Adjustment Description

Required Test Instrument

Radio communication test set 1 set
Scanner 1 set
3A/10V power supply 1 set
Digital voltmeter 1 set
3A Ammeter 1 set

Preparation

Open the programming software in PC and operate as the following instructions.

1. Programme Download:

Connect the radio with the computer via programming cable. And then turn the power on. LED glows red. Click “Programme” → “Download” on the interface to choose programme. Click “Open” to begin download and LED flashes red. When download is complete, click “End” and turn the power off. And then disconnect the programming cable.

2. Initialization:

Turn the power on while holding down [PTT] and [A] key simultaneously. LED glows orange and a BEEP sounds. Radio channel frequency and setting data are initialized.

3. Destination Set:

Connect the radio with the computer via programming cable. And then turn the power on. LED glows red. Set “frequency range” on the programming software interface. And then click “Programme” → “ Writing”.

4. Factory Setting

The compander is open. Squelch level 2. Adjustment mode is disabled.

Adjustment

VCO

Item	Condition	Measurement		Adjustment		Specification/ Remarks
		Test Instrument	Terminal	Part	Method	
1. Setting	Power supply 7.5V					
2.Transmit VCO lock voltage	1.Turn to CH1. Press PTT. TX High	Digital Voltmeter	CV	TC350 TC351	Check	3.3V±0.2V
	2. Press PTT again. TX Low				Check	1.0V±0.4V
3. Receiving VCO lock voltage	1. Turn to CH2. Press PTT. TX High				Check	3.1V±0.2V
	2. Press PTT again. TX Low				Check	1.0V±0.4V

Transmitter

Item	Condition	Measurement		Adjustment		Specification /Remarks
		Test Instrument	Terminal	Part	Method	
1. Transmit	Turn to CH3.	Radio	ANT	[B] (up) [C]	Adjust to center	Error≤150Hz

frequency		Press PTT.	Communication Test Set		(down)	frequency. Press [A] to save.	
2. Power	High	1. Turn to CH4. Press PTT. Center frequency	Radio Communication Test Set Ammeter	ANT	[B] (up) [C] (down)	Adjust to 4.0 W, I≤1.6A. Press [A] to save.	4.0W±0.3W
		2. Press PTT. Frequency changes to low frequency.				Adjust to 4.0 W, I≤1.6A. Press [A] to save.	
		3. Press PTT again. Frequency changes to high frequency.				Adjust to 4.0 W, I≤1.6A. Press [A] to save.	4.0W±0.3W
	Low	1. Turn to CH5. Press PTT. Center frequency.				Adjust to 1.0 W, I≤0.7A. Press [A] to save.	1W±0.3W
		2. Press PTT. Frequency changes to low frequency.				Adjust to 1.0 W, I≤0.7A. Press [A] to save.	
		3. Press PTT again. Frequency changes to high frequency.				Adjust to 1.0 W, I≤0.7A. Press [A] to save.	
3. CDCSS balance	Wideband	1. Turn to CH6. Press PTT. The radio operates with wideband. Center frequency.	Radio Communication Test Set LPF: 15KHz	ANT	[B] (up) [C] (down)	Rectify the waveform to square wave. Press [A] to save.	
		2. Press PTT. Frequency changes to low frequency.					
		3. Press PTT again. Frequency changes to high frequency.					
	Narrow-band	4. Press [A] for two seconds. LED flashes indicating that the radio operates with narrowband. Center frequency. Adjust narrowband following the above steps.					
4. Maximu-m frequenc-y deviaion	Wideband	1. Turn to CH7. Press PTT. The radio operates with wideband. Center frequency.	Radio Communication Test Set LPF: 15KHz AF: 1KHz 1V	ANT MIC Jack	[B] (up) [C] (down)	Adjust it to 4.0KHz±100Hz. Press [A] to save.	
	Narrow-band	2. Press [A] for two seconds. LED flashes indicating that the radio operates with narrowband. Center frequency.				Adjust it to 2.0KHz±100Hz. Press [A] to save.	

5. MIC Sensitivity		Turn to CH8. Press PTT. The radio operates with wideband. Center frequency.	Radio Communication Test Set LPF: 15KHz AF: 1KHz 24mV	ANT MIC Jack	[B] (up) [C] (down)	Check frequency deviation 2.9±0.1KHz. Press [A] to save.	Adjust as wideband.
6. CTCSS deviation	Wideba-nd	1. Turn to CH9. Press PTT. The radio operates with wideband. Center frequency.	Radio Communication Test Set LPF: 3KHz	ANT	[B] (up) [C] (down)	Adjust deviation to 0.70KHz±50Hz. Press [A] to save.	
		2. Press PTT. Frequency changes to low frequency.					
		3. Press PTT again, frequency changes to high frequency.					
	Narrow-band	4. Press [A] for two seconds. LED flashes indicating that the radio operates with narrowband. High frequency.				Adjust deviation to 0.35KHz±50Hz. Press [A] to save.	
		5. Press PTT. Frequency changes to center frequency.					
		6. Press PTT. Frequency changes to low frequency.					
7. CDCSS deviation	Wideba-nd	Turn to CH10. See CTCSS deviation adjustment.	Radio Communication Test Set LPF: 3KHz	ANT	[B] (up) [C] (down)	Adjust deviation to 0.70KHz±50Hz. Press [A] to save.	
	Narrowb-and	See CTCSS deviation adjustment.				Adjust deviation to 0.35KHz±50Hz. Press [A] to save.	
8.FFSK deviation	Wideba-nd	Turn to CH11. See CTCSS deviation adjustment.	Radio Communication Test Set LPF: 3KHz	ANT	[B] (up) [C] (down)	Adjust deviation to 3KHz±0.1KHz. Press [A] to save.	
	Narrow-band	See CTCSS deviation adjustment.				Adjust deviation to 1.45KHz±0.05KHz Press [A] to save.	
9.TONE deviation	Wideba-nd	Turn to CH12. See CTCSS deviation adjustment.	Radio Communication Test Set LPF: 3KHz	ANT	[B] (up) [C] (down)	Adjust it to 3KHz±0.1KHz. Press [A] to save.	

	Narrow-band	See CTCSS deviation adjustment.				Adjust it to 1.45KHz±0.05KHz Press [A] to save.	
10. Low battery alert level		Turn to CH15. Adjust voltage to 6.2V.	Digital Voltmeter			Press [A] to save.	
11.VOX Sensitivity		Turn to CH16.	Radio Communication Test Set LPF:15KHz AF:1KHz 3mV	ANT MIC Jack		Press [A] to save.	

Receiver

Item		Condition	Measurement		Adjustment		Specification /Remarks
			Test Instrument	Terminal	Part	Method	
Sensitivity		1. Turn to CH13. Press PTT. Center frequency. 2. Press PTT. Frequency changes to low frequency. 3. Press PTT. Frequency changes to high frequency.	Scanner	ANT T1	[B] (up) [C] (down)	Adjust the waveform. Press [A] to save.	
	Wideband	1. Turn to CH14. Press PTT. The radio operates with wideband. Center frequency. 2. Press PTT. Frequency changes to low frequency. 3. Press PTT. Frequency changes to high frequency.	Radio Communication Test Set SSG output: -118dBm MOD: 1KHz DEV: ±3KHz FILTER: 0.3-3.4KHz	ANT Speaker Jack		Adjust radio communication test set. SSG output: SINAD: 12dB Press [A] to save.	
	Narrow-band	4. Press [A] for two seconds. LED flashes indicating that the radio operates with narrowband. High frequency. 5. Press PTT. Frequency changes to center frequency. 6. Press PTT. Frequency changes to low frequency.	Radio Communication Test Set SSG output: -118dBm MOD:1KHz DEV:±1.5KHz FILTER: 0.3-3.4KHz			Adjust radio communication test set. SSG output: SINAD: 12dB Press [A] to save.	