

Radio Shack®

ServiceManual

20-460/9460

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 |
|--|---------------------------|------|---------|-------|
| Sensitivity | | | | |
| NFM: (S+N)/N=20 dB 3 kHz dev. at 1 kHz | 25–520 MHz | μV | 0.5 | 2 |
| | 760–1000 MHz | μV | 0.5 | 2 |
| | 1000.005–1300 MHz | μV | 3 | 10 |
| AM: (S+N)/N=20 dB 60% mod. at 1 kHz | 25–520 MHz | μV | 2 | 5 |
| | 760–1000 MHz | μV | 2 | 5 |
| | 1000.005–1300 MHz | μV | 5 | 20 |
| WFM: (S+N)/N=30 dB 22.5 kHz dev. at 1 kHz | 25–520 MHz | μV | 3 | 10 |
| | 760–1000 MHz | μV | 3 | 10 |
| | 1000.005–1300 MHz | μV | 10 | 25 |
| Squelch sensitivity NFM and AM | | | | |
| 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 |
| WFM | | | | |
| 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 |
| Selectivity | | | | |
| 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 |

| | | | Unit | Nominal | Limit |
|---------------------------------------|---|-------------------|---------------|---------|-------|
| 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) | | | | |

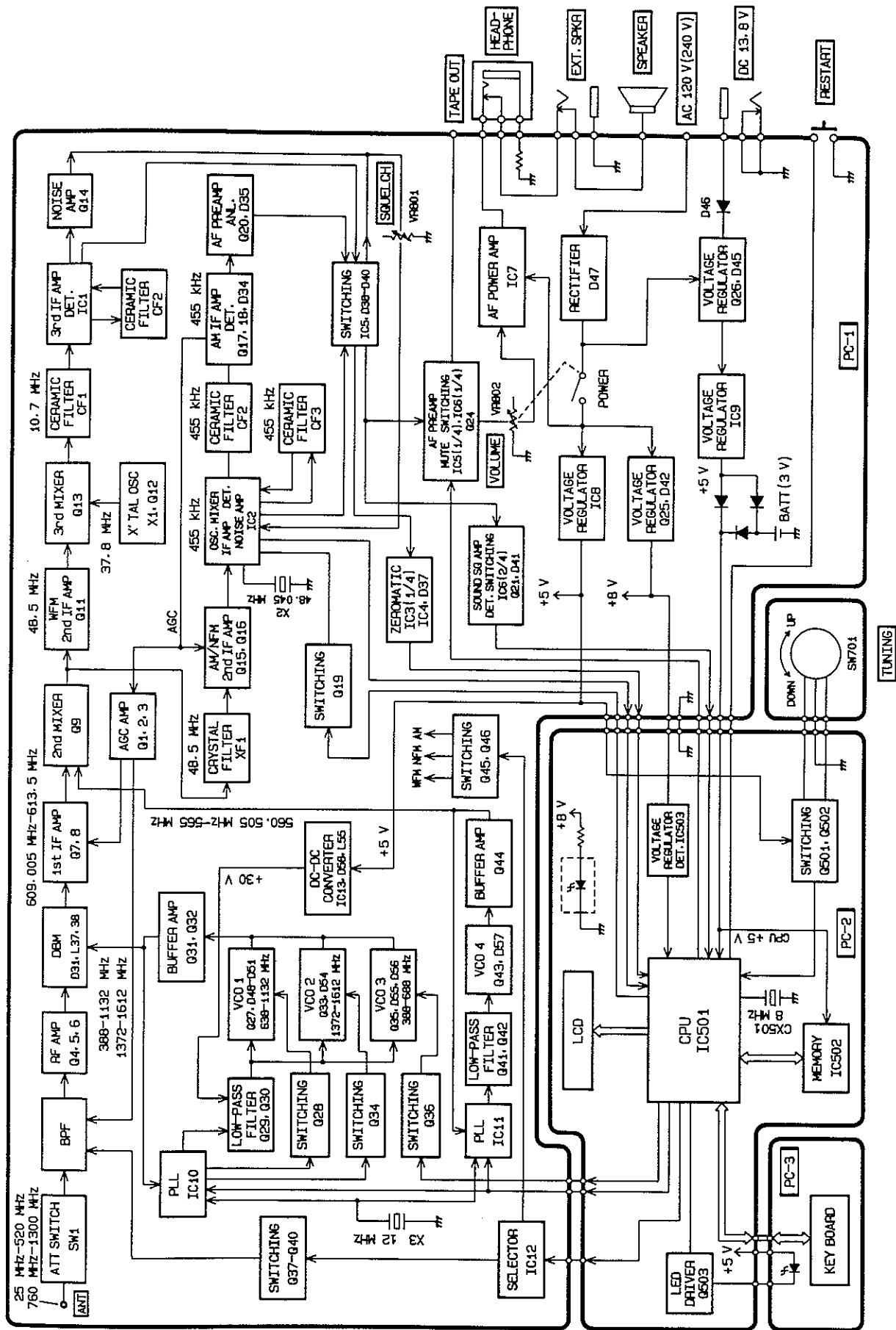
Note: Nominal specs represent the design specs. All units should be able to approximate these—some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; in no case should a unit fail to meet limit specs.

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 Δ 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.

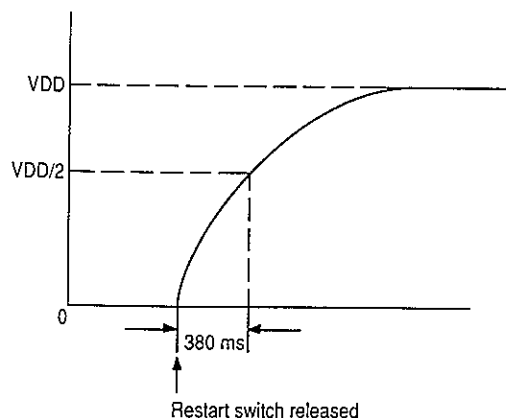


Figure A

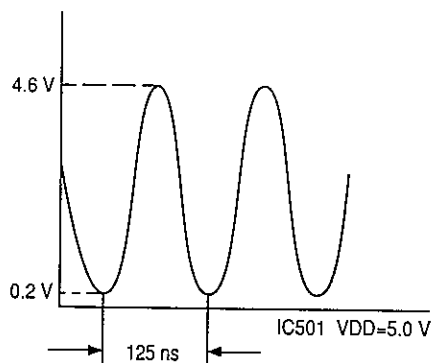


Figure B

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.

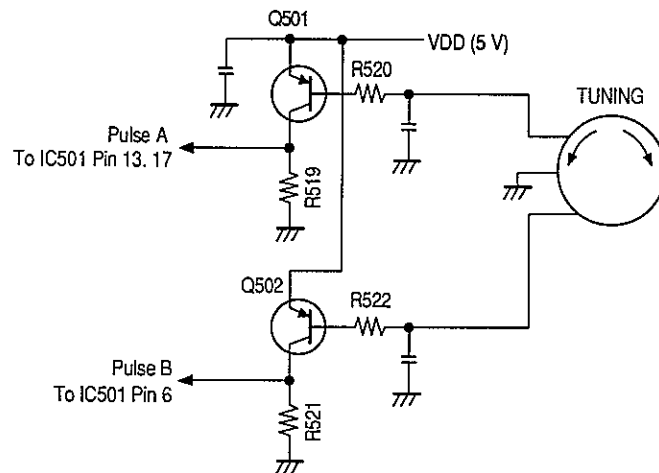


Figure C

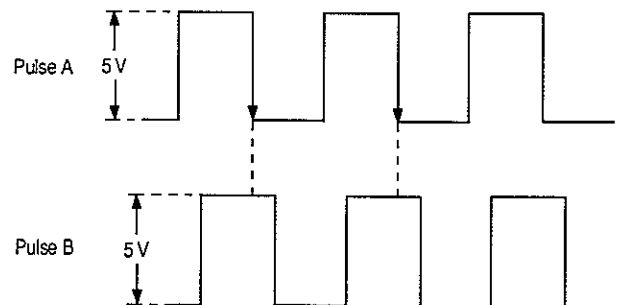


Figure D

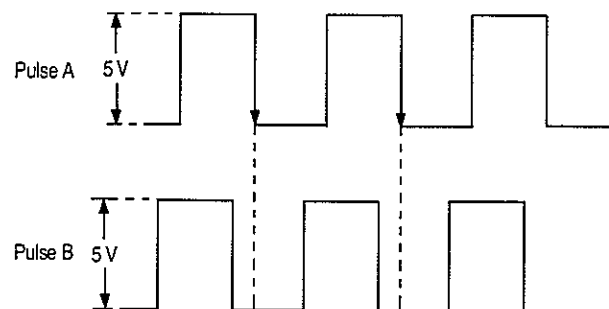
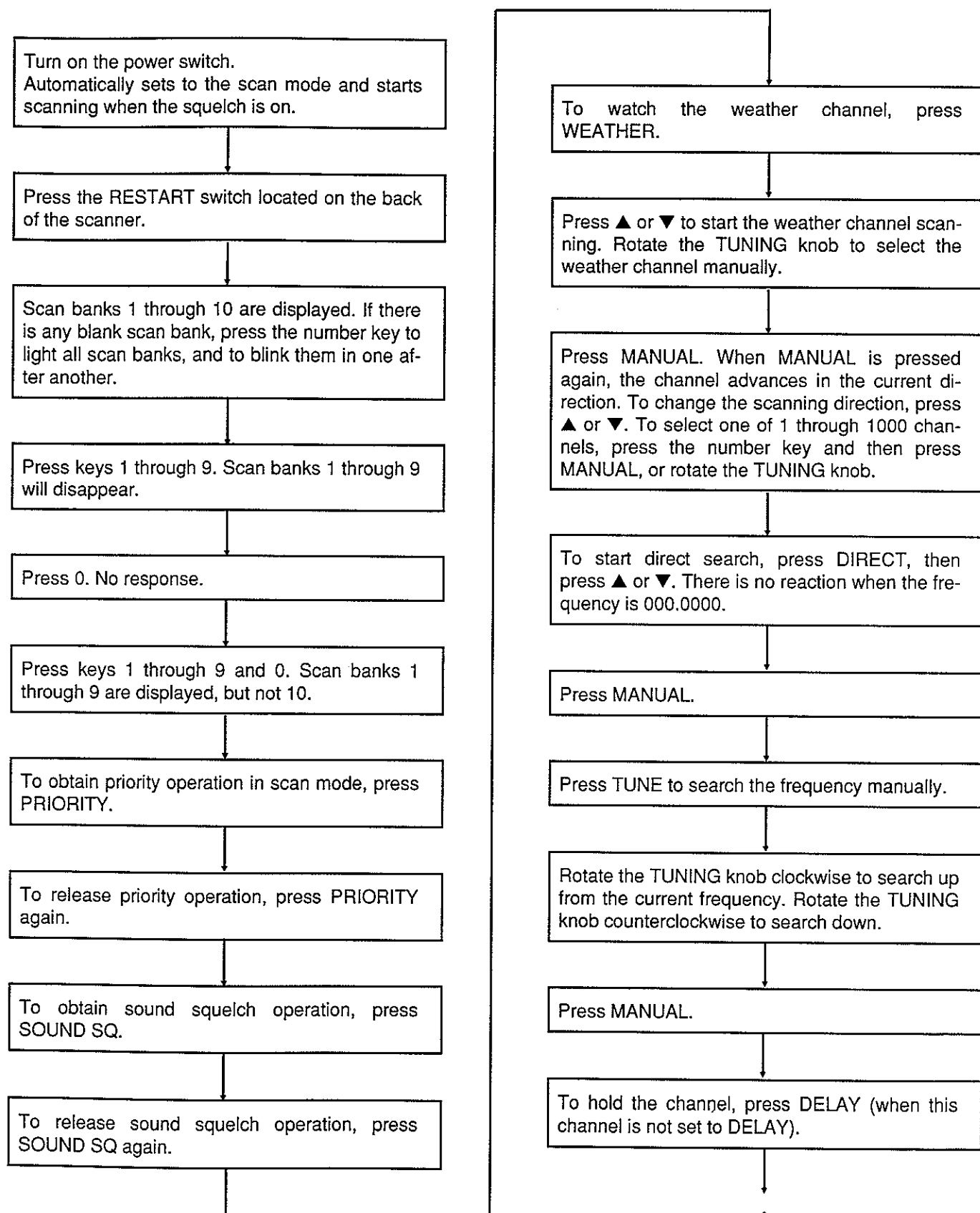
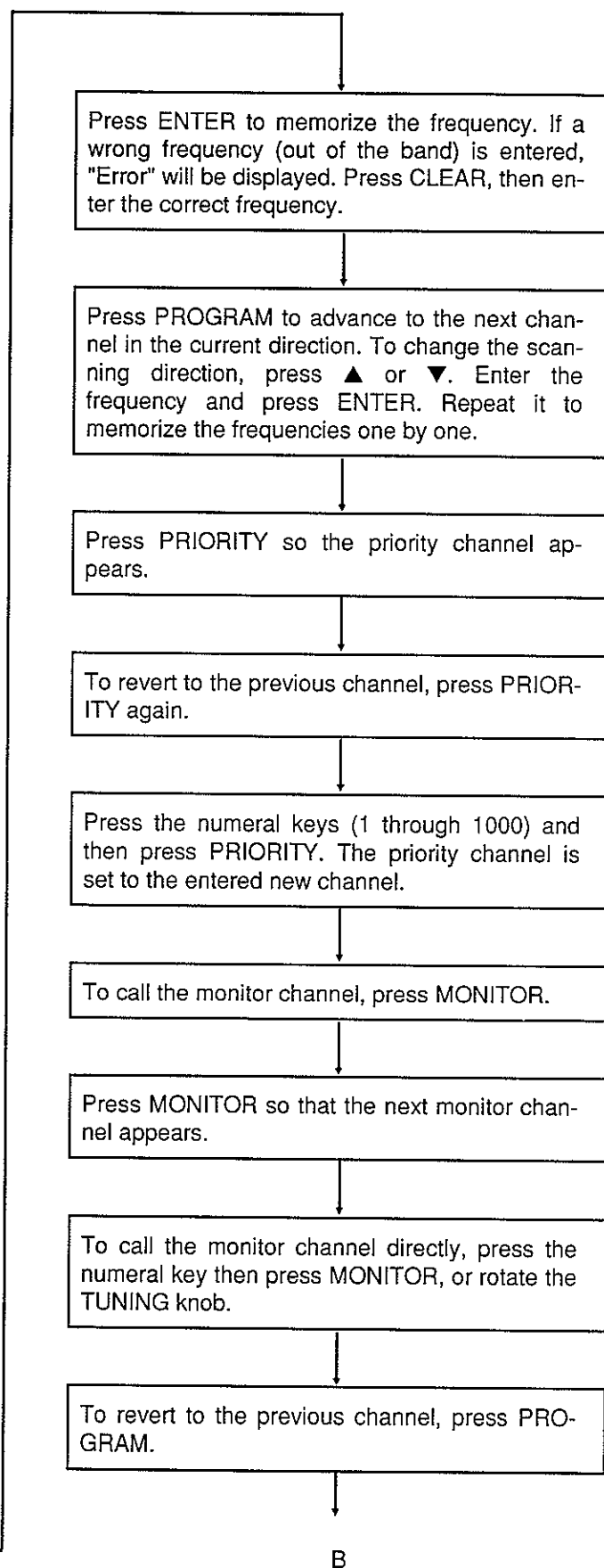
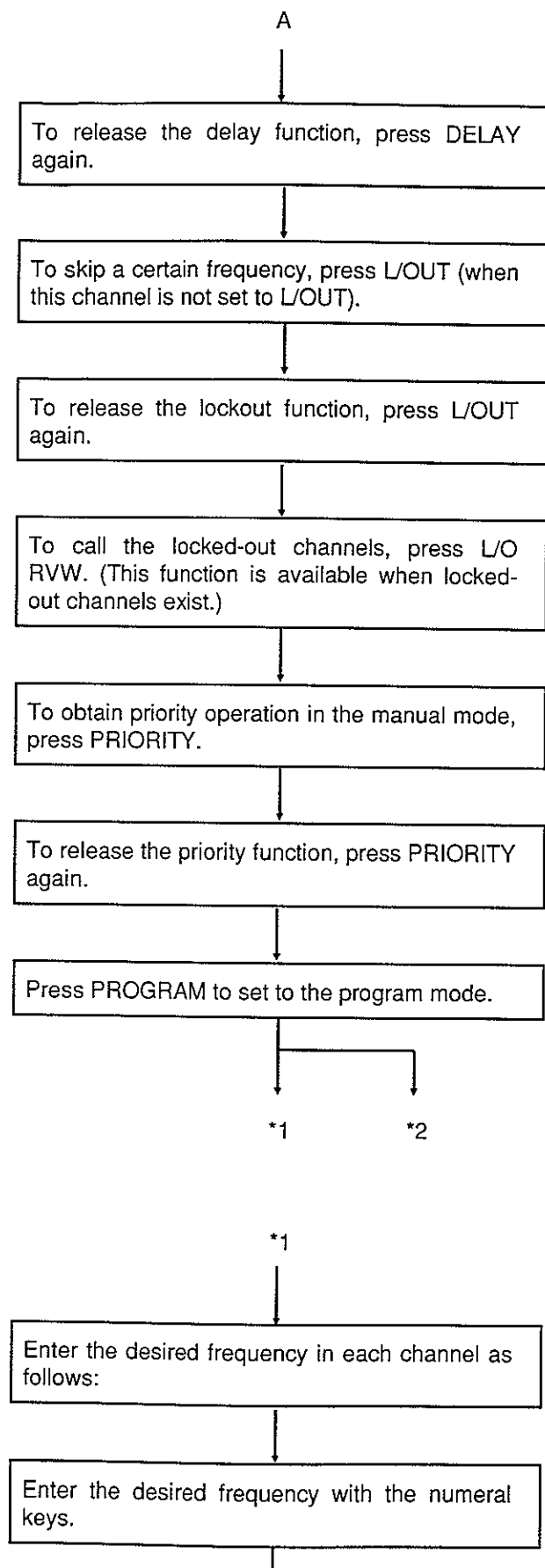
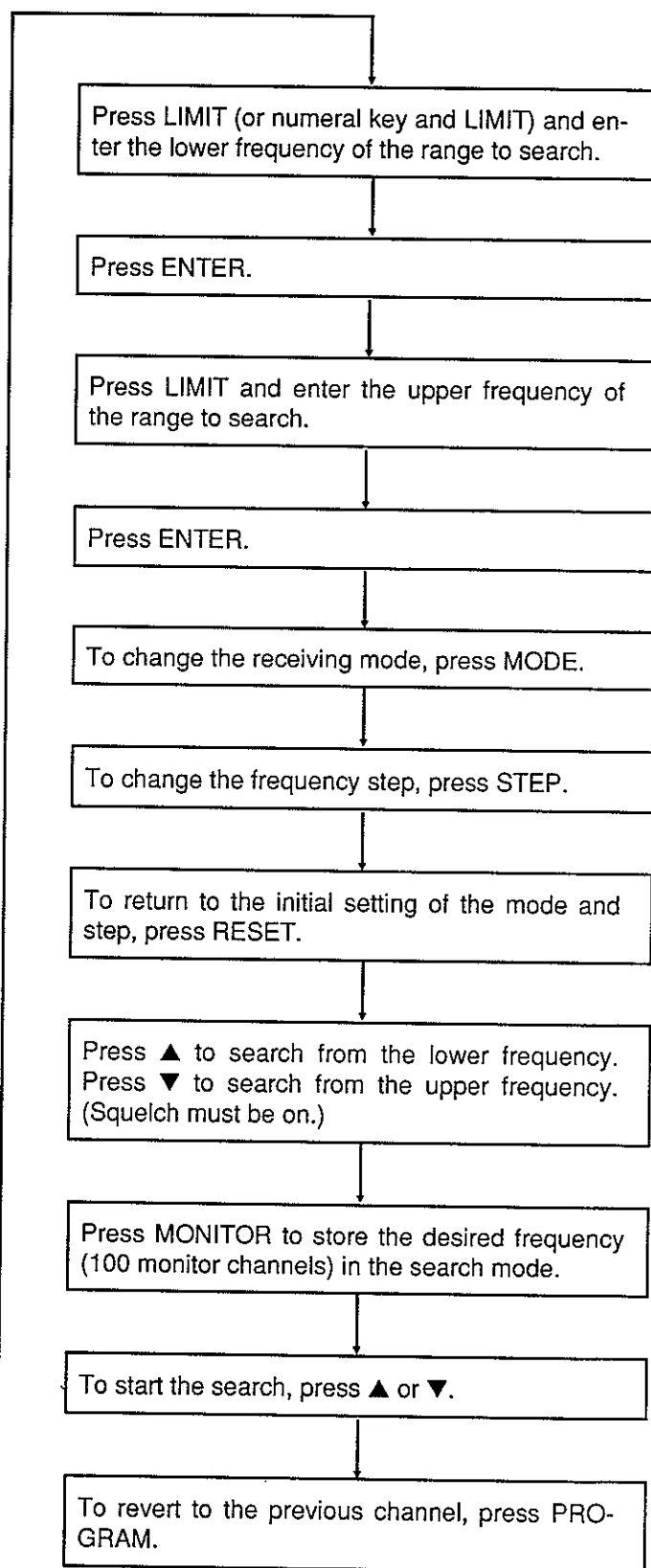
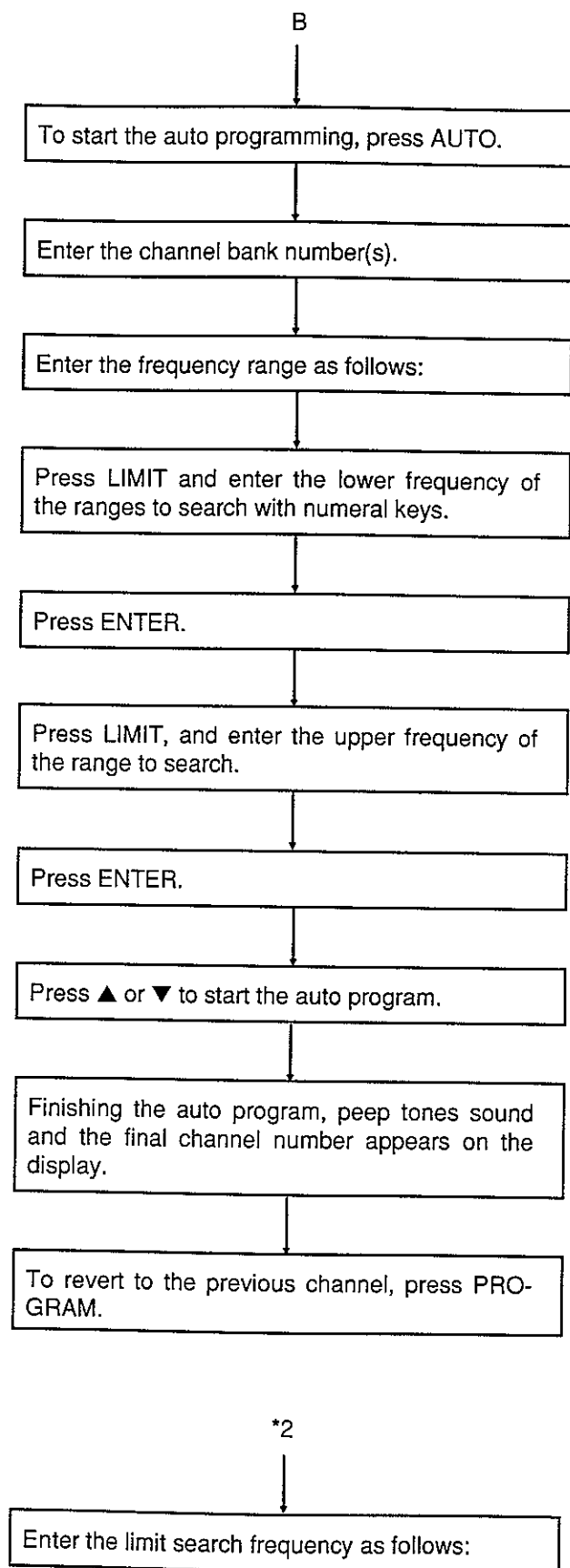


Figure E

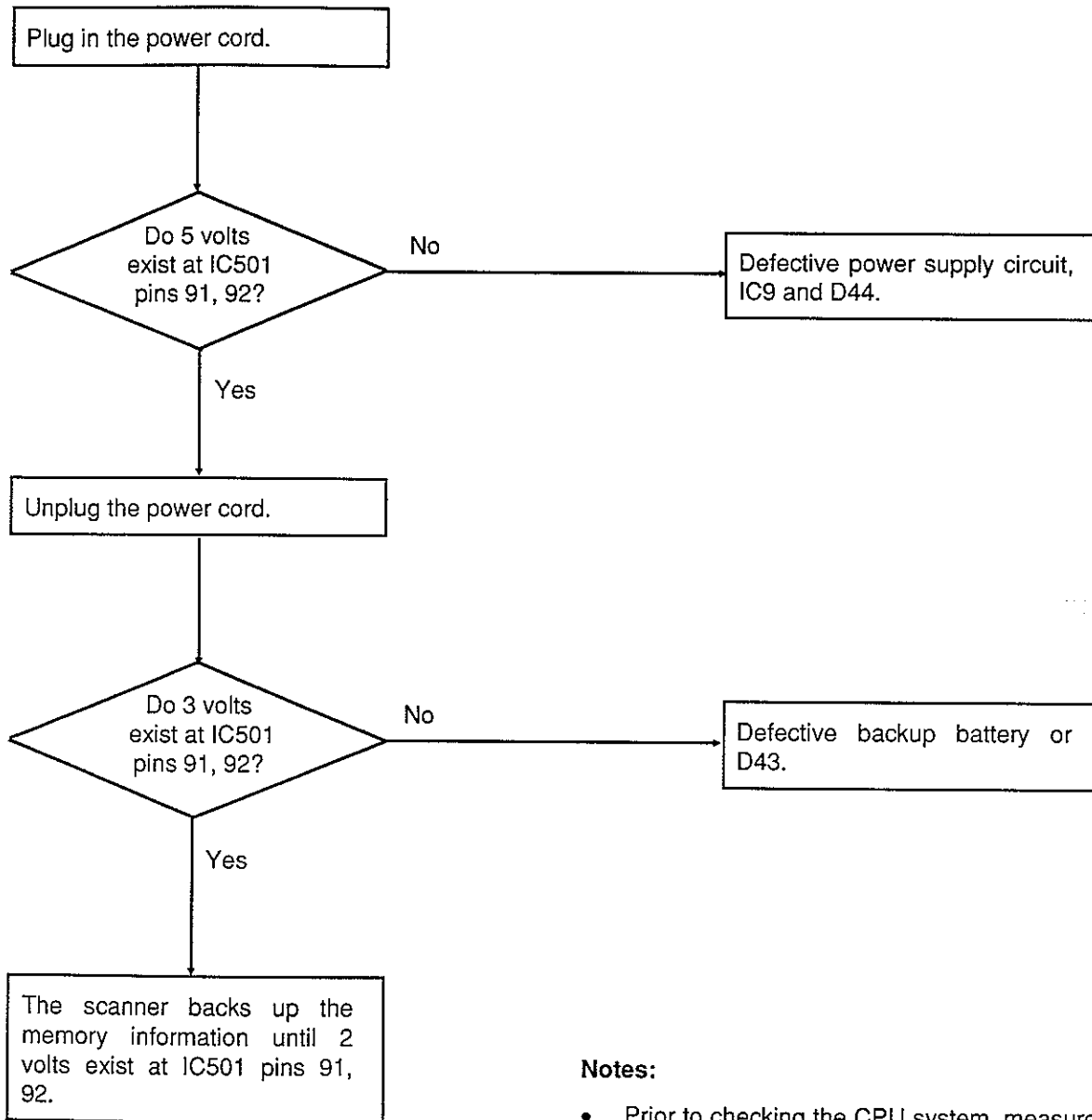
GENERAL OPERATION OUTLINE







MEMORY CHECK

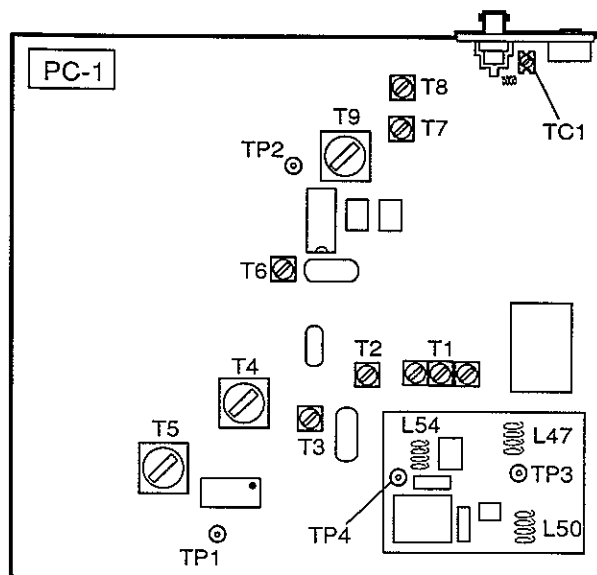


Notes:

- 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 ± 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"> 1. Select channel 2 and adjust L47 for 20 volts on the DC SSVM. See Table 2. 2. Select channel 3 and be sure the DC SSVM reads 9-13 volts (no adjustments are necessary for the coil). 3. Select channel 4 and adjust L50 for 22 volts on the DC SSVM. 4. Repeat above 1 to 3 until no further improvement is observed. See Table 2. |

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."

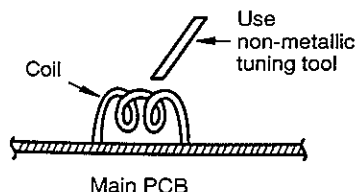


Figure 3

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.

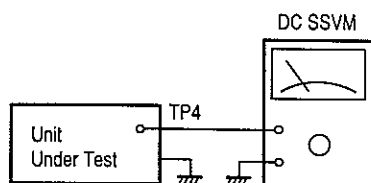


Figure 1

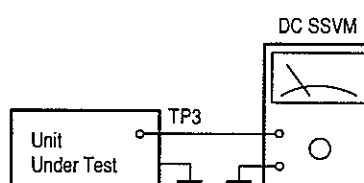


Figure 2

| 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 μ V output (no mod.) and adjust T9 for $4.0^{+0.3}_{-0}$ 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 μ V output (no mod.) and adjust T4 for $4.0^{+0.3}_{-0}$ volts on the DC SSVM. |

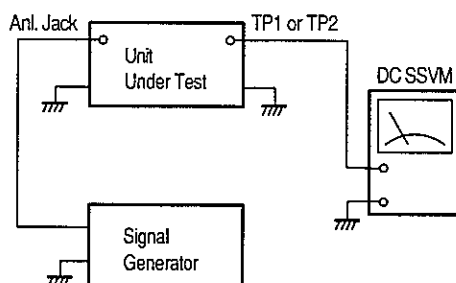


Figure 4

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"> 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). 2. Adjust T3 and T4 for maximum sensitivity. |

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"> 1. Set the signal generator frequency to 120 MHz (AM: 60% mod. at 1 kHz and the output at S/N 20 dB point). 2. Adjust T2 and T6 for maximum sensitivity. |

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"> 1. Set the signal generator frequency to 120 MHz (AM: 60% mod. at 1 kHz and the output at S/N 20 dB point). 2. Adjust T7 for maximum sensitivity. |

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"> 1. Set the signal generator frequency to 120 MHz (AM: 60% mod. at 400 Hz and the output at 100 μV). 2. Adjust T8 for minimum THD point. |

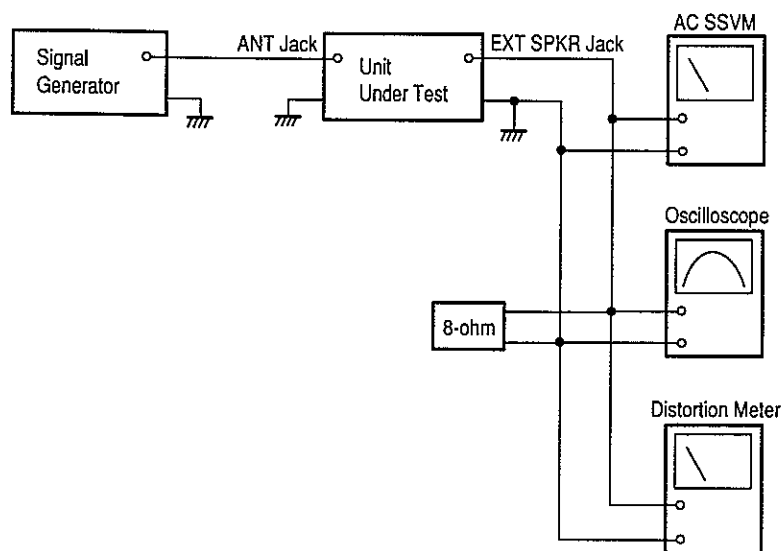


Figure 5

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"> Set the signal generator frequency to 612 MHz (FM: 3 kHz dev. at 1 kHz and the output approx. 1 mV). Adjust TC1 for minimum sensitivity. |

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"> 1. Select channel 7 and set the signal generator frequency to 514.995 MHz (FM: 3 kHz dev. at 1 kHz and 0.5 μV output). 2. Adjust T1 for maximum sensitivity. 3. Select channel 8 and set the signal generator frequency to 518.5 MHz (FM: 3 kHz dev. at 1 kHz and 0.5 μV output). 4. Readjust T1 for maximum sensitivity. <p>Note: Alignment should be done so that the sensitivity at channels 7 and 8 becomes the same.</p> |

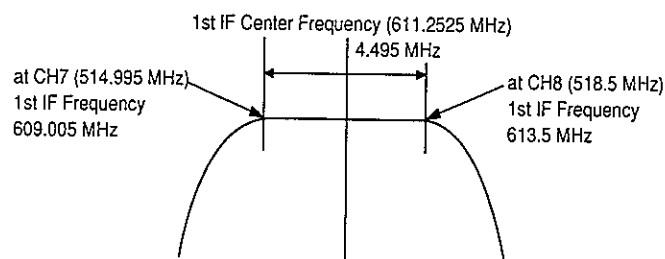
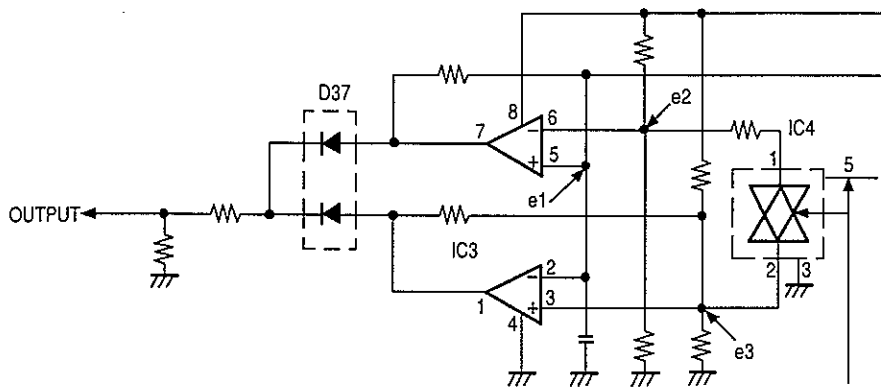
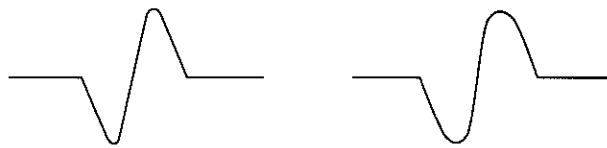


Figure 6

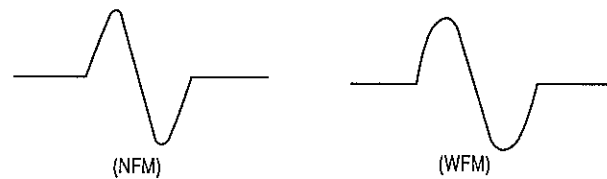
Zeromatic Function Test Procedure



Frequency: 25 to 520 MHz
760 to 1000 MHz



Frequency: 1000.005 to 1300 MHz



Discriminator Curve

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 $4.0_{-0}^{+0.3}$ 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 $4.0_{-0}^{+0.3}$ V at TP1. It is convenient to use the FM or TV sound signal for this adjustment.

TROUBLESHOOTING

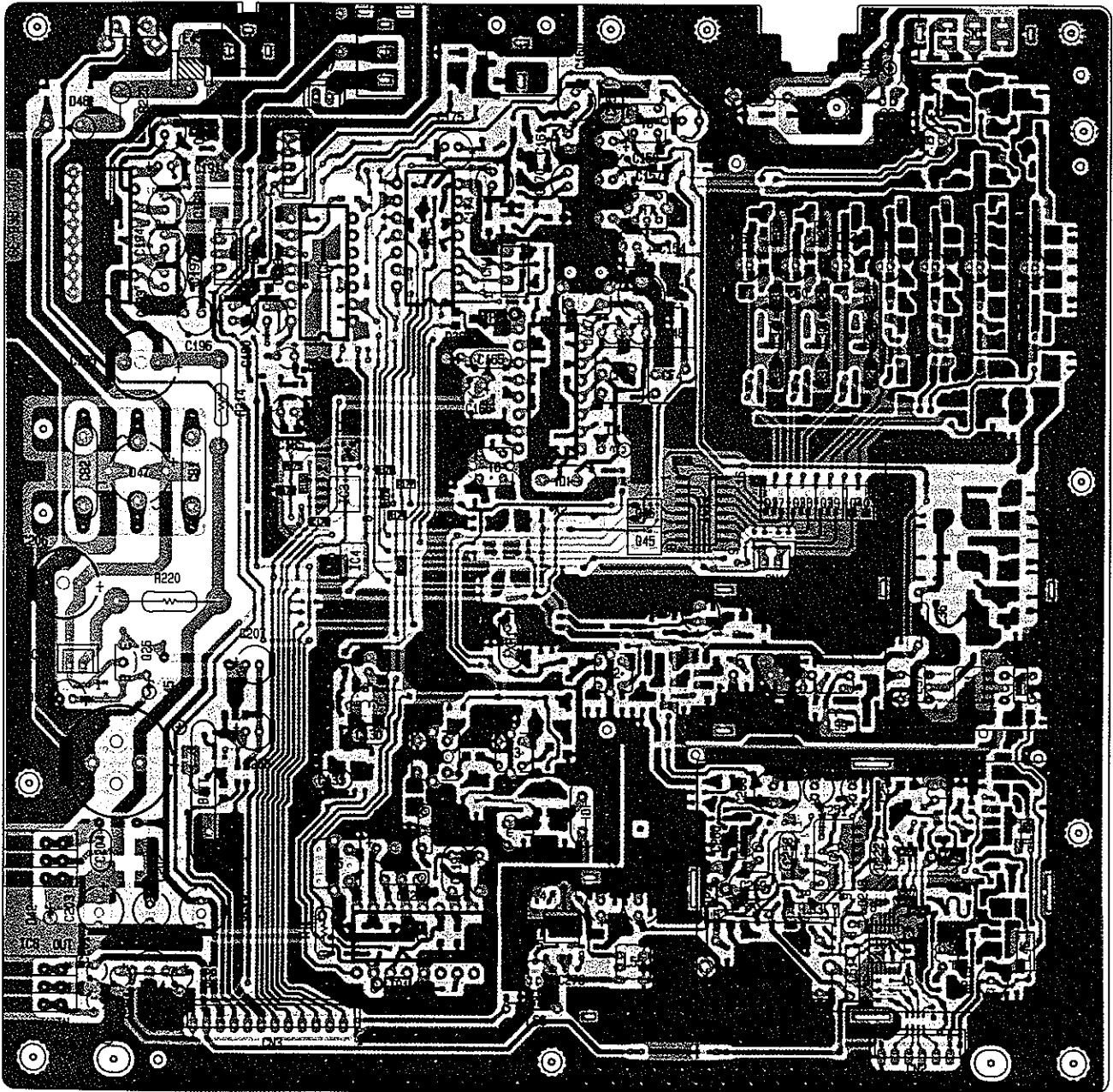
| Symptom | Possible Cause/Remedy |
|---|--|
| Display does not light and there is no sound when power is on Volume control: Maximum (MAX) Squelch control: Fully counterclockwise (CCW) | <ul style="list-style-type: none"> • Defective AC line cord: Replace. • Defective power transformer T801: Replace.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

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

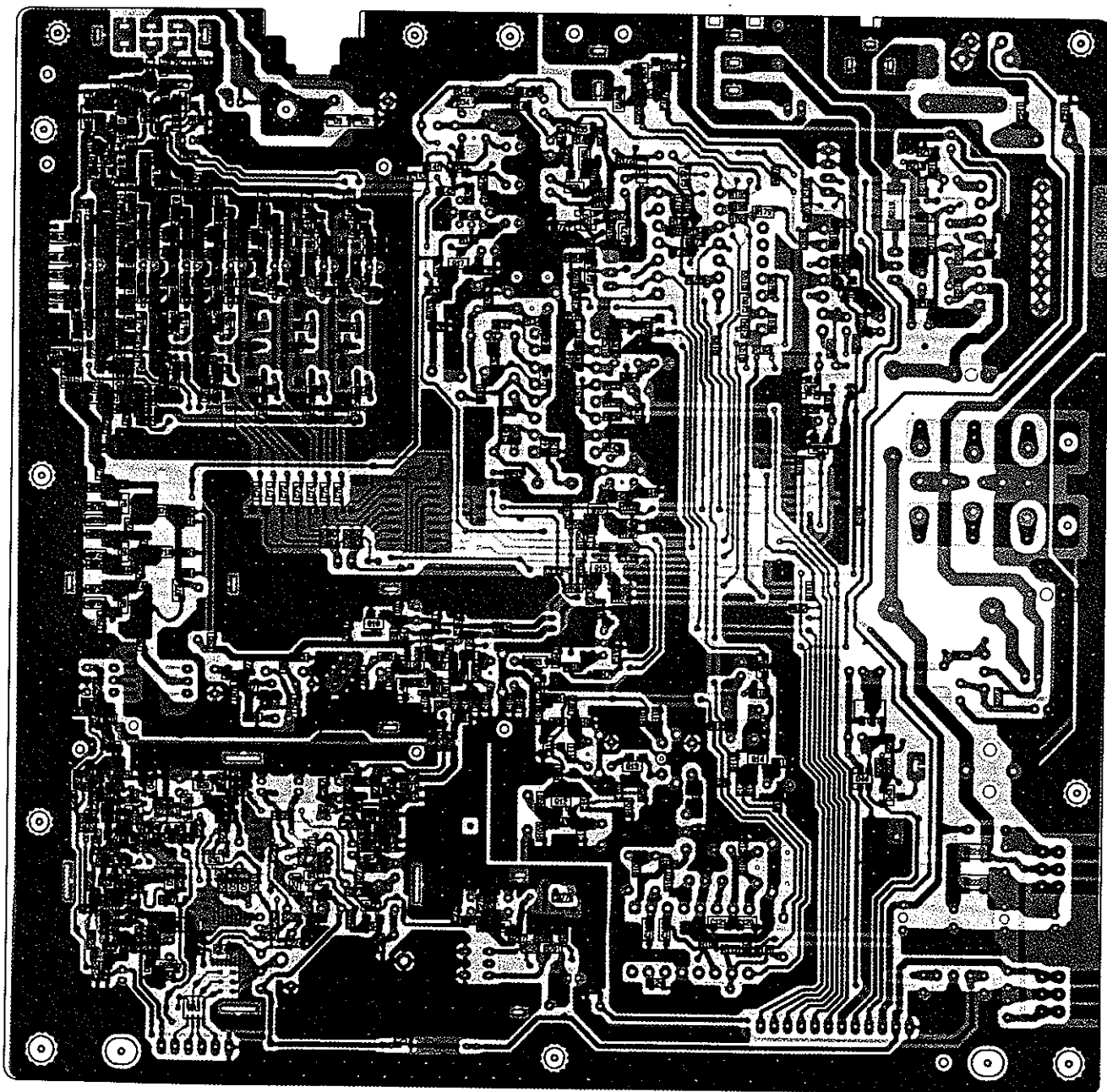
| Symptom | Possible Cause/Remedy |
|---|--|
| Low sensitivity between 68.000 and 107.995 MHz | <ul style="list-style-type: none"> Defective switching circuit Q38 and/or associated circuit: Replace the defective components. Defective bandpass filter (BPF): Replace the defective components. |
| Low sensitivity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

PRINTED CIRCUIT BOARDS

LINEAR

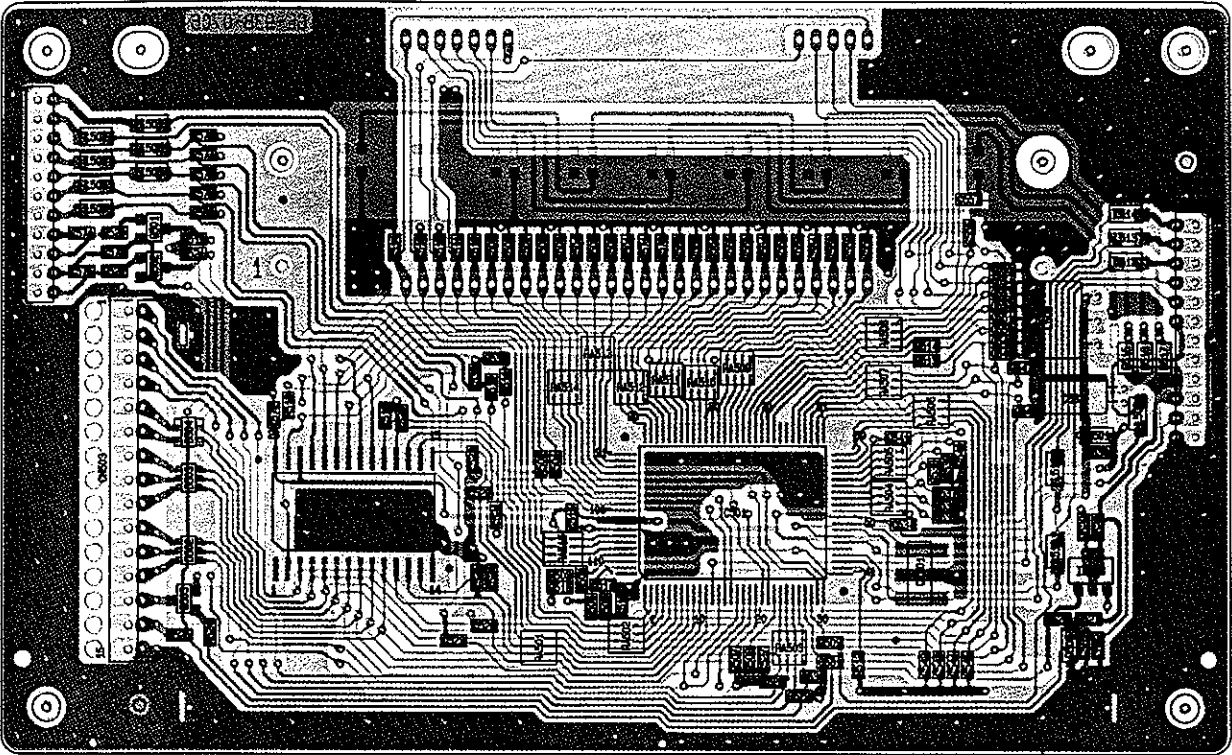


Top View

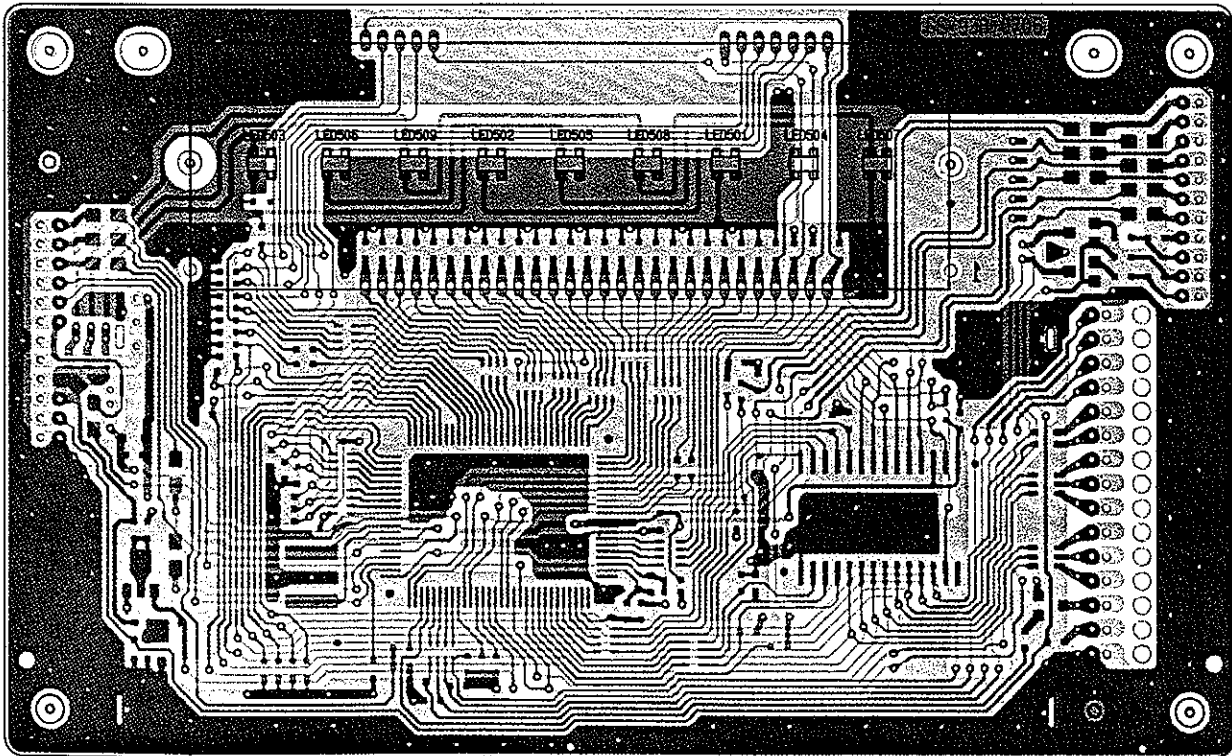


Bottom View

LOGIC

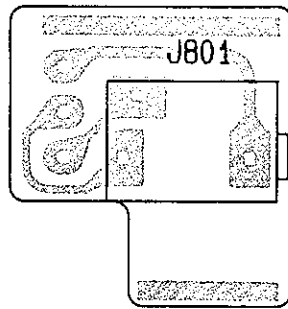


Top View

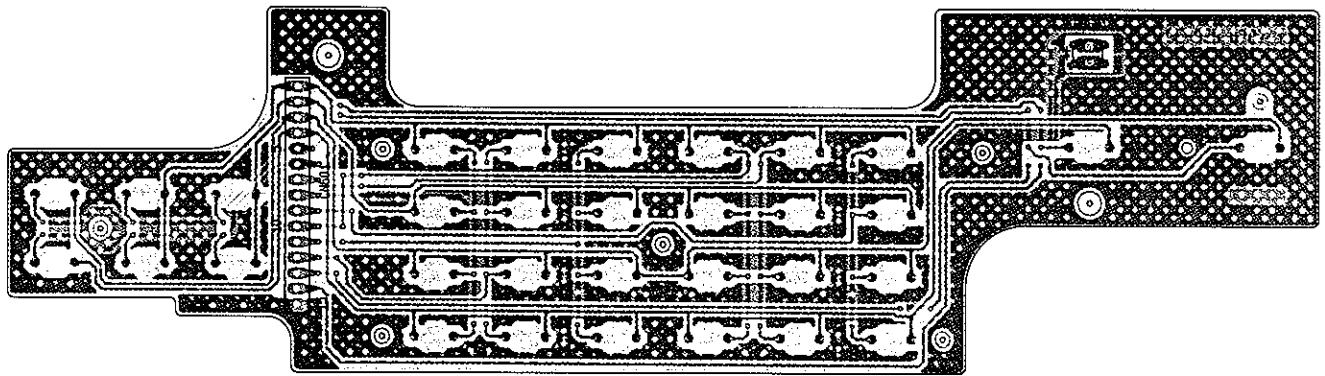


Bottom View

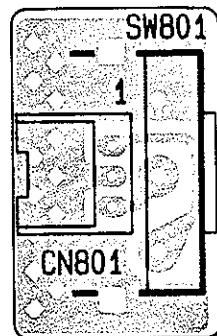
HEADPHONE JACK



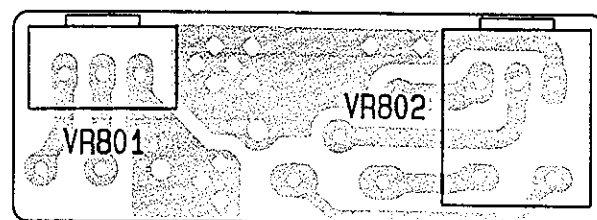
KEYBOARD SWITCH



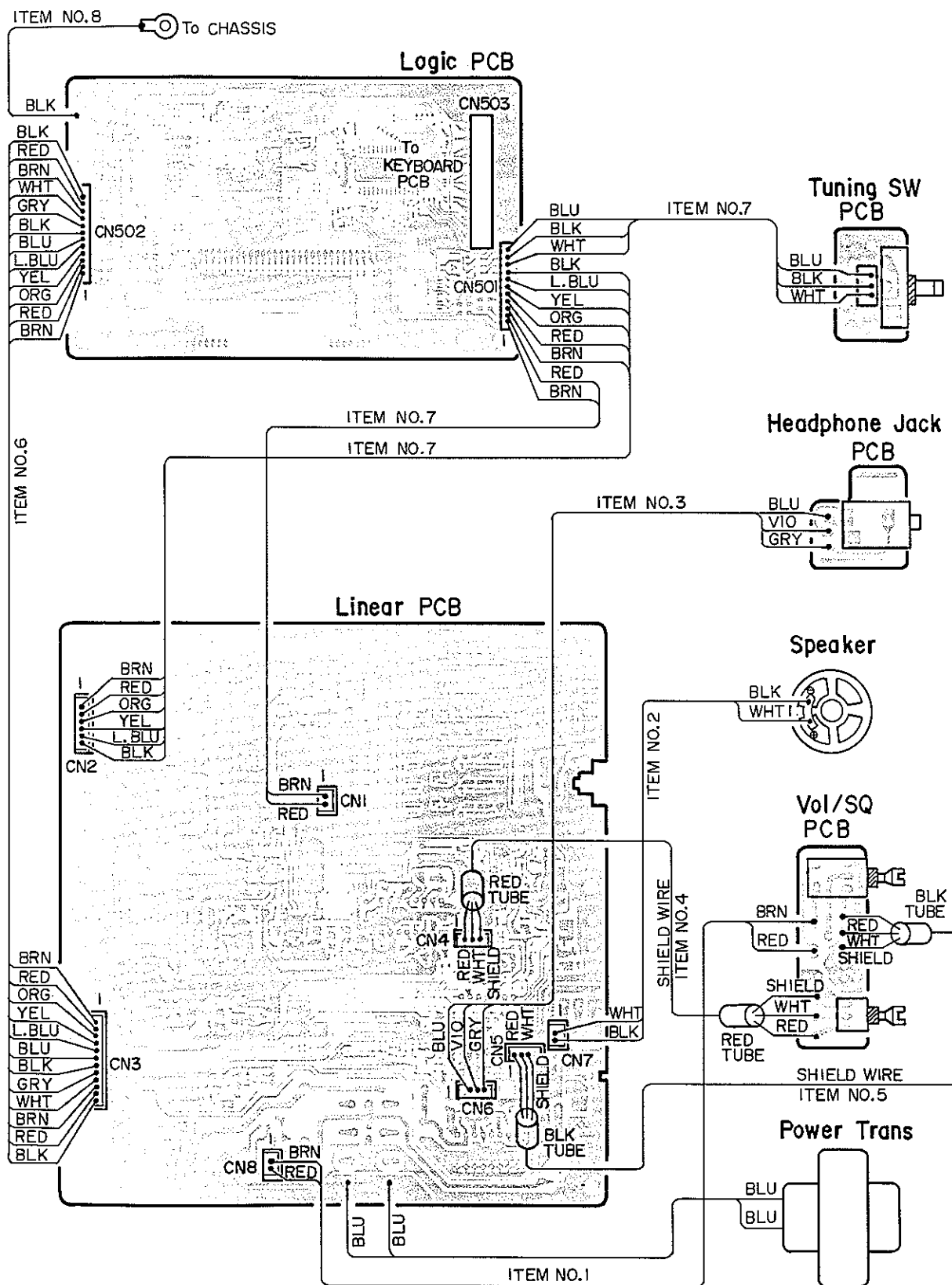
TUNING SWITCH



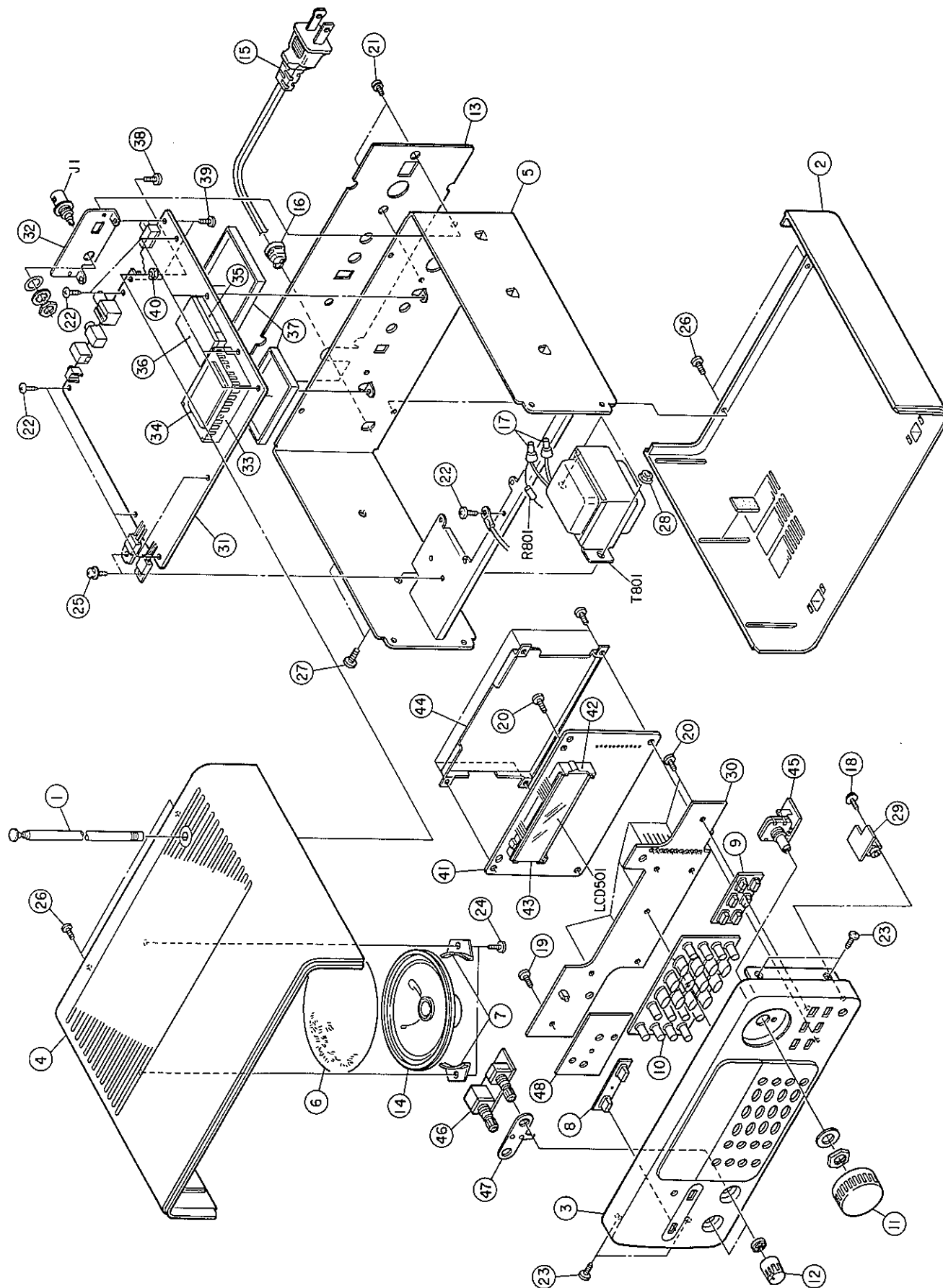
VOLUME / SQUELCH



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 |
| Miscellaneous | | | |
| 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 |
| LED | | | |
| LED601 | TLR226 | | TLR226 |
| Miscellaneous | | | |
| 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 |
| Capacitors | | | |
| C1 | Ceramic 0.001 μ F 50 V \pm 10% 0603 | | ECUX1H102KV or CM105SL102K50A |
| C2 | Ceramic 0.001 μ 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 μ F 50 V \pm 10% 0603 | | ECUX1H102KV or CM105SL102K50A |
| C9 | Electrolytic 1 μ F 50 V \pm 20% | | SMB50V010M or 50UTC M010M |
| C10 | Ceramic 0.001 μ F 50 V \pm 10% 0603 | | ECUX1H102KV or CM105SL102K50A |

| Ref. No. | Description | | | | | RS Part No. | Mfr's Part No. |
|----------|--------------|---------------|------|---------------|------|-------------|----------------------------------|
| C11 | Electrolytic | 10 μ 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 | ± 0.5 pF | 0603 | | ECUX1H060DV or CM105SL060D50A |
| C14 | Ceramic | 2 pF | 50 V | ± 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 | ± 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 | ± 0.25 pF | 0603 | | ECUX1H030CV or CM105SL030C50A |
| C21 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C22 | Electrolytic | 1 μ F | 50 V | $\pm 20\%$ | | | SMB50V010M or 50UTCM010M |
| C23 | Ceramic | 0.001 μ 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 | ± 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 | ± 0.5 pF | 0603 | | ECUX1H100DV or CM105SL100D50A |
| C31 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C32 | Electrolytic | 1 μ F | 50 V | $\pm 20\%$ | | | SMB50V010M or 50UTCM010M |
| C33 | Ceramic | 0.001 μ 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 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C93 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C94 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C95 | Ceramic | 10 pF | 50 V | ± 0.5 pF | 0603 | | ECUX1H100DV or CM105SL100D50A |
| C96 | Ceramic | 2 pF | 50 V | ± 0.25 pF | 0603 | | ECUX1H020CV or CM105SL020C50A |
| C97 | Ceramic | 5 pF | 50 V | ± 0.25 pF | 0603 | | ECUX1H050CV or CM105SL050C50A |
| C98 | Ceramic | 5 pF | 50 V | ± 0.25 pF | 0603 | | ECUX1H050CV or CM105SL050C50A |
| C99 | Ceramic | 0.001 μ 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 μ 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 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C105 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C106 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C107 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C108 | Electrolytic | 33 μ F | 16 V | $\pm 20\%$ | | | SMB16V330M or 16UTCMS330M |
| C109 | Ceramic | 47 pF | 50 V | $\pm 10\%$ | 0603 | | ECUX1H470KV or CM105SL470K50A |
| C110 | Ceramic | 0.001 μ 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 μ 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 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C116 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C117 | Mylar* | 0.047 μ F | 50 V | $\pm 10\%$ | | | AMZ-473K50 |
| C118 | Ceramic | 0.022 μ 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 μ F | 50 V | $\pm 10\%$ | | | AMZ-473K50 |
| C120 | Ceramic | 0.047 μ F | 50 V | $\pm 10\%$ | 0805 | | C2012X7R1H473K or CM21X7R473K50A |
| C121 | Ceramic | 0.022 μ F | 50 V | $\pm 10\%$ | 0805 | | C2012X7R1H223K or CM21X7R223K50A |
| C122 | Electrolytic | 100 μ F | 16 V | $\pm 20\%$ | | | SM16V101M or 16UTSS101M |
| C123 | Ceramic | 0.022 μ F | 50 V | $\pm 10\%$ | 0805 | | C2012X7R1H223K or CM21X7R223K50A |
| C124 | Ceramic | 0.01 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H103KBV or CM105X7R103K50A |
| C125 | Ceramic | 0.01 μ 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 μ F | 50 V | $\pm 10\%$ | | | AMZ-222K50 |
| C131 | Mylar | 0.01 μ F | 50 V | $\pm 10\%$ | | | AMZ-103K50 |
| C132 | Electrolytic | 4.7 μ F | 50 V | $\pm 20\%$ | | | SM50V4R7M or 50UTSS4R7M |
| C133 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C134 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C135 | Ceramic | 0.01 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H103KBV or CM105X7R103K50A |
| C136 | Ceramic | 0.01 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H103KBV or CM105X7R103K50A |
| C137 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C138 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C139 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C140 | Ceramic | 0.01 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H103KBV or CM105X7R103K50A |
| C141 | Ceramic | 0.001 μ 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 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C144 | Ceramic | 10 pF | 50 V | ± 0.5 pF | 0603 | | ECUX1H100DV or CM105SL100D50A |
| C145 | Ceramic | 33 pF | 50 V | $\pm 10\%$ | 0603 | | ECUX1H330KV or CM105SL330K50A |
| C146 | Ceramic | 0.047 μ F | 50 V | $\pm 10\%$ | 0805 | | C2012X7R1H473K or CM21X7R473K50A |
| C147 | Tantalum | 0.47 μ F | 35 V | $\pm 20\%$ | | | DN1VR47M1S |

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

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

| Ref. No. | Description | | | | | RS Part No. | Mfr's Part No. |
|----------|--------------|---------------|------|---------------|------|-------------|------------------------------------|
| C206 | Electrolytic | 470 μ F | 25 V | $\pm 20\%$ | | | SM25V471M or 25UTES471M |
| C207 | Electrolytic | 1 μ F | 50 V | $\pm 20\%$ | | | SM50V010M or 50UTSS010M |
| C208 | Electrolytic | 1 μ F | 50 V | $\pm 20\%$ | | | SM50V010M or 50UTSS010M |
| C209 | Electrolytic | 10 μ F | 16 V | $\pm 20\%$ | | | SM16V100M or 16UTSS100M |
| C210 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C211 | Ceramic | 0.01 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H103KBV or CM105X7R103K50A |
| C212 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C213 | Electrolytic | 10 μ 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 | ± 0.25 pF | 0603 | | ECUX1H020CV or CM105SL020C50A |
| C216 | Ceramic | 1 pF | 50 V | ± 0.25 pF | 0603 | | ECUX1H010CV or CM105SL010C50A |
| C217 | Ceramic | 2 pF | 50 V | ± 0.25 pF | 0603 | | ECUX1H020CV or CM105SL020C50A |
| C218 | Ceramic | 47 pF | 50 V | $\pm 10\%$ | 0603 | | ECUX1H470KV or CM105SL470K50A |
| C219 | Ceramic | 0.01 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H103KBV or CM105X7R103K50A |
| C220 | Ceramic | 0.001 μ 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 μ F | 50 V | $\pm 10\%$ | | | AMZ-103K50 |
| C223 | Ceramic | 0.082 μ F | 25 V | $\pm 10\%$ | 0805 | | CC20B1E823K or CM21X7R823K25A |
| C224 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C225 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C226 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C227 | Ceramic | 0.001 μ 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 | ± 0.25 pF | 0603 | | ECUX1H050CV or CM105SL050C50A |
| C233 | Ceramic | 2 pF | 50 V | ± 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. |
|------------------|-------------|------------------|----------|-------------|----------------------------|
| Capacitor Blocks | | | | | |
| CB1 | 0.01 μF x 2 | 250 V | +80%-20% | | EXR-FS203ZS |
| CB2 | 0.01 μF x 2 | 250 V | +80%-20% | | EXR-FS203ZS |
| Ceramic Filters | | | | | |
| 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 |
| Diodes | | | | | |
| 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△ | 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 |
| Integrated Circuits | | | | | | |
| IC1 | KA2243 | IF Amp./Detector | Bipolar | | | KA2243 |
| | or HA12413 | | | | | or HA12413 |
| IC2 | TK10420 | Osc./Mixer/Detector/ IF Amp./Noise Amp. | Bipolar | | | TK10420 |
| IC3 | BA10358F | Zeromatic | Bipolar | SMT | | BA10358F |
| | or NJM2904G | | | | | or NJM2904G |
| IC4 | TC4S66F | Zeromatic | MOS | SMT | | TC4S66F |
| IC5 | TC4066BP | Switching | MOS | | | TC4066BP |
| | or μPD4066BC | | | | | or μPD4066BC |
| IC6 | μPC324C | Sound SQ Amp./ | Bipolar | | | μPC324C |
| | or TA75324P | AF Pre-Amp./Mute Switching | | | | or TA75324P |
| IC7 | TDA1905 | AF Power Amp. | Bipolar | | | TDA1905 |
| IC8 | MC7805CT | Voltage Regulator | Bipolar | | | MC7805CT |
| | or TA78005AP | | | | | or TA78005AP |
| | or MCT7805CT | | | | | or MCT7805CT |
| | or KIA7805P | | | | | or KIA7805P |
| | or KA7805CT | | | | | or KA7805CT |
| | or L7805CV | | | | | or L7805CV |
| | or LM7805CT | | | | | 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 |
| Coils | | | | | | |
| L1 | Choke | 1 μH | | | | 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 μ 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 μ H | | | LAL03NAR47M |
| L43 | Choke | 2.2 mH | | | LHL06NB222J |
| L44 | Choke | 1 μ 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 μ H | | | LAL03NA100M |
| L53 | Filter, EMI Suppression | | | | LC103N-1R0 |
| L54 | VCO | | | | 2LNB-253 |
| L55 | DC-DC Converter | | | | GR-D835 |
| L56 | Choke | 10 μ H | | | LAL03NA100M |

| Ref. No. | Description | | | | RS Part No. | Mfr's Part No. |
|-------------|--------------------|-----------------|-----|-----|-------------|--------------------|
| Transistors | | | | | | |
| 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 | FET | 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 | FET | 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 | FET | 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. |
|-----------|-------------|----------|--------|-----|------|-------------|-----------------------------|
| Resistors | | | | | | | |
| 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. |
|-----------------------|----------------------------------|-------------|-----------------|
| Resistor Block | | | |
| RA1 | 1 kohm x 4 1/16 W ±5% | | CN1J4102J |
| Transformers | | | |
| 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 |
| Trimmer | | | |
| TC1 | 6 pF | | ECR-KN006A21 |
| Thermistor | | | |
| TH1 | 1.7 kohm | | TD5-C217D2 |
| Crystals | | | |
| X1 | 37.8 MHz | | TC-43 37.8MHz |
| X2 | 48.045 MHz | | TC-43 48.045MHz |
| X3 | 12 MHz | | TX1824G-4 |
| Crystal Filter | | | |
| XF1 | 48.5 MHz | | MF48R 48.5MHz |
| Miscellaneous | | | |
| | Battery, Lithium 3 V | | VL2020/1VC |
| | Jumper, Chip 0603 | | RK73Z1J |
| | | | or CJ10-000 |
| | Jumper, Chip 1206 | | 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 |
| Capacitors | | | | | | | |
| C501 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C501 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C502 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C503 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C504 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C505 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C506 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C507 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C508 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C509 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C510 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C511 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C512 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C513 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C514 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C515 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C516 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C517 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C518 | Ceramic | 0.001 μF | 50 V | ±10% | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C519 | Ceramic | 100 pF | 50 V | ±10% | 0603 | | ECUX1H101KV or CM105SL101K50A |
| C520 | Ceramic | 100 pF | 50 V | ±10% | 0603 | | ECUX1H101KV or CM105SL101K50A |
| C521 | Ceramic | 100 pF | 50 V | ±10% | 0603 | | ECUX1H101KV or CM105SL101K50A |
| C522 | Ceramic | 100 pF | 50 V | ±10% | 0603 | | ECUX1H101KV or CM105SL101K50A |
| C523 | Ceramic | 100 pF | 50 V | ±10% | 0603 | | ECUX1H101KV or CM105SL101K50A |
| C524 | Ceramic | 100 pF | 50 V | ±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 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C553 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C554 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C555 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C556 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C557 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C558 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C559 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C560 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C561 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C562 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C563 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C564 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C565 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C566 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C567 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C568 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C569 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C570 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C571 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C572 | Ceramic | 0.001 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H102KV or CM105SL102K50A |
| C573 | Ceramic | 0.01 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H103KBV or CM105X7R103K50A |
| C574 | Ceramic | 0.01 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H103KBV or CM105X7R103K50A |
| C575 | Ceramic | 0.01 μ F | 50 V | $\pm 10\%$ | 0603 | | ECUX1H103KBV or CM105X7R103K50A |
| C576 | Ceramic | 0.001 μ 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 |
| Ceramic Resonator | | | | | | | |
| CX501 | 8 MHz | | | | | | EFOS8004E5 |
| Diodes | | | | | | | |
| 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 |
| Integrated Circuits | | | | | | | |
| IC501 | GRE-9312 | Microprocessor | MOS | SMT | | | GRE-9312 |
| IC502 | CXK5864CM-10LL or 12LL | Memory | MOS | SMT | | | CXK5864CM-10LL or 12LL |
| IC503 | S8054HN-CB | Voltage Regulator Detector | MOS | SMT | | | or LC3664BML-10 or -12 S8054HN-CB |
| Coils | | | | | | | |
| 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 μ H | | | | | LQH1N1R0M04 |
| L513 | Choke | 1 μ H | | | | | LQH1N1R0M04 |
| L514 | Choke | 1 μ H | | | | | LQH1N1R0M04 |
| LEDs | | | | | | | |
| 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 |
| Transistors | | | | | | | |
| 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) |
| Resistors | | | | | | | |
| 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 |
| Resistor Blocks | | | | | | | |
| 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. |
|----------------------|-------------------------------|-------------|----------------|
| Miscellaneous | | | |
| 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 | PCB Assembly, Tuning Switch Consists of the following: | | GA-94D-0994 |
| Miscellaneous | | | |
| SW801 | Encoder, Rotary Connector, 3-Pin Male | | EC16B24202-15 PI22B03M |

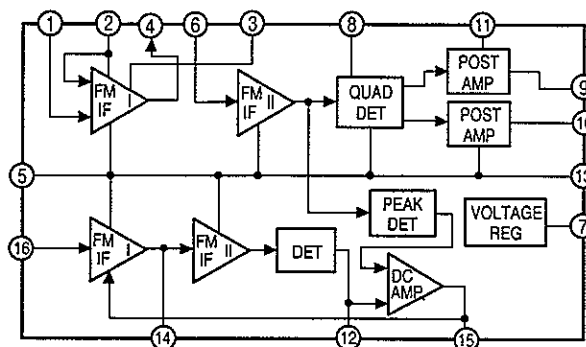
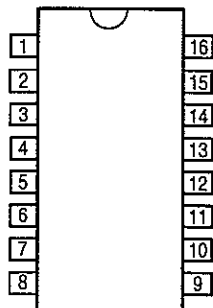
VOLUME SQUELCH PCB ASSEMBLY

| Ref. No. | Description | RS Part No. | Mfr's Part No. |
|----------------------|--|-------------|---|
| 46 | PCB Assembly, Volume/Squelch Consists of the following: | | GA-94D-0996 |
| Miscellaneous | | | |
| 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 |

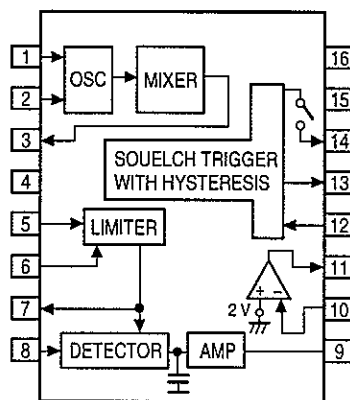
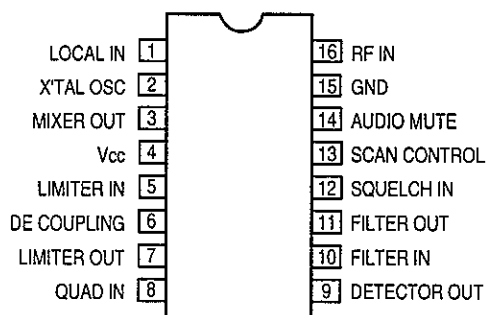
SEMICONDUCTOR LEAD IDENTIFICATION AND IC BLOCK DIAGRAM

INTEGRATED CIRCUITS

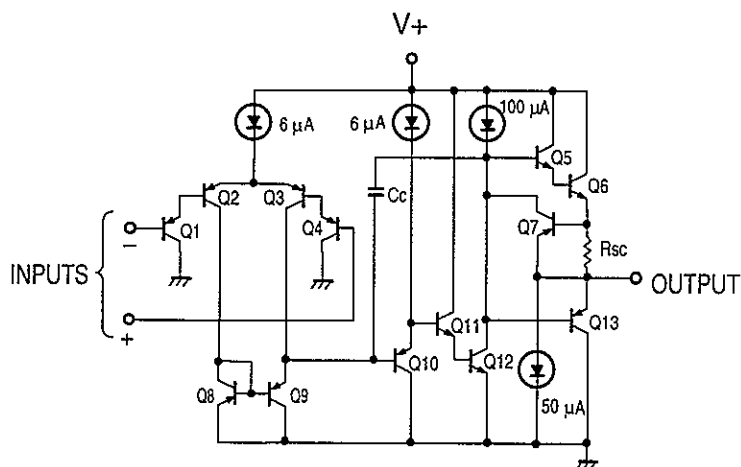
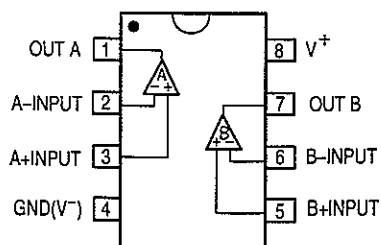
IC1 KA2243
or HA12413



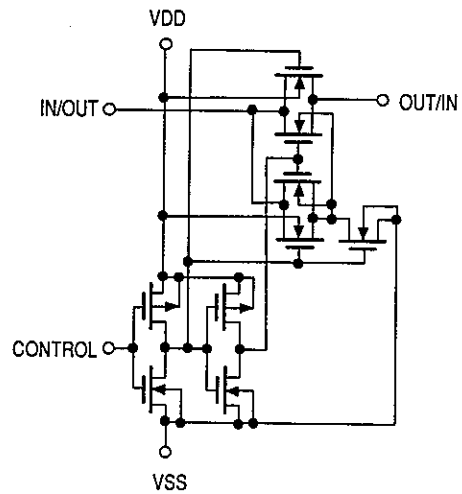
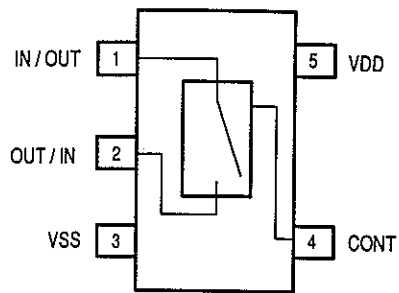
IC2 TK10420



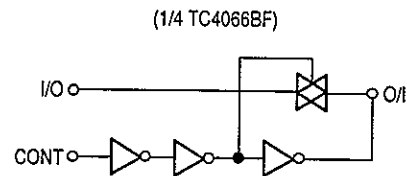
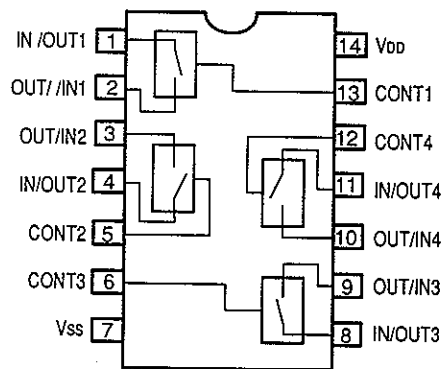
IC3 BA10358
or NJM2904G



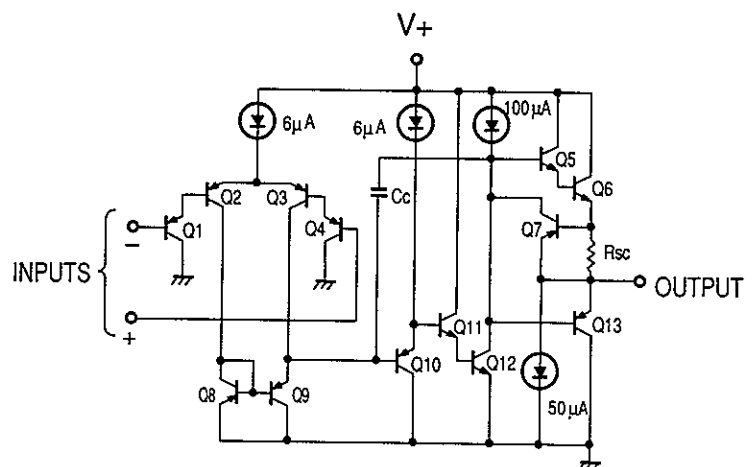
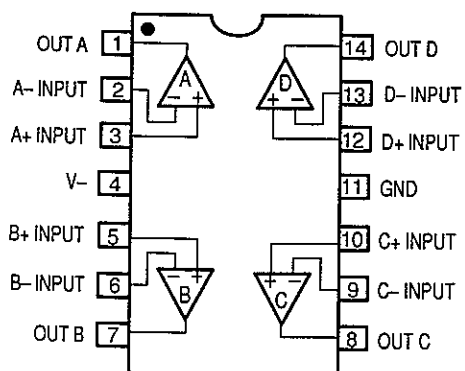
IC4 TC4S66F



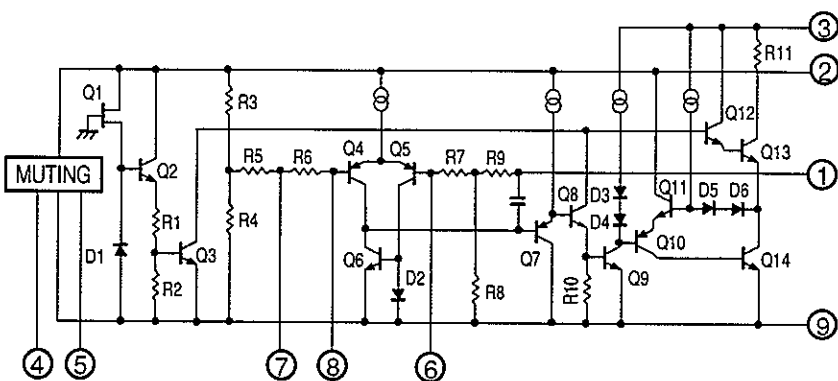
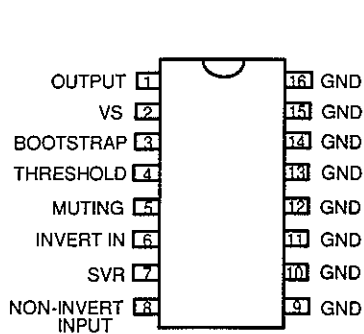
IC5 TC4066BP or μ PD4066BC



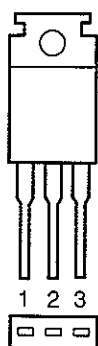
IC6 μ PC324C or TA75324P



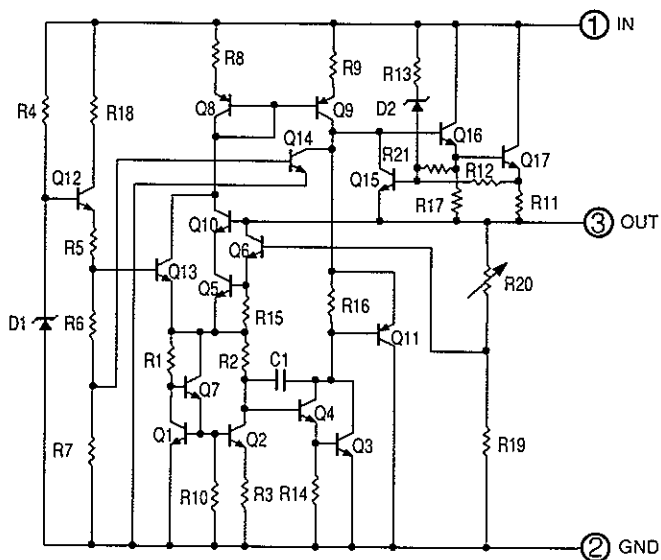
IC4 TDA1905



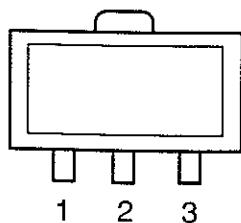
IC8 MC7805CT or TA78005AP



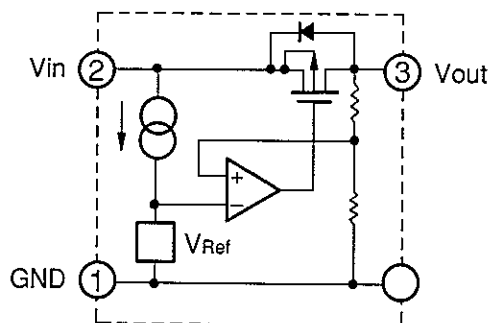
- 1. Input
- 2. GND
- 3. Output



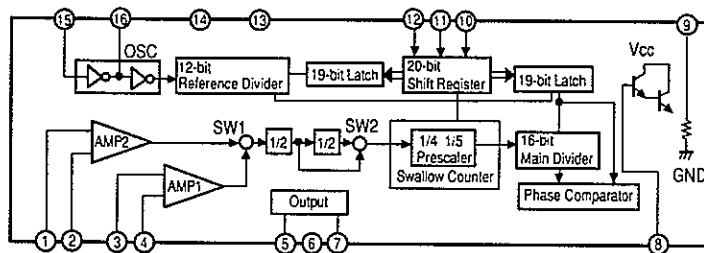
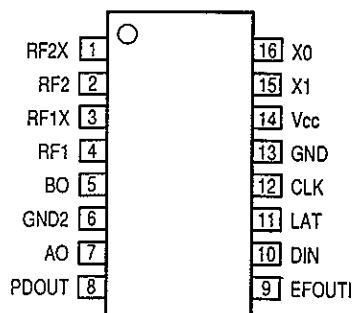
IC9 S81250HG-RD



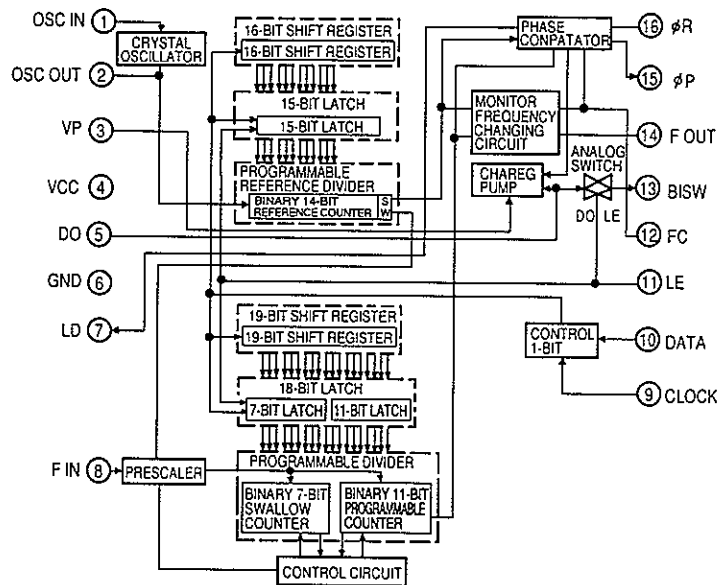
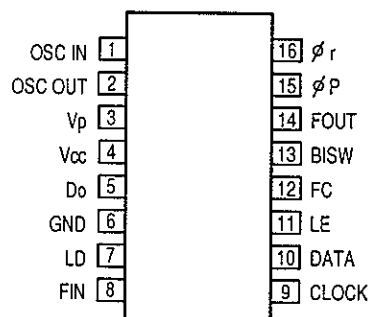
- 1. GND
- 2. Vin
- 3. Vout



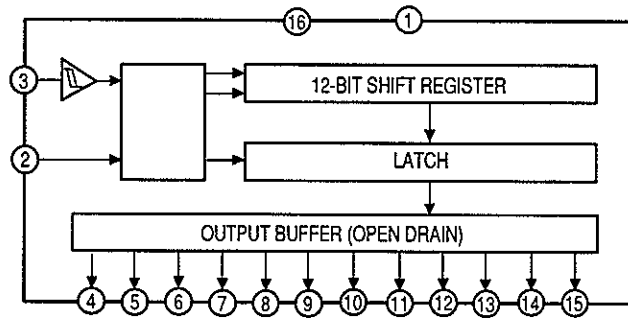
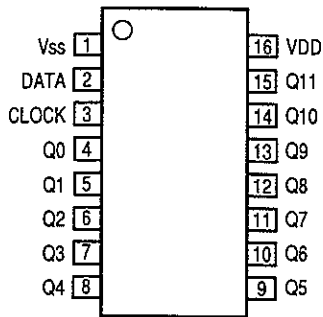
IC10 CXA1356N



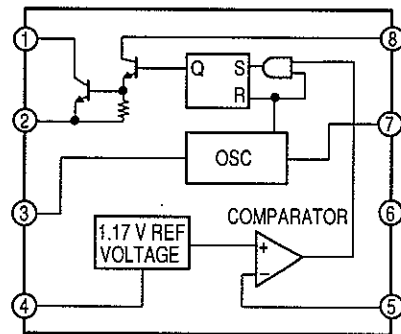
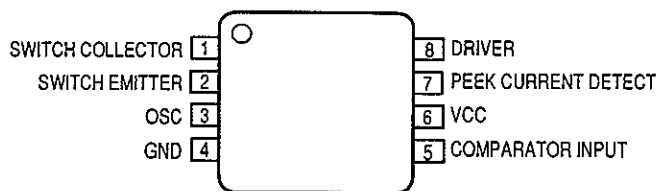
IC11 MB1505PF-G-BND-TF



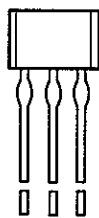
IC12 BU2040F



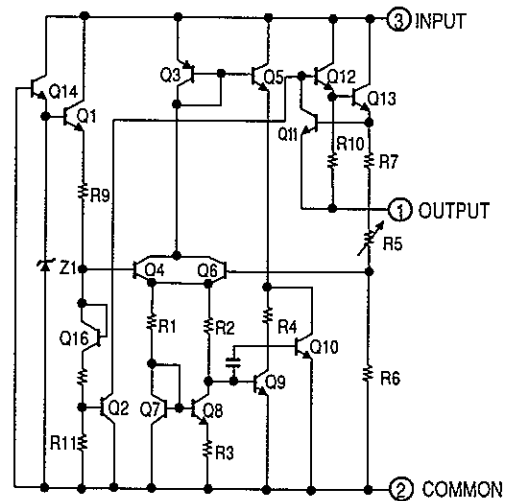
IC13 M5291FP-600C



IC14 TA78L05S



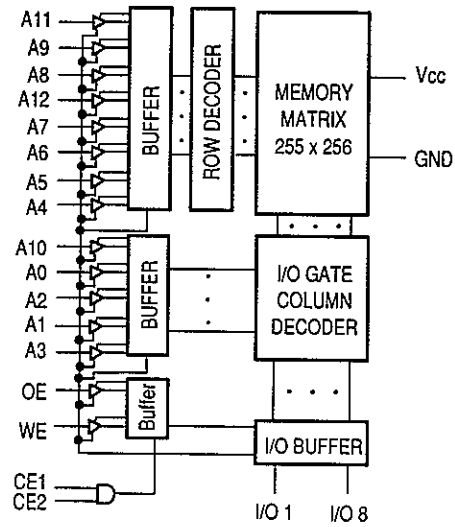
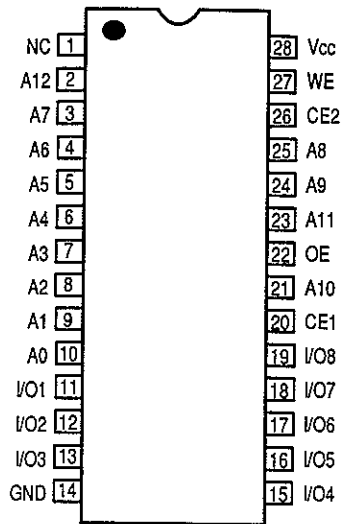
1. OUTPUT
2. COMMON
3. INPUT



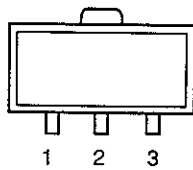
IC501 GRE-9312

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

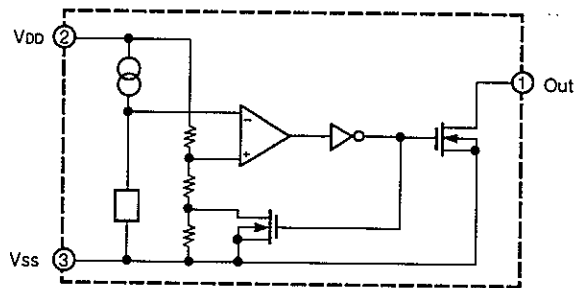
IC502 CXK5864CM-10LL or 12LL
or LC5864CM-10LL OR12



IC503 S8054HN-CB

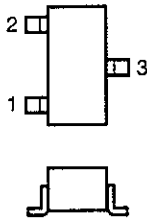


1. Out
2. VDD
3. Vss



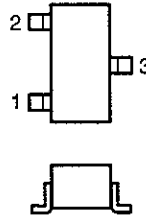
TRANSISTORS

(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



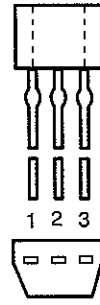
1. Emitter
2. Base
3. Collector

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



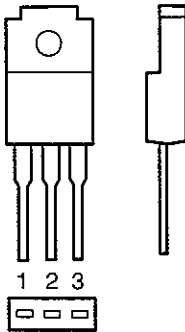
1. Emitter
2. Base
3. Collector

(C) 2SC2458(GR)



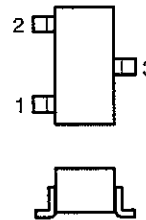
1. Emitter
2. Collector
3. Base

(D) 2SD1406 (GR)



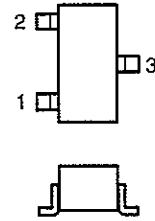
1. Base
2. Collector
3. Emitter

(E) 2SK209(GR) Marked XG



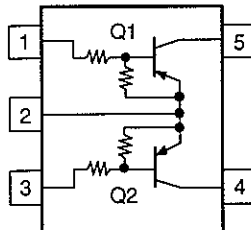
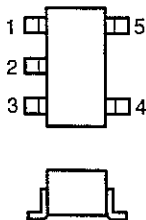
1. Drain
2. Source
3. Gate

(F) 2SK210(GR) Marked YG



1. Gate
2. Drain
3. Source

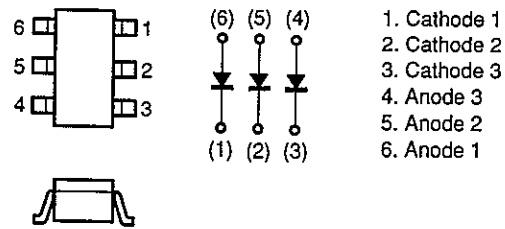
(G) FMA9 Marked A9



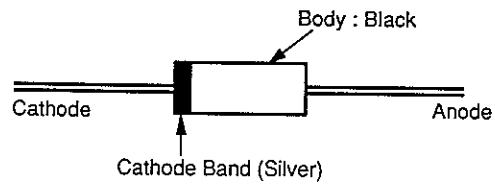
1. Base 1 (B1)
2. Emitter (E)
3. Base 2 (B2)
4. Collector 2 (C2)
5. Collector 1 (C1)

DIODES

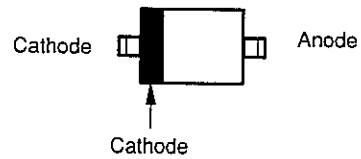
(A) 1MN10 (Marked N10)



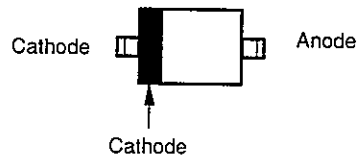
(B) 1N4002



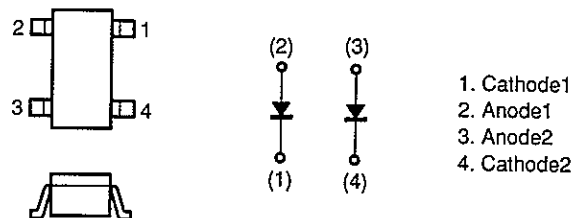
(C) 1SS353 (Marked C)



(D) 1SS354 (Marked B)



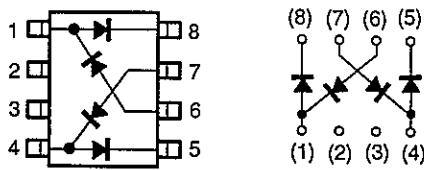
(E) DA227 (Marked N20)



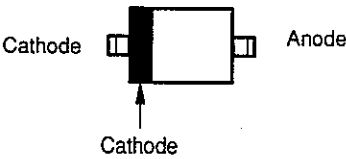
(F) DTZ4.7 (Marked 93)



(G) ND433G



(H) HSU277 (Marked 3)



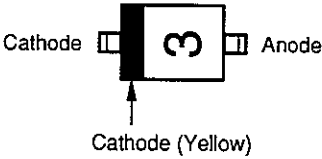
(I) HVU12-3 (Marked A)



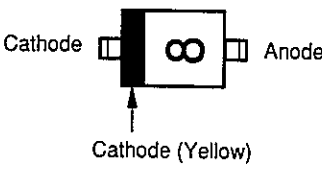
(J) HVU300A (Marked 0)



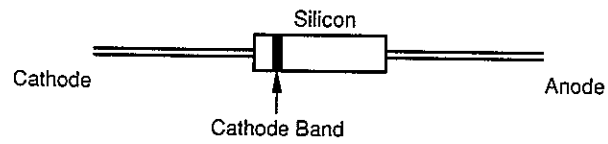
(K) HVU306A (Marked 3)



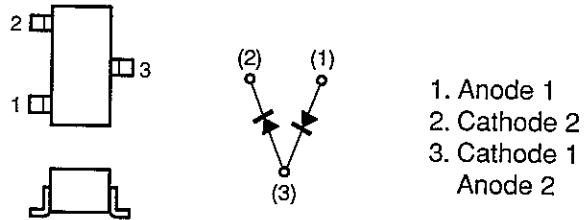
(L) HVU308 (Marked 8)



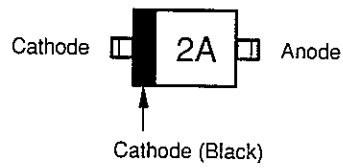
(M) HZ9B2L, HZ11B2L



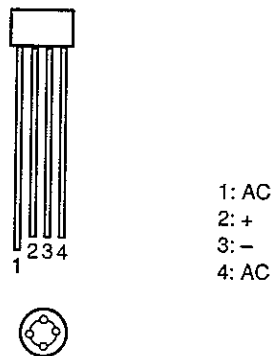
(N) MA716 (Marked M1U)



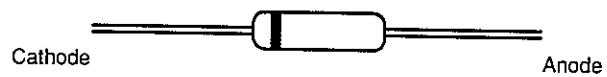
(O) MA728 (Marked 2A)



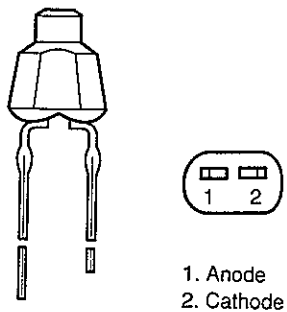
(P) RC202



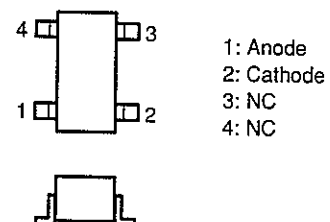
(Q) SD103



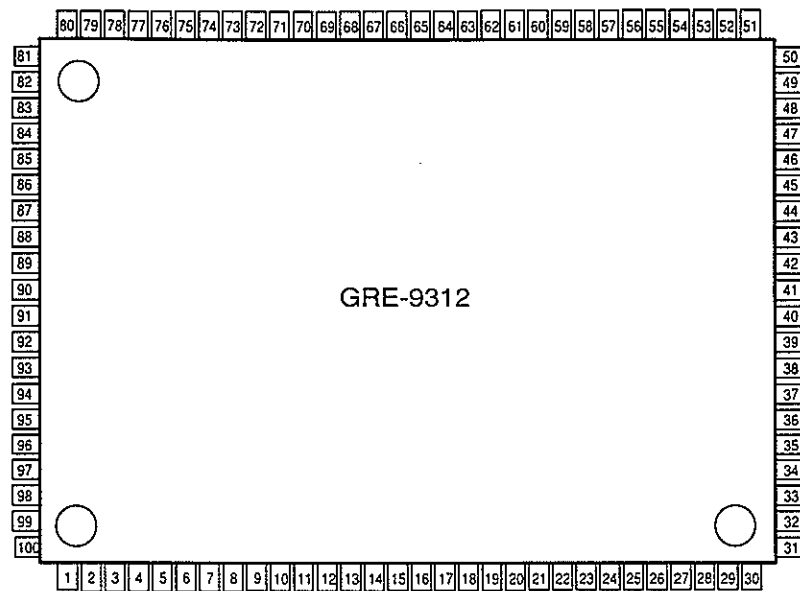
(R) TLR226



(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

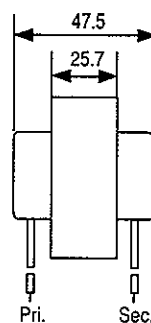
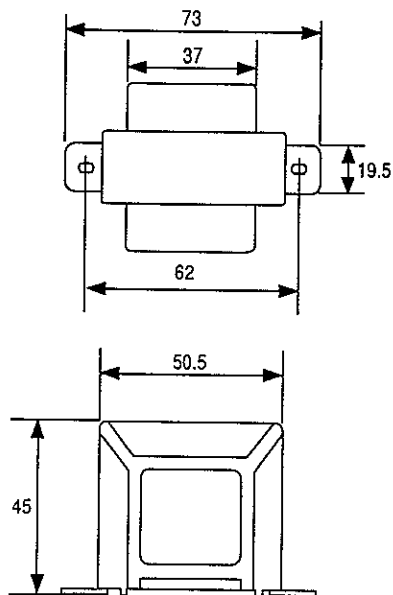
Protector

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

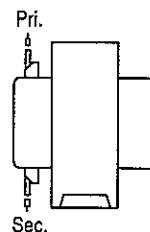
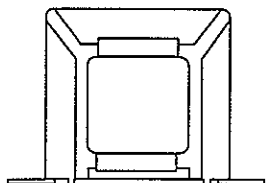
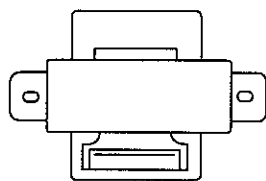
230 volts 50 Hz

Less than 80 mA at 230 volt 50 Hz

AC 12 volts

AC 10.9 volts $\pm 5\%$

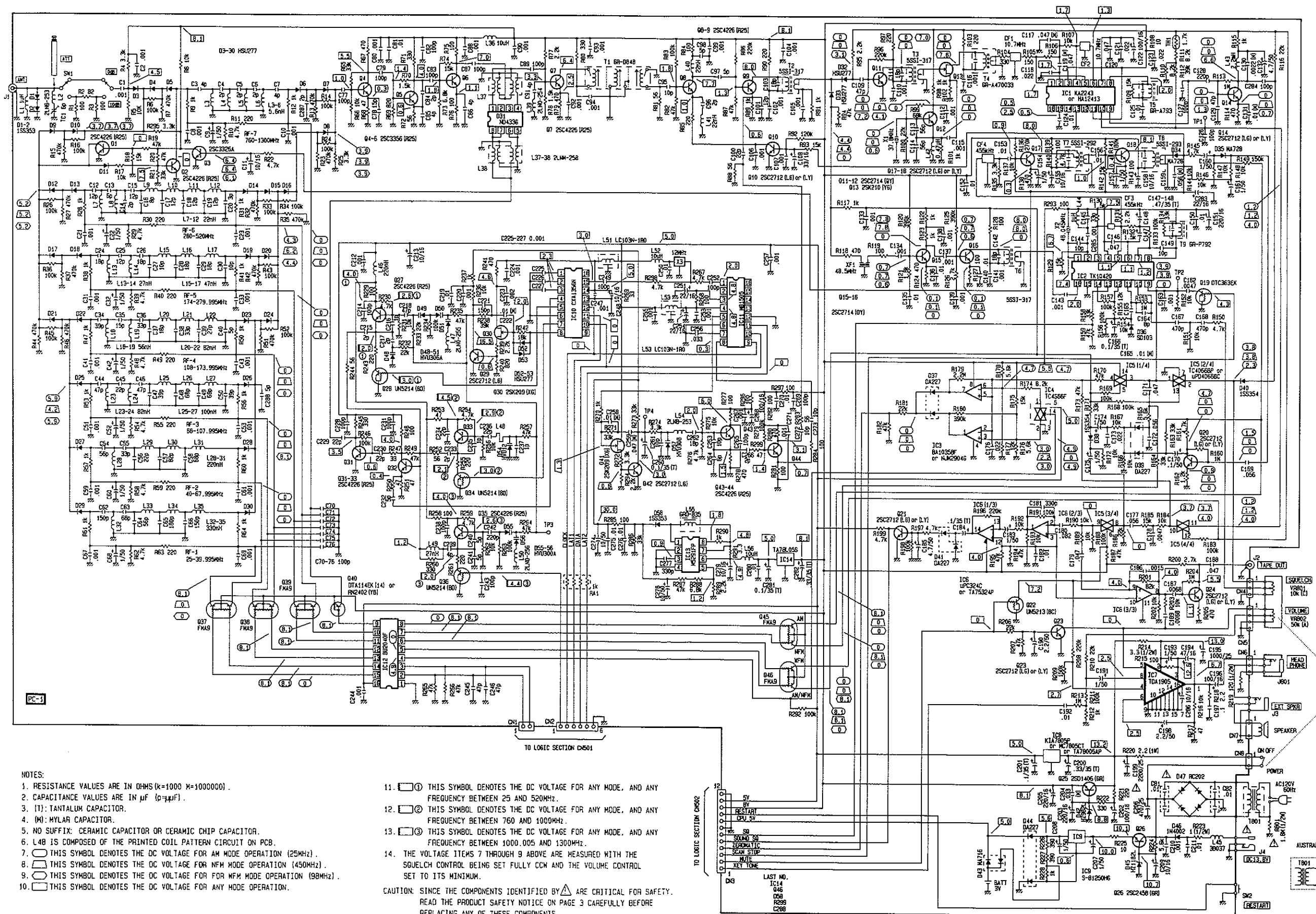
133°C, 250 volts, 1 A



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 |

SCEHMATIC DIAGRAM (LINEAR PCB SECTION)



SCEHMAIC DIAGRAM (LOGIC PCB SECTION)

