

Receiver Alignment

Connect a AC Volt Meter or Metered Dummy Load across the speaker terminals for measurement.

TEST EQUIPMENT TO USE & CONNECTION	RADIO SETTINGS			INSTRUCTIONS
	Channel	Mode	Clarifier Pos.	
Set signal generator to 27.185, 30% Modulation, Output 100 μ V	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	AM	Center	Adjust VR1 so that the S-meter reads '9'. Then set mode selector to USB and adjust VR2 so that the S-meter again reads '9'.
Noise Blanker Adjustment Set signal generator to 27.185, No Modulation, Output 100 μ V	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	AM NB/ANL Switch on	Center	Connect a DC volt meter to TP1 and adjust L1 and L2 to obtain a 2.5 volt \pm 0.5v reading.

Transmitter Alignment Procedure

TEST EQUIPMENT TO USE & CONNECTION	RADIO SETTINGS			INSTRUCTIONS
	Channel	Mode	Clarifier Pos.	
Connect DC mA meter to TP9 (+) and TP8 (-)	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	USB		Key radio with no modulation and adjust VR11 for 20 mA \pm 0.5 mA.
Connect DC mA meter to TP9 (+) and TP7 (-)	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	USB		First adjust VR10 and VR20 to their minimum position (fully counter clockwise). Key radio with no modulation and adjust VR10 to 50 mA \pm 5mA and then adjust VR20 to 100mA \pm 5mA
RF Wattmeter to Antenna Connector, Key radio and Inject a 1000Hz 30mV to mike audio input (Pin 2)	(5 Band Version) 40 E Band (6 Band Version) 40 F Band	USB		Adjust VR12 and L42 for maximum RF output. Next adjust L40, L43, L44 and L33 for maximum RF output . Repeat these adjustments again. Next adjust L42 for equal power output on CH40 E Band and CH1 A Band.
RF Wattmeter to Antenna Connector Key radio and Inject a 2-tone (500Hz and 2400 Hz 30mV) audio signal to mike audio input (Pin 2)	(5 Band Version) 40 E Band (6 Band Version) 40 F Band	USB		Adjust VR12 for maximum output. <i>Be sure that you do not adjust VR12 past the 2:00 position. Doing so can cause damage to the RF outputs and / or cause severe distortion on transmit.</i>
RF Wattmeter to Antenna Connector, RF power full, Key radio.	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	AM		Adjust VR13 for desired HI power AM/FM output power
RF Wattmeter to Antenna Connector, RF power set to Low (fully counter clockwise), Key radio.	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	AM		Adjust VR803 for desired Low power setting on AM/FM. <i>VR803 is located on switch function selector board.</i>
RF Wattmeter to Antenna Connector, ter clockwise , Key radio.	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	AM		Adjust VR8 so that the internal RF power meter reads the same as the external RF meter
Modulation Meter to Antenna Connector, Key radio and Inject a 400Hz 30mV audio signal to mike audio input (Pin 2).	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	AM		Adjust VR14 for desired AM Modulation
Connect a deviation meter or a linear detector meter to antenna connector. Key radio and inject a 1000Hz 30mV audio signal to the mike audio input. (Pin 2).		FM		Adjust VR5 for 2 to 3 KHz of FM deviation
Connect a 8 Ohm dummy load and a AC Voltmeter to the external Speaker jack, and connect a key switch to the key switch jack. Key Switch to on.		CW		Adjust VR16 for a 200mv \pm 10mV reading on the AC voltmeter for CW Tone level.

Synthesizer Alignment				
TEST EQUIPMENT TO USE & CONNECTION	RADIO SETTINGS			INSTRUCTIONS
	Channel	Mode	Clarifier Pos.	
Input of frequency counter to the junction of C78 and C79				Check for 10.2400 \pm 20Hz
Input of frequency counter to TP6 (Anode of D27)		CW		Adjust L26 for 10.6950 MHz \pm 0, -100Hz
Input of Frequency counter to TP6 (Anode of D27)		USB		Adjust L27 for 10.6925 MHz \pm 0, -100Hz
Input of frequency counter to TP6 (Anode of D27)		LSB		Adjust L28 For 10.6975 MHz \pm 0, -100Hz
Input of Oscilloscope to TP4 (Junction of C82,R107 & L46)	(5 Band Version) 19 C Band AM (6 Band Version) 19 D Band AM			Adjust L16 for maximum RF output
Input of Oscilloscope to TP3 (Jumper J58)	(5 Band Version) 40 E Band AM (6 Band Version) 40 F Band AM			Adjust L18 for maximum RF output.
Connect DC volt meter to TP2 (Junction of R109 and C81)	(5 Band Version) 40 E Band AM (6 Band Version) 40 F Band AM			Adjust L17 for 5.0 V \pm 0.1V Check Ch17 A Band, must be 1.5V minimum
Connect Frequency counter to TP3 (Jumper J58)	(5 Band Version) 19 C Band AM (6 Band Version) 19 D Band AM	Center		Adjust L19 for 16.490 MHz \pm 50Hz
(Same as Above)	(5 Band Version) 19 C Band USB (6 Band Version) 19 D Band USB	Center		Adjust L20 for 16.4925 MHz \pm 50Hz
(Same as Above) *	(5 Band Version) 19 C Band LSB (6 Band Version) 19 C Band LSB	Center		Adjust L21 for 16.4875 MHz \pm 50Hz

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	Channel	Mode	Clarifier Pos.	
Connect signal generator to Ant input. Set to 27.185, 30% Mod, output 50µV.	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	AM AM	Center Center	Adjust L3, L4, L6, L7, L8, L10, L11, L12 for maximum indication on AC Volt Meter or Dummy Load.
Set signal generator to 26.186, No Modulation, output 50µV	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	USB USB	Center Center	Adjust L13, L14 for maximum indication on Ac Volt Meter or Dummy Load.
Set signal generator to 27.185, and apply a 1µV, FM signal with 1.5KHz Deviation with 1Khz audio to Ant. Input.	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	FM FM	Center Center	Readjust L5 for maximum indication on AC Volt Meter or Dummy Load.
Set signal generator to 27.185, 30% modulation, 1000µV.	(5 Band Version) 19 C Band (6 Band Version) 19 D Band	AM AM	Center Set squelch to full clockwise pos. Center Set squelch to full clockwise pos.	Adjust VR4 so that the squelch just breaks. Readjust VR4 until squelch just quiets unit.