



**RadioShack®**

# ServiceManual

20-430A

**PRO-2050**  
**VHF/UHF/AIR/800MHz**  
**300-CHANNEL TRUNKTRACKER HOME SCANNER**

**Catalog Number: 20-430A**

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# SPECIFICATIONS

## GENERAL

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Band coverage:                   | 12 bands                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Frequency range:                 | 29 to 29.7 MHz (10 meter amateur band)<br>29.7 to 50 MHz (VHF low band)<br>50 to 54 MHz (6 meter amateur band)<br>108 to 136.975 MHz (Aircraft band)<br>137 to 144 MHz (Government)<br>144 to 148 MHz (2 meter amateur band)<br>148 to 174 MHz (VHF high band)<br>406 to 420 MHz (Federal government land mobile)<br>420 to 450 MHz (70-cm amateur band)<br>450 to 470 MHz (UHF standard band)<br>470 to 512 MHz (UHF "T" band)<br>806 to 956 MHz (Public service except cellular band) |
| Number of programmable channels: | 300 channels (30 CH × 10 banks)<br>50 channels for search skip memory<br>20 channels for service scan skip memory                                                                                                                                                                                                                                                                                                                                                                       |
| External Jacks:                  | ANT. jack: BNC type<br>Earphone jack (EXT. SP): 3.5 mm dia.<br>DC power jack: 5.5 mm dia.                                                                                                                                                                                                                                                                                                                                                                                               |
| Internal Speaker:                | 8-ohm, 2 W (2 1/4 inches dia.)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Power requirements:              | 12.0 V DC provided by AC adapter from DC Power jack                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Operating temperature:           | −10 °C ~ +50 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Storage temperature:             | −20 °C ~ +60 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Dimensions (HWD):                | 70 × 205 × 195 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Weight:                          | 750 g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Accessories:                     | Telescopic antenna, AC adapter                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Heterodyne system:               | 1. 1st heterodyne<br>29 to 174 MHz: Upper heterodyne (IF 380.6050-380.7000 MHz)<br>406 to 512 MHz: Upper heterodyne (IF 380.6125-380.7000 MHz)<br>806 to 956 MHz: Lower heterodyne (IF 380.7000-380.7875 MHz)<br>2. 2nd heterodyne (IF 10.85 MHz)<br>All bands: Upper heterodyne<br>3. 3rd heterodyne (IF 450 kHz)<br>All bands: Lower heterodyne                                                                                                                                       |

Filter: 380.70 MHz: SAW Filter  
10.85 MHz: Monolithic crystal filter  
450 kHz: Ceramic filter

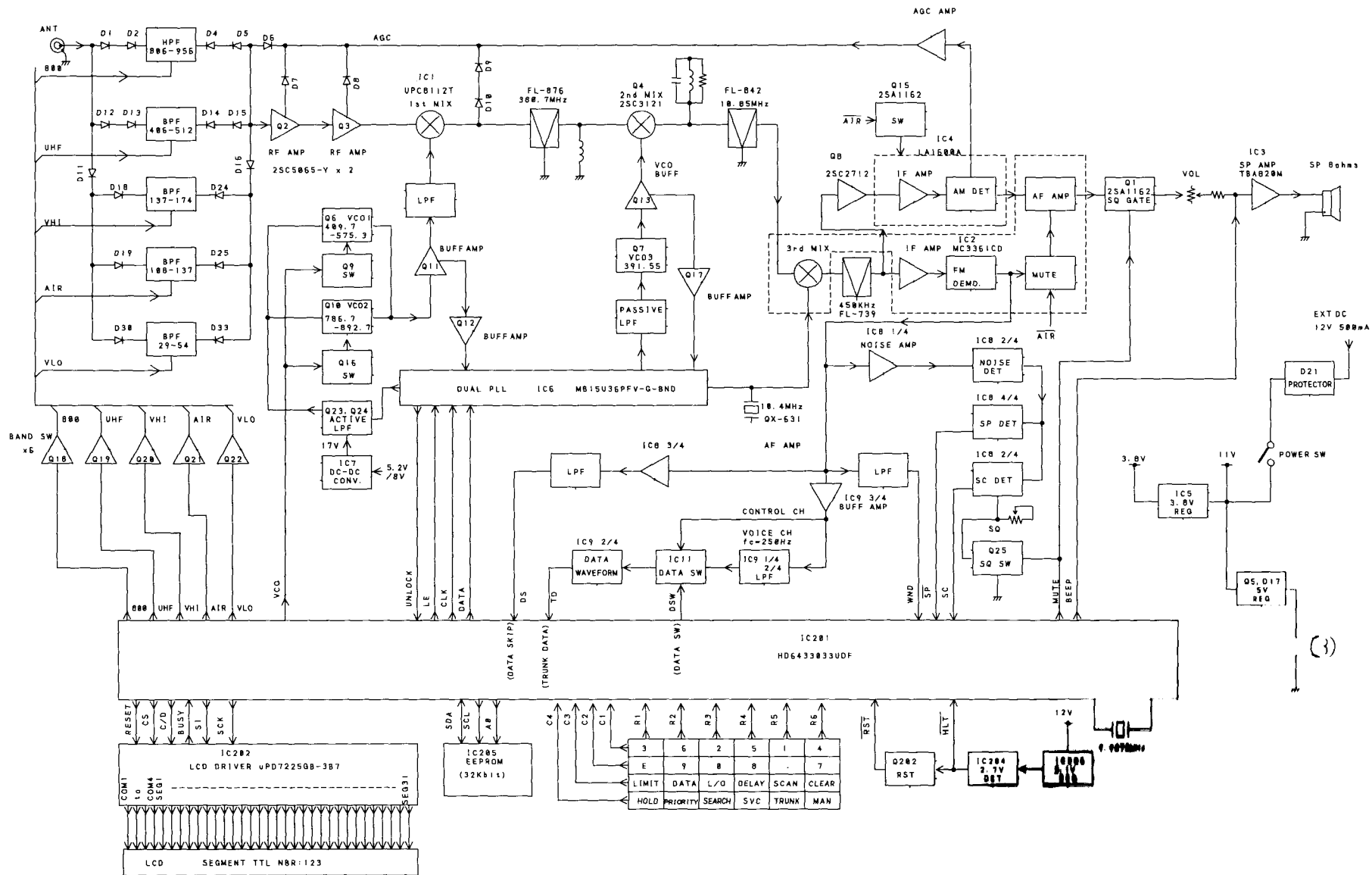
## MEASUREMENT CONDITIONS

Power source: 12 V DC  
Antenna impedance: 50-ohm  
Test temperature: +25 °C  $\pm$ 5 °C  
Modulation frequency: 1 kHz  
Deviation: FM  $\pm$ 3 kHz dev./AM 60% for aircraft band  
Mean signal input level: 100  $\mu$ V  
Audio output load: 8-ohm resistive load  
Standard ref. audio output: 50 mW

| Item                                   |                 | Unit | Nominal | Limit              |
|----------------------------------------|-----------------|------|---------|--------------------|
| Sensitivity (S+N)/N=20 dB              |                 |      |         |                    |
| VHF low band                           | 40.840 MHz      | μV   | 0.5     | 2.0                |
| VHF high band                          | 162.400 MHz     | μV   | 0.5     | 3.0                |
| UHF band                               | 453.250 MHz     | μV   | 0.4     | 3.0                |
| Aircraft band                          | 127.175 MHz     | μV   | 1.5     | 8.0                |
| Public service band                    | 857.200 MHz     | μV   | 0.7     | 4.0                |
| Maximum sensitivity                    | 127.175 MHz     | μV   | 0.2     | 2.0                |
| Threshold squelch (MANUAL)             |                 |      |         |                    |
| VHF low band                           | at 40.840 MHz   | μV   | 0.4     | <b>0.8</b>         |
| VHF high band                          | at 162.400 MHz  | μV   | 0.5     | <b>1.2</b>         |
| UHF band                               | at 453.250 MHz  | μV   | 0.4     | <b>1.8</b>         |
| Aircraft band                          | at 127.175 MHz  | μV   | 0.6     | <b>2.0</b>         |
| Public service band                    | at 857.200 MHz  | μV   | 0.3     | <b>3.0</b>         |
| Tight squelch (MANUAL) (S+N)/N         |                 |      |         |                    |
| VHF low band                           | at 40.840 MHz   | dB   | 25      | 15                 |
| VHF high band                          | at 162.400 MHz  | dB   | 25      | 15                 |
| UHF band                               | at 453.250 MHz  | dB   | 25      | 15                 |
| Aircraft band                          | at 127.175 MHz  | dB   | 15      | 10                 |
| Public service band                    | at 857.200 MHz  | dB   | 25      | 15                 |
| Hum and noise                          |                 |      |         |                    |
| VHF low band                           | at 40.840 MHz   | dB   | 39      | 30                 |
| VHF high band                          | at 162.400 MHz  | dB   | 39      | 30                 |
| UHF band                               | at 453.250 MHz  | dB   | 39      | 30                 |
| Aircraft band                          | at 127.175 MHz  | dB   | 50      | 30                 |
| Public service band                    | at 857.200 MHz  | dB   | 39      | 30                 |
| Data deviation sensitivity             |                 |      |         |                    |
| Control ch data                        | at 851.0125 MHz | kHz  | ±0.3    | ±1.5               |
| Voice ch data                          | at 851.0125 MHz | kHz  | ±0.1    | ±1.0               |
| Audio frequency response –6 dB         |                 |      |         |                    |
| (at 162.400 MHz)                       | Low             | Hz   | 300     | <b>200 ~ 450</b>   |
|                                        | High            | Hz   | 2300    | <b>1300 ~ 3000</b> |
| (at 127.175 MHz)                       | Low             | Hz   | 280     | <b>200 ~ 450</b>   |
|                                        | High            | Hz   | 2200    | <b>1300 ~ 3000</b> |
| Audio output power of internal speaker |                 |      |         |                    |
| (at 162.400 MHz)                       | Maximum         | mW   | 1100    | 700                |
|                                        | 10% THD         | mW   | 1000    | 600                |
| (at 127.175 MHz)                       | Maximum         | mW   | 1100    | 700                |
|                                        | 10% THD         | mW   | 1000    | 600                |
| (at 162.4 MHz 32 Ω EAR.)               | Maximum         | V    | 0.8     | 0.5                |

| Item                                                   | Unit      | Nominal | Limit |
|--------------------------------------------------------|-----------|---------|-------|
| Distortion at 50 mW output                             |           |         |       |
| at 162.400 MHz                                         | %         | 1.7     | 6     |
| at 127.175 MHz                                         | %         | 3.0     | 10    |
| Acceptable radio frequency displacement (EIA RS-204-D) |           |         |       |
| at 162.400 MHz                                         | kHz       | ±6      | ±3    |
| IF rejection (380.7 MHz)                               |           |         |       |
| at 162.4 MHz                                           | dB        | 90      | 50    |
| Residual noise (Vol.: min, SQ: Open)                   | mV        | 0.5     | 5     |
| Scan/Search rate                                       |           |         |       |
| Scan                                                   | CH/sec.   | 50      | 25    |
| Search (162.4 ~ 163.4 MHz)                             | Step/sec. | 100     | 50    |
| Scan delay                                             | Sec.      | 2       | 1 ~ 5 |
| Current drain (at 162.40 MHz)                          |           |         |       |
| (at full output)                                       | mA DC     | 436     | 500   |
| (at Squelched)                                         | mA DC     | 230     | 320   |

**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.



# BLOCK DIAGRAM

# ALIGNMENT AND ADJUSTMENT

## PREPARATION FOR ALIGNMENT

To enter the following test frequencies into the channel memories:

Turn on the Power while pressing "2", "9" and "SCAN" keys. Then press "MANUAL" key.

## TEST EQUIPMENT REQUIRED

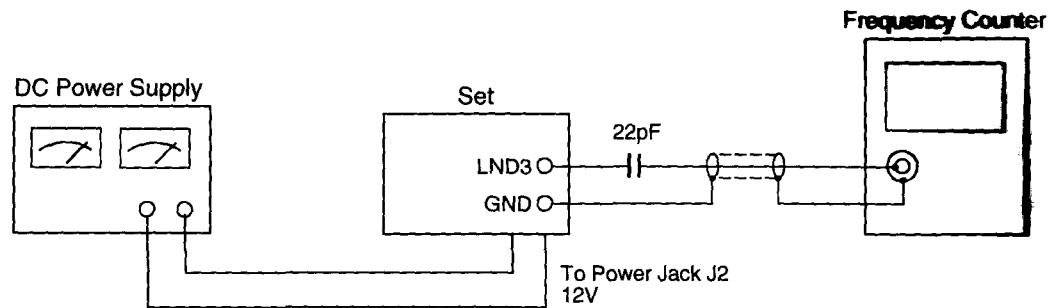
- DC power supply EXT. DC Power JACK: 12.0 V DC
- Oscilloscope
- Frequency counter
- Digital voltmeter
- SSVM
- Signal generator (SG)

**Table 1. Test Frequency**

| Channel | Test Frequency | Channel | Test Frequency | Channel | Test Frequency |
|---------|----------------|---------|----------------|---------|----------------|
| 1       | 30.0500 MHz    | 8       | 453.2500 MHz   | 15      | 54.0000 MHz    |
| 2       | 40.8400 MHz    | 9       | 511.9125 MHz   | 16      | 806.0000 MHz   |
| 3       | 49.9000 MHz    | 10      | 108.5000 MHz   | 17      | 857.2000 MHz   |
| 4       | 138.1500 MHz   | 11      | 118.8000 MHz   | 18      | 911.5000 MHz   |
| 5       | 162.4000 MHz   | 12      | 127.1750 MHz   | 19      | 954.9125 MHz   |
| 6       | 173.2250 MHz   | 13      | 135.5000 MHz   | 31      | 29.0000 MHz    |
| 7       | 406.8750 MHz   | 14      | 29.0000 MHz    | 32      | 512.0000 MHz   |

**ALIGNMENT OF REFERENCE OSC**

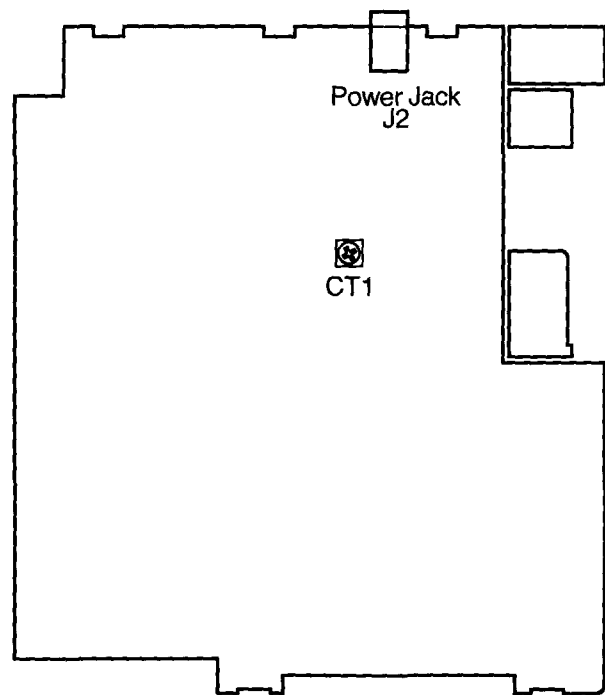
**Test Equipment Required and Connections**



**Alignment Procedure**

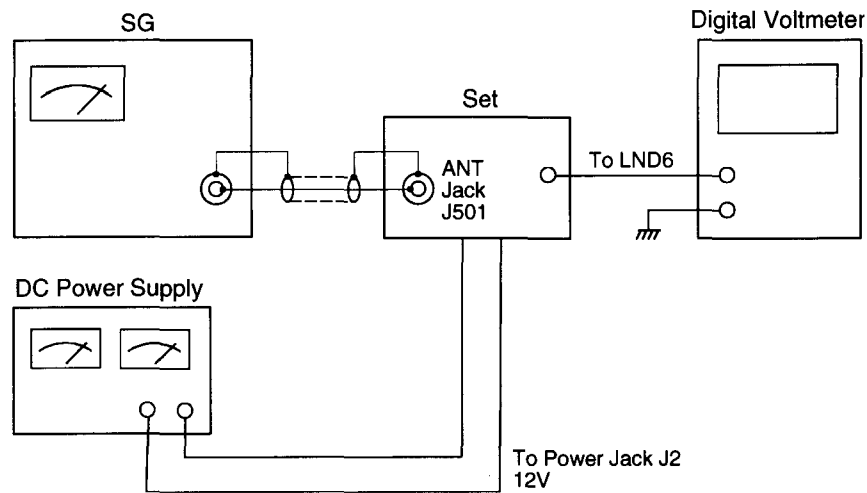
| Step | Preset to | Adjustment | Result                                                                                                               |
|------|-----------|------------|----------------------------------------------------------------------------------------------------------------------|
| 1    | CH14      | CT1        | Connect the frequency counter to LND3. (See Page 15 for the position.) Adjust CT1 to obtain 391.55 MHz $\pm$ 100 Hz. |

**Alignment Point Locations (RF PCB)**



ALIGNMENT OF NFM DISCRIMINATOR

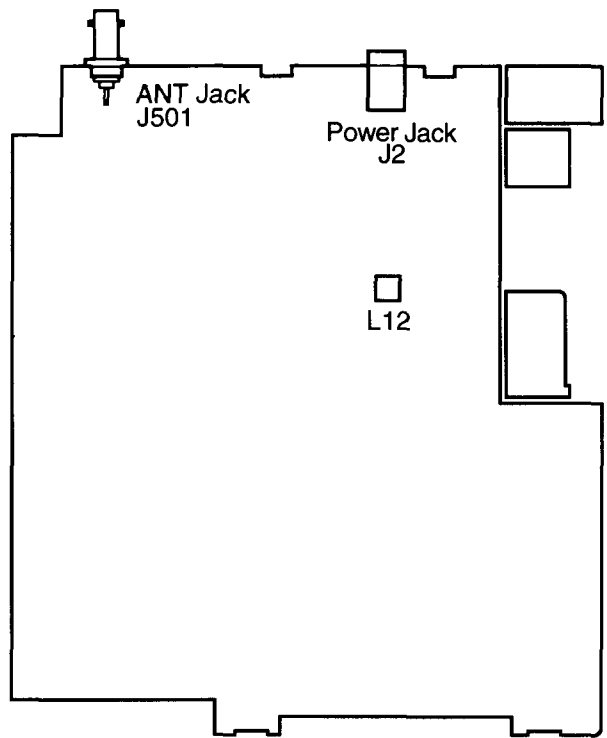
Test Equipment Required and Connections



Alignment Procedure

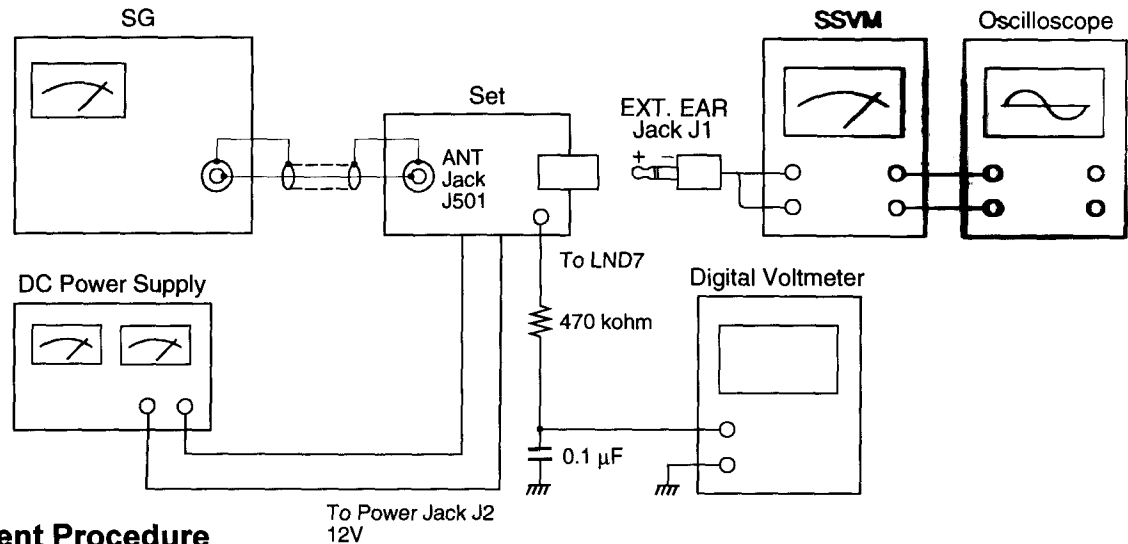
| Step | Preset to                                            | Adjustment | Result                                                                                                             |
|------|------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------|
| 1    | CH2<br>SG: 40.84 MHz<br>No modulation<br>100 $\mu$ V | L12        | Connect the digital voltmeter to LND6. (See Page 15 for the position.) Adjust L12 to obtain 1.3 V $\pm$ 0.05 V DC. |

Alignment Point Locations (RF PCB)



ALIGNMENT OF SQUELCH

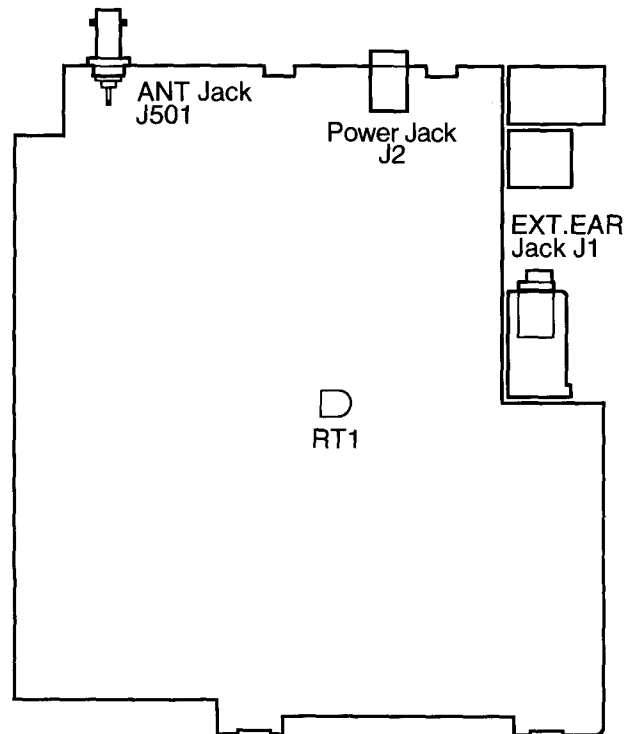
Test Equipment Required and Connections



Alignment Procedure

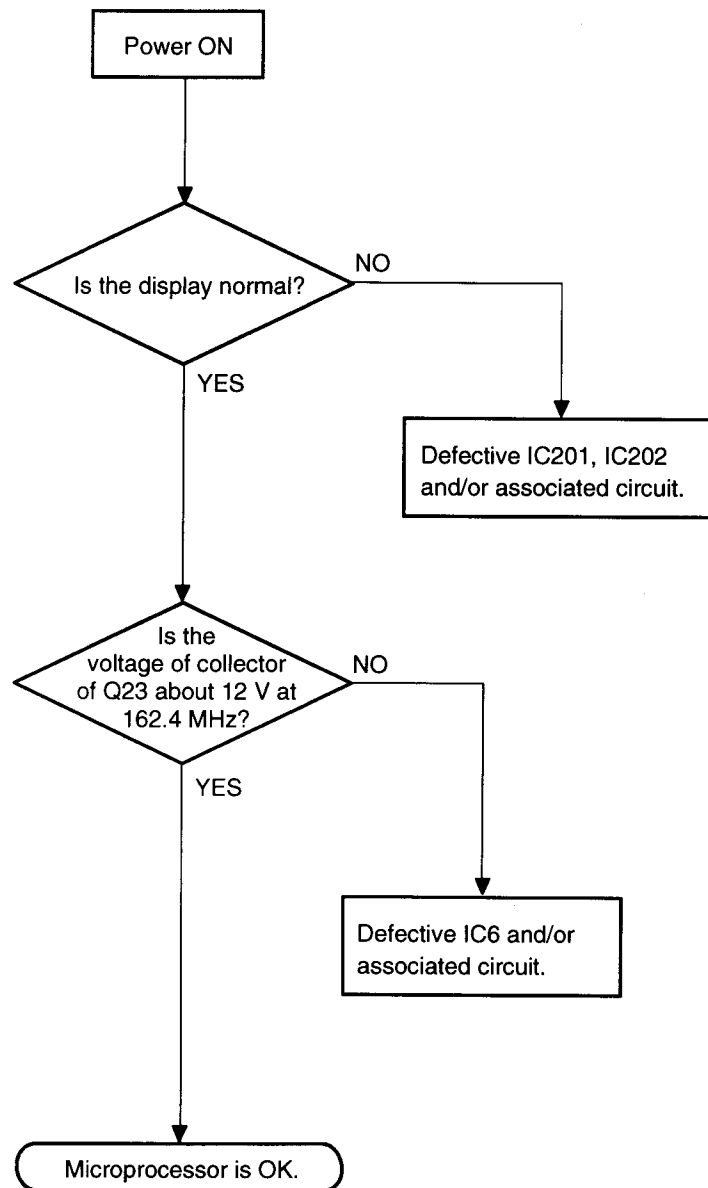
| Step | Preset to                                                      | Adjustment | Result                                                                                                |
|------|----------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------|
| 1    | CH2<br>SG: 40.840 MHz<br>No modulation                         |            | Set the SG level so that the voltage at LND7 is $0.96 \pm 0.05$ V DC. (See Page 15 for the position.) |
| 2    | CH2<br>SG: 40.840 MHz<br>1KHz $\pm$ 3KHz<br>Dev<br>Squelch: CW | RT1        | Adjust RT1 slowly until the squelch opens                                                             |

Alignment Point Location (RF PCB)

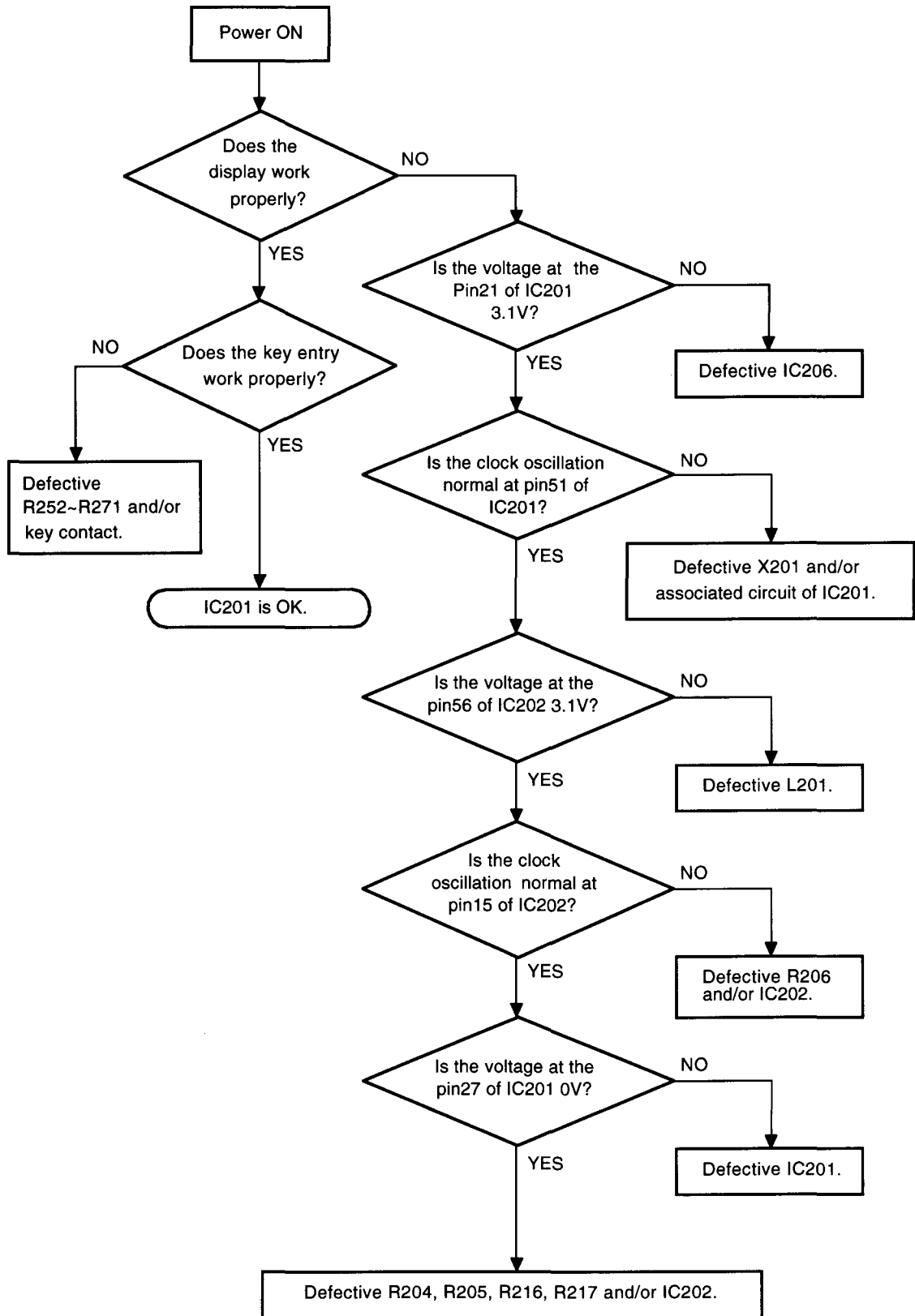


# TROUBLESHOOTING

## Reception Check

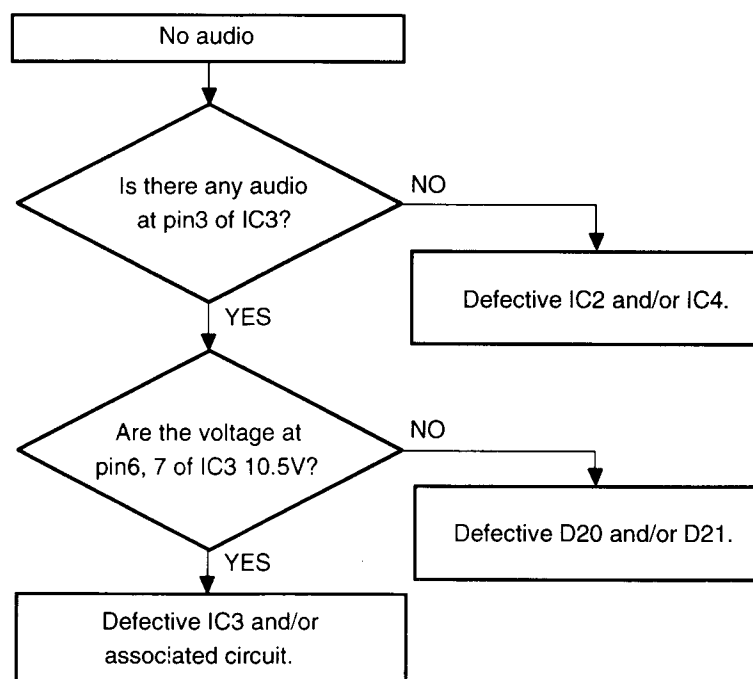


## Microprocessor Check

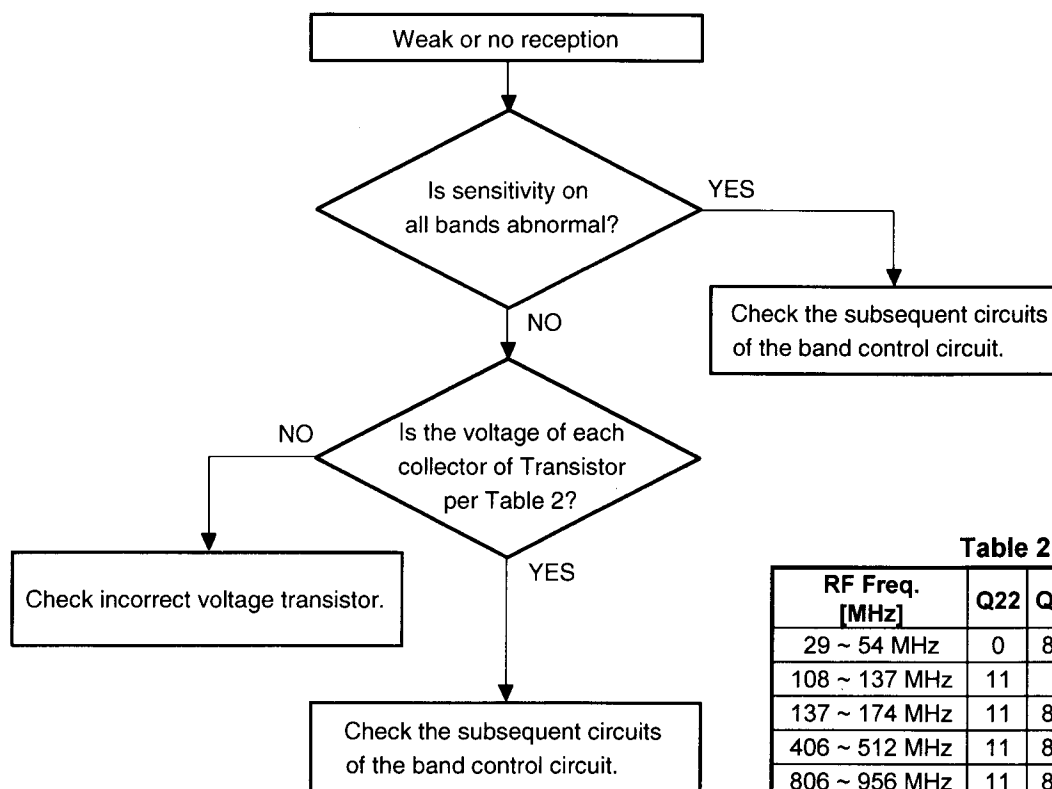


**Note:** While checking the above items, the microprocessor might "lock up." If so, turn the power switch OFF and then ON and restart to check.

## Audio Section



## RF Section



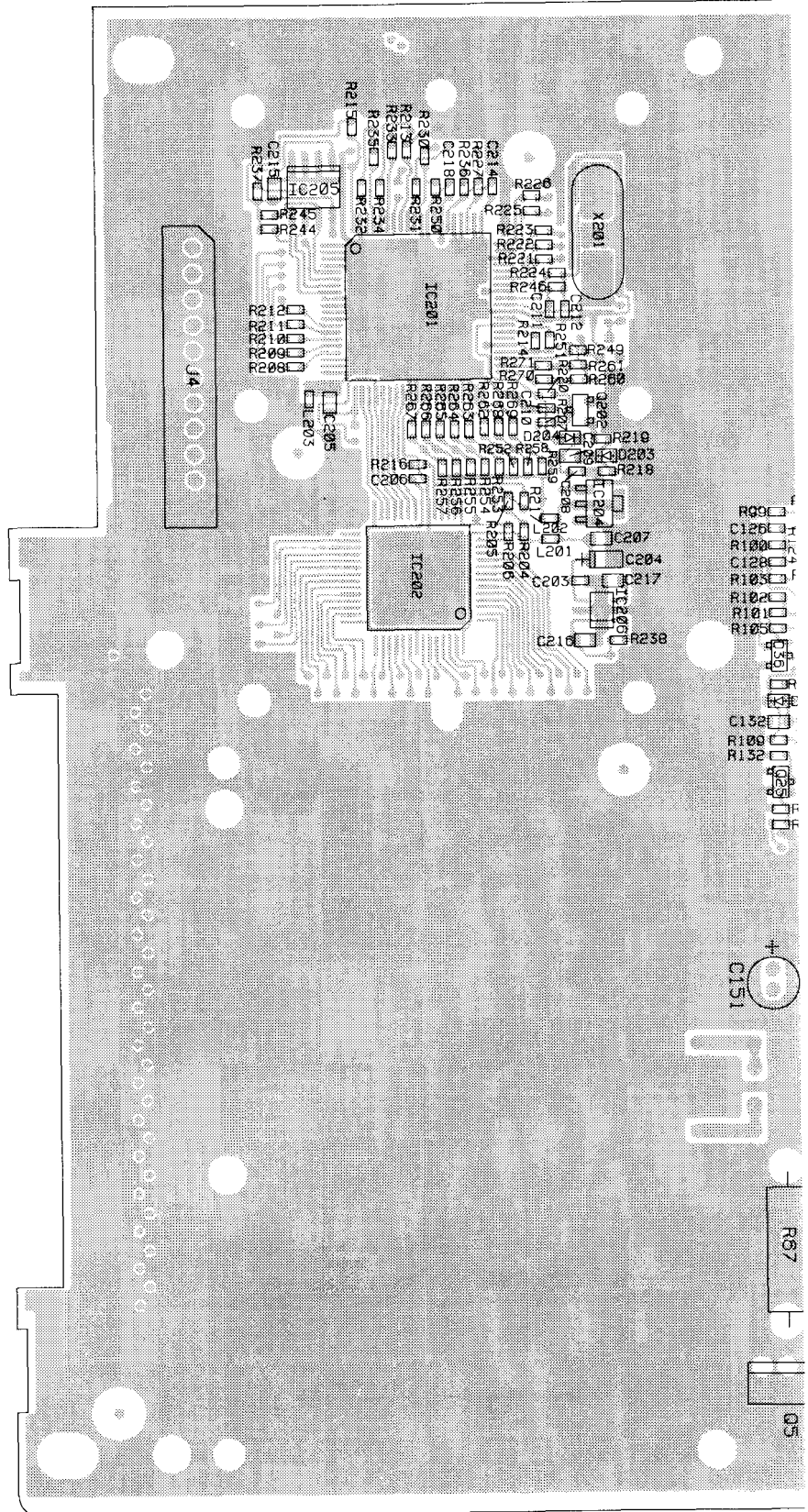
**Table 2.**

Unit: V

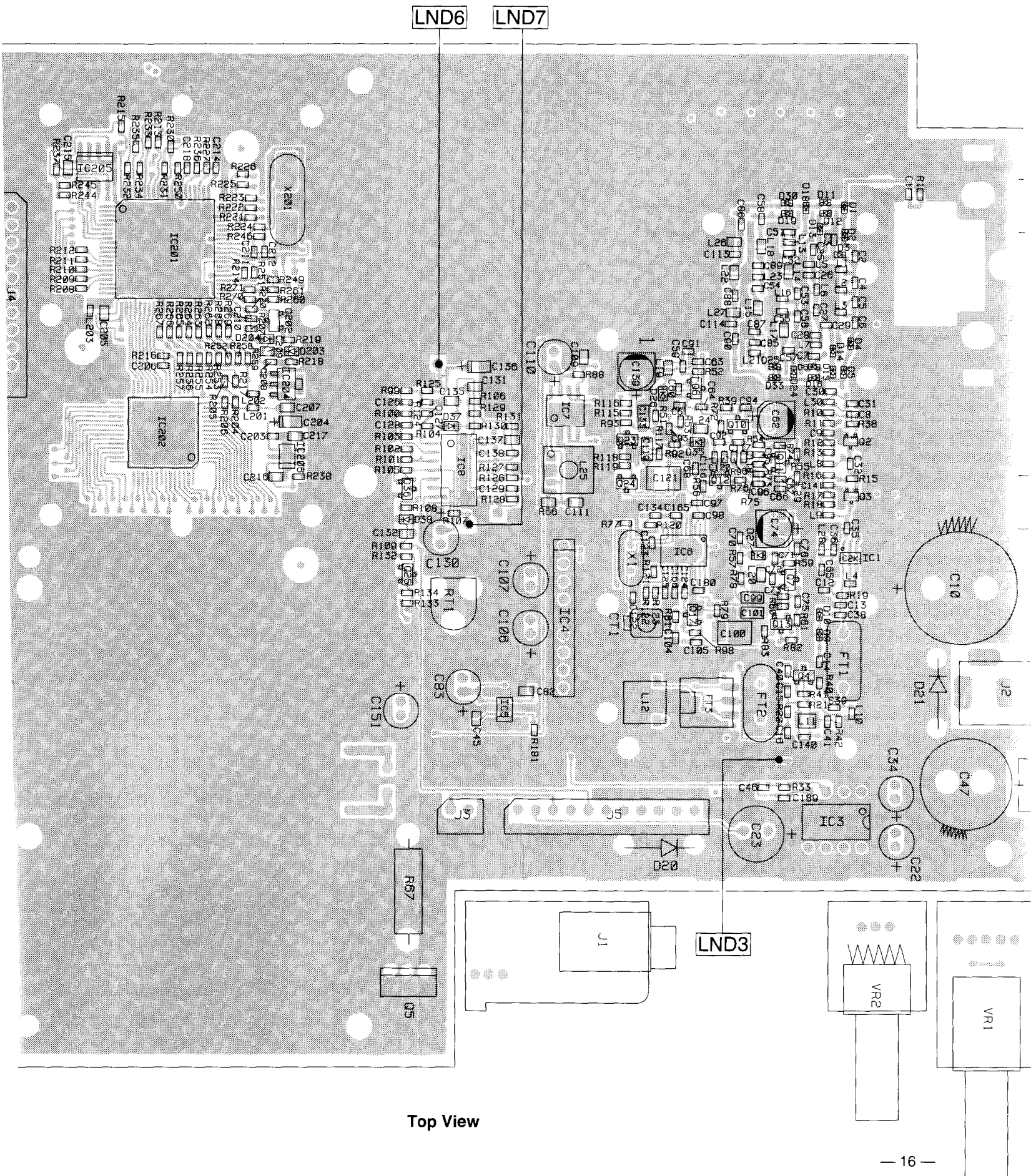
| RF Freq.<br>[MHz] | Q22 | Q21 | Q20 | Q19 | Q18 |
|-------------------|-----|-----|-----|-----|-----|
| 29 ~ 54 MHz       | 0   | 8.2 | 11  | 11  | 7.8 |
| 108 ~ 137 MHz     | 11  | 0   | 11  | 11  | 7.8 |
| 137 ~ 174 MHz     | 11  | 8.2 | 0   | 11  | 7.8 |
| 406 ~ 512 MHz     | 11  | 8.2 | 11  | 0   | 7.8 |
| 806 ~ 956 MHz     | 11  | 8.2 | 11  | 11  | 0   |



MAIN



# PRINTED CIRCUIT BOARDS

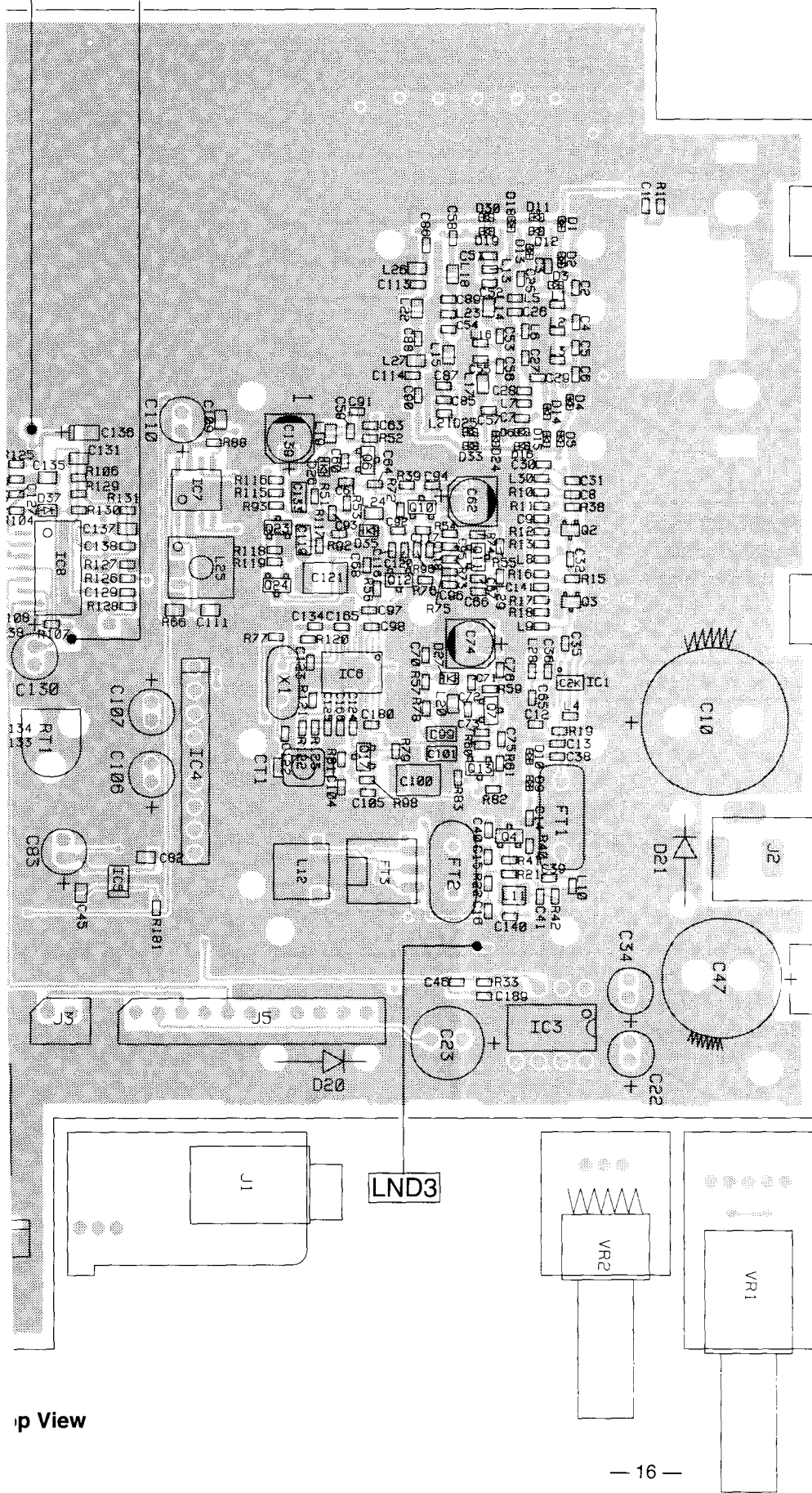


Top View

# JIT BOARDS

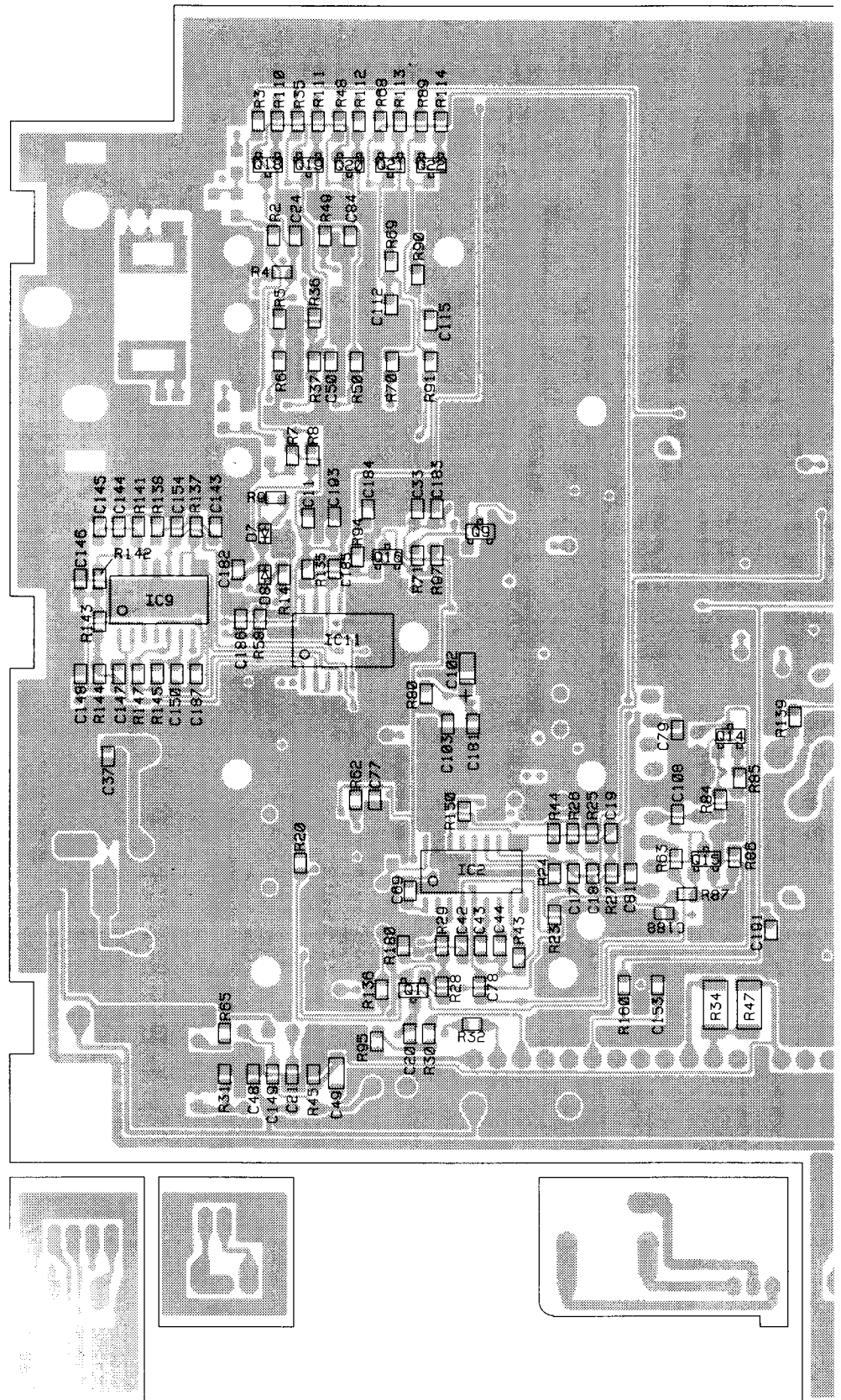
LND6

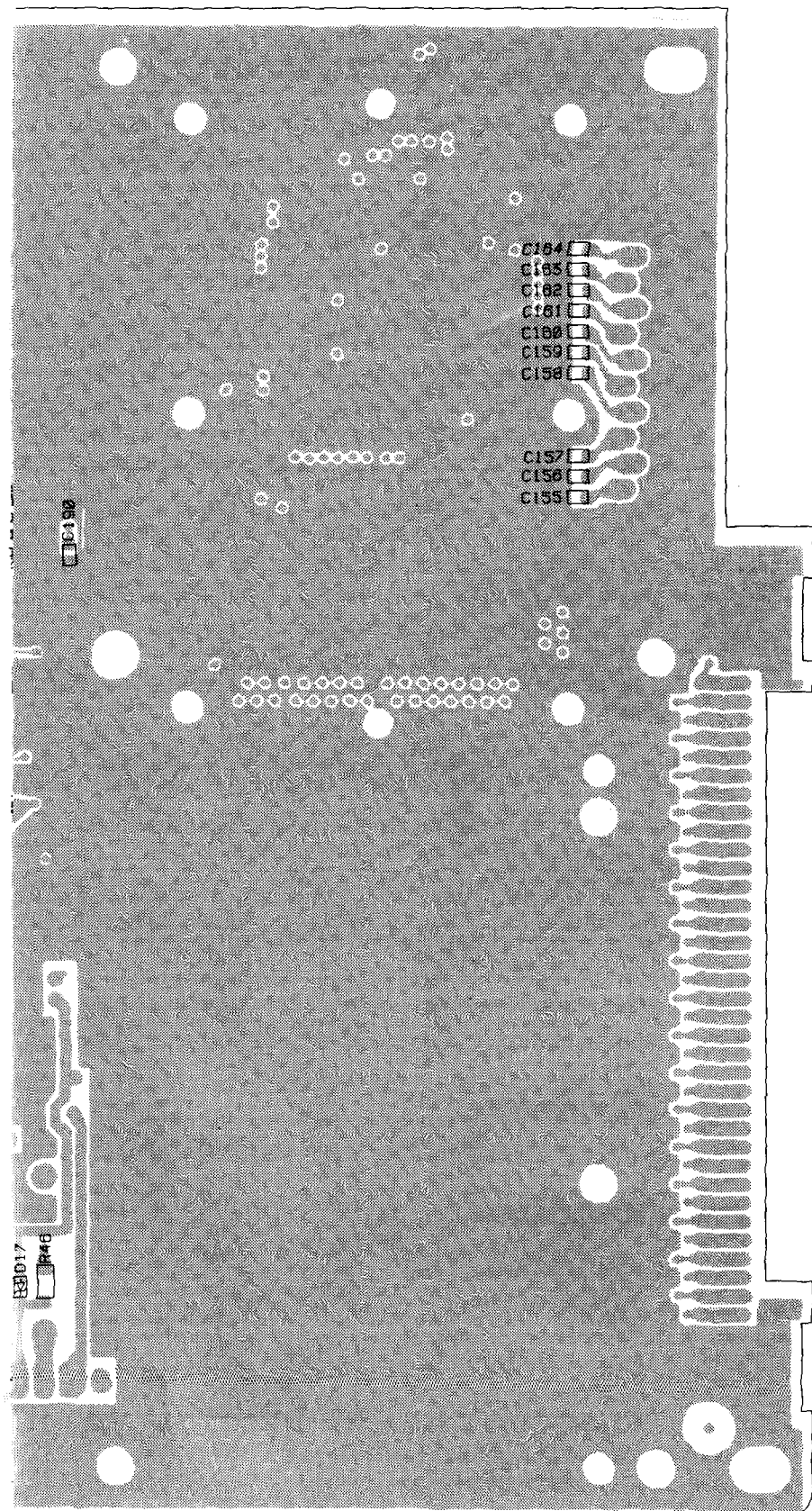
LND7



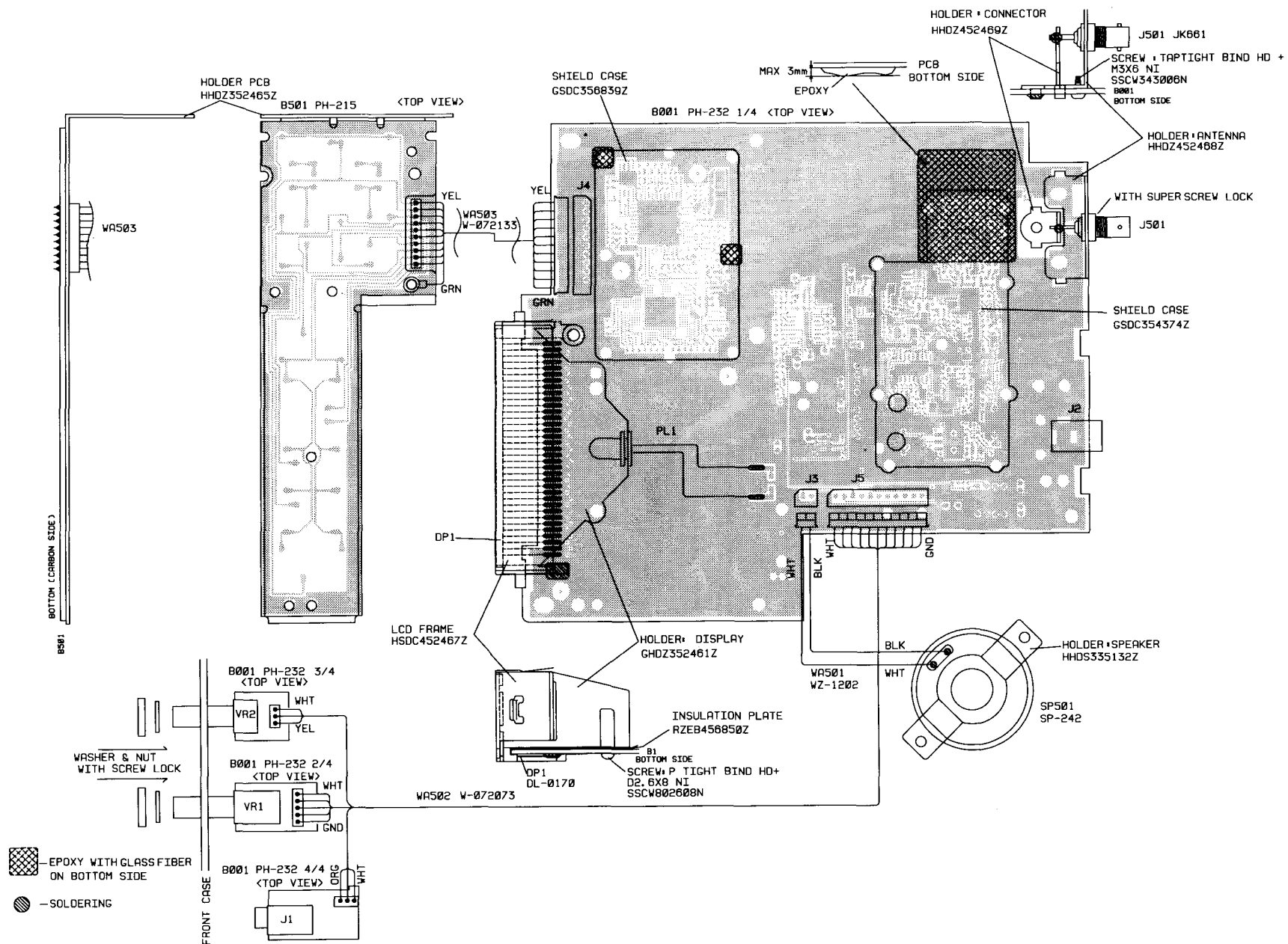
Wavy line symbol - Bond Lock

p View





ciew

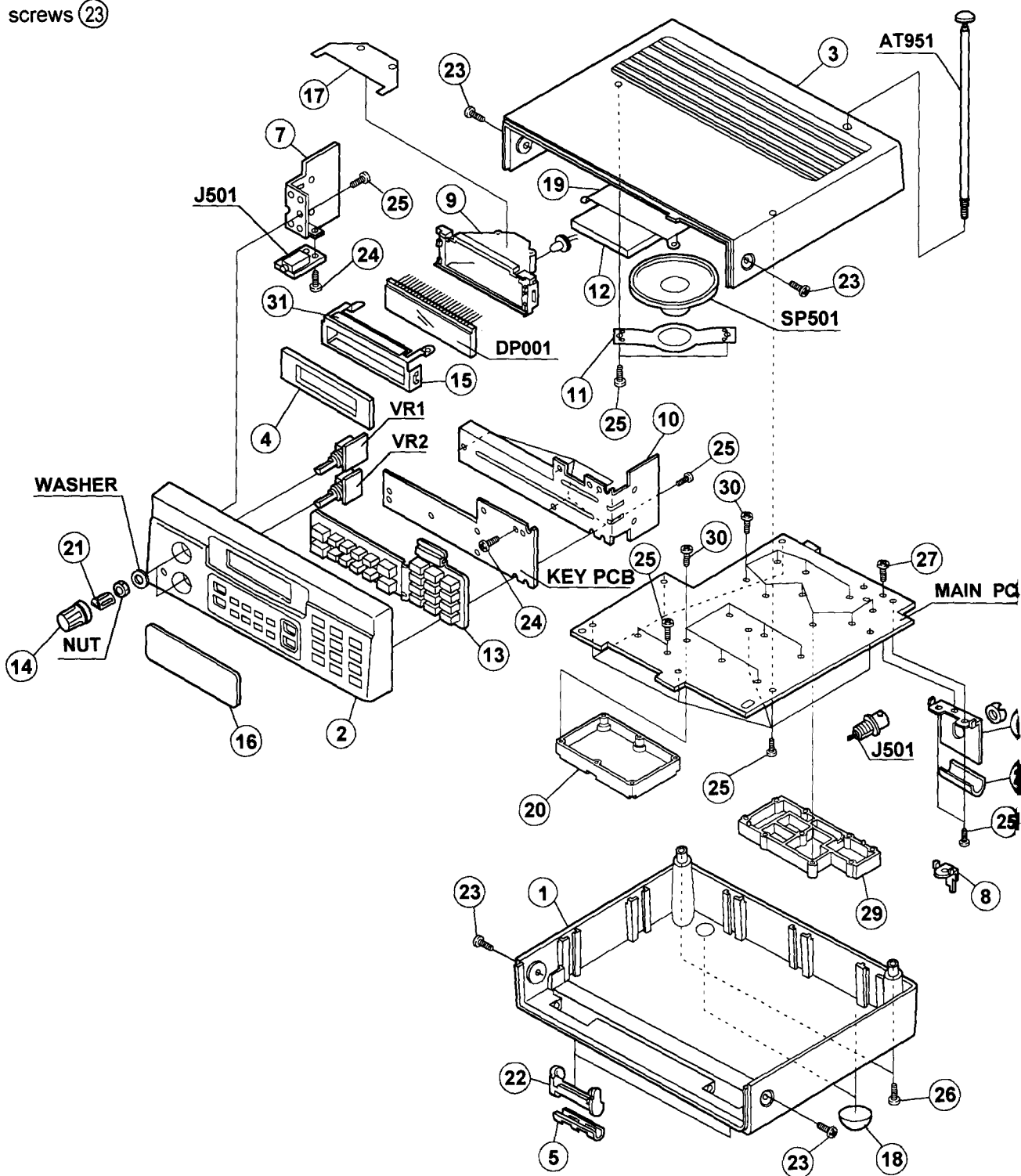


## WIRING DIAGRAM

## EXPLODED VIEW AND DISASSEMBLY INSTRUCTIONS

To remove the Bottom Cover, unscrew two screws (26) and two screws (23)

To remove the Top Cover, unscrew two screws (23)



## MECHANICAL PARTS LIST

| Ref. No. | Description                     | RS Part No.          | Mfr's Part No. |
|----------|---------------------------------|----------------------|----------------|
| 1        | Case, Bottom                    | ABS                  | GCAS152459Z    |
| 2        | Panel, Front (Comp)             | ABS                  | GCAS356846Z    |
| 3        | Case, Top                       | ABS                  | GCAS152458Z    |
| 4        | Cushion                         | Moltplene            | RCUN453002Z    |
| 5        | Foot                            | EPDM                 | LFUT452464Z    |
| 6        | Holder, Antenna                 | SECC                 | HHZ452468Z     |
| 7        | Holder, Case                    | SECC                 | HHZ452466Z     |
| 8        | Holder, Connector               | SPCC                 | HHZ452469Z     |
| 9        | Holder, Display                 | ABS(HI-HEAT)         | GHDZ352461Z    |
| 10       | Holder, PCB                     | SECC                 | HHZ352465Z     |
| 11       | Holder, Speaker                 | SUS304, 0.4T NON OIL | HHDS335132Z    |
| 12       | Insulation Plate                | PC                   | RZEB453512Z    |
| 13       | Key Rubber                      | SI                   | LNBZ256849Z    |
| 14       | Knob                            | ABS                  | GNBZ352460Z    |
| 15       | LCD Frame                       | C5191(PBP)           | HSDC452467Z    |
| 16       | Plate, Display                  | PC                   | KDPZ456847Z    |
| 17       | Insulation Plate                | PC                   | RZEB456850Z    |
| 18       | Rubber Foot                     | Polyuretan Rubber    | TSTD0340012    |
| 19       | Shield Cover                    | SPTE                 | HSDC452954Z    |
| 20       | Shield Case                     | ABS                  | GSDC356839Z    |
| 21       | Spring Plate, Knob              | D6.02XL9.53          | TSTD0200003    |
| 22       | Stand                           | ABS                  | GCAS452462Z    |
| 23       | Screw, Bind HD +                | M3X6 BZMC            | SSCW193006D    |
| 24       | Screw, Bind HD +                | M3X6 NI              | SSCW193006N    |
| 25       | Screw, P Tight Bind HD +        | D2.6X8 NI            | SSCW802608N    |
| 26       | Screw, P Tight Bind HD +        | D3X20 NI             | SSCW803020N    |
| 27       | Screw, TAP Tight Bind HD +      | M3X6 NI              | SSCW343006N    |
| 28       | Himelon                         |                      | RBLD451794Z    |
| 29       | Shield Case                     | ABS                  | GSDC354374Z    |
| 30       | Screw, P Tight Bind HD +        | D2X8 NI              | SSCW802008N    |
| 31       | Cushion                         |                      | RCUN431991Z    |
|          | Hardware Kit (Ref. No. 23 - 26) |                      | HDWRKB287ZP    |

# ELECTRICAL PARTS LIST

## MAIN PCB ASSEMBLY

| Ref. No.                                                                                                                                                                                                                                                                                                    | Description                                                    | RS Part No.         | Mfr's Part No.                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------|
| B1                                                                                                                                                                                                                                                                                                          | <b>Assembly, Main PCB</b><br><b>Consists of the following:</b> |                     | <b>AB287ZPBA</b><br><b>for U.S.A.</b><br><b>AB287APBA</b><br><b>for Canada</b> |
| <b>Capacitors</b>                                                                                                                                                                                                                                                                                           |                                                                |                     |                                                                                |
| <b>Notes:</b> All ceramic capacitors are Multilayer (1608) Tape type, unless otherwise specified.<br>The following codes indicate variations of capacitors against temperature:<br>B=±10%, CH=0±60 ppm/°C, CJ=0±120 ppm/°C, CK=0±250 ppm/°C<br>F=+30-80%, RH=-220ppm/°C±60 ppm/°C, UJ=-750ppm/°C±120 ppm/°C |                                                                |                     |                                                                                |
| C1                                                                                                                                                                                                                                                                                                          | Ceramic                                                        | 0.001μF 50V ±10 %   | B BCML811025Z                                                                  |
| C2                                                                                                                                                                                                                                                                                                          | Ceramic                                                        | 15 pF 50V ±5 %      | CH BCMM811504Z                                                                 |
| C3                                                                                                                                                                                                                                                                                                          | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |
| C4                                                                                                                                                                                                                                                                                                          | Ceramic                                                        | 4 pF 50V ±0.25 pF   | CH BCMM814091Z                                                                 |
| C5                                                                                                                                                                                                                                                                                                          | Ceramic                                                        | 2 pF 50V ±0.25 pF   | CK BCMS812091Z                                                                 |
| C6                                                                                                                                                                                                                                                                                                          | Ceramic                                                        | 4 pF 50V ±0.25 pF   | CH BCMM814091Z                                                                 |
| C7                                                                                                                                                                                                                                                                                                          | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |
| C8                                                                                                                                                                                                                                                                                                          | Ceramic                                                        | 0.01 μF 50V ±10 %   | B BCML811035Z                                                                  |
| C9                                                                                                                                                                                                                                                                                                          | Ceramic                                                        | 0.01 μF 50V ±10 %   | B BCML811035Z                                                                  |
| C10                                                                                                                                                                                                                                                                                                         | Electrolytic                                                   | 2200 μF 25V ±20 %   | C-130 BCAP512226Z                                                              |
|                                                                                                                                                                                                                                                                                                             | or Electrolytic                                                | 2200 μF 25V ±20 %   | C-156 BCAZ512226Z                                                              |
| C11                                                                                                                                                                                                                                                                                                         | Ceramic (2125)                                                 | 0.001 μF 50V ±10 %  | B BCXT811025Z                                                                  |
| C12                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |
| C13                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |
| C14                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |
| C15                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 0.01 μF 50V ±10 %   | B BCML811035Z                                                                  |
| C16                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |
| C17                                                                                                                                                                                                                                                                                                         | Ceramic (2125)                                                 | 0.001 μF 50V ±5 %   | CH BCBH811024Z                                                                 |
| C18                                                                                                                                                                                                                                                                                                         | Ceramic (2125)                                                 | 0.0047 μF 50V ±10 % | B BCXT814725Z                                                                  |
| C19                                                                                                                                                                                                                                                                                                         | Ceramic (2125)                                                 | 0.001 μF 50V ±10 %  | B BCXT811025Z                                                                  |
| C20                                                                                                                                                                                                                                                                                                         | Ceramic (2125)                                                 | 0.047 μF 50V ±10 %  | B BCXT814735Z                                                                  |
| C21                                                                                                                                                                                                                                                                                                         | Ceramic (2125)                                                 | 0.0082 μF 50V ±10 % | B BCXT818225Z                                                                  |
| C22                                                                                                                                                                                                                                                                                                         | Electrolytic                                                   | 47 μF 25V ±20 %     | C-130 BCAP514706Z                                                              |
|                                                                                                                                                                                                                                                                                                             | or Electrolytic                                                | 47 μF 25V ±20 %     | C-156 BCAZ514706Z                                                              |
| C23                                                                                                                                                                                                                                                                                                         | Electrolytic                                                   | 220 μF 25V ±20 %    | C-130 BCAP512216Z                                                              |
|                                                                                                                                                                                                                                                                                                             | or Electrolytic                                                | 220 μF 25V ±20 %    | C-156 BCAZ512216Z                                                              |
| C24                                                                                                                                                                                                                                                                                                         | Ceramic (2125)                                                 | 0.001 μF 50V ±10 %  | B BCXT811025Z                                                                  |
| C25                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 47 pF 50V ±5 %      | CH BCMM814704Z                                                                 |
| C26                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 6 pF 50V ±0.5 pF    | CH BCMM816092Z                                                                 |
| C27                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 1.5 pF 50V ±0.25 pF | CK BCMS811591Z                                                                 |
| C28                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 1.5 pF 50V ±0.25 pF | CH BCMM811591Z                                                                 |
| C29                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 10 pF 50V ±0.5 pF   | CH BCMM811002Z                                                                 |
| C30                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |
| C31                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 3 pF 50V ±0.25 pF   | CJ BCMT813091Z                                                                 |
| C32                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 56 pF 50V ±5 %      | CH BCMM815604Z                                                                 |
| C33                                                                                                                                                                                                                                                                                                         | Ceramic (2125)                                                 | 0.001 μF 50V ±10 %  | B BCXT811025Z                                                                  |
| C34                                                                                                                                                                                                                                                                                                         | Electrolytic                                                   | 2.2 μF 50V ±20 %    | C-130 BCAP812296Z                                                              |
|                                                                                                                                                                                                                                                                                                             | or Electrolytic                                                | 2.2 μF 50V ±20 %    | C-156 BCAZ812296Z                                                              |
| C35                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |
| C36                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |
| C37                                                                                                                                                                                                                                                                                                         | Ceramic (2125)                                                 | 0.1 μF 25V ±10 %    | B BCXT511045Z                                                                  |
| C38                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 3 pF 50V ±0.25 pF   | CK BCMT813091Z                                                                 |
| C39                                                                                                                                                                                                                                                                                                         | Ceramic                                                        | 0.001 μF 50V ±10 %  | B BCML811025Z                                                                  |

| Ref. No. | Description     |               |      |               |       |  | RS Part No. | Mfr's Part No. |
|----------|-----------------|---------------|------|---------------|-------|--|-------------|----------------|
| C40      | Ceramic         | 0.001 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCML811025Z    |
| C41      | Ceramic         | 0.001 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCML811025Z    |
| C42      | Ceramic (2125)  | 0.1 $\mu$ F   | 25V  | $\pm 10$ %    | B     |  |             | BCXT511045Z    |
| C43      | Ceramic (2125)  | 0.1 $\mu$ F   | 25V  | $\pm 10$ %    | B     |  |             | BCXT511045Z    |
| C44      | Ceramic (2125)  | 0.1 $\mu$ F   | 25V  | $\pm 10$ %    | B     |  |             | BCXT511045Z    |
| C45      | Ceramic (2125)  | 0.1 $\mu$ F   | 25V  | $\pm 10$ %    | B     |  |             | BCXT511045Z    |
| C46      | Ceramic         | 3 pF          | 50V  | $\pm 0.25$ pF | CJ    |  |             | BCMT813091Z    |
| C47      | Electrolytic    | 1000 $\mu$ F  | 25V  | $\pm 20$ %    | C-130 |  |             | BCAP511026Z    |
|          | or Electrolytic | 1000 $\mu$ F  | 25V  | $\pm 20$ %    | C-156 |  |             | BCAZ511026Z    |
| C48      | Ceramic (2125)  | 0.1 $\mu$ F   | 25V  | $\pm 10$ %    | B     |  |             | BCXT511045Z    |
| C49      | Ceramic (3216)  | 0.22 $\mu$ F  | 16V  | $\pm 10$ %    | R     |  |             | BCBZ312245Z    |
| C50      | Ceramic (2125)  | 0.001 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCXT811025Z    |
| C51      | Ceramic         | 180 pF        | 50V  | $\pm 5$ %     | CH    |  |             | BCMM811814Z    |
| C52      | Ceramic         | 39 pF         | 50V  | $\pm 5$ %     | CH    |  |             | BCMM813904Z    |
| C53      | Ceramic         | 7 pF          | 50V  | $\pm 0.25$ pF | CH    |  |             | BCMM817091Z    |
| C54      | Ceramic         | 5 pF          | 50V  | $\pm 0.25$ pF | CH    |  |             | BCMM815091Z    |
| C55      | Ceramic         | 68 pF         | 50V  | $\pm 5$ %     | CH    |  |             | BCMM816804Z    |
| C56      | Ceramic         | 1.5 pF        | 50V  | $\pm 0.25$ pF | CJ    |  |             | BCMS811591Z    |
| C57      | Ceramic         | 7 pF          | 50V  | $\pm 0.5$ pF  | CH    |  |             | BCMM817092Z    |
| C58      | Ceramic         | 12 pF         | 50V  | $\pm 5$ %     | CH    |  |             | BCMM811204Z    |
| C59      | Ceramic         | 39 pF         | 50V  | $\pm 5$ %     | UJ    |  |             | BCMP813904Z    |
| C60      | Ceramic         | 6 pF          | 50V  | $\pm 0.5$ pF  | UJ    |  |             | BCMP816092Z    |
| C61      | Ceramic         | 6 pF          | 50V  | $\pm 0.5$ pF  | UJ    |  |             | BCMP816092Z    |
| C62      | Electrolytic    | 47 $\mu$ F    | 6.3V | $\pm 20$ %    | C-258 |  |             | BCFZ904706Z    |
| C63      | Ceramic         | 0.001 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCML811025Z    |
| C64      | Ceramic         | 5 pF          | 50V  | $\pm 0.25$ pF | CH    |  |             | BCMM815091Z    |
| C65      | Ceramic         | 4 pF          | 50V  | $\pm 0.25$ pF | CH    |  |             | BCMM814091Z    |
| C66      | Ceramic         | 6 pF          | 50V  | $\pm 0.5$ pF  | CH    |  |             | BCMM816092Z    |
| C67      | Ceramic         | 1 pF          | 50V  | $\pm 0.25$ pF | CK    |  |             | BCMS811091Z    |
| C68      | Ceramic         | 0.001 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCML811025Z    |
| C69      | Ceramic (2125)  | 0.001 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCXT811025Z    |
| C70      | Ceramic         | 12 pF         | 50V  | $\pm 5$ %     | RH    |  |             | BCMN811204Z    |
| C71      | Ceramic         | 12 pF         | 50V  | $\pm 5$ %     | CH    |  |             | BCMM811204Z    |
| C72      | Ceramic         | 7 pF          | 50V  | $\pm 0.5$ pF  | CH    |  |             | BCMM817092Z    |
| C73      | Ceramic         | 7 pF          | 50V  | $\pm 0.5$ pF  | CH    |  |             | BCMM817092Z    |
| C74      | Electrolytic    | 47 $\mu$ F    | 6.3V | $\pm 20$ %    | C-258 |  |             | BCFZ904706Z    |
| C75      | Ceramic         | 10 pF         | 50V  | $\pm 0.5$ pF  | CH    |  |             | BCMM811002Z    |
| C76      | Ceramic         | 0.001 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCML811025Z    |
| C77      | Ceramic (2125)  | 0.001 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCXT811025Z    |
| C78      | Ceramic (2125)  | 0.022 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCXT812235Z    |
| C79      | Ceramic (2125)  | 0.047 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCXT814735Z    |
| C80      | Not Used        |               |      |               |       |  |             |                |
| C81      | Ceramic (2125)  | 0.01 $\mu$ F  | 50V  | $\pm 10$ %    | B     |  |             | BCXT811035Z    |
| C82      | Ceramic (2125)  | 0.1 $\mu$ F   | 25V  | $\pm 10$ %    | B     |  |             | BCXT511045Z    |
| C83      | Electrolytic    | 100 $\mu$ F   | 10V  | $\pm 20$ %    | C-130 |  |             | BCAP111016Z    |
|          | or Electrolytic | 100 $\mu$ F   | 10V  | $\pm 20$ %    | C-156 |  |             | BCAZ111016Z    |
| C84      | Ceramic (2125)  | 0.001 $\mu$ F | 50V  | $\pm 10$ %    | B     |  |             | BCXT811025Z    |
| C85      | Ceramic         | 150 pF        | 50V  | $\pm 5$ %     | CH    |  |             | BCMM811514Z    |
| C86      | Ceramic         | 470 pF        | 50V  | $\pm 5$ %     | CH    |  |             | BCMM814714Z    |
| C87      | Ceramic         | 68 pF         | 50V  | $\pm 5$ %     | CH    |  |             | BCMM816804Z    |
| C88      | Ceramic         | 47 pF         | 50V  | $\pm 5$ %     | CH    |  |             | BCMM814704Z    |
| C89      | Ceramic         | 100 pF        | 50V  | $\pm 5$ %     | CH    |  |             | BCMM811014Z    |
| C90      | Ceramic         | 470 pF        | 50V  | $\pm 5$ %     | CH    |  |             | BCMM814714Z    |
| C91      | Ceramic         | 8 pF          | 50V  | $\pm 0.25$ pF | RH    |  |             | BCMN818092Z    |

| Ref. No. | Description     |           |     |          |              |  | RS Part No. | Mfr's Part No. |
|----------|-----------------|-----------|-----|----------|--------------|--|-------------|----------------|
| C92      | Ceramic         | 4 pF      | 50V | ±0.25 pF | RH           |  |             | BCMN814091Z    |
| C93      | Ceramic         | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCML811025Z    |
| C94      | Ceramic         | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCML811025Z    |
| C95      | Ceramic         | 3 pF      | 50V | ±0.25 pF | CJ           |  |             | BCMT813091Z    |
| C96      | Ceramic         | 100 pF    | 50V | ±5 %     | CH           |  |             | BCMM811014Z    |
| C97      | Ceramic         | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCML811025Z    |
| C98      | Ceramic         | 220 pF    | 50V | ±5 %     | CH           |  |             | BCMM812214Z    |
| C99      | Chip Film       | 0.0047 µF | 50V | ±5 %     | C-264        |  |             | BCTG814724Z    |
| C100     | Chip Film       | 0.1 µF    | 50V | ±5 %     | C-264        |  |             | BCTG811044Z    |
| C101     | Chip Film       | 0.0047 µF | 50V | ±5 %     | C-264        |  |             | BCTG814724Z    |
| C102     | Tantalum Chip   | 4.7 µF    | 10V | ±20 %    | A C-241 Tape |  |             | BCSS114796Z    |
| C103     | Ceramic (2125)  | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCXT811025Z    |
| C104     | Ceramic         | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCML811025Z    |
| C105     | Ceramic         | 3 pF      | 50V | ±0.25 pF | CJ           |  |             | BCMT813091Z    |
| C106     | Electrolytic    | 22 µF     | 50V | ±20 %    | C-130        |  |             | BCAP812206Z    |
|          | or Electrolytic | 22 µF     | 50V | ±20 %    | C-156        |  |             | BCAZ812206Z    |
| C107     | Electrolytic    | 4.7 µF    | 50V | ±20 %    | C-130        |  |             | BCAP814796Z    |
|          | or Electrolytic | 4.7 µF    | 50V | ±20 %    | C-156        |  |             | BCAZ814796Z    |
| C108     | Ceramic (2125)  | 0.1 µF    | 25V | ±10 %    | B            |  |             | BCXT511045Z    |
| C109     | Ceramic (2125)  | 0.1 µF    | 25V | ±10 %    | B            |  |             | BCXT511045Z    |
| C110     | Electrolytic    | 4.7 µF    | 50V | ±20 %    | C-130        |  |             | BCAP814796Z    |
|          | or Electrolytic | 4.7 µF    | 50V | ±20 %    | C-156        |  |             | BCAZ814796Z    |
| C111     | Ceramic (2125)  | 1 µF      | 16V | -20+80 % | F            |  |             | BCXK311050Z    |
| C112     | Ceramic (2125)  | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCXT811025Z    |
| C113     | Ceramic         | 82 pF     | 50V | ±5 %     | CH           |  |             | BCMM818204Z    |
| C114     | Ceramic         | 100 pF    | 50V | ±5 %     | CH           |  |             | BCMM811014Z    |
| C115     | Ceramic (2125)  | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCXT811025Z    |
| C116     | Ceramic         | 0.5 pF    | 50V | B        | CH           |  |             | BCMM815088Z    |
| C117     | Ceramic         | 2 pF      | 50V | ±0.25 pF | RK           |  |             | BCMH812091Z    |
| C118     | Ceramic         | 2 pF      | 50V | ±0.25 pF | RK           |  |             | BCMH812091Z    |
| C119     | Chip Film       | 0.0047 µF | 50V | ±5 %     | C-264        |  |             | BCTG814724Z    |
| C120     | Ceramic         | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCML811025Z    |
| C121     | Chip Film       | 0.1 µF    | 50V | ±5 %     | C-264        |  |             | BCTG811044Z    |
| C122     | Ceramic         | 22 pF     | 50V | ±5 %     | CH           |  |             | BCMM812204Z    |
| C123     | Ceramic         | 33 pF     | 50V | ±5 %     | CH           |  |             | BCMM813304Z    |
| C124     | Ceramic         | 3 pF      | 50V | ±0.25 pF | CJ           |  |             | BCMT813091Z    |
| C125     | Ceramic         | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCML811025Z    |
| C126     | Ceramic         | 470 pF    | 50V | ±5 %     | CH           |  |             | BCMM814714Z    |
| C127     | Ceramic         | 47 pF     | 50V | ±5 %     | CH           |  |             | BCMM814704Z    |
| C128     | Ceramic         | 0.001 µF  | 50V | ±10 %    | B            |  |             | BCML811025Z    |
| C129     | Ceramic         | 22 pF     | 50V | ±5 %     | CH           |  |             | BCMM812204Z    |
| C130     | Electrolytic    | 100 µF    | 10V | ±20 %    | C-130        |  |             | BCAP111016Z    |
|          | or Electrolytic | 100 µF    | 10V | ±20 %    | C-156        |  |             | BCAZ111016Z    |
| C131     | Ceramic (2125)  | 0.22 µF   | 16V | ±10 %    | B            |  |             | BCXT312245Z    |
| C132     | Ceramic (2125)  | 0.047 µF  | 50V | ±10 %    | B            |  |             | BCXT814735Z    |
| C133     | Chip Film       | 0.0047 µF | 50V | ±5 %     | C-264        |  |             | BCTG814724Z    |
| C134     | Ceramic         | 100 pF    | 50V | ±5 %     | CH           |  |             | BCMM811014Z    |
| C135     | Ceramic (2125)  | 0.1 µF    | 25V | ±10 %    | B            |  |             | BCXT511045Z    |
| C136     | Tantalum Chip   | 4.7 µF    | 10V | ±20 %    | A C-241 Tape |  |             | BCSS114796Z    |
| C137     | Ceramic (2125)  | 0.047 µF  | 50V | ±10 %    | B            |  |             | BCXT814735Z    |
| C138     | Ceramic         | 0.0027 µF | 50V | ±10 %    | B            |  |             | BCML812725Z    |
| C139     | Electrolytic    | 10 µF     | 35V | ±20 %    | C-258        |  |             | BCFZ661006Z    |
| C140     | Ceramic         | 15 pF     | 50V | ±5 %     | CH           |  |             | BCMM811504Z    |
| C141     | Ceramic         | 0.01 µF   | 50V | ±10 %    | B            |  |             | BCML811035Z    |

| Ref. No. | Description     |                |     |              |              | RS Part No. | Mfr's Part No. |
|----------|-----------------|----------------|-----|--------------|--------------|-------------|----------------|
| C142     | Not Used        |                |     |              |              |             |                |
| C143     | Ceramic (2125)  | 0.056 $\mu$ F  | 25V | $\pm 10$ %   | B            |             | BCXT515635Z    |
| C144     | Ceramic (2125)  | 0.0027 $\mu$ F | 50V | $\pm 10$ %   | B            |             | BCXT812725Z    |
| C145     | Ceramic (2125)  | 680 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH816814Z    |
| C146     | Ceramic (2125)  | 0.056 $\mu$ F  | 25V | $\pm 10$ %   | B            |             | BCXT515635Z    |
| C147     | Ceramic (2125)  | 0.0027 $\mu$ F | 50V | $\pm 10$ %   | B            |             | BCXT812725Z    |
| C148     | Ceramic (2125)  | 390 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH813914Z    |
| C149     | Ceramic (2125)  | 0.001 $\mu$ F  | 50V | $\pm 10$ %   | B            |             | BCXT811025Z    |
| C150     | Ceramic (2125)  | 0.1 $\mu$ F    | 25V | $\pm 10$ %   | B            |             | BCXT511045Z    |
| C151     | Electrolytic    | 22 $\mu$ F     | 50V | $\pm 20$ %   | C-130        |             | BCAP812206Z    |
|          | or Electrolytic | 22 $\mu$ F     | 50V | $\pm 20$ %   | C-156        |             | BCAZ812206Z    |
| C152     | Not Used        |                |     |              |              |             |                |
| C153     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C154     | Ceramic (2125)  | 220 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH812214Z    |
| C155     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C156     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C157     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C158     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C159     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C160     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C161     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C162     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C163     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C164     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C165     | Ceramic         | 0.001 $\mu$ F  | 50V | $\pm 10$ %   | B            |             | BCML811025Z    |
| C166     | Ceramic         | 0.001 $\mu$ F  | 50V | $\pm 10$ %   | B            |             | BCML811025Z    |
| C167~179 | Not Used        |                |     |              |              |             |                |
| C180     | Ceramic         | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCMM811014Z    |
| C181     | Ceramic (2125)  | 0.001 $\mu$ F  | 50V | $\pm 10$ %   | B            |             | BCXT811025Z    |
| C182     | Ceramic (2125)  | 0.001 $\mu$ F  | 50V | $\pm 10$ %   | B            |             | BCXT811025Z    |
| C183     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C184     | Ceramic (2125)  | 0.001 $\mu$ F  | 50V | $\pm 10$ %   | B            |             | BCXT811025Z    |
| C185     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C186     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C187     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C188     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C189     | Ceramic         | 10 pF          | 50V | $\pm 0.5$ pF | CH           |             | BCMM811002Z    |
| C190     | Ceramic (2125)  | 10 pF          | 50V | $\pm 0.5$ pF | CH           |             | BCBH811002Z    |
| C191     | Ceramic (2125)  | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCBH811014Z    |
| C192     | Not Used        |                |     |              |              |             |                |
| C193     | Ceramic (2125)  | 0.001 $\mu$ F  | 50V | $\pm 10$ %   | B            |             | BCXT811025Z    |
| C194~202 | Not Used        |                |     |              |              |             |                |
| C203     | Ceramic         | 100 pF         | 50V | $\pm 5$ %    | CH           |             | BCMM811014Z    |
| C204     | Tantalum Chip   | 10 $\mu$ F     | 7V  | $\pm 10$ %   | A C-241 Tape |             | BCSS951005Z    |
| C205     | Ceramic (2125)  | 0.1 $\mu$ F    | 25V | $\pm 10$ %   | B            |             | BCXT511045Z    |
| C206     | Ceramic         | 0.033 $\mu$ F  | 16V | $\pm 10$ %   | B            |             | BCML313335Z    |
| C207     | Ceramic (2125)  | 0.1 $\mu$ F    | 25V | $\pm 10$ %   | B            |             | BCXT511045Z    |
| C208     | Ceramic         | 0.001 $\mu$ F  | 50V | $\pm 10$ %   | B            |             | BCML811025Z    |
| C209     | Ceramic (2125)  | 0.1 $\mu$ F    | 25V | $\pm 10$ %   | B            |             | BCXT511045Z    |
| C210     | Ceramic         | 0.01 $\mu$ F   | 50V | $\pm 10$ %   | B            |             | BCML811035Z    |
| C211     | Ceramic         | 22 pF          | 50V | $\pm 5$ %    | CH           |             | BCMM812204Z    |
| C212     | Ceramic         | 22 pF          | 50V | $\pm 5$ %    | CH           |             | BCMM812204Z    |
| C213     | Not Used        |                |     |              |              |             |                |
| C214     | Ceramic         | 0.001 $\mu$ F  | 50V | $\pm 10$ %   | B            |             | BCML811025Z    |

| Ref. No.       | Description    |               |                |            | RS Part No. | Mfr's Part No. |
|----------------|----------------|---------------|----------------|------------|-------------|----------------|
| C215           | Ceramic (2125) | 0.1 $\mu$ F   | 25V            | $\pm 10\%$ | B           | BCXT511045Z    |
| C216           | Ceramic (2125) | 0.1 $\mu$ F   | 25V            | $\pm 10\%$ | B           | BCXT511045Z    |
| C218           | Ceramic        | 0.033 $\mu$ F | 16V            | $\pm 10\%$ | B           | BCML313335Z    |
| CT001          | Trimmer        | CT-090        | ECR-LA030E52   | 30pF       |             | BCTY0090300    |
| <b>Filters</b> |                |               |                |            |             |                |
| FT1            |                | FL-876        | SAF380MA10T or |            |             | BFLY0876001    |
|                |                | FL-655        | NSRF C380      |            |             | BFLY0655001    |
| FT2            |                | FL-842        | UMF-7078       |            |             | BFLY0842001    |
| FT3            | Ceramic        | FL-739        | SFPC450D       |            |             | BFLY0739001    |
| <b>Diodes</b>  |                |               |                |            |             |                |
| D1             |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D2             |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D3             |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D4             |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D5             |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D6             |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D7             |                | 1SS355        | TE-17          |            |             | BDAY0807001    |
| D8             |                | 1SS355        | TE-17          |            |             | BDAY0807001    |
| D9             |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D10            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D11            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D12            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D13            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D14            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D15            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D16            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D17            | Zener          | UDZ5.6B       | TE-17          |            |             | BDAY0916013    |
| D18            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D19            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D20            |                | 1N4003        |                |            |             | BDAY0133001    |
| D21            |                | 1N4003        |                |            |             | BDAY0133001    |
| D24            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D25            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D26            | Varicap        | 1SV269(TPH3)  |                |            |             | BDAY1055001    |
| D27            | Varicap        | HVU308-1      | TRF            |            |             | BDAY0674001    |
| D30            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D33            |                | 1SS390        | TE61           |            |             | BDAY1041001    |
| D35            | Varicap        | 1SV269(TPH3)  |                |            |             | BDAY1055001    |
| D36            |                | 1SS226        | TE85L          |            |             | BDAY0274001    |
| D37            |                | 1SS355        | TE-17          |            |             | BDAY0807001    |
| D38            |                | 1SS355        | TE-17          |            |             | BDAY0807001    |
| D39~202        | Not Used       |               |                |            |             |                |
| D203           |                | 1SS355        | TE-17          |            |             | BDAY0807001    |
| D204           |                | 1SS355        | TE-17          |            |             | BDAY0807001    |
| <b>ICs</b>     |                |               |                |            |             |                |
| IC1            |                | UPC8112T-E3   |                |            |             | BDEY2885003    |
| IC2            |                | MC3361CDR2    |                |            |             | BDEY2768003    |
| IC3            |                | TBA820M       |                |            |             | BDEY0659001    |
| IC4            |                | LA1600A       |                |            |             | BDEY1000001    |

| Ref. No. | Description           |                     |                    | RS Part No. | Mfr's Part No. |  |
|----------|-----------------------|---------------------|--------------------|-------------|----------------|--|
| IC5      | Not Used              | TK11238AM-TL        |                    |             | BDEY3642003    |  |
| IC6      |                       | MB15U36PFV-G-BND-ER |                    |             | BDEY3642003    |  |
| IC7      |                       | TK11806M            |                    |             | BDEY0999001    |  |
| IC8      |                       | NJM3403AM(TE1)      |                    |             | BDEY3104003    |  |
| IC9      |                       | NJM3403AM(TE1)      |                    |             | BDEY3104003    |  |
| IC10     |                       |                     |                    |             |                |  |
| IC11     |                       | TC4066BF(EL)        |                    |             | BDEY1180003    |  |
| IC12~200 |                       |                     |                    |             |                |  |
| IC201    |                       | UC2265              | HD6433033UDF       |             | BDDY0806001    |  |
| IC202    |                       |                     | UPD7225GB-3B7      |             | BDEY1529001    |  |
| IC203    |                       | Not Used            |                    |             |                |  |
| IC204    |                       |                     | RH5VL27CA-T1       |             | BDEY2917003    |  |
| IC205    |                       |                     | M24C32-WMN6T       |             | BDEY3726003    |  |
| IC206    |                       |                     | TK11231BMCL        |             | BDEY3801003    |  |
| Jacks    |                       |                     |                    |             |                |  |
| J1       | SPEAKER<br>DC         | JK-424              | HSJ0836-01-500     |             | BJKY0424001    |  |
| J2       |                       | JK-1171             | DJ32-2             |             | BJKY1171001    |  |
| J3       |                       | JK-276              | 5267-02A           |             | BJKY0276002    |  |
| J4       |                       | JK-276              | 5267-11A           |             | BJKY0276011    |  |
| J5       |                       | JK-276              | 5267-11A           |             | BJKY0276011    |  |
| Coils    |                       |                     |                    |             |                |  |
| L1       | Inductor Molded Chip  | LZ-188              | 2.2 $\mu$ H        | Tape        | BLZY0188226    |  |
| L2       | Inductor Molded Chip  | LZ-188              | 4.7 $\mu$ H        |             | BLZY0188476    |  |
| L3       | Inductor Molded Chip  | LZ-188              | 4.7 $\mu$ H        |             | BLZY0188476    |  |
| L4       | Inductor Molded Chip  | LZ-188              | 27 $\mu$ H         |             | BLZY0188277    |  |
| L5       | Inductor Molded Chip  | LZ-188              | 10 $\mu$ H         |             | BLZY0188107    |  |
| L6       | Inductor Molded Chip  | LZ-188              | 56 $\mu$ H         |             | BLZY0188567    |  |
| L7       | Inductor Molded Chip  | LZ-188              | 12 $\mu$ H         |             | BLZY0188127    |  |
| L8       | Inductor Molded Chip  | LZ-188              | 1.8 $\mu$ H        |             | BLZY0188186    |  |
| L9       | Inductor Molded Chip  | LZ-188              | 39 $\mu$ H         |             | BLZY0188397    |  |
| L10      | Inductor Molded Chip  | LZ-188              | 56 $\mu$ H         |             | BLZY0188567    |  |
| L11      | Inductor Molded(Chip) | LZ-087              | 10 $\mu$ H J       |             | BLZY0087100    |  |
| L12      | Coil Chip Tape        | LF-271              | 614AG-0246GW=P3    |             | BLFY0271001    |  |
| L13      | Inductor Molded Chip  | LZ-188              | 33 $\mu$ H         |             | BLZY0188337    |  |
| L14      | Inductor Molded Chip  | LZ-199              | 0.15 $\mu$ H       |             | BLZY0199158    |  |
| L15      | Inductor Molded Chip  | LZ-199              | 0.27 $\mu$ H       |             | BLZY0199278    |  |
| L16      | Inductor Molded Chip  | LZ-188              | 15 $\mu$ H         |             | BLZY0188157    |  |
| L17      | Inductor Molded Chip  | LZ-199              | 0.15 $\mu$ H       |             | BLZY0199158    |  |
| L18      | Inductor Molded Chip  | LZ-199              | 0.15 $\mu$ H       |             | BLZY0199158    |  |
| L19      | Inductor Molded Chip  | LZ-199              | 0.012 $\mu$ H      |             | BLZY0199127    |  |
| L20      | Inductor Molded Chip  | LZ-199              | 0.01 $\mu$ H       |             | BLZY0199107    |  |
| L21      | Inductor Molded Chip  | LZ-188              | 27 $\mu$ H         |             | BLZY0188277    |  |
| L22      | Inductor Molded Chip  | LZ-199              | 0.33 $\mu$ H       |             | BLZY0199338    |  |
| L23      | Inductor Molded Chip  | LZ-188              | 15 $\mu$ H         |             | BLZY0188157    |  |
| L24      | Inductor Molded Chip  | LZ-199              | 0.01 $\mu$ H       |             | BLZY0199107    |  |
| L25      | Inductor Molded       | LZ-077              | 395AN-0054Z 1.2 MH |             | BLZY0077122    |  |
| L26      | Inductor Molded Chip  | LZ-199              | 0.15 $\mu$ H       |             | BLZY0199158    |  |
| L27      | Inductor Molded Chip  | LZ-199              | 0.15 $\mu$ H       |             | BLZY0199158    |  |
| L28      | Inductor Molded Chip  | LZ-188              | 10 $\mu$ H         |             | BLZY0188107    |  |
| L29      | Inductor Molded Chip  | LZ-188              | 10 $\mu$ H         |             | BLZY0188107    |  |

| Ref. No.           | Description          |          |               |           |        | RS Part No. | Mfr's Part No. |
|--------------------|----------------------|----------|---------------|-----------|--------|-------------|----------------|
| L30                | Inductor Molded Chip | LZ-188   | 8.2 $\mu$ H   |           |        |             | BLZY0188826    |
| L31~200            | Not Used             |          |               |           |        |             |                |
| L201               | Inductor Molded Chip | LZ-207   | MMZ1608Y601BT | 600       |        |             | BLZY0207601    |
| L202               | Inductor Molded Chip | LZ-207   | MMZ1608Y601BT | 600       |        |             | BLZY0207601    |
| L203               | Inductor Molded Chip | LZ-207   | MMZ1608Y601BT | 600       |        |             | BLZY0207601    |
| <b>Transistors</b> |                      |          |               |           |        |             |                |
| Q1                 |                      | DB-036   | 2SA1162-Y     | TE85L     |        |             | BDBA1162124    |
| Q2                 |                      | DB-848   | 2SC5065-Y     |           |        |             | BDBC5065124    |
| Q3                 |                      | DB-848   | 2SC5065-Y     |           |        |             | BDBC5065124    |
| Q4                 |                      | DB-724   | 2SC3121       | TE85L     |        |             | BDBC3121000    |
| Q5                 |                      | DB-440   | 2SD1683-S     |           |        |             | BDBD1683118    |
| Q6                 |                      | DB-711   | 2SC3356-R24   | T1B       |        |             | BDBC3356646    |
| Q7                 |                      | DB-711   | 2SC3356-R24   | T1B       |        |             | BDBC3356646    |
| Q9                 |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| Q10                |                      | DB-711   | 2SC3356-R24   | T1B       |        |             | BDBC3356646    |
| Q11                |                      | DB-711   | 2SC3356-R24   | T1B       |        |             | BDBC3356646    |
| Q12                |                      | DB-711   | 2SC3356-R24   | T1B       |        |             | BDBC3356646    |
| Q13                |                      | DB-711   | 2SC3356-R24   | T1B       |        |             | BDBC3356646    |
| Q14                |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| Q15                |                      | DB-036   | 2SA1162-Y     | TE85L     |        |             | BDBA1162124    |
| Q16                |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| Q17                |                      | DB-711   | 2SC3356-R24   | T1B       |        |             | BDBC3356646    |
| Q18                |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| Q19                |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| Q20                |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| Q21                |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| Q22                |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| Q23                |                      | DB-1004  | MMBT6428L     | T1        |        |             | BDBZ1004001    |
| Q24                | Field Effect         | DC-052   | 2SK209-GR     |           |        |             | BDCB0209303    |
| Q25                |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| Q26~201            | Not Used             |          |               |           |        |             |                |
| Q202               |                      | DB-381   | 2SC2712-Y     | TE85L     |        |             | BDBC2712124    |
| <b>Resistors</b>   |                      |          |               |           |        |             |                |
| R1                 | Carbon Fixed Chip    | 1 kohm   | 1/16W         | $\pm 5\%$ | Taping |             | BRFC161024Z    |
| R2                 | Carbon Fixed Chip    | 2.2 kohm | 1/10W         | $\pm 5\%$ | Taping |             | BRFC012224Z    |
| R3                 | Carbon Fixed Chip    | 2.2 kohm | 1/10W         | $\pm 5\%$ | Taping |             | BRFC012224Z    |
| R4                 | Carbon Fixed Chip    | 2.2 kohm | 1/10W         | $\pm 5\%$ | Taping |             | BRFC012224Z    |
| R5                 | Carbon Fixed Chip    | 4.7 kohm | 1/10W         | $\pm 5\%$ | Taping |             | BRFC014724Z    |
| R6                 | Carbon Fixed Chip    | 2.2 kohm | 1/10W         | $\pm 5\%$ | Taping |             | BRFC012224Z    |
| R7                 | Carbon Fixed Chip    | 2.2 kohm | 1/10W         | $\pm 5\%$ | Taping |             | BRFC012224Z    |
| R8                 | Carbon Fixed Chip    | 100 kohm | 1/10W         | $\pm 5\%$ | Taping |             | BRFC011044Z    |
| R9                 | Carbon Fixed Chip    | 100 ohm  | 1/10W         | $\pm 5\%$ | Taping |             | BRFC011014Z    |
| R10                | Carbon Fixed Chip    | 68 kohm  | 1/16W         | $\pm 5\%$ | Taping |             | BRFC166834Z    |
| R11                | Carbon Fixed Chip    | 15 kohm  | 1/16W         | $\pm 5\%$ | Taping |             | BRFC161534Z    |
| R12                | Carbon Fixed Chip    | 470 ohm  | 1/16W         | $\pm 5\%$ | Taping |             | BRFC164714Z    |
| R13                | Carbon Fixed Chip    | 15 ohm   | 1/16W         | $\pm 5\%$ | Taping |             | BRFC161504Z    |
| R14                | Carbon Fixed Chip    | 100 ohm  | 1/10W         | $\pm 5\%$ | Taping |             | BRFC011014Z    |
| R15                | Carbon Fixed Chip    | 68 kohm  | 1/16W         | $\pm 5\%$ | Taping |             | BRFC166834Z    |
| R16                | Carbon Fixed Chip    | 15 kohm  | 1/16W         | $\pm 5\%$ | Taping |             | BRFC161534Z    |
| R17                | Carbon Fixed Chip    | 1.2 kohm | 1/16W         | $\pm 5\%$ | Taping |             | BRFC161224Z    |

| Ref. No. | Description          |          |       |      |        |  | RS Part No. | Mfr's Part No. |
|----------|----------------------|----------|-------|------|--------|--|-------------|----------------|
| R18      | Carbon Fixed Chip    | 100 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC161014Z    |
| R19      | Carbon Fixed Chip    | 100 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC161014Z    |
| R20      | Carbon Fixed Chip    | 100 kohm | 1/10W | ±5 % | Taping |  |             | BRFC011044Z    |
| R21      | Carbon Fixed Chip    | 5.6 kohm | 1/16W | ±5 % | Taping |  |             | BRFC165624Z    |
| R22      | Carbon Fixed Chip    | 100 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC161014Z    |
| R23      | Carbon Fixed Chip    | 33 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC013334Z    |
| R24      | Carbon Fixed Chip    | 330 kohm | 1/10W | ±5 % | Taping |  |             | BRFC013344Z    |
| R25      | Carbon Fixed Chip    | 180 kohm | 1/10W | ±5 % | Taping |  |             | BRFC011844Z    |
| R26      | Carbon Fixed Chip    | 39 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC013934Z    |
| R27      | Carbon Fixed Chip    | 330 kohm | 1/10W | ±5 % | Taping |  |             | BRFC013344Z    |
| R28      | Carbon Fixed Chip    | 10 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC011034Z    |
| R29      | Carbon Fixed Chip    | 220 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012244Z    |
| R30      | Carbon Fixed Chip    | 1 kohm   | 1/10W | ±5 % | Taping |  |             | BRFC011024Z    |
| R31      | Carbon Fixed Chip    | 33 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC013334Z    |
| R32      | Carbon Fixed Chip    | 56 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC015634Z    |
| R33      | Carbon Fixed Chip    | 680 kohm | 1/16W | ±5 % | Taping |  |             | BRFC166844Z    |
| R34      | Carbon Fixed Chip    | 47 ohm   | 1/2W  | ±5 % | Tape   |  |             | BRFC124704Z    |
| R35      | Carbon Fixed Chip    | 47 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC014734Z    |
| R36      | Carbon Fixed Chip    | 2.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012224Z    |
| R37      | Carbon Fixed Chip    | 2.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012224Z    |
| R38      | Carbon Fixed Chip    | 470 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC164714Z    |
| R39      | Carbon Fixed Chip    | 330 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC163314Z    |
| R40      | Carbon Fixed Chip    | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R41      | Carbon Fixed Chip    | 27 ohm   | 1/16W | ±5 % | Taping |  |             | BRFC162704Z    |
| R42      | Carbon Fixed Chip    | 1M ohm   | 1/16W | ±5 % | Taping |  |             | BRFC161054Z    |
| R43      | Carbon Fixed Chip    | 22 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC012234Z    |
| R44      | Carbon Fixed Chip    | 33 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC013334Z    |
| R45      | Carbon Fixed Chip    | 1 ohm    | 1/10W | ±5 % | Taping |  |             | BRFC011094Z    |
| R46      | Carbon Fixed Chip    | 1 kohm   | 1/8W  | ±5 % | Taping |  |             | BRFC181024Z    |
| R47      | Carbon Fixed Chip    | 68 ohm   | 1/2W  | ±5 % | Tape   |  |             | BRFC126804Z    |
| R48      | Carbon Fixed Chip    | 47 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC014734Z    |
| R49      | Carbon Fixed Chip    | 2.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012224Z    |
| R50      | Carbon Fixed Chip    | 2.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012224Z    |
| R51      | Carbon Fixed Chip    | 4.7 kohm | 1/16W | ±5 % | Taping |  |             | BRFC164724Z    |
| R52      | Carbon Fixed Chip    | 22 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC162234Z    |
| R53      | Carbon Fixed Chip    | 470 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC164714Z    |
| R54      | Carbon Fixed Chip    | 22 ohm   | 1/16W | ±5 % | Taping |  |             | BRFC162204Z    |
| R55      | Carbon Fixed Chip    | 330 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC163314Z    |
| R56      | Carbon Fixed Chip    | 220 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC162214Z    |
| R57      | Carbon Fixed Chip    | 4.7 kohm | 1/16W | ±5 % | Taping |  |             | BRFC164724Z    |
| R58      | Carbon Fixed Chip    | 680 ohm  | 1/10W | ±5 % | Taping |  |             | BRFC016814Z    |
| R59      | Carbon Fixed Chip    | 39 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC163934Z    |
| R60      | Carbon Fixed Chip    | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R61      | Carbon Fixed Chip    | 22 ohm   | 1/16W | ±5 % | Taping |  |             | BRFC162204Z    |
| R62      | Carbon Fixed Chip    | 820 ohm  | 1/10W | ±5 % | Taping |  |             | BRFC018214Z    |
| R63      | Carbon Fixed Chip    | 2.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012224Z    |
| R64      | Not Used             |          |       |      |        |  |             |                |
| R65      | Carbon Fixed Chip    | 68 ohm   | 1/10W | ±5 % | Taping |  |             | BRFC016804Z    |
| R66      | Carbon Fixed Chip    | 4.7 ohm  | 1/10W | ±5 % | Taping |  |             | BRFC014794Z    |
| R67      | Metal Oxide (Formed) | 39 ohm   | 2WS   | ±5 % | (P=15) |  |             | BRSM023904Z    |
| R68      | Carbon Fixed Chip    | 22 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC012234Z    |
| R69      | Carbon Fixed Chip    | 2.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012224Z    |
| R70      | Carbon Fixed Chip    | 2.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012224Z    |
| R71      | Carbon Fixed Chip    | 10 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC011034Z    |

| Ref. No. | Description       |          |       |      |        |  | RS Part No. | Mfr's Part No. |
|----------|-------------------|----------|-------|------|--------|--|-------------|----------------|
| R72      | Carbon Fixed Chip | 15 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161534Z    |
| R73      | Carbon Fixed Chip | 22 ohm   | 1/16W | ±5 % | Taping |  |             | BRFC162204Z    |
| R74      | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R75      | Carbon Fixed Chip | 68 ohm   | 1/16W | ±5 % | Taping |  |             | BRFC166804Z    |
| R76      | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R77      | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R78      | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R79      | Carbon Fixed Chip | 5.6 kohm | 1/16W | ±5 % | Taping |  |             | BRFC165624Z    |
| R80      | Carbon Fixed Chip | 47 ohm   | 1/10W | ±5 % | Taping |  |             | BRFC014704Z    |
| R81      | Carbon Fixed Chip | 330 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC163314Z    |
| R82      | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R83      | Carbon Fixed Chip | 68 ohm   | 1/16W | ±5 % | Taping |  |             | BRFC166804Z    |
| R84      | Carbon Fixed Chip | 10 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC011034Z    |
| R85      | Carbon Fixed Chip | 8.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC018224Z    |
| R86      | Carbon Fixed Chip | 4.7 kohm | 1/10W | ±5 % | Taping |  |             | BRFC014724Z    |
| R87      | Carbon Fixed Chip | 22 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC012234Z    |
| R88      | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R89      | Carbon Fixed Chip | 47 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC014734Z    |
| R90      | Carbon Fixed Chip | 2.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012224Z    |
| R91      | Carbon Fixed Chip | 2.2 kohm | 1/10W | ±5 % | Taping |  |             | BRFC012224Z    |
| R92      | Carbon Fixed Chip | 4.7 kohm | 1/16W | ±5 % | Taping |  |             | BRFC164724Z    |
| R93      | Carbon Fixed Chip | 4.7 kohm | 1/16W | ±5 % | Taping |  |             | BRFC164724Z    |
| R94      | Carbon Fixed Chip | 100 ohm  | 1/10W | ±5 % | Taping |  |             | BRFC011014Z    |
| R95      | Carbon Fixed Chip | 10 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC011034Z    |
| R96      | Carbon Fixed Chip | 270 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC162714Z    |
| R97      | Carbon Fixed Chip | 22 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC012234Z    |
| R98      | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R99      | Carbon Fixed Chip | 1.8 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161824Z    |
| R100     | Carbon Fixed Chip | 2.2 kohm | 1/16W | ±5 % | Taping |  |             | BRFC162224Z    |
| R101     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R102     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R103     | Carbon Fixed Chip | 560 kohm | 1/16W | ±5 % | Taping |  |             | BRFC165644Z    |
| R104     | Carbon Fixed Chip | 100 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC161014Z    |
| R105     | Carbon Fixed Chip | 10 ohm   | 1/16W | ±5 % | Taping |  |             | BRFC161004Z    |
| R106     | Carbon Fixed Chip | 4.7 kohm | 1/16W | ±5 % | Taping |  |             | BRFC164724Z    |
| R107     | Carbon Fixed Chip | 470 kohm | 1/16W | ±5 % | Taping |  |             | BRFC164744Z    |
| R108     | Carbon Fixed Chip | 220 kohm | 1/16W | ±5 % | Taping |  |             | BRFC162244Z    |
| R109     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R110     | Carbon Fixed Chip | 22 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC012234Z    |
| R111     | Carbon Fixed Chip | 22 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC012234Z    |
| R112     | Carbon Fixed Chip | 22 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC012234Z    |
| R113     | Carbon Fixed Chip | 22 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC012234Z    |
| R114     | Carbon Fixed Chip | 22 kohm  | 1/10W | ±5 % | Taping |  |             | BRFC012234Z    |
| R115     | Carbon Fixed Chip | 4.7 kohm | 1/16W | ±5 % | Taping |  |             | BRFC164724Z    |
| R116     | Carbon Fixed Chip | 470 ohm  | 1/16W | ±5 % | Taping |  |             | BRFC164714Z    |
| R117     | Carbon Fixed Chip | 5.6 kohm | 1/16W | ±5 % | Taping |  |             | BRFC165624Z    |
| R118     | Carbon Fixed Chip | 8.2 kohm | 1/16W | ±5 % | Taping |  |             | BRFC168224Z    |
| R119     | Carbon Fixed Chip | 3.9 kohm | 1/16W | ±5 % | Taping |  |             | BRFC163924Z    |
| R120     | Carbon Fixed Chip | 33 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC163334Z    |
| R121     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R122     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R123     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R124     | Carbon Fixed Chip | 390 kohm | 1/16W | ±5 % | Taping |  |             | BRFC163944Z    |
| R125     | Carbon Fixed Chip | 4.7 kohm | 1/16W | ±5 % | Taping |  |             | BRFC164724Z    |

| Ref. No. | Description       |          |       |      |        | RS Part No. | Mfr's Part No. |
|----------|-------------------|----------|-------|------|--------|-------------|----------------|
| R126     | Carbon Fixed Chip | 8.2 kohm | 1/16W | ±5 % | Taping |             | BRFC168224Z    |
| R127     | Carbon Fixed Chip | 3.3 kohm | 1/16W | ±5 % | Taping |             | BRFC163324Z    |
| R128     | Carbon Fixed Chip | 1M ohm   | 1/16W | ±5 % | Taping |             | BRFC161054Z    |
| R129     | Carbon Fixed Chip | 680 kohm | 1/16W | ±5 % | Taping |             | BRFC166844Z    |
| R130     | Carbon Fixed Chip | 220 kohm | 1/16W | ±5 % | Taping |             | BRFC162244Z    |
| R131     | Carbon Fixed Chip | 2.2M ohm | 1/16W | ±5 % | Taping |             | BRFC162254Z    |
| R132     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |             | BRFC161024Z    |
| R133     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |             | BRFC161044Z    |
| R134     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |             | BRFC161044Z    |
| R135     | Carbon Fixed Chip | 10 kohm  | 1/10W | ±5 % | Taping |             | BRFC011034Z    |
| R136     | Carbon Fixed Chip | 100 ohm  | 1/10W | ±5 % | Taping |             | BRFC011014Z    |
| R137     | Carbon Fixed Chip | 10 kohm  | 1/10W | ±5 % | Taping |             | BRFC011034Z    |
| R138     | Carbon Fixed Chip | 470 kohm | 1/10W | ±5 % | Taping |             | BRFC014744Z    |
| R139     | Carbon Fixed Chip | 1 kohm   | 1/10W | ±5 % | Taping |             | BRFC011024Z    |
| R140     | Not Used          |          |       |      |        |             |                |
| R141     | Carbon Fixed Chip | 470 kohm | 1/10W | ±5 % | Taping |             | BRFC014744Z    |
| R142     | Carbon Fixed Chip | 10 kohm  | 1/10W | ±5 % | Taping |             | BRFC011034Z    |
| R143     | Carbon Fixed Chip | 680 kohm | 1/10W | ±5 % | Taping |             | BRFC016844Z    |
| R144     | Carbon Fixed Chip | 680 kohm | 1/10W | ±5 % | Taping |             | BRFC016844Z    |
| R145     | Carbon Fixed Chip | 820 kohm | 1/10W | ±5 % | Taping |             | BRFC018244Z    |
| R146     | Not Used          |          |       |      |        |             |                |
| R147     | Carbon Fixed Chip | 820 kohm | 1/10W | ±5 % | Taping |             | BRFC018244Z    |
| R148,149 | Not Used          |          |       |      |        |             |                |
| R150     | Carbon Fixed Chip | 330 kohm | 1/10W | ±5 % | Taping |             | BRFC013344Z    |
| R151~159 | Not Used          |          |       |      |        |             |                |
| R160     | Carbon Fixed Chip | 1 kohm   | 1/10W | ±5 % | Taping |             | BRFC011024Z    |
| R161~179 | Not Used          |          |       |      |        |             |                |
| R180     | Carbon Fixed Chip | 390 kohm | 1/10W | ±5 % | Taping |             | BRFC013944Z    |
| R181     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |             | BRFC161034Z    |
| R182~203 | Not Used          |          |       |      |        |             |                |
| R204     | Carbon Fixed Chip | 39 kohm  | 1/16W | ±5 % | Taping |             | BRFC163934Z    |
| R205     | Carbon Fixed Chip | 39 kohm  | 1/16W | ±5 % | Taping |             | BRFC163934Z    |
| R206     | Carbon Fixed Chip | 330 kohm | 1/16W | ±5 % | Taping |             | BRFC163344Z    |
| R207     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |             | BRFC161044Z    |
| R208     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |             | BRFC161034Z    |
| R209     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |             | BRFC161034Z    |
| R210     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |             | BRFC161034Z    |
| R211     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |             | BRFC161034Z    |
| R212     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |             | BRFC161024Z    |
| R213     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |             | BRFC161024Z    |
| R214     | Carbon Fixed Chip | 47 kohm  | 1/16W | ±5 % | Taping |             | BRFC164734Z    |
| R215     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |             | BRFC161034Z    |
| R216     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |             | BRFC161034Z    |
| R217     | Carbon Fixed Chip | 39 kohm  | 1/16W | ±5 % | Taping |             | BRFC163934Z    |
| R218     | Carbon Fixed Chip | 180 kohm | 1/16W | ±5 % | Taping |             | BRFC161844Z    |
| R219     | Carbon Fixed Chip | 180 kohm | 1/16W | ±5 % | Taping |             | BRFC161844Z    |
| R220     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |             | BRFC161034Z    |
| R221     | Carbon Fixed Chip | 4.7 kohm | 1/16W | ±5 % | Taping |             | BRFC164724Z    |
| R222     | Carbon Fixed Chip | 4.7 kohm | 1/16W | ±5 % | Taping |             | BRFC164724Z    |
| R223     | Carbon Fixed Chip | 4.7 kohm | 1/16W | ±5 % | Taping |             | BRFC164724Z    |
| R224     | Carbon Fixed Chip | 220 ohm  | 1/16W | ±5 % | Taping |             | BRFC162214Z    |
| R225     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |             | BRFC161024Z    |
| R226     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |             | BRFC161024Z    |
| R227     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |             | BRFC161034Z    |

| Ref. No. | Description       |          |       |      |        |  | RS Part No. | Mfr's Part No. |
|----------|-------------------|----------|-------|------|--------|--|-------------|----------------|
| R228,229 | Not Used          |          |       |      |        |  |             |                |
| R230     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R231     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R232     | Carbon Fixed Chip | 2.2 kohm | 1/16W | ±5 % | Taping |  |             | BRFC162224Z    |
| R233     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R234     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R235     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R236     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R237     | Carbon Fixed Chip | 47 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC164734Z    |
| R238     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±1 % | Taping |  |             | BRFC161034Z    |
| R239~243 | Not Used          |          |       |      |        |  |             |                |
| R244     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R245     | Carbon Fixed Chip | 47 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC164734Z    |
| R246     | Carbon Fixed Chip | 1 Mohm   | 1/16W | ±5 % | Taping |  |             | BRFC161054Z    |
| R247,248 | Not Used          |          |       |      |        |  |             |                |
| R249     | Carbon Fixed Chip | 10 kohm  | 1/16W | ±5 % | Taping |  |             | BRFC161034Z    |
| R250     | Carbon Fixed Chip | 680 kohm | 1/16W | ±5 % | Taping |  |             | BRFC166844Z    |
| R251     | Carbon Fixed Chip | 0 ohm    | 1/16W | ±5 % | Taping |  |             | BRFC160004Z    |
| R252     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R253     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R254     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R255     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R256     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R257     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R258     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R259     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R260     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R261     | Carbon Fixed Chip | 100 kohm | 1/16W | ±5 % | Taping |  |             | BRFC161044Z    |
| R262     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R263     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R264     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R265     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R266     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R267     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R268     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R269     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R270     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| R271     | Carbon Fixed Chip | 1 kohm   | 1/16W | ±5 % | Taping |  |             | BRFC161024Z    |
| RT1      | Semi-Fixed        | RT-552   |       |      | 100KB  |  |             | BRTY0552104    |
| VR1      | Variable          | RV-875   |       |      | 100KA  |  |             | BRVY0875001    |
| VR2      | Variable          | RV-876   |       |      | 100KC  |  |             | BRVY0876001    |

| Ref. No.             | Description                      | RS Part No. | Mfr's Part No. |
|----------------------|----------------------------------|-------------|----------------|
| <b>Miscellaneous</b> |                                  |             |                |
| DP1                  | Liquid Crystal Display DL-170    |             | BDLY0170001    |
| PL1                  | Pilot Lamp PL-105                |             | BPLY0105001    |
| X1                   | Crystal QX-631 10.4MHZ           |             | BQXY0631001    |
| X201                 | Crystal QX-650 9.9072MHZ         |             | BQXY0650001    |
|                      | Holder Display ABS(HI-HEAT)      |             | GHDZ352461Z    |
|                      | Shield Case ABS                  |             | GSDC354374Z    |
|                      | Shield Case ABS                  |             | GSDC356839Z    |
|                      | Holder Antenna SECC              |             | HHDZ452468Z    |
|                      | Holder Connector SPCC            |             | HHDZ452469Z    |
|                      | LCD Frame C5191(PBP)             |             | HSDC452467Z    |
|                      | Insulation Plate PC              |             | RZEB456850Z    |
|                      | Screw Taptight Bind Hd + M3X6 NI |             | SSCW343006N    |
|                      | Screw P Tight Bind Hd + D2X8 NI  |             | SSCW802008N    |

#### OTHER ELECTRICAL PARTS

| Ref. No. | Description                       | RS Part No. | Mfr's Part No. |
|----------|-----------------------------------|-------------|----------------|
| AD951    | AC Adapter for USA AD-221         |             | BADY0221001    |
| AD951    | AC Adapter for Canada AD-247      |             | BADY0247001    |
| AT951    | Antenna AT-192 TY-9009-1401       |             | BATY0192001    |
| B501     | PCB Key PH-215AA                  |             | BPHY0215AAZ    |
| J501     | Jack JK-661 BNC-RF3               |             | BJKY0661001    |
| SP501    | Speaker SP-242 57R89T604          |             | BSPY0242001    |
| WA501    | Wires Assembled WZ-1202 65 W/P 2P |             | BWZY1202001    |
| WA502    | Wires Assembled W-072073          |             | CZDZ072073Z    |
| WA503    | Wires Assembled W-072133          |             | CZDZ072133Z    |

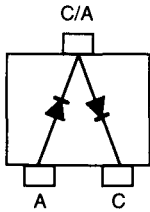
# SEMICONDUCTOR LEAD IDENTIFICATION

## DIODES

1SS355  
1SS390  
1SV269  
UDZ5.6B  
HVVU308-1



1SS226

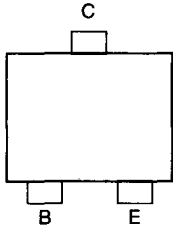


1N4003

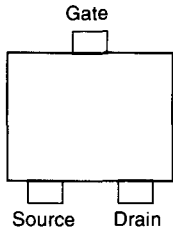


## TRANSISTORS

2SA1162-Y  
2SC2712-Y  
2SC3121  
2SC3356-R24  
MMBT6428LT1  
2SC5065

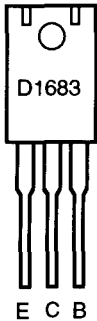


2SK209  
2SK431



B: Base  
C: Collector  
E: Emitter

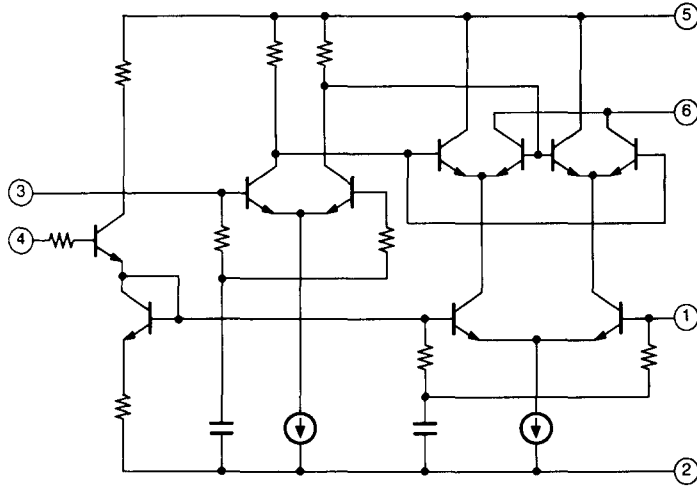
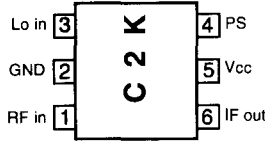
2SD1683



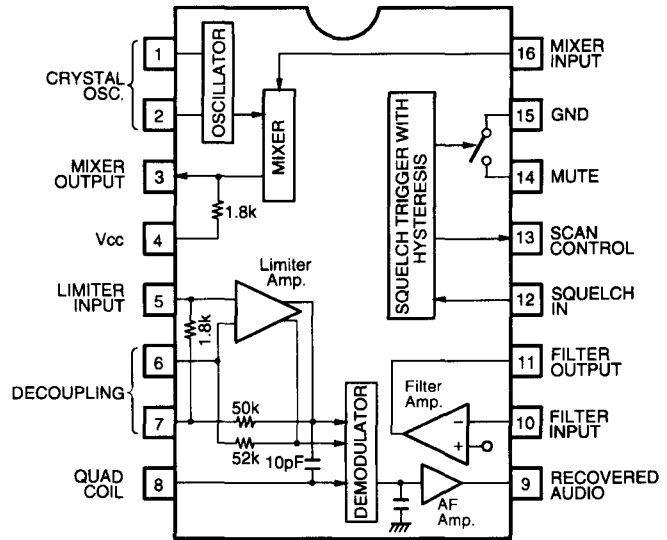
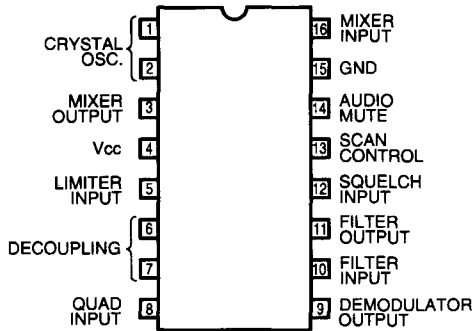
B: Base  
C: Collector  
E: Emitter

## IC INTERNAL DIAGRAMS

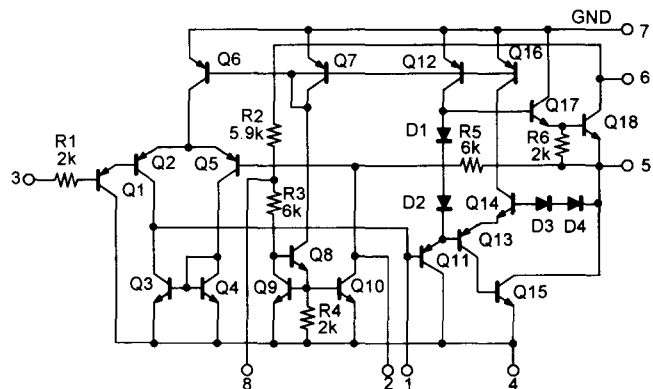
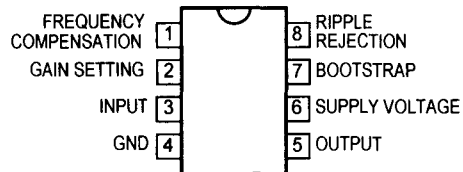
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μPC8112T



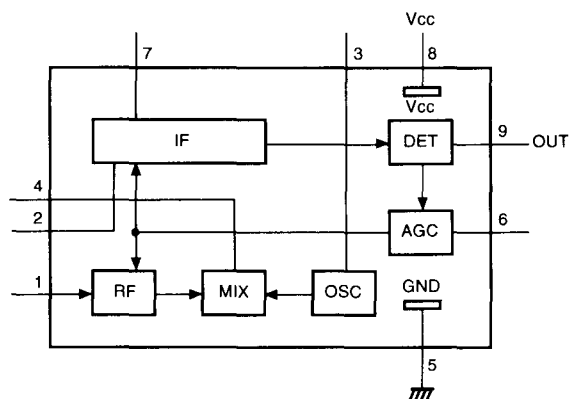
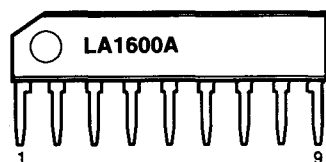
IC2  
MC3361CDR2



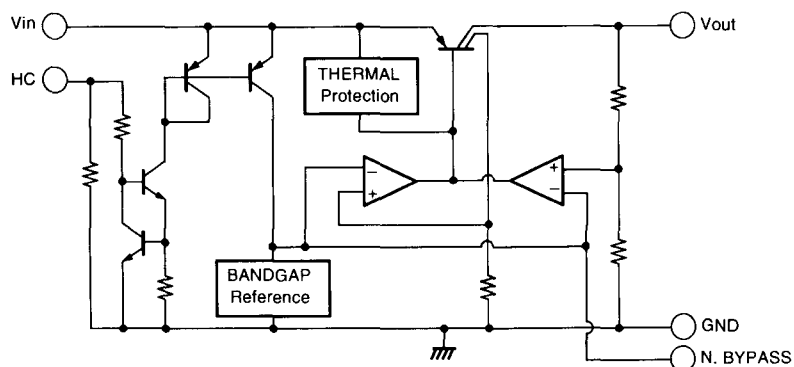
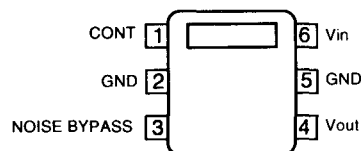
IC3  
TBA820M



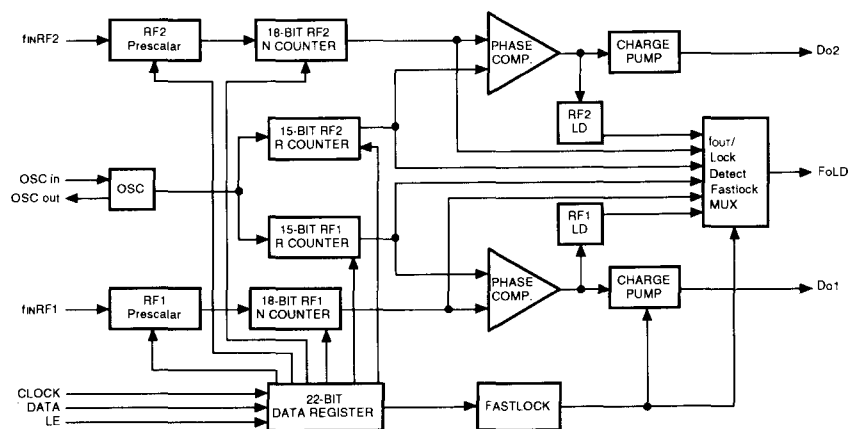
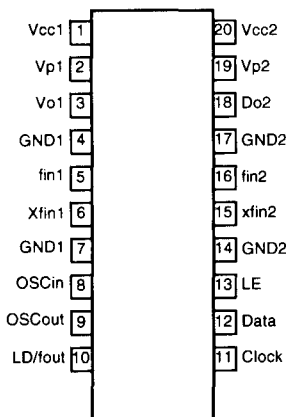
IC4  
LA1600A



IC5  
TK11238AM

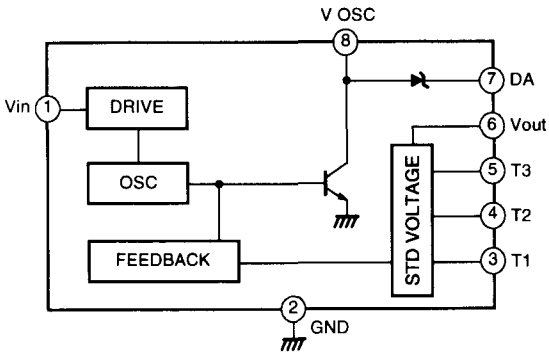
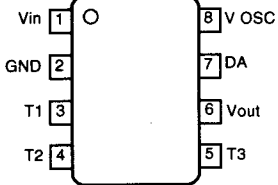


IC6  
MB15U36PFV



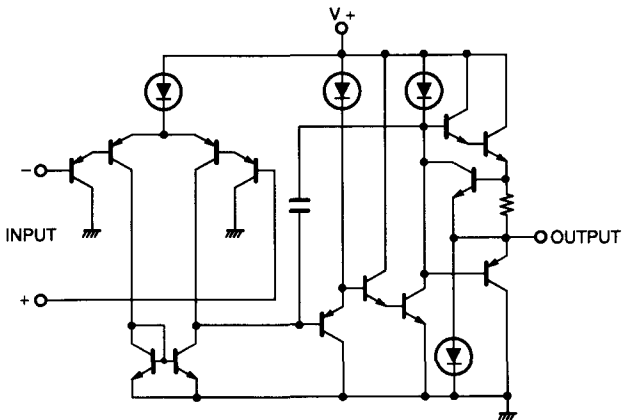
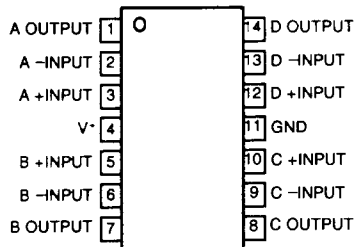
## IC7

TK11806M



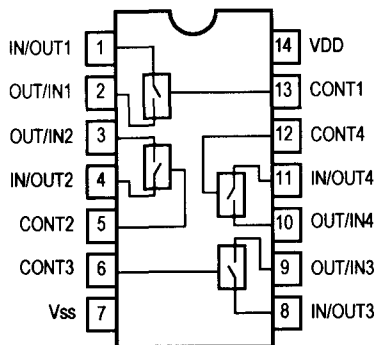
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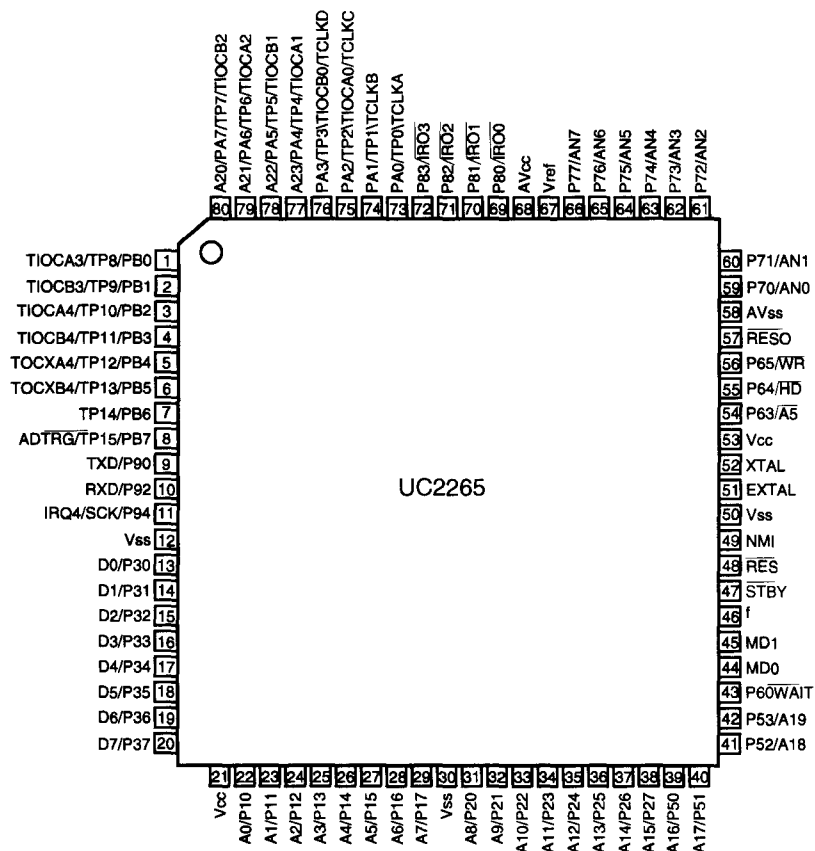


## IC11

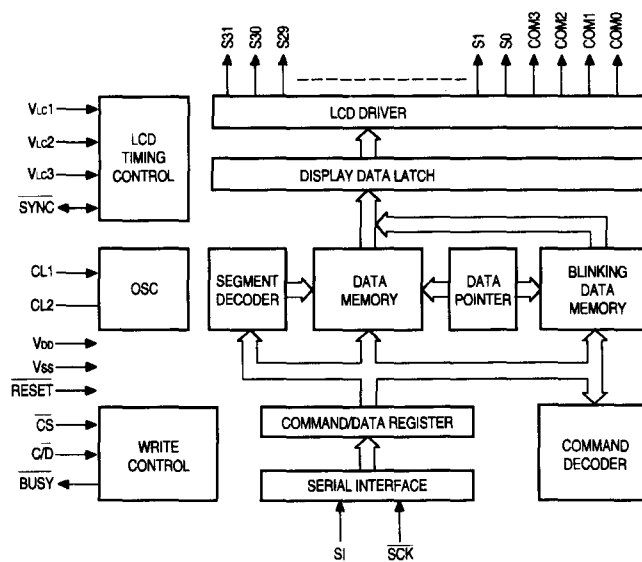
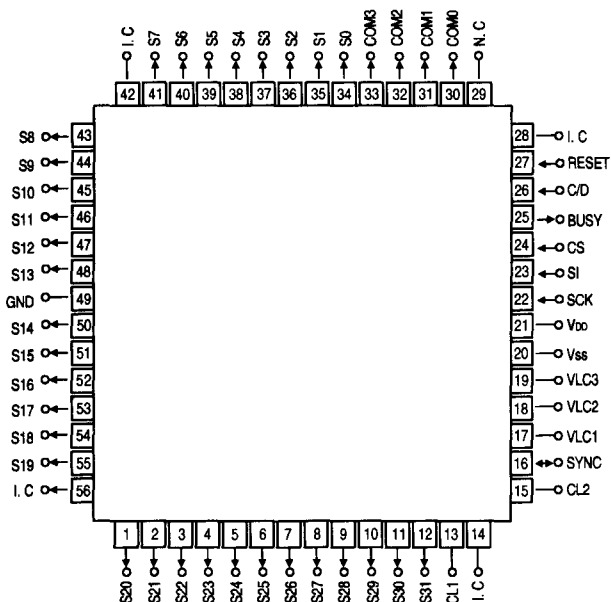
TC4066BF



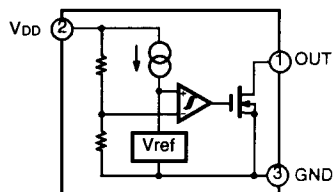
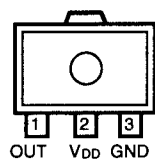
IC201  
HD6433033



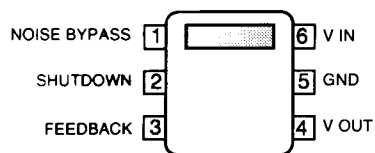
IC202  
μPD7225GB



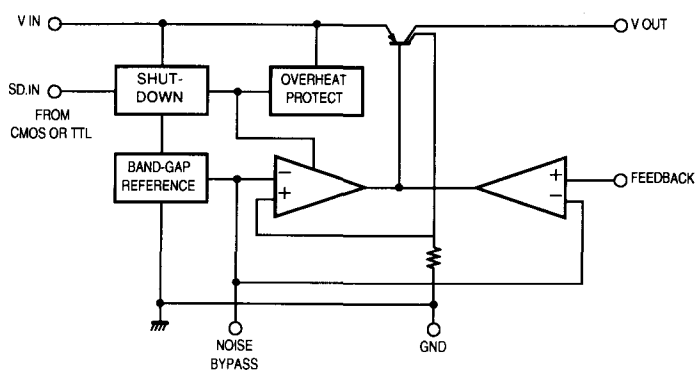
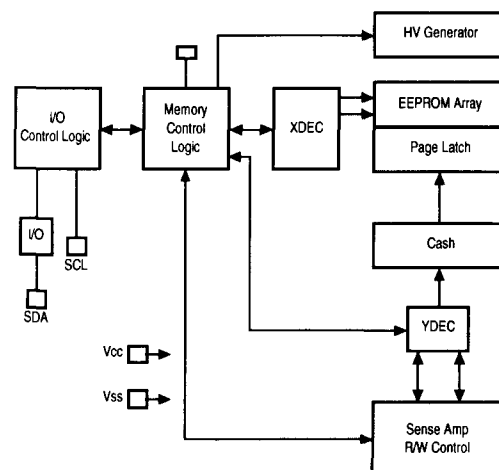
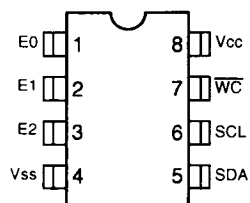
IC204  
RH5VL27CA



IC206  
TK11231BMCL



IC205  
M24C32



# VOLTAGE CHART

## TRANSISTORS

Unit [V]

| Ref. No. | Pin | Voltage | Remarks                                        |
|----------|-----|---------|------------------------------------------------|
| Q1       | B   | 1.2/1.2 | 162.4 MHz<br>100 $\mu$ V<br>RF=ON/OFF SQ=TIGHT |
|          | E   | 1.8/1.8 |                                                |
|          | C   | 1.8/0   |                                                |
| Q2       | B   | 0.8     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 2.5     |                                                |
| Q3       | B   | 0.7     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 1.7     |                                                |
| Q4       | B   | 1.0     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.4     |                                                |
|          | C   | 3.7     |                                                |
| Q5       | B   | 5.6     | EXT. POWER                                     |
|          | E   | 4.9     |                                                |
|          | C   | 5.0     |                                                |
| Q6       | B   | 2.7     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 2.0     |                                                |
|          | C   | 2.7     |                                                |
| Q7       | B   | 2.2     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 1.5     |                                                |
|          | C   | 2.7     |                                                |
| Q9       | B   | 0.7     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 0.0     |                                                |
| Q10      | B   | 2.2     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 2.2     |                                                |
|          | C   | 2.7     |                                                |
| Q11      | B   | 0.9     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0       |                                                |
|          | C   | 3.0     |                                                |
| Q12      | B   | 0.7     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 3.1     |                                                |
| Q13      | B   | 0.9     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 2.4     |                                                |
| Q14      | B   | 0.6     | 127.175 MHz 100 $\mu$ V                        |
|          | E   | 0.0     |                                                |
|          | C   | 2.5     |                                                |
| Q15      | B   | 3.0     | 127.175 MHz 100 $\mu$ V                        |
|          | E   | 3.8     |                                                |
|          | C   | 3.8     |                                                |
| Q16      | B   | 1.6     | 453.25 MHz 100 $\mu$ V                         |
|          | E   | 0.0     |                                                |
|          | C   | 0.0     |                                                |
| Q17      | B   | 0.7     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 3.0     |                                                |

Unit [V]

| Ref. No. | Pin | Voltage | Remarks                                        |
|----------|-----|---------|------------------------------------------------|
| Q18      | B   | 0.7     | 857.2 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 0.0     |                                                |
| Q19      | B   | 0.7     | 453.25 MHz 100 $\mu$ V                         |
|          | E   | 0.0     |                                                |
|          | C   | 0.0     |                                                |
| Q20      | B   | 0.7     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 0.0     |                                                |
| Q21      | B   | 0.7     | 127.175 MHz 100 $\mu$ V                        |
|          | E   | 0.0     |                                                |
|          | C   | 0.0     |                                                |
| Q22      | B   | 0.7     | 40.84 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 0.0     |                                                |
| Q23      | B   | 0.6     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 10.3    |                                                |
| Q24      | G   | 0.6     | 162.4 MHz 100 $\mu$ V                          |
|          | S   | 0.9     |                                                |
|          | D   | 3.7     |                                                |
| Q25      | B   | 0/0.6   | 162.4 MHz<br>100 $\mu$ V<br>RF=ON/OFF SQ=TIGHT |
|          | E   | 0/0     |                                                |
|          | C   | 0.2/0   |                                                |
| Q202     | B   | 0.0     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 3.0     |                                                |

## IC'S

Unit [V]

| Ref. No. | Pin | Voltage | Remarks                            |
|----------|-----|---------|------------------------------------|
| IC1      | 1   | 1.2     | 162.4 MHz 100 $\mu$ V              |
|          | 2   | 0.0     |                                    |
|          | 3   | 1.4     |                                    |
|          | 4   | 3.0     |                                    |
|          | 5   | 3.0     |                                    |
|          | 6   | 3.0     |                                    |
| IC2      | 1   | 3.7     | 162.4 MHz 100 $\mu$ V              |
|          | 2   | NC      |                                    |
|          | 3   | 3.2     |                                    |
|          | 4   | 3.8     |                                    |
|          | 5   | 3.3     |                                    |
|          | 6   | 3.3     |                                    |
|          | 7   | 3.3     |                                    |
|          | 8   | 3.8     |                                    |
|          | 9   | 1.4     |                                    |
|          | 10  | 0.6     |                                    |
|          | 11  | 1.8     |                                    |
|          | 12  | 4.1     |                                    |
|          | 13  | NC      |                                    |
|          | 14  | 1.4     |                                    |
|          | 15  | 0.0     |                                    |
|          | 16  | 3.8     |                                    |
| IC3      | 1   | 0.7     | 162.4 MHz 100 $\mu$ V<br>VOL. MIN. |
|          | 2   | 0.5     |                                    |
|          | 3   | 0       |                                    |
|          | 4   | 0       |                                    |
|          | 5   | 4.6     |                                    |
|          | 6   | 10.4    |                                    |
|          | 7   | 10.4    |                                    |
|          | 8   | 6.3     |                                    |
| IC4      | 1   | NC      | 127.175 MHz 100 $\mu$ V            |
|          | 2   | 1.1     |                                    |
|          | 3   | NC      |                                    |
|          | 4   | NC      |                                    |
|          | 5   | 0.0     |                                    |
|          | 6   | 1.4     |                                    |
|          | 7   | 1.1     |                                    |
|          | 8   | 3.7     |                                    |
|          | 9   | 2.4     |                                    |
| IC5      | 1   | 10.2    | 162.4 MHz 100 $\mu$ V              |
|          | 2   | 0       |                                    |
|          | 3   | 1.2     |                                    |
|          | 4   | 3.8     |                                    |
|          | 5   | 0       |                                    |
|          | 6   | 11.1    |                                    |
| IC6      | 1   | 3.5     |                                    |
|          | 2   | 3.5     |                                    |
|          | 3   | 0.6     |                                    |
|          | 4   | 0       |                                    |
|          | 5   | 2.5     |                                    |
|          | 6   | 2.5     |                                    |

Unit [V]

| Ref. No. | Pin | Voltage | Remarks                                     |
|----------|-----|---------|---------------------------------------------|
| IC6      | 7   | 0       |                                             |
|          | 8   | 1.5     |                                             |
|          | 9   | 1.4     |                                             |
|          | 10  | 3.5     |                                             |
|          | 11  | 0       |                                             |
|          | 12  | 0       |                                             |
|          | 13  | 0       |                                             |
|          | 14  | 0       |                                             |
|          | 15  | 2.5     |                                             |
|          | 16  | 2.5     |                                             |
|          | 17  | 0       |                                             |
|          | 18  | 2.0     |                                             |
| IC7      | 19  | 3.5     | 162.4 MHz 100 $\mu$ V                       |
|          | 20  | 3.5     |                                             |
|          | 1   | 11.1    |                                             |
|          | 2   | 0       |                                             |
|          | 3   | 9.3     |                                             |
|          | 4   | 9.3     |                                             |
|          | 5   | 16.9    |                                             |
|          | 6   | 16.9    |                                             |
| IC8      | 7   | 17.9    | 162.4 MHz 100 $\mu$ V<br>RF=ON/OFF SQ=TIGHT |
|          | 8   | 11.1    |                                             |
|          | 1   | 1.3/1.3 |                                             |
|          | 2   | 1.3/1.3 |                                             |
|          | 3   | 1.3/1.3 |                                             |
|          | 4   | 3.8/3.8 |                                             |
|          | 5   | 1.6/1.1 |                                             |
|          | 6   | 0.8/1.4 |                                             |
|          | 7   | 3.1/0   |                                             |
|          | 8   | 1.0/1.0 |                                             |
|          | 9   | 1.1/1.1 |                                             |
|          | 10  | 1.1/1.1 |                                             |
|          | 11  | 0/0     |                                             |
|          | 12  | 0.8/1.9 |                                             |
|          | 13  | 0.7/1.8 |                                             |
| IC9      | 14  | 3.1/3.1 | 857.2 MHz 100 $\mu$ V                       |
|          | 1   | 1.5     |                                             |
|          | 2   | 1.5     |                                             |
|          | 3   | 1.3     |                                             |
|          | 4   | 3.8     |                                             |
|          | 5   | 1.3     |                                             |
|          | 6   | 1.3     |                                             |
|          | 7   | 1.6     |                                             |
|          | 8   | 1.4     |                                             |
|          | 9   | 1.4     |                                             |
|          | 10  | 1.3     |                                             |
|          | 11  | 0       |                                             |
|          | 12  | 1.3     |                                             |
|          | 13  | 1.4     |                                             |
|          | 14  | 1.4     |                                             |
| IC11     | 1   | 1.5     |                                             |

## IC'S

Unit [V]

| Ref. No. | Pin | Voltage | Remarks |
|----------|-----|---------|---------|
| IC11     | 2   | 1.3     |         |
|          | 3   | 1.3     |         |
|          | 4   | 1.3     |         |
|          | 5   | 3.1     |         |
|          | 6   | 0       |         |
|          | 7   | 0       |         |
|          | 8   | 0       |         |
|          | 9   | 0       |         |
|          | 10  | 0       |         |
|          | 11  | 0.1     |         |
|          | 12  | 3.1     |         |
|          | 13  | 0.1     |         |
|          | 14  | 3.8     |         |
| IC201    | 1   | 0       |         |
|          | 2   | 0       |         |
|          | 3   | 0       |         |
|          | 4   | 0       |         |
|          | 5   | 3.1     |         |
|          | 6   | 3.1     |         |
|          | 7   | 3.1     |         |
|          | 8   | 3.1     |         |
|          | 9   | 0       |         |
|          | 10  | 0       |         |
|          | 11  | 0       |         |
|          | 12  | 0       |         |
|          | 13  | 0       |         |
|          | 14  | 0       |         |
|          | 15  | 3.1     |         |
|          | 16  | 0       |         |
|          | 17  | 0       |         |
|          | 18  | 0       |         |
|          | 19  | 0       |         |
|          | 20  | 0       |         |
|          | 21  | 3.1     |         |
|          | 22  | 3.1     |         |
|          | 23  | 0       |         |
|          | 24  | 3.1     |         |
|          | 25  | 3.1     |         |
|          | 26  | 0       |         |
|          | 27  | 0       |         |
|          | 28  | 0       |         |
|          | 29  | 0       |         |
|          | 30  | 0       |         |
|          | 31  | 0       |         |
|          | 32  | 0       |         |
|          | 33  | 0       |         |
|          | 34  | 0       |         |
|          | 35  | 0       |         |
|          | 36  | 0       |         |
|          | 37  | 0       |         |
|          | 38  | 0       |         |

Unit [V]

| Ref. No. | Pin | Voltage | Remarks     |
|----------|-----|---------|-------------|
| IC201    | 39  | 3.1     |             |
|          | 40  | 3.1     |             |
|          | 41  | 3.1     |             |
|          | 42  | 3.1     |             |
|          | 43  | NC      |             |
|          | 44  | 3.1     |             |
|          | 45  | 3.1     |             |
|          | 46  | NC      |             |
|          | 47  | 3.1     |             |
|          | 48  | 3.1     |             |
|          | 49  | 3.1     |             |
|          | 50  | 0       |             |
|          | 51  | 1.5     |             |
|          | 52  | 1.4     |             |
|          | 53  | 3.1     |             |
|          | 54  | 0       |             |
|          | 55  | 0       |             |
|          | 56  | 0       |             |
|          | 57  | NC      |             |
|          | 58  | 0       |             |
|          | 59  | 1.0     |             |
|          | 60  | 1       |             |
|          | 61  | 0       |             |
|          | 62  | 0       |             |
|          | 63  | 3.2     |             |
|          | 64  | 0       |             |
|          | 65  | 0       |             |
|          | 66  | 3.1     |             |
|          | 67  | 3.1     |             |
|          | 68  | 3.1     |             |
|          | 69  | 0       |             |
|          | 70  | 0       |             |
|          | 71  | 3.3     |             |
|          | 72  | 3.2     |             |
|          | 73  | 0       |             |
|          | 74  | NC      |             |
|          | 75  | 1.5     |             |
|          | 76  | 3.1     |             |
|          | 77  | 0       |             |
|          | 78  | 0       |             |
|          | 79  | 0       |             |
|          | 80  | 3.1     |             |
| IC202    | 1   | —       | Square wave |
|          | 2   | —       | Square wave |
|          | 3   | —       | Square wave |
|          | 4   | —       | Square wave |
|          | 5   | —       | Square wave |
|          | 6   | —       | Square wave |
|          | 7   | —       | Square wave |
|          | 8   | —       | Square wave |
|          | 9   | —       | Square wave |

Unit [V]

| Ref. No. | Pin | Voltage | Remarks               |
|----------|-----|---------|-----------------------|
| IC202    | 10  | —       | Square wave           |
|          | 11  | —       | Square wave           |
|          | 12  | —       | Square wave           |
|          | 13  | —       | Clock                 |
|          | 14  | 3.1     |                       |
|          | 15  | —       | Clock                 |
|          | 16  | NC      |                       |
|          | 17  | 2.1     |                       |
|          | 18  | 1.2     |                       |
|          | 19  | 0.3     |                       |
|          | 20  | 0       |                       |
|          | 21  | 3.1     |                       |
|          | 22  | 0       |                       |
|          | 23  | 0       |                       |
|          | 24  | 3.1     |                       |
|          | 25  | 3.1     |                       |
|          | 26  | 0       |                       |
|          | 27  | 3.1     |                       |
|          | 28  | 3.1     |                       |
|          | 29  | NC      |                       |
|          | 30  | —       | Square wave           |
|          | 31  | —       | Square wave           |
|          | 32  | —       | Square wave           |
|          | 33  | —       | Square wave           |
|          | 34  | —       | Square wave           |
|          | 35  | —       | Square wave           |
|          | 36  | —       | Square wave           |
|          | 37  | —       | Square wave           |
|          | 38  | —       | Square wave           |
|          | 39  | —       | Square wave           |
|          | 40  | —       | Square wave           |
|          | 41  | —       | Square wave           |
|          | 42  | 3.1     |                       |
|          | 43  | —       | Square wave           |
|          | 44  | —       | Square wave           |
|          | 45  | —       | Square wave           |
|          | 46  | —       | Square wave           |
|          | 47  | —       | Square wave           |
|          | 48  | —       | Square wave           |
|          | 49  | 3.1     |                       |
|          | 50  | —       | Square wave           |
|          | 51  | —       | Square wave           |
|          | 52  | —       | Square wave           |
|          | 53  | —       | Square wave           |
|          | 54  | —       | Square wave           |
|          | 55  | —       | Square wave           |
|          | 56  | 3.1     |                       |
| IC204    | 1   | 3.1     |                       |
|          | 2   | 3.1     | 162.4 MHz 100 $\mu$ V |
|          | 3   | 0       |                       |
| IC205    | 1   | 3.1     |                       |

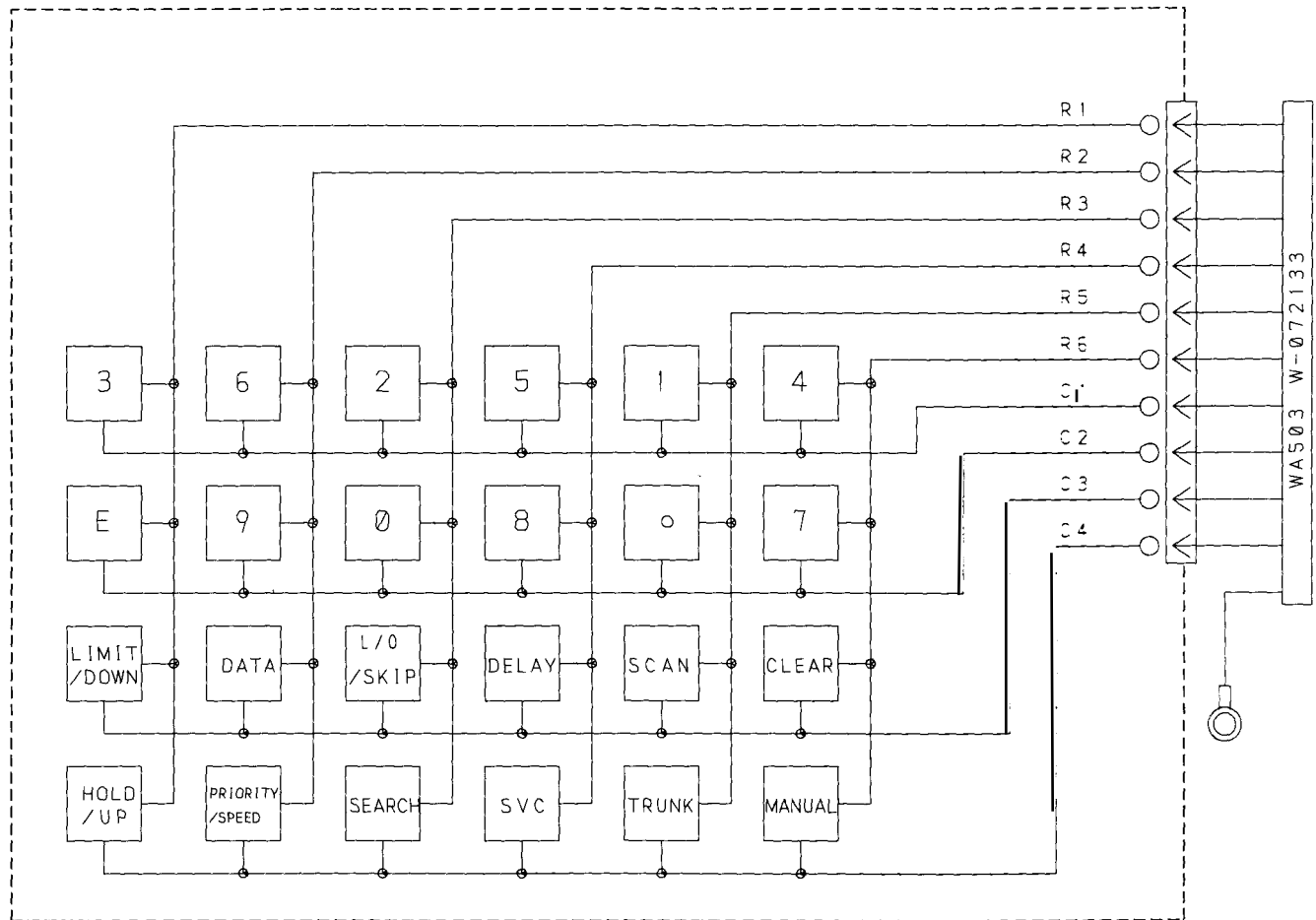
Unit [V]

| Ref. No. | Pin | Voltage | Remarks               |
|----------|-----|---------|-----------------------|
| IC205    | 2   | 0       |                       |
|          | 3   | 0       |                       |
|          | 4   | 0       | 162.4 MHz 100 $\mu$ V |
|          | 5   | 3.1     |                       |
|          | 6   | 3.1     |                       |
|          | 7   | 3.1     |                       |
|          | 8   | 3.1     |                       |
| IC206    | 1   | 10.0    |                       |
|          | 2   | 0       |                       |
|          | 3   | 1.2     | 162.4 MHz 100 $\mu$ V |
|          | 4   | 3.1     |                       |
|          | 5   | 0       |                       |
|          | 6   | 11.1    |                       |

# SCHEMATIC DIAGRAMS (Cat. No. 20-430A)

## KEY PCB

B501 PH-0215



## NOTE

## NOTE

**RadioShack**  
**A Division of Tandy Corporation**  
**Fort Worth, Texas 76102**

**IMPORTED FOR/IMPORTE POUR**  
**InterTAN CANADA LTD. BARRIE, CANADA, L4M 4W5**  
**InterTAN AUSTRALIA LTD. A.C.N. 002 511 944**  
**InterTAN U.K. LTD., WEST MIDLANDS, WS2 7PS**  
**REGISTERED TRADEMARK LICENSED BY RADIOSHACK**  
**DIVISION OF TANDY CORPORATION (USA)**