WJ-861X RECEIVER

APPENDIX Q

WJ-861X PLUGGABLE KEYBOARD CONTROL (PKC) 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

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APPENDIX Q

WJ-861X PLUGGABLE KEYBOARD CONTROL (PKC) OPTION

Q.1 GENERAL DESCRIPTION

The Pluggable Keyboard (PKC) option, provides a means of rapidly inputting frequency information into the WJ-861XB Receiver. The keyboard plugs into the existing optional tuning connector on the receiver front panel and permits receiver tuning, memory programming and the initiation of lock-out channels.

Q.2 INSTALLATION

Installation of the PKC option requires the Type 796203-1, Keyboard Control. The Keyboard Control, which plugs into the receiver front panel, contains a 16-key keyboard for entering data into the receiver. Refer to **Table Q-1** for a description of the key functions. The Keyboard Control mounting bracket permits the keyboard to be mounted on the receiver handle or it can be detached and operated as a hand-held or table-top controller.

Q.3 OPERATION

Frequency information is entered into the receiver, starting with the most significant digit, using keys 0 through 9 and the decimal key. As the frequency is entered, the receiver displays the keyed in frequency. The actual tuned frequency of the receiver is not changed, from its previous setting, until the TUN, STO, or LCK key is depressed. If the CLR key is depressed, at any time, the receiver display and tuned frequency are reset to 20.0000 MHz. No other parameter or memory location is affected by the keyboard CLR key.

Q.4 CIRCUIT DESCRIPTION

The option designation for this subassembly is PKC. Refer to **Figure Q-2** for a schematic diagram of the Type 796203-1, Keyboard Control.

Power from the Front Panel Display and Control assembly (A6) is applied to this subassembly via P1 which plugs into the front panel connector, J1. +5 volts is applied to the keyboard encoder via pin 20. The actual keyboard is made up of 16 normally open switches arranged as a matrix. This matrix is connected to the keyboard encoder via the X and Y connections. When a pushbutton is depressed, the keyboard encoder determines which pushbutton was depressed causing the AVL line to go high. Each time a normally open pushbutton is depressed, closing the circuit, data output is provided to the receiver microprocessor via connector P1. The microprocessor pulls the OE* line low, enabling the keyboard encoder to output data to the data bus. Note, the binary equivalent of the pushbutton depressed does not appear on the data bus. Refer to **Table Q-2** for the binary code that is present on the data bus. Keyboard encoder, U1 has a capacitor setting its oscillator frequency.

*Indicates active LOW

This frequency is what the chip senses everytime a pushbutton is depressed, closing the circuit. Because of the bouncing nature of mechanical switches, a debounce circuit is incorporated within the keyboard encoder.

Table Q-1. Keyboard Control, Key Functions

Key	Description
0-9	Keys 0 through 9 are utilized to enter the digits of the desired frequency. The frequency is entered, starting with the most significant digit of the number.
decimal	The decimal key is used for entering the fractional MHz component of the tuned frequency. The digits entered after the decimal key is depressed determine the 100 kHz, 10 kHz, 1 kHz and 100 Hz resolution, respectively.
TUN	The TUN key tunes the receiver to the frequency displayed on the receiver frequency display.
STO	The STO key performs the tune function and stores the frequency, along with all other parameters displayed on the front panel, into the memory channel that is displayed in the memory select window. When the STO key is depressed, the number in the memory select window is incremented by 1.
LCK	The LCK key performs the tune function and also creates a lock-out channel. The Lock-Out option must be incorporated in order to create a lock-out channel.
CLR	The CLR key resets the receiver tuned frequency and frequency display to 20.0000 MHz. This key affects only the frequency. All other receiver settings and the memory channels are unaffected.

Table Q-2. Binary Equivalents for each Pushbutton

Switch Position	Data Out				
	A	B	C	D	E
X1, Y1 (7)	0	0	0	0	0
X2, Y1 (8)	1	0	0	0	0
X3, Y1 (9)	0	1	0	0	0
X4, Y1 (TUN)	1	1	0	0	0
X1, Y2 (4)	0	0	1	0	0
X2, Y2 (5)	1	0	1	0	0
X3, Y2 (6)	0	1	1	0	0
X4, Y2 (STO)	1	1	1	0	0
X1, Y3 (1)	0	0	0	1	0
X2, Y3 (2)	1	0	0	1	0
X3, Y3 (3)	0	1	0	1	0
X4, Y3 (LCK)	1	1	0	1	0
X1, Y4 (0)	0	0	1	1	0
X2, Y4 (.)	1	0	1	1	0
X3, Y4 (*)	0	1	1	1	0
X4, Y4 (CLR)	1	1	1	1	0

Q.4.1 TYPE 796203-1 KEYBOARD ASSEMBLY

REF DESIG PREFIX A1

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
	Revision A				
A1	Key Encoder	1	280262-1	14632	
U1	Keyboard	1	190156-1	14632	

400270-
#

Q.4.1.1 **Part 280262-1 Keyboard Encoder** REF DESIG PREFIX A1A1

REF DESIG	DESCRIPTION	QTY PER ASSY	MANUFACTURER'S PART NO.	MFR. CODE	RECM VENDOR
	Revision A				
C1	Capacitor, Electrolytic, Tantalum: 4.7 µF, 10%, 35 V	1	CS13BF475K	81349	
C2	Capacitor, Electrolytic, Tantalum: 1 µF, 10%, 35 V	1	CS13BF105K	81349	
C3	Capacitor, Ceramic, Disc: 0.1 µF, 20%, 50 V	1	34475-1	14632	
U1	Integrated Circuit	1	MM74C923N	27014	

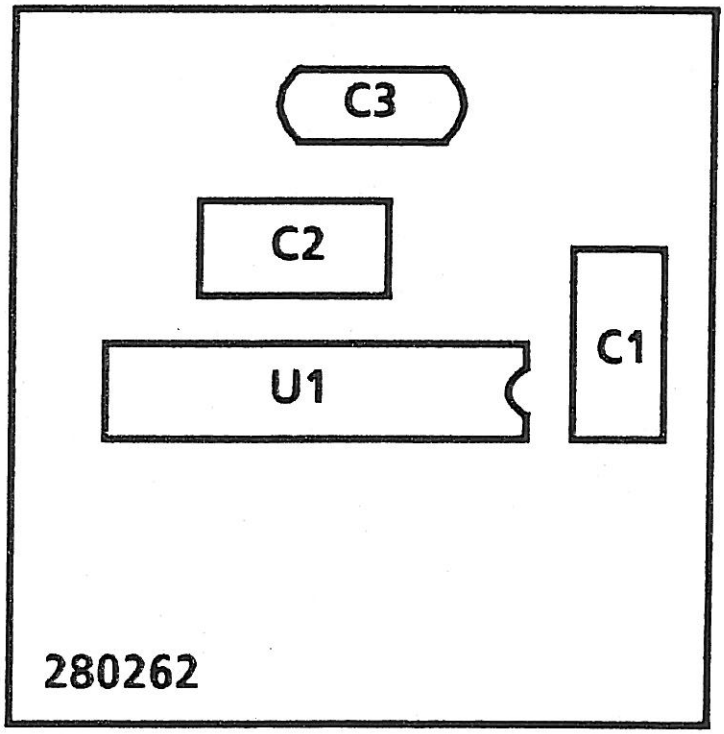

Figure Q-1. Part 280262-1, Keyboard Encoder (Option Q - PKC), Location of Components