



## 9. Alignment instructions

### WARNING

Any repairs or adjustments should be made under the supervision of a qualified radio-telephone technician.

### TRANSMITTER

#### 1. Power Supply Voltage

The Power supply voltage should be set for 4.5 VDC measured at the radio during transmit. Periodically check the power supply voltage during the alignment procedure.

#### 2. Frequency Setting

- A. Connect a frequency counter or Communications Service Monitor to the antenna connector through an RF power attenuator (10 watt minimum rating, 20 dB minimum attenuation).
- B. Depress the PTT switch.
- C. Adjust the CTX1 trimmer capacitor such that the output frequency is equal to the channel frequency with a maximum error of  $\pm 200$  Hz.
- D. Release the PTT switch.

#### 3. Output Power Alignment.

- A. Set the power supply voltage for 4.5 VDC.
- B. Connect a Communications Service Monitor or a wattmeter and dummy load to the antenna connector.
- C. Depress the PTT switch.
- D. To be convinced for 0.5 Watt output power with a maximum error of  $\pm 0.05$  Watt.
- E. Release the PTT switch.

#### 4. Deviation Adjustment.

- A. Connect an audio generator to the microphone jack JIG. The audio frequency should be set at 1 KHz.
- B. Connect an FM deviation meter or Communications Service Monitor to the antenna connector through an RF power attenuator (10 watt minimum rating, 20 dB minimum attenuation). Set the monitor to read peak deviation.
- C. Depress the PTT switch.
- D. Adjust the audio generator level 100 mV rms.
- E. Adjust VR201 for  $\pm 2.4$  KHz maximum deviation. (with ctcss tone)
- F. To be convinced  $\pm 1.8$  KHz without ctcss tone. (1.2 KHz dev. 20dB up)
- g. Release the ptt switch.



## RECEIVER

### NOTE:

Insure that the proper channel has been selected before preceding with the alignment procedure.

#### 1. Power Supply Voltage

The proper voltage for testing is 4.5 VDC.

#### 2. Receiver Alignment

- A. Connect an RF signal generator or Communications Service Monitor to the antenna connector.
- B. Connect a SINAD meter and oscilloscope across the speaker terminals.
- C. Set the output level of the RF signal generator for -47 dBm. the generator should be set for +/- 1.5 KHz deviation of a 1 KHz tone.
- D. Set the audio output level for 0.6 Vrms. by adjusting volume.
- E. Reduce the output level of the RF signal generator for produce a 6-12 dB SINAD indication.