



**RadioShack®**

# ServiceManual

20-524

**PRO-94**

**1000-CHANNEL HANDHELD TRUNKING SCANNER**

**Catalog Number: 20-524**

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## SPECIFICATIONS

### GENERAL

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Band coverage:                   | 14 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 (Military land mobile)<br>144 to 148 MHz (2 meter amateur band)<br>148 to 174 MHz (VHF high band)<br>216 to 225 MHz (1 meter amateur)<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)<br>1240 to 1300 MHz (25 cm amateur band) |
| Number of programmable channels: | 1000 channels (50 CH $\times$ 20 banks)<br>20 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>EXT. Power jack: 3.4 mm dia. (Center negative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Internal Speaker:                | 8-ohm, 0.5 W (36 mm dia.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Power requirements:              | 4 AA size rechargeable Ni-Cd battery, 4 AA size regular alkaline battery or<br>9 V DC provided by AC adapter from EXT. Power jack                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Operating temperature:           | -20 °C ~ +60 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Storage temperature:             | -30 °C ~ +80 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Dimensions (HWD):                | 152 $\times$ 66 $\times$ 41 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Weight:                          | 250 g (without battery and antenna)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Accessories:                     | Flexible antenna, Belt clip                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Heterodyne system:               | 1. 1st heterodyne<br>29 to 225 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 1300 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: 6 V DC at battery terminal  
Antenna impedance: 50-ohm  
Test temperature:  $+25^{\circ}\text{C} \pm 5^{\circ}\text{C}$   
Modulation frequency: 1 kHz  
Deviation: NFM  $\pm 3$  kHz dev./AM 60% mod.  
Mean signal input level: 100  $\mu\text{V}$   
Audio output load: 8-ohm resistive load  
Standard ref. audio output: 50 mW (0.632 V)



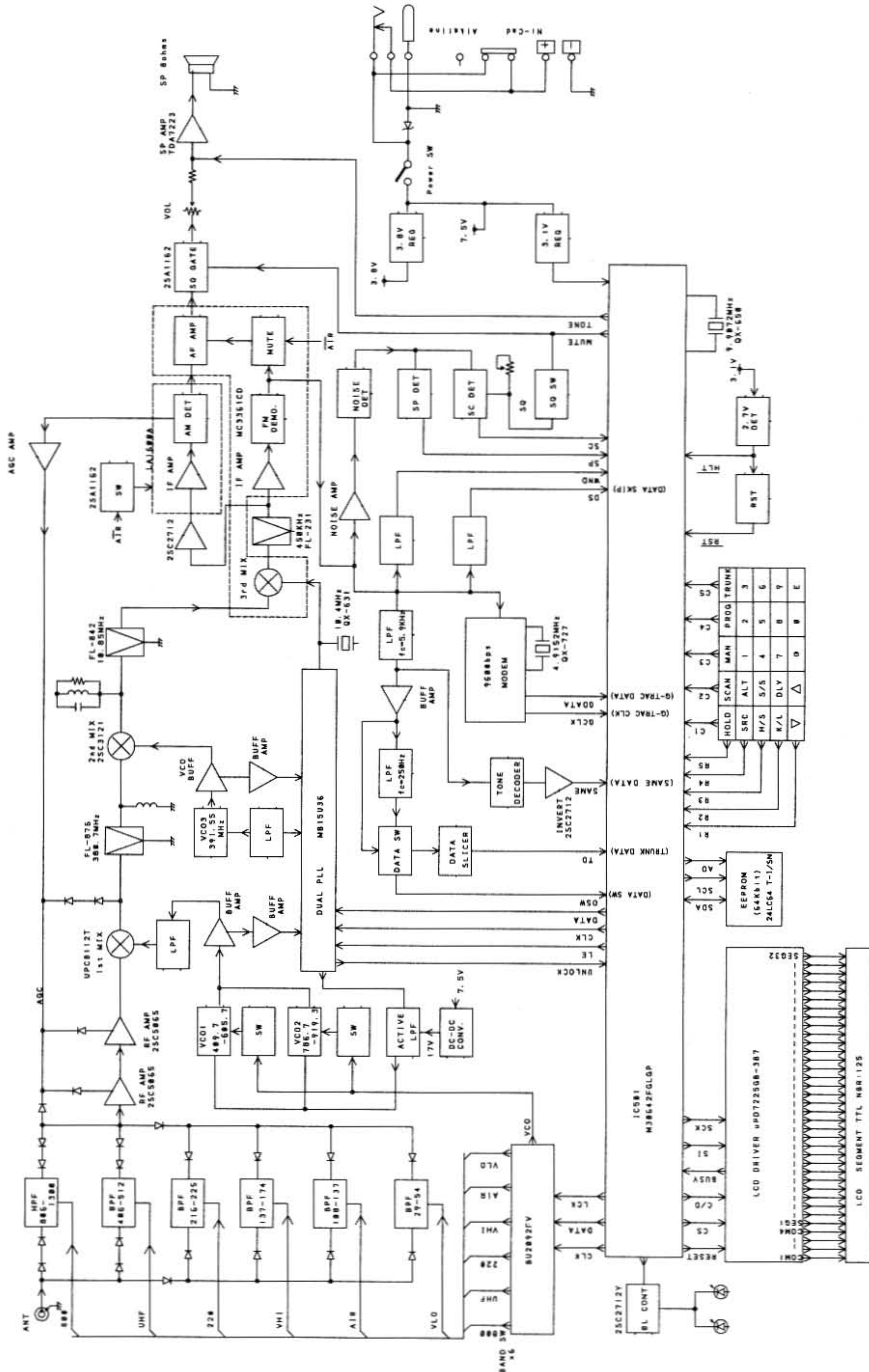
| Item                           |                  | Unit          | Nominal   | Limit       |
|--------------------------------|------------------|---------------|-----------|-------------|
| Sensitivity (S+N)/N=20 dB      |                  |               |           |             |
| VHF low band                   | 40.840 MHz       | $\mu\text{V}$ | 0.5       | 2.0         |
| VHF high band                  | 162.400 MHz      | $\mu\text{V}$ | 0.5       | 3.0         |
| 220 MHz band                   | 216.005 MHz      | $\mu\text{V}$ | 0.6       | 3.0         |
| UHF band                       | 453.250 MHz      | $\mu\text{V}$ | 0.4       | 3.0         |
| Aircraft band                  | 127.175 MHz      | $\mu\text{V}$ | 1.6       | 8.0         |
| Public service band            | 857.200 MHz      | $\mu\text{V}$ | 0.6       | 4.0         |
| 1200 MHz band                  | 1299.9125 MHz    | $\mu\text{V}$ | 4.0       | 20.0        |
| Maximum sensitivity            | 127.175 MHz      | $\mu\text{V}$ | 0.6       | 3.0         |
| Threshold squelch (MANUAL)     |                  |               |           |             |
| VHF low band                   | at 40.840 MHz    | $\mu\text{V}$ | 0.3       | 1.3         |
| VHF high band                  | at 162.400 MHz   | $\mu\text{V}$ | 0.3       | 1.6         |
| 220 MHz band                   | at 216.005 MHz   | $\mu\text{V}$ | 0.6       | 3.0         |
| UHF band                       | at 453.250 MHz   | $\mu\text{V}$ | 0.3       | 2.5         |
| Aircraft band                  | at 127.175 MHz   | $\mu\text{V}$ | 0.3       | 3.0         |
| Public service band            | at 857.200 MHz   | $\mu\text{V}$ | 0.4       | 3.0         |
| 1200 MHz band                  | at 1299.9125 MHz | $\mu\text{V}$ | 2.5       | 10.0        |
| 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          |
| 220 MHz band                   | at 216.005 MHz   | dB            | 25        | 15          |
| UHF band                       | at 453.250 MHz   | dB            | 25        | 15          |
| Aircraft band                  | at 127.175 MHz   | dB            | 16        | 8           |
| Public service band            | at 857.200 MHz   | dB            | 25        | 15          |
| 1200 MHz band                  | at 1299.9125 MHz | dB            | 25        | 15          |
| Hum and noise                  |                  |               |           |             |
| VHF low band                   | at 40.840 MHz    | dB            | 40        | 30          |
| VHF high band                  | at 162.400 MHz   | dB            | 40        | 30          |
| 220 MHz band                   | at 216.005 MHz   | dB            | 39        | 30          |
| UHF band                       | at 453.250 MHz   | dB            | 39        | 30          |
| Aircraft band                  | at 127.175 MHz   | dB            | 47        | 30          |
| Public service band            | at 857.200 MHz   | dB            | 39        | 30          |
| 1200 MHz band                  | at 1299.9125 MHz | dB            | 35        | 25          |
| Data deviation sensitivity     |                  |               |           |             |
| Control ch data                | at 851.0125 MHz  | kHz           | +0.5      | $\pm 1.5$   |
| Voice ch data                  | at 851.0125 MHz  | kHz           | $\pm 0.2$ | $\pm 1.0$   |
| Audio frequency response -6 dB |                  |               |           |             |
| (at 162.400 MHz)               | Low              | Hz            | 330       | 200 ~ 450   |
|                                | High             | Hz            | 1900      | 1300 ~ 3000 |
| (at 127.175 MHz)               | Low              | Hz            | 330       | 200 ~ 450   |
|                                | High             | Hz            | 1900      | 1260 ~ 2900 |



| Item                                                    | Unit      | Nominal   | Limit     |
|---------------------------------------------------------|-----------|-----------|-----------|
| Audio output power of internal speaker                  |           |           |           |
| (at 162.400 MHz)      Maximum                           | mW        | 350       | 100       |
| 10% THD                                                 | mW        | 300       | 90        |
| (at 127.175 MHz)      Maximum                           | mW        | 350       | 100       |
| 10% THD                                                 | mW        | 300       | 90        |
| Distortion at 50 mW output power (100 $\mu$ V RF input) |           |           |           |
| at 162.400 MHz                                          | %         | 1.5       | 6         |
| at 127.175 MHz                                          | %         | 2.5       | 10        |
| Acceptable radio frequency displacement (EIA RS-204-D)  |           |           |           |
| at 162.400 MHz                                          | kHz       | $\pm 6$   | $\pm 3$   |
| IF rejection (380.7 MHz)                                |           |           |           |
| at 162.4 MHz                                            | dB        | 80        | 50        |
| Residual noise (Vol.: max, SQ: close) at 162.4 MHz      | mV        | 0.5       | 2         |
| Scan/Search rate                                        |           |           |           |
| Scan                                                    | CH/sec.   | 50        | 25        |
| Search (162.4 ~ 163.4 MHz, MANUAL mode)                 | Step/sec. | 100       | 50        |
| Current drain (at 162.40 MHz)                           |           |           |           |
| (at full output)                                        | mA DC     | 180       | 220       |
| (at Squelched)                                          | mA DC     | 70        | 100       |
| Batt. Low turn-on voltage                               | V         | 4.50      | 4.35-4.65 |
| Auto power off voltage                                  | V         | 4.30      | 4.15-4.45 |
| Battery charge current                                  | mA        | 60        | 30 - 90   |
| Alert sensitivity (at 162.4 MHz, 1050 Hz)               | kHz       | $\pm 0.8$ | $\pm 2.0$ |
| EAS DATA sensitivity (at 162.4 MHz)                     | kHz       | $\pm 1.6$ | $\pm 2.0$ |

**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: 9.0 V DC (Center Negative)
- Oscilloscope
- Frequency counter
- SINAD meter
- Digital voltmeter
- SSVM
- Signal generator (SG)

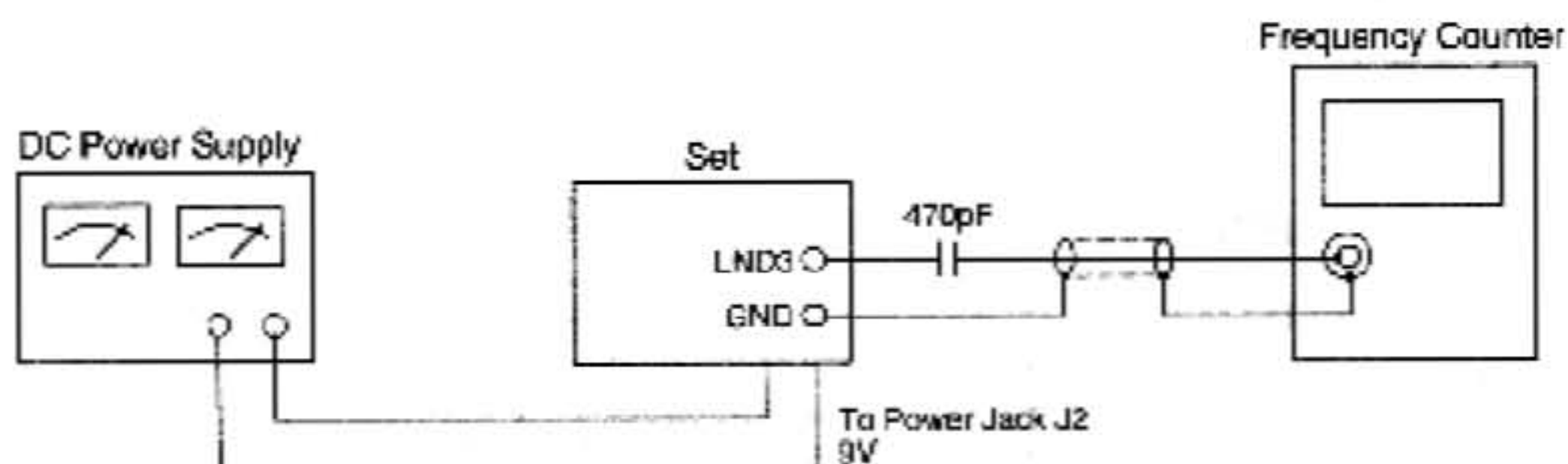
Table 1. Test Frequency

| Channel | Test Frequency | Channel | Test Frequency | Channel | Test Frequency |
|---------|----------------|---------|----------------|---------|----------------|
| 1       | 30.0500 MHz    | 9       | 511.9125 MHz   | 17      | 857.2000 MHz   |
| 2       | 40.8400 MHz    | 10      | 108.5000 MHz   | 18      | 911.5000 MHz   |
| 3       | 49.9000 MHz    | 11      | 118.8000 MHz   | 19      | 954.9125 MHz   |
| 4       | 138.1500 MHz   | 12      | 127.1750 MHz   | 20      | 1299.9125 MHz  |
| 5       | 162.4000 MHz   | 13      | 135.5000 MHz   | 21      | 216.0050 MHz   |
| 6       | 173.2250 MHz   | 14      | 29.0000 MHz    | 51      | 29.0000 MHz    |
| 7       | 406.8750 MHz   | 15      | 54.0000 MHz    | 52      | 512.0000 MHz   |
| 8       | 453.2500 MHz   | 16      | 806.0000 MHz   |         |                |



## ALIGNMENT OF REFERENCE OSC

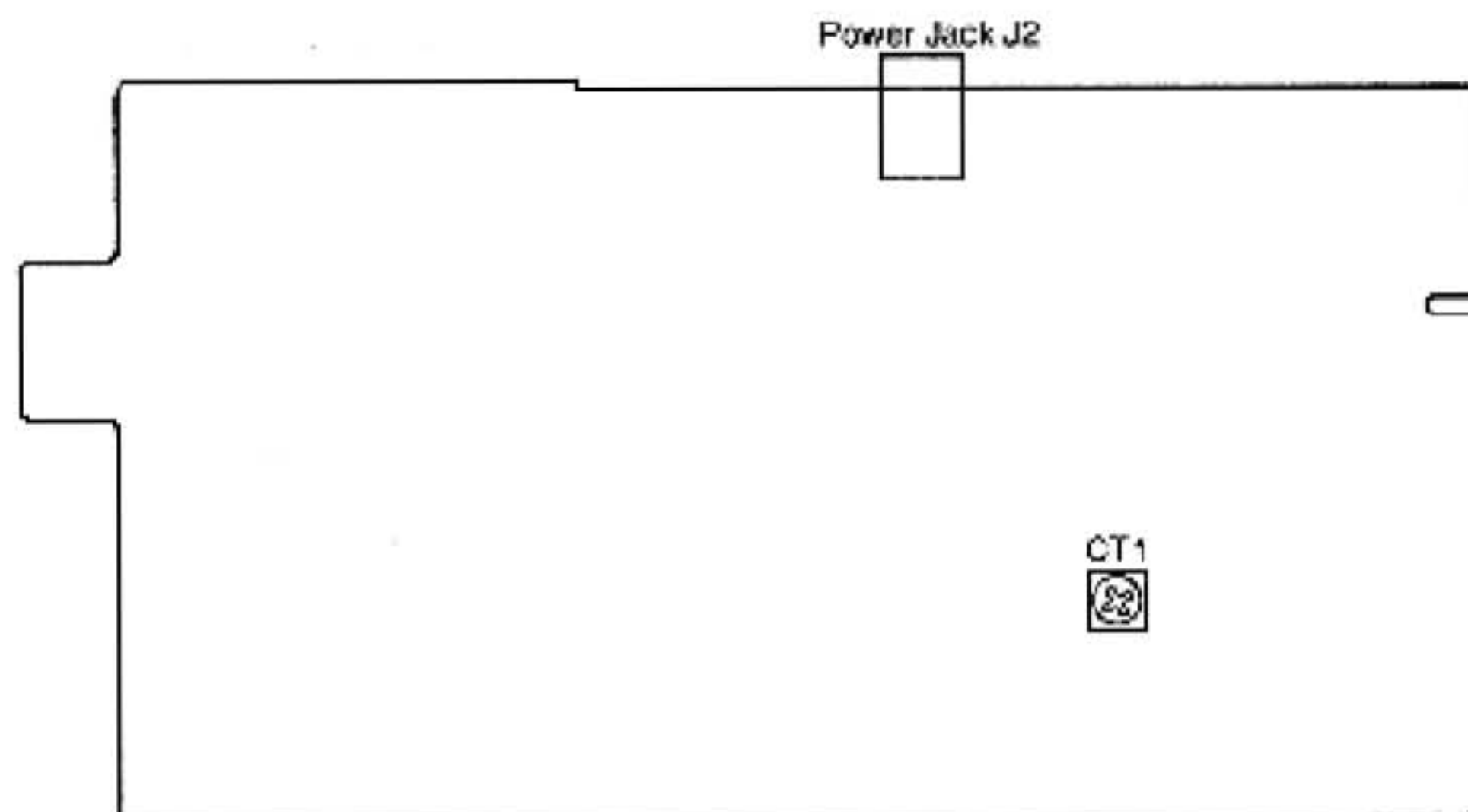
### Test Equipment Required and Connections



### Alignment Procedure

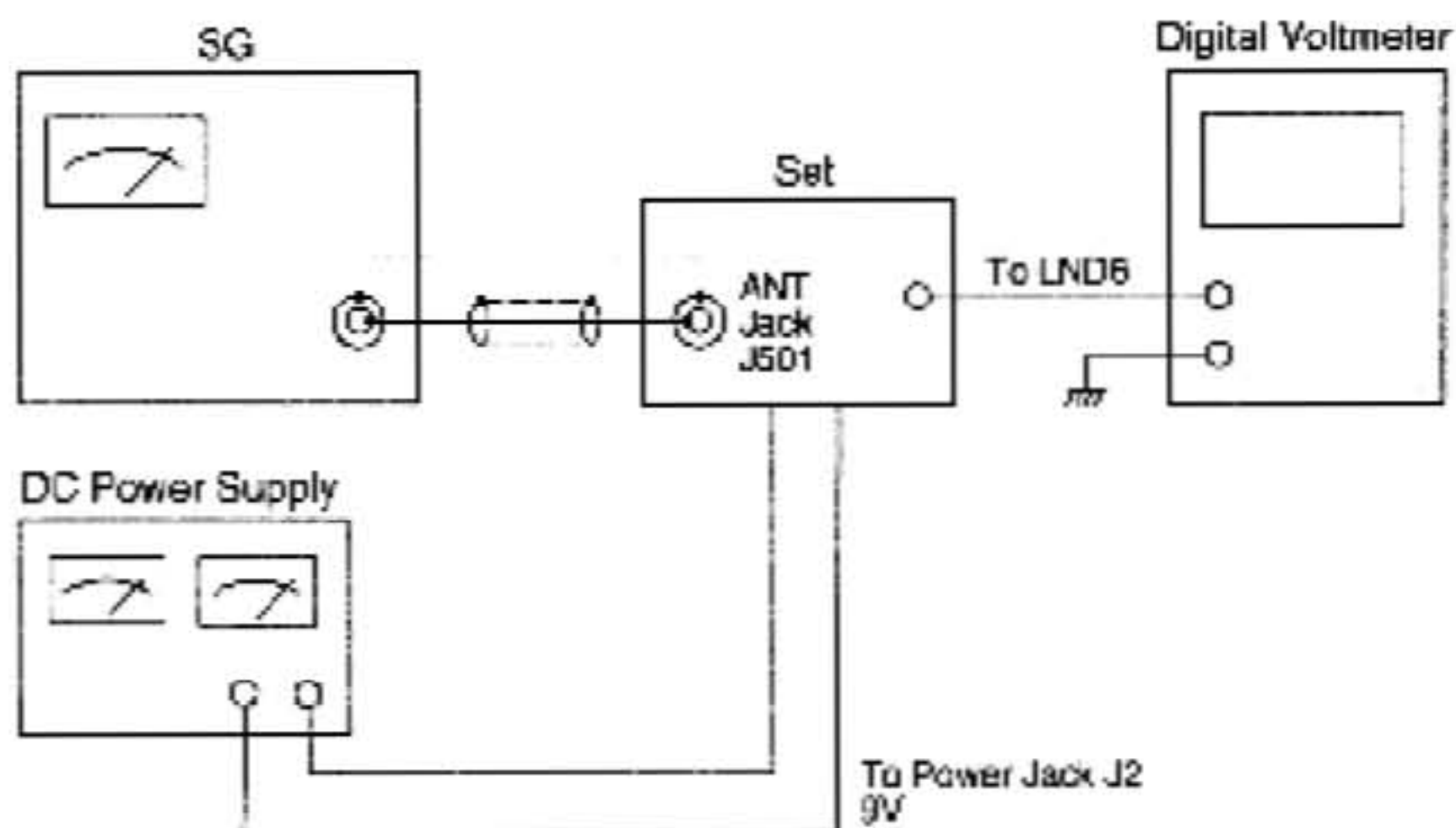
| Step | Preset to | Adjustment | Result                                                                                                               |
|------|-----------|------------|----------------------------------------------------------------------------------------------------------------------|
| 1    | CH14      | CT1        | Connect the frequency counter to LND3. (See Page 17 for the position.) Adjust CT1 to obtain 391.55 MHz $\pm$ 100 Hz. |

### Alignment Point Locations (RF PCB)



## ALIGNMENT OF NFM DISCRIMINATOR

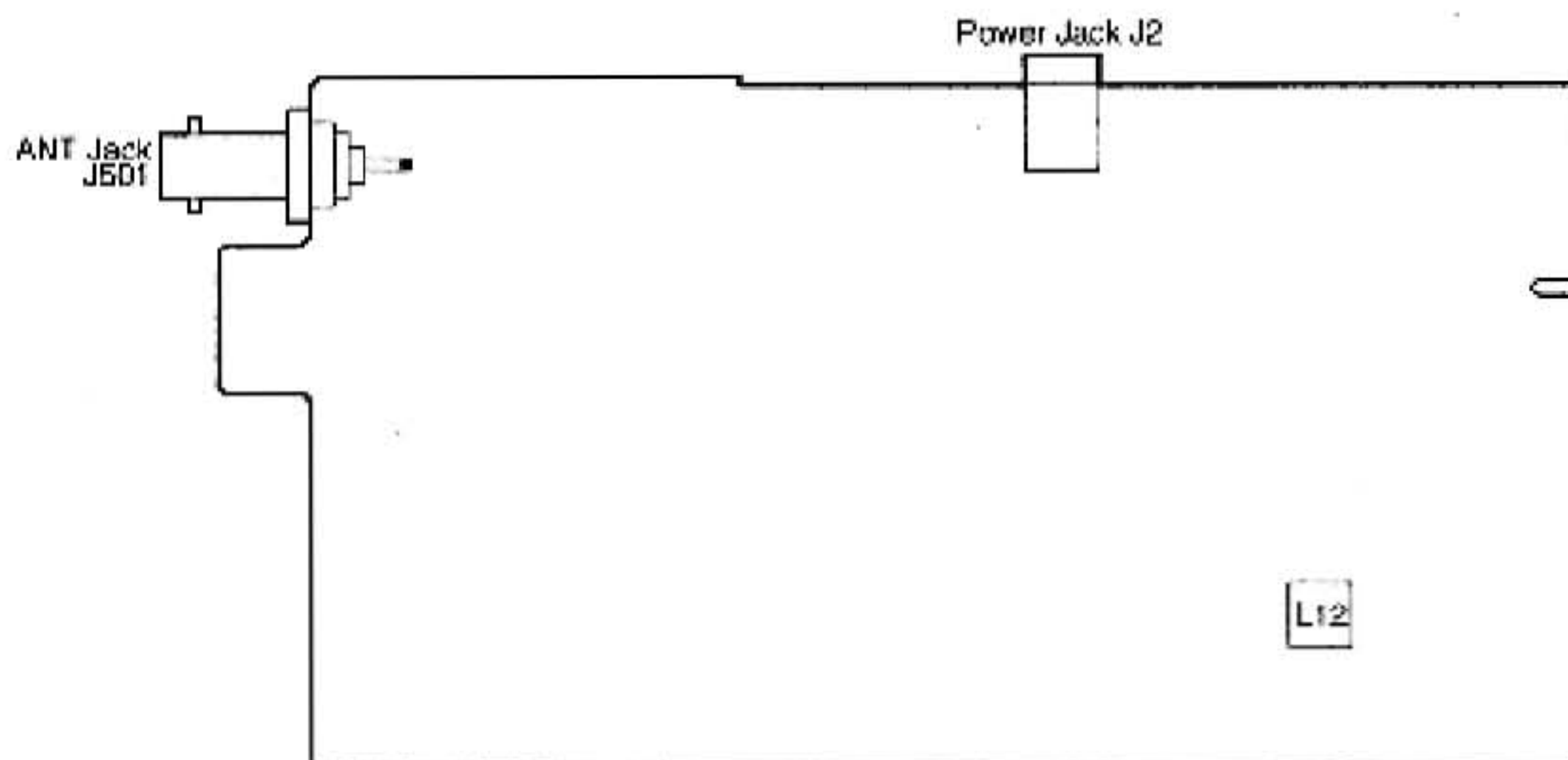
### Test Equipment Required and Connections



### Alignment Procedure

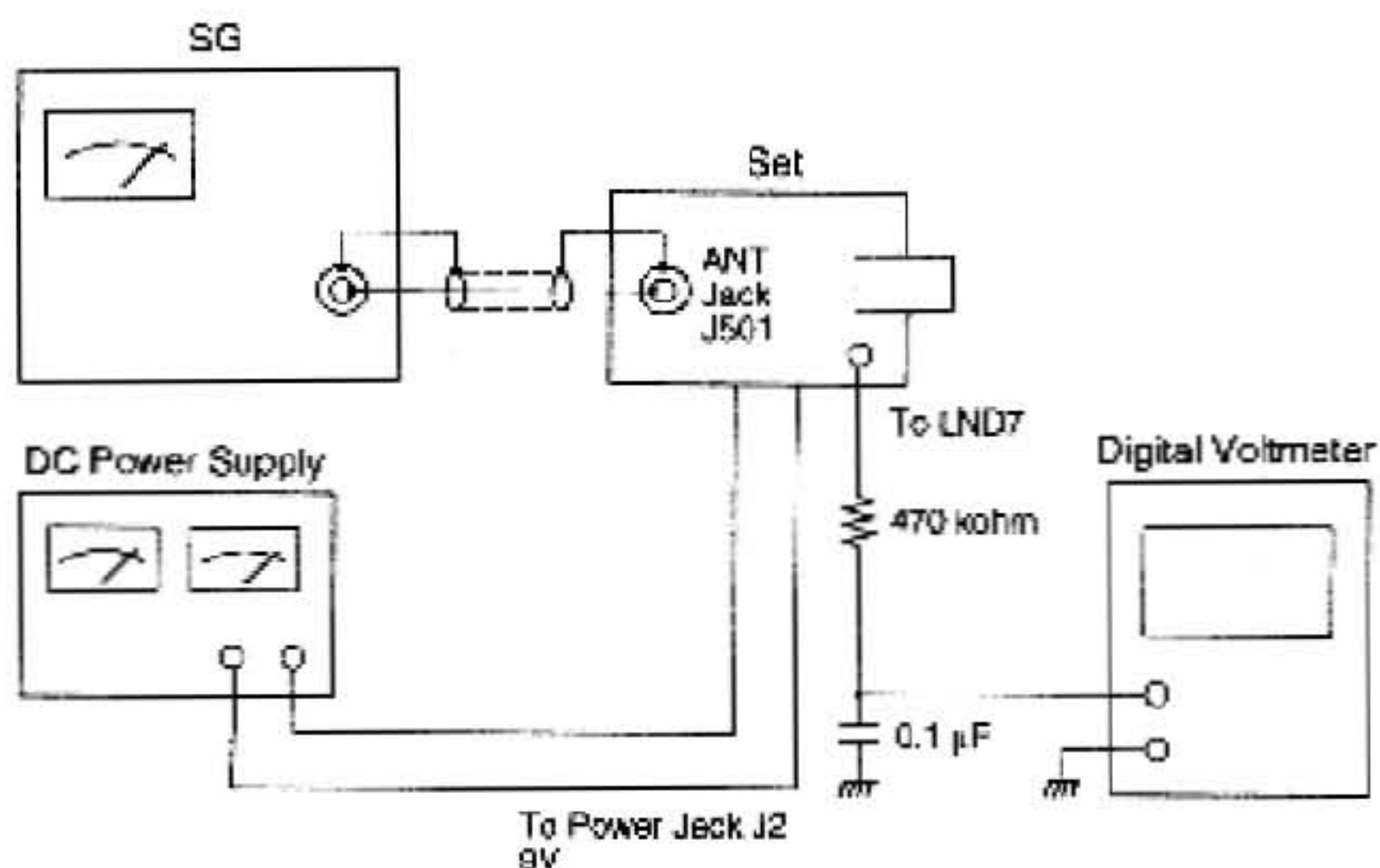
| Step | Preset to                                            | Adjustment | Result                                                                                                             |
|------|------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------|
| 1    | CH2<br>SG: 40.84 MHz<br>No modulation<br>100 $\mu$ V | L12        | Connect the digital voltmeter to LND6. (See Page 17 for the position.) Adjust L12 to obtain 1.3 V $\pm$ 0.05 V DC. |

### Alignment Point Locations (RF PCB)



## ALIGNMENT OF SQUELCH

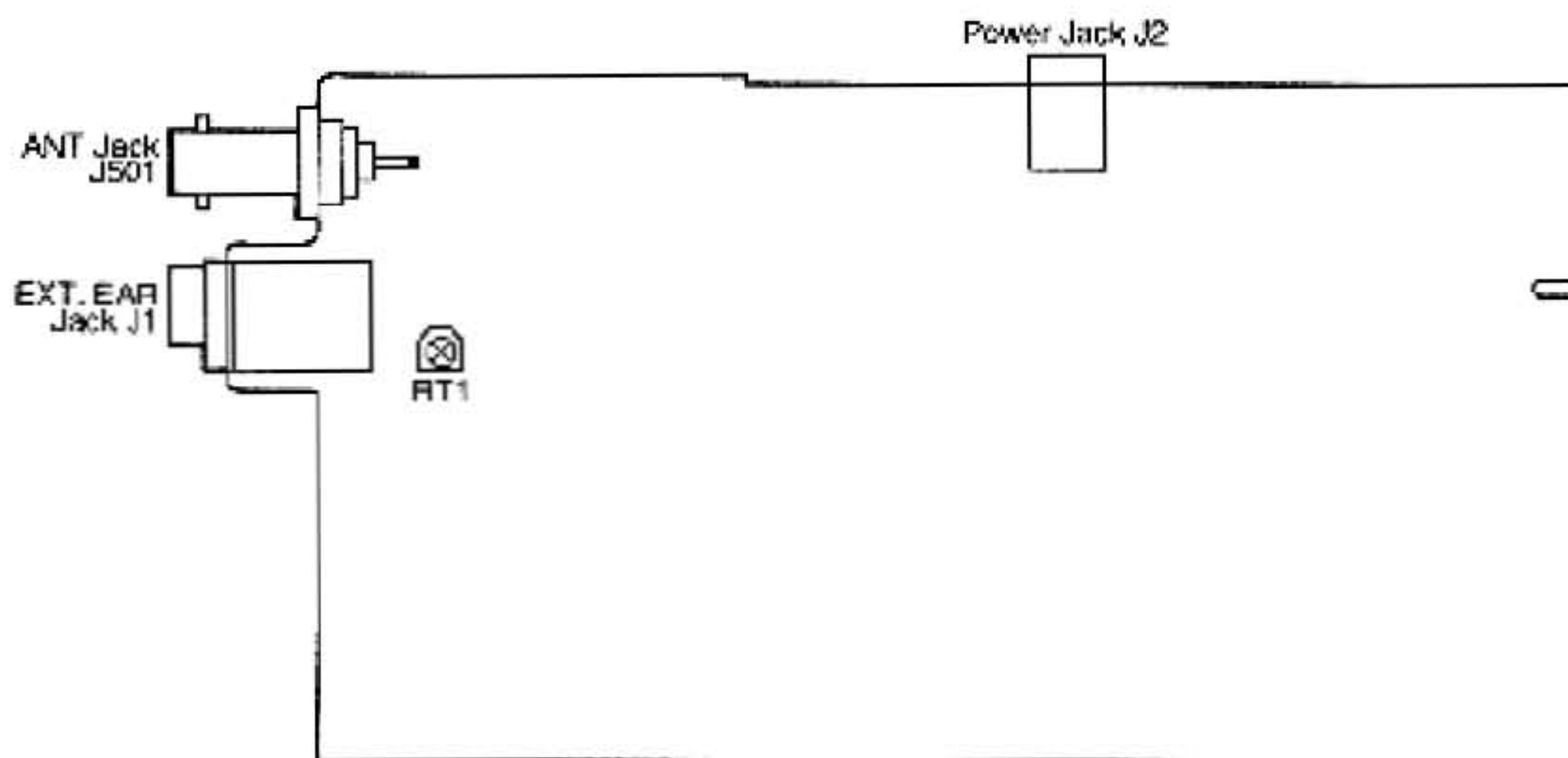
### Test Equipment Required and Connections



### Alignment Procedure

| Step | Preset to                                                    | Adjustment | Result                                                                                                                                              |
|------|--------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | CH2<br>SG: 40.840 MHz<br>NFM<br>No modulation<br>Squelch: CW | RT1        | Set the SG level so that the voltage at LND7 is $0.80 \pm 0.05$ V DC. (See Page 17 for the position.)<br>Adjust RT1 slowly until the squelch opens. |

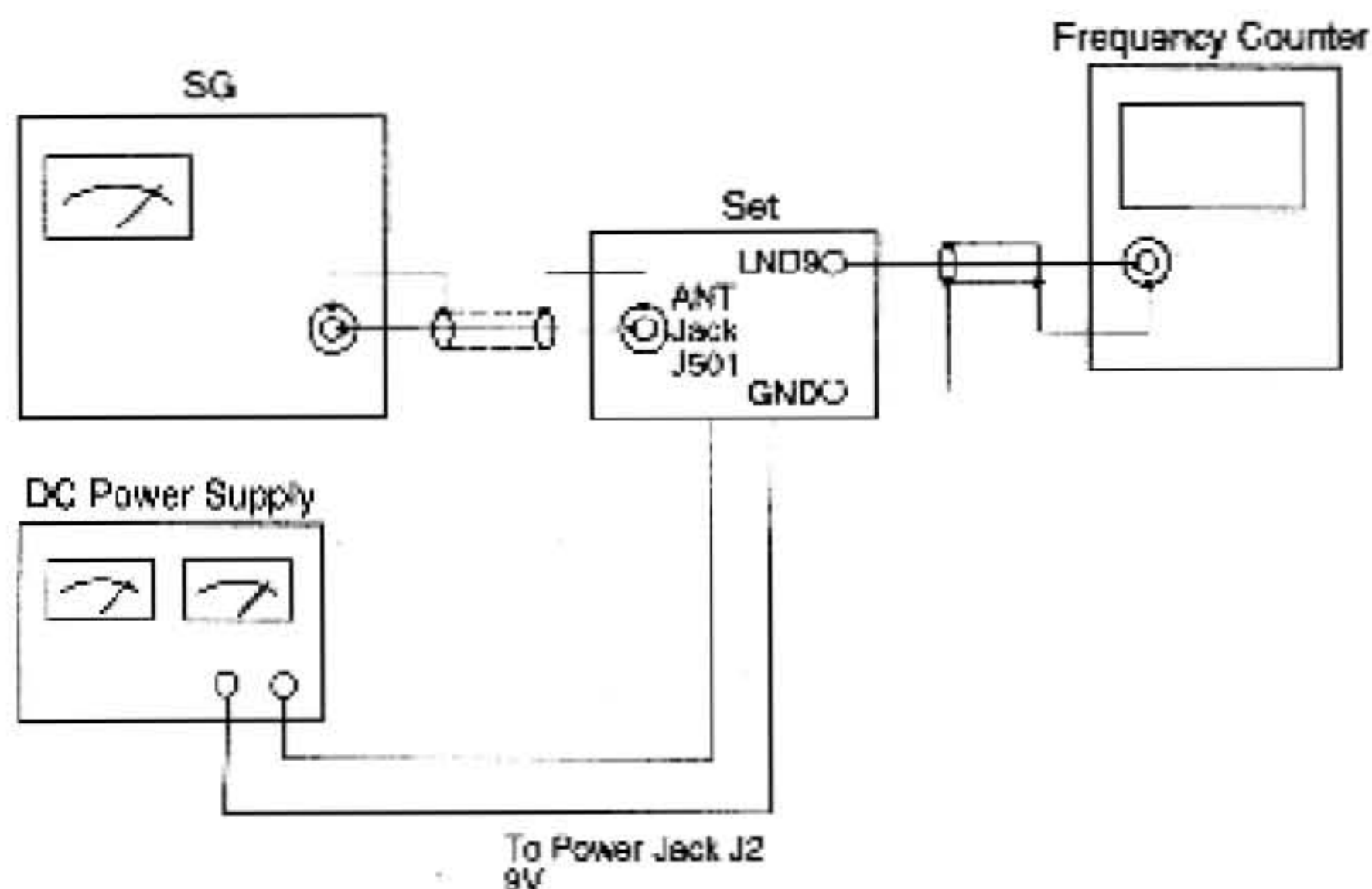
### Alignment Point Location (RF PCB)





## ALIGNMENT OF S.A.M.E.

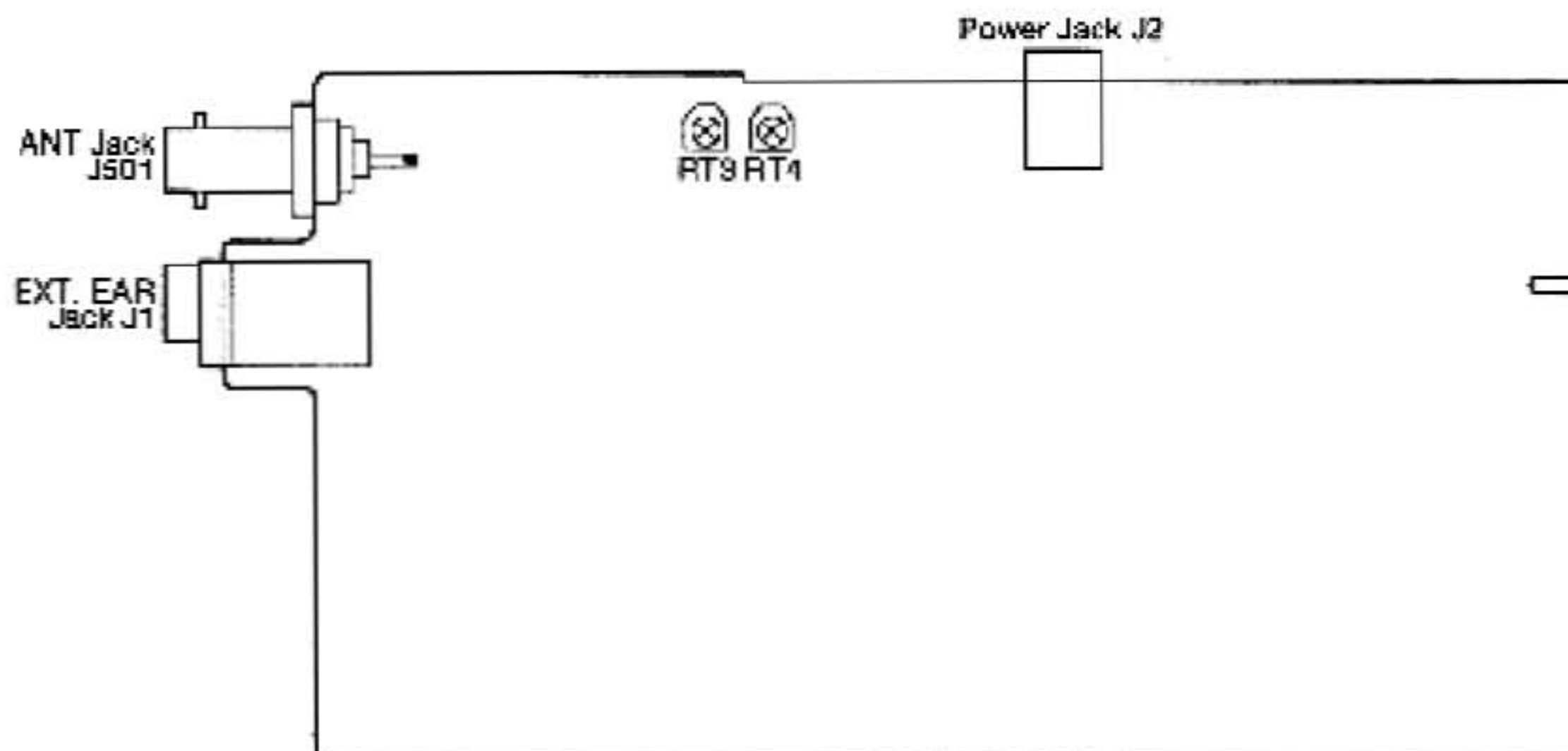
### Test Equipment Required and Connections



### Alignment Procedure

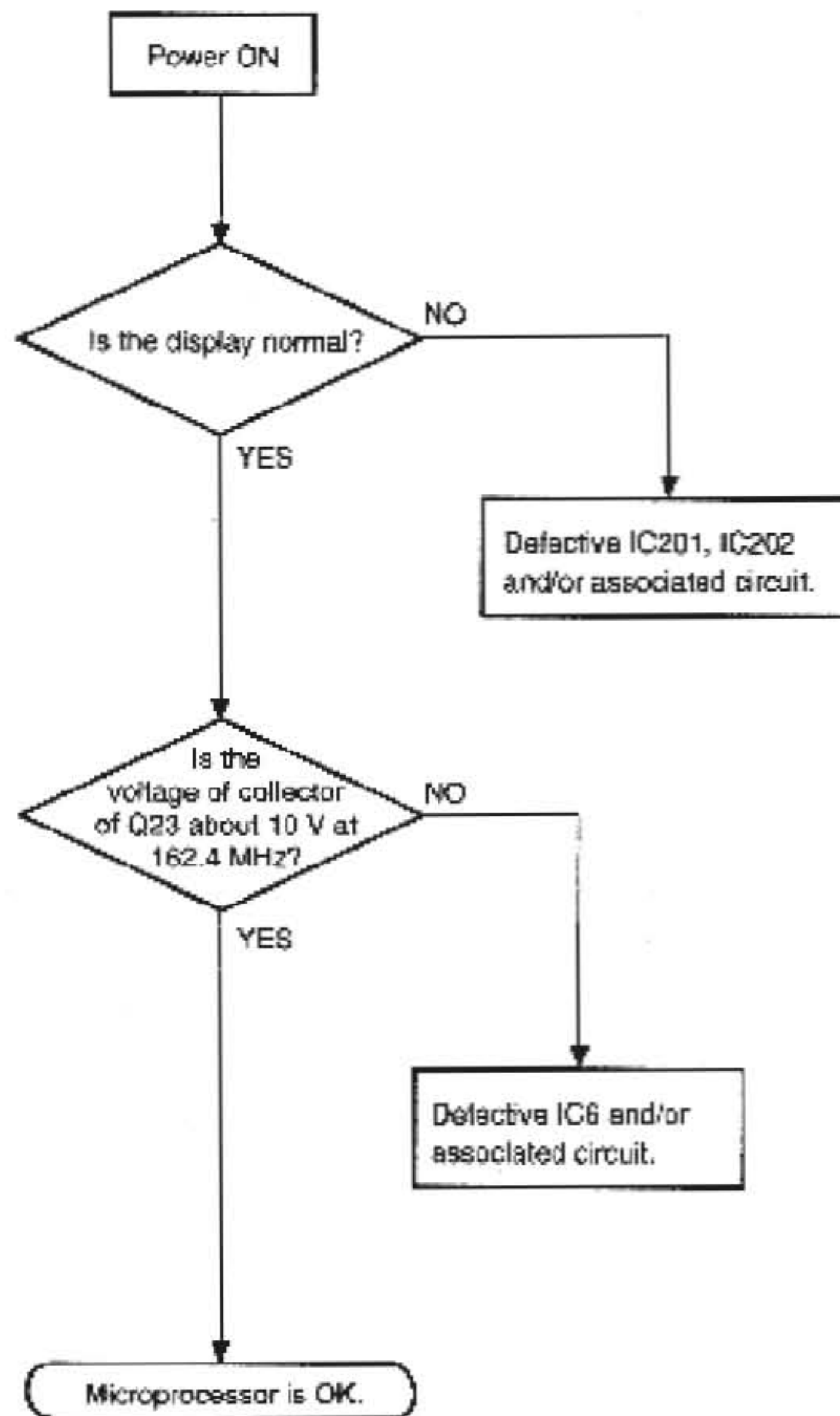
| Step | Preset to                                     | Adjustment | Result                                                                                                          |
|------|-----------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------|
| 1    |                                               | —          | Turn on the Power while pressing "2", "9" and "PRIORITY" keys. Then press "MANUAL" key.                         |
| 2    | SG: 162.4 MHz<br>100 $\mu$ V<br>No modulation | RT4        | Connect the frequency counter to LND9. (See Page 17 for the position.) Adjust RT4 to obtain 2100 Hz $\pm$ 10Hz. |
| 3    | Ditto                                         | RT3        | Press "MANUAL" key.<br>Then adjust RT3 to obtain 3575 Hz $\pm$ 10 Hz                                            |

### Alignment Point Location (RF PCB)

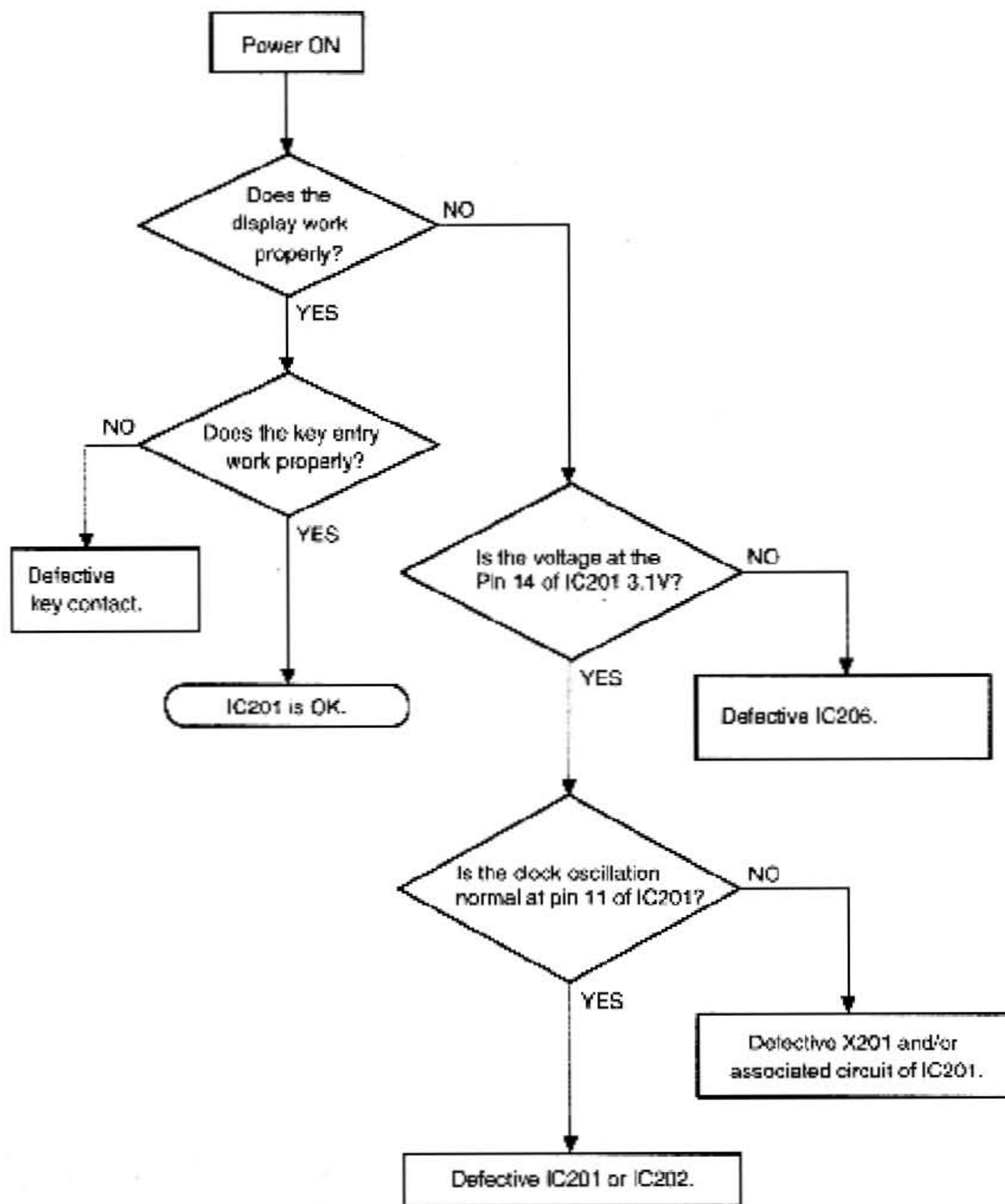


## TROUBLESHOOTING

### Reception Check



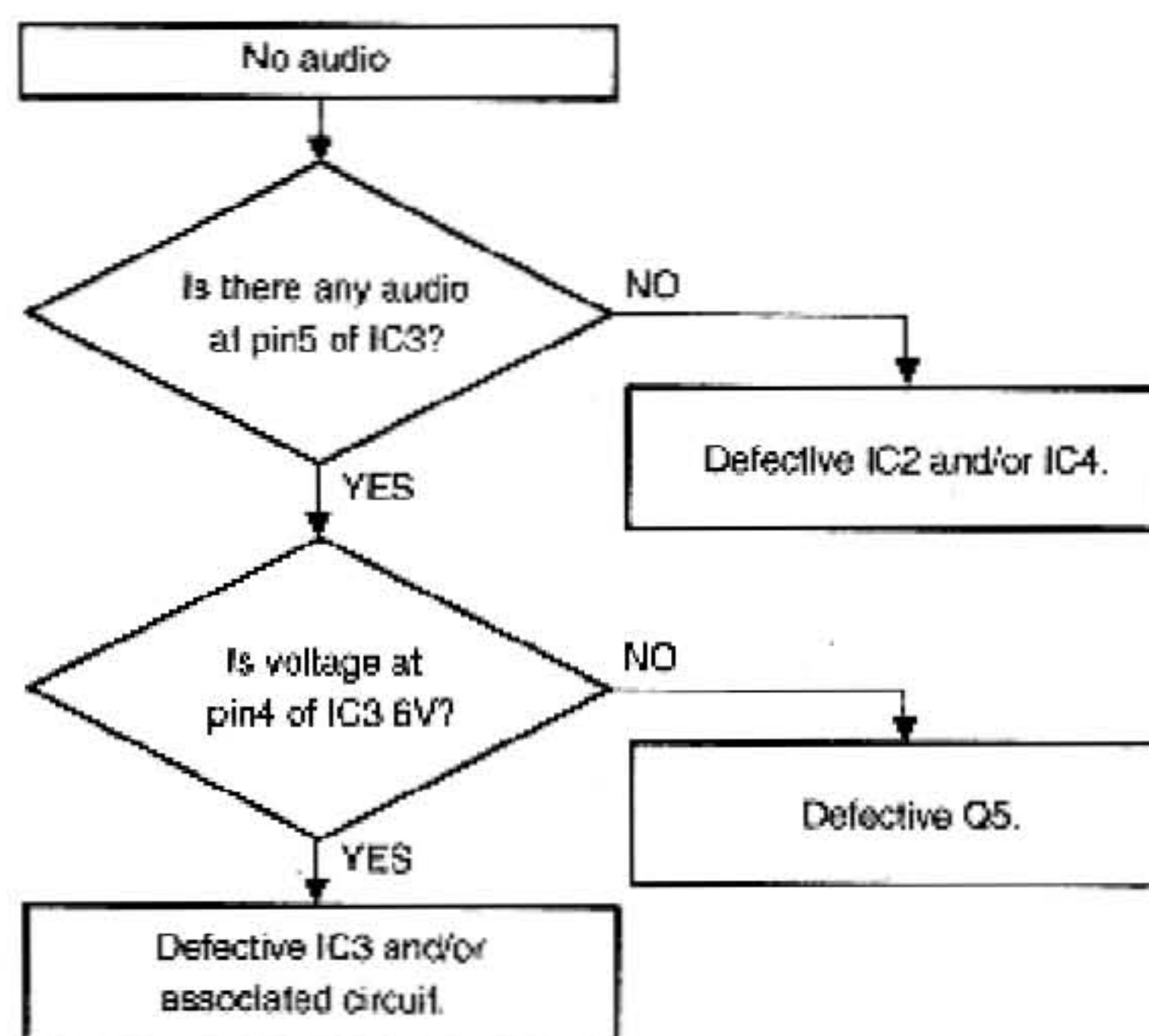
## Microprocessor Check



**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

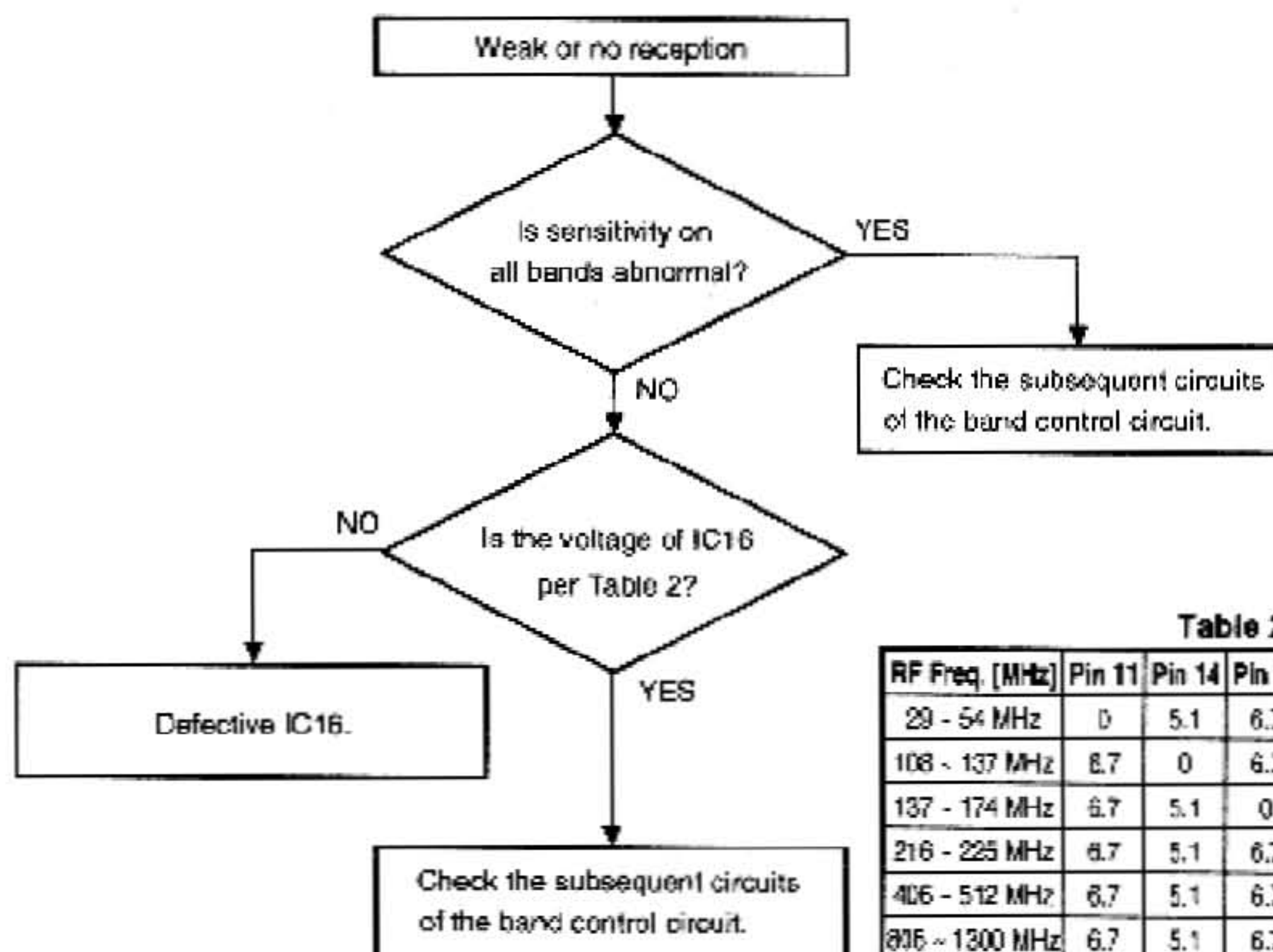


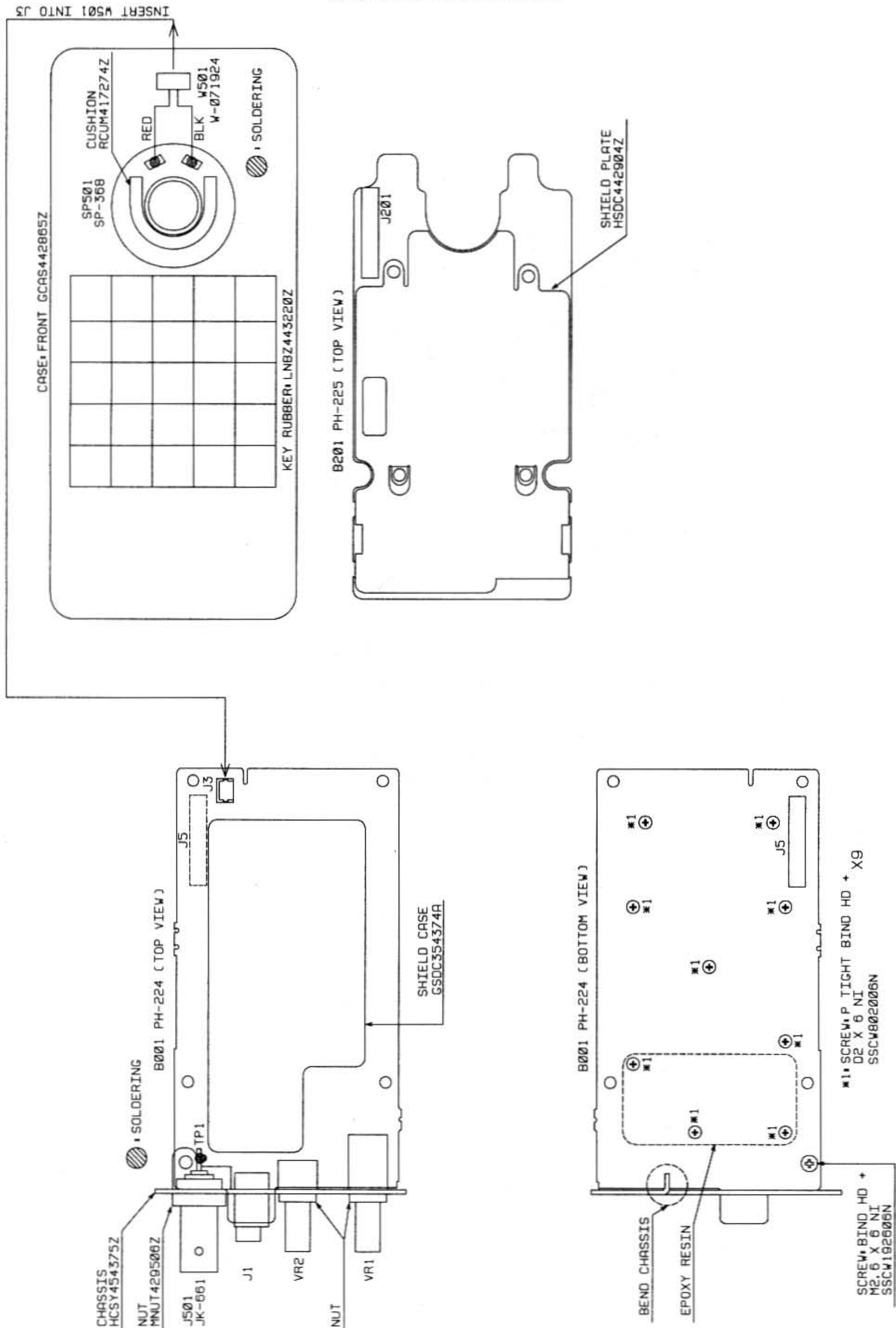
Table 2.

Unit: V

| RF Freq. [MHz] | Pin 11 | Pin 14 | Pin 15 | Pin 16 | Pin 17 | Pin 18 |
|----------------|--------|--------|--------|--------|--------|--------|
| 29 - 54 MHz    | 0      | 5.1    | 6.7    | 6.7    | 6.7    | 4.8    |
| 108 - 137 MHz  | 6.7    | 0      | 6.7    | 6.7    | 6.7    | 4.8    |
| 137 - 174 MHz  | 6.7    | 5.1    | 0      | 6.7    | 6.7    | 4.8    |
| 216 - 225 MHz  | 6.7    | 5.1    | 6.7    | 0      | 6.7    | 4.8    |
| 406 - 512 MHz  | 6.7    | 5.1    | 6.7    | 6.7    | 0      | 4.8    |
| 806 - 1300 MHz | 6.7    | 5.1    | 6.7    | 6.7    | 6.7    | 0      |

Unit: V  
 18  
 8  
 8  
 8  
 8  
 0

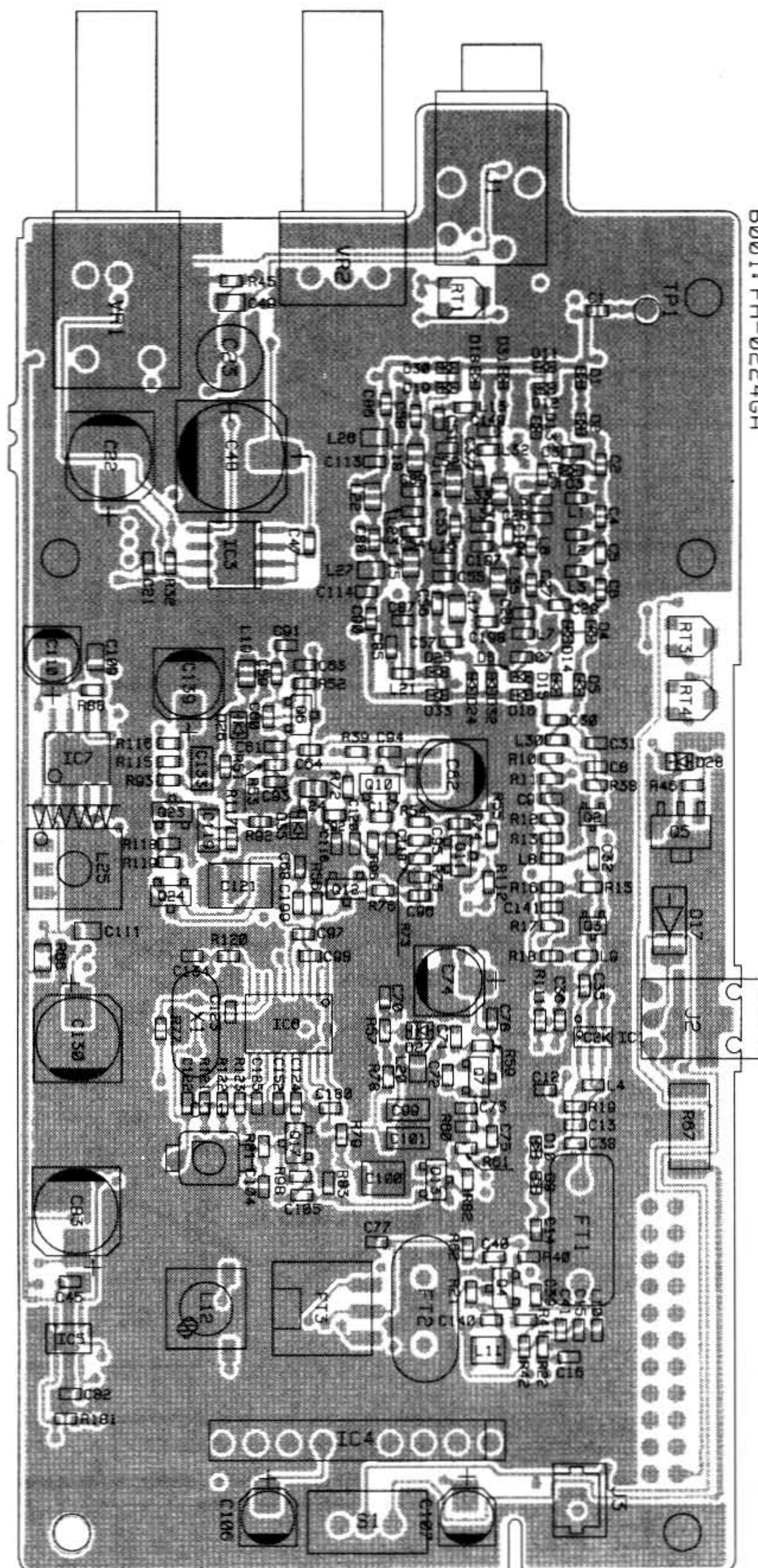
# WIRING DIAGRAM





# PRINTED CIRCUIT BOARDS

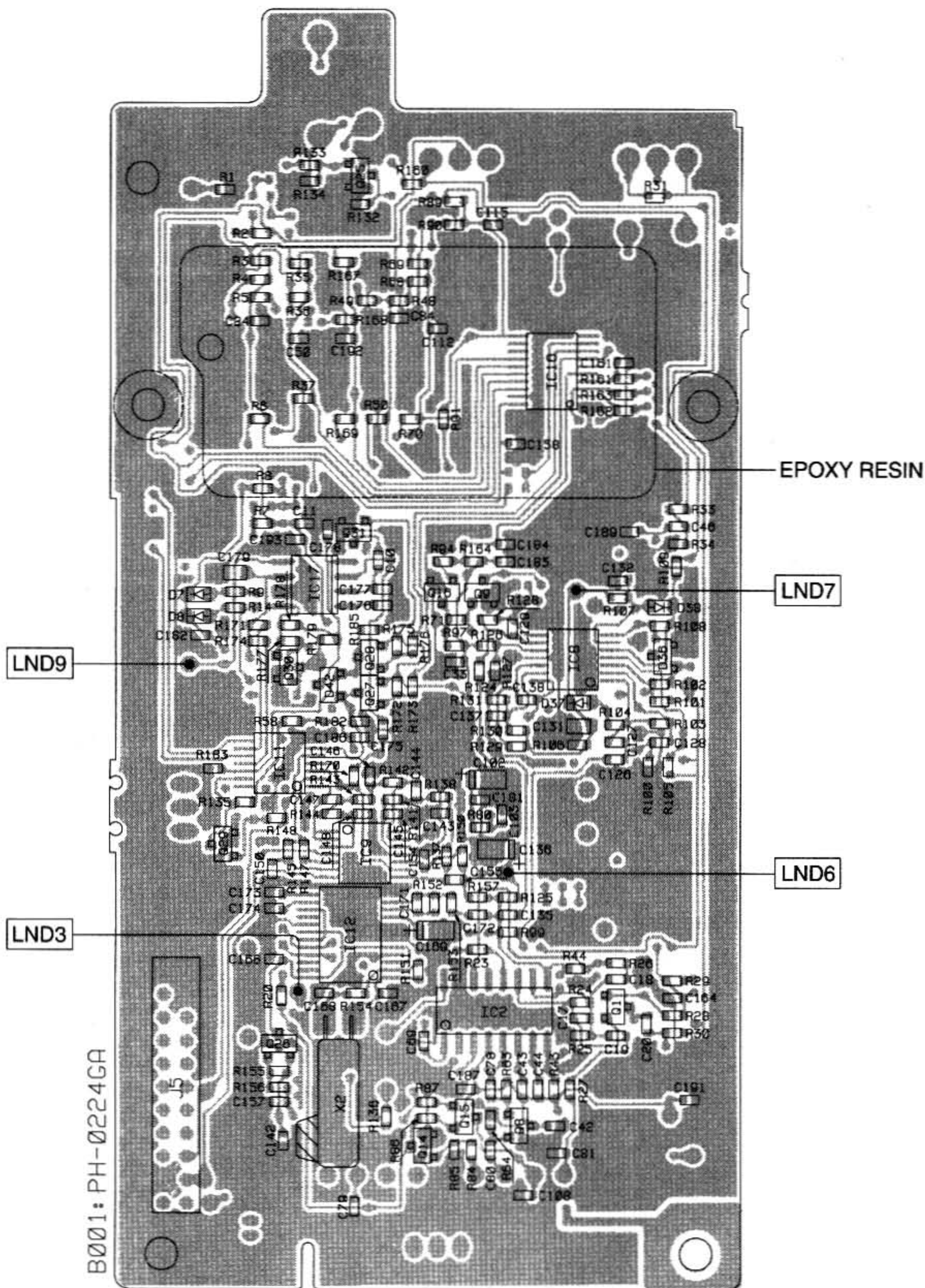
RF



B001:PH-0224CA

Top View



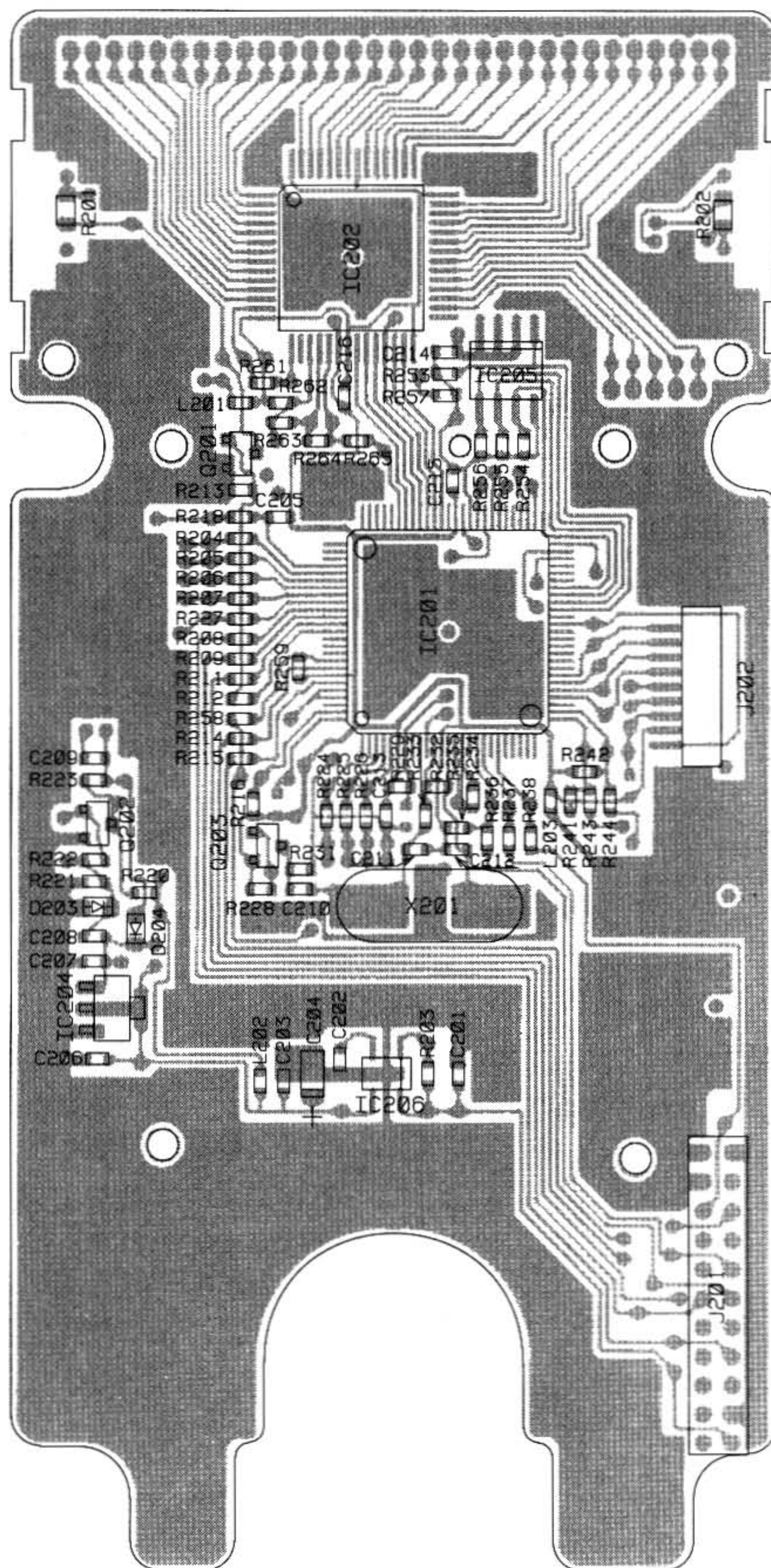


Bottom View



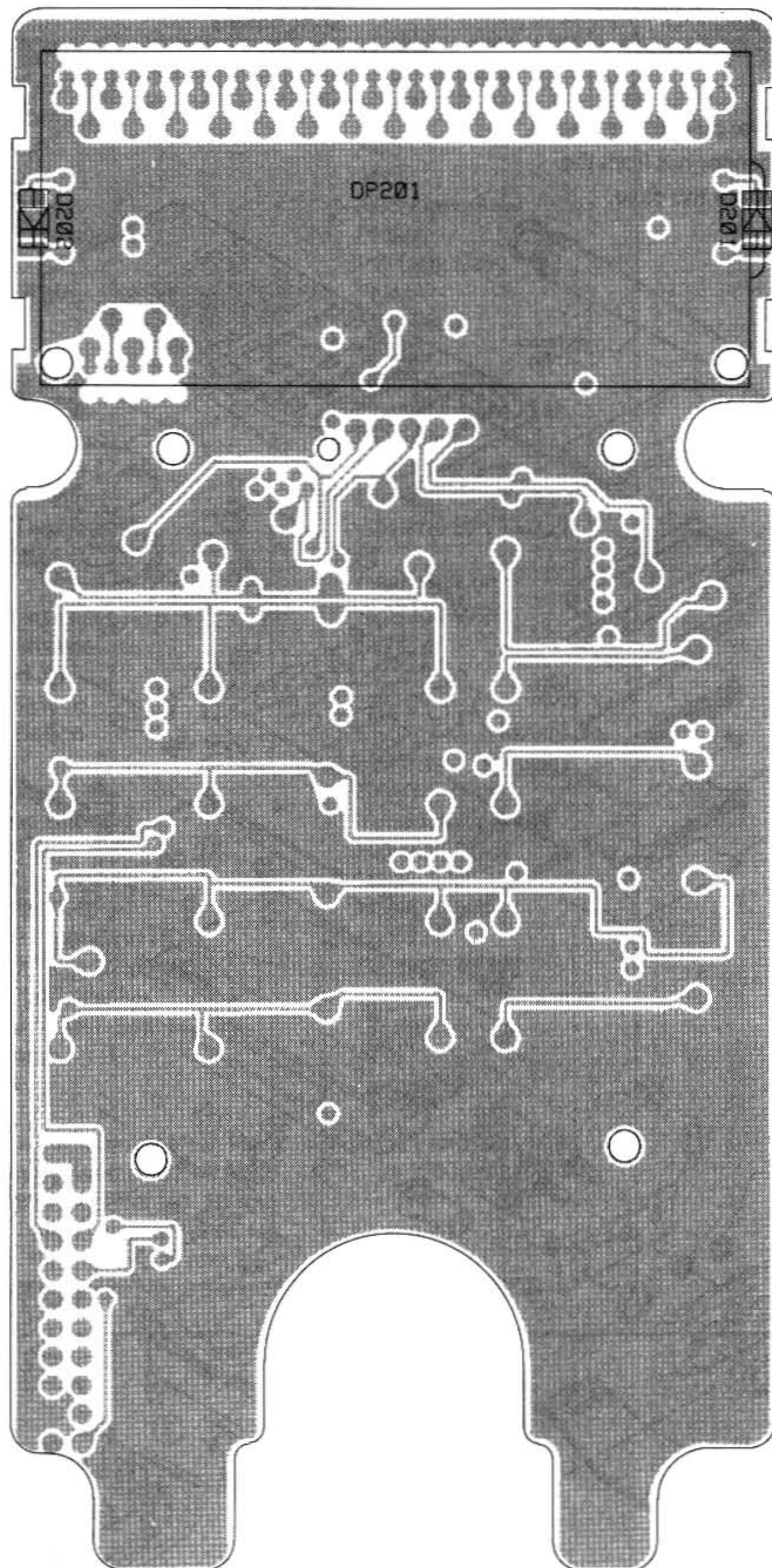
# LOGIC

B201: PH-225EA



Top View





B201: PH-225EA

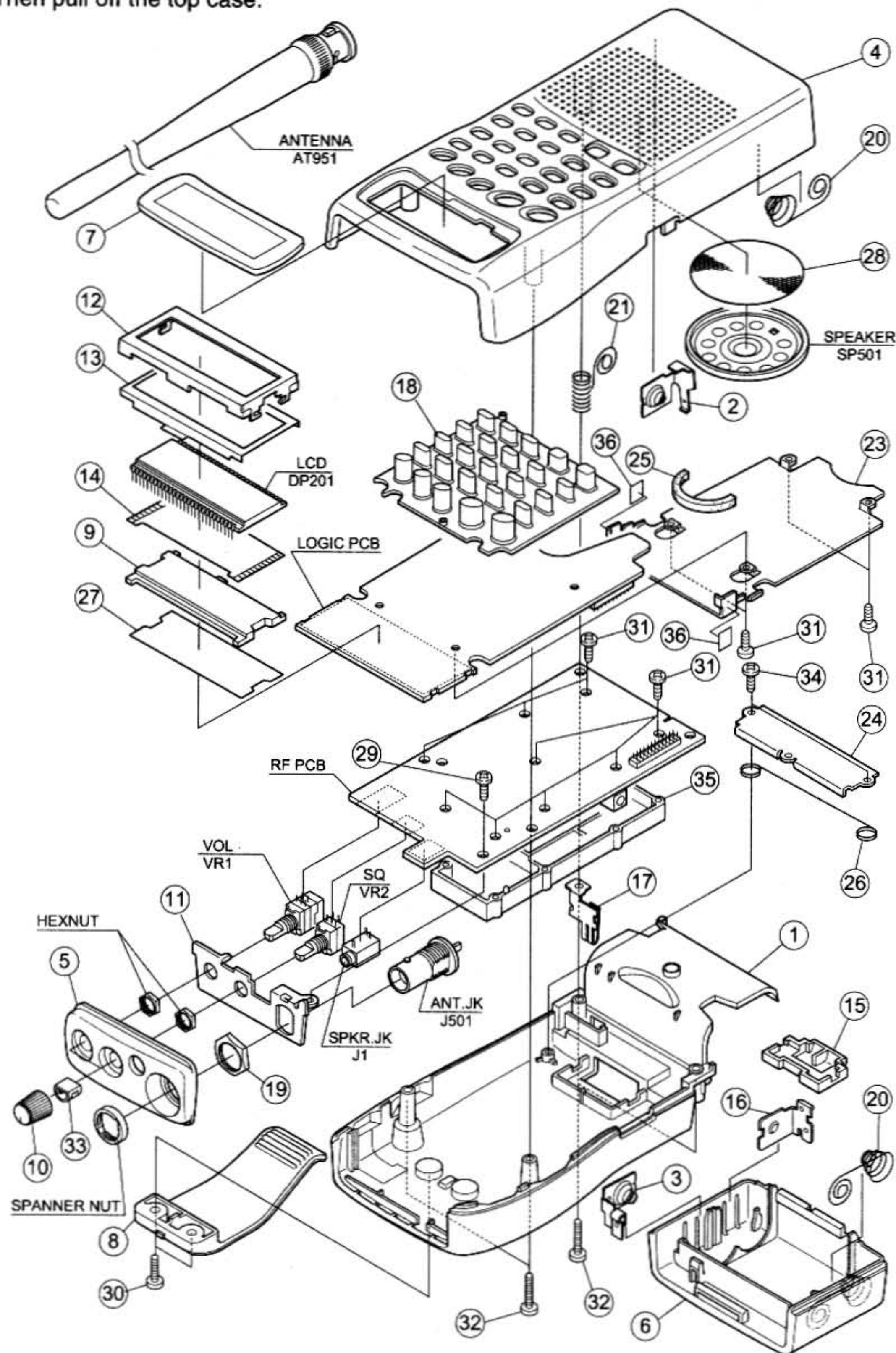
Bottom View



## EXPLODED VIEW AND DISASSEMBLY INSTRUCTIONS

To remove the front case and rear case, remove four screws (32) from the rear of the unit.

To remove the top case, pull out the two knobs (10) and the spanner nut from the top case. Then pull off the top case.





# MECHANICAL PARTS LIST

| Ref. No. | Description                                            | RS Part No.          | Mfr's Part No. |
|----------|--------------------------------------------------------|----------------------|----------------|
| 1        | Case, Rear                                             | ABS Dark Gray Silk   | GCAS131851B    |
| 2        | Battery Terminal                                       |                      | HTML431942B    |
| 3        | Battery Terminal                                       |                      | HTML431862B    |
| 4        | Case, Front                                            | ABS                  | GCAS442865Z    |
| 5        | Case, Top                                              | ABS                  | GCAS442870Z    |
| 6        | Case, Battery                                          | ABS Dark Gray        | GCAS231854Z    |
| 7        | Display Window                                         | PMMA                 | GCAS442869Z    |
| 8        | Belt Clip                                              | PC Dark Gray         | GETC329513Z    |
| 9        | Lighting Plate                                         | PMMA                 | GETC454379Z    |
| 10       | Knob                                                   | ABS Black            | GNBZ431856Z    |
| 11       | Chassis                                                | SECC                 | HCSY454375Z    |
| 12       | LCD Frame                                              | SPTE 0.3T            | HSDC342874Z    |
| 13       | Insulation Plate                                       | Polyester Film, 0.1t | RZEB442909Z    |
| 14       | Reflection Sheet                                       | Polyester            | RETC457780A    |
| 15       | Knob, Release                                          | ABS Dark Gray        | GNBZ431857Z    |
| 16       | Battery Terminal                                       | C5191(PBP) T=0.25    | HTML431860Z    |
| 17       | Battery Terminal                                       | C5191(PBP) T=0.25    | HTML431859Z    |
| 18       | Key Rubber                                             | SI                   | LNBZ443220Z    |
| 19       | Nut                                                    | C3601BD M11          | MNUT429506Z    |
| 20       | Spring Terminal                                        | SUS304 WPB           | NSPZ431915Z    |
| 21       | Spring Terminal                                        | SWIC-F               | NSPZ431858Z    |
| 22       | Not Used                                               |                      |                |
| 23       | Shield Plate                                           | SPTE                 | HSDC442904Z    |
| 24       | Holder, Button                                         | SECC T=0.8 MFZN-3    | HHDZ431863Z    |
| 25       | Cushion                                                | Moltprene            | RCUM417274Z    |
| 26       | Coil Spring                                            | SWIC-F D0.6          | NSPZ431864Z    |
| 27       | Reflection Sheet                                       | Yupo Paper,0.15T     | RETC454380Z    |
| 28       | Speaker Net                                            | Himelon Black        | RNTH430040Z    |
| 29       | Screw, Bind HD +                                       | M2.6X6 NI            | SSCW192606N    |
| 30       | Screw, Bind HD +                                       | M3X6 BZMC            | SSCW193006D    |
| 31       | Screw, P Tight Bind HD +                               | D2X6 NI              | SSCW802006N    |
| 32       | Screw, P Tight Bind HD +                               | D2.6X20 BZMC         | SSCW802620D    |
| 33       | Spring Plate, Knob                                     | D6XL5.2              | TSTD0200006    |
| 34       | Screw, P TIGHT Bind HD +                               | D2.6X6 NI            | SSCW802606N    |
| 35       | Shield Case                                            | ABS                  | GSDC354374A    |
| 36       | Cushion                                                | Neoprene             | RCUN443348Z    |
|          | Front Case Assembly (Ref. No. 2, 4, 7, 20, 21 and 28)  |                      | AB306ZPBC      |
|          | Rear Case Assembly (Ref. No. 1, 15, 17, 24, 26 and 34) |                      | AB306ZPBD      |
|          | Knob Assembly (Ref No. 10 and 33)                      |                      | AB306ZPBE      |
|          | Battery Case Assembly (Ref. No. 3, 5, 16 and 20)       |                      | AB306ZPBF      |
|          | Belt Clip Kit (Ref. No. 8 and 30)                      |                      | BLCPKB306ZP    |
|          | Hardware Kit (Ref. No. 31 and 32)                      |                      | HDWRKB306ZP    |



# ELECTRICAL PARTS LIST

## RF PCB ASSEMBLY

| Ref. No.                                                                                                                                                                                                                                                                                                      | Description                                                  | RS Part No.                  | Mfr's Part No.   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------|------------------|
| <b>B1</b>                                                                                                                                                                                                                                                                                                     | <b>Assembly, RF PCB</b><br><b>Consists of the following:</b> |                              | <b>AB306ZLBA</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±160 ppm/°C, CJ=0±120 ppm/°C CK=0±250 ppm/°C F=+30-80%,<br>UJ=-750 ppm/°C+120 ppm/°C, RH=-220 ppm/°C+60 ppm/°C |                                                              |                              |                  |
| C1                                                                                                                                                                                                                                                                                                            | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C2                                                                                                                                                                                                                                                                                                            | Ceramic                                                      | 47 pF 50 V ±5 % CH           | BCMM814704Z      |
| C3                                                                                                                                                                                                                                                                                                            | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C4                                                                                                                                                                                                                                                                                                            | Ceramic                                                      | 3 pF 50 V ±0.25 pF CJ        | BCMT813091Z      |
| C5                                                                                                                                                                                                                                                                                                            | Ceramic                                                      | 2 pF 50 V ±0.25 pF CK        | BCMS812091Z      |
| C6                                                                                                                                                                                                                                                                                                            | Ceramic                                                      | 4 pF 50 V ±0.25 pF CH        | BCMM814091Z      |
| C7                                                                                                                                                                                                                                                                                                            | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C8                                                                                                                                                                                                                                                                                                            | Ceramic                                                      | 0.01 $\mu$ F 50 V ±10 % B    | BCML811035Z      |
| C9                                                                                                                                                                                                                                                                                                            | Ceramic                                                      | 0.01 $\mu$ F 50 V ±10 % B    | BCML811035Z      |
| C10                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.1 $\mu$ F 16 V ±10 % B     | BCML311045Z      |
| C11                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C12                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C13                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C14                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C15                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.01 $\mu$ F 50 V ±10 % B    | BCML811035Z      |
| C16                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C17                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 470 pF 50 V ±5 % CH          | BCMM814714Z      |
| C18                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.0039 $\mu$ F 50 V ±10 % B  | BCML813925Z      |
| C19                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 680 pF 25 V ±5 % CH          | BCMM516814Z      |
| C20                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.0039 $\mu$ F 50 V ±10 % B  | BCML813925Z      |
| C21                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.0047 $\mu$ F 50 V ±10 % B  | BCML814725Z      |
| C22                                                                                                                                                                                                                                                                                                           | Electrolytic                                                 | 100 $\mu$ F 10 V ±20 % C-274 | BCZN111016Z      |
|                                                                                                                                                                                                                                                                                                               | or                                                           | 100 $\mu$ F 10 V ±20 % C-258 | BCFZ111016Z      |
| C23                                                                                                                                                                                                                                                                                                           | Electrolytic                                                 | 100 $\mu$ F 10 V ±20 % C-130 | BCAP111016Z      |
|                                                                                                                                                                                                                                                                                                               | or                                                           | 100 $\mu$ F 10 V ±20 % C-156 | BCAZ111016Z      |
|                                                                                                                                                                                                                                                                                                               | or                                                           | 100 $\mu$ F 10 V ±20 % C-290 | BCDS111016Z      |
| C24                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C25                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 470 pF 50 V ±5 % CH          | BCMM814714Z      |
| C26                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 8 pF 50 V ±0.5 pF CH         | BCMM818092Z      |
| C27                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 1.5 pF 50 V ±0.25 pF CK      | BCMS811591Z      |
| C28                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 3 pF 50 V ±0.25 pF CJ        | BCMT813091Z      |
| C29                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 10 pF 50 V ±0.5 pF CH        | BCMM811002Z      |
| C30                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C31                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 2 pF 50 V ±0.25 pF CK        | BCMS812091Z      |
| C32                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 68 pF 50 V ±5 % CH           | BCMM816804Z      |
| C33                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C34                                                                                                                                                                                                                                                                                                           | Not Used                                                     |                              |                  |
| C35                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C36                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C37                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 22 pF 50 V ±5 % CH           | BCMM812204Z      |
| C38                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 3 pF 50 V ±0.25 pF CJ        | BCMT813091Z      |
| C39                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |
| C40                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 5 pF 50 V ±0.25 pF CH        | BCMM815091Z      |
| C41                                                                                                                                                                                                                                                                                                           | Ceramic                                                      | 0.001 $\mu$ F 50 V ±10 % B   | BCML811025Z      |



| Ref. No. | Description    |               |       |               |       |  | RS Part No. | Mfr's Part No. |
|----------|----------------|---------------|-------|---------------|-------|--|-------------|----------------|
| C42      | Ceramic        | 0.1 $\mu$ F   | 16 V  | $\pm 10\%$    | B     |  |             | BCML311045Z    |
| C43      | Ceramic        | 0.1 $\mu$ F   | 16 V  | $\pm 10\%$    | B     |  |             | BCML311045Z    |
| C44      | Ceramic        | 0.1 $\mu$ F   | 16 V  | $\pm 10\%$    | B     |  |             | BCML311045Z    |
| C45      | Ceramic        | 0.1 $\mu$ F   | 16 V  | $\pm 10\%$    | B     |  |             | BCML311045Z    |
| C46      | Ceramic        | 10 pF         | 50 V  | $\pm 0.5$ pF  | CH    |  |             | BCMM811002Z    |
| C47      | Ceramic        | 0.1 $\mu$ F   | 16 V  | $\pm 10\%$    | B     |  |             | BCML311045Z    |
| C48      | Electrolytic   | 470 $\mu$ F   | 16 V  | $\pm 20\%$    | C-281 |  |             | BCZR314716Z    |
| C49      | Ceramic (2125) | 0.1 $\mu$ F   | 25 V  | $\pm 10\%$    | B     |  |             | BCXT511045Z    |
| C50      | Ceramic        | 0.001 $\mu$ F | 50 V  | $\pm 10\%$    | B     |  |             | BCML811025Z    |
| C51      | Ceramic        | 180 pF        | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM811814Z    |
| C52      | Ceramic        | 39 pF         | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM813904Z    |
| C53      | Ceramic        | 5 pF          | 50 V  | $\pm 0.25$ pF | CH    |  |             | BCMM815091Z    |
| C54      | Ceramic        | 5 pF          | 50 V  | $\pm 0.25$ pF | CH    |  |             | BCMM815091Z    |
| C55      | Ceramic        | 68 pF         | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM816804Z    |
| C56      | Ceramic        | 3 pF          | 50 V  | $\pm 0.25$ pF | CJ    |  |             | BCMT813091Z    |
| C57      | Ceramic        | 8 pF          | 50 V  | $\pm 0.5$ pF  | CH    |  |             | BCMM818092Z    |
| C58      | Ceramic        | 12 pF         | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM811204Z    |
| C59      | Ceramic        | 68 pF         | 50 V  | $\pm 5\%$     | UJ    |  |             | BCMP816804Z    |
| C60      | Ceramic        | 5 pF          | 50 V  | $\pm 0.25$ pF | UJ    |  |             | BCMP815091Z    |
| C61      | Ceramic        | 5 pF          | 50 V  | $\pm 0.25$ pF | UJ    |  |             | BCMP815091Z    |
| C62      | Electrolytic   | 47 $\mu$ F    | 6.3 V | $\pm 20\%$    | C-274 |  |             | BCZN904706Z    |
|          | or             | 47 $\mu$ F    | 6.3 V | $\pm 20\%$    | C-258 |  |             | BCFZ904706Z    |
| C63      | Ceramic        | 0.001 $\mu$ F | 50 V  | $\pm 10\%$    | B     |  |             | BCML811025Z    |
| C64      | Ceramic        | 5 pF          | 50 V  | $\pm 0.25$ pF | CH    |  |             | BCMM815091Z    |
| C65-C67  | Not Used       |               |       |               |       |  |             |                |
| C68      | Ceramic        | 0.001 $\mu$ F | 50 V  | $\pm 10\%$    | B     |  |             | BCML811025Z    |
| C69      | Ceramic        | 0.001 $\mu$ F | 50 V  | $\pm 10\%$    | B     |  |             | BCML811025Z    |
| C70      | Ceramic        | 12 pF         | 50 V  | $\pm 5\%$     | RH    |  |             | BCMN811204Z    |
| C71      | Ceramic        | 15 pF         | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM811504Z    |
| C72      | Ceramic        | 4 pF          | 50 V  | $\pm 0.25$ pF | CH    |  |             | BCMM814091Z    |
| C73      | Ceramic        | 4 pF          | 50 V  | $\pm 0.25$ pF | CH    |  |             | BCMM814091Z    |
| C74      | Electrolytic   | 47 $\mu$ F    | 6.3 V | $\pm 20\%$    | C-274 |  |             | BCZN904706Z    |
|          | or             | 47 $\mu$ F    | 6.3 V | $\pm 20\%$    | C-258 |  |             | BCFZ904706Z    |
| C75      | Ceramic        | 10 pF         | 50 V  | $\pm 0.5$ pF  | CH    |  |             | BCMM811002Z    |
| C76      | Ceramic        | 0.001 $\mu$ F | 50 V  | $\pm 10\%$    | B     |  |             | BCML811025Z    |
| C77      | Ceramic        | 0.001 $\mu$ F | 50 V  | $\pm 10\%$    | B     |  |             | BCML811025Z    |
| C78      | Ceramic        | 0.022 $\mu$ F | 25 V  | $\pm 10\%$    | B     |  |             | BCML512235Z    |
| C79      | Ceramic        | 0.047 $\mu$ F | 16 V  | $\pm 10\%$    | B     |  |             | BCML314735Z    |
| C80      | Ceramic        | 0.022 $\mu$ F | 25 V  | $\pm 10\%$    | B     |  |             | BCML512235Z    |
| C81      | Ceramic        | 0.01 $\mu$ F  | 50 V  | $\pm 10\%$    | B     |  |             | BCML811035Z    |
| C82      | Ceramic        | 0.1 $\mu$ F   | 16 V  | $\pm 10\%$    | B     |  |             | BCML311045Z    |
| C83      | Electrolytic   | 100 $\mu$ F   | 10 V  | $\pm 20\%$    | C-274 |  |             | BCZN111016Z    |
|          | or             | 100 $\mu$ F   | 10 V  | $\pm 20\%$    | C-258 |  |             | BCFZ111016Z    |
| C84      | Ceramic        | 0.001 $\mu$ F | 50 V  | $\pm 10\%$    | B     |  |             | BCML811025Z    |
| C85      | Ceramic        | 220 pF        | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM812214Z    |
| C86      | Ceramic        | 470 pF        | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM814714Z    |
| C87      | Ceramic        | 56 pF         | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM815604Z    |
| C88      | Ceramic        | 47 pF         | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM814704Z    |
| C89      | Ceramic        | 100 pF        | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM811014Z    |
| C90      | Ceramic        | 470 pF        | 50 V  | $\pm 5\%$     | CH    |  |             | BCMM814714Z    |
| C91      | Ceramic        | 7 pF          | 50 V  | $\pm 0.5$ pF  | RH    |  |             | BCMN817092Z    |
| C92      | Ceramic        | 3 pF          | 50 V  | $\pm 0.25$ pF | RJ    |  |             | BCMJ813091Z    |
| C93      | Ceramic        | 0.001 $\mu$ F | 50 V  | $\pm 10\%$    | B     |  |             | BCML811025Z    |



| Ref. No. | Description    |                |      |               |            | RS Part No. | Mfr's Part No. |
|----------|----------------|----------------|------|---------------|------------|-------------|----------------|
| C94      | Ceramic        | 0.001 $\mu$ F  | 50 V | $\pm 10$ %    | B          |             | BCML811025Z    |
| C95      | Ceramic        | 3 pF           | 50 V | $\pm 0.25$ pF | CJ         |             | BCMT813091Z    |
| C96      | Ceramic        | 10 pF          | 50V  | $\pm 0.5$ pF  | CH         |             | BCMM811002Z    |
| C97      | Ceramic        | 100 pF         | 50V  | $\pm 5$ %     | CH         |             | BCMM811014Z    |
| C98      | Ceramic        | 47 pF          | 50V  | $\pm 5$ %     | CH         |             | BCMM814704Z    |
| C99      | Mylar* Chip    | 0.0047 $\mu$ F | 50V  | $\pm 5$ %     | C-264      |             | BCTG814724Z    |
| C100     | Mylar* Chip    | 0.1 $\mu$ F    | 16V  | $\pm 5$ %     | C-264      |             | BCTG311044Z    |
| C101     | Mylar* Chip    | 0.0047 $\mu$ F | 50V  | $\pm 5$ %     | C-264      |             | BCTG814724Z    |
| C102     | Tantalum Chip  | 4.7 $\mu$ F    | 10V  | $\pm 20$ %    | C-122 TAPE |             | BCSH114796Z    |
|          | or             | 4.7 $\mu$ F    | 10V  | $\pm 20$ %    | A C-241    |             | BCSS114796Z    |
| C103     | Ceramic        | 0.001 $\mu$ F  | 50V  | $\pm 10$ %    | B          |             | BCML811025Z    |
| C104     | Ceramic        | 0.001 $\mu$ F  | 50V  | $\pm 10$ %    | B          |             | BCML811025Z    |
| C105     | Ceramic        | 3 pF           | 50V  | $\pm 0.25$ pF | CJ         |             | BCMT813091Z    |
| C106     | Electrolytic   | 22 $\mu$ F     | 6.3V | $\pm 20$ %    | C-274      |             | BCZN902206Z    |
|          | or             | 22 $\mu$ F     | 6.3V | $\pm 20$ %    | C-258      |             | BCFZ902206Z    |
| C107     | Electrolytic   | 4.7 $\mu$ F    | 35V  | $\pm 20$ %    | C-274      |             | BCZN664796Z    |
|          | or             | 4.7 $\mu$ F    | 35V  | $\pm 20$ %    | C-258      |             | BCFZ664796Z    |
| C108     | Ceramic        | 0.1 $\mu$ F    | 16V  | $\pm 10$ %    | B          |             | BCML311045Z    |
| C109     | Ceramic (2125) | 0.1 $\mu$ F    | 25V  | $\pm 10$ %    | B          |             | BCXT511045Z    |
| C110     | Electrolytic   | 4.7 $\mu$ F    | 35V  | $\pm 20$ %    | C-274      |             | BCZN664796Z    |
|          | or             | 4.7 $\mu$ F    | 35V  | $\pm 20$ %    | C-258      |             | BCFZ664796Z    |
| C111     | Ceramic (2125) | 1 $\mu$ F      | 16V  | $-20+80$ %    | F          |             | BCXK311050Z    |
| C112     | Ceramic        | 0.001 $\mu$ F  | 50V  | $\pm 10$ %    | B          |             | BCML811025Z    |
| C113     | Ceramic        | 82 pF          | 50V  | $\pm 5$ %     | CH         |             | BCMMB18204Z    |
| C114     | Ceramic        | 100 pF         | 50V  | $\pm 5$ %     | CH         |             | BCMM811014Z    |
| C115     | Ceramic        | 0.001 $\mu$ F  | 50V  | $\pm 10$ %    | B          |             | BCML811025Z    |
| C116     | Ceramic        | 0.75 pF        | 50V  | $\pm 0.1$ pF  | CH         |             | BCMS817588Z    |
| C117     | Ceramic        | 2 pF           | 50V  | $\pm 0.25$ pF | RK         |             | BCMH812091Z    |
| C118     | Ceramic        | 2 pF           | 50V  | $\pm 0.25$ pF | RK         |             | BCMH812091Z    |
| C119     | Mylar* Chip    | 0.0047 $\mu$ F | 50V  | $\pm 5$ %     | C-264      |             | BCTG814724Z    |
| C120     | Ceramic        | 0.001 $\mu$ F  | 50V  | $\pm 10$ %    | B          |             | BCML811025Z    |
| C121     | Mylar* Chip    | 0.1 $\mu$ F    | 50V  | $\pm 5$ %     | C-264      |             | BCTG811044Z    |
| C122     | Ceramic        | 22 pF          | 50V  | $\pm 5$ %     | CH         |             | BCMM812204Z    |
| C123     | Ceramic        | 33 pF          | 50V  | $\pm 5$ %     | CH         |             | BCMM813304Z    |
| C124     | Ceramic        | 3 pF           | 50V  | $\pm 0.25$ pF | CJ         |             | BCMT813091Z    |
| C125     | Ceramic        | 0.001 $\mu$ F  | 50V  | $\pm 10$ %    | B          |             | BCML811025Z    |
| C126     | Ceramic        | 470 pF         | 50V  | $\pm 5$ %     | CH         |             | BCMM814714Z    |
| C127     | Ceramic        | 47 pF          | 50V  | $\pm 5$ %     | CH         |             | BCMM814704Z    |
| C128     | Ceramic        | 0.001 $\mu$ F  | 50V  | $\pm 10$ %    | B          |             | BCML811025Z    |
| C129     | Ceramic        | 22 pF          | 50V  | $\pm 5$ %     | CH         |             | BCMM812204Z    |
| C130     | Electrolytic   | 100 $\mu$ F    | 10V  | $\pm 20$ %    | C-274      |             | BCZN111016Z    |
|          | or             | 100 $\mu$ F    | 10V  | $\pm 20$ %    | C-258      |             | BCFZ111016Z    |
| C131     | Ceramic (2125) | 0.22 $\mu$ F   | 16V  | $\pm 10$ %    | B          |             | BCXT312245Z    |
| C132     | Ceramic        | 0.047 $\mu$ F  | 16V  | $\pm 10$ %    | B          |             | BCML314735Z    |
| C133     | Mylar* Chip    | 0.0047 $\mu$ F | 50V  | $\pm 5$ %     | C-264      |             | BCTG814724Z    |
| C134     | Ceramic        | 100 pF         | 50V  | $\pm 5$ %     | CH         |             | BCMM811014Z    |
| C135     | Ceramic        | 0.027 $\mu$ F  | 16V  | $\pm 10$ %    | B          |             | BCML312735Z    |
| C136     | Tantalum Chip  | 4.7 $\mu$ F    | 10V  | $\pm 20$ %    | C-122 TAPE |             | BCSH114796Z    |
|          | or             | 4.7 $\mu$ F    | 10V  | $\pm 20$ %    | A C-241    |             | BCSS114796Z    |
| C137     | Ceramic        | 0.047 $\mu$ F  | 16V  | $\pm 10$ %    | B          |             | BCML314735Z    |
| C138     | Ceramic        | 0.0027 $\mu$ F | 50V  | $\pm 10$ %    | B          |             | BCML812725Z    |
| C139     | Electrolytic   | 10 $\mu$ F     | 35V  | $\pm 20$ %    | C-274      |             | BCZN661006Z    |
|          | or             | 10 $\mu$ F     | 35V  | $\pm 20$ %    | C-258      |             | BCFZ661006Z    |

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| Ref. No. | Description         |              |              |                |                       | RS Part No. | Mfr's Part No.             |
|----------|---------------------|--------------|--------------|----------------|-----------------------|-------------|----------------------------|
| C140     | Ceramic             | 18 pF        | 50V          | ±5 %           | CH                    |             | BCMM811804Z                |
| C141     | Ceramic             | 0.01 μF      | 50 V         | ±10 %          | B                     |             | BCML811035Z                |
| C142     | Ceramic             | 0.001 μF     | 50 V         | ±10 %          | B                     |             | BCML811025Z                |
| C143     | Ceramic             | 0.056 μF     | 16 V         | ±10 %          | B                     |             | BCML315635Z                |
| C144     | Ceramic             | 0.0027 μF    | 50 V         | ±10 %          | B                     |             | BCML812725Z                |
| C145     | Ceramic             | 680 pF       | 25 V         | ±5 %           | CH                    |             | BCMM516814Z                |
| C146     | Ceramic             | 0.056 μF     | 16 V         | ±10 %          | B                     |             | BCML315635Z                |
| C147     | Ceramic             | 0.0027 μF    | 50 V         | ±10 %          | B                     |             | BCML812725Z                |
| C148     | Ceramic             | 390 pF       | 50 V         | ±5 %           | CH                    |             | BCMM813914Z                |
| C149     | Ceramic             | 33 pF        | 50 V         | ±5 %           | CH                    |             | BCMM813304Z                |
| C150     | Ceramic             | 0.1 μF       | 16 V         | ±10 %          | B                     |             | BCML311045Z                |
| C151     | Not Used            |              |              |                |                       |             |                            |
| C152     | Ceramic             | 0.001 μF     | 50 V         | ±10 %          | B                     |             | BCML811025Z                |
| C153     | Not Used            |              |              |                |                       |             |                            |
| C154     | Ceramic             | 0.0068 μF    | 50 V         | ±10 %          | B                     |             | BCML816825Z                |
| C155     | Ceramic             | 0.012 μF     | 50 V         | ±10 %          | B                     |             | BCML811235Z                |
| C156     | Not Used            |              |              |                |                       |             |                            |
| C157     | Ceramic             | 0.001 μF     | 50 V         | ±10 %          | B                     |             | BCML811025Z                |
| C158     | Ceramic             | 0.001 μF     | 50 V         | ±10 %          | B                     |             | BCML811025Z                |
| C159,160 | Not Used            |              |              |                |                       |             |                            |
| C161     | Ceramic             | 100 pF       | 50 V         | ±5 %           | CH                    |             | BCMM811014Z                |
| C162,163 | Not Used            |              |              |                |                       |             |                            |
| C164     | Ceramic             | 0.1 μF       | 16 V         | ±10 %          | B                     |             | BCML311045Z                |
| C165     | Not Used            |              |              |                |                       |             |                            |
| C166     | Ceramic             | 0.01 μF      | 50 V         | ±10 %          | B                     |             | BCML811035Z                |
| C167     | Ceramic             | 15 pF        | 50 V         | ±5 %           | CH                    |             | BCMM811504Z                |
| C168     | Ceramic             | 15 pF        | 50 V         | ±5 %           | CH                    |             | BCMM811504Z                |
| C169     | Tantalum Chip<br>or | 1 μF<br>1 μF | 16 V<br>16 V | ±20 %<br>±20 % | C-122 TAPE<br>A C-227 |             | BCSH311096Z<br>BCPP311096Z |
| C170     | Not Used            |              |              |                |                       |             |                            |
| C171     | Ceramic             | 27 pF        | 50 V         | ±5 %           | CH                    |             | BCMM812704Z                |
| C172     | Ceramic             | 0.1 μF       | 16 V         | ±10 %          | B                     |             | BCML311045Z                |
| C173     | Ceramic             | 0.015 μF     | 50 V         | ±10 %          | B                     |             | BCML811535Z                |
| C174     | Ceramic             | 0.015 μF     | 50 V         | ±10 %          | B                     |             | BCML811535Z                |
| C175     | Ceramic             | 0.0082 μF    | 50 V         | ±10 %          | B                     |             | BCML818225Z                |
| C176     | Ceramic             | 0.015 μF     | 50 V         | ±10 %          | B                     |             | BCML811535Z                |
| C177     | Ceramic             | 0.0022 μF    | 50 V         | ±10 %          | B                     |             | BCML812225Z                |
| C178     | Ceramic             | 0.01 μF      | 50 V         | ±10 %          | B                     |             | BCML811035Z                |
| C179     | Ceramic (2125)      | 0.0022 μF    | 50 V         | ±5 %           | CH                    |             | BCBH812224Z                |
| C180     | Ceramic             | 47 pF        | 50 V         | ±5 %           | CH                    |             | BCMM814704Z                |
| C181     | Ceramic             | 0.001 μF     | 50 V         | ±10 %          | B                     |             | BCML811025Z                |
| C182     | Ceramic             | 0.001 μF     | 50 V         | ±10 %          | B                     |             | BCML811025Z                |
| C183     | Ceramic             | 100 pF       | 50 V         | ±5 %           | CH                    |             | BCMM811014Z                |
| C184     | Ceramic             | 0.001 μF     | 50 V         | ±10 %          | B                     |             | BCML811025Z                |
| C185     | Not Used            |              |              |                |                       |             |                            |
| C186     | Ceramic             | 100 pF       | 50 V         | ±5 %           | CH                    |             | BCMM811014Z                |
| C187     | Ceramic             | 100 pF       | 50 V         | ±5 %           | CH                    |             | BCMM811014Z                |
| C189     | Ceramic             | 10 pF        | 50 V         | ±0.5 pF        | CH                    |             | BCMM811002Z                |
| C190     | Not Used            |              |              |                |                       |             |                            |
| C191     | Ceramic             | 100 pF       | 50 V         | ±5 %           | CH                    |             | BCMM811014Z                |
| C192     | Ceramic             | 0.001 μF     | 50 V         | ±10 %          | B                     |             | BCML811025Z                |
| C193     | Ceramic             | 0.001 μF     | 50 V         | ±10 %          | B                     |             | BCML811025Z                |
| C194     | Ceramic             | 5 pF         | 50 V         | ±0.25 pF       | CH                    |             | BCMM815091Z                |



| Ref. No. | Description |            |                     |          |    | RS Part No. | Mfr's Part No. |
|----------|-------------|------------|---------------------|----------|----|-------------|----------------|
| C195,196 | Not Used    |            |                     |          |    |             |                |
| C197     | Ceramic     | 68 pF      | 50 V                | ±5 %     | CH |             | BCMM816804Z    |
| C198     | Ceramic     | 4 pF       | 50 V                | ±0.25 pF | CH |             | BCMM814091Z    |
| C199     | Ceramic     | 4 pF       | 50 V                | ±0.25 pF | CH |             | BCMM814091Z    |
| CT1      | Trimmer     | 30 pF      | CT-090 ECR-LA030E52 |          |    |             | BCTY0090900    |
| Filters  |             |            |                     |          |    |             |                |
| FT1      | SAW         | FL-876     | SAF380MA10T         |          |    |             | BFLY0876001    |
| FT2      | Crystal     | FL-842     | UMF-7078A           |          |    |             | BFLY0842001    |
| FT3      | Ceramic     | FL-739     | SFPC450D            |          |    |             | BFLY0739001    |
| Diodes   |             |            |                     |          |    |             |                |
| D1       |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D2       |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D3       |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D4       |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D5       |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D6       |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D7       |             |            | 1SS355              | TE-17    |    |             | BDAY0807001    |
| D8       |             |            | 1SS355              | TE-17    |    |             | BDAY0807001    |
| D9       |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D10      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D11      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D12      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D13      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D14      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D15      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D16      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D17      |             | DSM10C     |                     | TR       |    |             | BDAY0555001    |
| D18      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D19      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D20~23   | Not Used    |            |                     |          |    |             |                |
| D24      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D25      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D26      | Varicap     | MA357-(TX) |                     |          |    |             | BDAY1077001    |
| D27      | Varicap     | HVU308-1   |                     | TRF      |    |             | BDAY0874001    |
| D28      | Zener       | UDZS7.5B   |                     | TE-17    |    |             | BDAY1082015    |
| D29      | Not Used    |            |                     |          |    |             |                |
| D30      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D31      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D32      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D33      |             | DA-1041    | 1SS390              | TE61     |    |             | BDAY1041001    |
| D34      | Not Used    |            |                     |          |    |             |                |
| D35      | Varicap     | MA357-(TX) |                     |          |    |             | BDAY1077001    |
| D36      |             |            | 1SS226              | TE85L    |    |             | BDAY0274001    |
| D37      |             |            | 1SS355              | TE-17    |    |             | BDAY0807001    |
| D38      |             |            | 1SS355              | TE-17    |    |             | BDAY0807001    |
| D39~41   | Not Used    |            |                     |          |    |             |                |
| D42      |             |            | 1SS184              | TE85L    |    |             | BDAY0256001    |



| Ref. No. | Description          |                     | RS Part No.                | Mfr's Part No. |
|----------|----------------------|---------------------|----------------------------|----------------|
| ICs      |                      |                     |                            |                |
| IC1      |                      | UPC8112T-E3         |                            | BDEY2885003    |
| IC2      |                      | MC3361CDR2          |                            | BDEY2768003    |
| IC3      |                      | TDA7233D TAPE       |                            | BDEY2587003    |
| IC4      |                      | LA1600A             |                            | BDEY1000001    |
| IC5      |                      | TK11238EMCL         |                            | BDEY3881003    |
| IC6      |                      | MB15U36PFV-G-BND-ER |                            | BDEY3642003    |
| IC7      |                      | TK11806M            |                            | BDEY0999001    |
| IC8      |                      | NJM3403AV-TE1       |                            | BDEY2421003    |
| IC9      |                      | NJM3403AV-TE1       |                            | BDEY2421003    |
| IC10     | Not Used             |                     |                            |                |
| IC11     |                      | BU4088BCFV-E2       |                            | BDEY3876003    |
| IC12     |                      | FX589D5 TR          |                            | BDEY3902003    |
| IC13-15  | Not Used             |                     |                            |                |
| IC16     |                      | BU2092FV-E2         |                            | BDEY3875003    |
| IC17     |                      | LMC567CMX TAPE      |                            | BDEY2734003    |
| Jacks    |                      |                     |                            |                |
| J1       | Speaker              | JK-424              | HSJ0836-01-500             | BJKY0424001    |
| J2       |                      | JK-285              | HEC2711-01-620             | BJKY0285001    |
| J3       |                      | JK-459              | 53047-0210 2P              | BJKY0459002    |
| J4       | Not Used             |                     |                            |                |
| J5       | Plug                 | PG-177              | 9210B-2-22Z395-GF          | BPGY0177022    |
| Coils    |                      |                     |                            |                |
| L1       | Inductor Molded Chip | LZ188               | ELJRE2N2DF2 0.0022 $\mu$ H | BLZY0188226    |
| L2       | Inductor Molded Chip | LZ188               | ELJRE5N6JF2 0.0056 $\mu$ H | BLZY0188566    |
| L3       | Inductor Molded Chip | LZ188               | ELJRE4N7JF2 0.0047 $\mu$ H | BLZY0188476    |
| L4       | Inductor Molded Chip | LZ-188              | ELJRE27NJF2 0.027 $\mu$ H  | BLZY0188277    |
| L5       | Inductor Molded Chip | LZ-188              | ELJRE10NJF2 0.01 $\mu$ H   | BLZY0188107    |
| L6       | Inductor Molded Chip | LZ-188              | ELJRE56NJF3 0.056 $\mu$ H  | BLZY0188567    |
| L7       | Inductor Molded Chip | LZ-188              | ELJRE12NJF2 0.012 $\mu$ H  | BLZY0188127    |
| L8       | Inductor Molded Chip | LZ188               | ELJRE1N5DF2 0.0015 $\mu$ H | BLZY0188156    |
| L9       | Inductor Molded Chip | LZ-188              | ELJRE27NJF2 0.027 $\mu$ H  | BLZY0188277    |
| L10      | Inductor Molded Chip | LZ-188              | ELJRE56NJF3 0.056 $\mu$ H  | BLZY0188567    |
| L11      | Inductor Molded Chip | LZ-087              | 10 $\mu$ H J TAPE          | BLZY0087100    |
| L12      | Chip Tape            | LF-271              | 614AG-0246GW=P3            | BLFY0271001    |
| L13      | Inductor Molded Chip | LZ-188              | ELJRE27NJF2 0.027 $\mu$ H  | BLZY0188277    |
| L14      | Inductor Molded Chip | LZ-199              | ELJNDR18JF 0.18 $\mu$ H    | BLZY0199188    |
| L15      | Inductor Molded Chip | LZ-199              | ELJNDR27JF 0.27 $\mu$ H    | BLZY0199278    |
| L16      | Inductor Molded Chip | LZ-188              | ELJRE15NJF2 0.015 $\mu$ H  | BLZY0188157    |
| L17      | Inductor Molded Chip | LZ-199              | ELJNDR15JF 0.15 $\mu$ H    | BLZY0199158    |
| L18      | Inductor Molded Chip | LZ-199              | ELJNDR15JF 0.15 $\mu$ H    | BLZY0199158    |
| L19      | Inductor Molded Chip | LZ-199              | ELJND12NJF 0.012 $\mu$ H   | BLZY0199127    |
| L20      | Inductor Molded Chip | LZ-199              | ELJND10NJF 0.01 $\mu$ H    | BLZY0199107    |
| L21      | Inductor Molded Chip | LZ-188              | ELJRE27NJF2 0.027 $\mu$ H  | BLZY0188277    |
| L22      | Inductor Molded Chip | LZ-199              | ELJNDR33JF 0.33 $\mu$ H    | BLZY0199338    |
| L23      | Inductor Molded Chip | LZ-188              | ELJRE15NJF2 0.015 $\mu$ H  | BLZY0188157    |
| L24      | Inductor Molded Chip | LZ-199              | ELJND10NJF 0.01 $\mu$ H    | BLZY0199107    |
| L25      | Inductor Molded      | LZ-077              | 395AN-0054Z 1.2 MH         | BLZY0077122    |



| Ref. No.           | Description          |         |                            |         | RS Part No. | Mfr's Part No. |
|--------------------|----------------------|---------|----------------------------|---------|-------------|----------------|
| L26                | Inductor Molded Chip | LZ-199  | ELJNDR15JF 0.15 $\mu$ H    |         |             | BLZY0199158    |
| L27                | Inductor Molded Chip | LZ-199  | ELJNDR15JF 0.15 $\mu$ H    |         |             | BLZY0199158    |
| L28,29             | Not Used             |         |                            |         |             |                |
| L30                | Inductor Molded Chip | LZ188   | ELJFE4N7JF2 0.0047 $\mu$ H |         |             | BLZY0188476    |
| L31                | Not Used             |         |                            |         |             |                |
| L32                | Inductor Molded Chip | LZ-188  | ELJFE39NJF2 0.039 $\mu$ H  |         |             | BLZY0188397    |
| L33                | Inductor Molded Chip | LZ-199  | ELJNDR10JF 0.1 $\mu$ H     |         |             | BLZY0199108    |
| L34                | Inductor Molded Chip | LZ188   | ELJFE8N2JF2 0.0082 $\mu$ H |         |             | BLZY0188826    |
| L35                | Inductor Molded Chip | LZ-199  | ELJNDR12JF 0.12 $\mu$ H    |         |             | BLZY0199128    |
| <b>Transistors</b> |                      |         |                            |         |             |                |
| Q1                 |                      | DB-035  | 2SA812(M)-M6A              | T1B     |             | BDBA0812695    |
|                    | or                   | DB-036  | 2SA1162-Y                  | TE85L   |             | BDBA1162124    |
| Q2                 |                      | DB-848  | 2SC5065-Y                  | (TE85R) |             | BDBC5065124    |
| Q3                 |                      | DB-848  | 2SC5065-Y                  | (TE85R) |             | BDBC5065124    |
| Q4                 |                      | DB-724  | 2SC3121                    | TE85L   |             | BDBC3121000    |
| Q5                 |                      | DB-126  | 2SB1115-YL                 | T1      |             | BDBB1115333    |
| Q6                 |                      | DB-711  | 2SC3356-R24                | T1B     |             | BDBC3356646    |
| Q7                 |                      | DB-711  | 2SC3356-R24                | T1B     |             | BDBC3356646    |
| Q8                 |                      | DB-380  | 2SC1623-L6                 | T1B     |             | BDBC1623648    |
|                    | or                   | DB-381  | 2SC2712-Y                  | TE85L   |             | BDBC2712124    |
| Q9                 |                      | DB-380  | 2SC1623-L6                 | T1B     |             | BDBC1623648    |
|                    | or                   | 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-380  | 2SC1623-L6                 | T1B     |             | BDBC1623648    |
|                    | or                   | DB-381  | 2SC2712-Y                  | TE85L   |             | BDBC2712124    |
| Q15                |                      | DB-035  | 2SA812(M)-M6A              | T1B     |             | BDBA0812695    |
|                    | or                   | DB-036  | 2SA1162-Y                  | TE85L   |             | BDBA1162124    |
| Q16                |                      | DB-380  | 2SC1623-L6                 | T1B     |             | BDBC1623648    |
|                    | or                   | DB-381  | 2SC2712-Y                  | TE85L   |             | BDBC2712124    |
| Q17                |                      | DB-711  | 2SC3356-R24                | T1B     |             | BDBC3356646    |
| Q18-22             | Not Used             |         |                            |         |             |                |
| Q23                |                      | DB-1004 | MMBT6428L                  | T1      |             | BDBZ1004001    |
| Q24                | Field Effect         | DC-052  | 2SK209-GR                  |         |             | BDCB0209303    |
| Q25                |                      | DB-380  | 2SC1623-L6                 | T1B     |             | BDBC1623648    |
|                    | or                   | DB-381  | 2SC2712-Y                  | TE85L   |             | BDBC2712124    |
| Q26                |                      | DB-035  | 2SA812(M)-M6A              | T1B     |             | BDBA0812695    |
|                    | or                   | DB-036  | 2SA1162-Y                  | TE85L   |             | BDBA1162124    |
| Q27                |                      | DB-035  | 2SA812(M)-M6A              | T1B     |             | BDBA0812695    |
|                    | or                   | DB-036  | 2SA1162-Y                  | TE85L   |             | BDBA1162124    |
| Q28                |                      | DB-035  | 2SA812(M)-M6A              | T1B     |             | BDBA0812695    |
|                    | or                   | DB-036  | 2SA1162-Y                  | TE85L   |             | BDBA1162124    |
| Q29                |                      | DB-380  | 2SC1623-L6                 | T1B     |             | BDBC1623648    |
|                    | or                   | DB-381  | 2SC2712-Y                  | TE85L   |             | BDBC2712124    |
| Q30                |                      | DB-380  | 2SC1623-L6                 | T1B     |             | BDBC1623648    |
|                    | or                   | DB-381  | 2SC2712-Y                  | TE85L   |             | BDBC2712124    |
| Q31                |                      | DB-380  | 2SC1623-L6                 | T1B     |             | BDBC1623648    |
|                    | or                   | DB-381  | 2SC2712-Y                  | TE85L   |             | BDBC2712124    |



| Ref. No.         | Description                                 | RS Part No. | Mfr's Part No. |
|------------------|---------------------------------------------|-------------|----------------|
| <b>Resistors</b> |                                             |             |                |
| R1               | Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$   |             | BRFC161024Z    |
| R2               | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R3               | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R4               | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R5               | Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 5\%$ |             | BRFC164724Z    |
| R6               | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R7               | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R8               | Carbon Fixed Chip 100 kohm 1/16 W $\pm 5\%$ |             | BRFC161044Z    |
| R9               | Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$  |             | BRFC161014Z    |
| R10              | Carbon Fixed Chip 68 kohm 1/16 W $\pm 5\%$  |             | BRFC166834Z    |
| R11              | Carbon Fixed Chip 15 kohm 1/16 W $\pm 5\%$  |             | BRFC161534Z    |
| R12              | Carbon Fixed Chip 330 ohm 1/16 W $\pm 5\%$  |             | BRFC163314Z    |
| R13              | Carbon Fixed Chip 15 ohm 1/16 W $\pm 5\%$   |             | BRFC161504Z    |
| R14              | Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$  |             | BRFC161014Z    |
| R15              | Carbon Fixed Chip 68 kohm 1/16 W $\pm 5\%$  |             | BRFC166834Z    |
| R16              | Carbon Fixed Chip 15 kohm 1/16 W $\pm 5\%$  |             | BRFC161534Z    |
| R17              | Carbon Fixed Chip 820 ohm 1/16 W $\pm 5\%$  |             | BRFC168214Z    |
| R18              | Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$  |             | BRFC161014Z    |
| R19              | Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$  |             | BRFC161014Z    |
| R20              | Carbon Fixed Chip 100 kohm 1/16 W $\pm 5\%$ |             | BRFC161044Z    |
| R21              | Carbon Fixed Chip 5.6 kohm 1/16 W $\pm 5\%$ |             | BRFC165624Z    |
| R22              | Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$  |             | BRFC161014Z    |
| R23              | Carbon Fixed Chip 33 kohm 1/16 W $\pm 5\%$  |             | BRFC163334Z    |
| R24              | Carbon Fixed Chip 330 kohm 1/16 W $\pm 5\%$ |             | BRFC163344Z    |
| R25              | Carbon Fixed Chip 270 kohm 1/16 W $\pm 5\%$ |             | BRFC162744Z    |
| R26              | Carbon Fixed Chip 27 kohm 1/16 W $\pm 5\%$  |             | BRFC162734Z    |
| R27              | Carbon Fixed Chip 330 kohm 1/16 W $\pm 5\%$ |             | BRFC163344Z    |
| R28              | Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$  |             | BRFC161034Z    |
| R29              | Carbon Fixed Chip 220 kohm 1/16 W $\pm 5\%$ |             | BRFC162244Z    |
| R30              | Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$  |             | BRFC164734Z    |
| R31              | Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$  |             | BRFC161034Z    |
| R32              | Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$  |             | BRFC164734Z    |
| R33              | Carbon Fixed Chip 680 kohm 1/16 W $\pm 5\%$ |             | BRFC166844Z    |
| R34              | Carbon Fixed Chip 470 kohm 1/16 W $\pm 5\%$ |             | BRFC164744Z    |
| R35              | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R36              | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R37              | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R38              | Carbon Fixed Chip 470 ohm 1/16 W $\pm 5\%$  |             | BRFC164714Z    |
| R39              | Carbon Fixed Chip 330 ohm 1/16 W $\pm 5\%$  |             | BRFC163314Z    |
| R40              | Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$   |             | BRFC161024Z    |
| R41              | Carbon Fixed Chip 27 ohm 1/16 W $\pm 5\%$   |             | BRFC162704Z    |
| R42              | Carbon Fixed Chip 1 Mohm 1/16 W $\pm 5\%$   |             | BRFC161054Z    |
| R43              | Carbon Fixed Chip 22 kohm 1/16 W $\pm 5\%$  |             | BRFC162234Z    |
| R44              | Carbon Fixed Chip 27 kohm 1/16 W $\pm 5\%$  |             | BRFC162734Z    |
| R45              | Carbon Fixed Chip 4.7 ohm 1/16 W $\pm 5\%$  |             | BRFC164794Z    |
| R46              | Carbon Fixed Chip 560 ohm 1/16 W $\pm 5\%$  |             | BRFC165614Z    |
| R47              | Not Used                                    |             |                |
| R48              | Carbon Fixed Chip 47 kohm 1/16 W $\pm 5\%$  |             | BRFC164734Z    |
| R49              | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R50              | Carbon Fixed Chip 2.2 kohm 1/16 W $\pm 5\%$ |             | BRFC162224Z    |
| R51              | Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 5\%$ |             | BRFC164724Z    |



| Ref. No. | Description                            | RS Part No. | Mfr's Part No. |
|----------|----------------------------------------|-------------|----------------|
| R52      | Carbon Fixed Chip 15 kohm 1/16 W +5 %  |             | BRFC161534Z    |
| R53      | Carbon Fixed Chip 270 ohm 1/16 W ±5 %  |             | BRFC162714Z    |
| R54      | Carbon Fixed Chip 22 ohm 1/16 W +5 %   |             | BRFC162204Z    |
| R55      | Carbon Fixed Chip 330 ohm 1/16 W ±5 %  |             | BRFC163314Z    |
| R56      | Carbon Fixed Chip 120 ohm 1/16 W +5 %  |             | BRFC161214Z    |
| R57      | Carbon Fixed Chip 4.7 kohm 1/16 W ±5 % |             | BRFC164724Z    |
| R58      | Carbon Fixed Chip 680 ohm 1/16 W +5 %  |             | BRFC166814Z    |
| R59      | Carbon Fixed Chip 39 kohm 1/16 W ±5 %  |             | BRFC163934Z    |
| R60      | Carbon Fixed Chip 1 kohm 1/16 W ±5 %   |             | BRFC161024Z    |
| R61      | Carbon Fixed Chip 22 ohm 1/16 W ±5 %   |             | BRFC162204Z    |
| R62      | Carbon Fixed Chip 820 ohm 1/16 W +5 %  |             | BRFC168214Z    |
| R63      | Carbon Fixed Chip 1 Mohm 1/16 W ±5 %   |             | BRFC161054Z    |
| R64      | Carbon Fixed Chip 10 kohm 1/16 W +5 %  |             | BRFC161034Z    |
| R65      | Not Used                               |             |                |
| R66      | Carbon Fixed Chip 4.7 ohm 1/10 W +5 %  |             | BRFC014794Z    |
| R67      | Carbon Fixed Chip 12 ohm 1 W ±5 %      |             | BRFC101204Z    |
| R68      | Carbon Fixed Chip 22 kohm 1/16 W +5 %  |             | BRFC162234Z    |
| R69      | Carbon Fixed Chip 2.2 kohm 1/16 W ±5 % |             | BRFC162224Z    |
| R70      | Carbon Fixed Chip 2.2 kohm 1/16 W ±5 % |             | BRFC162224Z    |
| R71      | Carbon Fixed Chip 10 kohm 1/16 W ±5 %  |             | BRFC161034Z    |
| R72      | Carbon Fixed Chip 15 kohm 1/16 W ±5 %  |             | BRFC161534Z    |
| R73      | Carbon Fixed Chip 22 ohm 1/16 W ±5 %   |             | BRFC162204Z    |
| R74      | Carbon Fixed Chip 100 kohm 1/16 W ±5 % |             | BRFC161044Z    |
| R75      | Carbon Fixed Chip 68 ohm 1/16 W ±5 %   |             | BRFC166804Z    |
| R76      | Carbon Fixed Chip 68 kohm 1/16 W ±5 %  |             | BRFC166834Z    |
| R77      | Carbon Fixed Chip 10 kohm 1/16 W ±5 %  |             | BRFC161034Z    |
| R78      | Carbon Fixed Chip 10 kohm 1/16 W ±5 %  |             | BRFC161034Z    |
| R79      | Carbon Fixed Chip 5.6 kohm 1/16 W ±5 % |             | BRFC165624Z    |
| R80      | Carbon Fixed Chip 47 ohm 1/16 W ±5 %   |             | BRFC164704Z    |
| R81      | Carbon Fixed Chip 330 ohm 1/16 W ±5 %  |             | BRFC163314Z    |
| R82      | Carbon Fixed Chip 100 kohm 1/16 W ±5 % |             | BRFC161044Z    |
| R83      | Carbon Fixed Chip 68 ohm 1/16 W +5 %   |             | BRFC166804Z    |
| R84      | Carbon Fixed Chip 10 kohm 1/16 W ±5 %  |             | BRFC161034Z    |
| R85      | Carbon Fixed Chip 8.2 kohm 1/16 W ±5 % |             | BRFC168224Z    |
| R86      | Carbon Fixed Chip 4.7 kohm 1/16 W ±5 % |             | BRFC164724Z    |
| R87      | Carbon Fixed Chip 22 kohm 1/16 W ±5 %  |             | BRFC162234Z    |
| R88      | Carbon Fixed Chip 1 kohm 1/16 W ±5 %   |             | BRFC161024Z    |
| R89      | Carbon Fixed Chip 47 kohm 1/16 W ±5 %  |             | BRFC164734Z    |
| R90      | Carbon Fixed Chip 2.2 kohm 1/16 W +5 % |             | BRFC162224Z    |
| R91      | Carbon Fixed Chip 2.2 kohm 1/16 W ±5 % |             | BRFC162224Z    |
| R92      | Carbon Fixed Chip 4.7 kohm 1/16 W +5 % |             | BRFC164724Z    |
| R93      | Carbon Fixed Chip 4.7 kohm 1/16 W ±5 % |             | BRFC164724Z    |
| R94      | Carbon Fixed Chip 100 ohm 1/16 W +5 %  |             | BRFC161014Z    |
| R95      | Not Used                               |             |                |
| R96      | Carbon Fixed Chip 270 ohm 1/16 W ±5 %  |             | BRFC162714Z    |
| R97      | Carbon Fixed Chip 22 kohm 1/16 W ±5 %  |             | BRFC162234Z    |
| R98      | Carbon Fixed Chip 100 kohm 1/16 W ±5 % |             | BRFC161044Z    |
| R99      | Carbon Fixed Chip 1.8 kohm 1/16 W ±5 % |             | BRFC161824Z    |
| R100     | Carbon Fixed Chip 2.2 kohm 1/16 W ±5 % |             | BRFC162224Z    |
| R101     | Carbon Fixed Chip 10 kohm 1/16 W ±5 %  |             | BRFC161034Z    |
| R102     | Carbon Fixed Chip 1 kohm 1/16 W ±5 %   |             | BRFC161024Z    |
| R103     | Carbon Fixed Chip 390 kohm 1/16 W +5 % |             | BRFC163944Z    |
| R104     | Carbon Fixed Chip 100 ohm 1/16 W ±5 %  |             | BRFC161014Z    |



| Ref. No. | Description                                 | RS Part No. | Mir'a Part No. |
|----------|---------------------------------------------|-------------|----------------|
| R105     | Carbon Fixed Chip 10 ohm 1/16 W $\pm 5\%$   |             | BRFC161004Z    |
| R106     | Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 5\%$ |             | BRFC164724Z    |
| R107     | Carbon Fixed Chip 470 kohm 1/16 W $\pm 5\%$ |             | BRFC164744Z    |
| R108     | Carbon Fixed Chip 330 kohm 1/16 W $\pm 5\%$ |             | BRFC163344Z    |
| R109     | Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$   |             | BRFC161024Z    |
| R110     | Not Used                                    |             |                |
| R111     | Carbon Fixed Chip 0 ohm 1/16 W $\pm 5\%$    |             | BRFC160004Z    |
| R112     | Carbon Fixed Chip 0 ohm 1/16 W $\pm 5\%$    |             | BRFC160004Z    |
| R113,114 | Not Used                                    |             |                |
| R115     | Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 5\%$ |             | BRFC164724Z    |
| R116     | Carbon Fixed Chip 470 ohm 1/16 W $\pm 5\%$  |             | BRFC164714Z    |
| R117     | Carbon Fixed Chip 5.6 kohm 1/16 W $\pm 5\%$ |             | BRFC165624Z    |
| R118     | Carbon Fixed Chip 8.2 kohm 1/16 W $\pm 5\%$ |             | BRFC168224Z    |
| R119     | Carbon Fixed Chip 3.9 kohm 1/16 W $\pm 5\%$ |             | BRFC163924Z    |
| R120     | Carbon Fixed Chip 33 kohm 1/16 W $\pm 5\%$  |             | BRFC163334Z    |
| R121     | Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$  |             | BRFC161034Z    |
| R122     | Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$  |             | BRFC161034Z    |
| R123     | Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$  |             | BRFC161034Z    |
| R124     | Carbon Fixed Chip 390 kohm 1/16 W $\pm 5\%$ |             | BRFC163944Z    |
| R125     | Carbon Fixed Chip 4.7 kohm 1/16 W $\pm 5\%$ |             | BRFC164724Z    |
| R126     | Carbon Fixed Chip 8.2 kohm 1/16 W $\pm 5\%$ |             | BRFC168224Z    |
| R127     | Carbon Fixed Chip 3.3 kohm 1/16 W $\pm 5\%$ |             | BRFC163324Z    |
| R128     | Carbon Fixed Chip 1 Mohm 1/16 W $\pm 5\%$   |             | BRFC161054Z    |
| R129     | Carbon Fixed Chip 680 kohm 1/16 W $\pm 5\%$ |             | BRFC166844Z    |
| R130     | Carbon Fixed Chip 220 kohm 1/16 W $\pm 5\%$ |             | BRFC162244Z    |
| R131     | Carbon Fixed Chip 2.2 Mohm 1/16 W $\pm 5\%$ |             | BRFC162254Z    |
| R132     | Carbon Fixed Chip 6.8 kohm 1/16 W $\pm 5\%$ |             | BRFC166824Z    |
| R133     | Carbon Fixed Chip 100 kohm 1/16 W $\pm 5\%$ |             | BRFC161044Z    |
| R134     | Carbon Fixed Chip 100 kohm 1/16 W $\pm 5\%$ |             | BRFC161044Z    |
| R135     | Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$  |             | BRFC161034Z    |
| R136     | Carbon Fixed Chip 100 ohm 1/16 W $\pm 5\%$  |             | BRFC161014Z    |
| R137     | Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$  |             | BRFC161034Z    |
| R138     | Carbon Fixed Chip 470 kohm 1/16 W $\pm 5\%$ |             | BRFC164744Z    |
| R139,140 | Not Used                                    |             |                |
| R141     | Carbon Fixed Chip 470 kohm 1/16 W $\pm 5\%$ |             | BRFC164744Z    |
| R142     | Carbon Fixed Chip 10 kohm 1/16 W $\pm 5\%$  |             | BRFC161034Z    |
| R143     | Carbon Fixed Chip 680 kohm 1/16 W $\pm 5\%$ |             | BRFC166844Z    |
| R144     | Carbon Fixed Chip 680 kohm 1/16 W $\pm 5\%$ |             | BRFC166844Z    |
| R145     | Carbon Fixed Chip 820 kohm 1/16 W $\pm 5\%$ |             | BRFC168244Z    |
| R146     | Not Used                                    |             |                |
| R147     | Carbon Fixed Chip 820 kohm 1/16 W $\pm 5\%$ |             | BRFC168244Z    |
| R148     | Carbon Fixed Chip 220 kohm 1/16 W $\pm 5\%$ |             | BRFC162244Z    |
| R149     | Not Used                                    |             |                |
| R150     | Carbon Fixed Chip 5.6 kohm 1/16 W $\pm 5\%$ |             | BRFC165624Z    |
| R151     | Carbon Fixed Chip 1 Mohm 1/16 W $\pm 5\%$   |             | BRFC161054Z    |
| R152     | Carbon Fixed Chip 100 kohm 1/16 W $\pm 5\%$ |             | BRFC161044Z    |
| R153     | Carbon Fixed Chip 27 kohm 1/16 W $\pm 5\%$  |             | BRFC162734Z    |
| R154     | Carbon Fixed Chip 220 ohm 1/16 W $\pm 5\%$  |             | BRFC162214Z    |
| R155     | Carbon Fixed Chip 22 kohm 1/16 W $\pm 5\%$  |             | BRFC162234Z    |
| R156     | Carbon Fixed Chip 22 kohm 1/16 W $\pm 5\%$  |             | BRFC162234Z    |
| R157     | Carbon Fixed Chip 5.6 kohm 1/16 W $\pm 5\%$ |             | BRFC165624Z    |
| R158,159 | Not Used                                    |             |                |
| R160     | Carbon Fixed Chip 1 kohm 1/16 W $\pm 5\%$   |             | BRFC161024Z    |



| Ref. No.             | Description       |          |                     | RS Part No. | Mfr's Part No. |
|----------------------|-------------------|----------|---------------------|-------------|----------------|
| R161                 | Carbon Fixed Chip | 10 kohm  | 1/16 W +5 %         |             | BRFC161034Z    |
| R162                 | Carbon Fixed Chip | 10 kohm  | 1/16 W ±5 %         |             | BRFC161034Z    |
| R163                 | Carbon Fixed Chip | 10 kohm  | 1/16 W ±5 %         |             | BRFC161034Z    |
| R164                 | Carbon Fixed Chip | 10 kohm  | 1/16 W ±5 %         |             | BRFC161034Z    |
| R165,166             | Not Used          |          |                     |             |                |
| R167                 | Carbon Fixed Chip | 47 kohm  | 1/16 W ±5 %         |             | BRFC164734Z    |
| R168                 | Carbon Fixed Chip | 2.2 kohm | 1/16 W +5 %         |             | BRFC162224Z    |
| R169                 | Carbon Fixed Chip | 2.2 kohm | 1/16 W ±5 %         |             | BRFC162224Z    |
| R170                 | Carbon Fixed Chip | 5.6 kohm | 1/16 W ±5 %         |             | BRFC165624Z    |
| R171                 | Carbon Fixed Chip | 82 kohm  | 1/16 W ±5 %         |             | BRFC168234Z    |
| R172                 | Carbon Fixed Chip | 22 kohm  | 1/16 W ±5 %         |             | BRFC162234Z    |
| R173                 | Carbon Fixed Chip | 22 kohm  | 1/16 W ±5 %         |             | BRFC162234Z    |
| R174                 | Carbon Fixed Chip | 100 kohm | 1/16 W ±5 %         |             | BRFC161044Z    |
| R175                 | Carbon Fixed Chip | 22 kohm  | 1/16 W ±5 %         |             | BRFC162234Z    |
| R176                 | Carbon Fixed Chip | 22 kohm  | 1/16 W ±5 %         |             | BRFC162234Z    |
| R177                 | Carbon Fixed Chip | 220 kohm | 1/16 W ±5 %         |             | BRFC162244Z    |
| R178                 | Carbon Fixed Chip | 10 kohm  | 1/16 W ±5 %         |             | BRFC161034Z    |
| R179                 | Carbon Fixed Chip | 10 kohm  | 1/16 W ±5 %         |             | BRFC161034Z    |
| R180                 | Not Used          |          |                     |             |                |
| R181                 | Carbon Fixed Chip | 10 kohm  | 1/16 W ±5 %         |             | BRFC161034Z    |
| R182                 | Carbon Fixed Chip | 100 kohm | 1/16 W ±5 %         |             | BRFC161044Z    |
| R183                 | Carbon Fixed Chip | 100 kohm | 1/16 W ±5 %         |             | BRFC161044Z    |
| R184                 | Not Used          |          |                     |             |                |
| R185                 | Carbon Fixed Chip | 10 kohm  | 1/16 W +5 %         |             | BRFC161034Z    |
| RT1                  | Semi-Fixed (Tape) | RT-550   | 100 KB              |             | BRTY0550104    |
| RT2                  | Not Used          |          |                     |             |                |
| RT3                  | Semi-Fixed (Tape) | RT-550   | 22 KB               |             | BRTY0550223    |
| RT4                  | Semi-Fixed (Tape) | RT-550   | 100 KB              |             | BRTY0550104    |
| VR1                  | Variable          | RV-873   | TP96N00N 100 KA W/S |             | BRVY0873001    |
| VR2                  | Variable          | RV-874   | TP96N00 100 KC      |             | BRVY0874001    |
| <b>Miscellaneous</b> |                   |          |                     |             |                |
| S1                   | Switch Slide      | SW-465   | SLVG-12BP04         |             | BSWY0465001    |
| TP1                  | Terminal Pin      | TP-118   | IPS-1091-01         |             | BTPY0118001    |
| X1                   | Crystal           | QX-631   | 10.4 MHz            |             | BQXY0631001    |
| X2                   | Crystal           | QX-727   | 4.9152 MHz          |             | BQXY0727001    |



# LOGIC PCB ASSEMBLY

| Ref. No.                                                                                                                                                                                           | Description                                       |                          |                   |       |         | RS Part No. | Mfr's Part No. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------|-------------------|-------|---------|-------------|----------------|
| B201                                                                                                                                                                                               | Assembly, LOGIC PCB<br>Consists of the following: |                          |                   |       |         |             | AB306ZLBA      |
| Capacitors                                                                                                                                                                                         |                                                   |                          |                   |       |         |             |                |
| Notes: 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 |                                                   |                          |                   |       |         |             |                |
| C201                                                                                                                                                                                               | Ceramic                                           | 0.1 µF                   | 16 V              | ±10 % | B       |             | BCML311045Z    |
| C202                                                                                                                                                                                               | Ceramic                                           | 0.1 µF                   | 16 V              | ±10 % | B       |             | BCML311045Z    |
| C203                                                                                                                                                                                               | Ceramic                                           | 100 pF                   | 50 V              | ±5 %  | CH      |             | BCMM811014Z    |
| C204                                                                                                                                                                                               | Tantalum Chip                                     | 10 µF                    | 6.3 V             | ±20 % | C-122   |             | BCSH901006Z    |
|                                                                                                                                                                                                    | or                                                | 10 µF                    | 7 V               | ±20 % | A C-241 |             | BCS5951006Z    |
| C205                                                                                                                                                                                               | Ceramic                                           | 0.001 µF                 | 50 V              | ±10 % | B       |             | BCML811025Z    |
| C206                                                                                                                                                                                               | Ceramic                                           | 0.1 µF                   | 16 V              | ±10 % | B       |             | BCML311045Z    |
| C207                                                                                                                                                                                               | Ceramic                                           | 0.001 µF                 | 50 V              | ±10 % | B       |             | BCML811025Z    |
| C208                                                                                                                                                                                               | Ceramic                                           | 0.1 µF                   | 16 V              | ±10 % | B       |             | BCML311045Z    |
| C209                                                                                                                                                                                               | Ceramic                                           | 0.01 µF                  | 50 V              | ±10 % | B       |             | BCML811035Z    |
| C210                                                                                                                                                                                               | Ceramic                                           | 22 pF                    | 50 V              | ±5 %  | CH      |             | BCMM812204Z    |
| C211                                                                                                                                                                                               | Ceramic                                           | 22 pF                    | 50 V              | ±5 %  | CH      |             | BCMM812204Z    |
| C212                                                                                                                                                                                               | Ceramic                                           | 22 pF                    | 50 V              | ±5 %  | CH      |             | BCMM812204Z    |
| C213                                                                                                                                                                                               | Ceramic                                           | 0.033 µF                 | 16 V              | ±10 % | B       |             | BCML313335Z    |
| C214                                                                                                                                                                                               | Ceramic                                           | 0.1 µF                   | 16 V              | ±10 % | B       |             | BCML311045Z    |
| C215                                                                                                                                                                                               | Ceramic                                           | 0.1 µF                   | 16 V              | ±10 % | B       |             | BCML311045Z    |
| C216                                                                                                                                                                                               | Ceramic                                           | 0.033 µF                 | 16 V              | ±10 % | B       |             | BCML313335Z    |
| Diodes                                                                                                                                                                                             |                                                   |                          |                   |       |         |             |                |
| D201                                                                                                                                                                                               | LED                                               | CL-200Y-C-TS             |                   |       |         |             | BDAY0946001    |
| D202                                                                                                                                                                                               | LED                                               | CL-200Y-C-TS             |                   |       |         |             | BDAY0946001    |
| D203                                                                                                                                                                                               |                                                   | 1SS355                   | TE-17             |       |         |             | BDAY0807001    |
| D204                                                                                                                                                                                               |                                                   | 1SS355                   | TE-17             |       |         |             | BDAY0807001    |
| Jacks                                                                                                                                                                                              |                                                   |                          |                   |       |         |             |                |
| J201                                                                                                                                                                                               | Plug                                              | PG-196                   | 9269S-22A-GF      |       |         |             | BPGY0196022    |
| J202                                                                                                                                                                                               | Jack                                              | JK-965                   | IMSA-9611S-09C 9P |       |         |             | BJKY0965009    |
| ICs                                                                                                                                                                                                |                                                   |                          |                   |       |         |             |                |
| IC201                                                                                                                                                                                              | Not Used                                          | M30624FGLGPD5            |                   |       |         |             | BDEY3880001    |
| IC202                                                                                                                                                                                              |                                                   | UPD7225GB-3B7            |                   |       |         |             | BDEY1529001    |
| IC203                                                                                                                                                                                              |                                                   |                          |                   |       |         |             |                |
| IC204                                                                                                                                                                                              |                                                   | RH5VL27CA-T1             |                   |       |         |             | BDEY2917003    |
| IC205                                                                                                                                                                                              |                                                   | 24LC64T-I/SN             |                   |       |         |             | BDEY3877003    |
| IC206                                                                                                                                                                                              |                                                   | TK11231BMCL              |                   |       |         |             | BDEY3801003    |
| Coils                                                                                                                                                                                              |                                                   |                          |                   |       |         |             |                |
| 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    |



| Ref. No.    | Description       |          |            |       | RS Part No. | Mfr's Part No. |  |
|-------------|-------------------|----------|------------|-------|-------------|----------------|--|
| Transistors |                   |          |            |       |             |                |  |
| Q201        | or                | DB-380   | 2SC1623-L6 | T1B   |             | BDBC1623648    |  |
|             |                   | DB-381   | 2SC2712-Y  | TE85L |             | BDBC2712124    |  |
| Q202        | or                | DB-380   | 2SC1623-L6 | T1B   |             | BDBC1623648    |  |
|             |                   | DB-381   | 2SC2712-Y  | TE85L |             | BDBC2712124    |  |
| Q203        | or                | DB-380   | 2SC1623-L6 | T1B   |             | BDBC1623648    |  |
|             |                   | DB-381   | 2SC2712-Y  | TE85L |             | BDBC2712124    |  |
| Resistors   |                   |          |            |       |             |                |  |
| R201        | Carbon Fixed Chip | 100 ohm  | 1/10W      | ±5 %  |             | BRFC011014Z    |  |
| R202        | Carbon Fixed Chip | 100 ohm  | 1/10W      | ±5 %  |             | BRFC011014Z    |  |
| R203        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R204        | Carbon Fixed Chip | 4.7 kohm | 1/16W      | ±5 %  |             | BRFC164724Z    |  |
| R205        | Carbon Fixed Chip | 4.7 kohm | 1/16W      | ±5 %  |             | BRFC164724Z    |  |
| R206        | Carbon Fixed Chip | 4.7 kohm | 1/16W      | ±5 %  |             | BRFC164724Z    |  |
| R207        | Carbon Fixed Chip | 4.7 kohm | 1/16W      | ±5 %  |             | BRFC164724Z    |  |
| R208        | Carbon Fixed Chip | 2.2 kohm | 1/16W      | ±5 %  |             | BRFC162224Z    |  |
| R209        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R210        | Not Used          |          |            |       |             |                |  |
| R211        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R212        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R213        | Carbon Fixed Chip | 47 kohm  | 1/16W      | ±5 %  |             | BRFC164734Z    |  |
| R214        | Carbon Fixed Chip | 1 kohm   | 1/16W      | ±5 %  |             | BRFC161024Z    |  |
| R215        | Carbon Fixed Chip | 1 kohm   | 1/16W      | ±5 %  |             | BRFC161024Z    |  |
| R216        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R217        | Not Used          |          |            |       |             |                |  |
| R218        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R219        | Not Used          |          |            |       |             |                |  |
| R220        | Carbon Fixed Chip | 100 kohm | 1/16W      | ±5 %  |             | BRFC161044Z    |  |
| R221        | Carbon Fixed Chip | 100 kohm | 1/16W      | ±5 %  |             | BRFC161044Z    |  |
| R222        | Carbon Fixed Chip | 100 kohm | 1/16W      | ±5 %  |             | BRFC161044Z    |  |
| R223        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R224        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R225        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R226        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R227        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R228        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R229        | Carbon Fixed Chip | 4.7 kohm | 1/16W      | ±5 %  |             | BRFC164724Z    |  |
| R230        | Not Used          |          |            |       |             |                |  |
| R231        | Carbon Fixed Chip | 100 kohm | 1/16W      | ±5 %  |             | BRFC161044Z    |  |
| R232        | Carbon Fixed Chip | 1 Mohm   | 1/16W      | ±5 %  |             | BRFC161054Z    |  |
| R233        | Carbon Fixed Chip | 220 ohm  | 1/16W      | ±5 %  |             | BRFC162214Z    |  |
| R234        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R235        | Carbon Fixed Chip | 680 kohm | 1/16W      | ±5 %  |             | BRFC166844Z    |  |
| R236        | Carbon Fixed Chip | 10 kohm  | 1/16W      | ±5 %  |             | BRFC161034Z    |  |
| R237        | Carbon Fixed Chip | 10 kohm  | 1/16 W     | ±5 %  |             | BRFC161034Z    |  |
| R238        | Carbon Fixed Chip | 10 kohm  | 1/16 W     | ±5 %  |             | BRFC161034Z    |  |
| R239,240    | Not Used          |          |            |       |             |                |  |
| R241        | Carbon Fixed Chip | 39 kohm  | 1/16 W     | ±5 %  |             | BRFC163934Z    |  |
| R242        | Carbon Fixed Chip | 39 kohm  | 1/16 W     | ±5 %  |             | BRFC163934Z    |  |
| R243        | Carbon Fixed Chip | 10 kohm  | 1/16 W     | ±5 %  |             | BRFC161034Z    |  |



| Ref. No.             | Description            |          |                  | RS Part No. | Mfr's Part No. |
|----------------------|------------------------|----------|------------------|-------------|----------------|
| R244                 | Carbon Fixed Chip      | 10 kohm  | 1/16 W $\pm 5\%$ |             | BRFC161034Z    |
| R245-252             | Not Used               |          |                  |             |                |
| R253                 | Carbon Fixed Chip      | 47 kohm  | 1/16 W $\pm 5\%$ |             | BRFC164734Z    |
| R254                 | Carbon Fixed Chip      | 47 kohm  | 1/16 W $\pm 5\%$ |             | BRFC164734Z    |
| R255                 | Carbon Fixed Chip      | 47 kohm  | 1/16 W $\pm 5\%$ |             | BRFC164734Z    |
| R256                 | Carbon Fixed Chip      | 1 kohm   | 1/16 W $\pm 5\%$ |             | BRFC161024Z    |
| R257                 | Carbon Fixed Chip      | 10 kohm  | 1/16 W $\pm 5\%$ |             | BRFC161034Z    |
| R258                 | Carbon Fixed Chip      | 4.7 kohm | 1/16 W $\pm 1\%$ |             | BRFC164723Z    |
| R259                 | Carbon Fixed Chip      | 4.7 kohm | 1/16 W $\pm 1\%$ |             | BRFC164723Z    |
| R260                 | Not Used               |          |                  |             |                |
| R261                 | Carbon Fixed Chip      | 330 kohm | 1/16 W $\pm 5\%$ |             | BRFC163344Z    |
| R262                 | Carbon Fixed Chip      | 39 kohm  | 1/16 W $\pm 5\%$ |             | BRFC163934Z    |
| R263                 | Carbon Fixed Chip      | 39 kohm  | 1/16 W $\pm 5\%$ |             | BRFC163934Z    |
| R264                 | Carbon Fixed Chip      | 39 kohm  | 1/16 W $\pm 5\%$ |             | BRFC163934Z    |
| R265                 | Carbon Fixed Chip      | 1 kohm   | 1/16 W $\pm 5\%$ |             | BRFC161024Z    |
| <b>Miscellaneous</b> |                        |          |                  |             |                |
| DP201                | Liquid Crystal Display | DL-196   | DLC-1827P        | BDLY0196001 |                |
| X201                 | Crystal                | QX-650   | 9.9072MHZ        |             | BOXY0650001    |

#### OTHER ELECTRICAL PARTS

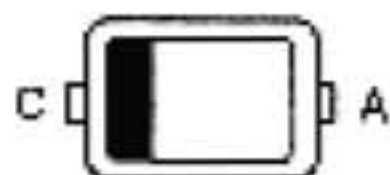
| Ref. No. | Description     |          |             | RS Part No. | Mfr's Part No. |
|----------|-----------------|----------|-------------|-------------|----------------|
| AT951    | Antenna         | AT-371   |             |             | BATY0371001    |
|          | or              | AT-233   | UNID233C    |             | BATY0233001    |
| J501     | Jack            | JK-661   | BNC-RF3     |             | BJKY0661001    |
| SP501    | Speaker         | SP-36B   | CS036001-12 |             | BSPY0368001    |
| W501     | Wires Assembled | W-071924 | 50 2P       |             | CZDZ071924Z    |



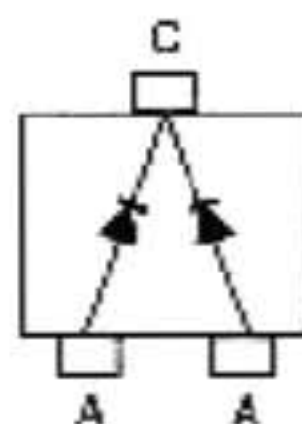
# SEMICONDUCTOR LEAD IDENTIFICATION

## DIODES

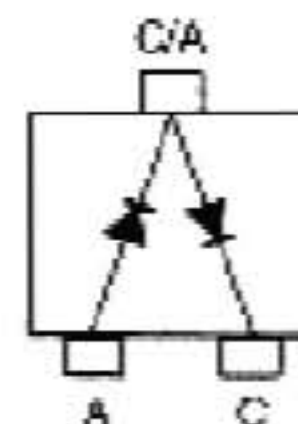
1SS355  
1SS390  
DSM10C  
UDZS7.5B  
HVU30B-1



1SS184



1SS226



CL-200Y

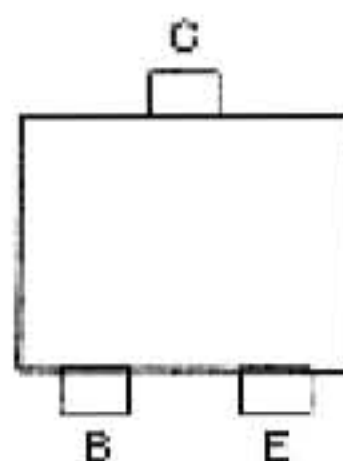


MA357

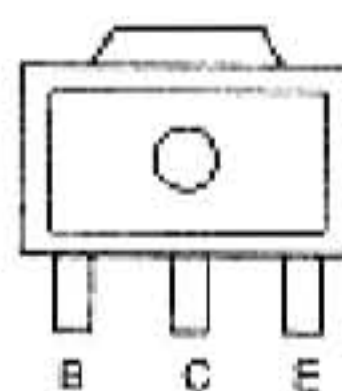


## TRANSISTORS

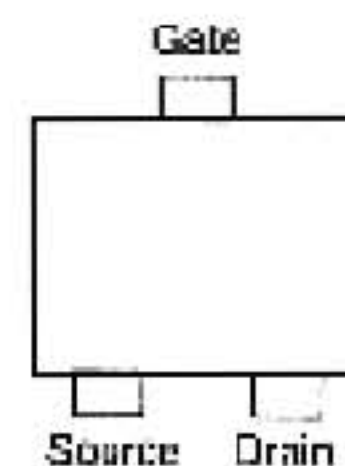
2SA812  
2SC1623  
2SC3121  
2SC3356-R24  
MMBT6428LT1  
2SC5065



2SB1115



2SK209

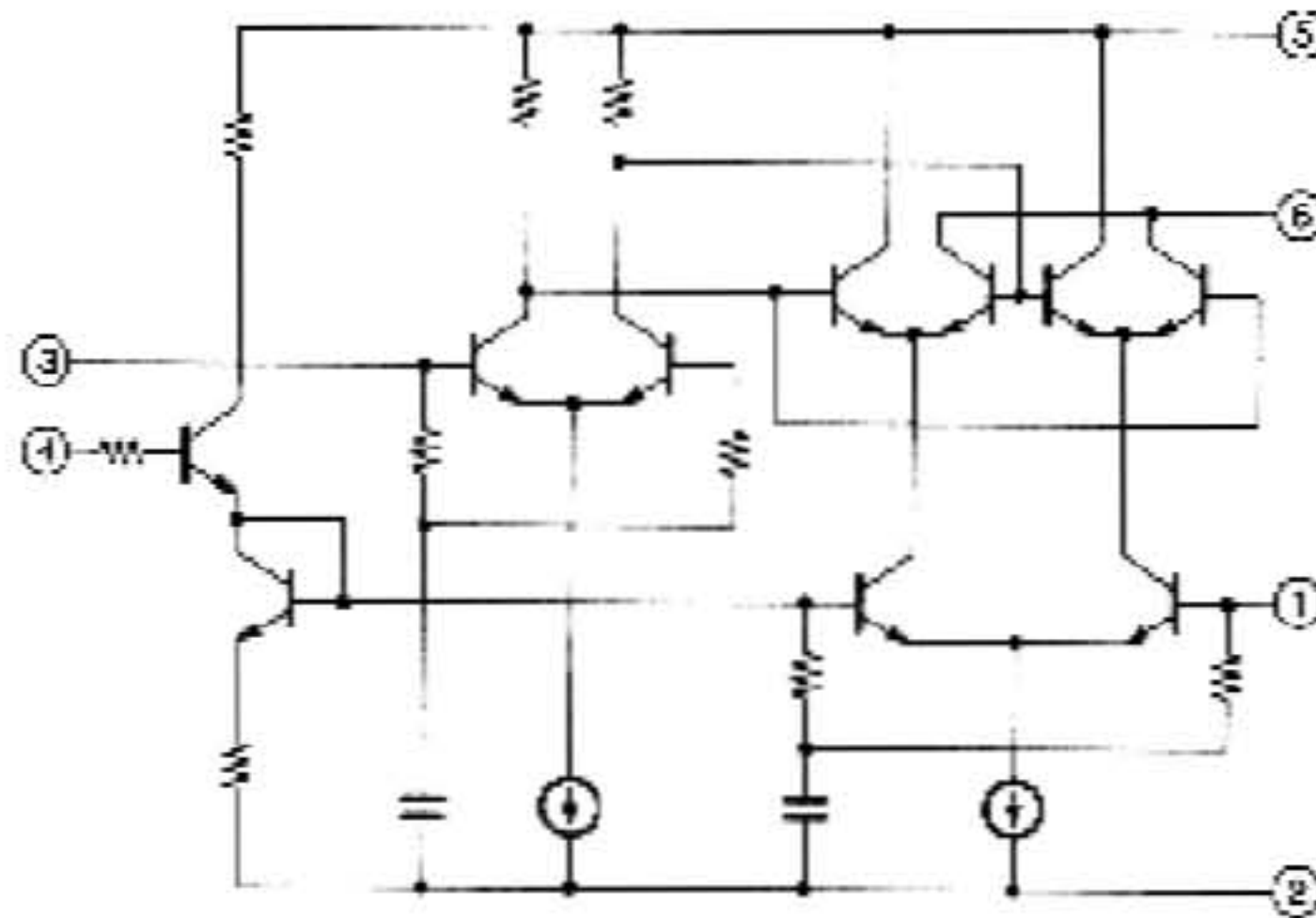


B: Base  
C: Collector  
E: Emitter

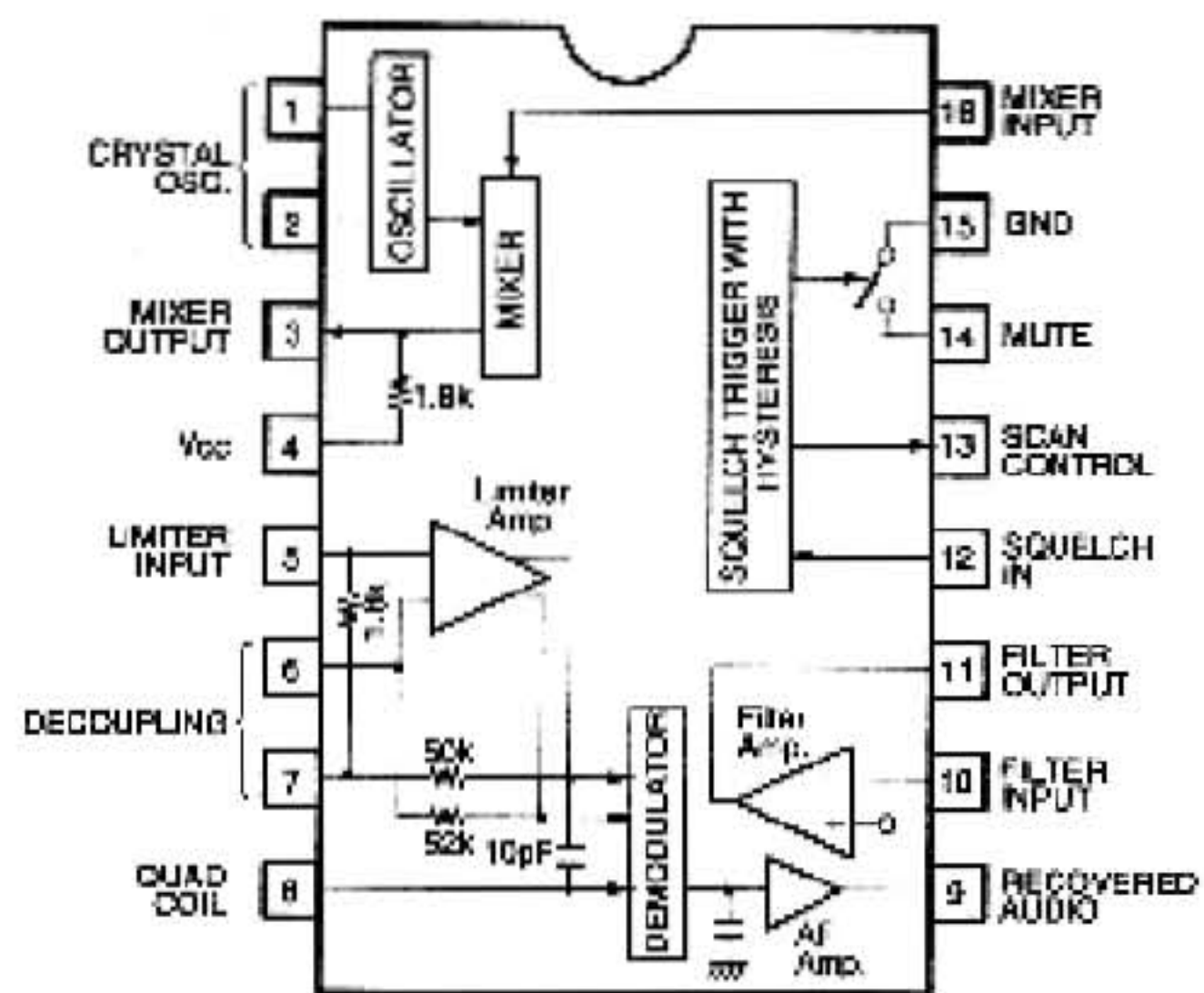
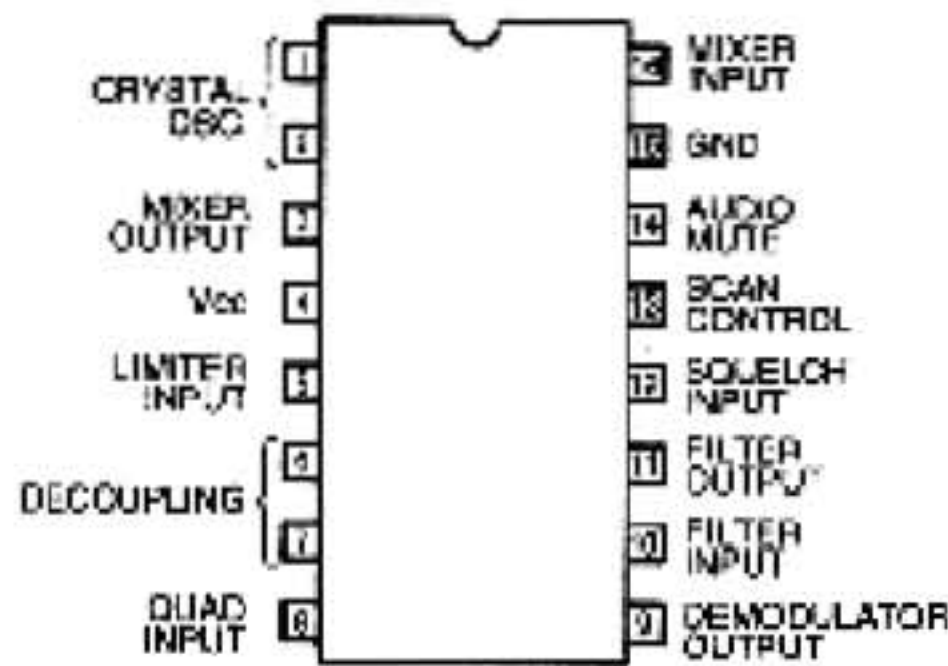
B: Base  
C: Collector  
E: Emitter

## IC INTERNAL DIAGRAMS

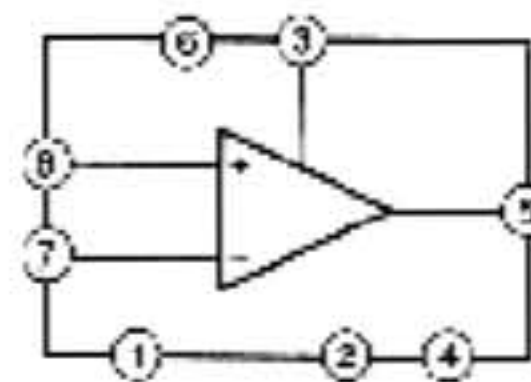
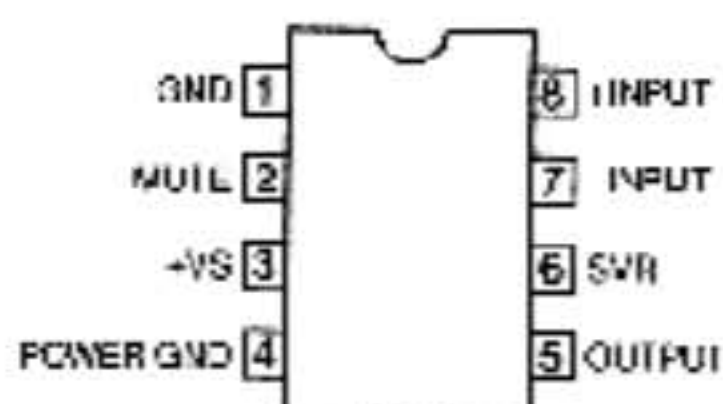
IC1  
μPC8112T



IC2  
MC3361CDR2

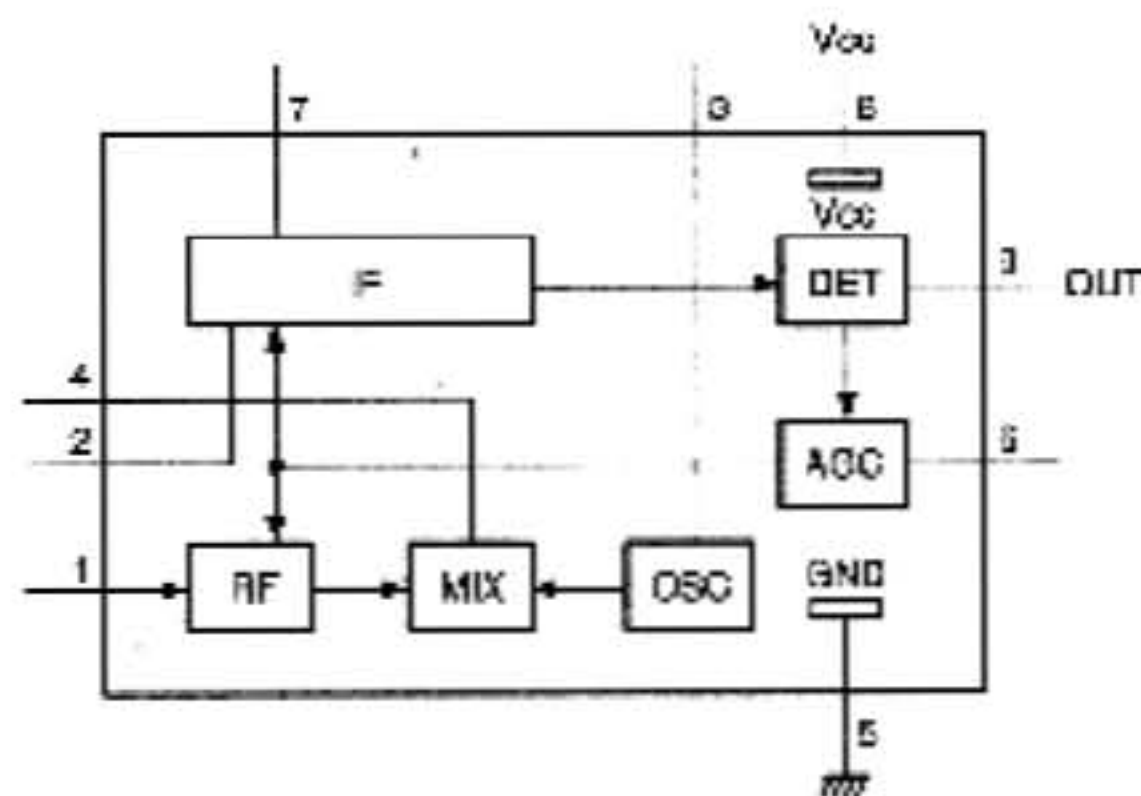
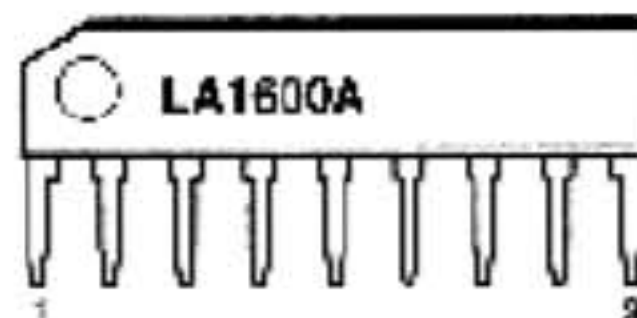


IC3  
TDA7233D

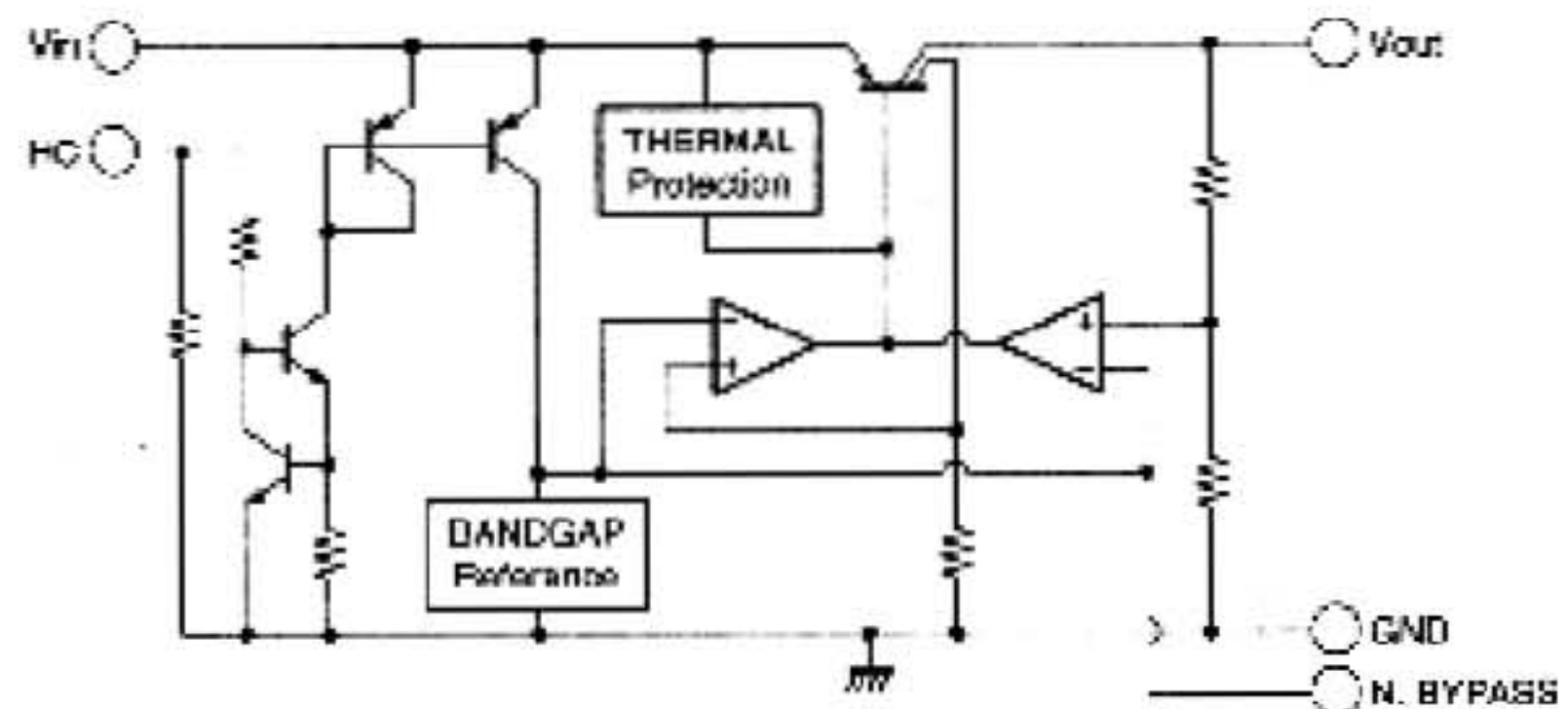
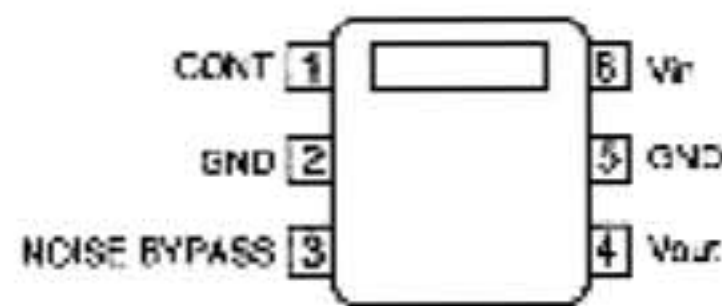




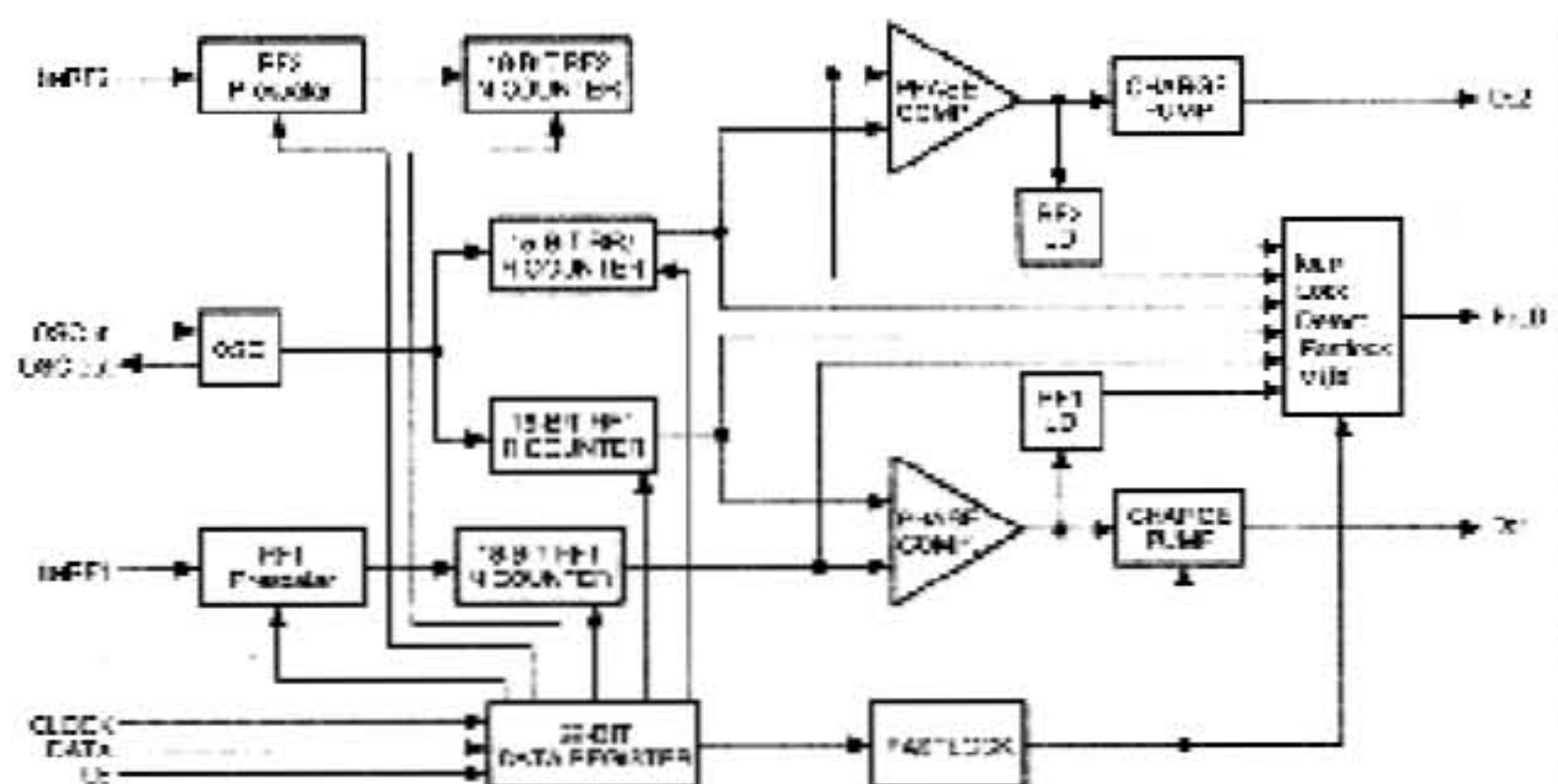
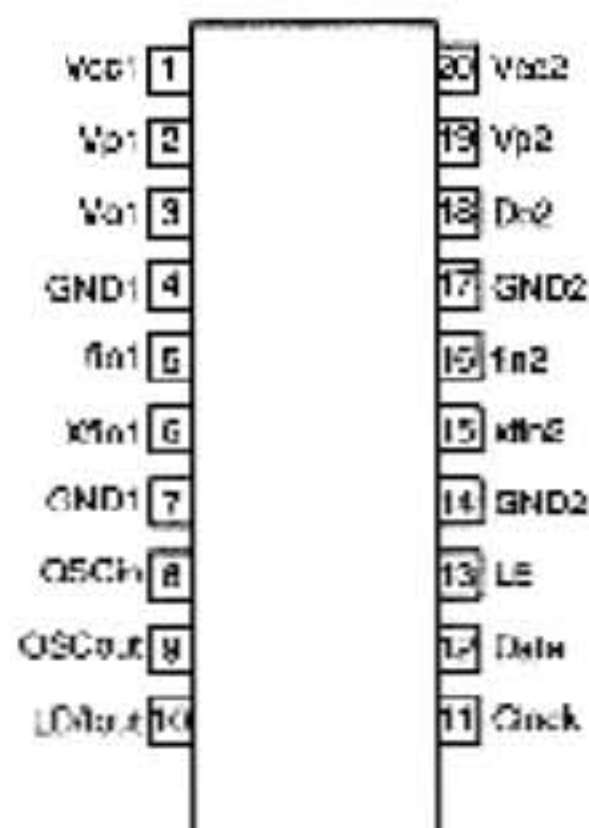
IC4  
LA1600A



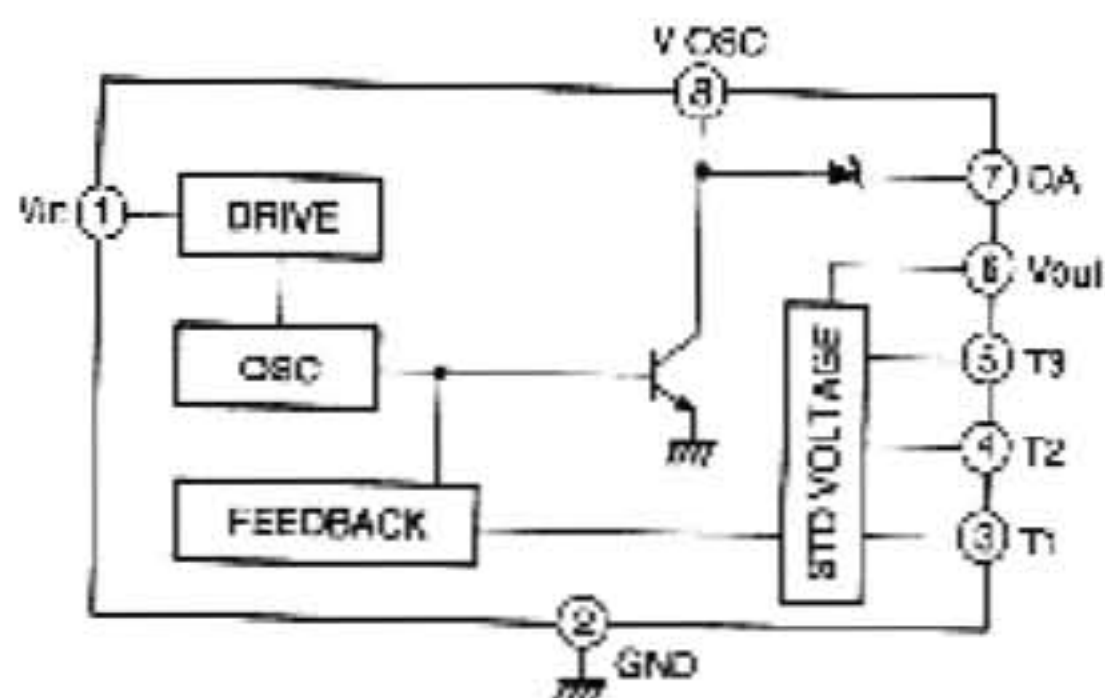
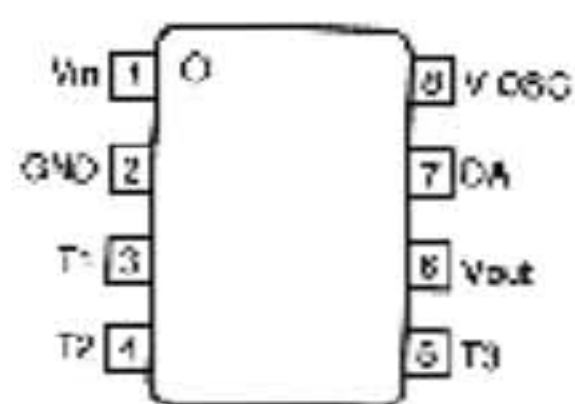
IC5  
TK11238BMCL



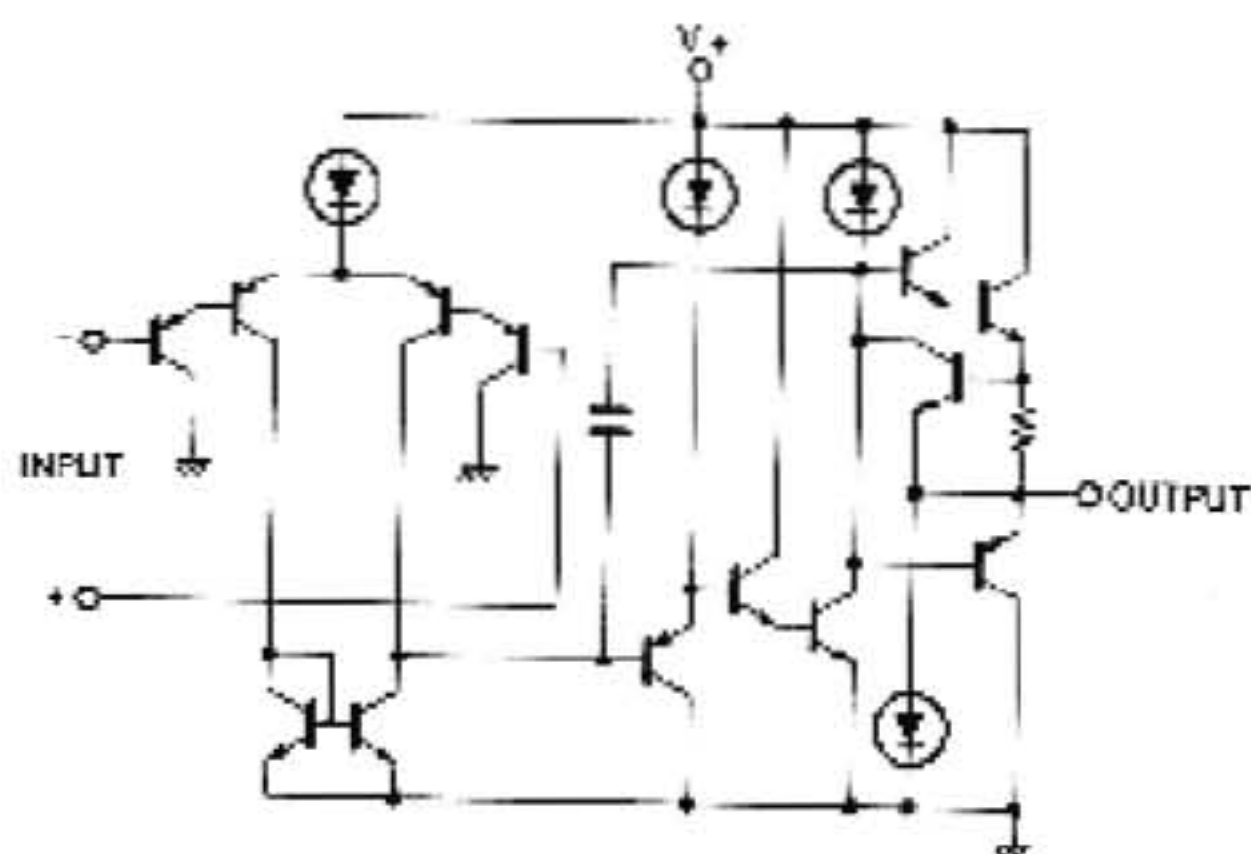
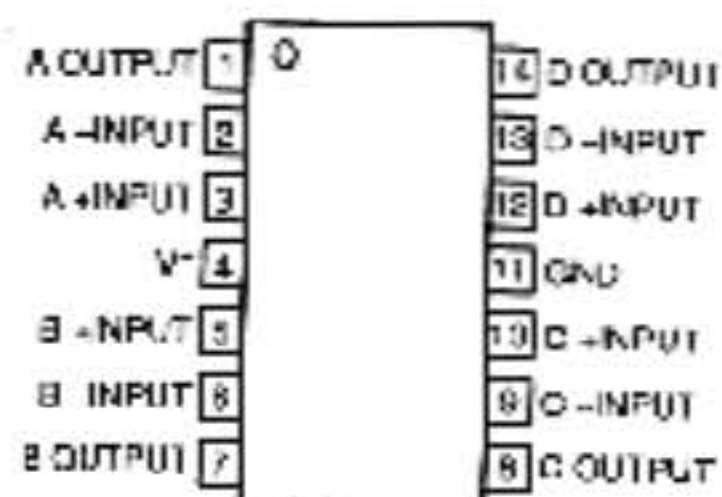
IC6  
MB15U36PFV



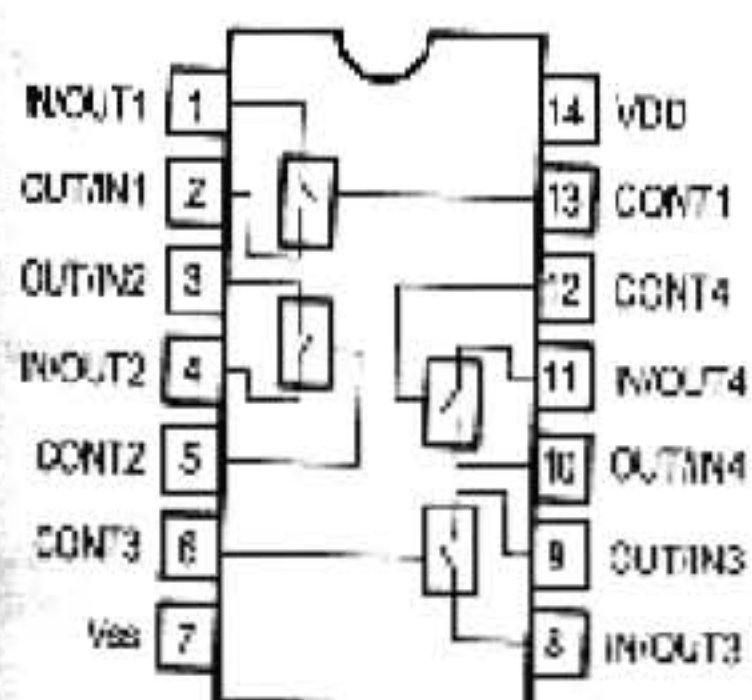
IC7  
TK1180BM



IC8/IC9  
NJM3403AV

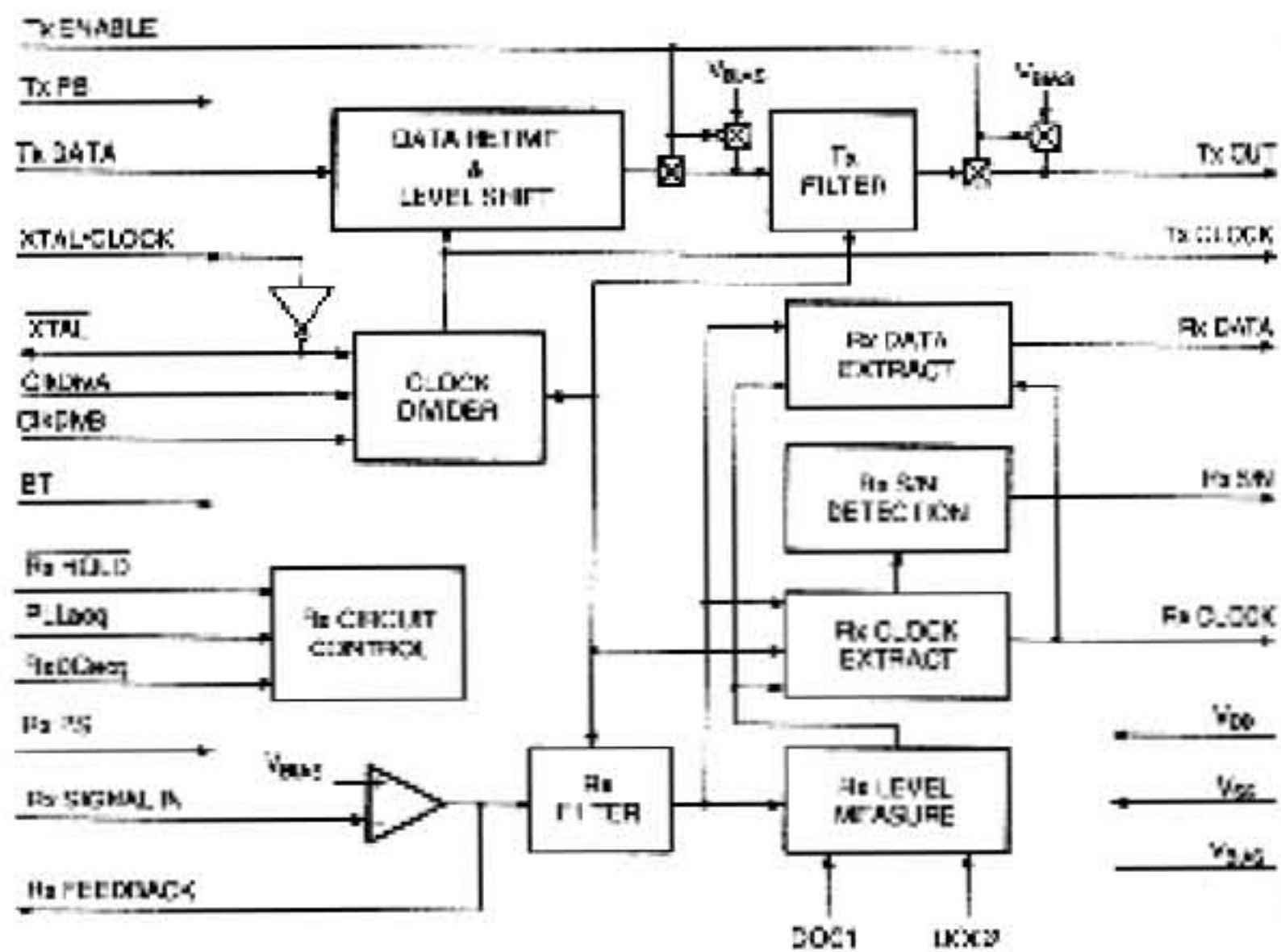
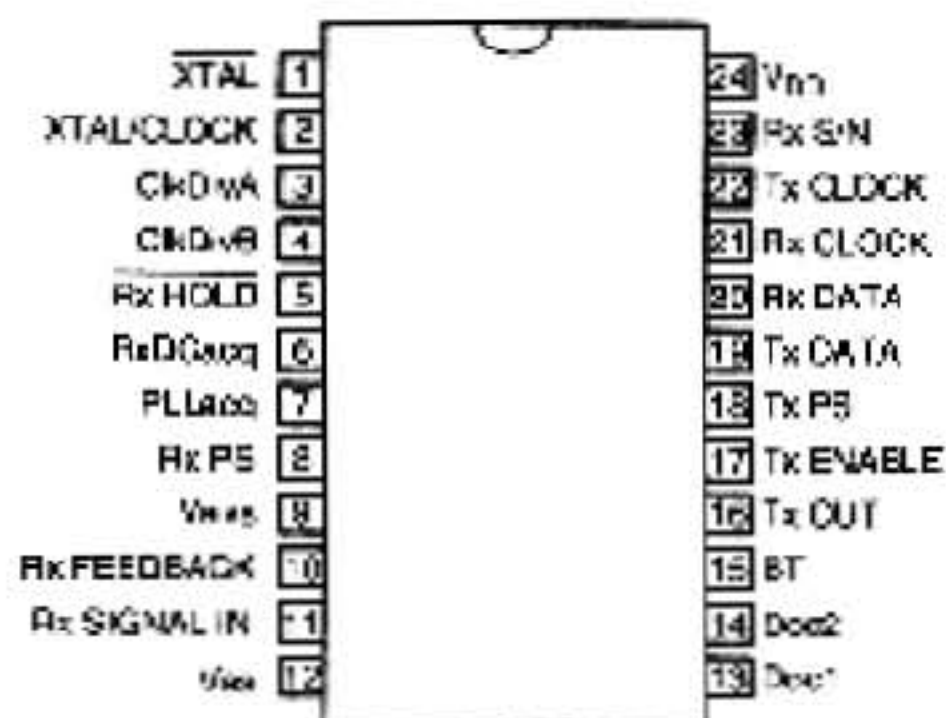


IC11  
BU4066BCFV

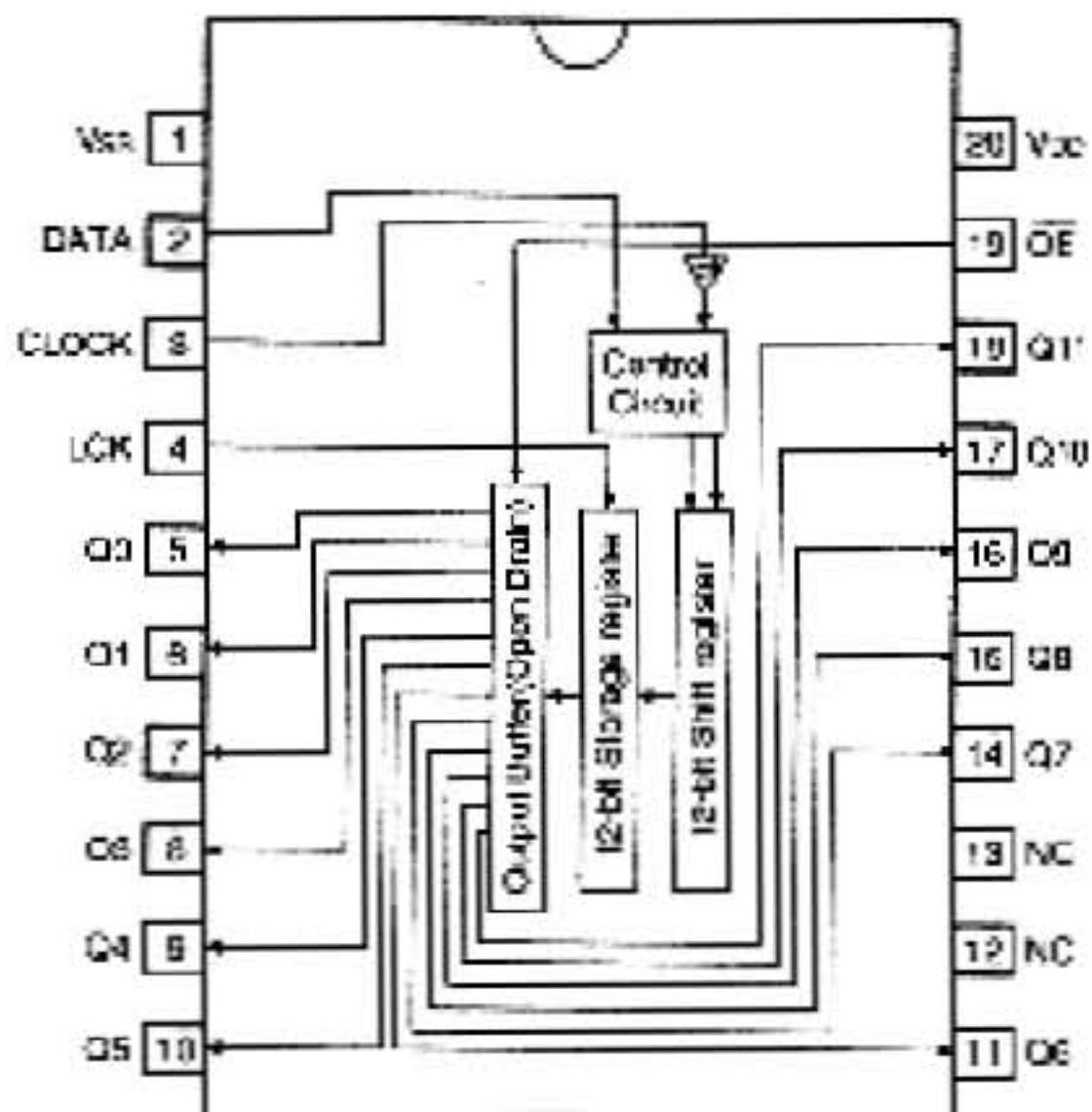
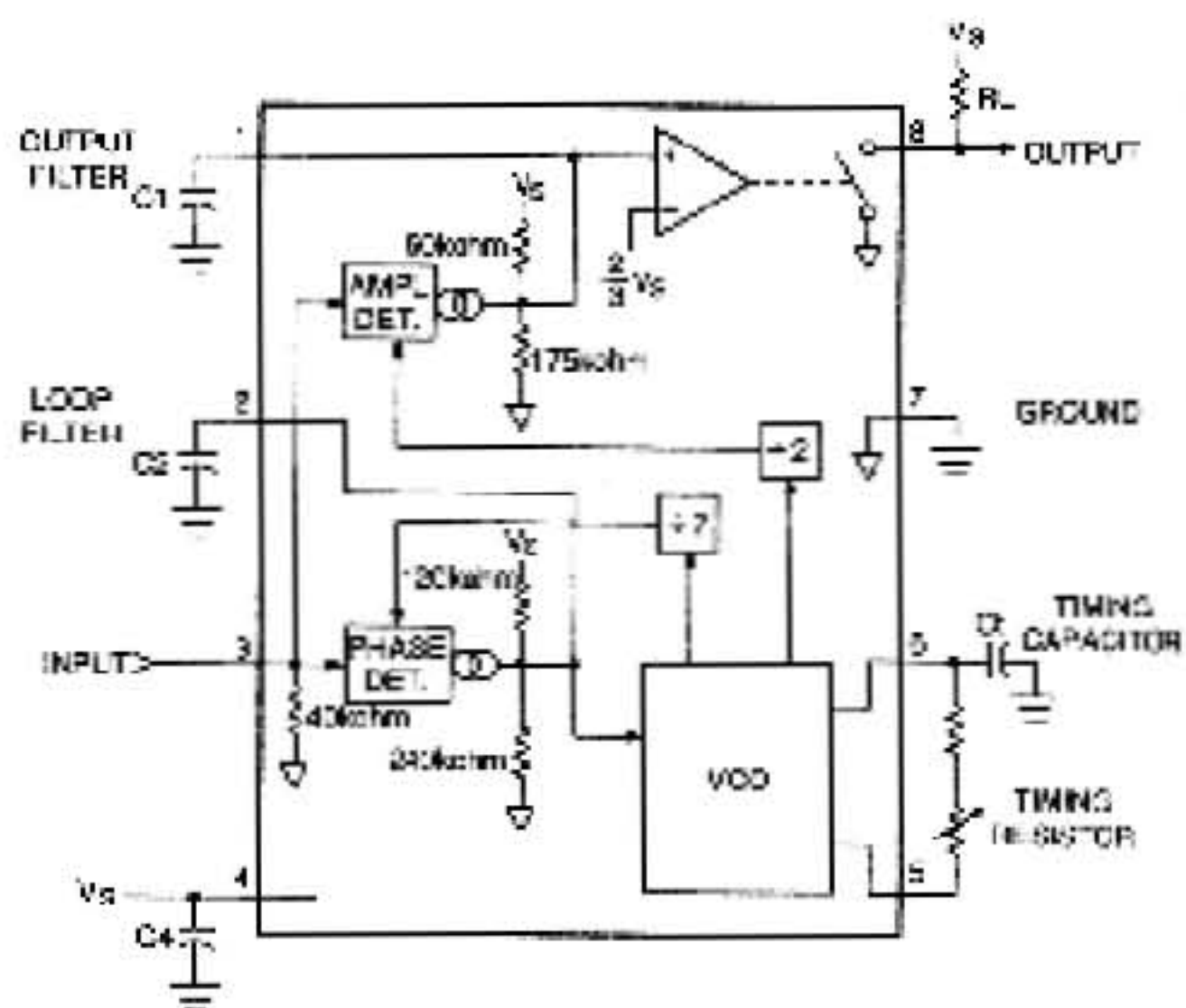
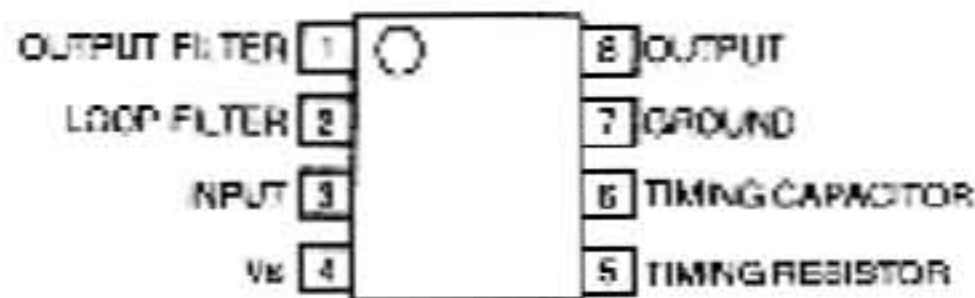




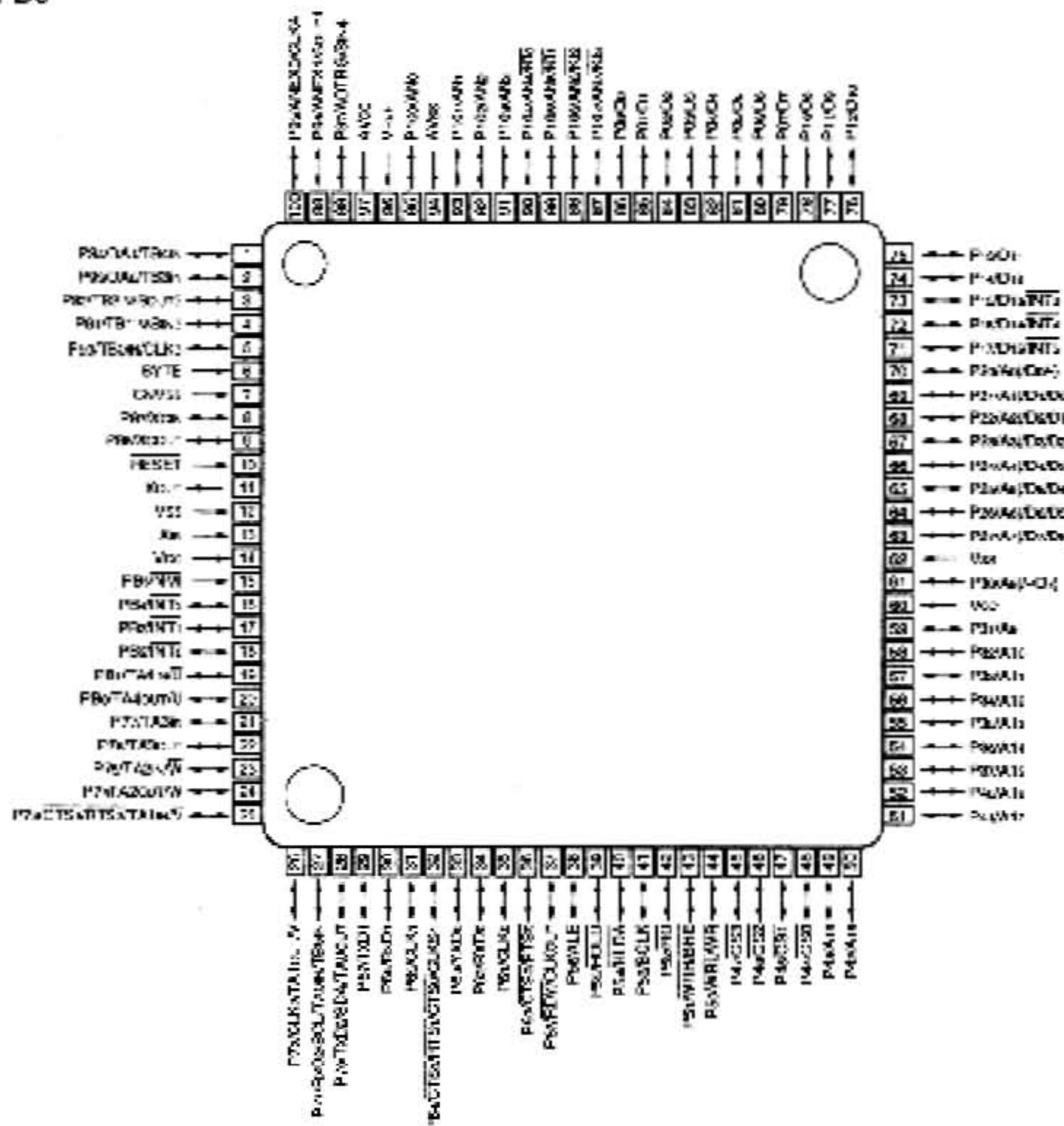
IC12  
FX589D5



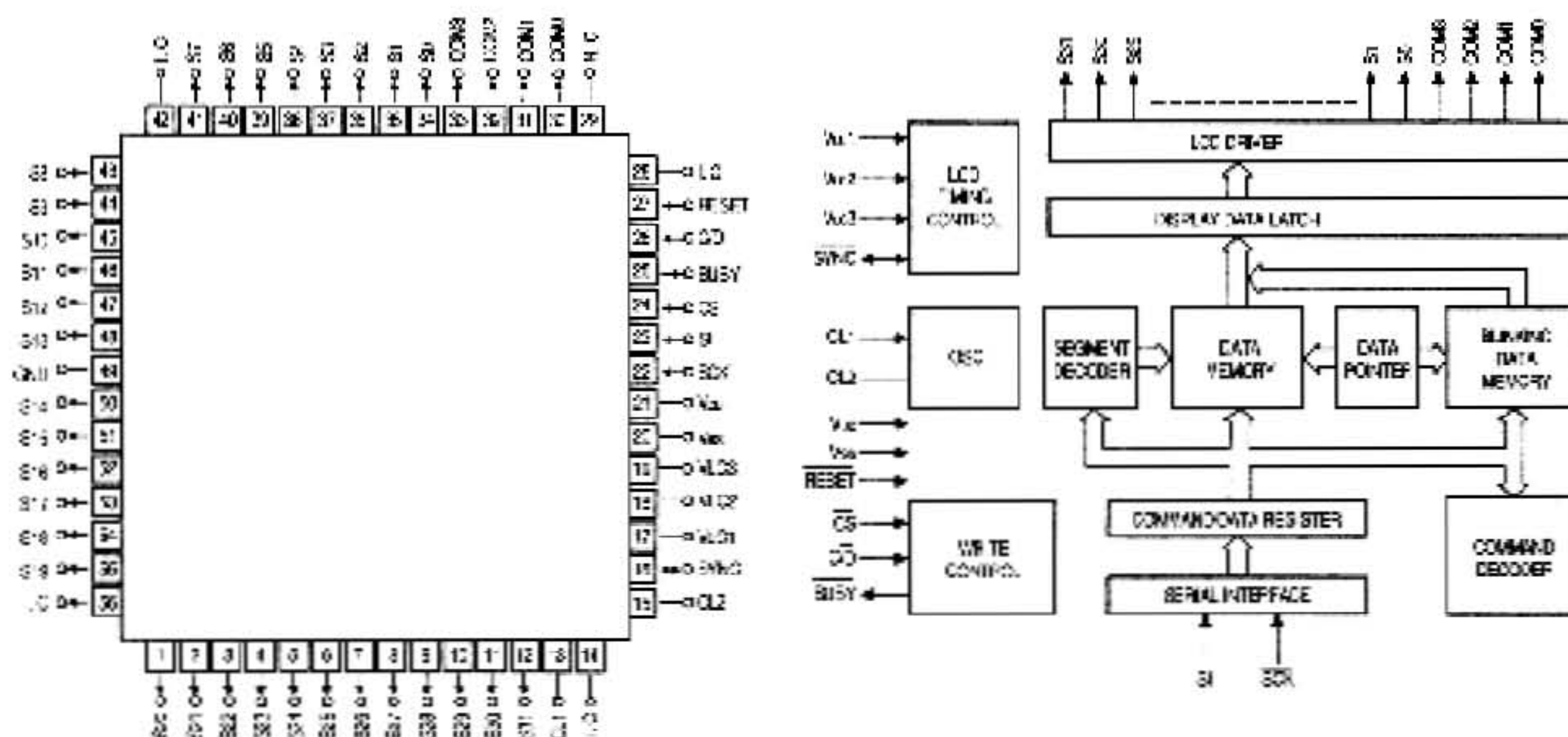
IC16  
BU2092FV

IC17  
LMC567CMX

IC201  
M30624FGLGPD5

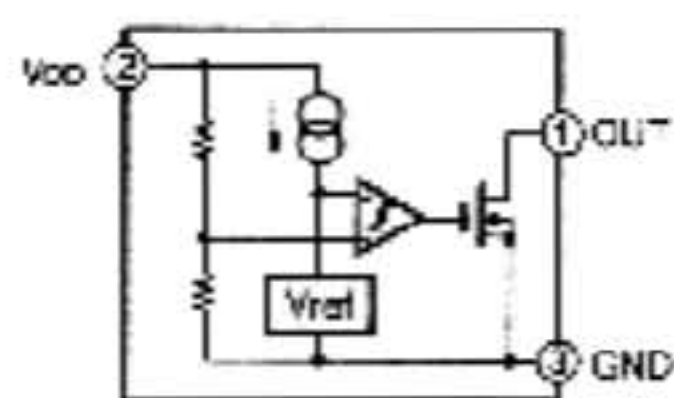
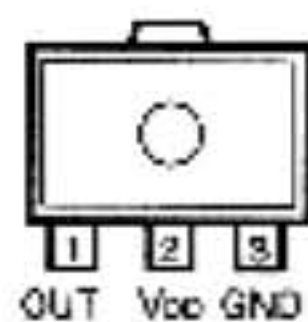


IC202  
μPD7225GB

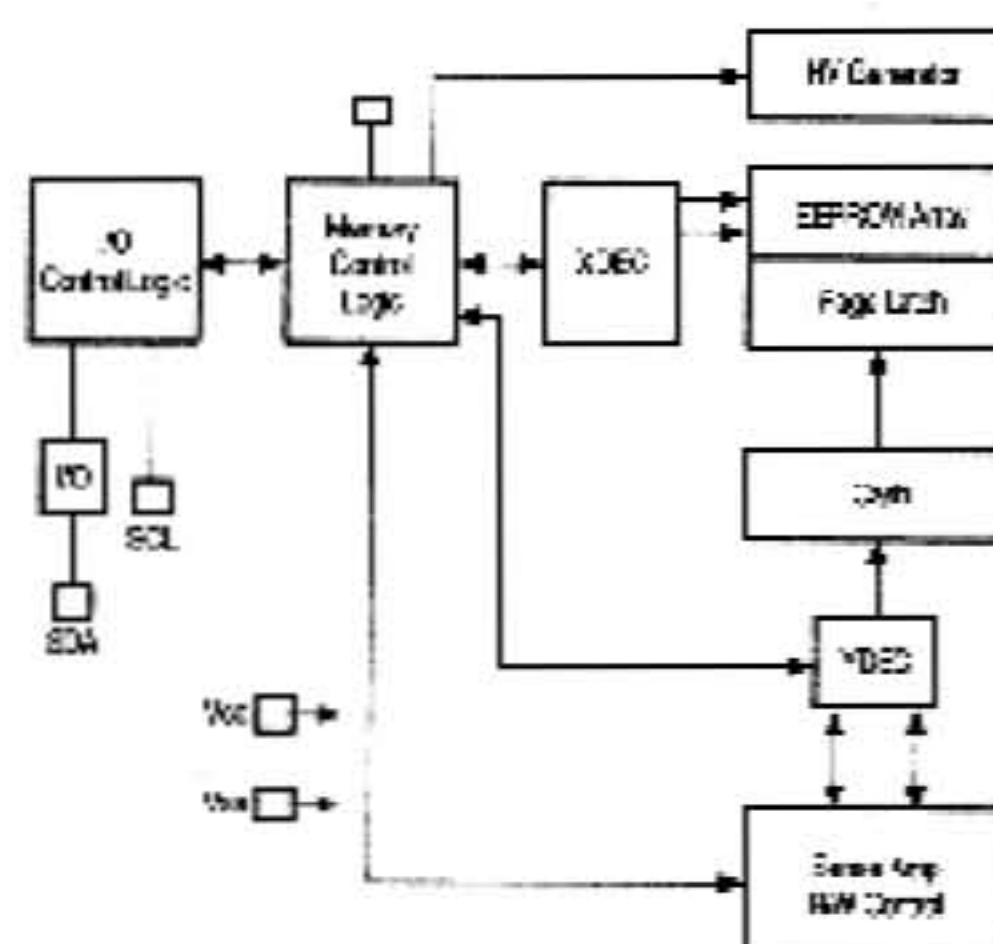
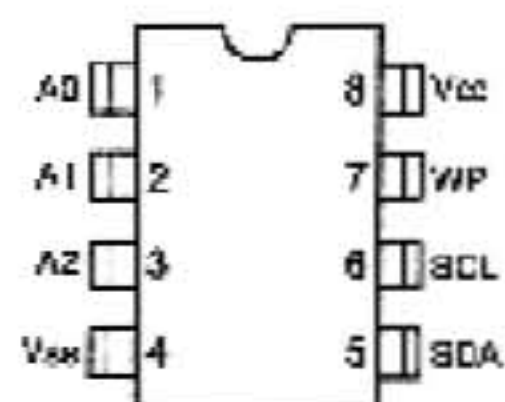




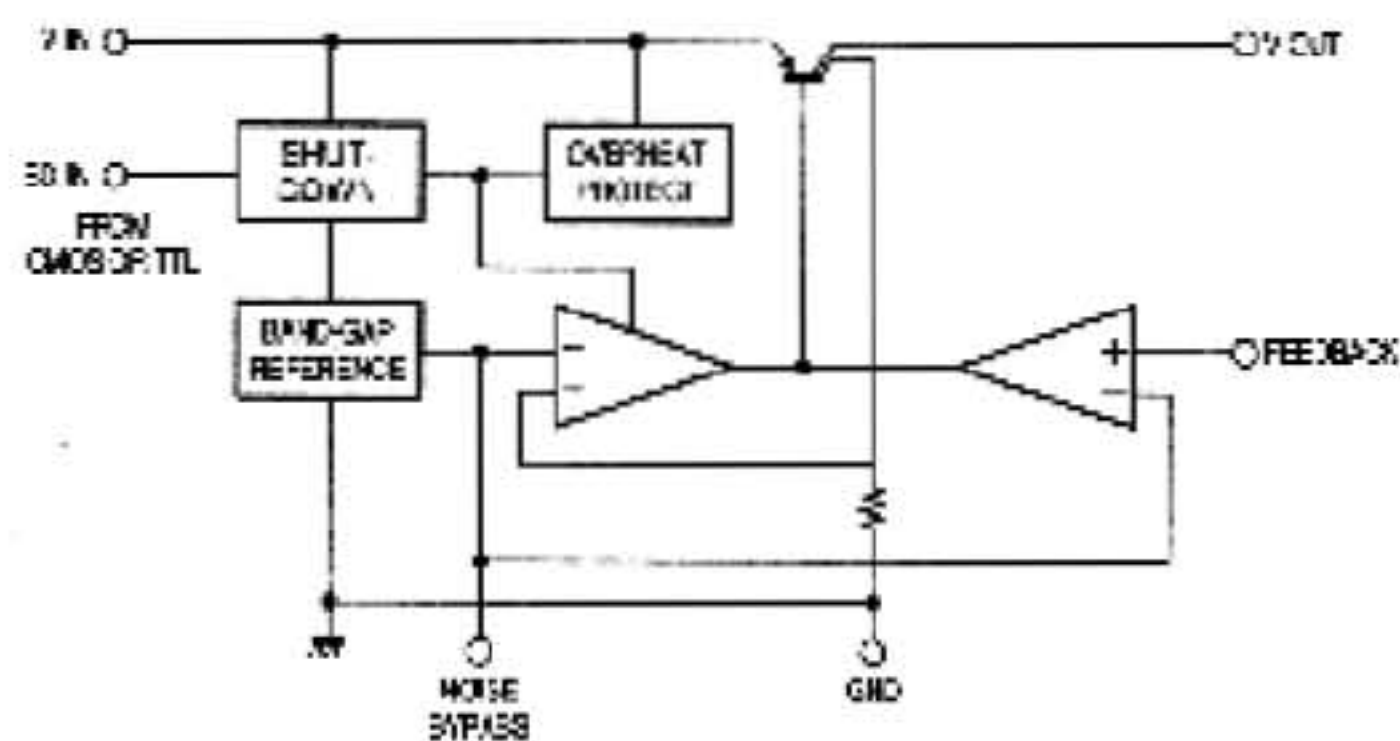
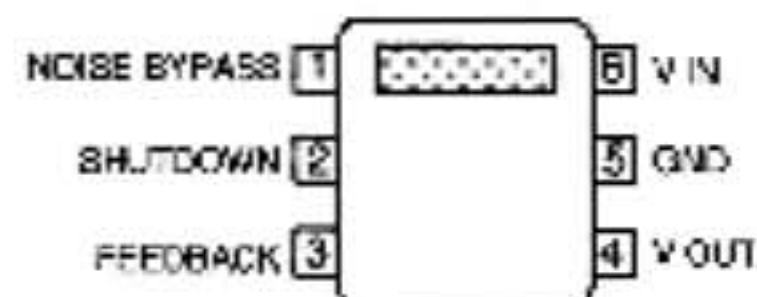
IC204  
RH5VL27CA



IC205  
24LC64



IC206  
TK11231BMCL



# VOLTAGE CHART

## TRANSISTORS

Unit [V]

| Ref. No. | Pin | Voltage | Remarks                                        |
|----------|-----|---------|------------------------------------------------|
| Q1       | B   | 0.8/3.1 | 162.4 MHz 100 $\mu$ V<br>RF=ON/OFF<br>SQ=TIGHT |
|          | E   | 1.4/1.4 |                                                |
|          | C   | 1.4/0   |                                                |
| Q2       | B   | 0.7     | 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   | 3.8     |                                                |
| Q5       | B   | -0.6    | EXT. POWER                                     |
|          | E   | 0       |                                                |
|          | C   | -1.5    |                                                |
| Q6       | B   | 2.1     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 1.4     |                                                |
|          | C   | 2.8     |                                                |
| Q7       | B   | 2.0     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 1.5     |                                                |
|          | C   | 2.8     |                                                |
| Q8       | B   | 2.8     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 2.2     |                                                |
|          | C   | 3.8     |                                                |
| Q9       | B   | 0       | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0       |                                                |
|          | C   | 0       |                                                |
| Q10      | B   | 2.1     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 1.4     |                                                |
|          | C   | 2.8     |                                                |
| Q11      | B   | 0.8     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 3.0     |                                                |
| Q12      | B   | 0.7     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 3.0     |                                                |
| Q13      | B   | 0.9     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 2.9     |                                                |
| Q14      | B   | 0.2     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 3.7     |                                                |
| Q15      | B   | 4.5     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 3.8     |                                                |
|          | C   | 0.3     |                                                |
| Q16      | B   | 0.7     | 453.25 MHz 100 $\mu$ V                         |
|          | E   | 0.0     |                                                |
|          | C   | 1.8     |                                                |

Unit [V]

| Ref. No. | Pin | Voltage | Remarks                                        |
|----------|-----|---------|------------------------------------------------|
| Q17      | B   | 0.7     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 3.0     |                                                |
| Q23      | B   | 0.6     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 10.1    |                                                |
| Q24      | 1   | 0.9     | 162.4 MHz 100 $\mu$ V                          |
|          | 2   | 3.8     |                                                |
|          | 3   | 0.4     |                                                |
| Q25      | B   | 0.0/0.6 | 162.4 MHz<br>100 $\mu$ V<br>RF=ON/OFF SQ=TIGHT |
|          | E   | 0.0     |                                                |
|          | C   | 0.5/0   |                                                |
| Q26      | B   | 3.2/3.8 | TRUNK ON/OFF                                   |
|          | E   | 3.8/3.8 |                                                |
|          | C   | 3.8/0.0 |                                                |
| Q27      | B   | 3.8     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 3.8     |                                                |
|          | C   | 0.0     |                                                |
| Q28      | B   | 3.8     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 3.8     |                                                |
|          | C   | 0.0     |                                                |
| Q29      | B   | 0.6     | TRUNK ON                                       |
|          | E   | 0.0     |                                                |
|          | C   | 0.0     |                                                |
| Q30      | B   | 0.0     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | GND     |                                                |
|          | C   | 0.0     |                                                |
| Q31      | B   | 0.0     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | GND     |                                                |
|          | C   | 0.0     |                                                |
| Q201     | B   | 0.7/0   | BACK LIGHT ON/OFF                              |
|          | E   | 0.0     |                                                |
|          | C   | 0.1/1.8 |                                                |
| Q202     | B   | 3.1     | 162.4 MHz 100 $\mu$ V                          |
|          | E   | 0.0     |                                                |
|          | C   | 0.5     |                                                |
| Q203     | B   | 0.0     | SINE WAVE                                      |
|          | E   | 0.0     |                                                |
|          | C   | —       |                                                |



## 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   | 3.8     | 162.4 MHz 100 $\mu$ V              |
|          | 2   | NC      |                                    |
|          | 3   | 3.3     |                                    |
|          | 4   | 3.8     |                                    |
|          | 5   | 3.4     |                                    |
|          | 6   | 3.4     |                                    |
|          | 7   | 3.4     |                                    |
|          | 8   | 3.8     |                                    |
|          | 9   | 1.3     |                                    |
|          | 10  | 0.6     |                                    |
|          | 11  | 1.4     |                                    |
|          | 12  | 2.3     |                                    |
|          | 13  | NC      |                                    |
|          | 14  | 1.3     |                                    |
|          | 15  | 0.0     |                                    |
|          | 16  | 3.8     |                                    |
| IC3      | 1   | 0.0     | 162.4 MHz 100 $\mu$ V<br>VOL. MIN. |
|          | 2   | 0.0     |                                    |
|          | 3   | 0.0     |                                    |
|          | 4   | 6.0     |                                    |
|          | 5   | 2.8     |                                    |
|          | 6   | 1.3     |                                    |
|          | 7   | 0.5     |                                    |
|          | 8   | 0.0     |                                    |
| IC5      | 1   | 2.7     | 162.4 MHz 100 $\mu$ V              |
|          | 2   | 0.0     |                                    |
|          | 3   | 1.2     |                                    |
|          | 4   | 3.8     |                                    |
|          | 5   | 0.0     |                                    |
|          | 6   | 6.0     |                                    |
|          | 7   | 0.0     |                                    |
| IC8      | 1   | 3.5     |                                    |
|          | 2   | 3.5     |                                    |
|          | 3   | 0.6     |                                    |
|          | 4   | 0       |                                    |
|          | 5   | 2.4     |                                    |
|          | 6   | NC      |                                    |
|          | 7   | 0       |                                    |
|          | 8   | 1.4     |                                    |
|          | 9   | 1.3     |                                    |
|          | 10  | 3.5     |                                    |
|          | 11  | 0       |                                    |
|          | 12  | 0       |                                    |
|          | 13  | 0       |                                    |

Unit [V]

| Ref. No. | Pin | Voltage | Remarks                                        |
|----------|-----|---------|------------------------------------------------|
| IC6      | 14  | 0       |                                                |
|          | 15  | 2.5     |                                                |
|          | 16  | 2.5     |                                                |
|          | 17  | 0       |                                                |
|          | 18  | 1.1     |                                                |
|          | 19  | 3.5     |                                                |
|          | 20  | 3.5     |                                                |
|          | 21  | 3.5     |                                                |
| IC7      | 1   | 6.0     | 162.4 MHz 100 $\mu$ V                          |
|          | 2   | 0.0     |                                                |
|          | 3   | 9.2     |                                                |
|          | 4   | 9.2     |                                                |
|          | 5   | 16.6    |                                                |
|          | 6   | 16.6    |                                                |
|          | 7   | 17.5    |                                                |
|          | 8   | 6.0     |                                                |
| IC8      | 1   | 1.5/1.5 | 162.4 MHz 100 $\mu$ V<br>RF-ON/OFF<br>SQ=TIGHT |
|          | 2   | 1.5/1.5 |                                                |
|          | 3   | 1.5/1.5 |                                                |
|          | 4   | 3.8/3.8 |                                                |
|          | 5   | 1.3/1.0 |                                                |
|          | 6   | 1/1.6   |                                                |
|          | 7   | 3.1/0   |                                                |
|          | 8   | 1.3/1.3 |                                                |
|          | 9   | 1.4/1.4 |                                                |
|          | 10  | 1.4/1.4 |                                                |
|          | 11  | 0.0     |                                                |
|          | 12  | 1.2/2.1 |                                                |
|          | 13  | 0.8/2   |                                                |
|          | 14  | 3.1/3.1 |                                                |
| IC9      | 1   | 1.3     | 162.4 MHz 100 $\mu$ V                          |
|          | 2   | 1.3     |                                                |
|          | 3   | 1.1     |                                                |
|          | 4   | 3.8     |                                                |
|          | 5   | 1.3     |                                                |
|          | 6   | 1.3     |                                                |
|          | 7   | 0.0     |                                                |
|          | 8   | 1.2     |                                                |
|          | 9   | 1.2     |                                                |
|          | 10  | 1.2     |                                                |
|          | 11  | 0.0     |                                                |
|          | 12  | 1.2     |                                                |
|          | 13  | 1.2     |                                                |
|          | 14  | 1.2     |                                                |
| IC11     | 1   | 1.3     | 162.4 MHz 100 $\mu$ V                          |
|          | 2   | 1.2     |                                                |
|          | 3   | 1.2     |                                                |
|          | 4   | 1.2     |                                                |
|          | 5   | 3.0     |                                                |
|          | 6   | 0       |                                                |
|          | 7   | 0       |                                                |
|          | 8   | 0       |                                                |

## IC'S

Unit [V]

| Ref. No. | Pin | Voltage | Remarks                        |
|----------|-----|---------|--------------------------------|
| IC11     | 9   | 0       | 162.4 MHz 100 $\mu$ V          |
|          | 10  | 0       |                                |
|          | 11  | 0.1     |                                |
|          | 12  | 0       |                                |
|          | 13  | 0.1     |                                |
|          | 14  | 3.8     |                                |
| IC12     | 1   | SINE    | 162.4 MHz 100 $\mu$ V TRUNK ON |
|          | 2   | SINE    |                                |
|          | 3   | 3.8     |                                |
|          | 4   | GND     |                                |
|          | 5   | 3.8     |                                |
|          | 6   | GND     |                                |
|          | 7   | GND     |                                |
|          | 8   | GND     |                                |
|          | 9   | 1.9     |                                |
|          | 10  | 1.9     |                                |
|          | 11  | 0.0     |                                |
|          | 12  | GND     |                                |
|          | 13  | 1.0     |                                |
|          | 14  | 2.7     |                                |
|          | 15  | 3.8     |                                |
|          | 16  | NC      |                                |
|          | 17  | GND     |                                |
|          | 18  | 3.8     |                                |
|          | 19  | 3.8     |                                |
|          | 20  | 1.6     |                                |
|          | 21  | 1.9     |                                |
|          | 22  | NC      |                                |
|          | 23  | NC      |                                |
|          | 24  | 3.8     |                                |
| IC16     | 1   | GND     | 162.4 MHz 100 $\mu$ V          |
|          | 2   | 0.0     |                                |
|          | 3   | 0.0     |                                |
|          | 4   | 0.0     |                                |
|          | 5   | 0.0     |                                |
|          | 6   | 3.8     |                                |
|          | 7   | 0.0     |                                |
|          | 8   | 0.0     |                                |
|          | 9   | NC      |                                |
|          | 10  | NC      |                                |
|          | 11  | 6.0     |                                |
|          | 12  | NC      |                                |
|          | 13  | NC      |                                |
|          | 14  | 4.6     |                                |
|          | 15  | 0.0     |                                |
|          | 16  | 5.9     |                                |
|          | 17  | 5.9     |                                |
|          | 18  | 4.3     |                                |
|          | 19  | GND     |                                |
|          | 20  | 3.8     |                                |

Unit [V]

| Ref. No. | Pin | Voltage | Remarks     |
|----------|-----|---------|-------------|
| IC17     | 1   | 2.5     | NWR-SAME ON |
|          | 2   | 2.1     |             |
|          | 3   | 0.0     |             |
|          | 4   | SQUARE  |             |
|          | 5   | SQUARE  |             |
|          | 6   | 1.6     |             |
|          | 7   | GND     |             |
|          | 8   | 1.6     |             |
| IC201    | 1   | NC      |             |
|          | 2   | NC      |             |
|          | 3   | 3.1     |             |
|          | 4   | 0.0     |             |
|          | 5   | —       |             |
|          | 6   | GND     |             |
|          | 7   | 0.0     |             |
|          | 8   | NC      |             |
|          | 9   | NC      |             |
|          | 10  | 0.1     |             |
|          | 11  | --      |             |
|          | 12  | GND     |             |
|          | 13  | --      |             |
|          | 14  | 3.1     |             |
|          | 15  | 3.1     |             |
|          | 16  | NC      |             |
|          | 17  | 3.3     |             |
|          | 18  | 3.2     |             |
|          | 19  | NC      |             |
|          | 20  | 0.0     |             |
|          | 21  | NC      |             |
|          | 22  | NC      |             |
|          | 23  | NC      |             |
|          | 24  | NC      |             |
|          | 25  | NC      |             |
|          | 26  | 0.0     |             |
|          | 27  | 0.0     |             |
|          | 28  | NC      |             |
|          | 29  | 0.0     |             |
|          | 30  | 0.0     |             |
|          | 31  | 0.0     |             |
|          | 32  | 0.0     |             |
|          | 33  | NC      |             |
|          | 34  | NC      |             |
|          | 35  | NC      |             |
|          | 36  | NC      |             |
|          | 37  | NC      |             |
|          | 38  | NC      |             |
|          | 39  | 0.0     |             |
|          | 40  | NC      |             |
|          | 41  | 3.1     |             |



Unit [V]

Unit [V]

| Ref. No. | Pin | Voltage | Remarks |
|----------|-----|---------|---------|
| IC201    | 42  | 3.1     |         |
|          | 43  | 3.1     |         |
|          | 44  | 3.1     |         |
|          | 45  | NC      |         |
|          | 46  | NC      |         |
|          | 47  | NC      |         |
|          | 48  | 0.0     |         |
|          | 49  | 0.0     |         |
|          | 50  | 0.0     |         |
|          | 51  | 0.0     |         |
|          | 52  | 0.0     |         |
|          | 53  | NC      |         |
|          | 54  | NC      |         |
|          | 55  | NC      |         |
|          | 56  | 3.1     |         |
|          | 57  | 3.1     |         |
|          | 58  | 3.1     |         |
|          | 59  | 3.1     |         |
|          | 60  | 3.1     |         |
|          | 61  | 3.1     |         |
|          | 62  | 0.0     |         |
|          | 63  | NC      |         |
|          | 64  | 3.1     |         |
|          | 65  | 3.1     |         |
|          | 66  | 3.1     |         |
|          | 67  | 3.1     |         |
|          | 68  | 3.1     |         |
|          | 70  | 0.0     |         |
|          | 71  | NC      |         |
|          | 72  | NC      |         |
|          | 73  | NC      |         |
|          | 74  | NC      |         |
|          | 75  | NC      |         |
|          | 76  | NC      |         |
|          | 77  | NC      |         |
|          | 78  | NC      |         |
|          | 79  | 3.1     |         |
|          | 80  | 0.0     |         |
|          | 81  | 0.0     |         |
|          | 82  | 0.0     |         |
|          | 83  | 0.0     |         |
|          | 84  | 0.0     |         |
|          | 85  | 3.1     |         |
|          | 86  | 0.0     |         |
|          | 87  | 3.1     |         |
|          | 88  | 0.0     |         |
|          | 89  | NC      |         |

| Ref. No. | Pin | Voltage | Remarks             |
|----------|-----|---------|---------------------|
| IC201    | 90  | NC      |                     |
|          | 91  | NC      |                     |
|          | 92  | 3.0     |                     |
|          | 93  | 1.4     |                     |
|          | 94  | GND     |                     |
|          | 95  | —       | SINE WAVE 162.4 MHz |
|          | 96  | 3.1     |                     |
|          | 97  | 3.1     |                     |
|          | 98  | NC      |                     |
|          | 99  | 0.4     |                     |
|          | 100 | 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         |
|          | 10  | —       | SQUARE WAVE         |
|          | 11  | —       | SQUARE WAVE         |
|          | 12  | —       | SQUARE WAVE         |
|          | 13  | 1.5     | CLOCK               |
|          | 14  | 3.1     |                     |
|          | 15  | 1.6     | CLOCK               |
|          | 16  | NC      |                     |
|          | 17  | 2.1     |                     |
|          | 18  | 1.1     |                     |
|          | 19  | 0       |                     |
|          | 20  | 0       |                     |
|          | 21  | 3.1     |                     |
|          | 22  | —       | SQUARE WAVE         |
|          | 23  | —       | SQUARE WAVE         |
|          | 24  | —       | SQUARE WAVE         |
|          | 25  | —       | SQUARE WAVE         |
|          | 26  | 3.1     |                     |
|          | 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         |

Unit [V]

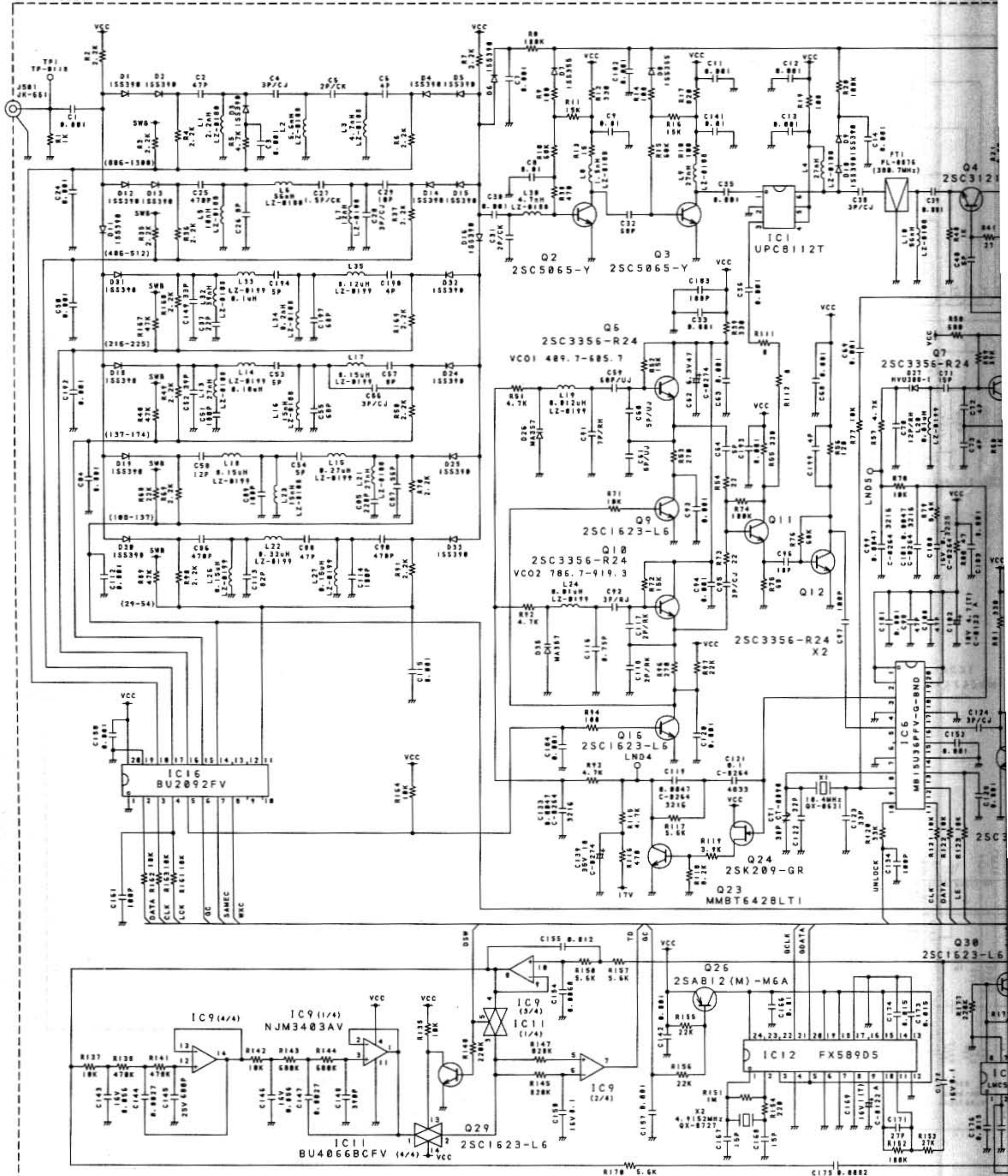
| Ref. No. | Pin | Voltage | Remarks     |
|----------|-----|---------|-------------|
| IC202    | 38  | —       | SQUARE WAVE |
|          | 39  | —       | SQUARE WAVE |
|          | 40  | —       | SQUARE WAVE |
|          | 41  | —       | SQUARE WAVE |
|          | 42  | 3.1     |             |
|          | 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     |             |
|          | 3   | 0       |             |
| IC205    | 1   | 3.1     |             |
|          | 2   | 0       |             |
|          | 3   | 0       |             |
|          | 4   | 0       |             |
|          | 5   | 3.1     |             |
|          | 6   | 3.1     |             |
|          | 7   | 3.1     |             |
|          | 8   | 3.1     |             |
| IC206    | 1   | 5.4     |             |
|          | 2   | 0       |             |
|          | 3   | 1.3     |             |
|          | 4   | 3.1     |             |
|          | 5   | 0       |             |
|          | 6   | 6.0     |             |



**NOTE**

RF PCB

B1 PH-0224





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... 43  
.. 49

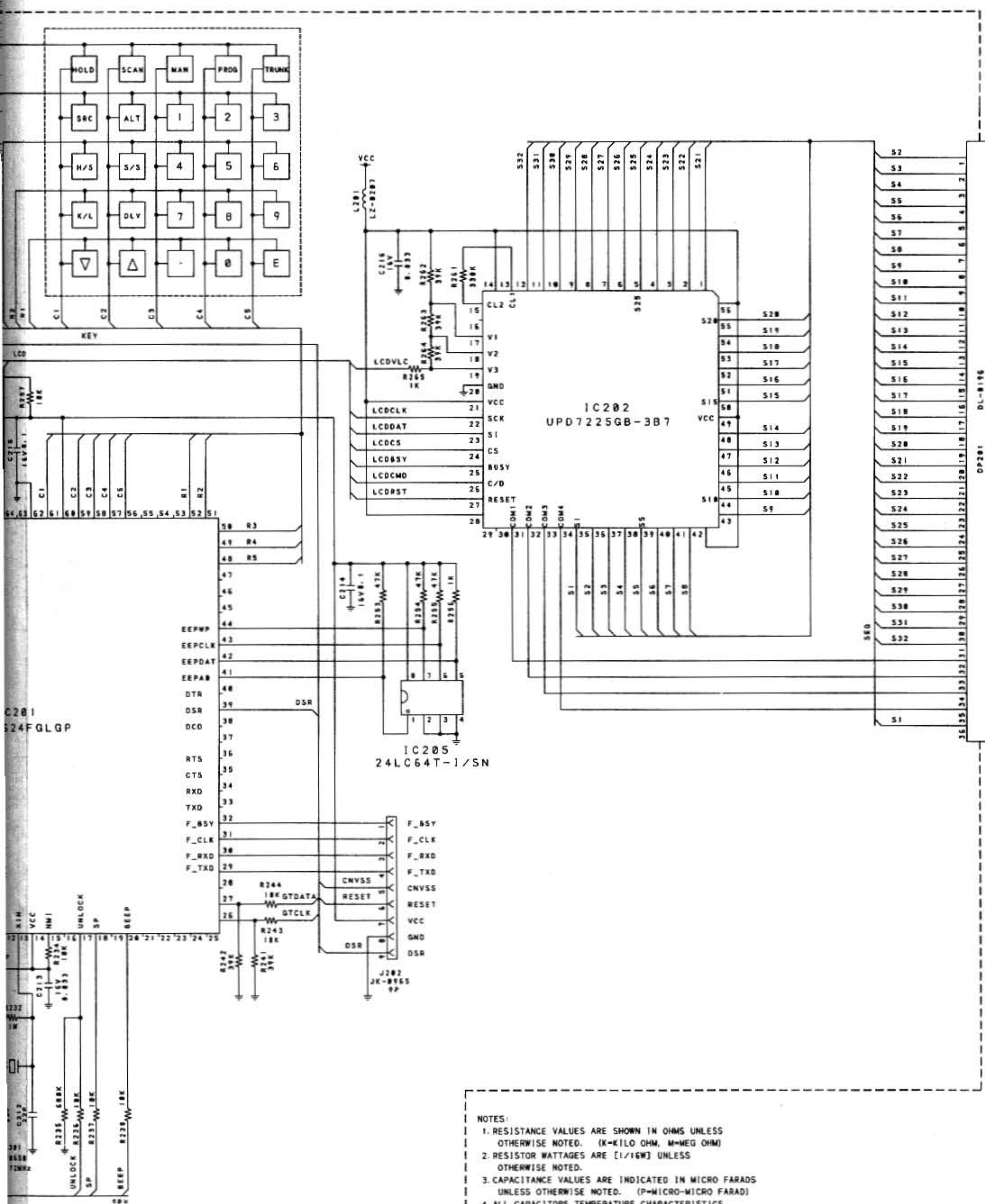




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