Preparation

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ALIGNMENT PROCEDURES

RECEIVER PART

1) BPF-101 and BPF-102 alignment

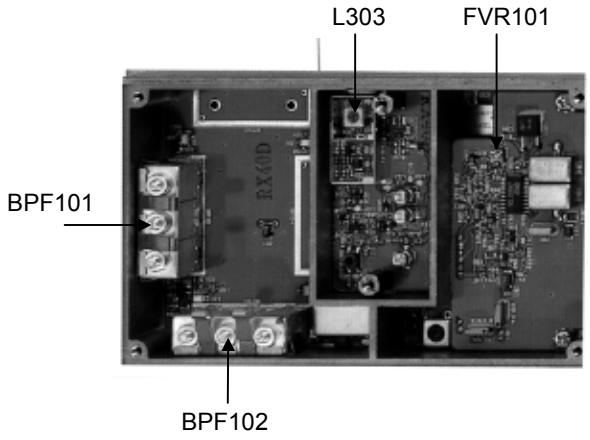
   Connect the signal generator to the Rx antenna connector of the unit. Align the BPF-101 and BPF-102 to obtain the maximum sensitivity. For better alignment, if you have spectrum analyzer and tracking generator, connect the tracking generator to the Rx antenna connector and pick up the output signal from J101 to connect spectrum analyzer. Align the BPF-101 and BPF-102 to cover the desired bandwidth of receiving frequencies.

2) FVR101 alignment

   This is to adjust the tight squelch level.

3) VCO alignment

   The VCO has been aligned at the factory to cover full bandwidth. However, if you need to re-adjust the VCO when you repair, set the VCO voltage at 10.5V by L303 at the highest band frequency.



TRANSMITTER PART

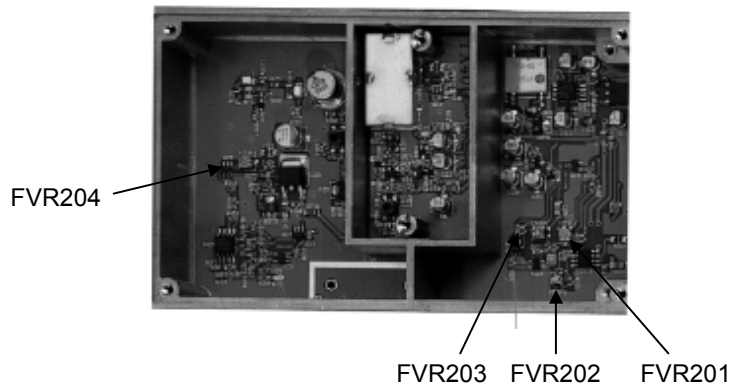
1) FVR201 alignment
   This potentiometer determines the modulation level. Carefully align FVR201 to obtain flat deviation from the lowest to the highest frequency installed in the transmitter.

2) FVR202 alignment
   This potentiometer determines the low frequency (below 300Hz) deviation. When CTCSS or DCS are used, it is necessary to align FVR202 to have enough deviation at low frequency.

3) FVR203 alignment
   FVR203 sets the maximum deviation, normally set at 5KHz. 2KHz or 2.5KHz deviation, for narrow spacing, can be selected with the programming software.

4) FVR204 alignment
   FVR204 adjusts the output power supplied to the transmitter.

5) VCO alignment
   The VCO has already been aligned at the factory, however if you need to re-adjust, set the VCO voltage to 10.5V at the highest band frequency.



Preparation

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POWER AMPLIFIER PART

1) With APC off, obtain maximum power reading by adjusting FVC502, 503, 504, 505, and 506.

2) FVR501
   Adjust FVR501 for minimum reverse power when the antenna is terminated with 50 ohms load.

3) FVR502
   FVR502 sets the point where reverse power is detected.

4) FVR503
   FVR503 sets the point where a low-power-alarm is triggered.

5) FVR504
   FVR504 sets the maximum power from the power module, however, do not exceed 110 watts +/- 2%.

6) FVR505
   FVR505 sets the high-temperature protection level.

7) FVR506
   FVR506 sets the PA bias to the correct current. This is a factory setting and does not need adjustment in normal alignment practice.

Service note: Touching the gate of a FET power device can cause damage to the device.

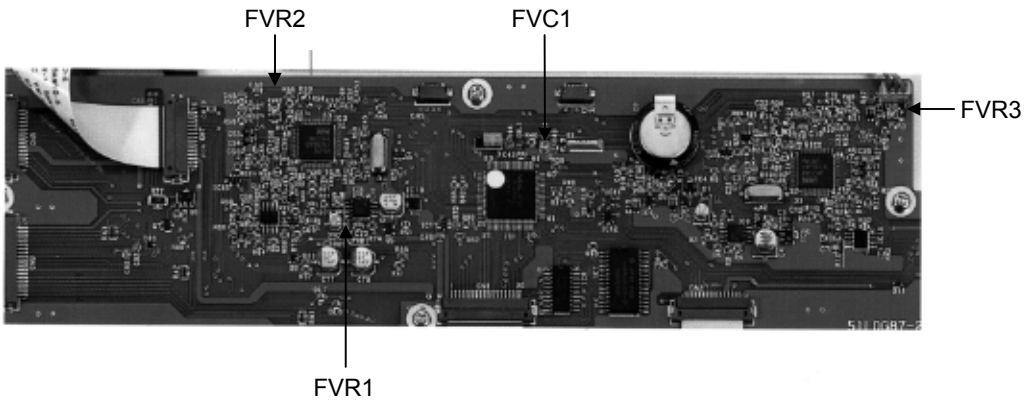
LOGIC PART

1) FVR1 alignment
   Set FVR1 to obtain 0dBm output into 600 ohms.

2) FVR2 alignment
   Adjust FVR2 for flat deviation level when used for a repeater.

3) FVR3 alignment
   FVR3 adjusts the power level indicator on the LCD.

8) FVC1 alignment
   Use FVC1 to shift the CPU clock frequency when necessary. A beat interference sometimes happens at certain frequency. In such case, shifting the CPU clock frequency may eliminate the interference.



FRONT CONTROL PANEL PART

1) VR401 alignment
   This is a volume controller.

2) VR402 alignment
   This is a squelch level controller.

3) FVR401 alignment
   Use FVR401 to set the HI-POWER-LEVEL of the Tx output power.

4) FVR402 alignment
   Use FVR402 to set the LO-POWER-LEVEL of the Tx output power.

5) FVR403 alignment
   This is to set the contrast of the LCD back light.