

AM / FM STEREO RECEIVER ———

# **R-1050**

## **SERVICE MANUAL**



R-1050

CIRCUIT DESCRIPTION

[POWER SUPPLY]

The AC line is connected to the primary side of power transformer via a two pole power switch (front panel) and a voltage selector. Four windings are provided for the secondary side i.e. (1) The 12V AC is utilized for 4 pilot lamps, and is at the same time half-wave rectified by D105 to realize DC 13V for the muting circuit and the blinker circuit. (2) 15V AC for tuner section: This 15V AC is half-wave rectified by D107 to obtain 18V unsmooth DC, which is further regulated by transistor Q113 and zener diode D108 to realize 13V regulated DC against  $\pm 20\%$  AC line. (3) 35V AC for preamp (equalizer stage, intermediate stage and tone control): The 35V AC is half-wave rectified by D109 to obtain -44V unsmooth DC, which is turned into low noise -40V DC via ripple filter Q118. Actual supply voltage at each section is; equalizer stage -37V, tone control -27V, intermediate stage -24.5V, all of which are determined by the voltage-drop at the de-coupling circuit placed in each stage. (4) 36V x 2 AC for main amp.: The 36V x 2 AC are rectified by D001 - D004 and then led to large filtering capacitors C006 and C007 (10000uF x 2) to obtain dual supply +48V and -48V. (5) 21V x 2 AC for Peak Indicator, which are tapped out from the same winding of the above (4). The 21V x 2 AC are rectified by D603 - D606 to obtain dual supply +27V and -27V.

[PRE AMP SECTION]

The preamplifier consists of an equalizer, and intermediate amplifier, and a tone control. The equalizer adopts the Negative Feedback circuit using two silicon transistors, 2SA836 (Q101), 2SC1345 (Q102) per channel and is designed to provide proper equalization to the input signals. Input signals given through the AUX and TUNER section bypass the equalizer and are fed directly to the later stages of this amplifier.

Controls arranged after the equalizer stage are: REC. OUT connector, TPAE MONITOR SWITCH, DUBBING SWITCH, LOW-CUT FILTER, HIGH-CUT FILTER, MODE SELECTOR, VOLUME CONTROL, and LOUDNESS SWITCH. The intermediate amplifier consisting of Q301, Q302 is a flat amplifier adopting 2-stage Negative Feedback circuit which is designed to boost the equalizer, tuner or AUX. This covers sufficiently the insertion loss by the tone control in the next stage and leads low impedance output to the tone control for its smooth function. The tone control adopts the EB-NF circuit of Q201 and Q202. Any desired frequency response can be adjusted by the following controls: Variable resistor VR202 (Bass), and variable resistor VR201 (Treble). Major components of the preamplifier are arranged on the printed circuit boards PB1059-1061, 1064. (PB1064 for equalizer, PB1059 for Filters, Loudness and Mode, PB1060 for Flat Amp, PB1061 Tone Control)

[MAIN AMPLIFIER]

The main amplifier is of full stage direct coupling, two stage differential amplification, predriving and fully complementary circuits. The power transistors Q109 2SD388A (NPN) and Q110 2SB541A (PNP) (2-transistor per channel) are fitted over to the heat sink inside the chassis. All components are assembled to the printed circuit board PB1062. The differential amplifier is consisted of Q101 and Q102, the pre-driving stage of Q103, Q104, Q105 (Q103 & Q104 are for the differential amp, and Q105 is arranged for the active load of Q103), and the driver transistors, Q107 and Q108. Besides the above transistors, capacitors, resistors, and semi-fixed volume controls are integrated in the circuit.

#### [AM SECTION]

The RF signal received by the ferrite-rod antenna is converted into 455kHz IF frequency by Q113. The output of the local oscillation circuitry composed of Q113 and T105 is mixed in Q113 with the incoming radio signal to provide the 455kHz IF frequency, which is connected to the next stage.

#### [PEAK INDICATOR CIRCUIT] (PB-1063)

The output signal passed through the "Peak Indicator Sensitivity Selector Switch" SW505 meets the Peak Detection circuit composed of Q601, Q602 and C602, whose detected DC signal is then converted into low-impedance by current booster Q603 and Q604.

Of course different threshold level is arranged for each LED driver Q605 - Q610 to make them light up in accordance with the signal level.

#### [A.F.C.C. ----- Automatic Filter Control Circuit] (PB-1059)

At the time of AM reception, if the higher order harmonics caused by clipping of power amp are fed back to the AM antenna, the operation will be unstable. Therefore the harmonics passed through the high pass filter Q501 are detected by D501, which controls the electronic high frequency attenuator Q502 and C508 connected to the output of AM detector. Thus unstable factors such as oscillation are eliminated.

#### [MUTING & PROTECTION CIRCUIT] PB-1062

Charging of C114 is commenced through R130 and R132 by activating the Power Switch. Thus when base voltage of Q114 becomes 1.3V some 10 seconds later, the drivers of Ryl01, that is, Q114 and Q115 are turned on to connect the output of power amp to the speaker selector switch SW006.

When the power switch is released to off, C114 is discharged via D103 and R131, and promptly Ryl01 is turned to be 'break'.

In case such DC ingredient that exceeds  $\pm 4V$  is at the output caused by abnormal operation of power amplifier, Q111 or Q112 is turned on, and C114 is discharged via D103 by Q113, thus Ryl01 is released.

#### [BLINKER CIRCUIT] (PB-1062)

During the breaking time of Ryl01, power is supplied to the vibrator to be oscillated, which turns LED101 on and off.

#### R-1050 ALIGNMENT PROCEDURE

The alignment procedure described in each chart may be performed independently, without affecting the others.

Warm up the signal generators for at least 15 minutes to make certain that they are stabilized at their operating temperature particularly generators containing vacuum tubes. Consult the instruction manual supplied with the particular test instrument for specific information concerning connection and operation.

The test equipment listed here is intended only as a guide, but alternate instruments should be of similar quality.

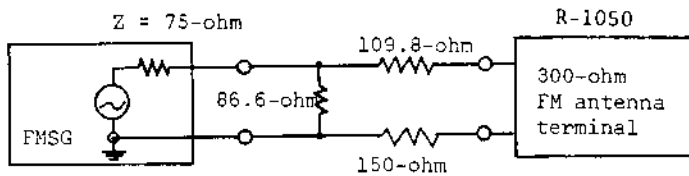
The following instruments are required for a complete alignment of the tuner.

1. Measurement instruments and Tools

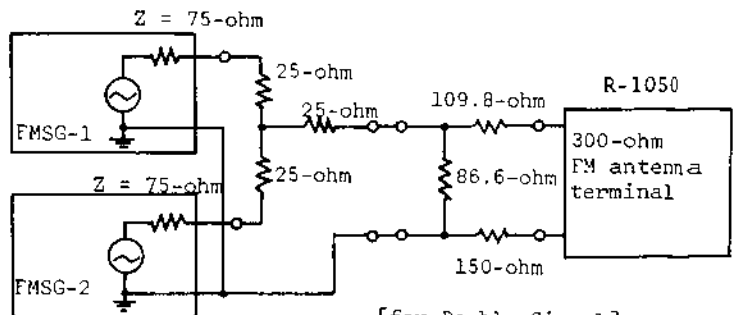
- |                |                                |                   |                                       |
|----------------|--------------------------------|-------------------|---------------------------------------|
| Signal Source: | 1) FM signal generator (FMSG)  | Output Indicator: | 7) Oscilloscope (CRO)                 |
|                | 2) Sweep generator (SWG)       |                   | 8) Distortion Meter (HDM)             |
|                | 3) AM signal generator (AMSG)  |                   | 9) AC voltmeter (ACVTVM)              |
|                | 4) FM stereo modulator (MPXSG) |                   | 10) DC volt meter (DCVTVM)            |
|                | 5) Audio Oscillator (AFO)      | Tools:            | 11) Hex head alignment tool           |
|                | 6) AM standard loop antenna    |                   | 12) Thin plastic shaft alignment tool |

2. General alignment conditions

- 1) The normal test voltage is within 10% of what is indicated on the receiver with less than 2% harmonic distortion.
- 2) Unless otherwise specified, the normal ambient temperature is 15°C - 25°C and humidity 55 - 75%. But if this is not possible, 5 - 35°C, 45 - 85% will provide acceptable results.
- 3) FM dummy antenna shall be as follows if not otherwise specified. The output voltage of the signal generator is 1/4 of the unloaded terminal voltage.



[for Single Signal]



[for Double Signal]

- 4) Connect the low side of signal source and the output indicator to the chassis ground as close as possible to the high side connection unless otherwise specified.
- 5) The 10.7 MHz marker used in each section of the alignment should be the same.
- 6) Marker insertion and amplitude should not distort the oscilloscope trace.
- 7) The AM standard loop antenna should be set above the ferrite loopstick antenna.
- 8) The output level of the sweep generator is measured by the output attenuator regardless of its terminated impedance.
- 9) FM modulation is 100% with  $\pm 75$ KHz.
- 10) All tuner audio output measurement are at TAPE OUT 1.

TUNER SECTION ALIGNMENT PROCEDURE

[CAUTION]

1. FM alignment must be done after 5 minutes of the power switch "ON".
2. Low distortion SG or stereo signal generator is indispensable for the FM-mono, stereo alignment procedure.

|                      |     |  |
|----------------------|-----|--|
| Preliminary Check    | 1.  | Voltage selector must be at the appointed voltage.   |
|                      | 2.  | Fuses on PB-1054 must be the appointed one.  |
|                      | 3.  | Set the Input Selector Switch at the "AM" position.  |
|                      | 4.  | Set the Dial Pointer at the maximum-right position.  |
|                      | 5.  | Set all semi-fixed pots (6 pcs) at their centre position.  |
|                      | 6.  | Select the De-emphasis Switch to the appointed time-constant.  |
| AM Section Alignment | 7.  | Push the Power Switch to "ON", and confirm if there is no trouble.   |
|                      | 8.  | Measure the voltage at the ( + ) side of power rectifying diode D107, which must be 8V $\pm$ 1V.   |
|                      | 9.  | Voltage at Pin No.41 or No. 42 must be 18V $\pm$ 1V.   |
|                      | 10. | Set the output of 455KHz Sweep Generator for AM at 40dB, and connect it to Pin No.35. At the same time connect the line input of the SG to the TP-2.   |
|                      | 11. | Adjust the Ceramic Filter T105 and T106, and the Detector IFT T107 to have symmetrical response.   |
|                      | 12. | Set the loop antenna connected to AM-SG at the measuring position.   |
|                      | 13. | Connect oscilloscope and milivoltmeter to the REC. OUT terminal.   |
|                      | 14. | Obtain 400Hz 30% modulation on AM SG, and set the output attenuator at 80dB.   |
|                      | 15. | Set both SG and the dial pointer at 600KHz.  |
|                      | 16. | Adjust T104, Ferrite-core antenna and RF coil T103 to obtain maximum response on the signal meter or 400Hz sine-wave.  |
|                      | 17. | Set SG and the Dial Pointer at 1400KHz.  |
|                      | 18. | Adjust 3 trimmers on top of the variable capacitor (viewing from front, the right side is for OSC.) to obtain maximum response on the Signal Meter or 400Hz sine-wave.<br>Repeat steps 15-18 for 2 or 3 times to obtain maximum sensitivity. |
|                      | 19. | Set SG and the Dial Pointer at 1000KHz, and at maximum output level (126dB), adjust VR106 to have 4.5 reading on the Signal Meter calibration.   |
|                      | 20. | Check that all the specification items, sensitivity, output level, etc., are fulfilled.  |

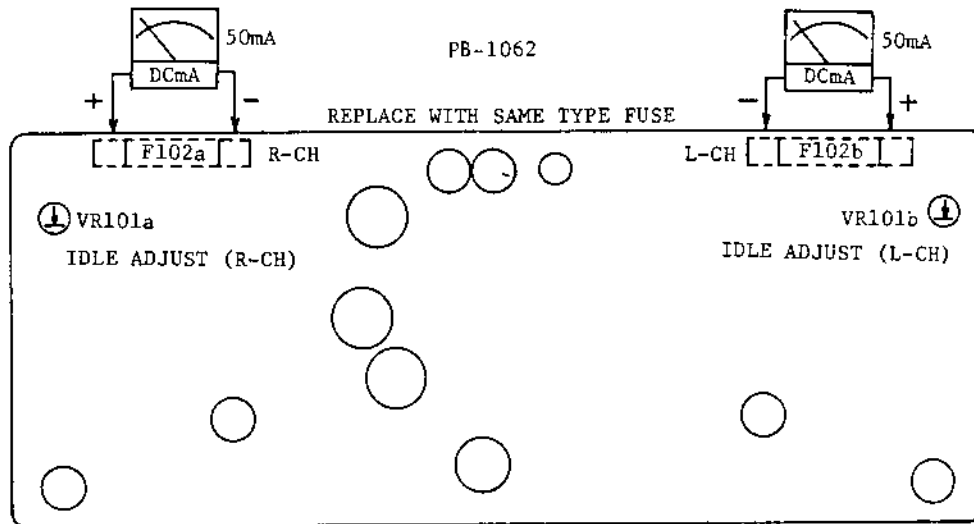
Note the following adjustment must be done at least 5 minutes after the power "ON".

|                                    |     |  |
|------------------------------------|-----|--|
| FM Frontend & IF Section Alignment | 21. | Set the Input Selector Switch at the "FM" position.  |
|                                    | 22. | Connect millivoltmeter, distortion meter and synchroscope to the REC. OUT terminal.  |
|                                    | 23. | Connect FM SG of 400Hz 100% modulated to the 300-ohm ANT. terminal through balun. In this case the attenuator of the SG must be minimum, and set VR101 at the extreme counter-clockwise direction.   |
|                                    | 24. | Set SG and the Dial Pointer at 98MHz. Short-circuit Pin No.19 and 21 on PB-1054.   |
|                                    | 25. | Adjust the detection transformer T101 to obtain center indication of the center meter.   |
|                                    | 26. | Set the SG output at 1mV, and adjust VR102 to have 1.0V output level at REC.OUT. Adjust detection trans T102 (both L & R ch) to realize minimum distortion (no more than 0.1%).  |
|                                    | 27. | Set SG output at minimum, and turn the tuning knob to let the center meter stay at the center. Then set SG output at 1mV, and adjust detection trans T101 and T102 for 2 or 3 times to realize minimum distortion of the detection output.                 |
|                                    | 28. | Set SG and dial pointer at 108MHz, then obtain 1.5 - 1.8uV of SG output.   |
|                                    | 29. | Adjust the trimmer on top of the Frontend (RF, ANT side) to obtain maximum indication of millivoltmeter.   |
|                                    | 30. | Set SG and dial pointer at 98MHz, then obtain 1.5 - 1.8uV SG output.   |
|                                    | 31. | Adjust IF core on the Frontend to obtain maximum indication of millivoltmeter.   |
|                                    | 32. | Set SG output at 1.9uV.  |
|                                    | 33. | Set the muting switch at "ON", and adjust VR101 to set muting point. In this case set it so that 400Hz detection output waveform can be stable against the level fluctuation and that stable output is feasible. After adjustment set the switch to "OFF". |
|                                    | 34. | Repeat step 27 and check distortion.<br>Center; 0.1%,           Limit; 0.2%  |
|                                    | 35. | Set SG output at 1mV, then adjust VR105 to have 4.5 reading on the signal meter calibration.   |
|                                    | 36. | Check that all the specification items such as sensitivity, output level, etc., are fulfilled.   |
|                                    | 37. | Set FM SG 100% modulated, and connect both equipments to the 300-ohm ANT. terminal through 300-ohm balun.  |
|                                    | 38. | Connect distortion meter, millivoltmeter, oscilloscope or synchroscope to the REC. OUT terminal. Remove short circuit made between 19 and 21.  |
|                                    | 39. | Set SG and the dial pointer at 98MHz, and fix the SG output at 1mV.  |

|                            |     |  |
|----------------------------|-----|--|
|                            | 40. | Connect Frequency Counter to TP-1, and adjust VR104 to obtain 19KHz +0, -10KHz. Only this case, the pilot signal of the SG should be "OFF".  |
|                            | 41. | Modulate the L-ch of the stereo signal generator, and make note of the output by the millivoltmeter.   |
|                            | 42. | Adjust VR103 to obtain minimum movement of the L-ch millivoltmeter.  |
|                            | 43. | Measure the distortion and separation on both channels, which must fulfill the specification. Note that only in the case the distortion is critical against the spec., adjust the IF core in the Frontend within 1/3 turn. |
|                            | 44. | Switch on and off the pilot signal, and confirm if the stereo indicator LED's light up in accordance with the signal.  |
|                            | 45. | Confirm all specification items such as S/N ratio etc. are fulfilled. And make note of them.   |
| FM Dolby Section Alignment | 46. | Set the input selector switch at the "FM" position, and the FM Dolby switch at the "DOLBY" position. At this time confirm if the Dolby indicator LED's light up.   |
|                            | 47. | Set SG and the dial pointer at 98MHz, and fix the SG output at 1mV.  |
|                            | 48. | Adjust VR801 on the Dolby printed circuit board PB-1055 to obtain 580mV output level at the L-ch REC. OUT terminal. At this step, stereo signal generator must be---modulation L+R 50% and pilot signal 10%.               |
|                            | 49. | Same as the above. Adjust VR802 on PB-1055 to have 580mV output level at the REC. OUT terminal.  |
|                            | 50. | Set stereo signal generator at 100% modulation at 1KHz. Confirm the output level of L-ch and R-ch at REC. OUT terminal is 1.1V.  |



IDLE ADJUST

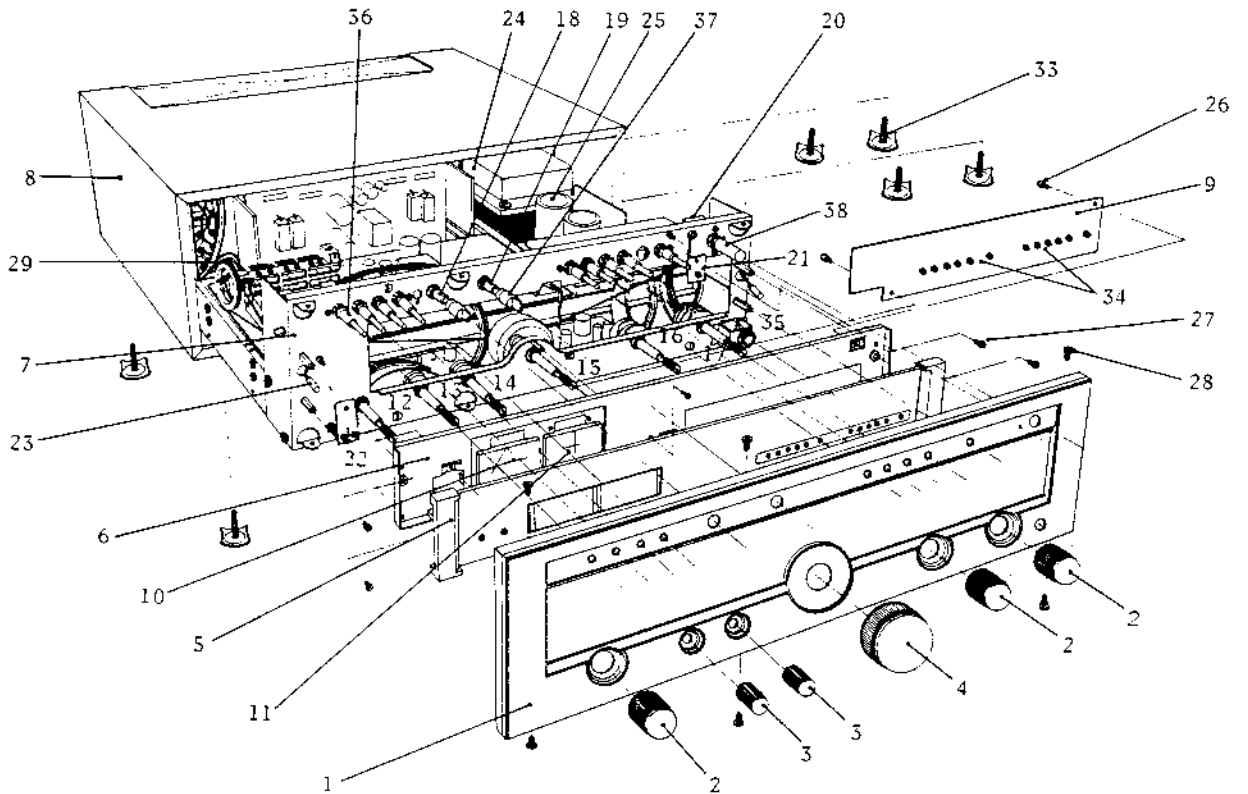


Idle Adjust

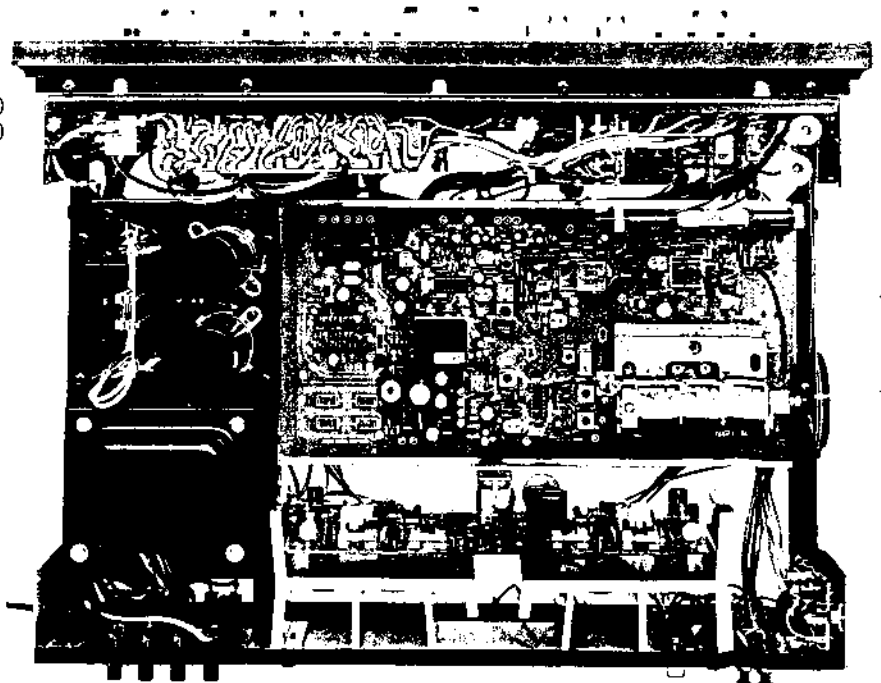
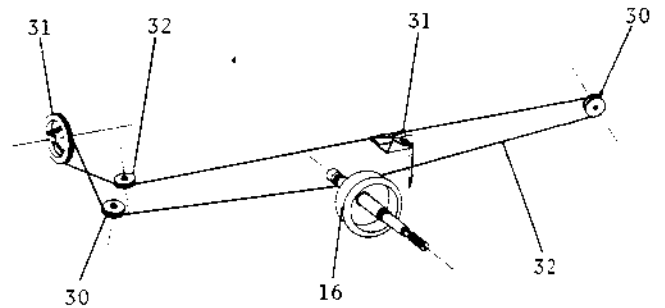
VR101a (R-ch) and VR101b (L-ch) on PB1062 are semifixed potentiometer for quiescent current adjustment of the power transistors.

First, remove both fuses of F102a (R-ch) and F102b (L-ch), and then insert a DC ammeter between the fuse grips. ( + for the edge-side grip).

After one minute of POWER-ON, adjust VR101a and VR101b respectively to have 50mA reading on the meter.



1. Front Panel (WA1068)
2. Knob (WJ1033, function etc.)
3. Knob (WJ1034, tone cont.)
4. Knob (WJ1035, tuning)
5. Dial Scale Ass'y (WM1024)
6. Holder
7. Sub Panel (UB1024)
8. Wooden Case (WB1043)
9. PB-1063
10. Signal Strength Meter (AM0041)
11. FM Fine Tuning Meter (AM0042)
12. Rotary Sw. (SR0081, Input Select.)
13. VR. (100k x 2)
14. VR. (50k x 2)
15. Tuning Shaft & Flywheel (UB1003)
16. VR. (200k x 2)
17. Rotary Sw. (SR0083, speaker)
18. Rotary Sw. (SR0082, dubbing)
19. VR. (250kMN x 2, balance)
20. Power Sw. (SP0070)
21. L.E.D. (TD0088)
22. L.E.D. (TD0088)
23. Dial Lamp (AL0039)
24. Power Transformer (PT0119)
25. Electrolytic (CE1408, 10000uF 50V)
26. Screw 3mm x 6mm
27. Screw 3mm x 6mm
28. Screw 4mm x 10mm
29. Drum (BX0016)
30. Plastic Pulley (BX0022)
31. Tuning Pointer (UZ1090)
32. Dial Cord
33. Screw 4mm x 20mm
34. L.E.D. (TD0088)
35. Headphone Jack (AJ0015)
36. Mould Knob (WJ1069)
37. Mould Knob (WJ1067)
38. Mould Knob (WJ1066)



REPLACEMENT PARTS LIST

PB-1054

RESISTORS ( $\pm 5\%$ , 1/4W unless otherwise noted)

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| R101       | RD0028    | 15k         | R147       | RD0008    | 560k        |
| 102        | RD0025    | 27k         | 148        | RD0046    | 680         |
| 103        | RD0022    | 47k         | 149        | RD0037    | 3.3k        |
| 104        | RD0034    | 5.6k        | 150        | RD0037    | 3.3k        |
| 105        | RD0022    | 47k         | 151        | RD0009    | 470k        |
| 106        | RD0043    | 1k          | 152        | RD0009    | 470k        |
| 107        | RD0020    | 68k         | 153        | RD0026    | 22k         |
| 108        | RD0029    | 12k         | 154        | RD0026    | 22k         |
| 109        | RD0022    | 47k         | 155        | RD0022    | 47k         |
| 110        | RD0050    | 330         | 156        | RD0034    | 5.6k        |
| 111        | RD0050    | 330         | 157        | RD0009    | 470k        |
| 112        | RD0056    | 100         | 158        | RD0050    | 330         |
| 113        | RD0037    | 3.3k        | 159        | RD0024    | 33k         |
| 114        | RD0061    | 47          | 160        | RD0013    | 220k        |
| 115        | RD0056    | 100         | 161        | RD0029    | 12k         |
| 116        | RD0037    | 3.3k        | 162        | RD0043    | 1k          |
| 117        | RD0043    | 1k          | 163        | RD0024    | 33k         |
| 118        | RD0056    | 100         | 164        | RD0013    | 220k        |
| 119        | RD0056    | 100         | 165        | RD0022    | 47k         |
| 120        | RD0047    | 560         | 166        | RD0052    | 220         |
| 121        | RD0024    | 33k         | 167        | RD0034    | 5.6k        |
| 122        | RD0024    | 33k         | 168        | RD0050    | 330         |
| 123        | RD0030    | 10k         | 169        | RD0009    | 470k        |
| 124        | RD0065    | 22          | 170        | RD0260    | 270 2W      |
| 125        | RD0028    | 15k         | 171        | RD0051    | 270         |
| 126        | RD0030    | 10k         | 172        | RD0017    | 100k        |
| 127        | RD0043    | 1k          | 173        | RD0053    | 180         |
| 128        | RD0029    | 12k         | 174        | RD0030    | 10k         |
| 129        | RD0022    | 47k         | 175        | RD0030    | 10k         |
| 130        | RD0039    | 2.2k        | 176        | RD0043    | 1k          |
| 131        | RD0048    | 470         | 178        | RD0034    | 5.6k        |
| 132        | RD491     | 2k          | 179        | RD0041    | 1.5k        |
| 133        | RD0022    | 47k         | 180        | RD0025    | 27k         |
| 134        | RD0022    | 47k         | 181        | RD0054    | 150         |
| 135        | RD0034    | 5.6k        | 182        | RD0054    | 150         |
| 136        | RD0026    | 22k         | 183        | RD0056    | 100         |
| 137        | RD0020    | 68k         | 187        | RD0052    | 220         |
| 138        | RD0022    | 47k         | 191        | RD0056    | 100         |
| 139        | RD0043    | 1k          |            |           |             |
| 140        | RD0029    | 12k         |            |           |             |
| 141        | RD0028    | 15k         |            |           |             |
| 142        | RD0056    | 100         |            |           |             |
| 143        | RD0041    | 1.5k        |            |           |             |
| 144        | RD0037    | 3.3k        |            |           |             |
| 145        | RD0037    | 3.3k        |            |           |             |
| 146        | RD0048    | 470         |            |           |             |

CAPACITORS (C...ceramic, E...electrolytic, S...styroi, T...tantalum, M...mylar)

| SYMBOL NO. | STOCK NO. | DESCRIPTION            |
|------------|-----------|------------------------|
| C101       | CK0011    | 0.01uF 25V C +80%-20%  |
| 102        | CK0011    | 0.01uF 25V C "         |
| 103        | CK0011    | 0.01uF 25V C "         |
| 104        | CK0010    | 0.04uF 25V C "         |
| 105        | CK0010    | 0.04uF 25V C "         |
| 106        | CE0213    | 0.47uF 50V E +75%-10%  |
| 107        | CK0010    | 0.04uF 25V C "         |
| 108        | CK0019    | 470pF 50V C $\pm 10\%$ |
| 109        | CK0010    | 0.04uF C               |
| 110        | CK0011    | 0.01uF C               |

|      |        |         |     |   |          |
|------|--------|---------|-----|---|----------|
| C111 | CK0011 | 0.01uF  |     | C |          |
| 112  | CK0011 | 0.01uF  |     | C |          |
| 113  | CK0011 | 0.01uF  |     | C |          |
| 114  | CK0011 | 0.01uF  |     | C |          |
| 115  | CK0011 | 0.01uF  |     | C |          |
| 116  | CK0010 | 0.04uF  |     | C |          |
| 117  | CK0010 | 0.04uF  |     | C |          |
| 118  | CK0010 | 0.04uF  |     | C |          |
| 119  | CE0099 | 2.2uF   | 50V | E |          |
| 120  | CK0011 | 0.01uF  |     | E |          |
| 121  | CK0010 | 0.04uF  |     | E |          |
| 122  | CK0010 | 0.04uF  |     | E |          |
| 123  | CK0010 | 0.04uF  |     | E |          |
| 124  | CE0099 | 2.2uF   |     | E |          |
| 125  | CC0007 | 100pF   |     | C |          |
| 126  | CE0213 | 0.47    | 50V | E |          |
| 127  | CK0010 | 0.04    |     | C |          |
| 128  | CK0010 | 0.04    |     | C |          |
| 129  | CE0098 | 1uF     | 50V | E | +75%-10% |
| 130  | CE0074 | 10uF    | 16V | E | +50%-10% |
| 131  | CE0076 | 33uF    | 16V | E | "        |
| 132  | CE0098 | 1uF     | 50V | E | +75%-10% |
| 133  | CQ0041 | 1000pF  | 50V | S | +5%-5%   |
| 134  | CS0028 | 0.33uF  | 35V | T | +50%-20% |
| 135  | CE0213 | 0.47uF  | 50V | E |          |
| 136  | CS0028 | 0.33    | 35V | T |          |
| 137  | CE0099 | 2.2uF   | 50V | E | +75%-10% |
| 138  | CE0099 | 2.2uF   | 50V | E | "        |
| 139  | CE0079 | 220uF   | 16V | E | +50%-10% |
| 140  | CQ0202 | 1600pF  |     | S |          |
| 141  | CQ202  | 1600pF  |     | S |          |
| 142  | CQ0100 | 820pF   |     | S |          |
| 143  | CQ0100 | 820pF   |     | S |          |
| 144  | CQ0043 | 1200pF  |     | S |          |
| 145  | CQ0043 | 1200pF  |     | S |          |
| 146  | CE0079 | 220uF   | 16V | E | +50%-10% |
| 147  | CE0084 | 4.7uF   | 25V | E | +75%-10% |
| 148  | CK0019 | 470pF   | 50V | C | +10%-10% |
| 149  | CQ0008 | 0.056uF |     | M |          |
| 150  | CE0084 | 4.7uF   | 16V | E |          |
| 151  | CK0019 | 470pF   |     | C |          |
| 152  | CQ0008 | 0.056uF |     | M |          |
| 153  | CE0076 | 33uF    | 16V | E | +50%-10% |
| 154  | CE0090 | 1000uF  | 25V | E | "        |
| 155  | CE0090 | 1000uF  | 25V | E | "        |
| 156  | CE0079 | 220uF   | 16V | E | "        |
| 157  | CE0079 | 220uF   | 16V | E | "        |
| 158  | CE0079 | 220uF   | 16V | E | "        |
| 159  | CK0010 | 0.04uF  |     | C |          |
| 160  | CK0011 | 0.01uF  |     | C |          |
| 161  | CK0010 | 0.04uF  |     | C |          |
| 162  | CK0010 | 0.04uF  |     | C |          |
| 163  | CE0079 | 220uF   | 16V | E | +50%-10% |
| 164  | CE0114 | 3.3uF   | 25V | E | +75%-10% |
| 165  | CE0084 | 4.7uF   | 25V | E | "        |
| 166  | CK0011 | 0.01uF  |     | C |          |
| 167  | CK0010 | 0.04uF  |     | C |          |
| 168  | CK0064 | 0.001uF |     | C | +20%-20% |
| 169  | CK0024 | 0.002uF |     | C | "        |
| 170  | CK0063 | 0.02uF  |     | C |          |
| 171  | CK0010 | 0.04uF  |     | C |          |
| 172  | CK0063 | 0.02uF  |     | C |          |
| 173  | CK0011 | 0.01uF  |     | C |          |
| 174  | CE0074 | 10uF    | 16V | E | +50%-10% |
| 175  | CK0010 | 0.04uF  |     | C |          |
| 176  | CK0063 | 0.02uF  |     | C |          |
| 177  | CQ0172 | 330pF   | 50V | S | +5%-5%   |
| 178  | CC0004 | 22pF    | 50V | C | +10%-10% |
| 179  | CC0080 | 15pF    | 50V | C | +10%-10% |
| 180  | CC0033 | 10pF    | 50V | C | "        |
| 181  | CK0010 | 0.04uF  |     | C |          |

|     |        |        |     |   |
|-----|--------|--------|-----|---|
| 182 | CK0010 | 0.04uF |     | C |
| 183 | CE0079 | 220uF  | 16V | E |
| 184 | CE0079 | 220uF  | 16V | E |
| 185 | CK0010 | 0.04uF |     | C |
| 186 | CK0010 | 0.04uF |     | C |
| 197 | CC0005 | 33pF   | 50V | C |

SEMICONDUCTORS (PB-1054)

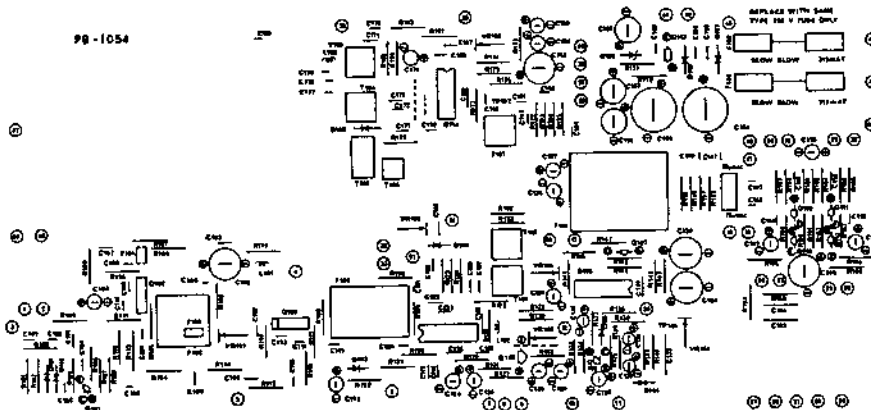
| SYMBOL NO. | STOCK NO. | DESCRIPTION  | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|--------------|------------|-----------|-------------|
| Q101       | TR0014    | 2SC381 TR    | Q113       | TR0047    | 2SD235 TR   |
| 102        | TC0011    | BA401 IC     | 114        | TC0021    | HA1197 IC   |
| 103        | TC0011    | BA401 IC     |            |           |             |
| 104        | TC0020    | LA1230 IC    | D101       | TD0018    | 1K188FM-1   |
| 105        | TR0066    | 2SC1222 TR   | 102        | TD0018    | 1K188FM-1   |
| 106        | TC0012    | LA3350SS IC  | 103        | TD0053    | 1S2473      |
| 107        | TF0001    | 2SK30A-O FET | 104        | TD0053    | 1S2473      |
| 108        | TR0146    | 2SC1740 TR   | 105        | TD0053    | 1S2473      |
| 109        | TR0066    | 2SC1222 TR   | 106        | TD0053    | 1S2473      |
| 110        | TR0068    | 2SA640 TR    | 107        | TD0002    | 1N4002      |
| 111        | TR0066    | 2SC1222 TR   | 108        | TD0079    | WZ140       |
| 112        | TR0068    | 2SA640 TR    | 109        | TD0018    | 1K188FM-1   |

FILTERS, COILS & TRANSFORMERS (PB-1054)

| SYMBOL NO. | STOCK NO. | DESCRIPTION                 |
|------------|-----------|-----------------------------|
| F101       | LA1106    | CFSE-28AC-10 ceramic filter |
| 102        | LA1106    | CFSE-28AC-10 ceramic filter |
| 103        | LA1107    | BF-41 block filter          |
| 104        | LA1103    | FB-3204 low-pass filter     |
|            | LA1222    | FB-722U12 front-end         |
| T101       | LA1092    | LUX-1092 FM trans.          |
| 102        | LA1093    | LUX-1093 "                  |
| 103        | LA1097    | LA1097 AM trans.            |
| 104        | LA1073    | LA1073 "                    |
| 105        | LA1098    | FSN-1067 "                  |
| 106        | LA1099    | NIT-7520 "                  |
| 107        | LA1100    | LA1100 "                    |
| L101       | LA1084    | RC855-180K choke coil       |
| 102        | LA1085    | LUX-1085 "                  |
| 103        | LA1086    | RC855-2R7M "                |
| 401        |           |                             |
| Bn         | LA1052    | LUX-1052 balun              |

TRIMMER POTENTIOMETERS (PB-1054)

| SYMBOL NO. | STOCK NO. | DESCRIPTION    | SYMBOL NO. | STOCK NO. | DESCRIPTION    |
|------------|-----------|----------------|------------|-----------|----------------|
| VR101      | RT0054    | KVSF8-7PNFB301 | VR104      | RT0051    | KVSF8-7PNFB502 |
| 102        | RT0051    | " " 502        | 105        | RT0052    | " " 203        |
| 103        | RT0050    | " " 501        | 106        | RT0055    | " " 102        |



DOLBY UNIT (PB-1055)

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| R801       | RD0043    | 1k          | R815       | RD0012    | 270k        |
| 802        | RD0022    | 47k         | 816        | RD0035    | 4.7k        |
| 803        | RD0012    | 270k        | 817        | RD0043    | 1k          |
| 804        | RD0035    | 4.7k        | 818        | RD0022    | 47k         |
| 805        | RD0037    | 3.3k        | 819        | RD0037    | 3.3k        |
| 806        | RD0022    | 47k         | 820        | RD0022    | 47k         |
| 807        | RD0053    | 180         | 821        | RD0053    | 180         |
| 808        | RD0022    | 47k         | 822        | RD0015    | 150k        |
| 809        | RD0017    | 100k        | 823        | RD0012    | 270k        |
| 810        | RD0055    | 120         | 824        | RD0007    | 680k        |
| 811        | RD0007    | 680k        | 825        | RD0055    | 120         |
| 812        | RD0015    | 150k        | 826        | RD0017    | 100k        |
| 813        | RD0012    | 270k        | 827        | RD0022    | 47k         |
| 814        | RD0061    | 47          |            |           |             |

CAPACITORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION |     |   |          |
|------------|-----------|-------------|-----|---|----------|
| C801       | CS0056    | 0.1uF       | 35V | T | +50%-20% |
| 802        | CE0213    | 0.47uF      | 50V | E | +75%-10% |
| 803        | CQ0121    | 0.12uF      | 50V | M | +10%-10% |
| 804        | CE0074    | 10uF        | 16V | E | +50%-10% |
| 805        | CE0074    | 10uF        | 16V | E | +50%-10% |
| 806        | CQ0012    | 0.027uF     | 50V | M | +10%-10% |
| 807        | CE0079    | 4700pF      |     | S | +20%-20% |
| 808        | CE0074    | 220uF       | 16V | E | +50%-10% |
| 809        | CQ0009    | 10uF        | 16V | E | +50%-10% |
| 810        | CQ0029    | 0.047uF     | 50V | M | +10%-10% |
| 811        | CK0009    | 0.33uF      | 50V | M | +10%-10% |
| 812        | CE0074    | 0.1uF       | 25V | C | +80%-20% |
| 813        | CQ0069    | 10uF        | 16V | E | +50%-10% |
| 814        | CS0056    | 5600pF      | 50V | S | +5%-5%   |
| 815        | CE0213    | 0.1uF       | 35V | T |          |
| 816        | CQ0121    | 0.47uF      | 50V | E |          |
| 817        | CE0074    | 0.12uF      |     | M |          |
| 818        | CE0074    | 10uF        | 16V | E |          |
| 819        | CE0074    | 10uF        | 16V | E |          |
| 820        | CE0079    | 220uF       | 16V | E |          |
| 821        | CQ0050    | 4700pF      |     | S |          |
| 822        | CQ0069    | 5600pF      |     | S |          |
| 823        | CQ0012    | 0.027uF     |     | M |          |
| 824        | CE0074    | 10uF        | 16V | E |          |
| 825        | CQ0009    | 0.047uF     |     | M |          |
| 826        | CQ0012    | 10uF        | 16V | E |          |
| 827        | CE0074    | 0.1uF       |     | C |          |
| 828        | CQ0029    | 0.33uF      |     | M |          |
| 829        | CE0079    | 220uF       | 16V | E |          |
| 830        | CE0077    | 47uF        | 16V | E | +75%-10% |

SEMICONDUCTORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION   | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|---------------|------------|-----------|-------------|
| Q801       | TR0003    | 2SC1000 GR TR | D801       | TD0018    | 1K188       |
| 802        | TC0022    | NE545B        | 802        | TD0018    | 1K188       |
| 803        | TR0003    | 2SC1000 GR TR |            |           |             |
| 804        | TC0022    | NE545B        |            |           |             |

-----  
PB-1059 (SWITCH BOARD)  
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RESISTORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| R501ab     | RD0004    | 1M          | R509       | RD0030    | 10k         |
| 502ab      | RD0033    | 6.8k        | 510        | RD0022    | 47k         |
| 503ab      | RD0004    | 1M          | 511        | RD0024    | 33k         |
| 504ab      | RD0025    | 27k         | 512        | RD0043    | 1k          |
| 505ab      | RD0029    | 12k         | 513        | RD0035    | 4.7k        |
| 506ab      | RD0013    | 220k        | 514        | RD0017    | 100k        |
| 507ab      | RD0021    | 56k         | 515        | RD0030    | 10k         |
| 508ab      | RD0025    | 27k         | 516        | RD0009    | 470k        |

CAPACITORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION   |
|------------|-----------|---------------|
| C501ab     | CQ0011    | 0.033uF 50V S |
| 502ab      | CQ0021    | 3300pF 50V S  |
| 503ab      | CQ0011    | 0.033uF 50V S |
| 504ab      | CC0011    | 470pF 50V C   |
| 505        | CK0064    | 1000pF 50V C  |
| 506        | CK0064    | 1000pF 50V C  |
| 507        | CE0074    | 10uF 16V E    |
| 508        | CK0009    | 0.1uF 25V C   |
| 509        | CE0099    | 2.2uF 50V E   |
| 007        | CE0078    | 100uF 16V E   |

SEMICONDUCTORS (PB-1059 switch board)

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| Q501       | TR0029    | 2SC945      | D501       | TD0016    | 1S1555      |
| 502        | TR0029    | 2SC945      |            |           |             |

SWITCHES

| SYMBOL NO.  | STOCK NO. | DESCRIPTION |
|-------------|-----------|-------------|
| SW501 - 505 | SP0073    | SUE53       |

-----  
PB-1060 (FLAT AMP. BOARD)  
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RESISTORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| R301ab     | RD0024    | 33k         | R306ab     | RD0027    | 18k         |
| 302ab      | RD0022    | 47k         | 307ab      | RD0043    | 1k          |
| 303ab      | RD0004    | 1M          | 308ab      | RD0034    | 5.6k        |
| 304ab      | RD0009    | 470k        | 309        | RD0037    | 3.3k        |
| 305ab      | RD0038    | 2.7k        |            |           |             |

CAPACITORS (PB-1060 FLAT AMP. BOARD)

| SYMBOL NO. | STOCK NO. | DESCRIPTION    |
|------------|-----------|----------------|
| C301ab     | CE0173    | 3.3uF 25V E LR |
| 302ab      | CE0078    | 100uF 16V E    |
| 303ab      | CC0012    | 10pF 50V C     |
| 304ab      | CE0173    | 3.3uF 25V E    |
| 305        | CK0010    | 0.04uF 50V C   |
| 306        | CE0103    | 100uF 50V E    |

SEMICONDUCTORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| Q301ab     | TR0125    | 2SA836E     | Q302ab     | TR0025    | 2SC1345E    |

TRIMMER POTENTIOMETERS

| SYMBOL NO. | STOCK NO. | DESCRIPTION     |
|------------|-----------|-----------------|
| VR301ab    | RV0102    | 200k $\times$ 2 |

PB-1061 TONE CONTROL BOARD

RESISTORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| R201ab     | RD0041    | 1.5k        | 207ab      | RD0045    | 1k          |
| 202ab      | RD0027    | 18k         | 208ab      | RD0022    | 47k         |
| 203ab      | RD0037    | 3.3k        | 209ab      | RD0049    | 390         |
| 204ab      | RD0041    | 1.5k        | 210ab      | RD0054    | 5.6k        |
| 205ab      | RD0027    | 18k         | 211ab      | RD0015    | 150k        |
| 206ab      | RD0037    | 3.3k        | 212ab      | RD0013    | 220k        |

CAPACITORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION    |
|------------|-----------|----------------|
| C201ab     | CQ0026    | 1000pF 50V S   |
| 202ab      | CQ0026    | 1000pF 50V S   |
| 203ab      | CQ0011    | 0.033uF 50V S  |
| 204ab      | CQ0022    | 2700pF 50V S   |
| 205ab      | CE0173    | 3.3uF 25V E LR |
| 206ab      | CC0037    | 4.7pF 50V C    |
| 207ab      | CC0005    | 33pF 50V C     |
| 208ab      | CE0173    | 3.3uF 25V E LR |
| 209        | CK0008    | 0.04uF 50V C   |
| 210        | CE0103    | 100uF 50V E    |

SEMICONDUCTORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| Q201ab     | TR0125    | 2SA836E     | Q202ab     | TR0125    | 2SA836E     |

TRIMMER POTENTIOMETER

| SYMBOL NO. | STOCK NO. | DESCRIPTION    | SYMBOL NO. | STOCK NO. | DESCRIPTION     |
|------------|-----------|----------------|------------|-----------|-----------------|
| VR201ab    | RV0101    | 50k $\times$ 2 | VR202ab    | RV0100    | 100k $\times$ 2 |

PB-1064 (EQUALIZER BOARD)

RESISTORS (1/4W,  $\pm$ 5% unless otherwise noted. L...low noise)

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| R401ab     | RD0021    | 56k         | R410ab     | RD0045    | 820 L       |
| 402ab      | RD0090    | 470k L      | 411ab      | RD0085    | 47k L       |
| 403ab      | RD0039    | 2.2k        | 412ab      | RD0084    | 100k L      |
| 404ab      | RD0077    | 1M L        | 413ab      | RD0086    | 39k L       |
| 405        | RD0028    | 15k         | 414ab      | RD0032    | 3.2k        |
| 406ab      | RD0048    | 470         | 415ab      | RD0042    | 1.2k        |
| 407ab      | RD0040    | 1.8k        | 416ab      | RD0011    | 330k        |
| 408        | RD0023    | 39k         | 417        | RD0046    | 680         |
| 409ab      | RD0078    | 820k L      |            |           |             |



CAPACITORS (LL...low leakage type)

| SYMBOL NO. | STOCK NO. | DESCRIPTION         |
|------------|-----------|---------------------|
| C401ab     | CS0008    | 2.2uF 25V T         |
| 402ab      | CC0005    | 33pF 50V C          |
| 403ab      | CE0078    | 100uF 16V E         |
| 404ab      | CC0008    | 150pF 50V C         |
| 405ab      | CQ0130    | 1000pF 50V S +5%-5% |
| 406ab      | CQ0130    | 1000pF 50V S +5%-5% |
| 407ab      | CQ0122    | 6800pF 50V S        |
| 408ab      | CE2030    | 10uF 16V E LL       |
| 409ab      | CC0037    | 5pF 50V C           |
| 410ab      | CS0012    | 0.47uF 35V T        |
| 412        | CE0068    | 47uF 10V E          |
| 413        | CE0102    | 47uF 50V E          |

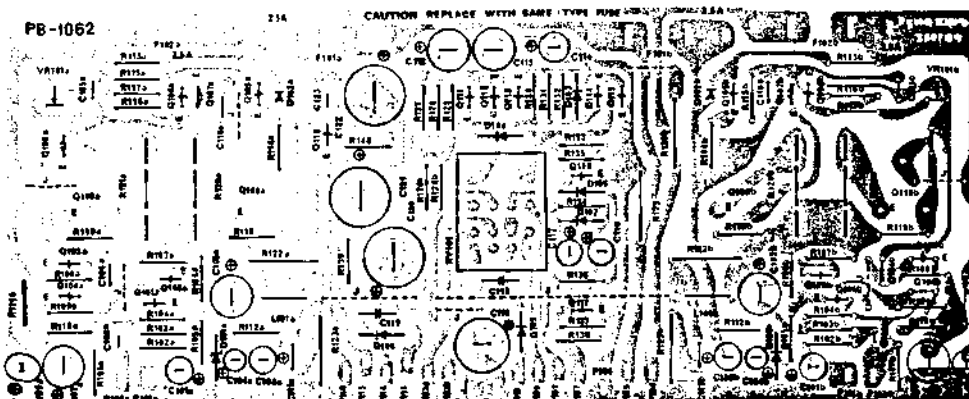
SEMICONDUCTORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| Q101ab     | TR0125    | 2SA836E     | Q102ab     | TR0025    | 2SC1345E    |

PB-1062 POWER AMP BOARD

RESISTORS (FP...flame proof)

| SYMBOL NO. | STOCK NO. | DESCRIPTION  | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|--------------|------------|-----------|-------------|
| R101ab     | RD0062    | 39k          | R122ab     | RS2696    | 4.7 1W      |
| 102ab      | RD0037    | 3.3k         | 123ab      | RS2708    | 15 1W       |
| 103ab      | RD0029    | 12k          | 124ab      | RD0032    | 8.2k        |
| 104ab      | RD0048    | 470          | 125        | RS2770    | 5.6k 1W     |
| 105ab      | RD0032    | 8.2k         | 126        | RS2770    | 5.6k 1W     |
| 106ab      | RD0013    | 220k         | 127        | RD0043    | 1k          |
| 107ab      | RD0029    | 12k          | 128        | RD0037    | 3.3k        |
| 108ab      | RD0037    | 3.3k         | 129        | RD0032    | 8.2k        |
| 109ab      | RD0037    | 3.3k         | 130        | RD0034    | 5.6k        |
| 110ab      | RS0068    | 180 FP       | 131        | RD0043    | 1k          |
| 111ab      | RS0066    | 100 FP       | 132        | RD0017    | 100k        |
| 112ab      | RD0117    | 4.7k 1/2W    | 133        | RD0039    | 2.2k        |
| 113ab      | RD0022    | 47k          | 134        | RD0020    | 68k         |
| 114ab      | RD0054    | 150          | 135        | RD0004    | 1M          |
| 115ab      | RD0048    | 470          | 136        | RD0023    | 39k         |
| 116ab      | RD0040    | 1.8k         | 137        | RD0004    | 1M          |
| 117ab      | RD0047    | 560          | 138        | RD0039    | 2.2k        |
| 118ab      | RS0074    | 100 FP 1/2W  | 139        | RS0074    | 100 FP 1/2W |
| 119ab      | RS0074    | 100 FP 1/2W  | 140        | RD0030    | 10k         |
| 120ab      | RG0060    | 0.33 -10% 5W |            |           |             |
| 121ab      | RG0060    | 0.33 -10% 5W | VR101ab    | RT0013    | 330B        |



CAPACITORS (BP...bi-polar)

| SYMBOL NO. | STOCK NO. | DESCRIPTION    |
|------------|-----------|----------------|
| C101ab     | CE0173    | 3.3uF 25V E LR |
| 102ab      | CC0010    | 330pF 50V C    |
| 103ab      | CE0070    | 220uF 10V E    |
| 104ab      | CE0074    | 10uF 16V E     |
| 105ab      | CK0010    | 0.04uF 25V C   |
| 106ab      | CC0018    | 47pF 500V C    |
| 108ab      | CE0219    | 2.2uF 100V E   |
| 109ab      | CE0317    | 2.2uF 500V E   |
| 110ab      | CC0036    | 100pF 500V C   |
| 111ab      | CQ0005    | 0.1uF 50V S    |
| 112        | CE0070    | 220uF 10V E    |
| 113        | CE0070    | 220uF 10V E    |
| 114        | CE0069    | 100uF 10V E    |
| 115        | CU0012    | 0.01uF 1.5KV C |
| 116        | CE0087    | 220uF 25V E    |
| 117        | CE0086    | 10uF 25V E     |
| 118        | CE0086    | 10uF 25V E     |
| 119        | CU0012    | 0.01uF 1.5KV C |
| 120        | CE0146    | 220uF 50V E    |
| 121        | CE0146    | 220uF 50V E    |
| 122        | CE0146    | 220uF 50V E    |
| 123        | CC0007    | 100pF 50V C    |

SEMICONDUCTORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION      | SYMBOL NO. | STOCK NO. | DESCRIPTION      |
|------------|-----------|------------------|------------|-----------|------------------|
| Q101ab     | TR0151    | 2SA750           | Q110ab     | TR0059    | 2SB541A power TR |
| 102ab      | TR0151    | 2SA750           | 111        | TR0127    | 2SC733           |
| 103ab      | TR0152    | 2SC1940          | 112        | TR0127    | 2SC733           |
| 104ab      | TR0152    | 2SC1940          | 114        | TR0127    | 2SC733           |
| 105ab      | TR0153    | 2SA915           | 116        | TR0127    | 2SC733           |
| 106ab      | TR0029    | 2SC945           | 117        | TR0127    | 2SC733           |
| 107ab      | TR0045    | 2SD381           | 113        | TR0008    | 2SA562           |
| 108ab      | TR0027    | 2SB536           | 115        | TR0001    | 2SC734           |
| 109ab      | TR0060    | 2SD388A power TR | 118        | TR0007    | 2SA561           |
| D101ab     | TD0027    | WZ-120 zener     | D105       | TD0002    | 1N4002           |
| 102ab      | TV0005    | VD1221 varister  | 106        | TD0016    | 1S1555           |
| 103        | TD0018    | 1K188FM-1        | 107        | TD0016    | 1S1555           |
| 104        | TD0001    | 1N4001           | 108        | TD0003    | 1N4003           |

OTHERS (PB-1062)

| SYMBOL NO. | STOCK NO. | DESCRIPTION            |
|------------|-----------|------------------------|
| Ry101      | AY0028    | MAT4B-BR12V relay      |
| F101ab     | BF0211    | 2.5A(T) or BF0300 fuse |
| F102ab     | BF0211    | 2.5A(T) BF0300 fuse    |
| L101ab     | LA1004    | 2uH                    |

PB-1056 (FUSE BOARD)

| SYMBOL NO. | STOCK NO. | DESCRIPTION   |
|------------|-----------|---------------|
| C001-004   | CU0004    | 0.01uF 250V P |
| D001-004   | TD0120    | 1N5404        |
| F001-004   | BF0206    | BF0308 0.5A   |

PB-1063 (PEAK INDICATOR BOARD)

RESISTORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION | SYMBOL NO. | STOCK NO. | DESCRIPTION |
|------------|-----------|-------------|------------|-----------|-------------|
| R601ab     | RD0026    | 22k         | R613ab     | RD0037    | 3.3k        |
| 602ab      | RD0019    | 82k         | 614ab      | RD0046    | 680         |
| 603ab      | RD0030    | 10k         | 615ab      | RD0035    | 4.7k        |
| 604ab      | RD0032    | 8.2k        | 616ab      | RD0046    | 680         |
| 605ab      | RD0027    | 18k         | 617ab      | RD0030    | 10k         |
| 606ab      | RD0045    | 820         | 618ab      | RD0040    | 1.8k        |
| 607ab      | RD0041    | 1.5k        | 619ab      | RD0040    | 1.8k        |
| 608ab      | RD0046    | 680         | 620ab      | RD0040    | 1.8k        |
| 609ab      | RD0040    | 1.8k        | 621ab      | RD0040    | 1.8k        |
| 610ab      | RD0046    | 680         | 622ab      | RD0033    | 6.8k        |
| 611ab      | RD0039    | 2.2k        | 623ab      | RD0033    | 6.8k        |
| 612ab      | RD0046    | 680         |            |           |             |

CAPACITORS

| SYMBOL NO. | STOCK NO. | DESCRIPTION  |
|------------|-----------|--------------|
| C601ab     | CE0171    | 4.7uF 16V E  |
| 602ab      | CE0098    | 1uF 50V E    |
| 603        | CE0250    | 100uF 35V E  |
| 604        | CK0008    | 0.04uF 50V C |
| 605        | CK0008    | 0.04uF 50V C |
| 606        | CK0008    | 0.04uF 50V C |
| 607        | CK0008    | 0.04uF 50V C |
| 608        | CE0250    | 100uF 35V E  |

SEMICONDUCTORS

| SYMBOL NO.   | STOCK NO. | DESCRIPTION | SYMBOL NO.       | STOCK NO. | DESCRIPTION |
|--------------|-----------|-------------|------------------|-----------|-------------|
| Q601ab-603ab | TR0127    | 2SC733      | D601ab           | TD0016    | 1S1555      |
| 604ab        | TR0128    | 2SA495      | 602ab            | TD0016    | 1S1555      |
| 605ab-610ab  | TR0127    | 2SC733      | 603-606          | TD0002    | 1N4002      |
|              |           |             | LED601ab - 606ab | TD0088    | SLP-119B    |

PB-1068

| SYMBOL NO. | STOCK NO. | DESCRIPTION  |
|------------|-----------|--------------|
|            | RD0043    | 1k resistor  |
|            | TD0088    | SLP-119B LED |

PB-1069

| SYMBOL NO. | STOCK NO. | DESCRIPTION  |
|------------|-----------|--------------|
|            | TD0088    | SLP-119B LED |

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BACK PANEL  
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| STOCK NO. | DESCRIPTION      |
|-----------|------------------|
| AC0010    | AC Socket        |
| AG0063    | Earth Terminal   |
| AS0002    | DIN Connector    |
| AT0006    | 8-pin Jack       |
| AT0007    | 6-pin Jack       |
| AT0051    | SP Terminal      |
| AT0053    | Antenna Terminal |
| BE1031    | Heat Sink        |
| BU0045    | PCB holder       |
| CK0009    | 0.1uF ceramic    |
| RD0004    | 1M-ohm, 1/4W     |
| RD0015    | 150k-ohm, 1/4W   |
| UC1044    | Back Panel       |

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SUB-PANEL  
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| STOCK NO. | DESCRIPTION            |
|-----------|------------------------|
| AJ0015    | Headphone Jack         |
| AL0039    | Lamp 12V 100mA         |
| AM0041    | Signal Meter           |
| AM0042    | Tuning Meter           |
| BX0017    | Pulley-shaft           |
| BX0022    | Pulley                 |
| CE0069    | 100uF 10V electrolytic |
| CE0077    | 47uF 16V "             |
| RS2746    | 560-ohm 1W             |
| RV0129    | 250k-MN                |
| SP0070    | Push SW (SDG5P502 4A)  |
| SP0072    | Push SW (SUE43A09B)    |
| SR0081    | Rotary SW (SRY5105105) |
| SR0082    | Rotary SW (SRF2043113) |
| SR0083    | Rotary SW (SRY2044132) |
| UB1003    | Fly-wheel              |
| UB1024    | Sub Panel              |
| UZ1090    | Dial Pointer           |
| WM1024    | Dial Scale Plate       |

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CHASSIS  
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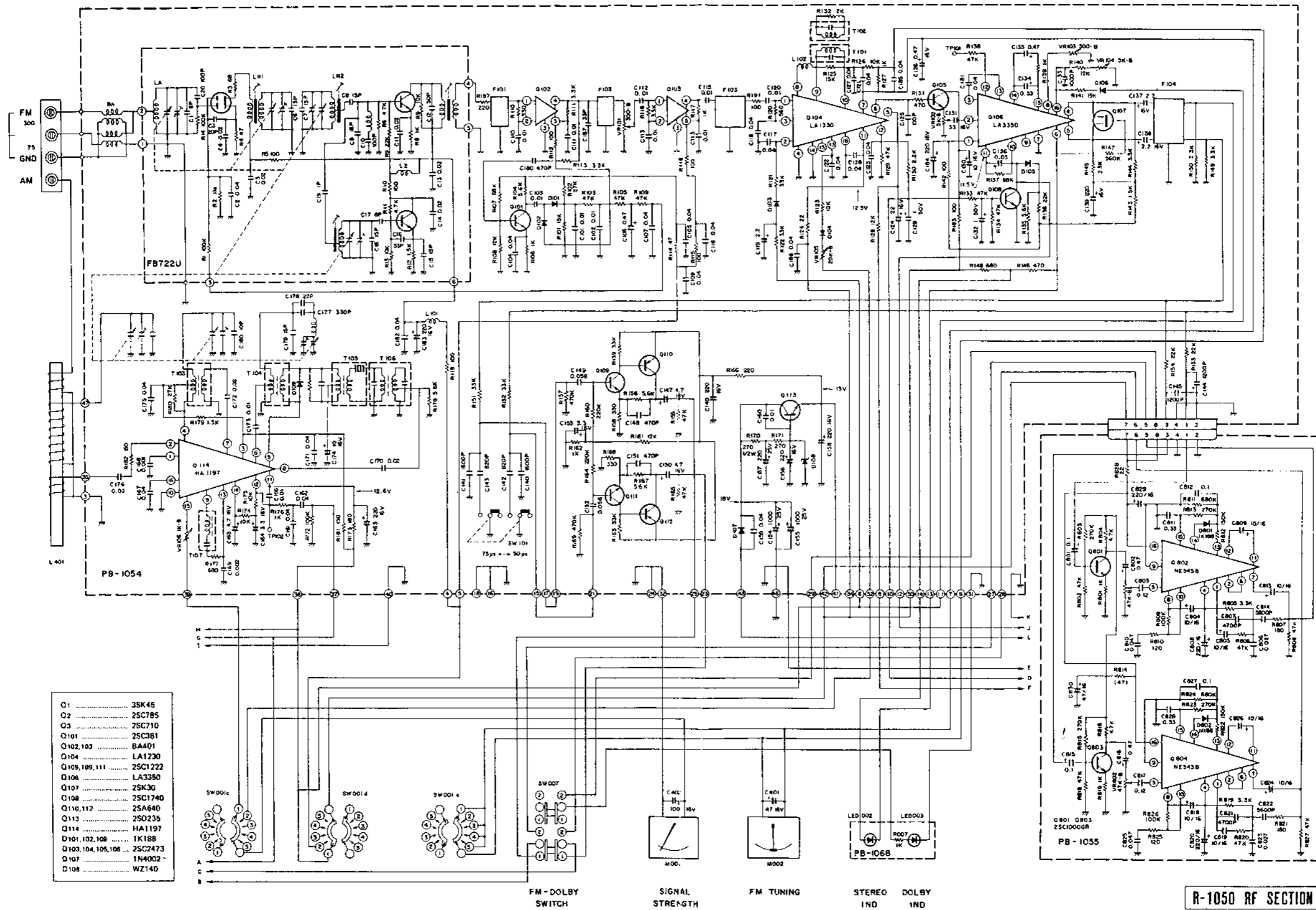
| STOCK NO. | DESCRIPTION              |
|-----------|--------------------------|
| AC0013    | voltage Selector Socket  |
| AC0014    | voltage Selector Plug    |
| AH0016    | 1-P Fuse Holder X-N1157  |
| AH0019    | Fuse Holder X-N1153      |
| BF0049    | Fuse 2.5A(T)             |
| BF0119    | Fuse MF60NR-5A           |
| BX0004    | Bar Antenna Holder       |
| BX0016    | Dial Drum                |
| CE0078    | 100uF 16V electrolytic   |
| CE1408    | 10000uF 50V electrolytic |
| CU0031    | AC capacitor 0.0022uF    |
| CU0051    | AC capacitor 0.0022uF    |
| LA1057    | Bar Antenna LUX-10257    |
| PT0119    | Power Transformer        |
| RD0100    | 2.2M-ohm                 |
| BK0018    | UL-AC cord               |
| BK0020    | AC cord                  |
| BK0022    | AC cord                  |
| BK0023    | AC cord SAA miniature    |

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EXTERIOR  
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| STOCK NO. | DESCRIPTION                     |
|-----------|---------------------------------|
| BU0069    | Leg                             |
| WA1068    | Front Panel                     |
| WB1043    | Wooden Case                     |
| WH1033    | Knob Set (volume, input,        |
| WH1034    | Knob Set (tone cont.) speakers) |
| WH1035    | Knob Set (tuning)               |
| WJ1066    | Mould Knob (power sw.)          |
| WJ1067    | Mould Knob (mode, balance)      |
| WJ1069    | Mould Knob (dolby FM, muting    |
| WT1009    | Ventilation etc.)               |
| WT1020    | Ventilation                     |
| XA1098    | Packing Case                    |

|  |  |  |      |       |      |      |
|--|--|--|------|-------|------|------|
| <b>(AUDIO SECTION)</b>                   |  | <b>Distortion at 65dBf:</b>                                  |      | 100Hz | 0.1% | 0.2% |
| <b>Power Output:</b>                     | 55 watts minimum continuous per channel, both channels driven into 8-ohm loads, from 20Hz to 20,000Hz with no more than 0.05% total harmonic distortion, no more than 0.05% (8-ohm, both ch driven, 60Hz - 7KHz = 4 : 1) | 1KHz   | 0.1% | 0.2%  |      |      |
| <b>Rated I.M.:</b>                       |  | 6KHz   | 0.3% | 0.4%  |      |      |
| <b>Frequency Response:</b>               | 10Hz - 50KHz (-1dB)  | <b>Intermodulation Distortion:</b>                           |      |       |      |      |
| <b>Input Sensitivity:</b>                | 2.5mV (phono), 150mV (aux., monitor)   | <b>Capture Ratio at 65dBf:</b>                               |      | 1.3dB | --   |      |
| <b>Phono Overload Voltage:</b>           | 150mV (1KHz)   | <b>Alternate Channel Selectivity:</b>                        |      | 70dB  | --   |      |
| <b>S/N Ratio:</b>                        | 66dB (phono), 85dB (aux., monitor)   | <b>Spurious Response Ratio:</b>                              |      | 90dB  | --   |      |
| <b>Residual Noise:</b>                   | no more than 0.7mV   | <b>Image Response Ratio:</b>                                 |      | 80dB  | --   |      |
| <b>Damping Factor:</b>                   | no less than 60 (8-ohm)  | <b>IF Response Ratio:</b>                                    |      | 85dB  | --   |      |
| <b>Tone Control:</b>                     | Bass ±10dB at 100Hz  | <b>AM Suppression Ratio:</b>                                 |      | 52dB  | --   |      |
|  | Treble ±10dB at 10KHz  | <b>Stereo Separation:</b>                                    |      | 100Hz | --   | 45dB |
| <b>Filters:</b>                          | High Cut ..... 7KHz (6dB/oct.)   |  |      | 1KHz  | --   | 45dB |
|  | Low Cut ..... 70Hz (6dB/oct.)  |  |      | 10KHz | --   | 40dB |
| <b>Crosstalk at 1KHz:</b>                | -65dB (aux., monitor)  | <b>Subcarrier Product Ratio:</b>                             |      |       |      | 60dB |
| <b>Peak Indicators:</b>                  | 0, -8, -9, -12, -15, -18dB   | <b>SCA Rejection Ratio:</b>                                  |      |       |      | 60dB |
| <b>(FM SECTION) (IEEE/IHF Standard)</b>  |  | <b>[AM SECTION]</b>  |      |       |      |      |
| <b>Usable Sensitivity:</b>               | [mono] 10.3dBf (1.8µV)      [stereo] 18.2dBf (4.6µV)   | <b>Usable Sensitivity at 1MHz, 400Hz, 30% mod.:</b>          |      |       |      |      |
| <b>46dB Quieting Sensitivity: 50µS</b>   | 14.1dBf (2.8µV)      37.4dBf (40µV)  | EXT. ANT. 15µV   |      |       |      |      |
| <b>50dB Quieting Sensitivity: 50µS</b>   | 14.1dBf (2.8µV)      36.8dBf (38µV)  | <b>Signal-to-noise Ratio at 1MHz, 10mV, 400Hz, 30% mod.:</b> |      |       |      |      |
| <b>Signal-to-noise Ratio at 65dBf:</b>   | 74dB      70dB   | 52dB   |      |       |      |      |
| <b>Muting Threshold:</b>                 | 8.8dBf (1.5µV)      8.8dBf (1.5µV)   | <b>Distortion at 1MHz 10mV, 400Hz, 30% mod.:</b>             |      |       |      |      |
| <b>Frequency Response 30Hz to 15KHz:</b> | +0.5, -1.5dB      +0.5, -1.5dB   | 0.5%   |      |       |      |      |
|  |  | <b>Image Response ratio at 1MHz:</b>                         |      |       |      |      |
|  |  | 75dB   |      |       |      |      |
|  |  | <b>IF Response Ratio at 1MHz:</b>                            |      |       |      |      |
|  |  | 80dB   |      |       |      |      |
| <b>[GENERAL]</b>                         |  | <b>[GENERAL]</b>   |      |       |      |      |
| <b>Power Consumption:</b>                |  | 270W (at full power, 8-ohm)                                  |      |       |      |      |
|  |  | 120V 2.5A (ICSA rated)                                       |      |       |      |      |
| <b>Dimensions:</b>                       |  | 490 (W) x 355 (D) x 180 (H) mm                               |      |       |      |      |
|  |  | (19-5/16" x 14" x 7-3/32")                                   |      |       |      |      |
| <b>Weight:</b>                           |  | Net 13.5Kgs (29.7 lbs.)                                      |      |       |      |      |
|  |  | Gross 15.5Kgs (34 lbs.)                                      |      |       |      |      |





## LUX CORPORATION, JAPAN

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