

# ServiceManual

**PRO-2035  
PROGRAMMABLE SCANNER**

**Catalog Number: 20-460/9460**

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## SPECIFICATIONS

Frequency range            25–250 MHz  
                                   \*760–823.995 MHz  
                                   \*849.005–868.995 MHz  
                                   \*894.005–1300 MHz

\* 760–1300 MHz for 20-9460

		Unit	Nominal	Limit
<b>Sensitivity</b>				
NFM: (S+N)/N=20 dB	25–520 MHz	μV	0.5	2
3 kHz dev. at 1 kHz	760–1000 MHz	μV	0.5	2
	1000.005–1300 MHz	μV	3	10
AM: (S+N)/N=20 dB	25–520 MHz	μV	2	5
60% mod. at 1 kHz	760–1000 MHz	μV	2	5
	1000.005–1300 MHz	μV	5	20
WFM: (S+N)/N=30 dB	25–520 MHz	μV	3	10
22.5 kHz dev. at 1 kHz	760–1000 MHz	μV	3	10
	1000.005–1300 MHz	μV	10	25
<b>Squelch sensitivity            NFM and AM</b>				
Threshold	25–520 MHz	μV	0.5	2
	760–1000 MHz	μV	0.5	2
	1000.005–1300 MHz	μV	3	10
Tight: (S+N)/N	25–520 MHz	dB	25	15
	760–1000 MHz	dB	25	15
	1000.005–1300 MHz	dB	20	10
<b>                                  WFM</b>				
Threshold	25–520 MHz	μV	3	10
	760–1000 MHz	μV	3	10
	1000.005–1300 MHz	μV	15	30
Tight: (S+N)/N	25–520 MHz	dB	40	30
	760–1000 MHz	dB	40	30
	1000.005–1300 MHz	dB	40	30
<b>Selectivity</b>				
NFM	–6 dB	kHz	±10	±14
	–50 dB	kHz	±20	±25
AM	–6 dB	kHz	±6	±10
	–50 dB	kHz	±12	±20
WFM	–6 dB	kHz	±150	±200
	–50 dB	kHz	±300	±400
Spurious rejection	at 328 MHz (NFM)	dB	40	35
IF rejection	612 MHz at 70 MHz (NFM)	dB	60	40
	612 MHz at 1000 MHz (NFM)	dB	60	40

			<b>Unit</b>	<b>Nominal</b>	<b>Limit</b>
Modulation acceptance	EIA RS-204-A		kHz	±8	±5
Signal to noise ratio	NFM and AM				
	3 kHz dev. at 1 kHz	25–520 MHz	dB	40	30
	60% mod. at 1 kHz	760–1000 MHz	dB	40	30
	100 μV input	1000.005–1300 MHz	dB	35	25
	WFM				
	22.5 kHz dev. at 1 kHz	25–520 MHz	dB	45	35
	100 μV input	760–1000 MHz	dB	45	35
		1000.005–1300 MHz	dB	40	30
Residual noise	Volume control, set to its minimum, squelched		mV	3	5
Scanning speed			Channels/sec.	50	28–55
Scan delay time			sec.	2	1–3
Audio output power	10% THD		watts	1.3	1
Channels of operation	Any 1000 channels in any band combination				
Channel, frequency, and mode displays	Liquid crystal display				
Receiving system	Direct key entry digital-controlled synthesizer, superheterodyne				
	1st IF (609.005–613.5 MHz)				
	2nd IF (48.5 MHz)				
	3rd IF (10.7 MHz) for WFM				
	3rd IF (455 kHz) for NFM and AM				
Power source	AC 120 V, 60 Hz, 18 W				
	DC 13.8 V 10 W				
Jacks	Headphones, external speaker, tape out and "BNC" type antenna connector				
Dimensions (HWD)	3 1/2 x 9 1/8 x 8 1/4 inches (90 x 232 x 210 mm)				
Weight	70.5 oz (2 kg)				

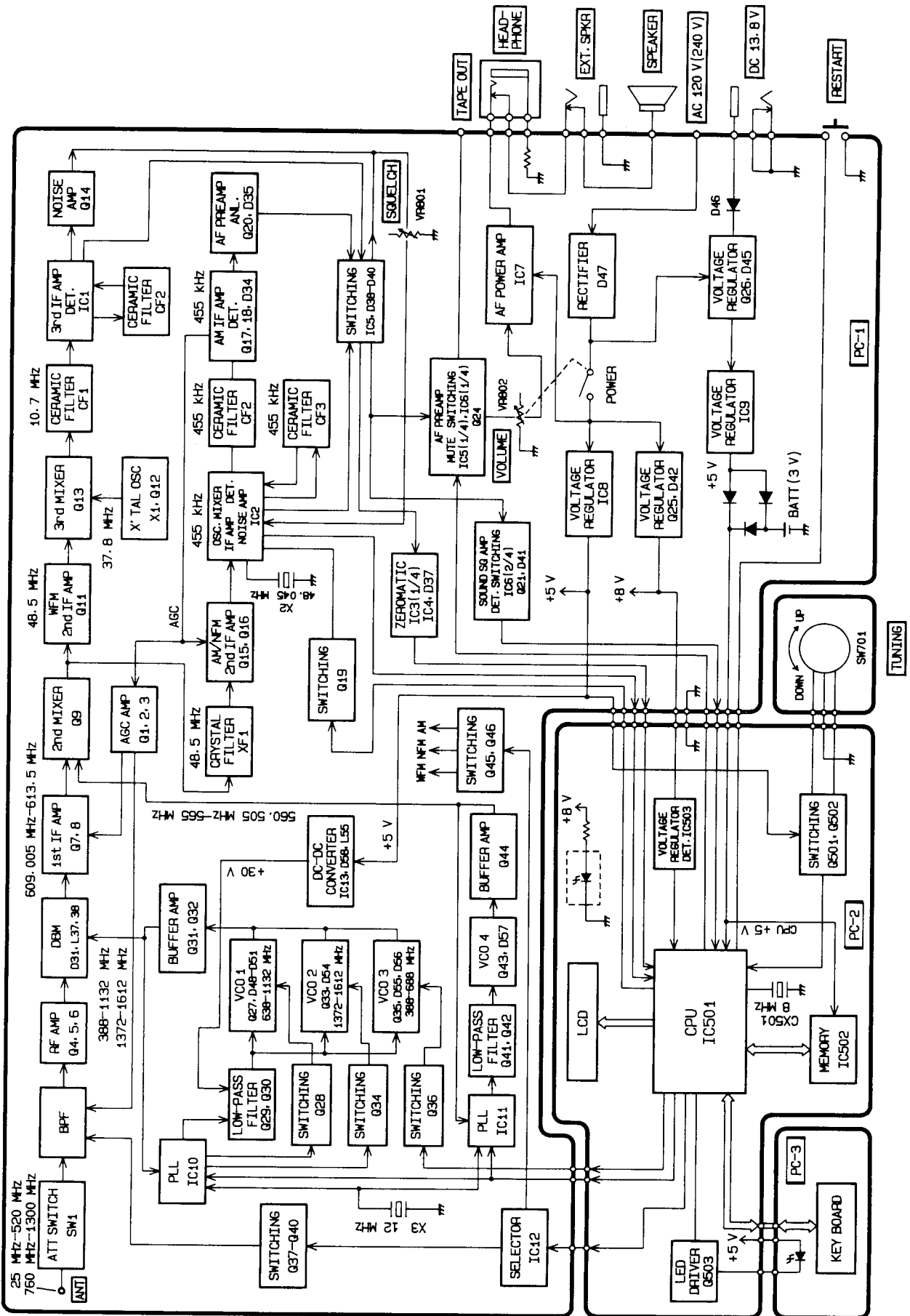
**Note:** Nominal specs represent the design specs. All units should be able to approximate these—some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; in no case should a unit fail to meet limit specs.

### PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by  $\triangle$  in the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

# BLOCK DIAGRAM



## PRINCIPLES OF OPERATION

The PRO-2035 is a PLL (Phase-Locked Loop) synthesized VHF/UHF, FM/AM receiver, controlled by a CPU (Central Processing Unit) via a keyboard.

The receiving mode and search step are initially set to correspond with the frequencies entered. When a frequency within the FM broadcast band is keyed in, the receiving mode is set to wideband FM (WFM). When a frequency in the active radio band, such as police, fire, and ham radio, is keyed in, the mode is set to narrowband FM (NFM), and when a frequency in the aircraft and CB band is keyed in, it sets to AM mode. Also, the receiving mode and frequency step can be changed by the MODE and STEP keys.

All functions, such as the receiving frequency range, frequency determination, scanning, and delay time, are controlled by the CPU. The CPU is able to do only the assigned functions and no modification of the CPU is feasible.

The following paragraphs explain the operation of the circuit in terms of the functional blocks:

The RF input circuit consists of bandpass filters (BPF). A signal generated by VCO1, VCO2, or VCO3 is applied to the double balanced mixer (DBM) and mixed with the RF signal. The DBM is employed to facilitate 25 MHz to 1300 MHz mixing.

The 1st IF (Q7 and Q8) is 609.005-613.5 MHz, and the signal is mixed with the VCO4 frequency at the 2nd mixer (Q9) to produce a 48.5 MHz signal, which is applied to the 2nd WFM IF (Q11) or 2nd NFM/AM IF (Q15, Q16). Corresponding with input from the keyboard, the CPU selects VCO1, VCO2, or VCO3 and determines the WFM/NFM/AM data of the PLL circuit that will function; then it outputs the necessary data.

A signal entered to NFM/AM IF is mixed with crystal oscillation frequency 48.045 MHz at the 3rd mixer (IC2) and converted to a 455 kHz signal. A signal entered to WFM IF is mixed with crystal oscillation frequency 37.8 MHz at the 3rd mixer (Q13) and converted to a 10.7 MHz signal. The signal is further amplified to be detected as an AF signal.

The AF signals of WFM, NFM, and AM are controlled by the CPU and applied to the AF power amplifier (IC7) via the switching circuit. The squelch signal is comprised of noise produced from WFM/NFM detector output, and amplified by IC2 to the switching signal, which controls AF mute and the CPU.

Any unstable supply voltage to the CPU can produce a CPU malfunction, such as wrong data processing, wrong data transfer, etc. To overcome this, the CPU can be initialized when necessary. Initialization is done when you press the RESTART switch. Figure A shows the initializing waveform.

CX501 (8 MHz) is a clock which is used for CPU control. Figure B shows the clock waveform at IC501 pin 39.

The CPU output data displays the frequency and function on the LCD. The LCD is back-lighted with nine LEDs.

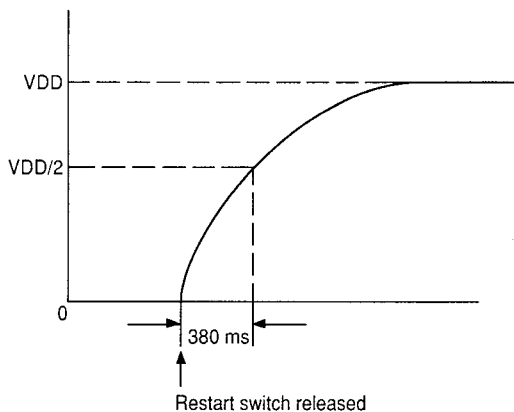


Figure A

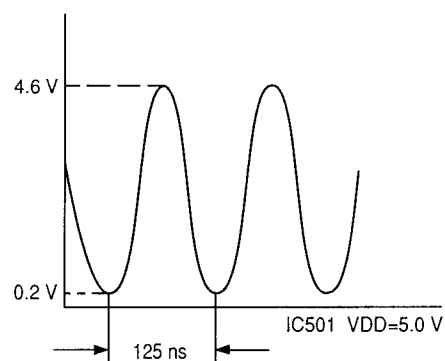


Figure B

Refer to Figures C,D, and E as you read the following.

Pulse A advances against Pulse B when the tuning knob turns clockwise; the opposite takes place when the tuning knob turns counterclockwise.

The CPU checks the status of Pulse B at the falling edge of Pulse A and judges the direction of the tuning knob rotation. If Pulse B is high, the knob is turned clockwise for higher frequency; if it is low, the knob is turned counterclockwise for lower frequency.

The CPU also counts the number of pulses to determine the magnitude of the frequency/channel change. One pulse represents one notch rotation of the tuning knob.

**Note:** The width of the pulse is irrelevant to the operation. It only shows how fast the knob is turned.

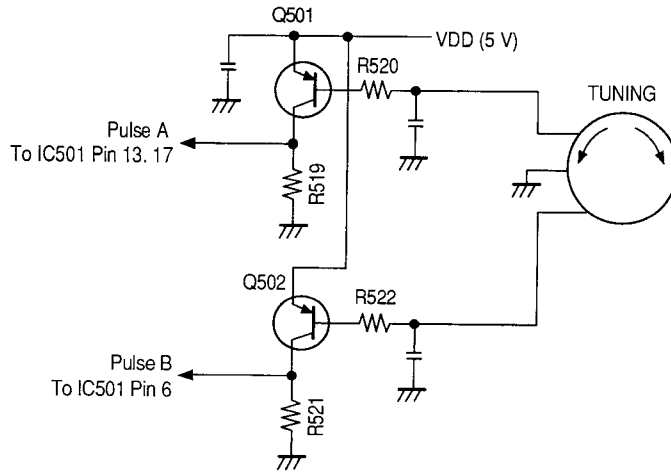


Figure C

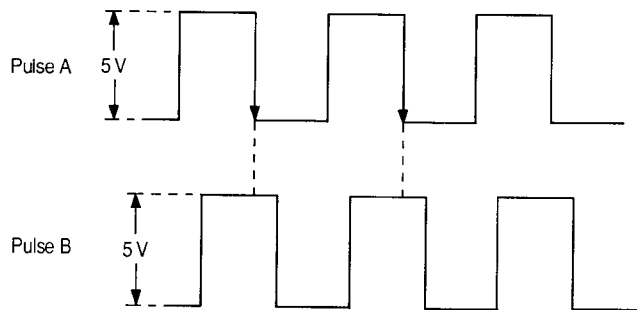


Figure D

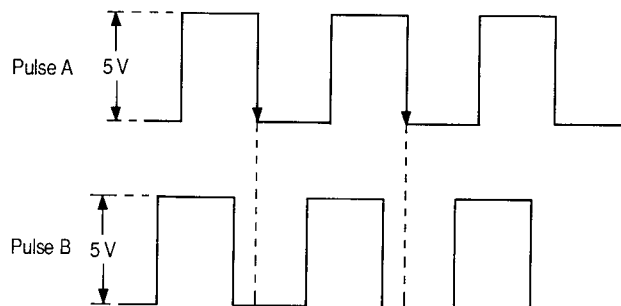
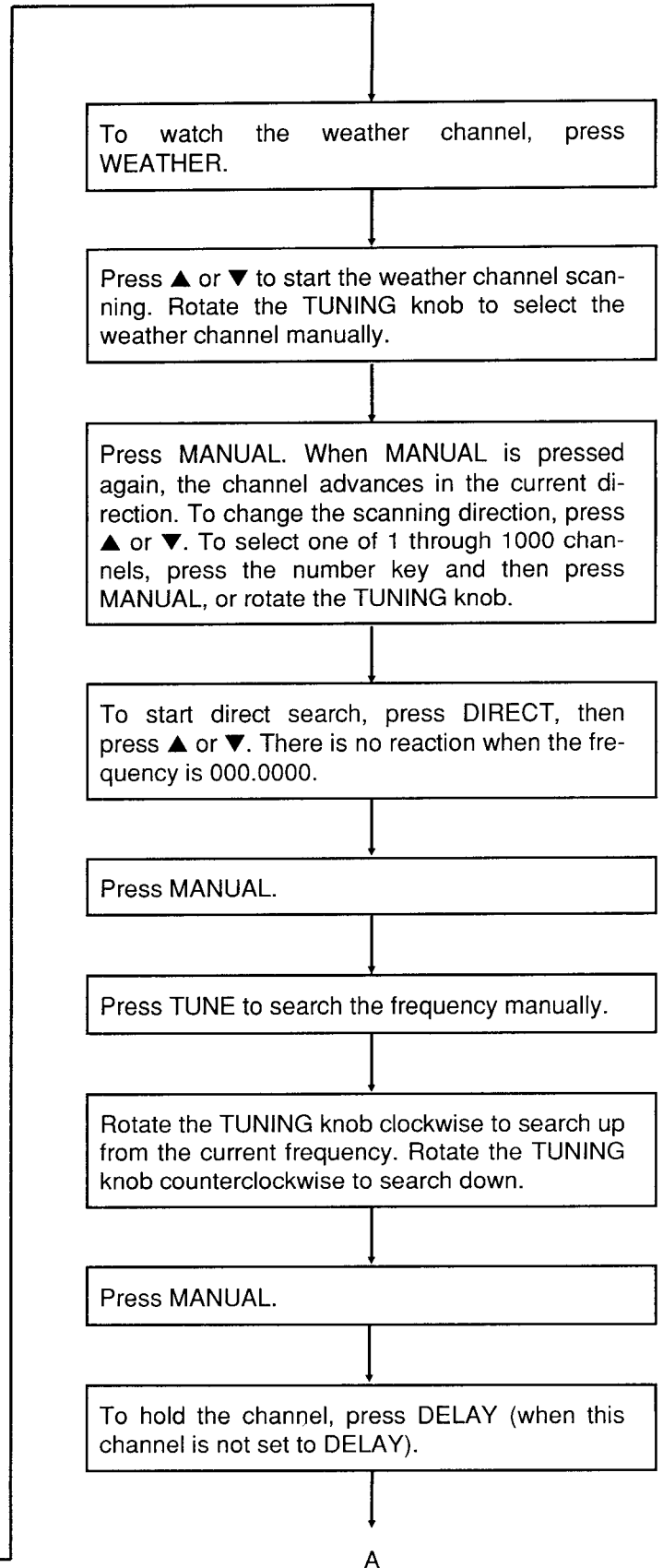
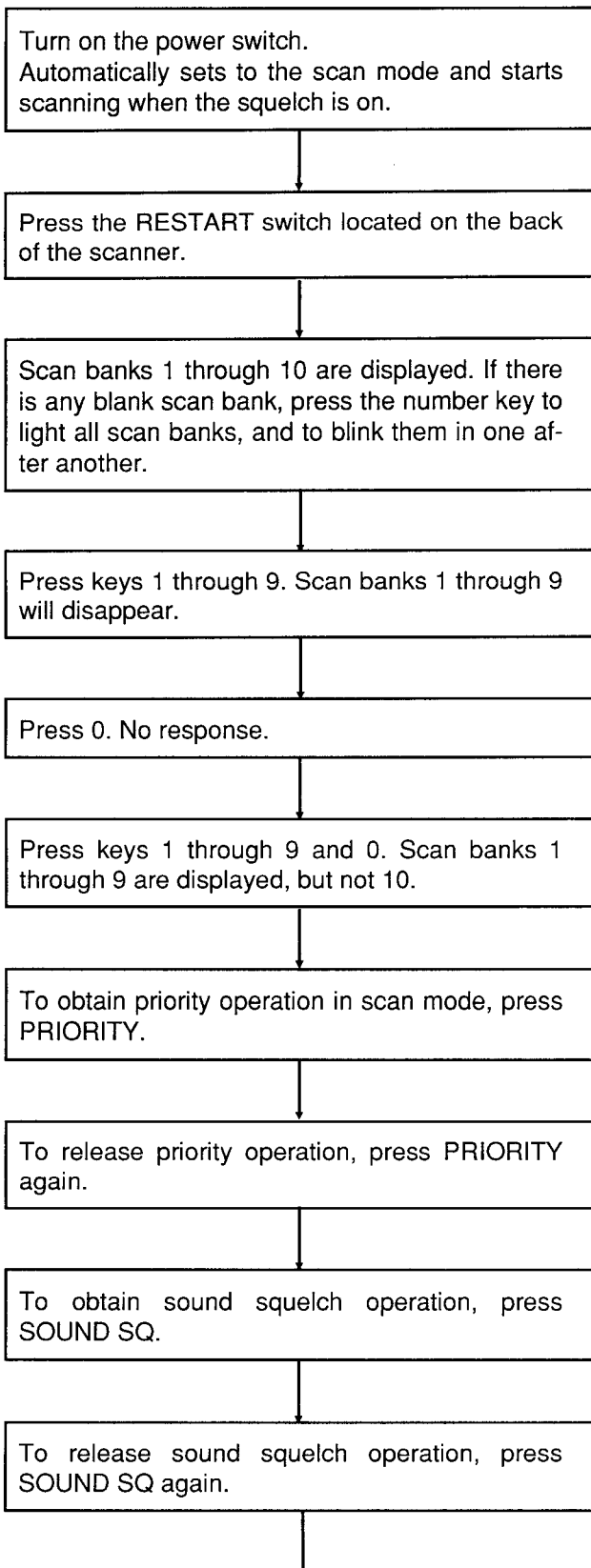
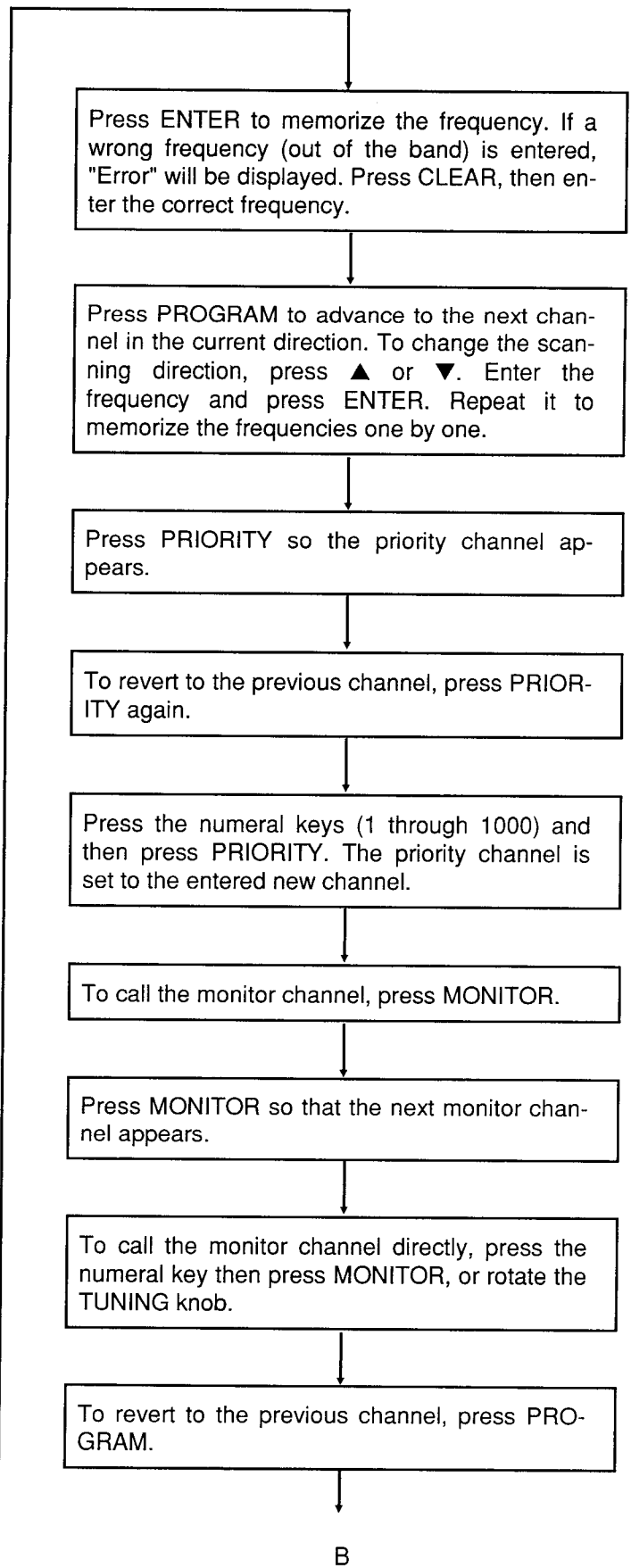
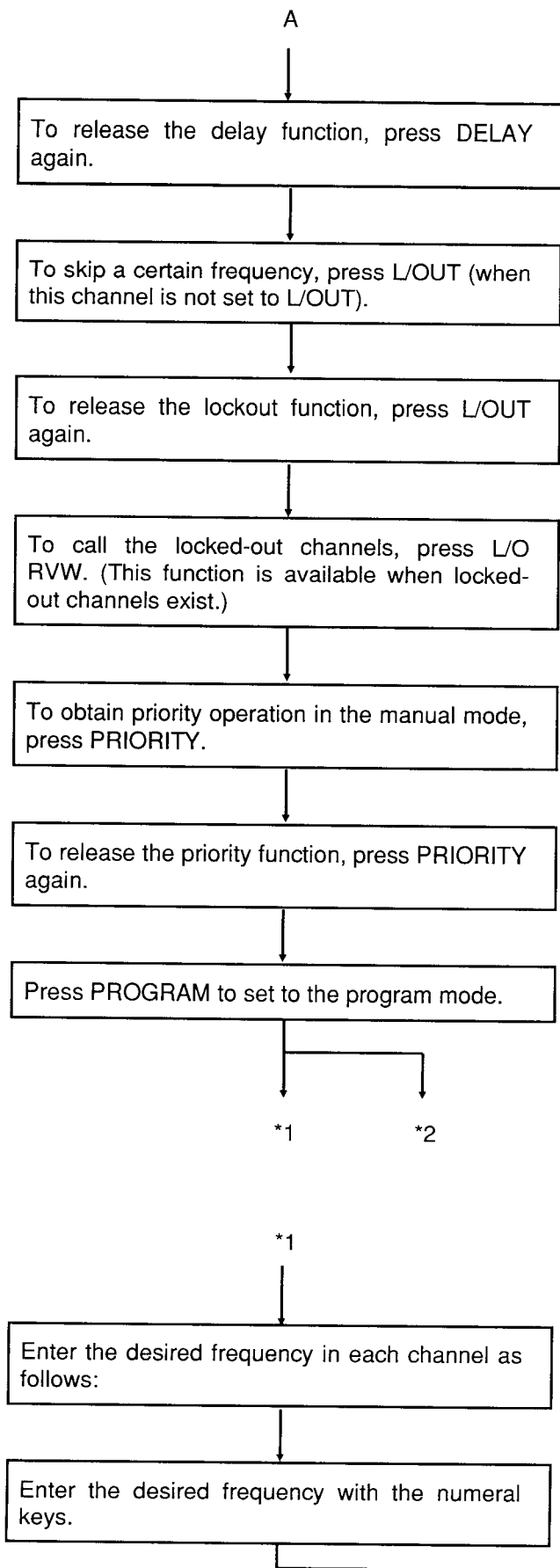


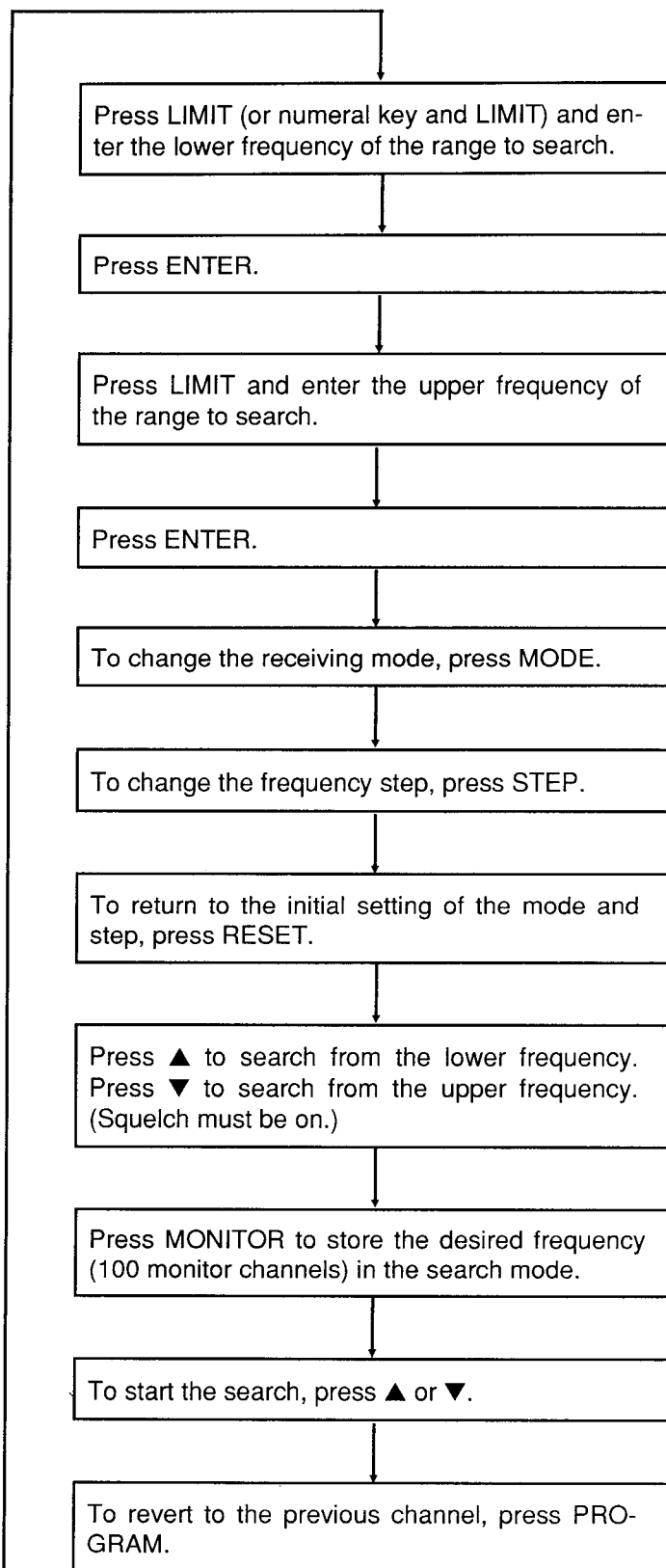
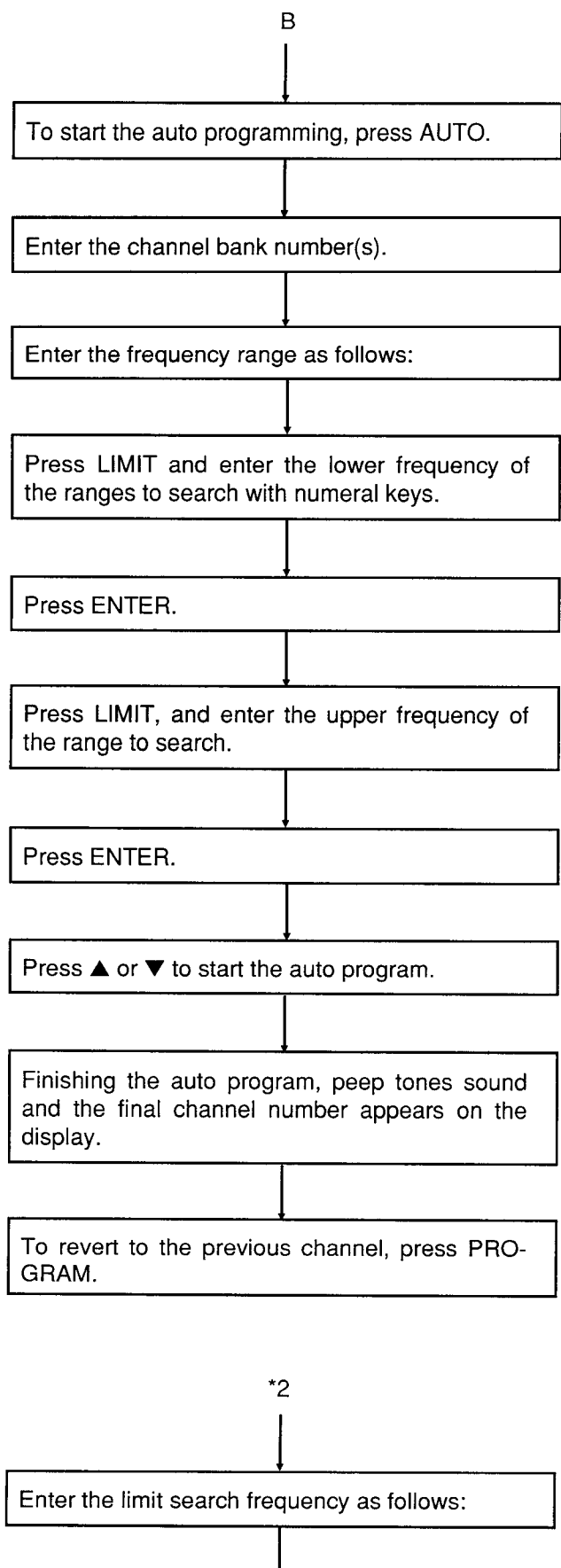
Figure E

## GENERAL OPERATION OUTLINE

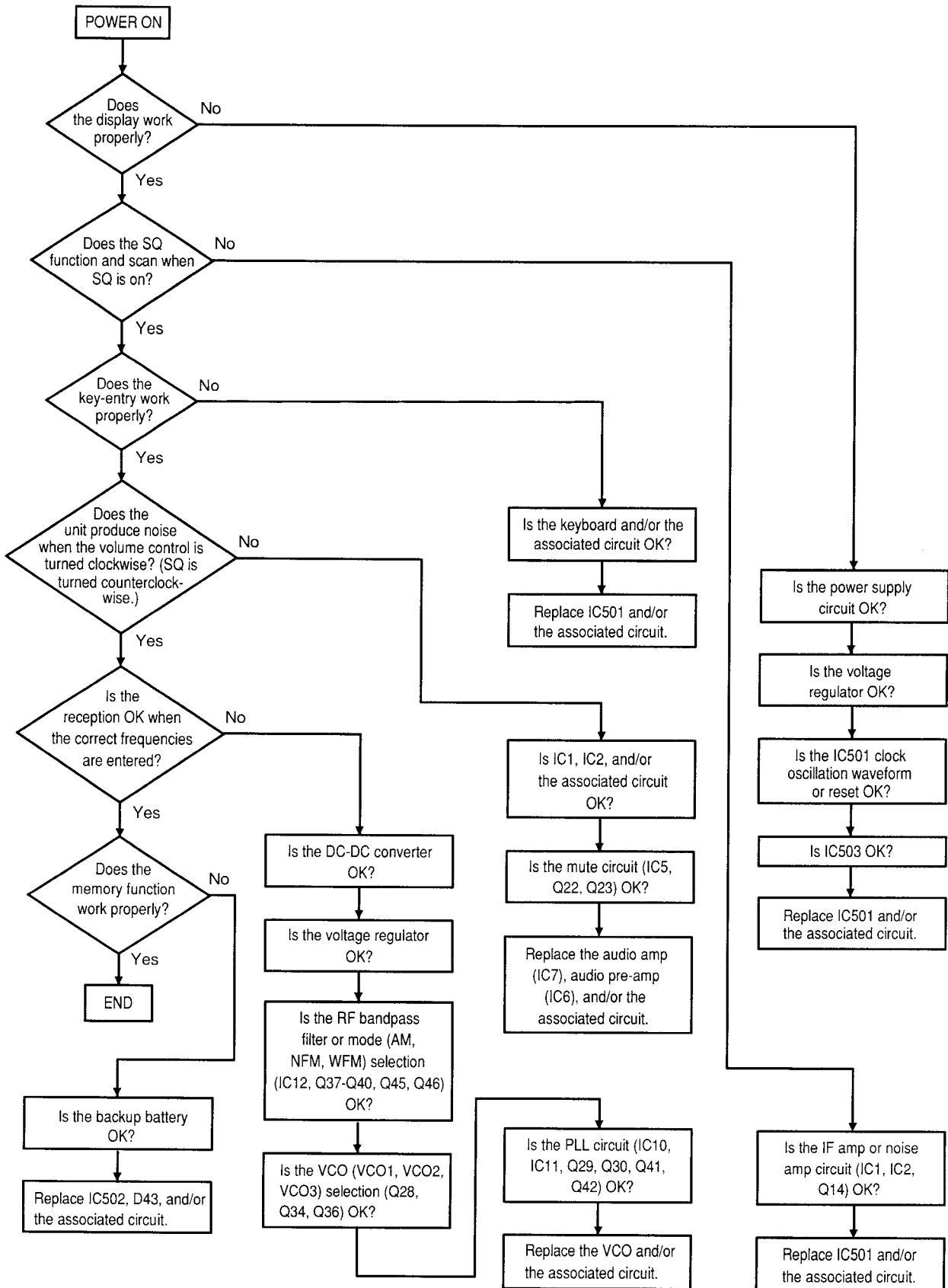




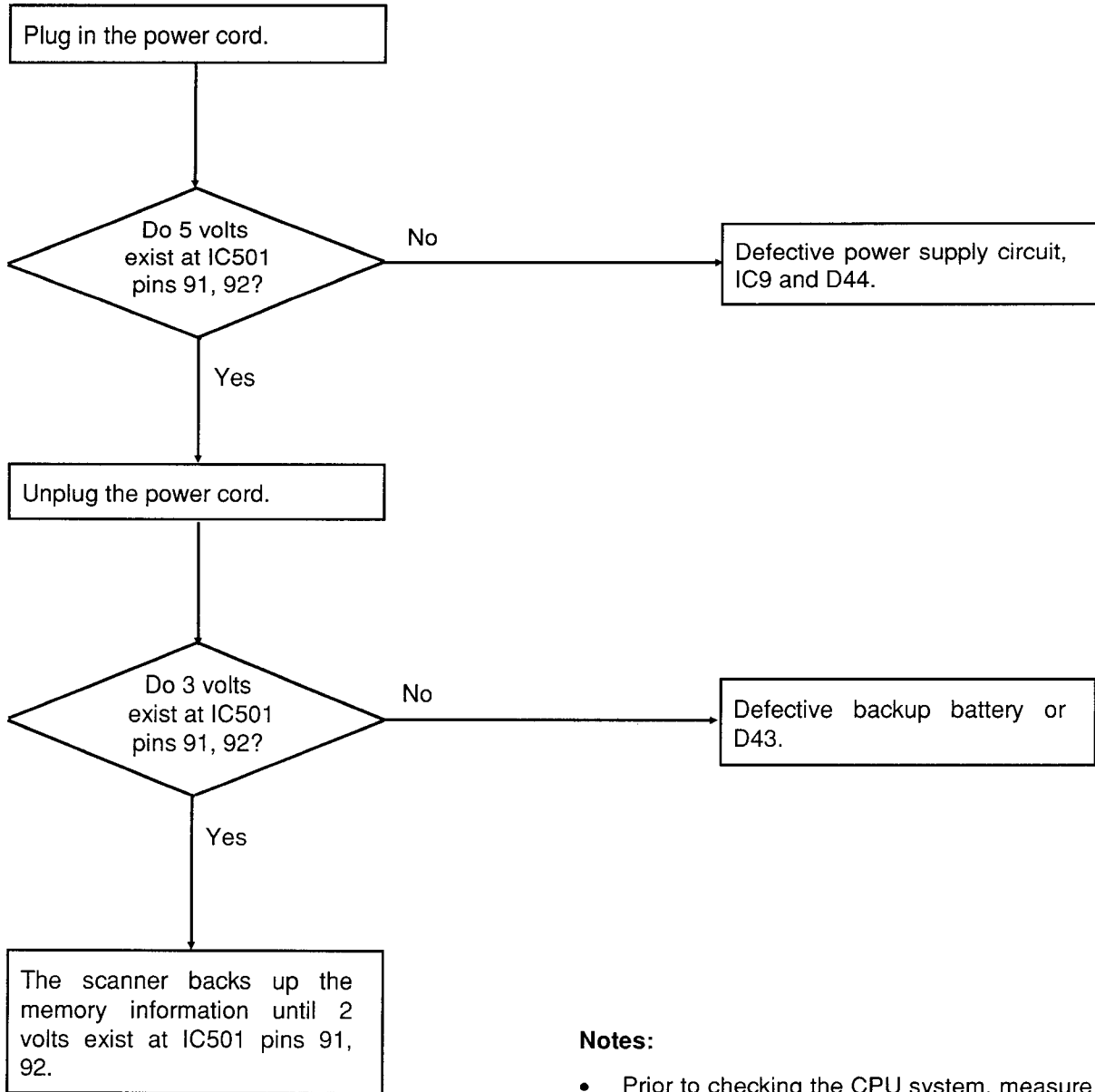




# RECEPTION CHECK



# MEMORY CHECK

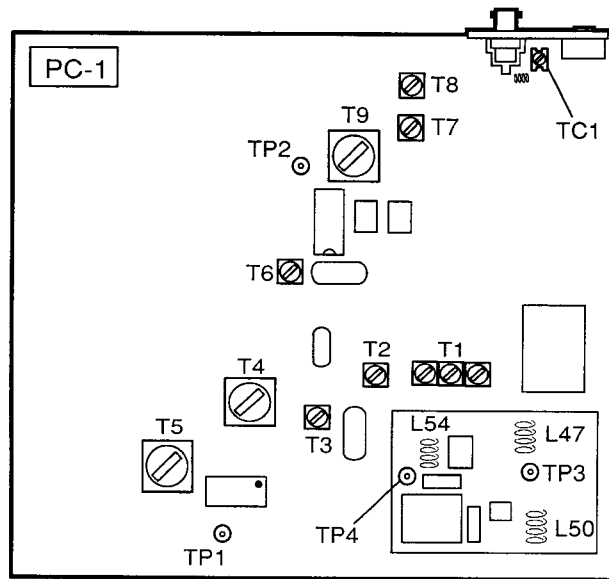


**Notes:**

- Prior to checking the CPU system, measure the supply voltage to the ICs. (See the schematic diagram.)
- While checking the following items, the ICs can "latch up." If this happens, push the restart switch for about one second and then continue checking. Be sure that power is present when doing this check.

# ALIGNMENT AND ADJUSTMENT

## ALIGNMENT AND TEST POINTS



## ALIGNMENT PREPARATION

### Test Equipment Required

- Oscilloscope
- AC SSVM
- DC SSVM
- 8-ohm dummy load
- AM/FM signal generator
- Distortion meter

### Notes:

- Use non-metallic tuning tools.
- The test equipment and receiver should be warmed up for at least 10 minutes before proceeding with alignment.
- The signal level from the generator should be kept as low as possible to obtain a usable output.

Channels 1 through 8 are as follows:

Channel	Frequency (MHz) and Mode	Channel	Frequency (MHz) and Mode
1	473.500 (NFM)	5	520.000 (WFM)
2	520.000 (NFM)	6	120.000 (AM)
3	1000.000 (NFM)	7	514.995 (NFM)
4	1300.000 (NFM)	8	518.500 MHz (NFM)

Table 1

## ALIGNMENT PROCEDURES

### PLL2 VCO Alignment

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: Fully counterclockwise (CCW). Select channel 1.	Connect DC SSVM to TP4. See Figure 1 on Page 14.	L54	Adjust L54 for $3\pm 0.2$ volts on the DC SSVM. See "How to Adjust Coils L47, L50, and L54."

### PLL1 VCO Alignment

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: CCW. Select channels 2, 3, and 4.	Connect DC SSVM to TP3. See Figure 2 on Page 14.	L47 L50	<ol style="list-style-type: none"> <li>1. Select channel 2 and adjust L47 for 20 volts on the DC SSVM. See Table 2.</li> <li>2. Select channel 3 and be sure the DC SSVM reads 9-13 volts (no adjustments are necessary for the coil).</li> <li>3. Select channel 4 and adjust L50 for 22 volts on the DC SSVM.</li> <li>4. Repeat above 1 to 3 until no further improvement is observed. See Table 2.</li> </ol>

### How to Adjust Coils L47, L50, and L54

Each of the coils should be adjusted by changing the pitch of the coil little by little by carefully using a non-metallic tuning tool as shown in Figure 3.

Increase the pitch of the coil when the measured voltage at TP3 or TP4 is higher than the voltage specified in the result column for "PLL2 VCO Alignment" and "PLL1 VCO Alignment."

Decrease the pitch of the coil when the measured voltage at TP3 or TP4 is lower than the voltage specified in the result column for "PLL2 VCO Alignment" and "PLL1 VCO Alignment."

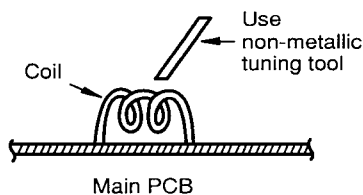


Figure 3

#### Notes:

Be very careful when doing coil pitch adjustment because it greatly affects the frequency.

Secure the coil with glue after alignment. Be sure the glue is dry and the coil is secured. Also, be sure that the environmental temperature is normal. Then, repeat VCO (PLL2 and PLL1) alignments above.

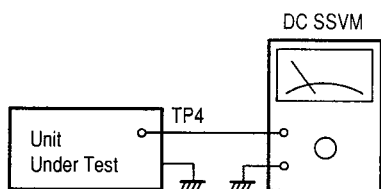


Figure 1

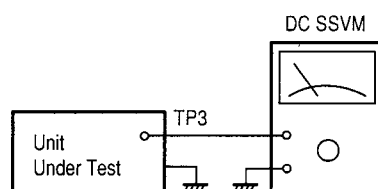


Figure 2

CH	Frequency	Voltage at TP3
CH2	520.000 MHz	20.8–21.2 volts
CH3	1000.000 MHz	9.0–13.0 volts
CH4	1300.000 MHz	21.8–22.2 volts

Table 2

### 455 kHz NFM Discriminator Coil Alignment

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: CCW. Select channel 2.	Connect the signal generator to the ANT jack and the DC SSVM to TP2. See Figure 4.	T9	Set the signal generator frequency to 520 MHz, 100 $\mu$ V output (no mod.) and adjust T9 for $4.0^{+0.3}$ volts on the DC SSVM.

### 10.7 MHz WFM Discriminator Coil Alignment

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: CCW. Select channel 5.	Connect the signal generator to the ANT jack and the DC SSVM to TP1. See Figure 4.	T5	Set the signal generator frequency to 520 MHz, 100 $\mu$ V output (no mod.) and adjust T4 for $4.0^{+0.3}$ volts on the DC SSVM.

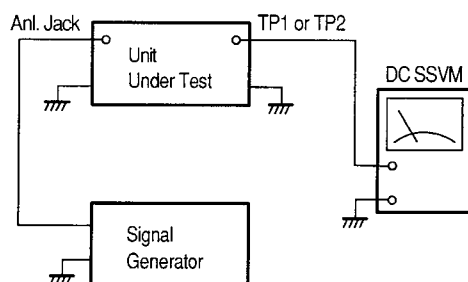


Figure 4

### 48.5 MHz and 10.7 MHz WFM IF Coil Alignment

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: CCW. Select channel 5.	Connect the signal generator to the ANT jack, and the oscilloscope, AC SSVM, distortion meter, and 8-ohm load to the EXT SPKR jack. See Figure 5.	T3 T4	<ol style="list-style-type: none"> <li>1. Set the signal generator frequency to 520 MHz (FM: 22.5 kHz dev. at 1 kHz and the output at S/N 20 dB point).</li> <li>2. Adjust T3 and T4 for maximum sensitivity.</li> </ol>

### 48.5 MHz 2nd IF Coil Alignment

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: CCW. Select channel 6.	Connect the signal generator to the ANT jack, and the oscilloscope, AC SSVM, distortion meter, and 8-ohm load to the EXT SPKR jack. See Figure 5.	T2 T6	<ol style="list-style-type: none"> <li>1. Set the signal generator frequency to 120 MHz (AM: 60% mod. at 1 kHz and the output at S/N 20 dB point).</li> <li>2. Adjust T2 and T6 for maximum sensitivity.</li> </ol>

### 455 kHz IF Coil Alignment

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: CCW. Select channel 6.	Connect the signal generator to the ANT jack, and the oscilloscope, AC SSVM, distortion meter, and 8-ohm load to the EXT SPKR jack. See Figure 5.	T7	<ol style="list-style-type: none"> <li>1. Set the signal generator frequency to 120 MHz (AM: 60% mod. at 1 kHz and the output at S/N 20 dB point).</li> <li>2. Adjust T7 for maximum sensitivity.</li> </ol>

### 455 kHz AM Detector Coil Alignment

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: CCW. Select channel 6.	Connect the signal generator to the ANT jack, and the oscilloscope, AC SSVM, distortion meter, and 8-ohm load to the EXT SPKR jack. See Figure 5.	T8	<ol style="list-style-type: none"> <li>1. Set the signal generator frequency to 120 MHz (AM: 60% mod. at 400 Hz and the output at 100 <math>\mu</math>V).</li> <li>2. Adjust T8 for minimum THD point.</li> </ol>

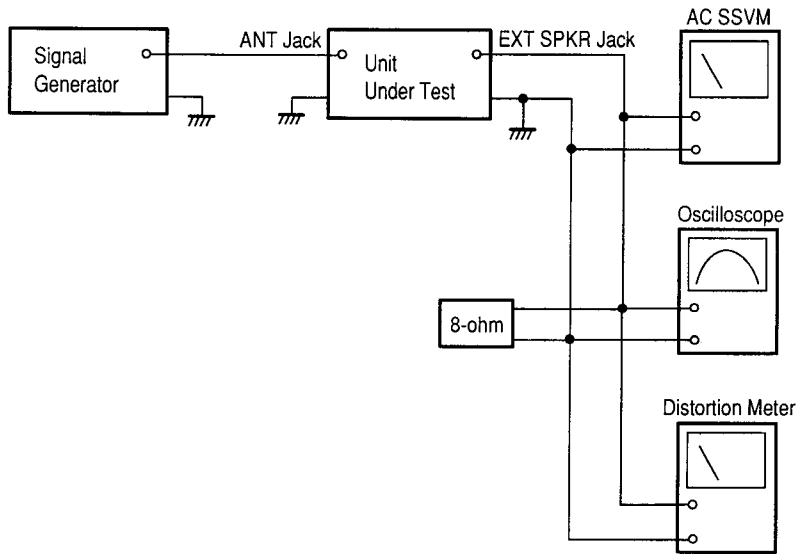


Figure 5

### 1st IF Trap Alignment

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: CCW. Select channel 3.	Connect the signal generator to the ANT jack, and the oscilloscope, AC SSVM, distortion meter, and 8-ohm load to the EXT SPKR jack. See Figure 5.	TC1	<ol style="list-style-type: none"> <li>1. Set the signal generator frequency to 612 MHz (FM: 3 kHz dev. at 1 kHz and the output approx. 1 mV).</li> <li>2. Adjust TC1 for minimum sensitivity.</li> </ol>



## 1st IF BPF Coil Alignment

Normally, additional adjustment is necessary for BPF coil T1 since it has been factory aligned. Only when the shape or pitch of T1 gets changed accidentally, readjustment is required as described below, referring to Figure 6.

Control Setting	Test Instrument Connection	Adjust	Result
OFF/VOLUME control: ON. SQUELCH control: CCW. Select channels 7 and 8.	Connect the signal generator to the ANT jack, and the oscilloscope, AC SSVM, distortion meter, and 8-ohm load to the EXT SPKR jack. See Figure 5.	T1	<ol style="list-style-type: none"> <li>1. Select channel 7 and set the signal generator frequency to 514.995 MHz (FM: 3 kHz dev. at 1 kHz and 0.5 <math>\mu</math>V output).</li> <li>2. Adjust T1 for maximum sensitivity.</li> <li>3. Select channel 8 and set the signal generator frequency to 518.5 MHz (FM: 3 kHz dev. at 1 kHz and 0.5 <math>\mu</math>V output).</li> <li>4. Readjust T1 for maximum sensitivity.</li> </ol> <p><b>Note:</b> Alignment should be done so that the sensitivity at channels 7 and 8 becomes the same.</p>

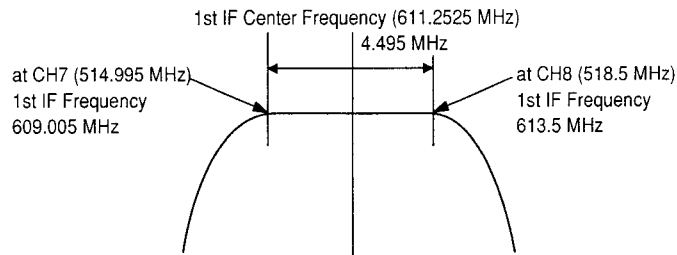
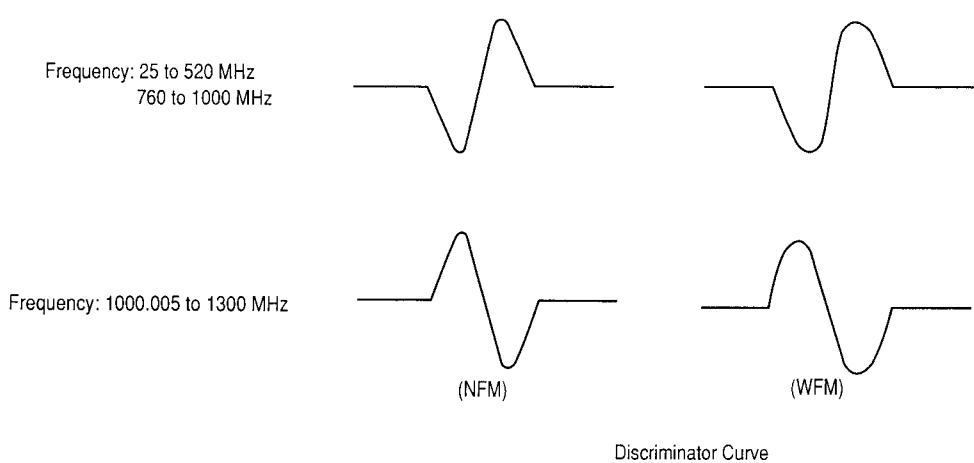
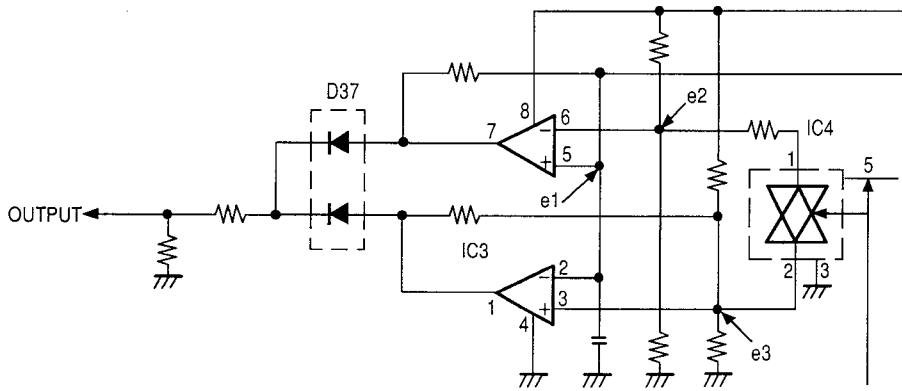


Figure 6

# Zeromatic Function Test Procedure



Zeromatic functions when OUTPUT is L.

	$0 < e1 < 3$	$e3 < e1 < e2$	$e2 < e1 < V_{cc}$
OUTPUT	H	L	H

## NFM Modulation

To adjust the e1 voltage, receive a signal in the manual mode and set T9 to obtain  $4.0 \pm 0.3$  V at TP2. It is convenient to use the National Weather Service signal for this adjustment.

## WFM Modulation

To adjust the e1 voltage, receive a signal in the manual mode and set T5 to obtain  $4.0 \pm 0.3$  V at TP1. It is convenient to use the FM or TV sound signal for this adjustment.

## TROUBLESHOOTING

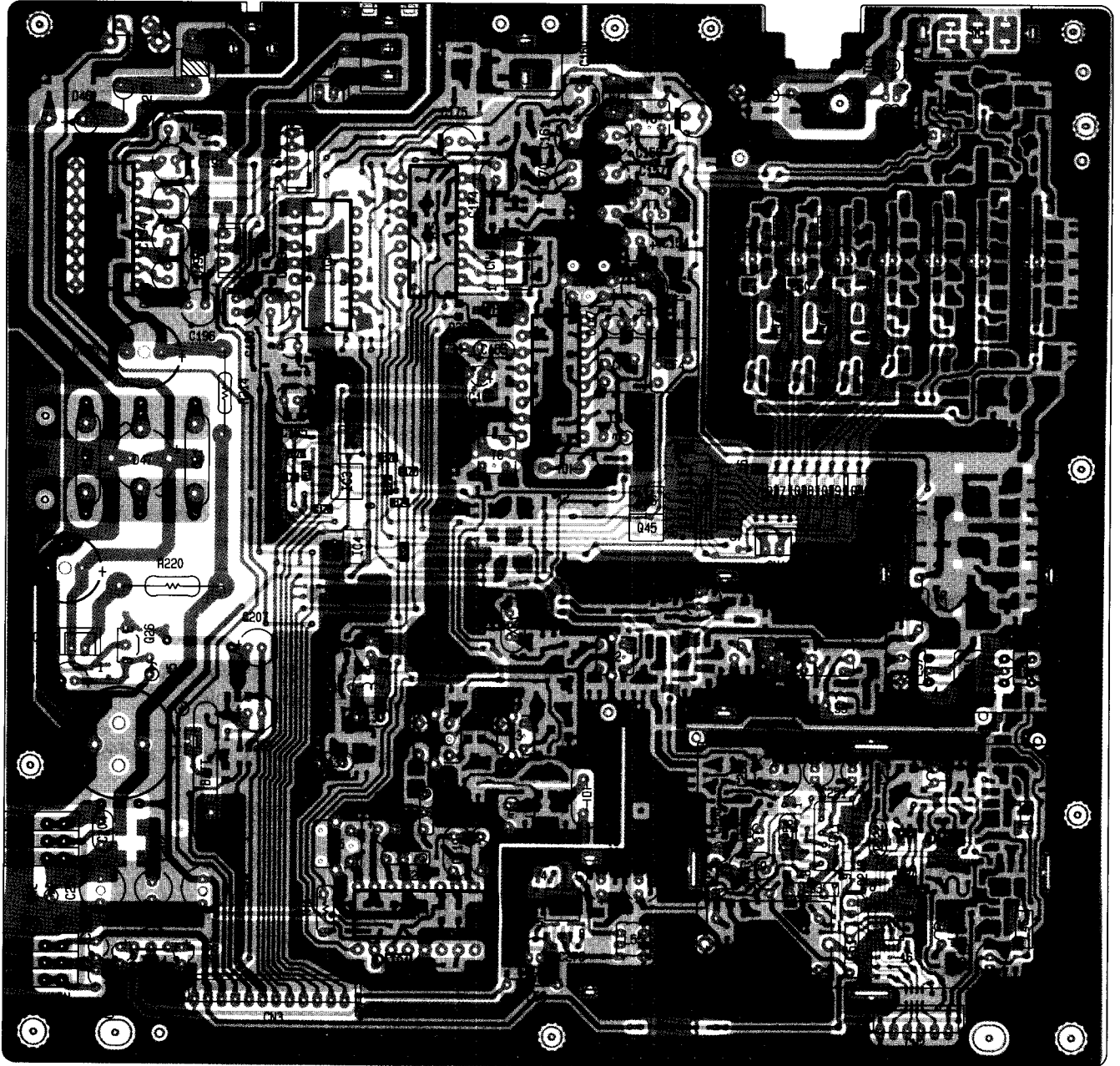
Symptom	Possible Cause/Remedy
Display does not light and there is no sound when power is on Volume control: Maximum (MAX) Squelch control: Fully counterclockwise (CCW)	<ul style="list-style-type: none"> <li>• Defective AC line cord: Replace.</li> <li>• Defective power transformer T801: Replace.</li> <li>• Defective ON-OFF switch on volume control VR801: Replace.</li> <li>• Defective rectifier D47: Replace.</li> <li>• Defective voltage regulator circuit: Replace the defective components.</li> </ul>
Display lights but there is no sound Volume control: MAX Squelch control: CCW	<ul style="list-style-type: none"> <li>• Defective speaker or headphone jack: Replace.</li> <li>• Defective audio amplifier IC7 and/or associated circuit: Replace the defective components.</li> <li>• Defective IF amplifier IC1, IC2, and/or associated circuit: Replace the defective components.</li> <li>• Defective squelch control D40, IC5, and/or associated circuit: Replace the defective components.</li> <li>• Defective AF pre-amplifier IC6 and/or associated circuit: Replace the defective components.</li> <li>• Defective audio mute switching IC5, IC6, and/or associated circuit: Replace the defective components.</li> <li>• Defective switching circuit IC5, D38, D39, and/or associated circuit: Replace the defective components.</li> <li>• Defective selector IC12: Replace.</li> </ul>
Sound comes out but display does not light Volume control: MAX Squelch control: CCW	<ul style="list-style-type: none"> <li>• IC501 is running "wild": Press RESTART switch.</li> <li>• Defective initiate control D501: Replace.</li> <li>• Defective voltage regulator IC9, Q26, D45, and/or associated circuit: Replace the defective components.</li> <li>• Defective LCD: Replace.</li> <li>• Defective CPU IC501 and/or associated circuit: Replace the defective components.</li> </ul>
Does not scan and squelch does not operate	<ul style="list-style-type: none"> <li>• Defective switching circuit IC5: Replace.</li> <li>• Defective IC2 and/or associated circuit: Replace the defective components.</li> <li>• Defective CPU IC501 and/or associated circuit: Replace the defective components.</li> </ul>

<b>Symptom</b>	<b>Possible Cause/Remedy</b>
Does not scan but squelch operates	<ul style="list-style-type: none"> <li>• IC501 is running "wild": Press RESTART switch.</li> <li>• Defective CPU IC501 and/or associated circuit: Replace the defective components.</li> </ul>
Operates in manual but does not operate in scan	<ul style="list-style-type: none"> <li>• Squelch control is not adjusted correctly: Turn squelch control clockwise.</li> </ul>
Display lights but program does not operate	<ul style="list-style-type: none"> <li>• Defective keyboard or connector and/or associated circuit: Replace the defective components.</li> </ul>
Sound does not come out in AM mode but NFM and WFM operate	<ul style="list-style-type: none"> <li>• Defective IC501: Replace.</li> <li>• Defective switching circuit Q45 and/or associated circuit: Replace the defective components.</li> <li>• Defective ANL circuit or AF pre-amplifier Q20, D35, and/or associated circuit: Replace the defective components.</li> <li>• Defective AM IF amp or detector circuit Q17, Q18, D34, and/or associated circuit: Replace the defective components.</li> </ul>
Sound does not come out in NFM mode but AM and WFM operate	<ul style="list-style-type: none"> <li>• Defective IC501: Replace.</li> <li>• Defective switching circuit Q45, D39, and/or associated circuit: Replace the defective components.</li> </ul>
Sound does not come out in AM and NFM modes but WFM operates	<ul style="list-style-type: none"> <li>• Defective IC2, Q15, Q16, and/or associated circuit: Replace the defective components.</li> <li>• Defective switching circuit Q46, D33, D38, and/or associated circuit: Replace the defective components.</li> </ul>
Sound does not come out in WFM mode but AM and NFM operate	<ul style="list-style-type: none"> <li>• Defective IC501: Replace.</li> <li>• Defective switching circuit Q46, D32, and/or associated circuit: Replace the defective components.</li> </ul>
Low sensitivity between 25.000 and 39.995 MHz	<ul style="list-style-type: none"> <li>• Defective switching circuit Q37 and/or associated circuit: Replace the defective components.</li> <li>• Defective bandpass filter (BPF): Replace the defective components.</li> </ul>
Low sensitivity between 40.000 and 67.995 MHz	<ul style="list-style-type: none"> <li>• Defective switching circuit Q37 and/or associated circuit: Replace the defective components.</li> <li>• Defective bandpass filter (BPF): Replace the defective components.</li> </ul>

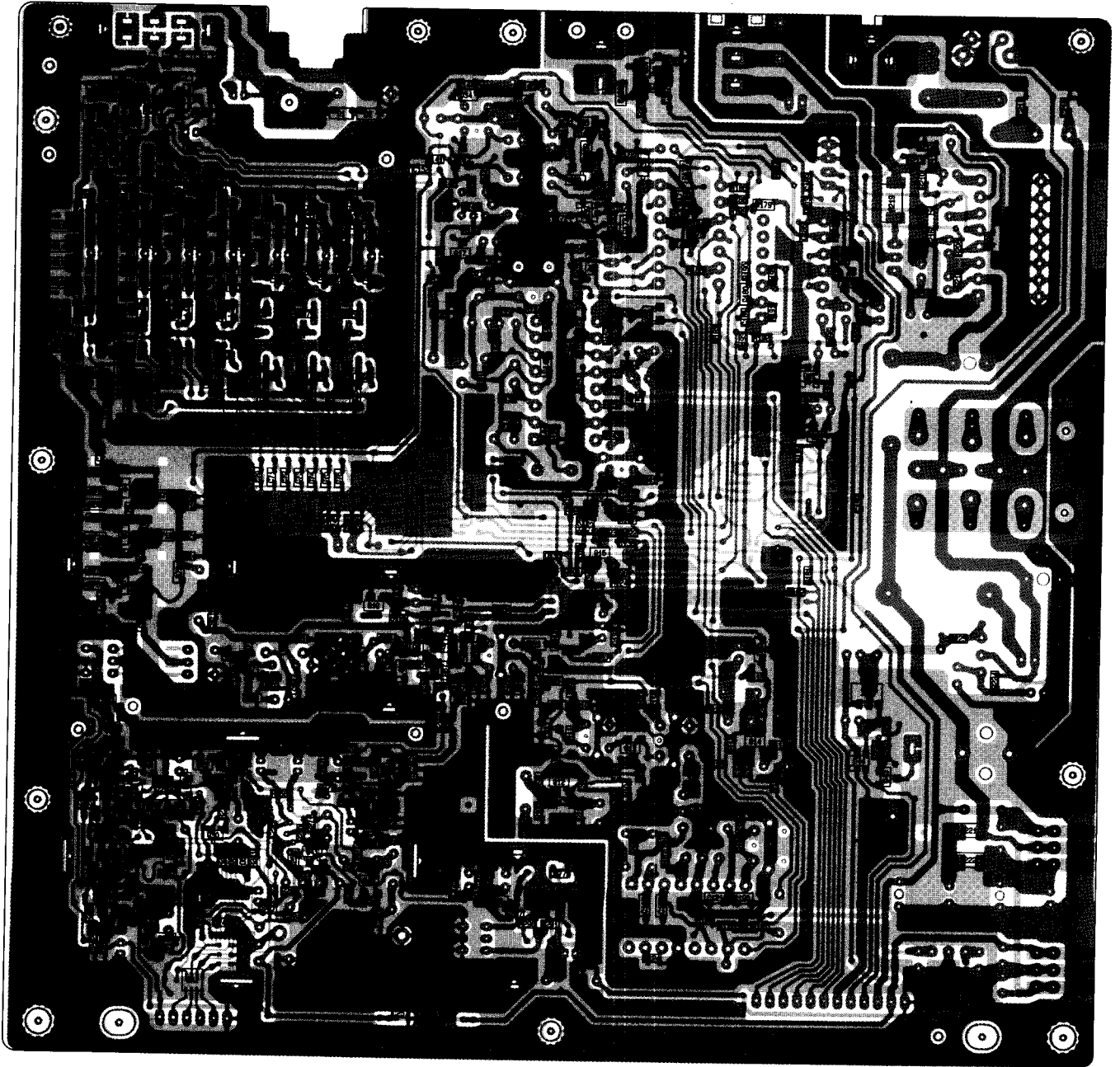
Symptom	Possible Cause/Remedy
Low sensitivity between 68.000 and 107.995 MHz	<ul style="list-style-type: none"> <li>• Defective switching circuit Q38 and/or associated circuit: Replace the defective components.</li> <li>• Defective bandpass filter (BPF): Replace the defective components.</li> </ul>
Low sensitivity between 108.000 and 173.995 MHz	<ul style="list-style-type: none"> <li>• Defective switching circuit Q38 and/or associated circuit: Replace the defective components.</li> <li>• Defective bandpass filter (BPF): Replace the defective components.</li> </ul>
Low sensitivity between 174.000 and 279.995 MHz	<ul style="list-style-type: none"> <li>• Defective switching circuit Q39 and/or associated circuit: Replace the defective components.</li> <li>• Defective bandpass filter (BPF): Replace the defective components.</li> </ul>
Low sensitivity between 280.000 and 520.000 MHz	<ul style="list-style-type: none"> <li>• Defective switching circuit Q39 and/or associated circuit: Replace the defective components.</li> <li>• Defective bandpass filter (BPF): Replace the defective components.</li> </ul>
Low sensitivity between 760.000 and 1300.000 MHz	<ul style="list-style-type: none"> <li>• Defective switching circuit Q40 and/or associated circuit: Replace the defective components.</li> <li>• Defective bandpass filter (BPF): Replace the defective components.</li> </ul>
Does not operate between 25.000 and 520.000 MHz	<ul style="list-style-type: none"> <li>• Defective VCO1 Q27, Q28, and/or associated circuit: Replace the defective components.</li> </ul>
Does not operate between 760.000 and 1000.000 MHz	<ul style="list-style-type: none"> <li>• Defective VCO2 Q33, Q34, and/or associated circuit: Replace the defective components.</li> </ul>
Does not operate between 1000.005 and 1300.000 MHz	<ul style="list-style-type: none"> <li>• Defective VCO3 Q35, Q36, and/or associated circuit: Replace the defective components.</li> </ul>
TUNING control knob does not operate	<ul style="list-style-type: none"> <li>• Defective tuning switch Q501, Q502, and/or associated circuit: Replace the defective components.</li> </ul>
Sound squelch does not operate	<ul style="list-style-type: none"> <li>• Defective sound squelch IC6, Q21, D41, and/or associated circuit: Replace the defective components.</li> </ul>
All bands do not operate but display is OK	<ul style="list-style-type: none"> <li>• Defective PLL IC10, IC11, and/or associated circuit: Replace the defective components.</li> <li>• Defective Q29, Q30, Q41, Q42, and/or associated circuit: Replace the defective components.</li> </ul>
Searches but does not halt on the correct frequency	<ul style="list-style-type: none"> <li>• Defective IC3 and/or IC4: Replace the defective IC.</li> <li>• Discriminator coil T9 (AM and NFM modes) or T5 (WFM mode) is out of adjustment: TP2 shall have approx. 4.0 volts on normal reception in AM and NFM modes. TP1 shall have approx. 4.0 volts on normal reception in WFM mode.</li> </ul>

# PRINTED CIRCUIT BOARDS

LINEAR

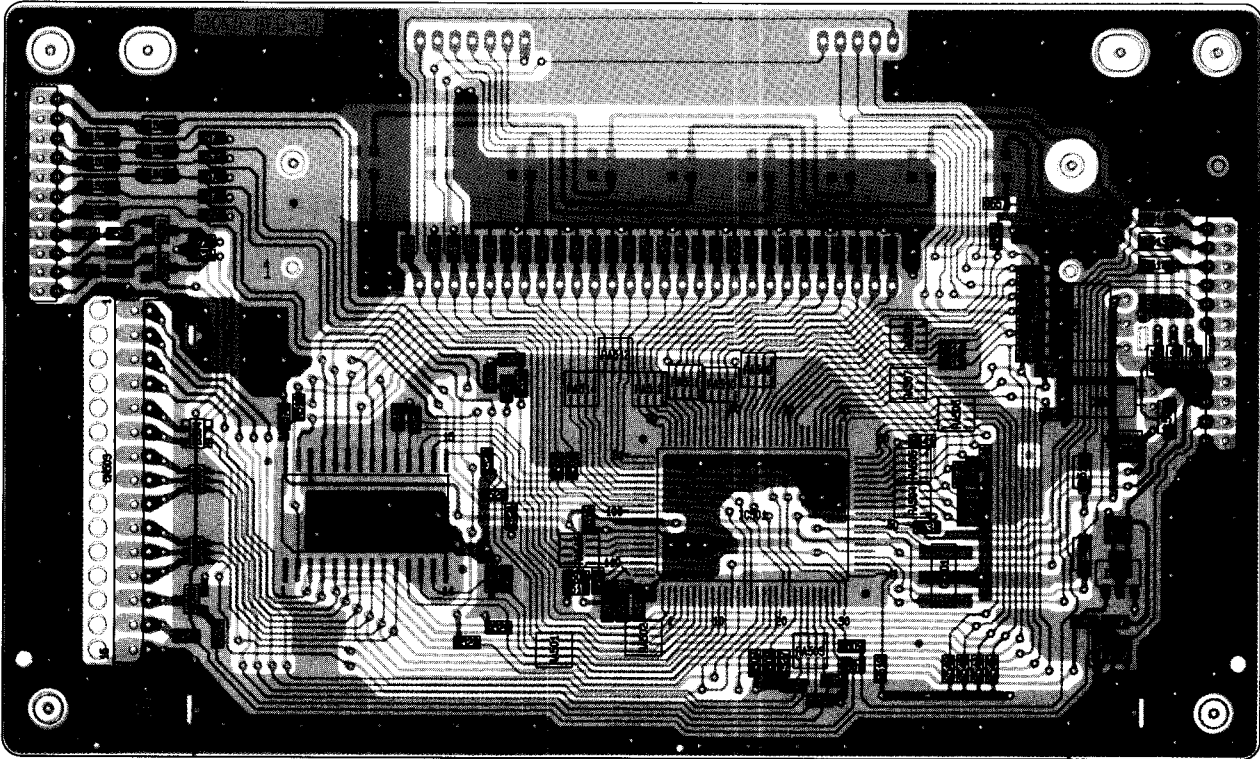


Top View

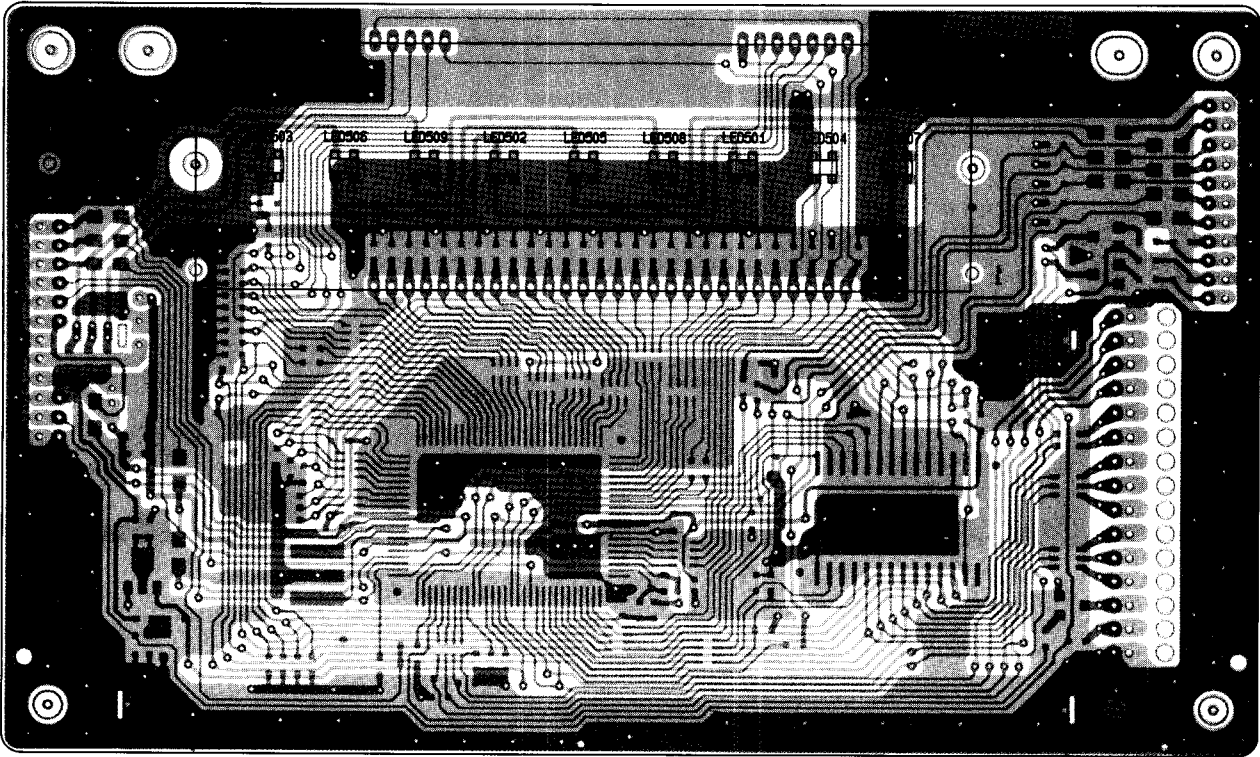


Bottom View

LOGIC



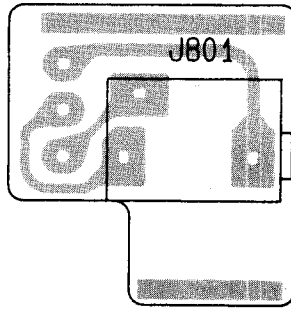
Top View



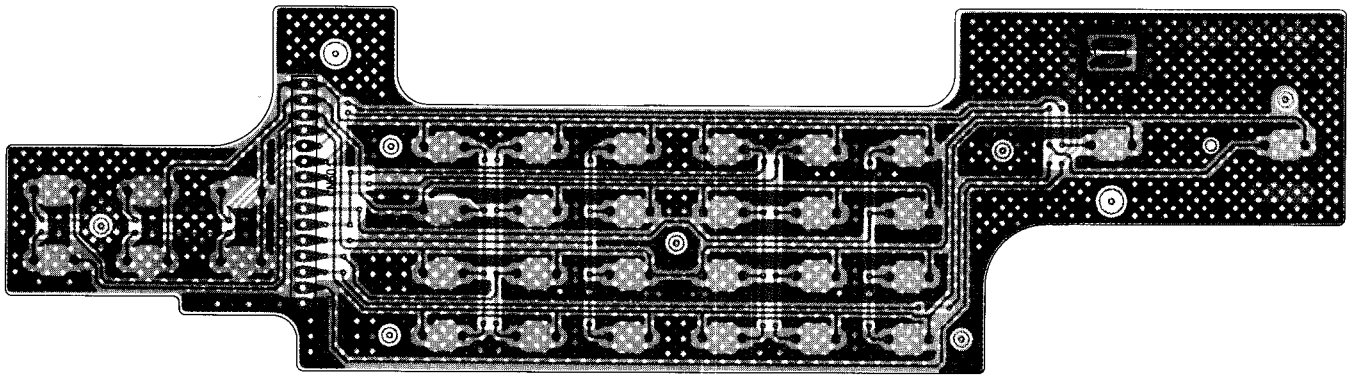
Bottom View



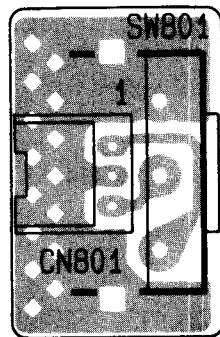
**HEADPHONE JACK**



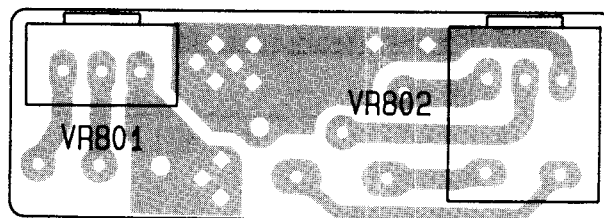
**KEYBOARD SWITCH**



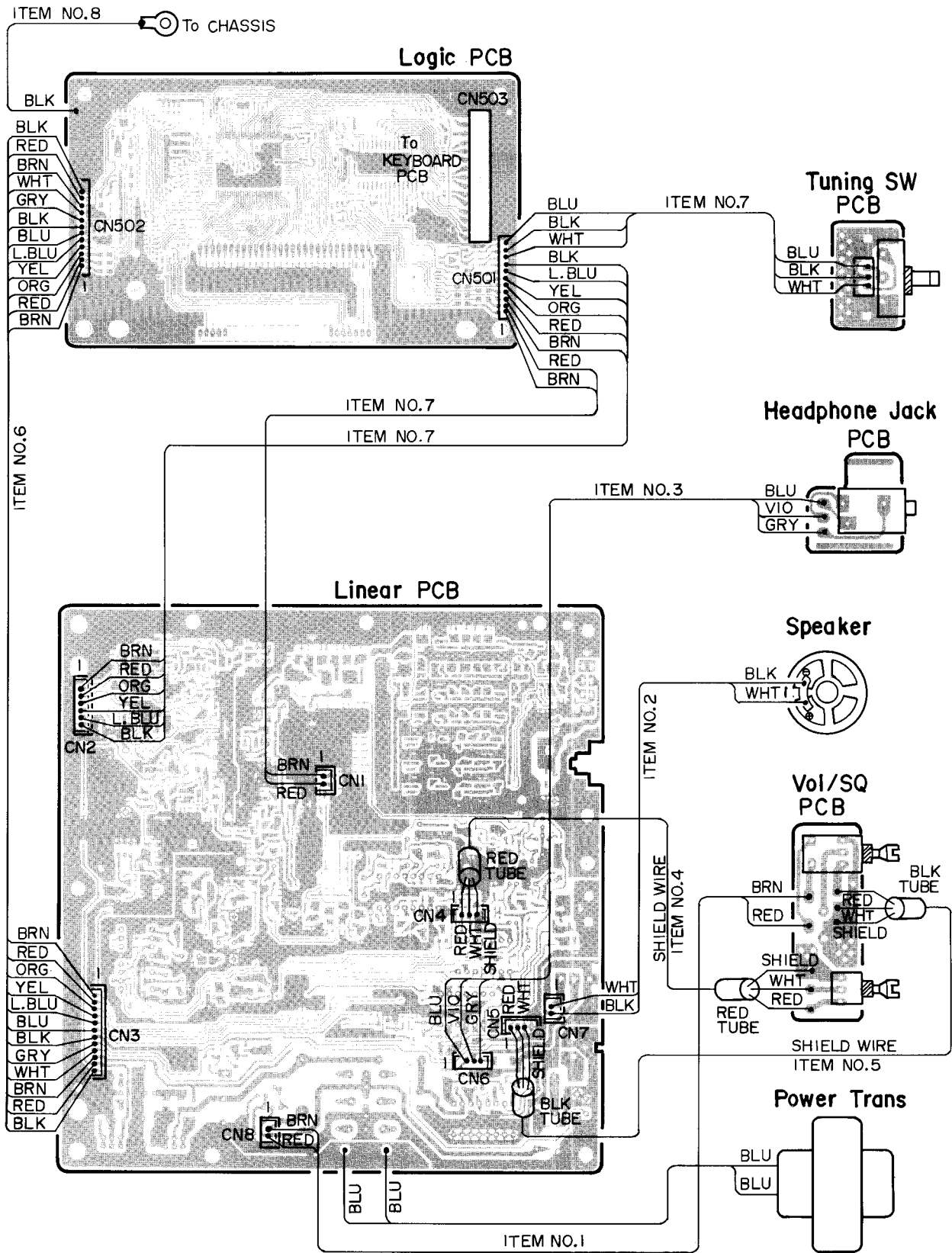
**TUNING SWITCH**



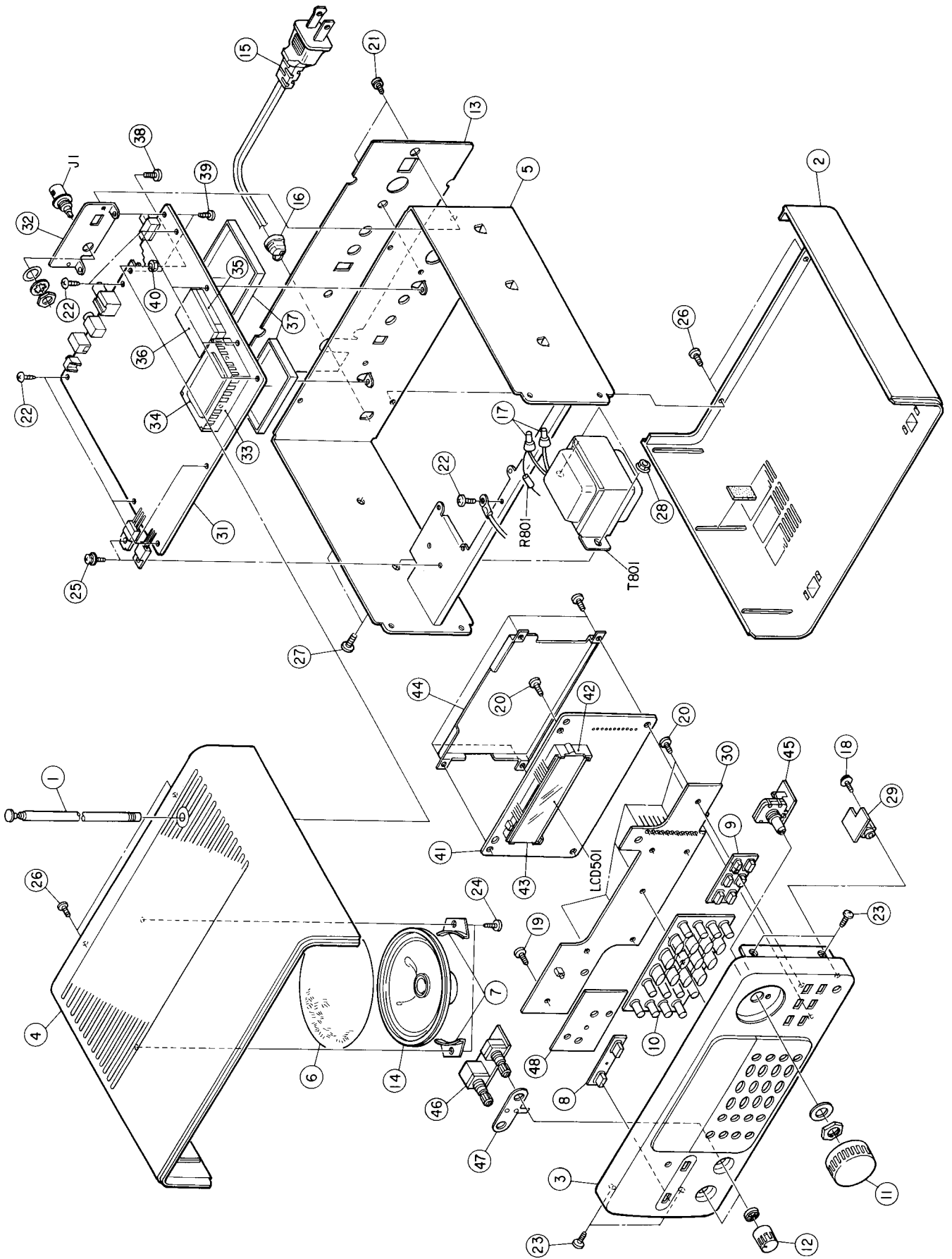
**VOLUME / SQUELCH**



# WIRING DIAGRAM



# EXPLODED VIEW



## MECHANICAL PARTS LIST

Ref. No.	Description	RS Part No.	Mfr's Part No.
1	Antenna, Telescopic		GE-88D-7597
2	Assembly, Cabinet Bottom (Non-Repairable)		GA-94D-0999
	Cabinet, Bottom		GE-93A-0695
	Cushion		GE-91D-9472
	Foot (Front)		GE-88B-7605B
	Tip (Rubber)		GE-88D-7606
	Foot (Black)		SJ-5027
3	Assembly, Escutcheon Front for USA (Non-Repairable)		GA-94D-0997
	Escutcheon, Front		GE-93A-0690
	Window, LCD		GE-93C-0691
	Assembly, Escutcheon Front for ITI (Non-Repairable)		GA-94D-0998
	Escutcheon, Front		GE-93A-0690-1
	Window, LCD		GE-93C-0691
4	Assembly, Cabinet Top		GA-94D-1151
	Cabinet, Top		GE-93A-0694
	Cushion		GE-91D-9472
5	Chassis for USA		GE-93A-0699
	Chassis for EC/Australia		GE-94C-1000
6	Himelon, Speaker		GE-88D-7681
7	Holder, Speaker		GE-84D-4580
8	Key Top (2 Key)		GE-93D-0696
9	Key Top (6 Key)		GE-93D-0697
10	Key Top (24 Key)		GE-93C-0698
11	Knob, Tuning		GE-93D-0693
12	Knob, Volume/Squelch		GE-93D-0692
13	Label, Rear		GE-94C-0692
R801△	Resistor, Solid 1.8 Mohm 1/2 W ±10% (USA/Canada only)		ERC-12GK185
14	Speaker 8 ohm 1 W		S08J18
T801△	Transformer, Power for USA/Canada		GE-84D-5158
T801△	Transformer, Power for EC/Australia		K6862
	Binder, AC Cord		No. 5121 or W-140
	Binder, Wire		PLT1M-M or BK-1
15	Cord, AC for USA/Canada		UP-953-J01
	Cord, AC for EC/Australia		HAR CRASS II (BLK 2m)
16	Strain Relief, Line Cord for USA/Canada		SR-3P-4
	Strain Relief, Line Cord for EC/Australia		SR-4N-4
17	Terminal,		1-SD
	Tube, AH-3 (USA/Canada only)		AWG6/16, 40 mm/Unit
	Wire Kit		No. 9312(A)
	Hardware Kit		No. 9312(B)
18	Screw, 2x6 TP Tapping		TP 2x6
19	Screw, 2.6x5 Pan Head P Tight BLK		P tight 2.6x5(BLK)
20	Screw, 2.6x6 Pan Head P Tight		P tight 2.6x6
21	Screw, 2.6x5 Pan Head Machine with SW Ni		PM 2.6x5 W/SW
22	Screw, 3x8 Brazier Head Tapping		BHT 3x8
23	Screw, 3x6 Binding Head Machine (Small Type)		BM 3x6
24	Screw, 3x8 Pan Head P Tight		P tight 3x8
25	Screw, 3x8 Pan Head Machine with SW/FW Ni		PM 3x8 W/SW/FW(Ni)
26	Screw, 3x8 Binding Head Machine Ni		BM 3x8(Ni)
27	Screw, 4x8 Special Binding Head Machine		SBM 4x8
28	Nut, Flange Serrated		4-DIA
48	Sheet, EDA Plastic		GE-94D-1195
29-47	See the Electrical Parts List on Page 29.		

# ELECTRICAL PARTS LIST

## HEADPHONE JACK PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
29	PCB Assembly, Headphone Jack Consists of the following:		GA-94D-0995
<b>Miscellaneous</b>			
J801	Jack, Headphone		HSJ0836-01-500

## KEYBOARD SWITCH PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
30	PCB Assembly, Keyboard Switch Consists of the following:		GA-94D-0993
<b>LED</b>			
LED601	TLR226		TLR226
<b>Miscellaneous</b>			
CN601	Connector, 15-Pin Male		3022-15B

## LINEAR PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
31	PCB Assembly, Linear Consists of the following:		GA-94D-0991
<b>Capacitors</b>			
C1	Ceramic 0.001 $\mu$ F 50 V $\pm$ 10% 0603		ECUX1H102KV or CM105SL102K50A
C2	Ceramic 0.001 $\mu$ F 50 V $\pm$ 10% 0603		ECUX1H102KV or CM105SL102K50A
C3	Ceramic 4 pF 50 V $\pm$ 0.25 pF 0603		ECUX1H040CV or CM105SL040C50A
C4	Ceramic 2 pF 50 V $\pm$ 0.5 pF 0603		ECUX1H020CV or CM105SL020C50A
C5	Ceramic 2 pF 50 V $\pm$ 0.25 pF 0603		ECUX1H020CV or CM105SL020C50A
C6	Ceramic 2 pF 50 V $\pm$ 0.25 pF 0603		ECUX1H020CV or CM105SL020C50A
C7	Ceramic 4 pF 50 V $\pm$ 0.25 pF 0603		ECUX1H040CV or CM105SL040C50A
C8	Ceramic 0.001 $\mu$ F 50 V $\pm$ 10% 0603		ECUX1H102KV or CM105SL102K50A
C9	Electrolytic 1 $\mu$ F 50 V $\pm$ 20%		SMB50V010M or 50UTCM010M
C10	Ceramic 0.001 $\mu$ F 50 V $\pm$ 10% 0603		ECUX1H102KV or CM105SL102K50A

Ref. No.	Description					RS Part No.	Mfr's Part No.
C11	Electrolytic	10 $\mu$ F	16 V	$\pm 20\%$			SMB16V100M or 16UTCM100M
C12	Ceramic	12 pF	50 V	$\pm 10\%$	0603		ECUX1H120KV or CM105SL120K50A
C13	Ceramic	6 pF	50 V	$\pm 0.5$ pF	0603		ECUX1H060DV or CM105SL060D50A
C14	Ceramic	2 pF	50 V	$\pm 0.25$ pF	0603		ECUX1H020CV or CM105SL020C50A
C15	Ceramic	12 pF	50 V	$\pm 10\%$	0603		ECUX1H120KV or CM105SL120K50A
C16	Ceramic	8 pF	50 V	$\pm 0.5$ pF	0603		ECUX1H080DV or CM105SL080D50A
C17	Ceramic	12 pF	50 V	$\pm 10\%$	0603		ECUX1H120KV or CM105SL120K50A
C18	Ceramic	12 pF	50 V	$\pm 10\%$	0603		ECUX1H120KV or CM105SL120K50A
C19	Ceramic	12 pF	50 V	$\pm 10\%$	0603		ECUX1H120KV or CM105SL120K50A
C20	Ceramic	3 pF	50 V	$\pm 0.25$ pF	0603		ECUX1H030CV or CM105SL030C50A
C21	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C22	Electrolytic	1 $\mu$ F	50 V	$\pm 20\%$			SMB50V010M or 50UTCM010M
C23	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C24	Ceramic	18 pF	50 V	$\pm 10\%$	0603		ECUX1H180KV or CM105SL180K50A
C25	Ceramic	12 pF	50 V	$\pm 10\%$	0603		ECUX1H120KV or CM105SL120K50A
C26	Ceramic	18 pF	50 V	$\pm 10\%$	0603		ECUX1H180KV or CM105SL180K50A
C27	Ceramic	10 pF	50 V	$\pm 0.5$ pF	0603		ECUX1H100DV or CM105SL100D50A
C28	Ceramic	18 pF	50 V	$\pm 10\%$	0603		ECUX1H180KV or CM105SL180K50A
C29	Ceramic	18 pF	50 V	$\pm 10\%$	0603		ECUX1H180KV or CM105SL180K50A
C30	Ceramic	10 pF	50 V	$\pm 0.5$ pF	0603		ECUX1H100DV or CM105SL100D50A
C31	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C32	Electrolytic	1 $\mu$ F	50 V	$\pm 20\%$			SMB50V010M or 50UTCM010M
C33	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C34	Ceramic	39 pF	50 V	$\pm 10\%$	0603		ECUX1H390KV or CM105SL390K50A
C35	Ceramic	15 pF	50 V	$\pm 10\%$	0603		ECUX1H150KV or CM105SL150K50A
C36	Ceramic	33 pF	50 V	$\pm 10\%$	0603		ECUX1H330KV or CM105SL330K50A
C37	Ceramic	18 pF	50 V	$\pm 10\%$	0603		ECUX1H180KV or CM105SL180K50A

Ref. No.	Description					RS Part No.	Mfr's Part No.
C38	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C39	Ceramic	27 pF	50 V	±10%	0603		ECUX1H270KV or CM105SL270K50A
C40	Ceramic	5 pF	50 V	±0.25 pF	0603		ECUX1H050CV or CM105SL050C50A
C41	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C42	Electrolytic	1 µF	50 V	±20%			SMB50V010M or 50UTCM010M
C43	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C44	Ceramic	47 pF	50 V	±10%	0603		ECUX1H470KV or CM105SL470K50A
C45	Ceramic	22 pF	50 V	±10%	0603		ECUX1H220KV or CM105SL220K50A
C46	Ceramic	47 pF	50 V	±10%	0603		ECUX1H470KV or CM105SL470K50A
C47	Ceramic	39 pF	50 V	±10%	0603		ECUX1H390KV or CM105SL390K50A
C48	Ceramic	68 pF	50 V	±10%	0603		ECUX1H680KV or CM105SL680K50A
C49	Ceramic	68 pF	50 V	±10%	0603		ECUX1H680KV or CM105SL680K50A
C50	Ceramic	39 pF	50 V	±10%	0603		ECUX1H390KV or CM105SL390K50A
C51	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C52	Electrolytic	1 µF	50 V	±20%			SMB50V010M or 50UTCM010M
C53	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102K or CM105SL102K50A
C54	Ceramic	56 pF	50 V	±10%	0603		ECUX1H560KV or CM105SL560K50A
C55	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C56	Ceramic	22 pF	50 V	±10%	0603		ECUX1H220KV or CM105SL220K50A
C57	Ceramic	82 pF	50 V	±10%	0603		ECUX1H820KV or CM105SL820K50A
C58	Ceramic	68 pF	50 V	±10%	0603		ECUX1H680KV or CM105SL680K50A
C59	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C60	Electrolytic	1 µF	50 V	±20%			SMB50V010M or 50UTCM010M
C61	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C62	Ceramic	150 pF	50 V	±10%	0603		ECUX1H151KV or CM105SL151K50A
C63	Ceramic	68 pF	50 V	±10%	0603		ECUX1H680KV or CM105SL680K50A
C64	Ceramic	56 pF	50 V	±10%	0603		ECUX1H560KV or CM105SL560K50A

Ref. No.	Description					RS Part No.	Mfr's Part No.
C65	Ceramic	180 pF	50 V	±10%	0603		ECUX1H181KV or CM105SL181K50A
C66	Ceramic	150 pF	50 V	±10%	0603		ECUX1H151KV or CM105SL151K50A
C67	Ceramic	0.001 μF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C68	Electrolytic	1 μF	50 V	±20%			SMB50V010M or 50UTCM010M
C69	Ceramic	0.001 μF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C70	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C71	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C72	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C73	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C74	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C75	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C76	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C77	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C78	Ceramic	15 pF	50 V	±10%	0603		ECUX1H150KV or CM105SL150K50A
C79	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C80	Ceramic	0.001 μF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C81	Ceramic	0.01 μF	50 V	±10%	0603		ECUX1H103KBV or CM105X7R103K50A
C82	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C83	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C84	Ceramic	2 pF	50 V	±0.25 pF	0603		ECUX1H020CV or CM105SL020C50A
C85	Ceramic	4 pF	50 V	±0.25 pF	0603		ECUX1H040CV or CM105SL040C50A
C86	Ceramic	4 pF	50 V	±0.25 pF	0603		ECUX1H040CV or CM105SL040C50A
C87	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C88	Ceramic	0.001 μF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C89	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C90	Ceramic	0.001 μF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C91	Ceramic	4 pF	50 V	±0.25 pF	0603		ECUX1H040CV or CM105SL040C50A



Ref. No.	Description					RS Part No.	Mfr's Part No.
C92	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C93	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C94	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C95	Ceramic	10 pF	50 V	$\pm 0.5$ pF	0603		ECUX1H100DV or CM105SL100D50A
C96	Ceramic	2 pF	50 V	$\pm 0.25$ pF	0603		ECUX1H020CV or CM105SL020C50A
C97	Ceramic	5 pF	50 V	$\pm 0.25$ pF	0603		ECUX1H050CV or CM105SL050C50A
C98	Ceramic	5 pF	50 V	$\pm 0.25$ pF	0603		ECUX1H050CV or CM105SL050C50A
C99	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C100	Ceramic	22 pF	50 V	$\pm 10\%$	0603		ECUX1H220KV or CM105SL220K50A
C101	Ceramic	12 pF	50 V	$\pm 10\%$	0603		ECUX1H120KV or CM105SL120K50A
C102	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C103	Ceramic	18 pF	50 V	$\pm 10\%$	0603		ECUX1H180KV or CM105SL180K50A
C104	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C105	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C106	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C107	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C108	Electrolytic	33 $\mu$ F	16 V	$\pm 20\%$			SMB16V330M or 16UTCMS330M
C109	Ceramic	47 pF	50 V	$\pm 10\%$	0603		ECUX1H470KV or CM105SL470K50A
C110	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C111	Ceramic	18 pF	50 V	$\pm 10\%$	0603		ECUX1H180KV or CM105SL180K50A
C112	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C113	Ceramic	56 pF	50 V	$\pm 10\%$	0603		ECUX1H560KV or CM105SL560K50A
C114	Ceramic	56 pF	50 V	$\pm 10\%$	0603		ECUX1H560KV or CM105SL560K50A
C115	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C116	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C117	Mylar*	0.047 $\mu$ F	50 V	$\pm 10\%$			AMZ-473K50
C118	Ceramic	0.022 $\mu$ F	50 V	$\pm 10\%$	0805		C2012X7R1H223K or CM21X7R223K50A

\*Mylar is a registered trademark of E.I. DuPont de Nemours and Company.

Ref. No.	Description					RS Part No.	Mfr's Part No.
C119	Mylar	0.047 $\mu$ F	50 V	$\pm$ 10%			AMZ-473K50
C120	Ceramic	0.047 $\mu$ F	50 V	$\pm$ 10%	0805		C2012X7R1H473K or CM21X7R473K50A
C121	Ceramic	0.022 $\mu$ F	50 V	$\pm$ 10%	0805		C2012X7R1H223K or CM21X7R223K50A
C122	Electrolytic	100 $\mu$ F	16 V	$\pm$ 20%			SM16V101M or 16UTSS101M
C123	Ceramic	0.022 $\mu$ F	50 V	$\pm$ 10%	0805		C2012X7R1H223K or CM21X7R223K50A
C124	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C125	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C126	Ceramic	100 pF	50 V	$\pm$ 10%	0603		ECUX1H101KV or CM105SL101K50A
C127	Ceramic	100 pF	50 V	$\pm$ 10%	0603		ECUX1H101KV or CM105SL101K50A
C128	Ceramic	220 pF	50 V	$\pm$ 10%	0603		ECUX1H221KV or CM105SL221K50A
C129	Ceramic	47 pF	50 V	$\pm$ 10%	0603		ECUX1H470KV or CM105SL470K50A
C130	Mylar	0.0022 $\mu$ F	50 V	$\pm$ 10%			AMZ-222K50
C131	Mylar	0.01 $\mu$ F	50 V	$\pm$ 10%			AMZ-103K50
C132	Electrolytic	4.7 $\mu$ F	50 V	$\pm$ 20%			SM50V4R7M or 50UTSS4R7M
C133	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C134	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C135	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C136	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C137	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C138	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C139	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C140	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C141	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C142	Ceramic	18 pF	50 V	$\pm$ 10%	0603		ECUX1H180KV or CM105SL180K50A
C143	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C144	Ceramic	10 pF	50 V	$\pm$ 0.5 pF	0603		ECUX1H100DV or CM105SL100D50A
C145	Ceramic	33 pF	50 V	$\pm$ 10%	0603		ECUX1H330KV or CM105SL330K50A
C146	Ceramic	0.047 $\mu$ F	50 V	$\pm$ 10%	0805		C2012X7R1H473K or CM21X7R473K50A
C147	Tantalum	0.47 $\mu$ F	35 V	$\pm$ 20%			DN1VR47M1S

Ref. No.	Description					RS Part No.	Mfr's Part No.
C148	Tantalum	0.47 $\mu$ F	35 V	$\pm$ 20%			DN1VR47M1S
C149	Ceramic	10 pF	50 V	$\pm$ 0.5 pF	0603		ECUX1H100DV or CM105SL100D50A
C150	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C151	Electrolytic	220 $\mu$ F	16 V	$\pm$ 20%			SM16V221M or 16UTSS221M
C152	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C153	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C154	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C155	Electrolytic	10 $\mu$ F	16 V	$\pm$ 20%			SM16V100M or 16UTSS100M
C156	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C157	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C158	Electrolytic	10 $\mu$ F	16 V	$\pm$ 20%			SM16V100M or 16UTSS100M
C159	Mylar	0.056 $\mu$ F	50 V	$\pm$ 10%			AMZ-563K50
C160	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C161	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C162	Ceramic	0.0047 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H472KBV or CM105X7R472K50A
C163	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102K or CM105SL102K50A
C164	Ceramic	8 pF	50 V	$\pm$ 0.5 pF	0603		ECUX1H080DV or CM105SL080D50A
C165	Mylar	0.01 $\mu$ F	50 V	$\pm$ 10%			AMZ-103K50
C166	Tantalum	0.1 $\mu$ F	35 V	$\pm$ 20%			DN1V0R1M1S
C167	Ceramic	470 pF	50 V	$\pm$ 10%	0603		ECUX1H471KV or CM105SL471K50A
C168	Ceramic	470 pF	50 V	$\pm$ 10%	0603		ECUX1H471KV or CM105SL471K50A
C169	Ceramic	0.056 $\mu$ F	25 V	$\pm$ 10%	0805		C2012X7R1E563K or CM21X7R563K25A
C170	Electrolytic	0.1 $\mu$ F	50 V	$\pm$ 20%			SM50VR10M or 50UTSSR10M
C171	Ceramic	0.047 $\mu$ F	50 V	$\pm$ 10%	0805		C2012X7R1H473K or CM21X7R473K50A
C172	Ceramic	0.056 $\mu$ F	25 V	$\pm$ 10%	0805		C2012X7R1E563K or CM21X7R563K25A
C173	Ceramic	0.022 $\mu$ F	50 V	$\pm$ 10%	0805		C2012X7R1H223K or CM21X7R223K50A
C174	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C175	Electrolytic	0.1 $\mu$ F	50 V	$\pm$ 20%			SM50VR10M or 50UTSSR10M
C176	Ceramic	0.022 $\mu$ F	50 V	$\pm$ 10%	0805		C2012X7R1H223K or CM21X7R223K50A

Ref. No.	Description					RS Part No.	Mfr's Part No.
C177	Ceramic	0.056 $\mu$ F	25 V	$\pm$ 10%	0805		C2012X7R1E563K or CM21X7R563K25A
C178	Ceramic	0.0047 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H472KBV or CM105X7R472K50A
C179	Ceramic	0.047 $\mu$ F	50 V	$\pm$ 10%	0805		C2012X7R1H473K or CM21X7R473K50A
C180	Ceramic	0.082 $\mu$ F	25 V	$\pm$ 10%	0805		CC20B1E823K or CM21X7R823K25A
C181	Ceramic	330 pF	50 V	$\pm$ 10%	0603		ECUX1H331KV or CM105SL331K50A
C182	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C183	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C184	Tantalum	0.1 $\mu$ F	35 V	$\pm$ 20%			DN1V0R1M1S
C185	Electrolytic	4.7 $\mu$ F	50 V	$\pm$ 20%			SM50V4R7M or 50UTSS4R7M
C186	Ceramic	0.0015 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H152KBV or CM105X7R152K50A
C187	Ceramic	0.0068 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H682KBV or CM105X7R682K50A
C188	Ceramic	0.047 $\mu$ F	50 V	$\pm$ 10%	0805		C2012X7R1H473K or CM21X7R473K50A
C189	Ceramic	0.0068 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H682KBV or CM105X7R682K50A
C190	Electrolytic	2.2 $\mu$ F	50 V	$\pm$ 20%			SM50V2R2M or 50UTSS2R2M
C191	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C192	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C193	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C194	Electrolytic	47 $\mu$ F	16 V	$\pm$ 20%			SM16V470M or 16UTSS470M
C195	Electrolytic	1000 $\mu$ F	25 V	$\pm$ 20%			SM25V102M or 25UTES102M
C196	Electrolytic	100 $\mu$ F	16 V	$\pm$ 20%			SM16V101M or 16UTSS101M
C197	Ceramic	0.1 $\mu$ F	50 V	+80%-20%			PRE131F104Z or SR295F104Z
C198	Electrolytic	2.2 $\mu$ F	50 V	$\pm$ 20%			SM50V2R2M or 50UTSS2R2M
C199 $\Delta$	Electrolytic	2200 $\mu$ F	25 V	$\pm$ 20%			SM25V222M or 25UTSS222M
C200	Tantalum	0.33 $\mu$ F	35 V	$\pm$ 20%			DN1VR33M1S
C201	Tantalum	0.1 $\mu$ F	35 V	$\pm$ 20%			DN1V0R1M1S
C202	Electrolytic	100 $\mu$ F	16 V	$\pm$ 20%			SM16V101M or 16UTSS101M
C203	Electrolytic	220 $\mu$ F	16 V	$\pm$ 20%			SM16V221M or 16UTSS221M
C204	Mylar	0.033 $\mu$ F	50 V	$\pm$ 10%			AMZ-333K50
C205	Electrolytic	220 $\mu$ F	16 V	$\pm$ 20%			SM16V221M or 16UTSS221M

Ref. No.	Description					RS Part No.	Mfr's Part No.
C206	Electrolytic	470 $\mu$ F	25 V	$\pm$ 20%			SM25V471M or 25UTES471M
C207	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C208	Electrolytic	1 $\mu$ F	50 V	$\pm$ 20%			SM50V010M or 50UTSS010M
C209	Electrolytic	10 $\mu$ F	16 V	$\pm$ 20%			SM16V100M or 16UTSS100M
C210	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C211	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C212	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C213	Electrolytic	10 $\mu$ F	16 V	$\pm$ 20%			SMB16V100M or 16UTCM100M
C214	Ceramic	100 pF	50 V	$\pm$ 10%	0603		ECUX1H101KV or CM105SL101K50A
C215	Ceramic	2 pF	50 V	$\pm$ 0.25 pF	0603		ECUX1H020CV or CM105SL020C50A
C216	Ceramic	1 pF	50 V	$\pm$ 0.25 pF	0603		ECUX1H010CV or CM105SL010C50A
C217	Ceramic	2 pF	50 V	$\pm$ 0.25 pF	0603		ECUX1H020CV or CM105SL020C50A
C218	Ceramic	47 pF	50 V	$\pm$ 10%	0603		ECUX1H470KV or CM105SL470K50A
C219	Ceramic	0.01 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H103KBV or CM105X7R103K50A
C220	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C221	Ceramic	150 pF	50 V	$\pm$ 10%	0603		ECUX1H151KV or CM105SL151K50A
C222	Mylar	0.01 $\mu$ F	50 V	$\pm$ 10%			AMZ-103K50
C223	Ceramic	0.082 $\mu$ F	25 V	$\pm$ 10%	0805		CC20B1E823K or CM21X7R823K25A
C224	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C225	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C226	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C227	Ceramic	0.001 $\mu$ F	50 V	$\pm$ 10%	0603		ECUX1H102KV or CM105SL102K50A
C228	Ceramic	100 pF	50 V	$\pm$ 10%	0603		ECUX1H101KV or CM105SL101K50A
C229	Ceramic	22 pF	50 V	$\pm$ 10%	0603		ECUX1H220KV or CM105SL220K50A
C230	Ceramic	22 pF	50 V	$\pm$ 10%	0603		ECUX1H220KV or CM105SL220K50A
C231	Ceramic	100 pF	50 V	$\pm$ 10%	0603		ECUX1H101KV or CM105SL101K50A
C232	Ceramic	5 pF	50 V	$\pm$ 0.25 pF	0603		ECUX1H050CV or CM105SL050C50A
C233	Ceramic	2 pF	50 V	$\pm$ 0.25 pF	0603		ECUX1H020CV or CM105SL020C50A

Ref. No.	Description					RS Part No.	Mfr's Part No.
C234	Ceramic	22 pF	50 V	±10%	0603		ECUX1H220KV or CM105SL220K50A
C235	Ceramic	1 pF	50 V	±0.25 pF	0603		ECUX1H010CV or CM105SL010C50A
C236	Ceramic	22 pF	50 V	±10%	0603		ECUX1H220KV or CM105SL220K50A
C237	Ceramic	1 pF	50 V	±0.25 pF	0603		ECUX1H010CV or CM105SL010C50A
C238	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C239	Ceramic	4 pF	50 V	±0.25 pF	0603		ECUX1H040CV or CM105SL040C50A
C240	Ceramic	5 pF	50 V	±0.25 pF	0603		ECUX1H050CV or CM105SL050C50A
C241	Ceramic	5 pF	50 V	±0.25 pF	0603		ECUX1H050CV or CM105SL050C50A
C242	Ceramic	220 pF	50 V	±10%	0603		ECUX1H221KV or CM105SL221K50A
C243	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C244	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C245	Ceramic	47 pF	50 V	±10%	0603		ECUX1H470KV or CM105SL470K50A
C246	Ceramic	47 pF	50 V	±10%	0603		ECUX1H470KV or CM105SL470K50A
C247	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C248	Electrolytic	10 µF	16 V	±20%			SMB16V100M or 16UTCM100M
C249	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C250	Ceramic	0.01 µF	50 V	±10%	0603		ECUX1H103KBV or CM105X7R103K50A
C251	Electrolytic	22 µF	16 V	±20%			SMB16V220M or 16UTCMS220M
C252	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C253	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C254	Electrolytic	22 µF	16 V	±20%			SMB16V220M or 16UTCMS220M
C255	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C256	Ceramic	0.033 µF	50 V	±10%	0805		C2012X7R1H333K or CM21X7R333K50A
C257	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C258	Mylar	0.01 µF	50 V	±10%			AMZ-103K50
C259	Mylar	0.047 µF	50 V	±10%			AMZ-473K50
C260	Tantalum	0.1 µF	35 V	±10%			TSD-A-1V0R1K
C261	Ceramic	10 pF	50 V	±0.5 pF	0603		ECUX1H100DV or CM105SL100D50A
C262	Ceramic	18 pF	50 V	±10%	0603		ECUX1H180KV or CM105SL180K50A

Ref. No.	Description					RS Part No.	Mfr's Part No.
C263	Ceramic	10 pF	50 V	±0.5 pF	0603		ECUX1H100DV or CM105SL100D50A
C264	Ceramic	6 pF	50 V	±0.5 pF	0603		ECUX1H060DV or CM105SL060D50A
C265	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C266	Ceramic	2 pF	50 V	±0.25 pF	0603		ECUX1H020CV or CM105SL020C50A
C267	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102K or CM105SL102K50A
C268	Electrolytic	100 µF	16 V	±20%			SMB16V101M or 16UTCM101M
C269	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C270	Ceramic	0.01 µF	50 V	±10%	0603		ECUX1H103KBV or CM105X7R103K50A
C271	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102K or CM105SL102K50A
C272	Ceramic	10 pF	50 V	±0.5 pF	0603		ECUX1H100DV or CM105SL100D50A
C273	Ceramic	10 pF	50 V	±0.5 pF	0603		ECUX1H100DV or CM105SL100D50A
C274	Electrolytic	10 µF	50 V	±20%			SM50V100M or 50UTSS100M
C275	Ceramic	0.01 µF	50 V	±10%	0603		ECUX1H103KBV or CM105X7R103K50A
C276	Ceramic	0.01 µF	50 V	±10%	0603		ECUX1H103KBV or CM105X7R103K50A
C277	Ceramic	330 pF	50 V	±10%	0603		ECUX1H331KV or CM105SL331K50A
C278	Electrolytic	10 µF	50 V	±20%			SM50V100M or 50UTSS100M
C279	Electrolytic	10 µF	16 V	±20%			SMB16V100M or 16UTCM100M
C280	Ceramic	0.01 µF	50 V	±10%	0603		ECUX1H103KBV or CM105X7R103K50A
C281	Tantalum	0.1 µF	35 V	±20%			DN1V0R1M1S
C282	Tantalum	0.33 µF	35 V	±20%			DN1VR33M1S
C283	Electrolytic	22 µF	16 V	±20%			SM16V220M or 16UTSS220M
C284	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C285	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C286	Electrolytic	10 µF	16 V	±20%			SM16V100M or 16UTSS100M
C287	Ceramic	2 pF	50 V	±0.25 pF	0603		ECUX1H020CV or CM105SL020C50A
C288	Ceramic	5 pF	50 V	±0.25 pF	0603		ECUX1H050CV or CM105SL050C50A

Ref. No.	Description			RS Part No.	Mfr's Part No.
<b>Capacitor Blocks</b>					
CB1	0.01 $\mu$ F x 2	250 V	+80%-20%		EXR-FS203ZS
CB2	0.01 $\mu$ F x 2	250 V	+80%-20%		EXR-FS203ZS
<b>Ceramic Filters</b>					
CF1	10.7 MHz				SFE10.7MA5W-A
CF2	10.7 MHz				SFE10.7MA5W-A
CF3	455 kHz				CFU455D2
CF4	455 kHz				SFPS455H or KBF455P-6AS
<b>Diodes</b>					
D1	1SS353	Marked C	Silicon		1SS353
D2	1SS353	Marked C	Silicon		1SS353
D3	HSU277	Marked 3	Silicon		HSU277
D4	HSU277	Marked 3	Silicon		HSU277
D5	HSU277	Marked 3	Silicon		HSU277
D6	HSU277	Marked 3	Silicon		HSU277
D7	HSU277	Marked 3	Silicon		HSU277
D8	HSU277	Marked 3	Silicon		HSU277
D9	HSU277	Marked 3	Silicon		HSU277
D10	HSU277	Marked 3	Silicon		HSU277
D11	HSU277	Marked 3	Silicon		HSU277
D12	HSU277	Marked 3	Silicon		HSU277
D13	HSU277	Marked 3	Silicon		HSU277
D14	HSU277	Marked 3	Silicon		HSU277
D15	HSU277	Marked 3	Silicon		HSU277
D16	HSU277	Marked 3	Silicon		HSU277
D17	HSU277	Marked 3	Silicon		HSU277
D18	HSU277	Marked 3	Silicon		HSU277
D19	HSU277	Marked 3	Silicon		HSU277
D20	HSU277	Marked 3	Silicon		HSU277
D21	HSU277	Marked 3	Silicon		HSU277
D22	HSU277	Marked 3	Silicon		HSU277
D23	HSU277	Marked 3	Silicon		HSU277
D24	HSU277	Marked 3	Silicon		HSU277
D25	HSU277	Marked 3	Silicon		HSU277
D26	HSU277	Marked 3	Silicon		HSU277
D27	HSU277	Marked 3	Silicon		HSU277
D28	HSU277	Marked 3	Silicon		HSU277
D29	HSU277	Marked 3	Silicon		HSU277
D30	HSU277	Marked 3	Silicon		HSU277
D31	ND433G	Schottky Barrier	Silicon		ND433G
D32	HSU277	Marked 3	Silicon		HSU277
D33	HSU277	Marked 3	Silicon		HSU277
D34	MA728	Marked 2A	Silicon		MA728
D35	MA728	Marked 2A	Silicon		MA728
D36	SD103	Schottky Barrier	Silicon		SD103
D37	DA227	Marked N20	Silicon		DA227
D38	1SS354	Marked B	Silicon		1SS354
D39	DA227	Marked N20	Silicon		DA227



Ref. No.	Description				RS Part No.	Mfr's Part No.
D40	1SS354	Marked B	Silicon			1SS354
D41	DA227	Marked N20	Silicon			DA227
D42	HZ9B2L		Silicon	Zener		HZ9B2L
D43	MA716	Marked M1U	Silicon			MA716
D44	DA227	Marked N20	Silicon			DA227
D45	HZ11B2L		Silicon	Zener		HZ11B2L
D46	1N4002		Silicon			1N4002
D47 <sup>△</sup>	RC202	Rectifier	Silicon			RC202
D48	HVU306A5	Marked 3	Silicon	Varactor		HVU306A5
D49	HVU306A5	Marked 3	Silicon	Varactor		HVU306A5
D50	HVU306A5	Marked 3	Silicon	Varactor		HVU306A5
D51	HVU306A5	Marked 3	Silicon	Varactor		HVU306A5
D52	HSU277	Marked 3	Silicon			HSU277
D53	HSU277	Marked 3	Silicon			HSU277
D54	HVU12-3	Marked A	Silicon	Varactor		HVU12-3
D55	HVU300A	Marked 0	Silicon	Varactor		HVU300A
D56	HVU300A	Marked 0	Silicon	Varactor		HVU300A
D57	HVU308-1	Marked 8	Silicon	Varactor		HVU308-1
D58	1SS353	Marked C	Silicon			1SS353
<b>Integrated Circuits</b>						
IC1	KA2243 or HA12413	IF Amp./Detector	Bipolar			KA2243 or HA12413
IC2	TK10420	Osc./Mixer/Detector/ IF Amp./Noise Amp.	Bipolar			TK10420
IC3	BA10358F or NJM2904G	Zeromatic	Bipolar	SMT		BA10358F or NJM2904G
IC4	TC4S66F	Zeromatic	MOS	SMT		TC4S66F
IC5	TC4066BP or $\mu$ PD4066BC	Switching	MOS			TC4066BP or $\mu$ PD4066BC
IC6	$\mu$ PC324C or TA75324P	Sound SQ Amp./ AF Pre-Amp./Mute Switching	Bipolar			$\mu$ PC324 or TA75324P
IC7	TDA1905	AF Power Amp.	Bipolar			TDA1905
IC8	MC7805CT or TA78005AP or MCT7805CT or KIA7805P or KA7805CT or L7805CV or LM7805CT	Voltage Regulator	Bipolar			MC7805CT or TA78005AP or MCT7805CT or KIA7805P or KA7805CT or L7805CV or LM7805CT
IC9	S81250HG-RD	Voltage Regulator	CMOS	SMT		S81250HG-RD
IC10	CXA1356N	PLL	MOS	SMT		CXA1356N
IC11	MB1505PF-G-BND	PLL	MOS	SMT		MB1505PF-G-BND
IC12	BU2040F	Selector	MOS	SMT		BU2040F
IC13	M5291FP-600C	DC-DC Converter	Bipolar	SMT		M5291FP-600C
IC14	TA78L05S	Voltage Regulator	Bipolar			TA78L05S
<b>Coils</b>						
L1	Choke	1 $\mu$ H				LAL03NA1R0M
L2	Trap	(609.5 MHz)				2LNB-253
L3	BPF	760 MHz to 1300 MHz		0805		LL2012-F5N6K
L4	BPF	760 MHz to 1300 MHz		0805		LL2012-F5N6K
L5	BPF	760 MHz to 1300 MHz		0805		LL2012-F5N6K

Ref. No.	Description			RS Part No.	Mfr's Part No.
L6	BPF	760 MHz to 1300 MHz	0805		LL2012-F5N6K
L7	BPF	280 MHz to 520 MHz	0805		LL2012-F22NK
L8	BPF	280 MHz to 520 MHz	0805		LL2012-F22NK
L9	BPF	280 MHz to 520 MHz	0805		LL2012-F22NK
L10	BPF	280 MHz to 520 MHz	0805		LL2012-F22NK
L11	BPF	280 MHz to 520 MHz	0805		LL2012-F22NK
L12	BPF	280 MHz to 520 MHz	0805		LL2012-F22NK
L13	BPF	174 MHz to 279.995 MHz	0805		LL2012-F27NK
L14	BPF	174 MHz to 279.995 MHz	0805		LL2012-F27NK
L15	BPF	174 MHz to 279.995 MHz	0805		LL2012-F47NK
L16	BPF	174 MHz to 279.995 MHz	0805		LL2012-F47NK
L17	BPF	174 MHz to 279.995 MHz	0805		LL2012-F47NK
L18	BPF	108 MHz to 173.995 MHz	0805		LL2012-F56NK
L19	BPF	108 MHz to 173.995 MHz	0805		LL2012-F56NK
L20	BPF	108 MHz to 173.995 MHz	0805		LL2012-F82NK
L21	BPF	108 MHz to 173.995 MHz	0805		LL2012-F82NK
L22	BPF	108 MHz to 173.995 MHz	0805		LL2012-F82NK
L23	BPF	68 MHz to 107.995 MHz	0805		LL2012-F82NK
L24	BPF	68 MHz to 107.995 MHz	0805		LL2012-F82NK
L25	BPF	68 MHz to 107.995 MHz	1206		LQN1AR10J04
L26	BPF	68 MHz to 107.995 MHz	1206		LQN1AR10J04
L27	BPF	68 MHz to 107.995 MHz	1206		LQN1AR10J04
L28	BPF	40 MHz to 67.995 MHz	1206		LQH1NR22K04
L29	BPF	40 MHz to 67.995 MHz	1206		LQH1NR22K04
L30	BPF	40 MHz to 67.995 MHz	1206		LQH1NR22K04
L31	BPF	40 MHz to 67.995 MHz	1206		LQH1NR22K04
L32	BPF	25 MHz to 39.995 MHz	1206		LQH1NR33K04
L33	BPF	25 MHz to 39.995 MHz	1206		LQH1NR33K04
L34	BPF	25 MHz to 39.995 MHz	1206		LQH1NR33K04
L35	BPF	25 MHz to 39.995 MHz	1206		LQH1NR33K04
L36	Choke	10 $\mu$ H			LAL03NA100M
L37	DBM				2LNM-258
L38	DBM				2LNM-258
L39	Choke				2LNO-254
L40	Choke	22 nH	0805		LL2012-F22NK
L41	Choke	22 nH	0805		LL2012-F22NK
L42	Choke	0.47 $\mu$ H			LAL03NAR47M
L43	Choke	2.2 mH			LHL06NB222J
L44	Choke	1 $\mu$ H			LAL03NA1R0M
L45	Choke				3B037
L46	Choke	220 nH	1206		LQH1NR22K04
L47	VCO				2LNO-255
L48	Stripline on PCB				
L49	Choke	27 nH	0805		LL2012-F27NK
L50	VCO				2LNO-256
L51	Filter, EMI Suppression				LC103N-1R0
L52	Choke	10 $\mu$ H			LAL03NA100M
L53	Filter, EMI Suppression				LC103N-1R0
L54	VCO				2LNB-253
L55	DC-DC Converter				GR-D835
L56	Choke	10 $\mu$ H			LAL03NA100M

Ref. No.	Description	RS Part No.	Mfr's Part No.
<b>Transistors</b>			
Q1	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q2	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q3	2SC3326(A) Marked CCA	NPN	2SC3326(A)
Q4	2SC3356(R25) Marked R25	NPN	2SC3356(R25)
Q5	2SC3356(R25) Marked R25	NPN	2SC3356(R25)
Q6	2SC3356(R25) Marked R25	NPN	2SC3356(R25)
Q7	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q8	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q9	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q10	2SC2712(GR) or (Y) Marked LG or LY	NPN	2SC2712(GR) or (Y)
Q11	2SC2714(Y) Marked QY	NPN	2SC2714(Y)
Q12	2SC2714(Y) Marked QY	NPN	2SC2714(Y)
Q13	2SK210(GR) Marked YG	MOS	2SK210(GR)
Q14	2SC2712(GR) or (Y) Marked LG or LY	NPN	2SC2712(GR) or (Y)
Q15	2SC2714(Y) Marked QY	NPN	2SC2714(Y)
Q16	2SC2714(Y) Marked QY	NPN	2SC2714(Y)
Q17	2SC2712(GR) or (Y) Marked LG or LY	NPN	2SC2712(GR) or (Y)
Q18	2SC2712(GR) or (Y) Marked LG or LY	NPN	2SC2712(GR) or (Y)
Q19	DTC363EK Marked H27	NPN	DTC363EK
Q20	2SC2712(GR) or (Y) Marked LG or LY	NPN	2SC2712(GR) or (Y)
Q21	2SC2712(GR) or (Y) Marked LG or LY	NPN	2SC2712(GR) or (Y)
Q22	UN5213 Marked 8C	NPN	UN5213
Q23	2SC2712(GR) or (Y) Marked LG or LY	NPN	2SC2712(GR) or (Y)
Q24	2SC2712(GR) or (Y) Marked LG or LY	NPN	2SC2712(GR) or (Y)
Q25	2SD1406(GR)	NPN	2SD1406(GR)
Q26	2SC2458(GR)	NPN	2SC2458(GR)
Q27	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q28	UN5214 Marked 8D	NPN	UN5214
Q29	2SC2712(GR) Marked LG	NPN	2SC2712(GR)
Q30	2SK209(GR) Marked XG	MOS	2SK209(GR)
Q31	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q32	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q33	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q34	UN5214 Marked 8D	NPN	UN5214
Q35	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q36	UN5214 Marked 8D	NPN	UN5214
Q37	FMA9 Marked A9	PNP	FMA9
Q38	FMA9 Marked A9	PNP	FMA9
Q39	FMA9 Marked A9	PNP	FMA9
Q40	DTA114EK Marked 14	NPN	DTA114EK
	or RN2402 Marked YB		or RN2402
Q41	2SK209(GR) Marked XG	MOS	2SK209(GR)
Q42	2SC2712(GR) Marked LG	NPN	2SC2712(GR)
Q43	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q44	2SC4226(R25) Marked R25	NPN	2SC4226(R25)
Q45	FMA9 Marked A9	PNP	FMA9
Q46	FMA9 Marked A9	PNP	FMA9

Ref. No.	Description				RS Part No.	Mfr's Part No.
<b>Resistors</b>						
R1	Metal Glaze	100 ohm	1/16 W	±5%	0603	RK73K1J101J or CR10-101J
R2	Metal Glaze	82 ohm	1/16 W	±5%	0603	RK73K1J820J or CR10-820J
R3	Metal Glaze	100 ohm	1/16 W	±5%	0603	RK73K1J101J or CR10-101J
R4	Metal Glaze	3.3 kohm	1/16 W	±5%	0603	RK73K1J332J or CR10-332J
R5	Metal Glaze	10 kohm	1/16 W	±5%	0603	RK73K1J103J or CR10-103J
R6	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R7	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R8	Metal Glaze	10 kohm	1/16 W	±5%	0603	RK73K1J103J or CR10-103J
R9	Metal Glaze	1 kohm	1/16 W	±5%	0603	RK73K1J102J or CR10-102J
R10	Metal Glaze	4.7 kohm	1/16 W	±5%	0603	RK73K1J472J or CR10-472J
R11	Metal Glaze	220 ohm	1/16 W	±5%	0603	RK73K1J221J or CR10-221J
R12	Metal Glaze	1 kohm	1/16 W	±5%	0603	RK73K1J102J or CR10-102J
R13	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R14	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R15	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R16	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R17	Metal Glaze	10 kohm	1/16 W	±5%	0603	RK73K1J103J or CR10-103J
R18	Metal Glaze	15 kohm	1/16 W	±5%	0603	RK73K1J153J or CR10-153J
R19	Metal Glaze	47 kohm	1/16 W	±5%	0603	RK73K1J473J or CR10-473J
R20	Metal Glaze	47 kohm	1/16 W	±5%	0603	RK73K1J473J or CR10-473J
R21	Metal Glaze	33 kohm	1/16 W	±5%	0603	RK73K1J333J or CR10-333J
R22	Metal Glaze	4.7 kohm	1/16 W	±5%	0603	RK73K1J472J or CR10-472J
R23	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R24	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R25	Metal Glaze	3.3 kohm	1/16 W	±5%	0603	RK73K1J332J or CR10-332J
R26	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J

Ref. No.	Description				RS Part No.	Mfr's Part No.
R27	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R28	Metal Glaze	1 kohm	1/16 W	±5%	0603	RK73K1J102J or CR10-102J
R29	Metal Glaze	4.7 kohm	1/16 W	±5%	0603	RK73K1J472J or CR10-472J
R30	Metal Glaze	220 ohm	1/16 W	±5%	0603	RK73K1J221J or CR10-221J
R31	Metal Glaze	1 kohm	1/16 W	±5%	0603	RK73K1J102J or CR10-102J
R32	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R33	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R34	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R35	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R36	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R37	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R38	Metal Glaze	1 kohm	1/16 W	±5%	0603	RK73K1J102J or CR10-102J
R39	Metal Glaze	4.7 kohm	1/16 W	±5%	0603	RK73K1J472J or CR10-472J
R40	Metal Glaze	220 ohm	1/16 W	±5%	0603	RK73K1J221J or CR10-221J
R41	Metal Glaze	1 kohm	1/16 W	±5%	0603	RK73K1J102J or CR10-102J
R42	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R43	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R44	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R45	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R46	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R47	Metal Glaze	1 kohm	1/16 W	±5%	0603	RK73K1J102J or CR10-102J
R48	Metal Glaze	4.7 kohm	1/16 W	±5%	0603	RK73K1J472J or CR10-472J
R49	Metal Glaze	220 ohm	1/16 W	±5%	0603	RK73K1J221J or CR10-221J
R50	Metal Glaze	1 kohm	1/16 W	±5%	0603	RK73K1J102J or CR10-102J
R51	Metal Glaze	470 kohm	1/16 W	±5%	0603	RK73K1J474J or CR10-474J
R52	Metal Glaze	100 kohm	1/16 W	±5%	0603	RK73K1J104J or CR10-104J
R53	Metal Glaze	1 kohm	1/16 W	±5%	0603	RK73K1J102J or CR10-102J

Ref. No.	Description					RS Part No.	Mfr's Part No.
R54	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R55	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R56	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R57	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R58	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R59	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R60	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R61	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R62	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R63	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R64	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R65	Metal Glaze	33 kohm	1/16 W	±5%	0603		RK73K1J333J or CR10-333J
R66	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R67	Metal Glaze	470 ohm	1/10 W	±5%	0805		RK73K2A471J or CR21-471J
R68	Metal Glaze	47 ohm	1/10 W	±5%	0805		RK73K2A470J or CR21-470J
R69	Metal Glaze	820 ohm	1/16 W	±5%	0603		RK73K1J821J or CR10-821J
R70	Metal Glaze	1.5 kohm	1/16 W	±5%	0603		RK73K1J152J or CR10-152J
R71	Metal Glaze	330 ohm	1/10 W	±5%	0805		RK73K2A331J or CR21-331J
R72	Metal Glaze	56 ohm	1/10 W	±5%	0805		RK73K2A560J or CR21-560J
R73	Metal Glaze	6.8 kohm	1/16 W	±5%	0603		RK73K1J682J or CR10-682J
R74	Metal Glaze	15 kohm	1/16 W	±5%	0603		RK73K1J153J or CR10-153J
R75	Metal Glaze	100 ohm	1/10 W	±5%	0805		RK73K2A101J or CR21-101J
R76	Metal Glaze	100 ohm	1/10 W	±5%	0805		RK73K2A101J or CR21-101J
R77	Metal Glaze	2.2 kohm	1/16 W	±5%	0603		RK73K1J222J or CR10-222J
R78	Metal Glaze	1.5 kohm	1/16 W	±5%	0603		RK73K1J152J or CR10-152J
R79	Metal Glaze	470 ohm	1/16 W	±5%	0603		RK73K1J471J or CR10-471J
R80	Metal Glaze	330 ohm	1/16 W	±5%	0603		RK73K1J331J or CR10-331J

Ref. No.	Description					RS Part No.	Mfr's Part No.
R81	Metal Glaze	56 ohm	1/16 W	±5%	0603		RK73K1J560J or CR10-560J
R82	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R83	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R84	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R85	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R86	Metal Glaze	220 kohm	1/16 W	±5%	0603		RK73K1J224J or CR10-224J
R87	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R88	Metal Glaze	56 ohm	1/16 W	±5%	0603		RK73K1J560J or CR10-560J
R89	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R90	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R91	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R92	Metal Glaze	120 kohm	1/16 W	±5%	0603		RK73K1J124J or CR10-124J
R93	Metal Glaze	15 kohm	1/16 W	±5%	0603		RK73K1J153J or CR10-153J
R94	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R95	Metal Glaze	2.2 kohm	1/16 W	±5%	0603		RK73K1J222J or CR10-222J
R96	Metal Glaze	220 kohm	1/16 W	±5%	0603		RK73K1J224J or CR10-224J
R97	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R98	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R99	Metal Glaze	68 kohm	1/16 W	±5%	0603		RK73K1J683J or CR10-683J
R100	Metal Glaze	22 kohm	1/16 W	±5%	0603		RK73K1J223J or CR10-223J
R101	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R102	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R103	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R104	Metal Glaze	330 ohm	1/16 W	±5%	0603		RK73K1J331J or CR10-331J
R105	Metal Glaze	150 ohm	1/16 W	±5%	0603		RK73K1J151J or CR10-151J
R106	Metal Glaze	150 ohm	1/16 W	±5%	0603		RK73K1J151J or CR10-151J
R107	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J

Ref. No.	Description					RS Part No.	Mfr's Part No.
R108	Metal Glaze	10 ohm	1/16 W	±5%	0603		RK73K1J100J or CR10-100J
R109	Metal Glaze	15 kohm	1/16 W	±5%	0603		RK73K1J153J or CR10-153J
R110	Metal Glaze	8.2 kohm	1/16 W	±5%	0603		RK73K1J822J or CR10-822J
R111	Metal Glaze	8.2 kohm	1/16 W	±5%	0603		RK73K1J822J or CR10-822J
R112	Metal Glaze	39 kohm	1/16 W	±5%	0603		RK73K1J393J or CR10-393J
R113	Metal Glaze	1 Mohm	1/16 W	±5%	0603		RK73K1J105J or CR10-105J
R114	Metal Glaze	470 ohm	1/16 W	±5%	0603		RK73K1J471J or CR10-471J
R115	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R116	Metal Glaze	22 kohm	1/16 W	±5%	0603		RK73K1J223J or CR10-223J
R117	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R118	Metal Glaze	470 ohm	1/16 W	±5%	0603		RK73K1J471J or CR10-471J
R119	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R120	Metal Glaze	390 kohm	1/16 W	±5%	0603		RK73K1J394J or CR10-394J
R121	Metal Glaze	1.8 kohm	1/16 W	±5%	0603		RK73K1J182J or CR10-182J
R122	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R123	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R124	Metal Glaze	470 ohm	1/16 W	±5%	0603		RK73K1J471J or CR10-471J
R125	Metal Glaze	390 kohm	1/16 W	±5%	0603		RK73K1J394J or CR10-394J
R126	Metal Glaze	2.7 kohm	1/16 W	±5%	0603		RK73K1J272J or CR10-272J
R127	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R128	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R129	Metal Glaze	15 kohm	1/16 W	±5%	0603		RK73K1J153J or CR10-153J
R130	Metal Glaze	1.5 kohm	1/16 W	±5%	0603		RK73K1J152J or CR10-152J
R131	Metal Glaze	2.2 kohm	1/16 W	±5%	0603		RK73K1J222J or CR10-222J
R132	Metal Glaze	1.5 kohm	1/16 W	±5%	0603		RK73K1J152J or CR10-152J
R133	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R134	Metal Glaze	33 kohm	1/16 W	±5%	0603		RK73K1J333J or CR10-333J



Ref. No.	Description					RS Part No.	Mfr's Part No.
R135	Metal Glaze	3.3 kohm	1/16 W	±5%	0603		RK73K1J332J or CR10-332J
R136	Metal Glaze	270 kohm	1/16 W	±5%	0603		RK73K1J274J or CR10-274J
R137	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R138	Metal Glaze	470 ohm	1/16 W	±5%	0603		RK73K1J471J or CR10-471J
R139	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R140	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R141	Metal Glaze	180 kohm	1/16 W	±5%	0603		RK73K1J184J or CR10-184J
R142	Metal Glaze	15 kohm	1/16 W	±5%	0603		RK73K1J153J or CR10-153J
R143	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R144	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R145	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R146	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R147	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R148	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R149	Metal Glaze	150 kohm	1/16 W	±5%	0603		RK73K1J154J or CR10-154J
R150	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R151	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R152	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R153	Metal Glaze	1 Mohm	1/16 W	±5%	0603		RK73K1J105J or CR10-105J
R154	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R155	Metal Glaze	12 kohm	1/16 W	±5%	0603		RK73K1J123J or CR10-123J
R156	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R157	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R158	Metal Glaze	33 kohm	1/16 W	±5%	0603		RK73K1J333J or CR10-333J
R159	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R160	Metal Glaze	1 Mohm	1/16 W	±5%	0603		RK73K1J105J or CR10-105J
R161	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J

Ref. No.	Description					RS Part No.	Mfr's Part No.
R162	Metal Glaze	1.2 kohm	1/16 W	±5%	0603		RK73K1J122J or CR10-122J
R163	Metal Glaze	33 kohm	1/16 W	±5%	0603		RK73K1J333J or CR10-333J
R164	Metal Glaze	33 kohm	1/16 W	±5%	0603		RK73K1J333J or CR10-333J
R165	Metal Glaze	5.6 kohm	1/16 W	±5%	0603		RK73K1J562J or CR10-562J
R166	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R167	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R168	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R169	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R170	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R171	Metal Glaze	33 kohm	1/16 W	±5%	0603		RK73K1J333J or CR10-333J
R172	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R173	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R174	Metal Glaze	8.2 kohm	1/16 W	±5%	0603		RK73K1J822J or CR10-822J
R175	Metal Glaze	15 kohm	1/16 W	±5%	0603		RK73K1J153J or CR10-153J
R176	Metal Glaze	5.6 kohm	1/16 W	±5%	0603		RK73K1J562J or CR10-562J
R177	Metal Glaze	12 kohm	1/16 W	±5%	0603		RK73K1J123J or CR10-123J
R178	Metal Glaze	5.6 kohm	1/16 W	±5%	0603		RK73K1J562J or CR10-562J
R179	Metal Glaze	2.2 Mohm	1/16 W	±5%	0603		RK73K1J225J or CR10-225J
R180	Metal Glaze	390 kohm	1/16 W	±5%	0603		RK73K1J394J or CR10-394J
R181	Metal Glaze	22 kohm	1/16 W	±5%	0603		RK73K1J223J or CR10-223J
R182	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R183	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R184	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R185	Metal Glaze	15 kohm	1/16 W	±5%	0603		RK73K1J153J or CR10-153J
R186	Metal Glaze	22 kohm	1/16 W	±5%	0603		RK73K1J223J or CR10-223J
R187	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R188	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J

Ref. No.	Description					RS Part No.	Mfr's Part No.
R189	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R190	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R191	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R192	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R193	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R194	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R195	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R196	Metal Glaze	220 kohm	1/16 W	±5%	0603		RK73K1J224J or CR10-224J
R197	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R198	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R199	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R200	Metal Glaze	2.7 kohm	1/16 W	±5%	0603		RK73K1J272J or CR10-272J
R201	Metal Glaze	82 kohm	1/16 W	±5%	0603		RK73K1J823J or CR10-823J
R202	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R203	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R204	Metal Glaze	1 Mohm	1/16 W	±5%	0603		RK73K1J105J or CR10-105J
R205	Metal Glaze	470 ohm	1/16 W	±5%	0603		RK73K1J471J or CR10-471J
R206	Metal Glaze	22 kohm	1/16 W	±5%	0603		RK73K1J223J or CR10-223J
R207	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R208	Metal Glaze	220 kohm	1/16 W	±5%	0603		RK73K1J224J or CR10-224J
R209	Metal Glaze	150 kohm	1/16 W	±5%	0603		RK73K1J154J or CR10-154J
R210	Metal Glaze	22 kohm	1/16 W	±5%	0603		RK73K1J223J or CR10-223J
R211	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R212	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R213	Metal Glaze	1 Mohm	1/16 W	±5%	0603		RK73K1J105J or CR10-105J
R214	Metal Film	3.3 ohm	1/2 W	±5%			FRN1/2B3R3JHB
R215	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R216	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J

Ref. No.	Description					RS Part No.	Mfr's Part No.
R217	Metal Glaze	47 ohm	1/16 W	±5%	0603		RK73K1J470J or CR10-470J
R218	Metal Glaze	2.2 ohm	1/16 W	±5%	0603		RK73M1J2R2J or CR10-2R2J
R219	Metal Glaze	120 ohm	1/2 W	±5%	2010		RK73K2H121J
R220	Metal Film	2.2 ohm	1 W	±5%			ERQ1ABJP2R2S
R221	Metal Glaze	220 ohm	1/4 W	±5%	1210		RK73K2E221J
R222	Metal Glaze	330 ohm	1/4 W	±5%	1210		RK73K2E331J
R223	Metal Film	1 ohm	1/2 W	±5%			FRN1/2B010JB
R224	Metal Glaze	5.6 kohm	1/16 W	±5%	0603		RK73K1J562J or CR10-562J
R225	Metal Glaze	10 ohm	1/16 W	±5%	0603		RK73K1J100J or CR10-100J
R226	Metal Glaze	390 ohm	1/16 W	±5%	0603		RK73K1J391J or CR10-391J
R227	Metal Glaze	390 ohm	1/16 W	±5%	0603		RK73K1J391J or CR10-391J
R228	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R229	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R230	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R231	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R232	Metal Glaze	22 kohm	1/16 W	±5%	0603		RK73K1J223J or CR10-223J
R233	Metal Glaze	22 kohm	1/16 W	±5%	0603		RK73K1J223J or CR10-223J
R234	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R235	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R236	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R237	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R238	Metal Glaze	39 kohm	1/16 W	±5%	0603		RK73K1J393J or CR10-393J
R239	Metal Glaze	2.2 kohm	1/16 W	±5%	0603		RK73K1J222J or CR10-222J
R240	Metal Glaze	820 ohm	1/16 W	±5%	0603		RK73K1J821J or CR10-821J
R241	Metal Glaze	470 ohm	1/16 W	±5%	0603		RK73K1J471J or CR10-471J
R242	Metal Glaze	18 kohm	1/16 W	±5%	0603		RK73K1J183J or CR10-183J
R243	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R244	Metal Glaze	56 ohm	1/16 W	±5%	0603		RK73K1J560J or CR10-560J
R245	Metal Glaze	330 ohm	1/16 W	±5%	0603		RK73K1J331J or CR10-331J
R246	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J

Ref. No.	Description					RS Part No.	Mfr's Part No.
R247	Metal Glaze	33 ohm	1/16 W	±5%	0603		RK73K1J330J or CR10-330J
R248	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R249	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R250	Metal Glaze	47 ohm	1/16 W	±5%	0603		RK73K1J470J or CR10-470J
R251	Metal Glaze	47 ohm	1/16 W	±5%	0603		RK73K1J470J or CR10-470J
R252	Metal Glaze	56 ohm	1/16 W	±5%	0603		RK73K1J560J or CR10-560J
R253	Metal Glaze	47 ohm	1/16 W	±5%	0603		RK73K1J470J or CR10-470J
R254	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R255	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R256	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R257	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R258	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R259	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R260	Metal Glaze	330 ohm	1/16 W	±5%	0603		RK73K1J331J or CR10-331J
R261	Metal Glaze	220 ohm	1/16 W	±5%	0603		RK73K1J221J or CR10-221J
R262	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R263	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R264	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R265	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R266	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R267	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R268	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R269	Metal Glaze	33 ohm	1/16 W	±5%	0603		RK73K1J330J or CR10-330J
R270	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R271	Metal Glaze	33 kohm	1/16 W	±5%	0603		RK73K1J333J or CR10-333J
R272	Metal Glaze	3.3 kohm	1/16 W	±5%	0603		RK73K1J332J or CR10-332J
R273	Metal Glaze	33 kohm	1/16 W	±5%	0603		RK73K1J333J or CR10-333J

Ref. No.	Description					RS Part No.	Mfr's Part No.
R274	Metal Glaze	3.3 kohm	1/16 W	±5%	0603		RK73K1J332J or CR10-332J
R275	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R276	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R277	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R278	Metal Glaze	470 ohm	1/16 W	±5%	0603		RK73K1J471J or CR10-471J
R279	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R280	Metal Glaze	470 ohm	1/16 W	±5%	0603		RK73K1J471J or CR10-471J
R281	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R282	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R283	Metal Glaze	56 ohm	1/16 W	±5%	0603		RK73K1J560J or CR10-560J
R284	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R285	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R286	Metal Glaze	33 kohm	1/16 W	±5%	0603		RK73K1J333J or CR10-333J
R287	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R288	Metal Glaze	6.8 kohm	1/16 W	±5%	0603		RK73K1J682J or CR10-682J
R289	Metal Glaze	2.2 kohm	1/16 W	±5%	0603		RK73K1J222J or CR10-222J
R290	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R291	Metal Glaze	3.3 ohm	1/16 W	±5%	0603		RK73M1J3R3J or CR10-3R3J
R292	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R293	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R294	Metal Glaze	2.2 kohm	1/16 W	±5%	0603		RK73K1J222J or CR10-222J
R295	Metal Glaze	3.3 kohm	1/16 W	±5%	0603		RK73K1J332J or CR10-332J
R296	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R297	Metal Glaze	100 ohm	1/16 W	±5%	0603		RK73K1J101J or CR10-101J
R298	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R299	Metal Glaze	47 ohm	1/16 W	±5%	0603		RK73K1J470J or CR10-470J

Ref. No.	Description	RS Part No.	Mfr's Part No.
<b>Resistor Block</b>			
RA1	1 kohm x 4      1/16 W      ±5%		CN1J4102J
<b>Transformers</b>			
T1	IF (1st) Helical Filter		GR-D848
T2	IF (2nd) 48.5 MHz		5SSI-317
T3	IF (2nd) WFM 48.5 MHz		5SSI-317
T4	IF (3rd) WFM 10.7 MHz		GR-A470033
T5	Quadrature/Detector WFM 10.7 MHz		GR-A793
T6	IF (2nd) AM/NFM 48.5 MHz		5SSI-317
T7	IF (3rd) 455 kHz		5SSI-292
T8	Detector 455 kHz		5SSI-293
T9	Quadrature/Detector NFM		GR-P792
<b>Trimmer</b>			
TC1	6 pF		ECR-KN006A21
<b>Thermistor</b>			
TH1	1.7 kohm		TD5-C217D2
<b>Crystals</b>			
X1	37.8 MHz		TC-43 37.8MHz
X2	48.045 MHz		TC-43 48.045MHz
X3	12 MHz		TX1824G-4
<b>Crystal Filter</b>			
XF1	48.5 MHz		MF48R 48.5MHz
<b>Miscellaneous</b>			
	Battery, Lithium 3 V		VL2020/1VC
	Jumper, Chip      0603		RK73Z1J
	Jumper, Chip      1206		or CJ10-000
			RK73Z2B
			or CJ32-000
TP1	Pin, Test		GE-87D-7290
TP2	Pin, Test		GE-87D-7290
TP3	Pin, Test		GE-87D-7290
TP4	Pin, Test		GE-87D-7290
GND	Pin, Test		GE-87D-7290
GND	Pin, Test		GE-87D-7290
CN1	Connector, 2-Pin Male		PI22A-02M

Ref. No.	Description	RS Part No.	Mfr's Part No.
CN2	Connector, 6-Pin Male		PI22A-06M
CN3	Connector, 12-Pin Male		PI22A-12M
CN4	Connector, 3-Pin Male		PI22A-03M
CN5	Connector, 4-Pin Male		PI22A-04M
CN6	Connector, 3-Pin Male		PI22A-03M
CN7	Connector, 2-Pin Male		PI22A-02M
CN8	Connector, 2-Pin Male		PI22A-02M
J2	Jack, Tape-Out		S-Q3097#01
J3	Jack, Ext. SP		S-G8036
J4	Jack, Power		MOJ-D14
SW2	Switch, Restart		SKHHLP
SW1	Switch, Attenuator		SSFZUB22-07
J1	Jack, BNC, Antenna		GE-85D-5383
32	Bracket, Connector, Antenna		GE-86D-6362
33	Case, Shield (C), PLL		GE-86D-6376
34	Case, Shield (B) Top, PLL		GE-88D-7571
35	Case, Shield, RF Amp		GE-91D-9222
36	Case, Shield, Top, RF Amp		GE-91D-9221
37	Bottom, Shield, BPF/PLL		GE-93D-0702
38	Screw, 3x8 Pan Head Machine Nickel		PM 3x8 (Ni)
39	Screw, 2.6x6 Pan Head Tapping		PT 2.6x6
40	Nut		3m/m
	Tube for D47		10 mm
	Tube for R223		5 mm
47	Sheet, Insulator		GE-94D-1195



# LOGIC PCB ASSEMBLY

Ref. No.	Description					RS Part No.	Mfr's Part No.
41	PCB Assembly, Logic Consists of the following:						GA-94D-0992
<b>Capacitors</b>							
C501	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C501	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C502	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C503	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C504	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C505	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C506	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C507	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C508	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C509	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C510	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C511	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C512	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C513	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C514	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C515	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C516	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C517	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C518	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C519	Ceramic	100 pF	50 V	$\pm 10\%$	0603		ECUX1H101KV or CM105SL101K50A
C520	Ceramic	100 pF	50 V	$\pm 10\%$	0603		ECUX1H101KV or CM105SL101K50A
C521	Ceramic	100 pF	50 V	$\pm 10\%$	0603		ECUX1H101KV or CM105SL101K50A
C522	Ceramic	100 pF	50 V	$\pm 10\%$	0603		ECUX1H101KV or CM105SL101K50A
C523	Ceramic	100 pF	50 V	$\pm 10\%$	0603		ECUX1H101KV or CM105SL101K50A
C524	Ceramic	100 pF	50 V	$\pm 10\%$	0603		ECUX1H101KV or CM105SL101K50A

Ref. No.	Description					RS Part No.	Mfr's Part No.
C525	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C526	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C527	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C528	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C529	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C530	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C531	Ceramic	0.001 μF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C532	Ceramic	47 pF	50 V	±10%	0603		ECUX1H470KV or CM105SL470K50A
C533	Ceramic	47 pF	50 V	±10%	0603		ECUX1H470KV or CM105SL470K50A
C534	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C535	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C536	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C537	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C538	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C539	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C540	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C541	Ceramic	100 pF	50 V	±10%	0603		ECUX1H101KV or CM105SL101K50A
C542	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C543	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C544	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C545	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C546	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C547	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C548	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C549	Ceramic	33 pF	50 V	±10%	0603		ECUX1H330KV or CM105SL330K50A
C550	Ceramic	0.001 μF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C551	Ceramic	0.001 μF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A

Ref. No.	Description					RS Part No.	Mfr's Part No.
C552	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C553	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C554	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C555	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C556	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C557	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C558	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C559	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C560	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C561	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C562	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C563	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C564	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C565	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C566	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C567	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C568	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C569	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C570	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C571	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C572	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C573	Ceramic	0.01 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H103KBV or CM105X7R103K50A
C574	Ceramic	0.01 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H103KBV or CM105X7R103K50A
C575	Ceramic	0.01 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H103KBV or CM105X7R103K50A
C576	Ceramic	0.001 $\mu$ F	50 V	$\pm 10\%$	0603		ECUX1H102KV or CM105SL102K50A
C577	Ceramic	47 pF	50 V	$\pm 10\%$	0603		ECUX1H470KV or CM105SL470K50A
C578	Ceramic	47 pF	50 V	$\pm 10\%$	0603		ECUX1H470KV or CM105SL470K50A

Ref. No.	Description					RS Part No.	Mfr's Part No.
C579	Ceramic	47 pF	50 V	±10%	0603		ECUX1H470KV or CM105SL470K50A
C580	Ceramic	47 pF	50 V	±10%	0603		ECUX1H470KV or CM105SL470K50A
C581	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C582	Ceramic	0.001 µF	50 V	±10%	0603		ECUX1H102KV or CM105SL102K50A
C583	Electrolytic	1 µF	50 V	±20%			SMB50V010M or 50UTCM010M
<b>Ceramic Resonator</b>							
CX501	8 MHz						EFO58004E5
<b>Diodes</b>							
D501	1SS354	Marked B	Silicon				1SS354
D502	IMN10	Marked N10	Silicon				IMN10
D503	IMN10	Marked N10	Silicon				IMN10
D504	DA227	Marked N20	Silicon				DA227
D505	DTZ4.7CT	Marked 93	Silicon				DTA4.7CT
<b>Integrated Circuits</b>							
IC501	GRE-9312	Microprocessor	MOS	SMT			GRE-9312
IC502	CXK5864CM-10LL or 12LL	Memory	MOS	SMT			CXK5864CM-10LL or 12LL or LC3364BML-10 or -12
IC503	S8054HN-CB	Voltage Regulator Detector	MOS	SMT			S8054HN-CB
<b>Coils</b>							
L501	Choke	1 µH					LQH1N1R0M04
L502	Choke	1 µH					LQH1N1R0M04
L503	Choke	1 µH					LQH1N1R0M04
L504	Choke	1 µH					LQH1N1R0M04
L505	Choke	1 µH					LQH1N1R0M04
L506	Choke	1 µH					LQH1N1R0M04
L507	Choke	1 µH					LQH1N1R0M04
L508	Filter, EMI Suppression						LC103N-1R0
L509	Choke	1 µH					LQH1N1R0M04
L510	Choke	1 µH					LQH1N1R0M04
L511	Choke	1 µH					LQH1N1R0M04

Ref. No.	Description					RS Part No.	Mfr's Part No.
L512	Choke	1 $\mu$ H					LQH1N1R0M04
L513	Choke	1 $\mu$ H					LQH1N1R0M04
L514	Choke	1 $\mu$ H					LQH1N1R0M04
<b>LEDs</b>							
LED501	LT1E51A						LT1E51A
LED502	LT1E51A						LT1E51A
LED503	LT1E51A						LT1E51A
LED504	LT1E51A						LT1E51A
LED505	LT1E51A						LT1E51A
LED506	LT1E51A						LT1E51A
LED507	LT1E51A						LT1E51A
LED508	LT1E51A						LT1E51A
LED509	LT1E51A						LT1E51A
<b>Transistors</b>							
Q501	2SA1298(Y)	Marked IY		PNP			2SA1298(Y)
Q502	2SA1298(Y)	Marked IY		PNP			2SA1298(Y)
Q503	2SC2712(GR) or (Y)		Marked LG or LY	NPN			2SC2712(GR) or (Y)
<b>Resistors</b>							
R501	Metal Glaze	1 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J102J or CR10-102J
R502	Metal Glaze	1 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J102J or CR10-102J
R503	Metal Glaze	18 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J183J or CR10-183J
R504	Metal Glaze	47 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J473J or CR10-473J
R505	Metal Glaze	47 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J473J or CR10-473J
R506	Metal Glaze	47 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J473J or CR10-473J
R507	Metal Glaze	47 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J473J or CR10-473J
R508	Metal Glaze	47 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J473J or CR10-473J
R509	Metal Glaze	1 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J102J or CR10-102J
R510	Metal Glaze	1 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J102J or CR10-102J
R511	Metal Glaze	1 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J102J or CR10-102J
R512	Metal Glaze	47 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J473J or CR10-473J
R513	Metal Glaze	1 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J102J or CR10-102J
R514	Metal Glaze	1 kohm	1/16 W	$\pm$ 5%	0603		RK73K1J102J or CR10-102J

Ref. No.	Description					RS Part No.	Mfr's Part No.
R515	Metal Glaze	220 ohm	1/10 W	±5%	0805		RK73K2A221J or CR21-221J
R516	Metal Glaze	220 ohm	1/10 W	±5%	0805		RK73K2A221J or CR21-221J
R517	Metal Glaze	220 ohm	1/10 W	±5%	0805		RK73K2A221J or CR21-221J
R518	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R519	Metal Glaze	3.3 kohm	1/16 W	±5%	0603		RK73K1J332J or CR10-332J
R520	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R521	Metal Glaze	3.3 kohm	1/16 W	±5%	0603		RK73K1J332J or CR10-332J
R522	Metal Glaze	47 kohm	1/16 W	±5%	0603		RK73K1J473J or CR10-473J
R523	Metal Glaze	1 kohm	1/16 W	±5%	0603		RK73K1J102J or CR10-102J
R524	Metal Glaze	10 kohm	1/16 W	±5%	0603		RK73K1J103J or CR10-103J
R525	Metal Glaze	3.3 kohm	1/16 W	±5%	0603		RK73K1J332J or CR10-332J
R526	Metal Glaze	100 kohm	1/16 W	±5%	0603		RK73K1J104J or CR10-104J
R527	Metal Glaze	4.7 kohm	1/16 W	±5%	0603		RK73K1J472J or CR10-472J
R528	Metal Glaze	22 kohm	1/16 W	±5%	0603		RK73K1J223J or CR10-223J
R529	Metal Glaze	82 kohm	1/16 W	±5%	0603		RK73K1J823J or CR10-823J
R530	Metal Glaze	470 kohm	1/16 W	±5%	0603		RK73K1J474J or CR10-474J
<b>Resistor Blocks</b>							
RA501	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA502	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA503	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA504	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA505	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA506	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA507	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA508	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA509	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA510	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA511	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA512	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA513	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA514	1 kohm x 4	1/16 W	±5%				CN1J4102J
RA515	1 kohm x 4	1/16 W	±5%				CN1J4102J

Ref. No.	Description	RS Part No.	Mfr's Part No.
<b>Miscellaneous</b>			
LCD501	LCD		T240311
42	Holder, LCD		GE-92A-9833
43	Film, Spread, Optical		GE-93D-0140
20	Screw, 2.6x6 Pan Head P tight		P tight 2.6x6
CN501	Assembly, Housing 11-Pin		Item No. 7
CN502	Assembly, Housing 12-Pin		Item No. 6
CN503	Connector, 15-Pin Female		5124-15BHPB
	Wire with Lug		Item No. 8
44	Shield Bottom, PCB Logic		GE-93C-0700

### TUNING SWITCH PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
45	<b>PCB Assembly, Tuning Switch</b> Consists of the following:		<b>GA-94D-0994</b>
<b>Miscellaneous</b>			
SW801	Encoder, Rotary Connector, 3-Pin Male		EC16B24202-15 PI22B03M

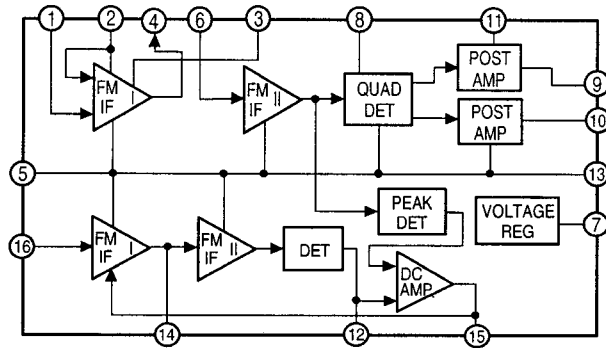
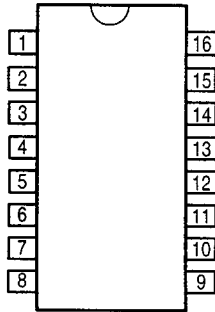
### VOLUME SQUELCH PCB ASSEMBLY

Ref. No.	Description	RS Part No.	Mfr's Part No.
46	<b>PCB Assembly, Volume/Squelch</b> Consists of the following:		<b>GA-94D-0996</b>
<b>Miscellaneous</b>			
47	Assembly, Squelch Potentiometer, Squelch 10 kohm (C) Nut, 7 mm Diameter Assembly, Volume Potentiometer, Volume 50 kohm (A) with Switch Nut, 7 mm Diameter Plate, Ground Assembly, Housing Connector Assembly, Housing Connector Assembly, Housing Connector		GA-94D-1154 RK0971110-10KC-15 GE-89D-8343-1 GA-94D-1155 RK0971211-50KA-15 GE-89D-8343-1 GE-94D-1001 Item No. 1 Item No. 4 Item No. 7

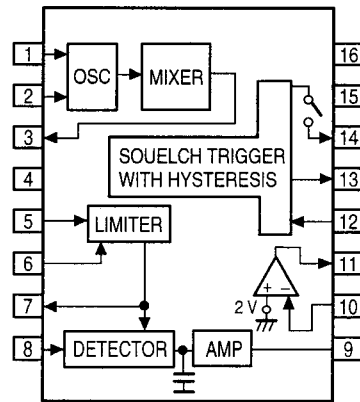
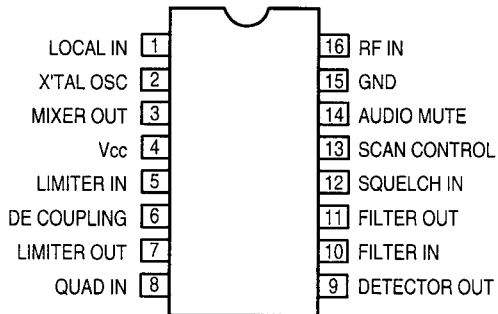
# SEMICONDUCTOR LEAD IDENTIFICATION AND IC BLOCK DIAGRAM

## INTEGRATED CIRCUITS

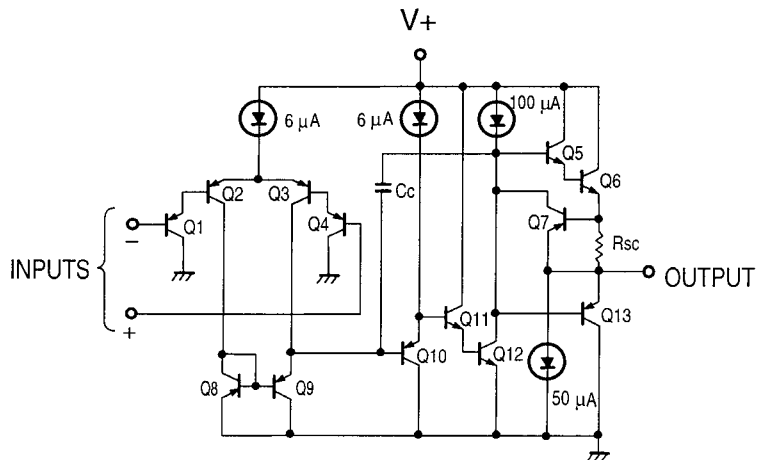
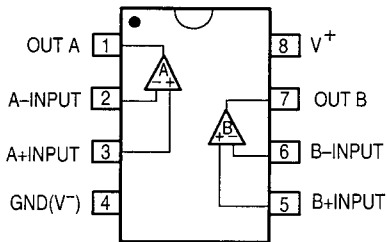
IC1 KA2243  
or HA12413



IC2 TK10420

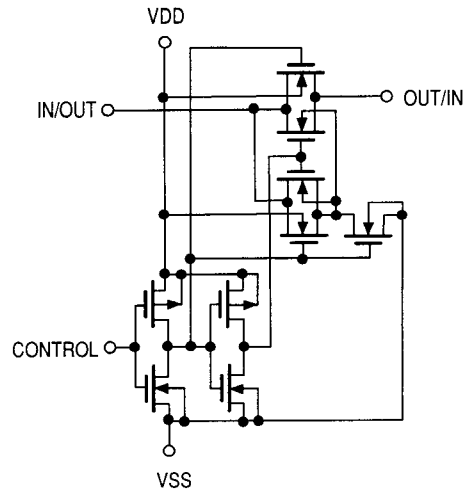
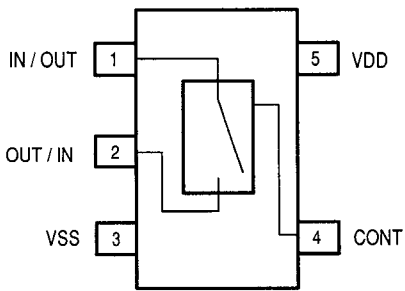


IC3 BA10358  
or NJM2904G

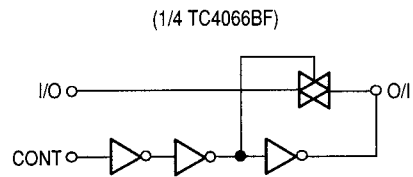
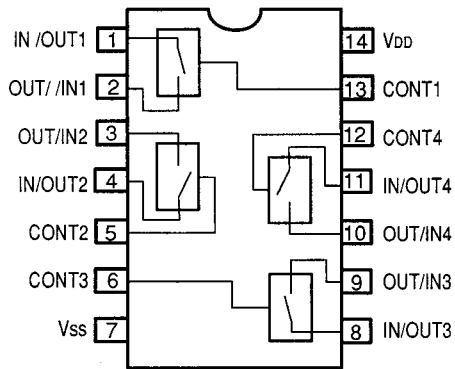




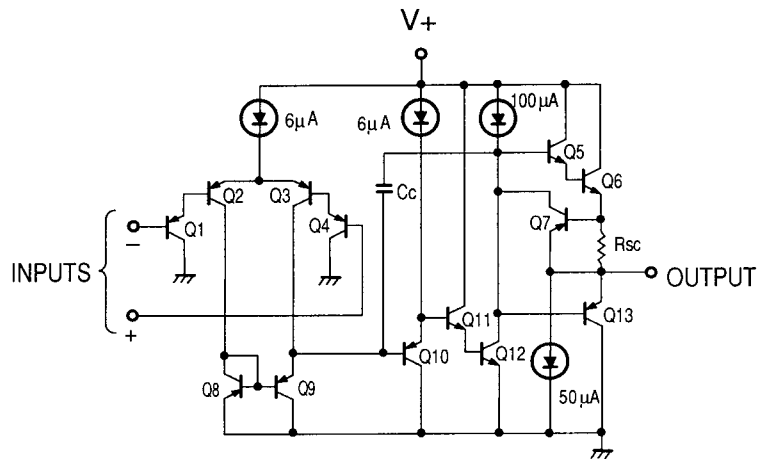
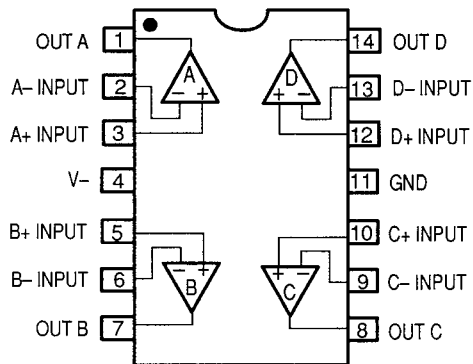
IC4 TC4S66F



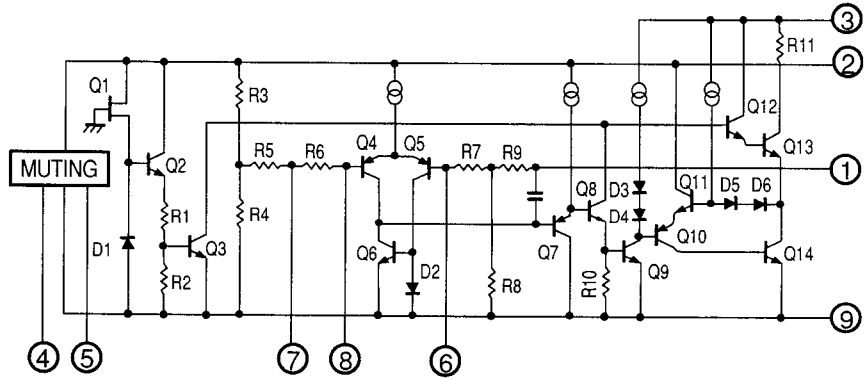
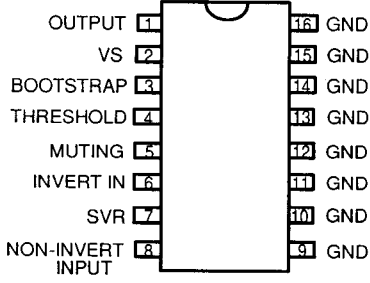
IC5 TC4066BP  
or  $\mu$ PD4066BC



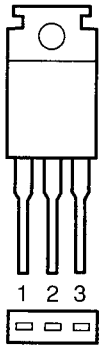
IC6  $\mu$ PC324C  
or TA75324P



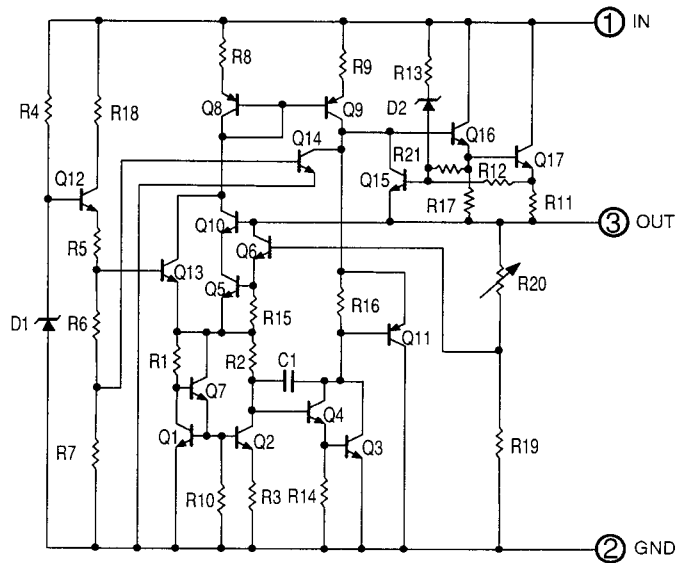
IC4 TDA1905



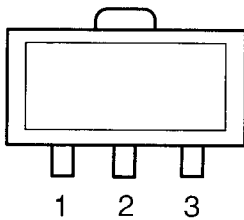
IC8 MC7805CT  
or TA78005AP



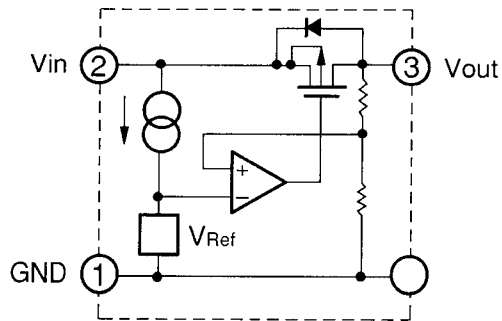
- 1. Input
- 2. GND
- 3. Output



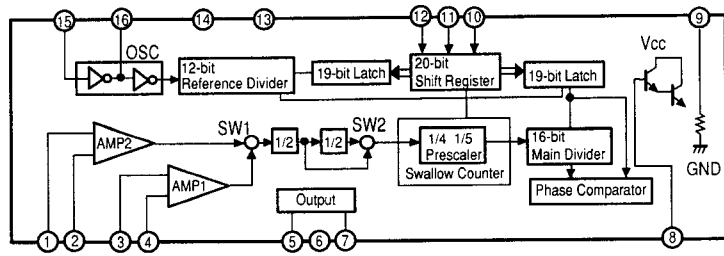
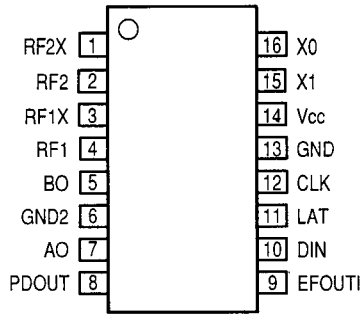
IC9 S81250HG-RD



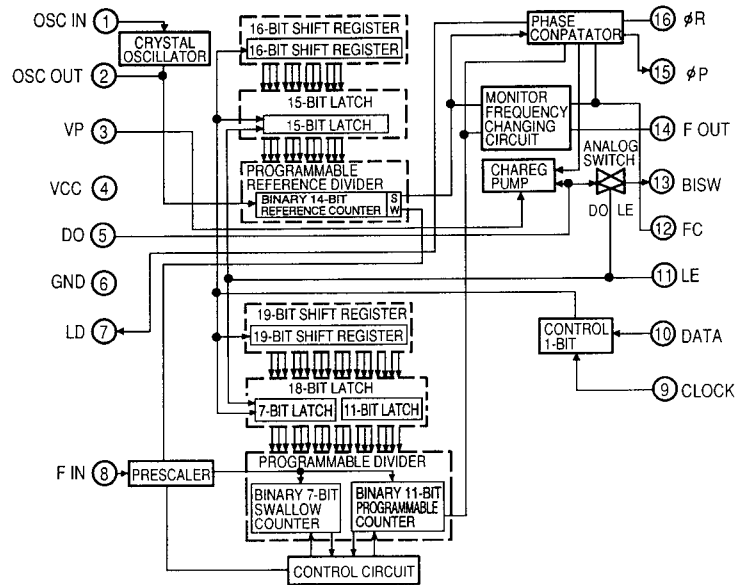
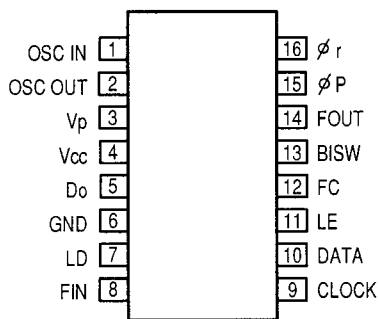
- 1. GND
- 2. Vin
- 3. Vout



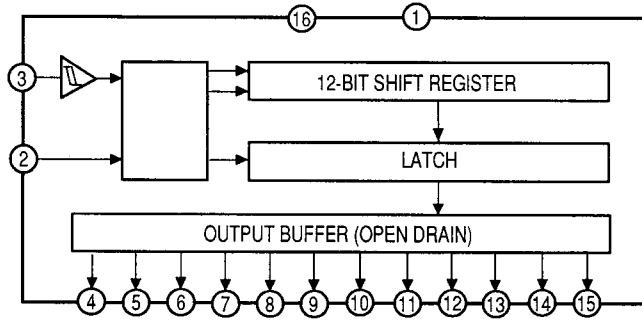
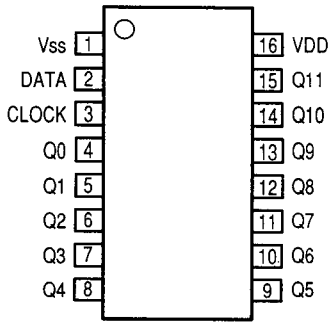
IC10 CXA1356N



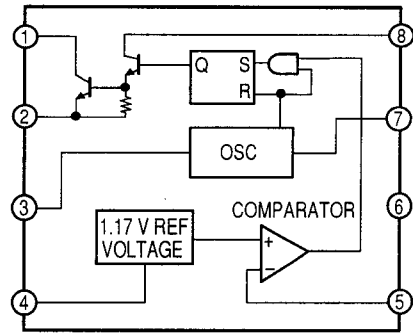
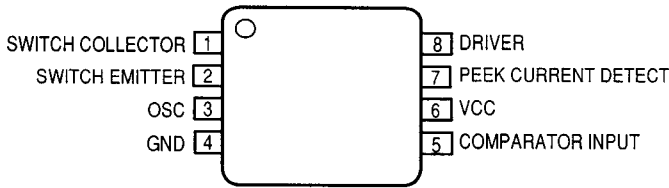
IC11 MB1505PF-G-BND-TF



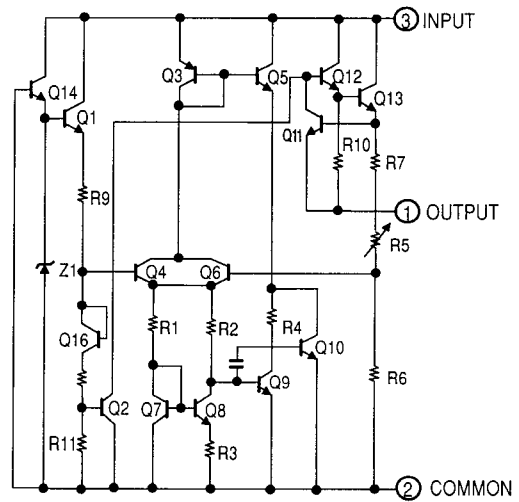
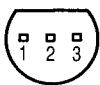
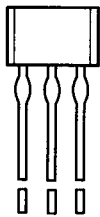
IC12 BU2040F



IC13 M5291FP-600C



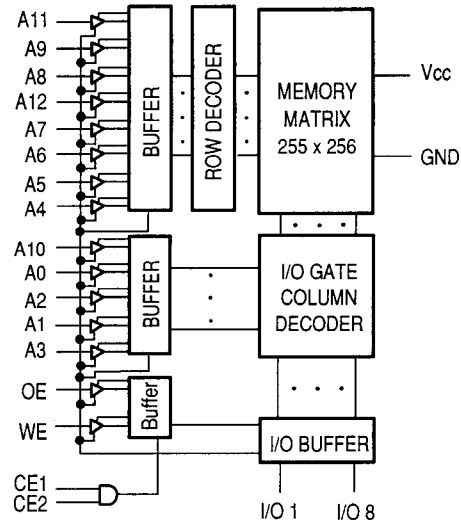
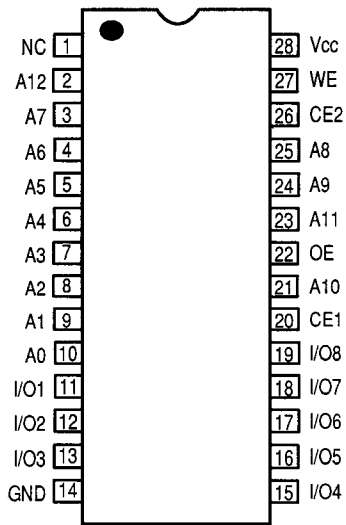
IC14 TA78L05S



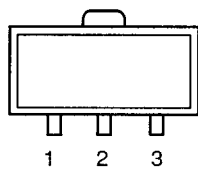
IC501 GRE-9312

See "Microprocessor (IC501) Port Format" on Page "74"

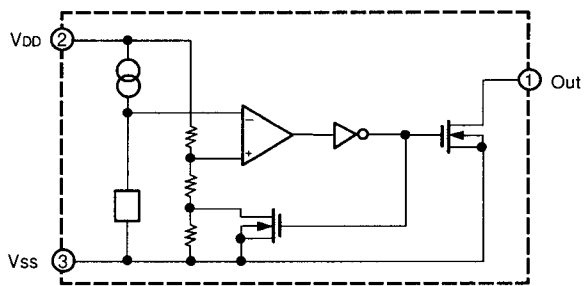
IC502 CXK5864CM-10LL or 12LL  
or LC5864CM-10LL OR12



IC503 S8054HN-CB

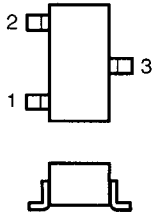


- 1. Out
- 2. V<sub>DD</sub>
- 3. V<sub>SS</sub>



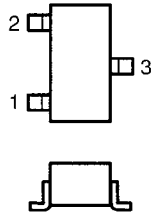
# TRANSISTORS

(A) 2SA1298(Y) Marked 1Y  
 2SC2712(Y) or (GR)  
 Marked Y or GR  
 2SC2714(Y) Marked QY  
 2SC3326(A) Marked CCA  
 2SC3356(R25) Marked R25  
 DTA114EK Marked 14  
 RN2402 Marked YB



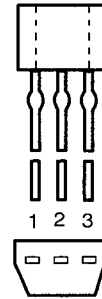
1. Emitter  
 2. Base  
 3. Collector

(B) 2SC4226(R25) Marked R25  
 UN5213 Marked 8C  
 UN5214 Marked 8D



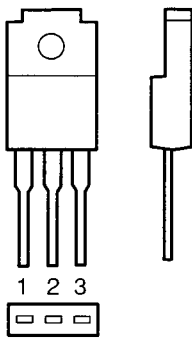
1. Emitter  
 2. Base  
 3. Collector

(C) 2SC2458(GR)



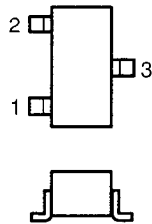
1. Emitter  
 2. Collector  
 3. Base

(D) 2SD1406 (GR)



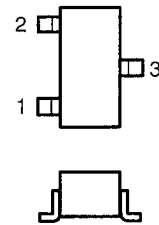
1. Base  
 2. Collector  
 3. Emitter

(E) 2SK209(GR) Marked XG



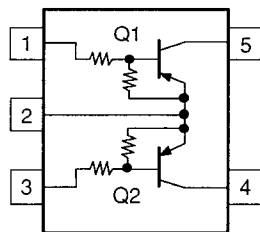
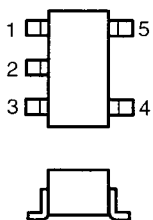
1. Drain  
 2. Source  
 3. Gate

(F) 2SK210(GR) Marked YG



1. Gate  
 2. Drain  
 3. Source

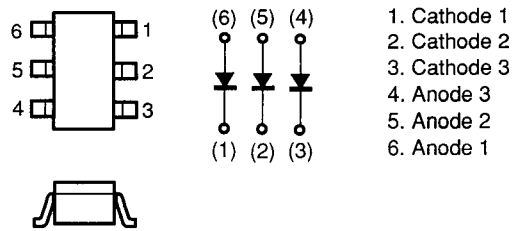
(G) FMA9 Marked A9



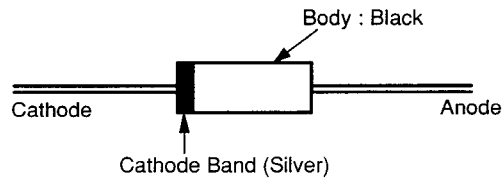
1. Base 1 (B1)  
 2. Emitter (E)  
 3. Base 2 (B2)  
 4. Collector 2 (C2)  
 5. Collector 1 (C1)

# DIODES

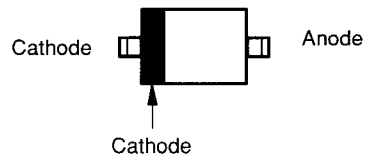
(A) 1MN10 (Marked N10)



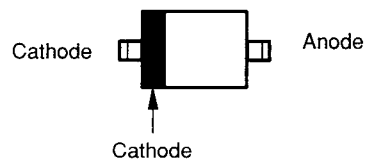
(B) 1N4002



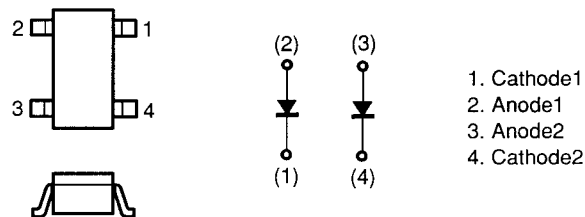
(C) 1SS353 (Marked C)



(D) 1SS354 (Marked B)



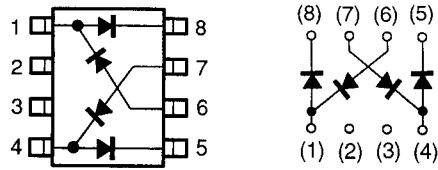
(E) DA227 (Marked N20)



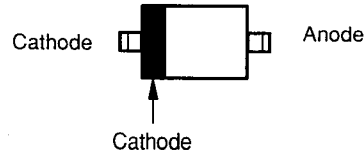
(F) DTZ4.7 (Marked 93)



(G) ND433G



(H) HSU277 (Marked 3)



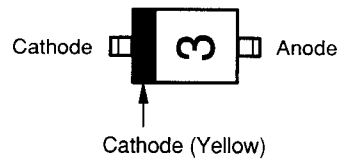
(I) HVU12-3 (Marked A)



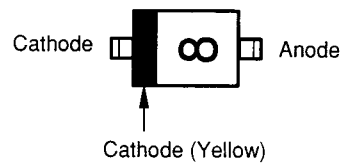
(J) HVU300A (Marked 0)



(K) HVU306A (Marked 3)

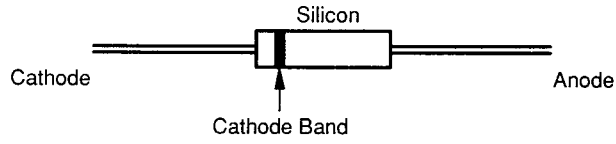


(L) HVU308 (Marked 8)

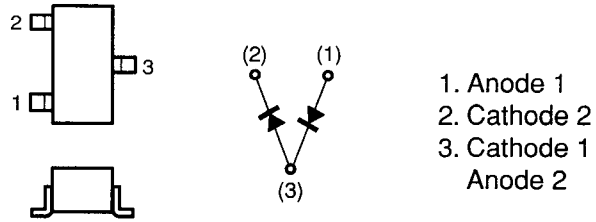




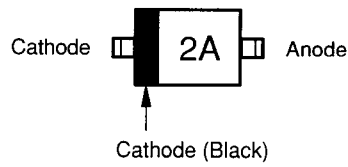
(M) HZ9B2L, HZ11B2L



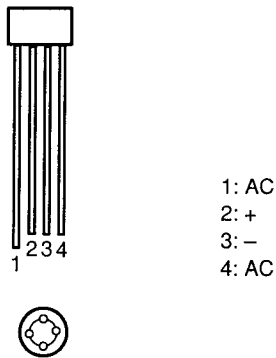
(N) MA716 (Marked M1U)



(O) MA728 (Marked 2A)



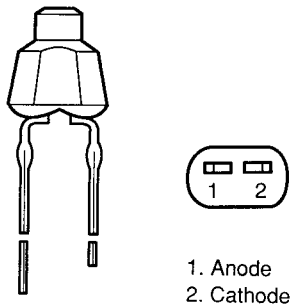
(P) RC202



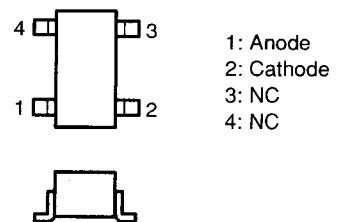
(Q) SD103



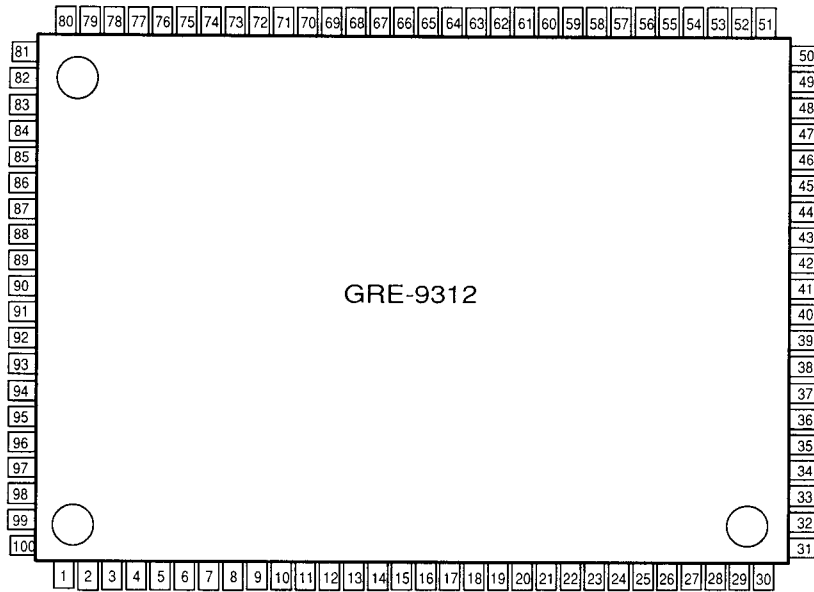
(R) TLR226



(S) LT1E51A



# MICROPROCESSOR (IC501) PORT FORMAT



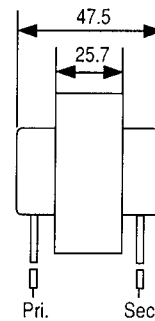
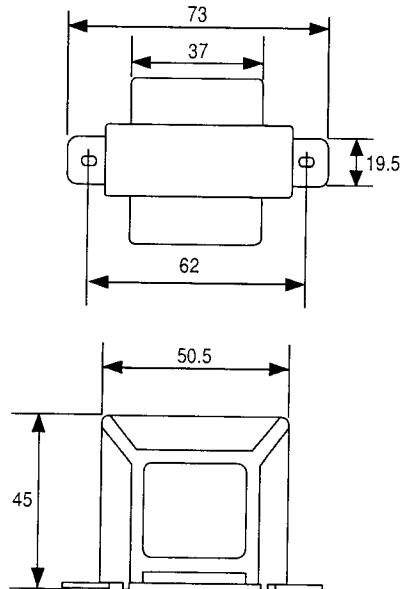
Pin No.	Function	Pin No.	Function	Pin No.	Function
1	N.C.	36	Zeromatic input	71	LCD segment 20 output
2	LCD bias input	37	Squelch input	72	LCD segment 19 output
3	Memory I/O 8	38	Clock input	73	LCD segment 18 output
4	Memory I/O 7	39	Clock output	74	LCD segment 17 output
5	Memory I/O 6	40	GND	75	LCD segment 16 output
6	Memory I/O 5	41	Memory WE output	76	LCD segment 15 output
7	Memory I/O 4	42	Memory OE output	77	LCD segment 13 output
8	Memory I/O 3	43	Memory CE1 output	78	LCD segment 12 output
9	Memory I/O 2	44	Memory A12 output	79	LCD segment 11 output
10	Memory I/O 1	45	Memory A11 output	80	LCD segment 10 output
11	VCO3 switching output	46	Memory A10 output	81	LCD segment 9 output
12	Key tone output	47	Memory A9 output	82	LCD segment 8 output
13	Knob signal input	48	Memory A8 output	83	LCD segment 7 output
14	PLL1 latch output	49	Memory A7 output	84	LCD segment 6 output
15	PLL2 LD output	50	Memory A6 output	85	LCD segment 5 output
16	Knob input (Up)	51	Memory A5 output	86	LCD segment 4 output
17	Knob input (Down)	52	Memory A4 output	87	LCD segment 3 output
18	Standby input	53	Memory A3 output	88	LCD segment 2 output
19	NC (Pulled down)	54	Memory A2 output	89	LCD segment 1 output
20	PLL clock output	55	Memory A1 output	90	LCD segment 0 output
21	PLL data output	56	Memory A0 output	91	VDD
22	NC (Pulled down)	57	NC	92	VDD
23	Key input	58	NC	93	GND
24	Key input	59	LCD segment 31 output	94	LCD common 3
25	Key input	60	LCD segment 30 output	95	LCD common 2
26	Key input	61	LCD segment 29 output	96	LCD common 1
27	Sound SQ indicator output	62	LCD segment 28 output	97	LCD common 0
28	Scan stop output	63	LCD segment 27 output	98	LCD bias
29	Shift register clock output	64	LCD segment 26 output	99	LCD bias
30	Shift register data output	65	LCD segment 25 output	100	NC
31	LCD bias control output	66	LCD segment 24 output		
32	NC (Pulled down)	67	LCD segment 23 output		
33	Mute output	68	LCD segment 22 output		
34	Sound SQ input	69	LCD segment 14 output		
35	Reset input	70	LCD segment 21 output		

## POWER TRANSFORMER SPECIFICATIONS

For USA, CANADA

Rated primary voltage and frequency  
 Open circuit primary current  
 Secondary output voltage  
     No load voltage  
 Protector

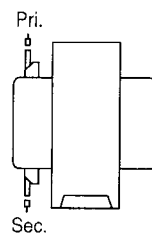
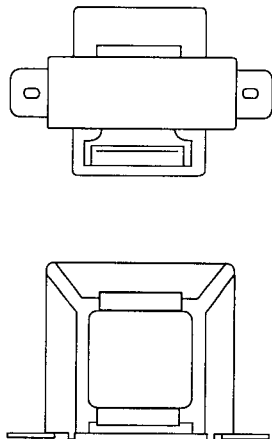
120 volts 60 Hz  
 Less than 100 mA at 120 volts 60 Hz  
  
 AC 12.6 volts  $\pm 5\%$   
 127°C, 250 volts, 2.5 A



For Europe, Australia

Rated primary voltage and frequency  
 Open circuit primary current  
 Secondary output voltage  
     No load voltage  
     Rated voltage  
 Protector

230 volts 50 Hz  
 Less than 80 mA at 230 volt 50 Hz  
  
 AC 12 volts  
 AC 10.9 volts  $\pm 5\%$   
 133°C, 250 volts, 1 A

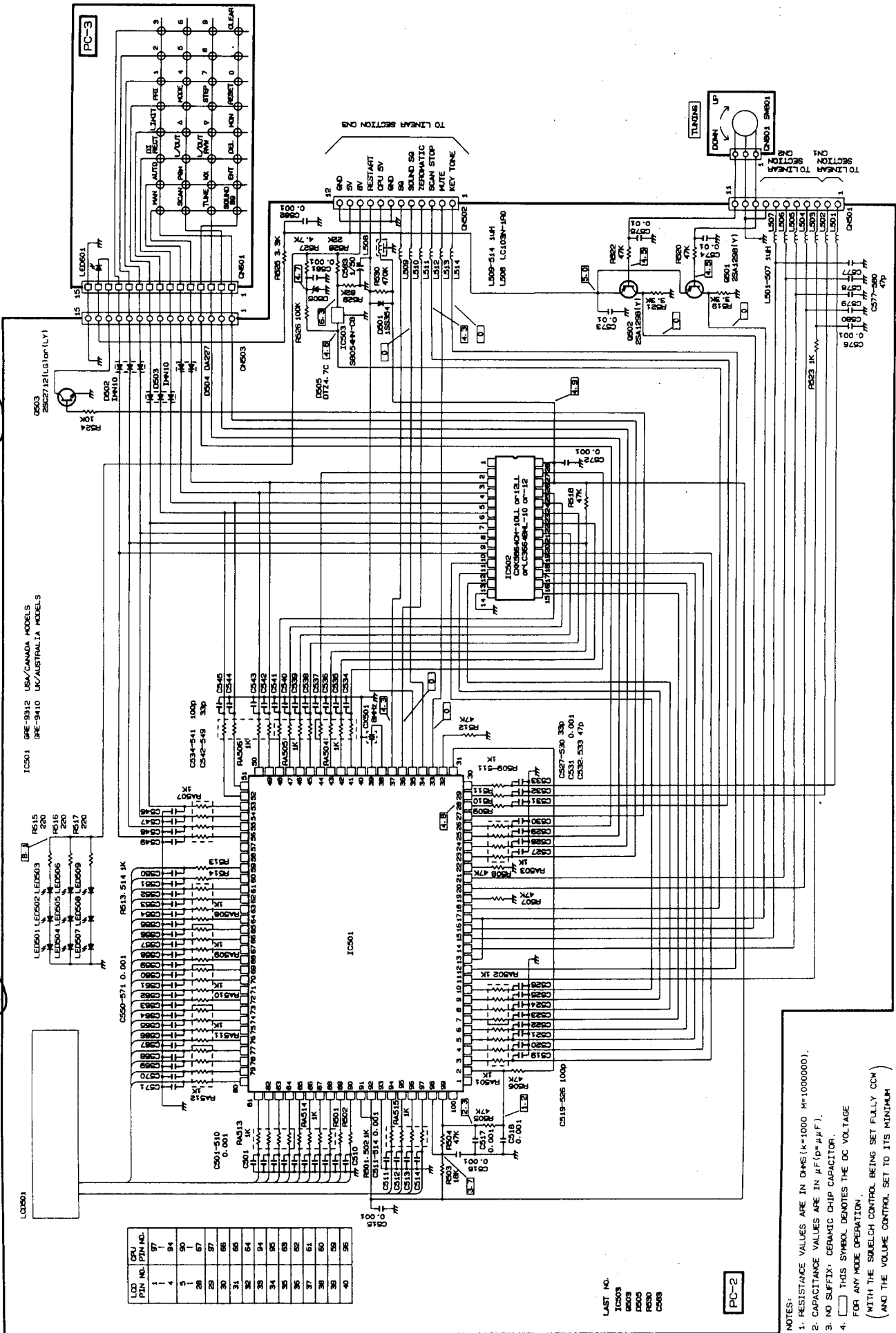


## PART NUMBER CROSS-REFERENCE

Ref. No.	Description	USA	CANADA	AUSTRALIA	U.K.	BELGIUM
IC501	Microprocessor MOS SMT	GRE-9312	GRE-9312	GRE-9410	GRE-9410	GRE-9410
T801	Transformer, Power	GE-84D-5158	GE-84D-5158	K6862	K6862	K6862
R801	Solid, 1.8 Mohm 1/2 W 10%	ERC-12GK185	ERC-12GK185	Not used	Not used	Not used
	Cord, AC	UP-953-J01	UP-953-J01	-----	HAR class ii	HAR class ii
	Strain Relief, Cord Line	SR-3P-4	SR-3P-4	SR-4N-4	SR-4N-4	SR-4N-4

**MANUFACTURED IN CHINA IMPORTED FOR/IMPORTE POUR**  
**InterTAN CANADA LTD. BARRIE, CANADA, L4M 4W5**  
**InterTAN AUSTRALIA LTD. A.C.N. 002 511 944**  
**InterTAN U.K. LTD., WEST MIDLANDS, WS2 7PS**  
**\*REGISTERED TRADEMARK OF TANDY CORPORATION**

**SCEHMATIC DIAGRAM (LOGIC PCB SECTION)**



LED PIN NO.	GRU PIN NO.
1	97
4	94
5	90
28	67
30	66
31	65
32	64
33	94
34	95
35	93
36	92
37	61
38	60
39	59
40	58

LAST NO.  
 IC503  
 IC504  
 IC505  
 IC506  
 IC507

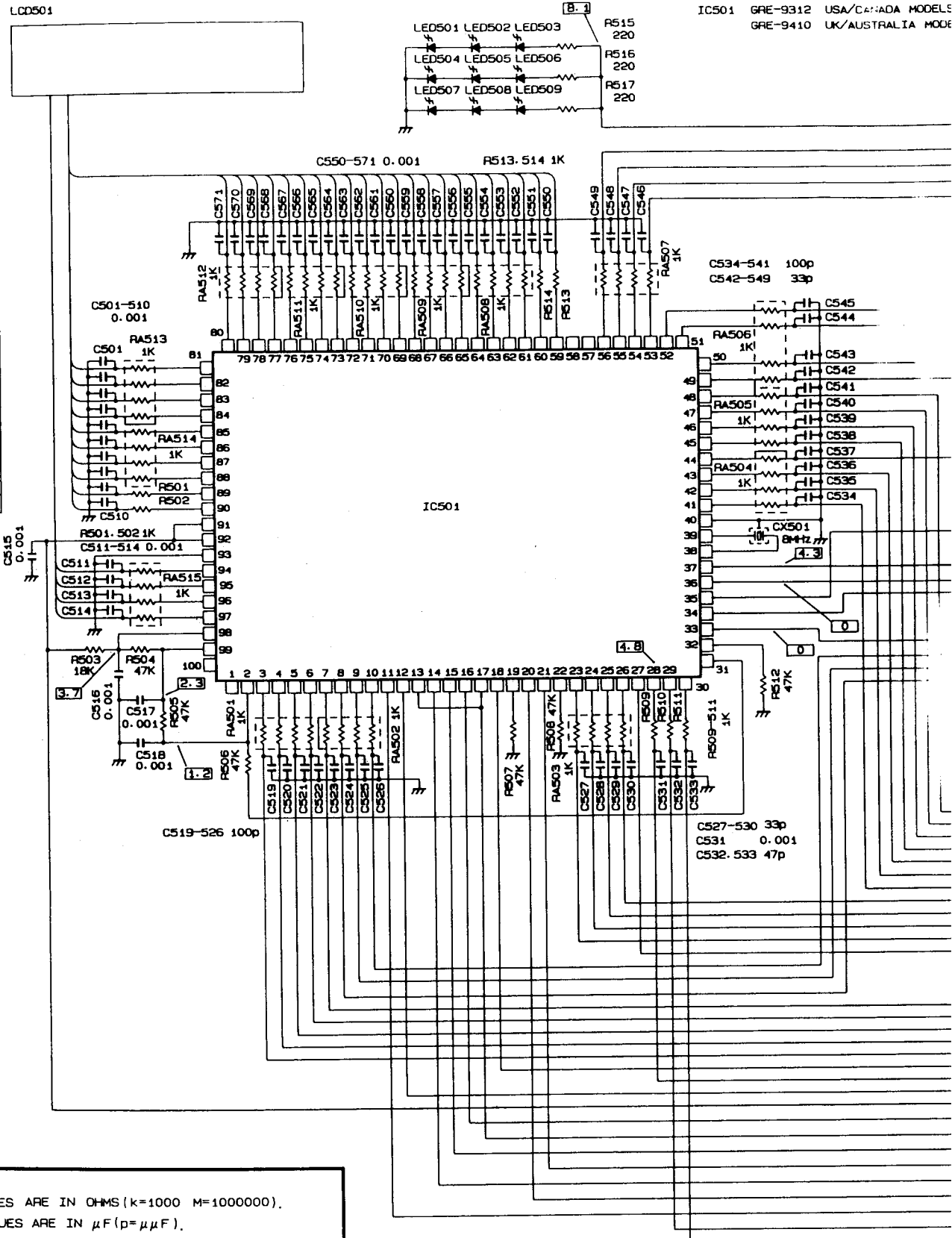
- NOTES:
1. RESISTANCE VALUES ARE IN OHMS (K=1000 M=1000000).
  2. CAPACITANCE VALUES ARE IN  $\mu$ F (P=PF).
  3. NO SUFFIX: CERAMIC CHIP CAPACITOR.
  4. THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE OPERATION. (WITH THE SWITCH CONTROL BEING SET FULLY Ccw) (AND THE VOLUME CONTROL SET TO ITS MINIMUM)

A

SCEHMATIC DIAGRAM (LOGIC PCB S

IC501 GRE-9312 USA/CANADA MODELS  
GRE-9410 UK/AUSTRALIA MODELS

LCD PIN NO.	CPU PIN NO.
1	97
4	94
5	90
28	67
29	97
30	66
31	65
32	64
33	94
34	96
35	63
36	62
37	61
38	60
39	59
40	96



LAST NO.  
IC503  
Q503  
D505  
R530  
C563

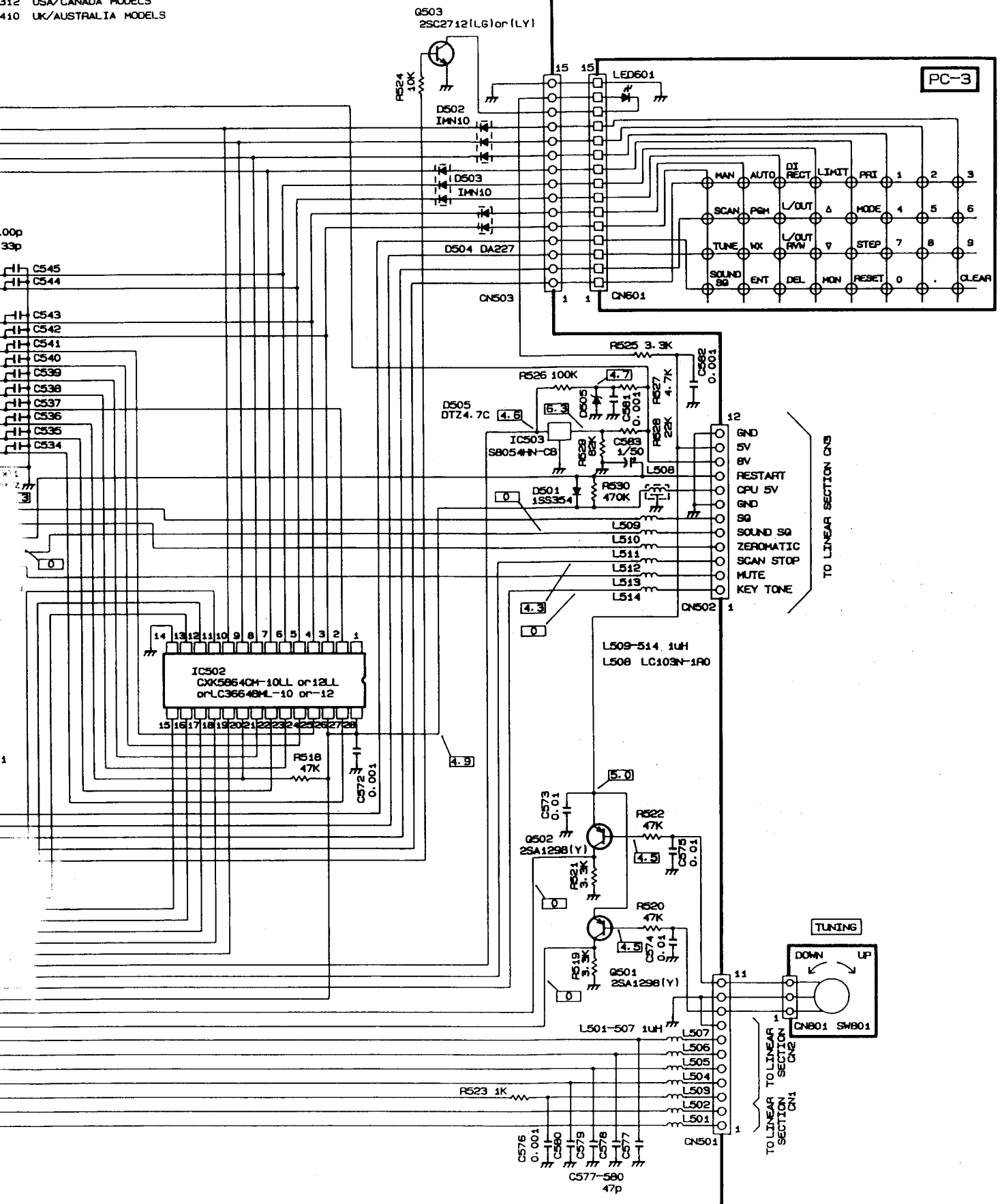
PC-2

- NOTES:
1. RESISTANCE VALUES ARE IN OHMS (k=1000 M=1000000).
  2. CAPACITANCE VALUES ARE IN  $\mu F$  ( $p = \mu\mu F$ ).
  3. NO SUFFIX: CERAMIC CHIP CAPACITOR.
  4.    THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE OPERATION.  
(WITH THE SQUELCH CONTROL BEING SET FULLY CCW)  
(AND THE VOLUME CONTROL SET TO ITS MINIMUM)

LOGIC PCB SECTION)

(B)

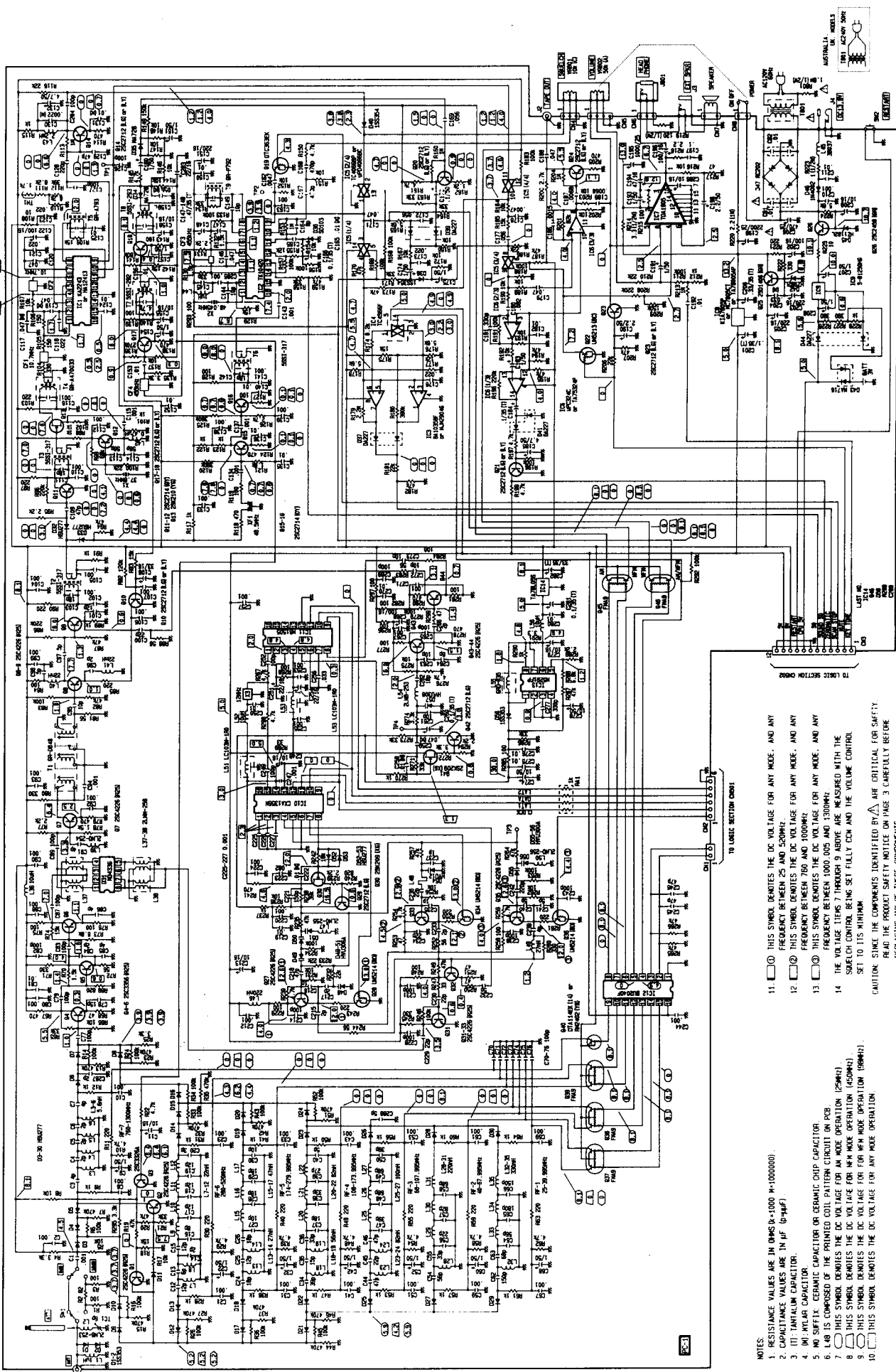
312 USA/CANADA MODELS  
410 UK/AUSTRALIA MODELS





**SCEHMATIC DIAGRAM (LINEAR PCB SECTION)**

**(B)**



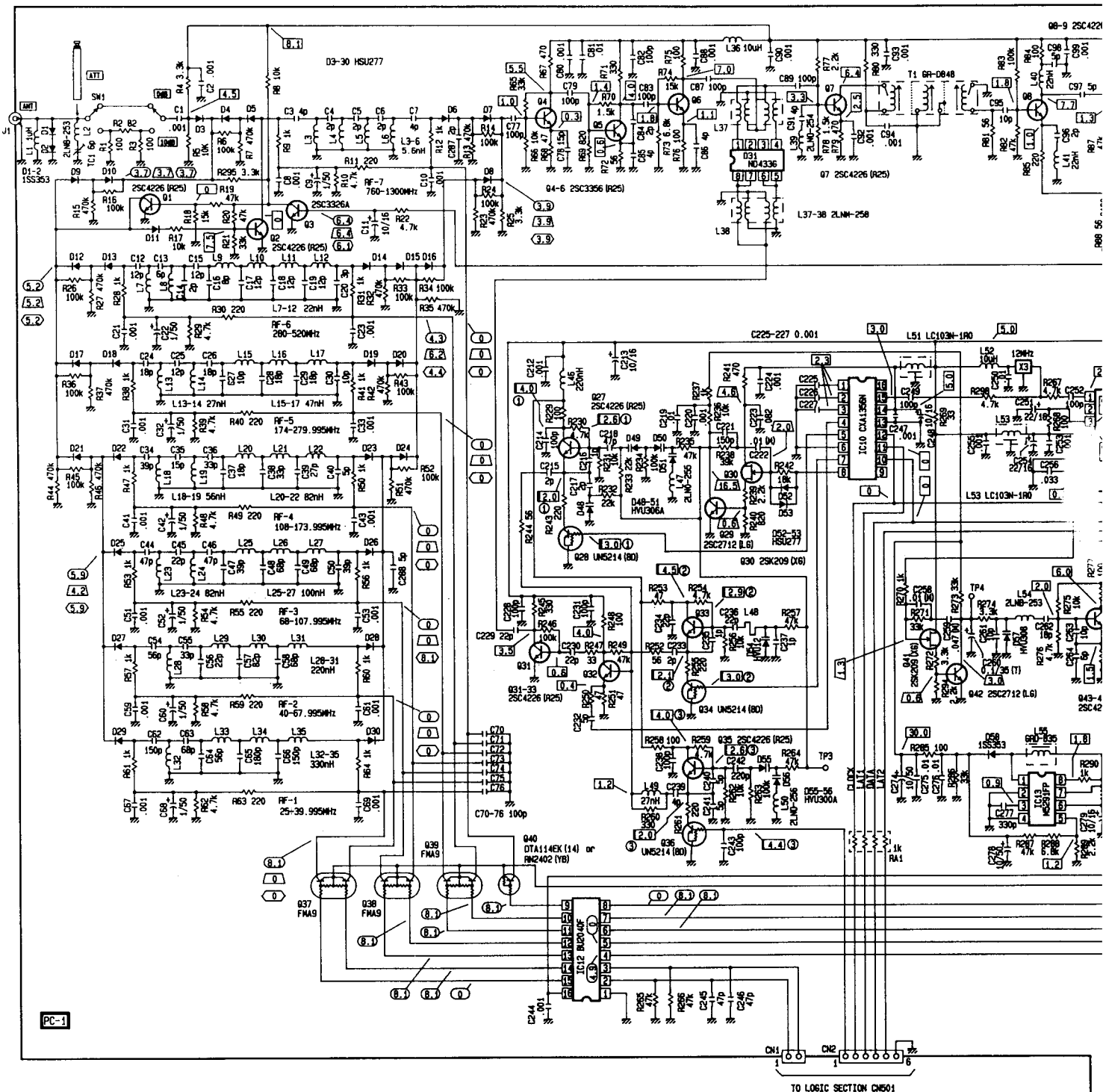
**(A)**

- 11. THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE, AND ANY FREQUENCY BETWEEN 20 AND 5000HZ.
  - 12. THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE, AND ANY FREQUENCY BETWEEN 760 AND 10000HZ.
  - 13. THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE, AND ANY FREQUENCY BETWEEN 1000.005 AND 13000HZ.
  - 14. THE VOLTAGE ITEMS 7 THROUGH 9 ABOVE ARE MEASURED WITH THE SQUELCH CONTROL BEING SET FULLY Ccw AND THE VOLUME CONTROL SET TO ITS MINIMUM.
- CAUTION: SINCE THE COMPONENTS IDENTIFIED BY ARE CRITICAL FOR SAFETY, READ THE PRODUCT SAFETY NOTICE ON PAGE 3 CAREFULLY BEFORE REPLACING ANY OF THESE COMPONENTS.

- NOTES:
- 1. RESISTANCE VALUES ARE IN OHMS (K=1000 M=1000000).
  - 2. CAPACITANCE VALUES ARE IN PF (p=picof).
  - 3. (T) TANTALUM CAPACITOR.
  - 4. (M) MICLAR CAPACITOR.
  - 5. NO SUFFIX CERAMIC CAPACITOR OR CERAMIC CHIP CAPACITOR.
  - 6. LAB IS COMPOSED OF THE PRINTED COIL PATTERN CIRCUIT ON PCB.
  - 7. THIS SYMBOL DENOTES THE DC VOLTAGE FOR AM MODE OPERATION (2500HZ).
  - 8. THIS SYMBOL DENOTES THE DC VOLTAGE FOR FM MODE OPERATION (4000HZ).
  - 9. THIS SYMBOL DENOTES THE DC VOLTAGE FOR WFM MODE OPERATION (5000HZ).
  - 10. THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE OPERATION.



# SCEHMATIC DIAGRAM (I



**NOTES:**

1. RESISTANCE VALUES ARE IN OHMS (K=1000 M=1000000).
2. CAPACITANCE VALUES ARE IN  $\mu\text{F}$  ( $\text{p}=\mu\mu\text{F}$ ).
3. (T): TANTALUM CAPACITOR.
4. (M): MYLAR CAPACITOR.
5. NO SUFFIX: CERAMIC CAPACITOR OR CERAMIC CHIP CAPACITOR.
6. L48 IS COMPOSED OF THE PRINTED COIL PATTERN CIRCUIT ON PCB.
7.  $\square$  ○ THIS SYMBOL DENOTES THE DC VOLTAGE FOR AM MODE OPERATION (25MHZ).
8.  $\square$  ○ THIS SYMBOL DENOTES THE DC VOLTAGE FOR NFM MODE OPERATION (450MHZ).
9.  $\square$  ○ THIS SYMBOL DENOTES THE DC VOLTAGE FOR FOR WFM MODE OPERATION (98MHZ).
10.  $\square$  ○ THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE OPERATION.

11.  $\square$  ○ THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE, AND ANY FREQUENCY BETWEEN 25 AND 520MHZ.
12.  $\square$  ○ THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE, AND ANY FREQUENCY BETWEEN 760 AND 1000MHZ.
13.  $\square$  ○ THIS SYMBOL DENOTES THE DC VOLTAGE FOR ANY MODE, AND ANY FREQUENCY BETWEEN 1000.005 AND 1300MHZ.
14. THE VOLTAGE ITEMS 7 THROUGH 9 ABOVE ARE MEASURED WITH THE SQUELCH CONTROL BEING SET FULLY CCM AND THE VOLUME CONTROL SET TO ITS MINIMUM.

**CAUTION:** SINCE THE COMPONENTS IDENTIFIED BY  $\triangle$  ARE CRITICAL FOR SAFETY. READ THE PRODUCT SAFETY NOTICE ON PAGE 3 CAREFULLY BEFORE REPLACING ANY OF THESE COMPONENTS.

# DIAGRAM (LINEAR PCB SECTION)

(B)

