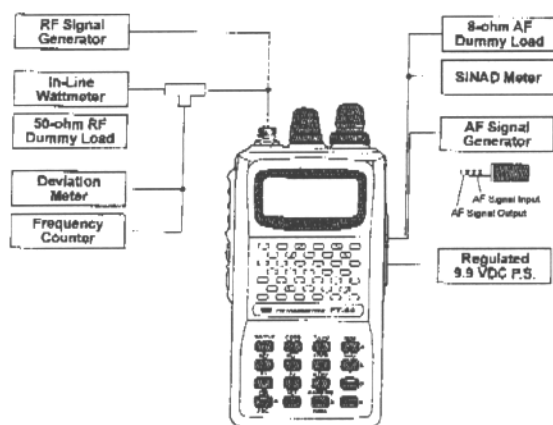


# Alignment

## Test Setup

Set up the test equipment as shown below for transceiver alignment, and apply 9.9 V DC power to the transceiver. Refer to the drawings for Alignment Points.



FT-60R ALIGNMENT SETUP

## Entering the Alignment Mode

Alignment of the FT-60R is performed using a front panel software-based procedure. To perform alignment of the transceiver, it must first be placed in the "Alignment Mode," in which the adjustments will be made and then stored into memory.

To enter the Alignment mode:

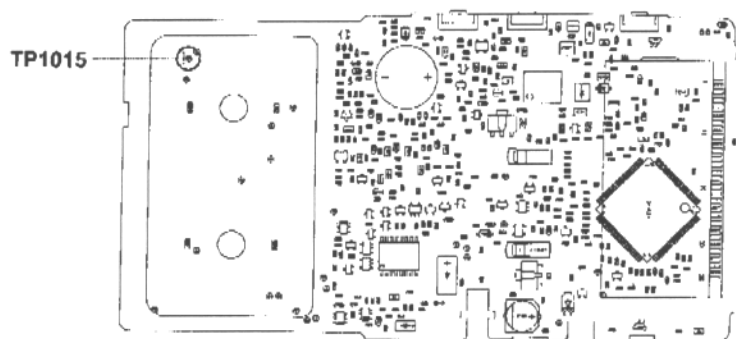
1. Press and hold in the **MONI** and **LAMP** switches turning the radio on. Once the radio is on, release these two switches.
2. Press the keypad in the following sequence:  
[**▲**(MHz)] → [0(**8**)]SET] →  
[1(SQ TYP)] → [7(P1)] → [V/M(PRI)]
3. Press the **[F/W]** key to cause "AO REF.xxx" to appear on the display for five seconds, this signifies that the transceiver is now in the "Alignment Mode."

## PLL Reference Frequency

1. Tune the frequency to 435.050 MHz, then set the transmit power level to "LOW."
2. Press the **[F/W]** key, then press the **[BAND(BAND DN)]** key to set the alignment parameter to "AO REF.xxx," if needed.
3. Within five seconds of appearing the "AO REF.xxx" on the display, press the **PTT** switch to activate the transmitter, adjust the **DIAL** knob so that the counter frequency reading is 435.050 MHz ( $\pm 100$  Hz).

## RF Front-end Tuning

1. Connect the DC voltmeter to **TP1015** on the MAIN unit, then inject a 439.050 MHz signal at a level of +10 dB $\mu$  (with 1 kHz modulation @ $\pm 3.5$  kHz deviation) from the RF signal generator.
2. Tune the frequency to 439.050 MHz.
3. Press the **[F/W]** key, then press the **[BAND(BAND DN)]** key to set the alignment parameter to "A1 TUN.xxx."
4. Within five seconds of appearing the "A1 TUN.xxx" on the display, adjust the **DIAL** knob so that the DC voltmeter reaches maximum deflection. The FT-60R's RF Front-end has a broad bandwidth. Therefore, prior to adjustment you must adjust the **DIAL** knob to set the frequency to the middle of the band, in step 2, so you can set peak in the DC voltmeter's deflection in the center of the RF passband.
5. Tune the frequency to 145.050 MHz.
6. Inject a 145.050 MHz signal at a level of +10 dB $\mu$  (with 1 kHz modulation @ $\pm 3.5$  kHz deviation) from the RF signal generator.
7. Press the **[F/W]** key to recall the alignment parameter to "A1 TUN.xxx."
8. Within five seconds of appearing the "A1 TUN.xxx" on the display, adjust the **DIAL** knob so that the DC voltmeter reaches maximum deflection. As in the previous section, be sure to set the **DIAL** knob for the center of the band prior to making this adjustment.



MAIN UNIT TEST POINT