FS2000 Alignment Procedure

1. **Align PLL Voltage:**
   - 1.1 Terminate antenna to 50 ohm Loading
   - 1.2 Connect the voltage probe to the TP13 of RF board to measure the PLL voltage
   - 1.3 Switch "PTT" Button to TX mode
   - 1.4 Align the spring coil (L1) to set a PLL voltage in TX mode at 2.6 – 2.8V
   - 1.5 Switch the PLL to RX mode and check PLL voltage is within 1.8 – 2.4V

2. **Align Tx Frequency:**
   - 2.1 Connect the RF probe to Antenna of the RF board
   - 2.2 Switch "PTT" Button to TX mode
   - 2.3 Align trimmer capacitor C137 so that frequency error is within +/- 400Hz

3. **Check TX power:**
   - 3.1 Connect the RF power meter to the Antenna of the RF board
   - 3.2 Check the RF TX power is 440mW

4. **Align 450kHz Quad-Coil:**
   - 4.1 Connect the IF probe to the main board
   - 4.2 Set 21.4MHz IF-Generator Audio modulation: 1kHz @1kHz DEV
   - 4.3 Set main board to Volume Level 9
   - 4.4 Align T1 for maximum o/p Level at SPK+ of the main board
   - 4.5 Check the distortion at "speaker +" is below 5%. (No Filter)
   - 4.6 Measure output at SPK+ is within 90mVrms to 120mVrms.(No filter)

5. **Align RSSI:**
   - 5.1 Connect the RF probe to Antenna of the RF board
   - 5.2 Set RF Signal Gen.: Mod. Freq. : 1KHz, 1.5kHz Deviation; Level = -50dBm
   - 5.3 Set to Volume Level 9 of the main board
   - 5.4 Reduce RF level to get 12dB SINAD at "speaker +" (No Filter)
   - 5.5 Check the Rx sensitivity is below -118dBm. (No Filter)
   - 5.6 Adjust R141 so that the speaker output goes from "ON" to intermittent.

6. **Align Limiting Modulation:**
   - 6.1 The Sound Source should provide a sound pressure level of 110dBSPL at microphone of the unit.
   - 6.2 Switch "PTT" Button to TX mode, deviation limiting should be observed.
   - 6.3 Align trimpot resistor R55 of Main Board to Max. modulation is 1.8-1.9 kHz Deviation (15kHz LP Filter)