

Confidentiality RequestedFunction of RF Semiconductors & Other Active Devices

Ref. Des.	Application	Description
D101	Tx forward power detector	On Semiconductor MBD330DWT1 dual Schottky diode
Y200	Reference oscillator 1.5 PPM	TEW TTS12V2 16.8 MHZ temperature compensated VCXO
Q502	VCO for second LO	Philips BFQ67W RF transistor
Q430	Receiver LNA	Philips BFS 520 RF transistor
D701	Antenna switch	Microsemi UPP9401 PIN diode
D702	Antenna switch	Microsemi UPP9401 PIN diode
D601	Antenna switch	Microsemi UPP9401 PIN diode
D602	Antenna switch	Microsemi UPP9401 PIN diode
Q211	VCO, 450-488 MHz	NEC NE68519 NPN Transistor
Q215	VCO, 376-414MHz	NEC NE68519 NPN Transistor
U4	Memory	Xicor X25160 Serial EEPROM 16K
U250	VCO buffer amp	Motorola VCO BUFFER IC
U102	TX driver amplifier	Motorola VHF/UHF/800 MHZ LDMOS driver amplifier
U470	RX down converter mixer	Infineon PMB2335 RF MIXER
U105	A to D converter for built-in-test	Texas Instruments TLV1544I QUAD 10 BIT A/D converter IC
U203	TX modulator D to A converter	Analog Devices AD5320BRT 12 BIT DAC
Q107	TX power amplifier	Motorola MODULE 800 MHZ RING
U104	Transmitter ALC	Motorola IC PWR CTRL IN MOS20
U103	Temperature sensor	National Instruments LM50C temperature sensor
U202	Frequency synthesizer	Atmel AT25016 FracN IC
U500	Receiver back-end IC	Analog Devices AD9874 IF digitizing subsystem ABACUS III-LP
U201	Reference oscillator buffer amplifier.	National Instruments CLC450 analog OP-amp
FL200	TX modulation low pass filter	Maxim MAX7414 switched capacitor filter

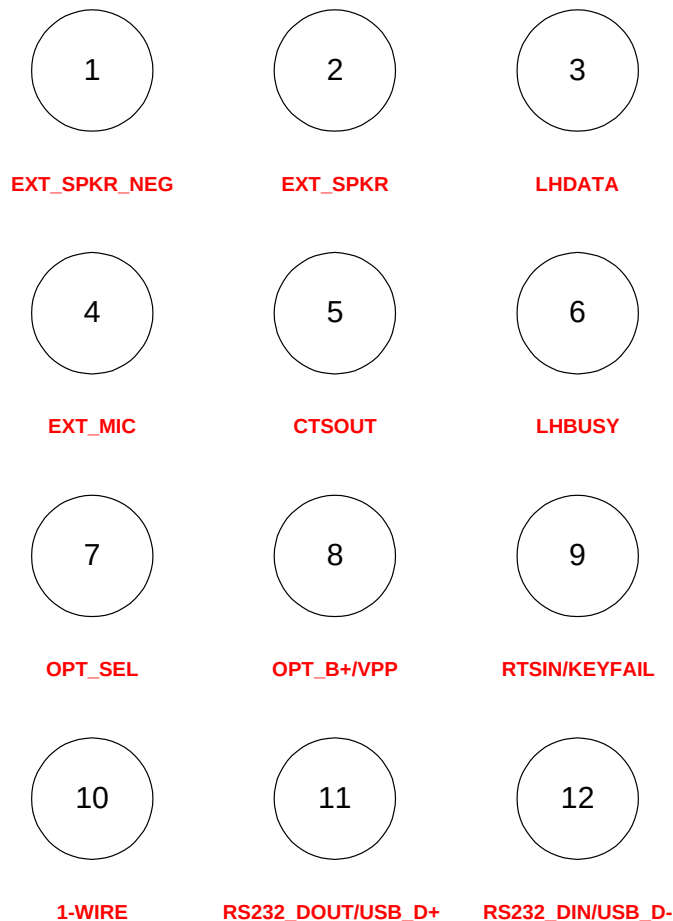
COMMENTS: The Motorola designators are special code numbers for active devices used in Motorola radios. These devices are either identical or derived from the device family listed under Source, by the manufacturer or are proprietary to Motorola. Service people do not have access to any cross-references or given any information on proprietary devices and are prevented from making unauthorized substitution.

TUNE-UP PROCEDURE

The following Tune-up procedure is similar to what will appear in the final service manual enclosed. A universal side connector is required for the following tuning procedure. A list of the universal side connector pins is shown below.

Universal Side Connector Pins

SSE 5000 Accessory Connector Pin Assignments



Setup Procedures

1. Connect radio to the computer using the RS232 or USB cable.
2. Connect radio antenna port to Modulation Analyzer.
3. Power up radio and all equipment.
4. Launch the XTS 5000 radio tuner software and click on the “read device” icon. A window will open with a list of the various parameters that may be tuned on this radio. Double click on the parameter to be tuned and follow the instructions below

Transmitter Alignment Procedure

Reference Oscillator

1. Click on the "PTT Toggle" button to make the radio transmit.
2. Measure the radio's transmit RF frequency with the service monitor.
3. Adjust the softpot value by manipulating the slider bar, incrementing the "New Softpot Value" spin box, or directly entering the desired value into the "New Softpot Value" spin box until the measured value is as close as possible to the frequency displayed on the screen.
4. Click on the "Program All" button to save the tuned value to the radio.

EXHIBIT 10-2

Transmitter Power

1. Click on the "PTT Toggle" button to make the radio transmit.
2. Measure the transmit power of the radio with the service monitor.
3. Adjust softpot value by manipulating the slider bar, incrementing the "New Softpot Value" spin box, or directly entering the desired value into the "New Softpot Value" spin box until the required power is indicated on the service monitor.
4. Repeat the above process for all frequencies and power settings (high, mid and low).
5. Click on the "Program All" button to save the tuned values in the radio.

Tx Deviation Balance

1. Click on the "PTT Toggle" button to make the radio transmit.
2. Click on the "PTT Tone: Low" button.
3. Measure the transmitted signal deviation of the radio with a service monitor.
4. Click on the "PTT Tone: High" button.
5. Adjust softpot value by manipulating the slider bar, incrementing the "New Softpot Value" spin box, or directly entering the desired value into the "New Softpot Value" spin box until the measured deviation when using the high tone is as close as possible to that observed when using the low tone.
6. Repeat the above process for all frequencies.
7. Click on the "Program All" button to save the tuned values in the radio.

Tx Deviation Limit

1. Click on the "PTT Toggle" button to make the radio transmit.
2. Measure the transmitted signal deviation of the radio with a service monitor.
3. Adjust softpot value by manipulating the slider bar, incrementing the "New Softpot Value" spin box, or directly entering the desired value into the "New Softpot Value" spin box, or directly entering the desired value into the "New

Softpot Value" spin box until the measured deviation is as close as possible to 2.83KHz.

4. Repeat the above process for all frequencies.
5. Click on the "Program All" button to save the tuned values in the radio.