WJ-861X RECEIVER

APPENDIX T

WJ-861XB/PSM, PANORAMIC/SECTOR MARKER

DISPLAY OPTION

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WARNING

This equipment utilizes voltages which are potentially dangerous and may be fatal if contacted. Exercise extreme caution when working with the equipment with any protective cover removed.

PROPRIETARY STATEMENT

TABLE OF CONTENTS

APPENDIX T

LIST OF TABLES

LIST OF ILLUSTRATIONS

APPENDIX T

WJ-861XB/PANSEC, PANORAMIC/SECTOR MARKER DISPLAY (PSM) OPTION

T.1 GENERAL DESCRIPTION

The Panoramic/Sector Marker Display (PSM) Option produces digitally-refreshed X, Y, and Z outputs for display of two traces on an external X-Y-Z CRT, as illustrated in **Figure T-1.** The PSM Option provides the receiver with an additional scanning mode, enhancing the search capabilities of the WJ-861XB Receiver. During PANSEC operation, the lower CRT plot displays the PAN Scan trace. It provides a visual indication of the signal activity within the programmed start and stop frequencies of the scan. Located above the PAN Scan trace is the SECTOR trace which displays a selected portion of the PAN trace for higher resolution viewing. The center frequency and the frequency width of the SECTOR trace are operator controllable utilizing the tuning wheel and DWELL control, respectively, permitting any portion of the receiver frequency spectrum to be expanded in the SECTOR trace. The Sector Position Indicator, directly below the PAN trace, underscores the portion of the spectrum that is displayed on the SECTOR trace. During the PANSEC Scan mode, rotation of the tuning wheel controls the positioning of the Sector Position Indicator and displays the center frequency of the SECTOR trace in the FREQUENCY window. Selecting the PANSEC Decay mode of operation improves the operator's ability to locate and note transient signals. PANSEC Decay provides a reduction (by 1/2) of the displayed Sector Scan signal amplitude, after signal transmission ceases, each time the Sector Scan trace is refreshed. If the signal returns, the displayed signal amplitude increases to display the signal amplitude. Rotation of the DWELL knob (WIDTH) controls the width of the Sector Scan segment that is viewed. The Width control range is from 2 times the selected PAN IF bandwidth to the full width of the PAN display.

When in the Scan Continue mode, the external CRT provides a frozen display of all signal activity present during the last PANSEC scan. A Marker, directly above the SECTOR trace, is available to the operator, during Scan Continue, to aid in tuning signals that are displayed on the SECTOR trace. Rotation of the tuning wheel positions the frequency marker over the desired signal and the signal frequency of the marker is displayed in the FREQUENCY window of the receiver. Pressing the MSTR/SLAVE pushbutton produces a data "handoff" and a set marker on the external signal monitor. The set marker indicates the tuned frequency of the slave receiver.

T.2 INSTALLATION

To incorporate the PSM Option into the receiver, the software utilized must be revision level **3.0** or greater. The revision level is indicated on a label attached to the EPROM on the Microprocessor (A5A3). Software revision levels less than 2.0 require hardware changes in addition to the software revision change.

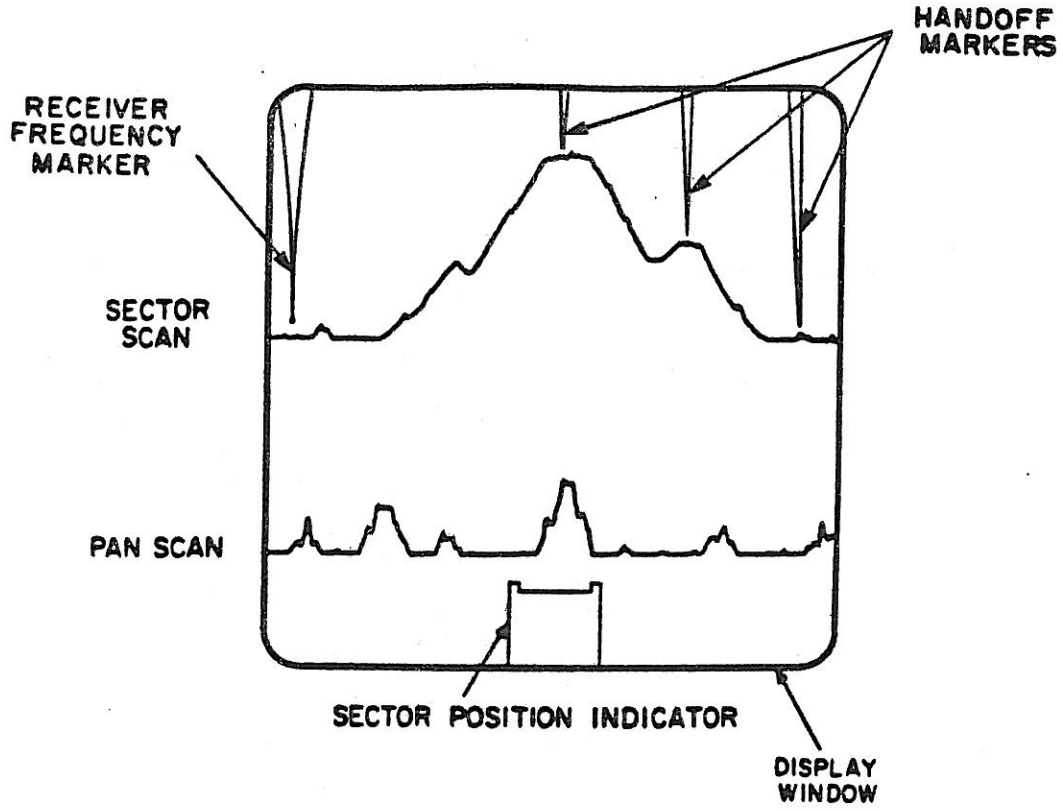

Figure T-1. PAN Scan Display

To facilitate incorporation of the PSM Option; remove the top and bottom covers from the receiver. Visually inspect the Microprocessor type number. If it is Type 796353-X verify a software revision level of **3.0** or greater for U4 and U5. If the Microprocessor is Type 794109-X check the following modules for the same software revision level (**2.2** or greater).

Nomenclature	Location	EPROM Location
Microprocessor	A5A3	U3,U4,U5,U6
*BITE (Option L)	Opt. Slot 3	U9
488 (Option D)	Opt. Slot 4	U6
*RLOG (Option J) Master/Slave	Opt. Slot 5	U9

*Present only if the receiver is configured with this option.

Install the following modules into their designated option slot.

Nomenclature	Location	Type Number
DRD (Option C)	Opt. Slot 2	796217-1
EM (Option M)	Opt. Slot 1	796185-X*

*EM Option Type Number 794137-X is NOT compatible for PANSEC operation.

NOTE

With Microprocessor A5A3 Type 796353-X only EPROM U4 and U5 are required. The BITE, 488 and RLOG require no EPROMs. The EM Option is not required, except when used with RLOG for the Real-Time Clock (RTC) Type 796185-11.

On the bottom of the receiver verify the connection of plug P38, on the A5 Digital I/O Motherboard, for PANSEC operation connect P38 to J5B. Ensure a wire wrap jumper (#30 insulated wire) is from J5B pin 3 to Option Slot 2 pin 6 and another jumper wire from J5B pin 6 to Option Slot 2 pin 12 (install it missing). Ensure R8 of the Receiver Interface (A5A1), Type 794018-X is 150 ohms. If not, install a 150Ω, 5%, 1/8 W resistor (P/N RCR05G151JS).

The PSM Option requires the utilization of an external X-Y-Z CRT. Connect the X OUT (J6), the Y OUT (J7) and Z OUT (J22) to the external monitor. Refer to **Figure T-2** for the placement of the upper case function decals (SECTOR WIDTH, PANSEC, WIDTH, PANSEC DECAY, 488 ADDR, and FBW SCAN). Place the PANSEC DECAY decal above the STEP key.

T.3 OPERATION

To place the receiver into PANSEC operation the unit must be in Manual Operation (the MAN key LED illuminated). With the receiver in the Manual mode, press the FUNCTION key (F ↑). The F LED illuminates indicating the receiver front panel is in the upper case operation mode. In the upper case mode, the BFO key becomes the PANSEC Selector/Indicator. Refer to **Table T-1** for an explanation of the PANSEC upper case keys and their functions. If the LED on the BFO key is illuminated, during upper case operation, the receiver is in the PANSEC mode. If the BFO LED is extinguished, in the upper case mode (not in PANSEC) pressing the BFO key places the unit into PANSEC operation, returning the front panel in the lower case operation mode (F ↑ key LED extinguished) and setting the receiver to Manual operation.

Programming the receiver to operate properly during PANSEC Scan is explained briefly here and in more detail in **paragraph T.3.2.** When in Manual PANSEC operation, enter the following parameters into the desired memory location (00 through 95). Memory locations are selected via pressing the Memory Up/Down keys, beneath the MEMORY SELECT window. Into the Even memory location (00, 02, 04 . . .94), enter the following parameters for the PAN Scan display:

Start FREQUENCY (of PAN display)
IF BANDWIDTH (for PAN Scan)

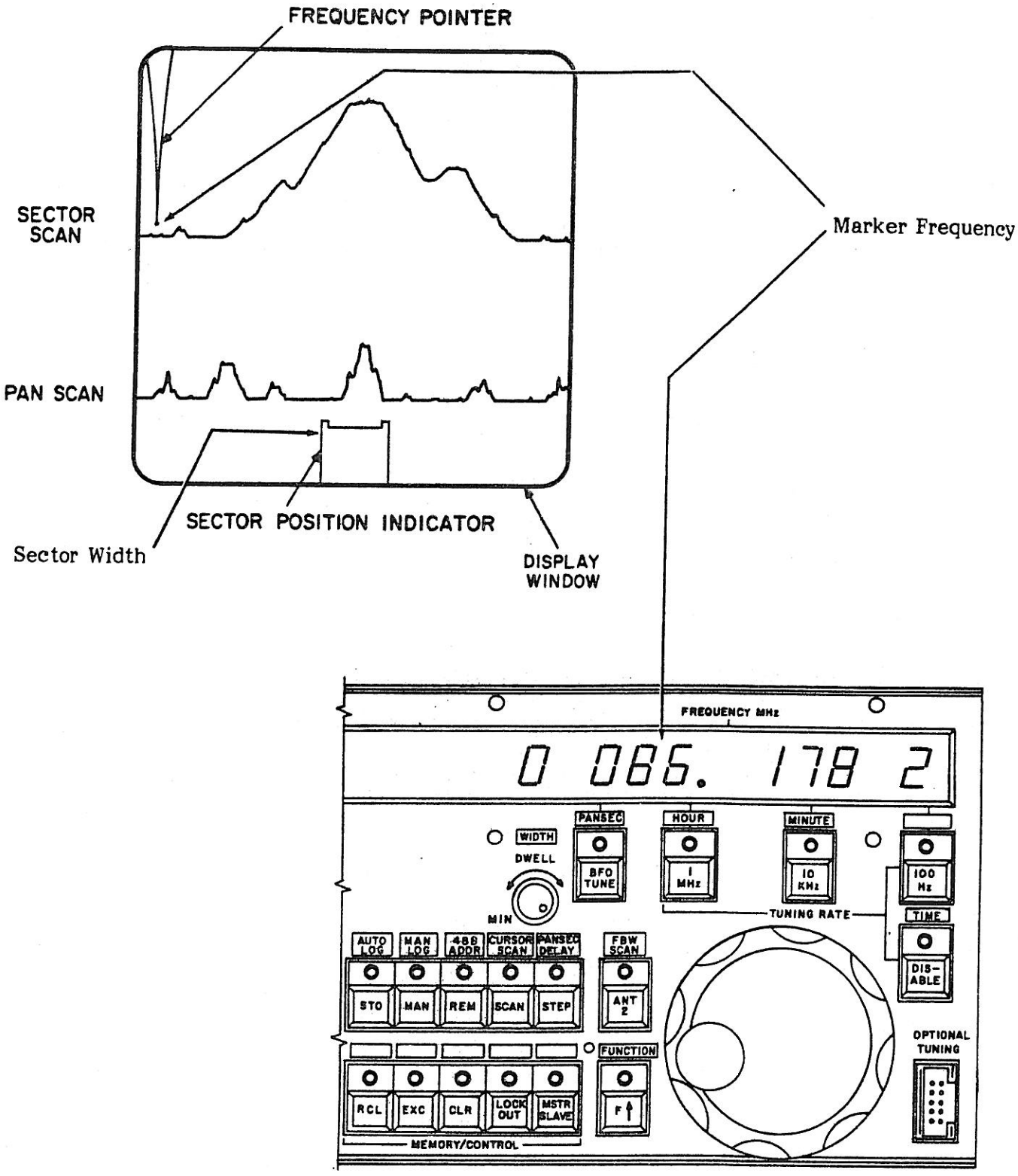

Figure T-2. Front Panel and Scan Continue Display

Table T-1. PANSEC Functional Control

Control	Selection	Operation
F ↑	Function	Selects upper case Operation.
BFO TUNE	PANSEC	Selects PANSEC mode of operation (BFO ON).
ANT 2	BW Step Size	Selects either Full BW steps (ANT 2 ON) or Half BW Steps (ANT 2 OFF) of the Bandwidth selected.
DWELL	Sector Position Indicator Bandwidth	Varies the bandwidth of the Sector Position Indicator.
TUNING	Sector Position Indicator and Marker	In PANSEC Scan - the tuning wheel varies the Sector Position Indicator location. The frequency displayed on the front panel indicates the center frequency of the Sector Scan trace. In Scan Continue - the tuning wheel varies the marker position. The frequency displayed on the front panel indicates the RF frequency of the signal pip positioned under the marker frequency.
RF/IF GAIN	Gain Level	Varies the gain of the signal level displayed on the Sector Scan display during PANSEC Scan.
BANDWIDTH	Sector Scan Resolution	Changes the bandwidth of the displayed Sector Scan trace. (Must be less than PAN BW.)
STEP	Delayed Sector Display Decay	Provides a delayed Scan signal decay when in Scan operation. When a displayed signal is no longer present, the amplitude of the signal on the Sector Scan trace decreases by 1/2 each time the trace is refreshed, indicating a signal interruption to the viewer.

The chosen parameters are entered into the memory location displayed in the MEMORY SELECT window via pressing the STO key. When the parameters are entered into memory the MEMORY SELECT is automatically incremented by one. Into this successive memory location, the Odd memory location, enter the following parameters for Sector Scan:

Stop FREQUENCY (of PAN display)
IF BANDWIDTH (Sector IF BW PAN BW)
DETECTION MODE
COR LEVEL (00 through 40)
AFC (if desired)
AGC or RF/IF GAIN Setting

The Start frequency must be less (lower in frequency) than the Stop frequency. These frequencies are selected via rotating the tuning wheel, and selecting the TUNING RATE key, to produce the desired frequencies.

The COR level is selectable from the theoretical noise floor level (00) to approximately 40 dB above the noise floor (40). COR LEVEL is controlled via the COR Up/Down keys located beneath the COR LEVEL display. A COR LEVEL of "--" indicates COR is disabled. The COR level entered for Sector is utilized during Scan Continue for audio switching. When AGC is not selected, the RF/IF GAIN control knob varies the signal amplitude displayed on the PAN Scan. Pressing the STO key enters these selected parameters into the Odd memory location.

Prior to selecting PANSEC operation the receiver must be correctly programmed to avoid errors and produce the desired scan. Improper receiver programming causes error codes to be generated when Continuous Scan is attempted (refer to the WJ-861X Receiver Instruction Manual for the ERROR CODES). Error code **815** indicates that the BANDWIDTH selected for the Stop frequency parameter is equal to or greater than the Start frequency bandwidth.

Selecting PANSEC Scan, via depressing the SCAN key, allows the PAN Scan display to be continuously refreshed. After the PAN Scan trace has been updated, the Sector Scan display is then updated. Rotating the tuning wheel varies the position of the Sector Position Indicator below the PAN Scan trace. Varying the width of the Sector Position Indicator, via the DWELL control, and the position of the Sector Position Indicator, via the tuning wheel, allows different portions of the PAN Scan trace to be displayed on the Sector Scan trace. While in PANSEC Scan, the sector bandwidth may be varied and RF/IF Gain may be varied to adjust the Sector Scan display.

The DWELL control is utilized to control the width of the Sector Position Indicator. Rotating the DWELL control counterclockwise (CCW), towards MIN, decreases the Sector Position Indicator width and increases the signal resolution. Rotating the DWELL control clockwise (CW), towards MAX, increases the width of the Sector Position Indicator and decreases signal resolution. The width of the indicator is adjustable between 10 kHz and 9.99 MHz. The Sector Position Indicator width is variable from a minimum width of 2 times the selected BANDWIDTH (1 times the BANDWIDTH in 1/2 BW step) to a maximum width of the entire PAN display.

While in PANSEC Scan mode of operation, PANSEC Decay may be selected via the following process. Select the Scan Continue mode by depressing the MAN key. Depress the F↑ key, placing the front panel into upper case operation, and then depress the STEP key PANSEC DECAY). The displayed Sector Scan trace signal level indicates the refreshed signal level. When the received signal is no longer present, each time the Sector Scan is refreshed the signal amplitude decreases by 1/2. As long as the signal does not return, the displayed signal level decreases until the signal disappears into the noise floor. Pressing the SCAN key again selects the PANSEC Scan operating mode.

Selecting Scan Continue allows the PAN Scan to continue displaying frozen signal levels while storing the signal information that was present on the Sector Scan trace at the time Scan Continue was selected. By retaining the signal information displayed on the Sector Scan, transient signals may be stored in order to determine their frequency. When in Scan Continue, the frequency of the stored signals may be determined by rotating the tuning wheel until the marker is centered above the desired signal response. Once the pointer is centered over the desired signal the FREQUENCY MHz displays the frequency of that signal (refer to **Figure T-2**).

PANSEC with markers enhances the PANSEC mode of operation. Scan Continue mode provides a marker on the top trace of the external signal monitor. When first entering into the Scan Continue mode, the marker is visible at the far left side of the signal monitor. The marker is an inverted pip, extending from the top of the CRT down to any signal activity on the Sector trace. Rotating the tuning wheel clockwise moves the marker from its lefthand starting position, across the monitor display from left to right. The marker frequency is displayed in the FREQUENCY window.

Once the tuning wheel has centered the marker over the desired signal, displayed on the external signal monitor, pressing the MSTR/SLAVE pushbutton dumps the master receiver parameters to the slave receiver address displayed in the MEMORY SELECT window. Device addresses are selectable from 00 to 14. Memory addresses 00-14 are set aside for marker memory. With the MEMORY SELECT window displaying number 00, pressing the MSTR/SLAVE key produces a marker on the monitor trace and dumps receiver data to device address 00. The marker visually indicates that signal data has been sent to another receiver on the IEEE-488 bus. Rotating the tuning wheel moves one marker, while the other marker remains at the handoff frequency. Up to 15 markers may be set, one marker for each device address on the IEEE-488 bus, and displayed on the PANSEC display.

After having set several markers on the PANSEC display, to determine which device corresponds to what marker, rotate tuning wheel and select the tuning resolution until the variable marker is centered directly over the set marker. Superimposing the variable marker on the set marker displays the slave device address in the MEMORY SELECT window. This allows the operator to determine the device that had received the frequency handoff data. Each time the variable marker is exactly centered upon a set marker, the address displayed in the MEMORY SELECT window changes to display the device address to which the data was sent.

With PANSEC enabled (upper case BFO) and Scan Continue selected (LEDs on MAN and SCAN keys illuminated) rotating the tuning wheel moves the marker position. The marker is seen as an inverted pip, extending down from the top of the external monitor to stop within approximately one fourth of an inch from the Sector Scan trace. The length of the marker is determined by the signal activity displayed on the Sector Scan trace. Rotating the variable marker across the displayed trace, the marker amplitude varies as it encounters signal activity. Once a marker has been set, and the data handed off, the amplitude of the marker does not vary. If the receiver is returned to the PANSEC Scan mode, and the signal that was present when the marker was set is not visible, the marker still indicates the signal frequency and the relative signal strength.

Scan Continue allows the operator to freeze a portion of the RF spectrum and set slave receivers to specific tuned frequencies, and then allows the operator to resume monitoring real-time signals. Any signal activity occurring at the handoff frequencies is detected by the receiver tuned to that specific frequency. Thus the operator can monitor greater portions of the RF spectrum and not miss specific signal activity occurring at the set marker frequencies.

Markers are set when the receiver is in the Scan Continue mode. Selecting the Scan Continue mode for the first time produces a marker at the far left of the external monitor display, extending down from the top of the CRT. Rotating the tuning wheel clockwise (CW) moves the marker across the monitor display, from left to right, in frequency steps determined by the selected TUNING RATE. Once the variable marker is centered above the desired signal, pressing the MSTR/SLAVE pushbutton outputs the receiver operating parameters and creates a marker on the signal monitor display. Receiver operating parameters are dumped to the slave device address displayed in the MEMORY SELECT window. After a handoff has occurred, the device address should be manually incremented to prevent the possibility of overwriting previous

data. Performing a handoff to the same device address causes previously sent data to be replaced with the data sent last. A second handoff, to the same device address, causes the previously set marker to disappear from the monitor display and to be reset at the presently tuned frequency.

Frequency separation between the set markers is determined by the Sector Scan width and the selected tuning resolution. Setting several markers close together, while in Scan Continue, can appear as one wide pulse during PANSEC Scan by increasing the Sector width. A wide marker pulse is created via decreasing signal resolution. Reducing the Sector width produces the individual set markers instead of one wide pulse.

Deletion of set markers is accomplished by pressing the CLR (Clear) pushbutton twice, clearing all of the set markers. Another method is to set all the device addresses (00-14) to the same tuned frequency. This results in having only one set marker displayed. The set markers may also be eliminated by exiting the PANSEC mode and then re-entering the PANSEC mode.

During Scan Continue, if the marker points to a displayed signal that exceeds the selected COR LEVEL, the COR ON LED illuminates. An audio signal can be heard by connecting a compatible headset to the PHONES jack connector and varying the AUDIO GAIN control. When AFC is enabled, during Scan Continue, the Frequency Pointer automatically centers above the signal (when within 1/2 of the selected BANDWIDTH) and tunes the displayed frequency to correspond to the new position of the pointer.

When PANSEC is disabled the external CRT displays the standard signal monitor trace, if this option is present in the receiver.

After the Installation Procedure has been completed and an external monitor is connected, the following PANSEC general operating procedures may be performed.

T.3.1 PANSEC SELECTION

a. Press the MAN key once (or twice if necessary) to place the unit into Manual operation.

b. Press the F↑ key to place the front panel keys into the upper case function. (The LED on the F↑ key illuminates to indicate upper case operation.)

c. Observe the BFO key, (if the LED is illuminated the receiver is in PANSEC) if the LED is not illuminated press the BFO key. Pressing the BFO key causes:

   1. The F↑ key LED to be extinguished.

   2. The receiver is now in the PANSEC mode, Manual operation, Full BW Step, and the front panel is in lower case function.

T.3.2 PANSEC PROGRAMMING

a. In Manual operation Press the Memory Select Up/Down keys to select the desired memory location from 00 to 95.

b. In an EVEN numbered Memory Select location:

   1. Enter the desired Start frequency by rotating the Tuning knob. (Tuning resolution may be varied by pressing the desired TUNING RATE key: 1 MHz, 10 kHz or 100 Hz.)

   2. Select the desired PAN bandwidth via pressing the respective BANDWIDTH key.

c. Press the STO (store) key to enter the preceding parameters into the selected memory location.

   1. The STO key LED illuminates momentarily.
   2. The parameters are entered into Memory Select.
   3. The Memory Select numerical display increments by one.

d. In this ODD numbered Memory Select, enter the following parameters:

   1. The desired Stop frequency, (greater in frequency than the Start frequency) via the tuning wheel.

   2. A Sector BANDWIDTH narrower than the bandwidth selected for the Start frequency (the EVEN Memory Select).

   3. The desired Sector DETECTION MODE.

   4. Enter the desired Sector COR LEVEL via the Up/Down COR keys (00-40).

   5. AGC enabled, if desired, by pressing the AGC key. If not selected, set RF/IF GAIN control knob for desired signal amplitude.

   6. AFC enabled, if desired, by pressing the AFC key.

e. Press the STO key, thus entering the selected parameters into memory.

T.3.3 OPERATION OF PANSEC

a. Set the receiver MEMORY SELECT to the EVEN numbered memory location containing the Scan Start frequency. Press the SCAN key placing the receiver in Scan mode. Pressing the Scan key produces the following indications:

1. The SCAN key LED is illuminated.

2. The receiver is scanning from the Start frequency to within 1 BANDWIDTH (1/2 BANDWIDTH during Half BW Step) of the Stop frequency.

3. The COR LEVEL alternately flashes "--" and the selected COR LEVEL entered into the ODD Memory Select.

b. Rotate the Tuning knob, moving the Sector Position Indicator in Full BW steps (or Half BW steps) to center it under the desired portion of the PAN Scan displayed trace.

c. Rotate the RF/IF GAIN control, on the front panel, to adjust the signal level amplitude displayed on the Sector Scan trace.

d. Depress the MAN key to store the signal displayed on the Sector Scan trace. Pressing the MAN key produces the following conditions:

1. The MAN key LED is illuminated.

2. The SCAN key LED is illuminated.

3. The receiver PAN Scan trace continues to be refreshed and the external CRT PAN Scan and Sector Scan display signal data that was present at the time Scan Continue was selected.

4. Rotating the Tuning knob moves the Frequency Pointer across the top of the Sector Scan trace.

5. The front panel frequency display now represents the frequency of the Frequency Pointer and is displayed at the center of the receiver's signal monitor.

e. Depressing either the MAN key, disabling the PANSEC Manual scan operation and returns the unit to Manual control, or the SCAN key, returning the receiver to Scan Continue operation and allowing the signal information on the Sector Scan trace to be refreshed.

NOTE

M/S (Master/Slave) works as a single dump while PANSEC is enabled. It sends all the front panel information in one burst to a slave unit. RLOG is functional while in Scan Continue, if this option is present in the receiver.

T.3.4 EXITING PANSEC MODE

To exit the PANSEC mode of operation and return the receiver to normal scan operation:

1. Press the F↑ key to place the front panel to upper case operation.
2. Press the BFO key to extinguish the LED on the BFO key, disabling PANSEC and returning the front panel to standard operation.

T.3.5 TYPE 861XB/PSM REF DESIG PREFIX

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
A1	Revision A Digital Refresh Display Assembly	1	796217-1	14632	

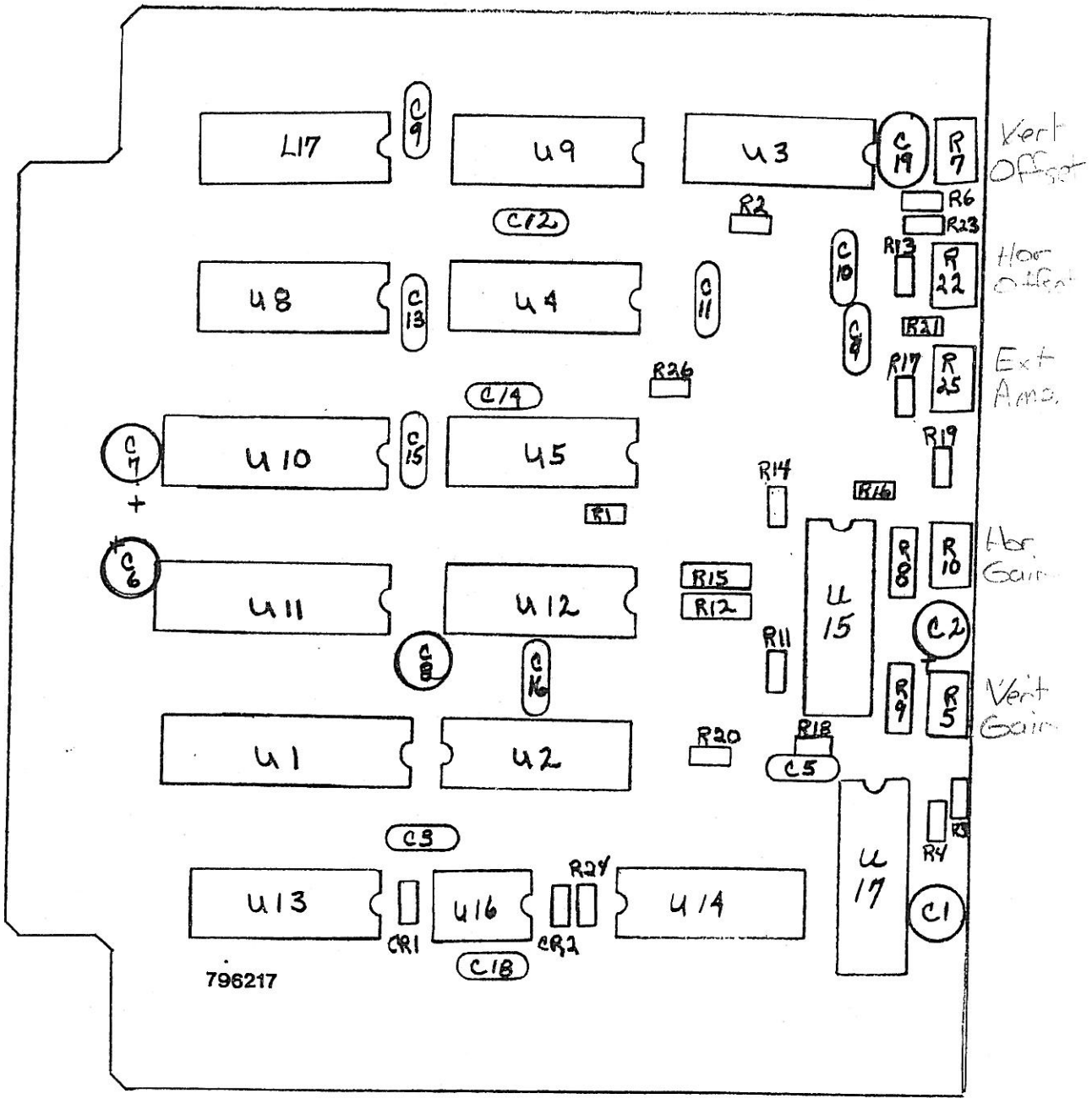

Figure T-3. Type 796217-1, Digital Refresh Display Assembly (A1), Location of Components

T.3.5.1 Type 796217-1 Digital Refresh Display Assembly REF DESIG PREFIX A1

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
	Revision F				
C1	Capacitor, Electrolytic, Tantalum: 10 µF, 20%, 20 V	2	199D106X0020CE3	56289	
C2	Same as C1				
C3	Capacitor, Ceramic, Disc: .1 µF, 20%, 50 V	10	34475-1	14632	
C4	Capacitor, Ceramic, Disc: 2200 pF, 10%, 200 V	1	CK06BX222K	81349	
C5	Capacitor, Mica, Dipped: 47 pF, 2%, 500 V	1	CM04ED470G03	81349	
C6	Capacitor, Electrolytic, Tantalum: 47 µF, 20%, 20 V	3	199D476X0020EE4	56289	
C7	Same as C6				
C8	Same as C6				
C9 Thru C16	Same as C3				
C17	Not Used				
C18	Same as C3				
C19	Capacitor, Mica, Dipped: 470 pF, 2%, 500 V	1	DM15-471G	72136	
CR1	Diode	2	5082-2811	28480	
CR2	Same as CR1				
R1	Resistor, Fixed, Film: 3.3 kΩ, 5%, 1/8 W	4	CF1/8-3.3K/J	09021	
R2	Same as R1				
R3	Resistor, Fixed, Film: 2.2 kΩ, 5%, 1/8 W	1	CF1/8-2.2K/J	09021	
R4	Resistor, Fixed, Film: 470Ω, 5%, 1/8 W	1	CF1/8-470 OHMS/J	09021	
R5	Resistor, Trim, Film: 10 kΩ, 10%, 1/2 W	2	62PAR10K	73138	
R6	Resistor, Fixed, Film: 33 kΩ, 5%, 1/8 W	2	CF1/8-33K/J	09021	
R7	Resistor, Trim, Film: 200 kΩ, 10%, 1/2 W	2	62PAR200K	73138	
R8	Resistor, Fixed, Film: 560Ω, 5%, 1/4 W	1	CF1/4-560 OHMS/J	09021	
R9	Resistor, Fixed, Film: 2.4 kΩ, 5%, 1/4 W	1	CF1/4-2.4K/J	09021	
R10	Same as R5				
R11	Resistor, Fixed, Film: 680Ω, 5%, 1/8 W	2	CF1/8-680 OHMS/J	09021	
R12	Resistor, Fixed, Film: 100Ω, 5%, 1/4 W	2	CF1/8-100 OHMS/J	09021	
R13	Resistor, Fixed, Film: 100 kΩ, 5%, 1/8 W	1	CF1/8-100K/J	09021	
R14	Same as R11				
R15	Same as R12				
R16	Resistor, Fixed, Film: 8.2 kΩ, 5%, 1/8 W	2	CF1/8-8.2K/J	09021	
R17	Resistor, Fixed, Film: 120 kΩ, 5%, 1/8 W	1	CF1/8-120K/J	09021	
R18	Same as R16				
R19	Resistor, Fixed, Film: 150Ω, 5%, 1/8 W	1	CF1/8-150 OHMS/J	09021	
R20	Same as R1				
R21	Resistor, Fixed, Film: 22 kΩ, 5%, 1/8 W	1	CF1/8-22K/J	09021	
R22	Same as R7				
R23	Same as R6				
R24	Resistor, Fixed, Film: 15 kΩ, 5%, 1/8 W	1	CF1/8-15K/J	09021	
R25	Resistor, Trimmer, Film: 500Ω 10%, 1/2 W	1	62PAR500	73138	

REF DESIG PREFIX A1

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
R26	Same as R1				
U1	Transceiver	1	MM74HCT245N	27014	
U2	Quad D-type Flip-flop	1	MM74C175N	27014	
U3	Quad 2-input NOR Gate	1	SN74LS02N	01295	
U4	Decoder/Demultiplexer	1	SN74LS139N	01295	
U5	Binary Counter	1	SN74LS161AN	01295	
U6	Not Used				
U7	Data Selector	3	SN74ALS157N	01295	
U8	Same as U7				
U9	Same as U7				
U10	RAM	2	P2114AL4	34649	
U11	Same as U10				
U12	Binary Counter	1	CD4040BE	02735	
U13	Digital/Analog Converter	2	AD7524JN	24355	
U14	Same as U13				
U15	Multivibrator	1	SN74LS123N	01295	
U16	Op Amplifier	1	MC1458N	18324	
U17	Analog Switch, DPST	1	DG302CJ	17856	
XU10	Socket, Integrated Circuit, 18 pins	2	518AG10D	91506	
XU11	Same as XU10				