# ALIGNMENT PROCEDURE AND PERFORMANCE TESTS

## 6.1 GENERAL

Receiver or transmitter alignment may be necessary if repairs are made that could affect tuning. Alignment points diagrams are located in Figure 6-3 or component layouts are located in Section 8.
Fabricate test cables by referring to Section 2.2 Interfacing with Data Equipment. This cable should include power and ground, a transmit keying switch that applies 5.5 VDC to the Rx and Tx Enable, data input and data output. The test setup must apply the various supply voltages and load the synthesizer with channel information.

## 6.2 ALIGNMENT PROCEDURE

### 6.2.1 VCTCXO SETUP (Y801)

1. Apply 7.2 Vdc +\-0.1 Vdc to pins 3, 4, and 5.
2. Verify 2.5 Vdc +\- 0.05 Vdc is on pin 10.
3. Set Y801 (the VCTCXO) to 14.400000 MHz +\- 6.0 Hz (+\- 0.4PPM)

### 6.2.2 FREQUENCY AND CONTROL LINE VOLTAGE CHECK

1. Connect the test setup shown in Figure 6-1. Set the power supply for +7.2V DC.
2. Load the synthesizer with the channel frequency.
3. Connect a DC voltmeter at TP831 to measure the VCO control line voltage for a meter reading of ≥ 0.50 - ≤ 5.0VDC for all desired frequencies of operation in both transmit and receive.

### 6.2.3 100mW TRANSMITTER POWER ALIGNMENT

1. Connect the test setup shown in Figure 6-1. A DC ammeter capable of measuring up to 2.0 A should be installed in the supply line.
2. Load the synthesizer with the desired channel frequency.
3. Set the IDSS of the final by shorting TP601. To Ground R521, turn counter-clockwise for minimum transmit current. Note the current and adjust R521 for 200 mA more current.
4. Key the transmitter and make sure that pins 3, 4, and 5 on the RF board are 7.2V.

**(Do not transmit for extended periods.)**

5. Adjust C552 for 100 milliwatts output power.