

ALIGNMENT PROCEDURE

LD-06001

Doc No.

Rev : 01

Date :20060704

Prepared by :

Approved by :

1. TRANSMITTER ALIGNMENT (TEST CONDITION: USE 7.2VDC 2A SUPPLY)			
NO.	ITEM	ALIGNMENT METHOD (WITH PRODUCTION SPEC.)	REMARKS
1.1	Rx / Tx VCO	<ol style="list-style-type: none"> 1. Connect a voltmeter between R301 (TP) on PCBA 2. Check the lower voltage should less than or equal to 0.5VDC. 3. Check the higher voltage should greater than or equal to 3VDC. 4. Connect PTT button to ground. 5. Check Tx VCO should be 1.8+/- 0.3V on CH01. 6. Release PTT button. Press and hold the MON button monitor LED will be on. 7. Check Rx VCO should be 1.3+/- 0.3V on CH1. 	
1.2	Tx Frequency	<ol style="list-style-type: none"> 1. Connect PPT button to ground and select CH1. 2. Adjust VR421 until TX frequency should be 450. 12500MHz+/- 0.30 kHz. 	
1.3	Tx Power	<ol style="list-style-type: none"> 1. Connect PPT button to ground and select CH1 and CH2 2. Check Tx power should be $\geq 3.5W$ at Ant point 	
1.4	Tx Modulation Check CTCSS Tone Dev. Check CTCSS Freq. Error Check Max. Deviation	<ol style="list-style-type: none"> 1. Connect PTT button to ground and Select CH1. 2. Apply 10mVrms with 1 kHz at mic input. 3. Adjust VR1 until the frequency deviation 2.5k +/- 0.1 kHz and check distortion should less than 3%. 4. And also check if Tx frequency response as below: 300Hz = 1+/- 0.2kHz. And 2.5kHz = 3.0kHz +/- 0.2kHz. 5. Select CH1 with Code 1, 12, 38 , the CTCSS Dev = 0.6 +0/-0.15 kHz 6. Select CH15 with code 1, 12,38, the CTCSS Dev = 0.6 +0/-0.15kHz 7. Check CTCSS Code 12 should be 100Hz+/-0.2%. 8. Increased MIC input signal to +40dB; check max deviation should less than 4 kHz and less than 4.5k with CTCSS. 	
1.5	Current Drain at max. Dev	<ol style="list-style-type: none"> 1. Connect PTT button to ground and selected CH1. 2. Check TX current should less than 1800mA with max deviation. 	

2. RECIEVER ALIGNMENT (TEST CONDITION: USE 6VDC 1.2A SUPPLY)			
NO.	ITEM	ALIGNMENT METHOD (WITH PRODUCTION SPEC.)	REMARKS
2.1	Check Rx Audio Level Rated Audio Output Power	<ol style="list-style-type: none"> 1. Set RF generator to CH1 (450.12500MHz) and set RF output to -47dBm with 2.5 kHz deviation/1kHz. 2. Terminated speaker point with 4 ohm load. 3. Set speaker output level to 0.8V of unit. Check distortion should be less then 3%. 4. Set speaker output level to 1.3Vrms. Check distortion should be less then 4.5%. 5. Set speaker output level to max. Check distortion should <10%. 	
2.2	Rx Sensitivity	<ol style="list-style-type: none"> 1. Set RF generator to CH1 (450.12500MHz) and set RF output to -47dBm with 2.5 kHz deviation/1kHz. 2. Set speaker output to 0.8V of unit and decrease RF output level to 12 dB 	

		sinad. 3. Check RF output level of RF generator should less than -120dBm. 4. Set RF generator to CH2 with 2.5 kHz dev/1kHz.and decrease RF output level to 12 dB sinad. 5. The RF output level should less than -120dBm.	
2.3	Rx Audio with CTCSS Check RX Sens. with CTCSS Check CTCSS Tone Decoder	1. Select CH1 with CTCSS Code 12. 2. Set squelch mode level to Lo. 3. Apply -47dBm RF signal with 2.5 kHz deviation/1kHz and external input of RF Gen with 0.6kHz deviation/100Hz as CTCSS code. 4. A 1 kHz signal will be heard from speaker. 5. Set speaker output to 0.8V and decrease RF level to 8dB sinad. 6. The speaker should be on. 7. Increase RF output level to -47dBm and change the external input Freq. of RF Gen. to 200Hz. 8. The speaker should be off.	

3. DC CURRENT DRAIN

(TEST CONDITION: USE 6VDC 1.2A SUPPLY ONLY)

NO.	ITEM	ALIGNMENT METHOD (WITH PRODUCTION SPEC.)	REMARKS
3.0	Check Battery Low	1. Set the power supply to 6.0V+/-0.15V. Battery low Red LED should be flashing.	
3.1	Check Standby Current (squelched)	1. Check the standby current should less than 70mA (squelched).	
3.2	Max. Audio Output	1. Adjust speaker volume to set speaker output level >200mV and distortion 5%. 2. Check current should less than 180mA.	
3.3			

~~ **END** ~~