MOTOROLA

Professional Radio
GP Series

VHF (136-174MHz)

Service Information

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Chapter 1

MODEL CHART AND TECHNICAL SPECIFICATIONS

1.0 GP320/GP340/GP360/GP380 Model Chart

Professional GP300 Series (VHF)						
Model						Description
MDH25KDC9AN0_E						GP320 VHF 136-174MHz 5W 1-Ch
	MDH25KDC9AN3_E					GP340 VHF 136-174MHz 5W 16-Ch
		MDH25KDF9AN5_E				GP360 VHF 136-174MHz 5W 255-Ch
			MDH25KDH9AN6_E			GP380 VHF 136-174MHz 5W 255-Ch
					Item	Description
X					PMLD4121_	*GP320 VHF Back Cover Kit
	X				PMLD4117_	*GP340 VHF Back Cover Kit
		X			PMLD4119_	*GP360 VHF Back Cover Kit
			X		PMLD4118_	*GP380 VHF Back Cover Kit
X					6864110B12	GP320 Basic User Guide
	X				6864110B13	GP340 Basic User Guide
		X			6864110B16	GP360 Basic User Guide
			X		6864110B18	GP380 Basic User Guide
X	X	X	X		PMAD4023_	VHF 14cm (150-161 MHz) Antenna
X	X	X	X		HNN9008_	Battery, NiMH Standard

x = Indicates one of each is required.

* = Service replacement boards

2.0 GP140 Model Chart

Professional GP140 (VHF)			
Model			**Description**
MDH25KDC9AA3_E			GP140 VHF 136-174 MHz 5W 16 Ch
		Item	**Description**
X		PMLE4109_	*GP140 UHF Back Cover Kit
X		6864110B25	GP140 Basic User Guide
X		PMAD4023_	VHF 14cm (150-161 MHz) Antenna
X		HNN9008_	Battery, NiMH Standard

x = Indicates one of each is required.

* = Service replacement boards

3.0 GP640/GP680 Model Chart

Professional GP600 Series (VHF)				
Model				**Description**
MDH25KDC9ACK3_E				GP640 VHF 136-174 MHz 5W
	MDH25KDH9CK6_E			GP680 VHF 136-174 MHz 5W
			Item	**Description**
X			PMLD4113_	*GP640 VHF Back Cover Kit
	X		PMLD4114_	*GP680 VHF Back Cover Kit
X			6864110B14	GP640 Basic User Guide
	X		6864110B19	GP680 Basic User Guide
X	X		PMAD4023_	VHF 14cm (150-161 MHz) Antenna
X	X		HNN9008_	Battery, NiMH Standard

x = Indicates one of each is required.

* = Service replacement boards

4.0 GP1280 Model Chart

Professional GP1280 (VHF)			
Model		**Description**	
MDH25KDN9CK8_E		GP1280 VHF 136-174 MHz 5W	
		Item	**Description**
X		PMLD4120_	*GP1280 VHF Back Cover Kit
X		6864110B20	GP1280 Basic User Guide
X		PMAD4023_	VHF 14cm (150-161 MHz) Antenna
X		HNN9008_	Battery, NiMH Standard

x = Indicates one of each is required.

* = Service replacement boards.

5.0 GP240/GP540/GP280/GP580 Model Chart

Professional GP200/GP500 Series (VHF)						
Model						Description
MDH25KDC9GC3						GP540 VHF 136-174MHz 5W
	MDH25KDH9GC6					GP580 VHF 136-174MHz 5W
		MDH25KDC9GB3				GP240 VHF 136-174MHz 5W
			MDH25KDH9GB6			GP280 VHF 136-174MHz 5W
					Item	Description
X		X			*PMLD4170_	GP240/GP540 VHF Back Cover Kit
	X		X		*PMLD4171_	GP280/GP580 VHF Back Cover Kit
X		X			*PMLD4216_	GP240/GP540 VHF Front Housing Kit
	X		X		*PMLD4373_	GP280/GP580 VHF Front Housing Kit
		X	X		6864120B15	GP240/GP280 User Guide (English)
		X	X		6864120B16	GP240/GP280 User Guide (ENG, RUS, FR, TUR)
		X	X		6864120B17	GP240/GP280 User Guide (GER, SPA, POR, IT)
		X	X		6864120B18	GP240/GP280 User Guide (SWE,NL, DAN, FIN)
		X	X		6864120B19	GP240/GP280 User Guide (CZ, PL, HU, RO)
X	X				6864120B20	GP540/GP580 User Guide (English)
X	X				6864120B21	GP540/GP580 User Guide (ENG, RUS, FR, TUR)
X	X				6864120B22	GP540/GP580 User Guide (GER, SPA, POR, IT)
X	X				6864120B23	GP540/GP580 User Guide (SWE,NL, DAN, FIN)
X	X				6864120B24	GP540/GP580 User Guide (CZ, PL, HU, RO)
X	X	X	X		NAD6502_	Antenna (146-174 MHz) HELIFLEX
X	X	X	X		HNN9008_	Battery, NiMH Standard

One user guide is selectable via option.

x = Indicates one of each is required.

* = Service replacement boards.

6.0 Technical Specifications

Data is specified for +25°C unless otherwise stated.

General Specifications		
Channel Capacity		
GP140	16	
GP240, GP280	128 in conventional Mode	
GP320	1	
GP340	16	
GP360, GP380	255	
GP540, GP580	128 in conventional Mode	
GP640, GP680, GP1280	16 (Conventional)	
Power Supply	Rechargeable battery 7.5v	
Dimensions: H x W x D (mm) Height excluding knobs	**GP140/GP240/320/340/360/380/ GP580/640/680**	
With standard high capacity NiMH battery	137 x 57.5 x 37.5	
With ultra high capacity NiMH battery	137 x 57.5 x 40.0	
With NiCD battery	137 x 57.5 x 40.0	
With Lilon battery	137 x 57.5 x 33.0	
	GP1280	
With standard high capacity NiMH battery	152 x 57.5 x 37.5	
With ultra high capacity NiMH battery	152 x 57.5 x 37.5	
With NiCD battery	152 x 57.5 x 37.5	
With Lilon battery	152 x 57.5 x 37.5	
Weight: (gm)	**GP140/GP240/ GP320/GP340/ GP540/GP640**	**GP360/GP280 GP380/GP580 GP680**
With Standard high capacity NiMH battery	420	428
With Ultra high capacity NiMH battery	500	508
With NiCD battery	450	458
With Lilon battery	350	358
	GP1280	
With Standard high capacity NiMH battery	460	
With Ultra high capacity NiMH battery	535	
With NiCD battery	485	
With Lilon battery	390	
Average Battery Life @5/5/90 Cycle:	Low Power	High Power
With Standard high capacity NiMH battery	11 hours	8 hours
With Ultra high capacity NiMH battery	14 hours	11 hours
With NiCD battery	12 hours	9 hours
With Lilon battery	11 hours	8 hours
Sealing:	Withstands rain testing per MIL STD 810 C/D /E and IP54	
Shock and Vibration:	Protection provided via impact resistant housing exceeding MIL STD 810-C/D /E and TIA/EIA 603	
Dust and Humidity:	Protection provided via environment resistant housing exceeding MIL STD 810 C/D /E and TIA/EIA 603	

Transmitter	VHF
*Frequencies - Full Bandsplit	VHF 136-174 MHz
Channel Spacing	12.5/20/25 kHz
Frequency Stability (-25°C to +55°C, +25° Ref.)	±2.5 ppm
Power	136 - 174 MHz:1-5W
Modulation Limiting	±2.5 @ 12.5 kHz ±4.0 @ 20 kHz ±5.0 @ 25 kHz
FM Hum & Noise	-40 dB typical
Conducted/Radiated Emission	-36 dBm <1 GHz -30 dBm >1 GHz
Adjacent Channel Power	-60 dB @ 12.5 kHz -70 dB @ 25 kHz
Audio Response (300 - 3000 Hz)	+1 to -3 dB
Audio Distortion	<5% typical

Receiver	VHF
*Frequencies - Full Bandsplit	VHF 136-174 MHz
Channel Spacing	12.5/20/25 kHz
Sensitivity (12 dB SINAD) EIA Sensitivity (20 dB SINAD) ETS	0.35 µV typical 0.50 µV typical
Intermodulation EIA	-65 dB
Adjacent Channel Selectivity	-60 dB @ 12.5 kHz -70 dB @ 25 kHz
Spurious Rejection	-70 dB
Rated Audio	0.5W
Audio Distortion @ Rated Audio	<3% typical
Hum & Noise	-45 dB @ 12.5 kHz -50 dB @ 20/25 kHz
Audio Response (300 - 3000 Hz)	+1 to -3 dB
Conducted Spurious Emission	-57 dBm <1 GHz -47 dBm >1 GHz ETS 300 086

*Availability subject to the laws and regulations of individual countries.

Chapter 2

THEORY OF OPERATION

1.0 Introduction

This Chapter provides a detailed theory of operation for the VHF circuits in the radio. For details of the theory of operation and trouble shooting for the the associated Controller circuits refer to the Controller Section of this manual.

2.0 VHF Transmitter

(*Refer to Figure 2-1 and the VHF Transmitter schematic diagram*)

The VHF transmitter consists of the following basic circuits:

1. Power amplifier (PA).
2. Antenna switch/harmonic filter.
3. Antenna matching network.
4. Power Control Integrated Circuit (PCIC).

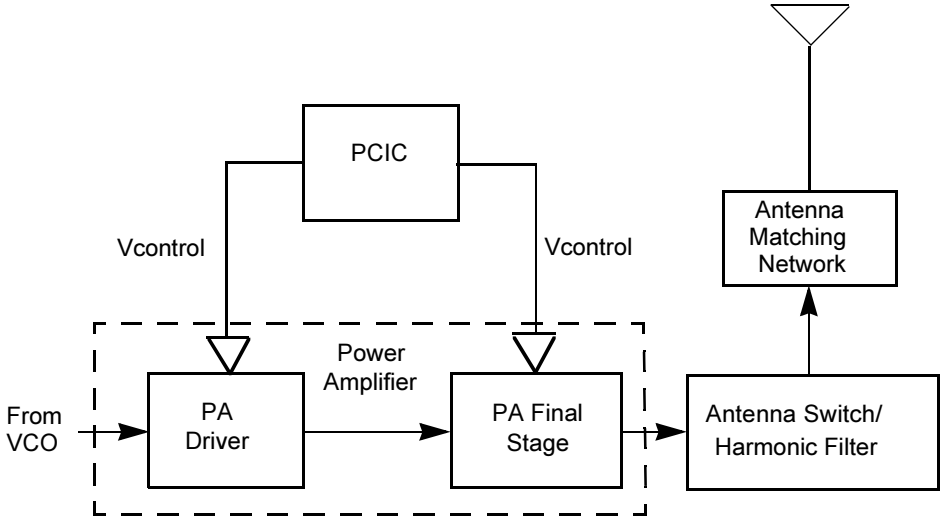


Figure 2-1 VHF Transmitter Block Diagram.

2.1 Power Amplifier

The power amplifier consists of two devices:

1. LDMOS driver IC (U3501)
2. LDMOS PA (Q3501)

The LDMOS driver IC contains two stages of amplification with a supply voltage of 7.3V.

This RF power amplifier is capable of supplying an output power of 0.3W (pin 6 and 7) with an input signal of 2mW (3dBm) (pin16). The current drain is typically around 130mA while operating in the frequency range of 136-174MHz.

The LDMOS PA is capable of supplying an output power of 7W with an input signal of 0.3W. The current drain is typically around 1800mA while operating in the frequency range of 136-174MHz. The power output is varied by changing the bias voltage.

2.2 Antenna Switch

The antenna switch circuit consists of two pin diodes, D3521 and D3551, a pi network (C3531, L3551 and C3550), and three current limiting resistors (R3571, R3572, R3573). In the transmit mode, B+ at PCIC (U3502) pin 23 goes low to turn on Q3561 where a B+ bias is applied to the antenna switch circuit to bias the diodes "on". The shunt diode (D3551) shorts out the receiver port, and the pi network, which operates as a quarter wave transmission line, transforms the low impedance of the shunt diode to a high impedance at the input of the harmonic filter. In the receive mode, the diodes are both off, creating a low attenuation path between the antenna and receiver ports.

2.3 Harmonic Filter

The harmonic filter consists of C3532 to C3536, L3531 and L3532. This network forms a low-pass filter to attenuate harmonic energy of the transmitter to specifications level. The harmonic filter insertion loss is typically less than 1.2dB.

2.4 Antenna Matching Network

A matching network made up of L3538 and C3537/C3539 is used to match the antenna impedance to the harmonic filter. This optimizes the performance of the transmitter and receiver into the antenna.

2.5 Power Control Integrated Circuit (PCIC)

The transmitter uses the PCIC, U3502 to control the power output of the radio by maintaining the radio current drain. The current to the final stage of the power module is supplied through R3519, which provides a voltage proportional to the current drain. This voltage is then fedback to the Automatic Level Control (ALC) within the PCIC to provide loop stability.

The PCIC also contains internal digital to analog converters (DACs) that provide the reference voltage of the control loop. The voltage level is controlled by the microprocessor through the data line of the PCIC.

The resistors and integrators within the PCIC, and external capacitors (C3562, C3563 and C3565) control the transmitter rise and fall times. These are necessary to reduce the power splatter into adjacent channels.

U3503 and its associated components act as a temperature cut back circuit. This provides the necessary voltage to the PCIC to cut the transmitter power if the radio temperature gets too high.

3.0 VHF Receiver (for all models except those with PCB8486473Z04)

The VHF receiver consists of a front end, back end, and automatic gain control circuits. A block diagram of the VHF receiver is shown in Figure 2-2. Detailed descriptions of these features are contained in the paragraphs that follow.

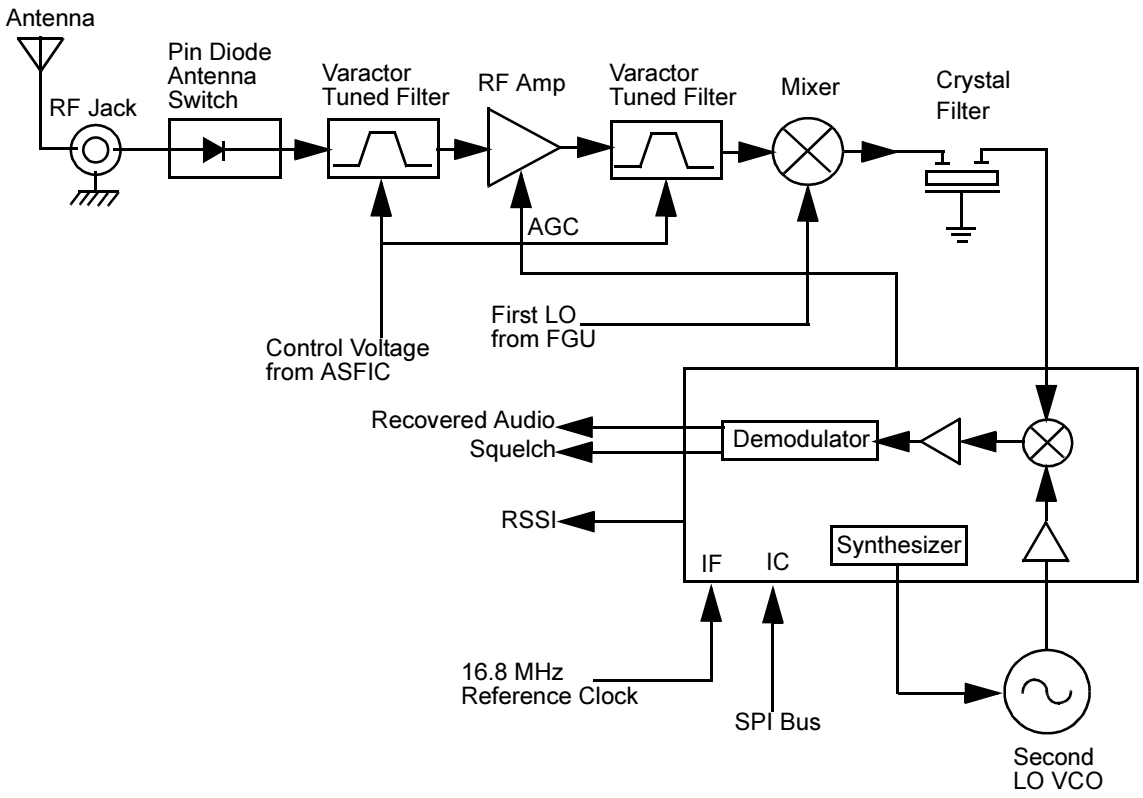


Figure 2-2 VHF Receiver Block Diagram.

3.1 Receiver Front-End

(*Refer to Figure 2-2 and the VHF Receiver Front End schematic diagram*)

The RF signal is received by the antenna and applied to a low-pass filter consisting of L3531, L3532, C3532 to C3563. The filtered RF signal is passed through the antenna switch. The antenna switch circuit consists of two pin diodes (D3521 and D3551) and a pi network (C3531, L3551, and C3550).The RF signal is then applied to a varactor tuned bandpass filter which consists of L3301, L3303, C3301 to C3304, and D3301. The filter is tuned by applying a control voltage to the varactor diode (D3301) in the filter.

The bandpass filter is electronically tuned by the DACRx from IC 404 which is controlled by the microprocessor. Depending on the carrier frequency, the DACRx supplies the tuned voltage to the varactor diodes in the filter. Wideband operation of the filter is achieved by shifting the bandpass filter across the band.

The output of the bandpass filter is coupled to the RF amplifier transistor Q3302 via C3306. After being amplified by the RF amplifier, the RF signal is further filtered by a second varactor tuned bandpass filter, consisting of L3305, L3306, C3311 to C3314 and D3302.

Both the pre and post-RF amplifier varactor tuned filters have similar responses. The 3 dB bandwidth of the filter is about 12 MHz. This enables the filters to be electronically controlled by using a single control voltage which is DACRx.

The output of the post-RF amplifier filter is connected to the passive double balanced mixer which consists of T3301, T3302, and CR3301. Matching of the filter to the mixer is provided by C3317, C3318 and L3308. After mixing with the first LO signal from the voltage controlled oscillator (VCO) using high side injection, the RF signal is down-converted to the 45.1 MHz IF signal.

The IF signal coming out of the mixer is transferred to the crystal filter (Y3200) through a resistor pad (R3321 - R3323) and a diplexer (C3320 and L3309). Matching to the input of the crystal filter is provided by C3200 and L3200. The crystal filter provides the necessary selectivity and intermodulation protection.

3.2 Receiver Back-End

(*Refer to Figure 2-2 and the VHF Receiver Back End schematic diagram*)

The output of crystal filter Y3200 is matched to the input of IF amplifier transistor Q3200 by capacitor C3203. Voltage supply to the IF amplifier is taken from the receive 5 volts (R5). The gain controlled IF amplifier provides a maximum gain of about 10dB. The amplified IF signal is then coupled into U3220 pin 3 via L3202, C3207, and C3230 which provides impedance matching for the IF amplifier and U3220.

The IF signal applied to pin 3 of U3220 is amplified, down-converted, filtered, then demodulated to produce the recovered audio at pin 27 of U3220. This IF IC is electronically programmable, and the amount of filtering, which is dependent on the radio channel spacing, is controlled by the microprocessor. Additional filtering, once externally provided by the conventional ceramic filters, is replaced by internal filters in the IF module (U3220).

The IF IC uses a type of direct conversion process, whereby the externally generated second LO frequency is divided by two in U3220 so that it is very close to the first IF frequency. The IF IC (U3220) synthesizes the second LO and phase-locks the VCO to track the first IF frequency. The second LO is designed to oscillate at twice the first IF frequency because of the divide-by-two function in the IF IC.

In the absence of an IF signal, the VCO “searches” for a frequency, or its frequency will vary close to twice the IF frequency. When an IF signal is received, the VCO will lock onto the IF signal. The second LO/VCO is a Colpitts oscillator built around transistor Q3270. The VCO has a varactor diode, D3270, to adjust the VCO frequency. The control signal for the varactor is derived from a loop filter consisting of C3278 to C3280, R3274 and R3275.

The IF IC (U3220) also provides a received signal-strength indicator (RSSI) and a squelch output. The RSSI is a dc voltage monitored by the microprocessor and is used as a peak indicator during the bench tuning of the receiver front-end varactor filter. The RSSI voltage is also used to control the automatic gain control (AGC) circuit at the front-end.

The demodulated signal on pin 27 of U3220 is also used for squelch control. The signal is routed to U404 (ASFIC) where squelch signal shaping and detection takes place. The demodulated audio signal is also routed to U404 for processing before going to the audio amplifier for amplification.

3.3 Automatic Gain Control (AGC)

(*Refer to the Receiver Front End and Receiver Back End schematic diagrams*)

The front end automatic gain control circuit provides automatic reduction of gain of the front end RF amplifier via feedback. This prevents overloading of backend circuits and is achieved by drawing some of the output power from the RF amplifier output. At high radio frequencies, capacitor C3327 provides the low impedance path to ground for this purpose. CR3302 is a pin diode used for switching the path on or off. A certain amount of forward biasing current is needed to turn the pin diode on. Transistor Q3301 provides this current.

Radio signal strength indicator, RSSI, a voltage signal, is used to drive Q3301 to saturation i.e. turned on. RSSI is produced by U3220 and is proportional to the gain of the RF amplifier and the input power to the radio.

Resistors R3304 and R3305 are voltage dividers designed to turn on Q3301 at certain RSSI levels. To turn on Q3301 the voltage across R3305 must be greater or equal to the voltage across R3324 + Vbe. Capacitor C3209 is used to dampen any instability while the AGC is turning on. The current flowing into the collector of Q3301, a high current gain NPN transistor, is drawn through the pin diode to turn it on. Maximum current flowing through the pin is limited by resistors R3316, R3313, R3306 and R3324. Feedback capacitor C3326 used to provide some stability to this high gain stage.

An additional gain control circuit is formed by Q3201 and associated components. Resistors R3206 and R3207 are voltage dividers designed to turn on Q3201 at a significantly higher RSSI level than the level required to turn on pin diode control transistor Q3301. In order to turn on Q3201 the voltage across R3207 must be greater or equal to the voltage across R3208 + Vbe. As current starts flowing into the collector of Q3201, it reduces the bias voltage at the base of IF amplifier transistor Q3200 and in turn, the gain of the IF amplifier. The gain is then controlled in a range of -30dB up to +10dB.

4.0 Receiver (for models with PCB 8486473Z04)

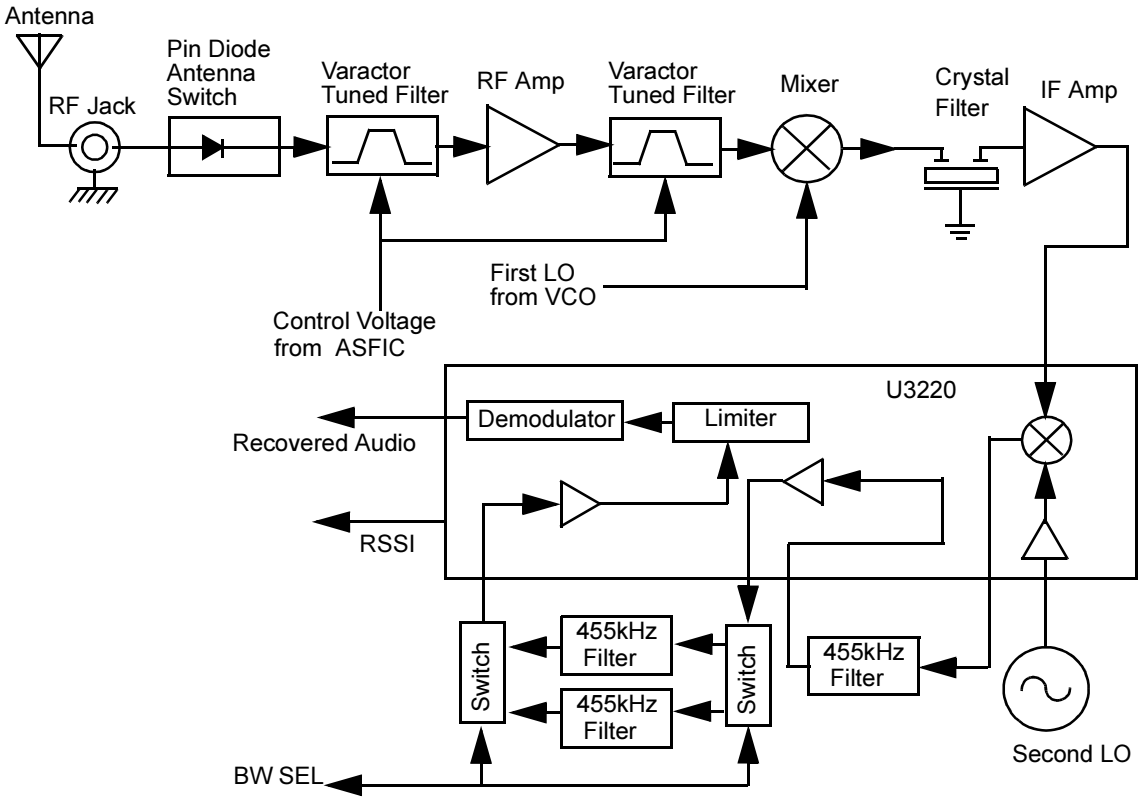


Figure 2-3 VHF Receiver Block Diagram

4.1 Receiver Front-End

(*Refer to Figure 2-3 and the VHF Receiver Front End, VHF Receiver Back End and VHF Transmitter schematic diagrams*)

The RF signal is received by the antenna and applied to a low-pass filter. For VHF, the filter consists of L3531, L3532, C3532 to C3563. The filtered RF signal is passed through the antenna switch consisting of two pin diodes (D3521 and D3551) and a pi network (C3531, L3551 and C3550).The signal is then applied to a varactor tuned bandpass filter. The VHF bandpass filter comprises of L3301, L3303, C3301 to C3304 and D3301. The bandpass filter is tuned by applying a control voltage to the varactor diode (D3301) in the filter.

The bandpass filter is electronically tuned by the DACRx from IC404 which is controlled by the microprocessor. Depending on the carrier frequency, the DACRx will supply the tuned voltage to the varactor diodes in the filter. Wideband operation of the filter is achieved by shifting the bandpass filter across the band.

The output of the bandpass filter is coupled to the RF amplifier transistor Q3302 via C3306. After being amplified by the RF amplifier, the RF signal is further filtered by a second varactor tuned bandpass filter, consisting of L3305, L3306, C3311 to C3314 and D3302.

Both the pre and post-RF amplifier varactor tuned filters have similar responses. The 3 dB bandwidth of the filter is about 12 MHz. This enables the filters to be electronically controlled by using a single control voltage which is DACRx .

The output of the post-RF amplifier filter is connected to the passive double balanced mixer which consists of T3301, T3302 and CR3301. Matching of the filter to the mixer is provided by C3317, C3318 and L3308. After mixing with the first LO signal from the voltage controlled oscillator (VCO) using high side injection, the RF signal is down-converted to the 44.85 MHz IF signal.

The IF signal coming out of the mixer is transfered to the crystal filter (Y3200) through a resistor pad (R3321 - R3323) and a diplexer (C3320 and L3309). Matching to the input of the crystal filter is provided by C3201 and L3200. The crystal filter provides the necessary selectivity and intermodulation protection.

4.2 Receiver Back-End

(*Refer to Figure 2-3 and the VHF Receiver Back End schematic diagram*)

The output of crystal filter Y3200 is matched to the input of IF amplifier transistor Q3200 by L3203. Voltage supply to the IF amplifier is taken from the receive 5 volts (R5). The IF amplifier Q3200 is actively biased by a collector base feedback provided by R3202 and R3203. The gain controlled IF amplifer provides a maximum gain of about 16dB. A dual hot carrier diode (CR3201) limits the filter output voltage swing to reduce overdrive effects at RF levels above -27dBm. The amplified IF signal is then coupled into U3220 (pin 1) via L3202, C3207, and C3200 which provides the matching for the IF amplifier and U3220.

The IF signal applied to pin 1 of U3220 is amplified, down-converted, filtered, and demodulated, to produce the recovered audio at pin 7 of U3220.

Within U3220, the first IF 44.85 MHz signal mixes with the 44.395 MHz second local oscillator (2nd LO) to produce the second IF signal at 455 kHz. The 2nd LO signal frequency is determined by crystal Y3201. The second IF signal (455 kHz) is then filtered by an external ceramic filter Y3205 before being amplified by the second IF amplifier within U3220. Again, the signal is filtered by a second external ceramic filter Y3203 or Y3204 depending on the selected channel spacing. Y3203 is used for 20/25 kHz channel spacing whereas Y3204, for 12.5 kHz channel spacing. The simple circuit consisting of U3221, CR3202, CR3203 and resistors R3209, R3212, R3211 and R3205 divert the second IF signal according to the BW_SEL line. The filtered output of the second IF signal is applied to the limiter input pin of U3220 (Pin 14).

The IF IC (U3220) contains a quadrature detector using a ceramic phase-shift element (Y3202) to provide audio detection. Internal amplification provides an audio output level around 120mVrms (@60% deviation) from pin 8 of U3220. This demodulated audio is fed to the ASFIC_CMP IC (U404) in the controller section.

The IF IC (U3220) also performs several other functions. It provides a received signal-strength indicator (RSSI) with a dynamic range of 70 dB. The RSSI is a dc voltage monitored by the microprocessor, and used as a peak indicator during the bench tuning of the receiver front-end varactor filter.

4.3 Automatic Gain Control (AGC)

(*Refer to the Receiver Front End and Receiver Back End schematic diagrams*)

The front end automatic gain control circuit provides automatic reduction of gain of the front end RF amplifier via feedback. This prevents overloading of backend circuits and is achieved by drawing some of the output power from the RF amplifier output. At high radio frequencies, capacitor C3327 provides the low impedance path to ground for this purpose. CR3302 is a pin diode used for switching the path on or off. A certain amount of forward biasing current is needed to turn the pin diode on. Transistor Q3301 provides this current.

Radio signal strength indicator, RSSI, a voltage signal, is used to drive Q3301 to saturation i.e. turned on. RSSI is produced by U3220 and is proportional to the gain of the RF amplifier and the input power to the radio.

Resistors R3304 and R3305 are voltage dividers designed to turn on Q3301 at certain RSSI levels. To turn on Q3301 the voltage across R3305 must be greater or equal to the voltage across R3324 + Vbe. Capacitor C3209 is used to dampen any instability while the AGC is turning on. The current flowing into the collector of Q3301, a high current gain NPN transistor, is drawn through the pin diode to turn it on. Maximum current flowing through the pin is limited by resistors R3316, R3313, R3306 and R3324. Feedback capacitor C3326 used to provide some stability to this high gain stage.

5.0 Frequency Generation Circuit

(*Refer to Figure 2-4 and the VHF Frequency Synthesizer schematic diagram*)

The Frequency Generation Circuit, shown in Figure 2-4, is composed of two main ICs, the Fractional-N synthesizer (U3701), and the VCO/Buffer IC (U3801). Designed in conjunction to maximize compatibility, the two ICs provide many of the functions that normally would require additional circuits. The synthesizer block diagram illustrates the interconnect and support circuit used in the region. Refer to the schematic for the reference designator.

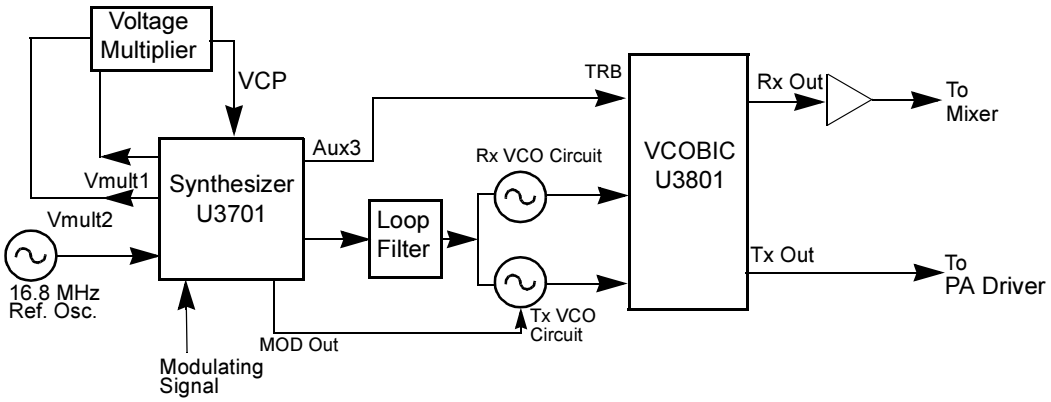


Figure 2-4 VHF Frequency Generation Unit Block Diagram

The synthesizer is powered by regulated 5V and 3.3V which is provided from ICs U3711 and U3201 respectively. The 5V signal is supplied to pins 13 and 30 and the 3.3V signal is applied to pins 5, 20, 34 and 36 of U3701. The synthesizer in turn generates a superfiltered 5V which powers U3801.

In addition to the VCO, the synthesizer must interface with the logic and ASFIC circuitry. Programming for the synthesizer is accomplished through the data, clock and chip select lines (pins 7, 8 and 9) from the microprocessor, U409. A 3.3V dc signal from pin 4 indicates to the microprocessor that the synthesizer is locked.

Transmit modulation from the ASFIC is supplied to pin10 of U3701. Internally the audio is digitized by the Fractional-N and applied to the loop divider to provide low-port modulation. The audio runs through an internal attenuator for modulation balancing purposes before going out at pin 41 to the VCO.

5.1 Synthesizer

The Fractional-N Synthesizer, shown in Figure 2-5, uses a 16.8MHz crystal (Y3761) to provide a reference for the system. The LVFractN IC (U3701) further divides this to 2.1MHz, 2.225MHz, and 2.4MHz as reference frequencies. Together with C3761, C3762, C3763, R3761, and D3761, they build up the reference oscillator that is capable of 2.5 ppm stability over temperatures of -30 to 85°C. A 16.8MHz signal at pin 19 of U3701 is also provided for use by ASFIC and LVZIF (for all models except those with PCB8486473Z04).

The loop filter which consist of C3721, C3722, R3721, R3722 and R3723 provides the necessary dc steering voltage for the VCO and determines the amount of noise and spur passing through.

In achieving fast locking for the synthesizer, an internal adapt charge pump provides higher current at pin 45 of U3701 to put the synthesizer within lock range. The required frequency is then locked by normal mode charge pump at pin 43.

Both the normal and adapt charge pumps get their supply from the capacitive voltage multiplier made up of C3701 to C3704 and triple diodes D3701, D3702. Two 3.3V square waves (180 degrees out of phase) are first multiplied by four and then shifted, along with regulated 5V, to build up 13.5V at pin 47 of U3701.

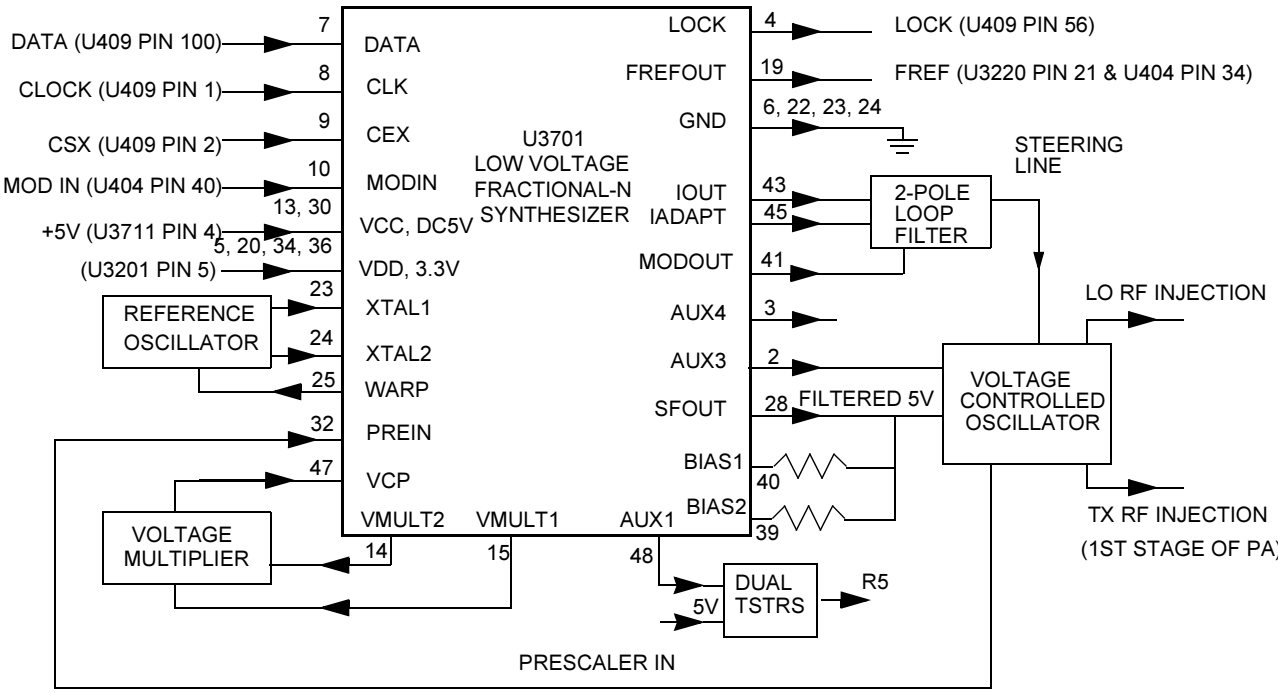


Figure 2-5 VHF Synthesizer Block Diagram.

5.2 Voltage Controlled Oscillator (VCO)

(*Refer to Figure 2-6 and the VHF Voltage Controlled Oscillator schematic diagram)*

The VCOB IC (U3801), shown in Figure 2-6, in conjunction with the Fractional-N synthesizer (U3701) generates RF in both the receive and the transmit modes of operation. The TRB line (U3801 pin 19) determines which oscillator and buffer are enabled. A sample of the RF signal from the enabled oscillator is routed from U3801 pin 12, through a low pass filter, to the prescaler input (U3701 pin 32). After frequency comparison in the synthesizer, a resultant CONTROL VOLTAGE is received at the VCO. This voltage is a DC voltage typically between 3.5V and 9.5V when the PLL is locked on frequency.

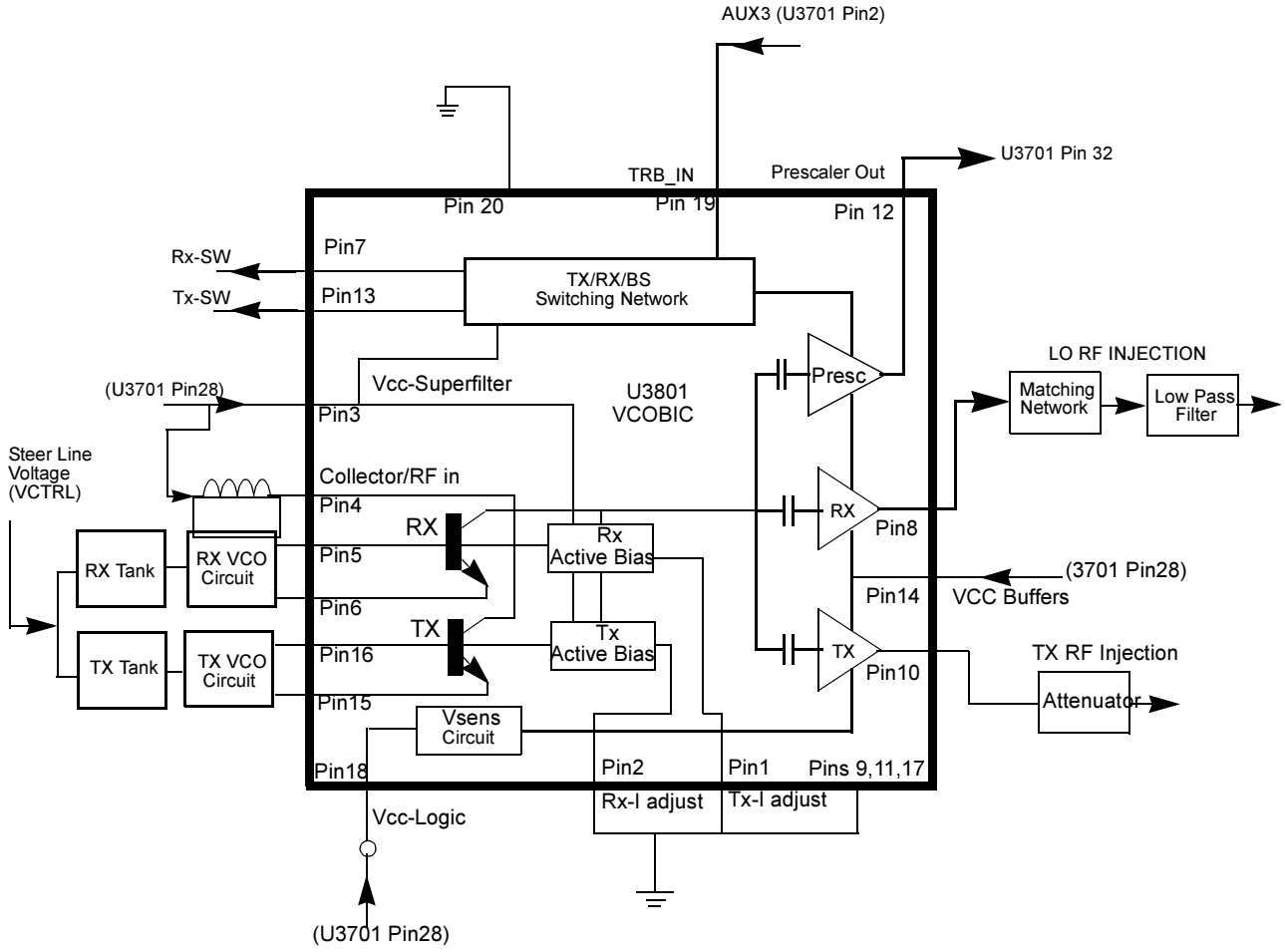


Figure 2-6 VHF VCO Block Diagram

Table 2-1 Level Shifter Logic

Desired Mode	AUX 4	AUX 3	TRB
Tx	n.u.	High (@3.2V)	High (@3.2V)
Rx	n.u.	Low	Low
Battery Saver	n.u.	Hi-Z/Float (@1.6V)	Hi-Z/Float (@1.6V)

In the receive mode, U3801 pin 19 is low or grounded. This activates the receive VCO by enabling the receive oscillator and the receive buffer of U3801. The RF signal at U3801 pin 8 is routed through a matching network. The resulting LO RF INJECTION signal is applied to the mixer at T3302.

During the transmit condition, when PTT is pressed, 3.2 volts is applied to U3801 pin 19. This activates the transmit VCO by enabling the transmit oscillator and the transmit buffer of U3801. The RF signal at U3801 pin 10 is injected into the input of the PA module (U3501 pin16). This RF signal is the TX RF INJECTION. Also in transmit mode, the audio signal to be frequency modulated onto the carrier is received through U3701, pin 41.

When a high impedance is applied to U3801 pin19, the VCO is operating in battery saver mode. In this case, both the receive and transmit oscillators as well as the receive, transmit and prescaler buffer are turned off.

6.0 Voice Storage (GP1280)

(*Refer to Figure 2-7 and the VHF Voice Storage schematic diagram)*

The Voice Storage feature is offered as standard in the GP1280 and as an Option board for GP340/GP360/GP380 and GP640/GP680.

The Voice Storage feature enables users to:

- Record and Playback Personal Memo (Reminders, Notes, etc.).
- Send over-the-air an “Out-Of-Office” message when an incoming call is received but is not available to take up call.
- Over-the-air recording of important voice message being received.

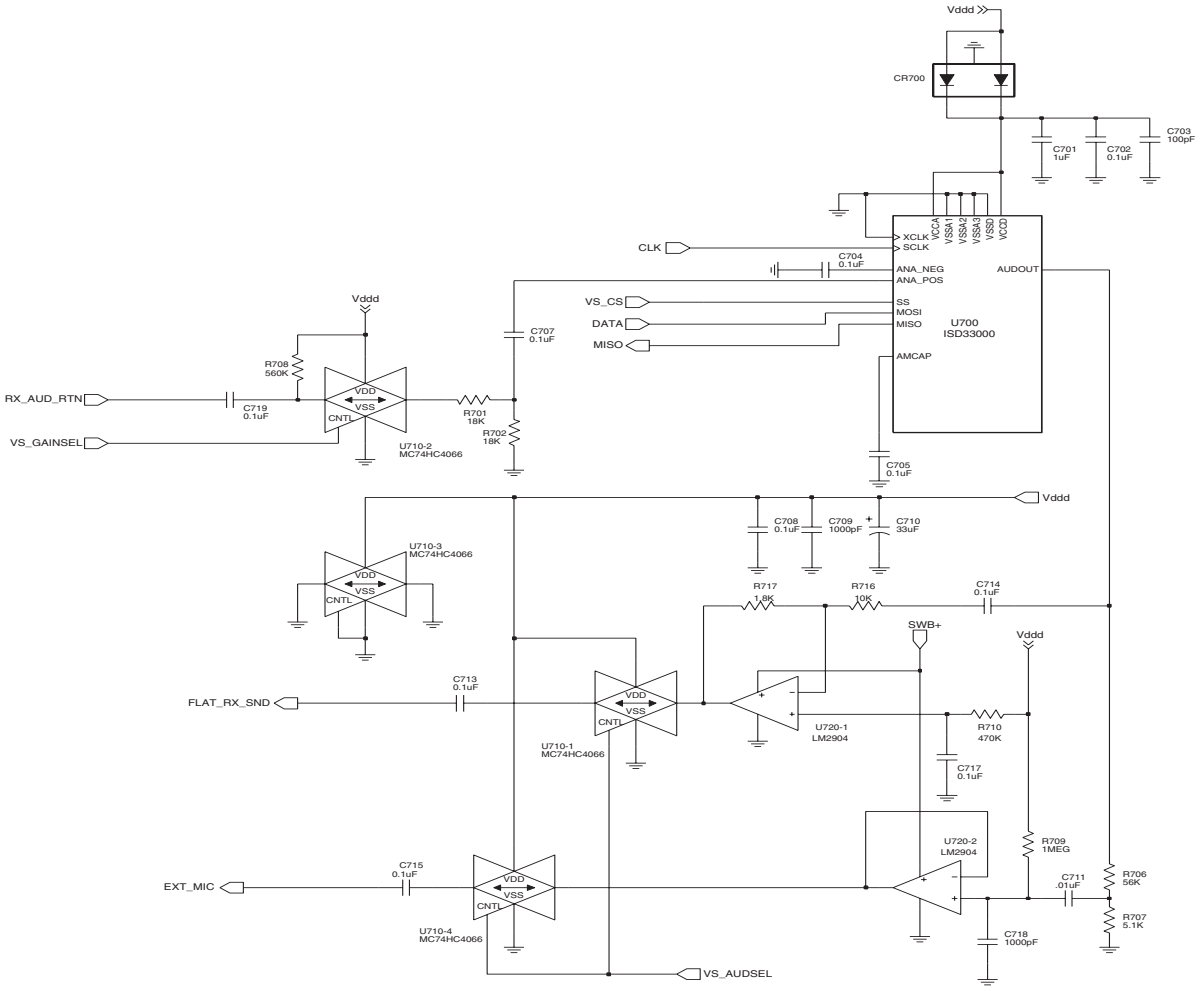


Figure 2-7 Audio path for voice storage connection to interface connector

Audio routing to the Voice Storage circuitry during receive message recording, message playback, personal memo recording and voice prompt transmit over the air are as follows:

Received Message Recording

The receive audio is tapped from the Rx_Aud_Rtn pin of the ASFIC_CMP during receive mode.

Message Playback

Message playback is via the FLAT_RX_SND pin of ASFIC_CMP. In the ASFIC_CMP, the signal is routed via the Side-Tone path to the Receive path where playback audio is routed to the speaker.

Personal Memo Recording

In this mode, voice is pick-up at the Mic. and via the Side-Tone path will be directed to the Rx_Aud_Rtn pin, which is then routed to the voice recording chip.

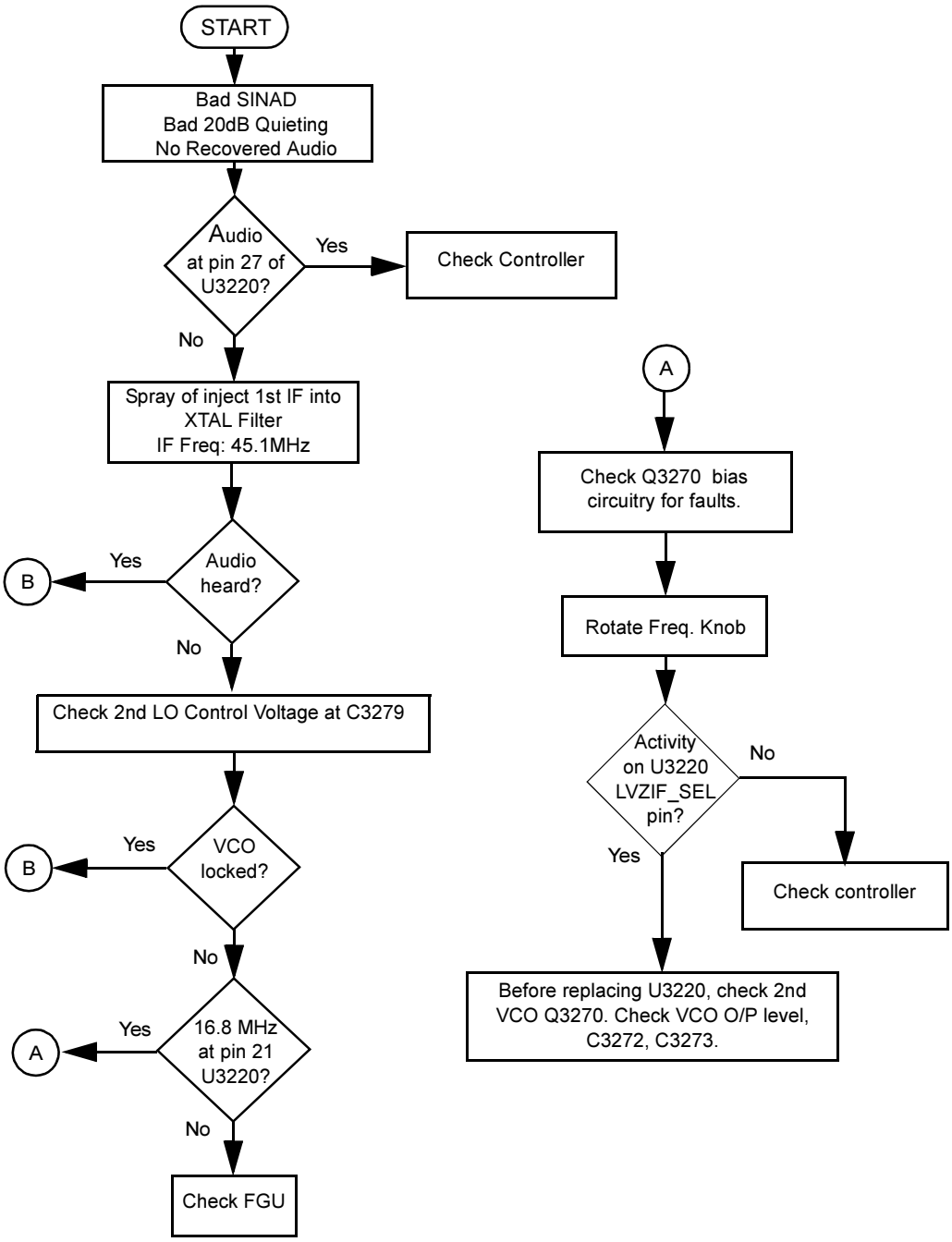
Voice Prompt transmit over the air

A personal voice prompt or Out-Of-Office Message which is stored in the IC can be transmitted over the air through mic path in the ASFIC_CMP to the calling party. This feature is similar to the Telephone Answering Machine feature when the person called is not available to attend the call.

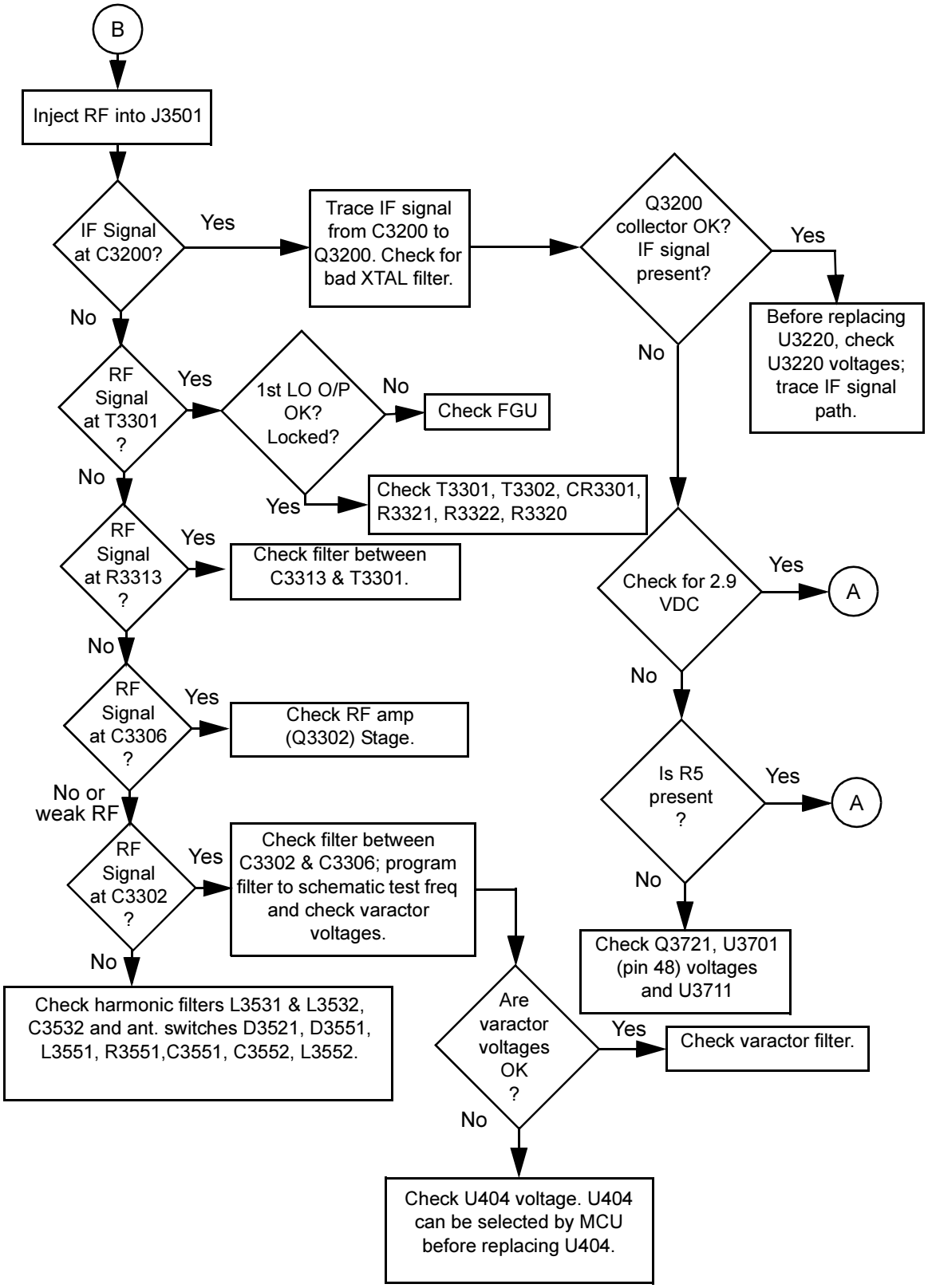
Chapter 3

TROUBLESHOOTING CHARTS

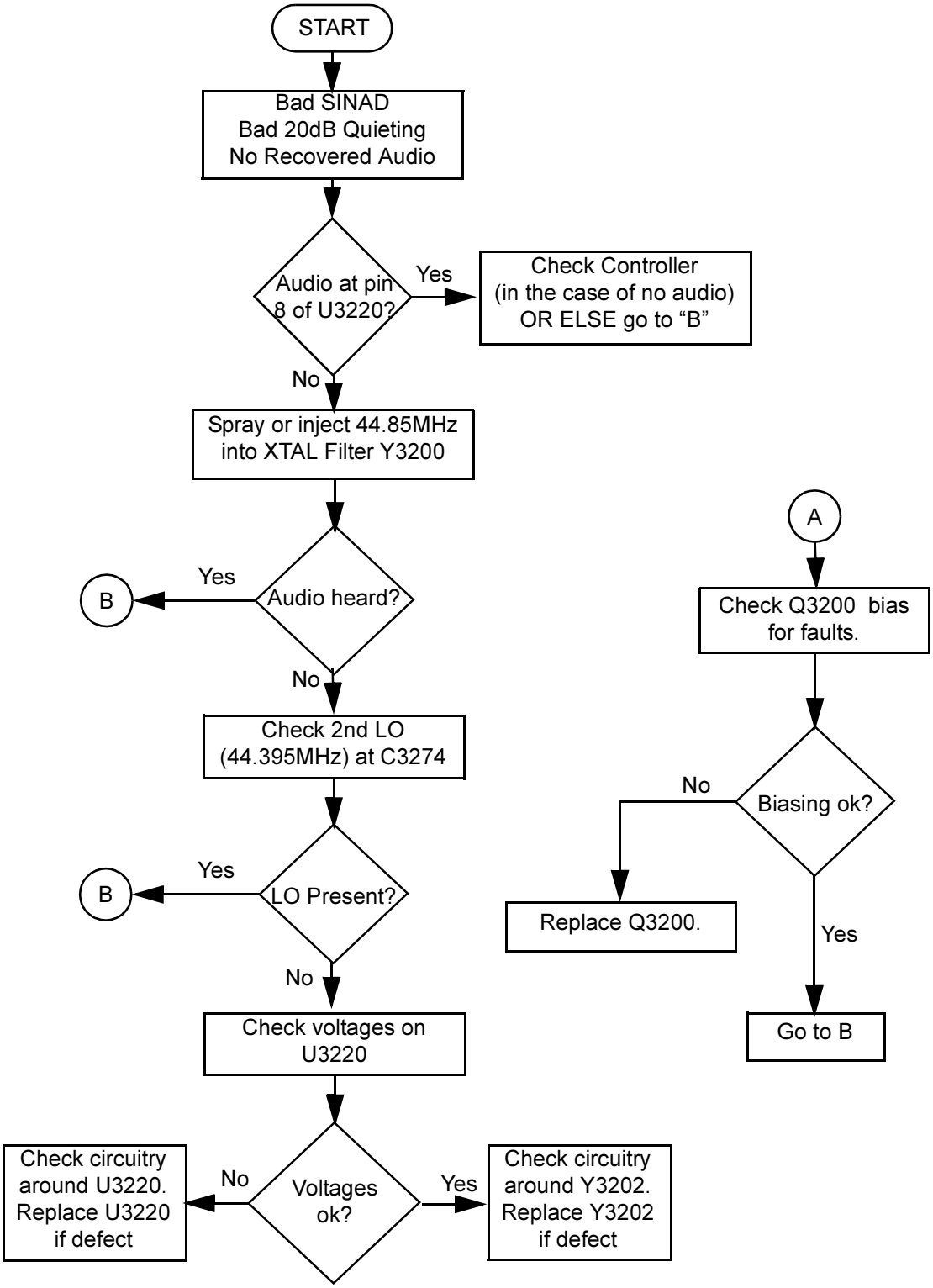
1.0 Troubleshooting Flow Chart for Receiver, for all models except those with PCB 8486473Z04 (Sheet 1 of 2)



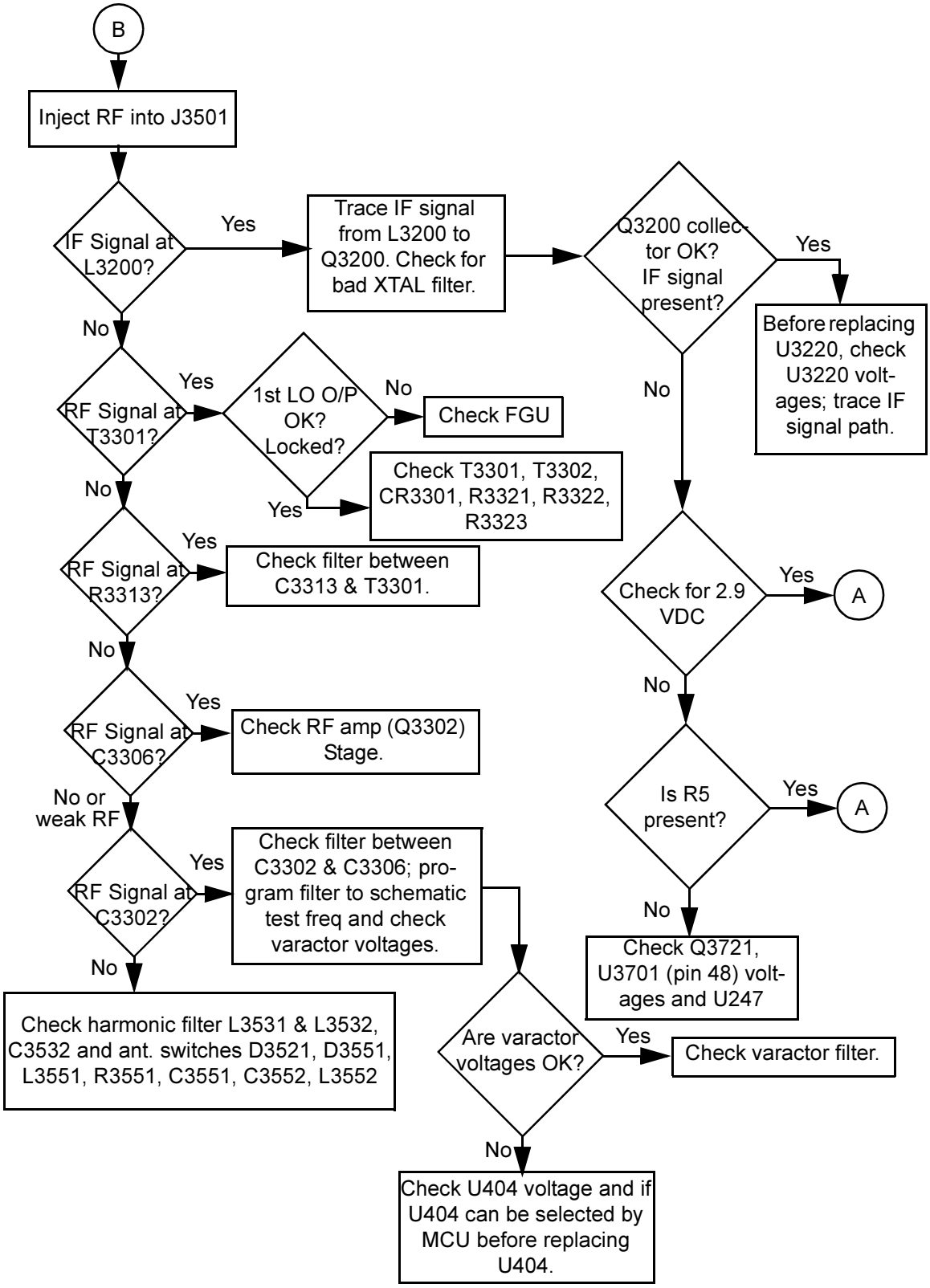
Troubleshooting Flow Chart for Receiver for all models except those with PCB 8486473Z04 (Sheet 2 of 2)



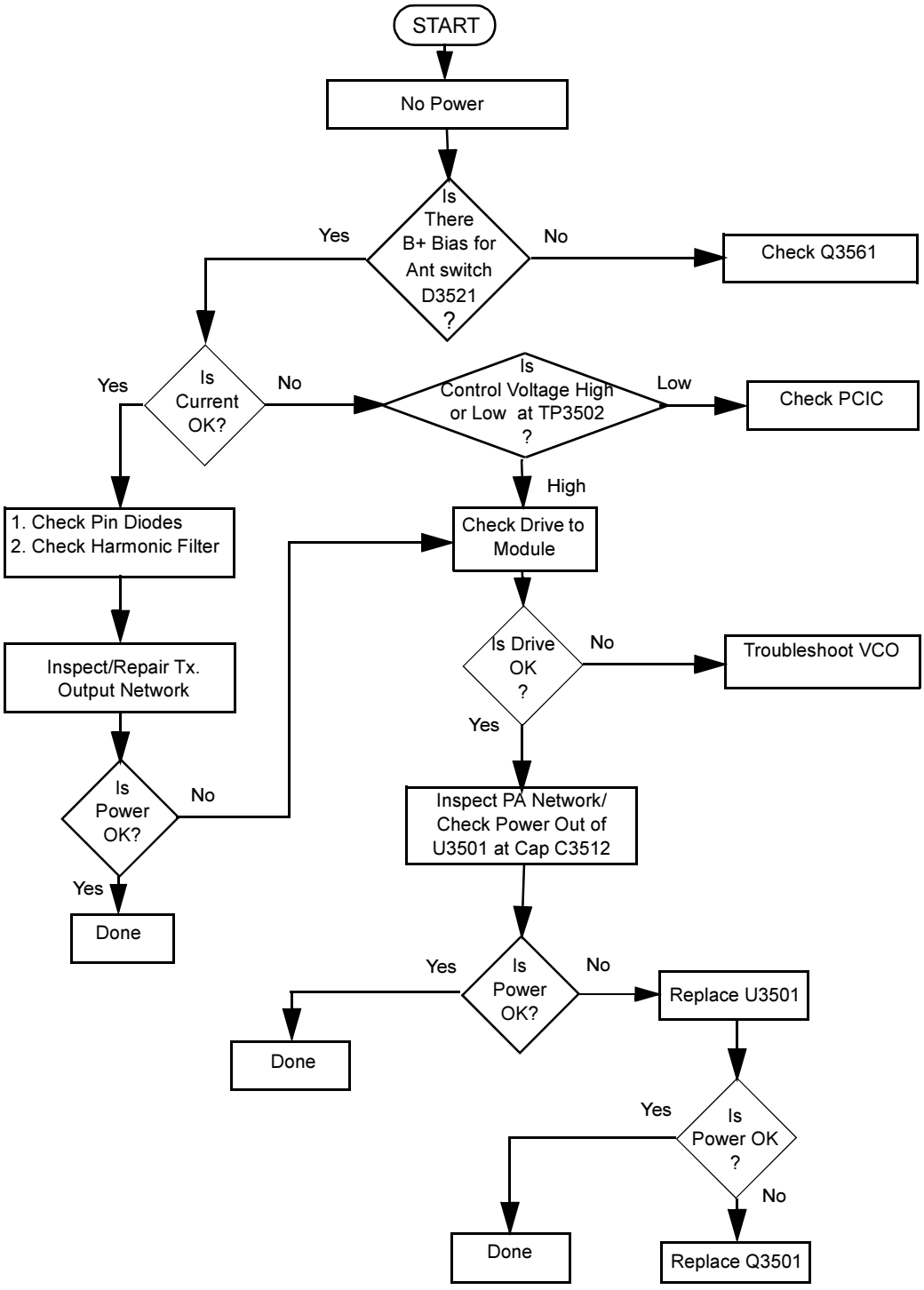
2.0 Troubleshooting Flow Chart for Receiver, for models with PCB 8486473Z04 (Sheet 1 of 2)



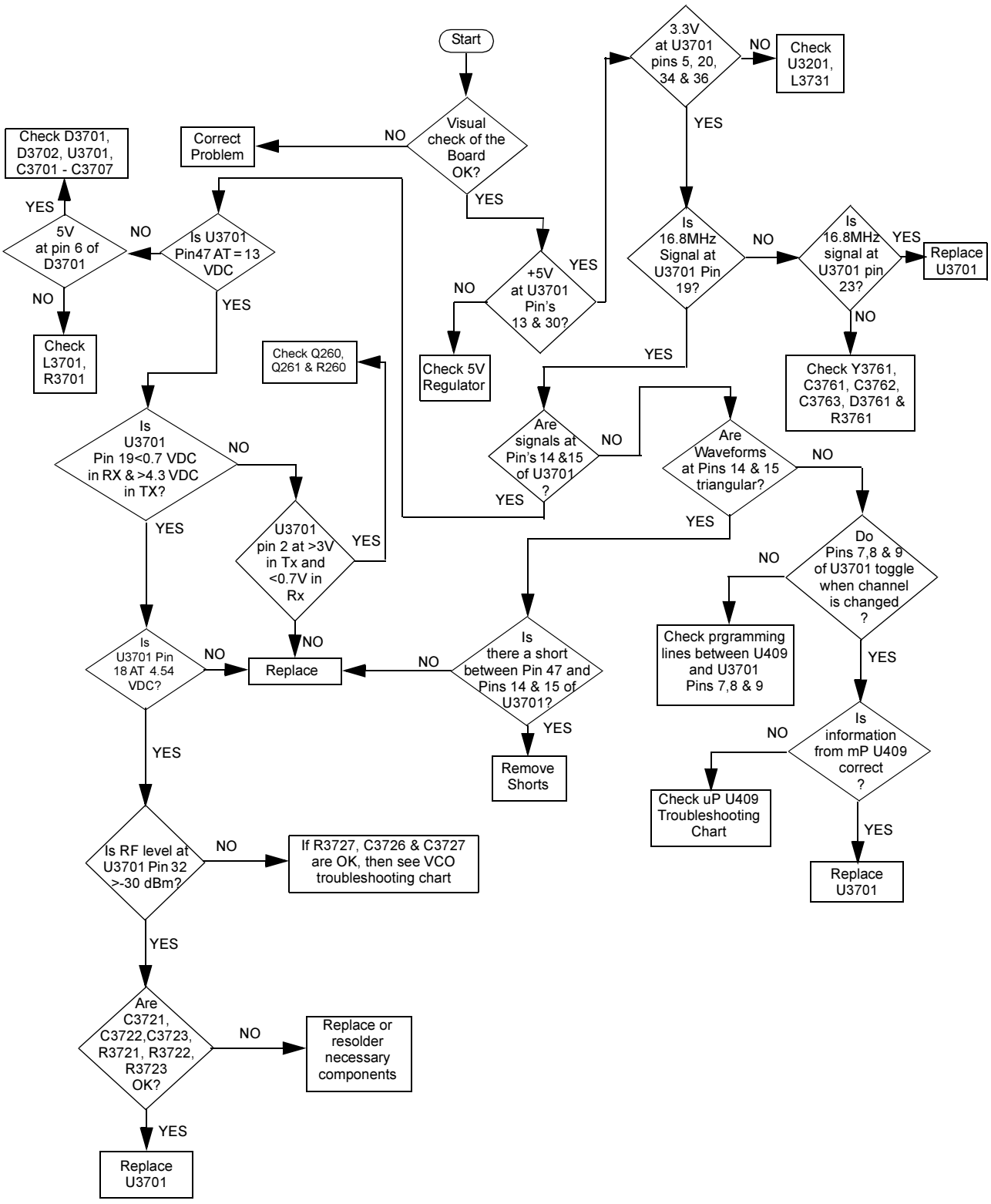
Troubleshooting Flow Chart for Receiver, for models with PCB 8486473Z04 (Sheet 2 of 2)



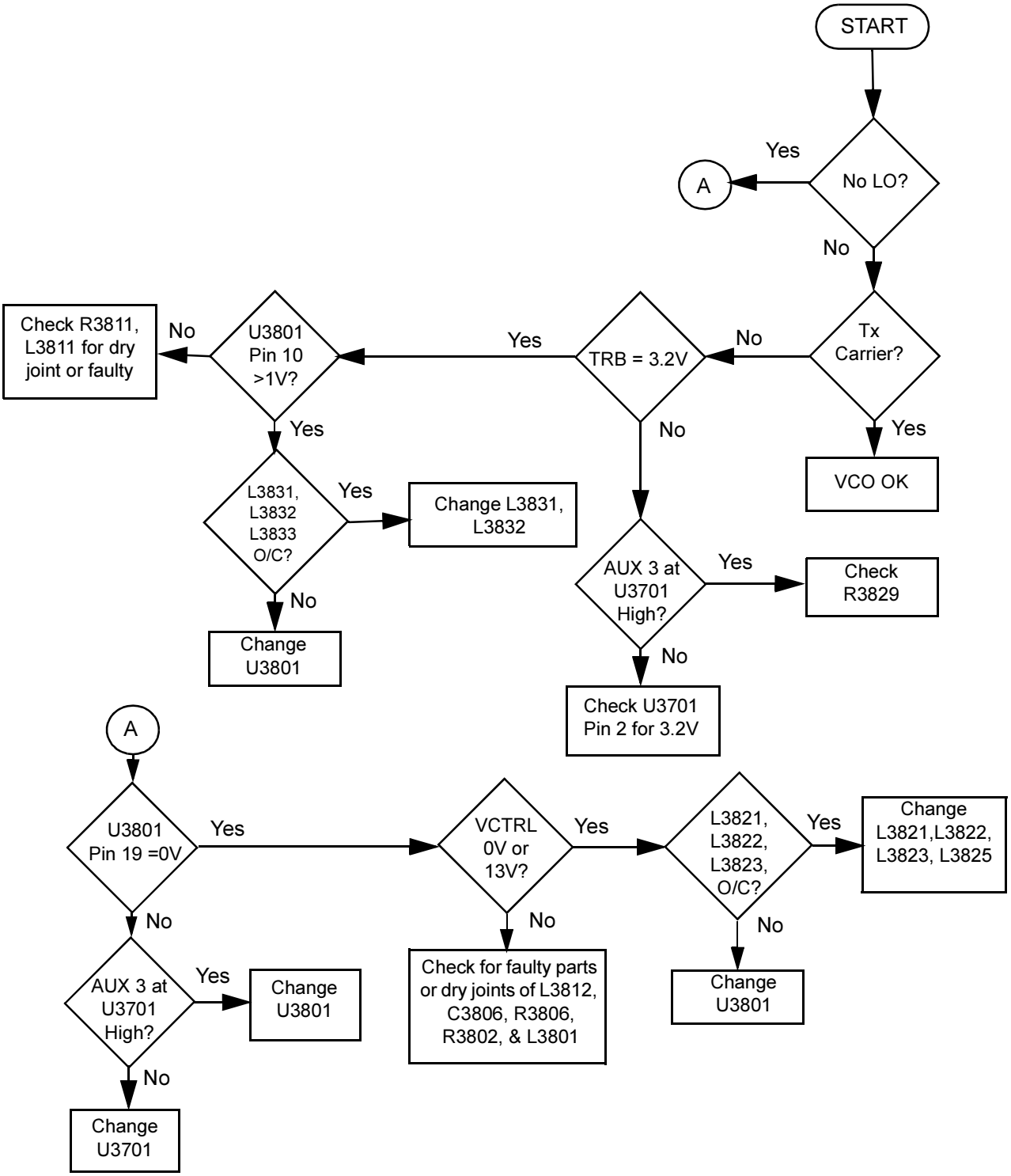
3.0 Troubleshooting Flow Chart for Transmitter



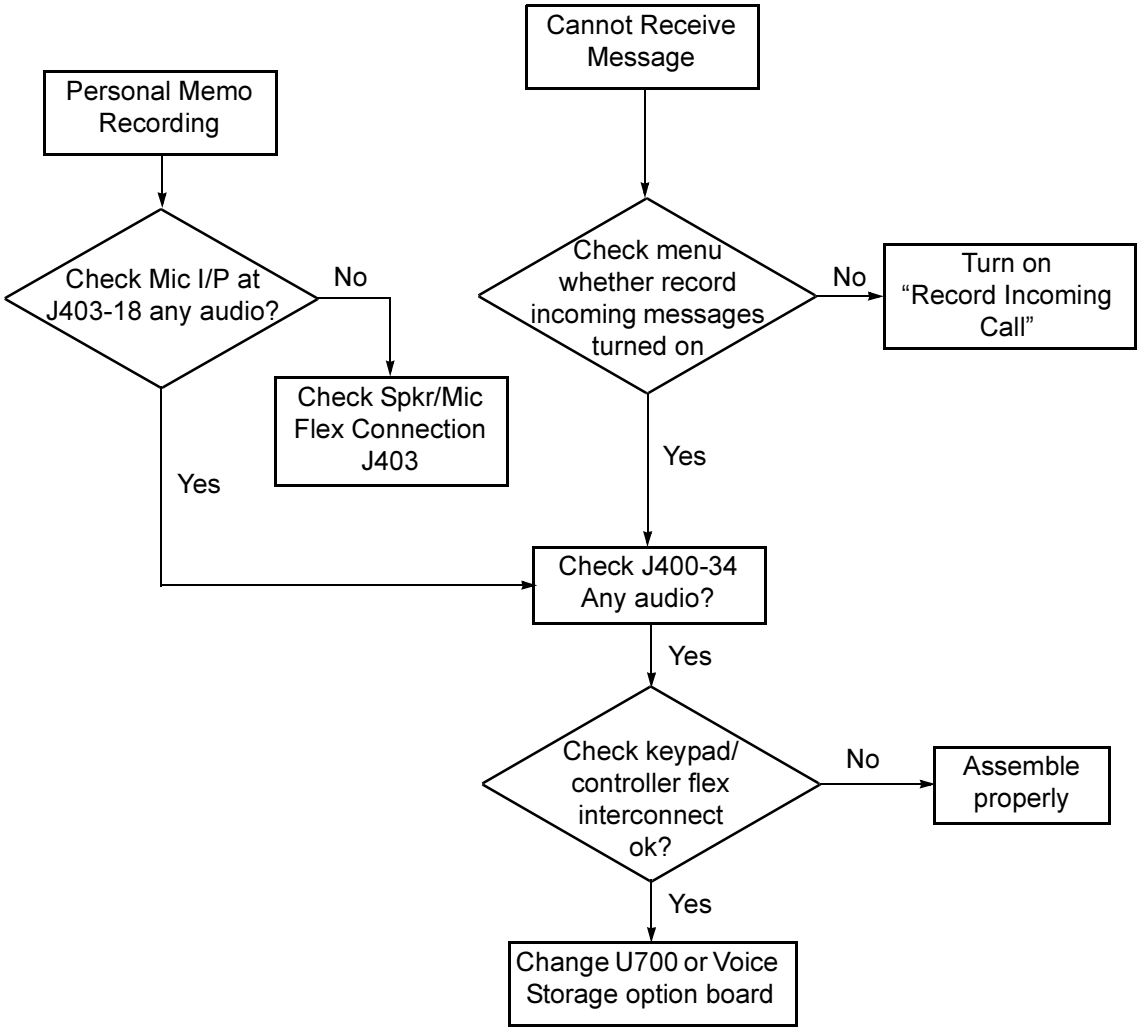
4.0 Troubleshooting Flow Chart for Synthesizer



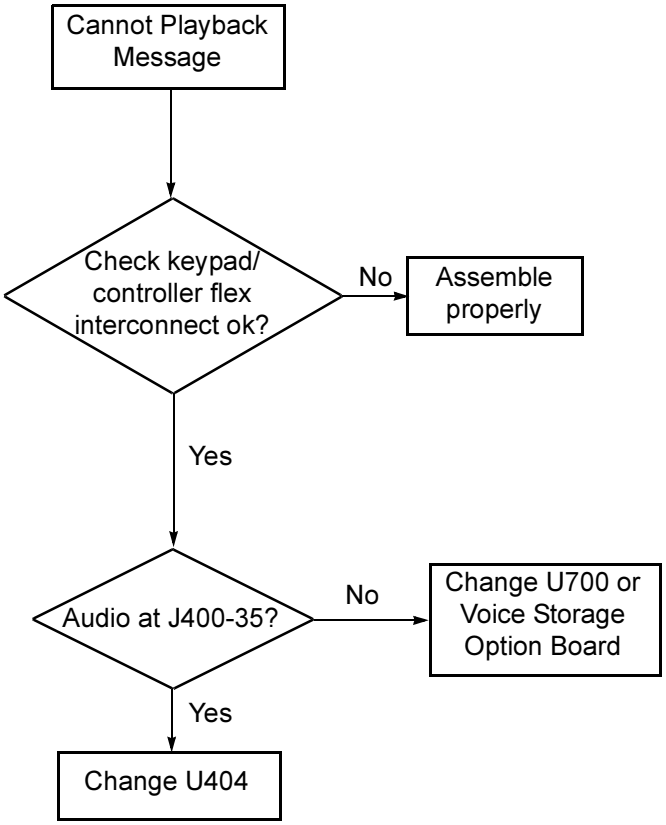
5.0 Troubleshooting Flow Chart for VCO



6.0 Troubleshooting Flow Chart for Receive Message/Personal Memo Recording



7.0 Troubleshooting Flow Chart for Message Playback



Chapter 4

VHF PCB/SCHEMATICS/PARTS LISTS

1.0 Allocation of Schematics and Circuit Boards

1.1 Controller Circuits

The VHF circuits are contained on the printed circuit board (PCB) which also contains the Controller circuits. This Chapter shows the schematics for the VHF circuits only, refer to the Controller section for details of the related Controller circuits . The PCB component layouts and the Parts Lists in this Chapter show both the Controller and VHF circuit components. The VHF schematics and the related PCB and parts list are shown in the tables below.

1.2 Voice Storage Facility

The Voice Storage facility is fitted to the GP1280 radio as standard and the schematics, component layout and parts list for these circuits are shown in this Chapter. The Voice Storage facility may be fitted to other radios in the GP Series as an option board; reference must be made to the Option Board manual in this case. The Voice Storage schematic and the related PCB is shown in Tables 4-2 and 4-4 below.

Table 4-1 VHF Diagrams and Parts Lists

PCB :	
8486062B12 Main Board Top Side	Page 4-5
8486062B12 Main Board Bottom Side	Page 4-6
8486062B14 Main Board Top Side	Page 4-25
8486062B14 Main Board Bottom Side	Page 4-26
SCHEMATICS	
Controls and Switches	Page 4-7
Receiver Front End	Page 4-8
Receiver Back End	Page 4-9
Synthesizer	Page 4-10
Voltage Controlled Oscillator	Page 4-11
Transmitter	Page 4-12
Parts List	
8486062B12	Page 4-13
8486062B14	Page 4-27

Table 4-2 VHF GP1280 Diagrams and Parts Lists

PCB :	
8486101B09 Main Board Top Side	Page 4-17
8486101B09 Main Board Bottom Side	Page 4-18
8486101B10 Main Board Top Side	Page 4-31
8486101B10 Main Board Bottom Side	Page 4-32
SCHEMATICS	
Controls and Switches	Page 4-7
Receiver Front End	Page 4-8
Receiver Back End	Page 4-9
Synthesizer	Page 4-10
Voltage Controlled Oscillator	Page 4-11
Transmitter	Page 4-12
Voice Storage Circuits	Page 4-19
Parts List	
8486101B09	Page 4-21
8486101B10	Page 4-33

Table 4-3 VHF Diagrams and Parts Lists

PCB :	
8486062B16 Main Board Top Side	Page 4-37
8486062B16 Main Board Bottom Side	Page 4-38
8486062B17 Main Board Top Side	Page 4-49
8486062B17 Main Board Bottom Side	Page 4-50
SCHEMATICS	
Controls and Switches	Page 4-39
Receiver Front End	Page 4-40
Receiver Back End	Page 4-41
Synthesizer	Page 4-42
Voltage Controlled Oscillator	Page 4-43
Transmitter	Page 4-44
Parts List	
8486062B16	Page 4-45
8486062B17	Page 4-51

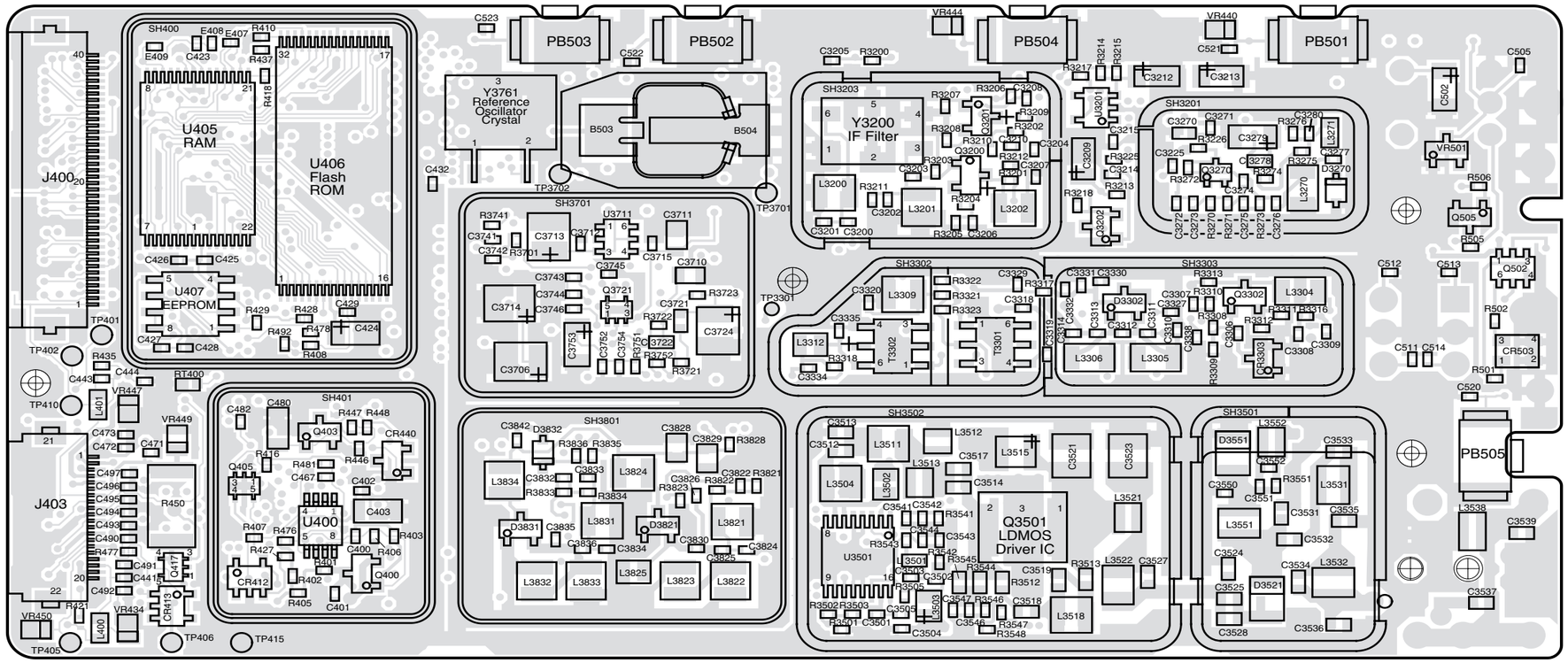
Table 4-4 VHF GP1280 Diagrams and Parts Lists

PCB :	
8486101B11 Main Board Top Side	Page 4-55
8486101B11 Main Board Bottom Side	Page 4-56
SCHEMATICS	
Controls and Switches	Page 4-39
Receiver Front End	Page 4-40
Receiver Back End	Page 4-41
Synthesizer	Page 4-42
Voltage Controlled Oscillator	Page 4-43
Transmitter	Page 4-44
Voice Storage Circuits	Page 4-19
Parts List	
8486101B11	Page 4-57

Table 4-5 VHF Diagrams and Parts Lists

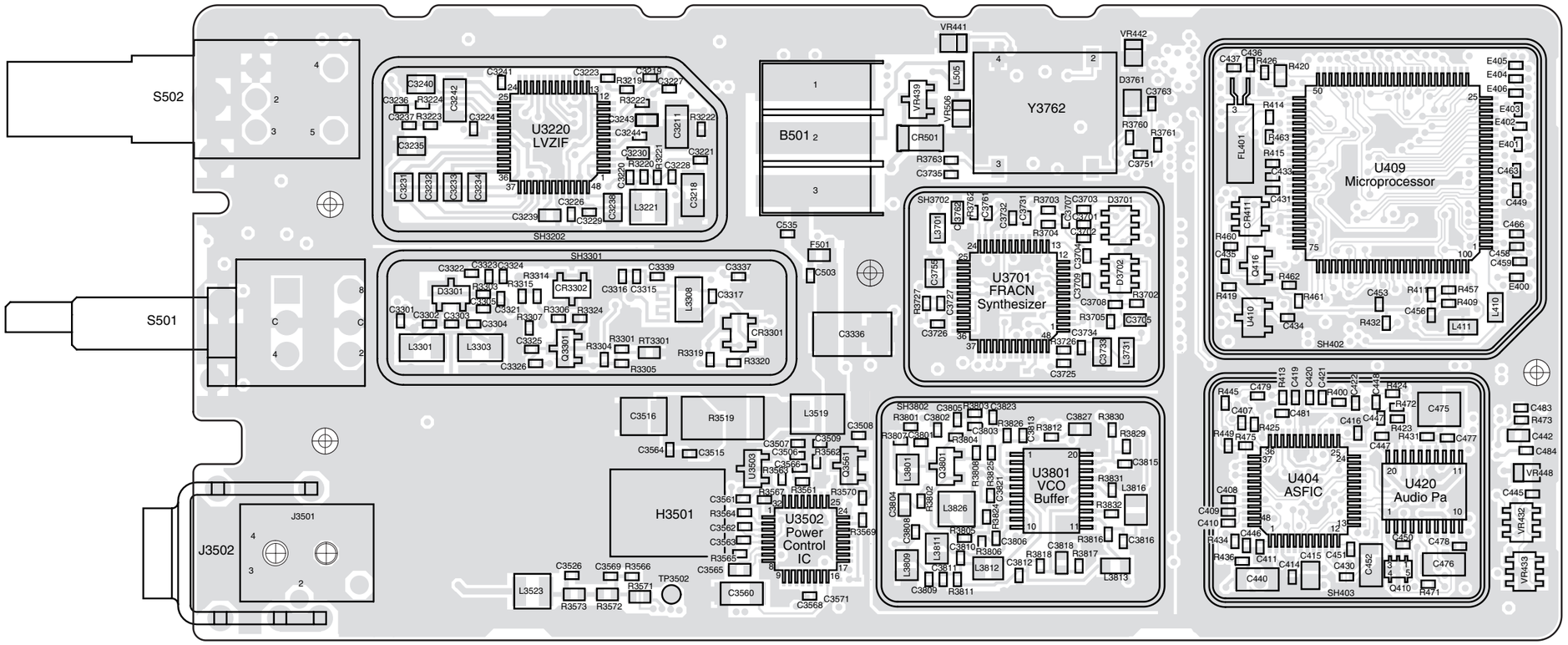
PCB :	
8486473Z04 Main Board Top Side	Page 4-61
8486473Z04 Main Board Bottom Side	Page 4-62
SCHEMATICS	
Controls and Switches	Page 4-63
Receiver Front End	Page 4-64
Receiver Back End	Page 4-65
Synthesizer	Page 4-66
Voltage Controlled Oscillator	Page 4-67
Transmitter	Page 4-68
Parts List	
8486473Z04	Page 4-69

2.0 VHF PCB 8486062B12 / Schematics



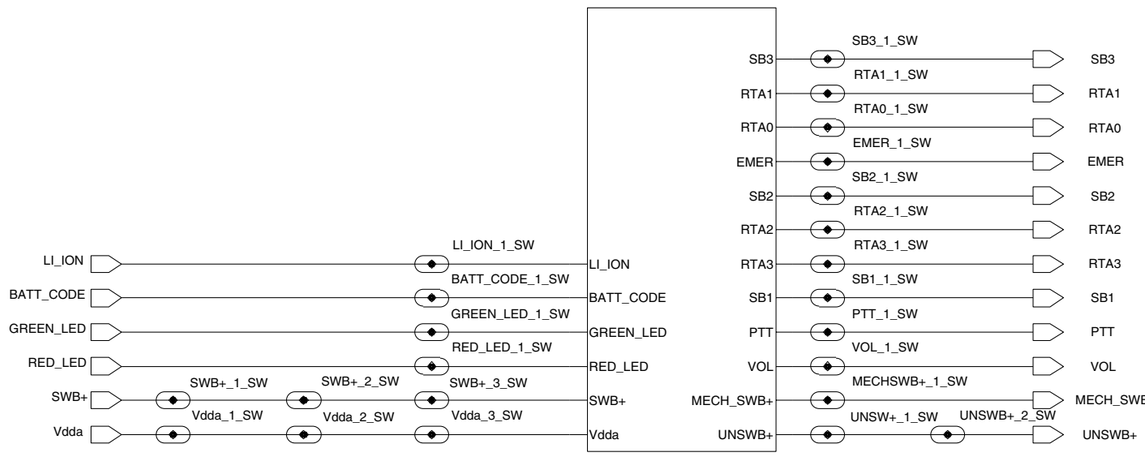
ZWG0130072-D

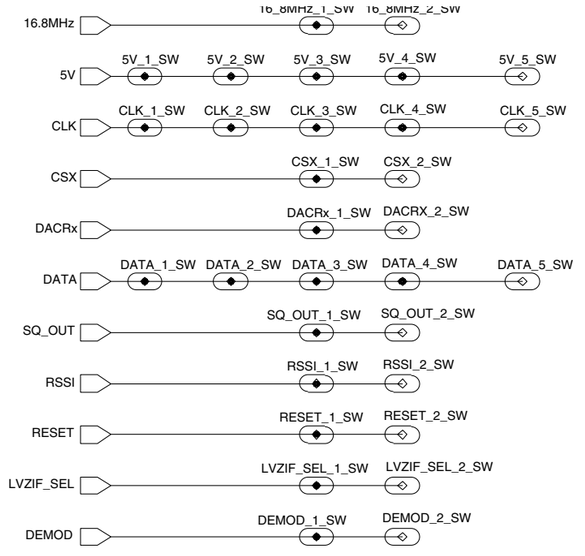
VHF (136-174 MHz) Main Board Top Side



ZWG01300073-C

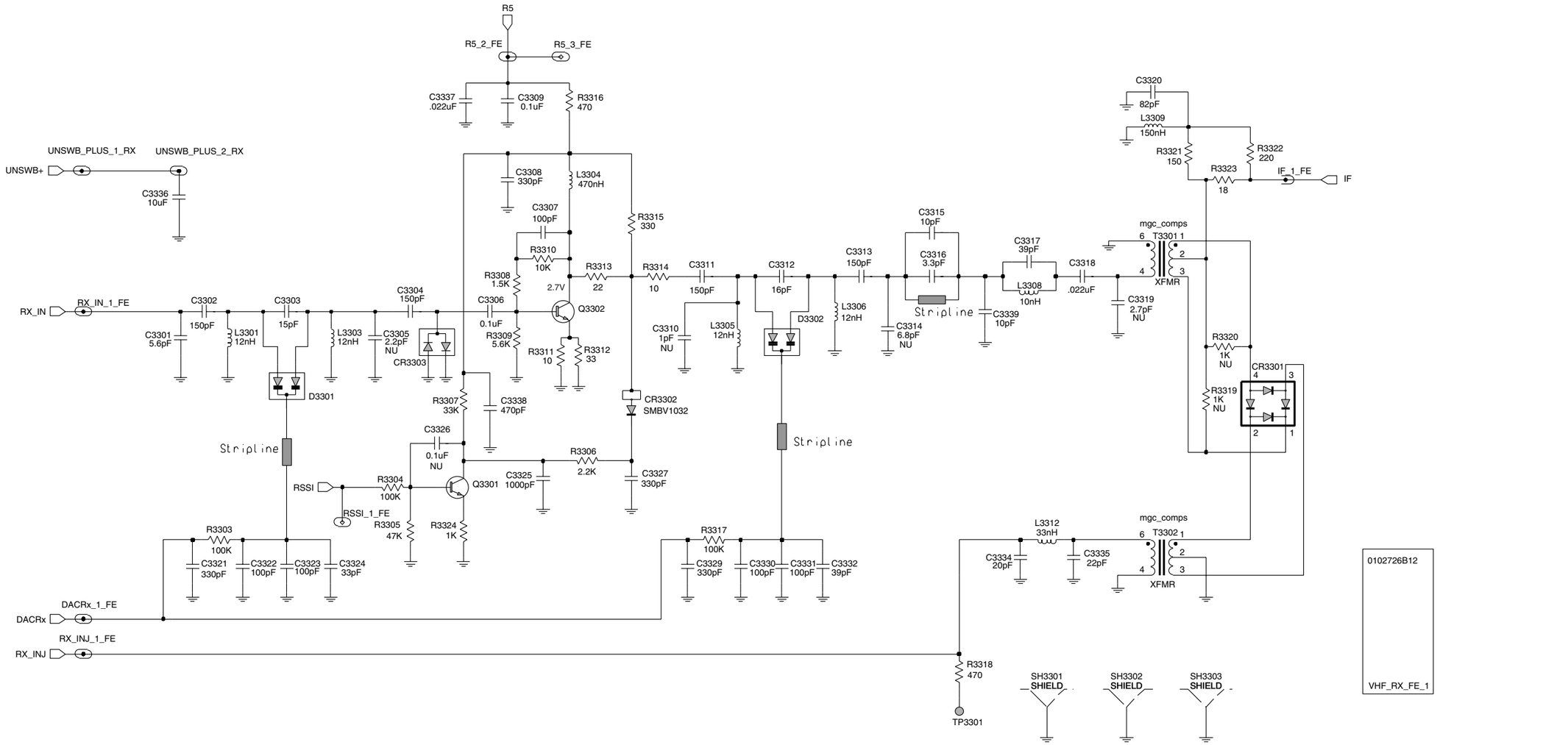
VHF (136-174 MHz) Main Board Bottom Side





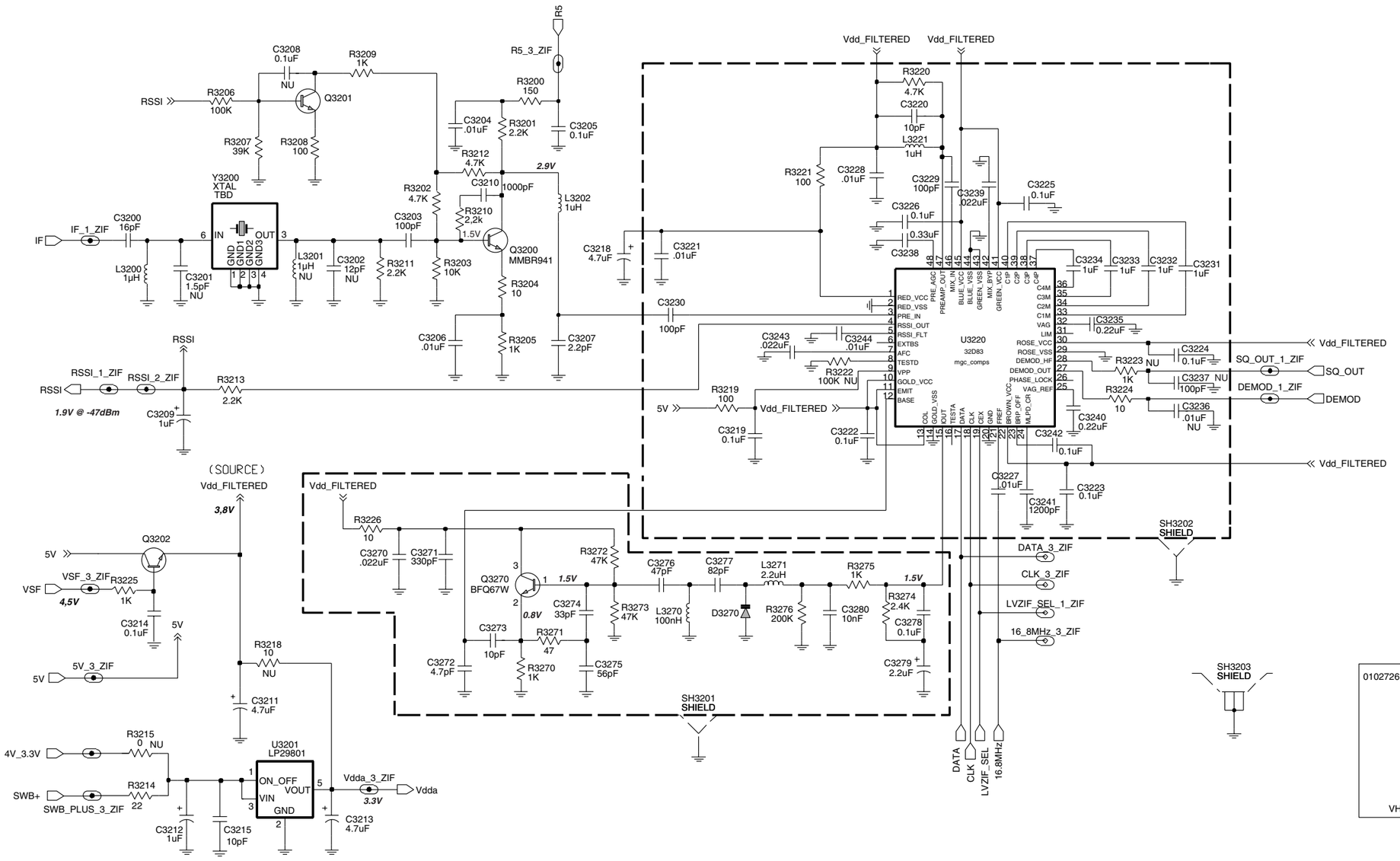
ZWG0130024-A

VHF (136-174 MHz) Controls and Switches



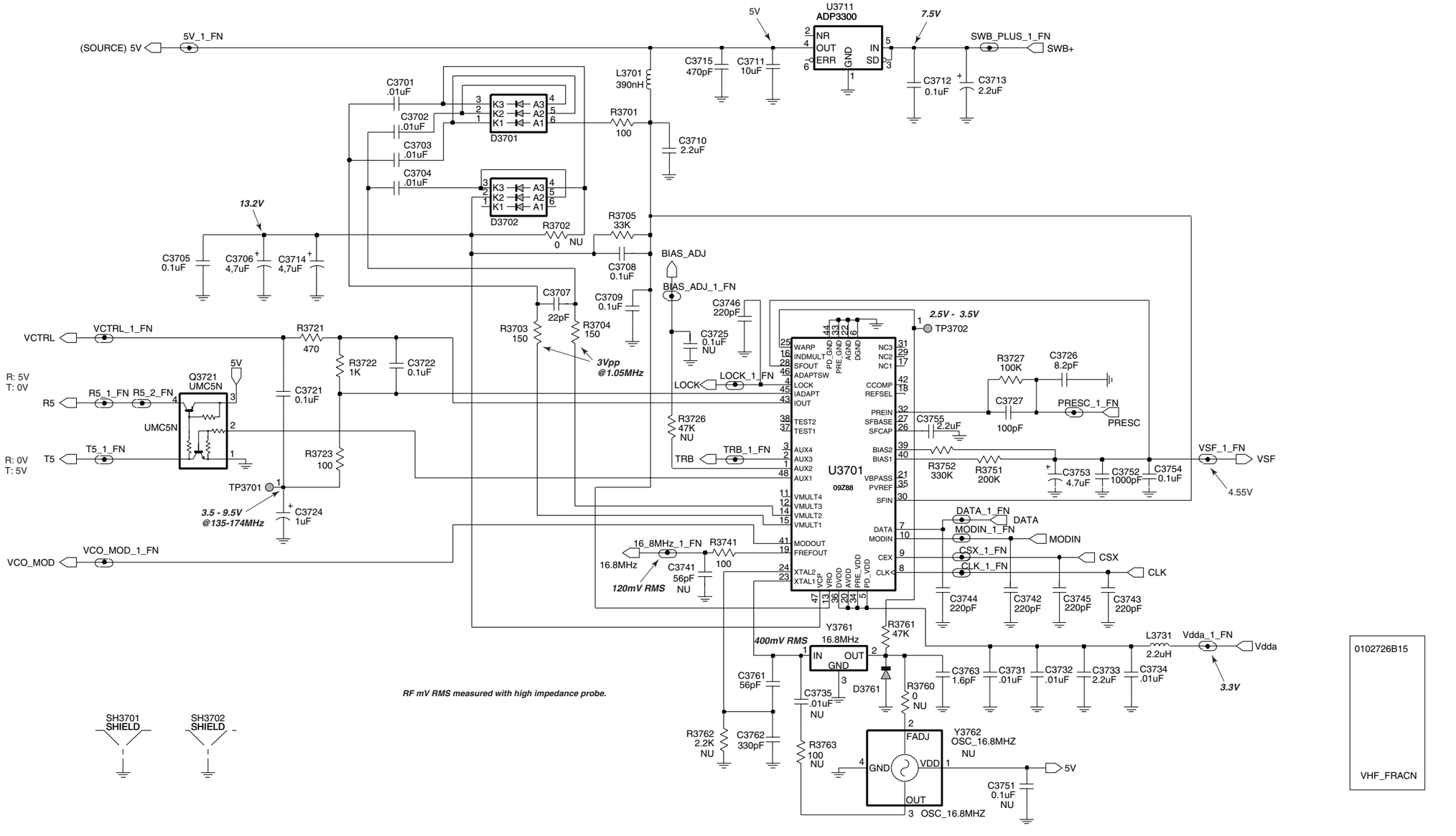
ZWG0130023-B

VHF (136-174 MHz) Receiver Front End



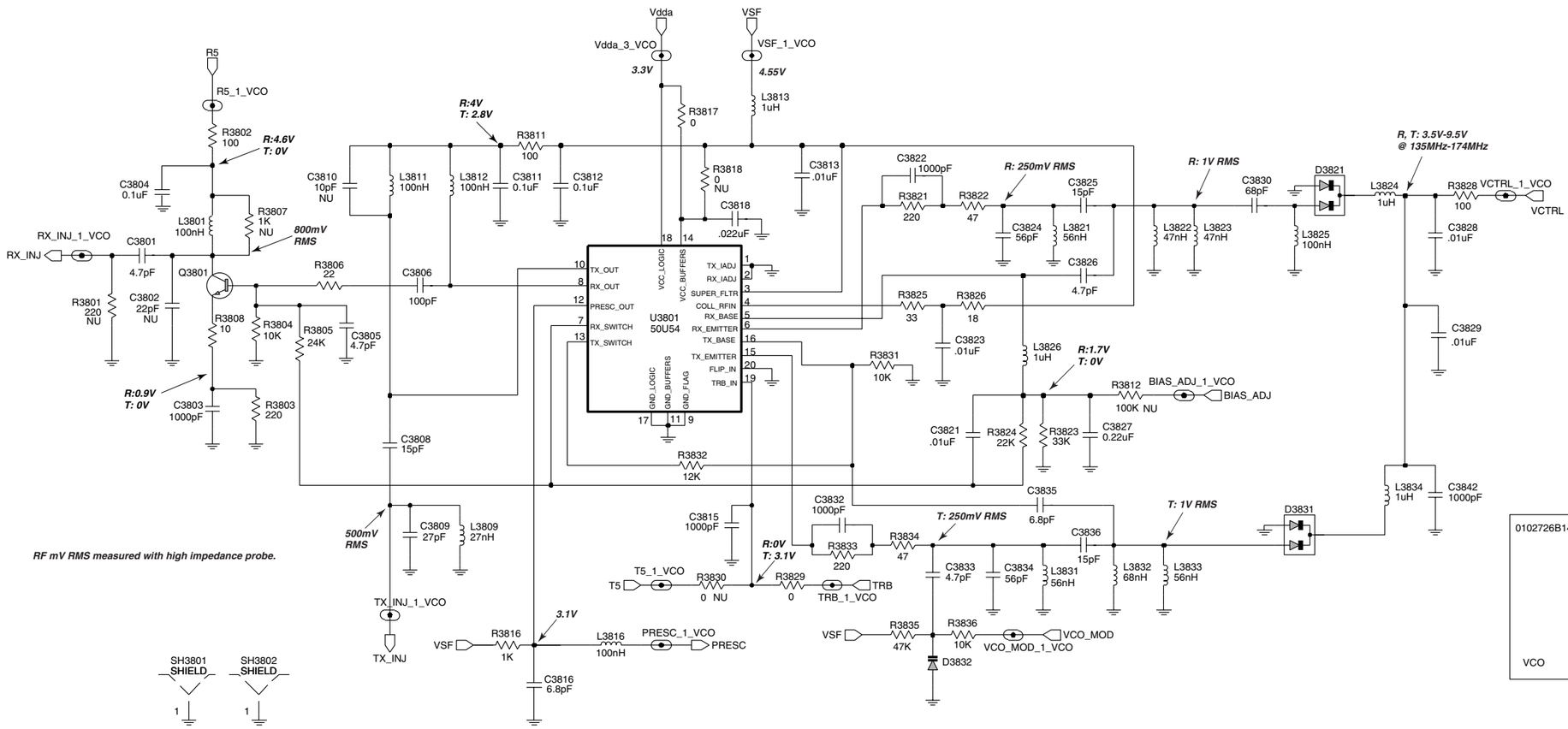
ZWG0130025-B

VHF (136-174 MHz) Receiver Back End



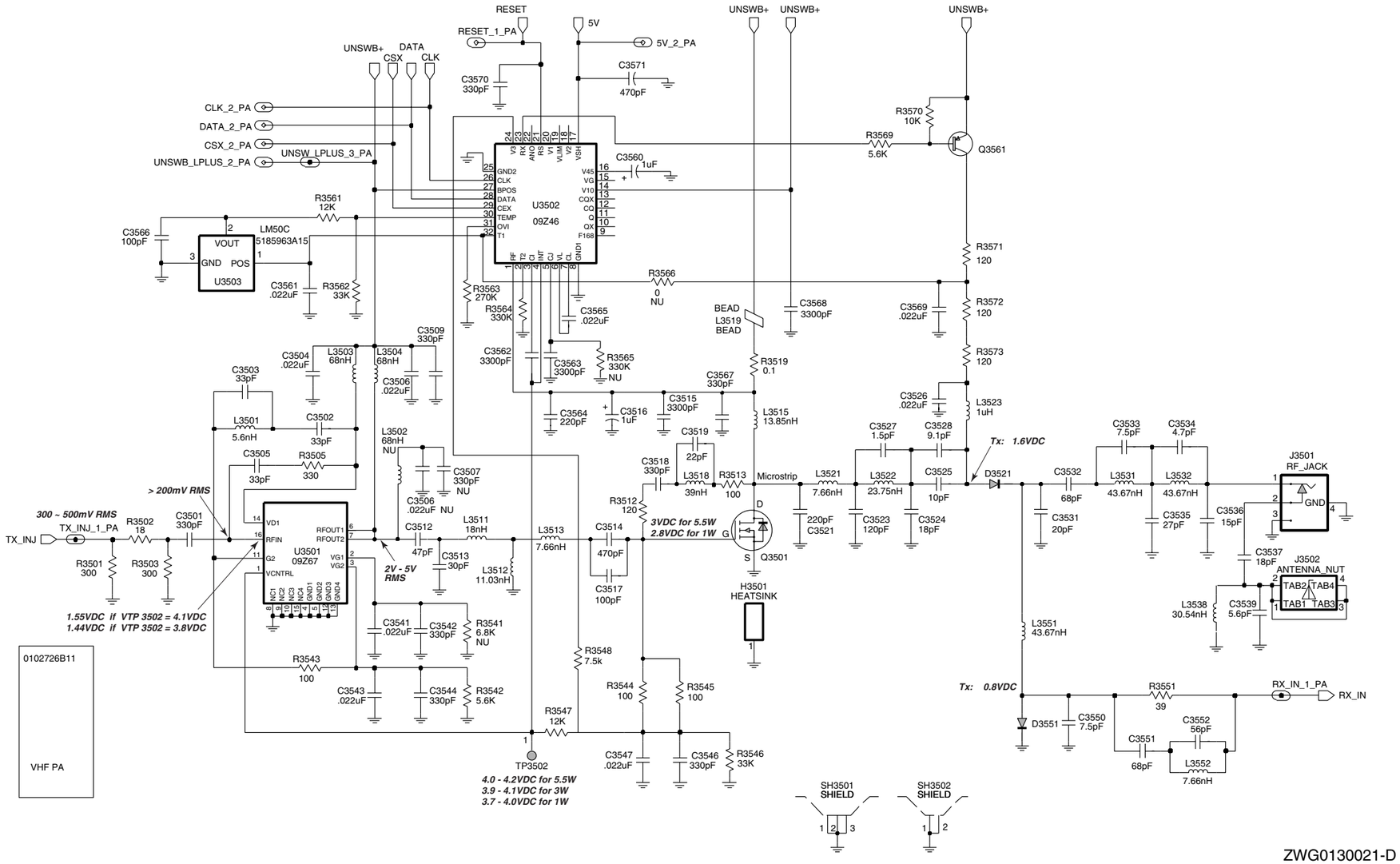
ZWG0130022-C

VHF (136-174 MHz) Synthesizer



ZWG0130020-B

VHF (136-174 MHz) Voltage Controlled Oscillator



ZWG0130021-D

VHF (136-174 MHz) Transmitter

3.0 VHF PCB 8486062B12 Parts List

Circuit Ref	Motorola Part No	Description
B501	0986237A02	CONN, CONTACT BATT
B503	3980502Z01	CONTACT, BACKUP B+ only GP360, GP380, GP680
B504	3980501Z01	CONTACT, BACKUP B- only GP360, GP380, GP680
C3200	2113743N31	16.0 PF 5% COG
C3203	2113743N50	100 PF 5% COG
C3204	2113743L41	10000 PF 10%
C3205	2113928N01	CER CHIP 0.1UF 10% 6.3
C3206	2113743L41	10000 PF 10%
C3207	2113743N10	2.2 PF +-.25PF COG
C3209	2311049A07	TANT 10% 1.0UF
C3210	2113743L17	1000 PF 10%
C3211	2311049A56	TAN CHIP A/P 4.7 20 10
C3212	2311049A07	TANT 10% 1.0UF
C3213	2311049A56	TAN CHIP A/P 4.7 20 10
C3214	2113928N01	CER CHIP 0.1UF 10% 6.3
C3215	2113743N26	10.0 PF 5% COG
C3218	2311049A56	TAN CHIP A/P 4.7 20 10
C3219	2113928N01	CER CHIP 0.1UF 10% 6.3
C3220	2113743N26	10.0 PF 5% COG
C3221	2113743L41	10000 PF 10%
C3222	2113928N01	CER CHIP 0.1UF 10% 6.3
C3223	2113928N01	CER CHIP 0.1UF 10% 6.3
C3224	2113928N01	CER CHIP 0.1UF 10% 6.3
C3225	2113928N01	CER CHIP 0.1UF 10% 6.3
C3226	2113928N01	CER CHIP 0.1UF 10% 6.3
C3227	2113743L41	10000 PF 10%
C3228	2113743L41	10000 PF 10%
C3229	2113743N50	100 PF 5% COG
C3230	2113740F51	REEL CL1 +/-30 100
C3231	2180478Z20	MONOLITHIC CERAMIC (1.0UF)
C3232	2180478Z20	MONOLITHIC CERAMIC (1.0UF)
C3233	2180478Z20	MONOLITHIC CERAMIC (1.0UF)
C3234	2180478Z20	MONOLITHIC CERAMIC (1.0UF)
C3235	2113743A23	.220UF 10%
C3238	2113743A24	.330 UF 10% 16V
C3239	2113743E07	CER CHIP .022UF
C3240	2113743A23	.220UF 10%
C3241	2113743L19	1200 PF 10%
C3242	2109720D14	CER CHIP LOW DIST 0.1UF
C3243	2113743E07	CER CHIP .022UF
C3244	2113743L41	10000 PF 10%
C3270	2113743E07	CER CHIP .022UF
C3271	2113743L05	330 PF 10%
C3272	2113743N18	4.7 PF +-.25PF COG
C3273	2113743N26	10.0 PF 5% COG
C3274	2113743N38	33.0 PF 5% COG
C3275	2113743N44	56.0 PF 5% COG
C3276	2113743N42	47.0 PF 5% COG
C3277	2113743N48	82.0 PF 5% COG
C3278	2113743E07	CER CHIP .022UF
C3279	2311049A40	GLOBAL TANT 10% 2.2 UF
C3280	2113743L41	10000 PF 10%
C3301	2113743N20	5.6 PF +-.5PF COG
C3302	2113743N54	150 PF 5% COG
C3303	2113743N30	15.0PF 5% COG
C3304	2113743N54	150 PF 5% COG
C3306	2113928N01	CER CHIP 0.1UF 10% 6.3
C3307	2113743N50	100 PF 5% COG
C3308	2113743L05	330 PF 10%
C3309	2113928N01	CER CHIP 0.1UF 10% 6.3
C3311	2113743N54	150 PF 5% COG
C3312	2113743N31	16.0 PF 5% COG
C3313	2113743N54	150 PF 5% COG
C3315	2113743N26	10.0 PF 5% COG
C3316	2113743N14	3.3 PF +-.25PF COG
C3317	2113743N40	39.0 PF 5% COG
C3318	2113743M08	22000PF +80-20% Y5V
C3320	2113743N48	82.0 PF 5% COG
C3321	2113743L05	330 PF 10%
C3322	2113743N50	100 PF 5% COG
C3323	2113743N50	100 PF 5% COG
C3324	2113743N38	33.0 PF 5% COG
C3325	2113743L17	1000 PF 10%
C3327	2113743L05	330 PF 10%
C3329	2113743L05	330 PF 10%
C3330	2113743N50	100 PF 5% COG
C3331	2113743N50	100 PF 5% COG
C3332	2113743N40	39.0 PF 5% COG
C3334	2113743N33	20.0 PF 5% COG
C3335	2113743N34	22.0 PF 5% COG
C3336	2311049A18	TANT 10% 10UF
C3337	2113743M08	22000PF +80-20% Y5V
C3338	2113743L09	470 PF 10%
C3339	2113743N26	10.0 PF 5% COG
C3501	2113743L05	330 PF 10%
C3502	2113743N38	33.0 PF 5% COG
C3503	2113743N38	33.0 PF 5% COG
C3504	2113743M08	22000PF +80-20% Y5V
C3505	2113743N38	33.0 PF 5% COG
C3508	2113743M08	22000PF +80-20% Y5V
C3509	2113743L05	330 PF 10%
C3512	2113740F43	REEL CL1 +/-30 47
C3513	2113740F38	REEL CL1 +/-30 30
C3514	2113740F67	CL1 +/-30 470 5%
C3515	2113743L29	3300PF 10%
C3516	2311049A08	KEMET CAPS
C3517	2113740F51	REEL CL1 +/-30 100
C3518	2113740F63	CL1 +/-30 330 5%
C3519	2113740F35	REEL CL1 +/-30 22
C3521	2111078B51	RF 220 5 NPO 100V
C3523	2111078B44	RF 120 5 NPO 100V
C3524	2113740F33	REEL CL1 +/-30 18
C3525	2113740F27	REEL CL1 +/-30 10
C3526	2113743M08	22000PF +80-20% Y5V
C3528	2113740F26	REEL CL1 +/-30 9.1
C3531	2113740F34	REEL CL1 +/-30 20
C3532	2113740F47	REEL CL1 +/-30 68
C3533	2113740F24	REEL CL1+/-30 7.5
C3534	2113740F19	CHIP CAP, CER 4.7PF
C3535	2113740F37	REEL CL1+/-30 27
C3536	2113740F31	REEL CL1 +/-30 15
C3537	2113740F33	REEL CL1 +/-30 18
C3539	2113740F21	REEL CL1+/-30 5.6
C3541	2113743M08	22000PF +80-20% Y5V
C3542	2113743L05	330 PF 10%
C3543	2113743M08	22000PF +80-20% Y5V
C3544	2113743L05	330 PF 10%
C3546	2113743L05	330 PF 10%
C3547	2113743M08	22000PF +80-20% Y5V
C3550	2113743N23	7.5 PF +-.5PF COG
C3551	2113743N46	68.0 PF 5% COG
C3552	2113743N44	56.0 PF 5% COG
C3560	2311049A07	TANT 10% 1.0UF
C3561	2113743M08	22000PF +80-20% Y5V
C3562	2113743L29	3300PF 10%
C3563	2113743L29	3300PF 10%
C3564	2113743L01	220 PF 10%
C3565	2113743E07	CER CHIP .022UF
C3566	2113743N50	100 PF 5% COG
C3567	2113743L05	330 PF 10%
C3568	2113743L29	3300PF 10%
C3569	2113743M08	22000PF +80-20% Y5V
C3570	2113743L05	330 PF 10%
C3571	2113743L09	470 PF 10%
C3701	2113743L41	10000 PF 10%
C3702	2113743L41	10000 PF 10%
C3703	2113743L41	10000 PF 10%
C3704	2113743L41	10000 PF 10%
C3705	2113743E20	CHIP. 10 UF 10%
C3706	2311049J11	CAPACITOR TANT 10% 4.7UF
C3707	2113743N34	22.0 PF 5% COG
C3708	2113743M24	100000 PF +80-20% Y5V
C3709	2113743M24	100000 PF +80-20% Y5V
C3710	2104993J02	MONOLITHIC CERAMIC (2.2UF)
C3711	2311049A69	TAN CHIP 10.0 UF 20% 6.3V
C3712	2113743M24	100000 PF +80-20% Y5V
C3713	2311049A09	TANT 2.2 UF 10%
C3714	2311049J11	CAPACITOR TANT 10% 4.7UF
C3715	2113743L09	470 PF 10%
C3721	2113743E20	CHIP. 10 UF 10%
C3722	2113743E20	CHIP. 10 UF 10%
C3724	2311049A08	KEMET CAPS
C3726	2113743N24	8.2 PF + -.5PF COG
C3727	2113743N50	100 PF 5% COG
C3731	2113743L41	10000 PF 10%
C3732	2113743L41	10000 PF 10%
C3733	2104993J02	MONOLITHIC CERAMIC (2.2UF)
C3734	2113743L41	10000 PF 10%
C3742	2113743L01	220 PF 10%
C3743	2113743L01	220 PF 10%
C3744	2113743L01	220 PF 10%
C3745	2113743L01	220 PF 10%
C3746	2113743L01	220 PF 10%
C3752	2113743L17	1000 PF 10%
C3753	2311049A56	TAN CHIP A/P 4.7 20 10
C3754	2113743M24	100000 PF +80-20% Y5V
C3755	2104993J02	MONOLITHIC CERAMIC (2.2UF)
* C3761	2113743N44	56.0 PF 5% COG
* C3762	2113740F63	CL1 +/-30 330 5%
* C3763	2113743N08	1.6 PF +-.25PF COG
C3801	2113743N18	4.7 PF +-.25PF COG
C3803	2113743L17	1000 PF 10%
C3804	2113743E20	CHIP. 10 UF 10%
C3805	2113743N18	4.7 PF +-.25PF COG
C3806	2113743N50	100 PF 5% COG
C3808	2113743N30	15.0PF 5% COG
C3809	2113743N36	27.0 PF 5% COG
C3811	2113743M24	100000 PF +80-20% Y5V
C3812	2113743M24	100000 PF +80-20% Y5V
C3813	2113743L41	10000 PF 10%
C3815	2113743L17	1000 PF 10%
C3816	2113743N22	6.8 PF +-.5PF COG
C3818	2113743E07	CER CHIP .022UF
C3821	2113743L41	10000 PF 10%
C3822	2113743L17	1000 PF 10%
C3823	2113743L41	10000 PF 10%
C3824	2113743N44	56.0 PF 5% COG
C3825	2113743N30	15.0PF 5% COG
C3826	2113743N18	4.7 PF +-.25PF COG
C3827	2113743E07	CER CHIP .022UF
C3828	2109720D01	CER CHIP LOW DIS T .01UF
C3829	2109720D01	CER CHIP LOW DIS T .01UF
C3830	2113743N46	68.0 PF 5% COG
C3832	2113743L17	1000 PF 10%
C3833	2113743N18	4.7 PF +-.25PF COG
C3834	2113743N44	56.0 PF 5% COG
C3835	2113743N22	6.8 PF +-.5PF COG
C3836	2113743N30	15.0PF 5% COG
C3842	2113743L17	1000 PF 10%
C400	2113743L41	10000 PF 10%
C401	2113743M24	100000 PF +80-20% Y5V
C402	2113743M24	100000 PF +80-20% Y5V
C403	2113928D08	CERAMIC CHIP 10.0UF
C407	2113928N01	CER CHIP 0.1UF 10% 6.3
C408	2113743N50	100 PF 5% COG
C409	2113743M24	100000 PF +80-20% Y5V
C410	2113928N01	CER CHIP 0.1UF 10% 6.3
C411	2113743M24	100000 PF +80-20% Y5V
C414	2113743M24	100000 PF +80-20% Y5V
C415	2109720D01	CER CHIP LOW DIS T .01UF
C416	2113928N01	CER CHIP 0.1UF 10% 6.3
C419	2113743L41	10000 PF 10%
C420	2113743L41	10000 PF 10%
C421	2113928N01	CER CHIP 0.1UF 10% 6.3
C422	2113743M24	100000 PF +80-20% Y5V
C423	2113743N50	100 PF 5% COG
C424	2311049A59	TANT CHIP A/P 10UF 10% 6V
C425	2113743M24	100000 PF +80-20% Y5V
C426	2113743N50	100 PF 5% COG
C427	2113743N50	100 PF 5% COG

Circuit Ref	Motorola Part No	Description
C428	2113743M24	100000 PF +80-20% Y5V
C429	2113743M24	100000 PF +80-20% Y5V
C430	2113928N01	CER CHIP 0.1UF 10% 6.3
C431	2113743N50	100 PF 5% COG
C433	2113743L41	10000 PF 10%
C434	2113743M24	100000 PF +80-20% Y5V
		only GP360, GP380, GP680
C435	2113743M24	100000 PF +80-20% Y5V
C436	2113743N34	22.0 PF 5% COG
		only GP360, GP380, GP680
C437	2113743N34	22.0 PF 5% COG
		only GP360, GP380, GP680
C440	2113743G26	4.7UF 16V + 80-20%
C441	2113743L09	470 PF 10%
C442	2113743E20	CHIP. 10 UF 10%
C443	2113928N01	CER CHIP 0.1UF 10% 6.3
C444	2113743N50	100 PF 5% COG
C445	2113743L09	470 PF 10%
C446	2113743L09	470 PF 10%
C447	2113928N01	CER CHIP 0.1UF 10% 6.3
C448	2113928N01	CER CHIP 0.1UF 10% 6.3
C449	2113743N50	100 PF 5% COG
C451	2113743M08	22000PF +80-20% Y5V
C452	2113743G26	4.7UF 16V + 80-20%
C453	2113743N50	100 PF 5% COG
C456	2113743N50	100 PF 5% COG
C458	2113743N50	100 PF 5% COG
C459	2113743N50	100 PF 5% COG
C463	2113743N50	100 PF 5% COG
C466	2113743N50	100 PF 5% COG
C467	2113928N01	CER CHIP 0.1UF 10% 6.3
C471	2113743L09	470 PF 10%
C472	2113743L09	470 PF 10%
C473	2113743L09	470 PF 10%
C474	2113743L41	10000 PF 10%
C475	2113743H14	10.0 UF 16V +80-20%
C476	2113928D08	CERAMIC CHIP 10.0UF
C477	2113743L17	1000 PF 10%
C478	2113743L17	1000 PF 10%
C479	2113928N01	CER CHIP 0.1UF 10% 6.3
C480	2113928D08	CERAMIC CHIP 10.0UF
C481	2113928N01	CER CHIP 0.1UF 10% 6.3
C482	2113928N01	CER CHIP 0.1UF 10% 6.3
C483	2113743L09	470 PF 10%
C484	2113743L09	470 PF 10%
C490	2113743L09	470 PF 10%
C491	2113743L09	470 PF 10%
C492	2113743L09	470 PF 10%
C493	2113743N50	100 PF 5% COG
C494	2113743N50	100 PF 5% COG
C495	2113743L09	470 PF 10%
C496	2113743L09	470 PF 10%
C497	2113743L09	470 PF 10%
C502	2311049A05	TANT 10% 0.47UF
C503	2113743N50	100 PF 5% COG
C505	2113743N50	100 PF 5% COG

Circuit Ref	Motorola Part No	Description
C511	2113743N50	100 PF 5% COG
C512	2113743N50	100 PF 5% COG
C513	2113743N50	100 PF 5% COG
C514	2113743N50	100 PF 5% COG
C520	2113743L41	10000 PF 10%
C521	2113743L41	10000 PF 10%
C522	2113743L41	10000 PF 10%
C523	2113743L41	10000 PF 10%
C535	2113743L17	1000 PF 10%
CR3301	4802245J42	RING QUAD SOT-143 PKG
CR3302	4805129M96	DIODE SMBV1032
CR3303	4880154K03	SOT MMBD353 DUAL SCHKY
CR411	4802245J47	SCHOTTKY BARRIER(RB471E)
CR412	4802245J62	SCHOTTKY BARRIER(RB471E)
CR413	4802245J62	SCHOTTKY BARRIER(RB471E)
CR440	4813833C02	DUAL 70V '5B' COMM CATH
CR501	4880107R01	RECTIFIER
CR503	4805729G49	LED RED/YEL
D3270	4862824C01	VARACTOR
D3301	4802081B58	DUAL SILCON (VARICAP)
D3302	4802081B58	DUAL SILCON (VARICAP)
D3521	4880973Z02	PIN DIODE
D3551	4880973Z02	PIN DIODE
D3701	4802233J09	TRIPLE SOT25-RH
D3702	4802233J09	TRIPLE SOT25-RH
* D3761	4862824C03	VARACTOR
D3821	4805649Q13	VCTR ISV 228
D3831	4805649Q13	VCTR ISV 228
D3832	4862824C01	VARACTOR
E400	2480640Z01	C/IND BK1005HM471 BEAD
E401	2480640Z01	C/IND BK1005HM471 BEAD
E402	2480640Z01	C/IND BK1005HM471 BEAD
E403	2480640Z01	C/IND BK1005HM471 BEAD
E404	2480640Z01	C/IND BK1005HM471 BEAD
E405	2480640Z01	C/IND BK1005HM471 BEAD
E406	2480640Z01	C/IND BK1005HM471 BEAD
E407	2480640Z01	C/IND BK1005HM471 BEAD
E408	2480640Z01	C/IND BK1005HM471 BEAD
E409	2480640Z01	C/IND BK1005HM471 BEAD
F501	6580542Z01	FUSE CHIP SMT TR/1608FF 3A
FL401	4870368G02	CLOCK OSC XTAL
		only GP360, GP380, GP680
H3501	2680499Z01	HEAT SPREADER
J3501	0180117S05	RF JACK ASSEMBLY
J3502	0280519Z02	NUT, ANTENNA
J400	0905505Y04	CONN ZIF 40Pin
		not in GP320
J403	0905505Y02	CONN ZIF MALE 20 PIN
L3200	2462587N68	CHIP IND 1000 NH 5%
L3202	2462587N68	CHIP IND 1000 NH 5%
L3221	2462587N68	CHIP IND 1000 NH 5%
L3270	2462587T15	IND CHIP 100NH 5% LOW PRO
L3271	2462587Q20	IND CHIP 2,200NH 20%
L3301	2462587T35	IND CHIP 12NH 5% LOW PRO
L3303	2462587T35	IND CHIP 12NH 5% LOW PRO
L3304	2462587T23	IND CHIP 470NH 5% LOW PRO

Circuit Ref	Motorola Part No	Description
L3305	2462587T35	IND CHIP 12NH 5% LOW PRO
L3306	2462587T35	IND CHIP 12NH 5% LOW PRO
L3308	2462587T34	IND CHIP 10NH 5% LOW PRO
L3309	2462587N55	CHIP IND 150 NH 5%
L3312	2462587V28	CHIP IND 33 NH 5% 0805
L3501	2413926H09	IND CHIP 5.6 NH +/- 0.3NH
L3503	2462587V32	CHIP IND 68NH 5% 0805
L3504	2462587N51	CHIP IND 68 NH 5%
L3511	2462587N44	CHIP IND 18 NH 5%
L3512	2479990B01	AIR WOUND GREEN 11.03NH
L3513	2479990A02	AIR WOUND GREEN 7.66NH
L3515	2479990C03	AIR WOUND GREEN 13.85NH
L3518	2462587N48	CHIP IND 39 NH 5%
L3519	2484657R01	INDUCTOR BEAD CHIP
L3521	2479990A02	AIR WOUND GREEN 7.66NH
L3522	2479990E01	COIL AIR WOUND GREEN 23.75
L3523	2462587N68	CHIP IND 1000 NH 5%
L3531	2479990N01	AIR WOUND GREEN 43.67NH
L3532	2479990N01	AIR WOUND GREEN 43.67NH
L3538	2479990M01	AIR WOUND GREEN 30.54NH
L3551	2479990N01	AIR WOUND GREEN 43.67NH
L3552	2479990A02	AIR WOUND GREEN 7.66NH
L3701	2462587Q42	IND CHIP 390NH 10%
L3731	2462587Q20	IND CHIP 2,200NH 20%
L3801	2462587V34	CHIP IND 100NH 5% 0805
L3809	2462587V27	CHIP IND 27 NH 5% 0805
L3811	2462587V34	CHIP IND 100NH 5% 0805
L3812	2462587V34	CHIP IND 100NH 5% 0805
L3813	2462587Q47	IND CHIP 1000 NH 10%
L3816	2462587V34	CHIP IND 100NH 5% 0805
L3821	2462587N50	CHIP IND 56 NH 5%
L3822	2462587N49	CHIP IND 47 NH 5%
L3823	2462587N49	CHIP IND 47 NH 5%
L3824	2462587N68	CHIP IND 1000 NH 5%
L3825	2462587V34	CHIP IND 100NH 5%
L3826	2462587N68	CHIP IND 1000 NH 5%
L3831	2462587N50	CHIP IND 56 NH 5%
L3832	2462587N51	CHIP IND 68 NH 5%
L3833	2462587N50	CHIP IND 56 NH 5%
L3834	2462587N68	CHIP IND 1000 NH 5%
L400	2462587Q42	IND CHIP 390NH 10%
L401	2462587Q42	IND CHIP 390NH 10%
L410	2462587Q42	IND CHIP 390NH 10%
L411	2462587Q42	IND CHIP 390NH 10%
L505	2462587Q42	IND CHIP 390NH 10%
PB501	4080523Z01	SWITCH, TACT
PB502	4080523Z01	SWITCH, TACT
PB503	4080523Z01	SWITCH, TACT
		not in GP320
PB504	4080523Z01	SWITCH, TACT
PB505	4080523Z01	SWITCH, TACT
		not in GP320
Q3200	4813827A07	TSTR NPN SML SIG MMBR941LT1
Q3201	4880214G02	TSTR MMBT3904
Q3202	4880214G02	TSTR MMBT3904

Circuit Ref	Motorola Part No	Description
Q3270	4805218N63	RF TRANS SOT 323 BFQ67W
Q3301	4880214G02	TSTR MMBT3904
Q3302	4813827A07	TSTR NPN MMBR941LT1
Q3501	4802245J55	TSTR POWER FIELD EFFECT
Q3561	4813824A17	XSTR PNP40V .2A B=100-300
Q3721	4802245J50	TSTR DUAL NPN/PNP UMC5N
Q3801	4813827A07	TSTR NPN MMBR941LT1
Q400	4809579E18	MOSFET P-CHAN TP010IT
Q403	4880214G02	TSTR MMBT3904
Q405	4802245J54	UMG5N DIGITAL TRANSISTOR
Q410	4802245J54	UMG5N DIGITAL TRANSISTOR
Q416	4809579E18	MOSFET P-CHAN TP010IT
		only GP360, GP380, GP680
Q417	4802245J50	TSTR DUAL NPN/PNP UMC5N
Q502	5180159R01	DUAL TRANS NPNS
Q505	4880214G02	TSTR MMBT3904
R3200	0662057M54	150 5% 20X40
R3201	0662057M82	2200 5% 20X40
R3202	0662057M90	4700 5% 20X40
R3203	0662057M98	10K 5% 20X40
R3204	0662057M26	10 5% 20X40
R3205	0662057M74	1000 5% 20X40
R3206	0662057N23	100K 5% 20X40
R3207	0662057N13	39K 5% 20X40
R3208	0662057M50	100 5% 20X40
R3209	0662057M74	1000 5% 20X40
R3210	0662057M82	2200 5% 20X40
R3211	0662057M82	2200 5% 20X40
R3212	0662057M90	4700 5% 20X40
R3213	0662057M82	2200 5% 20X40
R3214	0662057M34	22 5% 20X 40
R3219	0662057M50	100 5% 20X40
R3220	0662057M90	4700 5% 20X40
R3221	0662057M50	100 5% 20X40
R3224	0662057M26	10 5% 20X40
R3225	0662057M74	1000 5% 20X40
R3226	0662057M26	10 5% 20X40
R3270	0662057M74	1000 5% 20X40
R3271	0662057M42	47 5% 20X40
R3272	0662057N15	47K 5% 20X40
R3273	0662057N15	47K 5% 20X40
R3274	0662057M83	2400 5% 20X40
R3275	0662057M74	1000 5% 20X40
R3276	0662057N30	200K 5% 20X40
R3303	0662057N23	100K 5% 20X40
R3304	0662057N23	100K 5% 20X40
R3305	0662057N19	68K 5% 20X40
R3306	0662057M82	2200 5% 20X40
R3307	0662057N11	33K 5% 20X40
R3308	0662057M78	1500 5% 20X40
R3309	0662057M92	5600 5% 20X40
R3310	0662057M98	10K 5% 20X40
R3311	0662057M26	10 5% 20X40
R3312	0662057M38	33 5% 20X40
R3313	0662057M34	22 5% 20X 40
R3314	0662057M26	10 5% 20X40

Circuit Ref	Motorola Part No	Description
R3315	0662057M62	330 5% 20X40
R3316	0662057M66	470 5% 20X40
R3317	0662057N23	100K 5% 20X40
R3318	0662057M66	470 5% 20X40
R3321	0662057M54	150 5% 20X40
R3322	0662057M58	220 5% 20X40
R3323	0662057M32	18 5% 20X40
R3324	0662057M58	220 5% 20X40
R3501	0662057M61	300 5% 20X40
R3502	0662057M32	18 5% 20X40
R3503	0662057M61	300 5% 20X40
R3505	0662057M62	330 5% 20X40
R3512	0662057A27	120 OHMS 5%
R3513	0662057A25	100 OHMS 5%
R3519	0680539Z01	POWER METAL STRIP
R3542	0662057M92	5600 5% 20X40
R3543	0662057M50	100 5% 20X40
R3544	0662057A25	100 OHMS 5%
R3545	0662057A25	100 OHMS 5%
R3546	0662057N11	33K 5% 20X40
R3547	0662057N01	12K 5% 20X40
R3548	0662057M95	7500 55 20X40
R3551	0662057M40	39 5% 20X40
R3561	0662057N01	12K 5% 20X40
R3562	0662057N11	33K 5% 20X40
R3563	0662057N33	270K 5% 20X40
R3564	0662057N35	330K 5% 20X40
R3569	0662057M92	5600 5% 20X40
R3570	0662057M98	10K 5% 20X40
R3571	0662057A27	120 OHMS 5%
R3572	0662057A27	120 OHMS 5%
R3573	0662057A27	120 OHMS 5%
R3701	0662057M50	100 5% 20X40
R3703	0662057M54	150 5% 20X40
R3704	0662057M54	150 5% 20X40
R3705	0662057N11	33K 5% 20X40
R3721	0662057M66	470 5% 20X40
R3722	0662057M74	1000 5% 20X40
R3723	0662057M50	100 5% 20X40
R3727	0662057N23	100K 5% 20X40
R3741	0662057M50	100 5% 20X40
R3751	0662057N30	200K 5% 20X40
R3752	0662057N35	330K 5% 20X40
R3761	0662057N15	47K 5% 20X40
R3802	0662057M50	100 5% 20X40
R3803	0662057M58	220 5% 20X40
R3804	0662057M98	10K 5% 20X40
R3805	0662057N08	24K 5% 20X40
R3806	0662057M34	22 5% 20X 40
R3808	0662057M26	10 5% 20X40
R3811	0662057M50	100 5% 20X40
R3816	0662057M74	1000 5% 20X40
R3817	0662057M01	0 5% 20X40
R3821	0662057M58	220 5% 20X40
R3822	0662057M42	47 5% 20X40
R3823	0662057N11	33K 5% 20X40

Circuit Ref	Motorola Part No	Description
R3824	0662057N07	22K 5% 20X40
R3825	0662057M38	33 5% 20X40
R3826	0662057M32	18 5% 20X40
R3828	0662057M50	100 5% 20X40
R3829	0662057M01	0 5% 20X40
R3831	0662057M98	10K 5% 20X40
R3832	0662057N01	12K 5% 20X40
R3833	0662057M58	220 5% 20X40
R3834	0662057M42	47 5% 20X40
R3835	0662057N15	47K 5% 20X40
R3836	0662057M98	10K 5% 20X40
R400	0662057N15	47K 5% 20X40
R401	0662057M01	0 5% 20X40
R405	0662057M01	0 5% 20X40
R406	0662057N20	75K 5% 20X40
R407	0662057N19	68K 5% 20X40
R409	0662057M98	10K 5% 20X40
R410	0662057N23	100K 5% 20X40
R411	0662057M98	10K 5% 20X40
R413	0662057M01	0 5% 20X40
R414	0662057V34	180K 1% 1/16W
R415	0662057V26	91K 1% 1/16W
R416	0662057N13	39K 5% 20X40
R418	0662057M01	0 5% 20X40
R419	0662057M67	0 5% 20X40
		only GP360, GP380, GP680
R420	0662057B46	10.0 MEG OHMS 5%
		only GP360, GP380, GP680
R421	0662057M81	2000 5% 20X40
R423	0662057N21	82K 5% 20X40
R424	0662057N12	36K 5% 20X40
R425	0662057N10	30K 5% 20X40
R426	0662057N35	330K 5% 20X40
		only GP360, GP380, GP680
R427	0662057M84	2700 5% 20X40
R428	0662057M10	2.2 5% 20X40
R429	0662057M98	10K 5% 20X40
R431	0662057N39	470K 5% 20X40
R432	0662057N16	51K 5% 20X40
R434	0662057M62	330 5% 20X40
R435	0662057M81	2000 5% 20X40
R436	0662057M01	0 5% 20X40
R445	0662057N08	24K 5% 20X40
R446	0662057N31	RES, CHIP 220K 5% 20X40
R447	0662057N51	RES, CHIP 1.5 MEG 5% 20X40
R448	0662057N33	270K 5% 20X40
R449	0662057N08	24K 5% 20X40
R450	0683962T45	68 5-1
R457	0662057M98	10K 5% 20X40
R460	0662057M90	4700 5% 20X40
R461	0662057M56	180 5% 20X40
		only GP360, GP380, GP680
R462	0662057M98	10K 5% 20X40
		only GP360, GP380, GP680
R463	0662057M61	300 5% 20X40
R471	0662057M92	5600 5% 20X40

Circuit Ref	Motorola Part No	Description
R472	0662057M93	6200 5% 20X40
R473	0662057M26	10 5% 20X40
R475	0662057M01	0 5% 20X40
R476	0662057N08	24K 5% 20X40
R477	0662057M74	1000 5% 20X40
R478	0662057M98	10K 5% 20X40
R481	0662057N08	24K 5% 20X40
R492	0662057M01	0 5% 20X40
R501	0662057M70	680 5% 20X40
R502	0662057M56	180 5% 20X40
R505	0662057M98	10K 5% 20X40
R506	0662057N15	47K 5% 20X40
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z01	SWITCH (FREQUENCY)
		only GP340, GP640
S501	4080710Z02	SWITCH (FREQUENCY)
		only GP360, GP380, GP680
S502	1880619Z01	POTENTIOMETER, VOLUME
SH3201	2602023X08	SHIELD
SH3202	2686081B02	SHIELD
SH3203	2686081B03	SHIELD
SH3301	2686081B01	SHIELD
SH3302	2686081B05	SHIELD
SH3303	2686081B06	SHIELD
SH3501	2686081B03	SHIELD
SH3502	2686081B04	SHIELD
SH3701	2680511Z01	SHIELD SYNTHESIZER
SH3702	2680511Z01	SHIELD SYNTHESIZER
SH3801	2680513Z01	SHIELD VCO TOP
SH3802	2680514Z01	SHIELD VCO BOTTOM/LVZIF
SH400	2680505Z01	CONTROLLER TOP LEFT
SH401	2680506Z01	CONTROLLER TOP RIGHT
SH402	2680515Z01	CONTROLLER BOTTOM LEFT
SH403	2680516Z01	CONTROLLER BTM RIGHT
T3301	2580541Z01	BALUN TRANSFORMER
T3302	2580541Z01	BALUN TRANSFORMER
U3201	5102463J58	3.3V REG IN SOT23-5 PKG
U3220	5109632D83	IC LVZIF 2.2 H60G 48TQFP
U3501	5105109Z67	IC LDMOS DRIVER VHF/UHF
U3502	5185765B01	IC POWER CONTROL PASS 2.3
U3503	5185963A15	IC TEMP SENSOR 1M50C
U3701	5185963A27	IC FRACN AT25016 48 PIN GFP
U3711	5105739X05	IC 5V REGULATOR
U3801	5105750U54	IC VCO BUFFER
U400	5102463J40	REG 3.3V, LP2951CMM-3.3
U404	5185963A53	IC ASFIC CMP TQFP 48PIN PKG
U405	5102463J36	STATIC_RAM_32KX8
* U406	5102463J60	IC 512KX8 FLASH ROM
* U407	5102463J64	16KX8 SPI SERIAL EEPROM
U409	5102226J56	68HC11FLO_PASS5 TQFP
U410	5102463J57	REG 3.3V, ILC7062CM-33
		only GP360, GP380, GP680
U420	5102463J44	AUDIO AMPLIFIER TDA8547TS
VR432	4805656W08	ZENER QUAD
VR433	4805656W08	ZENER QUAD
VR434	4802245J51	ZENER DIODE; BZX284-C6V8"

Circuit Ref	Motorola Part No	Description
VR439	4880140L15	10V ZENER
VR447	4802245J53	ZENER_DIODE; BZX284-C10
VR448	4802245J53	ZENER_DIODE; BZX284-C10
VR449	4802245J53	ZENER_DIODE; BZX284-C10
VR450	4802245J53	ZENER_DIODE; BZX284-C10
VR501	4813830A18	6.8V 5% 225MWMMBZ5235B_
VR506	4802245J51	ZENER DIODE; BZX284-C6V8
Y3200	9186153B01	XTAL FILTER, SMD 45.1MHz
Y3761	4802245J49	CRYSTL 16.8MHZ WITH CLIP

* Motorola Depot Servicing only

Reference designators with an asterisk indicate components which are not field replaceable because they need to be calibrated with specialized factory equipment after installation. Radios in which these parts have been replaced in the field will be off frequency at temperature extremes.

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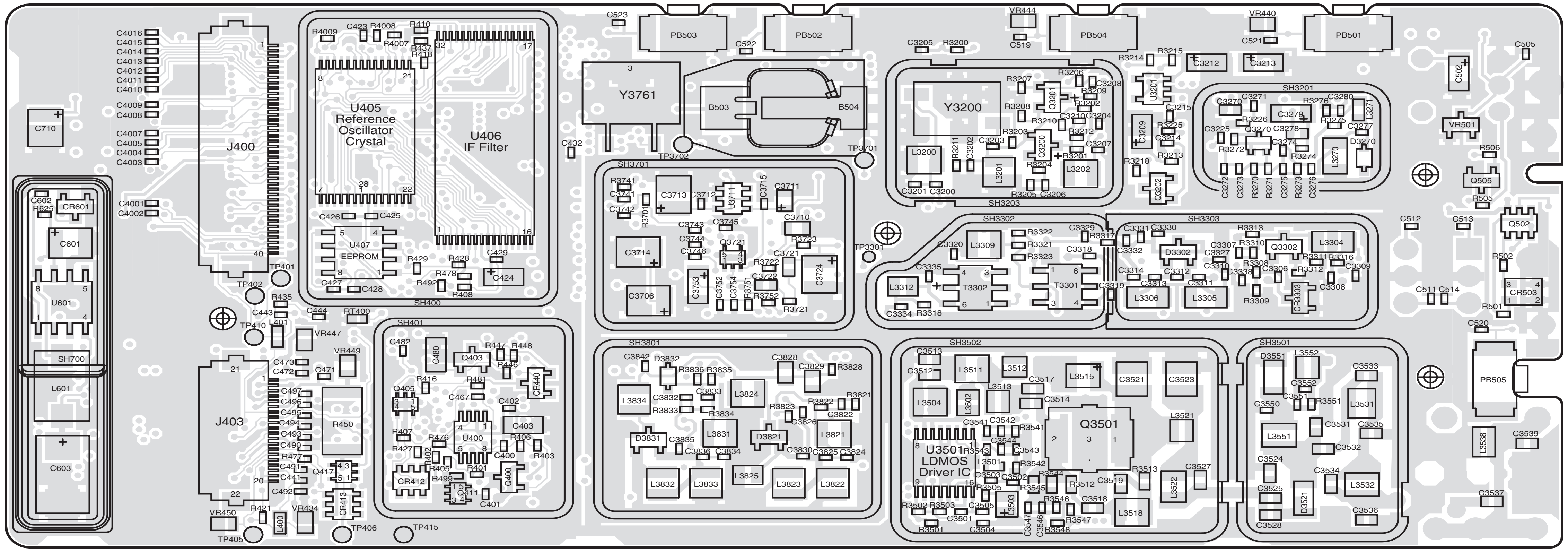
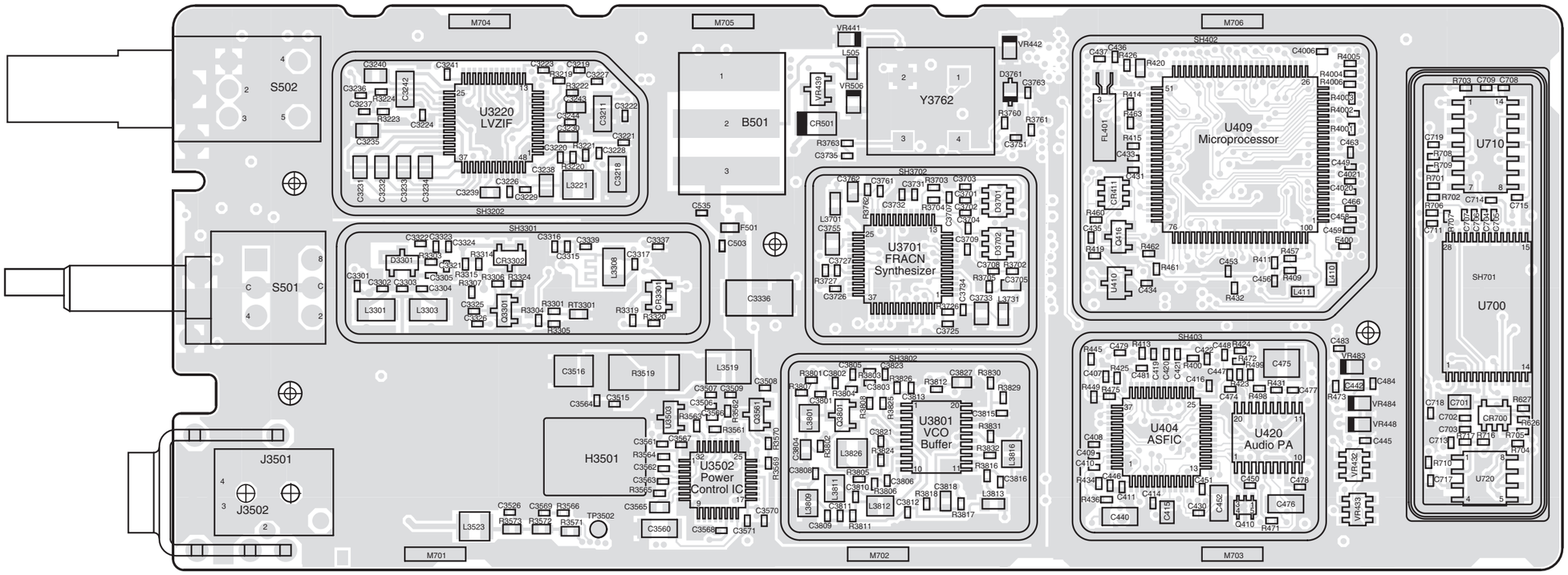
4.0 VHF PCB 8486101B09 / Schematics (GP1280)



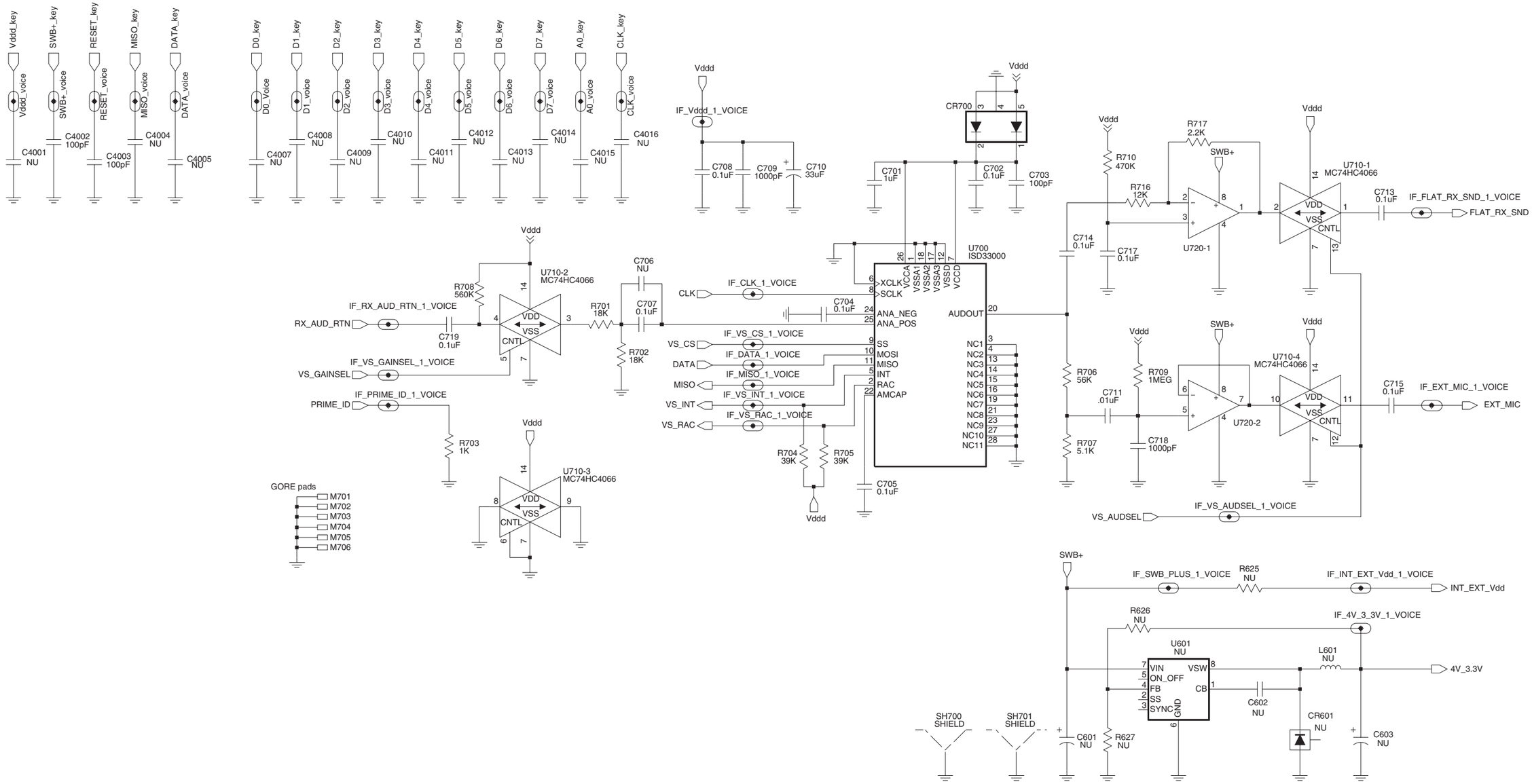
ZWG0130096-B

VHF (136-174 MHz) Main Board Top Side



ZWG0130097-B

VHF (136-174 MHz) Main Board Bottom Side



ZMY0130493-O

VHF (136-174 MHz) GP1280 - Voice Storage Schematic

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5.0 VHF PCB 8086101B09 Parts List (GP1280)

Circuit Ref	Motorola Part No	Description
B501	0986237A01	CONN, CONTACT BATTERY
B503	3980502Z01	CONTACT, BACKUP B+
B504	3980501Z01	CONTACT, BACKUP B-
C3200	2113743N31	16.0 PF 5%
C3203	2113743N50	100 PF 5%
C3204	2113743L41	10000 PF 10%
C3205	2113928N01	0.1UF 10% 6.3
C3206	2113743L41	10000 PF 10%
C3207	2113743N10	2.2 PF +-.25PF
C3209	2311049A07	TANT 10% 1.0UF
C3210	2113743L17	1000 PF 10%
C3211	2311049A56	TAN CHIP A/P 4.7 20 10
C3212	2311049A07	TANT 10% 1.0UF
C3213	2311049A56	TAN CHIP A/P 4.7 20 10
C3214	2113928N01	CERAMIC CHIP 10.0UF
C3215	2113743N26	10.0 PF 5%
C3218	2311049A56	TAN CHIP A/P 4.7 20 10
C3219	2113928N01	CERAMIC CHIP 10.0UF
C3220	2113743N26	10.0 PF 5%
C3221	2113743L41	10000 PF 10%
C3222	2113928N01	CERAMIC CHIP 10.0UF
C3223	2113928N01	0.1UF 10% 6.3
C3224	2113928N01	0.1UF 10% 6.3
C3225	2113928N01	0.1UF 10% 6.3
C3226	2113928N01	0.1UF 10% 6.3
C3227	2113743L41	10000 PF 10%
C3228	2113743L41	10000 PF 10%
C3229	2113743N50	100 PF 5%
C3230	2113740F51	REEL CL1 +/-30 100
C3231	2180478Z20	MONOLITH CERAMIC (1.0UF)
C3232	2180478Z20	MONOLITH CERAMIC (1.0UF)
C3233	2180478Z20	MONOLITH CERAMIC (1.0UF)
C3234	2180478Z20	MONOLITH CERAMIC (1.0UF)
C3235	2113743A23	.220UF 10%
C3238	2113743A24	.330 UF 10% 16V
C3239	2113743E07	.022UF
C3240	2113743A23	.220UF 10%
C3241	2113743L19	1200 PF 10%
C3242	2109720D14	LOW DIST 0.1UF
C3243	2113743E07	.022UF
C3244	2113743L41	10000 PF 10%
C3270	2113743E07	.022UF
C3271	2113743L05	330 PF 10%
C3272	2113743N18	4.7 PF +-.25PF
C3273	2113743N26	10.0 PF 5%
C3274	2113743N38	33.0 PF 5%
C3275	2113743N44	56.0 PF 5%
C3276	2113743N42	47.0 PF 5%
C3277	2113743N48	82.0 PF 5%
C3278	2113743E07	.022UF
C3279	2311049A40	GLOBAL TANT 10% 2.2 UF
C3280	2113743L41	10000 PF 10%
C3301	2113743N20	5.6 PF +-.5PF
C3302	2113743N54	150 PF 5%
C3303	2113743N30	15.0PF 5%
C3304	2113743N54	150 PF 5%
C3306	2113928N01	0.1UF 10% 6.3
C3307	2113743N50	100 PF 5%
C3308	2113743L05	330 PF 10%
C3309	2113928N01	0.1UF 10% 6.3
C3311	2113743N54	150 PF 5%
C3312	2113743N31	16.0 PF 5%
C3313	2113743N54	150 PF 5%
C3315	2113743N26	10.0 PF 5%
C3316	2113743N14	3.3 PF +-.25PF
C3317	2113743N40	39.0 PF 5%
C3318	2113743M08	22000PF +80-20% Y5V
C3320	2113743N48	82.0 PF 5%
C3321	2113743L05	330 PF 10%
C3322	2113743N50	100 PF 5%
C3323	2113743N50	100 PF 5%
C3324	2113743N38	33.0 PF 5%
C3325	2113743L17	1000 PF 10%
C3327	2113743L05	330 PF 10%
C3329	2113743L05	330 PF 10%
C3330	2113743N50	100 PF 5%
C3331	2113743N50	100 PF 5%
C3332	2113743N40	39.0 PF 5%
C3334	2113743N33	20.0 PF 5%
C3335	2113743N34	22.0 PF 5%
C3336	2311049A18	CAP. TANT 10% 10UF
C3337	2113743M08	22000PF +80-20% Y5V
C3338	2113743L09	470 PF 10%
C3339	2113743N26	10.0 PF 5%
C3501	2113743L05	330 PF 10%
C3502	2113743N38	33.0 PF 5%
C3503	2113743N38	33.0 PF 5%
C3504	2113743M08	22000PF +80-20% Y5V
C3505	2113743N38	33.0 PF 5%
C3508	2113743M08	22000PF +80-20% Y5V
C3509	2113743L05	330 PF 10%
C3512	2113740F43	REEL CL1 +/-30 47
C3513	2113740F38	REEL CL1 +/-30 30
C3514	2113740F67	CL1 +/-30 470 5%
C3515	2113743L29	3300PF 10%
C3516	2311049A08	KEMET CAPS
C3517	2113740F51	REEL CL1 +/-30 100
C3518	2113740F63	CL1 +/-30 330 5%
C3519	2113740F35	REEL CL1 +/-30 22
C3521	2111078B51	RF 220 5 NPO 100V
C3523	2111078B44	RF 120 5 NPO 100V
C3524	2113740F33	REEL CL1 +/-30 18
C3525	2113740F27	REEL CL1 +/-30 10
C3526	2113743M08	22000PF +80-20% Y5V
C3528	2113740F26	REEL CL1 +/-30 9.1
C3531	2113740F34	REEL CL1 +/-30 20
C3532	2113740F47	REEL CL1 +/-30 68
C3533	2113740F24	REEL CL1+/-30 7.5
C3534	2113740F19	CHIP CAP, CER 4.7PF
C3535	2113740F37	REEL CL1+/-30 27
C3536	2113740F31	REEL CL1 +/-30 15
C3537	2113740F33	REEL CL1 +/-30 18
C3539	2113740F21	REEL CL1+/-30 5.6
C3541	2113743M08	22000PF +80-20% Y5V
C3542	2113743L05	330 PF 10%
C3543	2113743M08	22000PF +80-20% Y5V
C3544	2113743L05	330 PF 10%
C3546	2113743L05	330 PF 10%
C3547	2113743M08	22000PF +80-20% Y5V
C3550	2113743N23	7.5 PF +-.5PF
C3551	2113743N46	68.0 PF 5%
C3552	2113743N44	56.0 PF 5%
C3560	2311049A07	TANT 10% 1.0UF
C3561	2113743M08	22000PF +80-20% Y5V
C3562	2113743L29	3300PF 10%
C3563	2113743L29	3300PF 10%
C3564	2113743L01	220 PF 10%
C3565	2113743E07	.022UF
C3566	2113743N50	100 PF 5%
C3567	2113743L05	330 PF 10%
C3568	2113743L29	3300PF 10%
C3569	2113743M08	22000PF +80-20% Y5V
C3570	2113743L05	330 PF 10%
C3571	2113743L09	470 PF 10%
C3701	2113743L41	10000 PF 10%
C3702	2113743L41	10000 PF 10%
C3703	2113743L41	10000 PF 10%
C3704	2113743L41	10000 PF 10%
C3705	2113743E20	CHIP. 10 UF 10%
C3706	2311049J11	CAPACITOR TANT 10% 4.7UF
C3707	2113743N34	22.0 PF 5%
C3708	2113743M24	100000 PF +80-20% Y5V
C3709	2113743M24	100000 PF +80-20% Y5V
C3710	2104993J02	MONOLITH CERAMIC (2.2UF)
C3711	2311049A69	TAN CHIP 10.0 UF 20% 6.3V
C3712	2113743M24	100000 PF +80-20% Y5V
C3713	2311049A09	TANT 2.2 UF 10%
C3714	2311049J11	CAPACITOR TANT 10% 4.7UF
C3715	2113743L09	470 PF 10%
C3721	2113743E20	CHIP. 10 UF 10%
C3722	2113743E20	CHIP. 10 UF 10%
C3724	2311049A08	KEMET CAPS
C3726	2113743N24	8.2 PF + -.5PF
C3727	2113743N50	100 PF 5%
C3731	2113743L41	10000 PF 10%
C3732	2113743L41	10000 PF 10%
C3733	2104993J02	MONOLITH CERAMIC (2.2UF)
C3734	2113743L41	10000 PF 10%
C3742	2113743L01	220 PF 10%
C3743	2113743L01	220 PF 10%
C3744	2113743L01	220 PF 10%
C3745	2113743L01	220 PF 10%
C3746	2113743L01	220 PF 10%
C3752	2113743L17	1000 PF 10%
C3753	2311049A56	TAN CHIP A/P 4.7 20 10
C3754	2113743M24	100000 PF +80-20% Y5V
C3755	2104993J02	MONOLITH CERAMIC (2.2UF)
* C3761	2113743N44	56.0 PF 5%
* C3762	2113740F63	330 CL1 +/-30 5%
* C3763	2113743N08	1.6 PF +-.25PF
C3801	2113743N18	4.7 PF +-.25PF
C3803	2113743L17	1000 PF 10%
C3804	2113743E20	CHIP. 10 UF 10%
C3805	2113743N18	4.7 PF +-.25PF
C3806	2113743N50	100 PF 5%
C3808	2113743N30	15.0PF 5%
C3809	2113743N36	27.0 PF 5%
C3811	2113743M24	100000 PF +80-20% Y5V
C3812	2113743M24	100000 PF +80-20% Y5V
C3813	2113743L41	10000 PF 10%
C3815	2113743L17	1000 PF 10%
C3816	2113743N22	6.8 PF +-.5PF
C3818	2113743E07	.022UF
C3821	2113743L41	10000 PF 10%
C3822	2113743L17	1000 PF 10%
C3823	2113743L41	10000 PF 10%
C3824	2113743N44	56.0 PF 5%
C3825	2113743N30	15.0PF 5%
C3826	2113743N18	4.7 PF +-.25PF
C3827	2113743E07	.022UF
C3828	2109720D01	LOW DIS T .01UF
C3829	2109720D01	LOW DIS T .01UF
C3830	2113743N46	68.0 PF 5%
C3832	2113743L17	1000 PF 10%
C3833	2113743N18	4.7 PF +-.25PF
C3834	2113743N44	56.0 PF 5%
C3835	2113743N22	6.8 PF +-.5PF
C3836	2113743N30	15.0PF 5%
C3842	2113743L17	1000 PF 10%
C400	2113743L41	10000 PF 10%

Circuit Ref	Motorola Part No	Description
C4001	2113743N50	100 PF 5%
C4002	2113743N50	100 PF 5%
C4003	2113743N50	100 PF 5%
C401	2113743M24	100000 PF +80-20% Y5V
C402	2113743M24	100000 PF +80-20% Y5V
C4020	2113743L17	1000 PF 10%
C4021	2113743L17	1000 PF 10%
C403	2113928D08	CERAMIC CHIP 10.0UF
C407	2113928N01	0.1UF 10% 6.3
C408	2113743N50	100 PF 5%
C409	2113743M24	100000 PF +80-20% Y5V
C410	2113928N01	0.1UF 10% 6.3
C411	2113743M24	100000 PF +80-20% Y5V
C414	2113743M24	100000 PF +80-20% Y5V
C415	2109720D01	LOW DIS T .01UF
C416	2113928N01	0.1UF 10% 6.3
C419	2113743L41	10000 PF 10%
C420	2113743L41	10000 PF 10%
C421	2113928N01	0.1UF 10% 6.3
C422	2113743M24	100000 PF +80-20% Y5V
C423	2113743N50	100 PF 5%
C424	2311049A59	TANT CHIP A/P 10UF 10% 6V
C425	2113743M24	100000 PF +80-20% Y5V
C426	2113743N50	100 PF 5%
C427	2113743N50	100 PF 5%
C428	2113743M24	100000 PF +80-20% Y5V
C429	2113743M24	100000 PF +80-20% Y5V
C430	2113928N01	0.1UF 10% 6.3
C431	2113743N50	100 PF 5%
C433	2113743L41	10000 PF 10%
C434	2113743M24	100000 PF +80-20% Y5V
C435	2113743M24	100000 PF +80-20% Y5V
C436	2113743N34	22.0 PF 5%
C437	2113743N34	22.0 PF 5%
C440	2113743G26	4.7UF 16V + 80-20%
C441	2113743L09	470 PF 10%
C442	2113743E20	10 UF 10%
C443	2113928N01	CERAMIC CHIP 10.0UF
C444	2113743N50	100 PF 5%
C445	2113743L09	470 PF 10%
C446	2113743L09	470 PF 10%
C447	2113928N01	CERAMIC CHIP 10.0UF
C448	2113928N01	CERAMIC CHIP 10.0UF
C449	2113743N50	100 PF 5%
C451	2113743M08	22000PF +80-20% Y5V
C452	2113743G26	4.7UF 16V + 80-20%
C453	2113743N50	100 PF 5%
C456	2113743N50	100 PF 5%
C458	2113743N50	100 PF 5%
C459	2113743N50	100 PF 5%
C463	2113743N50	100 PF 5%
C466	2113743N50	100 PF 5%
C467	2113928N01	0.1UF 10% 6.3
C471	2113743L09	470 PF 10%
C472	2113743L09	470 PF 10%
C473	2113743L09	470 PF 10%
C474	2113743L41	10000 PF 10%
C475	2113743H14	10.0 UF 16V +80-20%
C476	2113928D08	CERAMIC CHIP 10.0UF
C477	2113743L17	1000 PF 10%
C478	2113743L17	1000 PF 10%
C479	2113928N01	0.1UF 10% 6.3
C480	2113928D08	CERAMIC CHIP 10.0UF
C481	2113928N01	0.1UF 10% 6.3
C482	2113928N01	0.1UF 10% 6.3
C483	2113743L09	470 PF 10%
C484	2113743L09	470 PF 10%
C490	2113743L09	470 PF 10%
C491	2113743L09	470 PF 10%
C492	2113743L09	470 PF 10%
C493	2113743N50	100 PF 5%
C494	2113743N50	100 PF 5%
C495	2113743L09	470 PF 10%
C496	2113743L09	470 PF 10%
C497	2113743L09	470 PF 10%
C502	2311049A05	TANT 10% 0.47UF
C503	2113743N50	100 PF 5%
C505	2113743N50	100 PF 5%
C511	2113743N50	100 PF 5%
C512	2113743N50	100 PF 5%
C513	2113743N50	100 PF 5%
C514	2113743N50	100 PF 5%
C520	2113743L41	10000 PF 10%
C521	2113743L41	10000 PF 10%
C522	2113743L41	10000 PF 10%
C523	2113743L41	10000 PF 10%
C535	2113743L17	1000 PF 10%
C701	2180478Z20	MONOLITHIC CER (1.0UF)
C702	2113928N01	0.1UF 10% 6.3
C703	2113743N50	100 PF 5%
C704	2113928N01	0.1UF 10% 6.3
C705	2113928N01	0.1UF 10% 6.3
C707	2113928N01	0.1UF 10% 6.3
C708	2113928N01	0.1UF 10% 6.3
C709	2113743L17	1000 PF 10%
C711	2113743L41	10000 PF 10%
C713	2113928N01	0.1UF 10% 6.3
C714	2113928N01	0.1UF 10% 6.3
C715	2113928N01	0.1UF 10% 6.3
C717	2113928N01	0.1UF 10% 6.3
C718	2113743L17	1000 PF 10%
C719	2113928N01	0.1UF 10% 6.3
CR3301	4802245J42	RING QUAD SOT-143 PKG
CR3302	4805129M96	DIODE DUAL
CR3303	4880154K03	SOT MMBD353 DUAL SCHTKY
CR411	4802245J47	SCHOTTKY BARIER(RB471E)
CR411	4802245J62	DIODE SCHOTTKY, RB731U
CR412	4802245J62	DIODE SCHOTTKY, RB731U
CR413	4802245J62	DIODE SCHOTTKY, RB731U
CR440	4813833C02	DUAL 70V '5B' COMM CATH
CR501	4880107R01	RECTIFIER
CR503	4805729G49	DIODE RED/YEL
CR700	4802245J47	SCHOTTKY BARIER(RB471E)
D3270	4862824C01	DIODE VARACTOR
D3301	4802081B58	DUAL SILCON (VARICAP)
D3302	4802081B58	DUAL SILCON (VARICAP)
D3521	4880973Z02	PIN DIODE
D3551	4880973Z02	PIN DIODE
D3701	4802233J09	DIODE TRIPLE SOT25-RH
D3702	4802233J09	DIODE TRIPLE SOT25-RH
* D3761	4862824C03	DIODE VARACTOR
D3821	4805649Q13	DIODE VCTR ISV 228
D3831	4805649Q13	DIODE VCTR ISV 228
D3832	4862824C01	DIODE VARACTOR
E400	2480640Z01	C/IND BK1005HM471 BEAD
F501	6580542Z01	FUSE SMT TR/1608FF 3A
FL401	4870368G02	REFLOW CLOCK OSC XTAL
H3501	2680499Z01	HEAT SPREADER
J3501	0180117S05	RF JACK ASSEMBLY
J3502	0280519Z02	NUT, ANTENNA
J400	0905505Y04	CONN ZIF HORIZONTAL
J403	0905505Y02	CONN MALE 20 PIN ZIF
L3200	2462587N68	CHIP IND 1000 NH 5%
L3202	2462587N68	CHIP IND 1000 NH 5%
L3221	2462587N68	CHIP IND 1000 NH 5%
L3270	2462587T15	IND 100NH 5% LOW PRO
L3271	2462587Q20	IND CHIP 2,200NH 20%
L3301	2462587T35	IND CHIP 12NH 5% LOW PRO
L3303	2462587T35	IND CHIP 12NH 5% LOW PRO
L3304	2462587T23	IND CHIP 470NH 5%LOW PRO
L3305	2462587T35	IND CHIP 12NH 5% LOW PRO
L3306	2462587T35	IND CHIP 12NH 5% LOW PRO
L3308	2462587T34	IND CHIP 10NH 5% LOW PRO
L3309	2462587N55	CHIP IND 150 NH 5%
L3312	2462587V28	CHIP IND 33 NH 5% 0805
L3501	2413926H09	IND CHIP 5.6 NH +/- 0.3NH
L3503	2462587V32	CHIP IND 68NH 5% 0805
L3504	2462587N51	CHIP IND 68 NH 5%
L3511	2462587N44	CHIP IND 18 NH 5%
L3512	2479990B01	AIR WND COIL/GRN 11.03NH
L3513	2479990A02	AIR WND COIL/GRN 7.66NH
L3515	2479990C03	AIR WND COIL/GRN 13.85NH
L3518	2462587N48	CHIP IND 39 NH 5%
L3519	2484657R01	INDUCTOR BEAD CHIP
L3521	2479990A02	AIR WND COIL/GRN 7.66NH
L3522	2479990E01	COIL AIR WND/GRN 23.75
L3523	2462587N68	CHIP IND 1000 NH 5%
L3531	2479990N01	AIR WND COIL/GRN 43.67NH
L3532	2479990N01	AIR WND COIL/GRN 43.67NH
L3538	2479990M01	AIR WND COIL/GRN 30.54NH
L3551	2479990N01	AIR WND COIL/GRN 43.67NH
L3552	2479990A02	AIR WND COIL/GRN 7.66NH
L3701	2462587Q42	IND CHIP 390NH 10%
L3731	2462587Q20	IND CHIP 2,200NH 20%
L3801	2462587V34	CHIP IND 100NH 5% 0805
L3809	2462587V27	CHIP IND 27 NH 5% 0805
L3811	2462587V34	CHIP IND 100NH 5% 0805
L3812	2462587V34	CHIP IND 100NH 5% 0805
L3813	2462587Q47	IND CHIP 1000 NH 10%
L3816	2462587V34	CHIP IND 100NH 5% 0805
L3821	2462587N50	CHIP IND 56 NH 5%
L3822	2462587N49	CHIP IND 47 NH 5%
L3823	2462587N49	CHIP IND 47 NH 5%
L3824	2462587N68	CHIP IND 1000 NH 5%
L3825	2462587V34	CHIP IND 100NH 5% 0805
L3826	2462587N68	CHIP IND 1000 NH 5%
L3831	2462587N50	CHIP IND 56 NH 5%
L3832	2462587N51	CHIP IND 68 NH 5%
L3833	2462587N50	CHIP IND 56 NH 5%
L3834	2462587N68	CHIP IND 1000 NH 5%
L400	2462587Q42	IND CHIP 390NH 10%
L401	2462587Q42	IND CHIP 390NH 10%
L410	2462587Q42	IND CHIP 390NH 10%
L411	2462587Q42	IND CHIP 390NH 10%
L505	2462587Q42	IND CHIP 390NH 10%
M701	7585651Z01	PAD, FLEXIBLE
M702	7585651Z01	PAD, FLEXIBLE
M703	7585651Z01	PAD, FLEXIBLE
M704	7585651Z01	PAD, FLEXIBLE
M705	7585651Z01	PAD, FLEXIBLE
M706	7585651Z01	PAD, FLEXIBLE
PB501	4080523Z01	SWITCH, TACT
PB502	4080523Z01	SWITCH, TACT
PB503	4080523Z01	SWITCH, TACT
PB504	4080523Z01	SWITCH, TACT
PB505	4080523Z01	SWITCH, TACT
Q3200	4813827A07	NPNSML SIG MMBR941LT1 7Y
Q3201	4880214G02	TSTR MMBT3904
Q3202	4880214G02	TSTR MMBT3904
Q3270	4805218N63	RF TRANS SOT 323 BFQ67W
Q3301	4880214G02	TSTR MMBT3904
Q3302	4813827A07	NPNSML SIG MMBR941LT1 7Y
Q3501	4802245J55	POWER FIELD EFFECT
Q3561	4813824A17	XSTR PNP40V .2A B=100-300

Circuit Ref	Motorola Part No	Description
Q3721	4802245J50	DUAL NPN/PNP UMC5N
Q3801	4813827A07	NPNSML SIG MMBR941LT1 7Y
Q400	4809579E18	MOSFET P-CHAN TP010IT
Q403	4880214G02	TSTR MMBT3904
Q405	4802245J54	UMG5N DIGITAL TRANSIS-TOR
Q410	4802245J54	UMG5N DIGITAL TRANSIS-TOR
Q416	4809579E18	MOSFET P-CHAN TP010IT
Q417	4802245J50	DUAL NPN/PNP UMC5N
Q502	5180159R01	DUAL TRANS NPNS
Q505	4880214G02	TSTR MMBT3904
R3200	0662057M54	150 5% 20X40
R3201	0662057M82	2200 5% 20X40
R3202	0662057M90	4700 5% 20X40
R3203	0662057M98	10K 5% 20X40
R3204	0662057M26	10 5% 20X40
R3205	0662057M74	1000 5% 20X40
R3206	0662057N23	100K 5% 20X40
R3207	0662057N13	39K 5% 20X40
R3208	0662057M50	100 5% 20X40
R3209	0662057M74	1000 5% 20X40
R3210	0662057M82	2200 5% 20X40
R3211	0662057M82	2200 5% 20X40
R3212	0662057M90	4700 5% 20X40
R3213	0662057M82	2200 5% 20X40
R3214	0662057M34	22 5% 20X 40
R3219	0662057M50	100 5% 20X40
R3220	0662057M90	4700 5% 20X40
R3221	0662057M50	100 5% 20X40
R3224	0662057M26	10 5% 20X40
R3225	0662057M74	1000 5% 20X40
R3226	0662057M26	10 5% 20X40
R3270	0662057M74	1000 5% 20X40
R3271	0662057M42	47 5% 20X40
R3272	0662057N15	47K 5% 20X40
R3273	0662057N15	47K 5% 20X40
R3274	0662057M83	2400 5% 20X40
R3275	0662057M74	1000 5% 20X40
R3276	0662057N30	200K 5% 20X40
R3303	0662057N23	100K 5% 20X40
R3304	0662057N23	100K 5% 20X40
R3305	0662057N19	68K 5% 20X40
R3306	0662057M82	2200 5% 20X40
R3307	0662057N11	33K 5% 20X40
R3308	0662057M78	1500 5% 20X40
R3309	0662057M92	5600 5% 20X40
R3310	0662057M98	10K 5% 20X40
R3311	0662057M26	10 5% 20X40
R3312	0662057M38	33 5% 20X40
R3313	0662057M34	22 5% 20X 40

Circuit Ref	Motorola Part No	Description
R3314	0662057M26	10 5% 20X40
R3315	0662057M62	330 5% 20X40
R3316	0662057M66	470 5% 20X40
R3317	0662057N23	100K 5% 20X40
R3318	0662057M66	470 5% 20X40
R3321	0662057M54	150 5% 20X40
R3322	0662057M58	220 5% 20X40
R3323	0662057M32	18 5% 20X40
R3324	0662057M58	220 5% 20X40
R3501	0662057M61	300 5% 20X40
R3502	0662057M32	18 5% 20X40
R3503	0662057M61	300 5% 20X40
R3505	0662057M62	330 5% 20X40
R3512	0662057A27	120 OHMS 5%
R3513	0662057A25	100 OHMS 5%
R3519	0680539Z01	PWR METAL STRIP RES
R3542	0662057M92	5600 5% 20X40
R3543	0662057M50	100 5% 20X40
R3544	0662057A25	100 OHMS 5%
R3545	0662057A25	100 OHMS 5%
R3546	0662057N11	33K 5% 20X40
R3547	0662057N01	12K 5% 20X40
R3548	0662057M95	7500 55 20X40
R3551	0662057M40	39 5% 20X40
R3561	0662057N01	12K 5% 20X40
R3562	0662057N11	33K 5% 20X40
R3563	0662057N33	270K 5% 20X40
R3564	0662057N35	330K 5% 20X40
R3569	0662057M92	5600 5% 20X40
R3570	0662057M98	10K 5% 20X40
R3571	0662057A27	120 OHMS 5%
R3572	0662057A27	120 OHMS 5%
R3573	0662057A27	120 OHMS 5%
R3701	0662057M50	100 5% 20X40
R3703	0662057M54	150 5% 20X40
R3704	0662057M54	150 5% 20X40
R3705	0662057N11	33K 5% 20X40
R3721	0662057M66	470 5% 20X40
R3722	0662057M74	1000 5% 20X40
R3723	0662057M50	100 5% 20X40
R3727	0662057N23	100K 5% 20X40
R3741	0662057M50	100 5% 20X40
R3751	0662057N30	200K 5% 20X40
R3752	0662057N35	330K 5% 20X40
R3761	0662057N15	47K 5% 20X40
R3802	0662057M50	100 5% 20X40
R3803	0662057M58	220 5% 20X40
R3804	0662057M98	10K 5% 20X40
R3805	0662057N08	24K 5% 20X40
R3806	0662057M34	22 5% 20X 40
R3808	0662057M26	10 5% 20X40

Circuit Ref	Motorola Part No	Description
R3811	0662057M50	100 5% 20X40
R3816	0662057M74	1000 5% 20X40
R3817	0662057M01	0 5% 20X40
R3821	0662057M58	220 5% 20X40
R3822	0662057M42	47 5% 20X40
R3823	0662057N11	33K 5% 20X40
R3824	0662057N07	22K 5% 20X40
R3825	0662057M38	33 5% 20X40
R3826	0662057M32	18 5% 20X40
R3828	0662057M50	100 5% 20X40
R3829	0662057M01	0 5% 20X40
R3831	0662057M98	10K 5% 20X40
R3832	0662057N01	12K 5% 20X40
R3833	0662057M58	220 5% 20X40
R3834	0662057M42	47 5% 20X40
R3835	0662057N15	47K 5% 20X40
R3836	0662057M98	10K 5% 20X40
R400	0662057N15	47K 5% 20X40
R4001	0662057M74	1000 5% 20X40
R4002	0662057M74	1000 5% 20X40
R4003	0662057M74	1000 5% 20X40
R4004	0662057M74	1000 5% 20X40
R4005	0662057M74	1000 5% 20X40
R4006	0662057M74	1000 5% 20X40
R4007	0662057M74	1000 5% 20X40
R4008	0662057M74	1000 5% 20X40
R4009	0662057M74	1000 5% 20X40
R401	0662057M01	0 5% 20X40
R405	0662057M01	0 5% 20X40
R406	0662057N20	75K 5% 20X40
R407	0662057N19	68K 5% 20X40
R409	0662057M98	10K 5% 20X40
R410	0662057N23	100K 5% 20X40
R411	0662057M98	10K 5% 20X40
R413	0662057M01	0 5% 20X40
R414	0662057V34	180K 1% 1/16W
R415	0662057V26	91K 1% 1/16W
R416	0662057N13	39K 5% 20X40
R418	0662057M01	0 5% 20X40
R419	0662057M67	0 5% 20X40
R420	0662057B46	10.0 MEG OHMS 5%
R421	0662057M81	2000 5% 20X40
R423	0662057N21	82K 5% 20X40
R424	0662057N12	36K 5% 20X40
R425	0662057N10	30K 5% 20X40
R426	0662057N35	330K 5% 20X40
R427	0662057M84	2700 5% 20X40
R428	0662057M10	2.2 5% 20X40
R429	0662057M98	10K 5% 20X40
R431	0662057N39	470K 5% 20X40
R432	0662057N16	51K 5% 20X40

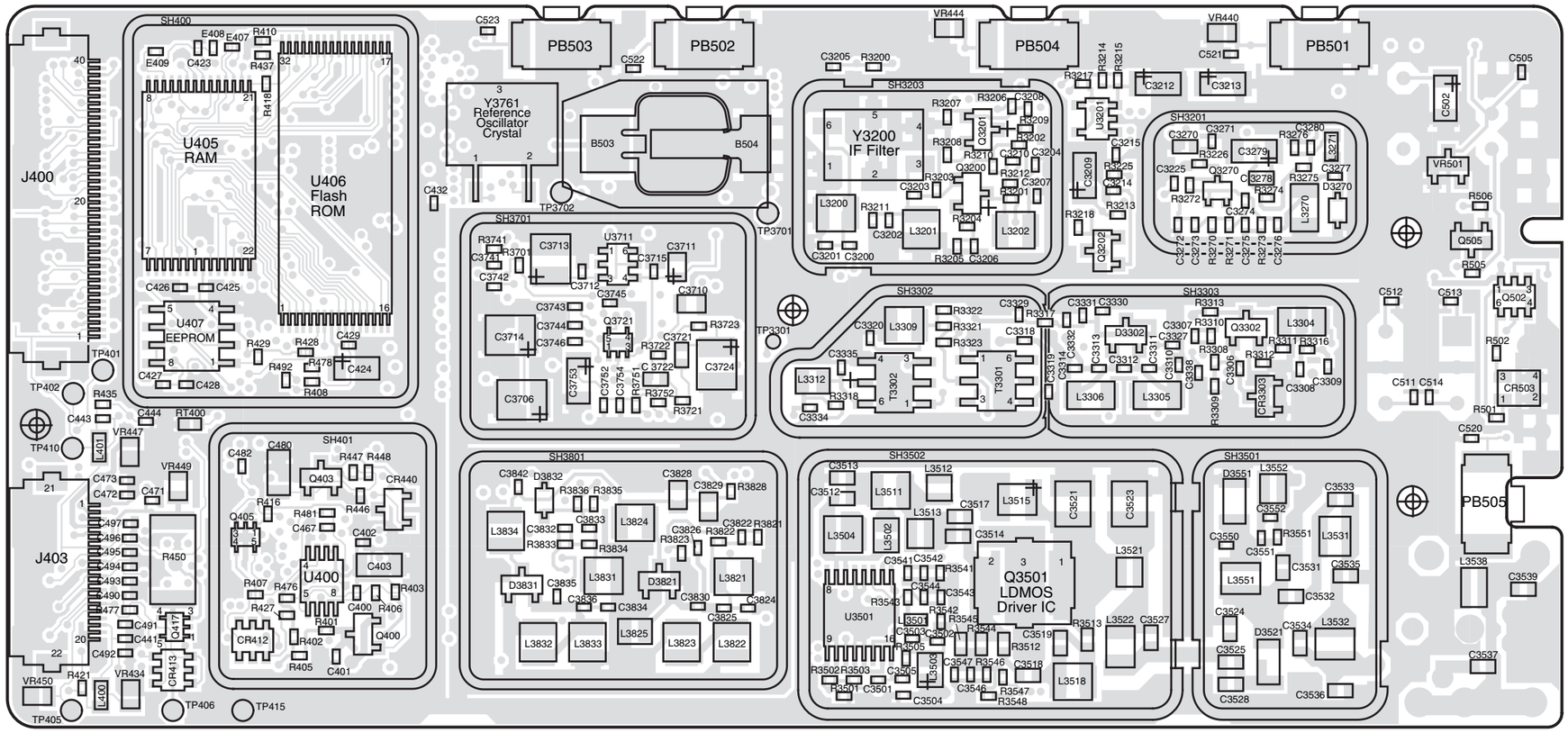
Circuit Ref	Motorola Part No	Description
R434	0662057M62	330 5% 20X40
R435	0662057M81	2000 5% 20X40
R436	0662057M01	0 5% 20X40
R445	0662057N08	24K 5% 20X40
R446	0662057N31	220K 5% 20X40
R447	0662057N51	1.5 MEG 5% 20X40
R448	0662057N33	270K 5% 20X40
R449	0662057N08	24K 5% 20X40
R450	0683962T45	68 5-1
R457	0662057M98	10K 5% 20X40
R460	0662057M90	4700 5% 20X40
R461	0662057M56	180 5% 20X40
R462	0662057M98	10K 5% 20X40
R463	0662057M61	300 5% 20X40
R471	0662057M92	5600 5% 20X40
R472	0662057M93	6200 5% 20X40
R473	0662057M26	10 5% 20X40
R475	0662057M01	0 5% 20X40
R476	0662057N08	24K 5% 20X40
R477	0662057M74	1000 5% 20X40
R478	0662057M98	10K 5% 20X40
R481	0662057N08	24K 5% 20X40
R492	0662057M01	0 5% 20X40
R499	0662057M98	10K 5% 20X40
R501	0662057M70	680 5% 20X40
R502	0662057M56	180 5% 20X40
R505	0662057M98	10K 5% 20X40
R506	0662057N15	47K 5% 20X40
R701	0662057N05	18K 5% 20X40
R702	0662057N05	18K 5% 20X40
R703	0662057M74	1000 5% 20X40
R704	0662057N13	39K 5% 20X40
R705	0662057N13	39K 5% 20X40
R706	0662057N17	56K 5% 20X40
R707	0662057M91	5100 5% 20X40
R708	0662057N41	560K 5% 20X40
R709	0662057N47	1.0 MEG 5% 20X40
R710	0662057N39	470K 5% 20X40
R716	0662057N01	12K 5% 20X40
R717	0662057M82	2200 5% 20X40
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z02	SWITCH (FREQUENCY)
S502	1880619Z01	POTENTIOMETER, VOLUME
SH3201	2602023X08	SHIELD
SH3202	2686081B02	SHIELD
SH3203	2686081B03	SHIELD
SH3301	2686081B01	SHIELD
SH3302	2686081B05	SHIELD
SH3303	2686081B06	SHIELD
SH3501	2686081B03	SHIELD
SH3502	2686081B04	SHIELD

Circuit Ref	Motorola Part No	Description
SH3701	2680511Z01	SHIELD SYNTHESIZER
SH3702	2680511Z01	SHIELD SYNTHESIZER
SH3801	2680513Z01	SHIELD VCO TOP
SH3802	2680514Z01	SHIELD VCO BOTTOM/LVZIF
SH400	2680505Z01	CTRL TOP LEFT
SH401	2680506Z01	CTRL TOP RIGHT
SH402	2680515Z01	CTRL BOTTOM LEFT
SH403	2680516Z01	CTRL BTM RIGHT
SH701	2680677Z01	(VOICE STORAGE BOTTOM)
T3301	2580541Z01	BALUN TRANSFORMER
T3302	2580541Z01	BALUN TRANSFORMER
U3201	5102463J58	3.3V REG IN SOT23-5 PKG
U3220	5109632D83	LVZIF 2.2 H60G 48TQFP
U3501	5105109Z67	IC LDMOS DRIVER VHF/UHF
U3502	5185765B01	IC PWR CONTROL PASS 2.3
U3503	5185963A15	IC TEMP SENSOR 1M50C
U3701	5185963A27	IC AT25016 48 PIN GFP
U3711	5105739X05	IC SOT 5V HI-PRECISION REG
U3801	5105750U54	IC PKG DIE VCO BUFFER
U400	5102463J40	REG 3.3V, LP2951CMM-3.3
U404	5185963A53	IC ASFIC CMP TQFP 48 PIN
U405	5102463J36	STATIC_RAM_32KX8
* U406	5102463J60	512X8 FLASH (AT49LV040)
* U407	5102463J64	16KX8 SPI SERIAL EEPROM
U409	5102226J56	68HC11FLO_PASS5 TQFP
U410	5102463J57	REG 3.3V, ILC7062CM-33
U411	4802245J54	UMG5N DIGITAL TRANSIS-TOR
U420	5102463J44	AUDIO AMP TDA8547TS
U700	5109152M01	IC EEPROM ISD3312OE1
U710	5102463J52	74HC4066D QUAD ANLOG SW
U720	5113818A01	SING SPLY LM2904DR
VR432	4805656W08	DIODE ZENER QUAD
VR433	4805656W08	DIODE ZENER QUAD
VR434	4802245J51	ZENER DIODE; BZX284-C6V8
VR439	4880140L15	10V ZENER
VR447	4802245J53	ZENER_DIODE; BZX284-C10
VR448	4802245J53	ZENER_DIODE; BZX284-C10
VR449	4802245J53	ZENER_DIODE; BZX284-C10
VR450	4802245J53	ZENER_DIODE; BZX284-C10
VR483	4802245J53	ZENER_DIODE; BZX284-C10
VR484	4802245J53	ZENER_DIODE; BZX284-C10
VR501	4813830A18	6.8V 5% 225MWMMBZ5235B_
VR506	4802245J51	ZENER DIODE; BZX284-C6V8
Y3200	4802245J43	MONOLITH/ XTAL FLTR
Y3761	4802245J49	XTAL 16.8MHZ WITH CLIP
	8486101B09	PCB WARIS P VHF GP1280

* Motorola Depot Servicing only

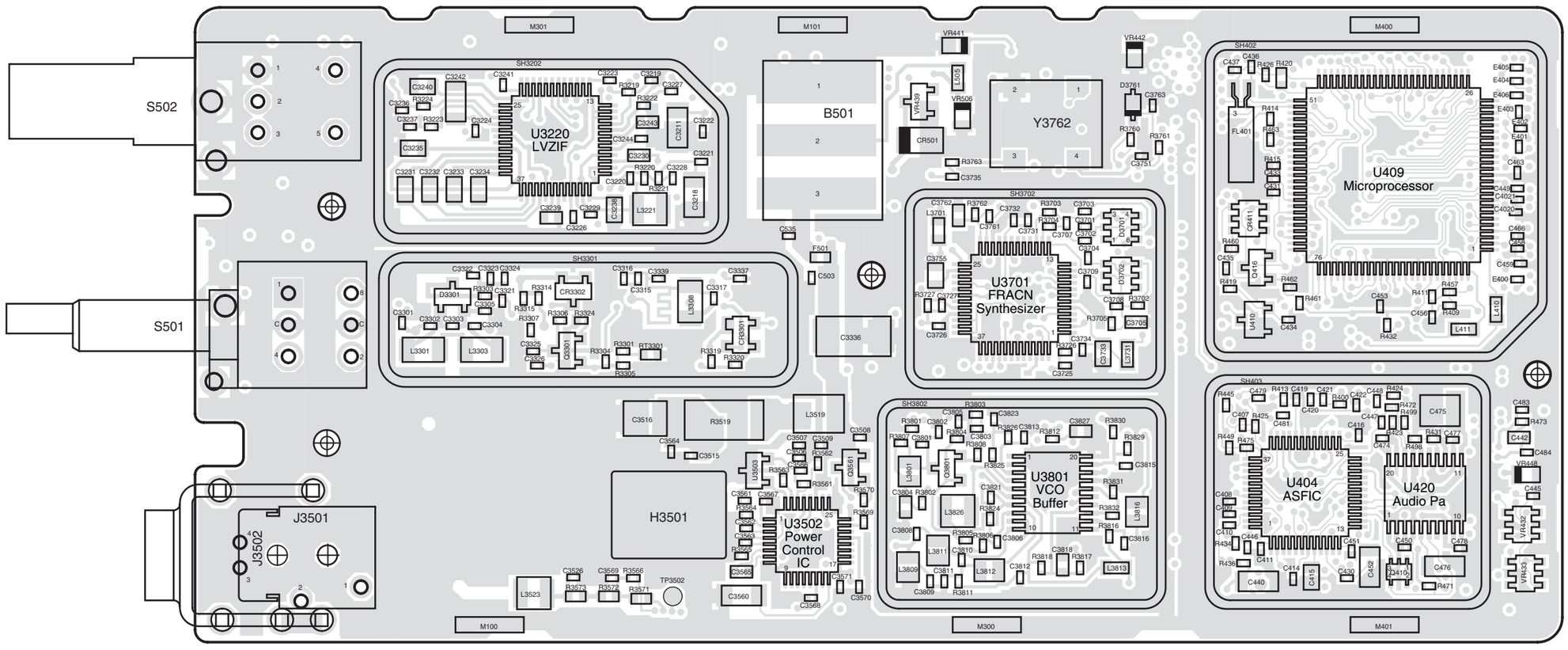
Reference designators with an asterisk indicate components which are not field replaceable because they need to be calibrated with specialized factory equipment after installation. Radios in which these parts have been replaced in the field will be off frequency at temperature extremes.

6.0 VHF PCB 8486062B14



ZWG0130072-E

VHF (136-174 MHz) Main Board Top Side



VHF (136-174 MHz) Main Board Bottom Side

7.0 VHF PCB 8486062B14 Parts List

Circuit Ref	Motorola Part No	Description
B501	0986237A02	CONN, CONTACT BATT
B503	3980502Z01	CONTACT, BACKUP B+ only GP360, GP380, GP680
B504	3980501Z01	CONTACT, BACKUP B- only GP360, GP380, GP680
C3200	2113743N31	16.0 PF 5% COG
C3203	2113743N50	100 PF 5% COG
C3204	2113743L41	10000 PF 10%
C3205	2113928N01	CER CHIP 0.1UF 10% 6.3
C3206	2113743L41	10000 PF 10%
C3207	2113743N10	2.2 PF +-.25PF COG
C3209	2311049A07	TANT 10% 1.0UF
C3210	2113743L17	1000 PF 10%
C3211	2311049A56	TAN CHIP A/P 4.7 20 10
C3212	2311049A07	TANT 10% 1.0UF
C3213	2311049A56	TAN CHIP A/P 4.7 20 10
C3214	2113928N01	CER CHIP 0.1UF 10% 6.3
C3215	2113743N26	10.0 PF 5% COG
C3218	2311049A56	TAN CHIP A/P 4.7 20 10
C3219	2113928N01	CER CHIP 0.1UF 10% 6.3
C3220	2113743N26	10.0 PF 5% COG
C3221	2113743L41	10000 PF 10%
C3222	2113928N01	CER CHIP 0.1UF 10% 6.3
C3223	2113928N01	CER CHIP 0.1UF 10% 6.3
C3224	2113928N01	CER CHIP 0.1UF 10% 6.3
C3225	2113928N01	CER CHIP 0.1UF 10% 6.3
C3226	2113928N01	CER CHIP 0.1UF 10% 6.3
C3227	2113743L41	10000 PF 10%
C3228	2113743L41	10000 PF 10%
C3229	2113743N50	100 PF 5% COG
C3230	2113740F51	REEL CL1 +/-30 100
C3231	2180478Z20	MONOLITHIC CERAMIC (1.0UF)
C3232	2180478Z20	MONOLITHIC CERAMIC (1.0UF)
C3233	2180478Z20	MONOLITHIC CERAMIC (1.0UF)
C3234	2180478Z20	MONOLITHIC CERAMIC (1.0UF)
C3235	2113743A23	.220UF 10%
C3238	2113743A24	.330 UF 10% 16V
C3239	2113743E07	CER CHIP .022UF
C3240	2113743A23	.220UF 10%
C3241	2113743L19	1200 PF 10%
C3242	2109720D14	CER CHIP LOW DIST 0.1UF
C3243	2113743E07	CER CHIP .022UF
C3244	2113743L41	10000 PF 10%
C3270	2113743E07	CER CHIP .022UF
C3271	2113743L05	330 PF 10%
C3272	2113743N18	4.7 PF +-.25PF COG
C3273	2113743N26	10.0 PF 5% COG
C3274	2113743N38	33.0 PF 5% COG
C3275	2113743N44	56.0 PF 5% COG
C3276	2113743N42	47.0 PF 5% COG
C3277	2113743N48	82.0 PF 5% COG
C3278	2113743E07	CER CHIP .022UF
C3279	2311049A40	GLOBAL TANT 10% 2.2 UF
C3280	2113743L41	10000 PF 10%
C3301	2113743N20	5.6 PF +-.5PF COG
C3302	2113743N54	150 PF 5% COG
C3303	2113743N30	15.0PF 5% COG
C3304	2113743N54	150 PF 5% COG
C3306	2113928N01	CER CHIP 0.1UF 10% 6.3
C3307	2113743N50	100 PF 5% COG
C3308	2113743L05	330 PF 10%
C3309	2113928N01	CER CHIP 0.1UF 10% 6.3
C3311	2113743N54	150 PF 5% COG
C3312	2113743N31	16.0 PF 5% COG
C3313	2113743N54	150 PF 5% COG
C3315	2113743N26	10.0 PF 5% COG
C3316	2113743N14	3.3 PF +-.25PF COG
C3317	2113743N40	39.0 PF 5% COG
C3318	2113743M08	22000PF +80-20% Y5V
C3320	2113743N48	82.0 PF 5% COG
C3321	2113743L05	330 PF 10%
C3322	2113743N50	100 PF 5% COG
C3323	2113743N50	100 PF 5% COG
C3324	2113743N38	33.0 PF 5% COG
C3325	2113743L17	1000 PF 10%
C3327	2113743L05	330 PF 10%
C3329	2113743L05	330 PF 10%
C3330	2113743N50	100 PF 5% COG
C3331	2113743N50	100 PF 5% COG
C3332	2113743N40	39.0 PF 5% COG
C3334	2113743N33	20.0 PF 5% COG
C3335	2113743N34	22.0 PF 5% COG
C3336	2311049A18	TANT 10% 10UF
C3337	2113743M08	22000PF +80-20% Y5V
C3338	2113743L09	470 PF 10%
C3339	2113743N26	10.0 PF 5% COG
C3501	2113743L05	330 PF 10%
C3502	2113743N38	33.0 PF 5% COG
C3503	2113743N38	33.0 PF 5% COG
C3504	2113743M08	22000PF +80-20% Y5V
C3505	2113743N38	33.0 PF 5% COG
C3508	2113743M08	22000PF +80-20% Y5V
C3509	2113743L05	330 PF 10%
C3512	2113740F43	REEL CL1 +/-30 47
C3513	2113740F38	REEL CL1 +/-30 30
C3514	2113740F67	CL1 +/-30 470 5%
C3515	2113743L29	3300PF 10%
C3516	2311049A08	KEMET CAPS
C3517	2113740F51	REEL CL1 +/-30 100
C3518	2113740F63	CL1 +/-30 330 5%
C3519	2113740F35	REEL CL1 +/-30 22
C3521	2111078B51	RF 220 5 NPO 100V
C3523	2111078B44	RF 120 5 NPO 100V
C3524	2113740F33	REEL CL1 +/-30 18
C3525	2113740F27	REEL CL1 +/-30 10
C3526	2113743M08	22000PF +80-20% Y5V
C3528	2113740F26	REEL CL1 +/-30 9.1
C3531	2113740F34	REEL CL1 +/-30 20
C3532	2113740F47	REEL CL1 +/-30 68
C3533	2113740F24	REEL CL1+/-30 7.5
C3534	2113740F19	CHIP CAP, CER 4.7PF
C3535	2113740F37	REEL CL1+/-30 27
C3536	2113740F31	REEL CL1 +/-30 15
C3537	2113740F33	REEL CL1 +/-30 18
C3539	2113740F21	REEL CL1+/-30 5.6
C3541	2113743M08	22000PF +80-20% Y5V
C3542	2113743L05	330 PF 10%
C3543	2113743M08	22000PF +80-20% Y5V
C3544	2113743L05	330 PF 10%
C3546	2113743L05	330 PF 10%
C3547	2113743M08	22000PF +80-20% Y5V
C3550	2113743N23	7.5 PF +-.5PF COG
C3551	2113743N46	68.0 PF 5% COG
C3552	2113743N44	56.0 PF 5% COG
C3560	2311049A07	TANT 10% 1.0UF
C3561	2113743M08	22000PF +80-20% Y5V
C3562	2113743L29	3300PF 10%
C3563	2113743L29	3300PF 10%
C3564	2113743L01	220 PF 10%
C3565	2113743E07	CER CHIP .022UF
C3566	2113743N50	100 PF 5% COG
C3567	2113743L05	330 PF 10%
C3568	2113743L29	3300PF 10%
C3569	2113743M08	22000PF +80-20% Y5V
C3570	2113743L05	330 PF 10%
C3571	2113743L09	470 PF 10%
C3701	2113743L41	10000 PF 10%
C3702	2113743L41	10000 PF 10%
C3703	2113743L41	10000 PF 10%
C3704	2113743L41	10000 PF 10%
C3705	2113743E20	CHIP. 10 UF 10%
C3706	2311049J11	CAPACITOR TANT 10% 4.7UF
C3707	2113743N34	22.0 PF 5% COG
C3708	2113743M24	100000 PF +80-20% Y5V
C3709	2113743M24	100000 PF +80-20% Y5V
C3710	2104993J02	MONOLITHIC CERAMIC (2.2UF)
C3711	2311049A69	TAN CHIP 10.0 UF 20% 6.3V
C3712	2113743M24	100000 PF +80-20% Y5V
C3713	2311049A09	TANT 2.2 UF 10%
C3714	2311049J11	CAPACITOR TANT 10% 4.7UF
C3715	2113743L09	470 PF 10%
C3721	2113743E20	CHIP. 10 UF 10%
C3722	2113743E20	CHIP. 10 UF 10%
C3724	2311049A08	KEMET CAPS
C3726	2113743N24	8.2 PF + -.5PF COG
C3727	2113743N50	100 PF 5% COG
C3731	2113743L41	10000 PF 10%
C3732	2113743L41	10000 PF 10%
C3733	2104993J02	MONOLITHIC CERAMIC (2.2UF)
C3734	2113743L41	10000 PF 10%
C3742	2113743L01	220 PF 10%
C3743	2113743L01	220 PF 10%
C3744	2113743L01	220 PF 10%
C3745	2113743L01	220 PF 10%
C3746	2113743L01	220 PF 10%
C3752	2113743L17	1000 PF 10%
C3753	2311049A56	TAN CHIP A/P 4.7 20 10
C3754	2113743M24	100000 PF +80-20% Y5V
C3755	2104993J02	MONOLITHIC CERAMIC (2.2UF)
* C3761	2113743N44	56.0 PF 5% COG
* C3762	2113740F63	CL1 +/-30 330 5%
* C3763	2113743N08	1.6 PF +-.25PF COG
C3801	2113743N18	4.7 PF +-.25PF COG
C3803	2113743L17	1000 PF 10%
C3804	2113743E20	CHIP. 10 UF 10%
C3805	2113743N18	4.7 PF +-.25PF COG
C3806	2113743N50	100 PF 5% COG
C3808	2113743N30	15.0PF 5% COG
C3809	2113743N36	27.0 PF 5% COG
C3811	2113743M24	100000 PF +80-20% Y5V
C3812	2113743M24	100000 PF +80-20% Y5V
C3813	2113743L41	10000 PF 10%
C3815	2113743L17	1000 PF 10%
C3816	2113743N22	6.8 PF +-.5PF COG
C3818	2113743E07	CER CHIP .022UF
C3821	2113743L41	10000 PF 10%
C3822	2113743L17	1000 PF 10%
C3823	2113743L41	10000 PF 10%
C3824	2113743N44	56.0 PF 5% COG
C3825	2113743N30	15.0PF 5% COG
C3826	2113743N18	4.7 PF +-.25PF COG
C3827	2113743E07	CER CHIP .022UF
C3828	2109720D01	CER CHIP LOW DIS T .01UF
C3829	2109720D01	CER CHIP LOW DIS T .01UF
C3830	2113743N46	68.0 PF 5% COG
C3832	2113743L17	1000 PF 10%
C3833	2113743N18	4.7 PF +-.25PF COG
C3834	2113743N44	56.0 PF 5% COG
C3835	2113743N22	6.8 PF +-.5PF COG
C3836	2113743N30	15.0PF 5% COG
C3842	2113743L17	1000 PF 10%
C400	2113743L41	10000 PF 10%
C401	2113743M24	100000 PF +80-20% Y5V
C402	2113743M24	100000 PF +80-20% Y5V
C403	2113928D08	CERAMIC CHIP 10.0UF
C407	2113928N01	CER CHIP 0.1UF 10% 6.3
C408	2113743N50	100 PF 5% COG
C409	2113743M24	100000 PF +80-20% Y5V
C410	2113928N01	CER CHIP 0.1UF 10% 6.3
C411	2113743M24	100000 PF +80-20% Y5V
C414	2113743M24	100000 PF +80-20% Y5V
C415	2109720D01	CER CHIP LOW DIS T .01UF
C416	2113928N01	CER CHIP 0.1UF 10% 6.3
C419	2113743L41	10000 PF 10%
C420	2113743L41	10000 PF 10%
C421	2113928N01	CER CHIP 0.1UF 10% 6.3
C422	2113743M24	100000 PF +80-20% Y5V
C423	2113743N50	100 PF 5% COG
C424	2311049A59	TANT CHIP A/P 10UF 10% 6V
C425	2113743M24	100000 PF +80-20% Y5V
C426	2113743N50	100 PF 5% COG

Circuit Ref	Motorola Part No	Description
C427	2113743N50	100 PF 5% COG
C428	2113743M24	100000 PF +80-20% Y5V
C429	2113743M24	100000 PF +80-20% Y5V
C430	2113928N01	CER CHIP 0.1UF 10% 6.3
C431	2113743N50	100 PF 5% COG
C433	2113743L41	10000 PF 10%
C434	2113743M24	100000 PF +80-20% Y5V
		only GP360, GP380, GP680
C435	2113743M24	100000 PF +80-20% Y5V
C436	2113743N34	22.0 PF 5% COG
		only GP360, GP380, GP680
C437	2113743N34	22.0 PF 5% COG
		only GP360, GP380, GP680
C440	2113743G26	4.7UF 16V + 80-20%
C441	2113743L09	470 PF 10%
C442	2113743E20	CHIP. 10 UF 10%
C443	2113928N01	CER CHIP 0.1UF 10% 6.3
C444	2113743N50	100 PF 5% COG
C445	2113743L09	470 PF 10%
C446	2113743L09	470 PF 10%
C447	2113928N01	CER CHIP 0.1UF 10% 6.3
C448	2113928N01	CER CHIP 0.1UF 10% 6.3
C449	2113743N50	100 PF 5% COG
C451	2113743M08	22000PF +80-20% Y5V
C452	2113743G26	4.7UF 16V + 80-20%
C453	2113743N50	100 PF 5% COG
C456	2113743N50	100 PF 5% COG
C458	2113743N50	100 PF 5% COG
C459	2113743N50	100 PF 5% COG
C463	2113743N50	100 PF 5% COG
C466	2113743N50	100 PF 5% COG
C467	2113928N01	CER CHIP 0.1UF 10% 6.3
C471	2113743L09	470 PF 10%
C472	2113743L09	470 PF 10%
C473	2113743L09	470 PF 10%
C474	2113743L41	10000 PF 10%
C475	2113743H14	10.0 UF 16V +80-20%
C476	2113928D08	CERAMIC CHIP 10.0UF
C477	2113743L17	1000 PF 10%
C478	2113743L17	1000 PF 10%
C479	2113928N01	CER CHIP 0.1UF 10% 6.3
C480	2113928D08	CERAMIC CHIP 10.0UF
C481	2113928N01	CER CHIP 0.1UF 10% 6.3
C482	2113928N01	CER CHIP 0.1UF 10% 6.3
C483	2113743L09	470 PF 10%
C484	2113743L09	470 PF 10%
C490	2113743L09	470 PF 10%
C491	2113743L09	470 PF 10%
C492	2113743L09	470 PF 10%
C493	2113743N50	100 PF 5% COG
C494	2113743N50	100 PF 5% COG
C495	2113743L09	470 PF 10%
C496	2113743L09	470 PF 10%
C497	2113743L09	470 PF 10%
C4020	2113743L17	1000PF 10%
		Placed on PCB 8486062B14 only

Circuit Ref	Motorola Part No	Description
C4021	2113743L17	1000PF 10%
		Placed on PCB 8486062B14 only
C502	2311049A05	TANT 10% 0.47UF
C503	2113743N50	100 PF 5% COG
C505	2113743N50	100 PF 5% COG
C511	2113743N50	100 PF 5% COG
C512	2113743N50	100 PF 5% COG
C513	2113743N50	100 PF 5% COG
C514	2113743N50	100 PF 5% COG
C520	2113743L41	10000 PF 10%
C521	2113743L41	10000 PF 10%
C522	2113743L41	10000 PF 10%
C523	2113743L41	10000 PF 10%
C535	2113743L17	1000 PF 10%
CR3301	4802245J42	RING QUAD SOT-143 PKG
CR3302	4805129M96	DIODE SMBV1032
CR3303	4880154K03	SOT MMBD353 DUAL SCHKY
CR411**	4802245J47	SCHOTTKY BARRIER(RB471E)
CR412**	4802245J47	SCHOTTKY BARRIER(RB471E)
CR413**	4802245J47	SCHOTTKY BARRIER(RB471E)
	**Placed on	PCB 8486062B12 only
CR411***	4802245J62	SCHOTTKY BARRIER(RB731U)
CR412***	4802245J62	SCHOTTKY BARRIER(RB731U)
CR413***	4802245J62	SCHOTTKY BARRIER(RB731U)
	***Placed on	PCB 8486062B14 only
CR440	4813833C02	DUAL 70V '5B' COMM CATH
CR501	4880107R01	RECTIFIER
CR503	4805729G49	LED RED/YEL
D3270	4862824C01	VARACTOR
D3301	4802081B58	DUAL SILCON (VARICAP)
D3302	4802081B58	DUAL SILCON (VARICAP)
D3521	4880973Z02	PIN DIODE
D3551	4880973Z02	PIN DIODE
D3701	4802233J09	TRIPLE SOT25-RH
D3702	4802233J09	TRIPLE SOT25-RH
* D3761	4862824C03	VARACTOR
D3821	4805649Q13	VCTR ISV 228
D3831	4805649Q13	VCTR ISV 228
D3832	4862824C01	VARACTOR
E400	2480640Z01	C/IND BK1005HM471 BEAD
E401	2480640Z01	C/IND BK1005HM471 BEAD
E402	2480640Z01	C/IND BK1005HM471 BEAD
E403	2480640Z01	C/IND BK1005HM471 BEAD
E404	2480640Z01	C/IND BK1005HM471 BEAD
E405	2480640Z01	C/IND BK1005HM471 BEAD
E406	2480640Z01	C/IND BK1005HM471 BEAD
E407	2480640Z01	C/IND BK1005HM471 BEAD
E408	2480640Z01	C/IND BK1005HM471 BEAD
E409	2480640Z01	C/IND BK1005HM471 BEAD
F501	6580542Z01	FUSE CHIP SMT TR/1608FF 3A
FL401	4870368G02	CLOCK OSC XTAL
		only GP360, GP380, GP680
H3501	2680499Z01	HEAT SPREADER
J3501	0180117S05	RF JACK ASSEMBLY
J3502	0280519Z02	NUT, ANTENNA
J400	0905505Y04	CONN ZIF 40Pin

Circuit Ref	Motorola Part No	Description
		not in GP320
J403	0905505Y02	CONN ZIF MALE 20 PIN
L3200	2462587N68	CHIP IND 1000 NH 5%
L3202	2462587N68	CHIP IND 1000 NH 5%
L3221	2462587N68	CHIP IND 1000 NH 5%
L3270	2462587T15	IND CHIP 100NH 5% LOW PRO
L3271	2462587Q20	IND CHIP 2,200NH 20%
L3301	2462587T35	IND CHIP 12NH 5% LOW PRO
L3303	2462587T35	IND CHIP 12NH 5% LOW PRO
L3304	2462587T23	IND CHIP 470NH 5% LOW PRO
L3305	2462587T35	IND CHIP 12NH 5% LOW PRO
L3306	2462587T35	IND CHIP 12NH 5% LOW PRO
L3308	2462587T34	IND CHIP 10NH 5% LOW PRO
L3309	2462587N55	CHIP IND 150 NH 5%
L3312	2462587V28	CHIP IND 33 NH 5% 0805
L3501	2413926H09	IND CHIP 5.6 NH +/- 0.3NH
L3503	2462587V32	CHIP IND 68NH 5% 0805
L3504	2462587N51	CHIP IND 68 NH 5%
L3511	2462587N44	CHIP IND 18 NH 5%
L3512	2479990B01	AIR WOUND GREEN 11.03NH
L3513	2479990A02	AIR WOUND GREEN 7.66NH
L3515	2479990C03	AIR WOUND GREEN 13.85NH
L3518	2462587N48	CHIP IND 39 NH 5%
L3519	2484657R01	INDUCTOR BEAD CHIP
L3521	2479990A02	AIR WOUND GREEN 7.66NH
L3522	2479990E01	COIL AIR WOUND GREEN 23.75
L3523	2462587N68	CHIP IND 1000 NH 5%
L3531	2479990N01	AIR WOUND GREEN 43.67NH
L3532	2479990N01	AIR WOUND GREEN 43.67NH
L3538	2479990M01	AIR WOUND GREEN 30.54NH
L3551	2479990N01	AIR WOUND GREEN 43.67NH
L3552	2479990A02	AIR WOUND GREEN 7.66NH
L3701	2462587Q42	IND CHIP 390NH 10%
L3731	2462587Q20	IND CHIP 2,200NH 20%
L3801	2462587V34	CHIP IND 100NH 5% 0805
L3809	2462587V27	CHIP IND 27 NH 5% 0805
L3811	2462587V34	CHIP IND 100NH 5% 0805
L3812	2462587V34	CHIP IND 100NH 5% 0805
L3813	2462587Q47	IND CHIP 1000 NH 10%
L3816	2462587V34	CHIP IND 100NH 5% 0805
L3821	2462587N50	CHIP IND 56 NH 5%
L3822	2462587N49	CHIP IND 47 NH 5%
L3823	2462587N49	CHIP IND 47 NH 5%
L3824	2462587N68	CHIP IND 1000 NH 5%
L3825	2462587V34	CHIP IND 100NH 5%
L3826	2462587N68	CHIP IND 1000 NH 5%
L3831	2462587N50	CHIP IND 56 NH 5%
L3832	2462587N51	CHIP IND 68 NH 5%
L3833	2462587N50	CHIP IND 56 NH 5%
L3834	2462587N68	CHIP IND 1000 NH 5%
L400	2462587Q42	IND CHIP 390NH 10%
L401	2462587Q42	IND CHIP 390NH 10%
L410	2462587Q42	IND CHIP 390NH 10%
L411	2462587Q42	IND CHIP 390NH 10%
L505	2462587Q42	IND CHIP 390NH 10%
PB501	4080523Z01	SWITCH, TACT

Circuit Ref	Motorola Part No	Description
PB502	4080523Z01	SWITCH, TACT
PB503	4080523Z01	SWITCH, TACT
		not in GP320
PB504	4080523Z01	SWITCH, TACT
PB505	4080523Z01	SWITCH, TACT
		not in GP320
Q3200	4813827A07	TSTR NPN SML SIG MMBR941LT1
Q3201	4880214G02	TSTR MMBT3904
Q3202	4880214G02	TSTR MMBT3904
Q3270	4805218N63	RF TRANS SOT 323 BFQ67W
Q3301	4880214G02	TSTR MMBT3904
Q3302	4813827A07	TSTR NPN MMBR941LT1
Q3501	4802245J55	TSTR POWER FIELD EFFECT
Q3561	4813824A17	XSTR PNP40V .2A B=100-300
Q3721	4802245J50	TSTR DUAL NPN/PNP UMC5N
Q3801	4813827A07	TSTR NPN MMBR941LT1
Q400	4809579E18	MOSFET P-CHAN TP010IT
Q403	4880214G02	TSTR MMBT3904
Q405	4802245J54	UMG5N DIGITAL TRANSISTOR
Q410	4802245J54	UMG5N DIGITAL TRANSISTOR
Q416	4809579E18	MOSFET P-CHAN TP010IT
		only GP360, GP380, GP680
Q417	4802245J50	TSTR DUAL NPN/PNP UMC5N
Q502	5180159R01	DUAL TRANS NPNS
Q505	4880214G02	TSTR MMBT3904
R3200	0662057M54	150 5% 20X40
R3201	0662057M82	2200 5% 20X40
R3202	0662057M90	4700 5% 20X40
R3203	0662057M98	10K 5% 20X40
R3204	0662057M26	10 5% 20X40
R3205	0662057M74	1000 5% 20X40
R3206	0662057N23	100K 5% 20X40
R3207	0662057N13	39K 5% 20X40
R3208	0662057M50	100 5% 20X40
R3209	0662057M74	1000 5% 20X40
R3210	0662057M82	2200 5% 20X40
R3211	0662057M82	2200 5% 20X40
R3212	0662057M90	4700 5% 20X40
R3213	0662057M82	2200 5% 20X40
R3214	0662057M34	22 5% 20X 40
R3219	0662057M50	100 5% 20X40
R3220	0662057M90	4700 5% 20X40
R3221	0662057M50	100 5% 20X40
R3224	0662057M26	10 5% 20X40
R3225	0662057M74	1000 5% 20X40
R3226	0662057M26	10 5% 20X40
R3270	0662057M74	1000 5% 20X40
R3271	0662057M42	47 5% 20X40
R3272	0662057N15	47K 5% 20X40
R3273	0662057N15	47K 5% 20X40
R3274	0662057M83	2400 5% 20X40
R3275	0662057M74	1000 5% 20X40
R3276	0662057N30	200K 5% 20X40
R3303	0662057N23	100K 5% 20X40
R3304	0662057N23	100K 5% 20X40

Circuit Ref	Motorola Part No	Description
R3305	0662057N19	68K 5% 20X40
R3306	0662057M82	2200 5% 20X40
R3307	0662057N11	33K 5% 20X40
R3308	0662057M78	1500 5% 20X40
R3309	0662057M92	5600 5% 20X40
R3310	0662057M98	10K 5% 20X40
R3311	0662057M26	10 5% 20X40
R3312	0662057M38	33 5% 20X40
R3313	0662057M34	22 5% 20X 40
R3314	0662057M26	10 5% 20X40
R3315	0662057M62	330 5% 20X40
R3316	0662057M66	470 5% 20X40
R3317	0662057N23	100K 5% 20X40
R3318	0662057M66	470 5% 20X40
R3321	0662057M54	150 5% 20X40
R3322	0662057M58	220 5% 20X40
R3323	0662057M32	18 5% 20X40
R3324	0662057M58	220 5% 20X40
R3501	0662057M61	300 5% 20X40
R3502	0662057M32	18 5% 20X40
R3503	0662057M61	300 5% 20X40
R3505	0662057M62	330 5% 20X40
R3512	0662057A27	120 OHMS 5%
R3513	0662057A25	100 OHMS 5%
R3519	0680539Z01	POWER METAL STRIP
R3542	0662057M92	5600 5% 20X40
R3543	0662057M50	100 5% 20X40
R3544	0662057A25	100 OHMS 5%
R3545	0662057A25	100 OHMS 5%
R3546	0662057N11	33K 5% 20X40
R3547	0662057N01	12K 5% 20X40
R3548	0662057M95	7500 55 20X40
R3551	0662057M40	39 5% 20X40
R3561	0662057N01	12K 5% 20X40
R3562	0662057N11	33K 5% 20X40
R3563	0662057N33	270K 5% 20X40
R3564	0662057N35	330K 5% 20X40
R3569	0662057M92	5600 5% 20X40
R3570	0662057M98	10K 5% 20X40
R3571	0662057A27	120 OHMS 5%
R3572	0662057A27	120 OHMS 5%
R3573	0662057A27	120 OHMS 5%
R3701	0662057M50	100 5% 20X40
R3703	0662057M54	150 5% 20X40
R3704	0662057M54	150 5% 20X40
R3705	0662057N11	33K 5% 20X40
R3721	0662057M66	470 5% 20X40
R3722	0662057M74	1000 5% 20X40
R3723	0662057M50	100 5% 20X40
R3727	0662057N23	100K 5% 20X40
R3741	0662057M50	100 5% 20X40
R3751	0662057N30	200K 5% 20X40
R3752	0662057N35	330K 5% 20X40
R3761	0662057N15	47K 5% 20X40
R3802	0662057M50	100 5% 20X40
R3803	0662057M58	220 5% 20X40

Circuit Ref	Motorola Part No	Description
R3804	0662057M98	10K 5% 20X40
R3805	0662057N08	24K 5% 20X40
R3806	0662057M34	22 5% 20X 40
R3808	0662057M26	10 5% 20X40
R3811	0662057M50	100 5% 20X40
R3816	0662057M74	1000 5% 20X40
R3817	0662057M01	0 5% 20X40
R3821	0662057M58	220 5% 20X40
R3822	0662057M42	47 5% 20X40
R3823	0662057N11	33K 5% 20X40
R3824	0662057N07	22K 5% 20X40
R3825	0662057M38	33 5% 20X40
R3826	0662057M32	18 5% 20X40
R3828	0662057M50	100 5% 20X40
R3829	0662057M01	0 5% 20X40
R3831	0662057M98	10K 5% 20X40
R3832	0662057N01	12K 5% 20X40
R3833	0662057M58	220 5% 20X40
R3834	0662057M42	47 5% 20X40
R3835	0662057N15	47K 5% 20X40
R3836	0662057M98	10K 5% 20X40
R400	0662057N15	47K 5% 20X40
R401	0662057M01	0 5% 20X40
R405	0662057M01	0 5% 20X40
R406	0662057N20	75K 5% 20X40
R407	0662057N19	68K 5% 20X40
R409	0662057M98	10K 5% 20X40
R410	0662057N23	100K 5% 20X40
R411	0662057M98	10K 5% 20X40
R413	0662057M01	0 5% 20X40
R414	0662057V34	180K 1% 1/16W
R415	0662057V26	91K 1% 1/16W
R416	0662057N13	39K 5% 20X40
R418	0662057M01	0 5% 20X40
R419	0662057M67	0 5% 20X40
		only GP360, GP380, GP680
R420	0662057B46	10.0 MEG OHMS 5%
		only GP360, GP380, GP680
R421	0662057M81	2000 5% 20X40
R423	0662057N21	82K 5% 20X40
R424	0662057N12	36K 5% 20X40
R425	0662057N10	30K 5% 20X40
R426	0662057N35	330K 5% 20X40
		only GP360, GP380, GP680
R427	0662057M84	2700 5% 20X40
R428	0662057M10	2.2 5% 20X40
R429	0662057M98	10K 5% 20X40
R431	0662057N39	470K 5% 20X40
R432	0662057N16	51K 5% 20X40
R434	0662057M62	330 5% 20X40
R435	0662057M81	2000 5% 20X40
R436	0662057M01	0 5% 20X40
R445	0662057N08	24K 5% 20X40
R446	0662057N31	RES, CHIP 220K 5% 20X40
R447	0662057N51	RES, CHIP 1.5 MEG 5% 20X40
R448	0662057N33	270K 5% 20X40

Circuit Ref	Motorola Part No	Description
R449	0662057N08	24K 5% 20X40
R450	0683962T45	68 5-1
R457	0662057M98	10K 5% 20X40
R460	0662057M90	4700 5% 20X40
R461	0662057M56	180 5% 20X40
		only GP360, GP380, GP680
R462	0662057M98	10K 5% 20X40
		only GP360, GP380, GP680
R463	0662057M61	300 5% 20X40
R471	0662057M92	5600 5% 20X40
R472	0662057M93	6200 5% 20X40
R473	0662057M26	10 5% 20X40
R475	0662057M01	0 5% 20X40
R476	0662057N08	24K 5% 20X40
R477	0662057M74	1000 5% 20X40
R478	0662057M98	10K 5% 20X40
R481	0662057N08	24K 5% 20X40
R492	0662057M01	0 5% 20X40
R498	0662057M98	10K 5% 20X40
		Placed on PCB 8486062B14 only
R499	0662057M98	10K 5% 20X40
		Placed on PCB 8486062B14 only
R501	0662057M70	680 5% 20X40
R502	0662057M56	180 5% 20X40
R505	0662057M98	10K 5% 20X40
R506	0662057N15	47K 5% 20X40
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z01	SWITCH (FREQUENCY)
		only GP340, GP640
S501	4080710Z02	SWITCH (FREQUENCY)
		only GP360, GP380, GP680
S502	1880619Z01	POTENTIOMETER, VOLUME
SH3201	2602023X08	SHIELD
SH3202	2686081B02	SHIELD
SH3203	2686081B03	SHIELD
SH3301	2686081B01	SHIELD
SH3302	2686081B05	SHIELD
SH3303	2686081B06	SHIELD
SH3501	2686081B03	SHIELD
SH3502	2686081B04	SHIELD
SH3701	2680511Z01	SHIELD SYNTHESIZER
SH3702	2680511Z01	SHIELD SYNTHESIZER
SH3801	2680513Z01	SHIELD VCO TOP
SH3802	2680514Z01	SHIELD VCO BOTTOM/LVZIF
SH400	2680505Z01	CONTROLLER TOP LEFT
SH401	2680506Z01	CONTROLLER TOP RIGHT
SH402	2680515Z01	CONTROLLER BOTTOM LEFT
SH403	2680516Z01	CONTROLLER BTM RIGHT
T3301	2580541Z01	BALUN TRANSFORMER
T3302	2580541Z01	BALUN TRANSFORMER
U3201	5102463J58	3.3V REG IN SOT23-5 PKG
U3220	5109632D83	IC LVZIF 2.2 H60G 48TQFP
U3501	5105109Z67	IC LDMOS DRIVER VHF/UHF
U3502	5185765B01	IC POWER CONTROL PASS 2.3
U3503	5185963A15	IC TEMP SENSOR 1M50C
U3701	5185963A27	IC FRACN AT25016 48 PIN GFP

Circuit Ref	Motorola Part No	Description
U3711	5105739X05	IC 5V REGULATOR
U3801	5105750U54	IC VCO BUFFER
U400	5102463J40	REG 3.3V, LP2951CMM-3.3
U404	5185963A53	IC ASFIC CMP TQFP 48PIN PKG
U405	5102463J36	STATIC_RAM_32KX8
* U406	5102463J60	IC 512KX8 FLASH ROM
* U407	5102463J64	16KX8 SPI SERIAL EEPROM
U409	5102226J56	68HC11FLO_PASS5 TQFP
U410	5102463J57	REG 3.3V, ILC7062CM-33
		only GP360, GP380, GP680
U420	5102463J44	AUDIO AMPLIFIER TDA8547TS
VR432	4805656W08	ZENER QUAD
VR433	4805656W08	ZENER QUAD
VR434	4802245J51	ZENER DIODE; BZX284-C6V8"
VR439	4880140L15	10V ZENER
VR447	4802245J53	ZENER_DIODE; BZX284-C10
VR448	4802245J53	ZENER_DIODE; BZX284-C10
VR449	4802245J53	ZENER_DIODE; BZX284-C10
VR450	4802245J53	ZENER_DIODE; BZX284-C10
VR501	4813830A18	6.8V 5% 225MWMMBZ5235B_
VR506	4802245J51	ZENER DIODE; BZX284-C6V8
Y3200	9186153B01	XTAL FILTER, SMD 45.1MHz
Y3761	4802245J49	CRYSTL 16.8MHZ WITH CLIP
	8486062B12/ 8486062B14	PCB WARIS VHF GP680

* Motorola Depot Servicing only

Reference designators with an asterisk indicate components which are not field replaceable because they need to be calibrated with specialized factory equipment after installation. Radios in which these parts have been replaced in the field will be off frequency at temperature extremes.

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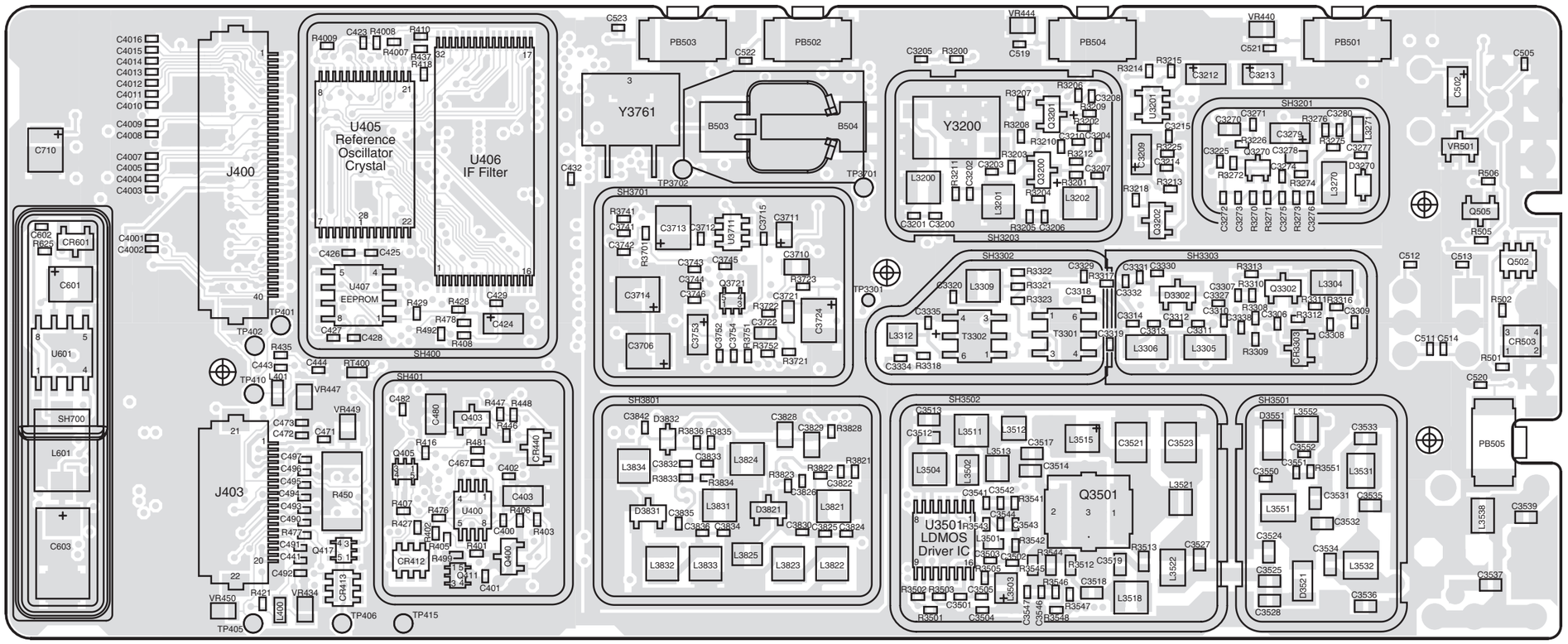
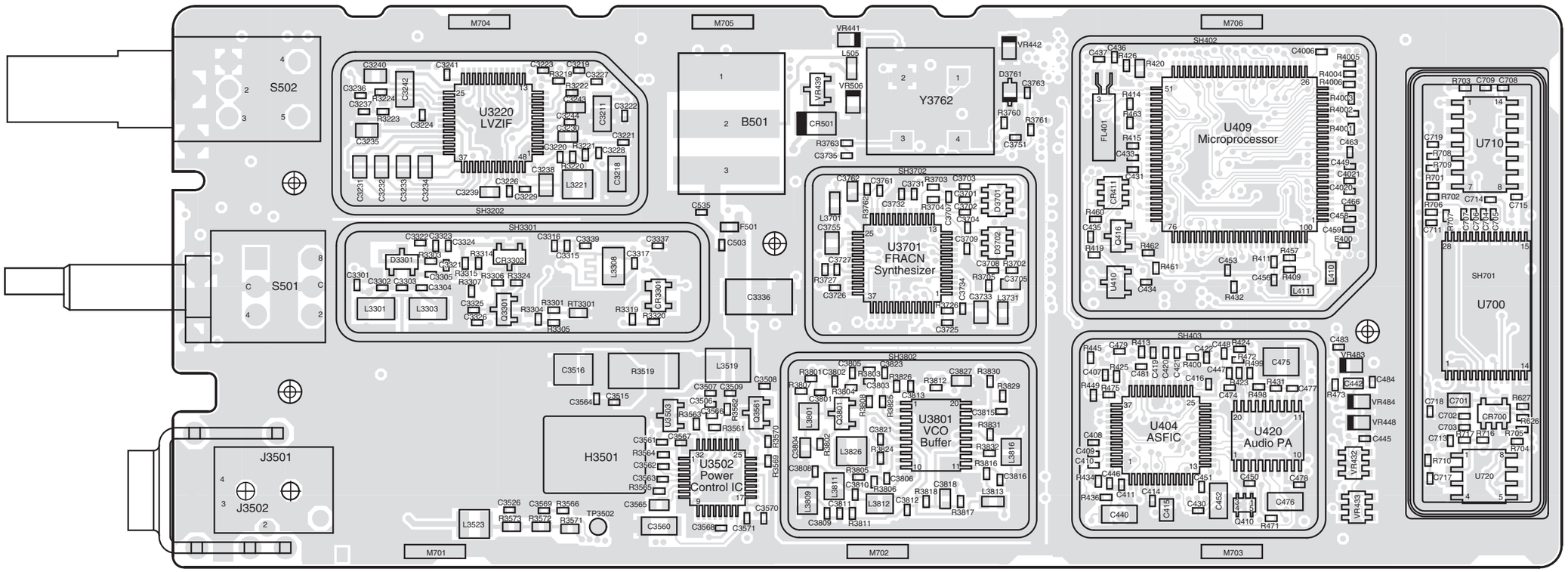
8.0 VHF PCB 8486101B10



ZWG0130096-B

VHF (136-174 MHz) Main Board Top Side



ZWG0130097-B

VHF (136-174 MHz) Main Board Bottom Side

9.0 VHF PCB 8486101B10 Parts List (GP1280)

Circuit Ref	Motorola Part No	Description
B501	0986237A01	CONN, CONTACT BATTERY
B503	3980502Z01	CONTACT, BACKUP B+
B504	3980501Z01	CONTACT, BACKUP B-
C3200	2113743N31	16.0 PF 5%
C3203	2113743N50	100 PF 5%
C3204	2113743L41	10000 PF 10%
C3205	2113928N01	0.1UF 10% 6.3
C3206	2113743L41	10000 PF 10%
C3207	2113743N10	2.2 PF +-.25PF
C3209	2311049A07	TANT 10% 1.0UF
C3210	2113743L17	1000 PF 10%
C3211	2311049A56	TAN CHIP A/P 4.7 20 10
C3212	2311049A07	TANT 10% 1.0UF
C3213	2311049A56	TAN CHIP A/P 4.7 20 10
C3214	2113928N01	CERAMIC CHIP 10.0UF
C3215	2113743N26	10.0 PF 5%
C3218	2311049A56	TAN CHIP A/P 4.7 20 10
C3219	2113928N01	CERAMIC CHIP 10.0UF
C3220	2113743N26	10.0 PF 5%
C3221	2113743L41	10000 PF 10%
C3222	2113928N01	CERAMIC CHIP 10.0UF
C3223	2113928N01	0.1UF 10% 6.3
C3224	2113928N01	0.1UF 10% 6.3
C3225	2113928N01	0.1UF 10% 6.3
C3226	2113928N01	0.1UF 10% 6.3
C3227	2113743L41	10000 PF 10%
C3228	2113743L41	10000 PF 10%
C3229	2113743N50	100 PF 5%
C3230	2113740F51	REEL CL1 +/-30 100
C3231	2180478Z20	MONOLITH CERAMIC (1.0UF)
C3232	2180478Z20	MONOLITH CERAMIC (1.0UF)
C3233	2180478Z20	MONOLITH CERAMIC (1.0UF)
C3234	2180478Z20	MONOLITH CERAMIC (1.0UF)
C3235	2113743A23	.220UF 10%
C3238	2113743A24	.330 UF 10% 16V
C3239	2113743E07	.022UF
C3240	2113743A23	.220UF 10%
C3241	2113743L19	1200 PF 10%
C3242	2109720D14	LOW DIST 0.1UF
C3243	2113743E07	.022UF
C3244	2113743L41	10000 PF 10%
C3270	2113743E07	.022UF
C3271	2113743L05	330 PF 10%
C3272	2113743N18	4.7 PF +-.25PF
C3273	2113743N26	10.0 PF 5%
C3274	2113743N38	33.0 PF 5%
C3275	2113743N44	56.0 PF 5%
C3276	2113743N42	47.0 PF 5%
C3277	2113743N48	82.0 PF 5%
C3278	2113743E07	.022UF
C3279	2311049A40	GLOBAL TANT 10% 2.2 UF
C3280	2113743L41	10000 PF 10%
C3301	2113743N20	5.6 PF +-.5PF
C3302	2113743N54	150 PF 5%
C3303	2113743N30	15.0PF 5%
C3304	2113743N54	150 PF 5%
C3306	2113928N01	0.1UF 10% 6.3
C3307	2113743N50	100 PF 5%
C3308	2113743L05	330 PF 10%
C3309	2113928N01	0.1UF 10% 6.3
C3311	2113743N54	150 PF 5%
C3312	2113743N31	16.0 PF 5%
C3313	2113743N54	150 PF 5%
C3315	2113743N26	10.0 PF 5%
C3316	2113743N14	3.3 PF +-.25PF
C3317	2113743N40	39.0 PF 5%
C3318	2113743M08	22000PF +80-20% Y5V
C3320	2113743N48	82.0 PF 5%
C3321	2113743L05	330 PF 10%
C3322	2113743N50	100 PF 5%
C3323	2113743N50	100 PF 5%
C3324	2113743N38	33.0 PF 5%
C3325	2113743L17	1000 PF 10%
C3327	2113743L05	330 PF 10%
C3329	2113743L05	330 PF 10%
C3330	2113743N50	100 PF 5%
C3331	2113743N50	100 PF 5%
C3332	2113743N40	39.0 PF 5%
C3334	2113743N33	20.0 PF 5%
C3335	2113743N34	22.0 PF 5%
C3336	2311049A18	CAP. TANT 10% 10UF
C3337	2113743M08	22000PF +80-20% Y5V
C3338	2113743L09	470 PF 10%
C3339	2113743N26	10.0 PF 5%
C3501	2113743L05	330 PF 10%
C3502	2113743N38	33.0 PF 5%
C3503	2113743N38	33.0 PF 5%
C3504	2113743M08	22000PF +80-20% Y5V
C3505	2113743N38	33.0 PF 5%
C3508	2113743M08	22000PF +80-20% Y5V
C3509	2113743L05	330 PF 10%
C3512	2113740F43	REEL CL1 +/-30 47
C3513	2113740F38	REEL CL1 +/-30 30
C3514	2113740F67	CL1 +/-30 470 5%
C3515	2113743L29	3300PF 10%
C3516	2311049A08	KEMET CAPS
C3517	2113740F51	REEL CL1 +/-30 100
C3518	2113740F63	CL1 +/-30 330 5%
C3519	2113740F35	REEL CL1 +/-30 22
C3521	2111078B51	RF 220 5 NPO 100V
C3523	2111078B44	RF 120 5 NPO 100V
C3524	2113740F33	REEL CL1 +/-30 18
C3525	2113740F27	REEL CL1 +/-30 10
C3526	2113743M08	22000PF +80-20% Y5V
C3528	2113740F26	REEL CL1 +/-30 9.1
C3531	2113740F34	REEL CL1 +/-30 20
C3532	2113740F47	REEL CL1 +/-30 68
C3533	2113740F24	REEL CL1+/-30 7.5
C3534	2113740F19	CHIP CAP, CER 4.7PF
C3535	2113740F37	REEL CL1+/-30 27
C3536	2113740F31	REEL CL1 +/-30 15
C3537	2113740F33	REEL CL1 +/-30 18
C3539	2113740F21	REEL CL1+/-30 5.6
C3541	2113743M08	22000PF +80-20% Y5V
C3542	2113743L05	330 PF 10%
C3543	2113743M08	22000PF +80-20% Y5V
C3544	2113743L05	330 PF 10%
C3546	2113743L05	330 PF 10%
C3547	2113743M08	22000PF +80-20% Y5V
C3550	2113743N23	7.5 PF +-.5PF
C3551	2113743N46	68.0 PF 5%
C3552	2113743N44	56.0 PF 5%
C3560	2311049A07	TANT 10% 1.0UF
C3561	2113743M08	22000PF +80-20% Y5V
C3562	2113743L29	3300PF 10%
C3563	2113743L29	3300PF 10%
C3564	2113743L01	220 PF 10%
C3565	2113743E07	.022UF
C3566	2113743N50	100 PF 5%
C3567	2113743L05	330 PF 10%
C3568	2113743L29	3300PF 10%
C3569	2113743M08	22000PF +80-20% Y5V
C3570	2113743L05	330 PF 10%
C3571	2113743L09	470 PF 10%
C3701	2113743L41	10000 PF 10%
C3702	2113743L41	10000 PF 10%
C3703	2113743L41	10000 PF 10%
C3704	2113743L41	10000 PF 10%
C3705	2113743E20	CHIP. 10 UF 10%
C3706	2311049J11	CAPACITOR TANT 10% 4.7UF
C3707	2113743N34	22.0 PF 5%
C3708	2113743M24	100000 PF +80-20% Y5V
C3709	2113743M24	100000 PF +80-20% Y5V
C3710	2104993J02	MONOLITH CERAMIC (2.2UF)
C3711	2311049A69	TAN CHIP 10.0 UF 20% 6.3V
C3712	2113743M24	100000 PF +80-20% Y5V
C3713	2311049A09	TANT 2.2 UF 10%
C3714	2311049J11	CAPACITOR TANT 10% 4.7UF
C3715	2113743L09	470 PF 10%
C3721	2113743E20	CHIP. 10 UF 10%
C3722	2113743E20	CHIP. 10 UF 10%
C3724	2311049A08	KEMET CAPS
C3726	2113743N24	8.2 PF + -.5PF
C3727	2113743N50	100 PF 5%
C3731	2113743L41	10000 PF 10%
C3732	2113743L41	10000 PF 10%
C3733	2104993J02	MONOLITH CERAMIC (2.2UF)
C3734	2113743L41	10000 PF 10%
C3742	2113743L01	220 PF 10%
C3743	2113743L01	220 PF 10%
C3744	2113743L01	220 PF 10%
C3745	2113743L01	220 PF 10%
C3746	2113743L01	220 PF 10%
C3752	2113743L17	1000 PF 10%
C3753	2311049A56	TAN CHIP A/P 4.7 20 10
C3754	2113743M24	100000 PF +80-20% Y5V
C3755	2104993J02	MONOLITH CERAMIC (2.2UF)
* C3761	2113743N44	56.0 PF 5%
* C3762	2113740F63	330 CL1 +/-30 5%
* C3763	2113743N08	1.6 PF +-.25PF
C3801	2113743N18	4.7 PF +-.25PF
C3803	2113743L17	1000 PF 10%
C3804	2113743E20	CHIP. 10 UF 10%
C3805	2113743N18	4.7 PF +-.25PF
C3806	2113743N50	100 PF 5%
C3808	2113743N30	15.0PF 5%
C3809	2113743N36	27.0 PF 5%
C3811	2113743M24	100000 PF +80-20% Y5V
C3812	2113743M24	100000 PF +80-20% Y5V
C3813	2113743L41	10000 PF 10%
C3815	2113743L17	1000 PF 10%
C3816	2113743N22	6.8 PF +-.5PF
C3818	2113743E07	.022UF
C3821	2113743L41	10000 PF 10%
C3822	2113743L17	1000 PF 10%
C3823	2113743L41	10000 PF 10%
C3824	2113743N44	56.0 PF 5%
C3825	2113743N30	15.0PF 5%
C3826	2113743N18	4.7 PF +-.25PF
C3827	2113743E07	.022UF
C3828	2109720D01	LOW DIS T .01UF
C3829	2109720D01	LOW DIS T .01UF
C3830	2113743N46	68.0 PF 5%
C3832	2113743L17	1000 PF 10%
C3833	2113743N18	4.7 PF +-.25PF
C3834	2113743N44	56.0 PF 5%
C3835	2113743N22	6.8 PF +-.5PF
C3836	2113743N30	15.0PF 5%
C3842	2113743L17	1000 PF 10%
C400	2113743L41	10000 PF 10%

Circuit Ref	Motorola Part No	Description
C4001	2113743N50	100 PF 5%
C4002	2113743N50	100 PF 5%
C4003	2113743N50	100 PF 5%
C401	2113743M24	100000 PF +80-20% Y5V
C402	2113743M24	100000 PF +80-20% Y5V
C4020	2113743L17	1000 PF 10%
C4021	2113743L17	1000 PF 10%
C403	2113928D08	CERAMIC CHIP 10.0UF
C407	2113928N01	0.1UF 10% 6.3
C408	2113743N50	100 PF 5%
C409	2113743M24	100000 PF +80-20% Y5V
C410	2113928N01	0.1UF 10% 6.3
C411	2113743M24	100000 PF +80-20% Y5V
C414	2113743M24	100000 PF +80-20% Y5V
C415	2109720D01	LOW DIS T .01UF
C416	2113928N01	0.1UF 10% 6.3
C419	2113743L41	10000 PF 10%
C420	2113743L41	10000 PF 10%
C421	2113928N01	0.1UF 10% 6.3
C422	2113743M24	100000 PF +80-20% Y5V
C423	2113743N50	100 PF 5%
C424	2311049A59	TANT CHIP A/P 10UF 10% 6V
C425	2113743M24	100000 PF +80-20% Y5V
C426	2113743N50	100 PF 5%
C427	2113743N50	100 PF 5%
C428	2113743M24	100000 PF +80-20% Y5V
C429	2113743M24	100000 PF +80-20% Y5V
C430	2113928N01	0.1UF 10% 6.3
C431	2113743N50	100 PF 5%
C433	2113743L41	10000 PF 10%
C434	2113743M24	100000 PF +80-20% Y5V
C435	2113743M24	100000 PF +80-20% Y5V
C436	2113743N34	22.0 PF 5%
C437	2113743N34	22.0 PF 5%
C440	2113743G26	4.7UF 16V + 80-20%
C441	2113743L09	470 PF 10%
C442	2113743E20	10 UF 10%
C443	2113928N01	CERAMIC CHIP 10.0UF
C444	2113743N50	100 PF 5%
C445	2113743L09	470 PF 10%
C446	2113743L09	470 PF 10%
C447	2113928N01	CERAMIC CHIP 10.0UF
C448	2113928N01	CERAMIC CHIP 10.0UF
C449	2113743N50	100 PF 5%
C451	2113743M08	22000PF +80-20% Y5V
C452	2113743G26	4.7UF 16V + 80-20%
C453	2113743N50	100 PF 5%
C456	2113743N50	100 PF 5%
C458	2113743N50	100 PF 5%
C459	2113743N50	100 PF 5%
C463	2113743N50	100 PF 5%
C466	2113743N50	100 PF 5%
C467	2113928N01	0.1UF 10% 6.3
C471	2113743L09	470 PF 10%
C472	2113743L09	470 PF 10%
C473	2113743L09	470 PF 10%
C474	2113743L41	10000 PF 10%
C475	2113743H14	10.0 UF 16V +80-20%
C476	2113928D08	CERAMIC CHIP 10.0UF
C477	2113743L17	1000 PF 10%
C478	2113743L17	1000 PF 10%
C479	2113928N01	0.1UF 10% 6.3
C480	2113928D08	CERAMIC CHIP 10.0UF
C481	2113928N01	0.1UF 10% 6.3
C482	2113928N01	0.1UF 10% 6.3
C483	2113743L09	470 PF 10%
C484	2113743L09	470 PF 10%
C490	2113743L09	470 PF 10%
C491	2113743L09	470 PF 10%
C492	2113743L09	470 PF 10%
C493	2113743N50	100 PF 5%
C494	2113743N50	100 PF 5%
C495	2113743L09	470 PF 10%
C496	2113743L09	470 PF 10%
C497	2113743L09	470 PF 10%
C502	2311049A05	TANT 10% 0.47UF
C503	2113743N50	100 PF 5%
C505	2113743N50	100 PF 5%
C511	2113743N50	100 PF 5%
C512	2113743N50	100 PF 5%
C513	2113743N50	100 PF 5%
C514	2113743N50	100 PF 5%
C520	2113743L41	10000 PF 10%
C521	2113743L41	10000 PF 10%
C522	2113743L41	10000 PF 10%
C523	2113743L41	10000 PF 10%
C535	2113743L17	1000 PF 10%
C701	2180478Z20	MONOLITHIC CER (1.0UF)
C702	2113928N01	0.1UF 10% 6.3
C703	2113743N50	100 PF 5%
C704	2113928N01	0.1UF 10% 6.3
C705	2113928N01	0.1UF 10% 6.3
C707	2113928N01	0.1UF 10% 6.3
C708	2113928N01	0.1UF 10% 6.3
C709	2113743L17	1000 PF 10%
C711	2113743L41	10000 PF 10%
C713	2113928N01	0.1UF 10% 6.3
C714	2113928N01	0.1UF 10% 6.3
C715	2113928N01	0.1UF 10% 6.3
C717	2113928N01	0.1UF 10% 6.3
C718	2113743L17	1000 PF 10%
C719	2113928N01	0.1UF 10% 6.3
CR3301	4802245J42	RING QUAD SOT-143 PKG
CR3302	4805129M96	DIODE DUAL
CR3303	4880154K03	SOT MMBD353 DUAL SCHTKY
CR411	4802245J47	SCHOTTKY BARIER(RB471E)
		Placed on PCB 8486101B09 only
CR412	4802245J62	DIODE SCHOTTKY, RB731U
CR413	4802245J62	DIODE SCHOTTKY, RB731U
CR440	4813833C02	DUAL 70V '5B' COMM CATH
CR501	4880107R01	RECTIFIER
CR503	4805729G49	DIODE RED/YEL
CR700	4802245J47	SCHOTTKY BARIER(RB471E)
D3270	4862824C01	DIODE VARACTOR
D3301	4802081B58	DUAL SILCON (VARICAP)
D3302	4802081B58	DUAL SILCON (VARICAP)
D3521	4880973Z02	PIN DIODE
D3551	4880973Z02	PIN DIODE
D3701	4802233J09	DIODE TRIPLE SOT25-RH
D3702	4802233J09	DIODE TRIPLE SOT25-RH
* D3761	4862824C03	DIODE VARACTOR
D3821	4805649Q13	DIODE VCTR ISV 228
D3831	4805649Q13	DIODE VCTR ISV 228
D3832	4862824C01	DIODE VARACTOR
E400	2480640Z01	C/IND BK1005HM471 BEAD
F501	6580542Z01	FUSE SMT TR/1608FF 3A
FL401	4870368G02	REFLOW CLOCK OSC XTAL
H3501	2680499Z01	HEAT SPREADER
J3501	0180117S05	RF JACK ASSEMBLY
J3502	0280519Z02	NUT, ANTENNA
J400	0905505Y04	CONN ZIF HORIZONTAL
J403	0905505Y02	CONN MALE 20 PIN ZIF
L3200	2462587N68	CHIP IND 1000 NH 5%
L3202	2462587N68	CHIP IND 1000 NH 5%
L3221	2462587N68	CHIP IND 1000 NH 5%
L3270	2462587T15	IND 100NH 5% LOW PRO
L3271	2462587Q20	IND CHIP 2,200NH 20%
L3301	2462587T35	IND CHIP 12NH 5% LOW PRO
L3303	2462587T35	IND CHIP 12NH 5% LOW PRO
L3304	2462587T23	IND CHIP 470NH 5%LOW PRO
L3305	2462587T35	IND CHIP 12NH 5% LOW PRO
L3306	2462587T35	IND CHIP 12NH 5% LOW PRO
L3308	2462587T34	IND CHIP 10NH 5% LOW PRO
L3309	2462587N55	CHIP IND 150 NH 5%
L3312	2462587V28	CHIP IND 33 NH 5% 0805
L3501	2413926H09	IND CHIP 5.6 NH +/- 0.3NH
L3503	2462587V32	CHIP IND 68NH 5% 0805
L3504	2462587N51	CHIP IND 68 NH 5%
L3511	2462587N44	CHIP IND 18 NH 5%
L3512	2479990B01	AIR WND COIL/GRN 11.03NH
L3513	2479990A02	AIR WND COIL/GRN 7.66NH
L3515	2479990C03	AIR WND COIL/GRN 13.85NH
L3518	2462587N48	CHIP IND 39 NH 5%
L3519	2484657R01	INDUCTOR BEAD CHIP
L3521	2479990A02	AIR WND COIL/GRN 7.66NH
L3522	2479990E01	COIL AIR WND/GRN 23.75
L3523	2462587N68	CHIP IND 1000 NH 5%
L3531	2479990N01	AIR WND COIL/GRN 43.67NH
L3532	2479990N01	AIR WND COIL/GRN 43.67NH
L3538	2479990M01	AIR WND COIL/GRN 30.54NH
L3551	2479990N01	AIR WND COIL/GRN 43.67NH
L3552	2479990A02	AIR WND COIL/GRN 7.66NH
L3701	2462587Q42	IND CHIP 390NH 10%
L3731	2462587Q20	IND CHIP 2,200NH 20%
L3801	2462587V34	CHIP IND 100NH 5% 0805
L3809	2462587V27	CHIP IND 27 NH 5% 0805
L3811	2462587V34	CHIP IND 100NH 5% 0805
L3812	2462587V34	CHIP IND 100NH 5% 0805
L3813	2462587Q47	IND CHIP 1000 NH 10%
L3816	2462587V34	CHIP IND 100NH 5% 0805
L3821	2462587N50	CHIP IND 56 NH 5%
L3822	2462587N49	CHIP IND 47 NH 5%
L3823	2462587N49	CHIP IND 47 NH 5%
L3824	2462587N68	CHIP IND 1000 NH 5%
L3825	2462587V34	CHIP IND 100NH 5% 0805
L3826	2462587N68	CHIP IND 1000 NH 5%
L3831	2462587N50	CHIP IND 56 NH 5%
L3832	2462587N51	CHIP IND 68 NH 5%
L3833	2462587N50	CHIP IND 56 NH 5%
L3834	2462587N68	CHIP IND 1000 NH 5%
L400	2462587Q42	IND CHIP 390NH 10%
L401	2462587Q42	IND CHIP 390NH 10%
L410	2462587Q42	IND CHIP 390NH 10%
L411	2462587Q42	IND CHIP 390NH 10%
L505	2462587Q42	IND CHIP 390NH 10%
M701	7585651Z01	PAD, FLEXIBLE
M702	7585651Z01	PAD, FLEXIBLE
M703	7585651Z01	PAD, FLEXIBLE
M704	7585651Z01	PAD, FLEXIBLE
M705	7585651Z01	PAD, FLEXIBLE
M706	7585651Z01	PAD, FLEXIBLE
PB501	4080523Z01	SWITCH, TACT
PB502	4080523Z01	SWITCH, TACT
PB503	4080523Z01	SWITCH, TACT
PB504	4080523Z01	SWITCH, TACT
PB505	4080523Z01	SWITCH, TACT
Q3200	4813827A07	NPNSML SIG MMBR941LT1 7Y
Q3201	4880214G02	TSTR MMBT3904
Q3202	4880214G02	TSTR MMBT3904
Q3270	4805218N63	RF TRANS SOT 323 BFQ67W
Q3301	4880214G02	TSTR MMBT3904
Q3302	4813827A07	NPNSML SIG MMBR941LT1 7Y
Q3501	4802245J55	POWER FIELD EFFECT
Q3561	4813824A17	XSTR PNP40V .2A B=100-300

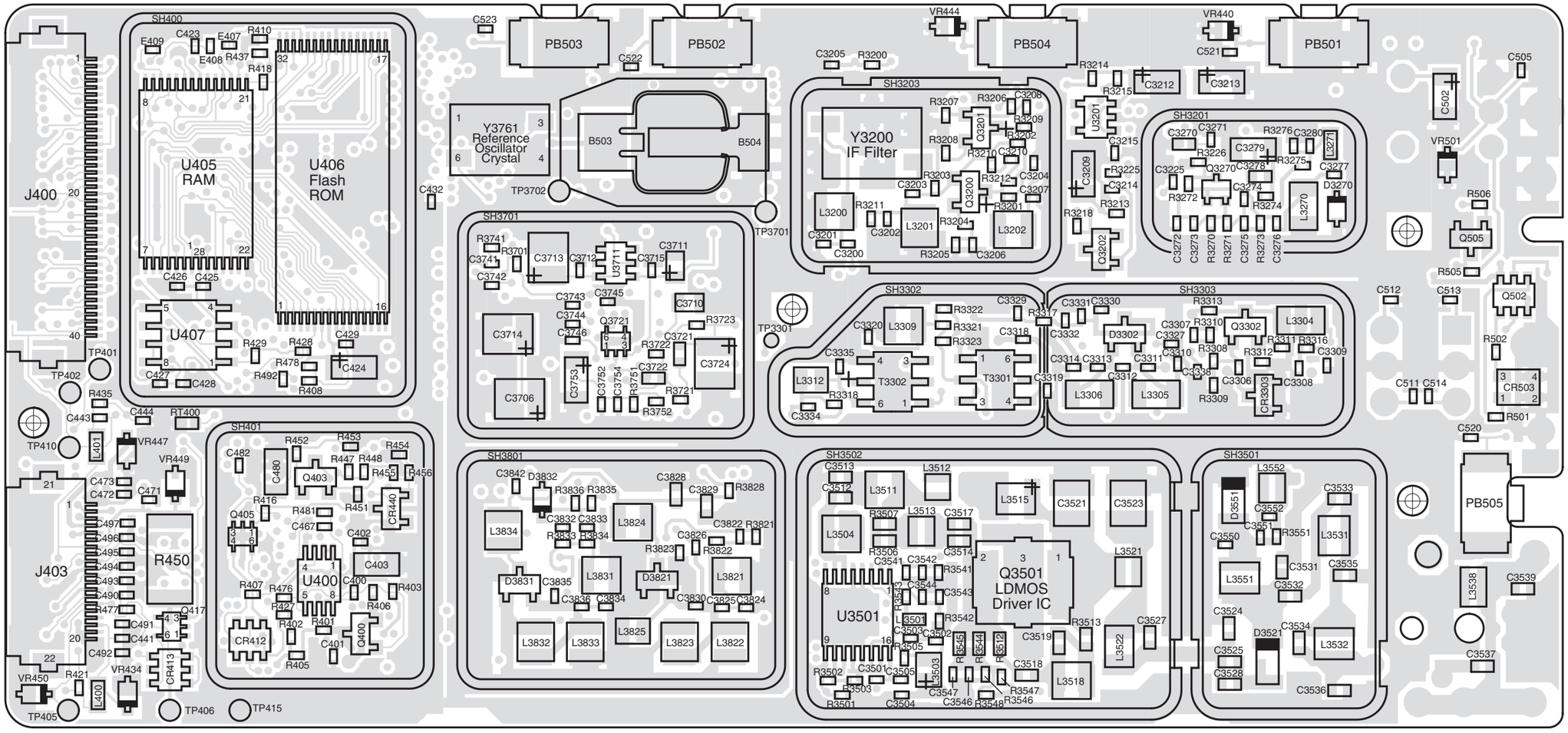
Circuit Ref	Motorola Part No	Description
Q3721	4802245J50	DUAL NPN/PNP UMC5N
Q3801	4813827A07	NPNSML SIG MMBR941LT1 7Y
Q400	4809579E18	MOSFET P-CHAN TP010IT
Q403	4880214G02	TSTR MMBT3904
Q405	4802245J54	UMG5N DIGITAL TRANSISTOR
Q410	4802245J54	UMG5N DIGITAL TRANSISTOR
Q416	4809579E18	MOSFET P-CHAN TP010IT
Q417	4802245J50	DUAL NPN/PNP UMC5N
Q502	5180159R01	DUAL TRANS NPNS
Q505	4880214G02	TSTR MMBT3904
R3200	0662057M54	150 5% 20X40
R3201	0662057M82	2200 5% 20X40
R3202	0662057M90	4700 5% 20X40
R3203	0662057M98	10K 5% 20X40
R3204	0662057M26	10 5% 20X40
R3205	0662057M74	1000 5% 20X40
R3206	0662057N23	100K 5% 20X40
R3207	0662057N13	39K 5% 20X40
R3208	0662057M50	100 5% 20X40
R3209	0662057M74	1000 5% 20X40
R3210	0662057M82	2200 5% 20X40
R3211	0662057M82	2200 5% 20X40
R3212	0662057M90	4700 5% 20X40
R3213	0662057M82	2200 5% 20X40
R3214	0662057M34	22 5% 20X 40
R3219	0662057M50	100 5% 20X40
R3220	0662057M90	4700 5% 20X40
R3221	0662057M50	100 5% 20X40
R3224	0662057M26	10 5% 20X40
R3225	0662057M74	1000 5% 20X40
R3226	0662057M26	10 5% 20X40
R3270	0662057M74	1000 5% 20X40
R3271	0662057M42	47 5% 20X40
R3272	0662057N15	47K 5% 20X40
R3273	0662057N15	47K 5% 20X40
R3274	0662057M83	2400 5% 20X40
R3275	0662057M74	1000 5% 20X40
R3276	0662057N30	200K 5% 20X40
R3303	0662057N23	100K 5% 20X40
R3304	0662057N23	100K 5% 20X40
R3305	0662057N19	68K 5% 20X40
R3306	0662057M82	2200 5% 20X40
R3307	0662057N11	33K 5% 20X40
R3308	0662057M78	1500 5% 20X40
R3309	0662057M92	5600 5% 20X40
R3310	0662057M98	10K 5% 20X40
R3311	0662057M26	10 5% 20X40
R3312	0662057M38	33 5% 20X40
R3313	0662057M34	22 5% 20X 40
R3314	0662057M26	10 5% 20X40
R3315	0662057M62	330 5% 20X40
R3316	0662057M66	470 5% 20X40
R3317	0662057N23	100K 5% 20X40
R3318	0662057M66	470 5% 20X40
R3321	0662057M54	150 5% 20X40
R3322	0662057M58	220 5% 20X40
R3323	0662057M32	18 5% 20X40
R3324	0662057M58	220 5% 20X40
R3501	0662057M61	300 5% 20X40
R3502	0662057M32	18 5% 20X40
R3503	0662057M61	300 5% 20X40
R3505	0662057M62	330 5% 20X40
R3512	0662057A27	120 OHMS 5%
R3513	0662057A25	100 OHMS 5%
R3519	0680539Z01	PWR METAL STRIP RES
R3542	0662057M92	5600 5% 20X40
R3543	0662057M50	100 5% 20X40
R3544	0662057A25	100 OHMS 5%
R3545	0662057A25	100 OHMS 5%
R3546	0662057N11	33K 5% 20X40
R3547	0662057N01	12K 5% 20X40
R3548	0662057M95	7500 55 20X40
R3551	0662057M40	39 5% 20X40
R3561	0662057N01	12K 5% 20X40
R3562	0662057N11	33K 5% 20X40
R3563	0662057N33	270K 5% 20X40
R3564	0662057N35	330K 5% 20X40
R3569	0662057M92	5600 5% 20X40
R3570	0662057M98	10K 5% 20X40
R3571	0662057A27	120 OHMS 5%
R3572	0662057A27	120 OHMS 5%
R3573	0662057A27	120 OHMS 5%
R3701	0662057M50	100 5% 20X40
R3703	0662057M54	150 5% 20X40
R3704	0662057M54	150 5% 20X40
R3705	0662057N11	33K 5% 20X40
R3721	0662057M66	470 5% 20X40
R3722	0662057M74	1000 5% 20X40
R3723	0662057M50	100 5% 20X40
R3727	0662057N23	100K 5% 20X40
R3741	0662057M50	100 5% 20X40
R3751	0662057N30	200K 5% 20X40
R3752	0662057N35	330K 5% 20X40
R3761	0662057N15	47K 5% 20X40
R3802	0662057M50	100 5% 20X40
R3803	0662057M58	220 5% 20X40
R3804	0662057M98	10K 5% 20X40
R3805	0662057N08	24K 5% 20X40
R3806	0662057M34	22 5% 20X 40
R3808	0662057M26	10 5% 20X40
R3811	0662057M50	100 5% 20X40
R3816	0662057M74	1000 5% 20X40
R3817	0662057M01	0 5% 20X40
R3821	0662057M58	220 5% 20X40
R3822	0662057M42	47 5% 20X40
R3823	0662057N11	33K 5% 20X40
R3824	0662057N07	22K 5% 20X40
R3825	0662057M38	33 5% 20X40
R3826	0662057M32	18 5% 20X40
R3828	0662057M50	100 5% 20X40
R3829	0662057M01	0 5% 20X40
R3831	0662057M98	10K 5% 20X40
R3832	0662057N01	12K 5% 20X40
R3833	0662057M58	220 5% 20X40
R3834	0662057M42	47 5% 20X40
R3835	0662057N15	47K 5% 20X40
R3836	0662057M98	10K 5% 20X40
R400	0662057N15	47K 5% 20X40
R4001	0662057M74	1000 5% 20X40
R4002	0662057M74	1000 5% 20X40
R4003	0662057M74	1000 5% 20X40
R4004	0662057M74	1000 5% 20X40
R4005	0662057M74	1000 5% 20X40
R4006	0662057M74	1000 5% 20X40
R4007	0662057M74	1000 5% 20X40
R4008	0662057M74	1000 5% 20X40
R4009	0662057M74	1000 5% 20X40
R401	0662057M01	0 5% 20X40
R405	0662057M01	0 5% 20X40
R406	0662057N20	75K 5% 20X40
R407	0662057N19	68K 5% 20X40
R409	0662057M98	10K 5% 20X40
R410	0662057N23	100K 5% 20X40
R411	0662057M98	10K 5% 20X40
R413	0662057M01	0 5% 20X40
R414	0662057V34	180K 1% 1/16W
R415	0662057V26	91K 1% 1/16W
R416	0662057N13	39K 5% 20X40
R418	0662057M01	0 5% 20X40
R419	0662057M67	0 5% 20X40
R420	0662057B46	10.0 MEG OHMS 5%
R421	0662057M81	2000 5% 20X40
R423	0662057N21	82K 5% 20X40
R424	0662057N12	36K 5% 20X40
R425	0662057N10	30K 5% 20X40
R426	0662057N35	330K 5% 20X40
R427	0662057M84	2700 5% 20X40
R428	0662057M10	2.2 5% 20X40
R429	0662057M98	10K 5% 20X40
R431	0662057N39	470K 5% 20X40
R432	0662057N16	51K 5% 20X40
R434	0662057M62	330 5% 20X40
R435	0662057M81	2000 5% 20X40
R436	0662057M01	0 5% 20X40
R445	0662057N08	24K 5% 20X40
R446	0662057N31	220K 5% 20X40
R447	0662057N51	1.5 MEG 5% 20X40
R448	0662057N33	270K 5% 20X40
R449	0662057N08	24K 5% 20X40
R450	0683962T45	68 5-1
R457	0662057M98	10K 5% 20X40
R460	0662057M90	4700 5% 20X40
R461	0662057M56	180 5% 20X40
R462	0662057M98	10K 5% 20X40
R463	0662057M61	300 5% 20X40
R471	0662057M92	5600 5% 20X40
R472	0662057M93	6200 5% 20X40
R473	0662057M26	10 5% 20X40
R475	0662057M01	0 5% 20X40
R476	0662057N08	24K 5% 20X40
R477	0662057M74	1000 5% 20X40
R478	0662057M98	10K 5% 20X40
R481	0662057N08	24K 5% 20X40
R492	0662057M01	0 5% 20X40
R498	0662057M98	10K 5% 20X40
		Placed not on PCB 8486101B09
R499	0662057M98	10K 5% 20X40
R501	0662057M70	680 5% 20X40
R502	0662057M56	180 5% 20X40
R505	0662057M98	10K 5% 20X40
R506	0662057N15	47K 5% 20X40
R701	0662057N05	18K 5% 20X40
R702	0662057N05	18K 5% 20X40
R703	0662057M74	1000 5% 20X40
R704	0662057N13	39K 5% 20X40
R705	0662057N13	39K 5% 20X40
R706	0662057N17	56K 5% 20X40
R707	0662057M91	5100 5% 20X40
R708	0662057N41	560K 5% 20X40
R709	0662057N47	1.0 MEG 5% 20X40
R710	0662057N39	470K 5% 20X40
R716	0662057N01	12K 5% 20X40
R717	0662057M82	2200 5% 20X40
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z02	SWITCH (FREQUENCY)
S502	1880619Z01	POTENTIOMETER, VOLUME
SH3201	2602023X08	SHIELD
SH3202	2686081B02	SHIELD
SH3203	2686081B03	SHIELD
SH3301	2686081B01	SHIELD
SH3302	2686081B05	SHIELD
SH3303	2686081B06	SHIELD
SH3501	2686081B03	SHIELD
SH3502	2686081B04	SHIELD

Circuit Ref	Motorola Part No	Description
SH3701	2680511Z01	SHIELD SYNTHESIZER
SH3702	2680511Z01	SHIELD SYNTHESIZER
SH3801	2680513Z01	SHIELD VCO TOP
SH3802	2680514Z01	SHIELD VCO BOTTOM/LVZIF
SH400	2680505Z01	CTRL TOP LEFT
SH401	2680506Z01	CTRL TOP RIGHT
SH402	2680515Z01	CTRL BOTTOM LEFT
SH403	2680516Z01	CTRL BTM RIGHT
SH701	2680677Z01	(VOICE STORAGE BOTTOM)
T3301	2580541Z01	BALUN TRANSFORMER
T3302	2580541Z01	BALUN TRANSFORMER
U3201	5102463J58	3.3V REG IN SOT23-5 PKG
U3220	5109632D83	LVZIF 2.2 H60G 48TQFP
U3501	5105109Z67	IC LDMOS DRIVER VHF/UHF
U3502	5185765B01	IC PWR CONTROL PASS 2.3
U3503	5185963A15	IC TEMP SENSOR 1M50C
U3701	5185963A27	IC AT25016 48 PIN GFP
U3711	5105739X05	IC SOT 5V HI-PRECISION REG
U3801	5105750U54	IC PKG DIE VCO BUFFER
U400	5102463J40	REG 3.3V, LP2951CMM-3.3
U404	5185963A53	IC ASFIC CMP TQFP 48 PIN
U405	5102463J36	STATIC_RAM_32KX8
* U406	5102463J60	512X8 FLASH (AT49LV040)
* U407	5102463J64	16KX8 SPI SERIAL EEPROM
U409	5102226J56	68HC11FLO_PASS5 TQFP
U410	5102463J57	REG 3.3V, ILC7062CM-33
U411	4802245J54	UMG5N DIGITAL TRANSISTOR
		Placed on PCB 8486101B09 only
U420	5102463J44	AUDIO AMP TDA8547TS
U700	5109152M01	IC EEPROM ISD3312OE1
U710	5102463J52	74HC4066D QUAD ANLOG SW
U720	5113818A01	SING SPLY LM2904DR
VR432	4805656W08	DIODE ZENER QUAD
VR433	4805656W08	DIODE ZENER QUAD
VR434	4802245J51	ZENER DIODE; BZX284-C6V8
VR439	4880140L15	10V ZENER
VR447	4802245J53	ZENER_DIODE; BZX284-C10
VR448	4802245J53	ZENER_DIODE; BZX284-C10
VR449	4802245J53	ZENER_DIODE; BZX284-C10
VR450	4802245J53	ZENER_DIODE; BZX284-C10
VR483	4802245J53	ZENER_DIODE; BZX284-C10
VR484	4802245J53	ZENER_DIODE; BZX284-C10
VR501	4813830A18	6.8V 5% 225MWMMBZ5235B_
VR506	4802245J51	ZENER DIODE; BZX284-C6V8
Y3200	4802245J43	MONOLITH/ XTAL FLTR
Y3761	4802245J49	XTAL 16.8MHZ WITH CLIP
	8486101B09 8486101B10	PCBs WARIS VHF GP1280

* Motorola Depot Servicing only

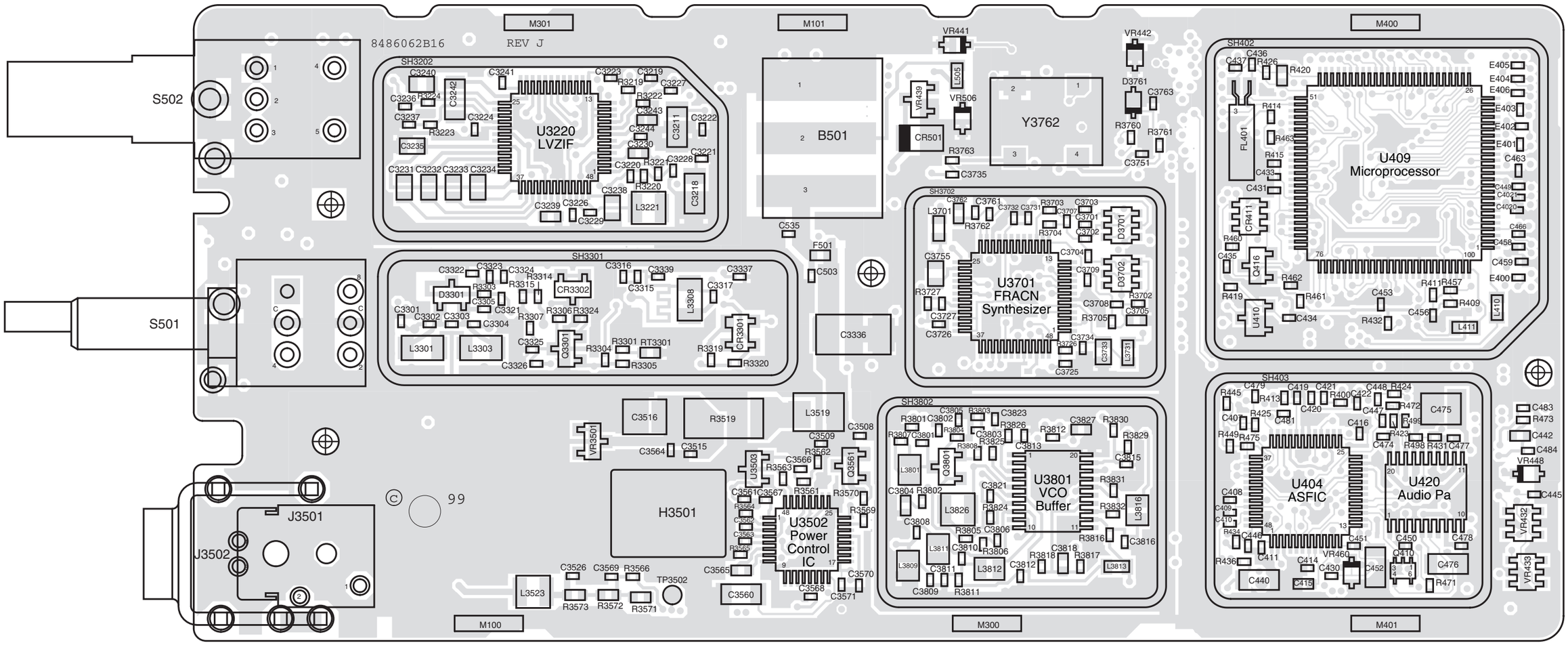
Reference designators with an asterisk indicate components which are not field replaceable because they need to be calibrated with specialized factory equipment after installation. Radios in which these parts have been replaced in the field will be off frequency at temperature extremes.

10.0 VHF PCB 8486062B16 / Schematics



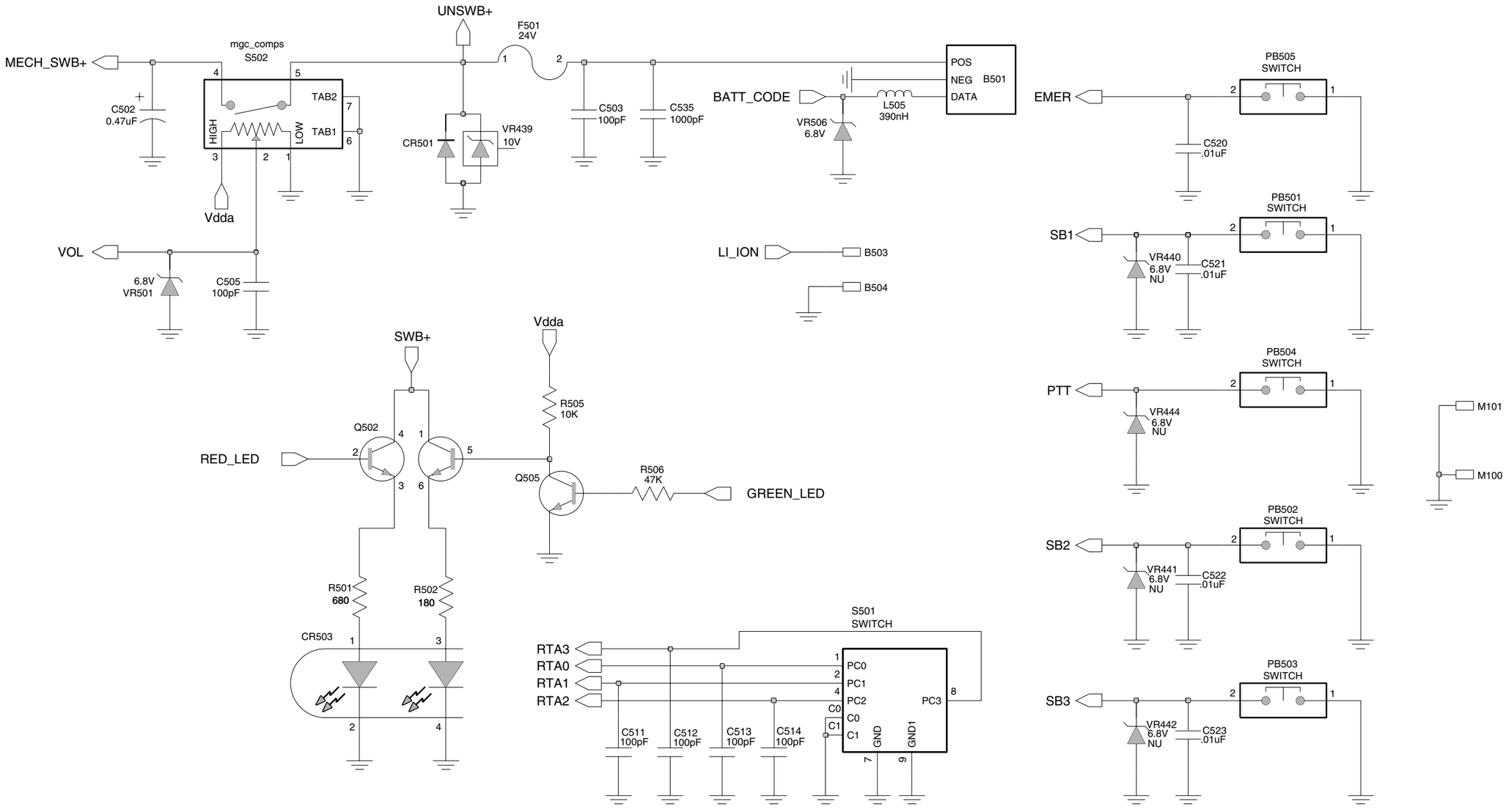
ZWG0130561-O

VHF (136-174 MHz) Main Board Top Side

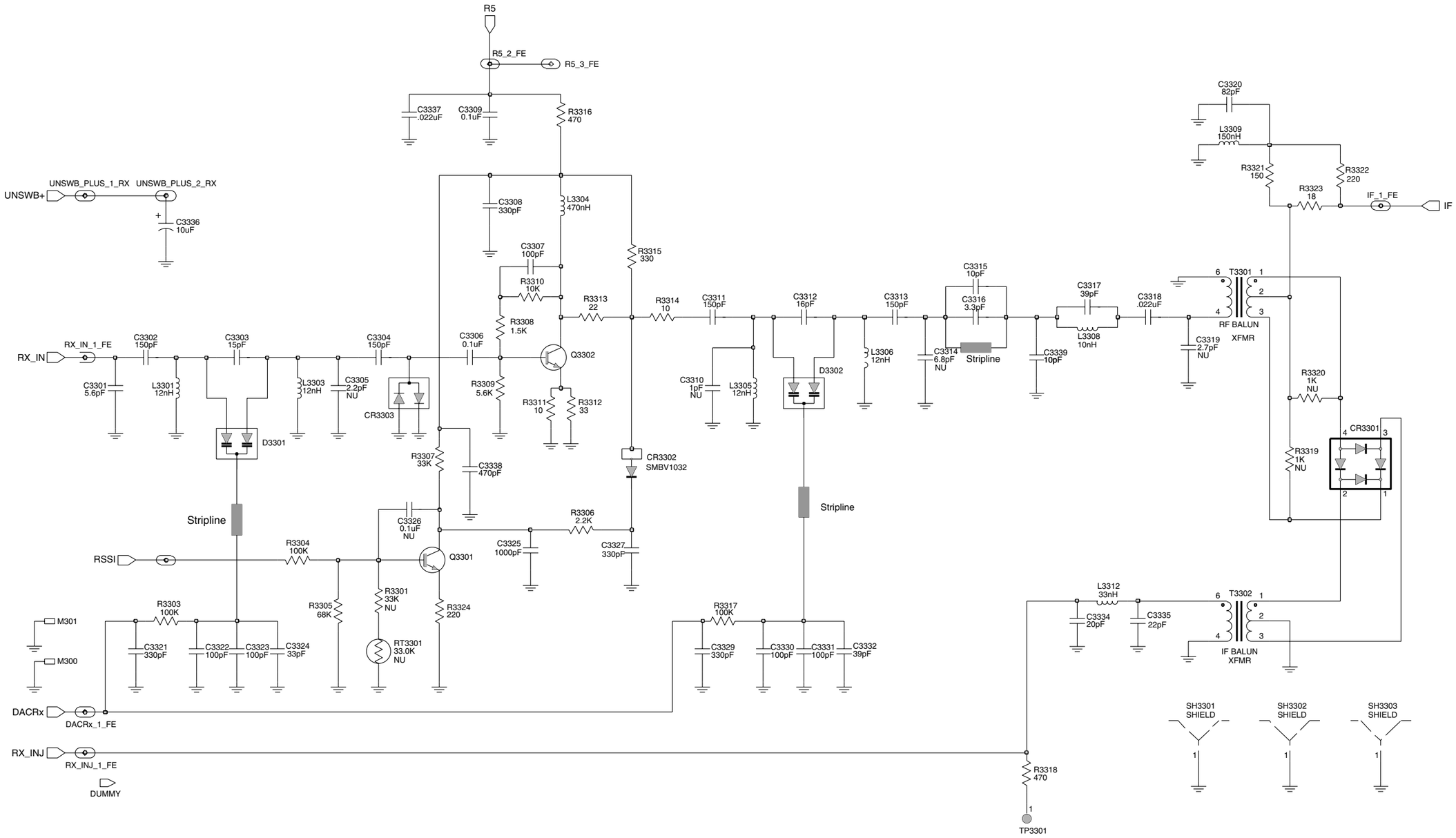


ZWG0130562-O

VHF (136-174 MHz) Main Board Bot Side

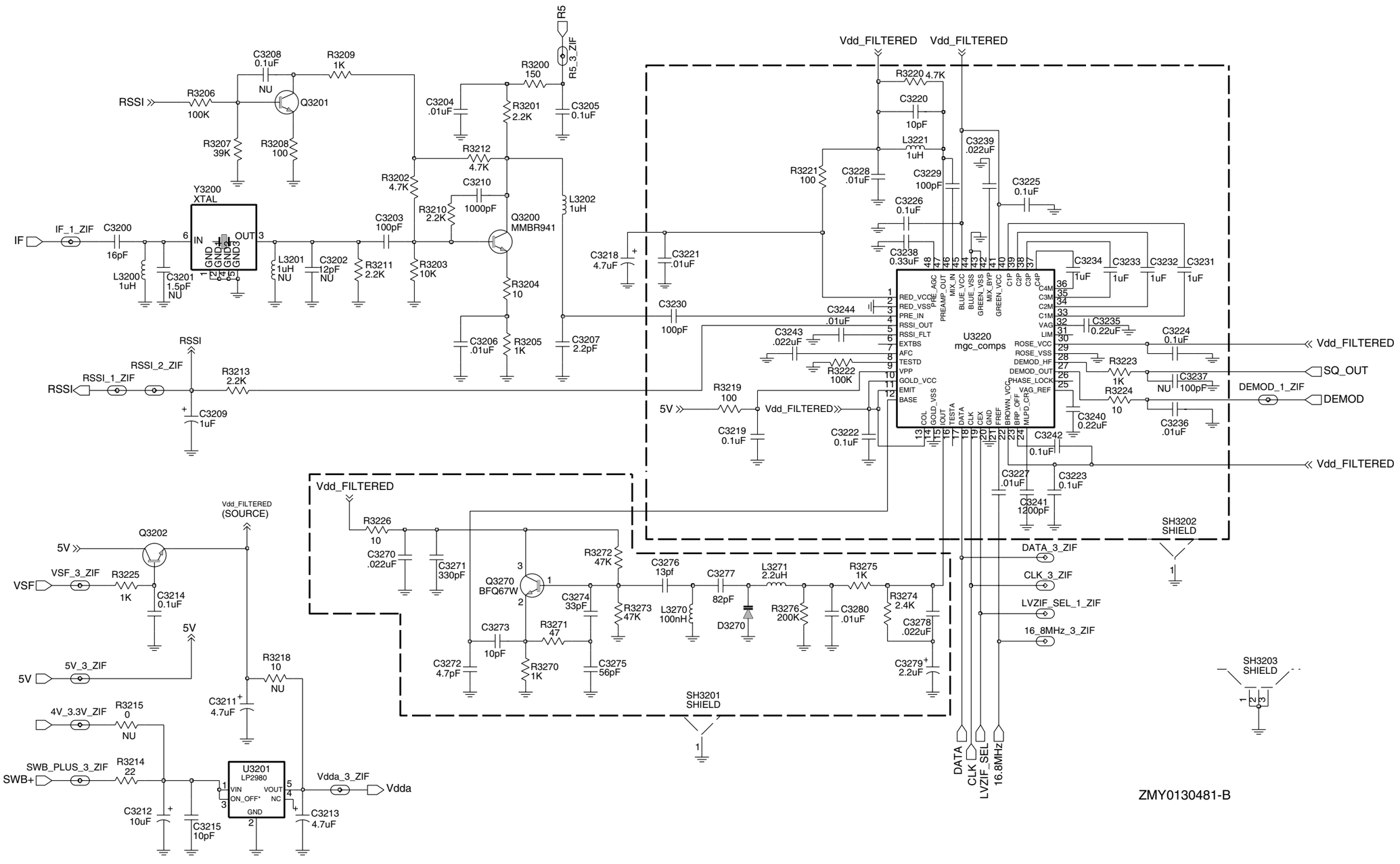


ZMY0130482-A



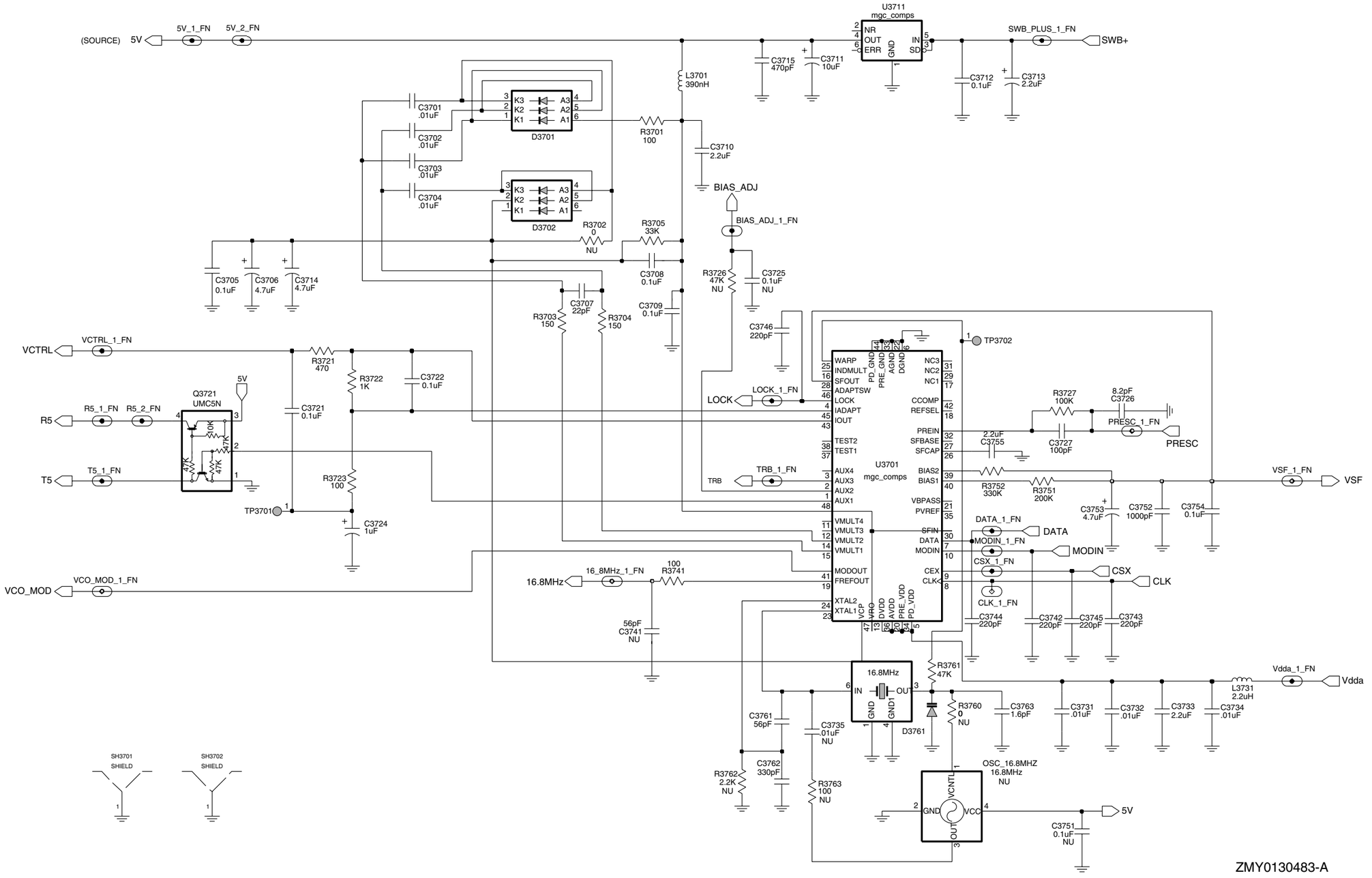
ZMY0130456-A

VHF (136-174 MHz) Receiver Front End

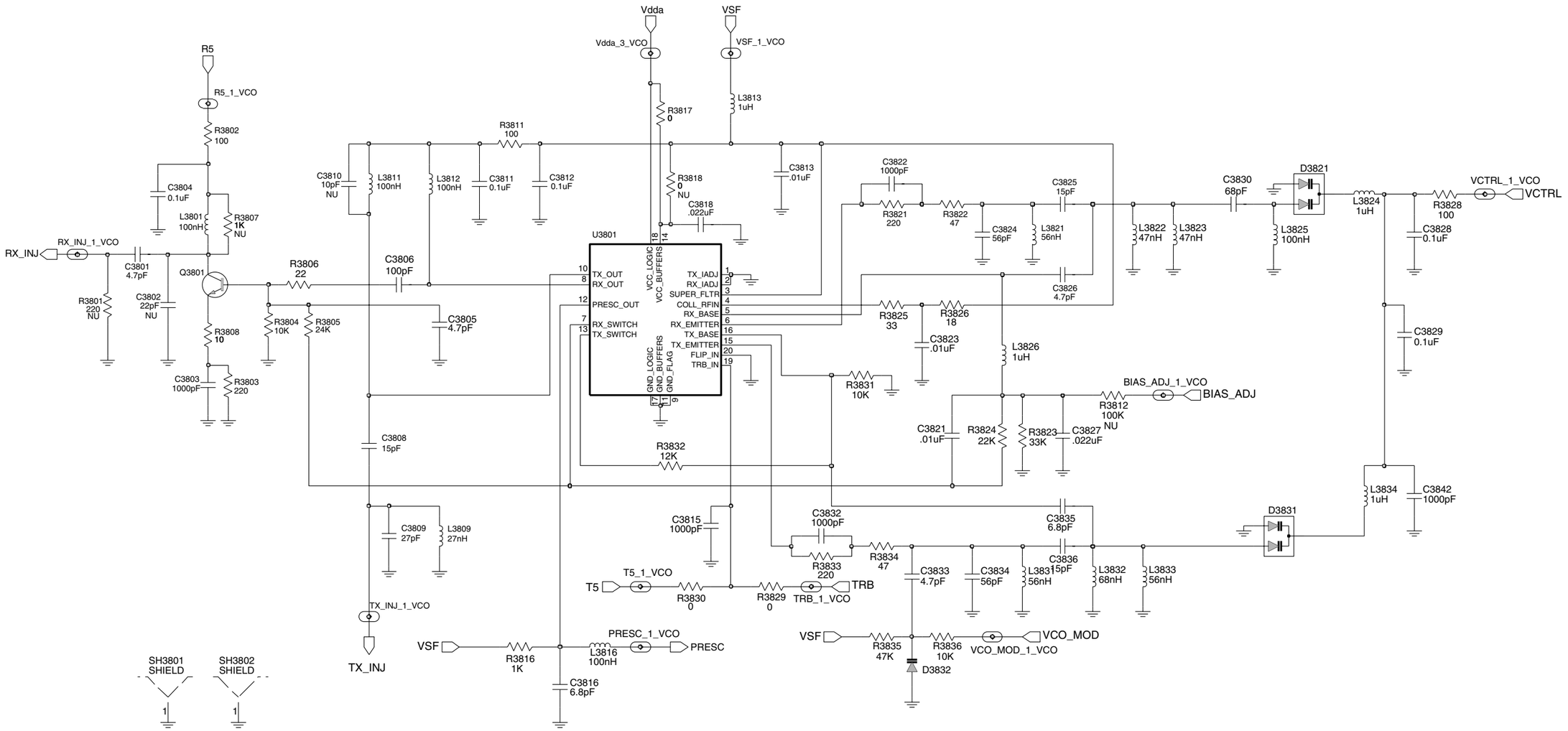


ZMY0130481-B

VHF (136-174 MHz) Receiver Back End

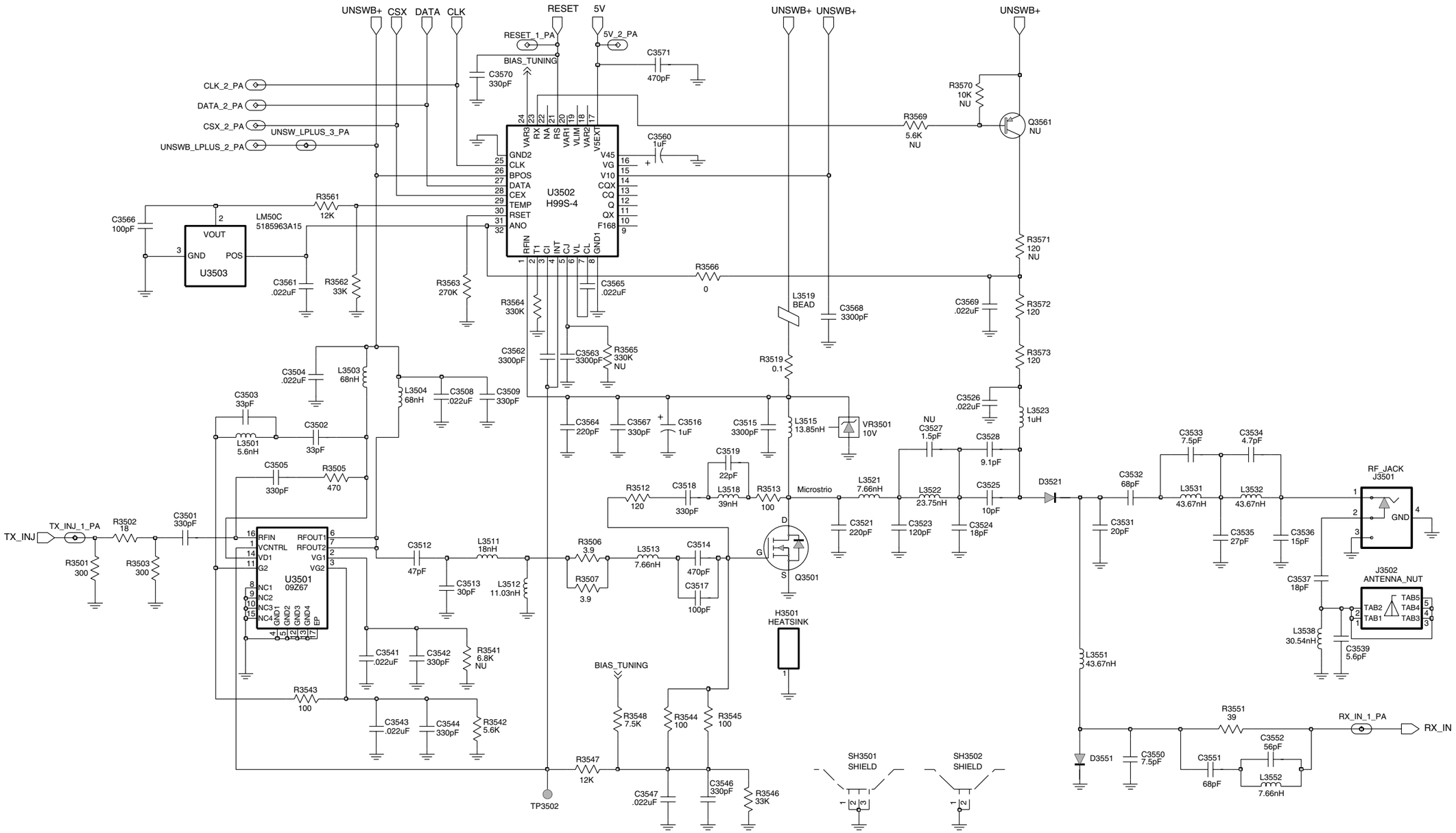


VHF (136-174 MHz) Synthesizer



ZMY0130485-A

VHF (136-174 MHz) Voltage Controlled Oscillator



ZMY0130484-A

VHF (136-174 MHz) Transmitter

11.0 VHF PCB 8486062B16 Parts List

Circuit Ref	Motorola Part No	Description
B501	0986237A02	Connector, Contact Battery
B503	3980502Z01	Backup battery B+ only GP360, GP380, GP680
B504	3980501Z01	Backup battery B- only GP360, GP380, GP680
C3200	2113743N31	16pF
C3203	2113743N50	100pF
C3204	2113743L41	10000pF, 10%
C3205	2113928N01	0.1uF, 10%
C3206	2113743L41	10000pF, 10%
C3207	2113743N10	2.2pF
C3209	2311049A07	1uF
C3210	2113743L17	1000pF, 10%
C3211	2311049A56	4.7uF, 20%, 10V
C3212	2311049A57	10uF
C3213	2311049A56	4.7uF, 20%, 10V
C3214	2113928N01	0.1uF, 10%
C3215	2113743N26	10pF
C3218	2311049A56	4.7uF, 20%, 10V
C3219	2113928N01	0.1uF, 10%
C3220	2113743N26	10pF
C3221	2113743L41	10000pF, 10%
C3222	2113928N01	0.1uF, 10%
C3223	2113928N01	0.1uF, 10%
C3224	2113928N01	0.1uF, 10%
C3225	2113928N01	0.1uF, 10%
C3226	2113928N01	0.1uF, 10%
C3227	2113743L41	10000pF, 10%
C3228	2113743L41	10000pF, 10%
C3229	2113743N50	100pF
C3230	2113740F51	100pF
C3231	2180478Z20	1uF
C3232	2180478Z20	1uF
C3233	2180478Z20	1uF
C3234	2180478Z20	1uF
C3235	2113743A23	0.220uF
C3238	2113743A24	0.330uF
C3239	2113743E07	0.022uF
C3240	2113743A23	0.220uF
C3241	2113743L19	1200pF
C3242	2109720D14	0.1uF
C3243	2113743E07	0.022uF
C3244	2113743L41	10000pF, 10%
C3270	2113743E07	0.022uF
C3271	2113743L05	330pF
C3272	2113743N18	4.7pF
C3273	2113743N26	10pF
C3274	2113743N38	33pF
C3275	2113743N44	56pF
C3276	2113743N42	47pF
C3277	2113743N48	82pF
C3278	2113743E07	0.022uF
C3279	2311049A40	2.2uF, 10%, 16V
C3280	2113743L41	10000pF, 10%
C3301	2113743N20	5.6pF
C3302	2113743N54	150pF
C3303	2113743N30	15pF
C3304	2113743N54	150pF
C3306	2113928N01	0.1uF, 10%
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113928N01	0.1uF, 10%
C3311	2113743N54	150pF
C3312	2113743N31	16pF
C3313	2113743N54	150pF
C3315	2113743N26	10pF
C3316	2113743N14	3.3pF
C3317	2113743N40	39pF
C3318	2113743M08	22000pF, +80/-20%
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF, 10%
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A18	10uF
C3337	2113743M08	22000pF, +80/-20%
C3338	2113743L09	470pF, 10%
C3339	2113743N26	10pF
C3501	2113743L05	330pF
C3502	2113743N38	33pF
C3503	2113743N38	33pF
C3504	2113743M08	22000pF, +80/-20%
C3505	2113743N38	33pF
C3508	2113743M08	22000pF, +80/-20%
C3509	2113743L05	330pF
C3512	2113740F43	47pF
C3513	2113740F38	30pF
C3514	2113740F47	68pF
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F47	68pF
C3521	2111078B51	220pF
C3523	2111078B44	120pF
C3524	2113740F33	18pF
C3525	2113740F27	10pF
C3526	2113743M08	22000pF, +80/-20%
C3528	2113740F27	10pF
C3531	2113740F34	20pF
C3532	2113740F47	68pF
C3533	2113740F24	7.5pF
C3534	2113740F19	4.7pF
C3535	2113740F37	27pF
C3536	2113740F31	15pF
C3537	2113740F33	18pF
C3539	2113740F29	12pF
C3541	2113743M08	22000pF, +80/-20%
C3542	2113743L05	330pF
C3543	2113743M08	22000pF, +80/-20%
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	22000pF, +80/-20%
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1uF
C3561	2113743M08	22000pF, +80/-20%
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF
C3564	2113743L01	220pF
C3565	2113743E07	0.022uF
C3566	2113743N50	100pF
C3567	2113743L05	330pF
C3568	2113743L29	3300pF
C3569	2113743M08	22000pF, +80/-20%
C3570	2113743L05	330pF
C3571	2113743L09	470pF, 10%
C3701	2113743L41	10000pF, 10%
C3702	2113743L41	10000pF, 10%
C3703	2113743L41	10000pF, 10%
C3704	2113743L41	10000pF, 10%
C3705	2113743E20	0.10uF, 10%
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113928N01	0.1uF, 10%
C3709	2113928N01	0.1uF, 10%
C3710	2104993J02	2.2uF
C3711	2311049A69	10uF
C3712	2113928N01	0.1uF, 10%
C3713	2311049A09	2.2uF
C3714	2311049J11	4.7uF
C3715	2113743L09	470pF, 10%
C3721	2113743E20	0.10uF, 10%
C3722	2113743E20	0.10uF, 10%
C3724	2311049A08	1uF
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	10000pF, 10%
C3732	2113743L41	10000pF, 10%
C3733	2104993J02	2.2uF
C3734	2113743L41	10000pF, 10%
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3752	2113743L17	1000pF, 10%
C3753	2311049A56	4.7uF, 20%, 10V
C3754	2113928N01	0.1uF, 10%
C3755	2104993J02	2.2uF
* C3761	2113743N44	56pF
* C3762	2113740F63	330pF
* C3763	2113743N08	1.6pF
C3801	2113743N18	4.7pF
C3803	2113743L17	1000pF, 10%
C3804	2113743E20	0.10uF, 10%
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3811	2113928N01	0.1uF, 10%
C3812	2113928N01	0.1uF, 10%
C3813	2113743L41	10000pF, 10%
C3815	2113743L17	1000pF, 10%
C3816	2113743N22	6.8pF
C3818	2113743E07	0.022uF
C3821	2113743L41	10000pF, 10%
C3822	2113743L17	1000pF, 10%
C3823	2113743L41	10000pF, 10%
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	0.022uF
C3828	2185895Z01	0.01uF, 10%
C3829	2185895Z01	0.01uF, 10%
C3830	2113743N46	68pF
C3832	2113743L17	1000pF, 10%
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF
C3836	2113743N30	15pF
C3842	2113743L17	1000pF, 10%
C400	2113743L41	10000pF, 10%
C401	2113928N01	0.1uF, 10%

Circuit Ref	Motorola Part No	Description
C402	2113928N01	0.1uF, 10%
C4020	2113743L17	1000pF, 10%
C4021	2113743L17	1000pF, 10%
C403	2113928D08	10uF, +/-80%/-20%
C407	2113928N01	0.1uF, 10%
C408	2113743N50	100pF
C409	2113928N01	0.1uF, 10%
C410	2113928N01	0.1uF, 10%
C411	2113928N01	0.1uF, 10%
C414	2113928N01	0.1uF, 10%
C415	2185895Z01	0.01uF, 10%
C416	2113928N01	0.1uF, 10%
C419	2113743L41	10000pF, 10%
C420	2113743L41	10000pF, 10%
C421	2113928N01	0.1uF, 10%
C422	2113928N01	0.1uF, 10%
C423	2113743N50	100pF
C424	2311049A59	10uF, 10%, 6V
C425	2113928N01	0.1uF, 10%
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113928N01	0.1uF, 10%
C429	2113928N01	0.1uF, 10%
C430	2113928N01	0.1uF, 10%
C431	2113743N50	100pF
C433	2113743L41	10000pF, 10%
C434	2113928N01	0.1uF, 10% only GP360, GP380, GP680
C435	2113928N01	0.1uF, 10%
C436	2113743N34	22pF only GP360, GP380, GP680
C437	2113743N34	22pF only GP360, GP380, GP680
C440	2113743G26	4.7F, + 80/-20%
C441	2113743L09	470pF, 10%
C442	2113743E20	0.10uF, 10%
C443	2113928N01	0.1uF, 10%
C444	2113743N50	100pF
C445	2113743L09	470pF, 10%
C446	2113743L09	470pF, 10%
C447	2113928N01	0.1uF, 10%
C448	2113928N01	0.1uF, 10%
C449	2113743N50	100pF
C451	2113743M08	22000pF, +80/-20%
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF

Circuit Ref	Motorola Part No	Description
C467	2113928N01	0.1uF, 10%
C471	2113743L09	470pF, 10%
C472	2113743L09	470pF, 10%
C473	2113743L09	470pF, 10%
C474	2113743L41	10000pF, 10%
C475	2113743H14	10uF, +80/-20%
C476	2113928D08	10uF, +/-80%/-20%
C477	2113743L17	1000pF, 10%
C478	2113743L17	1000pF, 10%
C479	2113928N01	0.1uF, 10%
C480	2113928D08	10uF, +/-80%/-20%
C481	2113928N01	0.1uF, 10%
C482	2113928N01	0.1uF, 10%
C483	2113743L09	470pF, 10%
C484	2113743L09	470pF, 10%
C490	2113743L09	470pF, 10%
C491	2113743L09	470pF, 10%
C492	2113743L09	470pF, 10%
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743L09	470pF, 10%
C496	2113743L09	470pF, 10%
C497	2113743L09	470pF, 10%
C502	2311049A05	0.47uF, 10%, 25V
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF, 10%
C521	2113743L41	10000pF, 10%
C522	2113743L41	10000pF, 10%
C523	2113743L41	10000pF, 10%
C535	2113743L17	1000pF, 10%
CR3301	4802245J42	Ring Quad diode
CR3302	4805129M96	Dual Bonds Pin Diode, RH Reeled
CR3303	4880154K03	Dual common anode-cathode diode
CR411	4802245J62	Schottky diode
CR412	4802245J62	Schottky diode
CR413	4802245J62	Schottky diode
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
D3270	4862824C01	Varactor
D3301	4802081B58	Dual Diode
D3302	4802081B58	Dual Diode
D3521	4880973Z02	Pin diode
D3551	4880973Z02	Pin diode

Circuit Ref	Motorola Part No	Description
D3701	4802233J09	Triple diode
D3702	4802233J09	Triple diode
* D3761	4862824C03	Varactor
D3821	4805649Q13	Varactor
D3831	4805649Q13	Varactor
D3832	4862824C01	Varactor
E400	2480640Z01	Ferrite bead
E401	2480640Z01	Ferrite bead
E402	2480640Z01	Ferrite bead
E403	2480640Z01	Ferrite bead
E404	2480640Z01	Ferrite bead
E405	2480640Z01	Ferrite bead
E406	2480640Z01	Ferrite bead
E407	2480640Z01	Ferrite bead
E408	2480640Z01	Ferrite bead
E409	2480640Z01	Ferrite bead
F501	6580542Z01	3A Fuse
FL401	4870368G02	Real Time Clock Osciall XTAL only GP360, GP380, GP680
H3501	2680499Z01	Heat spreader
J3501	0985613Z01	RF Jack
J3502	0280519Z02	Antenna_Nut
J400	0905505Y04	40-pin connector
J403	0905505Y02	20-pin connector
L3200	2462587N68	1uH
L3202	2462587N68	1uH
L3221	2462587N68	1uH
L3270	2462587T15	100nH
L3271	2462587Q20	2.2uF
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH
L3501	2413926H09	5.6nH
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH
L3512	2479990B01	11.03nH
L3513	2479990A02	7.66nH, 10%
L3515	2479990C03	13.85nH
L3519	2484657R01	Ferrite bead
L3521	2479990A02	7.66nH, 10%
L3522	2479990E01	23.75nH
L3523	2462587N68	1uH
L3531	2479990N01	43.67nH
L3532	2479990N01	43.67nH
L3538	2479990M01	30.54nH

Circuit Ref	Motorola Part No	Description
L3551	2479990N01	43.67nH
L3552	2479990A02	7.66nH, 10%
L3701	2462587Q42	390nH, 10%
L3731	2462587Q20	2.2uF
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1000nH, 10%, QF45
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1uH
L3825	2462587V34	100nH
L3826	2462587N68	1uH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1uH
L400	2462587Q42	390nH, 10%
L401	2462587Q42	390nH, 10%
L410	2462587Q42	390nH, 10%
L411	2462587Q42	390nH, 10%
L505	2462587Q42	390nH, 10%
PB501	4080523Z01	Tactile, Pushbutton
PB502	4080523Z01	Tactile, Pushbutton
PB503	4080523Z01	Tactile, Pushbutton not in GP320
PB504	4080523Z01	Tactile, Pushbutton
PB505	4080523Z01	Tactile, Pushbutton not in GP320
Q3200	4813827A07	NPN Transistor
Q3201	4880214G02	NPN Transistor
Q3202	4880214G02	NPN Transistor
Q3270	4805218N63	RF Transistor
Q3301	4880214G02	NPN Transistor
Q3302	4813827A07	NPN Transistor
Q3501	4813828A08	FET
Q3561	4813824A17	PNP Transistor
Q3721	4802245J50	Dual NPN/PNP Transistor
Q3801	4813827A07	NPN Transistor
Q400	4809579E18	Mosfet P - channel
Q403	4813824A17	PNP Transistor
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	Mosfet P - channel only GP360, GP380, GP680
Q417	4802245J50	Dual NPN/PNP Transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor

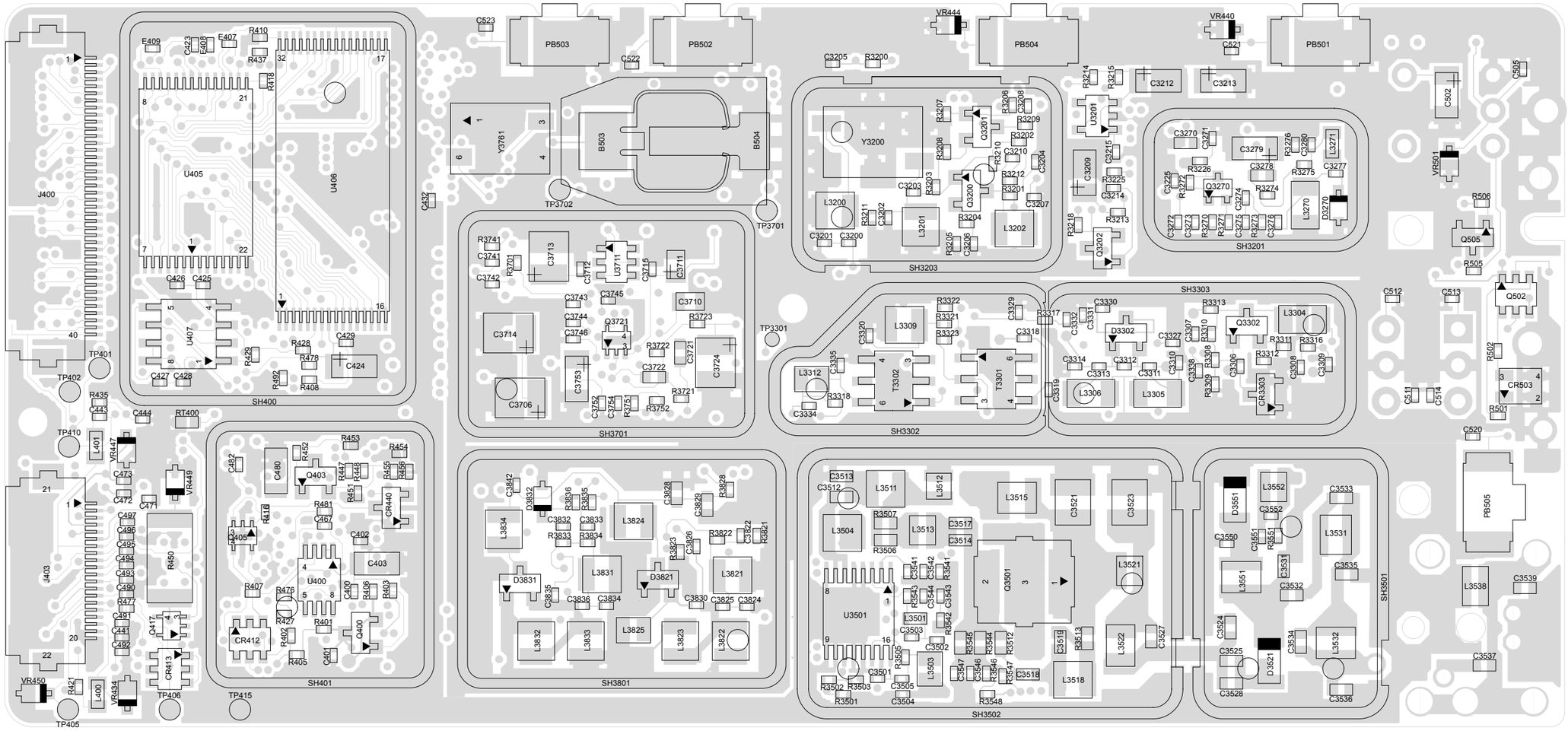
Circuit Ref	Motorola Part No	Description
R3200	0662057M54	150
R3201	0662057M82	2200
R3202	0662057M90	4700
R3203	0662057M98	10k
R3204	0662057M26	10
R3205	0662057M74	1000
R3206	0662057N23	100K
R3207	0662057N13	39K
R3208	0662057M50	100
R3209	0662057M74	1000
R3210	0662057M82	2200
R3211	0662057M82	2200
R3212	0662057M90	4700
R3213	0662057M82	2200
R3214	0662057M34	22
R3219	0662057M50	100
R3220	0662057M90	4700
R3221	0662057M50	100
R3224	0662057M26	10
R3225	0662057M74	1000
R3226	0662057M26	10
R3270	0662057M74	1000
R3271	0662057M42	47
R3272	0662057N15	47K
R3273	0662057N15	47K
R3274	0662057M83	2400
R3275	0662057M74	1000
R3276	0662057N30	200K
R3303	0662057N23	100K
R3304	0662057N23	100K
R3305	0662057N19	68K
R3306	0662057M82	2200
R3307	0662057N11	33K
R3308	0662057M78	1500
R3309	0662057M92	5600
R3310	0662057M98	10k
R3311	0662057M26	10
R3312	0662057M38	33
R3313	0662057M34	22
R3314	0662057M26	10
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3321	0662057M54	150
R3322	0662057M58	220
R3323	0662057M32	18
R3324	0662057M58	220
R3501	0662057M61	300
R3502	0662057M32	18
R3503	0662057M61	300
R3505	0662057M62	330
R3506	0662057B62	3.9
R3507	0662057B62	3.9
R3519	0680539Z01	0.1
R3541	0662057N13	39K
R3542	0662057M92	5600
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N01	12K
R3547	0662057N11	33K
R3548	0662057N07	22K
R3551	0662057M40	39
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3569	0662057M92	5600
R3570	0662057M98	10k
R3571	0662057A27	120
R3572	0662057A27	120
R3573	0662057A27	120
R3701	0662057M50	100
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R3721	0662057M66	470
R3722	0662057M74	1000
R3723	0662057M50	100
R3727	0662057N23	100K
R3741	0662057M50	100
R3751	0662057N30	200K
R3752	0662057N35	330K
R3761	0662057N15	47K
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10k
R3805	0662057N08	24K
R3806	0662057M34	22
R3808	0662057M26	10
R3811	0662057M50	100
R3816	0662057M74	1000
R3817	0662057M01	0
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100
R3829	0662057M01	0
R3831	0662057M98	10k
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47
R3835	0662057N15	47K
R3836	0662057M98	10k
R400	0662057N15	47K
R401	0662057M01	0
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R409	0662057M98	10k
R410	0662057N23	100K
R411	0662057M98	10k
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057M98	10k
R418	0662057M01	0
R419	0662057M67	510 only GP360, GP380, GP680
R420	0662057B46	10M only GP360, GP380, GP680
R421	0662057M81	2000
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K only GP360, GP380, GP680
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057M98	10k
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R445	0662057N08	24K
R447	0662057N51	1.5M
R448	0662057M98	10k
R449	0662057N08	24K
R450	0683962T45	68 ohms, 1W
R451	0662057N03	15K
R452	0662057N23	100K
R456	0662057M01	0
R457	0662057M98	10k
R460	0662057M90	4700
R461	0662057M56	180 only GP360, GP380, GP680
R462	0662057M98	10k only GP360, GP380, GP680
R463	0662057M61	300
R471	0662057M92	5600
R472	0662057M93	6200
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1000
R478	0662057M98	10k
R481	0662057N08	24K
R492	0662057M01	0
R498	0662057M98	10k
R499	0662057M98	10k
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10k
R506	0662057N15	47K
RT400	0680590Z01	THERMISTOR 33K
S501	4080710Z01	Frequency Switch only GP340, GP640
S501	4080710Z02	Frequency Switch only GP360, GP380, GP680
S502	1880619Z02	Volume Switch
SH3201	2602023X08	Rx Backend Top Shield
SH3202	2686081B02	LVZIF shields
SH3203	2686081B03	45.1MHz Xtal Filter Shield
SH3301	2686081B01	Rx Frontend Bottom Shield
SH3302	2686081B05	Mixer Shield
SH3303	2686081B06	Rx Frontend Top Shield
SH3501	2686081B03	Harmonic Filter Shield
SH3502	2686081B04	PA driver Shield
SH3701	2680511Z01	Synthesizer top shield
SH3702	2680511Z01	Synthesizer bottom shield
SH3801	2680513Z01	VCO Top Shield
SH3802	2680514Z01	VCO Bottom Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller on-off shield
SH402	2680515Z01	Controller Microprocessor shield
SH403	2680516Z01	Controller Asfic_Cmp/Audio PA shield
T3301	2580541Z01	Balun transformer
T3302	2580541Z01	Balun transformer
U3201	5102463J58	3.3V Regulator
U3220	5109632D83	LVZIF IC
U3501	5185130C65	VHF/UHF/800 MHZ LDMOS Driver
U3502	5185765B28	PCIC
U3503	5185963A15	Temperature Sense
U3701	5185963A27	LVFRACN Synthesizer IC
U3711	5105739X05	5V Regulator
U3801	5105750U54	VCO BUFFER IC

Circuit Ref	Motorola Part No	Description
U400	5102463J40	3.3V Regulator
U404	5185963A53	ASFIC_CMP
U405	5102463J36	Static_RAM_32KX8
* U406	5102463J60	512K X 8 Flash Memory
* U407	5102463J64	16k X 8 EEPROM
U409	5102226J56	Microprocessor IC
U410	5102463J57	3.3V Regulator only GP360, GP380, GP680
U420	5102463J44	Audio PA
VR3501	4880140L17	Zener diode-12V
VR432	4805656W08	5.6V Zener diode
VR433	4805656W08	5.6V Zener diode
VR434	4802245J73	ZENER DIODE-6.8V
VR439	4880140L17	Zener diode-12V
VR447	4802245J74	ZENER DIODE-10V
VR448	4802245J74	ZENER DIODE-10V
VR449	4802245J74	ZENER DIODE-10V
VR450	4802245J74	ZENER DIODE-10V
VR460	4802245J73	ZENER DIODE-6.8V
VR501	4802245J73	ZENER DIODE-6.8V
VR506	4802245J73	ZENER DIODE-6.8V
Y3200	9186153B01	Crystal Filter
Y3761	4805875Z04	16.8MHz Xtal oscillator (SMD)
	5480678Z01	PCB Bar Code Label
	8486062B16	VHF main PC Board

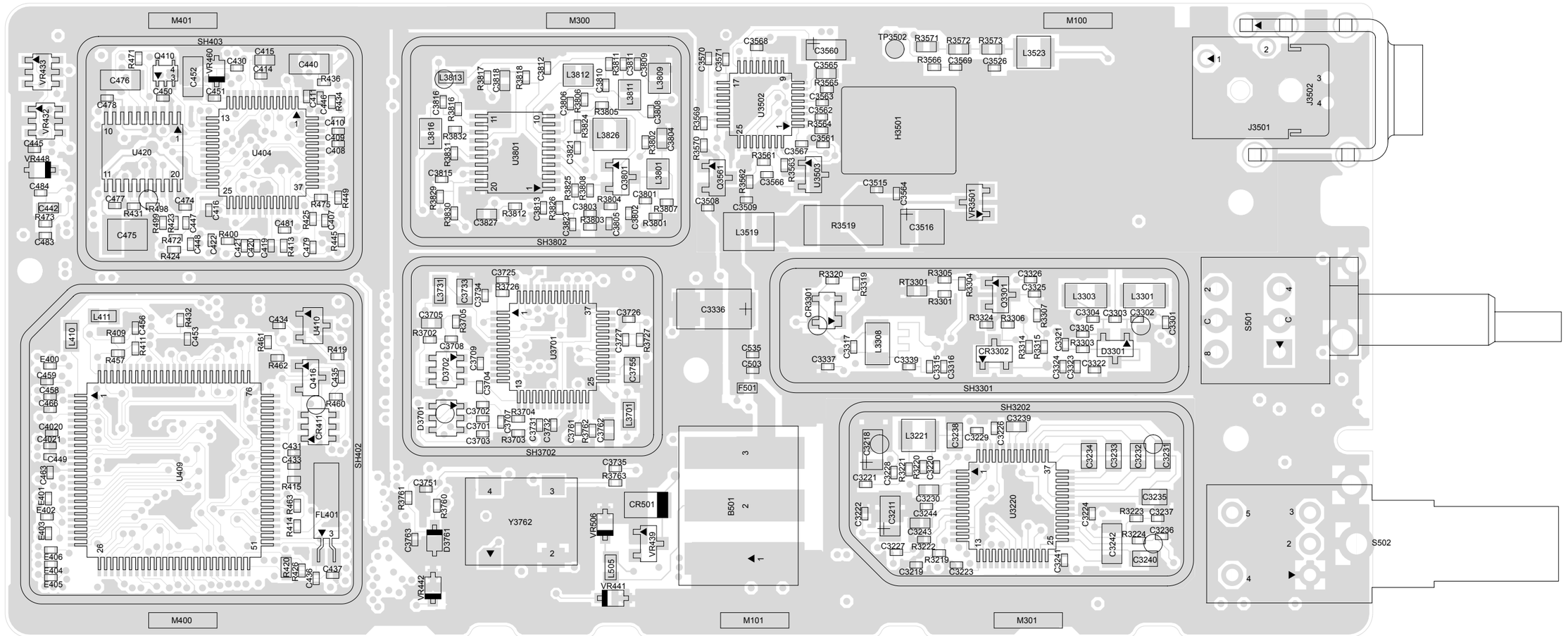
* Motorola Depot Servicing only

Reference designators with an asterisk indicate components which are not field replaceable because they need to be calibrated with specialized factory equipment after installation. Radios in which these parts have been replaced in the field will be off frequency at temperature extremes.

12.0 VHF PCB 8486062B17 / Schematics



VHF (136-174 MHz) Main Board Top Side



VHF (136-174 MHz) Main Board Bot Side

13.0 VHF PCB 8486062B17

Circuit Ref	Motorola Part No	Description
B501	0986237A02	Connector, Contact Battery
B503	3980502Z01	Backup battery B+ only GP360, GP380, GP680
B504	3980501Z01	Backup battery B- only GP360, GP380, GP680
C3200	2113743N31	16pF
C3203	2113743N50	100pF
C3204	2113743L41	10000pF, 10%
C3205	2113928N01	0.1uF, 10%
C3206	2113743L41	10000pF, 10%
C3207	2113743N10	2.2pF
C3209	2311049A07	1uF
C3210	2113743L17	1000pF, 10%
C3211	2311049A56	4.7uF, 20%, 10V
C3212	2311049A57	10uF
C3213	2311049A56	4.7uF, 20%, 10V
C3214	2113928N01	0.1uF, 10%
C3215	2113743N26	10pF
C3218	2311049A56	4.7uF, 20%, 10V
C3219	2113928N01	0.1uF, 10%
C3220	2113743N26	10pF
C3221	2113743L41	10000pF, 10%
C3222	2113928N01	0.1uF, 10%
C3223	2113928N01	0.1uF, 10%
C3224	2113928N01	0.1uF, 10%
C3225	2113928N01	0.1uF, 10%
C3226	2113928N01	0.1uF, 10%
C3227	2113743L41	10000pF, 10%
C3228	2113743L41	10000pF, 10%
C3229	2113743N50	100pF
C3230	2113740F51	100pF
C3231	2180478Z20	1uF
C3232	2180478Z20	1uF
C3233	2180478Z20	1uF
C3234	2180478Z20	1uF
C3235	2113743A23	0.220uF
C3238	2113743A24	0.330uF
C3239	2113743E07	0.022uF
C3240	2113743A23	0.220uF
C3241	2113743L19	1200pF
C3242	2109720D14	0.1uF
C3243	2113743E07	0.022uF
C3244	2113743L41	10000pF, 10%
C3270	2113743E07	0.022uF
C3271	2113743L05	330pF
C3272	2113743N18	4.7pF
C3273	2113743N26	10pF
C3274	2113743N38	33pF
C3275	2113743N44	56pF
C3276	2113743N42	47pF
C3277	2113743N48	82pF
C3278	2113743E07	0.022uF
C3279	2311049A40	2.2uF, 10%, 16V
C3280	2113743L41	10000pF, 10%
C3301	2113743N20	5.6pF
C3302	2113743N54	150pF
C3303	2113743N30	15pF
C3304	2113743N54	150pF
C3306	2113928N01	0.1uF, 10%
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113928N01	0.1uF, 10%
C3311	2113743N54	150pF
C3312	2113743N31	16pF
C3313	2113743N54	150pF
C3315	2113743N26	10pF
C3316	2113743N14	3.3pF
C3317	2113743N40	39pF
C3318	2113743M08	22000pF, +80/-20%
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF, 10%
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A18	10uF
C3337	2113743M08	22000pF, +80/-20%
C3338	2113743L09	470pF, 10%
C3339	2113743N26	10pF
C3501	2113743L05	330pF
C3502	2113743N38	33pF
C3503	2113743N38	33pF
C3504	2113743M08	22000pF, +80/-20%
C3505	2113743N38	33pF
C3508	2113743M08	22000pF, +80/-20%
C3509	2113743L05	330pF
C3512	2113740F43	47pF
C3513	2113740F38	30pF
C3514	2113740F47	68pF
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F47	68pF
C3521	2111078B51	220pF
C3523	2111078B44	120pF
C3524	2113740F33	18pF
C3525	2113740F27	10pF
C3526	2113743M08	22000pF, +80/-20%
C3528	2113740F27	10pF
C3531	2113740F34	20pF
C3532	2113740F47	68pF
C3533	2113740F24	7.5pF
C3534	2113740F19	4.7pF
C3535	2113740F37	27pF
C3536	2113740F31	15pF
C3537	2113740F33	18pF
C3539	2113740F29	12pF
C3541	2113743M08	22000pF, +80/-20%
C3542	2113743L05	330pF
C3543	2113743M08	22000pF, +80/-20%
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	22000pF, +80/-20%
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1uF
C3561	2113743M08	22000pF, +80/-20%
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF
C3564	2113743L01	220pF
C3565	2113743E07	0.022uF
C3566	2113743N50	100pF
C3567	2113743L05	330pF
C3568	2113743L29	3300pF
C3569	2113743M08	22000pF, +80/-20%
C3570	2113743L05	330pF
C3571	2113743L09	470pF, 10%
C3701	2113743L41	10000pF, 10%
C3702	2113743L41	10000pF, 10%
C3703	2113743L41	10000pF, 10%
C3704	2113743L41	10000pF, 10%
C3705	2113743E20	0.10uF, 10%
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113928N01	0.1uF, 10%
C3709	2113928N01	0.1uF, 10%
C3710	2104993J02	2.2uF
C3711	2311049A69	10uF
C3712	2113928N01	0.1uF, 10%
C3713	2311049A09	2.2uF
C3714	2311049J11	4.7uF
C3715	2113743L09	470pF, 10%
C3721	2113743E20	0.10uF, 10%
C3722	2113743E20	0.10uF, 10%
C3724	2311049A08	1uF
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	10000pF, 10%
C3732	2113743L41	10000pF, 10%
C3733	2104993J02	2.2uF
C3734	2113743L41	10000pF, 10%
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3752	2113743L17	1000pF, 10%
C3753	2311049A56	4.7uF, 20%, 10V
C3754	2113928N01	0.1uF, 10%
C3755	2104993J02	2.2uF
* C3761	2113743N44	56pF
* C3762	2113740F63	330pF
* C3763	2113743N08	1.6pF
C3801	2113743N18	4.7pF
C3803	2113743L17	1000pF, 10%
C3804	2113743E20	0.10uF, 10%
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3811	2113928N01	0.1uF, 10%
C3812	2113928N01	0.1uF, 10%
C3813	2113743L41	10000pF, 10%
C3815	2113743L17	1000pF, 10%
C3816	2113743N22	6.8pF
C3818	2113743E07	0.022uF
C3821	2113743L41	10000pF, 10%
C3822	2113743L17	1000pF, 10%
C3823	2113743L41	10000pF, 10%
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	0.022uF
C3828	2185895Z01	0.01uF, 10%
C3829	2185895Z01	0.01uF, 10%
C3830	2113743N46	68pF
C3832	2113743L17	1000pF, 10%
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF
C3836	2113743N30	15pF
C3842	2113743L17	1000pF, 10%
C400	2113743L41	10000pF, 10%
C401	2113928N01	0.1uF, 10%
C402	2113928N01	0.1uF, 10%

Circuit Ref	Motorola Part No	Description
C4020	2113743L17	1000pF, 10%
C4021	2113743L17	1000pF, 10%
C403	2113928D08	10uF, +/-80%/-20%
C407	2113928N01	0.1uF, 10%
C408	2113743N50	100pF
C409	2113928N01	0.1uF, 10%
C410	2113928N01	0.1uF, 10%
C411	2113928N01	0.1uF, 10%
C414	2113928N01	0.1uF, 10%
C415	2185895Z01	0.01uF, 10%
C416	2113928N01	0.1uF, 10%
C419	2113743L41	10000pF, 10%
C420	2113743L41	10000pF, 10%
C421	2113928N01	0.1uF, 10%
C422	2113928N01	0.1uF, 10%
C423	2113743N50	100pF
C424	2311049A59	10uF, 10%, 6V
C425	2113928N01	0.1uF, 10%
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113928N01	0.1uF, 10%
C429	2113928N01	0.1uF, 10%
C430	2113928N01	0.1uF, 10%
C431	2113743N50	100pF
C433	2113743L41	10000pF, 10%
C434	2113928N01	0.1uF, 10% only GP360, GP380, GP680
C435	2113928N01	0.1uF, 10%
C436	2113743N34	22pF only GP360, GP380, GP680
C437	2113743N34	22pF only GP360, GP380, GP680
C440	2113743G26	4.7F, + 80/-20%
C441	2113743L09	470pF, 10%
C442	2113743E20	0.10uF, 10%
C443	2113928N01	0.1uF, 10%
C444	2113743N50	100pF
C445	2113743L09	470pF, 10%
C446	2113743L09	470pF, 10%
C447	2113928N01	0.1uF, 10%
C448	2113928N01	0.1uF, 10%
C449	2113743N50	100pF
C451	2113743M08	22000pF, +80/-20%
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF, 10%

Circuit Ref	Motorola Part No	Description
C471	2113743L09	470pF, 10%
C472	2113743L09	470pF, 10%
C473	2113743L09	470pF, 10%
C474	2113743L41	10000pF, 10%
C475	2113743H14	10uF, +80/-20%
C476	2113928D08	10uF, +/-80%/-20%
C477	2113743L17	1000pF, 10%
C478	2113743L17	1000pF, 10%
C479	2113928N01	0.1uF, 10%
C480	2113928D08	10uF, +/-80%/-20%
C481	2113928N01	0.1uF, 10%
C482	2113928N01	0.1uF, 10%
C483	2113743L09	470pF, 10%
C484	2113743L09	470pF, 10%
C490	2113743L09	470pF, 10%
C491	2113743L09	470pF, 10%
C492	2113743L09	470pF, 10%
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743L09	470pF, 10%
C496	2113743L09	470pF, 10%
C497	2113743L09	470pF, 10%
C502	2311049A05	0.47uF, 10%, 25V
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF, 10%
C521	2113743L41	10000pF, 10%
C522	2113743L41	10000pF, 10%
C523	2113743L41	10000pF, 10%
C535	2113743L17	1000pF, 10%
CR3301	4802245J42	Ring Quad diode
CR3302	4805129M96	Dual Bonds Pin Diode, RH Reeled
CR3303	4880154K03	Dual common anode-cathode diode
CR411	4802245J62	Schottky diode
CR412	4802245J62	Schottky diode
CR413	4802245J62	Schottky diode
CR440	4813833C02	Dual Diode Common Cathode
CR501	4880107R01	Rectifier
CR503	4805729G49	LED Red/Yellow
D3270	4862824C01	Varactor
D3301	4802081B58	Dual Diode
D3302	4802081B58	Dual Diode
D3521	4880973Z02	Pin diode
D3551	4880973Z02	Pin diode
D3701	4802233J09	Triple diode

Circuit Ref	Motorola Part No	Description
D3702	4802233J09	Triple diode
* D3761	4862824C03	Varactor
D3821	4805649Q13	Varactor
D3831	4805649Q13	Varactor
D3832	4862824C01	Varactor
E400	2480640Z01	Ferrite bead
E401	2480640Z01	Ferrite bead
E402	2480640Z01	Ferrite bead
E403	2480640Z01	Ferrite bead
E404	2480640Z01	Ferrite bead
E405	2480640Z01	Ferrite bead
E406	2480640Z01	Ferrite bead
E407	2480640Z01	Ferrite bead
E408	2480640Z01	Ferrite bead
E409	2480640Z01	Ferrite bead
F501	6580542Z01	3A Fuse
FL401	4870368G02	Real Time Clock Osciall XTAL only GP360, GP380, GP680
H3501	2680499Z01	Heat spreader
J3501	0985613Z01	RF Jack
J3502	0280519Z02	Antenna_Nut
J400	0905505Y04	40-pin connector
J403	0905505Y02	20-pin connector
L3200	2462587N68	1uH
L3202	2462587N68	1uH
L3221	2462587N68	1uH
L3270	2462587T15	100nH
L3271	2462587Q20	2.2uF
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH
L3501	2413926H09	5.6nH
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH
L3512	2479990B01	11.03nH
L3513	2479990A02	7.66nH, 10%
L3515	2479990C03	13.85nH
L3519	2484657R01	Ferrite bead
L3521	2479990A02	7.66nH, 10%
L3522	2479990E01	23.75nH
L3523	2462587N68	1uH
L3531	2479990N01	43.67nH
L3532	2479990N01	43.67nH
L3538	2479990M01	30.54nH
L3551	2479990N01	43.67nH

Circuit Ref	Motorola Part No	Description
L3552	2479990A02	7.66nH, 10%
L3701	2462587Q42	390nH, 10%
L3731	2462587Q20	2.2uF
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1000nH, 10%, QF45
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1uH
L3825	2462587V34	100nH
L3826	2462587N68	1uH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1uH
L400	2462587Q42	390nH, 10%
L401	2462587Q42	390nH, 10%
L410	2462587Q42	390nH, 10%
L411	2462587Q42	390nH, 10%
L505	2462587Q42	390nH, 10%
PB501	4080523Z01	Tactile, Pushbutton
PB502	4080523Z01	Tactile, Pushbutton
PB503	4080523Z01	Tactile, Pushbutton not in GP320
PB504	4080523Z01	Tactile, Pushbutton
PB505	4080523Z01	Tactile, Pushbutton not in GP320
Q3200	4813827A07	NPN Transistor
Q3201	4880214G02	NPN Transistor
Q3202	4880214G02	NPN Transistor
Q3270	4805218N63	RF Transistor
Q3301	4880214G02	NPN Transistor
Q3302	4813827A07	NPN Transistor
Q3501	4813828A08	FET
Q3561	4813824A17	PNP Transistor
Q3721	4802245J50	Dual NPN/PNP Transistor
Q3801	4813827A07	NPN Transistor
Q400	4809579E18	Mosfet P - channel
Q403	4813824A17	PNP Transistor
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	Mosfet P - channel only GP360, GP380, GP680
Q417	4802245J50	Dual NPN/PNP Transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor
R3200	0662057M54	150

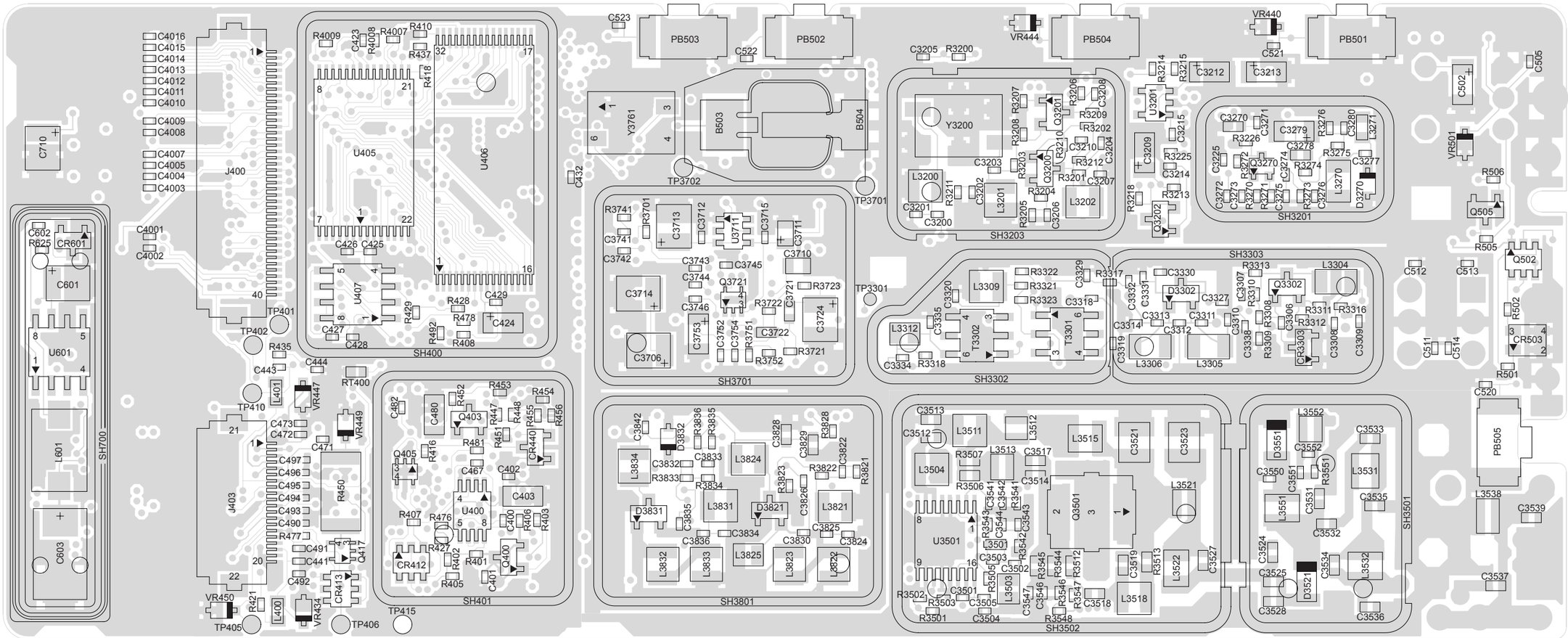
Circuit Ref	Motorola Part No	Description
R3201	0662057M82	2200
R3202	0662057M90	4700
R3203	0662057M98	10k
R3204	0662057M26	10
R3205	0662057M74	1000
R3206	0662057N23	100K
R3207	0662057N13	39K
R3208	0662057M50	100
R3209	0662057M74	1000
R3210	0662057M82	2200
R3211	0662057M82	2200
R3212	0662057M90	4700
R3213	0662057M82	2200
R3214	0662057M34	22
R3219	0662057M50	100
R3220	0662057M90	4700
R3221	0662057M50	100
R3224	0662057M26	10
R3225	0662057M74	1000
R3226	0662057M26	10
R3270	0662057M74	1000
R3271	0662057M42	47
R3272	0662057N15	47K
R3273	0662057N15	47K
R3274	0662057M83	2400
R3275	0662057M74	1000
R3276	0662057N30	200K
R3303	0662057N23	100K
R3304	0662057N23	100K
R3305	0662057N19	68K
R3306	0662057M82	2200
R3307	0662057N11	33K
R3308	0662057M78	1500
R3309	0662057M92	5600
R3310	0662057M98	10k
R3311	0662057M26	10
R3312	0662057M38	33
R3313	0662057M34	22
R3314	0662057M26	10
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3321	0662057M54	150
R3322	0662057M58	220
R3323	0662057M32	18
R3324	0662057M58	220
R3501	0662057M61	300
R3502	0662057M32	18
R3503	0662057M61	300
R3505	0662057M62	330
R3506	0662057B62	3.9
R3507	0662057B62	3.9
R3519	0680539Z01	0.1
R3541	0662057N13	39K
R3542	0662057M92	5600
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N01	12K
R3547	0662057N11	33K
R3548	0662057N07	22K
R3551	0662057M40	39
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3569	0662057M92	5600
R3570	0662057M98	10k
R3571	0662057A27	120
R3572	0662057A27	120
R3573	0662057A27	120
R3701	0662057M50	100
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R3721	0662057M66	470
R3722	0662057M74	1000
R3723	0662057M50	100
R3727	0662057N23	100K
R3741	0662057M50	100
R3751	0662057N30	200K
R3752	0662057N35	330K
R3761	0662057N15	47K
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10k
R3805	0662057N08	24K
R3806	0662057M34	22
R3808	0662057M26	10
R3811	0662057M50	100
R3816	0662057M74	1000
R3817	0662057M01	0
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100
R3829	0662057M01	0
R3831	0662057M98	10k
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47
R3835	0662057N15	47K
R3836	0662057M98	10k
R400	0662057N15	47K
R401	0662057M01	0
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R409	0662057M98	10k
R410	0662057N23	100K
R411	0662057M98	10k
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057M98	10k
R418	0662057M01	0
R419	0662057M67	510 only GP360, GP380, GP680
R420	0662057B46	10M only GP360, GP380, GP680
R421	0662057M81	2000
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K only GP360, GP380, GP680
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057M98	10k
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R445	0662057N08	24K
R447	0662057N51	1.5M
R448	0662057M98	10k
R449	0662057N08	24K
R450	0683962T45	68 ohms, 1W
R451	0662057N03	15K
R452	0662057N23	100K
R456	0662057M01	0
R457	0662057M98	10k
R460	0662057M90	4700
R461	0662057M56	180 only GP360, GP380, GP680
R462	0662057M98	10k only GP360, GP380, GP680
R463	0662057M61	300
R471	0662057M92	5600
R472	0662057M93	6200
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N08	24K
R477	0662057M74	1000
R478	0662057M98	10k
R481	0662057N08	24K
R492	0662057M01	0
R498	0662057M98	10k
R499	0662057M98	10k
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10k
R506	0662057N15	47K
RT400	0680590Z01	THERMISTOR 33K
S501	4080710Z01	Frequency Switch only GP340, GP640
S501	4080710Z02	Frequency Switch only GP360, GP380, GP680
S502	1880619Z02	Volume Switch
SH3201	2602023X08	Rx Backend Top Shield
SH3202	2686081B02	LVZIF shields
SH3203	2686081B03	45.1MHz Xtal Filter Shield
SH3301	2686081B01	Rx Frontend Bottom Shield
SH3302	2686081B05	Mixer Shield
SH3303	2686081B06	Rx Frontend Top Shield
SH3501	2686081B03	Harmonic Filter Shield
SH3502	2686081B04	PA driver Shield
SH3701	2680511Z01	Synthesizer top shield
SH3702	2680511Z01	Synthesizer bottom shield
SH3801	2680513Z01	VCO Top Shield
SH3802	2680514Z01	VCO Bottom Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller on-off shield
SH402	2680515Z01	Controller Microprocessor shield
SH403	2680516Z01	Controller Asfic_Cmp/Audio PA shield
T3301	2580541Z01	Balun transformer
T3302	2580541Z01	Balun transformer
U3201	5102463J58	3.3V Regulator
U3220	5109632D83	LVZIF IC
U3501	5185130C65	VHF/UHF/800 MHZ LDMOS Driver
U3502	5185765B28	PCIC
U3503	5185963A15	Temperature Sense
U3701	5185963A27	LVFRACN Synthesizer IC
U3711	5105739X05	5V Regulator
U3801	5105750U54	VCO BUFFER IC
U400	5102463J40	3.3V Regulator

Circuit Ref	Motorola Part No	Description
U404	5185963A53	ASFIC_CMP
U405	5102463J36	Static_RAM_32KX8
* U406	5102463J60	512K X 8 Flash Memory
* U407	5102463J64	16k X 8 EEPROM
U409	5102226J56	Microprocessor IC
U410	5102463J57	3.3V Regulator only GP360, GP380, GP680
U420	5102463J44	Audio PA
VR3501	4880140L17	Zener diode-12V
VR432	4805656W08	5.6V Zener diode
VR433	4805656W08	5.6V Zener diode
VR434	4802245J73	ZENER DIODE-6.8V
VR439	4880140L17	Zener diode-12V
VR447	4802245J74	ZENER DIODE-10V
VR448	4802245J74	ZENER DIODE-10V
VR449	4802245J74	ZENER DIODE-10V
VR450	4802245J74	ZENER DIODE-10V
VR460	4802245J73	ZENER DIODE-6.8V
VR501	4802245J73	ZENER DIODE-6.8V
VR506	4802245J73	ZENER DIODE-6.8V
Y3200	9186153B01	Crystal Filter
Y3761	4805875Z04	16.8MHz Xtal oscillator (SMD)
	5480678Z01	PCB Bar Code Label
	8486062B16	VHF main PC Board
	8486062B17	VHF main PC Board

* Motorola Depot Servicing only

Reference designators with an asterisk indicate components which are not field replaceable because they need to be calibrated with specialized factory equipment after installation. Radios in which these parts have been replaced in the field will be off frequency at temperature extremes.

14.0 VHF PCB 8486101B11 / Schematic



VHF (136-174 MHz) Main Board Top Side

VHF (136-174 MHz) Main Board Bot Side

15.0 VHF PCB 8486101B11 Parts List

Circuit Ref.	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup Contact, B +
B504	3980501Z01	Backup Contact, B -
C3200	2113743N31	16pF
C3201	NOTPLACED	
C3202	NOTPLACED	
C3203	2113743N50	100pF
C3204	2113743L41	10000pF
C3205	2113928N01	0.1uF
C3206	2113743L41	10000pF
C3207	2113743N10	2.2pF
C3208	NOTPLACED	
C3209	2311049A07	1uF
C3210	2113743L17	1000pF
C3211	2311049A56	4.7uF
C3212	2311049A57	10uF
C3213	2311049A56	4.7uF
C3214	2113928N01	0.1uF
C3215	2113743N26	10pF
C3218	2311049A56	4.7uF
C3219	2113928N01	0.1uF
C3220	2113743N26	10pF
C3221	2113743L41	10000pF
C3222	2113928N01	0.1uF
C3223	2113928N01	0.1uF
C3224	2113928N01	0.1uF
C3225	2113928N01	0.1uF
C3226	2113928N01	0.1uF
C3227	2113743L41	10000pF
C3228	2113743L41	10000pF
C3229	2113743N50	100pF
C3230	2113740F51	100
C3231	2180478Z20	1uF
C3232	2180478Z20	1uF
C3233	2180478Z20	1uF
C3234	2180478Z20	1uF
C3235	2113743A23	0.220uF
C3236	NOTPLACED	
C3237	NOTPLACED	
C3238	2113743A24	0.330uF
C3239	2113743E07	0.022uF
C3240	2113743A23	0.220uF
C3241	2113743L19	1200pF
C3242	2109720D14	0.1uF
C3243	2113743E07	0.022uF
C3244	2113743L41	10000pF
C3270	2113743E07	0.022uF
C3271	2113743L05	330pF
C3272	2113743N18	4.7pF
C3273	2113743N26	10pF
C3274	2113743N38	33pF
C3275	2113743N44	56pF
C3276	2113743N42	47pF
C3277	2113743N48	82pF
C3278	2113743E07	0.022uF
C3279	2311049A40	2.2uF
C3280	2113743L41	10000pF
C3301	2113743N20	5.6pF
C3302	2113743N54	150pF
C3303	2113743N30	15pF
C3304	2113743N54	150pF
C3305	NOTPLACED	
C3306	2113928N01	0.1uF
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113928N01	0.1uF
C3310	NOTPLACED	
C3311	2113743N54	150pF
C3312	2113743N31	16pF
C3313	2113743N54	150pF
C3314	NOTPLACED	
C3315	2113743N26	10pF
C3316	2113743N14	3.3pF
C3317	2113743N40	39pF
C3318	2113743M08	22000pF
C3319	NOTPLACED	
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF
C3326	NOTPLACED	
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A96	33uF
C3337	2113743M08	22000pF
C3338	2113743L09	470pF
C3339	2113743N26	10pF
C3501	2113743L05	330pF
C3502	2113743N38	33pF
C3503	2113743N38	33pF
C3504	2113743M08	22000pF
C3505	2113743N38	33pF
C3508	2113743M08	22000pF
C3509	2113743L05	330pF
C3512	2113740F43	47
C3513	2113740F38	30
C3514	2113740F47	68
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F47	68
C3518	NOTPLACED	
C3519	NOTPLACED	
C3521	2111078B51	220
C3523	2111078B44	120
C3524	2113740F34	20
C3525	2113740F27	10
C3526	2113743M08	22000pF
C3527	NOTPLACED	
C3528	2113740F27	10
C3531	2113740F36	24
C3532	2113740F52	110
C3533	2113740F24	7.5
C3534	2113740F23	6.8
C3535	2113740F37	27
C3536	2113740F31	15
C3537	2113740F33	18
C3539	2113740F29	12
C3541	2113743M08	22000pF
C3542	2113743L05	330pF
C3543	2113743M08	22000pF
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	22000pF
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1uF
C3561	2113743M08	22000pF
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF
C3564	2113743L01	220pF
C3565	2113743E07	0.022uF
C3566	2113743N50	100pF
C3567	2113743L05	330pF
C3568	2113743L29	3300pF
C3569	2113743M08	22000pF
C3570	2113743L05	330pF
C3571	2113743L09	470pF
C3701	2113743L41	10000pF
C3702	2113743L41	10000pF
C3703	2113743L41	10000pF
C3704	2113743L41	10000pF
C3705	2113743E20	0.1uF
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113928N01	0.1uF
C3709	2113928N01	0.1uF
C3710	2104993J02	2.2uF
C3711	2311049A69	10uF
C3712	2113928N01	0.1uF
C3713	2311049A09	2.2uF
C3714	2311049J11	4.7uF
C3715	2113743L09	470pF
C3721	2113743E20	0.1uF
C3722	2113743E20	0.1uF
C3724	2311049A08	1uF
C3725	NOTPLACED	
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	10000pF
C3732	2113743L41	10000pF
C3733	2104993J02	2.2uF
C3734	2113743L41	10000pF
C3735	NOTPLACED	
C3741	NOTPLACED	
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3751	NOTPLACED	
C3752	2113743L17	1000pF
C3753	2311049A56	4.7uF
C3754	2113928N01	0.1uF
C3755	2104993J02	2.2uF
C3761	2113743N42	47pF
C3762	2113740F63	330
C3763	NOTPLACED	
C3801	2113743N18	4.7pF
C3802	NOTPLACED	

Circuit Ref.	Motorola Part No.	Description
C3803	2113743L17	1000pF
C3804	2113743E20	0.1uF
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3810	NOTPLACED	
C3811	2113928N01	0.1uF
C3812	2113928N01	0.1uF
C3813	2113743L41	10000pF
C3815	2113743L17	1000pF
C3816	2113743N22	6.8pF
C3818	2113743E07	0.022uF
C3821	2113743L41	10000pF
C3822	2113743L17	1000pF
C3823	2113743L41	10000pF
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	0.022uF
C3828	2185895Z01	0.01uF
C3829	2185895Z01	0.01uF
C3830	2113743N46	68pF
C3832	2113743L17	1000pF
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF
C3836	2113743N30	15pF
C3842	2113743L17	1000pF
C400	2113743L41	10000pF
C4001	NOTPLACED	
C4002	NOTPLACED	
C4003	NOTPLACED	
C4004	NOTPLACED	
C4005	NOTPLACED	
C4007	NOTPLACED	
C4008	NOTPLACED	
C4009	NOTPLACED	
C401	2113928N01	0.1uF
C4010	NOTPLACED	
C4011	NOTPLACED	
C4012	NOTPLACED	
C4013	NOTPLACED	
C4014	NOTPLACED	
C4015	NOTPLACED	
C4016	NOTPLACED	
C402	2113928N01	0.1uF

Circuit Ref.	Motorola Part No.	Description
C4020	2113743L17	1000pF
C4021	2113743L17	1000pF
C403	2113743G24	2.2uF
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113928N01	0.1uF
C410	2113928N01	0.1uF
C411	2113928N01	0.1uF
C414	2113928N01	0.1uF
C415	2185895Z01	0.01uF
C416	2113928N01	0.1uF
C419	2113743L41	10000pF
C420	2113743L41	10000pF
C421	2113928N01	0.1uF
C422	2113928N01	0.1uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113928N01	0.1uF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113928N01	0.1uF
C429	2113928N01	0.1uF
C430	2113928N01	0.1uF
C431	2113743N50	100pF
C432	NOTPLACED	
C433	2113743L41	10000pF
C434	2113928N01	0.1uF
C435	2113928N01	0.1uF
C436	2113743N34	22pF
C437	2113743N34	22pF
C440	2113743G26	4.7uF
C441	2113743L09	470pF
C442	2113743E20	0.1uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743L09	470pF
C446	2113743L09	470pF
C447	2113928N01	0.1uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOTPLACED	
C451	2113743M08	22000pF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF

Circuit Ref.	Motorola Part No.	Description
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743L09	470pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C474	2113743L41	10000pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C477	2113743L17	1000pF
C478	2113743L17	1000pF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF
C483	2113743L09	470pF
C484	2113743L09	470pF
C490	2113743L09	470pF
C491	2113743L09	470pF
C492	2113743L09	470pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743L09	470pF
C496	2113743L09	470pF
C497	2113743L09	470pF
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF
C521	2113743L41	10000pF
C522	2113743L41	10000pF
C523	2113743L41	10000pF
C535	2113743L17	1000pF
C601	NOTPLACED	
C602	NOTPLACED	
C603	NOTPLACED	
C701	2180478Z20	1uF
C702	2113928N01	0.1uF
C703	2113743N50	100pF
C704	2113928N01	0.1uF
C705	2113928N01	0.1uF
C706	NOTPLACED	
C707	2113928N01	0.1uF

Circuit Ref.	Motorola Part No.	Description
C708	2113928N01	0.1uF
C709	2113743L17	1000pF
C711	2113743L41	10000pF
C713	2113928N01	0.1uF
C714	2113928N01	0.1uF
C715	2113928N01	0.1uF
C717	2113928N01	0.1uF
C718	2113743L17	1000pF
C719	2113928N01	0.1uF
CR3301	4802245J42	Ring Quad Diode
CR3302	4805129M96	Dual Bonds Pin Diode
CR3303	4880154K03	Dual Schottky Diode
CR411	4802245J62	Schottky diode
CR412	4802245J62	Schottky diode
CR413	4802245J62	Schottky diode
CR440	4813833C02	Dual Common Cathode Diode
CR501	4880107R01	Rectifier
CR503	4805729G49	Red/Yellow LED
CR601	NOTPLACED	
CR700	4802245J47	Diode Schottky
D3270	4862824C01	Varactor
D3301	4802081B58	Dual Diode
D3302	4802081B58	Dual Diode
D3521	4880973Z02	Pin Diode
D3551	4880973Z02	Pin Diode
D3701	4802233J09	Triple diode
D3702	4802233J09	Triple diode
D3761	4862824C03	Varactor
D3821	4805649Q13	Varactor
D3831	4805649Q13	Varactor
D3832	4862824C01	Varactor
E400	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
FL401	4870368G02	Real Time Clock Oscillator Xtal 38.4kHz
H3501	2680499Z01	Heat Spreader
J3501	0985613Z01	RF Jack
J3502	0280519Z02	Antenna Nut
J400	0905505Y04	40-Pin Connector
J403	0905505Y02	20-Pin Connector
L3200	2462587N68	1000nH
L3201	NOTPLACED	
L3202	2462587N68	1000nH
L3221	2462587N68	1000nH
L3270	2462587T15	100nH
L3271	2462587Q20	2,200nH

Circuit Ref.	Motorola Part No.	Description
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH
L3501	2413926H09	5.6nH
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH
L3512	2479990B01	11.03nH
L3513	2479990A02	7.66nH
L3515	2479990C03	13.85nH
L3518	NOTPLACED	
L3519	2484657R01	Ferrite Bead
L3521	2479990A02	7.66nH
L3522	2479990E01	23.75nH
L3523	2462587N68	1000nH
L3531	2479990N01	43.67nH
L3532	2479990N01	43.67nH
L3538	2479990M01	30.54nH
L3551	2479990N01	43.67nH
L3552	2479990A02	7.66nH
L3701	2462587Q42	390nH
L3731	2462587Q20	2,200nH
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1000nH
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1000nH
L3825	2462587V34	100nH
L3826	2462587N68	1000nH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1000nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH

Circuit Ref.	Motorola Part No.	Description
L505	2462587Q42	390nH
L601	NOTPLACED	
M100	7585651Z01	EMI Pad
M101	7585651Z01	EMI Pad
M300	7585651Z01	EMI Pad
M301	7585651Z01	EMI Pad
M400	7585651Z01	EMI Pad
M401	7585651Z01	EMI Pad
PB501	4080523Z02	Tactile Switch
PB502	4080523Z02	Tactile Switch
PB503	4080523Z02	Tactile Switch
PB504	4080523Z02	Tactile Switch
PB505	4080523Z02	Tactile Switch
Q3200	4802197J95	NPN Transistor
Q3201	4880214G02	NPN Transistor
Q3202	4880214G02	NPN Transistor
Q3270	4805218N63	RF NPN Transistor
Q3301	4880214G02	NPN Transistor
Q3302	4802197J95	NPN Transistor
Q3501	4813828A08	RF Power Amplifier
Q3561	4813824A17	PNP Transistor
Q3721	4809939C05	DUAL NPN/PNP Transistor
Q3801	4802197J95	NPN Transistor
Q400	4809579E18	MOSFET P-Channel
Q403	4813824A17	NPN Transistor
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
Q416	4809579E18	MOSFET P-Channel
Q417	4809939C05	DUAL NPN/PNP Transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor
R3200	0662057M54	150
R3201	0662057M82	2.2K
R3202	0662057M90	4.7K
R3203	0662057M98	10K
R3204	0662057M26	10
R3205	0662057M74	1K
R3206	0662057N23	100K
R3207	0662057N13	39K
R3208	0662057M50	100
R3209	0662057M74	1K
R3210	0662057M82	2.2K
R3211	0662057M82	2.2K
R3212	0662057M90	4.7K
R3213	0662057M82	2.2K
R3214	0662057M34	22
R3215	NOTPLACED	

Circuit Ref.	Motorola Part No.	Description
R3218	NOTPLACED	
R3219	0662057M50	100
R3220	0662057M90	4.7K
R3221	0662057M50	100
R3222	NOTPLACED	
R3223	NOTPLACED	
R3224	0662057M26	10
R3225	0662057M74	1K
R3226	0662057M26	10
R3270	0662057M74	1K
R3271	0662057M42	47
R3272	0662057N15	47K
R3273	0662057N15	47K
R3274	0662057M83	2.4K
R3275	0662057M74	1K
R3276	0662057N30	200K
R3301	NOTPLACED	
R3303	0662057N23	100K
R3304	0662057N23	100K
R3305	0662057N19	68K
R3306	0662057M82	2.2K
R3307	0662057N11	33K
R3308	0662057M78	1.5K
R3309	0662057M92	5.6K
R3310	0662057M98	10K
R3311	0662057M26	10
R3312	0662057M38	33
R3313	0662057M34	22
R3314	0662057M26	10
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3319	NOTPLACED	
R3320	NOTPLACED	
R3321	0662057M54	150
R3322	0662057M58	220
R3323	0662057M32	18
R3324	0662057M58	220
R3501	0662057M61	300
R3502	0662057M32	18
R3503	0662057M61	300
R3505	0662057M62	330
R3506	0662057B62	3.9
R3507	0662057B62	3.9
R3512	NOTPLACED	
R3513	NOTPLACED	

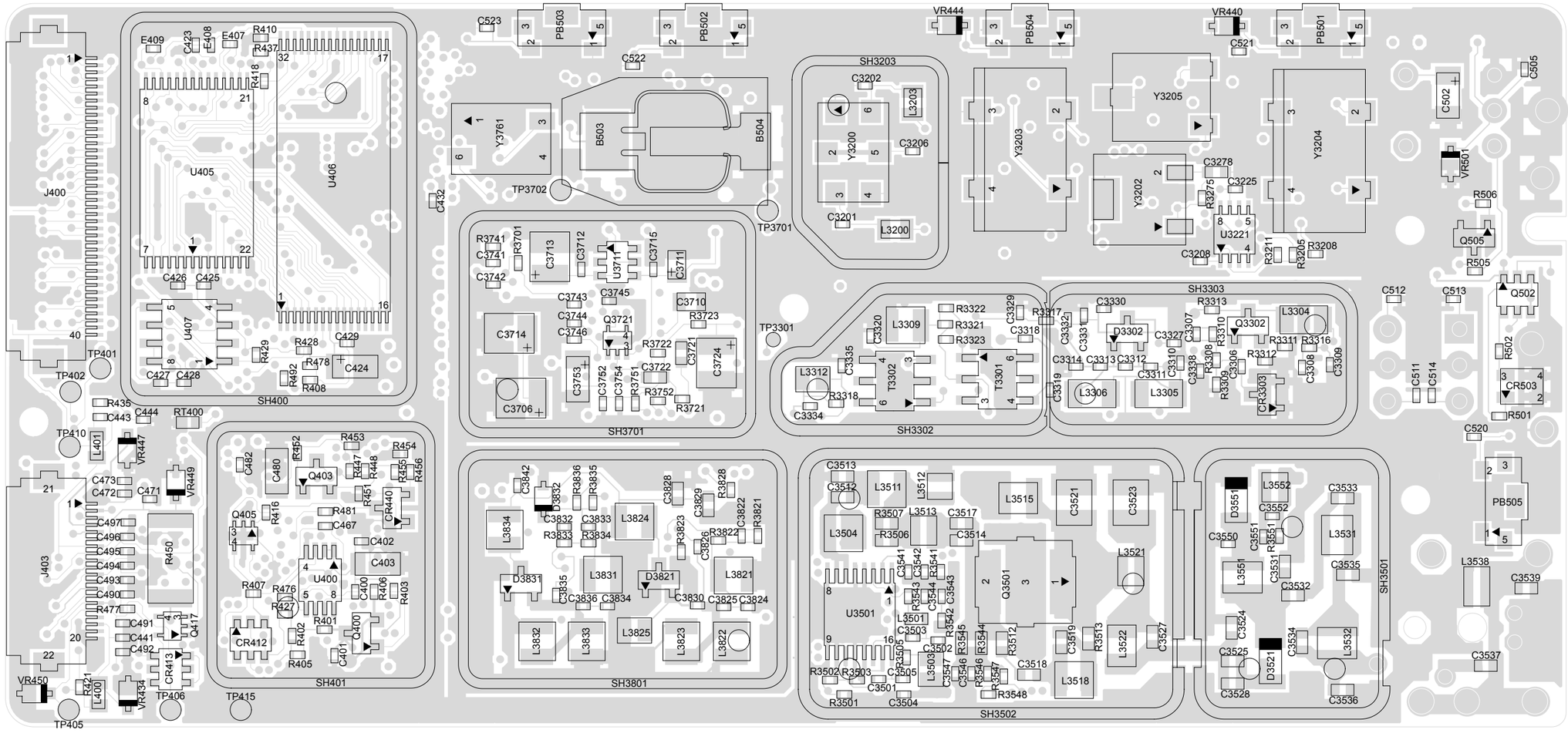
Circuit Ref.	Motorola Part No.	Description
R3519	0680539Z01	0.1
R3541	0662057N13	39K
R3542	0662057M92	5.6K
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N01	12K
R3547	0662057N11	33K
R3548	0662057N07	22K
R3551	0662057M40	39
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3565	NOTPLACED	
R3566	NOTPLACED	
R3569	0662057M92	5.6K
R3570	0662057M98	10K
R3571	0662057A27	120
R3572	0662057A27	120
R3573	0662057A27	120
R3701	0662057M50	100
R3702	NOTPLACED	
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R3721	0662057M66	470
R3722	0662057M68	560
R3723	0662057M50	100
R3726	NOTPLACED	
R3727	0662057N23	100K
R3741	0662057M50	100
R3751	0662057N30	200K
R3752	0662057N29	180K
R3760	NOTPLACED	
R3761	0662057N15	47K
R3762	NOTPLACED	
R3763	NOTPLACED	
R3801	NOTPLACED	
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10K
R3805	0662057N08	24K
R3806	0662057M34	22
R3807	NOTPLACED	
R3808	0662057M26	10
R3811	0662057M50	100

Circuit Ref.	Motorola Part No.	Description
R3812	NOTPLACED	
R3816	0662057M74	1K
R3817	0662057M01	0
R3818	NOTPLACED	
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100
R3829	0662057M01	0
R3830	NOTPLACED	
R3831	0662057M98	10K
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47
R3835	0662057N15	47K
R3836	0662057M98	10K
R400	0662057N15	47K
R4001	0662057M74	1K
R4002	0662057M74	1K
R4003	0662057M74	1K
R4004	0662057M74	1K
R4005	0662057M74	1K
R4006	0662057M74	1K
R4007	0662057M74	1K
R4008	0662057M74	1K
R4009	0662057M74	1K
R401	0662057M01	0
R402	NOTPLACED	
R403	NOTPLACED	
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	NOTPLACED	
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057M98	10K
R418	0662057M01	0
R419	0662057M67	510
R420	0662057B46	10M
R421	0662057M81	2K
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K
R427	0662057M84	2.7K
R428	0662057M10	2.2
R429	0662057N20	75K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2K
R436	0662057M01	0
R437	NOTPLACED	
R445	0662057N08	24K
R447	0662057N23	100K
R448	0662057M98	10K
R449	0662057N08	24K
R450	0683962T45	68
R451	0662057N03	15K
R452	0662057N23	100K
R453	NOTPLACED	
R454	NOTPLACED	
R455	NOTPLACED	
R456	0662057M01	0
R457	0662057M98	10K
R460	0662057M90	4.7K
R461	0662057M56	180
R462	0662057M98	10K
R463	0662057M61	300
R471	0662057N06	20K
R472	0662057M93	6.2K
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330K
R477	0662057M74	1K
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R498	0662057M98	10K
R499	0662057M98	10K
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
R625	NOTPLACED	
R626	NOTPLACED	
R627	NOTPLACED	
R701	0662057N05	18K
R702	0662057N05	18K
R703	0662057M74	1K
R704	0662057N13	39K
R705	0662057N13	39K
R706	0662057N17	56K
R707	0662057M91	5.1K
R708	0662057N41	560K
R709	0662057N47	1M
R710	0662057N39	470K
R716	0662057N01	12K
R717	0662057M82	2.2K
RT3301	NOTPLACED	
RT400	0680590Z01	THERMISTOR_33K
S501	4080710Z02	Frequency Switch
S502	1880619Z02	POTENTIOMETER (VOLUME)
SH3201	2602023X08	Rx Backend Top Shield
SH3202	2686081B02	LVZIF shields
SH3203	2686081B03	45.1MHz Xtal Filter Shield
SH3301	2686081B01	Receiver Front-End Bottom Shield
SH3302	2686081B05	Mixer Shield
SH3303	2686081B06	Receiver Front-End Top Shield
SH3501	2686081B03	Harmonic Filter Shield
SH3502	2686081B04	PA driver Shield
SH3701	2680511Z01	Synthesizer Top Shield
SH3702	2680511Z01	Synthesizer Bottom Shield
SH3801	2680513Z01	VCO Resonators Shield
SH3802	2680514Z01	VCO Buffer IC Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On-off Shield
SH402	2680515Z01	Microprocessor Shield
SH403	2680516Z01	Asfic_Cmp, Audio PA Shield
SH701	2680677Z01	Voice Storage Shield
T3301	2580541Z02	Balun Transformer
T3302	2580541Z02	Balun Transformer
U3201	5102463J58	3.3V Regulator
U3220	5109632D83	LVZIF IC
U3501	5185130C65	LDMOS Driver IC
U3502	5185765B26	PCIC
U3503	5185963A15	Temperature sensor
U3701	5185963A27	LVFRACN Synthesizer IC
U3711	5105739X05	5V Regulator
U3801	5105750U54	VCO BUFFER IC
U400	5102463J40	3.3V Regulator
U404	5185130C53	ASFIC_CMP IC
U405	5102463J36	Static RAM_32K X 8
U406	5102463J60	Flash ROM_512K X 8
U407	5102495J05	EEPROM_16K X 8
U409	5102226J56	Micro Processor
U410	5102463J57	3.3V Regulator
U420	5102463J44	Audio PA
U601	NOTPLACED	
U700	5185770M01	IC Voice Storage
U710	5102463J52	QUAD ANALOG SWITCH IC
U720	5113818A01	SING Supply IC
VR3501	4880140L17	ZENER DIODE - 12V
VR432	4805656W08	5.6V Zener diode
VR433	4805656W08	5.6V Zener diode
VR434	4802245J73	ZENER DIODE-6.8V
VR439	4880140L17	ZENER DIODE - 12V
VR440	NOTPLACED	
VR441	NOTPLACED	
VR442	NOTPLACED	
VR444	NOTPLACED	
VR447	4802245J74	ZENER DIODE-10V
VR448	4802245J74	ZENER DIODE-10V
VR449	4802245J74	ZENER DIODE-10V
VR450	4802245J75	ZENER DIODE-12V
VR460	4802245J73	ZENER DIODE-6.8V
VR483	4802245J74	ZENER DIODE-10V
VR484	4802245J74	ZENER DIODE-10V
VR501	4802245J73	ZENER DIODE-6.8V
VR506	4802245J73	ZENER DIODE-6.8V
Y3200	9186153B01	Crystal Filter
Y3761	4805875Z04	16.8MHz Xtal Oscillator
Y3762	NOTPLACED	
	8486101B11	VHF GP1280 Main PC Board

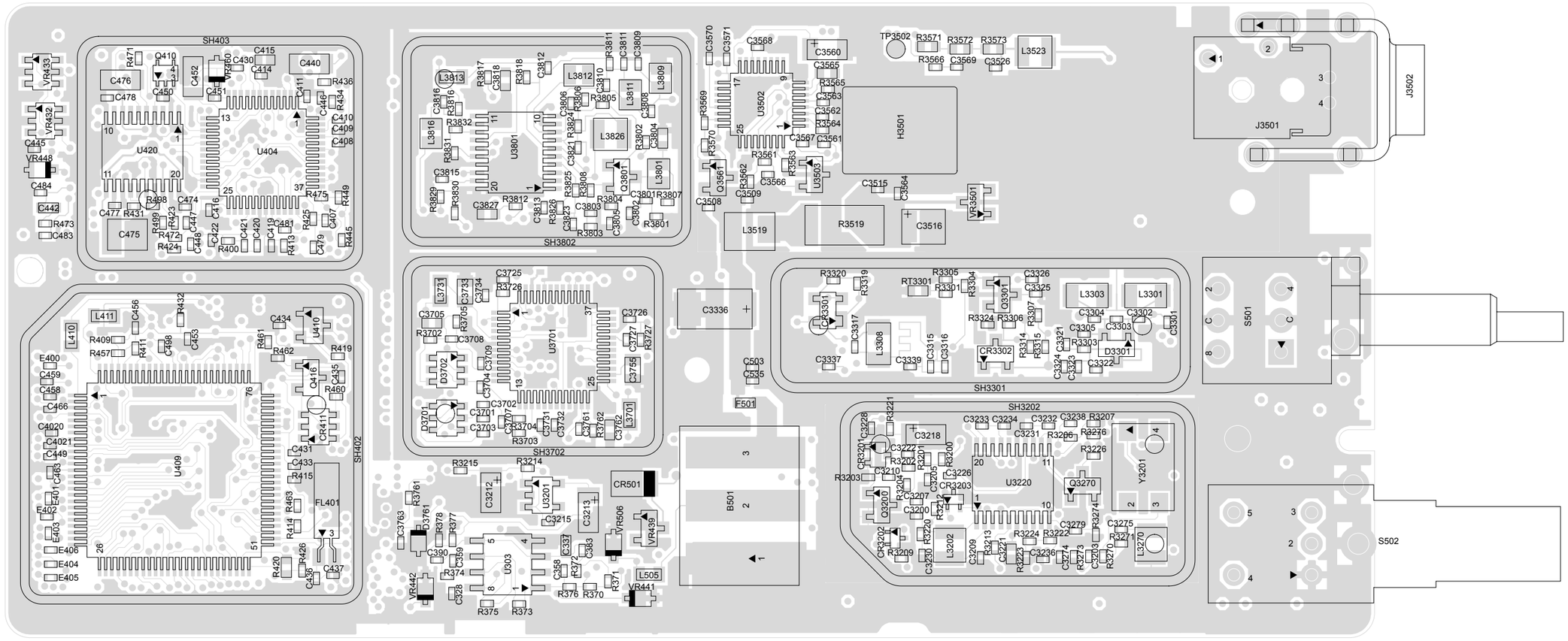
* Motorola Depot Servicing only

Reference designators with an asterisk indicate components which are not field replaceable because they need to be calibrated with specialized factory equipment after installation. Radios in which these parts have been replaced in the field will be off frequency at temperature extremes.

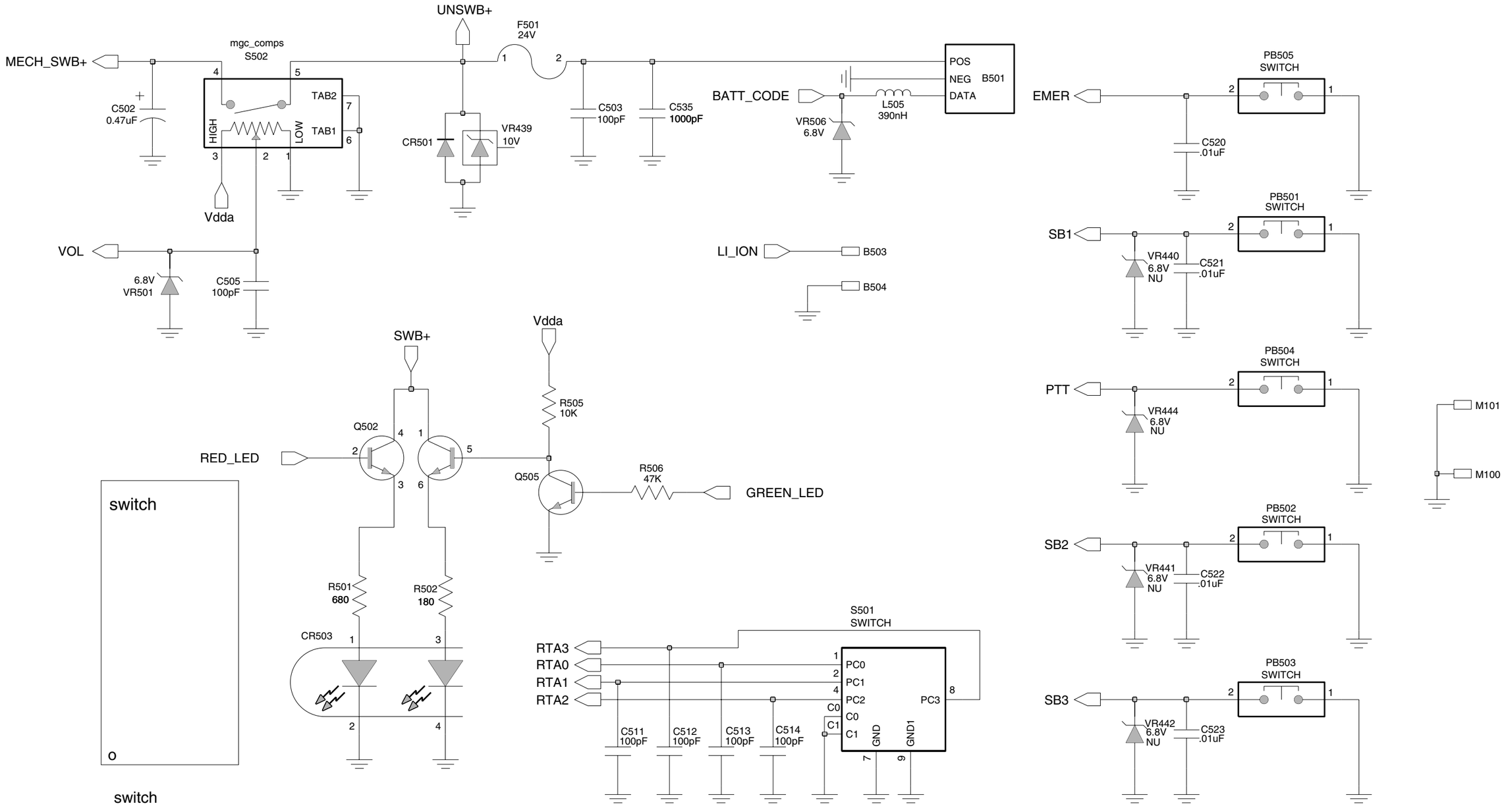
16.0 VHF PCB 8486473Z04 / Schematics



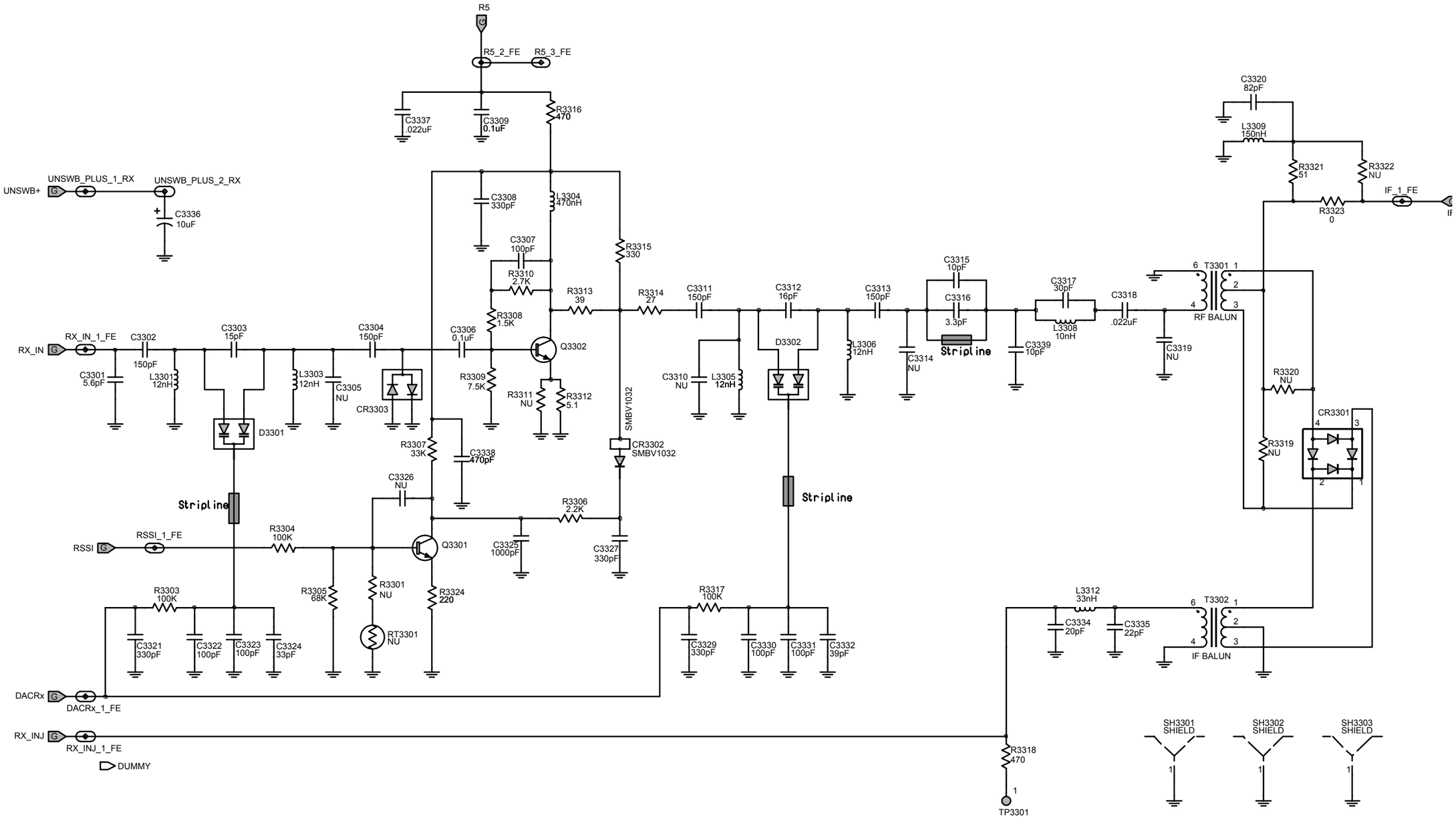
VHF (136-174 MHz) Main Board Top Side



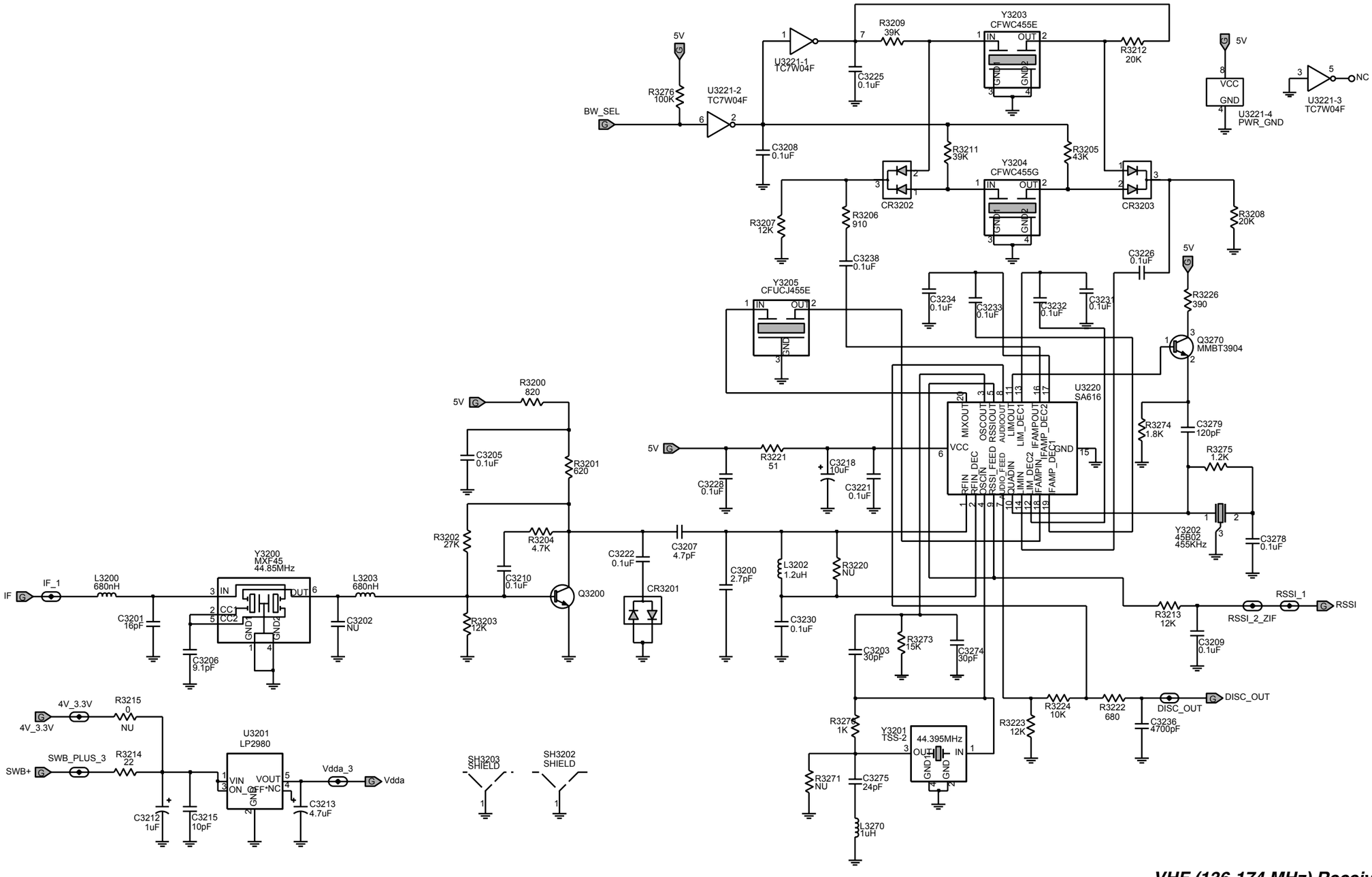
VHF (136-174 MHz) Main Board Bottom Side



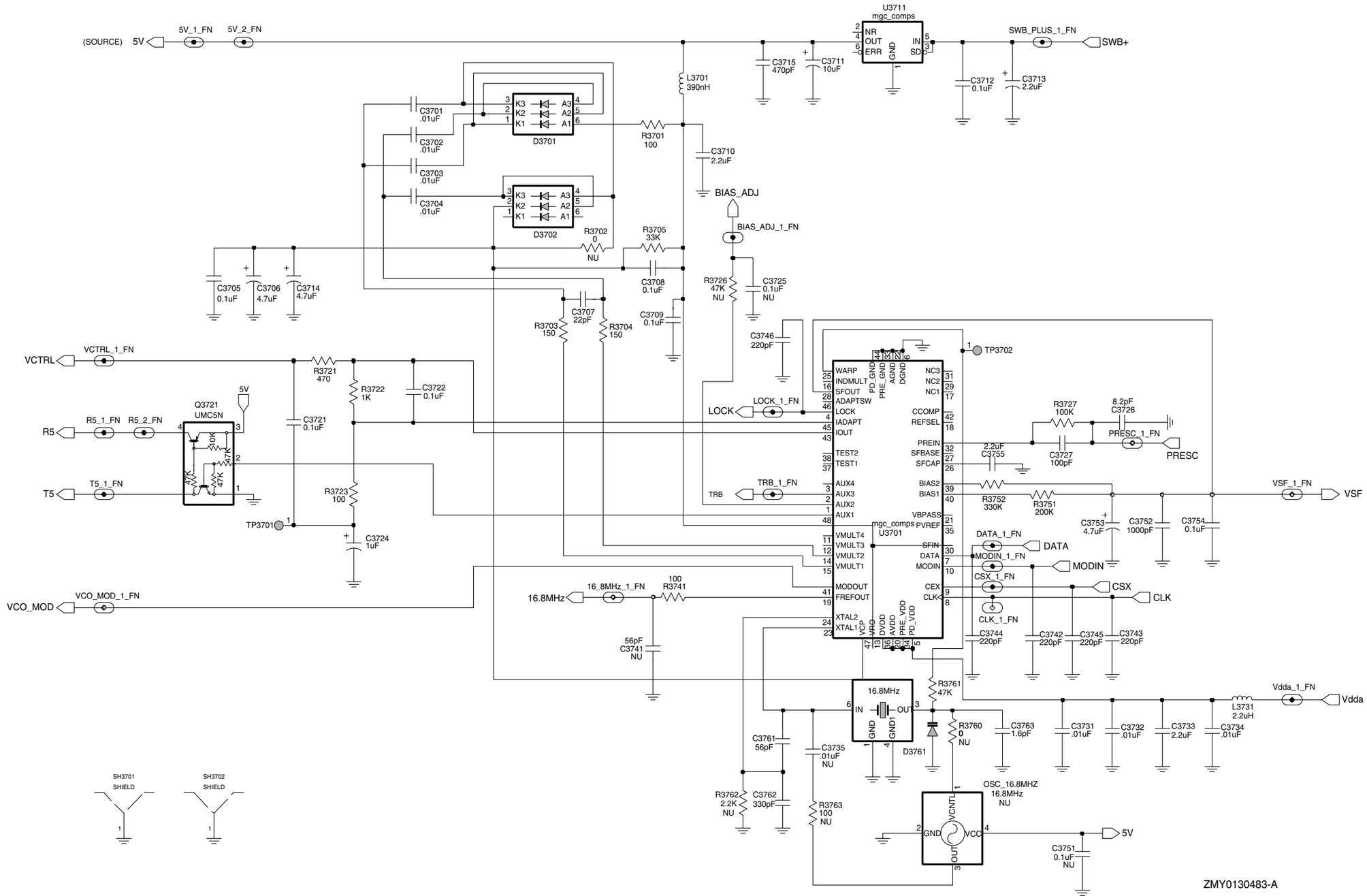
VHF (136-174 MHz) Controls and Switches



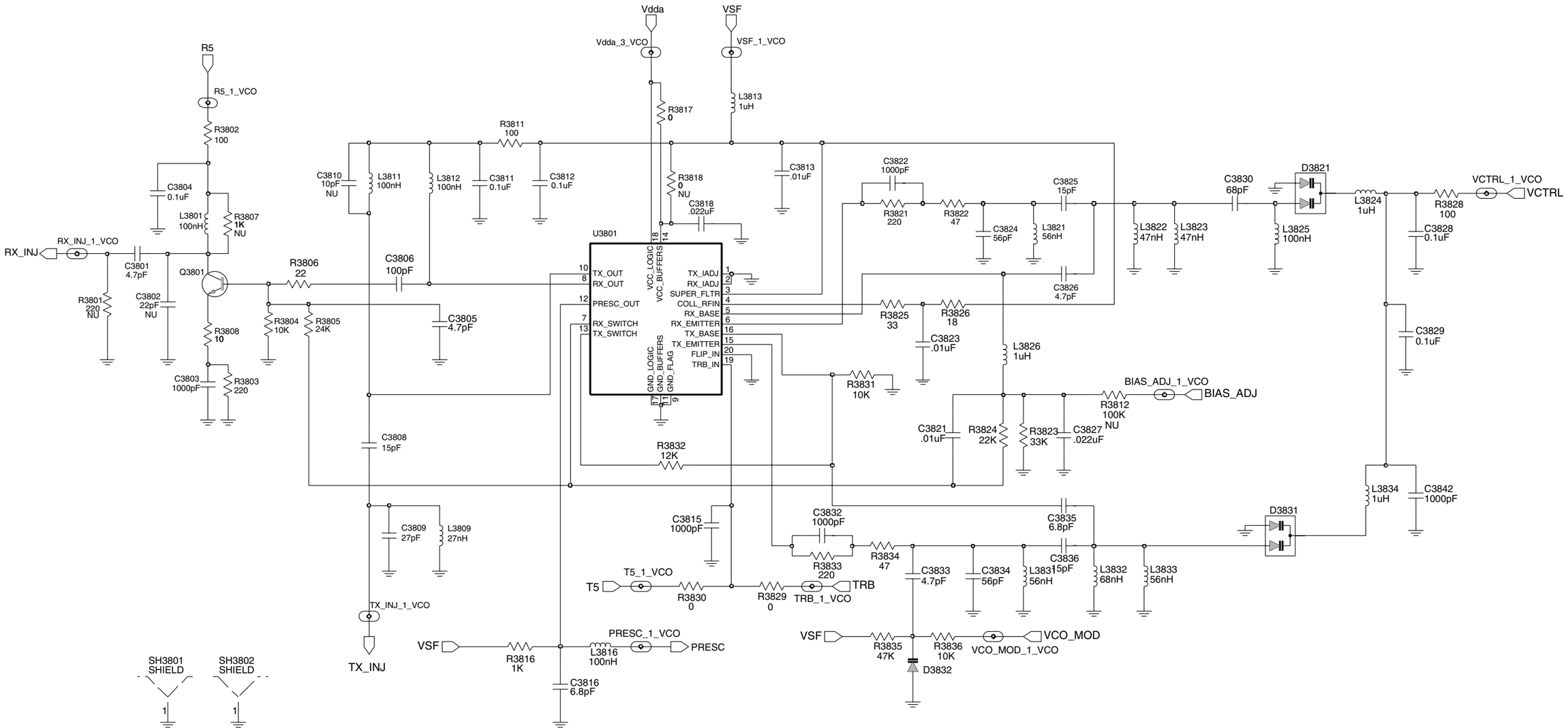
VHF (136-174 MHz) Receiver Front End



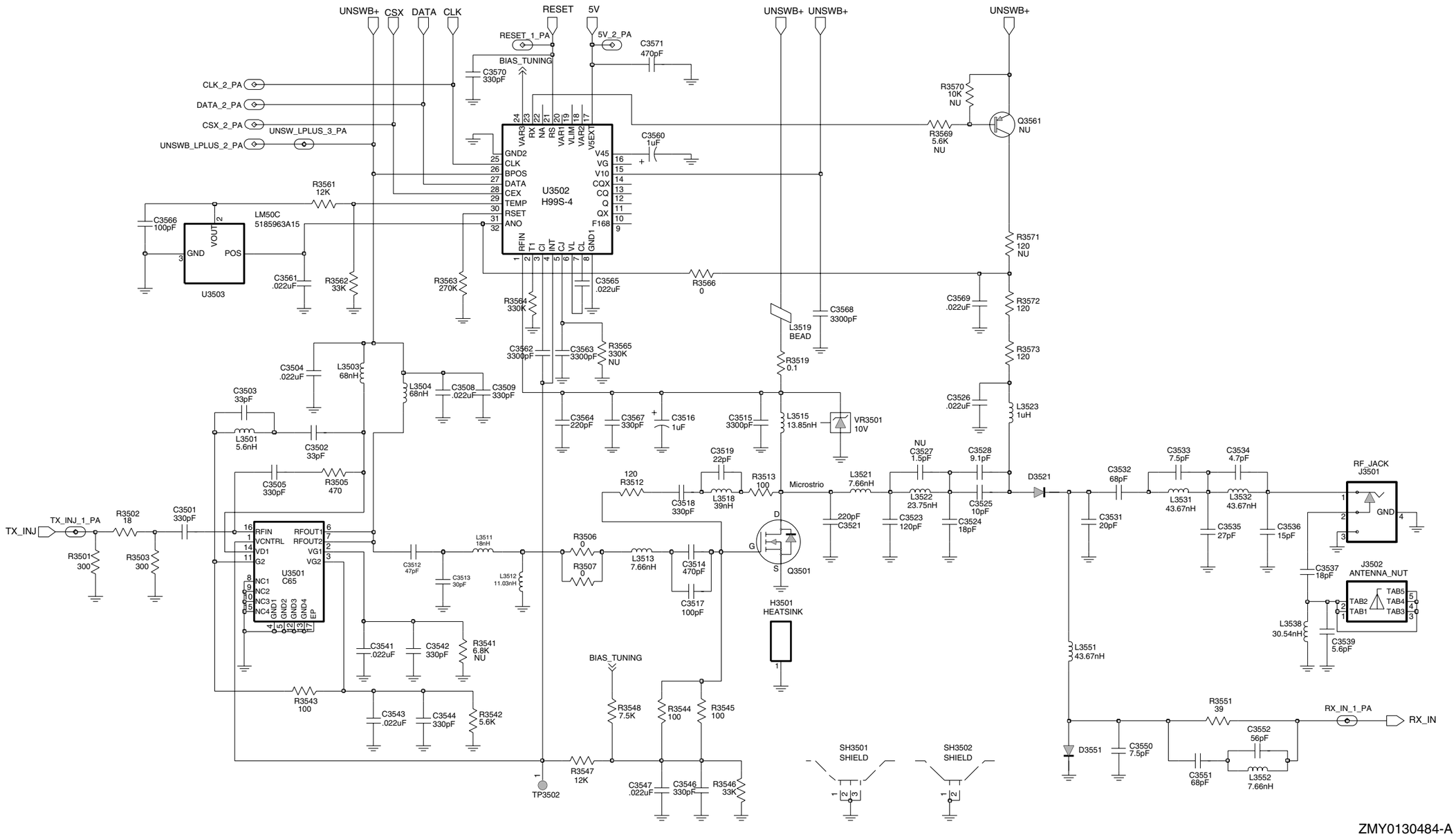
VHF (136-174 MHz) Receiver Back End



VHF (136-174 MHz) Synthesizer



VHF (136-174 MHz) Voltage Controlled Oscillator



ZMY0130484-A

VHF (136-174 MHz) Transmitter

17.0 VHF PCB 8486473Z04 Radio Parts List

Circuit Ref	Motorola Part No.	Description
B501	0986237A02	Battery Contact Module
B503	3980502Z01	Backup Contact, B + (not placed in non-display radios)
B504	3980501Z01	Backup Contact, B - (not placed in non-display radios)
C3200	2113743N12	2.7pF
C3201	2113743N31	16pF
C3202	NOT PLACED	
C3203	2113743N37	30pF
C3205	2113743M24	100000pF
C3206	2109445U26	9.1
C3207	2113743N18	4.7pF
C3208	2113743M24	100000pF
C3209	2113743M24	100000pF
C3210	2113743M24	100000pF
C3212	2311049A07	1uF
C3213	2311049A56	4.7uF
C3215	2113743N26	10pF
C3218	2311049A59	10uF
C3221	2113743E20	0.1uF
C3222	2113743M24	100000pF
C3225	2113743M24	100000pF
C3226	2113743M24	100000pF
C3228	2113743M24	100000pF
C3230	2113743M24	100000pF
C3231	2113743M24	100000pF
C3232	2113743M24	100000pF
C3233	2113743M24	100000pF
C3234	2113743M24	100000pF
C3236	2113743L33	4700pF
C3238	2113743M24	100000pF
C3274	2113743N37	30pF
C3275	2113743N35	24pF
C3278	2113743E20	0.1uF
C3279	2113743N52	120pF
C328	2113743M24	100000pF
C3301	2113743N20	5.6pF
C3302	2113743N54	150pF
C3303	2113743N30	15pF
C3304	2113743N54	150pF
C3305	NOT PLACED	
C3306	2113928N01	0.1uF
C3307	2113743N50	100pF
C3308	2113743L05	330pF
C3309	2113928N01	0.1uF
C3310	NOT PLACED	
C3311	2113743N54	150pF
C3312	2113743N31	16pF
C3313	2113743N54	150pF
C3314	NOT PLACED	
C3315	2113743N26	10pF
C3316	2113743N14	3.3pF
C3317	2113743N37	30pF
C3318	2113743M08	22000pF
C3319	NOT PLACED	
C3320	2113743N48	82pF
C3321	2113743L05	330pF
C3322	2113743N50	100pF
C3323	2113743N50	100pF
C3324	2113743N38	33pF
C3325	2113743L17	1000pF
C3326	NOT PLACED	
C3327	2113743L05	330pF
C3329	2113743L05	330pF
C3330	2113743N50	100pF
C3331	2113743N50	100pF
C3332	2113743N40	39pF
C3334	2113743N33	20pF
C3335	2113743N34	22pF
C3336	2311049A96	33uF
C3337	2113743M08	22000pF
C3338	2113743L09	470pF
C3339	2113743N26	10pF
C337	2113928P04	1uF
C3501	2113743L05	330pF
C3502	2113743N38	33pF
C3503	2113743N38	33pF
C3504	2113743M08	22000pF
C3505	2113743N38	33pF
C3508	2113743M08	22000pF
C3509	2113743L05	330pF
C3512	2113740F43	47pF
C3513	2113740F38	30pF
C3514	2113740F47	68pF
C3515	2113743L29	3300pF
C3516	2311049A08	1uF
C3517	2113740F47	68pF
C3518	NOT PLACED	
C3519	NOT PLACED	
C3521	2111078B51	220pF
C3523	2111078B44	120pF
C3524	2113740F34	20pF
C3525	2113740F27	10pF
C3526	2113743M08	22000pF
C3527	NOT PLACED	
C3528	2113740F27	10pF
C3531	2113740F34	20pF
C3532	2113740F47	68pF
C3533	2113740F24	7.5pF
C3534	2113740F19	4.7pF
C3535	2113740F37	27pF
C3536	2113740F31	15pF
C3537	2113740F33	18pF
C3539	2113740F29	12pF
C3541	2113743M08	22000pF
C3542	2113743L05	330pF
C3543	2113743M08	22000pF
C3544	2113743L05	330pF
C3546	2113743L05	330pF
C3547	2113743M08	22000pF
C3550	2113743N23	7.5pF
C3551	2113743N46	68pF
C3552	2113743N44	56pF
C3560	2311049A07	1uF
C3561	2113743M08	22000pF
C3562	2113743L29	3300pF
C3563	2113743L29	3300pF
C3564	2113743L01	220pF
C3565	2113743E07	0.022uF
C3566	2113743N50	100pF
C3567	2113743L05	330pF
C3568	2113743L29	3300pF
C3569	2113743M08	22000pF
C3570	2113743L05	330pF
C3571	2113743L09	470pF
C358	2113743N22	6.8pF
C359	2113743N31	16pF
C3701	2113743L41	10000pF
C3702	2113743L41	10000pF
C3703	2113743L41	10000pF
C3704	2113743L41	10000pF
C3705	2113743E20	0.1uF
C3706	2311049J11	4.7uF
C3707	2113743N34	22pF
C3708	2113928N01	0.1uF
C3709	2113928N01	0.1uF
C3710	2104993J02	2.2uF
C3711	2311049A69	10uF
C3712	2113928N01	0.1uF
C3713	2311049A09	2.2uF
C3714	2311049J11	4.7uF
C3715	2113743L09	470pF
C3721	2113743E20	0.1uF
C3722	2113743E20	0.1uF
C3724	2311049A08	1uF
C3725	NOT PLACED	
C3726	2113743N24	8.2pF
C3727	2113743N50	100pF
C3731	2113743L41	10000pF
C3732	2113743L41	10000pF
C3733	2104993J02	2.2uF

Circuit Ref	Motorola Part No.	Description
C3734	2113743L41	10000pF
C3741	NOT PLACED	
C3742	2113743L01	220pF
C3743	2113743L01	220pF
C3744	2113743L01	220pF
C3745	2113743L01	220pF
C3746	2113743L01	220pF
C3752	2113743L17	1000pF
C3753	2311049A56	4.7uF
C3754	2113928N01	0.1uF
C3755	2104993J02	2.2uF
C3761	2113743N42	47pF
C3762	2113740F63	330pF
C3763	NOT PLACED	
C3801	2113743N18	4.7pF
C3802	NOT PLACED	
C3803	2113743L17	1000pF
C3804	2113743E20	0.1uF
C3805	2113743N18	4.7pF
C3806	2113743N50	100pF
C3808	2113743N30	15pF
C3809	2113743N36	27pF
C3810	NOT PLACED	
C3811	2113928N01	0.1uF
C3812	2113928N01	0.1uF
C3813	2113743L41	10000pF
C3815	2113743L17	1000pF
C3816	2113743N22	6.8pF
C3818	2113743E07	0.022uF
C3821	2113743L41	10000pF
C3822	2113743L17	1000pF
C3823	2113743L41	10000pF
C3824	2113743N44	56pF
C3825	2113743N30	15pF
C3826	2113743N18	4.7pF
C3827	2113743E07	0.022uF
C3828	2185895Z01	0.01uF
C3829	2185895Z01	0.01uF

Circuit Ref	Motorola Part No.	Description
C383	2113743N43	51pF
C3830	2113743N46	68pF
C3832	2113743L17	1000pF
C3833	2113743N18	4.7pF
C3834	2113743N44	56pF
C3835	2113743N22	6.8pF
C3836	2113743N30	15pF
C3842	2113743L17	1000pF
C390	2113743N43	51pF
C400	2113743L41	10000pF
C401	2113928N01	0.1uF
C402	2113928N01	0.1uF
C4020	NOT PLACED	
C4021	NOT PLACED	
C403	2113743G24	2.2uF
C407	2113928N01	0.1uF
C408	2113743N50	100pF
C409	2113928N01	0.1uF
C410	2113928N01	0.1uF
C411	2113928N01	0.1uF
C414	2113928N01	0.1uF
C415	2185895Z01	0.01uF
C416	2113928N01	0.1uF
C419	2113743L41	10000pF
C420	2113743L41	10000pF
C421	2113928N01	0.1uF
C422	2113928N01	0.1uF
C423	2113743N50	100pF
C424	2311049A59	10uF
C425	2113928N01	0.1uF
C426	2113743N50	100pF
C427	2113743N50	100pF
C428	2113928N01	0.1uF
C429	2113928N01	0.1uF
C430	2113928N01	0.1uF
C431	2113743N50	100pF
C432	NOT PLACED	
C433	2113743L41	10000pF

Circuit Ref	Motorola Part No.	Description
C434	2113928N01	0.1uF (not placed in non-display radios)
C435	2113928N01	0.1uF
C436	2113743N34	22pF (not placed in non-display radios)
C437	2113743N34	22pF (not placed in non-display radios)
C440	2113743G26	4.7uF
C441	2113743L09	470pF
C442	2113743E20	0.1uF
C443	2113928N01	0.1uF
C444	2113743N50	100pF
C445	2113743L09	470pF
C446	2113743L09	470pF
C447	2113928N01	0.1uF
C448	2113928N01	0.1uF
C449	2113743N50	100pF
C450	NOT PLACED	
C451	2113743M08	22000pF
C452	2113743B29	1uF
C453	2113743N50	100pF
C456	2113743N50	100pF
C458	2113743N50	100pF
C459	2113743N50	100pF
C463	2113743N50	100pF
C466	2113743N50	100pF
C467	2113928N01	0.1uF
C471	2113743L09	470pF
C472	2113743L09	470pF
C473	2113743L09	470pF
C474	2113743L41	10000pF
C475	2113743H14	10uF
C476	2113928D08	10uF
C477	2113743L17	1000pF
C478	2113743L17	1000pF
C479	2113928N01	0.1uF
C480	2113928D08	10uF
C481	2113928N01	0.1uF
C482	2113928N01	0.1uF

Circuit Ref	Motorola Part No.	Description
C483	2113743L09	470pF
C484	2113743L09	470pF
C490	2113743L09	470pF
C491	2113743L09	470pF
C492	2113743L09	470pF
C493	2113743N50	100pF
C494	2113743N50	100pF
C495	2113743L09	470pF
C496	2113743L09	470pF
C497	2113743L09	470pF
C498	NOT PLACED	
C502	2311049A05	0.47uF
C503	2113743N50	100pF
C505	2113743N50	100pF
C511	2113743N50	100pF
C512	2113743N50	100pF
C513	2113743N50	100pF
C514	2113743N50	100pF
C520	2113743L41	10000pF
C521	2113743L41	10000pF
C522	2113743L41	10000pF
C523	2113743L41	10000pF
C535	2113743L17	1000pF
CR3201	4813825A19	Schottky Diode
CR3202	4802245J97	Band Switching Diode
CR3203	4802245J97	Band Switching Diode
CR3301	4802245J42	Ring Quad Diode
CR3302	4805129M96	Dual Diode
CR3303	4880154K03	Dual Diode
CR411	4802245J62	Schottkt Diode
CR412	4802245J62	Schottkt Diode
CR413	4802245J62	Schottkt Diode
CR440	4813833C02	Dual Diode
CR501	4880107R01	Rectifier
CR503	4805729G49	Red / Yellow LED
D3301	4802081B58	Dual Diode
D3302	4802081B58	Dual Diode
D3521	4880973Z02	Pin Diode

Circuit Ref	Motorola Part No.	Description
D3551	4880973Z02	Pin Diode
D3701	4802233J09	Triple Diode
D3702	4802233J09	Triple Diode
D3761	4862824C03	Varactor Diode
D3821	4805649Q13	Varactor Diode
D3831	4805649Q13	Varactor Diode
D3832	4862824C01	Varactor Diode
E400	2480640Z01	Ferrite Bead
E401	2480640Z01	Ferrite Bead
E402	2480640Z01	Ferrite Bead
E403	2480640Z01	Ferrite Bead
E404	2480640Z01	Ferrite Bead
E405	2480640Z01	Ferrite Bead
E406	2480640Z01	Ferrite Bead
E407	2480640Z01	Ferrite Bead
E408	2480640Z01	Ferrite Bead
E409	2480640Z01	Ferrite Bead
F501	6580542Z01	Fuse 3A
		Real Time Clock Xtal Oscillator
FL401	4870368G02	38.4kHz (not placed in non-display radios)
H3501	2680499Z01	Heat Spreader
J3501	0985613Z01	RF Jack
J3502	0280519Z02	Antenna Nut
J400	0905505Y04	40-Pin Connector
J403	0905505Y02	20-Pin Connector
L3200	2413926K33	680nH
L3202	2413923A25	1200nH
L3203	2413926K33	680nH
L3270	2462587N68	1000nH
L3301	2462587T35	12nH
L3303	2462587T35	12nH
L3304	2462587T23	470nH
L3305	2462587T35	12nH
L3306	2462587T35	12nH
L3308	2462587T34	10nH
L3309	2462587N55	150nH
L3312	2462587V28	33nH
L3501	2413926H09	5.6nH

Circuit Ref	Motorola Part No.	Description
L3503	2462587V32	68nH
L3504	2462587N51	68nH
L3511	2462587N44	18nH
L3512	2479990B01	11.03nH
L3513	2479990A02	7.66nH
L3515	2479990C03	1385nH
L3518	NOT PLACED	
L3519	2484657R01	Ferrite Bead
L3521	2479990A02	7.66nH
L3522	2479990E01	23.75nH
L3523	2462587N68	1000nH
L3531	2479990N01	43.67nH
L3532	2479990N01	43.67nH
L3538	2479990M01	30.54nH
L3551	2479990N01	43.67nH
L3552	2479990A02	7.66nH
L3701	2462587Q42	390nH
L3731	2462587Q20	2200nH
L3801	2462587V34	100nH
L3809	2462587V27	27nH
L3811	2462587V34	100nH
L3812	2462587V34	100nH
L3813	2462587Q47	1000nH
L3816	2462587V34	100nH
L3821	2462587N50	56nH
L3822	2462587N49	47nH
L3823	2462587N49	47nH
L3824	2462587N68	1000nH
L3825	2462587V34	100nH
L3826	2462587N68	1000nH
L3831	2462587N50	56nH
L3832	2462587N51	68nH
L3833	2462587N50	56nH
L3834	2462587N68	1000nH
L400	2462587Q42	390nH
L401	2462587Q42	390nH
L410	2462587Q42	390nH
L411	2462587Q42	390nH

Circuit Ref	Motorola Part No.	Description
L505	2462587Q42	390nH
PB501	4086470Z01	Tactile Switch
PB502	4086470Z01	Tactile Switch
PB503	4086470Z01	Tactile Switch
PB504	4086470Z01	Tactile Switch
PB505	4086470Z01	Tactile Switch
Q3200	4802197J95	NPN Transistor
Q3270	4813824A10	NPN Transistor
Q3301	4880214G02	NPN Transistor
Q3302	4802197J95	NPN Transistor
Q3501	4813828A08	RF Power Amplifier
Q3561	4813824A17	PNP Transistor
Q3721	4809939C05	Dual NPN/PNP Transistor
Q3801	4802197J95	NPN Transistor
Q400	4809579E18	MOSFET P-chan Transistor
Q403	4813824A17	PNP Transistor
Q405	4802245J54	Dual NPN Transistor
Q410	4802245J54	Dual NPN Transistor
		MOSFET P-chan Transistor
Q416	4809579E18	(not placed in non-display radios)
Q417	4809939C05	Dual NPN/PNP Transistor
Q502	5180159R01	Dual NPN Transistor
Q505	4880214G02	NPN Transistor
R3200	0662057M72	820
R3201	0662057M69	620
R3202	0662057N09	27K
R3203	0662057N01	12K
R3204	0662057M90	4700
R3205	0662057N06	20K
R3206	0662057M73	910
R3207	0662057N01	12K
R3208	0662057N06	20K
R3209	0662057N13	39K
R3211	0662057N13	39K
R3212	0662057N06	20K
R3213	0662057N01	12K
R3214	0662057M34	22
R3215	0662057M01	0

Circuit Ref	Motorola Part No.	Description
R3220	NOT PLACED	
R3221	0662057M43	51
R3222	0662057M70	680
R3223	0662057V04	12K
R3224	0662057V02	10K
R3226	0662057M64	390
R3270	0662057M74	1000
R3271	NOT PLACED	
R3273	0662057N03	15K
R3274	0662057M80	1800
R3275	0662057M76	1200
R3276	0662057N23	100K
R3301	NOT PLACED	
R3303	0662057N23	100K
R3304	0662057N23	100K
R3305	0662057N18	62K
R3306	0662057M82	2200
R3307	0662057N11	33K
R3308	0662057M78	1500
R3309	0662057M95	7500
R3310	0662057M84	2700
R3311	NOT PLACED	
R3312	0662057M19	5.1
R3313	0662057M40	39
R3314	0662057M35	24
R3315	0662057M62	330
R3316	0662057M66	470
R3317	0662057N23	100K
R3318	0662057M66	470
R3319	NOT PLACED	
R3320	NOT PLACED	
R3321	0662057M43	51
R3322	NOT PLACED	
R3323	0662057M01	0
R3324	0662057M58	220
R3501	0662057M61	300
R3502	0662057M32	18
R3503	0662057M61	300

Circuit Ref	Motorola Part No.	Description
R3505	0662057M62	330
R3506	0662057B62	3.9
R3507	0662057B62	3.9
R3512	NOT PLACED	
R3513	NOT PLACED	
R3519	0680539Z01	0.1
R3541	0662057N13	39K
R3542	0662057M92	5600
R3543	0662057M50	100
R3544	0662057A25	100
R3545	0662057A25	100
R3546	0662057N01	12K
R3547	0662057N11	33K
R3548	0662057N07	22K
R3551	0662057M40	39
R3561	0662057N01	12K
R3562	0662057N11	33K
R3563	0662057N33	270K
R3564	0662057N35	330K
R3565	NOT PLACED	
R3566	NOT PLACED	
R3569	0662057M92	5600
R3570	0662057M98	10K
R3571	0662057A27	120
R3572	0662057A27	120
R3573	0662057A27	120
R370	NOT PLACED	
R3701	0662057M50	100
R3702	NOT PLACED	
R3703	0662057M54	150
R3704	0662057M54	150
R3705	0662057N11	33K
R371	0662057N23	100K
R372	0662057N28	160K
R3721	0662057M66	470
R3722	0662057M68	560
R3723	0662057M50	100
R3726	NOT PLACED	
R3727	0662057N23	100K
R373	NOT PLACED	
R374	0662057N23	100K
R3741	0662057M50	100
R375	NOT PLACED	
R3751	0662057N30	200K
R3752	0662057N29	180K
R376	0662057M01	0
R3761	0662057N15	47K
R3762	NOT PLACED	
R377	0662057N23	100K
R378	0662057N23	100K
R3801	NOT PLACED	
R3802	0662057M50	100
R3803	0662057M58	220
R3804	0662057M98	10K
R3805	0662057N08	24K
R3806	0662057M34	22
R3807	NOT PLACED	
R3808	0662057M26	10
R3811	0662057M50	100
R3812	NOT PLACED	
R3816	0662057M74	1000
R3817	0662057M01	0
R3818	NOT PLACED	
R3821	0662057M58	220
R3822	0662057M42	47
R3823	0662057N11	33K
R3824	0662057N07	22K
R3825	0662057M38	33
R3826	0662057M32	18
R3828	0662057M50	100
R3829	0662057M01	0
R3830	NOT PLACED	
R3831	0662057M98	10K
R3832	0662057N01	12K
R3833	0662057M58	220
R3834	0662057M42	47
R3835	0662057N15	47K
R3836	0662057M98	10K
R400	0662057N15	47K
R401	0662057M01	0
R402	NOT PLACED	
R403	NOT PLACED	
R405	0662057M01	0
R406	0662057N20	75K
R407	0662057N19	68K
R408	NOT PLACED	
R409	0662057M98	10K
R410	0662057N23	100K
R411	0662057M98	10K
R413	0662057M01	0
R414	0662057V34	180K
R415	0662057V26	91K
R416	0662057M98	10K
R418	0662057M01	0
R419	0662057M67	510 (not placed in non-display radios)
R420	0662057B46	10M (not placed in non-display radios)
R421	0662057M81	2000
R423	0662057N21	82K
R424	0662057N12	36K
R425	0662057N10	30K
R426	0662057N35	330K (not placed in non-display radios)
R427	0662057M84	2700
R428	0662057M10	2.2
R429	0662057N20	75K
R431	0662057N39	470K
R432	0662057N16	51K
R434	0662057M62	330
R435	0662057M81	2000
R436	0662057M01	0
R437	NOT PLACED	
R445	0662057N08	24K
R447	0662057N23	100K
R448	0662057M98	10K
R449	0662057N08	24K
R450	0683962T45	68
R451	0662057N03	15K
R452	0662057N23	100K
R453	NOT PLACED	
R454	NOT PLACED	
R455	NOT PLACED	
R456	0662057M01	0
R457	0662057M98	10K
R460	0662057M90	4700
R461	0662057M56	180 (not placed in non-display radios)
R462	0662057M98	10K (not placed in non-display radios)
R463	0662057M61	300
R471	0662057N06	20K
R472	0662057M93	6200
R473	0662057M26	10
R475	0662057M01	0
R476	0662057N35	330K
R477	0662057M74	1000
R478	0662057M98	10K
R481	0662057N08	24K
R492	0662057M01	0
R498	0662057M98	10K
R499	0662057M98	10K
R501	0662057M70	680
R502	0662057M56	180
R505	0662057M98	10K
R506	0662057N15	47K
RT3301	NOT PLACED	
RT400	0680590Z01	Thermistor_33K
S501	4080710Z01	Frequency Switch (For non-display radios only)
S501	4080710Z02	Frequency Switch (For display radios only)
S502	1880619Z02	Volume / On-off Switch
SH3202	2686539Z01	IFIC Shield

Circuit Ref	Motorola Part No.	Description
SH3203	2686527Z01	Crystal Filter Shield
SH3301	2686081B01	Receiver Back-End Bottom Shield
SH3302	2686081B05	Mixer Diode Shield
SH3303	2686081B06	Receiver Front-End Shield
SH3501	2686081B03	Harmonic Filter Shield
SH3502	2686081B04	PA Shield
SH3701	2680511Z01	Synthesizer Top Shield
SH3702	2680511Z01	Synthesizer Bottom Shield
SH3801	2680513Z01	VCO Top Shield
SH3802	2680514Z01	VCO Buffer IC Shield
SH400	2680505Z01	Controller Memory Shield
SH401	2680506Z01	Controller On-off Shield
SH402	2680515Z01	Microprocessor Shield
SH403	2680516Z01	Asfic_Cmp, Audio PA Shield
T3301	2580541Z02	Balun Transformer
T3302	2580541Z02	Balun Transformer
U303	5113818A01	IC Sing Supply
U3201	5102463J58	3.3V Regulator
U3220	5186144B01	IF IC
U3221	5109522E10	Inverter IC
U3501	5185130C65	ASFIC CMP IC
U3502	5185765B26	LDMOS Driver IC
U3503	5185963A15	PCIC
U3701	5185963A27	Temperature Sensor
U3711	5105739X05	5V Regulator
U3801	5105750U54	VCO Buffer IC
U400	5102463J40	3.3V Regulator
U404	5185130C53	LV FRAC-N IC
U405	5102463J36	Static RAM 32K X 8
U406	*5102463J60	Flash ROM 512K X 8
U407	*5102495J05	EEPROM 16K X 8
U409	5102226J56	Microprocessor IC
U410	5102463J57	3.3V Regulator (not placed in non-display radios)
U420	5102463J44	Audio PA
VR3501	4880140L17	Zener Diode
VR432	4805656W08	Zener Diode
VR433	4805656W08	Zener Diode
VR434	4802245J73	Zener Diode 6.8V
VR439	4880140L17	Zener Diode
VR440	NOT PLACED	
VR441	NOT PLACED	
VR442	NOT PLACED	
VR444	NOT PLACED	
VR447	4802245J74	Zener Diode 10V
VR448	4802245J74	Zener Diode 10V
VR449	4802245J74	Zener Diode 10V
VR450	4802245J75	Zener Diode 12V
VR460	4802245J73	Zener Diode 6.8V
VR501	4802245J73	Zener Diode 6.8V
VR506	4802245J73	Zener Diode 6.8V
Y3200	9180022M11	44.85MHZ Crystal Filter
Y3201	4802245J84	44.395MHz Crystal Oscillator
Y3202	9186145B02	455KHZ Discriminator
Y3203	9180469V05	455KHz 6-Pole Ceramic Filter
Y3204	9180469V03	455KHz 6-Pole Ceramic Filter
Y3205	9180468V05	455KHz 4-Pole Ceramic Filter
Y3761	4805875Z04	16.8 MHz Crystal Oscillator
	8486473Z04	VHF PC Board

* Motorola Depot Servicing only

Reference designators with an asterisk indicate components which are not field replaceable because they need to be calibrated with specialized factory equipment after installation. Radios in which these parts have been replaced in the field will be off frequency at temperature extremes.

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