

Function of RF Semiconductors & Other Active Devices

<u>Schematic</u>	<u>Designator</u>		<u>Device</u>	<u>Circuit</u>
<u>Key</u>	<u>Motorola</u>	<u>Type</u>	<u>Application</u>	<u>Source</u>
U10	57W50	IC	RF Amp	Motorola
U30	57W52	IC	Mixer	Motorola
Q40	18N55	IC	IF Amp	Philips
Y201	63A22	Module	Ref. Oscillator	Motorola
U203	63A27	IC	Synthesizer	Motorola
U202	50U54	IC	VCO/Buffer	Motorola
U102	63A89	IC	RF PA Driver	Motorola
Q104	85Y59	Module	RFPA	Motorola
U104	65B01	IC	Power Control	Motorola
U103	57W85	IC	A/D-D/A	Motorola

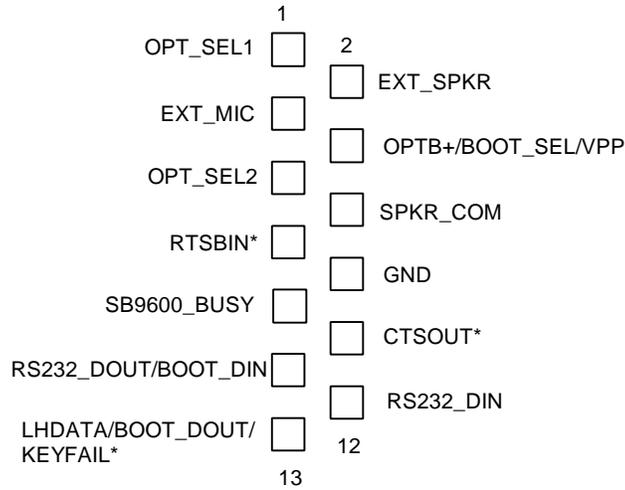
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COMMENTS: The Motorola designators are special code numbers for active devices used in Motorola radios. These devices are either identical or derived from the device family listed under Source, by the manufacturer or are proprietary to Motorola. Service 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



### Transmitter Alignment Procedure

#### STEP PROCEDURE

1. Connect radio to Radio Interface Box (RIB box) using radio accessory connector and connect RIB box to computer.
2. Connect radio antenna port to Modulation Analyzer.
3. Power up radio and all equipment.
4. From the Main Menu in RSS (Radio Service Software) enter the Transmit Alignment Menu by pressing F2-F2. The following alignments may be adjusted by pressing the relevant function key.
5. TX Power (F3)-
  - a. Key radio by pressing F6.
  - b. Adjust TX power using the up-down arrows.
  - c. De-Key the radio by pressing F6.
  - d. Save new value to the codeplug by pressing F8.
  - e. Repeat for other power levels and channels.
  - f. Proceed to Reference Oscillator warp by pressing F10-F2.

6. Reference Oscillator (F2)-
  - a. Key radio by pressing F6.
  - b. Adjust Reference Oscillator frequency to the selected mode customer frequency, as indicated on the customer information sheet, to within +/-100 Hz. The frequency counter must use a frequency reference known to have a frequency stability of 0.10 PPM or better.
  - c. De-Key the radio by pressing F6.
  - d. Save new value to the codeplug by pressing F8.
  - e. Proceed to the TX Deviation Balance Menu by pressing F10-F4.
  
7. TX Deviation Balance (F4)-
  - a. Key radio by pressing F4.
  - b. Measure the deviation and record the value.
  - c. De-Key the radio by pressing F4.
  - d. Key radio by pressing F6.
  - e. Use the up-down arrows to adjust the deviation to within +/-2% of the value recorded in Step 7.b. above.
  - f. Save new values to the codeplug by pressing F8.
  - g. Repeat for other channels. Proceed to TX Deviation Limit Menu by pressing F10-F5.
  
8. TX Deviation Limit (F5)-
  - a. Key radio by pressing F6.
  - b. Adjust the deviation using the up-down arrows to a value between 2.750 and 2.820 kHz.
  - c. Save new values to the codeplug by pressing F8.
  - d. Repeat for other channels.