

1001LWX (SI4707) Tuning Procedures

REV:0

DATE:28-Mar-13

1-1 Testing Equipment

Equipment	Grade and Range
DC power supply	Output voltage : 13.8 V DC Current capacity : 3 A or more
Digital Multimeter	
Frequency counter	Frequency range : 0.1–300 MHz Frequency accuracy : ± 1 ppm or better Sensitivity : 100 mV or better
RF COMMUNICATIONS TEST SET(8920A) (RF Tester)	Frequency range : 0.4–1000 MHz
Oscilloscope	Frequency range : DC–20 MHz Measuring range : 0.01–20V
External speaker	Input impedance : 8Ω Capacity : 5 W or more

1-2 VCO Tuning

Tuning Items	Setting	Test		Standard	Tuning	
		Location	Testing Point		Location	Tuning Point
Loop lock voltage	<ul style="list-style-type: none"> ● Channel : CH 19 ● RX 	Main board	Use multi-meter to check the voltage of VCO on main board.	3.0-3.6V	Main board	L8
The reference oscillator frequency	<ul style="list-style-type: none"> ● Channel : CH 19 ● TX 	Main board	Connect the frequency output to frequency counter	27.185MHZ +/-200Hz	Main board	VC1

1-3 TX Tuning

Tuning Items	Setting	Test		Standard	Tuning	
		Location	Testing Point		Location	Tuning Point
Carrier Output Power	<ul style="list-style-type: none"> ● Channel : CH 19 ● TX 	Main board	Connect RF tester to antenna input port	3.8~4W	Main board	L801
The Maximum Modulation Frequency Offset	<ul style="list-style-type: none"> ● Channel: : CH 19 ● The audio signal is connected to the hand-held microphone. Audio output level: 800mV Audio Output RFrequency: 1000Hz. ● TX 	Main board	Connect RF tester to antenna port	90%~93%	Main board	RV2
80% MOD Distortion	<ul style="list-style-type: none"> ● Channel : CH 19 ● The audio signal is connected to the hand-held microphone. Audio output level: 15mV ● TX 	Main board	Connect RF tester to antenna port	<8%	Main board	L5 L6
Signal Meter	<ul style="list-style-type: none"> ● Channel : CH 19 ● TX 	LCD	Connect RF tester to antenna port	Signal meter at full indication.	Main board	RV4

1-4 RX Tuning

Tuning Items	Setting	Test		Standard	Tuning	
		Location	Testing Point		Location	Tuning Point
Sensitivity	<ul style="list-style-type: none"> ● Channel: CH 19 ● Connect antenna port to output of tester ● RX 	Main board	External speaker signal is connected to the 8 ohm dummy load and then connected to the audio input of RF tester.	10dB SINAD receiving sensitivity not less than 1uV Distortion is less than 5%.	Main board	L1 T3 T4 T5 L3
	<ul style="list-style-type: none"> ● Channel: CH 19 ● Connect antenna port to output of tester ● RX 	Main board	External speaker signal is connected to the 8 ohm dummy load and then connected to the audio input of RF tester.	SQ Tight, 60dBuV open	Main board	RV1
Signal Meter	<ul style="list-style-type: none"> ● Channel : CH 19 ● RX 	LCD	Connect RF tester to antenna port	40dBuV at S9	Main board	RV3