

# GXT555

## ALIGNMENT PROCEDURE

### 1. REFERENCE TEST EQUIPMENT

- A. HP8921A Cell site test set or HP8920A, B Communication Test Set with Spectrum Analyzer option.
- B. Fluke 187 Digital Voltmeter
- C. HP E3615A Power supply

### 2. TEST POINT

- A. ANTENNA : Test point is not prepared. Use antenna contact with ANTENNA\_GND\_T(antenna ground).
- B. VCO reference voltage : Test point 1 is prepared.
- C. RX audio output : Test point SPKOUT is prepared or use ear-jack(3.5mm).
- D. TX Mic. Input : Test point MICIN is prepared or use ear-jack(2.5mm) with 10uF coupling capacitor.
- E. Battery Vcc : Test point is not prepared. Please use mechanical contact.
- F. Up Key : Test point UP is prepared.
- G. Down Key : Test point DW is prepared.
- H. Function Key : Test point Menu is prepared.
- I. Monitor Key : Test point SCAN is prepared.
- J. PTT Key : Test point PTT is prepared.
- K. CALL Key : Test point CALL is prepared.

**Note. : All key can be activated when connect with ground.**

### 3. VCO ALIGNMENT

- A. Set unit to Channel 1 and connect a voltmeter to TP1 (VCO PD).
- B. Press & hold PTT.
- C. Extend L303 until the voltmeter reads 2.0V.
- D. ***Cover shield-plate on VCO can and monitor the voltage on TP1.*** The voltage should be 1.5Vdc +/-0.2Vdc. If the voltage is not 2.0Vdc +/-0.2Vdc, realign L303 until meet to requirement.
- E. Release PTT button so units is in receiving mode and monitor the voltage on TP1. The voltage should be in the range 2.0Vds +/-0.5V
- F. Set unit to channel 14.
- 6. Press & hold the PTT switch and observe the voltage on TP4. The voltage should be 2 – 3,5 Vdc.
- 7. Release PTT and observe the voltage on TP4. The voltage should read between 2.0 - 3.5 Vdc.

**Note : VCO shield-can should be soldered after VCO alignment is finished.**

### 4. TRANSMITTER FREQUENCY ALIGNMENT

- A. Press & hold the PTT button.
- B. Align CT201 trimmer capacitor such that the output frequency is equal to the channel frequency with a maximum error of +/- 200 Hz. CT201 is located on the left side of 20.95MHz X-tal.

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### **5. TRANSMITTER OUTPUT POWER CONFIRMATION**

- A. Set unit to channel 1 and power Hi mode.
- B. Press & hold the PTT button.
- C. Transmit power should normally be between 3.2W to 4.5W.
- D. Set unit to channel 14.
- E. Press & hold the PTT button. Ensure that Tx Power should be between 0.3-0.6W.

### **6. TRANSMITTER DEVIATION ALIGNMENT**

- A. Connect an audio generator (600 ohms) to the ear jack. The audio frequency should be set at 1KHz with a level of 200mV RMS.
- B. Connect an FM deviation meter (communications test set) to Antenna contact. Set the monitor to read peak to peak divided by two  $[(pk-pk)/2]$  deviation. Set filter of equipment from 25Hz to 15KHz.
- C. Press & hold the PTT button.
- D. Align RV2 for +/- 2.2 kHz deviation (+/-0.1KHz). RV2 is located on the bottom of the VCO shield can.
- E. Decrease audio generator level until deviation reads +/- 1.5 kHz (approximately 4mV) and record generator level. Level should be between 2 mV and 5 mV.
- F. Confirm that transmit audio distortion is less than 5%.

### **7. RECEIVER ALIGNMENT**

- A. Set the output level of the RF signal generator for -47dBm. The generator should be set for 1.5 kHz deviation at 1 kHz audio.
- B. Set volume level 4 (It is initial.).
- C. Connect Audio analyzer to SPKOUT.
- D. Set equipment filter 25Hz to 15KHz.
- E. Confirm that Rx Sensitivity is less than -120dBm (nominally -123dBm) by reducing the output level of the RF signal generator until a 12 dB SINAD reading is achieved.
- F. Set SSG output level until 9dB sinad sensitivity and align RV1 until the unit is un-squelched.
- G. Set signal generator level to -47dBm.
- H. With 1.5KHz deviation at 1KHz modulation, set volume for maximum audio. Audio level should be on over than 1.9Vrms.

### **8. BATTERY INDICATOR CONFIRMATION**

- A. Set unit to receiving mode. Don't set transmitter mode..
- B. Set power supply voltage to 6V.
- C. Decrease power supply voltage until low battery icon blinks.

### **9. POWER OFF CURRENT CONSUMPTION**

- A. Set power supply voltage to 6V and connect to unit.
- B. Confirm current. It must be less than 100uA.

### **10. FREQUENCIES TABLE**

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<b>Channel</b>	<b>Freq. MHz</b>	<b>Channel</b>	<b>Freq. MHz</b>
1	462.5625	12	467.6625
2	462.5875	13	467.6875
3	462.6125	14	467.7125
4	462.6375	15	462.5500
5	462.6625	16	462.5750
6	462.6875	17	462.6000
7	462.7125	18	462.6250
8	467.5625	19	462.6500
9	467.5875	20	462.6750
10	467.6125	21	462.7000
11	467.6375	22	462.7250