

2. ALIGNMENT INSTRUCTIONS

WARNING

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

2-1. VCO

2-1-1. Power Supply Voltage

The power supply voltage should be set for 6.0 Vdc.

2-1-1. VCO Adjustment

- A. Connect high impedance voltmeter between R302 and C311
- B. Adjust L302 for 1.0V.

2-2. TRANSMITTER

2-2-1. Power Supply Voltage

The power supply voltage should be set for 6.0 V DC measured at the radio during transmit. Periodically check the supply voltage during the alignment procedure.

2-2-2. Frequency Setting

- A. Connect a frequency counter or Communications Service Monitor to the antenna connector through an RF power attenuates (5 watt minimum rating, 20 dB minimum attenuation).
- B. Depress the PTT switch.
- C. Adjust the TCXO such that output frequency is equal to the channel. Frequency with a maximum error of ± 300 Hz.
- D. Adjust CT301 for ± 300 Hz.
- E. Release the PTT switch.

2-2-3. Output Power Alignment

- A. Set the power supply voltage for 6.0 V DC.
- 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 2.0 watt output power with a maximum error of ± 0.2 watt.
- E. Release the PTT switch.

2-2-4. 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 communication Service Monitor to the antenna connector Through an RF power attenuates (5 watt minimum rating, 20 dB minimum attenuates). Set the monitor to read peak deviation.
- C. Depress the PTT switch.
- D. Adjust the audio generator level 100 mV rms.
- E. Adjust RV721 for 2.3 KHz maximum deviation.
- F. Release the PTT switch.

2-3. RECEIVER

Note : Insure that the proper channel has been selected before proceedings with the alignment procedure.

2-3-1. Power Supply Voltage.

The proper voltage for testing is 6.0 V DC.

2-3-2. 12dB SINAD Alignment

- A. Connect an RF signal generator or Communications Service Monitor to the antenna connect.
- 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 12 dB SINAD indication.

2-3-3. Squelch Alignment

- A. Connect an RF signal generator or Communications Service Monitor to the antenna connect.
- B. Connect a SINAD meter and oscilloscope across the speaker terminals.
- C. Set the output level of the RF signal generator for -125 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. Adjust RV101 for audio output disappears.

3. SEMICONDUCTOR AND FUNCTION

3-1. Transistor

Ref No.	Description	Manufacturer	Function
Q101	2SC4226	NEC	RX RF Amplifier
Q102	2SC4226	NEC	RX Mixer
Q103	KTC3880	KEC	RC IF Amplifier
Q201	KRC104S	KEC	AF Mute Control
Q202	KTA1504S	KEC	AF Mute Control
Q301	2SC4226	NEC	VCO OSC
Q302	2SC4226	NEC	VCO Buffer Amplifier
Q303	KRC104S	KEC	TX VCO Switching
Q421	KTC3875S	KEC	Tone Detector
Q601	2SC4226	NEC	TX RF Amplifier
Q602	2SC4226	NEC	TX Driver Amplifier
Q603	NE5510279A	NEC	TX Power Amplifier
Q604	KRC104S	KEC	Power Hi/Low Control
Q701	2SC4226	NEC	VOX Amplifier
Q704	KRC104S	KEC	Mic Mute
Q802	KRC104S	KEC	AF Path
Q901	KRA105S	KEC	RX B+ Control
Q902	KRA105S	KEC	TX B+ Control
Q903	KRA105S	KEC	VCO B+ Control
Q907	KRC111S	KEC	Back Light LED Control

3-2. Integrated Circuit

Ref No.	Description	Manufacturer	Function
IC101	DBL5018	Daewoo	2 nd IF Mixer/AF Detector
IC301	TB31202FN	Toshiba	PLL IC
IC801	HD6438024	Hitachi	CPU
IC201	LM386	National	AF Amplifier
IC901	R1120N331B	RICOH	3.3V Regulator
IC802	24C02	Samsung	EEPROM
IC401C,402A	DBL324	Daewoo	RX HPF
IC402B,C,D	DBL324	Daewoo	RX Tone LPF(Tone Detector)
IC401A,B,D	DBL324	Daewoo	TX BPF