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**Rockwell
International**

Collins instruction book

**AN/PRC-515
Radio Set**

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INTRODUCTION

This manual contains second and third line maintenance instructions for Radio Set AN/PRC-515. It includes a description of the equipment, maintenance procedures, illustrated parts list, and schematics. Throughout the manual, common names are used for nonmenclatured items of Radio Set AN/PRC-515 and several nomenclatured accessory items. The common names are:

<u>NOMENCLATURE</u>	<u>COMMON NAME</u>
Receiver-Transmitter Group OR-5007/URC	receiver-transmitter group
Radio Receiver-Transmitter RT-5047/URC	receiver-transmitter
Receiver-Transmitter Control C-5310/URC	control
Amplifier-Coupler AM-5280/URC	amplifier-coupler
Storage Battery BB-706/U	battery
Radio Set Harness MT-5167/PRC-515	pack frame
Antenna AS-5093/PRC-515	whip antenna
Handset H-5017/GR	handset
Headset-Microphone H-5016/PRC-515	headset
Electrical Power Cable Assembly CX-5229/PRC-515	battery cable
Battery Charger PP-5267/U	battery charger
Direct Current Generator G-5002/PRC-515	generator
Telegraph Key KY-5033/PRC-515	telegraph key
Antenna AS-5094/PRC-515	dipole antenna
Antenna Counterpoise AS-5095/PRC-515	antenna counterpoise

Additional manuals that support Radio Set AN/PRC-515 include:

Radio Set AN/PRC-515 Operator's Manual

Radio Test Set AN/PRM-501

Radio Test Set AN/PRM-502

Battery Charger PP-5267/U Maintenance Manual

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SECTION I
DESCRIPTION

1.1 PURPOSE

Radio Set AN/PRC-515 (figure 1-1) is a backpack, single-sideband, high-frequency receiver-transmitter that provides tactical voice and CW communications in the 2.0000- to 29.9999-MHz frequency range with a channel spacing of 100 Hz.

1.2 EQUIPMENT SUPPLIED

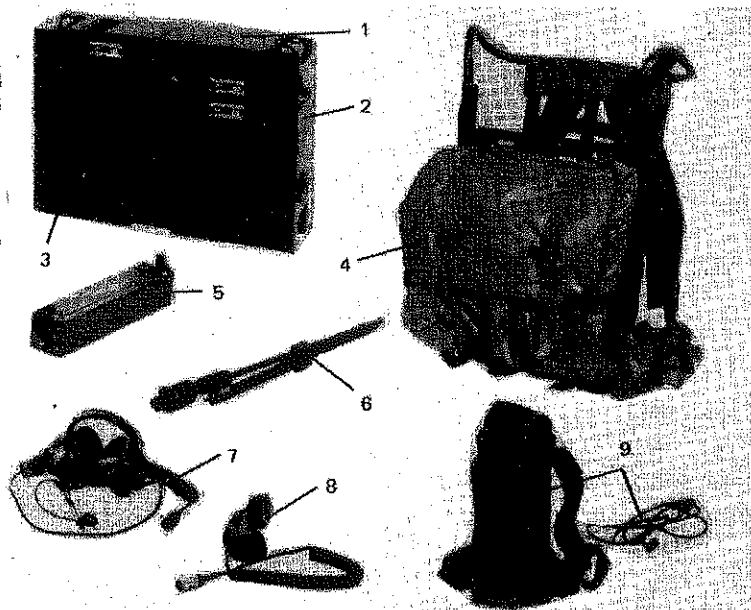
Equipment supplied as part of Radio Set AN/PRC-515, is shown in figure 1-2, and is listed in table 1-1.

1.3 ACCESSORY EQUIPMENT

Accessory equipment available for use with Radio Set AN/PRC-515 is shown in figure 1-3 and is listed in table 1-2.



Figure 1-1. Radio Set AN/PRC-515



1. RECEIVER-TRANSMITTER
CONTROL C-5310/URC
2. RADIO RECEIVER
TRANSMITTER RT-5047/URC
3. AMPLIFIER-COUPLER
AM-5280/URC
4. RADIO SET HARNESS
MT-5167/PRC-515
5. STORAGE BATTERY BB-706/U
6. ANTENNA AS-5093/PRO-515
7. HEADSET-MICROPHONE
H-5016/PRC-515
8. HANDSET H-5017/GH
9. ELECTRICAL POWER CABLE
ASSEMBLY CX-5229/PRC-515

TPA-0297-017

Figure 1-2. Equipment Supplied

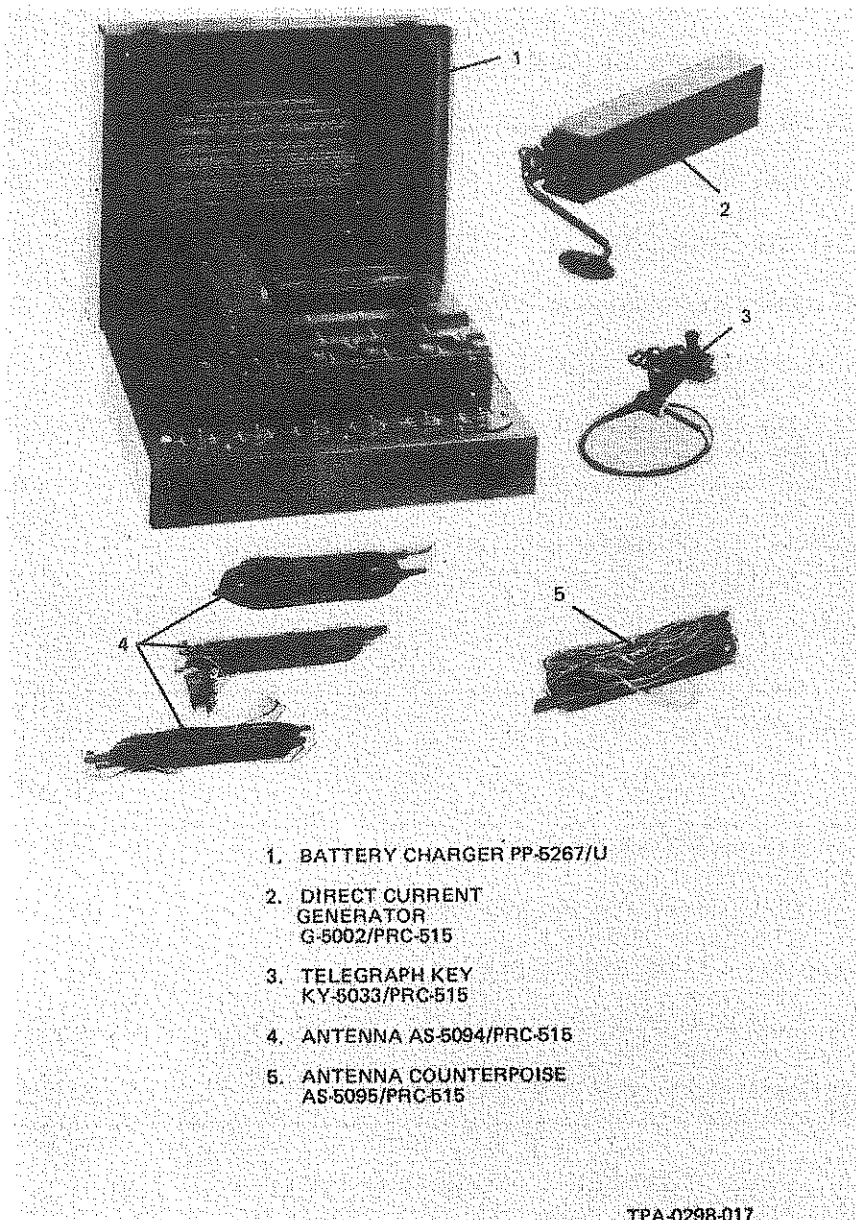


Figure 1-3. Accessory Equipment

QTY	NOMENCLATURE	COLLINS PART NUMBER
*1	Radio Receiver-Transmitter RT-5047/URC	622-2148-002
*1	Receiver-Transmitter Control C-5310/URC	622-2553-003
*1	Amplifier-Coupler AM-5280/URC	622-2149-001
2	Storage Battery BB-706/U	629-5703-001
1	Radio Set Harness MT-5167/PRC-515	629-3425-002
1	Antenna AS-5093/PRC-515	629-5702-001
1	Handset H-5017/GR	637-1952-001
1	Headset-Microphone H-5016/PRC-515	635-5148-001
1	Electrical Power Cable Assembly CX-5229/PRC-515	629-3428-001
*These items make up Receiver-Transmitter Group OR-5007/URC (Collins part number 622-1407-002).		

Table 1-1. Equipment Supplied

NOMENCLATURE	COLLINS PART NUMBER
Battery Charger PP-5267/U	629-3416-003
Direct Current Generator G-5002/PRC-515	629-3415-001
Telegraph Key KY-5033/PRC-515	637-1949-001
Antenna AS-5094/PRC-515	622-3073-001
Antenna Counterpoise AS-5095/PRC-515	629-5896-001

Table 1-2. Accessory Equipment

1.4 EQUIPMENT SPECIFICATIONS

Frequency range	2 to 29,999 MHz in 0.1-kHz increments.
Modes	Upper sideband (USB), amplitude modulation equivalent (AM), and continuous wave (CW).
Power output	20 watts (high power) or 2 watts (low power) nominal peak envelope or average power into 50 ohms with 1.3:1 vswr.
Duty cycle	Continuous for 12-hour period at 1:9 transmit voice/receive ratio using one Storage Battery BB-706/U
Tuning time	4 seconds nominal and 7 seconds maximum (after frequency selection is made).
Receiver sensitivity	
USB	-113 dB mW, 50-ohm rf input for a signal + noise/noise ratio of not less than 10 dB.
AM	-102 dB mW, 30% modulated, 50-ohm rf input for a signal + noise/noise ratio of not less than 10 dB.
Audio input	-56 to -26 dB mW into 600 ohms to develop rated rf output.
Audio output	10 mW into 600 ohms, adjustable with volume control.
Primary power	22 to 30 V dc (25.2 V dc nominal), 60 watts nominal on transmit CW and 1.5 watts nominal on receive (provided by Storage Battery BB-706/U).
Total weight	12.7 kg (28 lb).
Temperature range	
Operating	-54 to +65°C (-65.2 to +149°F).
Storage	-60 to +75°C (-76 to +167°F).
Operating altitude	3,048 metres (10,000 feet).
Operating humidity	95 percent relative humidity.

1.5 EQUIPMENT DESCRIPTION

1.5.1 Receiver-Transmitter Group OR-5007/URC

Receiver-Transmitter Group OR-5007/URC is a compact lightweight receiver-transmitter consisting of three units: Radio Receiver-Transmitter RT-5047/URC, Receiver-Transmitter Control C-5310/URC, and Amplifier-Coupler AM-5280/URC. When mechanically latched together, these units are electrically connected through mating connectors. All operating controls are located under a hinged cover on the control.

1.5.2 Storage Battery BB-706/U

Storage Battery BB-706/U is a rechargeable nickel-cadmium 1.8-Ah battery that latches beneath the receiver-transmitter group. It supplies dc power for 12 hours of operation at a 1:9 transmit voice/receive duty cycle.

1.5.3 Radio Set Harness MT-5167/PRC-515

Radio Set Harness MT-5167/PRC-515 is a lightweight, rugged pack frame with adjustable straps. It can hold, simultaneously, a receiver-transmitter group, a battery, and either a Direct Current Generator G-5002/PRC-515 or a spare battery. The field pack, part of the pack frame, has compartments to store all the accessory items except the battery charger.

1.5.4 Antenna AS-5093/PRC-515

Antenna AS-5093/PRC-515 is a 2.4-metre (8-foot) whip antenna that can be easily folded for storage. It has a shock absorbing mount and detent positioning device capable of $\pm 90^\circ$ front-to-back movement in 45° increments.

1.5.5 Handset H-5017/GR

Handset H-5017/GR has an earpiece, a microphone, a push-to-talk (ptt) switch, and connects to the control by means of a coiled cord.

1.5.6 Headset-Microphone H-5016/PRC-515

Headset-Microphone H-5016/PRC-515 has two earpieces, a boom microphone, a ptt switch, a headband, and connects to the control by means of a coiled cord.

1.5.7 Electrical Power Cable Assembly CX-5229/PRC-515

The CX-5229/PRC-515 is a 1.5-metre (5-foot) cable and a canvas bag with an adjustable shoulder strap. It allows the battery to be carried under the operator's outer clothing during very cold weather.

1.5.8 Battery Charger PP-5267/U

Battery Charger PP-5267/U is a portable battery charger that will discharge and charge six batteries simultaneously. It operates from either 28-V dc or 110-V ac power source.

1.5.9 Direct Current Generator G-5002/PRC-515

Direct Current Generator G-5002/PRC-515 is a hand-operated generator that can be latched between the receiver-transmitter group and the battery to extend operating time indefinitely.

Charging rates are indicated by lamps; green for normal operation and red for high charging rate.

1.5.10 Telegraph Key KY-5033/PRC-515

Telegraph Key KY-5033/PRC-515 is adjustable in tension and gap and connects to the control by means of a 0.9-metre (3-foot) flexible cord and connector. The telegraph key can be attached to the operator's thigh with a strap.

1.5.11 Antenna AS-5094/PRC-515

Antenna AS-5094/PRC-515 is a dipole antenna that consists of two 35.67-metre (117-foot) braided wires, wrapped on individual plastic bobbins, and allows long-range communications. Each wire has a 30.48-metre (100-foot) throwing line attached. The two wires are connected to a center junction, which is connected to the receiver-transmitter with a 15.25-metre (50-foot) coaxial feeder line.

1.5.12 Antenna Counterpoise AS-5095/PRC-515

The AS-5095/PRC-515 provides a ground plane in low electrical conductivity areas. It consists of four 10-metre (32.8-foot) braided wires and a 1.8-metre (6-foot) feeder cable connected to a center junction. The wires and feeder cable are wrapped on a plastic bobbin for storage.

1.6 OPERATING CONFIGURATIONS AND OPTIONS

1.6.1 Standard Configuration

The standard configuration consists of the receiver-transmitter group and the battery installed in the pack frame. The whip antenna is connected to the antenna connector on the amplifier-coupler, and the handset or the headset is connected to one of the audio connectors on the control. For CW operation, the telegraph key is connected to one of the audio connectors. This configuration is used for missions of up to 12 hours operating time and communications distances up to 25 kilometres (15.5 miles).

1.6.2 Spare Battery Option

When missions of up to 24 hours operating time are required, a spare battery is latched to the bottom of the operational battery. The spare battery is not electrically connected to the system. When the operating battery is discharged, it is interchanged with the spare.

1.6.3 Generator Option

For cases of isolated or extended missions, a generator can be used to maintain battery charge. The generator connects between the receiver-transmitter group and the battery. A clip on the pack frame secures the generator crank.

1.6.4 Cold Weather Configuration

During cold weather of 0°C (+32°F) and colder, the battery must be kept warm to obtain sufficient mission time. The battery cable allows the battery to be removed from the receiver-transmitter group and to be carried in a battery bag under the operator's outer clothing.

1.6.5 Antenna Options

In dry or rocky terrain of low electrical conductivity, the antenna counterpoise provides a ground plane for the whip antenna. The four braided wires of the antenna counterpoise are laid out on the ground, and the feedline connector is plugged into the coaxial BNC connector on the amplifier-coupler.

For extended communications ranges, the whip antenna is replaced with the dipole antenna. The dipole antenna can be erected using available structures such as buildings or trees. Each end of the dipole terminates in a bobbin that allows adjustment of the length. Markings on the braided wire facilitates selection of the proper length for the desired operating frequency. The antenna feedline is plugged into the coaxial BNC connector on the amplifier-coupler.

1.7 PRINCIPLES OF OPERATION

Figure 1-4 is a block diagram of Radio Set AN/PRC-515, including optional accessory items, and figure 1-5 is a block diagram of the receiver-transmitter group.

1.7.1 Receive Functional Theory

The receiver-transmitter group is in the receive mode whenever the push-to-talk (ptt) or CW key line is open. In the receive mode, the receive-transmit relays in power amplifier A3A4 and broadband amplifier A1A3 bypass these amplifiers and connect the antenna rf signal to mixer A1A2 where it is converted to a 5-MHz if signal.

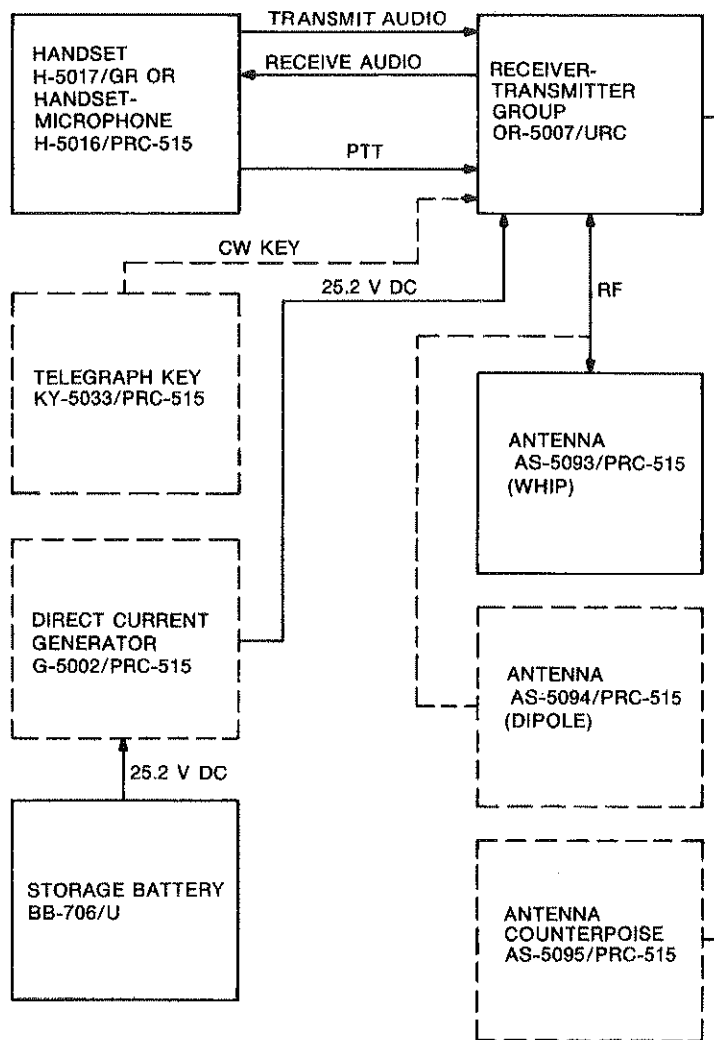
Mixer A1A2 consists of two mixer circuits and a 115-MHz filter. The first mixer circuit mixes the rf signal with a variable injection signal (117 to 145 MHz) from frequency synthesizer A1A6. The variable injection frequency is controlled by frequency selectors on the control. The output of the first mixer is passed through a 115-MHz bandpass filter to the second mixer. In the second mixer the 115-MHz if signal is mixed with a 110-MHz injection signal to produce a 5-MHz if signal. The 5-MHz if signal is fed to if/af amplifier A1A5 where it is converted to an audio signal.

If/af amplifier A1A5 performs USB or AM detection depending on the position of the MODE selector on the control. The detection circuits receive a 5-MHz injection signal from frequency synthesizer A1A6. The volume control on the control sets the audio input level of A1A5. The receive audio A1A5 is coupled through a filter in the control and is parallel connected to the two audio connectors on the control.

1.7.2 Transmit Functional Theory

The receiver-transmitter group is in the transmit mode whenever the ptt or CW key line is closed. During CW operation, a delay circuit in A1A5 maintains the transmit mode during normal CW key open periods (1 second maximum).

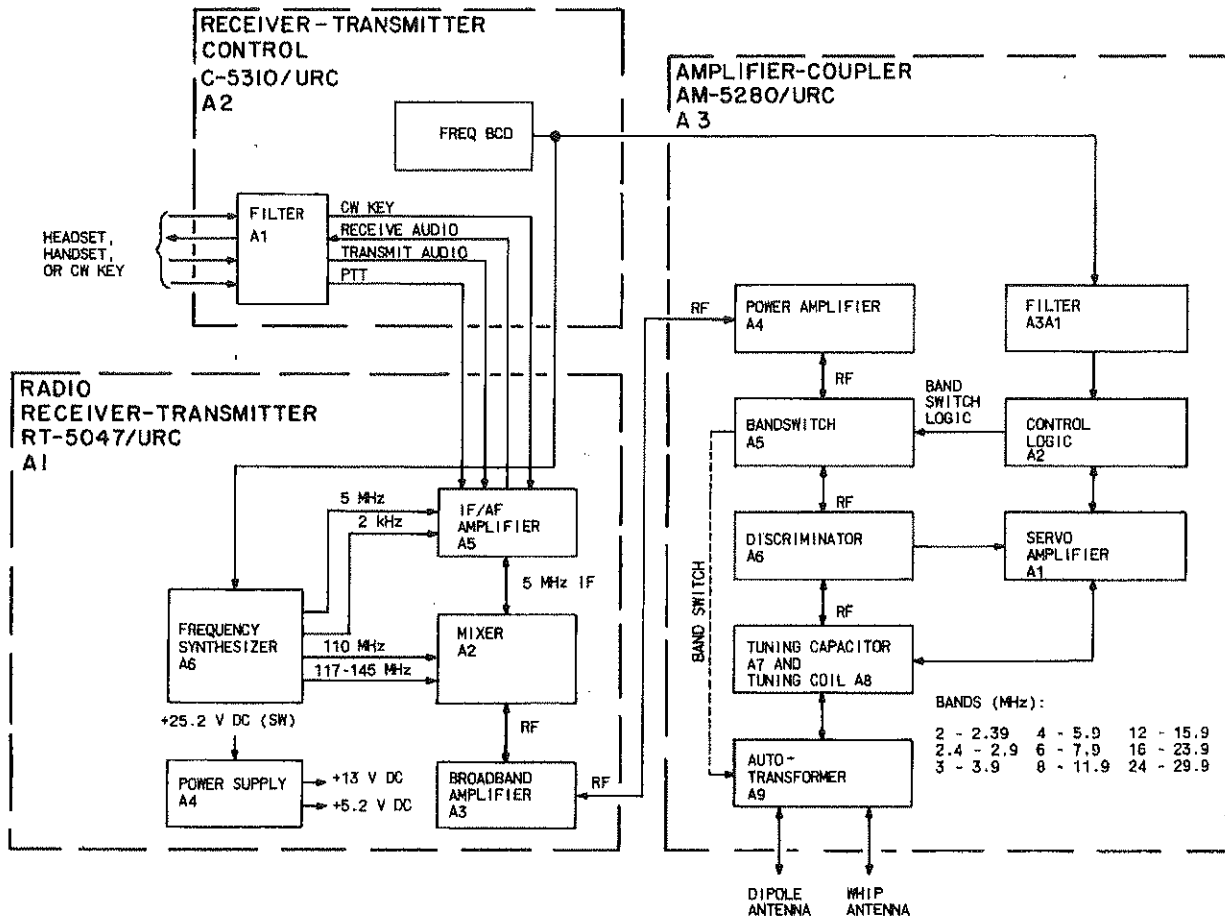
On voice operation, the transmit audio signal is passed through a filter in the control to if/af amplifier A1A5 in the radio receiver-transmitter. In A1A5, the voice signal is amplified and applied to a balanced modulator. The balanced modulator uses a 5-MHz injection signal from frequency synthesizer A1A6 to produce a 5-MHz double-sideband signal, which is passed through a SSB filter to produce a single-sideband (SSB) signal. In AM, the 5-MHz carrier is reinserted after the SSB filter to produce an equivalent AM signal consisting of the SSB signal and a 5-MHz carrier.



NOTE:
BROKEN LINES INDICATE OPTIONAL ACCESSORY ITEMS.

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Figure 1-4. Radio Set AN/PRC-515, Block Diagram



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Figure 1-5. Receiver-Transmitter Group or OR -5007/URC, Block Diagram

On CW operation, the CW key line is filtered in the control and applied to if/af amplifier A1A5 in the radio receiver-transmitter. A CW keying circuit in A1A5 applies a keyed 2-kHz signal to the input of the balanced modulator. The 2-kHz signal is obtained from frequency synthesizer A1A6.

Mixer A1A2 converts the 5-MHz voice or CW if signal to an rf signal of the desired frequency. Mixer A1A2 consists of two mixers and a 115-MHz bandpass filter. In the first mixer circuit, the 5-MHz if signal is mixed with a 110-MHz injection signal from frequency synthesizer A1A6. The output of this mixer is fed through a 115-MHz bandpass filter to the second mixer. In the second mixer, the 115-MHz if signal is mixed with a variable injection frequency (117 to 145 MHz) from frequency synthesizer A1A6 to produce the desired rf signal frequency. The variable injection frequency is controlled by frequency selectors on the control.

The output of mixer A1A2 is amplified to approximately 250 mW by broadband amplifier A1A3 and applied to power amplifier A3A4. Power amplifier A3A4 amplifies the output to 2 watts or 20 watts depending upon the setting of the POWER/PUISSANCE switch on the control. The output of power amplifier A3A4 is fed through bandswitch A3A5, discriminator A3A6, tuning capacitor A3A7, tuning coil A3A8, and autotransformer A3A9 to the antenna. When connected, the whip antenna is used. When the whip antenna is disconnected, a switch in the amplifier-coupler selects the dipole antenna.

1.7.3 Tuning Functional Theory

Whenever power is turned on or a new frequency is selected, the control applies a rechannel pulse to if/af amplifier A1A5. If/af amplifier A1A5 processes the rechannel pulse and applies it to frequency synthesizer A1A6 and control logic A3A2. Frequency synthesizer A1A6 generates a new variable injection frequency based on binary coded decimal (bcd) information received from the frequency selectors on the control. Control logic A3A2 also receives bcd frequency information from the selector switches and provides band-switching information to bandswitch A3A5. During synthesizer frequency changing and band switching, the transmit circuit is disabled. When band switching is complete, control logic A3A2 advances to a standby condition. In this condition, frequency synthesizer A1A6 and bandswitch A3A5 are tuned to the new frequency, but tuning capacitor A3A7 and tuning coil A3A8 are tuned to the old frequency. The receive circuits are operational, but the transmit circuits are disabled.

Final tuning is initiated by momentarily pressing the ptt switch or the CW key. Control logic A3A2 now advances to the tune state and (1) a 2-kHz audio tone is applied to the operator's headset; (2) a transmit signal at the selected frequency is supplied to the amplifier-coupler for tuning; (3) the transmitter is keyed; and (4) tuning capacitor A3A7 and tuning coil A3A8 are servo tuned to the new frequency using the output of discriminator A3A6. When vswr remains below approximately 1.3:1 for 300 milliseconds, control logic A3A2 advances to the operate state and the transmitter is unkeyed. Tuning is now complete.

During transmit operation, the vswr is continuously monitored and if it goes above 1.3:1 for more than 2 seconds, a retune cycle is initiated. In retune, the servo amplifiers are enabled and the servo motors are driven by discriminator phasing and loading inputs, derived from the transmitter voice envelope, until the vswr is below 1.3:1 for more than 300 milliseconds.

Transmit operation is checked by a tune incomplete monitor circuit in control logic A3A2. A fault condition occurs if (1) the tune or retune cycle is not completed or (2) the rf voltage at the junction of the tuning coil and tuning capacitor exceeds 850 volts peak. When a fault condition occurs, tuning stops, the transmit circuit is disabled, and an interrupted 2-kHz tone (beeping) is applied to the operator's headset. A tune incomplete condition is reset by rechanneling the frequency selectors on the control.

1.7.4 Receiver-Transmitter Group OR-5007/URC Detailed Theory

1.7.4.1 Receiver-Transmitter Control A2, C-5310/URC

Refer to figure 4-14, schematics section of this manual. When Receiver-Transmitter Control C-5310/URC (control) is mechanically latched to Radio Receiver-Transmitter RT-5047/URC (receiver-transmitter), connector A2P1 is mated with A1A1J1 (as shown on figure 4-1, schematics section). Connectors J1 and J2 of A2 are connected in parallel to simultaneously accommodate any two of three audio I/O devices: Handset H-5017/GR, Headset-Microphone H-5016/PRC-515, and Telegraph Key KY-5033/PRC-515. The signals of the audio I/O device(s), CW KEY, PTT, RCV/XMT AUDIO, are filtered by the LC filter

network connected to each of the signal lines. The control provides OFF control for the receiver-transmitter group through mechanical linkage of a switch contact to the wiper arm of potentiometer A2R1. When A2R1 is rotated to the maximum counterclockwise (ccw) position, detent occurs (switch contact opens) and the +25.2-V dc (SW) voltage is removed from A2P1-36 and -49. Rotating A2R1 clockwise (cw) from the detent, closes the switch and applies +25.2 V dc from A2P1-24 and -30 to A2P1-36 and -49. Further rotation of A2R1 toward maximum cw increases the audio gain (AF GAIN HIGH) of the af amplifier stage of the receiver-transmitter. Rotating A2R1 ccw decreases af gain. When +25.2 V dc is switched to A2P1-36 and -49, the voltage is also applied to the lamp circuits of frequency selector switches A2S1 through A2S6. The switches are then illuminated when lamp test switch A2S7 is depressed and ground is applied. This illuminates switches A2S1 through A2S6 when the operator needs light to read the frequency or wants to make a lamp check. Frequency selection is made by actuating the appropriate switches until the desired frequency is read in the window adjacent to each switch. The frequency switches provide binary coded decimal (bcd) signals, representing the selected frequency, to which the receiver-transmitter and Amplifier-Coupler AM-5280/URC (amplifier-coupler) automatically tune. Operating modes, USB or AM, are selected by switch A2S8. An open circuit at A2P1-23 selects the AM (USB) function, whereas, a ground at A2P1-23 selects AM. Operating power level, HI PWR or LO PWR, is selected by switch A2S9. A ground at A2P1-27 places the radio in LOW POWER (2 watts) operation. An open at A2P1-27 selects LOW POWER (22 watts) operation. A rechannel signal (ground) is applied to A2P1-38 (RCP) whenever one or more of switches A2S1 through A2S6 are actuated.

1.7.4.2 Radio Receiver-Transmitter A1, RT-5047/URC

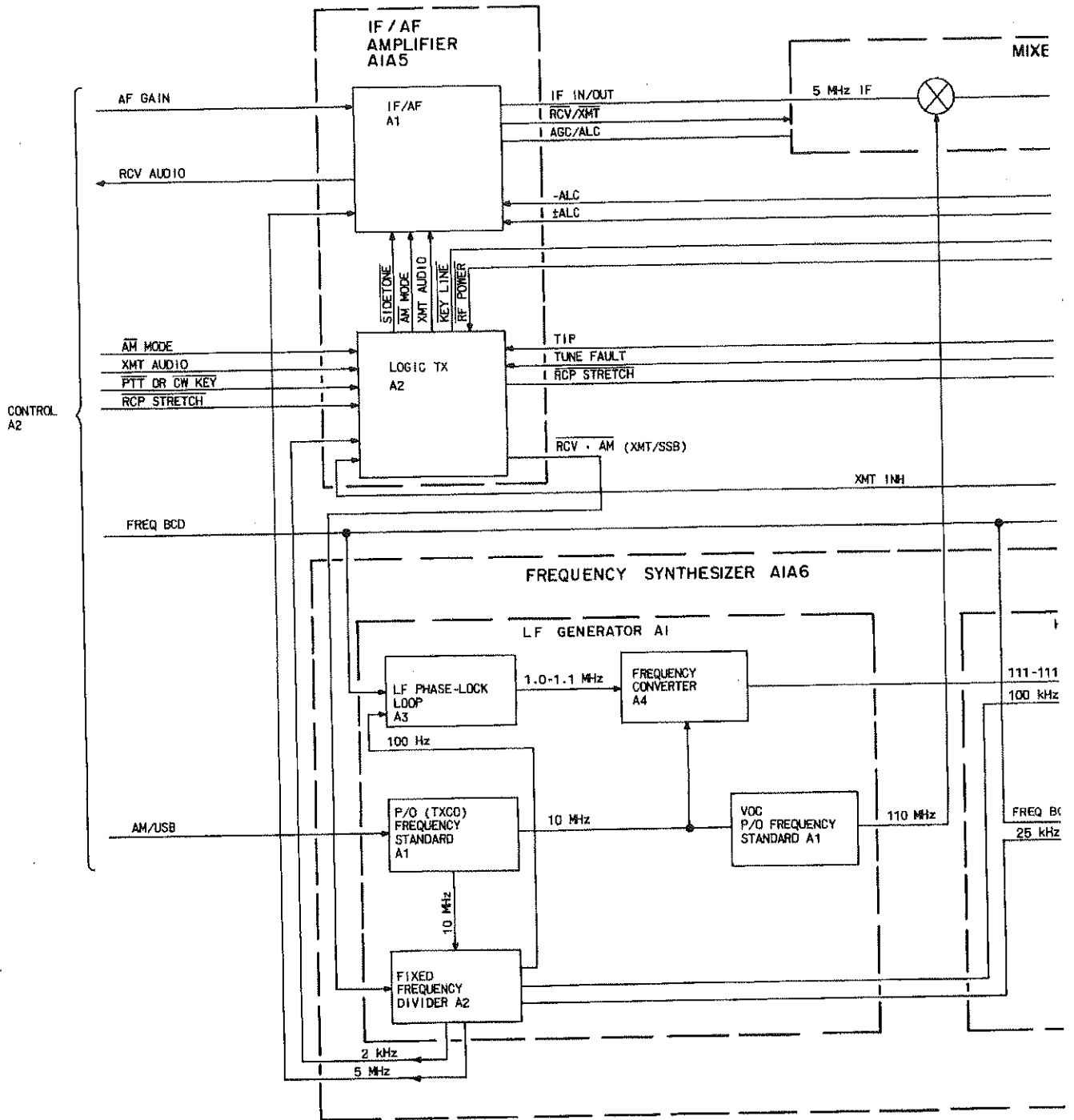
Refer to figure 1-6. The radio receiver-transmitter performs frequency translation and amplification of af to rf (transmit function) and rf to af (receive function) with five sub-assemblies: if/af amplifier (A1A5), mixer (A1A2), broadband amplifier (A1A3), frequency synthesizer (A1A6), and power supply (A1A4). If/af amplifier A1A5 provides af/if amplification, modulation/demodulation, if selectivity, and logic processing of control functions. Mixer A1A2 provides up and down conversion for the received or transmitted signals. Broadband amplifier A1A3 amplifies the transmit rf to approximately 250 mW to drive the power amplifier circuits of amplifier-coupler A3. Frequency synthesizer A1A6 generates and supplies injection frequencies to the mixer for up and down conversion, and carrier injection frequency and tone frequency to the if/af amplifier. Power supply A1A4 converts +25.2 volts dc (SW) into regulated +13-volt and -5.2-volt dc outputs for distribution to the other subassemblies.

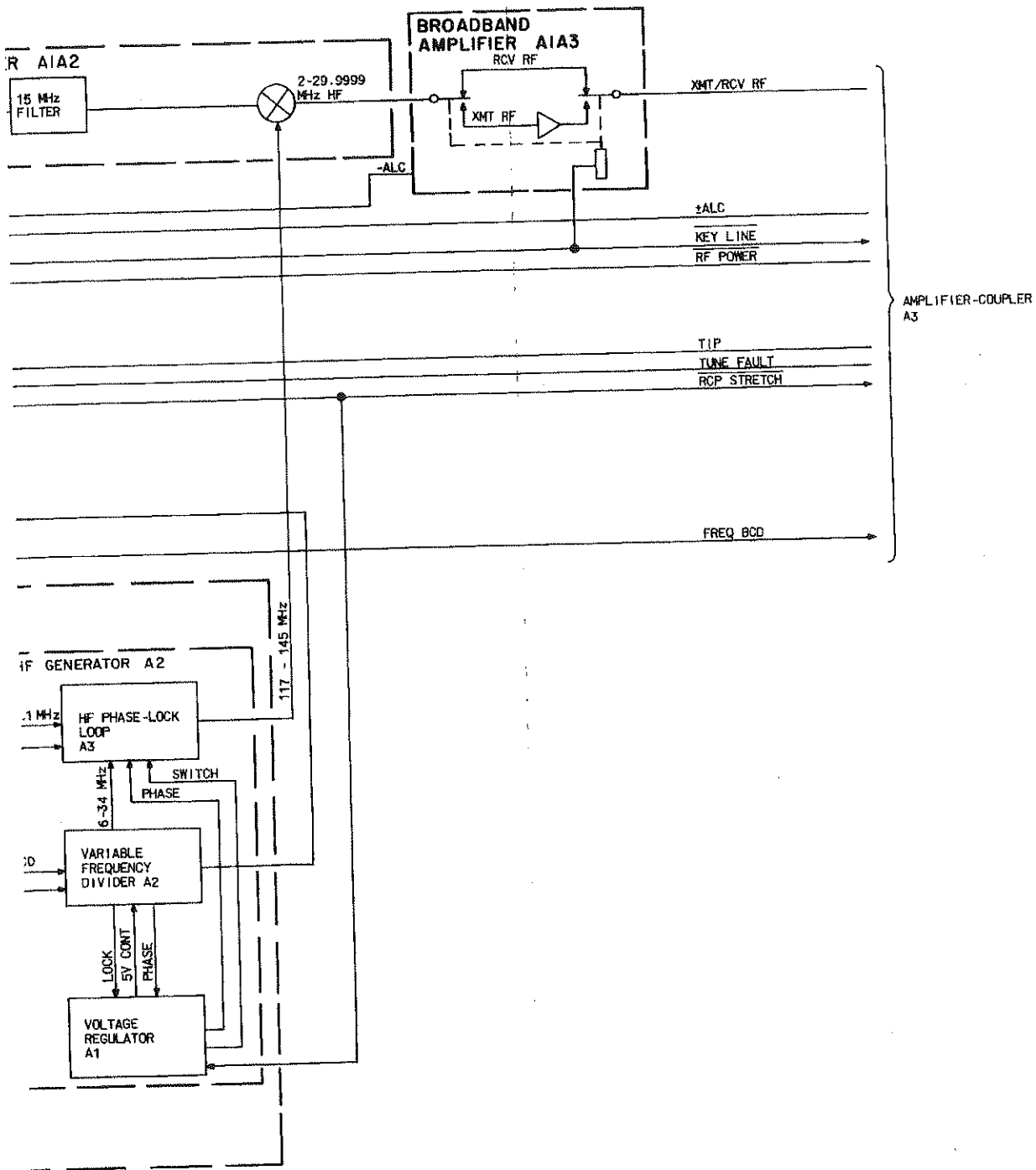
1.7.4.2.1 Receiver Theory

Refer to figure 4-14, schematics section. At control A2 the operator selects either the USB or AM mode and the operating frequency. When A2 is turned on, tuning is complete, the radio is unkeyed, and receive operation of Radio Set AN/PRC-515 is in effect.

1.7.4.2.1.1 Broadband Amplifier A1A3

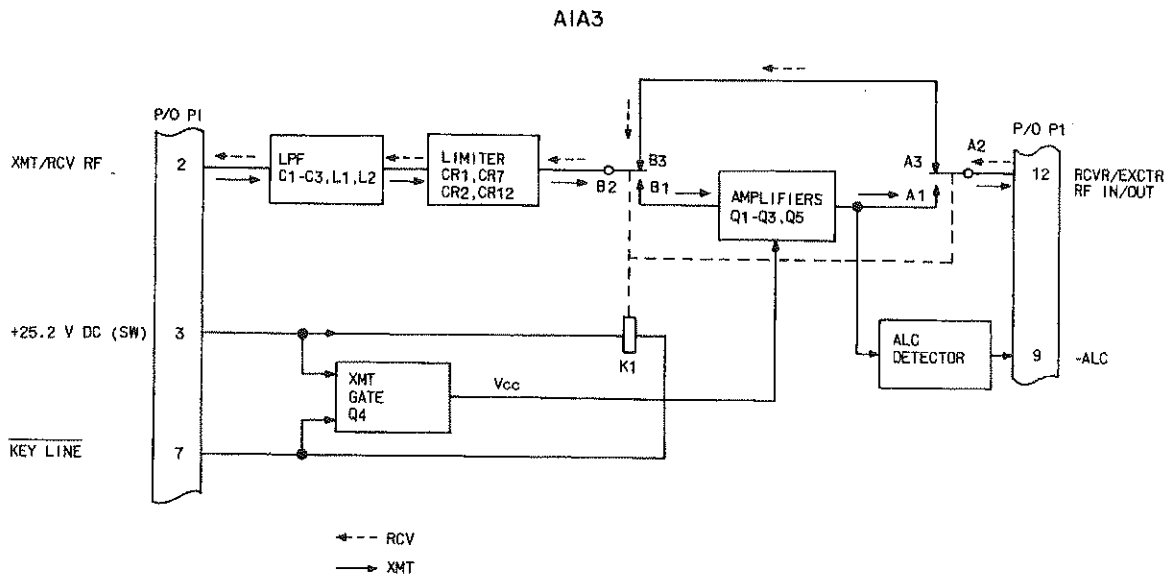
Refer to figure 1-7 in this section and figure 4-3 of the schematic section. The received signal is coupled from amplifier-coupler A3 through chassis A1A1 to connector A1A1J3/A1A1P1-12 and on to relay A1A3K1-A2. With the radio unkeyed, relay A1A3K1 is de-energized and relay contacts A2/A3 and B2/B3 are closed. This routes the received rf from P1-12 through the limiter and LC filter network to A1A1J3/A1A3P1-2.





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Figure 1-6. Radio Receiver-Transmitter RT-5047/URC, Block Diagram



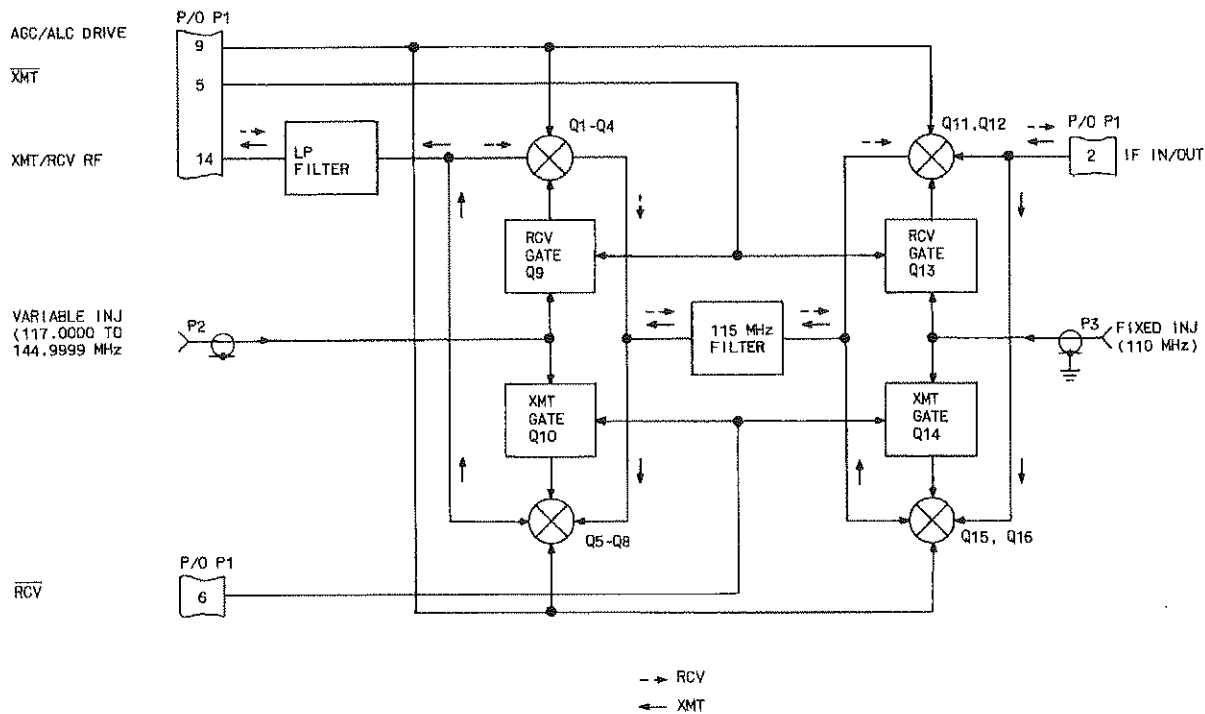
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Figure 1-7. Broadband Amplifier (Receive or Transmit), Simplified Schematic Diagram

1.7.4.2.1.2 Mixer A1A2

Refer to figure 1-8 of this section and figures 4-1 and 4-2 of the schematic section. The receive rf (AM or USB) is routed by chassis wiring from broadband amplifier A1A3 to A1A1J2/A1A2P1-14. The control inputs supplied to A1A2 are $\overline{\text{XMT}}$ and $\overline{\text{RCV}}$ logic, and the AGC/ALC DRIVE from A1A5. During receive mode, RCV ($\overline{\text{XMT}}$) logic at A1A2P1-5 is high and the XMT ($\overline{\text{RCV}}$) logic at A1A2P1-6 is low. The RCV logic is applied to injection amplifier transistors Q9 and Q13, which in turn switches on diodes CR2, CR3, CR6, and CR8. The fixed and variable injection frequencies are now applied to the receive up conversion mixer Q1 and Q2 and the receive down conversion mixer Q11 and Q12. The XMT logic switches Q10 and Q14 are off, which disables both transmit mixers.

The receive rf (2-29.9999 MHz) from P1-14 passes through the low-pass LC filter, switching diode CR2, transformer T1, and on to the gates of the up conversion mixer FET's Q1 and Q2. FET's Q3 and Q4 neutralize the gate-to-drain capacity of Q1 and Q2. The receive rf is mixed with the variable injection frequency (117-144.9999 MHz) to obtain 115-MHz if, which is applied to the 115-MHz filter through diode CR3. The 115-MHz if out of the filter passes through diode CR6 and transformer T5 to the bases of down conversion mixer transistors Q11 and Q12. The 115-MHz if is mixed with fixed injection (110-MHz) to produce a 5-MHz if. The 5-MHz if (with upper and lower sidebands reversed) is coupled by transformer T6 through diode CR8 to P1-2 (IF OUT).



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Figure 1-8. Mixer (Receive or Transmit), Simplified Schematic Diagram

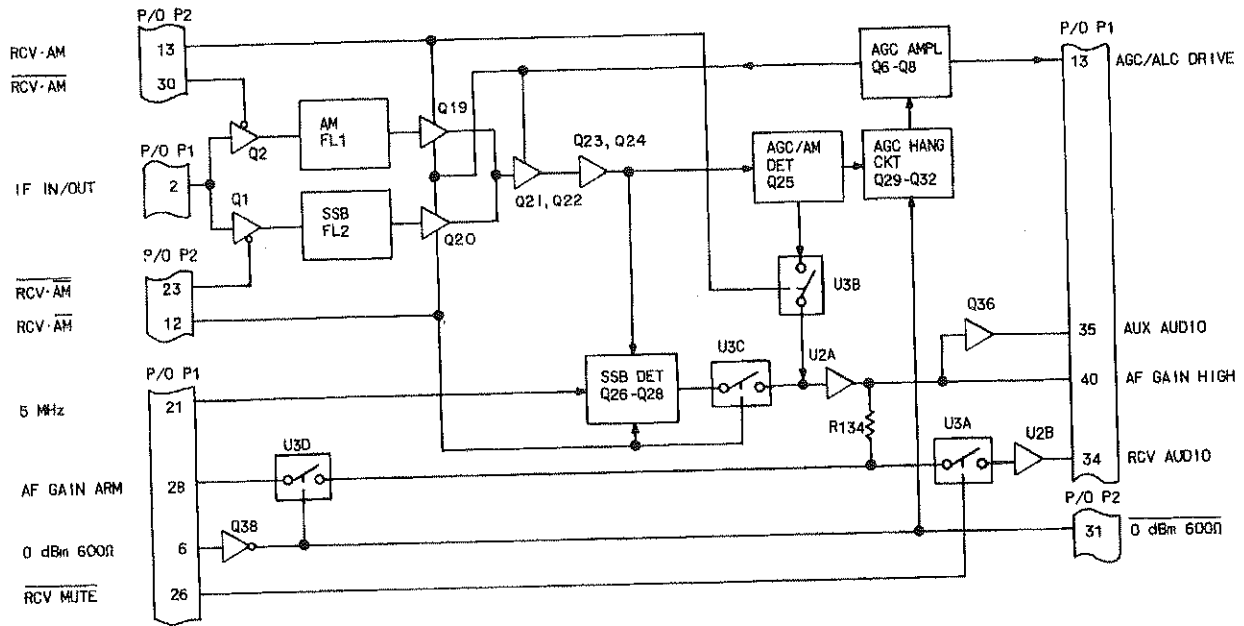
When the receive rf input signals are below AGC threshold, the electron flow is through inductors L3 and L16, bypassing diodes CR1 and CR7. As the rf input signal increases, the AGC/ALC DRIVE voltage at P1-9 decreases, permitting conduction by diodes CR1 and CR7. As the current of diodes CR1 and CR7 increases, the rf and if signals are shunted to ground, reducing the signal gain.

1.7.4.2.1.3 If/Af A1A5A1

- a. AM Receive. Refer to figure 1-9 of this section and figures 4-1 and 4-5 of the schematic section. The IF IN signal is applied from A1A2P1/A1A1J2-2 to A1A1J5/A1A5A1P1-2. When in AM mode, the 5-MHz if signal is coupled from A1A5A1P1-2 (IF IN), to the base of amplifier switch transistor Q2. With the radio in AM mode, RCV·AM logic (ground) at P2-30 is applied to the base of transistor Q2, biasing it on and allowing the AM receive if to be applied to filter AM filter FL1 and then on to amplifier switch transistor Q19, which is also biased on by +5.2-volt logic (RCV·AM) at P2-13. Transistors Q1 and Q20 are biased off during AM mode.

The receive if output of transistor Q19 passes through if amplifier transistors Q21 through Q24 on to AGC/AM audio detector transistor Q25. The detected af output of transistor Q25 is applied to the input of AM switch U3B and to the AGC hang circuit, transistors Q29 through Q32. As the collector current of transistor Q32 increases to transistor Q8 of the ALC/AGC DRIVE circuit, the output voltage of transistor Q6 decreases. This decrease in voltage to inductors L1, L2, and L3 permits diodes CR6, CR7, and CR8 to conduct, which maintains the gain of transistors Q19, Q21, and Q22

A1A5A1



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Figure 1-9. If/Af (A1A5A1) Receive, Functional Block Diagram

proportionate to the received signal level. The dc voltage output of transistor Q6 is also supplied to A1A2 from P1-13 (AGC DRIVE).

The presence of RCV-AM logic at the control element of switch U3B switches the AM receive audio to the output element of the switch. This audio is then coupled by capacitor C55 to the first audio amplifier U2A. The output of audio amplifier U2A is applied to R134, and to P1-40 (AF GAIN HIGH), which connects to variable resistor R1 (af gain) of control A2. The audio level at the input to audio mute gate, switch U3A, is controlled by A2R1 and voice/data gate, switch U3D. Switch U3A is gated by RCV MUTE logic. With the radio in normal receive operation, no tuning occurring, the RCV MUTE logic enables switch U3A and the audio is coupled by capacitor C61 to the second af amplifier U2B. The receive audio is amplified and coupled to A1A5P1/A1A1J5-34 on to A1A1J1/A2P1-43 (RCV AUDIO) for routing to the audio I/O device(s) connected to the control.

- b. USB Receive. Refer to figures 4-1 and 4-5, schematics section, and figure 1-9 of this section. The 5-MHz USB receive if is applied to A1A5A1 on the same signal line that AM receive if is applied. The USB receive if is coupled to switch transistors Q1 and Q2. With Q1 gated on by RCV-AM logic (P2-23), when the radio is in USB mode, the receive if output of Q1 is direct coupled to lower sideband filter FL2 (the sidebands are inverted in A1A2 so lower sideband is the upper sideband). Then the receive if passes through transistor Q20 when RCV-AM gating logic is present. This couples the 5-MHz if to if amplifiers, transistors Q21 through Q24. The gain of transistors Q20 through Q22 is controlled by AGC/ALC DRIVE in the same manner as noted in AM receive mode of

operation. The if output of transistor Q24 is sent to AGC/AM audio detector, transistor Q25. Also, the if signal at the emitter of Q24 is coupled to transistor Q28 of the SSB detector, which is comprised of transistors Q26, Q27, and Q28. The SSB detector is switched on during USB mode by RCV·AM logic (P2-12) which is applied to the base of transistor Q27. The 5-MHz injection signal from P1-21 is coupled to the base of Q26. Mixing the injection frequency with the receive if produces the resultant USB af output from Q27 which is then coupled by capacitor C54 to switch U3C. During USB receive mode, switch U3C is closed by RCV·AM logic and the audio output of U3C is coupled to the audio amplifiers by capacitor C55. The USB audio amplifiers are the same ones that are used for AM operation.

1.7.4.2.2 Transmitter Theory

The receiver-transmitter group is ready to transmit after power is turned on, frequency and mode are selected at control A2, and tuning is complete. To transmit, enable the receiver-transmitter group keyline by (1) pressing the ptt switch on the headset or handset, or (2) by keying the telegraph key.

Refer to figures 4-1, 4-6, and 4-14 schematic section. For voice operation, the PTT signal is supplied to A1A5A2 from control A2 through the following route; A2P1/A1A1J1-39, through chassis A1A1 wiring to A1A1J5/A1A5A1P1-23, and through A1A5A1 board wiring to A1A5A1P2/A1A5A2P1-26.

For CW keying operation, the CW KEY signal is supplied to A1A5A2 from control A2 through the following route; A2P1/A1A1J1-19, through A1A1 chassis wiring to A1A1J5/A1A5A1P1-17 and through A1A5A1 board wiring to A1A5A1P2/A1A5A2P1-20.

For xmit audio (voice), the xmit audio signal is supplied to A1A5A2 from control A2 through the following route; A2P1/A1A1J1-20, through chassis A1A1 wiring to A1A1J5/A1A5A1P1-15, and through A1A5A1 board wiring to A1A5A1P2/A1A5A2P1-29.

1.7.4.2.2.1 Logic/Tx A1A5A2

Refer to figure 1-12 of this section and figure 4-6, schematics section. XMT AUDIO from P1-29 is coupled through FET Q12 to af amplifier U8B. Transistor Q14 and FET Q13 serve as a voice/data gain change stage (data is not used). The af output from amplifier U8B is applied to P1-9 and to af amplifier U8A. The audio to U8A is amplified and applied to AGC detector, transistor Q11. The AGC detector output voltage is applied to attenuators (FET's Q12 and Q15) to maintain the audio output at P1-9 at a constant level.

Figure 1-10 of this section provides a logic table for the various transmit-receive functions. In CW mode, the 2-kHz audio from P1-10 passes through gate/filter stage, FET's Q5, Q6, and Q16, and through af amplifier U8B with attenuators Q12 and Q15 at full attenuation. RC network C1 and R4 provides a delay to hold the radio in transmit mode for approximately one second after CW key is released.

The rechannel pulse signal at P1-24, which is momentary ground, causes capacitors C4 and C24 to be discharged by transistors Q3 and Q4, respectively. The output pulse at P1-33 (RCP STRETCH) is delayed by the time constant of C4 and R18 and the pulse width is determined by C24 and R69.

1.7.4.2.2.2 If/Af A1A5A1

Refer to figure 1-10 and 1-11 in this section. The logic in transmit turns on balanced modulator U1 and transistor Q3, while biasing off transistor Q39. The XMT AUDIO from P2-9 is applied to balanced modulator U1 where it is mixed with 5-MHz from P1-21 to produce a double sideband, suppressed carrier output signal. This output signal from U1 is sent through transistor Q5, diode CR2 and SSB filter FL2.

PI PIN	INPUTS						OUTPUTS	
	PTT 26	TIP 28	CW KEY 20	RCV ONLY 15	XMT INH 22	TUNE FAULT 17	RCV 6	XMT 32
	X	X	X	X	X	0	X	0
	0	X	X	X	X	0	0	X
	X	0	X	X	X	0	0	X
	0	X	X	0	X	0	X	0
	0	X	X	X	0	0	X	0
	0	X	X	X	X	X	X	0
	X	X	0	X	X	0	0	X
	X	X	0 TO X	X	X	0	NOTE	NOTE

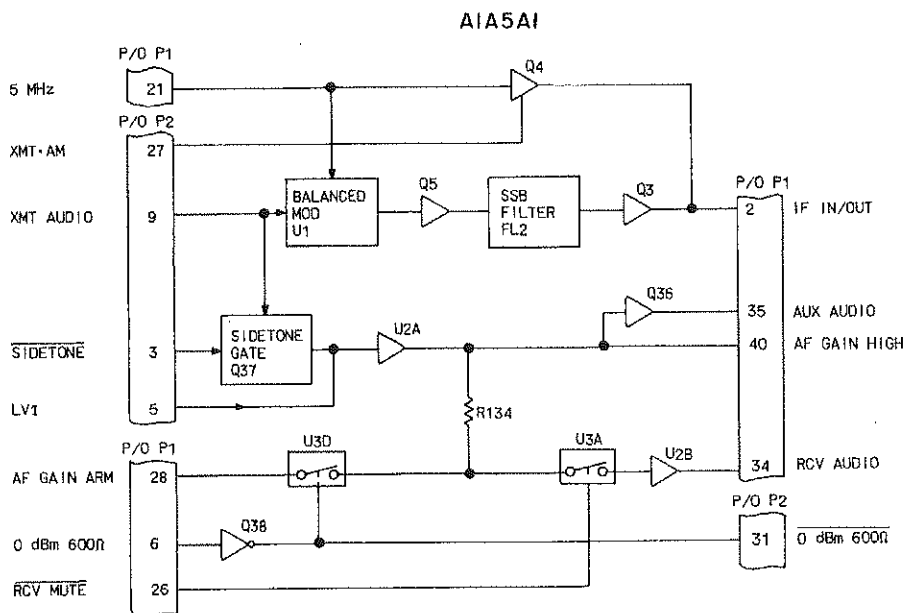
NOTE: WHEN CW KEY IS DISABLED THE OUTPUT STAYS AT ZERO AT PI-6 FOR APPROX. 1 SECOND.

X = MORE THAN +4.5 V
0 = LESS THAN +0.5 V

PI PIN	INPUTS			OUTPUTS				
	PTT 26	AM 19	TIP 28	13	30	27	12	23
	X	X	X	0	X	0	X	0
	0	X	X	0	X	0	0	X
	X	0	X	X	0	0	0	X
	0	0	X	0	X	X	0	X
	X	0	0	X	0	0	0	X

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Figure 1-10. Logic/Tx A1A5A2, Logic Tables



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Figure 1-11. If/Af A1A5A1 (Transmit), Simplified Schematic Diagram

The if output from FL2 is amplified by transistor Q3 and coupled to P1-2 (IF OUT). If AM is selected at control A2, carrier reinsert gate, transistor Q4 and diode CR1, are gated on by logic from P2-27. This allows the 5-MHz carrier to be added to the SSB output of if amplifier Q3, producing an AM equivalent (AM) signal to P1-2.

- a. Sidetone and Low Voltage Input. During transmit, the sidetone transmit audio is supplied to the headset or the handset via the receive audio circuits previously discussed. Refer to figures 1-12 and 1-13 of this section and figures 4-5 and 4-6, schematics section.

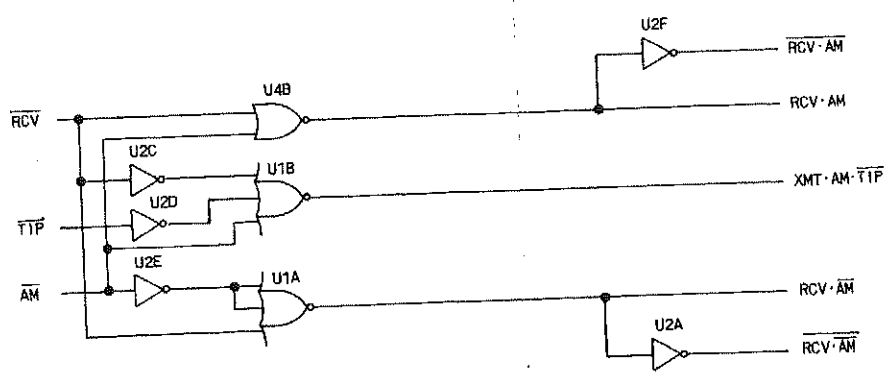
There are three conditions when the sidetone gate (FET A1A5A1Q37) is biased on: When (1) tuning is in progress (TIP) a 2-kHz tone is heard; when (2) a coupler fault occurs, a pulsating 2-kHz tone is heard; or, when (3) there is forward power output from amplifier-coupler (A3), audio is heard. In USB mode FET A1A5A1Q37 remains on for the time constant of capacitor A1A5A2C3 and resistor A1A5A2R14 (approximately 1 second) after the absence of voice audio.

The low voltage input (LVI) indication occurs when +25.2 V dc (SW) at A1A5A2P1-25 becomes less than +22.5 volts, allowing transistor A1A5A2Q1 to conduct. This causes square-wave generator A1A5A2U4A and A1A5A2U5A to oscillate. This square-wave output is coupled through R37 to A1A5A2P1/A1A5A1P2-5 and on to the audio circuits of A1A5A1 to produce a low frequency clicking sound. If a coupler fault occurs during this time, a pulsating 2-kHz tone is heard.

YLTNE

IT

5V



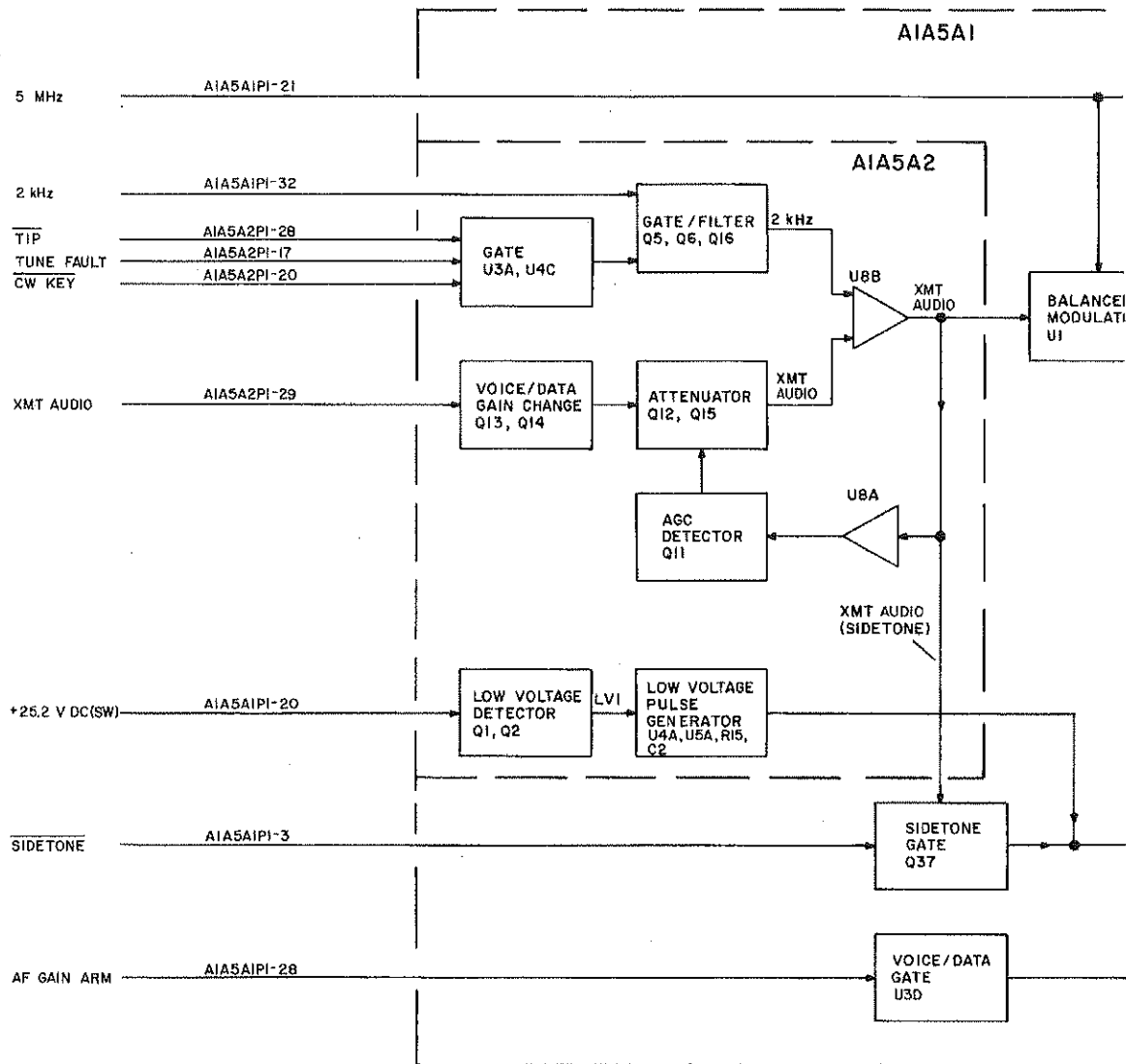
INPUTS		
AM	TTP	RCV
0	0	0
0	0	1
0	1	0
0	1	1
1	0	0
1	0	1
1	1	0
1	1	1

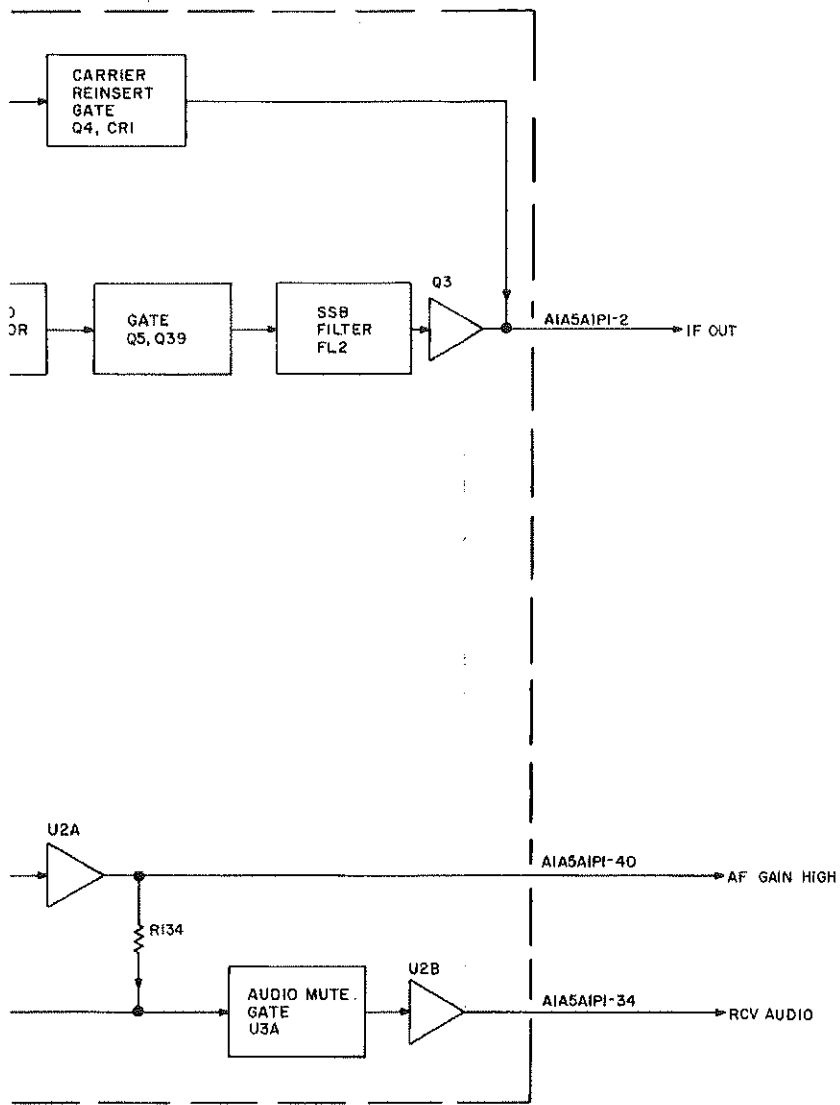
OUTPUTS				
RCV-AM	RCV-AM	XMT-AM-TTP	RCV-AM	RCV-AM
0	1	0	1	0
1	0	0	1	0
0	1	0	1	0
1	0	1	1	0
1	0	0	0	1
1	0	0	1	0
1	0	0	0	1
1	0	0	1	0

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Figure 1-12. Logic/Tx A1A5A2, Simplified Schematic Diagram and Logic Tables





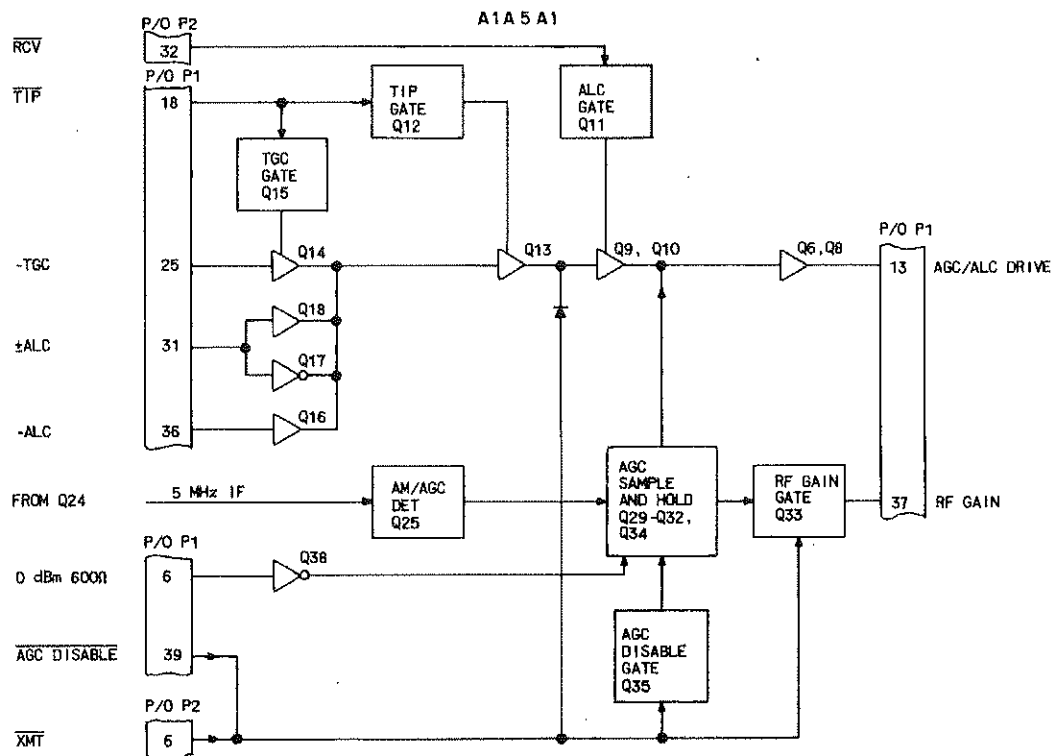
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Figure 1-13. If/Af Amplifier A1A5 (Transmit),
Functional Block Diagram

- b. ALC. Refer to figure 1-14 of this section and figure 4-5 of the schematic section. During transmit operation, the ALC stages of A1A5A1 are enabled by XMT logic from P2-32 to switch transistor Q11. When transmitting, negative ALC voltage from amplifier-coupler A3 is applied from P1-31 to the emitter of transistor Q17. If broadband amplifier A1A3 exceeds approximately 300 mW, it develops a negative ALC voltage which is applied to the emitter of transistor Q16 through P1-36. The output of Q16 or Q17 causes transistor Q13 to start discharging capacitor C22, which causes transistor Q9 to begin conduction. As the conduction of Q9 increases, the output of transistor Q6 (ALC/AGC DRIVE to mixer A1A2) decreases, permitting diodes A1A2CR1 and A1A2CR7 to conduct. This decreases the rf output from A1A2 to amplifier-coupler A3 until A3 has the proper output level and is not overdriven.

1.7.4.2.2.3 Mixer A1A2

Refer to figure 1-8 of this section and figure 4-2 of the schematic section. During transmit, the switching logic at P1-5 and P1-6 switches the transmit mixers on and the receive mixers off. The IF IN (5-MHz AME or SSB) signal is coupled by diode CR10 and transformer T8 to the up conversion mixer, transistors Q15 and Q16. The sum of 110- and 5-MHz frequencies (115 MHz) is coupled through transformer T7 and diode CR9 to the 115-MHz filter. The filtered output is coupled to the down conversion mixer, FET's Q5 and Q8, by diode CR5 and transformer T4. Here the 115-MHz signal is mixed with 117- to 144.9999-MHz variable injection signal from P2 to obtain the 2- to 29.9999-MHz output. FET's Q7 and Q8 neutralize



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Figure 1-14. AGC/ALC, Simplified Schematic Diagram

the gate-to-drain capacity of FET's Q5 and Q6. The rf output of the down conversion mixer is coupled through low-pass filter inductors L1 and L2 and capacitors C1 and C2, to P1-14 (XMT RF) by transformer T3, diode CR4, and capacitor C4. If the rf output is too high (as noted in ALC discussion), the ALC/ AGC DRIVE at P1-9 decreases, permitting diodes CR1 and CR7 to conduct, reducing the rf output.

1.7.4.2.2.4 Broadband Amplifier A1A3

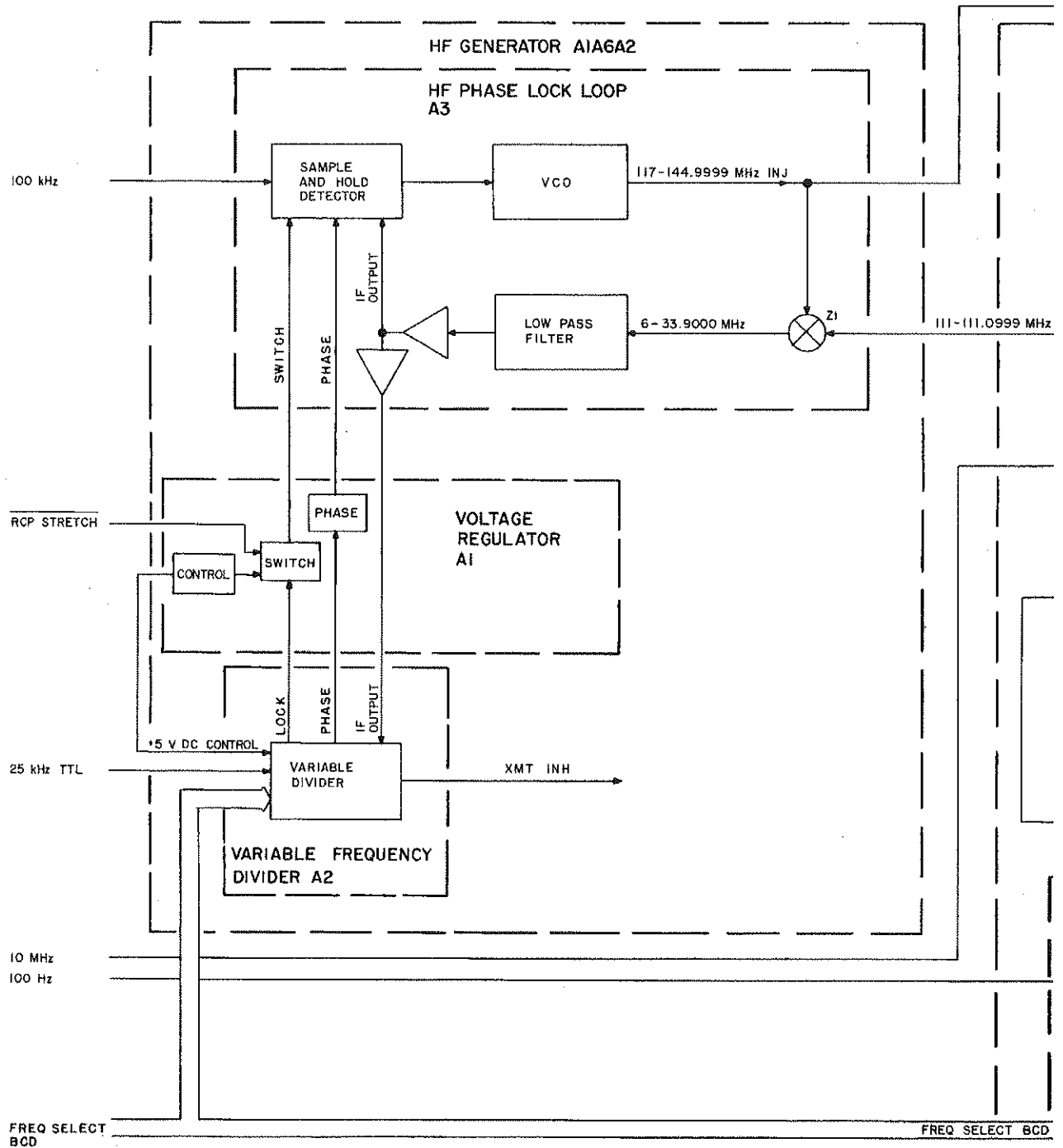
Refer to figure 1-7 of this section and figures 4-1 and 4-3 of the schematic section. The transmit rf output of A1A2 is applied to A1A3 via A1A2P1/A1A1J2-14 and A1A1J3/A1A3P1-2. With the radio turned on at the control, +25.2 V dc (SW) is applied to A1A3, and with the key line enabled by the ptt switch, keying relay K1 is energized and the +25.2 V dc (SW) is switched to the amplifier circuits by Q4. The incoming rf at P1-2 is passed through the LC filter network, a limiter circuit and on to the emitter follower stage, Q1, through the closed relay contacts, B1 and B2. The emitter follower couples the rf to rf amplifiers Q2, Q3, and Q5. The 250-mW rf output of Q5 is transformer coupled by T1 through the closed relay contacts A1 and A2 to P1-12. The ALC detector, VR2 and CR8, provide a protective ALC bias to A1A5 ALC circuits that limits the rf output to approximately 300 mW if amplifier-coupler A3 ALC should fail. This ALC OUT signal at P1-9 is routed through A1A1J3-9 to A1A1J5/A1A5A1P1-36. The transmit rf output from A1A3 is supplied to amplifier-coupler A3 through A1A3P1/A1A1J3-12 of A1A3 and A1A1P1/A3J1-36.

1.7.4.2.2.5 Frequency Synthesizer A1A6

Refer to figure 1-6. Frequency synthesizer A1A6 provides a variable injection frequency and a fixed injection frequency to A1A2 plus two fixed frequencies to A1A5 during both receive and transmit periods of operation. The variable injection frequency is a frequency in the 117 MHz to 144.9999-MHz range, variable in 100-Hz increments, the specific frequency being proportionate to the operating frequency selected at the control. The fixed injection frequency to the mixer module is 110 MHz. Two fixed frequencies are supplied to A1A5. One is the 5-MHz fixed injection frequency and the other one is the 2-kHz tone signal. A1A6 also supplies the transmit inhibit logic output (XMT INH) in response to the power on or frequency change logic (RECHANNEL) from control A2. Control A2 also provides the bcd frequency selection logic and the USB logic inputs to A1A6.

To process the above logic inputs and to generate the above output signals, the frequency synthesizer uses the seven subassemblies shown on figure 1-6. For frequency generation functions, four phase-lock loops are used. Refer to figure 1-15. One phase-lock loop is used to generate the fixed injection frequency (110 MHz). The remaining phase-lock loops, the low frequency, the converter, and the high frequency phase-lock loops, are used to generate the 117-144.9999-MHz variable injection frequency. The low frequency phase-lock loop (LFPLL) uses the bcd logic from the control and provides the bcd selected frequency within the 1.0 to 1.0999-MHz range to the converter for translation to a higher frequency within the 111 to 111.0999-MHz range.

This translated output from the converter is applied to the high frequency phase-lock loop (HFPLL) for translation to a higher frequency. During locked conditions, the HFPLL is controlled by the sample and hold phase detector stage. The output frequency of the HFPLL mixer (variable from 6-33.9 MHz), the resultant frequency of mixing the output frequency of the converter (111-111.0999 MHz) with the HFPLL vco frequency (117-144.9999 MHz), is sampled by the sample and hold phase detector to maintain the correct vco frequency. But, when a new frequency acquisition by the HFPLL is required (initiated by frequency change at control A2), control of the HFPLL vco is switched to the frequency/phase discriminator of the variable divider to acquire digital phase lock on the new frequency. As shown in figure 1-15, the variable divider is controlled by bcd logic from the control, thus, a frequency



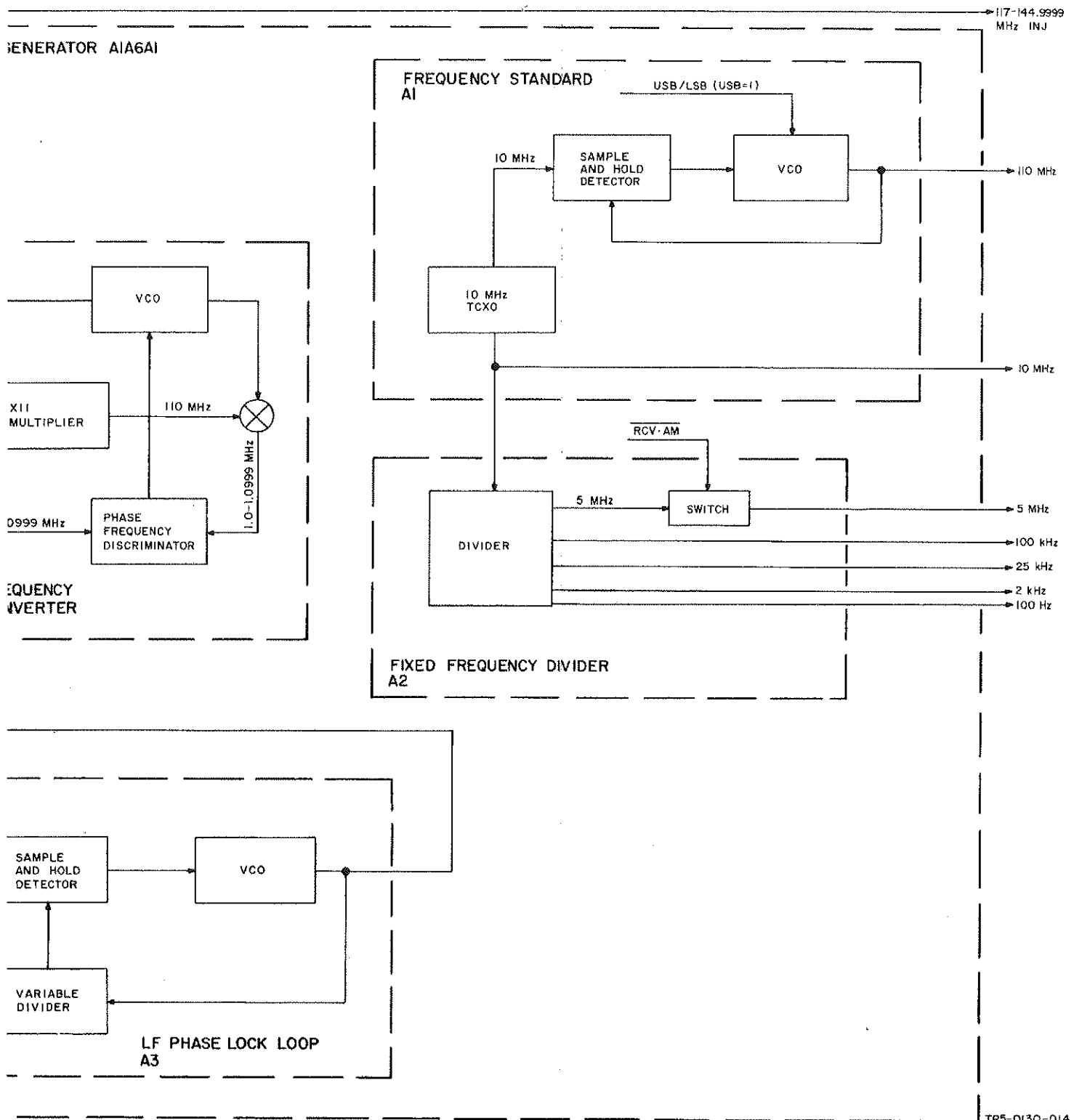


Figure 1-15. Frequency Synthesizer A1A6, Block Diagram

change at the control causes the bcd logic change to switch on the variable divider. This initiates the loop action necessary to achieve digital phase lock on the new frequency by the frequency/phase discriminator and inhibit the transmit (XMT INH) functions during frequency acquisition (rechannel cycle). When digital phase-lock occurs, vco control is transferred back to the sample and hold phase detector and the variable divider is switched off. This puts the hf phase-lock loop back in a locked (normal) condition.

The fixed divider operates in conjunction with the frequency standard and supplies the following frequencies to the radio receiver-transmitter. The 5-MHz is supplied to A1A5 during all modes of operation except AM receive when the 5-MHz signal is switched off. The 2-kHz tone signal is supplied to A1A5 during all modes of operation. The 100-kHz frequency is supplied to the HFPLL. The 25-kHz frequency is applied to the variable divider, and the 100-Hz frequency is supplied to the LFPLL.

- a. Frequency Standard A1A6A1A1. Refer to figures 1-6 and 1-15 of this section, and figure 4-7, schematics section. The frequency standard subassembly circuits are comprised of the frequency standard generator (10 MHz), which is a temperature-compensated, crystal controlled oscillator (tcxo), and a fixed injection frequency generator, which is a vco with a sample and hold stage. The tcxo consists of crystal Y1, transistors Q1 and Q2, varactor CR2 and temperature compensating networks RT1, RT2, and RT3. The trimmer capacitor is provided to compensate for the aging of the crystal and the selectable components (as noted by schematic note 3) are to be selected at final test. When the radio power is turned on, the tcxo is energized and supplies a stable reference frequency of 10 MHz from the impedance matching output network of Q1 and Q2 through the buffer-driver stage Q3 and Q4 to the sample and hold reference pulse shaper Q5. The 10-MHz reference frequency output from the impedance matching network is supplied to frequency converter A1A6A1A4 and the 10-MHz output from the buffer-driver is applied to A1A6A1A2. The vco circuit consists of the oscillator, FET Q9, varactor CR1, and switch transistor Q8. With the radio power on, the USB logic input from A1A5 switches transistor Q8 on to provide the correct dc voltage level for the oscillator to operate at 110 MHz. The 110-MHz output of the vco is applied to the sample and hold circuit, CR7 and CR8, through buffer Q6 and Q7. The rectifier diodes CR7 and CR8, provide a negative dc voltage feedback to the vco that corrects the frequency compared to the 10-MHz reference frequency at the primary of T1. The 110-MHz output from the vco, 110 MHz INJ, is applied to A1A2 as an output from buffer-driver Q10 and connector A1A6A1A1P1.

The +5.2 V dc is supplied to frequency standard A1A6A1A1 from power supply A1A4 via A1A1 and A1A6A1A2. The +11.5 V dc is supplied by voltage regulator A1A6A2A1 via A1A6A1A2. (Refer to figure 4-11, schematics section.)

- b. Fixed Frequency Divider A1A6A1A2. Refer to figures 1-6 and 1-15 of this section and figure 4-8, schematics section. The fixed frequency divider consists of a network of frequency dividers and a gated transistor emitter-follower circuit that applies the 5-MHz injection frequency output to A1A5. The 10-MHz reference frequency is supplied by A1A6A1A1 to transistor driver Q2. The output of the driver is a 10-MHz square-wave clocking signal that is applied to the 2:1 frequency divider, U1A. The outputs of the divider are two 5-MHz signals. One is used to clock the 5:1 divider stage, U1B and U2, and the other is coupled to emitter-follower Q1, which is controlled by the RCV·AM logic from P1-6. Q1 is turned on by the RCV·AM logic during all modes of operation except the AM receive mode at which time Q1 is turned off and the 5-MHz output is cut off. The 5-MHz input to the dividers, U1B, U2A and U2B, is divided by 5, to 1 MHz, and further divided by 10, to 100-kHz, by U3A. One 100-kHz output is applied to divider U3B and one output is supplied to HEPLL A1A6A2A3. The divider U3B is configured to divide the 100-kHz signal by 2 and 5, providing a 50-kHz output and a 20-kHz

output. The 50-kHz output is divided by 2 by U4A to provide a 25-kHz frequency to the variable divider subassembly. The 20-kHz output is applied to divider U5B and divided by 10 to produce a 2-kHz output. This is coupled by capacitor C2 to P1-5.

The 2-kHz output from divider U5B is also applied to 2:1 divider U4B and to 10:1 divider U5A, and converted to 100 Hz for application to LFPLL A1A6A1A3.

The +5.2 V dc is supplied by A1A4 and the +11.5 V dc is provided by A1A6A2A1 (figure 4-11, schematics section).

- c. Lf Phase-Lock Loop A1A6A1A3. Refer to figures 1-6 and 1-15 of this section and figure 4-9, schematics section. The LFPLL supplies to the frequency converter A1A6A1A4 a frequency that can be varied from 1.0 MHz to 1.0999 MHz in 100-Hz increments. The specific frequency within the 1.0- to 1.0999-MHz range is determined by the bcd logic input to connector P1 from control A2. To generate the 1.0- to 1.09999 MHz frequency, A1A6A1A3 employs a vco stage, a frequency/phase detector stage, and a sample and hold phase detector stage referenced to 100-Hz from the fixed frequency divider. The output frequency of the vco is controlled over the above range by the dc voltage applied to varactor CR2. Therefore, when a frequency is selected at control A2, the bcd logic is applied to the frequency discriminator variable dividers U6-U9. They establish the proper logic input to the sample and hold switch, U1, to adjust the dc voltage to CR2 for an oscillator output frequency equivalent to the binary coding from control A2. To maintain vco frequency stability, the output of the vco is looped back to the phase detector, U4A, through feedback driver Q7. The output of the frequency discriminator is applied from NOR gate U5A to the phase detector U4A. The output of U4A is a logic output with a variable duty cycle that controls the duty cycle of the output from U6 to the sample and hold phase detector, U1. Also applied to U1 is the ramp voltage supplied by the ramp generator, transistors Q1 and Q2. The ramp generator is driven by the 100-Hz reference signal from A1A6A1A2. When Q2 is on (the input is high), capacitors C1 and C2 are held at zero. When the input is low Q1 is turned off, allowing C1 and C2 to charge toward 14 V dc at a constant rate until Q2 is turned on by the 100-Hz input. The ramp voltage is sampled by the $\phi 1$ and $\phi 2$ signals at the duty cycle rate which is a function of the phase difference between the compared frequencies applied to the phase detector, U4A. The $\phi 1$ signal gates (samples) the ramp voltage through the first part of switch U1. The $\phi 2$ signal follows and gates the sampled ramp voltage through the second section of switch U1 for filtering. The sampled ramp voltage, after filtering, becomes the vco control voltage and is coupled to varactor CR2 by source followers Q3 and Q4. Increasing the vco control voltage, increases the vco frequency; decreasing the control voltage, decreases the vco frequency. Therefore, the vco control voltage, being a function of the frequency difference between the compared frequencies, increases or decreases the oscillator frequency to correct the output frequency.

The +13 V dc voltage is supplied by A1A4 and the +11.5 and +14 V dc voltage is provided by A1A6A2A1 (figure 4-11, schematics section).

- d. Frequency Converter A1A6A1A4. Refer to figures 1-6 and 1-15 of this section and figure 4-10, schematics section. The frequency converter generates a frequency within the 111.0 to 111.0999-MHz range. The frequency is supplied to A1A6A2A3 for generation of the variable injection frequency that is supplied to A1A2. The specific output frequency of the converter is controlled by the output of frequency/phase detector (F/ ϕ DET) U1 and U2. An output frequency between 111.0-111.0999 MHz is generated by the vco, Q2. The vco control voltage to CR1 from the F/ ϕ detector is a function of the phase difference between the output frequency of the oscillator and the input frequency from A1A6A1A3, both of which are applied to the F/ ϕ detector, U1. The input frequency to the F/ ϕ detector from A1A6A1A3, as previously noted, is determined by the bcd logic from the control. The other input frequency to the F/ ϕ detector

(1.0-1.0999 MHz), representing the vco frequency, is developed in the following manner. The 111.0-111.0999-MHz vco output is applied to buffer Q6 and coupled by C36 to gate G2 of mixer Q5. The 10-MHz input from the frequency standard is applied to amplifier-buffer Q3 and coupled by C26 to X11 multiplier Q4 which provides the 110-MHz input to gate G1 of mixer Q5. The resultant output frequency, 1.0-1.0999 MHz, is supplied to squaring amplifier Q1. The 1.0-1.0999-MHz square-wave output of Q1 is applied to the input of F/ϕ detector U1A. The two frequencies are compared by the F/ϕ detector to develop a square wave pulse train at the output of U2 with a duty cycle that is a function of the phase difference between the compared frequencies. The output of U2C is applied to the low-pass filter network where the ac component is filtered out and the dc voltage becomes the vco control voltage. This is applied to varactor CR1 to vary the vco frequency as necessary to decrease the phase difference to achieve lock-on.

The +13 and +5.2 volts dc voltage is supplied by A1A4 and the +11.5 volts dc comes from A1A6A2A1 (figure 4-11, schematics section).

- e. Hf Phase-Lock Loop A1A6A2A3, Variable Frequency Divider A1A6A2A2, and Voltage Regulator A1A6A2A1. Refer to figures 1-6 and 1-15 of this section, and figures 4-11, 4-12, and 4-13, schematics section. The purpose of the HFPLL is to generate a variable injection frequency within the 117 to 144.9999-MHz range for application to mixer A1A2 (figure 1-6). To accomplish this, A1A6A2A3 requires the 111.0 to 111.0999-MHz input from A1A6A1A4, the 100-kHz signal from A1A6A1A2, and the phase/lock control signals from A1A6A2A2. During locked operations (normal operating conditions with power on and all tuning complete), the frequency generating circuits of A1A6A2A3 operate independently of A1A6A2A2 and A1A6A2A1. The HFPLL (figure 4-13, schematics section) consists of the vco, Q104 and varactors CR101 and CR102; the sample and hold detector, Q3; the mixer, Z1; and the associated buffer stages for the vco and mixer output signals. The output frequency of the vco is actively controlled by the dc control voltage applied by the sample and hold phase detector to the varactors. This detector dc output is a result of the sampled output frequency of mixer Z1. Two frequencies are applied to Z1, the 111-111.0999-MHz reference frequency from A1A6A1A4 and the 117-144.9999 MHz output frequency of vco Q104, to develop an if within the 6-33.9 MHz range (4-MHz above the 2-29.9999-MHz operating frequency selected at control A2). The output of the mixer is passed through the low-pass LC filter network to the squaring amplifier circuits of Q6 and Q7 for application to the sample and hold detector stage. The 6-33.9-MHz signal is mixed with the 100-kHz input from A1A6A1A2 in the secondary of transformer T1. The resultant 6-33.9-MHz signal is rectified and filtered by the circuits of CR3 and CR4 and Q3 of A1A6A2A3. This becomes the vco dc negative feedback voltage that is applied to varactors CR101 and CR102 of A1A6A2A3. The dc voltage varies the capacitance of the varactors, raising or lowering the vco frequency as necessary to keep the phase error in the hold-in range.

The if output from Z1 is also applied from if amplifier Q7 to squaring amplifier Q5, the output of which is routed to A1A6A2A2P2-2 (figure 4-12, schematics section). During the locked condition described above, the variable divider is inoperative, therefore, the if input has no effect. However, when the radio is first turned on or a new frequency is selected at the control a rechannel logic signal is initiated by control A2. This starts a tuning cycle within the radio that includes switching (on or off) of logic 1 and +5 V dc to various circuits of A1A6A2A2. The rechannel logic (RCP STRETCH) is supplied from A1A5A2P1-33 to A1A6A2A1P1-3 via A1A5A1 and chassis A1A1. When the rechannel signal is enabled at A1A6A2A1P1-3, a ground is applied to pulse stretcher circuit U2 of A1A6A2A1 resulting in conduction of squaring amplifier Q7. Conduction of Q7 establishes the following events; (1) Q4 to conduct, (2) Q5 to conduct, (3) +14V dc potential felt at switch function of A1A6A2A3, (4) Q8 ceases conduction, (5) Q9 to conduct, and (6) Q6 to conduct. The conduction of Q6 applies a ground potential on connector pin A1A6A2A1P2/A1A6A2A2P2-5 (5 V dc CONTROL line). A ground

on this pin forward biases series control switch Q2 of A1A6A2A2 thereby enabling the logic 1 and +5 V dc function. These two functions are enabled as long as control transistor Q2 is held on by the 5 Vdc CONTROL signal from A1A6A2A1. When a LOCK (LOCK=0) pulse occurs on connector pin A1A6A2A1P2-3, the 5 V dc CONTROL line is disabled and Q2 ceases conduction. This disables logic 1 and +5 V dc on A1A6A2A2.

Refer to figure 4-12, schematics section. A1A6A2A2 performs the frequency/phase discrimination and vco control functions for the hf phase-lock loop in a manner similar to those functions previously covered for A1A6A1A4. When logic 1 and +5 V dc is enabled as a result of a rechannel pulse, the variable dividers, U2-U5 of A1A6A2A2, receive the bcd logic signals from the control. The bcd logic, representing the selected frequency, is processed for comparison with the logic output of divider U1 (6-33.9 MHz), representing the HFPLL vco output frequency, to determine the frequency and phase difference with reference to the 25-kHz signal from A1A6A1A2 via A1A6A2A1. The phase difference output from the frequency/phase discriminator, U10 through U12 of A1A6A2A2, is applied to the PHASE signal line, A1A6A2A2P2-4, the duty cycle of which is a function of the phase difference between the compared frequencies.

Refer to figures 4-11, 4-12, and 4-13, schematics section. The PHASE signal at A1A6A2A2P2/A1A6A2A1P2-4 is applied to the pulse shaper transistor, A1A6A2A1Q3. The output of A1A6A2A1Q3 is applied to FET A1A6A2A3Q8 for filtering and conversion to a dc vco control voltage. The dc level, proportionate to the phase difference, is applied to the varactors to retune the vco to reduce the phase difference until lock-in is achieved. When lock-in occurs, the frequency phase discriminator of the variable divider (figure 4-12, schematics section) provides a LOCK signal at A1A6A2A2P2-3 from NOR gate A1A6A2A2U6B, which is routed to inverter A1A6A2A1U2A and coupled to the pulse shaper amplifier stage, Q7, Q4, Q8, and Q9, of voltage regulator A1A6A2A1. One output from A1A6A2A1Q4 is supplied to A1A6A2A3 (SWITCH signal) to turn off FET A1A6A2A3Q8. This transfers the control of vco A1A6A2A3Q104 from A1A6A2A2 to the sample and hold circuits of A1A6A2A3. The other output from A1A6A2A1Q4 is amplified by A1A6A2A1Q9 and applied as a cut off signal to switch transistor A1A6A2A1Q6 as previously discussed in this subsection (e).

When a frequency change is initiated at the control, the bcd logic is processed by A1A6A2A2 to provide a transmit inhibit signal (XMT INHIBIT to A1A5A2P1-22 to prevent transmission during the tune cycle of the radio. The +5.2 volts dc at A1A6A2A2-11 is supplied by A1A4.

Refer to figure 4-11, schematics section. In addition to the circuits already discussed, A1A6A2A1 provides regulating circuits for the +11.5 and +14 volts dc voltage as well as signal interface between the various synthesizer subassemblies as shown on figure 4-11. The +14-volt dc regulator consists of series regulator transistor Q1, reference voltage regulator VR1, and comparator U1B, which is connected to the output voltage divider R3, R4, and R12, and the reference voltage divider, VR1, R10, and R11. The collector of series regulator Q1 is connected to +25.2 V dc (sw and fltr). A change in the +14-volt dc output appears as a voltage change across voltage divider R3, R4, and R12. This change is compared with the reference voltage by the comparator U1B and reflected as a bias change at the base of series regulator Q1. An increase in bias reflects an increase in the output voltage. Consequently, the increased bias reduces conduction of Q1 which reduces the output voltage until +14 V dc is reached. In like manner, a decrease in bias reflects a decrease in the output voltage. This increases Q1 conduction to increase the output voltage until the +14-volt output level is reached. The +11.5-volt voltage regulator, Q2, VR3, and U1A, are connected to the reference voltage divider VR1, R10, and R11, and +11.5-volts dc divider R7, R8, and R9. The series regulator Q2, connected to +13 volts dc, and the control circuits operate in the same manner as Q1 to provide a regulated +11.5 volts dc output.

The +14- and +11.5-volt dc outputs are distributed to the various frequency synthesizer sub-assemblies as shown on the voltage regulator schematic diagram, figure 4-11.

1.7.4.2.2.6 Power Supply A1A4

Refer to figure 1-16 and 1-33 of this section and figure 4-4, schematics section. Power supply A1A4 provides regulated +13 volts and +5.2 volts dc outputs from a +25.2-volt dc source (battery). The routing of source voltage is shown on the power distribution diagram, figure 1-33 of this section. The +13 V dc switching regulator circuits consist of series switch transistor Q1, fly-back diode CR1, control transistors Q3, Q4, Q5, comparator transistors Q6 and Q7, and reference voltage regulator VR4. Transistor Q1 conducts in 14- to 35-usec intervals in response to bias changes effected by the comparator, Q6 and Q7. If the sampled output voltage applied to Q6 is high compared to the reference voltage applied to Q6, the series switch transistor is saturated for reduced periods of time during its operating interval by the reduced on-time of the control transistor Q3. The on-time of Q3 is reduced by the increased bias voltage from the Darlington pair of transistors, Q4 and Q5, which reflects the voltage error (high voltage) determined by the comparator Q6. During the conduction cycle of series switch Q1, the reduced current flow causes the output voltage to decrease toward the reference level until the correct output (+13 V dc) is reached. Conversely, if the output voltage decreases, the effective bias reverses to increase the conduction time of Q1 and raise the output voltage to the normal level. Transistor Q2 provides overcurrent protection for the +13 V dc regulator network.

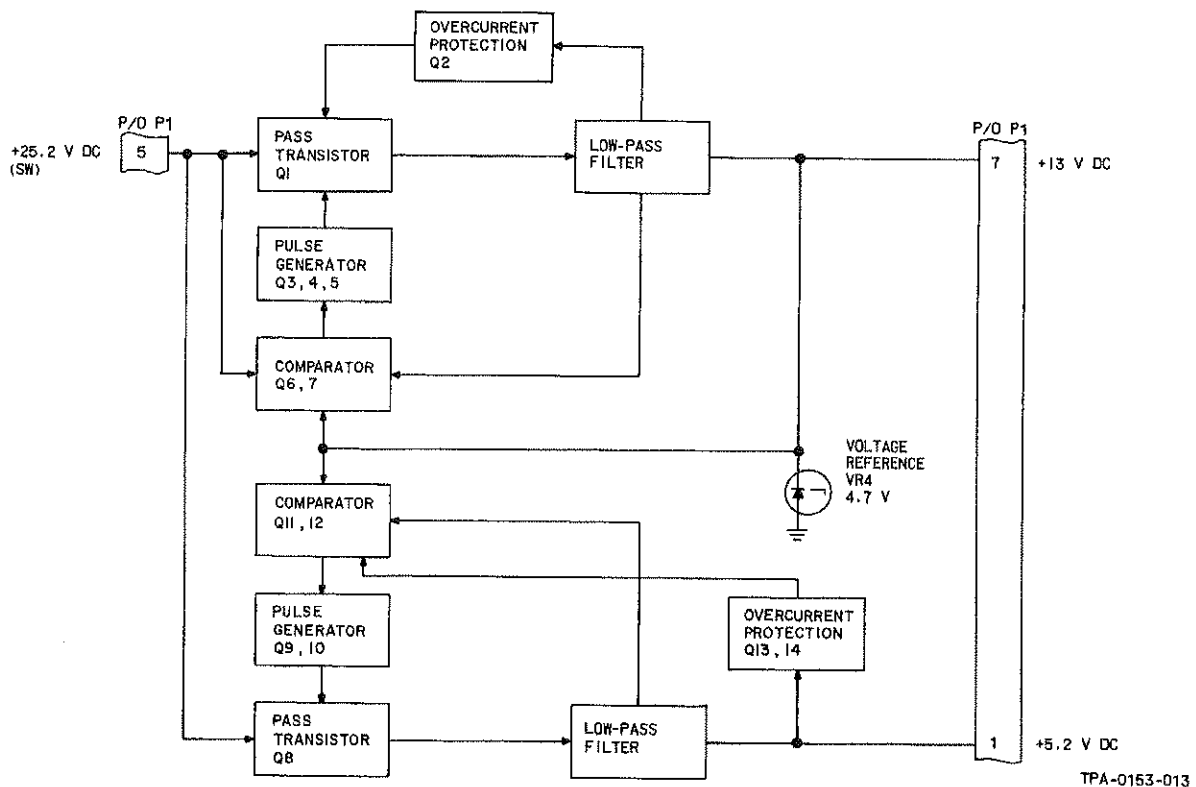


Figure 1-16. Power Supply A1A4 Simplified Schematic Diagram

The +5.2-volt dc regulator network is comprised of series switch Q8, control circuits Q9 and Q10, comparator Q11 and Q12, and reference voltage regulator VR4. The operation of the +5.2 V dc regulator is similar to the operation of the +13 V dc regulator. Transistors Q13 and Q14 provide overcurrent protection for the regulator.

1.7.4.2.2.7 Receiver-Transmitter Chassis A1A1

Refer to figure 4-1, schematics section. The receiver-transmitter chassis has eight connectors, J1 through J7 and P1, and a number of filtering capacitors. The eight connectors provide interconnection between modules A1A2 through A1A6, control A2 and amplifier-coupler A3. A dc filter circuit for +25.2 V dc (SW) is also provided. The filter circuit, Q1, capacitors C1 and C2, and resistors R1 through R3 are energized when +25.2 V dc (SW) is switched on at control A2. The +25.2 V dc (SW) turns on Q1. This results in a +25.2 V dc (SW and FLTR) output from the filter network, C1, C2, and R1 through R3, to connector J6 of A1A1. When the +25.2 V dc (SW) is switched off at control A2, transistor Q1 is turned off, cutting off the +25.2 V dc (SW and FLTR) to J6.

1.7.4.3 Amplifier-Coupler A3, AM-5280/URC

1.7.4.3.1 Transmit Theory

Refer to figure 1-17. Power amplifier A3A4 of the amplifier-coupler is a three stage push-pull class AB broadband amplifier with a minimum power gain of 23.5 dB. The amplifier is designed for a maximum required drive of 100 milliwatts, and 22-watts output. An output of 22 watts allows for antenna coupler losses, and guarantees full 20-watts output when the antenna coupler is tuned to a 50-ohm load. The power amplifier can be operated at either 20- or 2-watts output. The output level is selected by a switch on control A2.

A thermal switch in the power amplifier monitors the temperature of a heat sink. In the event a safe operating temperature is exceeded, such as by over extending the duty cycle, the ALC circuit automatically limits the output at 2 watts.

The fully automatic antenna coupler is capable of tuning an 8-foot whip and 50-ohm antennas over the 2- to 30-MHz frequency range. The coupler will also tune long wire and other whip antennas at selected frequencies. Tuning time is 4 seconds typical and 7 seconds maximum. Tuning elements include servo-driven elements (A3A7 and A3A8) that provide fine tuning and frequency band switched elements (A3A9). Elements within A3A9 are used to translate antenna impedances to within the tuning range of the servo-driven elements, A3A7 and A3A8.

1.7.4.3.1.1 Power Amplifier A3A4

Refer to figures 4-18 and 4-19, schematics section, and figure 1-17 of this section. In transmit mode, rf is applied from radio receiver-transmitter A1 to rf subassembly A3A4A1. Since the PA KEY is low and +25.2 V dc (KEYED) is enabled in transmit mode, rf is passed through contacts B2/B1 of relay A3A4A1K1 to transformer A3A4A1T1. The rf is amplified by a three stage amplifier and applied to output coax A3A4A1P1. Each of the three amplifier stages of A3A4A1 is transformer coupled to the next stage. The predriver stage consists of transistor pair Q1 and Q2, the driver stage consists of Q3 and Q4, and the final amplifier consists of Q5 and Q6. The rf is amplified to about 22 watts and coupled through transformer T6 to bias/control A3A4A2, connector J1. A bias regulator circuit on A3A4A2 provides the proper dc bias levels to coupling transformers A3A4A1T1, T2, and T3 to ensure class AB amplifier operation. The amplified rf is then passed by relay A3A4A2K1 to bandswitch A3A5.

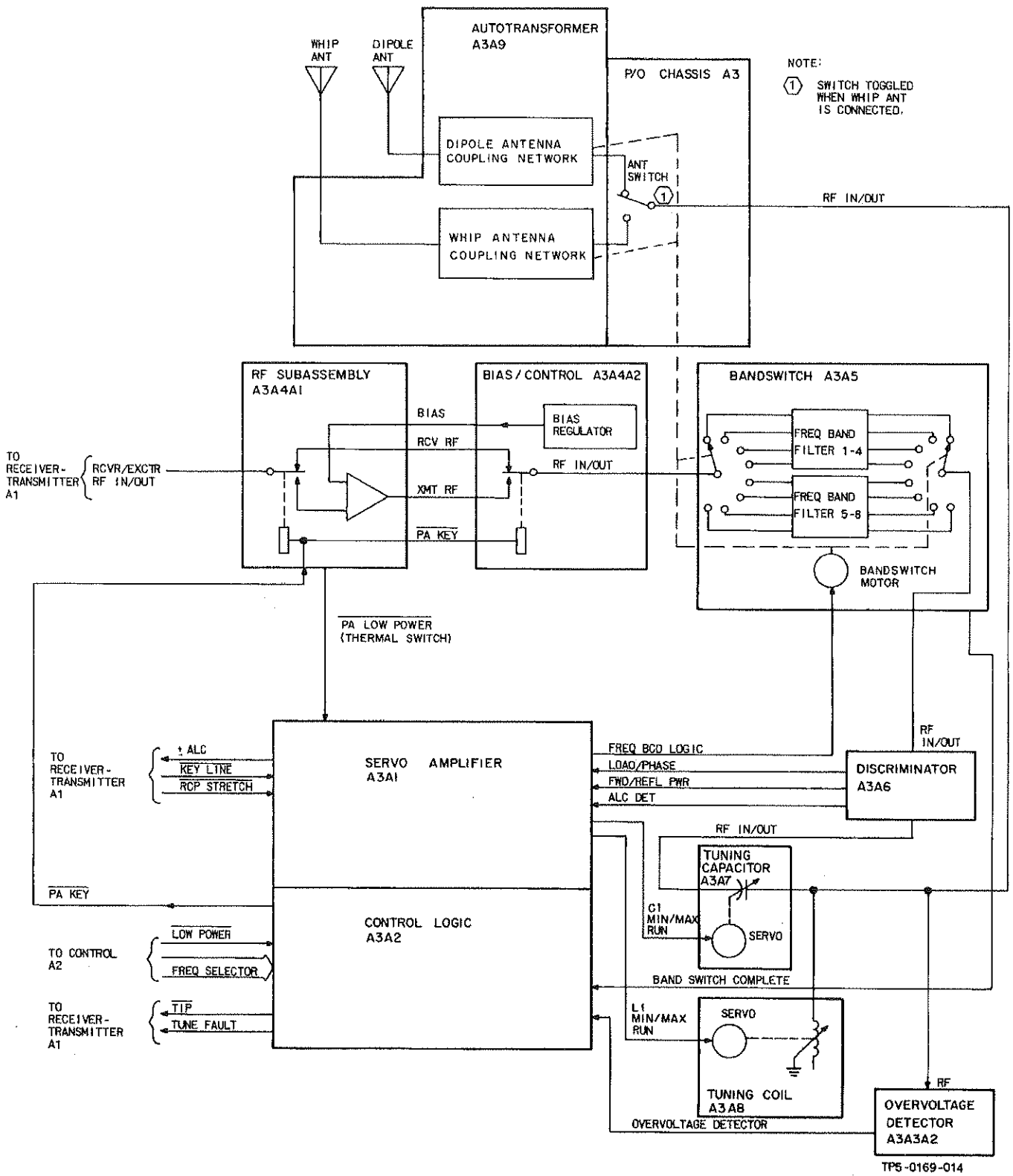


Figure 1-17. Amplifier-Coupler A3, AM-5280/URC, Block Diagram

Power amplifier ALC (automatic level control) is derived by sampling the rf drive supplied to discriminator A3A6. The resulting dc signal from the alc detector on the discriminator is fed to an op-amp on servo amplifier A3A1. The op-amp produces 0 VDC when the output of the rf amplifier is 1/2 dB or less below 20 watts and approximately -8 V dc with an rf output +1/2 dB above 20 watts.

1.7.4.3.1.2 Bandswitch A3A5

Refer to figure 1-17 this section and figure 4-20, schematics section. The bandswitch automatically selects the proper frequency band filter upon receipt of information from control logic A3A2. The band switched filters are used to provide harmonic rejection in the transmit mode. The filters are low pass filters and are selected approximately every 1/2 octave for each of the eight bands. The filter element values for each band are selected to give the best possible harmonic suppression for that band. The number of filter elements in some bands is higher than actually needed for harmonic suppression, this reduces the bandpass ripple to keep the vswr low at the higher frequencies and maintains optimum efficiency. Frequency band logic from control logic A3A2 applies a logic high to the appropriate servo band contact of switch S1. This logic high enables transistor switch A1Q2 which actuates relay A1K1 and applies +25.2 V dc to bandswitch motor B1. The motor runs and rotates switches S1, S2A, and S3 until S1 switches off of the logic high contact and opens the motor circuit. This deenergizes A1K1 and stops the motor. Simultaneously, S2A and S3 have rotated to contact positions corresponding with the activated frequency band. This connects the appropriate bandpass filter (1 of 8) to the rf signal path. The amplified rf from the power amplifier is now able to pass through S3 to the proper bandpass filter and through S2A to discriminator A3A6.

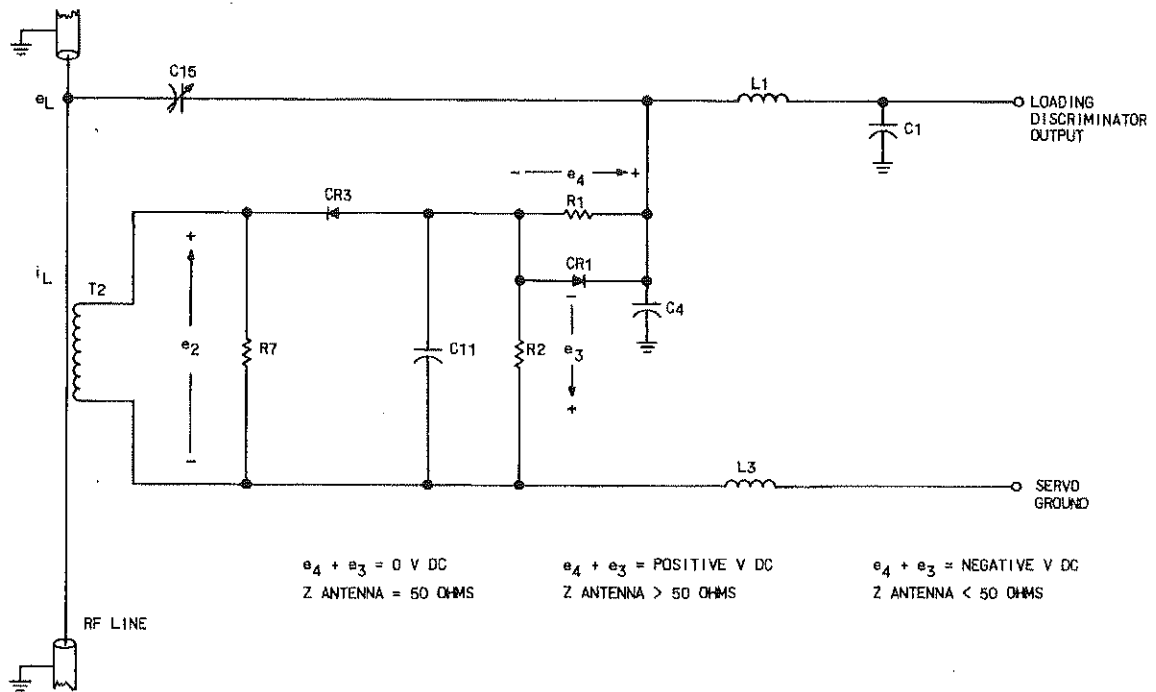
The bandswitch also drives switch S2B which applies a ground to the center tap of the variable tuning coil (A3A8) if the frequency is greater than 12 MHz. Bandswitch motor B1 is mechanically coupled to the wafer switch in autotransformer A3A9. While the motor is running the band logic selects the correct output network in A3A9. When the motor stops running (relay A1K1 deenergizes), ground is removed from the band switch complete output (A3A5P1-14). This logic output tells control logic card A3A2 that the band switching process is completed.

During the amplifier-coupler tune cycle, a logic low from the tune in progress (TIP) circuit actuates relay A1K2. This places the TIP resistor across the output (rf line) until all tuning is completed. The TIP resistor is located on A3.

1.7.4.3.1.3 Discriminator A3A6

Refer to figure 4-21, schematics section. The discriminator is a device that samples input rf power, voltage and current to the amplifier-coupler and develops dc error signals that are related to the impedance of the load and the power to the load. The loading discriminator develops a dc error voltage that is proportional to the magnitude of the impedance with respect to the normal 50-ohm impedance. The phasing discriminator develops a dc error signal that is proportional to the phase angle between the reactive and resistive portions of the load impedance. The forward and reflected power detectors are used to determine the start and completion respectively of the tuning sequence.

- a. Loading Discriminator, Part of A3A6A1 and A3A6A2. Refer to figure 1-18. The loading discriminator compares the magnitude of the rf current with the rf voltage. This comparison creates an error signal output that is proportional to the difference between the impedance of the rf circuit and 50 ohms.



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Figure 1-18. Loading Discriminator, Part of A3A6A1 and A3A6A2, Simplified Schematic Diagram

When the impedance of the rf circuit is 50 ohms, there is no error signal developed. When the rf circuit impedance is greater than 50 ohms, the error signal is positive. When the rf circuit impedance is less than 50 ohms, the error signal is negative.

Rf line current (i_L) induces a voltage (e_2) across transformer T2. When diode CR3 is forward biased, the current through resistor R2, diode CR3, and transformer T2 develops a voltage (e_3) across R2 that is proportional to the rf line current.

Line voltage is sampled by a voltage divider consisting of C15 and C4. When diode CR1 is reverse biased, the current through R1 develops a voltage (e_4) across R1 that is proportional to the line voltage.

C15 is factory adjusted so that the voltage across R2 is equal to the voltage across R1 when the impedance of the rf circuit is 50 ohms.

When the rf circuit impedance is less than 50 ohms, the line current increases and the line voltage tends to decrease. This causes the voltage across R2 to increase due to the increased current flow through T2. The voltage across R1 tends to decrease since it is proportional to the line voltage. The voltage difference across R2 and R1 develops

a negative error signal output. When the rf circuit impedance is greater than 50 ohms, the inverse is true, and a positive error signal is developed.

- b. Phasing Discriminator, A3A6A3 and part of A3A6A1. Refer to figure 1-19. The phasing discriminator in amplifier-coupler A3 develops a dc error signal that is proportional to the phase shift between the rf voltage and the rf current. When the antenna is resistive, the line current and the line voltage are in phase, and the error signal is zero. When the antenna is capacitive, the line current leads the line voltage, and the error signal is negative. When the antenna is inductive, the line current lags the line voltage, and the error signal is positive.

The phasing discriminator is divided into two circuits. Potentiometer R5 is adjusted to balance the impedance of circuit number 1 (B, C, E, and F) and circuit number 2 (A, D, E, and F). The line voltage e_L is sampled, with no phase shift, by voltage divider C12 and C13. The induced voltage in the secondary of the transformer is 90 degrees out of phase with line current i_L . The vector addition of the induced voltage e_2 and the sampled voltage e_6 in circuit number 1 creates a resultant voltage e_4 . The vector addition of induced voltage e_3 and the sampled voltage e_6 in circuit number 2 creates a resultant voltage e_5 . Voltages e_4 and e_5 are rectified by CR6 and CR5 and filtered by C10 and C9. The algebraic sum of Vec and Ved is the error output.

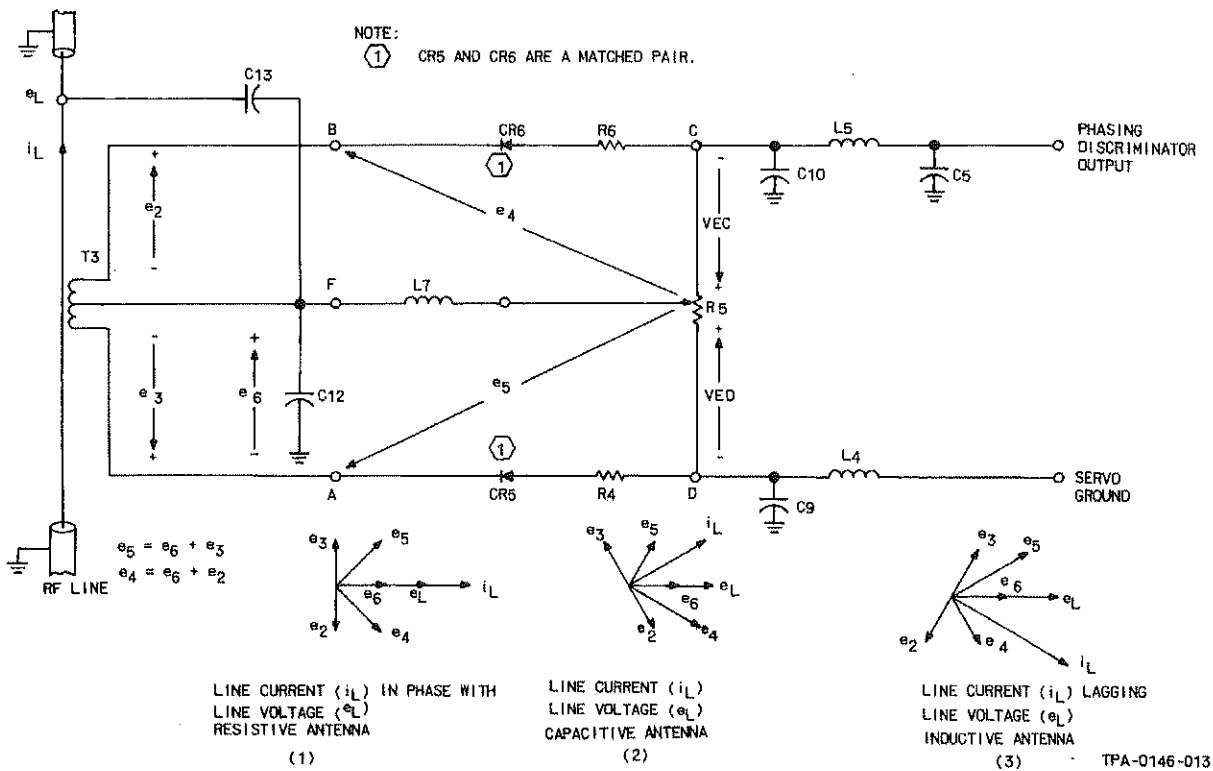


Figure 1-19. Phasing Discriminator, A3A6A3 and part of A3A6A1, Simplified Schematic Diagram

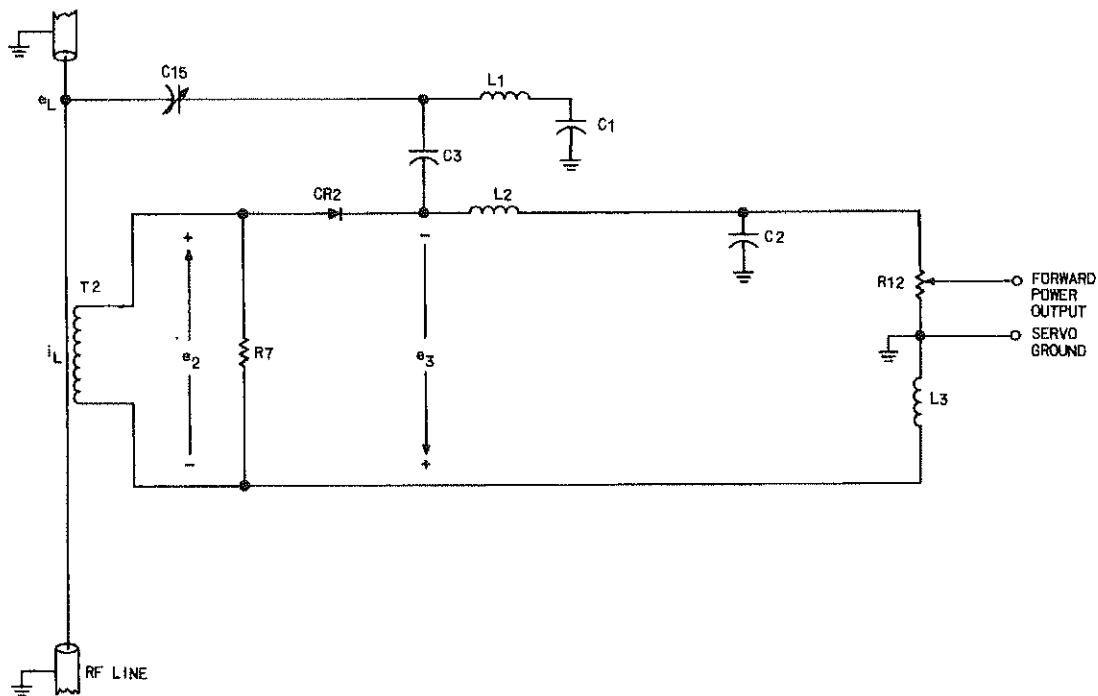
When the antenna is resistive, line current i_L and line voltage e_L are in phase. The magnitude of the resultant voltage across circuit number 1 (e_4) is equal to the magnitude of the resultant voltage across circuit number 2 (e_5); therefore, the error signal is zero (vector diagram (1) of figure 1-19).

When the antenna is capacitive, the vector addition of induced voltage e_2 and sampled voltage e_6 causes resultant voltage e_4 to increase in magnitude. The vector addition of induced voltage e_3 and sampled voltage e_6 causes resultant voltage e_5 to decrease in magnitude. The algebraic sum of resultant voltages e_4 and e_5 creates a negative error signal output (vector diagram (2) of figure 1-19).

When the antenna is inductive, the vector addition of induced voltage e_2 and sampled voltage e_6 causes resultant voltage e_4 to decrease in magnitude. The vector addition of induced voltage e_3 and sampled voltage e_6 causes resultant voltage e_5 to increase in magnitude. The algebraic sum of resultant voltages e_4 and e_5 creates a positive error signal output (vector diagram (3) of figure 1-19).

Resultant voltage e_4 is rectified by diode CR6 and then filtered by C5, L5, and C10. Resultant voltage e_5 is rectified by diode CR5 and then filtered by L4, and C9. The algebraic differences of the resultant voltages create a dc error signal output proportional to the phase difference between the rf voltage and the rf current.

- c. Forward Power Discriminator, Part of A3A6A1 and A3A6A2. Refer to figure 1-20. The forward power discriminator generates a dc output proportional to the rf power traveling toward the antenna.

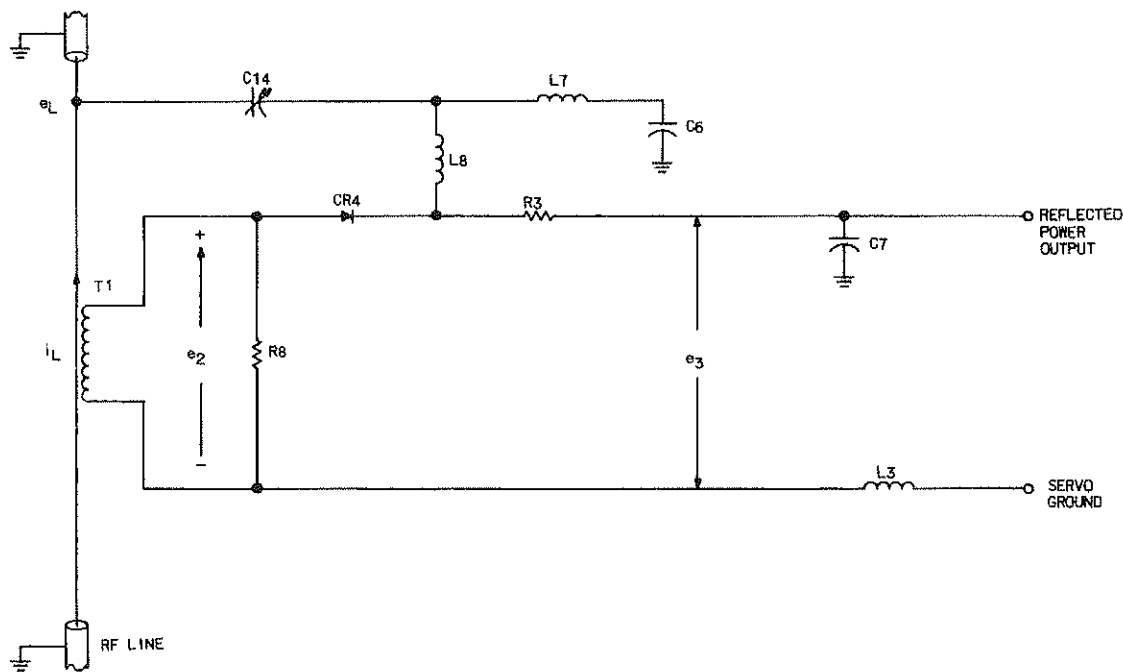


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Figure 1-20. Forward Power Discriminator, Part of A3A6A1 and A3A6A2, Simplified Schematic Diagram

The secondary of transformer T2 is loaded with a low value of resistance, R7, to result in a secondary voltage (e_2) 180° out of phase with primary current. The line voltage is sampled by the voltage divider C15 and C1 and appears at the junction of CR2 and L2. The sampled portion of the line voltage is 180° out of phase with the secondary voltage across T2. On one-half of the rf cycle the induced voltage is greater in magnitude than the sampled voltage; therefore, diode CR2 is forward biased to produce a positive output when forward power is present.

- d. Reflected Power Discriminator, Part of A3A6A1 and A3A6A2. Refer to figure 1-21. The reflected power discriminator develops a dc output proportional to the deviation of the vswr from 1.0 to 1. The vswr deviates from 1.0 to 1 when the antenna impedance is not 50 ohms and resistive; therefore, a reflected power output is developed when the antenna circuit is not resonant with a resistance of 50 ohms.



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Figure 1-21. Reflected Power Discriminator, Part of A3A6A1 and A3A6A2, Simplified Schematic Diagram

The secondary of transformer T1 is loaded with a low value resistor, R8, to result in a secondary voltage (e_2) in phase with the line current i_L . The line voltage is sampled, with no phase shift, by voltage divider C14 and C6. C14 is factory adjusted to create a sampled voltage (at junction of CR4 and R3) equal to the induced voltage on T1 when the vswr is 1.0 to 1; therefore, CR4 is cut off, and there is no output.

When the antenna circuit is resonant with a resistance less than 50 ohms, the rf current increases and the rf voltage tends to decrease. The induced voltage in the secondary of T1 is greater in magnitude than the sampled voltage. Therefore, on the positive half of the rf cycle, diode CR4 is forward biased. The conduction of CR4 develops a positive output proportional to the reflected power.

When the antenna circuit is resonant with a resistance more than 50 ohms, the rf current decreases and the rf voltage tends to increase. The induced voltage e_2 is less than sampled voltage e_3 . Therefore, on the negative half of the rf cycle, diode CR4 is forward biased. The conduction of CR4 develops a positive output proportional to the reflected power.

When the antenna circuit is reactive (nonresonant), the rf line voltage is out of phase with the rf line current. During a portion of each cycle, the induced voltage is more positive than the sampled voltage, and diode CR4 is forward biased. The conduction of CR4 develops a positive output proportional to the reflected power.

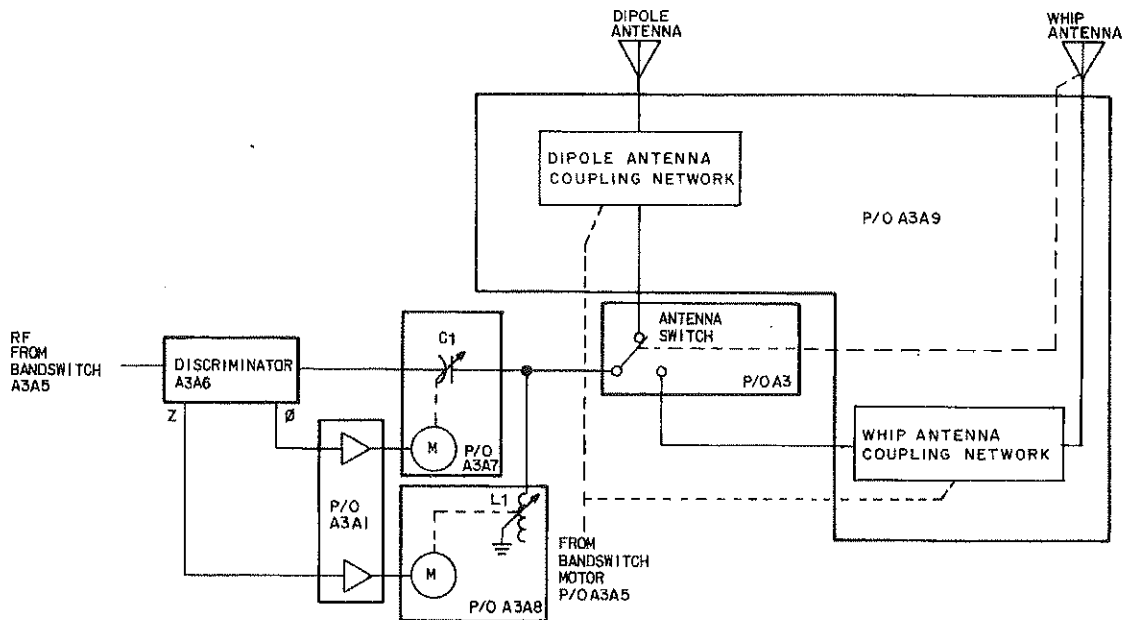
- e. ALC Detector. The ALC detector develops a dc output proportional to the rf voltage. The rf is rectified by CR7 and referenced by zener diode VR1. The ALC detector voltage controls the output of the power amplifier during tune and low power (2 watts) modes.

1.7.4.3.1.4 Rf Tuning Network

Refer to figure 1-22 Tuning capacitor A3A7(C1) and tuning coil A3A8(L1) are servo driven elements that provide exact impedance matching to the 50-ohm output of the solid-state power amplifier. Autotransformer A3A9 contains capacitive and inductive components which are frequency bandswitched elements that translate antenna impedances to within the tuning range of C1 and L1. The inductive component, autotransformer (A3A9T1), is used exclusively for tuning the 8-foot whip antenna from 2 to 8 MHz. The antenna switch located on A3 is a mechanically interlocked switch that selects the proper tuning element in autotransformer A3A9. The switch is activated by the whip antenna. When the whip antenna is not connected, the capacitive components (A3A9C1 through C5 and C7) are automatically connected to the dipole antenna BNC connector.

- a. Autotransformer A3A9. Refer to figure 1-22 in this section and to figures 4-16 and 4-24, schematics section. The autotransformer provides two frequency selective networks, one for use with a dipole antenna (capacitors C1 through C5 and C7) and one for use with a whip antenna (autotransformer T1 and capacitor C6).

The required value of capacitance (C1 through C5 and C7) is selected by bandswitch A3A5. The capacitance translates the dipole antenna impedances to within the tuning range of variable elements L1 and C1. The same is true for selecting autotransformer taps when using the whip antenna. Once antenna impedances are inside the tuning range, loading and phasing error signals run L1 and C1 to obtain the 50-ohm input impedance to the antenna.



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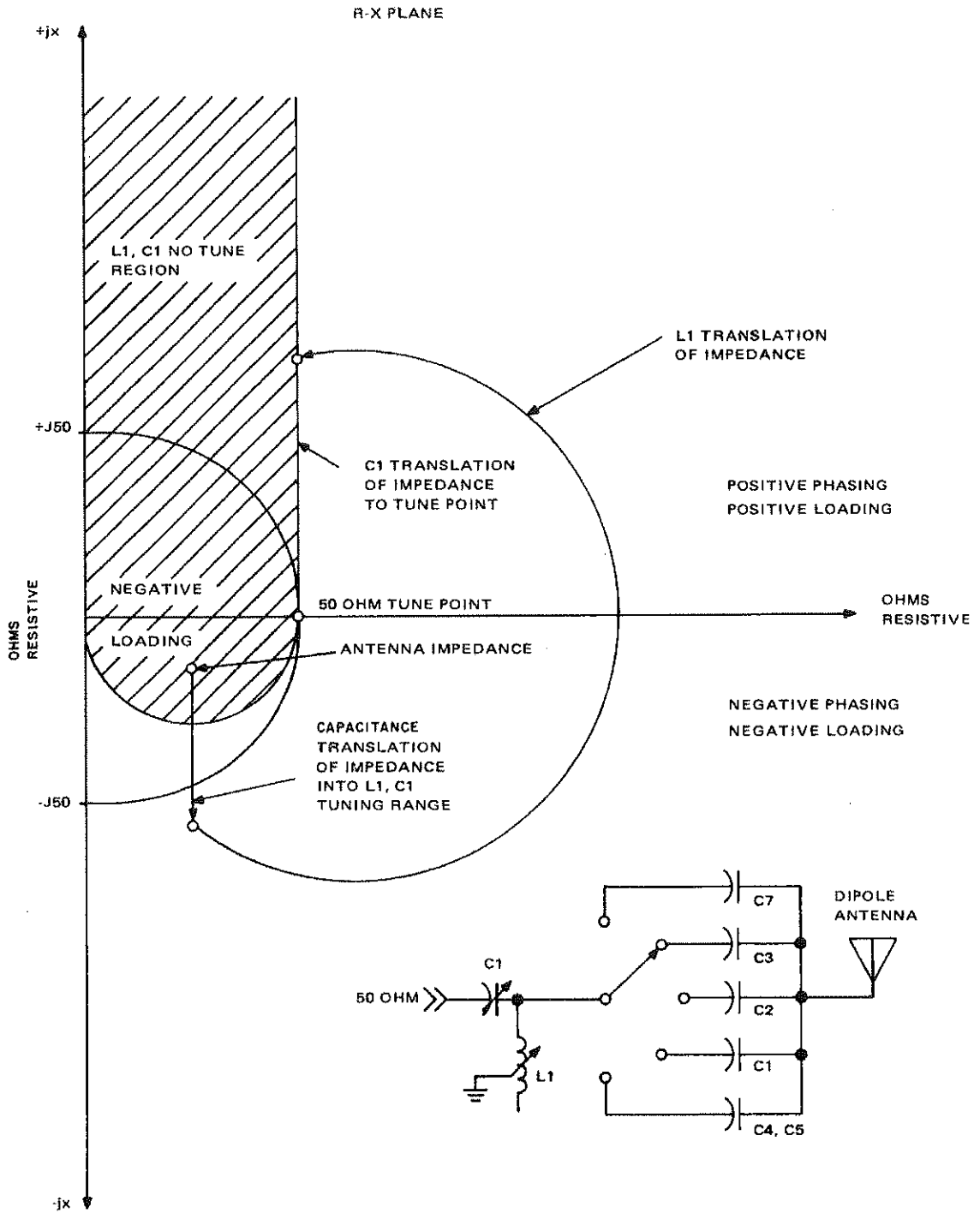
Figure 1-22. Rf Tuning Network, Simplified Schematic Diagram

Figure 1-23 shows how L1, C1, and capacitance (A3A9C1 through C5 and C7) are used to tune the antenna at one example frequency. Figure 1-24 shows the tuning procedure using the 8-foot whip antenna below 8.0 MHz. The auto transformer is switched out above 8.0 MHz.

When a whip antenna is connected, the amplifier-coupler antenna switch is mechanically switched to the normally open position. The rf is applied to switch wafers S1A and S1B of A3A9. Switch S1 is driven by bandswitch motor A3A5B1. At tuned frequencies from 2 to 7.9999 MHz, the rf is coupled through S1B to autotransformer T1. The autotransformer passes the rf through S1A to the whip antenna connector. From 8 to 23.9999 MHz, the rf is applied directly to S1A. From 24 to 29.9999 MHz, capacitor C6 provides capacitance for tuning the whip antenna.

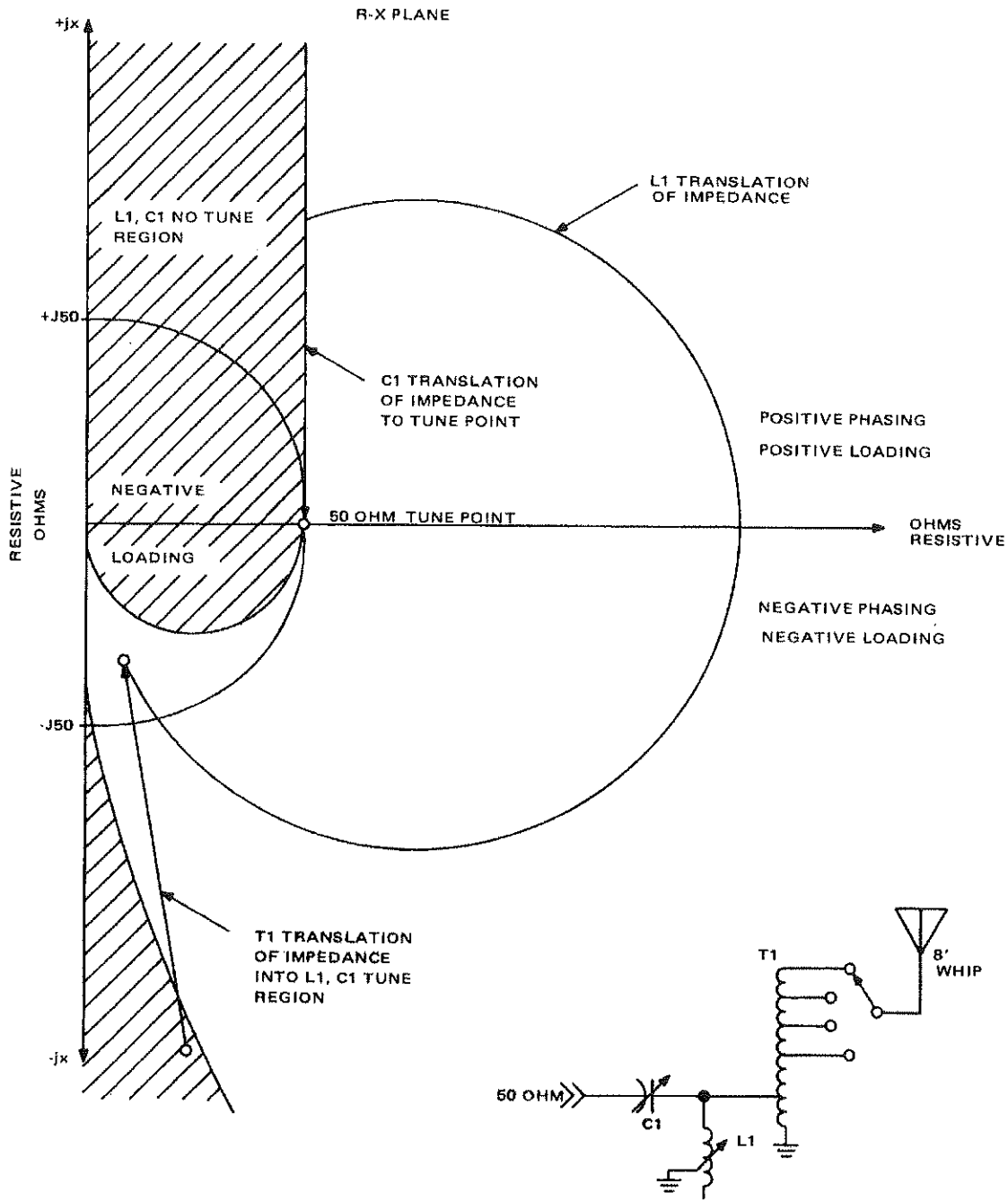
When using the dipole antenna, the antenna switch remains in the normally closed position. The rf is applied to a contact on switch wafer S1C. Capacitors A3A9 C1 through C5 and C7 translate the antenna impedance within the tuning range of C1 and L1. The wiper arm of S1C applies the rf to the dipole antenna BNC connector.

- b. Tuning Capacitor A3A7. Refer to figure 4-22, schematics section. The tuning capacitor is controlled by voltages (C1 max run and C1 min run) from servo amplifier A3A1. When a positive voltage is applied to A3A7P1-9 (C1 max run) and a ground to A3A7P1-10, current flows through the wiper arm of S1A to motor B1. Under this condition when B1 runs, the capacitance of C1 is mechanically adjusted toward maximum capacitance.



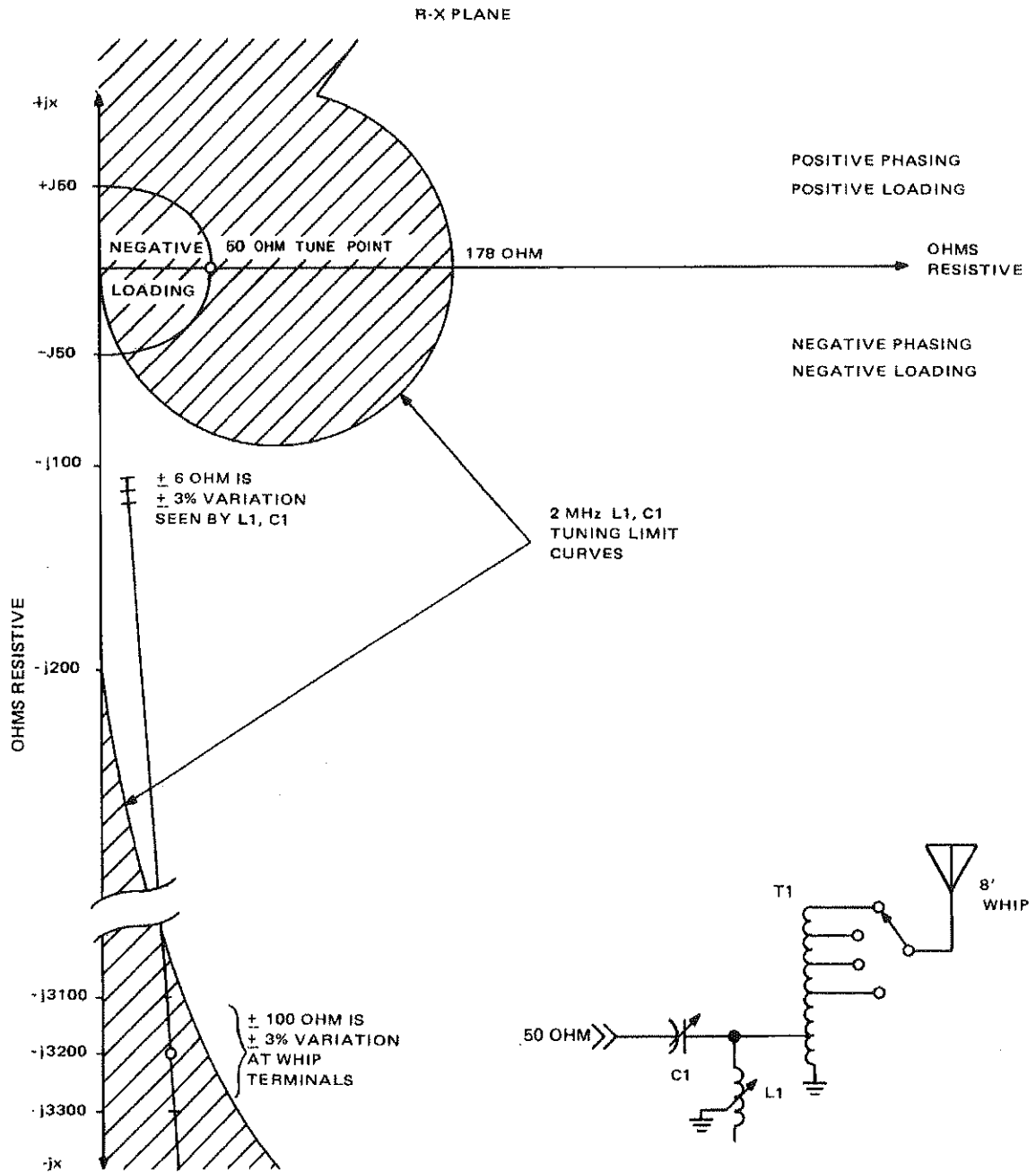
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Figure 1-23. Tuning Procedure when C2 is required



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Figure 1-24. Tuning Procedure when T1 is used



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Figure 1-25. Whip Antenna Reactance Variation Reduction

S1A is mechanically connected to B1. S1A may rotate until the contact going to CR4 becomes open at maximum capacitance. When the contact opens, the voltage to B1 is removed and B1 stops. Switch S1B rotates while B1 is running. A ground established through S1B from A3A7P1-2, applies a ground at A3A7P1-5 to tell control logic A3A2 when C1 is maximum.

When a positive voltage is applied to A3A7P1-10 (C1 min run); current flows through B1 (red dot side) to the wiper arm of S1A and out through CR3. C1 max run (A3A7P1-9) is ground. B1 now runs to force C1 towards minimum and also rotates switches S1A and S1B. Switch S1A may continue to rotate until the contact going to CR3 becomes open, disabling B1. Switch S1B applies a ground to A3A7P1-6 to tell control logic A3A2 when C1 reaches a capacitance of 145 to 275 pf or less.

When logic conditions on control logic A3A2 are such that there is no forcing of the capacitor to max or min positions, the phasing voltage sample from the discriminator controls C1 position. Operation of the tuning capacitor is as discussed above, except that C1 is adjusted (toward max or min) only when a phasing voltage exists.

- c. Tuning Coil A3A8. Refer to figure 4-23, schematics section. The tuning coil is positioned by L1 max run and L1 min run control voltages from servo amplifier A3A1. When a positive voltage is applied to A3A8P1-10 (L1 max run) current flows through CR1 and S1 to motor B1. L1 min run (A3A8P1-4) is ground. This condition forces B1 to run to maximum. At max inductance, the follower arm places a ground on A3A8P1-2 ($\overline{\text{L1 MAX}}$) and pulls switch S1 down to CR2. The ground at A3A8P1-2 tells control logic A3A2 that L1 is at maximum. When S1 is actuated, the current path is broken and the motor stops running. When a positive voltage is applied to A3A8P1-4 (L1 min run), current flows through servo B1, switch S2, and diode CR3. L1 max run (A3A8P1-10) is ground. This forces servo B1 to run to minimum. At minimum inductance, the follower arm places a ground on A3A8P1-9 ($\overline{\text{L1 MIN}}$) and pulls switch S2 down to CR4. The ground at A3A8P1-9 tells control A3A2 that L1 is at minimum. When S2 is actuated, the current path is broken and the motor stops running.

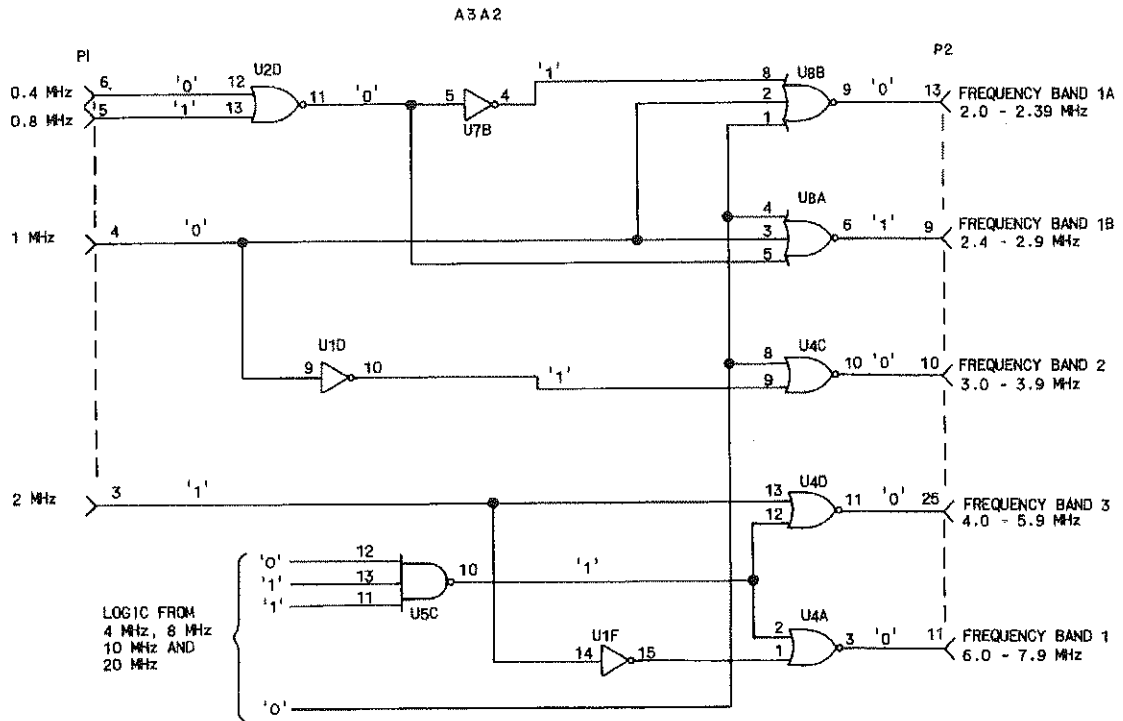
When logic conditions on control logic A3A2 are such that there is no forcing of the inductor to max or min positions, the loading voltage sample from discriminator A3A6 controls the tuning of L1. Operation of the tuning coil is as discussed above, except that L1 is adjusted (toward max or min) only when a loading voltage exists. The positive or negative voltage sample will cause L1 to run only until proper loading occurs (rf circuit impedance returns to 50 ohms).

A tab above the tuning coil is connected to the $\overline{\text{L1 Position}}$ output of A3A8. When a frequency 12 MHz or greater is selected a ground is applied by bandswitch A3A5 to the center-tap on the tuning coil L1. Should the roller make contact with the tab above 12 MHz, the ground is transferred to the $\overline{\text{L1 Position}}$ output and applied to control logic A3A2. Logic from A3A2 then disables the loading servo amplifier and the coil stops.

1.7.4.3.1.5 Control Logic A3A2

Refer to figure 4-17 schematics section. Control logic A3A2 receives binary coded decimal (bcd) frequency information, rechannel pulse (RCP STRETCH) and key line control from radio receiver-transmitter A1, servo enable from servo amplifier A3A1, and tuning coil/capacitor position logic from A3A7 and A3A8. The logic control supplies control logic signals for the amplifier-coupler, such as frequency band logic and servo command logic.

- a. Frequency Decoding. Refer to figure 1-26. The bcd input from control A2 is decoded into frequency band information, see table 1-3. Band logic controls B1 on bandswitch module A3A5. High level logic is applied to the appropriate frequency line/lines on connector P1 of control logic A3A2. This logic is applied to various logic gates where



TRUTH TABLE

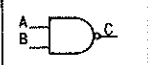

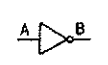
 NAND			 NOR			 INV	
A	B	C	A	B	C	A	B
0	0	1	0	0	1	0	1
1	0	1	1	0	0	1	0
0	1	1	0	1	0		
1	1	0	1	1	0		

Figure 1-26. Frequency Band Logic, Simplified Schematic Diagram

FREQ BAND	FREQ RANGE	CONN PIN
1A	2.0 to 2.39 MHz	P2-13
1B	2.4 to 2.9 MHz	P2-9
2	3.0 to 3.9 MHz	P2-10
3	4.0 to 5.9 MHz	P2-25
4	6.0 to 7.9 MHz	P2-11
5	8.0 to 11.9 MHz	P2-28
6	12.0 to 15.9 MHz	P2-26
7	16.0 to 23.9 MHz	P2-20
8	24.0 to 29.9 MHz	P2-27

Table 1-3. Frequency Bands

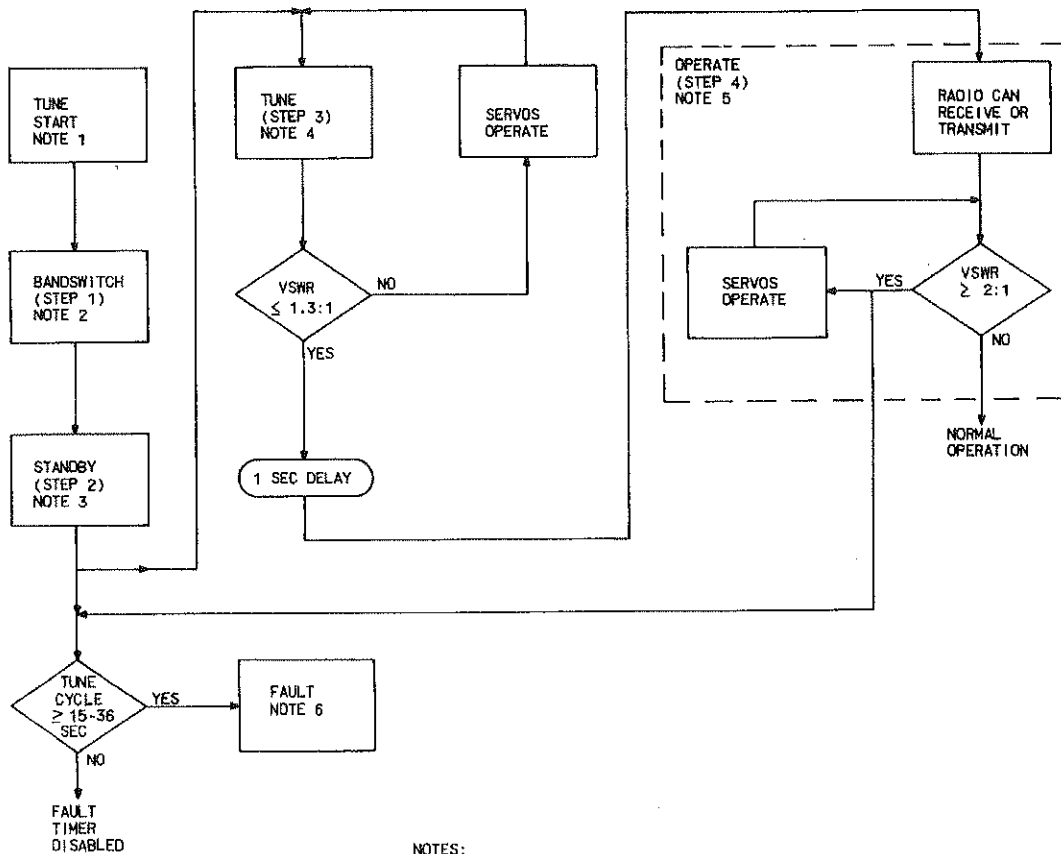
it is decoded and a logic 1 is applied to the proper connector pin on P2. This in turn enables B1 on bandswitch module A3A5. For example; assume an operating frequency of 2.8 MHz. Refer to figure 1-26. A logic 1 is applied to the 2.0 MHz and 0.8 MHz input (P1-3/5), all other frequency inputs are logic 0.

The bcd frequency logic, as shown in figure 1-26 is applied directly or indirectly through logic gates to the output gates for each frequency band. Note that output gate U8A, figure 1-26, is the only output gate with all logic 0 inputs to connector P1. Refer to the truth table in figure 1-26. A logic 1 output from U8A enables the 2.4 to 2.9 MHz frequency band (1B). All other outputs are logic 0 and the frequency bands (1A and 2 through 8) are disabled. Operation for decoding any frequency (2 to 29.9 MHz) is similar to the above example except the logic flow will change and the proper band for the selected frequency will be enabled.

At frequencies above 12 MHz, a high level logic is applied to the forcing circuits of the variable tuning elements (C1/L1) where it is used under certain conditions. This is covered in later paragraphs.

- b. Tune Logic. Refer to figure 1-27. Coupler tuning is accomplished by four tuning steps (bandswitch, standby, tune, and operate) that control the logic to the servo amplifiers and ALC circuits.

Initial turn-on of primary power or the selection of a different frequency generates a rechannel pulse. The rechannel pulse sets the amplifier-coupler to tune step 1, bandswitch. The tuning sequence is illustrated in figure 1-27. A bandswitch complete signal plus coil (L1) position signal allows the logic to advance to step 2, standby. The sequence logic waits in standby for a key (key interlock) from the operator. The tuning elements are still positioned in the tuned condition for the last frequency. Upon receipt of a key (key interlock) the logic sequence goes to step 3, tune. When the tuning sequence is not in bandswitch and all bandswitching is complete, and a key interlock is



NOTES:

1. TUNE START RECHANNEL PULSE RECEIVED WHEN POWER IS TURNED ON OR A NEW FREQUENCY IS SELECTED.
2. BANDSWITCH (STEP 1) SWITCHED +25.2 V DC TURNED ON AND SYSTEM HELD IN UNKEYED CONDITION. BANDSWITCH COMPLETE PLUS COIL POSITION LOGIC, AMPLIFIER-COUPLER ADVANCES TO STANDBY.
3. STANDBY (STEP 2) AMPLIFIER-COUPLER DORMANT AWAITING KEY (KEY INTERLOCK) TO ALLOW AMPLIFIER-COUPLER TO ADVANCE TO TUNE.
4. TUNE (STEP 3) AMPLIFIER-COUPLER ELEMENTS TUNE, LEAVES TUNE AND ADVANCES TO OPERATE WHEN FWD PWR IS PRESENT AND VSWR IS LOW.
5. OPERATE (STEP 4) KEYED OR UNKEYED, RECEIVE THROUGH A TUNED AMPLIFIER-COUPLER IN RECEIVE, TRANSMIT WITH KEY. IF IN TRANSMIT AND SYSTEM DETECTS HIGH VSWR (2:1 FOR 1.5 SECONDS OR MORE) ELEMENTS ARE ALLOWED TO TUNE TO RESTORE LOW VSWR.
6. FAULT TUNE FAULT IF SYSTEM DOES NOT TUNE IN ALLOTTED TIME, REQUIRES NEW RECHANNEL PULSE TO RESET.

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Figure 1-27. Tune Sequence Flow Diagram

present, transistor switch Q2 applies a ground to A3A2P1-11. This ground actuates keyline relays in power amplifier A3A4 to pass the rf to bandswitch A3A5.

In tune, the following signals are used to control the tune cycle:

Servo amplifier enable	enables servos and allows elements C1 and L1 to tune
Tune-in-progress (TIP) signal to power amplifier	places power amplifier in a tune mode
TIP to radio receiver-transmitter A1	places radio receiver-transmitter A1 in a tune mode, which supplies a CW tone for tuning
Sidetone control to radio receiver-transmitter A1	rf present in receiver-transmitter A1 sidetone control circuits, which in turn generates a sidetone in the operators headset.

Forward rf power and low vswr (VSWR) logic from servo amplifier A3A1 indicates that rf is present and the transmission line to the power amplifier is tuned to 50+ JO ohms to within 1.3:1 vswr. Approximately 1 second after the amplifier-coupler is tuned to 1.3:1 vswr with forward power present, the tuning sequence advances to step 4, operate. In operate, anytime the vswr indicates a mismatch of greater than approximately 2:1 for more than the allotted time delay, the servo amplifiers are enabled. The amplifier-coupler retunes until the vswr is low and the fixed delay expires, then it returns to normal operate. The vswr logic to enable the servos is delayed each time the vswr increases or decreases to provide noise immunity and allow the servos to pull-in as accurately as possible.

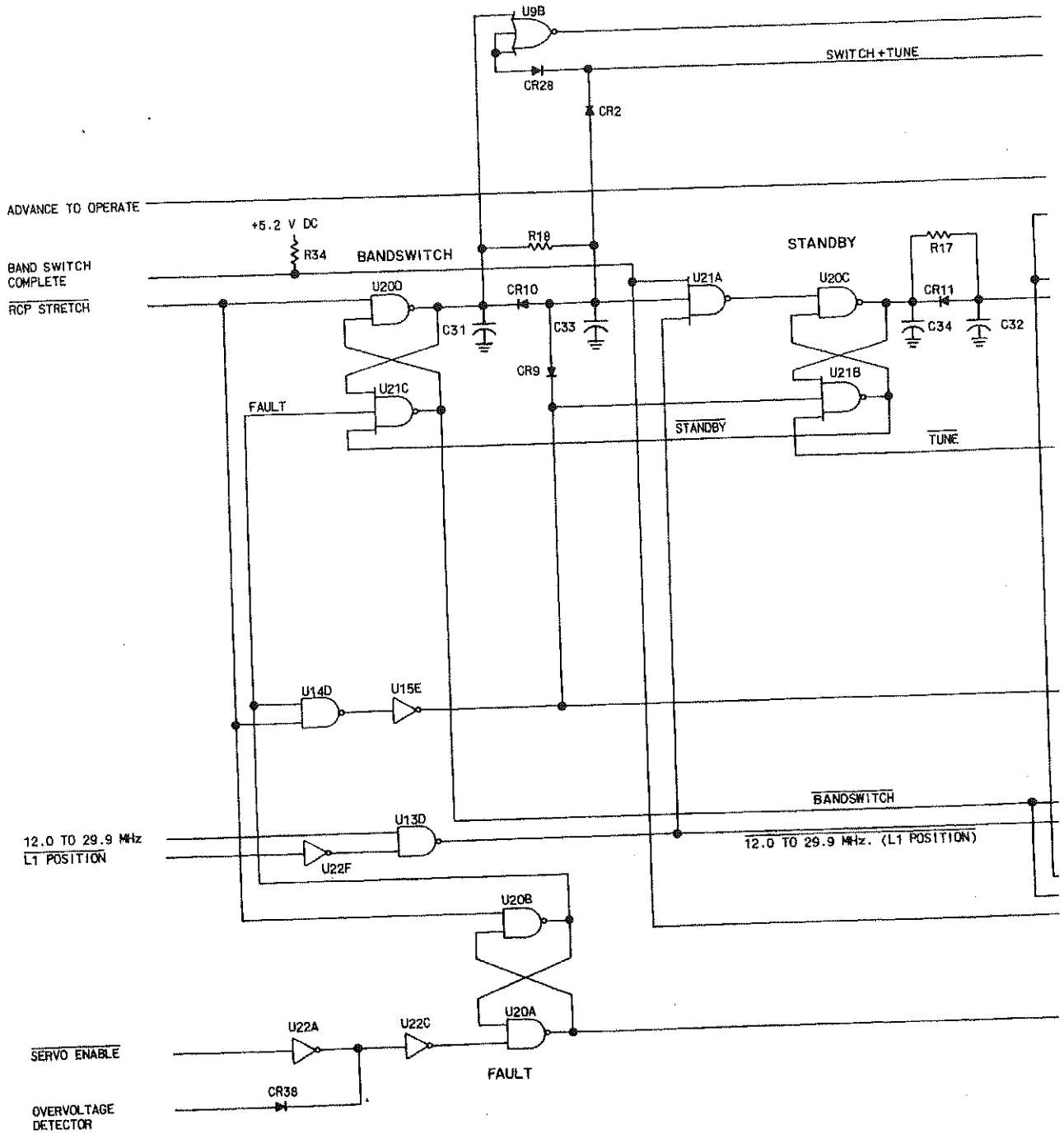
The tune cycle is timed by a fault circuit, see figure 1-27. If the tune cycle exceeds 15 to 36 seconds the system will fault. If a fault occurs, the tuning sequence must be re-set with a tune start (rechannel) pulse.

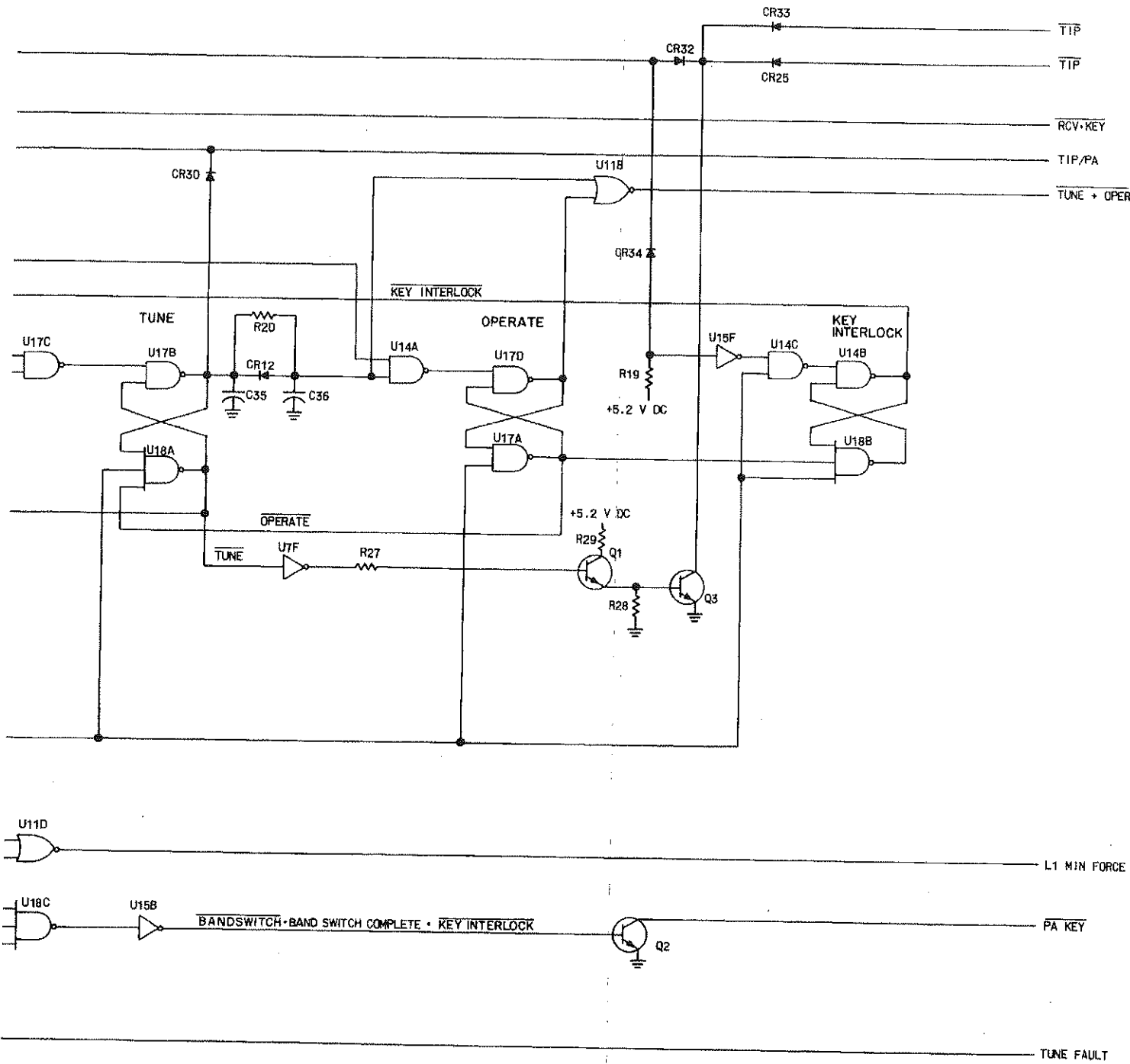
1. Bandswitch Step. Refer to figure 1-28. The rechannel pulse (RCP STRETCH) applies a 50 ms ground (logic 0) to U20D. This sets the bandswitch flip-flop (U20D and U21C). This same low level pulse is applied to U20B and resets the fault flip-flop (U20A and U20B). Simultaneously a logic 0 is gated through U14D and U15E and resets the standby, tune, and operate flip-flops. When the bandswitch flip-flop is set, the logic 1 output of U20D is applied to servo enable U9B. The output of U9B drives the circuit to energize relay A3A3A1K1. This enables +25.2 V dc (KEYED). Gate U20D also supplies a logic 1 to U21A. The logic 0 output of U21C is applied to the input of U11D. If the frequency is higher than 12 MHz and the roller on the tuning coil is contacting the L1 position tab, a logic 0 from U13D is applied to the other input of U11D. The logic 1 out of U11D enables the servo and forces the roller toward MIN until it breaks contact with the tab, at approximately mid-coil. The output of U13D changes to a logic 1 and is applied to the input of U21A. The logic 0 output of U21C is also applied to U18C to hold the power amplifier in an unkeyed condition.

When bandswitch motor B1 on A3A5 stops running, ground is removed from the bandswitch complete circuit and a logic 1 is applied to the input of U21A. When the bandswitch flip-flop is set, bandswitch is complete, and the roller on the tuning coil is not making contact with the L1 position tab (if over 12 MHz) all inputs to U21A are logic 1. When all inputs to U21A are at logic 1, the tuning sequence advances to standby.

2. Standby Step. The logic 0 output of U21A sets standby flip-flop (U20C and U21B). The logic 0 output of U20C is applied to the input of U17C. The logic 0 output of

KEY LINE





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Figure 1-28. Control Logic A3A2, Simplified Schematic Diagram

U21B is fed back to U21C to reset the bandswitch flip-flop. In standby the radio may receive but transmission is inhibited. The tuning elements are still in their previously tuned positions unless the radio is in the RCV only mode. In the RCV only mode the tuning coil and capacitor are homed to maximum, however, the RCV only mode is used only during testing with Radio Test Set AN/PRM-501.

When the standby flip-flop is set and the radio keyed (key interlock) both inputs to U17C are logic 1. When both inputs to U17C are at logic 1 the tuning sequence advances to tune.

When a ground is applied to the keyline, a logic 0 is gated through U15F and U14C to set key interlock flip-flop U14B and U18B. The logic 1 output of U14B is applied back to the input of U17C and also to U18C to remove the power amplifier key inhibit.

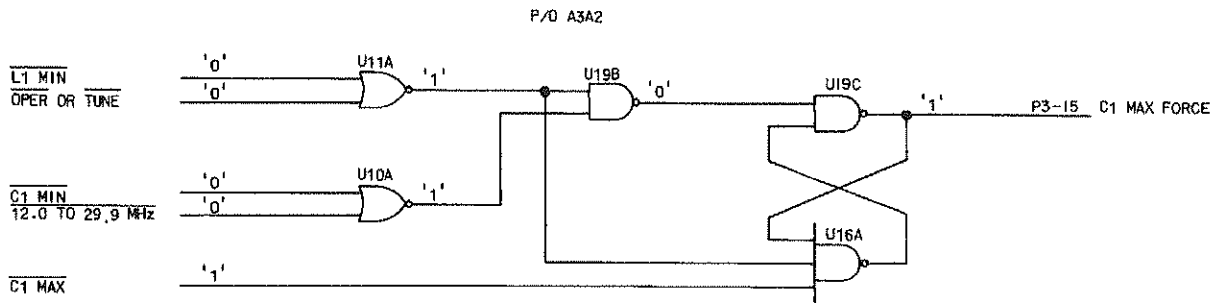
3. Tune Step. When both inputs to U17C are at logic 1, the logic 0 output sets tune flip-flop U17B and U18A. The logic 1 output of U17B is applied through CR30 to enable the servos and applied through R20 to the input of U14A. The logic 0 output of U18A supplies the feedback to reset the standby flip-flop and also applies a logic 0 to U7F. The logic is inverted by U7F, amplified by Q1, and switched by Q3, placing a ground on the keyline and applying TIP logic low to radio receiver-transmitter A1. The radio receiver-transmitter turns on the rf and allows the amplifier-coupler tuning elements to tune. Discriminator A3A6 samples the rf and provides phasing and loading information to servo amplifier A3A1. A3A1 determines when the vswr is 1.3:1. When the vswr is correct and forward power is present, an advance to operate signal (logic 1) is applied to the input of U14A.

When the tune flip-flop is set and an advance to operate logic 1 is supplied by A3A1 both inputs to U14A are at logic 1. When both inputs to U14A are at logic 1 the tuning sequence advances to step 4, operate.

4. Operate Step. The logic 0 output of U14A sets the operate flip-flop, U17D and U17A. The logic 1 output of U17D (operate or tune) is applied through U11B to the L1/C1 forcing circuits. The logic 0 output from U17A is fed back to U18A to reset the tune flip-flop. This reset condition releases the hold on the keyline and TIP line applied by transistor switch Q3. In operate step, the amplifier-coupler is tuned and ready to transmit or receive as long as the vswr remains 1.3:1. Should the vswr vary, and forward power is present, the servos will be enabled until the amplifier-coupler is retuned to the correct vswr.
5. Tuning Coil/Capacitor Forcing Logic. Logic gating on control logic A3A2 determine the conditions under which the tuning elements (C1/L1) are forced to run toward maximum or minimum position. The developed forcing logic is applied to servo amplifier A3A1.

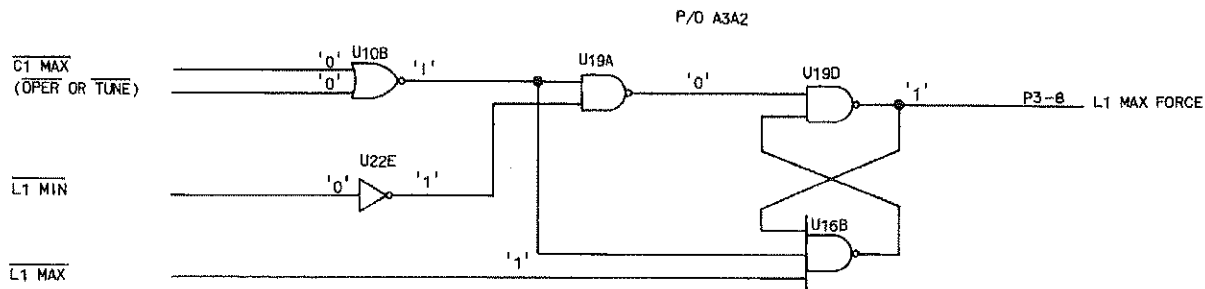
Refer to figure 1-29. When the following logic conditions are set, C1 max forcing logic is applied to the servo amplifier forcing C1 to maximum: L1-Min, C1-Min, (12 to 29.9 MHz) and (operate or tune) step. With these conditions, logic 0's are applied to the inputs of U11A and U10A. The logic 1 outputs of U11A and U10A are applied to U19B. The logic 0 output of U19B sets flip-flop U19C and U16A. The logic 1 output of U19C is applied through A3A2P3-15 to servo amplifier A3A1 which forces C1 to maximum position. If L1 runs off minimum or C1 hits maximum, the force flip-flop will reset disabling the forcing functions.

Refer to figure 1-30. When the following logic conditions are set, L1 Max forcing logic is applied to the servo amplifier forcing L1 to maximum: L1 at Min, C1 at Max while in operate or tune. With these conditions, logic 0's are applied to the inputs of U10B and U22E. The logic 1 outputs of U10B and U22E are applied to U19A. The logic 0 output of U19A sets flip-flop U19D and U16B. The logic 1 output of U19D is applied through A3A2P3-8 to servo amplifier A3A1 which forces L1 to maximum position.



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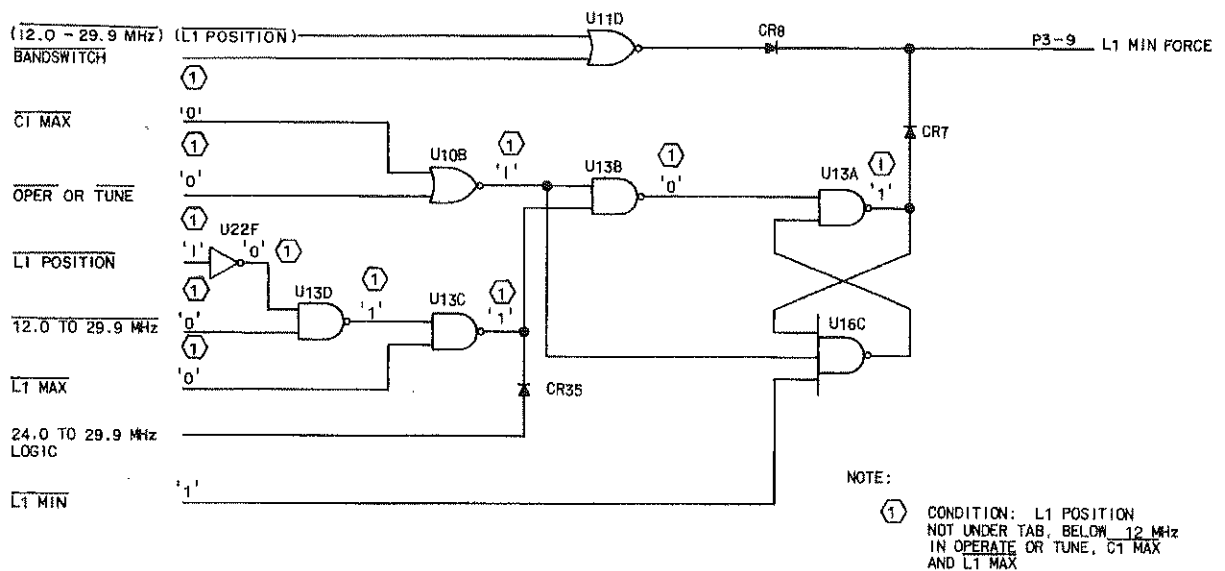
Figure 1-29. C1 Max Forcing Logic, Simplified Schematic Diagram



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Figure 1-30. L1 Max Forcing Logic, Simplified Schematic Diagram

Refer to figure 1-31. When the following logic conditions are appropriately set, L1 Min forcing logic is applied to the servo amplifier forcing L1 toward minimum position: frequency below 12 MHz (12 to 29.9 MHz), L1 Position, L1 Max, C1 Max and (operate or tune). With these conditions, a logic 1 is inverted through U22F and applied, along with a logic 0 from the 12 to 29.9 MHz logic, to the input of U13D. The logic 1 output of U13D and a logic 0 from L1 Max are applied to U13C. Logic 0's from C1 Max and (operate or tune) are applied to the inputs of U10B. The logic 1 output of U10B and the logic 1 output of U13C are applied to the input of U13B. The logic 0 out of U13B sets flip-flop U13A and U16C. The logic 1 output of U13A is applied through A3A2P3-9 to servo amplifier A3A1 which forces L1 toward minimum position. If the frequency is above 12 MHz and L1 roller is making contact with the tab and in bandswitch tuning step, logic 0's are applied to U11D. The logic 1 output of U11D is applied through A3A2P3-9 to the servo amplifier which forces L1 toward minimum position until the roller breaks contact with the tab. Above 24 MHz the coil will force to min if C1 hits max while in the tune or operate step. The flip-flop will reset if L1 hits min or C1 comes off max or phasing sense becomes positive.



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Figure 1-31. L1 Min Forcing Logic, Simplified Schematic Diagram

Positive phasing sense logic from servo amplifier A3A1 applies a logic 1 to U10B. The logic 0 output of U10B is inverted by U13B (L1 Min Force) and U19A (L1 Max Force) and resets the L1 forcing flip-flops, disabling the forcing logic and allowing the servos to control the tuning.

- c. **Fault Logic.** Refer to figure 1-28. When the servos are enabled a logic 0 is applied by the servo amplifier to U22A in the fault circuit. The logic 0 is inverted by U22A and applied to the fault timing network. If the radio fails to tune within 15 to 36 seconds, the logic 1 is inverted by U22C and applied to the fault flip-flop, U20A and U20B. The logic 1 output of U20A (tune fault) is applied to the system. If a tune fault occurs, a logic 0 from U20B resets all the tune step flip-flops to 0 status and tuning stops. A new tune start pulse must be initiated to start a new tuning sequence. At any time the rf signal level becomes too high, overvoltage detector A3A3A2 applies a logic high through CR38 to U22C. This will also fault the tuning sequence.

Overvoltage detector A3A3A2, refer to figure 4-15 in diagrams section, provides rf sampling to protect amplifier-coupler A3 from damage due to abnormally high signal levels. The rf (approximately 850 volts peak) is sampled at the junction of the tuning coil and the tuning capacitor, and applied to A3A3A2. The rf is then filtered, rectified by CR5, and integrated by C4 to provide a normalized dc voltage to the noninverting input of U1A. A filtered 5.1 V dc is developed across zener VR1 and the inverting input of U1A. When the rectified dc voltage exceeds 5.1 volts, comparator U1A develops a positive output voltage. This positive voltage is applied to the control logic card as a fault initiate command, indicating an abnormally high level of rf.

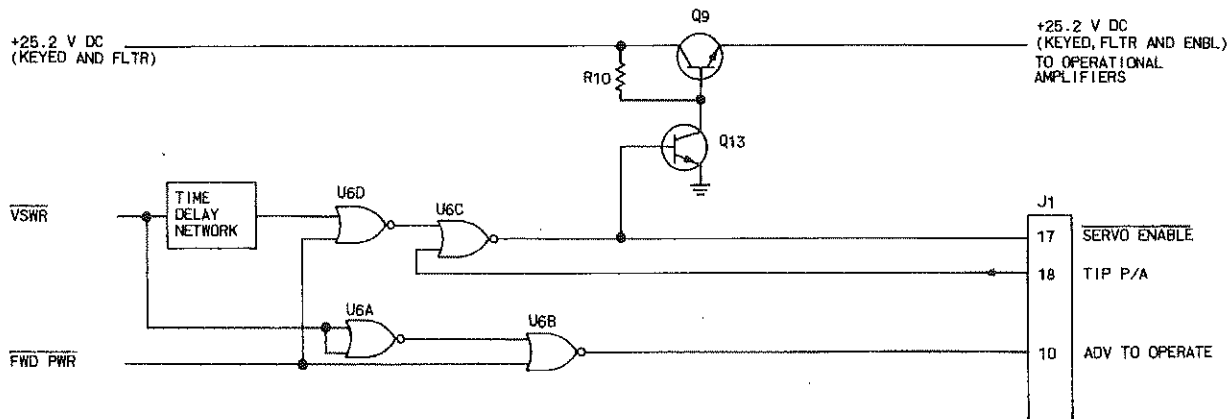
1.7.4.3.1.6 Servo Amplifier A3A1

Refer to figure 4-17, schematics section. The servo amplifier is a dc amplifier capable of operation from a battery supply voltage of 22 to 30 V dc. The servo amplifier receives loading and phasing error voltages, forward and reflected power logic from discriminator A3A6 and forcing logic from logic control A3A2. The servo amplifier converts forcing logic and error voltages into servo drive signals to cause the tuning coil and capacitor to run towards maximum or minimum position. The servo amplifier also develops phasing sense, vswr comparison, servo controls, ALC, and sidetone voltages.

- a. Tuning Coil/Capacitor Run Control. When the tuning coil forcing logic is low (both L1 max force and L1 min force), the loading sample from the discriminator A3A6 controls op amp U1A. When the loading voltage is positive (rf impedance more than 50 ohms), the output of U1A decreases, causing the output of U2B to increase, which supplies a positive voltage output at A3A1J4-4. Since U2A is now low, a ground is applied to A3A1J4-10. This forces L1 to run toward minimum. When the rf circuit impedance adjusts to 50 ohms, the loading voltage becomes zero and L1 stops running. When the loading is negative (rf impedance less than 50 ohms), the output of U1A increases, causing the output voltage of U2A to increase which supplies a positive voltage output at A3A1J4-10 to force L1 to run toward maximum. Again, when the rf circuit impedance adjusts to 50 ohms, L1 stops running. When forcing logic from A3A2 activates L1 min force or L1 max force, the forcing logic levels override the loading input. A logic '1' on the L1 min force input (A3A1J1-9) will cause a positive voltage output at A3A1J4-4 as described above. A logic 1 on the L1 max force input (A3A1J1-8) will cause a positive voltage output at A3A1J4-10, as described above. However, should the tuning coil-tab contact the roller while tuned to a frequency greater than or equal to 12 MHz, transistor Q12 is cut off. This condition back biases FET Q16 and removes Q5 and Q22 from the circuit. An open circuit appears at A3A1J4-4 which stops the tuning coil from running toward minimum.

The phasing input from the discriminator controls op amp U1B. Logic from A3A2 applies C1 max force and C1 min force logic commands. Circuit operation is the same as that discussed above for the loading and tuning coil forcing logic.

- b. Phasing Sense. The phasing input from the discriminator is applied to the noninverting input of U5B. When there is positive phasing the output of U5A develops a logic high voltage across VR8 which is applied to control logic card A3A2.
- c. Vswr and Forward Power. Refer to figure 1-32. Both the forward power and the reflected power samples from discriminator A3A6 are applied to U4B. The input networks to U4B allow the forward and reflected power to be compared and a vswr check to be made. When the vswr is 1.3 to 1 a logic 1 is applied to NOR gate U6A. The logic is inverted by U6A and applied, along with logic from the forward power circuit, to U6B. (When forward power is present a logic 0 is applied to U6B.) The logic 1 output of U6B (advance to operate) is applied to control logic A3A2. Simultaneously a logic 1 is applied through a time delay network to U6D. When forward power is present, U4A applies a logic 0 to U6D. The logic 0 output of U6D, along with a logic 0 (servo enable) from A3A2 is applied to U6C. If the vswr is 1.3 to 1 and forward power is present, the output of U6C is a logic 1. The logic 1 enables transistor Q13 which in turn disables transistor Q9, removing +25.2 V dc (Keyed, filtered and enabled) thereby disabling the servo amplifiers. U6C also provides the servo enable logic to the fault circuit on A3A2. When the vswr is not 1.3 to 1 and forward power is present, a logic 0 is applied through the time delay network to U6D. The output of U6D changes to a logic 1, the output of U6C goes to a logic 0 and cuts off Q13 and allows Q9 to conduct applying +25.2 V dc (Keyed and Fltr) to servo op amps as +25 V dc (Keyed, fltr and enabled). The servos are enabled and the amplifier coupler retunes until the vswr is at the proper ratio then the tuning sequence goes back into the operate step.



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Figure 1-32. Forward Power to Vswr Comparison and Servo Enable, Simplified Schematic Diagram

- d. ALC and Sidetone. In the tune mode (tune step 3) the detected ALC voltage from the discriminator controls the ALC output voltage from U5B. The cathodes of CR3 and CR1 are grounded by TIP. This disables the bias supplied through R37 and enables Q17. The ALC detector voltage from the Q17 is much higher than the forward power voltage supplied from the discriminator. As a result the ALC detector controls U5B. However, if the reflected power is too high, resistor R82 will feed bias to U5B and the forward power will be decreased.

In operate, Q17 is biased off and the output of U5B is controlled by forward power. The cathodes of CR1 and CR3 are no longer grounded. If low power is requested (P1-19 grounded) Q17 will turn on and the ALC detector will control the output of U5B.

Sidetone enabling is controlled by current summing op amp U5B. The sidetone (A3A1P1-25) is applied during tune and operate when rf is present. Five current sources feed the inverting input. When the current through R82 (reflected power) plus the current through R6 (forward power plus the current through Q17 (ALC)) is equal to the current through R33 (reference) plus the current through R36 (drive), the output of U5B goes negative. This condition turns Q10 on and applies a logic 0 to A3A1P1-25 (RF POWER) to activate the sidetone.

The servo amplifier also contains an internal -12 V dc supply circuit. Inverters U7A and U7B are tuned by R70 and C39 to develop a 20 kHz square wave. The square wave switches Q11, Q26, and Q14 on and off and controls the biasing of CR11. Zener diodes VR4 and VR5 then develop -12.4 V dc at the base of Q15, causing Q15 to conduct and -12 V dc to develop at the emitter lead.

1.7.4.3.2 Receive Theory

The following paragraphs contain a description of the rf signal path from the antenna to radio receiver-transmitter A1. For more detail on any particular module, card, or sub-assembly refer to the description of the transmit path, paragraph 1.7.4.3.1.

When using a dipole antenna, the received rf is coupled through autotransformer A3A9 wafer switch section S1C, and through its associated capacitive network to the antenna switch. When using a whip antenna, the received rf is coupled through autotransformer A3A9 wafer switch section S1A and either capacitor C6, autotransformer T1 and S1B, or directly to the antenna switch. Autotransformer T1 is used for frequencies from 2 to 7.9999 MHz only and capacitor C6 is used for frequencies from 16 to 23.9999 MHz only. The antenna switch is toggled when the whip antenna is connected.

The rf signal from the antenna switch is applied to tuning coil A3A8L1, tuning capacitor A3A7C1, and overvoltage detector A3A3A2. The tuning coil and tuning capacitor are tuned to optimum receive conditions by logic applied by servo amplifier A3A1 and control logic A3A2. Optimum receive conditions occur when the control logic is in the standby step of the tuning sequence. The overvoltage detector provides a fault initiate signal to A3A2 should the rf signal get too high.

The rf is then coupled through the discriminator to bandswitch A3A5. The bandswitch module contains two filter boards, each having four bandpass filters. The appropriate filter is selected by the bandswitch step of the tuning sequence. The band filtered rf is then applied to the power amplifier.

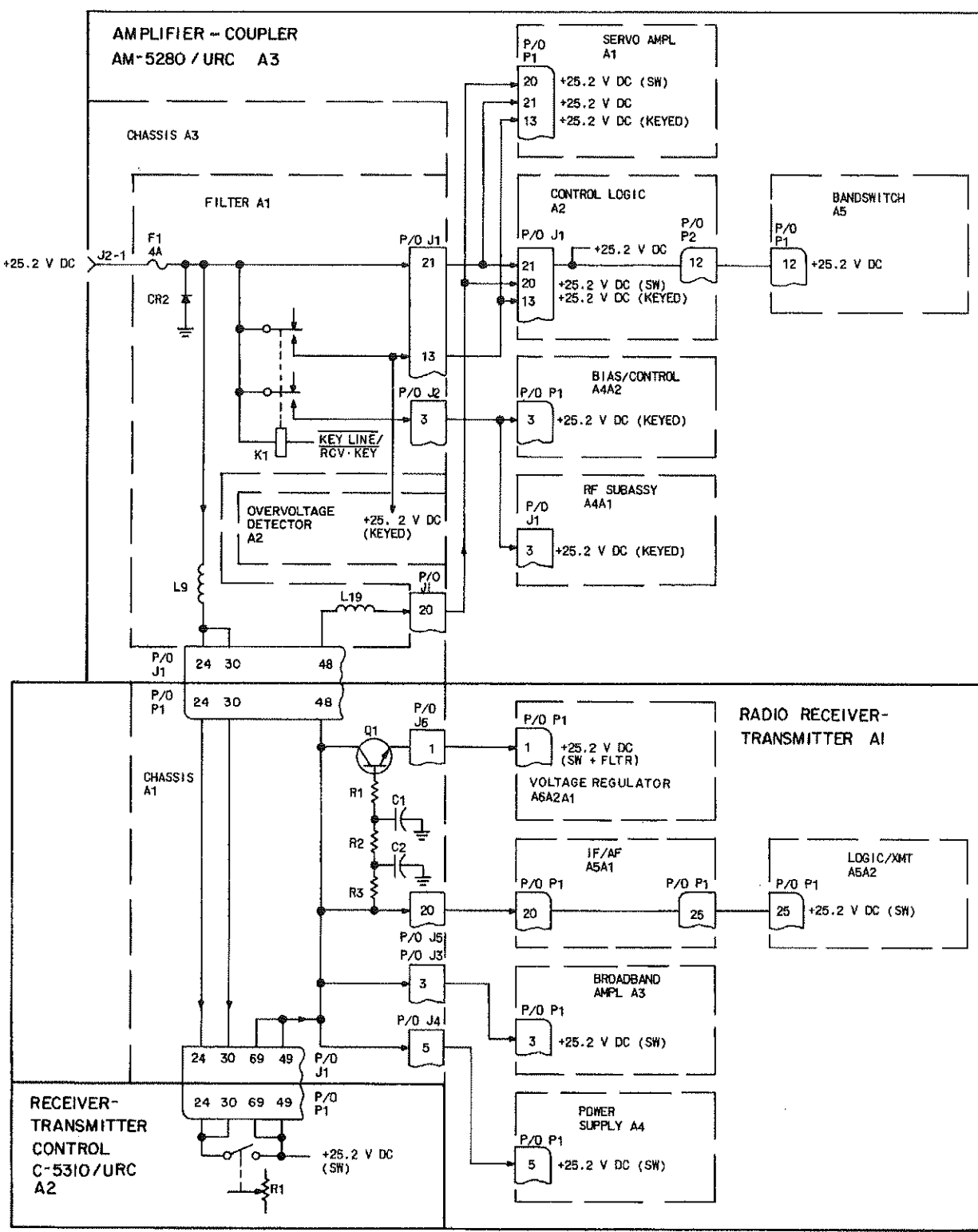
Relay A3A4A2K2 is deenergized when receiving. The received rf is passed to rf assembly A3A4A1. Relay A3A4A1K1 is also deenergized when receiving. The received rf is then passed through the relay to receiver-transmitter A1.

1.7.4.4 DC Power Distribution

Refer to figure 1-33. The receiver-transmitter group operates from a 25.2-volt (+5, -3 V dc) battery connected to A3J2. Four terms are used to functionally label the 25.2 volts dc shown on figure 1-33.

+25.2 V dc	voltage applied to the receiver-transmitter group when the battery is connected.
+25.2 V dc (keyed)	voltage applied when the receiver-transmitter group is keyed.
+25.2 V dc (SW)	voltage applied when switched on at the control.
+25.2 V dc (SW and filtered)	switched voltage filtered by the circuits discussed in paragraph 1.7.4.2.5.

The +25.2 volt dc battery voltage is applied from connector A3J2-1 to fuse A3A3A1F1. From the fuse, the +25.2 V dc voltage is routed to relay A3A3A1K1, A3J1-24 and -30, and A3A3A1J1-21 for distribution. When A3A3A1K1 is energized by keying the equipment, +25.2 V dc (KEYED) voltage is supplied to A3A1P1-13, A3A2P1-13, A3A4A1J1-3 and A3A4A2P1-3.



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Figure 1-33. Receiver-Transmitter Group OR-5007/URC, DC Power Distribution Diagram

The +25-volt voltage is distributed to A3A1, A3A2 and A3A5, and is connected to the OFF section of A2R1 through connectors A3J1/A1A1P1-24, -30 and A1A1J1/A2P1-24, 30. When the receiver-transmitter group is turned on at the control, the +25.2 volts dc becomes +25.2 V DC (SW) which is applied to A2P1/A1A1J1-36, -49 for distribution (figure 1-33). The switched dc output of A1A1Q1 becomes +25.2 V DC (SW AND FLTR) and is applied to A1A6.

The +25.2 DC (SW) is applied to A1A4P1-5 and converted to regulated +5.2 and +13 volts dc. +5.2 V DC is applied to A1A4P1 -1 and +13 V DC to A1A4P1-7 for distribution.

1.7.5 Direct Current Generator G-5002/PRC-515 Detailed Theory

Refer to figure 4-28, schematics section. The generator consists of a crank generator, a voltage regulator circuit, and a current output indicator circuit. The dc output of the hand crank generator is applied through the CR1-CR4 bridge circuit to a series voltage regulator, Q1, Q2, and Q4. Primary current flow is through series transistor Q1, current sensing resistor R1, and diode CR5. Diode CR5 prevents battery discharge back through the generator when it is not being operated.

For low input voltage levels (slow cranking speeds), drive transistor Q2 and series transistor Q1 are on (control transistor Q4 is in cutoff) and the output voltage follows the input voltage. Output voltage is fed back through the voltage divider R7 and R8 to the base of control transistor Q4. VR2 is the threshold reference diode that allows Q4 to turn on when the voltage across R9 is equal to Q4 emitter-base drop plus 5.1 volts.

When the output voltage reaches approximately +30 V dc, base drive supplied by voltage divider R7 and R9 is sufficient to turn on Q4. The conduction by Q4 diverts base drive away from Q2. Q2 and Q1 conduct less, Q1 collector to emitter voltage increases, and the output voltage is maintained at approximately 30 V dc.

The green (DS1) and red (DS2) crank speed indicator lamps are controlled by a current sensing circuit made up of R1, Q3, Q5, Q6, and VR1 and VR3. As output current increases the voltage drop across current sensing resistor R1 also increases. The voltage drop across R1, which is in the Q3 base to emitter path, controls current flow through Q3. With an output current flow of between 40 and 150 mA, there is sufficient current flow through Q3 to cause Q5 to turn on and light lamp DS1. With an output current of between 150 and 300 mA, there is sufficient current flow through Q3 to cause Q6 to turn on and light lamp DS2.

SECTION II

MAINTENANCE

2.1 GENERAL

This section includes second-line and third-line maintenance. Second-line maintenance (paragraph 2.2) includes preventive maintenance for Radio Set AN/PRC-515 and testing/troubleshooting of the receiver-transmitter group, the receiver-transmitter, the amplifier-coupler, and the generator. The second-line maintenance concept for the receiver-transmitter group (including the receiver-transmitter and the antenna-coupler) is to isolate a fault to a second-line replaceable item, replace the faulty item with a good operating item, and direct the faulty item to the third-line maintenance function. Second-line replaceable items for the receiver-transmitter group are listed in table 2-1.

Third-line maintenance (paragraph 2.3) includes testing/troubleshooting of subassemblies in the receiver-transmitter group. The third-line maintenance concept is to isolate a fault within a third-line maintenance item and repair it by making use of information in the testing/troubleshooting tables, the schematic diagrams, and the parts list.

This section also includes disassembly procedures for the receiver-transmitter group (paragraph 2.4) and the generator (paragraph 2.5) and reassembly procedures for the receiver-transmitter group (paragraph 2.6) and the generator (paragraph 2.7).

2.2 SECOND-LINE MAINTENANCE

2.2.1 Preventive Maintenance

Preventive maintenance is the systematic care, inspection, and servicing performed to maintain the equipment in proper operating condition. To ensure that the equipment is always ready for operation, it must be inspected and serviced systematically so that defects and deterioration may be discovered and corrected before they result in serious damage or equipment failure. Defects or deterioration detected during operation or testing should be noted for corrective action to be taken as soon as operation has ceased. Stop operation immediately if any condition indicates that the equipment may be damaged by continued operation.

2.2.2 Inspection

Perform the following visual and mechanical inspections on a periodic schedule or if the operational status of a radio set is unknown. Take corrective action as described.

- a. Inspect cables and connectors and verify that all connectors are locked in place.
- b. The pins in the two audio connectors on the control are spring loaded. When depressed and released each pin should freely spring back to its fully extended position. If faulty, replace the control.
- c. The whip antenna switch (located on top of the whip antenna connector of the amplifier-coupler) is spring loaded. The switch plunger should freely spring back to its fully extended position when depressed and released. If faulty, replace the amplifier-coupler.

ITEM	COLLINS PART NUMBER
Receiver-Transmitter Control C-5310/URC Radio Receiver-Transmitter RT-5047/URC Amplifier-Coupler AM-5280/URC	622-2553-003 622-2148-002 622-2149-001
Radio Receiver-Transmitter RT-5047/URC subassemblies: Chassis A1A1 Mixer A1A2 Broadhand amplifier A1A3 Power Supply A1A4 If/Af amplifier A1A5 If/af A1A5A1 Logic/tx A1A5A2 Frequency synthesizer A1A6 Frequency standard A1A6A1A1 Fixed frequency divider A1A6A1A2 Voltage regulator A1A6A2A1 Variable frequency divider A1A6A2A2 Hf phase-lock loop A1A6A2A3 Lf phase-lock loop A1A6A1A3 Frequency converter A1A6A1A4	629-3406-001 629-3403-001 601-3671-001 601-3670-001 629-3405-001 601-3668-001 601-3669-001 629-3402-002 601-3877-001 601-3876-002 601-3874-002 601-3875-002 635-8154-001 601-3879-001 601-3878-001
Amplifier-Coupler AM-5280/URC subassemblies: Servo amplifier A3A1 Control logic A3A2 Rf subassembly A3A4A1 Bias/control A3A4A1 Bandswitch A3A5 Discriminator A3A6 Tuning capacitor A3A7 Tuning coil A3A8 Autotransformer A3A9	601-3673-001 601-3672-001 623-7287-001 623-3675-001 629-3414-001 629-3409-001 629-3412-001 629-3413-001 629-3407-001

Table 2-1. Receiver-Transmitter Group Second-Line Replaceable Items

- d. Intermittent operation usually indicates a faulty connector. If the audio in the earpiece is intermittently received, inspect all connectors for signs of corrosion or pin misalignment. If a faulty connector is detected and cleaning or realignment of pins doesn't clear the trouble, replace the handset or headset. If trouble persists, refer to the troubleshooting procedures for the receiver-transmitter group.
- e. Inspect the generator/battery as follows:
 1. When the generator is not connected to a battery or to the receiver-transmitter group (no lead) it should crank freely without supplying any current. While turning the crank, verify smooth cranking operation with no binding or grating and observe that the indicator lamps are not lit.

CAUTION

Never short the generator output terminals when it is latched to a battery because the battery will be damaged. Also, do not apply excessive force to obtain high cranking speed when the generator outputs are shorted, as damage to the gearbox may result.

2. With the generator output terminals shorted together, maximum rotational resistance should be felt and the indicator lamps should not light when the generator is cranked. If abnormal indications are detected in this step, refer to test/troubleshooting procedures for the generator in this section.
3. If the generator indications are normal in step (2), but turns freely (and indicator lamps on generator don't light) when cranked with a battery attached, an open circuit between generator output terminals is indicated. Verify that the connections between generator and battery are clean and properly engaged. If trouble persists, replace battery.
4. The generator alone will not power the receiver-transmitter group (a good battery must be attached to the receiver-transmitter group). But, with only the generator attached to the receiver-transmitter group, the operator should be able to illuminate the panel lamps on the control by cranking the generator while holding the lamp switch down. If the panel lamps do not light and the green indicator lamp on the generator also does not light (indicating that the generator is not supplying current), check the following for faults:
 - (a) The connector between the generator and the receiver-transmitter group (bad connection).
 - (b) Fuse A3A3A1F1 (blown).
 - (c) Generator (defective).

2.2.3 Cleaning

Cleaning procedures consist of using a dry soft-bristled brush to remove dust and lint and a soft rag moistened with a mild detergent solution to remove marks, smudges, and oil film deposits. Regular cleaning is limited to the exterior of the receiver-transmitter group.

2.2.4 Test Equipment Requirements

Table 2-2 lists the test equipment, or equivalent, required to perform receiver-transmitter group second-line maintenance procedures. Common general purpose tools and materials that are readily available are not included. Also, most cables, adapters, T-connectors, etc required for the test equipment setups are not identified in the test equipment table or on the test setup diagrams.

ITEM	RECOMMENDED TYPE
Radio Test Set AN/PRM-501	AN/PRM-501
Ac vtm	Hewlett-Packard 400E
Attenuator, rf (20-dB/20-watt/50-ohm) (2 required)	Weinschel 9214-20
Attenuator, Audio	Hewlett-Packard 350B
Attenuator, 6-dB	Measurements 80-ZH3
Digital voltmeter	Fluke 8000A
Distortion analyzer	Hewlett-Packard 333A
Frequency counter	Fluke 1920A
Handset	Handset-Microphone H-5016/PRC-515
Isolation transformer, 600-ohm	Hewlett-Packard 11005A
Mixer-attenuator, 600-ohm	Customer supplied, refer to figure 2-31 for schematic diagram
Multimeter	Hewlett-Packard 410C
Oscillator (2 required)	Hewlett-Packard 204C
Oscilloscope	Tektronix 464
Power divider	Weinschel 1506A
Power supply, 22-30-V dc (5 amp)	Hewlett-Packard 6266B
Probe coaxial T connector	Hewlett-Packard 11042A
Receiver-transmitter control	Receiver-Transmitter Control C-5310/URC

Table 2-2. Receiver-Transmitter Group, Second-Line Maintenance Test Equipment Required.

ITEM	RECOMMENDED TYPE
Signal generator (2 required)	Hewlett-Packard 8650B with option 001 and option 003 or fuseholder 11509A
Spectrum analyzer	Hewlett-Packard 141T with 8552B if section and 8553B rf section (1-KHz to 110MHz)
Voltage divider capacitive (100:1)	Hewlett-Packard 11040A
Wave analyzer	Hewlett-Packard 3581A
Whip antenna	Antenna AS-5093/PRC-515

Table 2-2. Receiver-Transmitter Group, Second-Line Maintenance Test Equipment Required (cont)

Table 2-3 lists the test equipment, or equivalent, required to perform generator second-line maintenance procedures.

2.2.5 Receiver-Transmitter Group Minimum Performance Test

Table 2-4 is a minimum performance test for the receiver-transmitter group. Perform test steps in the order presented in the PROCEDURE column. Results in the MINIMUM PERFORMANCE STANDARD column will be obtained if the receiver-transmitter group is operating properly. If these results are not obtained, perform the procedure described in the IF INDICATION IS ABNORMAL column and repeat the minimum performance test. The corrective procedure in the IF INDICATION IS ABNORMAL column is primarily substitution of "known good units" (receiver-transmitter, control, or amplifier-coupler) in the sequence specified until the faulty unit is identified (the fault is cleared). When a faulty receiver-transmitter A1 is identified, perform testing/troubleshooting procedures in table 2-5. When a faulty antenna-coupler A3 is identified, perform testing/troubleshooting procedures in table 2-6. When a faulty control A2 is identified, it is directed to third-line maintenance. If receiver-transmitter A1 or antenna coupler A3 is identified as faulty, substitution of second-line replaceable subassemblies (see table 2-1) may isolate the fault to a defective subassembly which is directed to third-line maintenance. Refer to disassembly and reassembly procedures in this section to remove and replace units and to the schematics section for electrical interconnection of units.

NOTE

For receiver tests, if local interference or receiver internal spurious responses are encountered, the tests may be performed at frequencies 10 kHz higher than those specified.

ITEM	RECOMMENDED TYPE
Ammeter, 0-500 ma	Hallmark Standards MPFB
Battery, 25.2 V dc	Storage Battery BB-706/U
Multimeter	Hewlett Packard 410C
Power Supply, 40-100 V dc (2 amp at 40 V dc and 200 ma at 100 V dc)	

Table 2-3. Generator, Second-Line Maintenance Test Equipment Required


STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Power check	<p>Connect test equipment as shown in figure 2-1, test setup A.</p> <p>On control A2, set MEGAHERTZ KILOHERTZ to 02.000, POWER/ PUISSANCE to <input type="checkbox"/> , OFF/ FERMÉ to maximum clockwise, and MODE to USB.</p> <p>Adjust 22-30 V dc power supply for 25.2 +0.1 V dc. Set the test set PWR to ON and observe line current indication on the 22 - 30 V dc power supply ammeter.</p>	55-75 ma	<p>Replace, in order, amplifier coupler, receiver-transmitter, and control. If replacing the amplifier-coupler corrects the fault, check fuse A3A3A1F1.</p> <p>If replacing the receiver-transmitter corrects the fault, replace, in order, power supply A1A4 and chassis A1A1.</p>
2 Lamp test	On control A2, press  button and observe MEGAHERTZ KILOHERTZ switches.	All switches light.	Replace lamp for any unlit switch. If all lamps are unlit, replace, in order, control and amplifier-coupler.
3 Receive audio	a. With MODE switch on control A2 set to USB and handset connected to A2J1, listen to handset.	Hiss is heard in earpiece.	<p>Connect handset to A2J2 on control A2. Replace, in order, handset, control, receiver-transmitter, and amplifier-coupler.</p> <p>If replacing the receiver-transmitter corrects the fault, replace, one at a time, the sub-assemblies (except A1A3) listed in table 2-1.</p>

Table 2-4. Receiver-Transmitter Group Minimum Performance Test

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3 (cont)	b. On control A2, set MODE switch to AM and listen to handset.	Hiss is heard in earpiece.	Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.
4 Receive audio level	While listening to hiss in earpiece turn OFF/FERME control from maximum clockwise to maximum counterclockwise (but not to off).	Hiss decreases to low level.	Replace receiver-transmitter. If Replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.
5 Receive audio tune	<p>On Control A2, set MODE switch to USB and OFF/FERME control to maximum clockwise.</p> <p>a. Set signal generator for 2.0010 MHz at a level of 10,000 uV.</p> <p>b. On control A2, set MODE switch to AM. Set signal generator for 2.0000 MHz at a level of 10,000 uV, modulated 30% with 1,000 Hz.</p>	<p>1000-Hz tone will be heard in earpiece.</p> <p>1000-Hz tone will be heard in earpiece.</p>	<p>Replace, in order, amplifier-coupler, receiver-transmitter, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.</p> <p>Same as above</p>

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
6 Transmit tune	<p>Connect test equipment as shown in figure 2-2 test setup A. Connect the handset to A2J2. On audio adapter, set PTT and CW KEY switches to OFF.</p> <p>On control A2, set MEGAHERTZ KILOHERTZ to 02.0000, POWER/ PUISSANCE TO <input type="checkbox"/> , OFF/ FERMÉ to mid-range, and MODE to USB.</p> <p>Momentarily press ptt switch on the handset and listen to handset and observe rf output on the multimeter.</p>	<p>Tuning cycle is initiated as indicated by a 2000-Hz tone in the ear-piece for duration of tune cycle.</p> <p>Rf output power appears on the multimeter and falls to zero when tuning is complete.</p>	<p>Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace one at a time, the sub-assemblies listed in table 2-1.</p> <p>Replace, in order amplifier-coupler, receiver-transmitter, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the sub-assemblies listed in table 2-1.</p>
7 Transmit low voltage fault	<p>Reduce power supply voltage 1 or 2 volts, press ptt switch on the handset, and listen to the handset. Repeat, if necessary, until a clicking sound is heard in the headset. When the clicking sound is obtained, observe the 22-30 V dc power supply output voltage. Readjust power supply output for 25.2 \pm0.1 V dc output.</p>	<p>20-22 V dc</p>	<p>Replace, in order receiver-transmitter and amplifier-coupler. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.</p>

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8 Transmit power output	Momentarily press ptt switch on the handset and observe rf output on the multimeter. Repeat the procedure for each of the following frequency settings on control A2: 03.0000, 04.0000, 06.0000, 08.0000, 12.0000, 16.0000, 24.0000, and 29.9000 MHz.	26-35 V ac	Replace, in order, amplifier-coupler, receiver-transmitter, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.
8.1 Whip antenna tuning	On control A2, set MEGAHERTZ KILOHERTZ to 02.0000. Connect the antenna simulator to A3J4 as shown in figure 2-2 test setup B. Momentarily press ptt switch on the handset and listen to handset for 1 minute. Repeat the procedure for each of the following frequency settings on control A2: 03.0000, 04.0000, 06.0000, 08.0000, 12.0000, 16.0000, 24.0000, and 29.9000 MHz. Disconnect antenna simulator after completion of test.	Tuning cycle is initiated as indicated by a 2000-Hz tone in the ear-piece for duration of tune cycle, and pulsed tune fault tone will not be heard after ptt switch is pressed.	Replace antenna-coupler.
9 Transmit tune fault	On control A2, set MEGAHERTZ KILOHERTZ to 25.0000. Disconnect all test equipment at A3J3 (presents open circuit). Momentarily press ptt switch on the handset and listen to the handset.	Pulsed tune fault tone will be heard 15-36 seconds after the ptt switch is pressed.	Repeat at another frequency in 20.0000-29.9999 MHz range. If normal indication is not obtained, replace, in order, amplifier-coupler, receiver-transmitter and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)


STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
<p>10 Receive sensitivity</p>	<p>Connect test equipment as shown in figure 2-1 test setup B. (Use 3 rf attenuators: two 20 dB and one 6 dB.) On control A2, set MEGAHERTZ KILOHERTZ to 02.0000, POWER/PUISSANCE to , OFF/FERMÉ to mid-range, and MODE to USB. On audio adapter, set PTT to MOM.</p> <p>a. On signal generator, set AM modulation to OFF. Set signal generator for 2.0010 MHz at a level of 100 uV. On the distortion analyzer, measure the signal-plus-noise to noise ratio ((S+N)/N) by nulling out the 1000-Hz audio.</p> <p>b. On control A2, set MODE to AM. Set signal generator for 2.0000 MHz modulated 30% at 1000 Hz at a level of 350 uV. Measure the (S+N)/N ratio by turning off the AM modulation.</p> <p>c. On control A2, set MEGAHERTZ KILOHERTZ to 16.0000 and MODE to USB. On audio adapter, set PTT to MOM. Set signal generator for 16.0010 MHz at a level of 100 uV. Measure the (S+N)/N ratio as in step a.</p>	<p>Not less than 10 dB.</p> <p>Not less than 10 dB.</p> <p>Not less than 10 dB.</p>	<p>Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the sub-assemblies listed in table 2-1.</p> <p>Same as above.</p> <p>Same as above.</p>

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
10 (cont)	<p>d. On control A2, set MODE to AM. Set signal generator for 16.0000 MHz, modulated 30% at 1000 Hz at a level of 350 uV. Measure the (S+N)/N ratio as in step b.</p> <p>e. On control A2, set MEGAHERTZ KILOHERTZ to 29.0000 and MODE to USB. On audio adapter, set PTT to MOM. Set signal generator for 29.0010 MHz at a level of 100 uV. Measure the (S+N)/N ratio as in step a.</p> <p>f. On control A2, set MODE to AM. Set signal generator for 29.0000 MHz, modulated 30% at 1000 Hz at a level of 350 uV. Measure the (S+N)/N ratio as in step b.</p>	<p>Not less than 10 dB.</p> <p>Not less than 10 dB.</p> <p>Not less than 10 dB.</p>	<p>Same as above.</p> <p>Same as above.</p> <p>Same as above.</p>
11 Receive harmonic distortion	<p>On control A2, set MEGAHERTZ KILOHERTZ to 16.0000, PUISSANCE to <input type="checkbox"/> , OFF/FERME to maximum clockwise, and MODE to USB.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">NOTE</div> <p>Disconnect signal generator prior to setting PTT to MOM position to avoid possible damage to signal generator.</p> <p>On the audio adapter, set PTT switch in MOM position until the coupler has tuned (should complete in 7 seconds maximum).</p>		

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)



STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11 (cont)	<p>a. Reconnect signal generator and set for 16.0010 MHz at a level of 100,000 uV. Adjust the OFF/FERME control for a receiver output of 10 dBm on the distortion analyzer. On the distortion analyzer, measure the harmonic distortion.</p> <p>b. On control A2, set MODE to AM. Set signal generator for 16,0000 MHz, modulated 90% at 1000 Hz at a level of 100,000 uV. Adjust the OFF/FERME control for a receiver output of 10 dBm on the distortion analyzer. On the distortion analyzer, measure harmonic distortion.</p>	<p>Less than 10%.</p> <p>Less than 10%.</p>	<p>Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.</p> <p>Same as above.</p>
12 Receive volume range	<p>On control A2, set MEGAHERTZ KILOHERTZ to 16.0000, POWER/ PUISSANCE to , OFF/FERME to maximum clockwise, and MODE to USB. Set signal generator for 16.0010 MHz at a level of 100,000 uV. Adjust the OFF/FERME control for a receiver output of 10 dBm on the distortion analyzer (establishes a 0 dB reference point). Adjust OFF/FERME for maximum counterclockwise (but not off) and measure the dB change in receiver output on the distortion analyzer.</p>	<p>30 dB minimum.</p>	<p>Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.</p>
13 Receive age	<p>On control A2, set MEGAHERTZ KILOHERTZ to 16.0000, POWER/ PUISSANCE TO , OFF/FERME to mid-range, and MODE to USB. Connect the signal generator and 6-dB attenuator to A3J3 (removes the two rf</p>	<p>Less than 3 dB.</p>	<p>Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault,</p>

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)


STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
13 (cont)	attenuators). Set signal generator for 16.0010 MHz at a level of 100 uV. Record the receiver output on the distortion analyzer (establishes a 0 dB reference point). Measure the dB change in receiver output on the distortion analyzer while changing the signal generator to several output levels between 3 uV and 100 uV. Measure the dB change in receiver output on the distortion analyzer while changing the signal generator to several output levels between 100 uV and 100,000 uV.		replace, one at a time, the subassemblies listed in table 2-1.
14 Receive selectivity	<p>On control A2, set MEGAHERTZ KILOHERTZ to 16.0000, POWER/ PUISSANCE to , OFF/ FERME to mid-range, and MODE to USB. Connect the two rf attenuators between the 6-dB attenuator and A3J3.</p> <p>a. Set signal generator for 16.0010 MHz at a level of 100 uV. Adjust signal generator frequency for maximum receiver output on the distortion analyzer. Record the receiver output on the distortion analyzer (establishes a reference level). Increase signal generator output level to 200 uV. Set the signal generator to 16.00035 MHz and observe the receiver output on the distortion analyzer. Set signal generator to 16.0032 MHz and observe the receiver output on the distortion analyzer.</p> <p>b. On control A2, set MODE to AM. Set signal generator for 16.0000 MHz, modulated 30%</p>	<p>Equal to or greater than reference level.</p> <p>0 to -9 dB of the reference level for 2750-Hz</p>	<p>Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace one at a time, the subassemblies listed in table 2-1.</p> <p>Same as above.</p>

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
<p>14 (cont)</p> <p>15 Receive if and image rejection</p>	<p>at 1000 Hz at a level of 100,000 uV. Record the receiver output on the distortion analyzer (establishes a reference level). On the signal generator, increase the modulation frequency to 2750 Hz, then decrease it to 2000 Hz. Observe the receiver output on the distortion analyzer for both modulation frequencies.</p> <p>On control A2, set MEGAHERTZ KILOHERTZ to 16.0000, POWER/ PUISSANCE to <input type="checkbox"/> OFF/FERME to mid-range, and MODE to USB.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">NOTE</div> <p>Disconnect signal generator prior to setting PTT to MOM position to avoid possible damage to signal generator.</p> <p>On the audio adapter, set PTT switch in MOM position until the coupler has tuned (should complete in 7 seconds maximum).</p> <p>Reconnect signal generator and set for 16.0010 MHz at a level of 100 uV. Record the receiver output on the distortion analyzer (establishes a reference level).</p> <p>a. Set signal generator to 4.9990 MHz (2nd if) and adjust the output level until the reference level is obtained on the distortion analyzer.</p>	<p>modulation frequency and 0 to -3 dB of the reference level for 2000-Hz modulation frequency.</p> <p>At least 70 dB above the reference level.</p>	<p>Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies, listed in table 2-1.</p>

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
15 (cont)	<div style="border: 1px solid black; width: fit-content; margin: 0 auto; padding: 2px; text-align: center;">NOTE</div> <p>The two rf attenuators may be removed in order to obtain the required level in step a, b, c, and d.</p> <p>b. Set signal generator to 114.9990 MHz (1st if) and adjust the output level until the reference level is obtained on the distortion analyzer.</p> <p>c. Set signal generator to 245.9990 MHz (1st if image) and adjust the output level until the reference level is obtained on the distortion analyzer.</p> <p>d. Set signal generator to 25.9990 MHz (2nd if image) and adjust the output level until the reference level is obtained on the distortion analyzer.</p>	<p>At least 70 dB above the reference level.</p> <p>At least 60 dB above the reference level.</p> <p>At least 60 dB above the reference level.</p>	<p>Same as above.</p> <p>Same as above.</p> <p>Same as above.</p>
16 Transmit power output	<p>Connect test equipment as shown in figure 2-2 test setup A. On audio adapter, set PTT and CW KEY to OFF. On control A2, set MEGAHERTZ KILOHERTZ to 02.0000, POWER/PUISSANCE to <input type="checkbox"/>, OFF/FERME to mid-range, and MODE to USB.</p> <p>a. Set oscillator for 1000 Hz, and an input level to the receiver-transmitter group of -26 dBm measured on the ac vtm. On the audio adapter, set PTT switch to MOM and, using the multimeter, observe the receiver-transmitter group rf output.</p>	<p>26.6-35.1 V ac after tuning is complete.</p>	<p>Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.</p>

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
16 (cont)	<p>b. On control A2, change the frequency to 2.99 MHz, set PTT switch on the audio adapter to MOM, and observe the rf output.</p> <p>c. Repeat step b for the following frequencies: 3.0, 3.99, 4.0, 5.99, 6.0, 7.99, 8.0, 11.99, 12.0, 15.99, 16.0, 23.99, 24.0, and 29.99 MHz.</p> <p>d. On control A2, set MEGAHERTZ KILOHERTZ to 02.0000 and POWER/ PUISSANCE to <input checked="" type="checkbox"/> . Check that the 1000-Hz input level to the receiver-transmitter group is -26 dBm. On the audio adapter, set PTT switch to MOM and observe the rf output.</p> <p>e. On control A2, change the frequency to 2.99 MHz, set the PTT switch on the audio adapter to MOM, and observe the rf output.</p> <p>f. Repeat step e for the following frequencies: 3.0, 3.99, 4.0, 5.99, 6.0, 7.99, 8.0, 11.99, 12.0, 15.99, 16.0, 23.99, 24.0, and 29.99 MHz.</p>	<p>26.6-35.1 V ac after tuning is complete.</p> <p>26.6-35.1 V ac after tuning is complete.</p> <p>8.6-15.0 V ac after tuning is complete.</p> <p>8.6-15.0 V ac after tuning is complete.</p> <p>8.6-15.0 V ac after tuning is complete.</p>	<p>Same as above.</p> <p>Same as above.</p> <p>Same as above.</p> <p>Same as above.</p> <p>Same as above.</p>
17 Transmit AM modulation	<p>On control A2, set MEGAHERTZ KILOHERTZ to 16.0000, POWER/ PUISSANCE to <input type="checkbox"/> , OFF/ FERME to mid-range and MODE to AM. Set oscillator for 1000 Hz and an input level to the receiver-transmitter group of -54 dBm measured on the ac vtvm when transmitter is keyed.</p>		

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
17 (cont)	<p>a. On the audio adapter, set PTT switch to MOM and observe carrier and sideband on the spectrum analyzer. Adjust the 1000-Hz audio input frequency to locate the peak sideband level.</p> <p>b. On oscillator, set input level to the receiver-transmitter group for -26 dBm. Repeat step a.</p>	<p>Amplitude of sideband and carrier are within ± 2 dB of each other.</p> <p>Amplitude of sideband and carrier are within ± 2 dB of each other.</p>	<p>Replace, in order, receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies, listed in table 2-1.</p> <p>Same as above.</p>
18 Transmit carrier suppression	<p>On control A2, set MEGAHERTZ KILOHERTZ to 16.0000, POWER/ PUISSANCE to <input type="checkbox"/> , OFF/ FERME to mid-range, and MODE to USB. Set oscillator for 1000 Hz and an input level to the receiver-transmitter group of -54 dBm measured on the ac vtvm. On the audio adapter, set PTT switch to MOM and observe the carrier suppression.</p> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> <p>If necessary to locate the carrier, set MODE switch on control A2 to AM, disconnect oscillator, and set PTT switch on the audio adapter to MOM.</p>	-50 dB minimum	Replace, in order receiver-transmitter, amplifier-coupler, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies listed in table 2-1.

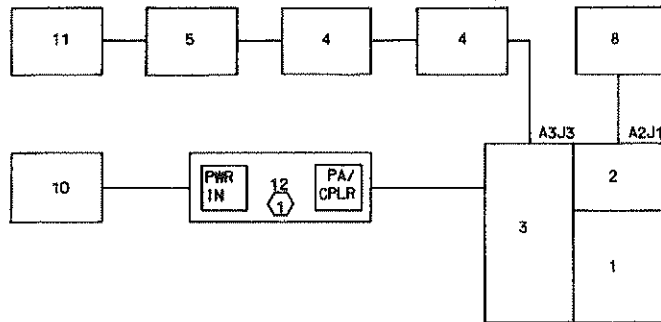
Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
<p>19 Transmit inter-modulation distortion</p>	<p>Connect the test equipment as shown in figure 2-2, test setup B.</p> <p>On control A2, set MEGAHERTZ KILOHERTZ to 02.0000, POWER/PUISSANCE to <input type="checkbox"/> , OFF/FERME to mid-range, and MODE to USB.</p> <p>On mixer-attenuator, set AUDIO LOAD/ OSC 1 IN to OSC 1 IN and AUDIO LOAD/ OSC 2 IN to AUDIO LOAD. Set oscillator No. 1 for 1000 Hz and an input level to the receiver-transmitter group of -32 dBm measured on the ac vtm.</p> <p>Set AUDIO LOAD/OSC 1 IN to AUDIO LOAD and AUDIO/OSC 2 IN to OSC 2 IN. Set oscillator No. 2 for 1600 Hz and an input level to the receiver-transmitter group of -32 dBm measured on the ac vtm.</p> <p>Set AUDIO LOAD/OSC 1 IN to OSC 1 IN (both oscillators will now be connected to the input of the receiver-transmitter group).</p> <p>a. On the audio adapter, set PTT switch to MOM and observe the third and fifth order intermodulation products on the spectrum analyzer.</p>	<p>-25 dB minimum relative to the 2-tone signal.</p>	<p>Replace, in order amplifier-coupler, receiver-transmitter, and control. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the sub-assemblies listed in table 2-1.</p>

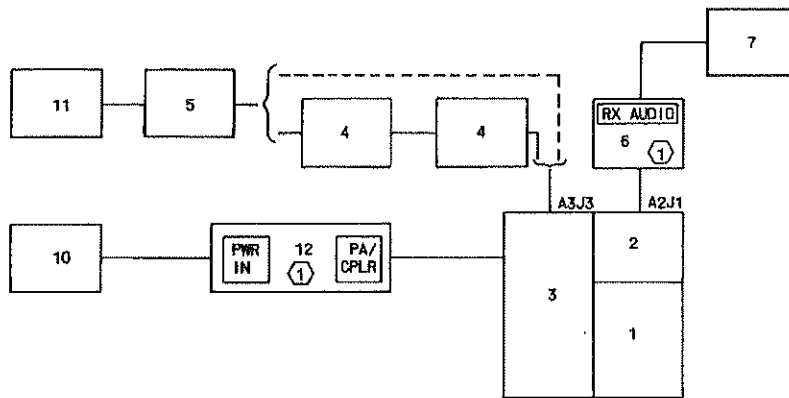
Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
19 (cont)	<p>b. On control A2, set MEGAHERTZ KILOHERTZ to 16.0000. Repeat step a.</p> <p>c. On control A2, set MEGAHERTZ KILOHERTZ to 29.0000. Repeat step a.</p>	<p>-25 dB minimum relative to the 2-tone signal.</p> <p>-25 dB minimum relative to the 2-tone signal.</p>	<p>Same as above.</p> <p>Same as above.</p>
20 Transmit cw operation	<p>Connect the test equipment as shown in figure 2-2, test setup A. Connect the oscilloscope in place of the spectrum analyzer. On control A2, set MEGAHERTZ KILOHERTZ to 16.0000, POWER/PUISSANCE to <input type="checkbox"/>, OFF/FERMÉ to mid-range, and MODE to USB. On the audio adapter, set CW KEY switch to MOM and note that cw side-tone is heard. Measure the cw hang time on the oscilloscope from the point the switch is closed to the point where the rf first appears.</p>	<p>0.75-1.25 seconds hang time.</p>	<p>Replace receiver-transmitter. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the sub-assemblies in table 2-1.</p>
21 Transmit alc attack time	<p>On control A2, set MEGAHERTZ KILOHERTZ to 16.0000, POWER/PUISSANCE to <input type="checkbox"/>, OFF/FERMÉ to mid-range, and MODE to USB. On the audio adapter, set CW KEY switch to MOM to trigger the oscilloscope.</p> <p>On the audio adapter, set CW KEY switch to MOM and measure alc attack time on the oscilloscope from the first appearance of output to the point where the output is within 3 dB of its final value.</p>	<p>15 milliseconds maximum.</p>	<p>Replace, in order, receiver-transmitter, and amplifier-coupler. If replacing the receiver-transmitter corrects the fault, replace, one at a time, the subassemblies in table 2-1.</p>

Table 2-4. Receiver-Transmitter Group Minimum Performance Test (cont)



TEST SETUP A



TEST SETUP B

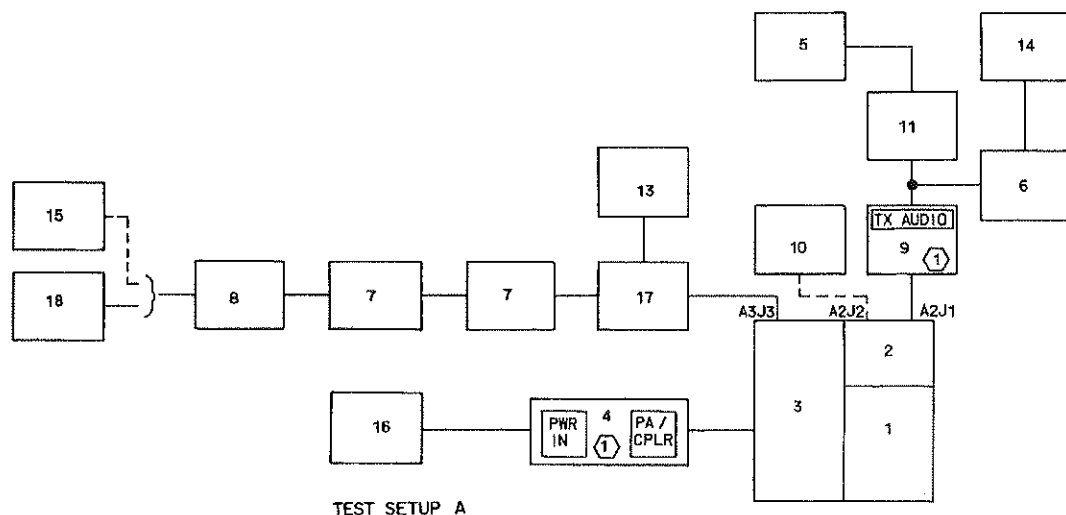
1. RECEIVER-TRANSMITTER A1
2. CONTROL A2
3. AMPLIFIER-COUPLER A3
4. ATTENUATOR, RF (2 REQUIRED)
5. ATTENUATOR, 6-dB
6. AUDIO ADAPTER
7. DISTORTION ANALYZER
8. HANDSET
9. ISOLATION TRANSFORMER
10. POWER SUPPLY, 22-30 V DC
11. SIGNAL GENERATOR
12. TEST FIXTURE

NOTES:

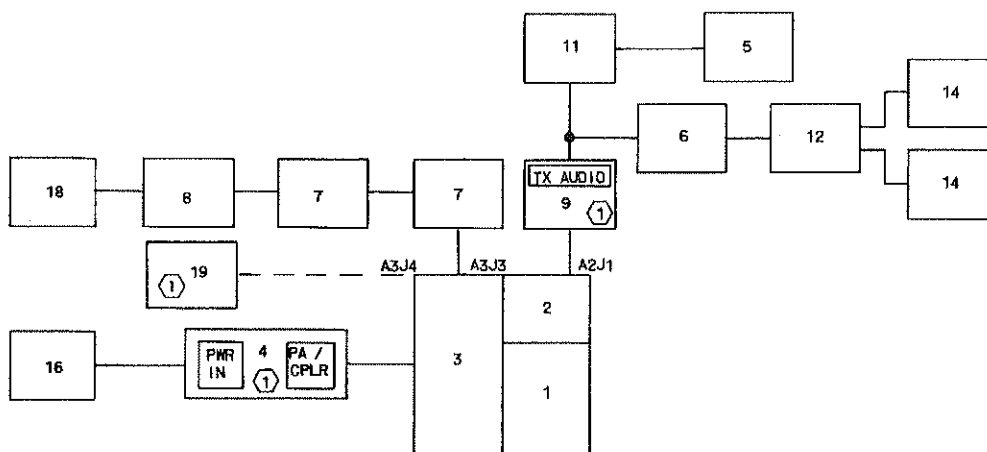
- ① PART OF RADIO TEST SET AN/PRM-501.
- ② DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-1. Receiver-Transmitter Group, Receive Test Setup



TEST SETUP A



TEST SETUP B

1. RECEIVER-TRANSMITTER A1
2. CONTROL A2
3. AMPLIFIER-COUPLER A3
4. TEST FIXTURE
5. AC VTVM
6. ATTENUATOR, AUDIO
7. ATTENUATOR, RF (2 REQUIRED)
8. ATTENUATOR, 6 dB
9. AUDIO ADAPTER
10. HANDSET
11. ISOLATION TRANSFORMER, 600 OHM
12. MIXER-ATTENUATOR, 600 OHM
13. MULTIMETER
14. OSCILLATOR (2 REQUIRED)
15. OSCILLOSCOPE
16. POWER SUPPLY, 22-30 V DC
17. PROBE COAXIAL T CONNECTOR
18. SPECTRUM ANALYZER
19. ANTENNA SIMULATOR

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-501.
- ② DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-2. Receiver-Transmitter Group, Transmit Test Setup

2.2.6 Receiver-Transmitter A1, Testing/Troubleshooting

2.2.6.1 Test Equipment Required

The following test equipment items from table 2-2 are required to perform the procedures in table 2-5.

Radio Test Set AN/PRM-501	Mixer-attenuator, 600-ohm (refer to figure 2-31)
Receiver-transmitter control	Multimeter
A c vtvm	Oscillator (2 required)
Attenuator, audio	Power supply, 22-30 V dc
Attenuator, rf (20 dB/20 watt/50-ohm)	Probe coaxial T connector
Attenuator, 6 dB	
Digital voltmeter	Signal generator (2 required)
Distortion analyzer	
Frequency counter	Spectrum analyzer (if section and 1-kHz to 110-MHz rf section)
Handset	
Isolation transformer, 600-ohm	Wave analyzer

2.2.6.2 Testing/Troubleshooting

Perform the procedures in the following table to isolate a fault to a replaceable subassembly or to verify proper operation of receiver-transmitter A1. When a defective subassembly is replaced, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Test Setup	<p>a. Connect the test equipment as shown in figure 2-3 test setup A.</p> <p>b. On test fixture, set controls as follows: PWR to OFF CPLR PWR to R/E R/E PWR to EXT C/H-004 to OFF BAND INFO to R/E AUX AF to OFF RF GAIN control (ADJUST to maximum counterclockwise) RF GAIN switch to disable (down position) ALC switch to EXT EXT ALC switch to +13V EXT ALC control (ALC ADJ) to maximum counterclockwise <u>AM-USB-LSB to USB</u> <u>KEY, PTT, CWK, ST, FLT, RCL, TIP, RX MUTE</u>, and <u>LP</u> to disable (down position) <u>RX ONLY</u> to ENABLE</p> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> <p>L and C switches have no affect and can be in any position.</p> <p>On audio adapter, set PTT and CW KEY to OFF.</p> <p>c. On control A2, set MEGA-HERTZ KILOHERTZ to 02.0000, POWER/PUISSANCE to <u>[E]</u>, OFF/FERMÉ to maximum counterclockwise (but not to off), and MODE to USB. On test fixture, set PWR to ON.</p>		

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
2 Power check	a. Adjust 22-30 V dc power supply for 25.2 ±0.1 V dc and observe line current reading on 22-30 V dc power supply ammeter.	55-70 mA	If less than 55 mA, perform step b. If greater than 70 mA, replace, in order, power supply A1A4, logic/tx A1A5A2, if/af A1A5A1, mixer A1A2, frequency synthesizer A1A6, and broadband amplifier A1A3.
	b. Measure voltage at 24V test point on test fixture.	+25.0 to +25.4 Vdc	Replace, in order, power supply A1A4, broadband amplifier A1A3, and chassis A1A1.
	c. Measure voltage at +13V test point on test fixture	+12.9 to +13.1 Vdc	Replace, in order, power supply A1A4, logic/tx A1A5A2, if/af A1A5A1, and frequency synthesizer A1A6.
	d. Measure voltage at +5V test point on test fixture.	+5.1 to +5.3 Vdc	Same as above.
	e. On test fixture, set <u>CWK</u> to ENABLE and observe line current reading on 22-30 Vdc power supply ammeter. Return <u>CWK</u> to down position.	55 to 75 mA.	Replace logic/tx A1A5A2. Check chassis A1A1 wiring.
	f. On test fixture, set <u>RX ONLY</u> to down position and <u>CWK</u> to ENABLE and observe line current reading on 22-30 V dc power supply ammeter. Return <u>RX ONLY</u> to ENABLE and <u>CWK</u> to down position.	235 to 280 mA.	Replace, in order broadband amplifier A1A3 and logic/tx A1A5A2. Check chassis A1A1 wiring.

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3 Tune start	On control A2, change each digit of the MEGAHERTZ KILOHERTZ control one digit at a time, and observe line current reading on 22-30 V dc power supply ammeter. Return MEGAHERTZ KILOHERTZ to 02.0000.	Current rises to 130 to 190 mA for approximately 3 seconds after each frequency change.	Replace frequency synthesizer A1A6. Check chassis A1A1 wiring.
4 Receive audio	On control A2, set OFF/FERMÉ to maximum clockwise and listen to handset.	Hiss is heard in earpiece.	Replace, in order, mixer A1A2 and if/af A1A5A1. Check chassis A1A1 wiring.
5 Receive audio tone	Set signal generator for 2.0010 MHz at a level of 5000 μ V and listen to handset.	1000-Hz tone is heard in earpiece.	Replace, in order, mixer A1A2, if/af A1A5A1, and frequency synthesizer A1A6. Check chassis A1A1 wiring.
6 Receive audio level	a. While listening to 1000-Hz tone in earpiece, turn OFF/FERMÉ from maximum clockwise to maximum counterclockwise (but not to off). b. Set OFF/FERMÉ to mid-range.	1000-Hz tone heard in earpiece decreases to low level.	Replace if/af A1A5A1. Check chassis A1A1 wiring.
7 Receive rf gain	a. Connect multimeter (dc probe) to RF GAIN test point (VOLTS) on the test fixture. On test fixture, set RF GAIN switch to ENABLE and turn RF GAIN control (ADJUST) from maximum counterclockwise to maximum clockwise while monitoring the handset and the multimeter. Disconnect multimeter. On test fixture, set RF GAIN switch to down position and RF GAIN control to maximum counterclockwise.	1000-Hz tone heard in earpiece decreases and multimeter indicates a voltage change.	Replace if/af A1A5A1. Check chassis A1A1 wiring.
8 Receive mute	On test set, set <u>RX MUTE</u> to ENABLE while monitoring the handset.	The 1000-Hz tone is not heard in earpiece.	Replace if/af A1A5A1. Check chassis A1A1 wiring.

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8 (cont)	b. On test set, set RX MUTE to down position.		
9 Receive agc	Remove the rf attenuator between the signal generator and the R/E connector (BNC) on the test fixture. On control A2, set MEGAHERTZ KILOHERTZ to 16.0000. Set signal generator for 16.0010 MHz at a level of 100 uV. Record the receiver output on the distortion analyzer (establishes a 0 dB reference point). Measure the dB change in receiver output on the distortion analyzer while changing the signal generator to several output levels between 3 uV and 100 uV and between 100 uV and 100,000 uV. Replace the rf attenuator between the signal generator and the R/E connector on the test fixture.	Less than 3 dB.	Replace, in order, if/af A1A5A1, mixer A1A2, and frequency synthesizer A1A6. Check chassis A1A1 wiring.
10 Receive sensitivity	<p>a. On control A2, set MEGAHERTZ KILOHERTZ to 02.0000. Set signal generator for 2.0010 MHz at a level of 10 uV. On the distortion analyzer, measure the signal-plus-noise to noise ratio ((S+N)/N) by nulling out the 1000-Hz audio.</p> <p>b. On control A2, set MODE to AM. Set signal generator for 2.0000 MHz, modulated 30% at 1000 Hz at a level of 35 uV. Measure the (S+N)/N ratio by turning off the AM modulation.</p> <p>c. On control A2, set MEGAHERTZ KILOHERTZ to 16.0000 and MODE to USB. Set signal generator for 16.0010 MHz at a level of 10 uV. Measure the (S+N)/N ratio as in step a.</p>	<p>Not less than 10 dB.</p> <p>Not less than 10 dB.</p> <p>Not less than 10 dB.</p>	<p>Replace, in order, mixer A1A2, if/af A1A5A1, frequency synthesizer A1A6, and power supply A1A4.</p> <p>Same as above.</p> <p>Same as above.</p>

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11 Receive if and image rejection	d. On control A2, set MODE to AM. Set signal generator for 16.0000 MHz, modulated 30% at 1000 Hz at a level of 35 uV. Measure the (S+N)/N ratio as in step b.	Not less than 10 dB.	Same as above.
	e. On control A2, set MEGAHERTZ KILOHERTZ to 29.0000 and MODE to USB. Set signal generator for 29.0010 MHz at a level of 10 uV. Measure the (S+N)/N ratio as in step a.	Not less than 10 dB.	Same as above.
	f. On control A2, set MODE to AM. Set signal generator for 29.0000 MHz, modulated 30% at 1000 Hz at a level of 35 uV. Measure the (S+N)/N ratio as in step b.	Not less than 10 dB.	Same as above.
	On control A2, set MEGAHERTZ KILOHERTZ to 16.0000 and MODE to USB. Set signal generator for 16.0010 MHz at a level of 10 uV. Record the receiver output on the distortion analyzer (establishes a reference level).		
	a. Set signal generator to 4.9990 MHz (2nd if) and adjust the output level until the reference level is obtained on the distortion analyzer.	At least 60 dB above the reference level.	Replace, in order, mixer A1A2 and if/af A1A5A1.
	b. Set signal generator to 114.9990 MHz (1st if) and adjust the output level until the reference level is obtained on the distortion analyzer.	At least 60 dB above the reference level.	Same as above.
	c. Set signal generator to 245.9990 MHz (1st if image) and adjust the output level until the reference level is obtained on the distortion analyzer.	At least 50 dB above the reference level.	Same as above.

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11 (cont)	d. Set signal generator to 25.9990 MHz (2nd if image) and adjust the output level until the reference level is obtained on the distortion analyzer.	At least 50 dB above the reference level.	Same as above.
12 Receive harmonic distortion	Set signal generator for 16.0010 MHz at a level of 10,000 uV. On control A2, adjust the OFF/FERME control for a receiver output of +10 dBm on the distortion analyzer. On the distortion analyzer, measure the harmonic distortion.	Less than 10%.	Replace, in order, if/af A1A5A1, mixer A1A2, frequency synthesizer A1A6, and power supply A1A4.
13 Receive selectivity	a. Set signal generator for 16.0010 MHz at a level of 10 uV. Adjust signal generator frequency for maximum receiver output on the distortion analyzer (establishes a reference level). Increase signal generator output level to 20 uV. Change the signal generator to the reference frequency plus 350 Hz and observe the receiver output on the distortion analyzer. Change the signal generator to the reference frequency plus 3200 Hz and observe the receiver output on the distortion analyzer.	Equal to or greater than the reference level.	Replace, in order, if/af A1A5A1, mixer A1A2, and frequency synthesizer A1A6.
	b. Increase signal generator output level to 10,000 uV. Change the signal generator to the frequency for maximum receive output on the distortion analyzer. Record the receiver output on the distortion analyzer (establishes a reference level). Change the signal generator to the reference frequency plus 6700 Hz and observe the receiver	Equal to or less than the reference level.	Same as above.

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)


STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
13 (cont)	<p>output on the distortion analyzer. Change the signal generator to the reference frequency minus 300 Hz and observe the receiver output on the distortion analyzer.</p> <p>c. On control A2 set MODE to AM (frequency 16,0000 MHz), set signal generator to 16.0000 MHz, 1000 uV modulated 30% at 1000 Hz.</p> <p>d. Adjust modulation frequency for maximum receive output on distortion analyzer (establishes a reference level).</p> <p>e. Increase modulation frequency to 2750 Hz and measure receive output.</p>	Within ± 4.5 dB of reference step d.	Same as step a.
14 Receive in-band intermodulation	<p>a. Connect test equipment as shown in figure 2-3 test setup B. Set controls as specified in step 1. b. On control A2, set MEGAHERTZ KILOHERTZ to 2.0000, POWER/PUISSANCE to , OFF/FERMÉ to mid-range, and MODE to USB. On test fixture set PWR to ON.</p> <p>b. Set one signal generator to 2.00100 MHz and the other signal generator to 2.00111 MHz with an output level of 200 mV from each signal generator. Observe the third-order intermodulation products on the wave analyzer.</p>		

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
14 (cont)	c. Tune the wave analyzer to obtain peak response near 890 Hz and 1200 Hz.	No less than -30 dB.	Replace, in order, if/af A1A5A1 and mixer A1A2.
15 Receive front-end intermodulation	<p>a. On control A2, set MEGAHERTZ KILOHERTZ to 16.0000. On test fixture, disconnect jumper cable connected to R/E. Connect one of the signal generators to the R/E connector. Set this signal generator for 16.0010 MHz at a level of 2 uV. Observe the receiver output on the wave analyzer (establishes a reference level). Return test setup to the original configuration.</p> <p>b. Set one signal generator to 7.0000 MHz and the other signal generator to 9.0010 MHz with an output level of 2000 uV from each rf signal generator. Observe the receiver output on the wave analyzer.</p> <p>c. Set one signal generator to 10.0000 MHz and the other signal generator to 13.0005 MHz with an output level of 2000 uV from each signal generator. Observe the receiver output on the wave analyzer.</p>	<p>Less than the reference level.</p> <p>Less than the reference level.</p>	<p>Replace, in order, if/af A1A5A1 and mixer A1A2.</p> <p>Same as above.</p>
16 Receive desensitization	Disconnect the wave analyzer from the isolation transformer and connect the distortion analyzer in its place. On control A2, set MEGAHERTZ KILOHERTZ to 02.0000.		

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
16 (cont)	<p>a. Set one signal generator to 2.0010 MHz at an output level of 2 uV and the other signal generator to 2.0500 MHz at an output level of 2 uV.</p> <p>b. Increase the output level on the signal generator tuned to 2.0500 MHz by 70 dB (to 6320 uV). Measure the signal-plus-noise to noise ratio (S+N)/N by nulling out the 1000-Hz audio.</p> <p>c. On the signal generator tuned to 2.0500 MHz, set the frequency for 1.9500 MHz with the same output level as in step b. Measure the (S+N)/N ratio as in step b.</p>	<p>Not less than 7 dB.</p> <p>Not less than 7 dB.</p>	<p>Replace, in order, mixer A1A2, if/af A1A5A1, mixer A1A2, frequency synthesizer A1A6, and power supply A1A4.</p> <p>Same as above.</p>
17 Receive discrete single signal spurious	<p>On control A2, set MEGAHERTZ KILOHERTZ to 16.0000. Set one signal generator to off. Set the other signal generator to 16.0010 MHz at a level of 2 uV. Observe the receiver output on the distortion analyzer (establishes a reference level). Set the signal generator to 16.1010 MHz at a level of 2000 uV. Observe the receiver output on the distortion analyzer.</p>	<p>Less than the reference level.</p>	<p>Replace, in order, if/af A1A5A1, mixer A1A2, frequency synthesizer A1A6, and power supply A1A4.</p>
18 Receive cross modulation	<p>On control A2, set MODE to AM. Set one signal generator to off. Set the other signal generator to 16.0000 MHz modulated 30% at 1000 Hz at a level of 20 uV. Observe the receiver output on the distortion analyzer (establishes a reference level).</p> <p>Remove the 1000 Hz modulation. Turn on the other signal generator and set it for 14.4000 MHz modulated 30% at 1000 Hz at a</p>	<p>Not less than 10 dB below the reference level.</p>	<p>Replace, in order, if/af A1A5A1, mixer A1A2, frequency synthesizer</p>

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
<p>18 (cont)</p> <p>19 Transmit sidetone and power out- put</p>	<p>level of 200 mV. Observe the receiver output on the distortion analyzer.</p> <p>a. Connect test equipment as shown in figure 2-4 test setup A, except connect the frequency counter to the 20 dB attenuator instead of the spectrum analyzer.</p> <p>b. On test fixture, set controls as follows: PWR to OFF CPLR PWR to R/E R/E PWR to EXT C/H-004 to OFF BAND INFO to R/E AUX AF to OFF RF GAIN control (ADJUST) to maximum counterclockwise RF GAIN switch to disable (down position) ALC switch to EXT EXT ALC switch to +13V EXT ALC control (ALC ADJ) to maximum counterclockwise AM-USB-LSB to USB <u>KEY</u>, <u>PTT</u>, <u>CWK</u>, <u>ST</u>, <u>FLT</u>, <u>RCL</u>, <u>TIP</u>, <u>RX ONLY</u>, <u>RX MUTE</u>, and LP to disable (down position).</p> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> <p>L and C switches have no affect and can be in any position.</p> <p>On audio adapter, set PTT and CW KEY to OFF. On test fixture, set PWR to ON.</p>		<p>A1A6, and power supply A1A4.</p>

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
19 (cont)	c. On test fixture, set \overline{TIP} to ENABLE and listen to hand set.	2,000-Hz tone heard in earpiece.	Replace, in order, broadband amplifier A1A3, logic/tx A1A5A2, if/af A1A5A1, mixer A1A2, frequency synthesizer A1A6. Check chassis A1A1 wiring.
	d. Measure rf voltage output level on the multimeter.	3.5-4.7 Vrms	Same as above.
20 Transmit fault	a. On test fixture, leave \overline{TIP} set to ENABLE and set FLT to ENABLE. Measure rf voltage output level on the multimeter.	Rf voltage output level falls to zero.	Replace logic/tx A1A5A2.
	b. On test fixture, set \overline{TIP} to down position while listening to the handset. On test fixture, set FLT to down position.	Pulsed tune fault tone (beeping) in the earpiece.	Same as above.
21 Transmit frequency	a. On control A2, set MEGAHERTZ KILOHERTZ to 29.9999, POWER/PUISSANCE to <input type="checkbox"/> OFF/FERMÉ to mid-range, and MODE to AM. On test fixture, set AM-USB-LSB to AM and \overline{PTT} to ENABLE. Observe the frequency output on the frequency counter.	29.999876-29.999924 MHz	Replace, in order, frequency synthesizer A1A6, if/af A1A5A1, mixer A1A2, and broadband amplifier A1A3. Check +25.2-V dc filtered circuits on chassis A1A1.
	b. Repeat step a for the following frequencies: 18.8888, 7.7777, and 2.0000 MHz. On test fixture, set \overline{PTT} to down position. Disconnect the frequency counter from the rf attenuator and connect the spectrum analyzer in its place.	18.888780-18.888820 MHz, 7.777690-7.777710 MHz, and 1.999995-2.000005 MHz.	Same as above.
22 Transmit CW key and sidetone	a. On test fixture, set \overline{CWK} to ENABLE. Observe rf output on the multimeter.	Rf output present	Replace, in order, broadband amplifier A1A3, logic/tx A1A5A2, mixer A1A2, and frequency synthesizer A1A6. Check chassis A1A1 wiring.

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
22 (cont)	b. On test fixture, set ST to ENABLE. Monitor sidetone on the headset. c. On test fixture, set ST and <u>CWK</u> to down position.	2000-Hz tone heard in the headset.	Replace, in order, logic/tx A1A5A2 and frequency synthesizer A1A6. Check chassis A1A1 wiring.
23 Transmit frequency response	a. On control A2, set MEGA-HERTZ KILOHERTZ to 02.0000 and MODE to USB. b. Set oscillator for 1000 Hz, and an input to the receiver-transmitter of -20 dBm measured on the ac vtvm. On test fixture, set <u>PTT</u> to ENABLE and AM/USB/LSB to USB. Establish an rf output reference on the spectrum analyzer.		
	<div style="border: 1px solid black; width: fit-content; margin: 0 auto; padding: 2px; text-align: center;">NOTE</div> <p>The spectrum analyzer BANDWIDTH, SCAN WIDTH, and SCAN TIME PER DIV must be the same for all frequencies.</p> c. Repeat step b for the following frequencies on control A2: 15.0000 MHz, 24.0000 MHz, and 29.9000 MHz.	Not more than 5 dB variation in the readings for the four frequencies.	Replace, in order, broadband amplifier A1A3, mixer A1A2, logic/tx A1A5A2, frequency synthesizer A1A6, if/af A1A5A1, and power supply A1A4.
24 Transmit intermodulation distortion	Connect test equipment as shown in figure 2-4 test setup B. On control A2 set MEGAHERTZ KILOHERTZ to 02.0000.		

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
24 (cont)	<p>On mixer-attenuator, set AUDIO LOAD/OSC 1 IN to OSC 1 IN and AUDIO LOAD/OSC 2 IN to AUDIO LOAD. Set oscillator No. 1 for 1000 Hz and an input level to the receiver-transmitter group of -32 dBm measured on the ac vtvm.</p> <p>Set AUDIO LOAD/OSC 1 IN to AUDIO LOAD and AUDIO LOAD/OSC 2 IN to OSC 2 IN. Set oscillator No. 2 for 1600 Hz and an input level to the receiver-transmitter group of -32 dBm measured on the ac vtvm.</p> <p>Set AUDIO LOAD/OSC 1 IN to OSC 1 IN (both oscillators will now be connected to the input of the receiver-transmitter group).</p> <p>a. On test fixture, set $\overline{\text{PTT}}$ to ENABLE and EXT ALC control (ALC ADJ) for 3.5 V rms on the multimeter.</p> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> <p>EXT ALC switch must be set to +13V and ALC switch must be set to EXT.</p>		

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
24 (cont)	<p>b. Observe the third order intermodulation products on the spectrum analyzer.</p> <p>c. On control A2, set MEGAHERTZ KILOHERTZ to 16.0000. Check that oscillators have -32 dBm outputs and ALC ADJ on the test fixture is set for 3.5 Vrms on the multimeter. Observe the third order intermodulation products on the spectrum analyzer.</p> <p>d. Repeat step e for 29.9000 MHz.</p> <p>e. On test fixture, set $\overline{\text{PTT}}$ down.</p>	<p>-33 dB minimum</p> <p>-33 dB minimum</p> <p>-33 dB minimum</p> <p>-33 dB minimum</p>	<p>Replace in order, broadband amplifier A1A3, mixer A1A2, if/af A1A5A1, logic/tx A1A5A2, frequency synthesizer, A1A6, and power supply A1A4.</p> <p>Same as above.</p> <p>Same as above.</p> <p>Same as above.</p>
25 Transmit carrier and opposite sideband suppression	<p>a. Connect test equipment as shown in figure 2-4A. On control A2, set MEGAHERTZ KILOHERTZ to 16.0000.</p> <p>b. On test fixture, set $\overline{\text{CWK}}$ to ENABLE and observe the carrier and lower sideband suppression on the spectrum analyzer.</p> <p>c. On test fixture, set $\overline{\text{CWK}}$ down.</p> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> <p>If necessary to locate the carrier, set MODE switch on control A2 and AM-USB-LSB on the test fixture to AM.</p>	<p>-55 dB minimum</p>	<p>Replace if/af A1A5A1.</p>

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
<p>26 Transmit modulation and audio compression</p>	<p>a. On control A2, set MODE to AM. On test fixture, set AM-USB-LSB to AM.</p> <p>b. Set oscillator for 1000 Hz and an input level to the receiver-transmitter of -54 dBm.</p> <p>c. On test fixture, set $\overline{\text{PTT}}$ to ENABLE and observe the carrier and sideband levels on the spectrum analyzer. Adjust the oscillator frequency for peak output level of the sideband on the spectrum analyzer.</p> <p>d. Repeat step b and c with an oscillator input level to the receiver-transmitter of -26 dBm.</p> <p>e. On test fixture, set $\overline{\text{PTT}}$ down.</p>	<p>Carrier and sideband levels nearly equal (± 2 dB).</p> <p>Carrier and sideband levels nearly equal (± 2 dB).</p>	<p>Increase audio oscillator output level to -53 dBm and repeat step c. If the correct indication is still not obtained, replace in order, if/af A1A5A1 and logic/tx A1A5A2.</p> <p>Same as above.</p>
<p>27 Transmit second harmonic and spurious</p>	<p>a. On control A2, set MEGAHERTZ KILOHERTZ to 02.0000 and MODE to USB. On test fixture, set AM-USB-LSB to USB.</p> <p>b. On test fixture, set $\overline{\text{CWK}}$ to ENABLE and EXT ALC control (ALC ADJ) for 3.5 Vrms on the multimeter.</p> <p>c. Observe the second harmonic on the spectrum analyzer.</p>	<p>-25 dB minimum</p>	<p>Replace in order, frequency synthesizer A1A6, if/af A1A5A1, logic/tx A1A5A2, mixer A1A2, broadband amplifier A1A3, and power supply A1A4.</p>

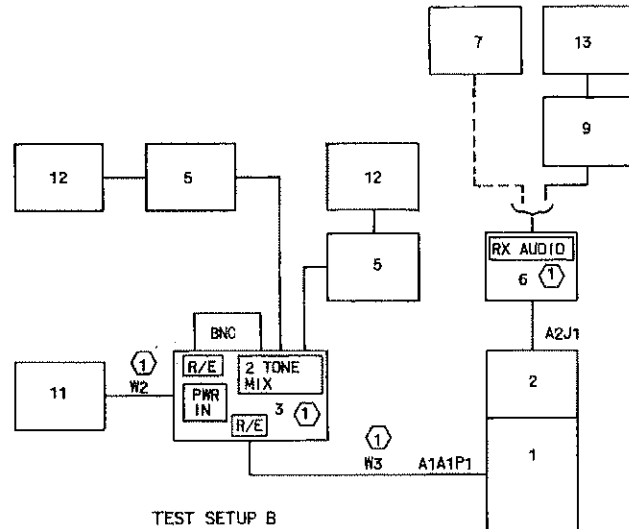
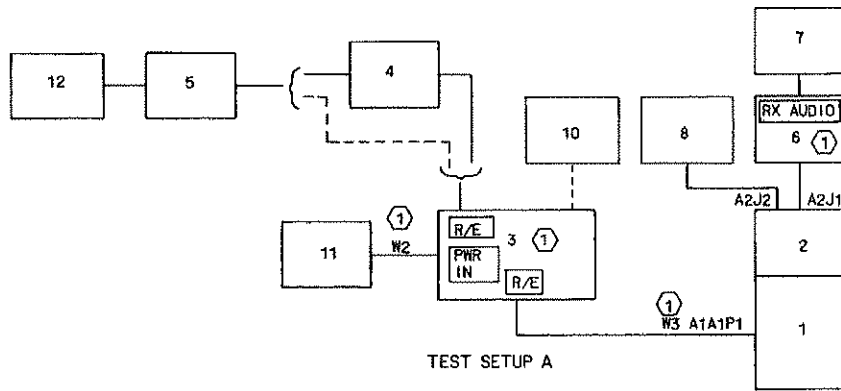
Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
27 (cont)	d. On control A2, set MEGA-HERTZ KILOHERTZ to 16.0000. Check that ALC ADJ on test fixture is set for 3.5 Vrms on the multimeter. Observe the second harmonic on the spectrum analyzer.	-25 dB minimum	Same as above.
	e. Repeat step d. for a frequency of 29.9000 MHz.	-25 dB minimum	Same as above.
	f. On control A2, set MEGA-HERTZ KILOHERTZ to 02.0100 and repeat step b.		
	g. Observe spurious outputs at 10 kHz (SB), 100 kHz (SB), 1 MHz, and 7 MHz on the spectrum analyzer. Tune spectrum analyzer to 1 MHz and 7 MHz to observe spurious outside (if any) at those frequencies.	-50 dB minimum	Replace in order, frequency synthesizer A1A6, if/af A1A5A1, mixer A1A2, broadband amplifier A1A3, logic/tx A1A5A2, and power supply A1A4.
	h. On control A2, set MEGA-HERTZ KILOHERTZ to 16.0000 and repeat step b.		
	i. Observe spurious outputs at 100 kHz, 5 MHz, and 21 MHz in same manner as step g.	-50 dB minimum	Same as above.
	j. On control A2, set MEGA-HERTZ KILOHERTZ to 29.9000 and repeat step b.		
	k. Observe spurious outputs at 100 kHz and 34.9 MHz in same manner as step g.	-50 dB minimum	Same as above.
l. On test fixture, set \overline{CWK} to down position and ALC ADJ to maximum counterclockwise position.			

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
28 Transmit alc	<p>a. Set oscillator for 1000 Hz and input level to the receiver-transmitter of -20 dBm.</p> <p>b. On test fixture, set $\overline{\text{PTT}}$ to ENABLE and observe the rf output on the spectrum analyzer (establishes a reference level).</p> <p>c. Adjust EXT ALC control (ALC ADJ) for +6 V dc at ALC test point (VOLTS). Observe the rf output on the spectrum analyzer.</p>	Not less than 30 dB below the reference level.	Replace in order, broadband amplifier A1A3, mixer A1A2, if/af A1A5A1, and power supply A1A4.

Table 2-5. Receiver-Transmitter A1, Testing/Troubleshooting (cont)



1. RECEIVER-TRANSMITTER A1
2. CONTROL A2
3. TEST FIXTURE
4. ATTENUATOR, RF
5. ATTENUATOR, 6 dB
6. AUDIO ADAPTER
7. DISTORTION ANALYZER
8. HANDSET
9. ISOLATION TRANSFORMER
10. MULTIMETER
11. POWER SUPPLY, 22-30 V DC
12. SIGNAL GENERATOR (2 REQUIRED)
13. WAVE ANALYZER

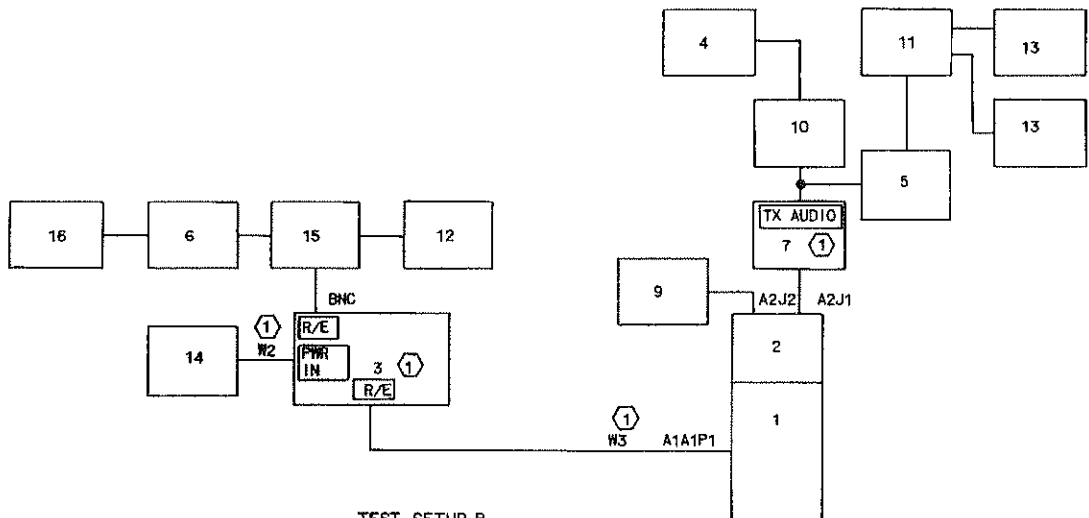
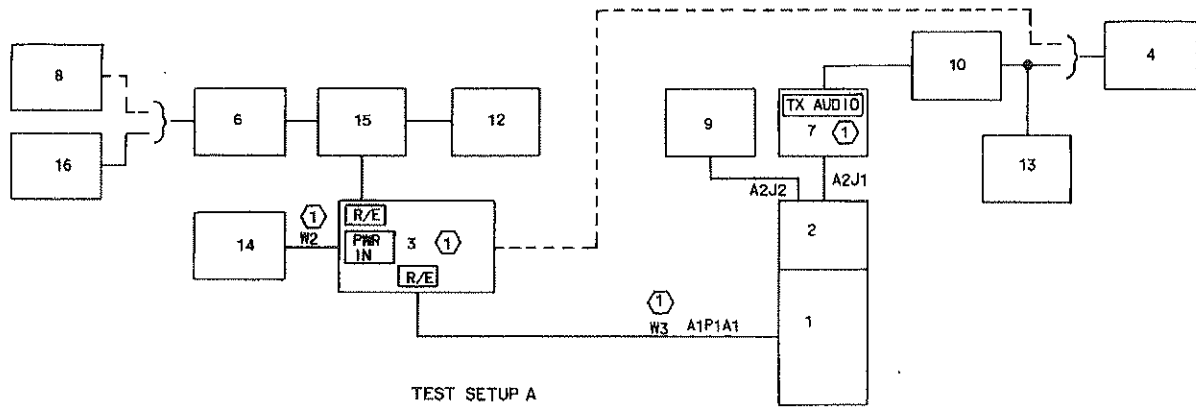
NOTES:

① PART OF RADIO TEST SET AN/PRM-501.

② DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-3. Receiver-Transmitter A1, Receive Test Setup



1. RECEIVER-TRANSMITTER A1
2. CONTROL A2
3. TEST FIXTURE
4. AC VTVM
5. ATTENUATOR, AUDIO
6. ATTENUATOR, RF
7. AUDIO ADAPTER
8. FREQUENCY COUNTER
9. HANDSET
10. ISOLATION TRANSFORMER, 600Ω
11. MIXER ATTENUATOR, 600Ω
12. MULTIMETER
13. OSCILLATOR (2 REQUIRED)
14. POWER SUPPLY, 22-30 V DC
15. PROBE COAXIAL T CONNECTOR
16. SPECTRUM ANALYZER

- NOTES:
- (1) PART OF RADIO TEST SET AN/PRM-501.
 - (2) DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-4. Receiver-Transmitter A1, Transmit Test Setup

2.2.7 Amplifier-Coupler A3, Testing/Troubleshooting

2.2.7.1 Test Equipment Required

The following test equipment items from table 2-2 are required to perform the procedures in table 2-6:

Radio Test Set AN/PRM-501	Power supply, 22-30 V dc
Attenuator, rf (20 dB/20 watt 50 ohm) (2 required)	Probe coaxial T connector
Digital voltmeter	Signal generator (2 required)
Multimeter	Spectrum analyzer (if sectional and 1-kHz to 110-MHz rf section required)
Power Divider	Voltage divider, capacitive (100:1)

2.2.7.2 Testing/Troubleshooting

Perform the procedures in the following table to isolate a fault to a replaceable subassembly or to verify proper operation of amplifier-coupler A3. When a defective subassembly is replaced, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Test setup	<p>a. Connect test equipment as shown in figure 2-5 test setup A.</p> <p>b. On test fixture, set controls as follows: PWR to OFF CPLR PWR to EXT BAND INFO to TESTER AUX AF to OFF ALC to PA/C L to MIN C to MIN AM-USB-LSB to USB <u>KEY</u>, <u>PTT</u>, <u>CWK</u>, <u>ST</u>, <u>FLT</u>, <u>RCL</u>, <u>TIP</u>, <u>RX ONLY</u>, <u>RX MUTE</u>, and <u>LP</u> to disable (down position).</p> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> <p>R/E PWR, C/H-004, RF GAIN, and EXT ALC controls have no affect and can be in any position.</p> <p>On test fixture, set PWR to ON.</p> <p>Adjust 22-30 V dc power supply for 25.2 ±0.1 V dc at 24V test point on test fixture.</p>		
2 High voltage switch alignment	<p>a. On test fixture, set <u>MHZ</u> to 020 (2 MHz) and set <u>RCL</u> to ENABLE momentarily, then to down position. Switch should operate. If not, set <u>MHZ</u> to 030 (3 MHz) and set <u>RCL</u> to ENABLE momentarily, then to down position. Inspect high voltage switch A3A9S1A rear rotor contact.</p>	<p>Refer to figure 2-6. Contact should engage high voltage segment by approximately 1.2 mm (0.047 in).</p>	<p>If switch did not operate, check fuse A3A3A1F1 and replace if necessary. Replace, in order, bandswitch A3A5, control logic A3A2, and autotransformer A3A9.</p>

Table 2-6. Amplifier-Coupler A3, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
2 (cont)	b. On test fixture, set <u>MHz</u> to 250 (25 MHz). Set <u>RCL</u> to <u>ENABLE</u> momentarily, then to down position. Inspect high voltage switch A3A9S1A rear rotor contact.	Refer to figure 2-6. Contact should engage 24-30 MHz segment.	Same as above.
	c. On test fixture, set <u>MHz</u> to 080 (8 MHz). Set <u>RCL</u> to <u>ENABLE</u> , then to down position. Inspect high voltage switch A3A9S1A rear rotor contact.	Refer to figure 2-6. Contact should engage 8-12 MHz segment.	Same as above.
3 Receive only	a. On test fixture, set <u>MHz</u> to 080 (8 MHz) and <u>RX ONLY</u> to <u>ENABLE</u> . Set <u>RCL</u> to <u>ENABLE</u> momentarily, then to down position. When element stops running, inspect tuning coil A3A8L1 and tuning capacitor A3A7C1 position.	Tuning coil A3A8L1 and tuning capacitor A3A7C1 both run to maximum position.	If both elements fail to operate, replace control logic A3A2. If A3A8L1 fails to operate, replace tuning coil A3A8. If A3A7C1 fails to operate, replace tuning capacitor A3A7.
	b. On test fixture, set <u>MHz</u> to 120 (12 MHz). Set <u>RCL</u> to <u>ENABLE</u> momentarily, then to down position.	Tuning capacitor A3A7C1 remains at maximum position and tuning coil A3A8L1 runs to mid position.	Same as above.
4 Keying current demand	On test fixture, set <u>RX ONLY</u> to down position and <u>KEY</u> to <u>ENABLE</u> and observe current on the 22-30 V dc power supply ammeter. On test fixture, set <u>KEY</u> to down position.	Current will rise to 300 to 460 mA when switch is enabled.	Replace in order, control logic A3A2 and servo amplifier A3A1. Check chassis A3A3 wiring.
5 Fault	On test fixture, set <u>KEY</u> to <u>ENABLE</u> and monitor the elapsed time between the <u>KEY</u> switch being set to <u>ENABLE</u> and a logic 1 voltage appearing at FLT test point as measured on the digital voltmeter.	10-36 seconds	Replace in order, control logic A3A2 and servo amplifier A3A1. Check chassis A3A3 wiring.

Table 2-6. Amplifier-Coupler A3, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7 High voltage fault	<p>a. On test fixture, set MHZ to 080 (8 MHz). Set signal generator for 8.0 MHz. Disconnect probe coaxial T connector at A3J3 on amplifier-coupler A3 (leave A3J3 open circuit). On test fixture, momentarily set <u>RCL</u> to ENABLE and set <u>KEY</u> to ENABLE. Increase the signal generator output until amplifier-coupler A3 tunes.</p> <p>b. Connect the multimeter with the capacitive voltage divider to the output end of L1 of tuning coil A3A8. Slowly increase signal generator output and monitor the voltage on the multimeter until the voltage indication is approximately 6.7 V rms (670 V rms equivalent with 100:1 divider).</p> <p>c. On test fixture, set <u>KEY</u> to down position. Reduce signal generator output to minimum. Reconnect probe coaxial T connector at A3J3 on amplifier-coupler A3. Reconnect the multimeter, without the capacitive voltage divider, to the probe coaxial T connector.</p>	Amplifier-coupler A3 faults.	If fault does not occur at 670 V rms, adjust A3A3A2R1 for fault. If this does not produce the NORMAL INDICATION, replace over-voltage detector A3A3A2.
8 Power output	<p>a. On test fixture, set MHZ to 020 (2 MHz). Set signal generator for 2.0 MHz. On test fixture, momentarily set <u>RCL</u> to ENABLE and set <u>KEY</u> to ENABLE. Increase the signal generator output until amplifier-coupler A3 tunes.</p>		

Table 2-6. Amplifier-Coupler A3, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8 (cont)	b. Observe voltage on digital voltmeter at ALC test point (VOLTS) on test fixture just before the coupler advances to operate mode (monitor multimeter at rf output).	Alc voltage is negative and rf output is 21.2 to 27.4 Vrms just before coupler advances to operate.	Replace in order, power amplifier A3A4, control logic A3A2, bandswitch A3A5, discriminator A3A6, servo amplifier A3A1, tuning capacitor A3A8 and autotransformer A3A9. Check chassis A3A3 wiring.
	c. Increase signal generator output until -2.0 to -3.0 V dc is obtained on digital voltmeter at ALC test point (VOLTS) on the test fixture. Observe rf output on the multimeter. Reduce signal generator output to minimum. On test fixture set <u>KEY</u> to down position.	26.6 to 35.0 Vrms.	Same as above.
	d. Repeat step a for 8 MHz, then repeat step c.	26.6 to 35.0 Vrms.	Same as above.
	e. Repeat step a for 16 MHz, then repeat step c.	26.6 to 35.0 Vrms.	Same as above.
	f. Repeat step a for 29.9 MHz, then repeat step c.	26.6 to 35.0 Vrms.	Same as above.
	g. On test fixture, set <u>LP</u> to ENABLE and repeat steps a and c.	8.6 to 15.0 Vrms.	Same as above.
	h. Repeat step a for 8 MHz, then repeat step c.	8.6 to 15.0 Vrms.	Same as above.
	i. Repeat step a for 16 MHz, then repeat step c.	8.6 to 15.0 Vrms.	Same as above.
	j. Repeat step a for 29.9 MHz, then repeat step c.	8.6 to 15.0 Vrms.	Same as above.
	k. On test fixture, set <u>LP</u> to down position.		

Table 2-6. Amplifier-Coupler A3, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
9 (cont)	<p>output for both signal generators to minimum.</p> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> <p>Reference level is the rf input from one of the signal generators.</p> <p>f. On test fixture, set MHz to 150 (15 MHz). Set both signal generators for 15.0000 MHz. Turn off signal generator no. 2.</p> <p>g. Repeat step c.</p> <p>h. Adjust one of the signal generators for a frequency difference between the two signal generator outputs of 1600 Hz.</p> <p>i. Repeat step e.</p> <p>j. On test fixture, set MHz to 299 (29.9 MHz). Set both signal generators for 29.9000 MHz. Turn off signal generator no. 2.</p> <p>k. Repeat step c.</p>	<p>Approximately 32 Vrms.</p> <p>-25 dB minimum</p> <p>Approximately 32 Vrms.</p>	<p>capacitor A3A7, tuning coil A3A8, and autotransformer A3A9.</p> <p>Adjust both signal generators for an rf output of 32 Vrms.</p> <p>Replace in order, power amplifier A3A4, bandswitch A3A5, discriminator A3A6, tuning capacitor A3A7, tuning coil A3A8, and autotransformer A3A9.</p> <p>Adjust signal generators for an rf output of 32 Vrms.</p>

Table 2-6. Amplifier-Coupler A3, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
9 (cont)	1. Repeat step h and e.	-25 dB minimum	Replace in order, power amplifier A3A4, bandswitch A3A5, discriminator A3A7, tuning capacitor A3A7, tuning coil A3A8, and autotransformer A3A9.
10 Harmonic suppression	<p>a. Turn off signal generator no. 2.</p> <p>b. On test fixture, set MHZ to 022 (2.2 MHz). Set signal generator no. 1 for 2.2000 MHz. Adjust the signal generator output for an amplifier-coupler A3 rf output of 31.6 Vrms on the multimeter.</p> <p>c. Observe the second and third harmonic outputs on the spectrum analyzer referenced to the fundamental (signal generator frequency).</p> <p>d. Repeat steps b and c for the following frequencies: 2.7 MHz, 3.5 MHz, 5.0 MHz, 7.0 MHz, 10.0 MHz, 14.0 MHz, 20.0 MHz, and 27.0 MHz.</p>	-40 dB minimum	Replace in order, power amplifier A3A4, bandswitch A3A5, discriminator A3A6, tuning capacitor A3A7, tuning coil A3A8, and autotransformer A3A9.
11. Tune time	<p>a. Connect test equipment as shown in figure 2-5 test setup A. Repeat step 1.b.</p> <p>b. On test fixture, set MHZ to 020 (2 MHz). Momentarily set RCL to ENABLE and</p>		

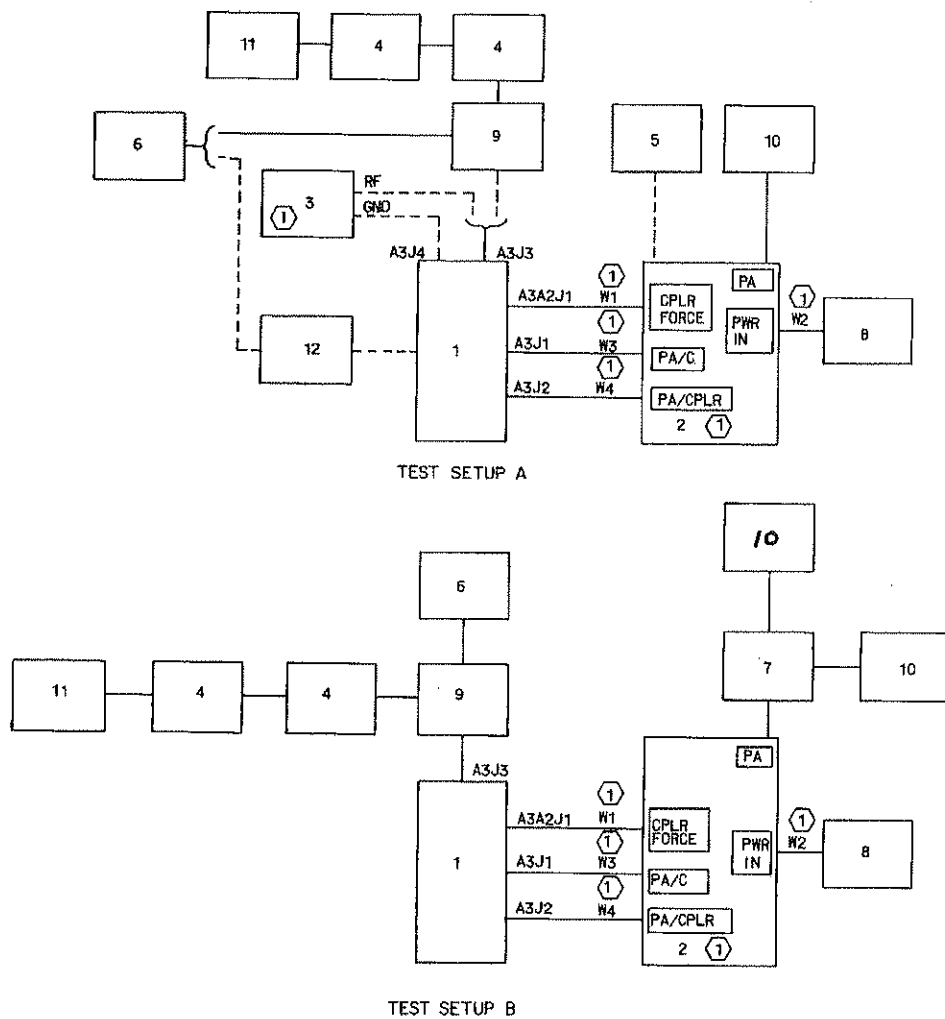
Table 2-6. Amplifier-Coupler A3, Testing/Troubleshooting. (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11 (cont)	<p>set <u>KEY</u> to ENABLE. Set signal generator for 2.0 MHz. Adjust signal generator output for an amplifier-coupler A3 rf output of 31.6 Vrms on the multimeter. On test fixture, set <u>KEY</u> to down position, then set MHz to 299 (29.9 MHz).</p> <p>c. Set signal generator for 29.9 MHz. On test fixture, momentarily set <u>RCL</u> to ENABLE and momentarily set <u>KEY</u> to ENABLE. Observe time required for amplifier-coupler A3 to tune up. Reduce signal generator output to minimum.</p> <p>d. Repeat steps b and c for the following frequency combinations: 29.9 MHz to 2.0 MHz 2.0 MHz to 12.0 MHz 12.0 MHz to 22.0 MHz 22.0 MHz to 2.0 MHz</p> <p>e. Remove the probe coaxial T connector at A3J3 and connect the antenna simulator as shown in figure 2-5 test setup A.</p> <p>f. Repeat steps b, c, and d.</p> <p>g. Remove the antenna simulator and connect the probe coaxial T connector as shown in figure 2-5A.</p>	<p>7 seconds maximum</p> <p>7 seconds maximum</p> <p>7 seconds maximum</p>	<p>Replace in order, control logic A3A2, servo amplifier A3A1, power amplifier A3A4, band-switch A3A5, discriminator A3A6, tuning capacitor A3A7, tuning coil A3A8, and auto-transformer A3A9.</p> <p>Same as above.</p> <p>Same as above.</p>

Table 2-6. Amplifier-Coupler A3, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
12 Automatic retune	<p>a. On test fixture, set MHZ for 240 (24 MHz) and momentarily set \overline{RCL} to ENABLE and set \overline{KEY} to ENABLE. Set signal generator for 24.0 MHz. Increase the signal generator output until amplifier-coupler A3 tunes. On test fixture, set \overline{KEY} to down position.</p> <p>b. Set signal generator for 29.9 MHz. On test fixture set \overline{KEY} to ENABLE and observe time required for amplifier-coupler A3 to tune up.</p>	7 seconds maximum	Replace in order, control logic A3A2, servo amplifier A3A1, power amplifier A3A4, band-switch A3A5, discriminator A3A7, tuning capacitor A3A7, tuning coil A3A8, and auto-transformer A3A9.
13 Sidetone	<p>a. On test fixture, set MHZ to 160 (16 MHz) and momentarily set \overline{RCL} to ENABLE. Set signal generator for 16.0 MHz. Adjust signal generator output for an amplifier-coupler A3 rf output of 31.6 Vrms on the multimeter. Set \overline{KEY} to up position.</p> <p>b. Using digital voltmeter, monitor the voltage at test point ST on the test fixture. On test fixture, set ST to up position.</p> <p>c. Reduce the signal generator output until the voltage at test point ST rises to approximately + 5 Vdc. Observe the rf output on the multimeter.</p>	Approximately 28 Vrms.	Replace in order, power amplifier A3A4, control logic A3A2, discriminator A3A6, servo amplifier A3A3, and bandswitch A3A5.

Table 2-6. Amplifier-Coupler A3, Testing/Troubleshooting (cont)



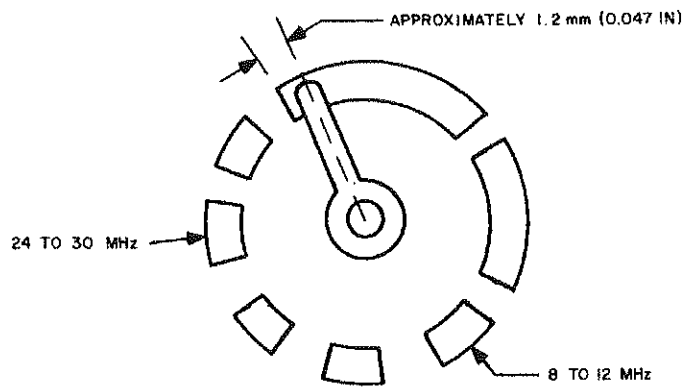
1. AMPLIFIER-COUPLER A3
2. TEST FIXTURE
3. ANTENNA, SIMULATOR
4. ATTENUATOR, RF
5. DIGITAL VOLTMETER
6. MULTIMETER
7. POWER DIVIDER
8. POWER SUPPLY, 22-30 V DC
9. PROBE COAXIAL T CONNECTOR
10. SIGNAL GENERATOR (2 REQ)
11. SPECTRUM ANALYZER
12. VOLTAGE DIVIDER, CAPACITIVE

NOTES:

- (1) PART OF RADIO TEST SET AN/PRM-501.
- (2) DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED

TP5-4796-014

Figure 2-5. Amplifier-Coupler A3, Test Setup



TPA-0194-012

Figure 2-6. Amplifier-Coupler A3, High Voltage Switch A3A9S1A
Rear Rotor Contact

2.2.8 Generator Minimum Performance Test

The second-line maintenance concept for the generator is to isolate a fault to a second-line replaceable item and replace the faulty item with a good operating item. Second-line replaceable items for the generator are listed in table 2-7.

Table 2-8 is a minimum performance test for the generator. Perform test steps in the order presented in the PROCEDURES column. Results in the NORMAL INDICATION column will be obtained if the generator is operating properly. If these results are not obtained, perform the procedure described in the IF INDICATION IS ABNORMAL column and repeat the minimum performance test. Refer to disassembly and reassembly procedures in this section to remove and replace items.

The following test equipment items from table 2-3 are required to perform the procedures in table 2-8:

Power supply, 40-100 V dc

Ammeter

Multimeter

Battery, 25.2 V dc

ITEM	COLLINS PART NUMBER
Circuit board A1	629-5777-001
Power supply generator	635-4868-001
Capacitor A2C1	913-5019-200
Indicator lamps DS1 and DS2	262-2171-040
Lamp socket with green lens XDS1	262-1385-030
Lamp socket with red lens XDS2	262-1385-010
Case	629-5772-002
Cover	629-5784-001

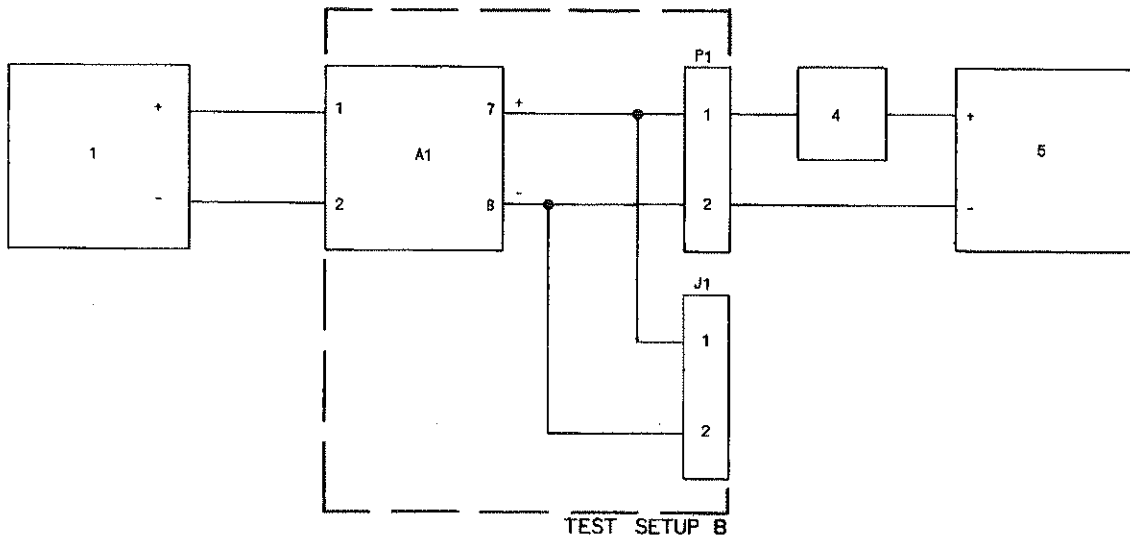
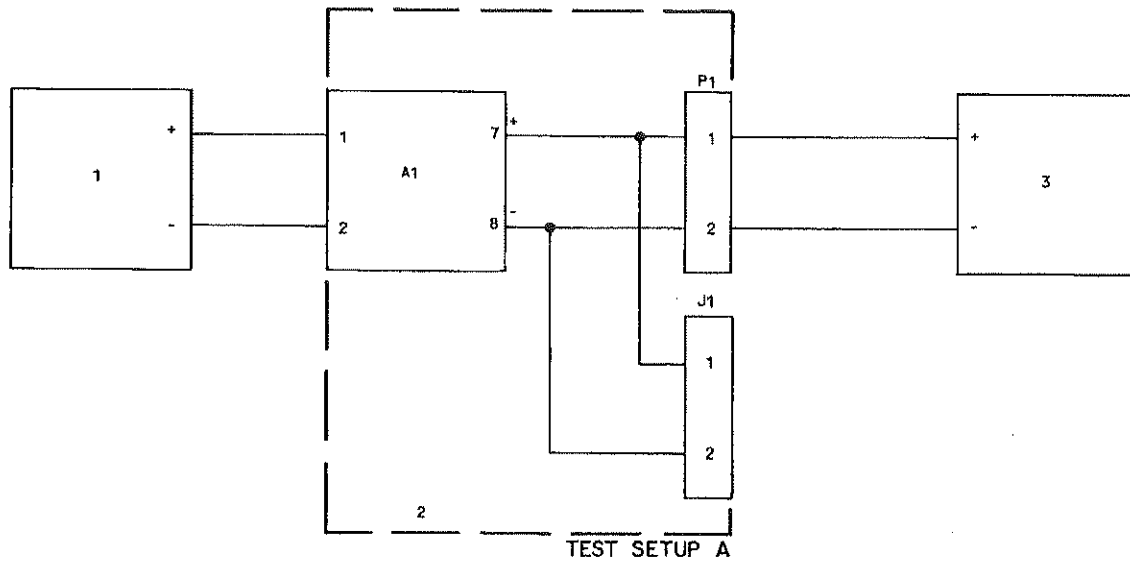
Table 2-7. Generator Second-Line Replaceable Items

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1	Remove cover from generator (refer to paragraph 2.5) and visually inspect subassemblies for signs of wear or deformation. Crank generator and verify movement.	Handle turns freely with no binding, grating, etc.	Replace power supply generator.
2	Measure resistance between chassis and positive terminal of both connectors on the generator case (negative lead of ohmmeter must be connected to chassis ground).	5 megohms minimum	Replace circuit board A1. Locate and correct short circuit condition.
3	Verify continuity between connectors (refer to schematic diagram).	+ battery connector, + radio connector, and pin 7 of A1 are common. - battery connector, - radio connector, pin 8 of A1, and the chassis are common.	Correct faulty wiring in the chassis.
4	Disconnect the leads from the power supply generator to pins 1 and 2 of A1 and connect test equipment as shown in figure 2-7 test setup A. Turn on 40-100 V dc power supply and adjust output from 40 to 100 V dc while monitoring regulator output on the multimeter. Turn off 40-100 V dc power supply.	30 - 32 V dc over entire 40 to 100 V dc input range.	Replace A1.
5	Reverse the output leads from the 40-100 V dc power supply (+ connected to pin 2 of A1, - connected to pin 1 of A1). Turn on 40-100 V dc power supply and adjust output from 40 to 100 V dc while monitoring regulator output multimeter. Turn off 40-100 V dc power supply.	30 - 32 V dc over entire 40 to 100 V dc input range.	Replace A1.

Table 2-8. Generator Minimum Performance Test

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
6	Remove the multimeter from the test setup and connect ammeter and battery as shown in figure 2-7 test setup B. Turn on 40-100 V dc power supply and adjust the current limit on the 40-100 V dc power supply to 300 mA. Increase the 40-100 V dc power supply output voltage very slowly until the green lamp on the generator lights. Note the output current when green lamp lights.	40 - 80 mA	Replace DS1. If DS1 is good, but lamp does not light, replace A1.
7	Increase voltage slowly until red lamp lights. Note the output current when the red lamp lights. Turn off 40-100 V dc power supply.	150 - 250 mA	Replace DS2. If DS2 is good, but lamp does not light, replace A1.
8	Remove the 40-100 V dc power supply from the test setup of figure 2-7 test setup B (leave ammeter and battery connected as shown) and solder generator leads to circuit board A1.		
	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">NOTE</div> <p>Polarity of leads is of no consequence because of bridge rectifier.</p>		
	Crank the generator and slowly increase speed until green indicator lights. Note the output current when the green lamp lights.	40 - 150 mA	Replace power supply generator.
9	Slowly increase cranking speed until the red indicator lamp lights. Note the output current when the red lamp lights.	150 - 300 mA	Replace power supply generator.
10	Slowly increase cranking speed while monitoring the output current. Note maximum output current.	400 mA minimum	Replace power supply generator

Table 2-8. Generator Minimum Performance Test (cont)



- 1. POWER SUPPLY, 40-100 V DC
- 2. GENERATOR
- 3. MULTIMETER
- 4. AMMETER
- 5. STORAGE BATTERY BB-706/U

TPA-0195-014

Figure 2-7. Generator, Test Setup

2.3 THIRD-LINE MAINTENANCE

2.3.1 General

When a second-line replaceable item is received, testing/troubleshooting procedures are performed to locate a fault. After a faulty item has been repaired, install it in a receiver-transmitter group and test in accordance with the second-line minimum performance test of paragraph 2.2.5.

2.3.2 Test Equipment Requirements

The following table lists all the test equipment or equivalent required to perform third-line maintenance procedures. Common general purpose tools and materials that are readily available are not included. Also, some cables, adapters, T-connectors, etc. required for the test equipment setups are not identified in the test equipment table or on the test setup diagrams. A list of only the test equipment required to perform testing/troubleshooting of a specific third-line maintenance item is located just prior to that procedure.

2.3.3 Power Supply A1A4, Testing/Troubleshooting

Perform the procedures in table 2-10 to isolate a fault to the lowest replaceable subassembly or component or to verify proper operation of the unit. Refer to the schematic diagrams and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-10.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug In Unit TS-5110/PRM-502 (power supply test adapter)
Power Supply PP-5290/PRM-502 (power supply)

Digital voltmeter

Oscilloscope

Resistor decade box (2 required)

ITEM	RECOMMENDED TYPE
Radio Test Set AN/PRM-502	Radio Test Set AN/PRM-502
Attenuator, audio (0-110 dB/5-watt/ 600-ohm)	Hewlett-Packard 350D
Attenuator, rf (20 dB/20 watt/50-ohm) (2 required)	Weinschel 9214-20
Attenuator, 6-dB (2 required)	Measurements 80-ZH3
Digital voltmeter	Fluke 8000A
Distortion analyzer	Hewlett-Packard 333A
Frequency counter If load, 500-ohm	Fluke 1920A Fabricate locally, refer to item 9 Fig 2-18.
Impedance bridge	Hewlett-Packard 4260A
Isolation transformer, 600-ohm	Hewlett-Packard 11005A
Load, 50-ohm	Bird 8085
Mixer-attenuator, 600-ohm	Customer supplied, refer to Figure 2-31 for schematic diagram
Multimeter	Hewlett-Packard 410C
Oscillator (2 required)	Hewlett-Packard 204C
Oscilloscope	Tektronix 464 or Hewlett-Packard 1741A
Power divider	Weinschel 1506A
Power supply, 0-40 V dc (0.5 amp)	Hewlett-Packard 6102A
Probe coaxial T connector	Hewlett-Packard 11042A
Resistor decade box, 0-100,000 ohms (2 required)	Clarostat 240C
Rms voltmeter	Hewlett-Packard 3400A
Rf vector impedance meter	Hewlett-Packard 4815A
Rf voltmeter, with 50 ohm adapter	Boonton 92C, includes 50 ohm adapter model 91-8B

Table 2-9. Third-Line Maintenance Test Equipment Required

ITEM	RECOMMENDED TYPE
Voltage divider, (100:1)	Boonton 91-7C
Selective voltmeter/wave analyzer	Hewlett-Packard 3581C
Signal generator (2 required)	Hewlett-Packard 8640B with option 001 and option 003 or fuseholder 11509A
Spectrum analyzer	Hewlett-Packard 141T with 8552B if section, 8553B rf section, and 8554B rf section

Table 2-9. Third-Line Maintenance Test Equipment Required (Cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	a. On test adapter, set POWER to OFF b. Install power supply A1A4 on test adapter and connect power supply and the digital voltmeter as shown in figure 2-8. c. On power supply, set POWER to ON. On test adapter, set POWER to ON, LOAD +5.2V to OPEN, LOAD +13V to OPEN, and DVM SELECT to +25.2V. On power supply, adjust OUTPUT VOLTAGE control for +25.2 V dc on the digital voltmeter.		
2 +13 V output voltage	a. On test adapter, set LOAD +13V to 270 OHMS and DVM SELECT to +13V. b. Observe voltage on digital voltmeter at DVM test points.	+12.9 to +13.1 V dc	Check the following: Q6/Q7, Q4/Q5, VR4/VR2, CR1, Q1/Q3, R9 (Refer to step 13 of this procedure.) C5/C6.
3 +5.2V output voltage	a. On test adapter, set LOAD +13V to OPEN, LOAD +5.2V to 100 OHMS, and DVM SELECT to +5.2V. b. Observe voltage on digital voltmeter at DVM test points.	+5.1 to +5.3 V dc	Check the following: Q8/Q9, Q11/Q12, Q10, VR6, C13/C14, R23 (Refer to step 13 of this procedure.)

Table 2-10. Power Supply A1A4, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4 +25.2 V current	a. On test adapter, set LOAD +5.2V to OPEN and ensure that LOAD +13V is set to OPEN. b. Set DVM SELECT to +25.2V CUR .1 MA/MV. c. Hold 25.2 V CURRENT in MONITOR position while observing current on digital voltmeter at DVM test points.	50 mV (5 mA) maximum	Check the following: Q2, Q1/Q3, VR2, VR4, VR6, Q8/Q9, Q13/Q14, CR1, C7/C8, C13/C14 R9/R23 (Refer to step 13 of this procedure.)
5 +13V operating period	a. Connect the oscilloscope to the collector of A1A4Q1 (casing). b. On test adapter, set LOAD +13V to 270 OHMS. Observe the operating period (time for one switching cycle) on the oscilloscope.	14 μ sec to 35 μ sec on time of Q1.	Check the following: C15 L1 R14 CR1 Q1 Q4/Q5
6 +5.2 V operating period	a. Connect the oscilloscope to collector of A1A4Q8 (casing). b. On test adapter, set LOAD +5.2V to 100 OHMS. Observe the operating period (time for one switching cycle) on the oscilloscope.	13 μ sec to 35 μ sec on time of Q8.	Check the following: C13 L4 R31 Q8 CR5 Q11/Q12
7 +13V ripple	a. Connect the oscilloscope to +13V connector on test adapter.		

Table 2-10. Power Supply A1A4, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7 (cont)	b. On test adapter, ensure that LOAD +13V is set to 270 OHMS. Observe the peak-to-peak ripple voltage on the oscilloscope.	15 mV peak-to-peak maximum	Check the following: L1/C5 L2/C6 VR2 VR4 CR1
8 +5.2V ripple	a. Connect the oscilloscope to +5.2V connector on test adapter. b. On test adapter, ensure that LOAD +5.2V is set to 100 OHMS. Observe peak-to-peak ripple voltage on the oscilloscope.	20 mV peak-to-peak maximum	Check the following: L4/C13 L5/C14 CR5 VR6 L3 C12
9 +13V regulation	a. On test adapter, set DVM SELECT to +13V and LOAD +13V to 270 OHMS. Observe voltage on digital voltmeter. b. On test adapter, set LOAD +13V to 560 OHMS. Observe voltage on digital voltmeter.	No more than 0.05 V dc variation between readings of steps a and b.	Check the following: Q6/Q7 Q4/Q5 Q3 VR4 C9 CR1 Q1
10 +5.2V regulation	a. On test adapter, set DVM SELECT to +5.2V and LOAD +5.2V to 15 OHMS. Observe voltage on digital voltmeter. b. On test adapter, set LOAD +5.2V to 100 OHMS. Observe voltage on digital voltmeter.	No more than 0.08 V dc variation between readings of steps a and b.	Check the following: Q11/Q12 Q9/Q10 VR6 C12 CR5

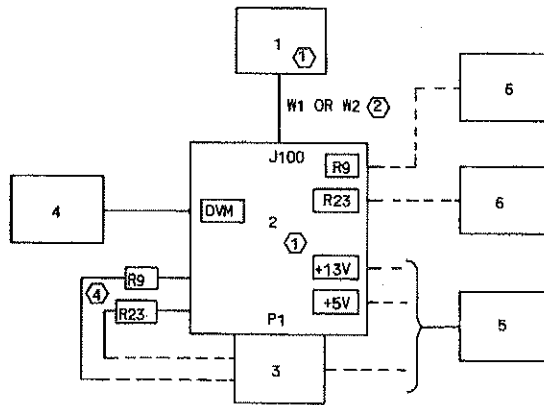
Table 2-10. Power Supply A1A4, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11 +5.2V over-current protection	a. On test adapter, set DVM SELECT to I SHORT CIRCUIT 10 MA/MV. b. Hold SHORT CIRCUIT CURRENT in +5.2V position while observing current on digital voltmeter at DVM test points. c. Repeat step 3.	 65 mV (650 mA) maximum +5.1 to +5.3 V dc	 Check the following: Q11/Q12 Q13/Q14 C11/VR6 Same as for step 3.
12 +13V over-current protection	a. On test adapter, set DVM SELECT switch to I SHORT CIRCUIT 10 MA/MV. b. Hold SHORT CIRCUIT CURRENT in +13V position while observing digital voltmeter at DVM test points. c. Repeat step 2. <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> Step 13 is the procedure for adjusting +5.2V dc and +13V dc output. Perform this procedure only when referenced in steps 2 through 4.	30 mV (300 mA) maximum +12.9 to +13.1 V dc	Check the following: Q2 C4 C2 Q4/Q5 Q3/Q1
13 Resistor R9 and R23 test selection	a. On test adapter, set POWER to OFF, 25.2 V CURRENT to MONITOR, LOAD +13V to OPEN, LOAD +5.2V to OPEN, SHORT CIRCUIT CURRENT to center position, and DVM SELECT to +25.2V. b. Remove R9 and R23 from power supply A1A4. c. Connect one resistor decade box to TEST SELECT R9 jacks on test adapter and set for 100 K ohms. Connect		

Table 2-10. Power Supply A1A4, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
13 (cont)	<p>pendant test leads, labelled R9 across resistor mounting terminals on A1A4.</p> <p>d. Connect second resistor decade box to TEST SELECT R23 jacks on test adapter and set for 100 K ohms. Connect pendant test leads, labelled R23 across resistor mounting terminals on A1A4.</p> <p>e. On test adapter, set DVM SELECT to +25.2V CUR .1MA/MV and POWER to ON. Hold 25.2V CURRENT in the MONITOR position and observe input current with digital voltmeter.</p> <p>f. On test adapter, set LOAD +13V to 270 OHMS and DVM SELECT to +13V.</p> <p>g. Select the R9 resistance value on resistor decade box that provides a reading of +13 \pm0.1 V dc on digital voltmeter.</p> <p>h. Set LOAD +13V to OPEN, LOAD +5.2V to 100 OHMS, and DVM SELECT to +5.2V.</p> <p>i. Select R23 resistance value on resistance decade box for a +5.2 \pm0.1 V dc reading on the digital voltmeter.</p>	<p>50 mV (5 mA) maximum</p> <p>+12.9 to +13.1 V dc</p> <p>+5.1 to +5.3 V dc</p>	<p>Replace R9 with test value selected on decade box.</p> <p>Replace R23 with test value selected on decade box.</p>

Table 2-10. Power Supply A1A4, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. POWER SUPPLY TEST ADAPTER
3. POWER SUPPLY A1A4
4. DIGITAL VOLTMETER
5. OSCILLOSCOPE
6. RESISTOR DECADE BOX (2 REQUIRED)

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.
- ④ PENDANT TEST LEADS, PART OF POWER SUPPLY TEST ADAPTER.

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Figure 2-8. Power Supply A1A4,
Test Setup

2.3.4 Broadband Amplifier A1A3, Testing/Troubleshooting

Perform the procedures in table 2-11 to isolate a fault to the lowest replaceable subassembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-11.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5111/PRM-502 (broadband amplifier test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Attenuator, 6-dB (2 required)

Digital voltmeter

Power divider

Rf voltmeter

Signal generator (2 required)

Spectrum analyzer (if section and 1-kHz to 110-MHz if section required)

Voltage Divider 100:1

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	<ul style="list-style-type: none"> a. On test adapter, set POWER and KEY to OFF. b. Install broadband amplifier A1A3, on test adapter and connect power supply as shown in figure 2-9. c. On power supply set POWER to ON. Connect digital voltmeter (H) to I MON MA/MV, (L) to GND test points. d. On test adapter, set POWER to ON. e. On power supply adjust OUTPUT VOLTAGE control for +25.2 Vdc on the digital voltmeter. 		
2 Keyline open	On test adapter connect digital voltmeter to I MON MA/MV test points and observe voltage (1 mV equals 1 mA).	0 mV (0 mA)	Check the following: K1, Q4, C9-C11 and C17.
3 Keyline close	On test adapter, set KEY to ON. Observe voltage on digital voltmeter. Set KEY to OFF.	170 to 210 mV (170 to 210 mA)	Check the following: Q4, VR2, Q1-Q3 and Q5.
4 Gain	<ul style="list-style-type: none"> a. On test adapter, connect rf voltmeter, with 50 ohm adapter to RF OUT connector and signal generator (through 6-dB attenuator) to RF IN connector. b. On test adapter, set KEY to ON. c. Set signal generator for 15.0 MHz, unmodulated, at -14 dBm 		

Table 2-11. Broadband Amplifier A1A3, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4 (cont)	d. Measure rf output on rf voltmeter.	+21 to +25 dBm (gain equals 41 to 46 dB)	Check the following: VR1, C1-C3, CR1, CR2, CR7 and CR12.
5 Frequency response	a. Set signal generator for 2.0 MHz and adjust for +20 dBm output measured on the rf voltmeter.	Reference	
	b. Change signal generator frequency to 15.0 MHz (do not change its output level). Measure rf output on rf voltmeter.	Not less than +19.5 dBm	Check the following: C1-C3, L1, L2, CR1, CR2, CR7, CR12, and Q1-Q5.
	c. Change signal generator frequency to 30.0 MHz. Measure rf output on rf voltmeter.	Same as step a.	Same as above.
	d. Change signal generator frequency to 115.0 MHz. Measure rf output on rf voltmeter.	Not less than 50 dB down from output measured in step 4d.	Same as above.
	e. Disconnect signal generator and on test adapter set POWER and KEY to OFF.		
6 Inter-modulation distortion	a. Connect two signal generators (through 6-dB attenuators) and power divider to RF IN connector on test adapter.		
	b. On test adapter, set POWER and KEY to ON.		
	c. Adjust the two signal generators for 1-kHz separation at 2.0 MHz and an output from each signal generator of +5 dBm.		
	d. Disconnect rf voltmeter and connect spectrum analyzer to RF OUT connector on test adapter.		

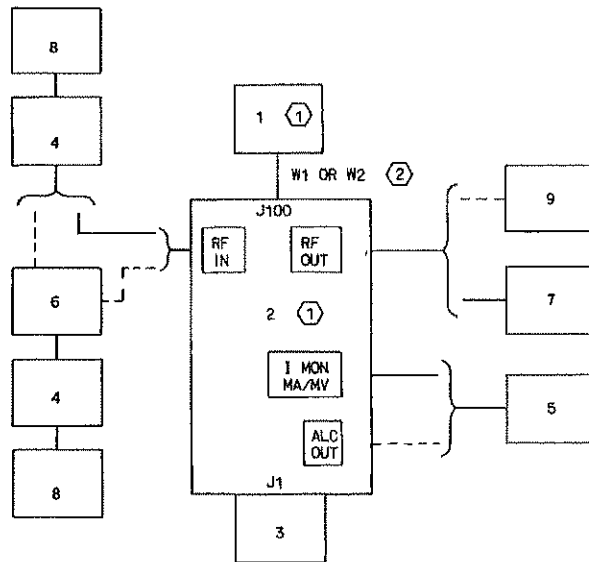
Table 2-11. Broadband Amplifier A1A3, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
6 (cont)	<p>e. Use the rf input with the highest frequency tone as the reference. Measure third order intermodulation product in dB below the reference.</p> <p>f. Repeat steps c and e at 15.0 and 30.0 MHz.</p> <p>g. Disconnect spectrum analyzer, two signal generators and power divider from test adapter.</p> <p>h. On test adapter, set POWER and KEY to OFF.</p>	<p>No less than 40 dB down.</p> <p>No less than 30 dB down.</p>	<p>Check the following: C1-C3, L1, L2, CR1, CR2, CR7, CR12 and Q1-Q5.</p> <p>Same as above.</p>
7 Harmonic output	<p>a. Connect signal generator (through 6-dB attenuator) to RF IN connector on test adapter.</p> <p>b. Connect rf voltmeter, with 50 ohm adapter, to RF OUT connector on test adapter.</p> <p>c. On test adapter, set POWER and KEY to ON.</p> <p>d. Set signal generator for 2.0 MHz and adjust for a +20-dBm output measured on the rf voltmeter.</p> <p>e. Disconnect rf voltmeter and connect spectrum analyzer to RF OUT connector on test adapter.</p> <p>f. Measure second and third order harmonics with spectrum analyzer.</p>	<p>Second order: No less than 25 dB down.</p> <p>Third order: No less than 35 dB down.</p>	<p>Check the following: C1-C3, L1, L2, CR1, CR2, CR7, CR12 and Q1-Q5.</p>

Table 2-11. Broadband Amplifier A1A3, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7 (cont)	g. Disconnect spectrum analyzer and connect rf voltmeter to RF OUT connector on test adapter. h. Repeat steps d through g at 15.0 and 30.0 MHz.	Same as step f.	Same as above.
8 ALC	a. Connect rf voltmeter through 100:1 divider and 50-ohm adapter to RF OUT connector on test adapter. b. Set signal generator for 15.0 MHz and adjust for 50 mV (equivalent to 5 V rms) measured on rf voltmeter. c. With digital voltmeter, measure dc voltage at ALC OUT test point.	-1.4 to -1.9 V dc	Check the following: VR2, CR8, C13 and Q4.

Table 2-11. Broadband Amplifier A1A3, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. BROADBAND AMPLIFIER TEST ADAPTER
3. BROADBAND AMPLIFIER A1A3
4. ATTENUATOR, 6 dB (2 REQUIRED)
5. DIGITAL VOLTMETER
6. POWER DIVIDER
7. RF VOLTMETER
8. SIGNAL GENERATOR (2 REQUIRED)
9. SPECTRUM ANALYZER

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY
- ③ DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-9. Broadband Amplifier A1A3,
Test Setup

2.3.5 Discriminator A3A6, Testing/Troubleshooting

Perform the procedures in table 2-12 to isolate a fault to the lowest replaceable subassembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-12.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5112/PRM-502 (discriminator test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Attenuator, 6-dB

Digital voltmeter

Multimeter

Signal generator

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	<p>a. On test adapter, set UNIT POWER and FAN to OFF.</p> <p>b. Install discriminator A3A6 on test adapter and connect power supply as shown in figure 2-10.</p> <p>c. On power supply set POWER to ON. Connect digital voltmeter (H) to CURRENT MON 10 MA/MV, (L) to GND. On test adapter, set UNIT POWER and FAN to ON. On power supply adjust OUTPUT VOLTAGE control for +25.2 V dc on the digital voltmeter.</p>		
2 Input current	<p>a. Connect both digital voltmeter leads to CURRENT MON 10 MA/MV test points.</p> <p>b. Observe voltage on digital voltmeter.</p> <div data-bbox="467 1203 643 1266" style="border: 1px solid black; padding: 2px; margin: 10px auto; width: fit-content;">CAUTION</div> <p>Dc input not to exceed 250 mV (2.5 A) monitored with digital voltmeter at CURRENT MON 10 MA/MV test points.</p> <div data-bbox="467 1503 643 1566" style="border: 1px solid black; padding: 2px; margin: 10px auto; width: fit-content;">CAUTION</div> <p>Signal generator rf output must be turned OFF when switching circuit select or BAND MHZ selectors.</p>	250 mV (2.5A) maximum	Check power supply and test adapter.

Table 2-12. Discriminator A3A6, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3 (cont)	<p>h. Set circuit select to 29.99 MHz (sense). Do not readjust signal generator output level. Observe voltage on digital voltmeter at monitor PHASING test point. Record voltage deviation from tracking error and compute sensitivity. Sensitivity is defined as the absolute value of the algebraic differences between sense and tracking voltage levels.</p> <p>i. Repeat step h for each of the following frequencies (select applicable bands):</p> <p>2.0 MHz</p> <p>4.0, 8.0, and 14.0 MHz</p> <p>20.0 MHz</p> <p>26.0 MHz</p>	<p>Sensitivity (sense minus tracking error level) should be no less than 100 mV.</p> <p>Tracking error no more than +65 mV. Sensitivity no less than 60 mV.</p> <p>Tracking error no more than +50 mV. Sensitivity no less than 100 mV.</p> <p>Tracking error no more than +100 mV.</p> <p>Sensitivity no less than 100 mV.</p> <p>Tracking error no more than +120 mV. Sensitivity no less than 100 mV.</p>	<p>Readjust A3A6A3R5 to reduce tracking error to minimum.</p> <p>Check the following: A3A6A2T1, T2 A3A6A3T3 A3A6A2CR1, CR2, CR3 A3A6A2L3 A3A6A3CR5, CR6</p> <p>Adjust A3A6A3R5 and recheck error at 29.99 MHz. Note: Position of components on phasing board will affect this adjustment.</p> <p>Same as step h.</p> <p>Same as step h.</p> <p>Same as step h.</p>

Table 2-12. Discriminator A3A6, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4 Loading alignment	<p>a. Complete steps 3a through 3c.</p> <p>b. Connect digital voltmeter to LOADING test point. Observe digital voltmeter and adjust A3A6A2C15 for zero volts.</p> <p>c. Switch BAND MHZ from 14 to 26- 29.9 and perform step 3.f. Observe digital voltmeter to measure tracking error at LOADING test point.</p> <p>d. Switch circuit select from TRACK to LOAD. Measure sense voltage at LOADING test point and calculate sensitivity (absolute value of the algebraic difference between sense and tracking voltages).</p> <p>e. Repeat steps b through d for the following frequencies (make applicable band selections):</p> <p>2.0 MHz</p> <p>4.0, 8.0, 20.0, and 26.0 MHz</p>	<p>Tracking error no more than <u>+150</u> mV.</p> <p>Sensitivity not less than 250 mV.</p> <p>Tracking error no more than +150 mV. Sensitivity no less than 250 mV.</p> <p>Same as 2.0 MHz.</p>	<p>Balance tracking error between 14.0 and 29.9 MHz by adjusting A3A6A2C15. Replace loading board A3A6A2.</p> <p>Adjust A3A6A2C15. Check the following: A3A6A2T1, T2. A3A6A3T3 A3A6A2CR1, CR2, CR3 A3A6A2L1 Replace loading board A3A6A2.</p> <p>Same as above.</p> <p>Same as above.</p>
5 Forward power	<p>a. Set circuit select to TRACK and BAND MHZ to 26-29.9.</p> <p>b. Adjust signal for 29.999 MHz unmodulated. Observe multimeter and adjust signal generator for 31.6 V (20 W) at RF POWER test point.</p>		

Table 2-12. Discriminator A3A6, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
5 (cont)	c. Connect digital voltmeter to FWD. PWR test point and observe digital voltmeter.	2.3 to 2.4 V dc.	Adjust A3A6R12 for 2.35 V dc. Replace A3A6R12 if found to be defective. Replace loading board A3A6A2.
	d. Repeat steps a through c for following frequencies (with proper band selections): 2.0, 4.0, 8.0, 14.0, 20.0, and 26.0 MHz	2.0 to 2.3 V dc.	Same as above.
6 Reflected power	a. Perform steps 5. a and 5. b.		
	b. Connect digital voltmeter to REFL. PWR test point and observe voltage on digital voltmeter.	No more than 50 mV.	Adjust A3A6A2C14 for less than 50 mV. Change A3A6A2L8 with test select value listed in Parts List (Section III) (readjust A3A6A2C14 to obtain null after A3A6A2L8 is changed).
	c. Set BAND MHZ to 2 and signal generator to 2.0 MHz, unmodulated. Observe multimeter and adjust generator for 31.6 V (20 W) at RF POWER test point (tracking).		
	d. Observe digital voltmeter at REFL, PWR test point (tracking).	Not more than 200 mV.	Adjust A3A6A2C14 for no more than 200 mV. Change A3A6A2R3 with test select value listed in Parts List (Section III) (readjust A3A6A2C14 after A3A6A2R3 is changed).

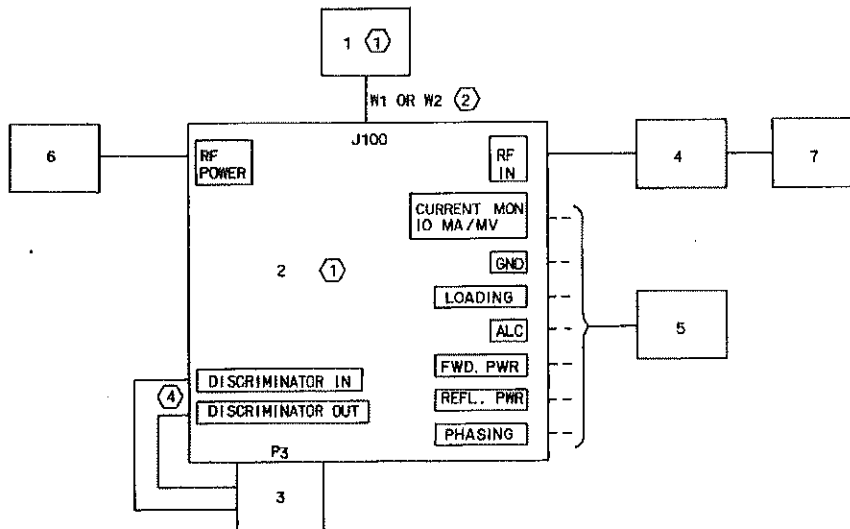
Table 2-12. Discriminator A3A6, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
6 (cont)	<p>e. Switch circuit select from TRACK to LOAD. Observe voltage on digital voltmeter at REFL. PWR test point (sense) and compute sensitivity (sense voltage minus tracking voltage)</p> <p>f. Repeat steps a through e for each of the following frequencies (with proper band selections):</p> <p>4.0, 8.0, 14.0, and 20.0 MHz</p> <p>26.0 MHz</p> <p>29.9 MHz</p>	<p>Tracking no more than 200 mV. Sensitivity no less than 250 mV.</p> <p>Tracking no more than 200 mV. Sensitivity no less than 250 mV.</p> <p>Tracking no more than 200 mV. Sensitivity no less than 100 mV.</p> <p>Tracking no more than 50 mV. Sensitivity no less than 100 mV.</p>	<p>Replace loading board A3A6A2. Replace phasing board A3A6A3.</p> <p>Replace loading board A3A6A2. Replace phasing board A3A6A3.</p> <p>Same as above.</p> <p>Same as above.</p>
7 ALC	<p>a. Set circuit select to TRACK and BAND MHZ to 2.</p> <p>b. Adjust signal generator to 2.0 MHz, unmodulated. Observe multimeter and adjust signal generator for 10.0 volts (2W) measured at RF POWER test point.</p> <p>c. Connect digital voltmeter to ALC test point and observe digital voltmeter.</p>	<p>3.95 to 4.05 V dc</p>	<p>Adjust A3A6R11 for 3.95 to 4.05 V dc. Remove power, check the following: A3A6R11, R13, R10, CR7, VR1, C18.</p>

Table 2-12. Discriminator A3A6, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7 (cont)	<p>d. Repeat steps a through c for each of the following frequencies:</p> <p>4.0, 8.0, 14.0, 20.0, 26.0, and 29.9 MHz. Maintain voltage output at RF POWER test point at 10.0 volts.</p> <p>e. Repeats steps a through d for 22.36 V (10 W) at RF POWER test point. Maintain voltage output at RF Power test point at 22.36 volts.</p>	<p>3.3 to 4.1 V dc</p> <p>7.0 to 8.0 V dc for all frequencies listed.</p>	<p>Same as above.</p> <p>Same as above.</p>

Table 2-12. Discriminator A3A6, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. DISCRIMINATOR TEST ADAPTER
3. DISCRIMINATOR A3A6
4. ATTENUATOR, 6-dB
5. DIGITAL VOLTMETER
6. MULTIMETER
7. SIGNAL GENERATOR

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ DASHED LINES ARE ALTERNATE CONNECTIONS DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.
- ④ PENDANT CABLES, PART OF A3A6.

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Figure 2-10. Discriminator A3A6,
Test Setup

2.3.6 Tuning Capacitor A3A7, Testing/Troubleshooting

Perform the procedures in table 2-13 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-13.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5113/PRM-502 (tuning capacitor/
tuning coil test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Digital voltmeter

Impedance bridge

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	a. On test adapter, set POWER to OFF. b. Install tuning capacitor A3A7 on test adapter and connect power supply as shown in figure 2-11. c. Connect digital voltmeter to DVM test points. d. On test adapter, set DVM SELECT to VOLTAGE, MOTOR VOLTAGE to 25.2 V, UNIT to CAP, MOTOR DIRECTION to OFF and POWER to ON. e. On power supply set POWER to ON and adjust output for 25.2 V dc indication on digital voltmeter.		
2 Motor run voltage	a. On test adapter, set MOTOR VOLTAGE to 2-10 V VAR and adjust VAR ADJ for minimum voltage on the digital voltmeter at DVM (+) (-) test points. b. On test adapter, set MOTOR DIRECTION to MAX or MIN and adjust VAR ADJ until capacitor just begins to run. Observe dc voltage on digital voltmeter. c. On test adapter, set MOTOR DIRECTION to OFF.	Not more than 7 V dc	Check the following: C2, B1, and C1 drive assembly.
3 Motor minimum	a. On test adapter, set MOTOR VOLTAGE to 25.2 V, MOTOR DIRECTION to MIN. When motor stops, set MOTOR DIRECTION to OFF.	Switch S1 wafer turns in a clockwise direction as viewed in figure 2-12.	Check the following: S1, CR4 and CR1.

Table 2-13. Tuning Capacitor A3A7 Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4 Motor maximum	<p>a. On test adapter, set MOTOR DIRECTION to MAX. When motor stops, set MOTOR DIRECTION to OFF.</p> <p>b. On test adapter, connect digital voltmeter to MAX RUN and MIN RUN test points (positive lead to MAX RUN).</p> <p>c. Measure resistance on digital voltmeter while manually rotating capacitor gear train, at motor shaft, toward minimum until motor maximum tab on switch S1 (figure 2-12) just contacts the switch wafer.</p> <p>d. Rotate capacitor gear train, at motor shaft, toward maximum until the digital voltmeter just indicates an open.</p> <p>e. On test adapter, set POWER to OFF.</p> <p>f. Disconnect tuning capacitor A3A7 from test adapter. Connect capacitor C1 to impedance bridge and measure capacitance of C1. Reconnect tuning capacitor A3A7 to test adapter and set POWER to ON.</p>	<p>Switch S1 wafer turns counter-clockwise as viewed in figure 2-12.</p> <p>Resistance will show a single diode drop when contact is made.</p> <p>Not less than 975 pf.</p>	<p>Check the following: S1, CR2 and CR3.</p> <p>Same as above.</p> <p>Replace capacitor C1.</p>
5 Logic maximum	<p>a. On test adapter, if MAX LIMIT lamp is lit, set MOTOR DIRECTION to MIN until lamp goes out then return to OFF.</p>		

Table 2-13. Tuning Capacitor A3A7 Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
5 (cont)	<p>b. On test adapter, set MOTOR DIRECTION to MAX until the MAX LIMIT lamp lights, then return to OFF. Set POWER to OFF. Disconnect tuning capacitor A3A7 from test adapter.</p> <p>c. Connect capacitor C1 to impedance bridge and measure capacitance of capacitor C1. Reconnect tuning capacitor A3A7 to test adapter.</p>	<p>MAX LIMIT lamp lights before the maximum contact of switch S1B opens.</p> <p>Not less than 930 pf.</p>	<p>Check the following: C1 and S1.</p> <p>Replace C1.</p>
6 Logic minimum	<p>a. On test adapter, set POWER to ON. If MIN LIMIT lamp is lit, set MOTOR DIRECTION to MAX until MIN LIMIT lamp goes out then return to OFF.</p> <p>b. On test adapter, set MOTOR DIRECTION to MIN until MIN LIMIT lamp lights then return to OFF. Set POWER to OFF. Disconnect tuning capacitor A3A7 from test adapter.</p> <p>c. Connect capacitor C1 to impedance bridge and measure capacitance of capacitor C1. Reconnect tuning capacitor A3A7 to test adapter.</p>	<p>145 to 275 pf</p>	<p>Check the following: S1 and C1.</p>
7 Minimum brake	<p>a. On test adapter, set POWER to ON and MOTOR DIRECTION to MIN. When motor stops set POWER to OFF.</p> <p>b. Manually rotate capacitor gear-train, at motor shaft, until the motor minimum brake tab on switch S1 (figure 2-12) just contacts the switch wafer.</p>		

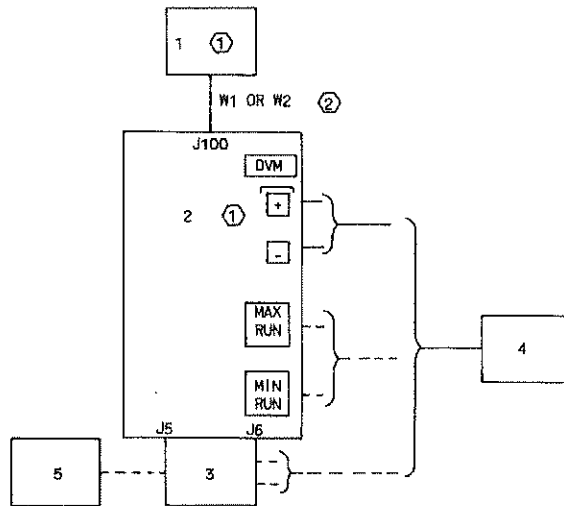
Table 2-13. Tuning Capacitor A3A7 Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7 (cont)	<p>c. With digital voltmeter measure resistance between the motor minimum brake tab (- lead) and the motor black-dot tab (+ lead).</p> <p>d. Manually rotate capacitor gear-train, at motor shaft, until the motor minimum brake tab on S1 (figure 2-12) breaks contact with the switch wafer. Measure resistance as in step c.</p> <p>e. Reverse leads of digital voltmeter and measure resistance.</p>	<p>Resistance equal to short circuit.</p> <p>Resistance equal to one diode drop plus motor resistance.</p> <p>Resistance equal to open circuit.</p>	<p>Replace S1.</p> <p>Replace S1.</p> <p>Replace S1.</p>
8 Maximim brake	<p>a. On test adapter, set POWER to ON and MOTOR DIRECTION to MAX. When motor stops, set POWER to OFF.</p> <p>b. Manually rotate capacitor gear-train at motor shaft, until the motor maximum brake tab on switch S1 (figure 2-12) just contacts the switch wafer.</p> <p>c. With digital voltmeter measure resistance between the motor maximum brake tab (- lead) and the motor black-dot tab (+ lead).</p> <p>d. Manually rotate capacitor gear-train, at motor shaft, toward minimum until the motor maximum brake tab on switch S1 (figure 2-12) breaks contact with the switch wafer. Measure resistance as in step c.</p>	<p>Resistance equal to short circuit.</p> <p>Resistance equal to open circuit.</p>	<p>Replace switch S1.</p> <p>Replace switch S1.</p>

Table 2-13. Tuning Capacitor A3A7 Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8 (cont)	e. Reverse leads of digital voltmeter and measure resistance.	Resistance equal to one diode drop plus motor resistance.	Replace switch S1.

Table 2-13. Tuning Capacitor A3A7 Testing/Troubleshooting (cont)



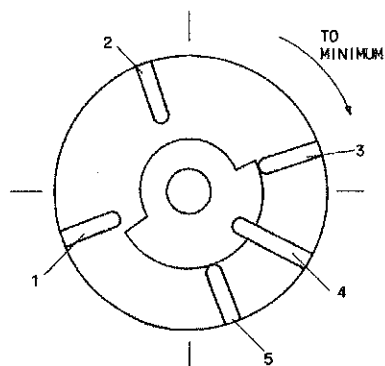
1. POWER SUPPLY
2. TUNING CAPACITOR/TUNING COIL TEST ADAPTER
3. TUNING CAPACITOR A3A7
4. DIGITAL VOLTMETER
5. IMPEDANCE BRIDGE

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-11. Tuning Capacitor A3A7,
Test Setup



- 1. MOTOR MINIMUM BRAKE TAB (GRAY)
- 2. MOTOR MAXIMUM BRAKE TAB (BROWN)
- 3. MOTOR MINIMUM TAB (PURPLE)
- 4. MOTOR BLACK-DOT TAB (WHITE)
- 5. MOTOR MAXIMUM TAB (BLUE)

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Figure 2-12. Switch S1, Tuning
Capacitor A3A7

2.3.7 Tuning Coil A3A8, Testing/Troubleshooting

Perform the procedures in table 2-14 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-14.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5113/PRM-502 (tuning capacitor/
tuning coil test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Digital voltmeter

Rf vector impedance meter

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	<ul style="list-style-type: none"> a. On test adapter, set POWER to OFF. b. Install tuning coil A3A8 on test adapter and connect power supply as shown in figure 2-13. c. Connect digital voltmeter to DVM test points. d. On test adapter, set DVM SELECT to VOLTAGE, MOTOR VOLTAGE to 25.2 V, UNIT to COIL, MOTOR DIRECTION to OFF and POWER to ON. e. On power supply set POWER to ON and adjust output for 25.2 V dc indication on digital voltmeter. 		
2 Motor run voltage	<ul style="list-style-type: none"> a. On test adapter set MOTOR VOLTAGE to 2-10 V VAR and adjust VAR ADJ for minimum voltage on the digital voltmeter. b. Manually position the grounding roller at the minimum end of coil L1 (figure 2-14). c. On test adapter set MOTOR DIRECTION to MAX and adjust VAR ADJ until the grounding roller just begins to move. Observe dc voltage on digital voltmeter. d. On test adapter, set DVM SELECT to CURRENT 10 MA/MV. Observe current on digital voltmeter. 	<p>The minimum limit switch activated, MIN LIMIT lamp lights.</p> <p>Not more than 7 V dc.</p> <p>Not more than 25 mV (250 mA).</p>	<p>Check S2.</p> <p>Check the following: C1, B1, and L1 drive assembly.</p> <p>Same as above.</p>

Table 2-14. Tuning Coil A3A8, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
2 (cont)	<p>e. On test adapter, set MOTOR DIRECTION to OFF and DVM SELECT to VOLTAGE. Adjust VAR ADJ for minimum voltage indication on digital voltmeter.</p> <p>f. Manually position the grounding roller under the 12-30 MHz limit bar (figure 2-14).</p> <p>g. Repeat steps c and d.</p> <p>h. Manually position the grounding roller at the maximum end of coil L1 (figure 2-14).</p> <p>i. On test adapter, set DVM SELECT to VOLTAGE, MOTOR DIRECTION to MIN and adjust VAR ADJ until the grounding roller just starts to move. Observe dc voltage on digital voltmeter.</p> <p>j. Repeat step d.</p> <p>k. On test adapter, set MOTOR DIRECTION to OFF and DVM SELECT to VOLTAGE.</p>	<p>POSITION lamp lights.</p> <p>Same as steps c and d.</p> <p>Maximum limit switch activated. MAX LIMIT lamp lights.</p> <p>Same as step c.</p> <p>Same as step d.</p>	<p>Same as step c.</p> <p>Check maximum limit switch.</p> <p>Same as step c.</p> <p>Same as step d.</p>
3 Limit switch	<p>a. Manually position the grounding roller near the minimum end of coil L1 (figure 2-14).</p> <p>b. On test adapter, set MOTOR DIRECTION to MAX. Adjust VAR ADJ until grounding roller starts to move, and observe the POSITION</p>	<p>POSITION lamp lights just as the grounding roller touches the 12-30 MHz limit bar</p>	<p>Check the following: maximum limit switch, 12-30 MHz limit bar, and coil L1 drive assembly.</p>

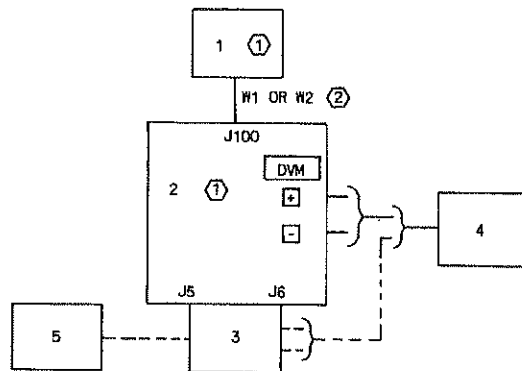
Table 2-14. Tuning Coil A3A8, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3 (cont)	<p>and MAX LIMIT lamps. When motor stops set motor DIRECTION to OFF.</p> <p>c. On test adapter, set MOTOR DIRECTION to MIN and observe the MIN LIMIT lamp. When motor stops set MOTOR DIRECTION to OFF.</p> <p>d. Check continuity with a digital voltmeter, between rf input terminal and the 12-30 MHz band wire at maximum end of coil L1 shaft (figure 2-14).</p>	<p>(figure 2-14). MAX LIMIT lamp lights when the grounding roller touches the maximum limit switch (figure 2-14).</p> <p>MIN LIMIT lamp lights when grounding roller touches the minimum limit switch (figure 2-14).</p> <p>Continuity</p>	<p>Check minimum limit switch.</p> <p>Replace coil L1.</p>
4 Coil coast	<p>a. On test adapter, ensure that MOTOR DIRECTION is set to OFF. Set DVM SELECT to VOLTAGE and MOTOR VOLTAGE to 30 V (two switches).</p> <p>b. Manually position the grounding roller at the maximum end of coil L1 (figure 2-14).</p> <p>c. On test adapter, set MOTOR DIRECTION to MIN and observe where grounding roller stops.</p>	<p>Grounding roller stops (coil shaft does not turn) approximately 1/8 to 1/4 turn from minimum end of coil L1.</p>	<p>Check the following: L1 drive assembly and minimum limit switch.</p>

Table 2-14. Tuning Coil A3A8, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4 (cont)	d. On test adapter, set MOTOR DIRECTION to MAX and observe where grounding roller stops.	Grounding roller stops approximately 1/8 turn from maximum end of coil L1.	Check the following: maximum limit switch and L1 drive assembly.
5 Inductance	<p>a. On test adapter, set MOTOR VOLTAGE to 25.2 V and MOTOR DIRECTION to MIN. When motor stops, set MOTOR DIRECTION to MAX. When motor stops, set MOTOR DIRECTION to OFF.</p> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> <p>In the following step, ensure that a good ground is obtained for rf vector impedance meter probe.</p> <p>b. With rf vector impedance meter set at 2 MHz, measure the impedance (inductance) of coil L1 at the minimum frequency end (where screw attaches coil to insulator, figure 2-14).</p>	<p>Not less than 198.5 ohms (15.8 mH).</p>	<p>Replace coil L1.</p>

Table 2-14. Tuning Coil A3A8, Testing/Troubleshooting (cont)



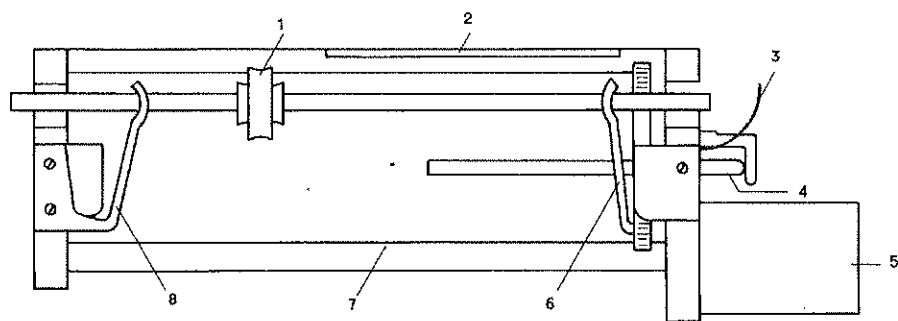
1. POWER SUPPLY
2. TUNING CAPACITOR/TUNING COIL TEST ADAPTER
3. TUNING COIL ASAS
4. DIGITAL VOLTMETER
5. RF VECTOR IMPEDANCE METER

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-13. Tuning Coil A3A8,
Test Setup



- 1. GROUNDING ROLLER
- 2. 12-30 MHz LIMIT BAR
- 3. WIRE GROUNDED BY BANDSWITCH
(12-30 MHz)
- 4. CENTER TAP
- 5. MOTOR
- 6. MAXIMUM LIMIT SWITCH
- 7. COIL L1
- 8. MINIMUM LIMIT SWITCH

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Figure 2-14. Tuning Coil A3A8

2.3.8 Autotransformer A3A9, Testing/Troubleshooting

Perform the procedures in table 2-15 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-15.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5114/PRM-502 (autotransformer test adapter)

Rf vector impedance meter

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	<p>a. On autotransformer A3A9 to be tested, verify that the bandswitch high voltage wafer S1A is in line with the centering mark on contact. The centering mark is provided on the 2 MHz position to aid in adjustment. If contact is not in correct position, rotate switch shaft until above conditions are met.</p> <p>b. On test adapter, set BAND (MHZ) to 2.0- 2.39 and install and connect autotransformer A3A9 on test adapter. Connect mechanical linkage to switch S1 and tighten setscrew.</p> <p>c. Connect rf vector impedance meter as shown in figure 2-15.</p>		
2 Whip	<p>a. On test adapter, set BAND (MHZ) to some other position, then back to 2.0-2.39 and check high voltage contact.</p> <p>b. Set frequency on rf vector impedance meter to 2.0 MHz.</p> <p>c. On rf vector impedance meter, measure impedance and phase angle for 2.0 MHz.</p>	<p>High voltage contact of switch S1A aligns with printed marking.</p> <p><u>390-500 ohms</u> <u>/-84° to -89°</u></p>	<p>Check S1.</p> <p>Refer to schematic and determine applicable components. Check and replace as necessary.</p>

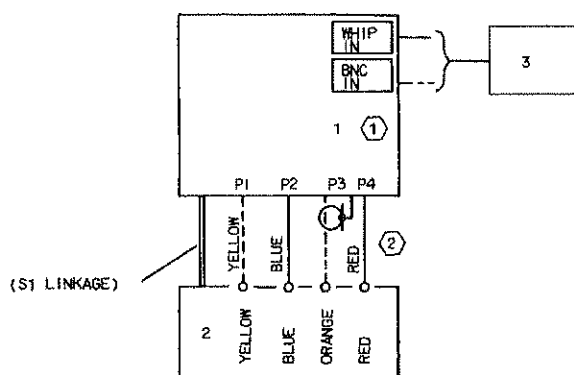
Table 2-15. Autotransformer A3A9, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL																		
2 (cont)	<p>d. Repeat steps a through c for the following bands and frequencies:</p> <table border="1" data-bbox="391 541 760 1052"> <thead> <tr> <th data-bbox="391 541 597 569">Band</th> <th data-bbox="597 541 760 569">Frequency</th> </tr> </thead> <tbody> <tr> <td data-bbox="391 569 597 596">2.4-2.9</td> <td data-bbox="597 569 760 596">2.4 MHz</td> </tr> <tr> <td data-bbox="391 596 597 623">3.0-3.9</td> <td data-bbox="597 596 760 623">3.0 MHz</td> </tr> <tr> <td data-bbox="391 623 597 651">4.0-5.9</td> <td data-bbox="597 623 760 651">4.0 MHz</td> </tr> <tr> <td data-bbox="391 651 597 678">6.0-7.9</td> <td data-bbox="597 651 760 678">6.0 MHz</td> </tr> <tr> <td data-bbox="391 678 597 705">8.0-11.9</td> <td data-bbox="597 678 760 705">8.0 MHz</td> </tr> <tr> <td data-bbox="391 705 597 732">12.0-15.9</td> <td data-bbox="597 705 760 732">12.0 MHz</td> </tr> <tr> <td data-bbox="391 732 597 760">16.0-23.9</td> <td data-bbox="597 732 760 760">16.0 MHz</td> </tr> <tr> <td data-bbox="391 760 597 787">24.0-29.0</td> <td data-bbox="597 760 760 787">24.0 MHz</td> </tr> </tbody> </table> <p>e. Disconnect rf vector impedance meter probe from WHIP IN on test adapter.</p> <p>f. Disconnect red and blue leads from test adapter to terminals of the autotransformer.</p>	Band	Frequency	2.4-2.9	2.4 MHz	3.0-3.9	3.0 MHz	4.0-5.9	4.0 MHz	6.0-7.9	6.0 MHz	8.0-11.9	8.0 MHz	12.0-15.9	12.0 MHz	16.0-23.9	16.0 MHz	24.0-29.0	24.0 MHz	<p>230-280 ohms /-84° to -89°</p> <p>350-410 ohms /-84° to -89°</p> <p>490-570 ohms /-84° to -89°</p> <p>290-340 ohms /-84° to -89°</p> <p>510-570 ohms /84° to -89°</p> <p>340-380 ohms /-84° to -89°</p> <p>240-280 ohms /-84° to -89°</p> <p>200-235 ohms /-84° to -89°</p>	
Band	Frequency																				
2.4-2.9	2.4 MHz																				
3.0-3.9	3.0 MHz																				
4.0-5.9	4.0 MHz																				
6.0-7.9	6.0 MHz																				
8.0-11.9	8.0 MHz																				
12.0-15.9	12.0 MHz																				
16.0-23.9	16.0 MHz																				
24.0-29.0	24.0 MHz																				
3 BNC	<p>a. Connect rf vector impedance meter probe to BNC IN on test adapter.</p> <p>b. Connect yellow lead on test adapter to yellow terminal on the autotransformer and the coaxial cable to orange terminal.</p> <p>c. On test adapter set BAND (MHZ) to 2-2.39.</p> <p>d. Set frequency on rf vector impedance meter to 2.0 MHz.</p>																				

Table 2-15. Autotransformer A3A9, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL		
3 (cont)	e. On rf vector impedance meter measure impedance and phase angle for 2.0 MHz.	110-130 ohms /-61° to -69°	Refer to schematic and determine applicable components. Check and replace faulty component.		
	f. Repeat steps c through e for the following bands and frequencies:				
	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"><u>Band</u></td> <td style="text-align: center;"><u>Frequency</u></td> </tr> </table>	<u>Band</u>		<u>Frequency</u>	
	<u>Band</u>	<u>Frequency</u>			
	2.4-2.9	2.4 MHz		95-115 ohms /-58° to -66°	
	3.0-3.9	3.0 MHz		80-100 ohms /-54° to -62°	
	4.0-5.9	4.0 MHz		140-160 ohms /-70° to -80°	
	6.0-7.9	6.0 MHz		95-115 ohms /-61° to -69°	
	8.0-11.9	8.0 MHz		70-90 ohms /-51° to -59°	
	12.0-15.9	12.0 MHz		120-140 ohms /-70° to -80°	
16.0-23.9	16.0 MHz	165-185 ohms /-75° to -85°			
24.0-29.9	24.0 MHz	70-90 ohms /-60° to -70°			

Table 2-15. Autotransformer A3A9, Testing/Troubleshooting (cont)



1. AUTOTRANSFORMER TEST ADAPTER
2. AUTOTRANSFORMER A3A9
3. RF VECTOR IMPEDANCE METER

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PENDANT TEST LEADS, PART OF AUTOTRANSFORMER TEST ADAPTER.
- ③ DASHED LINES ARE ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-15. Autotransformer A3A9,
Test Setup

2.3.9 Control Logic A3A2, Testing/Troubleshooting

Perform the procedures in table 2-16 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-16.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5115/PRM-502 (control logic test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Digital voltmeter

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	<p>a. On test adapter, set all switches in either OFF, O, or GND position.</p> <p>b. Install control logic card A3A2 and connect power supply and digital voltmeter as shown in figure 2-16.</p> <p>c. On Power supply, turn power to ON. Turn on test equipment and allow sufficient time for warmup.</p> <p>d. On test adapter, set POWER switches and 25.2 V SWITCH to ON.</p> <p>e. Measure voltage at 25.2 V test point on test adapter.</p> <p>f. Measure voltage at 5.2V test point on test adapter.</p>	<p>25.2 V dc</p> <p>5.2 V dc</p>	<p>Adjust 22 V-32 V OUTPUT VOLTAGE potentiometer on power supply.</p> <p>Check power supply.</p>

Table 2-16. Control Logic A3A2, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 (cont)	<div data-bbox="576 466 701 529" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;">NOTE</div> <p data-bbox="479 571 852 781">(Applicable to steps 2, 3, and 4) Initially all switches except for POWER are either OFF, in O, or GND position. Perform the tests in the sequence shown.</p> <p data-bbox="479 814 860 1201">Restart the test, if an error is made, at the start of that section or at the restart position noted. If the TEST ADAPTER SWITCH SETTING entry is blank, leave the corresponding switch in its previous setting. For each switch setting, observe only those 'outputs' indicated in the NORMAL INDICATION column.</p>		

Table 2-16. Control Logic A3A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE										NORMAL INDICATION				IF INDICATION IS ABNORMAL			
	TEST ADAPTER SWITCH SETTINGS (2)										TEST ADAPTER INDICATOR STATUS (2)(3)							
2. BAND DECODER (1)															CHECK THE FOLLOWING COMPONENTS:			
	4 PL-6(S3)	8 PL-5(S4)	1 PL-4(S5)	2 PL-3(S6)	3 PL-8(S7)	8 PL-7(S8)	10 PL-1(S9)	20 PL-2(S10)	2-2-39 P2-13(DS1)	3-4-2-9 P2-9(DS2)	3-3-9 P2-10(DS3)	4-3-9 P2-25(DS4)	6-7-9 P2-11(DS5)	8-11-9 P2-28(DS6)	12-15-9 P2-26(DS7)	16-23-9 P2-20(DS8)	24-29-9 P2-27(DS9)	
a	0	0	0	0	0	0	0	1	0	0	0	0					C3, C4, C49, CR24, U2, U3, U7	
b	1							0	1								C5, C48, CR23, U2, U3, U8	
c	0	1						0	1								C5, C48, CR23, U2, U3, U8	
d		0	1					0	1								C5, C47, CR22, U1, U2, U3, U4	
e			0	1				0	0	1	0	0					C6, C46, CR21, U1, U4, U5	
f				0	1			0				1	0	0			C8, C44, C19, U1 THRU U5	
g					0	1		0				1	0				C9, C10, C44, CR19, U1 THRU U5	
h			1										1				C6, C43, CR15, CR18, U1 THRU U9	
i					0	1		0									C10, U3, U8	
j		1						0					1	0			C10, C42, CR17, U1, U2, U6, U7, U8	
k	1				0			0		0							U1, U2, U4, U8	
l		0	1					0	0	1							C7, C45, CR20, U4, U5	
m			0	1				0			0						C8, C44, CR19, U2, U3, U5, U8	
n				0	1			0									C9, C48, CR23, U3, U4, U8	
o					0	1		0									C10, U4, U8	
p		1			1	0		0					0				C5, C9, U1, U3, U4	
q				1	0			0									U3, U4, U5	
r			0	1				0	0								CR19, CR21, U2, U4, U5	
s				0	1			0			1	0					C43, CR18, U1, U3, U4, U6, U9	
t				0	1			0									U4, U5	
u			1	1	0			0									CR20, U4, U5	
v				0	1			0	0	1							C42, CR17, U1, U2, U6, U7	
w					0	1		0		0	1						C10, C41, CR16, U1, U2, U6, U7, U8, U10	
x			0	0	1	1				0	1	0					C42, CR17, U1, U2, U6, U7, U8	
y					0					0	0						U3, U4, U5, U6	
z			1	0	1					0							U1, U3, U5, U6, U9	
aa				1						1	0	1					CR16, CR17, U1, U3, U5, U6, U10	
ab			0	1								1					C41, CR16, U1, U2, U6, U7, U8, U10	
ac				0	0							1					C41, CR16, U1, U2, U6, U7, U8, U10	
ad			1	1	0	1						0					U6, U7, U10	

(1) READ NOTE FOLLOWING STEP 1.

(2) COMPONENT REFERENCE DESIGNATORS ARE SHOWN IN (). REFER TO TEST ADAPTER SCHEMATIC DIAGRAM.

(3) 1 = LOGIC 1 AND INDICATOR ON TEST ADAPTER IS LIT.
0 = LOGIC 0 AND INDICATOR ON TEST ADAPTER NOT LIT.

Table 2-16. Control Logic A3A2, Testing/Troubleshooting (cont)

STEP 3. ① TUNE STEPS	PROCEDURE TEST ADAPTER SWITCH SETTINGS ②												NORMAL INDICATION TEST ADAPTER IND- ICATOR STATUS ② ③				IF INDICATION IS ABNORMAL CHECK THE FOLLOWING COMPONENTS							
	L PL-4 (S5)	2 PL-3 (S6)	4 PL-8 (S7)	8 PL-7 (S8)	10 PL-1 (S9)	20 PL-2 (S10)	KEY PL-17 (S11)	RECHAN PL-26 (S12)	RCV PL-27 (S13)	HV DET PL-32 (S20)	ADV TO DPR P3-10 (S21)	LI POS P3-6 (S14)	SERVO ENBL P3-17 (S22)	BANDSWITCH COMPL P2-14 (S19)	BANDSWITCH J1-10 (DS21)	STANDBY J1-9 (DS22)		TUNE J1-8 (DS23)	OPERATE J1-4 (DS24)	KEY J1-7 (DS25)	TIP PL-22 (DS12)	TUNE FAULT PL-24 (DS13)	KEY PL-17 (DS14)	PA KEY PL-II (DS15)
a	0	0	0	0	1	OC	G	OC	0	0	0	1	G	1	0	0	0	OC	0	OC				U20, U21
b							G							0	1	0	0	OC	0	OC	OC			U20, U21
c							G			G				1	0	0	0							U20, U21
d					1	0	OC	OC						1	0	0	0							U20, U21
e													OC	0	1	0	0				OC			U20, U21
f							G							0	1	0	0							U20, U21
g							OC							0	0	1	0	1	G	G	G	G		U18
h													G											U20, U21
i							G							1	0	0	0			OC	OC			U20, U21
j							G	OC					OC		1		1							U14, U17, U18, U20, U21
k										1				0	0	0	1	1	OC					U14, U17, U18, U20, U21
l							OC													0				
m													G											
* n							G							1	0	0	0							U20, U21
o							OC		1					0	0	0	0							
p							G		0															
q							OC						OC	0	1	0	0							U20, U21
r									1	0				0	0	0	0		1					U20, U22
s							G	B	0															
t							OC							0	0	1	0	1						U11, U14, U17, U18, U20, U21
u									1					0	0	0	0	0						
v							G		0	1														
w							OC							0	0	0	1	1						U11, U14, U17, U18, U20, U21
x									1			G		0	0	0	0	0						
y					0	1	OC	G					OC	1	0	0	0				OC			U20, U21

* TEST MAY BE RESTARTED AT THIS POINT.

① READ NOTE FOLLOWING STEP 1.

② COMPONENT REFERENCE DESIGNATORS ARE SHOWN IN (). REFER TO TEST ADAPTER SCHEMATIC DIAGRAM.

③ 1 = LOGIC 1 AND INDICATOR ON TEST ADAPTER IS LIT.
G = GROUND AND INDICATOR ON TEST ADAPTER IS LIT.
0 = LOGIC 0 AND INDICATOR ON TEST ADAPTER NOT LIT.
OC = OPEN CKT AND INDICATOR ON TEST ADAPTER NOT LIT.

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Table 2-16. Control Logic A3A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE															NORMAL INDICATION					IF INDICATION IS ABNORMAL										
	TEST ADAPTER SWITCH SETTINGS															TEST ADAPTER INDICATOR STATUS															
4. ① COIL AND CAPACITOR	②															② ③					CHECK THE FOLLOWING COMPONENTS										
	1 PI-4(S5)	2 PI-3(S6)	4 PI-8(S7)	8 PI-7(S8)	20 PI-1(S9)	20 PI-2(S10)	KEY PI-17(S11)	RECHAN PI-26(S12)	RCV PI-27(S13)	RV DET PI-32(S20)	ADV TO OPR P3-10(S21)	LI POS P3-6(S14)	LI MAX P3-12(S15)	LI MIN P3-4(S16)	CI MIN P3-7(S17)	SERVO ENBL P3-18(S18)	YSWR P3-16(S23)	BANDSWITCH COMPL P2-14(S19)	RCV KEY PI-18(DS16)	RCV MUTE PI-30(U4)*		SERVO STBY P3-18(U5)*	12-30M LI POS P3-2(DS17)	LI MIN FORCE P3-9(DS18)	LI MAX FORCE P3-9(DS17)	CI MAX FORCE P3-6(DS18)	BANDSWITCH P3-4(S19)	STANDBY J1-10(DS20)	TUNE J1-9(DS22)	OPERATE J1-4(DS24)	
a	0	0	1	0	0	1	OC	G	OC	OC	OC	G	G	G	G	G	G	G	G	0	1	OC	OC	OC	1	0	0	0	0	U19, U20	
b																					1	1	OC							U13, U17, U18, U22	
c								G																						Q4, Q5, U9, U11, U12, U16, U19, THRU U22	
d										G	OC										G									U11, U16, U19, THRU U22	
e		0	1	0								G	OC																	U10, U13, U16, U19, U20, U21	
f									OC												OC	OC		OC						Q4, Q5, U9, U13	
g								G				G									OC	OC								Q4, Q5, U3, U9, U12, U20, U21	
h		1	0	1										OC							OC	OC								Q4, Q5, U3, U9, U12, U20, U21	
i		0													OC							OC								U11, U13	
j						G																								U3, U12, U17, U18, U20, U21	
k							OC			OC																				U11, U13, U20, U21	
l													G																		
m																						OC									U11, U13, U20, U21
n												G																			
o																															U11, U13, U20, U21
p																															
q																															U11, U13, U20, U21
r		1																													
s		0																													U11, U13, U20, U21
t																															
u		1	0				OC						G																		
v																															U16, U19, U22
w																															
x																															
y																															
z																															U16, U19, U22
aa																															
ab																															U16, U19
ac																															
ad																															
ae																															U10, U16, U19
af																															
ag																															
ah																															U10, U16, U19
ai																															U10, U16, U19
aj																															U11, U16, U19

Table 2-16. Control Logic A3A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE															NORMAL INDICATION			IF INDICATION IS ABNORMAL	
	TEST ADAPTER SWITCH SETTINGS ②															TEST ADAPTER INDICATOR STATUS ② ③				
4. ① COIL AND CAPACITOR (CONT)	1 P1-4 (S5) 2 P1-3 (S6) 4 P1-8 (S7) 8 P1-7 (S8) 10 P1-1 (S9) 20 P1-2 (S10) KEY P1-17 (S11) RECHAN P1-12 (S12) RCV P1-27 (S13) HV DET P1-32 (S20) ADV TO OFF P3-10 (S21) LI POS P3-6 (S14) CI MAX P3-12 (S14) LI MAX P3-4 (S15) LI MIN P3-7 (S17) CI MIN P3-18 (S18) SERVO ENBL P3-17 (S22) VSWR P3-16 (S23) BANDSWITCH COMPL P2-14 (S19) RCV KEY P1-18 (DS16) SERVO MUTE P1-30 (J4) SERVO STBY P3-18 (J5)* I2-30N LI POS P3-18 (J5)* LI MIN FORCE P3-2 (DS17) CI MAX FORCE P3-9 (DS17) CI MAX FORCE P3-8 (DS18) BANDSWITCH P3-15 (DS19) STANDBY J1-9 (DS20) TUNE J1-10 (DS21) OPERATE J1-8 (DS22) OPERATE J1-4 (DS24)																		CHECK THE FOLLOWING COMPONENTS	
	ak																			
al																			U9, U16, U19	
*** am																			U20, U21	
an																	1	0	0	U14, U15, U18
ao																				U10, U16, U17, U18, U19
ap																				U20, U21
aq																				U13, U17, U18
ar																				
as																				U20, U21
at																				U14, U17
au																				U11
av																				
aw																				U16, U19, U22
ax																				U13, U16, U19, U22
ay																				
az																				U16, U19, U22
ba																				U3, U11, U12, U20, U21
bb																				U11, U16, U19
bc																				U7, U9, U16, U19
bd																				U7, U9, U16, U19
be																				U3, U12
bf																				U3, U12
bg																				U3, U10, U11, U12, U13, U16

* FOR INDICATIONS AT P1-30 (J4) AND P3-18 (J5), USE DIGITAL VOLTMETER.
1 = +2.5 TO +5.2 V DC; G = CHASSIS GROUND; OC = OPEN CIRCUIT.

** DELAY 5 SECONDS BEFORE PROCEEDING TO NEXT STEP.

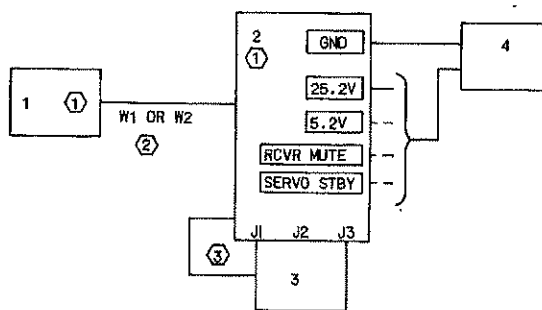
*** TEST MAY BE RESTARTED AT THIS POINT.

① READ NOTE FOLLOWING STEP 1.

② COMPONENT REFERENCE DESIGNATORS ARE SHOWN IN (). REFER TO TEST ADAPTER SCHEMATIC DIAGRAM.

③ 1 = LOGIC 1 AND INDICATOR ON TEST ADAPTER IS LIT.
G = GROUND AND INDICATOR ON TEST ADAPTER IS LIT
0 = LOGIC 0 AND INDICATOR ON TEST ADAPTER NOT LIT.
OC = OPEN CIRCUIT AND INDICATOR ON TEST ADAPTER NOT LIT.

Table 2-16. Control Logic A3A2, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. CONTROL LOGIC TEST ADAPTER
3. CONTROL LOGIC A3A2
4. DIGITAL VOLTMETER

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ PENDANT CABLE, PART OF CONTROL LOGIC TEST ADAPTER.
- ④ DASHED LINES ARE ALTERNATE CONNECTIONS DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

TP5-4802-014

Figure 2-16. Control Logic A3A2, Test Setup

2.3.10 Servo Amplifier A3A1, Testing/Troubleshooting

Perform the procedures in table 2-17 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-17.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5116/PRM-502 (servo amplifier test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Digital voltmeter

Oscilloscope

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
<p>1 Preliminary setup</p> <p>2 Input Voltages</p>	<p>a. On test adapter, set switches and controls to the following positions: POWER switches to OFF, FORCE switches (C MAX, C MIN, L MAX, and L MIN) to OPEN, TIP to OPEN, LOW PWR to OPEN, PA LOW PWR to OPEN, 12-30 MHZ to 5.2V, SERVO RCV to 5.2V, C RUN LOAD to center position, L RUN LOAD to center position, INTCON CHECK to center position, REFLD PWR to OPEN, and DVM SELECT to ALC DET.</p> <p>b. Install servo amplifier A3A1 on test adapter and connect power supply as shown in figure 2-17.</p> <p>c. On power supply, set POWER to ON. Connect digital voltmeter to +25.2 V. On test adapter, set POWER switches (2) to ON. On power supply, adjust OUTPUT VOLTAGE control for +25.15 to 25.25 V dc on digital voltmeter.</p> <p>d. Connect digital voltmeter to +13V test point.</p>	<p style="text-align: center;">NOTE</p> <p>Unless otherwise specified, all voltage measurements are stated with reference to chassis ground (GND test point on test fixture).</p> <p>+25.15 to +25.25 V dc.</p> <p>+12.90 to +13.10± V dc.</p>	<p>Check power supply and test adapter power input circuit.</p> <p>Same as c.</p>

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
2.1 -12 Vdc (25.2V SW ON)	a. Connect digital voltmeter to DVM test points. b. Set DVM SELECT to -12V and observe digital voltmeter.	-10.8 to -12.5 V dc.	Check the following: C-38-41, C49; CR9-11; Q11, Q14, Q15, Q26; R70-75, R79; U7, VR4, and VR5.
2.2 +13 Vdc SW (25.2V SW ON)	a. Set DVM SELECT to +13V SW and observe digital voltmeter.	+12.3 to +13.1 V dc	Check the following: Q27, R68, and R69.
2.3 +13 V dc (25.2 V SW OFF)	a. Set 25.2 V SW to OFF and observe digital voltmeter.	Less than +1.0 Vdc	Check power supply and test adapter power input circuit.
2.4 -12Vdc (25.2 V SW OFF)	a. Set DVM SELECT to -12V and observe digital voltmeter. b. Set 25.2V SW to ON.	Less than +2.0 Vdc	Same as above.
3 ALC adjustments			
3.1 ALC detector (tune)	a. Set TIP to GND. b. Set DVM SELECT to FWD PWR and connect digital voltmeter to DVM testpoints. c. Observe digital voltmeter and adjust FWD PWR for +1.15 to 1.25 V dc on digital voltmeter. d. Set DVM SELECT to ALC DET. e. Observe digital voltmeter and adjust ALC DET for +9.30 to 10.0 V dc on digital voltmeter. Record voltage level.		

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3.1 (cont)	<ul style="list-style-type: none"> f. Repeat steps b and c. g. Connect digital voltmeter to ALC test connector. h. On servo amplifier A3A1, adjust R34 until ALC level on digital voltmeter just begins to go negative from zero V dc. 		
3.2 Forward power (operate)	<ul style="list-style-type: none"> a. Set TIP to OPEN. b. Set DVM SELECT to FWD PWR and connect digital voltmeter to DVM test points. c. Observe digital voltmeter and adjust FWD PWR for +1.9 to 2.1 V dc on digital voltmeter. d. Set DVM SELECT to ALC DET. e. Observe digital voltmeter and adjust ALC DET for +9.9 to 10.1 V dc on digital voltmeter. f. Connect digital voltmeter to ALC test connector. g. On servo amplifier A3A1, adjust R35 until ALC level on digital voltmeter just begins to go negative from zero V dc. 		
3.3 Low power (low pwr gnd)	<ul style="list-style-type: none"> a. Set LOW PWR to GND. b. Connect digital voltmeter to DVM test points and set DVM SELECT to FWD PWR. 		

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3.3 (cont)	<ul style="list-style-type: none"> c. Observe digital voltmeter and adjust FWD PWR for +0.3 to +0.5 V dc on digital voltmeter. d. Set DVM SELECT to ALC DET. e. Observe digital voltmeter and adjust ALC DET for +3.95 to 4.05 V dc on digital voltmeter. f. Connect digital voltmeter to ALC test connector. g. On servo amplifier A3A1, adjust R35 until ALC level on digital voltmeter just begins to go negative from zero V dc. 		
3.4 Low power (low power open)	<ul style="list-style-type: none"> a. Set PA LOW PWR to GND and LOW PWR to OPEN. b. Repeat steps 2.3b through g. 		
3.5 ALC final adjustment	<ul style="list-style-type: none"> a. Repeat steps 2.2, 2.3, and 2.4 until the ALC voltage on the digital voltmeter is slightly negative without adjusting R34 or R35. (Set PA LOW PWR to OPEN before repeating step 2.2.) b. Repeat steps 2.1a through h until the ALC voltage on the digital voltmeter is slightly negative without adjusting R34. 		Repeat steps 2.1a through 2.1d. Set the ALC DET voltage at a higher level than recorded in step 2.1e. Repeat steps 2.1g and h.

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4 ALC 4.1 ALC detector (Tune)	a. Set PA LOW PWR to OPEN, LOW PWR to OPEN, and TIP to GND. b. Connect digital voltmeter to DVM test points. c. Set DVM SELECT to FWD PWR. d. Adjust FWD PWR for +1.15 to +1.25 V dc on digital voltmeter. e. Set DVM SELECT to ALC DET. f. Adjust ALC DET for +9.5 to +9.7 V dc on digital voltmeter. g. Set DVM SELECT to FWD PWR and readjust FWD PWR for +1.15 to +1.25 V dc on digital voltmeter. h. Connect digital voltmeter to ALC test connector and observe SIDETONE indicator. Adjust ALC DET until digital voltmeter indication just begins to go negative from zero. (1) Connect digital voltmeter to DVM test points. (2) Set DVM SELECT to ALC DET and observe digital voltmeter. i. Connect digital voltmeter to ALC test connector and measure voltage while monitoring SIDETONE indicator.	 SIDETONE indicator should be off. +9.3 to 10.0 V dc SIDETONE indicator should be lit when ALC reaches -1.0 V dc.	 Check the following: C9, CR1-2, CR6, Q10, Q17, U5B, VR2, and VR3. Same as above. Check the following: CR3, Q10, U5B, and VR3.

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4.1 (cont)	<p>Continue adjusting ALC DET until -5.5 to -6.5 V dc is read on digital voltmeter.</p> <p>j. Transfer digital voltmeter to DVM test points and observe ALC DET voltage on digital voltmeter.</p>	<p>When -6 V dc is indicated at ALC, ALC DET voltage should be 9.8 to 10.8 V dc.</p>	<p>Check the following: CR3, CR12, Q17, U5B, and VR3.</p>
4.2 Forward power (operate)	<p>a. Set TIP to OPEN and repeat steps 4.1a through 4.1c.</p> <p>b. Adjust FWD PWR for +2.0 to +2.2 V dc on digital voltmeter.</p> <p>c. Set DVM SELECT to ALC DET and adjust ALC DET for +9.9 to +10.1 V dc on digital voltmeter.</p> <p>d. Connect digital voltmeter to ALC test connector.</p> <p>e. Observe both SIDETONE indicator and digital voltmeter, and adjust FWD PWR until ALC voltage just begins to go negative.</p> <p>(1) Connect digital voltmeter to DVM test points</p> <p>(2) Set DVM SELECT to FWD PWR and observe digital voltmeter.</p> <p>f. Reconnect digital voltmeter to ALC test connector and continue to vary FWD PWR until ALC voltage on digital voltmeter is -5.5 to -6.5 V dc.</p> <p>g. Connect digital voltmeter to DVM test points and set DVM SELECT to FWD PWR. Observe digital voltmeter.</p>	<p>SIDETONE indicator should</p> <p>1.9 to 2.1 V dc.</p> <p>+2.0 to 2.4 V dc</p>	<p>Check the following: CR3, Q10, Q17, U5B and VR3.</p> <p>Same as above.</p> <p>Same as above.</p>

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4.3 Low power	<p>a. Set test adapter switches to the following positions: PA LOW PWR to OPEN, LOW PWR to GND, TIP to OPEN, REFLD PWR to OPEN.</p> <p>b. Set DVM SELECT to ALC DET and adjust ALC DET for +4.0 V dc on digital voltmeter.</p> <p>c. Set DVM SELECT to FWD PWR and adjust FWD PWR for +0.3 to +0.5 V dc.</p> <p>d. Connect digital voltmeter to ALC test connector and adjust ALC DET until voltage at ALC just begins to go negative. Set DVM SELECT to ALC DET and connect digital voltmeter to DVM test points. Observe ALC DET voltage on digital voltmeter.</p> <p>e. Set LOW PWR to OPEN and PA LOW PWR to GND and repeat steps b. through d.</p>	<p>+3.9 to +4.2 V dc.</p> <p>+3.9 to +4.2 V dc.</p>	<p>Check the following: CR3, CR12, Q17, U5B, and VR3.</p> <p>Same as above.</p>
4.4 Reflected power	<p>a. Set PA LOW PWR to OPEN, and ensure that LOW PWR and TIP are set to OPEN.</p> <p>b. Set DVM SELECT to FWD PWR and adjust FWD PWR to +0.95 to +1.05 V dc.</p> <p>c. Set REFLD PWR to VAR ADJ.</p> <p>d. Connect digital voltmeter to ALC test connector and adjust REFLD PWR until ALC voltage begins to go negative from zero.</p>		

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
5 (cont)	<p>g. Set DVM SELECT to VSWR and observe digital voltmeter.</p> <p>h. Adjust REFLD PWR slowly until VSWR voltage is less than 0.1 V dc and ADV TO OPR voltage is less than 0.5 V dc (logic zero).</p> <p>i. Set DVM SELECT to REFLD PWR and observe digital voltmeter.</p>	<p>No less than 4.0 V dc.</p> <p>+0.7 to +0.85 V dc.</p>	<p>Check the following: C14, C17, CR5, CR14, U4, and VR6.</p> <p>Check the following: Q17 and VR2.</p>
6 Forward power detector	<p>a. Ensure that test adapter switches are set to the following positions: PA LOW PWR to OPEN, LOW PWR to OPEN, TIP to OPEN, REFLD PWR to VAR ADJ.</p> <p>b. Set DVM SELECT to FWD PWR and adjust FWD PWR for zero volts on digital voltmeter.</p> <p>c. Set DVM SELECT to REFLD PWR and adjust REFLD PWR for zero volts on digital voltmeter.</p> <p>d. Set DVM SELECT to ADV TO OPR and observe digital voltmeter.</p> <p>e. Observe digital voltmeter and adjust FWD PWR slowly to increase FWD PWR voltage until ADV TO OPR voltage on digital voltmeter goes to +3.5 V dc (logic 1).</p>	<p>Less than +0.5 V dc (logic zero).</p>	<p>Check the following: C37, CR4, CR5, U4, U6, VR6, and VR7.</p>

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
6 (cont)	f. Set DVM SELECT to FWD PWR and observe digital voltmeter.	+0.35 to +0.5 V dc	Check the following: C16, C37, CR4, U4, U6 and VR7.
7 Servo enable	a. Ensure that test adapter switches are set to same positions noted in step 6.		
	b. Set DVM SELECT to FWD PWR and adjust FWD PWR for +1.9 to +2.1 V dc on digital voltmeter.		
	c. Set DVM selector to REFLD PWR and adjust REFLD PWR to +0.9 to +1.1 V dc on digital voltmeter.		
	d. Set DVM SELECT to VSWR and observe digital voltmeter.	Less than +1.0 V dc.	Check the following: C15, CR5, U4B, and VR6.
	e. Connect oscilloscope vertical input to SERVO ENABLE test connector and trigger input to VSWR test connector.		
	f. Set DVM SELECT to REFLD PWR.		
	g. Ensure that SERVO RCV is set to 5.2 V. Observe SERVO ENABLE voltage on oscilloscope and short DVM (+) (-) test points.	Less than +0.2 V dc (logic zero).	Check the following: C15, C52, CR5, CR6, U4, and U6.
	h. Set SERVO RCV to GND. Remove short from DVM (+) (-) test points (step f) and note elapsed time for SERVO ENABLE voltage to go from +4.5 (high) to +0.2 V dc (low).	1.0 to 1.8 seconds	Check the following: C36; CR7; R44, R45, and VR6.

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7 (cont)	i. Wait 10 seconds then short DVM (+) (-) test points. Note elapsed time for SERVO ENABLE voltage to go from +0.2 (low) to +4.5 V dc (high).	0.5 to 1.5 seconds	Check the following: C15, U4, U6, and R80.
8 Advance to operate	<p>a. Ensure that test adapter switches are set to the following positions: PA LOW PWR to OPEN, LOW PWR to OPEN, TIP to OPEN, REFLD PWR to VAR ADJ.</p> <p>b. Set DVM SELECT to FWD PWR and connect digital voltmeter to DVM test points.</p> <p>c. Adjust FWD PWR for +1.9 to +2.1 V dc on digital voltmeter.</p> <p>d. Set DVM SELECT to REFLD PWR and adjust REFLD PWR for +0.9 to 1.1 V dc on digital voltmeter.</p> <p>e. Set DVM SELECT to ADV TO OPR and observe digital voltmeter.</p> <p>f. Connect oscilloscope vertical input to ADV TO OPR test connector and trigger input to VSWR test connector.</p> <p>g. Observe ADV TO OPERATE voltage on oscilloscope, set DVM SELECT to REFLD PWR and short DVM (+) (-) test points. Observe time it takes ADV TO OPERATE voltage to go from low to high (to +4.5 V dc).</p>	<p>Less than 0.2 V dc (logic zero).</p> <p>1.0 to 2.0 seconds</p>	<p>Check the following: CR5, U4, U6, and VR6.</p> <p>Check the following: C37, CR5, CR8, R41, U4, U6, and VR6.</p>

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
9 Interconnect lines	<p>a. Ensure that test adapter switches are set to the following positions: PA LOW PWR to OPEN, LOW PWR to OPEN, TIP to OPEN, REFLD PWR to VAR ADJ.</p> <p>b. Observe INTCON CHECK indicator.</p> <p>c. Set INTCON CHECK switch to NO. 1 and observe INTCON CHECK indicator.</p> <p>d. Set INTCON CHECK switch to NO. 2 and observe INTCON CHECK indicator.</p> <p>e. Set INTCON CHECK switch to mid-position and observe INTCON CHECK indicator.</p>	<p>Indicator not lit.</p> <p>Indicator lit.</p> <p>Indicator lit.</p> <p>Indicator not lit.</p>	<p>Check applicable wiring.</p> <p>Same as above.</p> <p>Same as above.</p> <p>Same as above.</p>
10 Loading servo amplifier	<p>a. Connect digital voltmeter to DVM test points.</p> <p>b. Ensure that 12-30 MHZ is set to 5.2 V.</p> <p>c. Set DVM SELECT to FWD PWR and adjust FWD PWR for +1.9 to +2.1 V dc on digital voltmeter.</p> <p>d. Set DVM SELECT to REFLD PWR and adjust REFLD PWR for zero volts on digital voltmeter.</p> <p>e. Set DVM SELECT to LOADING and SERVO RCV to 5.2 V. Adjust LOADING for +0.110 to +0.130 V dc.</p> <p>f. Set DVM SELECT to L RUN and observe voltage on digital voltmeter.</p>	<p>+18 to +22.0 V dc.</p>	<p>Check the following: C11, Q18, Q19, Q22, Q23, U1, and U2.</p>

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
10 (cont)	g. Set L RUN LOAD to FULL for 15 seconds and observe digital voltmeter.	+18 to +22.0 V dc.	Same as above.
	h. Set DVM SELECT to LOADING and adjust LOADING for -0.110 to -0.130 V dc. Repeat steps f and g.	-18 to -22.0 V dc.	Same as above.
	i. With LOADING adjusted for -0.110 to -0.130 V dc, set 12-30 MHZ to GND, DVM SELECT to L RUN, and L RUN LOAD to HALF.	-0.2 to -2.5 V dc.	Same as above.
	j. Set 12-30 MHZ to 5.2 V, adjust LOADING to +0.5 V dc, and set L MAX to 5.2 V. Observe digital voltmeter.	-20 to -22.5 V dc.	Same as above.
	k. Set DVM SELECT to LOADING and adjust LOADING for -0.5 V dc. Set DVM SELECT back to L RUN. Set L MIN to 5.2 V and observe L RUN voltage on digital voltmeter.	+20 to +22.5 V dc.	Same as above.
	l. Set SERVO RCV to GND, and ensure that 12-30 MHZ is set to 5.2 V. Set L MAX to 5.2 V and observe L RUN voltage on digital voltmeter.	-2.0 to +2.0 V dc.	Check the following: C27, C50, Q1, Q2, Q5, Q6, Q9, Q13, Q18, Q19, Q23 and U6.
	m. Set DVM SELECT to REFLD PWR and adjust REFLD PWR for +1.0 V dc. Set DVM SELECT to SERVO ENBL and observe SERVO ENBL voltage for low logic state.	-0.6 to +0.6 V dc	
	n. Set DVM SELECT to L RUN.		

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
10 (cont) 11 Phasing servo amplifier	o. Set L MAX to 5.2 V and observe L RUN voltage on digital voltmeter. a. Ensure that REFLD PWR is set to VAR ADJ. b. Set DVM SELECT to FWD PWR and adjust FWD PWR for +1.9 to +2.1 V dc on digital voltmeter. c. Set DVM SELECT to REFLD PWR and adjust REFLD PWR for zero volts on digital voltmeter. d. Set SERVO RCV to 5.2 V and DVM SELECT to PHASING. Adjust PHASING for +0.085 to +0.115 V dc on digital voltmeter.	-20 to -22.5 V dc	Check the following: C11, Q18, Q19, Q22, Q23, U1, U2, U4, and U6.
	<div style="border: 1px solid black; width: fit-content; margin: 0 auto; padding: 2px; text-align: center;">NOTE</div> <p>Looking at card on test adapter, J2 is the 5 rows of pins (4 pins each) in the upper middle of the card. J2-16 is the extreme left pin in the center row.</p> e. On servo amplifier A3A1, connect digital voltmeter to J2-16. Observe digital voltmeter. f. Connect digital voltmeter to DVM test points, set DVM SELECT to C RUN, and observe digital voltmeter.		+3.0 to +5.5 V dc +14.0 to +20.0 V dc

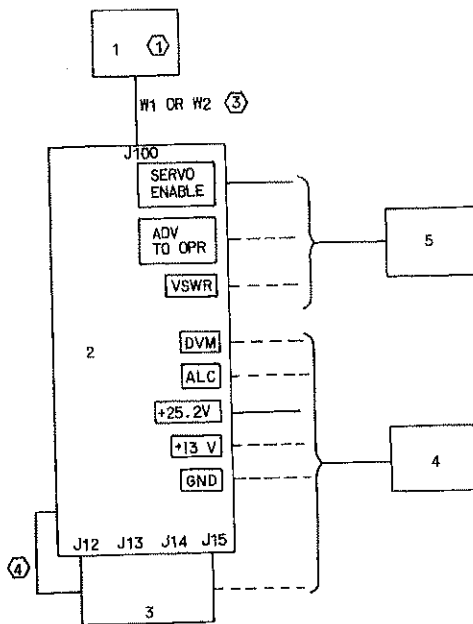
Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11 (cont)	<p>g. While monitoring C RUN voltage on digital voltmeter, set C RUN LOAD to FULL for 15 seconds. Note voltage during FULL setting.</p> <p>h. Set DVM SELECT to PHASING and adjust PHASING for -0.085 to -0.115 V dc on digital voltmeter and repeat steps e, f, and g.</p> <p>i. Set DVM SELECT to PHASING and adjust PHASING for +0.5 V dc.</p> <p>j. Set DVM SELECT to C RUN and set C MAX to 5.2 V. Observe voltage on digital voltmeter.</p> <p>k. Set DVM SELECT to PHASING and adjust PHASING for -0.5 ±0.01 V dc.</p> <p>l. Set DVM SELECT to C RUN and set C MIN to 5.2 V. Observe digital voltmeter.</p> <p>m. Set SERVO RCV to GND and ensure that 12-30 MHZ is set to 5.2 V.</p>	<p>+14.0 to +18.0 V dc.</p> <p>a. Voltage at A3A1 J2-16 should be -0.6 to +0.6 V dc.</p> <p>b. Voltage determined by step f. should be -14.0 to -20.0 V dc.</p> <p>c. Voltage determined by step g. should be -14.0 to -18.0 V dc.</p> <p>-20.0 to -22.5 Vdc.</p> <p>+20 to +22.5 V dc.</p>	<p>Same as above.</p> <p>Check the following: CR16, U5, and VR8.</p> <p>Check the following: C31, C32, C46, Q3, Q4, Q7, Q8, Q20, Q21, Q24, Q25, and U5.</p> <p>Same as above.</p> <p>Check the following: C31, C32, Q3, Q4, Q7, Q8, Q20, Q21, Q24, Q25, and U1.</p> <p>Same as above.</p>

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11 (cont)	<p>n. Set C MAX to 5.2 V. Observe digital voltmeter.</p> <p>o. Set SERVO RCV to 5.2, 12-30 MHZ to GND, and ensure that REFLD PWR is set to VAR ADJ.</p> <p>p. Set DVM SELECT to REFLD PWR and adjust REFLD PWR for +1.0 V dc on digital voltmeter.</p> <p>q. Set DVM SELECT to SERVO ENABLE. Observe digital voltmeter.</p> <p>r. Set DVM SELECT to C RUN and switch C MAX to 5.2 V. Observe digital voltmeter.</p>	<p>-2.0 to +2.0 V dc.</p> <p>Less than +0.2 V dc (logic 0).</p> <p>-20.0 to -22.5 V dc.</p>	<p>Same as above.</p> <p>Check the following: U6C, U6D, VR6, and VR7.</p> <p>Check the following: C31, C32, Q3, Q4, Q7, Q8, Q20, Q21, Q24, Q25, U1 and U3.</p>

Table 2-17. Servo Amplifier A3A1, Testing/Troubleshooting (cont)



- 1. POWER SUPPLY
- 2. SERVO AMPLIFIER TEST ADAPTER
- 3. SERVO AMPLIFIER A3A1
- 4. DIGITAL VOLTMETER
- 5. OSCILLOSCOPE

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.
- ③ PART OF POWER SUPPLY.
- ④ PENDANT CABLE, PART OF SERVO AMPLIFIER TEST ADAPTER.

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Figure 2-17. Servo Amplifier A3A1, Test Setup

2.3.11 If /Af A1A5A1, Testing/Troubleshooting

Perform the procedures in table 2-18 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-18.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5117/PRM-502 (if/af test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Electrical Frequency Synthesizer 0-5122/PRM-502 (electrical frequency synthesizer)

Attenuator, audio

Attenuator, 6-dB (2 required)

Digital voltmeter

Distortion analyzer

Frequency counter

If load, 500 ohm (0.1-uf cap. and 500-ohm resistor)

Isolation transformer

Mixer-attenuator, 600 ohms (refer to figure 2-31)

Oscillator (2 required)

Oscilloscope (storage function required)

Power divider

Power supply, 0-40 V dc

Rms voltmeter

Rf voltmeter

Signal generator (2 required)

Spectrum analyzer (if section and 1-KHz to 110-MKz rf section required)

Wave analyzer

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	<ul style="list-style-type: none"> a. On test adapter set POWER to OFF. b. Install If/Af A1A5A1 on test adapter and connect power supply as shown in figure 2-18 test setup A. c. On power supply, set power to ON; on test adapter set AGC to ATTACK, +25 VDC control fully clockwise, AM-SSB to SSB, VOICE-DATA to DATA, POWER to ON, AGC to ENBL, all other switches to DSBL and RF GAIN control to maximum clockwise position. d. Connect digital voltmeter to +25 VDC P1-20 test point on test adapter and adjust the power supply OUTPUT VOLTAGE for 26 V dc indication on digital voltmeter. e. On test adapter adjust +25 VDC control for a +25.2 V dc indication on digital voltmeter. f. On frequency synthesizer, set POWER to ON and connect to 5 MHZ injection jack on test adapter. 		
2 SSB receive audio	<ul style="list-style-type: none"> a. On test adapter, connect signal generator to IF IN/OUT jack and rms voltmeter to RCV AUDIO test points. b. Adjust signal generator for 4.9990 MHz to 100 uV and measure RCV AUDIO on rms voltmeter. 	720 to 840 mV rms	Adjust A1A5A1R150 (figure 3-5, sheet 3) Check the following: Q26-Q28, Q21-Q24, and U2, and U3.

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
2 (cont)	c. Connect rms voltmeter to AUX AUDIO test point on test adapter and measure audio level.	700 to 860 mV rms	Check Q36 and associated components
3 AM receive audio	<p>a. On test adapter, set AM-SSB to AM, disconnect 5 MHz injection (from frequency synthesizer test set) and connect rms voltmeter to RCV AUDIO jacks.</p> <p>b. Adjust signal generator for 5.0 MHz, 100 uV modulated 100% at 1000 Hz applied to IF IN/OUT jack on test adapter.</p> <p>c. Measure RCV AUDIO with rms voltmeter.</p>	720 to 840 mV rms	Adjust A1A5A1R151 (figure 3-5 sheet 3) Check the following: Q21-Q24, Q25, U2, U3, and Q29-Q32.
4 Receive sensitivity	<p>a. Adjust signal generator for 5.0 MHz, 3.5 uV, modulated 30% at 1000 Hz applied to IF IN/OUT jack on test adapter.</p> <p>b. Connect distortion analyzer to RCV AUDIO test point on test adapter and measure the signal-plus-noise to noise ratio ((S+N)/N) by turning off the AM modulation.</p> <p>c. On test adapter, set AM-SSB to SSB, reconnect the 5 MHz injection from frequency synthesizer to 5 MHz jack.</p> <p>d. Adjust signal generator for 4.9990 MHz, 1.0 uV applied to IF IN/OUT jack on test adapter.</p>	Not less than 11 dB.	Check the following Q2, FL1, U2, U3, Q21-Q25, and Q19

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4 (cont)	e. Measure the signal-plus-noise (S+N)/N ratio by nulling out the 1000-Hz audio.	Not less than 11 dB.	Check the following: Q1, FL2, Q26-Q28, U2, U3, and Q20-Q24.
5 Audio volume control	a. On test adapter, set VOICE-DATA to VOICE. Connect rms voltmeter to RCV AUDIO jack and set VOLUME control fully clockwise.		
	b. Adjust signal generator for 4.9999 MHz at 100 uV, applied to IF IN/OUT jack on test adapter and measure RCV AUDIO with rms voltmeter.	Not less than 2.8 Vrms.	Check the following: U3 and U2
	c. On test adapter, set VOLUME control fully counterclockwise and measure RCV AUDIO with rms voltmeter.	Not more than 27 mV rms.	Check the following: U3 and U2.
	d. On test adapter, set RCV MUTE to ENBL, VOLUME control fully clockwise and measure RCV AUDIO with rms voltmeter.	Not more than 3 mV rms.	Check U3.
6 SSB receive distortion	a. On test adapter, set RCV MUTE to DSBL and connect distortion analyzer to RCV AUDIO jack.		
	b. Adjust signal generator for 4.9990 MHz at 100 uV applied to IF IN/OUT on test adapter and adjust VOLUME control for 2.7 Vrms audio output at RCV AUDIO jack on test adapter (use rms voltmeter portion of distortion analyzer).		
	c. With distortion analyzer, measure the percent of distortion of the audio output at the RCV AUDIO jack.	Not more than 1 percent.	Check the following: Q21, Q24, U2, and Q26-28.

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
7 AM receive distortion	<p>a. On test adapter, set AM-SSB to AM and disconnect the 5 MHz injection signal from the 5 MHz jack.</p> <p>b. Adjust signal generator for 5.0 MHz, 100 uV, modulated 100% at 1000 Hz; applied to IF IN/OUT jack on test adapter. Adjust VOLUME control for 2.7 Vrms audio output at RCV AUDIO jack on test adapter (use rms voltmeter portion of distortion analyzer).</p> <p>c. With distortion analyzer measure percent of distortion of the audio output at the RCV AUDIO jack.</p>	Not more than 7 percent	Check the following: Q21-Q24, U2, and Q25.
8 Receive intermodu- lation	<p>a. On test adapter, set AM-SSB to SSB, connect the 5 MHz injection signal from the frequency synthesizer to 5 MHz jack. Connect rms voltmeter to RCV AUDIO test point.</p> <p>b. Connect two signal generators through 6 dB attenuators and power divider to IF IN/OUT jack on test adapter as shown in figure 2-18 test setup A.</p> <p>c. Turn one signal generator OFF and adjust the other for 4.99900 MHz at 10 mV.</p> <p>d. On test adapter, adjust VOLUME control for 2.0 Vrms measured with rms voltmeter connected to RCV AUDIO.</p> <p>e. Turn on the other signal generator and turn first one OFF, adjust second signal generator 4.99889 MHz at 10 mV.</p>		

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8 (cont)	<p>f. Turn on both signal generators and connect wave analyzer to RCV AUDIO test point on test adapter.</p> <p>g. Measure the distortion products below the 1000 and 1110 Hz tones on the wave analyzer.</p>	<p>110 Hz-Not less than 38 dB 890 Hz-Not less than 38 dB 1220 Hz-Not less than 38 dB</p>	<p>Check the following: Q26-Q28, U3, and U2.</p>
9 SSB bandpass	<p>a. On test adapter, set AGC to DSBL and reconnect the rms voltmeter to RCV AUDIO test point.</p> <p>b. Disconnect the two signal generators from test adapter and connect one signal generator through the 6-dB attenuator to IF IN/OUT jack on test adapter.</p> <p>c. Adjust signal generator for 4,999 MHz, 3 uV applied to IF IN/OUT jack on test adapter.</p> <p>d. Vary frequency of signal generator for peak audio output on rms voltmeter and note as reference (both frequency and voltage).</p> <p>e. Increase signal generator frequency until the audio out (measured on rms voltmeter) decreases to the 2 dB point of the reference frequency.</p>	<p>Reference</p>	

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
10 AM bandpass	f. Disconnect rms voltmeter and connect frequency counter to RCV AUDIO test point on test adapter and measure audio frequency. Disconnect frequency counter and reconnect rms voltmeter to RCV AUDIO test point.	Not more than 600 Hz.	Check the following: FL2, Q21-Q24, Q26-Q28, and U2.
	g. Increase signal generator frequency until audio out (measured on rms voltmeter) decreases to the 3.5 dB point of the reference frequency, then repeat step f.	Not more than 300 Hz.	Same as step f.
	h. Readjust signal generator to the reference frequency then decrease frequency until audio out (measured on rms voltmeter) decreases to the 2 dB point of the reference frequency.		
	i. Repeat step f.	Not less than 2700 Hz.	Check the following: FL1, Q21-Q24, and Q25.
	j. Decrease signal generator frequency until audio out (measured on rms voltmeter) decreases to the 3.5 dB point, then repeat step f.	Not less than 3200 Hz.	Same as step i.
	a. On test adapter, set AM-SSB to AM, AGC to ENBL and disconnect 5 MHz injection from the 5 MHz jack. b. Adjust signal generator for 5.0000 MHz, 100 uV, modulated 5% at 1000 Hz.		

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
10 (cont)	c. Vary the 1000 Hz modulating frequency for peak audio OUTPUT at RCV AUDIO test point on test adapter (measured on rms voltmeter). Note both modulating frequency and audio out as reference.	Reference.	
	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto 10px auto;">NOTE</div> <p>If necessary use frequency counter to measure modulating frequency (audio).</p>		
	d. Increase modulating frequency on signal generator until audio out (measured on rms voltmeter) decreases to 2 dB point from reference. Note audio frequency.	Not less than 2000 Hz.	Check the following: FL1, Q21-Q24, and Q25.
	e. Continue to increase modulating frequency until audio output (measured on rms voltmeter) decreases to 5.0 dB point from reference. Note audio frequency.	Not less than 2750 Hz or more than 3200 Hz.	Same as step d.
11 Audio rise	a. On test adapter, set AM-SSB to SSB, VOICE-DATA to DATA and connect 5 MHz injection frequency (from the frequency synthesizer) to the 5 MHZ jack. b. Adjust signal generator for 4.9990 MHz at 10 uV applied to IF IN/OUT jack on test adapter.		

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
11 (cont)	<p>c. With rms voltmeter measure level at RCV AUDIO jack on test adapter.</p> <p>d. Adjust signal generator for 4.9990 MHz at 100 uV and repeat step c.</p> <p>e. Adjust signal generator for 4.9990 MHz at 10 mV and repeat step c.</p>	<p>Not less than 600 mV.</p> <p>720 to 840 mV</p> <p>Not more than 950 mV.</p>	<p>Check the following: Q25, Q6-Q8, and Q29-Q32.</p> <p>Same as step c.</p> <p>Same as step c.</p>
12 AGC attack/decay	<p>a. Ensure that signal generator is adjusted for 4.9990 MHz at 10 mV, applied to IF IN/OUT jack on test adapter.</p> <p>b. On test adapter, connect oscilloscope to RCV AUDIO jack and synchronize oscilloscope with the output of the SYNC jack.</p> <p>c. On test adapter, set AGC to DECAY then to ATTACK (repeat as necessary) and on oscilloscope measure the time required for RCV AUDIO output to be within 3 dB of final level (agc attack time).</p> <p>d. On test adapter, set AGC to ATTACK then to DECAY (repeat as necessary to sync oscilloscope and obtain measurement) and on oscilloscope measure the time required for RCV AUDIO output to be within 3 dB of final value (agc decay time).</p> <p>e. On test adapter, set DATA-VOICE to VOICE and repeat step d.</p>	<p>Not more than 4 milliseconds.</p> <p>40 to 100 milliseconds.</p> <p>250 to 750 milliseconds.</p>	<p>Check the following: Q29-Q32, C51-C53, and Q25.</p> <p>Same as step c.</p> <p>Same as step c.</p>

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
13 Rf gain	<p>a. On test adapter set DATA-VOICE to DATA and AGC to ATTACK and adjust signal generator for 4.9990 MHz and -10 dBm (1000 Hz tone) indicated on rms voltmeter at RCV AUDIO test point.</p> <p>b. Adjust RF GAIN on test adapter for maximum RCV AUDIO output, then readjust signal generator level for -10 dBm RCV AUDIO output. Note signal generator output level for reference.</p> <p>c. Reduce RF GAIN on test adapter to obtain minimum RCV AUDIO output.</p> <p>d. Increase signal generator output to obtain -10 dBm RCV AUDIO output and observe dB increase of signal generator output level.</p>	<p>250 to 750 milli-seconds.</p> <p>Not less than 30 dB.</p>	<p>Same as step c.</p> <p>Check the following: Q33, and Q34.</p>
14 Receive currents	<p>a. On test adapter disconnect signal generator from IF IN/OUT jack and connect digital voltmeter to CURRENT MONITOR MV/MA +5.2 V test points and measure voltage (current).</p> <p>b. On test adapter, connect digital voltmeter to CURRENT MONITOR MV/MA + 13 V test points and measure voltage (current).</p>	<p>Not more than 7.5 mV (7.5 mA)</p> <p>Not more than 25 mV (25 mA).</p>	<p>check the following: L4 and C72, then check +5.2 V dc distribution in A1A5A1.</p> <p>Check the following: L5 and C65, then check +13 V dc distribution in A1A5A1.</p>
15 Transmit output level	<p>a. On test adapter, set AGC to DSBL and connect oscillator through isolation transformer to TX AUDIO and connect rf voltmeter</p>		

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
15 (cont)	<p>across a 500 ohm load to IF IN/OUT jacks (as shown in figure 2-18 test setup B).</p> <p>b. Adjust oscillator for 1000 Hz at 120 mV.</p> <p>c. On test adapter, set PTT to ENBL and measure output at IF IN/OUT jack on rf voltmeter. Set PTT to DSBL.</p>	45 to 75 mV.	Check the following: Q13-Q14, U1, Q12, Q15, Q11, and U8.
16. Transmit carrier reinsert	<p>a. On test adapter, set AM-SSB to AM and connect spectrum analyzer across a 500 ohm load to IF IN/OUT jack.</p> <p>b. Adjust oscillator for 1000 Hz at 120 mV, set PTT to ENBL and measure the dB difference between the carrier and the 1000 Hz sideband. Set PTT to DSBL.</p> <p style="text-align: center;">NOTE</p> <p>For steps 17 and 18, if necessary to locate the carrier, set AM/SSB to AM, disconnect oscillator and set PTT to ENBL.</p>	Not more than 0.5 dB.	Adjust A1A5A1 R149 (figure 3-5, sheet 1) Check the following: Q4, CR1, Q3, and C3.
17 Opposite sideband suppression	<p>a. On test adapter, set AM-SSB to SSB and adjust oscillator for 400 Hz at 120 mV applied to TX AUDIO test point.</p>		

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
17 (cont)	b. On test adapter, set PTT to ENBL and measure the level of the opposite sideband in dB down from the desired sideband at IF IN/OUT jack on the spectrum analyzer. Set PTT to DSBL.	Not less than 60 dB down.	Check the following U1, FL2, Q5, C1-C2, C4 and Q1.
18 Carrier suppression	a. Adjust oscillator for 1000 Hz at 12 mV applied to TX AUDIO test points on test adapter. b. On test adapter, set PTT to ENBL and measure in dB the carrier level below the lower sideband on spectrum analyzer connected to IF IN/OUT jack. Set PTT to DSBL.	Not less than 50 dB down.	Adjust A1A5A1R30 and A1A5A1R154 as many times as necessary (figure 3-5, sheet 2). Check the following: U1, FL2 and Q5.
19 Transmit intermodulation	a. Connect 2 oscillators through the mixer attenuator, 600 ohm and connect mixer output to TX AUDIO jack on test adapter as shown in figure 2-18 test setup B. b. On mixer-attenuator, set AUDIO LOAD/OSC 1 IN to OSC 1 IN and AUDIO LOAD/OSC 2 IN to AUDIO LOAD. Set oscillator No. 1 for 1000 Hz and an input level to the TX AUDIO jack of 60 mV (use the rms voltmeter to measure at the TX AUDIO jack). c. On mixer-attenuator, set AUDIO LOAD/OSC 1 IN to AUDIO LOAD. Set AUDIO LOAD/OSC 2 IN to OSC 2 IN. Set oscillator No. 2 for 1150 Hz and an input level to the TX AUDIO jack of 60 mV.		

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
19 (cont)	<p>d. On mixer-attenuator, set AUDIO LOAD/OSC 1 IN to OSC 1 IN (both oscillators will now be connected to the TX AUDIO jack on the test adapter).</p> <p>e. Connect spectrum analyzer through 500-ohm load (item 9, figure 2-18) to IF IN/OUT jack on test adapter. Set PTT to ENBL.</p> <p>f. Measure the level of the 850- and 1300-Hz products in dB below the desired tones. On test adapter, set PTT to DSBL.</p>	850 and 1300 Hz not less than 45 dB down.	Same as test 17 step b.
20 Sidetone	<p>a. On test adapter, set SDT to ENBL, connect rms voltmeter to RCV AUDIO test points. Connect oscillator to TX AUDIO test point and adjust for 1000 Hz at 120 mV input to TX AUDIO test point.</p> <p>b. On test adapter, set PTT to ENBL and measure RCV AUDIO on rms voltmeter. Set PTT to DSBL.</p>	-4.8 to -7.2 dBm.	Check the following: U2 and C76.
21 Low voltage fault	<p>a. On test adapter, set SDT to DSBL, VOICE-DATA to DATA, disconnect oscillator from TX AUDIO test point, connect digital voltmeter to +25 VDC P1-20 test point.</p> <p>b. On test adapter, set PTT to ENBL and reduce +25 V dc control to +20 V dc indicated on digital voltmeter. Monitor RCV AUDIO on rms voltmeter. Set PTT to DSBL and readjust +25</p>	-7.0 to -11 dBm	Check the following: U2 and C76.

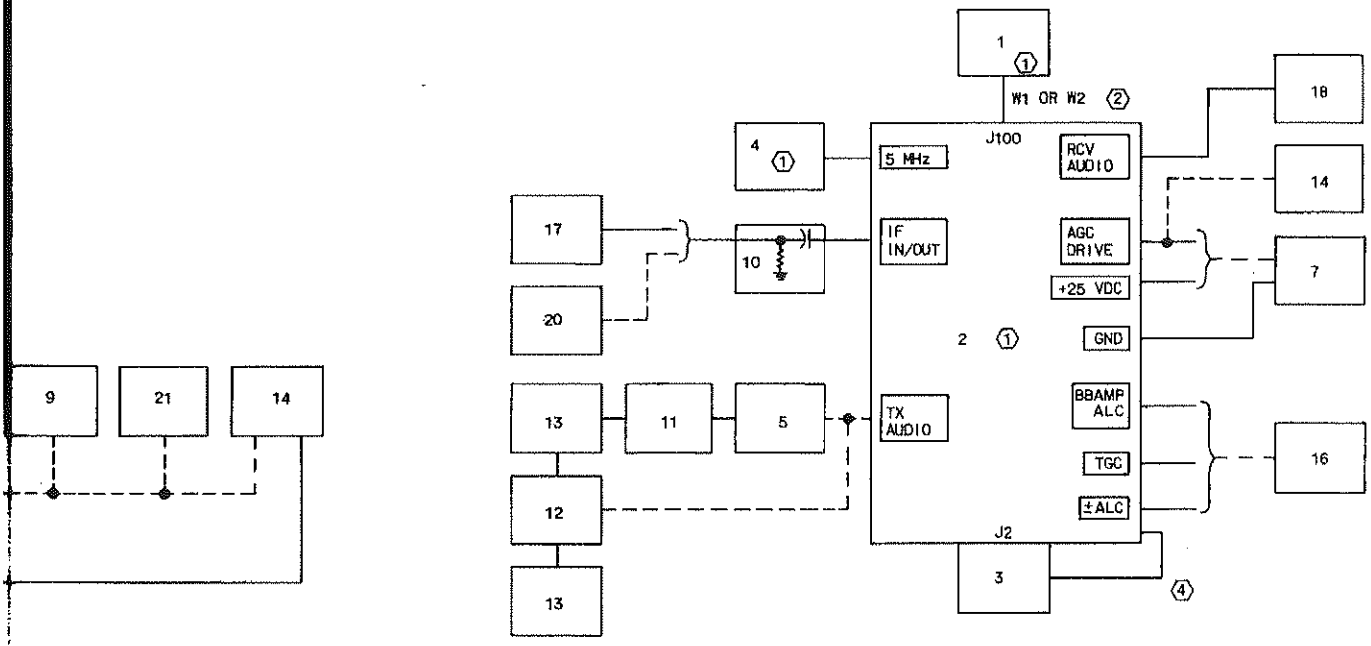
Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
2			
21 (cont)	V dc control for 25 V dc indicated on digital voltmeter.		
22 ALC	<p>a. On test adapter, connect digital voltmeter with negative lead to AGC DRIVE and positive lead to AGC COM test points. Connect 0-40 V dc power supply with negative lead to BB AMP-ALC and positive lead to GND test points. Measure the voltage at AGCDRIVE test point with 0 V dc applied to BB AMP-ALC test point.</p> <p>b. On test adapter, set PTT and TGC to ENBL. Adjust 0-40 V dc power supply for -1.5 V dc applied to BB AMP-ALC test point. Measure the voltage increase at AGC DRIVE test point.</p> <p>c. On test adapter, set TIP to ENBL and connect 0-40 V dc power supply to TGC (negative terminal) and GND (positive terminal) test points. Adjust 0-40 V dc power supply output for +0.3 V dc indication on digital voltmeter. Note the 0-40 V dc power supply voltage output.</p> <p>d. Adjust 0-40 V dc power supply output for 0.65 V dc output indicated on digital voltmeter, note 0-40 V dc power supply voltage.</p> <p>e. Connect oscilloscope to AGC DRIVE test point.</p>	<p>Reference</p> <p>Not less than 0.65 V dc.</p> <p>-2.9 to -4.2 V dc</p> <p>-4.6 to -5.9 V dc.</p>	<p>Check the following: Q16, Q18, Q6, Q11, Q9, Q10, C22, and CR16.</p> <p>Check the following: Q18, CR5, Q6, Q8, Q13, C22, Q10, Q9 and CR16.</p> <p>Same as step c.</p>

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
22 (cont)	<p>f. Adjust 0-40 V dc power supply to apply a -5.0 V dc to TGC test point on test adapter and note AGC DRIVE output on oscilloscope for reference.</p> <p>g. Set TIP to DSBL and measure the time for the output to decrease to within 10 percent of final value (TIP decay time).</p> <p>h. Connect 0-40 V dc power supply to \pmALC (negative terminal) and GND (positive terminal) test points on test adapter. Connect digital voltmeter as in step d.</p> <p>i. Adjust 0-40 V dc power supply for a 0.3 V dc AGC DRIVE voltage indicated on digital voltmeter. Adjust 0-40 V dc power supply to increase voltage applied to +ALC test point by -2 V dc and note AGC DRIVE voltage on digital voltmeter.</p> <p>j. Adjust 0-40 V dc power supply to increase voltage applied to \pmALC test point by an additional -1.0 V dc and note AGC DRIVE voltage on digital voltmeter.</p>	<p>0.2 to 0.6 seconds.</p> <p>Not more than -0.65 V dc.</p> <p>Not less than 0.65 V dc.</p>	<p>Same as step c.</p> <p>Same as step c.</p> <p>Same as step c.</p>

Table 2-18. If/Af A1A5A1, Testing/Troubleshooting (cont)



TEST SETUP B

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Figure 2-18. If/Af A1A5A1, Test Setup

2.3.12 Bandswitch A3A5, Testing/Troubleshooting

Perform the procedures in table 2-19 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-19.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5118/PRM-502 (bandswitch test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Attenuator, Rf, 20-dB (2 required)

Digital voltmeter

Load, 50 ohm

Multimeter

Probe coaxial T connector

Rf vector impedance meter

Signal generator

Spectrum analyzer (IF section and 1-KHz to 110 MHz rf section required)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	a. On test adapter set UNIT POWER to OFF, FAN to OFF and TIP to OPEN. b. Install bandswitch A3A5 to test adapter and connect test equipment as shown in figure 2-19. c. Set UNIT POWER and FAN to ON. d. Measure dc voltage between either red CURRENT MONITOR or 10 MA/MV test point and GND test point.	25.2 V dc	On the power supply, adjust OUTPUT VOLTAGE potentiometer for 25.2 V dc.
2 Current demand	a. Connect digital voltmeter leads to CURRENT MONITOR 10 MA/MV BANDSWITCH test points. b. Monitor CURRENT MONITOR 10 MA/MV BANDSWITCH test points while cycling BAND SELECT switch from 1A to 8. c. Return BAND SELECT to 1A.	20 mV (200 mA) maximum during cycling.	If current is excessive on all channels check for high friction in gears, shafts or wafer switches. If current is excessive on only one channel, check components applicable to the faulty channel.
3 Bandswitch complete	a. While observing SWITCHING indicator, slowly cycle BAND SELECT from 1A to 8. b. Return BAND SELECT to 1A.	When switching is complete, SWITCHING indicator goes out. While bandswitching occurs, SWITCHING indicator is lit.	Check following: S1, Q1, K1, and B1.

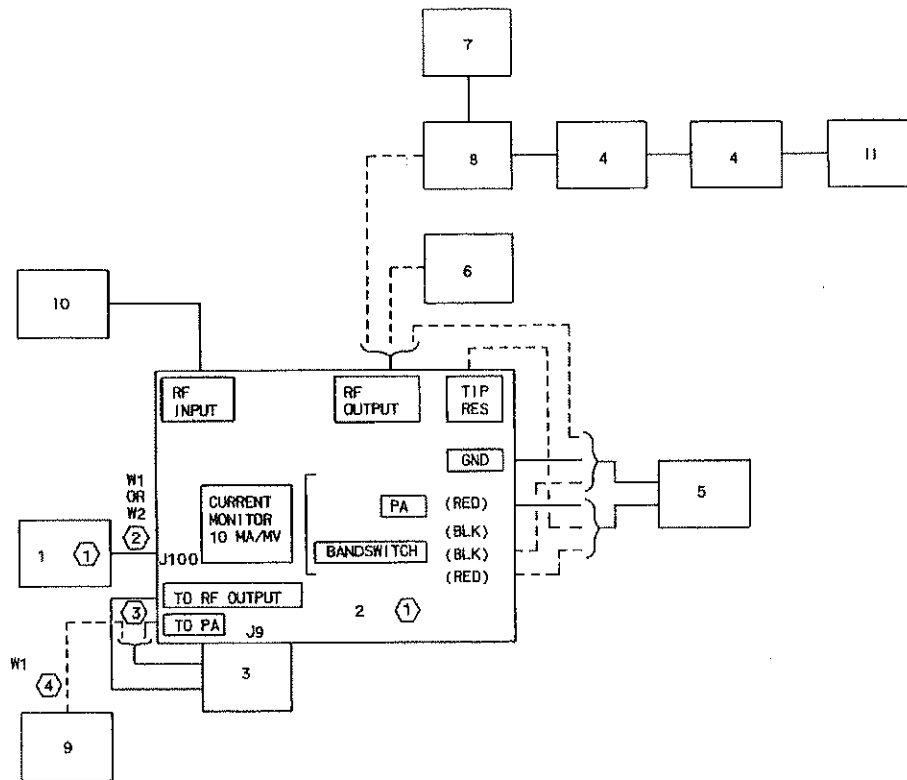
Table 2-19. Bandswitch A3A5, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
4 Varicoil center-tap	a. While observing COIL CENTER TAP indicator, rotate BAND SELECT from 1A through 8. b. Return BAND SELECT to 1A.	COIL CENTER TAP indicator is off for positions 1A through 5 and on for positions 6 through 8.	Check S2.
5 Tune in progress (TIP)	a. Set TIP PA switch to GND. b. Connect digital voltmeter between RF OUTPUT and TIP RES test point. Check for continuity. c. Disconnect digital voltmeter. d. Set TIP PA switch to OPEN.	Continuity between RF OUTPUT and TIP RES test point.	Check following: K2 and S2.
6 Band impedance	a. Connect 50-ohm load to RF OUTPUT as shown in figure 2-19. <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> Distance from rf vector impedance meter probe to bandswitch input must be not more than 4 inches. (Use cable CPN 630-1789-001.) b. Connect rf vector impedance meter to bandswitch input A3A5J1.		

Table 2-19. Bandswitch A3A5, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL																																										
6 (cont)	<p>c. Measure impedance for the following bands/frequencies:</p> <table border="1" data-bbox="389 525 779 1197"> <thead> <tr> <th data-bbox="389 525 487 567">BAND</th> <th data-bbox="487 525 779 567">FREQUENCY</th> </tr> </thead> <tbody> <tr><td data-bbox="389 567 487 609">1</td><td data-bbox="487 567 779 609">2.0 MHz</td></tr> <tr><td data-bbox="389 609 487 651"></td><td data-bbox="487 609 779 651">2.99 MHz</td></tr> <tr><td data-bbox="389 651 487 693">2</td><td data-bbox="487 651 779 693">3.0 MHz</td></tr> <tr><td data-bbox="389 693 487 735"></td><td data-bbox="487 693 779 735">3.99 MHz</td></tr> <tr><td data-bbox="389 735 487 777">3</td><td data-bbox="487 735 779 777">4.0 MHz</td></tr> <tr><td data-bbox="389 777 487 819"></td><td data-bbox="487 777 779 819">5.99 MHz</td></tr> <tr><td data-bbox="389 819 487 861">4</td><td data-bbox="487 819 779 861">6.0 MHz</td></tr> <tr><td data-bbox="389 861 487 903"></td><td data-bbox="487 861 779 903">7.99 MHz</td></tr> <tr><td data-bbox="389 903 487 945">5</td><td data-bbox="487 903 779 945">8.0 MHz</td></tr> <tr><td data-bbox="389 945 487 987"></td><td data-bbox="487 945 779 987">11.99 MHz</td></tr> <tr><td data-bbox="389 987 487 1029">6</td><td data-bbox="487 987 779 1029">12.9 MHz</td></tr> <tr><td data-bbox="389 1029 487 1071"></td><td data-bbox="487 1029 779 1071">15.99 MHz</td></tr> <tr><td data-bbox="389 1071 487 1113">7</td><td data-bbox="487 1071 779 1113">16.9 MHz</td></tr> <tr><td data-bbox="389 1113 487 1155"></td><td data-bbox="487 1113 779 1155">18.0 MHz</td></tr> <tr><td data-bbox="389 1155 487 1197"></td><td data-bbox="487 1155 779 1197">23.99 MHz</td></tr> <tr><td data-bbox="389 1197 487 1239">8</td><td data-bbox="487 1197 779 1239">24.0 MHz</td></tr> <tr><td data-bbox="389 1239 487 1281"></td><td data-bbox="487 1239 779 1281">26.0 MHz</td></tr> <tr><td data-bbox="389 1281 487 1323"></td><td data-bbox="487 1281 779 1323">27.0 MHz</td></tr> <tr><td data-bbox="389 1323 487 1365"></td><td data-bbox="487 1323 779 1365">28.0 MHz</td></tr> <tr><td data-bbox="389 1365 487 1407"></td><td data-bbox="487 1365 779 1407">29.99 MHz</td></tr> </tbody> </table> <p>d. Disconnect rf vector impedance meter and reconnect to PA pendant cable to bandswitch.</p>	BAND	FREQUENCY	1	2.0 MHz		2.99 MHz	2	3.0 MHz		3.99 MHz	3	4.0 MHz		5.99 MHz	4	6.0 MHz		7.99 MHz	5	8.0 MHz		11.99 MHz	6	12.9 MHz		15.99 MHz	7	16.9 MHz		18.0 MHz		23.99 MHz	8	24.0 MHz		26.0 MHz		27.0 MHz		28.0 MHz		29.99 MHz	60 ohms maximum	<ol style="list-style-type: none"> 1. Perform filter board adjustments. Refer to paragraph 2.8. 2. Replace appropriate filter board.
BAND	FREQUENCY																																												
1	2.0 MHz																																												
	2.99 MHz																																												
2	3.0 MHz																																												
	3.99 MHz																																												
3	4.0 MHz																																												
	5.99 MHz																																												
4	6.0 MHz																																												
	7.99 MHz																																												
5	8.0 MHz																																												
	11.99 MHz																																												
6	12.9 MHz																																												
	15.99 MHz																																												
7	16.9 MHz																																												
	18.0 MHz																																												
	23.99 MHz																																												
8	24.0 MHz																																												
	26.0 MHz																																												
	27.0 MHz																																												
	28.0 MHz																																												
	29.99 MHz																																												
7 Filter operation	<p>a. Connect signal generator, multimeter, and spectrum analyzer as shown in figure 2-19. Connect digital voltmeter to CURRENT MONITOR 10 MA/MV PA test points.</p> <p>b. Adjust the signal generator for 33V rf output from filter network and measure harmonic attenuation and current demand for each of the frequencies listed in Test 6 step b.</p>	The harmonic attenuation should be not less than -40 dB. The current demand should be not more than 2.5 amp (250 mV) on multimeter.	<ol style="list-style-type: none"> 1. Perform filter board adjustments. Refer to paragraph 2.8. 2. Replace appropriate filter board. 																																										

Table 2-19. Bandswitch A3A5, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. BANDSWITCH TEST ADAPTER
3. BANDSWITCH A3A5
4. ATTENUATOR, 20 dB, (2 REQUIRED)
5. DIGITAL VOLTMETER
6. LOAD, 50 OHM
7. MULTIMETER
8. PROBE COAXIAL T CONNECTOR
9. RF VECTOR IMPEDANCE METER
10. SIGNAL GENERATOR
11. SPECTRUM ANALYZER

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ PENDANT CABLES, PART OF BANDSWITCH TEST ADAPTER.
- ④ PART OF BANDSWITCH TEST ADAPTER
- ⑤ DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-19. Bandswitch A3A5,
Test Setup

2.3.13 Power Amplifier A3A4, Testing/Troubleshooting

Perform the procedures in table 2-20 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-20.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5119/PRM-502 (power amplifier test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Attenuator, rf, 20-dB (2 required)

Attenuator, 6-dB (2 required)

Digital voltmeter

Load, 50-ohm

Multimeter

Power divider

Probe coaxial T connector

Signal generator (2 required)

Spectrum analyzer (if section and 100-KHz to 1250-MHz rf section required).

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	<p>a. On test adapter, set UNIT POWER, KEY and FAN to OFF.</p> <p>b. Install power amplifier A3A4 on test adapter and connect power supply as shown in figure 2-20.</p> <p>c. On power supply, set POWER to ON. On test adapter, connect digital voltmeter (H) to CURRENT MON 10 MA/MV red test point and (L) to chassis ground. Set UNIT POWER (1A and 3A), KEY and FAN to ON.</p> <p>d. On power supply, adjust OUTPUT VOLTAGE for 25.2 V dc on digital voltmeter.</p> <p>e. Adjustments</p> <p>(1) On test adapter, set KEY to OFF, BAND to 8, and connect digital voltmeter to CURRENT MON 10 MA/MV test points.</p> <p>(2) On test adapter, set KEY to ON.</p> <p>(3) Operate A3A4A2R12 (see figure 3-21) through its range and observe digital voltmeter. Set R12 for 20 mV (200 mA) indication on digital voltmeter.</p> <p>(4) On test adapter, set KEY to OFF.</p>	<p>Output voltage 25.2 V dc. Both UNIT POWER and FAN indicators will light.</p> <p>Voltage (current) should vary between 7 and 30 mV (70 and 300 mA)</p>	<p>Check power supply and test adapter.</p>

Table 2-20. Power Amplifier A3A4, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 (cont)	<p>(5) On test adapter, connect multimeter and 50-ohm load to RF OUT FULL PWR test point as shown in figure 2-20. Connect signal generator, through the 6-dB attenuator, to RF IN.</p> <p>(6) On test adapter, set KEY to ON.</p> <p>(7) Set signal generator for 29.9999 MHz and adjust output for 31.6 V rms measured on multimeter.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">NOTE</div> <p>It may be necessary to remove the 6 dB attenuator in order to obtain 31.6 V rms.</p> <p>(8) Adjust A3A4A2R22 (see figure 3-21) counterclockwise until rf output just begins to decrease then turn R22 6.5 turns clockwise from this point.</p> <p>(9) On test adapter, set KEY to OFF.</p>		
2 CW power output	<p>a. On test adapter, set BAND to 1. Set signal generator rf output to minimum and frequency to 2.0 MHz.</p> <p>b. On test adapter, set KEY to ON and increase signal generator drive while monitoring voltage/current (power amplifier current demand) on digital voltmeter at CURRENT MON 10 MA/MV test points. Make</p>	<p>Signal generator output is not more than 2.5 V rms. Power output indication on multimeter is 31.6 V rms.</p>	<p>Replace following subassemblies: A3A4A1 A3A4A2</p>

Table 2-20. Power Amplifier A3A4 Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL														
2 (cont)	<p>sure current demand on digital voltmeter never exceeds 250 mV (2500 mA) while adjusting signal generator drive for a 31.6 Vrms power output indication on the multimeter.</p> <p>c. On test adapter, set KEY to OFF.</p> <p>d. Repeat steps a through c with the signal generator set to the following frequencies and the BAND set to the proper band.</p> <table border="0" data-bbox="386 909 727 1119"> <tr><td>3.5 MHz</td><td>BAND 2</td></tr> <tr><td>5.0 MHz</td><td>BAND 3</td></tr> <tr><td>7.0 MHz</td><td>BAND 4</td></tr> <tr><td>10.0 MHz</td><td>BAND 5</td></tr> <tr><td>15.0 MHz</td><td>BAND 6</td></tr> <tr><td>20.0 MHz</td><td>BAND 7</td></tr> <tr><td>29.9 MHz</td><td>BAND 8</td></tr> </table>	3.5 MHz	BAND 2	5.0 MHz	BAND 3	7.0 MHz	BAND 4	10.0 MHz	BAND 5	15.0 MHz	BAND 6	20.0 MHz	BAND 7	29.9 MHz	BAND 8	Same as step b.	Same as step b.
3.5 MHz	BAND 2																
5.0 MHz	BAND 3																
7.0 MHz	BAND 4																
10.0 MHz	BAND 5																
15.0 MHz	BAND 6																
20.0 MHz	BAND 7																
29.9 MHz	BAND 8																
3 PEP power output and intermod- ulation	<p>a. On test adapter, set BAND to 1. Connect two signal generators through 6-dB attenuators and power divider to RF IN jack as shown in figure 2-20.</p> <p>b. On test adapter set KEY switch to ON and turn on one signal generator, assure other signal generator is off. Tune signal generator for 2.0 MHz and adjust the rf output for 16 volts on multimeter across the 50-ohm load. Turn rf signal generator off.</p>																

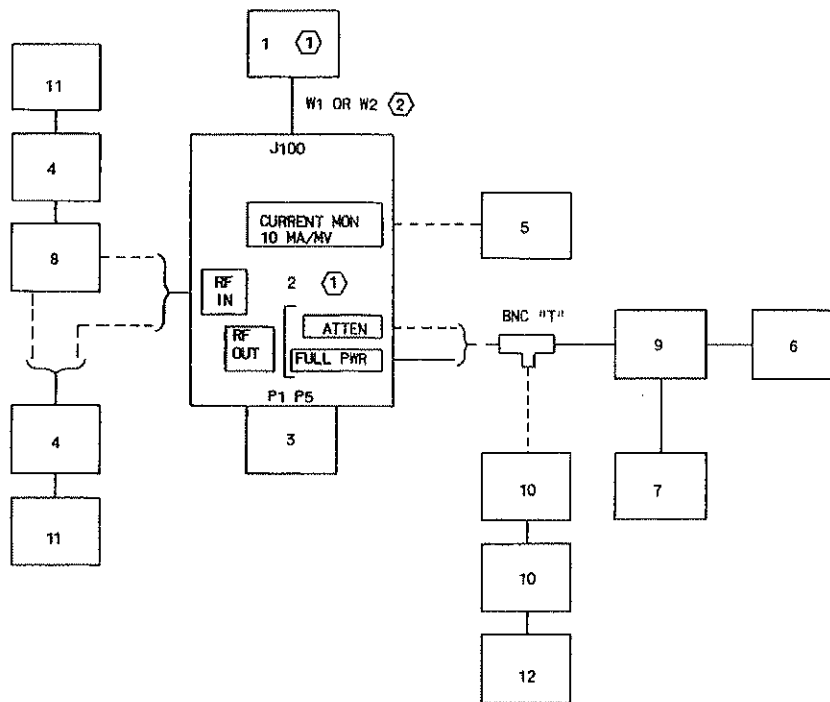
Table 2-20. Power Amplifier A38A4, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3 (cont)	<p style="text-align: center;">NOTE</p> <p>It may be necessary to remove the 6 dB attenuators in order to obtain 16 volts.</p> <p>c. Turn second signal generator on and repeat step b for same frequency and voltage level.</p> <p>d. Turn both signal generators on and measure the voltage on multimeter across the 50-ohm load.</p> <p style="text-align: center;">NOTE</p> <p>If the multimeter indicates the presence of oscillations, connect the TIME BASE connectors of the signal generators together. Set one to EXT. This will place them in phase coincidence with each other.</p> <p>e. Measure voltage/current (current demand) on digital voltmeter at CURRENT MON 10MA/MV test points.</p> <p>f. On test adapter, connect spectrum analyzer through two 20-dB rf attenuators to the BNC T connector as shown in figure 2-20.</p>	<p>Approximately 33 volts.</p> <p>No more than 200 mV (2000 mA).</p>	<p>Adjust both generators to obtain approximately 33 volts across 50-ohm load. Replace following assemblies: A3A4A1 A3A4A2</p> <p>Repeat adjustments test 1 steps e (5) through (9). Replace following subassemblies: A3A4A1 A3A4A2</p>

Table 2-20. Power Amplifier A3A4, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3 (cont)	<p data-bbox="337 426 756 661">g. Increase frequency of first signal generator by 1600 Hz. With first signal generator set for 2.00160 MHz and second signal generator set for 2.0010 MHz monitor the rf output with the spectrum analyzer.</p> <p data-bbox="337 814 776 1050">h. Repeat steps d. through g. for the following frequencies, switching BAND selector to applicable frequency band. 8.0 MHz (band 5) 12.0 MHz (band 6) 24.0 MHz (band 8) 29.99 MHz (band 8)</p>	<p data-bbox="815 426 1055 569">Third-order and fifth order intermodulation products not less than -25 dB.</p> <p data-bbox="815 814 1026 842">Same as step g.</p>	<p data-bbox="1094 426 1377 779">Repeat adjustments test 1e (1) through (4) and reset A3A4A2R12 for minimum intermodulation distortion. Replace the following subassemblies: A3A4A1 A3A4A2 (do not exceed 250 mA with no drive)</p> <p data-bbox="1094 814 1305 842">Same as step g.</p>

Table 2-20. Power Amplifier A3A4, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. POWER AMPLIFIER TEST ADAPTER
3. POWER AMPLIFIER A3A4
4. ATTENUATOR, 6-dB (2 REQUIRED)
5. DIGITAL VOLTMETER
6. LOAD, 50-OHM
7. MULTIMETER
8. POWER DIVIDER
9. PROBE COAXIAL T CONNECTOR
10. RF ATTENUATOR (2 REQUIRED)
11. SIGNAL GENERATOR (2 REQUIRED)
12. SPECTRUM ANALYZER

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-20. Power Amplifier A3A4,
Test Setup

2.3.14 Control A2, Testing/Troubleshooting

Perform the procedures in table 2-21 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-21.

Radio Test Set AN/PRM-502 items:

Control Test Set TS-5120/PRM-502 (control test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Digital voltmeter

Oscilloscope

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	a. On test adapter, set switches as follows: POWER to ON REMOTE-OPERATE to OFF. b. Install control A2 on test adapter and connect power supply as shown in figure 2-21. c. On control A2, set switches as follows: POWER/PUISSANCE to <input type="checkbox"/> MODE to USB d. On power supply set POWER to ON. Connect digital voltmeter to 25 V. On power supply adjust OUTPUT VOLTAGE control for +25.15 to +25.25 V dc on digital voltmeter.	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">NOTE</div> <p>Unless otherwise stated, switch settings will remain as noted in step 1a.</p>	
2 Frequency select	a. On control A2, set MEGAHERTZ KILOHERTZ selectors to 100000. b. Observe the FREQUENCY DECODE-MHZ display on test adapter for correct readout. c. Perform steps a. and b. for the frequencies listed below: 111111 222222 233333 244444 255555 266666 277777 288888 299999	100000 should be displayed.	Check the following: components: Switches A2S1 through S6, corresponding to the improper readout.

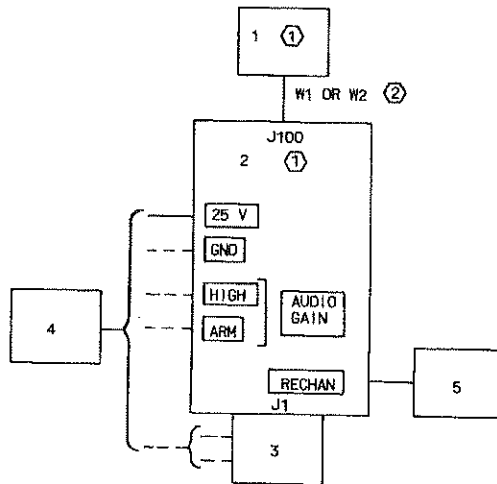
Table 2-21. Control A2, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3 Rechannel pulse	<p>a. Connect oscilloscope input lead and external trigger lead to RECHAN jack on test adapter.</p> <p>b. Adjust oscilloscope for negative slope.</p> <p>c. On control A2, switch 100 Hz (extreme right hand frequency selector) from 0 through 9 while observing the oscilloscope.</p> <p>d. Repeat step c. for each of the remaining five MEGAHERTZ KILOHERTZ frequency selectors on control A2.</p> <p>e. Disconnect oscilloscope.</p>	<p>RECHANNEL output should be grounded for at least one millisecond between each digit selected.</p> <p>RECHANNEL output should be grounded for at least one millisecond between each digit selected.</p>	<p>Check switch A2S6.</p> <p>Check the applicable switch.</p>
4 24V switched	<p>a. Rotate OFF/FERME clockwise past detent while observing 24V SWITCH indicators.</p> <p>b. Rotate OFF/FERME control on control A2 maximum counterclockwise while observing 24V SWITCH indicators.</p>	<p>Both indicators should be lit.</p> <p>Both indicators should go out.</p>	<p>Check A2R1 switch contacts.</p> <p>Same as above.</p>
5 Transmit power control	<p>a. On control A2, set POWER/PUISSANCE TO <input checked="" type="checkbox"/> and observe LOW POWER indicator on test adapter.</p> <p>b. On control A2, set POWER/PUISSANCE TO <input type="checkbox"/> and observe LOW POWER indicator.</p>	<p>LOW POWER indicator should be lit.</p> <p>LOW POWER indicator should go out.</p>	<p>Check switch A2S9.</p> <p>Same as above.</p>

Table 2-21. Control A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
6 (cont)	a. On control A2, depress and hold \AA switch and observe the frequency selector switches. b. Release \AA switch.	All six switches are lit. Lamps of all six switches go out.	Check applicable switches. If no lights are lit, check A2S7. Same as step a, except lamps remain lit.
7 Mode selection	a. On control A2, set MODE to AM and observe AM indicator on test adapter. b. On control A2, set MODE to USB and observe AM indicator.	AM indicator is lit. AM indicator is off.	Check switch A2S8. Check switch A2S8.
8 Af gain control	a. Connect digital voltmeter (set to ohms) to AUDIO GAIN HIGH test point and GND test point on test adapter. b. Observe digital voltmeter. c. Connect digital voltmeter to AUDIO GAIN HIGH and ARM test points. d. Observe digital voltmeter while varying OFF/FERME control on control A2 from maximum counterclockwise to maximum clockwise.	800 to 1200 ohms Varies smoothly from less than 10 ohms to 1,200 ohms.	Replace A2R1 Replace A2R1.
9 Continuity	a. With digital voltmeter, check continuity between corresponding pins of A2J1 and A2J2.	Resistance between corresponding pins should be no more than 5 ohms.	Check A2J1, A2J2 and wiring.

Table 2-21. Control A2, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. CONTROL TEST ADAPTER
3. CONTROL A2
4. DIGITAL VOLTMETER
5. OSCILLOSCOPE

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ DASHED LINE IS A ALTERNATE CONNECTION IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-21. Control A2, Test Setup

2.3.15 Frequency Synthesizer A1A6, Testing/Troubleshooting

Perform the procedures in table 2-22 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Test cables W1, W2 and W3 are supplied as part of test adapter TS-5121 and are provided as aids in troubleshooting the unit, they are not required to perform the test procedures. Cables W1 and W2 interconnect subassemblies A6A1 and A6A2 when they are separated and cable W3 allows circuit card A6A2A2 to be extended from subassembly A6A2 for easy access to components.

Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective sub-assembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-22.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-in Unit Test Set TS-5121/PRM-502 (frequency synthesizer test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Digital voltmeter

Frequency counter

Rf voltmeter

Selective voltmeter/Wave analyzer

Spectrum analyzer (if section and 100-KHz to 1250-MHz rf section required).

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	<p>a. On test adapter, set POWER to OFF.</p> <p>b. Install frequency synthesizer A1A6 on test adapter and connect power supply as shown in figure 2-22. Connect J15 pendant cable to J1 on A1A6. Connect J1 pendant cable to the longer of the two frequency synthesizer cables. Connect the shorter of the two synthesizer cables to J2.</p> <p>c. On power supply set POWER to ON. On test adapter connect digital voltmeter (H) to CURRENT MONITOR 24V test point and (L) to GND test point. Set POWER to ON. On power supply adjust OUTPUT VOLTAGE for 24 V dc indication on digital voltmeter.</p> <p>d. On test adapter, move the positive lead of digital voltmeter to CURRENT MONITOR 13V test point and measure voltage.</p> <p>e. On test adapter, move the positive lead of digital voltmeter to CURRENT MONITOR 5V test point and measure voltage.</p>	<p>13 ± 0.5 V dc</p> <p>5.2 ± 0.2 V dc</p>	<p>Adjust 13 volt circuit in power supply.</p> <p>Adjust 5.2 volt circuit in power supply.</p>
2 +5V current	<p>a. On test adapter, set MODE to USB/110, RECHANNEL to OFF. Connect digital voltmeter to CURRENT MONITOR 5V 10 MA/MV test points and measure voltage/current.</p>	<p>3 to 4 mV (30 to 40 mA)</p>	<p>Replace the following: Frequency standard A1A6A1A1 Fixed frequency divider A1A6A1A2</p>

Table 2-22. Frequency Synthesizer A1A6, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
2 (cont)	b. On test adapter hold RE-CHANNEL in MNL ON position and measure voltage/current. Return RECHANNEL to OFF.	Same as step a.	Frequency converter A1A6A1A4 Voltage regulator A1A6A2A1 Variable frequency divider A1A6A2A2. Replace the following: Voltage regulator A1A6A2A1 Variable frequency divider A1A6A2A2.
3 +13V current	a. On test adapter connect digital voltmeter to CURRENT MONITOR 13V 1 MA/MV test points. b. Measure voltage/current on digital voltmeter.	30 to 50 mV (30 to 50 mA).	Replace the following: Lf phase-lock loop A1A6A1A3 Frequency converter A1A6A1A4 Voltage regulator A6A1A2A1.
4 24V current	a. On test adapter connect digital voltmeter to CURRENT MONITOR 24V 1 MA/MV test points. b. Measure voltage/current on digital voltmeter.	4 to 6 mV (4 to 6 mA).	Replace voltage regulator A1A6A2A1.
5 117-145 MHz output	a. On test adapter set RE-CHANNEL to AUTO, connect frequency counter to 117-145 MHz test point. b. On test adapter select 29.9999 MHz with FREQUENCY CONTROL-MHZ.	TX INHIBIT lamp lights momentarily while selecting frequency.	Check test adapter.

Table 2-22. Frequency Synthesizer A1A6, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
5 (cont)	<p>c. Measure output frequency at 117-145 MHz test point on frequency counter.</p> <p>d. Repeat step b. and c. for the following frequencies: 18.8888 MHz 7.7777 MHz 2.0000 MHz 1.5000 MHz</p> <p>e. On test adapter connect rf voltmeter through 50-ohm adapter to 117-145 MHz test point. Select 29.9999 MHz with FREQUENCY CONTROL-MHZ and measure rf level at 117-145 MHz test point on rf voltmeter.</p> <p>f. Repeat step e. for the following frequencies: 18.8888 MHz 7.7777 MHz 2.0000 MHz</p>	<p>144.9999 MHz \pm 116 Hz.</p> <p>133.8888 MHz \pm 106 Hz 122.7777 MHz \pm 97 Hz 117.0000 MHz \pm 93 Hz. TX INHIBIT indicator is lit.</p> <p>+3 dBm \pm dB.</p> <p>Same as step e. Same as step e. Same as step e.</p>	<p>Replace the following: Hf phase-lock loop A1A6A2A3 Variable frequency divider A1A6A2A2 Voltage regulator A1A6A2A1.</p> <p>Same as step c. Same as step c. Same as step c.</p> <p>Replace variable frequency divider A1A6A2A2.</p> <p>Replace hf phase-lock loop A1A6A2A3.</p> <p>Same as step e. Same as step e. Same as step e.</p>
6 117-145 MHz spectral purity	<p>a. On test adapter, connect spectrum analyzer to 117-145 MHz test point, select 16.0000 MHz with FREQUENCY CONTROL-MHZ, and measure 100-kHz sideband.</p>	<p>No less than 60 dB.</p>	<p>Replace hf phase-lock loop A1A6A2A3.</p>

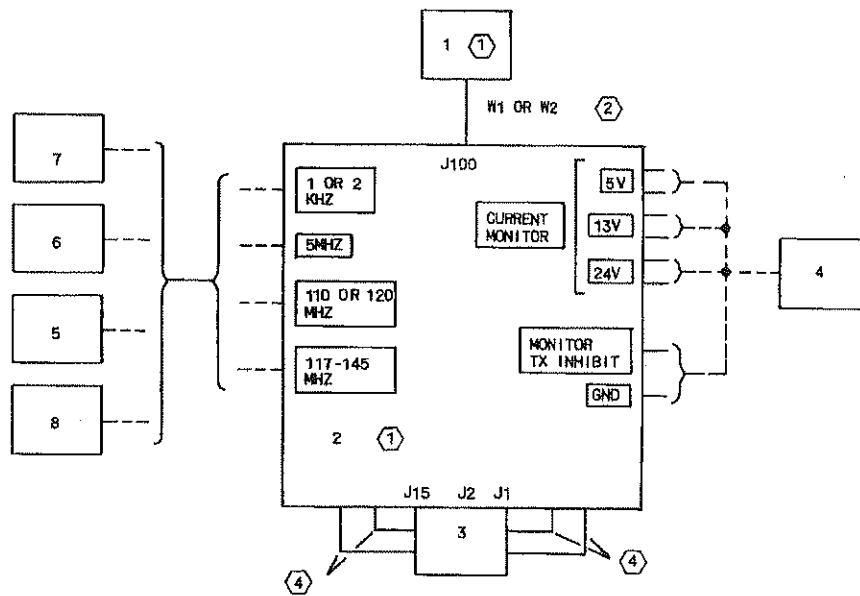
Table 2-22. Frequency Synthesizer A1A6, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
6 (cont)	b. On test adapter, select 2.0010 MHz with FREQUENCY CONTROL-MHZ and measure 10-kHz sideband.	No less than 50 dB.	Replace frequency converter A1A6A1A4.
7 110/120 MHz output	a. On test adapter, set RE-CHANNEL to OFF and connect frequency counter to 110 OR 120 MHz test point.		
	b. Measure the frequency on frequency counter. Ensure that MODE is set to USB/110.	110 MHz \pm 88 Hz.	Replace frequency standard A1A6A1A1.
	c. On test adapter connect rf voltmeter to 110 OR 120 MHz test point and measure rf level.	+1 dBm \pm 3 dB.	Same as step b.
	d. On test adapter connect frequency counter to 110 OR 120 MHz test point, set MODE switch to LSB/120. Measure frequency.	120 MHz \pm 96 Hz	Same as step b.
	e. Repeat step c.	Same as step c.	Same as step b.
8 110/120 MHz spectral purity	a. On test adapter set RE-CHANNEL to AUTO, MODE to USB/110 and connect spectrum analyzer to 110 OR 120 MHz test point.	Same as step c.	Same as step b.
	b. Measure 120-MHz output on spectrum analyzer.	Not less than 60 dB down.	Replace frequency standard A1A6A1A1.
	c. On test adapter set MODE to LSB/120 and measure 110-MHz output.	Not less than 60 dB down.	Same as step b.
9 2-KHz output	a. On test adapter set MODE to USB/110 and connect frequency counter to 1 OR 2 KHZ jack.		

Table 22. Frequency Synthesizer A1A6, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
9 (cont)	b. Measure output frequency on frequency counter.	2 kHz.	Replace the following: Fixed frequency divider A1A6A1A2 Frequency standard A1A6A1A1.
10 5-MHz output	c. On test adapter connect selective voltmeter to 1 OR 2 KHZ jack and measure output level.	+ .125 V \pm 2 dB.	Replace fixed frequency divider A1A6A1A2.
	a. On test adapter set 5 MHZ to ON/SSB and connect frequency counter to 5 MHZ test jack.		
	b. Measure output on frequency counter.	5 MHz \pm 4 Hz.	Replace the following: Fixed frequency divider A1A6A1A2 Frequency standard A1A6A1A1.
	c. On test adapter connect rf voltmeter (unterminated) to 5 MHZ test jack and measure output level.	0.04V \pm 1 dB	Same as step b.
	d. On test adapter set 5MHZ to OFF/AM.		
	e. On test adapter connect rf voltmeter to 5 MHZ test point and measure output level.	No more than 1.0 mV	Same as step b.

Table 2-22. Frequency Synthesizer A1A6, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. FREQUENCY SYNTHESIZER TEST ADAPTER
3. FREQUENCY SYNTHESIZER A1A6
4. DIGITAL VOLTMETER
5. FREQUENCY COUNTER
6. RF VOLTMETER
7. SELECTIVE VOLTMETER
8. SPECTRUM ANALYZER

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.
- ④ PENDANT CABLES, PART OF FREQUENCY SYNTHESIZER TEST ADAPTER.

TP5-4808-014

Figure 2-22. Frequency Synthesizer Test Setup

2.3.16 Mixer A1A2, Testing/Troubleshooting

Perform the procedures in table 2-23 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-23.

Radio Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5122/PRM-502 (mixer test adapter)
Power Supply PP-5290/PRM-502 (power supply)

Electrical Frequency Synthesizer 0-5122/PRM-502 (electrical frequency synthesizer)

Attenuator, 6-dB (2 required)

Digital voltmeter

Distortion analyzer

Power divider

Rf voltmeter, with 50 ohm adapter

Signal generator (2 required)

Spectrum analyzer (if section and 1-kHz, to 110 MHz rf section required)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	<p>a. On test adapter, set POWER to OFF.</p> <p>b. Install mixer A1A2 on test adapter and connect power supply as shown in figure 2-23, test setup A. Set power supply POWER to ON.</p> <p>c. On test adapter, set MODE to RCV, AGC to OFF and POWER to ON.</p> <p>d. On electrical frequency synthesizer, set POWER to ON, MODE to SSB and USB, and FREQUENCY SELECT-MHZ to 15.0000 MHz.</p> <p>e. Receive adjustments (1) On test adapter, connect signal generator through 6-dB attenuator to RF IN/OUT test point and connect rf voltmeter to MIXER OUTPUT LOAD RF OUT test point as shown in figure 2-23, test setup A. Connect rf jumper cable between MIXER IN/OUT and MIXER OUTPUT LOAD RF IN test points.</p> <div style="border: 1px solid black; width: fit-content; margin: 10px auto; padding: 2px 10px;">NOTE</div> <p>Hard volts is defined as open circuit voltage obtained by adding the 6-dB attenuator in series with the signal generator rf output. Unless otherwise noted, hard volts will be used for these procedures.</p>		

Table 2-23. Mixer A1A2, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 (cont)	<p>(2) Set signal generator for 15.0 MHz at a level of 10 mV.</p> <p>(3) Monitor rf out on rf voltmeter and adjust A1A2C10, C30 and C35 (see figure 3-15, sheet 1) for maximum rf output.</p>		
2 Receive gain	<p>a. Set signal generator for 15.0 MHz, 10 mV output and measure rf out on rf voltmeter connected to MIXER OUTPUT LOAD RF OUT test point.</p> <p>b. Repeat step b at 2.0 MHz and 29.999 MHz, set the electrical frequency synthesizer to the required frequency (2.0 or 29.999 MHz) for each test.</p>	<p>60 ± 20 mV</p> <p>Same as step b.</p>	<p>Check the following: Q1, Q2, T1, Q11, Q12, T5, FL1, T6, CR7.</p> <p>Same as step b.</p>
3 Receive bandpass	<p>a. Set signal generator for 15.0 MHz at 10 mV output (applied to RF IN/OUT test point on test adapter) and set electrical frequency synthesizer to 15.0000 MHz.</p> <p>b. Measure rf output on rf voltmeter connected to MIXER OUTPUT LOAD RF OUT test point. Note level as reference.</p> <p>c. On signal generator increase output level to raise rf output by 0.6 dB, then increase signal generator frequency to obtain voltage reference level noted in step b (measured on rf voltmeter). Note frequency variation above 15.000 MHz.</p>	<p>Reference</p> <p>No less than 3.0 kHz.</p>	<p>Check the following: FL1, Q1-Q2, Q11-Q12, L1-L2, and C1-C2.</p>

Table 2-23. Mixer A1A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3 (cont)	d. Repeat steps a, b, and c for frequency variation below 15.0000 MHz.	Same as step c.	Same as step c.
4 Receive sensitivity	<p>a. On test adapter, connect distortion analyzer to RCVR AF OUT test point as shown in figure 2-23, test setup A. Disconnect rf jumper from MIXER OUTPUT LOAD RF IN test point and connect to IF IN/OUT test point.</p> <p>b. Set signal generator for 15.0010 MHz, 0.7 uV, applied to RF IN/OUT test point on test adapter.</p> <p>c. On the distortion analyzer measure the signal-plus-noise to noise ratio ((S+N)/N) by nulling out the 1000-Hz audio.</p> <p>d. Set electrical frequency synthesizer for 2.000 MHz and adjust signal generator for 2.0010 MHz, 0.7-uV output and repeat step c.</p> <p>e. Set electrical frequency synthesizer for 29.9990 MHz and adjust signal generator for 30.0000 MHz and repeat step c.</p>	<p>Not less than 12 dB.</p> <p>Same as step c.</p> <p>Same as step c.</p>	<p>Check the following: Q1-Q2, T1, Q11-Q12, T5, FL1, T6, CR7.</p> <p>Same as step c.</p> <p>Same as step c.</p>
5 Receive AGC	a. Set electrical frequency synthesizer for 15.0000 MHz and adjust signal generator for 15.0010-MHz, 0.7 -uV output applied to RF IN/OUT test point on test adapter.	Same as step c.	Same as step c.

Table 2-23. Mixer A1A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
5 (cont)	b. Set reference on distortion analyzer (RCVR AF OUT test point). c. On test adapter, set AGC to ON. d. Increase output level of signal generator until reference level, step b, is obtained on distortion analyzer. Measure increase in signal generator output level.	Reference 45 ± 5 dB above reference.	Check the following: CR7, Q1-Q2, T1-T2, Q11-Q12, T5-T6, CR3, CR5, CR6 and CR9.
6 Receive if rejection	a. On test adapter, set AGC to OFF. b. Set signal generator for 15.0010 MHz, 1.0 uV, applied to RF IN/OUT test point on test adapter. c. Set reference on distortion analyzer (RCVR AF OUT test point). d. Reset signal generator for 114.9990 MHz, then increase output level of signal generator until reference level, step c, is obtained on distortion analyzer. Measure increase in signal generator output level.	Reference Not less than 38 dB above reference.	Check the following: FL1, Q1-Q2, Q11-Q12, T1-T2, T5-T6, CR3, and CR6.
7 Receive current	a. On test adapter connect digital voltmeter to T/R CURRENT MV/MA test points and set AGC to ON. b. Measure dc voltage (current) on digital voltmeter.	Not more than 13 mV (13 mA).	Check the following: L1, R1, C6, R3, C15, L9, C28, CR7, L16, C27, L8, R4, C14, and L4.

Table 2-23. Mixer A1A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8 Transmit gain	<p>a. On test adapter, set MODE to XMT and assure that AGC is OFF. On electrical frequency synthesizer assure that POWER is ON, MODE is in SSB and USB, and FREQUENCY SELECT-MHZ is set to 15.0000 MHz.</p> <p>b. On test adapter, connect signal generator through 6-dB attenuator to MIXER INPUT LOAD RF IN test point. Refer to figure 2-23, test setup B. Disconnect the rf jumper and connect between MIXER INPUT LOAD RF OUT and MIXER IN/OUT test points.</p> <p>c. Transmit Adjustments (1) Connect rf voltmeter (unterminated) to MIXER INPUT LOAD MV IN test point. (2) Set signal generator for 5.0000 MHz and adjust output for 60 mV measured on rf voltmeter. (3) Remove rf voltmeter from MIXER INPUT LOAD MV IN test point and connect thru the 50-ohm BNC adapter, to RF IN/OUT test point. (4) Monitor rf voltmeter and adjust A1A2C25, C44, and C47 (see figure 3-15, sheet 1) for maximum rf output.</p> <p>d. Measure rf output at RF IN/OUT test point on rf voltmeter.</p>	70 ± 20 mV.	Check the following: Q15-Q17, T8, Q5-Q6, T3, FL1, T7, CR9 and CR5.

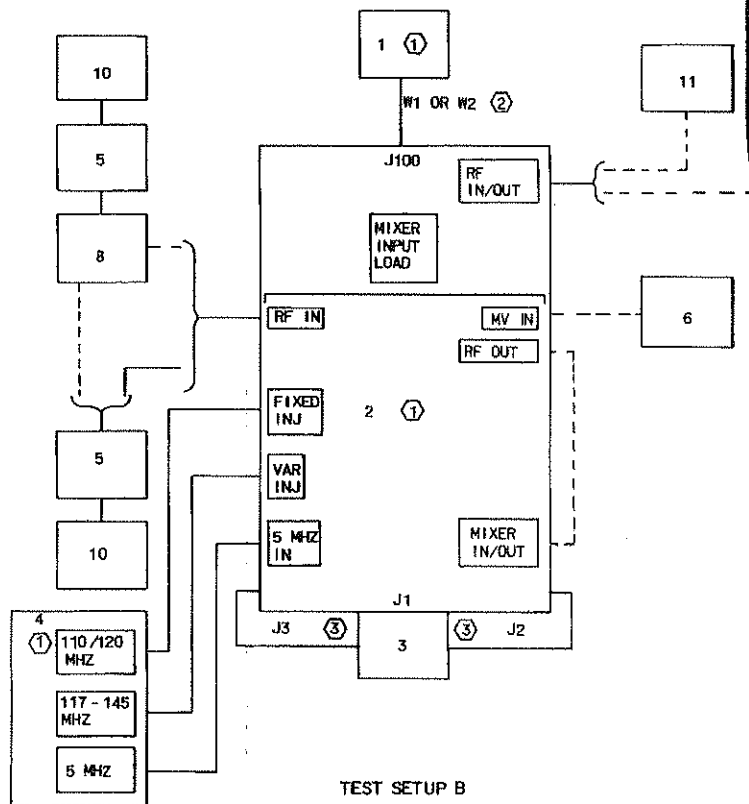
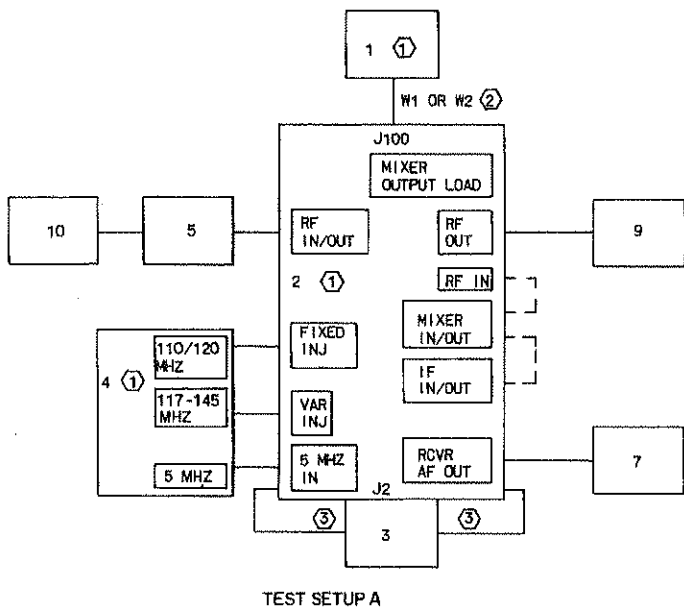
Table 2-23. Mixer A1A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8 (cont)	<p>e. Set electrical frequency synthesizer to 2.0000 MHz. (signal generator remains at 5.0000 MHz at 60 mV output applied to MIXER IN/OUT test point on test adapter).</p> <p>f. Repeat step d.</p> <p>g. Repeat step d with electrical frequency synthesizer set to 29.9999 MHz.</p>		
9 TGC	<p>a. Set electrical frequency synthesizer FREQUENCY SELECT-MHZ to 15.0000 MHz and assure that signal generator is at 5.0000 MHz, 60 mV output.</p> <p>b. On test adapter connect spectrum analyzer to RF IN/OUT jack. Measure output for reference.</p> <p>c. On test adapter, set AGC to ON and measure output on spectrum analyzer. Set AGC to OFF.</p>	<p>Same as step d.</p> <p>Same as step d.</p> <p>Reference.</p> <p>Not less than 30 dB or more than 45 dB down from reference, step b.</p>	<p>Same as step d.</p> <p>Same as step d.</p> <p>Same as test 7 step b.</p>
10 Transmit intermodulation	<p>a. On test adapter, connect two signal generators through 6-dB attenuators and power divider to MIXER INPUT LOAD RF IN test point. Connect spectrum analyzer to RF IN/OUT test point.</p> <p>b. With one signal generator off, set the other for 5.0000 MHz and adjust output for 30 mV measured on rf voltmeter (unterminated) connected to MIXER</p>		

Table 2-23. Mixer A1A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
10 (cont)	<p>INPUT LOAD MV IN test point on test adapter. Set signal generator to OFF.</p> <p>c. Turn on the other signal generator and set for 5.00011 MHz and output for 30 mV measured on rf voltmeter (unterminated). Turn on the first signal generator.</p> <p>d. Measure the third order products on the spectrum analyzer.</p>	No less than 40 dB.	Check the following: Q15-Q16, Q5-Q6, Q10, Q14.
11 Transmit Current	<p>a. On test adapter, connect digital voltmeter to T/R CURRENT MV/MA test points and disconnect signal generators.</p> <p>b. On test adapter, set AGC to ON and measure voltage (current) on digital voltmeter. Set AGC to OFF.</p>	Not more than 16.5 mV (16.5 mA).	Same as test 7, step b.

Table 2-23. Mixer A1A2, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. MIXER TEST ADAPTER
3. MIXER A1A2
4. ELECTRICAL FREQUENCY SYNTHESIZER
5. ATTENUATOR, 6-dB (2 REQUIRED)
6. DIGITAL VOLTMETER
7. DISTORTION ANALYZER
8. POWER DIVIDER
9. RF VOLTMETER
10. SIGNAL GENERATOR (2 REQUIRED)
11. SPECTRUM ANALYZER

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ PENDANT CABLE, PART OF MIXER TEST ADAPTER.
- ④ USE 50-OHM BNC ADAPTER.
- ⑤ DASHED LINE IS ALTERNATE CONNECTION DESCRIBED IN A PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

Figure 2-23. Mixer A1A2,

2.3.17 Logic/Tx A1A5A2, Testing/Troubleshooting

Perform the procedures in table 2-24 to isolate a fault to the lowest replaceable sub-assembly or component or to verify proper operation of the unit. Refer to the schematic diagram and to the illustrated parts list for information on circuit configuration and component location and description. When a defective subassembly has been repaired, the procedures should be repeated to verify all faults have been corrected.

The procedures are to be performed in the sequence given. If an individual test is to be performed, review prior tests to ensure proper test setup and control settings.

The following test equipment items from table 2-9 are required to perform the procedures in table 2-24.

Radio Set Test Set AN/PRM-502 items:

Electronic Circuit Plug-In Unit Test Set TS-5123/PRM-502 (logic/tx test adapter)

Power Supply PP-5290/PRM-502 (power supply)

Attenuator, Audio

Digital voltmeter

Isolation transformer, 600-ohm

Mixer-attenuator, 600 ohm (refer to figure 2-31)

Oscillator (2 required)

Oscilloscope (storage function required)

Rms voltmeter

Selective Voltmeter/Wave Analyzer

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
1 Preliminary setup	a. On test adapter, set POWER to OFF. b. Install logic/tx A1A5A2 on test adapter and connect power supply as shown in figure 2-24, test setup A. c. On power supply set POWER to ON. On test adapter, connect digital voltmeter to 25 VDC P1-25 test point and rotate the 25 VDC adjust fully clockwise. d. On test adapter, set POWER to ON, \overline{SK} +40 V to OFF, SET to DIRECT, R/C TRIGGER to OFF, STD, PTT, TIP, CWK, RCV ONLY, AM, VOICE, and TX INHIBIT to DSBL. e. On power supply, adjust OUTPUT VOLTAGE for 26 Vdc indication on digital voltmeter. f. On test adapter adjust 25 VDC control for 25.2 Vdc indication on digital voltmeter.		
2 \overline{TX} , TX logic with functions disabled	a. Measure voltage at \overline{TX} test point on test adapter with digital voltmeter. b. Measure voltage at TX test point.	Not less than +4.5 Vdc (logic 1) Not more than +0.5 Vdc (logic 0)	Check the following: U3, Q9, U5-U6, Q7-Q8, C10, U2, Q10. Same as step a.
3 \overline{TX} , TX logic with PTT enabled	a. On test adapter, set PTT to ENBL and measure voltage at \overline{TX} test point with digital voltmeter.	Not more than +0.5 Vdc (logic 0)	Check the following: U3, Q9, U5-U6, Q7-Q8, C10.

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
3 (cont)	b. Measure voltage at TX test point.	Not less than +4.5 Vdc (logic 1)	Check the following: U3, Q9, U5-U6, Q7-Q8, C10, U2, Q10.
4 $\overline{\text{TX}}$, TX logic with TIP enabled	a. On test adapter, set PTT to DSBL and TIP to ENBL. Measure voltage at $\overline{\text{TX}}$ test point with digital voltmeter.	Not more than +0.5 Vdc (logic 0)	Check the following: U3, Q9, U5-U6, Q7-Q8, C10.
	b. Measure voltage at TX test point.	Not less than +4.5 Vdc (logic 1).	Check the following: U3, Q9, U5-U6, Q7-Q8, C10, U2, Q10.
5 $\overline{\text{TX}}$, TX logic with PTT, RCV ONLY enabled	a. On test adapter, set TIP to DSBL and PTT and RCV ONLY to ENBL. Measure voltage at $\overline{\text{TX}}$ test point with digital voltmeter.	Not less than +4.5 Vdc (logic 1).	Check the following: U3, Q9, U5-U6, Q7-Q8, C10, U7, CR2
	b. Measure voltage at TX test point.	Not more than +0.5 Vdc.	Check the following: U3, Q9, U5-U6, Q7-Q8, C10, U2, Q10, U7.
6 $\overline{\text{TX}}$, TX logic with PTT and TX INHB enabled	a. On test adapter, set RCV ONLY to DSBL and TX INHB to ENBL. Measure voltage at $\overline{\text{TX}}$ test point with digital voltmeter.	Not less than +4.5 Vdc (logic 1)	Check the following: U3, Q9, U5-U6, Q7-Q8, C10, U7, CR2.
	b. Measure voltage at TX test point.	Not more than +0.5 Vdc (logic 0)	Check the following: U3, Q9, U5-U6, Q7-Q8, C10, U2, Q10, U7.
7 $\overline{\text{TX}}$, TX logic with PTT and FAULT enabled	a. On test adapter, set TX INHB to DSBL and FAULT to ENBL. Measure voltage at $\overline{\text{TX}}$ test point with digital voltmeter.	Not more than +4.5 Vdc (logic 1)	Check the following: U3, Q9, U5-U6, Q7-Q8, C10.
	b. Measure voltage at TX test point.	Not more than +0.5 Vdc (logic 0)	Check the following: U3, Q9, U5-U6, Q7-Q8, C10, U2, Q10.

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
8 $\overline{\text{TX}}$, TX logic with CWK enabled	a. On test adapter, set PTT and FAULT to DSBL. Set CWK to ENBL and measure voltage at $\overline{\text{TX}}$ test point with digital voltmeter.	Not more than +0.5 Vdc.	Check the following: U6, U3, Q7-Q8-Q9, C10.
	b. Measure voltage at TX test point.	Not less than +4.5 Vdc.	Check the following: U6, U2, U3, Q7, Q8-Q10, C11.
9 $\overline{\text{TX}}$, TX logic switching CWK from ENBL to DSBL	a. On test adapter, connect oscilloscope input to $\overline{\text{TX}}$ jack and trigger with signal from CWK test point. Switch CWK from ENBL to DSBL and monitor $\overline{\text{TX}}$ output with digital voltmeter and oscilloscope.	Output stays below +1.0 V dc 0.6 to 1.3 seconds then rises to not less than +4.5 Vdc (logic 1).	Check the following: C1, R4, CR1.
	b. Measure voltage at TX test point.	Not more than +0.5 V dc (logic 0).	Check the following: U6, U2, U3, Q7-Q8, Q10, C11.
10 RCV.AM $\overline{\text{RCV.AM}}$ logic with switches disabled	a. On test adapter, set CWK to DSBL and measure voltage at RCV.AM test point with digital voltmeter.	Not more than +0.5 V dc (logic 0).	Check the following: U3, U4, U5, U2, Q7-Q8.
	b. Measure voltage at $\overline{\text{RCV.AM}}$ test point.	Not less than +4.5 V dc (logic 1)	Check the following: U3, U4, U5, U2, Q7-Q8.
11 RCV.AM, $\overline{\text{RCV.AM}}$ logic with PTT enabled	a. On test adapter, set PTT to ENBL, and measure voltage at RCV.AM test point with digital voltmeter.	Not more than +0.5 V dc (logic 0)	Check the following: U3, U4, U5, U2, Q7-Q8.
	b. Measure voltage at $\overline{\text{RCV.AM}}$ test point.	Not less than +4.5 V dc (logic 1)	Check the following: U3, U4, U5, U2, Q7-Q8.
12 RCV.AM $\overline{\text{RCV.AM}}$ logic with AM enabled	a. On test adapter, set PTT to DSBL and set AM to ENBL. Measure voltage at RCV.AM test point with digital voltmeter.	Not less than +4.5 V dc (logic 1)	Check U4.

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
12 (cont)	b. Measure voltage at <u>RCV.AM</u> point.	Not more than +0.5 V dc (logic 0).	Check U4, U2.
13 <u>TX.AM.</u> <u>TIP</u> logic with switches disabled	a. On test adapter, set AM to DSBL and measure voltage at <u>TX.AM.TIP</u> test point with digital voltmeter.	Not more than +0.5 V dc (logic 0).	Check U1, U2, U3.
14 <u>TX.AM.</u> <u>TIP</u> logic with PTT enabled	a. On test adapter, set PTT to ENBL. b. Measure voltage at <u>TX.AM.TIP</u> test point with digital voltmeter.	Not more than +0.5 V dc (logic 0).	Check U1, U2, U3.
15 <u>TX.AM.</u> <u>TIP</u> with PTT and AM enabled	a. On test adapter, Set AM to ENBL. b. Measure voltage at <u>TX.AM.TIP</u> test point with digital voltmeter.	Not less than +4.5 V dc (logic 1).	Check U1, U2, U3.
16 <u>TX.AM.</u> <u>TIP</u> with AM. <u>TIP</u> enabled	a. On test adapter set TIP to ENBL and PTT to DSBL. b. Measure voltage at <u>TX.AM.TIP</u> test point with digital voltmeter.	Not more than 0.5 V dc (logic 0).	Check U1, U2, U3.
17 <u>RCV.AM</u> , <u>RCV.AM</u> logic with switches disabled	a. On test adapter, set TIP and AM to DSBL and measure voltage at <u>RCV.AM</u> test point with digital voltmeter. b. Measure voltage at <u>RCV.AM</u> test point.	Not less than +4.5 V dc (logic 1). Not more than +0.5 V dc (logic 0).	Check U1, U3. Check U1, U2, U3.

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
18 RCV. $\overline{\text{AM}}$, RCV. $\overline{\text{AM}}$ logic with PTT enabled	a. On test adapter, set PTT to ENBL and measure voltage at RCV. $\overline{\text{AM}}$ test point with digital voltmeter. b. Measure voltage at $\overline{\text{RCV.AM}}$ test point.	Not more than +0.5 V dc (logic 0). Not less than +4.5 V dc (logic 1)	Check U1, U2, U3. Check U2.
19 RCV. $\overline{\text{AM}}$, RCV. $\overline{\text{AM}}$ logic with AM enabled	a. On test adapter, set PTT to DSBL and AM to ENBL. b. Measure voltage at RCV. $\overline{\text{AM}}$ test point with digital voltmeter. c. Measure voltage at $\overline{\text{RCV.AM}}$ test point.	Not more than +0.5 V dc (logic 0). Not less than +4.5 V dc (logic 1).	Check U1, U2, U3. Check U2.
20 RCV. $\overline{\text{AM}}$ RCV. $\overline{\text{AM}}$ logic with PTT and AM enabled	a. On test adapter, set PTT and AM to ENBL and measure voltage at RCV. $\overline{\text{AM}}$ test point with digital voltmeter. b. Measure voltage at $\overline{\text{RCV.AM}}$ test point.	Not more than +0.5 V dc (logic 0). Not less than +4.5 V dc (logic 1).	Check U1, U2, U3. Check U2.
21 ST (side- tone) logic with switches disabled	a. On test adapter, set PTT and AM to DSBL. b. Measure voltage at ST test point on test adapter with digital voltmeter.	Not less than +4.5 V dc (logic 1).	Check the following: U1, U6, C3, U2.
22 ST logic with TIP enabled	a. On test adapter, set TIP to ENBL. b. Measure voltage at ST test point on test adapter with digital voltmeter.	Not more than +0.5 V dc (logic 0).	Check U2, U1.

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
23 ST logic with fault enabled	a. On test adapter, set TIP to DSBL and FAULT to ENBL. b. Measure voltage at ST test point with digital voltmeter.	Not more than +0.5 V dc (logic 0).	Check U1.
24 ST logic with STD enabled	a. On test adapter, set FAULT to DSBL and STD to ENBL. b. Measure voltage at ST test point with digital voltmeter.	Not more than +0.5 V dc (logic 0).	Check U6, CR3.
25 ST logic with STD switched from ENBL to DSBL (ST delay)	a. On test adapter, connect oscilloscope to ST test point and trigger oscilloscope from STD test point. b. Monitor ST output and switch STD from ENBL to DSBL. Measure time in seconds ST stays below 1.0 V dc.	1.0 to 2.0 seconds.	Check the following: R14, C3, CR3.
26 LVI-fault	a. On test adapter, set STD to DSBL. Connect oscilloscope to LVI test point. b. Monitor LVI while decreasing voltage with 25 V DC control until LVI signal appears. c. On test adapter measure voltage at 25 VDC P1-25 test point with digital voltmeter. d. On test adapter, set FAULT to ENBL.	LVI output is a square wave, 5 V peak-to-peak. P1-25 output 20.5 to 22.5 V dc. Oscilloscope displays not less than +4.5 V dc (logic 1).	Check the following: U7, Q1-Q2, U4. Check the following: U7, Q1-Q2, U4. Check the following: U4, U3.

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
27 AF compressor logic	<p>a. On test adapter, set FAULT to DSBL. Readjust 25 VDC control for +25.2 V dc at P1-25 test point. Set PTT to ENBL and ensure SET is set to DIRECT.</p> <p>b. On test adapter, connect oscillator to TX AUDIO IN and the rms voltmeter to TX AUDIO OUT jacks.</p> <p>c. Set oscillator for 1000 Hz at +10 dBm input to TX AUDIO IN and measure audio output level with rms voltmeter at TX AUDIO OUT.</p> <p>d. On test adapter, set TIP to ENBL and measure audio level at TX AUDIO OUT test jack with rms voltmeter.</p> <p>e. On test adapter, set TIP to DSBL and CWK to ENBL. Measure audio at TX AUDIO OUT with rms voltmeter.</p> <p>f. On test adapter, set PTT and CWK to DSBL. Measure audio at TX AUDIO OUT with rms voltmeter.</p>	<p>110 to 131 mV</p> <p>Not more than 0.5 mV.</p> <p>Not more than 0.5 mV.</p>	<p>Check the following: Q13-Q14, U8, Q15-Q12, U7.</p> <p>Check U6, U7.</p>
28 System key	<p>a. On test adapter, set \overline{SK} +40 V to ON and measure voltage at \overline{SK}P1-16 test point with digital voltmeter.</p> <p>b. On test adapter, set PTT to ENBL and measure voltage at \overline{SK}P1-16 test point with digital voltmeter.</p>	<p>+34 to +38 V dc.</p> <p>Not more than 0.3 V dc.</p>	<p>Check Q7-Q8, VR1.</p> <p>Check U3, U5.</p>
29 Rechannel pulse	<p>a. On test adapter set PTT to DSBL and \overline{SK} +40V to OFF. Connect oscilloscope to R/C</p>		

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
29 (cont)	<p>OUT test point and synchronize the oscilloscope with signal from R/C SYNC test jack.</p> <p>b. On test adapter, set R/C TRIGGER momentarily to ON and measure the delay and pulse width of R/C OUT signal.</p>	<p>Delay: 5 to 15 milliseconds Pulse Width: 50 to 150 milliseconds.</p>	<p>Check: Q3, R18-19, C4. check: Q4, C24-R69</p>
30 Voice mode gain	<p>a. On test adapter, set PTT and VOICE to ENBL. Ensure SET is set to DIRECT.</p> <p>b. Set oscillator for 1000 Hz at -26 dBm input to TX AUDIO IN jack and measure output at TX AUDIO OUT jack with rms voltmeter.</p> <p>c. Adjust oscillator to apply a 1000-Hz tone at -46 dBm to TX AUDIO IN jack and measure TX AUDIO OUT with rms voltmeter.</p> <p>d. Adjust oscillator to apply a 1000-Hz tone at -60 dBm to TX AUDIO IN jack and measure TX AUDIO OUT with rms voltmeter.</p>	<p>110 to 130 mV.</p> <p>108 to 128 mV.</p> <p>65 to 95 mV.</p>	<p>Check the following: U8, Q13-Q14, Q12-Q15, C12, C13.</p> <p>Check the following: U8, Q13-Q14, Q12-Q15, C12, C13.</p> <p>Check the following: U8, Q13-Q14, Q12-Q15, C12, C13.</p>
31 CW Key mode	<p>a. On test adapter, set PTT and VOICE to DSBL and CWK to ENBL.</p> <p>b. Connect oscillator through isolation transformer to 1 OR 2 KHZ jack on test adapter and adjust oscillator for 1000 Hz at 100-mV input to 1OR 2 KHZ jack.</p>		

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
31 (cont)	c. Measure audio output at TX AUDIO OUT jack with rms voltmeter.	90 to 110 mV	Check the following: U8, Q5-Q6, C9, C17
	d. Adjust oscillator for 2-kHz at 100 mV to 1 OR 2 KHZ jack and measure TX AUDIO OUT on rms voltmeter.	87 to 107 mV.	Check the following: U8, Q5-Q6, C9, C17.
	e. Adjust oscillator for 3-kHz at 100 mV to 1 OR 2 KHZ jack and measure TX AUDIO OUT on rms voltmeter.	Not more than 35 mV.	Check the following: U8, Q5-Q6, C9, C17.
32 Fault pulse	a. On test adapter set CWK to DSBL.		
	b. Adjust oscillator for 1000 Hz at 100 mV to 1 OR 2 KHZ jack.		
	c. On test adapter, connect oscilloscope to TX AUDIO OUT test jack.		
	d. While monitoring TX AUDIO OUT on oscilloscope, set test adapter FAULT switch to ENBL and measure pulse width (on time) of TX AUDIO OUT signal.	60 to 120 milli-seconds.	Check the following: R22, C5, U4, Q16, C17.
33 Compression amplifier	a. On test adapter, set FAULT to DSBL, PTT and VOICE to ENBL and SET to ATTACK.		
	b. Adjust oscillator for 1000 Hz at -26 dBm to TX AUDIO IN test jack.		
	c. On test adapter connect TX/AF SYNC jack to trigger the oscilloscope connected to TX AUDIO OUT jack. Positive trigger for		

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
33 (cont)	<p>attack and negative trigger for decay.</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px auto; width: fit-content;">NOTE</div> <p>INITIATE switch should be left in DECAY for 15 seconds between each positioning of INITIATE switch in ATTACK direction.</p> <p>d. On test adapter, move INITIATE switch in direction of ATTACK arrow and measure the attack time (time from application of signal until TX AUDIO OUT reaches 3 dBm of final value) on oscilloscope.</p> <p>e. On test adapter, place SET switch to DECAY and move INITIATE switch in DECAY direction. Measure decay time of TX AUDIO OUT signal, time from a 30-dB decrease (-26 dBm to -56 dBm due to 30 dB attenuation in test adapter) in TX AUDIO IN until TX AUDIO OUT has recovered to within 3 dBm of final level.</p>	<p>No more than 8 milliseconds.</p> <p>No less than 500 milliseconds.</p>	<p>Check the following: U8, Q12-Q15, C21, Q13-Q14.</p> <p>Check the following: U8, Q12-Q15, C21, Q13-Q14.</p>
34 Intermodulation	<p>a. On test adapter place SET to DIRECT.</p> <p>b. Connect two oscillators through the mixer-attenuator and connect mixer output to TX AUDIO IN jack on test adapter as shown in figure 2-24 test setup B.</p>		

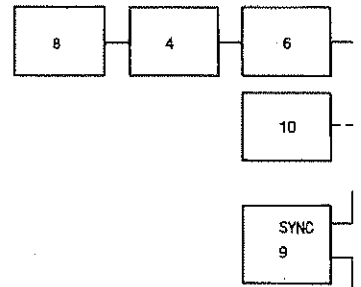
Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
34 (cont)	<p>c. On mixer-attenuator, set AUDIO LOAD/OSC 1 IN to OSC 1 IN and AUDIO LOAD/OSC 2 IN to AUDIO LOAD. Set oscillator No. 1 for 1000 Hz and an input level to the TX AUDIO IN jack of -32 dBm.</p> <p>d. On mixer-attenuator, set AUDIO LOAD/OSC 1 IN to AUDIO LOAD and AUDIO LOAD/OSC 2 IN to OSC 2 IN. Set oscillator No. 2 for 1300 Hz and an input level to the TX AUDIO IN jack of -32 dBm.</p> <p>e. On mixer-attenuator, set AUDIO LOAD/OSC 1 IN to OSC 1 IN (both oscillators will now be connected to the TX AUDIO IN jack on the test adapter).</p> <p>f. On test adapter, connect wave analyzer to TX AUDIO OUT jack and measure the products in dB below the desired tones.</p>	700 and 1600 Hz not less than 34 dB down.	Check the following: U8, Q13, Q14, Q15, Q12.
35 Power requirements	<p>a. On test adapter, disconnect oscillators and set switches as outlined in test 1 step d and connect digital voltmeter to CURRENT MONITOR MV/MA +13V test points.</p> <p>b. On test adapter, set PTT to ENBL and measure dc voltage (current) on digital voltmeter.</p>	Not more than 2.5 mV (2.5 mA).	Check the following: C22, R64, and +13 volt circuit.

Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)

STEP	PROCEDURE	NORMAL INDICATION	IF INDICATION IS ABNORMAL
35 (cont)	<p>c. On test adapter, set PTT to DSBL, RCV ONLY to ENBL, and measure dc voltage (current) on digital voltmeter.</p> <p>d. On test adapter, connect digital voltmeter to CURRENT MONITOR MV/MA +5.2V test points. Measure dc voltage (current) on digital voltmeter.</p> <p>e. On test adapter, set RCV ONLY to DSBL and PTT to ENBL and measure dc voltage (current) on digital voltmeter.</p>	<p>Not more than 2.5 mV (2.5 mA).</p> <p>Not more than 5.5 mV (5.5 mA).</p> <p>Not more than 25 mV (25 mA).</p>	<p>Check the following: C22, R64, and +13 volt circuit</p> <p>Check the following: C18, L1, and +5.2 volt circuit.</p> <p>Same as above.</p>

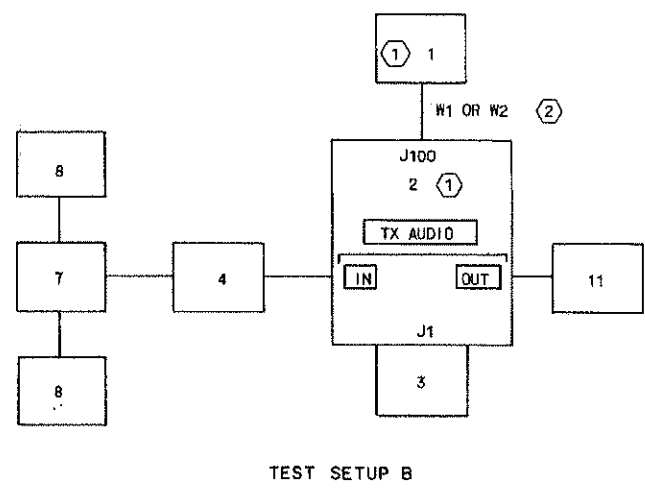
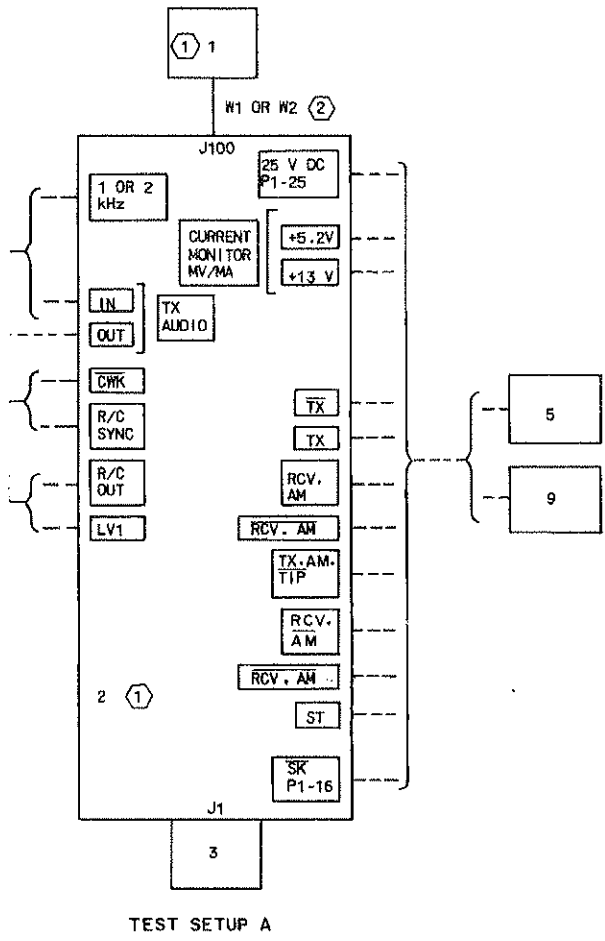
Table 2-24. Logic/Tx A1A5A2, Testing/Troubleshooting (cont)



1. POWER SUPPLY
2. LOGIC/TX TEST ADAPTER
3. LOGIC/TX A1A5A2
4. ATTENUATOR, AUDIO
5. DIGITAL VOLTMETER
6. ISOLATION TRANSFORMER, 600 OHM
7. MIXER-ATTENUATOR, 600 OHMS
8. OSCILLATOR (2 REQUIRED)
9. OSCILLOSCOPE
10. RMS VOLTMETER
11. WAVE ANALYZER

NOTES:

- ① PART OF RADIO TEST SET AN/PRM-502.
- ② PART OF POWER SUPPLY.
- ③ DASHED LINE IS ALTERNATE CONNECTION
DO NOT MAKE THIS CONNECTION UNTIL SI



DESCRIBED IN A PROCEDURE STEP.
) INSTRUCTED.

TP5-4810-014

Figure 2-24. Logic/Tx A1A5A2,
 Test Setup

2-223/2-224 (Blank)

2.3.18 Receiver-Transmitter Chassis A1A1, Troubleshooting

Troubleshooting of chassis A1A1, consists of performing continuity checks between pins on connectors A1A1J1, A1A1J2, A1A1J3, A1A1J4, A1A1J5, A1A1J6, A1A1J7, and A1A1P1 as listed in table 2-25. If continuity is not obtained between all pins listed on a horizontal grid of table 2-25, locate and repair or replace the defective wire between the associated pins. Refer to the schematic diagram for information on circuit configuration.

The only test equipment item from table 2-9 required to perform the continuity checks is a multimeter.

A1A1J1	A1A1J2	A1A1J3	A1A1J4	A1A1J5	A1A1J6	A1A1J7	A1A1P1
1					26		18
2					25		17
3					24		16
4					23		15
5					22		14
6					21		13
7					20		12
8					19		11
9					18		10
10					17		9
11					16		8
12					15		7
13					14		6
14						10	5
15						9	4
16						8	3
17						7	2
18						6	1
19				17			49
20				15			51
21				14			35
22				6			
23				8			31
24							30
25							29

Table 2-25. Receiver-Transmitter Chassis A1A1, Continuity

A1A1J1	A1A1J2	A1A1J3	A1A1J4	A1A1J5	A1A1J6	A1A1J7	A1A1P1
26							28
27							27
28							26
29							25
30							24
31						1	23
32						2	22
33						3	21
34						4	20
35						5	19
36		3	5	20			48
37				19			47
38				22			
39				23			46
40				26			45
41			7	27	4		43
42				28			
43				34			
44		1	1	33	12	11	41
45				35			40
46				37			39
47				40			
48				42			38
49	2			20			
				2			

Table 2-25. Receiver-Transmitter Chassis A1A1, Continuity (cont)

A1A1J1	A1A1J2	A1A1J3	A1A1J4	A1A1J5	A1A1J6	A1A1J7	A1A1P1
	5			38			
	6			11			
	9			13			
	10			7			
	14	2					
		7		12			33
		9		36			
		12					36
				4	6		
				9	3		34
				10			32
				18			50
				21	7		
				24		13	
				25			44
				31			42
				32	13		

Table 2-25. Receiver-Transmitter Chassis A1A1, Continuity (cont)

2.3.19 Amplifier-Coupler Chassis A3A3, Troubleshooting

Troubleshooting of chassis A3A3 consists of performing continuity checks between pins on connectors A3J1, A3A3A1J1, A3A3A1J2, and A3J2 as listed in table 2-26. It is noted in table 2-26 where there is an inductor and/or diode in the circuit that would provide a resistance measurement. If not noted, the circuit consists only of interconnecting wire. If continuity is not obtained between all pins listed on a horizontal grid of table 2-26, locate and repair or replace the defective wire and/or component between the associated pins. Refer to the schematic diagram for information on circuit configuration when performing the continuity checks of table 2-26 and when troubleshooting the following: circuits between A3A9 and A3, A3J4 and antenna switch on A3; circuit between antenna switch on A3 and A3A3A2 and A3A3A2.

The only test equipment item from table 2-9 required to perform the continuity checks is a multimeter.

A3J1	A3A3A1J1	A3A3A1J2	A3J2	A3A3A1K1	A3A3A2	COMPONENT IN CIRCUIT
1	1					Inductor
2	5					Inductor
3	6					Inductor
19	2					Inductor
20	4					Inductor
21	3					Inductor
22	8					Inductor
23	7					Inductor
24①	21		1	4/8/1④		Inductor between A3J1-24 and A3A3A1J1- 21. Fuse between A3J2-1 and A3A3A1J1- 21 and A3A3A1K1-1/ 4/8. Diode between A3A3A1J1-21 (cathode) and A3J2-2 (anode).
25②	9/16/28/ 29	7	2			
26②						
27	19					Inductor
28②						
29②						
30①						
32	24					Inductor
33	17			5④		Inductor between A3J1-33 and A3A3A1J1- 17. Diode between A3A3A1J1-17 (cathode) and A3A3A1K1-5 (anode).

Table 2-26. Amplifier-Coupler A3A3, Continuity

A3J1	A3A3A1J1	A3A3A1J2	A3J2	A3A3A1K1	A3A3A2	COMPONENT IN CIRCUIT
34	26					Inductor
35	27					Inductor
36		1				
37		1				
41	14					Inductor
42	23					Inductor
43	15					Inductor
45	30					Inductor
47	25					Inductor
48	20					Inductor
50	22					Inductor and diode (anode connected to inductor and cathode connected to A3A3A1J1-22).
		3		7		
	10	4				
	11	5				
	12	6				
		8 ^③				
	13			3	U1-8/R3 junction	
	18			5 ^④		Diode (cathode connec- ted to A3A3A1J1-18 and anode connected to A3A3A1K1-5).
	32				R5/R6/C6 junction	
<p>① A3J1-24 and A3J1-30 are common.</p> <p>② A3J1-25, A3J1-26, A3J1-28, and A3J1-29 are common ground.</p> <p>③ No circuit connection (spare).</p> <p>④ Diode connected across A3A3A1K1 terminals 1 (cathode) and 5 (anode).</p>						

Table 2-26, Amplifier-Coupler A3A3, Continuity (cont)

2.4 RECEIVER-TRANSMITTER GROUP DISASSEMBLY

2.4.1 Disconnection of Major Units

Figure 2-25 shows the receiver-transmitter group assembled.

2.4.1.1 Receiver-Transmitter A1/Amplifier-Coupler A3 Disconnection

NOTE

If there is a possibility that bandswitch A3A5 might be removed, tune the receiver-transmitter group to 8 MHz.

NOTE

If there is a possibility that autotransformer A3A9 might be removed, tune the receiver-transmitter group to 2 MHz.

NOTE

Be sure that the battery is removed before proceeding with disconnection procedures.

- a. First release the two bottom quick-release latches and then the two top ones that connect amplifier-coupler A3 to receiver-transmitter A2.
- b. Carefully pull the two units apart until the connectors are separated.

2.4.1.2 Control A2 Removal

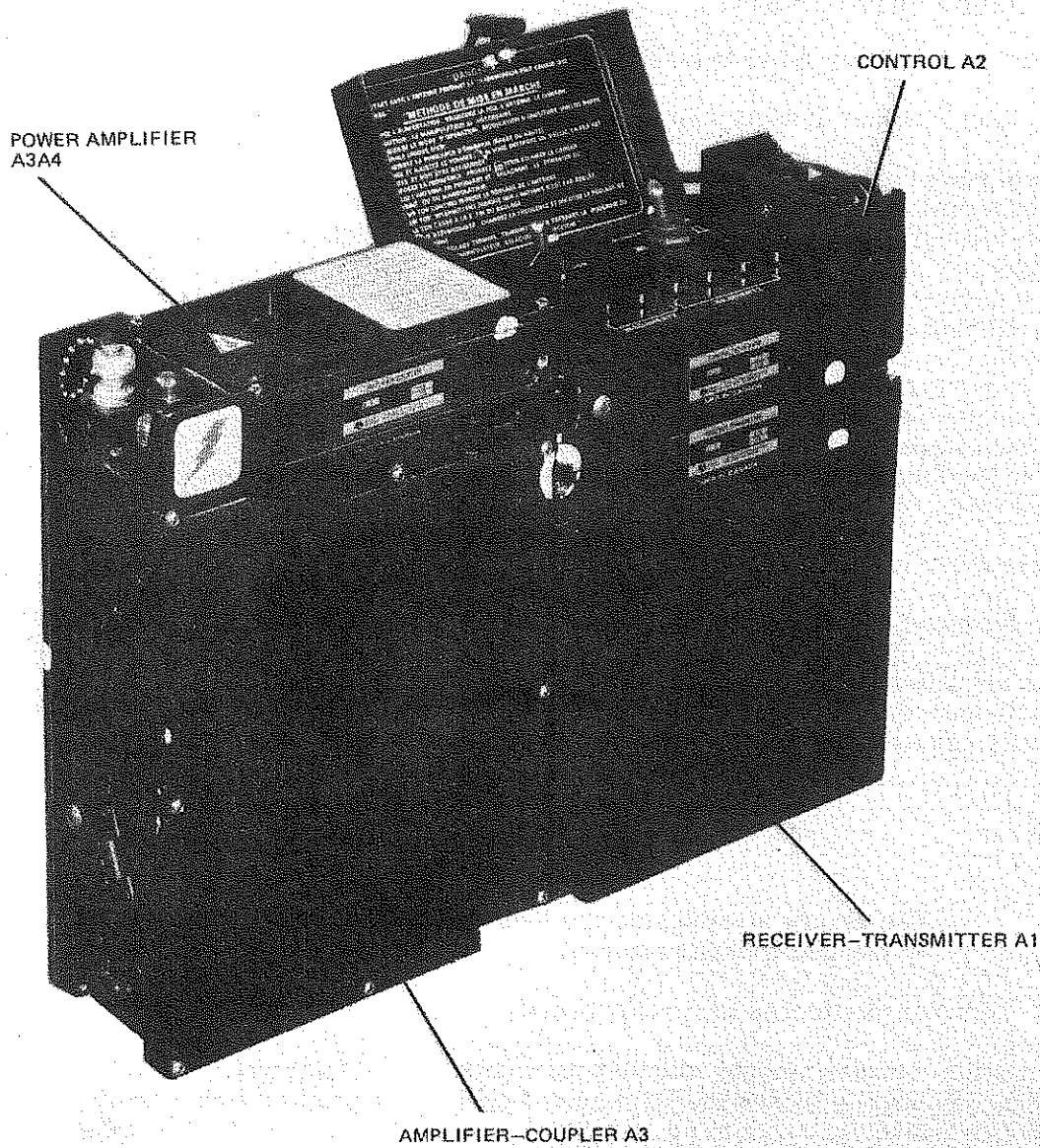
- a. With control A2 cover up, locate and loosen the four hold-down screws.
- b. Carefully lift control A2 straight up until disconnected from receiver-transmitter A1 connector.

2.4.2 Amplifier-Coupler A3 Disassembly

2.4.2.1 Power Amplifier A3A4 Removal

NOTE

Matching surfaces of the power amplifier and the amplifier-coupler are sealed with a heat-sinking compound. Care should be exercised during removal of the power amplifier to prevent damage to the ridge formed by the sealing compound.



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Figure 2-25. Receiver-Transmitter Group, Assembled.

- a. Refer to figure 2-25. Partially and equally loosen the four hold-down screws until the screws are disconnected.
- b. Carefully lift the power amplifier straight up until the connectors of the power amplifier and amplifier-coupler are disengaged and the sealing compound ridge is clear of the amplifier coupler surface.

2.4.2.2 Power Amplifier A3A4 Disassembly

2.4.2.2.1 Bias/Control A3A4A2 Removal (figure 2-26)

- a. Perform power amplifier removal procedure.
- b. Disconnect miniature coax cable from connector on bias/control.
- c. Loosen four hold-down screws and lift bias/control straight away from rf subassembly connector.

2.4.2.2.2 Rf Subassembly A3A4A1 Removal (figure 2-26)

- a. Refer to paragraph 2.4.2.2.1 and remove bias/control A3A4A2.
- b. Tag and unsolder leads to Q3 and Q4.
- c. Unsolder straps of transistors Q5 and Q6.
- d. Remove the four corner posts and lift the rf subassembly away from the power amplifier chassis.

2.4.2.3 Amplifier-Coupler Cover Removal

2.4.2.3.1 Removal for Access to Electromechanical Subassemblies

- a. Set the amplifier-coupler upright with the antenna connectors at the left.
- b. Partially and equally loosen the eight hold-down screws until they are disconnected.
- c. Carefully remove the cover to prevent damage to the water-tight sealing ridge.

NOTE

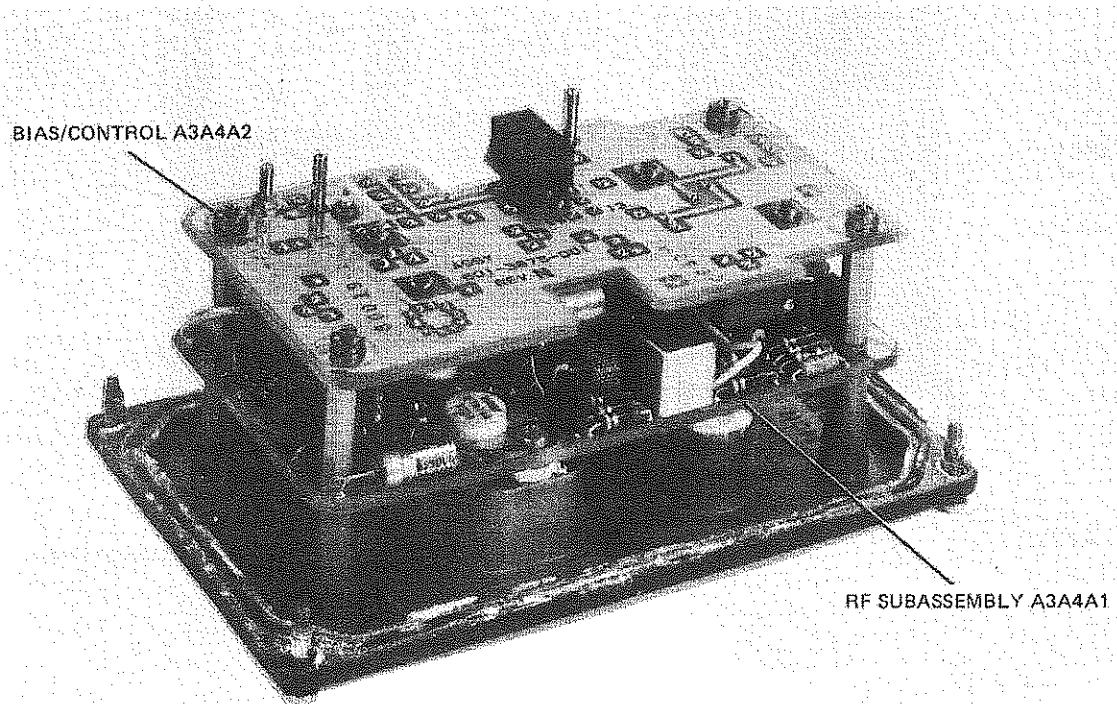
The covers of each side are identical. They do not need to be identified when removed.

2.4.2.3.2 Removal for Access to Circuit Boards

- a. Set amplifier-coupler upright with antenna connectors to the right.
- b. Partially and equally loosen the eight hold-down screws until disconnected.
- c. Carefully remove the cover to prevent damage to the water-tight sealing ridge.

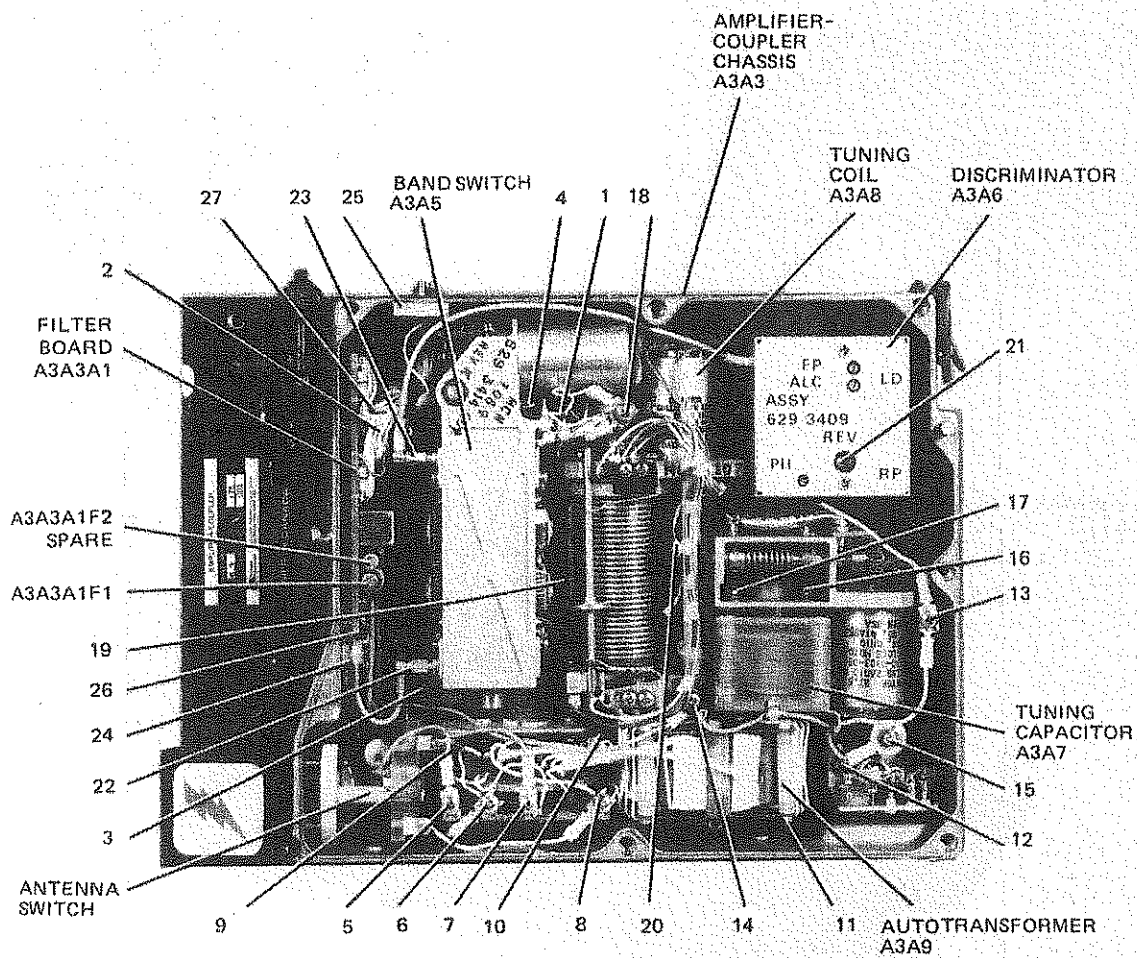
2.4.2.4 Bandswitch A3A5 Removal (figure 2-27)

- a. Complete procedure 2.4.2.3.1.
- b. Disconnect two miniature coaxial cables (22) and (23) and two white leads (1) and (2).
- c. Loosen the two hold-down screws (3) and (4).
- d. If necessary, loosen the autotransformer to allow end play of mechanical linkage to the bandswitch.
- e. To remove, lift the bandswitch straight up until clear of adjacent components on chassis (drive coupling, part of amplifier-coupler, is removed with the bandswitch).



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Figure 2-26. Power Amplifier A3A4, Subassembly Location



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Figure 2-27. Amplifier-Coupler A3, Electromechanical Subassembly Location

2.4.2.5 Autotransformer A3A9 Removal (figure 2-27)

- a. Complete procedure 2.4.2.3.1.

NOTE

Observe and diagram if necessary the position and dress of the red, orange, blue, and yellow leads before disconnecting them. Duplicating the dress and position during reassembly is required to ensure frequency stability.

- b. Loosen the screws and free the red lead (5), the orange lead (6), the blue lead (7), and the yellow lead (8).
- c. Loosen the four hold-down screws (9), (10), (11), and (12).
- d. Carefully lift the autotransformer straight up from the chassis. Ensure that the drive coupling (part of the amplifier-coupler) on the bandswitch remains in place and maintains its original position, slot vertical.

2.4.2.6 Discriminator A3A6 Removal (figure 2-27)

- a. Complete procedure 2.4.2.3.1.
- b. Disconnect miniature coaxial cable from bandswitch (23).
- c. Loosen the screw and free the orange lead (13).
- d. Loosen the hold-down screw (21) and carefully lift the discriminator straight out.

2.4.2.7 Tuning Capacitor A3A7 Removal (figure 2-27)

- a. Complete procedure 2.4.2.3.1.
- b. Loosen the screws and disconnect the orange lead (13), the green lead (14), and the blue lead (15).
- c. Loosen the hold-down screws (16) and (17).
- d. Pull the tuning capacitor assembly straight out.

2.4.2.8 Tuning Coil A3A8 Removal (figure 2-27)

- a. Complete procedure 2.4.2.3.1.
- b. Loosen screws (14) and (18) and free the green and purple leads respectively.
- c. Loosen the two hold-down screws (19) and (20).
- d. Pull the tuning coil straight out.

2.4.2.9 Filter A3A3A1 Removal (figure 2-27)

- a. Complete procedures 2.4.1.1, 2.4.2.3.1., and 2.4.2.3.2.
- b. Remove bandswitch, servo amplifier, and control logic.
- c. Unsolder two red leads and the orange lead.
- d. Disconnect miniature coaxial cable by first unsnapping the plastic lock (24) and then disconnecting the coaxial connector.

NOTE

Chassis water-tight sealing will be destroyed when connector A3A3A1J1 is loosened. Connector must be resealed when replaced.

- e. Loosen the two hold-down screws on connector A3A3J1 and pull connector from chassis mount.
- f. Loosen the two hold-down screws (26) and (27) and carefully lift filter away from chassis.

2.4.2.10 Fuse A3A3A1F1 Removal (figure 2-27)

- a. With cover removed (procedure 2.4.2.3.1.), locate fuse A3A3A1F1 and pull out of fuseholder.
- b. If replacement fuse is required, remove spare fuse A3A3A1F2 from spare fuseholder and push into A3A3A1F1 fuseholder.
- c. Be sure to replace spare fuse with another fuse.

2.4.2.11 Control Logic A3A2 Removal (Refer to figure 2-28).

- a. Complete procedures 2.4.2.3.2.
- b. Remove the four hold-down screws.
- c. Carefully lift the upper right hand corner to loosen connector P1. Maintain the circuit board flat and carefully loosen the remaining connectors from the underlying board (servo amplifier).
- d. Lift the control logic by the plastic handles attached to each side.

2.4.2.12 Servo Amplifier A3A1 Removal (Refer to figure 2-28).

- a. Complete procedures 2.4.2.3.1 and 2.4.2.11.
- b. Loosen the five hold-down screws.
- c. Carefully disconnect the servo amplifier from the chassis connectors and remove.

2.4.3 Receiver-Transmitter A1 Disassembly

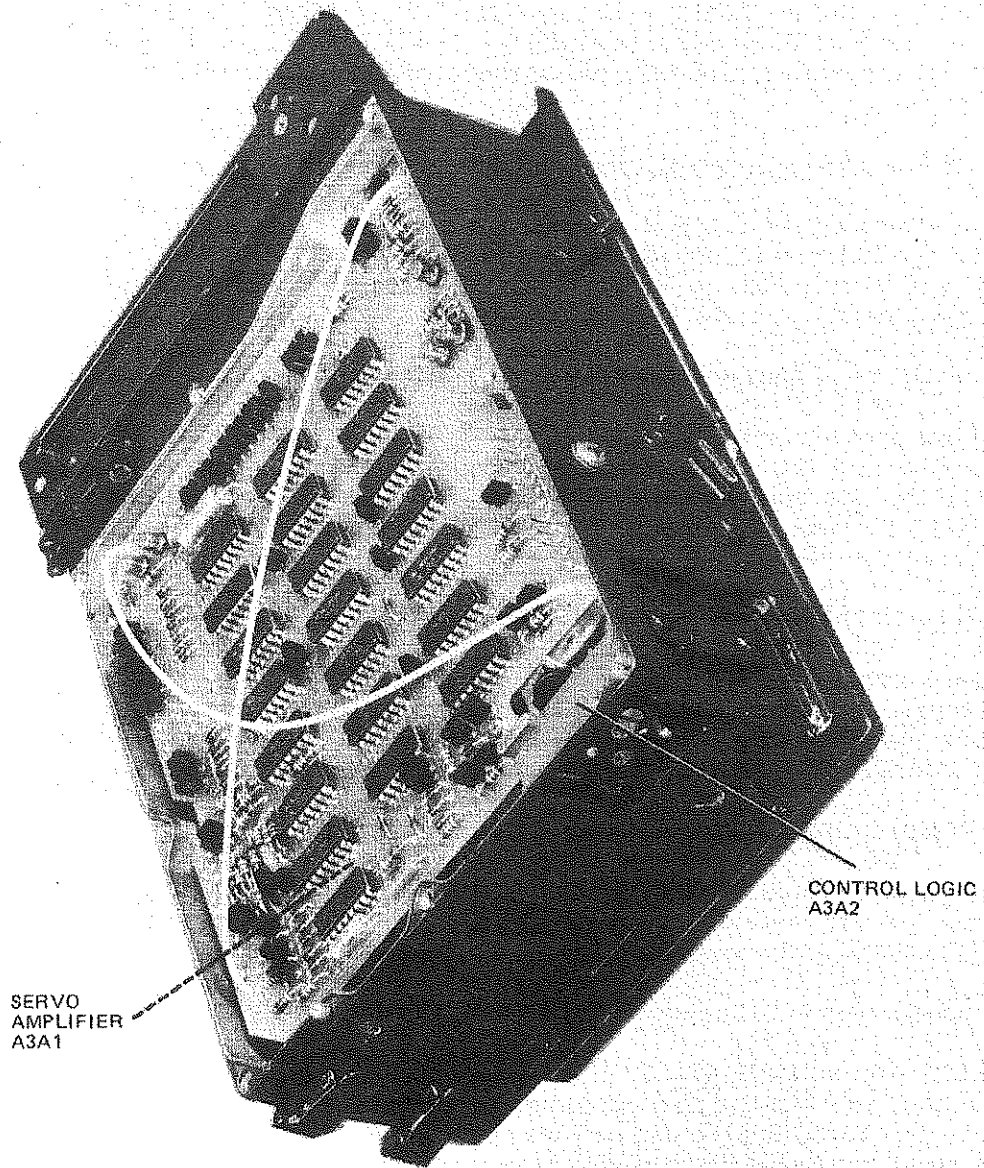
2.4.3.1 Dust Cover Removal

- a. Perform procedure 2.4.1.1 and 2.4.1.2.
- b. Place the receiver-transmitter in an upright position. Locate the four countersunk hold-down screws on top of the case.

NOTE

The case is sealed for water tightness. Care must be exercised during removal of dust cover to prevent damage to the ridge formed by the sealing compound.

- c. Remove the hold-down screws. Hold the dust cover in one hand, grasp the top part of the chassis with the other hand, and carefully pull the receiver-transmitter out of the case.



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Figure 2-28. Amplifier-Coupler A3, Circuit Board Location

2.4.3.2 Logic/Tx A1A5A2 Removal (figure 2-29)

- a. Complete procedure 2.4.3.1.
- b. Remove the four hold-down screws.
- c. Carefully disconnect the logic/tx connectors from the underlying if/af connectors and remove.

2.4.3.3 If/Af A1A5A1 Removal (figure 2-29)

- a. Complete procedure 2.4.3.2.
- b. Loosen the hold-down screw at the end of the board.
- c. Use the plastic handle to loosen the board from the chassis connector and to slide the board out until free of the guides on the chassis.

2.4.3.4 Mixer A1A2 Removal (figure 2-29)

- a. Complete procedure 2.4.3.1.
- b. Disconnect and tag the two miniature coaxial cables.
- c. Remove the two hold-down screws.
- d. Carefully pull the mixer away from the chassis until disconnected from the chassis connector and remove.

2.4.3.5 Broadband Amplifier A1A3 Removal (2-29)

- a. Complete procedure 2.4.3.1.
- b. Disconnect and tag the mixer miniature coaxial cables.
- c. Remove the two hold-down screws. Carefully pull the broadband amplifier until disconnected from the chassis connector and remove.

2.4.3.6 Power Supply A1A4 Removal (figure 2-29)

- a. Complete procedure 2.4.3.1.
- b. Remove the two hold-down screws. Carefully pull the power supply away from the chassis until disconnected from chassis connector and remove.

2.4.3.7 Frequency Synthesizer A1A6 Removal (figure 2-29)

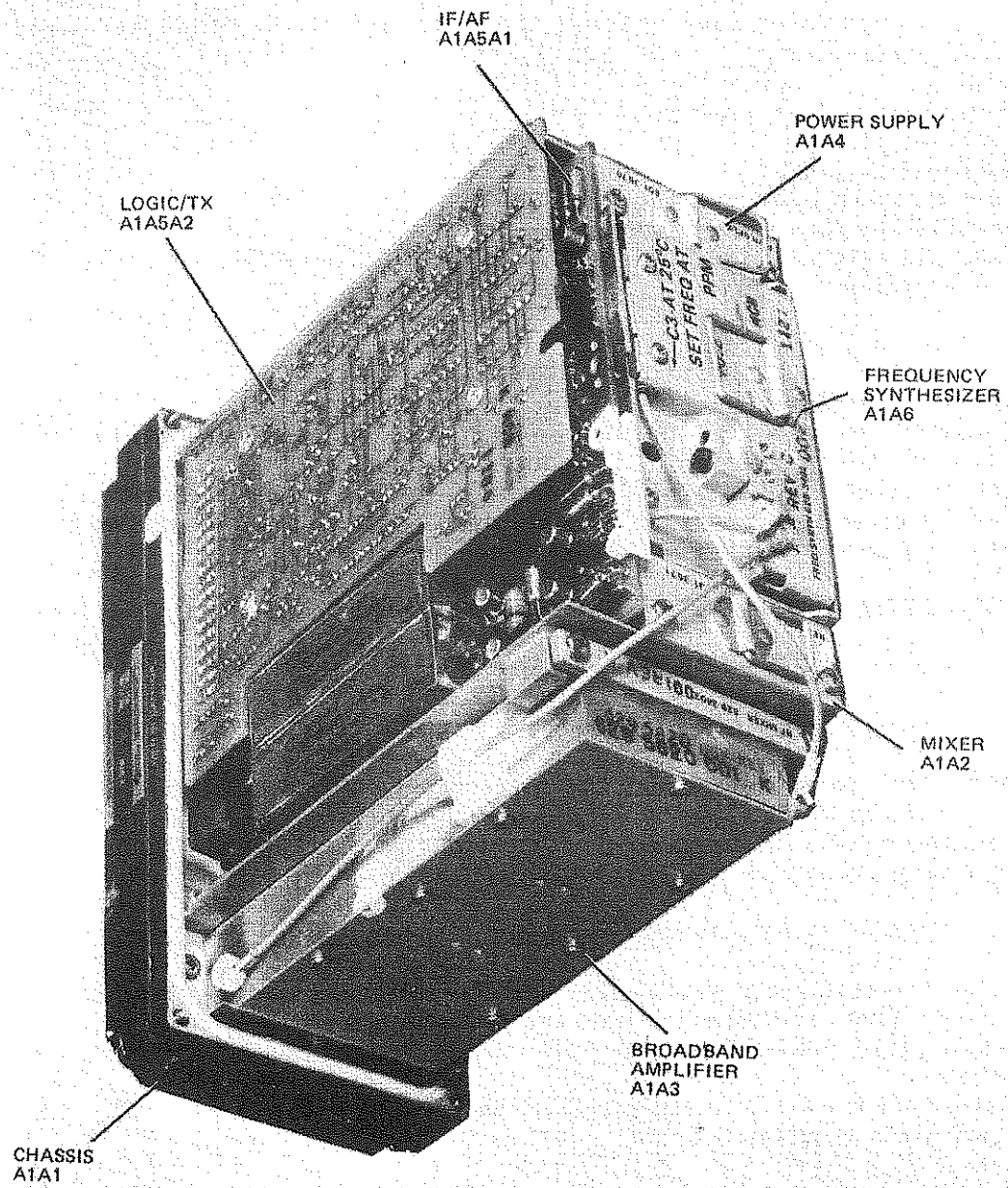
- a. Complete procedure 2.4.3.1, 2.4.3.2, and 2.4.3.3.
- b. Disconnect and tag the two miniature coaxial cables from the mixer.
- c. Remove the three hold-down screws (Use offset Phillips head screwdriver on front screw). Carefully pull the frequency synthesizer away from the chassis until disconnected from chassis connector and remove.

2.5 GENERATOR DISASSEMBLY

2.5.1 Cover Removal

NOTE

The generator is sealed for water tightness. Care should be exercised during removal of the cover to prevent damage to the ridge formed by the sealing compound.



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Figure 2-29. Receiver-Transmitter A1, Subassembly Location

- a. Remove the eighteen screws (seven on each side and two on each end) from the cover.
- b. Force may be necessary to break the water tight seal. When loose, pull the cover from the case.

2.5.2 Subassembly A1 Removal

- a. Remove the cover.
- b. Unsolder two leads and their shields.
- c. Remove the four hold-down screws.
- d. Fold the subassembly up and out. Tag and unsolder the six leads. Remove the subassembly.

2.5.3 Generator Removal

- a. Remove the cover.
- b. Loosen four screws on the coupler located at the crank end of the coupler.
- c. Slide the crankshaft out of the coupler and case.
- d. Lift the generator and coupler up and out of the generator case.
- e. Generator and coupler may be separated by loosening four screws on the coupler and sliding the coupler off of the generator shaft.

2.6 RECEIVER-TRANSMITTER GROUP REASSEMBLY

2.6.1 Receiver-Transmitter A1 Reassembly

2.6.1.1 Power Supply A1A4 Replacement (figure 2-29)

- a. Align the power supply with the correct slot and carefully push into place, making sure the connectors of the chassis and the supply are properly mated.
- b. Tighten down with two hold-down screws.
- c. Complete procedure 2.6.1.7.

2.6.1.2 Frequency Synthesizer A1A6 Replacement (figure 2-29)

- a. Align the frequency synthesizer with its slot and carefully push into place, making sure the connector pins are properly mated.
- b. Secure with the hold-down screws (use offset Phillips head screwdriver on front screw).
- c. Reconnect the two miniature coaxial cables to the mixer.
- d. Complete procedure 2.6.1.7.

2.6.1.3 Mixer A1A2 Replacement (figure 2-29)

- a. Connect the mixer to the chassis connector.
- b. Secure with the two hold-down screws.
- c. Connect the two miniature coaxial cables.
- d. Complete procedure 2.6.1.7.

2.6.1.4 Broadband Amplifier A1A3 Replacement (figure 2-29)

- a. Align the broadband amplifier with its slot and carefully push into place, making sure the connector pins are properly mated.

- b. Secure with two hold-down screws.
- c. Reconnect the two miniature coaxial cables to the mixer.
- d. Complete procedure 2.6.1.7.

2.6.1.5 If/Af A1A5A1 Replacement (figure 2-29)

- a. Using the plastic handle on the end of the board, align the if/af with the guides on the sides of the chassis slot. Push the board until the connector pins are properly mated with the chassis connector.
- b. Secure with the single hold-down screw.

2.6.1.6 Logic/Tx A1A5A2 Replacement (figure 2-29)

- a. Align the logic/tx connector pins with the connectors on the if/af and carefully press the board until the pins are properly seated.
- b. Secure with the four hold-down screws.
- c. Complete the next procedure.

2.6.1.7 Dust Cover Replacement

- a. Hold the receiver-transmitter dust cover in an upright position (open end at the top).

NOTE

If water tight seal ridge has been damaged, repair with DOW RTV 3145 or equivalent.

- b. Align the receiver-transmitter with the cover opening and slide into place.
- c. Secure with the four hold-down screws replaced in the countersunk holes in the top of the chassis.

2.6.2 Amplifier-Coupler A3 Reassembly

2.6.2.1 Power Amplifier A3A4 Reassembly

2.6.2.1.1 Rf Subassembly A3A4A1 Replacement (figure 2-26)

- a. Align the four corner holes with chassis posts and secure with four corner posts.
- b. Resolder straps to Q5 and Q6.
- c. Resolder tagged leads to Q3 and Q4.

2.6.2.1.2 Bias/Control A3A4A2 (figure 2-26)

- a. Align the four hold-down screw holes with the four posts on the rf subassembly, ensuring that the pins of the connectors are properly inserted.
- b. Secure with the four hold-down screws.
- c. Connect the miniature coaxial cable.

2.6.2.1.3 Power Amplifier A3A4 Replacement

NOTE

If heat-sinking ridge (beading) is damaged, repair with DOW RTV 3145 compound (or equivalent) before connecting units together.

- a. Refer to figure 2-25. Align the four hold-down screws of the power amplifier with the holes in the top of the amplifier-coupler chassis, using the two dowels as alignment guide.
- b. Press the units together and secure with the four hold-down screws.

2.6.2.1.4 Servo Amplifier A3A1 Replacement (figure 2-28)

- a. Carefully align the connector pins of the servo amplifier with the amplifier-coupler chassis connector.
- b. When the servo amplifier pins are properly pressed into place, the five hold-down screw holes should be aligned with the chassis holes. Secure with the five hold-down screws.
- c. Complete procedure 2.6.2.1.5 and 2.6.2.1.11.

2.6.2.1.5 Control Logic A3A2 Replacement (figure 2-28)

- a. Position the control logic hold-down screw holes with the four stand-off posts on the servo amplifier. Proper hole alignment should ensure proper control logic pin alignment with the servo connectors.
- b. Carefully press the control logic pins into place and secure with the four hold-down screws.
- c. Perform procedure 2.6.2.1.11.

2.6.2.1.6 Tuning Coil A3A8 Replacement

- a. Position the tuning coil as shown in figure 2-27.
- b. Secure with the two hold-down screws ①⑨ and ②① .
- c. Connect the green lead to ①④ and the purple lead to ①⑧ .
- d. Complete procedure 2.6.2.1.11.

2.6.2.1.7 Tuning Capacitor A3A7 Replacement

- a. Position the tuning capacitor as shown in figure 2-27.
- b. Secure with the two hold-down screws ①⑥ and ①⑦ .
- c. Connect the orange lead to ①③ , the green lead to ①④ , and the blue lead to ①⑤ .
- d. Perform procedure 2.6.2.1.11.

2.6.2.1.8 Discriminator A3A6 Replacement (figure 2-27)

- a. Position the discriminator as shown in figure 2-27.
- b. Secure with hold-down screw ②① .
- c. Connect the orange lead to ①③ .

- d. Connect the miniature coaxial cable to the bandswitch at ⑳ .
- e. Perform procedure 2.6.2.1.11.

2.6.2.1.9 Autotransformer A3A9 Replacement (figure 2-27)

NOTE

As noted in the disconnection procedure 2.4.1.1, the receiver-transmitter should be tuned for 2 MHz. If not, the bandswitch must be removed before replacing the autotransformer so that the drive coupling (part of amplifier-coupler) slots can be matched up. Also, ensure that the flat edge of the drive coupling is toward the dogged end of the drive.

- a. Observe the slot of the drive coupling on the bandswitch to be vertical (2 MHz position). If not, refer to procedure 2.6.2.1.10.
- b. Position autotransformer as shown in figure 2-27, making sure that the slot of the drive coupling and the autotransformer driveshaft are properly aligned.
- c. Secure with the four hold-down screws ⑨ , ⑩ , ⑪ , and ⑫ .
- d. Refer to the note in procedure 2.4.2.5. Connect the red lead to ⑤ , the orange lead to ⑥ , the blue lead to ⑦ , and the yellow lead to ⑧ , while maintaining as near as possible the original position and dress of the leads.
- e. Complete procedure 2.6.2.1.11.

2.6.2.1.10 Bandswitch A3A5 Replacement (figure 2-27)

NOTE

Autotransformer A3A9 must be installed in the amplifier-coupler before bandswitch A3A5 can be replaced. The autotransformer driveshaft must be vertical with the dogged end toward the bottom of the amplifier-coupler chassis. The driveshaft can be rotated by hand to the correct position.

NOTE

Bandswitch A3A5 must be set to the 8 MHz position before it is installed in the amplifier-coupler. This is necessary to permit proper mechanical coupling between autotransformer A3A9 and bandswitch A3A5. The gear-train in the bandswitch cannot be rotated by hand. The bandswitch must be set to the 8 MHz position using the test adapter. Refer to table 2-19.

- a. Ensure that bandswitch A3A5 is set to 8 MHz (refer to above notes).
- b. Install the drive coupling (part of the amplifier-coupler) on the bandswitch spur gear (the slot of the drive coupling must be vertical to accept the raised portion of the autotransformer driveshaft).
- c. Carefully install the bandswitch into the amplifier-coupler as shown in figure 2-27.
- d. Secure with the two hold-down screws ③ and ④.
- e. Connect miniature coaxial cables ②② and ②③, taking care not to overtighten the coaxial connectors.
- f. Connect white leads ① and ②.
- g. Perform procedure 2.6.2.1.11.

2.6.2.1.11 Amplifier-Coupler Cover Replacement

- a. Check the water tight seal ridge along the edges of the cover for damage. If repair is required use DOW RTV 3145 or equivalent.
- b. Either cover will fit either side of the coupler. Align the cover hold-down screws with the holes in the amplifier-coupler chassis. Partially and evenly tighten the eight hold-down screws until they are equally tight.

2.6.3 Reassembly of Major Units

Figure 2-25 shows the receiver-transmitter group assembled.

2.6.3.1 Control A2 Replacement

- a. Align the connector pins of control A2 with receiver-transmitter A1 connector and press into place.
- b. Lift the control cover and secure the control to the receiver-transmitter with the four hold down screws.

2.6.3.2 Receiver-Transmitter A1/Amplifier-Coupler A3 Reconnection

- a. Align the connector pins of amplifier-coupler A3 with receiver-transmitter A1 connector and press into place.
- b. Adjust the turnbuckle of the top fasteners on the amplifier-coupler (if necessary) to ensure a snug fit when fasteners are clamped shut. Close the top fasteners first, then the bottom fasteners.

2.7 GENERATOR REASSEMBLY

2.7.1 General

With the exception of cover replacement, reassembly of the generator is the reversal of the disassembly procedures in paragraph 2.5.

2.7.2 Cover Replacement

- a. Check the water tight seal around the inside edge of the cover for damage. If repair of sealing edge is required, use DOW RTV 3145 or equivalent.
- b. Press sealing compound (same as step a.) into all 18 pressed nuts from outside of the case.
- c. Carefully place cover onto case, insert and evenly tighten the 18 hold-down screws.

2.8 RECEIVER-TRANSMITTER GROUP ALIGNMENT/ADJUSTMENTS

2.8.1 General

Alignment/adjustments for Receiver-Transmitter Group are required only in third-line maintenance and then only at the subassembly (module) level. There are no alignment/adjustment requirements at the second-line maintenance level. There are no alignment/adjustment requirements at the unit level for the following units: Receiver-Transmitter A1, Control A2, or Amplifier-Coupler A3.

The following paragraphs provide information on the subassemblies (modules) that require alignment/adjustment. Subassemblies not listed do not require alignment/adjustment.

2.8.2 Receiver-Transmitter A1

- a. Mixer A1A2, adjustments are covered in testing/troubleshooting table 2-23.
- b. Power Supply A1A4, resistors (R9 and R23) test selection is covered in test 13 of testing/troubleshooting table 2-10.
- c. If/Af A1A5A1, adjustments are covered in testing/troubleshooting table 2-18.

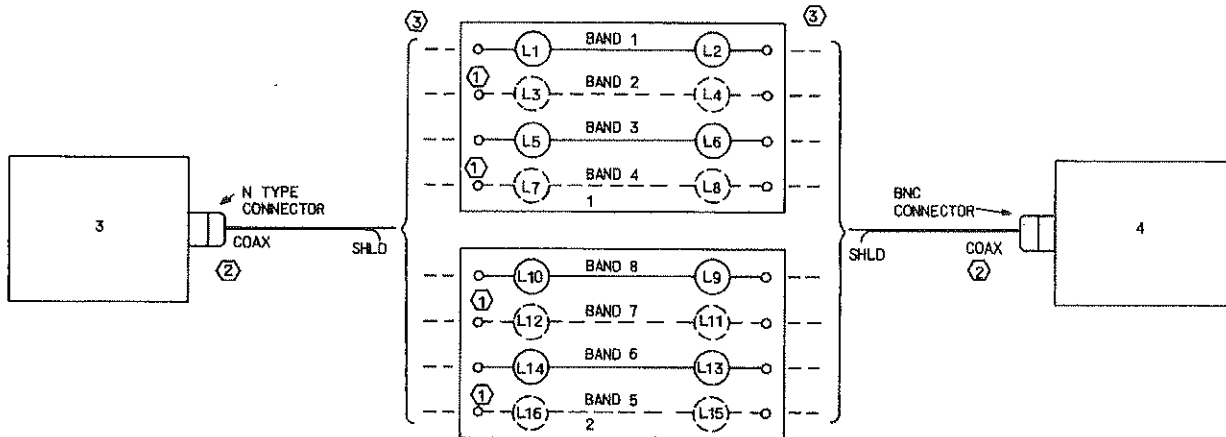
2.8.3 Amplifier-Coupler A3

- a. Servo Amplifier A3A1, adjustments are covered in testing/troubleshooting table 2-17.
- b. Power Amplifier A3A4, adjustments are covered in testing/troubleshooting table 2-20.
- c. Bandswitch A3A5, Filter Alignment
 - (1) Remove filter boards A3A5A2 and A3A5A3 from the unit under test.
 - (2) Inspect bandswitch A3A5 and filter boards for broken wire, spacing of coil wires, shorts and position of components.

NOTE

The input/output coaxial test cables must not exceed 15 inches in length. Solder the center conductor of coax cables to Band 1 input/output terminals and assure coax shields are grounded to the filter board. Also the signal generator and spectrum analyzer must be well grounded.

- (3) Connect signal generator and spectrum analyzer to Band 1 input and output terminals on filter board No. 1, as shown in figure 2-30.
- (4) Adjust signal generator for 6.48 MHz at 0.5 V ac and set reference level on spectrum analyzer.



1. FILTER BOARD NO. 1 A3A5A2.
2. FILTER BOARD NO. 2 A3A5A3.
3. SIGNAL GENERATOR.
4. SPECTRUM ANALYZER.

NOTES:

- ① COMPONENTS ENCLOSED IN DASHED LINES ARE LOCATED ON OPPOSITE SIDE OF BOARD.
- ② TEST COAXIAL CABLES NOT MORE THAN 15 INCH LENGTH MAXIMUM. ONE CABLE TERMINATE WITH A N TYPE CONNECTOR ON ONE END. THE OTHER CABLE TERMINATED WITH A BNC CONNECTOR ON ONE END.
- ③ DASHED LINES ARE ALTERNATE CONNECTIONS DESCRIBED IN PROCEDURE STEP. DO NOT MAKE THIS CONNECTION UNTIL SO INSTRUCTED.

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Figure 2-30. Filter Boards A3A5A2 and A3A5A3 Alignment, Test Setup

- (5) Adjust input coil L1 on filter board No. 1, refer to figure 3-24, for transmission zero (indicated by an extreme dip on display of spectrum analyzer).
- (6) Adjust signal generator for 4.19 MHz at 0.5 V ac and set reference level on spectrum analyzer.
- (7) Adjust output coil L2 on filter board No 1, refer to figure 3-24, for transmission zero.
- (8) Repeat steps (3) through (7) for bands 2, 3, and 4, using the following data:

<u>BAND</u>	<u>INPUT COIL ZERO FREQ</u>	<u>ADJUST</u>	<u>BAND</u>	<u>OUTPUT COIL ZERO FREQ</u>	<u>ADJUST</u>
2	10.35 MHz	L3	2	6.23 MHz	L4
3	12.39 MHz	L5	3	8.36 MHz	L6
4	17.48 MHz	L7	4	11.06 MHz	L8

- (9) Repeat steps (3) through (8) for filter board No 2, bands 5 through 8 using the following data (refer to figure 3-25 for component location).

NOTE

BAND 7

No less than 18-dB attenuation at 32.00 MHz. Adjust L11 if necessary to comply.

BAND 8

No less than 13-dB attenuation at 48.00 MHz. Adjust L11 if necessary to comply.

<u>BAND</u>	<u>INPUT COIL ZERO FREQ</u>	<u>ADJUST</u>	<u>BAND</u>	<u>OUTPUT COIL ZERO FREQ</u>	<u>ADJUST</u>
5	32.90 MHz	L16	5	16.42 MHz	L15
6	34.39 MHz	L14	6	24.68 MHz	L13
7	51.05 MHz	L12	7	34.00 MHz	L11
8	82.85 MHz	L10	8	52.00 MHz	L9

- (10) Disconnect signal generator and spectrum analyzer. Reinstall filter boards in unit under test.
- d. Discriminator A3A6, adjustments are covered in testing/troubleshooting table 2-12.
 - e. Tuning Capacitor A3A7, adjustments are covered in testing/troubleshooting table 2-13.

2.9 REPAIR OF SOLID-STATE DEVICES AND CIRCUIT BOARDS

The general practices and precautions for printed circuits and microelectronic components apply to repair and replacement of components mounted on circuit cards. Use the procedures to remove or replace components or to make repairs. Use a 40-watt (maximum) soldering iron with a pointed tip and one flat side. Keep the tip well tinned at all times.

CAUTION

When unsoldering or soldering solid-state devices, attach a heat sink to the lead near the body of the device.

To unsolder connections at a terminal, use the flat side of the soldering iron tip to apply heat at the connection. Apply heat to the lead until the solder just melts; then use the tip or a pointed tool to separate the lead from the terminal. Exercise care to avoid overheating. Do not use force to pry the lead from the terminal.

CAUTION

Do not apply heat at a pad or thru hole for longer than 4 seconds.

To unsolder connections at a pad or thru hole, use the point of the soldering iron tip. Apply heat at the side opposite the component until the solder just melts; then use tweezers or needle-nose pliers to extract the lead from the thru hole. Exercise care to avoid overheating. Do not use force to remove the lead from the thru hole.

When the lead has been removed, allow the point to cool before reapplying heat. When the point has cooled, reheat the terminal or pad and remove all excess solder.

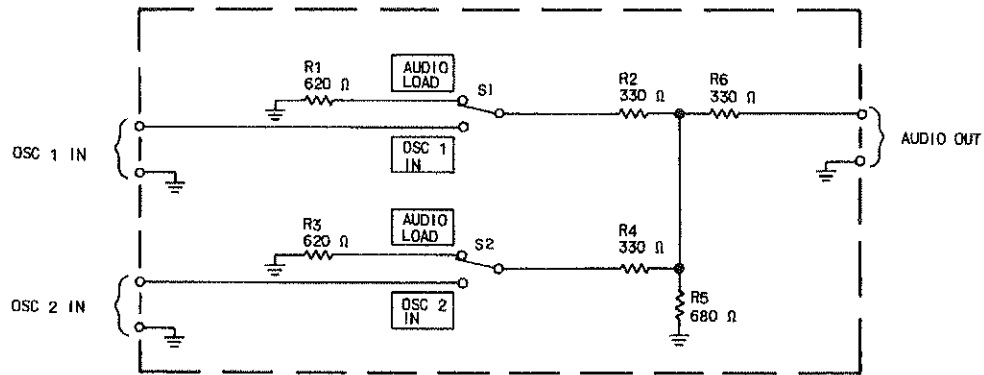
WARNING

Use cleaning solvent under a ventilated hood. Avoid breathing solvent vapor and fumes. Wear a suitable mask when necessary. Avoid continuous contact with solvent. Use goggles, gloves, and apron to prevent irritation from prolonged contact. Change clothing upon which solvents have been spilled. Observe all fire precautions for flammable materials. Use flammable solvents only in a well ventilated area, or in a hood provided with explosion-proof electrical equipment, and an exhaust fan with sparkproof blades. Warn other persons to keep away from hazardous area or working enclosure.

NOTE

When necessary to disturb dress of wiring and cables, note dress of wiring and cables and restore to dress after cleaning.

When connections have been unsoldered and the component has been removed, use a cotton swab or small brush dipped in solvent to clean the mounting area. Remove all flux residue, dirt, corrosion, and film deposits.



NOTE:
① ALL RESISTORS ARE 1/8 WATT.

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Figure 2-31. Mixer Attenuator, 600 ohm, Schematic Diagram

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parts list

3.1 INTRODUCTION

3.1.1 GENERAL

The purpose of this parts list, prepared by Collins Telecommunications Products Division of Rockwell International, is for identification, requisition, and issuance of parts.

Parts listed meet critical equipment design specification requirements. Use only part numbers specified in this parts list for replacement of parts.

3.1.2 GROUP ASSEMBLY PARTS LIST

FIG - ITEM Column — Digits preceding the dash refer to figure numbers. Digits following the dash are item numbers assigned in sequence to correspond with item numbers on the illustrations.

PART NO Column — Listed are MIL standard, vendor, or Collins part numbers. Collins part numbering system consists of 10 digits as follows: a 3-digit family number, a 4-digit serial number, and a 3-digit dash number.

INDENT Column — Items are coded 1, 2, 3, etc, to indicate the relationship to the next higher assembly.

DESCRIPTION Column — Lists the noun name, modifier, descriptive information, federal manufacturer's code, reference designation, attaching part (AP), reference to other figures, and effectivities.

Attaching parts are identified by (AP) following the part or parts they attach.

Effectivities are identified by the following methods: MCN (Manufacturer Control Number) 101 and up; CI (Configuration Identifier) 5-digit number; REV (Revision Identifier) dash (-) denotes original, letter A first change, letter B second change, etc. One of the above identifiers is listed on each chassis and/or replaceable assembly. Service Bulletins are identified by SB 1, SB 2, etc.

USABLE ON CODE Column — Part variations within a group of equipment are indicated by a letter code (A, B, C, etc). Absence of a code indicates part applies to all models.

UNITS PER ASSY Column — Quantities specified are per item number. Letters AR denote the selection of parts as required. Letters REF refer to an assembly completely assembled on a preceding figure and illustration.

3.1.3 NUMERICAL INDEX

PART NUMBER Column — Part numbers are listed in alphanumeric sequence.

FIG - ITEM Column — Digits preceding the dash refer to figure numbers. Digits following the dash are item numbers.

TTL REQ Column — Listed is the total quantity of parts or assemblies covered in the Group Assembly Parts List.

3.1.4 REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION Column — Reference designations are listed in alphanumeric sequence.

FIG - ITEM Column — Digits preceding the dash refer to figure numbers. Digits following the dash are item numbers.

PART NUMBER Column — Part numbers listed are for items that have reference designations assigned.

3.1.5 HOW TO USE THIS PARTS LIST

To locate a part number if the assembly in which the part is used is known, turn to the List of Illustrations and find the page number for the assembly in which the part is used. Locate the part and its index number on the illustration and find the index number on the Group Assembly Parts List page to determine its description and part number.

To locate the illustration for a part if the part number is known, refer to the Numerical Index and find the part number. Turn to the Group Assembly Parts List and find the first figure and index number indicated in the Numerical Index for that part. If this figure shows the part in a section or system of the equipment other than the one desired, refer to the other figure numbers listed in the Numerical Index.

To locate the illustration for a part if the reference designation is known, refer to the Reference Designation Index and find the symbol; turn to the Group Assembly Parts List and find the figure and index number indicated in the index.

3.1.6 MANUFACTURER'S CODE, NAME, AND ADDRESS

CODE	MANUFACTURER'S NAME AND ADDRESS
A1350	Columbia Nut and Bolt Corp. 41 Murry St. New York, NY 10001
A1608	Manta Tent Tarpaulin P. O. Box 3657B 1010 Logan Ave. Winnipeg, Manitoba, Canada
00106	Batori Computer Co., Inc. 72-81 113th St Forest Hills, NY 11375
00136	McCoy Electronics Co. Watts and Chestnut St. Mt. Holly Springs, PA 17065
00779	Amp, Inc. P. O. Box 3608 Harrisburg, PA 17105
01121	Allen-Bradly Co. 1201 S. 2nd St. Milwaukee, WI 53204
01281	TRW Inc. TRW Semiconductor Div. 14520 Aviation Blvd. Lawndale, CA 90260
01295	Texas Instruments, Inc. Components Group 13500 N. Central Expressway Dallas, TX 75222
01526	General Electric Co. Data Communications Products Dept General Electric Dr. Waynesboro, VA 22980
01686	R. C. L. Electronics, Inc. Div. of AMF, Inc. 195 McGregor St. Manchester, NH 03012

CODE	MANUFACTURER'S NAME AND ADDRESS
02310	Abscoa Industries 1071 W. Arbor Vitae St. Inglewood, CA 90301
02660	Bunker-Ramo Corp. Amphenol Connector Div. 2801 S. 25th Ave. Broadview, IL 60153
02735	RCA Corp. Solid State Div. Route 202 Somerville, NJ 08876
02768	Illinois Tool Works, Inc. Fastex Division 195 Algonquin Road Des Plaines, IL 60016
03508	General Electric Co. Semi-Conductor Products Dept. W. Genesee St. Auburn, NY 13021
03877	Transitron Electronics Corp. 168 Albion St. Wakefield, MA 01880
04713	Motorola, Inc. Semiconductor Products Group 5005 E. McDowell Rd. Phoenix, AZ 85008
04740	Duranmark, Inc. Secatoag Ave. Port Washington, NY 11050
05411	Du Page Mfg. Co. 2250 Curtiss Ave. Downers Grove, IL 60515
07263	Fairchild Camera and Instrument Corp. Semiconductor Div. 464 Ellis St. Mountain View, CA 94042
07707	U.S.M. Corp. U.S.M. Fastener Div. 510 River Rd. Shelton, CT 06484

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
07896	Jardaro Machine Products 325 S. Shiloh Rd. Garland, TX 75040	14433	ITT Semiconductors P.O. Box 3049 3301 Electronics Way West Palm Beach, FL 33402
07910	Teledyne Semiconductor 1300 Terra Bella Ave. Mountain View, CA 94043	14655	Cornell-Dubilier Electronics Div. Federal Pacific Electric Co. Gov't Contract Dept. 150 Ave. L Newark, NJ 07101
07933	Raytheon Co. Semiconductor Div HQ 350 Ellis St. Mountain View, CA 94042	15238	ITT Semiconductors A Div of International Telephone and Telegraph Corp. P.O. Box 168 500 Broadway Lawrence, MA 01841
08289	Blinn, Delbert Co., Inc., The P.S. Box 2007 1678 E. Mission Blvd. Pomona, CA 91766	15536	Hy-Gain Electronics Corp. R.R. 3 Lincoln, NB 68505
08664	Bristol Div. of American Chain and Cable Co., Inc. 40 Bristol St. Waterbury, CT 06720	15542	Mini-Circuits Laboratory Div. of Scientific Components 2913 Quentin Rd Brooklyn, NY 11299
08806	General Electric Co. Lamp Business Div. Nela Park Cleveland, OH 44112	16546	U.S. Capacitor, Corp/CENTRALAB/ Electronics Div. 4561 Colorado St. Los Angeles, CA 90039
12615	U.S. Terminals, Inc. 7504 Camargo Rd. Cincinnati, OH 45243	16575	Sonetronics, Inc. 1718 H St. W Belmar, NJ 07719
12954	Siemens Corp Components Group P.O. Box 1390 8700 E. Thomas Rd. Scottsdale, AZ 85252	17117	Electronic Molding Corp. 96 Mill St. Woonsocket, RI 02895
12967	Majol Portable Power Systems, Inc. 6 Orchard St. Nanuet, NY 10954	17856	Siliconix Inc. 2201 Laurelwood Rd. Santa Clara, CA 95054
13103	Thermalloy Co., Inc. P.O. Box 34829 2021 W. Valley View Lane Dallas, TX 75234	18324	Signetics Corp. 811 E. Arques Ave. Sunnyvale, CA 94086
14099	Semtech Corp. 652 Mitchell Rd. Newbury Park, CA 91320	18796	Erie Technological Products, Inc. State College Div 1900 W. College Ave. State College, PA 16801

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
19209	General Electric Co. Electronic Capacitor and Battery Products Sec. P.O. Box 114 Gainesville, FL 32601	28986	Nexus, Inc. 50 Summyside Ave. Stamford, CT 06902
19647	Caddock Electronics, INC 3127 Chicago Ave. Riverside CA 92507	34335	Advanced Micro Devices 901 Thompson Place Sunnyvale, CA 94086
21052	High Energy Corp. Lower Valley Rd. Parksburg, PA 19305	35003	ITT Cannon Electric 666 E. Dyer Rd. Santa Ana, CA 92702
22229	Solitron Devices, Inc. 8808 Balboa Ave. San Diego, CA 92123	40920	Miniature Bearing Div. MPB Corp. Optical Ave. Precision Park Keene, NH 03431
22480	Sinclair and Valentine Co. of Canada Ltd. 4590 Dufferin St. Downsview, Ont, Canada	46384	Penn Eng. & Mfg. Corp. P.O. Box 311 Doylestown, PA 18901
22599	ESNA Div. of Amerace Corp. 16150 Stagg St. Van Nuys, CA 91406	56289	Sprague Electric Co. North Adams, MA 01247
24036	Clemens Canvas and Mfg. 823 10th St. S.W. Cedar Rapids, IA 52404	56878	Standard Pressed Steel Co. Benson East Jenkintown, PA 19046
25140	Globe Industries Div. of TRW, Inc. 2275 Stanley Ave. Dayton, OH 45404	70318	Allmetal Screw Products Co. Inc. 821 Stewart Ave. Garden City, NY 11530
26419	Apex Airtonics, Inc. 2465 Altantic Ave. Brooklyn, NY 11207	70485	Atlantic Inida Rubber Works, Inc. 571 W. Polk St. Chicago, IL 60607
27014	National Semiconductor Corp. 2900 Semiconductor Dr. Santa Clara, CA 95951	70601	Anti-Corrosive Metal Products Co. Inc. P.O. Box 1894 Albany, NY 12201
27687	Greer-Smyra Inc. Smyrna Industrial Park Smyrna, TN 371167	71468	ITT Cannon Electric 666 E Dyer Rd. Santa Ana, CA 92705
28480	Hewlett-Packard Co. Corporate Hq 1501 Page Mill Rd. Palo Alto, CA 93404	72136	Electro Motive Corp. Co., Inc. Subsidiary of International Electronics Corp. P.O. Box 7600 Lauter Ave. Florence, SC 29501
		72606	Gasket Mfg. Co. 18001 S. Main St. Gardena, CA 90248

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
72619	Dialight Corp. Sub of Digitronics Corp. 60 Stewart Ave. Brooklyn, NY 11237	78488	Stackpole Carbon Co. St. Mary's, PA 15857
72962	ESNA Div. of Amerace Corp. 2330 Vauxhall Rd. Union, NJ 07083	79136	Waldes Kohinoor, Inc. 47-16 Austel Place Long Island City, NY 11101
72982	Erie Technological Products, Inc. 644 W. 12th St. Erie, PA 16512	79807	Wrought Washer Mfg. Co. 2100 S. Bay St. Milwaukee, WI 52307
73899	J.F.D. Electronics Corp. 15th at 62nd St. Brooklyn, NY 11219	79963	Zierick Mfg. Co. Radio Circle Mt. Kisco, NY 10549
75915	Littlefuse, Inc. 800 E. Northwest Hwy. Des Plaines, IL 60019	80058	Joint Electronic Type Designation System
76005	Lord Kinematics Lord Corp. 1635 W. 12th St. Erie, PA 16512	80294	Bourns, Inc. 1200 Columbia Ave. Riverside, CA 92507
76854	Oak Industries Inc. Switch Div. S. Main St. Crystal Lake, IL 60014	81073	Grayhill, Inc. P.O. Box 373 561 Hillgrove Ave. La Grange, IL 60525
77147	Patton-Mac Guyer Co. Div. of Avid Corp. 17 Virginia Ave. Providence, RI 02905	81349	Military Specifications
77250	Pheoll Mfg. Co. Div. of Allied Products Corp. 5700 W. Roosevelt Rd. Chicago, IL 60650	81350	Joint Army-Navy Specifications
78112	Scott Paper Co. Industrial Hwy. and Tinicum Island Rd. Philadelphia, PA 19113	81483	International Rectifier Corp. 9220 Sunset Blvd. Los Angeles, CA 90069
78189	Illinois Tool Works, Inc. Shakeproof Div. St. Charles Rd. Elgin, IL 60120	82240	Simmons Fastener Corp. 1781 N. Broadway Albany, NY 12204
		82872	Roanwell Corp. 180 Varick St. New York, NY 10014
		83086	New Hampshire Ball Bearings Inc. Rt. 202 Peterborough, NH 03458
		83259	Parker Seal and Co. Div. of Parker-Hannifin Corp. 10567 Jefferson Blvd. Culver City, CA 90231

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
86577	Precision Metal Products of Malden Inc. 41 Elm St. Stoneham, MA 02180	94033	La Pointe Industries, Inc. 155 W. Main St. Rockville, CT 06066
86928	Seastrom Mfg. Co. Inc. 701 Sonora Ave. Glendale, CA 91201	94375	Automatic Connector, Inc., 400 Moreland Rd. Commack, NY 11725
88044	Aeronautical Standards Group Dept. of Navy and Air Forces	95121	Quality Components, Inc. P. O. Box 113 St. Marys, PA 15857
88245	Litton Systems, Inc. USECO Div. 13536 Saticoy St. Van Nuys, CA 91409	95275	Vitramon, Inc. Box 544 Bridgeport, CT 06601
88252	Diamond Shamrock Chemical Co. NOPCO Chemical Div. First and Essex St. Harrison, NJ 07029	96214	Texas Instruments, Inc. Gov't Div. of Eqpt. Group P. O. Box 6015 13510 N. Central Expressway Dallas, TX 75222
90030	USM Corp. USM Machinery Div. 181 Elliot St. Beverly, MA 01915	96341	Microwave Associates, Inc. South Ave. Burlington, MA 01801
90634	Gulton Industries, Inc. Gulton St. Metuchen, NJ 08840	96881	Thomas Industries, Inc. 1029 Plandome Rd. Manhasset, NY 11030
91293	Johanson Mfg. Co. P. O. Box 329 Boonton, NJ 07005	96906	Military Standards
91314	Lewis Spring and Mfg. Co. 2652 W. North Ave. Chicago, IL 60647	97534	Roseman Mower Corp. 2300 W. Lake Ave. Glenview, IL 60025
91812	Janco Corp. 3111 Winona Ave. Box 3038 Burbank, CA 91504	97539	APM-Hexseal Corp. 44 Honeck St. Englewood, NJ 07631
92878	Hunter Mfg. Co. 30525 Aurora Rd. Cleveland, OH 44139	98003	Nielsen Hardware Corp. P. O. Box 568 770 Wethersfield Ave. Hartford, CT 06101
93958	Republic Electronics Corp. 176 E. 7th St. Paterson, NJ 07524	98278	Malco A. Microdot Connector and Cable Div. 220 Pasadena Ave. South Pasadena, CA 91030

CODE	MANUFACTURER'S NAME AND ADDRESS
98291	Selectro Corp. 225 Hoyt Manaroneck, NY 10544
98978	International Electronic Research Corp. 135 W. Magnolia Blvd. Burbank, CA 91502

3.1.7 Reference Designation Prefixes

The following prefixes have been assigned in this manual:

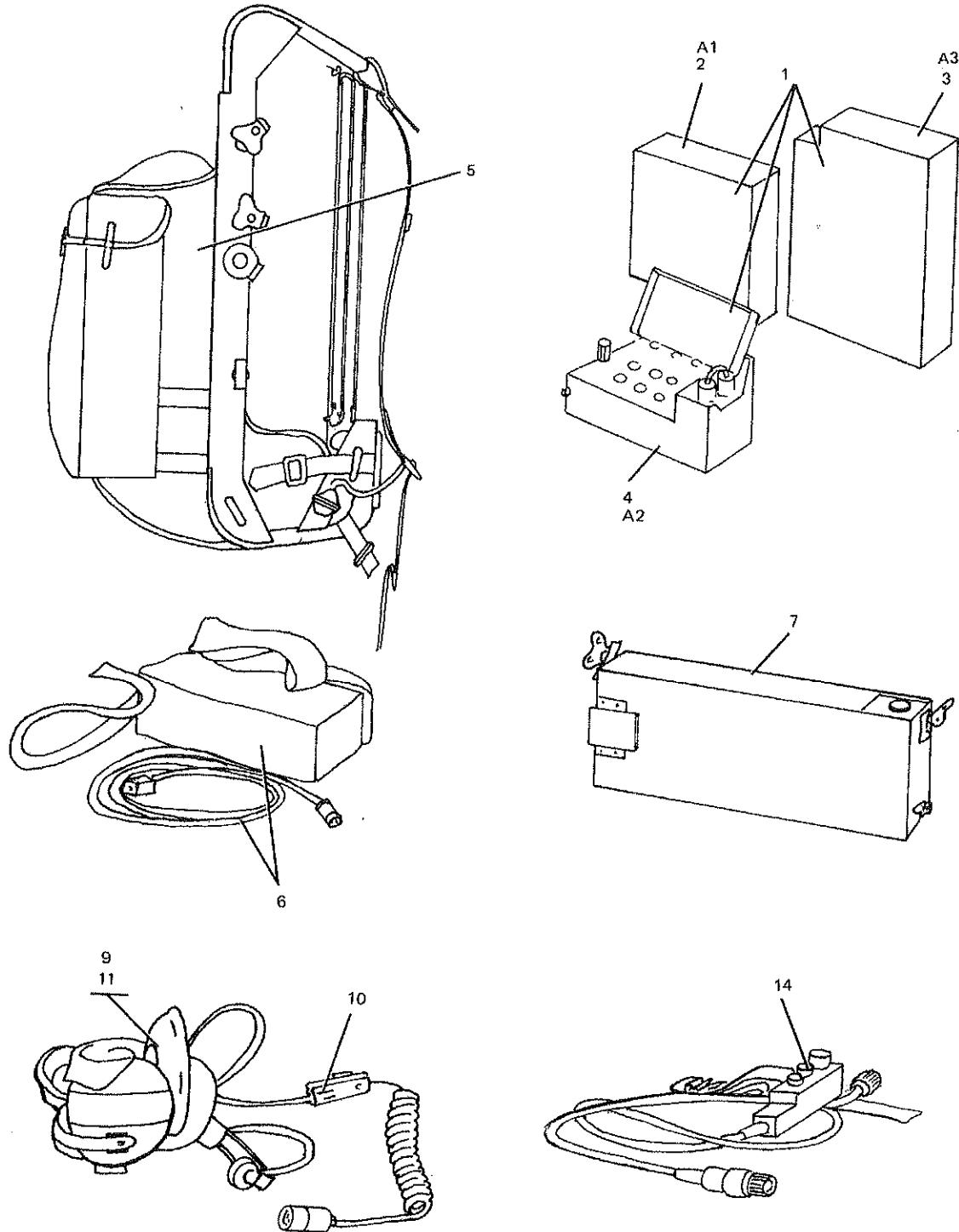
<u>PREFIX</u>	<u>UNIT PART NUMBER</u>	<u>FIG-ITEM</u>
A1	622-2148-002	3-2
A1A1	629-3406-001	3-2-17
A1A2	629-3403-001	3-15
A1A3	601-3671-001	3-16
A1A4	601-3670-001	3-3
A1A5	629-3405-001	3-2-5
A1A5A1	601-3668-001	3-5
A1A5A2	601-3669-001	3-4
A1A6	629-3402-002	3-2-12
A1A6A1	609-2467-002	3-6
A1A6A1A1	601-3877-001	3-7
A1A6A1A2	601-3876-002	3-10
A1A6A1A3	601-3879-001	3-9
A1A6A1A4	601-3878-001	3-8
A1A6A2	609-2469-001	3-11
A1A6A2A1	601-3874-002	3-13
A1A6A2A2	601-3875-002	3-14
A1A6A2A3	635-8154-001	3-12
A2	622-2553-003	3-34
A2A1	601-3666-001	3-34-39
A3	622-2149-001	3-18
A3A1	601-3673-001	3-20
A3A2	601-3672-001	3-19
A3A3	629-3411-001	3-18-27
A3A3A1	635-4749-001	3-18-30
A3A3A2	635-4690-001	3-32
A3A4	629-3410-001	3-18-6
A3A4A1	623-7287-001	3-22
A3A4A2	601-3675-001	3-21
A3A5	629-3414-001	3-23
A3A5A1	601-3677-001	3-23-5
A3A5A2	629-3482-001	3-24
A3A5A3	629-3483-001	3-25
A3A6	629-3409-001	3-27
A3A6A1	629-5705-001	3-27-14
A3A6A2	601-3686-001	3-28
A3A6A3	601-3685-001	3-29
A3A7	629-3412-001	3-30
A3A8	629-3413-001	3-26
A3A9	629-3407-001	3-31

3.1.8 CONFIGURATION IDENTIFIERS

The following CI's/REV LTR's were used in compiling data for this manual:

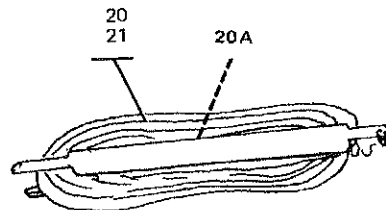
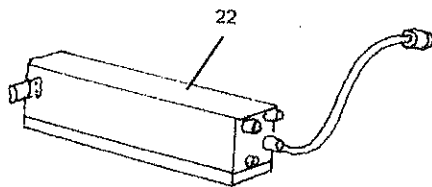
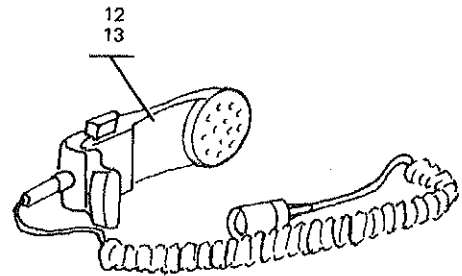
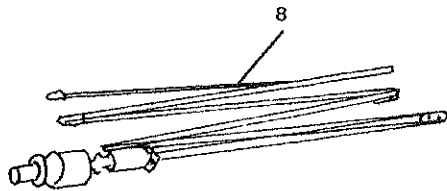
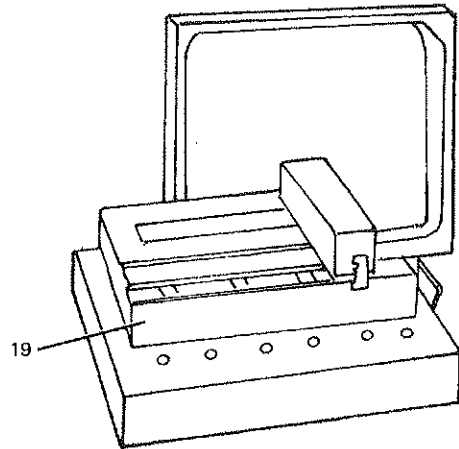
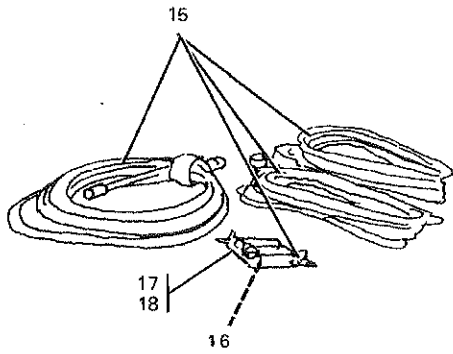
<u>CI/REV LTR</u>	<u>UNIT PART NUMBER</u>	<u>FIG-ITEM</u>	<u>CI/REV LTR</u>	<u>UNIT PART NUMBER</u>	<u>FIG-ITEM</u>
H	622-2577-002	3-1	D	629-5501-001	3-16-36
C	622-1407-002	3-1-1	K	601-3667-001	3-17
S	622-2148-002	3-2	N	622-2149-001	3-18
75424	629-3405-001	3-2-5	B	629-3410-001	3-18-6
A	635-4676-001	3-2-7	L	623-7287-001	3-18-8
D	629-3402-002	3-2-12	U	629-3411-001	3-18-27
F	629-3406-001	3-2-17	V	601-3672-001	3-19
S	601-3670-001	3-3	V	601-3673-001	3-20
B	601-3988-001	3-3-24	N	601-3675-001	3-21
B	601-3987-001	3-3-66	K	601-3674-001	3-22
M	601-3669-001	3-4	E	629-3414-001	3-23
P	601-3668-001	3-5	B	601-3677-001	3-23-5
D	609-2467-002	3-6	F	629-3482-001	3-24
N	601-3877-001	3-7	H	629-3483-001	3-25
B	635-0670-001	3-7-37	J	629-3413-001	3-26
A	635-0672-001	3-7-48	L	629-3409-001	3-27
-	635-1592-001	3-7-49	75385	629-5705-001	3-27-14
A	635-0858-001	3-7-50	G	601-3686-001	3-28
A	635-0860-001	3-7-52	76205	635-0867-001	3-28-21
A	635-0857-001	3-7-54	76205	635-0868-001	3-28-24
A	635-0859-001	3-7-56	H	601-3685-001	3-29
A	635-0858-001	3-7-58	N	629-3412-001	3-30
A	635-0857-001	3-7-61	J	629-3407-001	3-31
C	635-0671-001	3-7-69	J	635-4690-001	3-32
A	635-0643-001	3-7-90	M	601-3865-001	3-33
C	635-0856-001	3-7-97	R	622-2553-003	3-34
B	635-0852-001	3-7-100	F	629-3439-002	3-34-6
A	635-0853-001	3-7-101	E	601-3666-001	3-34-39
A	635-0856-001	3-7-121	F	629-3425-002	3-35
L	601-3878-001	3-8	B	637-1953-001	3-35-24
H	601-3879-001	3-9	J	629-3428-001	3-36
76426	637-2575-001	3-9-15	N	629-5703-001	3-37
T	601-3876-002	3-10	C	629-5773-001	3-37-2
-	601-3880-001	3-10-4	N	629-5771-006	3-37-13
C	609-2469-001	3-11	N	629-5771-001	3-37-14
J	623-3849-001	3-11-7	F	629-5702-001	3-38
K	635-8154-001	3-12	A	635-5246-001	3-38-7
-	635-8155-001	3-12-81	C	635-5241-001	3-38-16
R	601-3874-002	3-13	B	637-1949-001	3-39
A	601-3491-001	3-13-46	R	629-3415-001	3-40
A	601-3490-001	3-13-65	76054	635-4888-001	3-40-11
L	601-3875-002	3-14	H	629-5772-008	3-40-33
P	629-3403-001	3-15	K	629-5772-001	3-40-35
S	601-3671-001	3-16	D	629-5777-001	3-41

3.2 GROUP ASSEMBLY PARTS LIST



TP4-9838-029

Figure 3-1. Radio Set AN/PRC-515 (Sheet 1 of 2)

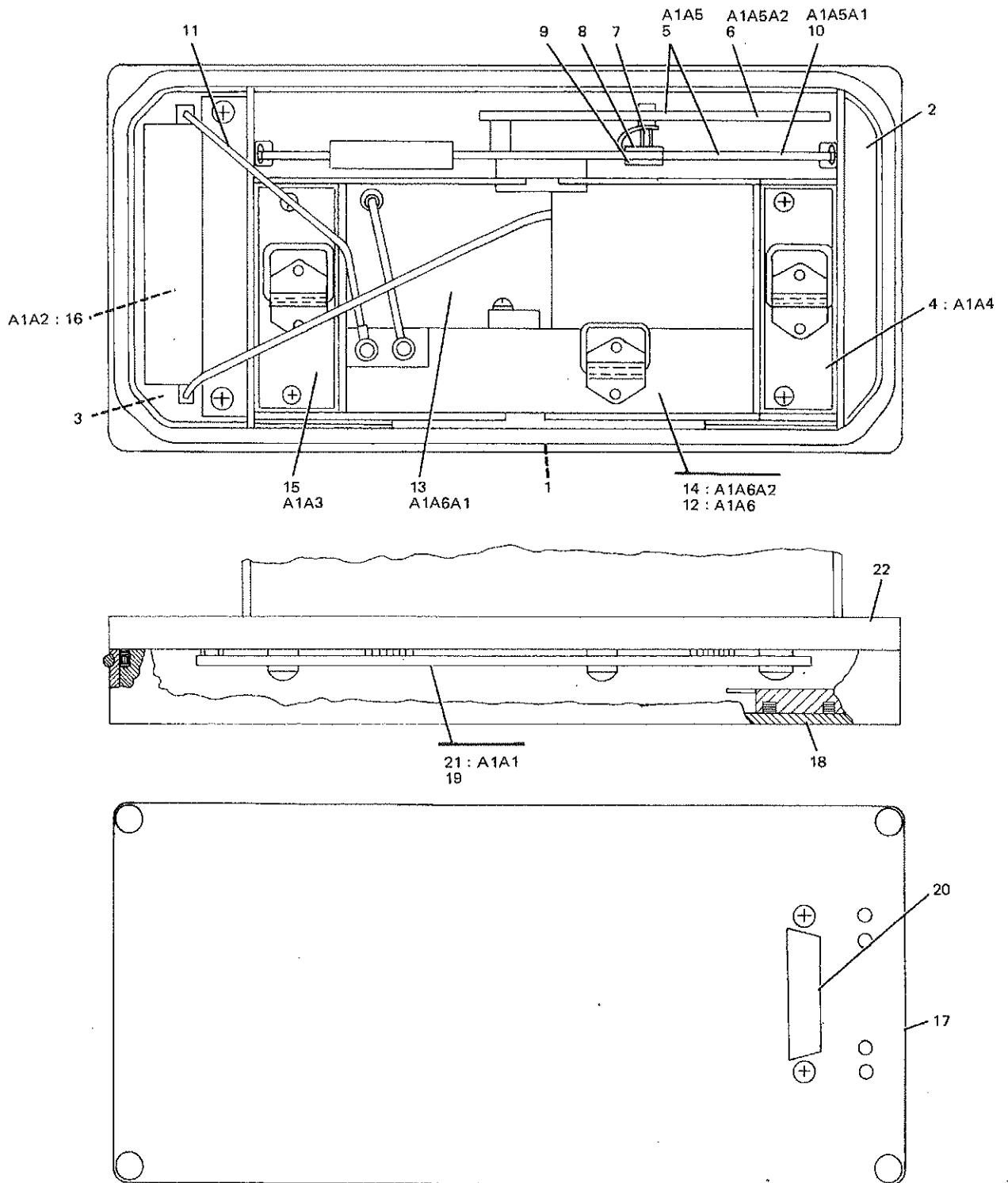


TP4-9838-029

Figure 3-1. Radio Set AN/PRC-515 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-1 -	622-2577-002	1	RADIO SET AN/PRC-515		1
1	622-1407-CC2	2	RECEIVER-TRANSMITTER GROUP CR-5007/URC		1
2	622-2148-CC2	3	RADIO RECEIVER-TRANSMITTER RT-5047/URC A1 (SEE FIG 3-2)		1
3	622-2149-CC1	3	AMPLIFIER-COUPLER AM-5280/URC A3 (SEE FIG 3-18)		1
4	622-2553-CC3	3	RECEIVER-TRANSMITTER CONTROL C-5310/URC A2 (SEE FIG 3-34)		1
5	629-3425-CC2	2	RADIO SET HARNESS RT-5167/PRC-515 (SEE FIG 3-35)		1
6	629-3428-CC1	2	ELECTRICAL POWER CABLE ASSEMBLY CX-5229/PRC-515 (SEE FIG 3-36)		1
7	629-5703-CC1	2	STORAGE BATTERY BB-706/U (SEE FIG 3-37)		2
8	629-5702-CC1	2	ANTENNA AS-5093/PRC-515 (SEE FIG 3-38)		1
9	625-5148-CC1	2	HEADSET-MICROPHONE H-5016/PRC-515		1
10	625-5174-CC1	3	CLIP, INSERT (EFF TC REV LTR C)		1
11	123330	3	HEADSET (V82872) 977-0159-010		1
12	637-1952-CC1	2	HANDSET H-5017/GR		1
13	NEXUSAPIC5A	3	HANDSET (V16575) 977-0019-020		1
14	637-1949-CC1	1	TELEGRAPH KEY KY-5033/PRC-515 (ANCILLIARY EQUIPMENT) (SEE FIG 3-39)		1
15	622-3073-CC1	1	ANTENNA AS-5094/PRC-515 (ANCILLIARY EQUIPMENT)		1
16	625-1747-CC0	2	PLATE, IDENT		1
17	S1903AC	2	ANTENNA ELEMENT (V15536) 013-1578-010		1
18	625-4940-CC1	2	STRAP, ANTENNA (EFF TC REV LTR C)		1
19	629-3416-CC3	1	BATTERY CHARGER PP-5267/U (ANCILLARY EQUIPMENT) (SEE SEPARATE MANUAL)		1
20	629-5896-CC1	1	ANTENNA COUNTERPOISE AS-5095/PRC-515 (ANCILLIARY EQUIPMENT)		1
20A	625-1748-CC0	2	PLATE, IDENT (EFF REV LTR A)		1
21	013-1582-C1C	2	COUNTERPOISE (V15536) 013-1582-010		1
22	629-3415-CC1	1	DIRECT CURRENT GENERATOR G-5002/PRC-515 (ANCILLIARY EQUIPMENT) (SEE FIG 3-40)		1



TP4-9659-019

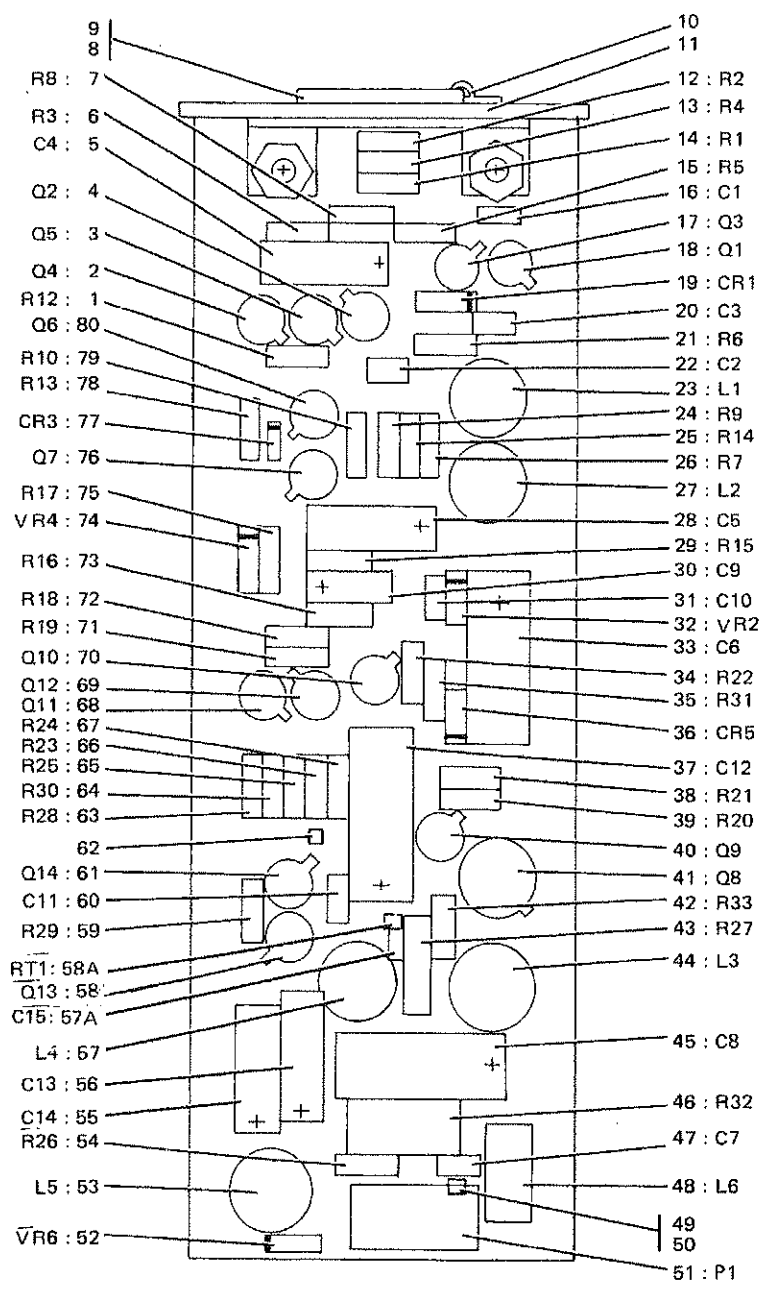
Figure 3-2. Radio Receiver-Transmitter RT-5047/URC A1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-2 -	622-2148-CC2	1	RADIO RECEIVER-TRANSMITTER RT-5047/URC A1 (SEE FIG 3-1-2 FOR NHA)		REF
1	635-1507-CCC	2	PLATE,IDENT		1
2	629-5859-CC5	2	COVER		1
	33C-1732-C20	2	SCREW,SLFLKG, SST, 4-40 X 3/16 (V22599)		2
	33C-1732-C9C	2	SCREW,SLFLKG, SST, 4-40 X 3/4 (V22599)		1
3	NT352RC832VC3L	2	SCREW,MACH, CRES, 2-32 X 3/16 (V02310)		1
4	6C1-367C-C01	2	POWER SUPPLY A1A4 (SEE FIG 3-15)		1
	MS51957-15	2	SCREW,MACH, STL, 4-40 X 3/8 (V96906)		2
	MS35338-135	2	WASHER,LCKK, SST, C.115 ID X 0.209 OD (V96906)		2
5	629-3405-CC1	2	IF/AF AMPLIFIER A1A5		1
6	6C1-3669-C01	3	LCGIC/TX A1A5A2 (SEE FIG 3-4)		1
7	635-4676-C01	3	ELECTRONIC COMPONENTS ASSEMBLY		1
	MS51957-3	3	SCREW,MACH, CD PL STL, 2-56 X 1/4 (V96906)		4
8	629-5853-C01	4	STRIP,RETAINER		1
9	629-3485-C01	4	STRIP,RETAINER		1
	34C-C644-CC	4	SLEEVE,SPG (V91314) 34C-C644-CCO (AP FOR 8-9)		2
	5C2-1515-CC2	4	WASHER,FLAT (AP FOR 8-9)		2
	MS35338-135	4	WASHER,LCKK, SST, C.115 ID X 0.209 OD (V96906)		1
	MS51957-17	4	SCREW,MACH, STL, 4-40 X 1/2 (V96906)		1
	MS51959-4	4	SCREW,MACH, SST, 2-56 X 5/16 (V96906)		2
	629-6147-CC1	4	RETAINER SCREW (AP FOR 8-9)		1
10	6C1-3668-C01	4	IF/AF A1A5A1 (SEE FIG 3-5)		1
11	14C-C53C-3C22	2	CABLE PLUG (V98278) 426-5435-670		1
12	629-3402-CC2	2	FREQUENCY SYNTHESIZER A1A6		1
13	6C9-2467-CC2	3	LF GENERATOR A1A6A1 (SEE FIG 3-6)		1
	MS51957-168	3	SCREW,MACH, SST, 4-40 X 7/16 (V96906)		2
	MS51957-188	3	SCREW,MACH, SST, 4-40 X 5/8 (V96906)		2
	31C-334C-CCC	3	WASHER,LCKK, SST, C.125 IC X 0.187 OD (V79807)		2
14	6C9-2465-C01	3	HF GENERATOR A1A6A2 (SEE FIG 3-11)		1
15	6C1-3671-C01	2	BROADBAND AMPLIFIER A1A3 (SEE FIG 3-16)		1
	MS51957-15	2	SCREW,MACH, STL, 4-40 X 3/8 (V96906)		2
	MS35338-135	2	WASHER,LCKK, SST, C.115 ID X 0.209 OD (V96906)		2
16	629-3403-C01	2	MIXER A1A2 (SEE FIG 15)		1
	MS51957-19	2	SCREW,MACH, STL, 4-40 X 3/4 (V96906)		2
	MS35338-135	2	WASHER,LCKK, SST, C.115 ID X 0.209 OD (V96906)		2
	34C-C644-CC	2	SLEEVE,SPG (V91314) 34C-C644-CCO (AP) (EFF TC REV LTR P)		2
17	629-3406-C01	2	CHASSIS A1A1		1
	P342-C053-CCC	2	SCREW,MACH, SST, 4-40 X 1-1/8 (V77250)		4
	MS51957-20	2	SCREW,MACH, STL, 4-40 X 7/8 (V96906)		4
	34C-C644-CC	2	SLEEVE,SPG (V91314) 34C-C644-CCO (AP)		4
18	629-3442-C01	3	COVER (EFF TC REV LTR E)		1
18	635-8251-CC1	3	COVER		1
19	635-5157-CC1	3	SIDECARD ASSY		1
	MS51957-12	3	SCREW,MACH, STL, 4-40 X 3/16 (V96906)		5
20	MDNB97294-85	4	CONN,CA ASSY (V71468) 426-0073-010		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
	MS51955-6		4 SCREW, MACH, SST, 2-56 X 7/16 (V96906) 342-0136-CCO (AP)		4
	MS28775-C24		4 PACKING, PREFORM (V56906) 200-2338-450 (AP)		3
21	601-3667-CC1		4 SIDE BOARD (SEE FIG 3-17)		1
22	629-3488-CC1		3 CHASSIS		1
	MS51957-14		3 SCREW, MACH, SST, 4-40 X 5/16 (V96906) 343-0134-CCO (AP)		4
	34C-0644-CC		3 SLEEVE, SPG (V91314) 34C-0644-CCO (AP)		4



TP4-9660-019

Figure 3-3. Power Supply A1A4

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-3 -	6C1-367C-CC1	1	POWER SUPPLY A1A4 (SEE FIG 3-2-4 FOR NHA)		REF
1	RN55C3831F	2	RESISTOR,FXD, FILM, 3.83K, 1%, 1/8W (V81348) 7C5-1024-CCC A1A4R12		1
2	2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1A4Q4		1
3	2N2222A	2	TRANSISTOR (V07263) 352-0661-C20 A1A4Q5		1
4	2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1A4C2		1
5	M35CC3-C1-2368	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 10%, 50V (V81349) 184-9087-550 A1A4C4		1
6	RCRC7G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/4W (V81346) 745-0809-CCC A1A4R3		1
7	RCRC7G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/4W (V81349) 745-0773-CCC A1A4R6		1
8	629-3356-CC4	2	HANDLE		1
	M35649-244	2	NUT,PLAIN,HEX, SST, 4-40 (V969C6) 313-0043-CC0 (AP)		2
	31C-634C-CCC	2	WASHER,FLAT, SST, C.125 ID X 0.281 OD (V798C7) 31C-634C-CCC (AP)		2
	31C-C278-CCC	2	WASHER,LCKK, SST, C.115 ID X 0.202 OD (V70318) 31C-0278-CCC (AP)		2
	M551957-15	2	SCREW,WACH, STL, 4-40 X 3/8 (V969C6) 343-0135-CCC (AP)		2
9	629-3452-CC1	3	HANDLE		1
10	629-3493-CC1	3	RETAINER,HANDLE		1
	M516535-54	3	RIVET,TUBULAR, CS, 0.089 DIA X 0.188 (V969C6) 305-1733-CCC (AP)		2
11	629-3396-CC1	3	BRACKET		1
12	RCRC7G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCC A1A4R2		1
13	RCRC7G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCC A1A4R4		1
14	RCRC7G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/4W (V81349) 745-0809-CCC A1A4R1		1
15	RCRC7G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCC A1A4R5		1
16	CK05BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A1A4C1		1
17	2N29C7A	2	TRANSISTOR (V04713) 352-0551-C10 A1A4C3		1
18	2N29C7A	2	TRANSISTOR (V04713) 352-0551-010 A1A4Q1		1
19	1N4934	2	SEMICONO DEVICE (V04713) 353-6518-C20 A1A4CR1		1
20	CK05BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5C19-200 A1A4C3		1
21	RCRC7G1C1KS	2	RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/4W (V81349) 745-0713-CCC A1A4R6		1
22	CK05BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A1A4C2		1
23	567-839C-CC1	2	CCIL A1A4L1		1
	6C1-3588-CC1	2	RESISTOR, TEST SELECT (NON-PRG CURABLE ITEM)		1
24	RN55C10C2F	3	RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCC A1A4R9		AR
24	RN55C1052F	3	RESISTOR,FXD, FILM, 10.5K, 1%, 1/8W (V81349) 7C5-1045-CCC A1A4R9		AR
24	RN55C11C2F	3	RESISTOR,FXD, FILM, 11K, 1%, 1/8W (V81349) 7C5-1046-CCC A1A4R9		AR
24	RN55C1152F	3	RESISTOR,FXD, FILM, 11.5K, 1%, 1/8W (V81349) 7C5-1047-CCC A1A4R9		AR
24	RN55C1212F	3	RESISTOR,FXD, FILM, 12.1K, 1%, 1/8W (V81349) 7C5-1048-CCC A1A4R9		AR
24	RN55C1272F	3	RESISTOR,FXD, FILM, 12.7K, 1%, 1/8W (V81349) 7C5-1049-CCC A1A4R9		AR
24	RN55C1332F	3	RESISTOR,FXD, FILM, 13.3K, 1%, 1/8W (V81349) 7C5-1050-CCC A1A4R9		AR
24	RN55C14C2F	3	RESISTOR,FXD, FILM, 14K, 1%, 1/8W (V81349) 7C5-1051-CCC A1A4R9		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-3	24 RN55C1472F	3	RESISTOR,FXD, FILM, 14.7K, 1%, 1/8W (V81349) 7C5-1052-CCC A1A4R9		AR
	24 RN55C1542F	3	RESISTOR,FXD, FILM, 15.4K, 1%, 1/8W (V81349) 7C5-1053-CCO A1A4R9		AR
	24 RN55C1022F	3	RESISTOR,FXD, FILM, 10.2K, 1%, 1/8W (V81349) 7C5-3605-480 A1A4R9		AR
	24 RN55C1072F	3	RESISTOR,FXD, FILM, 10.7K, 1%, 1/8W (V81349) 7C5-3605-490 A1A4R9		AR
	24 RN55C1132F	3	RESISTOR,FXD, FILM, 11.3K, 1%, 1/8W (V81349) 7C5-3605-500 A1A4R9		AR
	24 RN55C1182F	3	RESISTOR,FXD, FILM, 11.8K, 1%, 1/8W (V81349) 7C5-3605-510 A1A4R9		AR
	24 RN55C1242F	3	RESISTOR,FXD, FILM, 12.4K, 1%, 1/8W (V81349) 7C5-3605-520 A1A4R9		AR
	24 RN55C1372F	3	RESISTOR,FXD, FILM, 13.7K, 1%, 1/8W (V81349) 7C5-3605-540 A1A4R9		AR
	24 RN55C1432F	3	RESISTOR,FXD, FILM, 14.3K, 1%, 1/8W (V81349) 7C5-3605-550 A1A4R9		AR
	24 RNC55H13C2FS	3	RESISTOR,FXD, FILM, 13K, 1%, 1/10W (V81349) 724-064C-C3C A1A4R9		AR
	25 RCRC7C475KS	2	RESISTOR,FXD, CMPSN, 4.7MEGC, 10%, 1/4W (V81349) 745-0881-CCO A1A4R14		1
	26 RWR81S2R37FR	2	RESISTOR,FXD, WW 2.37 OHMS, 1%, 1W (V81349) 747-2179-37C A1A4R7		1
	27 629-3491-CC1	2	CCIL A1A4L2		1
	28 M39CC3-C1-2289	2	CAPACITOR,FXD, ELCTLT, 15UF, 10%, 20V (V81349) 184-9086-490 A1A4C5		1
	29 RCRC7C1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCO A1A4R15		1
	30 M39CC3-C1-2255	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 20%, 10V (V81349) 184-9086-150 A1A4C9		1
	31 CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A4C10		1
	32 1N4744A	2	SEMICOND DEVICE (V04713) 353-6481-330 A1A4VR2		1
	33 M39CC3-C1-2265	2	CAPACITOR,FXD, ELCTLT, 47UF, 10%, 20V (V81349) 184-9086-550 A1A4C6		1
	34 RCRC7C1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCO A1A4R22		1
	35 RCRC7C155KS	2	RESISTOR,FXD, CMPSN, 1.5MEGC, 10%, 1/4W (V81349) 745-0863-CCC A1A4R31		1
	36 1N4934	2	SEMICOND DEVICE (V04713) 353-6518-020 A1A4CR5		1
	37 M39CC3-C1-2295	2	CAPACITOR,FXD, ELCTLT, 47UF, 10%, 20V (V81349) 184-9086-550 A1A4C12		1
	38 RCRC7C1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCO A1A4R21		1
	39 RCRC7C1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCO A1A4R20		1
	40 2N29C7A	2	TRANSISTOR (V04713) 352-0551-010 A1A4Q9		1
	41 2N5323	2	TRANSISTOR (V07263) 352-0982-020 A1A4Q8		1
	42 RCRC7C272KS	2	RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/4W (V81349) 745-0764-CCC A1A4R33		1
	43 11A7CCR5COH	2	RESISTOR,FXD, WW 0.5 OHMS, 3%, 1W (V01686) 747-1269-CCO A1A4R27		1
	44 629-6163-CC1	2	CCIL A1A4L3		1
	45 M39CC3-C1-2375	2	CAPACITOR,FXD, ELCTLT, 18UF, 10%, 50V (V81349) 184-9087-660 A1A4C8		1
	46 RW69V2R7	2	RESISTOR,FXD, WW 2.7 OHMS, 5%, 3W (V81349) 747-5364-CCC A1A4R32		1
	47 CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A4C7		1
	48 M9751C1-7	2	CCIL,RF, 10UH (V96906) 240-1600-CCO A1A4L6		1
	49 372-2234-C1C	2	CONTACT,ELEC 372-2234-C10		4
	50 372-2234-C2C	2	CONTACT,ELEC 372-2234-C20		4

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-3	51 372-2623-C13	2	F-CLOSING, CONN, EL 372-2623-013 A1A4F1		1
	52 1N4734A	2	SEMICONV DEVICE (VC4713) 353-6481-130 A1A4VR6		1
	53 629-3491-CC1	2	CCIL A1A4L5		1
	54 RCR07G1C1KS	2	RESISTOR, FXD, CMPSN, 100 CMFS, 10%, 1/4W (V81349) 745-0713-000 A1A4R26 (EFF TO REV LTR S)		1
	630-2203-001	2	RESISTOR, TEST SELECT (NON PROCURABLE ITEM) (EFF REV LTR S)		1
	54 RCR07G100KS	3	RESISTOR, FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-000 A1A4R26 (EFF REV LTR S)		AR
	54 RCR07G150KS	3	RESISTOR, FXD, CMPSN, 15 OHMS, 10%, 1/4W (V81349) 745-0683-000 A1A4R26 (EFF REV LTR S)		AR
	54 RCR07G220KS	3	RESISTOR, FXD, CMPSN, 22 OHMS, 10%, 1/4W (V81349) 745-0689-000 A1A4R26 (EFF REV LTR S)		AR
	54 RCR07G330KS	3	RESISTOR, FXD, CMPSN, 33 OHMS, 10%, 1/4W (V81349) 745-0695-000 A1A4R26 (EFF REV LTR S)		AR
	54 RCR07G470KS	3	RESISTOR, FXD, CMPSN, 47 OHMS, 10%, 1/4W (V81349) 745-0701-000 A1A4R26 (EFF REV LTR S)		AR
	54 RCR07G560KS	3	RESISTOR, FXD, CMPSN, 56 OHMS, 10%, 1/4W (V81349) 745-0704-000 A1A4R26 (EFF REV LTR S)		AR
	54 RCR07G580KS	3	RESISTOR, FXD, CMPSN, 68 OHMS, 10%, 1/4W (V81349) 745-0707-000 A1A4R26 (EFF REV LTR S)		AR
	54 RCR07G820KS	3	RESISTOR, FXD, CMPSN, 82 OHMS, 10%, 1/4W (V81349) 745-0710-000 A1A4R26 (EFF REV LTR S)		AR
	54 RCR07G101KS	3	RESISTOR, FXD, CMPSN, 100 OHMS, 10%, 1/4W (V81349) 745-0713-000 (EFF REV LTR S)		AR
	55 M39CC3-C1-2259	2	CAPACITOR, FXD, ELCTLT, 39UF, 10%, 10V (V81349) 184-9086-190 A1A4C14		1
	56 M39CC3-C1-2259	2	CAPACITOR, FXD, ELCTLT, 39UF, 10%, 10V (V81349) 184-9086-190 A1A4C13		1
	57 629-3491-CC1	2	CCIL A1A4L4		1
	57A CK05BX1C4M	2	CAPACITOR, FXD, CER DIEL, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A4C15 (EFF REV LTR R)		1
	58 2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1A4Q13		1
	58A 32TC4	2	RESISTOR, THRM, 2K, 10%, 1.8MW (V9C634) 714-1138-C8C A1A4R11 (EFF REV LTR R)		1
	59 RCR07G273KS	2	RESISTOR, FXD, CMPSN, 27K, 10%, 1/4W (V81349) 745-0800-000 A1A4R29		1
	60 CK05BX1C3K	2	CAPACITOR, FXD, CER DIEL, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A4C11		1
	61 2N2907A	2	TRANSISTOR (VC4713) 352-C551-010 A1A4C14		1
	62 372-2601-132	2	CONTACT, ELEC 372-2601-132		4
	63 RCR07G333KS	2	RESISTOR, FXD, CMPSN, 33K, 10%, 1/4W (V81349) 745-0803-000 A1A4R28		1
	64 RCR07G152KS	2	RESISTOR, FXD, CMPSN, 1.5K, 10%, 1/4W (V81349) 745-0755-000 A1A4R30		1
	65 RN55D1622F	2	RESISTOR, FXD, FILM, 16.2K, 1%, 1/8W (V81349) 705-1054-000 A1A4R25		1
	601-3987-CC1	2	RESISTOR, TEST SELECT (NON-PROCURABLE ITEM)		1
	66 RN55D1102F	3	RESISTOR, FXD, FILM, 11K, 1%, 1/8W (V81349) 705-1046-000 A1A4R23		AR
	66 RN55D1212F	3	RESISTOR, FXD, FILM, 12.1K, 1%, 1/8W (V81349) 705-1048-000 A1A4R23		AR
	66 RN55D1332F	3	RESISTOR, FXD, FILM, 13.3K, 1%, 1/8W (V81349) 705-1050-000 A1A4R23		AR
	66 RN55C1472F	3	RESISTOR, FXD, FILM, 14.7K, 1%, 1/8W (V81349) 705-1052-000 A1A4R23		AR
	66 RN55D1962F	3	RESISTOR, FXD, FILM, 19.6K, 1%, 1/8W (V81349) 705-1058-000 A1A4R23		AR
	66 RN55C2152F	3	RESISTOR, FXD, FILM, 21.5K, 1%, 1/8W (V81349) 705-1060-000 A1A4R23		AR
	66 RN55C2372F	3	RESISTOR, FXD, FILM, 23.7K, 1%, 1/8W (V81349) 705-1062-000 A1A4R23		AR
	66 RN55C2742F	3	RESISTOR, FXD, FILM, 27.4K, 1%, 1/8W (V81349) 705-1065-000 A1A4R23		AR
	66 RN55C3012F	3	RESISTOR, FXD, FILM, 30.1K, 1%, 1/8W (V81349) 705-1067-000 A1A4R23		AR
	66 RN55C3162F	3	RESISTOR, FXD, FILM, 31.6K, 1%, 1/8W (V81349) 705-1068-000 A1A4R23		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-3	66 RN55C3322F	3	RESISTOR,FXD, FILM, 33.2K, 1%, 1/8W (V81349) 7C5-1069-CCC A1A4R23		AR
	66 RN55C3482F	3	RESISTOR,FXD, FILM, 34.8K, 1%, 1/8W (V81349) 7C5-1070-CCO A1A4R23		AR
	66 RN55C4C22F	3	RESISTOR,FXD, FILM, 40.2K, 1%, 1/8W (V81349) 7C5-1073-CCC A1A4R23		AR
	66 RN55C4422F	3	RESISTOR,FXD, FILM, 44.2K, 1%, 1/8W (V81349) 7C5-1075-CCO A1A4R23		AR
	66 RN55C5622F	3	RESISTOR,FXD, FILM, 56.2K, 1%, 1/8W (V81349) 7C5-1080-CCC A1A4R23		AR
	66 RN55C1CC3F	3	RESISTOR,FXD, FILM, 100K, 1%, 1/8W (V81349) 7C5-1092-CCO A1A4R23		AR
	66 RN55C3C13F	3	RESISTOR,FXD, FILM, 301K, 1%, 1/8W (V81349) 7C5-1115-CCC A1A4R23		AR
3-3	66 RN55D1742F	3	RESISTOR,FXD, FILM, 17.4K, 1%, 1/8W (V81349) 7C5-3605-590 A1A4R23		AR
	66 RN55C3922F	3	RESISTOR,FXD, FILM, 39.20K, 1%, 1/8W (V81349) 7C5-3605-760 A1A4R23		AR
	67 RN55D787CF	2	RESISTOR,FXD, FILM, 787 OHMS, 1%, 1/8W (V81349) 7C5-0991-CCO A1A4R24		1
	68 2N29C7A	2	TRANSISTOR (V04713) 352-0551-010 A1A4C11		1
	69 2N29C7A	2	TRANSISTOR (V04713) 352-0551-010 A1A4Q12		1
	70 2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1A4Q10		1
	71 RCRC7G1C4KS	2	RESISTOR,FXD, CMPSN, 0.10MEG, 10%, 1/4W (V81349) 745-0821-CCO A1A4R19		1
	72 RCRC7G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/4W (V81349) 745-0809-CCO A1A4R18		1
	73 RCRC7G273KS	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/4W (V81349) 745-0800-CCC A1A4R16		1
	74 MZ4624	2	SEMICOND DEVICE (V04713) 353-3591-480 A1A4VR4		1
	75 RCRC7G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCC A1A4R17		1
	76 2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1A4C7		1
	77 1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A1A4CR3		1
	78 RCRC7G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/4W (V81349) 745-0773-CCC A1A4R13		1
	79 RN55C1472F	2	RESISTOR,FXD, FILM, 14.7K, 1%, 1/8W (V81349) 7C5-1052-CCO A1A4R10		1
	80 2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1A4Q6		1

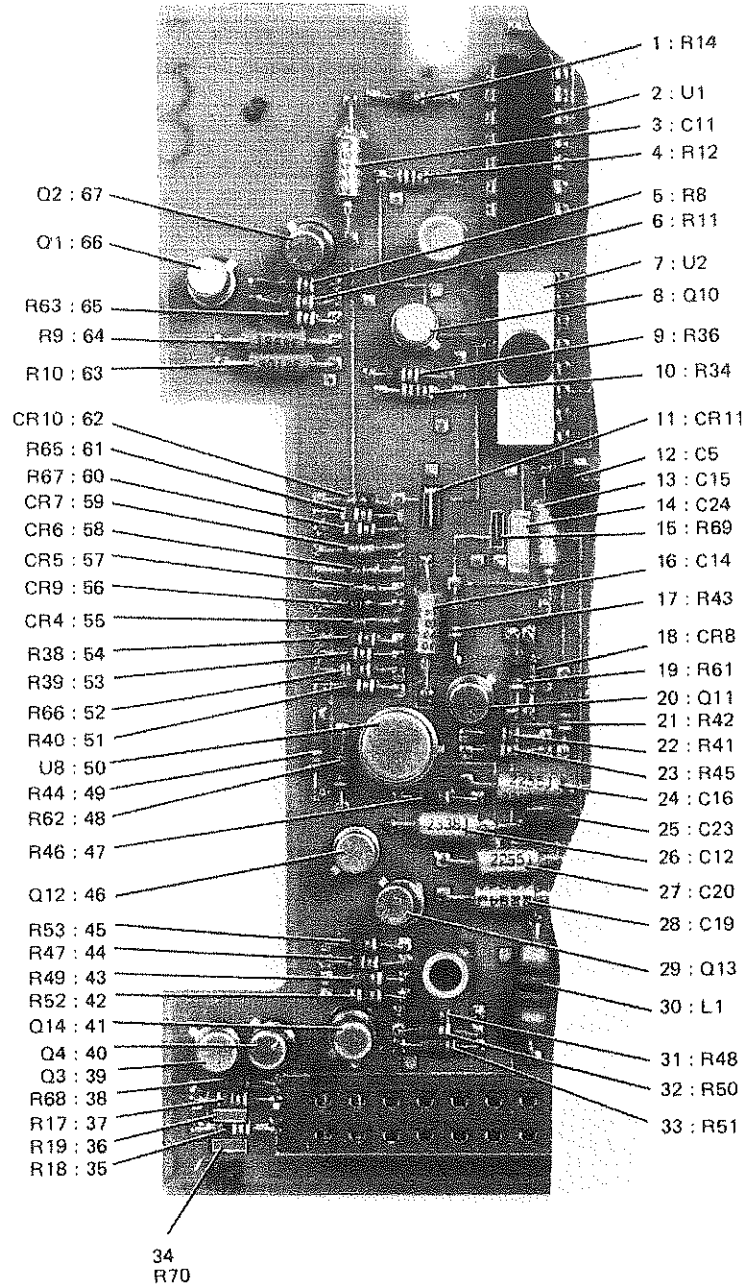


Figure 3-4. Logic/Tx A1A5A2 (Sheet 1 of 2)

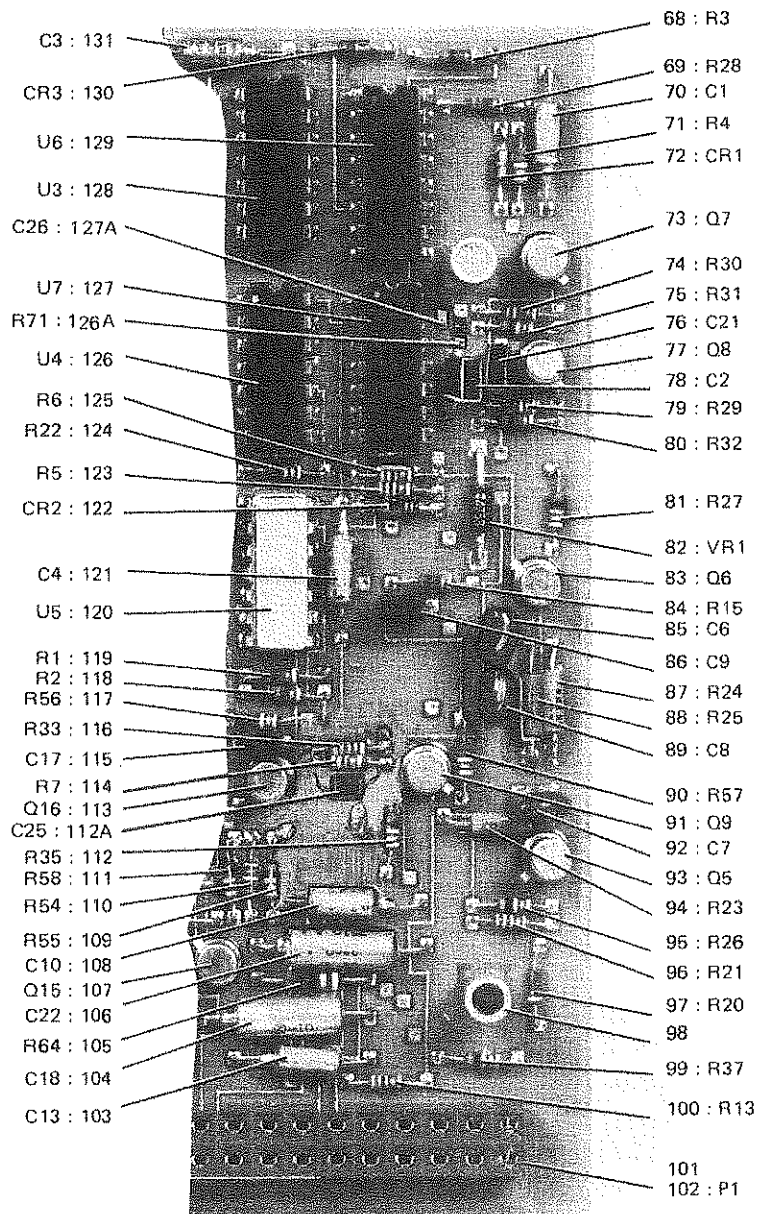


Figure 3-4. Logic/Tx A1A5A2 (Sheet 2)

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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-4-	6C1-3669-CC1	1	LCGIC/TX A1A5A2 (SEE FIG 3-2-6 FOR NHA)		REF
1	RCRC5G1C5JS	2	RESISTOR,FXD, CMPSN, 1MEGC, 5%, 1/8W (V81349) 745-1864-25C A1A5A2R14 (EFF TC REV LTR L)		1
1	RCRC5G125JS	2	RESISTOR,FXD, CMPSN, 1.2MEGC, 5%, 1/8W (V81349) 745-1864-27C A1A5A2R14 (EFF REV LTR L)		1
2	CD4C25MJ	2	INTEGRATED CKT (V04713) 351-8183-C10 A1A5A2U1		1
3	M39CC3-C1-2348	2	CAPACITOR,FXD, ELCTLT, 0.33UF, 20%, 50V (V81349) 184-9087-35C A1A5A2C11		1
4	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349) 745-1863-85C A1A5A2R12		1
5	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-00C A1A5A2R8		1
6	RCRC5G224JS	2	RESISTOR,FXD, CMPSN, 220K, 5%, 1/8W (V81349) 745-1864-09C A1A5A2R11		1
7	CD4C45MJ	2	MICROCIRCUIT (V27C14) 351-8197-C10 A1A5A2U2		1
8	JAN2N29C7A	2	TRANSISTOR (V81350) 352-7500-190 A1A5A2Q10		1
9	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-00C A1A5A2R36		1
10	RCRC5G333KS	2	RESISTOR,FXD, CMPSN, 33K, 10%, 1/8W (V81349) 745-2395-00C A1A5A2R34		1
11	1N5767	2	SEMICOND DEVICE (V2848C) 922-6119-010 A1A5A2CR11		1
12	CKC5BX1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-00C A1A5A2C5		1
13	M39CC3-C1-2283	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 10%, 20V (V81349) 184-9086-430 A1A5A2C15		1
14	M39CC3-C1-2348	2	CAPACITOR,FXD, ELCTLT, 0.33UF, 20%, 50V (V81349) 184-9087-35C A1A5A2C24		1
15	RCRC5G684JS	2	RESISTOR,FXD, CMPSN, 680K, 5%, 1/8W (V81349) 745-1864-21C A1A5A2R69		1
16	M39CC3-C1-2283	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 10%, 20V (V81349) 184-9086-43C A1A5A2C14		1
17	RCRC5G681JS	2	RESISTOR,FXD, CMPSN, 680 OHMS, 5%, 1/8W (V81349) 745-1863-45C A1A5A2R43		1
18	1A4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A1A5A2CR8		1
19	RCRC5G1C5JS	2	RESISTOR,FXD, CMPSN, 1MEGC, 5%, 1/8W (V81349) 745-1864-25C A1A5A2R61		1
20	JAN2N29C7A	2	TRANSISTOR (V81350) 352-7500-190 A1A5A2G11		1
21	RCRC5G1C3JS	2	RESISTOR,FXD, CMPSN, 10K, 5%, 1/8W (V81349) 745-1863-73C A1A5A2R42		1
22	RCRC5G224JS	2	RESISTOR,FXD, CMPSN, 220K, 5%, 1/8W (V81349) 745-1864-09C A1A5A2R41		1
23	RCRC5G824JS	2	RESISTOR,FXD, CMPSN, 820K, 5%, 1/8W (V81349) 745-1864-23C A1A5A2R45		1
24	M39CC3-C1-2255	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 20%, 10V (V81349) 184-9086-15C A1A5A2C16		1
25	CM5C100C30GWV	2	CAPACITOR,FXD, MICA DIEI, 10PF, PERM 0.5PF, 300V (V72136) 912-4141-C2C A1A5A2C23		1
26	M39CC3-C1-2338	2	CAPACITOR,FXD, ELCTLT, 0.1UF, 10%, 50V (V81349) 184-9087-25C A1A5A2C12		1
27	M39CC3-C1-2255	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 20%, 10V (V81349) 184-9086-15C A1A5A2C20		1
28	M39CC3-C1-2284	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V81349) 184-9086-44C A1A5A2C19		1
29	2N2608	2	TRANSISTOR (V22229) 352-0605-010 A1A5A2Q13		1
30	MS75C89-11	2	CCIL,RF, 100UH (V96906) 240-2715-370 A1A5A2L1		1
31	RCRC5G68CJS	2	RESISTOR,FXD, CMPSN, 68 OHMS, 5%, 1/8W (V81349) 745-1863-21C A1A5A2R48		1
32	RCRC5G682JS	2	RESISTOR,FXD, CMPSN, 6.8K, 5%, 1/8W (V81349) 745-1863-69C A1A5A2R50		1
33	RCRC5G621JS	2	RESISTOR,FXD, CMPSN, 620 OHMS, 5%, 1/8W (V81349) 745-1863-44C A1A5A2R51		1
34	RCRC5G222JS	2	RESISTOR,FXD, CMPSN, 2.2K, 5%, 1/8W (V81349) 745-1863-57C A1A5A2R70		1
35	RCRC5G1C3JS	2	RESISTOR,FXD, CMPSN, 10K, 5%, 1/8W (V81349) 745-1863-73C A1A5A2R18		1
36	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349) 745-1863-81C A1A5A2R19		1
37	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-49C A1A5A2R17		1

GROUP ASSEMBLY PARTS LIST

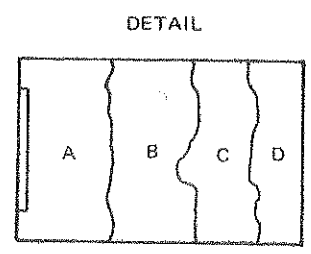
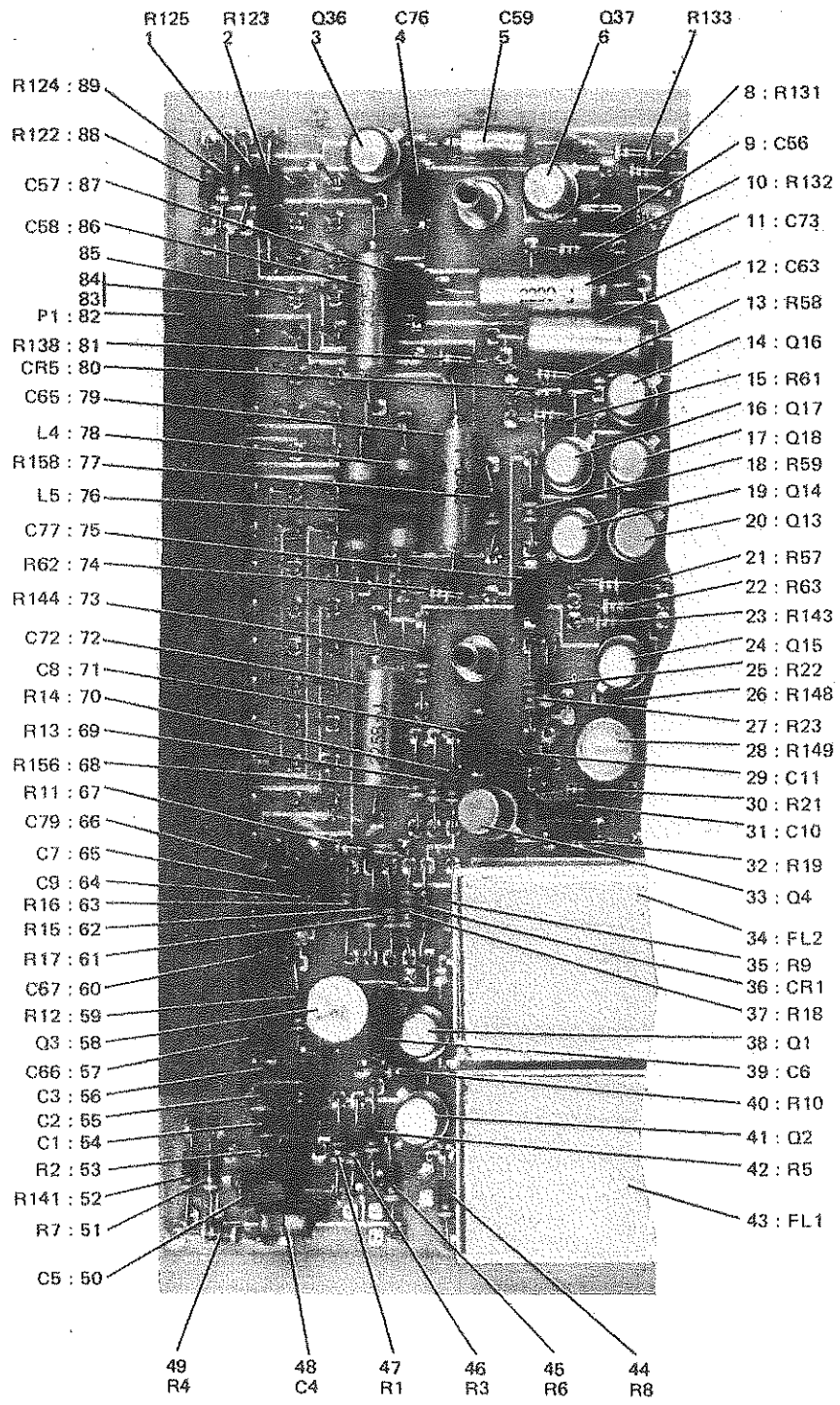
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-4-	38		RCRC5G1C3JS		
		2	RESISTOR,FXD, CMPSN, 10K, 5%, 1/8W (V81349) 745-1863-730 A1A5A2R68		1
	39		JAN2N29C7A		
		2	TRANSISTOR (V8135C) 352-7500-190 A1A5A2C3		1
	40		JAN2N2222A		
		2	TRANSISTOR (V81350) 352-7500-280 A1A5A2Q4		1
	41		JAN2N2222A		
		2	TRANSISTOR (V81350) 352-7500-280 A1A5A2Q14		1
	42		RCRC5G332JS		
		2	RESISTOR,FXD, CMPSN, 3.3K, 5%, 1/8W (V81349) 745-1863-61C A1A5A2R52		1
	43		RCRC5G682JS		
		2	RESISTOR,FXD, CMPSN, 6.8K, 5%, 1/8W (V81349) 745-1863-690 A1A5A2R49		1
	44		RCRC5G3C3JS		
		2	RESISTOR,FXD, CMPSN, 30K, 5%, 1/8W (V81349) 745-1863-84C A1A5A2R47		1
	45		RCRC5G1C1JS		
		2	RESISTOR,FXD, CMPSN, 100 OHMS, 5%, 1/8W (V81349) 745-1863-250 A1A5A2R53		1
	46		2N26C8		
		2	TRANSISTOR (V22229) 352-0605-C10 A1A5A2C12		1
	47		RCRC5G1C5JS		
		2	RESISTOR,FXD, CMPSN, 1MEG, 5%, 1/8W (V81349) 745-1864-250 A1A5A2R46		1
	48		RCRC5G335JS		
		2	RESISTOR,FXD, CMPSN, 3.3MEG, 5%, 1/8W (V81349) 745-1864-370 A1A5A2R62		1
	49		RCRC5G824JS		
		2	RESISTOR,FXD, CMPSN, 82CK, 5%, 1/8W (V81349) 745-1864-230 A1A5A2R44		1
	50		MC155EG		
		2	INTEGRATED CKT (VC4713) 351-1071-C20 A1A5A2UB		1
	51		RCRC5G224JS		
		2	RESISTOR,FXD, CMPSN, 220K, 5%, 1/8W (V81349) 745-1864-09C A1A5A2R40		1
	52		RCRC5G332JS		
		2	RESISTOR,FXD, CMPSN, 3.3K, 5%, 1/8W (V81349) 745-1863-610 A1A5A2R66		1
	53		RCRC5G824JS		
		2	RESISTOR,FXD, CMPSN, 82CK, 5%, 1/8W (V81349) 745-1864-230 A1A5A2R39		1
	54		RCRC5G273JS		
		2	RESISTOR,FXD, CMPSN, 27K, 5%, 1/8W (V81349) 745-1863-830 A1A5A2R38 (EFF TO REV LTR L)		1
	54		RN55C2742F		
		2	RESISTOR,FXD, FILM, 27.4K, 1%, 1/8W (V81349) 7C5-1065-CCC A1A5A2R38 (EFF REV LTR L)		1
	55		1N4454		
		2	SEMICOND DEVICE (VC3508) 353-3644-G10 A1A5A2CR4		1
	56		1N5767		
		2	SEMICOND DEVICE (V2848C) 922-6119-G10 A1A5A2CR9		1
	57		1N4454		
		2	SEMICOND DEVICE (VC3508) 353-3644-G10 A1A5A2CR5		1
	58		1N4454		
		2	SEMICOND DEVICE (VC3508) 353-3644-G10 A1A5A2CR6		1
	59		1N4454		
		2	SEMICOND DEVICE (VC3508) 353-3644-G10 A1A5A2CR7		1
	60		RCRC5G474JS		
		2	RESISTOR,FXD, CMPSN, 470K, 5%, 1/8W (V81349) 745-1864-170 A1A5A2R67		1
	61		RCRC5G474JS		
		2	RESISTOR,FXD, CMPSN, 470K, 5%, 1/8W (V81349) 745-1864-170 A1A5A2R65		1
	62		1N4454		
		2	SEMICOND DEVICE (VC3508) 353-3644-G10 A1A5A2CR10		1
	63		RN55C3013F		
		2	RESISTOR,FXD, FILM, 301K, 1%, 1/8W (V81349) 7C5-1115-CCC A1A5A2R10		1
	64		RN55C1963F		
		2	RESISTOR,FXD, FILM, 196K, 1%, 1/8W (V81349) 7C5-1106-CCC A1A5A2R6		1
	65		RCRC5G1C4KS		
		2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A5A2R63		1
	66		JAN2N29C7A		
		2	TRANSISTOR (V81350) 352-7500-190 A1A5A2Q1		1
	67		JAN2N29C7A		
		2	TRANSISTOR (V81350) 352-7500-190 A1A5A2Q2		1
	68		RCRC5G1C2JS		
		2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A5A2R3		1
	69		RCRC5G682JS		
		2	RESISTOR,FXD, CMPSN, 6.8K, 5%, 1/8W (V81349) 745-1863-690 A1A5A2R28		1
	70		M39CC3-C1-2283		
		2	CAPACITOR,FXD, ELCILT, 2.2UF, 10%, 20V (V81349) 184-9086-430 A1A5A2C1		1
	71		RCRC5G6E4JS		
		2	RESISTOR,FXD, CMPSN, 680K, 5%, 1/8W (V81349) 745-1864-210 A1A5A2R4		1
	72		1N4454		
		2	SEMICOND DEVICE (VC3508) 353-3644-G10 A1A5A2CR1		1
	73		JAN2N29C7A		
		2	TRANSISTOR (V81350) 352-7500-190 A1A5A2Q7		1
	74		RCRC5G331JS		
		2	RESISTOR,FXD, CMPSN, 330 OHMS, 5%, 1/8W (V81349) 745-1863-370 A1A5A2R30		1
	75		RCRC5G1C3KS		
		2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349) 745-2377-000 A1A5A2R31		1
	76		CK05BX1C4M		
		2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A2C21		1
	77		JAN2N2222A		
		2	TRANSISTOR (V8135C) 352-7500-280 A1A5A2Q8		1
	78		CK05BX1C4K		
		2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A5A2C2		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-4- 79	RCRC5G224JS	2	RESISTOR,FXD, CMPSN, 220K, 5%, 1/8W (V81349) 745-1864-090 A1A5A2R29		1
80	RCRC5G1C5JS	2	RESISTOR,FXD, CMPSN, 1MEGC, 5%, 1/8W (V81349) 745-1864-250 A1A5A2R32		1
81	RCRC5G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349) 745-2377-CCO A1A5A2R27		1
82	1N4753A	2	SEMICONV DEVICE (V04713) 353-6481-510 A1A5A2VR1		1
83	2N441E	2	TRANSISTCR (V17856) 352-0756-01C A1A5A2Q6		1
84	RCRC5G1C5JS	2	RESISTOR,FXD, CMPSN, 1MEGC, 5%, 1/8W (V81349) 745-1864-250 A1A5A2R15 (EFF TO REV LTR M)		1
84	RCRC5G684JS	2	RESISTOR,FXD, CMPSN, 680K, 5%, 1/8W (V81349) 745-1864-210 A1A5A2R15 (EFF REV LTR M)		1
85	CM5F4C1JC5CWV	2	CAPACITCR,FXD, MICA DIEL, 400PF, 5%, 50V (V72136) 912-4141-520 A1A5A2C6		1
86	CKC5BX1C4M	2	CAPACITCR,FXD, CER DIEL, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A2C9		1
87	RN55C2E13F	2	RESISTOR,FXD, FILM, 261K, 1%, 1/8W (V81349) 7C5-1112-CCG A1A5A2R24		1
88	RN55C1213F	2	RESISTOR,FXD, FILM, 121K, 1%, 1/8W (V81349) 7C5-1096-CCO A1A5A2R25		1
89	CM5F2C1JC5CWV	2	CAPACITCR,FXD, MICA DIEL, 200PF, 5%, 50V (V72136) 912-4141-440 A1A5A2C8		1
90	RCRC5G224JS	2	RESISTOR,FXD, CMPSN, 220K, 5%, 1/8W (V81349) 745-1864-090 A1A5A2R57		1
91	JAN2N29C7A	2	TRANSISTCR (V81350) 352-7500-190 A1A5A2Q9		1
92	CM5F2C1JC5CWV	2	CAPACITCR,FXD, MICA DIEL, 200PF, 5%, 50V (V72136) 912-4141-440 A1A5A2C7		1
93	2N26CE	2	TRANSISTCR (V22229) 352-0605-010 A1A5A2Q5		1
94	RN55C2613F	2	RESISTOR,FXD, FILM, 261K, 1%, 1/8W (V81349) 7C5-1112-CCG A1A5A2R23		1
95	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A2R26		1
96	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349) 745-1863-850 A1A5A2R21		1
97	RCRC5G222JS	2	RESISTOR,FXD, CMPSN, 2.2K, 5%, 1/8W (V81349) 745-1863-570 A1A5A2R20		1
98	778-9422-C2C	2	SLEEVE,SPACER		4
99	RCRC5G154JS	2	RESISTOR,FXD, CMPSN, 150K, 5%, 1/8W (V81349) 745-1864-050 A1A5A2R37		1
100	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349) 745-1863-850 A1A5A2R13		1
101	372-2252-C1C	2	CCNTACT,ELEC 372-2252-C10		34
102	372-2624-C26	2	ENCLOSING,CCAN 372-2624-026 A1A5A2P1		1
103	M39CC3-C1-2284	2	CAPACITCR,FXD, ELCTILT, 2.2UF, 20%, 20V (V81349) 184-9086-440 A1A5A2C13		1
104	M39CC3-C1-225E	2	CAPACITCR,FXD, ELCTILT, 33UF, 20%, 10V (V81349) 184-9086-180 A1A5A2C18		1
105	RCRC7C10CKS	2	RESISTOR,FXD, CMPSN, 10 CHMS, 10%, 1/4W (V81349) 745-0677-CCC A1A5A2R64		1
106	M39CC3-C1-229C	2	CAPACITCR,FXD, ELCTILT, 15UF, 20%, 20V (V81349) 184-9086-500 A1A5A2C22		1
107	FN19C5	2	TRANSISTCR (V17856) 352-0756-050 A1A5A2Q15		1
108	M39CC3-C1-2348	2	CAPACITCR,FXD, ELCTILT, 0.33UF, 20%, 50V (V81349) 184-9087-350 A1A5A2C10		1
109	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A2R55		1
110	RCRC5G824JS	2	RESISTOR,FXD, CMPSN, 820K, 5%, 1/8W (V81349) 745-1864-230 A1A5A2R54		1
111	RCRC5G224JS	2	RESISTOR,FXD, CMPSN, 220K, 5%, 1/8W (V81349) 745-1864-090 A1A5A2R58		1
112	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A5A2R35		1
112A	CKC5BX1C4M	2	CAPACITCR,FXD, CER DIEL, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A2C25 (EFF REV LTR J)		1
113	2N26CE	2	TRANSISTCR (V22229) 352-0605-010 A1A5A2C16		1
114	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349) 745-1863-850 A1A5A2R7		1
115	CKC5BX1C3M	2	CAPACITCR,FXD, CER DIEL, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A2C17		1

GROUP ASSEMBLY PARTS LIST

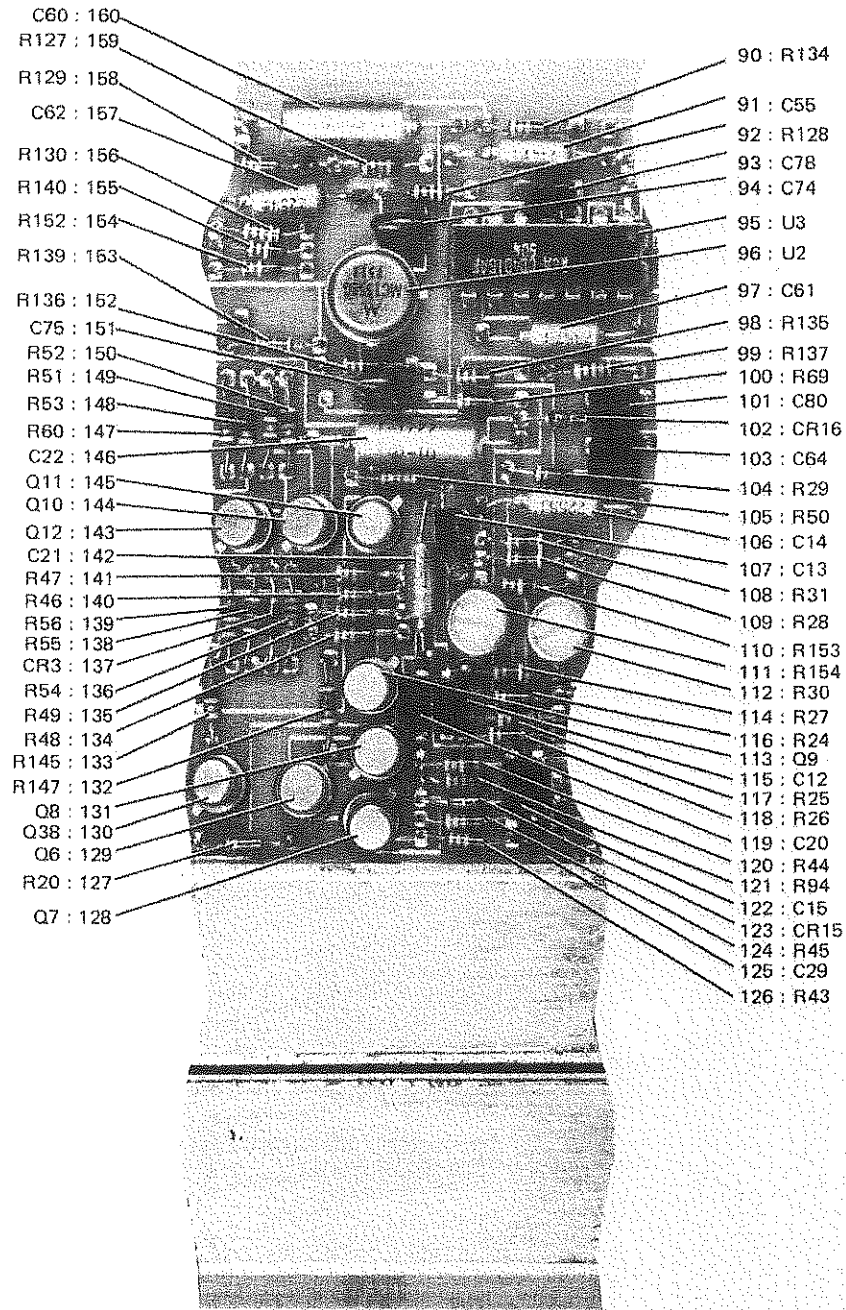
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-4- 116	RCRC5G333KS	2	RESISTOR,FXD, CMPSN, 33K, 10%, 1/8W (V81349) 745-2395-000 A1A5A2R33		1
117	RCRC5G224JS	2	RESISTOR,FXD, CMPSN, 220K, 5%, 1/8W (V81349) 745-1864-C9C A1A5A2R56		1
118	RCRC5G562JS	2	RESISTOR,FXD, CMPSN, 5.6K, 5%, 1/8W (V81349) 745-1863-670 A1A5A2R2		1
119	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-49C A1A5A2R1		1
120	CC4C11MJ	2	INTEGRATED CKT (V27014) 351-8160-020 A1A5A2U5		1
121	M29CC3-C1-2348	2	CAPACITOR,FXD, ELCTLT, 0.33UF, 20%, 50V (V81349) 184-9087-350 A1A5A2C4		1
122	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A5A2CR2		1
123	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349) 745-1863-850 A1A5A2R5		1
124	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-00C A1A5A2R22		1
125	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349) 745-1863-850 A1A5A2R6		1
126	CB4CC1MJ	2	INTEGRATED CKT (V27014) 351-8160-010 A1A5A2U4		1
126A	RCR05G105JS	2	RESISTOR,FXD, CMPSN, 1MEGO, 5%, 1/8W (V81349) 745-1864-250 A1A5A2R71 (EFF REV LTR M)		1
127	CC4C23UBF	2	INTEGRATED CKT (V02735) 351-8184-010 A1A5A2U7		1
127A	CK05BX103M	2	CAPACITOR,FXD, CER DIEL, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A2C26 (EFF REV LTR M)		1
128	CC4CC1MJ	2	INTEGRATED CKT (V27014) 351-8160-010 A1A5A2U3		1
129	CD4049MJ	2	MICROCIRCUIT (V27014) 351-8197-010 A1A5A2U6		1
130	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A1A5A2CR3		1
131	M29CC3-C1-2283	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 10%, 20V (V81349) 184-9086-430 A1A5A2C3		1



DETAIL A

TP4-9662-047

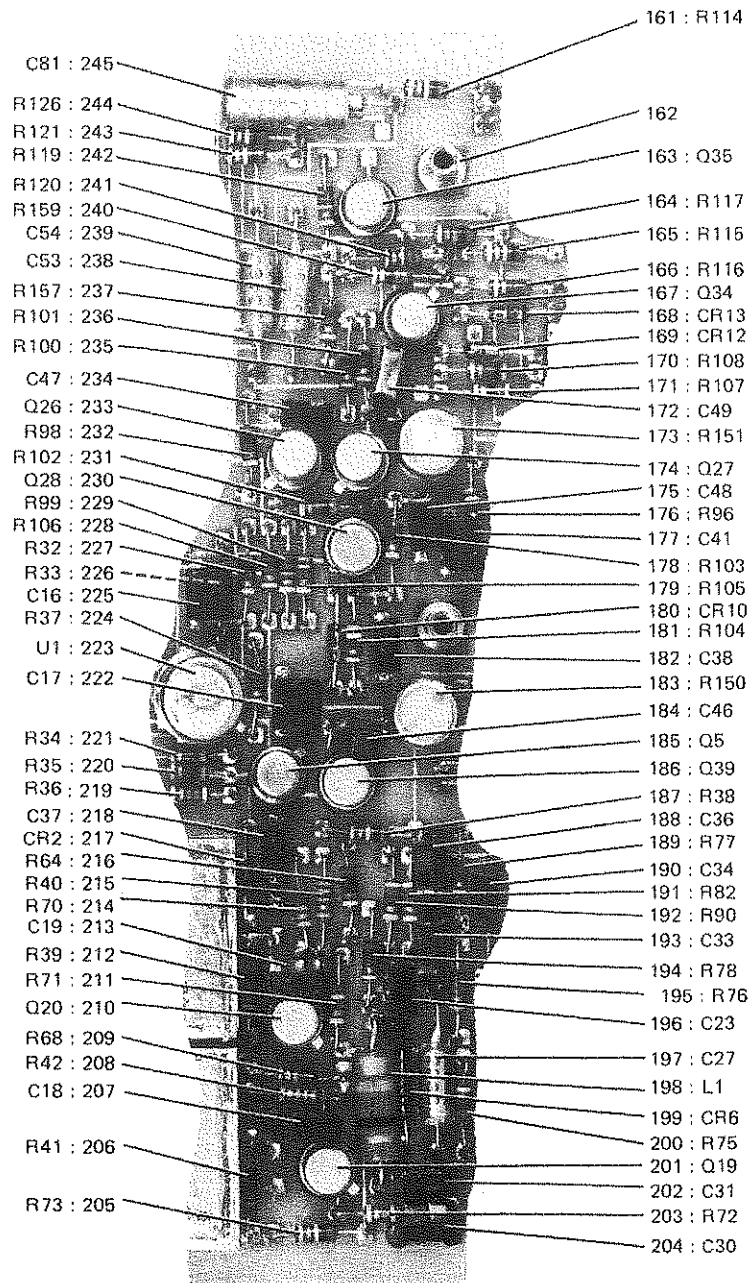
Figure 3-5. II/AF A1A5A1 (Sheet 1 of 4)



DETAIL B

TP4-9662-047

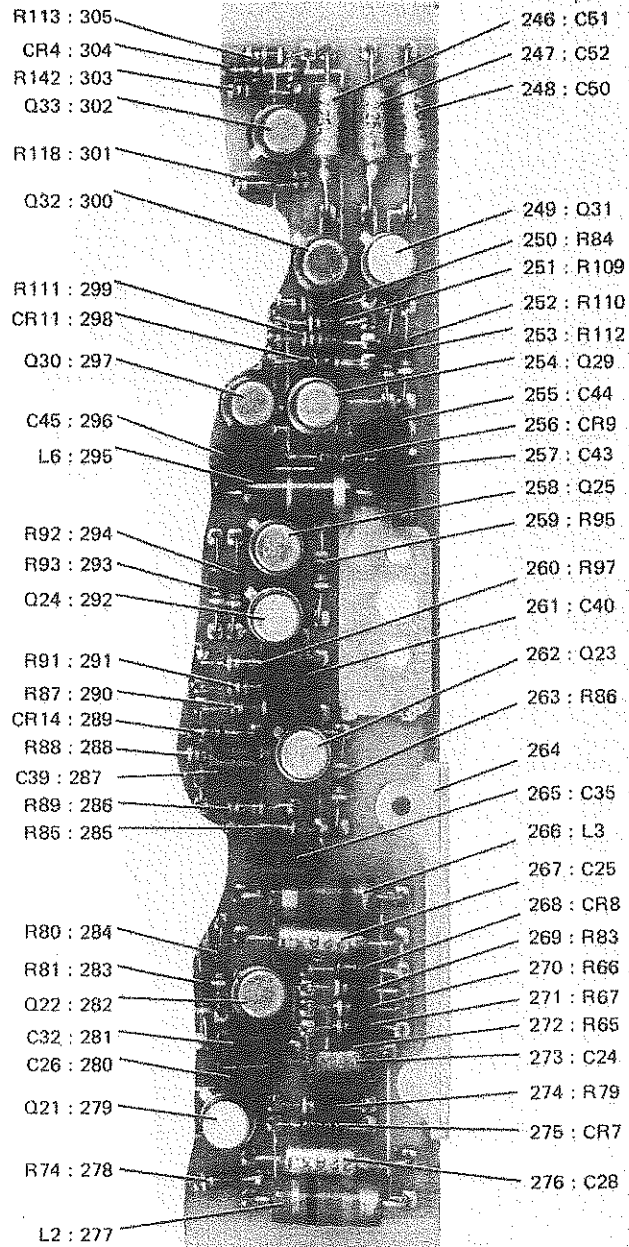
Figure 3-5. If/Af A1A5A1 (Sheet 2)



DETAIL C

TP4-9662-047

Figure 3-5. II/Af A1A5A1 (Sheet 3)



DETAIL D

TP4-9662-047

Figure 3-5. II/Af A1A5A1 (Sheet 4)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-5-					REF
1	6C1-3668-CC1	1	IF/AF A1A5A1 (SEE FIG 3-2-10 FOR NMA)		1
	RCRC5G1C1JS	2	RESISTOR,FXD, CMPSN, 100 OHMS, 5%, 1/8W (V81349)		1
			745-1863-250 A1A5A1R125		
2	RNC55F-6C4CFS	2	RESISTOR,FXD, FILM, 604 OHMS, 1%, 1/10W (V81349)		1
			724-0638-730 A1A5A1R123		
3	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q36		1
4	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V		1
			(V81349) 913-5019-660 A1A5A1C76		
5	M39CC3-C1-2283	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 10%, 20V (V81349)		1
			184-9086-430 A1A5A1C59		
6	2N2608	2	TRANSISTOR (V22229) 352-0605-010 A1A5A1Q37		1
7	RCRC5G471JS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 5%, 1/8W (V81349)		1
			745-1863-410 A1A5A1R133		
8	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349)		1
			745-1863-810 A1A5A1R131		
9	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V		1
			(V81349) 913-5019-660 A1A5A1C56		
10	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349)		1
			745-1863-810 A1A5A1R132		
11	M39CC3-C1-2290	2	CAPACITOR,FXD, ELCTLT, 15UF, 20%, 20V (V81349)		1
			184-9086-500 A1A5A1C73		
12	M39CC3-C1-2305	2	CAPACITOR,FXD, ELCTLT, 6.8UF, 20%, 35V (V81349)		1
			184-9086-650 A1A5A1C63		
13	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349)		1
			745-1863-810 A1A5A1R58		
14	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q16		1
15	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349)		1
			745-1863-810 A1A5A1R61		
16	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q17		1
17	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q18		1
18	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349)		1
			745-1864-010 A1A5A1R59		
19	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q14		1
20	JAN2N2907A	2	TRANSISTOR (V81350) 352-7500-190 A1A5A1Q13		1
21	RCRC5G224JS	2	RESISTOR,FXD, CMPSN, 220K, 5%, 1/8W (V81349)		1
			745-1864-090 A1A5A1R57		
22	RCRC5G683JS	2	RESISTOR,FXD, CMPSN, 68K, 5%, 1/8W (V81349)		1
			745-1863-930 A1A5A1R63		
23	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349)		1
			745-1863-810 A1A5A1R143		
24	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q15		1
25	RCRC5G222JS	2	RESISTOR,FXD, CMPSN, 2.2K, 5%, 1/8W (V81349)		1
			745-1863-570 A1A5A1R22		
26	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349)		1
			745-1863-490 A1A5A1R148		
27	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349)		1
			745-1863-850 A1A5A1R23		
28	3325H1-103	2	RESISTOR,VAR, 10K, 10%, 0.5W (V80294)		1
			382-0027-100 A1A5A1R149		
29	CKC5BX1C2M	2	CAPACITOR,FXD, CER DIEI, 100PF, 20%, 200V		1
			(V81349) 913-3989-000 A1A5A1C11		
30	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349)		1
			745-1863-810 A1A5A1R21		
31	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V		1
			(V81349) 913-5019-660 A1A5A1C10		
32	RCRC5G121JS	2	RESISTOR,FXD, CMPSN, 120 OHMS, 5%, 1/8W (V81349)		1
			745-1863-270 A1A5A1R19		
33	2N918	2	TRANSISTOR (V07910) 352-0440-000 A1A5A1Q4		1
34	2E45C	2	FILTER,BP XTAL (VCC106) 293-1308-010 A1A5A1FL2		1
35	RCRC5G132JS	2	RESISTOR,FXD, CMPSN, 1.3K, 5%, 1/8W (V81349)		1
			745-1863-520 A1A5A1R9		
36	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-010 A1A5A1CR1		1
37	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349)		1
			745-1863-850 A1A5A1R18		
38	2N4208	2	TRANSISTOR (V27014) 352-0959-020 A1A5A1Q1		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-5-	39		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A1A5A1C6		1
	40		2 RESISTOR,FXD, CMPSA, 2.2K, 5%, 1/8W (V81349) 745-1863-570 A1A5A1R10		1
	41		2 TRANSISTOR (V27014) 352-0959-020 A1A5A1Q2		1
	42		2 RESISTOR,FXD, CMPSA, 82 OHMS, 5%, 1/8W (V81349) 745-1863-230 A1A5A1R5		1
	43		2 FILTER,BP,XTAL (VCC136) 293-1307-C10 A1A5A1FL1		1
	44		2 RESISTOR,FXD, CMPSA, 1.1K, 5%, 1/8W (V81349) 745-1863-500 A1A5A1R8		1
	45		2 RESISTOR,FXD, CMPSA, 8.2K, 5%, 1/8W (V81349) 745-1863-710 A1A5A1R6		1
	46		2 RESISTOR,FXD, CMPSA, 8.2K, 5%, 1/8W (V81349) 745-1863-710 A1A5A1R3		1
	47		2 RESISTOR,FXD, CMPSA, 18K, 5%, 1/8W (V81349) 745-1863-79C A1A5A1R1		1
	48		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C4		1
	49		2 RESISTOR,FXD, CMPSA, 470 OHMS, 5%, 1/8W (V81349) 745-1863-410 A1A5A1R4		1
	50		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-720 A1A5A1C5		1
	51		2 RESISTOR,FXD, CMPSA, 56 OHMS, 5%, 1/8W (V81349) 745-1863-19C A1A5A1R7		1
	52		2 RESISTOR,FXD, CMPSA, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A5A1R141		1
	53		2 RESISTOR,FXD, CMPSA, 18K, 5%, 1/8W (V81349) 745-1863-79C A1A5A1R2		1
	54		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C1		1
	55		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A1A5A1C2		1
	56		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C3		1
	57		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A1A5A1C66		1
	58		2 TRANSISTOR (V07910) 352-0440-000 A1A5A1Q3		1
	59		2 RESISTOR,FXD, CMPSA, 560 OHMS, 5%, 1/8W (V81349) 745-1863-430 A1A5A1R12		1
	60		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C67		1
	61		2 RESISTOR,FXD, CMPSA, 22K, 5%, 1/8W (V81349) 745-1863-810 A1A5A1R17		1
	62		2 RESISTOR,FXD, CMPSA, 220 OHMS, 5%, 1/8W (V81349) 745-1863-33C A1A5A1R15		1
	63		2 RESISTOR,FXD, CMPSA, 560 OHMS, 5%, 1/8W (V81349) 745-1863-430 A1A5A1R16		1
	64		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C9		1
	65		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C7		1
	66		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C79		1
	67		2 RESISTOR,FXD, CMPSA, 560 OHMS, 5%, 1/8W (V81349) 745-1863-430 A1A5A1R11		1
	68		2 RESISTOR,FXD, CMPSA, 56 OHMS, 5%, 1/8W (V81349) 745-1863-190 A1A5A1R156		1
	69		2 RESISTOR,FXD, CMPSA, 22K, 5%, 1/8W (V81349) 745-1863-810 A1A5A1R13		1
	70		2 RESISTOR,FXD, CMPSA, 560 OHMS, 5%, 1/8W (V81349) 745-1863-430 A1A5A1R14		1
	71		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C8		1
	72		2 CAPACITOR,FXD, ELCTLY, 33UF, 20%, 10V (V81349) 184-9086-180 A1A5A1C72		1
	73		2 RESISTOR,FXD, CMPSA, 100K, 5%, 1/8W (V81349) 745-1864-01C A1A5A1R144		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-5- 74	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349)		1
			745-1864-010 A1A5A1R62		
75	CK05BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A1A5A1C77		1
76	MS75C89-23	2	CCIL,RF, 1CCOUH (V96906) 240-2715-490 A1A5A1L5		1
77	RCRC5G1C1JS	2	RESISTOR,FXD, CMPSN, 100 OHMS, 5%, 1/8W (V81349)		1
			745-1863-250 A1A5A1R158		
78	MS75C89-11	2	CCIL,RF, 1CCOUH (V96906) 240-2715-370 A1A5A1L4		1
79	M39CC3-C1-2290	2	CAPACITOR,FXD, ELCTLT, 15UF, 20%, 20V (V81349)		1
			184-9086-500 A1A5A1C65		
80	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A1A5A1CR5		1
81	RCRC5G1C0JS	2	RESISTOR,FXD, CMPSN, 10 OHMS, 5%, 1/8W (V81349)		1
			745-1863-010 A1A5A1R138		
82	372-2623-C30	2	HCUSING,CCNN,EL 372-2623-C30 A1A5A1P1		1
83	372-2234-C10	2	CCNTACT,ELEC 372-2234-C10		21
84	372-2234-C20	2	CCNTACT,ELEC 372-2234-C20		21
85	372-2601-C72	2	CCNTACT,ELEC 372-2601-C72		34
86	CK05BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-720 A1A5A1C57		1
87	M39CC3-C1-2305	2	CAPACITOR,FXD, ELCTLT, 6.8UF, 20%, 35V (V81349)		1
			184-9086-650 A1A5A1C58		
88	RCRC5G1E3JS	2	RESISTOR,FXD, CMPSN, 18K, 5%, 1/8W (V81349)		1
			745-1863-790 A1A5A1R122		
89	RCRC5G222JS	2	RESISTOR,FXD, CMPSN, 2.2K, 5%, 1/8W (V81349)		1
			745-1863-570 A1A5A1R124		
90	RCRC5G823JS	2	RESISTOR,FXD, CMPSN, 82K, 5%, 1/8W (V81349)		1
			745-1863-950 A1A5A1R134		
91	M39CC3-C1-2357	2	CAPACITOR,FXD, ELCTLT, 1UF, 20%, 50V (V81349)		1
			184-9087-440 A1A5A1C55		
92	RCRC5G394JS	2	RESISTOR,FXD, CMPSN, 390K, 5%, 1/8W (V81349)		1
			745-1864-150 A1A5A1R128		
93	CK05BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A1A5A1C78		1
94	DM5E27CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 27PF, 5%, 50V (V72136)		1
			S12-4141-180 A1A5A1C74		
95	CD4C16MJ	2	INTEGRATED CKT (V34335) 351-8179-010 A1A5A1U3 (EFF TO REV LTR M)		1
96	MC14C66BAL	2	INTEGRATED CKT (V04713) 351-8252-020 A1A5A1U3 (EFF REV LTR M)		1
97	M39CC3-C1-2357	2	INTEGRATED CKT (V04713) 351-1071-020 A1A5A1U2		1
			CAPACITOR,FXD, ELCTLT, 1UF, 20%, 50V (V81349)		1
			184-9087-440 A1A5A1C61		
98	RCRC5G153JS	2	RESISTOR,FXD, CMPSN, 15K, 5%, 1/8W (V81349)		1
			745-1863-770 A1A5A1R135		
99	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349)		1
			745-1863-850 A1A5A1R137		
100	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349)		1
			745-1863-490 A1A5A1R69		
101	CK05BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A1A5A1C80		1
102	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-010 A1A5A1CR16		1
103	CK05BX1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A5A1C64		1
104	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349)		1
			745-1863-490 A1A5A1R29		
105	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349)		1
			745-1863-850 A1A5A1R50		
106	M39CC3-C1-2255	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 20%, 10V (V81349)		1
			184-9086-150 A1A5A1C14		
107	CK05BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A1A5A1C13		1
108	RCRC5G47CJS	2	RESISTOR,FXD, CMPSN, 47 OHMS, 5%, 1/8W (V81349)		1
			745-1863-170 A1A5A1R31		
109	RCRC5G47CJS	2	RESISTOR,FXD, CMPSN, 47 OHMS, 5%, 1/8W (V81349)		1
			745-1863-170 A1A5A1R28		
110	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349)		1
			745-1864-010 A1A5A1R153		

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-5- 111	33291-503	2	RESISTOR,VAR, 50K, 10%, 0.5W (V80294) 382-0027-120 A1A5A1R154		1
112	33291-501	2	RESISTOR,VAR, 500 OHMS, 10%, 0.5W (V80294) 382-0027-060 A1A5A1R30		1
113	2N2484	2	TRANSISTOR (V07263) 352-0549-000 A1A5A1Q9		1
114	RCRC5G3S2JS	2	RESISTOR,FXD, CMPSN, 3.9K, 5%, 1/8W (V81349) 745-1863-630 A1A5A1R27		1
115	CK05BXC4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C12		1
116	RCRC5G2C2JS	2	RESISTOR,FXD, CMPSN, 2K, 5%, 1/8W (V81349) 745-1863-560 A1A5A1R24		1
117	RCRC5G3C2JS	2	RESISTOR,FXD, CMPSN, 3K, 5%, 1/8W (V81349) 745-1863-600 A1A5A1R25		1
118	RCRC5G3C2JS	2	RESISTOR,FXD, CMPSN, 3K, 5%, 1/8W (V81349) 745-1863-600 A1A5A1R26		1
119	CK05BXC3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C20		1
120	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A1R44		1
121	RCRC5G272JS	2	RESISTOR,FXD, CMPSN, 27K, 5%, 1/8W (V81349) 745-1863-830 A1A5A1R94		1
122	CK05BXC3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C15		1
123	1N44E4	2	SEMICONDC DEVICE (V03508) 353-3644-010 A1A5A1CR15		1
124	RCRC5G1C3JS	2	RESISTOR,FXD, CMPSN, 10K, 5%, 1/8W (V81349) 745-1863-730 A1A5A1R45		1
125	CK05BXC3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C29		1
126	RCRC5G1C3JS	2	RESISTOR,FXD, CMPSN, 10K, 5%, 1/8W (V81349) 745-1863-730 A1A5A1R43		1
127	RCRC5G561JS	2	RESISTOR,FXD, CMPSN, 560 OHMS, 5%, 1/8W (V81349) 745-1863-430 A1A5A1R20		1
128	2N2484	2	TRANSISTOR (V07263) 352-0549-000 A1A5A1C7		1
129	JAN2N29C7A	2	TRANSISTOR (V81350) 352-7500-190 A1A5A1Q6		1
130	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q38		1
131	2N2484	2	TRANSISTOR (V07263) 352-0549-000 A1A5A1Q8		1
132	RCRC5G471JS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 5%, 1/8W (V81349) 745-1863-410 A1A5A1R147		1
133	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A1R145		1
134	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349) 745-1863-810 A1A5A1R48		1
135	RCRC5G223JS	2	RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349) 745-1863-810 A1A5A1R49		1
136	RCRC5G333JS	2	RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349) 745-1863-850 A1A5A1R54		1
137	1N44E4	2	SEMICONDC DEVICE (V03508) 353-3644-010 A1A5A1CR3		1
138	RCRC5G473JS	2	RESISTOR,FXD, CMPSN, 47K, 5%, 1/8W (V81349) 745-1863-890 A1A5A1R55		1
139	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A1R56		1
140	RCRC5G153JS	2	RESISTOR,FXD, CMPSN, 15K, 5%, 1/8W (V81349) 745-1863-770 A1A5A1R46		1
141	RCRC5G683JS	2	RESISTOR,FXD, CMPSN, 68K, 5%, 1/8W (V81349) 745-1863-930 A1A5A1R47		1
142	#39CC3-C1-2357	2	CAPACITOR,FXD, ELCTLT, 1UF, 20%, 50V (V81349) 184-9087-440 A1A5A1C21		1
143	JAN2N29C7A	2	TRANSISTOR (V81350) 352-7500-190 A1A5A1Q12		1
144	2N2484	2	TRANSISTOR (V07263) 352-0549-000 A1A5A1Q10		1
145	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q11		1
146	#39CC3-C1-2271	2	CAPACITOR,FXD, ELCTLT, 22UF, 10%, 15V (V81349) 184-9086-310 A1A5A1C22		1
147	RCRC5G1E3JS	2	RESISTOR,FXD, CMPSN, 18K, 5%, 1/8W (V81349) 745-1863-790 A1A5A1R60		1
148	RCRC5G222JS	2	RESISTOR,FXD, CMPSN, 2.2K, 5%, 1/8W (V81349) 745-1863-570 A1A5A1R53		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-5- 149	RCRC5G274JS	2	RESISTOR,FXD, CMPSA, 270K, 5%, 1/8W (V81349) 745-1864-110 A1A5A1R51		1
150	RCRC5G6883JS	2	RESISTOR,FXD, CMPSA, 68K, 5%, 1/8W (V81349) 745-1863-930 A1A5A1R52		1
151	CP5E36CJC5ChV	2	CAPACITOR,FXD, MICA DIEI, 36PF, 5%, 50V (V72136) 912-4141-240 A1A5A1C75		1
152	RCRC5G274JS	2	RESISTOR,FXD, CMPSA, 270K, 5%, 1/8W (V81349) 745-1864-110 A1A5A1R136		1
153	RCRC5G913JS	2	RESISTOR,FXD, CMPSA, 91K, 5%, 1/8W (V81349) 745-1863-960 A1A5A1R139		1
154	RCRC5G274JS	2	RESISTOR,FXD, CMPSA, 270K, 5%, 1/8W (V81349) 745-1864-110 A1A5A1R152		1
155	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSA, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A1R140		1
156	RCRC5G364JS	2	RESISTOR,FXD, CMPSA, 390K, 5%, 1/8W (V81349) 745-1864-150 A1A5A1R130		1
157	M39CC3-C1-2254	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 10%, 10V (V81349) 184-9086-140 A1A5A1C62		1
158	RCRC5G154JS	2	RESISTOR,FXD, CMPSA, 150K, 5%, 1/8W (V81349) 745-1864-050 A1A5A1R129		1
159	RCRC5G243JS	2	RESISTOR,FXD, CMPSA, 24K, 5%, 1/8W (V81349) 745-1863-820 A1A5A1R127		1
160	M39CC3-C1-2305	2	CAPACITOR,FXD, ELCTLT, 6.8UF, 20%, 35V (V81349) 184-9086-650 A1A5A1C60		1
161	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSA, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A1R114		1
162	768-3177-C23	2	PCST		4
	P213-C156-CC	2	NUT,PLAIN,HEX, NP BR5, 4-40 (V77250) 213-0156-CCC (AP)		4
163	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q35		1
164	RCRC5G1C3JS	2	RESISTOR,FXD, CMPSA, 10K, 5%, 1/8W (V81349) 745-1863-730 A1A5A1R117		1
165	RCRC5G1C3JS	2	RESISTOR,FXD, CMPSA, 10K, 5%, 1/8W (V81349) 745-1863-730 A1A5A1R115		1
166	RCRC5G822JS	2	RESISTOR,FXD, CMPSA, 8.2K, 5%, 1/8W (V81349) 745-1863-710 A1A5A1R116		1
167	2N2484	2	TRANSISTOR (V07263) 352-0549-000 A1A5A1Q34		1
168	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A1A5A1CR13		1
169	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A1A5A1CR12		1
170	RCRC5G3C2JS	2	RESISTOR,FXD, CMPSA, 3K, 5%, 1/8W (V81349) 745-1863-600 A1A5A1R108		1
171	RCRC5G47CJS	2	RESISTOR,FXD, CMPSA, 47 CHMS, 5%, 1/8W (V81349) 745-1863-170 A1A5A1R107		1
172	CK05BX472M	2	CAPACITOR,FXD, CER DIEI, 4700PF, 20%, 100V (V81349) 913-5019-640 A1A5A1C49		1
173	3325F1-101	2	RESISTOR,VAR, 100 CHMS, 10%, 0.5W (V80294) 382-0027-040 A1A5A1R151		1
174	2N918	2	TRANSISTOR (V07910) 352-0440-000 A1A5A1Q27		1
175	CK05BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C48		1
176	RCRC5G391JS	2	RESISTOR,FXD, CMPSA, 390 CHMS, 5%, 1/8W (V81349) 745-1863-390 A1A5A1R96		1
177	CK05BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C41		1
178	RCRC5G822JS	2	RESISTOR,FXD, CMPSA, 8.2K, 5%, 1/8W (V81349) 745-1863-710 A1A5A1R103		1
179	RCRC5G331JS	2	RESISTOR,FXD, CMPSA, 330 CHMS, 5%, 1/8W (V81349) 745-1863-370 A1A5A1R105		1
180	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A1A5A1CR10		1
181	RCRC5G392JS	2	RESISTOR,FXD, CMPSA, 3.9K, 5%, 1/8W (V81349) 745-1863-630 A1A5A1R104		1
182	CK05BX1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A5A1C38		1
183	3325F1-1C3	2	RESISTOR,VAR, 10K, 10%, 0.5W (V80294) 382-0027-100 A1A5A1R150		1
184	CK05BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C46		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-5-	185	2N42CE	2 TRANSISTOR (V27014) 352-0959-02C A1A5A1Q5		1
	186	2N918	2 TRANSISTOR (V07910) 352-C440-000 A1A5A1Q39		1
	187	RCRC5G1C4JS	2 RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A1R38		1
	188	CKC5BX1C3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C36		1
	189	RCRC5G222JS	2 RESISTOR,FXD, CMPSN, 2.2K, 5%, 1/8W (V81349) 745-1863-570 A1A5A1R77		1
	190	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C34		1
	191	RCRC5G471JS	2 RESISTOR,FXD, CMPSN, 470 OHMS, 5%, 1/8W (V81349) 745-1863-410 A1A5A1R82		1
	192	RCRC5G471JS	2 RESISTOR,FXD, CMPSN, 470 OHMS, 5%, 1/8W (V81349) 745-1863-410 A1A5A1R90		1
	193	CKC5BX1C3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C33		1
	194	RCRC5G1C2JS	2 RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A5A1R78		1
	195	RCRC5G221JS	2 RESISTOR,FXD, CMPSN, 220 OHMS, 5%, 1/8W (V81349) 745-1863-330 A1A5A1R76		1
	196	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C23		1
	197	M39003-C1-2283	2 CAPACITOR,FXD, ELCLT, 2.2UF, 10%, 20V (V81349) 184-9086-430 A1A5A1C27		1
	198	MS75C69-7	2 COIL,RF, 47UH (V96906) 240-2715-330 A1A5A1L1		1
	199	IN5767	2 SEMICONV DEVICE (V28480) 922-6119-010 A1A5A1CR6		1
	200	RCRC5G272JS	2 RESISTOR,FXD, CMPSN, 2.7K, 5%, 1/8W (V81349) 745-1863-590 A1A5A1R75		1
	201	2N918	2 TRANSISTOR (V07910) 352-0440-000 A1A5A1Q19		1
	202	CKC5BX1C2M	2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A5A1C31		1
	203	RCRC5G241JS	2 RESISTOR,FXD, CMPSN, 240 OHMS, 5%, 1/8W (V81349) 745-1863-340 A1A5A1R72		1
	204	CKC5BX1C3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C30		1
	205	RCRC5G1C4JS	2 RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A1R73		1
	206	RCRC5G112JS	2 RESISTOR,FXD, CMPSN, 1.1K, 5%, 1/8W (V81349) 745-1863-500 A1A5A1R41		1
	207	CKC5BX1C2M	2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A5A1C18		1
	208	RCRC5G333JS	2 RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349) 745-1863-850 A1A5A1R42		1
	209	RCRC5G223JS	2 RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349) 745-1863-810 A1A5A1R68		1
	210	2N918	2 TRANSISTOR (V07910) 352-0440-000 A1A5A1Q20		1
	211	RCRC5G241JS	2 RESISTOR,FXD, CMPSN, 240 OHMS, 5%, 1/8W (V81349) 745-1863-340 A1A5A1R71		1
	212	RCRC5G122JS	2 RESISTOR,FXD, CMPSN, 1.2K, 5%, 1/8W (V81349) 745-1863-510 A1A5A1R39		1
	213	CKC5BX1C2M	2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A5A1C19		1
	214	RCRC5G223JS	2 RESISTOR,FXD, CMPSN, 22K, 5%, 1/8W (V81349) 745-1863-810 A1A5A1R70		1
	215	RCRC5G333JS	2 RESISTOR,FXD, CMPSN, 33K, 5%, 1/8W (V81349) 745-1863-850 A1A5A1R40		1
	216	RCRC5G1CCJS	2 RESISTOR,FXD, CMPSN, 10 OHMS, 5%, 1/8W (V81349) 745-1863-010 A1A5A1R64 (EFF TC REV LTR J)		1
	216	RCRC5G22CJS	2 RESISTOR,FXD, CMPSN, 22 OHMS, 5%, 1/8W (V81349) 745-1863-090 A1A5A1R64 (EFF REV LTR J)		1
	217	1N4454	2 SEMICONV DEVICE (V03508) 353-3644-010 A1A5A1CR2		1
	218	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C37		1
	219	RCRC5G471JS	2 RESISTOR,FXD, CMPSN, 470 OHMS, 5%, 1/8W (V81349) 745-1863-410 A1A5A1R36		1
	220	RCRC5G3C2JS	2 RESISTOR,FXD, CMPSN, 3K, 5%, 1/8W (V81349) 745-1863-600 A1A5A1R35		1

GROUP ASSEMBLY PARTS LIST

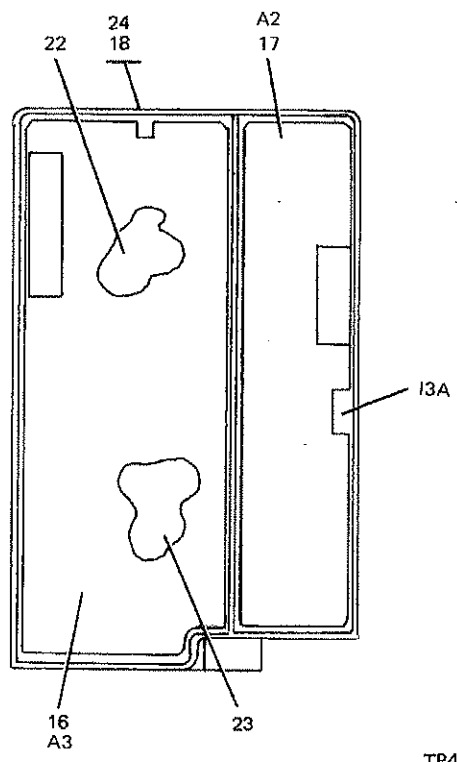
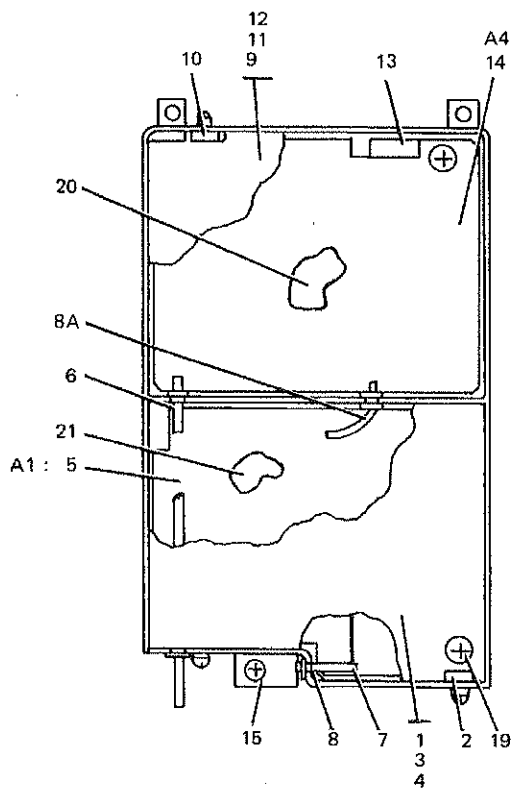
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-5- 221	RCRC5G3C2JS	2	RESISTOR,FXD, CMPSN, 3K, 5%, 1/8W (V81349) 745-1863-600 A1A5A1R34		1
222	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, C.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C17		1
223	MC1596G	2	INTEGRATED CKT (V04713) 351-0043-010 A1A5A1U1		1
224	RCRC5G821JS	2	RESISTOR,FXD, CMPSN, 820 OHMS, 5%, 1/8W (V81349) 745-1863-470 A1A5A1R37		1
225	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, C.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C16		1
226	RCRC5G621JS	2	RESISTOR,FXD, CMPSN, 620 OHMS, 5%, 1/8W (V81349) 745-1863-440 A1A5A1R33 (EFF IC REV LTR J)		1
	63C-1544-CC1	2	RESISTOR, TEST SELECT (ACK PRECURABLE ITEM) (EFF REV LTR J)		1
226	RCRC5G621JS	3	RESISTOR,FXD, CMPSN, 620 OHMS, 5%, 1/8W (V81349) 745-1863-440 A1A5A1R33		AR
226	RCRC5G681JS	3	RESISTOR,FXD, CMPSN, 680 OHMS, 5%, 1/8W (V81349) 745-1863-450 A1A5A1R33		AR
226	RCRC5G751JS	3	RESISTOR,FXD, CMPSN, 750 OHMS, 5%, 1/8W (V81349) 745-1863-460 A1A5A1R33		AR
227	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A5A1R32		1
228	RCRC5G221JS	2	RESISTOR,FXD, CMPSN, 220 OHMS, 5%, 1/8W (V81349) 745-1863-330 A1A5A1R106		1
229	RCRC5G1E3JS	2	RESISTOR,FXD, CMPSN, 18K, 5%, 1/8W (V81349) 745-1863-790 A1A5A1R99		1
230	2N518	2	TRANSISTOR (V0791C) 352-0440-000 A1A5A1C28		1
231	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A5A1R102		1
232	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A5A1R98		1
233	2N518	2	TRANSISTOR (V0791C) 352-0440-000 A1A5A1C26		1
234	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C47		1
235	RCRC5G3C2JS	2	RESISTOR,FXD, CMPSN, 3K, 5%, 1/8W (V81349) 745-1863-600 A1A5A1R100		1
236	RCRC5G3C2JS	2	RESISTOR,FXD, CMPSN, 3K, 5%, 1/8W (V81349) 745-1863-600 A1A5A1R101		1
237	RCRC5G821JS	2	RESISTOR,FXD, CMPSN, 820 OHMS, 5%, 1/8W (V81349) 745-1863-470 A1A5A1R157		1
238	M39CC3-C1-2357	2	CAPACITOR,FXD, ELCTLT, 1UF, 20%, 50V (V81349) 184-9087-440 A1A5A1C53		1
239	M39CC3-C1-2348	2	CAPACITOR,FXD, ELCTLT, 0.33UF, 20%, 50V (V81349) 184-9087-350 A1A5A1C54		1
240	RCRC5G220JS	2	RESISTOR,FXD, CMPSN, 22 OHMS, 5%, 1/8W (V81349) 745-1863-090 A1A5A1R159		1
241	RCRC5G683JS	2	RESISTOR,FXD, CMPSN, 68K, 5%, 1/8W (V81349) 745-1863-930 A1A5A1R120		1
242	RCRC5G273JS	2	RESISTOR,FXD, CMPSN, 27K, 5%, 1/8W (V81349) 745-1863-830 A1A5A1R119		1
243	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A1R121		1
244	RCRC5G1C4JS	2	RESISTOR,FXD, CMPSN, 100K, 5%, 1/8W (V81349) 745-1864-010 A1A5A1R126		1
245	M39CC3-C1-2258	2	CAPACITOR,FXD, ELCTLT, 33UF, 20%, 10V (V81349) 184-9086-180 A1A5A1C81		1
246	M39CC3-C1-2254	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 10%, 10V (V81349) 184-9086-140 A1A5A1C51		1
247	M39CC3-C1-2254	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 10%, 10V (V81349) 184-9086-140 A1A5A1C52		1
248	M39CC3-C1-2254	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 10%, 10V (V81349) 184-9086-140 A1A5A1C50		1
249	JAN2N29C7A	2	TRANSISTOR (V81350) 352-7500-190 A1A5A1Q31		1
250	RCRC5G562JS	2	RESISTOR,FXD, CMPSN, 5.6K, 5%, 1/8W (V81349) 745-1863-670 A1A5A1R84		1
251	RCRC5G1C1JS	2	RESISTOR,FXD, CMPSN, 100 OHMS, 5%, 1/8W (V81349) 745-1863-250 A1A5A1R109		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-5- 252	RCRC5G124JS	2	RESISTOR,FXD, CMPSA, 120K, 5%, 1/8W (V81349) 745-1864-030 A1A5A1R11C		1
253	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSA, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A5A1R112		1
254	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q29		1
255	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C44		1
256	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A5A1CR9		1
257	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C43		1
258	2N42CE	2	TRANSISTOR (V27014) 352-0959-020 A1A5A1Q25		1
259	RCRC5G322JS	2	RESISTOR,FXD, CMPSA, 3.3K, 5%, 1/8W (V81349) 745-1863-610 A1A5A1R95		1
260	RCRC5G562JS	2	RESISTOR,FXD, CMPSA, 5.6K, 5%, 1/8W (V81349) 745-1863-670 A1A5A1R97		1
261	CKC5BX1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A5A1C40		1
262	2N918	2	TRANSISTOR (VC791C) 352-0440-000 A1A5A1Q23		1
263	RCRC5G322JS	2	RESISTOR,FXD, CMPSA, 3.3K, 5%, 1/8W (V81349) 745-1863-610 A1A5A1R86		1
264	6C1-3625-CC1 3515-2C-03	2	HANDLE 2 WASHER,SPR TNSA CD PL STL, 0.363 ID X 0.510 CD (V78189) 31C-0355-000 (AP)		1
265	CKC5BX1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A5A1C35		1
266	MS75C89-8	2	CCIL,RF, 56UH (V96906) 240-2715-340 A1A5A1L3		1
267	M39CC3-C1-2283	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 10%, 20V (V81349) 184-9086-430 A1A5A1C25		1
268	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-010 A1A5A1CR8		1
269	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSA, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A5A1R83		1
270	RCRC5G22CJS	2	RESISTOR,FXD, CMPSA, 22 OHMS, 5%, 1/8W (V81349) 745-1863-090 A1A5A1R66		1
271	RCRC5G22CJS	2	RESISTOR,FXD, CMPSA, 22 OHMS, 5%, 1/8W (V81349) 745-1863-090 A1A5A1R67		1
272	RCRC5G1CCJS	2	RESISTOR,FXD, CMPSA, 10 OHMS, 5%, 1/8W (V81349) 745-1863-010 A1A5A1R65 (EFF TC REV LTR J)		1
272	RCRC5G22CJS	2	RESISTOR,FXD, CMPSA, 22 OHMS, 5%, 1/8W (V81349) 745-1863-090 A1A5A1R65 (EFF REV LTR J)		1
273	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C24		1
274	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSA, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A5A1R79		1
275	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-010 A1A5A1CR7		1
276	M39CC3-C1-2283	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 10%, 20V (V81349) 184-9086-430 A1A5A1C28		1
277	MS75C89-7	2	CCIL,RF, 47UH (V96906) 240-2715-330 A1A5A1L2		1
278	RCRC5G222JS	2	RESISTOR,FXD, CMPSA, 2.2K, 5%, 1/8W (V81349) 745-1863-570 A1A5A1R74		1
279	2N918	2	TRANSISTOR (VC791C) 352-0440-000 A1A5A1Q21		1
280	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A5A1C26		1
281	CKC5BX1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A5A1C32		1
282	2N918	2	TRANSISTOR (V07910) 352-0440-000 A1A5A1Q22		1
283	RCRC5G221JS	2	RESISTOR,FXD, CMPSA, 220 OHMS, 5%, 1/8W (V81349) 745-1863-330 A1A5A1R81		1
284	RCRC5G272JS	2	RESISTOR,FXD, CMPSA, 2.7K, 5%, 1/8W (V81349) 745-1863-590 A1A5A1R80		1
285	RCRC5G272JS	2	RESISTOR,FXD, CMPSA, 2.7K, 5%, 1/8W (V81349) 745-1863-590 A1A5A1R85		1
286	RCRC5G432JS	2	RESISTOR,FXD, CMPSA, 4.3K, 5%, 1/8W (V81349) 745-1863-640 A1A5A1R89		1
287	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A5A1C39		1
288	RCRC5G221JS	2	RESISTOR,FXD, CMPSA, 220 OHMS, 5%, 1/8W (V81349) 745-1863-330 A1A5A1R88		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-5- 289	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A1A5A1CR14		1
290	RCRC5G472JS	2	RESISTOR,FXD, CMPSN, 4.7K, 5%, 1/8W (V81349) 745-1863-650 A1A5A1R87		1
291	RCRC5G183JS	2	RESISTOR,FXD, CMPSN, 18K, 5%, 1/8W (V81349) 745-1863-790 A1A5A1R91		1
292	2N918	2	TRANSISTOR (VC7910) 352-0440-000 A1A5A1C24		1
293	RCRC5G471JS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 5%, 1/8W (V81349) 745-1863-410 A1A5A1R93		1
294	RCRC5G221JS	2	RESISTOR,FXD, CMPSN, 220 OHMS, 5%, 1/8W (V81349) 745-1863-330 A1A5A1R92		1
295	MS75C89-27	2	COIL,RF, 2200UH (VS6906) 240-2715-530 A1A5A1L6		1
296	CKC5B1C2M	2	CAPACITOR,FXD, CER DIEL, 1CGPF, 20%, 200V (V81349) 913-3989-000 A1A5A1C45		1
297	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1C30		1
298	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A1A5A1CR11		1
299	RCRC5G113JS	2	RESISTOR,FXD, CMPSN, 11K, 5%, 1/8W (V81349) 745-1863-740 A1A5A1R111		1
300	2N2484	2	TRANSISTOR (VC7263) 352-0549-000 A1A5A1Q32		1
301	RCRC5G682JS	2	RESISTOR,FXD, CMPSN, 6.8K, 5%, 1/8W (V81349) 745-1863-690 A1A5A1R118		1
302	JAN2N2222A	2	TRANSISTOR (V81350) 352-7500-280 A1A5A1Q33		1
303	RCRC5G2C3JS	2	RESISTOR,FXD, CMPSN, 20K, 5%, 1/8W (V81349) 745-1863-800 A1A5A1R142		1
304	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A1A5A1CR4		1
305	RCRC5G473JS	2	RESISTOR,FXD, CMPSN, 47K, 5%, 1/8W (V81349) 745-1863-890 A1A5A1R113		1

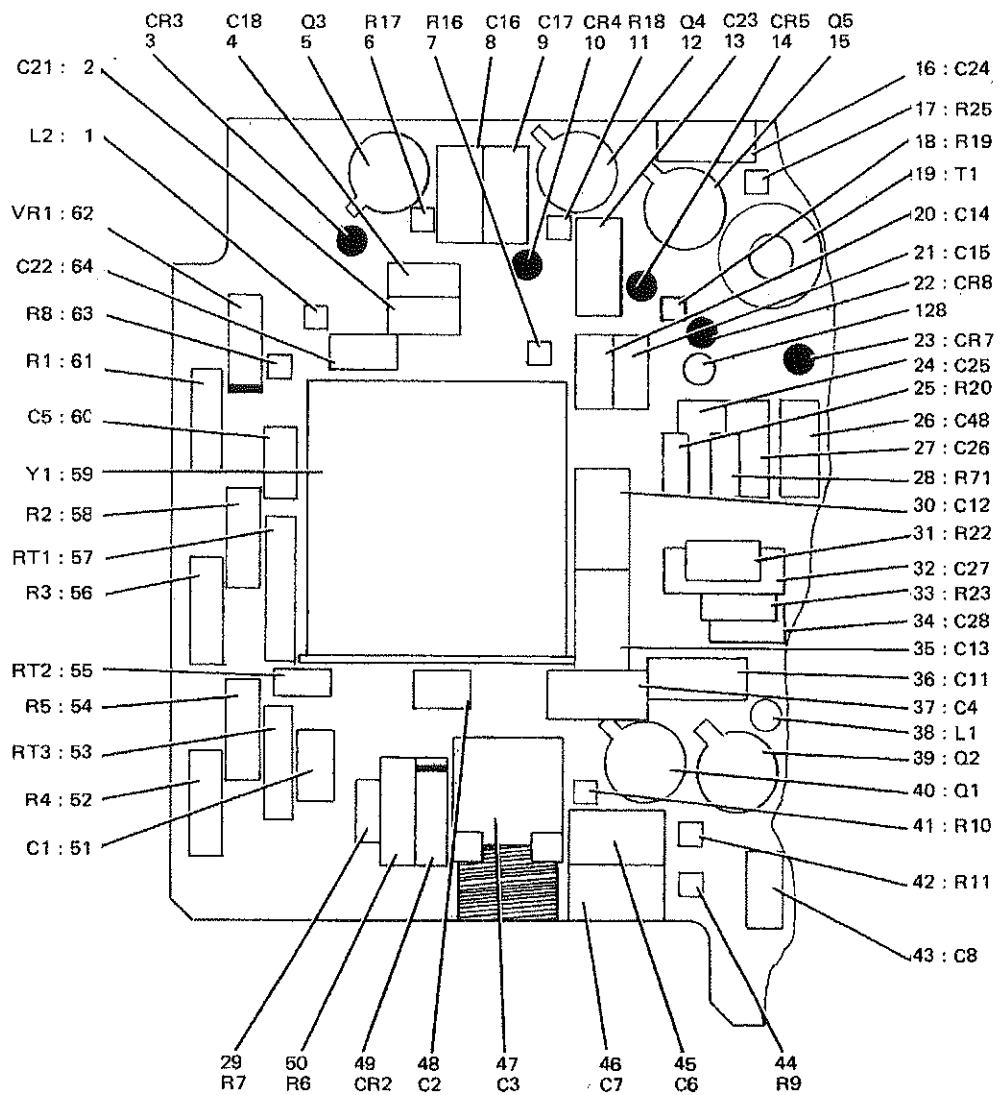


TP4-9663-019

Figure 3-6. Lf Generator A1A6A1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-6 -	6C9-2467-CC2	1	LF GENERATOR A1A6A1 (SEE FIG 3-2-13 FOR NFA)		REF
1	623-3846-CC1	2	COVER, NO.1		1
	31C-CC94-CCC	2	WASHER, LOCK, CD PL BRZ, 0.088 ID X 0.165 OD (V79807) 31C-0094-CCO (AP)		3
	MS51957-2	2	SCREW, MACH, SST, 2-56 X 3/16 (V96906)		3
	33C-1701-C10	2	SCREW, SLFLKG, SST, 2-56 X 3/16 (V72962)		4
2	623-1548-CC3	3	SPACER, SHOULDERS		7
3	623-3846-CC3	3	PLATE, INSULATOR		1
4	623-3846-CC2	3	COVER		1
5	6C1-3877-CC1	2	FREQUENCY STANDARD A1A6A1A1 (SEE FIG 3-7)		1
	31C-632C-CCC	2	WASHER, FLAT, SST, C.092 ID X 0.218 OD (V79807) 31C-632C-CCC (AP)		4
	31C-CC94-CCC	2	WASHER, LOCK, CD PL BRZ, 0.088 ID X 0.165 OD (V79807) 31C-0094-CCO (AP)		4
	MS51957-2	2	SCREW, MACH, SST, 2-56 X 3/16 (V96906)		4
6	623-3840-CC1	2	TUBE		1
7	14C-C53C-5C13	2	CABLE ASSY, ELEC (V98278) 426-5435-250		2
8	6C9-1797-CC1	2	EYELET		3
8A	RC178BL	2	CABLE, RF (V81349) 425-1538-000		1
9	623-3847-CC1	2	COVER NO.2		1
	31C-CC94-CCC	2	WASHER, LOCK, CD PL BRZ, 0.088 ID X 0.165 OD (V79807) 31C-0094-CCO (AP)		2
	MS51957-2	2	SCREW, MACH, SST, 2-56 X 3/16 (V96906)		2
	33C-1701-C10	2	SCREW, SLFLKG, SST, 2-56 X 3/16 (V72962)		3
10	623-1548-CC3	3	SPACER, SHOULDERS		5
11	623-3847-CC3	3	PLATE, INSULATOR		1
12	623-3847-CC2	3	COVER		1
13	MS75C85-C7	2	CCIL, RF, 100LH (V96906) 24C-2047-CCO		3
13A	MS75C85-C7	2	CCIL, RF, 100UH (V96906) 24C-2047-CCO		3
14	6C1-3876-CC1	2	FREQUENCY CONVERTER A1A6A1A4 (SEE FIG 3-8)		1
	31C-632C-CCC	2	WASHER, FLAT, SST, C.092 ID X 0.218 OD (V79807) 31C-632C-CCC (AP)		4
	31C-CC94-CCC	2	WASHER, LOCK, CD PL BRZ, 0.088 ID X 0.165 OD (V79807) 31C-0094-CCO (AP)		4
	MS51957-2	2	SCREW, MACH, SST, 2-56 X 3/16 (V96906)		4
15	MS51957-188	2	SCREW, MACH, SST, 4-40 X 5/8 (V96906)		1
	34C-C644-CC	2	SLEEVE, SPG (V91314) 34C-C644-CCO (AP)		1
	MS35328-135	2	WASHER, LOCK, SST, C.115 ID X 0.209 OD (V96906)		1
16	6C1-3879-CC1	2	LF PHASE-LOCK LOOP A1A6A1A3 (SEE FIG 3-9)		1
	31C-632C-CCC	2	WASHER, FLAT, SST, C.092 ID X 0.218 OD (V79807) 31C-632C-CCC (AP)		5
	31C-CC94-CCC	2	WASHER, LOCK, CD PL BRZ, 0.088 ID X 0.165 OD (V79807) 31C-0094-CCO (AP)		5
	MS51957-2	2	SCREW, MACH, SST, 2-56 X 3/16 (V96906)		5
17	6C1-3876-CC2	2	FIXED FREQUENCY DIVIDER A1A6A1A2 (SEE FIG 3-10)		1
	31C-632C-CCC	2	WASHER, FLAT, SST, C.092 ID X 0.218 OD (V79807) 31C-632C-CCC (AP)		5
	31C-CC94-CCC	2	WASHER, LOCK, CD PL BRZ, 0.088 ID X 0.165 OD (V79807) 31C-0094-CCO (AP)		5
	MS51957-2	2	SCREW, MACH, SST, 2-56 X 3/16 (V96906)		5
18	623-385C-CC1	2	CHASSIS		1
19	623-1548-CC2	3	SPACER, SHOULDERS		18
20	623-3855-CC1	3	SHEET, INSULATOR NC.2		1
21	623-3857-CC1	3	SHEET, INSULATOR NC.4		1
22	623-3854-CC1	3	SHEET, INSULATOR NC.1		1
23	623-3856-CC1	3	SHEET, INSULATOR NC.3		1
24	623-385C-CC2	3	CHASSIS, BRAZED		1

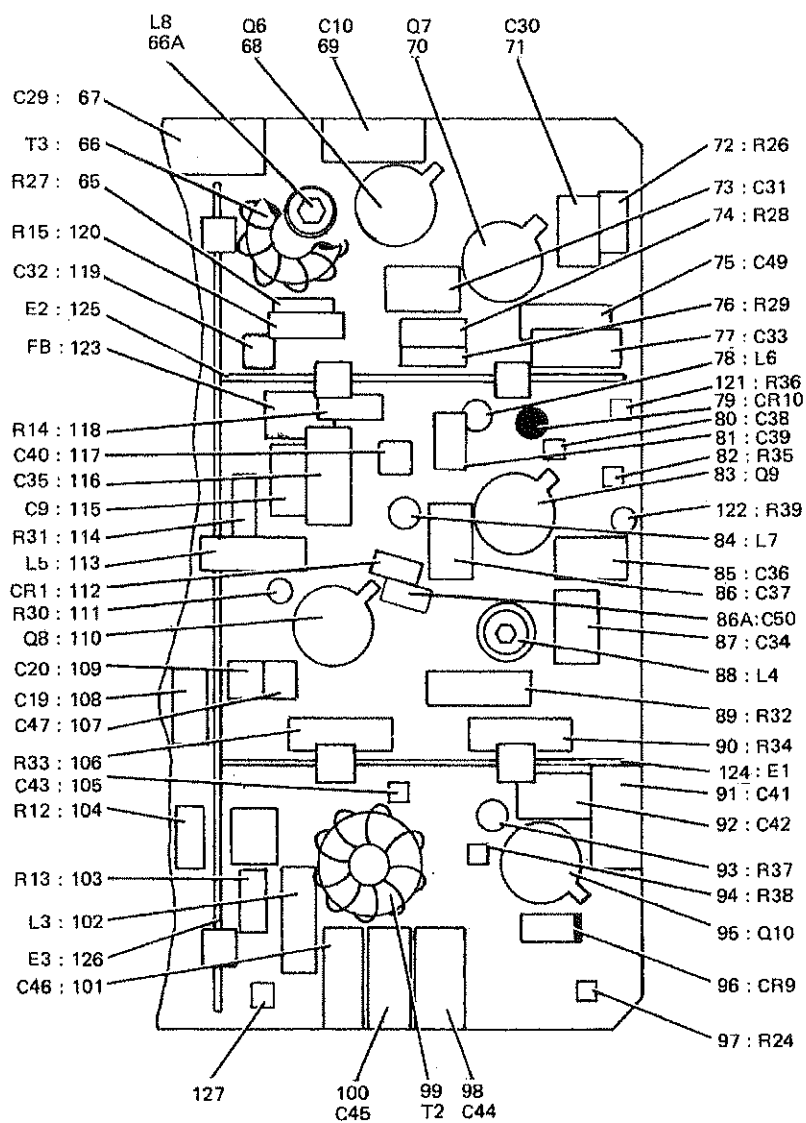


NOTE:

● CATHODE END OF DIODE

TP4-9664-029

Figure 3-7. Frequency Standard A1A6A1A1 (Sheet 1 of 2)



NOTE:
 ● CATHODE END OF DIODE

TP4-9664-029

Figure 3-7. Frequency Standard A1A6A1A1 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7 -	6C1-3877-CC1	1	FREQUENCY STANDARD A1A6A1A1 (SEE FIG 3-6-5 FOR NFA)		REF
1	M575C85-C7	2	CCIL,RF, 100UH (V569C6) 24C-2047-CCO A1A6A1A1L2		1
2	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A1C21		1
3	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A6A1A1CR3		1
4	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A1C18		1
5	2N42CE	2	TRANSISTOR (V27014) 352-0959-020 A1A6A1A1Q3		1
6	RCRC5G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/8W (V81349) 745-2353-CCO A1A6A1A1R17		1
7	RCRC5G47CKS	2	RESISTOR,FXD, CMPSN, 47 OHMS, 10%, 1/8W (V81349) 745-2292-CCO A1A6A1A1R16		1
8	DM5E56CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 56PF, 5%, 50V (V72136) 912-4141-310 A1A6A1A1C16		1
9	DM5E56CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 56PF, 5%, 50V (V72136) 912-4141-310 A1A6A1A1C17		1
10	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A6A1A1CR4		1
11	RCRC5G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/8W (V81349) 745-2353-CCO A1A6A1A1R18		1
12	2N2784	2	TRANSISTOR (V03877) 352-0707-020 A1A6A1A1Q4		1
13	DM5E47CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 47PF, 5%, 50V (V72136) 912-4141-280 A1A6A1A1C23		1
14	1N5711	2	SEMICOND DEVICE (V2848C) 353-3691-010 A1A6A1A1CR5		1
15	2N4208	2	TRANSISTOR (V27014) 352-0959-020 A1A6A1A1Q5		1
16	DM5F1C1JC5OWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A1A1C24		1
17	RCRC5G122KS	2	RESISTOR,FXD, CMPSN, 1.2K, 10%, 1/8W (V81349) 745-2344-CCO A1A6A1A1R25		1
18	RCRC5G122KS	2	RESISTOR,FXD, CMPSN, 1.2K, 10%, 1/8W (V81349) 745-2344-CCO A1A6A1A1R19		1
19	623-3834-CC3	2	TRANSFORMER A1A6A1A1T1		1
20	CKC5BX1C2K	2	CAPACITOR,FXD, CER DIEI, 1000PF, 10%, 200V (V81349) 913-4018-CCO A1A6A1A1C14		1
21	CKC5BX1C2K	2	CAPACITOR,FXD, CER DIEI, 1000PF, 10%, 200V (V81349) 913-4018-CCO A1A6A1A1C15		1
22	1N5711	2	SEMICOND DEVICE (V2848C) 353-3691-010 A1A6A1A1CR6		1
23	1N5711	2	SEMICOND DEVICE (V2848C) 353-3691-010 A1A6A1A1CR7		1
24	DM5F1C1JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A1A1C25		1
25	RCRC5G393KS	2	RESISTOR,FXD, CMPSN, 39K, 10%, 1/8W (V81349) 745-2398-CCO A1A6A1A1R20		1
26	DM5E33CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 33PF, 5%, 50V (V72136) 912-4141-22C A1A6A1A1C48 (EFF TC REV LTR L)		1
26	DM5F1C1JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A1A1C48 (EFF REV LTR L)		1
27	DM5F1C1JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A1A1C26		1
28	RCRC5G393KS	2	RESISTOR,FXD, CMPSN, 39K, 10%, 1/8W (V81349) 745-2398-CCO A1A6A1A1R21		1
29	RCRC5G104KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCO A1A6A1A1R7		1
30	DM5F111JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 110PF, 5%, 50V (V72136) 912-4141-370 A1A6A1A1C12		1
31	RCRC5G562KS	2	RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/8W (V81349) 745-2368-CCO A1A6A1A1R22 (EFF TC REV LTR M)		1
32	DM5E47CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 47PF, 5%, 50V (V72136) 912-4141-280 A1A6A1A1C27 (EFF TC REV LTR M)		1
33	RCRC5G562KS	2	RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/8W (V81349) 745-2368-CCO A1A6A1A1R23		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7-	34	CK05BX1C4K	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5C19-320 A1A6A1A1C28		1
	35	DM5F271JC5CWV	2 CAPACITOR,FXD, MICA DIEI, 270PF, 5%, 50V (V72136) 912-4141-47C A1A6A1A1C13		1
	36	DM5E33CJC5CWV	2 CAPACITOR,FXD, MICA DIEI, 33PF, 5%, 50V (V72136) 912-4141-220 A1A6A1A1C11		1
		635-C67C-CC1	2 CAPACITOR,TEST SELECT (NCR-PRCCURABLE ITEM)		1
	37	DM5F1C1JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A1A1C4		AR
	37	DM5E82CJC5CWV	3 CAPACITOR,FXD, MICA DIEI, 82PF, 5%, 50V (V72136) 912-4141-350 A1A6A1A1C4		AR
	37	DM5F91CJC5CWV	3 CAPACITOR,FXD, MICA DIEI, 91PF, 5%, 50V (V72136) 912-4141-36C A1A6A1A1C4		AR
	37	DM5F111JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 110PF, 5%, 50V (V72136) 912-4141-37C A1A6A1A1C4		AR
	37	DM5F121JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 120PF, 5%, 50V (V72136) 912-4141-38C A1A6A1A1C4		AR
	37	DM5F131JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 130PF, 5%, 50V (V72136) 912-4141-39C A1A6A1A1C4		AR
	37	DM5F151JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 150PF, 5%, 50V (V72136) 912-4141-40C A1A6A1A1C4		AR
	37	DM5F161JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 160PF, 5%, 50V (V72136) 912-4141-41C A1A6A1A1C4		AR
	37	DM5F171JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 170PF, 5%, 50V (V72136) 912-4141-42C A1A6A1A1C4		AR
	37	DM5F181JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 180PF, 5%, 50V (V72136) 912-4141-43C A1A6A1A1C4		AR
	37	DM5F201JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 200PF, 5%, 50V (V72136) 912-4141-44C A1A6A1A1C4		AR
	37	DM5F221JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 220PF, 5%, 50V (V72136) 912-4141-45C A1A6A1A1C4		AR
	37	DM5F241JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 240PF, 5%, 50V (V72136) 912-4141-46C A1A6A1A1C4		AR
	37	DM5F271JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 270PF, 5%, 50V (V72136) 912-4141-47C A1A6A1A1C4		AR
	37	DM5F301JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 300PF, 5%, 50V (V72136) 912-4141-48C A1A6A1A1C4		AR
	37	DM5F331JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 330PF, 5%, 50V (V72136) 912-4141-49C A1A6A1A1C4		AR
	37	DM5F361JC5CWV	3 CAPACITOR,FXD, MICA DIEI, 360PF, 5%, 50V (V72136) 912-4141-50C A1A6A1A1C4		AR
	38	MS750E4-12	2 CCIL,RF, 10UH (V96906) 24C-2035-CCG A1A6A1A111		1
	39	2NS18	2 TRANSISTOR (V07910) 352-0440-CCG A1A6A1A1C2		1
	40	2NS18	2 TRANSISTOR (V07910) 352-0440-000 A1A6A1A1C1		1
	41	RCRC5G222KS	2 RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/8W (V81349) 745-2353-CCG A1A6A1A1R10		1
	42	RCRC5G183KS	2 RESISTOR,FXD, CMPSN, 18K, 10%, 1/8W (V81349) 745-2386-CCG A1A6A1A1R11		1
	43	CK05BX1C2K	2 CAPACITOR,FXD, CER DIEI, 1000PF, 10%, 200V (V81349) 913-4018-CCG A1A6A1A1C8		1
	44	RCRC5G223KS	2 RESISTOR,FXD, CMPSN, 22K, 10%, 1/8W (V81349) 745-2389-CCG A1A6A1A1R9		1
	45	DM5F221JC5CWV	2 CAPACITOR,FXD, MICA DIEI, 220PF, 5%, 50V (V72136) 912-4141-45C A1A6A1A1C6		1
	46	DM5F221JC5CWV	2 CAPACITOR,FXD, MICA DIEI, 220PF, 5%, 50V (V72136) 912-4141-45C A1A6A1A1C7		1
	47	PC26J14C	2 CAPACITOR,VAR, AIR DIEI, 1PF TC 14PF, (V81349) 922-0595-03C A1A6A1A1C3		1
		635-C672-CC1	2 CAPACITOR,TEST SELECT (NCR-PRCCURABLE ITEM)		1
	48	CCR13CG4R7C	3 CAPACITOR,FXD, CER DIEI, 4.7PF, 0.25PF, 75V (V81349) 913-1098-21C A1A6A1A1C2		AR
	48	CCR13CG3R9C	3 CAPACITOR,FXD, CER DIEI, 3.9PF, 0.25PF, 75V (V81349) 913-1098-22C A1A6A1A1C2		AR
	48	CCR13CG3R3C	3 CAPACITOR,FXD, CER DIEI, 3.3PF, 0.25PF, 75V (V81349) 913-1098-23C A1A6A1A1C2		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7- 48	81C1B617CGGC-279	3	CAPACITOR,FXD, CER DIEI, 2.7PF, 0.25PF, 75V (V72982) 913-1C98-240 A1A6A1A1C2		AR
48	CCR13CG2R2C	3	CAPACITOR,FXD, CER DIEI, 2.2PF, 0.25PF, 75V (V81349) 913-1C98-250 A1A6A1A1C2		AR
48	CCR13CG1R8C	3	CAPACITOR,FXD, CER DIEI, 1.8PF, 0.25PF, 75V (V81349) 913-1098-260 A1A6A1A1C2		AR
48	CCR13CG1R5C	3	CAPACITOR,FXD, CER DIEI, 1.5PF, 0.25PF, 75V (V81349) 913-1C98-270 A1A6A1A1C2		AR
48	8111BC9CCGKC-478	3	CAPACITOR,FXD, CER DIEI, C.47PF, 0.25PF, 75V (V72982) 913-1098-320 A1A6A1A1C2		AR
48	81C1B212CCKC-1C9	3	CAPACITOR,FXD, CER DIEI, 1PF, 0.25PF, 150V (V72982) 913-1C98-330 A1A6A1A1C2		AR
48	CCR13CG5R6D	3	CAPACITOR,FXD, CER DIEI, 5.6PF, 0.5PF, 75V (V81349) 913-1098-130 A1A6A1A1C2 (EFF REV LTR A)		AR
48	CCR13CG6R8D	3	CAPACITOR,FXD, CER DIEI, 6.8PF, 0.5PF, 75V (V81349) 913-1C98-140 A1A6A1A1C2 (EFF REV LTR A)		AR
48	81C1B212CCKC-7C9	3	CAPACITOR,FXD, CER DIEI, 7PF, 0.25PF, 150V (V72982) 913-1098-350 A1A6A1A1C2 (EFF REV LTR A)		AR
48	CCR13CG7R5D	3	CAPACITOR,FXD, CER DIEI, 7.5PF, 0.5PF, 75V (V81349) 913-1098-150 A1A6A1A1C2 (EFF REV LTR A)		AR
48	CCR13CG8R2D	3	CAPACITOR,FXD, CER DIEI, 8.2PF, 0.5PF, 75V (V81349) 913-1098-160 A1A6A1A1C2 (EFF REV LTR A)		AR
49	1N5147	2	SEMICOND DEVICE (V96341) 922-6095-170 A1A6A1A1CR2 (EFF TC REV LTR L)		1
	63C-1552-CC1	2	TEST SELECT KIT (ACN PROCURABLE ITEM) (EFF REV LTR L)		1
49	1N5146A	3	SEMICOND DEVICE (V96341) 922-6095-160 A1A6A1A1CR2		AR
49	1N5147	3	SEMICOND DEVICE (V96341) 922-6095-170 A1A6A1A1CR2		AR
	635-C858-CC1	2	RESISTOR,TEST SELECT (ACN PROCURABLE ITEM)		1
50	RN55C75CCF	3	RESISTOR,FXD, FILM, 75C OHMS, 1%, 1/8W (V81349) 7C5-0990-CC0 A1A6A1A1R6		AR
50	RN55C787CF	3	RESISTOR,FXD, FILM, 787 OHMS, 1%, 1/8W (V81349) 7C5-0991-CC0 A1A6A1A1R6		AR
50	RN55C825CF	3	RESISTOR,FXD, FILM, 825 OHMS, 1%, 1/8W (V81349) 7C5-0992-CC0 A1A6A1A1R6		AR
50	RN55C866CF	3	RESISTOR,FXD, FILM, 866 OHMS, 1%, 1/8W (V81349) 7C5-0993-CC0 A1A6A1A1R6		AR
50	RN55C9C9CF	3	RESISTOR,FXD, FILM, 9C9 OHMS, 1%, 1/8W (V81349) 7C5-0994-CC0 A1A6A1A1R6		AR
50	RN55C9530F	3	RESISTOR,FXD, FILM, 953 OHMS, 1%, 1/8W (V81349) 7C5-0995-CC0 A1A6A1A1R6		AR
50	RN55C1CC1F	3	RESISTOR,FXD, FILM, 1K, 1%, 1/8W (V81349) 7C5-0996-CC0 A1A6A1A1R6		AR
50	RN55C1051F	3	RESISTOR,FXD, FILM, 1.05K, 1%, 1/8W (V81349) 7C5-0997-CC0 A1A6A1A1R6		AR
50	RN55C11C1F	3	RESISTOR,FXD, FILM, 1.1K, 1%, 1/8W (V81349) 7C5-0998-CC0 A1A6A1A1R6		AR
50	RN55C1151F	3	RESISTOR,FXD, FILM, 1.15K, 1%, 1/8W (V81349) 7C5-0999-CC0 A1A6A1A1R6		AR
50	RN55C1211F	3	RESISTOR,FXD, FILM, 1.21K, 1%, 1/8W (V81349) 7C5-1000-CC0 A1A6A1A1R6		AR
50	RN55C1271F	3	RESISTOR,FXD, FILM, 1.27K, 1%, 1/8W (V81349) 7C5-1001-CC0 A1A6A1A1R6		AR
50	RN55C1331F	3	RESISTOR,FXD, FILM, 1.33K, 1%, 1/8W (V81349) 7C5-1002-CC0 A1A6A1A1R6		AR
50	RN55C14C1F	3	RESISTOR,FXD, FILM, 1.40K, 1%, 1/8W (V81349) 7C5-1003-CC0 A1A6A1A1R6		AR
50	RN55C1471F	3	RESISTOR,FXD, FILM, 1.47K, 1%, 1/8W (V81349) 7C5-1004-CC0 A1A6A1A1R6		AR
50	RN55C1541F	3	RESISTOR,FXD, FILM, 1.54K, 1%, 1/8W (V81349) 7C5-1005-CC0 A1A6A1A1R6		AR
50	RN55C1621F	3	RESISTOR,FXD, FILM, 1.62K, 1%, 1/8W (V81349) 7C5-1006-CC0 A1A6A1A1R6		AR
50	RN55C1691F	3	RESISTOR,FXD, FILM, 1.69K, 1%, 1/8W (V81349) 7C5-1007-CC0 A1A6A1A1R6		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7- 50	RN5501781F	3	RESISTOR,FXD, FILM, 1.78K, 1%, 1/8W (V81349) 7C5-1008-CCO A1A6A1A1R6		AR
50	RN5501871F	3	RESISTOR,FXD, FILM, 1.87K, 1%, 1/8W (V81349) 7C5-1009-CCO A1A6A1A1R6		AR
50	RN5501961F	3	RESISTOR,FXD, FILM, 1.96K, 1%, 1/8W (V81349) 7C5-1010-CCO A1A6A1A1R6		AR
50	RN5502051F	3	RESISTOR,FXD, FILM, 2.05K, 1%, 1/8W (V81349) 7C5-1011-CCO A1A6A1A1R6		AR
50	RN5502151F	3	RESISTOR,FXD, FILM, 2.15K, 1%, 1/8W (V81349) 7C5-1012-CCO A1A6A1A1R6		AR
50	RN5502261F	3	RESISTOR,FXD, FILM, 2.26K, 1%, 1/8W (V81349) 7C5-1013-CCO A1A6A1A1R6		AR
50	RN5502371F	3	RESISTOR,FXD, FILM, 2.37K, 1%, 1/8W (V81349) 7C5-1014-CCO A1A6A1A1R6		AR
51	CKC58X1C3K	2	CAPACITOR,FXD, CER DIEL, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A1C1		1
	635-086C-CC1	2	RESISTOR,TEST SELECT (NON-PROCURABLE ITEM)		1
52	RN5501002F	3	RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A1A6A1A1R4		AR
52	RN5501102F	3	RESISTOR,FXD, FILM, 11K, 1%, 1/8W (V81349) 7C5-1046-CCO A1A6A1A1R4		AR
52	RN5501212F	3	RESISTOR,FXD, FILM, 12.1K, 1%, 1/8W (V81349) 7C5-1048-CCO A1A6A1A1R4		AR
52	RN5501332F	3	RESISTOR,FXD, FILM, 13.3K, 1%, 1/8W (V81349) 7C5-1050-CCO A1A6A1A1R4		AR
52	RN5501402F	3	RESISTOR,FXD, FILM, 14K, 1%, 1/8W (V81349) 7C5-1051-CCO A1A6A1A1R4		AR
52	RN5501472F	3	RESISTOR,FXD, FILM, 14.7K, 1%, 1/8W (V81349) 7C5-1052-CCO A1A6A1A1R4		AR
52	RN5501542F	3	RESISTOR,FXD, FILM, 15.4K, 1%, 1/8W (V81349) 7C5-1053-CCO A1A6A1A1R4		AR
52	RN5501622F	3	RESISTOR,FXD, FILM, 16.2K, 1%, 1/8W (V81349) 7C5-1054-CCO A1A6A1A1R4		AR
52	RN5501692F	3	RESISTOR,FXD, FILM, 16.9K, 1%, 1/8W (V81349) 7C5-1055-CCO A1A6A1A1R4		AR
52	RN5501782F	3	RESISTOR,FXD, FILM, 17.8K, 1%, 1/8W (V81349) 7C5-1056-CCO A1A6A1A1R4		AR
52	RN5501872F	3	RESISTOR,FXD, FILM, 18.7K, 1%, 1/8W (V81349) 7C5-1057-CCO A1A6A1A1R4		AR
52	RN5501962F	3	RESISTOR,FXD, FILM, 19.6K, 1%, 1/8W (V81349) 7C5-1058-CCO A1A6A1A1R4		AR
52	RN5502052F	3	RESISTOR,FXD, FILM, 20.5K, 1%, 1/8W (V81349) 7C5-1059-CCO A1A6A1A1R4		AR
52	RN5502152F	3	RESISTOR,FXD, FILM, 21.5K, 1%, 1/8W (V81349) 7C5-1060-CCO A1A6A1A1R4		AR
52	RN5502262F	3	RESISTOR,FXD, FILM, 22.6K, 1%, 1/8W (V81349) 7C5-1061-CCO A1A6A1A1R4		AR
52	RN5502372F	3	RESISTOR,FXD, FILM, 23.7K, 1%, 1/8W (V81349) 7C5-1062-CCO A1A6A1A1R4		AR
52	RN5502492F	3	RESISTOR,FXD, FILM, 24.9K, 1%, 1/8W (V81349) 7C5-1063-CCO A1A6A1A1R4		AR
52	RN5502612F	3	RESISTOR,FXD, FILM, 26.1K, 1%, 1/8W (V81349) 7C5-1064-CCO A1A6A1A1R4		AR
52	RN5502742F	3	RESISTOR,FXD, FILM, 27.4K, 1%, 1/8W (V81349) 7C5-1065-CCO A1A6A1A1R4		AR
52	RN5502872F	3	RESISTOR,FXD, FILM, 28.7K, 1%, 1/8W (V81349) 7C5-1066-CCO A1A6A1A1R4		AR
52	RN5501213F	3	RESISTOR,FXD, FILM, 121K, 1%, 1/8W (V81349) 7C5-1096-CCO A1A6A1A1R4		AR
52	RN5501273F	3	RESISTOR,FXD, FILM, 127K, 1%, 1/8W (V81349) 7C5-1097-CCO A1A6A1A1R4		AR
52	RN5501323F	3	RESISTOR,FXD, FILM, 133K, 1%, 1/8W (V81349) 7C5-1098-CCO A1A6A1A1R4		AR
52	RN5501403F	3	RESISTOR,FXD, FILM, 140K, 1%, 1/8W (V81349) 7C5-1099-CCO A1A6A1A1R4		AR
52	RN5501473F	3	RESISTOR,FXD, FILM, 147K, 1%, 1/8W (V81349) 7C5-1100-CCO A1A6A1A1R4		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7- 52	RN55C1543F	3	RESISTOR,FXD, FILM, 154K, 1%, 1/8W (V81349) 7C5-1101-CCC A1A6A1A1R4		AR
52	RN55C1623F	3	RESISTOR,FXD, FILM, 162K, 1%, 1/8W (V81349) 7C5-1102-CCO A1A6A1A1R4		AR
52	RN55C1693F	3	RESISTOR,FXD, FILM, 169K, 1%, 1/8W (V81349) 7C5-1103-CCO A1A6A1A1R4		AR
52	RN55C1783F	3	RESISTOR,FXD, FILM, 178K, 1%, 1/8W (V81349) 7C5-1104-CCC A1A6A1A1R4		AR
52	RN55C1873F	3	RESISTOR,FXD, FILM, 187K, 1%, 1/8W (V81349) 7C5-1105-CCO A1A6A1A1R4		AR
52	RN55C1963F	3	RESISTOR,FXD, FILM, 196K, 1%, 1/8W (V81349) 7C5-1106-CCO A1A6A1A1R4		AR
52	RN55C2053F	3	RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-1107-CCO A1A6A1A1R4		AR
52	RN55C2153F	3	RESISTOR,FXD, FILM, 215K, 1%, 1/8W (V81349) 7C5-1108-CCO A1A6A1A1R4		AR
52	RN55C2263F	3	RESISTOR,FXD, FILM, 226K, 1%, 1/8W (V81349) 7C5-1109-CCC A1A6A1A1R4		AR
52	RN55C2373F	3	RESISTOR,FXD, FILM, 237K, 1%, 1/8W (V81349) 7C5-1110-CCO A1A6A1A1R4		AR
52	RN55C2493F	3	RESISTOR,FXD, FILM, 249K, 1%, 1/8W (V81349) 7C5-1111-CCC A1A6A1A1R4		AR
52	RN55C2613F	3	RESISTOR,FXD, FILM, 261K, 1%, 1/8W (V81349) 7C5-1112-CCO A1A6A1A1R4		AR
52	RN55C2743F	3	RESISTOR,FXD, FILM, 274K, 1%, 1/8W (V81349) 7C5-1113-CCC A1A6A1A1R4		AR
52	RN55C2873F	3	RESISTOR,FXD, FILM, 287K, 1%, 1/8W (V81349) 7C5-1114-CCO A1A6A1A1R4		AR
52	RN55C3013F	3	RESISTOR,FXD, FILM, 301K, 1%, 1/8W (V81349) 7C5-1115-CCC A1A6A1A1R4		AR
53	61TM49-5PCT	2	RESISTOR,THRM, 1MEGC, 5%, 5.3MW (V90634) 714-2853-CCO A1A6A1A1RT3		1
	635-C857-CC1	2	RESISTOR,TEST SELECT (NEN-PRCCURABLE ITEM)		1
54	RN55C10C2F	3	RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A1A6A1A1R5		AR
54	RN55C1052F	3	RESISTOR,FXD, FILM, 10.5K, 1%, 1/8W (V81349) 7C5-1045-CCC A1A6A1A1R5		AR
54	RN55C11C2F	3	RESISTOR,FXD, FILM, 11K, 1%, 1/8W (V81349) 7C5-1046-CCO A1A6A1A1R5		AR
54	RN55C1152F	3	RESISTOR,FXD, FILM, 11.5K, 1%, 1/8W (V81349) 7C5-1047-CCC A1A6A1A1R5		AR
54	RN55C1212F	3	RESISTOR,FXD, FILM, 12.1K, 1%, 1/8W (V81349) 7C5-1048-CCO A1A6A1A1R5		AR
54	RN55C1272F	3	RESISTOR,FXD, FILM, 12.7K, 1%, 1/8W (V81349) 7C5-1049-CCC A1A6A1A1R5		AR
54	RN55C1322F	3	RESISTOR,FXD, FILM, 13.2K, 1%, 1/8W (V81349) 7C5-1050-CCO A1A6A1A1R5		AR
54	RN55C1402F	3	RESISTOR,FXD, FILM, 14K, 1%, 1/8W (V81349) 7C5-1051-CCC A1A6A1A1R5		AR
54	RN55C1472F	3	RESISTOR,FXD, FILM, 14.7K, 1%, 1/8W (V81349) 7C5-1052-CCO A1A6A1A1R5		AR
54	RN55C1542F	3	RESISTOR,FXD, FILM, 15.4K, 1%, 1/8W (V81349) 7C5-1053-CCO A1A6A1A1R5		AR
54	RN55C1622F	3	RESISTOR,FXD, FILM, 16.2K, 1%, 1/8W (V81349) 7C5-1054-CCC A1A6A1A1R5		AR
54	RN55C1692F	3	RESISTOR,FXD, FILM, 16.9K, 1%, 1/8W (V81349) 7C5-1055-CCO A1A6A1A1R5		AR
54	RN55C1782F	3	RESISTOR,FXD, FILM, 17.8K, 1%, 1/8W (V81349) 7C5-1056-CCO A1A6A1A1R5		AR
54	RN55C1872F	3	RESISTOR,FXD, FILM, 18.7K, 1%, 1/8W (V81349) 7C5-1057-CCO A1A6A1A1R5		AR
54	RN55C1962F	3	RESISTOR,FXD, FILM, 19.6K, 1%, 1/8W (V81349) 7C5-1058-CCC A1A6A1A1R5		AR
54	RN55C2052F	3	RESISTOR,FXD, FILM, 20.5K, 1%, 1/8W (V81349) 7C5-1059-CCO A1A6A1A1R5		AR
54	RN55C2152F	3	RESISTOR,FXD, FILM, 21.5K, 1%, 1/8W (V81349) 7C5-1060-CCC A1A6A1A1R5		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7- 54	RN55C2262F	3	RESISTOR,FXD, FILM, 22.6K, 1%, 1/8W (V81349) 7C5-1061-CCO A1A6A1A1R5		AR
54	RN55C2372F	3	RESISTOR,FXD, FILM, 23.7K, 1%, 1/8W (V81349) 7C5-1062-CCO A1A6A1A1R5		AR
54	RN55C2492F	3	RESISTOR,FXD, FILM, 24.9K, 1%, 1/8W (V81349) 7C5-1063-CCO A1A6A1A1R5		AR
54	RN55C2612F	3	RESISTOR,FXD, FILM, 26.1K, 1%, 1/8W (V81349) 7C5-1064-CCO A1A6A1A1R5		AR
54	RN55C2742F	3	RESISTOR,FXD, FILM, 27.4K, 1%, 1/8W (V81349) 7C5-1065-CCO A1A6A1A1R5		AR
54	RN55C2872F	3	RESISTOR,FXD, FILM, 28.7K, 1%, 1/8W (V81349) 7C5-1066-CCO A1A6A1A1R5		AR
54	RN55C3012F	3	RESISTOR,FXD, FILM, 30.1K, 1%, 1/8W (V81349) 7C5-1067-CCO A1A6A1A1R5		AR
54	RN55C3162F	3	RESISTOR,FXD, FILM, 31.6K, 1%, 1/8W (V81349) 7C5-1068-CCO A1A6A1A1R5		AR
54	RN55C3322F	3	RESISTOR,FXD, FILM, 33.2K, 1%, 1/8W (V81349) 7C5-1069-CCO A1A6A1A1R5		AR
54	RN55C3482F	3	RESISTOR,FXD, FILM, 34.8K, 1%, 1/8W (V81349) 7C5-1070-CCO A1A6A1A1R5		AR
55	51TC43	2	RESISTOR,THRM, 1K, 10%, 2.6MW (V9C634) 714-1138-060 A1A6A1A1R72		1
	635-C859-C01	2	RESISTOR,TEST SELECT (MCM-PROCURABLE ITEM)		1
56	RN55C1213F	3	RESISTOR,FXD, FILM, 121K, 1%, 1/8W (V81349) 7C5-1096-CCO A1A6A1A1R3		AR
56	RN55C1273F	3	RESISTOR,FXD, FILM, 127K, 1%, 1/8W (V81349) 7C5-1097-CCO A1A6A1A1R3		AR
56	RN55C1333F	3	RESISTOR,FXD, FILM, 133K, 1%, 1/8W (V81349) 7C5-1098-CCO A1A6A1A1R3		AR
56	RN55C1403F	3	RESISTOR,FXD, FILM, 140K, 1%, 1/8W (V81349) 7C5-1099-CCO A1A6A1A1R3		AR
56	RN55C1473F	3	RESISTOR,FXD, FILM, 147K, 1%, 1/8W (V81349) 7C5-1100-CCO A1A6A1A1R3		AR
56	RN55C1543F	3	RESISTOR,FXD, FILM, 154K, 1%, 1/8W (V81349) 7C5-1101-CCO A1A6A1A1R3		AR
56	RN55C1623F	3	RESISTOR,FXD, FILM, 162K, 1%, 1/8W (V81349) 7C5-1102-CCO A1A6A1A1R3		AR
56	RN55C1693F	3	RESISTOR,FXD, FILM, 169K, 1%, 1/8W (V81349) 7C5-1103-CCO A1A6A1A1R3		AR
56	RN55C1703F	3	RESISTOR,FXD, FILM, 170K, 1%, 1/8W (V81349) 7C5-1104-CCO A1A6A1A1R3		AR
56	RN55C1873F	3	RESISTOR,FXD, FILM, 187K, 1%, 1/8W (V81349) 7C5-1105-CCO A1A6A1A1R3		AR
56	RN55C1963F	3	RESISTOR,FXD, FILM, 196K, 1%, 1/8W (V81349) 7C5-1106-CCO A1A6A1A1R3		AR
56	RN55C2053F	3	RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-1107-CCO A1A6A1A1R3		AR
56	RN55C2153F	3	RESISTOR,FXD, FILM, 215K, 1%, 1/8W (V81349) 7C5-1108-CCO A1A6A1A1R3		AR
56	RN55C2263F	3	RESISTOR,FXD, FILM, 226K, 1%, 1/8W (V81349) 7C5-1109-CCO A1A6A1A1R3		AR
56	RN55C2373F	3	RESISTOR,FXD, FILM, 237K, 1%, 1/8W (V81349) 7C5-1110-CCO A1A6A1A1R3		AR
56	RN55C2493F	3	RESISTOR,FXD, FILM, 249K, 1%, 1/8W (V81349) 7C5-1111-CCO A1A6A1A1R3		AR
56	RN55C2613F	3	RESISTOR,FXD, FILM, 261K, 1%, 1/8W (V81349) 7C5-1112-CCO A1A6A1A1R3		AR
56	RN55C2743F	3	RESISTOR,FXD, FILM, 274K, 1%, 1/8W (V81349) 7C5-1113-CCO A1A6A1A1R3		AR
56	RN55C2873F	3	RESISTOR,FXD, FILM, 287K, 1%, 1/8W (V81349) 7C5-1114-CCO A1A6A1A1R3		AR
56	RN55C3013F	3	RESISTOR,FXD, FILM, 301K, 1%, 1/8W (V81349) 7C5-1115-CCO A1A6A1A1R3		AR
57	51TC49	2	RESISTOR,THRM, 100K, 10%, 4MW (V9C634) 714-1138-010 A1A6A1A1R71		1
	635-C858-C01	2	RESISTOR,TEST SELECT (MCM-PROCURABLE ITEM)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7- 58	RN55C75CCF	3	RESISTOR,FXD, FILM, 750 OHMS, 1%, 1/8W (V81349) 7C5-0990-CCO A1A6A1A1R2		AR
58	RN55C787CF	3	RESISTOR,FXD, FILM, 787 OHMS, 1%, 1/8W (V81349) 7C5-0991-CCC A1A6A1A1R2		AR
58	RN55C825CF	3	RESISTOR,FXD, FILM, 825 OHMS, 1%, 1/8W (V81349) 7C5-0992-CCO A1A6A1A1R2		AR
58	RN55C866CF	3	RESISTOR,FXD, FILM, 866 OHMS, 1%, 1/8W (V81349) 7C5-0993-CCC A1A6A1A1R2		AR
58	RN55C909CF	3	RESISTOR,FXD, FILM, 909 OHMS, 1%, 1/8W (V81349) 7C5-0994-CCO A1A6A1A1R2		AR
58	RN55C953CF	3	RESISTOR,FXD, FILM, 953 OHMS, 1%, 1/8W (V81349) 7C5-0995-CCO A1A6A1A1R2		AR
58	RN55C10C1F	3	RESISTOR,FXD, FILM, 1K, 1%, 1/8W (V81349) 7C5-0996-CCO A1A6A1A1R2		AR
58	RN55C1051F	3	RESISTOR,FXD, FILM, 1.05K, 1%, 1/8W (V81349) 7C5-0997-CCC A1A6A1A1R2		AR
58	RN55C11C1F	3	RESISTOR,FXD, FILM, 1.1K, 1%, 1/8W (V81349) 7C5-0998-CCO A1A6A1A1R2		AR
58	RN55C1151F	3	RESISTOR,FXD, FILM, 1.15K, 1%, 1/8W (V81349) 7C5-0999-CCO A1A6A1A1R2		AR
58	RN55C1211F	3	RESISTOR,FXD, FILM, 1.21K, 1%, 1/8W (V81349) 7C5-1000-CCO A1A6A1A1R2		AR
58	RN55C1271F	3	RESISTOR,FXD, FILM, 1.27K, 1%, 1/8W (V81349) 7C5-1001-CCO A1A6A1A1R2		AR
58	RN55C1331F	3	RESISTOR,FXD, FILM, 1.33K, 1%, 1/8W (V81349) 7C5-1002-CCO A1A6A1A1R2		AR
58	RN55C14C1F	3	RESISTOR,FXD, FILM, 1.40K, 1%, 1/8W (V81349) 7C5-1003-CCO A1A6A1A1R2		AR
58	RN55C1471F	3	RESISTOR,FXD, FILM, 1.47K, 1%, 1/8W (V81349) 7C5-1004-CCC A1A6A1A1R2		AR
58	RN55C1541F	3	RESISTOR,FXD, FILM, 1.54K, 1%, 1/8W (V81349) 7C5-1005-CCO A1A6A1A1R2		AR
58	RN55C1621F	3	RESISTOR,FXD, FILM, 1.62K, 1%, 1/8W (V81349) 7C5-1006-CCC A1A6A1A1R2		AR
58	RN55C1691F	3	RESISTOR,FXD, FILM, 1.69K, 1%, 1/8W (V81349) 7C5-1007-CCO A1A6A1A1R2		AR
58	RN55C1781F	3	RESISTOR,FXD, FILM, 1.78K, 1%, 1/8W (V81349) 7C5-1008-CCC A1A6A1A1R2		AR
58	RN55C1871F	3	RESISTOR,FXD, FILM, 1.87K, 1%, 1/8W (V81349) 7C5-1009-CCO A1A6A1A1R2		AR
58	RN55C1961F	3	RESISTOR,FXD, FILM, 1.96K, 1%, 1/8W (V81349) 7C5-1010-CCC A1A6A1A1R2		AR
58	RN55C2051F	3	RESISTOR,FXD, FILM, 2.05K, 1%, 1/8W (V81349) 7C5-1011-CCO A1A6A1A1R2		AR
58	RN55C2151F	3	RESISTOR,FXD, FILM, 2.15K, 1%, 1/8W (V81349) 7C5-1012-CCC A1A6A1A1R2		AR
58	RN55C2261F	3	RESISTOR,FXD, FILM, 2.26K, 1%, 1/8W (V81349) 7C5-1013-CCO A1A6A1A1R2		AR
58	RN55C2371F	3	RESISTOR,FXD, FILM, 2.37K, 1%, 1/8W (V81349) 7C5-1014-CCC A1A6A1A1R2		AR
59	289-7148-C10G1	2	XTAL UNIT,QTZ, 10MHZ (V00136) 289-7148-010 A1A6A1A1Y1 (EFF TO REV LTR M)		1
59	289-7148-C2CG1	2	XTAL UNIT,QTZ (V00136) 289-7148-020 A1A6A1A1Y1 (EFF REV LTR M)		1
60	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIE1, 0.01UF, 10%, 100V (V81349) 913-5019-2CC A1A6A1A1C5		1
	635-C857-CC1	2	RESISTOR,TEST SELECT (NCN-PRCCURAELE ITEM)		1
61	RN55C10C2F	3	RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A1A6A1A1R1		AR
61	RN55C1052F	3	RESISTOR,FXD, FILM, 10.5K, 1%, 1/8W (V81349) 7C5-1045-CCC A1A6A1A1R1		AR
61	RN55C11C2F	3	RESISTOR,FXD, FILM, 11K, 1%, 1/8W (V81349) 7C5-1046-CCO A1A6A1A1R1		AR
61	RN55C1152F	3	RESISTOR,FXD, FILM, 11.5K, 1%, 1/8W (V81349) 7C5-1047-CCC A1A6A1A1R1		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7-	61 RN55C1212F	3	RESISTOR,FXD, FILM, 12.1K, 1%, 1/8W (V81349)		AR
	61 RN55C1272F	3	7C5-1048-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 12.7K, 1%, 1/8W (V81349)		AR
	61 RN55C1332F	3	7C5-1049-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 13.3K, 1%, 1/8W (V81349)		AR
	61 RN55C1402F	3	7C5-1050-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 14K, 1%, 1/8W (V81349)		AR
	61 RN55C1472F	3	7C5-1051-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 14.7K, 1%, 1/8W (V81349)		AR
	61 RN55C1542F	3	7C5-1052-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 15.4K, 1%, 1/8W (V81349)		AR
	61 RN55C1622F	3	7C5-1053-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 16.2K, 1%, 1/8W (V81349)		AR
	61 RN55C1692F	3	7C5-1054-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 16.9K, 1%, 1/8W (V81349)		AR
	61 RN55C1782F	3	7C5-1055-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 17.8K, 1%, 1/8W (V81349)		AR
	61 RN55C1872F	3	7C5-1056-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 18.7K, 1%, 1/8W (V81349)		AR
	61 RN55C1962F	3	7C5-1057-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 19.6K, 1%, 1/8W (V81349)		AR
	61 RN55C2052F	3	7C5-1058-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 20.5K, 1%, 1/8W (V81349)		AR
	61 RN55C2152F	3	7C5-1059-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 21.5K, 1%, 1/8W (V81349)		AR
	61 RN55C2262F	3	7C5-1060-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 22.6K, 1%, 1/8W (V81349)		AR
	61 RN55C2372F	3	7C5-1061-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 23.7K, 1%, 1/8W (V81349)		AR
	61 RN55C2492F	3	7C5-1062-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 24.9K, 1%, 1/8W (V81349)		AR
	61 RN55C2612F	3	7C5-1063-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 26.1K, 1%, 1/8W (V81349)		AR
	61 RN55C2742F	3	7C5-1064-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 27.4K, 1%, 1/8W (V81349)		AR
	61 RN55C2872F	3	7C5-1065-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 28.7K, 1%, 1/8W (V81349)		AR
	61 RN55C3012F	3	7C5-1066-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 30.1K, 1%, 1/8W (V81349)		AR
	61 RN55C3162F	3	7C5-1067-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 31.6K, 1%, 1/8W (V81349)		AR
	61 RN55C3322F	3	7C5-1068-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 33.2K, 1%, 1/8W (V81349)		AR
	61 RN55C3482F	3	7C5-1069-CCO A1A6A1A1R1 RESISTOR,FXD, FILM, 34.8K, 1%, 1/8W (V81349)		AR
	62 1N41C4	2	7C5-1070-CCO A1A6A1A1R1 SEMICOND DEVICE (VU4713) 353-3591-C60		1
	63 RCRC5G222KS	2	A1A6A1A1V1R1 RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/8W (V81349)		1
	64 CKC5E1C3K	2	745-2353-CCO A1A6A1A1R8 CAPACITOR,FXD, CER DIEL, C.01UF, 10%, 100V		1
	65 RCRC5G243JS	2	(V81349) 913-5019-200 A1A6A1A1C22 RESISTOR,FXD, CMPSN, 24K, 5%, 1/8W (V81349)		1
	66 623-3E43-CC2	2	745-1863-820 A1A6A1A1R27 TRANSFORMER A1A6A1A1T3 (EFF TC REV LTR M)		1
	66A 623-3E48-CC3	2	CC1L A1A6A1A1L8 (EFF REV LTR M)		1
	67 DM5F181JC50WV	2	7C5-1070-CCO A1A6A1A1R1 CAPACITOR,FXD, MICA DIEL, 180PF, 5%, 50V		1
	67 DM5F101JC50WV	2	(V72136) 912-4141-430 A1A6A1A1C29 (EFF TC REV LTR M) CAPACITOR,FXD, MICA DIEL, 100PF, 5%, 50V		1
	68 2N918	2	(V72136) 912-4141-C50 A1A6A1A1C29 (EFF REV LTR M) TRANSISTOR (V07910) 352-0440-000 A1A6A1A1Q6		1
	63E-0671-CC1	2	CAPACITOR,TEST SELECT (NCN-PROCURABLE ITEM)		1
	69 DM5CC50C30CWV	3	CAPACITOR,FXD, MICA DIEL, 5PF, PORM 0.5PF, 300V		AR
			(V72136) 912-4141-C10 A1A6A1A1C10		

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7-	69	DM5C1CCD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 10PF, PORM 0.5PF, 300V (V72136) 912-4141-C2C A1A6A1A1C10		AR
	69	DM5CC1CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 1PF, PORM 0.5PF, 300V (V72136) 912-4141-C60 A1A6A1A1C10		AR
	69	DM5CC3CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 3PF, PORM 0.5PF, 300V (V72136) 912-4141-C70 A1A6A1A1C10		AR
	69	DM5CC4CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 4PF, PORM 0.5PF, 300V (V72136) 912-4141-080 A1A6A1A1C10		AR
	69	DM5CC6CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 6PF, PORM 0.5PF, 300V (V72136) 912-4141-C9C A1A6A1A1C10		AR
	69	DM5CC7CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 7PF, PORM 0.5PF, 300V (V72136) 912-4141-100 A1A6A1A1C10		AR
	69	DM5CC8CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 8PF, PORM 0.5PF, 300V (V72136) 912-4141-110 A1A6A1A1C10		AR
	69	DM5C12CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 12PF, PORM 0.5PF, 300V (V72136) 912-4141-120 A1A6A1A1C10		AR
	69	DM5C15CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 15PF, PORM 0.5PF, 300V (V72136) 912-4141-130 A1A6A1A1C10		AR
	69	DM5CC5CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 9PF, PORM 0.5PF, 300V (V72136) 912-4141-530 A1A6A1A1C10		AR
	69	DM5CC20CD3CCWV	3 CAPACITOR,FXD, MICA DIEI, 2PF, PORM 0.5PF, 300V (V72136) 912-4141-540 A1A6A1A1C10		AR
	70	2K918	2 TRANSISTOR (V07910) 352-C440-CCO A1A6A1A1C7		1
	71	8121-1CCCCG471K	2 CAPACITOR,FXD, CER DIEI, 470PF, 10%, 100V (V18796) 913-3281-C50 A1A6A1A1C30		1
	72	RCRC5G1C2KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCC A1A6A1A1R26		1
	73	8121-1CCCCG471K	2 CAPACITOR,FXD, CER DIEI, 470PF, 10%, 100V (V18796) 913-3281-C50 A1A6A1A1C31		1
	74	RCRC5G362JS	2 RESISTOR,FXD, CMPSN, 3.6K, 5%, 1/8W (V81349) 745-1863-620 A1A6A1A1R28		1
	75	DM5C1CCD3CCWV	2 CAPACITOR,FXD, MICA DIEI, 10PF, PORM 0.5PF, 300V (V72136) 912-4141-C2C A1A6A1A1C49		1
	76	RCRC5G113JS	2 RESISTOR,FXD, CMPSN, 11K, 5%, 1/8W (V81349) 745-1863-740 A1A6A1A1R29		1
	77	DM5C1CCD3CCWV	2 CAPACITOR,FXD, MICA DIEI, 10PF, PORM 0.5PF, 300V (V72136) 912-4141-C2C A1A6A1A1C33		1
	78	MS75C83-13	2 COIL,RF, 1UH (V96906) 240-2023-CCO A1A6A1A1L6		1
	79	1N5711	2 SEMICOND DEVICE (V28480) 353-3691-010 A1A6A1A1CR10		1
	80	CCR13CG4R7C	2 CAPACITOR,FXD, CER DIEI, 4.7PF, 0.25PF, 75V (V81349) 913-1098-210 A1A6A1A1C38		1
	81	CCR13CG1CCK	2 CAPACITOR,FXD, CER DIEI, 10PF, 10%, 75V (V81349) 913-1098-060 A1A6A1A1C39		1
	82	RCRC5G1C3KS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349) 745-2377-CCC A1A6A1A1R35		1
	83	FN19C5	2 TRANSISTOR (V17856) 352-0756-050 A1A6A1A109		1
	84	MS75C84-C2	2 COIL,RF, 1.50UH (V96906) 240-2025-CCO A1A6A1A1L7		1
	85	8121-1CCCCG471K	2 CAPACITOR,FXD, CER DIEI, 470PF, 10%, 100V (V18796) 913-3281-C50 A1A6A1A1C36		1
	86	8121-1CCCCG471K	2 CAPACITOR,FXD, CER DIEI, 470PF, 10%, 100V (V18796) 913-3281-C50 A1A6A1A1C37		1
	86A	81C1B212CCKC-1C9 C	2 CAPACITOR,FXD, CER DIEI, 1PF, 0.25PF, 150V (V72982) 913-1098-330 A1A6A1A1C50 (EFF REV LTR K)		1
	87	8121-1CCCCG471K	2 CAPACITOR,FXD, CER DIEI, 470PF, 10%, 100V (V18796) 913-3281-C50 A1A6A1A1C34		1
	88	623-3648-CC1	2 COIL A1A6A1A1L4		1
	89	RN55C2482F	2 RESISTOR,FXD, FILM, 34.8K, 1%, 1/8W (V81349) 7C5-1C7C-CCO A1A6A1A1R32		1
		625-C643-CC1	2 RESISTOR,TEST SELECT (ACN-PRCCURABLE ITEM)		1
	90	RN55C8661F	3 RESISTOR,FXD, FILM, 8.66K, 1%, 1/8W (V81349) 7C5-1C41-CCO A1A6A1A1R34		AR
	90	RN55C1CC2F	3 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1C44-CCC A1A6A1A1R34		AR

GROUP ASSEMBLY PARTS LIST

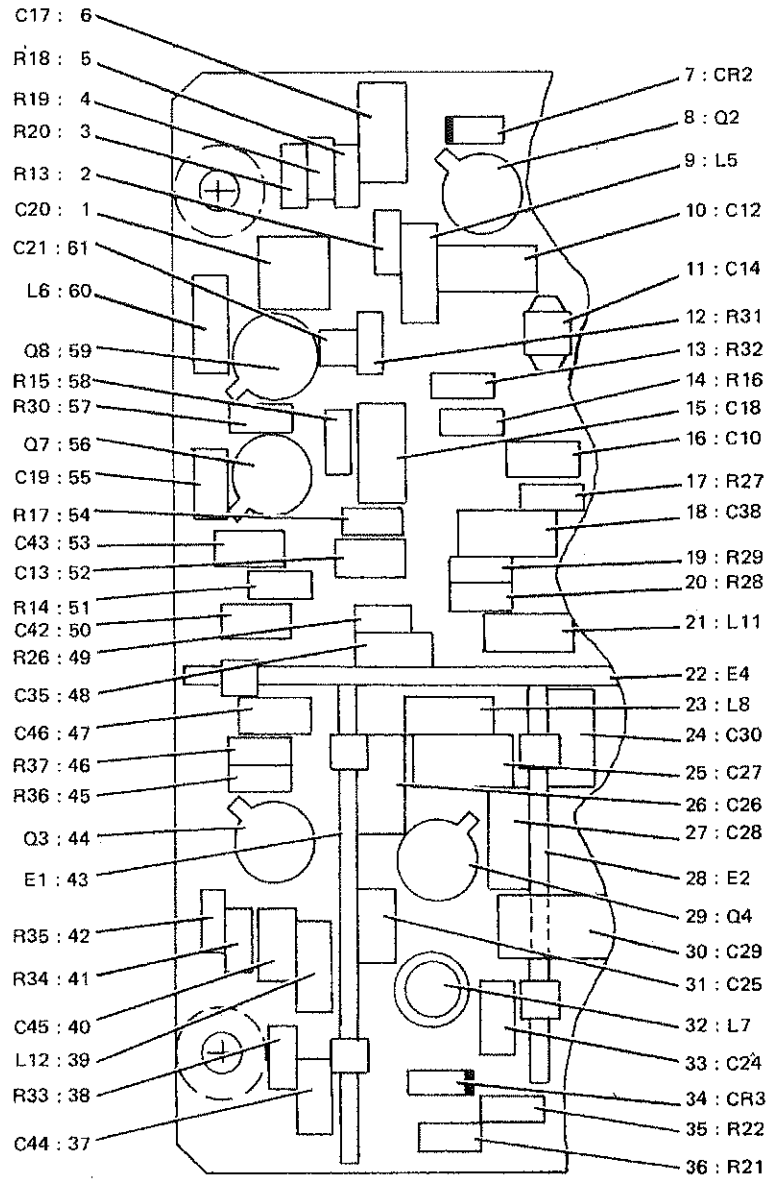
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7-	90 RN55C1152F	3	RESISTOR,FXD, FILM, 11.5K, 1%, 1/8W (V81349) 7C5-1C47-CCO A1A6A1A1R34		AR
	90 RN55C1272F	3	RESISTOR,FXD, FILM, 12.7K, 1%, 1/8W (V81349) 7C5-1C49-CCC A1A6A1A1R34		AR
	90 RN55C14C2F	3	RESISTOR,FXD, FILM, 14K, 1%, 1/8W (V81349) 7C5-1C51-CCC A1A6A1A1R34		AR
	90 RN55C1542F	3	RESISTOR,FXD, FILM, 15.4K, 1%, 1/8W (V81349) 7C5-1C53-CCO A1A6A1A1R34		AR
	90 RN55C1692F	3	RESISTOR,FXD, FILM, 16.9K, 1%, 1/8W (V81349) 7C5-1C55-CCO A1A6A1A1R34		AR
	90 RN55C1782F	3	RESISTOR,FXD, FILM, 17.8K, 1%, 1/8W (V81349) 7C5-1C56-CCC A1A6A1A1R34		AR
	90 RN55C1872F	3	RESISTOR,FXD, FILM, 18.7K, 1%, 1/8W (V81349) 7C5-1C57-CCO A1A6A1A1R34		AR
	90 RN55C1962F	3	RESISTOR,FXD, FILM, 19.6K, 1%, 1/8W (V81349) 7C5-1C58-CCC A1A6A1A1R34		AR
	90 RN55C2C52F	3	RESISTOR,FXD, FILM, 20.5K, 1%, 1/8W (V81349) 7C5-1C59-CCO A1A6A1A1R34		AR
	90 RN55C2372F	3	RESISTOR,FXD, FILM, 23.7K, 1%, 1/8W (V81349) 7C5-1C62-CCC A1A6A1A1R34		AR
	90 RN55C2492F	3	RESISTOR,FXD, FILM, 24.9K, 1%, 1/8W (V81349) 7C5-1C63-CCO A1A6A1A1R34		AR
	90 RN55C2612F	3	RESISTOR,FXD, FILM, 26.1K, 1%, 1/8W (V81349) 7C5-1C64-CCC A1A6A1A1R34		AR
	90 RN55C2742F	3	RESISTOR,FXD, FILM, 27.4K, 1%, 1/8W (V81349) 7C5-1C65-CCO A1A6A1A1R34		AR
	90 RN55C2872F	3	RESISTOR,FXD, FILM, 28.7K, 1%, 1/8W (V81349) 7C5-1C66-CCO A1A6A1A1R34		AR
	90 RN55C3012F	3	RESISTOR,FXD, FILM, 30.1K, 1%, 1/8W (V81349) 7C5-1C67-CCO A1A6A1A1R34		AR
	90 RN55C3162F	3	RESISTOR,FXD, FILM, 31.6K, 1%, 1/8W (V81349) 7C5-1C68-CCO A1A6A1A1R34		AR
	90 RN55C3322F	3	RESISTOR,FXD, FILM, 33.2K, 1%, 1/8W (V81349) 7C5-1C69-CCC A1A6A1A1R34		AR
	90 RN55C3482F	3	RESISTOR,FXD, FILM, 34.8K, 1%, 1/8W (V81349) 7C5-1C7C-CCO A1A6A1A1R34		AR
	91 CM5F181JC5CW	2	CAPACITOR,FXD, MICA DIEI, 180PF, 5%, 50V (V72136) 912-4141-430 A1A6A1A1C41		1
	92 8121-1CCCOG471K	2	CAPACITOR,FXD, CER DIEI, 470PF, 10%, 100V (V18796) 913-3281-C50 A1A6A1A1C42		1
	93 RCRC5G183KS	2	RESISTOR,FXD, CMPSN, 18K, 10%, 1/8W (V81349) 745-2386-CCO A1A6A1A1R37 (EFF TC REV LTR L)		1
	93 RCRC5G223KS	2	RESISTOR,FXD, CMPSN, 22K, 10%, 1/8W (V81349) 745-2389-CCO A1A6A1A1R37 (EFF REV LTR L)		1
	94 RCRC5G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/8W (V81349) 745-2371-CCO A1A6A1A1R38 (EFF TC REV LTR L)		1
	94 RCRC5G183KS	2	RESISTOR,FXD, CMPSN, 18K, 10%, 1/8W (V81349) 745-2386-CCO A1A6A1A1R38 (EFF REV LTR L)		1
	95 2A918	2	TRANSISTOR (V0791C) 352-C440-CCO A1A6A1A1G10		1
	96 1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A6A1A1CR9		1
	97 RCRC5G681KS	2	RESISTOR,FXD, CMPSN, 680 OHMS, 10%, 1/8W (V81349) 745-2335-CCO A1A6A1A1R24 (EFF TO REV LTR M)		1
	635-C856-G01	2	RESISTOR, TEST SELECT (NCN PROCURABLE ITEM) (EFF REV LTR M)		1
	97 RCRC5G821KS	3	RESISTOR,FXD, CMPSN, 820 OHMS, 10%, 1/8W (V81349) 745-2338-CCO A1A6A1A1R24		AR
	97 RCRC5G1C2KS	3	RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCO A1A6A1A1R24		AR
	97 RCRC5G122KS	3	RESISTOR,FXD, CMPSN, 1.2K, 10%, 1/8W (V81349) 745-2344-CCO A1A6A1A1R24		AR
	97 RCRC5G152KS	3	RESISTOR,FXD, CMPSN, 1.5K, 10%, 1/8W (V81349) 745-2347-CCO A1A6A1A1R24		AR
	97 RCRC5G182KS	3	RESISTOR,FXD, CMPSN, 1.8K, 10%, 1/8W (V81349) 745-235C-CCO A1A6A1A1R24		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7- 98	DM5F181JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 180PF, 5%, 50V (V72136) 912-4141-430 A1A6A1A1C44		1
99	623-3834-CC2	2	TRANSFORMER A1A6A1A1T2		1
	635-C852-CC1	2	CAPACITOR,TEST SELECT (ACN-PRCCURABLE ITEM)		1
100	DM5E22CC3CCWV	3	CAPACITOR,FXD, MICA DIEI, 22PF, FORM 0.5PF, 300V (V72136) 912-4141-C30 A1A6A1A1C45		AR
100	DM5C12CC3CCWV	3	CAPACITOR,FXD, MICA DIEI, 12PF, FORM 0.5PF, 300V (V72136) 912-4141-120 A1A6A1A1C45		AR
100	DM5C15CC3CCWV	3	CAPACITOR,FXD, MICA DIEI, 15PF, FORM 0.5PF, 300V (V72136) 912-4141-130 A1A6A1A1C45		AR
100	DM5C18CC1CCWV	3	CAPACITOR,FXD, MICA DIEI, 18PF, FORM 0.5PF, 100V (V72136) 912-4141-140 A1A6A1A1C45		AR
100	DM5E2CC01CCWV	3	CAPACITOR,FXD, MICA DIEI, 20PF, FORM 0.5PF, 100V (V72136) 912-4141-150 A1A6A1A1C45 (EFF TO REV LTR B)		AR
100	DM5E24CC05CWV	3	CAPACITOR,FXD, MICA DIEI, 24PF, FORM 0.5PF, 50V (V72136) 912-4141-160 A1A6A1A1C45		AR
100	DM5E27CJC5CWV	3	CAPACITOR,FXD, MICA DIEI, 27PF, 5%, 50V (V72136) 912-4141-180 A1A6A1A1C45 (EFF TO REV LTR B)		AR
100	DM5E3CCJC5CWV	3	CAPACITOR,FXD, MICA DIEI, 30PF, 5%, 50V (V72136) 912-4141-200 A1A6A1A1C45 (EFF TO REV LTR B)		AR
100	DM5E33CJC5CWV	3	CAPACITOR,FXD, MICA DIEI, 33PF, 5%, 50V (V72136) 912-4141-220 A1A6A1A1C45 (EFF TO REV LTR B)		AR
100	DM5E36CJC5CWV	3	CAPACITOR,FXD, MICA DIEI, 36PF, 5%, 50V (V72136) 912-4141-240 A1A6A1A1C45 (EFF TO REV LTR B)		AR
	635-C853-CC1	2	CAPACITOR,TEST SELECT (ACN PRCCURABLE ITEM)(EFF TO REV LTR M)		1
101	DM5E22CC3CCWV	3	CAPACITOR,FXD, MICA DIEI, 22PF, FORM 0.5PF, 300V (V72136) 912-4141-C30 A1A6A1A1C46 (EFF TO REV LTR M)		AR
101	DM5C15CC3CCWV	3	CAPACITOR,FXD, MICA DIEI, 15PF, FORM 0.5PF, 300V (V72136) 912-4141-130 A1A6A1A1C46 (EFF TO REV LTR M)		AR
101	DM5C18CC1CCWV	3	CAPACITOR,FXD, MICA DIEI, 18PF, FORM 0.5PF, 100V (V72136) 912-4141-140 A1A6A1A1C46 (EFF TO REV LTR M)		AR
101	DM5E2CC01CCWV	3	CAPACITOR,FXD, MICA DIEI, 20PF, FORM 0.5PF, 100V (V72136) 912-4141-150 A1A6A1A1C46 (EFF TO REV LTR M)		AR
101	DM5E24CC05CWV	3	CAPACITOR,FXD, MICA DIEI, 24PF, FORM 0.5PF, 50V (V72136) 912-4141-160 A1A6A1A1C46 (EFF TO REV LTR M)		AR
101	DM5E27CJC5CWV	3	CAPACITOR,FXD, MICA DIEI, 27PF, 5%, 50V (V72136) 912-4141-180 A1A6A1A1C46 (EFF TO REV LTR M)		AR
101	DM5E3CCJC5CWV	3	CAPACITOR,FXD, MICA DIEI, 30PF, 5%, 50V (V72136) 912-4141-200 A1A6A1A1C46 (EFF TO REV LTR M)		AR
101	DM5E33CJC5CWV	3	CAPACITOR,FXD, MICA DIEI, 33PF, 5%, 50V (V72136) 912-4141-220 A1A6A1A1C46 (EFF TO REV LTR M)		AR
101	DM5E36CJC5CWV	3	CAPACITOR,FXD, MICA DIEI, 36PF, 5%, 50V (V72136) 912-4141-240 A1A6A1A1C46 (EFF TO REV LTR M)		AR
101	DM5E43CJC5CWV	3	CAPACITOR,FXD, MICA DIEI, 43PF, 5%, 50V (V72136) 912-4141-260 A1A6A1A1C46 (EFF TO REV LTR M)		AR
102	VS75C83-C5	2	COIL,RF, 0.22UH (V96906) 240-2015-000 A1A6A1A1L3		1
103	RCRC5G47CK5	2	RESISTOR,FXD, CMPSN, 47 CM5, 10%, 1/8W (V81349) 745-2292-000 A1A6A1A1R13		1
104	RCRC5C563KS	2	RESISTOR,FXD, CMPSN, 56K, 10%, 1/8W (V81349) 745-2404-000 A1A6A1A1R12		1
105	CY1CC1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 50V (V16546) 913-3279-C30 A1A6A1A1C43		1
106	RN5E6152F	2	RESISTOR,FXD, FILM, 61.9K, 1%, 1/8W (V81349) 7C5-1C82-000 A1A6A1A1R33		1
107	CY1CC1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 50V (V16546) 913-3279-C30 A1A6A1A1C47		1
108	CKC5RX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A1C19		1
109	CY1CC1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 50V (V16546) 913-3279-C30 A1A6A1A1C20		1

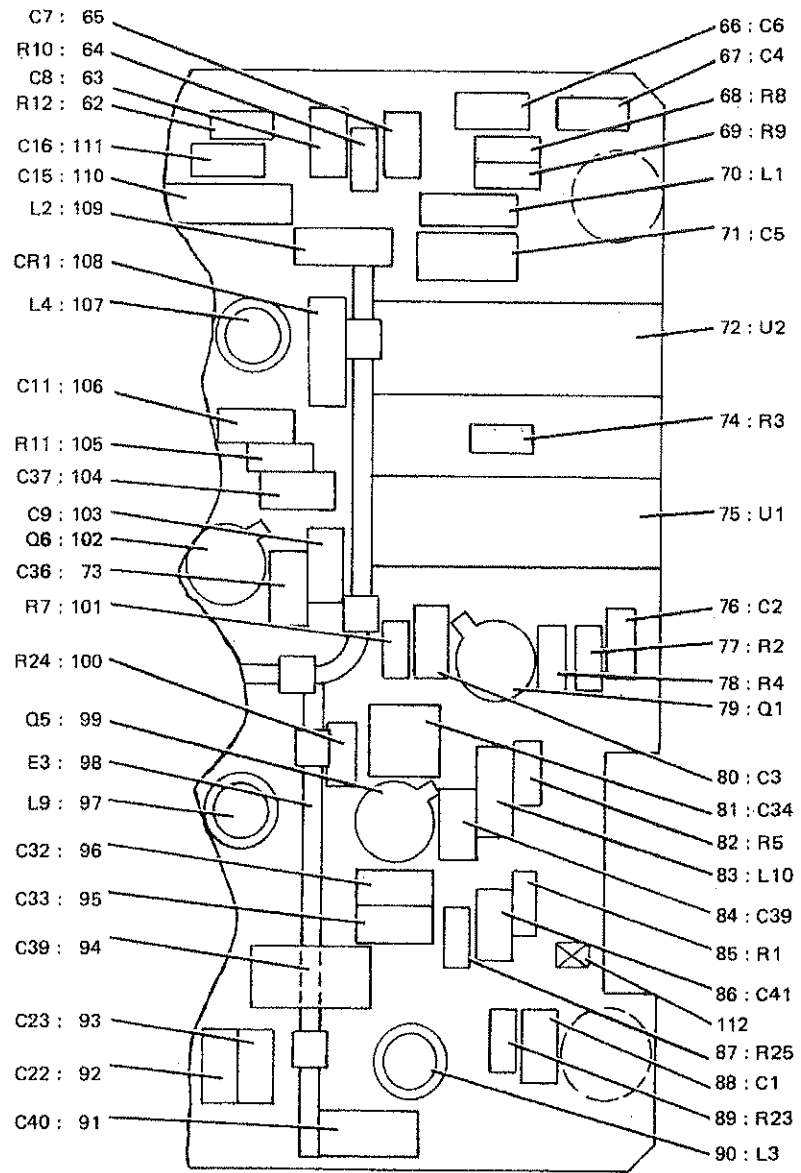
GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-7- 110	2N2222A	2	TRANSISTOR (V072631) 352-0661-020 A1A6A1A1Q8		1
111	RCRC5G563KS	2	RESISTOR,FXD, CMPSN, 56K, 10%, 1/8W (V81349) 745-2404-000 A1A6A1A1R30		1
112	MVIC9	2	SEMICONV DEVICE (VC4713) 922-6124-020 A1A6A1A1CR1		1
113	MS75C85-C7	2	COIL,RF, ICCUH (V96906) 240-2047-000 A1A6A1A1L5		1
114	RCRC5G122KS	2	RESISTOR,FXD, CMPSN, 1.2K, 10%, 1/8W (V81349) 745-2344-000 A1A6A1A1R31		1
115	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, ICCV (V81349) 913-5C19-200 A1A6A1A1C9		1
116	BMEF1C1JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A1A1C35		1
117	CY1CC1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 50V (V16546) 913-3279-C30 A1A6A1A1C40		1
118	RCRC5G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/8W (V81349) 745-2329-000 A1A6A1A1R14		1
119	CY1CC1C2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 50V (V16546) 913-3279-C30 A1A6A1A1C32		1
120	RCRC5G47CKS	2	RESISTOR,FXD, CMPSN, 47 OHMS, 10%, 1/8W (V81349) 745-2292-000 A1A6A1A1R15		1
	635-C856-001	2	RESISTOR, TEST SELECT (ACN-PRCCURABLE ITEM) (EFF TO REV LTR M)		1
121	RCRC5G33CKS	3	RESISTOR,FXD, CMPSN, 33 OHMS, 10%, 1/8W (V81349) 745-2286-000 A1A6A1A1R36 (EFF TC REV LTR M)		AR
121	RCRC5G39CKS	3	RESISTOR,FXD, CMPSN, 39 OHMS, 10%, 1/8W (V81349) 745-2289-000 A1A6A1A1R36 (EFF TC REV LTR M)		AR
121	RCRC5G47CKS	3	RESISTOR,FXD, CMPSN, 47 OHMS, 10%, 1/8W (V81349) 745-2292-000 A1A6A1A1R36 (EFF TC REV LTR M)		AR
121	RCRC5G56CKS	3	RESISTOR,FXD, CMPSN, 56 OHMS, 10%, 1/8W (V81349) 745-2295-000 A1A6A1A1R36 (EFF TC REV LTR M)		AR
121	RCRC5G68CKS	3	RESISTOR,FXD, CMPSN, 68 OHMS, 10%, 1/8W (V81349) 745-2298-000 A1A6A1A1R36 (EFF TC REV LTR M)		AR
121	RCRC5G82CKS	3	RESISTOR,FXD, CMPSN, 82 OHMS, 10%, 1/8W (V81349) 745-2301-000 A1A6A1A1R36 (EFF TC REV LTR M)		AR
121	RCRC5G1C1KS	3	RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/8W (V81349) 745-2304-000 A1A6A1A1R36 (EFF TO REV LTR M)		AR
121	RCRC5G39CKS	2	RESISTOR,FXD, CMPSN, 39 OHMS, 10%, 1/8W (V81349) 745-2289-000 A1A6A1A1R36 (EFF REV LTR M)		1
122	RCRC5G121KS	2	RESISTOR,FXD, CMPSN, 120 OHMS, 10%, 1/8W (V81349) 745-2308-000 A1A6A1A1R39		
123	57-C180	2	SUPPRESSOR,PARA (V78488) 288-2154-000		4
124	623-3844-CC1	2	SHIELD A1A6A1A1E1		1
125	623-3844-C01	2	SHIELD A1A6A1A1E2		1
126	623-3845-CC1	2	SHIELD A1A6A1A1E3		1
127	372-2601-C27	2	CONTACT,ELEC 372-2601-C27		12
128	SL441-4346HT	2	TERMINAL,STDF (V12615) 306-2222-100		18



TP4-9865-029

Figure 3-8. Frequency Converter A1A6A1A4 (Sheet 1 of 2)



TP4-9685-029

Figure 3-8. Frequency Converter A1A6A1A4 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-8 -	6C1-3876-C01	1	FREQUENCY CONVERTER A1A6A1A4 (SEE FIG 3-6-14 FOR N+A)		REF
1	941C-GPC	2	CAPACITOR,VAR, CER DIEI, 1 TC 4.5PF, 250V (V91293) 917-0005-C10 A1A6A1A4C20		1
2	RCRC5G56CK5	2	RESISTOR,FXD, CMPSN, 56 OHMS, 10%, 1/8W (V81349) 745-2295-C00 A1A6A1A4R13		1
3	RCRC5G75CJS	2	RESISTOR,FXD, CMPSN, 75 OHMS, 5%, 1/8W (V81349) 745-1863-220 A1A6A1A4R20		1
4	RCRC5G121JS	2	RESISTOR,FXD, CMPSN, 120 OHMS, 5%, 1/8W (V81349) 745-1863-270 A1A6A1A4R19		1
5	RCRC5G75CJS	2	RESISTOR,FXD, CMPSN, 75 OHMS, 5%, 1/8W (V81349) 745-1863-220 A1A6A1A4R18		1
6	DM5C1CC03CCWV	2	CAPACITOR,FXD, MICA DIEI, 10PF, PORM 0.5PF, 300V (V72136) 912-4141-C20 A1A6A1A4C17		1
7	1N5711	2	SEMICOND DEVICE (V28480) 353-3691-C10 A1A6A1A4CR2		1
8	FN19C5	2	TRANSISTOR (V17856) 352-C756-050 A1A6A1A4Q2		1
9	MS75C83-13	2	CCIL,RF, 1UH (V96906) 240-2023-C00 A1A6A1A4L5		1
10	DM5CC5CC3CCWV	2	CAPACITOR,FXD, MICA DIEI, 5PF, PORM 0.5PF, 300V (V72136) 912-4141-C10 A1A6A1A4C12		1
11	4C0-32-24	2	CAPACITOR,FXD, CER DIEI, 5PF, 10%, 100V (V93958) 913-3112-240 A1A6A1A4C14		1
12	RCRC5G151KS	2	RESISTOR,FXD, CMPSN, 150 OHMS, 10%, 1/8W (V81349) 745-2311-C00 A1A6A1A4R31		1
13	RCRC5G68CK5	2	RESISTOR,FXD, CMPSN, 68 OHMS, 10%, 1/8W (V81349) 745-2298-C00 A1A6A1A4R32		1
14	RCRC5G113JS	2	RESISTOR,FXD, CMPSN, 11K, 5%, 1/8W (V81349) 745-1863-740 A1A6A1A4R16		1
15	DM5F1G1JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-050 A1A6A1A4C18		1
16	CK05BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C10		1
17	RCRC5G271KS	2	RESISTOR,FXD, CMPSN, 270 OHMS, 10%, 1/8W (V81349) 745-2320-C00 A1A6A1A4R27		1
18	DM5CC3CC3CCWV	2	CAPACITOR,FXD, MICA DIEI, 3PF, PORM 0.5PF, 300V (V72136) 912-4141-C70 A1A6A1A4C38		1
19	RCRC5G562KS	2	RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/8W (V81349) 745-2368-C00 A1A6A1A4R29		1
20	RCRC5G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/8W (V81349) 745-2383-C00 A1A6A1A4R28		1
21	MS75C83-C4	2	CCIL,RF, 0.18UH (V96906) 240-2014-C00 A1A6A1A4111		1
22	623-3842-CC1	2	SHIELD A1A6A1A4E4		1
23	MS75C84-C2	2	CCIL,RF, 1.50UH (V96906) 240-2025-C00 A1A6A1A4L8		1
24	DM5C1CC3CCWV	2	CAPACITOR,FXD, MICA DIEI, 10PF, PORM 0.5PF, 300V (V72136) 912-4141-020 A1A6A1A4C30		1
25	DM5F241J05CWV	2	CAPACITOR,FXD, MICA DIEI, 240PF, 5%, 50V (V72136) 912-4141-460 A1A6A1A4C27		1
26	DM5E36CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 36PF, 5%, 50V (V72136) 912-4141-240 A1A6A1A4C26		1
27	DM5C1CC03CCWV	2	CAPACITOR,FXD, MICA DIEI, 10PF, PORM 0.5PF, 300V (V72136) 912-4141-C20 A1A6A1A4C28		1
28	623-3841-CC3	2	SHIELD A1A6A1A4E2		1
29	2N5179	2	TRANSISTOR (V02735) 352-0792-020 A1A6A1A4Q4		1
30	CCC-39ULF5PCT	2	CAPACITOR,FXD, CER DIEI, 0.39PF, 5%, 500V (V95121) 913-2961-C00 A1A6A1A4C29		1
31	CK05BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A4C25		1
32	623-3843-CC1	2	CCIL A1A6A1A4L7		1
33	CK05BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A4C24		1
34	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-C10 A1A6A1A4CR3		1
35	RCRC5G561KS	2	RESISTOR,FXD, CMPSN, 560 OHMS, 10%, 1/8W (V81349) 745-2332-C00 A1A6A1A4R22		1

GROUP ASSEMBLY PARTS LIST

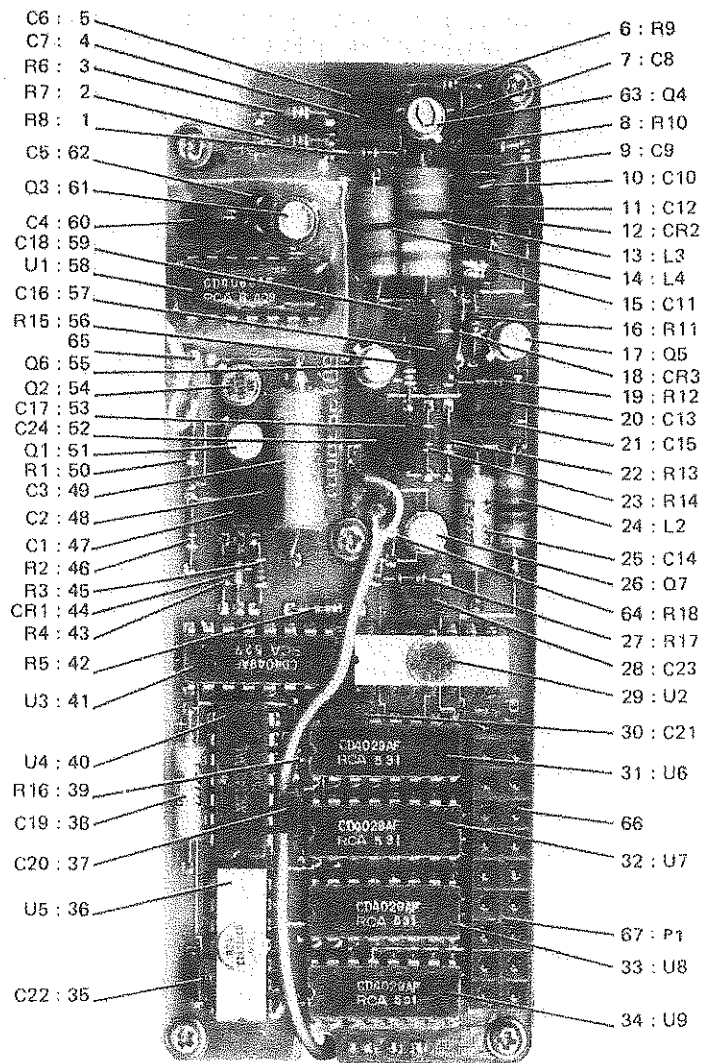
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-8	36		2 RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/8W (V81349)		1
	37		745-2368-000 A1A6A1A4R21		
	37		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A4C44		1
	38		2 RESISTOR,FXD, CMPSN, 47 OHMS, 10%, 1/8W (V81349)		1
	39		745-2292-000 A1A6A1A4R33		
	39		2 COIL,RF, 10UH (V96906) 240-2035-000 A1A6A1A4L12		1
	40		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A4C45		1
	41		2 RESISTOR,FXD, CMPSN, 27K, 10%, 1/8W (V81349)		1
	42		745-2392-000 A1A6A1A4R34		
	42		2 RESISTOR,FXD, CMPSN, 15K, 10%, 1/8W (V81349)		1
	43		745-2383-000 A1A6A1A4R35		
	43		2 SHIELD A1A6A1A4E1		1
	44		2 TRANSISTOR (V81350) 352-7500-130 A1A6A1A4C3		1
	45		2 RESISTOR,FXD, CMPSN, 680 OHMS, 10%, 1/8W (V81349) 745-2335-000 A1A6A1A4R36		1
	46		2 RESISTOR,FXD, CMPSN, 47 OHMS, 10%, 1/8W (V81349)		1
	47		745-2292-000 A1A6A1A4R37		
	47		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A4C46		1
	48		2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A6A1A4C35		1
	49		2 RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/8W (V81349) 745-2304-000 A1A6A1A4R26		1
	50		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C42		1
	51		2 RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/8W (V81349) 745-2304-000 A1A6A1A4R14		1
	52		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A4C13		1
	53		2 CAPACITOR,FXD, CER DIEI, 1000PF, 10%, 200V (V81349) 913-4018-000 A1A6A1A4C43		1
	54		2 RESISTOR,FXD, CMPSN, 2.2K, 5%, 1/8W (V81349)		1
	55		745-1863-570 A1A6A1A4R17		
	55		2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-000 A1A6A1A4C19		1
	56		2 TRANSISTOR (V81350) 352-7500-130 A1A6A1A4C7		1
	57		2 RESISTOR,FXD, CMPSN, 24K, 5%, 1/8W (V81349)		1
	58		745-1863-820 A1A6A1A4R30		
	58		2 RESISTOR,FXD, CMPSN, 3.6K, 5%, 1/8W (V81349)		1
	59		745-1863-620 A1A6A1A4R15		
	59		2 TRANSISTOR (V81350) 352-7500-130 A1A6A1A4C8		1
	60		2 COIL,RF, 0.33UH (V96906) 240-2017-000 A1A6A1A4L6		1
	61		2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%XP80%, 50V (V16546) 913-3279-350 A1A6A1A4C21		1
	62		2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349)		1
	63		745-2377-000 A1A6A1A4R12		
	63		2 CAPACITOR,FXD, CER DIEI, 0.033UF, 10%, 50V (V81349) 913-5019-260 A1A6A1A4C8		1
	64		2 RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/8W (V81349) 745-2329-000 A1A6A1A4R10		1
	65		2 CAPACITOR,FXD, CER DIEI, 1000PF, 10%, 200V (V81349) 913-4018-000 A1A6A1A4C7		1
	66		2 CAPACITOR,FXD, CER DIEI, 2200PF, 10%, 100V (V81349) 913-5019-120 A1A6A1A4C6		1
	67		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C4		1
	68		2 RESISTOR,FXD, CMPSN, 39K, 10%, 1/8W (V81349)		1
	69		745-2398-000 A1A6A1A4R8		
	69		2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349)		1
	70		745-2377-000 A1A6A1A4R9		
	70		2 COIL,RF, 470UH (V96906) 240-2723-020 A1A6A1A4L1		1
	71		2 CAPACITOR,FXD, MICA DIEI, 47PF, 5%, 50V (V72136)		1
			912-4141-280 A1A6A1A4C5		

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-8	72		2 INTEGRATED CKT (V27014) 351-8332-020 A1A6A1A4U2		1
	73		2 CAPACITOR,FXD, CER DIEI, 100PF, 20%, 200V (V81349) 913-3989-000 A1A6A1A4C36		1
	74		2 RESISTOR,FXD, CMPSN, 56K, 10%, 1/8W (V81349) 745-2404-000 A1A6A1A4R3		1
	75		2 INTEGRATED CKT (V27014) 351-8367-C10 A1A6A1A4U1		1
	76		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C2		1
	77		2 RESISTOR,FXD, CMPSN, 56K, 10%, 1/8W (V81349) 745-2404-000 A1A6A1A4R2		1
	78		2 RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/8W (V81349) 745-2365-000 A1A6A1A4R4		1
	79		2 TRANSISTOR (V14433) 352-C596-C30 A1A6A1A4Q1		1
	80		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C3		1
	81		2 CAPACITOR,VAR, CER DIEI, 1 TC 4.5PF, 250V (V81293) 917-0005-C10 A1A6A1A4C34		1
	82		2 RESISTOR,FXD, CMPSN, 180K, 10%, 1/8W (V81349) 745-2422-000 A1A6A1A4R5		1
	83		2 CCIL,RF, 470UH (V96906) 240-2723-C20 A1A6A1A4L10		1
	84		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C31		1
	85		2 RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/8W (V81349) 745-2304-000 A1A6A1A4R1		1
	86		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C41		1
	87		2 RESISTOR,FXD, CMPSN, 390 OHMS, 10%, 1/8W (V81349) 745-2326-000 A1A6A1A4R25		1
	88		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C1		1
	89		2 RESISTOR,FXD, CMPSN, 270 OHMS, 10%, 1/8W (V81349) 745-2320-000 A1A6A1A4R23		1
	90		2 CCIL A1A6A1A4L3		1
	91		2 CAPACITOR,FXD, MICA DIEI, 7PF, PORM 0.5PF, 300V (V72136) 912-4141-100 A1A6A1A4C40		1
	92		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C22		1
	93		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A4C23		1
	94		2 CAPACITOR,FXD, CER DIEI, 0.39PF, 5%, 500V (V95121) 913-2961-000 A1A6A1A4C39		1
	95		2 CAPACITOR,FXD, CER DIEI, 100PF, 20%, 200V (V81349) 913-3989-000 A1A6A1A4C33		1
	96		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C32		1
	97		2 CCIL A1A6A1A4L9		1
	98		2 SHIELD A1A6A1A4E3		1
	99		2 TRANSISTOR (V02735) 352-1093-C10 A1A6A1A4C5		1
	100		2 RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-000 A1A6A1A4R24		1
	101		2 RESISTOR,FXD, CMPSN, 1.8K, 10%, 1/8W (V81349) 745-2350-000 A1A6A1A4R7		1
	102		2 TRANSISTOR (V02735) 352-0792-020 A1A6A1A4Q6		1
	103		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A4C9		1
	104		2 CAPACITOR,FXD, CER DIEI, 100PF, 20%, 200V (V81349) 913-3989-000 A1A6A1A4C37		1
	105		2 RESISTOR,FXD, CMPSN, 270 OHMS, 10%, 1/8W (V81349) 745-2320-000 A1A6A1A4R11		1
	106		2 CAPACITOR,FXD, CER DIEI, 100PF, 20%, 200V (V81349) 913-3989-000 A1A6A1A4C11		1
	107		2 CCIL A1A6A1A4L4		1
	108		2 SEMICOND DEVICE (V96341) 922-6095-C10 A1A6A1A4CR1		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-8	109	MS75C84-C2	2	CCIL,RF, 1.50UM (V56906) 240-2025-C00 A1A6A1A4L2	1
	110	374NFC-125C5PFCR MC5PF	2	CAPACITOR,FXD, CER DIEI, 5PF, 0.5PF, 100V (V72982) 913-1097-C60 A1A6A1A4C15	1
	111	CK058X1C2M	2	CAPACITGR,FXD, CER DIEI, 1000PF, 20%, 200V (V81349) 913-3989-C00 A1A6A1A4C16	1
	112	372-2601-C27	2	CCNTACT,ELEC 372-2601-C27	9



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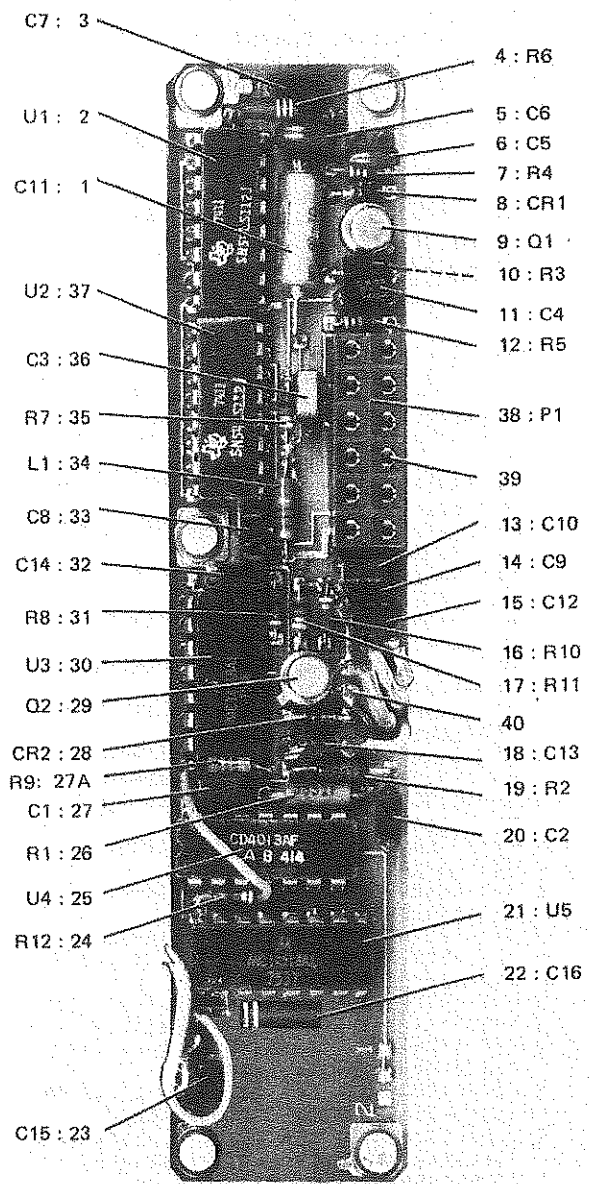
Figure 3-9. Lf Phase-Lock Loop A1A6A1A3

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-9 -	6C1-3E79-C01	1	LF PHASE-LCCK LCOP A1A6A1A3 (SEE FIG 3-6-16 FOR RHA)		REF
1	RCRC5G273JS	2	RESISTOR,FXD, CMPSN, 27K, 5%, 1/8W (V81349) 745-1863-830 A1A6A1A3R8		1
2	RCRC5G272JS	2	RESISTOR,FXD, CMPSN, 27K, 5%, 1/8W (V81349) 745-1863-830 A1A6A1A3R7		1
3	RCRC5G273KS	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/8W (V81349) 745-2392-CCC A1A6A1A3R6		1
4	CKC5B472K	2	CAPACITOR,FXD, CER DIEI, 0.047UF, 10%, 50V (V81349) 913-5019-280 A1A6A1A3C7		1
5	CKC6BX1C5K	2	CAPACITOR,FXD, CER DIEI, 1UF, 10%, 50V (V81349) 513-5019-560 A1A6A1A3C6		1
6	RCRC5G273KS	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/8W (V81349) 745-2392-000 A1A6A1A3R9		1
7	CKC6B474K	2	CAPACITOR,FXD, CER DIEI, 0.47UF, 10%, 50V (V81349) 913-5019-520 A1A6A1A3C8		1
8	RCRC5G683JS	2	RESISTOR,FXD, CMPSN, 68K, 5%, 1/8W (V81349) 745-1863-930 A1A6A1A3R10		1
9	CKC5B1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A3C9		1
10	DM5E3CCJCS5W	2	CAPACITOR,FXD, MICA DIEI, 30PF, 5%, 50V (V72136) 912-4141-200 A1A6A1A3C10		1
11	CKC5B1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A1A6A1A3C12		1
12	MV1666	2	SEMICOND DEVICE (V04713) 922-6116-010 A1A6A1A3CR2		1
13	MS75C52-1	2	CCIL,RF, 47UH (V96906) 240-1628-000 A1A6A1A3L3		1
14	MS751C1-12 637-2575-CC1	2	CCIL,RF, 27UH (V96906) 240-1604-000 A1A6A1A3L4		1
		2	CAPACITOR, TEST SELECT A1A6A1A3C11 (NON-PROCURABLE ITEM)		1
15	DM5C5CCD3CCWV	3	CAPACITOR,FXD, MICA DIEI, 5PF, PORM 0.5PF, 300V (V72136) 912-4141-C10 A1A6A1A3C11		AR
15	DM5C1CCD3CCWV	3	CAPACITOR,FXD, MICA DIEI, 10PF, PORM 0.5PF, 300V (V72136) 912-4141-C20 A1A6A1A3C11		AR
15	DM5E2CCD1CCWV	3	CAPACITOR,FXD, MICA DIEI, 20PF, PORM 0.5PF, 100V (V72136) 912-4141-150 A1A6A1A3C11		AR
15	DM5E270J050WV	3	CAPACITOR,FXD, MICA DIEI, 27PF, 5%, 50V (V72136) 912-4141-180 A1A6A1A3C11		AR
15	DM5E36CJ050WV	3	CAPACITOR,FXD, MICA DIEI, 36PF, 5%, 50V (V72136) 912-4141-240 A1A6A1A3C11		AR
15	DM5E470J050WV	3	CAPACITOR,FXD, MICA DIEI, 47PF, 5%, 50V (V72136) 912-4141-280 A1A6A1A3C11		AR
15	DM5E56CJ050WV	3	CAPACITOR,FXD, MICA DIEI, 56PF, 5%, 50V (V72136) 912-4141-310 A1A6A1A3C11		AR
16	RCRC5G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349) 745-2377-000 A1A6A1A3R11		1
17	FN1905	2	TRANSISTOR (V17856) 352-0756-050 A1A6A1A3Q5		1
18	IN5711	2	SEMICOND DEVICE (V28480) 353-3691-010 A1A6A1A3CR3		1
19	RCRC5G1E2KS	2	RESISTOR,FXD, CMPSN, 1.8K, 10%, 1/8W (V81349) 745-2350-CCC A1A6A1A3R12		1
20	CKC5B1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A6A1A3C13		1
21	CKC5B1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A6A1A3C15		1
22	RCRC5G271KS	2	RESISTOR,FXD, CMPSN, 270 OHMS, 10%, 1/8W (V81349) 745-2320-CCC A1A6A1A3R13		1
23	RCRC5G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/8W (V81349) 745-2365-CCC A1A6A1A3R14		1
24	MS75C89-23	2	CCIL,RF, 100UH (V96906) 240-2715-490 A1A6A1A3L2		1
25	M39CC3-C1-2272	2	CAPACITOR,FXD, ELCTLT, 22UF, 20%, 15V (V81349) 184-9086-320 A1A6A1A3C14		1
26	2N2369A	2	TRANSISTOR (V14433) 352-0596-030 A1A6A1A3Q7		1
27	RCRC5G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/8W (V81349) 745-2365-CCC A1A6A1A3R17		1
28	CKC5B1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A6A1A3C23		1
29	CB4CC2UBMJ	2	INTEGRATED CKT (V27014) 351-8185-010 A1A6A1A3U2		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-9	30		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A6A1A3C21		1
	31		2 INTEGRATED CKT (V02735) 351-8233-C10 A1A6A1A3U6		1
	32		2 INTEGRATED CKT (V02735) 351-8233-C10 A1A6A1A3U7		1
	33		2 INTEGRATED CKT (V02735) 351-8233-C10 A1A6A1A3U8		1
	34		2 INTEGRATED CKT (V02735) 351-8233-C10 A1A6A1A3U9		1
	35		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A6A1A3C22		1
	36		2 INTEGRATED CKT (V27014) 351-8185-C10 A1A6A1A3U5		1
	37		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A6A1A3C20		1
	38		2 CAPACITOR,FXD, ELCTLT, 22UF, 20%, 15V (V81349) 184-9086-320 A1A6A1A3C19		1
	39		2 RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/8W (V81349) 745-2304-000 A1A6A1A3R16		1
	40		2 INTEGRATED CKT (V27014) 351-8160-C30 A1A6A1A3U4		1
	41		2 MICROCIRCUIT (V27014) 351-8197-C10 A1A6A1A3U3		1
	42		2 RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/8W (V81349) 745-2304-000 A1A6A1A3R5		1
	43		2 RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/8W (V81349) 745-2329-000 A1A6A1A3R4		1
	44		2 SEMICOND DEVICE (V03508) 353-3644-010 A1A6A1A3C1		1
	45		2 RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/8W (V81349) 745-2356-000 A1A6A1A3R3		1
	46		2 RESISTOR,FXD, CMPSN, 18K, 10%, 1/8W (V81349) 745-2386-000 A1A6A1A3R2		1
	47		2 CAPACITOR,FXD, CER DIEI, 1UF, 10%, 50V (V81349) 913-5019-560 A1A6A1A3C1		1
	48		2 CAPACITOR,FXD, CER DIEI, 1UF, 10%, 50V (V81349) 913-5019-560 A1A6A1A3C2		1
	49		2 CAPACITOR,FXD, ELCTLT, 47UF, 20%, 20V (V81349) 184-9086-560 A1A6A1A3C3		1
	50		2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349) 745-2377-000 A1A6A1A3R1		1
	51		2 TRANSISTOR (V04713) 352-0551-C10 A1A6A1A3C1		1
	52		2 CAPACITOR,FXD, CER DIEI, 100PF, 20%, 200V (V81349) 913-3977-000 A1A6A1A3C24		1
	53		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A6A1A3C17		1
	54		2 TRANSISTOR (V07263) 352-0661-020 A1A6A1A3Q2		1
	55		2 TRANSISTOR (V14433) 352-0596-C30 A1A6A1A3Q6		1
	56		2 RESISTOR,FXD, CMPSN, 180K, 10%, 1/8W (V81349) 745-2422-000 A1A6A1A3R15		1
	57		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A6A1A3C16		1
	58		2 INTEGRATED CKT (V04713) 351-8252-C20 A1A6A1A3U1		1
	59		2 CAPACITOR,FXD, CER DIEI, 100PF, 20%, 200V (V81349) 913-3977-000 A1A6A1A3C18		1
	60		2 CAPACITOR,FXD, CER DIEI, 0.47UF, 10%, 50V (V81349) 913-5019-520 A1A6A1A3C4		1
	61		2 TRANSISTOR (V17856) 352-0912-010 A1A6A1A3Q3		1
	62		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A1A3C5		1
	63		2 TRANSISTOR (V17856) 352-0912-C10 A1A6A1A3C4		1
	64		2 RESISTOR,FXD, CMPSN, 180K, 10%, 1/8W (V81349) 745-2422-000 A1A6A1A3R18		1
	65		2 CONTACT,ELEC 372-2601-027		6
	66		2 CONTACT,ELEC 372-2252-010		18
	67		2 HCUSING,CONN 372-2624-018 A1A6A1A3P1		1



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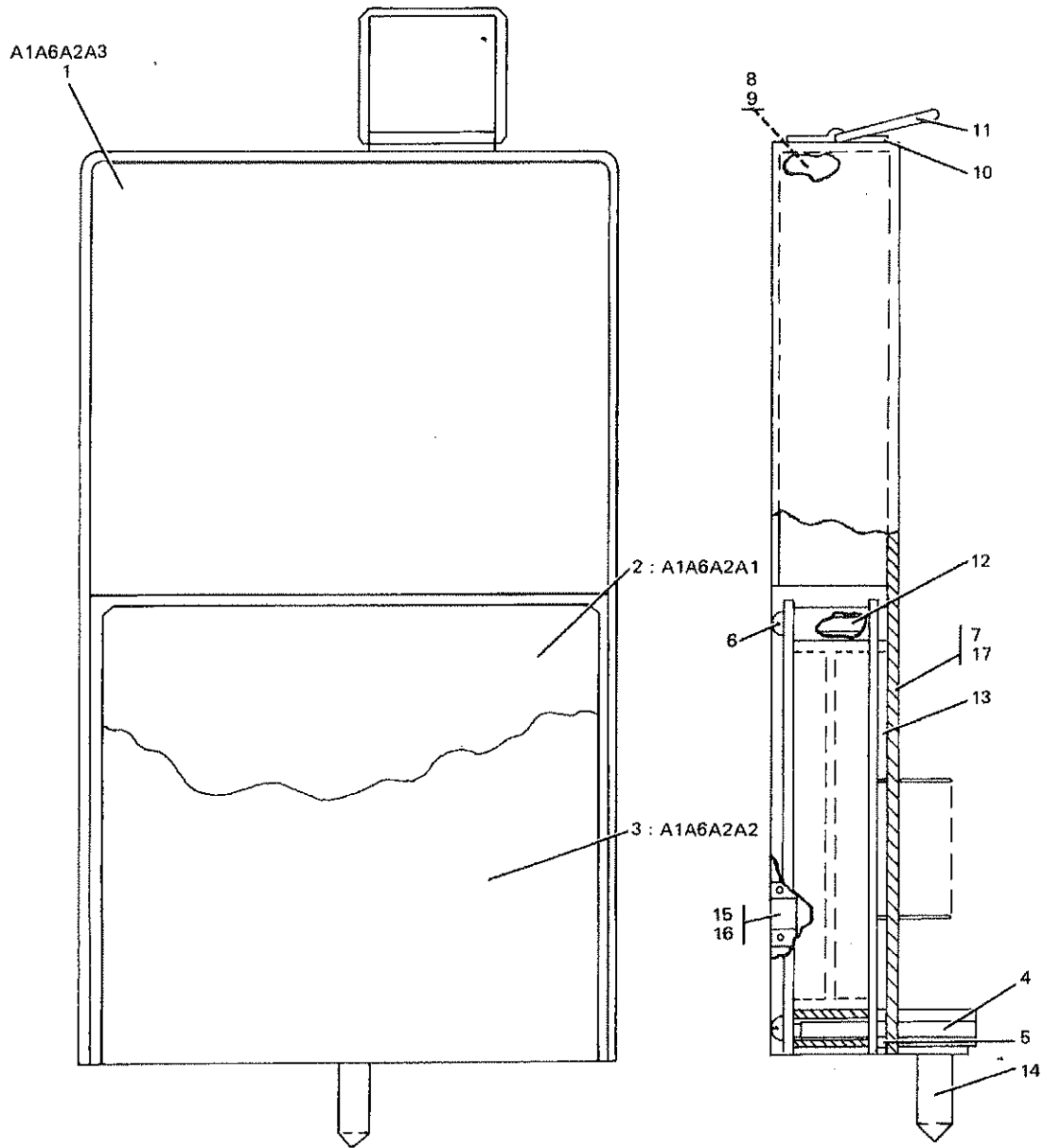
Figure 3-10. Fixed Frequency Divider A1A6A1A2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-10 -	6C1-3876-CC2	1	FIXED FREQUENCY DIVIDER A1A6A1A2 (SEE FIG 3-6-17 FCR NFA)		REF
1	M39CC3-C1-2259	2	CAPACITOR, FXD, ELCTLY, 39UF, 10%, 10V (V81349) 1E4-9086-190 A1A6A1A2C11		1
2	S54LS112F83C	2	INTEGRATED CKT (V18324) 351-1525-020 A1A6A1A2U1		1
3	CKC5BX1C3K	2	CAPACITOR, FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A2C7		1
	6C1-388C-CC1	2	RESISTOR, TEST SELECT (NCN-PROCURABLE ITEM)		1
4	RN55C2C51F	3	RESISTOR, FXD, FILM, 2.05K, 1%, 1/8W (V81349) 7C5-1011-CC0 A1A6A1A2R6		AR
4	RN55C2151F	3	RESISTOR, FXD, FILM, 2.15K, 1%, 1/8W (V81349) 7C5-1012-CC0 A1A6A1A2R6		AR
4	RN55C2261F	3	RESISTOR, FXD, FILM, 2.26K, 1%, 1/8W (V81349) 7C5-1013-CC0 A1A6A1A2R6		AR
4	RN55C2371F	3	RESISTOR, FXD, FILM, 2.37K, 1%, 1/8W (V81349) 7C5-1014-CC0 A1A6A1A2R6		AR
4	RN55C2491F	3	RESISTOR, FXD, FILM, 2.49K, 1%, 1/8W (V81349) 7C5-1015-CC0 A1A6A1A2R6		AR
4	RN55C2611F	3	RESISTOR, FXD, FILM, 2.61K, 1%, 1/8W (V81349) 7C5-1016-CC0 A1A6A1A2R6		AR
4	RN55C2741F	3	RESISTOR, FXD, FILM, 2.74K, 1%, 1/8W (V81349) 7C5-1017-CC0 A1A6A1A2R6		AR
4	RN55C2871F	3	RESISTOR, FXD, FILM, 2.87K, 1%, 1/8W (V81349) 7C5-1018-CC0 A1A6A1A2R6		AR
4	RN55C3011F	3	RESISTOR, FXD, FILM, 3.01K, 1%, 1/8W (V81349) 7C5-1019-CC0 A1A6A1A2R6		AR
4	RN55C3161F	3	RESISTOR, FXD, FILM, 3.16K, 1%, 1/8W (V81349) 7C5-1020-CC0 A1A6A1A2R6		AR
4	RN55C3321F	3	RESISTOR, FXD, FILM, 3.32K, 1%, 1/8W (V81349) 7C5-1021-CC0 A1A6A1A2R6		AR
4	RN55C3481F	3	RESISTOR, FXD, FILM, 3.48K, 1%, 1/8W (V81349) 7C5-1022-CC0 A1A6A1A2R6		AR
4	RN55C3651F	3	RESISTOR, FXD, FILM, 3.65K, 1%, 1/8W (V81349) 7C5-1023-CC0 A1A6A1A2R6		AR
5	CM5F1C1JC5CWV	2	CAPACITOR, FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-050 A1A6A1A2C6		1
6	CM5E33CJC5CWV	2	CAPACITOR, FXD, MICA DIEI, 33PF, 5%, 50V (V72136) 912-4141-220 A1A6A1A2C5		1
7	RCRC5G153KS	2	RESISTOR, FXD, CMPSN, 15K, 10%, 1/8W (V81349) 745-2383-CC0 A1A6A1A2R4		1
8	1N5711	2	SEMICOND DEVICE (V28480) 353-3691-010 A1A6A1A2CR1		1
9	2N2369A	2	TRANSISTOR (V14433) 352-0596-030 A1A6A1A2Q1		1
10	RCRC5G472KS	2	RESISTOR, FXD, CMPSN, 4.7K, 10%, 1/8W (V81349) 745-2365-CC0 A1A6A1A2R3		1
11	CKC5BX1C3K	2	CAPACITOR, FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A2C4		1
12	RCRC5G123KS	2	RESISTOR, FXD, CMPSN, 12K, 10%, 1/8W (V81349) 745-2380-CC0 A1A6A1A2R5		1
13	CKC5BX1C3K	2	CAPACITOR, FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A2C10		1
14	CKC5BX1C3K	2	CAPACITOR, FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A2C9		1
15	CKC5BX1C3K	2	CAPACITOR, FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A2C12		1
16	RCRC5G122KS	2	RESISTOR, FXD, CMPSN, 1.2K, 10%, 1/8W (V81349) 745-2344-CC0 A1A6A1A2R10		1
17	RCRC5G1C1KS	2	RESISTOR, FXD, CMPSN, 100 OHMS, 10%, 1/8W (V81349) 745-2304-CC0 A1A6A1A2R11		1
18	CM5C1CCD3CCWV	2	CAPACITOR, FXD, MICA DIEI, 10PF, PORM 0.5PF, 30GV (V72136) 912-4141-C20 A1A6A1A2C13 (EFF TO REV LTR R)		1
18	CM5E2CCD1CCWV	2	CAPACITOR, FXD, MICA DIEI, 20PF, PORM 0.5PF, 100V (V72136) 912-4141-150 A1A6A1A2C13 (EFF REV LTR R)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-10 19	RN55C2552F	2	RESISTOR,FXD, FILM, 25.5K, 1%, 1/8W (V81349) 7C5-3605-67C A1A6A1A2R2		1
20	CKC5BX473K	2	CAPACITOR,FXD, CER DIEL, 0.047UF, 10%, 50V (V81349) 913-5019-280 A1A6A1A2C2		1
21	MC145188AL	2	INTEGRATED CKT (V04713) 351-8176-C10 A1A6A1A2U5		1
22	M39CC3-C1-2259	2	CAPACITOR,FXD, ELCYLT, 39UF, 10%, 10V (V81349) 184-9086-190 A1A6A1A2C16		1
23	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEL, 0.01UF, 10%, 100V (V81349) 913-5C19-200 A1A6A1A2C15		1
24	RCRC5G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCO A1A6A1A2R12		1
25	CG4C13BMJ	2	INTEGRATED CKT (V27014) 351-8160-C30 A1A6A1A2U4		1
26	RN55C3831F	2	RESISTOR,FXD, FILM, 3.83K, 1%, 1/8W (V81349) 7C5-1C24-CCO A1A6A1A2R1		1
27	CKC5BX473K	2	CAPACITOR,FXD, CER DIEL, 0.047UF, 10%, 50V (V81349) 913-5C19-280 A1A6A1A2C1		1
27A	RCRC5G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCO A1A6A1A2R9 (EFF REV LTR T)		1
28	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A1A6A1A2CR2		1
29	2N2369A	2	TRANSISTOR (V14433) 352-0596-030 A1A6A1A2Q2 (EFF TC REV LTR R)		1
29	2N2784	2	TRANSISTOR (V03877) 352-C707-020 A1A6A1A2Q2 (EFF REV LTR R)		1
30	MC145188AL	2	INTEGRATED CKT (V04713) 351-8176-C10 A1A6A1A2U3		1
31	RCRC5G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCO A1A6A1A2R8		1
32	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEL, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A1A2C14		1
33	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEL, 0.01UF, 10%, 100V (V81349) 913-5C19-200 A1A6A1A2C8		1
34	MS75C85-C7	2	COIL,RF, 100UH (V96906) 240-2047-CCO A1A6A1A2L1		1
35	RCRC5G1C1KS	2	RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/8W (V81349) 745-2304-CCO A1A6A1A2R7		1
36	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEL, 0.01UF, 10%, 100V (V81349) 913-5C19-200 A1A6A1A2C3		1
37	S54LS112F883C	2	INTEGRATED CKT (V18324) 351-1525-C20 A1A6A1A2U2		1
38	372-2624-C15	2	PCBSING,CONN 372-2624-C15 A1A6A1A2P1		1
39	372-2252-C10	2	CONTACT,ELEC 372-2252-C10		12
40	372-2601-C27	2	CONTACT,ELEC 372-2601-C27		9

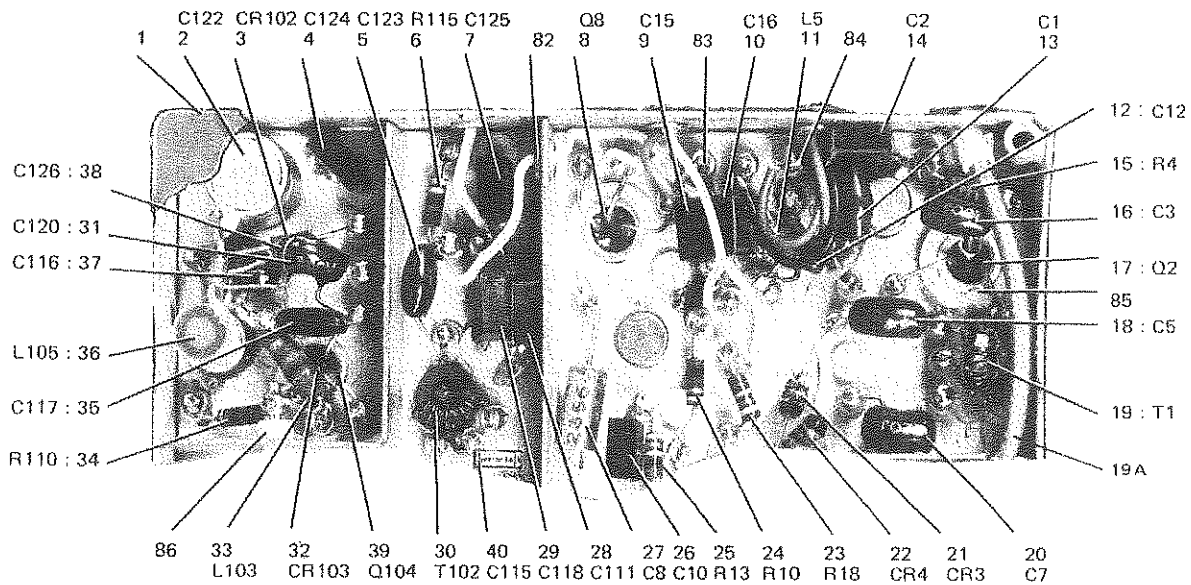


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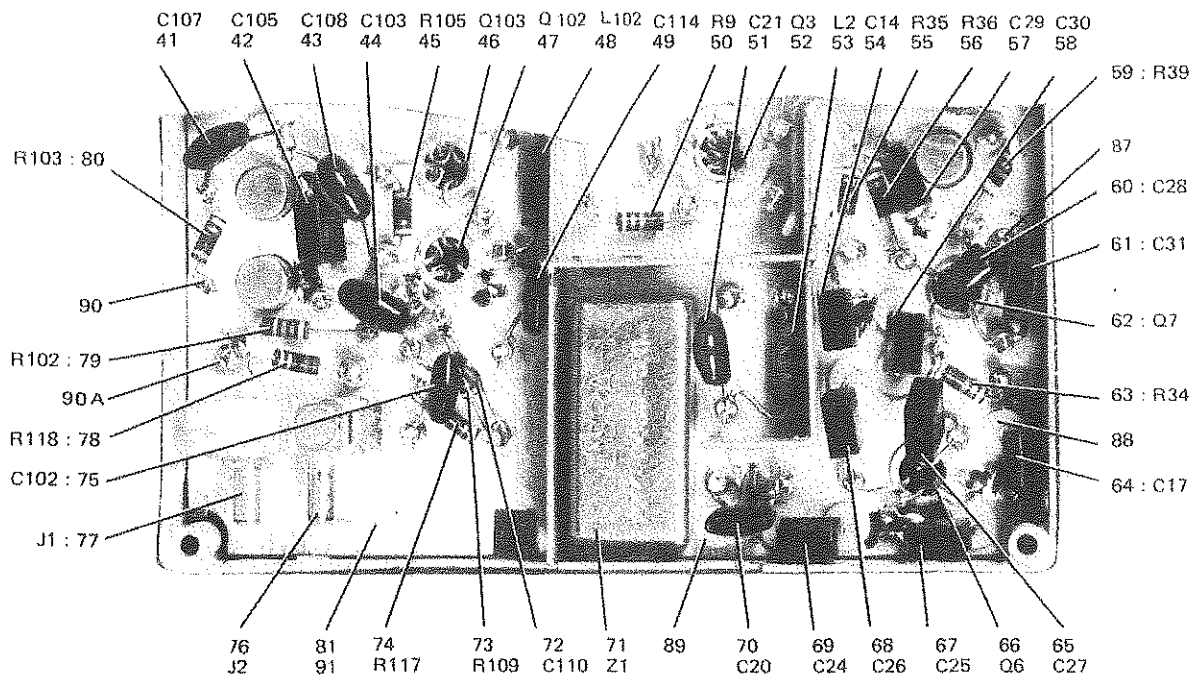
Figure 3-11. Hf Generator A1A6A2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-11 -	609-2469-0C1	1	HF GENERATOR A1A6A2 (SEE FIG 3-2-14 FOR NFA)		REF
1	635-8154-CC1	2	HF PHASE-LOCK LOOP A1A6A2A3 (SEE FIG 3-12)		1
	33C-1701-C2C	2	SCREW, SLFLKG, SST, 2-56 X 1/4 (V72962)		4
			33C-1701-020 (AP)		
2	601-3674-CC2	2	VCLTAGE REGULATOR A1A6A2A1 (SEE FIG 3-13)		1
3	601-3875-CC2	2	VARIABLE FREQUENCY DIVIDER A1A6A2A2 (SEE FIG 3-14)		1
4	540-9041-CC3	2	PCST, HEX		2
5	623-3837-CC1	2	PCST, CARD SPACER		2
6	33C-1716-C3C	2	SCREW, SLFLKG, SST, 2-56 X 1/4 (V56878)		3
			33C-1716-C3C		
7	623-3849-CC1	2	CHASSIS		1
8	565-7241-CC4	3	NLT, ANGLE (EFF TC REV LTR J)		1
9	609-C933-C01	3	FASTENER, ANGLE (EFF TC REV LTR J)		1
9	609-C933-CC2	3	FASTENER, ANGLE (EFF REV LTR J)		2
10	546-6126-CC2	3	RETAINER		1
	MS16535-52	3	RIVET, TUBULAR, CS, 0.089 CIA X 0.125 (V96906)		2
			305-1731-CC0 (AP)		
11	546-6127-CC2	3	HANDLE		1
12	623-3836-CC1	3	PCST		1
13	623-3858-CC1	3	SHEET, INSUL		1
14	548-6246-CC2	3	PIN, LOCATING		1
15	625-4644-CC1	3	NLT		2
16	MS20426AD2-3	3	RIVET, SOLID, AL, 1/16 CIA X 3/16 (V96906)		8
			305-1352-CC0		
17	623-3849-CC2	3	CHASSIS, BRAZED		1



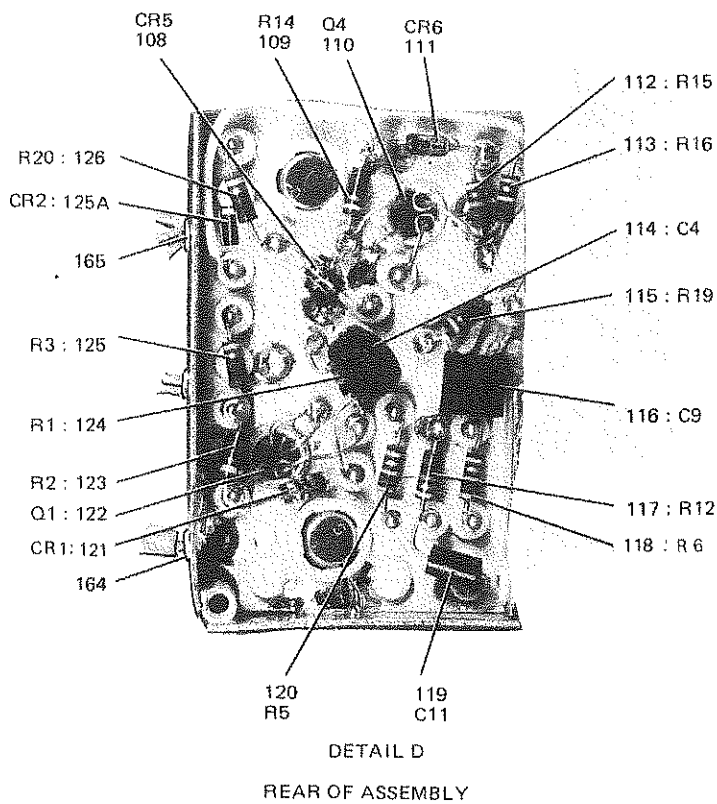
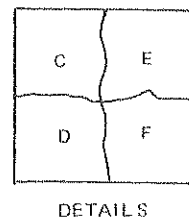
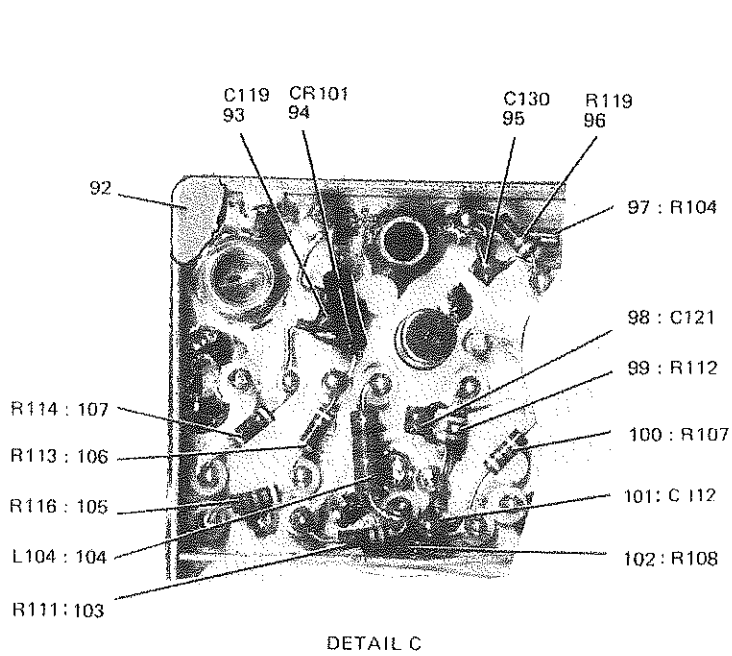
DETAIL A



DETAIL B
TOP VIEW

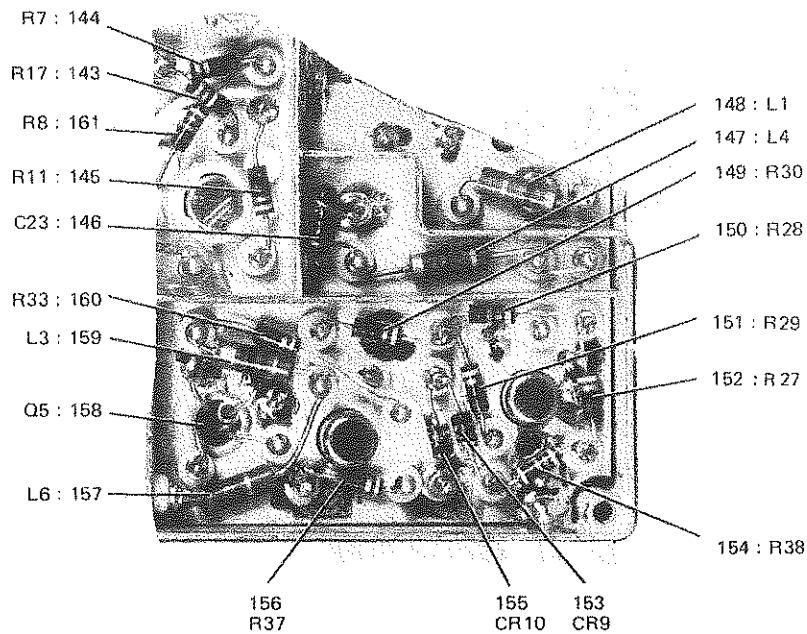
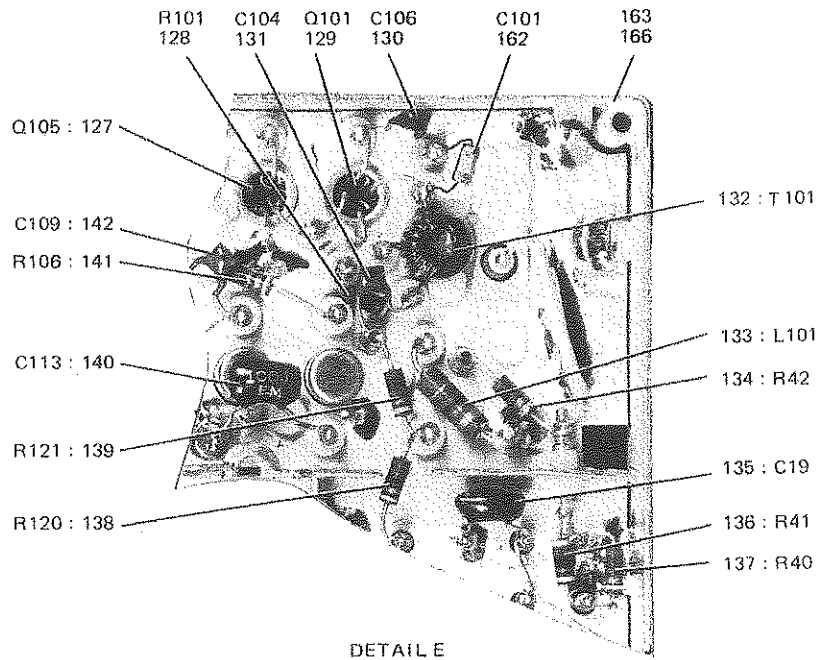
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Figure 3-12. Hf Phase-Lock Loop A1A6A2A3 (Sheet 1 of 3)



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Figure 3-12. Hf Phase-Lock Loop A1A6A2A3 (Sheet 2)



DETAIL F
REAR OF ASSEMBLY

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Figure 3-12. Hf Phase-Lock Loop A1A6A2A3 (Sheet 3)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-12 -	635-8154-CC1	1	HF PHASE-LOCK LOOP A1A6A2A3 (SEE FIG 3-11-1 FOR NHA)		REF
1	623-3853-CC1	2	COVER, SHIELD		1
2	5288	2	CAPACITOR, VAR, AIR DIEI, 0.8 TC 10PF, 250V (V91293) 922-0583-200 A1A6A2A3C122		1
3	7C-51	2	SEMICONV DEVICE (V14433) 922-6106-C10 A1A6A2A3C102		1
4	CKCEBX1C4K	2	CAPACITOR, FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A3C124		1
5	CM5E47CJC5CWV	2	CAPACITOR, FXD, MICA DIEI, 47PF, 5%, 50V (V72136) 912-4141-28C A1A6A2A3C123 (EFF TC REV LTR H)		1
5	8121-1CCCGG471K	2	CAPACITOR, FXD, CER DIEI, 470PF, 10%, 100V (V18796) 913-3281-C50 A1A6A2A3C123 (EFF REV LTR H)		1
6	RCRC5G275KS	2	RESISTOR, FXD, CMPSN, 2.7MEGC, 10%, 1/8W (V81349) 745-1864-780 A1A6A2A3R115		1
7	CKC5BX332K	2	CAPACITOR, FXD, CER DIEI, 3300PF, 10%, 100V (V81349) 913-5019-140 A1A6A2A3C125		1
8	2N4353	2	TRANSISTOR (V22229) 352-0898-030 A1A6A2A3G8		1
9	CKC5BX1C4K	2	CAPACITOR, FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A3C15		1
10	CKC5BX1C4K	2	CAPACITOR, FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A3C16		1
11	MS75C85-C7	2	COIL, RF, 100UH (V96906) 240-2047-CC0 A1A6A2A3L5		1
12	CY10C102Z	2	CAPACITOR, FXD, CER DIEI, 1000PF, M20X P80%, 50V (V16546) 913-3279-350 A1A6A2A3C12		1
13	CM5F1C1JC5CWV	2	CAPACITOR, FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A2A3C1		1
14	CKC5BX1C4K	2	CAPACITOR, FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A3C2		1
15	RCRC5G272KS	2	RESISTOR, FXD, CMPSN, 2.7K, 10%, 1/8W (V81349) 745-2356-CC0 A1A6A2A3R4		1
16	CM5F1C1JC5CWV	2	CAPACITOR, FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A2A3C3		1
17	2N4208	2	TRANSISTOR (V27014) 352-0959-020 A1A6A2A3C2		1
18	CM5F221JC5CWV	2	CAPACITOR, FXD, MICA DIEI, 220PF, 5%, 50V (V72136) 912-4141-450 A1A6A2A3C5		1
19	623-3834-CC1	2	TRANSFORMER A1A6A2A3T1		1
19A	RG17EBL	2	CABLE, RF (V81349) 425-1538-000		1
20	CM5F221JC5CWV	2	CAPACITOR, FXD, MICA DIEI, 220PF, 5%, 50V (V72136) 912-4141-450 A1A6A2A3C7		1
21	1N5711	2	SEMICONV DEVICE (V2848C) 353-3691-010 A1A6A2A3CR3 (EFF TO REV LTR K)		1
21	353-3316-C1C	2	SEMICONV DEVICE (V22480) 353-3316-C10 A1A6A2A3CR3 (EFF REV LTR K)		1
22	1N5711	2	SEMICONV DEVICE (V2848C) 353-3691-010 A1A6A2A3CR4 (EFF TO REV LTR K)		1
22	353-3316-C1C	2	SEMICONV DEVICE (V22480) 353-3316-010 A1A6A2A3CR4 (EFF REV LTR K)		1
23	RCRC5G683JS	2	RESISTOR, FXD, CMPSN, 68K, 5%, 1/8W (V81349) 745-1863-930 A1A6A2A3R18		1
24	RCRC5G1C2KS	2	RESISTOR, FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CC0 A1A6A2A3R10		1
25	RCRC5G1C4KS	2	RESISTOR, FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CC0 A1A6A2A3R13		1
26	CKC5BX1C3K	2	CAPACITOR, FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A2A3C10		1
27	M39CC3-C1-2356	2	CAPACITOR, FXD, ELCTLY, 1UF, 10%, 50V (V81349) 184-9087-430 A1A6A2A3C8		1
28	CKC5BX1C4K	2	CAPACITOR, FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A3C111		1
29	CKC5BX1C2K	2	CAPACITOR, FXD, CER DIEI, 1000PF, 10%, 200V (V81349) 913-4018-CC0 A1A6A2A3C118		1
30	623-3834-CC2	2	TRANSFORMER A1A6A2A3T1C2		1
31	CM5F1C1JC5CWV	2	CAPACITOR, FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A2A3C120 (EFF TO REV LTR E)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-12 31	DM5F151JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 150PF, 5%, 50V (V72136) 912-4141-400 A1A6A2A3C120 (EFF REV LTR E)		1
32	1N5711	2	SEMICONV DEVICE (V2848C) 353-3691-C10 A1A6A2A3CR1C3		1
33	MS75C83-12	2	CCIL,RF, 0.82UH (V56906) 240-2022-000 A1A6A2A3L1C3		1
34	RCRC5G56CKS	2	RESISTOR,FXD, CMPSN, 56 OHMS, 10%, 1/8W (V81349) 745-2295-CCO A1A6A2A3R110		1
35	DM5C1CCD3CCWV	2	CAPACITOR,FXD, MICA DIEI, 10PF, PCRM 0.5PF, 300V (V72136) 912-4141-020 A1A6A2A3C117		1
35	DM5C15CD3CCWV	2	CAPACITOR,FXD, MICA DIEI, 15PF, PCRM 0.5PF, 300V (V72136) 912-4141-130 A1A6A2A3C117 (EFF REV LTR E)		1
36	623-3859-CC1	2	CCIL, ADJUSTABLE A1A6A2A3L105		1
37	DM5CC5CC3CCWV	2	CAPACITOR,FXD, MICA DIEI, 5PF, PCRM 0.5PF, 300V (V72136) 912-4141-C10 A1A6A2A3C116		1
38	81C1AC75CCJC-309	2	CAPACITOR,FXD, CER DIEI, 3PF, 0.5PF, 75V (V72982) 913-1098-110 A1A6A2A3C126		1
39	FN19C5	2	TRANSISTOR (V17856) 352-0756-C50 A1A6A2A3C104		1
40	CCR13CG1R8C	2	CAPACITOR,FXD, CER DIEI, 1.8PF, 0.25PF, 75V (V81349) 913-1098-260 A1A6A2A3C115		1
40	81118C9CCCKC-478	2	CAPACITOR,FXD, CER DIEI, 0.47PF, 0.25PF, 75V (V72982) 913-1098-320 A1A6A2A3C115 (EFF REV LTR C)		1
40	81C1B212CCKC-105	2	CAPACITOR,FXD, CER DIEI, 1PF, 0.25PF, 150V (V72982) 913-1098-330 A1A6A2A3C115 (EFF REV LTR C)		1
41	DM5F1G1JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A2A3C107		1
42	CK05B8X1C2K	2	CAPACITOR,FXD, CER DIEI, 100PF, 10%, 200V (V81349) 913-4C18-CCO A1A6A2A3C105		1
43	DM5F1G1JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A2A3C108		1
44	DM5F1C1JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A6A2A3C103		1
45	RCRC5G362JS	2	RESISTOR,FXD, CMPSN, 3.6K, 5%, 1/8W (V81349) 745-1863-620 A1A6A2A3R105		1
46	2N918	2	TRANSISTOR (V07910) 352-0440-000 A1A6A2A3C103		1
47	2N918	2	TRANSISTOR (V07910) 352-0440-000 A1A6A2A3C102		1
48	MS75C83-C3	2	CCIL,RF, 0.15UH (V56906) 240-2013-000 A1A6A2A3L102		1
49	DM5C15CD3CCWV	2	CAPACITOR,FXD, MICA DIEI, 15PF, PCRM 0.5PF, 300V (V72136) 912-4141-130 A1A6A2A3C114		1
50	RCRC5G563KS	2	RESISTOR,FXD, CMPSN, 56K, 10%, 1/8W (V81349) 745-2404-CCO A1A6A2A3R9		1
51	DM5F151JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 150PF, 5%, 50V (V72136) 912-4141-400 A1A6A2A3C21		1
52	2N5197	2	TRANSISTOR (V17856) 351-0035-020 A1A6A2A3C03		1
53	MS75C83-C8	2	CCIL,RF, 0.39UH (V56906) 240-2018-000 A1A6A2A3L2		1
54	CK05B8X1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A3C14		1
55	RCRC5G1CCKS	2	RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/8W (V81349) 745-2268-CCO A1A6A2A3R35		1
56	RCRC5G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCO A1A6A2A3R36		1
57	CK05B8X1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A2A3C29		1
58	CK05B8X1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A2A3C30		1
59	RCRC5G273KS	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/8W (V81349) 745-2392-CCO A1A6A2A3R39		1
60	DM5E2CCD1CCWV	2	CAPACITOR,FXD, MICA DIEI, 20PF, PCRM 0.5PF, 100V (V72136) 912-4141-150 A1A6A2A3C28 (EFF TO REV LTR H)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-12 60	EM5E36CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 36PF, 5%, 50V (V72136)		1
61	CKC5BX1C3K	2	912-4141-24C A1A6A2A3C28 (EFF REV LTR H)		1
62	2N2857	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-2CC A1A6A2A3C31		1
63	RCRC5G123KS	2	TRANSISTOR (V02735) 352-0792-010 A1A6A2A3Q7		1
64	CKC5BX1C3K	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/8W (V81349) 745-238C-000 A1A6A2A3R34		1
65	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-2CC A1A6A2A3C17		1
66	2N2857	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A2A3C27		1
67	CKC5BX1C3K	2	TRANSISTOR (V02735) 352-0792-010 A1A6A2A3C6		1
68	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-2CC A1A6A2A3C25		1
69	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-2CC A1A6A2A3C26		1
70	EM5E36CJC5CWV	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-2CC A1A6A2A3C24		1
71	SRA1	2	CAPACITOR,FXD, MICA DIEI, 36PF, 5%, 50V (V72136) 912-4141-24C A1A6A2A3C2C		1
72	CY1CC1C2Z	2	MIXER,RF (V15542) 277-C405-010 A1A6A2A3Z1		1
73	RCRC5G751JS	2	CAPACITOR,FXD, CER DIEI, 1000PF, M20%P80%, 50V (V16546) 913-3279-35C A1A6A2A3C110		1
73	RCRC5G391JS	2	RESISTOR,FXD, CMPSN, 750 OHMS, 5%, 1/8W (V81349) 745-1863-46C A1A6A2A3R109 (EFF TC REV LTR D)		AR
73	RCRC5G431JS	2	RESISTOR,FXD, CMPSN, 390 OHMS, 5%, 1/8W (V81349) 745-1863-390 A1A6A2A3R109 (EFF REV LTR D)		AR
73	RCRC5G471JS	2	RESISTOR,FXD, CMPSN, 430 OHMS, 5%, 1/8W (V81349) 745-1863-40C A1A6A2A3R109 (EFF REV LTR C)		AR
73	RCRC5G511JS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 5%, 1/8W (V81349) 745-1863-410 A1A6A2A3R109 (EFF REV LTR D)		AR
73	RCRC5G561JS	2	RESISTOR,FXD, CMPSN, 510 OHMS, 5%, 1/8W (V81349) 745-1863-42C A1A6A2A3R109 (EFF REV LTR D)		AR
73	RCRC5G621JS	2	RESISTOR,FXD, CMPSN, 560 OHMS, 5%, 1/8W (V81349) 745-1863-43C A1A6A2A3R109 (EFF REV LTR D)		AR
73	RCRC5G681JS	2	RESISTOR,FXD, CMPSN, 620 OHMS, 5%, 1/8W (V81349) 745-1863-44C A1A6A2A3R109 (EFF REV LTR D)		AR
73	RCRC5G751JS	2	RESISTOR,FXD, CMPSN, 680 OHMS, 5%, 1/8W (V81349) 745-1863-45C A1A6A2A3R109 (EFF REV LTR D)		AR
73	RCRC5G821JS	2	RESISTOR,FXD, CMPSN, 750 OHMS, 5%, 1/8W (V81349) 745-1863-460 A1A6A2A3R109 (EFF REV LTR C)		AR
73	RCRC5G911JS	2	RESISTOR,FXD, CMPSN, 820 OHMS, 5%, 1/8W (V81349) 745-1863-470 A1A6A2A3R109 (EFF REV LTR D)		AR
73	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 910 OHMS, 5%, 1/8W (V81349) 745-1863-480 A1A6A2A3R109 (EFF REV LTR D)		AR
74	RCRC5G151KS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A6A2A3R109 (EFF REV LTR D)		1
75	EM5C15CC3CCWV	2	RESISTOR,FXD, CMPSN, 150 OHMS, 10%, 1/8W (V81349) 745-2311-000 A1A6A2A3R117		1
76	141-1C12-CCC1	2	CAPACITOR,FXD, MICA DIEI, 15PF, PORM 0.5PF, 300V (V72136) 912-4141-130 A1A6A2A3C102		1
77	141-1C02-CCC3	2	CONNECTOR,RCPT, ELEC (V98278) 357-7353-060 A1A6A2A3J2		1
78	RCRC5G1ECKS	2	CONNECTOR,RCPT, ELEC (V98278) 357-7353-020 A1A6A2A3J1		1
79	RCRC5G243JS	2	RESISTOR,FXD, CMPSN, 18 OHMS, 10%, 1/8W (V81349) 745-2277-000 A1A6A2A3R118		1
80	RCRC5G362JS	2	RESISTOR,FXD, CMPSN, 24K, 5%, 1/8W (V81349) 745-1863-820 A1A6A2A3R102		1
81	635-8155-0C1	2	RESISTOR,FXD, CMPSN, 3.6K, 5%, 1/8W (V81349) 745-1863-620 A1A6A2A3R103		1
82	SE33CACPL	2	TERMINAL BCARD, PRESSE0 A1A6A2A3TR1		2
83	SL180-231	3	EYELET,MILC, BRS, C.092 CIA X 0.101 (V9C030) 307-1001-000		8
84	SL179-230	3	TERMINAL,FEEDTH (V12615) 306-1272-000		1
85	119-C5C7-CCCC99	3	TERMINAL,STDF (V12615) 306-1262-000		3
		3	HOLDER,XSTR (V98291) 352-9509-000		3

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-12 86	SL18C-231	3	TERMINAL, FEEDTH (V12615) 306-1272-C00		1
87	SS5170	3	TERMINAL, FEEDTH (V86577) 306-0989-C00		7
88	CC2-6CC2-CCC599	3	TERMINAL, STDF (V98291) 306-1291-C00		13
89	CC4-34C3-CCC599	3	TERMINAL, STDF (V98291) 306-2539-1C0		24
90	SL354-351WHT	3	TERMINAL, FEEDTH (V12615) 306-2474-010		42
90A	2540A	3	TERMINAL (V88245) 306-C757-C00		13
91	635-8155-CC2	3	TERMINAL BOARD, BRAZED		1
92	623-3851-CC1	2	COVER, CHASSIS		1
	33C-17C1-C1C	2	SCREW, SLFLKG, SST, 2-56 X 3/16 (V72962)		4
93	8121-1CCCCG471K	2	CAPACITOR, FXD, CER DIEI, 470PF, 10%, 100V (V18796) 913-3281-C50 A1A6A2A3C119		1
94	1N5139	2	SEMICOND DEVICE (V96341) 922-6095-010 A1A6A2A3CR101		1
95	CY1CC1C2Z	2	CAPACITOR, FXD, CER DIEI, 1000PF, #20%P80%, 50V (V16546) 913-3279-350 A1A6A2A3C130		1
96	RCRC5G391JS	2	RESISTOR, FXD, CMPSN, 390 OHMS, 5%, 1/8W (V81349) 745-1863-390 A1A6A2A3R119		AR
96	RCRC5G431JS	2	RESISTOR, FXD, CMPSN, 430 OHMS, 5%, 1/8W (V81349) 745-1863-400 A1A6A2A3R119		AR
96	RCRC5G471JS	2	RESISTOR, FXD, CMPSN, 470 OHMS, 5%, 1/8W (V81349) 745-1863-410 A1A6A2A3R119		AR
96	RCRC5G511JS	2	RESISTOR, FXD, CMPSN, 510 OHMS, 5%, 1/8W (V81349) 745-1863-420 A1A6A2A3R119		AR
96	RCRC5G561JS	2	RESISTOR, FXD, CMPSN, 560 OHMS, 5%, 1/8W (V81349) 745-1863-430 A1A6A2A3R119		AR
96	RCRC5G621JS	2	RESISTOR, FXD, CMPSN, 620 OHMS, 5%, 1/8W (V81349) 745-1863-440 A1A6A2A3R119		AR
96	RCRC5G681JS	2	RESISTOR, FXD, CMPSN, 680 OHMS, 5%, 1/8W (V81349) 745-1863-450 A1A6A2A3R119		AR
96	RCRC5G751JS	2	RESISTOR, FXD, CMPSN, 750 OHMS, 5%, 1/8W (V81349) 745-1863-460 A1A6A2A3R119		AR
96	RCRC5G821JS	2	RESISTOR, FXD, CMPSN, 820 OHMS, 5%, 1/8W (V81349) 745-1863-470 A1A6A2A3R119		AR
96	RCRC5G911JS	2	RESISTOR, FXD, CMPSN, 910 OHMS, 5%, 1/8W (V81349) 745-1863-480 A1A6A2A3R119		AR
96	RCRC5G1C2JS	2	RESISTOR, FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A6A2A3R119		AR
97	RCRC5G112JS	2	RESISTOR, FXD, CMPSN, 11K, 5%, 1/8W (V81349) 745-1863-740 A1A6A2A3R104		1
98	CY1CC102Z	2	CAPACITOR, FXD, CER DIEI, 1000PF, #20%P80%, 50V (V16546) 913-3279-350 A1A6A2A3C121 (EFF TO REV LTR D)		1
98	CK05BX152M	2	CAPACITOR, FXD, CER DIEI, 1500PF, 20%, 100V (V81349) 913-5019-610 A1A6A2A3C121 (EFF REV LTR D)		1
99	RCRC5G1C3KS	2	RESISTOR, FXD, CMPSN, 10K, 10%, 1/8W (V81349) 745-2377-CC0 A1A6A2A3R112		1
100	RCRC5G243JS	2	RESISTOR, FXD, CMPSN, 24K, 5%, 1/8W (V81349) 745-1863-820 A1A6A2A3R107		1
101	CY1CC102Z	2	CAPACITOR, FXD, CER DIEI, 1000PF, #20%P80%, 50V (V16546) 913-3279-350 A1A6A2A3C112		1
102	RCRC5G560KS	2	RESISTOR, FXD, CMPSN, 56 OHMS, 10%, 1/8W (V81349) 745-2295-CCC A1A6A2A3R108		1
103	RCRC5G181KS	2	RESISTOR, FXD, CMPSN, 180 OHMS, 10%, 1/8W (V81349) 745-2314-CC0 A1A6A2A3R111		1
104	MS75C64-C2	2	CCIL, RF, 1.50UH (V96906) 240-2025-C00 A1A6A2A3L1C4		1
105	RCRC5G163JS	2	RESISTOR, FXD, CMPSN, 16K, 5%, 1/8W (V81349) 745-1863-780 A1A6A2A3R116		1
106	RCRC5G472KS	2	RESISTOR, FXD, CMPSN, 4.7K, 10%, 1/8W (V81349) 745-2365-CC0 A1A6A2A3R113		1
107	RCRC5G472KS	2	RESISTOR, FXD, CMPSN, 4.7K, 10%, 1/8W (V81349) 745-2365-CC0 A1A6A2A3R114		1
108	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A1A6A2A3CR5		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-12 109	RCRC5G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/8W (V81349) 745-2371-CCO A1A6A2A3R14 (EFF TC REV LTR C)		1
109	RN55C59C1F	2	RESISTOR,FXD, FILM, 5.9K, 10%, 1/8W (V81349) 7C5-1C33-CCC A1A6A2A3R14 (EFF REV LTR C)		1
110	2N918	2	TRANSISTOR (V07910) 352-0440-000 A1A6A2A3Q4		1
111	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A1A6A2A3CR6		1
112	RCRC5G183KS	2	RESISTOR,FXD, CMPSN, 18K, 10%, 1/8W (V81349) 745-2386-CCO A1A6A2A3R15		1
113	RCRC5G124JS	2	RESISTOR,FXD, CMPSN, 12CK, 5%, 1/8W (V81349) 745-1864-C3C A1A6A2A3R16 (EFF TC REV LTR C)		AR
113	RCRC5G134JS	2	RESISTOR,FXD, CMPSN, 13CK, 5%, 1/8W (V81349) 745-1864-C4C A1A6A2A3R16 (EFF TC REV LTR C)		AR
113	RCRC5G154JS	2	RESISTOR,FXD, CMPSN, 15CK, 5%, 1/8W (V81349) 745-1864-C5C A1A6A2A3R16 (EFF TC REV LTR C)		AR
113	RCRC5G164JS	2	RESISTOR,FXD, CMPSN, 16CK, 5%, 1/8W (V81349) 745-1864-C6C A1A6A2A3R16 (EFF TC REV LTR C)		AR
113	RCRC5G184JS	2	RESISTOR,FXD, CMPSN, 18CK, 5%, 1/8W (V81349) 745-1864-C7C A1A6A2A3R16 (EFF TC REV LTR C)		AR
113	RCRC5G2C4JS	2	RESISTOR,FXD, CMPSN, 2CCK, 5%, 1/8W (V81349) 745-1864-C8C A1A6A2A3R16 (EFF TC REV LTR C)		AR
113	RCRC5G224JS	2	RESISTOR,FXD, CMPSN, 22CK, 5%, 1/8W (V81349) 745-1864-C9C A1A6A2A3R16 (EFF TC REV LTR C)		AR
113	RCRC5G244JS	2	RESISTOR,FXD, CMPSN, 24CK, 5%, 1/8W (V81349) 745-1864-1C0 A1A6A2A3R16 (EFF TC REV LTR C)		AR
113	RCRC5G274JS	2	RESISTOR,FXD, CMPSN, 27CK, 5%, 1/8W (V81349) 745-1864-11C A1A6A2A3R16 (EFF TC REV LTR C)		AR
113	RN55C1213F	2	RESISTOR,FXD, FILM, 121K, 1%, 1/8W (V81349) 7C5-1096-CCO A1A6A2A3R16 (EFF REV LTR C)		AR
113	RN55D1273F	2	RESISTOR,FXD, FILM, 127K, 1%, 1/8W (V81349) 7C5-1C97-CCC A1A6A2A3R16 (EFF REV LTR C)		AR
113	RN55C1333F	2	RESISTOR,FXD, FILM, 133K, 1%, 1/8W (V81349) 7C5-1098-CCO A1A6A2A3R16 (EFF REV LTR C)		AR
113	RN55C14C3F	2	RESISTOR,FXD, FILM, 14CK, 1%, 1/8W (V81349) 7C5-1C99-CCO A1A6A2A3R16 (EFF REV LTR C)		AR
113	RN55C1473F	2	RESISTOR,FXD, FILM, 147K, 1%, 1/8W (V81349) 7C5-11C0-CCO A1A6A2A3R16 (EFF REV LTR C)		AR
113	RN55C1543F	2	RESISTOR,FXD, FILM, 154K, 1%, 1/8W (V81349) 7C5-11C1-CCO A1A6A2A3R16 (EFF REV LTR C)		AR
113	RN55C1623F	2	RESISTOR,FXD, FILM, 162K, 1%, 1/8W (V81349) 7C5-11C2-CCO A1A6A2A3R16 (EFF REV LTR C)		AR
113	RN55C1693F	2	RESISTOR,FXD, FILM, 169K, 1%, 1/8W (V81349) 7C5-11C3-CCO A1A6A2A3R16 (EFF REV LTR C)		AR
113	RN55D1783F	2	RESISTOR,FXD, FILM, 178K, 1%, 1/8W (V81349) 7C5-11C4-CCO A1A6A2A3R16 (EFF REV LTR C)		AR
114	DM5F2C1JC5CWV	2	CAPACITOR,FXD, MICA DIEL, 300PF, 5%, 50V (V72136) 912-4141-480 A1A6A2A3C4		1
115	RCRC5G1C5KS	2	RESISTOR,FXD, CMPSN, 1MEGC, 10%, 1/8W (V81349) 745-2449-CCO A1A6A2A3R19		1
116	CKC5EX122K	2	CAPACITOR,FXD, CER DIEL, 1200PF, 10%, 100V (V81349) 913-5019-C90 A1A6A2A3C9		1
117	RCRC5G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349) 745-2377-CCO A1A6A2A3R12		1
118	RCRC5G474KS	2	RESISTOR,FXD, CMPSN, 470K, 10%, 1/8W (V81349) 745-2437-CCO A1A6A2A3R6		1
119	CK12BX1C3K	2	CAPACITOR,FXD, CER DIEL, 10,000PF, 20%, 100V (V81349) 913-5020-44C A1A6A2A3C11		1
120	RCRC5G474KS	2	RESISTOR,FXD, CMPSN, 470K, 10%, 1/8W (V81349) 745-2437-CCO A1A6A2A3R5		1
121	1N5711	2	SEMICOND DEVICE (V28480) 353-3691-C10 A1A6A2A3CR1		1
122	2N918	2	TRANSISTOR (V07910) 352-C440-CCO A1A6A2A3Q1		1
123	RCRC5G272KS	2	RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/8W (V81349) 745-2356-CCO A1A6A2A3R2		1
124	RCRC5G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349) 745-2377-CCC A1A6A2A3R1		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-12	125		2 RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/8W (V81349) 745-2304-CCC A1A6A2A3R3		1
	125A		2 SEMICOND DEVICE (VC3508) 353-3644-010 A1A6A2A3CR2 (EFF REV LTR H)		1
	126		2 RESISTOR,FXD, CMPSN, 10MEG, 10%, 1/8W (V81349) 745-1864-850 A1A6A2A3R20		1
	127		2 TRANSISTOR (V0791C) 352-0440-CCC A1A6A2A3Q105		1
	128		2 RESISTOR,FXD, CMPSN, 56 OHMS, 10%, 1/8W (V81349) 745-2295-CCO A1A6A2A3R101		1
	129		2 TRANSISTOR (V0791C) 352-0440-CCO A1A6A2A3Q1C1		1
	130		2 CAPACITOR,FXD, CER DIEI, 1000PF, #20%P80%, 50V (V16546) 913-3279-350 A1A6A2A3C106		1
	131		2 CAPACITOR,FXD, CER DIEI, 1000PF, #20%P80%, 50V (V16546) 913-3279-350 A1A6A2A3C104		1
	132		2 TRANSFORMER A1A6A2A3T1C1		1
	133		2 CCIL,RF, 0.15UH (V96906) 240-2013-000 A1A6A2A3L101		1
	134		2 RESISTOR,FXD, CMPSN, 120 OHMS, 5%, 1/8W (V81349) 745-1863-270 A1A6A2A3R42		1
	135		2 CAPACITOR,FXD, MICA DIEI, 36PF, 5%, 50V (V72136) 912-4141-240 A1A6A2A3C19		1
	136		2 RESISTOR,FXD, CMPSN, 47 OHMS, 5%, 1/8W (V81349) 745-1863-170 A1A6A2A3R41		1
	137		2 RESISTOR,FXD, CMPSN, 120 OHMS, 5%, 1/8W (V81349) 745-1863-270 A1A6A2A3R40		1
	138		2 RESISTOR,FXD, CMPSN, 18 OHMS, 10%, 1/8W (V81349) 745-2277-CCO A1A6A2A3R120		1
	139		2 RESISTOR,FXD, CMPSN, 150 OHMS, 10%, 1/8W (V81349) 745-2311-CCO A1A6A2A3R121		1
	140		2 CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-050 A1A6A2A3C113		1
	141		2 RESISTOR,FXD, CMPSN, 11K, 5%, 1/8W (V81349) 745-1863-740 A1A6A2A3R106		1
	142		2 CAPACITOR,FXD, CER DIEI, 1000PF, #20%P80%, 50V (V16546) 913-3279-350 A1A6A2A3C109		1
	143		2 RESISTOR,FXD, CMPSN, 680K, 10%, 1/8W (V81349) 745-2443-CCO A1A6A2A3R17	AR	
	144		2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCO A1A6A2A3R7		1
	145		2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCO A1A6A2A3R11		1
	146		2 CAPACITOR,FXD, MICA DIEI, 150PF, 5%, 50V (V72136) 912-4141-400 A1A6A2A3C23		1
	147		2 CCIL,RF, 0.27UH (V96906) 240-2016-000 A1A6A2A3L4		1
	148		2 CCIL,RF, 0.27UH (V96906) 240-2016-000 A1A6A2A3L1		1
	149		2 RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/8W (V81349) 745-2268-CCO A1A6A2A3R30		1
	150		2 RESISTOR,FXD, CMPSN, 68K, 5%, 1/8W (V81349) 745-1863-930 A1A6A2A3R28		1
	151		2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCO A1A6A2A3R29		1
	152		2 RESISTOR,FXD, CMPSN, 56 OHMS, 10%, 1/8W (V81349) 745-2295-CCO A1A6A2A3R27		1
	153		2 SEMICOND DEVICE (V28480) 353-3691-010 A1A6A2A3CR9		1
	154		2 RESISTOR,FXD, CMPSN, 47K, 5%, 1/8W (V81349) 745-1863-890 A1A6A2A3R38		1
	155		2 SEMICOND DEVICE (V28480) 353-3691-010 A1A6A2A3CR10		1
	156		2 RESISTOR,FXD, CMPSN, 220 OHMS, 10%, 1/8W (V81349) 745-2317-CCO A1A6A2A3R37		1
	157		2 CCIL,RF, 1.20UH (V96906) 240-2024-000 A1A6A2A3L6		1
	158		2 TRANSISTOR (V0791C) 352-C440-CCO A1A6A2A3Q5		1
	159		2 CCIL,RF, 100UH (V96906) 240-2047-000 A1A6A2A3L3		1
	160		2 RESISTOR,FXD, CMPSN, 8.2K, 10%, 1/8W (V81349) 745-2374-CCO A1A6A2A3R33		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-12 161	RCRC5G563KS	2	RESISTOR,FXD, CMPSN, 56K, 10%, 1/8W (V81349) 745-2404-CCO A1A6A2A3R8		1
162	CCR13CG1R8C	2	CAPACITOR,FXD, CER DIEI, 1.8PF, 0.25PF, 75W (V81349) 913-1098-260 A1A6A2A3C101		1
162	81118C9CCKC-478 C	2	CAPACITOR,FXD, CER DIEI, 0.47PF, 0.25PF, 75V (V72982) 913-1098-320 A1A6A2A3C101 (EFF REV LTR C) OR		1
162	8101E212CCKC-109 C	2	CAPACITOR,FXD, CER DIEI, 1PF, 0.25PF, 150V (V72982) 913-1098-330 A1A6A2A3C101 (EFF REV LTR C) OR		1
163	635-8153-CC1	2	CHASSIS, RCLLED		1
164	SE53NIPL	3	EYELET,MTLC, NP BRS, 0.154 DIA X 0.096 (V07707) 3C7-12C1-CCO		1
165	SE33CADPL	3	EYELET,MTLC, BRS, 0.092 DIA X 0.101 (V90030) 3C7-1CC1-CCO		3
166	635-8153-CC4	3	CHASSIS, BRAZED		1

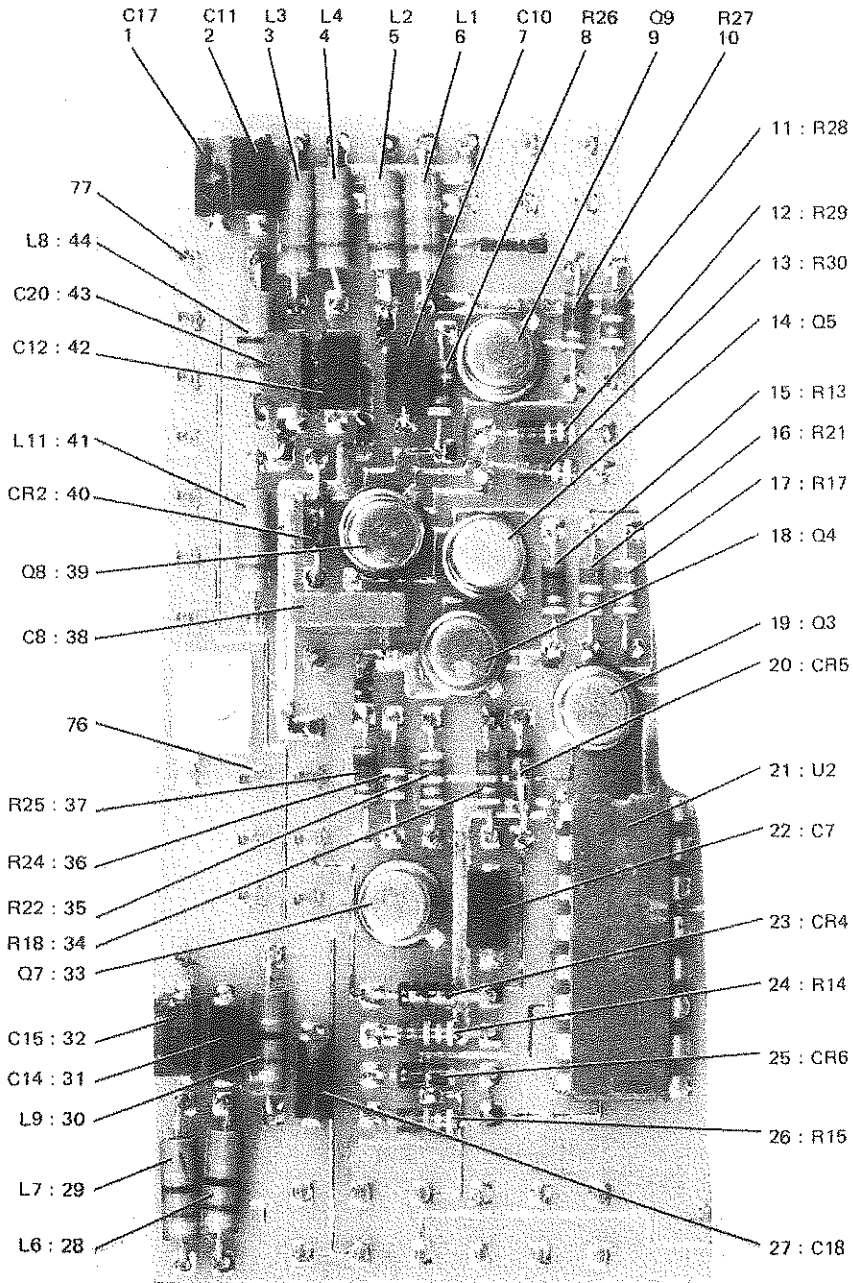
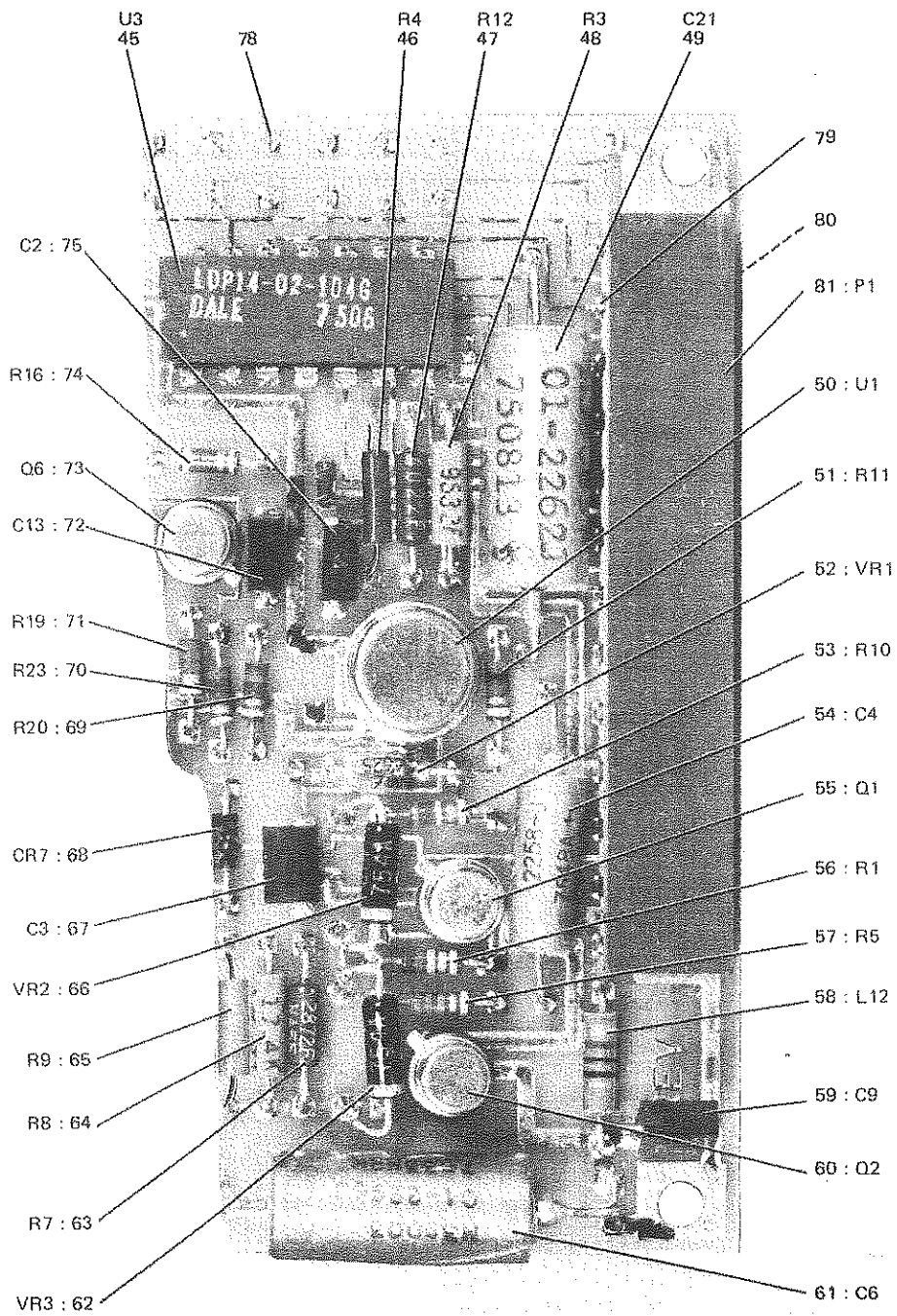


Figure 3-13. Voltage Regulator A1A6A2A1 (Sheet 1 of 2)

TP4-9669-027



TP4-9669-027

Figure 3-13. Voltage Regulator A1A6A2A1 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

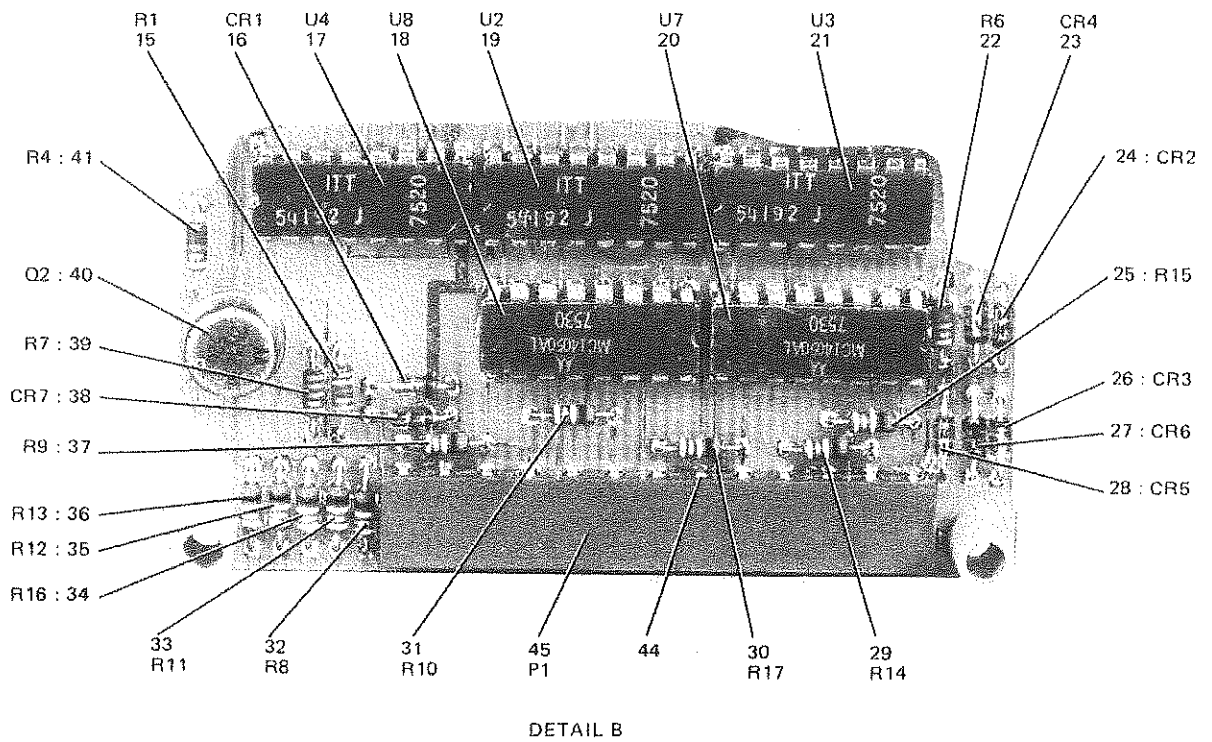
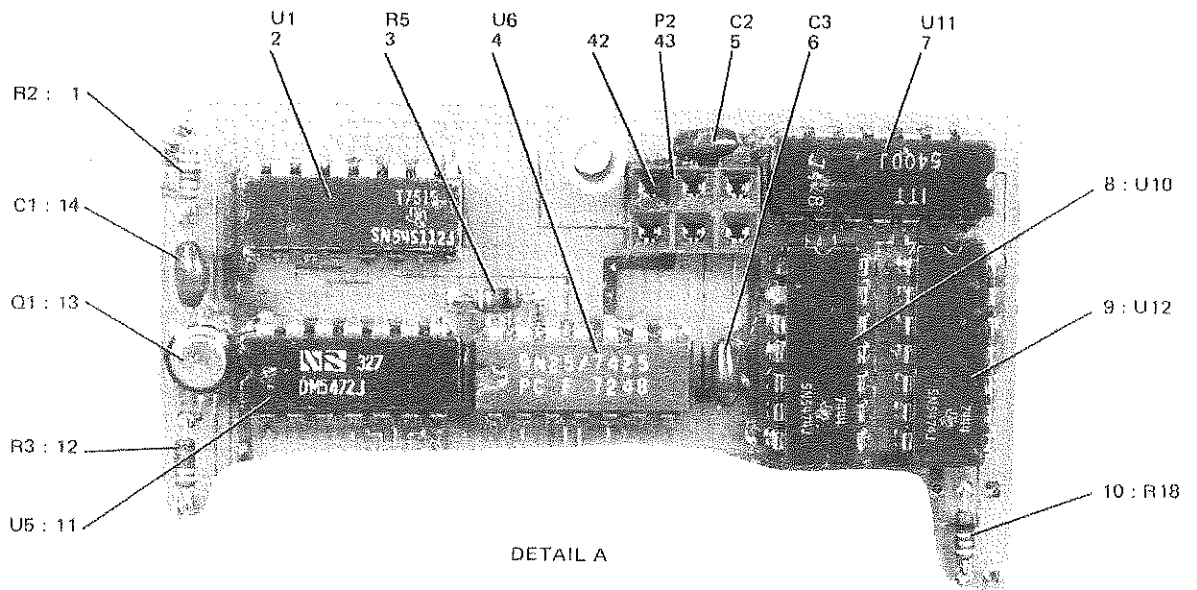
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-13 -	6C1-3874-CC2		1 VOLTAGE REGULATOR A1A6A2A1 (SEE FIG 3-11-2 FOR NHA1)		REF
1	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 5CV (V81349) 913-5019-320 A1A6A2A1C17		1
2	CK05BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A2A1C11		1
3	MST5C84-C2	2	CCIL,RF, 1.50UH (V96906) 240-2025-000 A1A6A2A1L3		1
4	MST5C84-C2	2	CCIL,RF, 1.50UH (V96906) 240-2025-000 A1A6A2A1L4		1
5	MST5C84-C2	2	CCIL,RF, 1.50UH (V96906) 240-2025-000 A1A6A2A1L2		1
6	MST5C84-C2	2	CCIL,RF, 1.50UH (V96906) 240-2025-000 A1A6A2A1L1		1
7	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 5CV (V81349) 913-5019-320 A1A6A2A1C10		1
8	RCRC5G335KS	2	RESISTOR,FXD, CMPSN, 3.3MEGO, 10%, 1/8W (V81349) 745-1864-790 A1A6A2A1R26		1
9	2N29C7A	2	TRANSISTOR (V04713) 352-0551-010 A1A6A2A1Q9		1
10	RCRC5G752JS	2	RESISTOR,FXD, CMPSN, 7.5K, 5%, 1/8W (V81349) 745-1863-700 A1A6A2A1R27		1
11	RCRC5G823KS	2	RESISTOR,FXD, CMPSN, 82K, 10%, 1/8W (V81349) 745-2410-000 A1A6A2A1R28		1
12	RCRC5G223KS	2	RESISTOR,FXD, CMPSN, 22K, 10%, 1/8W (V81349) 745-2389-000 A1A6A2A1R29		1
13	RCRC5G822KS	2	RESISTOR,FXD, CMPSN, 8.2K, 10%, 1/8W (V81349) 745-2374-000 A1A6A2A1R30		1
14	2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1A6A2A1C5		1
15	RCRC5G1C5KS	2	RESISTOR,FXD, CMPSN, 1MEGO, 10%, 1/8W (V81349) 745-2449-000 A1A6A2A1R13		1
16	RCRC5G124KS	2	RESISTOR,FXD, CMPSN, 120K, 10%, 1/8W (V81349) 745-2416-000 A1A6A2A1R21		1
17	RCRC5G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/8W (V81349) 745-2401-000 A1A6A2A1R17		1
18	2N29C7A	2	TRANSISTOR (V04713) 352-0551-010 A1A6A2A1Q4		1
19	2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1A6A2A1Q3		1
20	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A1A6A2A1CR5		1
21	CC4C49MJ	2	MICROCVRCUIT (V27014) 351-8197-010 A1A6A2A1U2		1
22	CK05BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 5CV (V81349) 913-5019-320 A1A6A2A1C7 (EFF TO REV LTR N1)		1
22	M39CC3-C1-2255	2	CAPACITOR,FXD, ELCTLT, 4.7UF, 20%, 10V (V81349) 184-9086-150 A1A6A2A1C7 (EFF REV LTR N)		1
23	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A1A6A2A1CR4		1
24	RCRC5G563KS	2	RESISTOR,FXD, CMPSN, 56K, 10%, 1/8W (V81349) 745-2404-000 A1A6A2A1R14		1
25	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A1A6A2A1CR6		1
26	RCR05G563KS	2	RESISTOR,FXD, CMPSN, 56K, 10%, 1/8W (V81349) 745-2404-000 A1A6A2A1R15		1
27	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 5CV (V81349) 913-5019-320 A1A6A2A1C18		1
28	MST5084-C2	2	CCIL,RF, 1.50UH (V96906) 240-2025-000 A1A6A2A1L6		1
29	MST5C84-C2	2	CCIL,RF, 1.50UH (V96906) 240-2025-000 A1A6A2A1L7		1
30	MST5C84-C2	2	CCIL,RF, 1.50UH (V96906) 240-2025-000 A1A6A2A1L9		1
31	CK05BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A2A1C14		1
32	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A1C15		1
33	2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1A6A2A1Q7		1
34	RCRC5G822KS	2	RESISTOR,FXD, CMPSN, 8.2K, 10%, 1/8W (V81349) 745-2374-000 A1A6A2A1R18		1
35	RCRC5G474KS	2	RESISTOR,FXD, CMPSN, 470K, 10%, 1/8W (V81349) 745-2437-000 A1A6A2A1R22		1
36	RCRC5G224KS	2	RESISTOR,FXD, CMPSN, 220K, 10%, 1/8W (V81349) 745-2425-000 A1A6A2A1R24		1
37	RCRC5G105KS	2	RESISTOR,FXD, CMPSN, 1MEGO, 10%, 1/8W (V81349) 745-2449-000 A1A6A2A1R25		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-13	38	CKC6BX1C5K	2 CAPACITOR,FXD, CER DIEI, 1UF, 10%, 50V (V81349) 913-5C19-56C A1A6A2A1C8		1
	39	2N29C7A	2 TRANSISTOR (V04713) 352-0551-010 A1A6A2A1Q8		1
	40	1N4454	2 SEMICOND DEVICE (VC3508) 353-3644-C1C A1A6A2A1CR2		1
	41	MS75CE4-C2	2 COIL,RF, 1.50UH (V56906) 240-2025-C00 A1A6A2A1L11		1
	42	CKC6BX1C3K	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5C19-2C0 A1A6A2A1C12		1
	43	CKC6BX1C4K	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5C19-32C A1A6A2A1C20		1
	44	MS75CE4-C2	2 COIL,RF, 1.50UH (V56906) 240-2025-C00 A1A6A2A1L8		1
	45	314A1G4	2 RESISTOR NTK, 100K, 2%, 1W (VC1121) 35C-4C27-14C A1A6A2A1L3		1
		6C1-3491-CC1	2 RESISTOR KIT (ACN-FRCCURABLE ITEM)		1
	46	RN55C9C91F	3 RESISTOR,FXD, FILM, 9.09K, 1%, 1/8W (V81349) 7C5-1C42-CCC A1A6A2A1R4		AR
	46	RN55C1C52F	3 RESISTOR,FXD, FILM, 10.5K, 1%, 1/8W (V81349) 7C5-1C45-CCO A1A6A2A1R4		AR
	46	RN55C1212F	3 RESISTOR,FXD, FILM, 12.1K, 1%, 1/8W (V81349) 7C5-1C48-CCC A1A6A2A1R4		AR
	46	RN55C1472F	3 RESISTOR,FXD, FILM, 14.7K, 1%, 1/8W (V81349) 7C5-1052-CCO A1A6A2A1R4		AR
	46	RN55C1542F	3 RESISTOR,FXD, FILM, 15.4K, 1%, 1/8W (V81349) 7C5-1053-CCC A1A6A2A1R4		AR
	46	RN55C1622F	3 RESISTOR,FXD, FILM, 16.2K, 1%, 1/8W (V81349) 7C5-1054-CCO A1A6A2A1R4		AR
	46	RN55C1872F	3 RESISTOR,FXD, FILM, 18.7K, 1%, 1/8W (V81349) 7C5-1C57-CCC A1A6A2A1R4		AR
	46	RN6CC9761F	3 RESISTOR,FXD, FILM, 9.76K, 1%, 1/4W (V81349) 7C5-3602-370 A1A6A2A1R4 (EFF TC REV LTR A)		AR
	46	RN6CC1132F	3 RESISTOR,FXD, FILM, 11.3K, 1%, 1/4W (V81349) 7C5-3602-4CC A1A6A2A1R4 (EFF TC REV LTR A)		AR
	46	RN6CC13C2F	3 RESISTOR,FXD, FILM, 13K, 1%, 1/4W (V81349) 7C5-3602-430 A1A6A2A1R4 (EFF TC REV LTR A)		AR
	46	RN6CC1372F	3 RESISTOR,FXD, FILM, 13.7K, 1%, 1/8W (V81349) 7C5-3602-44C A1A6A2A1R4 (EFF TC REV LTR A)		AR
	46	RN6CC1742F	3 RESISTOR,FXD, FILM, 17.4K, 1%, 1/4W (V81349) 7C5-3602-490 A1A6A2A1R4 (EFF TC REV LTR A)		AR
	46	RN55C9761F	3 RESISTOR,FXD, FILM, 9.76K, 1%, 1/8W (V81349) 7C5-3605-470 A1A6A2A1R4		AR
	46	RN55C1132F	3 RESISTOR,FXD, FILM, 11.3K, 1%, 1/8W (V81349) 7C5-3605-5C0 A1A6A2A1R4		AR
	46	RN55C13C2F	3 RESISTOR,FXD, FILM, 13K, 1%, 1/8W (V81349) 7C5-3605-530 A1A6A2A1R4		AR
	46	RN55C1372F	3 RESISTOR,FXD, FILM, 13.7K, 1%, 1/8W (V81349) 7C5-3605-54C A1A6A2A1R4		AR
	46	RN55C1742F	3 RESISTOR,FXD, FILM, 17.4K, 1%, 1/8W (V81349) 7C5-3605-590 A1A6A2A1R4		AR
	47	RN55C4C22F	2 RESISTOR,FXD, FILM, 40.2K, 1%, 1/8W (V81349) 7C5-1C73-CCC A1A6A2A1R12		1
	48	RN55C9522F	2 RESISTOR,FXD, FILM, 95.2K, 1%, 1/8W (V81349) 7C5-1C91-CCO A1A6A2A1R3		1
	49	M39CC3-C1-2262	2 CAPACITOR,FXD, ELCTLT, 100UF, 20%, 10V (V81349) 184-9086-22C A1A6A2A1C21		1
	50	MC1558G	2 INTEGRATED CKT (V04713) 351-1071-C20 A1A6A2A1U1		1
	51	RCRC9G1C2KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCO A1A6A2A1R11		1
	52	MZ4625	2 SEMICOND DEVICE (V04713) 353-3591-490 A1A6A2A1VR1		1
	53	RCRC9G333KS	2 RESISTOR,FXD, CMPSN, 33K, 10%, 1/8W (V81349) 745-2395-CCO A1A6A2A1R10		1
	54	M39CC3-C1-225E	2 CAPACITOR,FXD, ELCTLT, 33UF, 20%, 10V (V81349) 184-9086-180 A1A6A2A1C4 (EFF TC REV LTR N)		1
	54	M39CC3-C1-2255	2 CAPACITOR,FXD, ELCTLT, 4.7UF, 20%, 10V (V81349) 184-9086-150 A1A6A2A1C4 (EFF REV LTR N)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-13	55	2N2222A	2 TRANSISTOR (VC7263) 352-C661-C2C A1A6A2A1C1		1
	56	RCRC5G273KS	2 RESISTOR,FXD, CMPSA, 27K, 10%, 1/8W (V81349)		1
	57	RCRC5G6E1KS	2 RESISTOR,FXD, CMPSA, 680 OHMS, 10%, 1/8W (V81349) 745-2392-CCO A1A6A2A1R1		1
	58	MS75C64-12	2 CCIL,RF, 1GUH (V96906) 240-2035-CCC A1A6A2A1L12		1
	59	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A1C9		1
	60	2N2222A	2 TRANSISTOR (VC7263) 352-C661-020 A1A6A2A1C2		1
	61	M39CC3-C1-2296	2 CAPACITOR,FXD, ELCTLT, 47UF, 20%, 20V (V81349) 1E4-9C86-560 A1A6A2A1C6		1
	62	JAN1N754A	2 SEMICOND DEVICE (V8135C) 353-2981-CCO A1A6A2A1VR3		1
	63	RN55C2872F	2 RESISTOR,FXD, FILM, 28.7K, 1%, 1/8W (V81349) 7C5-1C66-CCO A1A6A2A1R7		1
	64	RN55D1742F	2 RESISTOR,FXD, FILM, 17.4K, 1%, 1/8W (V81349) 7C5-3605-590 A1A6A2A1R8		1
		6C1-349C-CC1	2 RESISTOR KIT (NON-PRCCURABLE ITEM)		1
	65	RN55D2491F	3 RESISTOR,FXD, FILM, 2.49K, 1%, 1/8W (V81349) 7C5-1C15-CCO A1A6A2A1R9		AR
	65	RN55C3011F	3 RESISTOR,FXD, FILM, 3.01K, 1%, 1/8W (V81349) 7C5-1019-CCO A1A6A2A1R9		AR
	65	RN55C3831F	3 RESISTOR,FXD, FILM, 3.83K, 1%, 1/8W (V81349) 7C5-1C24-CCO A1A6A2A1R9		AR
	65	RN55C4421F	3 RESISTOR,FXD, FILM, 4.42K, 1%, 1/8W (V81349) 7C5-1027-CCO A1A6A2A1R9		AR
	65	RN55C5111F	3 RESISTOR,FXD, FILM, 5.11K, 1%, 1/8W (V81349) 7C5-1C30-CCO A1A6A2A1R9		AR
	65	RN55C59C1F	3 RESISTOR,FXD, FILM, 5.9K, 10%, 1/8W (V81349) 7C5-1C33-CCO A1A6A2A1R9		AR
	65	RN55C6191F	3 RESISTOR,FXD, FILM, 6.19K, 1%, 1/8W (V81349) 7C5-1C34-CCO A1A6A2A1R9 (EFF REV LTR A)		AR
	65	RN55C6811F	3 RESISTOR,FXD, FILM, 6.81K, 1%, 1/8W (V81349) 7C5-1C36-CCO A1A6A2A1R9		AR
	66	JAN1N754A	2 SEMICOND DEVICE (V8135C) 353-2981-CCO A1A6A2A1VR2		1
	67	CKO5BX1C4K	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A1C3		1
	68	1N4454	2 SEMICOND DEVICE (VC3508) 353-3644-C1C A1A6A2A1CR7		1
	69	RCRC5G562KS	2 RESISTOR,FXD, CMPSA, 5.6K, 10%, 1/8W (V81349) 745-2368-CCO A1A6A2A1R2C		1
	70	RCRC5G152KS	2 RESISTOR,FXD, CMPSA, 1.5K, 10%, 1/8W (V81349) 745-2347-CCO A1A6A2A1R23		1
	71	RCRC5G222KS	2 RESISTOR,FXD, CMPSA, 2.2K, 10%, 1/8W (V81349) 745-2353-CCO A1A6A2A1R19		1
	72	CKC5BX1C3K	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A6A2A1C13		1
	73	2N2222A	2 TRANSISTOR (V07263) 352-C661-020 A1A6A2A1C6		1
	74	RCRC5G472KS	2 RESISTOR,FXD, CMPSA, 4.7K, 10%, 1/8W (V81349) 745-2365-CCO A1A6A2A1R16		1
	75	CKC5BX1C4K	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A1A6A2A1C2		1
	76	372-2601-C69	2 CONTACT,ELEC 372-2601-C69		6
	77	372-2601-C10	2 CONTACT,ELEC 372-2601-010		2
	78	372-2601-C83	2 CONTACT,ELEC 372-2601-C83		30
	79	372-2234-C20	2 CONTACT,ELEC 372-2234-C20		13
	80	372-2234-C10	2 CONTACT,ELEC 372-2234-C10		13
	81	372-2623-022	2 HCUSING,CONN,EL 372-2623-022 A1A6A2A1P1		1
	82	372-2601-027	2 CONTACT,ELEC 372-2601-027		12
	83	372-2601-C45	2 CONTACT,ELEC 372-2601-045		4



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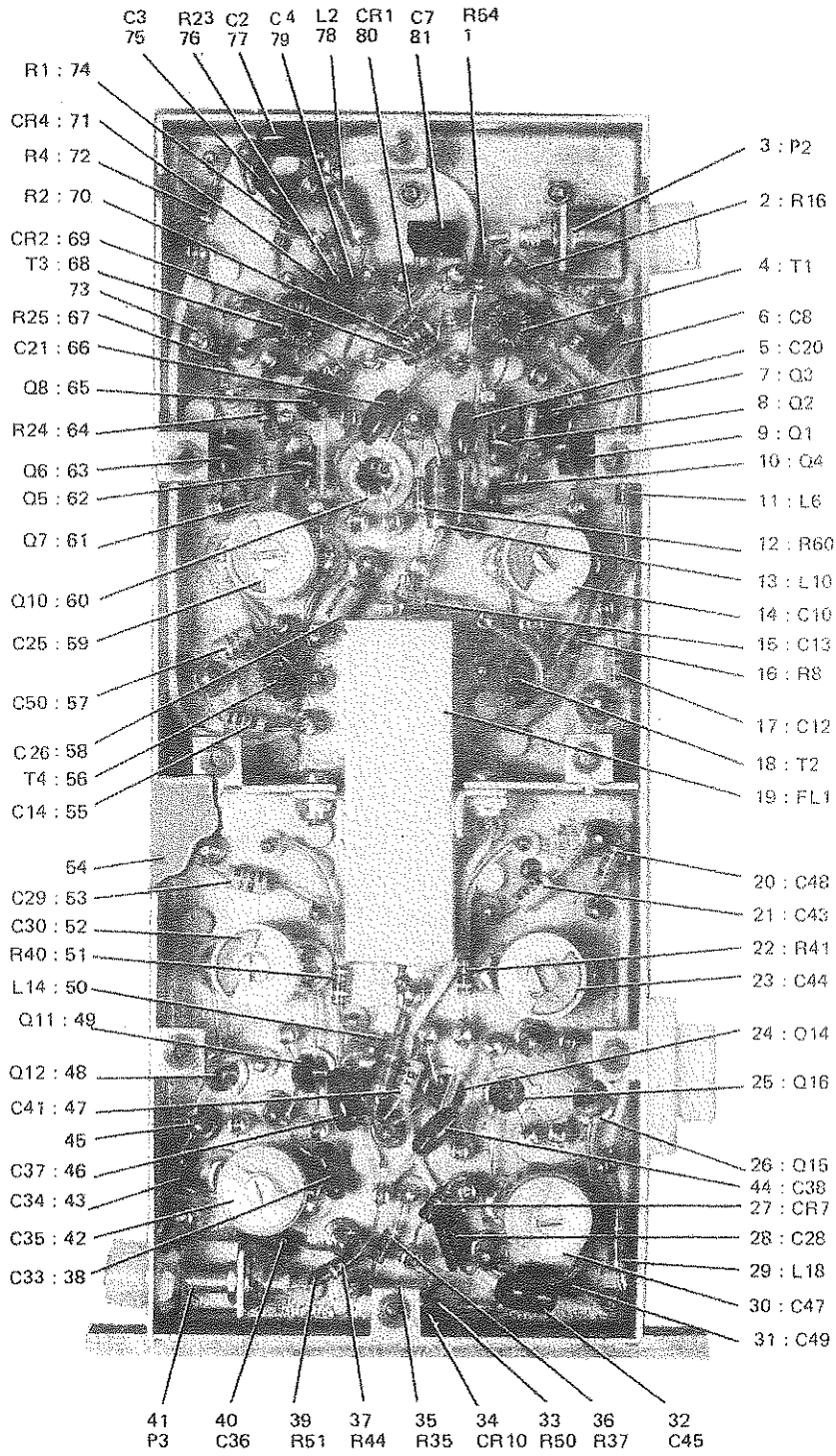
Figure 3-14. Variable Frequency Divider A1A6A2A2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-14 -	6C1-3875-CC2		1 VARIABLE FREQUENCY DIVIDER A1A6A2A2 (SEE FIG 3-11-3 FCR NHA)		REF
1	RCRC5G331KS	2	RESISTOR,FXD, CMPSN, 330 OHMS, 10%, 1/8W (V81349) 745-2323-CCC A1A6A2A2R2		1
2	SN54S112J	2	INTEGRATED CKT (V01295) 351-7808-010 A1A6A2A2U1		1
3	RCRC5G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-CCC A1A6A2A2R5		1
4	SN5425J	2	INTEGRATED CKT (V01295) 351-7857-010 A1A6A2A2U6		1
5	DM5E47CJC50WV	2	CAPACITOR,FXD, MICA DIE, 47PF, 5%, 50V (V72136) 912-4141-280 A1A6A2A2C2		1
6	DM5E47CJC50WV	2	CAPACITOR,FXD, MICA DIE, 47PF, 5%, 50V (V72136) 912-4141-280 A1A6A2A2C3		1
7	DM54CCJ	2	INTEGRATED CKT (V27014) 351-7389-020 A1A6A2A2U11		1
8	SN5474J	2	INTEGRATED CKT (V01295) 351-7606-020 A1A6A2A2U10		1
9	SN5474J	2	INTEGRATED CKT (V01295) 351-7606-020 A1A6A2A2U12		1
10	RCRC5G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349) 745-2377-CCC A1A6A2A2R18		1
11	SN5472J	2	INTEGRATED CKT (V01295) 351-7749-020 A1A6A2A2U5		1
12	RCRC5C562KS	2	RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/8W (V81349) 745-2368-CCC A1A6A2A2R3 (EFF TC REV LTR J)		1
12	RCRC5G332KS	2	RESISTOR,FXD, CMPSN, 3.3K, 10%, 1/8W (V81349) 745-2359-CCC A1A6A2A2R3 (EFF REV LTR J)		1
13	2N2784	2	TRANSISTOR (VC3877) 352-C7C7-020 A1A6A2A2C1		1
14	DM5E51CJC50WV	2	CAPACITOR,FXD, MICA DIE, 51PF, 5%, 50V (V72136) 912-4141-300 A1A6A2A2C1		1
15	RCRC5G3S1KS	2	RESISTOR,FXD, CMPSN, 350 OHMS, 10%, 1/8W (V81349) 745-2326-CCC A1A6A2A2R1		1
16	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A1A6A2A2CR1		1
17	54192DM	2	INTEGRATED CKT (VC7263) 351-7607-030 A1A6A2A2U4		1
18	4C5C8DM	2	MICROCIRCUIT (V02735) 351-8208-010 A1A6A2A2U8		1
19	54192DM	2	INTEGRATED CKT (V07263) 351-7607-030 A1A6A2A2U2		1
20	4C5C8DM	2	MICROCIRCUIT (V02735) 351-8208-010 A1A6A2A2U7		1
21	54192DM	2	INTEGRATED CKT (VC7263) 351-7607-030 A1A6A2A2U3		1
22	RCRC5G563KS	2	RESISTOR,FXD, CMPSN, 56K, 10%, 1/8W (V81349) 745-2404-CCC A1A6A2A2R6		1
23	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A6A2A2CR4		1
24	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A6A2A2CR2		1
25	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A6A2A2R15		1
26	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A6A2A2CR3		1
27	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A6A2A2CR6		1
28	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A6A2A2CR5		1
29	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A6A2A2R14		1
30	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A6A2A2R17		1
31	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A6A2A2R10		1
32	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A6A2A2R8		1
33	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A6A2A2R11		1
34	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A6A2A2R16		1
35	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A6A2A2R12		1
36	RCRC5G1C4KS	2	RESISTOR,FXD, CMPSN, 100K, 10%, 1/8W (V81349) 745-2413-CCC A1A6A2A2R13		1

GROUP ASSEMBLY PARTS LIST

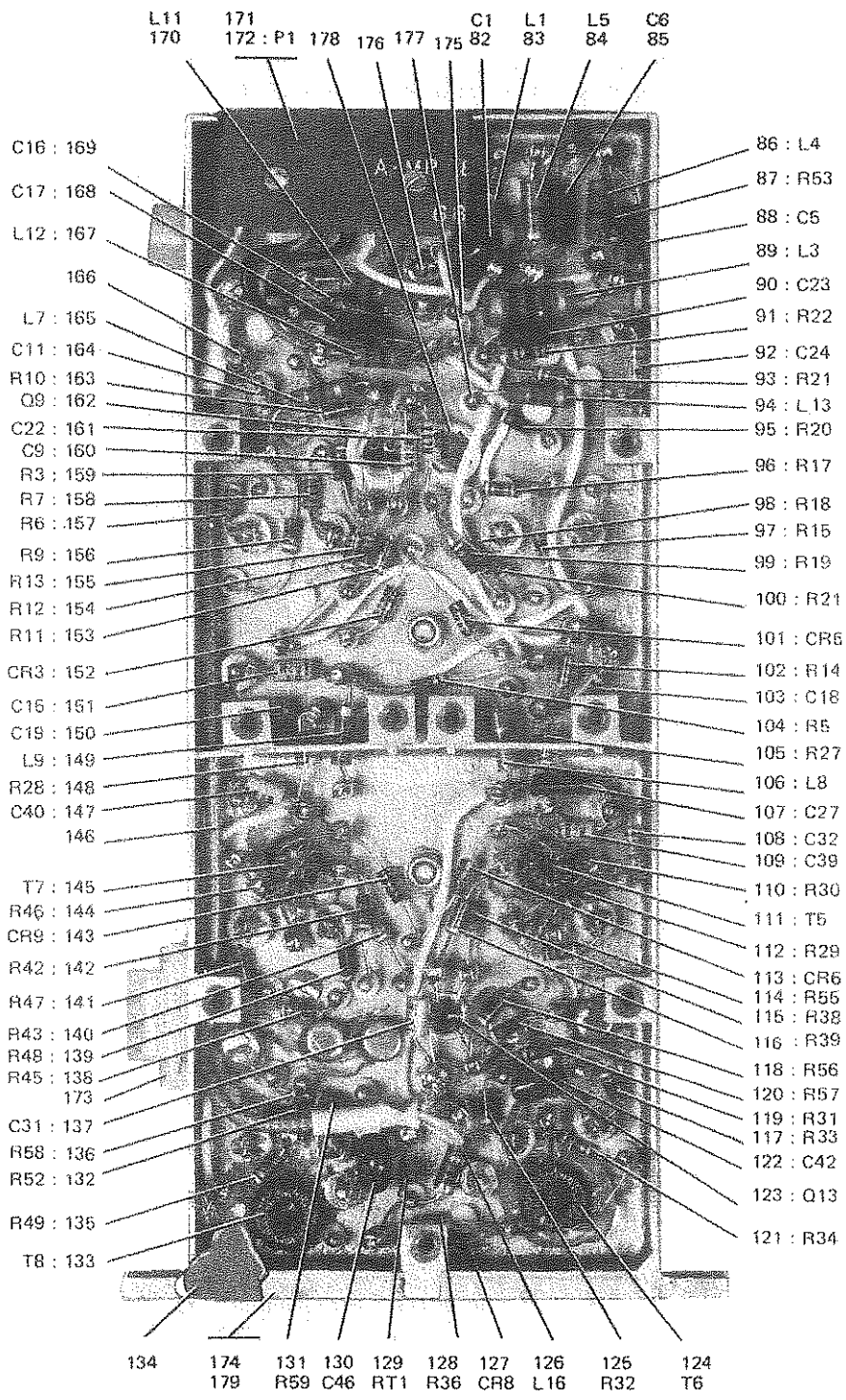
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNTS PER ASSY
3-14	37	RCRC5G1C4KS	2 RESISTOR,FXD, CMPSN, 100K, 1C%, 1/8W (V81349) 745-2413-CCG A1A6A2A2R9		1
	38	1N4454	2 SEMICOND DEVICE (VC3508) 353-3644-C10 A1A6A2A2CR7		1
	39	RCRC5G333KS	2 RESISTOR,FXD, CMPSN, 33K, 10%, 1/8W (V81349) 745-2395-CCG A1A6A2A2R7		1
	40	2N4234	2 TRANSISTOR (V07263) 352-0695-030 A1A6A2A2Q2		1
	41	RCRC5G221KS	2 RESISTOR,FXD, CMPSN, 220 OHMS, 10%, 1/8W (V81349) 745-2317-CCG A1A6A2A2R4		1
	42	372-3352-C11	2 CONTACT,ELEC 372-3392-011		6
	43	372-2624-C12	2 HCUSING,CONN 372-2624-C12 A1A6A2A2P2		1
	44	372-2234-C10	2 CONTACT,ELEC 372-2234-C10		13
	45	635-8162-CC1	2 HCUSING A1A6A2A2P1		1



FRONT OF ASSEMBLY

TP4-9682-027

Figure 3-15. Mixer A1A2 (Sheet 1 of 2)



REAR OF ASSEMBLY

TP4-9682-027

Figure 3-15. Mixer A1A2 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-15 -	629-3403-CC1	1	MIXER A1A2 (SEE FIG 3-2-16 FOR AHA)		REF
1	RCRC5G1CCJS	2	RESISTOR,FXD, CMPSN, 10 OHMS, 5%, 1/8W (V81349) 745-1863-010 A1A2R54		1
2	RCRC5G1S1JS	2	RESISTOR,FXD, CMPSN, 150 OHMS, 5%, 1/8W (V81349) 745-1863-290 A1A2R16		1
3	141-1CC2-CCC2	2	CONNECTOR,RCPT, ELEC (V98278) 357-7353-010 A1A2P2		1
4	618-3367-CC1	2	BUSHING (AP)		1
5	628-2336-C01	2	TRANSFORMER A1A2T1		1
5	CM5F1C1JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-050 A1A2C20		1
6	CK05BXC4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-720 A1A2C8		1
7	SPF554	2	TRANSISTOR (V04713) 352-1068-020 A1A2Q3 (EFF TO REV LTR P)		1
7	SPF554-1	2	TRANSISTOR (V04713) 352-1068-030 A1A2Q3 (EFF REV LTR P)		1
8	SPF554	2	TRANSISTOR (V04713) 352-1068-020 A1A2Q2 (EFF TO REV LTR P)		1
8	SPF554-1	2	TRANSISTOR (V04713) 352-1068-030 A1A2Q2 (EFF REV LTR P)		1
9	SPF554	2	TRANSISTOR (V04713) 352-1068-020 A1A2Q1 (EFF TO REV LTR P)		1
9	SPF554-1	2	TRANSISTOR (V04713) 352-1068-030 A1A2Q1 (EFF REV LTR P)		1
10	SPF554	2	TRANSISTOR (V04713) 352-1068-020 A1A2Q4 (EFF TO REV LTR P)		1
10	SPF554-1	2	TRANSISTOR (V04713) 352-1068-030 A1A2Q4 (EFF REV LTR P)		1
11	MS75CE4-17	2	CCIL,RF, 27UH (V96906) 240-2040-000 A1A2L6		1
12	RCRC5G162JS	2	RESISTOR,FXD, CMPSN, 1.8K, 5%, 1/8W (V81349) 745-1863-550 A1A2R60		1
13	MS75CE4-C4	2	CCIL,RF, 2.20UH (V96906) 240-2027-000 A1A2L10		1
14	538CC2CCPC89R	2	CAPACITOR,VAR, CER DIEI, 2 TC 8PF, 350V (V72982) 917-1228-000 A1A2C10		1
15	CK12BXC2M	2	CAPACITOR,FXD, CER DIEI, 100PF, 20%, 100V (V81349) 913-3019-000 A1A2C13		1
16	RCRC5G23CKS	2	RESISTOR,FXD, CMPSN, 33 OHMS, 10%, 1/8W (V81349) 745-2286-000 A1A2R8		1
17	CK12BXC2M	2	CAPACITOR,FXD, CER DIEI, 100PF, 20%, 100V (V81349) 913-3019-000 A1A2C12		1
18	628-2335-C01	2	TRANSFORMER A1A2T2		1
19	2Q25	2	FILTER,BANDPASS (V00136) 293-1306-010 A1A2FL1		1
	92-1660-26	2	NUT,SLFLKG,HEX, CD PL BRS, 2-56 (V72962) 333-1405-030 (AP)		2
	MS51957-2	2	SCREW,PACH, SST, 2-56 X 3/16 (V96906) 343-0123-000 (AP)		2
20	CK12BXC2M	2	CAPACITOR,FXD, CER DIEI, 100PF, 20%, 100V (V81349) 913-3019-000 A1A2C48		1
21	CK12BXC2M	2	CAPACITOR,FXD, CER DIEI, 100PF, 20%, 100V (V81349) 913-3019-000 A1A2C43		1
22	RCRC5G392JS	2	RESISTOR,FXD, CMPSN, 3.9K, 5%, 1/8W (V81349) 745-1863-630 A1A2R41		1
23	538CC2CCPC89R	2	CAPACITOR,VAR, CER DIEI, 2 TC 8PF, 350V (V72982) 917-1228-000 A1A2C44		1
24	S16835	2	TRANSISTOR (V07263) 352-0440-010 A1A2Q14		1
25	2N2857	2	TRANSISTOR (V02735) 352-0792-010 A1A2Q16		1
26	2N2857	2	TRANSISTOR (V02735) 352-0792-010 A1A2Q15		1
27	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-010 A1A2CR7		1
28	CK13BXC3M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3021-000 A1A2C28		1
29	MS75CE4-17	2	CCIL,RF, 27UH (V96906) 240-2040-000 A1A2L18		1
30	538CC2E2PC94R	2	CAPACITOR,VAR, CER DIEI, 9 TC 35PF, 200V (V72982) 917-1235-000 A1A2C47		1
31	CK13BXC3M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3021-000 A1A2C49		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-15	32		2 CAPACITOR,FXD, MICA DIEI, 330PF, 5%, 50V (V72136) 912-4141-49C A1A2C45		1
	33		2 RESISTOR,FXD, CMPSA, 47K, 10%, 1/8W (V81349) 745-2401-CCO A1A2R50		1
	34		2 SEMICOND DEVICE (V28480) 922-6119-C10 A1A2CR10		1
	35		2 RESISTOR,FXD, CMPSA, 33 OHMS, 10%, 1/8W (V81349) 745-2286-CCO A1A2R35		1
	36		2 RESISTOR,FXD, CMPSA, 1K, 5%, 1/8W (V81349) 745-1863-49C A1A2R37		1
	37		2 RESISTOR,FXD, CMPSA, 10 OHMS, 5%, 1/8W (V81349) 745-1863-C10 A1A2R44		1
	38		2 CAPACITOR,FXD, MICA DIEI, 68PF, 5%, 50V (V72136) 912-4141-330 A1A2C33		1
	39		2 RESISTOR,FXD, CMPSA, 150 OHMS, 5%, 1/8W (V81349) 745-1863-290 A1A2R51		1
	40		2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3021-CCO A1A2C36		1
	41		2 CONNECTOR,RCPT, ELEC (V98278) 357-7353-010 A1A2P3		1
			2 BUSHING (AP) 618-3367-CC1		1
	42		2 CAPACITOR,VAR, CER DIEI, 9 TC 35PF, 20CV (V72982) 917-1235-CCO A1A2C35		1
	43		2 CAPACITOR,FXD, MICA DIEI, 68PF, 5%, 50V (V72136) 912-4141-330 A1A2C34		1
	44		2 CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A2C38		1
	45		2 TERMINAL,GND (V12615) 306-1312-CCO		4
			2 NUT,PLAIN,HEX, NP ERS, 2-56 (V77250) P313-G484-C1C		4
			2 WASHER,LOCK, SST, C.088 ID X 0.172 OD (V96906) MS35338-134 31C-0275-CCO (AP)		4
	46		2 CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A2C37		1
	47		2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3019-CCO A1A2C41		1
	48		2 TRANSISTOR (V02735) 352-0792-C10 A1A2Q12		1
	49		2 TRANSISTOR (V02735) 352-0792-C10 A1A2Q11		1
	50		2 COIL,RF, 2.20UH (V96906) 240-2027-CCO A1A2L14		1
	51		2 RESISTOR,FXD, CMPSA, 3.9K, 5%, 1/8W (V81349) 745-1863-63C A1A2R40		1
	52		2 CAPACITOR,VAR, CER DIEI, 2 TC 8PF, 350V (V72982) 917-1228-CCO A1A2C30		1
	53		2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3019-CCO A1A2C29		1
	54		2 COVER MS51957-2		1
			2 SCREW,WACH, SST, 2-56 X 3/16 (V96906) 343-0123-CCO (AP)		8
			2 WASHER,LOCK, SST, C.088 ID X 0.172 OD (V96906) MS35338-134 31C-0275-CCO (AP)		8
	55		2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3019-CCO A1A2C14		1
	56		2 TRANSFORMER A1A2T4		1
	57		2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3019-CCO A1A2C50		1
	58		2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3019-CCO A1A2C26		1
	59		2 CAPACITOR,VAR, CER DIEI, 2 TC 8PF, 350V (V72982) 917-1228-CCO A1A2C25		1
	60		2 TRANSISTOR (V07263) 352-0440-C10 A1A2Q10		1
	61		2 TRANSISTOR (V04713) 352-1068-020 A1A2Q7 (EFF TO REV LTR P)		1
	61		2 TRANSISTOR (V04713) 352-1068-030 A1A2Q7 (EFF REV LTR P)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-15 62	SPF554	2	TRANSISTCR (V04713) 352-1068-C20 A1A2C5 (EFF TC REV LTR P)		1
62	SPF554-1	2	TRANSISTCR (V04713) 352-1068-030 A1A2Q5 (EFF REV LTR P)		1
63	SPF554	2	TRANSISTCR (V04713) 352-1068-020 A1A2Q6 (EFF TC REV LTR P)		1
63	SPF554-1	2	TRANSISTCR (V04713) 352-1068-030 A1A2Q6 (EFF REV LTR P)		1
64	RCRC5G1CCJS	2	RESISTCR,FXD, CMPSA, 10 CHMS, 5%, 1/8W (V81349) 745-1863-010 A1A2R24		1
65	SPF554	2	TRANSISTCR (V04713) 352-1068-C20 A1A2Q8 (EFF TC REV LTR P)		1
65	SPF554-1	2	TRANSISTCR (V04713) 352-1068-030 A1A2Q8 (EFF REV LTR P)		1
66	DM5F101JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 100PF, 5%, 50V (V72136) 912-4141-C50 A1A2C21		1
67	RCRC5G1CCJS	2	RESISTCR,FXD, CMPSA, 10 CHMS, 5%, 1/8W (V81349) 745-1863-010 A1A2R25		1
68	628-2334-CC1	2	TRANSFORMER A1A2T3		1
69	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-C10 A1A2CR2		1
70	RCRC5G473KS	2	RESISTCR,FXD, CMPSA, 47K, 10%, 1/8W (V81349) 745-2401-C00 A1A2R2		1
71	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-C10 A1A2CR4		1
72	RCRC5G1CCJS	2	RESISTCR,FXD, CMPSA, 10 CHMS, 5%, 1/8W (V81349) 745-1863-010 A1A2R4		1
73	AB4C6A	2	TERMINAL,GND (V12615) 306-1314-CCC		12
74	RCRC5G1CCJS	2	RESISTCR,FXD, CMPSA, 10 CHMS, 5%, 1/8W (V81349) 745-1863-C10 A1A2R1		1
75	CM5E27CJC50WV	2	CAPACITOR,FXD, MICA DIEI, 27PF, 5%, 50V (V72136) 912-4141-180 A1A2C3		1
76	RCRC5G473KS	2	RESISTCR,FXD, CMPSA, 47K, 10%, 1/8W (V81349) 745-2401-C00 A1A2R23		1
77	DM5F161JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 160PF, 5%, 50V (V72136) 912-4141-410 A1A2C2		1
78	MS75C83-C8	2	CCIL,RF, 0.39UH (V96906) 240-2018-C00 A1A2L2		1
79	CK05BXC4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A2C4		1
80	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-C10 A1A2CR1		1
81	CK05BXC4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A1A2C7		1
82	CM5E820JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 82PF, 5%, 50V (V72136) 912-4141-350 A1A2C1		1
83	MS75C83-C8	2	CCIL,RF, 0.39UH (V96906) 240-2018-C00 A1A2L1		1
84	MS75C84-17	2	CCIL,RF, 27UH (V96906) 240-2040-C00 A1A2L5		1
85	CK13BXC3M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3021-C00 A1A2C6		1
86	MS75C84-17	2	CCIL,RF, 27UH (V96906) 240-2040-C00 A1A2L4		1
87	RCRC5G1CCJS	2	RESISTCR,FXD, CMPSA, 10 CHMS, 5%, 1/8W (V81349) 745-1863-010 A1A2R53		1
88	CK13BXC3M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3021-C00 A1A2C5		1
89	MS75C89-11	2	CCIL,RF, 100UH (V96906) 240-2715-370 A1A2L3		1
90	CK13BXC3M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3021-C00 A1A2C23		1
91	RCRC5G33CKS	2	RESISTCR,FXD, CMPSA, 33 OHMS, 10%, 1/8W (V81349) 745-2286-C00 A1A2R22		1
92	CK12BXC2M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3019-C00 A1A2C24		1
93	RCRC5G332JS	2	RESISTCR,FXD, CMPSA, 3.3K, 5%, 1/8W (V81349) 745-1863-610 A1A2R21		1
94	MS75C83-C3	2	CCIL,RF, 0.15UH (V96906) 240-2013-C00 A1A2L13		1
95	RCRC5G1CCJS	2	RESISTCR,FXD, CMPSA, 10 CHMS, 5%, 1/8W (V81349) 745-1863-010 A1A2R20		1

GROUP ASSEMBLY PARTS LIST

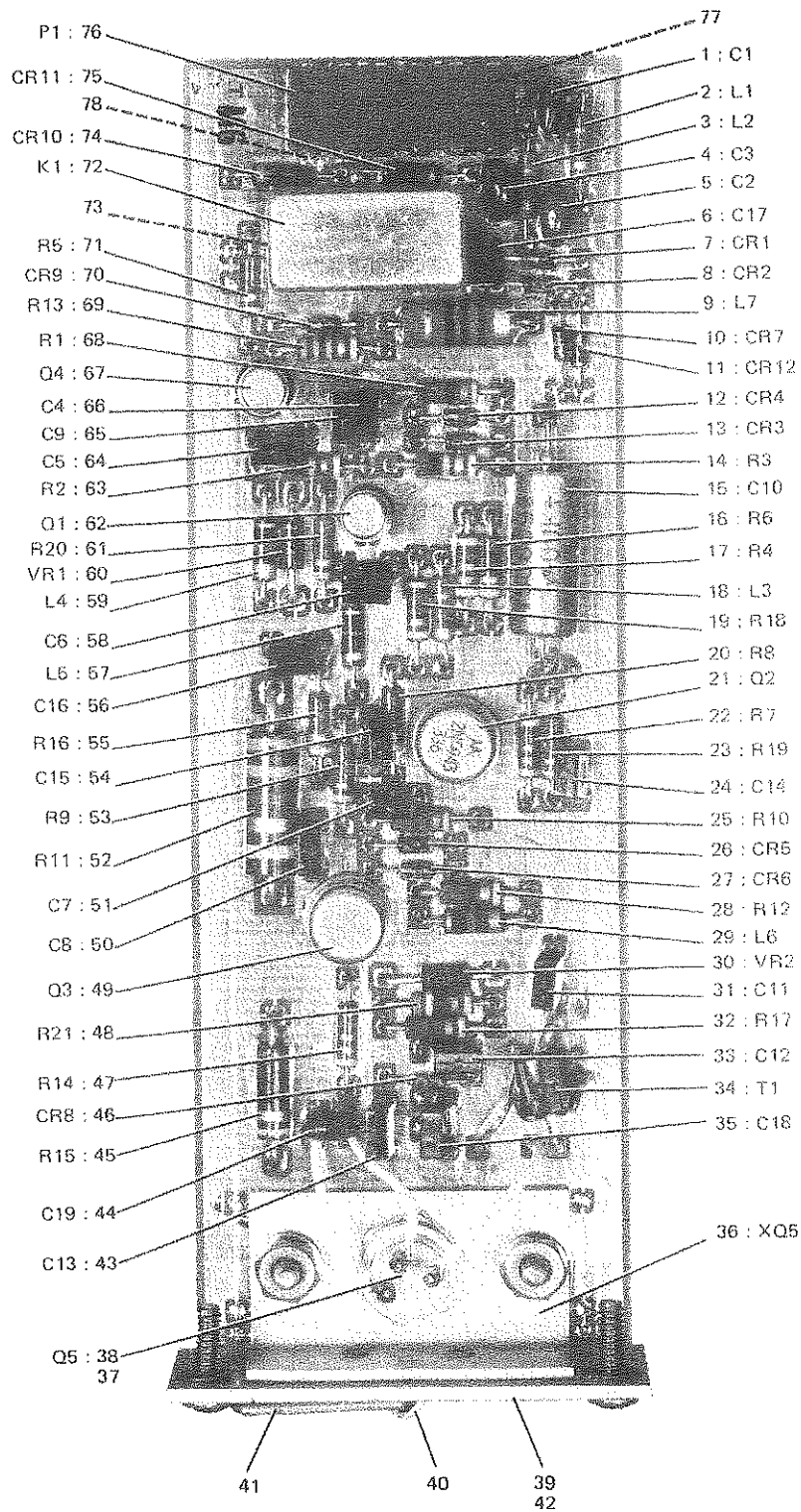
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-15 96	RCRC5G332JS	2	RESISTOR,FXD, CMPSN, 3.3K, 5%, 1/8W (V81349) 745-1863-610 A1A2R17		1
97	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-45C A1A2R15		1
98	RCRC5G332JS	2	RESISTOR,FXD, CMPSN, 3.3K, 5%, 1/8W (V81349) 745-1863-61C A1A2R18		1
99	RCRC5G121JS	2	RESISTOR,FXD, CMPSN, 120 OHMS, 5%, 1/8W (V81349) 745-1863-270 A1A2R19		1
100	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A2R26		1
101	1N5767	2	SEMICOND DEVICE (V2848C) 922-6119-010 A1A2CR5		1
102	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A2R14		1
103	CK12BX1C2M	2	CAPACITOR,FXD, CER DIEI, 100PF, 20%, 100V (V81349) 913-3C19-CCO A1A2C18		1
104	RCRC5G22CJS	2	RESISTOR,FXD, CMPSN, 22 OHMS, 5%, 1/8W (V81349) 745-1863-C90 A1A2R5		1
105	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-45C A1A2R27		1
106	MS75C84-17	2	COIL,RF, 27UH (V96906) 240-2040-CCO A1A2L8		1
107	CK13BX1C3M	2	CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 100V (V81349) 913-3C21-CCO A1A2C27		1
108	CK12BX1C2M	2	CAPACITOR,FXD, CER DIEI, 100PF, 20%, 100V (V81349) 913-3019-CCO A1A2C32		1
109	CK12BX1C2M	2	CAPACITOR,FXD, CER DIEI, 100PF, 20%, 100V (V81349) 913-3C19-CCO A1A2C39		1
110	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSN, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A2R30		1
111	628-2333-CC1	2	TRANSFORMER A1A2T5		1
112	RCRC5G271JS	2	RESISTOR,FXD, CMPSN, 270 OHMS, 5%, 1/8W (V81349) 745-1863-35C A1A2R29		1
113	1N5767	2	SEMICOND DEVICE (V2848C) 922-6119-010 A1A2CR6		1
114	RCRC5G332JS	2	RESISTOR,FXD, CMPSN, 3.3K, 5%, 1/8W (V81349) 745-1863-61C A1A2R55		1
115	RCRC5G271JS	2	RESISTOR,FXD, CMPSN, 270 OHMS, 5%, 1/8W (V81349) 745-1863-350 A1A2R38		1
116	RCRC5G682JS	2	RESISTOR,FXD, CMPSN, 6.8K, 5%, 1/8W (V81349) 745-1863-65C A1A2R39 (EFF TC REV LTR M)		1
116	RCRC5G562JS	2	RESISTOR,FXD, CMPSN, 5.6K, 5%, 1/8W (V81349) 745-1863-670 A1A2R39 (EFF REV LTR M)		1
117	RCRC5G1CCJS	2	RESISTOR,FXD, CMPSN, 10 OHMS, 5%, 1/8W (V81349) 745-1863-C1C A1A2R33		1
118	RCRC5G150JS	2	RESISTOR,FXD, CMPSN, 15 OHMS, 5%, 1/8W (V81349) 745-1863-050 A1A2R56		1
119	RCRC5G272JS	2	RESISTOR,FXD, CMPSN, 2.7K, 5%, 1/8W (V81349) 745-1863-59C A1A2R31		1
120	RCRC5G15CJS	2	RESISTOR,FXD, CMPSN, 15 OHMS, 5%, 1/8W (V81349) 745-1863-05C A1A2R57		1
121	RCRC5G47CKS	2	RESISTOR,FXD, CMPSN, 47 OHMS, 10%, 1/8W (V81349) 745-2292-CCO A1A2R34		1
122	DM5F131JC5GWV	2	CAPACITOR,FXD, MICA DIEI, 130PF, 5%, 50V (V72136) 912-4141-39C A1A2C42		1
123	S16835	2	TRANSISTOR (V7263) 352-C440-010 A1A2C13		1
124	628-2337-C01	2	TRANSFORMER A1A2T6		1
125	RCRC5G1CCJS	2	RESISTOR,FXD, CMPSN, 10 OHMS, 5%, 1/8W (V81349) 745-1863-010 A1A2R32		1
126	MS75C85-C7	2	COIL,RF, 100UH (V96906) 240-2047-CCO A1A2L16		1
127	1N5767	2	SEMICOND DEVICE (V2848C) 922-6119-010 A1A2CR8		1
128	RCRC5G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/8W (V81349) 745-2401-CCO A1A2R36		1
129	31TC43	2	RESISTOR,THRM, 1K, 10%, 2.6MW (V90634) 714-1138-060 A1A2R11		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-15 130	CM5F331JC50WV	2	CAPACITOR,FXD, MICA DIEL, 330PF, 5%, 50V (V72136) 912-4141-490 A1A2C46		1
131	RCRC5G22CJS	2	RESISTOR,FXD, CMPSA, 22 OHMS, 5%, 1/8W (V81349) 745-1863-C90 A1A2R59		1
132	RCRC5G122JS	2	RESISTOR,FXD, CMPSA, 1.2K, 5%, 1/8W (V81349) 745-1863-510 A1A2R52		1
133	628-2337-CC2	2	TRANSFORMER A1A2T8		1
134	629-5E4C-CC1 MS51955-2	2	COVER		1
		2	SCREW,MACH, SST, 2-56 X 3/16 (V96906) 342-0132-CCC (AP)		9
135	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSA, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A2R49		1
136	RCRC5G22CJS	2	RESISTOR,FXD, CMPSA, 22 OHMS, 5%, 1/8W (V81349) 745-1863-C50 A1A2R58		1
137	CK12BX1C2M	2	CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 100V (V81349) 913-3C19-CCC A1A2C31		1
138	RCRC5G153JS	2	RESISTOR,FXD, CMPSA, 15K, 5%, 1/8W (V81349) 745-1863-770 A1A2R45		1
139	RCRC5G1CCJS	2	RESISTOR,FXD, CMPSA, 10 OHMS, 5%, 1/8W (V81349) 745-1863-010 A1A2R48		1
140	RCRC5G271JS	2	RESISTOR,FXD, CMPSA, 270 OHMS, 5%, 1/8W (V81349) 745-1863-350 A1A2R43		1
141	RCRC5G1CCJS	2	RESISTOR,FXD, CMPSA, 10 OHMS, 5%, 1/8W (V81349) 745-1863-C10 A1A2R47		1
142	RCRC5G562JS	2	RESISTOR,FXD, CMPSA, 5.6K, 5%, 1/8W (V81349) 745-1863-670 A1A2R42		1
143	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-010 A1A2CR9		1
144	RCRC5G22CJS	2	RESISTOR,FXD, CMPSA, 22 OHMS, 5%, 1/8W (V81349) 745-1863-C90 A1A2R46		1
145	628-2334-CC1	2	TRANSFORMER A1A2T7		1
146	RG178BU	2	CABLE,RF (V81349) 425-1538-000		AR
147	CK12BX1C2M	2	CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 100V (V81349) 913-3C19-CC0 A1A2C40		1
148	RCRC5G1C2JS	2	RESISTOR,FXD, CMPSA, 1K, 5%, 1/8W (V81349) 745-1863-490 A1A2R28		1
149	M975084-17	2	COIL,RF, 27UH (V96906) 240-2040-CCC A1A2L9		1
150	CK12BX1C2M	2	CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 100V (V81349) 913-3C19-CC0 A1A2C19		1
151	CK12BX1C2M	2	CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 100V (V81349) 913-3C19-CC0 A1A2C15		1
152	1N5767	2	SEMICOND DEVICE (V28480) 922-6119-010 A1A2CR3		1
153	RCRC5G221JS	2	RESISTOR,FXD, CMPSA, 220 OHMS, 5%, 1/8W (V81349) 745-1863-330 A1A2R11 (EFF TO REV LTR M)		1
153	RCRC5G151JS	2	RESISTOR,FXD, CMPSA, 150 OHMS, 5%, 1/8W (V81349) 745-1863-290 A1A2R11 (EFF REV LTR M)		1
154	RCRC5G332JS	2	RESISTOR,FXD, CMPSA, 3.3K, 5%, 1/8W (V81349) 745-1863-610 A1A2R12		1
155	RCRC5G332JS	2	RESISTOR,FXD, CMPSA, 3.3K, 5%, 1/8W (V81349) 745-1863-610 A1A2R13		1
156	RCRC5G662JS	2	RESISTOR,FXD, CMPSA, 6.8K, 5%, 1/8W (V81349) 745-1863-690 A1A2R9 (EFF TO REV LTR M)		1
156	RCRC5G332JS	2	RESISTOR,FXD, CMPSA, 3.3K, 5%, 1/8W (V81349) 745-1863-610 A1A2R9 (EFF REV LTR M)		1
157	RCRC5G3R3JS	2	RESISTOR,FXD, CMPSA, 3.3 OHMS, 5%, 1/8W (V81349) 745-0907-130 A1A2R6		1
158	RCRC5G3R3JS	2	RESISTOR,FXD, CMPSA, 3.3 OHMS, 5%, 1/8W (V81349) 745-0907-130 A1A2R7		1
159	RCRC5G22CJS	2	RESISTOR,FXD, CMPSA, 22 OHMS, 5%, 1/8W (V81349) 745-1863-090 A1A2R3		1
160	CK12BX1C2M	2	CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 100V (V81349) 913-3019-CC0 A1A2C9		1
161	CK12BX1C2M	2	CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 100V (V81349) 913-3C19-CC0 A1A2C22		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-15	162	S16835	2 TRANSISTOR (V07263) 352-0440-010 A1A2C9		1
	163	RCRC5G1CCJS	2 RESISTOR,FXD, CMPSN, 10 CHMS, 5%, 1/8W (V81349) 745-1863-C10 A1A2R10		1
	164	CK12BX1C2M	2 CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 100V (V81349) 913-3C19-CC0 A1A2C11		1
	165	MS75C83-C3	2 COIL,RF, 0.15UH (V96906) 240-2013-CC0 A1A2L7		1
	166	AB4C5A	2 TERMINAL,GND (V12615) 306-1313-CC0		2
		P313-C484-C1C	2 NUT,PLAIN,HEX, NP BRS, 2-56 (V7725C) 313-0484-01C (AP)		2
		MS35338-134	2 WASHER,LOCK, SST, C.088 ID X 0.172 OD (V96906) 31C-0275-CC0 (AP) (EFF TC REV LTR H)		2
		31C-C276-CC0	2 WASHER,LOCK, SST, C.102 ID X 0.188 OD (V70318) 31C-0276-CC0 (AP) (EFF REV LTR F)		2
		31C-C129-CC0	2 WASHER,FLAT, BRS, C.089 ID X 0.188 OD (V05411) 31C-0129-CC0 (AP) (EFF REV LTR F)		2
	167	MS75C84-17	2 COIL,RF, 27UH (V96906) 240-204C-CC0 A1A2L12		1
	168	CK13BX1C3M	2 CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 100V (V81349) 913-3021-CC0 A1A2C17		1
	169	CK13BX1C3M	2 CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 100V (V81349) 913-3021-CC0 A1A2C16		1
	170	MS75C84-17	2 COIL,RF, 27UH (V96906) 240-204C-CC0 A1A2L11		1
	171	372-2255-C2C	2 CONTACT,ELEC 372-2255-020		9
	172	629-5839-CC1	2 CONNECTOR A1A2P1		1
		92-166C-CC	2 NUT,SLFLKG,HEX, CD PL BRS, 0-80 (V72962) 333-1405-010 (AP)		2
		322-C272-C1C	2 SCREW,MACH, SST, 0-80 X 1/2 (V7725C) 322-C272-010 (AP)		2
	173	8511-C1-CC	2 CLIP,SPR TNSN (V02768) 150-0775-010		1
	174	629-582C-CC1	2 CHASSIS		1
		635-8223-CC4	2 SCREW (AP)		2
		MS35338-135	2 WASHER,LOCK, SST, C.115 ID X 0.209 OD (V96906) 31C-0275-CC0 (AP)		2
		34C-C644-CC	2 SLEEVE,SPG (V91314) 34C-0644-CC0 (AP)		2
	175	SL441-434WHT	3 TERMINAL,STDF (V12615) 306-2222-1CC		54
	176	C11-6809-CCC599	3 TERMINAL,FEEDTH (V98291) 306-2297-CC0		12
	177	SL354-351WHT	3 TERMINAL,FEEDTH (V12615) 306-2474-C10		49
	178	119-C507-CCCCG9	3 HOLDER,XSTR (V98291) 352-9509-CC0		2
	179	629-582C-GG2	3 CHASSIS		1



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Figure 3-16. Broadband Amplifier A1A3

GROUP ASSEMBLY PARTS LIST

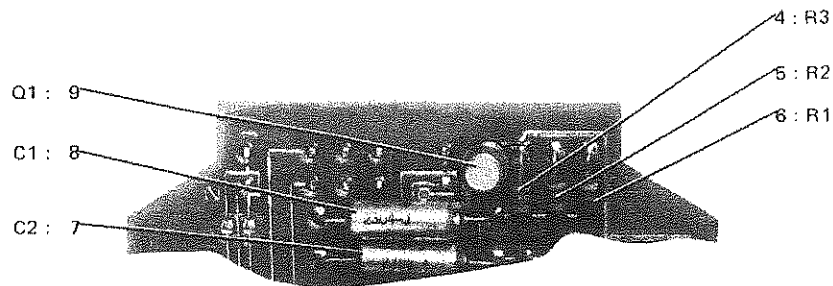
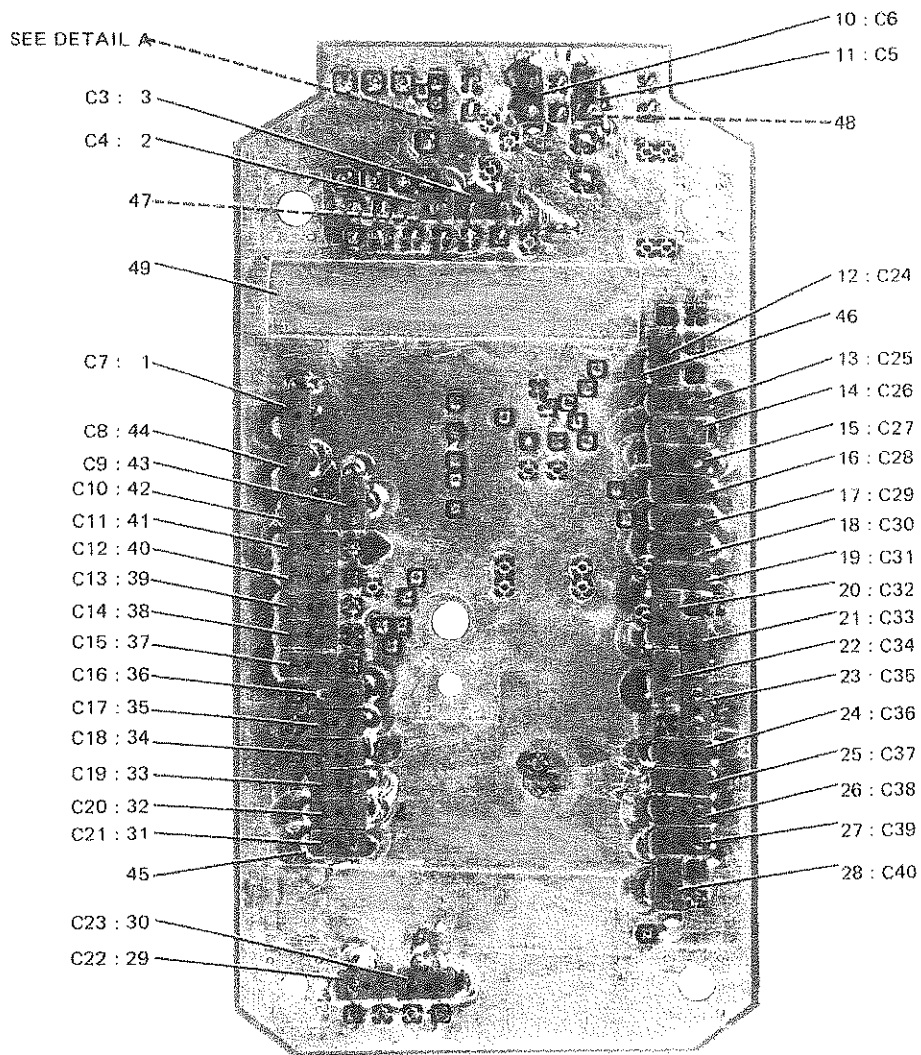
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-16 -	6C1-3671-CC1	1	BROADBAND AMPLIFIER A1A3 (SEE FIG 3-2-15 FOR NFA)		REF
	1 CM5E82CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 82PF, 5%, 50V (V72136) 912-4141-35C A1A3C1		1
	2 MS75C83-C8	2	CCIL,RF; 0.39UH (V96906) 240-2018-000 A1A3L1		1
	3 MS75C83-C8	2	CCIL,RF; 0.39UH (V96906) 240-2018-000 A1A3L2		1
	4 CM5E82CJC5CWV	2	CAPACITOR,FXD, MICA DIEI, 82PF, 5%, 50V (V72136) 912-4141-35C A1A3C3		1
	5 CM5F161JC5CWV	2	CAPACITOR,FXD, MICA DIEI, 160PF, 5%, 50V (V72136) 912-4141-41C A1A3C2		1
	6 CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A1A3C17		1
	7 DA17C1	2	SEMICOND DEVICE (VC3508) 353-3644-040 A1A3CR1		1
	8 DA17C1	2	SEMICOND DEVICE (VC3508) 353-3644-040 A1A3CR2		1
	9 MS751C1-7	2	CCIL,RF, 1CUH (V96906) 240-1600-000 A1A3L7		1
	10 DA17C1	2	SEMICOND DEVICE (VC3508) 353-3644-040 A1A3CR7		1
	11 DA17C1	2	SEMICOND DEVICE (VC3508) 353-3644-040 A1A3CR12		1
	12 1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A3CR4		1
	13 1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A3CR3		1
	14 RCRC7G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 A1A3R3		1
	15 M29CC3-C1-2375	2	CAPACITOR,FXD, ELCTLT, 1CUF, 20%, 50V (V81349) 184-9087-62C A1A3C10		1
	16 RCRC7G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-000 A1A3R6		1
	17 RCRC7G4R7JS	2	RESISTOR,FXD, CMPSN, 4.7 OHMS, 5%, 1/4W (V81349) 745-4382-000 A1A3R4		1
	18 MS75C84-C2	2	CCIL,RF, 1.50UH (V96906) 240-2025-000 A1A3L3		1
	19 RCRC7G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/4W (V81349) 745-0737-000 A1A3R18		1
	20 RCRC7G221KS	2	RESISTOR,FXD, CMPSN, 220 OHMS, 10%, 1/4W (V81349) 745-0725-000 A1A3R8		1
	21 2N5943	2	TRANSISTCR (V04713) 352-0991-010 A1A3Q2		1
	22 RCRC7G4R7JS	2	RESISTOR,FXD, CMPSN, 4.7 OHMS, 5%, 1/4W (V81349) 745-4382-000 A1A3R7		1
	23 RCRC7G221KS	2	RESISTOR,FXD, CMPSN, 220 OHMS, 10%, 1/4W (V81349) 745-0725-000 A1A3R19		1
	24 CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A1A3C14		1
	25 RN55C681CF	2	RESISTOR,FXD, FILM, 681 OHMS, 1%, 1/8W (V81349) 705-0988-000 A1A3R10		1
	26 1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A3CR5		1
	27 1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A1A3CR6		1
	28 RCRC7G82CKS	2	RESISTOR,FXD, CMPSN, 82 OHMS, 10%, 1/4W (V81349) 745-0710-000 A1A3R12		1
	29 MS75C84-17	2	CCIL,RF, 27UH (V96906) 240-2040-000 A1A3L6		1
	30 M24E26	2	SEMICOND DEVICE (V04713) 353-3591-500 A1A3VR2		1
	31 CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A1A3C11		1
	32 RCRC7G182JS	2	RESISTOR,FXD, CMPSN, 1.8K, 5%, 1/4W (V81349) 745-0757-000 A1A3R17		1
	33 CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A1A3C12		1
	34 625-6144-CC1	2	TRANSFORMER A1A3T1		1
	35 CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A3C18		1
	36 625-5501-CC1	2	PANEL A1A3XQ5		1
	MS35649-244	2	NUT,PLAIN,HEX, SST, 4-40 (V96906) 313-C043-000 (AP)		2
	31C-C278-CCC	2	WASHER,LOCK, SST, C.115 ID X 0.202 OD (V70318) 31C-C278-000 (AP)		2
	31C-634C-CCC	2	WASHER,FLAT, SST, C.125 ID X 0.281 OD (V79807) 31C-6340-000 (AP)		2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-16	MS51957-15	2	SCREW, MACH, STL, 4-40 X 3/8 (V969C6) 343-0135-CCO (AP)		2
37	629-349C-CC1	3	TRANSISTOR MODIFIED		1
	334-1CC8-CCO	3	NUT, HEX, SPCL, NP BRS, 10-32 (VA135C) 334-1CC8-CCO (AP)		1
	MS35333-107	3	WASHER, LCKK, CD PL BRZ, C.204 IC X 0.381 CD (V96906) 373-3C40-CCO (AP)		1
38	2N3375	4	TRANSISTOR (V02735) 352-0611-010 A1A305		1
39	629-3392-CC4	3	HANDLE BAIL-RIVETED		1
40	629-3493-CC1	4	RETAINER, HANDLE		1
	MS16535-54	4	RIVET, TUBULAR, CS, 0.089 DIA X 0.188 (V969C6) 3C5-1733-CCO (AP)		2
41	629-3492-CC1	4	HANDLE BAIL-COVER		1
42	629-3392-CC1	4	BRACKET, TRANSISTOR		1
43	CKC5BX1C3K	2	CAPACITOR, FXD, CER DIEL, 0.01UF, 10%, 100V (V81349) 913-5019-2CC A1A3C13		1
44	DM5CC5CC3GCWV	2	CAPACITOR, FXD, MICA DIEL, 5PF, FORM 0.5PF, 300V (V72136) 912-4141-C1C A1A3C19		1
45	RCR2CC15CKS	2	RESISTOR, FXD, CMPSN, 15 CHMS, 10%, 1/2W (V81349) 745-1275-CCO A1A3R15		1
46	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C1C A1A3CR8		1
47	RCRC7G4R7JS	2	RESISTOR, FXD, CMPSN, 4.7 OHMS, 5%, 1/4W (V81349) 745-4382-CCO A1A3R14		1
48	RCRC7G1C3JS	2	RESISTOR, FXD, CMPSN, 10K, 5%, 1/4W (V81349) 745-0784-CCO A1A3R21		1
49	2N5543	2	TRANSISTOR (VC4713) 352-0991-C1C A1A3C3		1
50	CKC5BX1C4M	2	CAPACITOR, FXD, CER DIEL, 0.1UF, 20%, 50V (V81349) 913-5019-72C A1A3C8		1
51	CKC5BX1C3K	2	CAPACITOR, FXD, CER DIEL, 0.01UF, 10%, 100V (V81349) 913-5019-200 A1A3C7		1
52	RCR32C331KS	2	RESISTOR, FXD, CMPSN, 330 OHMS, 10%, 1W (V81349) 745-3331-CCO A1A3R11		1
53	RN55E2741F	2	RESISTOR, FXD, FILM, 2.74K, 1%, 1/8W (V81349) 7C5-1C17-CCO A1A3R9 CR		1
53	RN55D3321F	2	RESISTOR, FXD, FILM, 3.32K, 1%, 1/8W (V81349) 7C5-1C21-CCO A1A3R9 (EFF REV LTR R)		1
54	CKC5BX1C4M	2	CAPACITOR, FXD, CER DIEL, 0.1UF, 20%, 50V (V81349) 913-5019-72C A1A3C15		1
55	RCRC7G1C3MS	2	RESISTOR, FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A1A3R16		1
56	CKC5BX1C4M	2	CAPACITOR, FXD, CER DIEL, 0.1UF, 20%, 50V (V81349) 913-5019-72C A1A3C16		1
57	MS75C84-17	2	COIL, RF, 27UH (V96906) 240-204C-CCG A1A3L5		1
58	CKC5BX1C4M	2	CAPACITOR, FXD, CER DIEL, 0.1UF, 20%, 50V (V81349) 913-5019-72C A1A3C6		1
59	MS75C84-17	2	COIL, RF, 27UH (V96906) 240-204C-CCO A1A3L4		1
60	1N4742A	2	SEMICOND DEVICE (VC4713) 353-6481-290 A1A3VR1		1
61	RCRC7G122KS	2	RESISTOR, FXD, CMPSN, 1.2K, 10%, 1/4W (V81349) 745-0752-CCO A1A3R20		1
62	2N918	2	TRANSISTOR (V07910) 352-0440-CCO A1A3Q1		1
63	RCRC7G1C3KS	2	RESISTOR, FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A1A3R2		1
64	CKC5BX1C4M	2	CAPACITOR, FXD, CER DIEL, 0.1UF, 20%, 50V (V81349) 913-5019-72C A1A3C5		1
65	CKC5BX1C4M	2	CAPACITOR, FXD, CER DIEL, 0.1UF, 20%, 50V (V81349) 913-5019-72C A1A3C9		1
66	CKC5BX1C3K	2	CAPACITOR, FXD, CER DIEL, 0.01UF, 10%, 100V (V81349) 913-5019-2CC A1A3C4		1
67	2N29C7A	2	TRANSISTOR (VC4713) 352-0551-C1C A1A3Q4		1
68	RCRC7G51CJS	2	RESISTOR, FXD, CMPSN, 51 CHMS, 5%, 1/4W (V81349) 745-0702-CCO A1A3R1		1
69	RCRC7G333KS	2	RESISTOR, FXD, CMPSN, 33K, 10%, 1/4W (V81349) 745-0803-CCO A1A3R13		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-16	70	1N4454	2 SEMICOND DEVICE (V03508) 353-3644-010 A1A3CR9		1
	71	RCR07G822KS	2 RESISTOR,FXD, CMPSN, 8.2K, 10%, 1/4W (V81349) 745-0782-CCC A1A3R5		1
	72	39AV1271A2	2 RELAY,AMY (V01526) 974-1065-17C A1A3K1		1
	73	635-4765-CC1	2 INSULATOR		1
	74	1N645	2 SEMICOND DEVICE (V15238) 353-2607-C00 A1A3CR10		1
	75	1N645	2 SEMICOND DEVICE (V15238) 353-2607-C00 A1A3CR11		1
	76	372-2623-C13	2 FUSING,CONN,EL 372-2623-C13 A1A3P1		1
	77	372-2234-C1C	2 CONTACT,ELEC 372-2234-010		6
	78	372-2234-C2C	2 CONTACT,ELEC 372-2234-C20		6



DETAIL A
REAR TOP

TP4-9684-017

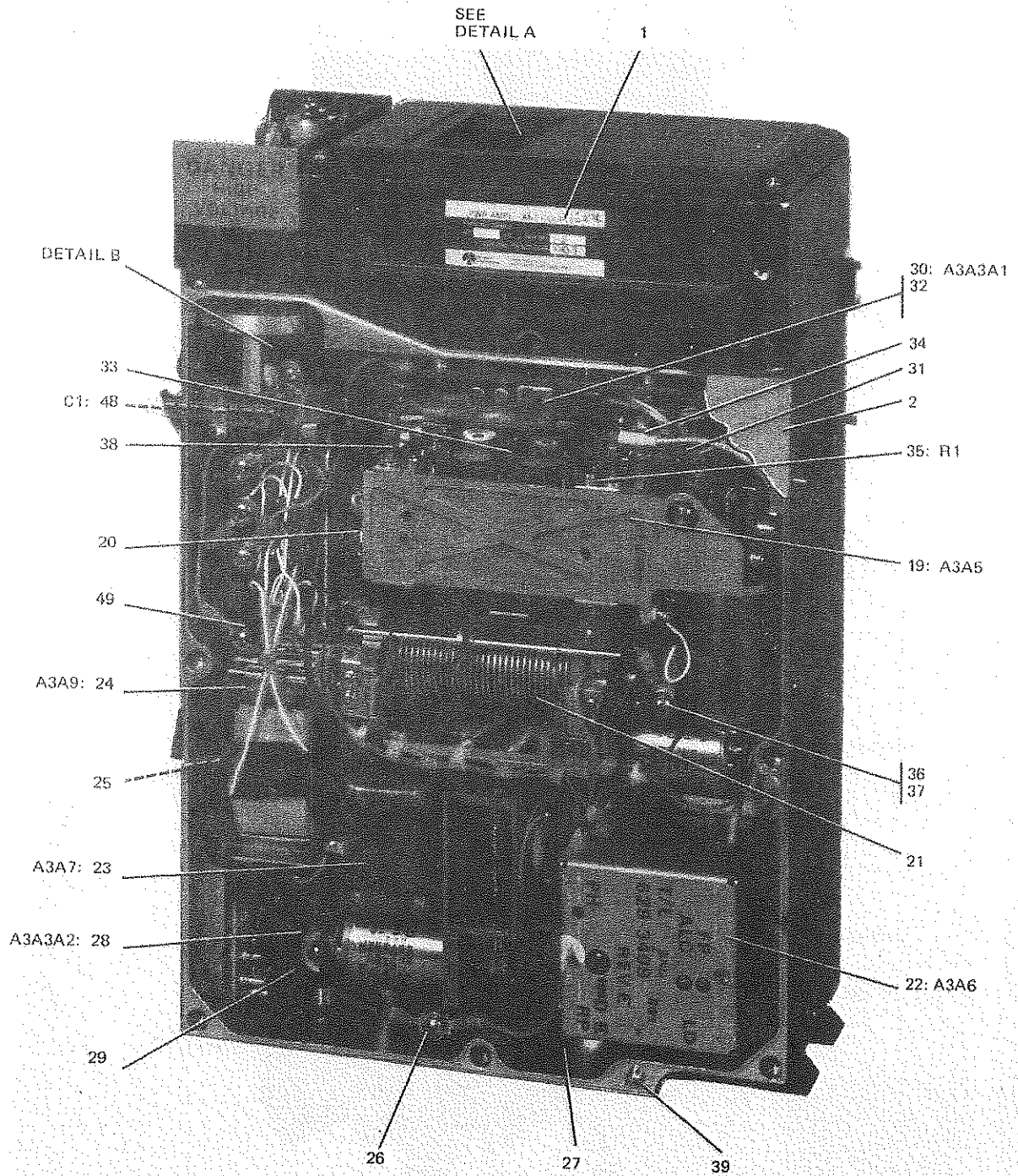
Figure 3-17. Chassis (Part of A1A1)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-17 -	6C1-3667-CC1	1	SIDEBBOARD P/OA1A1 (SEE FIG 3-2-21 FOR NFA)		REF
1	193-C2C	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-020 A1A1C7		1
2	193-C20	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-02C A1A1C4		1
3	193-C2C	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-020 A1A1C3		1
4	RCRC7G123KS	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/4W (V81349) 745-0788-CCC A1A1R3		1
5	RCRC7G123KS	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/4W (V81349) 745-0788-CCC A1A1R2		1
6	RCRC7G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCC A1A1R1		1
7	M39CC3-C1-23C4	2	CAPACITOR,FXD, ELCTLT, 6.8UF, 10%, 35V (V81349) 184-9086-640 A1A1C2		1
8	M39CC3-C1-23C4	2	CAPACITOR,FXD, ELCTLT, 6.8UF, 10%, 35V (V81349) 184-9086-640 A1A1C1		1
9	2N2222A	2	TRANSISTOR (V07263) 352-0661-02C A1A1Q1		1
10	193-C20	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-020 A1A1C6		1
11	193-C2C	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-020 A1A1C5		1
12	193-C20	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-02C A1A1C24		1
13	193-C20	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-020 A1A1C25		1
14	193-C20	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-02C A1A1C26		1
15	193-C2C	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-020 A1A1C27		1
16	193-C20	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-02C A1A1C28		1
17	193-C2C	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-02C A1A1C29		1
18	193-C2C	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-02C A1A1C20		1
19	193-C20	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-020 A1A1C31		1
20	193-C20	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-02C A1A1C32		1
21	193-C20	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-020 A1A1C33		1
22	193-C20	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-02C A1A1C34		1
23	193-C20	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-020 A1A1C35		1
24	193-C20	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-02C A1A1C36		1
25	193-C2C	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-020 A1A1C37		1
26	193-C2C	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-02C A1A1C38		1
27	193-C2C	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-020 A1A1C39		1
28	193-C20	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-020 A1A1C40		1
29	193-C20	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-02C A1A1C22		1
30	193-C2C	2	CAPACITOR,FXD, CER DIEI, 1C,CCOPF, 200V (V16546) 913-3288-020 A1A1C23		1
31	193-C20	2	CAPACITOR,FXD, CER DIEI, 10,CCOPF, 200V (V16546) 913-3288-02C A1A1C21		1

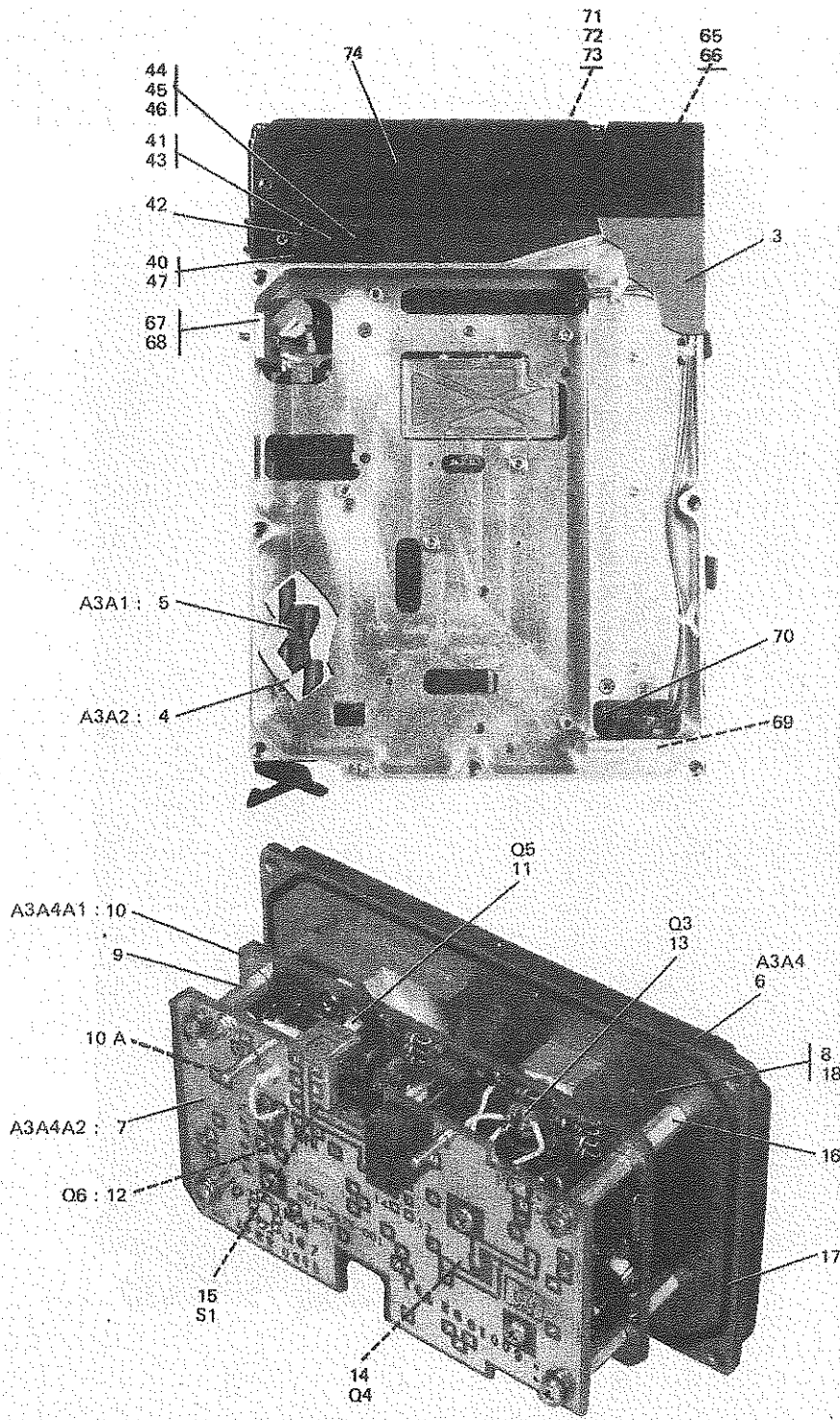
GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-17	32	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C20		1
	33	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C19		1
	34	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C18		1
	35	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C17		1
	36	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C16		1
	37	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C15		1
	38	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C14		1
	39	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C13		1
	40	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C12		1
	41	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C11		1
	42	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C10		1
	43	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C9		1
	44	193-C20	2 CAPACITOR,FXD, CER DIEI, 10,000PF, 200V (V16546) 913-3288-020 A1A1C8		1
	45	635-3395-CC1	2 SPACER (EFF TO REV LTR J)		1
	46	635-5393-CC1	2 SPACER (EFF TO REV LTR J)		1
	47	635-5391-CC1	2 SPACER (EFF TO REV LTR J)		2
	48	635-5389-CC1	2 SPACER (EFF TO REV LTR J)		1
	49	635-5220-001	2 STRIP CONTACT		2



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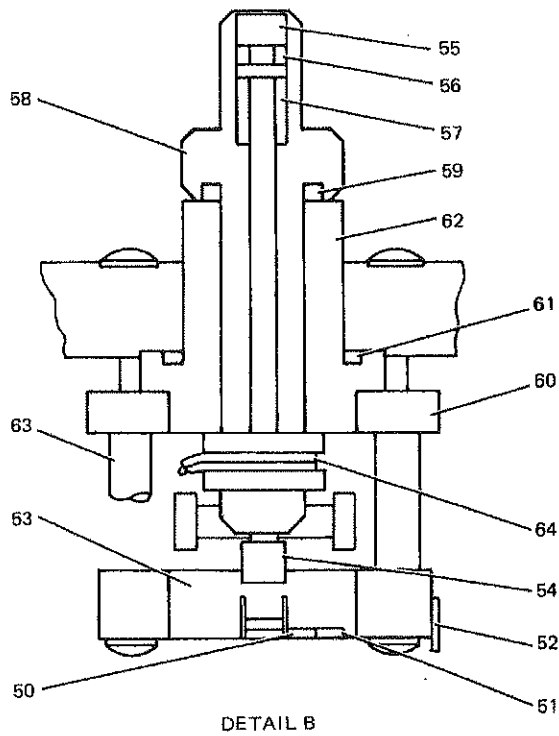
Figure 3-18. Amplifier-Coupler AM-5280/URC A3 (Sheet 1 of 3)



DETAIL A

TP4-9685-037

Figure 3-18. Amplifier-Coupler AM-5280/URC A3 (Sheet 2)



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Figure 3-18. Amplifier-Coupler AM-5280/URC A3 (Sheet 3)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-18 -	622-2149-001	1	AMPLIFIER-COUPLER AM-5280/URC A3 (SEE FIG 3-1-3 FOR NHA)		REF
1	635-1508-000	2	PLATE, NAME		1
2	635-8247-002	2	COVER CR		1
2	623-7288-003	2	COVER (EFF TC REV LTR M)		1
3	635-8247-001	2	COVER CR		1
3	623-7288-004	2	COVER (EFF TC REV LTR M)		1
	340-C644-CC	2	SLEEVE,SPG (V91314) 340-C644-CCC (AP)		16
	MS51957-17	2	SCREW,MACH, STL, 4-40 X 1/2 (V96906) 343-0137-CCO (AP)		16
4	601-3672-CC1	2	CONTROL LOGIC A3A2 (SEE FIG 3-19)		1
	310-6326-CCC	2	WASHER,FLAT, SST, C.502 ID X 0.812 OD (V79807) 310-6326-CCC (AP)		4
	MS51957-2	2	SCREW,MACH, SST, 2-56 X 3/16 (V96906) 343-0123-CCO (AP)		4
5	601-3673-CC1	2	SERVO AMPLIFIER A3A1 (SEE FIG 3-20)		1
	CIE845	2	WASHER,FLAT, SST, 0.119 ID X 0.218 OD (V72606) 310-0460-CCO (AP)		5
	310-C278-CCC	2	WASHER,LOCK, SST, C.115 ID X 0.202 OD (V70318) 310-0278-CCC (AP)		5
	MS51957-13	2	SCREW,MACH, STL, 4-40 X 1/4 (V96906) 343-0133-CCO (AP)		5
6	629-3410-CC1	2	POWER AMPLIFIER A3A4		1
	340-C644-CC	2	SLEEVE,SPG (V91314) 340-C644-CCC (AP)		4
	MS51957-17	2	SCREW,MACH, STL, 4-40 X 1/2 (V96906) 343-0137-CCO (AP)		4
7	601-3675-CC1	3	BIAS/CONTROL A3A4A2 (SEE FIG 3-21)		1
	MS35338-135	3	WASHER,LOCK, SST, C.115 ID X 0.209 OD (V96906) 310-0279-CCO (AP)		4
	CIE845	3	WASHER,FLAT, SST, C.119 ID X 0.218 OD (V72606) 310-0460-CCO (AP)		4
	MS51957-14	3	SCREW,MACH, SST, 4-40 X 5/16 (V96906) 343-0134-CCO (AP)		4
8	623-7287-CC1	3	RF SUBASSEMBLY A3A4A1		1
9	540-9047-CC3	4	PCST		4
10	601-3674-CC1	4	RF CIRCUIT CARD (SEE FIG 3-22)		1
	MS35338-135	4	WASHER,LOCK, SST, C.115 ID X 0.209 OD (V96906) 310-0279-CCO (AP)		4
10A	140-C530-5CCC	4	CONNECTOR,PLUG, ELEC (V98278) 426-5437-C10 A3A4A1K1 (EFF REV LTR K)		1
11	PT9788	4	TRANSISTOR,PWR (V01281) 352-1031-010 A3A4A1C5		1
12	PT9788	4	TRANSISTOR,PWR (V01281) 352-1031-C10 A3A4A1Q6		1
	MS35338-135	4	WASHER,LOCK, SST, C.115 ID X 0.209 OD (V96906) 310-0279-CCO (AP FCR 11, 12)		4
	P343-0285-CCC	4	SCREW,MACH, NP BRS, 4-40 X 1/4 (V77250) 343-0285-CCO (AP FCR 11, 12)		4
13	JAN2N3375	4	TRANSISTOR (V81350) 352-7500-410 A3A4A1Q3		1
14	JAN2N3375	4	TRANSISTOR (V81350) 352-7500-410 A3A4A1Q4		1
15	M24236-19-193	4	SWITCH,THRMSTC (V81349) 267-0277-C30 A3A4A1S1		1
16	540-9045-CC3	4	PCST (EFF TC REV LTR J)		4
16	P312-346C-CCC	4	STCD,CONT THD, BRS, 4-40 X 3/8 (V77250) 312-346C-000 (EFF REV LTR J)		4
17	629-5644-CC1	4	GASKET, RUBBER		1
18	635-4716-CC1	4	COVER CR		1
18	629-5764-CC1	4	COVER (EFF TC REV LTR G)		1
19	629-3414-CC1	2	BANDSWITCH A3A5 (SEE FIG 3-23)		1
20	635-4771-CC1	2	COUPLING DRIVE		1
21	629-3413-CC1	2	TUNING COIL A3A8 (SEE FIG 3-26)		1
22	629-3405-CC1	2	DISCRIMINATOR A3A6 (SEE FIG 3-27)		1
23	629-3412-CC1	2	TUNING CAPACITOR A3A7 (SEE FIG 3-30)		1
24	629-3407-CC1	2	AUTOTRANSFORMER A3A9 (SEE FIG 3-31)		1
25	NT352R0832VC3L	2	SCREW,MACH, CRES, 8-32 X 3/16 (V02310) 330-4042-130		1

GROUP ASSEMBLY PARTS LIST

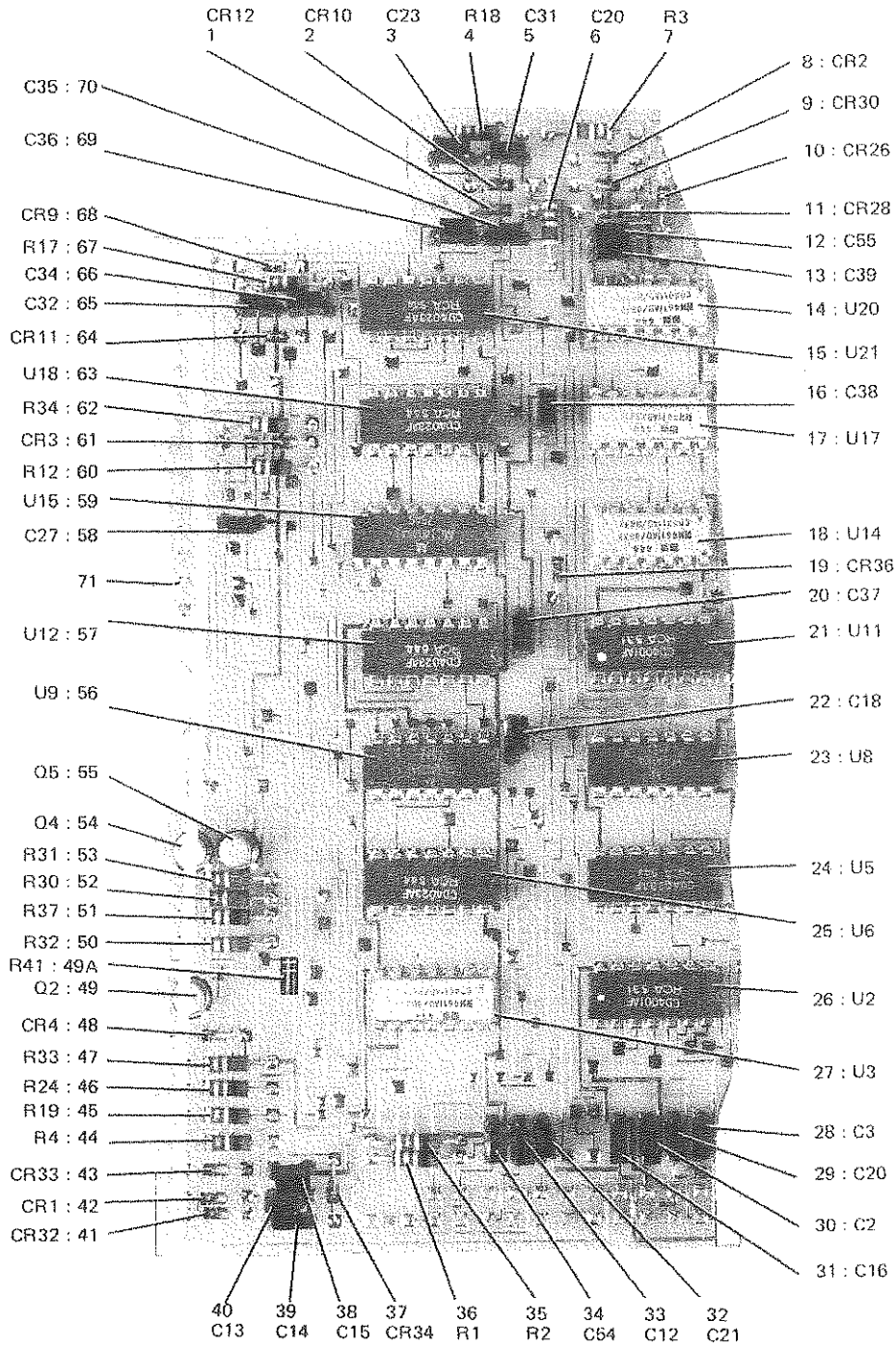
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-1	26	MSE1957-13	2 SCREW, MACH, STL, 4-40 X 1/4 (V96906)		3
		CIE845	343-0133-CCO		
			2 WASHER, FLAT, SST, C.119 ID X 0.218 OD (V72606)		3
			31C-0460-CCO (AP)		
		MSE3338-135	2 WASHER, LCCK, SST, C.115 ID X 0.209 OD (V96906)		3
			31C-0279-CCO (AP)		
	27	629-3411-CC1	2 CHASSIS A3A3		1
	28	635-469C-CC1	3 OVERVOLTAGE DETECTOR A3A3A2 (SEE FIG 3-32)		1
		MSE1957-13	3 SCREW, MACH, STL, 4-40 X 1/4 (V96906)		2
			343-0133-CCO (AP)		
		MSE1957-12	3 SCREW, MACH, STL, 4-40 X 3/16 (V96906)		1
			343-0132-CCO (AP)		
		31C-C278-CCO	3 WASHER, LCCK, SST, C.115 ID X 0.202 OD (V70318)		3
			31C-0278-CCO (AP)		
	29	54C-9051-CC3	3 PCST		2
		P33C-229C-CCO	3 SCREW, MACH, SST, 4-40 X 1/4 (V77250)		2
			33C-229C-CCO (AP)		
	30	635-4749-CC1	3 FILTER A3A3A1		1
		31C-C278-CCO	3 WASHER, LCCK, SST, C.115 ID X 0.202 OD (V70318)		4
			31C-0278-CCO (AP)		
		MSE1957-13	2 SCREW, MACH, STL, 4-40 X 1/4 (V96906)		4
			343-0133-CCO (AP)		
	31	MENB96555-17	4 CONNECTOR, CABLE (V71468) 426-0075-010 A3A3A1J1		1
	32	6C1-3865-CC1	4 FILTER CIRCUIT CARD (SEE FIG 3-33)		1
	33	4C4C-2HT	3 TERMINAL, LUG (V77147) 304-C014-CCO		1
		MSE3649-224	3 NUT, PLAIN, HEX, SST, 2-56 (V96906) 313-C037-CCO		1
			(AP)		
		31C-CC7C-CCO	3 WASHER, LCCK, SST, C.097 ID X 0.165 OD (V79807)		1
			31C-CC7C-CCO (AP)		
		MSE1957-2	3 SCREW, MACH, SST, 2-56 X 3/16 (V96906)		1
			343-0123-CCO (AP)		
	34	54C-9036-CC3	3 PCST, HEX		1
		31C-C278-CCO	3 WASHER, LCCK, SST, C.115 ID X 0.202 OD (V70318)		1
			31C-0278-CCO (AP)		
		4C07-4HT	3 TERMINAL, LUG (V77147) 304-C015-CCO (AP)		1
		2475-53-1	3 TERMINAL, STDF (V17117) 306-2547-010 (AP)		1
		MSE1959-12	3 SCREW, MACH, SST, 4-40 X 3/16 (V96906)		1
			342-0043-CCO (AP) (EFF TO REV LTR M)		
		MSE1959-13	3 SCREW, MACH, SST, 4-40 X 1/4 (V96906)		1
			342-0044-CCO (AP) (EFF REV LTR M)		
		P312-CC09-CCO	3 STLD, CONT THD, STL, 4-40 X 1/2 (V77250)		1
			312-0009-CCO (AP) (EFF TO REV LTR U)		
		P312-CC07-CCO	3 STLD, CONT THD, STL, 4-40 X 3/8 (V77250)		1
			312-CC07-CCO (AP) (EFF REV LTR U)		
	35	MS281-100RCF	3 RESISTOR, FXD, FILM, 100 OHMS, 1%, 8W (V19647)		1
			714-3248-040 A3A3R1		
	36	2475-53-1	3 TERMINAL, STDF (V17117) 306-2547-010		2
	37	54C-9045-CC3	3 POST		2
		31C-C278-CCO	3 WASHER, LCCK, SST, C.115 ID X 0.202 OD (V70318)		2
			31C-0278-CCO (AP)		
		MSE1959-12	3 SCREW, MACH, SST, 4-40 X 3/16 (V96906)		2
			342-0043-CCO (AP) (EFF TO REV LTR M)		
		MSE1959-13	3 SCREW, MACH, SST, 4-40 X 1/4 (V96906)		2
			342-0044-CCO (AP) (EFF REV LTR M)		
		P312-CC09-CCO	3 STLD, CONT THD, STL, 4-40 X 1/2 (V77250)		2
			312-CC09-CCO (AP)		
	38	14C-C53C-3C23	3 CABLE ASSY, ELEC (V98278) 426-5435-690 A3A3P1		1
	39	629-3852-CC1	3 SCREW (EFF TO REV LTR A)		2
	40	635-5353-CC1	3 CATCH ASSY		2
		MSE1959-3	3 SCREW, MACH, SST, 2-56 X 1/4 (V96906)		4
			342-0133-CCO (AP)		
	41	635-5352-CC1	4 CLEVIS ASSY		1
	42	635-5347-CC1	5 CLEVIS, PIVCT		1
	43	635-5345-CC1	5 RCD, THREADED		1
		MS16555-617	5 PIN, STR, HDLS, SST, 0.094 DIA X 0.310 (V96906)		1
			311-0789-CCO (AP) (EFF TO REV LTR A)		
		MS16555-617	5 PIN, STR HDLS, SST, 3/32 DIA X 5/16 (V96906)		1
			311-164C-CCO (AP) (EFF REV LTR A)		

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-18 44	635-537C-CC1	4	SHAFT, SHOULDERED		1
	MS16633-1C12	4	RING,RTNG (V96906) 340-0087-CCO (AP)		2
45	MS212C9CC815	5	INSERT,SCR THD, SST, 8-32 X C.246 (V96906)		1
			C12-2112-CCO		
46	635-537C-CC2	5	SHAFT		1
47	635-5351-CC1	4	ARM, CATCH		1
48	292P1C356	3	CAPACITOR,FXD, PLSTC DIEI, C.C1UF, 10%, 600V (V56289) 933-1039-660 A3A3C1		1
	AB397-1A	3	TERMINAL,STUD (V12615) 3C6-1286-CCO (AP)		2
49	52922	3	TERMINAL,LLG (VCO779) 304-1531-C1C		4
50	629-5517-CC1	3	LEAD		1
51	629-5516-CC1	3	LEAD		1
52	629-5515-CC1	3	LEAD		1
	31C-0075-CCO	3	WASHER,LCKK, BRZ, C.088 ID X 0.165 OD (V798C7)		3
			31C-0075-CCO (AP)		
	MS51957-2	3	SCREW,MACH, SST, 2-56 X 3/16 (V96906)		3
			343-0123-CCO (AP)		
53	629-5506-CC1	3	INSULATOR		1
	MS51957-17	3	SCREW,MACH, STL, 4-40 X 1/2 (V96906)		2
			343-0137-CCO (AP)		
54	780-8785-CC1	3	CAP		1
55	780-8788-CC1	3	PLUNGER		1
56	MS28775-CC6	3	PACKING,PREFORM (V96906) 200-2338-360		1
57	780-8793-CC1	3	SPRING		1
58	629-3473-CC1	3	LEAD, ELEC		1
59	MS28775-C12	3	PACKING,PREFORM (V96906) 200-2338-170		1
60	629-5520-CC1	3	SPACER		1
	R4-4CX3-4	3	SCREW,SEAL, SST, 4-40 X 3/4 (V97539)		4
			330-4C31-C3C (AP) (EFF TO REV LTR M)		
	R4-4CX7-8	3	SCREW,SEAL, SST, 4-40 X 7/8 (V97539)		4
			33C-4C31-C4C (AP) (EFF REV LTR M)		
61	MS28775-C18	3	PACKING,PREFORM (V96906) 200-2338-260		1
62	629-5519-CC1	3	INSULATOR		1
63	54C-9645-CC3	2	PCST, HEX		2
	P312-CC09-CCO	3	STUD,CONT THD, STL, 4-40 X 1/2 (V77250)		2
			312-0009-CCO (AP)		
64	G167-3	3	TERMINAL,LLG (V94375) 3C4-1196-CCO		2
	P313-CC64-CCO	3	NUT,PLAIN,HEX, SST, 3/8-32 (V77250) 313-CC64-CCO (AP)		
	172C-02	3	WASHER,LCKK, SST, C.391 ID X 0.507 OD (V78189)		1
			373-0085-CCO (AP)		
	5133-12C	3	RING,RTNG (V79136) 340-0250-CCO (AP)		1
65	M39C12-25-CCC6	3	COVER-CHAIN (V81349) 357-9069-CCO		1
	MS35649-244	3	NUT,PLAIN,HEX, SST, 4-40 (V96906) 313-0043-CCO (AP) (EFF REV LTR M)		1
	31C-0278-CCO	3	WASHER,LCKK, SST, C.115 ID X C.202 OD (V70318)		1
			31C-0278-CCO (AP)		
	MS51957-13	3	SCREW,MACH, STL, 4-40 X 1/4 (V96906)		1
			343-0133-CCO (AP) (EFF TO REV LTR N)		
	MS51959-14	3	SCREW,MACH, SST, 4-40 X 5/16 (V96906)		1
			342-0045-CCO (AP) (EFF REV LTR N)		
66	M39C12-24-CCC2	3	CONNECTOR,RCPT, ELEC (V81349) 357-9307-CCO		1
	AN565F4F3	3	SETSCREW, CD PL STL, 4-40 X 3/16 (V88044)		2
			335-0236-CCO (AP)		
67	MS28775-C24	3	PACKING,PREFORM (V96906) 200-2338-450		1
68	P33C-2288-CCO	3	SCREW,MACH, SST, 2-56 X 7/16 (V77250)		2
			33C-2288-CCO		
	68-1660-26	3	NUT,SLFLKG,HEX, AL, 2-56 (V72962) 333-C604-CCO (AP)		2

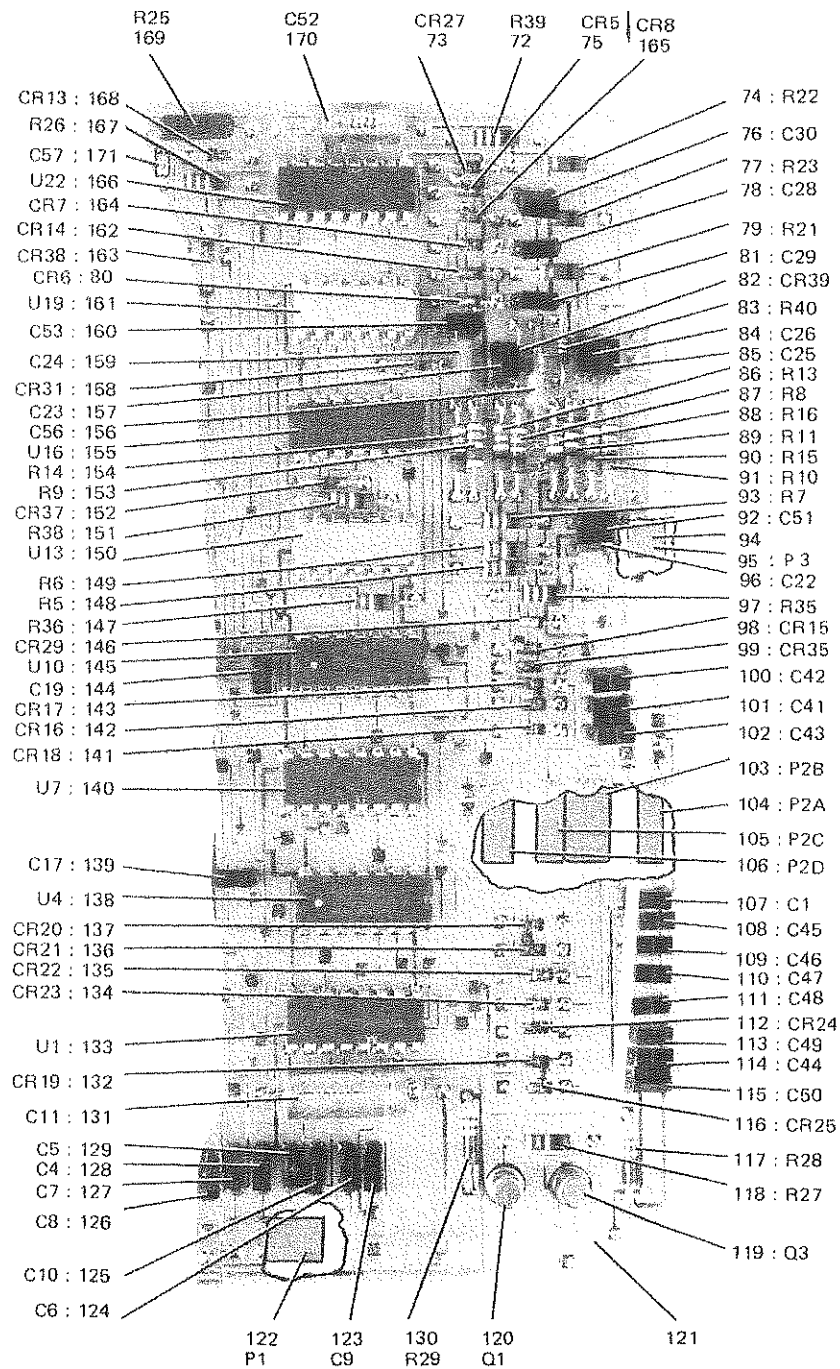
GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-18 69	CES41C-1CC1	3	PLUG CONNECTOR (V35C03) 37C-C037-010 A3A3J2		1
	629-55C5-CC1	3	GASKET (AP)		1
	MS35649-244	3	NUT, PLAIN, HEX, SST, 4-40 (V96906) 313-CC43-CC0 (AP)		1
	31C-C278-CCC	3	WASHER, LOCK, SST, C.115 ID X C.202 OD (V7C318) 31C-0278-CCC (AP)		1
	MS51959-16	3	SCREW, MACH, SST, 4-40 X 7/16 (V96906) 342-CC47-CCC (AP)		1
70	4CC7-4FT	3	TERMINAL, LLG (V77147) 304-CC15-CC0		1
	MS35649-244	3	NUT, PLAIN, HEX, SST, 4-40 (V96906) 313-CC43-CC0 (AP)		1
	31C-C278-CCC	3	WASHER, LOCK, SST, C.115 ID X C.202 OD (V7C318) 31C-0278-CCC (AP)		1
	635-4767-CC2	3	SCREW (AP)		1
71	6C9-C792-CC1	3	HOUSING, CCNN		1
72	6C9-C793-CC1	3	HOUSING, CCNN		1
73	629-5766-CC1	3	PLATE, CCNN		1
	MS35649-224	2	NUT, PLAIN, HEX, SST, 2-56 (V96906) 313-0037-CC0 (AP)		2
	31C-CC7C-CCC	3	WASHER, LOCK, SST, C.097 ID X C.165 OD (V79807) 31C-007C-CC0 (AP) (EFF TC REV LTR U)		2
	MS51957-3	3	SCREW, MACH, CD PL STL, 2-56 X 1/4 (V96906) 343-0124-CC0 (AP) (EFF TC REV LTR U)		1
	MS51957-2	3	SCREW, MACH, SST, 2-56 X 3/16 (V96906) 343-0123-CC0 (AP) (EFF REV LTR U)		2
74	627-1453-CC1	3	CHASSIS CR		1
74	623-7116-CC2	3	CHASSIS (EFF TC REV LTR M)		1



TP4-9686-027

Figure 3-19. Control Logic A3A2 (Sheet 1 of 2)



TP4-9686-027

Figure 3-19. Control Logic A3A2 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-19-	6C1-3672-C01		1 CONTROL LOGIC A3A2 (SEE FIG 3-18-4)		REF
1	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR12		1
2	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR10		1
3	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-720 A3A2C33		1
4	RCRC7G1C4KS		2 RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-CCO A3A2R18		1
5	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A3A2C31 (EFF TO REV LTR V)		1
5	CK05BX103M		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C31 (EFF REV LTR V)		1
6	RCRC7G474KS		2 RESISTOR,FXD, CMPSN, 0.47MEGC, 10%, 1/4W (V81349) 745-0845-CCO A3A2R20		1
7	RCRC7G474KS		2 RESISTOR,FXD, CMPSN, 0.47MEGC, 10%, 1/4W (V81349) 745-0845-CCO A3A2R3		1
8	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR2		1
9	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR30		1
10	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR26		1
11	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR28		1
12	CK05BX1C4K		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-32C A3A2C55 (EFF TO REV LTR V)		1
12	CK05BX103M		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C55 (EFF REV LTR V)		1
13	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-720 A3A2C39 (EFF TO REV LTR V)		1
13	CK05BX103M		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C39 (EFF REV LTR V)		1
14	CD4C11MJ		2 INTEGRATED CKT (V27014) 351-8160-020 A3A2U20		1
15	CD4C23UBF		2 INTEGRATED CKT (VC2735) 351-8184-010 A3A2U21		1
16	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C38		1
17	CD4C11MJ		2 INTEGRATED CKT (V27014) 351-8160-020 A3A2U17		1
18	CD4C11MJ		2 INTEGRATED CKT (V27014) 351-8160-020 A3A2U14		1
19	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR36		1
20	CK05BX1C3M		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C37		1
21	CD4CC1MJ		2 INTEGRATED CKT (V27014) 351-8160-010 A3A2U11		1
22	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C18		1
23	CD4C25MJ		2 INTEGRATED CKT (VC4713) 351-8183-010 A3A2U8		1
24	CD4C23UBF		2 INTEGRATED CKT (VC2735) 351-8184-010 A3A2U5		1
25	CD4C23UBF		2 INTEGRATED CKT (VC2735) 351-8184-010 A3A2U6		1
26	CD4CC1MJ		2 INTEGRATED CKT (V27014) 351-8160-010 A3A2U2		1
27	CD4C11MJ		2 INTEGRATED CKT (V27014) 351-8160-020 A3A2U3		1
28	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C3		1
29	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C20		1
30	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-720 A3A2C2		1
31	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-72C A3A2C16		1
32	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C21 (EFF TO REV LTR V)		1
32	CK05BX103M		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C21 (EFF REV LTR V)		1
33	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A3A2C12		1
34	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C54		1
35	RCRC7G1C4KS		2 RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-CCO A3A2R2		1
36	RCRC7G1C3KS		2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A3A2R1		1
37	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR34		1
38	CK05BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-720 A3A2C15		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-19	39	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C14		1
	40	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C13		1
	41	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR32		1
	42	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR1		1
	43	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR33		1
	44	2	RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-000 A3A2R4		1
	45	2	RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-000 A3A2R19		1
	46	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 A3A2R24		1
	47	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/4W (V81349) 745-0800-000 A3A2R33		1
	48	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR4		1
	49	2	TRANSISTOR (V07263) 352-0661-020 A3A2Q2		1
	49A	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349) 745-2341-000 A3A2R41 (EFF REV LTR V)		1
	50	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/4W (V81349) 745-0800-000 A3A2R32		1
	51	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 A3A2R37		1
	52	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/4W (V81349) 745-0788-000 A3A2R30		1
	53	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/4W (V81349) 745-0788-000 A3A2R31		1
	54	2	TRANSISTOR (V07263) 352-0661-020 A3A2Q4		1
	55	2	TRANSISTOR (V07263) 352-0661-020 A3A2Q5		1
	56	2	INTEGRATED CKT (V04713) 351-8183-010 A3A2U9		1
	57	2	INTEGRATED CKT (V02735) 351-8184-010 A3A2U12		1
	58	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C27		1
	59	2	MICROCIRCUIT (V27014) 351-8197-010 A3A2U15		1
	60	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 A3A2R12		1
	61	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR3		1
	62	2	RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-000 A3A2R34		1
	63	2	INTEGRATED CKT (V02735) 351-8184-010 A3A2U18		1
	64	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR11		1
	65	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C32		1
	66	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C34 (EFF TO REV LTR V)		1
	66	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C34 (EFF REV LTR V)		1
	67	2	RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-000 A3A2R17		1
	68	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR9		1
	69	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C36		1
	70	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C35		1
	71	2	CCNTACT,ELEC 372-2601-045 (EFF TO REV LTR S)		12
	71	2	CCNTACT,ELEC 372-2601-037 (EFF REV LTR S)		12
	72	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 A3A2R39		1
	73	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR27		1
	74	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-000 A3A2R22		1
	75	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR5		1
	76	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C30		1
	77	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-000 A3A2R23		1

GROUP ASSEMBLY PARTS LIST

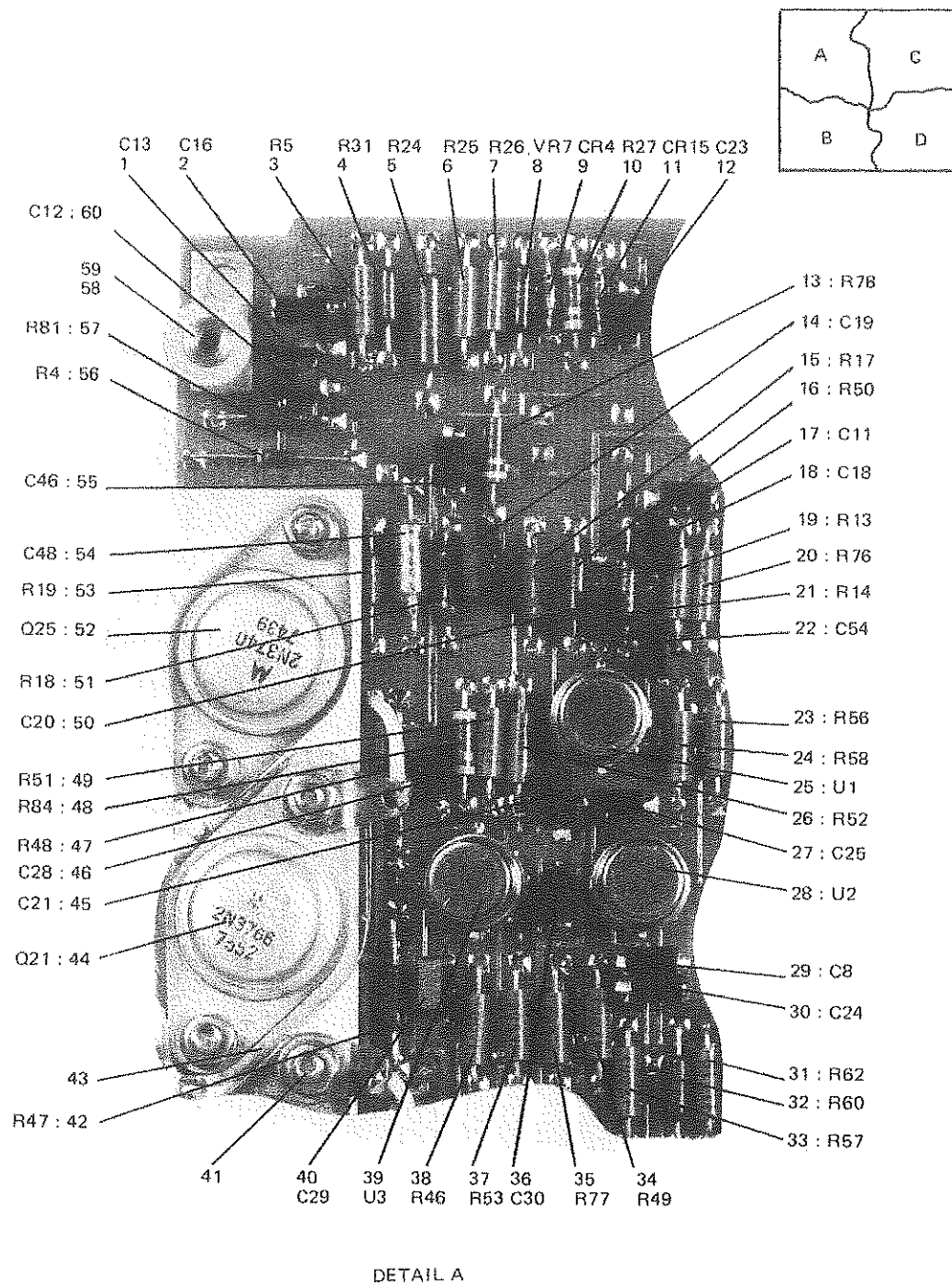
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-19	78	CK05BXC4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C28 (EFF TO REV LTR V)		1
	78	CK05BX103M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C28 (EFF REV LTR V)		1
	79	RCRC7G1C2KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0745-CCC A3A2R21		1
	80	1N4454	2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR6		1
	81	CK05BXC4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C29		1
	82	1N4454	2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR39		1
	83	RCRC5G274KS	2 RESISTOR,FXD, CMPSN, 270K, 10%, 1/8W (V81349) 745-2428-CCO A3A2R40		1
	84	CK05BXC4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C26		1
	85	CK05BXC4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C25		1
	86	RCRC7G1C4KS	2 RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-CCO A3A2R13		1
	87	RCRC7G1C3MS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A3A2R8		1
	88	RCRC7G1C4MS	2 RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-CCO A3A2R16		1
	89	RCRC7G1C3MS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A3A2R11		1
	90	RCRC7G1C4KS	2 RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-CCO A3A2R15		1
	91	RCRC7G1C3KS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A3A2R10		1
	92	CK05BXC4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C51		1
	93	RCRC7G1C3KS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A3A2R7		1
	94	372-3392-C19	2 CONTACT,ELEC 372-3392-019		70
	95	372-2624-C18	2 HCUSING,CONN 372-2624-018 A3A2P3		1
	96	CK05BXC4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C22		1
	97	RCRC7G1C3KS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A3A2R35		1
	98	1N4454	2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR15		1
	99	1N4454	2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR35		1
	100	CK05BXC3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C42		1
	101	CK05BXC3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C41		1
	102	CY1CC1C2M	2 CAPACITOR,FXD, CER DIEI, 1000PF, 20%, 50V (V16546) 913-3279-C30 A3A2C43		1
	103	372-2624-C13	2 HCUSING,CONN 372-2624-013 A3A2P2B		1
	104	372-2625-C13	2 HCUSING,CONN 372-2625-013 A3A2P2A		1
	105	372-2625-C13	2 HCUSING,CONN 372-2625-013 A3A2P2C		1
	106	372-2625-C13	2 HCUSING,CONN 372-2625-013 A3A2P2C		1
	107	CK05BXC4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C1		1
	108	CK05BXC3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C45		1
	109	CK05BXC3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C46		1
	110	CK05BXC3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C47		1
	111	CK05BXC3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C48		1
	112	1N4454	2 SEMICOND DEVICE (VC3508) 353-3644-010 A3A2CR24		1
	113	CK05BXC3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C49		1
	114	CM5F181JC9CWV	2 CAPACITOR,FXD, MICA DIEI, 180PF, 5%, 50V (V72136) 912-4141-430 A3A2C44 (EFF TO REV LTR S)		1
	114	CK05BXC3M	2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A2C44 (EFF REV LTR S)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-19 115	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C50		1
116	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR25		1
117	RCRC7G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/4W (V81349) 745-0761-C00 A3A2R28		1
118	RCRC7G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-C00 A3A2R27		1
119	2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A3A2C3		1
120	2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A3A2Q1		1
121	757-9241-015	2	HANDLE		2
122	372-2624-C25	2	HOUSING,CONN 372-2624-025 A3A2P1		1
123	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C9		1
124	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C6		1
125	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C10		1
126	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C8		1
127	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C7		1
128	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C4		1
129	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C5		1
130	RCRC7G821KS	2	RESISTOR,FXD, CMPSN, 820 OHMS, 10%, 1/4W (V81349) 745-0746-C00 A3A2R29		1
131	M39CC3-C1-2255	2	CAPACITOR,FXD, ELCTLT, 47UF, 10%, 20V (V81349) 184-9086-550 A3A2C11		1
132	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR19		1
133	CD4C49MJ	2	MICROCIRCUIT (V27014) 351-8197-010 A3A2U1		1
134	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR23		1
135	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR22		1
136	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR21		1
137	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR20		1
138	CD4CC1MJ	2	INTEGRATED CKT (V27014) 351-8160-010 A3A2U4		1
139	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C17		1
140	CD4C49MJ	2	MICROCIRCUIT (V27014) 351-8197-010 A3A2U7		1
141	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR18		1
142	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR16		1
143	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR17		1
144	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C19		1
145	CD4CC1MJ	2	INTEGRATED CKT (V27014) 351-8160-010 A3A2U10		1
146	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR29		1
147	RCRC7G1C4KS	2	RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-C00 A3A2R36		1
148	RCRC7G1C4KS	2	RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-C00 A3A2R5		1
149	RCRC7G1C4KS	2	RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-C00 A3A2R6		1
150	CD4011MJ	2	INTEGRATED CKT (V27014) 351-8160-020 A3A2U13		1
151	RCRC7G1C4KS	2	RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-C00 A3A2R38		1
152	1N4454	2	SEMICOND DEVICE (V03508) 353-3644-010 A3A2CR37		1
153	RCRC7G474KS	2	RESISTOR,FXD, CMPSN, 0.47MEGC, 10%, 1/4W (V81349) 745-0845-C00 A3A2R9		1
154	RCRC7G1C4KS	2	RESISTOR,FXD, CMPSN, 0.10MEGC, 10%, 1/4W (V81349) 745-0821-C00 A3A2R14		1
155	CD4C23UBF	2	INTEGRATED CKT (V02735) 351-8184-010 A3A2U16		1
156	M39CC3-C1-2243	2	CAPACITOR,FXD, ELCTLT, 6.8UF, 20%, 6V (V81349) 184-9086-030 A3A2C56		1
157	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C23		1

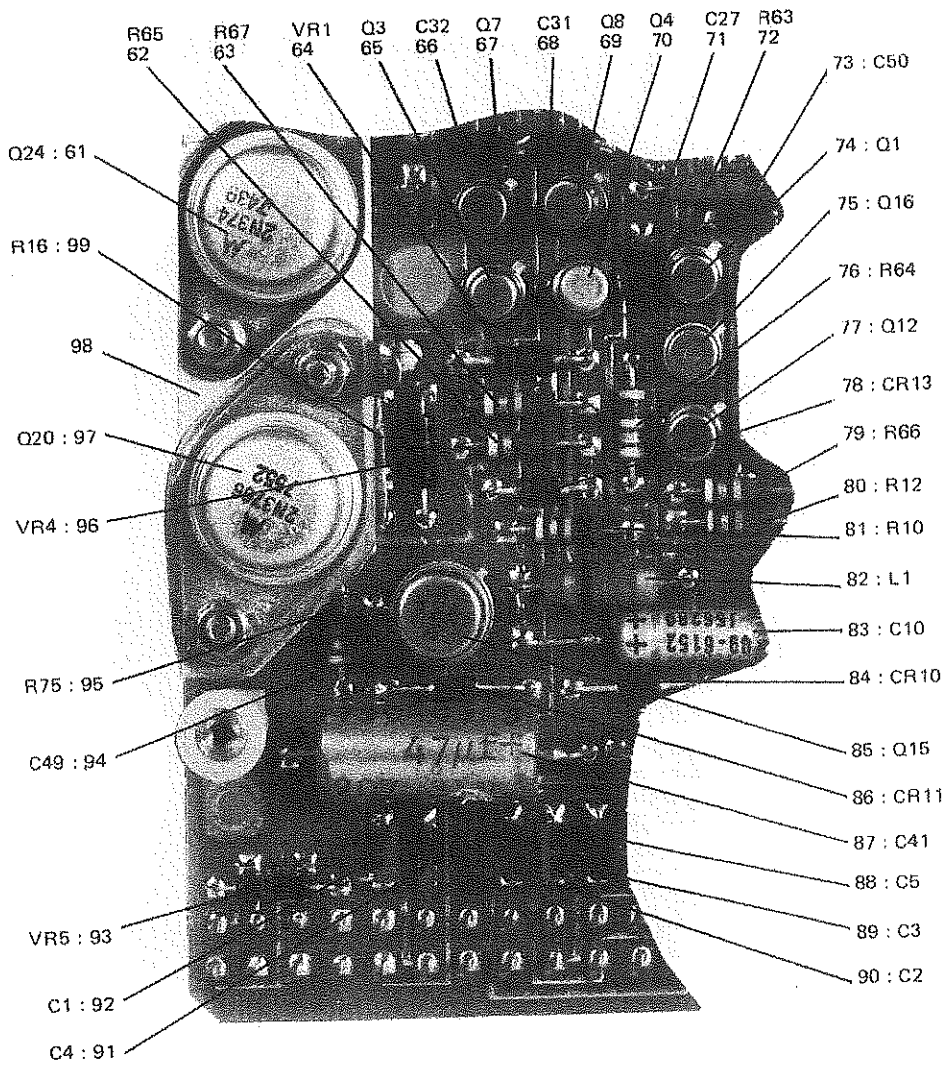
GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-19 158	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A3A2CR31 (EFF TO REV LTR R)		1
159	CY3CC474M	2	CAPACITOR,FXD, CER DIEI, 0.47UF, 20%, 50V (V16546) 913-3279-250 A3A2C24		1
160	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C53		1
161	CD4C11MJ	2	INTEGRATED CKT (V27014) 351-8160-020 A3A2U19		1
162	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A3A2CR14		1
163	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A3A2CR38		1
164	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A3A2CR7		1
165	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A3A2CR8		1
166	CD4C45MJ	2	MICROCIRCUIT (V27014) 351-8197-C1C A3A2U22		1
167	RCRC7G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81345) 745-0785-CGO A3A2R26		1
168	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A3A2CR13		1
169	RN6CC1CC4F	2	RESISTOR,FXD, FILM, 1MEGC, 1%, 1/4W (V81345) 7C5-6740-CCC A3A2R25		1
170	M39CC3-C1-2257	2	CAPACITOR,FXD, ELCTLT, 33UF, 10%, 10V (V81349) 184-9086-170 A3A2C52		1
171	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A2C57 (EFF REV LTR T)		1



TP4-9687-047

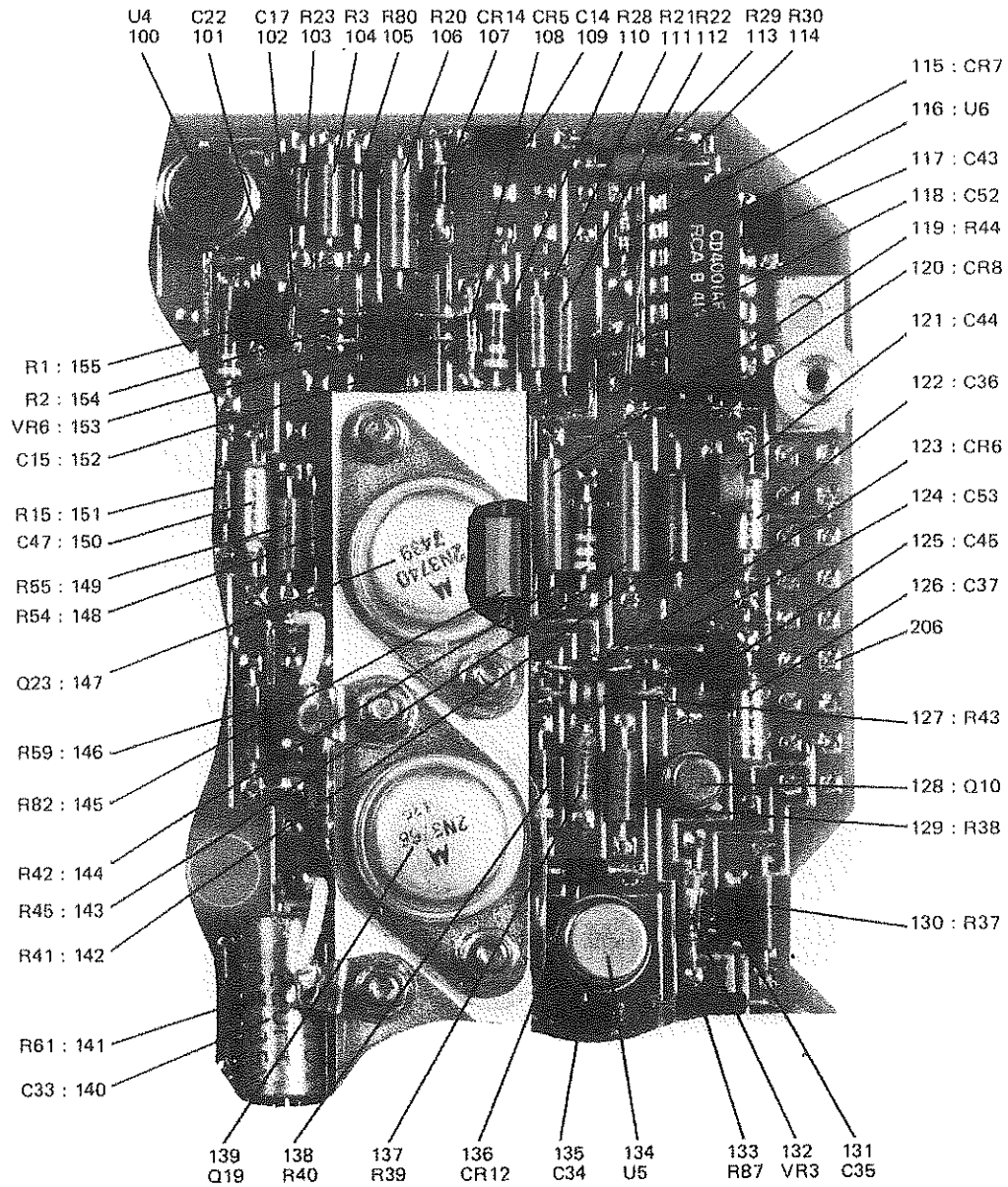
Figure 3-20. Servo Amplifier A3A1 (Sheet 1 of 4)



DETAIL B

TP4-9687-047

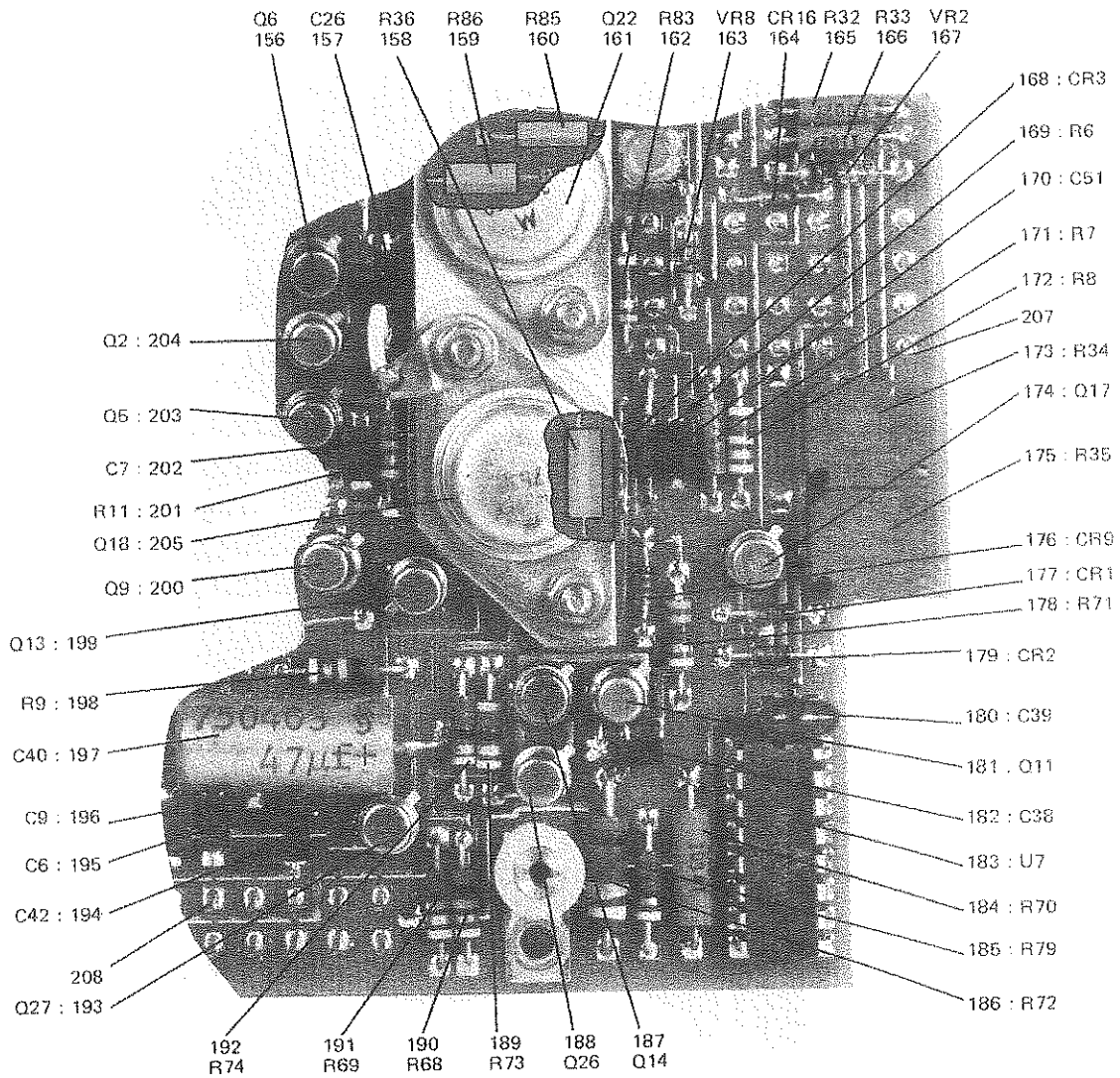
Figure 3-20. Servo Amplifier A3A1 (Sheet 2)



DETAIL C

TP4-9687-047

Figure 3-20. Servo Amplifier A3A1 (Sheet 3)



DETAIL D

TP4-9687-047

Figure 3-20. Servo Amplifier A3A1 (Sheet 4)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-20 -	6C1-3673-CC1		1 SERVO AMPLIFIER A3A1 (SEE FIG 3-18-5 FOR NHA)		REF
1	CKC5BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C13		1
2	CKC5BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C16		1
3	RA55C5621F		2 RESISTOR,FXD, FILM, 5.62K, 1%, 1/8W (V81349) 7C5-1032-CCO A3A1R5		1
4	RA55C3322F		2 RESISTOR,FXD, FILM, 33.2K, 1%, 1/8W (V81349) 7C5-1069-CCC A3A1R31		1
5	RA6CC1CC4F		2 RESISTOR,FXD, FILM, 1MEGC, 1%, 1/4W (V81349) 7C5-6740-CCO A3A1R24		1
6	RA55C1CC2F		2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R25		1
7	RA55C1CC3F		2 RESISTOR,FXD, FILM, 10CK, 1%, 1/8W (V81349) 7C5-1092-CCO A3A1R26		1
8	1N753A		2 SEMICOND DEVICE (V81483) 353-2714-CCO A3A1NR7		1
9	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-C10 A3A1CR4		1
10	RCRC7C472KS		2 RESISTOR,FXD, CMPSA, 4.7K, 10%, 1/4W (V81349) 745-0773-CCO A3A1R27		1
11	1N4454		2 SEMICOND DEVICE (VC3508) 353-3644-C10 A3A1CR15		1
12	CKC5BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C23		1
13	RCRC7C222KS		2 RESISTOR,FXD, CMPSA, 2.2K, 10%, 1/4W (V81349) 745-0761-CCO A3A1R78		1
14	CKC6EX334K		2 CAPACITOR,FXD, CER DIEI, 0.33UF, 10%, 50V (V81349) 913-5019-500 A3A1C19		1
15	RA55C5111F		2 RESISTOR,FXD, FILM, 5.11K, 1%, 1/8W (V81349) 7C5-1030-CCC A3A1R17		1
16	RA55C2C53F		2 RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-1107-CCO A3A1R50		1
17	CKC5BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C11		1
18	CKC5BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C18		1
19	RA55C5111F		2 RESISTOR,FXD, FILM, 5.11K, 1%, 1/8W (V81349) 7C5-1030-CCC A3A1R13		1
20	RA55C2C53F		2 RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-1107-CCO A3A1R76		1
21	RA55C4C22F		2 RESISTOR,FXD, FILM, 4C.2K, 1%, 1/8W (V81349) 7C5-1073-CCC A3A1R14		1
22	CKC5BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C54		1
23	RA55C1CC2F		2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCC A3A1R56		1
24	RA55C1CC2F		2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R58		1
25	MC1558G		2 INTEGRATED CKT (VG4713) 351-1071-C20 A3A1U1		1
26	RA55C1CC2F		2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R52		1
27	CKC5BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C25		1
28	MC1558G		2 INTEGRATED CKT (VC4713) 351-1071-C20 A3A1U2		1
29	CKC5BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C8		1
30	CKC5BX1C4M		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C24		1
31	RA55C5111F		2 RESISTOR,FXD, FILM, 5.11K, 1%, 1/8W (V81349) 7C5-1030-CCO A3A1R62		1
32	RA55C2C53F		2 RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-1107-CCO A3A1R60		1
33	RA55C1CC2F		2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R57		1
34	RA55C1CC2F		2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R49		1
35	RA55C2C53F		2 RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-1107-CCC A3A1R77		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-20	36	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C30		1
	37	RN55D2053F	2 RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-11C7-CC0 A3A1R53		1
	38	RN55D1CC2F	2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CC0 A3A1R46		1
	39	MC1556G	2 INTEGRATED CKT (V04713) 351-1071-C20 A3A1U3		1
	40	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C29		1
	41	4C4C-S1-DSP1	2 TERMINAL,LUG (V77147) 304-0332-CC0		6
	42	RN55D2053F	2 RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-11C7-CC0 A3A1R47		1
	43	TA24C2A	2 WASHER,MICA (V08289) 352-9570-C20		8
	44	2N3766	2 TRANSISTOR (V07263) 352-0689-010 A3A1C21		1
	45	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C21		1
	46	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C28		1
	47	RN55D2053F	2 RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-11C7-CC0 A3A1R48		1
	48	RCRC7G472KS	2 RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/4W (V81349) 745-0773-CC0 A3A1R84		1
	49	RN55D1CC2F	2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CC0 A3A1R51		1
	50	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C20		1
	51	RN55D5112F	2 RESISTOR,FXD, FILM, 51.1K, 1%, 1/8W (V81349) 7C5-1C78-CC0 A3A1R18		1
	52	2N374C	2 TRANSISTOR (V07263) 352-0695-C10 A3A1C25		1
	53	RN55D1782F	2 RESISTOR,FXD, FILM, 17.8K, 1%, 1/8W (V81349) 7C5-1056-CC0 A3A1R19		1
	54	M39CC3-C1-2356	2 CAPACITOR,FXD, ELCILT, 1UF, 10%, 50V (V81349) 184-9087-43C A3A1C48		1
	55	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C46		1
	56	RCRC5C125JS	2 RESISTOR,FXD, CMPSN, 1.2MEG, 5%, 1/8W (V81349) 745-1864-270 A3A1R4		1
	57	RN55D3322F	2 RESISTOR,FXD, FILM, 33.2K, 1%, 1/8W (V81349) 7C5-1069-CC0 A3A1R81		1
	58	629-5757-CC1	2 BUSHING,SPACER		4
	59	629-5756-CC1	2 PCST,SPACER		4
	60	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C12		1
	61	2N374C	2 TRANSISTOR (V07263) 352-0695-C10 A3A1Q24		1
	62	RCRC7G682KS	2 RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/4W (V81349) 745-0779-CC0 A3A1R65		1
	63	RCRC7G273KS	2 RESISTOR,FXD, CMPSN, 27K, 10%, 1/4W (V81349) 745-0800-CC0 A3A1R67		1
	64	1N4733A	2 SEMICOND DEVICE (V04713) 353-6481-110 A3A1VR1		1
	65	2N2222A	2 TRANSISTOR (V07263) 352-C661-020 A3A1Q3		1
	66	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C32		1
	67	2N29C7A	2 TRANSISTOR (V04713) 352-0551-010 A3A1Q7		1
	68	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C31		1
	69	2N29C7A	2 TRANSISTOR (V04713) 352-0551-010 A3A1Q8		1
	70	2N2222A	2 TRANSISTOR (V07263) 352-0661-020 A3A1Q4		1
	71	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C27		1
	72	RN55D4871F	2 RESISTOR,FXD, FILM, 4.87K, 1%, 1/8W (V81349) 7C5-1029-CC0 A3A1R63		1
	73	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C50		1
	74	2N2222A	2 TRANSISTOR (V07263) 352-0661-020 A3A1Q1		1
	75	JAN2N26C8	2 TRANSISTOR (V81350) 352-7500-360 A3A1Q16		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-20	76	RCRC7G474KS	2 RESISTOR,FXD, CMPSN, 0.47MEGC, 10%, 1/4W (V81349) 745-0845-CCO A3A1R64		1
	77	2N2222A	2 TRANSISTOR (V07263) 352-0661-020 A3A1Q12		1
	78	1N4CC2	2 SEMICOND DEVICE (VC4713) 353-6442-020 A3A1CR13		1
	79	RCRC7G273KS	2 RESISTOR,FXD, CMPSN, 27K, 10%, 1/4W (V81349) 745-08CC-CCO A3A1R66		1
	80	RCRC7G273KS	2 RESISTOR,FXD, CMPSN, 27K, 10%, 1/4W (V81349) 745-08CC-CCO A3A1R12		1
	81	RCRC7G1C3KS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A3A1R10		1
	82	MS75C09-29	2 COIL,RF, 33CCUH (V96906) 240-2715-550 A3A1R11		1
	83	M29CC6-C9-8152	2 CAPACITOR,FXD, ELCTLT, 6.8UF, 20%, 75V (V81349) 184-91C4-080 A3A1C10		1
	84	1N4CC2	2 SEMICOND DEVICE (VC4713) 353-6442-020 A3A1CR10		1
	85	2N29C5A	2 TRANSISTOR (V07933) 352-0550-000 A3A1Q15		1
	86	1N4CC2	2 SEMICOND DEVICE (VC4713) 353-6442-020 A3A1CR11		1
	87	M39CC3-C1-2307	2 CAPACITOR,FXD, ELCTLT, 22UF, 20%, 35V (V81349) 184-9086-67C A3A1C41		1
	88	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-72C A3A1C5		1
	89	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A3A1C3		1
	90	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-72C A3A1C2		1
	91	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A3A1C4		1
	92	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A3A1C1		1
	93	1N752A	2 SEMICOND DEVICE (V81483) 353-2714-000 A3A1NR5		1
	94	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-72C A3A1C49		1
	95	RCRC7G1C2KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCO A3A1R75		1
	96	1N753A	2 SEMICOND DEVICE (V81483) 353-2714-000 A3A1NR4		1
	97	2N3766	2 TRANSISTOR (V07263) 352-0689-010 A3A1Q20		1
	98	621-6837-CC1	2 PLATE, TRANSISTOR MOUNTING		2
	99	RCRC7G271KS	2 RESISTOR,FXD, CMPSN, 270 OHMS, 10%, 1/4W (V81349) 745-0728-CCO A3A1R16		1
	100	MC1558G	2 INTEGRATED CKT (V04713) 351-1071-020 A3A1U4		1
	101	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A3A1C22		1
	102	CY30C474M	2 CAPACITOR,FXD, CER DIEI, 0.47UF, 20%, 50V (V16546) 913-3279-250 A3A1C17		1
	103	RN55D3322F	2 RESISTOR,FXD, FILM, 33.2K, 1%, 1/8W (V81349) 7C5-1069-CCO A3A1R23		1
	104	RN55D1623F	2 RESISTOR,FXD, FILM, 162K, 1%, 1/8W (V81349) 7C5-1102-CCO A3A1R3		1
	105	RN55D3322F	2 RESISTOR,FXD, FILM, 33.2K, 1%, 1/8W (V81349) 7C5-1069-CCO A3A1R80		1
	106	RN4CD1CC4F	2 RESISTOR,FXD, FILM, 1MEGC, 1%, 1/4W (V81349) 7C5-6740-CCO A3A1R20		1
	107	1N4CC2	2 SEMICOND DEVICE (VC4713) 353-6442-020 A3A1CR14		1
	108	1N4454	2 SEMICOND DEVICE (V03508) 353-3644-010 A3A1CR5		1
	109	CKC5BX1C4M	2 CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5C19-72C A3A1C14		1
	110	RCRC7G472KS	2 RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/4W (V81349) 745-0773-CCO A3A1R28		1
	111	RN55D1CC3F	2 RESISTOR,FXD, FILM, 100K, 1%, 1/8W (V81349) 7C5-1092-CCO A3A1R21		1
	112	RN55D1CC2F	2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R22		1
	113	RN55D1CC2F	2 RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R29		1

GROUP ASSEMBLY PARTS LIST

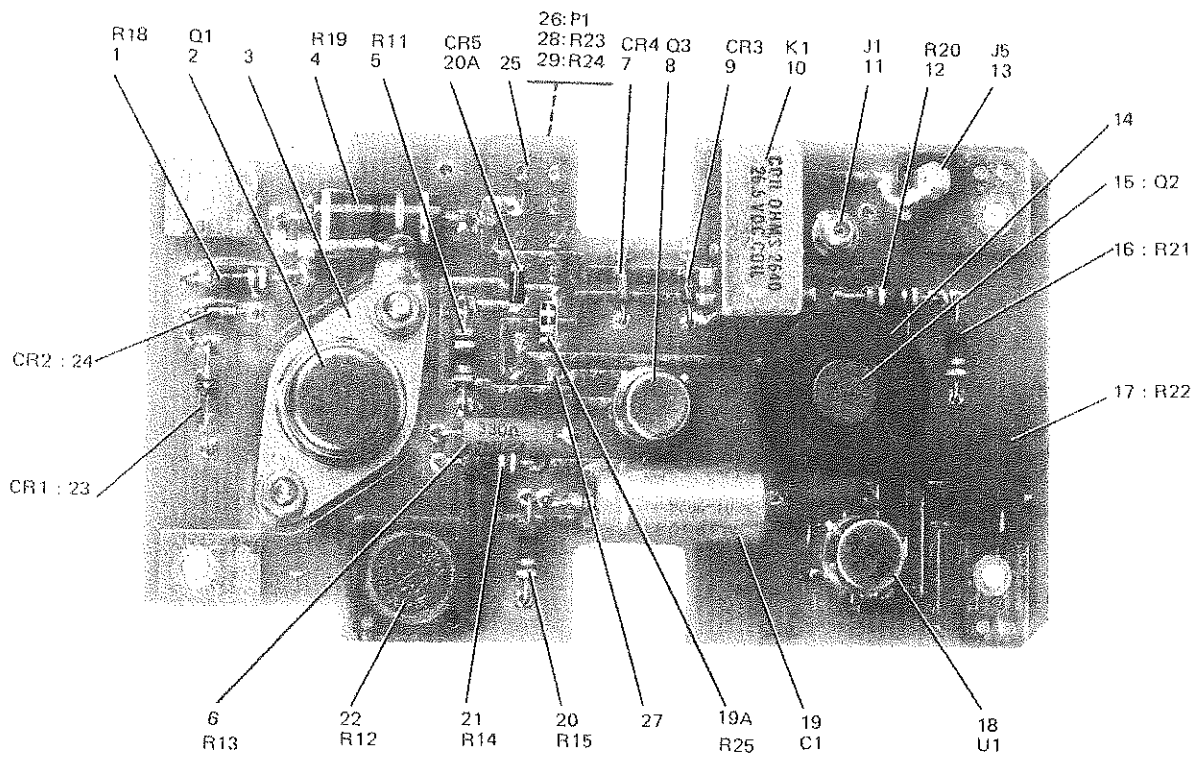
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-20 114	RN55C1CC2F	2	RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R30		1
115	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A3A1CR7		1
116	CD4CC1MJ	2	INTEGRATED CKT (V27014) 351-8160-010 A3A1U6		1
117	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C43		1
118	CY3CC474M	2	CAPACITOR,FXD, CER DIEI, 0.47UF, 20%, 50V (V16546) 913-3279-250 A3A1C52		1
119	RN60D5623F	2	RESISTOR,FXD, FILM, 562K, 1%, 1/4W (V81349) 7C5-6728-CCO A3A1R44		1
120	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A3A1CR8		1
121	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C44		1
122	M39CC3-C1-22E1	2	CAPACITOR,FXD, ELCTLT, 1.5UF, 20%, 20V (V81349) 184-9086-410 A3A1C36		1
123	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A3A1CR6		1
124	CY3CC474M	2	CAPACITOR,FXD, CER DIEI, 0.47UF, 20%, 50V (V16546) 913-3279-250 A3A1C53		1
125	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C45		1
126	M39CC3-C1-22E1	2	CAPACITOR,FXC, ELCTLT, 1.5UF, 20%, 20V (V81349) 184-9086-410 A3A1C37		1
127	RCRC7G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A3A1R43		1
128	2N29C7A	2	TRANSISTOR (V04713) 352-0551-010 A3A1Q10		1
129	RN55C1CC2F	2	RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R38		1
130	RN55C1CC2F	2	RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R37		1
131	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C35		1
132	1N758A	2	SEMICOND DEVICE (V81483) 353-2724-000 A3A1VR3		1
133	RN55D5362F	2	RESISTOR,FXD, FILM, 53.6K, 1%, 1/8W (V81349) 7C5-1079-CCO A3A1R67		1
134	MC1558G	2	INTEGRATED CKT (V04713) 351-1071-020 A3A1U5		1
135	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C34		1
136	1N4002	2	SEMICOND DEVICE (V04713) 353-6442-020 A3A1CR12		1
137	RN55D2153F	2	RESISTOR,FXD, FILM, 215K, 1%, 1/8W (V81349) 7C5-1108-CCO A3A1R39		1
138	RCRC7G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CCO A3A1R40		1
139	2N3766	2	TRANSISTOR (V07263) 352-0689-010 A3A1Q19		1
140	M39CC3-C1-23C7	2	CAPACITOR,FXD, ELCTLT, 22UF, 20%, 35V (V81349) 184-9086-670 A3A1C33		1
141	RN55D2053F	2	RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-1107-CCO A3A1R61		1
142	RN6CC1CC4F	2	RESISTOR,FXD, FILM, 1MEGC, 1%, 1/4W (V81349) 7C5-6740-CCO A3A1R41		1
143	RN60D5623F	2	RESISTOR,FXD, FILM, 562K, 1%, 1/4W (V81349) 7C5-6728-CCO A3A1R45		1
144	RCRC7G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-CCO A3A1R42		1
145	RN55C1782F	2	RESISTOR,FXD, FILM, 17.8K, 1%, 1/8W (V81349) 7C5-1056-CCO A3A1R82		1
146	RN55D2053F	2	RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-1107-CCO A3A1R59		1
147	2N374C	2	TRANSISTOR (V07263) 352-0695-010 A3A1Q23		1
148	RN55D2053F	2	RESISTOR,FXD, FILM, 205K, 1%, 1/8W (V81349) 7C5-1107-CCO A3A1R54		1
149	RN55C1CC2F	2	RESISTOR,FXD, FILM, 10K, 1%, 1/8W (V81349) 7C5-1044-CCO A3A1R55		1
150	M39CC3-C1-2356	2	CAPACITOR,FXD, ELCTLT, 1UF, 10%, 50V (V81349) 184-9087-430 A3A1C47		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-20 151	RN55C1782F	2	RESISTOR,FXD, FILM, 17.8K, 1%, 1/8W (V81349) 7C5-1C56-CCC A3A1R15		1
152	CKC5BX1C4M	2	CAPACITOR,FXC, CER DIEI, 0.1UF, 20%, 5CV (V81349) 913-5019-720 A3A1C15		1
153	1N753A	2	SEMICOND DEVICE (V81482) 353-2714-000 A3A1VR6		1
154	RN55C3322F	2	RESISTOR,FXD, FILM, 33.2K, 1%, 1/8W (V81349) 7C5-1C69-CCC A3A1R2		1
155	RCRC7G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/4W (V81349) 745-0761-000 A3A1R1		1
156	2N29C7A	2	TRANSISTOR (V04713) 352-0551-C10 A3A1Q6		1
157	CKC5BX1C4M	2	CAPACITOR,FXC, CER DIEI, 0.1UF, 20%, 5CV (V81349) 913-5019-720 A3A1C26		1
158	RN55C3C12F	2	RESISTOR,FXD, FILM, 30.1K, 1%, 1/8W (V81349) 7C5-1C67-CCC A3A1R36		1
159	RN55C5362F	2	RESISTOR,FXD, FILM, 53.6K, 1%, 1/8W (V81349) 7C5-1C79-CCC A3A1R86		1
160	RCRC5G335JS	2	RESISTOR,FXD, CMPSN, 3.3MEGD, 5%, 1/8W (V81349) 745-1864-370 A3A1R85		1
161	2N374C	2	TRANSISTOR (VC7263) 352-0695-C10 A3A1Q22		1
162	RCRC7G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/4W (V81349) 745-0773-000 A3A1R83		1
163	1N751A	2	SEMICOND DEVICE (V12954) 353-2710-000 A3A1VR8		1
164	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A3A1CR16		1
165	RN55C4641F	2	RESISTOR,FXD, FILM, 4.64K, 1%, 1/8W (V81349) 7C5-1C28-CCC A3A1R32		1
166	RN55C11C2F	2	RESISTOR,FXD, FILM, 11K, 1%, 1/8W (V81349) 7C5-1C46-CCC A3A1R33		1
167	1N753A	2	SEMICOND DEVICE (V81483) 353-2714-000 A3A1VR2		1
168	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A3A1CR3		1
169	RN55C1C72F	2	RESISTOR,FXD, FILM, 10.7K, 1%, 1/8W (V81349) 7C5-3605-49C A3A1R6		1
170	CKC5BX473K	2	CAPACITOR,FXD, CER DIEI, 0.047UF, 10%, 50V (V81349) 913-5019-280 A3A1C51		1
171	RN55C2742F	2	RESISTOR,FXD, FILM, 27.4K, 1%, 1/8W (V81349) 7C5-1065-000 A3A1R7		1
172	RCR07G474KS	2	RESISTOR,FXD, CMPSN, 0.47MEGD, 10%, 1/4W (V81349) 745-0845-000 A3A1R8		1
173	RJ24CP2C3	2	RESISTOR,VAR, NONWIRE-WOUND, 20K, 10%, 1/2W (V81349) 380-1C80-110 A3A1R34		1
174	JAN2N26C8	2	TRANSISTOR (V81350) 352-7500-360 A3A1Q17		1
175	RJ24CP1C4	2	RESISTOR,VAR, NONWIRE-WOUND, 100K, 10%, 1/2W (V81349) 38C-1C80-140 A3A1R35		1
176	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A3A1CR9		1
177	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A3A1CR1		1
178	RCRC7G332KS	2	RESISTOR,FXD, CMPSN, 3.3K, 10%, 1/4W (V81349) 745-0767-000 A3A1R71		1
179	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A3A1CR2		1
180	CMC4ED2CCJC3	2	CAPACITOR,FXC, MICA DIEI, 20PF, 5%, 50CV (V81349) 912-3841-000 A3A1C39		1
181	2N2222A	2	TRANSISTOR (VC7263) 352-0661-020 A3A1C11		1
182	CKC5BX151K	2	CAPACITOR,FXC, CER DIEI, 150PF, 10%, 200V (V81349) 913-4008-000 A3A1C38		1
183	CD4C45MJ	2	MICROCIRCUIT (V27C14) 351-8197-010 A3A1U7		1
184	RN6CC1C04F	2	RESISTOR,FXD, FILM, 1MEGD, 1%, 1/4W (V81349) 7C5-6740-000 A3A1R70		1
185	RCRC7G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/4W (V81349) 745-0761-000 A3A1R79		1
186	RCR2CG1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 A3A1R72		1
187	2N29C7A	2	TRANSISTOR (V04713) 352-0551-010 A3A1Q14		1
188	2N2222A	2	TRANSISTOR (VC7263) 352-0661-C20 A3A1C26		1
189	RCR07G47CKS	2	RESISTOR,FXD, CMPSN, 47 OHMS, 10%, 1/4W (V81349) 745-0701-000 A3A1R73		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-20 190	RCRC7G1C3KS	2	RESISTOR,FXD, CMPSA, 10K, 10%, 1/4W (V81349) 745-0785-CCC A3A1R68		1
191	RCRC7G223KS	2	RESISTOR,FXD, CMPSA, 22K, 10%, 1/4W (V81349) 745-0797-CCC A3A1R69		1
192	RCRC7G22CKS	2	RESISTOR,FXD, CMPSA, 22 CHMS, 10%, 1/4W (V81349) 745-0689-CCC A3A1R74		1
193	2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A3A1Q27		1
194	CKC5B1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C42		1
195	CKC5B1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C6		1
196	CKC5B1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C9		1
197	M39CC3-C1-2307	2	CAPACITOR,FXD, ELCILT, 22UF, 20%, 35V (V81349) 184-9086-670 A3A1C40		1
198	RCRC7G1C3KS	2	RESISTOR,FXD, CMPSA, 10K, 10%, 1/4W (V81349) 745-0785-CCC A3A1R5		1
199	2N2222A	2	TRANSISTOR (V07263) 352-0661-C20 A3A1G13		1
200	2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A3A1Q9		1
201	RCRC7G273KS	2	RESISTOR,FXD, CMPSA, 27K, 10%, 1/4W (V81349) 745-0800-CCC A3A1R11		1
202	CKC5B1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C7		1
203	2N2907A	2	TRANSISTOR (V04713) 352-0551-010 A3A1C5		1
204	2N2222A	2	TRANSISTOR (V07263) 352-0661-C20 A3A1C2		1
205	2N3766	2	TRANSISTOR (V07263) 352-0689-C10 A3A1C18		1
205A	CK05B1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A1C55 (MCN 1-16 ONLY)		1
206	372-2601-179	2	CCONTACT,ELEC 372-2601-179		24
207	372-2601-145	2	CCONTACT,ELEC 372-2601-145		20
208	372-2601-183	2	CCONTACT,ELEC 372-2601-183		32

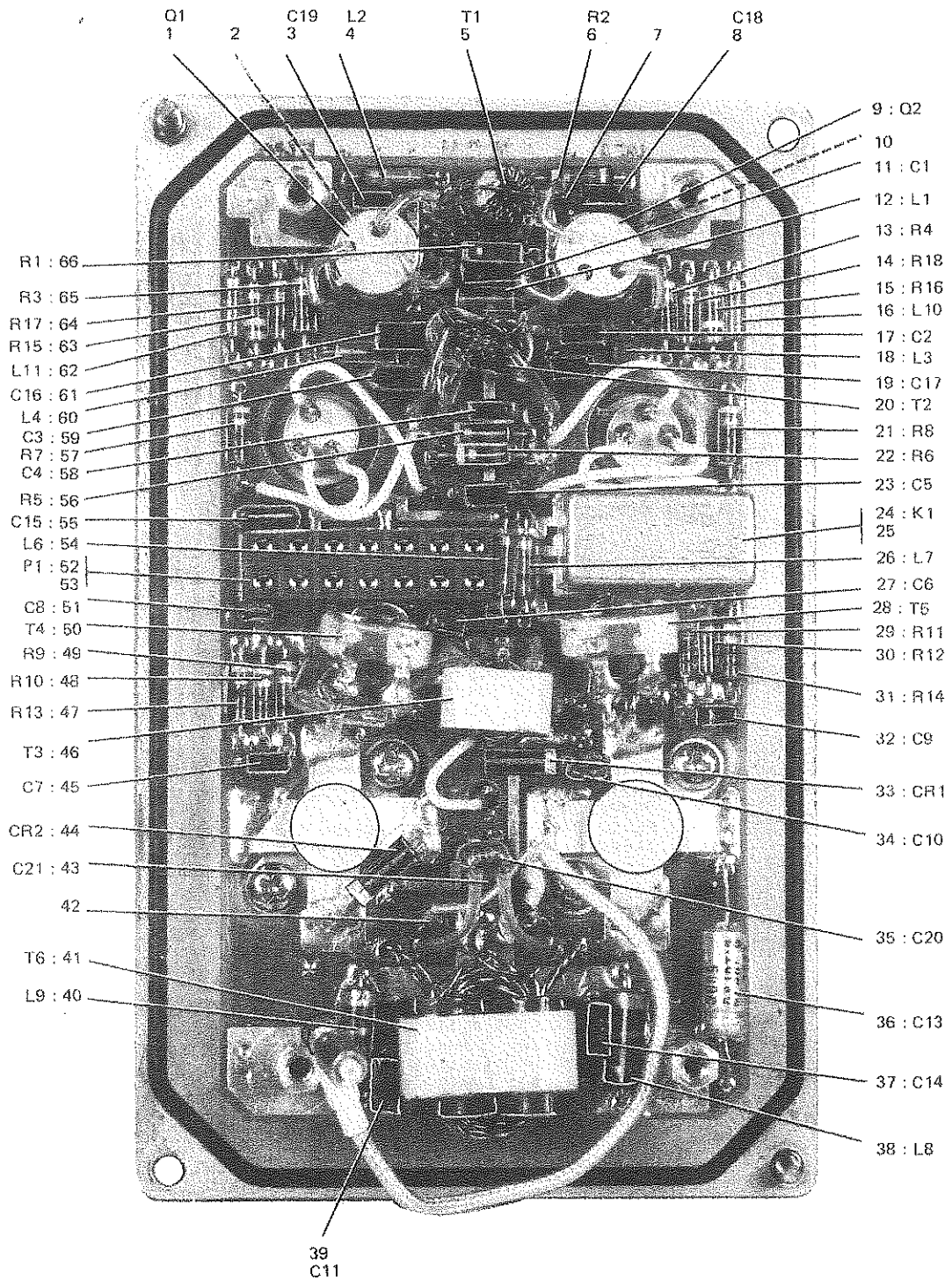


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Figure 3-21. Bias/Control A3A4A2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-21 -	6C1-3675-CC1	1	BIAS/CONTRCL A3A4A2 (SEE FIG 3-18-7 FOR NHA)		REF
1	RCR07G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CC0 A3A4A2R18		1
2	2N3054	2	TRANSISTOR (VC2735) 352-0581-010 A3A4A2Q1		1
3	42-66-1	2	INSULATOR,PL (V131C3) 352-9605-190		1
4	RCR32G47CKS	2	RESISTOR,FXD, CMPSN, 47 OHMS, 10%, 1W (V81349) 745-3296-CC0 A3A4A2R19		1
5	RCR07G39CKS	2	RESISTOR,FXD, CMPSN, 39 CHMS, 10%, 1/4W (V81349) 745-0698-CC0 A3A4A2R11		1
6	TITM1-4 33C-10PC	2	RESISTOR,THRM, 330 OHMS, 10%, 1/4W (V96214) 714-2353-CC0 A3A4A2R11		1
7	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A3A4A2CR4		1
8	2N2219A	2	TRANSISTOR (VC7263) 352-0661-010 A3A4A2Q3		1
9	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A3A4A2CR3		1
10	3SAV1271A2	2	RELAY,AMT (VC1526) 974-1065-17C A3A4A2K1		1
11	141-10C3-CCC2	2	CONNECTOR,RCPT, ELEC (V98278) 357-7353-070 A3A4A2J1		1
12	RCR07G392KS	2	RESISTOR,FXD, CMPSN, 3.9K, 10%, 1/4W (V81349) 745-0770-CC0 A3A4A2R20		1
13	141-0G11-CCC2	2	CONNECTOR,RCPT, ELEC (V92878) 357-7337-010 A3A4A2J5		1
14	2215B	2	HEATSINK,SEMICC (V131C3) 352-9950-000		1
15	2N4C33	2	TRANSISTOR (V07263) 352-0791-04C A3A4A2Q2		1
16	RCR07G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CC0 A3A4A2R21		1
17	RJ24CP1C3	2	RESISTOR,VAR, NONWIRE-WOUND, 10K, 10%, 1/2W (V81349) 38C-1080-100 A3A4A2R22		1
18	UA7234M	2	INTEGRATED CKT (V07263) 351-1035-010 A3A4A2U1		1
19	M39CC3-C1-2167	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 75V (V81349) 184-9085-26C A3A4A2C1 (EFF TC REV LTR N)		1
19	M39CC3-C1-2026	2	CAPACITOR,FXD, ELCTLT, 220UF, 20%, 10V (V81349) 184-9083-26C A3A4A2C1 (EFF REV LTR N)		1
	630-2C26-CC1	2	RESISTOR, TEST SELECT (ACN PROCURABLE ITEM)(EFF REV LTR A)		1
19A	RCR05G3R3JS	3	RESISTOR, FXD, CMPSN, 3.3 CHMS, 5%, 1/8W (V81349) 745-0907-130 A3A4A2R25		AR
19A	RCR05G4R7JS	3	RESISTOR, FXD, CMPSN, 4.7 CHMS, 5%, 1/8W (V81349) 745-0907-170 A3A4A2R25		AR
20	RCR07G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-CC0 A3A4A2R15		1
20A	353-6442-C80	2	SEMICONV DEVICE (V13499) A3A4A2CR5 (EFF REV LTR L)		1
21	RCR07G22CKS	2	RESISTOR,FXD, CMPSN, 22 CHMS, 10%, 1/4W (V81349) 745-0689-CC0 A3A4A2R14		1
22	RY22C2P5C1	2	RESISTOR,VAR,WW 500 CHMS, 5%, 3/4W (V81349) 381-1721-030 A3A4A2R12		1
23	1N751A	2	SEMICONV DEVICE (V12954) 353-2710-000 A3A4A2CR1 (EFF TC REV LTR L)		1
23	1N753A	2	SEMICONV DEVICE (V81483) 353-2714-000 A3A4A2VR1 (EFF REV LTR L)		1
24	1N4454	2	SEMICONV DEVICE (VC3508) 353-3644-010 A3A4A2CR2		1
25	372-3392-C13	2	CONTACT,ELEC 372-3392-013		8
26	372-2624-C13	2	HOUSING,CONN 372-2624-C13 A3A4A2P1		1
27	372-2601-C89	2	CONTACT,ELEC 372-2601-089		6
28	RCR07G511JS	2	RESISTOR,FXD, CMPSN, 510 CHMS, 5%, 1/4W (V81349) 745-0738-CC0 A3A4A2R23		1
29	RCR07G121KS	2	RESISTOR,FXD, CMPSN, 120 OHMS, 10%, 1/4W (V81349) 745-0716-CC0 A3A4A2R24		1



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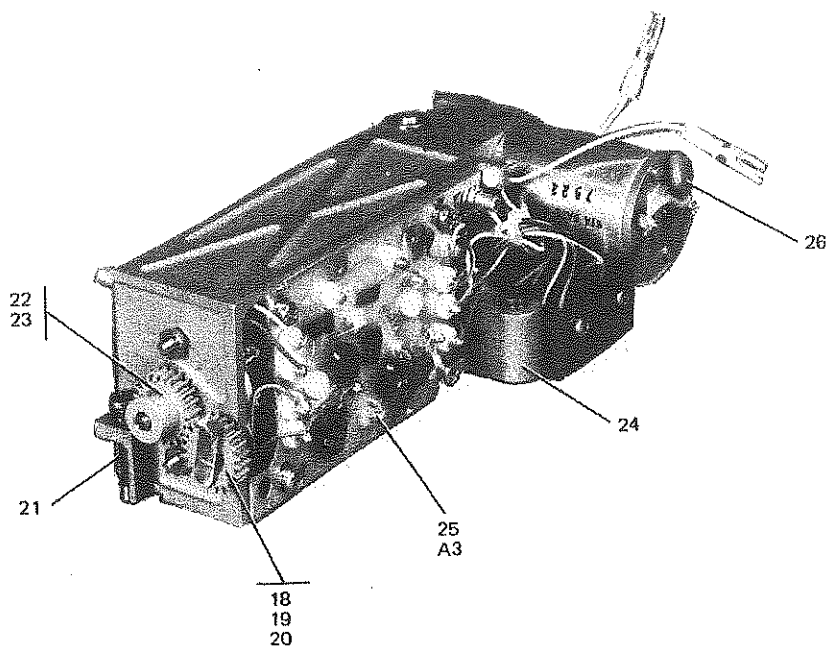
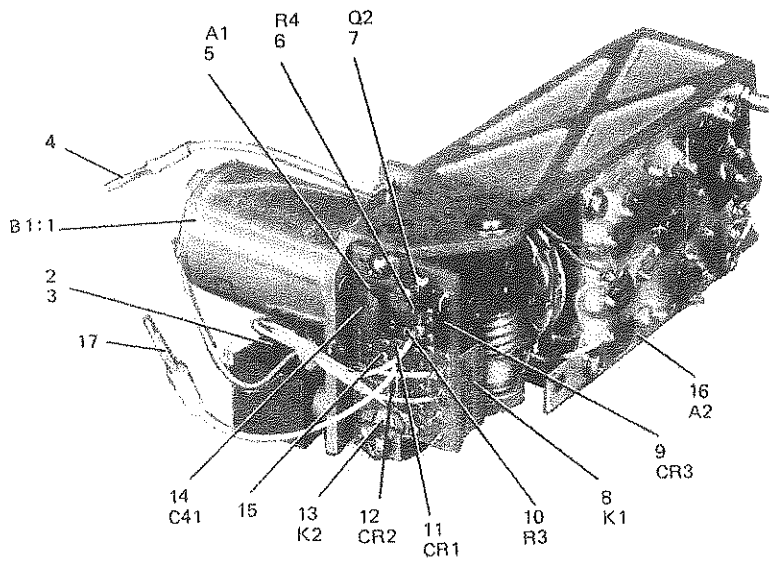
Figure 3-22. Rf Circuit Card (Part of A3A4A1)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-22 -	6C1-2674-CC1	1	RF CIRCUIT CARD Ø A3A4A1 (SEE FIG 3-18-10 FOR NHA)		REF
1	352-C671-C2C	2	TRANSISTOR 352-0671-02C A3A4A1C1		1
2	TX83-032-C37R	2	HEAT SINK,ELEC (V98978) 352-9604-C10		1
	P243-02E4-CCC	2	SCREW,MACH, NP BRS, 4-40 X 3/16 (V77250)		1
			343-0284-CCO (AP)		
	31C-CC54-CCO	2	WASHER,FLAT, BRS, 0.125 ID X 0.312 OD (V79807)		1
			31C-CC54-CCO (AP)		
	MW25C-125	2	INSULATOR,WSHR, MICA, 0.125 ID X 0.250 OD (V08289) 302-0640-040 (AP)		1
3	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A3A4A1C19		1
4	MS75C84-C8	2	CCIL,RF, 4.70UH (V96906) 240-2031-000 A3A4A1L2		1
5	625-617C-CC1	2	TRANSFORMER A3A4A1T1		1
6	RCRC7G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/4W (V81349) 745-0737-CCO A3A4A1R2		1
7	372-2601-C84	2	CONTACT,ELEC 372-2601-C84		6
8	CKC5BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-200 A3A4A1C18		1
9	352-C671-C2C	2	TRANSISTOR 352-0671-02C A3A4A1C2		1
10	TX83-032-C37R	2	HEAT SINK,ELEC (V98978) 352-9604-C10		1
	P243-02E4-CCC	2	SCREW,MACH, NP BRS, 4-40 X 3/16 (V77250)		1
			343-0284-CCO (AP)		
	31C-CC54-CCO	2	WASHER,FLAT, BRS, 0.125 ID X 0.312 OD (V79807)		1
			31C-CC54-CCO (AP)		
	MW25C-125	2	INSULATOR,WSHR, MICA, 0.125 ID X 0.250 OD (V08289) 302-0640-040 (AP)		1
11	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A3A4A1C1		1
12	MS75C83-13	2	CCIL,RF, 1UH (V96906) 240-2023-CCO A3A4A1L1		1
13	RN6CC1CRCF	2	RESISTOR,FXD, FILM, 10 OHMS, 1%, 1/4W (V81349) 705-6500-CCO A3A4A1R4 (EFF TO REV LTR K)		1
13	RCRC7G1CCKS	2	RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-CCO A3A4A1R4 (EFF REV LTR K)		1
14	RCRC7G151JS	2	RESISTOR,FXD, CMPSN, 150 OHMS, 5%, 1/4W (V81349) 745-0718-CCO A3A4A1R18		1
15	RCRC7G39CKS	2	RESISTOR,FXD, CMPSN, 39 OHMS, 10%, 1/4W (V81349) 745-0698-CCO A3A4A1R16		1
16	MS75C84-C3	2	CCIL,RF, 1.80UH (V96906) 240-2026-000 A3A4A1L10		1
17	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A3A4A1C2		1
18	MS75C83-13	2	CCIL,RF, 1UH (V96906) 240-2023-CCO A3A4A1L3		1
19	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A3A4A1C17		1
20	625-6167-CC1	2	TRANSFORMER A3A4A1T2		1
21	RN6CC1CRCF	2	RESISTOR,FXD, FILM, 10 OHMS, 1%, 1/4W (V81349) 705-6500-CCO A3A4A1R8 (EFF TO REV LTR K)		1
21	RCRC7G1CCKS	2	RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-CCO A3A4A1R8 (EFF REV LTR K)		1
22	RCRC7G56CKS	2	RESISTOR,FXD, CMPSN, 56 OHMS, 10%, 1/4W (V81349) 745-0704-CCO A3A4A1R6		1
23	CKC5BX15CK	2	CAPACITOR,FXD, CER DIEI, 15PF, 10%, 200V (V81349) 913-5019-C30 A3A4A1C5		1
24	3SAV1271A2	2	RELAY,AMT (V01526) 974-1065-170 A3A4A1K1		1
25	635-4765-CC1	2	SHEET		1
26	MS75C83-13	2	CCIL,RF, 1UH (V96906) 240-2023-CCO A3A4A1L7		1
27	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A3A4A1C6		1
28	625-6169-CC1	2	TRANSFORMER A3A4A1T5		1
29	RCRC7G1CCKS	2	RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-CCO A3A4A1R11		1
30	RCRC7G1CCKS	2	RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-CCO A3A4A1R12		1

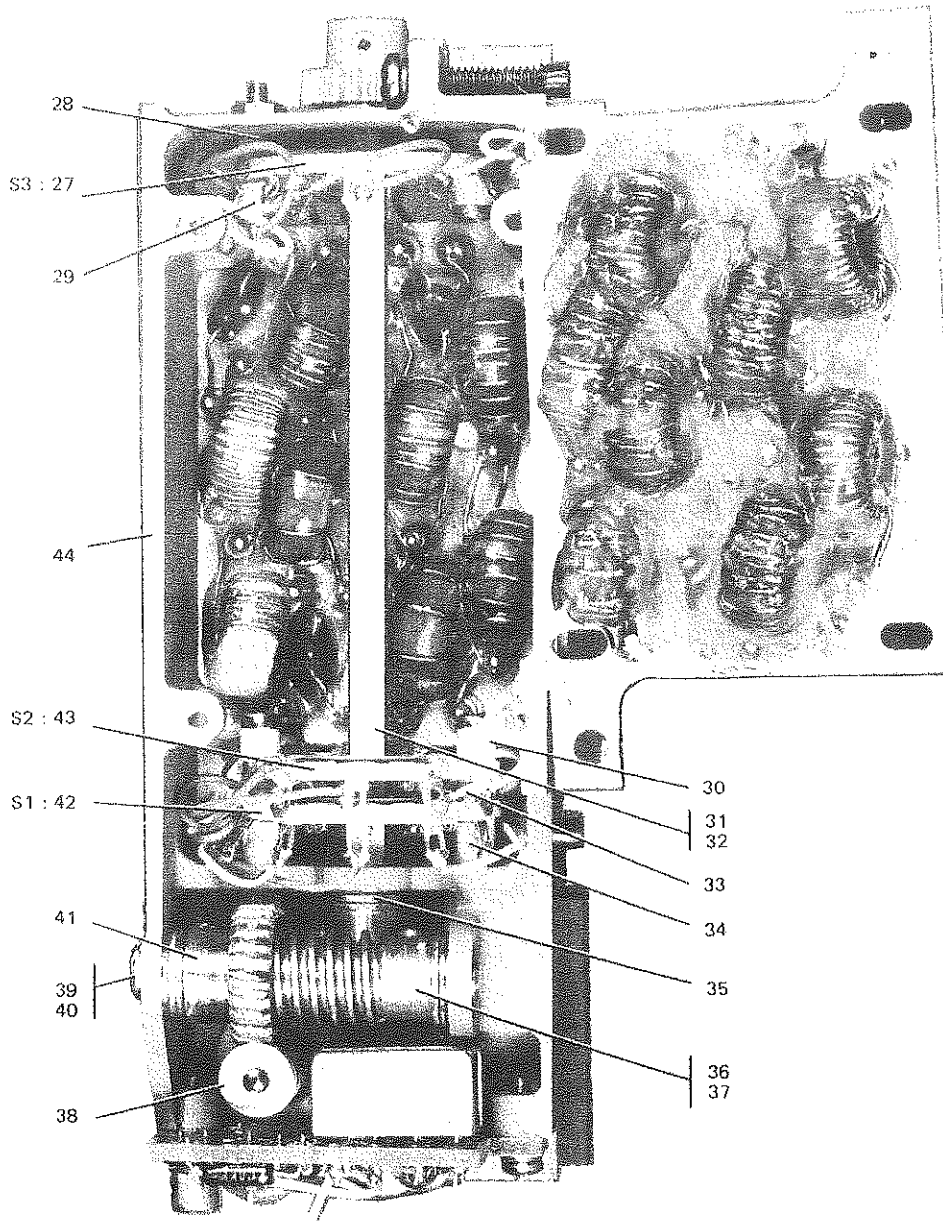
GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-22	31		2 RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349)		1
	32		745-0677-CCO A3A4A1R14 2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5C19-32C A3A4A1C9		1
	33		2 SEMICOND DEVICE (V07263) 353-3083-000 A3A4A1CR1		1
	34		2 CAPACITOR,FXD, CER DIEI, 470PF, 5%, 100V (V72982) 913-1098-410 A3A4A1C10		1
	35		2 CAPACITOR,FXD, CER DIEI, 0.22UF, 20%, 100V (V56289) 913-3314-C10 A3A4A1C20		1
	36		2 CAPACITOR,FXD, ELCTLY,0.2UF, 20%, 60V (V81349) 184-9103-930 A3A4A1C13		1
	37		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5C19-32C A3A4A1C14		1
	38		2 COIL,RF, 1.20UH (V96906) 240-2715-140 A3A4A1L8		1
	39		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5C19-32C A3A4A1C11		1
	40		2 COIL,RF, 1.20UH (V96906) 240-2715-140 A3A4A1L9		1
	41		2 TRANSFORMER A3A4A1T6		1
	42		2 CONTACT,ELEC 372-2601-C33		2
	43		2 CAPACITOR,FXD, MICA DIEI, 110PF, 1%, 300V (V14655) 912-2091-180 A3A4A1C12		1
	44		2 SEMICOND DEVICE (V07263) 353-3083-000 A3A4A1CR2		1
	45		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5C19-32C A3A4A1C7		1
	46		2 TRANSFORMER A3A4A1T3		1
	47		2 RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-CCO A3A4A1R13		1
	48		2 RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-CCO A3A4A1R10		1
	49		2 RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-CCO A3A4A1R9		1
	50		2 TRANSFORMER A3A4A1T4		1
	51		2 CAPACITOR,FXD, CER DIEI, 470PF, 5%, 100V (V72982) 913-1098-410 A3A4A1C8		1
	52		2 CONTACT,ELEC 372-3392-C11		14
	53		2 MCLSING,CONN 372-2624-C16 A3A4A1P1		1
	54		2 COIL,RF, 1UH (V96906) 240-2023-000 A3A4A1L6		1
	55		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5C19-32C A3A4A1C15		1
	56		2 RESISTOR,FXD, CMPSN, 56 OHMS, 10%, 1/4W (V81349) 745-0704-CCO A3A4A1R5		1
	57		2 RESISTOR,FXD, FILM, 10 OHMS, 1%, 1/4W (V81349) 7C5-65CC-CCO A3A4A1R7 (EFF TC REV LTR K)		1
	57		2 RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-CCO A3A4A1R7 (EFF REV LTR K)		1
	58		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5C19-32C A3A4A1C4		1
	59		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-320 A3A4A1C3		1
	60		2 COIL,RF, 1UH (V96906) 240-2023-000 A3A4A1L4		1
	61		2 CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5C19-320 A3A4A1C16		1
	62		2 COIL,RF, 1.80UH (V96906) 240-2026-000 A3A4A1L11		1
	63		2 RESISTOR,FXD, CMPSN, 39 OHMS, 10%, 1/4W (V81349) 745-0698-CCO A3A4A1R15		1
	64		2 RESISTOR,FXD, CMPSN, 150 OHMS, 5%, 1/4W (V81349) 745-0718-CCO A3A4A1R17		1
	65		2 RESISTOR,FXD, FILM, 10 OHMS, 1%, 1/4W (V81349) 7C5-65CC-CCO A3A4A1R3 (EFF TC REV LTR K)		1
	65		2 RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/4W (V81349) 745-0677-CCO A3A4A1R3 (EFF REV LTR K)		1
	66		2 RESISTOR,FXD, CMPSN, 120 OHMS, 10%, 1/4W (V81349) 745-0716-CCO A3A4A1R1		1



TP4-9690-027

Figure 3-23. Bandswitch A3A5 (Sheet 1 of 2)



TP4-9690-027

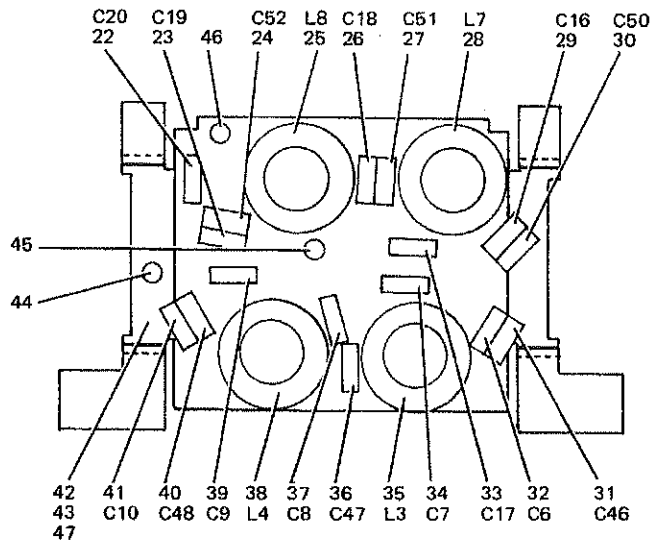
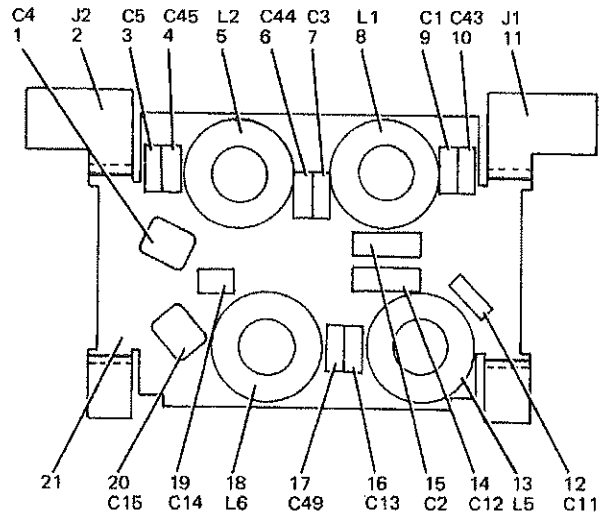
Figure 3-23. Bandswitch A3A5 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-23 -	629-3414-CC1		1 BANDSWITCH A3A5 (SEE FIG 3-18-19 FOR NFA)		REF
1	41A95E		2 MOTOR, DC (V25140) 230-C303-030 A3A5B1		1
	MS51959-3		2 SCREW, MACH, SST, 2-56 X 1/4 (V96906)		2
			342-0133-CC0 (AP)		
2	372-2255-CC0		2 CONTACT, ELEC 372-2255-CC0		13
3	78C-4928-CC1		2 HOUSING CONN A3A5F1		1
	MS51957-5		2 SCREW, MACH, SST, 2-56 X 3/4 (V96906)		2
			343-0129-CC0 (AP)		
4	52922		2 TERMINAL, LUG (V00779) 304-1531-010		1
5	6C1-2677-CC1		2 RELAY ASSY A3A5A1		1
	31C-C125-CCC		2 WASHER, FLAT, BR5, C.089 ID X 0.188 OD (V05411)		2
			31C-0129-CC0 (AP)		
	31C-CC75-CCC		2 WASHER, LOCK, BR2, C.088 ID X 0.165 OD (V79807)		2
			31C-CC75-CC0 (AP)		
	MS51957-2		2 SCREW, MACH, SST, 2-56 X 3/16 (V96906)		2
			343-0123-CC0 (AP)		
6	RCRC5G1C2KS		3 RESISTOR, FXD, CMPSA, 1K, 10%, 1/8W (V81349)		1
			745-2341-CCC A3A5A1R4		
7	JAN2N2222A		3 TRANSISTOR (V81350) 352-7500-280 A3A5A1Q2 (EFF TC REV LTR B)		1
7	S19206		3 TRANSISTOR (V07263) 352-0661-040 A3A5A1Q2 (EFF REV LTR B)		1
8	3S8C1018A2		3 RELAY, AMT (V01526) 974-0479-040 A3A5A1K1		1
9	353-285C-CC1		3 SEMICONV DEVICE 353-285C-CC1 A3A5A1CR3		1
10	RCRC5G273KS		3 RESISTOR, FXD, CMPSA, 27K, 10%, 1/8W (V81349)		1
			745-2392-CCC A3A5A1R3 (EFF TC REV LTR A)		
10	RCRC5G1C2KS		3 RESISTOR, FXD, CMPSA, 1K, 10%, 1/8W (V81349)		1
			745-2341-CCC A3A5A1R3 (EFF REV LTR A)		
11	1N4CC3		3 SEMICONV DEVICE (V04713) 353-6442-030 A3A5A1CR1		1
12	1N4CC3		3 SEMICONV DEVICE (V04713) 353-6442-030 A3A5A1CR2		1
13	3S8C1018A2		3 RELAY, AMT (V01526) 974-0479-040 A3A5A1K2		1
14	2CC671C4XC1C1A3		3 CAPACITOR, FXD, CER DIEI, 0.1UF, 20%, 160V (V56289) 913-4240-C40 A3A5A1C41		1
15	372-2601-CC2		3 CONTACT, ELEC 372-2601-CC2		2
16	429-3462-CC1		2 FILTER NC.1 A3A5A2 (SEE FIG 3-24)		1
	31C-C125-CCC		2 WASHER, FLAT, BR5, C.089 ID X 0.188 OD (V05411)		4
			31C-0129-CCC (AP)		
	31C-CC75-CCC		2 WASHER, LOCK, BR2, C.088 ID X 0.165 OD (V79807)		4
			31C-0075-CC0 (AP)		
	MS51957-2		2 SCREW, MACH, SST, 2-56 X 3/16 (V96906)		4
			343-0123-CC0 (AP)		
17	52922		2 TERMINAL, LUG (V00779) 304-1531-010		1
18	78C-8086-CC1		2 GEAR SPUR ASSY		1
	54C-3CC3-CC3		2 WASHER (AP)		1
	MS16624-5C1R		2 RING, RTNG (V96906) 340-CC04-CCC (AP)		1
19	78C-6675-CC1		3 GEAR, SPLR		1
20	78C-6765-CC1		3 SHAFT		1
21	34C-C644-CC		2 SLEEVE, SPG (V91314) 340-0644-CCC		1
	78C-835C-CC1		2 SCREW, MTG (AP)		1
	31C-C396-CCC		2 WASHER, LOCK, BR2, C.115 ID X 0.202 OD (V79807)		1
			31C-0396-CC0 (AP)		
22	78C-4927-CC1		2 GEAR SPLR		1
23	S518FCP25LC2		2 BEARING, BALL, AN (V40920) 309-1417-000 (EFF TC REV LTR H)		1
23	S518FC3P15LY5		2 BEARING, BALL, AN (V40920) 309-1562-000 (EFF REV LTR H)		1
	335-C12C-CCC		2 SETSCREW, CD PL STL, 2-56 X 3/32 (V08664)		2
			335-0120-CC0 (AP) (EFF TC REV LTR F)		
	328-0368-CCC		2 SETSCREW, CD PL STL, 2-56 X 3/32 (V08664)		2
			328-0368-CC0 (AP) (EFF REV LTR F)		
24	34C-C644-CC		2 SLEEVE, SPG (V91314) 340-0644-CC0		1
	78C-835C-CC1		2 SCREW, MTG (AP)		1
	31C-C396-CCC		2 WASHER, LOCK, BR2, C.115 ID X 0.202 OD (V79807)		1
			31C-0396-CC0 (AP)		

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-23	25	629-3483-C01	2 FILTER NC,2 A3A5A3 (SEE FIG 3-25)		1
		31C-0129-CCC	2 WASHER,FLAT, BRS, 0.089 ID X 0.188 OD (V05411)		4
		31C-CC75-CCC	2 WASHER,LCCK, BRZ, C.088 ID X 0.165 OD (V79807)		4
		MSS1957-2	2 SCREW,MACH, SST, 2-56 X 3/16 (V96906)		4
	26	2CC671C4XC1CIA3	2 CAPACITOR,FXD, CER DIEL, C.1UF, 20%, 100V (V56289) 913-4240-04C A3A5C42		1
	27	4-1171-209	2 SWITCH SECT,RTR (V76854) 269-2656-C30 A3A5S3		1
	28	15523 3-32	2 SPACER,SLV (V76854) 269-8026-CCC		2
	29	15523 1-E	2 INSULATOR,BSHG (V76854) 269-8021-000		2
		P313-C05C-CCC	2 NUT,PLAIN,HEX, NP BRS, 2-56 (V77250)		2
		31C-CC75-CCC	2 WASHER,LCCK, BRZ, C.088 ID X 0.165 OD (V79807)		2
		15517-2	2 WASHER,NP, FBR GLS, C.088 ID X 0.150 OD (V76854)		2
		P343-G3C3-CCC	2 SCREW,MACH, NP BRS, 2-56 X 1/2 (V77250)		2
	30	15523 1-E	2 INSULATOR,BSHG (V76854) 269-8021-000		2
	31	78C-7925-CC1	2 SHAFT, WAFER		1
	32	S5622FCP25LC2	2 BEARING,BALL,AN (V4092C) 309-1421-000 (EFF TC REV LTR H)		1
	32	S5632FC3P15LY5	2 BEARING,BALL,AN (V4092C) 309-1563-000 (EFF REV LTR H)		1
	33	15523 3-32	2 SPACER,SLV (V76854) 269-8026-000		2
	34	15523 3-16	2 SPACER,SLV (V76854) 269-8022-000		2
	35	629-5754-CC2	2 GEAR, HELICAL		1
		335-C12C-CCC	2 SETSCREW, CD PL STL, 2-56 X 3/32 (V08664)		2
		328-0368-CCC	2 SETSCREW, CD PL STL, 2-56 X 3/32 (V08664)		2
		78C-6739-CC1	2 WASHER (AP)		4
	36	629-5753-CC1	2 GEAR, BANDSWITCH-NC2		1
		328-0368-CCC	2 SETSCREW, CD PL STL, 2-56 X 3/32 (V08664)		2
	37	S5632FCP25LC2	2 BEARING,BALL,AN (V4092C) 309-1421-000 (EFF TC REV LTR H)		1
	37	S5632FC3P15LY5	2 BEARING,BALL,AN (V4092C) 309-1563-000 (EFF REV LTR H)		1
	38	629-5752-CC1	2 GEAR, BANDSWITCH-NC1		1
		335-C12C-CCC	2 SETSCREW, CD PL STL, 2-56 X 3/32 (V08664)		2
		328-0368-CCC	2 SETSCREW, CD PL STL, 2-56 X 3/32 (V08664)		2
	39	78C-6762-CC1	2 SHAFT, GEAR		1
	40	S5632FCP25LC2	2 BEARING,BALL,AN (V4092C) 309-1421-000 (EFF TC REV LTR H)		1
	40	S5632FC3P15LY5	2 BEARING,BALL,AN (V4092C) 309-1563-000 (EFF REV LTR H)		1
	41	629-5754-CC1	2 GEAR, HELICAL		1
		335-C12C-CCC	2 SETSCREW, CD PL STL, 2-56 X 3/32 (V08664)		2
		78C-6739-CC1	2 WASHER (AP) (EFF REV LTR F)		4
	42	4-1261-212	2 SWITCH SECT,RTR (V76854) 269-2656-G40 A3A5S1		1
	43	4-1711-211	2 SWITCH SECT,RTR (V76854) 269-2656-G20 A3A5S2		1
		P313-C05C-CCC	2 NUT,PLAIN,HEX, NP BRS, 2-56 (V77250)		2
		31C-CC75-CCC	2 WASHER,LOCK, BRZ, C.088 ID X 0.165 OD (V79807)		2
		15517-2	2 WASHER,NP, FBR GLS, 0.088 ID X 0.150 OD (V76854)		2
		P343-C3C4-CCC	2 SCREW,MACH, NP BRS, 2-56 X 3/4 (V77250)		2
	44	78C-7971-CC1	2 CHASSIS		1



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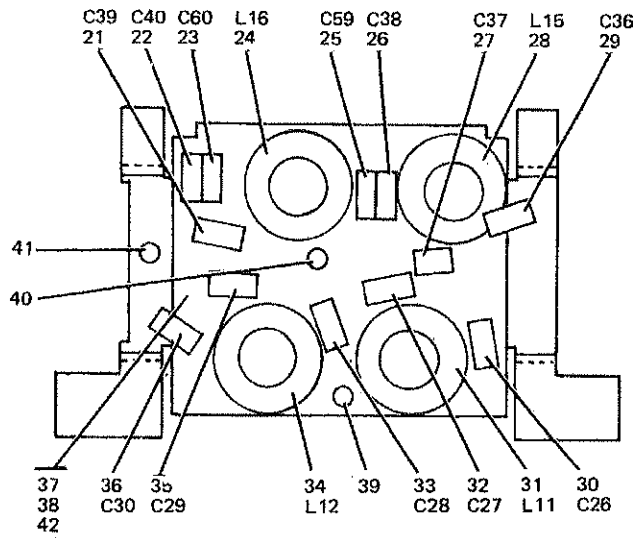
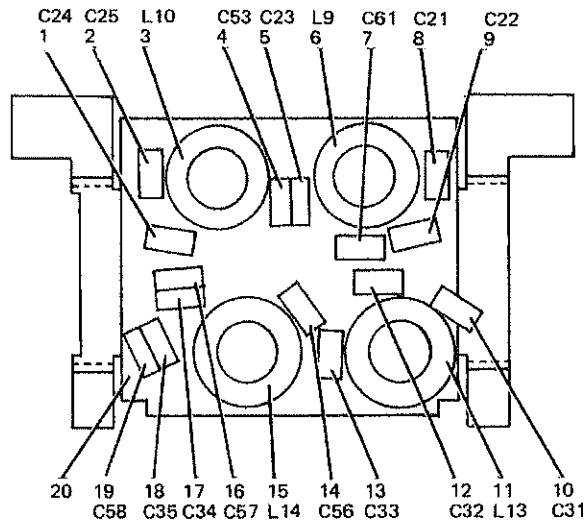
Figure 3-24. Filter No. 1 A3A5A2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-24 -	629-3482-CC1	1	FILTER NC.1 A3A5A2 (SEE FIG 3-23-16 FOR NFW)		REF
1	CC7FA751FC3	2	CAPACITOR,FXD, MICA DIEI, 750PF, 1%, 100V (V14655) 912-2091-9CC A3A5A2C4		1
2	141-CC11-CCC2	2	CONNECTOR,RCPT, ELEC (V92878) 357-7337-01C A3A5A2J2		1
3	CC7FA361FC3	2	CAPACITOR,FXD, MICA DIEI, 360PF, 1%, 100V (V14655) 912-2091-820 A3A5A2C5 (EFF TO REV LTR E)		1
3	CC7FA361FC3	2	CAPACITOR,FXD, MICA DIEI, 360PF, 1%, 100V (V14655) 912-2091-820 A3A5A2C5 (EFF REV LTR E)		1
4	CC7FC241FC3	2	CAPACITOR,FXD, MICA DIEI, 240PF, 1%, 300V (V14655) 912-2091-780 A3A5A2C45 (EFF TO REV LTR E)		1
4	CC7FC241FC3	2	CAPACITOR,FXD, MICA DIEI, 240PF, 1%, 300V (V14655) 912-2091-780 A3A5A2C45 (EFF REV LTR E)		1
5	623-3337-CC2	2	CCIL A3A5A2L2		1
6	637-1721-CC1	2	INSULATOR, CCIL NC1 (AP)		1
6	CD6ED5CCFC3	2	CAPACITOR,FXD, MICA DIEI, 50PF, 1%, 500V (V14655) 912-2091-C9C A3A5A2C44		1
7	CC7FA152FC3	2	CAPACITOR,FXD, MICA DIEI, 150PF, 1%, 100V (V14655) 912-2091-970 A3A5A2C3		1
8	623-3337-CC1	2	CCIL A3A5A2L1		1
8	637-1721-CC1	2	INSULATOR, CCIL NC1 (AP)		1
9	CC7FC161FC3	2	CAPACITOR,FXD, MICA DIEI, 160PF, 1%, 500V (V14655) 912-2091-740 A3A5A2C1		1
10	CC7FA751FC3	2	CAPACITOR,FXD, MICA DIEI, 750PF, 1%, 100V (V14655) 912-2091-9CC A3A5A2C43		1
11	141-CC11-CCC2	2	CONNECTOR,RCPT, ELEC (V92878) 357-7337-01C A3A5A2J1		1
12	CC7FA471FC3	2	CAPACITOR,FXD, MICA DIEI, 470PF, 1%, 100V (V14655) 912-2091-850 A3A5A2C11		1
13	623-3337-CC5	2	CCIL A3A5A2L5		1
13	637-1721-CC1	2	INSULATOR, CCIL NC1 (AP)		1
14	CD6FC111FC3	2	CAPACITOR,FXD, MICA DIEI, 110PF, 1%, 300V (V14655) 912-2091-180 A3A5A2C12		1
15	CC7FC201FC3	2	CAPACITOR,FXD, MICA DIEI, 200PF, 1%, 300V (V14655) 912-2091-760 A3A5A2C2		1
16	CC7FA751FC3	2	CAPACITOR,FXD, MICA DIEI, 750PF, 1%, 100V (V14655) 912-2091-9CC A3A5A2C13		1
17	CD6ED27CC3	2	CAPACITOR,FXD, MICA DIEI, 27PF, 2%, 500V (V14655) 912-4134-9CC A3A5C49		1
18	623-3337-CC6	2	CCIL A3A5A2L6		1
18	637-1721-CC1	2	INSULATOR, CCIL-NC1 (AP)		1
19	CC7FA391FC3	2	CAPACITOR,FXD, MICA DIEI, 390PF, 1%, 100V (V14655) 912-2091-830 A3A5A2C14		1
20	CC7FA231FC3	2	CAPACITOR,FXD, MICA DIEI, 330PF, 1%, 100V (V14655) 912-2091-810 A3A5A2C15		1
21	637-1702-CC1	2	PLATE, INSULATOR		1
22	CC7FC181FC3	2	CAPACITOR,FXD, MICA DIEI, 180PF, 1%, 500V (V14655) 912-2091-750 A3A5A2C20		1
23	CC7FA361FC3	2	CAPACITOR,FXD, MICA DIEI, 360PF, 1%, 100V (V14655) 912-2091-820 A3A5A2C19		1
24	CD6CD10CJ3	2	CAPACITOR,FXD, MICA DIEI, 10PF, 5%, 500V (V14655) 912-4134-850 A3A5A2C52		1
25	623-3337-CC8	2	CCIL A3A5A2L8		1
25	637-1722-CC1	2	INSULATOR COIL-NO2 (AP)		1
26	CC7FA471FC3	2	CAPACITOR,FXD, MICA DIEI, 470PF, 1%, 100V (V14655) 912-2091-850 A3A5A2C18		1
27	CD6ED62CFC3	2	CAPACITOR,FXD, MICA DIEI, 62PF, 1%, 500V (V14655) 912-2091-120 A3A5A2C51		1
28	623-3337-CC7	2	CCIL A3A5A2L7		1
28	637-1722-CC1	2	INSULATOR COIL-NO2 (AP)		1
29	CC7FA231FC3	2	CAPACITOR,FXD, MICA DIEI, 330PF, 1%, 100V (V14655) 912-2091-810 A3A5A2C16		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-24	30		2 CAPACITOR,FXD, MICA DIEI, 10PF, 5%, 500V (V14655) 912-4134-850 A3A5A2C50		1
	31		2 CAPACITOR,FXD, MICA DIEI, 100PF, 1%, 300V (V14655) 912-2091-170 A3A5A2C46		1
	32		2 CAPACITOR,FXD, MICA DIEI, 510PF, 1%, 100V (V14655) 912-2091-860 A3A5A2C6		1
	33		2 CAPACITOR,FXD, MICA DIEI, 82PF, 1%, 300V (V14655) 912-2091-150 A3A5A2C17		1
	34		2 CAPACITOR,FXD, MICA DIEI, 120PF, 1%, 300V (V14655) 912-2091-190 A3A5A2C7		1
	35		2 CCIL A3A5A2L3		1
	637-1722-CC1		2 INSULATOR CCIL-NO2 (AP)		1
	36		2 CAPACITOR,FXD, MICA DIEI, 110PF, 1%, 300V (V14655) 912-2091-180 A3A5A2C47		1
	37		2 CAPACITOR,FXD, MICA DIEI, 1000PF, 1%, 100V (V14655) 912-2091-930 A3A5A2C8		1
	38		2 CCIL A3A5A2L4		1
	39		2 CAPACITOR,FXD, MICA DIEI, 510PF, 1%, 100V (V14655) 912-2091-860 A3A5A2C9		1
	40		2 CAPACITOR,FXD, MICA DIEI, 27PF, 2%, 500V (V14655) 912-4134-900 A3A5A2C48		1
	41		2 CAPACITOR,FXD, MICA DIEI, 470PF, 1%, 100V (V14655) 912-2091-850 A3A5A2C10		1
	42		2 PLATE, INSULATOR		1
	43		2 TERMINAL BOARD, PRSD		1
	44		3 TERMINAL,STCF (V12615) 306-2222-100		10
	45		3 TERMINAL,FEEDTH (V12615) 306-2474-010		4
	46		3 TERMINAL,FEEDTH (V86577) 306-0985-000		6
	47		3 TERMINAL BOARD		1



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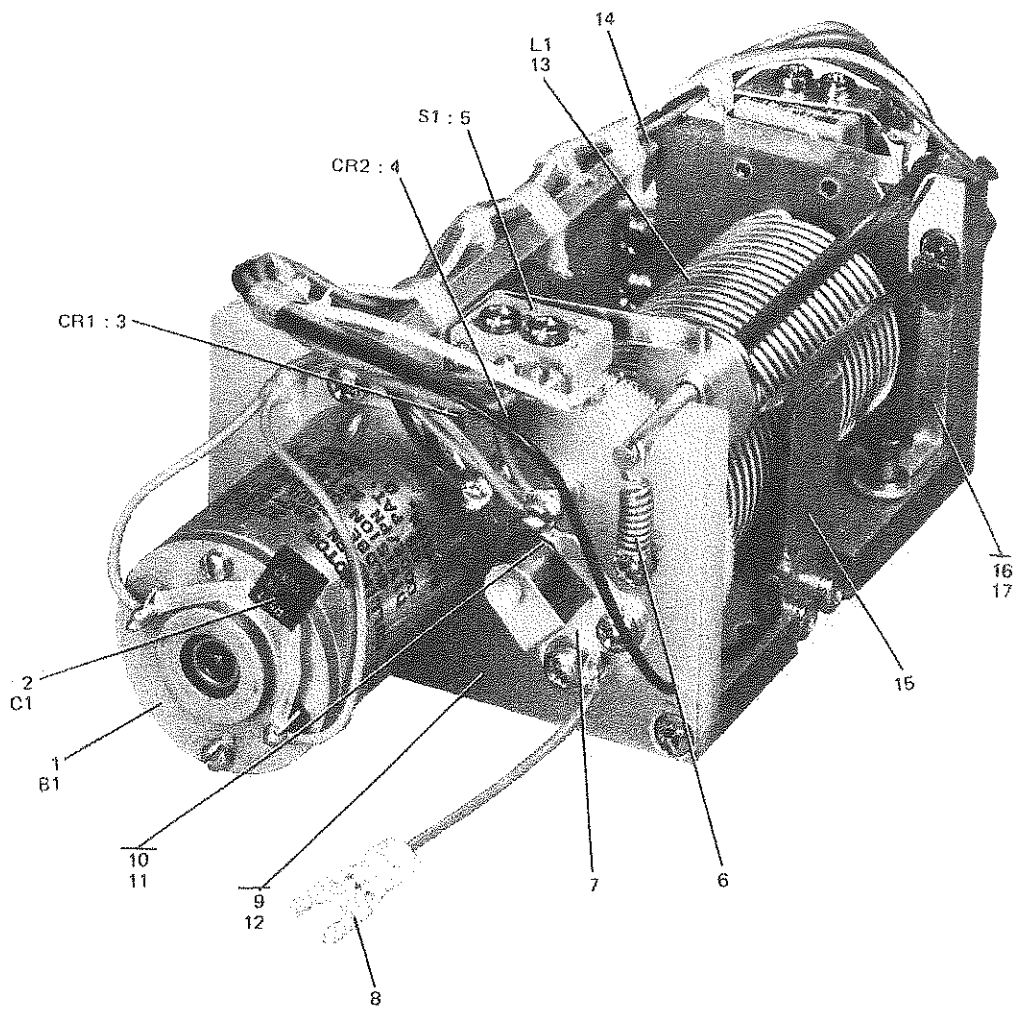
Figure 3-25. Filter No. 2 A3A5A3

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-25 -	629-3483-CC1	1	FILTER NO.2 A3A5A3 (SEE FIG 3-23-25 FOR NHA)		REF
1	CD6CC15CJC3	2	CAPACITOR,FXD, MICA DIEI, 15PF, 5%, 500V (V14655) 912-4134-870 A3A5A3C24		1
2	CNC4ED39CGC3	2	CAPACITOR,FXD, MICA DIEI, 39PF, 2%, 500V (V81349) 912-3853-C00 A3A5A3C25		1
3	623-2337-C1C 637-1721-CC1	2	CCIL A3A5A3L10		1
4	CD6CC15CJC3	2	INSULATOR, COIL-NC1 (AF)		1
5	CD6FC1C1F03	2	CAPACITOR,FXD, MICA DIEI, 15PF, 5%, 500V (V14655) 912-4134-870 A3A5A3C53		1
6	623-2337-CC9 637-1721-CC1	2	CAPACITOR,FXD, MICA DIEI, 100PF, 1%, 300V (V14655) 912-2091-170 A3A5A3C23		1
7	CD6ED27CGC3	2	CCIL A3A5A3L9		1
8	CD6CC15CJC3	2	INSULATOR, CCIL-NC1 (AF)		1
9	CD6ED27CGC3	2	CAPACITOR,FXD, MICA DIEI, 27PF, 2%, 500V (V14655) 912-4134-900 A3A5A3C61		1
10	CD6FC121F03	2	CAPACITOR,FXD, MICA DIEI, 15PF, 5%, 500V (V14655) 912-4134-870 A3A5A3C21		1
11	623-2337-C13 637-1721-CC1	2	CAPACITOR,FXD, MICA DIEI, 27PF, 2%, 500V (V14655) 912-4134-900 A3A5A3C22		1
12	CD7FC131F03	2	CAPACITOR,FXD, MICA DIEI, 120PF, 1%, 300V (V14655) 912-2091-190 A3A5A3C31		1
13	CD7FC241F03	2	CCIL A3A3L13		1
14	CD6CC15CJC3	2	INSULATOR, CCIL-NC1 (AF)		1
15	623-2337-C14 637-1721-CC1	2	CAPACITOR,FXD, MICA DIEI, 130PF, 1%, 500V (V14655) 912-2091-720 A3A5A3C32		1
16	CNC4ED3CGG03	2	CAPACITOR,FXD, MICA DIEI, 240PF, 1%, 300V (V14655) 912-2091-780 A3A5A3C33		1
17	CD6CC15CJC3	2	CAPACITOR,FXD, MICA DIEI, 15PF, 5%, 500V (V14655) 912-4134-870 A3A5A3C56		1
18	CD6CC15CJC3	2	CCIL A3A5A3L14		1
19	CD6CC15CJC3	2	INSULATOR, CCIL-NC1 (AF)		1
20	637-1702-CC1	2	CAPACITOR,FXD, MICA DIEI, 30PF, 2%, 500V (V81349) 912-3847-C00 A3A5A3C57		1
21	CNC4ED3CGG03	2	CAPACITOR,FXD, MICA DIEI, 15PF, 5%, 500V (V14655) 912-4134-870 A3A5A3C34		1
22	CD7FC161FC3	2	CAPACITOR,FXD, MICA DIEI, 160PF, 1%, 500V (V14655) 912-2091-740 A3A5A3C35		1
23	CNC4CD1CCDC3	2	CAPACITOR,FXD, MICA DIEI, 10PF, 0.5PF, 500V (V81349) 912-3837-C00 A3A5A3C58		1
24	637-1702-CC1	2	PLATE, INSULATOR		1
25	CNC4ED3CGG03	2	CAPACITOR,FXD, MICA DIEI, 30PF, 2%, 500V (V81349) 912-3847-C00 A3A5A3C39		1
26	CD7FC241F03	2	CAPACITOR,FXD, MICA DIEI, 240PF, 1%, 300V (V14655) 912-2091-780 A3A5A3C40		1
27	CD6CC15CJC3	2	CAPACITOR,FXD, MICA DIEI, 15PF, 5%, 500V (V14655) 912-4134-870 A3A5A3C60		1
28	623-2337-C16 637-1722-CC1	2	CCIL A3A5A3L16		1
29	CNC4ED3CCJC3	2	INSULATOR, CCIL-NC1 (AF)		1
30	CD7FA391FC3	2	CAPACITOR,FXD, MICA DIEI, 20PF, 5%, 500V (V81349) 912-3841-C00 A3A5A3C59		1
31	CD7FC2C1F03	2	CAPACITOR,FXD, MICA DIEI, 390PF, 1%, 100V (V14655) 912-2091-830 A3A5A3C38		1
32	623-2337-C15 637-1722-CC1	2	CAPACITOR,FXD, MICA DIEI, 200PF, 1%, 300V (V14655) 912-2091-760 A3A5A3C37		1
33	CD7FC181F03	2	CCIL A3A5A3L15		1
34	CNC4ED39CGC3	2	INSULATOR, COIL-NC2 (AF)		1
35	623-2337-C11 637-1722-CC1	2	CAPACITOR,FXD, MICA DIEI, 180PF, 1%, 500V (V14655) 912-2091-750 A3A5A3C36		1
36	CD6FC1C1F03	2	CAPACITOR,FXD, MICA DIEI, 39PF, 2%, 500V (V81349) 912-3853-C00 A3A5A3C26		1
37	623-2337-C11 637-1722-CC1	2	CCIL A3A5A3L11		1
38	CD6FC1C1F03	2	INSULATOR, COIL-NC2 (AF)		1
39	623-2337-C11 637-1722-CC1	2	CAPACITOR,FXD, MICA DIEI, 100PF, 1%, 300V (V14655) 912-2091-170 A3A5A3C27		1

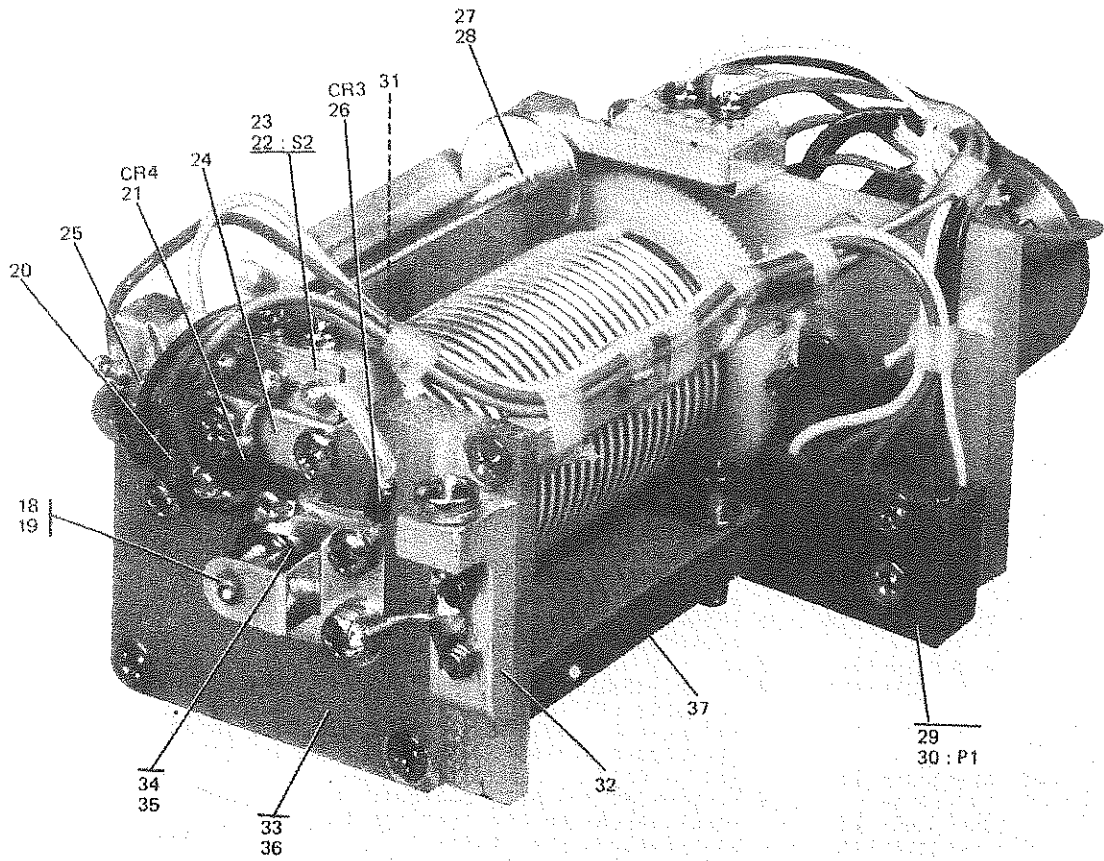
GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-25	33	CC7FC161FC3	2 CAPACITOR,FXD, MICA DIEI, 160PF, 1%, 500V (V14655) 912-2091-740 A3A5A3C28		1
	34	623-3337-C12 637-1722-CC1	2 CCIL A3A5A3L12 2 INSULATOR, CCIL-NC2 (AP)		1 1
	35	CD6EC27C6C3	2 CAPACITOR,FXD, MICA DIEI, 27PF, 2%, 500V (V14655) 912-4134-900 A3A5A3C29		1
	36	CD6EC82CFC3	2 CAPACITOR,FXD, MICA DIEI, 82PF, 1%, 300V (V14655) 912-2091-150 A3A5A3C30		1
	37	637-17C2-CC1	2 PLATE, INSULATOR		1
	38	637-17C1-CC3	2 TERMINAL BOARD, PRSD		1
	39	SS517C	3 TERMINAL,FEEDTH (V86577) 306-0989-C00		6
	40	SL354-351WHT	3 TERMINAL,FEEDTH (V12615) 306-2474-C10		4
	41	SL441-424WHT	3 TERMINAL,STDF (V12615) 306-2222-100		10
	42	637-17C1-CC2	2 TERMINAL BOARD		1



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Figure 3-26. Tuning Coil A3A8 (Sheet 1 of 2)



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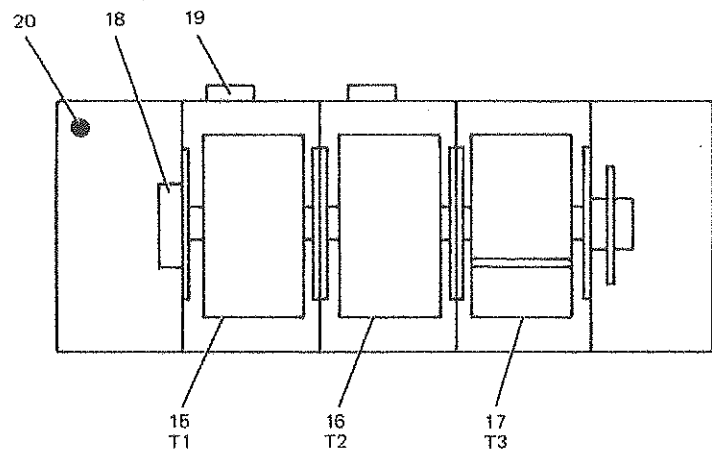
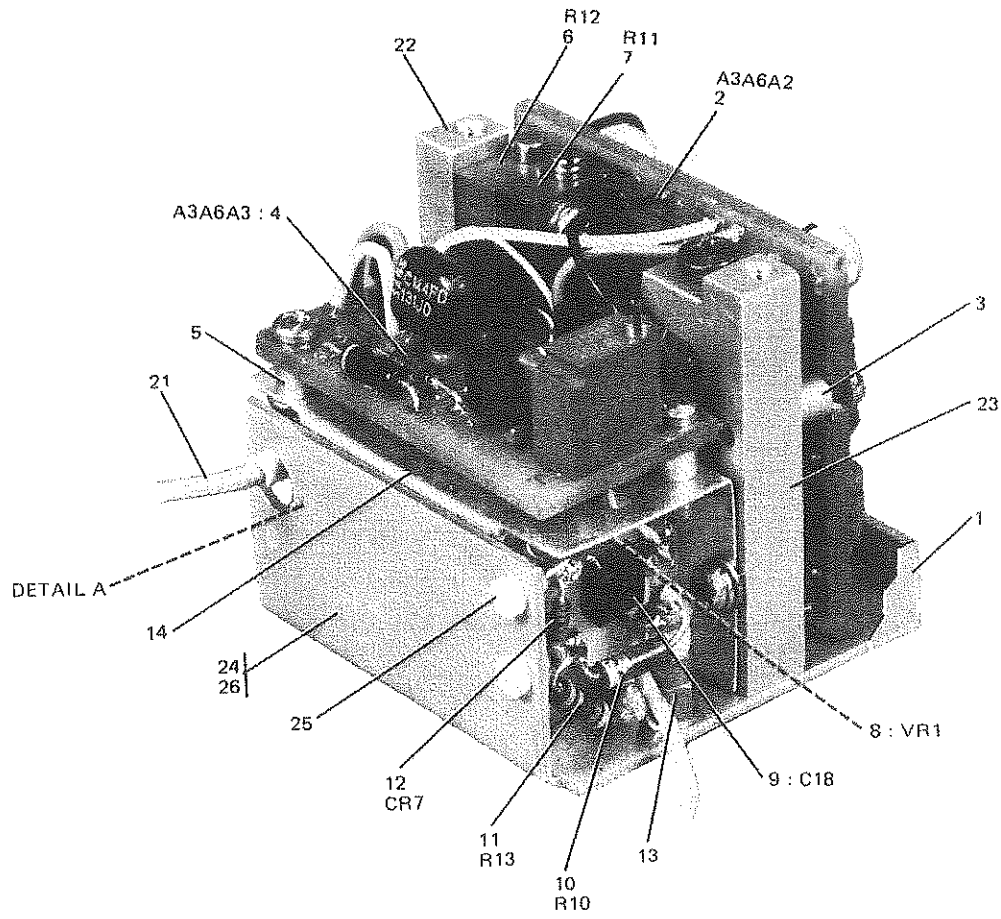
Figure 3-26. Tuning Coil A3A8 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-26 -	629-3413-CC1	1	TUNING COIL A3A8 (SEE FIG 3-18-21 FOR NHA)		REF
1	41A2C5	2	MCTGR,DC (V25140) 230-0303-000 A3A8B1		1
	P342-0143-CCC	2	SCREW,MACH, NP BRS, 2-56 X 1/4 (V77250) 342-0143-CCC (AP)		2
2	CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 50V (V81349) 913-5019-720 A3A8C1		1
3	1N4CC2	2	SEMICOND DEVICE (VC4713) 353-6442-030 A3A8CR1		1
4	1N4CC3	2	SEMICOND DEVICE (VC4713) 353-6442-030 A3A8CR2		1
5	MS24547-1	2	SWITCH,SENS (V96906) 266-7002-000 A3A8S1		1
	P343-C3C1-CCC	2	SCREW,MACH, NP BRS, 2-56 X 3/8 (V77250) 343-C3C1-CCO (AP)		2
	629-57C6-CC1	2	SPRING ACTUATOR (AF)		2
6	78C-6852-CC1	2	SPRING		1
	P343-C298-CCC	2	SCREW,MACH, NP BRS, 2-56 X 3/16 (V77250) 343-0298-CCO (AP)		1
7	78C-7236-CC1	2	CCNTACT		1
	4C4C-2HT	2	TERMINAL,LUG (V77147) 304-0014-000 (AP)		1
	P343-C298-CCC	2	SCREW,MACH, NP BRS, 2-56 X 3/16 (V77250) 343-0298-CCO (AP)		2
	31C-CC7C-CCC	2	WASHER,LOCK, SST, C.097 ID X C.165 OD (V79807) 31C-007C-CCO (AP)		2
8	52922	2	TERMINAL,LUG (V00779) 304-1531-010		1
9	623-39C1-CC1	2	PLATE, MOUNTING		1
	P342-C144-CCC	2	SCREW,MACH, NP BRS, 2-56 X 5/16 (V77250) 342-0144-CCO (AP)		2
10	S5632FC3P15LY5	3	BEARING,BALL,AN (V40920) 309-1563-000		1
11	M2-542-1	3	TERMINAL,FEEDTH (V12615) 306-2608-030		2
12	623-39C2-CC2	3	PLATE		1
13	629-615C-CC1	2	CCRE, WIRE WOUND A3ABL1		1
14	54C-9078-CC3	2	PCST		1
	P342-C144-CCC	2	SCREW,MACH, NP BRS, 2-56 X 5/16 (V77250) 342-0144-CCC (AP)		1
	P343-C3CC-CCC	2	SCREW,MACH, NP BRS, 2-56 X 5/16 (V77250) 343-03CC-CCO (AP)		1
15	629-5614-CC1	2	CCNTACT		1
	P343-C298-CCC	2	SCREW,MACH, NP BRS, 2-56 X 3/16 (V77250) 343-0298-CCO (AP)		2
	31C-CC7C-CCC	2	WASHER,LOCK, SST, C.097 ID X 0.165 OD (V79807) 31C-CC7C-CCO (AP)		2
16	629-5759-CC1	2	STRAP, GAD		1
17	34C-C644-CC	2	SLEEVE,SPG (V91314) 34C-C644-000		2
	78C-6C4C-CC1	2	SCREW, MOUNTING CCIL (AP FCR 16-17)		2
	31C-C298-CCC	2	WASHER,LOCK, BRZ, C.115 ID X C.202 OD (V79807) 31C-0396-CCO (AP FCR 16-17)		2
18	78C-7236-CC1	2	CCNTACT		1
19	4C4C-2HT	2	TERMINAL,LUG (V77147) 304-0014-000		1
	P343-C298-CCC	2	SCREW,MACH, NP BRS, 2-56 X 3/16 (V77250) 343-0298-CCO (AP)		2
	31C-CC7C-CCC	2	WASHER,LOCK, SST, C.097 ID X 0.165 OD (V79807) 31C-CC7C-CCO (AP)		2
20	78C-6852-CC1	2	SPRING		1
	P343-C298-CCC	2	SCREW,MACH, NP BRS, 2-56 X 3/16 (V77250) 343-0298-CCO (AP)		1
21	1N4CC3	2	SEMICOND DEVICE (VC4713) 353-6442-030 A3A8CR4		1
22	MS24547-1	2	SWITCH,SENS (V96906) 266-7002-000 A3A8S2		1
23	629-57C6-CC1	2	SPRING ACTUATOR		1
	P343-C3C1-CCC	2	SCREW,MACH, NP BRS, 2-56 X 3/8 (V77250) 343-03C1-CCO (AP FCR 22-23)		2
24	623-39C4-CC1	2	BLCK MOUNTING-SWITCH		1
	P343-C3C1-CCC	2	SCREW,MACH, NP BRS, 2-56 X 3/8 (V77250) 343-C3C1-CCO (AP)		2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY	
3-26	25		78C-6772-CC1		2 CCNTACT	1
			4C4C-2BT		2 TERMINAL,LUG (V77147) 304-0014-CC0 (AP)	1
			M535649-224		2 NUT,PLAIN,HEX, SST, 2-56 (V96906) 313-0037-CC0 (AP) (EFF TO REV LTR G)	1
			92-1660-26		2 NLT,SLFLKG,HEX, CD PL BRS, 2-56 (V72962) 333-1405-C30 (AP) (EFF REV LTR G)	1
			31C-CC7C-CCC		2 WASHER,LOCK, SST, 0.097 ID X 0.165 OD (V79807) 31C-CC7C-CCC (AP) (EFF TO REV LTR G)	1
			P343-CC2C-CCC		2 SCREW,MACH, NP BRS, 2-56 X 7/16 (V77250) 343-0302-CCC (AP) (EFF TO REV LTR J)	1
			P342-0146-CCC		2 SCREW,MACH, NP BRS, 2-56 X 7/16 (V77250) 342-0146-CCC (AP) (EFF REV LTR J)	1
	26		1N4003		2 SEMICOND DEVICE (V04713) 353-6442-030 A3A8CR3	1
	27		78C-6757-CC1		2 SHAFT	1
	28		78C-6758-CC1		2 WHEEL	1
	29		372-2255-C2C		2 CCNTACT,ELEC 372-2255-C2C	6
	30		623-3906-GC1		2 CONN, MODIFIED A3A8P1	1
			P342-0146-CCC		2 SCREW,MACH, NP BRS, 2-56 X 7/16 (V77250) 342-0146-CCC (AP FCR 29-30)	2
	31		623-3903-CC1		2 SPACER,COIL	1
	32		629-5746-CC1		2 BLOCK,TERMINAL	1
			31C-634C-CCC		2 WASHER,FLAT, SST, 0.125 ID X 0.281 OD (V79807) 31C-6340-CC0 (AP)	1
			31C-0396-CCC		2 WASHER,LOCK, BRZ, 0.115 ID X 0.202 OD (V79807) 31C-0396-CCC (AP)	1
			P343-0285-CCC		2 SCREW,MACH, NP BRS, 4-40 X 1/4 (V77250) 343-0285-CC0 (AP)	1
	33		623-3902-CC1		2 PLATE, MOUNTING-CCIL	1
			P342-0144-CCC		2 SCREW,MACH, NP BRS, 2-56 X 5/16 (V77250) 342-0144-CC0 (AP)	1
	34		55632FC3P15LY5		3 BEARING,BALL,AN (V4092C) 309-1563-CC0	1
	35		M2-542-1		3 TERMINAL,FEEDTH (V12615) 306-2608-G30	2
	36		623-3902-CC2		3 PLATE	1
	37		78C-6766-CC1		2 PLATE,BASE	1



DETAIL A

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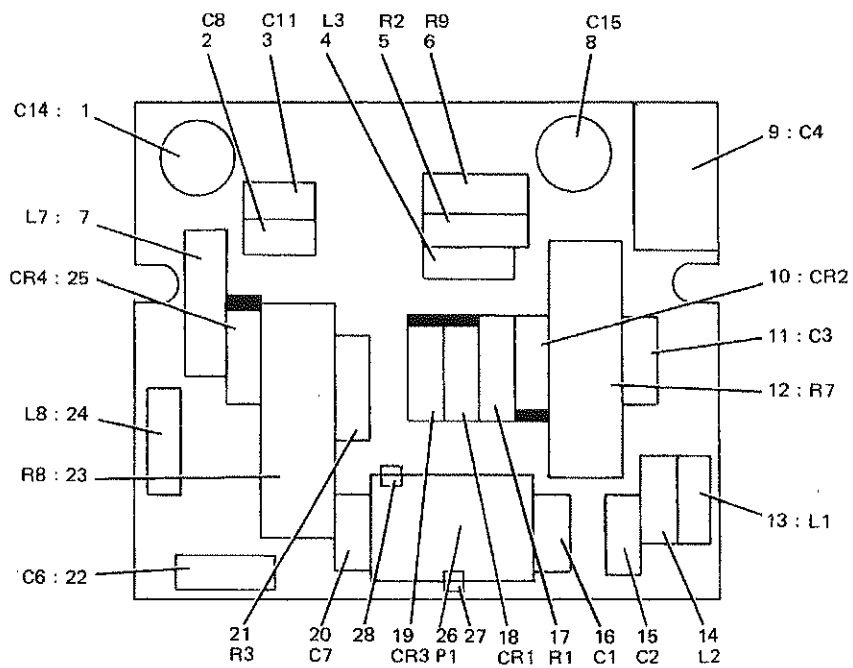
Figure 3-27. Discriminator A3A6

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-27 -	629-34CS-C01	1	DISCRIMINATOR A3A6 (SEE FIG 3-18-22 FOR NHA)		REF
1	623-7282-CC1	2	COVER, DISCRIMINATOR		1
2	601-3686-CC1	2	LOADING BOARD A3A6A2 (SEE FIG 3-28)		1
3	541-595C-CC2	2	SPACER, SLEEVE		2
	31C-0129-CCC	2	WASHER, FLAT, BRS, C.089 ID X 0.188 OD (V05411)		2
	MS51957-2	2	31C-0129-CCO (AP FCR 1-2) SCREW, MACH, SST, 2-56 X 3/16 (V96906)		2
	MS51957-5	2	343-0123-CCO (AP FCR 1-2) SCREW, MACH, SST, 2-56 X 3/8 (V96906)		2
4	601-3685-CC1	2	343-0126-CCO (AP FCR 1-2) (EFF REV LTR L) PHASING BOARD A3A6A3 (SEE FIG 3-29)		1
5	541-5949-CC2	2	SPACER, SLEEVE		2
	MS35649-224	2	NUT, PLAIN, HEX, SST, 2-56 (V96906) 313-CC37-CCO		2
	MS35338-96	2	(AP FCR 3-4) WASHER, SPRING, CD FL BRZ, 0.088 ID X 0.172 OD		2
	4C4C-2FT	2	(V96906) 31C-CC93-CCO (AP FCR 3-4) TERMINAL, LLG (V77147) 304-CC14-CCO (AP FCR 3-4)		2
	P343-C3CC-CCC	2	SCREW, MACH, NP BRS, 2-56 X 5/16 (V77250)		2
6	3C59L1-1C4	2	343-03CC-CCO (AP FCR 3-4) RESISTOR, VAR, 10K, 10%, 1W (V80294)		1
7	3C59L1-1C4	2	38C-3774-130 A3A6R12 RESISTOR, VAR, 100K, 10%, 1W (V80294)		1
	31C-0129-CCC	2	38C-3774-130 A3A6R11 WASHER, FLAT, BRS, C.089 ID X 0.188 OD (V05411)		2
	MS51957-7	2	31C-0129-CCO (AP FCR 5-6) SCREW, MACH, SST, 2-56 X 1/2 (V96906)		2
8	IN965B	2	343-0128-CCO (AP FCR 5-6) SEMICONV DEVICE (V04713) 353-3176-CCO A3A6VR1		1
9	CKC5BX152K	2	CAPACITOR, FXD, CER DIEL, 1500PF, 10%, 100V		1
10	RCR07G152KS	2	(V81349) 913-5019-100 A3A6C18 RESISTOR, FXD, CMPSN, 1.5K, 10%, 1/4W (V81349)		1
11	RCR07G332KS	2	745-0755-CCC A3A6R10 RESISTOR, FXD, CMPSN, 3.3K, 10%, 1/4W (V81349)		1
12	IN4454	2	745-0767-CCO A3A6R13 SEMICONV DEVICE (V03508) 353-3644-C10 A3A6CR7		1
13	G13-57CC-CC0789	2	TERMINAL, STLD (V98291) 306-1018-CCO		2
	4C4C-2FT	2	TERMINAL, LUG (V77147) 304-0014-CCO (AP)		1
	33C-1701-C1C	2	SCREW, SLFLKG, SST, 2-56 X 3/16 (V72962)		2
14	629-57C5-CC1	2	33C-1701-C1C (AP) TRANSFORMER A3A6A1		1
	31C-0129-CCC	2	WASHER, FLAT, BRS, C.089 ID X 0.188 OD (V05411)		2
	MS35338-134	2	31C-0129-CCO (AP) WASHER, LOCK, SST, C.088 ID X 0.172 OD (V96906)		2
	MS51957-2	2	31C-0275-CCO (AP) SCREW, MACH, SST, 2-56 X 3/16 (V96906)		2
15	629-5699-CC1	3	343-0123-CCO (AP) CCIL A3A6A1T1		1
16	629-5699-CC2	3	CCIL A3A6A1T2		1
17	629-5704-CC1	3	CCIL A3A6A1T3		1
18	78C-6621-CC1	3	SHAFT		1
	MS16633-1025	3	RING, RTNG (V96906) 340-0091-CCC (AP)		1
	MW687-255-4	3	INSULATOR, WSHR, MICA, 0.255 ID X 0.687 OD		6
19	1C7C	3	(V08289) 302-0640-350 (AP) GRCMET, RBR (V70485) 201-0213-C30		3
20	78C-6592-CC1	3	CAN		1
21	14C-C53C-5C01	2	CABLE ASSY, ELEC (V98278) 426-5435-010 A3A6P2		1
22	623-7284-CC1	2	PCST, MOUNTING		1
	33C-1701-C1C	2	SCREW, SLFLKG, SST, 2-56 X 3/16 (V72962)		2
			33C-1701-C1C (AP)		

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-27	23	78C-6624-CC1	2 PCST, MOUNTING		1
		31C-0396-CCC	2 WASHER, LOCK, BRZ, 0.115 ID X 0.202 OD (V79807)		1
			31C-0396-CCC (AP)		
		33C-1701-C10	2 SCREW, SLFLKG, SST, 2-56 X 3/16 (V72962)		2
			33C-1701-C10 (AP)		
		78C-6623-CC1	2 SCREW, CAPTIVE (AP)		1
	24	623-7283-CC1	2 BASE, DISCRIMINATOR		1
	25	SL441-4346HT	3 TERMINAL, STD (V12615) 306-2222-100		2
	26	623-7283-CC2	3 BASE		1



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Figure 3-28. Loading Board A3A6A2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-28 -	601-3686-CC1	1	LOADING BOARD A3A6A2 (SEE FIG 3-27-2 FOR NHA)		REF
1	518-024A5-25PF	2	CAPACITOR,VAR, CER DIEI, 5 TC 25PF, 100V (V72982) 917-1256-C30 A3A6A2C14		1
2	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A3A6A2C8		1
3	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A3A6A2C11		1
4	MS75C85-19	2	CCIL,RF, 1CCOH (V96906) 240-2723-C10 A3A6A2L3		1
5	RCRC7G123KS	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/4W (V81349) 745-0788-C00 A3A6A2R2		1
6	RCRC7G331KS	2	RESISTOR,FXD, CMPSN, 33C OHMS, 10%, 1/4W (V81349) 745-0731-C00 A3A6A2R9		1
7	772-5721-CC1	2	CCIL A3A6A2L7		1
8	518-024A5-25PF	2	CAPACITOR,VAR, CER DIEI, 5 TC 25PF, 100V (V72982) 917-1256-C30 A3A6A2C15		1
9	CM04FB2C1JC3	2	CAPACITOR,FXD, MICA DIEI, 200PF, 5%, 500V (V81349) 912-3900-000 A3A6A2C4		1
10	FC7CC	2	SEMICOND DEVICE (V07263) 353-3586-C10 A3A6A2CR2		1
11	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A3A6A2C3		1
12	RC6CP19R6G	2	RESISTOR,FXD, 19.6 OHMS, 2%, 1W (V81349) 714-0011-C10 A3A6A2R7		1
13	MS75C85-19	2	CCIL,RF, 1CCOH (V96906) 240-2723-C10 A3A6A2L1		1
14	MS75C85-19	2	CCIL,RF, 1CCOH (V96906) 240-2723-C10 A3A6A2L2		1
15	CK05BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A6A2C2		1
16	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A3A6A2C1		1
17	RCRC7G123KS	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/4W (V81349) 745-0788-C00 A3A6A2R1		1
18	FC7CC	2	SEMICOND DEVICE (V07263) 353-3586-C10 A3A6A2CR1		1
19	FC7CC	2	SEMICOND DEVICE (V07263) 353-3586-C10 A3A6A2CR3		1
20	CKC5BX1C3M	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A6A2C7		1
21	635-C867-CC1	2	RESISTOR,TEST SELECT (NON-PRCCURABLE ITEM)		1
	RCRC7G821KS	3	RESISTOR,FXD, CMPSN, 820 OHMS, 10%, 1/4W (V81349) 745-0746-C00 A3A6A2R3		AR
21	RCRC7G1C2KS	3	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-C00 A3A6A2R3		AR
21	RCRC7G122KS	3	RESISTOR,FXD, CMPSN, 1.2K, 10%, 1/4W (V81349) 745-0752-C00 A3A6A2R3		AR
22	CC6FC111JC3	2	CAPACITOR,FXD, MICA DIEI, 110PF, 5%, 300V (V14655) 912-4134-340 A3A6A2C6		1
23	RC6CP34R8G	2	RESISTOR,FXD, 34.8 OHMS, 2%, 1W (V81349) 714-0011-C20 A3A6A2R8		1
	635-C868-CC1	2	CCIL,TEST SELECT (NON-PRCCURABLE ITEM)		1
24	MS75C83-13	3	CCIL,RF, 1UH (V96906) 240-2023-C00 A3A6A2L8		AR
24	MS75C84-C1	3	CCIL,RF, 1.20UH (V96906) 240-2024-C00 A3A6A2L8		AR
24	MS75C84-C2	3	CCIL,RF, 1.50UH (V96906) 240-2025-C00 A3A6A2L8		AR
25	FC7CC	2	SEMICOND DEVICE (V07263) 353-3586-C10 A3A6A2CR4		1
26	372-2623-C12	2	HCUSING,CONN,EL 372-2623-C12 A3A6A2P1		1
27	372-2234-C1C	2	CCNTACT,ELEC 372-2234-C1C		3
28	372-2234-C1C	2	CCNTACT,ELEC 372-2234-C1C		3

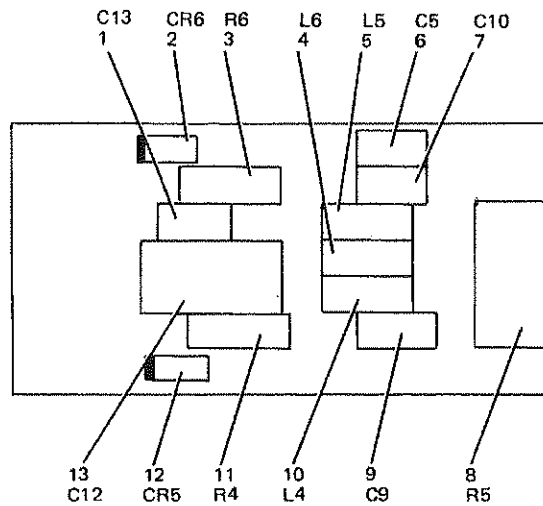
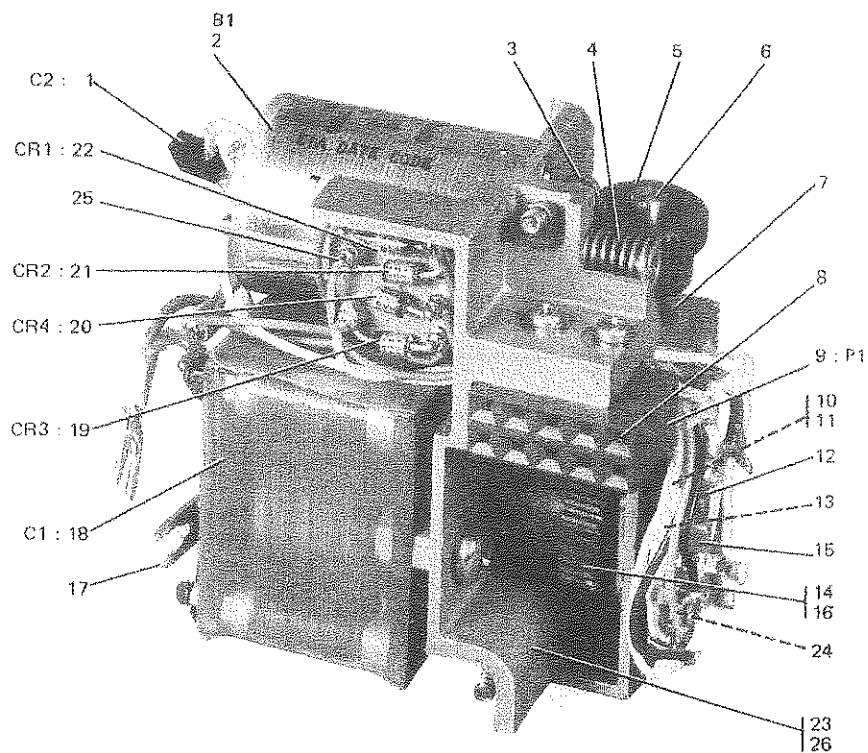


Figure 3-29. Phasing Board A3A6A3

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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-29-	601-3685-001		1 PHASING BOARD A3A6A3 (SEE FIG 3-27-4 FOR NHA)		REF
1	CK05BX1CCK		2 CAPACITOR,FXD, CER DIEI, 10PF, 10%, 200V (V81349) 913-5019-C10 A3A6A3C13		1
2	SE63C		2 SEMICOND DEVICE (VC3877) 353-3589-G10 A3A6A3CR6		1
3	RN55C4641F		2 RESISTOR,FXD, FILM, 4.64K, 1%, 1/8W (V81349) 7C5-1028-C00 A3A6A3R6		1
4	MS75C85-19		2 COIL,RF, 1CCCUH (V96906) 240-2723-G10 A3A6A3L6		1
5	MS75C85-19		2 COIL,RF, 1CCCUH (V96906) 240-2723-G10 A3A6A3L5		1
6	CKC58X1C3M		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5019-660 A3A6A3C5		1
7	CKC58X1C3M		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A3A6A3C10		1
8	3299W1-2CK		2 RESISTOR,VAR, 20K, 10%, 1/2W (V80294) 382-1405-080 A3A6A3R5		1
9	CKC58X1C3M		2 CAPACITOR,FXD, CER DIEI, 0.01UF, 20%, 100V (V81349) 913-5C19-660 A3A6A3C9		1
10	MS75C85-19		2 COIL,RF, 1CCCUH (V96906) 240-2723-G10 A3A6A3L4		1
11	RN55C4641F		2 RESISTOR,FXD, FILM, 4.64K, 1%, 1/8W (V81349) 7C5-1028-C00 A3A6A3R4		1
12	SE63C		2 SEMICOND DEVICE (VC3877) 353-3589-G10 A3A6A3CR5		1
13	CM04FC131JC3		2 CAPACITOR,FXD, MICA DIEI, 130PF, 5%, 500V (V81349) 912-3888-C00 A3A6A3C12		1



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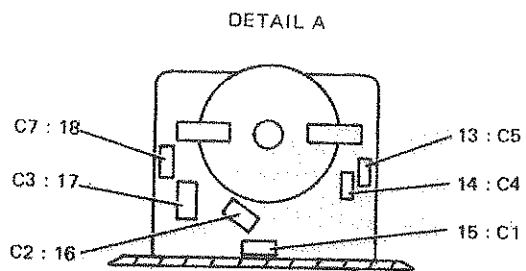
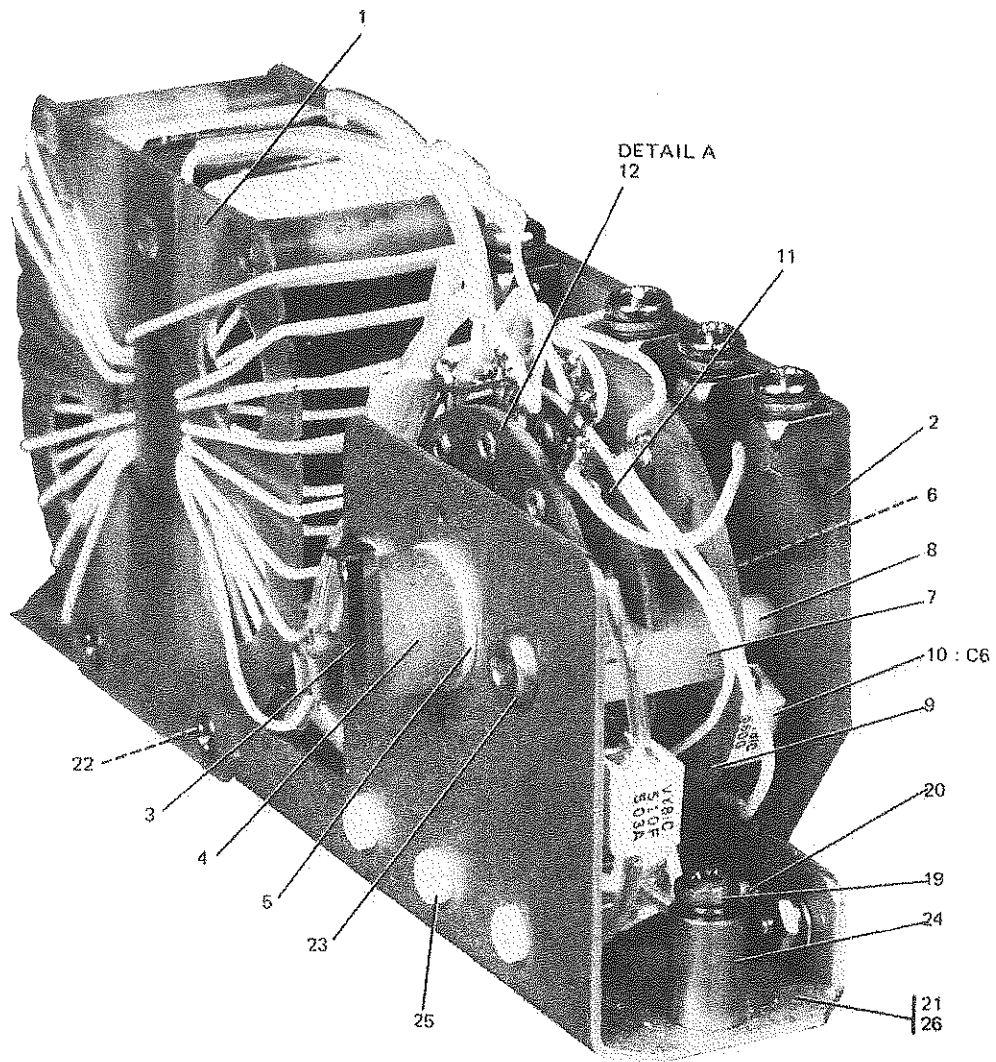
Figure 3-30. Tuning Capacitor A3A7

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-30-	629-3412-CC1	1	TUNING CAPACITOR A3A7 (SEE FIG 3-18-23 FOR NHA)		REF
	1 CKC5BX1C4M	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 20%, 5CV (V81349) 913-5019-720 A3A7C2		1
	2 41A556	2	CTOR,DC (V25140) 230-C303-030 A3A7B1		1
	MS51957-3	2	SCREW,MACH, CD PL STL, 2-56 X 1/4 (V96906) 343-0124-CCC (AP)		1
	MS51959-3	2	SCREW,MACH, SST, 2-56 X 1/4 (V96906) 342-0133-CCO (AP)		1
	3 780-8250-CC1	2	SCREW,MTG		2
	31C-C356-GCC	2	WASHER,LCCK, BRZ, C.115 ID X 0.202 OD (V79807) 310-0396-CCO (AP)		2
	34C-C644-CC	2	SLEEVE,SPG (V91314) 34C-C644-CCO (AP)		2
	4 629-5713-CC1	2	GEAR,WORM NC.1		1
	335-C121-CCC	2	SETSCREW, CD PL STL, 2-56 X 1/16 (V08664) 335-0121-CCO (AP) (EFF TC REV LTR G)		2
	AN565D2L1	2	SETSCREW, CD PL STL, 2-56 X 1/16 (V88044) 328-0370-CCO (AP) (EFF REV LTR G)		2
	5 629-5714-CC1	2	GEAR,HELICAL NC.1		1
	335-C121-CCC	2	SETSCREW, CD PL STL, 2-56 X 1/16 (V08664) 335-0121-CCO (AP) (EFF TC REV LTR G)		2
	AN565D2L1	2	SETSCREW, CD PL STL, 2-56 X 1/16 (V88044) 328-0370-CCO (AP) (EFF REV LTR G)		2
	6 780-6740-CC1	2	SHAFT		1
	7 55622FC3P15LY5	2	BEARING,BALL,AN (V40920) 309-1563-000		2
	780-6739-CC1	2	WASHER (AP)		1
	8 372-2255-C20	2	CONTACT,ELEC 372-2255-C20		5
	9 780-6636-CC1	2	PLUG,SING,CONN A3A7P1		1
	MS55649-224	2	NUT,PLAIN,HEX, SST, 2-56 (V96906) 313-0037-CCO (AP)		2
	31C-CC75-CCC	2	WASHER,LCCK, BRZ, C.088 ID X 0.165 OD (V79807) 31C-CC75-CCC (AP)		2
	MS51957-8	2	SCREW,MACH, SST, 2-56 X 5/8 (V96906) 343-0005-CCO (AP)		2
	10 629-5715-CC1	2	GEAR,WORM NC.2		1
	335-C121-CCC	2	SETSCREW, CD PL STL, 2-56 X 1/16 (V08664) 335-0121-CCO (AP) (EFF TC REV LTR G)		2
	AN565D2L1	2	SETSCREW, CD PL STL, 2-56 X 1/16 (V88044) 328-0370-CCO (AP) (EFF REV LTR G)		2
	11 780-6738-CC1	2	CELLAR		1
	335-C121-CCO	2	SETSCREW, CD PL STL, 2-56 X 1/16 (V08664) 335-0121-CCO (AP) (EFF TC REV LTR G)		2
	AN565D2L1	2	SETSCREW, CD PL STL, 2-56 X 1/16 (V88044) 328-0370-CCO (AP) (EFF REV LTR G)		2
	12 4-1761-1C5	2	SWITCH SECT,RTR (V76854) 269-2659-010 A3A7S1		1
	780-7180-CC1	2	SPACER (AP)		2
	MS51957-4	2	SCREW,MACH, CD PL STL, 2-56 X 5/16 (V96906) 343-0125-CCO (AP)		2
	13 SFR1553K13-26	2	BEARING,BALL,AN (V83086) 309-1159-010		1
	14 635-5466-CC1	2	GEAR,CAPACITOR		1
	MS51963-1C	2	SETSCREW, CD PL STL, 4-40 X 3/16 (V96906) 328-5029-CCO (AP) (EFF TC REV LTR L)		2
	AN565D4L3	2	SETSCREW, CD PL STL, 4-40 X 3/16 (V88044) 328-0376-CCO (AP) (EFF REV LTR L)		2
	31C-C445-CCC	2	WASHER,FLAT, SST C.168 ID X 0.281 OD (V72606) 31C-0445-CCO (AP)		1
	15 635-5464-CC1	3	SHAFT,GEAR		1
	P343-C298-CCC	3	SCREW,MACH, NP BRS, 2-56 X 3/16 (V77250) 343-0298-CCO (AP)		1
	16 635-5465-CC1	3	GEAR		1
	17 52922	2	TERMINAL,LUG (V00779) 304-1531-C10		3

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-30	18	35C-3	2 CAPACITOR,VAR, AIR DIEI, 16.5 TC 900PF, 10CCV (V54033) 921-CC34-C10 A3A7C1		1
		MS51957-26	2 SCREW,MACH, SST, 6-32 X 1/4 (V96906) 343-0167-CCG (AP) (EFF TC REV LTR H)		3
		MS51957-25	2 SCREW,MACH, SST, 6-32 X 3/16 (V96906) 343-0166-CCG (AP) (EFF REV LTR H)		3
		31C-C078-CCG	2 WASHER,LCCK, BR2, C.141 ID X 0.239 OD (V79807) 31C-C078-CCO (AP)		3
	19	1N4CC3	2 SEMICOND DEVICE (V04713) 353-6442-030 A3A7CR3		1
	20	1N4CC3	2 SEMICOND DEVICE (V04713) 353-6442-030 A3A7CR4		1
	21	1N4CC3	2 SEMICOND DEVICE (V04713) 353-6442-030 A3A7CR2		1
	22	1N4CC3	2 SEMICOND DEVICE (V04713) 353-6442-030 A3A7CR1		1
	23	78C-757C-C01	2 CHASSIS		1
	24	R22NCFMA1-26	3 NLT,SLFLKG, CD PL STL, 2-56 (V72962) 233-0837-CCO		2
	25	004-1CC1-CCC599	3 TERMINAL,STLD (V98291) 306-1315-CCG		6
	26	78C-7565-C01	3 CHASSIS, CASTING		1



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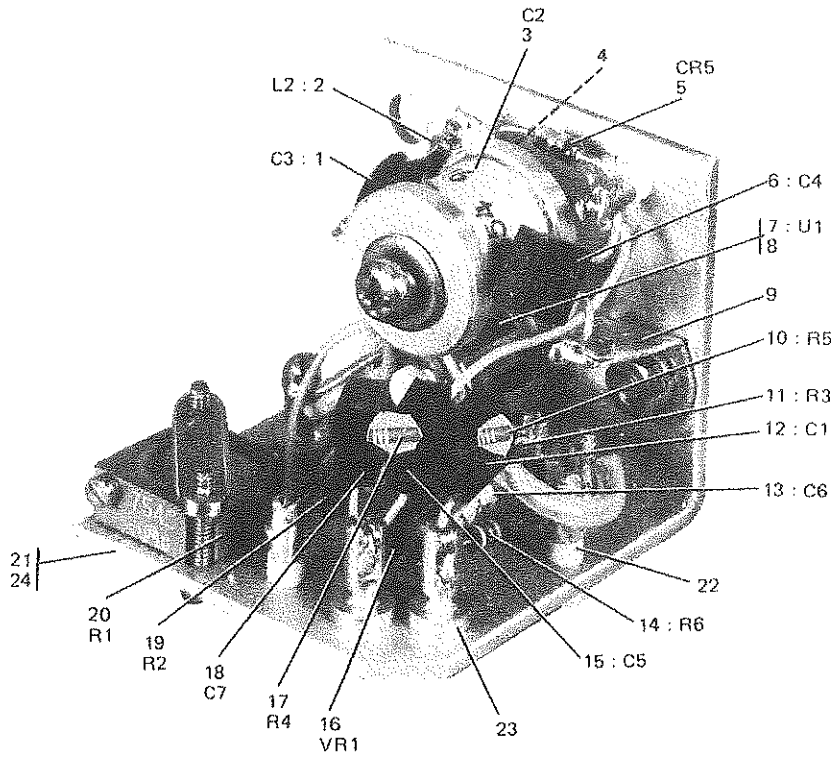
Figure 3-31. Autotransformer A3A9

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-31-					REF
1	629-3407-CC1	1	AUTOTRANSFORMER A3A9 (SEE FIG 3-18-24 FOR NHA)		1
	629-5761-CC1	2	TRANSFORMER A3A9T1		1
	P343-C259-CCC	2	SCREW, WACH, NP BRS, 2-56 X 1/4 (V77250)		3
			343-0299-CCO (AP)		
	P343-C29C-CCC	2	SCREW, WACH, NP BRS, 4-40 X 5/8 (V77250)		1
			343-029C-CCC (AP)		
	DIE845	2	WASHER, FLAT, SST, C.119 ID X 0.218 OD (V72606)		1
			31C-046C-CCO (AP)		
	34C-0644-CC	2	SLEEVE, SPG (V91314) 34C-0644-CCO (AP)		1
2	6C1-3564-CC1	2	SWITCH, SUPPORT BOARD		1
	P343-C259-CCC	2	SCREW, WACH, NP BRS, 2-56 X 1/4 (V77250)		2
			343-0299-CCO (AP)		
	P343-C285-CCC	2	SCREW, WACH, NP BRS, 4-40 X 1/4 (V77250)		4
			343-0285-CCO (AP)		
	MS35238-57	2	WASHER, SPRING, CD FL BRZ, 0.115 ID X 0.209 OD (V96906) 31C-0095-CCO (AP)		4
	DIE845	2	WASHER, FLAT, SST, C.115 ID X 0.218 OD (V72606)		4
			31C-046C-CCO (AP)		
3	78C-74CC-CC1	2	SHAFT, DRIVE		1
4	629-5705-CC1	2	SHAFT, SWITCH		1
	AN565D2L3	2	SETSCREW, CD PL STL, 2-56 X 3/16 (V88044)		2
			328-0374-CCO (AP) (EFF TC REV LTR H)		
	AN565D4L3	2	SETSCREW, CD PL STL, 4-40 X 3/16 (V88044)		2
			328-0376-CCO (AP) (EFF REV LTR F)		
5	6L1FF	2	BEARING, SLV (V96881) 309-0800-CCO		1
6	629-5706-CC1	2	CONTACT, HIGH VOLTAGE		1
	5133-15C	2	RING, RTNG (V79136) 340-0252-CCO (AP)		1
7	780-8698-CC1	2	SPACER, SLEEVE		2
8	635-4715-CC1	2	SPACER, STUDDED		2
	334-1252-CCC	2	NUT, PLAIN, HEX, NYL, 4-40 (V7C6C1) 334-1252-CCO (AP)		2
9	6C1-3582-CC1	2	BOARD, HV WAFER A3A9S1A		1
10	VY81C56CG	2	CAPACITOR, FXD, GL DIEI, 56PF, 2%, 500V (V95275)		1
			914-2574-CCO A3A9C6		
11	28C4C28F	2	SWITCH, SECT RTR (V76854) 269-2627-180 A3A9S1B		1
12	28C4C38F	2	SWITCH SECT RTR (V76854) 269-2627-190 A3A9S1C		1
13	UYC3391J	2	CAPACITOR, FXD, CER DIEI, 390PF, 5%, 300V (V73899) 914-3081-CCO A3A9C5		1
14	UYC3301J	2	CAPACITOR, FXD, CER DIEI, 300PF, 5%, 300V (V73899) 914-3079-CCO A3A9C4		1
15	VY82C241J	2	CAPACITOR, FXD, GL DIEI, 240PF, 5%, 500V (V95275)		1
			914-2620-CCO A3A9C1		
16	VY81C75CG	2	CAPACITOR, FXD, GL DIEI, 75PF, 2%, 500V (V95275)		1
			914-2583-CCO A3A9C2		
17	VY81C33CJ	2	CAPACITOR, FXD, GL DIEI, 33PF, 5%, 500V (V95275)		1
			914-2557-CCO A3A9C3		
18	VY81C51CF	2	CAPACITOR, FXD, GL DIEI, 51PF, 1%, 500V (V95275)		1
			914-257C-CCO A3A9C7		
19	78C-7523-CC1	2	SCREW, MTG		3
	MS35238-97	2	WASHER, SPRING, CD FL BRZ, 0.115 ID X 0.209 OD (V96906) 31C-0095-CCO (AP)		3
20	4C4C-2HT	2	TERMINAL, LUG (V77147) 304-0014-CCO		2
	MS35649-224	2	NUT, PLAIN, HEX, SST, 2-56 (V96906) 313-0037-CCO (AP)		2
	31C-C07C-CCC	2	WASHER, LECK, SST, C.097 ID X 0.165 OD (V79807)		2
			31C-C07C-CCO (AP)		
	MS51959-3	2	SCREW, WACH, SST, 2-56 X 1/4 (V96906)		1
			342-0133-CCO (AP)		
	P343-C259-CCC	2	SCREW, WACH, NP BRS, 2-56 X 1/4 (V77250)		1
			343-0299-CCO (AP)		
21	623-729C-CC1	2	BASE, PLATE		1
	MS51959-4	2	SCREW, WACH, SST, 2-56 X 5/16 (V96906)		2
			342-0134-CCO (AP)		

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-31	22	R22NCFMA1-26	3 NLT, SLFLKG, CD PL STL, 2-56 (V72962) 333-0837-CC0		6
	23	CL44C-1C	3 NLT, PLAIN, CD PL STL, 4-40 (V46384) 334-0552-CC0		2
	24	78C-7053-CC1	3 DCWEL, LOCATING		3
	25	SL439-433WT	3 TERMINAL, STD (V12615) 306-1521-CC0		3
	26	623-729C-CC2	3 BASE		1



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Figure 3-32. Overvoltage Detector A3A3A2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-32-	635-469C-C01	1	OVERVOLTAGE DETECTOR A3A3A2 (SEE FIG 3-18-28 FOR		REF
1	CM04EB51CJC3	2	CAPACITOR,FXD, MICA DIEI, 51PF, 5%, 500V (V81349) 912-3858-CCC A3A3A2C3		1
2	MS75CE5-19	2	CCIL,RF, 1CCCUM (V96906) 240-2723-C10 A3A3A2L2		1
3	MT54T10SCAA	2	CAPACITOR,FXD, CER DIEI, 1PF, C.5PF, 5000V (V21052) 913-0756-CCC A3A3A2C2		1
4	4C07-4HT	2	TERMINAL,LUG (V77147) 304-C015-CCC (EFF TO REV LTR J)		1
4	4C4C-2HT	2	TERMINAL,LUG (V77147) 304-0014-000 (EFF REV LTR J)		1
	MS51957-1	2	SCREW,MACH, SST, 2-56 X 1/8 (V969C6)		1
	MS51957-4	2	SCREW,MACH, CD PL STL, 2-56 X 5/16 (V96906)		1
	31C-CC75-CCC	2	WASHER,LOCK, BRZ, C.088 ID X 0.165 OD (V79807)		3
	31C-CC53-CCC	2	WASHER,FLAT, BRS, C.093 ID X 0.250 OD (V79807)		1
	31C-C125-CCC	2	WASHER,FLAT, BRS, C.089 ID X 0.188 OD (V05411)		1
	5612-12-32	2	WASHER,NP, NYL, 0.136 ID X 0.375 OD (V86928)		1
	3C2-C646-C7C	2	WASHER,NP,SHLDR PLSTC, 0.096 ID X C.250 OD (V78956) 3C2-0646-C7C (AP FCR 3,4)		1
	P213-CC5C-CCC	2	NUT,PLAIN,HEX, NP BRS, 2-56 (V7725G)		1
5	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-C10 A3A3A2CR5		1
6	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-32C A3A3A2C4		1
7	MC1558G	2	INTEGRATED CKT (VC4713) 351-1071-C20 A3A3A2U1		1
8	TXP3-G32-C37R	2	HEAT SINK,ELEC (V98978) 352-9604-010		1
	MS51957-12	2	SCREW,MACH, STL, 4-40 X 3/16 (V96906)		1
	31C-C278-CCC	2	WASHER,LOCK, SST, C.115 ID X 0.202 OD (V70318)		1
9	4C07-4HT	2	TERMINAL,LUG (V77147) 304-C015-CCC		1
10	RCRC5G273KS	2	RESISTOR,FXD, CMPSN, 27K, 10%, 1/8W (V81349)		1
11	RCRC5G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/8W (V81349)		1
12	CK05BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-32C A3A3A2C1		1
13	M39CC3-C1-2254	2	CAPACITOR,FXD, ELCTLY, 4.7UF, 10%, 10V (V81349)		1
14	RCRC5G1C3KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/8W (V81349)		1
15	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, C.1UF, 10%, 50V (V81349) 913-5019-32C A3A3A2C5		1
16	1N751A	2	SEMICOND DEVICE (V12954) 353-2710-000 A3A3A2VRI		1
17	RCRC5G335KS	2	RESISTOR,FXD, CMPSN, 3.3MEGC, 10%, 1/8W (V81349)		1
18	CKC5BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-32C A3A3A2C7		1
19	RCRC5G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/8W (V81349)		1
20	RY24C2L1C3	2	RESISTOR,VAR, 10K, 5%, 3/4W (V81349)		1
	321-C412-CCC	2	SCREW,MACH, SST, 0-80 X 5/16 (V70601)		2
	618-7505-G01	2	PLATE,NUT (AP)		2
21	635-4724-CC1	2	BRACKET		1
22	SL441-434HT	3	TERMINAL,STDF (V12615) 306-2222-100		7
23	M2-542-3	3	TERMINAL,FEEDTH (V12615) 306-2408-G60		4
24	635-4724-CC2	3	BRACKET		1

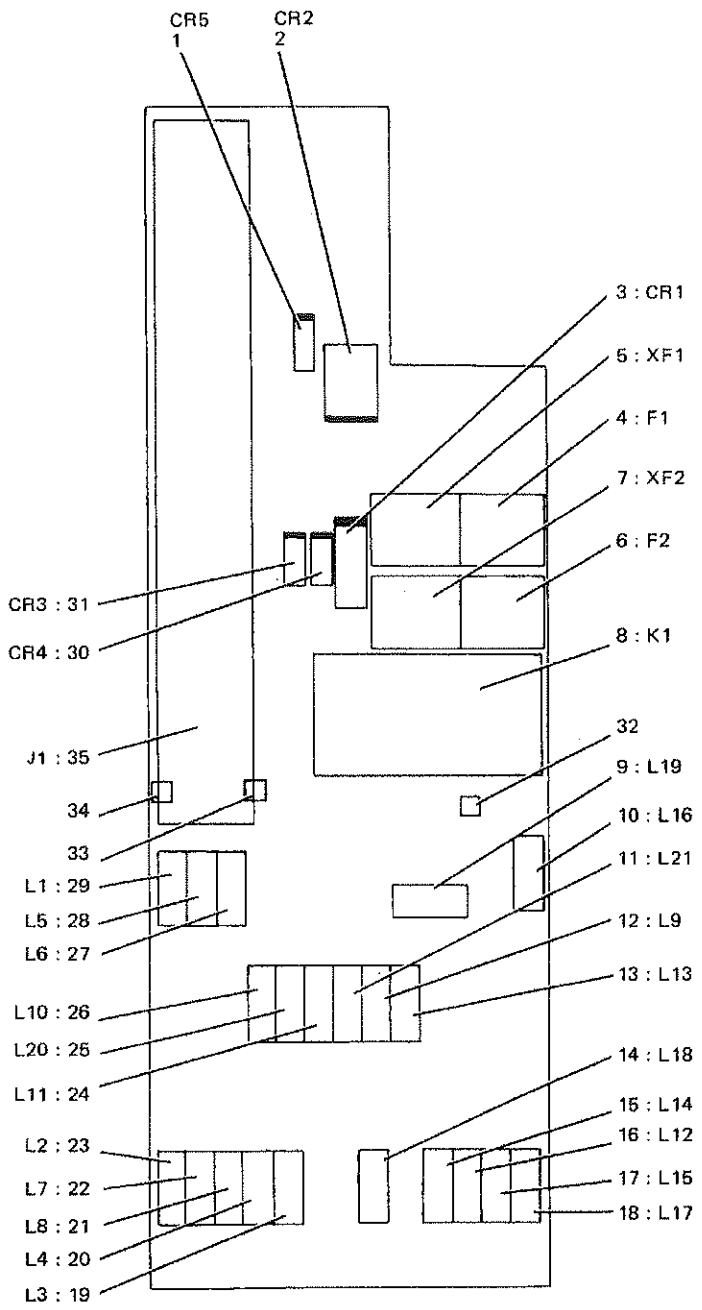


Figure 3-33. Filter (Part of A3A3A1)

TP4-9676-019

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-33 -	6C1-3865-CC1		1 FILTER CIRCUIT CARD POA3A3A1 (SEE FIG 3-18-32 FOR NHA)		REF
1	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A3A3A1CR5		1
2	1N555C	2	SEMICOND DEVICE (V14C99) 353-3718-040 A3A3A1CR2		1
3	1N4002	2	SEMICOND DEVICE (V04713) 353-6442-020 A3A3A1CR1		1
4	272CC5	2	FLSE (V75915) 264-C936-180 A3A3A1F1		1
5	281C07	2	FLSE HOLDER (V75915) 265-0012-010 A3A3A1XF1		1
6	272CC5	2	FLSE (V75915) 264-C936-180 A3A3A1F2		1
7	281C07	2	FLSE HOLDER (V75915) 265-0012-010 A3A3A1XF2		1
8	3SAV1271A2	2	RELAY,AMT (V01526) 974-1065-170 A3A3A1K1 (EFF TO REV LTR J)		1
8	3SAV181CA2	2	RELAY,ARM (V01526) 974-1065-280 A3A3A1K1 (EFF REV LTR J)		1
9	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-CC0 A3A3A1L19		1
10	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L16		1
11	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L21		1
12	78C-8771-CC1	2	CCIL A3A3A1L9		1
13	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L13		1
14	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L18		1
15	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L14		1
16	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L12		1
17	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L15		1
18	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L17		1
19	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L3		1
20	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L4		1
21	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L8		1
22	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L7		1
23	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L2		1
24	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L11		1
25	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L20		1
26	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L10		1
27	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L6		1
28	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L5		1
29	MS75C85-C7	2	CCIL,RF, 100UH (V96906) 240-2047-C00 A3A3A1L1		1
30	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A3A3A1CR4		1
31	1N4454	2	SEMICOND DEVICE (VC3508) 353-3644-010 A3A3A1CR3		1
32	372-2601-150	2	CONTACT,ELEC 372-2601-150		8
33	372-2234-C20	2	CONTACT,ELEC 372-2234-C20		16
34	372-2234-C10	2	CONTACT,ELEC 372-2234-C10		16
35	372-2623-025	2	HCLSLING,CONN,EL 372-2623-025 A3A3A1J1		1

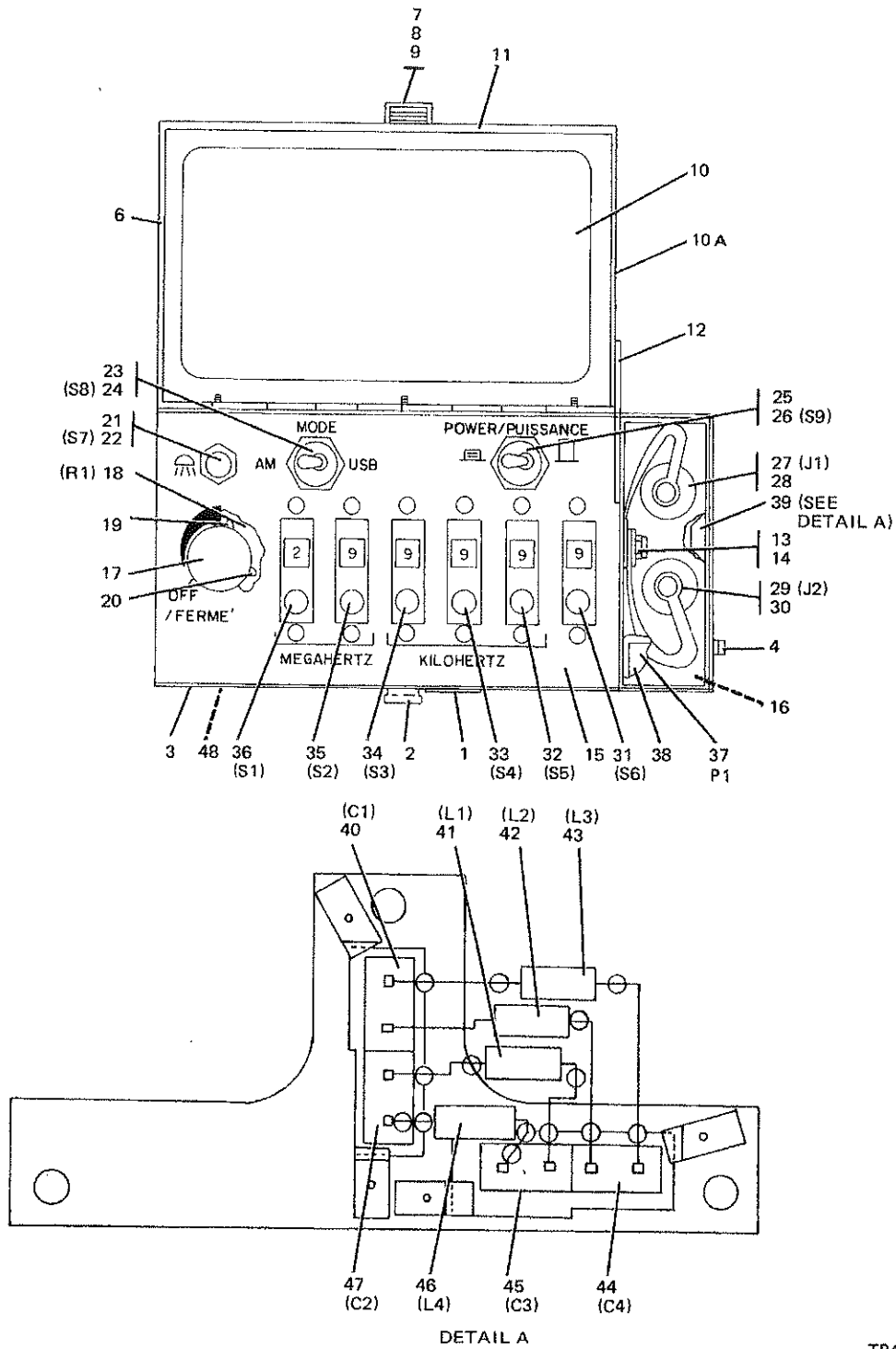


Figure 3-34. Receiver-Transmitter Control C-5310/URC A2

TP4-9839-019

GROUP ASSEMBLY PARTS LIST

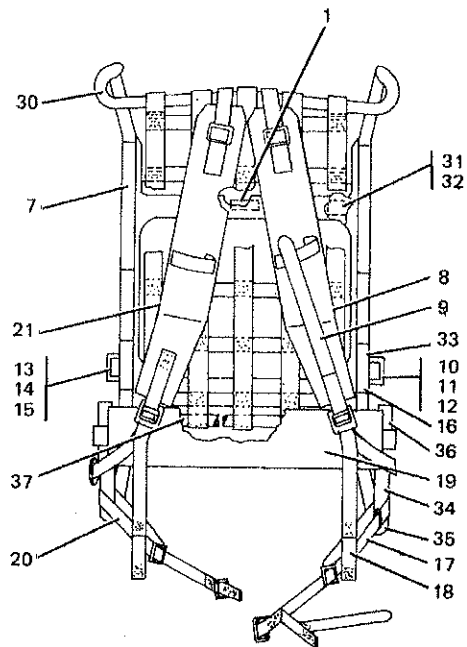
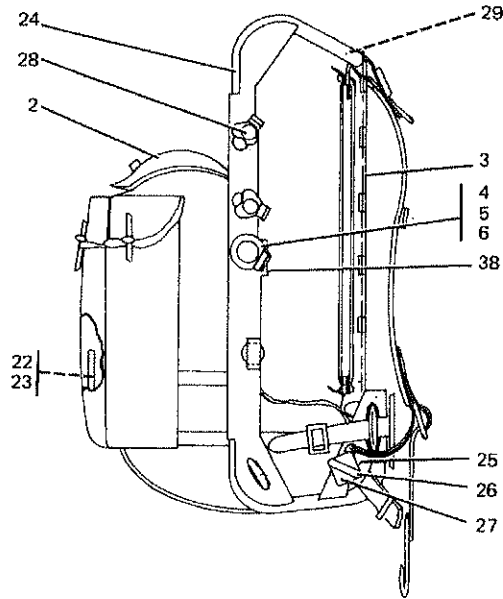
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-34 -	622-2553-CC3	1	RECEIVER-TRANSMITTER CONTROL C-531C/URC A2 (SEE FIG 3-1-4 FOR NHA)		REF
1	635-1505-CC0	2	PLATE, IDENT		1
2	VHS340	2	CATCH, LUGGAGE (V98003) 015-1097-040		1
	MS51959-3B	2	SCREW, MACH, SST, 2-56 X 1/4 (V96906)		2
			342-CC01-CC0 (AP)		
3	635-535C-CC1	2	STRIKE, LATCH		2
	MS51959-3B	2	SCREW, MACH, SST, 2-56 X 1/4 (V96906)		4
			342-CC01-CC0 (AP)		
4	635-5175-CC1	2	STRIKE, MCD		1
	MS51957-13	2	SCREW, MACH, STL, 4-40 X 1/4 (V96906)		1
			343-0133-CC0 (AP)		
	MS51957-15	2	SCREW, MACH, STL, 4-40 X 3/8 (V96906)		1
			343-0135-CC0 (AP)		
	68-166C-4C	2	NUT, SLFLKG, HEX, AL, 4-40 (V72962) 333-0605-CC0 (AP)		1
5	629-3438-CC1	2	HINGE, MODIFIED		1
	MS51957-12B	2	SCREW, MACH, SST, 4-40 X 3/16 (V96906)		3
			343-0018-CC0 (AP)		
	MS51957-14B	2	SCREW, MACH, SST, 4-40 X 5/16 (V96906)		3
			343-CC2C-CC0 (AP)		
	MS35338-135	2	WASHER, LCKK, SST, 0.115 ID X 0.209 OD (V96906)		3
			21C-0279-CC0 (AP)		
	68-166C-4C	2	NUT, SLFLKG, HEX, AL, 4-40 (V72962) 333-0605-CC0 (AP)		3
6	629-3435-CC2	2	COVER, HCUSING		1
7	VHC340-2	3	CATCH, LUGGAGE (V98003) 015-1097-020		1
	68NP26	3	NUT, SLFLKG, HEX, AL, 2-56 (V72962) 333-0327-CC0 (AP)		2
	P342-0145-CC0	3	SCREW, MACH, NP BRS, 2-56 X 3/8 (V77250)		2
			342-0145-CC0 (AP)		
8	635-5454-CC1	3	STRIP, RUBBER		1
9	635-5455-CC1	3	PLATE		1
10	635-4688-CC1	3	PLATE, INSTRUCTION (EFF TO REV LTR E)		1
10	637-2000-CC1	3	PLATE, INSTRUCTION (EFF REV LTR E)		1
10A	629-5889-CC1	3	PLATE, INSTRUCTION		1
11	635-5473-CC1	3	COVER		1
12	637-1486-CC1	2	SLIDE, COVER		1
	68-166C-4C	2	NUT, SLFLKG, HEX, AL, 4-40 (V72962) 333-0605-CC0 (AP)		1
	504-C73C-CC3	2	WASHER, FLAT (AP)		1
	756-8204-C23	2	WASHER, RUBBER (AP)		1
	303-1000-CC0	2	WASHER, NP, PLSTC, 0.125 ID X 0.281 OD (V79807)		1
			303-1000-CC0 (AP)		
	629-5885-CC1	2	SPACER (AP)		1
	MS51957-1	2	SCREW, MACH, SST, 2-56 X 1/8 (V96906)		1
			343-0122-CC0 (AP)		
13	637-4211-CC1	2	STRAP, CAP		2
14	621-7571-CC2	2	STRAP, RETAINER		1
	68-166C-4C	2	NUT, SLFLKG, HEX, AL, 4-40 (V72962) 333-0605-CC0 (AP FOR 13-14)		1
	MS51959-16	2	SCREW, MACH, SST, 4-40 X 7/16 (V96906)		1
			342-0047-CC0 (AP FOR 13-14)		
15	629-3475-CC5	2	WELDSING, CONTROL		1
	34C-C641-CC	2	SLEEVE, SPG (V91314) 340-0641-CC0 (AP)		4
	P247-CC46-CC0	2	SCREW, MACH, SST, 6-32 X 1-3/4 (V77250)		4
			347-0046-CC0 (AP)		
	NT352R0832AC4	2	SCREW, MACH, SST, 8-32 X 1/4 (V02310)		1
			33C-4042-C60 (AP)		
16	4E3	2	TERMINAL, LUG (V79963) 304-1089-CC0		2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
8-34	17	777-C614-CC1	2 KACB, CONTRCL		1
		MS51963-9	2 SETSCREW, CD PL STL, 4-4C X 1/8 (V96906)		2
		N5C4C 1-8	328-5C2C-CCC (AP)		
			2 NUT,HEX,SHAFT, CRES, 1/4-32 (V97539)		1
			334-1266-CCO (AP)		
	18	CM412C8-C1C	2 RESISTOR,VAR, 1000 OHMS, 20%, 1W (V12967)		1
			378-C268-C1C A2R1		
	19	3558F125C	2 TERMINAL,LUG (V79963) 304-0040-070		1
	20	3558F125C	2 TERMINAL,LUG (V79963) 304-0040-070		1
	21	N5C4S	2 BCCT,MINTR PB (V97539) 266-0081-010		1
	22	35-1	2 SWITCH,PUSH (V81073) 266-6034-CCO A2S7		1
	23	N1C3CB25DURC	2 BCCT,DUMP SEAL (V97539) 266-0123-020		1
	24	MS35058-23	2 SWITCH,TGL (V96906) 266-3067-000 A2S8		1
	25	N1C3CB25DURC	2 BCCT,DUMP SEAL (V97539) 266-0123-020		1
	26	MS35058-23	2 SWITCH,TGL (V96906) 266-3067-000 A2S9		1
	27	U183U	2 CCNNECTOR,RCPT, ELEC (V80058) 372-2180-000 A2J1		1
	28	164-895PCD	2 COVER,CONN,ELEC (VC266C) 372-1820-C30 (EFF TO REV LTR R)		1
	28	63C-150C-CC1	2 COVER,CONN,ELEC (EFF REV LTR R)		1
	29	U183U	2 CCNNECTOR,RCPT, ELEC (V80058) 372-2180-000 A1J2		1
	30	164-895PCD	2 COVER,CONN,ELEC (VC266C) 372-1820-C30 (EFF TO REV LTR R)		1
	30	63C-150C-CC1	2 COVER,CONN,ELEC (EFF REV LTR R)		1
	31	2943-4	2 SWITCH,RTRY (V91812) 259-9646-040 A2S6		1
	32	2943-4	2 SWITCH,RTRY (V91812) 259-9646-040 A2S5		1
	33	2943-4	2 SWITCH,RTRY (V91812) 259-9646-040 A2S4		1
	34	2943-4	2 SWITCH,RTRY (V91812) 259-9646-040 A2S3		1
	35	2943-4	2 SWITCH,RTRY (V91812) 259-9646-040 A2S2		1
	36	2943-3	2 SWITCH,RTRY (V91812) 259-9646-030 A2S1		1
		MS51959-3B	2 SCREW,MACH, SST, 2-56 X 1/4 (V96906)		12
			342-0001-CCO (AP) (EFF TO REV LTR N)		
		P33C-3595-CCO	2 SCREW,MACH, SST, 2-56 X 3/8 (V77250)		12
			33C-3595-CCO (EFF REV LTR N)		
	37	MCN896555-17	2 CCNNECTOR,CABLE (V71468) 426-0075-010 A2P1		1
		68-1660-26	2 NUT,SLFLKG,HEX, AL, 2-56 (V72962) 333-0604-000 (AP)		2
		MS51959-7	2 SCREW,MACH, SST, 2-56 X 1/2 (V96906)		2
			342-0137-CCO (AP)		
		MS28775-C24	2 PACKING,PREFORM (V96906) 200-2338-450 (AP)		1
	38	MS3367-4-9	2 TIE,CABLE (V96906) 435-1169-100		28
	39	6C1-3666-CC1	2 FILTER A2A1		1
		MS51957-3	2 SCREW,MACH, CD PL STL, 2-56 X 1/4 (V96906)		3
			343-0124-CCO (AP)		
		31C-632C-CCO	2 WASHER,FLAT, SST, C.092 ID X 0.218 OD (V798C7)		3
			31C-632C-CCO (AP)		
		MS35338-134	2 WASHER,LCK, SST, C.088 ID X 0.172 OD (V96906)		3
			31C-0275-CCO (AP)		
	40	193-C2C	3 CAPACITOR,FXD, CER DIEL, 10,000PF, 200V (V16546)		1
			913-3288-020 A2A1C1		
	41	MS75C84-17	3 CCIL,RF, 27UH (V96906) 240-204C-CCO A2A1L1		1
	42	MS75C84-17	3 CCIL,RF, 27UH (V96906) 240-204C-CCO A2A1L2		1
	43	MS75C84-17	3 CCIL,RF, 27UH (V96906) 240-204C-CCO A2A1L3		1
	44	193-C2C	3 CAPACITOR,FXD, CER DIEL, 10,000PF, 200V (V16546)		1
			913-3288-020 A2A1C4		
	45	193-C2C	3 CAPACITOR,FXD, CER DIEL, 10,000PF, 200V (V16546)		1
			913-3288-020 A2A1C3		
	46	MS75C84-17	3 CCIL,RF, 27UH (V96906) 240-204C-CCO A2A1L4		1
	47	193-C2C	3 CAPACITOR,FXD, CER DIEL, 10,000PF, 200V (V16546)		1
			913-3288-020 A2A1C2		
		635-5391-CC1	3 SPACER (AP FOR 45 AND 47)		2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-34	48 635-8254-C1C	2	COVER CR		1
	48 629-3441-CC1	2	COVER (EFF TC REV LTR N)		1
	MS51655-25	2	SCREW, MACH, SST, 6-32 X 7/16 (V96906)		6
			342-0063-CCO (AP) (EFF TC REV LTR N)		
			CR		
	33C-1716-81C	2	SCREW, SLFLKG, STL, 6-32 X 5-16 (V56878)		6
			33C-1716-81C (AP)		
	MS28775-C24	2	PACKING, PREFORM (V96906) 200-2338-450 (AP)		1



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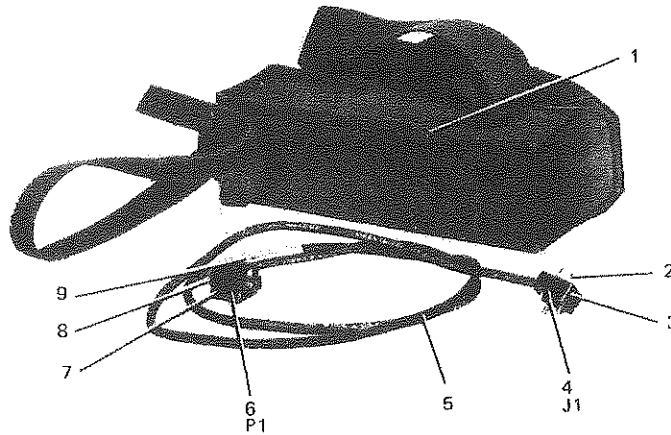
Figure 3-35. Radio Set Harness MT-5167/PRC-515

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-35 -	629-3425-CC2	1	RADIO SET HARNESS MT-5167/PRC-515 (SEE FIG 3-1-5 FCR NFA)		REF
1	635-1514-CCC MS51957-2	2	PLATE, IDENT		1
		2	SCREW, MACH, SST, 2-56 X 3/16 (V96906)		2
	31C-CC7C-CCC	2	343-0123-CCC (AP)		
		2	WASHER, LCCK, SST, C.C97 ID X C.165 OD (V79807)		2
			31C-C07C-CCO (AP) (EFF REV LTR F)		
	31C-632C-CCC	2	WASHER, FLAT, SST, C.C92 ID X 0.218 OD (V798C7)		2
			31C-632C-CCC (AP) (EFF REV LTR F)		
2	C21-C549-C1C	2	BAG, CARRYING (VA1608) C21-C549-010		1
3	C21-C549-C9C	2	BACKREST (VA1608) C21-C549-090		1
4	635-5104-CC1	2	KACB, SHOULDERED		1
5	635-4955-CC1	2	PCST, SHOULDERED		1
6	635-4956-CC1 MS51959-3C	2	BRACKET, ANGLE		1
		2	SCREW, MACH, SST, 6-32 X 1/2 (V96906)		2
	ARPE68-C16	2	342-CC64-CCO (AP FCR 4-6)		
7	635-464C-CC1 MS51959-15	2	GASKET (V83259) 2CC-2380-C90 (AP FCR 4-6)		1
		2	GLIDE, LCNG		2
		2	SCREW, MACH, SST, 4-40 X 3/8 (V96906)		6
			342-CC46-CCC (AP)		
8	C21-C549-C4C	2	STRAP, SHLD, LH (VA1608) C21-0549-040		1
9	C21-C549-C5C	2	STRAP, SHLD, LH (VA1608) C21-0549-050		1
10	635-4645-CC1	2	PLATE, NLT		2
	635-5125-CC1 MS51959-17	2	SCREW, RETAINER (AP) (AP FCR 10)		2
		2	SCREW, MACH, SST, 4-40 X 1/2 (V96906)		4
			342-0048-CCO (AP) (AP FCR 10)		
11	MS124696	2	INSERT, SCR THD, CRES, 1/4-28 X 0.375 (V96906)		1
			C12-1591-CCC		
12	635-4645-CC2	3	PLATE		1
13	635-4623-CC2	2	SCREW, SPECIAL		2
14	635-4623-CC1	3	SCREW		1
15	775-4188-CC1	3	RCC		1
16	635-4641-CC1 MS51959-15	2	GLIDE, SHORT		2
		2	SCREW, MACH, SST, 4-40 X 3/8 (V96906)		4
			342-CC46-CCC (AP)		
17	C21-C549-C8C	2	STRAP (VA1608) C21-0549-C8C		1
18	C21-C549-C6C	2	STRAP, SHLD, LWR (VA1608) C21-0549-060		2
19	C21-0549-C2C	2	STRAP, BACKREST (VA1608) C21-0549-C20		1
20	C21-C549-C7C	2	STRAP (VA1608) C21-0549-C7C		1
21	C21-C549-C3C	2	STRAP, SHLD, RH (VA1608) C21-0549-030		1
22	C21-C549-1CC	2	RETAINER, STRAP (VA1608) C21-0549-100		2
23	C21-0549-11C	2	STRAP, WEB (VA1608) C21-0549-110		2
24	637-1952-CC1	2	PACK FRAME		1
25	637-1953-CC2	3	GLSSET-NC1		1
26	635-1953-C12	3	LCCP (EFF TC REV LTR B)		2
26	637-1953-C12	3	LCCP (EFF REV LTR B)		2
27	635-1953-C13	3	BRACKET (EFF TC REV LTR B)		2
27	637-1953-C13	3	BRACKET (EFF REV LTR B)		2
	MS2C426AD3-5	3	RIVET, SOLID, AL, 3/32 DIA X 5/16 (V96906)		4
			3C5-1363-CCO (AP) (EFF TC REV LTR A)		
	MS2C47CAD3-5	3	RIVET, SOLID, AL, 0.094 DIA X 5/16 (V96906)		4
			3C5-1156-CCC (AP) (EFF REV LTR A)		
28	SL3 AQ43+	3	CATCH, LUGGAGE (V82240) 015-1859-CCO		4
		3	RIVET, BLIND, AL, 0.125 DIA X 0.357 (V07707)		4
			3C5-2C6C-C3C (AP)		
	MS2C426AD4-5	3	RIVET, SOLID, AL, 1/8 DIA X 5/16 (V96906)		4
			3C5-1374-CCO (AP)		
29	635-4639-CC1 AQ43+	3	RETAINER, STRAP		4
		3	RIVET, BLIND, AL, 0.125 DIA X 0.357 (V07707)		8
			3C5-2060-030 (AP)		
30	637-1953-CC5	3	TUBE, FORMED		1
31	637-1953-C1C	3	LCCP		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-35	32	637-1953-C11	3 BRACKET		2
		MS2C426AD3-5	3 RIVET, SOLID, AL, 3/32 DIA X 5/16 (V96906)		4
			3C5-1363-CCO (AP)		
	33	637-1953-004	3 TLBE NC3		2
	34	637-1953-003	3 GLSSET NC2		1
	35	637-1953-006	3 TLBE NC2		1
	36	637-1953-009	3 CAP, END		2
	37	637-1953-007	3 TLBE NC1		1
	38	637-1953-008	3 FRAME		1

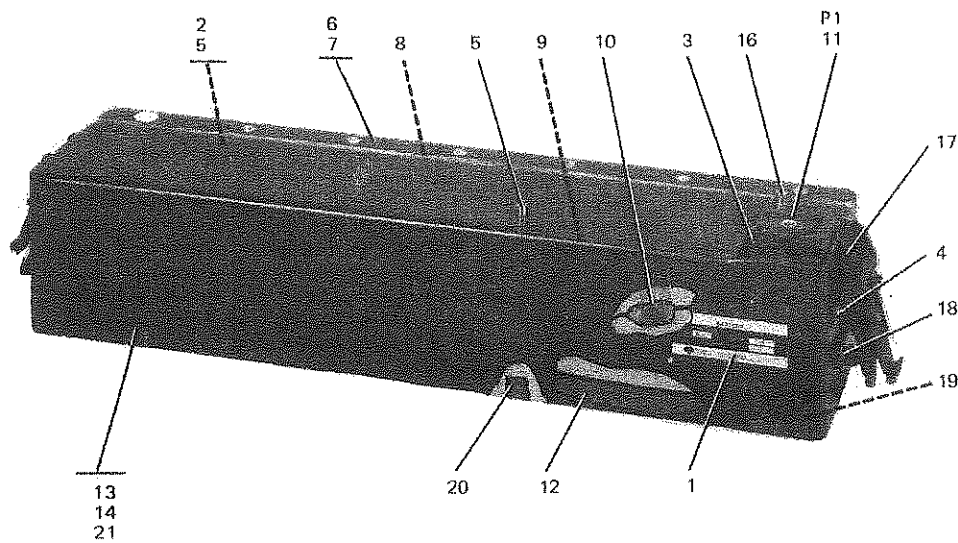


TP4-9696-017

Figure 3-36. Electrical Power Cable CX-5229/PRC-515

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-36 -	620-2428-CC1	1	ELECTRICAL POWER CABLE, CX-5229/PRC-515 (SBE FIG 3-1-6 FOR NHA)		REF
1	635-4922-CC1	2	BAG, BATTERY		1
2	CE941C-1CC4	2	JACKSCREW (V35C03) 370-0037-040		1
3	635-4722-CC1	2	CAP, PLUG		1
	637-4184-CC1	2	SCREW, RETAINER (AP)		1
4	CE941C-1CC2	2	RCPT CONNECTOR (V35C03) 370-0037-020 J1		1
	P313-C132-CC0	2	NUT, PLAIN, HEX, SST, 4-40 (V77250) 313-0132-CC0 (AP)		2
	635-5344-CC1	2	SPACER, CONNECTOR (AP) (EFF TC REV LTR J)		1
	637-1258-CC1	2	SPACER, CONNECTOR (AP) (EFF REV LTR J)		2
	MS51959-19	2	SCREW, MACH, SST, 4-40 X 3/4 (V96906) 342-0050-CC0 (AP)		1
	635-4767-CC3	2	SCREW, SPECIAL (AP)		1
5	CC-C2LCP2-18-C25	2	CABLE, PWR, ELEC (V81349) 424-0398-020		AR
6	CE941C-1CC1	2	PLUG CONNECTOR (V35C03) 370-0037-010 P1		1
	P313-C132-CC0	2	NUT, PLAIN, HEX, SST, 4-40 (V77250) 313-0132-CC0 (AP)		2
	MS51959-19	2	SCREW, MACH, SST, 4-40 X 3/4 (V96906) 342-CC50-CC0 (AP)		1
	635-4767-CC1	2	SCREW, SPECIAL (AP) (EFF REV LTR H)		1
7	635-4723-CC1	2	CAP, RCPT		1
	637-4184-CC1	2	SCREW, RETAINER (AP)		1
8	CE941C-1CC4	2	JACKSCREW (V35C03) 370-0037-040		1
9	152-5156-87C	2	BAND, MKR, CABLE (VC4740) 152-5156-870		1

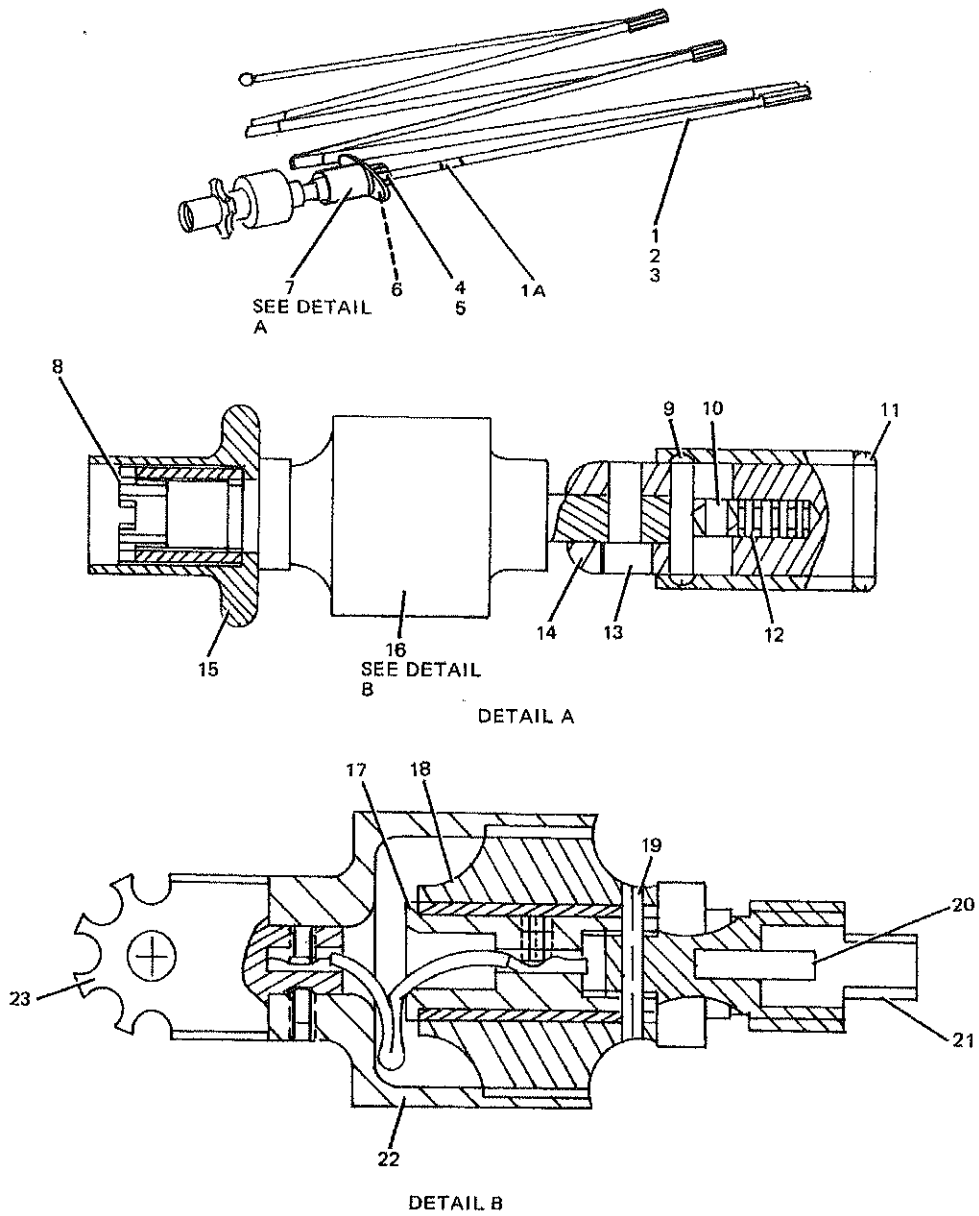


TP4-7807-017

Figure 3-37. Storage Battery BB-706/U

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-37 -	629-5703-CC1	1	STORAGE BATTERY BB-706/U (SEE FIG 3-1-7 FOR NHA)		REF
1	635-1513-CCC	2	PLATE, IDENT (EFF TO REV LTR K)		1
1	635-1746-CCC	2	PLATE, IDENT (EFF REV LTR K)		1
2	629-5773-CC1	2	COVER, ASSY		1
	M951959-13	2	SCREW, WASH, SST, 4-40 X 1/4 (V96906)		18
			342-0044-000 (AP)		
3	629-5773-CC3	3	SOCKET		1
4	635-4643-C01	3	PLATE, SUPPORT		2
	M920426AD3-4	3	RIVET, SOLID, AL, 3/32 DIA X 1/4 (V96906)		4
			305-1362-000 (AP)		
5	629-5773-CC2	3	COVER		1
6	5-193N364-7	2	GASKET (V893259) 200-2380-150		1
7	629-5900-CC1	2	SLEEVE, RUBBER		1
8	P502	2	LCKFOAM (V88252) 821-C196-000		AR
9	629-5901-CC1	2	VALVE, RELIEF		1
10	418CC2SCC1G1	2	BATTERY STORAGE (V19209) 221-0087-010		1
11	CR9410-1CC2	2	RCPT CONNECTOR (V35003) 370-C037-C20 P1		1
	637-1358-CC1	2	SPACER, CONNECTOR (AP)		2
	M951959-16	2	SCREW, WASH, SST, 4-40 X 7/16 (V96906)		2
			342-0047-000 (AP) (EFF TO REV LTR K)		
	M951959-17	2	SCREW, WASH, SST, 4-40 X 1/2 (V96906)		1
			342-0048-000 (AP) (EFF REV LTR K)		
	635-4767-CC2	2	SCREW, SPECIAL (AP) (EFF REV LTR K)		1
12	820-1605-C20	2	PLASTIC, MATL (V78112) 820-1605-020 (EFF TO REV LTR G)		AR
12	635-5452-CC1	2	FILTER, FOAM (EFF REV LTR G)		AR
13	629-5771-CC6	2	CASE ASSY		1
14	629-5771-C01	3	CASE		1
	333-1455-050	3	NUT, SLFLKG, CD PL STL, 10-32 (V27687)		2
			333-1455-050 (AP) (EFF TO REV LTR H)		
	R22NCFMA2-40	3	NUT, SLFLKG, CD PL STL, 4-40 (V72962)		20
			333-0840-000 (AP) (EFF REV LTR H)		
	310-0045-000	3	WASHER, FLAT, SST, 0.125 ID X 0.312 OD (V79807)		2
			310-0045-000 (AP) (EFF TO REV LTR K)		
15	629-5775-CC2	4	PIN, GUIDE		1
16	629-5775-CC1	4	PIN, GUIDE		1
	548-5574-CC3	4	WASHER, FLAT (AP FCR 15-16) (EFF REV LTR K)		2
17	015-1912-CCC	4	LATCH (V82240) 015-1912-CC0		2
	M92047CAD4-5	4	RIVET, SOLID, AL, 0.125 DIA X 5/16 (V96906)		5
			305-1170-000 (AP)		
18	M988360-128CE	4	CATCH, LUGGAGE (V98003) 015-2453-070		2
	M92047CAD4-6	4	RIVET, SOLID, AL, 1/8 DIA X 3/8 (V96906)		4
			305-1171-000 (AP)		
19	629-5774-C01	4	SOCKET, GUIDE PIN		1
20	629-5774-CC2	4	SOCKET, GUIDE PIN		1
21	629-5771-CC2	4	CASE, WELDED		1

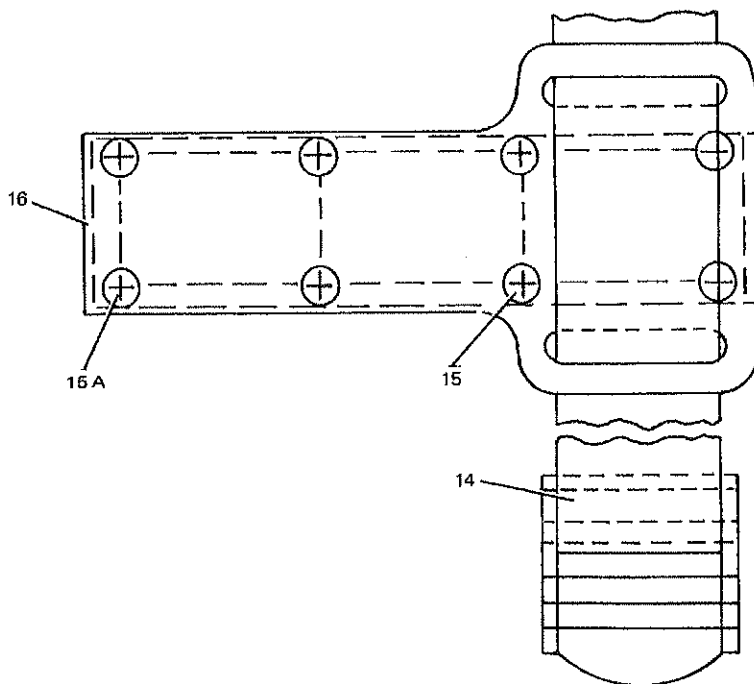
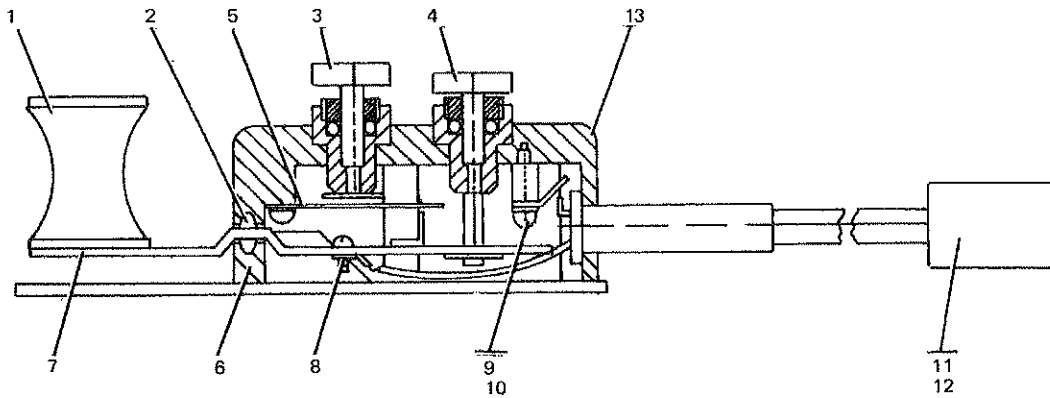


TP4-9674-019

Figure 3-38. Antenna AS-5093/PRC-515

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-38 -	629-5702-CC1	1	ANTENNA AS-5093/PRC-515 (SEE FIG 3-1-8 FOR NFA)		REF
1	627-4163-CC1	2	ANTENNA WHIP (EFF TC REV LTR E)		1
1A	625-1745-CC1	2	PLATE, IDENT (EFF REV LTR F)		1
2	627-4121-CC1	2	PLATE, INSTR (EFF REV LTR E)		1
3	C13-1577-C2C	2	ANTENNA (V26419) C13-1577-C2C (EFF REV LTR E)		1
4	625-494C-CC1	2	STRAP, ANTENNA		1
5	625-494C-CC2	3	WEB		1
6	MS25338-139	2	WASHER, LOCK, SST, C.255 ID X 0.489 OD (V96906)		1
			31C-0288-CCO		
7	635-5246-CC1	2	MCLNT, ANTENNA		1
8	635-475E-CC1	3	RETAINER, ANT KNOB		1
9	635-4756-CC1	3	SHAFT, PULL		1
	MS51957-3B	3	SCREW, MACH, SST, 2-56 X 1/4 (V96906)		2
			343-0072-CCO (AP)		
10	635-4757-CC1	3	GLIDE, SPRING		1
11	635-476C-CC1	3	PULL, ANT		1
12	MS24585-11C5	3	SPRING, HELICAL (V96906) 34C-1047-160		1
13	635-4755-CC1	3	PIN, TOP		1
14	635-4761-CC1	3	CLEVIS, ANT-TOP		1
15	637-1681-CC1	3	KACB, ANT		1
16	635-5241-CC1	3	BASE, ANTENNA ISOLATOR		1
17	635-5237-CC1	4	SHAFT, ISOLATOR		1
	AN565F6+3	4	SETSCREW, CD PL STL, 6-32 X 3/16 (V88044)		1
			335-0243-CCO (AP)		
18	H3CC2-36	4	ISOLATOR, TUBE (V76005) 200-1103-010		1
19	95-C22-C94-C750	4	PIN, SPR, CCP, C.094 CIA X 0.750 (V72962)		1
			311-0626-CCO		
20	95-C28-125-C625	4	PIN, SPR, CCP, C.125 DIA X 0.625 (V72962)		1
			311-0635-CCO		
21	635-5242-CC1	4	BASE, ANTENNA INDEXING		1
22	635-5238-CC1	4	SHAFT, CUPPED		1
	AN565F2+3	4	SETSCREW, CD PL STL, 2-56 X 3/16 (V88044)		2
			335-0233-CCO (AP) (EFF TC REV LTR C)		
	AN565F4+3	4	SETSCREW, CD PL STL, 4-40 X 3/16 (V88044)		2
			335-0236-CCO (AP) (EFF REV LTR C)		
23	635-4762-CC1	4	BASE, ANTENNA NOTCHED		1
	AN565F4+2	4	SETSCREW, CD PL STL, 4-40 X 1/8 (V88044)		1
			335-0235-CCO (AP)		

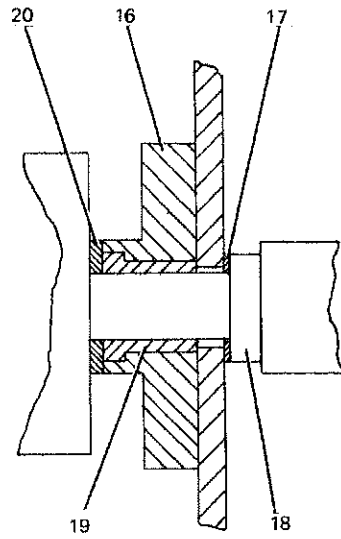
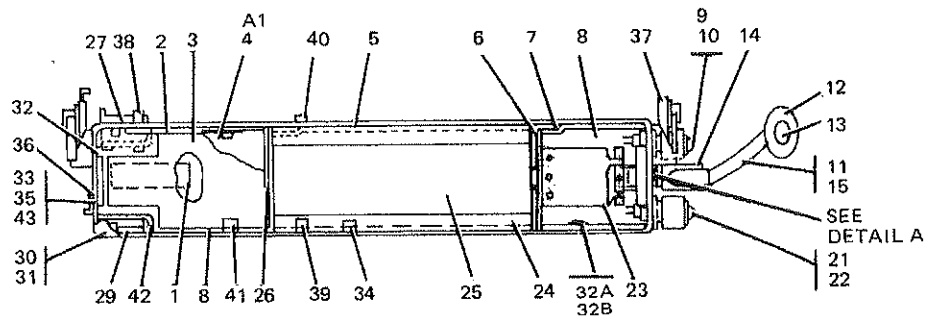


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Figure 3-39. Telegraph Key KY-5033/PRC-515

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-39 -	637-1949-CC1	1	TELEGRAPH KEY KY-5033/PRC-515 (ANCILLIARY EQUIPMENT) (SEE FIG 3-1-14 FOR NHA)		REF
1	637-1876-CC1 MS51959-28	2	KNCB, KEY		1
		2	SCREW, MACH, SST, 6-32 X 3/8 (V96906) 342-0062-CCO (AP)		1
2	MS9068-C1C	2	PACKING, PREFORM (V96906) 200-2334-320		1
3	637-1889-CC1 MS9021-CC7 X5133-11C	2	CAP, SLOTTED		1
		2	GASKET (V96906) 2CC-2363-040 (AP)		1
		2	RING, RTNG (V79136) 340-0258-CCO (AP)		1
	637-1882-CC2	2	SCREW, ADJUSTMENT (AP)		1
4	637-1889-CC1 MS9021-CC7 X5133-11C	2	CAP, SLOTTED		1
		2	GASKET (V96906) 2CC-2363-040 (AP)		1
		2	RING, RTNG (V79136) 340-0258-CCO (AP)		1
	637-1882-CC1	2	SCREW, ADJUSTMENT (AP)		1
5	637-1890-CC1 MS35338-134	2	SPRING, FLAT		1
		2	WASHER, LOCK, SST, C.088 ID X C.172 OD (V96906) 31C-0275-CCO (AP)		2
	MS51957-2	2	SCREW, MACH, SST, 2-56 X 3/16 (V96906) 343-0123-CCO (AP)		2
6	637-1876-CC1	2	HCLSLING, BASE KEY		1
7	637-1879-CC1	2	ARM, ACTUATOR-KEY		1
8	4040-2HT MS35649-224	2	TERMINAL, LUG (V77147) 304-0014-CCO		1
		2	NUT, PLAIN, HEX, SST, 2-56 (V96906) 313-0037-CCO (AP)		1
	MS35338-134	2	WASHER, LOCK, SST, C.088 ID X 0.172 OD (V96906) 31C-0275-CCO (AP)		1
	MS51957-2	2	SCREW, MACH, SST, 2-56 X 3/16 (V96906) 343-0123-CCO (AP)		1
9	4007-4HT	2	TERMINAL, LUG (V77147) 304-0015-CCO		1
10	541-5966-CC2 MS35338-135	2	SPACER		1
		2	WASHER, LOCK, SST, C.115 ID X C.209 OD (V96906) 31C-0275-CCO (AP FOR 9-10)		1
	P343-C287-CCO	2	SCREW, MACH, NP BRS, 4-40 X 3/8 (V77250) 343-0287-CCO (AP FOR 9-10)		1
11	637-1893-CC1	2	CABLE ASSY		1
12	AP1C5A	3	CONNECTOR PLUG, ELEC (V28986) 369-0109-01C P1		1
13	637-1891-CC1	2	HCLSLING, KEY		1
14	C11-C157-C1C	2	STRAP, WEBBING (V24036) C11-0157-C1C		1
15	MS51959-18	2	SCREW, MACH, SST, 4-40 X 5/8 (V96906) 342-0049-CCO (EFF REV LTR A)		2
15A	MS51959-13	2	SCREW, MACH, SST, 4-40 X 1/4 (V96906) 342-0044-CCO (EFF REV LTR A)		4
16	629-6152-CC2	2	BASE, KEY		1



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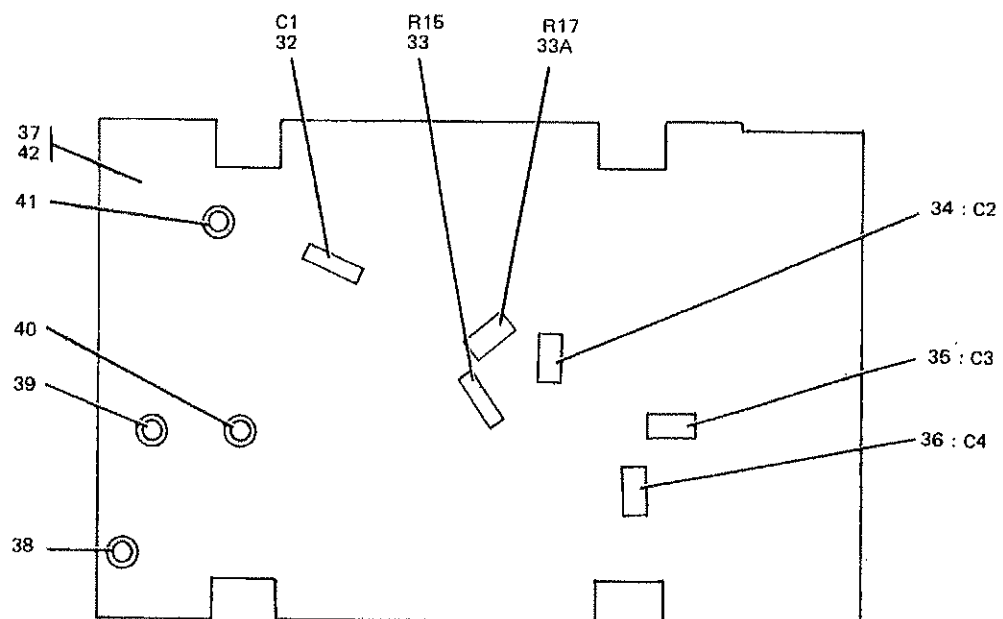
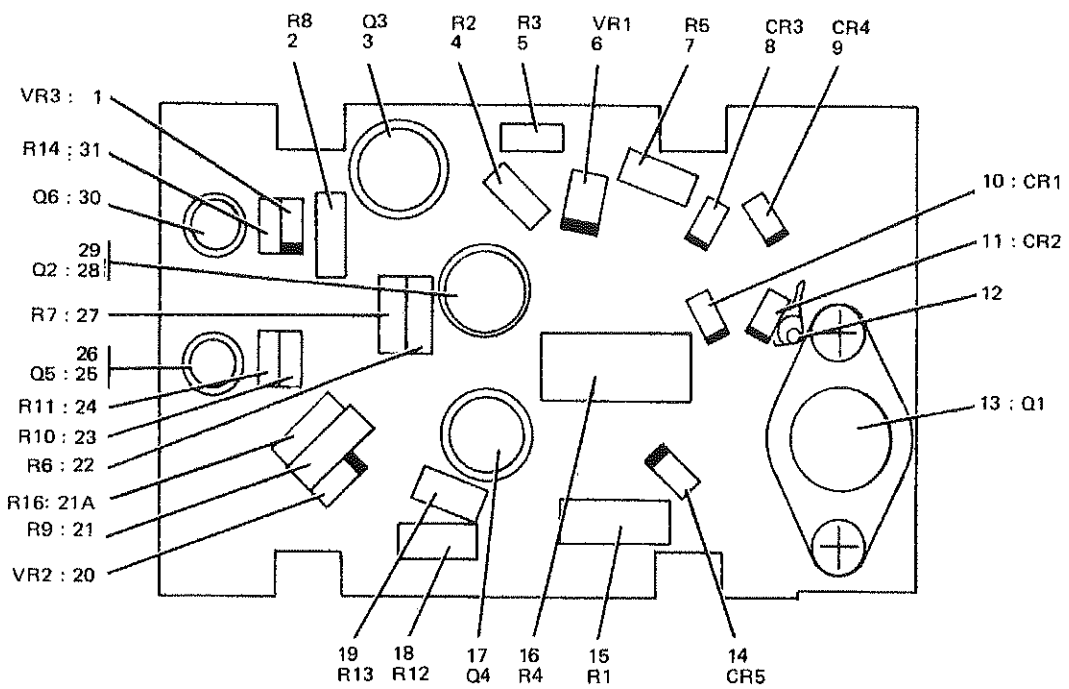
Figure 3-40. Direct Current Generator G-5002/PRC-515

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-40-	629-3415-CC1	1	DIRECT CURRENT GENERATOR G-5002/PRC-515 (ANCILLIARY EQUIPMENT) (SEE FIG 3-1-22 FOR MFA)		REF
1	635-1510-CCC	2	PLATE, IDENT		1
2	635-4883-CC1	2	INSUL, SCUND-NC.3		1
3	635-4884-CC1	2	INSUL, SCUND-NC.4		1
4	629-5777-CC1	2	COMPONENT ASSEMBLY A1 (SEE FIG 3-41)		1
	MS51957-14	2	SCREW, MACH, SST, 4-40 X 5/16 (V96906)		4
			343-0134-CC0 (AP)		
	310-6340-CCC	2	WASHER, FLAT, SST, 0.125 ID X 0.281 OD (V79807)		4
			310-6340-CC0 (AP)		
5	629-6180-CC6	2	INSUL, SMD-1		1
6	635-4882-CC1	2	INSUL, SCUND-NC.2		1
7	629-6180-CC2	2	INSUL, SMD-1		3
8	629-6180-CC3	2	INSUL, SMD-1		1
9	174-8430-C112-20	2	LIGHT, INC (V72619) 262-1385-030 XCS1		1
		3			
10	382	2	LAMP, INCAND (V08806) 262-2171-040 ES1		1
11	635-4888-CC1	2	CRANK, HAND		1
12	629-5782-CC1	3	HANDLE		1
13	541-6133-CC2	3	SPACER		1
	310-0049-CCC	3	WASHER, FLAT, SST, 0.203 ID X 0.500 OD (V79807)		2
			310-0049-CC0 (AP)		
	MS51958-66B	3	SCREW, MACH, SST, 10-32 X 7/8 (V96906)		1
			343-0804-CCC (AP)		
14	629-5783-CC1	3	SHIVEL		1
	MS16562-22C	3	PIN, SPR, SST, 0.125 DIA X 7/16 (V96906)		1
			311-0382-CC0 (AP)		
15	635-4854-CC1	3	LEVER, CRANK		1
16	635-4855-CC1	2	BEARING, SHAFT -PRSD		1
	NT352RC832VC3L	2	SCREW, MACH, CRES, 8-32 X 3/16 (V02310)		2
			230-4042-130 (AP)		
17	629-5905-CC1	2	BEARING, THRUST EXT		1
18	629-5904-CC1	2	SHAFT, GEN		1
19	MS28775-C12	2	PACKING, PREFORM (V96906) 200-2338-170		1
20	629-5906-CC1	2	BEARING, THRUST INT		1
21	174-8430-C111-20	2	LIGHT, INC (V72619) 262-1385-010 XCS2		1
		3			
22	382	2	LAMP, INCAND (V08806) 262-2171-040 CS2		1
23	635-5119-CC1	2	COUPLER		1
24	629-6180-CC5	2	INSUL, SMD-1		1
25	635-4868-CC1	2	GENERATOR, POWER SUPPLY B1		1
26	629-6180-CC7	2	INSUL, SMD-1		1
27	CE9410-1002	2	RCPT CONNECTOR (V35003) 370-0037-C20 P1		1
	MS51959-16	2	SCREW, MACH, SST, 4-40 X 7/16 (V96906)		2
			342-0047-CC0 (AP) (EFF TO REV LTR H)		
	MS51959-17	2	SCREW, MACH, SST, 4-40 X 1/2 (V96906)		1
			342-0048-CC0 (AP) (EFF REV LTR F)		
	635-4767-CC2	2	SCREW, SPECIAL (AP) (EFF REV LTR F)		1
	637-1358-CC1	2	SPACER, CONNECTOR (AP) (EFF REV LTR H)		2
28	635-4885-CC1	2	INSUL, SCUND-NC.5		1
29	CE9410-1001	2	PLUG CONNECTOR (V35003) 370-0037-010 J1		1
	MS51959-16	2	SCREW, MACH, SST, 4-40 X 7/16 (V96906)		2
			342-0047-CC0 (AP) (EFF TO REV LTR H)		
	MS51959-17	2	SCREW, MACH, SST, 4-40 X 1/2 (V96906)		1
			342-0048-CC0 (AP) (EFF REV LTR F)		
	635-4767-CC2	2	SCREW, SPECIAL (AP) (EFF REV LTR F)		1
30	629-5784-CC1	2	COVER		1
	MS51959-13	2	SCREW, MACH, SST, 4-40 X 1/4 (V96906)		10
			342-0044-CC0 (AP)		
31	629-6180-CC1	2	INSUL, SMD-1		1
32	629-6180-CC4	2	INSUL, SMD-1		1
32A	629-5901-CC1	2	VALVE, RELIEF (EFF REV LTR M)		1
	629-5900-CC1	2	SLEEVE, RUBBER (AP) (EFF REV LTR M)		1
32B	5-193N304-7	2	GASKET (V83259) 200-2380-150 (EFF REV LTR M)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-40	33 629-5772-CC8	2	CASE ASSEMBLY		1
	34 333-1455-C20	3	NLT, SLFLKG, CD PL STL, 4-40 (V27687) 333-1455-C20 (EFF TC REV LTR H)		22
	34 F22NCFMA2-40	3	NLT, SLFLKG, CD PL STL, 4-40 (V72962) 333-0840-C00 (EFF REV LTR H)		22
	35 629-5772-CC1	3	CASE ASSEMBLY, PRSD		1
	36 MS833CC-128CE	4	CATCH, LUGGAGE (V98003) 015-2453-070		2
	MS2C47CAD4-6	4	RIVET, SOLID, AL, 1/8 DIA X 3/8 (V96906) 3C5-1171-CC0 (AP)		2
	MS2C426AD4-6	4	RIVET, SOLID, AL, 1/8 DIA X 3/8 (V96906) 3C5-1375-CC0 (AP)		2
	37 C15-1512-CCC	4	LATCH (V82240) 015-1512-000		2
	MS2C47CAD4-5	4	RIVET, SOLID, AL, 0.125 DIA X 5/16 (V96906) 3C5-1170-CC0 (AP)		3
	MS2C426AD4-5	4	RIVET, SOLID, AL, 1/8 DIA X 5/16 (V96906) 3C5-1374-CC0 (AP)		2
	38 629-5775-CC1	4	PIN GUIDE		1
	548-9574-CC3	4	WASHER (AP) (EFF REV LTR K)		1
	39 629-5774-CC2	4	SCCKET, GUIDE PIN		1
	40 629-5775-CC2	4	PIN GUIDE		1
	548-9574-CC3	4	WASHER (AP) (EFF REV LTR K)		1
	41 F22L+A27M22-4C	4	NLT, SLFLKG, PL, CD PL STL, 4-40 (V72962) 333-1246-CC0		4
	MS2C426AD2-3	4	RIVET, SOLID, AL, 1/16 DIA X 3/16 (V96906) 3C5-1352-CC0 (AP)		8
	42 629-5774-CC1	4	SCCKET, GUIDE PIN		1
	43 629-5772-CC2	4	CASE, WELDED		1



TP4-9671-019

Figure 3-41. Component Assembly A1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-41-	629-5777-C01	1	COMPONENT ASSEMBLY A1 (SEE FIG 3-40-4 FOR NHA)		REF
1	1N751A	2	SEMICOND DEVICE (V12954) 353-2710-000 A1VR3		1
2	RCR20G1E2KS	2	RESISTOR,FXD, CMPSN, 1.8K, 10%, 1/2W (V81349) 745-1363-CCC AIR8		1
3	2N2505A	2	TRANSISTCR (VC7933) 352-0550-000 A1Q3		1
4	RCRC7G221KS	2	RESISTCR,FXD, CMPSN, 220 OHMS, 10%, 1/4W (V81349) 745-0725-000 AIR2		1
5	RCRC7G1C2KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0745-CCC AIR3		1
6	1N751A	2	SEMICOND DEVICE (V12954) 353-2710-000 A1VR1		1
7	RCR20G272KS	2	RESISTCR,FXD, CMPSN, 2.7K, 10%, 1/2W (V81349) 745-137C-CCC AIR5		1
8	1N4CC2	2	SEMICOND DEVICE (VC4713) 353-6442-020 A1CR3		1
9	1N4CC2	2	SEMICOND DEVICE (VC4713) 353-6442-020 A1CR4		1
10	1N4CC2	2	SEMICOND DEVICE (VC4713) 353-6442-020 A1CR1		1
11	1N4CC2	2	SEMICOND DEVICE (VC4713) 353-6442-020 A1CR2		1
12	4CC7-6FT	2	TERMINAL,LUG (V77147) 3C4-CC16-000		1
13	2N3767	2	TRANSISTCR (V07263) 352-0689-020 A1Q1 (EFF TO REV LTR C)		1
13	2N373E	2	TRANSISTCR (V04713) 352-C932-010 A1Q1 (EFF REV LTR C)		1
	P313-C14C-CCC	2	NUT,PLAIN,HEX, NP BRS, 6-32 (V7725C) 313-014C-CCC (AP FCR 12,13)		2
	31C-CG78-CCC	2	WASHER,LOCK, BRZ, C.141 ID X C.239 OD (V798C7) 31C-0078-CCC (AP FCR 12,13)		2
	31C-CC55-CCC	2	WASHER,FLAT, BRS, C.147 ID X 0.312 OD (V798C7) 31C-0055-CCC (AP FCR 12,13)		2
	547-E177-C14	2	FLUSHING, INSULATOR (AP FCR 12,13)		2
	1A24C2A	2	WASHER,NICA (V08289) 352-9570-020 (AP FOR 12,13)		1
	P343-C33C-CCC	2	SCREW,WACH, NP BRS, 6-32 X 3/8 (V7725C) 343-033C-CCC (AP FCR 12,13)		2
14	1N4CC2	2	SEMICOND DEVICE (VC4713) 353-6442-020 A1CR5		1
15	RW69V12C	2	RESISTCR,FXD,WW 12 OHMS, 5%, 3W (V81349) 747-5322-CCC AIR1		1
16	RCR42G182KS	2	RESISTCR,FXD, CMPSN, 1.8K, 10%, 2W (V81349) 745-5663-CCC AIR4 (EFF TO REV LTR C)		1
16	RCR42G332KS	2	RESISTCR,FXD, CMPSN, 3.3K, 10%, 2W (V81349) 745-5673-CCC AIR4 (EFF REV LTR C)		1
17	JAN2A2219A	2	TRANSISTCR (V8135C) 352-7500-29C A1Q4		1
18	RCR20C271KS	2	RESISTCR,FXD, CMPSN, 270 OHMS, 10%, 1/2W (V81349) 745-1328-000 AIR12		1
19	RCR20G271KS	2	RESISTOR,FXD, CMPSN, 270 OHMS, 10%, 1/2W (V81349) 745-1328-000 AIR13		1
20	1N751A	2	SEMICOND DEVICE (V12954) 353-2710-000 A1VR2		1
21	RN60C1331F	2	RESISTOR,FXD, FILM, 1.33K, 1%, 1/4W (V81349) 7C5-6602-CCC AIR9		1
	63C-1462-CC1	2	RESISTOR, TEST SELECT (NCA PRCCURABLE ITEM) (EFF REV LTR J)		1
21A	RCR07G822JS	3	RESISTCR,FXD, CMPSN, 8.2K, 5%, 1/4W (V81349) 745-0781-CCC AIR16		AR
21A	RCRC7G912JS	3	RESISTCR,FXD, CMPSN, 9.1K, 5%, 1/4W (V81349) 745-0783-CCC AIR16		AR
21A	RCRC7G1C3JS	3	RESISTCR,FXD, CMPSN, 10K, 5%, 1/4W (V81349) 745-0784-CCC AIR16		AR
21A	RCRC7G113JS	3	RESISTOR,FXD, CMPSN, 11K, 5%, 1/4W (V81349) 745-0786-CCC AIR16		AR
21A	RCRC7G123JS	3	RESISTCR,FXD, CMPSN, 12K, 5%, 1/4W (V81349) 745-0787-CCC AIR16		AR
21A	RCRC7G133JS	3	RESISTCR,FXD, CMPSN, 13K, 5%, 1/4W (V81349) 745-0789-CCC AIR16		AR
21A	RCRC7G153JS	3	RESISTOR,FXD, CMPSN, 15K, 5%, 1/4W (V81349) 745-079C-CCC AIR16		AR
21A	RCRC7G163JS	3	RESISTCR,FXD, CMPSN, 16K, 5%, 1/4W (V81349) 745-0792-CCC AIR16		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
3-41	21A RCRC7G1E3JS	3	RESISTOR,FXD, CMPSA, 18K, 5%, 1/4W (V81349) 745-0793-CCC AIR16		AR
	21A RCRC7G223JS	3	RESISTOR,FXD, CMPSA, 22K, 5%, 1/4W (V81349) 745-0796-CCO AIR16		AR
	21A RCRC7G273JS	3	RESISTOR,FXD, CMPSA, 27K, 5%, 1/4W (V81349) 745-0799-CCC AIR16		AR
	21A RCRC7G51CJS	3	RESISTOR,FXD, CMPSA, 51 OHMS, 5%, 1/4W (V81349) 745-0702-CCO AIR16		AR
	22 RCR2CG272KS	2	RESISTOR,FXD, CMPSA, 2.7K, 10%, 1/2W (V81349) 745-137C-CCC AIR6		1
	23 RCRC7G471KS	2	RESISTOR,FXD, CMPSA, 470 OHMS, 10%, 1/4W (V81349) 745-0737-CCC AIR10		1
	24 RCRC7G1C3KS	2	RESISTOR,FXD, CMPSA, 16K, 10%, 1/4W (V81349) 745-0785-CCC AIR11		1
	25 2N2222A	2	TRANSISTOR (V07263) 352-0661-020 A1Q5		1
	26 119-C5C7-CCCC09	2	HOLDER,XSTR (V98291) 352-9509-CCC		2
	27 RK6CC5361F	2	RESISTOR,FXD, FILM, 5.36K, 1%, 1/4W (V81349) 7C5-6631-CCC AIR7		1
	28 2N344C	2	TRANSISTOR (V02735) 352-0603-010 A1Q2		1
	29 119-C5C6-CCCC09	2	HOLDER,XSTR (V98291) 352-9508-CCC		3
	30 2N2222A	2	TRANSISTOR (V07263) 352-0661-C2C A1Q6		1
	31 RCRC7G1C3KS	2	RESISTOR,FXD, CMPSA, 10K, 10%, 1/4W (V81349) 745-0785-CCO AIR14		1
	32 CK13BX1C3M	2	CAPACITOR,FXD, CER DIEI, 10000PF, 20%, 100V (V81349) 913-3C21-CCC A1C1		1
	33 RCRC7G1C2KS	2	RESISTOR,FXD, CMPSA, 1K, 10%, 1/4W (V81349) 745-0749-CCO AIR15		1
	33A RCRC7G471KS	2	RESISTOR,FXD, CMPSA, 470 OHMS, 10%, 1/4W (V81349) 745-0737-CCC AIR17 (EFF REV LTR C)		1
	34 CK05BX1C4K	2	CAPACITOR,FXD, CER DIEI, 0.1UF, 10%, 50V (V81349) 913-5019-32C A1C2		1
	35 CK05BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-20C A1C3		1
	36 CK05BX1C3K	2	CAPACITOR,FXD, CER DIEI, 0.01UF, 10%, 100V (V81349) 913-5019-20C A1C4		1
	37 629-577E-CC1	2	BCARD, TERMINAL PRSD		1
	38 ME-54C-3	3	TERMINAL,FEEDTH (V12615) 306-2608-050		3
	39 M2-542-3	3	TERMINAL,FEEDTH (V12615) 306-2608-060		3
	40 SL157-197	3	TERMINAL,STDF (V12615) 306-1260-CCC		6
	41 SL158-198	3	TERMINAL,FEEDTH (V12615) 306-1270-CCO (EFF REV LTR F)		18
	42 629-577E-CC2	3	BCARD		1

3.3 NUMERICAL INDEX

PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
AB397-1A	3-18-48	2	CD4029BF	3-9-31	1
AB404A	3-15-45	4		3-9-32	1
AB405A	3-15-166	2		3-9-33	1
AB406A	3-15-73	12		3-9-34	1
AD43H	3-35-28	4	CD4049MJ	3-4-7	1
	3-35-29	8		3-4-129	1
AN56502L1	3-30-4	2		3-9-41	1
	3-30-5	2		3-13-21	1
	3-30-10	2		3-19-59	1
	3-30-11	2		3-19-133	1
AN56502L3	3-31-4	2		3-19-140	1
AN56504L3	3-30-14	2		3-19-166	1
	3-31-4	2		3-20-183	1
AN565F2H3	3-38-22	2	CD4093BMJ	3-8-72	1
AN565F4H2	3-38-23	1	CD6CC1C0J03	3-24-24	1
AN565F4H3	3-18-66	2		3-24-3C	1
	3-38-22	2	CD6CC150J03	3-25-1	1
AN565F6H3	3-38-17	1		3-25-4	1
AP105A	3-39-12	1		3-25-8	1
ARP568-016	3-35-6	1		3-25-14	1
CCR13CG1R5C	3-7-48	AR		3-25-17	1
CCR13CG1R8C	3-7-48	AR		3-25-23	1
	3-12-4C	1	CD6EC820F03	3-24-33	1
	3-12-162	1		3-25-36	1
CCR13CG100K	3-7-81	1	CD6EC270G03	3-24-17	1
CCR13CG2R2C	3-7-48	AR		3-24-4C	1
CCR13CG3R3C	3-7-48	AR		3-25-7	1
CCR13CG3R9C	3-7-48	AR		3-25-9	1
CCR13CG4R7C	3-7-48	AR		3-25-35	1
	3-7-8C	1	CD6EC500F03	3-24-6	1
CCR13CG5R6D	3-7-48	AR	CD6EC620F03	3-24-27	1
CCR13CG6R8D	3-7-48	AR	CD6FC101F03	3-24-31	1
CCR13CG7R5C	3-7-48	AR		3-25-5	1
CCR13CG8R2D	3-7-48	AR		3-25-32	1
CD4001MJ	3-4-126	1	CD6FC111F03	3-22-43	1
	3-4-128	1		3-24-14	1
	3-19-21	1		3-24-36	1
	3-19-26	1	CD6FC111J03	3-28-22	1
	3-19-138	1	CD6FC121F03	3-24-34	1
	3-19-145	1		3-25-10	1
	3-20-116	1	CD7FA102F03	3-24-37	1
CD4002UBMJ	3-9-29	1	CD7FA152F03	3-24-7	1
	3-9-36	1	CD7FA331F03	3-24-20	1
CD4011MJ	3-4-120	1		3-24-29	1
	3-19-14	1	CD7FA361F03	3-24-3	1
	3-19-17	1		3-24-3	1
	3-19-18	1		3-24-23	1
	3-19-27	1	CD7FA391F03	3-24-19	1
	3-19-150	1		3-25-26	1
	3-19-161	1	CD7FA471F03	3-24-12	1
CD4013BMJ	3-6-40	1		3-24-26	1
	3-10-25	1		3-24-41	1
CD4016MJ	3-5-55	1	CD7FA511F03	3-24-32	1
CD4023UBF	3-4-127	1		3-24-39	1
	3-19-15	1	CD7FA751F03	3-24-1	1
	3-19-24	1		3-24-10	1
	3-19-25	1		3-24-16	1
	3-19-57	1	CD7FC201F03	3-24-15	1
	3-19-63	1		3-25-27	1
	3-19-155	1	CD7FC241F03	3-24-4	1
CD4025MJ	3-4-2	1		3-24-4	1
	3-19-23	1		3-25-13	1
	3-19-56	1		3-25-22	1

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PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
CD7FD131F03	3-25-12	1		3-10-33	1
CD7FD161FC3	3-24-9	1		3-10-36	1
	3-25-18	1		3-12-26	1
	3-25-33	1		3-12-57	1
CD7FD181F03	3-24-22	1		3-12-58	1
	3-25-29	1		3-12-61	1
CE9410-1C01	3-18-69	1		3-12-64	1
	3-36-6	1		3-12-65	1
	3-40-29	1		3-12-67	1
CE9410-1C02	3-36-4	1		3-12-68	1
	3-37-11	1		3-12-69	1
	3-40-27	1		3-13-2	1
CE9410-1C04	3-36-2	1		3-13-31	1
	3-36-8	1		3-13-42	1
CK05BX100K	3-29-1	1		3-13-72	1
CK05BX101M	3-9-52	1		3-16-35	1
	3-9-59	1		3-16-43	1
CK05BX102K	3-7-20	1		3-16-51	1
	3-7-21	1		3-16-66	1
	3-7-43	1		3-22-3	1
	3-8-53	1		3-22-8	1
	3-8-65	1		3-41-35	1
	3-12-29	1		3-41-36	1
	3-12-42	1	CK05BX103M	3-4-115	1
CK05BX102M	3-4-12	1		3-4-127A	1
	3-5-29	1		3-5-4	1
	3-5-103	1		3-5-9	1
	3-5-182	1		3-5-31	1
	3-5-202	1		3-5-39	1
	3-5-207	1		3-5-48	1
	3-5-213	1		3-5-54	1
	3-5-261	1		3-5-55	1
	3-5-265	1		3-5-56	1
	3-5-281	1		3-5-57	1
	3-5-296	1		3-5-60	1
	3-8-48	1		3-5-64	1
	3-8-55	1		3-5-71	1
	3-8-73	1		3-5-75	1
	3-8-95	1		3-5-93	1
	3-8-104	1		3-5-101	1
	3-8-106	1		3-5-107	1
	3-8-111	1		3-5-119	1
CK05BX103K	3-3-20	1		3-5-122	1
	3-3-47	1		3-5-125	1
	3-3-60	1		3-5-177	1
	3-7-2	1		3-5-184	1
	3-7-4	1		3-5-188	1
	3-7-51	1		3-5-193	1
	3-7-60	1		3-5-204	1
	3-7-64	1		3-5-222	1
	3-7-108	1		3-5-225	1
	3-7-115	1		3-5-234	1
	3-8-31	1		3-5-273	1
	3-8-33	1		3-5-287	1
	3-8-37	1		3-9-11	1
	3-8-40	1		3-19-5	1
	3-8-47	1		3-19-12	1
	3-8-52	1		3-19-13	1
	3-8-93	1		3-19-20	1
	3-10-3	1		3-19-32	1
	3-10-11	1		3-19-66	1
	3-10-13	1		3-19-78	1
	3-10-14	1		3-19-100	1
	3-10-15	1		3-19-101	1
	3-10-23	1		3-19-108	1
	3-10-32	1		3-19-109	1
				3-19-110	1

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PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ	
CK05BX103M	3-19-111	1		3-3-57A	1	
	3-19-113	1		3-4-76	1	
	3-19-114	1		3-4-86	1	
	3-28-2	1		3-4-112A	1	
	3-28-3	1		3-5-50	1	
	3-28-11	1		3-5-65	1	
	3-28-15	1		3-5-66	1	
	3-28-16	1		3-5-86	1	
	3-28-20	1		3-5-115	1	
	3-29-6	1		3-5-175	1	
	3-29-7	1		3-5-190	1	
	3-29-9	1		3-5-196	1	
	CK05BX104K	3-4-78		1	3-5-218	1
		3-7-34		1	3-5-255	1
3-8-16		1	3-5-257	1		
3-8-50		1	3-5-280	1		
3-8-67		1	3-9-20	1		
3-8-76		1	3-9-21	1		
3-8-80		1	3-9-28	1		
3-8-84		1	3-9-30	1		
3-8-86		1	3-9-35	1		
3-8-88		1	3-9-37	1		
3-8-92		1	3-9-53	1		
3-8-96		1	3-9-57	1		
3-8-103		1	3-15-6	1		
3-9-9		1	3-15-79	1		
3-9-62		1	3-15-81	1		
3-12-4		1	3-16-6	1		
3-12-9		1	3-16-24	1		
3-12-10		1	3-16-31	1		
3-12-14		1	3-16-33	1		
3-12-28		1	3-16-50	1		
3-12-54		1	3-16-54	1		
3-13-1		1	3-16-56	1		
3-13-7		1	3-16-58	1		
3-13-22		1	3-16-64	1		
3-13-27		1	3-16-65	1		
3-13-32		1	3-19-3	1		
3-13-43		1	3-19-5	1		
3-13-59		1	3-19-13	1		
3-13-67		1	3-19-16	1		
3-13-75		1	3-19-22	1		
3-19-12		1	3-19-28	1		
3-22-11		1	3-19-29	1		
3-22-17		1	3-19-30	1		
3-22-19		1	3-19-31	1		
3-22-27		1	3-19-32	1		
3-22-32		1	3-19-33	1		
3-22-37		1	3-19-34	1		
3-22-39		1	3-19-38	1		
3-22-45		1	3-19-39	1		
3-22-55		1	3-19-40	1		
3-22-58		1	3-19-58	1		
3-22-59		1	3-19-65	1		
3-22-61		1	3-19-66	1		
3-32-6		1	3-19-69	1		
3-32-12		1	3-19-70	1		
3-32-15		1	3-19-76	1		
3-32-18		1	3-19-78	1		
3-41-34	1	3-19-81	1			
CK05BX104M	3-3-16	1	3-19-84	1		
	3-3-22	1	3-19-85	1		
	3-3-31	1	3-19-92	1		

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PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ	
GKC5BX104M	3-19-96	1	CK05BX332K	3-12-7	1	
	3-19-107	1		CK05BX333K	3-8-63	1
	3-19-115	1	CK05BX472M	3-5-172	1	
	3-19-123	1	CK05BX473K	3-9-4	1	
	3-19-124	1		3-10-20	1	
	3-19-125	1		3-10-27	1	
	3-19-126	1		3-20-170	1	
	3-19-127	1	CK06BX105K	3-9-5	1	
	3-19-128	1		3-9-47	1	
	3-19-129	1		3-9-48	1	
	3-19-139	1		3-13-38	1	
	3-19-144	1	CK06BX334K	3-20-14	1	
	3-19-157	1	CK06BX474K	3-9-7	1	
	3-19-160	1		3-9-60	1	
	3-19-171	1	CK12BX102M	3-15-15	1	
	3-20-1	1		3-15-17	1	
	3-20-2	1		3-15-20	1	
	3-20-12	1		3-15-21	1	
	3-20-17	1		3-15-47	1	
	3-20-18	1		3-15-53	1	
	3-20-22	1		3-15-55	1	
	3-20-27	1		3-15-57	1	
	3-20-29	1		3-15-58	1	
	3-20-30	1		3-15-92	1	
	3-20-36	1		3-15-103	1	
	3-20-40	1		3-15-108	1	
	3-20-45	1		3-15-109	1	
	3-20-46	1		3-15-137	1	
	3-20-50	1		3-15-147	1	
	3-20-55	1		3-15-150	1	
	3-20-60	1		3-15-151	1	
	3-20-66	1		3-15-160	1	
	3-20-68	1		3-15-161	1	
	3-20-71	1		3-15-164	1	
	3-20-73	1		CK12BX103K	3-12-119	1
	3-20-88	1		CK13BX103M	3-15-28	1
	3-20-89	1			3-15-31	1
	3-20-90	1			3-15-40	1
	3-20-91	1			3-15-85	1
	3-20-92	1			3-15-88	1
	3-20-94	1			3-15-90	1
	3-20-101	1			3-15-107	1
	3-20-109	1			3-15-168	1
	3-20-117	1			3-15-169	1
	3-20-121	1			3-41-32	1
	3-20-125	1		CL440-1C	3-31-23	2
	3-20-131	1		CM04CD100D03	3-25-19	1
	3-20-135	1		CM04ED200J03	3-20-180	1
	3-20-152	1			3-25-25	1
	3-20-157	1		CM04ED300G03	3-25-16	1
	3-20-194	1			3-25-21	1
	3-20-195	1		CM04ED390G03	3-25-2	1
	3-20-196	1			3-25-30	1
	3-20-202	1		CM04ED510J03	3-32-1	1
	3-20-205A	1		CM04FD131J03	3-29-13	1
3-26-2	1		CM04FD201J03	3-28-9	1	
3-30-1	1		CM41208-010	3-34-18	1	
CK05BX122K	3-12-116	1	CY10C102M	3-7-105	1	
CK05BX150K	3-22-23	1		3-7-107	1	
CK05BX151K	3-20-182	1		3-7-109	1	
CK05BX152K	3-27-9	1		3-7-117	1	
CK05BX152M	3-12-98	1		3-7-119	1	
CK05BX222K	3-8-66	1		3-19-102	1	

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CY10C102Z	3-8-61	1	DM5E220C300WV	3-12-60	1	
	3-12-12	1		3-7-100	AR	
	3-12-72	1		3-7-101	AR	
	3-12-95	1		DM5E240DC50WV	3-7-100	AR
	3-12-98	1		3-7-101	AR	
	3-12-101	1		DM5E270J050WV	3-5-94	1
	3-12-130	1		3-7-100	AR	
	3-12-131	1		3-7-101	AR	
	3-12-142	1		3-9-15	AR	
	3-19-159	1		3-15-75	1	
	3-20-102	1		DM5E300J050WV	3-7-100	AR
CY30C474M	3-20-118	1	3-7-101	AR		
	3-20-124	1	3-9-10	1		
	3-36-5	AR	DM5E330J050WV	3-7-26	1	
CO-0210F2-18-025			3-7-36	1		
CA1701	3-16-7	1	3-7-100	AR		
	3-16-8	1	3-7-101	AR		
	3-16-10	1	3-10-6	1		
DIE845	3-16-11	1	DM5E360J050WV	3-5-151	1	
	3-18-5	5	3-7-100	AR		
	3-18-7	4	3-7-101	AR		
	3-18-26	3	3-8-26	1		
	3-31-1	1	3-9-15	AR		
DM5C010D300WV	3-31-2	4	3-12-60	1		
	3-7-69	AR	3-12-70	1		
	DM5C020D300WV	AR	3-12-135	1		
	DM5C030D300WV	AR	DM5E430J050WV	3-7-101	AR	
	3-8-18	1	DM5E470J050WV	3-7-13	1	
	DM5C040D300WV	AR	3-7-32	1		
	DM5C050D300WV	AR	3-8-71	1		
	3-8-10	1	3-9-15	AR		
	3-9-15	AR	3-12-5	1		
	3-12-37	1	3-14-5	1		
	3-16-44	1	3-14-6	1		
	DM5C060D300WV	AR	DM5E510J050WV	3-14-14	1	
	DM5C070D300WV	AR	DM5E560J050WV	3-7-8	1	
	3-8-91	1	3-7-9	1		
	DM5C080D300WV	AR	3-9-15	AR		
DM5C090D300WV	AR	DM5E680J050WV	3-15-38	1		
DM5C100D300WV	1	3-15-43	1			
3-7-69	AR	DM5E820J050WV	3-7-37	AR		
3-7-75	1	3-15-82	1			
3-7-77	1	3-16-1	1			
3-8-6	1	3-16-4	1			
3-8-24	1	DM5F101J050WV	3-7-16	1		
3-8-27	1	3-7-24	1			
3-9-15	AR	3-7-26	1			
3-10-18	1	3-7-27	1			
3-12-35	1	3-7-37	AR			
DM5C120D300WV	AR	3-7-67	1			
3-7-100	AR	3-7-116	1			
DM5C150D300WV	AR	3-8-15	1			
3-7-69	AR	3-10-5	1			
3-7-100	AR	3-12-13	1			
3-7-101	AR	3-12-16	1			
3-12-35	1	3-12-31	1			
3-12-49	1	3-12-41	1			
3-12-75	1	3-12-43	1			
DM5C180D100WV	AR	3-12-44	1			
3-7-100	AR	3-12-140	1			
DM5E200D100WV	AR	3-15-5	1			
3-7-101	AR	3-15-44	1			
3-9-15	AR	3-15-46	1			
3-10-18	1					

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DM5F101J050WV	3-15-66	1		3-5-14	1
DM5F111J050WV	3-7-30	1		3-5-16	1
	3-7-37	AR		3-5-17	1
DM5F121J050WV	3-7-37	AR		3-5-19	1
DM5F131J050WV	3-7-37	AR		3-5-24	1
	3-15-122	1		3-5-130	1
DM5F151J050WV	3-7-37	AR		3-5-145	1
	3-12-31	1		3-5-163	1
	3-12-51	1		3-5-254	1
	3-12-146	1		3-5-297	1
DM5F161J050WV	3-7-37	AR		3-5-302	1
	3-15-77	1		3-23-7	1
	3-16-5	1	JAN2N2608	3-20-75	1
DM5F171J050WV	3-7-37	AR		3-20-174	1
DM5F181J050WV	2-7-37	AR	JAN2N2907A	3-4-8	1
	3-7-67	1		3-4-20	1
	3-7-91	1		3-4-39	1
	3-7-98	1		3-4-66	1
	3-19-114	1		3-4-67	1
DM5F201J050WV	3-4-89	1		3-4-73	1
	3-4-92	1		3-4-91	1
	3-7-37	AR		3-5-20	1
DM5F221J050WV	3-7-37	AR		3-5-129	1
	3-7-45	1		3-5-143	1
	3-7-46	1		3-5-249	1
	3-12-18	1	JAN2N3375	3-18-13	1
	3-12-20	1		3-18-14	1
DM5F241J050WV	2-7-37	AR	JAN2N918	3-8-44	1
	3-8-25	1		3-8-56	1
DM5F271J050WV	3-7-35	1		3-8-59	1
	3-7-37	AR	MC14C66BAL	3-5-95	1
DM5F301J050WV	3-7-37	AR		3-9-58	1
	3-12-114	1	MC145188AL	3-10-21	1
DM5F331J050WV	3-7-37	AR		3-10-30	1
	3-15-32	1	MC1558G	3-4-50	1
	3-15-130	1		3-5-96	1
DM5F361J050WV	3-7-37	AR		3-13-50	1
DM5F401J050WV	3-4-85	1		3-20-25	1
DM5F910J050WV	3-7-37	AR		3-20-28	1
DM5400J	3-14-7	1		3-20-39	1
FD7CO	3-28-10	1		3-20-100	1
	3-28-18	1		3-20-134	1
	3-28-19	1		3-32-7	1
	3-28-25	1	MC1596G	3-5-223	1
FN1905	3-4-107	1	MDNB96555-17	3-18-31	1
	3-7-83	1		3-34-37	1
	3-8-8	1	MDNB97294-85	3-2-20	1
	3-9-17	1	MMS4C74J	3-8-75	1
	3-12-39	1	MS124696	3-35-11	1
F22LHA27M22-40	3-40-41	4	MS16535-52	3-11-10	2
F22NCFMA2-40	3-37-14	20	MS16535-54	3-3-10	2
	3-40-34	22		3-16-40	2
HS83300-128CE	3-37-18	2	MS16555-617	3-18-43	1
	3-40-36	2		3-18-43	1
HT54T109DAA	3-32-3	1	MS16562-220	3-40-14	1
H3C02-36	3-38-18	1	MS16624-5018	3-23-18	1
JAN1N754A	3-13-62	1	MS16633-1012	3-18-44	2
	3-13-66	1	MS16633-1025	3-27-18	1
JAN2N2219A	3-41-17	1	MS20426AC2-3	3-11-16	8
JAN2N2222A	3-4-40	1		3-40-41	8
	3-4-41	1	MS20426AC3-4	3-37-4	4
	3-4-77	1	MS20426A03-5	3-35-27	4
	3-5-3	1		3-35-32	4

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MS20426AD4-5	3-35-28	4		3-18-28	1
	3-40-37	2		3-32-8	1
MS20426AD4-6	3-40-36	2	MS51957-12B	3-34-5	3
MS20470AD3-5	3-35-27	4	MS51957-13	3-18-5	5
MS20470AD4-5	3-37-17	5		3-18-26	3
	3-40-37	3		3-18-28	2
MS20470AD4-6	3-37-18	4		3-18-30	4
	3-40-36	2		3-18-65	1
MS21209C0815	3-18-45	1		3-34-4	1
MS24547-1	3-26-5	1	MS51957-14	3-2-22	4
	3-26-22	1		3-18-7	4
MS24585-1105	3-38-12	1		3-40-4	4
MS281-100R0F	3-18-35	1	MS51957-14B	3-34-5	3
MS28775-006	3-18-56	1	MS51957-15	3-2-4	2
MS28775-012	3-18-59	1		3-2-15	2
	3-40-19	1		3-3-8	2
MS28775-018	3-18-61	1		3-16-36	2
MS28775-024	3-2-20	3		3-34-4	1
	3-16-67	1	MS51957-16B	3-2-13	2
	3-34-37	1	MS51957-17	3-2-9	1
	3-34-48	1		3-18-3	16
MS3367-4-9	3-34-38	28		3-18-6	4
MS35058-23	3-34-24	1		3-18-53	2
	3-34-26	1	MS51957-18B	3-2-13	2
MS35333-107	3-16-37	1		3-6-15	1
MS35338-134	3-15-45	4	MS51957-19	3-2-16	2
	3-15-54	8	MS51957-2	3-6-1	3
	3-15-166	2		3-6-5	4
	3-27-14	2		3-6-9	2
	3-34-39	3		3-6-14	4
	3-39-5	2		3-6-16	5
	3-39-8	1		3-6-17	5
MS35338-135	3-2-4	2		3-15-19	2
	3-2-9	1		3-15-54	8
	3-2-15	2		3-18-4	4
	3-2-16	2		3-18-33	1
	3-6-15	1		3-18-52	3
	3-15-174	2		3-18-73	2
	3-18-7	4		3-23-5	2
	3-18-10	4		3-23-16	4
	3-18-12	4		3-23-25	4
	3-18-26	3		3-27-3	2
	3-34-5	3		3-27-14	2
	3-39-10	1		3-35-1	2
MS35338-139	3-38-6	1		3-39-5	2
MS35338-96	3-27-5	2		3-39-8	1
MS35338-97	3-31-2	4	MS51957-20	3-2-17	4
	3-31-19	3	MS51957-25	3-30-18	3
MS35649-224	3-18-33	1	MS51957-26	3-30-18	3
	3-18-73	2	MS51957-3	3-2-7	4
	3-26-25	1		3-18-73	1
	3-27-5	2		3-30-2	1
	3-30-9	2		3-34-39	3
	3-31-20	2	MS51957-3B	3-38-9	2
	3-39-8	1	MS51957-4	3-30-12	2
MS35649-244	3-3-8	2		3-32-4	1
	3-16-36	2	MS51957-5	3-27-3	2
	3-18-65	1	MS51957-7	3-27-7	2
	3-18-69	1	MS51957-8	3-30-9	2
	3-18-70	1	MS51957-9	3-23-3	2
MS51957-1	3-32-4	1	MS51958-66B	3-40-13	1
	3-34-12	1	MS51959-12	3-18-34	1
MS51957-12	3-2-19	5		3-18-37	2

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MS51959-13	3-18-34	1	MS75084-02	3-7-84	1
	3-18-37	2		3-8-23	1
	3-27-2	18		3-8-109	1
	3-39-15A	4		3-12-104	1
MS51959-14	3-4C-3C	18		3-13-3	1
	3-18-65	1		3-13-4	1
MS51959-15	3-25-7	6		3-13-5	1
	3-35-16	4		3-13-6	1
MS51959-16	3-18-69	1		3-13-28	1
	3-24-14	1		3-13-29	1
	3-37-11	2		3-13-30	1
	3-40-27	2		3-13-41	1
MS51959-17	3-40-29	2		3-13-44	1
	3-25-10	4		3-16-18	1
	3-37-11	1		3-28-24	AR
	3-4C-27	1	3-22-16	1	
MS51959-18	3-4C-29	1	MS75084-03	3-22-62	1
	3-39-15	2	MS75084-04	3-15-13	1
MS51959-19	3-36-4	1	MS75084-08	3-15-50	1
	3-36-6	1	MS75084-12	3-22-4	1
MS51959-2	3-15-134	9	MS75084-12	3-7-38	1
MS51959-28	3-29-1	1		3-8-39	1
MS51959-29	3-34-48	6		3-13-58	1
MS51959-3	3-18-40	4	MS75084-17	3-15-11	1
	3-23-1	2		3-15-29	1
	3-30-2	1		3-15-84	1
	3-21-20	1		3-15-86	1
MS51959-38	3-34-2	2		3-15-106	1
	3-34-3	4		3-15-149	1
MS51959-30	3-24-36	12		3-15-167	1
	3-35-6	2		3-15-170	1
MS51959-4	3-2-9	2		3-16-29	1
	3-31-21	2		3-16-57	1
MS51959-6	3-2-20	4		3-16-59	1
MS51959-7	3-34-37	2		3-34-41	1
MS51963-10	3-30-14	2		3-34-42	1
MS51963-9	3-34-17	2		3-34-43	1
MS75052-1	3-9-13	1		3-34-46	1
MS75083-03	3-12-48	1	MS75085-07	3-6-13	3
	3-12-133	1		3-6-13A	3
	3-15-54	1		3-7-1	1
	3-15-165	1		3-7-113	1
MS75083-04	3-8-21	1		3-10-34	1
	3-7-102	1		3-12-11	1
MS75083-05	3-12-147	1		3-12-159	1
	3-12-148	1		3-15-126	1
MS75083-07	3-8-60	1		3-33-9	1
	3-12-53	1		3-33-10	1
MS75083-08	3-15-78	1		3-33-11	1
	3-15-83	1		3-33-13	1
	3-16-2	1		3-33-14	1
	3-16-3	1		3-33-15	1
	3-12-33	1		3-33-16	1
	3-7-78	1	3-33-17	1	
MS75083-12	3-8-9	1	3-33-18	1	
	3-22-12	1	3-33-19	1	
	3-22-18	1	3-33-20	1	
	3-22-26	1	3-33-21	1	
	3-22-54	1	3-33-22	1	
	3-22-60	1	3-33-23	1	
	3-28-24	AR	3-33-24	1	
	MS75084-01	3-12-157	1	3-33-25	1
		3-28-24	AR	3-33-26	1

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	3-33-28	1		3-10-1	1
	2-33-29	1		3-10-22	1
MS75085-15	3-8-7C	1	M39CC3-01-2262	3-13-49	1
	3-8-83	1	M39CC3-01-2271	3-5-146	1
MS75085-19	3-28-4	1	M39CC3-01-2272	3-9-25	1
	3-28-13	1		3-9-38	1
	3-28-14	1	M39CC3-01-2281	3-20-122	1
	3-29-4	1		3-20-126	1
	3-29-5	1	M39CC3-01-2283	3-4-13	1
	3-29-10	1		3-4-16	1
	3-32-2	1		3-4-70	1
	3-22-38	1		3-4-131	1
	3-22-40	1		3-5-5	1
				3-5-197	1
MS75088-2				3-5-267	1
				3-5-276	1
MS75089-11	3-4-30	1	M39CC3-01-2284	3-4-28	1
	3-5-78	1		3-4-103	1
MS75089-23	3-15-89	1	M39CC3-01-2289	3-3-28	1
	3-5-76	1	M39CC3-01-2290	3-4-106	1
MS75089-27	3-9-24	1		3-5-11	1
	3-5-295	1		3-5-79	1
MS75089-29	3-20-82	1	M39003-01-2295	3-3-33	1
MS75089-7	3-5-198	1		3-3-37	1
	3-5-277	1		3-19-131	1
MS75089-8	3-5-266	1	M39CC3-01-2296	3-9-49	1
MS75101-12	3-9-14	1		3-13-61	1
MS75101-7	3-3-48	1	M39CC3-01-2304	3-17-7	1
MS9021-007	3-16-9	1		3-17-8	1
	3-39-3	1	M39CC3-01-2305	3-5-12	1
MS9068-010	3-39-4	1		3-5-87	1
	3-35-2	1		3-5-160	1
MV109	3-7-112	1	M39CC3-01-2307	3-20-87	1
MV1666	3-9-12	1		3-20-140	1
MW250-125	3-22-2	1		3-20-197	1
	3-22-10	1	M39CC3-01-2338	3-4-26	1
MW687-255-4	3-27-18	6	M39CC3-01-2348	3-4-3	1
	3-3-74	1		3-4-14	1
MZ4624	3-13-52	1		3-4-108	1
MZ4625	3-16-30	1		3-4-121	1
MZ4626	3-26-11	2		3-5-239	1
M2-542-1	3-26-35	2	M39CC3-01-2356	3-12-27	1
	3-32-23	4		3-20-54	1
M2-542-3	3-41-39	3		3-20-150	1
	3-18-15	1	M39CC3-01-2357	3-5-91	1
M24236-19-193	3-21-19	1		3-5-97	1
M39003-01-2026	3-21-19	1		3-5-142	1
M39003-01-2167	3-19-156	1		3-5-238	1
M39003-01-2243	3-5-157	1	M39CC3-01-2368	3-3-5	1
M39003-01-2254	3-5-246	1	M39CC3-01-2375	3-16-15	1
	3-5-247	1	M39CC3-01-2379	3-3-45	1
	3-5-248	1	M39CC6-09-8132	3-22-36	1
	3-32-13	1	M39006-09-8152	3-20-83	1
	3-3-30	1	M39012-24-C002	3-18-66	1
	3-4-24	1	M39012-25-C006	3-18-65	1
	3-4-27	1	M5-540-3	3-41-38	3
	3-5-106	1	NEXUSAP105A	3-1-13	1
	3-13-22	1	NT352R0832AC4	3-34-15	1
	3-13-54	1	NT352R0832VC3L	3-2-3	1
M39003-01-2257	3-19-170	1		3-18-25	1
M39003-01-2258	3-4-104	1		3-40-16	2
	3-5-72	1		3-34-23	1
	3-5-245	1			
M39003-01-2259	3-13-54	1			
	3-3-55	1			

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N5045	3-34-21	1		3-15-1	1
N9C40 1-8	3-34-17	1		3-15-37	1
PC26J140	3-7-47	1		3-15-64	1
PT9788	3-18-11	1		3-15-67	1
	3-18-12	1		3-15-72	1
P312-CC07-CC0	3-18-34	1		3-15-74	1
P312-CC09-CC0	3-18-34	1		3-15-87	1
	3-18-37	2		3-15-95	1
	3-18-63	2		3-15-117	1
P312-3460-000	3-18-16	4		3-15-125	1
P313-CC50-000	3-23-29	2		3-15-139	1
	3-23-43	2		3-15-141	1
	3-32-4	1		3-15-163	1
P313-CC64-CC0	3-18-64	2	RCR05G100KS	3-12-55	1
P313-0132-CC0	3-36-4	2		3-12-149	1
	3-36-6	2	RCR05G101JS	3-4-45	1
P313-0140-CC0	3-41-13	2		3-5-1	1
P313-0156-CC0	3-5-162	4		3-5-77	1
P313-0484-CC0	3-15-45	4		3-5-251	1
	3-15-166	2	RCR05G101KS	3-7-121	AR
P330-2288-CC0	3-18-68	2		3-8-49	1
P330-2290-CC0	3-18-29	2		3-8-51	1
P330-3595-CC0	3-34-36	12		3-8-85	1
P342-0053-CC0	3-2-17	4		3-9-39	1
P342-0143-CC0	3-26-1	2		3-9-42	1
P342-0144-CC0	3-26-9	2		3-10-17	1
	3-26-14	1		3-10-35	1
	3-26-33	1		3-12-125	1
P342-0145-CC0	3-34-7	2	RCR05G102JS	3-4-37	1
P342-0146-CC0	3-26-25	1		3-4-68	1
	3-26-30	2		3-4-119	1
P343-0284-CC0	3-22-2	1		3-5-26	1
	3-22-10	1		3-5-52	1
P343-0285-CC0	3-18-12	4		3-5-100	1
	3-26-32	1		3-5-104	1
	3-31-2	4		3-5-194	1
P343-0287-CC0	3-35-10	1		3-5-227	1
P343-0290-CC0	3-31-1	1		3-5-231	1
P343-0298-CC0	3-26-6	1		3-5-232	1
	3-26-7	2		3-5-253	1
	3-26-15	2		3-5-269	1
	3-26-19	2		3-5-274	1
	3-26-20	1		3-12-73	AR
	3-30-15	1		3-12-96	AR
P343-0299-CC0	3-31-1	3		3-15-36	1
	3-31-2	2		3-15-97	1
	3-31-20	1		3-15-100	1
P343-0300-CC0	3-26-14	1		3-15-102	1
	3-27-5	2		3-15-105	1
P343-0301-CC0	3-26-5	2		3-15-110	1
	3-26-23	2		3-15-135	1
	3-26-24	2		3-15-148	1
P343-0302-CC0	3-26-25	1	RCR05G102KS	3-7-72	1
P343-0303-CC0	3-23-29	2		3-7-97	AR
P343-0304-CC0	3-23-43	2		3-10-24	1
P343-0330-CC0	3-41-13	2		3-10-27A	1
P347-0046-CC0	3-34-15	4		3-10-31	1
P5C2	3-37-8	AR		3-12-24	1
CC0-390UF5PCT	3-8-30	1		3-12-56	1
	3-8-94	1		3-12-144	1
RCR05G100JS	3-5-81	1		3-12-145	1
	3-5-216	1		3-12-151	1

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	3-14-3	1		3-13-37	1
	3-19-49A	1		3-12-126	1
	3-23-6	1		3-5-44	1
	3-23-1C	1		3-5-206	1
RCR05G103JS	3-32-19	1	RCR05G112JS	3-5-299	1
	3-4-21	1	RCR05G113JS	3-7-76	1
	3-4-35	1	3-8-14	1	
	3-4-38	1	3-12-97	1	
	3-5-124	1	3-12-141	1	
RCR05G103KS	3-5-126	1	RCR05G121JS	3-5-32	1
	3-5-164	1	3-8-4	1	
	3-5-165	1	3-12-134	1	
	3-4-75	1	3-12-137	1	
	3-4-81	1	3-15-99	1	
RCR05G104JS	3-7-82	1	RCR05G121KS	3-7-122	1
	3-8-62	1	RCR05G122JS	3-5-212	1
	3-8-69	1	RCR05G122KS	3-15-132	1
	3-9-16	1	3-7-17	1	
	3-9-50	1	3-7-18	1	
	3-12-99	1	3-7-97	AR	
	3-12-117	1	3-7-114	1	
	3-12-124	1	3-10-16	1	
	3-14-1C	1	3-10-12	1	
	3-32-14	1	3-12-63	1	
	3-4-95	1	RCR05G123KS	3-5-252	1
	3-4-109	1	RCR05G124JS	3-12-113	AR
	3-5-18	1	RCR05G124KS	3-13-16	1
	3-5-73	1	RCR05G125JS	3-4-1	1
	3-5-74	1	3-20-56	1	
3-5-110	1	RCR05G132JS	3-5-35	1	
3-5-120	1	RCR05G134JS	3-12-113	AR	
3-5-133	1	RCR05G150JS	3-15-118	1	
3-5-139	1	3-15-120	1		
3-5-185	1	RCR05G151JS	3-15-2	1	
3-5-161	1	3-15-39	1		
3-5-187	1	3-15-153	1		
3-5-205	1	RCR05G151KS	3-8-12	1	
3-5-243	1	3-12-74	1		
3-5-244	1	3-12-139	1		
RCR05G104KS	3-4-5	1	RCR05G152KS	3-7-97	AR
3-4-9	1	RCR05G153JS	3-13-70	1	
3-4-65	1	3-5-98	1		
3-4-112	1	3-5-140	1		
3-4-124	1	3-15-138	1		
3-7-29	1	3-8-20	1		
3-8-100	1	3-8-42	1		
3-12-29	1	3-10-7	1		
3-14-25	1	RCR05G154JS	3-4-99	1	
3-14-29	1	3-5-158	1		
3-14-30	1	3-12-113	AR		
3-14-31	1	RCR05G163JS	3-12-105	1	
3-14-32	1	RCR05G164JS	3-12-113	AR	
3-14-33	1	RCR05G180KS	3-12-78	1	
3-14-34	1	3-12-138	1		
3-14-35	1	RCR05G181KS	3-12-103	1	
3-14-36	1	RCR05G182JS	3-15-12	1	
3-14-37	1	RCR05G182KS	3-7-97	AR	
RCR05G105JS	3-4-1	1	3-8-101	1	
3-4-19	1	3-9-19	1		
3-4-47	1	3-5-47	1		
3-4-80	1	3-5-53	1		
3-4-84	1	3-5-88	1		
3-4-126A	1				
RCR05G105KS	3-12-115	1			

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	3-5-229	1	RCR05G224JS	3-4-6	1
	3-5-291	1		3-4-22	1
RCR05G183KS	3-7-42	1		3-4-51	1
	3-7-93	1		3-4-79	1
	3-7-94	1		3-4-90	1
	3-9-46	1		3-4-111	1
	3-12-112	1		3-4-117	1
RCR05G184JS	3-12-113	AR		3-5-21	1
RCR05G184KS	3-8-82	1		3-12-113	AR
	3-9-56	1	RCR05G224KS	3-13-36	1
	3-9-64	1	RCR05G241JS	3-5-203	1
RCR05G202JS	3-5-116	1		3-5-211	1
RCR05G203JS	3-5-303	1	RCR05G243JS	3-5-159	1
RCR05G204JS	3-12-113	AR		3-7-65	1
RCR05G220JS	3-5-216	1		3-8-57	1
	3-5-240	1		3-12-79	1
	3-5-270	1		3-12-100	1
	3-5-271	1	RCR05G244JS	3-12-113	AR
	3-5-272	1	RCR05G271JS	3-15-112	1
	3-15-104	1		3-15-115	1
	3-15-131	1		3-15-140	1
	3-15-136	1	RCR05G271KS	3-8-17	1
	3-15-144	1		3-8-89	1
	3-15-159	1		3-8-105	1
RCR05G221JS	3-5-62	1		3-9-22	1
	3-5-195	1	RCR05G272JS	3-5-200	1
	3-5-228	1		3-5-284	1
	3-5-283	1		3-5-285	1
	3-5-288	1		3-15-119	1
	3-5-294	1	RCR05G272KS	3-9-45	1
	3-15-153	1		3-12-15	1
RCR05G221KS	3-12-156	1		3-12-123	1
	3-14-41	1	RCR05G273JS	3-4-54	1
RCR05G222JS	3-4-34	1		3-5-121	1
	3-4-97	1		3-5-242	1
	3-5-25	1		3-9-1	1
	3-5-40	1		3-9-2	1
	3-5-89	1	RCR05G273KS	3-8-41	1
	3-5-148	1		3-9-3	1
	3-5-189	1		3-9-6	1
	3-5-278	1		3-12-59	1
	3-8-54	1		3-13-56	1
RCR05G222KS	3-7-6	1		3-23-10	1
	3-7-11	1		3-32-10	1
	3-7-41	1	RCR05G274JS	3-5-149	1
	3-7-63	1		3-5-152	1
	3-13-71	1		3-5-154	1
RCR05G223JS	3-4-36	1		3-12-113	AR
	3-5-8	1	RCR05G274KS	3-19-83	1
	3-5-10	1	RCR05G275KS	3-12-6	1
	3-5-13	1	RCR05G3R3JS	3-15-157	1
	3-5-15	1		3-15-158	1
	3-5-23	1		3-21-19A	AR
	3-5-30	1	RCR05G302JS	3-5-117	1
	3-5-61	1		3-5-118	1
	3-5-65	1		3-5-170	1
	3-5-134	1		3-5-220	1
	3-5-135	1		3-5-221	1
	3-5-209	1		3-5-235	1
	3-5-214	1		3-5-236	1
RCR05G223KS	3-7-44	1	RCR05G303JS	3-4-44	1
	3-7-93	1	RCR05G330KS	3-7-121	AR

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	3-15-35	1		3-5-109	1
3-15-91	1	3-5-171		1	
RCR05G331JS	3-4-74	1	3-12-136	1	
	3-5-179	1	RCR05G470KS	3-7-7	1
RCR05G331KS	3-14-1	1		3-7-103	1
	RCR05G332JS	3-4-42		1	3-7-120
3-4-52		1		3-7-121	AR
3-5-259	1	3-8-38		1	
3-5-263	1	3-8-46		1	
3-15-93	1	3-15-121		1	
3-15-96	1	RCR05G471JS		3-5-7	1
3-15-98	1			3-5-49	1
3-15-114	1			3-5-132	1
3-15-154	1		3-5-191	1	
3-15-155	1		3-5-192	1	
3-15-156	1		3-5-219	1	
RCR05G332KS	3-14-12		1	3-5-293	1
	RCR05G333JS		3-4-4	1	3-12-73
3-4-96			1	3-12-96	AR
3-4-100	1		RCR05G471KS	3-7-118	1
3-4-114	1	3-8-64		1	
3-4-123	1	3-9-43	1		
3-4-125	1	RCR05G472JS	3-5-290	1	
3-5-27	1		RCR05G472KS	3-8-78	1
3-5-37	1	3-9-23		1	
3-5-99	1	3-9-27	1		
3-5-105	1	3-10-10	1		
3-5-136	1	3-12-106	1		
3-5-208	1	3-12-107	1		
3-5-215	1	3-13-74	1		
RCR05G333KS	3-4-10	1	3-32-11	1	
	3-4-116	1	RCR05G473JS	3-5-138	1
3-13-53	1	3-5-305		1	
2-14-39	1	3-12-154	1		
RCR05G335JS	3-4-48	1	RCR05G473KS	3-13-17	1
	3-20-160	1		3-15-33	1
RCR05G335KS	3-13-8	1	3-15-70	1	
	3-32-17	1	3-15-76	1	
RCR05G362JS	3-7-74	1	3-15-128	1	
	3-8-58	1	RCR05G474JS	3-4-60	1
3-12-45	1	3-4-61		1	
3-12-80	1	RCR05G474KS	3-12-118	1	
RCR05G390KS	3-7-121		AR	3-12-120	1
	3-7-121	1	3-13-35	1	
RCR05G391JS	3-5-176	1	RCR05G511JS	3-12-73	AR
	3-12-73	AR		3-12-96	AR
3-12-96	AR	RCR05G560JS	3-5-51	1	
RCR05G391KS	3-8-87		1	3-5-68	1
	3-14-15	1	RCR05G560KS	3-7-121	AR
RCR05G392JS	3-5-114	1		3-8-2	1
	3-5-181	1	3-12-34	1	
3-15-22	1	3-12-102	1		
3-15-51	1	3-12-128	1		
RCR05G393KS	3-7-25	1	3-12-152	1	
	3-7-28	1	RCR05G561JS	3-5-59	1
3-8-68	1	3-5-63		1	
RCR05G394JS	3-5-92	1		3-5-67	1
	3-5-156	1		3-5-70	1
RCR05G4R7JS	3-21-19A	AR		3-5-127	1
RCR05G431JS	3-12-73	AR		3-12-73	AR
	3-12-96	AR	3-12-96	AR	
RCR05G432JS	3-5-286	1	RCR05G561KS	3-8-35	1

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	3-5-250	1		3-12-73	AR	
	3-5-260	1		3-12-96	AR	
	3-15-116	1		3-7-97	AR	
RCR05G562KS	3-15-142	1	RCR05G821KS	3-5-45	1	
	3-7-31	1	RCR05G822JS	3-5-46	1	
	3-7-33	1		3-5-166	1	
	3-8-19	1		3-5-178	1	
RCR05G563KS	3-8-36	1	RCR05G822KS	3-12-160	1	
	3-13-69	1		3-13-13	1	
	3-14-12	1		3-13-34	1	
	3-7-104	1	RCR05G823JS	3-5-90	1	
	3-7-111	1	RCR05G823KS	3-13-11	1	
	3-8-74	1	RCR05G824JS	3-4-23	1	
	3-8-77	1		3-4-49	1	
	3-12-50	1		3-4-53	1	
	3-12-161	1		3-4-110	1	
	3-13-24	1	RCR05G911JS	3-12-73	AR	
RCR05G621JS	3-13-26	1		3-12-96	AR	
	3-14-22	1	RCR05G913JS	3-5-153	1	
	3-4-23	1	RCR07G100KS	3-3-54	AR	
	3-5-226	1		3-4-105	1	
	3-5-226	AR		3-22-13	1	
	3-12-73	AR		3-22-21	1	
	3-12-96	AR		3-22-29	1	
	RCR05G680JS	3-4-31	1		3-22-30	1
	RCR05G680KS	3-7-121	AR		3-22-31	1
	RCR05G681JS	3-8-13	1		3-22-47	1
3-4-17		1		3-22-48	1	
3-5-226		AR		3-22-49	1	
3-12-73		AR		3-22-57	1	
RCR05G681KS	3-12-96	AR		3-22-65	1	
	3-7-97	1	RCR07G101KS	3-3-21	1	
	3-8-45	1		3-3-54	1	
RCR05G682JS	3-13-57	1	RCR07G102KS	3-3-12	1	
	3-4-32	1		3-3-13	1	
	3-4-43	1		3-3-15	1	
	3-4-69	1		3-3-29	1	
RCR05G682KS	3-5-301	1		3-3-34	1	
	3-15-116	1		3-3-38	1	
	3-15-156	1		3-3-39	1	
	3-7-94	1		3-3-75	1	
	3-12-109	1		3-16-16	1	
	3-5-22	1		3-17-6	1	
	3-5-141	1		3-19-74	1	
	3-5-150	1		3-19-77	1	
	3-5-241	1		3-19-79	1	
	3-9-8	1		3-20-95	1	
RCR05G683JS	3-12-23	1		3-20-138	1	
	3-12-150	1		3-21-1	1	
	3-4-15	1		3-21-16	1	
	3-4-71	1		3-21-20	1	
	3-4-84	1		3-28-21	AR	
	3-12-143	AR		3-41-5	1	
	RCR05G684KS	3-8-3	1		3-41-33	1
	RCR05G750JS	3-8-5	1	RCR07G103JS	3-16-48	1
	RCR05G751JS	3-5-226	AR		3-41-21A	AR
		3-12-73	1	RCR07G103KS	3-16-14	1
3-12-73		AR		3-16-55	1	
3-12-96		AR		3-16-63	1	
RCR05G752JS	3-13-10	1		3-19-36	1	
RCR05G820JS	3-5-42	1		3-19-46	1	
RCR05G820KS	3-7-121	AR		3-19-51	1	
RCR05G821JS	3-5-224	1		3-19-60	1	

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	3-19-89	1	RCR07G273JS	3-41-21A	AR
	3-19-91	1	RCR07G273KS	3-3-59	1
	3-19-93	1		3-3-73	1
	3-19-97	1		3-19-47	1
	3-19-118	1		3-19-50	1
	3-19-167	1		3-20-63	1
	3-20-81	1		3-20-79	1
	3-20-127	1		3-20-80	1
	3-20-144	1		3-20-201	1
	3-20-190	1	RCR07G330KS	3-3-54	AR
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	3-41-24	1	RCR07G332KS	3-20-178	1
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	3-19-62	1	RCR07G392KS	3-21-12	1
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3-7-10	1		3-19-168	1		
3-7-96	1		3-20-9	1		
3-9-44	1		3-20-11	1		
3-10-28	1		3-20-108	1		
3-12-10B	1		3-20-115	1		
3-12-111	1		3-20-120	1		
3-12-125A	1		3-20-123	1		
3-13-20	1		3-20-164	1		
3-13-23	1		3-20-168	1		
3-13-25	1		3-20-176	1		
3-13-40	1		3-20-177	1		
3-13-68	1		3-20-179	1		
3-14-16	1		3-21-7	1		
3-14-23	1		3-21-9	1		
3-14-24	1		3-21-24	1		
3-14-26	1		3-27-12	1		
3-14-27	1		3-32-5	1		
3-14-28	1		3-33-1	1		
3-14-38	1		3-33-30	1		
3-16-12	1		3-33-31	1		
3-16-13	1		3-20-64	1		
3-16-26	1		3-3-52	1		
3-16-27	1		3-16-60	1		
3-16-46	1		3-3-32	1		
3-16-70	1		3-4-82	1		
3-19-1	1		3-3-19	1		
3-19-2	1	3-3-36	1			
3-19-8	1	3-8-108	1			
3-19-9	1	3-12-94	1			
3-19-10	1	3-7-49	AR			
3-19-11	1	3-7-49	1			
3-19-19	1	3-7-49	AR			
3-19-37	1	3-33-2	1			
		1N4733A				
		1N4734A				
		1N4742A				
		1N4744A				
		1N4753A				
		1N4934				
		1N5139				
		1N5146A				
		1N5147				
		1N5550				

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1N5711	3-7-14	1	141-1002-0003	3-12-77	1
	3-7-22	1	141-1003-0002	3-21-11	1
	3-7-23	1	141-1012-0001	3-12-76	1
	3-7-79	1	152-5156-870	3-36-9	1
	3-8-7	1	15517-2	3-23-29	2
	3-9-18	1		3-23-43	2
	3-10-8	1	15523 1-8	3-23-29	2
	3-12-21	1		3-23-30	2
	3-12-22	1	15523 3-16	3-23-34	2
	3-12-32	1	15523 3-32	3-23-28	2
	3-12-121	1		3-23-33	2
	3-12-153	1	164-295WCC	3-34-28	1
	3-12-155	1		3-34-30	1
1N5767	3-4-11	1	172C-02	3-18-64	1
	3-4-56	1	174-8430-0111-20	3-40-21	1
	3-5-36	1	3		
	3-5-102	1	174-8430-0112-20	3-40-9	1
	3-5-159	1	3		
	3-5-268	1	193-C2C	3-17-1	1
	3-5-275	1		3-17-2	1
	3-8-34	1		3-17-3	1
	3-15-27	1		3-17-10	1
	3-15-34	1		3-17-11	1
	3-15-69	1		3-17-12	1
	3-15-71	1		3-17-13	1
	3-15-80	1		3-17-14	1
	3-15-101	1		3-17-15	1
	3-15-113	1		3-17-16	1
	3-15-127	1		3-17-17	1
	3-15-143	1		3-17-18	1
	3-15-152	1		3-17-19	1
1N645	3-16-74	1		3-17-20	1
	3-16-75	1		3-17-21	1
1N751A	3-20-163	1		3-17-22	1
	3-21-23	1		3-17-23	1
	3-32-16	1		3-17-24	1
	3-41-1	1		3-17-25	1
	3-41-6	1		3-17-26	1
	3-41-20	1		3-17-27	1
1N753A	3-20-8	1		3-17-28	1
	3-20-93	1		3-17-29	1
	3-20-96	1		3-17-30	1
	3-20-153	1		3-17-31	1
	3-20-167	1		3-17-32	1
	3-21-23	1		3-17-33	1
1N758A	3-20-132	1		3-17-34	1
1N965B	3-27-8	1		3-17-35	1
1070	3-27-19	3		3-17-36	1
119-0506-000009	3-41-29	3		3-17-37	1
119-0507-000009	3-12-85	3		3-17-38	1
	3-15-178	2		3-17-39	1
	3-41-26	2		3-17-40	1
123330	3-1-11	1		3-17-41	1
140-0530-3022	3-2-11	1		3-17-42	1
140-0530-3023	3-18-38	1		3-17-43	1
140-0530-5000	3-18-10A	1		3-17-44	1
140-0530-5001	3-27-21	1		3-34-40	1
140-0530-5013	3-6-7	2		3-34-44	1
141-0011-0002	3-21-13	1		3-34-45	1
	3-24-2	1		3-34-47	1
	3-24-11	1		3-5-43	1
141-1002-0002	3-15-3	1	28449	3-5-34	1
	3-15-41	1	28450		
			2C067104X0101A3	3-23-14	1

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2C067104XC1CIA3	3-23-26	1		3-3-18	1
2N2219A	3-21-8	1		3-3-40	1
2N2222A	3-3-2	1		3-3-61	1
	3-3-3	1		3-3-68	1
	3-3-4	1		3-3-69	1
	3-3-58	1		3-9-51	1
	3-3-70	1		3-13-9	1
	3-3-76	1		3-13-18	1
	3-3-80	1		3-13-39	1
	3-7-110	1		3-16-67	1
	3-9-54	1		3-20-67	1
	3-13-14	1		3-20-69	1
	3-13-19	1		3-20-128	1
	3-13-33	1		3-20-156	1
	3-13-55	1		3-20-187	1
	3-13-60	1		3-20-203	1
	3-13-73	1	2N3054	3-21-2	1
	3-17-9	1	2N3375	3-16-38	1
	3-19-49	1	2N3440	3-41-28	1
	3-19-54	1	2N3738	3-41-13	1
	3-19-55	1	2N3740	3-20-52	1
	3-19-119	1		3-20-61	1
	3-19-120	1		3-20-147	1
	3-20-65	1		3-20-161	1
	3-20-70	1	2N3766	3-20-44	1
	3-20-74	1		3-20-97	1
	3-20-77	1		3-20-139	1
	3-20-181	1		3-20-205	1
	3-20-188	1	2N3767	3-41-13	1
	3-20-193	1	2N4033	3-21-15	1
	3-20-199	1	2N4208	3-5-38	1
	3-20-200	1		3-5-41	1
	3-20-204	1		3-5-185	1
	3-41-25	1		3-5-258	1
	3-41-30	1		3-7-5	1
2N2369A	3-8-79	1		3-7-15	1
	3-9-26	1		3-12-17	1
	3-9-55	1	2N4234	3-14-40	1
	3-10-9	1	2N4338	3-9-61	1
	3-10-29	1		3-9-63	1
2N2484	3-5-113	1	2N4393	3-12-8	1
	3-5-128	1	2N4416	3-4-83	1
	3-5-131	1	2N5179	3-8-29	1
	3-5-144	1		3-8-102	1
	3-5-167	1	2N5197	3-12-52	1
	3-5-300	1	2N5323	3-3-41	1
2N2608	3-4-29	1	2N5943	3-16-21	1
	3-4-46	1		3-16-49	1
	3-4-93	1	2N918	3-5-33	1
	3-4-113	1		3-5-58	1
	3-5-6	1		3-5-174	1
2N2784	3-7-12	1		3-5-186	1
	3-10-29	1		3-5-201	1
	3-14-13	1		3-5-210	1
2N2857	3-12-62	1		3-5-230	1
	3-12-66	1		3-5-233	1
	3-15-25	1		3-5-262	1
	3-15-26	1		3-5-279	1
	3-15-48	1		3-5-282	1
	3-15-49	1		3-5-292	1
2N2905A	3-20-85	1		3-7-39	1
	3-41-3	1		3-7-40	1
2N2907A	3-3-17	1		3-7-68	1

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	3-7-95	1		3-30-9	2		
	3-12-46	1		3-32-4	3		
	3-12-47	1		3-30-18	3		
	3-12-110	1		3-41-13	2		
	3-12-122	1		310-C094-000	3-6-1	3	
	3-12-127	1		3-6-5	4		
	3-12-129	1		3-6-9	2		
	3-12-158	1		3-6-14	4		
	3-16-62	1		3-6-16	5		
	3-15-19	1		3-6-17	5		
	2C25	3-21-14		1	310-0129-000	3-15-166	2
	2215B	3-18-24		1	3-23-5	2	
	2475-53-1	3-18-36		2	3-23-16	4	
2540A	3-12-90A	13	3-23-25	4			
272G05	3-33-4	1	3-27-3	2			
	3-33-6	1	3-27-7	2			
28C4028F	3-31-11	1	3-27-14	2			
2804038F	3-31-12	1	3-32-4	1			
281C07	3-33-5	1	310-C276-000	3-15-166	2		
	3-33-7	1	310-C278-000	3-3-8	2		
289-7148-010G1	3-7-59	1	3-16-36	2			
289-7148-020G1	3-7-59	1	3-18-5	5			
292P10396	3-18-48	1	3-18-28	3			
2943-3	3-34-36	1	3-18-30	4			
2943-4	3-34-31	1	3-18-34	1			
	3-34-32	1	3-18-37	2			
	3-34-33	1	3-18-65	1			
	3-34-34	1	3-18-69	1			
	3-34-35	1	3-18-70	1			
3N187	3-8-59	1	3-32-8	1			
3SAV1271A2	3-16-72	1	310-C396-000	3-23-21	1		
	3-21-10	1	3-23-24	1			
	3-22-24	1	3-26-17	2			
	3-33-8	1	3-26-32	1			
3SAV1810A2	3-33-8	1	3-27-23	1			
3SBC1018A2	3-23-8	1	3-30-3	2			
	3-23-13	1	310-0445-000	3-30-14	1		
302-8646-070	3-32-4	1	310-3340-000	3-2-13	2		
303-1000-000	3-34-12	1	310-6320-000	3-6-5	4		
3059L1-104	3-27-6	1	3-6-14	4			
	3-27-7	1	3-6-16	5			
31TC43	3-7-55	1	3-6-17	5			
	3-15-129	1	3-34-39	3			
310-C045-000	3-37-14	2	3-35-1	2			
310-0049-000	3-40-13	2	310-6326-000	3-18-4	4		
310-0053-000	3-32-4	1	310-6340-000	3-3-8	2		
310-0054-000	3-22-2	1	3-16-36	2			
	3-22-10	1	3-26-32	1			
310-0055-000	3-41-13	2	3-40-4	4			
310-0070-000	3-18-33	1	314A104	3-13-45	1		
	3-18-73	2	32TD4	3-3-58A	1		
	3-26-7	2	321-C412-000	3-32-20	2		
	3-26-15	2	322-0272-010	3-15-172	2		
	3-26-19	2	328-C368-000	3-23-23	2		
	3-26-25	1	3-23-35	2			
	3-31-20	2	3-23-36	2			
	3-35-1	2	3-23-38	2			
310-C075-000	3-18-52	3	3299W1-20K	3-29-8	1		
	3-23-5	2	330-1701-010	3-6-1	4		
	3-23-16	4	3-6-9	3			
	3-23-25	4	3-12-92	4			
	3-23-29	2	3-27-13	2			

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	3-27-23	2		3-23-2	13
230-1701-C20	3-11-1	4		3-26-29	6
230-1716-030	3-11-6	3		3-30-8	5
230-1716-810	3-34-48	6	372-2601-010	3-13-77	2
230-1732-020	3-2-2	2	372-2601-027	3-7-127	12
230-1732-090	3-2-2	1		3-8-112	9
2329H1-101	3-5-173	1		3-9-65	6
2329H1-103	3-5-28	1		3-10-40	9
	3-5-183	1		3-13-82	12
2329H1-501	3-5-112	1		3-23-15	2
2329H1-503	3-5-111	1	372-2601-033	3-22-42	2
233-1455-020	3-40-34	22	372-2601-037	3-19-71	12
233-1455-050	3-37-14	2	372-2601-045	3-13-83	4
234-1008-000	3-16-37	1		3-19-71	12
234-1292-000	3-31-8	2	372-2601-069	3-13-76	6
235-0120-000	3-23-23	2	372-2601-072	3-5-85	34
	3-23-35	2	372-2601-083	3-13-78	30
	3-23-38	2	372-2601-084	3-22-7	6
	3-23-41	2	372-2601-089	3-21-27	6
235-0121-000	3-30-4	2	372-2601-132	3-3-62	4
	3-30-5	2	372-2601-145	3-20-207	20
	3-30-10	2	372-2601-150	3-33-32	8
240-0641-00	3-30-11	2	372-2601-179	3-20-206	24
240-0644-00	3-34-15	4	372-2601-183	3-20-208	32
	3-2-9	2	372-2623-012	3-28-26	1
	3-2-16	2	372-2623-013	3-3-51	1
	3-2-17	4		3-16-76	1
	3-2-22	4	372-2623-022	3-13-81	1
	3-6-15	1	372-2623-025	3-33-35	1
	3-15-174	2	372-2623-030	3-5-82	1
	3-18-3	16	372-2624-012	3-14-43	1
	3-18-6	4	372-2624-013	3-19-103	1
	3-23-21	1		3-21-26	1
	3-23-24	1	372-2624-015	3-10-38	1
	3-26-17	2	372-2624-016	3-22-53	1
	3-30-3	2	372-2624-018	3-9-67	1
	3-31-1	1		3-19-95	1
2515-20-03	3-5-264	1	372-2624-025	3-19-122	1
252-0671-C20	3-22-1	1	372-2624-026	3-4-102	1
	3-22-9	1	372-2625-013	3-19-104	1
253-2850-001	3-23-9	1		3-19-105	1
253-3316-010	3-12-21	1		3-19-106	1
	3-12-22	1	372-3392-011	3-14-42	6
253-6442-080	3-21-20A	1		3-22-52	14
255BHT250	3-34-19	1	372-3392-013	3-21-25	8
	3-34-20	1	372-3392-019	3-19-94	70
372-2234-010	3-3-49	4	374NPO-125C5PFOR	3-8-110	1
	3-5-83	21	N05PF		
	3-13-80	13	382	3-40-10	1
	3-14-44	13		3-40-22	1
	3-16-77	6	39-1	3-34-22	1
	3-28-27	3	390-3	3-30-18	1
	3-28-28	3	4-1171-209	3-23-27	1
	3-23-34	16	4-1261-212	3-23-42	1
372-2234-C20	3-3-50	4	4-1711-211	3-23-43	1
	3-5-84	21	4-1781-105	3-30-12	1
	3-13-79	13	4007-4HT	3-18-34	1
	3-16-78	6		3-18-70	1
	3-23-33	16		3-32-4	1
372-2252-010	3-4-101	34		3-32-9	1
	3-9-66	18		3-39-9	1
	3-10-39	12	4007-6HT	3-41-12	1

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4040-2HT	3-18-33	1	565-7241-004	3-11-8	1
	3-26-7	1	567-8390-001	3-3-23	1
	3-26-19	1	57-0180	3-7-123	4
	3-26-25	1	611FF	3-31-5	1
	3-27-5	2	601-3490-001	3-13-64	1
	3-27-13	1	601-3491-001	3-13-45	1
	3-31-20	2	601-3629-001	3-5-264	1
	3-32-4	1	601-3666-001	3-34-39	1
	3-39-8	1	601-3667-001	3-2-21	1
4040-5PDSPL	3-20-41	6		3-17-	REF
4050BCM	3-14-18	1	601-3668-001	3-2-10	1
	3-14-20	1		3-5-	REF
408-32-24	3-8-11	1	601-3669-001	3-2-6	1
41A205	3-26-1	1		3-4-	REF
41A958	3-23-1	1	601-3670-001	3-2-4	1
	3-30-2	1		3-3-	REF
41B002S001G1	3-37-10	1	601-3671-001	3-2-15	1
43-66-1	3-21-3	1		3-16-	REF
5-193N304-7	3-37-6	1	601-3672-001	3-18-4	1
	3-40-328	1		3-19-	REF
502-1515-002	3-2-9	2	601-3673-001	3-18-5	1
504-0730-003	3-34-12	1		3-20-	REF
511049	3-7-57	1	601-3674-001	3-18-10	1
5133-12C	3-18-64	1		3-22-	REF
5133-15C	3-31-6	1	601-3675-001	3-18-7	1
518-024A5-25PF	3-28-1	1		3-21-	REF
	3-28-8	1	601-3677-001	3-23-5	1
5288	3-12-2	1	601-3685-001	3-27-4	1
52922	3-18-49	4		3-29-	REF
	3-23-4	1	601-3686-001	3-27-2	1
	3-23-17	1		3-28-	REF
	3-26-8	1	601-3865-001	3-18-32	1
	3-30-17	3		3-33-	REF
538002C0P089R	3-15-14	1	601-3874-002	3-11-2	1
	3-15-23	1		3-13-	REF
	3-15-52	1	601-3875-002	3-11-3	1
	3-15-59	1		3-14-	REF
538002E2P094R	3-15-30	1	601-3876-002	3-6-17	1
	3-15-42	1		3-10-	REF
540-3003-003	3-23-18	1	601-3877-001	3-6-5	1
540-9036-003	3-18-34	1		3-7-	REF
540-9041-003	3-11-4	2	601-3878-001	3-6-14	1
540-9045-003	3-18-16	4		3-8-	REF
	3-18-37	2	601-3879-001	3-6-16	1
	3-18-63	2		3-9-	REF
540-9047-003	3-18-9	4	601-3880-001	3-10-3	1
540-9051-003	3-18-29	2	601-3964-001	3-31-2	1
540-9078-003	3-26-14	1	601-3982-001	3-31-9	1
541-5949-002	3-27-5	2	601-3987-001	3-3-65	1
541-5950-002	3-27-3	2	601-3988-001	3-3-23	1
541-5966-002	3-39-10	1	609-C792-001	3-18-71	1
541-6133-002	3-40-13	1	609-0793-001	3-18-72	1
541920M	3-14-17	1	609-C933-001	3-11-9	1
	3-14-19	1	609-C933-002	3-11-9	2
	3-14-21	1	609-1797-001	3-6-8	3
546-6126-002	3-11-10	1	609-2467-002	3-2-13	1
546-6127-002	3-11-11	1		3-6-	REF
547-8177-014	3-41-13	2	609-2469-001	3-2-14	1
548-8246-002	3-11-14	1		3-11-	REF
548-9574-003	3-37-16	2	61M49-5PCT	3-7-53	1
	3-40-38	1	618-3367-001	3-15-3	1
	3-40-40	1		3-15-41	1

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618-7905-001	3-22-20	2	623-3853-001	3-12-1	1
621-6837-001	3-20-98	2	623-3854-001	3-6-22	1
621-7571-002	3-34-14	1	623-3855-001	3-6-20	1
622-1407-002	3-1-1	1	623-3856-001	3-6-23	1
622-2148-002	3-1-2	1	623-3857-001	3-6-21	1
	3-2-	REF	623-3858-001	3-11-13	1
622-2149-001	3-1-3	1	623-3859-001	3-12-36	1
	3-18-	REF	623-3901-001	3-26-9	1
622-2553-003	3-1-4	1	623-3902-001	3-26-33	1
	3-34-	REF	623-3902-002	3-26-12	1
622-2577-002	3-1-	1		3-26-36	1
622-3073-001	3-1-15	1	623-3903-001	3-26-31	1
623-1548-002	3-6-19	18	623-3904-001	3-26-24	1
623-1548-003	3-6-2	7	623-3906-001	3-26-30	1
	3-6-10	5	623-7116-002	3-18-74	1
623-3337-001	3-24-8	1	623-7282-001	3-27-1	1
623-3337-002	3-24-5	1	623-7283-001	3-27-24	1
623-3337-003	3-24-35	1	623-7283-002	3-27-26	1
623-3337-004	3-24-38	1	623-7284-001	3-27-22	1
623-3337-005	3-24-13	1	623-7287-001	3-18-8	1
623-3337-006	3-24-18	1	623-7288-003	3-18-2	1
623-3337-007	3-24-28	1	623-7288-004	3-18-3	1
623-3337-008	3-24-25	1	623-7290-001	3-31-21	1
623-3337-009	3-25-6	1	623-7290-002	3-31-26	1
623-3337-010	3-25-3	1	628-2333-001	3-15-111	1
623-3337-011	3-25-31	1	628-2334-001	3-15-145	1
623-3337-012	3-25-34	1	628-2335-001	3-15-18	1
623-3337-013	3-25-11	1		3-15-56	1
623-3337-014	3-25-15	1	628-2336-001	3-15-4	1
623-3337-015	3-25-28	1		3-15-68	1
623-3337-016	3-25-24	1	628-2337-001	3-15-124	1
623-3834-001	3-12-19	1	628-2337-002	3-15-133	1
623-3834-002	3-7-99	1	629-3392-001	3-16-42	1
	3-12-30	1	629-3392-004	3-16-39	1
	3-12-132	1	629-3396-001	3-3-11	1
623-3834-003	3-7-19	1	629-3396-004	3-3-8	1
623-3837-001	3-11-5	2	629-3402-002	3-2-12	1
623-3838-001	3-11-12	1	629-3403-001	3-2-16	1
623-3840-001	3-6-6	1		3-15-	REF
623-3841-001	3-8-98	1	629-3405-001	3-2-5	1
623-3841-002	3-8-43	1	629-3406-001	3-2-17	1
623-3841-003	3-8-28	1	629-3407-001	3-18-24	1
623-3842-001	3-8-22	1		3-31-	REF
623-3843-001	3-8-32	1	629-3409-001	3-18-22	1
	3-8-90	1		3-27-	REF
	3-8-97	1	629-3410-001	3-18-6	1
	3-8-107	1	629-3411-001	3-18-27	1
623-3843-002	3-7-66	1	629-3412-001	3-18-23	1
623-3844-001	2-7-124	1		3-30-	REF
	3-7-125	1	629-3413-001	3-18-21	1
623-3845-001	3-7-126	1		3-26-	REF
623-3846-001	3-6-1	1	629-3414-001	3-18-19	1
623-3846-002	3-6-4	1		3-23-	REF
623-3846-003	3-6-3	1	629-3415-001	3-1-22	1
623-3847-001	3-6-9	1		3-40-	REF
623-3847-002	3-6-12	1	629-3416-003	3-1-19	1
623-3847-003	3-6-11	1	629-3425-002	3-1-5	1
623-3848-001	3-7-88	1		3-35-	REF
623-3848-003	3-7-66A	1	629-3428-001	3-1-6	1
623-3849-001	3-11-7	1		3-36-	REF
623-3849-002	3-11-17	1	629-3438-001	3-34-5	1
623-3850-001	3-6-18	1	629-3439-002	3-34-6	1
623-3850-002	3-6-24	1	629-3441-001	3-34-48	1
623-3851-001	3-12-92	1			

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629-3473-001	3-18-58	1	629-5774-002	3-37-20	1
629-3475-009	3-24-15	1		3-40-39	1
629-3482-001	3-23-16	1	629-5775-001	3-37-16	1
	3-24-	REF		3-40-38	1
629-3483-001	3-23-25	1	629-5775-002	3-37-15	1
	3-25-	REF		3-40-40	1
629-3485-001	3-2-9	1	629-5777-001	3-40-4	1
629-3488-001	3-2-22	1		3-41-	REF
629-3490-001	3-16-37	1	629-5778-001	3-41-37	1
629-3491-001	3-3-27	1	629-5778-002	3-41-42	1
	3-3-53	1	629-5782-001	3-40-12	1
	3-3-57	1	629-5783-001	3-40-14	1
629-3492-001	3-3-9	1	629-5784-001	3-40-30	1
	3-16-41	1	629-5820-001	3-15-174	1
629-3493-001	3-3-10	1	629-5820-002	3-15-179	1
	3-16-40	1	629-5839-001	3-15-172	1
629-5501-001	3-16-36	1	629-5840-001	3-15-134	1
629-5505-001	3-18-69	1	629-5841-001	3-15-54	1
629-5506-001	3-18-53	1	629-5852-001	3-18-39	2
629-5515-001	3-18-52	1	629-5853-001	3-2-8	1
629-5516-001	3-18-51	1	629-5859-005	3-2-2	1
629-5517-001	3-18-50	1	629-5885-001	3-34-12	1
629-5519-001	3-18-62	1	629-5889-001	3-34-10A	1
629-5520-001	3-18-60	1	629-5896-001	3-1-20	1
629-5614-001	3-26-15	1	629-5900-001	3-37-7	1
629-5644-001	3-18-17	1		3-40-32A	1
629-5699-001	3-27-15	1	629-5901-001	3-37-9	1
629-5699-002	3-27-16	1		3-40-32A	1
629-5702-001	3-1-8	1	629-5904-001	3-40-18	1
	3-28-	REF	629-5905-001	3-40-17	1
629-5703-001	3-1-7	2	629-5906-001	3-40-20	1
	3-27-	REF	629-6144-001	3-16-34	1
629-5704-001	3-27-17	1	629-6147-001	3-2-9	1
629-5705-001	3-27-14	1	629-6150-001	3-26-13	1
629-5706-001	3-26-5	2	629-6152-002	3-39-16	1
	3-26-23	1	629-6163-001	3-3-44	1
629-5708-001	3-31-6	1	629-6166-001	3-22-41	1
629-5709-001	3-31-4	1	629-6167-001	3-22-20	1
629-5713-001	3-30-4	1	629-6168-001	3-22-46	1
629-5714-001	3-30-5	1	629-6169-001	3-22-28	1
629-5715-001	3-30-10	1		3-22-50	1
629-5746-001	3-26-32	1	629-6170-001	3-22-5	1
629-5752-001	3-23-38	1	629-6180-001	3-40-31	1
629-5753-001	3-23-36	1	629-6180-002	3-40-7	3
629-5754-001	3-23-41	1	629-6180-003	3-40-8	1
629-5754-002	3-23-35	1	629-6180-004	3-40-32	1
629-5756-001	3-20-59	4	629-6180-005	3-40-24	1
629-5757-001	3-20-58	4	629-6180-006	3-40-5	1
629-5759-001	3-26-16	1	629-6180-007	3-40-26	1
629-5761-001	3-31-1	1	630-1463-001	3-41-21A	1
629-5764-001	3-18-18	1	630-1500-001	3-34-28	1
629-5766-001	3-18-73	1		3-34-30	1
629-5771-001	3-37-14	1	630-1544-001	3-5-226	1
629-5771-002	3-37-21	1	630-1592-001	3-7-49	1
629-5771-006	3-37-13	1	630-2026-001	3-21-19A	1
629-5772-001	3-40-35	1	630-2203-001	3-3-54	1
629-5772-002	3-40-43	1	635-0643-001	3-7-89	1
629-5772-008	3-40-33	1	635-0670-001	3-7-36	1
629-5773-001	3-37-2	1	635-0671-001	3-7-68	1
629-5773-002	3-37-5	1	635-0672-001	3-7-47	1
629-5773-003	3-37-3	1	635-0852-001	3-7-99	1
629-5774-001	3-37-19	1	635-0853-001	3-7-100	1
			635-0856-001	3-7-97	1

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635-0856-001	3-7-120	1	635-4888-001	3-40-11	1
635-0857-001	3-7-53	1	635-4894-001	3-40-15	1
	3-7-6C	1	635-4895-001	3-40-16	1
635-0858-001	3-7-49	1	635-4923-001	3-36-1	1
	3-7-57	1	635-4940-001	3-1-18	1
635-0859-001	3-7-55	1		3-38-4	1
635-0860-001	3-7-51	1	635-4940-002	3-38-5	1
635-0867-001	3-28-2C	1	635-4955-001	3-35-5	1
635-0868-001	3-28-23	1	635-4956-001	3-35-6	1
635-1507-000	3-2-1	1	635-5104-001	3-35-4	1
635-1508-000	3-18-1	1	635-5119-001	3-40-23	1
635-1509-000	3-34-1	1	635-5129-001	3-35-10	2
635-1510-000	3-40-1	1	635-5148-001	3-1-9	1
635-1513-000	3-37-1	1	635-5157-001	3-2-19	1
635-1514-000	3-35-1	1	635-5174-001	3-1-10	1
635-1745-001	3-38-1A	1	635-5175-001	3-34-4	1
635-1746-000	3-37-1	1	635-5220-001	3-17-49	2
635-1747-000	3-1-16	1	635-5237-001	3-38-17	1
635-1748-000	3-1-2CA	1	635-5238-001	3-38-22	1
635-1953-012	3-35-26	2	635-5241-001	3-38-16	1
635-1953-013	3-35-27	2	635-5242-001	3-38-21	1
635-3395-001	3-17-45	1	635-5246-001	3-38-7	1
635-4623-001	3-35-14	1	635-5344-001	3-36-4	1
635-4623-002	3-35-13	2	635-5347-001	3-18-42	1
635-4639-001	3-35-29	4	635-5349-001	3-18-43	1
635-4640-001	3-35-7	2	635-5350-001	3-34-3	2
635-4641-001	3-35-16	2	635-5351-001	3-18-47	1
635-4643-001	3-37-4	2	635-5352-001	3-18-41	1
635-4644-001	3-11-15	2	635-5353-001	3-18-40	2
635-4645-001	3-35-10	2	635-5370-001	3-18-44	1
635-4645-002	3-35-12	1	635-5370-002	3-18-46	1
635-4676-001	3-2-7	1	635-5389-001	3-17-48	1
635-4688-001	3-34-10	1	635-5391-001	3-17-47	2
635-4690-001	3-18-28	1		3-34-47	2
	3-32-	REF	635-5393-001	3-17-46	1
635-4715-001	3-21-8	2	635-5452-001	3-37-12	AR
635-4719-001	3-18-18	1	635-5454-001	3-34-8	1
635-4722-001	3-36-3	1	635-5455-001	3-34-9	1
635-4723-001	3-26-7	1	635-5464-001	3-30-15	1
635-4724-001	3-32-21	1	635-5465-001	3-30-16	1
635-4724-002	3-32-24	1	635-5466-001	3-30-14	1
635-4749-001	3-18-30	1	635-5473-001	3-34-11	1
635-4755-001	3-38-13	1	635-8153-001	3-12-183	1
635-4756-001	3-38-9	1	635-8153-004	3-12-166	1
635-4757-001	3-38-10	1	635-8154-001	3-11-1	1
635-4758-001	3-38-8	1		3-12-	REF
635-4760-001	3-38-11	1	635-8155-001	3-12-81	1
635-4761-001	3-38-14	1	635-8155-002	3-12-91	1
635-4762-001	3-38-23	1	635-8162-001	3-14-45	1
635-4765-001	3-16-73	1	635-8223-004	3-15-174	2
	3-22-25	1	635-8247-001	3-18-3	1
635-4767-001	3-36-6	1	635-8247-002	3-18-2	1
635-4767-002	3-18-70	1	635-8251-001	3-2-18	1
	3-37-11	1	635-8254-010	3-34-48	1
	3-40-27	1	637-1358-001	3-36-4	2
	3-40-29	1		3-37-11	2
635-4767-003	3-36-4	1		3-40-27	2
635-4771-001	3-18-20	1	637-1453-001	3-18-74	1
635-4868-001	3-40-25	1	637-1486-001	3-34-12	1
635-4882-001	3-40-6	1	637-1681-001	3-38-15	1
635-4883-001	3-40-2	1	637-1701-001	3-24-43	1
635-4884-001	3-40-3	1	637-1701-002	3-24-47	1
635-4885-001	3-40-28	1		3-25-42	1

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637-1701-CC3	3-25-38	1	772-5727-001	3-28-7	1
637-1702-001	3-24-21	1	775-4188-CC1	3-35-15	1
	3-24-42	1	777-0614-001	3-34-17	1
	3-25-20	1	778-9422-020	3-4-98	4
	3-25-37	1	780-6040-001	3-26-17	2
637-1721-001	3-24-5	1	780-6592-001	3-27-20	1
	3-24-8	1	780-6621-001	3-27-18	1
	3-24-13	1	780-6623-001	3-27-23	1
	3-24-18	1	780-6624-CC1	3-27-23	1
	3-25-3	1	780-6638-CC1	3-30-9	1
	3-25-6	1	780-6738-001	3-30-11	1
	3-25-11	1	780-6739-CC1	3-23-35	4
637-1722-CC1	3-25-15	1		3-23-41	4
	3-24-25	1		3-30-7	1
	3-24-28	1	780-6740-001	3-30-6	1
	3-24-35	1	780-6757-001	3-26-27	1
	3-25-24	1	780-6758-001	3-26-28	1
	3-25-28	1	780-6763-001	3-23-39	1
	3-25-31	1	780-6765-001	3-23-20	1
	3-25-34	1	780-6766-001	3-26-37	1
637-1876-CC1	3-39-6	1	780-6772-001	3-26-25	1
637-1878-001	3-39-1	1	780-6852-CC1	3-26-6	1
637-1879-001	3-39-7	1		3-26-20	1
637-1882-001	3-39-4	1	780-6875-001	3-23-19	1
637-1882-002	3-39-3	1	780-6927-CC1	3-23-22	1
637-1889-001	3-39-3	1	780-6928-001	3-23-3	1
	3-39-4	1	780-7053-001	3-31-24	3
637-1890-CC1	3-39-5	1	780-7180-001	3-30-12	2
637-1891-CC1	3-35-13		780-7336-CC1	3-26-7	1
637-1893-CC1	3-39-11	1		3-26-18	1
637-1949-001	3-1-14	1	780-7400-001	3-31-3	1
	3-39-	REF	780-7523-CC1	3-31-19	3
637-1952-001	3-1-12	1	780-7925-001	3-23-31	1
637-1953-001	3-35-24	1	780-7969-001	3-30-26	1
637-1953-002	3-35-25	1	780-7970-001	3-30-23	1
637-1953-003	3-35-34	1	780-7971-001	3-23-44	1
637-1953-004	3-35-33	2	780-8086-001	3-23-18	1
637-1953-005	3-35-30	1	780-8350-001	3-23-21	1
637-1953-006	3-35-35	1		3-23-24	1
637-1953-007	3-35-37	1		3-30-3	2
637-1953-008	3-35-38	1	780-8698-001	3-31-7	2
637-1953-009	3-35-36	2	780-8771-CC1	3-33-12	1
637-1953-010	3-35-31	1	780-8788-001	3-18-55	
637-1953-011	3-35-32	2	780-8789-001	3-18-54	1
637-1953-012	3-35-26	2	780-8793-001	3-18-57	1
637-1953-013	3-35-27	2	8101A075C0J0-309	3-12-38	1
637-2000-001	3-34-10	1	D		
637-2575-001	3-9-14	1	8101E077C0G0-279	3-7-48	AR
637-4121-001	3-38-2	1	C		
637-4163-001	3-38-1	1	8101E212C0H0-709	3-7-48	AR
637-4184-001	3-36-3	1	C		
	3-36-7	1	8101E212C0K0-109	3-7-48	AR
637-4211-001	3-34-13	2	C		
68-1660-26	3-18-68	2		3-7-86A	1
	3-34-37	2		3-12-40	1
68-1660-40	3-34-4	1		3-12-162	1
	3-34-5	3	8111B090C0K0-478	3-7-48	AR
	3-34-12	1	C		
	3-34-14	1		3-12-40	1
68NM26	3-34-7	2		3-12-162	1
756-8204-023	3-34-12	1	8121-100006471K	3-7-71	1
757-9241-015	3-19-121	2		3-7-73	1
768-3177-023	3-5-162	4		3-7-85	1

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8121-1C0C0G471K	3-7-86	1			
	3-7-87	1			
	3-7-92	1			
	3-12-5	1			
	3-12-93	1			
8121W101C0G0-471 J	3-22-34	1			
	3-22-51	1			
820-1605-020	3-37-12	AR			
8511-01-00	3-15-173	1			
92-1660-00	3-15-172	2			
92-1660-26	3-15-19	2			
	3-26-25	1			
935C224XGSP	3-22-35	1			
9410-0PC	3-8-1	1			
	3-8-81	1			
59-022-094-C75C	3-38-19	1			
99-028-125-0625	3-38-20	1			

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A1	3-1-2	622-2148-002	A1A2C11	3-15-164	CK128X102M
A1	3-2-	622-2148-002	A1A2C12	3-15-17	CK128X102M
A1	3-40-4	629-5777-001	A1A2C13	3-15-15	CK128X102M
A1	3-41-	629-5777-001	A1A2C14	3-15-55	CK128X102M
A1A1	3-2-17	629-3408-001	A1A2C15	3-15-151	CK128X102M
A1A1C1	3-17-8	M39CC3-C1-2304	A1A2C16	3-15-169	CK138X103M
A1A1C10	3-17-42	193-C2C	A1A2C17	3-15-168	CK138X103M
A1A1C11	3-17-41	193-C2C	A1A2C18	3-15-103	CK128X102M
A1A1C12	3-17-40	193-C2C	A1A2C19	3-15-150	CK128X102M
A1A1C13	3-17-39	193-C2C	A1A2C2	3-15-77	DM5F161J050WV
A1A1C14	3-17-38	193-C2C	A1A2C20	3-15-5	DM5F101J050WV
A1A1C15	3-17-37	193-C2C	A1A2C21	3-15-66	DM5F101J050WV
A1A1C16	3-17-36	193-C2C	A1A2C22	3-15-161	CK128X102M
A1A1C17	3-17-35	193-C2C	A1A2C23	3-15-90	CK138X103M
A1A1C18	3-17-34	193-C2C	A1A2C24	3-15-92	CK128X102M
A1A1C19	3-17-33	193-C2C	A1A2C25	3-15-59	538002C0PC89R
A1A1C2	3-17-7	M39CC3-C1-2304	A1A2C26	3-15-58	CK128X102M
A1A1C20	3-17-32	193-C2C	A1A2C27	3-15-107	CK138X103M
A1A1C21	3-17-31	193-C2C	A1A2C28	3-15-28	CK138X103M
A1A1C22	3-17-29	193-C2C	A1A2C29	3-15-53	CK128X102M
A1A1C23	3-17-30	193-C2C	A1A2C3	3-15-75	DM5E270J050WV
A1A1C24	3-17-12	193-C2C	A1A2C30	3-15-52	538002C0PC89R
A1A1C25	3-17-13	193-C2C	A1A2C31	3-15-137	CK128X102M
A1A1C26	3-17-14	193-C2C	A1A2C32	3-15-108	CK128X102M
A1A1C27	3-17-15	193-C2C	A1A2C33	3-15-38	DM5E680J050WV
A1A1C28	3-17-16	193-C2C	A1A2C34	3-15-43	DM5E680J050WV
A1A1C29	3-17-17	193-C2C	A1A2C35	3-15-42	538002E2P094R
A1A1C3	3-17-3	193-C2C	A1A2C36	3-15-40	CK138X103M
A1A1C30	3-17-18	193-C2C	A1A2C37	3-15-46	DM5F101J050WV
A1A1C31	3-17-19	193-C2C	A1A2C38	3-15-44	DM5F101J050WV
A1A1C32	3-17-20	193-C2C	A1A2C39	3-15-109	CK128X102M
A1A1C33	3-17-21	193-C2C	A1A2C4	3-15-79	CK058X104M
A1A1C34	3-17-22	193-C2C	A1A2C40	3-15-147	CK128X102M
A1A1C35	3-17-23	193-C2C	A1A2C41	3-15-47	CK128X102M
A1A1C36	3-17-24	193-C2C	A1A2C42	3-15-122	DM5F131J050WV
A1A1C37	3-17-25	193-C2C	A1A2C43	3-15-21	CK128X102M
A1A1C38	3-17-26	193-C2C	A1A2C44	3-15-23	538002C0PC89R
A1A1C39	3-17-27	193-C2C	A1A2C45	3-15-32	DM5F331J050WV
A1A1C4	3-17-2	193-C2C	A1A2C46	3-15-130	DM5F331J050WV
A1A1C40	3-17-28	193-C2C	A1A2C47	3-15-30	538002E2P094R
A1A1C5	3-17-11	193-C2C	A1A2C48	3-15-20	CK128X102M
A1A1C6	3-17-10	193-C2C	A1A2C49	3-15-31	CK138X103M
A1A1C7	3-17-1	193-C2C	A1A2C5	3-15-88	CK138X103M
A1A1C8	3-17-44	193-C2C	A1A2C50	3-15-57	CK128X102M
A1A1C9	3-17-43	193-C2C	A1A2C6	3-15-85	CK138X103M
A1A1Q1	3-17-9	2N2222A	A1A2C7	3-15-81	CK058X104M
A1A1R1	3-17-6	RCRC7G102KS	A1A2C8	3-15-6	CK058X104M
A1A1R2	3-17-5	RCRC7G123KS	A1A2C9	3-15-160	CK128X102M
A1A1R3	3-17-4	RCRC7G123KS	A1A2FL1	3-15-19	2Q25
A1A2	3-2-16	629-3403-001	A1A2L1	3-15-83	MS75083-08
A1A2	3-15-	629-3403-001	A1A2L10	3-15-13	MS75084-04
A1A2CR1	3-15-80	1N5767	A1A2L11	3-15-170	MS75084-17
A1A2CR10	3-15-34	1N5767	A1A2L12	3-15-167	MS75084-17
A1A2CR2	3-15-69	1N5767	A1A2L13	3-15-94	MS75083-03
A1A2CR3	3-15-152	1N5767	A1A2L14	3-15-50	MS75084-04
A1A2CR4	3-15-71	1N5767	A1A2L16	3-15-126	MS75085-07
A1A2CR5	3-15-101	1N5767	A1A2L18	3-15-29	MS75084-17
A1A2CR6	3-15-113	1N5767	A1A2L2	3-15-78	MS75083-08
A1A2CR7	3-15-27	1N5767	A1A2L3	3-15-89	MS75089-11
A1A2CR8	3-15-127	1N5767	A1A2L4	3-15-86	MS75084-17
A1A2CR9	3-15-143	1N5767	A1A2L5	3-15-84	MS75084-17
A1A2C1	3-15-82	DM5E82CJC50WV	A1A2L6	3-15-11	MS75084-17
A1A2C10	3-15-14	538002C0PC89R	A1A2L7	3-15-165	MS75083-03

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A1A2L8	3-15-106	MS75C84-17	A1A2R39	3-15-116	RCR05G562JS
A1A2L9	3-15-149	MS75C84-17	A1A2R39	3-15-116	RCRC5G682JS
A1A2P1	3-15-172	629-5839-001	A1A2R4	3-15-72	RCRC5G100JS
A1A2P2	3-15-3	141-1002-0002	A1A2R40	3-15-51	RCR05G392JS
A1A2P3	3-15-41	141-1002-G002	A1A2R41	3-15-22	RCR05G392JS
A1A2Q1	3-15-9	SPF554-1	A1A2R42	3-15-142	RCR05G562JS
A1A2C1	3-15-9	SPF554	A1A2R43	3-15-140	RCR05G271JS
A1A2C10	3-15-60	S16835	A1A2R44	3-15-37	RCR05G100JS
A1A2Q11	3-15-49	2N2857	A1A2R45	3-15-138	RCR05G153JS
A1A2Q12	3-15-48	2N2857	A1A2R46	3-15-144	RCRC5G220JS
A1A2Q13	3-15-123	S16835	A1A2R47	3-15-141	RCR05G100JS
A1A2Q14	3-15-24	S16835	A1A2R48	3-15-139	RCR05G100JS
A1A2Q15	3-15-26	2N2857	A1A2R49	3-15-135	RCR05G102JS
A1A2Q16	3-15-25	2N2857	A1A2R5	3-15-104	RCR05G220JS
A1A2Q2	3-15-8	SPF554-1	A1A2R50	3-15-33	RCR05G473KS
A1A2Q2	3-15-8	SPF554	A1A2R51	3-15-39	RCR05G151JS
A1A2Q3	3-15-7	SPF554	A1A2R52	3-15-132	RCR05G122JS
A1A2Q3	3-15-7	SPF554-1	A1A2R53	3-15-87	RCR05G100JS
A1A2Q4	3-15-10	SPF554	A1A2R54	3-15-1	RCR05G100JS
A1A2Q4	3-15-10	SPF554-1	A1A2R55	3-15-114	RCR05G332JS
A1A2Q5	3-15-62	SPF554	A1A2R56	3-15-118	RCR05G150JS
A1A2Q5	3-15-62	SPF554-1	A1A2R57	3-15-120	RCR05G150JS
A1A2Q6	3-15-63	SPF554	A1A2R58	3-15-136	RCR05G220JS
A1A2Q6	3-15-63	SPF554-1	A1A2R59	3-15-131	RCR05G220JS
A1A2Q7	3-15-61	SPF554	A1A2R6	3-15-157	RCR05G3R3JS
A1A2Q7	3-15-61	SPF554-1	A1A2R60	3-15-12	RCR05G182JS
A1A2Q8	3-15-65	SPF554-1	A1A2R7	3-15-158	RCR05G3R3JS
A1A2Q8	3-15-65	SPF554	A1A2R8	3-15-16	RCR05G330KS
A1A2Q9	3-15-162	S16835	A1A2R9	3-15-156	RCR05G332JS
A1A2R11	3-15-129	317D43	A1A2R9	3-15-156	RCR05G682JS
A1A2R1	3-15-74	RCRC5G100JS	A1A2T1	3-15-4	628-2336-001
A1A2R10	3-15-163	RCRC5G100JS	A1A2T2	3-15-18	628-2335-001
A1A2R11	3-15-153	RCRC5G221JS	A1A2T3	3-15-68	628-2336-001
A1A2R11	3-15-153	RCRC5G151JS	A1A2T4	3-15-56	628-2335-001
A1A2R12	3-15-154	RCR05G332JS	A1A2T5	3-15-111	628-2333-001
A1A2R13	3-15-155	RCR05G332JS	A1A2T6	3-15-124	628-2337-001
A1A2R14	3-15-102	RCRC5G102JS	A1A2T7	3-15-145	628-2334-001
A1A2R15	3-15-97	RCRC5G102JS	A1A2T8	3-15-133	628-2337-002
A1A2R16	3-15-2	RCR05G151JS	A1A3	3-2-15	601-3671-001
A1A2R17	3-15-96	RCR05G332JS	A1A3	3-16-	601-3671-001
A1A2R18	3-15-98	RCR05G332JS	A1A3CR1	3-16-7	DA1701
A1A2R19	3-15-99	RCR05G121JS	A1A3CR10	3-16-74	1N645
A1A2R2	3-15-70	RCR05G473KS	A1A3CR11	3-16-75	1N645
A1A2R20	3-15-95	RCR05G100JS	A1A3CR12	3-16-11	DA1701
A1A2R21	3-15-93	RCR05G332JS	A1A3CR2	3-16-8	DA1701
A1A2R22	3-15-91	RCR05G330KS	A1A3CR3	3-16-13	1N4454
A1A2R23	3-15-76	RCR05G473KS	A1A3CR4	3-16-12	1N4454
A1A2R24	3-15-64	RCRC5G100JS	A1A3CR5	3-16-26	1N4454
A1A2R25	3-15-67	RCRC5G100JS	A1A3CR6	3-16-27	1N4454
A1A2R26	3-15-100	RCRC5G102JS	A1A3CR7	3-16-10	DA1701
A1A2R27	3-15-105	RCR05G102JS	A1A3CR8	3-16-46	1N4454
A1A2R28	3-15-148	RCRC5G102JS	A1A3CR9	3-16-70	1N4454
A1A2R29	3-15-112	RCR05G271JS	A1A3C1	3-16-1	DM5E82CJ050WV
A1A2R3	3-15-159	RCR05G220JS	A1A3C10	3-16-15	M39C03-01-2375
A1A2R30	3-15-110	RCR05G102JS	A1A3C11	3-16-31	CK05Bx104M
A1A2R31	3-15-119	RCR05G272JS	A1A3C12	3-16-33	CK05Bx104M
A1A2R32	3-15-125	RCRC5G100JS	A1A3C13	3-16-43	CK05Bx103K
A1A2R33	3-15-117	RCR05G100JS	A1A3C14	3-16-24	CK05Bx104M
A1A2R34	3-15-121	RCR05G470KS	A1A3C15	3-16-54	CK05Bx104M
A1A2R35	3-15-35	RCRC5G330KS	A1A3C16	3-16-56	CK05Bx104M
A1A2R36	3-15-128	RCR05G473KS	A1A3C17	3-16-6	CK05Bx104M
A1A2R37	3-15-36	RCRC5G102JS	A1A3C18	3-16-35	CK05Bx103K
A1A2R38	3-15-115	RCR05G271JS	A1A3C19	3-16-44	DM5C05C0300WV

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A1A3C2	3-16-5	DM5F161JC5CWV	A1A4L1	3-3-23	567-8390-001
A1A3C3	3-16-4	DM5E62CJC5CWV	A1A4L2	3-3-27	629-3491-001
A1A3C4	3-16-66	CKC58X1C3K	A1A4L3	3-3-44	629-6163-001
A1A3C5	3-16-64	CKO58X1C4M	A1A4L4	3-3-57	629-3491-001
A1A3C6	3-16-58	CKC58X1C4M	A1A4L5	3-3-53	629-3491-001
A1A3C7	3-16-51	CKC58X1C3K	A1A4L6	3-3-48	MS751C1-7
A1A3C8	3-16-50	CKO58X1C4M	A1A4P1	3-3-51	372-2623-013
A1A3C9	3-16-65	CKC58X1C4M	A1A4C1	3-3-18	2N29C7A
A1A3K1	3-16-72	3SAV1271A2	A1A4C10	3-3-70	2N2222A
A1A3L1	3-16-2	MS75083-08	A1A4C11	3-3-68	2N29C7A
A1A3L2	3-16-3	MS75083-08	A1A4C12	3-3-69	2N29C7A
A1A3L3	3-16-18	MS75084-C2	A1A4C13	3-3-58	2N2222A
A1A3L4	3-16-59	MS75084-17	A1A4C14	3-3-61	2N2907A
A1A3L5	3-16-57	MS75084-17	A1A4C2	3-3-4	2N2222A
A1A3L6	3-16-29	MS75084-17	A1A4C3	3-3-17	2N2907A
A1A3L7	3-16-9	MS751C1-7	A1A4C4	3-3-2	2N2222A
A1A3P1	3-16-76	372-2623-013	A1A4C5	3-3-3	2N2222A
A1A3Q1	3-16-62	2N918	A1A4C6	3-3-8C	2N2222A
A1A3Q2	3-16-21	2N5943	A1A4C7	3-3-76	2N2222A
A1A3Q3	3-16-49	2N5943	A1A4C8	3-3-41	2K5323
A1A3Q4	3-16-67	2N29C7A	A1A4C9	3-3-40	2N2907A
A1A3Q5	3-16-38	2N3375	A1A4RT1	3-3-58A	32TD4
A1A3R1	3-16-68	RCRC7G51CJS	A1A4R1	3-3-14	RCRC7G473KS
A1A3R10	3-16-25	RN55D681CF	A1A4R10	3-3-79	RN55C1472F
A1A3R11	3-16-52	RCR32G331KS	A1A4R12	3-3-1	RN55D3831F
A1A3R12	3-16-28	RCR07G820KS	A1A4R13	3-3-78	RCRC7G472KS
A1A3R13	3-16-65	RCRC7G333KS	A1A4R14	3-3-25	RCRC7G475KS
A1A3R14	3-16-47	RCRC7G4R7JS	A1A4R15	3-3-29	RCRC7G102KS
A1A3R15	3-16-45	RCR2CG150KS	A1A4R16	3-3-73	RCRC7G273KS
A1A3R16	3-16-55	RCR07G1C3KS	A1A4R17	3-3-75	RCRC7G102KS
A1A3R17	3-16-32	RCRC7G182JS	A1A4R18	3-3-72	RCRC7G473KS
A1A3R18	3-16-19	RCRC7G471KS	A1A4R19	3-3-71	RCRC7G104KS
A1A3R19	3-16-23	RCRC7G221KS	A1A4R2	3-3-12	RCRC7G102KS
A1A3R2	3-16-63	RCRC7G1C3KS	A1A4R20	3-3-39	RCRC7G102KS
A1A3R20	3-16-61	RCRC7G122KS	A1A4R21	3-3-38	RCRC7G102KS
A1A3R21	3-16-48	RCRC7G1C3JS	A1A4R22	3-3-34	RCRC7G102KS
A1A3R3	3-16-14	RCRC7G1C3KS	A1A4R23	3-3-66	RN55D1102F
A1A3R4	3-16-17	RCRC7G4R7JS	A1A4R23	3-3-66	RN55C1212F
A1A3R5	3-16-71	RCRC7G822KS	A1A4R23	3-3-66	RN55C1332F
A1A3R6	3-16-16	RCRC7G1C2KS	A1A4R23	3-3-66	RN55D1472F
A1A3R7	3-16-22	RCRC7G4R7JS	A1A4R23	3-3-66	RN55C1962F
A1A3R8	3-16-20	RCRC7G221KS	A1A4R23	3-3-66	RN55C2152F
A1A3R9	3-16-53	RN55D2741F	A1A4R23	3-3-66	RN55C2372F
A1A3R9	3-16-53	RN55D3321F	A1A4R23	3-3-66	RN55D2742F
A1A3T1	3-16-34	629-6144-001	A1A4R23	3-3-66	RN55D3012F
A1A3VR1	3-16-6C	1N4742A	A1A4R23	3-3-66	RN55C3162F
A1A3VR2	3-16-3C	MZ4626	A1A4R23	3-3-66	RN55C3322F
A1A3XQ5	3-16-36	629-55C1-001	A1A4R23	3-3-66	RN55D3482F
A1A4	3-2-4	601-367C-001	A1A4R23	3-3-66	RN55D4022F
A1A4	3-3-	601-367C-001	A1A4R23	3-3-66	RN55D4422F
A1A4CR1	3-3-19	1N4934	A1A4R23	3-3-66	RN55D5622F
A1A4CR3	3-3-77	1N4454	A1A4R23	3-3-66	RN55D1C03F
A1A4CR5	3-3-36	1N4934	A1A4R23	3-3-66	RN55C3013F
A1A4C1	3-3-16	CKC58X1C4M	A1A4R23	3-3-66	RN55C1742F
A1A4C10	3-3-31	CKC58X1C4M	A1A4R23	3-3-66	RN55D3922F
A1A4C11	3-3-60	CKO58X1C3K	A1A4R24	3-3-67	RN55D787CF
A1A4C12	3-3-37	M39CC3-C1-2295	A1A4R25	3-3-65	RN55D1622F
A1A4C13	3-3-56	M39CC3-C1-2259	A1A4R26	3-3-54	RCR07G100KS
A1A4C14	3-3-55	M39CC3-C1-2259	A1A4R26	3-3-54	RCR07G150KS
A1A4C15	3-3-57A	CKO58X1C4M	A1A4R26	3-3-54	RCR07G220KS
A1A4C2	3-3-22	CKO58X1C4M	A1A4R26	3-3-54	RCR07G330KS
A1A4C3	3-3-2C	CKC58X1C3K	A1A4R26	3-3-54	RCR07G470KS
A1A4C4	3-3-5	M39CC3-C1-2368	A1A4R26	3-3-54	RCR07G560KS
A1A4C5	3-3-28	M39003-C1-2289	A1A4R26	3-3-54	RCR07G680KS
A1A4C6	3-3-33	M39003-01-2295	A1A4R26	3-3-54	RCR07G820KS
A1A4C7	3-3-47	CKO58X1C3K	A1A4R26	3-3-54	RCR07G101KS
A1A4C8	3-3-45	M39003-01-2379			
A1A4C9	3-3-30	M39003-01-2255			

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A1A4R27	3-3-43	Y1A7CUR5COH	A1A5A1C19	3-5-213	CK05BX102M
A1A4R28	3-3-63	RCR07G333KS	A1A5A1C2	3-5-55	CK05BX103M
A1A4R29	3-3-59	RCRC7G273KS	A1A5A1C20	3-5-119	CK05BX103M
A1A4R3	3-3-6	RCRC7G473KS	A1A5A1C21	3-5-142	M39003-01-2357
A1A4R30	3-3-64	RCRC7G152KS	A1A5A1C22	3-5-146	M39003-01-2271
A1A4R31	3-3-35	RCRC7G155KS	A1A5A1C23	3-5-196	CK05BX104M
A1A4R32	3-3-46	RW69V2R7	A1A5A1C24	3-5-273	CK05BX103M
A1A4R33	3-3-42	RCRC7G272KS	A1A5A1C25	3-5-267	M39003-01-2283
A1A4R4	3-3-13	RCRC7G1C2KS	A1A5A1C26	3-5-280	CK05BX104M
A1A4R5	3-3-15	RCRC7G1G2KS	A1A5A1C27	3-5-197	M39003-01-2283
A1A4R6	3-3-21	RCRC7G1C1KS	A1A5A1C28	3-5-276	M39003-01-2283
A1A4R7	3-3-26	RWR815R37FR	A1A5A1C29	3-5-125	CK05BX103M
A1A4R8	3-3-7	RCRC7G472KS	A1A5A1C3	3-5-56	CK05BX103M
A1A4R9	3-3-24	RN55D1C2F	A1A5A1C30	3-5-204	CK05BX103M
A1A4R9	3-3-24	RN55D1C52F	A1A5A1C31	3-5-202	CK05BX102M
A1A4R9	3-3-24	RN55D11C2F	A1A5A1C32	3-5-281	CK05BX102M
A1A4R9	3-3-24	RN55D1152F	A1A5A1C33	3-5-193	CK05BX103M
A1A4R9	3-3-24	RN55D1212F	A1A5A1C34	3-5-190	CK05BX104M
A1A4R9	3-3-24	RN55D1272F	A1A5A1C35	3-5-265	CK05BX102M
A1A4R9	3-3-24	RN55D1322F	A1A5A1C36	3-5-188	CK05BX103M
A1A4R9	3-3-24	RN55D1402F	A1A5A1C37	3-5-218	CK05BX104M
A1A4R9	3-3-24	RN55D1472F	A1A5A1C38	3-5-182	CK05BX102M
A1A4R9	3-3-24	RN55D1542F	A1A5A1C39	3-5-287	CK05BX103M
A1A4R9	3-3-24	RN55D1C22F	A1A5A1C4	3-5-48	CK05BX103M
A1A4R9	3-3-24	RN55D1072F	A1A5A1C40	3-5-261	CK05BX102M
A1A4R9	3-3-24	RN55D1132F	A1A5A1C41	3-5-177	CK05BX103M
A1A4R9	3-3-24	RN55D1182F	A1A5A1C43	3-5-257	CK05BX104M
A1A4R9	3-3-24	RN55D1242F	A1A5A1C44	3-5-255	CK05BX104M
A1A4R9	3-3-24	RN55D1372F	A1A5A1C45	3-5-296	CK05BX102M
A1A4R9	3-3-24	RN55D1432F	A1A5A1C46	3-5-184	CK05BX103M
A1A4R9	3-3-24	RNC55H1302FS	A1A5A1C47	3-5-234	CK05BX103M
A1A4VR2	3-3-32	1N4744A	A1A5A1C48	3-5-175	CK05BX104M
A1A4VR4	3-3-74	MZ4624	A1A5A1C49	3-5-172	CK05BX472M
A1A4VR6	3-3-52	1N4734A	A1A5A1C5	3-5-50	CK05BX104M
A1A5	3-2-5	629-34C5-001	A1A5A1C50	3-5-248	M39003-01-2254
A1A5A1	3-5-	601-3668-001	A1A5A1C51	3-5-246	M39003-01-2254
A1A5A1	3-2-1C	601-3668-001	A1A5A1C52	3-5-247	M39003-01-2254
A1A5A1CR1	3-5-38	1N5767	A1A5A1C53	3-5-238	M39003-01-2357
A1A5A1CR10	3-5-180	1N4454	A1A5A1C54	3-5-239	M39003-01-2348
A1A5A1CR11	3-5-298	1N4454	A1A5A1C55	3-5-91	M39003-01-2357
A1A5A1CR12	3-5-169	1N4454	A1A5A1C56	3-5-9	CK05BX103M
A1A5A1CR13	3-5-168	1N4454	A1A5A1C57	3-5-86	CK05BX104M
A1A5A1CR14	3-5-285	1N4454	A1A5A1C58	3-5-87	M39003-01-2305
A1A5A1CR15	3-5-123	1N4454	A1A5A1C59	3-5-5	M39003-01-2283
A1A5A1CR16	3-5-1C2	1N5767	A1A5A1C6	3-5-39	CK05BX103M
A1A5A1CR2	3-5-217	1N4454	A1A5A1C60	3-5-160	M39003-01-2305
A1A5A1CR3	3-5-137	1N4454	A1A5A1C61	3-5-97	M39003-01-2357
A1A5A1CR4	3-5-304	1N4454	A1A5A1C62	3-5-157	M39003-01-2254
A1A5A1CR5	3-5-8C	1N4454	A1A5A1C63	3-5-12	M39003-01-2305
A1A5A1CR6	3-5-159	1N5767	A1A5A1C64	3-5-103	CK05BX102M
A1A5A1CR7	3-5-275	1N5767	A1A5A1C65	3-5-79	M39003-01-2290
A1A5A1CR8	3-5-268	1N5767	A1A5A1C66	3-5-57	CK05BX103M
A1A5A1CR9	3-5-256	1N4454	A1A5A1C67	3-5-60	CK05BX103M
A1A5A1C1	3-5-54	CK05BX103M	A1A5A1C7	3-5-65	CK05BX104M
A1A5A1C10	3-5-31	CK05BX103M	A1A5A1C72	3-5-72	M39003-01-2258
A1A5A1C11	3-5-29	CK05BX102M	A1A5A1C73	3-5-11	M39003-01-2290
A1A5A1C12	3-5-115	CK05BX104M	A1A5A1C74	3-5-94	DM5E270J050NV
A1A5A1C13	3-5-1C7	CK05BX103M	A1A5A1C75	3-5-151	DM5E36CJ050NV
A1A5A1C14	3-5-1C6	M39003-01-2255	A1A5A1C76	3-5-4	CK05BX103M
A1A5A1C15	3-5-122	CK05BX103M	A1A5A1C77	3-5-75	CK05BX103M
A1A5A1C16	3-5-225	CK05BX103M	A1A5A1C78	3-5-93	CK05BX103M
A1A5A1C17	3-5-222	CK05BX103M	A1A5A1C79	3-5-66	CK05BX104M
A1A5A1C18	3-5-207	CK05BX102M	A1A5A1C8	3-5-71	CK05BX103M

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A1A5A1C81	3-5-245	M39CC3-C1-2258	A1A5A1R110	3-5-252	RCR05G124JS
A1A5A1C9	3-5-64	CK05BXC3M	A1A5A1R111	3-5-299	RCR05G113JS
A1A5A1FL1	3-5-43	2B449	A1A5A1R112	3-5-253	RCR05G102JS
A1A5A1FL2	3-5-34	2B45C	A1A5A1R113	3-5-305	RCR05G473JS
A1A5A1L1	3-5-198	MS75C89-7	A1A5A1R114	3-5-161	RCR05G104JS
A1A5A1L2	3-5-277	MS75C89-7	A1A5A1R115	3-5-165	RCR05G103JS
A1A5A1L3	3-5-266	MS75C89-8	A1A5A1R116	3-5-166	RCR05G822JS
A1A5A1L4	3-5-78	MS75C89-11	A1A5A1R117	3-5-164	RCR05G103JS
A1A5A1L5	3-5-76	MS75C89-23	A1A5A1R118	3-5-301	RCR05G682JS
A1A5A1L6	3-5-295	MS75C89-27	A1A5A1R119	3-5-242	RCR05G273JS
A1A5A1P1	3-5-82	372-2623-03C	A1A5A1R12	3-5-59	RCR05G561JS
A1A5A1Q1	3-5-38	2N42C8	A1A5A1R120	3-5-241	RCR05G683JS
A1A5A1Q10	3-5-144	2N2484	A1A5A1R121	3-5-243	RCR05G104JS
A1A5A1Q11	3-5-145	JAN2N2222A	A1A5A1R122	3-5-88	RCR05G183JS
A1A5A1Q12	3-5-143	JAN2N29C7A	A1A5A1R123	3-5-2	RNC55F6040FS
A1A5A1Q13	3-5-20	JAN2N29C7A	A1A5A1R124	3-5-89	RCR05G222JS
A1A5A1Q14	3-5-19	JAN2N2222A	A1A5A1R125	3-5-1	RCR05G101JS
A1A5A1Q15	3-5-24	JAN2N2222A	A1A5A1R126	3-5-244	RCR05G104JS
A1A5A1Q16	3-5-14	JAN2N2222A	A1A5A1R127	3-5-159	RCR05G243JS
A1A5A1Q17	3-5-16	JAN2N2222A	A1A5A1R128	3-5-92	RCR05G394JS
A1A5A1Q18	3-5-17	JAN2N2222A	A1A5A1R129	3-5-158	RCR05G154JS
A1A5A1Q19	3-5-201	2N918	A1A5A1R13	3-5-69	RCR05G223JS
A1A5A1Q2	3-5-41	2N42C8	A1A5A1R130	3-5-156	RCR05G394JS
A1A5A1Q20	3-5-210	2N918	A1A5A1R131	3-5-8	RCR05G223JS
A1A5A1Q21	3-5-279	2N918	A1A5A1R132	3-5-10	RCR05G223JS
A1A5A1Q22	3-5-282	2N918	A1A5A1R133	3-5-7	RCR05G471JS
A1A5A1Q23	3-5-262	2N918	A1A5A1R134	3-5-90	RCR05G823JS
A1A5A1Q24	3-5-292	2N918	A1A5A1R135	3-5-98	RCR05G153JS
A1A5A1Q25	3-5-258	2N42C8	A1A5A1R136	3-5-152	RCR05G274JS
A1A5A1Q26	3-5-233	2N918	A1A5A1R137	3-5-99	RCR05G333JS
A1A5A1Q27	3-5-174	2N918	A1A5A1R138	3-5-81	RCR05G100JS
A1A5A1Q28	3-5-230	2N918	A1A5A1R139	3-5-153	RCR05G913JS
A1A5A1Q29	3-5-254	JAN2N2222A	A1A5A1R14	3-5-70	RCR05G561JS
A1A5A1Q3	3-5-58	2N918	A1A5A1R140	3-5-155	RCR05G104JS
A1A5A1Q30	3-5-297	JAN2N2222A	A1A5A1R141	3-5-52	RCR05G102JS
A1A5A1Q31	3-5-249	JAN2N29C7A	A1A5A1R142	3-5-303	RCR05G203JS
A1A5A1Q32	3-5-300	2N2484	A1A5A1R143	3-5-23	RCR05G223JS
A1A5A1Q33	3-5-302	JAN2N2222A	A1A5A1R144	3-5-73	RCR05G104JS
A1A5A1Q34	3-5-167	2N2484	A1A5A1R145	3-5-133	RCR05G104JS
A1A5A1Q35	3-5-163	JAN2N2222A	A1A5A1R147	3-5-132	RCR05G471JS
A1A5A1Q36	3-5-3	JAN2N2222A	A1A5A1R148	3-5-26	RCR05G102JS
A1A5A1Q37	3-5-6	2N26C8	A1A5A1R149	3-5-28	3329H1-103
A1A5A1Q38	3-5-130	JAN2N2222A	A1A5A1R15	3-5-62	RCR05G221JS
A1A5A1Q39	3-5-186	2N918	A1A5A1R150	3-5-183	3329H1-103
A1A5A1Q4	3-5-33	2N918	A1A5A1R151	3-5-173	3329H1-101
A1A5A1Q5	3-5-185	2N42C8	A1A5A1R152	3-5-154	RCR05G274JS
A1A5A1Q6	3-5-129	JAN2N29C7A	A1A5A1R153	3-5-110	RCR05G104JS
A1A5A1Q7	3-5-128	2N2484	A1A5A1R154	3-5-111	3329H1-503
A1A5A1Q8	3-5-131	2N2484	A1A5A1R156	3-5-68	RCR05G560JS
A1A5A1Q9	3-5-113	2N2484	A1A5A1R157	3-5-237	RCR05G821JS
A1A5A1R1	3-5-47	RCR05G183JS	A1A5A1R158	3-5-77	RCR05G101JS
A1A5A1R10	3-5-40	RCR05G222JS	A1A5A1R159	3-5-240	RCR05G220JS
A1A5A1R100	3-5-235	RCR05G302JS	A1A5A1R16	3-5-63	RCR05G561JS
A1A5A1R101	3-5-236	RCR05G302JS	A1A5A1R17	3-5-61	RCR05G223JS
A1A5A1R102	3-5-231	RCR05G102JS	A1A5A1R18	3-5-37	RCR05G333JS
A1A5A1R103	3-5-178	RCR05G822JS	A1A5A1R19	3-5-32	RCR05G121JS
A1A5A1R104	3-5-181	RCR05G392JS	A1A5A1R2	3-5-53	RCR05G183JS
A1A5A1R105	3-5-179	RCR05G331JS	A1A5A1R20	3-5-127	RCR05G561JS
A1A5A1R106	3-5-228	RCR05G221JS	A1A5A1R21	3-5-30	RCR05G223JS
A1A5A1R107	3-5-171	RCR05G470JS	A1A5A1R22	3-5-25	RCR05G222JS
A1A5A1R108	3-5-170	RCR05G302JS	A1A5A1R23	3-5-27	RCR05G333JS
A1A5A1R109	3-5-251	RCR05G101JS	A1A5A1R24	3-5-116	RCR05G202JS

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A1A5A1R26	3-5-118	RCR05G3C2JS	A1A5A1R79	3-5-274	RCR05G102JS
A1A5A1R27	3-5-114	RCR05G3S2JS	A1A5A1R8	3-5-44	RCR05G112JS
A1A5A1R28	3-5-109	RCR05G470JS	A1A5A1R80	3-5-284	RCR05G272JS
A1A5A1R29	3-5-104	RCR05G102JS	A1A5A1R81	3-5-283	RCR05G221JS
A1A5A1R3	3-5-46	RCR05G22JS	A1A5A1R82	3-5-191	RCR05G471JS
A1A5A1R30	3-5-112	3329H1-5C1	A1A5A1R83	3-5-269	RCR05G102JS
A1A5A1R31	3-5-108	RCR05G470JS	A1A5A1R84	3-5-250	RCR05G562JS
A1A5A1R32	3-5-227	RCR05G102JS	A1A5A1R85	3-5-285	RCR05G272JS
A1A5A1R33	3-5-226	RCR05G621JS	A1A5A1R86	3-5-263	RCR05G332JS
A1A5A1R33	3-5-226	RCR05G621JS	A1A5A1R87	3-5-290	RCR05G472JS
A1A5A1R33	3-5-226	RCR05G681JS	A1A5A1R88	3-5-288	RCR05G221JS
A1A5A1R33	3-5-226	RCR05G751JS	A1A5A1R89	3-5-286	RCR05G432JS
A1A5A1R34	3-5-221	RCR05G3C2JS	A1A5A1R9	3-5-35	RCR05G132JS
A1A5A1R35	3-5-220	RCR05G3C2JS	A1A5A1R90	3-5-192	RCR05G471JS
A1A5A1R36	3-5-219	RCR05G471JS	A1A5A1R91	3-5-291	RCR05G183JS
A1A5A1R37	3-5-224	RCR05G821JS	A1A5A1R92	3-5-294	RCR05G221JS
A1A5A1R38	3-5-187	RCR05G1C4JS	A1A5A1R93	3-5-293	RCR05G471JS
A1A5A1R39	3-5-212	RCR05G122JS	A1A5A1R94	3-5-121	RCR05G273JS
A1A5A1R4	3-5-49	RCR05G471JS	A1A5A1R95	3-5-259	RCR05G332JS
A1A5A1R40	3-5-215	RCR05G333JS	A1A5A1R96	3-5-176	RCR05G391JS
A1A5A1R41	3-5-206	RCR05G112JS	A1A5A1R97	3-5-260	RCR05G562JS
A1A5A1R42	3-5-208	RCR05G333JS	A1A5A1R98	3-5-232	RCR05G102JS
A1A5A1R43	3-5-126	RCR05G103JS	A1A5A1R99	3-5-229	RCR05G183JS
A1A5A1R44	3-5-120	RCR05G104JS	A1A5A1U1	3-5-223	MC1596G
A1A5A1R45	3-5-124	RCR05G1C3JS	A1A5A1U2	3-5-96	MC1558G
A1A5A1R46	3-5-140	RCR05G153JS	A1A5A1U3	3-5-95	CD4016MJ
A1A5A1R47	3-5-141	RCR05G683JS	A1A5A1U3	3-5-95	MC140668AL
A1A5A1R48	3-5-134	RCR05G223JS	A1A5A2	3-2-6	601-3669-CC1
A1A5A1R49	3-5-135	RCR05G223JS	A1A5A2	3-4-	601-3669-CC1
A1A5A1R5	3-5-42	RCR05G220JS	A1A5A2CR1	3-4-72	1N4454
A1A5A1R50	3-5-105	RCR05G333JS	A1A5A2CR10	3-4-62	1N4454
A1A5A1R51	3-5-149	RCR05G274JS	A1A5A2CR11	3-4-11	1N5767
A1A5A1R52	3-5-150	RCR05G683JS	A1A5A2CR2	3-4-122	1N4454
A1A5A1R53	3-5-148	RCR05G222JS	A1A5A2CR3	3-4-130	1N4454
A1A5A1R54	3-5-136	RCR05G333JS	A1A5A2CR4	3-4-55	1N4454
A1A5A1R55	3-5-138	RCR05G473JS	A1A5A2CR5	3-4-57	1N4454
A1A5A1R56	3-5-139	RCR05G1C4JS	A1A5A2CR6	3-4-58	1N4454
A1A5A1R57	3-5-21	RCR05G224JS	A1A5A2CR7	3-4-59	1N4454
A1A5A1R58	3-5-13	RCR05G223JS	A1A5A2CR8	3-4-18	1N4454
A1A5A1R59	3-5-18	RCR05G1C4JS	A1A5A2CR9	3-4-56	1N5767
A1A5A1R6	3-5-45	RCR05G822JS	A1A5A2C1	3-4-70	M39003-01-2283
A1A5A1R60	3-5-147	RCR05G183JS	A1A5A2C10	3-4-108	M39003-01-2348
A1A5A1R61	3-5-15	RCR05G223JS	A1A5A2C11	3-4-3	M39003-01-2348
A1A5A1R62	3-5-74	RCR05G1C4JS	A1A5A2C12	3-4-26	M39003-01-2338
A1A5A1R63	3-5-22	RCR05G683JS	A1A5A2C13	3-4-103	M39003-01-2284
A1A5A1R64	3-5-216	RCR05G1C0JS	A1A5A2C14	3-4-16	M39003-01-2283
A1A5A1R64	3-5-216	RCR05G220JS	A1A5A2C15	3-4-13	M39003-01-2283
A1A5A1R65	3-5-272	RCR05G220JS	A1A5A2C16	3-4-24	M39003-01-2255
A1A5A1R65	3-5-272	RCR05G1C0JS	A1A5A2C17	3-4-115	CK05BX103M
A1A5A1R66	3-5-270	RCR05G220JS	A1A5A2C18	3-4-104	M39003-01-2258
A1A5A1R67	3-5-271	RCR05G220JS	A1A5A2C19	3-4-28	M39003-01-2284
A1A5A1R68	3-5-209	RCR05G223JS	A1A5A2C2	3-4-78	CK05BX104K
A1A5A1R69	3-5-100	RCR05G1C2JS	A1A5A2C20	3-4-27	M39003-01-2255
A1A5A1R7	3-5-51	RCR05G560JS	A1A5A2C21	3-4-76	CK05BX104M
A1A5A1R70	3-5-214	RCR05G223JS	A1A5A2C22	3-4-106	M39003-01-2290
A1A5A1R71	3-5-211	RCR05G241JS	A1A5A2C23	3-4-25	CM5C1000300WV
A1A5A1R72	3-5-203	RCR05G241JS	A1A5A2C24	3-4-14	M39003-01-2348
A1A5A1R73	3-5-205	RCR05G1C4JS	A1A5A2C25	3-4-112A	CK05BX104M
A1A5A1R74	3-5-278	RCR05G222JS	A1A5A2C26	3-4-127A	CK05BX103M
A1A5A1R75	3-5-200	RCR05G272JS	A1A5A2C3	3-4-131	M39003-01-2283
A1A5A1R76	3-5-195	RCR05G221JS	A1A5A2C4	3-4-121	M39003-01-2348
A1A5A1R77	3-5-189	RCR05G222JS	A1A5A2C5	3-4-12	CK05BX102M
			A1A5A2C6	3-4-85	DM5F401J050WV

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A1A5A2C7	3-4-92	DM5H2C1J050WV	A1A5A2R47	3-4-44	RCR05G303JS
A1A5A2C8	3-4-89	DM5H2C1JC5CWV	A1A5A2R48	3-4-31	RCR05G680JS
A1A5A2C9	3-4-86	CKG5EX104M	A1A5A2R49	3-4-43	RCR05G682JS
A1A5A2L1	3-4-30	MS75089-11	A1A5A2R5	3-4-123	RCR05G333JS
A1A5A2P1	3-4-102	372-2624-026	A1A5A2R5C	3-4-32	RCR05G682JS
A1A5A2Q1	3-4-66	JAN2N29C7A	A1A5A2R51	3-4-33	RCR05G621JS
A1A5A2Q10	3-4-8	JAN2N29C7A	A1A5A2R52	3-4-42	RCR05G332JS
A1A5A2Q11	3-4-20	JAN2N29C7A	A1A5A2R53	3-4-45	RCR05G101JS
A1A5A2Q12	3-4-46	2N2608	A1A5A2R54	3-4-110	RCR05G824JS
A1A5A2Q13	3-4-29	2N2608	A1A5A2R55	3-4-109	RCR05G104JS
A1A5A2Q14	3-4-41	JAN2N2222A	A1A5A2R56	3-4-117	RCR05G224JS
A1A5A2Q15	3-4-107	FN1905	A1A5A2R57	3-4-90	RCR05G224JS
A1A5A2Q16	3-4-113	2N2608	A1A5A2R58	3-4-111	RCR05G224JS
A1A5A2Q2	3-4-67	JAN2N29C7A	A1A5A2R6	3-4-125	RCR05G333JS
A1A5A2Q3	3-4-39	JAN2N29C7A	A1A5A2R61	3-4-19	RCR05G105JS
A1A5A2Q4	3-4-40	JAN2N2222A	A1A5A2R62	3-4-48	RCR05G335JS
A1A5A2Q5	3-4-93	2N2608	A1A5A2R63	3-4-65	RCR05G104KS
A1A5A2Q6	3-4-83	2N4416	A1A5A2R64	3-4-105	RCR07C1C0KS
A1A5A2Q7	3-4-73	JAN2N29C7A	A1A5A2R65	3-4-61	RCR05G474JS
A1A5A2Q8	3-4-77	JAN2N2222A	A1A5A2R66	3-4-52	RCR05G324JS
A1A5A2Q9	3-4-91	JAN2N29C7A	A1A5A2R67	3-4-60	RCR05G474JS
A1A5A2R1	3-4-119	RCR05G1C2JS	A1A5A2R68	3-4-38	RCR05G103JS
A1A5A2R10	3-4-63	RN55D3C13F	A1A5A2R69	3-4-15	RCR05G684JS
A1A5A2R11	3-4-6	RCR05G224JS	A1A5A2R7	3-4-114	RCR05G333JS
A1A5A2R12	3-4-4	RCR05G333JS	A1A5A2R7C	3-4-34	RCR05G222JS
A1A5A2R13	3-4-100	RCR05G333JS	A1A5A2R71	3-4-126A	RCR05G105JS
A1A5A2R14	3-4-1	RCR05G105JS	A1A5A2R8	3-4-5	RCR05G104KS
A1A5A2R14	3-4-1	RCR05G125JS	A1A5A2R9	3-4-64	RN55D1963F
A1A5A2R15	3-4-84	RCR05G1C5JS	A1A5A2U1	3-4-2	CD4025VJ
A1A5A2R15	3-4-84	RCR05G684JS	A1A5A2U2	3-4-7	CD4049MJ
A1A5A2R17	3-4-37	RCR05G1C2JS	A1A5A2U3	3-4-128	CD4001MJ
A1A5A2R18	3-4-35	RCR05G103JS	A1A5A2U4	3-4-126	CD4001MJ
A1A5A2R19	3-4-36	RCR05G223JS	A1A5A2U5	3-4-120	CD4011MJ
A1A5A2R2	3-4-118	RCR05G562JS	A1A5A2U6	3-4-129	CD4049MJ
A1A5A2R20	3-4-97	RCR05G222JS	A1A5A2U7	3-4-127	CD4023UBF
A1A5A2R21	3-4-96	RCR05G333JS	A1A5A2U8	3-4-50	MC1558G
A1A5A2R22	3-4-124	RCR05G1C4KS	A1A5A2VR1	3-4-82	1N4753A
A1A5A2R23	3-4-94	RN55D2613F	A1A6	3-2-12	629-34C2-C02
A1A5A2R24	3-4-87	RN55D2613F	A1A6A1	3-2-13	609-2467-002
A1A5A2R25	3-4-88	RN55D1213F	A1A6A1	3-6-	609-2467-002
A1A5A2R26	3-4-95	RCR05G1C4JS	A1A6A1A1	3-7-	601-3877-001
A1A5A2R27	3-4-81	RCR05G1C3KS	A1A6A1A1	3-6-5	601-3877-001
A1A5A2R28	3-4-85	RCR05G682JS	A1A6A1A1CR1	3-7-112	MV109
A1A5A2R29	3-4-79	RCR05G224JS	A1A6A1A1CR10	3-7-79	1N5711
A1A5A2R3	3-4-68	RCR05G1C2JS	A1A6A1A1CR2	3-7-49	1N5147
A1A5A2R30	3-4-74	RCR05G331JS	A1A6A1A1CR2	3-7-49	1N5147
A1A5A2R31	3-4-75	RCR05G103KS	A1A6A1A1CR2	3-7-49	1N5146A
A1A5A2R32	3-4-80	RCR05G105JS	A1A6A1A1CR3	3-7-3	1N4454
A1A5A2R33	3-4-116	RCR05G333KS	A1A6A1A1CR4	3-7-10	1N4454
A1A5A2R34	3-4-10	RCR05G333KS	A1A6A1A1CR5	3-7-14	1N5711
A1A5A2R35	3-4-112	RCR05G1C4KS	A1A6A1A1CR7	3-7-23	1N5711
A1A5A2R36	3-4-9	RCR05G1C4KS	A1A6A1A1CR8	3-7-22	1N5711
A1A5A2R37	3-4-99	RCR05G154JS	A1A6A1A1CR9	3-7-96	1N4454
A1A5A2R38	3-4-54	RCR05G273JS	A1A6A1A1C1	3-7-51	CK058103K
A1A5A2R38	3-4-54	RN55D2742F	A1A6A1A1C10	3-7-69	DM5C0700300WV
A1A5A2R39	3-4-53	RCR05G824JS	A1A6A1A1C10	3-7-69	DM5C08C0300WV
A1A5A2R4	3-4-71	RCR05G684JS	A1A6A1A1C10	3-7-69	DM5C09C0300WV
A1A5A2R40	3-4-51	RCR05G224JS	A1A6A1A1C10	3-7-69	DM5C0200300WV
A1A5A2R41	3-4-22	RCR05G224JS	A1A6A1A1C10	3-7-69	DM5C0600300WV
A1A5A2R42	3-4-21	RCR05G1C3JS	A1A6A1A1C10	3-7-69	DM5C1500300WV
A1A5A2R43	3-4-17	RCR05G681JS	A1A6A1A1C10	3-7-69	DM5C12C0300WV
A1A5A2R44	3-4-49	RCR05G824JS	A1A6A1A1C10	3-7-69	DM5C05G0300WV
A1A5A2R45	3-4-23	RCR05G824JS	A1A6A1A1C10	3-7-69	DM5C0300300WV
A1A5A2R46	3-4-47	RCR05G1C5JS	A1A6A1A1C10	3-7-69	DM5C0400300WV

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A1A6A1A1C10	3-7-69	DM5C1CCD300WV	A1A6A1A1C4	3-7-37	DM5F121J050WV
A1A6A1A1C10	3-7-69	DM5CC1CD300WV	A1A6A1A1C4	3-7-37	DM5F111J050WV
A1A6A1A1C11	3-7-36	DM5E33CJC5CWV	A1A6A1A1C4	3-7-37	DM5F131J050WV
A1A6A1A1C12	3-7-30	DM5F111J050WV	A1A6A1A1C4	3-7-37	DM5F161J050WV
A1A6A1A1C13	3-7-35	DM5F271J050WV	A1A6A1A1C4	3-7-37	DM5F171J050WV
A1A6A1A1C14	3-7-20	CKC5BXC2K	A1A6A1A1C40	3-7-117	CY10C102M
A1A6A1A1C15	3-7-21	CKC5BXC2K	A1A6A1A1C41	3-7-91	DM5F181J050WV
A1A6A1A1C16	3-7-8	DM5E56CJC050WV	A1A6A1A1C42	3-7-92	8121-10CC0G471K
A1A6A1A1C17	3-7-9	DM5E56CJC050WV	A1A6A1A1C43	3-7-105	CY10C102M
A1A6A1A1C18	3-7-4	CKC5BXC3K	A1A6A1A1C44	3-7-98	DM5F181J050WV
A1A6A1A1C19	3-7-108	CKC5BXC3K	A1A6A1A1C45	3-7-100	DM5C150C300WV
A1A6A1A1C2	3-7-48	CCR13CG5R6D	A1A6A1A1C45	3-7-100	DM5E200D100WV
A1A6A1A1C2	3-7-48	CCR13CG6R8D	A1A6A1A1C45	3-7-100	DM5E360J050WV
A1A6A1A1C2	3-7-48	CCR13CG7R5D	A1A6A1A1C45	3-7-100	DM5E300J050WV
A1A6A1A1C2	3-7-48	8101B212COKC-109	A1A6A1A1C45	3-7-100	DM5C120D300WV
		C	A1A6A1A1C45	3-7-100	DM5E270J050WV
A1A6A1A1C2	3-7-48	CCR13CG3R3C	A1A6A1A1C45	3-7-100	DM5E220D300WV
A1A6A1A1C2	3-7-48	8101B212COKC-709	A1A6A1A1C45	3-7-100	DM5C180C100WV
		C	A1A6A1A1C45	3-7-100	DM5E240D050WV
A1A6A1A1C2	3-7-48	CCR13CG8R2D	A1A6A1A1C46	3-7-101	DM5E330J050WV
A1A6A1A1C2	3-7-48	CCR13CG3R9C	A1A6A1A1C46	3-7-101	DM5E240C050WV
A1A6A1A1C2	3-7-48	CCR13CG4R7C	A1A6A1A1C46	3-7-101	DM5E430J050WV
A1A6A1A1C2	3-7-48	CCR13CG2R2C	A1A6A1A1C46	3-7-101	DM5E200D100WV
A1A6A1A1C2	3-7-48	8101B077C0G0-279	A1A6A1A1C46	3-7-101	DM5C150C300WV
		C	A1A6A1A1C46	3-7-101	DM5E270J050WV
A1A6A1A1C2	3-7-48	CCR13CG1R8C	A1A6A1A1C46	3-7-101	DM5E220D300WV
A1A6A1A1C2	3-7-48	CCR13CG1R5C	A1A6A1A1C46	3-7-101	DM5E360J050WV
A1A6A1A1C2	3-7-48	8111BC9COKC-478	A1A6A1A1C46	3-7-101	DM5E300J050WV
		C	A1A6A1A1C46	3-7-101	DM5C180C100WV
A1A6A1A1C20	3-7-109	CY10C102M	A1A6A1A1C46	3-7-101	CY10C102M
A1A6A1A1C21	3-7-2	CK05BXC3K	A1A6A1A1C47	3-7-107	DM5F101J050WV
A1A6A1A1C22	3-7-64	CK05BXC3K	A1A6A1A1C48	3-7-26	DM5E330J050WV
A1A6A1A1C23	3-7-13	DM5E47CJC5CWV	A1A6A1A1C48	3-7-26	DM5C100D300WV
A1A6A1A1C24	3-7-16	DM5F1C1J050WV	A1A6A1A1C49	3-7-75	CK05BXC3K
A1A6A1A1C25	3-7-24	DM5F1C1J050WV	A1A6A1A1C5	3-7-60	8101B212COKC-109
A1A6A1A1C26	3-7-27	DM5F1C1J050WV			C
A1A6A1A1C27	3-7-32	DM5E47CJC050WV	A1A6A1A1C6	3-7-45	DM5F221J050WV
A1A6A1A1C28	3-7-34	CKC5BXC4K	A1A6A1A1C7	3-7-46	DM5F221J050WV
A1A6A1A1C29	3-7-67	DM5F181J050WV	A1A6A1A1C8	3-7-43	CK05BXC2K
A1A6A1A1C29	3-7-67	DM5F1C1J050WV	A1A6A1A1C9	3-7-115	CK05BXC3K
A1A6A1A1C3	3-7-47	PC26J14C	A1A6A1A1E1	3-7-124	623-3844-001
A1A6A1A1C30	3-7-71	8121-10CC0G471K	A1A6A1A1E2	3-7-125	623-3844-001
A1A6A1A1C31	3-7-73	8121-10CC0G471K	A1A6A1A1E3	3-7-126	623-3845-001
A1A6A1A1C32	3-7-119	CY10C102M	A1A6A1A1I1	3-7-38	MS75084-12
A1A6A1A1C33	3-7-77	DM5C1CCD300WV	A1A6A1A1I2	3-7-1	MS75085-07
A1A6A1A1C34	3-7-87	8121-10CC0G471K	A1A6A1A1I3	3-7-102	MS75083-05
A1A6A1A1C35	3-7-116	DM5F1C1J050WV	A1A6A1A1I4	3-7-88	623-3848-001
A1A6A1A1C36	3-7-85	8121-10CC0G471K	A1A6A1A1I5	3-7-113	MS75085-07
A1A6A1A1C37	3-7-86	8121-10CC0G471K	A1A6A1A1I6	3-7-78	MS75083-13
A1A6A1A1C38	3-7-80	CCR13CG4R7C	A1A6A1A1I7	3-7-84	MS75084-02
A1A6A1A1C39	3-7-81	CCR13CG100K	A1A6A1A1I8	3-7-66A	623-3848-003
A1A6A1A1C4	3-7-37	DM5F181J050WV	A1A6A1A1I9	3-7-40	2N918
A1A6A1A1C4	3-7-37	DM5F101J050WV	A1A6A1A1C10	3-7-95	2N918
A1A6A1A1C4	3-7-37	DM5E82CJC050WV	A1A6A1A1C10	3-7-39	2N918
A1A6A1A1C4	3-7-37	DM5F361J050WV	A1A6A1A1C10	3-7-5	2N4208
A1A6A1A1C4	3-7-37	DM5F301J050WV	A1A6A1A1C10	3-7-12	2N2784
A1A6A1A1C4	3-7-37	DM5F271J050WV	A1A6A1A1C10	3-7-15	2N4208
A1A6A1A1C4	3-7-37	DM5F151J050WV	A1A6A1A1C10	3-7-68	2N918
A1A6A1A1C4	3-7-37	DM5F221J050WV	A1A6A1A1C10	3-7-70	2N918
A1A6A1A1C4	3-7-37	DM5F201J050WV	A1A6A1A1C10	3-7-110	2N2222A
A1A6A1A1C4	3-7-37	DM5F241J050WV	A1A6A1A1C9	3-7-83	FN1905
A1A6A1A1C4	3-7-37	DM5F331J050WV	A1A6A1A1RT1	3-7-57	51T049

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A1A6A1A1R2	3-7-55	31TC43	A1A6A1A1R2	3-7-58	RN5501621F
A1A6A1A1R3	3-7-53	61TM49-5PCT	A1A6A1A1R20	3-7-25	RCR05G393KS
A1A6A1A1R1	3-7-61	RN55D2492F	A1A6A1A1R21	3-7-28	RCR05G393KS
A1A6A1A1R1	3-7-61	RN55D2152F	A1A6A1A1R22	3-7-31	RCR05G562KS
A1A6A1A1R1	3-7-61	RN55D2612F	A1A6A1A1R23	3-7-33	RCR05G562KS
A1A6A1A1R1	3-7-61	RN55D2742F	A1A6A1A1R24	3-7-97	RCR05G102KS
A1A6A1A1R1	3-7-61	RN55D1962F	A1A6A1A1R24	3-7-97	RCR05G152KS
A1A6A1A1R1	3-7-61	RN55D1542F	A1A6A1A1R24	3-7-97	RCR05G821KS
A1A6A1A1R1	3-7-61	RN55D2C52F	A1A6A1A1R24	3-7-97	RCR05G122KS
A1A6A1A1R1	3-7-61	RN55D1872F	A1A6A1A1R24	3-7-97	RCR05G182KS
A1A6A1A1R1	3-7-61	RN55D2372F	A1A6A1A1R24	3-7-97	RCR05G681KS
A1A6A1A1R1	3-7-61	RN55D3322F	A1A6A1A1R25	3-7-17	RCR05G122KS
A1A6A1A1R1	3-7-61	RN55D3482F	A1A6A1A1R26	3-7-72	RCR05G102KS
A1A6A1A1R1	3-7-61	RN55D3162F	A1A6A1A1R27	3-7-65	RCR05G243JS
A1A6A1A1R1	3-7-61	RN55D2872F	A1A6A1A1R28	3-7-74	RCR05G362JS
A1A6A1A1R1	3-7-61	RN55D3C12F	A1A6A1A1R29	3-7-76	RCR05G113JS
A1A6A1A1R1	3-7-61	RN55D14C2F	A1A6A1A1R3	3-7-56	RN55D1473F
A1A6A1A1R1	3-7-61	RN55D1692F	A1A6A1A1R3	3-7-56	RN55D1873F
A1A6A1A1R1	3-7-61	RN55D1782F	A1A6A1A1R3	3-7-56	RN55D1213F
A1A6A1A1R1	3-7-61	RN55D1472F	A1A6A1A1R3	3-7-56	RN55D1623F
A1A6A1A1R1	3-7-61	RN55D1622F	A1A6A1A1R3	3-7-56	RN55C1403F
A1A6A1A1R1	3-7-61	RN55D1272F	A1A6A1A1R3	3-7-56	RN55D2613F
A1A6A1A1R1	3-7-61	RN55D1212F	A1A6A1A1R3	3-7-56	RN55C1333F
A1A6A1A1R1	3-7-61	RN55D1152F	A1A6A1A1R3	3-7-56	RN55C3013F
A1A6A1A1R1	3-7-61	RN55D1332F	A1A6A1A1R3	3-7-56	RN55C2493F
A1A6A1A1R1	3-7-61	RN55D1C02F	A1A6A1A1R3	3-7-56	RN55D2053F
A1A6A1A1R1	3-7-61	RN55D1C52F	A1A6A1A1R3	3-7-56	RN55D1543F
A1A6A1A1R1	3-7-61	RN55D11C2F	A1A6A1A1R3	3-7-56	RN55C2263F
A1A6A1A1R1	3-7-61	RN55D2262F	A1A6A1A1R3	3-7-56	RN55D1783F
A1A6A1A1R10	3-7-41	RCR05G222KS	A1A6A1A1R3	3-7-56	RN55D2873F
A1A6A1A1R11	3-7-42	RCR05G183KS	A1A6A1A1R3	3-7-56	RN55D1963F
A1A6A1A1R12	3-7-104	RCR05G563KS	A1A6A1A1R3	3-7-56	RN55D1693F
A1A6A1A1R13	3-7-103	RCR05G47CKS	A1A6A1A1R3	3-7-56	RN55C1273F
A1A6A1A1R14	3-7-118	RCR05G471KS	A1A6A1A1R3	3-7-56	RN55D2153F
A1A6A1A1R15	3-7-12C	RCR05G47CKS	A1A6A1A1R3	3-7-56	RN55D2373F
A1A6A1A1R16	3-7-7	RCR05G47CKS	A1A6A1A1R3	3-7-56	RN55C2743F
A1A6A1A1R17	3-7-6	RCR05G222KS	A1A6A1A1R30	3-7-111	RCR05G563KS
A1A6A1A1R18	3-7-11	RCR05G222KS	A1A6A1A1R31	3-7-114	RCR05G122KS
A1A6A1A1R19	3-7-18	RCR05G122KS	A1A6A1A1R32	3-7-89	RN55D3482F
A1A6A1A1R2	3-7-58	RN55D2261F	A1A6A1A1R33	3-7-106	RN55C6192F
A1A6A1A1R2	3-7-58	RN55D2151F	A1A6A1A1R34	3-7-90	RN55D2872F
A1A6A1A1R2	3-7-58	RN55D1331F	A1A6A1A1R34	3-7-90	RN55D3012F
A1A6A1A1R2	3-7-58	RN55D1211F	A1A6A1A1R34	3-7-90	RN55D1782F
A1A6A1A1R2	3-7-58	RN55D1151F	A1A6A1A1R34	3-7-90	RN55D3162F
A1A6A1A1R2	3-7-58	RN55D1541F	A1A6A1A1R34	3-7-90	RN55D3322F
A1A6A1A1R2	3-7-58	RN55D1871F	A1A6A1A1R34	3-7-90	RN55D1872F
A1A6A1A1R2	3-7-58	RN55D1C51F	A1A6A1A1R34	3-7-90	RN55D1962F
A1A6A1A1R2	3-7-58	RN55D1471F	A1A6A1A1R34	3-7-90	RN55D8661F
A1A6A1A1R2	3-7-58	RN55D9530F	A1A6A1A1R34	3-7-90	RN55D1152F
A1A6A1A1R2	3-7-58	RN55D1781F	A1A6A1A1R34	3-7-90	RN55D2052F
A1A6A1A1R2	3-7-58	RN55D1691F	A1A6A1A1R34	3-7-90	RN55D1692F
A1A6A1A1R2	3-7-58	RN55D8660F	A1A6A1A1R34	3-7-90	RN55D1542F
A1A6A1A1R2	3-7-58	RN55D2C51F	A1A6A1A1R34	3-7-90	RN55D1402F
A1A6A1A1R2	3-7-58	RN55D1271F	A1A6A1A1R34	3-7-90	RN55D3482F
A1A6A1A1R2	3-7-58	RN55D14C1F	A1A6A1A1R34	3-7-90	RN55D1272F
A1A6A1A1R2	3-7-58	RN55D1961F	A1A6A1A1R34	3-7-90	RN55D1C02F
A1A6A1A1R2	3-7-58	RN55D2371F	A1A6A1A1R34	3-7-90	RN55D2492F
A1A6A1A1R2	3-7-58	RN55D8250F	A1A6A1A1R34	3-7-90	RN55D2612F
A1A6A1A1R2	3-7-58	RN55D7870F	A1A6A1A1R34	3-7-90	RN55D2372F
A1A6A1A1R2	3-7-58	RN55D7500F	A1A6A1A1R34	3-7-90	RN55D2742F
A1A6A1A1R2	3-7-58	RN55D9C90F	A1A6A1A1R35	3-7-82	RCR05G103KS
A1A6A1A1R2	3-7-58	RN55D1CC1F	A1A6A1A1R36	3-7-121	RCR05G560KS
A1A6A1A1R2	3-7-58	RN55D11C1F	A1A6A1A1R36	3-7-121	RCR05G820KS

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A1A6A1A1R36	3-7-121	RCRC5G33CKS	A1A6A1A1R5	3-7-54	RN5501002F
A1A6A1A1R36	3-7-121	RCRC5G680KS	A1A6A1A1R5	3-7-54	RN5501102F
A1A6A1A1R36	3-7-121	RCRC5G101KS	A1A6A1A1R5	3-7-54	RN5501052F
A1A6A1A1R36	3-7-121	RCRC5G390KS	A1A6A1A1R5	3-7-54	RN5501152F
A1A6A1A1R36	3-7-121	RCRC5G470KS	A1A6A1A1R5	3-7-54	RN5501332F
A1A6A1A1R36	3-7-121	RCRC5G390KS	A1A6A1A1R5	3-7-54	RN5502052F
A1A6A1A1R37	3-7-93	RCRC5G223KS	A1A6A1A1R5	3-7-54	RN5501472F
A1A6A1A1R37	3-7-93	RCRC5G183KS	A1A6A1A1R5	3-7-54	RN5502152F
A1A6A1A1R38	3-7-94	RCRC5G682KS	A1A6A1A1R5	3-7-54	RN5502492F
A1A6A1A1R38	3-7-94	RCRC5G183KS	A1A6A1A1R5	3-7-54	RN5502262F
A1A6A1A1R39	3-7-122	RCRC5G121KS	A1A6A1A1R5	3-7-54	RN5502612F
A1A6A1A1R4	3-7-52	RN5502263F	A1A6A1A1R5	3-7-54	RN5503322F
A1A6A1A1R4	3-7-52	RN5502493F	A1A6A1A1R5	3-7-54	RN5501692F
A1A6A1A1R4	3-7-52	RN5501622F	A1A6A1A1R5	3-7-54	RN5501542F
A1A6A1A1R4	3-7-52	RN5501332F	A1A6A1A1R5	3-7-54	RN5501622F
A1A6A1A1R4	3-7-52	RN5501542F	A1A6A1A1R6	3-7-50	RN5507870F
A1A6A1A1R4	3-7-52	RN5501543F	A1A6A1A1R6	3-7-50	RN5509530F
A1A6A1A1R4	3-7-52	RN5501623F	A1A6A1A1R6	3-7-50	RN5502051F
A1A6A1A1R4	3-7-52	RN5501783F	A1A6A1A1R6	3-7-50	RN5507500F
A1A6A1A1R4	3-7-52	RN5501212F	A1A6A1A1R6	3-7-50	RN5501691F
A1A6A1A1R4	3-7-52	RN5501402F	A1A6A1A1R6	3-7-50	RN5501271F
A1A6A1A1R4	3-7-52	RN5502743F	A1A6A1A1R6	3-7-50	RN5501541F
A1A6A1A1R4	3-7-52	RN5502053F	A1A6A1A1R6	3-7-50	RN5508660F
A1A6A1A1R4	3-7-52	RN5502873F	A1A6A1A1R6	3-7-50	RN5501331F
A1A6A1A1R4	3-7-52	RN5501213F	A1A6A1A1R6	3-7-50	RN5502151F
A1A6A1A1R4	3-7-52	RN5501472F	A1A6A1A1R6	3-7-50	RN5501151F
A1A6A1A1R4	3-7-52	RN5501782F	A1A6A1A1R6	3-7-50	RN5509090F
A1A6A1A1R4	3-7-52	RN5502613F	A1A6A1A1R6	3-7-50	RN5508250F
A1A6A1A1R4	3-7-52	RN5501002F	A1A6A1A1R6	3-7-50	RN5502371F
A1A6A1A1R4	3-7-52	RN5502373F	A1A6A1A1R6	3-7-50	RN5501621F
A1A6A1A1R4	3-7-52	RN5501873F	A1A6A1A1R6	3-7-50	RN5501211F
A1A6A1A1R4	3-7-52	RN5502612F	A1A6A1A1R6	3-7-50	RN5501401F
A1A6A1A1R4	3-7-52	RN5502153F	A1A6A1A1R6	3-7-50	RN5501471F
A1A6A1A1R4	3-7-52	RN5501963F	A1A6A1A1R6	3-7-50	RN5501781F
A1A6A1A1R4	3-7-52	RN5501692F	A1A6A1A1R6	3-7-50	RN5501051F
A1A6A1A1R4	3-7-52	RN5501872F	A1A6A1A1R6	3-7-50	RN5502261F
A1A6A1A1R4	3-7-52	RN5501233F	A1A6A1A1R6	3-7-50	RN5501961F
A1A6A1A1R4	3-7-52	RN5501102F	A1A6A1A1R6	3-7-50	RN5501101F
A1A6A1A1R4	3-7-52	RN5502742F	A1A6A1A1R6	3-7-50	RN5501871F
A1A6A1A1R4	3-7-52	RN5502262F	A1A6A1A1R6	3-7-50	RN5501001F
A1A6A1A1R4	3-7-52	RN5502492F	A1A6A1A1R7	3-7-29	RCRC5G104KS
A1A6A1A1R4	3-7-52	RN5503013F	A1A6A1A1R8	3-7-63	RCRC5G222KS
A1A6A1A1R4	3-7-52	RN5501403F	A1A6A1A1R9	3-7-44	RCRC5G223KS
A1A6A1A1R4	3-7-52	RN5502052F	A1A6A1A1T1	3-7-19	623-3834-C03
A1A6A1A1R4	3-7-52	RN5502152F	A1A6A1A1T2	3-7-99	623-3834-C02
A1A6A1A1R4	3-7-52	RN5502872F	A1A6A1A1T3	3-7-66	623-3843-C02
A1A6A1A1R4	3-7-52	RN5502372F	A1A6A1A1VR1	3-7-62	IN4104
A1A6A1A1R4	3-7-52	RN5501473F	A1A6A1A1V1	3-7-59	289-7148-020G1
A1A6A1A1R4	3-7-52	RN5501693F	A1A6A1A1V1	3-7-59	289-7148-010G1
A1A6A1A1R4	3-7-52	RN5501962F	A1A6A1A2	3-6-17	601-3876-002
A1A6A1A1R4	3-7-52	RN5501273F	A1A6A1A2	3-10-	601-3876-C02
A1A6A1A1R5	3-7-54	RN5501872F	A1A6A1A2CR1	3-10-8	IN5711
A1A6A1A1R5	3-7-54	RN5501782F	A1A6A1A2CR2	3-10-8	IN4454
A1A6A1A1R5	3-7-54	RN5501962F	A1A6A1A2C1	3-10-27	CK05BX473K
A1A6A1A1R5	3-7-54	RN5502742F	A1A6A1A2C10	3-10-13	CK05BX103K
A1A6A1A1R5	3-7-54	RN5502872F	A1A6A1A2C11	3-10-1	M39C03-01-2259
A1A6A1A1R5	3-7-54	RN5501402F	A1A6A1A2C12	3-10-15	CK05BX103K
A1A6A1A1R5	3-7-54	RN5503162F	A1A6A1A2C13	3-10-18	DM5C1000300GV
A1A6A1A1R5	3-7-54	RN5501272F	A1A6A1A2C13	3-10-18	DM5E200100GV
A1A6A1A1R5	3-7-54	RN5503012F	A1A6A1A2C14	3-10-32	CK05BX103K
A1A6A1A1R5	3-7-54	RN5502372F	A1A6A1A2C15	3-10-23	CK05BX103K
A1A6A1A1R5	3-7-54	RN5501212F	A1A6A1A2C16	3-10-22	M39C03-01-2259
A1A6A1A1R5	3-7-54	RN5503482F	A1A6A1A2C2	3-10-20	CK05BX473K

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A1A6A1A2C3	3-1C-36	CKC58X1C3K	A1A6A1A3C19	3-9-38	M39C03-C1-2272
A1A6A1A2C4	3-1C-11	CK058X103K	A1A6A1A3C2	3-9-48	CK068X105K
A1A6A1A2C5	3-1C-6	DM5E33CJC50WV	A1A6A1A3C2C	3-9-37	CK058X104M
A1A6A1A2C6	3-1C-5	DM5F1C1JC5CWV	A1A6A1A3C21	3-9-30	CK058X104M
A1A6A1A2C7	3-1C-3	CKC58X1C3K	A1A6A1A3C22	3-9-35	CK058X104M
A1A6A1A2C8	3-1C-33	CKC58X103K	A1A6A1A3C23	3-9-28	CK058X104M
A1A6A1A2C9	3-1C-14	CKC58X1C3K	A1A6A1A3C24	3-9-52	CK058X101M
A1A6A1A2L1	3-1C-24	MS75C85-C7	A1A6A1A3C3	3-9-49	M39C03-C1-2296
A1A6A1A2P1	3-1C-38	372-2624-015	A1A6A1A3C4	3-9-60	CK068X474K
A1A6A1A2Q1	3-1C-9	2N2369A	A1A6A1A3C5	3-9-62	CK058X104K
A1A6A1A2Q2	3-1C-29	2N2784	A1A6A1A3C6	3-9-5	CK068X105K
A1A6A1A2Q2	3-1C-29	2N2269A	A1A6A1A3C7	3-9-4	CK058X473K
A1A6A1A2R1	3-1C-26	RN55D3831F	A1A6A1A3C8	3-9-7	CK068X474K
A1A6A1A2R10	3-1C-16	RCRC5G122KS	A1A6A1A3C9	3-9-9	CK058X104K
A1A6A1A2R11	3-1C-17	RCRC5G1C1KS	A1A6A1A3L2	3-9-24	MS75089-23
A1A6A1A2R12	3-1C-24	RCRC5G1C2KS	A1A6A1A3L3	3-9-13	MS75052-1
A1A6A1A2R2	3-1C-19	RN55D2552F	A1A6A1A3L4	3-9-14	MS751C1-12
A1A6A1A2R3	3-1C-1C	RCRC5G472KS	A1A6A1A3P1	3-9-67	372-2624-018
A1A6A1A2R4	3-1C-7	RCRC5G153KS	A1A6A1A3C1	3-9-51	2N29C7A
A1A6A1A2R5	3-1C-12	RCRC5G123KS	A1A6A1A3C2	3-9-54	2N2222A
A1A6A1A2R6	3-1C-4	RN55D2611F	A1A6A1A3C3	3-9-61	2N4338
A1A6A1A2R6	3-1C-4	RN55C2741F	A1A6A1A3C4	3-9-63	2N4338
A1A6A1A2R6	3-1C-4	RN55D2261F	A1A6A1A3C5	3-9-17	FN1905
A1A6A1A2R6	3-1C-4	RN55D2871F	A1A6A1A3C6	3-9-55	2N2369A
A1A6A1A2R6	3-1C-4	RN55D2371F	A1A6A1A3C7	3-9-26	2N2369A
A1A6A1A2R6	3-1C-4	RN55D3C11F	A1A6A1A3R1	3-9-5C	RCRC5G1C3KS
A1A6A1A2R6	3-1C-4	RN55C3161F	A1A6A1A3R10	3-9-8	RCRC5G683JS
A1A6A1A2R6	3-1C-4	RN55D3321F	A1A6A1A3R11	3-9-16	RCRC5G103KS
A1A6A1A2R6	3-1C-4	RN55D3481F	A1A6A1A3R12	3-9-19	RCRC5G182KS
A1A6A1A2R6	3-1C-4	RN55D3651F	A1A6A1A3R13	3-9-22	RCRC5G271KS
A1A6A1A2R6	3-1C-4	RN55D2491F	A1A6A1A3R14	3-9-23	RCRC5G472KS
A1A6A1A2R6	3-1C-4	RN55D2151F	A1A6A1A3R15	3-9-56	RCRC5G184KS
A1A6A1A2R6	3-1C-4	RN55D2C51F	A1A6A1A3R16	3-9-39	RCRC5G101KS
A1A6A1A2R7	3-1C-35	RCRC5G1C1KS	A1A6A1A3R17	3-9-27	RCRC5G472KS
A1A6A1A2R8	3-1C-31	RCRC5G1C2KS	A1A6A1A3R18	3-9-64	RCRC5G184KS
A1A6A1A2R9	3-1C-27A	RCRC5G1C2KS	A1A6A1A3R2	3-9-46	RCRC5G183KS
A1A6A1A2U1	3-1C-2	S54LS112F883C	A1A6A1A3R3	3-9-45	RCRC5G272KS
A1A6A1A2U2	3-1C-37	S54LS112F883C	A1A6A1A3R4	3-9-43	RCRC5G471KS
A1A6A1A2U3	3-1C-3C	MC145188BAL	A1A6A1A3R5	3-9-42	RCRC5G1C1KS
A1A6A1A2U4	3-1C-25	CD4C13BMJ	A1A6A1A3R6	3-9-3	RCRC5G273KS
A1A6A1A2U5	3-1C-21	MC145188BAL	A1A6A1A3R7	3-9-2	RCRC5G273JS
A1A6A1A3	3-9-	601-3879-CC1	A1A6A1A3R8	3-9-1	RCRC5G273JS
A1A6A1A3	3-6-16	601-3875-CC1	A1A6A1A3R9	3-9-6	RCRC5G273KS
A1A6A1A3CR1	3-9-44	1N4454	A1A6A1A3U1	3-9-58	MC140668AL
A1A6A1A3CR2	3-9-12	MV1666	A1A6A1A3U2	3-9-29	CC4002UBMJ
A1A6A1A3CR3	3-9-18	1N5711	A1A6A1A3L3	3-9-41	CC4049MJ
A1A6A1A3C1	3-9-47	CKC68X1C5K	A1A6A1A3L4	3-9-40	CC4C13BMJ
A1A6A1A3C10	3-9-1C	DM5E3CCJ05CWV	A1A6A1A3U5	3-9-36	CC4002UBMJ
A1A6A1A3C11	3-9-14	637-2575-CC1	A1A6A1A3U6	3-9-31	CD4029BF
A1A6A1A3C11	3-9-15	DM5CC5CD3CCWV	A1A6A1A3L7	3-9-32	CC40298F
A1A6A1A3C11	3-9-15	DM5C1CC03CCWV	A1A6A1A3U8	3-9-33	CC40298F
A1A6A1A3C11	3-9-15	DM5E2CCD10CWV	A1A6A1A3U9	3-9-34	CC40298F
A1A6A1A3C11	3-9-15	DM5E27CJC5CWV	A1A6A1A4	3-8-	601-3878-C01
A1A6A1A3C11	3-9-15	DM5E36CJC5CWV	A1A6A1A4	3-6-14	601-3878-C01
A1A6A1A3C11	3-9-15	DM5E47CJ050WV	A1A6A1A4CR1	3-8-108	1N5139
A1A6A1A3C11	3-9-15	DM5E56CJC5CWV	A1A6A1A4CR2	3-8-7	1N5711
A1A6A1A3C12	3-9-11	CKC58X1C3M	A1A6A1A4CR3	3-8-34	1N5767
A1A6A1A3C13	3-9-2C	CKC58X1C4M	A1A6A1A4C1	3-8-88	CK058X104K
A1A6A1A3C14	3-9-25	M39C03-C1-2272	A1A6A1A4C10	3-8-16	CK058X104K
A1A6A1A3C15	3-9-21	CK058X1C4M	A1A6A1A4C11	3-8-106	CK058X102M
A1A6A1A3C16	3-9-57	CK058X1C4M	A1A6A1A4C12	3-8-1C	DM5CC5C03COWV
A1A6A1A3C17	3-9-53	CKC58X1C4M	A1A6A1A4C13	3-8-52	CK058X1C3K
A1A6A1A3C18	3-9-59	CKC58X1C1M	A1A6A1A4C14	3-8-11	408-32-24

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A1A6A1A4C15	3-8-11C	374NPC-125C5PFOR M05PF	A1A6A1A4C7	3-8-56	JAN2N918
A1A6A1A4C16	3-8-111	CK05BX1C2M	A1A6A1A4C8	3-8-59	JAN2N918
A1A6A1A4C17	3-8-6	DM5C1CC030CWV	A1A6A1A4R1	3-8-85	RCR05G101KS
A1A6A1A4C18	3-8-15	DM5F101J050WV	A1A6A1A4R10	3-8-64	RCR05G471KS
A1A6A1A4C19	3-8-55	CK05BX1C2M	A1A6A1A4R11	3-8-105	RCR05G271KS
A1A6A1A4C2	3-8-76	CK05BX1C4K	A1A6A1A4R12	3-8-62	RCR05G103KS
A1A6A1A4C20	3-8-1	941C-CPC	A1A6A1A4R13	3-8-2	RCR05G560KS
A1A6A1A4C21	3-8-61	CY1CG1C2Z	A1A6A1A4R14	3-8-51	RCR05G101KS
A1A6A1A4C22	3-8-92	CK05BX1C4K	A1A6A1A4R15	3-8-58	RCR05G362JS
A1A6A1A4C23	3-8-93	CK05BX1C3K	A1A6A1A4R16	3-8-14	RCR05G113JS
A1A6A1A4C24	3-8-33	CK05BX1C3K	A1A6A1A4R17	3-8-54	RCR05G222JS
A1A6A1A4C25	3-8-31	CK05BX1C3K	A1A6A1A4R18	3-8-5	RCR05G750JS
A1A6A1A4C26	3-8-26	DM5E36CJ050WV	A1A6A1A4R19	3-8-4	RCR05G121JS
A1A6A1A4C27	3-8-25	DM5F241J050WV	A1A6A1A4R2	3-8-77	RCR05G563KS
A1A6A1A4C28	3-8-27	DM5C1CC030CWV	A1A6A1A4R20	3-8-3	RCR05G750JS
A1A6A1A4C29	3-8-30	QCC-39LUF5PCT	A1A6A1A4R21	3-8-36	RCR05G562KS
A1A6A1A4C3	3-8-80	CK05BX1C4K	A1A6A1A4R22	3-8-35	RCR05G561KS
A1A6A1A4C30	3-8-24	DM5C1CC030CWV	A1A6A1A4R23	3-8-89	RCR05G271KS
A1A6A1A4C31	3-8-84	CK05BX1C4K	A1A6A1A4R24	3-8-100	RCR05G104KS
A1A6A1A4C32	3-8-96	CK05BX1C4K	A1A6A1A4R25	3-8-87	RCR05G391KS
A1A6A1A4C33	3-8-95	CK05BX1C2M	A1A6A1A4R26	3-8-49	RCR05G101KS
A1A6A1A4C34	3-8-81	941C-CPC	A1A6A1A4R27	3-8-17	RCR05G271KS
A1A6A1A4C35	3-8-48	CK05BX102M	A1A6A1A4R28	3-8-20	RCR05G153KS
A1A6A1A4C36	3-8-73	CK05BX1C2M	A1A6A1A4R29	3-8-19	RCR05G562KS
A1A6A1A4C37	3-8-1C4	CK05BX1C2M	A1A6A1A4R3	3-8-74	RCR05G563KS
A1A6A1A4C38	3-8-18	DM5CC30C30CWV	A1A6A1A4R30	3-8-57	RCR05G243JS
A1A6A1A4C39	3-8-94	QCC-39LUF5PCT	A1A6A1A4R31	3-8-12	RCR05G151KS
A1A6A1A4C4	3-8-67	CK05BX1C4K	A1A6A1A4R32	3-8-13	RCR05G680KS
A1A6A1A4C40	3-8-91	DM5C07CD300WV	A1A6A1A4R33	3-8-38	RCR05G470KS
A1A6A1A4C41	3-8-86	CK05BX1C4K	A1A6A1A4R34	3-8-41	RCR05G273KS
A1A6A1A4C42	3-8-50	CK05BX104K	A1A6A1A4R35	3-8-42	RCR05G153KS
A1A6A1A4C43	3-8-53	CK05BX1C2K	A1A6A1A4R36	3-8-45	RCR05G681KS
A1A6A1A4C44	3-8-37	CK05BX1C3K	A1A6A1A4R37	3-8-46	RCR05G470KS
A1A6A1A4C45	3-8-40	CK05BX1C3K	A1A6A1A4R4	3-8-78	RCR05G472KS
A1A6A1A4C46	3-8-47	CK05BX1C3K	A1A6A1A4R5	3-8-82	RCR05G184KS
A1A6A1A4C5	3-8-71	DM5E47CJ050WV	A1A6A1A4R7	3-8-101	RCR05G182KS
A1A6A1A4C6	3-8-66	CK05BX222K	A1A6A1A4R8	3-8-68	RCR05G393KS
A1A6A1A4C7	3-8-65	CK05BX1C2K	A1A6A1A4R9	3-8-69	RCR05G103KS
A1A6A1A4C8	3-8-63	CK05BX333K	A1A6A1A4U1	3-8-75	MM54C74J
A1A6A1A4C9	3-8-1C3	CK05BX1C4K	A1A6A1A4U2	3-8-72	CD4093BMJ
A1A6A1A4E1	3-8-43	623-3841-002	A1A6A2	3-11-	609-2469-001
A1A6A1A4E2	3-8-28	623-3841-003	A1A6A2	3-2-14	609-2469-001
A1A6A1A4E3	3-8-98	623-3841-001	A1A6A2A1	3-11-2	601-3874-002
A1A6A1A4E4	3-8-22	623-3842-001	A1A6A2A1	3-13-	601-3874-002
A1A6A1A4L1	3-8-70	MS75C85-15	A1A6A2A1CR2	3-13-40	1N4454
A1A6A1A4L1C	3-8-89	MS75C85-15	A1A6A2A1CR4	3-13-23	1N4454
A1A6A1A4L11	3-8-21	MS75C83-04	A1A6A2A1CR5	3-13-20	1N4454
A1A6A1A4L12	3-8-39	MS75084-12	A1A6A2A1CR6	3-13-25	1N4454
A1A6A1A4L2	3-8-1C5	MS75C84-C2	A1A6A2A1CR7	3-13-68	1N4454
A1A6A1A4L3	3-8-90	623-3843-001	A1A6A2A1C10	3-13-7	CK05BX104K
A1A6A1A4L4	3-8-1C7	623-3843-001	A1A6A2A1C11	3-13-2	CK05BX103K
A1A6A1A4L5	3-8-9	MS75C83-13	A1A6A2A1C12	3-13-42	CK05BX103K
A1A6A1A4L6	3-8-60	MS75C83-07	A1A6A2A1C13	3-13-72	CK05BX103K
A1A6A1A4L7	3-8-32	623-3843-001	A1A6A2A1C14	3-13-31	CK05BX103K
A1A6A1A4L8	3-8-23	MS75C84-C2	A1A6A2A1C15	3-13-32	CK05BX104K
A1A6A1A4L9	3-8-97	623-3843-001	A1A6A2A1C17	3-13-1	CK05BX104K
A1A6A1A4Q1	3-8-79	2N2369A	A1A6A2A1C18	3-13-27	CK05BX104K
A1A6A1A4Q2	3-8-8	FN1905	A1A6A2A1C2	3-13-75	CK05BX104K
A1A6A1A4Q3	3-8-44	JAN2N918	A1A6A2A1C20	3-13-43	CK05BX104K
A1A6A1A4Q4	3-8-29	2N5179	A1A6A2A1C21	3-13-49	M39003-01-2262
A1A6A1A4Q5	3-8-99	3N187	A1A6A2A1C3	3-13-67	CK05BX104K
A1A6A1A4Q6	3-8-1C2	2N5179	A1A6A2A1C4	3-13-54	M39003-01-2258
			A1A6A2A1C4	3-13-54	M39003-01-2255

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A1A6A2A1C6	3-13-61	M39CC3-C1-2296	A1A6A2A1R4	3-13-46	RN55D1212F
A1A6A2A1C7	3-13-22	M39CC3-C1-2255	A1A6A2A1R4	3-13-46	RN55D1052F
A1A6A2A1C7	3-13-22	CKC58X104K	A1A6A2A1R5	3-13-57	RCR05G681KS
A1A6A2A1C8	3-13-38	CKC68X105K	A1A6A2A1R7	3-13-63	RN55C2872F
A1A6A2A1C9	3-13-59	CKC58X104K	A1A6A2A1R8	3-13-64	RN55D1742F
A1A6A2A1L1	3-13-6	MS75C84-C2	A1A6A2A1R9	3-13-65	RN55C6191F
A1A6A2A1L11	3-13-41	MS75C84-C2	A1A6A2A1R9	3-13-65	RN55C2491F
A1A6A2A1L12	3-13-58	MS75C84-12	A1A6A2A1R9	3-13-65	RN55C3831F
A1A6A2A1L2	3-13-5	MS75C84-C2	A1A6A2A1R9	3-13-65	RN55C6811F
A1A6A2A1L3	3-13-3	MS75C84-C2	A1A6A2A1R9	3-13-65	RN55C5111F
A1A6A2A1L4	3-13-4	MS75C84-C2	A1A6A2A1R9	3-13-65	RN55C5901F
A1A6A2A1L6	3-13-28	MS75C84-C2	A1A6A2A1R9	3-13-65	RN55D4421F
A1A6A2A1L7	3-13-29	MS75C84-C2	A1A6A2A1R9	3-13-65	RN55C3011F
A1A6A2A1L8	3-13-44	MS75C84-C2	A1A6A2A1U1	3-13-50	MC1558G
A1A6A2A1L9	3-13-30	MS75C84-C2	A1A6A2A1U2	3-13-21	CC4C49MJ
A1A6A2A1P1	3-13-81	372-2623-022	A1A6A2A1U3	3-13-45	314A104
A1A6A2A1Q1	3-13-55	2N2222A	A1A6A2A1VR1	3-13-52	M24625
A1A6A2A1Q2	3-13-60	2N2222A	A1A6A2A1VR2	3-13-66	JAN1N754A
A1A6A2A1Q3	3-13-19	2N2222A	A1A6A2A1VR3	3-13-62	JAN1N754A
A1A6A2A1Q4	3-13-18	2N29C7A	A1A6A2A2	3-11-3	601-3875-002
A1A6A2A1Q5	3-13-14	2N2222A	A1A6A2A2	3-14-	601-3875-002
A1A6A2A1Q6	3-13-73	2N2222A	A1A6A2A2CR1	3-14-16	IN4454
A1A6A2A1Q7	3-13-33	2N2222A	A1A6A2A2CR2	3-14-24	IN4454
A1A6A2A1Q8	3-13-39	2N29C7A	A1A6A2A2CR3	3-14-26	IN4454
A1A6A2A1Q9	3-13-9	2N29C7A	A1A6A2A2CR4	3-14-23	IN4454
A1A6A2A1R1	3-13-56	RCR05G273KS	A1A6A2A2CR5	3-14-28	IN4454
A1A6A2A1R10	3-13-53	RCR05G333KS	A1A6A2A2CR6	3-14-27	IN4454
A1A6A2A1R11	3-13-51	RCR05G102KS	A1A6A2A2CR7	3-14-38	IN4454
A1A6A2A1R12	3-13-47	RN55D4C22F	A1A6A2A2C1	3-14-14	DM5E510J050WV
A1A6A2A1R13	3-13-15	RCR05G1C5KS	A1A6A2A2C2	3-14-5	CN5E47CJ050WV
A1A6A2A1R14	3-13-24	RCR05G563KS	A1A6A2A2C3	3-14-6	DM5E47CJ050WV
A1A6A2A1R15	3-13-26	RCR05G563KS	A1A6A2A2P1	3-14-45	635-8162-001
A1A6A2A1R16	3-13-74	RCR05G472KS	A1A6A2A2P2	3-14-43	372-2624-012
A1A6A2A1R17	3-13-17	RCR05G473KS	A1A6A2A2C1	3-14-13	2N2784
A1A6A2A1R18	3-13-34	RCR05G822KS	A1A6A2A2C2	3-14-40	2N4234
A1A6A2A1R19	3-13-71	RCR05G222KS	A1A6A2A2R1	3-14-15	RCR05G391KS
A1A6A2A1R20	3-13-69	RCR05G562KS	A1A6A2A2R10	3-14-31	RCR05G104KS
A1A6A2A1R21	3-13-16	RCR05G124KS	A1A6A2A2R11	3-14-33	RCR05G104KS
A1A6A2A1R22	3-13-35	RCR05G474KS	A1A6A2A2R12	3-14-35	RCR05G104KS
A1A6A2A1R23	3-13-70	RCR05G152KS	A1A6A2A2R13	3-14-36	RCR05G104KS
A1A6A2A1R24	3-13-36	RCR05G224KS	A1A6A2A2R14	3-14-29	RCR05G104KS
A1A6A2A1R25	3-13-37	RCR05G1C5KS	A1A6A2A2R15	3-14-25	RCR05G104KS
A1A6A2A1R26	3-13-8	RCR05G335KS	A1A6A2A2R16	3-14-34	RCR05G104KS
A1A6A2A1R27	3-13-10	RCR05G752JS	A1A6A2A2R17	3-14-30	RCR05G104KS
A1A6A2A1R28	3-13-11	RCR05G823KS	A1A6A2A2R18	3-14-10	RCR05G103KS
A1A6A2A1R29	3-13-12	RCR05G223KS	A1A6A2A2R2	3-14-1	RCR05G331KS
A1A6A2A1R3	3-13-48	RN55D9532F	A1A6A2A2R3	3-14-12	RCR05G332KS
A1A6A2A1R30	3-13-13	RCR05G822KS	A1A6A2A2R3	3-14-12	RCR05G562KS
A1A6A2A1R4	3-13-46	RN60D9761F	A1A6A2A2R4	3-14-41	RCR05G221KS
A1A6A2A1R4	3-13-46	RN55D1542F	A1A6A2A2R5	3-14-3	RCR05G102KS
A1A6A2A1R4	3-13-46	RN55D1302F	A1A6A2A2R6	3-14-22	RCR05G563KS
A1A6A2A1R4	3-13-46	RN55D1472F	A1A6A2A2R7	3-14-39	RCR05G333KS
A1A6A2A1R4	3-13-46	RN55D1742F	A1A6A2A2R8	3-14-32	RCR05G104KS
A1A6A2A1R4	3-13-46	RN55D1372F	A1A6A2A2R9	3-14-37	RCR05G104KS
A1A6A2A1R4	3-13-46	RN60D1302F	A1A6A2A2U1	3-14-2	SN54S112J
A1A6A2A1R4	3-13-46	RN55D9C91F	A1A6A2A2U10	3-14-8	SN5474J
A1A6A2A1R4	3-13-46	RN55D1E72F	A1A6A2A2U11	3-14-7	DM5400J
A1A6A2A1R4	3-13-46	RN60D1372F	A1A6A2A2U12	3-14-9	SN5474J
A1A6A2A1R4	3-13-46	RN60D1742F	A1A6A2A2U2	3-14-19	54192CM
A1A6A2A1R4	3-13-46	RN55D1622F	A1A6A2A2U3	3-14-21	54192CM
A1A6A2A1R4	3-13-46	RN55D1132F	A1A6A2A2U4	3-14-17	54192CM
A1A6A2A1R4	3-13-46	RN55D9761F	A1A6A2A2U5	3-14-11	SN5472J
A1A6A2A1R4	3-13-46	RN60D1132F	A1A6A2A2U6	3-14-4	SN5425J

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A1A6A2A2U7	3-14-26	40508DM	A1A6A2A3C16	3-12-10	CK05BX104K
A1A6A2A2U8	3-14-18	40508DM	A1A6A2A3C17	3-12-64	CK05BX103K
A1A6A2A3	3-12-	635-8154-CC1	A1A6A2A3C19	3-12-135	CM5E36CJ050WV
A1A6A2A3	3-11-1	635-8154-001	A1A6A2A3C2	3-12-14	CK05BX104K
A1A6A2A3CR1	3-12-121	1N5711	A1A6A2A3C2C	3-12-70	DM5E36CJ050WV
A1A6A2A3CR10	3-12-155	1N5711	A1A6A2A3C21	3-12-51	DM5F151J050WV
A1A6A2A3CR101	3-12-94	1N5139	A1A6A2A3C23	3-12-146	DM5F151J050WV
A1A6A2A3CR102	3-12-3	70-51	A1A6A2A3C24	3-12-69	CK05BX103K
A1A6A2A3CR103	3-12-32	1N5711	A1A6A2A3C25	3-12-67	CK05BX103K
A1A6A2A3CR2	3-12-125A	1N4454	A1A6A2A3C26	3-12-68	CK05BX103K
A1A6A2A3CR3	3-12-21	1N5711	A1A6A2A3C27	3-12-65	CK05BX103K
A1A6A2A3CR3	3-12-21	353-3316-010	A1A6A2A3C28	3-12-60	CM5E200D100WV
A1A6A2A3CR4	3-12-22	1N5711	A1A6A2A3C28	3-12-60	DM5E36CJ050WV
A1A6A2A3CR4	3-12-22	353-3316-010	A1A6A2A3C29	3-12-57	CK05BX103K
A1A6A2A3CR5	3-12-106	1N4454	A1A6A2A3C3	3-12-16	DM5F101J050WV
A1A6A2A3CR6	3-12-111	1N4454	A1A6A2A3C30	3-12-58	CK05BX103K
A1A6A2A3CR9	3-12-153	1N5711	A1A6A2A3C31	3-12-61	CK05BX103K
A1A6A2A3C1	3-12-13	DM5F1C1JC5CWV	A1A6A2A3C4	3-12-114	DM5F3C1J050WV
A1A6A2A3C10	3-12-26	CK05BX103K	A1A6A2A3C5	3-12-18	DM5F221J050WV
A1A6A2A3C101	3-12-162	8101B212C0K0-109 C	A1A6A2A3C7	3-12-20	DM5F221J050WV
A1A6A2A3C101	3-12-162	CCR13CG1R8C	A1A6A2A3C8	3-12-27	M39G03-01-2356
A1A6A2A3C101	3-12-162	8111BC9CC0K0-478 C	A1A6A2A3C9	3-12-116	CK05BX122K
A1A6A2A3C102	3-12-75	DM5C15CD3CCWV	A1A6A2A3J1	3-12-77	141-1002-0003
A1A6A2A3C103	3-12-44	DM5F1C1JC5CWV	A1A6A2A3J2	3-12-76	141-1012-CC01
A1A6A2A3C104	3-12-131	CY1CC1C2Z	A1A6A2A3L1	3-12-148	MS75083-06
A1A6A2A3C105	3-12-42	CK05BX1C2K	A1A6A2A3L101	3-12-133	MS75083-C3
A1A6A2A3C106	3-12-130	CY1CC1C2Z	A1A6A2A3L102	3-12-48	MS75083-03
A1A6A2A3C107	3-12-41	DM5F1C1JC5CWV	A1A6A2A3L103	3-12-33	MS75083-12
A1A6A2A3C108	3-12-43	DM5F1C1JC5CWV	A1A6A2A3L104	3-12-104	MS75084-02
A1A6A2A3C109	3-12-142	CY1CC1C2Z	A1A6A2A3L105	3-12-36	623-3859-001
A1A6A2A3C11	3-12-119	CK12BX1C3K	A1A6A2A3L2	3-12-53	MS75083-08
A1A6A2A3C110	3-12-72	CY1GC1C2Z	A1A6A2A3L3	3-12-159	MS75085-07
A1A6A2A3C111	3-12-28	CK05BX1C4K	A1A6A2A3L4	3-12-147	MS75083-06
A1A6A2A3C112	3-12-101	CY1CC1C2Z	A1A6A2A3L5	3-12-11	MS75085-07
A1A6A2A3C113	3-12-140	DM5F1C1JC5CWV	A1A6A2A3L6	3-12-157	MS75084-01
A1A6A2A3C114	3-12-49	DM5C15CD30CWV	A1A6A2A3C1	3-12-122	2N918
A1A6A2A3C115	3-12-40	CCR13CG1R8C	A1A6A2A3C101	3-12-129	2N918
A1A6A2A3C115	3-12-40	8111BC9CC0K0-478 C	A1A6A2A3C102	3-12-47	2N918
A1A6A2A3C115	3-12-40	8101B212C0K0-109 C	A1A6A2A3C103	3-12-46	2N918
A1A6A2A3C116	3-12-37	DM5GC5CD3CCWV	A1A6A2A3C104	3-12-39	FN1905
A1A6A2A3C117	3-12-35	DM5C10CD30CWV	A1A6A2A3C105	3-12-127	2N918
A1A6A2A3C117	3-12-35	DM5G15CD30CWV	A1A6A2A3C2	3-12-17	2N4208
A1A6A2A3C118	3-12-29	CK05BX1C2K	A1A6A2A3C3	3-12-52	2N5197
A1A6A2A3C119	3-12-93	8121-1CCCG0471K	A1A6A2A3C4	3-12-110	2N918
A1A6A2A3C12	3-12-12	CY1GC1C2Z	A1A6A2A3C5	3-12-158	2N918
A1A6A2A3C120	3-12-31	DM5F1C1JC5CWV	A1A6A2A3C6	3-12-66	2N2857
A1A6A2A3C120	3-12-31	DM5F151J050WV	A1A6A2A3C7	3-12-62	2N2857
A1A6A2A3C121	3-12-98	CK05BX152M	A1A6A2A3C8	3-12-8	2N4393
A1A6A2A3C121	3-12-98	CY1GC1C2Z	A1A6A2A3R1	3-12-124	RCR05G103KS
A1A6A2A3C122	3-12-2	5288	A1A6A2A3R10	3-12-24	RCR05G102KS
A1A6A2A3C123	3-12-5	8121-1CCCG0471K	A1A6A2A3R101	3-12-128	RCR05G560KS
A1A6A2A3C123	3-12-5	DM5E47CJ05CWV	A1A6A2A3R102	3-12-79	RCR05G243JS
A1A6A2A3C124	3-12-4	CK05BX1C4K	A1A6A2A3R103	3-12-80	RCR05G362JS
A1A6A2A3C125	3-12-7	CK05BX332K	A1A6A2A3R104	3-12-97	RCR05G113JS
A1A6A2A3C126	3-12-38	8101AC75C0J0-309 D	A1A6A2A3R105	3-12-45	RCR05G362JS
A1A6A2A3C130	3-12-95	CY1GC1C2Z	A1A6A2A3R106	3-12-141	RCR05G113JS
A1A6A2A3C14	3-12-54	CK05BX1C4K	A1A6A2A3R107	3-12-100	RCR05G243JS
A1A6A2A3C15	3-12-9	CK05BX1C4K	A1A6A2A3R108	3-12-102	RCR05G560KS
			A1A6A2A3R109	3-12-73	RCR05G751JS
			A1A6A2A3R109	3-12-73	RCR05G391JS
			A1A6A2A3R109	3-12-73	RCR05G431JS
			A1A6A2A3R109	3-12-73	RCR05G471JS
			A1A6A2A3R109	3-12-73	RCR05G511JS

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A1A6A2A3R109	3-12-73	RCRC5G561JS	A1A6A2A3R33	3-12-160	RCRC5G822KS
A1A6A2A3R109	3-12-73	RCRC5G621JS	A1A6A2A3R34	3-12-63	RCRC5G123KS
A1A6A2A3R109	3-12-73	RCRC5G681JS	A1A6A2A3R35	3-12-55	RCRC5G100KS
A1A6A2A3R109	3-12-73	RCRC5G751JS	A1A6A2A3R36	3-12-56	RCRC5G102KS
A1A6A2A3R109	3-12-73	RCRC5G821JS	A1A6A2A3R37	3-12-156	RCRC5G221KS
A1A6A2A3R109	3-12-73	RCRC5G911JS	A1A6A2A3R38	3-12-154	RCRC5G473JS
A1A6A2A3R109	3-12-73	RCRC5G102JS	A1A6A2A3R39	3-12-59	RCRC5G273KS
A1A6A2A3R11	3-12-145	RCRC5G102KS	A1A6A2A3R4	3-12-15	RCRC5G272KS
A1A6A2A3R110	3-12-34	RCRC5G560KS	A1A6A2A3R40	3-12-137	RCRC5G121JS
A1A6A2A3R111	3-12-103	RCRC5G181KS	A1A6A2A3R41	3-12-136	RCRC5G47CJS
A1A6A2A3R112	3-12-99	RCRC5G103KS	A1A6A2A3R42	3-12-134	RCRC5G121JS
A1A6A2A3R113	3-12-106	RCRC5G472KS	A1A6A2A3R5	3-12-120	RCRC5G474KS
A1A6A2A3R114	3-12-107	RCRC5G472KS	A1A6A2A3R6	3-12-118	RCRC5G474KS
A1A6A2A3R115	3-12-6	RCRC5G275KS	A1A6A2A3R7	3-12-144	RCRC5G102KS
A1A6A2A3R116	3-12-105	RCRC5G163JS	A1A6A2A3R8	3-12-161	RCRC5G563KS
A1A6A2A3R117	3-12-74	RCRC5G151KS	A1A6A2A3R9	3-12-50	RCRC5G563KS
A1A6A2A3R118	3-12-78	RCRC5G180KS	A1A6A2A3TB1	3-12-81	635-8155-C01
A1A6A2A3R119	3-12-96	RCRC5G351JS	A1A6A2A3T1	3-12-19	623-3834-C01
A1A6A2A3R119	3-12-96	RCRC5G431JS	A1A6A2A3T101	3-12-132	623-3834-C02
A1A6A2A3R119	3-12-96	RCRC5G471JS	A1A6A2A3T1C2	3-12-30	623-3834-C02
A1A6A2A3R119	3-12-96	RCRC5G511JS	A1A6A2A3T1	3-12-71	SRA1
A1A6A2A3R119	3-12-96	RCRC5G561JS	A1CR1	3-41-10	1N4002
A1A6A2A3R119	3-12-96	RCRC5G621JS	A1CR2	3-41-11	1N4002
A1A6A2A3R119	3-12-96	RCRC5G681JS	A1CR3	3-41-8	1N4002
A1A6A2A3R119	3-12-96	RCRC5G751JS	A1CR4	3-41-9	1N4002
A1A6A2A3R119	3-12-96	RCRC5G821JS	A1CR5	3-41-14	1N4002
A1A6A2A3R119	3-12-96	RCRC5G911JS	A1C1	3-41-32	CK13BX103M
A1A6A2A3R119	3-12-96	RCRC5G102JS	A1C2	3-41-34	CK05BX104K
A1A6A2A3R12	3-12-117	RCRC5G103KS	A1C3	3-41-35	CK05BX103K
A1A6A2A3R120	3-12-138	RCRC5G180KS	A1C4	3-41-36	CK05BX103K
A1A6A2A3R121	3-12-139	RCRC5G151KS	A1J2	3-34-29	U183U
A1A6A2A3R13	3-12-25	RCRC5G104KS	A1Q1	3-41-13	2N3767
A1A6A2A3R14	3-12-109	RCRC5G682KS	A1Q1	3-41-13	2N3738
A1A6A2A3R14	3-12-109	RN5505901F	A1Q2	3-41-28	2N3440
A1A6A2A3R15	3-12-112	RCRC5G183KS	A1Q3	3-41-3	2N2905A
A1A6A2A3R16	3-12-113	RN5501693F	A1Q4	3-41-17	JAN2N2219A
A1A6A2A3R16	3-12-113	RN5501473F	A1Q5	3-41-25	2N2222A
A1A6A2A3R16	3-12-113	RN5501543F	A1Q6	3-41-30	2N2222A
A1A6A2A3R16	3-12-113	RN5501783F	A1R1	3-41-15	RW69V12C
A1A6A2A3R16	3-12-113	RN5501273F	A1R10	3-41-23	RCRC7G471KS
A1A6A2A3R16	3-12-113	RCRC5G124JS	A1R11	3-41-24	RCRC7G103KS
A1A6A2A3R16	3-12-113	RN5501623F	A1R12	3-41-18	RCRC20G271KS
A1A6A2A3R16	3-12-113	RCRC5G134JS	A1R13	3-41-19	RCRC20G271KS
A1A6A2A3R16	3-12-113	RCRC5G154JS	A1R14	3-41-31	RCRC7G103KS
A1A6A2A3R16	3-12-113	RCRC5G164JS	A1R15	3-41-33	RCRC7G102KS
A1A6A2A3R16	3-12-113	RCRC5G184JS	A1R16	3-41-21A	RCRC7G822JS
A1A6A2A3R16	3-12-113	RN5501213F	A1R16	3-41-21A	RCRC7G912JS
A1A6A2A3R16	3-12-113	RCRC5G204JS	A1R16	3-41-21A	RCRC7G103JS
A1A6A2A3R16	3-12-113	RN5501403F	A1R16	3-41-21A	RCRC7G113JS
A1A6A2A3R16	3-12-113	RN5501333F	A1R16	3-41-21A	RCRC7G123JS
A1A6A2A3R16	3-12-113	RCRC5G224JS	A1R16	3-41-21A	RCRC7G133JS
A1A6A2A3R16	3-12-113	RCRC5G244JS	A1R16	3-41-21A	RCRC7G153JS
A1A6A2A3R16	3-12-113	RCRC5G274JS	A1R16	3-41-21A	RCRC7G163JS
A1A6A2A3R17	3-12-143	RCRC5G684KS	A1R16	3-41-21A	RCRC7G183JS
A1A6A2A3R18	3-12-23	RCRC5G683JS	A1R16	3-41-21A	RCRC7G223JS
A1A6A2A3R19	3-12-115	RCRC5G105KS	A1R16	3-41-21A	RCRC7G273JS
A1A6A2A3R2	3-12-123	RCRC5G272KS	A1R16	3-41-21A	RCRC7G510JS
A1A6A2A3R20	3-12-124	RCRC5G106KS	A1R17	3-41-33A	RCRC7G471KS
A1A6A2A3R27	3-12-152	RCRC5G560KS	A1R2	3-41-4	RCRC7G221KS
A1A6A2A3R28	3-12-150	RCRC5G683JS	A1R3	3-41-5	RCRC7G102KS
A1A6A2A3R29	3-12-151	RCRC5G102KS	A1R4	3-41-16	RCRC42G182KS
A1A6A2A3R3	3-12-125	RCRC5G101KS	A1R4	3-41-16	RCRC42G332KS
A1A6A2A3R30	3-12-149	RCRC5G100KS	A1R5	3-41-7	RCRC20G272KS

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A1R6	3-41-22	RCR2CG272KS	A3A1C21	3-20-45	CK05B104M
A1R7	3-41-27	RN6CD5361F	A3A1C22	3-20-101	CK05B104M
A1R8	3-41-2	RCR2CG162KS	A3A1C23	3-20-12	CK05B104M
A1R9	3-41-21	RN6CD1331F	A3A1C24	3-20-30	CK05B104M
A1VR1	3-41-6	1N751A	A3A1C25	3-20-27	CK05B104M
A1VR2	3-41-20	1N751A	A3A1C26	3-20-157	CK05B104M
A1VR3	3-41-1	1N751A	A3A1C27	3-20-71	CK05B104M
A2	3-1-4	622-2553-003	A3A1C28	3-20-46	CK05B104M
A2	3-34-	622-2553-003	A3A1C29	3-20-40	CK05B104M
A2A1	3-34-39	601-3668-CC1	A3A1C3	3-20-89	CK05B104M
A2A1C1	3-34-40	193-C2C	A3A1C30	3-20-36	CK05B104M
A2A1C2	3-34-47	193-C2C	A3A1C31	3-20-68	CK05B104M
A2A1C3	3-34-45	193-C2C	A3A1C32	3-20-66	CK05B104M
A2A1C4	3-34-44	193-C2C	A3A1C33	3-20-140	M39C03-01-2307
A2A1L1	3-34-41	MS75084-17	A3A1C34	3-20-135	CK05B104M
A2A1L2	3-34-42	MS75084-17	A3A1C35	3-20-131	CK05B104M
A2A1L3	3-34-43	MS75084-17	A3A1C36	3-20-122	M39C03-01-2281
A2A1L4	3-34-46	MS75084-17	A3A1C37	3-20-126	M39C03-01-2281
A2J1	3-34-27	UI83C	A3A1C38	3-20-182	CK05B151K
A2P1	3-34-37	MDN896555-17	A3A1C39	3-20-180	CM04EC200J03
A2R1	3-34-18	CM412CC-C1C	A3A1C4	3-20-91	CK05B104M
A2S1	3-34-36	2943-3	A3A1C40	3-20-197	M39C03-01-2307
A2S2	3-34-35	2943-4	A3A1C41	3-20-87	M39C03-01-2307
A2S3	3-34-34	2943-4	A3A1C42	3-20-194	CK05B104M
A2S4	3-34-33	2943-4	A3A1C43	3-20-117	CK05B104M
A2S5	3-34-32	2943-4	A3A1C44	3-20-121	CK05B104M
A2S6	3-34-31	2943-4	A3A1C45	3-20-125	CK05B104M
A2S7	3-34-22	39-1	A3A1C46	3-20-55	CK05B104M
A2S8	3-34-24	MS35C58-23	A3A1C47	3-20-150	M39C03-01-2356
A2S9	3-34-26	MS35C58-23	A3A1C48	3-20-54	M39C03-01-2356
A3	3-1-3	622-2149-CC1	A3A1C49	3-20-94	CK05B104M
A3	3-18-	622-2149-CC1	A3A1C5	3-20-88	CK05B104M
A3A1	3-18-5	601-3673-CC1	A3A1C50	3-20-73	CK05B104M
A3A1	3-20-	601-3673-CC1	A3A1C51	3-20-170	CK05B473K
A3A1CR1	3-20-177	1N4454	A3A1C52	3-20-118	CY30C474M
A3A1CR10	3-20-84	1N40C2	A3A1C53	3-20-124	CY30C474M
A3A1CR11	3-20-86	1N40C2	A3A1C54	3-20-22	CK05B104M
A3A1CR12	3-20-136	1N40C2	A3A1C55	3-20-205A	CK05B104M
A3A1CR13	3-20-78	1N40C2	A3A1C6	3-20-195	CK05B104M
A3A1CR14	3-20-107	1N40C2	A3A1C7	3-20-202	CK05B104M
A3A1CR15	3-20-11	1N4454	A3A1C8	3-20-29	CK05B104M
A3A1CR16	3-20-164	1N4454	A3A1C9	3-20-196	CK05B104M
A3A1CR2	3-20-179	1N4454	A3A1L1	3-20-82	MS75089-29
A3A1CR3	3-20-168	1N4454	A3A1C1	3-20-74	2N2222A
A3A1CR4	3-20-9	1N4454	A3A1C10	3-20-128	2N2907A
A3A1CR5	3-20-108	1N4454	A3A1C11	3-20-181	2N2222A
A3A1CR6	3-20-123	1N4454	A3A1C12	3-20-77	2N2222A
A3A1CR7	3-20-115	1N4454	A3A1C13	3-20-199	2N2222A
A3A1CR8	3-20-120	1N4454	A3A1C14	3-20-187	2N2907A
A3A1CR9	3-20-176	1N4454	A3A1C15	3-20-85	2N2905A
A3A1C1	3-20-92	CK05B104M	A3A1C16	3-20-75	JAN2N2608
A3A1C10	3-20-83	M39CC6-C9-8152	A3A1C17	3-20-174	JAN2N2608
A3A1C11	3-20-17	CK05B104M	A3A1C18	3-20-205	2N3766
A3A1C12	3-20-60	CK05B104M	A3A1C19	3-20-139	2N3766
A3A1C13	3-20-1	CK05B104M	A3A1C2	3-20-204	2N2222A
A3A1C14	3-20-109	CK05B104M	A3A1C20	3-20-97	2N3766
A3A1C15	3-20-152	CK05B104M	A3A1C21	3-20-44	2N3766
A3A1C16	3-20-2	CK05B104M	A3A1C22	3-20-161	2N3740
A3A1C17	3-20-102	CY30C474M	A3A1C23	3-20-147	2N3740
A3A1C18	3-20-18	CK05B104M	A3A1C24	3-20-61	2N3740
A3A1C19	3-20-14	CK06B1334K	A3A1C25	3-20-52	2N3740
A3A1C2	3-20-90	CK05B104M	A3A1C26	3-20-188	2N2222A
A3A1C20	3-20-50	CK05B104M	A3A1C27	3-20-193	2N2222A

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A3A1Q4	3-20-70	2N2222A	A3A1R61	3-20-141	RN55D2053F
A3A1Q5	3-20-203	2N2907A	A3A1R62	3-20-31	RN55D5111F
A3A1Q6	3-20-156	2N2907A	A3A1R63	3-20-72	RN55D4871F
A3A1Q7	3-20-67	2N2907A	A3A1R64	3-20-76	RCR07G474KS
A3A1Q8	3-20-69	2N2907A	A3A1R65	3-20-62	RCR07G682KS
A3A1Q9	3-20-200	2N2222A	A3A1R66	3-20-79	RCR07G273KS
A3A1R1	3-20-155	RCR07G222KS	A3A1R67	3-20-63	RCR07G273KS
A3A1R10	3-20-81	RCR07G1C3KS	A3A1R68	3-20-190	RCR07G103KS
A3A1R11	3-20-201	RCR07G273KS	A3A1R69	3-20-191	RCR07G223KS
A3A1R12	3-20-80	RCR07G273KS	A3A1R7	3-20-171	RN55D2742F
A3A1R13	3-20-19	RN55D5111F	A3A1R70	3-20-184	RN66C1C04F
A3A1R14	3-20-21	RN55D4C22F	A3A1R71	3-20-178	RCR07G332KS
A3A1R15	3-20-151	RN55D1782F	A3A1R72	3-20-186	RCR07G102KS
A3A1R16	3-20-99	RCR07G271KS	A3A1R73	3-20-189	RCR07G470KS
A3A1R17	3-20-15	RN55D5111F	A3A1R74	3-20-192	RCR07G220KS
A3A1R18	3-20-51	RN55D5112F	A3A1R75	3-20-95	RCR07G102KS
A3A1R19	3-20-53	RN55D1782F	A3A1R76	3-20-20	RN55D2053F
A3A1R2	3-20-154	RN55D3322F	A3A1R77	3-20-35	RN55D2053F
A3A1R20	3-20-106	RN66D1CC4F	A3A1R78	3-20-13	RCR07C222KS
A3A1R21	3-20-111	RN55D1CC3F	A3A1R79	3-20-185	RCR07G222KS
A3A1R22	3-20-112	RN55D1CC2F	A3A1R8	3-20-172	RCR07G474KS
A3A1R23	3-20-103	RN55D3322F	A3A1R80	3-20-105	RN55D3322F
A3A1R24	3-20-5	RN66D1CC4F	A3A1R81	3-20-57	RN55D3322F
A3A1R25	3-20-6	RN55D1CC2F	A3A1R82	3-20-145	RN55D1782F
A3A1R26	3-20-7	RN55D1CC3F	A3A1R83	3-20-162	RCR07G472KS
A3A1R27	3-20-10	RCR07G472KS	A3A1R84	3-20-48	RCR07G472KS
A3A1R28	3-20-110	RCR07G472KS	A3A1R85	3-20-160	RCR05G335JS
A3A1R29	3-20-113	RN55D1CC2F	A3A1R86	3-20-159	RN55D5362F
A3A1R3	3-20-104	RN55D1623F	A3A1R87	3-20-133	RN55D5362F
A3A1R30	3-20-114	RN55D1CC2F	A3A1R9	3-20-198	RCR07G103KS
A3A1R31	3-20-4	RN55D3322F	A3A1U1	3-20-25	MC1558G
A3A1R32	3-20-165	RN55D4641F	A3A1U2	3-20-28	MC1558G
A3A1R33	3-20-166	RN55D1CC2F	A3A1U3	3-20-39	MC1558G
A3A1R34	3-20-173	RJ24CP203	A3A1U4	3-20-100	MC1558G
A3A1R35	3-20-175	RJ24CP104	A3A1U5	3-20-134	MC1558G
A3A1R36	3-20-158	RN55D3C12F	A3A1U6	3-20-116	CD4001MJ
A3A1R37	3-20-130	RN55D1CC2F	A3A1U7	3-20-183	CD4049MJ
A3A1R38	3-20-129	RN55D1CC2F	A3A1VR1	3-20-64	1N4733A
A3A1R39	3-20-137	RN55D2153F	A3A1VR2	3-20-167	1N753A
A3A1R4	3-20-56	RCR05G125JS	A3A1VR3	3-20-132	1N758A
A3A1R40	3-20-138	RCR07G1C2KS	A3A1VR4	3-20-96	1N753A
A3A1R41	3-20-142	RN66D1CC4F	A3A1VR5	3-20-93	1N753A
A3A1R42	3-20-144	RCR07G103KS	A3A1VR6	3-20-153	1N753A
A3A1R43	3-20-127	RCR07G1C3KS	A3A1VR7	3-20-8	1N753A
A3A1R44	3-20-119	RN66D5623F	A3A1VR8	3-20-163	1N751A
A3A1R45	3-20-143	RN66D5623F	A3A2	3-18-4	601-3672-C01
A3A1R46	3-20-38	RN55D1CC2F	A3A2	3-19-	601-3672-001
A3A1R47	3-20-42	RN55D2C53F	A3A2CR1	3-19-42	1N4454
A3A1R48	3-20-47	RN55D2C53F	A3A2CR10	3-19-2	1N4454
A3A1R49	3-20-34	RN55D1CC2F	A3A2CR11	3-19-64	1N4454
A3A1R5	3-20-3	RN55D5621F	A3A2CR12	3-19-1	1N4454
A3A1R50	3-20-16	RN55D2053F	A3A2CR13	3-19-168	1N4454
A3A1R51	3-20-49	RN55D1CC2F	A3A2CR14	3-19-162	1N4454
A3A1R52	3-20-26	RN55D1CC2F	A3A2CR15	3-19-98	1N4454
A3A1R53	3-20-37	RN55D2053F	A3A2CR16	3-19-142	1N4454
A3A1R54	3-20-148	RN55D2C53F	A3A2CR17	3-19-143	1N4454
A3A1R55	3-20-149	RN55D1CC2F	A3A2CR18	3-19-141	1N4454
A3A1R56	3-20-23	RN55D1CC2F	A3A2CR19	3-19-132	1N4454
A3A1R57	3-20-33	RN55D1CC2F	A3A2CR2	3-19-8	1N4454
A3A1R58	3-20-24	RN55D1CC2F	A3A2CR20	3-19-137	1N4454
A3A1R59	3-20-146	RN55D2C53F	A3A2CR21	3-19-136	1N4454
A3A1R6	3-20-169	RN55D1072F	A3A2CR22	3-19-135	1N4454

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A3A2CR23	3-19-134	1N4454	A3A2C45	3-19-108	CK058X103M
A3A2CR24	3-19-112	1N4454	A3A2C46	3-19-109	CK058X103M
A3A2CR25	3-19-116	1N4454	A3A2C47	3-19-110	CK058X103M
A3A2CR26	3-19-10	1N4454	A3A2C48	3-19-111	CK058X103M
A3A2CR27	3-19-73	1N4454	A3A2C49	3-19-113	CK058X103M
A3A2CR28	3-19-11	1N4454	A3A2C5	3-19-129	CK058X104M
A3A2CR29	3-19-146	1N4454	A3A2C50	3-19-115	CK058X104M
A3A2CR3	3-19-61	1N4454	A3A2C51	3-19-92	CK058X104M
A3A2CR30	3-19-9	1N4454	A3A2C52	3-19-170	M39003-01-2257
A3A2CR31	3-19-158	1N4454	A3A2C53	3-19-160	CK058X104M
A3A2CR32	3-19-41	1N4454	A3A2C54	3-19-34	CK058X104M
A3A2CR33	3-19-43	1N4454	A3A2C55	3-19-12	CK058X103M
A3A2CR34	3-19-37	1N4454	A3A2C55	3-19-12	CK058X104K
A3A2CR35	3-19-59	1N4454	A3A2C56	3-19-156	M39003-01-2243
A3A2CR36	3-19-19	1N4454	A3A2C57	3-19-171	CK058X104M
A3A2CR37	3-19-152	1N4454	A3A2C6	3-19-124	CK058X104M
A3A2CR38	3-19-163	1N4454	A3A2C7	3-19-127	CK058X104M
A3A2CR39	3-19-82	1N4454	A3A2C8	3-19-126	CK058X104M
A3A2CR4	3-19-48	1N4454	A3A2C9	3-19-123	CK058X104M
A3A2CR5	3-19-75	1N4454	A3A2P1	3-19-122	372-2624-025
A3A2CR6	3-19-80	1N4454	A3A2P2A	3-19-104	372-2625-013
A3A2CR7	3-19-164	1N4454	A3A2P2B	3-19-103	372-2624-013
A3A2CR8	3-19-165	1N4454	A3A2P2C	3-19-105	372-2625-013
A3A2CR9	3-19-68	1N4454	A3A2P2D	3-19-106	372-2625-013
A3A2C1	3-19-107	CK058X104M	A3A2P3	3-19-95	372-2624-018
A3A2C10	3-19-125	CK058X104M	A3A2C1	3-19-120	2N2222A
A3A2C11	3-19-131	M39CC3-C1-2295	A3A2C2	3-19-49	2N2222A
A3A2C12	3-19-33	CK058X104M	A3A2C3	3-19-119	2N2222A
A3A2C13	3-19-40	CK058X104M	A3A2C4	3-19-54	2N2222A
A3A2C14	3-19-39	CK058X104M	A3A2C5	3-19-55	2N2222A
A3A2C15	3-19-38	CK058X104M	A3A2R1	3-19-36	RCR07G103KS
A3A2C16	3-19-31	CK058X104M	A3A2R10	3-19-91	RCR07G103KS
A3A2C17	3-19-139	CK058X104M	A3A2R11	3-19-89	RCR07G103KS
A3A2C18	3-19-22	CK058X104M	A3A2R12	3-19-60	RCR07G103KS
A3A2C19	3-19-144	CK058X104M	A3A2R13	3-19-86	RCR07G104KS
A3A2C2	3-19-30	CK058X104M	A3A2R14	3-19-154	RCR07G104KS
A3A2C20	3-19-29	CK058X104M	A3A2R15	3-19-90	RCR07G104KS
A3A2C21	3-19-32	CK058X103M	A3A2R16	3-19-88	RCR07G104KS
A3A2C21	3-19-32	CK058X104M	A3A2R17	3-19-67	RCR07G104KS
A3A2C22	3-19-96	CK058X104M	A3A2R18	3-19-4	RCR07G104KS
A3A2C23	3-19-157	CK058X104M	A3A2R19	3-19-45	RCR07G104KS
A3A2C24	3-19-159	CY30C474M	A3A2R2	3-19-35	RCR07G104KS
A3A2C25	3-19-85	CK058X104M	A3A2R20	3-19-6	RCR07G474KS
A3A2C26	3-19-84	CK058X104M	A3A2R21	3-19-79	RCR07G102KS
A3A2C27	3-19-58	CK058X104M	A3A2R22	3-19-74	RCR07G102KS
A3A2C28	3-19-78	CK058X103M	A3A2R23	3-19-77	RCR07G102KS
A3A2C28	3-19-78	CK058X104M	A3A2R24	3-19-46	RCR07G103KS
A3A2C29	3-19-81	CK058X104M	A3A2R25	3-19-169	RN60C1004F
A3A2C3	3-19-28	CK058X104M	A3A2R26	3-19-167	RCR07G103KS
A3A2C30	3-19-76	CK058X104M	A3A2R27	3-19-118	RCR07G103KS
A3A2C31	3-19-5	CK058X103M	A3A2R28	3-19-117	RCR07G222KS
A3A2C31	3-19-5	CK058X104M	A3A2R29	3-19-130	RCR07G821KS
A3A2C32	3-19-65	CK058X104M	A3A2R3	3-19-7	RCR07G474KS
A3A2C33	3-19-3	CK058X104M	A3A2R30	3-19-52	RCR07G123KS
A3A2C34	3-19-66	CK058X103M	A3A2R31	3-19-53	RCR07G123KS
A3A2C34	3-19-66	CK058X104M	A3A2R32	3-19-50	RCR07G273KS
A3A2C35	3-19-70	CK058X104M	A3A2R33	3-19-47	RCR07G273KS
A3A2C36	3-19-69	CK058X104M	A3A2R34	3-19-62	RCR07G104KS
A3A2C37	3-19-20	CK058X103M	A3A2R35	3-19-97	RCR07G103KS
A3A2C38	3-19-16	CK058X104M	A3A2R36	3-19-147	RCR07G104KS
A3A2C39	3-19-13	CK058X103M	A3A2R37	3-19-51	RCR07G103KS
A3A2C39	3-19-13	CK058X104M	A3A2R38	3-19-151	RCR07G104KS
A3A2C4	3-19-128	CK058X104M	A3A2R39	3-19-72	RCR07G103KS
A3A2C41	3-19-101	CK058X103M	A3A2R4	3-19-44	RCR07G104KS
A3A2C42	3-19-100	CK058X103M			
A3A2C43	3-19-102	CY1CC102M			
A3A2C44	3-19-114	DM5F181JCS0WV			
A3A2C44	3-19-114	CK058X103M			

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A3A2R40	3-19-83	RCRC5G274KS	A3A3A1XF2	3-33-7	281CC7
A3A2R41	3-19-49A	RCR05G102KS	A3A3A2	3-18-28	635-4690-C01
A3A2R5	3-19-148	RCRG7G1C4KS	A3A3A2	3-32-	635-4690-C01
A3A2R6	3-19-149	RCRC7G1C4KS	A3A3A2CR5	3-32-5	1N4454
A3A2R7	3-19-93	RCRC7G1C3KS	A3A3A2C1	3-32-12	CK05BX104K
A3A2R8	3-19-87	RCRG7G1C3KS	A3A3A2C2	3-32-3	PT54T1C9DAA
A3A2R9	3-19-153	RCRG7G474KS	A3A3A2C3	3-32-1	CM04EC510J03
A3A2U1	3-19-133	CD4C49MJ	A3A3A2C4	3-32-6	CK05BX104K
A3A2U10	3-19-145	CD4CC1MJ	A3A3A2C5	3-32-15	CK05BX104K
A3A2U11	3-19-21	CD4CC1MJ	A3A3A2C6	3-32-13	M39C03-C1-2254
A3A2U12	3-19-57	CD4C23LBF	A3A3A2C7	3-32-18	CK05BX104K
A3A2U13	3-19-150	CD4G11MJ	A3A3A2L2	3-32-2	MS75085-19
A3A2U14	3-19-18	CD4G11MJ	A3A3A2R1	3-32-20	RT24C2L103
A3A2U15	3-19-59	CD4C49MJ	A3A3A2R2	3-32-19	RCR05G102KS
A3A2U16	3-19-155	CD4C23LBF	A3A3A2R3	3-32-11	RCR05G472KS
A3A2U17	3-19-17	CD4G11MJ	A3A3A2R4	3-32-17	RCR05G335KS
A3A2U18	3-19-63	CD4C23LBF	A3A3A2R5	3-32-10	RCR05G273KS
A3A2U19	3-19-161	CD4C11MJ	A3A3A2R6	3-32-14	RCR05G103KS
A3A2U2	3-19-26	CD4CC1MJ	A3A3A2U1	3-32-7	MC1558C
A3A2U20	3-19-14	CD4G11MJ	A3A3A2VR1	3-32-16	1N751A
A3A2U21	3-19-15	CD4C23LBF	A3A3C1	3-18-48	292P1C396
A3A2U22	3-19-166	CD4C49MJ	A3A3J2	3-18-69	CE941C-1C01
A3A2U3	3-19-27	CD4C11MJ	A3A3J4	3-18-66	M39012-24-CC02
A3A2U4	3-19-138	CD4CC1MJ	A3A3L13	3-25-11	623-3337-013
A3A2U5	3-19-24	CD4C23LBF	A3A3P1	3-18-38	14C-0530-3C23
A3A2U6	3-19-25	CD4C23LBF	A3A3R1	3-18-35	MS281-1CCROP
A3A2U7	3-19-140	CD4C49MJ	A3A4	3-18-6	629-341C-C01
A3A2U8	3-19-23	CD4C25MJ	A3A4A1	3-18-8	623-7287-001
A3A2U9	3-19-56	CD4C25MJ	A3A4A1CR1	3-22-33	1N3070
A3A3	3-18-27	629-3411-001	A3A4A1CR2	3-22-44	1N3070
A3A3A1	3-18-30	635-4749-C01	A3A4A1C1	3-22-11	CK05BX104K
A3A3A1CR1	3-33-3	1N4CC2	A3A4A1C10	3-22-34	8121M101COGO-471
A3A3A1CR2	3-33-2	1N555C			J
A3A3A1CR3	3-33-31	1N4454	A3A4A1C11	3-22-39	CK05BX104K
A3A3A1CR4	3-33-30	1N4454	A3A4A1C12	3-22-43	CD6FC111F03
A3A3A1CR5	3-33-1	1N4454	A3A4A1C13	3-22-36	M39006-09-8132
A3A3A1F1	3-33-4	272CC5	A3A4A1C14	3-22-37	CK05BX104K
A3A3A1F2	3-33-6	272CC5	A3A4A1C15	3-22-55	CK05BX104K
A3A3A1J1	3-18-31	MDNBS6555-17	A3A4A1C16	3-22-61	CK05BX104K
A3A3A1J1	3-23-35	372-2623-025	A3A4A1C17	3-22-19	CK05BX104K
A3A3A1K1	3-33-8	3SAV1271A2	A3A4A1C18	3-22-8	CK05BX103K
A3A3A1K1	3-33-8	3SAV181CA2	A3A4A1C19	3-22-3	CK05BX103K
A3A3A1L1	3-33-29	MS75C85-C7	A3A4A1C2	3-22-17	CK05BX104K
A3A3A1L10	3-33-26	MS75C85-07	A3A4A1C2C	3-22-35	935C224XCSP
A3A3A1L11	3-33-24	MS75C85-07	A3A4A1C3	3-22-59	CK05BX104K
A3A3A1L12	3-33-16	MS75C85-C7	A3A4A1C4	3-22-58	CK05BX104K
A3A3A1L13	3-33-13	MS75C85-C7	A3A4A1C5	3-22-23	CK05BX150K
A3A3A1L14	3-33-15	MS75C85-07	A3A4A1C6	3-22-27	CK05BX104K
A3A3A1L15	3-33-17	MS75C85-07	A3A4A1C7	3-22-45	CK05BX104K
A3A3A1L16	3-33-10	MS75C85-C7	A3A4A1C8	3-22-51	8121M101COGO-471
A3A3A1L17	3-33-18	MS75C85-07			J
A3A3A1L18	3-33-14	MS75C85-07	A3A4A1C9	3-22-32	CK05BX104K
A3A3A1L19	3-33-9	MS75C85-C7	A3A4A1K1	3-22-24	3SAV1271A2
A3A3A1L2	3-33-23	MS75C85-C7	A3A4A1L1	3-22-12	MS75083-13
A3A3A1L20	3-33-25	MS75C85-C7	A3A4A1L10	3-22-16	MS75084-03
A3A3A1L21	3-33-11	MS75C85-07	A3A4A1L11	3-22-62	MS75084-03
A3A3A1L3	3-33-19	MS75C85-C7	A3A4A1L2	3-22-4	MS75084-C8
A3A3A1L4	3-33-20	MS75C85-C7	A3A4A1L3	3-22-18	MS75083-13
A3A3A1L5	3-33-28	MS75C85-C7	A3A4A1L4	3-22-60	MS75083-13
A3A3A1L6	3-33-27	MS75C85-07	A3A4A1L6	3-22-54	MS75083-13
A3A3A1L7	3-33-22	MS75C85-C7	A3A4A1L7	3-22-26	MS75C83-13
A3A3A1L8	3-33-21	MS75C85-C7	A3A4A1L8	3-22-38	MS75088-2
A3A3A1L9	3-33-12	78G-8771-001	A3A4A1L9	3-22-40	MS75088-2
A3A3A1XF1	3-33-5	281CC7			

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A3A4A1P1	3-22-53	372-2624-016	A3A4A2R22	3-21-17	RJ24CP103
A3A4A1Q1	3-22-1	352-0671-020	A3A4A2R23	3-21-28	RCRC7G511JS
A3A4A1Q2	3-22-9	352-0671-020	A3A4A2R24	3-21-29	RCRC7G121KS
A3A4A1Q3	3-18-13	JAN2N3375	A3A4A2R25	3-21-19A	RCR05G3R3JS
A3A4A1Q4	3-18-14	JAN2N3375	A3A4A2R25	3-21-19A	RCR05G4R7JS
A3A4A1Q5	3-18-11	PT9788	A3A4A2U1	3-21-18	UA723HM
A3A4A1Q6	3-18-12	PT9788	A3A4A2VR1	3-21-23	1N753A
A3A4A1R1	3-22-66	RCRC7G121KS	A3A5	3-18-19	629-3414-001
A3A4A1R10	3-22-48	RCRC7G1COKS	A3A5	3-23-	629-3414-001
A3A4A1R11	3-22-29	RCRC7G1COKS	A3A5A1	3-23-5	601-3677-001
A3A4A1R12	3-22-30	RCRC7G1COKS	A3A5A1CR1	3-23-11	1N4003
A3A4A1R13	3-22-47	RCRC7G1COKS	A3A5A1CR2	3-23-12	1N4003
A3A4A1R14	3-22-31	RCRC7G1COKS	A3A5A1CR3	3-23-9	353-2850-001
A3A4A1R15	3-22-63	RCRC7G390KS	A3A5A1C41	3-23-14	2C067104X0101A3
A3A4A1R16	3-22-15	RCRC7G390KS	A3A5A1K1	3-23-8	3S8C1018A2
A3A4A1R17	3-22-64	RCRC7G151JS	A3A5A1K2	3-23-13	3S8C1018A2
A3A4A1R18	3-22-14	RCRC7G151JS	A3A5A1C2	3-23-7	JAN2N2222A
A3A4A1R2	3-22-6	RCRC7G471KS	A3A5A1C2	3-23-7	S192C6
A3A4A1R3	3-22-65	RN60C1CROF	A3A5A1R3	3-23-10	RCR05G273KS
A3A4A1R3	3-22-65	RCRC7G1COKS	A3A5A1R3	3-23-10	RCR05G102KS
A3A4A1R4	3-22-13	RN60C1CROF	A3A5A1R4	3-23-6	RCR05G102KS
A3A4A1R4	3-22-13	RCRC7G1COKS	A3A5A2	3-23-16	629-3482-001
A3A4A1R5	3-22-56	RCRC7G560KS	A3A5A2	3-24-	629-3482-001
A3A4A1R6	3-22-22	RCRC7G560KS	A3A5A2C1	3-24-9	CD7FD161F03
A3A4A1R7	3-22-57	RN60C1CROF	A3A5A2C1C	3-24-41	CC7FA471F03
A3A4A1R7	3-22-57	RCRC7G1COKS	A3A5A2C11	3-24-12	CC7FA471F03
A3A4A1R8	3-22-21	RCRC7G1COKS	A3A5A2C12	3-24-14	CC6FC111F03
A3A4A1R8	3-22-21	RN60C1CROF	A3A5A2C13	3-24-16	CD7FA751F03
A3A4A1R9	3-22-49	RCRC7G1COKS	A3A5A2C14	3-24-19	CD7FA391F03
A3A4A1S1	3-18-15	M24236-19-193	A3A5A2C15	3-24-20	CC7FA331F03
A3A4A1T1	3-22-5	629-6170-001	A3A5A2C16	3-24-29	CC7FA331F03
A3A4A1T2	3-22-20	629-6167-001	A3A5A2C17	3-24-33	CD6EC820FC3
A3A4A1T3	3-22-46	629-6168-001	A3A5A2C18	3-24-26	CD7FA471F03
A3A4A1T4	3-22-50	629-6169-001	A3A5A2C19	3-24-23	CC7FA361F03
A3A4A1T5	3-22-28	629-6169-001	A3A5A2C2	3-24-15	CC7FC201F03
A3A4A1T6	3-22-41	629-6166-001	A3A5A2C2C	3-24-22	CD7FD181F03
A3A4A1W1	3-18-1CA	146-C53C-5CCC	A3A5A2C3	3-24-7	CC7FA152F03
A3A4A2	3-18-7	601-3675-001	A3A5A2C4	3-24-1	CC7FA751F03
A3A4A2	3-21-	601-3675-001	A3A5A2C43	3-24-10	CC7FA751F03
A3A4A2CR1	3-21-23	1N751A	A3A5A2C44	3-24-6	CD6ED500FC3
A3A4A2CR2	3-21-24	1N4454	A3A5A2C45	3-24-4	CC7FC241F03
A3A4A2CR3	3-21-9	1N4454	A3A5A2C45	3-24-4	CC7FC241F03
A3A4A2CR4	3-21-7	1N4454	A3A5A2C46	3-24-31	CC6FC101F03
A3A4A2CR5	3-21-2CA	353-6442-080	A3A5A2C47	3-24-36	CD6FC111F03
A3A4A2C1	3-21-19	M390C3-C1-2026	A3A5A2C48	3-24-40	CC6ED270G03
A3A4A2C1	3-21-19	M390C3-C1-2167	A3A5A2C5	3-24-3	CC7FA361F03
A3A4A2J1	3-21-11	141-1CC3-0002	A3A5A2C5	3-24-3	CD7FA361F03
A3A4A2J5	3-21-13	141-CC11-0002	A3A5A2C5C	3-24-30	CD6C0100J03
A3A4A2K1	3-21-10	3SAV1271A2	A3A5A2C51	3-24-27	CC6ED620F03
A3A4A2P1	3-21-26	372-2624-013	A3A5A2C52	3-24-24	CC6C0100J03
A3A4A2Q1	3-21-2	2N3054	A3A5A2C6	3-24-32	CD7FA511F03
A3A4A2Q2	3-21-15	2N4033	A3A5A2C7	3-24-34	CD6FC121F03
A3A4A2Q3	3-21-8	2N2215A	A3A5A2C8	3-24-37	CC7FA1C2F03
A3A4A2RT1	3-21-6	TI1M1-4 330-1CPC T	A3A5A2C9	3-24-39	CC7FA511F03
A3A4A2R11	3-21-5	RCRC7G390KS	A3A5A2J1	3-24-11	141-0011-0002
A3A4A2R12	3-21-22	RT22C2P5C1	A3A5A2J2	3-24-2	141-0011-0002
A3A4A2R14	3-21-21	RCRC7G220KS	A3A5A2L1	3-24-8	623-3337-001
A3A4A2R15	3-21-20	RCRC7G1C2KS	A3A5A2L2	3-24-5	623-3337-002
A3A4A2R18	3-21-1	RCRC7G1C2KS	A3A5A2L3	3-24-35	623-3337-003
A3A4A2R19	3-21-4	RCR32G47CKS	A3A5A2L4	3-24-38	623-3337-004
A3A4A2R20	3-21-12	RCRC7G392KS	A3A5A2L5	3-24-13	623-3337-005
A3A4A2R21	3-21-16	RCRC7G1C2KS	A3A5A2L6	3-24-18	623-3337-006
			A3A5A2L7	3-24-28	623-3337-007

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER
A3A5A2L8	3-24-25	623-3337-008	A3A6A2C6	3-28-22	CD6FC111J03
A3A5A3	3-23-25	629-3483-CC1	A3A6A2C7	3-28-20	CK058X103M
A3A5A3	3-25-	629-3483-CC1	A3A6A2C8	3-28-2	CK058X103M
A3A5A3C21	3-25-8	CD6CD15CJ03	A3A6A2L1	3-28-13	MS75085-19
A3A5A3C22	3-25-9	CD6ED27CG03	A3A6A2L2	3-28-14	MS75085-19
A3A5A3C23	3-25-5	CD6FC1C1F03	A3A6A2L3	3-28-4	MS75085-19
A3A5A3C24	3-25-1	CD6CD15CJ03	A3A6A2L7	3-28-7	772-5727-001
A3A5A3C25	3-25-2	CM04ED39CG03	A3A6A2L8	3-28-24	MS75084-02
A3A5A3C26	3-25-3C	CM04ED39CG03	A3A6A2L8	3-28-24	MS75083-13
A3A5A3C27	3-25-32	CD6FC1C1F03	A3A6A2L8	3-28-24	MS75084-01
A3A5A3C28	3-25-33	CD7FD161F03	A3A6A2P1	3-28-26	372-2623-012
A3A5A3C29	3-25-35	CD6ED27CG03	A3A6A2R1	3-28-17	RCR07G123KS
A3A5A3C30	3-25-36	CO68C82CF03	A3A6A2R2	3-28-5	RCR07G123KS
A3A5A3C31	3-25-10	CD6FC121F03	A3A6A2R3	3-28-21	RCR07G122KS
A3A5A3C32	3-25-12	CD7FC131F03	A3A6A2R3	3-28-21	RCR07G821KS
A3A5A3C33	3-25-13	CD7FC241F03	A3A6A2R3	3-28-21	RCR07G102KS
A3A5A3C34	3-25-17	CD6CD15CJ03	A3A6A2R7	3-28-12	RD60P19R6G
A3A5A3C35	3-25-18	CD7FD161F03	A3A6A2R8	3-28-23	RD60P34R8G
A3A5A3C36	3-25-29	CD7FD181F03	A3A6A2R9	3-28-6	RCR07G331KS
A3A5A3C37	3-25-27	CD7FC2C1F03	A3A6A3	3-29-	601-3685-001
A3A5A3C38	3-25-26	CD7FA351F03	A3A6A3	3-27-4	601-3685-001
A3A5A3C39	3-25-21	CM04ED39CG03	A3A6A3CR5	3-29-12	SE630
A3A5A3C40	3-25-22	CD7FC241F03	A3A6A3CR6	3-29-2	SE630
A3A5A3C53	3-25-4	CD6CD15CJ03	A3A6A3C10	3-29-7	CK058X103M
A3A5A3C56	3-25-14	CD6CD15CJ03	A3A6A3C12	3-29-13	CM04FC131J03
A3A5A3C57	3-25-16	CM04ED39CG03	A3A6A3C13	3-29-1	CK058X100K
A3A5A3C58	3-25-19	CM04CD1C0D03	A3A6A3C5	3-29-6	CK058X103M
A3A5A3C59	3-25-25	CM04ED2CCJ03	A3A6A3C9	3-29-9	CK058X103M
A3A5A3C60	3-25-23	CD6CD15CJ03	A3A6A3L4	3-29-10	MS75085-19
A3A5A3C61	3-25-7	CD6ED27CG03	A3A6A3L5	3-29-5	MS75085-19
A3A5A3L10	3-25-3	623-3337-010	A3A6A3L6	3-29-4	MS75085-19
A3A5A3L11	3-25-31	623-3337-011	A3A6A3R4	3-29-11	RN5504641F
A3A5A3L12	3-25-34	623-3337-012	A3A6A3R5	3-29-8	3299W1-20K
A3A5A3L14	3-25-15	623-3337-014	A3A6A3R6	3-29-3	RN5504641F
A3A5A3L15	3-25-28	623-3337-015	A3A6CR7	3-27-12	1N4454
A3A5A3L16	3-25-24	623-3337-016	A3A6C18	3-27-9	CK058X152K
A3A5A3L9	3-25-6	623-3337-CC9	A3A6P2	3-27-21	140-C530-5001
A3A5B1	3-23-1	41A958	A3A6R10	3-27-10	RCR07G152KS
A3A5C42	3-23-26	2C067104X0101A3	A3A6R11	3-27-7	3059L1-104
A3A5C49	3-24-17	CD6ED27CG03	A3A6R12	3-27-6	3059L1-104
A3A5P1	3-23-3	78C-6928-CC1	A3A6R13	3-27-11	RCR07G332KS
A3A5S1	3-23-42	4-1261-212	A3A6VR1	3-27-8	1N9658
A3A5S2	3-23-43	4-1711-211	A3A7	3-18-23	629-3412-001
A3A5S3	3-23-27	4-1171-2C9	A3A7	3-30-	629-3412-001
A3A6	3-18-22	629-3409-CC1	A3A7E1	3-30-2	41A958
A3A6	3-27-	629-3409-001	A3A7CR1	3-30-22	1N4003
A3A6A1	3-27-14	629-5705-0C1	A3A7CR2	3-30-21	1N4003
A3A6A1T1	3-27-15	629-5659-0C1	A3A7CR3	3-30-19	1N4003
A3A6A1T2	3-27-16	629-5659-0C2	A3A7CR4	3-30-20	1N4003
A3A6A1T3	3-27-17	629-5704-001	A3A7C1	3-30-18	390-3
A3A6A2	3-28-	601-3686-0C1	A3A7C2	3-30-1	CK058X104M
A3A6A2	3-27-2	601-3686-0C1	A3A7P1	3-30-9	780-6638-001
A3A6A2CR1	3-28-18	FD7GC	A3A7S1	3-30-12	4-1781-105
A3A6A2CR2	3-28-10	FD7GC	A3A8	3-18-21	629-3413-001
A3A6A2CR3	3-28-19	FD7GC	A3A8	3-26-	629-3413-001
A3A6A2CR4	3-28-25	FD7GC	A3A8E1	3-26-1	41A205
A3A6A2C1	3-28-16	CK058X103M	A3A8CR1	3-26-3	1N4003
A3A6A2C11	3-28-3	CK058X103M	A3A8CR2	3-26-4	1N4003
A3A6A2C14	3-28-1	518-C24A5-25PF	A3A8CR3	3-26-26	1N4003
A3A6A2C15	3-28-8	518-C24A5-25PF	A3A8CR4	3-26-21	1N4003
A3A6A2C2	3-28-15	CK058X103M	A3A8C1	3-26-2	CK058X104M
A3A6A2C3	3-28-11	CK058X103M	A3A8L1	3-26-13	629-6150-001
A3A6A2C4	3-28-9	CM04FD2C1JC3	A3A8P1	3-26-30	623-3906-001

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER
A3A8S1	3-26-5	MS24547-1			
A3A8S2	3-26-22	MS24547-1			
A3A9	3-18-24	629-3407-001			
A3A9	3-21-	629-3407-001			
A3A9C1	3-31-15	VY82C241J			
A3A9C2	3-31-16	VY81C75CG			
A3A9C3	3-31-17	VY81C330J			
A3A9C4	3-31-14	UY033C1J			
A3A9C5	3-31-13	UY03391J			
A3A9C6	3-31-10	VY81C56CG			
A3A9C7	3-31-18	VY81C51CF			
A3A9S1A	3-31-9	601-3982-001			
A3A9S1B	3-31-11	28C4C2BF			
A3A9S1C	3-31-12	28C4C3BF			
A3A9T1	3-31-1	629-5761-001			
B1	3-40-25	635-4868-CC1			
CS1	3-40-10	382			
CS2	3-40-22	382			
J1	3-36-4	CE941C-1002			
J1	3-40-29	CE941C-1CC1			
POA1A1	3-17-	601-3667-CC1			
POA1A1	3-2-19	635-5157-CC1			
POA1A1	3-2-21	601-3667-001			
POA3A3A1	3-33-	601-3865-CC1			
POA3A4A1	3-22-	601-3674-CC1			
P1	3-36-6	CE941C-1C01			
P1	3-37-11	CE941C-1C02			
P1	3-39-12	AP1C5A			
P1	3-40-27	CE941C-1C02			
XDS1	3-40-9	174-843C-0112-20			
		3			
XDS2	3-40-21	174-843C-0111-2C			
		3			

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SECTION IV
SCHEMATICS

4.1 GENERAL

Schematic diagrams are included for Receiver-Transmitter Group OR-5007/URC, Handset H-5017/PRC-515, Handset-Microphone H-5016/PRC-515, Electrical Power Cable Assembly CX-5229/PRC-515, and Direct Current Generator G-5002/PRC-515. The schematic diagram titles and figure numbers are:

FIGURE	TITLE
4-1	Chassis A1A1, Schematic Diagram
4-2	Mixer A1A2, Schematic Diagram
4-3	Broadband Amplifier A1A3, Schematic Diagram
4-4	Power Supply A1A4, Schematic Diagram
4-5	If/Af A1A5A1, Schematic Diagram
4-6	Logic/Tx A1A5A2, Schematic Diagram
4-7	Frequency Standard A1A6A1A1, Schematic Diagram
4-8	Fixed Frequency Divider A1A6A1A2, Schematic Diagram
4-9	Lf Phase-Lock Loop A1A6A1A3, Schematic Diagram
4-10	Frequency Converter A1A6A1A4, Schematic Diagram
4-11	Voltage Regulator A1A6A2A1, Schematic Diagram
4-12	Variable Frequency Divider A1A6A2A2, Schematic Diagram
4-13	Hf Phase-Lock Loop A1A6A2A3, Schematic Diagram
4-14	Receiver-Transmitter Control A2, C-5310/URC, Schematic Diagram
4-15	Amplifier-Coupler A3, AM-5280/URC, Schematic Diagram
4-16	Servo Amplifier A3A1, Schematic Diagram
4-17	Control Logic A3A2, Schematic Diagram
4-18	RF Subassembly A3A4A1, Schematic Diagram
4-19	Bias/Control A3A4A2, Schematic Diagram

FIGURE	TITLE
4-20	Bandswitch A3A5, Schematic Diagram
4-21	Discriminator A3A6, Schematic Diagram
4-22	Tuning Capacitor A3A7, Schematic Diagram
4-23	Tuning Coil A3A8, Schematic Diagram
4-24	Autotransformer A3A9, Schematic Diagram
4-25	Handset H-5017/PRC-515, Schematic Diagram
4-26	Headset-Microphone H-5016/PRC-515, Schematic Diagram
4-27	Electrical Power Cable Assembly CX-5229/PRC-515, Schematic Diagram
4-28	Direct Current Generator G-5002/PRC-515, Schematic Diagram

VARIABLE DIVIDER
A1A6A2A2P1 FUNCTIONS

GROUND

XMT INHIBIT

1 MHz

10 MHz

100 kHz

+5.2 V DC

VARIABLE DIVIDER
A1A6A2A1P1 FUNCTIONS

5 MHz

+25.2 V DC (SW AND FLTR)

RCV STRETCH

RCV-AM

1 OR 2 kHz

+5.2 V DC

+13 V DC

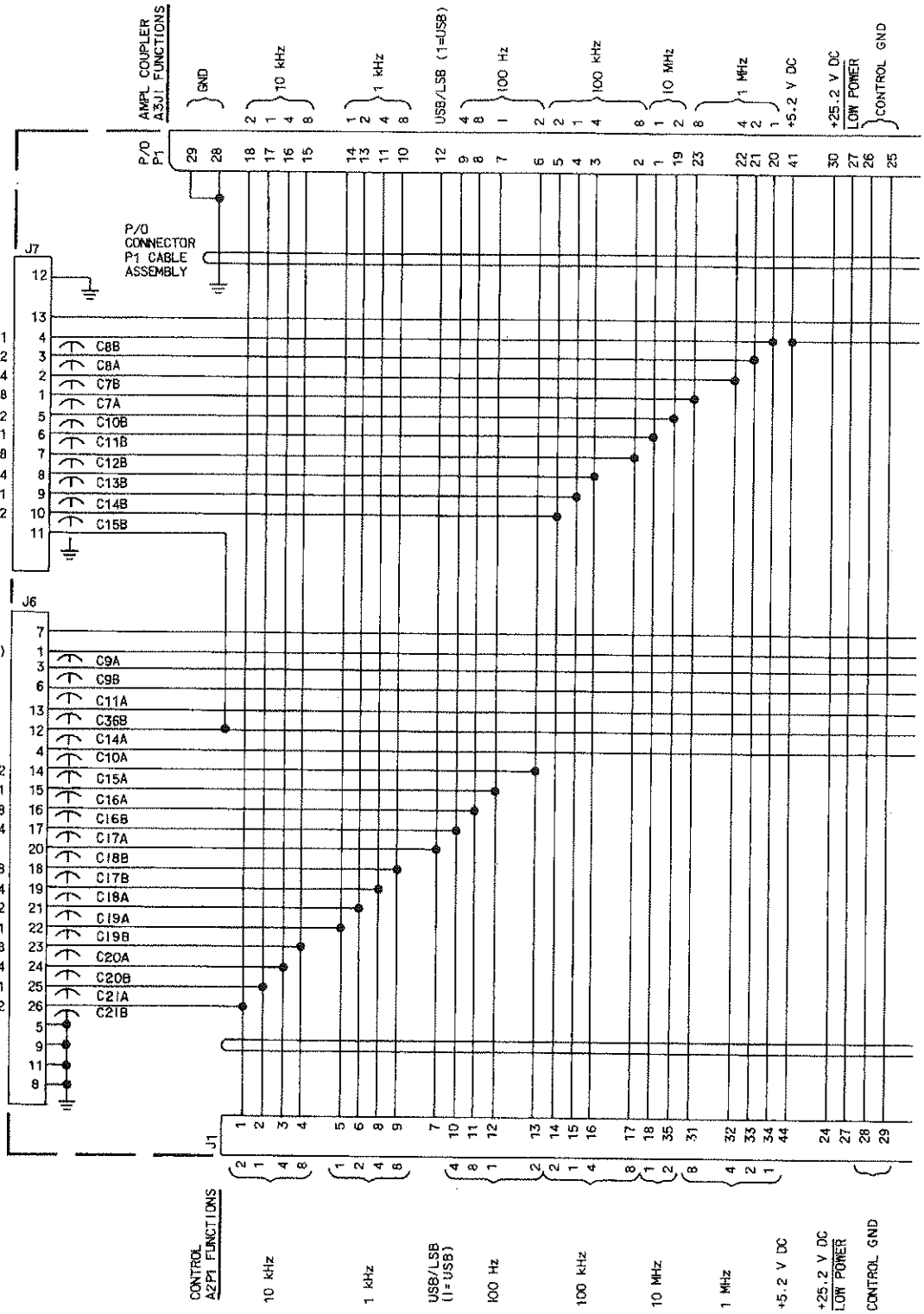
100 Hz

USB/LSB (I=USB)

1 kHz

10 kHz

GND



CONTROL
A2P1 FUNCTIONS

10 kHz

1 kHz

USB/LSB
(I=USB)

100 Hz

100 kHz

10 MHz

1 MHz

+5.2 V DC

+25.2 V DC
LOW POWER

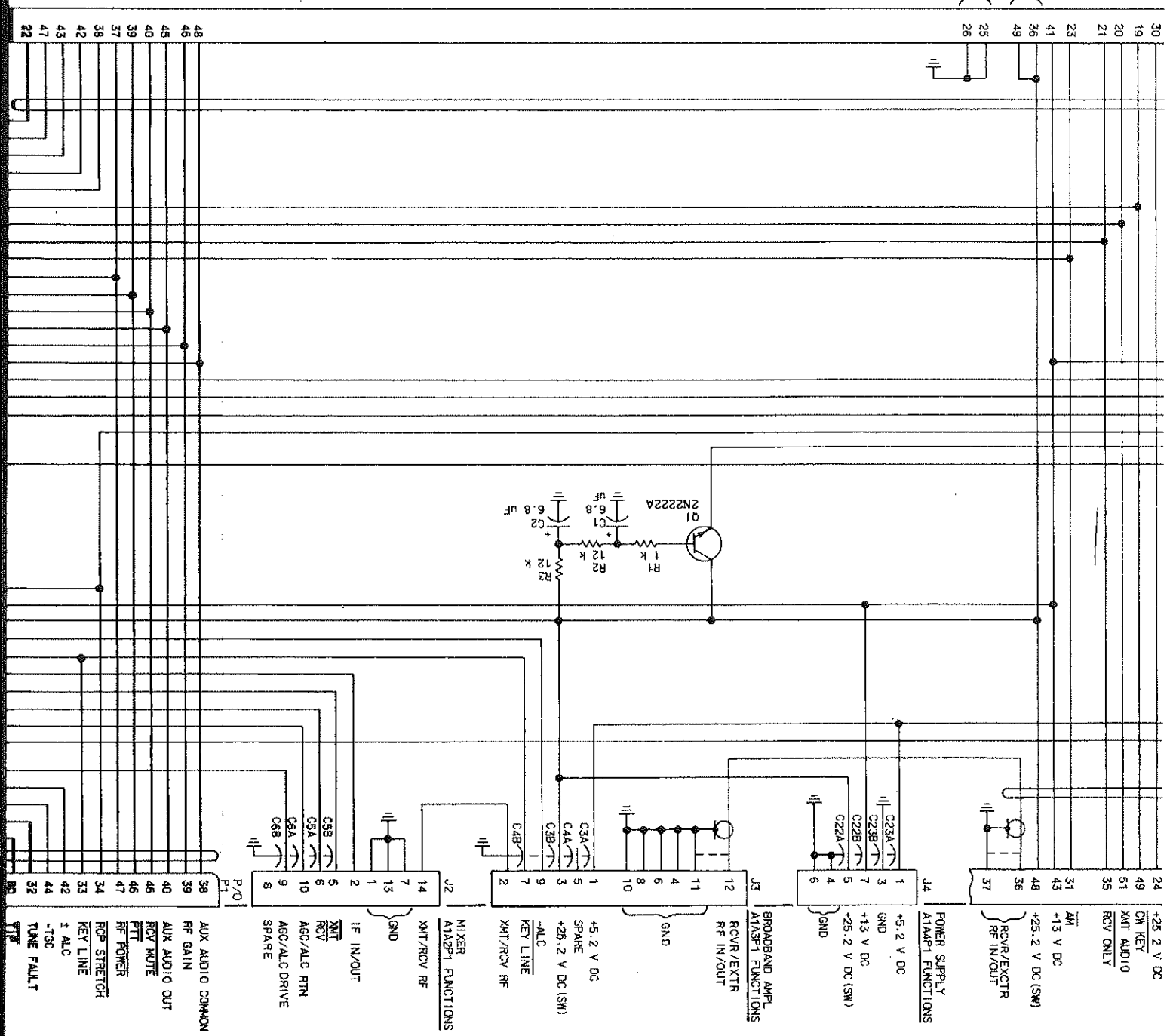
CONTROL GND

+25.2 V DC
 CW KEY
 XMT AUDIO
 RCY ONLY
 AM
 -13 V DC
 +25.2 V DC (SM)
 GND

30
 19
 20
 21
 23
 41
 36
 49
 25
 26

AUX AUDIO COMMON
 RF GAIN
 AUX AUDIO
 RCY MUTE
 PTT
 RF POWER
 RF POWER
 AF GAIN ARM
 RCY AUDIO
 AF GAIN HIGH
 0.48m SOCR CONTROL

48
 46
 45
 40
 39
 37
 36
 42
 43
 47
 22



24
 49
 51
 35
 31
 48
 43
 36
 37

+25.2 V DC
 CW KEY
 XMT AUDIO
 RCY ONLY
 AM
 -13 V DC
 +25.2 V DC (SM)
 RCYV/EXCTR
 RF IN/OUT

J4
 1
 3
 7
 5
 4
 6

POWER SUPPLY
 AT/ADPT FUNCTIONS
 +5.2 V DC
 GND
 +13 V DC
 +25.2 V DC (SM)
 GND

J3
 12
 11
 4
 6
 8
 10

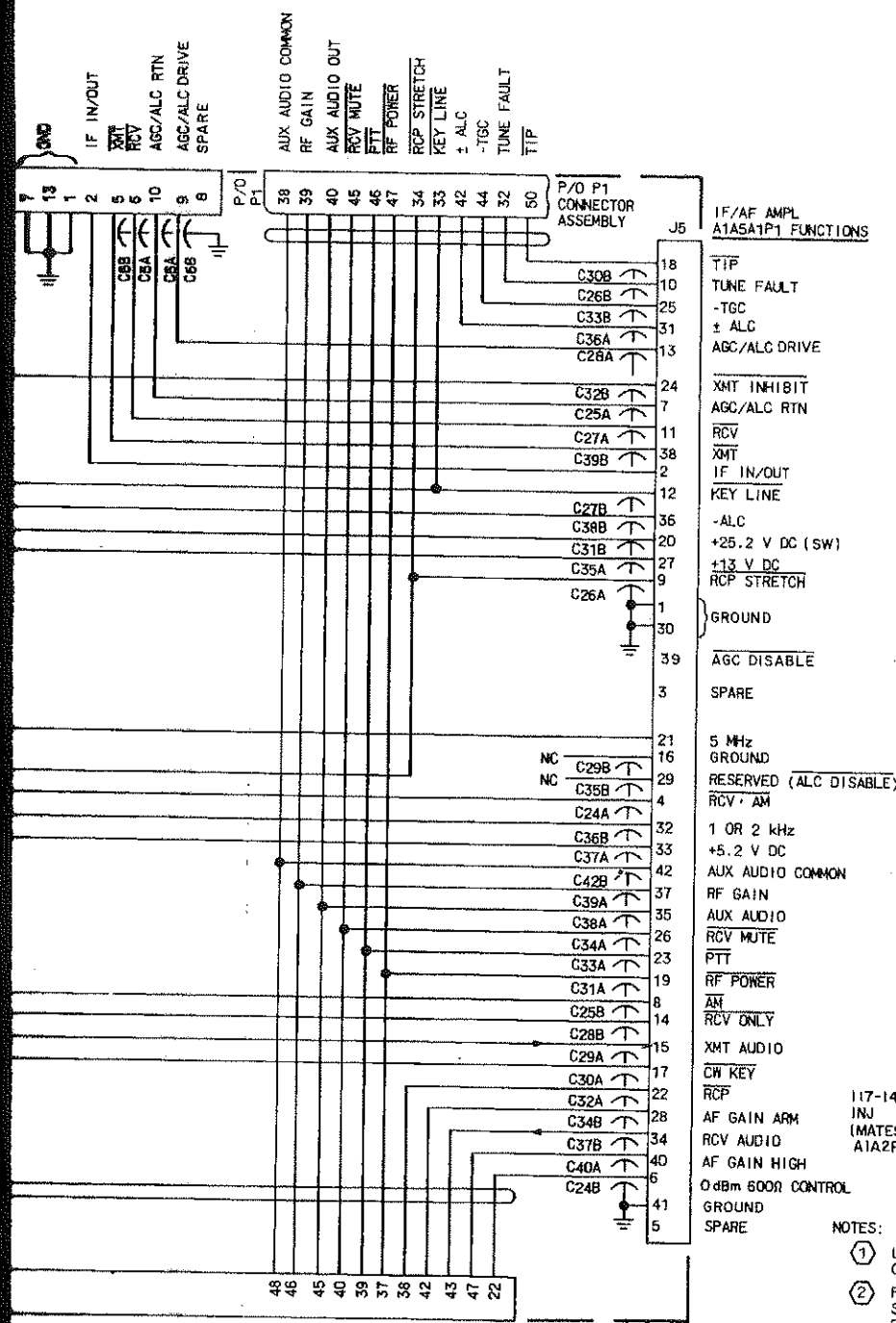
BROADBAND AMPL
 AT/ADPT FUNCTIONS
 RCYV/EXTR
 RF IN/OUT
 GND

J2
 14
 7
 13
 1
 2

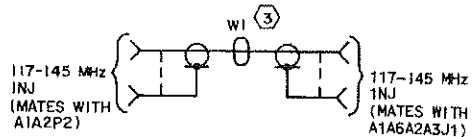
MIXER
 AT/ADPT FUNCTIONS
 XMT/RCY RF
 GND
 IF IN/OUT
 XMT
 RCY
 AGC/ALC RTN
 AGC/ALC DRIVE
 SPARE

P/O
 38
 39
 40
 46
 46
 47
 34
 33
 42
 44
 32

AUX AUDIO COMMON
 RF GAIN
 AUX AUDIO OUT
 RCY MUTE
 PTT
 RF POWER
 RF POWER
 AF GAIN ARM
 RCY AUDIO
 AF GAIN HIGH
 TUNE FAULT



IF/AF AMPL
A1A5A1P1 FUNCTIONS

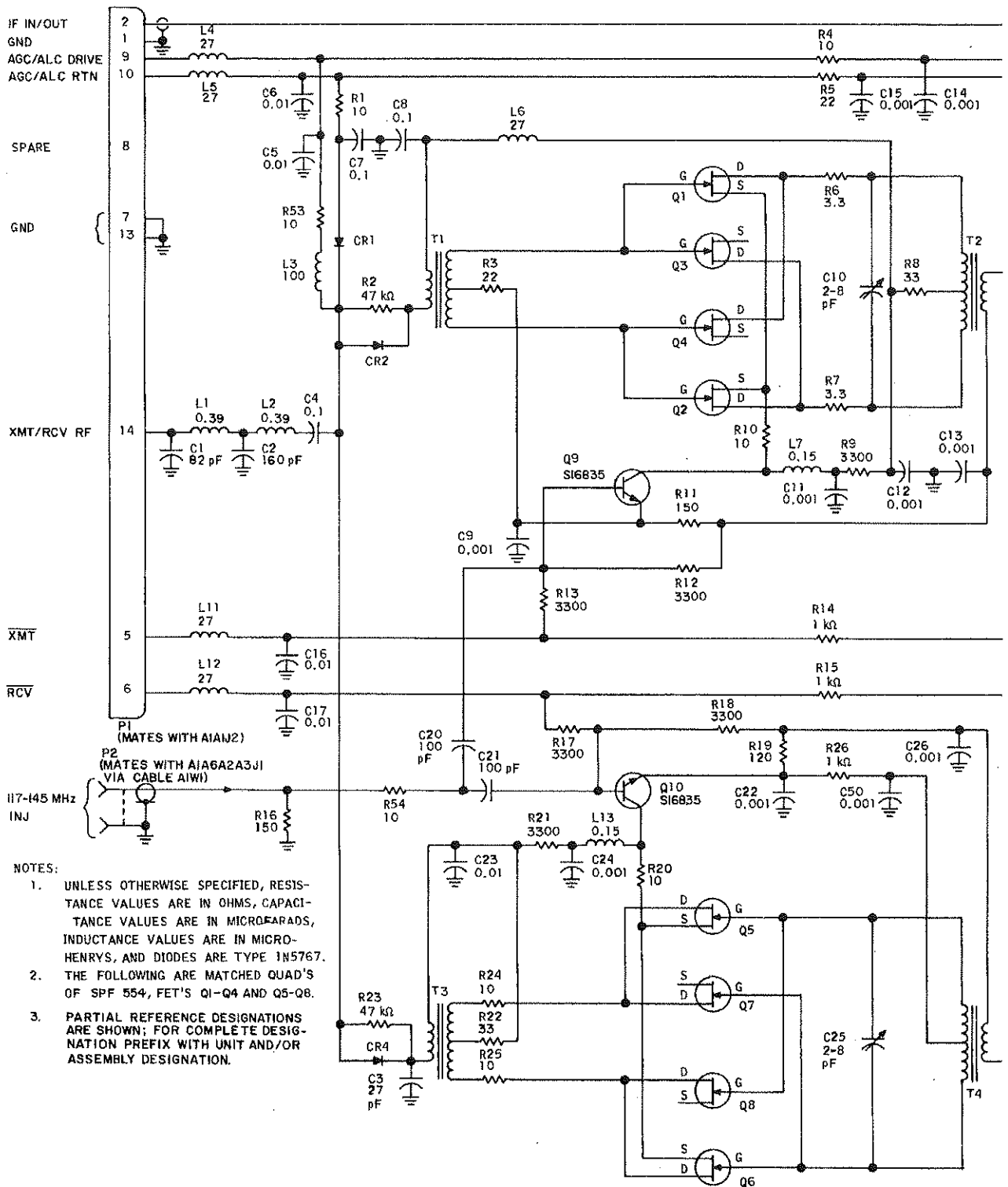


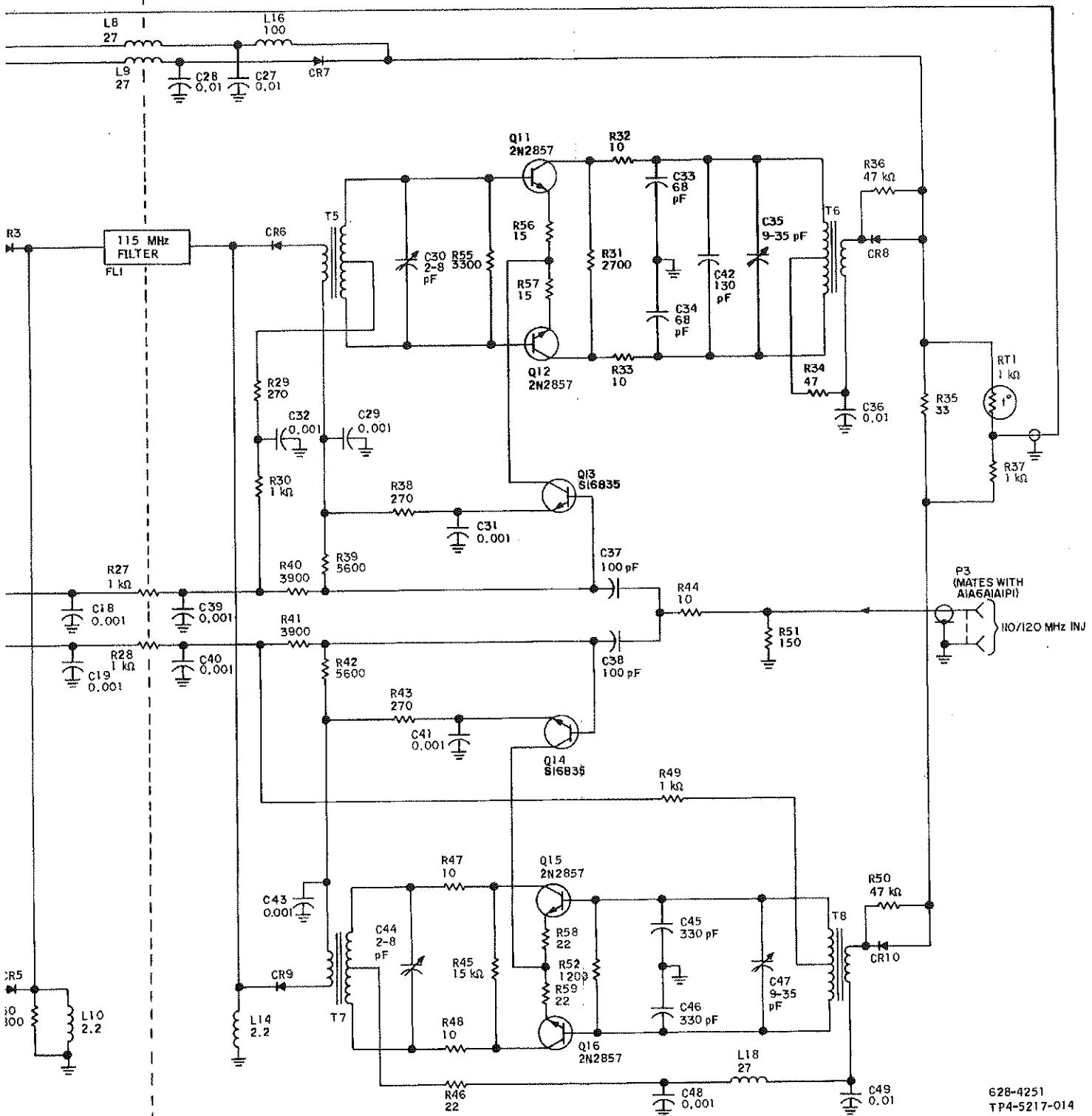
- NOTES:
- ① UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS AND CAPACITORS ARE 10,000 pF.
 - ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATIONS, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
 - ③ CABLE W1 IS LOCATED ON A1.

AUX AUDIO COMMON
RF GAIN
AUX AUDIO
RCV MUTE
PTT
RF POWER
RCP
AF GAIN ARM
RCV AUDIO
AF GAIN HIGH
0 dBm 600Ω CONTROL

628-4249
TPA-0073-015

Figure 4-1. Chassis A1A1,
Schematic Diagram

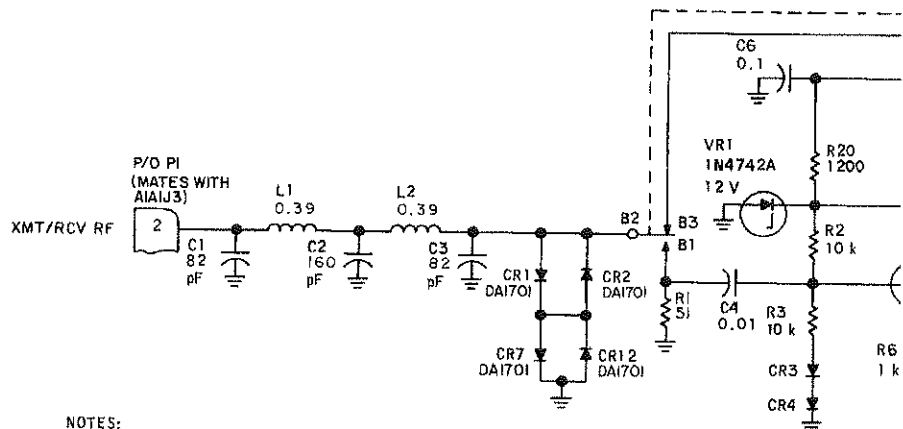




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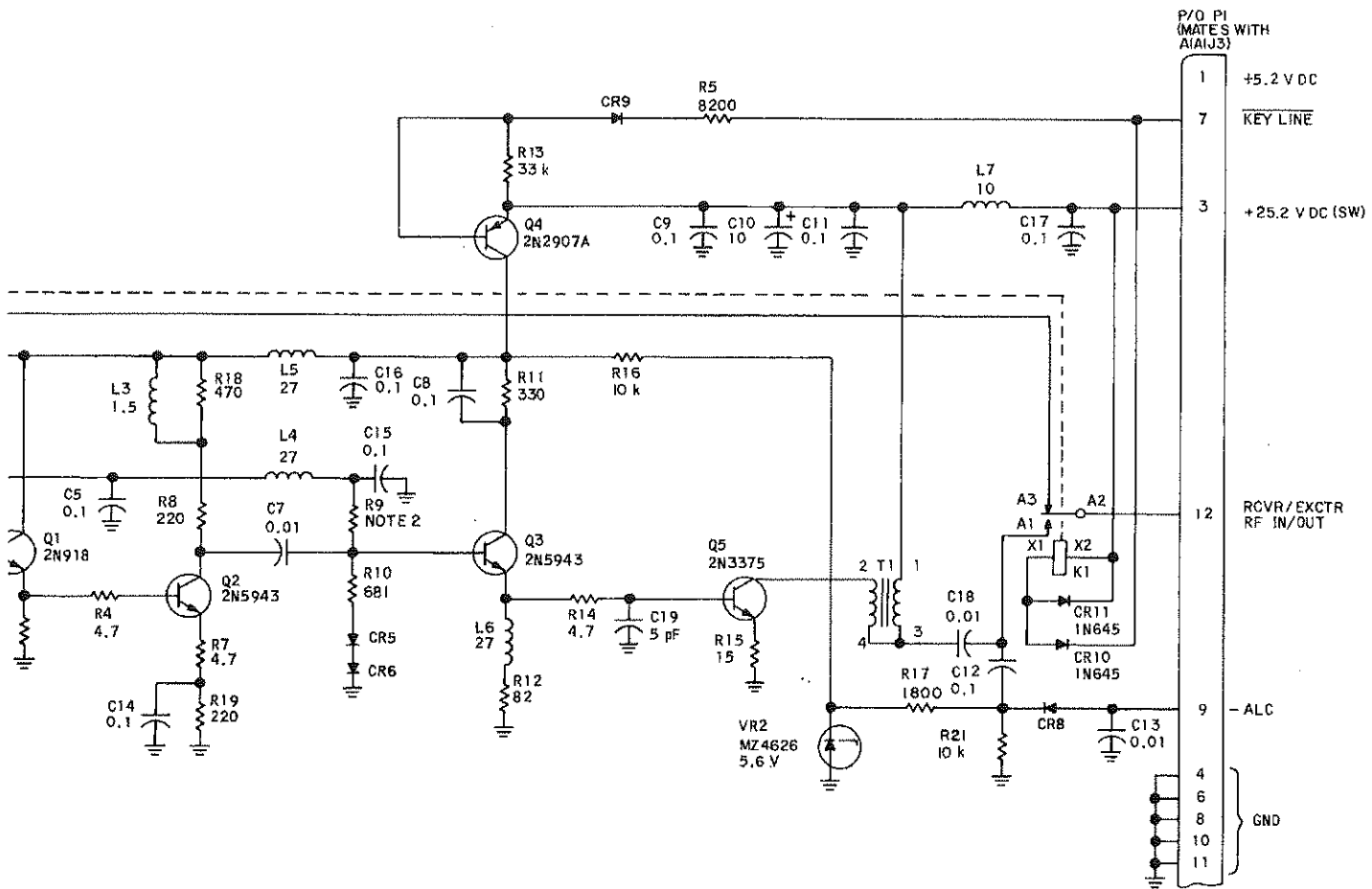
Figure 4-2. Mixer A1A2, Schematic Diagram

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NOTES:

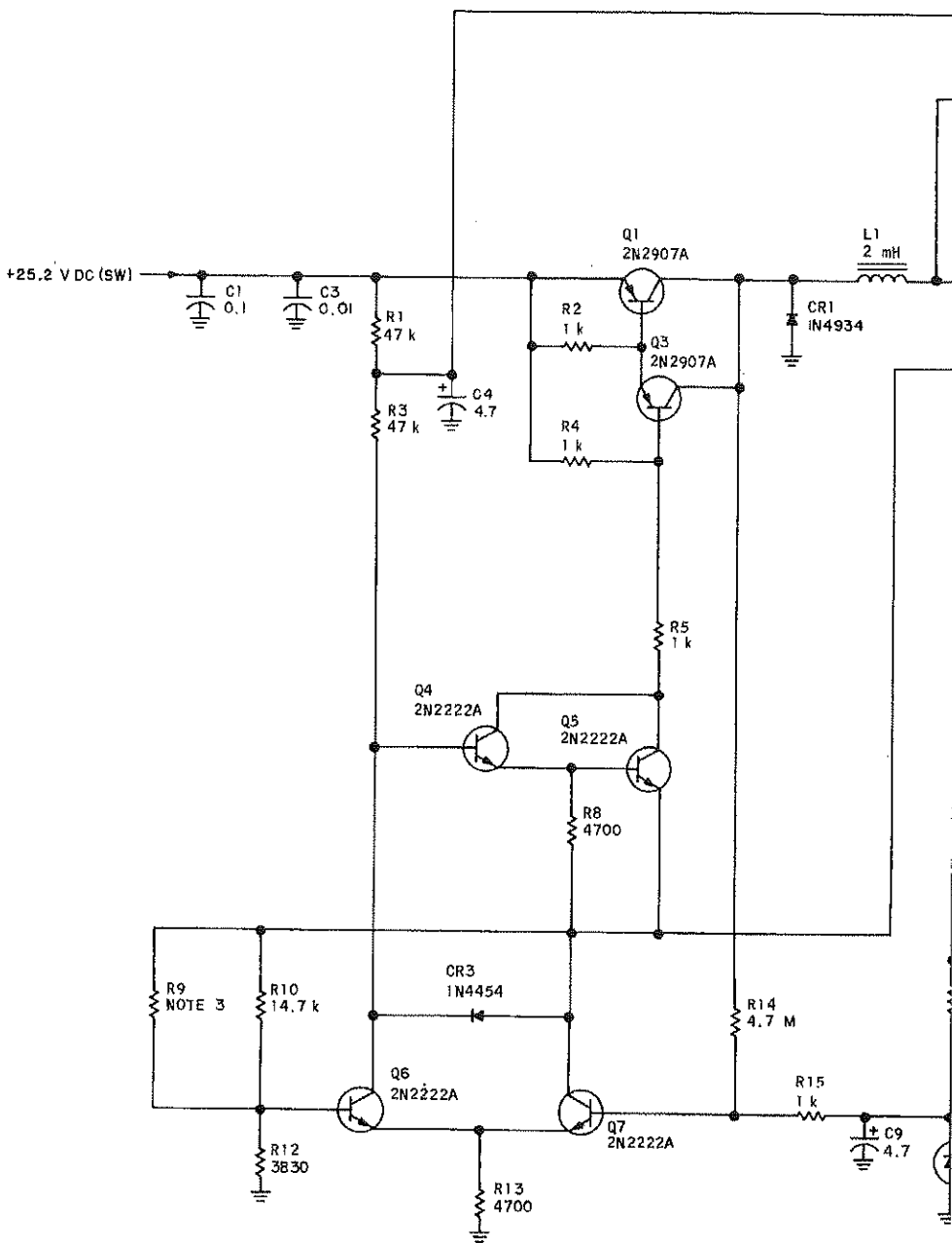
1. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, INDUCTANCE VALUES ARE IN MICROHENRYS, AND DIODES ARE TYPE 1N4454.
2. FINAL VALUE OF R9 SELECTED IN TEST, NOMINAL VALUE 3320.

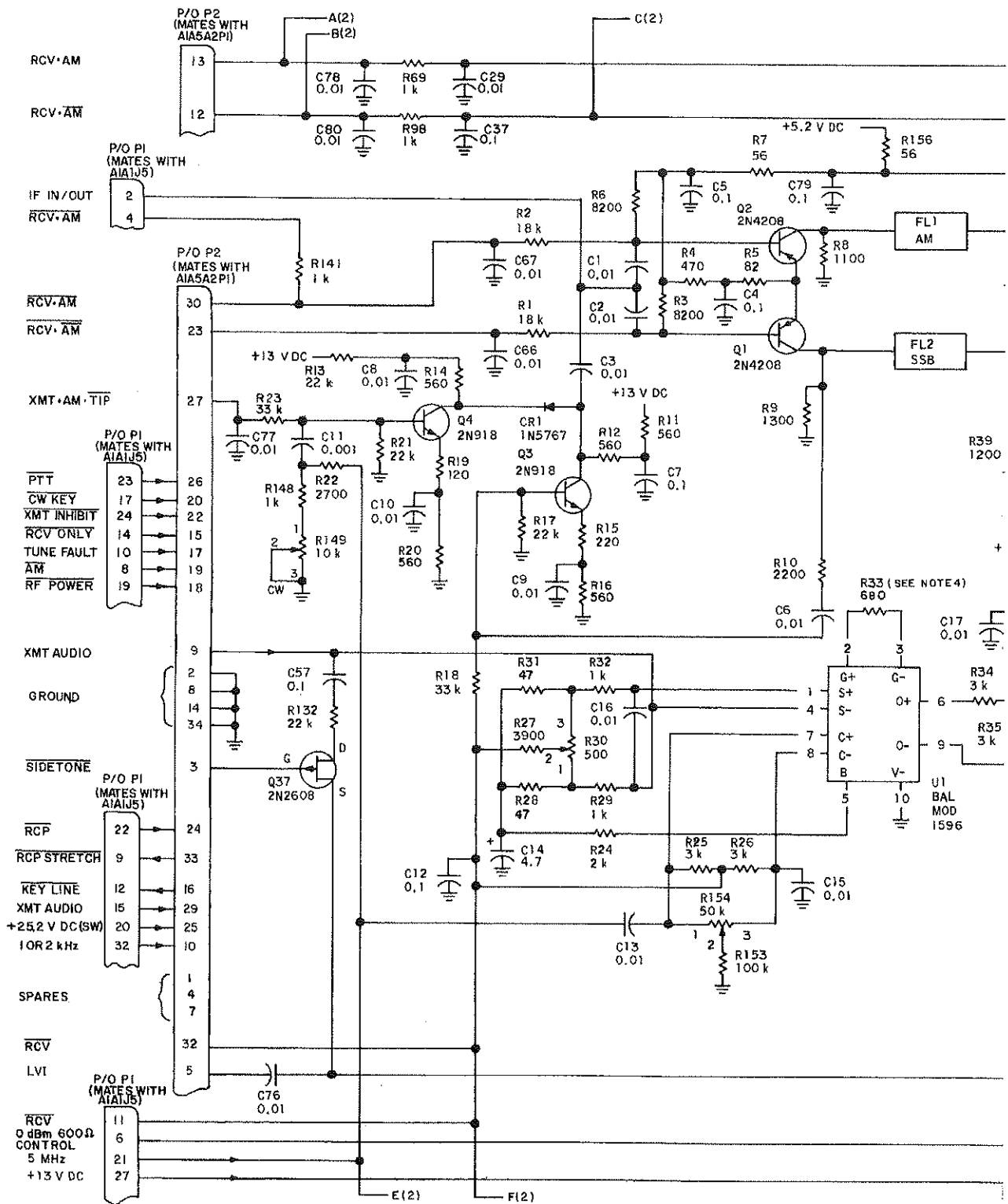


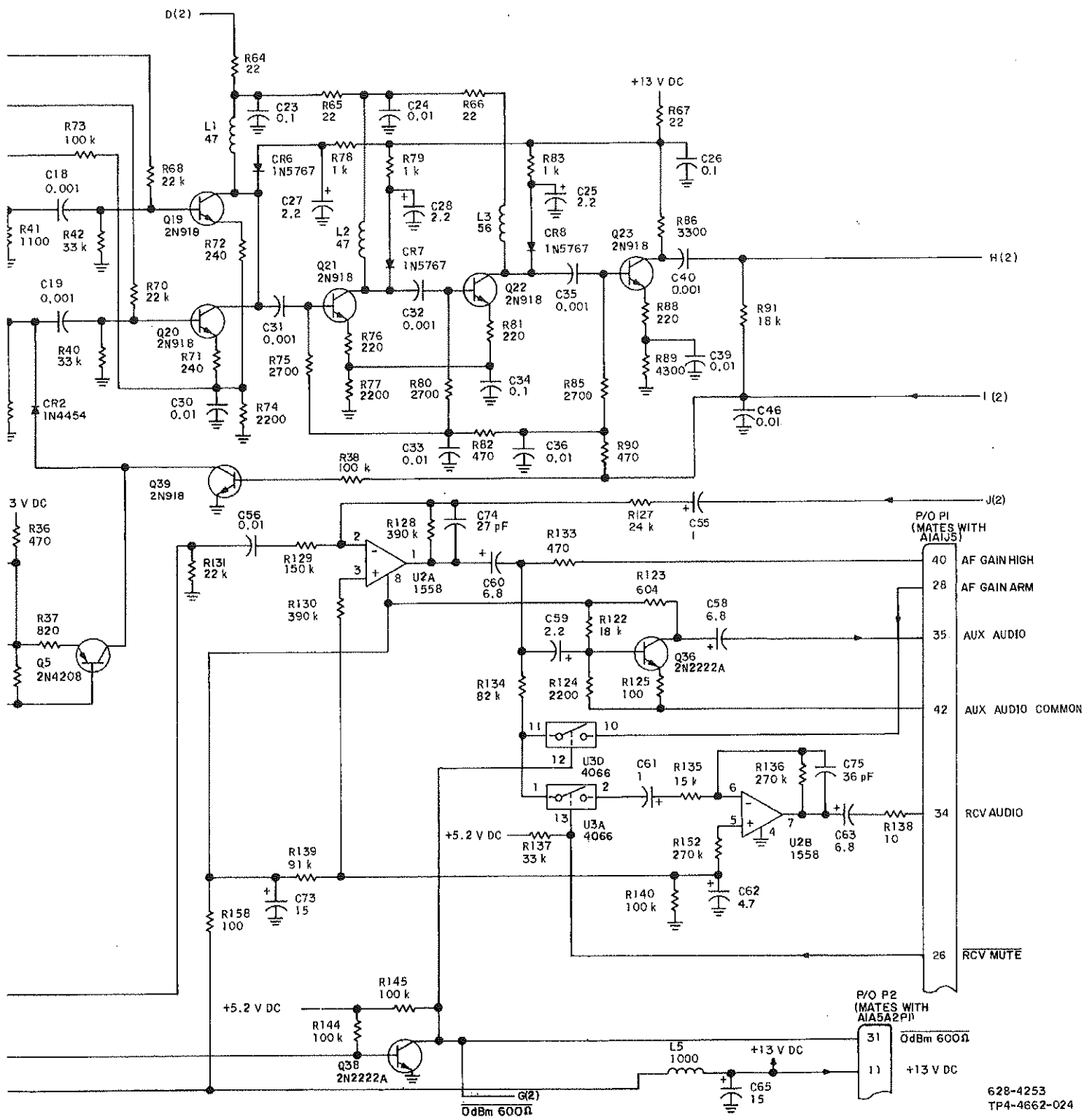
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Figure 4-3. Broadband Amplifier A1A3, Schematic Diagram

4-7/4-8 (Blank)

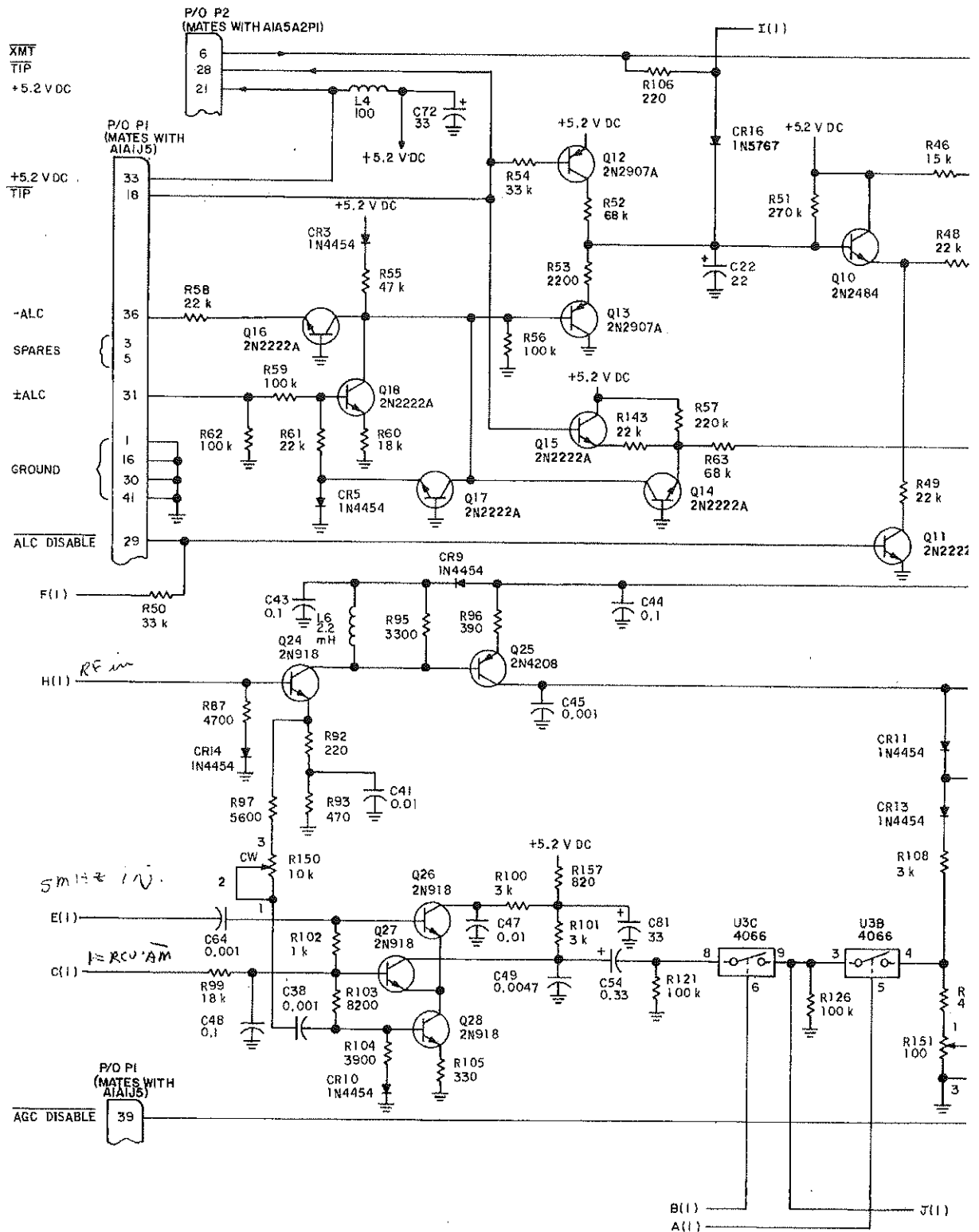


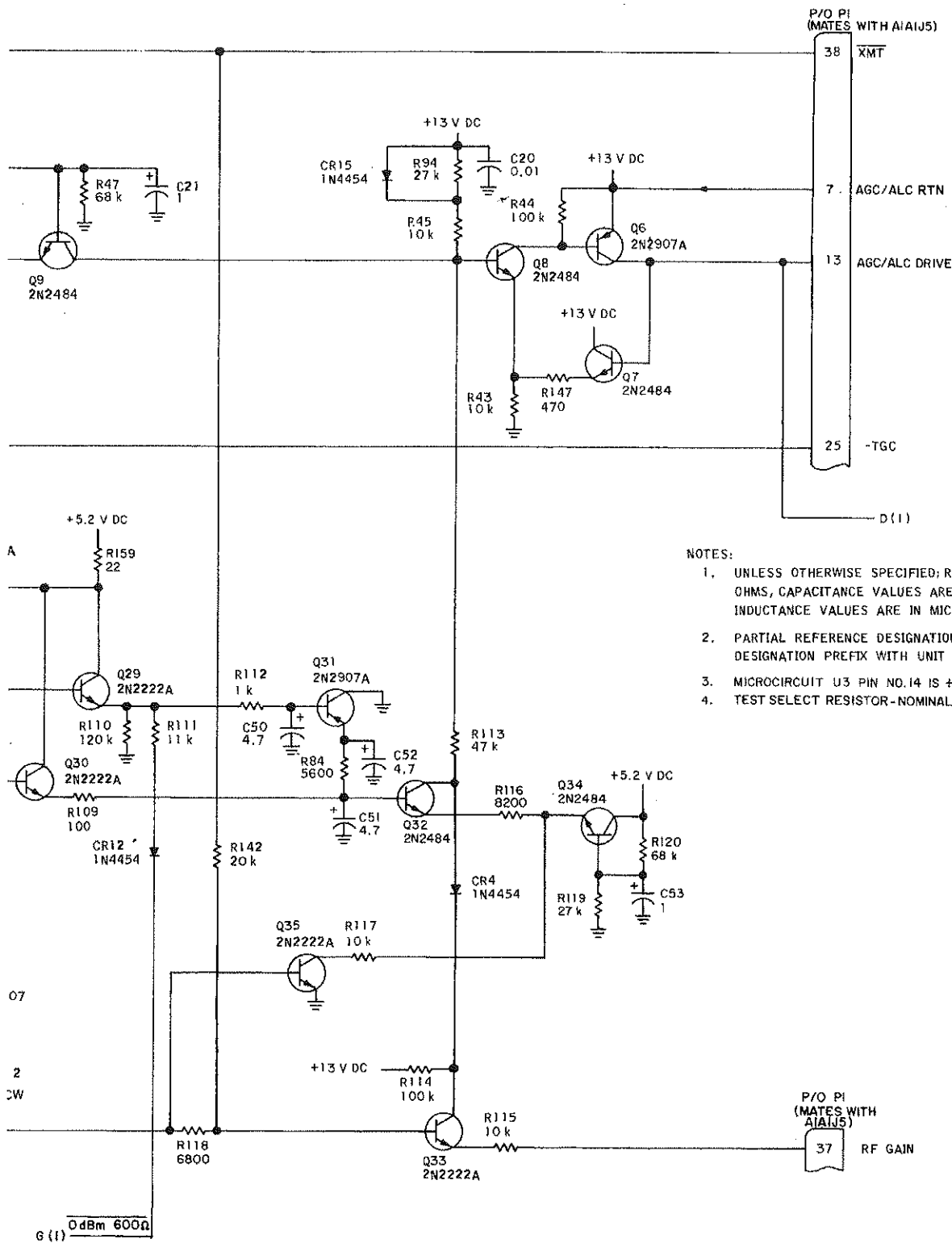




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Figure 4-5. If/Af A1A5A1, Schematic Diagram (Sheet 1 of 2)





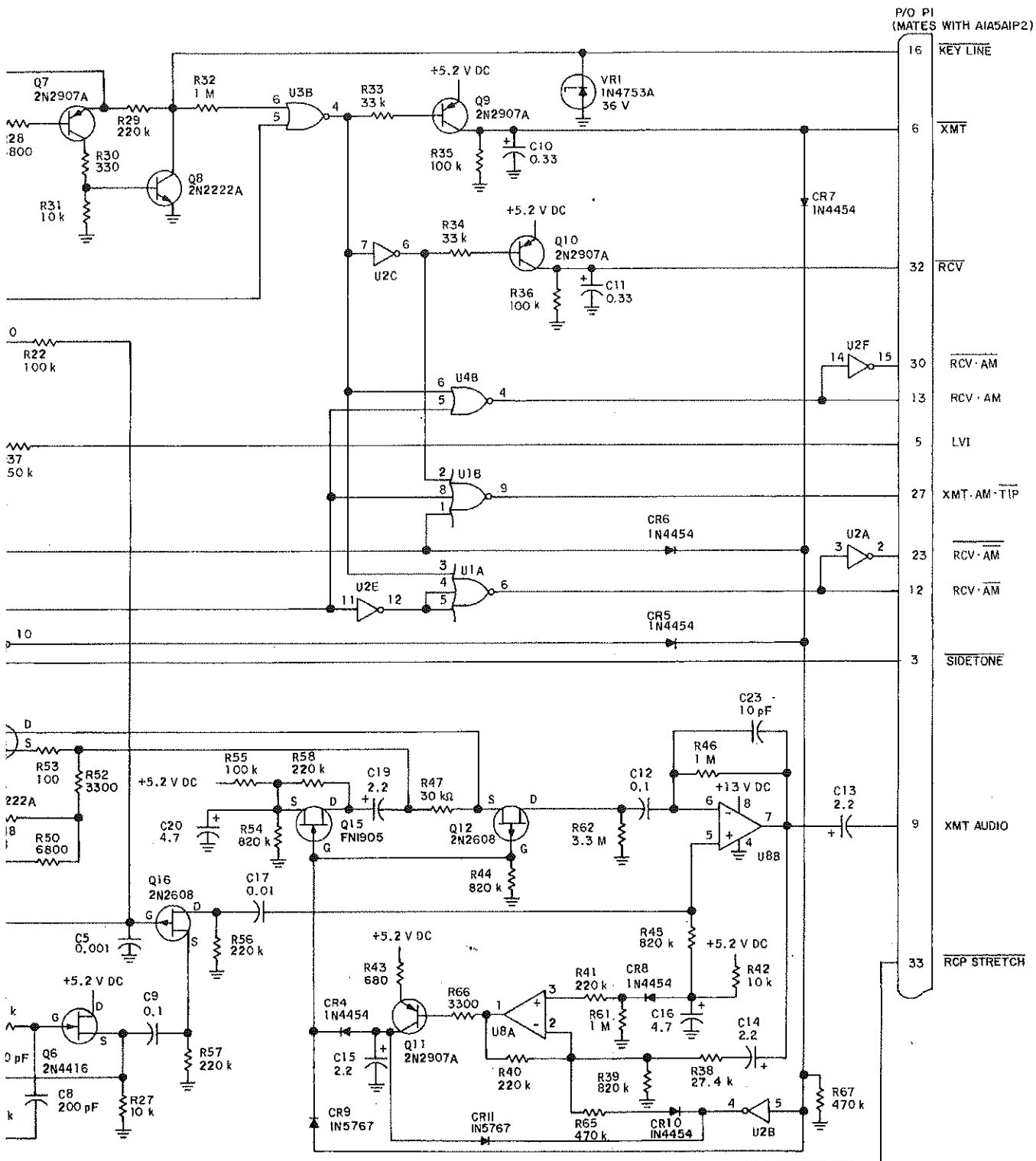
NOTES:

1. UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, AND INDUCTANCE VALUES ARE IN MICROHENRYS.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
3. MICROCIRCUIT U3 PIN NO.14 IS +5.2 V DC AND PIN NO.7 IS GROUND.
4. TEST SELECT RESISTOR-NOMINAL VALUE 620 OHMS.

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TP4-4662-024

Figure 4-5. If/Af A1A5A1, Schematic Diagram (Sheet 2)

4-13/4-14 (Blank)



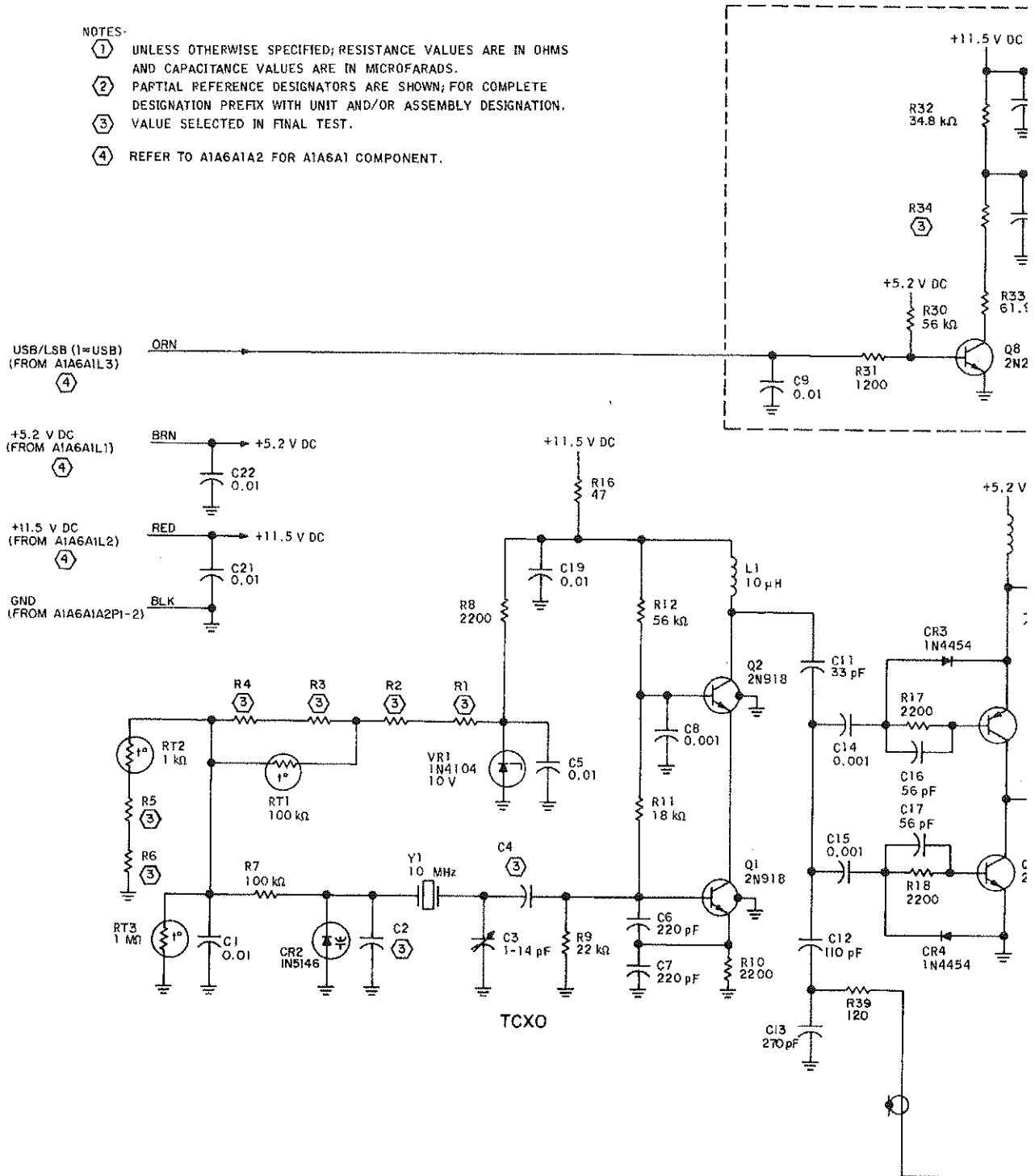
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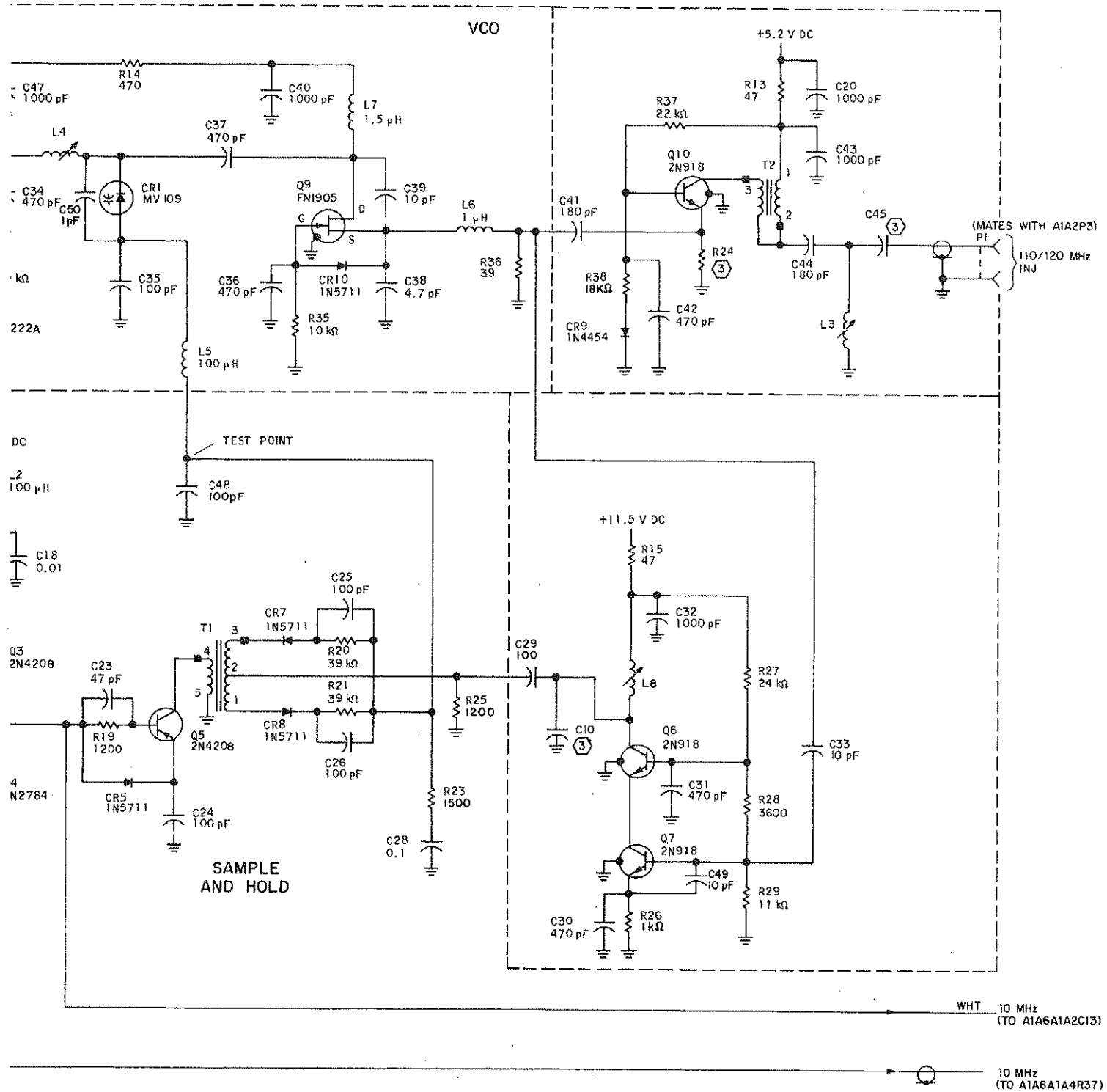
Figure 4-6. Logic/Tx A1A5A2,
Schematic Diagram

4-15/4-16 (Blank)

NOTES-

- ① UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN MICROFARADS.
- ② PARTIAL REFERENCE DESIGNATORS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION, VALUE SELECTED IN FINAL TEST.
- ③
- ④ REFER TO A1A6A1A2 FOR A1A6A1 COMPONENT.



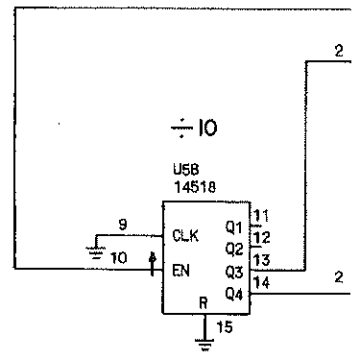
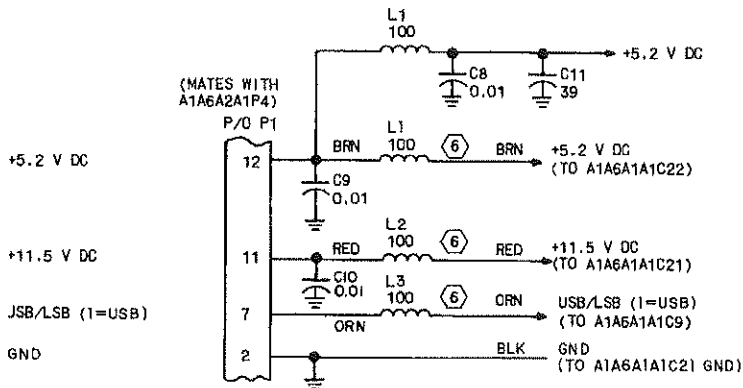
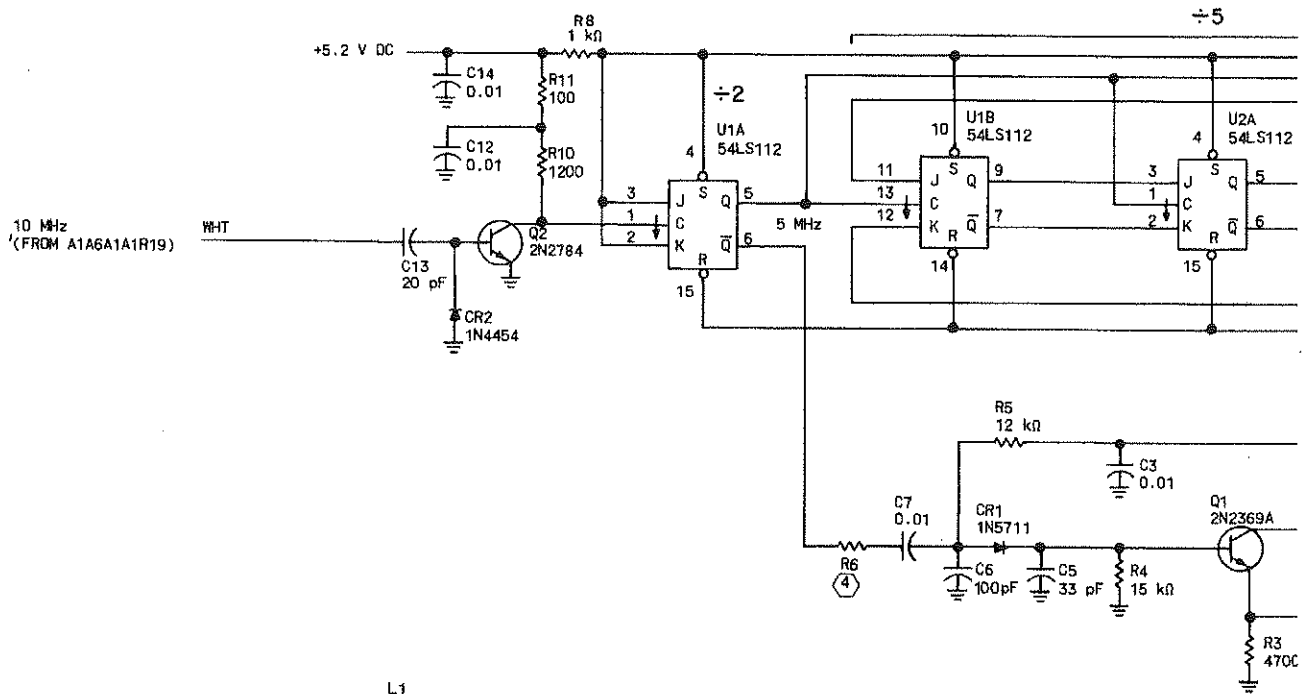


WHT 10 MHz
(TO A1A6A1A2C13)

10 MHz
(TO A1A6A1A4R37)

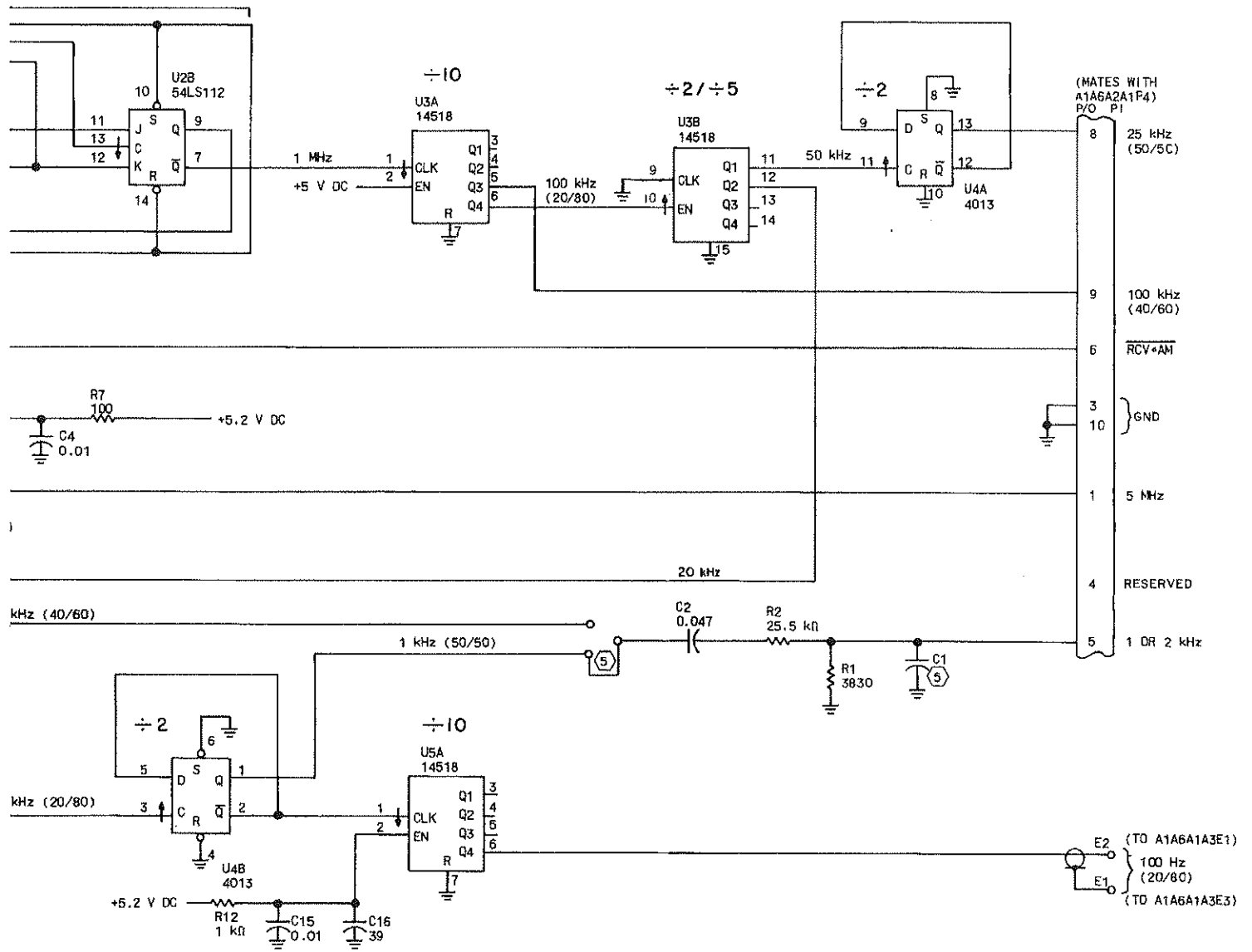
635-0138

Figure 4-7. Frequency Standard A1A6A1A1, Schematic Diagram



NOTES:

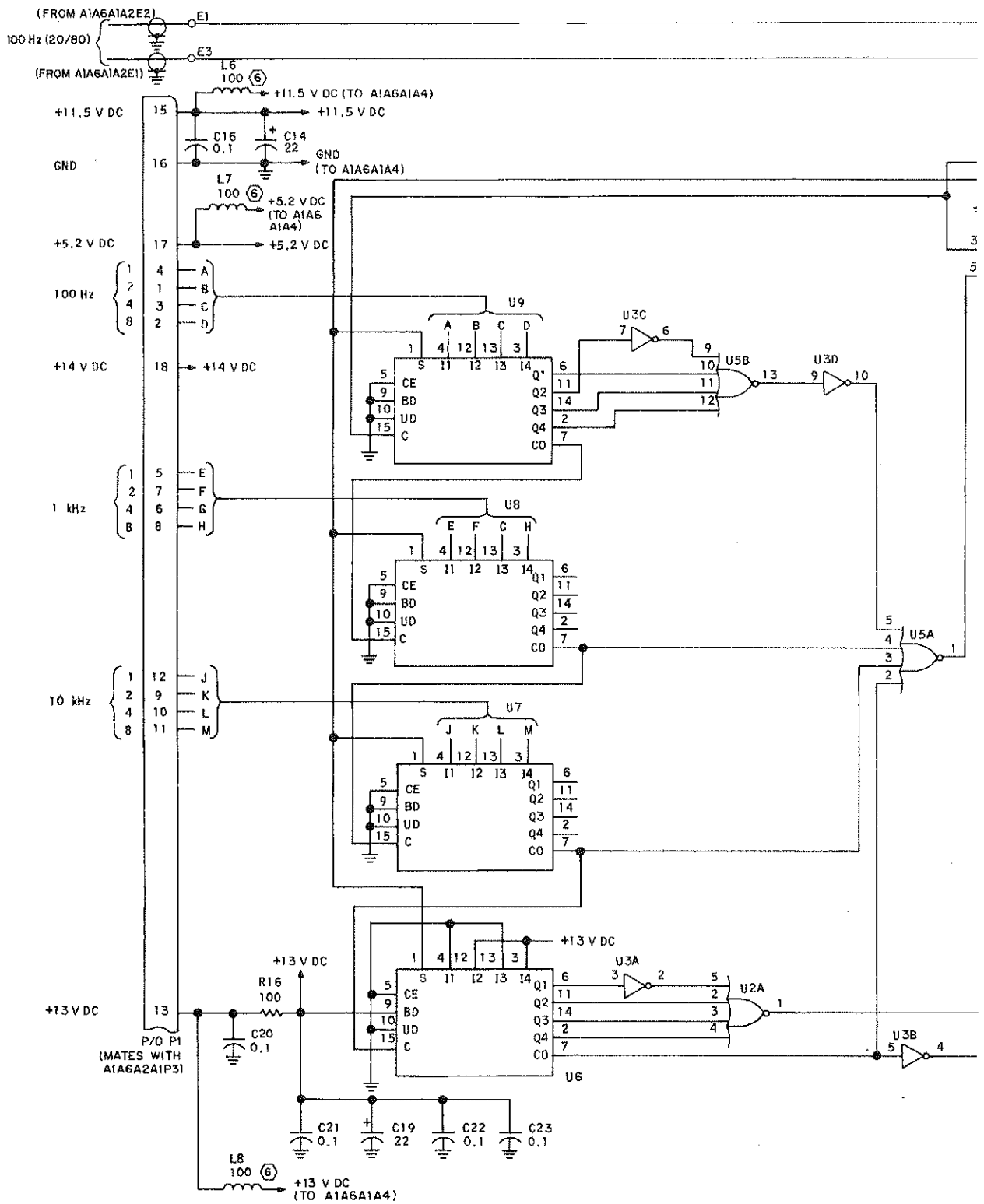
- ① UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS AND INDUCTANCE VALUES ARE IN MICROHENRYS
- ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ③ MICROCIRCUIT POWER AND GROUND INFORMATION:
 U1,U2 -- PIN 14 IS +5.2 V DC PIN 7 IS GROUND
 U3 -- PIN 16 IS +5 V DC PIN 8 IS GROUND
 U4 -- PIN 14 CONNECTS TO +5.2 V DC THRU R12 PIN 7 IS GROUND
 U5 -- PIN 16 CONNECTS TO +5.2 V DC THRU R12 PIN 8 IS GROUND
- ④ FINAL VALUE IS SELECTED IN TEST.
- ⑤ 1 OR 2 kHz STRAPPING OPTION:
 -001: 1 kHz, C1 = 0.1 uF
 -002: 2 kHz, C1 = 0.047 uF
- ⑥ LOCATED ON A1A6A1.

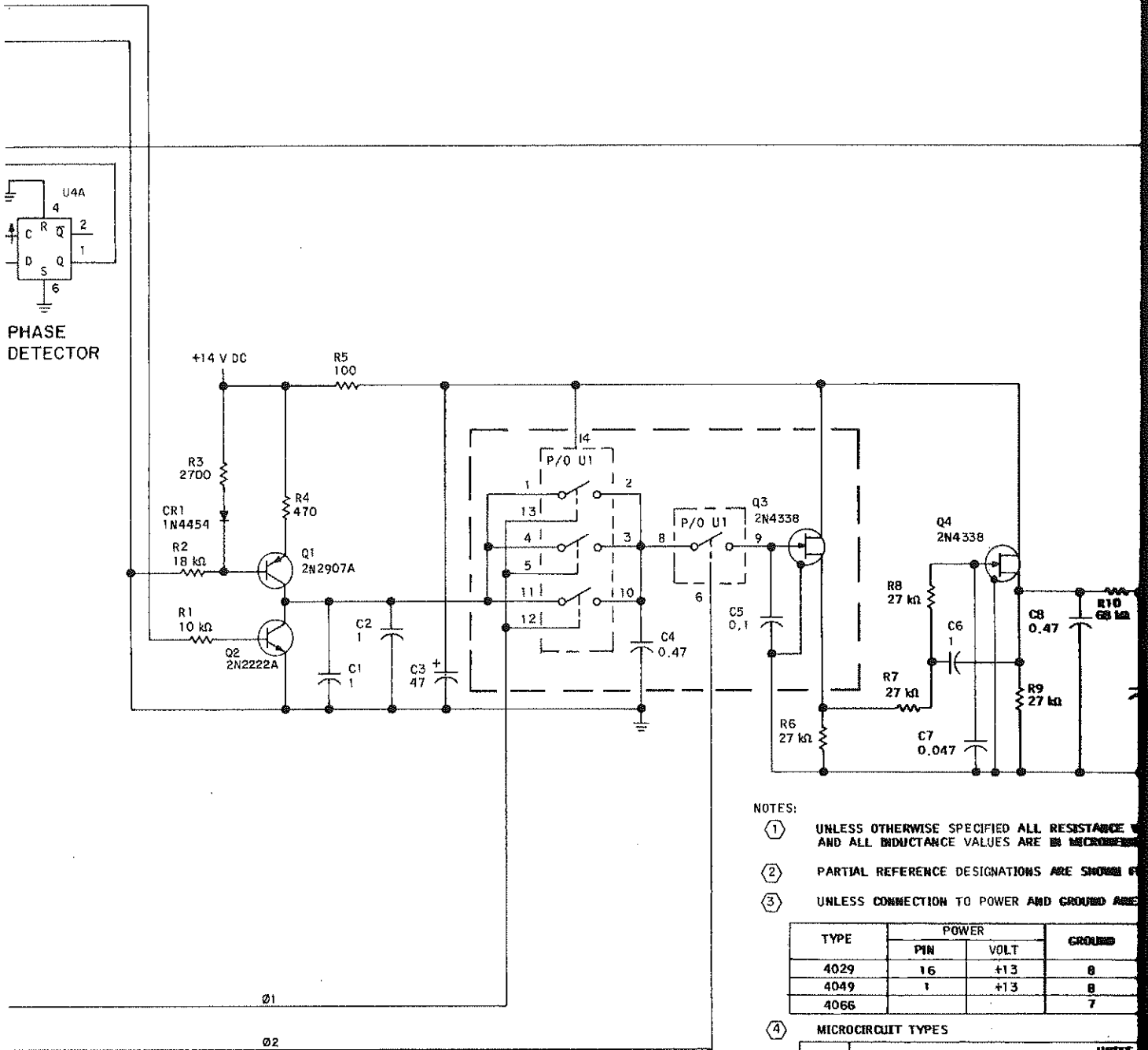


635-0139

Figure 4-8. Fixed Frequency Divider A1A6A1A2 Schematic Diagram

4-19/4-20 (Blank)





PHASE DETECTOR

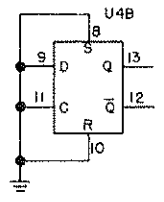
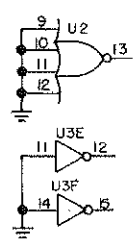
- NOTES:
- ① UNLESS OTHERWISE SPECIFIED ALL RESISTANCE VALUES AND ALL INDUCTANCE VALUES ARE IN MICROHMS.
 - ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR THE P/O U1.
 - ③ UNLESS CONNECTION TO POWER AND GROUND ARE SHOWN, ALL OTHER CONNECTIONS ARE TO GROUND.

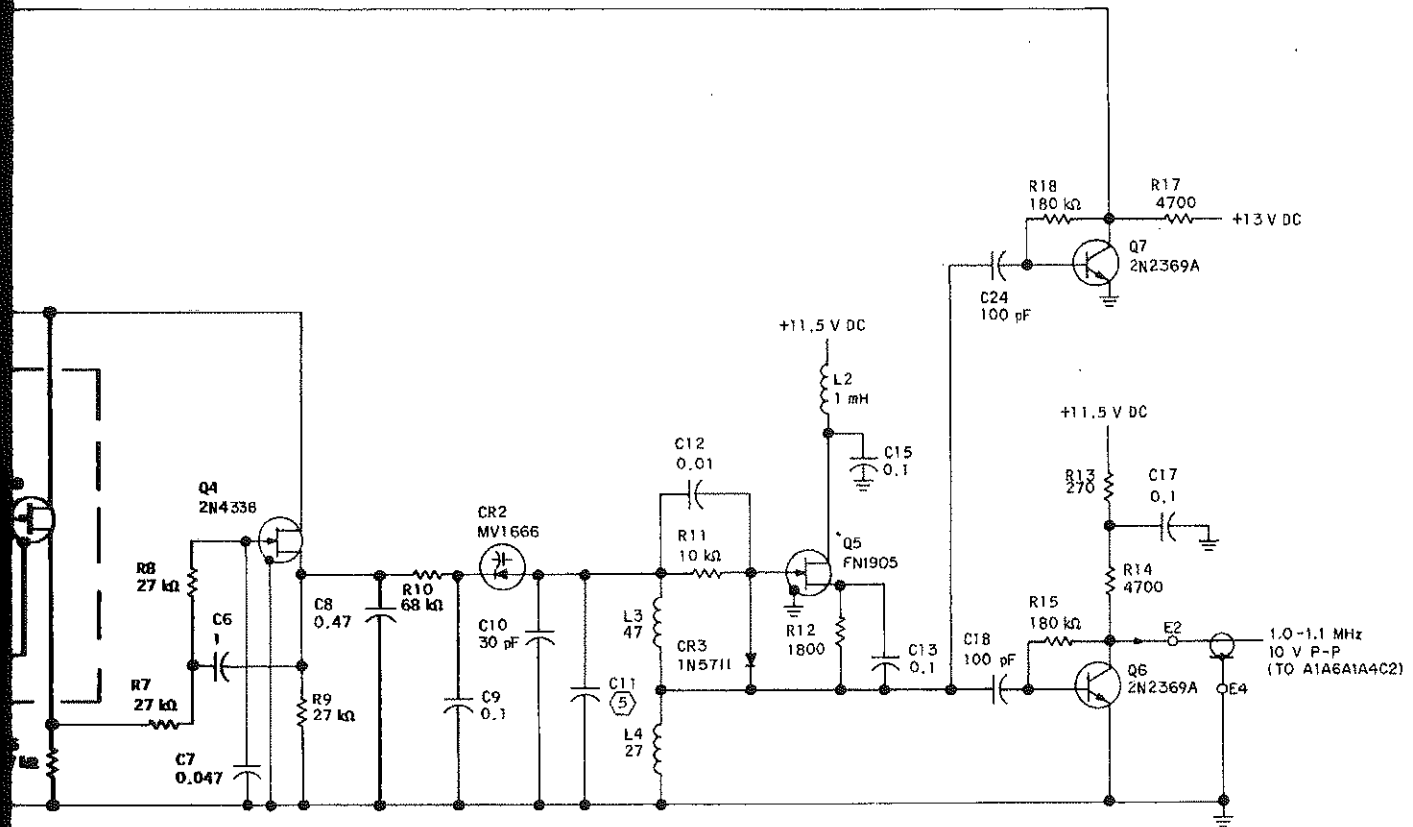
TYPE	POWER		GROUPS
	PIN	VOLT	
4029	16	+13	8
4049	1	+13	8
4066			7

④ MICROCIRCUIT TYPES

TENS	UNITS					
	0	1	2	3	4	5
0	4066	4002	4049	4013	4066	4066

- ⑤ VALUE SELECTED IN TEST.
- ⑥ LOCATED ON A1A6A1.





UNLESS OTHERWISE SPECIFIED ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICROFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.

PARTIAL REFERENCE DESIGNATIONS ARE SHOWN FOR COMPLETE DESIGNATION PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.

UNLESS CONNECTION TO POWER AND GROUND ARE SHOWN PIN 14 IS +13 V AND PIN 7 IS GROUND EXCEPT

TYPE	POWER		GROUND
	PIN	VOLT	
4029	16	+13	8
4049	1	+13	8
4066			7

MICROCIRCUIT TYPES

UNITS	UNITS									
	0	1	2	3	4	5	6	7	8	9
6	4066	4002	4049	4013	4002	4029	4029	4029	4029	4029

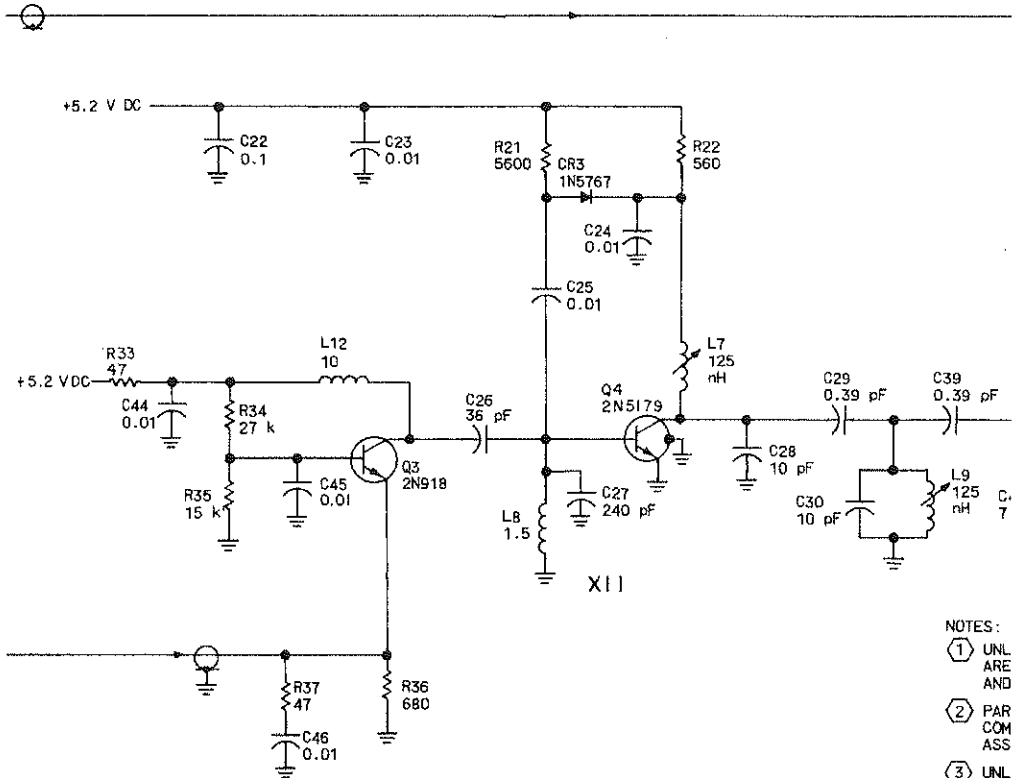
VALUE SELECTED IN TEST.

LOCATED ON A1A6A1.

635-0137
TP4-5199-015

Figure 4-9. LF Phase-Lock Loop A1A6A1A3 Schematic Diagram

1.0-1.1 MHz 10 V P-P
(FROM A1A6A1A3E2)

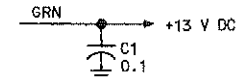


10 MHz
(FROM A1A6A1A1R39)

+5.2 V DC
(FROM A1A6A1L7)
⑤

→ +5.2 V DC

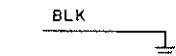
+13 V DC
(FROM A1A6A1L8)
⑤



+11.5 V DC
(FROM A1A6A1L6)
⑤

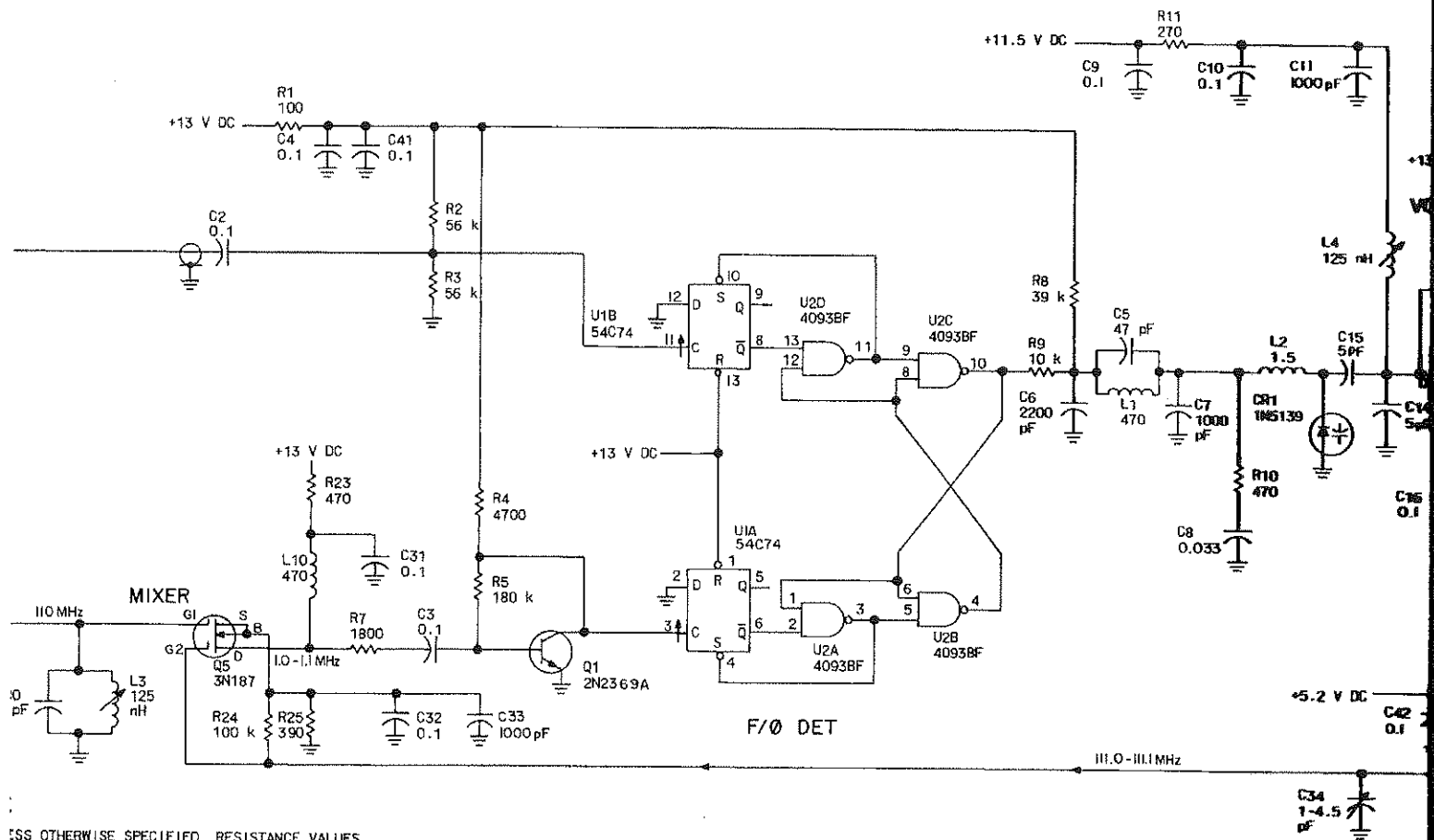
→ +11.5 V DC

GND
(FROM A1A6A1A3P1-16)



NOTES:

- ① UNL ARE AND
- ② PAR COM ASS
- ③ UNL SHO AND
- ④ LOC
- ⑤ REF



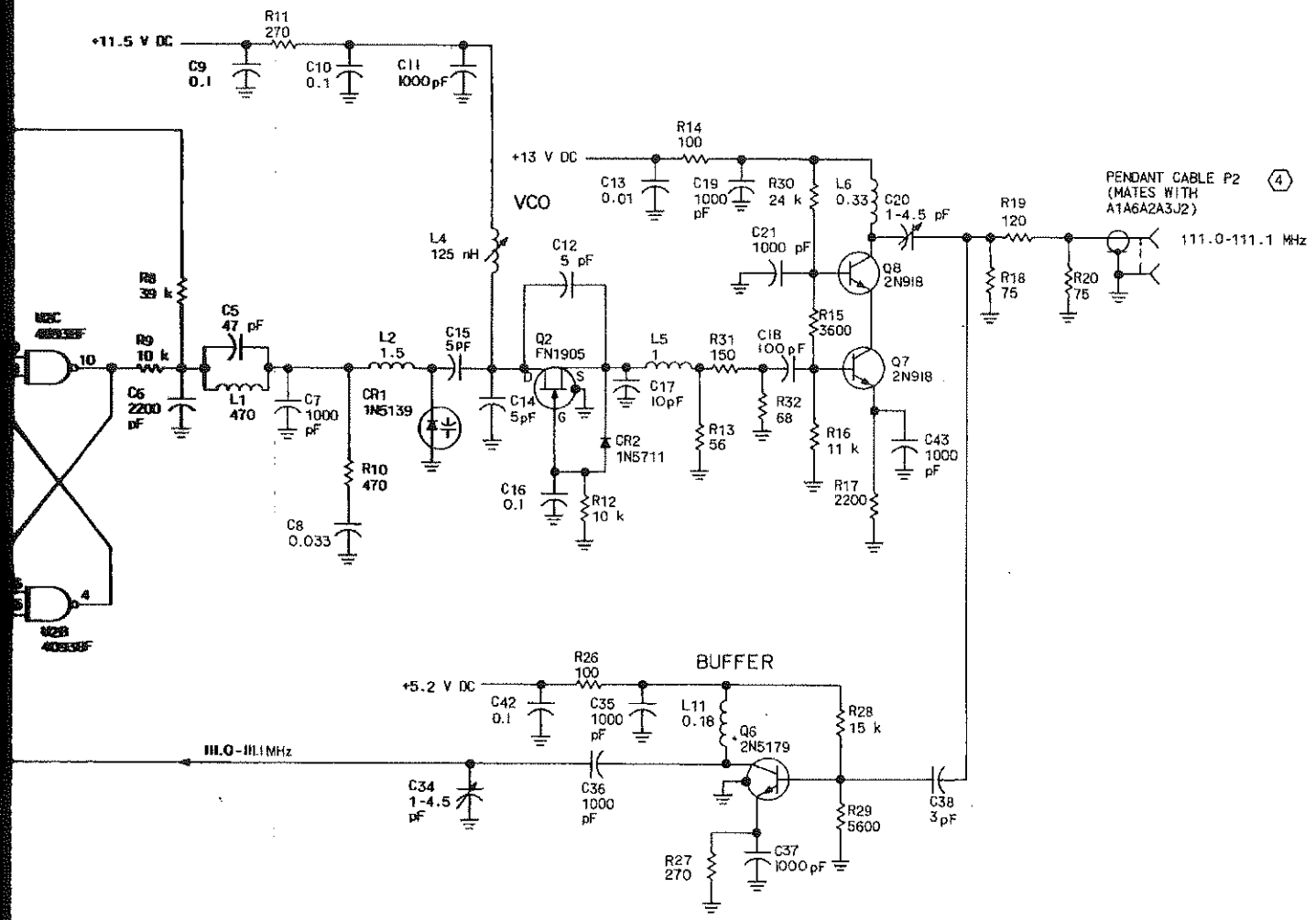
UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES
 ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS,
 AND INDUCTANCE VALUES ARE IN MICROHENRYS.

ALL REFERENCE DESIGNATIONS ARE SHOWN. FOR
 COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR
 ASSEMBLY DESIGNATION.

ALL CONNECTIONS TO POWER AND GROUND ARE
 UNLESS OTHERWISE SPECIFIED. PIN NO. 14 IS +13 V DC
 AND PIN NO. 7 IS GROUND.

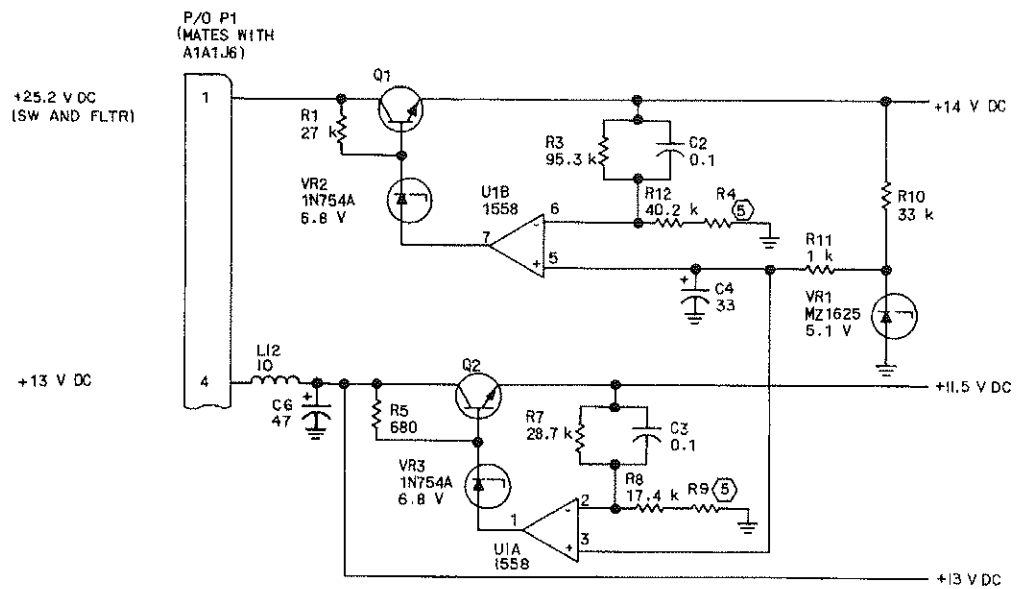
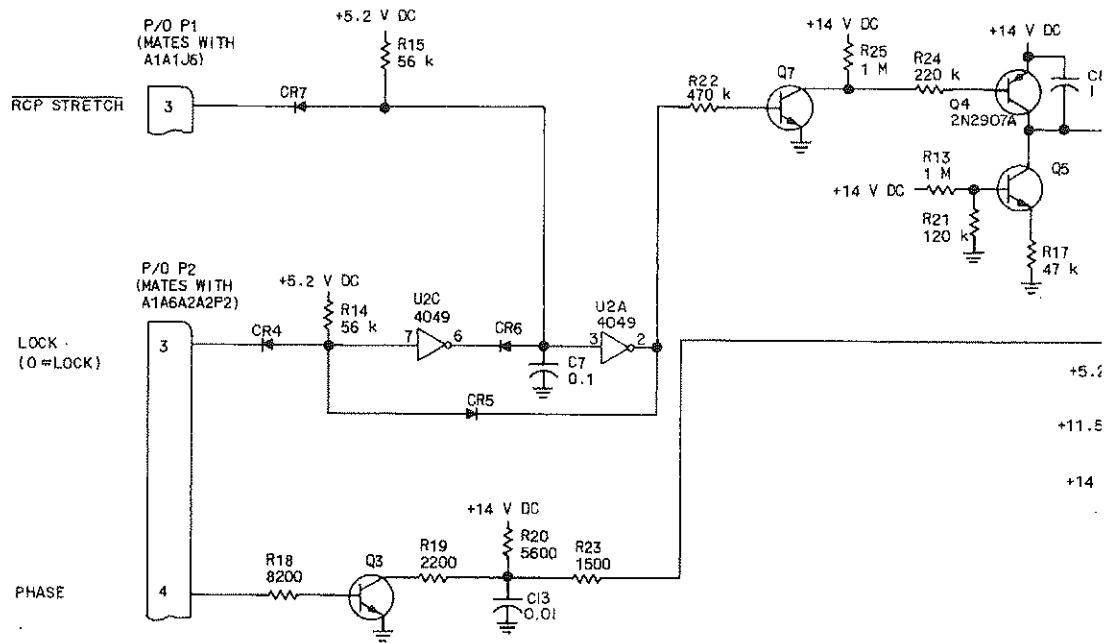
BASED ON A1A6A1.

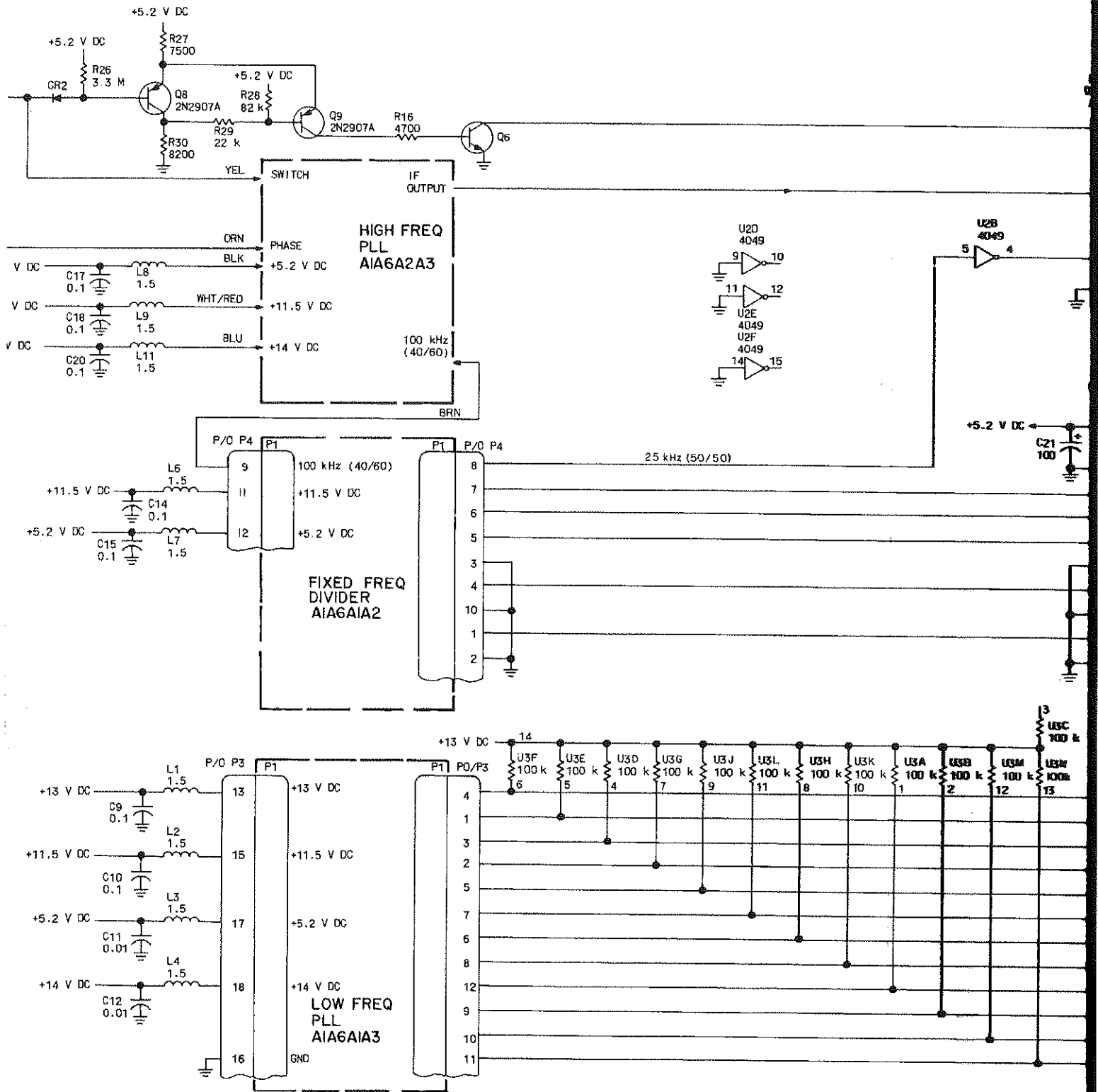
REFER TO A1A6A1A3 FOR A1A6A1 COMPONENT.

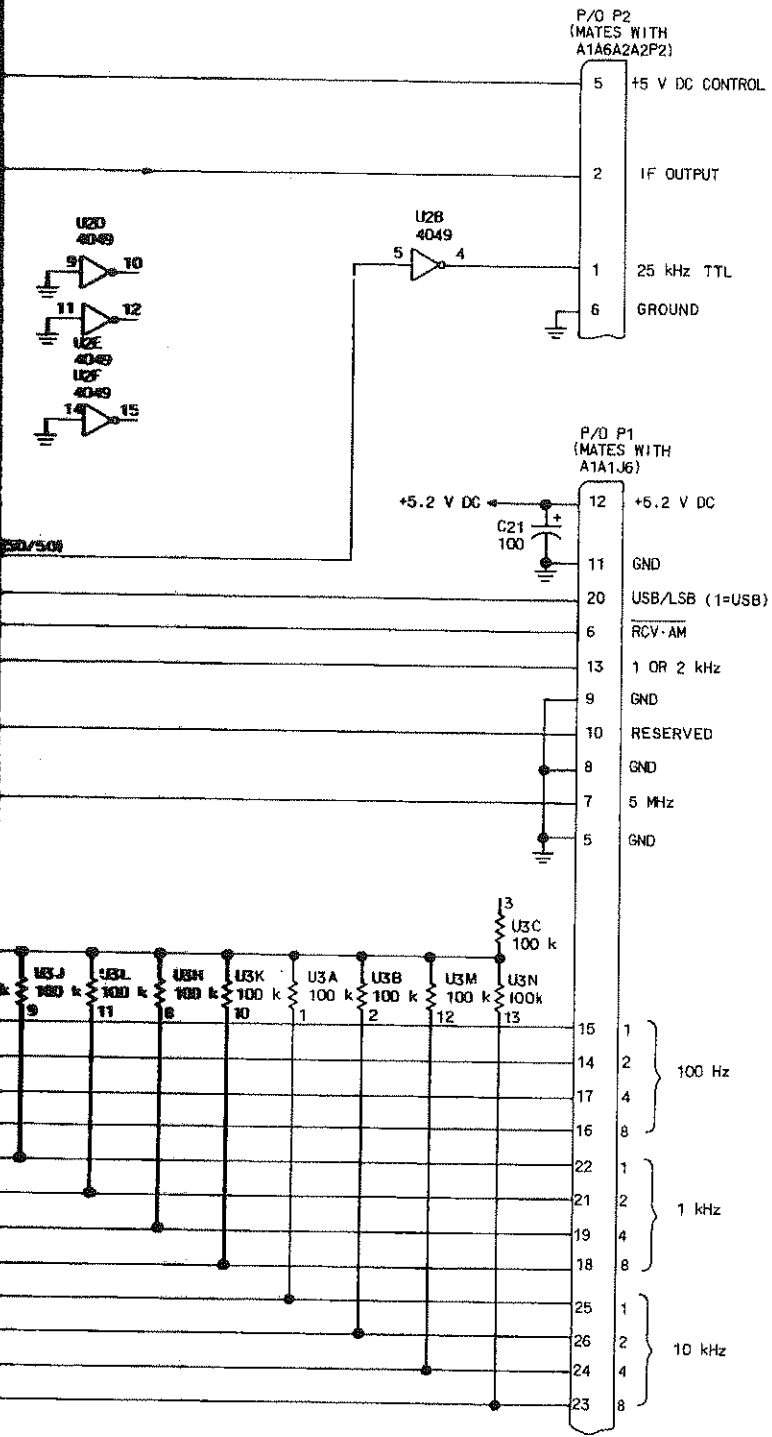


635-0136
TPA-0074-015

Figure 4-10. Frequency Converter A1A6A1A4, Schematic Diagram





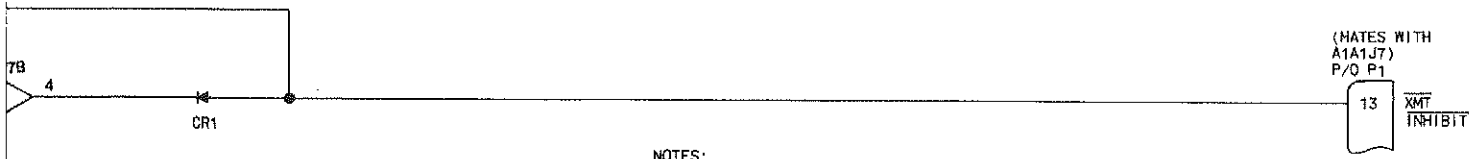


NOTES:

- ① UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICRO-FARADE, AND INDUCTANCE VALUES ARE IN MICRO-HENRYS.
- ② UNLESS OTHERWISE NOTED, DIODES ARE TYPE 1N4454 AND TRANSISTORS ARE TYPE 2N2222A.
- ③ UNLESS CONNECTION TO POWER AND GROUND ARE SHOWN; MICROCIRCUIT PIN NO. 1 IS +5.2 V DC AND PIN NO. 8 IS GROUND, EXCEPT 155B WHERE MICROCIRCUIT PIN NO. 8 IS +13 V DC AND PIN NO. 4 IS GROUND.
- ④ PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ⑤ VALUE SELECTED DURING FINAL TEST.

635-0142
7PA-0071-015

Figure 4-11. Voltage Regulator A1A6A2A1 Schematic Diagram

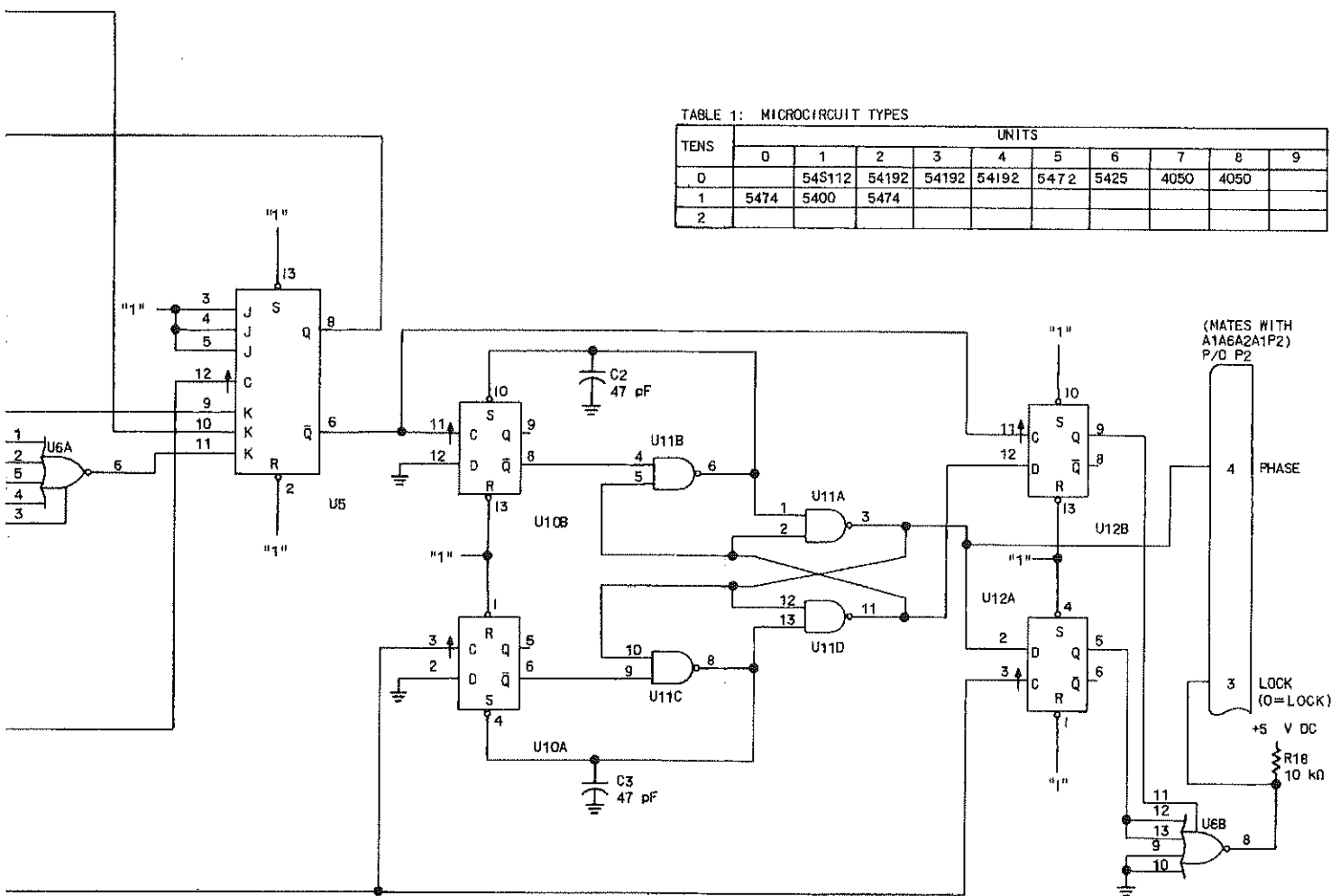


NOTES:

- ① UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, AND DIODES ARE TYPE 1N4454
- ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ③ UNLESS CONNECTIONS TO POWER AND GROUND ARE SHOWN; MICROCI RCUIT PIN NO. 14 IS +5 V DC AND PIN NO. 7 IS GROUND. EXCEPT: U1,U2,U3,U4, PIN NO. 16 IS +5 V DC AND PIN NO. 8 IS GROUND U7,U8, PIN NO. 1 IS +5.2 V DC AND PIN NO. 8 IS GROUND
- ④ C1 VALUE IS 1000 pF ON 601-3875-001 AND 51 pF ON 601-3875-002.

TABLE 1: MICROCI RCUIT TYPES

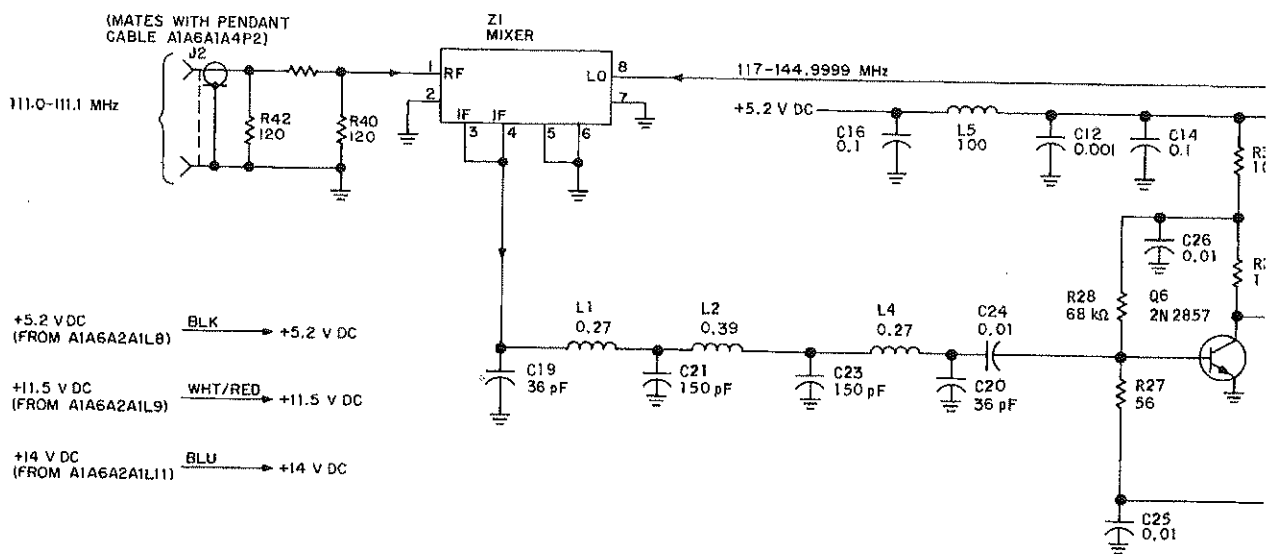
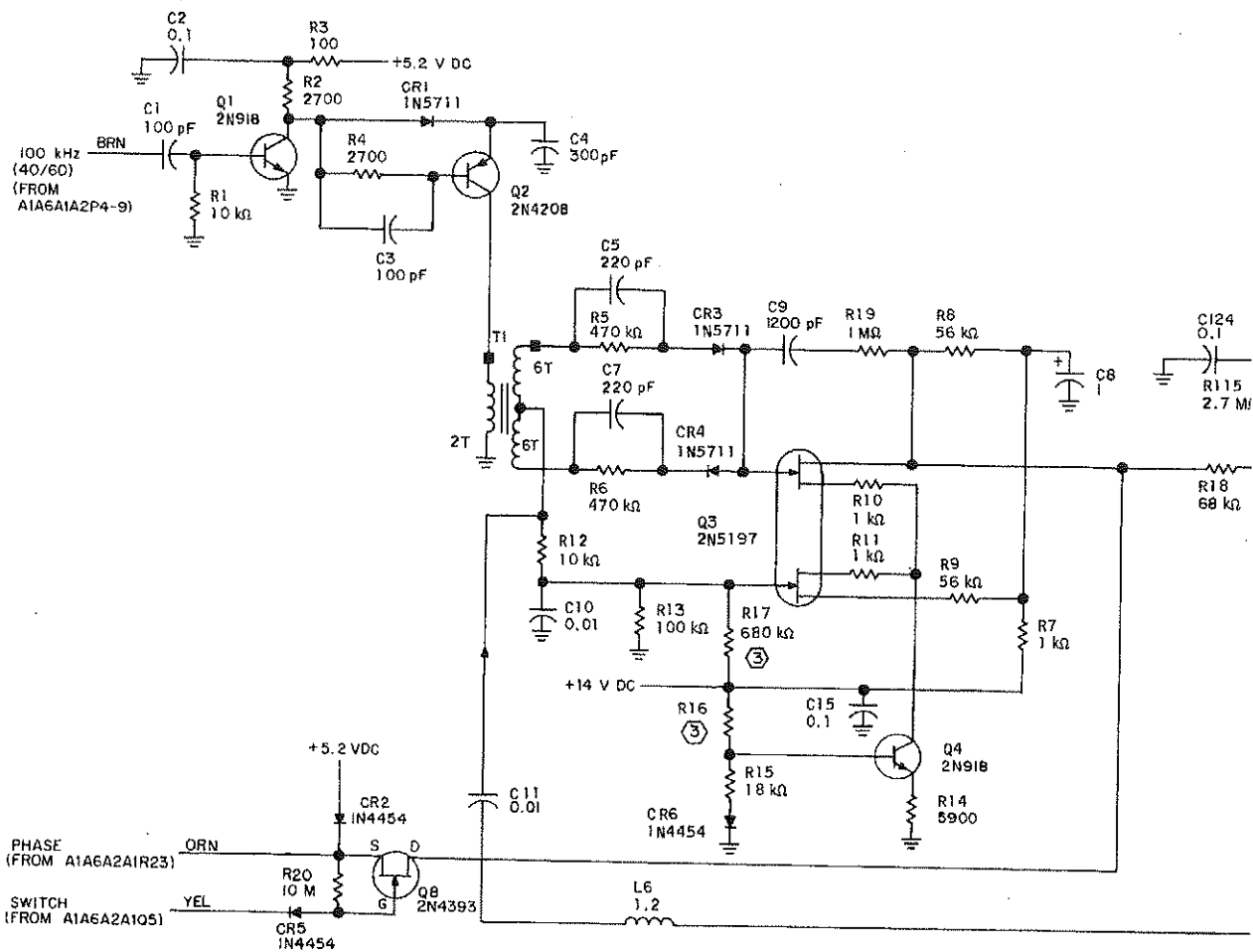
TENS	UNITS									
	0	1	2	3	4	5	6	7	8	9
0		54S112	54192	54192	54192	5472	5425	4050	4050	
1	5474	5400	5474							
2										

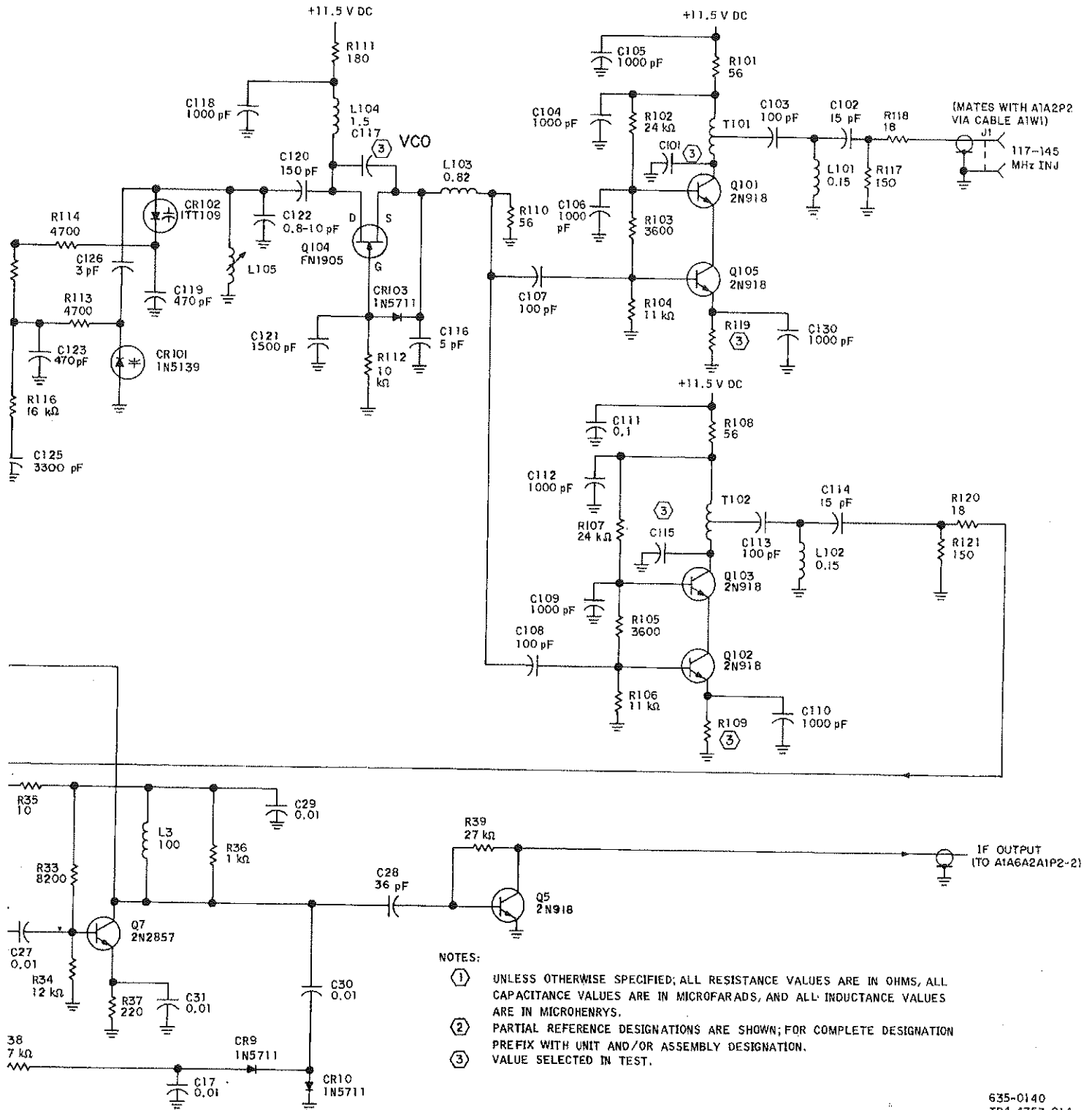


635-0143

Figure 4-12. Variable Frequency Divider A1A6A2A2, Schematic Diagram

4-27/4-28 (Blank)



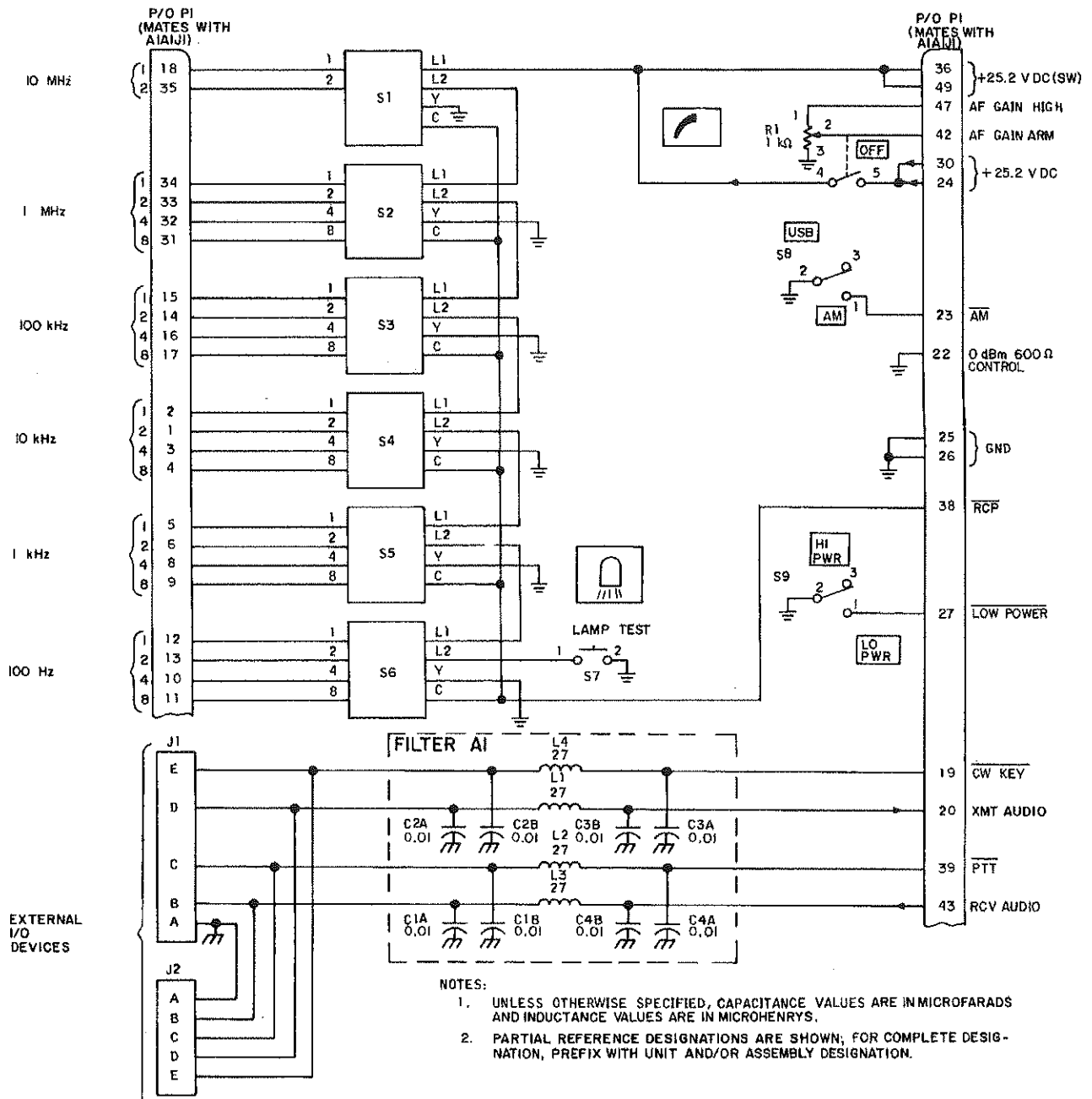


NOTES:

- ① UNLESS OTHERWISE SPECIFIED; ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN MICROFARADS, AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.
- ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ③ VALUE SELECTED IN TEST.

635-0140
TP4-4753-014

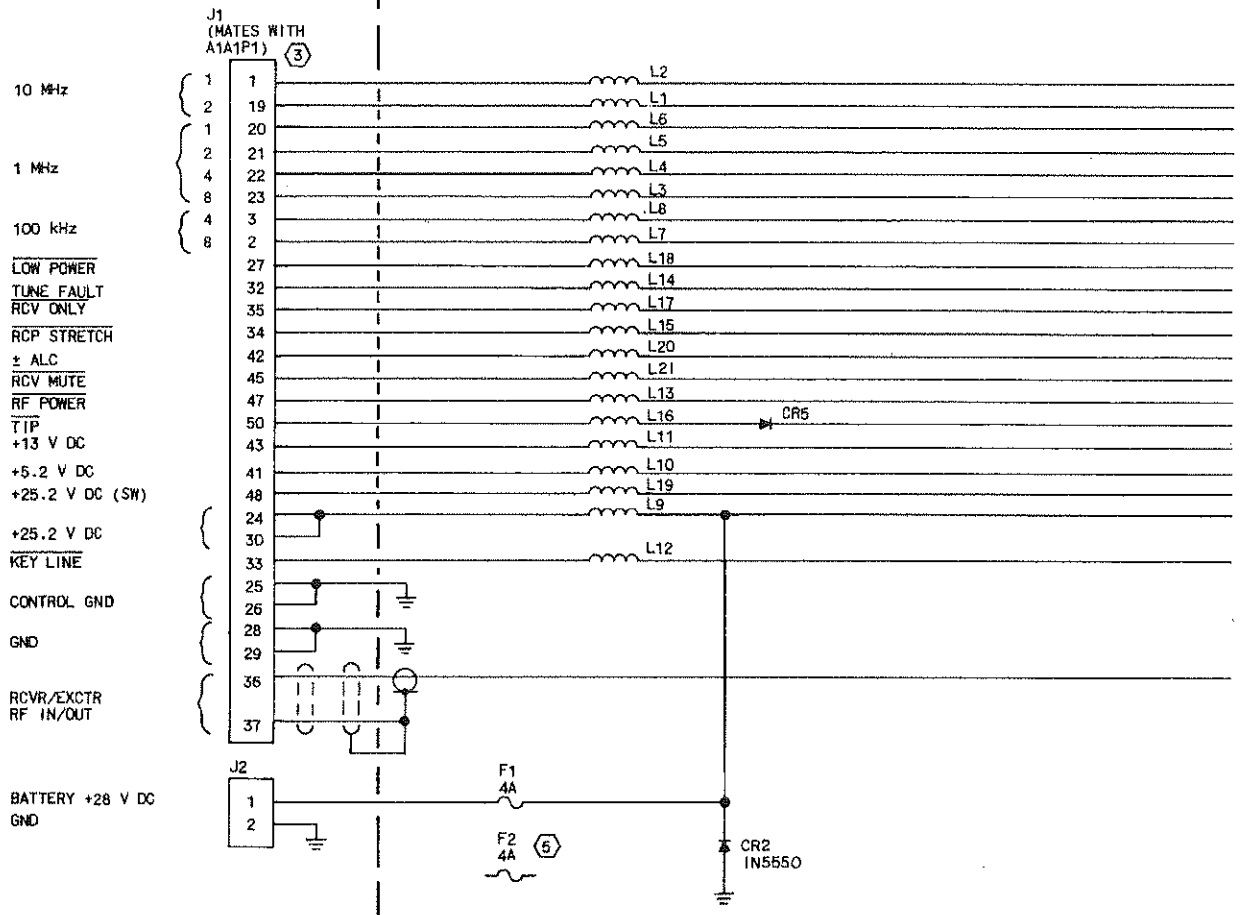
Figure 4-13. Hf Phase-Lock Loop A1A6A2A3, Schematic Diagram



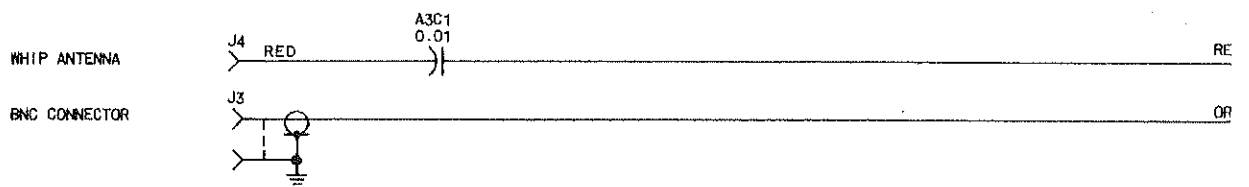
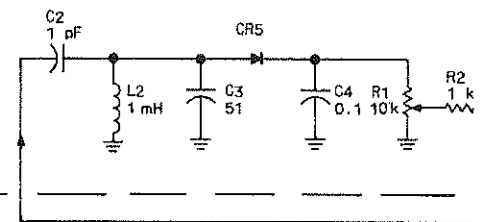
628-4248

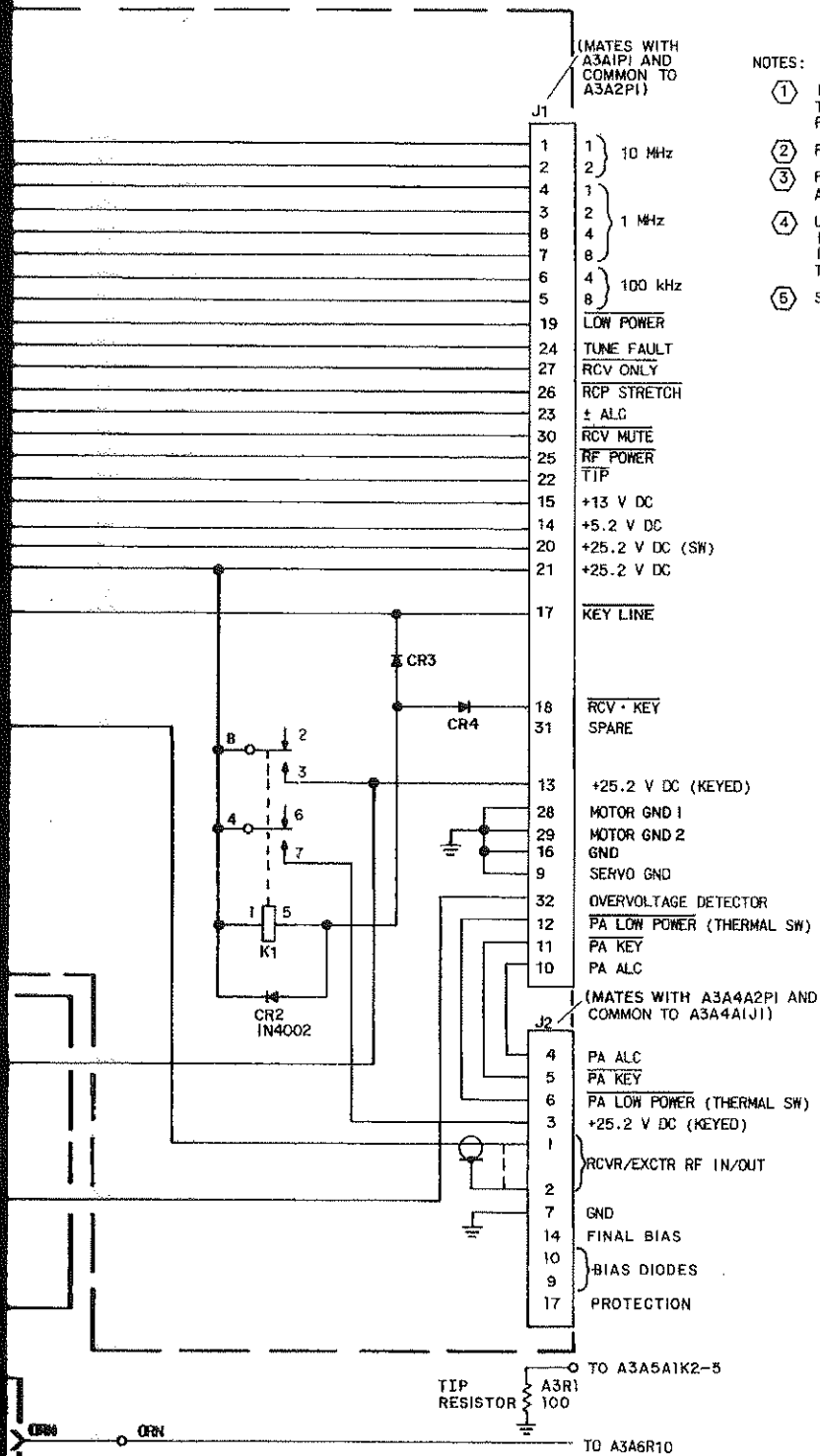
Figure 4-14. Receiver-Transmitter Control A2, C-5310/URC, Schematic Diagram

FILTER BOARD A3A1



OVERVOLTAGE DETECTOR A3A2





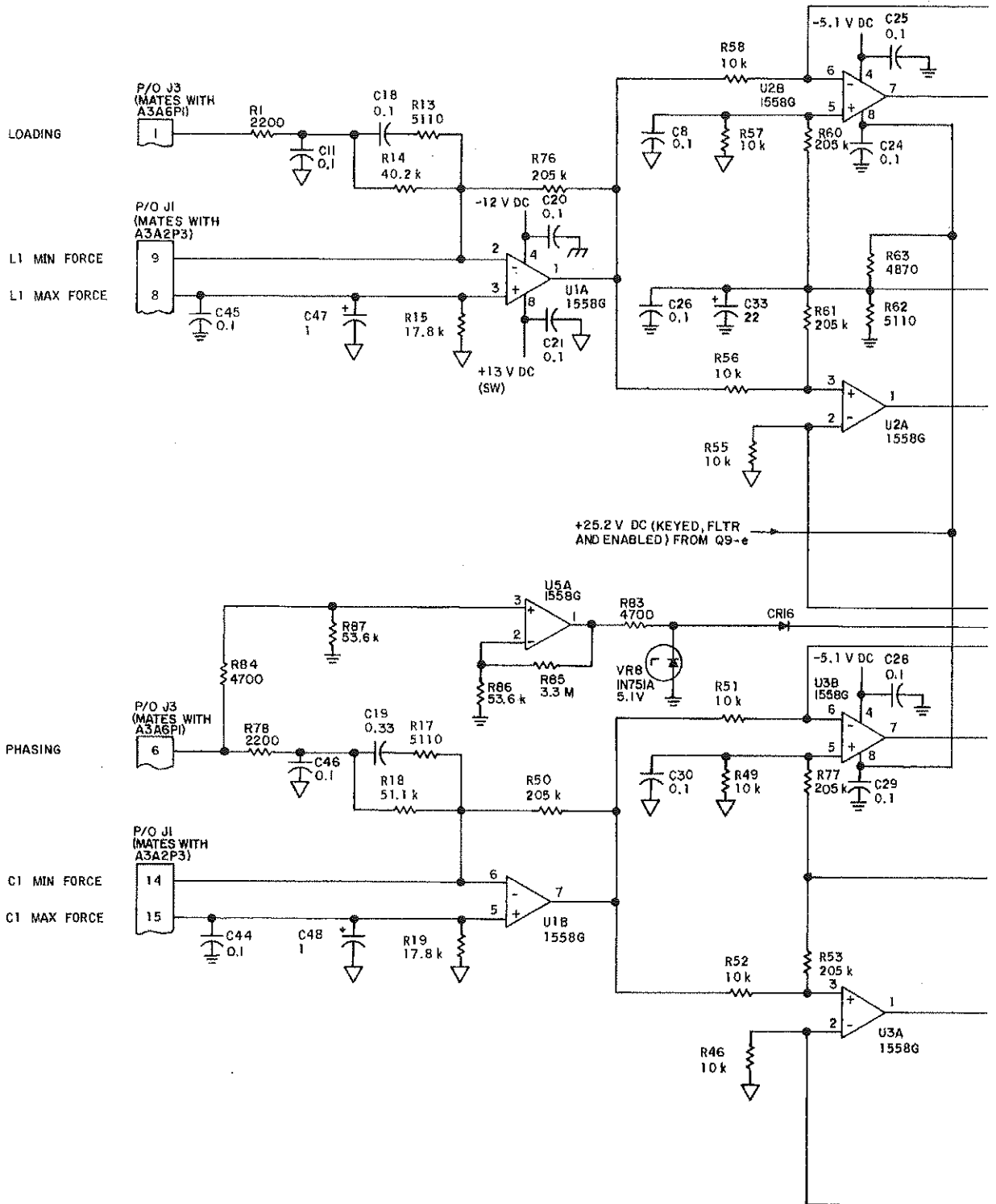
NOTES:

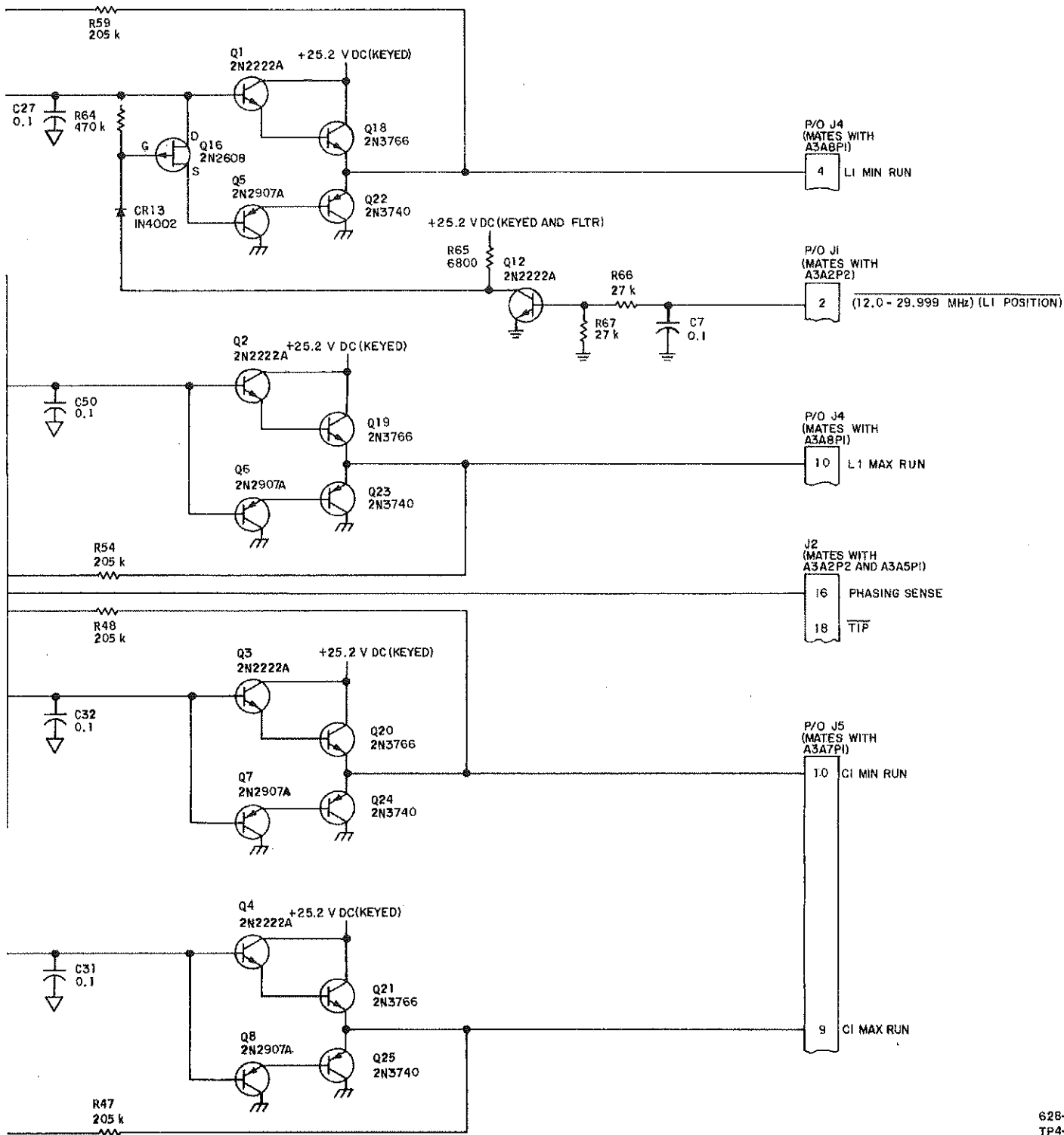
- ① INSERTION OF THE WHIP ANTENNA MECHANICALLY CHANGES THE CIRCUIT FROM NORMALLY CLOSED TO NORMALLY OPEN POSITION.
- ② REFER TO SCHEMATIC OF THIS ASSEMBLY.
- ③ PINS 4 THRU 18, 31, 38, 39, 40, 44, 46, 49 AND 51 ON A3J1 ARE SPARES.
- ④ UNLESS OTHERWISE SPECIFIED RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, AND INDUCTANCE VALUES ARE 100 μH, AND DIODES ARE TYPE 1N4454.
- ⑤ SPARE FUSE

635-0225
TPA-0072-015

Figure 4-15. Amplifier-Coupler A3, AM-5280/URC, Schematic Diagram

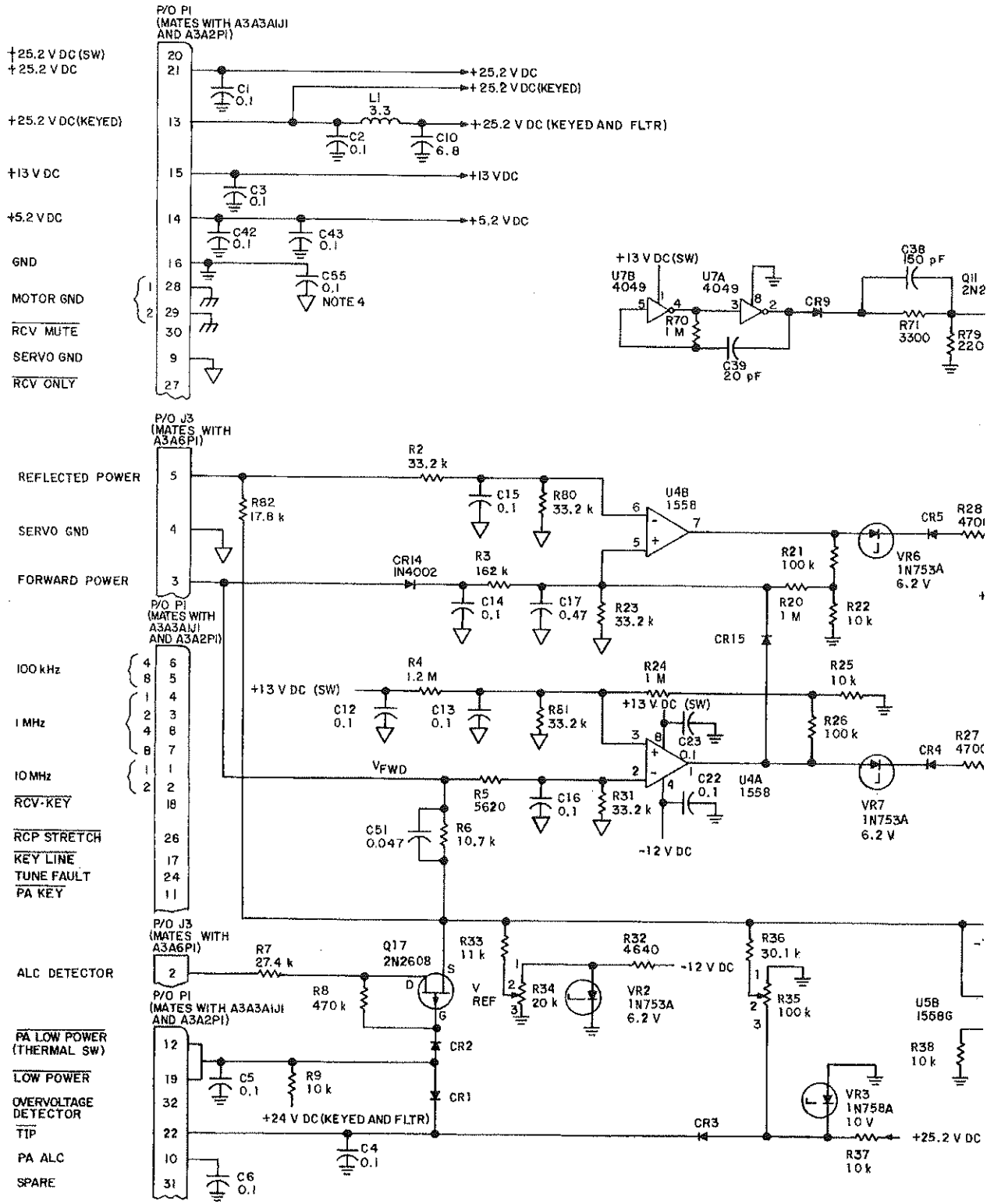
4-33/4-34 (Blank)

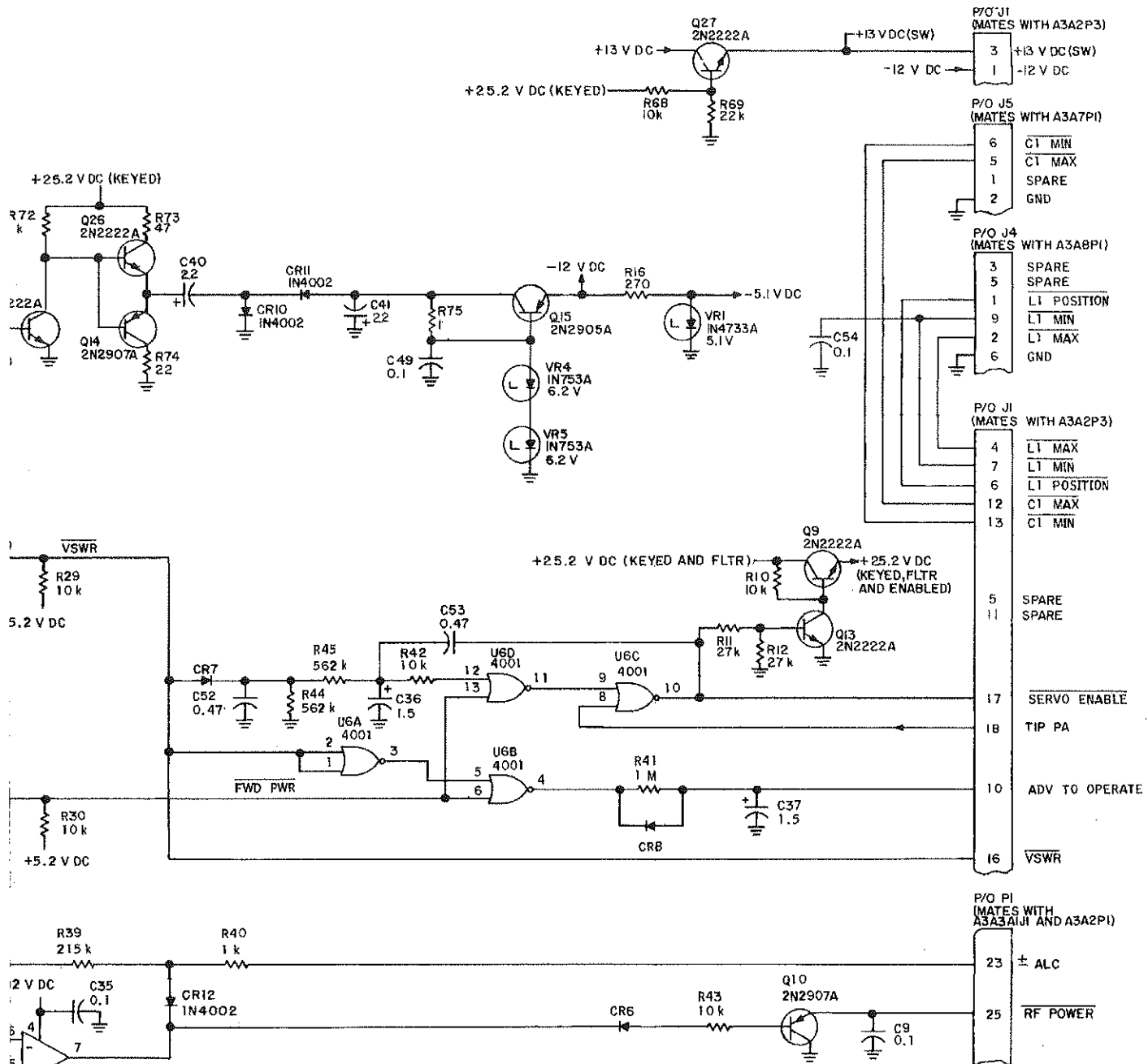




628-4270
TP4-4615-024

Figure 4-16. Servo Amplifier A3A1, Schematic Diagram (Sheet 1 of 2)

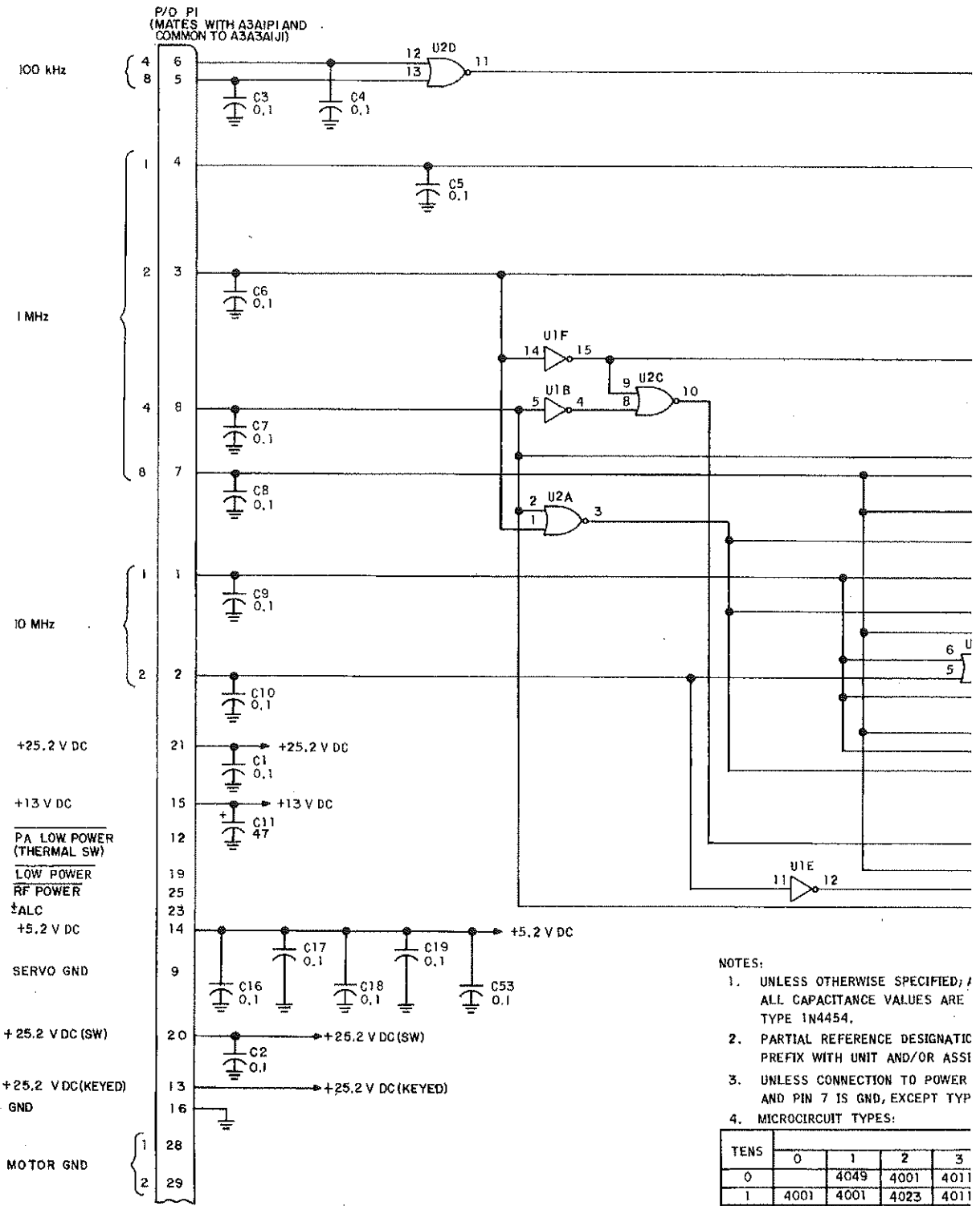




- NOTES:
1. UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, INDUCTANCE VALUES ARE IN MILLIHENRYS, AND DIODES ARE TYPE 1N4454.
 2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
 3. UNLESS CONNECTION TO POWER AND GROUND ARE SHOWN; MICROCIRCUIT PIN NO. 14 IS +5 V DC AND PIN NO. 7 IS GROUND.
 4. C55 USED ON MCN 1 THRU 16 ONLY.

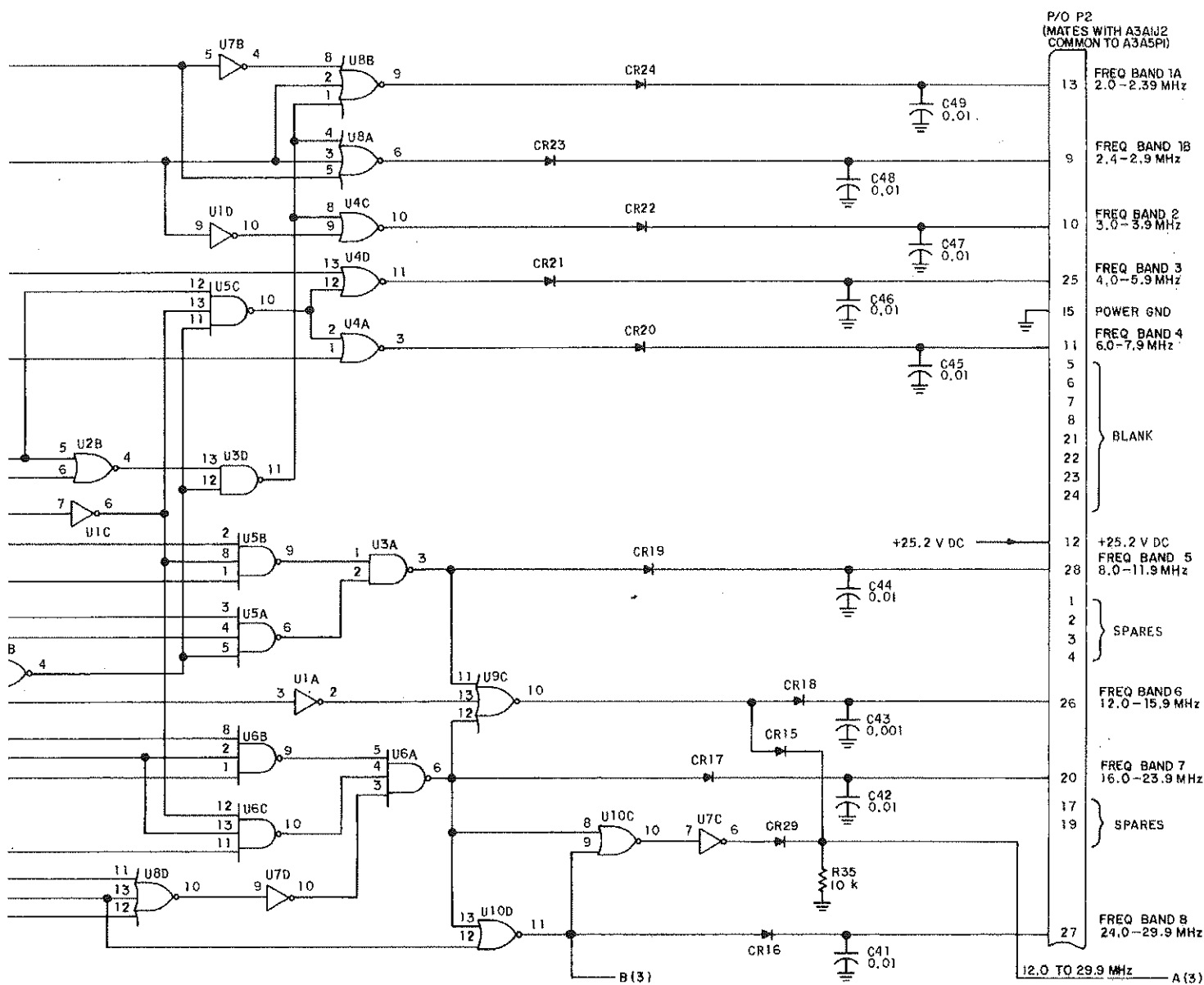
628-4270
TP4-4615-024

Figure 4-16. Servo Amplifier A3A1, Schematic Diagram (Sheet 2)



- NOTES:
1. UNLESS OTHERWISE SPECIFIED, / ALL CAPACITANCE VALUES ARE TYPE 1N4454.
 2. PARTIAL REFERENCE DESIGNATIC PREFIX WITH UNIT AND/OR ASSI
 3. UNLESS CONNECTION TO POWER AND PIN 7 IS GND, EXCEPT TYP
 4. MICROCIRCUIT TYPES:

TENS	0	1	2	3
0		4049	4001	4011
1	4001	4001	4023	4011
2	4011	4023	4049	



.L RESISTANCE VALUES ARE IN OHMS,
I MICROFARADS, AND ALL DIODES ARE

IS ARE SHOWN; FOR COMPLETE DESIGNATION
ABLY DESIGNATION.

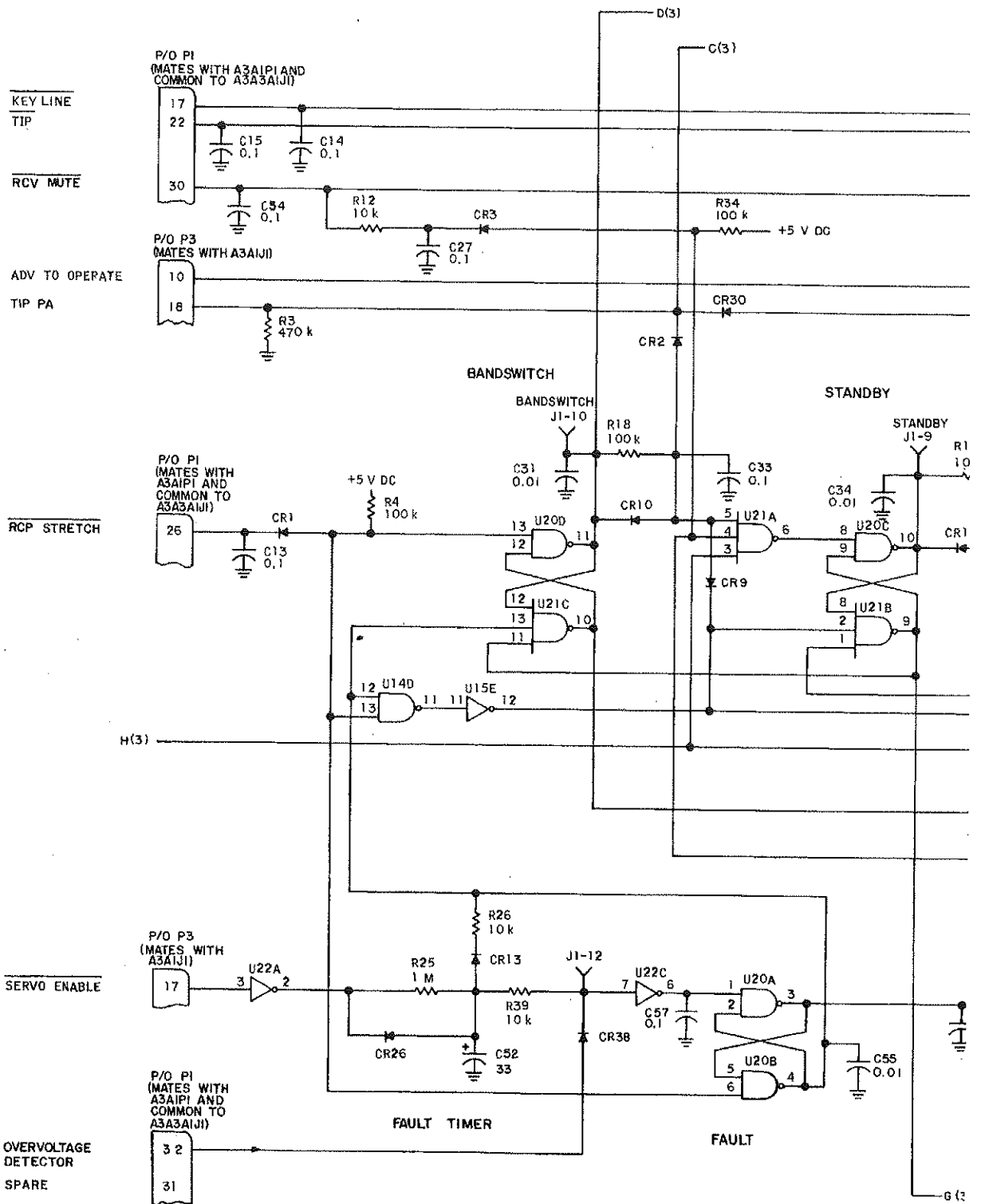
IND GROUND ARE SHOWN PIN 14 IS +5 V DC
4049 WHERE PIN 1 IS +5 V DC AND PIN 8 IS GND.

UNITS					
4	5	6	7	8	9
4001	4023	4023	4049	4025	4025
4011	4049	4023	4011	4023	4011

628-4269
TP4-4614-034

Figure 4-17. Control Logic A3A2,
Schematic Diagram (Sheet 1 of 3)

4-39/4-40 (Blank)



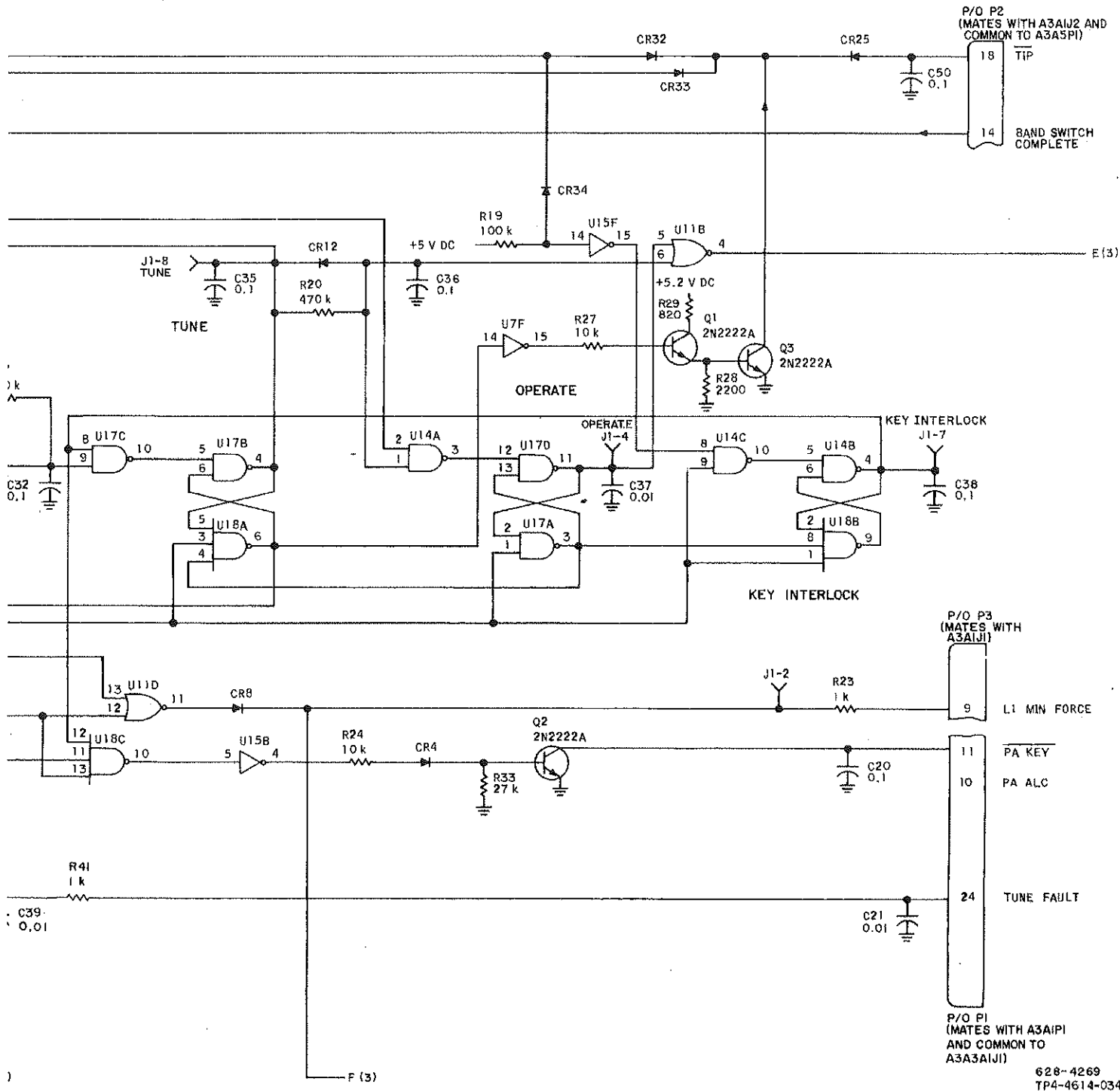
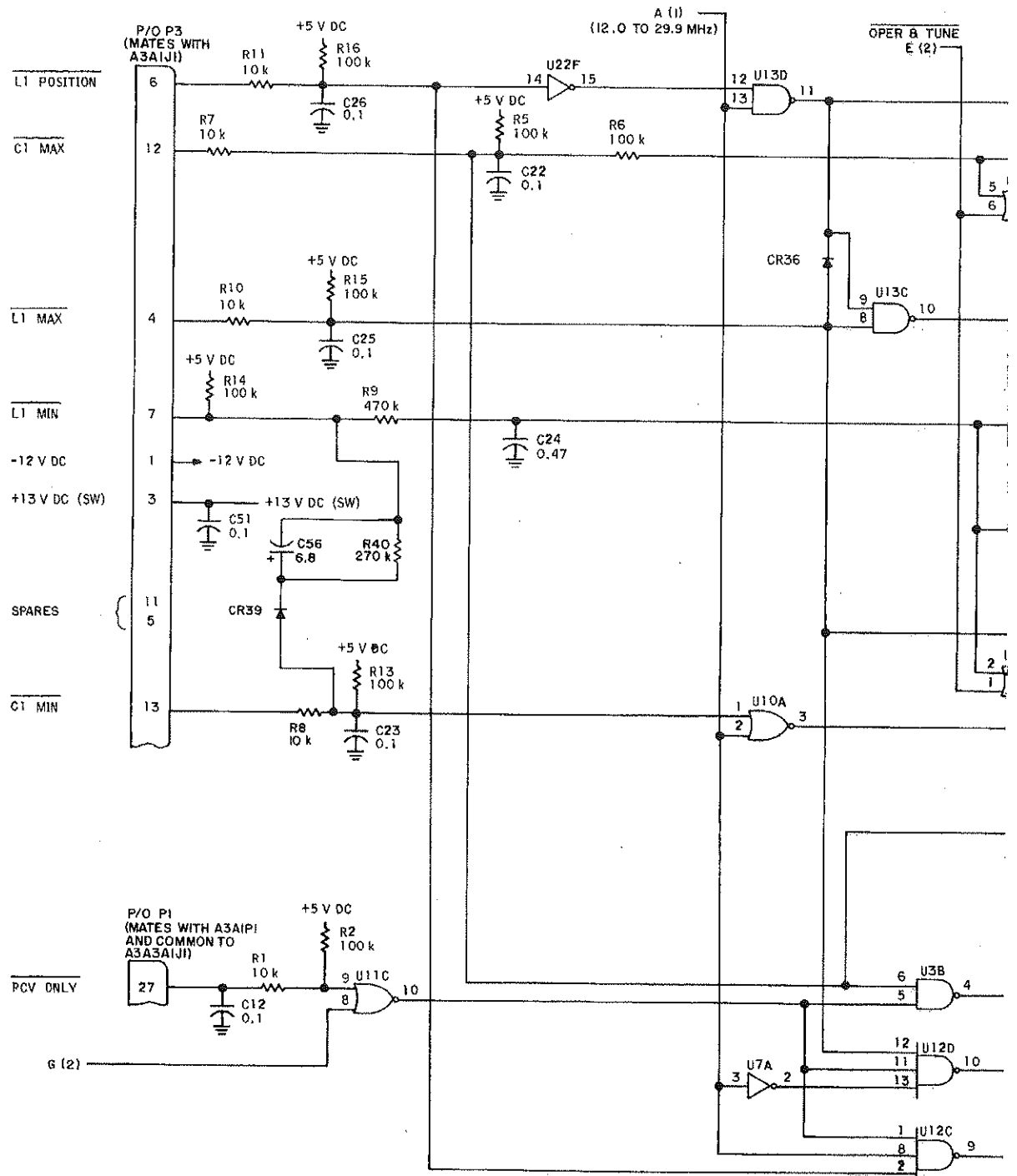
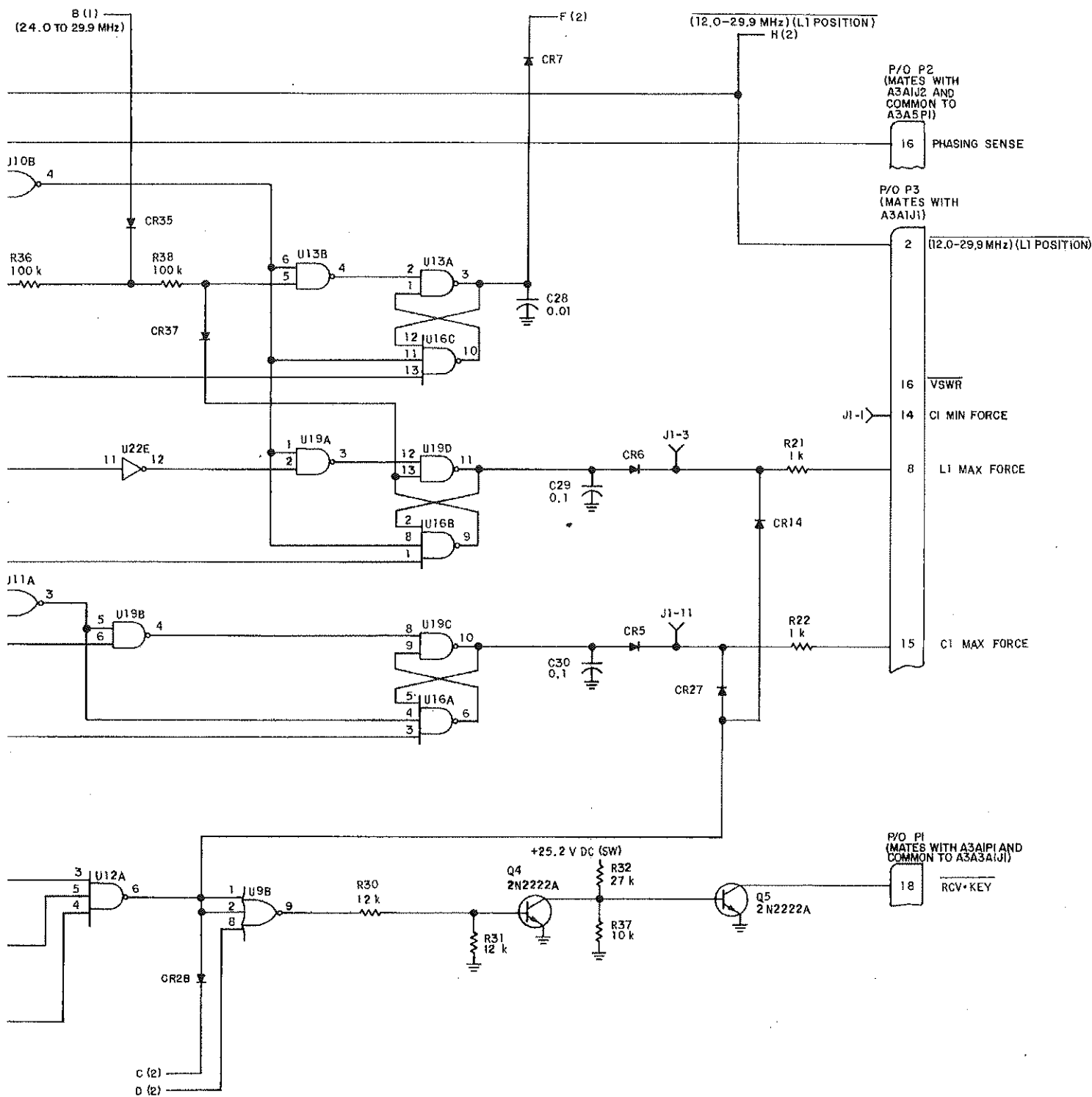


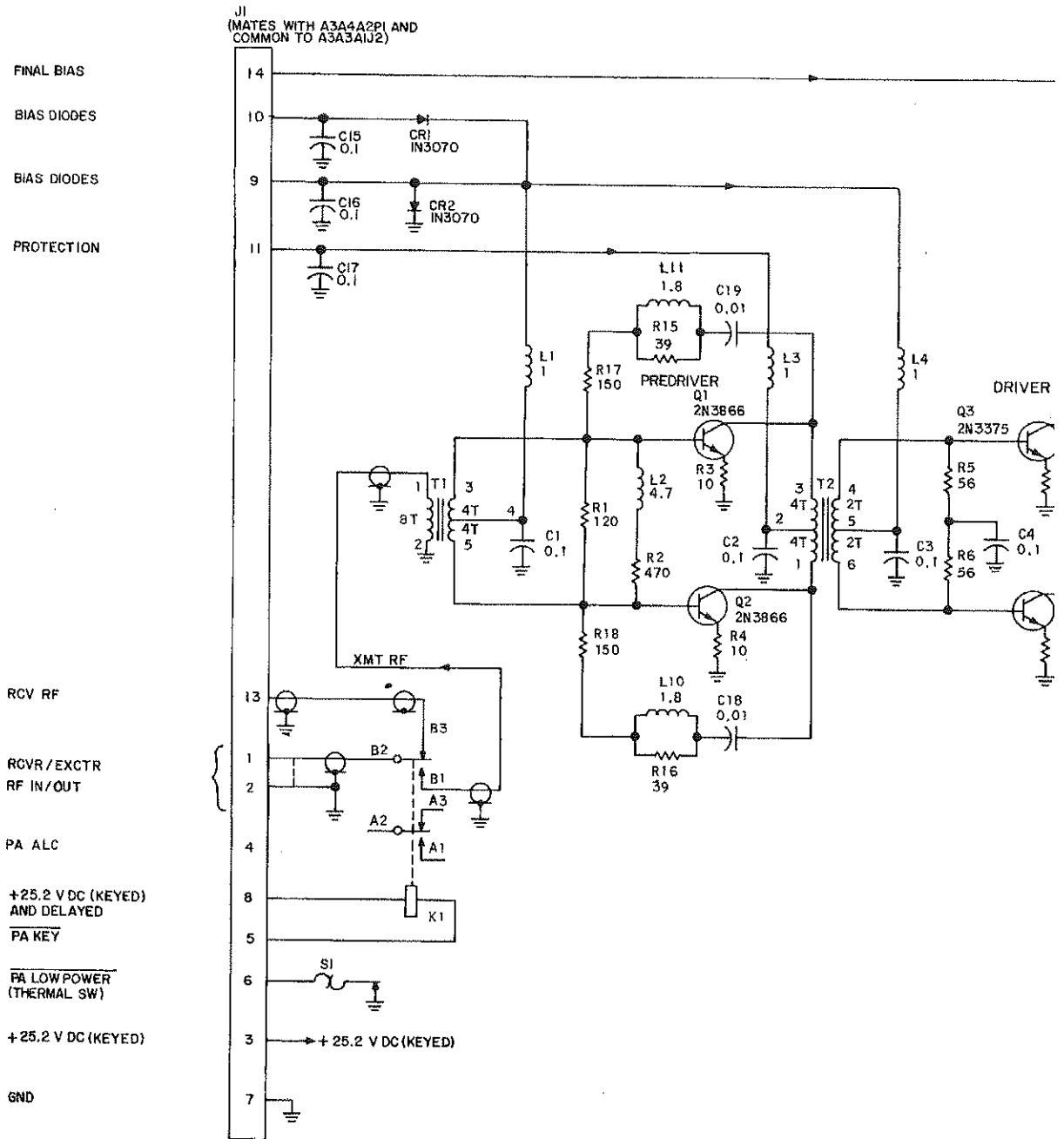
Figure 4-17. Control Logic A3A2, Schematic Diagram (Sheet 2)





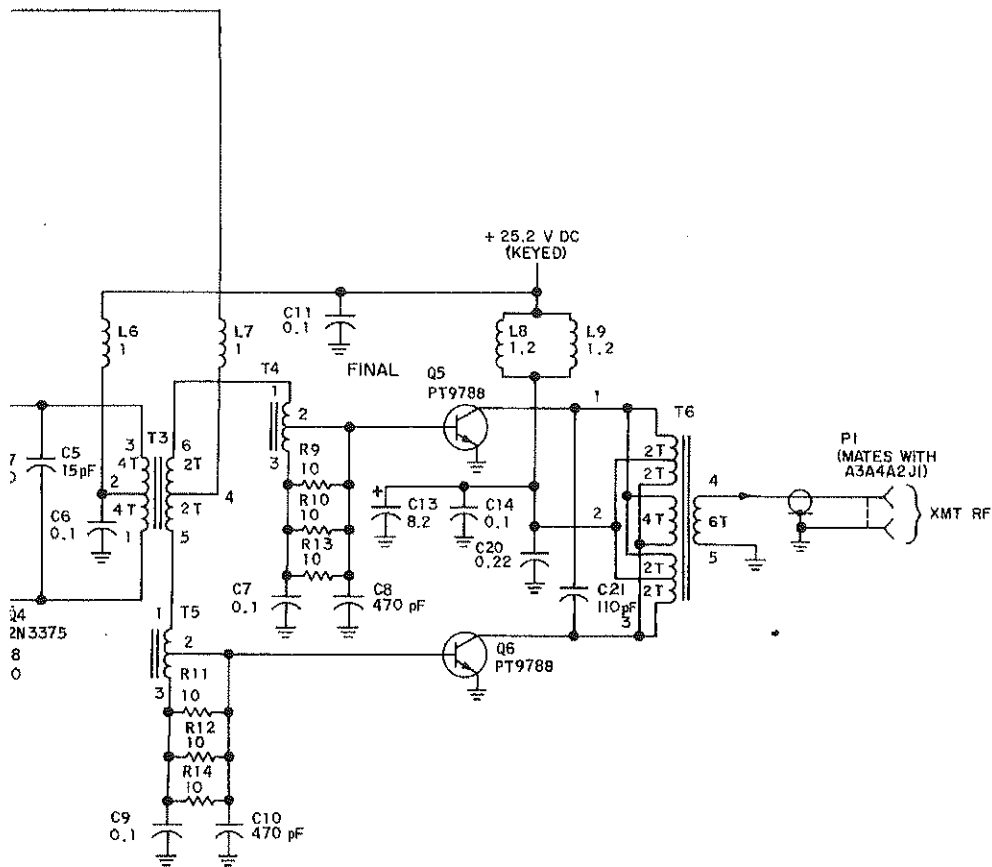
628-4269
TP4-4614-034

Figure 4-17. Control Logic A3A2 Schematic Diagram (Sheet 3)



HIGHEST REFERENCE DESIGNATION			
R17	C16	CR4	L12
Q6	T6	K1	S1

REFERENCE DESIGNATION NOT USED			
R13, R14	CR3		
R15, R16			



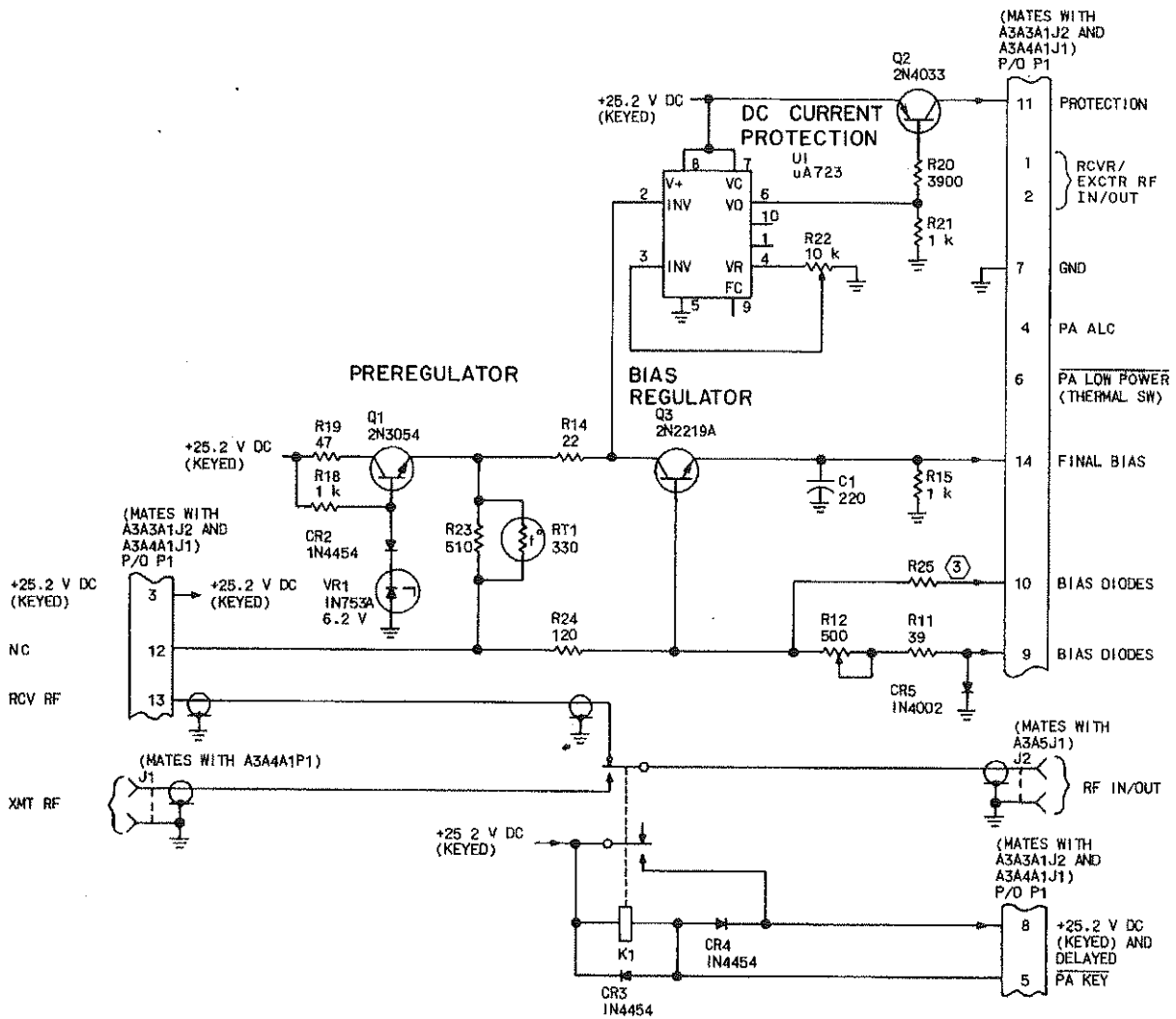
NOTES:

- ① UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, AND INDUCTANCE VALUES ARE IN MICROHENRYS.
- ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.

628-4271
TP4-5311-014

Figure 4-18. RF Subassembly A3A4A1,
Schematic Diagram

4-45/4-46 (Blank)



NOTES:

- ① UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN MICROFARADS.
- ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ③ R25 IS A TEST SELECT, MAY BE 0., 3.3 OR 4.7 OHMS.

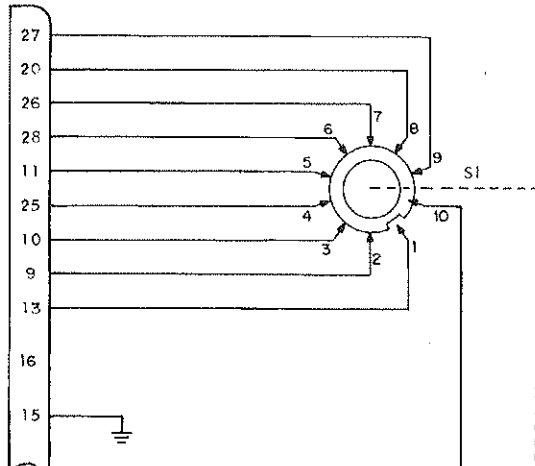
629-4272
TP4-5312-014

Figure 4-19. Bias/Control A3A4A2, Schematic Diagram

- FREQ BAND 8, 24.0-29.9 MHz
- FREQ BAND 7, 16.0-23.9 MHz
- FREQ BAND 6, 12.0-15.9 MHz
- FREQ BAND 5, 8.0-11.9 MHz
- FREQ BAND 4, 6.0-7.9 MHz
- FREQ BAND 3, 4.0-5.9 MHz
- FREQ BAND 2, 3.0-3.9 MHz
- FREQ BAND 1B, 2.4-2.9 MHz
- FREQ BAND 1A, 2.0-2.39 MHz

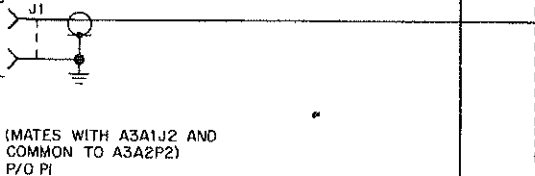
PHASING SENSE
POWER GND

(MATES WITH A3A1J2 AND
COMMON TO A3A2P2)
P/O PI



(MATES WITH A3A4A2J2)

RF IN/OUT

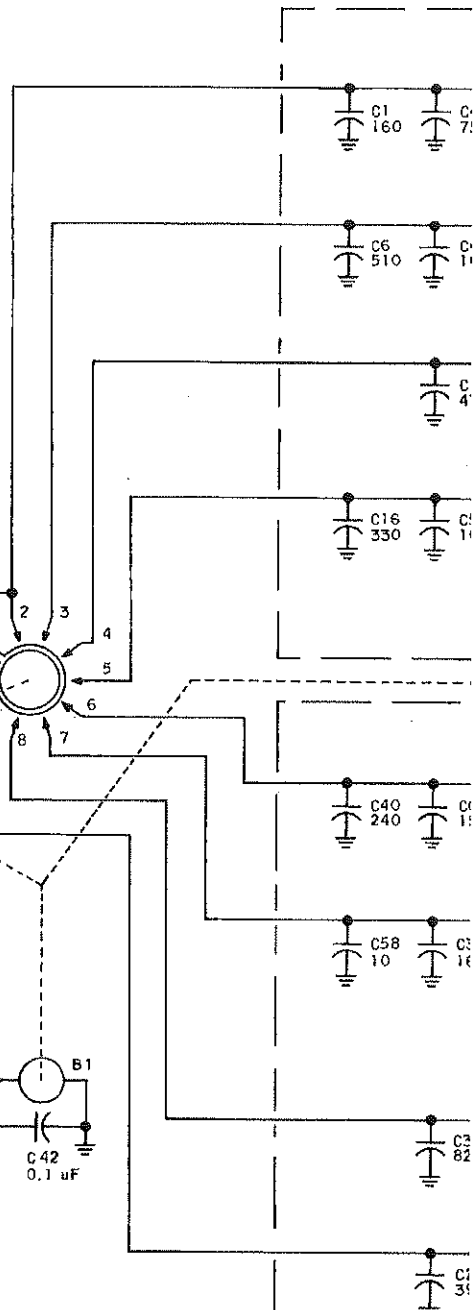
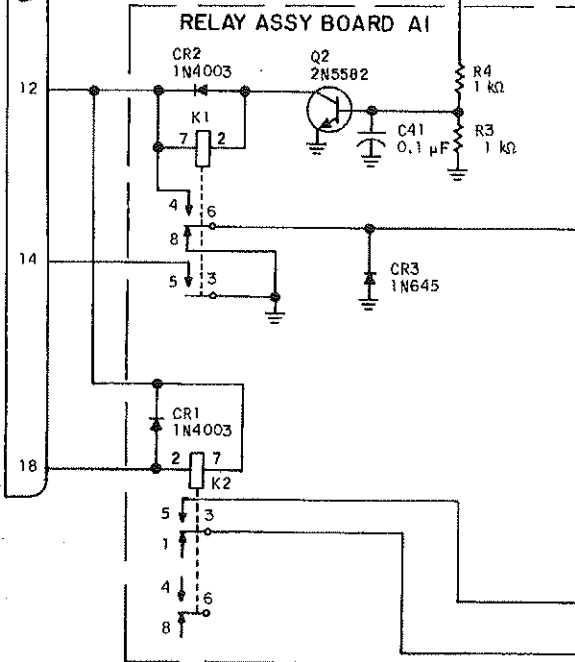


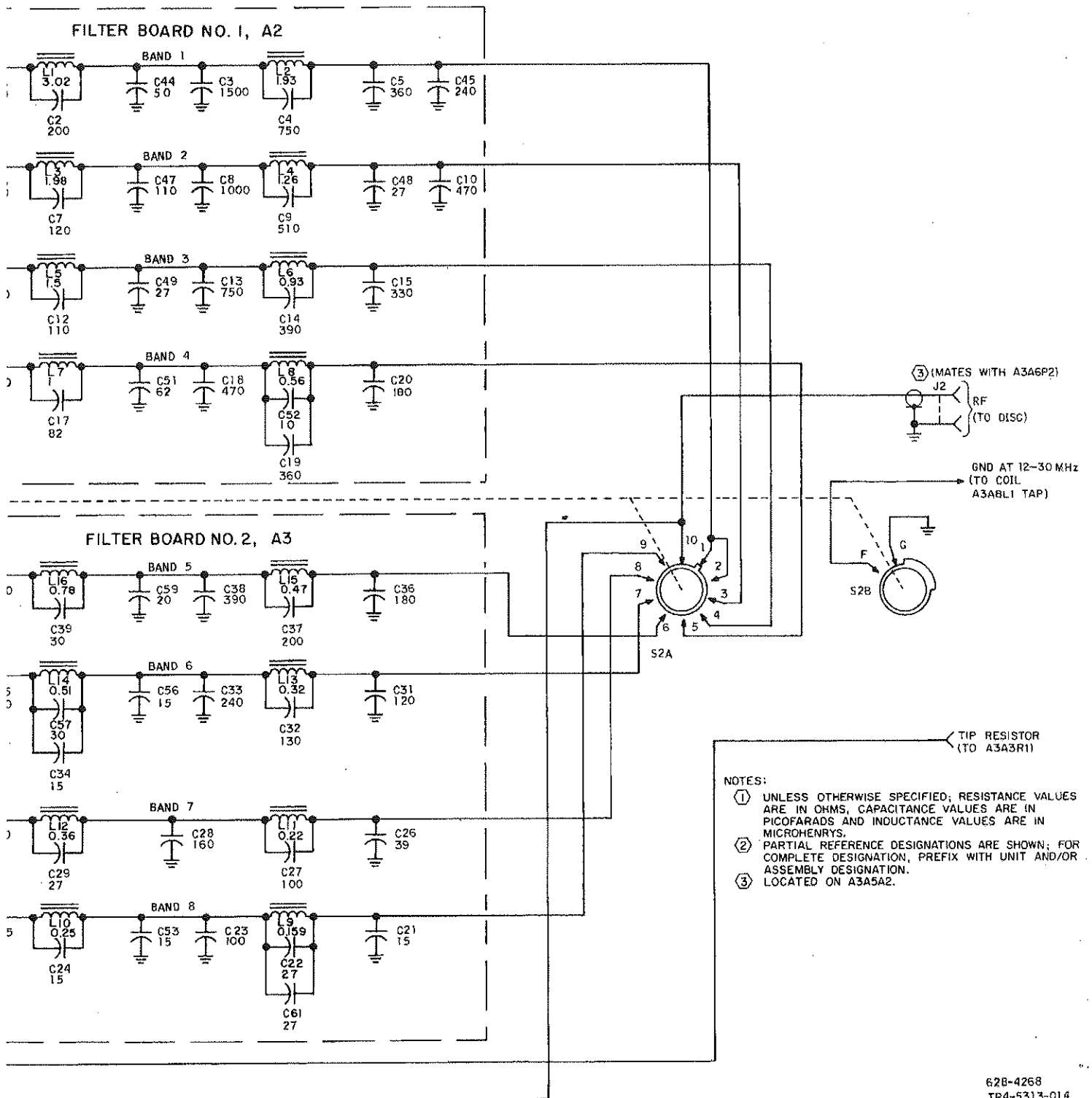
(MATES WITH A3A1J2 AND
COMMON TO A3A2P2)
P/O PI

+25.2 V DC

BAND SWITCH
COMPLETE

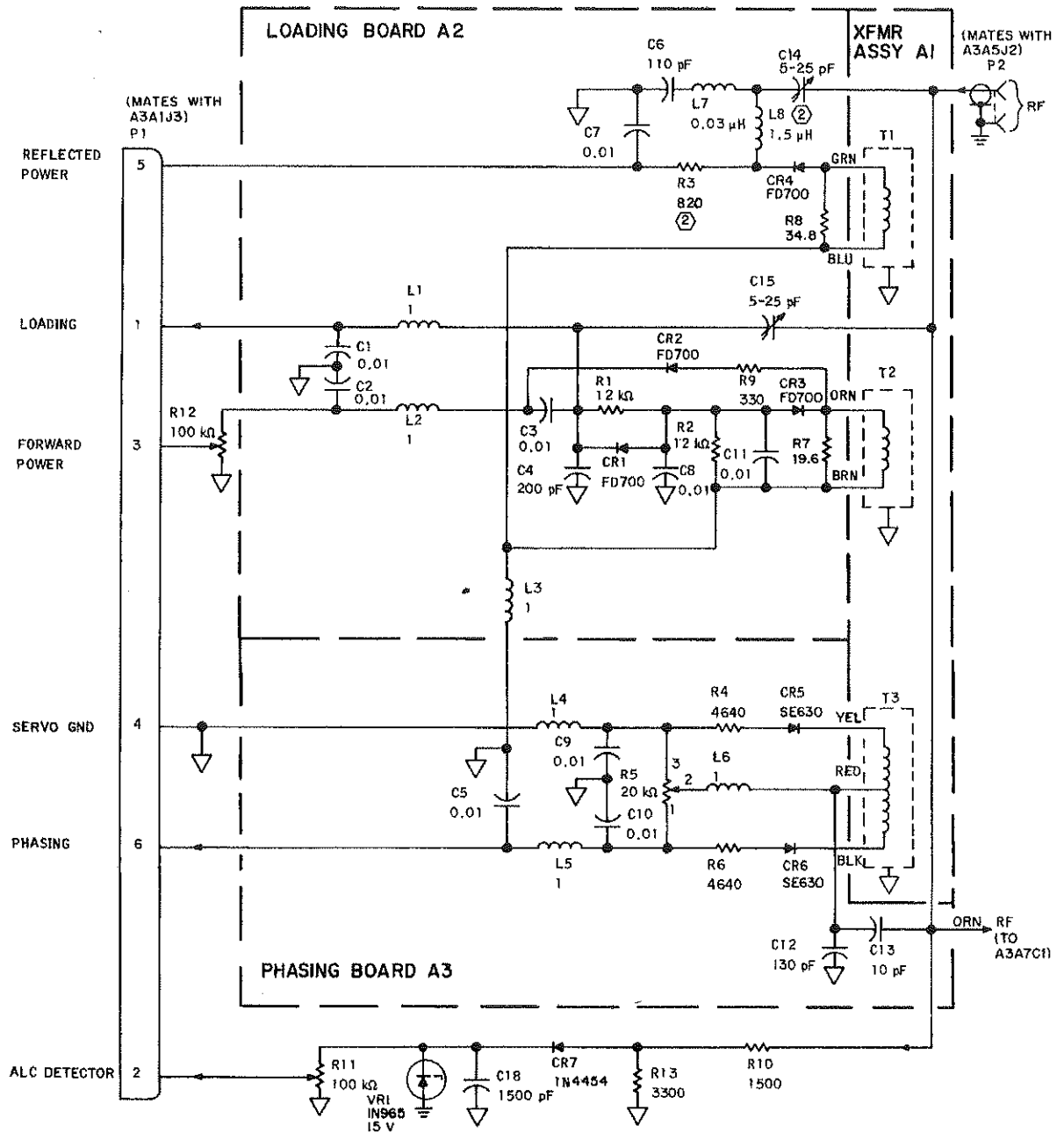
TIP





62B-4268
 TP4-5313-014

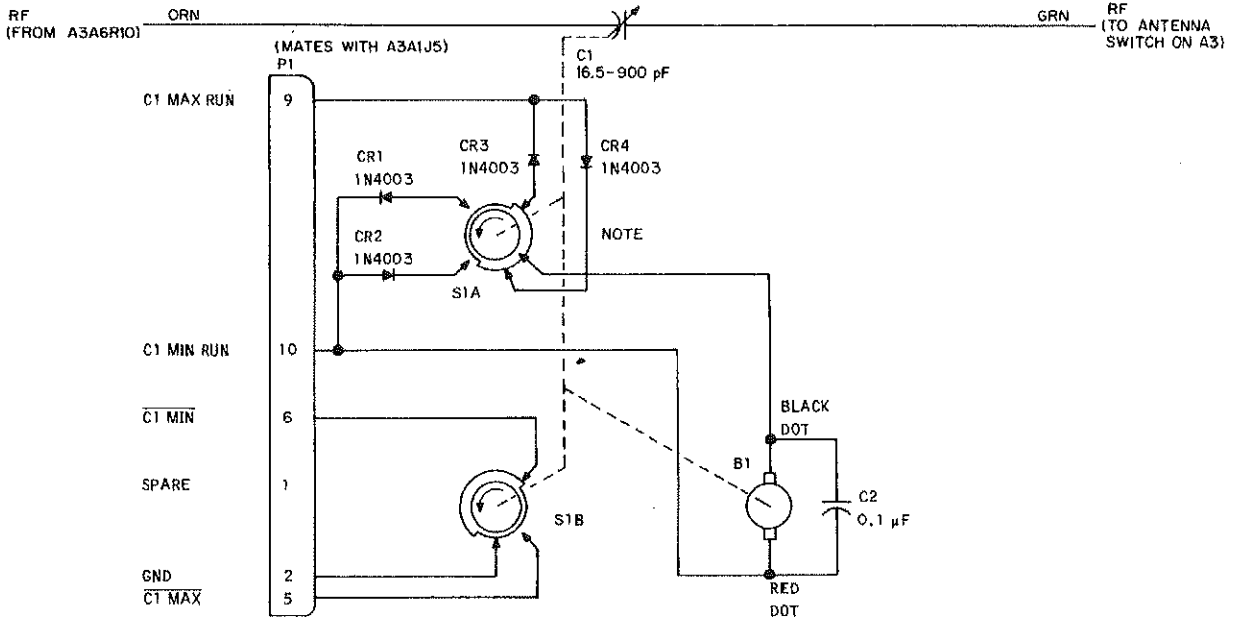
Figure 4-20. Bandswitch A3A5, Schematic Diagram



NOTES:
 ① UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, AND INDUCTANCE VALUES ARE IN MILLIHENRYS.
 ② TEST SELECT. NOMINAL VALUE SHOWN.

628-4265
 TP4-4616-014

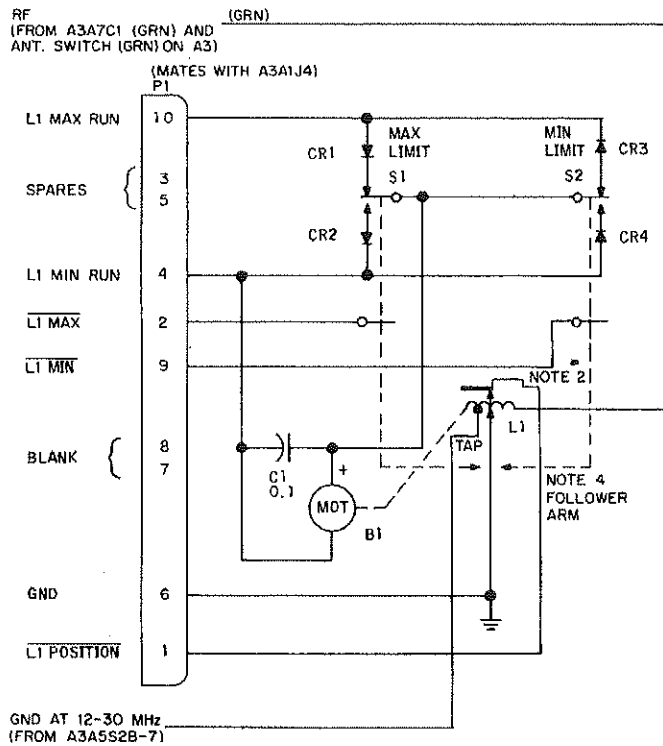
Figure 4-21. Discriminator A3A6, Schematic Diagram



NOTE:
 S1A CONTACT GOING TO CR3 IS OPEN AT MINIMUM. S1A CONTACT
 GOING TO CR4 IS OPEN AT MAXIMUM. ARROW IN SWITCH INDICATES
 DIRECTION TO MAXIMUM.

626-4266
 TP4-4617-013

Figure 4-22. Tuning Capacitor A3A7,
 Schematic Diagram

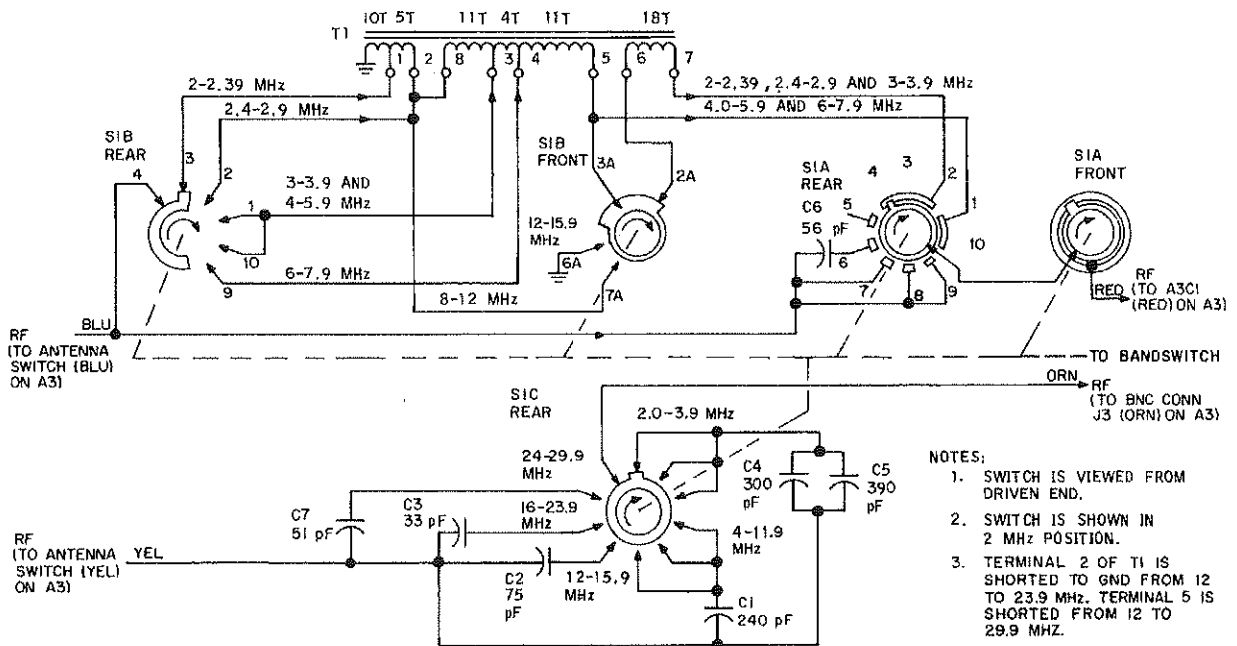


NOTES:

1. UNLESS OTHERWISE NOTED, DIODES ARE IN4003.
2. THE FOLLOWER ARM MAKES CONTACT AND GROUNDS THE POSITIONING CONTACT OVER PART OF THE COIL L1.
3. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, AND INDUCTANCE VALUES ARE IN MICROHENRYS.
4. FOLLOWER ARM ACTUATES S1 AND S2 AND PLACES A GROUND ON ACTUATOR (PIN 2 OR 9).

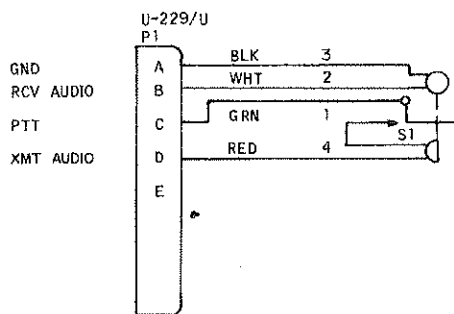
628-4267
 TP4-4682-014

Figure 4-23. Tuning Coil A3A8, Schematic Diagram



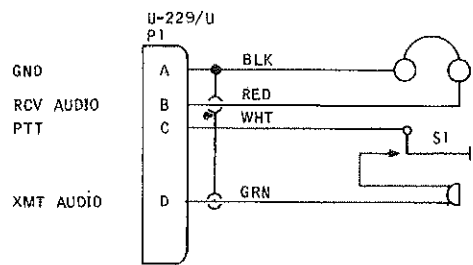
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Figure 4-24. Autotransformer A3A9,
Schematic Diagram



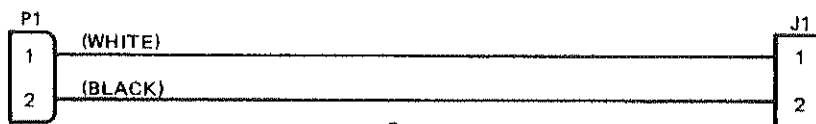
TP4-9386-012

Figure 4-25. Handset H-5017/PRC-515,
Schematic Diagram



TP4-9388-012

Figure 4-26. Headset-Microphone H-5016/
PRC-515, Schematic Diagram

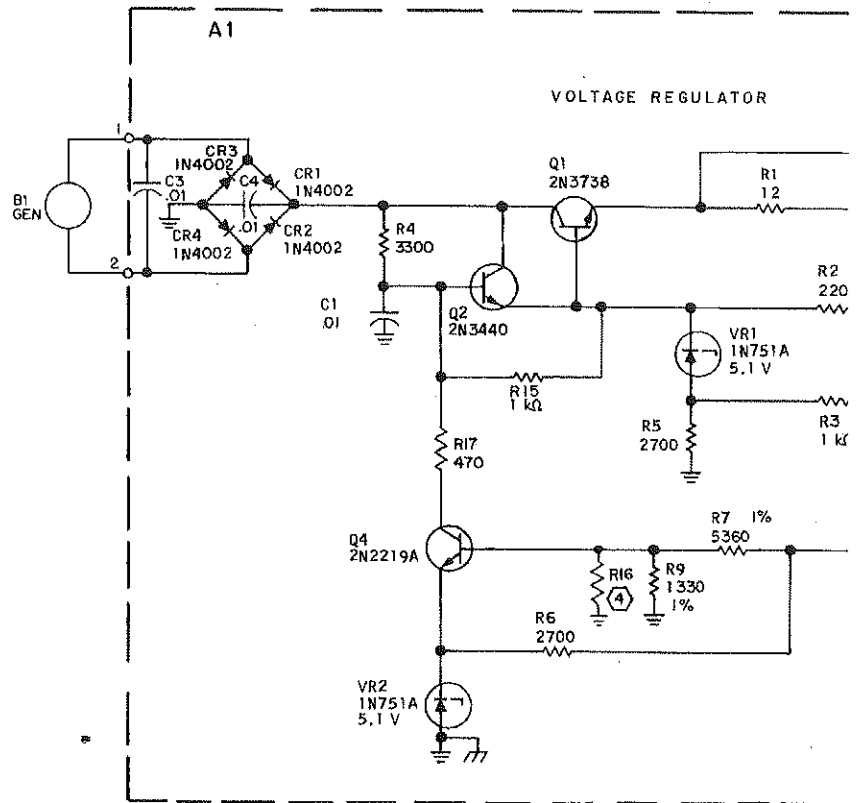


NOTE: WIRE SIZE: 18 AWG.

TP5-0139-011

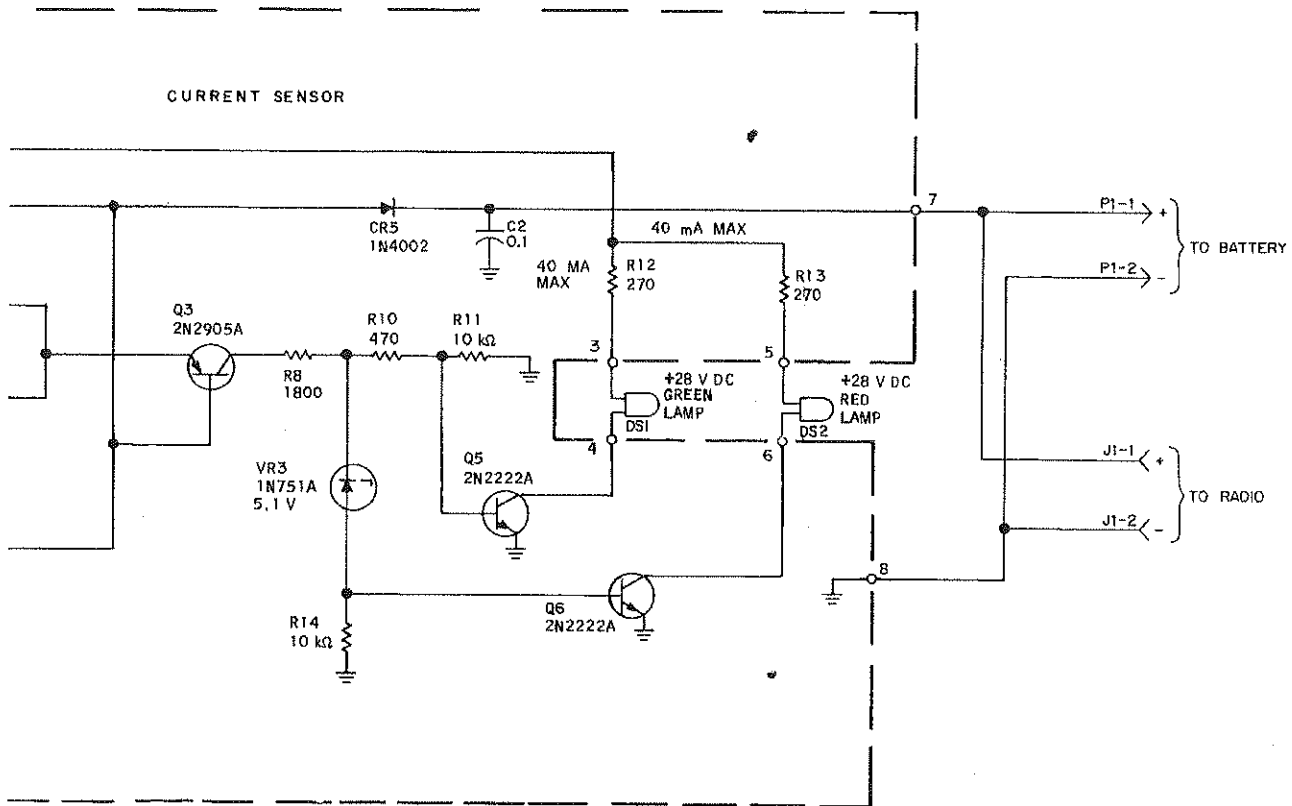
Figure 4-27. Electrical Power Cable
Assembly CX-5229/PRC-515,
Schematic Diagram

4-63/4-64 (Blank)



NOTES:

- ① UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS, AND CAPACITANCE VALUES ARE IN MICROFARADS.
- ② PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
- ③ LAMPS ARE TYPE NO. 387.
- ④ VALUE SELECTED IN FINAL TEST.



628-4273
TP4-4564-014

Figure 4-28. Direct Current Generator
G-5002/PRC-515, Schematic
Diagram

4-65/4-66 (Blank)

CUSTOMER SERVICE INFORMATION

EQUIPMENT/MANUAL REGISTRATION

MANUAL TITLE _____

MANUAL PART NO _____

USER'S NAME _____

ADDRESS _____

ZIP: _____

EQUIPMENT TYPE NO	EQUIPMENT PART NO	SERIAL NO
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

YOU MUST COMPLETE AND RETURN THIS FORM TO RECEIVE ADDITIONAL MATERIALS.

Please indicate desired services.

- Manual Revisions
- Service Bulletins/Service Information Letters
- Instruction Books (Indicate Type)

QTY

(TITLE)	(PART NO)	(QTY)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Rockwell-Collins has endeavored to furnish you with an accurate, up-to-date manual. We welcome your comments concerning this manual. Please use the following space to report any errors, discrepancies, or omissions as well as any general comments you wish to make.

REMARKS:

ATTN: QUALITY CONTROL-
TECHNICAL PUBLICATIONS 120-120

PLACE
STAMP
HERE

Logistics
Collins Telecommunications
Products Division
Rockwell International
Cedar Rapids, Iowa 52498

OR-5007/URC AND 719D-2A RECEIVER-TRANSMITTER GROUP (622-1407-XXX)
AM-5280/URC AND 549A-2 AMPLIFIER-COUPLER A3 (622-2149-001, -002, -003)
POWER AMPLIFIER A3A4 (629-3410-001)
RF SUBASSEMBLY A3A4A1 (601-3674-001, -002)

SERVICE BULLETIN NO 1

REDUCE T/R RELAY FAILURES

This service bulletin applies to OR-5007/URC and 719D-2A (622-1407-XXX) systems containing AM-5280/URC and 549A-2 (622-2149-001) units with serial numbers 1 through 688 and 878 through 911.

AM-5280/URC and 549A-2 production cut-in serial numbers are 689 through 877, 912 and above.

The high inrush current required to charge capacitor C13 on rf subassembly A3A4A1 causes premature failure of tr relay K1 on filter board A3A3A1. If failure of K1 is noted by abnormally low battery life, then incorporation of this service bulletin is required when the relay is being replaced. Bypass capacitor C13 may be removed without degrading performance because of the proximity of the low-impedance power source.

This service bulletin removes capacitor A3A4A1C13.

Estimated time required is 0.5 man-hour.

No modification parts are required, but a service bulletin information chart will be needed to record the service bulletin number after the modification has been made. The chart may be ordered free of charge for six months after the date of this bulletin. Orders should be sent to Collins Telecommunications Products Division/Rockwell International, Service Parts Department, Cedar Rapids, Iowa 52406. Include the Collins part number of the chart, the serial numbers of the units to be modified, and reference OR-5007/URC and 719D-2A Service Bulletin No 1.

No special tools or equipment are required.

This service bulletin references the 719D-2A Receiver-Transmitter Group Instruction Book, Collins part number (CPN) 523-0766774.

The second edition of the 719D-2A instruction book and the first editions of the AN/PRC-515 maintenance and parts list manuals will include the change covered in this bulletin.

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MODIFICATION PROCEDURE

A. Disconnect all power from the equipment.

NOTE: Refer to the 719D-2A instruction book parts list section (CPN 523-0767337), figure 4, item 5, for location of rf subassembly A3A4A1.

B. Remove rf subassembly A3A4A1 from the AM-5280/URC or 549A-2 amplifier-coupler A3.

C. Refer to figure 1 of this bulletin for location of component and remove capacitor C13.

NOTE: Refer to figure 2 for before and after schematic diagrams of the rf subassembly.

D. Reinstall the rf subassembly into the AM-5280/URC or 549A-2.

E. Install a service bulletin information chart (280-3778-010) near the AM-5280/URC or 549A-2 nameplate and mark SB 1 on the chart.

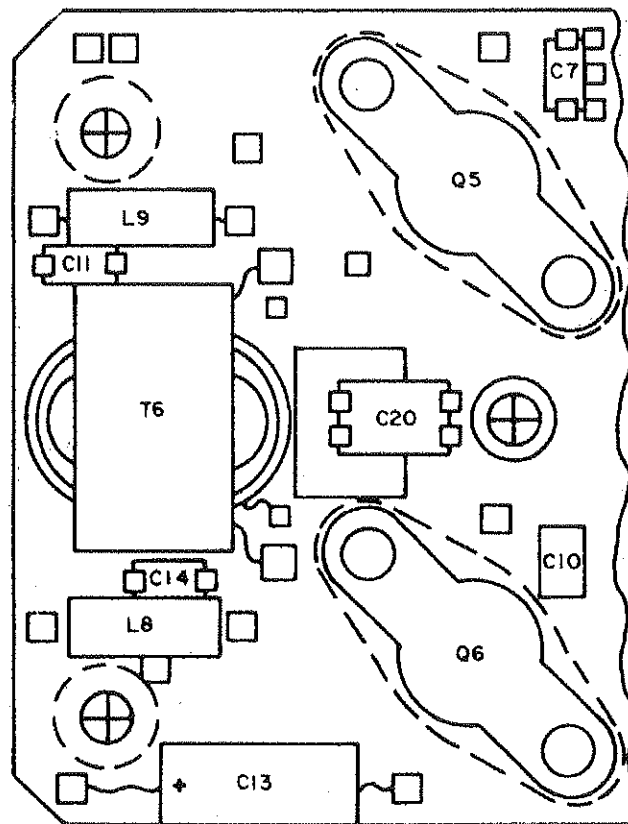
MATERIAL INFORMATION

The chart listed below is required to record the implementation of this service bulletin.

<u>COLLINS PART NUMBER</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>DESCRIPTION</u>
280-3778-010	1		Chart, information

Rockwell- Collins | SERVICE BULLETIN

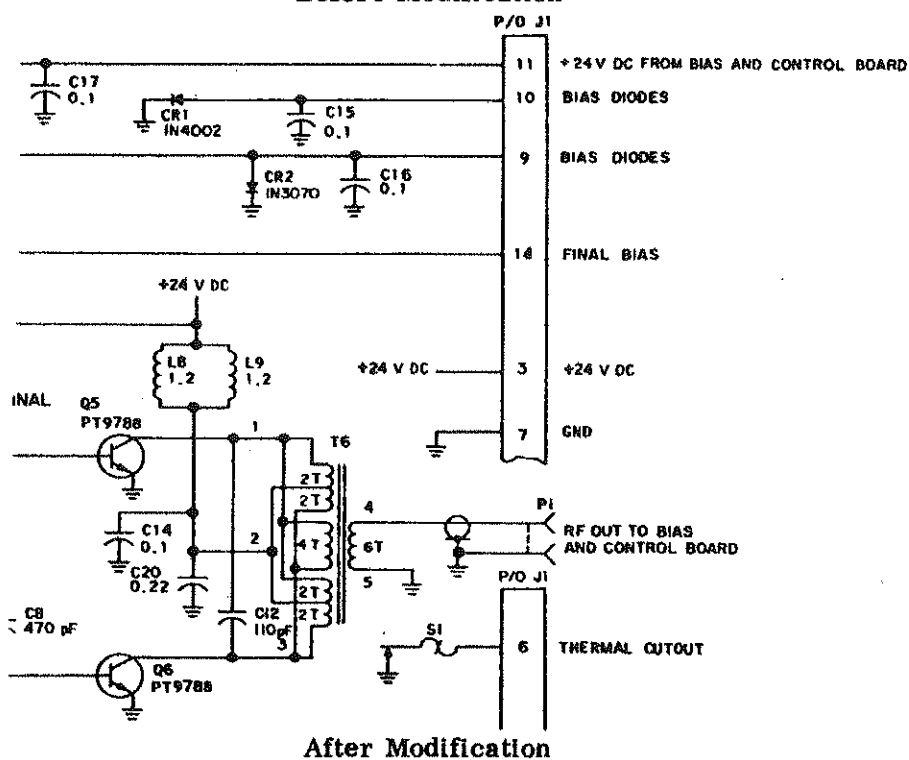
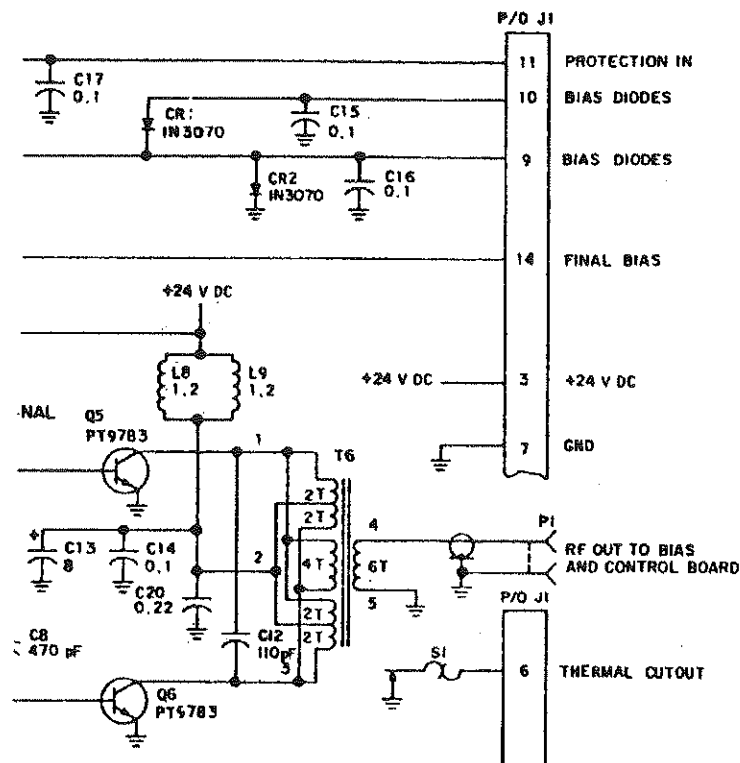
Collins Telecommunications Products Division/Rockwell International



P/O Rf Subassembly A3A4A1
Figure 1

Rockwell-Collins | SERVICE BULLETIN

Collins Telecommunications Products Division/Rockwell International





SERVICE BULLETIN

Collins Telecommunications Products Division/Rockwell International

• 350605

549A-2 (AM-5280/URC) AMPLIFIER-COUPLER A3 (622-2149-001, -002, -003)
 DISCRIMINATOR A3A6 (629-3409-001)
 LOADING BOARD A3A6A2 (601-3686-001)
 POWER AMPLIFIER A3A4 (629-3410-001, -002, -003)
 BIAS/CONTROL A3A4A2 (601-3675-002)
 PA SUBASSEMBLY A3A4A1 (623-7287-001, -002, -003)
 RF SUBASSEMBLY P/O A3A4A1 (601-3674-002)

SERVICE BULLETIN NO 2

LIMIT TRANSISTOR CURRENT DURING TUNE

This service bulletin applies to 549A-2 (622-2149-001, -002, -003) units with serial numbers 1593 and below.

Production cut-in is serial number 1594. Production cut-in for the subassemblies affected by this revision is as follows:

Discriminator A3A6 (629-3409-001)	REV R
Loading board A3A6A2 (601-3686-001)	REV J
Bias/control A3A4A2 (601-3675-002)	REV Y
Rf subassembly A3A4A1 (601-3674-002)	REV V

Excessive transistor current during tune mode can cause failure of the amplifier transistors. This service bulletin incorporates several revisions that will limit transistor current. These modifications should not be made until the transistors need to be replaced.

One zener diode is removed from the discriminator to prevent saturation of ALC during tune mode. A zener diode is added to the loading board to limit ALC voltage to 12 volts. Peak bias current is limited by changing one resistor on the bias/control card and six resistors on the rf subassembly card. Amplifier gain variations when using various transistor vendors is kept to a minimum by test selecting five of the resistors.

Estimated time required is 4.0 man-hours.

The modification parts are itemized in the material information paragraph. For additional information concerning parts, contact Collins Telecommunications Products Division/Rockwell International, Service Parts Department, Cedar Rapids, Iowa 52498. Reference 549A-2 Service Bulletin No 2 in all correspondence.

The following test equipment or equivalent is required.

<u>ITEM</u>	<u>RECOMMENDED TYPE</u>
Power amplifier test adapter TS-5119/PRM-502	Rockwell-Collins 622-2790-002, -003
Power supply PP-5290/PRM-502	Rockwell-Collins 622-2779-001
Attenuator, 6 dB (2 required)	Measurements 80-ZH3



SERVICE BULLETIN

Collins Telecommunications Products Division/Rockwell International

<u>ITEM</u>	<u>RECOMMENDED TYPE</u>
Digital voltmeter	Fluke 8000A
Load, 50 ohms	Bird 8085
Multimeter	Hewlett-Packard 410C
Variable attenuator	Weinschel 905
Power divider	Weinschel 1506A
Probe coaxial T-connector	Hewlett-Packard 11042A
Rf signal generator (2 required)	Hewlett-Packard 8640B
Spectrum analyzer	Hewlett-Packard 141T

This service bulletin references the AN/PRC-515 Radio Set instruction book, part number 523-0769144.

MODIFICATION PROCEDURE

- A. Remove radio set battery.

NOTE: Refer to AN/PRC-515 instruction book, paragraph 2.4.2, for amplifier-coupler A3 disassembly.

- B. Remove power amplifier A3A4 according to paragraph 2.4.2.1.

- C. Remove bias/control A3A4A2 according to paragraph 2.4.2.2.1.

- D. Remove discriminator A3A6 according to paragraph 2.4.2.6.

- E. Refer to instruction book, figure 3-27, item 8, for location of zener diode A3A6VR1. Remove and discard VR1.

NOTE: Refer to figure 1 of the service bulletin while performing steps G and H. Refer to figure 2 for a schematic diagram that includes the new diode.

- F. Insert a pin (372-2601-033) into hole next to symbol Z in figure 1.

- G. Install 1N4106 zener diode VR1 (353-3591-080) from new pin (cathode) to hole (anode) shown in figure 1.

- H. On test adapter TS-5119/PRM-502, set UNIT POWER, KEY, and FAN to OFF. Install power amplifier A3A4 on test adapter, and perform test setup as shown in figure 3.

NOTE: Refer to figures 4 and 5 for location of components. Refer to figures 6 and 7 for schematic diagrams that include the changes made by this bulletin.

- I. On A3A4A1 card (figure 4), remove 39- Ω resistors R15 and R16, and replace them with 150- Ω resistors (745-0718-000).

- J. Leave the original 10- Ω test select resistors R3, R4, R7, and R8 on rf subassembly A3A4A1. All four resistors must be the same value.



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- K. Install bias/control A3A4A2 onto power amplifier.
- L. With bias controls R1 and R4 full ccw, set test adapter and power supply POWER to ON. Set test adapter FAN to ON. Increase dc voltage to 25.2 volts while monitoring current demand. Current should not exceed 0.5 A.
- M. Connect voltmeter across R3 or R4 on rf subassembly.
- N. Adjust R1 on bias/control for a voltage equivalent to 1.5 mA ($0.0015 \times$ resistance selected).
- O. Adjust R4 on bias/control for a current demand of 150 mA.
- P. On test adapter, set BAND switch to 8 and KEY switch to ON.
- Q. Set signal generator for 29.9999 MHz, and adjust output for 31.6 V rms measured on multimeter. Current should not exceed 2.6 A. Note signal generator level.
- R. On test adapter, set KEY switch to OFF.
- S. On test adapter, set BAND to 1. Set signal generator rf output to minimum and frequency to 2.0 MHz.
- T. On test adapter, set KEY to ON, and increase signal generator drive to develop 31.6-V rms power output indication on multimeter. The signal generator drive voltage should be NMT 2.50 V rms or NLT 1.20 V rms. The dc current should not exceed 2.6 A.
- U. Test-select resistors R3, R4, and R7, and R8 (table 1) to meet the drive voltage and dc current requirements of step T. When a resistor is removed, install a pin (372-2601-033) in each hole where a resistor lead is removed. The new resistors will be connected between the pins. Resistors R7 and R8 can be one step higher or lower than R3/R4, but R7 and R8 must be the same value. When the test selects are changed, the bias must be readjusted according to steps M through Q.

Table 1. Test-Select Resistors R3, R4, R7, and R8.

PART NUMBER	QTY	VALUE
745-0688-000	4	22 Ω
745-0687-000	4	20 Ω
745-0685-000	4	18 Ω
745-0682-000	4	15 Ω
745-0679-000	4	12 Ω
745-0676-000	4	10 Ω



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- V. On test adapter, set KEY to OFF.
- W. Repeat steps S through V with the signal generator set to the following frequencies and the test adapter BAND switch set to the proper band.

3.5 MHz	BAND 2
5.0 MHz	BAND 3
7.0 MHz	BAND 4
10.0 MHz	BAND 5
15.0 MHz	BAND 6
20.6 MHz	BAND 7
29.9 MHz	BAND 8

- X. On test adapter, set KEY switch to ON, set signal generator frequency to 29.99 MHz, and increase signal generator drive to produce output of 31.6 V rms measured on multimeter.
- Y. Measure dc voltage at bias/control card Q2 collector. Test-select resistor R8 (table 2) on bias/control card for a voltage of +10.0 to +15.0 V dc at Q2-C.

Table 2. Test-Select Resistor R8.

PART NUMBER	QTY	VALUE
745-3321-000	1	180 Ω
745-3314-000	1	120 Ω
745-3335-000	1	39 Ω
745-3331-000	1	330 Ω
745-3328-000	1	270 Ω
745-3324-000	1	220 Ω
745-3317-000	1	150 Ω
745-3307-000	1	82 Ω

- Z. Set one signal generator on, and assure the other signal generator is off. Tune signal generator for 2 MHz, approximately 1.5 V rms. Turn signal generator off.
- AA. Set second signal generator on and tune for 2.001 MHz, approximately 1.5 V rms.
- AB. Set dc voltage to 22 volts and select BAND 1.
- AC. On test adapter, set KEY to ON. Adjust variable attenuator to drive pa to 31.6 volts measured across 50-ohm load. The dc current should not exceed 2 A.
- AD. Adjust spectrum analyzer to measure intermodulation products. The highest products level should be NMT -25 dB. Bias adjustment R4 may be touched up (maximum bias current 250 μA).



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A.E. Repeat steps Z through AD with signal generators set to following frequencies and test adapter BAND switch set to proper band.

SIGNAL GENERATOR #1	SIGNAL GENERATOR #2	BAND
8.0 MHz	8.001 MHz	5
12.0 MHz	12.001 MHz	6
24.0 MHz	24.001 MHz	8
29.9 MHz	29.901 MHz	8

AF. Repeat steps Z through AD at 2.0 and 29.9 MHz with dc voltage set to 30 volts.

AG. Turn off all power and disconnect test equipment.

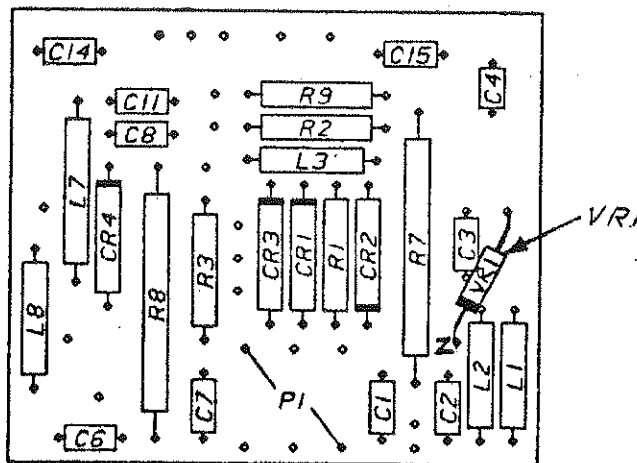
AH. Reassemble amplifier-coupler A3 in reverse order of disassembly.

AI. Attach service bulletin information chart (280-3778-010) near nameplate and mark SB 2 on chart.

MATERIAL INFORMATION

The parts listed below are required to modify one 549A-2 (AM-5280/URC).

<u>COLLINS</u> <u>PART NUMBER</u>	<u>QTY</u>	<u>UNIT</u> <u>PRICE</u>	<u>DESCRIPTION</u>
372-2601-033	9		Pin
353-3591-080	1		Diode, zener, 1N4106, VR1
745-0718-000	2		Resistor, 150 Ω, R15, R16
745-0688-000	4		Resistor, 22 Ω, R3, R4, R7, R8
745-0687-000	4		Resistor, 20 Ω, R3, R4, R7, R8
745-0685-000	4		Resistor, 18 Ω, R3, R4, R7, R8
745-0682-000	4		Resistor, 15 Ω, R3, R4, R7, R8
745-0679-000	4		Resistor, 12 Ω, R3, R4, R7, R8
745-0676-000	4		Resistor, 10 Ω, R3, R4, R7, R8
745-3321-000	1		Resistor, 180 Ω, R8
745-3314-000	1		Resistor, 120 Ω, R8
745-3335-000	1		Resistor, 39 Ω, R8
745-3331-000	1		Resistor, 330 Ω, R8
745-3328-000	1		Resistor, 270 Ω, R8
745-3324-000	1		Resistor, 220 Ω, R8
745-3317-000	1		Resistor, 150 Ω, R8
745-3307-000	1		Resistor, 82 Ω, R8
280-3778-010	1		Chart, information

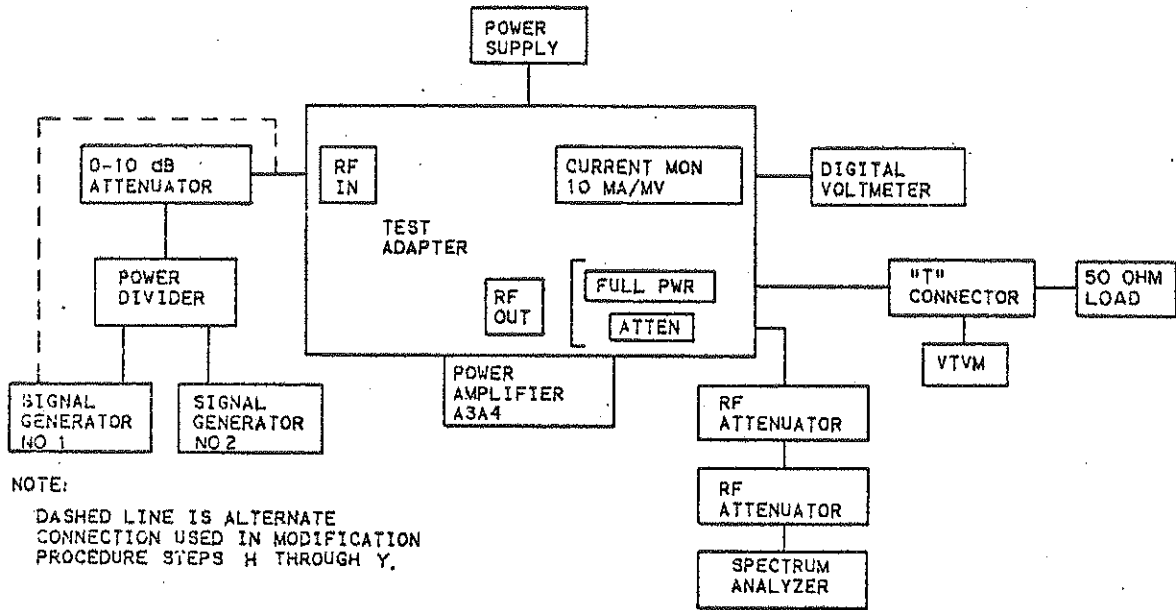


Loading Board A3A6A2
Figure 1

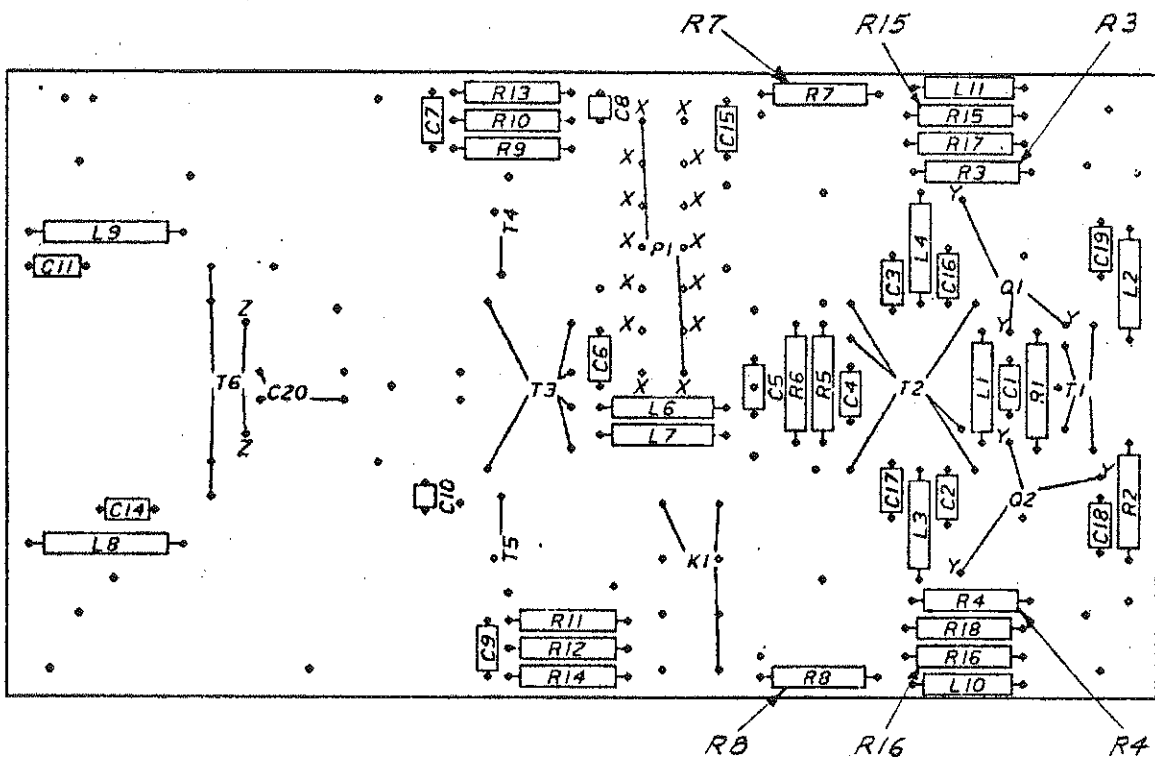


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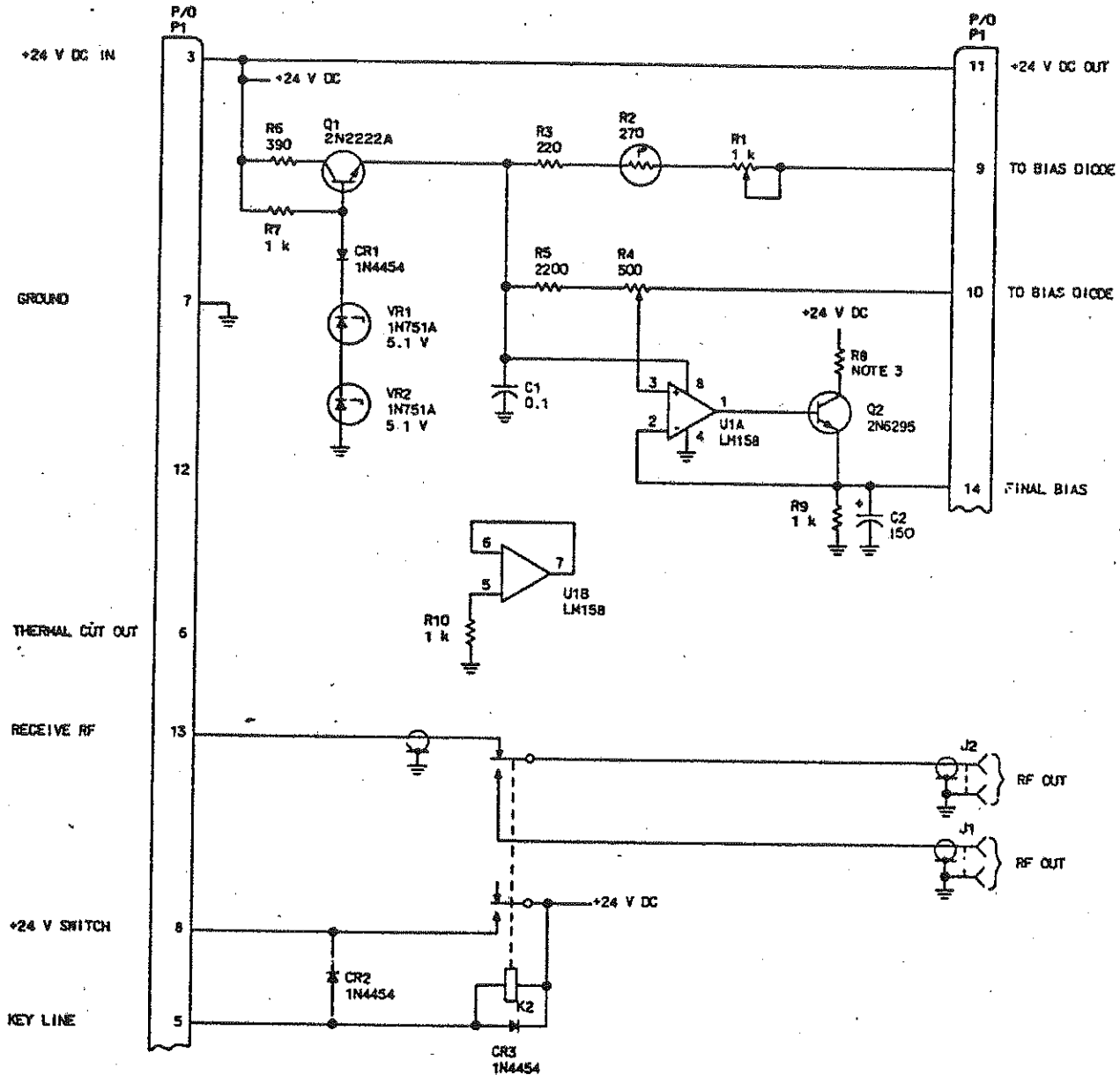
Test Setup Diagram
Figure 3





SERVICE BULLETIN

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NOTES:

1. UNLESS OTHERWISE SPECIFIED; RESISTANCE VALUES ARE IN OHMS AND CAPACITANCE VALUES ARE IN MICROFARADS.
2. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE DESIGNATION, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.
3. VALUE SELECTED DURING TEST.

634-6539

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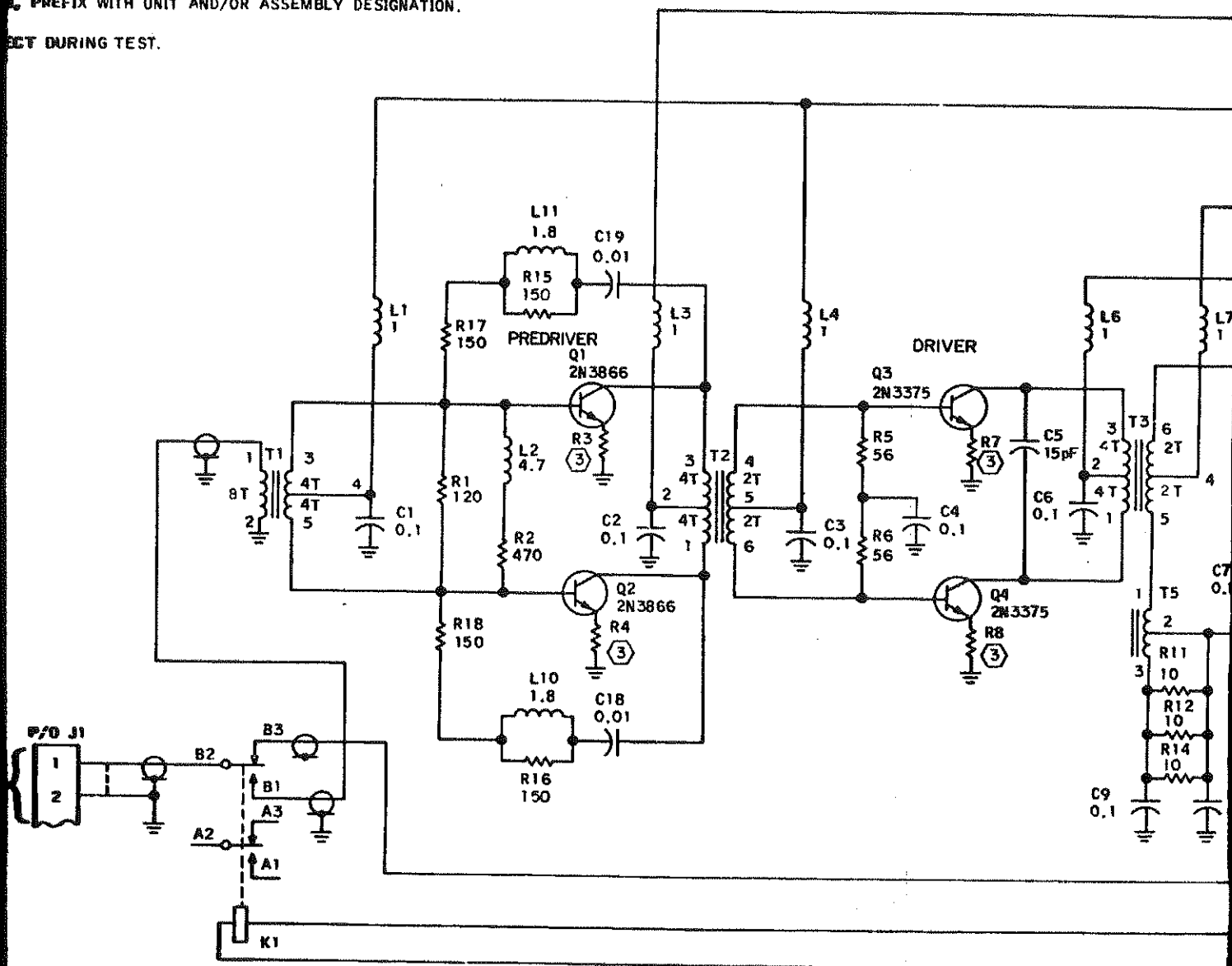
Communications Products Division/Rockwell International

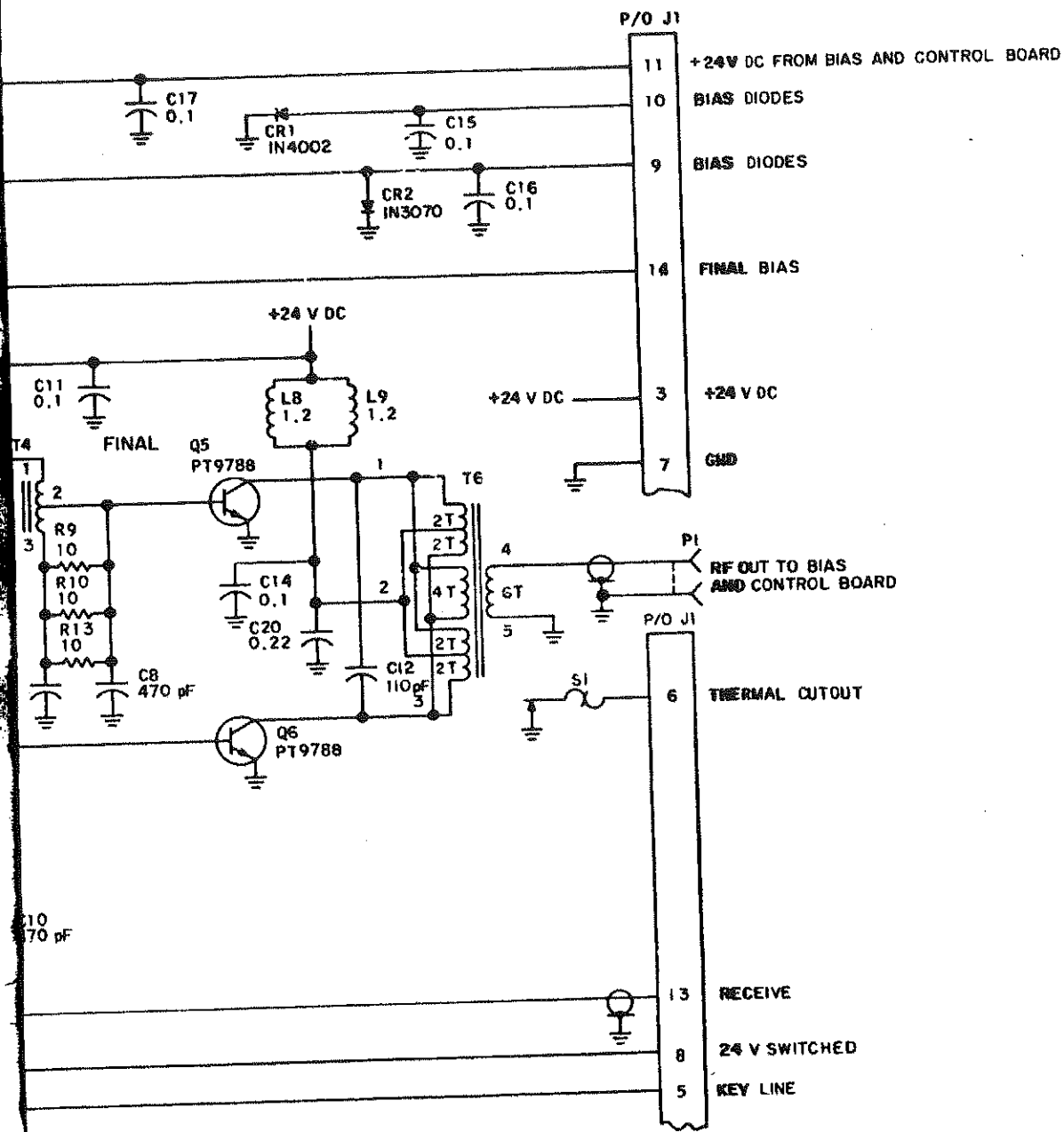
UNLESS SPECIFIED, RESISTANCE VALUES ARE IN OHMS,
CAPACITANCE VALUES ARE IN MICROFARADS, AND INDUCTANCE VALUES
ARE IN HENRYS.

REFERENCE DESIGNATIONS ARE SHOWN; FOR COMPLETE
PARTS LIST, PREFIX WITH UNIT AND/OR ASSEMBLY DESIGNATION.

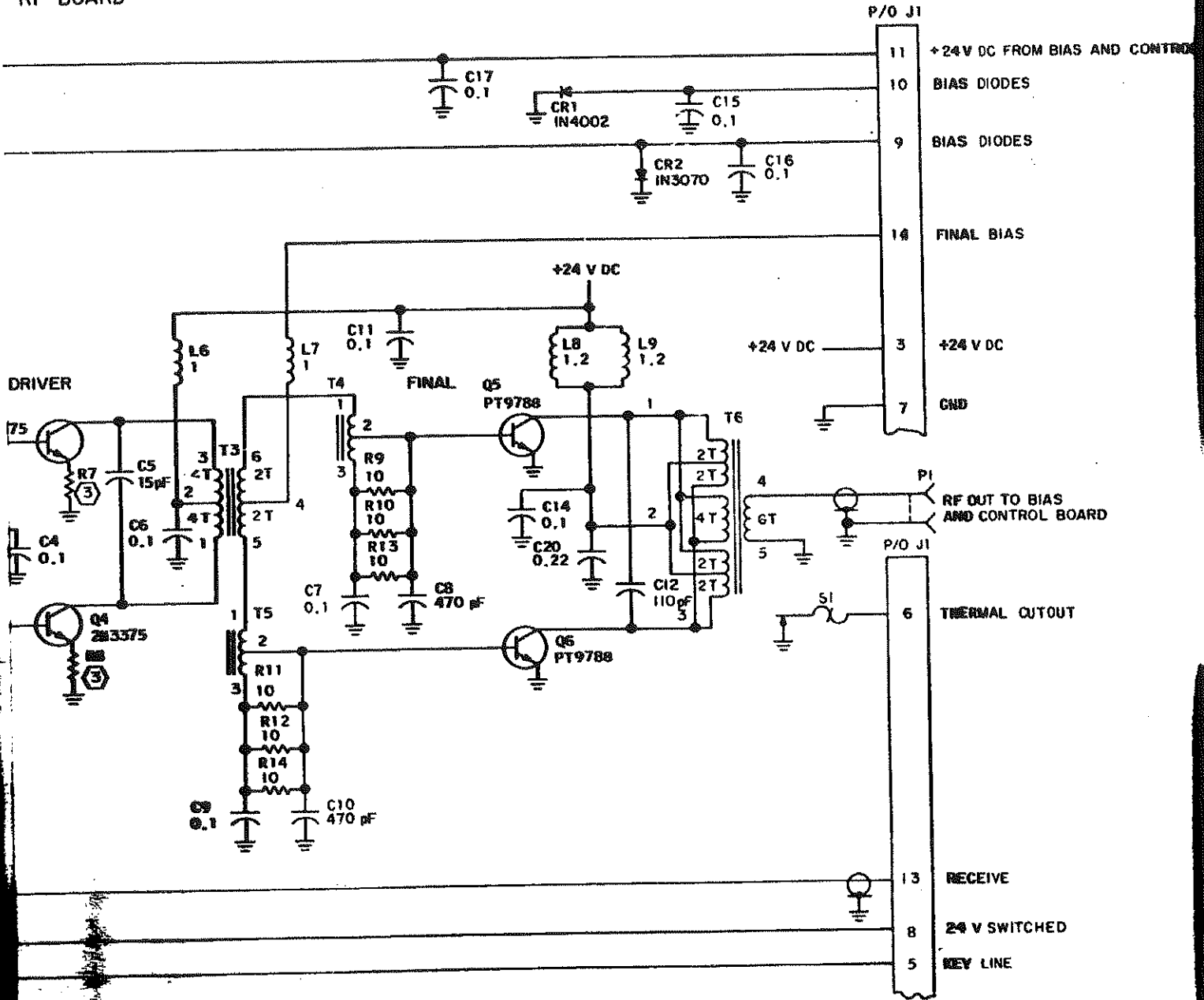
DO NOT REMOVE OR ADJUST DURING TEST.

RF BOARD





RF BOARD



P/O J1

- 11 +24 V DC FROM BIAS AND CONTROL BOARD
- 10 BIAS DIODES
- 9 BIAS DIODES
- 14 FINAL BIAS
- 3 +24 V DC
- 7 GND
- 4 RF OUT TO BIAS AND CONTROL BOARD
- 6 THERMAL OUTPUT
- 13 RECEIVE
- 8 24 V SWITCHED
- 5 KEY LINE