QP-350-DU2 Tune up Procedure

1 Required Test Instrument

Radio Communication Test Set	1 set
Scanner	1 set
1A/5V Power Supply	1 set
Digital Voltmeter	1 set
3A Ammeter	1 set

2 Adjustment process

VCO

Item	Condition	Measurement		Adjustment		Specification/ Remarks
		Test Instrument	Terminal	Parts	Method	
1. Setting	Power supply voltage					
2.Transmit VCO lock voltage	1. CH: TX high	Digital Voltmeter	CV	TC301	adjustment	
	2. CH:TX Low				Check	
3.Receive VCO lock voltage	1. CH: RX high					
	2. RX low			TC302	Check	

Transmitter

Item		Condition	Test Instrument	Method	Purpose
Group 1	Adjust a channel	Enter the adjust mode; Turn to CH1; TX mode.	Radio Communication Test Set; TX Test	Adjust VR1	Frequency Error≤ 100Hz
	1. TX power Low	Enter the adjust mode. Turn to CH1. Adjust at 5 point (wideband).		PTT key (increase) SK1 key (decrease)	Adjust power to: 0.5W±0.1W

	2. CDCSS balance	Enter the adjust mode. Turn to CH3. Adjust at 3 point (wideband), 1 point (medium band) and 1 point (narrowband) respectively.	Radio Communication Test Set TX TEST HPF：20HZ LPF：300HZ	PTT key (increase) SK1 key (decrease)	
	3. CDCSS deviation	Enter the adjust mode. Turn to CH3. Adjust at 3 point (wideband), 1 point (medium band) and 1 point (narrowband) respectively.		PTT key (increase) SK1 key (decrease)	Adjust deviation to 750Hz (wideband), 600Hz (medium band) and 400Hz (narrowband) respectively.
	4. CTCSS (67.0Hz) deviation Low	Enter the adjust mode. Turn to CH4. Adjust at 3 point (wideband), 1 point (medium band) and 1 point (narrowband) respectively.		PTT key (increase) SK1 key (decrease)	
	5. CTCSS (136.5Hz) deviation Center	Enter the adjust mode. Turn to CH5. Adjust at 3 point (wideband), 1 point (medium band) and 1 point (narrowband) respectively.		PTT key (increase) SK1 key (decrease)	
	6. CTCSS (254.1Hz) deviation High	Enter the adjust mode. Turn to CH6. Adjust at 3 point (wideband), 1 point (medium band) and 1 point (narrowband) respectively.		PTT key (increase) SK1 key (decrease)	

	7. Transmit Audio Deviation	Enter the adjust mode. Turn to CH7. Adjust at 3 point (wideband), 1 point (medium band), 1 point (narrow band).	Radio Communication Test Set HPF: 20Hz LPF: 15KHz 1KHz 120mV	PTT key (increase) SK1 key (decrease)	Adjust deviation to 4KHz (wideband), 3.2KHz (medium band) and 2KHz (narrowband) respectively.
	8. 2 Tone deviation	Enter the adjust mode. Turn to CH8. Adjust at 1 point (wideband), 1 point (medium band), 1 point (narrow band).	Radio Communication Test Set TX Test HPF: 20Hz LPF: 15KHz No modulation signal.	PTT key (increase) SK1 key (decrease)	Adjust deviation to 3.2KHz (wideband), 2.5KHz (medium band) and 1.8KHz (narrowband) respectively.
	9. DTMF deviation	Enter the adjust mode. Turn to CH9. Adjust at 1 point (wideband), 1 point (medium band), and 1 point (narrow band).		PTT key (increase) SK1 key (decrease)	Adjust deviation to 3.2KHz (wideband), 2.5KHz (medium band) and 1.8KHz (narrowband) respectively.
	10. MSK deviation	Enter the adjust mode. Turn to CH10. Adjust at 3 point (wideband), 1 point (medium band), 1 point (narrow band).		PTT key (increase) SK1 key (decrease)	Adjust deviation to 3.2KHz (wideband), 2.5KHz (medium band) and 1.8KHz (narrowband) respectively.
	11. VOX GAIN1	Enter the adjust mode. Turn to CH11. Adjust at 1 point (wideband).	Radio Communication Test Set TX TEST HPF: 20HZ LPF: 15KHZ	Save	Modulation signal: 1KHz, 45mv Press PTT to save;
	12. VOX GAIN5	Enter the adjust mode. Turn to CH12. Adjust at 1 point (wideband).		Save	Modulation signal: 1KHz, 15mv Press PTT to save;
	13. TX power HIGH	Enter the adjust mode. Turn to CH13. Adjust at 5 point (wideband).	Radio Communication Test Set TX TEST	PTT key (increase) SK1 key (decrease)	Adjust power to 2±0.1W VHF: 2W, UHF: 2W

	14. TX voltage Low	Enter the adjust mode. Turn to CH14. Adjust at 1 point (wideband).		Save	Adjust voltage to 3.0V,press PTT to save

Receiver

Item		Condition	Test Instrument	Method	Purpose
Group 2	1. RX sensitivity	Enter the adjust mode. Turn to CH1. Adjust at 5 point (wideband).	Radio Communication Test Set RX TEST HPF：300HZ LPF：3KHZ	PTT key SK1 key	Adjust level to 119dBm. SINAD≥12dB
	2. RX volume	Enter the adjust mode. Turn to CH2. Adjust 1 point at wideband, medium band and narrowband respectively.		PTT key (Increase) SK1 key (Decrease	When Max. volume is set, adjust AC level to 1W (16Ω), single input 2.5V, dual input 5V
	3. Squelch Level 3 (OPEN)	Enter the adjust mode. Turn to CH3. Adjust at 5 point (wideband), 1 point (medium band) and 1 point (narrowband) respectively.		Save	Adjust level to -123dBm，press PTT to save
	4. Squelch Level 3 (SQUELCH)	Enter the adjust mode. Turn to CH4. Adjust at 5 point (wideband), 1 point (medium band) and 1 point (narrowband) respectively.		Save	Adjust level to -125dBm，press PTT to save
	5. Squelch Level 9 (OPEN)	Enter the adjust mode. Turn to CH5. Adjust at 5 point (wideband), 1 point (medium band) and 1 point (narrowband) respectively.		Save	Adjust level to -117dBm，press PTT to save

	6. Squelch Level 9 (SQUELCH)	Enter the adjust mode. Turn to CH6. Adjust at 5 point (wideband), 1 point (medium band) and 1 point (narrowband) respectively.		Save	Adjust level to -119dBm，press PTT to save
	7. RX voltage Low	Enter the adjust mode. Turn to CH7. Adjust at 1 point (wideband).		Save	Adjust power supply voltage to 3.1V, press PTT to save

Note: AF deviation of the receiver is 3KHz (wideband)，2.5KHz(medium band) and 1.5KHz (narrowband)