A. PCB LEVEL (Test Condition: under CH1)

NO	ITEM	ALIGNMENT METHOD	REMARK
1.	LCD display (Should enter test mode)	1. Press and hold the '+' key and 'Menu' key together. 2. Turn on the radio power until a good key chirp is heard, and the backlight is on for about 500 ms. finally, the LCD should be display '**1**$^{\mathbf{CH}}$' . 3. Press 'DOWN' key, then all LCD segments should be anticlockwise displayed. 4. Finally, all the LCD segments should be shown for about 500ms as follows: **18**$^{\mathbf{88.}}$.	
2.	Standby current	1. Set A-METER, and RX mode @50ohm load. 2. Check the standby current <45mA DC.	
3.	Talk on current	1. Set A-METER, and TX mode. 2. Check the talk on current <480mA DC.	
4	VCO	1. Set TEST mode. 2. Adjust L113 to provide 0.7 ~2.2VDC at TP103 3. Check TP103 to provide 0.7 ~1.3VDC on Tx mode CH1.	
5.	TX Power	1. Set TX mode CH1. 2. Check transmit power to provide 19.8dBm ERP. 3. Set TX mode CH11. 4. Check transmit power to provide 19.9dBm ERP.	Supply Voltage= 4.5VDC
6.	TX Frequency	Adjust C159 to provide 462.5625MHz ± 50Hz at CH1.	
7.	TX Modulation & distortion	1. Set 50mv AF level at TP116; 1KHz,Adjust VR101 to provide max TX deviation 2.0KHz to 2.35KHz. 2. Check input mic level in 5~15 mV to provide normal deviation 1.5KHz. 3. Check the demodulation distortion ≤ 5%. 4. Audio Frequency Response a) Input a 2.0mV 1KHz audio frequency to TP116 and press 'PTT' switch. b) Check the response compare to 1KHz tone i) 500Hz: -5.0 dB to –9.0dB. ii) 2.5KHz: +2.0 dB to + 9.0dB.	Filter Setting HPF 50Hz LPF 15KHz PK +MAX

A. PCB LEVEL (Test Condition: under CH1)

NO	ITEM	ALIGNMENT METHOD	REMARK
8.	Rx Audio test	1. Set RX mode CH4. 2. Set SG RF level to –50dBm with 1.5 kHz deviation 1KHz modulation Signal. 3. Adjust L114 to provide minimum distortion & max output level at TP117. 4. Rotate the volume switch to the position, which give a Max audio output at TP117. 5. Check Max audio output level >1400mV. 6. Check Rx current <150mA. 7. Check the 1KHz distortion ≤ 3.5%. 8. Set SG RF level to –119dBm with 1.5kHz deviation at 1KHz audio frequency. a). Check SINAD sensitivity ≤ -118dBm@ 12dB SINAD at TP117. 9. Audio frequency response. a) Set SG RF level to –50dBm with 1.5kHz deviation at 1KHz audio frequency. b) Rotate the volume switch to the position, which give an output 100mV±5mV at TP117. c) Vary the audio frequency from 300Hz to 3KHz. d) Check the RX response compare to 1KHz tone. i) 500Hz: -9 dB to -18dB. ii) 2.5KHz: -18.0 dB to –25.0 dB. 10. Maximum and Minimum Audio Output Power. a) Set SG RF level to –50dBm with 1.5kHz deviation at 1KHz audio frequency. b) Rotate the volume switch to the position, which give a maximum output. c) Check the voltage at TP117 ≤1400mV. d) Set maximum audio output to 0dB; rotate the volume switch to the position, which give a minimum output. e) Check the minimum voltage –23 to -40dB at TP117.	
9.	Noise- Detector	1. Set SG to –120dBm with 1.5KHz deviation. 1KHz AF on CH4. 2. Adjust VR1 for transient state @ 10dB SINAD. 3. Check high state @7 to 14dB SINAD.	
10.	Normal Battery level Detect	1. Provide 1.5V DC at BP102. 2. Battery level: 4.2±0.1V level 1, 3.8±0.1V level 2, 3.4±0.1V level 3, 3.1±0.1V level 4. 3. Disconnect 1.5V DC at BP102. 4. Battery level: 3.7±0.1V level 1, 3.4±0.1V level 2, 3.2±0.1V level 3, 3.1±0.1V level 4.	

B. CASING LEVEL

NO	ITEM	ALIGNMENT METHOD	REMARK
1.	Current Consumption	1. Set A-METER. 2. With volume switch OFF, check the OFF current <10μA. 3. With volume switch ON, check the standby current <45mA. 4. TX Current. a) Press 'PTT' switches and check the TX current <480mA.	
2.	TX Frequency	1. Check CH1=462.5625MHz -/+500Hz; 2. Check CH14=467.7125 MHz -/+500Hz.	
3.	Noise- Detector	1. Set the distance between antennas of SG and checked unit to 0.3M ~ 0.5M. 2. The antennas of SG and checked unit should be parallel to make the electromagnetic field of SG. 3. Radiate equably to the antenna of checked unit. 4. Set SG to –90dBm with 1.5KHz deviation, 1KHz tone on CH4. 5. Adjust VR102 for HIGH state: 7 ~ 13 dB SINAD.	When adjusting Noise-Det. , Should reduce any interference from other Instruments and body.
4.	Vox Detector	1.Set VOX level at 1. 2.Set AF level at 12 +/-0.2mV, 1KHz at TP116 3.Unit start to transmit. 4.Set AF level at 8.5 +/-0.2mV,1KHz at TP116 5.Unit stop to transmit 6.Set VOX level at 2. 7.Set AF level at 7.5 +/-0.2mV,1KHz at TP116 8.Unit start to transmit. 9.Set AF level at 5.0 +/-0.2mV,1KHz at TP116 10.Unit stop to transmit 11.Set VOX level at 3. 12.Set AF level at 3.5 +/-0.2mV,1KHz at TP116 13.Unit start to transmit 14.Set AF level at 2.0+/-0.2mV,1KHz at TP116 15.Unit stop to transmit	

B. CASING LEVEL

NO	ITEM	ALIGNMENT METHOD	REMARK
5.	Audio RX Path CH10	1. Set SG RF level to -50dBm with 1.5kHz Dev.; 1kHz AF, Rotate the volume switch to the position, which give an Max output. 2. Check speaker O/P level >85dBspL(30cm distance). 3. Set SG RF level to -60dBm with 1.5kHz Dev.; 1kHz AF. 4. Plug the dummy speaker and dummy microphone into audio jet. 5. Rotate the volume switch to the position, which give an output 900+/-50mv. 6. Set SG RF level to -90dBm with 1.5kHz Dev.; 1kHz AF. 7. Check the radiated sensitivity correlate to the golden sample. 8. Audio frequency response. a) Set SG RF level to –60dBm with 1.5kHz deviation at 1KHz audio frequency. b) Rotate the volume switch to the position, which give an output 100mV ±5mV (voltage difference of dummy speaker). c) Vary the audio frequency from 300Hz to 3KHz. d) Check the RX response compare to 1KHz tone. i) 500Hz: -9dB to -18.0 dB. ii) 2.5KHz: -18.0 dB to –25.0 dB. 9. Maximum and Minimum Audio Output Power a) Set SG RF level to –60dBm with 1.5kHz deviation at 1KHz audio frequency. b) Rotate the volume switch to the position, which give a maximum output with distortion <5%. c) Check the voltage difference of dummy speaker ≤900mV. d) Set maximum audio output to 0dB; rotate the volume switch to the position, which give a minimum output. e) Check the voltage difference between of dummy speaker –23 dB to -40dB.	

6.	Audio TX Path CH1	1. Check the radiated power correlate to golden sample. 2. Plug the dummy speaker and dummy microphone into audio jet. 3. Standard TX Deviation. a) Input mic level to dummy microphone and press 'PTT' switch. b) Check max dev 1.8KHz<max dev <2.5KHz. c) Check input level in 0.5~10mV to provide normal deviation 1.5KHz. 4. Audio Frequency Response. a) Input a 2.0mv@1KHz audio frequency to dummy microphone and press 'PTT' switch. b) Check the response. i) 500Hz: -5.0 dB to –9.0 dB. 2.5KHz: +2.0 dB to + 9.0 dB. 5.Repeat CH8.	

B. CASING LEVEL

NO	ITEM	ALIGNMENT METHOD	REMARK
7.	Function check and Intercom function (between sample and production unit)	1. Turn on the radio power , the backlight should be on For a while and a good key chirp should be heard at The same time. 2. The LCD display should be clear, not miss the segment when pressing '+' and '-' or '-' key, the key tone should also be heard clearly. 3. Set channel of the sample and production unit CH=4. 4. Press 'PTT' switch to intercom between sample and Production unit, the LED should be light. 5. The sound quality between both should be clear and no metal sound. 6. Press 'CALL' key, the call tone should be heard clearly each other. 7. Change channel of the production unit to CH=8 , then Press 'PTT' switch of sample. 8. Any noise should not be heard from the speaker of Production unit. 9. Press any key, the dead problem should not occur.	

* Remark:

Power supply: Min DC 3.3v; Max DC4.5v

TX mode:

1. Press and hold PTT button

RX mode:

1. Release PTT button