SERVICE MANUAL

STEREO CASSETTE TAPE DECK

AL90

ALPINE

Contents

Specifications

Recording System	4 Track, 2 Channel Stereo
Tape Speed	4.76 cm/sec. ±1%
Wow and Flutter	0.03% (JIS WRMS)
Signal to Noise Ratio ("A" Curve WTD, Metal Position, R/P, from 400 Hz 3% Dist. Point)	
Dolby NR Off	54 dB
Dobly B-Type NR On	59 dB
Dolby C-Type NR On	64 dB
Distortion (400 Hz, 0 dB, Metal Position)	
STD	2%
BLES	3%
Frequency Response by Reference Tape (—25 dB Level, Dolby NR Off)	
Metal (TDK AC-711)	20 Hz to 22 KHz (±2 dB)
CrO2 (TDK AE-512)	20 Hz to 20 KHz (±2 dB)
FeCr (SONY CS-300)	20 Hz to 21 KHz (±2 dB)
Normal (TDK AC-223)	20 Hz to 20 KHz (±2 dB)
Allowable Frequency Response by BLES (—25 dB Level, Dolby NR Off)	
"OK"	20 Hz ($^{+4}_{-6}$ dB) to 20 KHz ($^{+5}_{-8}$ dB)
"Nearly OK"	20 Hz ($^{+4}_{-6}$ dB) to 17 KHz ($^{+4}_{-8}$ dB)
Bias Frequency	105 KHz
Erase Ratio	60 dB (125 Hz)
Crosstalk	60 dB (1 KHz, 0 dB)
Separation	35 dB (1 KHz, 0 dB)
Input Level/Impedance	
Mic	0.8mV/600 ohm
Line	100mV/15K ohm
EXT NR	580mV ±1.5 dB/50K ohm (400 Hz)
Output Level/Impedance	
Line	1000mV ±1.5 dB/100K ohm
Headphone	500mV/8 ohm
EXT NR	580mV ±1.5 dB/100K ohm (400 Hz)
Fast Forward/Rewind Time (C-60)	85 sec.
Take Up Torque	35 to 60gcm
Fast Forward/Rewind Torque	70 to 130gcm
Power Consumption	40W
Power Source	110/127/220/240V, AC 50/60 Hz (Multi Voltage Model) 120V, AC 60 Hz (Single Voltage Model)
Memory Back Up	SUM-3 Battery 2 pcs. (1.5V x 2)
Dimensions	435(W) x 126(H) x 347(D) mm
Weight	10.1 Kg

* Specifications and characteristics are subject to change without prior notice.

* Noise reduction system manufactured under licence from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Parts Locations and Disassembly Instructions

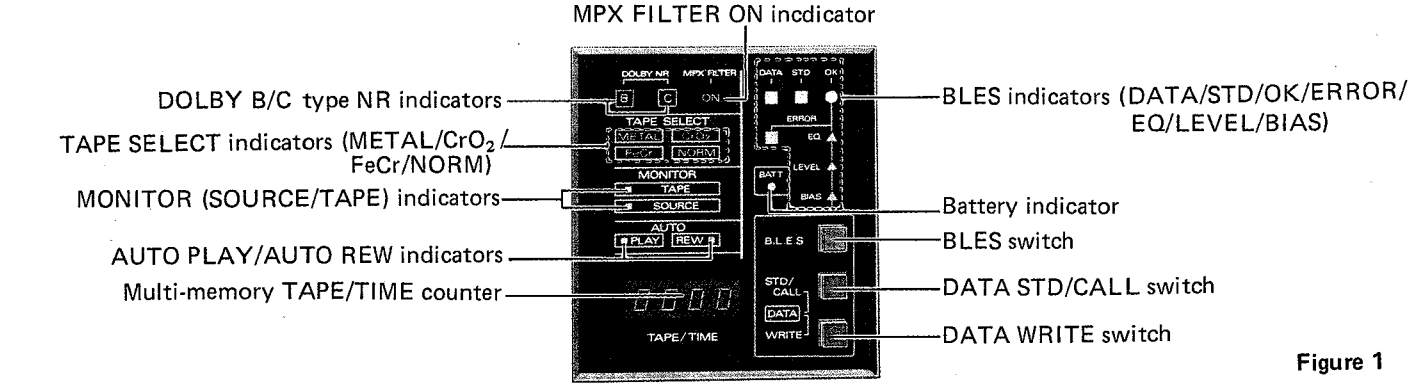


Figure 1

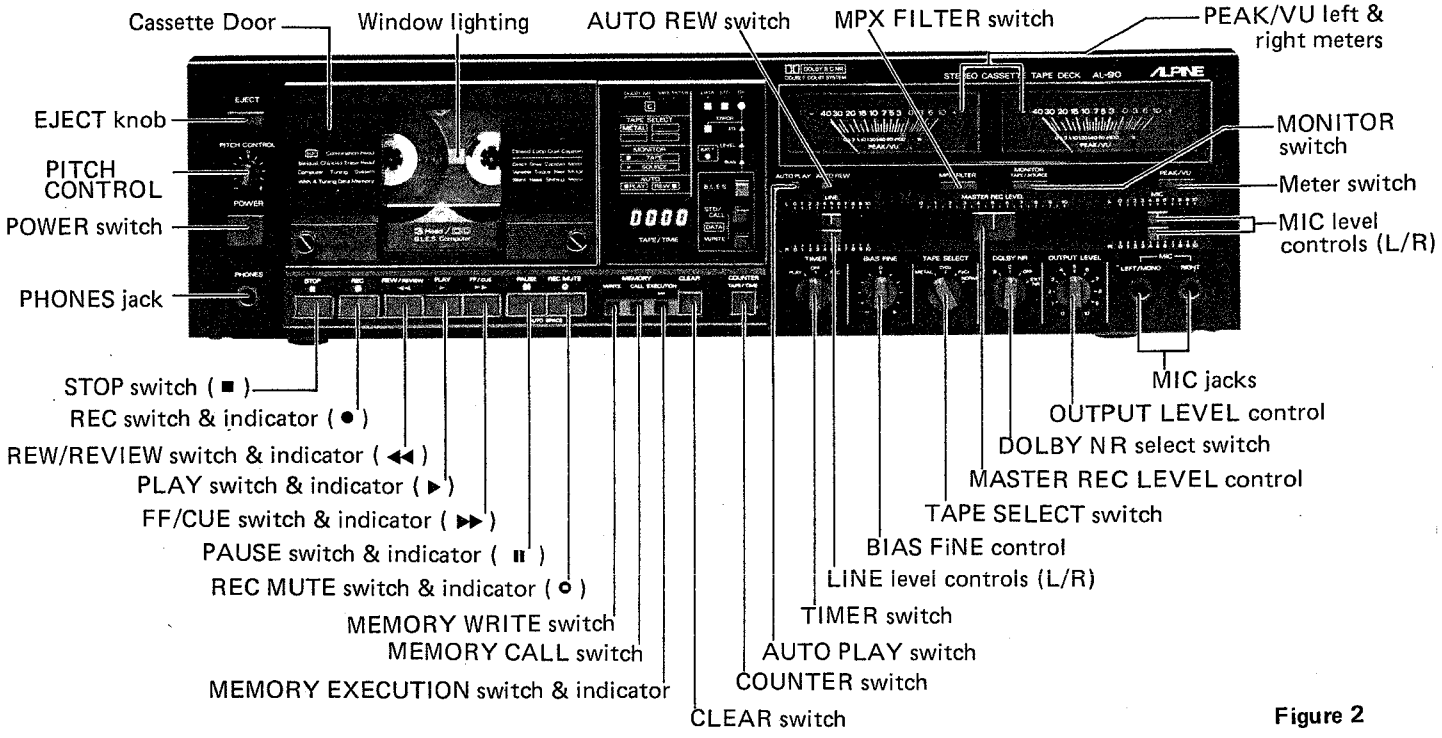


Figure 2

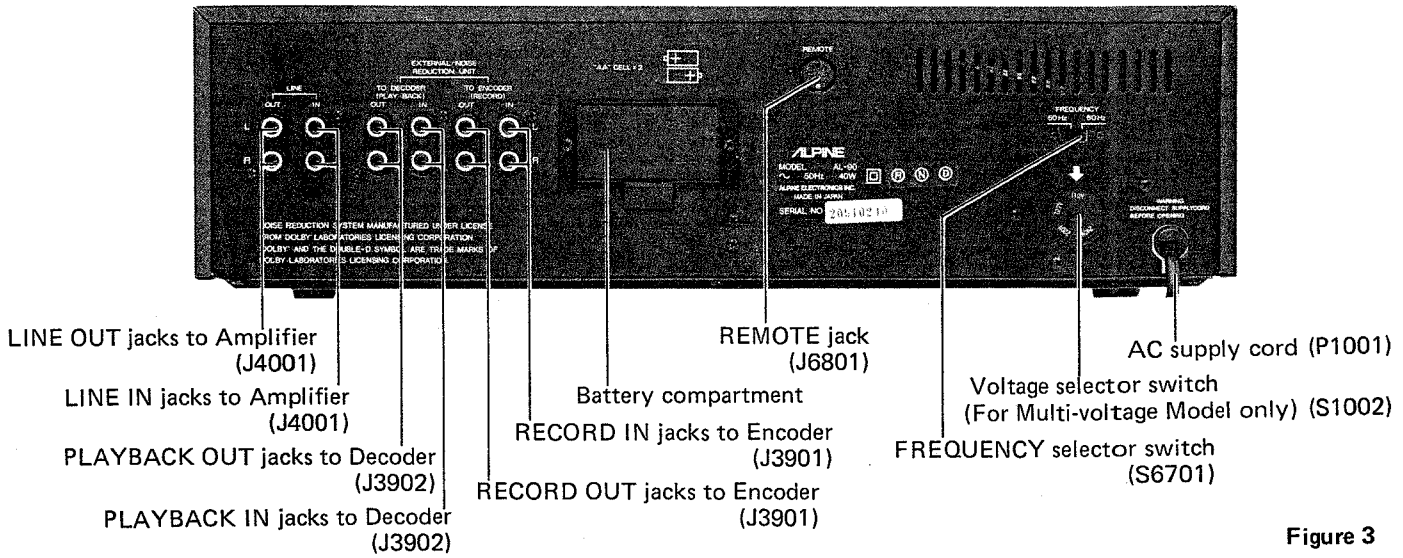


Figure 3

1. **Removal of Top Cover**
   (1) Remove six screws (A) as shown in Figure 4.
   (2) Remove the top cover backward.

2. **Removal of Panel Bracket with Pulse OSC P.C. Board**
   (1) Remove three screws (B) and two push rivets (△) as shown in Figure 5.
   (2) Remove the panel bracket upward, with pulse OSC P.C. Board.
   (3) Remove two push rivets (※) as shown in Figure 5.
   (4) Remove the Pulse OSC P.C. Board.

3. **Removal of Mechanism Control P.C. Board Assembly**
   (1) Remove the push rivet (▲) as shown in Figure 5.
   (2) Disconnect all lead wires and connectors from the P.C. Board.
   (3) Pull out the P.C. Board upward.

4. **Removal of Dolby P.C. Board Assembly**
   (1) Remove the push rivet (☆) as shown in Figure 5.
   (2) Remove a screw (R) as shown in Figure 5.
   (3) Disconnect all connectors from the P.C. Board.
   (4) Pull out the P.C. Board upward.

5. **Removal of Record EQ P.C. Board Assembly**
   (1) Remove two push rivets (★) as shown in Figure 6.
   (2) Pull out the P.C. Board upward.

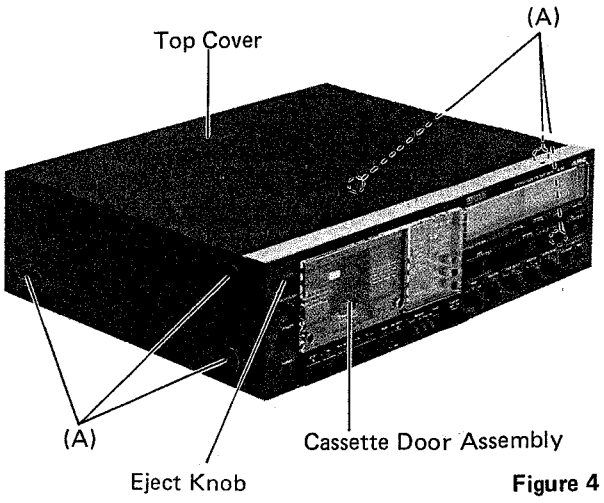


Figure 4

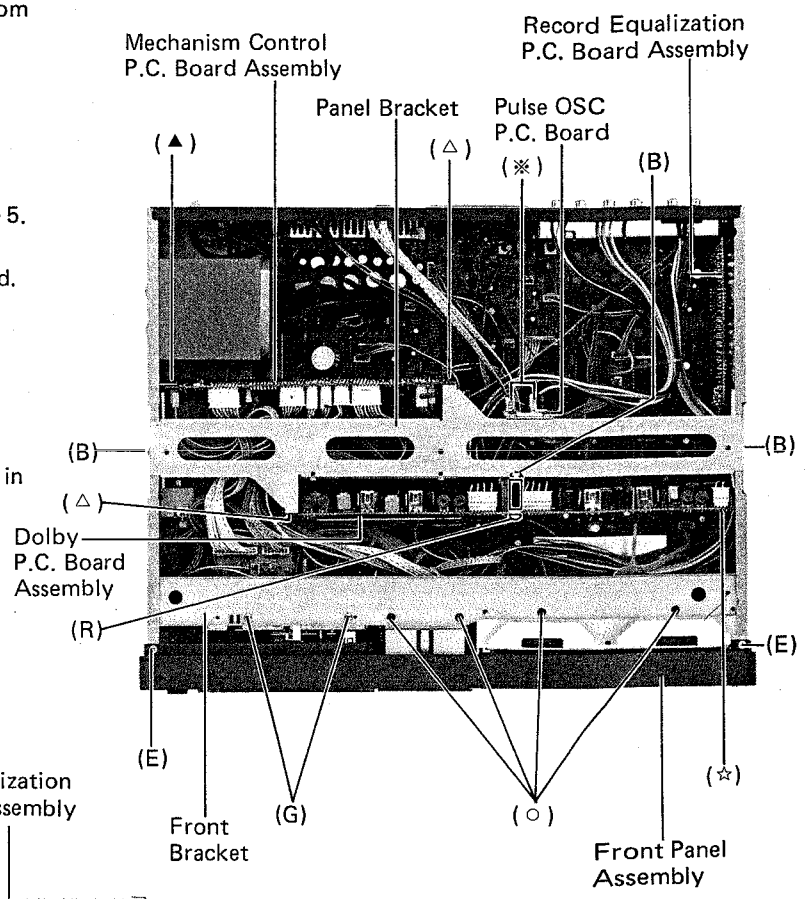


Figure 5

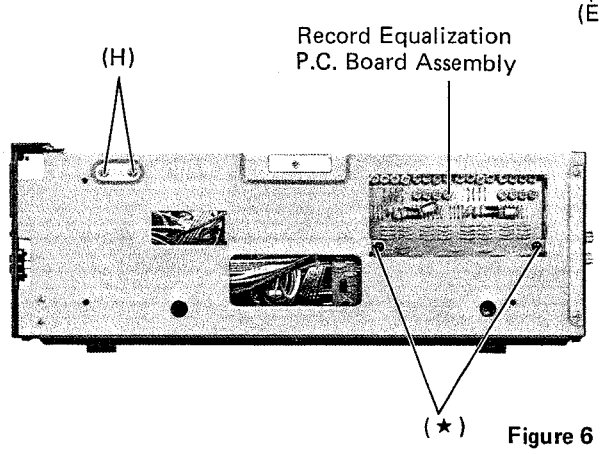


Figure 6

6. Removal of Phono Plate P.C. Board
(1) Remove six screws (C) as shown in Figure 7.
(2) Disconnect all connectors from the P.C.Board.

7. Removal of Remote Jack P.C. Board
(1) Remove two screws (D) as shown in Figure 7.
(2) Disconnect the 8 pin connector from the mechanism control P.C. Board.

8. Removal of Front Panel Assembly
(1) Push the eject knob to open the cassette door and remove the cassette door assembly upward as shown in Figure 4.
(2) Remove two screws (E) as shown in Figure 5.
(3) Remove four screws (F) as shown in Figure 8.
(4) Remove the front panel assembly toward you.

9. Removal of Front Bracket
(1) Remove two screws (G) and four push rivets (○) as shown in Figure 5.
(2) Remove two screws (H) as shown in Figure 6.
(3) Remove two screws (I) as shown in Figure 9.
(4) Remove the front bracket.

10. Removal of Pitch Control P.C. Board Assembly
(1) Remove two screws (J) and two push rivets (●) as shown in Figure 9.
(2) Disconnect three connectors from the P.C. Board.

11. Removal of Power Switch
(1) Remove two screws (K) as shown in Figure 9.

12. Removal of Headphone P.C. Board
(1) Remove two stoppers (□) as shown in Figure 10.

13. Removal of Cassette Deck Assembly
(1) After removal of the top cover, front panel and front bracket, remove four screws (L) as shown in Figure 11.
(2) Disconnect all connectors from the P.C. Board.

14. Removal of Keyboard Switch P.C. Board Assembly
(1) Remove two screws (M) as shown in Figure 10.
(2) Disconnect all connectors from the P.C.Board.

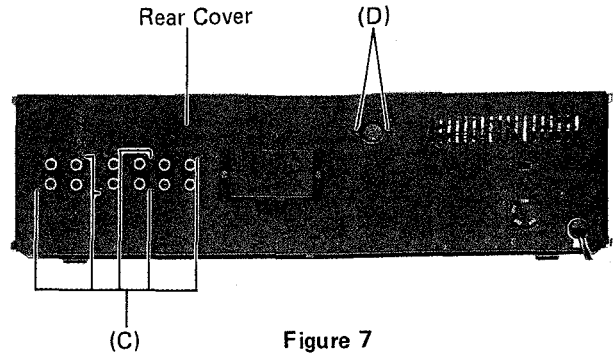


Figure 7

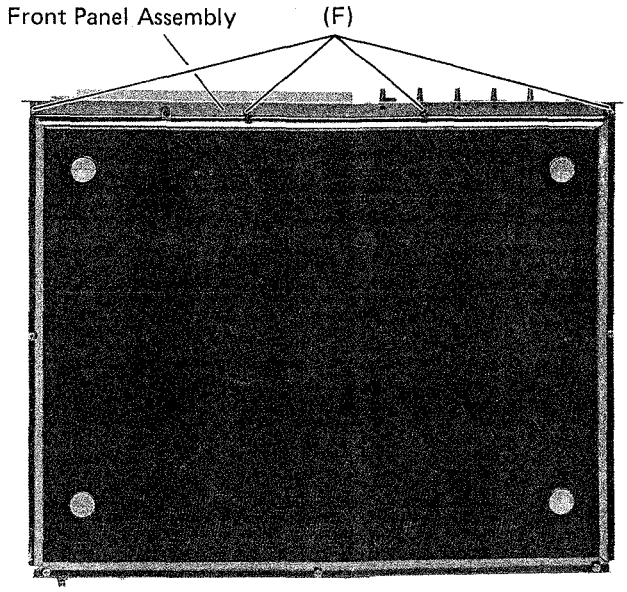


Figure 8

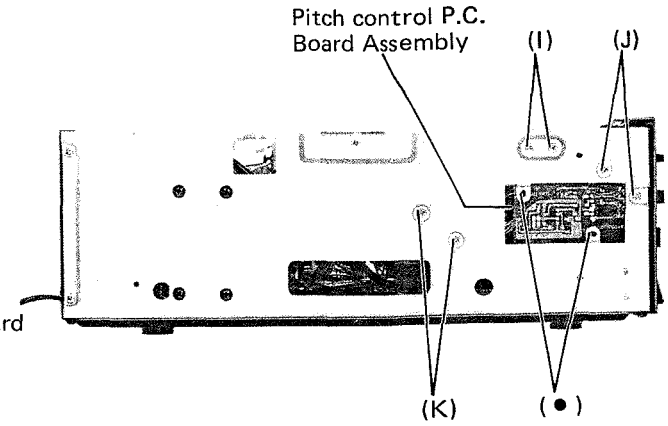


Figure 9

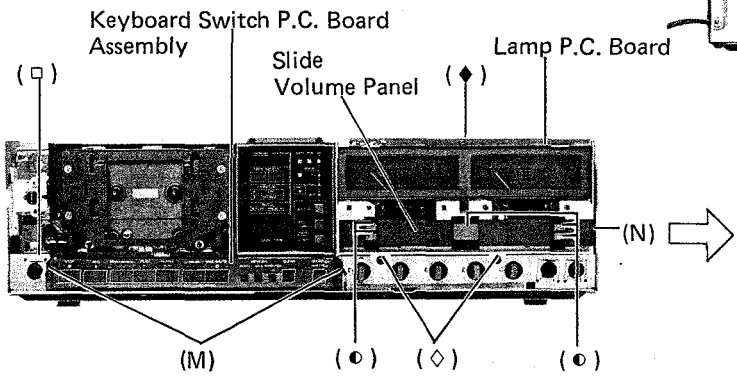


Figure 10

15. Removal of Counter & LED Assembly

(1) Remove two push rivets (■) as shown in Figure 12.

(2) Disconnect all connectors from the P.C.Board.

16. Removal of Meter, Volume & Switch Assembly

(1) Remove two push rivets (◇) as shown in Figure 10.

(2) Disconnect all connectors from the P.C.Board.

(3) Removal of Volume Switch P.C. Board.

1) Remove the screw (N) and the slide volume panel in the arrow direction as shown in Figure 10.

2) Carefully put out five knobs (◐) as shown in Figure 10.

3) Remove ten screws (P) and the push rivet (◪) as shown in Figures 13 and 14.

4) Remove the three dipping solder as shown in Figure 14.

(4) Removal of Meter
Carefully put out the meter plate (Q) as shown in Figure 13.

(5) Removal of Lamp P.C. Board.
Remove the push rivet (◆) as shown in Figure 10.

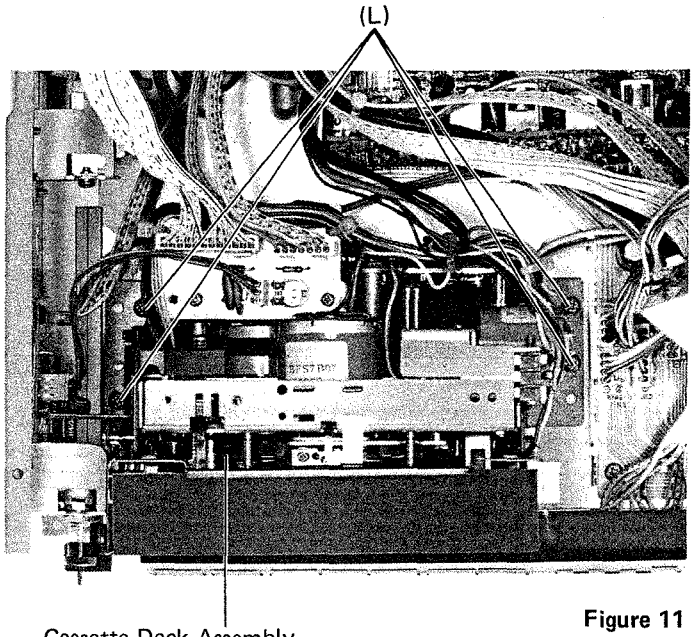


Figure 11

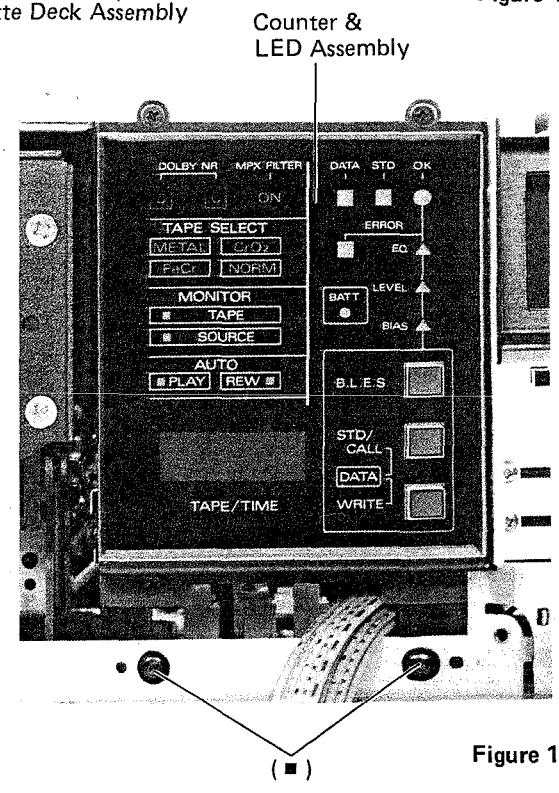


Figure 12

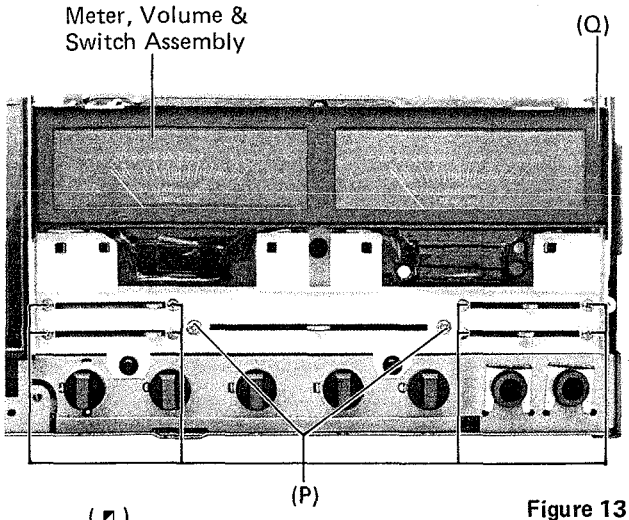


Figure 13

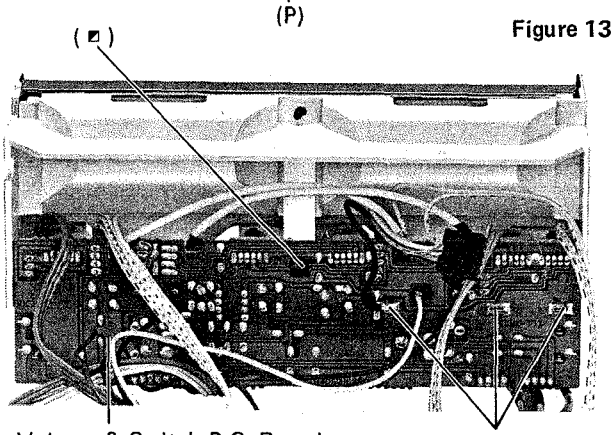


Figure 14

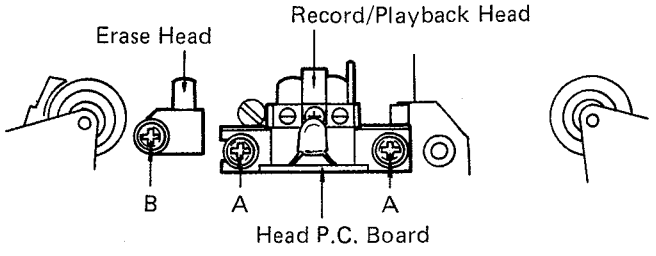
Replacement of Mechanical Parts

1. **Replacement of Cassette Deck Assembly**
   (1) Remove the cassette deck assembly according to the item "Parts Locations and Instructions".
   (2) After replacing the cassette deck assembly with a new one, assemble the unit in the reverse way to disassembly.

2. **Replacement of Record/Playback and Erase Heads**
   (1) Remove the cassette deck assembly according to the item "Parts Locations and Instructions".
   (2) For removal of the record/playback head, remove two screws (A) and disconnect the lead wires from the head P.C. Board as shown in Figure 15. Then remove the record/playback head from the P.C. Board using a soldering iron.
   For removal of the erase head, remove the screw (B) and disconnect the lead wires from the head to take it off as shown in Figure 15.
   (3) After replacing the head(s) with a new one and installing the head in the reverse way to disassembly, adjust head azimuth, height and tilt angle.
   (4) Apply a lock paint on the screws (A, B) after mechanical adjustment and readjust electrical adjustment according to "Adjustment Procedures".

3. **Replacement of Reel Belt(s)**
   (1) Remove the cassette deck assembly.
   (2) Remove two screws (◎) to take off the dust cover assembly from the cassette deck as shown in Figure 16.
   (3) After replacing the reel belt with a new one, clean it with absolute alcohol and install it in the reverse way to the disassembly.
   (4) After assembling, confirm tape speed and wow/flutter are suitable according to "Adjustment Procedures".

4. **Replacement of Pinch Roller Assembly (S)**
   (1) Remove the cassette deck assembly.
   (2) Remove the "E" ring to take off the pinch roller assembly (S) as shown in Figure 17.
   (3) After replacing the pinch roller assembly (S) with a new one, clean it with absolute alcohol and assemble it in the reverse way to the disassembly.
   (4) After assembling, confirm tape speed and wow/flutter are suitable according to "Adjustment Procedures".



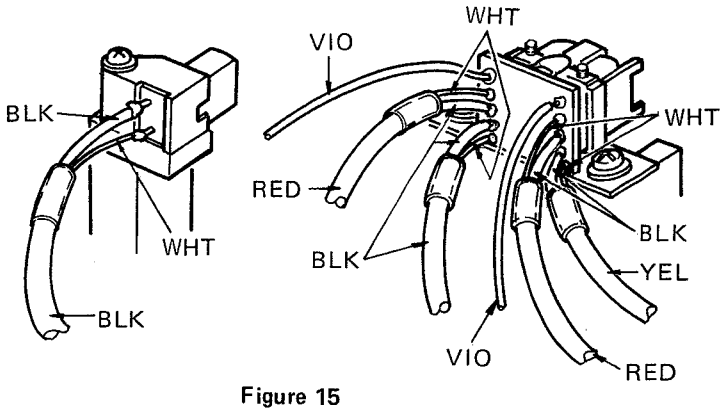


Figure 15

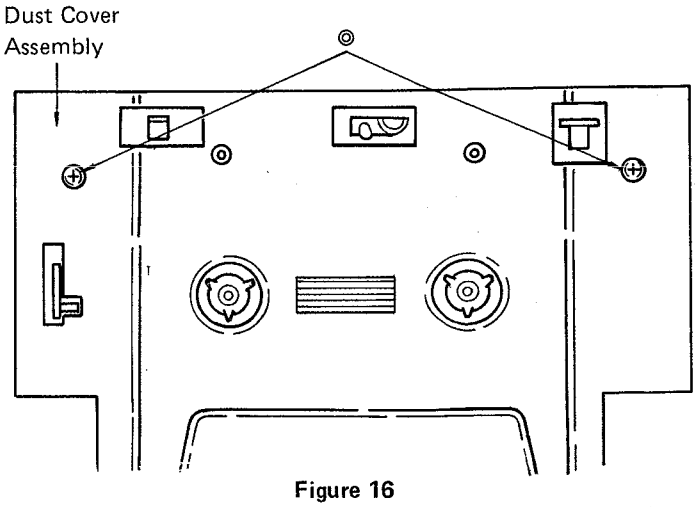


Figure 16

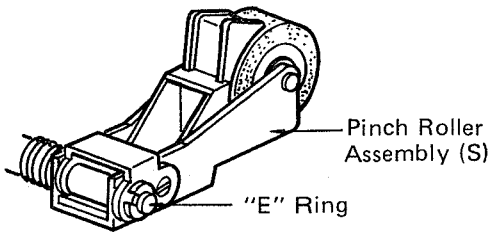


Figure 17

5. Replacement of Pinch Roller Assembly (T)

(1) Remove the cassette deck assembly and then the dust cover assembly.

(2) Remove the pull spring and the "E" ring to take off the pinch roller assembly as shown in Figure 18.

(3) After replacing the pinch roller assembly (T) with a new one, clean it with absolute alcohol and assemble it in the reverse way to the disassembly.

(4) After assembling, confirm tape speed and wow/flutter are suitable according to "Adjustment Procedures".

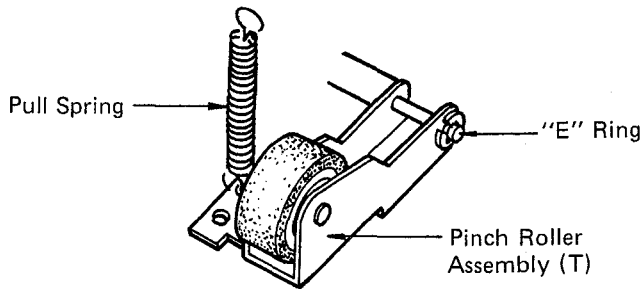


Figure 18

6. Replacement of Pad Motor Assembly

(1) Remove the cassette deck assembly.

(2) Remove two screws (●) as shown in Figures 19 and 21.

(3) Pull out the cam gear, and remove two screws (☆) as shown in Figure 20, and two lead wires (violet, orange) from the terminal P.C. Board to take off the pad motor.

(4) After replacing the pad motor assembly with a new one, assemble it in the reverse way to disassembly.

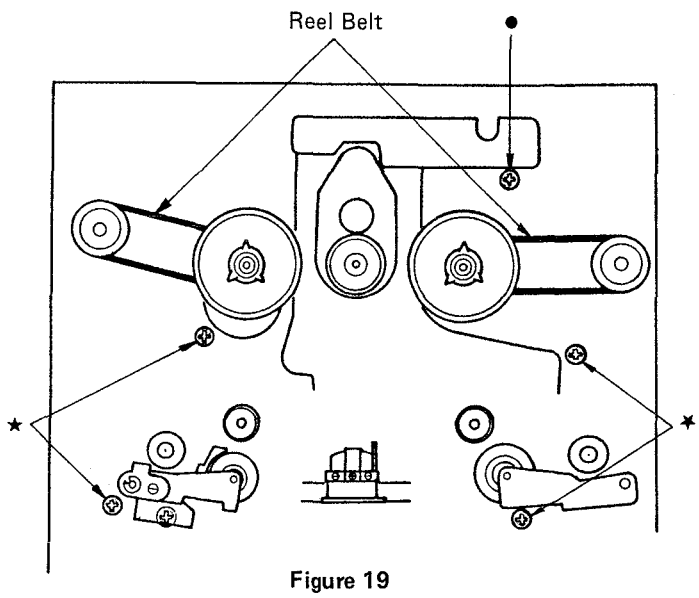


Figure 19

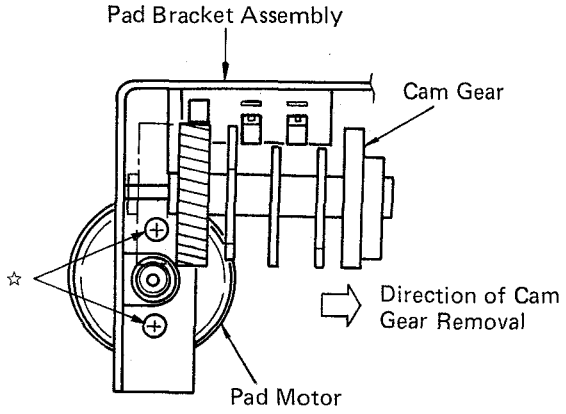


Figure 20

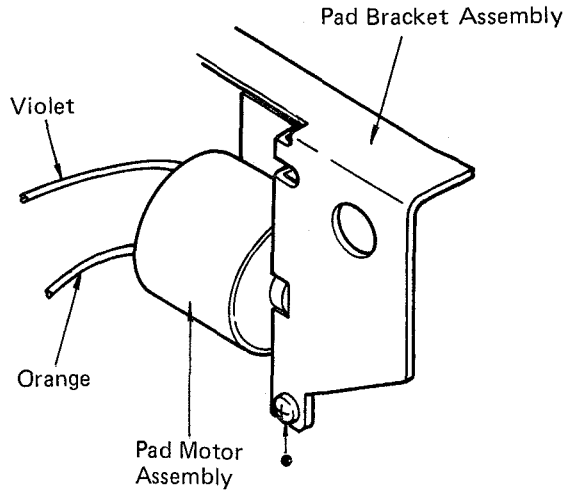


Figure 21

7. Replacement of Reel Motor Assembly

(1) Remove the cassette deck assembly and then the dust cover assembly.

(2) Remove five screws (★) to take off the DD motor unit assembly from the cassette deck assembly as shown in Figure 19.

(3) Remove five screws (◆) from the cassette deck assembly as shown in Figure 22.

(4) Remove two screws (◇) from the motor bracket as shown in Figure 23 and two lead wires (red, blue) from the terminal P.C. Board.

(5) After replacing the reel motor assembly with a new one, assemble it in the reverse way to disassembly.

(6) After assembling, confirm tape speed and wow/flutter are suitable according to "Adjustment Procedures".

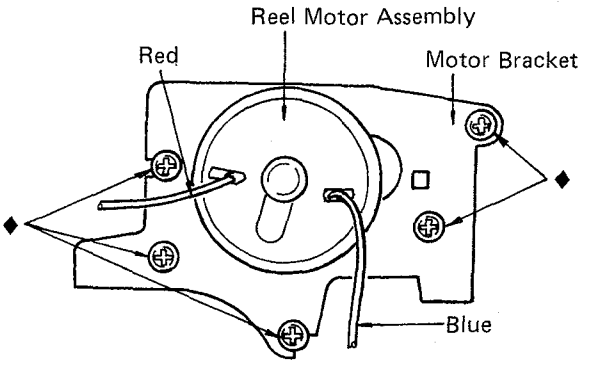


Figure 22

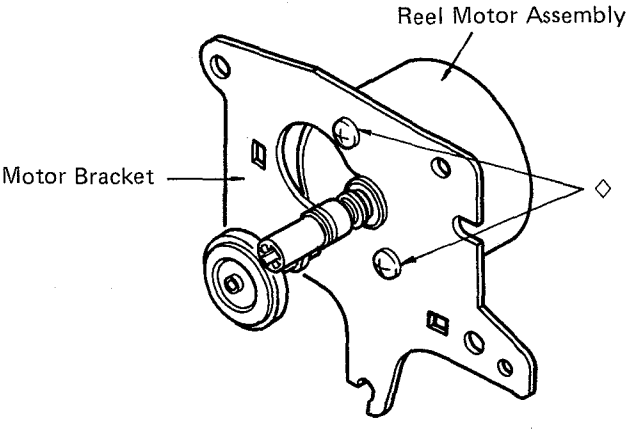


Figure 23

Adjustment Procedures

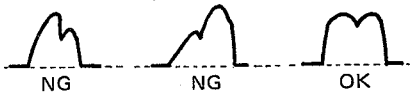
Notes: (1) Adjustments are proceeded under the following conditions such as switch and volume settings unless otherwise noted.

1. MONITOR switch: TAPE
2. PEAK/VU left & Right meters: PEAK
3. TAPE SELECT switch: NORM
4. DOLBY NR select switch: OFF
5. DATA STD/CALL switch: STD
6. PITCH CONTROL: Center
7. BIAS FINE control: Center
8. MIC level controls: Minimum (L/R)
9. OUTPUT LEVEL control: Maximum
10. Other switches: Off position

(2) The LINE and REC LEVEL volumes on these adjustments follow as positions in step 11.

Step	Adjustment Items	Mode	Adjustment Parts	Test Points	Connection	Remarks
1	DC Voltage check	STOP			Figure 27	Check voltage at each Test Point. Test Point: TP1001 | TP1002 | TP1003 | TP1004 | TP1005 Voltage(V): 24 ±1 | 12 ±1 | –12 ±1 | 18 | 12 ±1 Test Point: TP1006 | TP1007 | TP2013 | TP2014 Voltage(V): 9 | 6 ±1 | 10 ±1 | –10 ±1
2	Head Height and Tilt Angle		Screws A, B (Figure 24)			• Measurement Gauge: M-300 1. Head Height (Figure 25) The guide check bar should smoothly pass through the tape guide. 2. Tilt Angle (Figure 26) The guide check bar should stay in parallel with the guide plate or the top of the guide check bar should tilt a little forward you.
3	Tape Guide of Supply Pinch Roller		Screw D (Figure 24)			• Measurement Gauge: M-300 The guide check bar should smoothly pass through the tape guide of supply pinch roller. (Figure 25)
4	Head Azimuth	PLAY	Screw C (Figure 24)	TP3501(L) TP3501(R)	Figure 28	• Test Tape: MTT-114 (10 KHz) The left and right outputs are in-phase and maximum and equal in amplitude. If the azimuth screw movement is too large, readjust the head height and Tilt angle in step 2.
5	Tape Speed	PLAY	VR1	TP3501 or TP3502	Figure 29	• Test Tape: MTT-111 (3,000 Hz) Adjust VR1 to obtain output frequency reading of 3,000 ±10 Hz at TP3501 or TP3502.

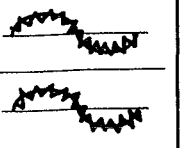
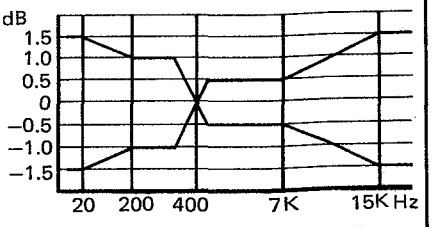
Step	Adjustment Items	Mode	Adjustment Parts	Test Points	Connection	Remarks
6	DC Balance of playback Equalization Amplifier	STOP	VR2003(L) VR2004(R)	TP2007(L) TP2009(L) TP2008(R) TP2010(R)	Figure 30	1. Disconnect the head cable (CB2001) and adjust each the left and the right channels independently. 2. Switch the oscilloscope to DC range and adjsut both voltage in CH1 and CH2 to the same value approximately 0.65V. * Voltage variations at TP2009 and TP2010 are small.
7	Playback EQ and Peak Point	PLAY	S2001 VR2001 } L S2002 VR2002 } R	TP2011(L) TP2012(R)	Figure 31	1. Set unit to playback mode with a blank tape loades. 2. Feed 200 Hz test signal from AF oscillator and adjust oscillator output so that 1V (= 0 dB) output is developed at each test point. Change oscillator frequency to 20 Hz and 7 kHz so that output levels shown below are obtained. Change oscillator frequency to 27 kHz and adjust S2001, 2002, VR2001, 2002 to find a peak level so that a peak is developed between 26 kHz and 27 kHz. Frequency Hz: 20 / 7K / 26K ~ 27K Output dB: +11 / −15.5 / −9 ∿ −12 3. Check for −15.5 dB output at 7 kHz. 4. Check for −20 dB output at 7 KHz when Metal position is selected.
8	Dolby Level	PLAY	VR3501(L) VR3502(R)	TP3501(L) TP3502(R)	Figure 28	• Test tape: MTT-150 (400 Hz) Adjust to obtain 580mV output at each test point.
9	Dolby Level (EXT NR / DECODER OUT)	PLAY	VR3801(L) VR3802(R)	EXT NR DECODER OUT	Figure 32	• Test tape: MTT-150 Adjust to obtain 580mV output at each test point.
10	Dolby Level (A/D Buffer / Out)	PLAY	VR2007(L) VR2008(R)	TP2019(L) TP2020(R)	Figure 28	• Test tape: MTT-150 Adjust to obtain 1000mV output at each test point.
11	Input Sensitivity Reference level (Dolby Level)	STOP MONITOR: SOURCE	REC LEVEL VOLUME, LINE VOLUME	TP3001(L) TP3002(R)	Figure 33	AF OSC: 1 KHz, 100mV (Dolby level) Input. Adjust to obtain 580mV output at each test point.
12	Input sensitivity (EXT NR / ENCODER OUT)	STOP MONITOR: SOURCE	VR3301(L) VR3302(R)	EXT NR ENCODER OUT	Figure 35	AF OSC: 1 KHz, 100mV (Dolby level) Input. Adjust to obtain 580mV output at each test point.

Step	Adjustment Items	Mode	Adjustment Parts	Test Points	Connection	Remarks
13	Level Meter Input	STOP MONITOR: SOURCE	VR4801(L) VR4802(R)	TP4801, TP4803 } L TP4802, TP4804 } R	Figure 34	1. Adjust each the left and right channels independently. 2. AF OSC: 1 kHz, 316mV (Dolby level +10 dB) Input. Adjust to obtain 1000mV reading between TP4801 & TP4803 (TP4802 & TP4804).
14	Level Meter 0 dB reading	STOP MONITOR: SOURCE	VR4803(L) VR4804(R)	Level Meter	Figure 33	1. AF OSC: 1 kHz, 100mV (Dolby level) Input. Adjust for 0 dB reading on Level Meter. 2. AF OSC: Decrease oscillator output level by 20 dB. Check the level meter pointer indicates –20 dB. 3. AF OSC: Increase oscillator output level by 10 dB from 100mV reference level. Check the level meter pointer indicates +10 dB.
15	AUTO EQ IC (1) Internal reference voltage	STOP MONITOR: SOURCE	VR5005(L) VR5006(R)	TP5003(L) TP5004(R)	Figure 27	Adjust to obtain 3.0V DC output at each test point. (Variable range should be within approx. 2.25 ∿ 4.5V.)
	(2) Input level	REC/PLAY	VR5001(L) VR5002(R)	TP5005(L) TP5006(R)	Figure 33	TEST TAPE: BLANK TAPE AF OSC: 800 Hz, 100mV (Dolby Level) Input Adjust to obtain 100mV output at each test point.
	(3) Peaking fo		L5001(L) L5002(R)	TP5005(L) TP5006(R)		AF OSC: 30 kHz, 5.6mV (–25 dB) Input. Adjust to obtain maximum output at each test point.
16	BIAS (1) OSC Frequency (ERASE)	REC/PAUSE T. SELECT: METAL	T5006	TP5011 TP5012(G)	Figure 36	TEST TAPE: BLANK TAPE Adjust to obtain frequency reading of 105 kHz at test point. The output level under this condition should be approx. 50mV (100mA). * TP E Vcc Value approx T. Select: METAL / CrO_2 / FeCr / NORM V: 12 / 8.8
	(2) Bias Current	REC/PLAY T. SELECT: METAL	T5005	TP5015(L) TP5016(R) TP5017(G)		1. TEST TAPE: BLANK TAPE Connect oscilloscope to emitter of Q5023 (Q5024) and adjust to obtain scope display shown below with maximum amplitude across test points.  NG NG OK Emitter output voltage wave forms of Q5023 (Q5024)

<table>
<tr><th>Step</th><th>Adjustment Items</th><th>Mode</th><th>Adjustment Parts</th><th>Test Points</th><th>Connection</th><th>Remarks</th></tr>
<tr><td rowspan="7"></td><td rowspan="6">Bias Current Temporarily Setting</td><td>REC/PLAY</td><td></td><td rowspan="8"></td><td rowspan="8"></td><td>2. TEST TAPE: BLANK TAPE
Check oscillator frequency set in step 16 (1), and if the frequency has been upset, proceed steps 16 (1) ∿ (2).</td></tr>
<tr><td>T. Select</td><td>L, R</td><td>Bias Current *Voltage at TP5013 (B, Vcc) approx</td></tr>
<tr><td>METAL</td><td>VR5013, VR5014</td><td>5.5mV (2.5mA) 12V</td></tr>
<tr><td>CrO_2</td><td>VR5011, VR5012</td><td>3.1mV (1.4mA) 6V</td></tr>
<tr><td>FeCr</td><td>VR5009, VR5010</td><td>3.1mV (1.4mA) 5V</td></tr>
<tr><td>NORM</td><td>VR5007, VR5008</td><td>2.6mV (1.2mA) 5V</td></tr>
<tr><td>(3) Bias Trap</td><td>REC/PLAY
T. SELECT:
METAL</td><td>L5003, L5007 } L
L5004, L5008 } R</td><td>TP5007(L)
TP5008(R)</td><td>1. TEST TAPE: BLANK TAPE
Adjust to obtain minimum amplitude of Bias voltage wave form at each test point.
2. Check oscillator frequency set in step 16 (1), and if the frequency has been upset, readjust the frequency according to steps 16 (1) ∿ (3).</td></tr>
<tr><td>17</td><td>Peak Bias</td><td>REC/PLAY</td><td></td><td>LINE OUT</td><td>Figure 37</td><td>1. Level
AF OSC: 400 Hz, 5.6mV (−25 dB from 100mV)
Adjust Level Adjust Volume until record/playback output of 56mV, which is the same level as that of SOURCE, is obtained.
2. Bias
AF OSC: 400 Hz, 100mV (Dolby Level) Input.
Adjust Bias Adjust Volume so that Distortion Values shown in table below is obtained.</td></tr>
<tr><td colspan="2"></td><td colspan="2">T. Select L, R</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td>METAL Level</td><td>VR5509, VR5510</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td>METAL Bias</td><td>VR5013, VR5014</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td>CrO_2 Level</td><td>VR5511, VR5512</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td>CrO_2 Bias</td><td>VR5011, VR5012</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td>FeCr Level</td><td>VR5513, VR5514</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td>FeCr Bias</td><td>VR5009, VR5010</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td>NORM Level</td><td>VR5515, VR5516</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td>NORM Bias</td><td>VR5007, VR5008</td><td colspan="2"></td><td></td></tr>
</table>

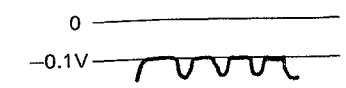
Reference Tape	AF OSC Level	Distortion	Line Out Level
AC-711	5.6mV	–	56mV
	100mV	1.5% (Max. 2.0%)	approx. 1,000mV
AE-512	5.6mV	–	56mV
	100mV	1.7% (Max. 2.0%)	approx. 1,000mV
CS-300	5.6mV	–	56mV
	100mV	1.3% (Max. 2.0%)	approx. 1,000mV
AC-223	5.6mV	–	56mV
	100mV	1.3% (Max. 2.0%)	approx. 1,000mV

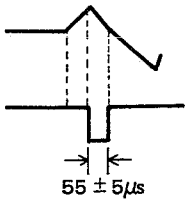
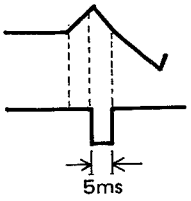
* If level differences between TAPE and SOURCE positions are observed at −25 dB and 0 dB level alignments, the former should have priority over the latter.

<table>
<tr><th>Step</th><th>Adjustment Items</th><th>Mode</th><th>Adjustment Parts</th><th>Test Points</th><th>Connection</th><th>Remarks</th></tr>
<tr><td rowspan="2">18</td><td rowspan="2">PB AMP
Bias Trap</td><td rowspan="2">REC/PLAY
T. SELECT:
METAL</td><td>L2001, L2003 } L
L2002, L2004 } R</td><td>TP2019(L)
TP2020(R)</td><td rowspan="2">Figure 38</td><td rowspan="2">1. AF OSC: 400 Hz, 56mV (–25 dB from 1V) Line Out
If record/playback output signal (wave form) is modulated or superimposed with high frequency signals (Bias signal), adjust for minimum amplitude of the high frequency signals.
2. If level variation is observed at Dolby NR: C position, readjust L3501 & L3502 for maximum amplitude of scope display at 400 Hz.
* Record/Playback output wave form superimposed with bias signal.
  </td></tr>
<tr><td>L3501(L)
L3502(R)</td><td>TP3501(L)
TP3502(R)</td></tr>
<tr><td>19</td><td>Record/Playback Frequency Response</td><td>REC/PLAY</td><td></td><td>LINE OUT</td><td>Figure 35</td><td>AF OSC: 56mV (–25 dB from 1V) Line Out
 

< Specifications of Record/Playback Frequency Response >
Adjust respective trimming resistor so that record/playback frequency response within the above limits, (referred to 400 Hz) is obtained.</td></tr>
</table>

T. Select				Reference Frequency 400 Hz L, R	Mid & Hi Frequencies 7 kHz L, R	High Frequency 15 kHz L, R	Reference Tape
METAL				VR5509, VR5510	VR5501, VR5502	VR5517, VR5518	AC-711
CrO_2				VR5511, VR5512	VR5503, VR5504	VR5519, VR5520	AE-512
FeCr				VR5513, VR5514	VR5505, VR5506	VR5521, VR5522	CS-300
NORM				VR5515, VR5516	VR5507, VR5508	VR5523, VR5524	AC-223

Step	Adjustment Items	Mode	Adjustment Parts	Test Points	Connection	Remarks
						* A. If the frequency response is out of specifications, try to re-adjust, using following steps: 1. Step 19 2. Steps 2 ∿ 4 3. Step 17 (Try to change bias signal level within a range on which audio output distortion does not exceed maximum limit.) B. If the frequency response is out of specifications over high end, try to repeat step 7.
20	AUTO EQ (1) TONE OSC LEVEL	STOP TONE OSC: 800 Hz S8001: TEST S8002: TEST	VR8002	TP8002	Figure 39	1. Short-circuit all four terminals (–6, MUTE, OSC ϕ, OSC 1) of TEST CN (CB8001). Place S8001 & S8002 in TEST positions. 2. Monitor 800 Hz wave from at test point. Adjust for VTVM reading of 56mV. * TONE OSC frequency can be varied as shown below by changing combinations of terminal connections. TONE OSC Frequency: 15 kHz / 7 kHz / 800 Hz TEST CN Terminals to be short-circuited: –6, MUTE OSC ϕ / –6, MUTE OSC 1 / –6, MUTE OSC 1, OSC ϕ
	(2) A/D CONVERTER GAIN	STOP TONE OSC: 800 Hz S8001: TEST S8002: TEST	VR8003	TP8003	Figure 40	Adjust to obtain scope display shown below:  * Set oscilloscope to DC mode.
	(3) A/D CONVERTER OFF-SET	STOP TONE OSC: 800 Hz S8001: TEST S8002: TEST	VR8004	TP8007 (IC8006 of ① pin)	Figure 41	1. Adjust to obtain –150mV DC at test point. 2. Check the DC output decreases to –15mV when TP8002 is grounded.

Step	Adjustment Items	Mode	Adjustment Parts	Test Points	Connection	Remarks
	(4) AUTO EQ TEST OSC SELECTION (Built-in OSC)	STOP TONE OSC: 800 Hz S8001: TEST S8002: TEST	VR5003(L) VR5004(R)	TP5005(L) TP5006(R)	Figure 42	1. Connect TP5001 to GND. 2. Adjust to obtain 5.6mV at each test point.
	(5) A/D IN (A/D CONVERTER OFF-SET)	STOP BLES: ON TONE OSC: 800 Hz S8002: TEST	VR8004	TP8002 TP8004 TP8005 TP8006	Figure 43	1. Set oscilloscope to EXT TRIGGER mode and adjust the trigger level so that oscilloscope is triggered by ADST (TP8006) signal when BLES switch is placed in ON position. Next, short-circuit INPUT terminals and bring oscilloscope's horizontal line to center of screen. Set oscilloscope to DC INPUT, 2V/cm & 50 μs of sweep time. 2. Connect TP8002 to GND. 3. Place BLES switch in ON position, and adjust so that A/D IN TIME (Output wave form of period at TP8005) of 50 ∿ 60μs is obtained. ADST Signal (TP8006) EXT. TRG INTEGRATOR (TP8004) A/D IN TIME (TP8005)  55 ± 5μs
	(6) A/D IN (A/D CONVERTER GAIN)	STOP BLES: ON TONE OSC: 800 Hz S8001: TEST S8002: TEST	VR8003	TP8002 TP8004 TP8005 TP8006	Figure 43	1. Change sweep time range of oscilloscope from 50 μs to 1ms. 2. Disconnect TP8002 from GND. 3. Adjust so that A/D IN TIME (Output wave form of period at TP8005) of 5ms is obtained when BLES switch is placed in ON position. ADST Signal (TP8006) EXT. TRG. IN INTEGRATOR (TP8004) A/D IN TIME (TP8005)  5ms

* After completion of alignment, remove (OPEN) TEST CONNECTOR to release S8001 & S8002 from TEST condition.

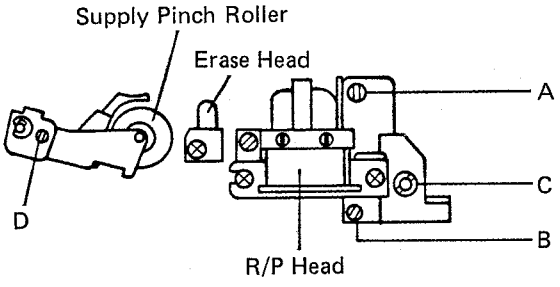


Figure 24

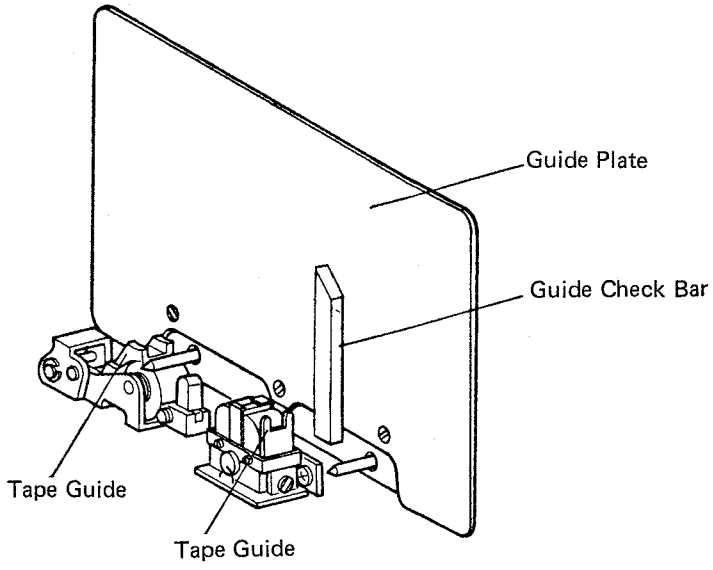


Figure 25

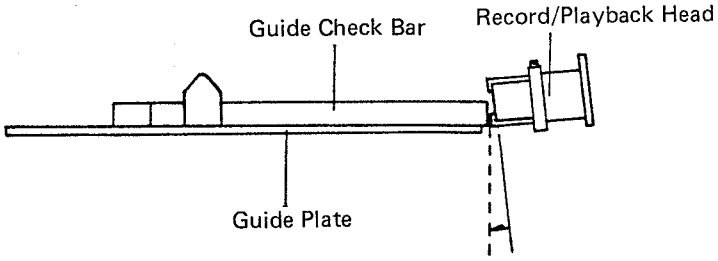


Figure 26

CONNECTION DIAGRAMS

Step	T.P.
1	1001 ∿ 1007 2013, 2014
15 – (1)	5003, 5004

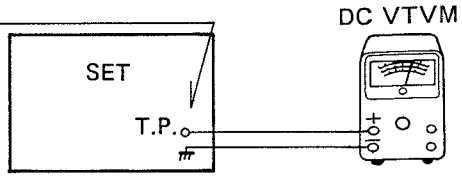


Figure 27

Step	T.P
4	3501, 3502
8	
10	2019, 2020

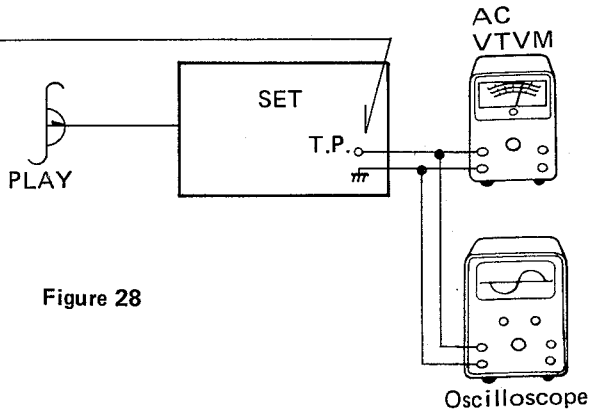


Figure 28

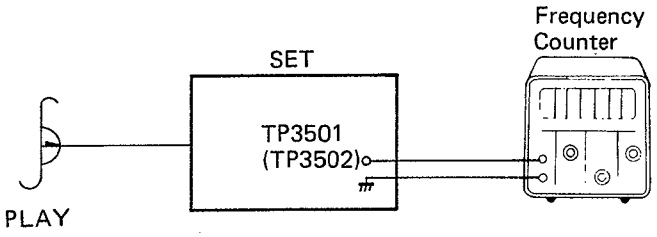


Figure 29

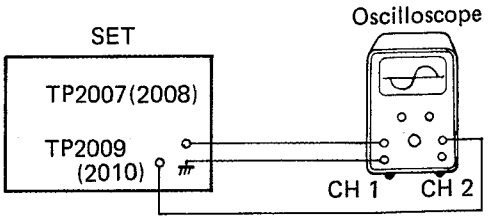


Figure 30

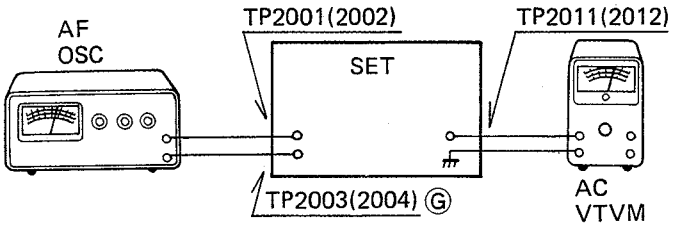


Figure 31

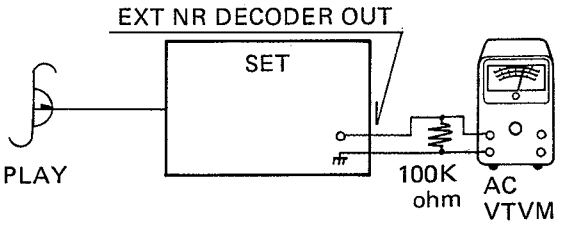


Figure 32

Step	T.P
11	3001, 3002
14	LEVEL METER
15 – (2), (3)	5005, 5006

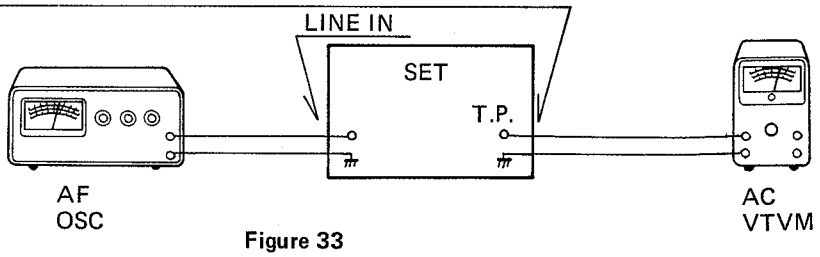


Figure 33

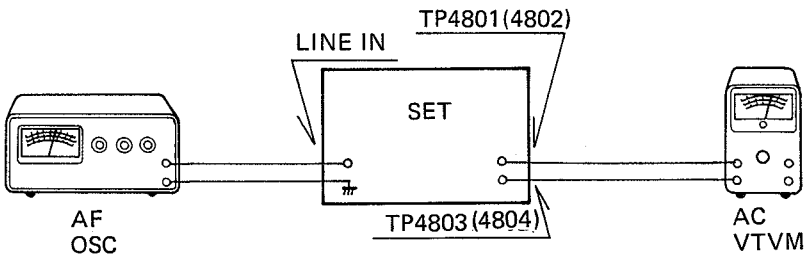


Figure 34

Step	T.P
12	EXT NR ENCODER OUT
19	LINE OUT

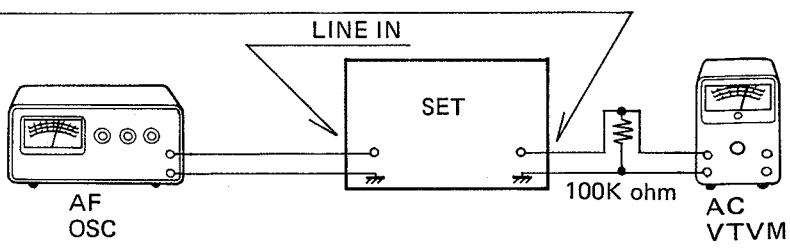


Figure 35

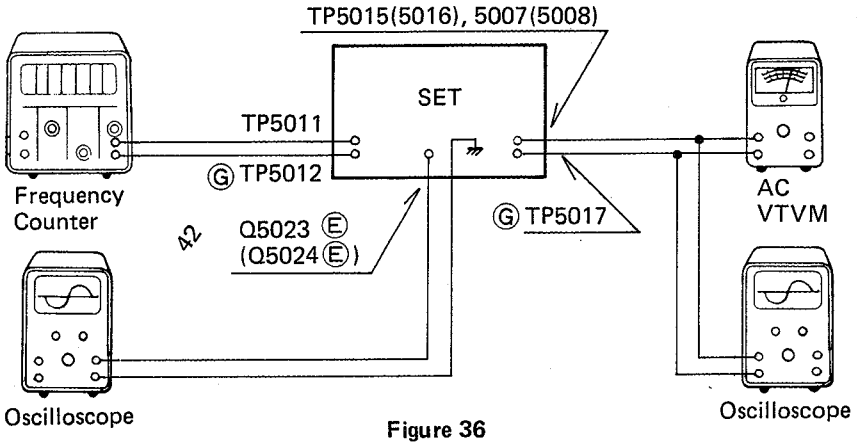


Figure 36

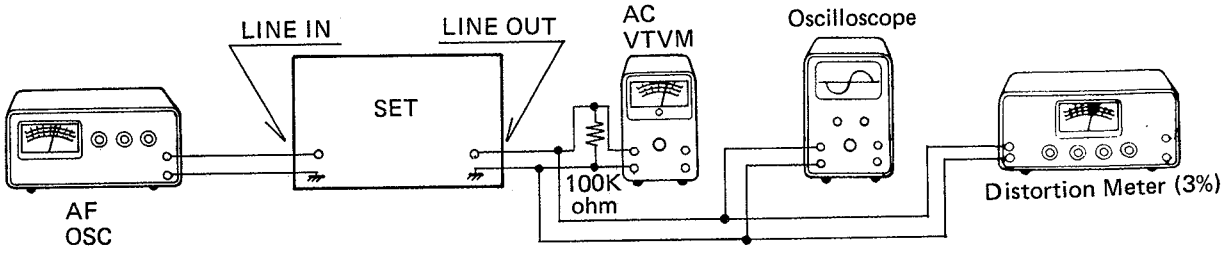


Figure 37

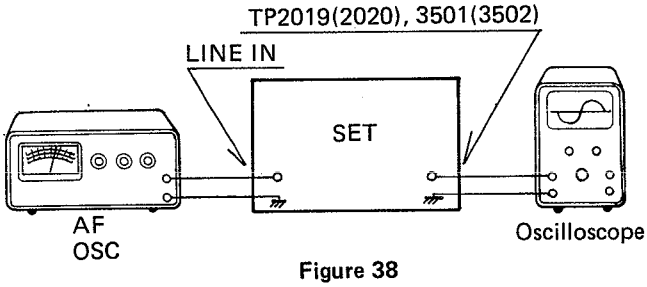


Figure 38

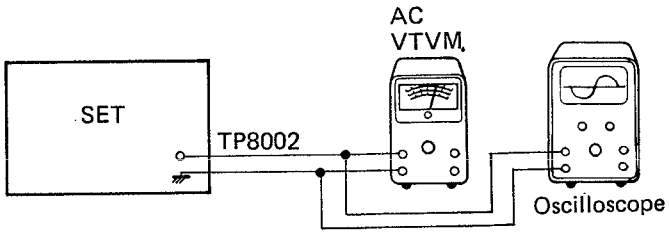


Figure 39

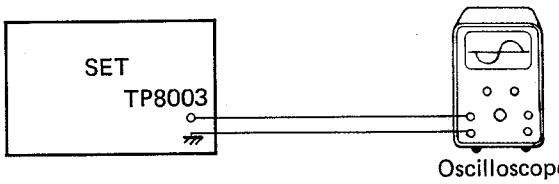


Figure 40

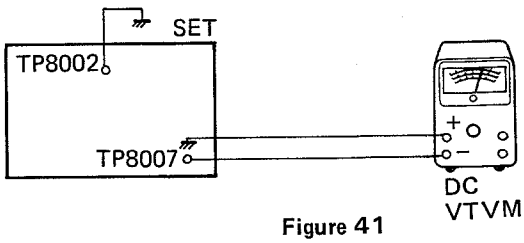


Figure 41

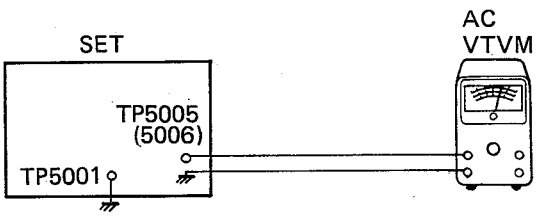


Figure 42

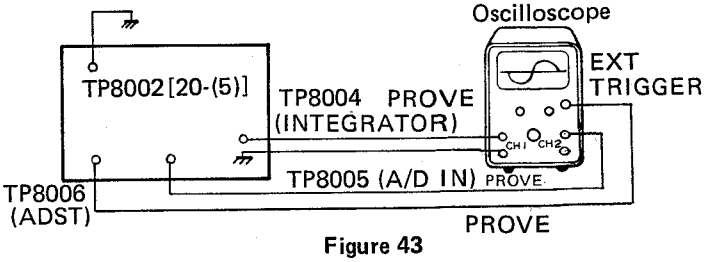
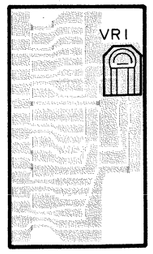
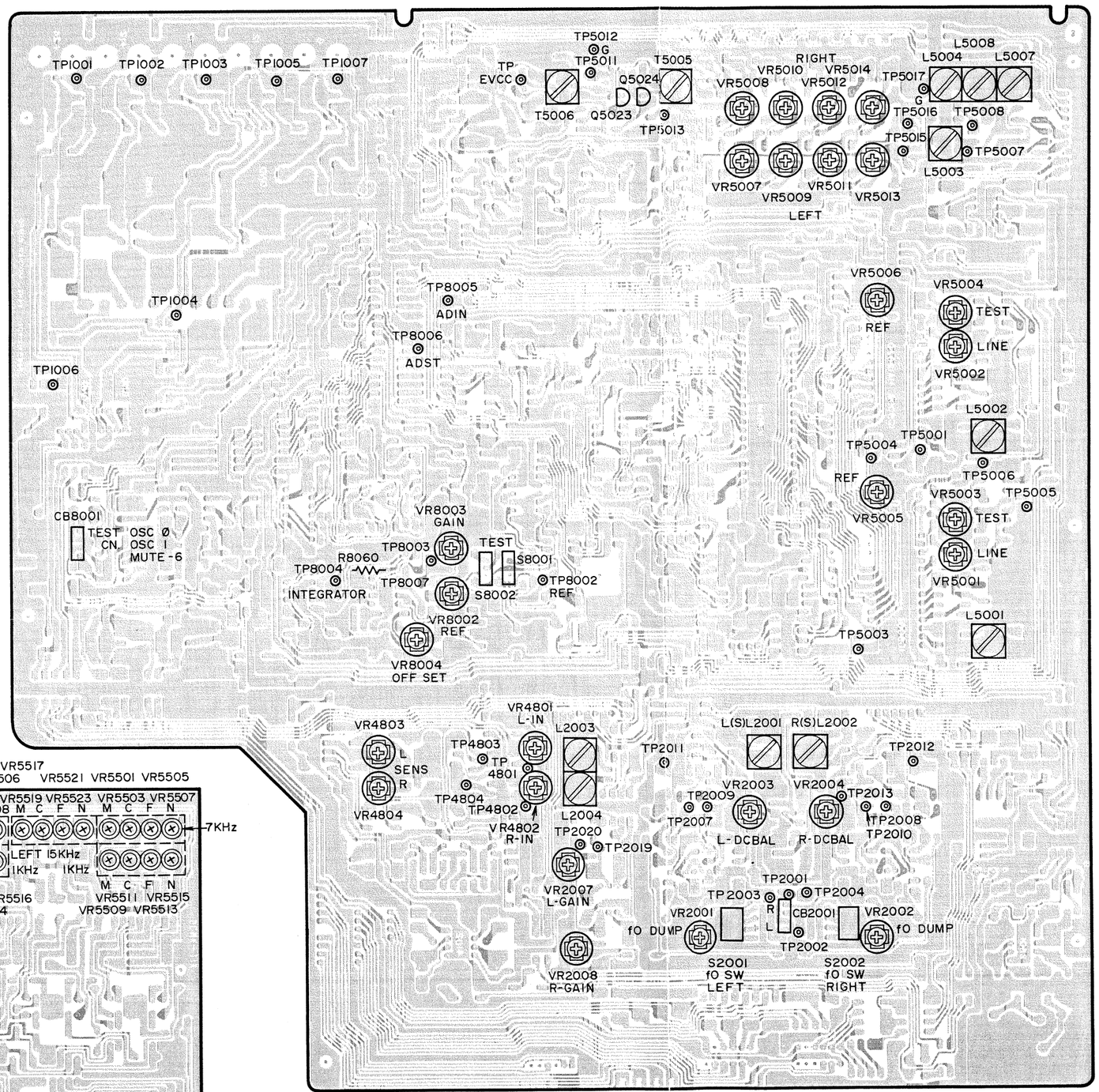


Figure 43

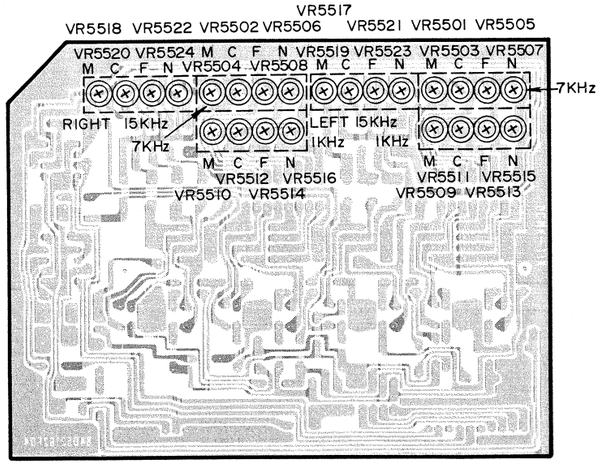
Adjustment Locations



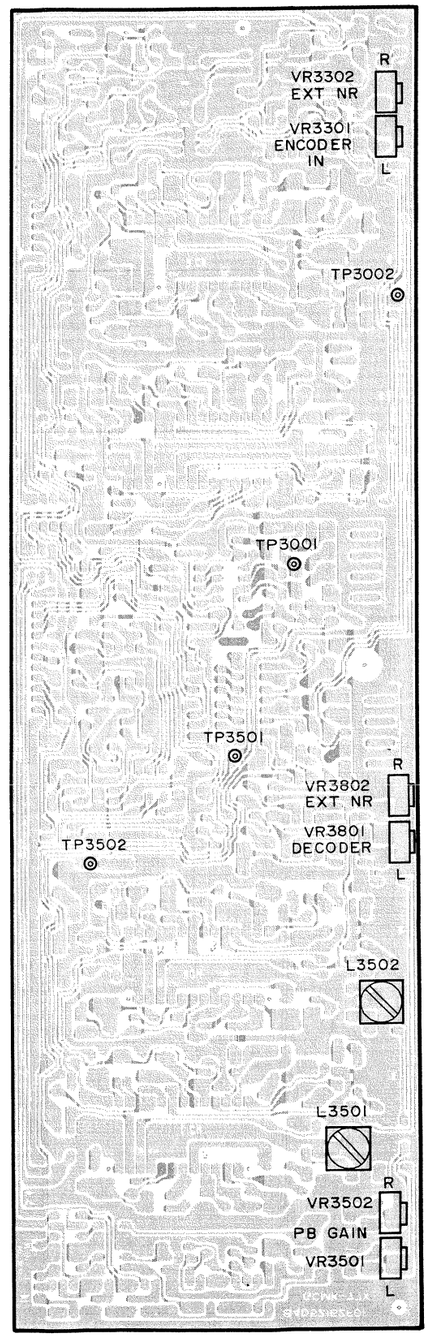
Terminal P.C. Board



Mother P.C. Board

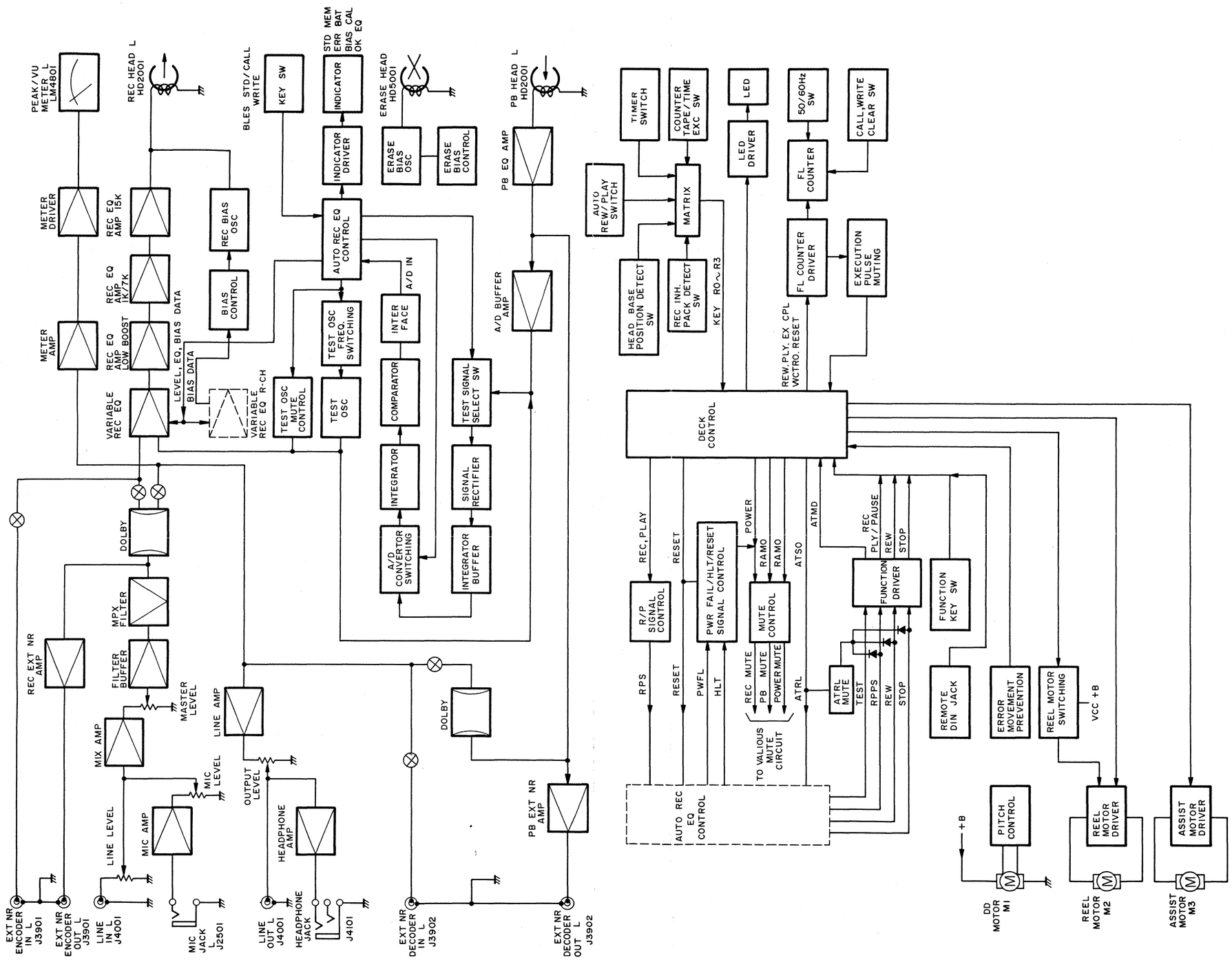


Record EQ P.C. Board



Dolby NR P.C. Board

Block Diagram



Trouble Shooting Guide

When the tape deck fails to function properly, check following conditions first, then examine it according to the check list below.

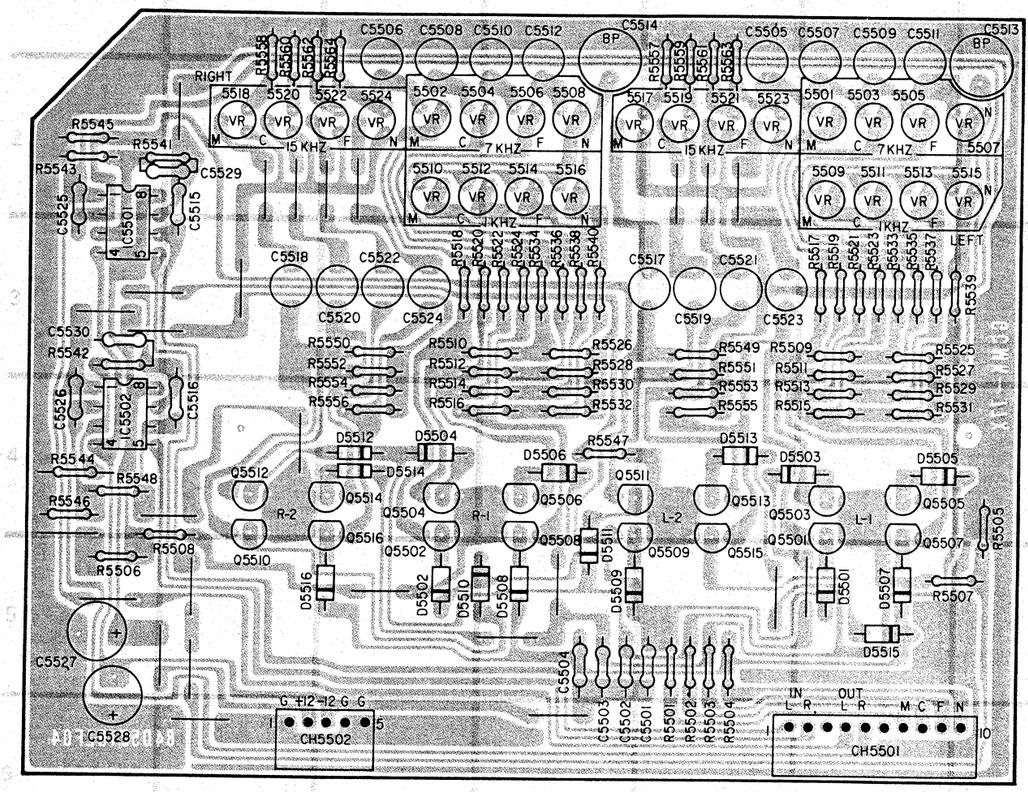
1. Are all connections correct?
2. Is this unit properly used as instructed in the manual?
3. Is there any trouble on speakers and amplifiers?

Symptom	Causes	Remedy
• Tape does not run.	• No power supplied. • Cassette door is not properly closed. • PAUSE switch was touched and the deck is in pause mode. • Tape end is reached.	• Check AC supply cord and POWER switch. • Push EJECT knob to check cassette loading and close the cassette door again. • Release the pause mode. • Rewind the tape or turn the cassette over.
• During rewind, the tape stops or goes into playback.	• MEMORY EXECUTION switch is ON.	• Set MEMORY EXECUTION switch to OFF.
• Recording is not possible.	• Tabs for prevention of accidental erasure have been removed. • Connections are improper. • Heads are dirty.	• Cover the tab openings with a piece of adhesive tape. • Check connections. • Perform head cleaning.
• No playback sound.	• Although no external NR unit is being used, DOLBY NR select switch is set to "EXT NR". • During playback, MONITOR switch is set to SOURCE. • OUTPUT LEVEL control is set to minimum. • During recording and pause mode, MONITOR switch is set to TAPE.	• Set the switch to correct position. • Set MONITOR switch to TAPE. • Adjust for proper level. • Set MONITOR switch to SOURCE.
• Recording or playback operation starts automatically when power is switched on.	• TIMER switch is not set to OFF.	• Set TIMER switch to OFF.
• Input signal does not come in the deck when recording.	• REC LEVEL controls are set to minimum. • Connections between AL-90 and stereo system are incorrect.	• Adjust for proper level. • Check connections and cords.
• Playback sound is husky or left/right sound balance is instable.	• Heads are dirty. • Tape is stretched or warped.	• Perform head cleaning. • Use another tape.
• Excessive tape hiss.	• Heads are magnetized. • Inferior tape with high hiss noise is used. • Heads are dirty. • Setting of DOLBY NR select switch is unsuitable. • Recording level is too low. • MIC level controls are not set to minimum in recording from LINE IN.	• Perform head demagnetizing. • Replace the tape. • Perform head cleaning. • Set the switch to a correct position. • Adjust for proper level. • Set MIC level controls to minimum.

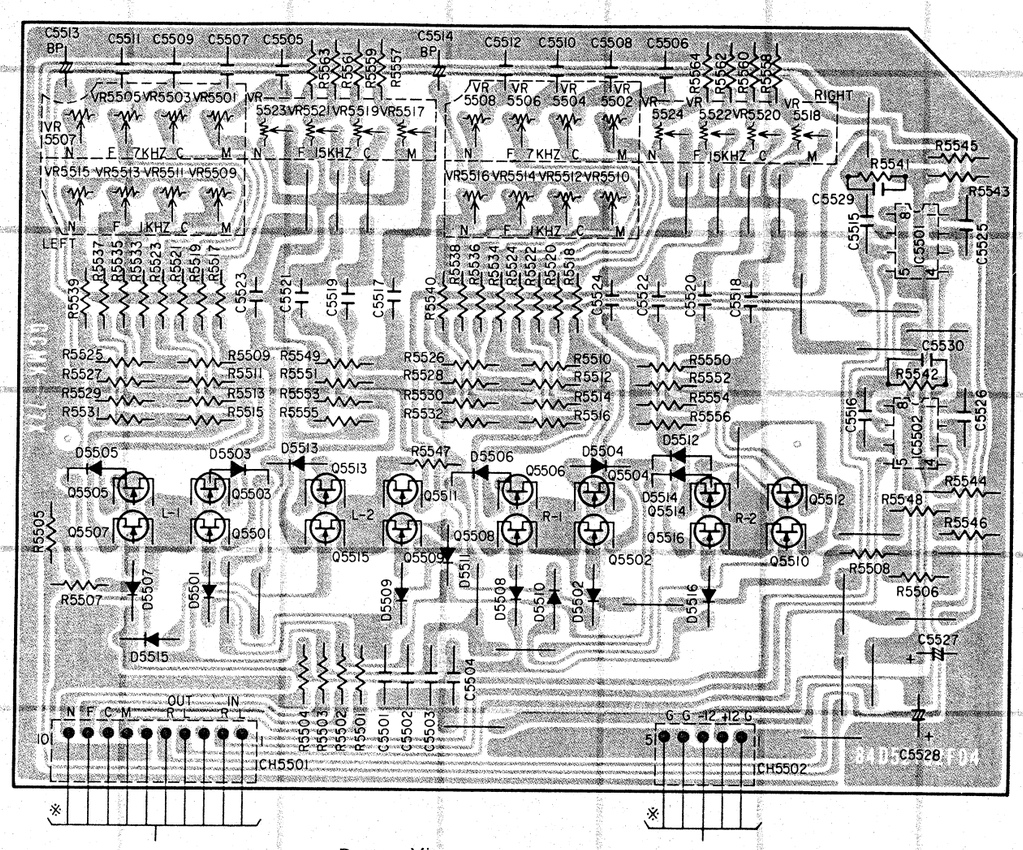
Symptom	Causes	Remedy
• Sound is distorted.	• Recorded sound on the tape itself is distorted. • Recording level is too high. • TAPE SELECT switch is not set to correct position in recording.	• Check by listening to another tape. • Adjust for proper level. • Set TAPE SELECT switch to correct position.
• Wow/flutter is excessive and sound is intermittent.	• Heads, pinch rollers and capstans are dirty. • Tape is wound too tightly or unevenly.	• Perform cleaning of heads and tape transport part. • Wind the tape with fast forward or rewind.
• Loud hum noise is heard during playback.	• Connection cords are not plugged in correctly. • External leakage flux (in inductive fields from amplifier power transformer, etc.) occurs. • Heads are dirty	• Securely plug in all cords. • Remove inductive sources such as fluorescent lamps, amplifiers, transformers, etc. from the vicinity of the deck. • Perform head cleaning.
• High tone is excessively enhaned.	• NR system is not engaged properly. • TAPE SELECT switch is set incorrectly.	• The same NR system as was used in re-ding must be employed for playback. • Set TAPE SELECT switch to suitable position.
• High tone is weak.	• Heads are dirty. • TAPE SELECT switch is set incorrectly. • Dolby NR system is engaged for play-back of a tape which was not recorded with Dolby NR system.	• Perform head cleaning. • Set TAPE SELECT switch to suitable position. • Set DOLBY NR select switch to OFF.
• Only timer playback is ef-fective even if the deck is set up for timer recording.	• Tabs for prevention of accidental erasure have been removed.	• Cover the tab openings with a piece of adhesive tape.
• Auto tuning operation can not be performed even if BLES is touched.	• Tabs for prevention of accidental erasure have been removed.	• Cover the tab openings with a piece of adhesive tape.
• "OK" is not achieved easily with BLES operation.	• TAPE SELECT switch is set to incorrect position. • The tape in use exceeds the adjustment range. • BLES operation is performed at the leader tape section. • Extremely worn-out tape is used. • Heads are dirty.	• Set TAPE SELECT switch to suitable position. • Call up the standard data and perform recording. • Fast forward the tape and perform BLES operation near the center of the tape. • Use the another cassette tape. • Perform head cleaning.
• Counter memory opera-tion can not be performed.	• MEMORY EXECUTION switch is set to OFF.	• Set MEMORY EXECUTION switch to ON.
• BATT indicator flashes on/off.	• Memory back-up batteries for retention of data become weak when power is off. • Loading of batteries is faulty.	• Replace batteries. • Check the polarities of batteries.
• BLES operation ceases midway.	• The tape comes to end and automatically stops.	• Perform BLES operation near the center of the tape.
• TIMER counter does not give correct readings.	• Setting of FREQUENCY select switch is wrong.	• Turn off POWER switch and then set FRE-QUENCY select switch to the correct position.

Parts Layout on P.C. Boards

- Record EQ P.C. Board

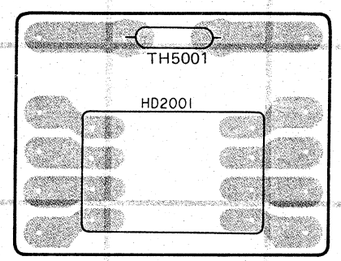


Top View

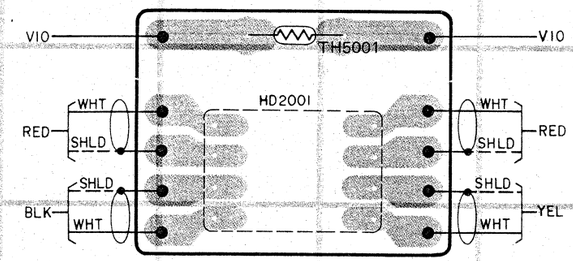


Bottom View

- Head P.C. Board

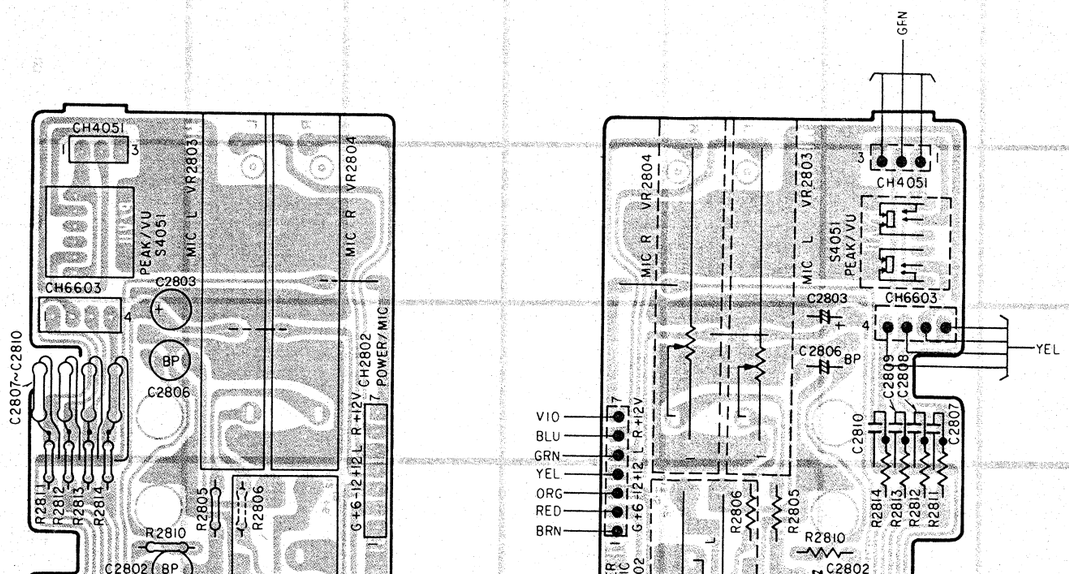


Top View

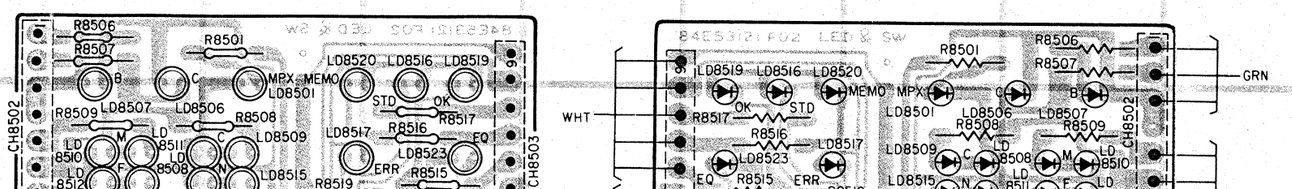


Bottom View

- Volume/Switch P.C. Board

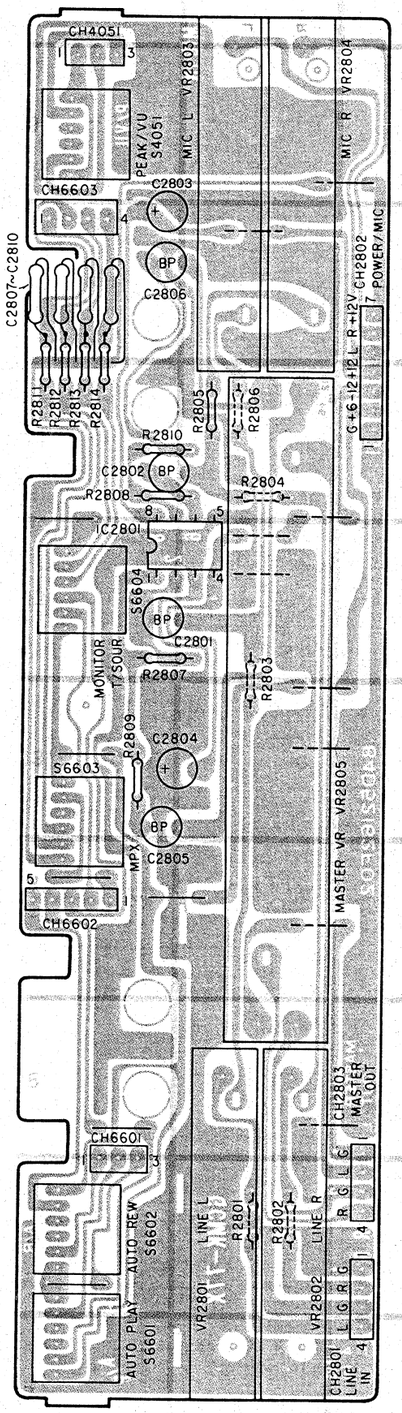


- Counter/LED P.C. Board

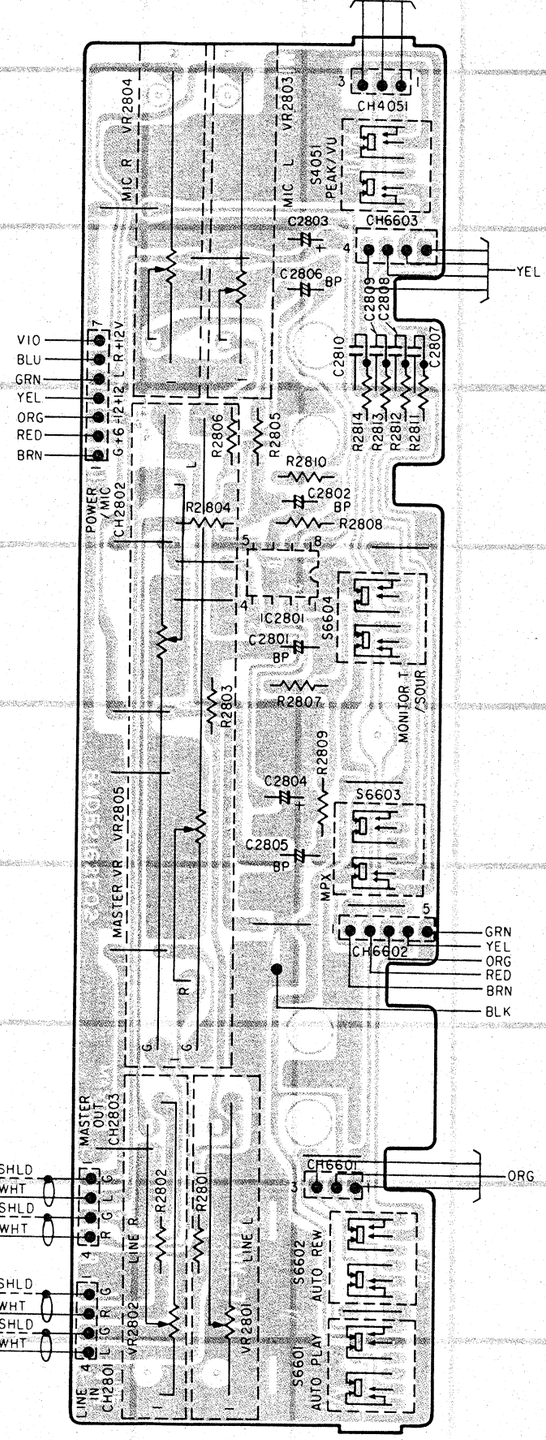


- Phono

- Pitch C

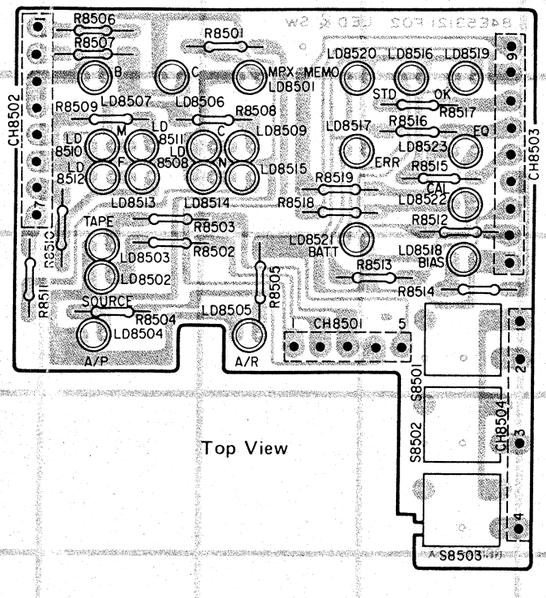


Top View

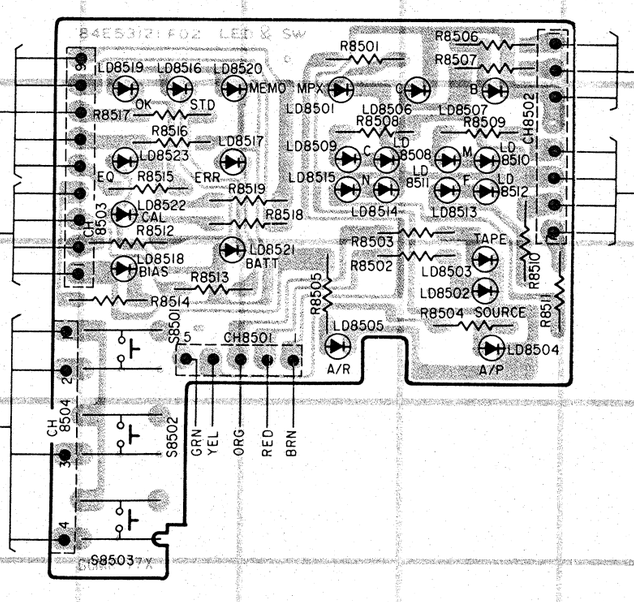


Bottom View

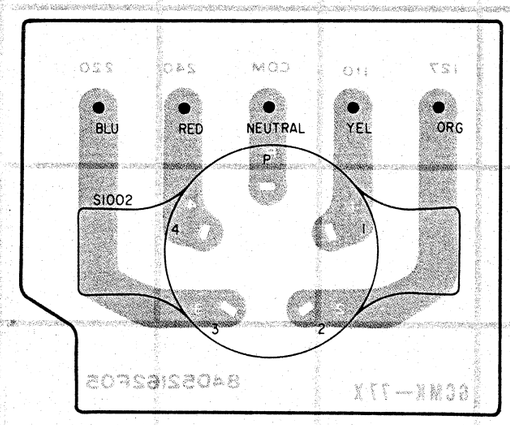
• Counter/LED P.C. Board



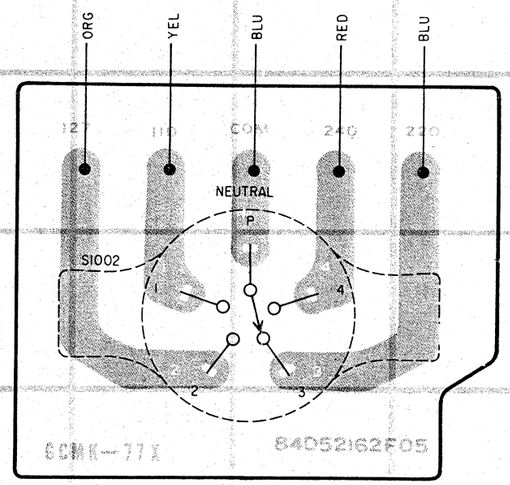
Top View



• Voltage Select P.C. Board



Top View

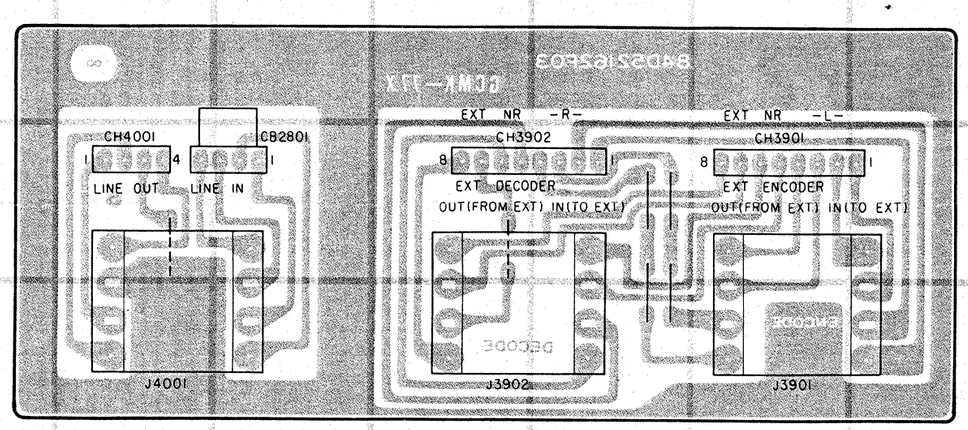


Bottom View

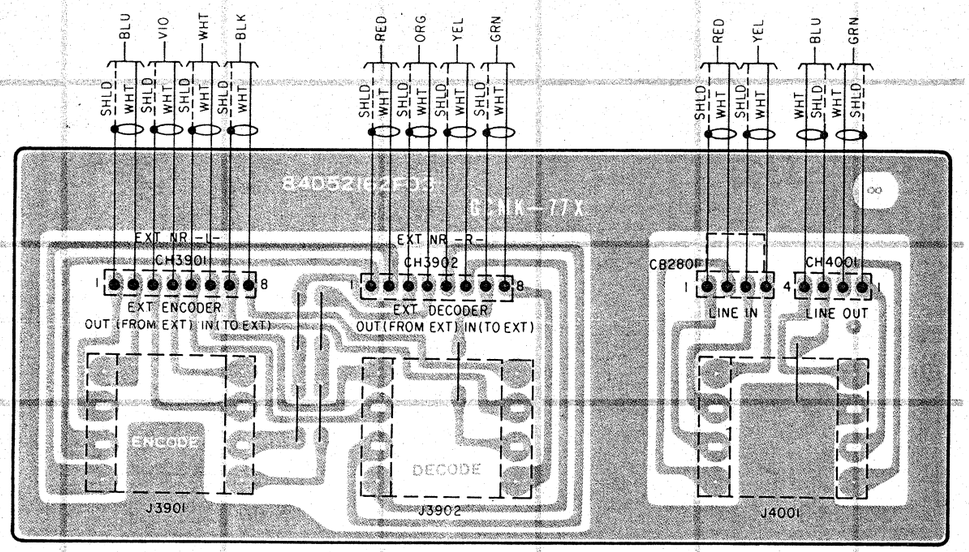
• Headph

• Pulse OS

• Phono Plate P.C. Board

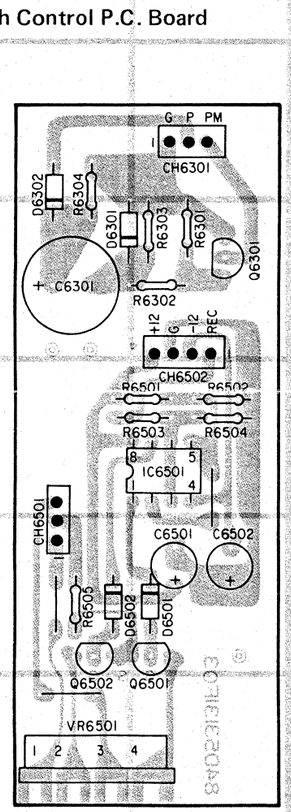


Top View

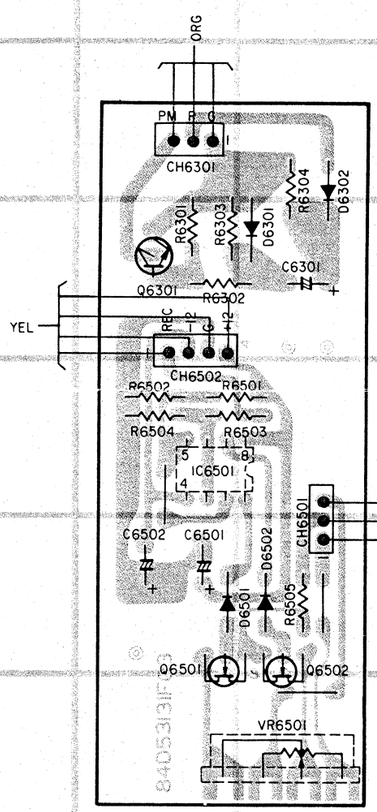


Bottom View

• Pitch Control P.C. Board

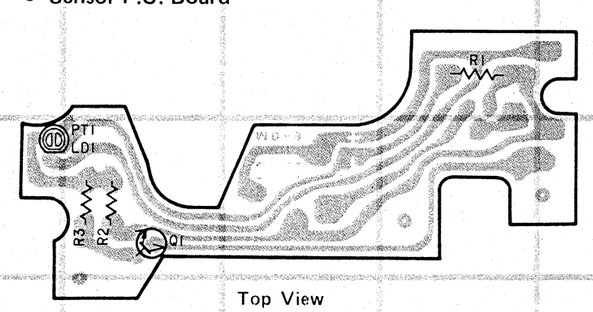


Top View

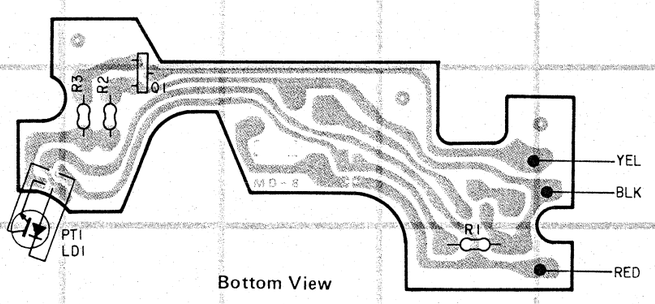


Bottom View

• Sensor P.C. Board



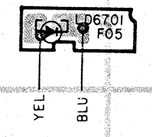
Top View



Bottom View

• LED P.C. Board

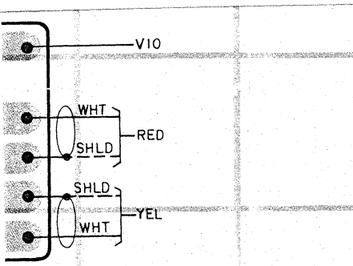
Top View

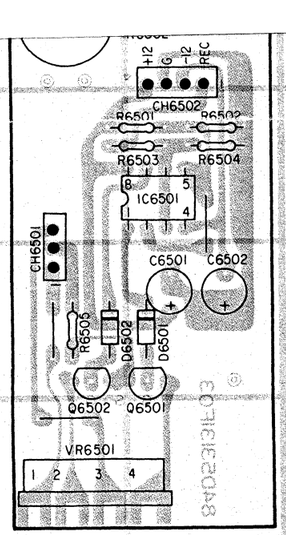


Bottom View

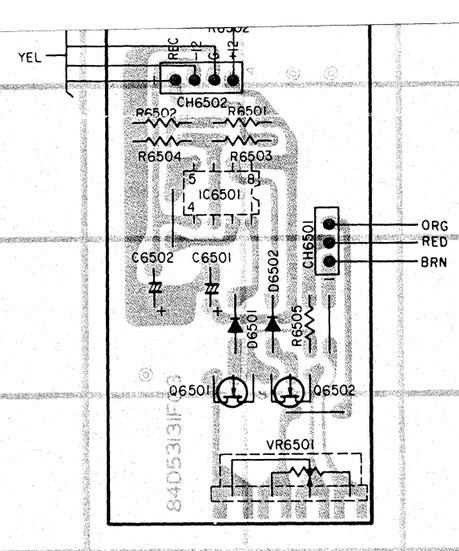
• Headphone P.C. Board

• Remote Jack P.C. Board

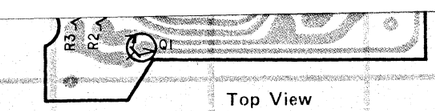




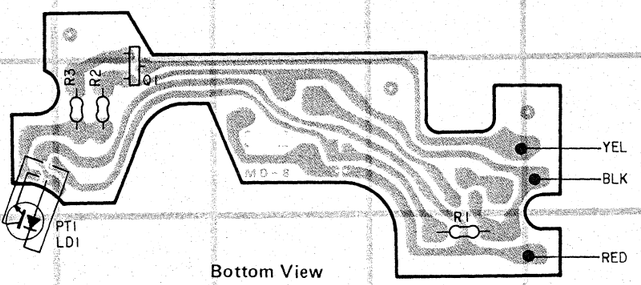
Top View



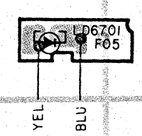
Bottom View



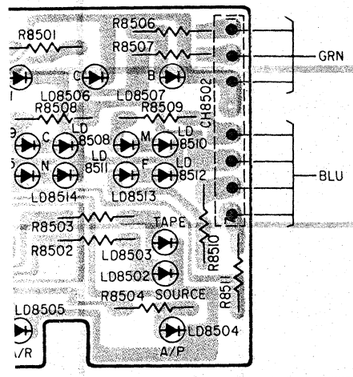
Top View



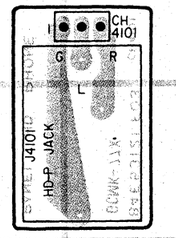
Bottom View



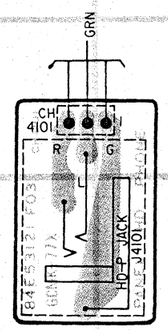
Bottom View



● Headphone P.C. Board

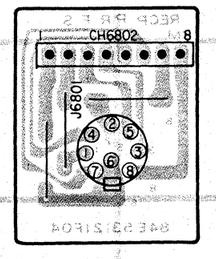


Top View

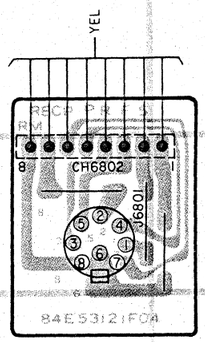


Bottom View

● Remote Jack P.C. Board

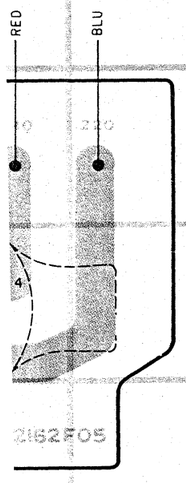


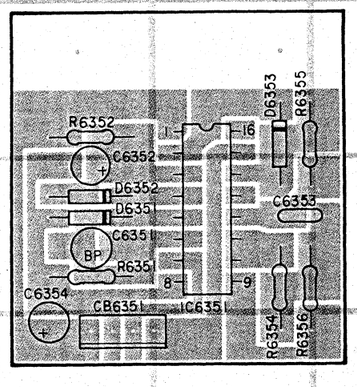
Top View



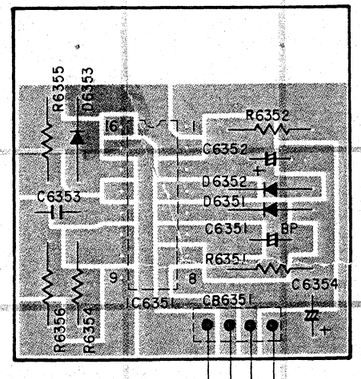
Bottom View

● Pulse OSC P.C. Board



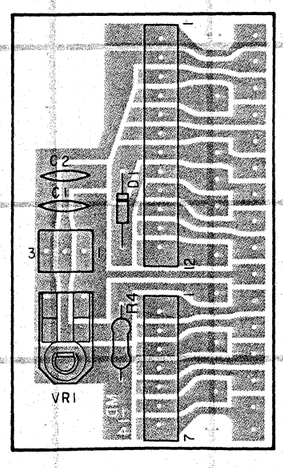


Top View

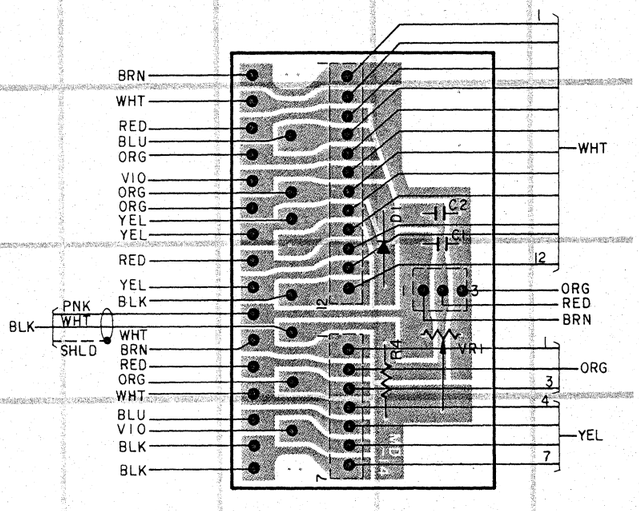


Bottom View

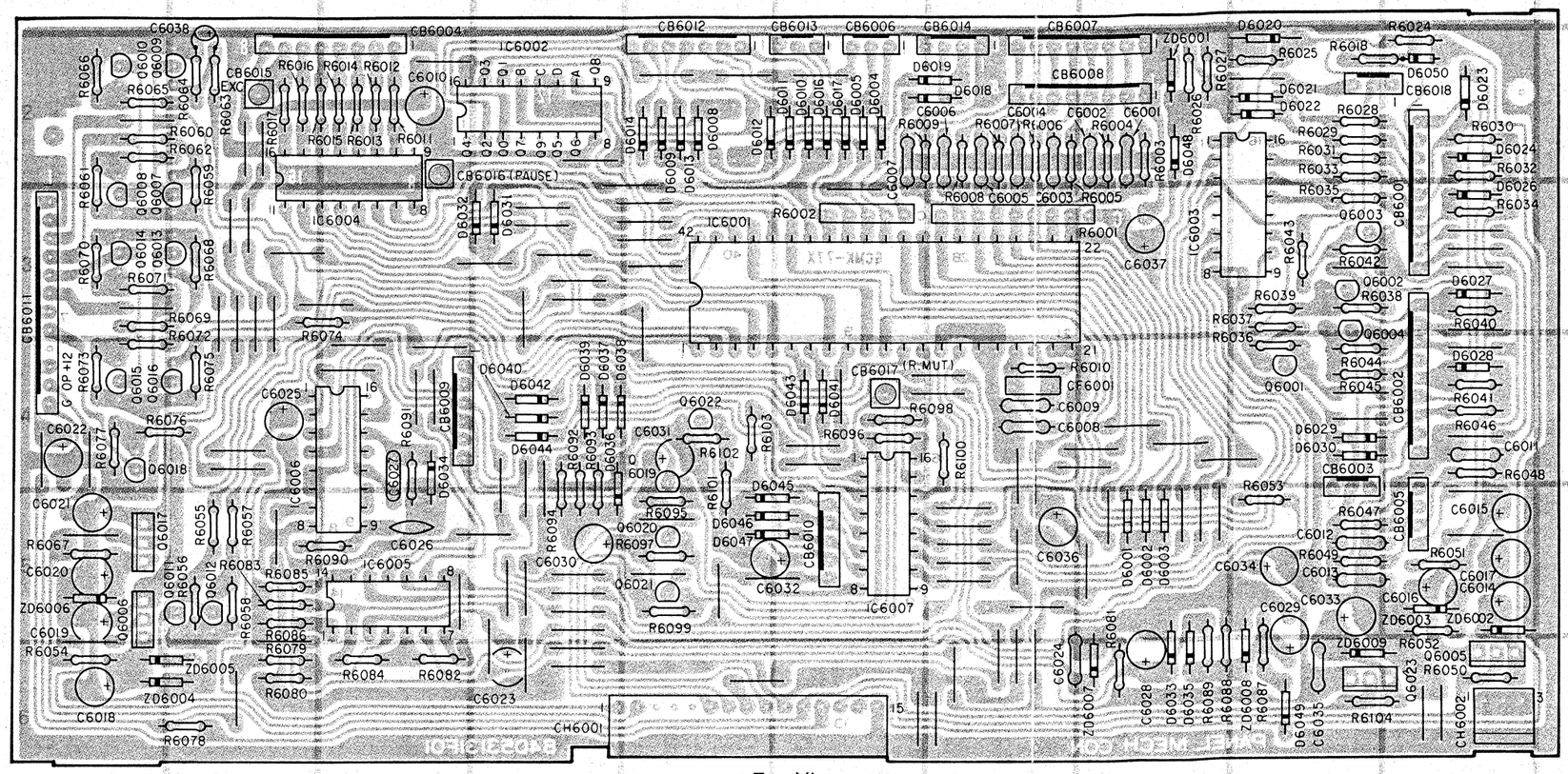
● Terminal P.C. Board



Top View

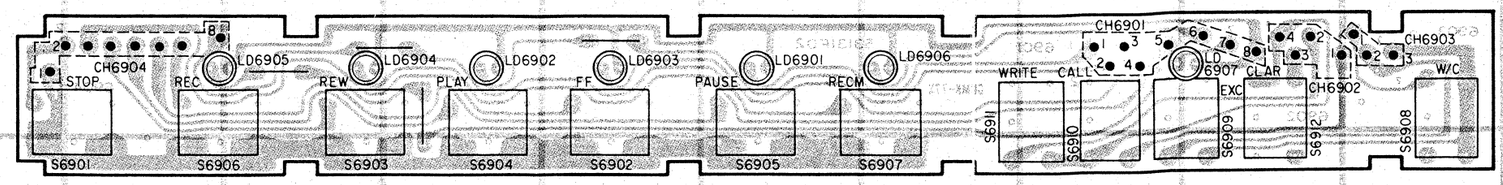


Mechanism Control P.C. Board



Top View

Keyboard P.C. Board

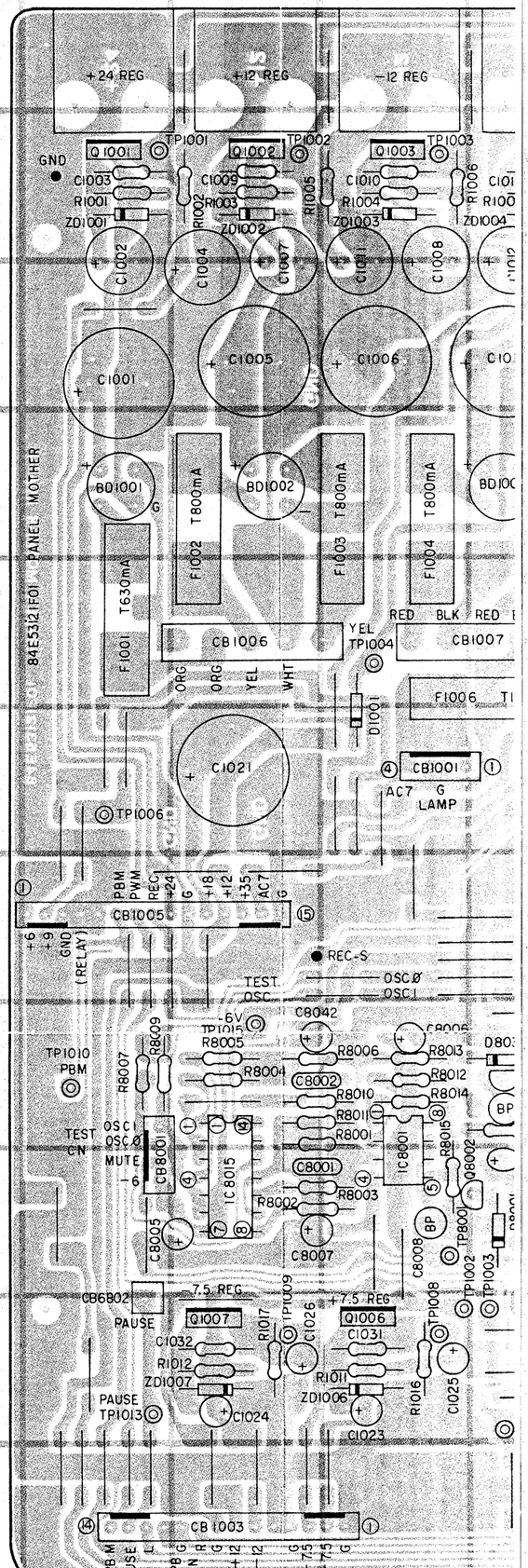


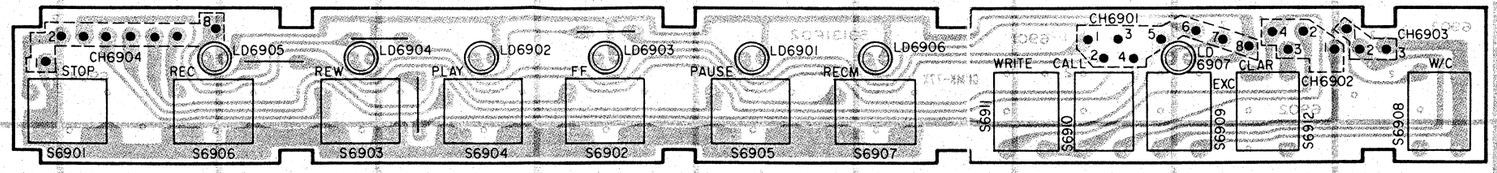
Top View

Lamp P.C. Board

Top View

Mother P.C. Board

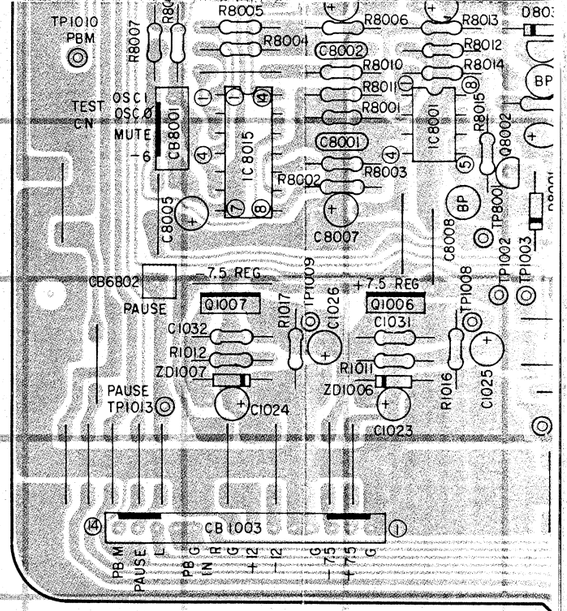




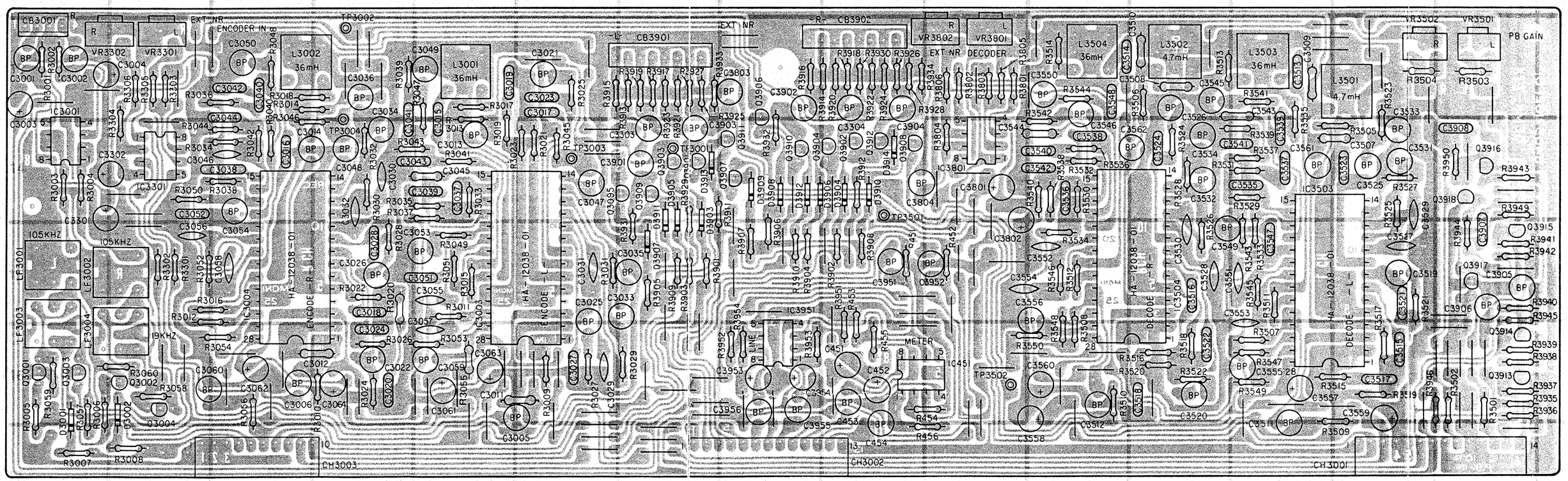
Top View

- Lamp P.C. Board

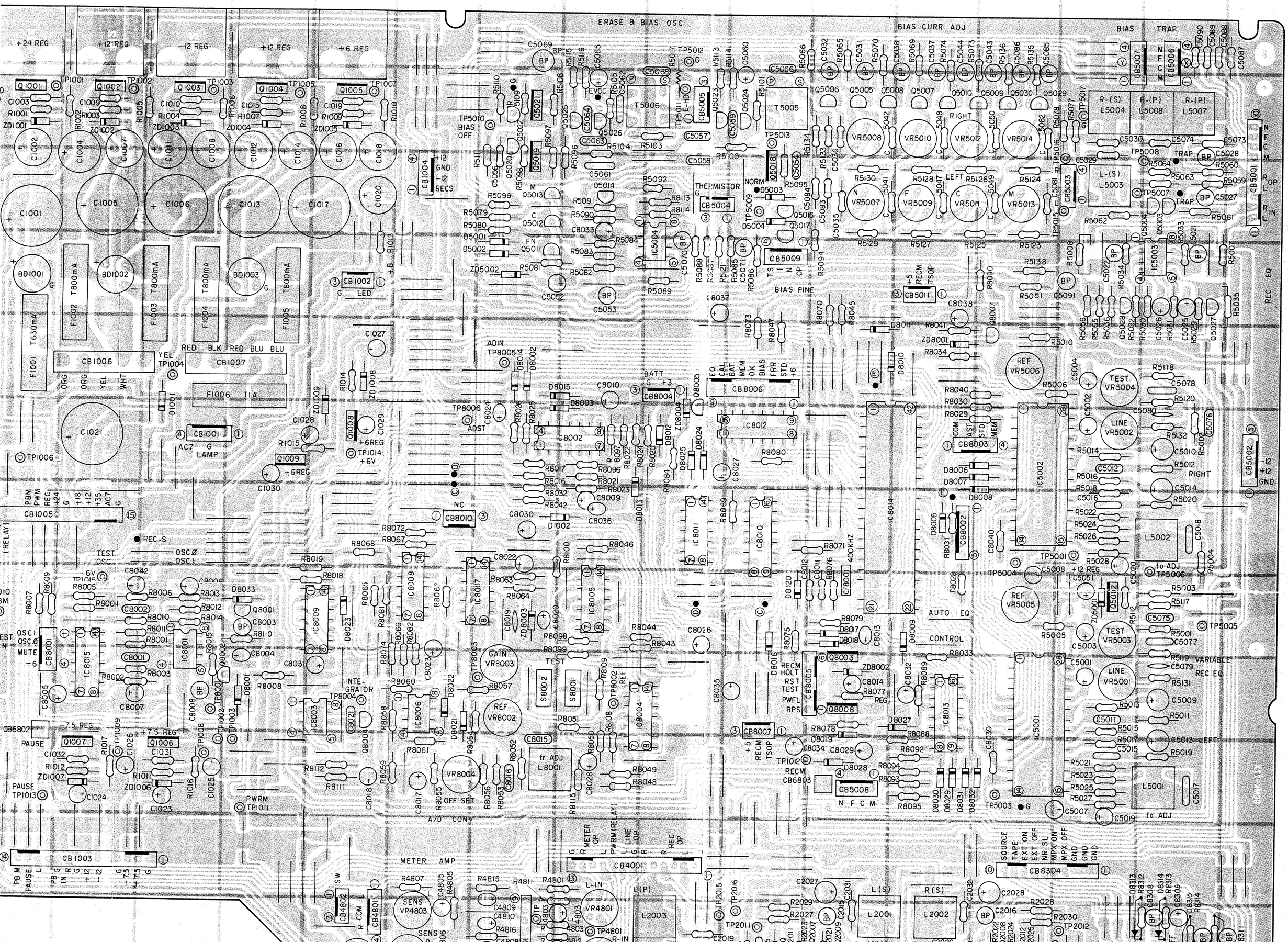
Top View

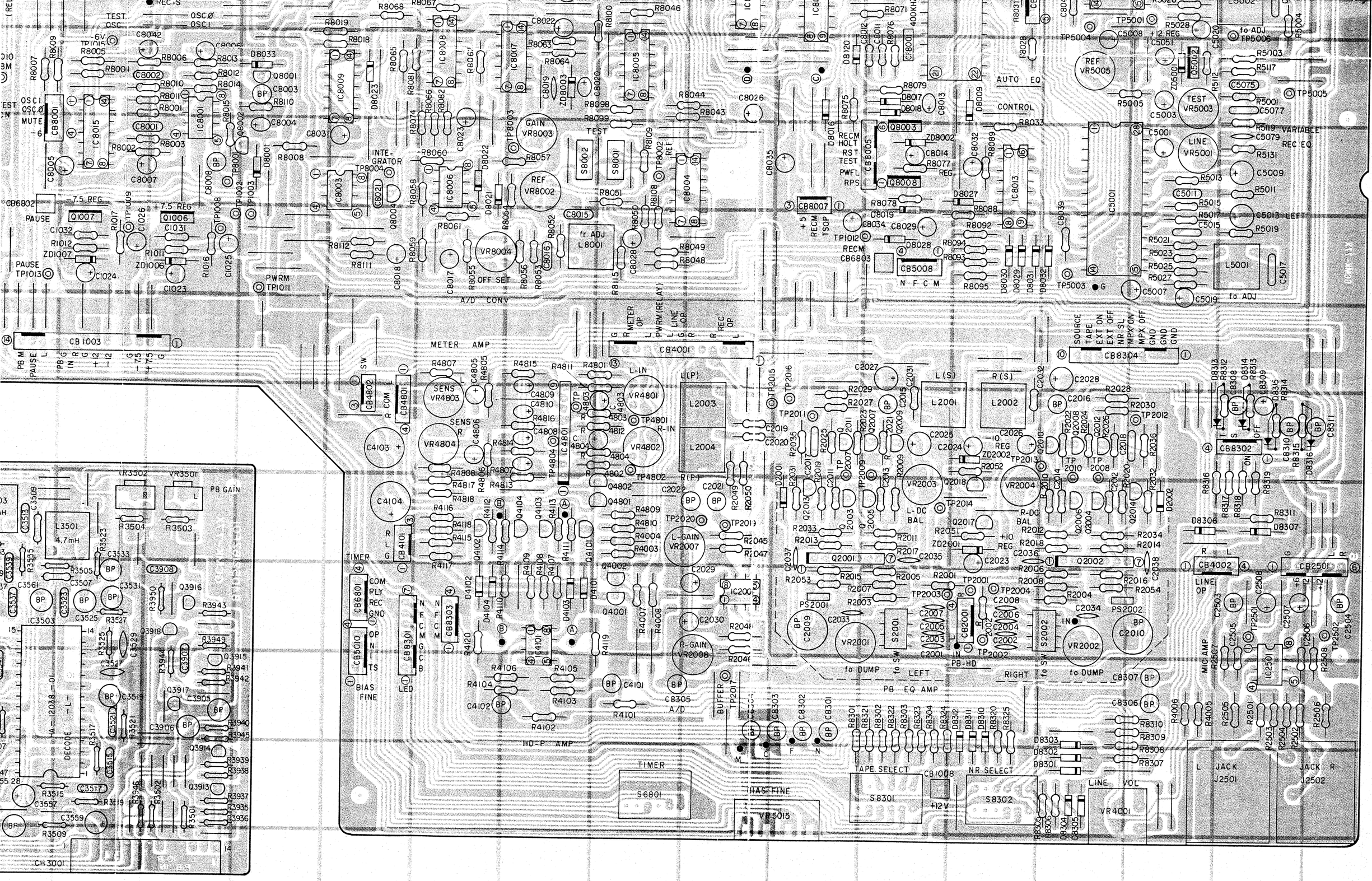


- Dolby NR P.C. Board



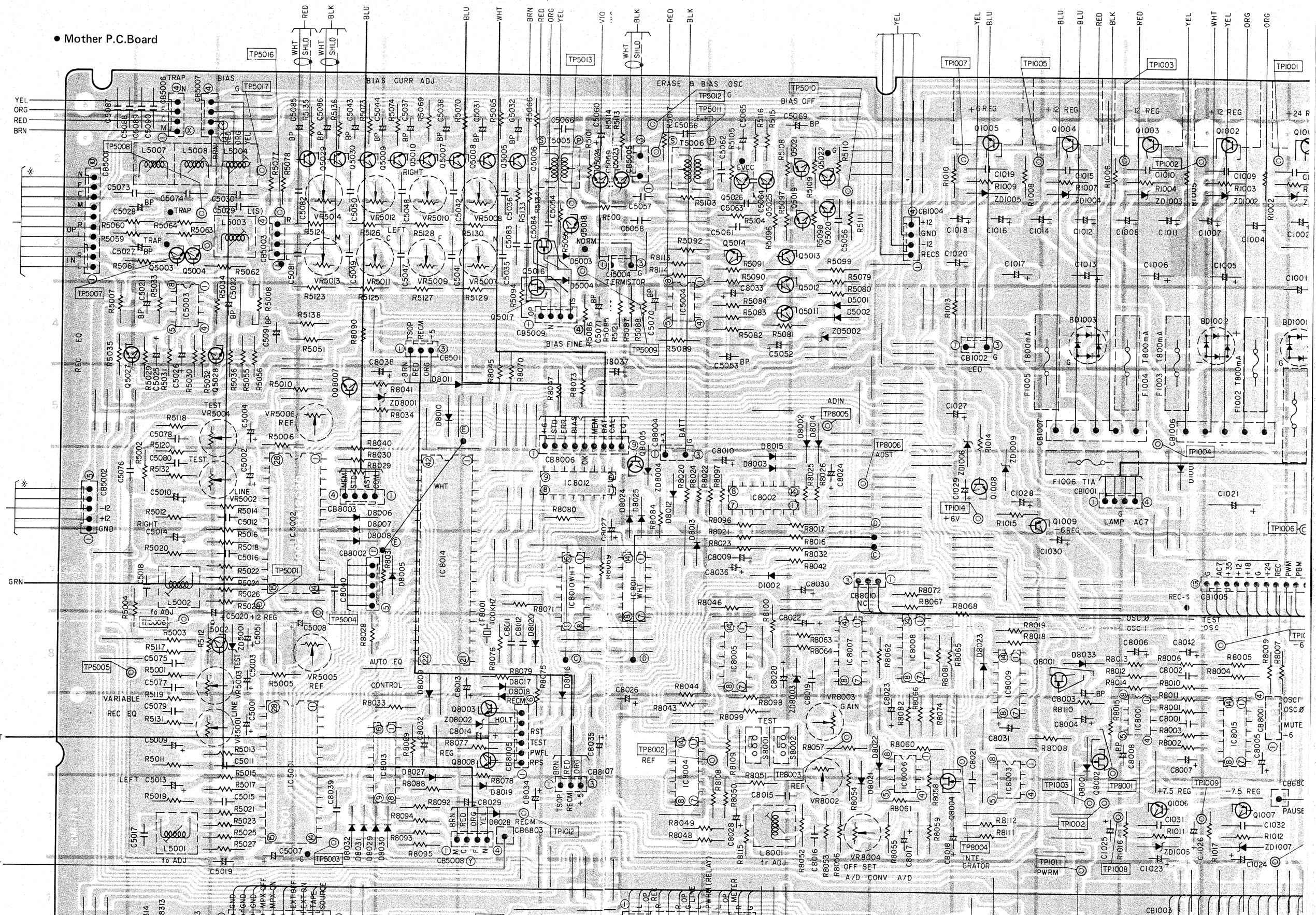
Top View

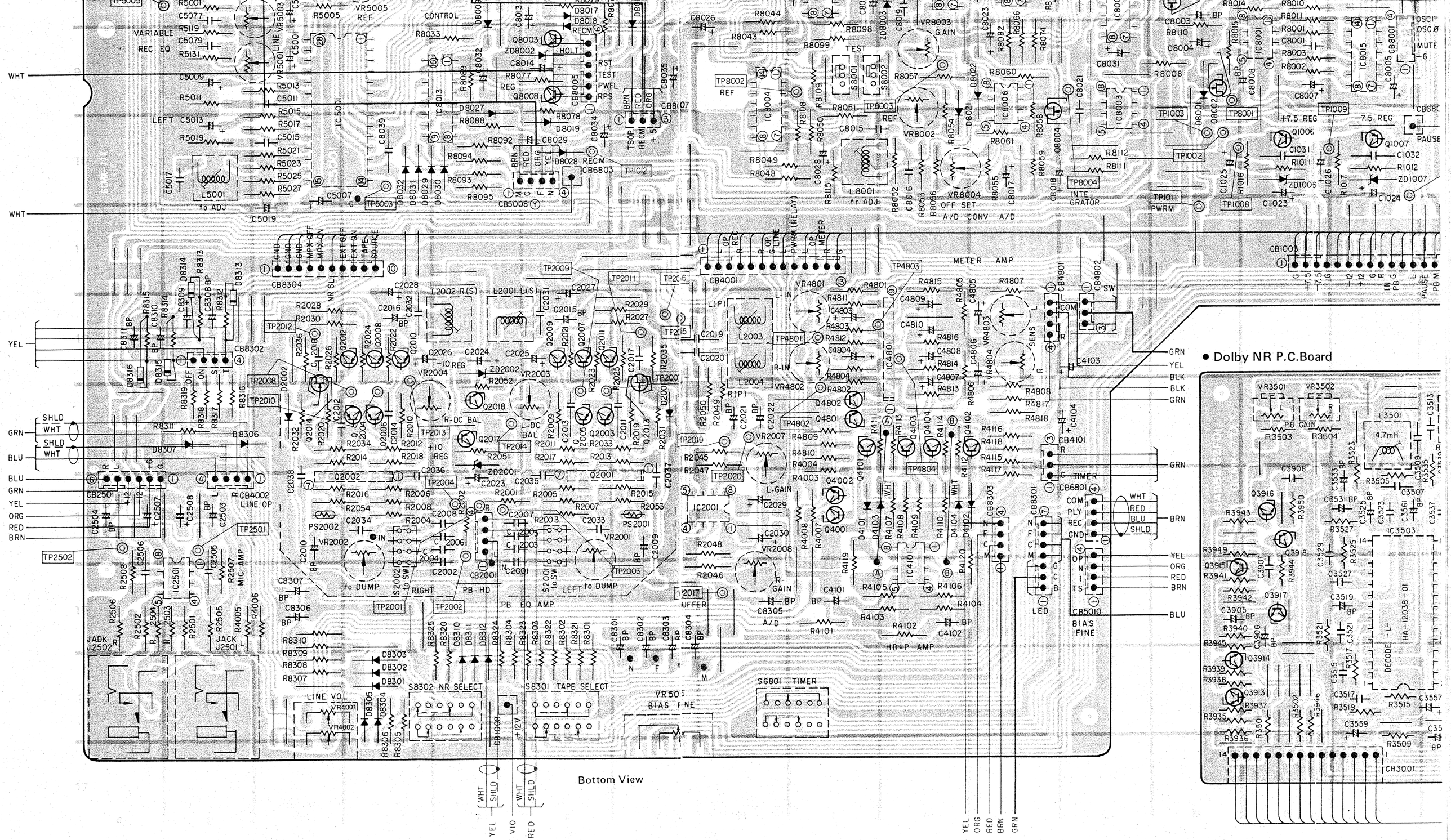

+24 REG
+12 REG
-12 REG
+12 REG
+6 REG
ERASE & BIAS OSC
BIAS CURR ADJ
BIAS
TRAP
THERMISTOR
NORM
BIAS FINE
REC EQ
RIGHT
LEFT
REF VR5006
TEST VR5004
LINE VR5002
TEST VR5003
LINE VR5001
REF VR5005
AUTO EQ
CONTROL
VARIABLE
REC EQ
fo ADJ
+12 REG
ADIN
ADST
BATT
EQ CAL BAT MEM OK BIAS FRR STD +6
COM AST STD MEM
400KHZ
GAIN VR8003
REF VR8002
OFF SET VR8004
fr. ADJ L8001
INTE-GRATOR
A/D CONV
TEST
RECM HOLT RST TEST PWFL RPS
REG
RECM CB6803
N F C M
+5 RECM TSOP
PAUSE
-7.5 REG
+7.5 REG
PWRM TP1011
TEST OSC
OSCØ OSCI
REC-S
(RELAY)
LAMP
LED
-6REG
+6REG
+6V
NC
RED BLK RED BLU BLU
ORG ORG YEL WHT
YEL
F1006 T1A
T630mA
T800mA
PBM PWM REC +24 G +18 +12 +35 AC7 G
CB1005
CB1006
CB1007
CB1003
PB M PAUSE L PB G IN R G +12 -12 G -7.5 +7.5 G
METER AMP
SENS VR4803
R COM
METER OP PWRM(RELAY) L LINE OP G R REC OP L
CB4001
L-IN
R-IN
VR4801
L(P)
L2003
L(S)
L2001
R(S)
L2002
SOURCE TAPE EXT ON EXT OFF NR SL MPX ON MPX OFF GND GND GND
CB8304
-12 +12 GND
CB5002
N F C M R OP L R IN L
CB5001
R-(S) L5004
R-(P) L5008
R-(P) L5007
L-(S) L5003
L5002
L5001
IC5001
IC5002
IC8014
IC8012
IC8011
IC8010
IC8009
IC8008
IC8007
IC8006
IC8005
IC8004
IC8003
IC8002
IC8001
IC8013
IC8015
IC5003
IC5004
T5005
T5006
S8001
S8002
C1001
C1005
C1006
C1013
C1017
C1021
BD1001
BD1002
BD1003
F1001
F1002
F1003
F1004
F1005


TEST OSC
OSCØ
OSC1
MUTE
7.5 REG
+7.5 REG
PAUSE
INTE-GRATOR
GAIN VR8003
REF VR8002
VR8004
OFF SET
A/D CONV
fr ADJ L8001
TEST
PWRM
AUTO EQ
CONTROL
REF VR5005
TEST VR5003
LINE VR5001
VARIABLE REC EQ
LEFT
fo ADJ
N F C M
CB1003
CB4001
CB8304
SOURCE
TAPE
EXT ON
EXT OFF
NR SL
MPX ON
MPX OFF
GND
METER AMP
SENS VR4803
SENS VR4804
L-IN
R-IN
L(P)
R(P)
L(S)
R(S)
L2003
L2004
L2001
L2002
L-GAIN VR2007
R-GAIN VR2008
L-DC BAL
R-DC BAL
VR2003
VR2004
-10 REG
+10 REG
VR2001
VR2002
fo DUMP
LEFT
RIGHT
PB EQ AMP
HD-P AMP
TIMER
COM
PLY
REC
GND
BIAS FINE
LED
BUFFER
TIMER S6801
BIAS FINE VR5015
TAPE SELECT S8301
NR SELECT S8302
LINE VOL VR4001
MIC AMP
LINE OP
L JACK J2501
JACK R J2502
VR3502
VR3501
PB GAIN
L3501 4.7mH
HA-12038-01
DECODE
CH3001
O
P
Q
R
S
T
U
V
W
X
Y
Z
AA
BB

Top View

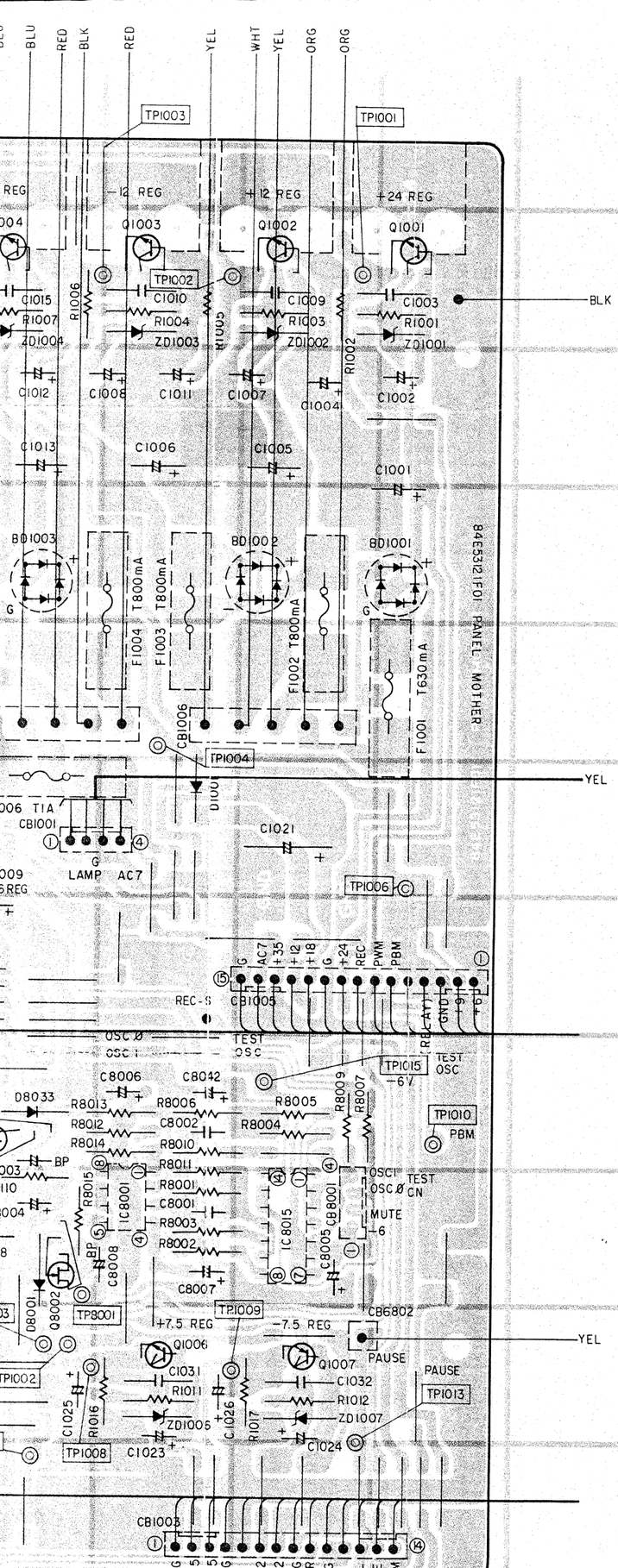
● Mother P.C.Board



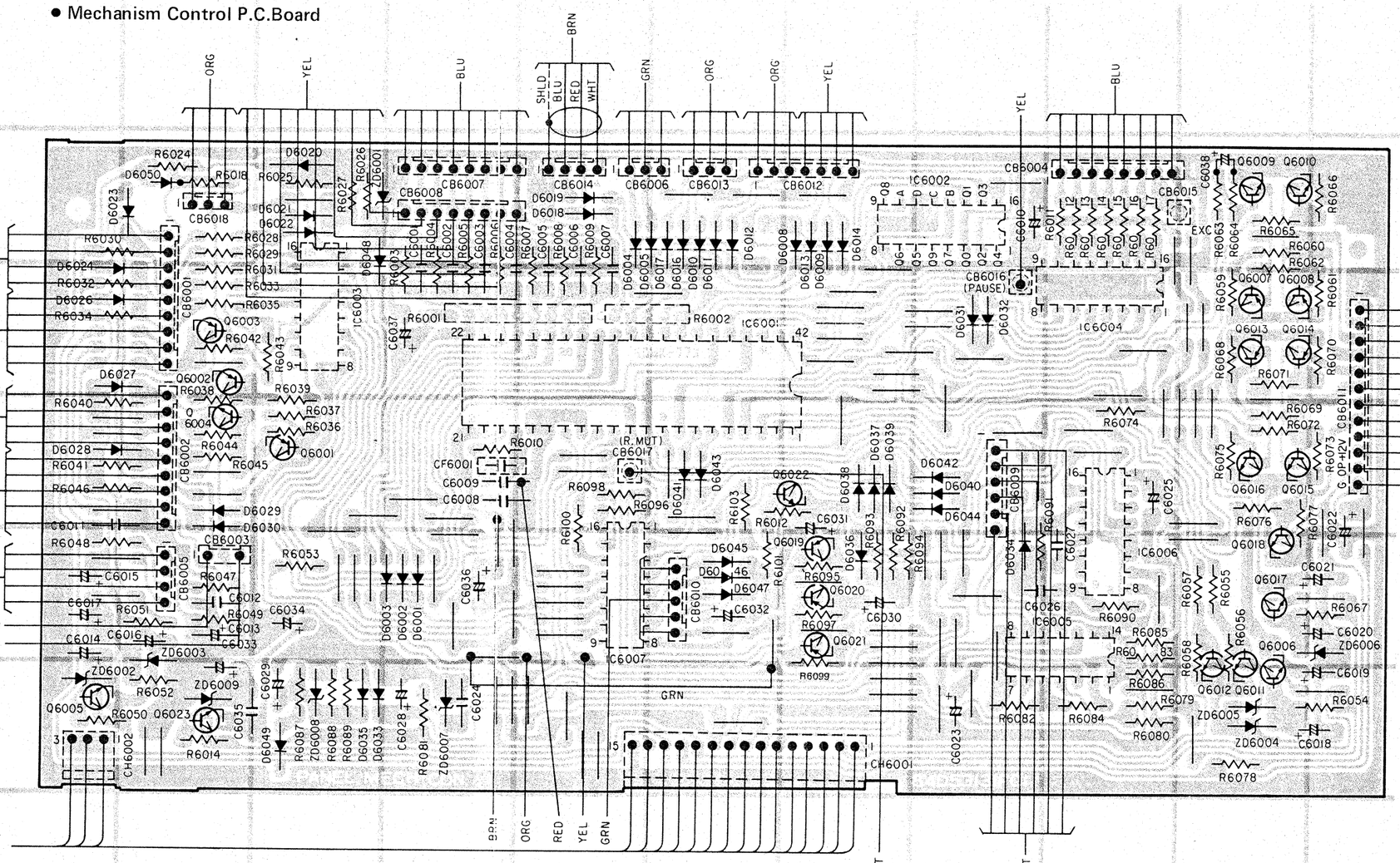


Bottom View

● Dolby NR P.C.Board

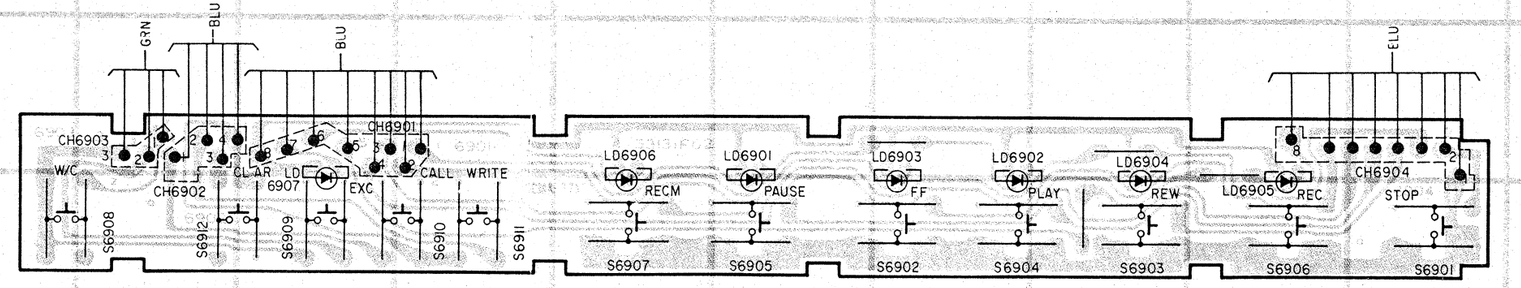


● Mechanism Control P.C.Board



Bottom View

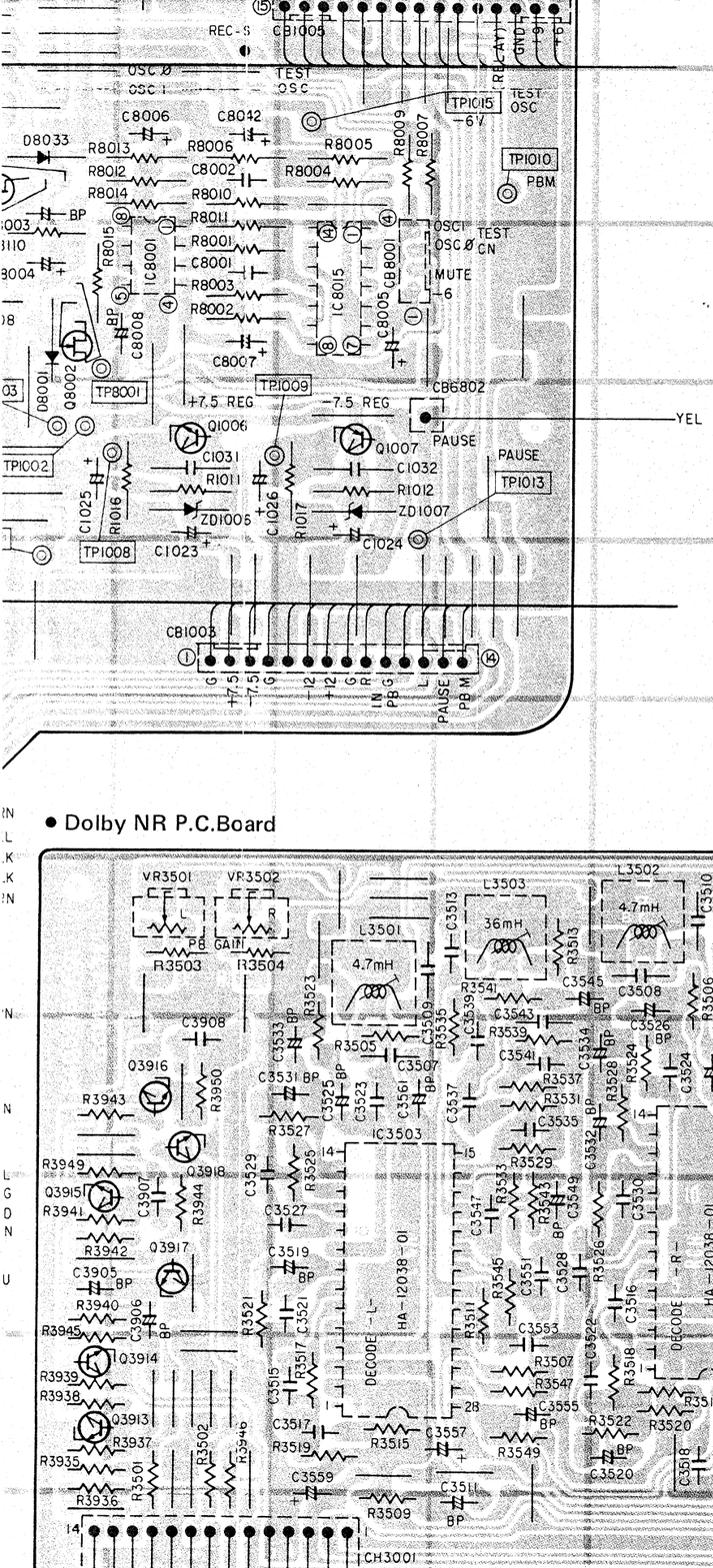
● Keyboard P.C.Board



Bottom View

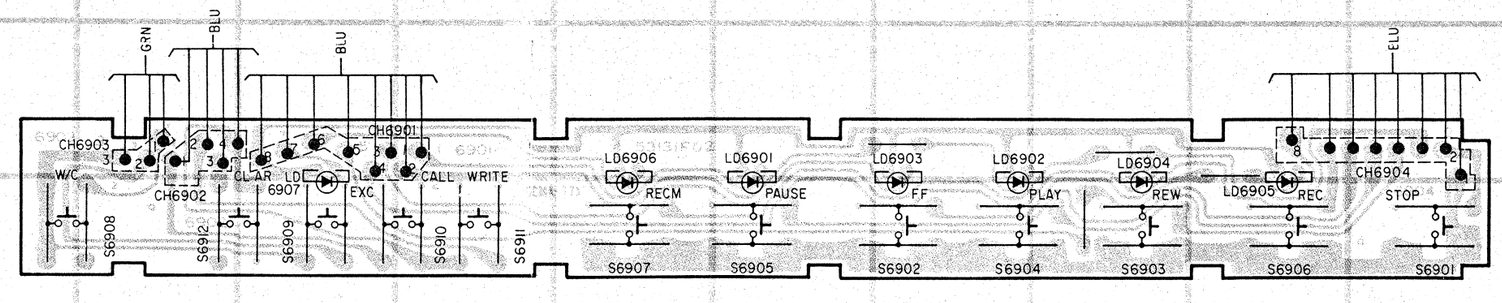
● Lamp P.C.Board

Bottom View



Bottom View

● Keyboard P.C.Board

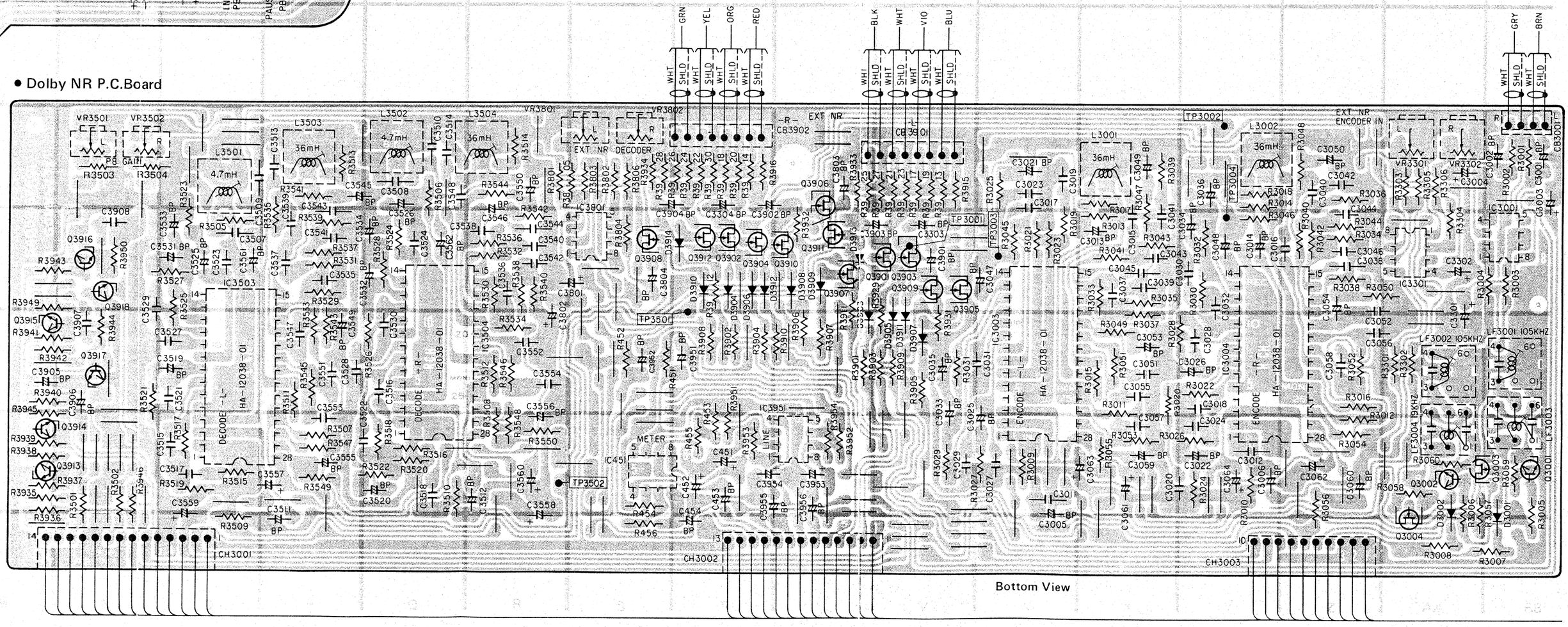


Bottom View

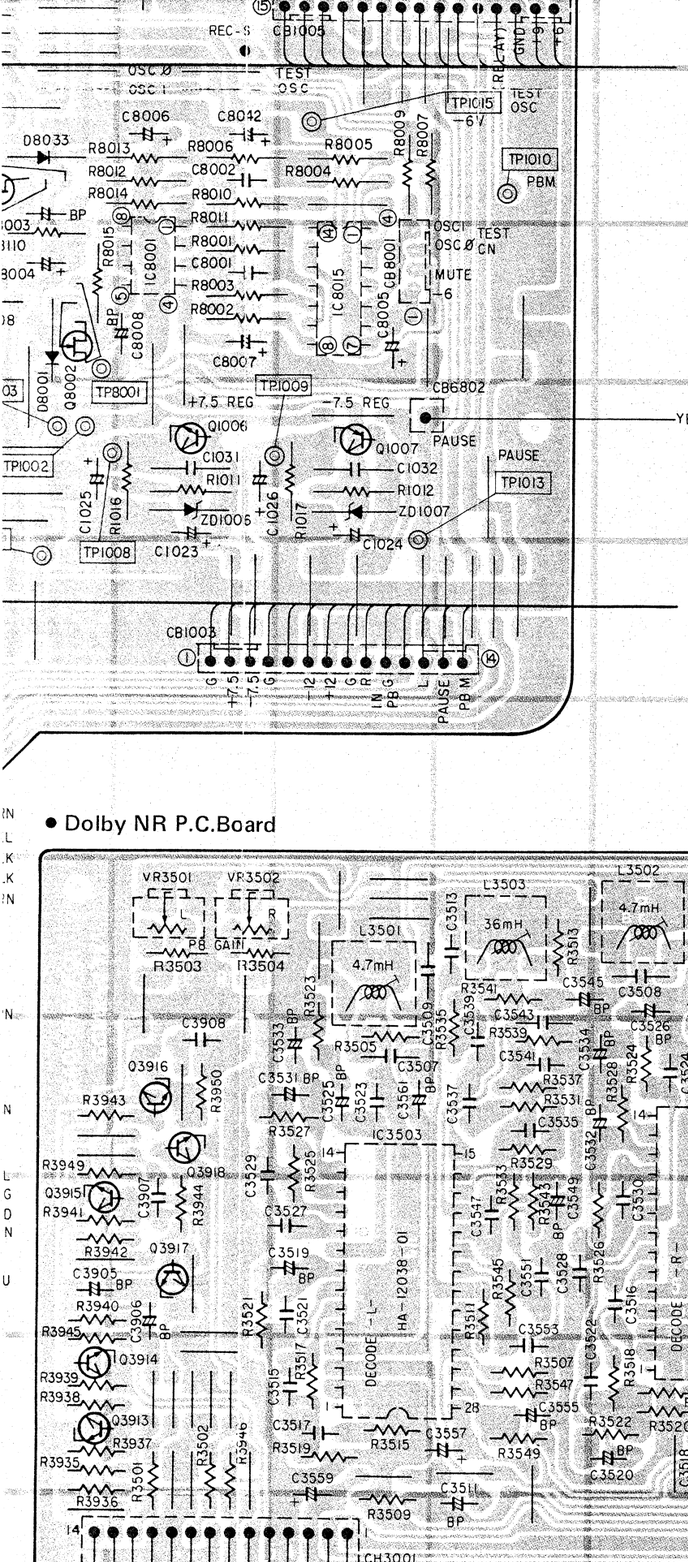
● Lamp P.C.Board

Bottom View

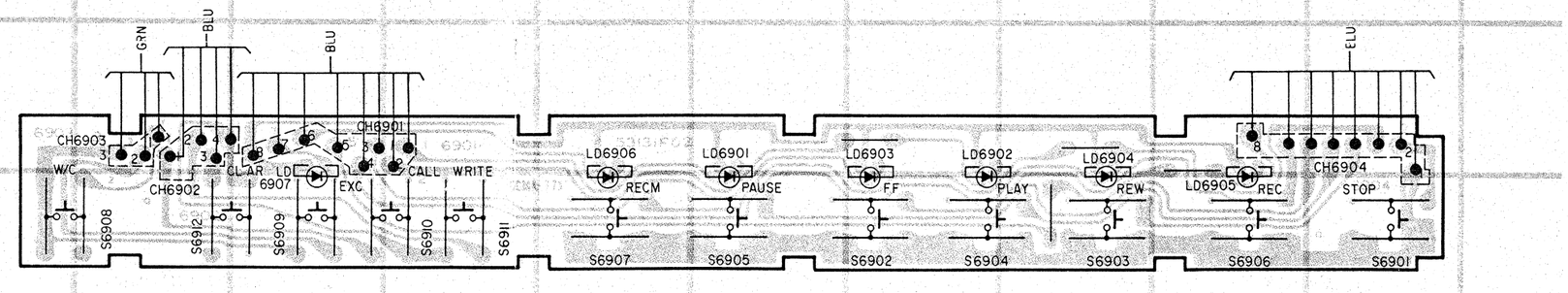
● Dolby NR P.C.Board



Bottom View

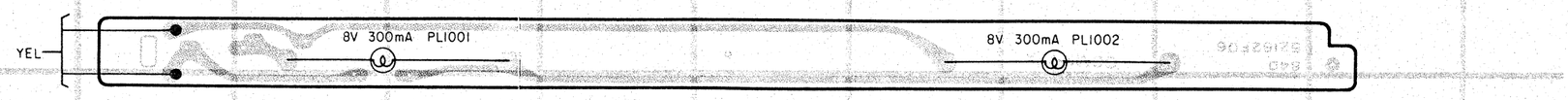


● Keyboard P.C.Board



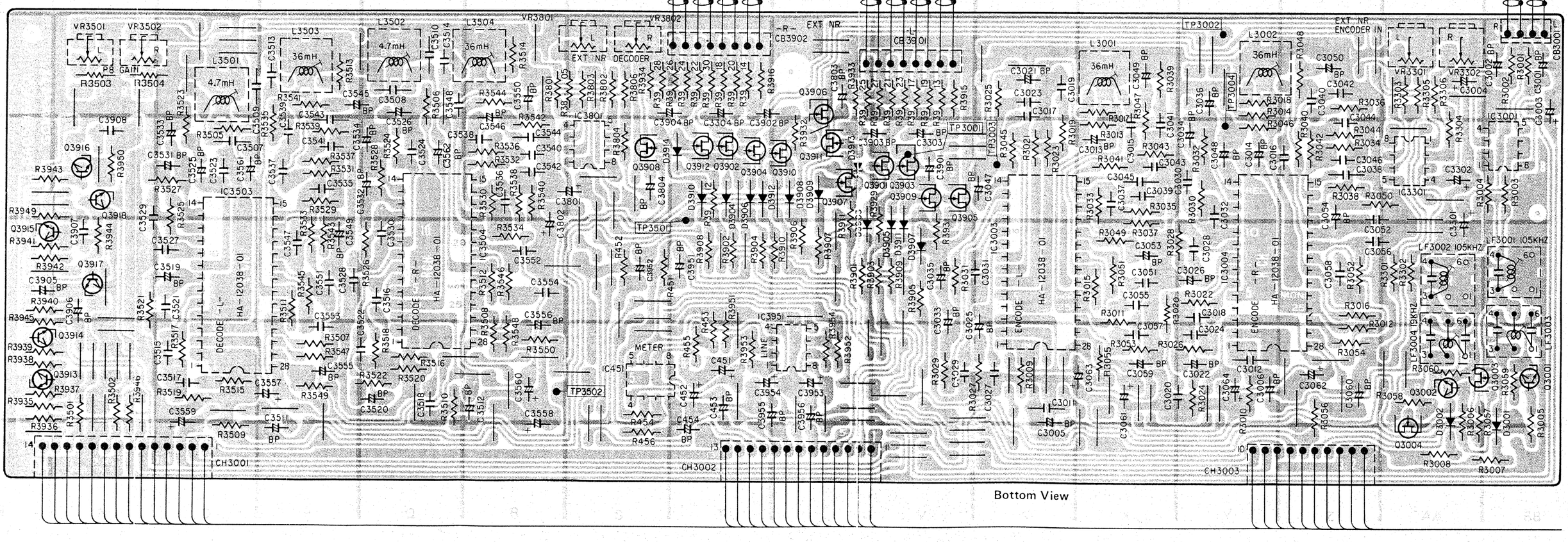
Bottom View

● Lamp P.C.Board



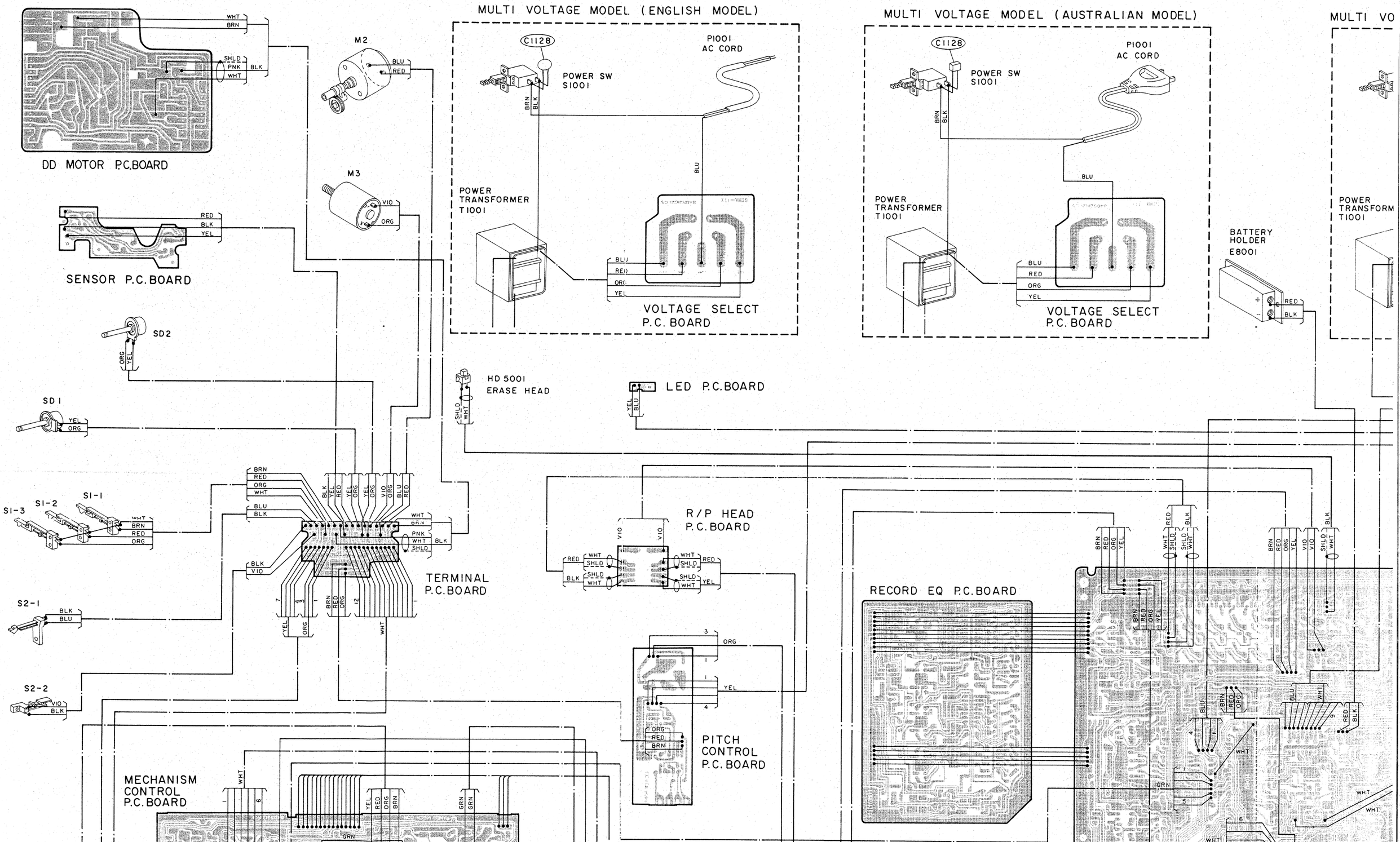
Bottom View

● Dolby NR P.C.Board



Bottom View

Wiring Diagram



TERMINAL P.C.BOARD

S2-1

S2-2

PITCH CONTROL P.C.BOARD

RECORD EQ P.C.BOARD

MECHANISM CONTROL P.C.BOARD

REMOTE JACK P.C.BOARD

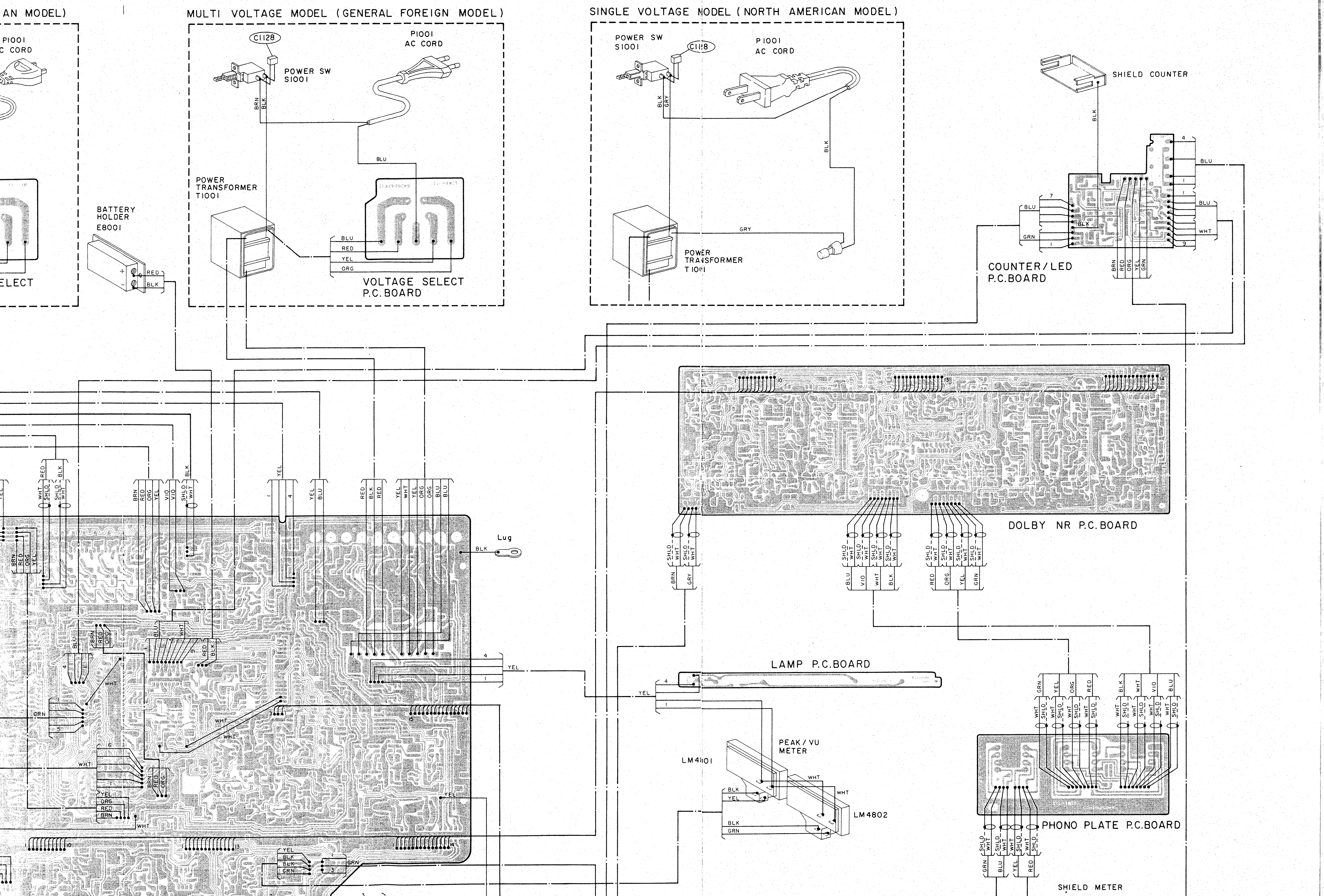
S6701 60Hz◄►50Hz

MOTHER P.C.BOARD

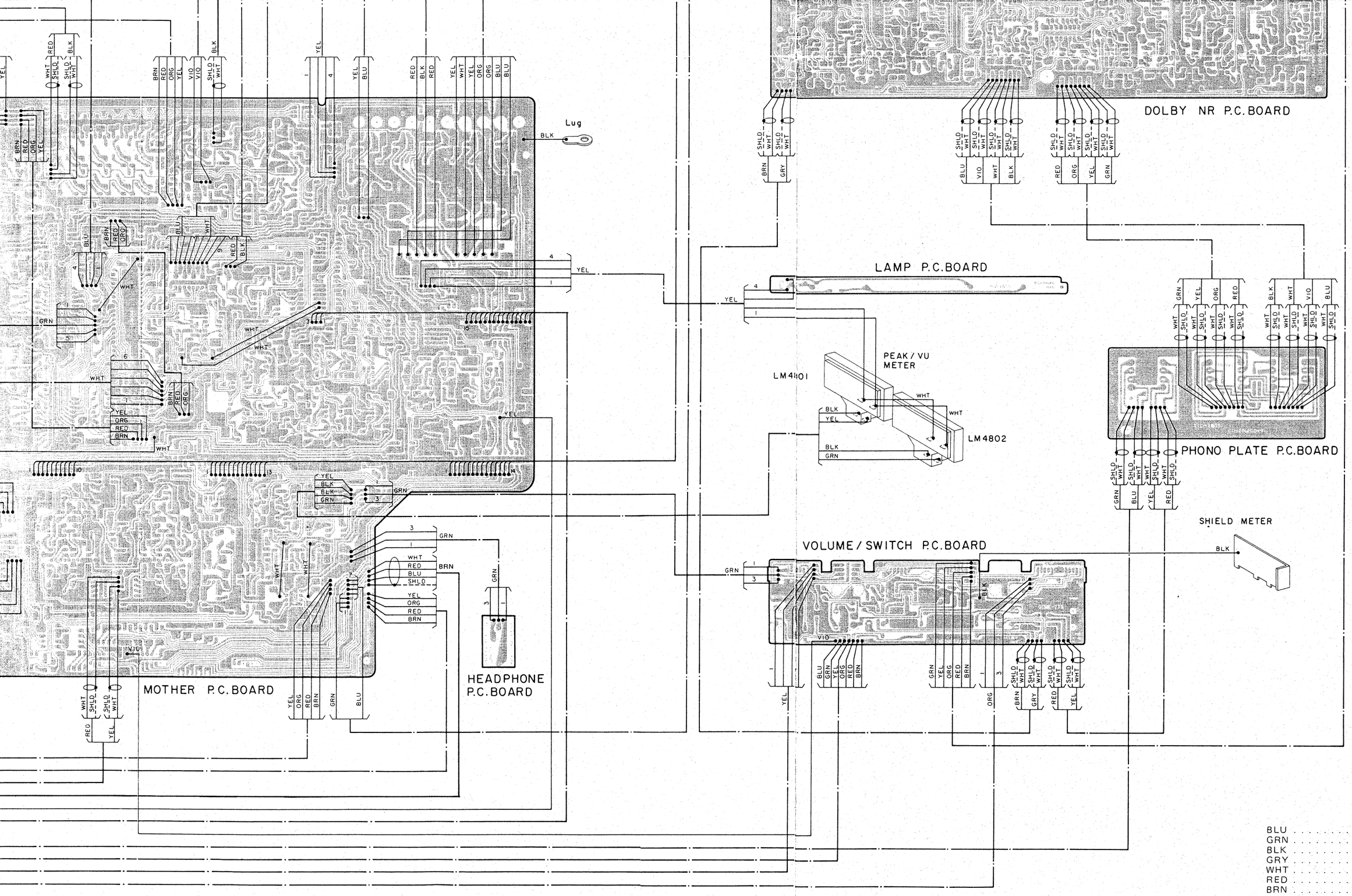
PULSE OSC P.C.BOARD

KEY BOARD P.C.BOARD

FL COUNTER P.C.BOARD



AN MODEL)
P1001
C CORD
ELECT
MULTI VOLTAGE MODEL (GENERAL FOREIGN MODEL)
C1128
P1001
AC CORD
POWER SW
S1001
POWER
TRANSFORMER
T1001
VOLTAGE SELECT
P.C. BOARD
BATTERY
HOLDER
E8001
SINGLE VOLTAGE MODEL (NORTH AMERICAN MODEL)
POWER SW
S1001
P1001
AC CORD
POWER
TRASFORMER
T1001
SHIELD COUNTER
COUNTER/LED
P.C.BOARD
DOLBY NR P.C.BOARD
Lug
LAMP P.C.BOARD
PEAK/VU
METER
LM4401
LM4802
PHONO PLATE P.C.BOARD
SHIELD METER



BLU . . . . . .Blue
GRN . . . . . .Green
BLK . . . . . .Black
GRY . . . . . .Gray
WHT . . . . . .White
RED . . . . . .Red
BRN . . . . . .Brown
ORG . . . . . .Orange
YEL . . . . . .Yellow
VIO. . . . . .Violet
GRN//WHT . . . .Green/White
GRY/WHT. . . . .Gray/White
GRY/YEL . . . . .Gray/Yellow
GRN/YEL . . . . .Green/Yellow

Voltage Chart

Mechanism Control P.C. Board

Transistors

Symbol No.	Mode	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
Q6001	Emitter	24.71											
	Collector	0.08											
	Base	24.46											
Q6002	Emitter	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73	24.73
	Collector	14.44	14.44	14.44	14.44	14.44	14.44	14.44	14.44	14.44	14.44	14.44	14.44
	Base	24.45	24.45	24.45	24.45	24.45	24.45	24.45	24.45	24.45	24.45	24.45	24.45
Q6003	Emitter	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71
	Collector	14.4	14.4	24.72	14.4	14.4	14.4	14.4	24.7	14.4	14.4	14.4	24.7
	Base	24.46	24.46	24.09	24.46	24.46	24.46	24.46	24.06	24.44	24.44	24.44	24.05
Q6004	Emitter	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83	14.83
	Collector	14.27	14.27	14.27	14.27	14.27	14.27	14.27	14.27	14.27	14.27	14.27	14.27
	Base	14.68	14.68	14.68	14.68	14.68	14.68	14.68	14.68	14.68	14.68	14.68	14.68
Q6005	Emitter	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71
	Collector	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58	38.58
	Base	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19	25.19
Q6006	Emitter	8.86	8.86	4.75	5.02	8.6	8.6	8.86	4.75	5.02	8.6	8.6	4.75
	Collector	9.42	9.35	9.08	9.35	9.22	9.17	9.26	9.03	9.25	9.17	9.13	8.98
	Base	9.3	9.3	5.39	5.39	9.28	9.28	9.3	5.39	5.39	9.28	9.28	5.39
Q6007	Emitter	8.86	8.86	4.75	5.02	8.6	8.6	8.86	4.75	5.02	8.6	8.6	4.75
	Collector	8.77	8.77	3.96	4.97	7.82	0.78	8.77	3.96	4.97	7.82	0.78	3.96
	Base	8.8	8.8	3.3	4.99	7.14	7.96	8.81	3.3	4.99	7.13	7.95	3.31
Q6008	Emitter	8.86	8.86	4.75	5.02	8.6	8.6	8.86	4.75	5.02	8.6	8.6	4.75
	Collector	8.79	8.79	0.77	4.98	0.78	7.82	8.79	0.77	4.98	0.78	7.81	0.77
	Base	8.8	8.8	4.12	4.99	7.99	7.13	8.81	4.12	4.99	7.98	7.12	4.12
Q6009	Emitter	GND											
	Collector	8.77	8.77	3.96	4.97	7.82	0.78	8.77	3.96	4.97	7.82	0.78	3.96
	Base	0.01	0.01	0.01	0.01	0.01	1.52	0.01	0.01	0.01	0.02	1.52	0.01
Q6010	Emitter	GND											
	Collector	8.79	8.79	0.77	4.98	0.78	7.82	8.79	0.77	4.98	0.78	7.81	0.77
	Base	0.01	0.01	1.5	0.01	1.5	0.01	0.01	1.5	0.01	1.5	0.02	1.5
Q6011	Emitter	GND											
	Collector	6.02	6.02	0.07	0.07	6.02	6.02	6.02	0.08	0.07	6.02	6.02	0.07
	Base	0.01	0.01	0.74	0.74	0.02	0.02	0.01	0.74	0.74	0.02	0.02	0.74
Q6012	Emitter	GND											
	Collector	0.01	0.01	0.74	0.74	0.02	0.02	0.01	0.74	0.74	0.02	0.02	0.74
	Base	0	0.01	0.01	0.01	0.71	0.71	0.01	0.01	0.01	0.71	0.71	0.01
Q6013	Emitter	9.35											
	Collector	9.31											
	Base	9.3											
Q6014	Emitter	9.35											
	Collector	9.31											
	Base	9.32											
Q6015	Emitter	0											
	Collector	9.31											
	Base	0.01											
Q6016	Emitter	0											
	Collector	9.31											
	Base	0.01											
Q6017	Emitter	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35	9.35
	Collector	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16
	Base	9.76	9.76	9.76	9.76	9.76	9.76	9.76	9.76	9.76	9.76	9.76	9.76
Q6018	Emitter	0											
	Collector	12.23											
	Base	0.01											
Q6019	Emitter	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1
	Collector	25.08	25.08	25.08	25.08	25.08	25.08	25.08	−6.21	25.08	25.08	25.08	25.08
	Base	24.43	24.43	24.43	24.43	24.43	24.43	24.43	24.79	24.4	24.4	24.4	24.4

Symbol No.	Mode	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
Q6020	Emitter	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1
	Collector	25.18	25.18	−6.22	25.18	25.18	25.18	25.18	−6.22	25.18	−6.22	−6.22	25.18
	Base	24.54	24.54	24.93	24.54	24.54	24.54	24.48	24.48	24.47	24.93	24.93	24.47
Q6021	Emitter	25.1											
	Collector	−8.2											
	Base	24.92											
Q6022	Emitter	GND											
	Collector	—											
	Base	0	0	0	0	0	0	0	0	0	0	0	0
Q6023	Emitter	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
	Collector	18.37	18.37	18.37	18.37	18.37	18.37	18.37	18.37	18.37	18.37	18.37	18.37
	Base	10.94	10.94	10.94	10.94	10.94	10.94	10.94	10.94	10.94	10.94	10.94	10.94

IC's

Symbol No.	IC6001											
Mode / Pin No.	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	REC/ Play	REC/ Play → Pause	Cue	Review	Auto Space
1	*1											
2	0.01	0.01	10.2	0.1	10.04	0.01	0.01	10.02	0.01	10.03	0.02	10.02
3	0.01	0.01	0.02	0.01	0.02	10.04	0.01	0.02	0.02	0.02	10.03	0.02
4	0.01	0.01	10.25	10.25	0.02	0.02	0.01	10.25	10.25	10.25	10.25	10.25
5	*2											
6	10.29	10.29	0.02	10.29	10.29	10.29	10.29	0.02	10.28	0.02	0.02	10.28
7	10.28	10.28	10.28	10.28	10.28	10.28	10.28	0.02	10.28	10.28	10.28	10.28
8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	F
9	—											
10	0											
11	0.01											
12	0.01	0.01	0.01	0.01	0.01	0.01	10.2	10.2	10.2	0.01	0.01	10.2
13	10.4	10.4	E 10Vp-p	10.4	E 10Vp-p	E 10Vp-p	10.4	E 10Vp-p	10.4	E 10Vp-p	E 10Vp-p	E 10Vp-p
14	GND											
15	0	0	0	0	0	0	0	0	0	0	0	0
16	GND											
17	GND											
18	G 2Vp-p	G 2Vp-p	G 2Vp-p	G 2Vp-p	G 2Vp-p	G 2Vp-p	G 2Vp-p	G 2Vp-p	G 2Vp-p	G 2Vp-p	G 2Vp-p	G 2Vp-p
19	G 8Vp-p	G 8Vp-p	G 8Vp-p	G 8Vp-p	G 8Vp-p	G 8Vp-p	G 8Vp-p	G 8Vp-p	G 8Vp-p	G 8Vp-p	G 8Vp-p	G 8Vp-p
20	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
21	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
22	0.22	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88
23	9.88	9.88	9.88	9.88	0.22	9.88	9.88	9.88	9.88	0.22	9.88	9.88
24	9.88	9.88	9.88	9.88	9.88	0.22	9.88	9.88	9.88	9.88	0.22	9.88
25	9.88	9.88	0.22	9.88	9.88	9.88	9.88	0.22	9.88	0.22	0.22	9.88
26	9.88	0.22	9.88	0.22	9.88	9.88	0.22	9.88	0.22	9.88	9.88	9.88
27	9.88	9.88	9.88	9.88	9.88	9.88	0.22	0.22	9.88	9.88	9.88	9.88
28	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	0.22
29	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89
30	0											
31	0											
32	—											
33	—											
34	—											
35	—											
36	0	9.94	0.01	9.93	0.01	0.01	9.92	0.01	9.92	9.92	9.92	0.01
37	0.01	0.01	9.07	0.01	0.01	0.01	0.01	9.07	0.01	0.01	0.01	9.07
38	0.01	0.01	0.01	0.01	9.91	0.01	0.01	0.01	0.01	9.91	0.01	0.01
39	0.01	0.01	0.01	0.01	0.01	9.72	0.01	0.01	0.01	9.72	0.01	0.01
40	—											
41	—											
42	*1											

Symbol No.	IC6002											
Mode / Pin No.	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
1	–											
2	–											
3	–											
4	–											
5	–											
6	–											
7	–											
8	GND											
9	–											
10	–											
11	GND											
12	GND											
13	–											
14	–											
15	–											
16	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4

Symbol No.	IC6003											
Mode / Pin No.	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
1	AC 1.55	AC 1.55	AC 1.55	AC 1.55	AC 1.55	AC 1.55	AC 1.55	AC 1.55	AC 1.55	AC 1.55	AC 1.55	AC 1.55
2	1.95	1.95	E 1.8Vp-p	1.95	E 1.8Vp-p	E 1.8Vp-p	1.95	E 1.8Vp-p	1.95	E 1.8Vp-p	E 1.8Vp-p	E 1.8Vp-p
3	0.01	0.01	9.07	0.01	0.01	0.01	0.01	9.07	0.01	0.01	0.01	9.07
4	0.01	0.01	0.01	0.01	0.01	9.72	0.01	0.01	0.01	9.72	0.01	0.01
5	–											
6	0.01											
7	0	0	0	0	0	0	0	0	0	0	0	0
8	GND											
9	–											
10	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25
11	23.25											
12	–											
13	22.35	22.35	22.35	22.35	22.35	0.01	22.34	22.34	22.34	22.35	0.02	22.34
14	23.22	23.22	0.02	23.22	23.22	23.22	23.22	0.02	23.18	23.18	23.18	0.02
15	0.05	0.05	E 21Vp-p	0.05	E 21Vp-p	E 21Vp-p	0.05	E 21Vp-p	0.05	E 21Vp-p	E 21Vp-p	E 21Vp-p
16	H	H	H	H	H	H	H	H	H	H	H	H

Symbol No.	IC6004											
Mode / Pin No.	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
1	0											
2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	K
3	0.01	0.01	0.01	0.01	0.01	0.01	10.23	10.23	10.23	0.01	0.01	10.23
4	0.01	0.01	0.01	0.01	0.01	9.72	0.01	0.01	0.01	9.72	0.01	0.01
5	0.01	0.01	0.01	0.01	9.91	0.01	0.01	0.01	0.01	9.91	0.01	0.01
6	0.01	0.01	9.07	0.01	0.01	0.01	0.01	9.07	0.01	0.01	0.01	9.07
7	0	9.94	0.01	9.93	0.01	0.01	9.92	0.01	9.92	9.92	9.92	0.01
8	GND											
9	–											
10	4.93	0.11	4.91	0.11	4.92	4.92	0.11	4.92	0.11	0.11	0.11	4.92
11	4.81	4.81	0.14	4.81	4.81	4.81	4.81	0.14	4.81	4.81	4.81	0.14
12	4.78	4.78	4.78	4.78	0.13	4.78	4.78	4.78	4.78	0.13	4.78	4.78
13	4.79	4.79	4.79	4.79	4.79	0.13	4.79	4.79	4.79	4.79	0.13	4.79
14	5.01	5.01	5.01	5.01	5.01	5.01	0.11	0.11	0.11	5.01	5.01	0.11
15	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	F 5Vp-p

FET's

Symbol No.	Q2001		Q2002	
Pin No. \ Mode	P	R	P	R
1	6.2	6.2	6.23	6.23
2	0.02	0.02	0	0
3	0.5	0.5	0.43	0.43
4	—	—	—	—
5	0.5	0.5	0.43	0.43
6	0	0	−0.02	−0.02
7	6.2	6.2	6.23	6.23

FET's

Symbol No.	Mode	Source	Drain	Gate
Q2013	P	0.02	−10.46	0.02
	R	0.02	−10.46	0.02
Q2014	P	−0.02	−10.47	−0.02
	R	−0.02	−10.47	−0.02
Q5016	P	−4.06	−4.38	−4.02
	R	5.72	0	5.73
Q5017	P	−4.06	−3.92	−4.02
	R	5.72	0.05	5.73
Q8001	P	0	−2.19	C
	R	0	−2.19	C
Q8002	P	0	0.04	0
	R	0	0.04	0
Q8004	P	2.05	−5.85	0
	R	2.05	−5.85	0

Volume/Switch P.C. Board

IC

Symbol No.	IC2801	
Pin No. \ Mode	P	R
1	0	0
2	0	0
3	0	0
4	−12.91	−12.91
5	0	0
6	0	0
7	0	0
8	12.88	12.88

Dolby NR P.C. Board

IC's

Symbol No.	IC451	
Pin No. \ Mode	P	R
1	0	0
2	0	0
3	0	0
4	−13.09	−13.09
5	0	0
6	0	0
7	0	0
8	13.04	13.04

Symbol No.	IC3003		IC3004		IC3503		IC3504	
Pin No. \ Mode	P	R	P	R	P	R	P	R
1	0	0	0	0	—	—	—	—
2	0	0	0	0	0	0	0	0
3	−7.8	−7.8	−7.78	−7.78	−7.81	−7.81	−7.81	−7.81
4	—	—	—	—	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
7	−0.02	−0.02	0.01	0.01	0.23	0.23	0.13	0.13
8	−0.01	−0.01	0.01	0.01	0	0	0	0
9	0.06	0.06	0.04	0.04	0.04	0.04	0.06	0.06
10	−7.79	−7.79	−7.77	−7.77	−7.8	−7.8	−7.8	−7.8
11	−6.62	−6.62	−6.62	−6.62	−6.67	−6.67	−6.64	−6.64
12	−6.62	−6.62	−6.22	−6.22	−6.26	−6.26	−6.24	−6.24
13	−7.79	−7.79	−7.77	−7.77	−7.8	−7.8	−7.8	−7.8
14	−0.87	−0.87	−0.86	−0.86	—	—	—	—
15	0.4	0.4	0.38	0.38	0.49	0.49	0.52	0.52
16	0.16	0.16	0.16	0.16	−0.07	−0.07	−0.07	−0.07
17	0.18	0.18	0.17	0.17	−0.08	−0.08	−0.07	−0.07
18	−0.01	−0.01	−0.01	−0.01	0	0	0	0
19	0.07	0.07	0.04	0.04	0.06	0.06	0.05	0.05
20	−6.59	−6.59	−6.59	−6.59	−6.63	−6.63	−6.6	−6.6
21	−6.06	−6.06	−6.07	−6.07	−6.1	−6.1	−6.08	−6.08
22	0.03	0.03	0.03	0.03	0.26	0.26	0.17	0.17
23	0.03	0.03	0.03	0.03	0.26	0.26	0.17	0.17
24	0.07	0.07	0.07	0.07	0.31	0.31	0.22	0.22
25	0.07	0.07	0.07	0.07	0.31	0.31	0.22	0.22
26	−0.01	−0.01	0	0	−7.73	−7.73	−7.73	−7.73
27	−1.66	−1.66	−1.62	−1.62	−1.61	−1.61	−1.66	−1.66
28	7.74	7.74	7.74	7.74	7.76	7.76	7.76	7.76

Transistors

Symbol No.	Mode	Emitter	Collector	Base
Q1001	P	25.04	38.9	25.62
	R	25	38.25	25.57
Q1002	P	13.01	18.9	14.14
	R	13.01	18.81	14.14
Q1003	P	−13.13	−18.8	−14.27
	R	−13.13	18.7	−14.27
Q1004	P	12.3	18.86	12.87
	R	12.3	18.74	12.87
Q1005	P	6.47	9.25	7.72
	R	6.47	9.17	7.72
Q1006	P	7.75	13.01	8.35
	R	7.75	13.01	8.35
Q1007	P	−7.8	−13.13	−8.39
	R	−7.8	−13.13	−8.39
Q1008	P	6.04	13.01	6.64
	R	6.04	13.01	6.64
Q1009	P	−5.97	−13.13	−6.57
	R	−5.97	−13.13	−6.57
Q2003	P	6.78	0.72	6.21
	R	6.78	0.72	6.21
Q2004	P	6.8	0.55	6.25
	R	6.8	0.55	6.25
Q2005	P	6.78	0.64	6.22
	R	6.78	0.64	6.22
Q2006	P	6.8	0.6	6.25
	R	6.8	0.6	6.25
Q2007	P	−0.61	0.64	−0.04
	R	−0.61	0.64	−0.04
Q2008	P	−0.65	0.6	−0.07
	R	−0.65	0.6	−0.07
Q2009	P	0.03	9.98	0.64
	R	0.03	9.98	0.64
Q2010	P	−0.01	9.98	0.6
	R	−0.01	9.98	0.6
Q2011	P	0.01	−10.07	−0.61
	R	0.01	−10.07	−0.61
Q2012	P	−0.02	−10.07	−0.65
	R	−0.02	−10.07	−0.65
Q2017	P	9.98	12.93	10.66
	R	9.98	12.93	10.66
Q2018	P	−10.07	−13.04	−10.76
	R	−10.07	−13.04	−10.76
Q4001	P	0	0	−8.25
	R	0	0	−8.25
Q4002	P	0	0	−8.25
	R	0	0	−8.25
Q4101	P	−0.02	12.93	0.63
	R	−0.02	12.93	0.63
Q4102	P	0.03	12.92	0.64
	R	0.03	12.92	0.64
Q4103	P	−0.02	−13.03	−0.62
	R	−0.02	−13.03	−0.62
Q4104	P	−0.02	−13.03	−0.62
	R	−0.02	−13.03	−0.62
Q4801	P	−8.47	−8.73	−8.27
	R	−8.47	−8.73	−8.27
Q4802	P	−8.48	−8.73	−8.26
	R	−8.48	−8.73	−8.26
Q5002	P	12.3	24.88	12.86
	R	12.3	24.82	12.86
Q5003	P	0	0	0.72
	R	0	0	−11.78

Symbol No.	Mode	Emitter	Collector	Base
Q5004	P	0	0	0.72
	R	0	0	−11.79
Q5005	P	0	0.01	0.67
	R	0	0.01	0.67
Q5006	P	0	0.01	0.68
	R	0	0.01	0.68
Q5007	P	0	0	−11.77
	R	0	AC 1.4	−11.77
Q5008	P	0	0	−11.78
	R	0	AC 1.33	−11.78
Q5009	P	0	0	−11.73
	R	0	AC 1.38	−11.73
Q5010	P	0	0	−11.72
	R	0	AC 1.38	−11.72
Q5011	P	0	0	0.72
	R	0	0	0.72
Q5012	P	0	−3.49	−11.77
	R	0	3.11	−11.77
Q5013	P	0	−3.5	−10.31
	R	0	3.11	−10.31
Q5014	P	0	−4.61	−4.16
	R	0	0	0.73
Q5018	P	−4.69	−4.68	−4.11
	R	5.27	24.86	5.86
Q5019	P	−4.67	−4.66	−4.65
	R	24.87	18.17	24.79
Q5020	P	0	−4.63	−8.86
	R	0	24.78	−8.86
Q5021	P	24.94	−4.67	24.83
	R	24.91	24.87	24.24
Q5022	P	0	24.81	0.01
	R	0	0.01	0.69
Q5023	P	0	−4.66	−4.64
	R	0.09	5.12	0.17
Q5024	P	0	−4.65	−4.64
	R	0.07	5.13	0
Q5025	P	0	−4.67	−4.67
	R	0.2	9.37	0.44
Q5026	P	0	−4.67	−4.65
	R	0.18	9.38	0.26
Q5027	P	0	0	0.69
	R	0	0	−11.75
Q5028	P	0	0	0.69
	R	0	0	−11.75
Q5029	P	0	0	−10.29
	R	0	AC 1.44	−10.29
Q5030	P	0	0	−10.29
	R	0	AC 1.08	−10.29
Q8003	P	5.01	11.56	5.57
	R	5.01	11.56	5.57
Q8005	P	0	5.03	0
	R	0	5.03	0
Q8007	P	0	0	0.65
	R	0	0	0.65
Q8008	P	4.97	11.56	5.57
	R	4.97	11.56	5.57

Symbol No.	IC8008		IC8009	
Pin No. \ Mode	P	R	P	R
1	−5.85	−5.85	0.05	0.05
2	4.97	4.97	4.97	4.97
3	6.04	6.04	4.97	4.97
4	0.13	0.13	4.97	4.97
5	12.44	12.44	4.97	4.97
6	4.97	4.97	0.05	0.05
7	2.01	2.01	0.05	0.05
8	2.01	2.01	4.97	4.97
9	0	0	4.97	4.97
10	4.96	4.96	0	0
11	2.01	2.01	4.9	4.9
12	−5.97	−5.97	0	0
13	−5.77	−5.77	4.97	4.97
14	−5.75	−5.75	4.97	4.97

Symbol No.	IC4801	
Pin No. \ Mode	P	R
1	0	0
2	−8.48	−8.48
3	−4.17	−4.17
4	0.01	0.01
5	−8.71	8.71
6	0.01	0.01
7	−4.09	−4.09
8	−8.45	−8.45
9	8.74	8.74

Symbol No.	IC8013	
Pin No. \ Mode	P	R
1	4.97	4.97
2	4.97	0.03
3	0.11	5.43
4	0.29	0.29
5	5.01	5.01
6	4.97	4.97
7	−0.51	−0.51
8	0	0
9	−0.52	−0.52
10	4.97	4.97
11	−0.52	−0.52
12	4.97	4.97
13	—	—
14	8.67	8.67
15	0	0
16	—	—

Symbol No.	IC8010		IC8012	
Pin No. \ Mode	P	R	P	R
1	4.97	4.97	0	0
2	4.97	4.97	4.8	4.8
3	0	0	0	0
4	4.97	4.97	0	0
5	0.05	0.05	0	0
6	4.97	4.97	0	0
7	0.05	0.05	4.89	4.89
8	0	0	0	0
9	4.91	4.91	—	—
10	0	0	0.14	0.14
11	0	0	5.15	5.15
12	4.76	4.76	5.02	5.02
13	—	—	4.93	4.93
14	4.91	4.91	4.95	4.95
15	0	0	0.16	0.16
16	4.97	4.97	5.03	5.03

Symbol No.	IC8014	
Pin No. \ Mode	P	R
1	0.02	0.02
2	4.92	4.92
3	4.92	4.92
4	4.91	4.91
5	4.91	4.91
6	4.91	4.91
7	0.05	0.05
8	4.88	4.88
9	0	0
10	0	0
11	0	0
12	0	0
13	4.8	4.8
14	—	—
15	0	0
16	0	0
17	2.37	2.37
18	A	A
19	4.94	4.94
20	5.01	5.01
21	5.01	5.01
22	0	0
23	4.97	4.97
24	4.97	4.97
25	4.97	4.97
26	4.93	4.93
27	4.93	4.93
28	4.93	4.93
29	4.93	0.61
30	D	D
31	0	0
32	0.01	0.01
33	0.01	0.01
34	0.01	0.01
35	5.01	5.01
36	0.04	0.04
37	0.04	0.04
38	0.05	0.05
39	0.05	0.05
40	4.6	4.6
41	4.9	4.9
42	0.03	0.03

Symbol No.	IC8011		IC8015	
Pin No. \ Mode	P	R	P	R
1	0.05	0.05	B 6.4Vp-p	B 6.4Vp-p
2	4.97	4.97	B 6.6Vp-p	B 6.6Vp-p
3	0	0	B 6.6Vp-p	B 6.6Vp-p
4	0	0	B 6.4Vp-p	B 6.4Vp-p
5	0.05	0.05	6.03	6.03
6	4.97	4.97	6.03	6.03
7	0	0	−5.97	−5.97
8	0.05	0.05	0	0
9	0.05	0.05	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	6.03	6.03
13	4.97	4.97	6.03	6.03
14	4.97	4.97	6.04	6.04

Mother P.C. Board

IC's

Symbol No.	IC2001		IC2501	
Pin No. \ Mode	P	R	P	R
1	0.05	0.05	0.01	0.01
2	0	0	0	0
3	0	0	0	0
4	−13.04	−13.04	−13.04	−13.04
5	0	0	0	0
6	0	0	0	0
7	0.05	0.05	0.03	0.03
8	12.93	12.93	12.93	12.93

Symbol No.	IC4101		IC5003	
Pin No. \ Mode	P	R	P	R
1	0	0	0.03	0.03
2	0	0	0.01	0
3	0	0	0	0
4	−13.04	−13.04	−13.06	−13.06
5	0	0	0	0
6	0	0	0.01	0.01
7	0	0	0.04	0.04
8	12.93	12.93	12.95	12.95

Symbol No.	IC5004		IC8001	
Pin No. \ Mode	P	R	P	R
1	−4.12	23.44	B 6.6Vp-p	B 6.6Vp-p
2	−0.42	2.25	B 2.2Vp-p	B 2.2Vp-p
3	4.71	4.81	B 2.2Vp-p	B 2.2Vp-p
4	−6.95	−6.85	−13.06	−13.06
5	3.07	3.07	0	0
6	−3.48	3.1	0	0
7	−4	6.9	0	0
8	−4.65	24.85	12.95	12.95

Symbol No.	IC8005		IC8007	
Pin No. \ Mode	P	R	P	R
1	5.99	5.99	3.06	3.06
2	−5.72	−5.72	0	0
3	6	6	0	0
4	6	6	−0.01	−0.01
5	1.99	1.99	−5.76	−5.76
6	0.04	0.04	−5.76	−5.76
7	1.99	1.99	−5.97	−5.97
8	1.99	1.99	0	0
9	4.95	4.95	0	0
10	6	6	0	0
11	1.99	1.99	0	0
12	−5.93	−5.93	−5.76	−5.76
13	−5.72	−5.72	−5.76	−5.76
14	6	6	6.03	6.03

Symbol No.	IC5001		IC5002	
Pin No. \ Mode	P	R	P	R
1	—	—	—	—
2	—	—	—	—
3	—	—	—	—
4	—	—	—	—
5	−0.2	−0.2	−0.2	−0.2
6	4.93	0.61	4.39	0.61
7	4.93	4.93	4.93	4.93
8	4.93	4.93	4.93	4.93
9	4.93	4.93	4.93	4.93
10	0.04	0.04	0.04	0.04
11	0.04	0.04	0.04	0.04
12	0.09	0.09	0.08	0.08
13	0	0	0	0
14	3.08	3.08	3.1	3.1
15	4.74	4.74	4.95	4.95
16	4.04	4.04	4.14	4.14
17	4.04	4.04	4.14	4.14
18	4.63	4.63	4.73	4.73
19	4.71	4.71	4.81	4.81
20	4.36	4.36	4.26	4.26
21	4.36	4.36	4.26	4.26
22	4.02	4.02	4.01	4.01
23	4.02	4.02	4.01	4.01
24	3.62	3.62	3.57	3.57
25	12.32	12.32	12.32	12.32
26	3.61	3.61	3.59	3.59
27	4.12	4.21	4.12	4.21
28	6.54	6.54	6.53	6.53

Symbol No.	IC8002		IC8004	
Pin No. \ Mode	P	R	P	R
1	6.0	6.0	0	0
2	6.0	6.0	0	0
3	6.0	6.0	0	0
4	0.05	0.05	0	0
5	0	0	−5.72	−5.72
6	0	0	−5.72	−5.72
7	0	0	−5.93	−5.93
8	1.99	1.99	0	0
9	2.6	2.6	0	0
10	0.99	0.99	0	0
11	2.6	2.6	0	0
12	−5.94	−5.94	6	6
13	5.75	5.35	6	6
14	5.75	5.35	6	6

Symbol No.	IC8003		IC8006	
Pin No. \ Mode	P	R	P	R
1	12.45	12.45	−0.01	−0.01
2	0	0	0	0
3	0	0	0	0
4	−13.06	−13.06	−13.05	−13.05
5	0	0	0	0
6	0	0	0	0
7	0	0	—	—
8	12.95	12.95	12.95	12.95

Symbol No.	IC6005											
Mode / Pin No.	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
1	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
2	10.4	10.4	E 10Vp-p	10.4	E 10Vp-p	E 10Vp-p	10.4	E 10Vp-p	10.4	E 10Vp-p	E 10Vp-p	E 10Vp-p
3	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
4	8 or 0	8 or 0	E 8Vp-p	8 or 0	E 8Vp-p	E 8Vp-p	8 or 0	E 8Vp-p	8 or 0	E 8Vp-p	E 8Vp-p	E 8Vp-p
5	4 or 2	4 or 2	J	4 or 2	J	J	4 or 2	J	4 or 2	J	J	J
6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
7	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76
8	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76
9	0.01	0.01	9.07	0.01	0.01	0.01	0.01	9.07	0.01	0.01	0.01	9.07
10	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76	2.76
11	0.01	0.01	0.01	0.01	0.01	0.01	10.23	10.23	10.23	0.01	0.01	10.23
12	GND											
13	0.07	0.07	0.11	0.07	0.07	0.07	0.12	6.99	0.12	0.07	0.07	6.99
14	0.07	0.07	0.11	0.07	0.07	0.07	0.12	6.99	0.12	0.07	0.07	6.99

Symbol No.	IC6006											
Mode / Pin No.	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
1	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
2	0	0	0	0	0	0	0	0	0	0	0	0
3	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37
4	0	0	0	0	0	0	0	0	0	0	0	0
5	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37
6	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37
7	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
8	GND											
9	9.36	9.36	9.36	9.36	9.36	9.36	9.36	9.36	9.36	9.36	9.36	9.36
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37
13	–											
14	0	0	0	0	0	0	0	0	0	0	0	0
15	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37	10.37
16	–											

Symbol No.	IC6007											
Mode / Pin No.	Stop	Pause	Play	Play → Puase	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
1	9.68	9.68	9.68	9.68	9.68	9.68	9.68	0.02	9.68	9.68	9.68	9.68
2	9.68	9.68	0	9.68	9.68	9.68	9.68	0	9.68	0	0	9.68
3	0											
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
6	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
7	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
8	GND											
9	–											
10	0.22	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88
11	9.88	9.88	9.88	9.88	9.88	0.22	9.88	9.88	9.88	9.88	0.22	9.88
12	9.87	9.87	9.87	9.87	9.87	9.87	9.87	9.87	9.87	9.77	9.77	9.87
13	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89
14	24.75											
15	0.04	0.04	24.76	0.04	0.04	0.04	0.04	24.71	0 04	24.76	24.76	0.04
16	0.04	0.04	0.04	0.04	0.04	0.04	0.04	24.7	0.04	0.04	0.04	0.04

Symbol No.	IC3001		IC3301	
Pin No. \ Mode	P	R	P	R
1	0	0	0.02	0.02
2	0	0	0	0
3	0	0	0	0
4	−13.08	−13.08	13.09	−13.09
5	0	0	0	0
6	0	0	0.02	0.02
7	0	0	0	0
8	13.04	13.04	13.04	13.04

Symbol No.	IC3801		IC3951	
Pin No. \ Mode	P	R	P	R
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	−13.09	−13.09	−13.09	−13.09
5	0	0	0	0
6	0	0	0	0
7	0.03	0.03	0	0
8	13.04	13.04	13.04	13.04

Transistors

Symbol No.	Mode	Emitter	Collector	Base
Q3001	P	0	0	−6.11
	R	0	0	−6.11
Q3002	P	0	0	−6.11
	R	0	0	−6.11
Q3913	P	0	12.76	0
	R	0	12.76	0
Q3914	P	13.04	−6.17	12.89
	R	13.04	−6.17	12.89
Q3915	P	0	0	−6.03
	R	0	0	−6.03
Q3916	P	0	0	−6.03
	R	0	0	−6.03
Q3917	P	0	0	−6.07
	R	0	0	−6.07
Q3918	P	0	0	−6.06
	R	0	0	−6.06

FET's

Symbol No.	Mode	Source	Drain	Gate
Q3003	P	0	0	0
	R	0	0	0
Q3004	P	0	0	0
	R	0	0	0
Q3901	P	0	0	0
	R	0	0	0
Q3902	P	0	0	0
	R	0	0	0
Q3903	P	0	0	−10.97
	R	0	0	−10.97
Q3904	P	0	0	−10.98
	R	0	0	−10.98
Q3905	P	0	0	0
	R	0	0	0
Q3906	P	0	0	0
	R	0	0	0
Q3907	P	0	0	0
	R	0	0	0
Q3908	P	0	0	0
	R	0	0	0
Q3909	P	0	0	−11.31
	R	0	0	−11.31
Q3910	P	0	0	−11.32
	R	0	0	−11.32
Q3911	P	0	0	−11.32
	R	0	0	−11.32
Q3912	P	0	0	−11.31
	R	0	0	−11.31

Pitch Control P.C. Board

FET's/Transistor

Symbol No.	Mode	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
Q6501	Source	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81
	Drain	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81
	Gate	−11.1	−11.1	−11.1	−11.1	−11.1	−11.1	0	0	0	−11.1	−11.1	0
Q6502	Source	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81
	Drain	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81
	Gate	0	0	0	0	0	0	−11.1	−11.1	−11.1	0	0	−11.1
Q6301	Emitter	GND											
	Collector	−											
	Base	0											

IC

Symbol No.	IC6501											
Pin No. \ Mode	Stop	Pause	Play	Play → Pause	FF	Rew	Rec/ Pause	Rec/ Play	Rec/ Play → Pause	Cue	Review	Auto Space
1	−11.56	−11.56	−11.56	−11.56	−11.56	−11.56	12.25	12.25	12.25	−11.56	−11.56	12.25
2	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
3	0.01	0.01	0.01	0.01	0.01	0.01	9.1	9.1	9.1	0.01	0.01	9.1
4	−12.94	−12.94	−12.94	−12.94	−12.94	−12.94	−12.94	−12.94	−12.94	−12.94	−12.94	−12.94
5	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
6	0.01	0.01	0.01	0.01	0.01	0.01	9.1	9.1	9.1	0.01	0.01	9.1
7	12.27	12.27	12.27	12.27	12.27	12.27	−11.58	−11.58	−11.58	12.27	12.27	−11.58
8	12.89	12.89	12.89	12.89	12.89	12.89	12.89	12.89	12.89	12.89	12.89	12.89

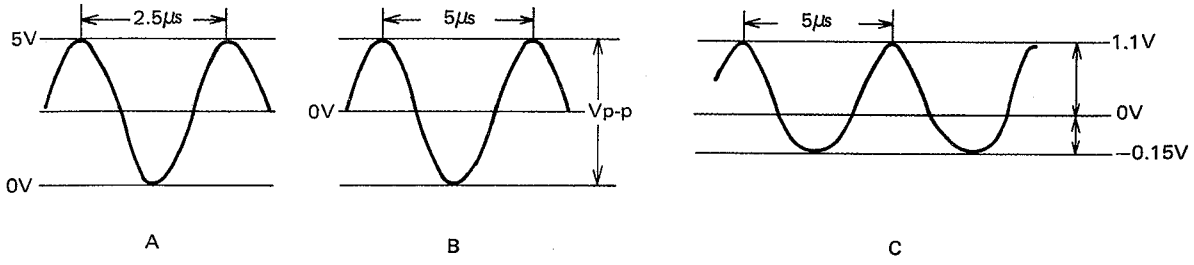
Record EQ P.C. Board

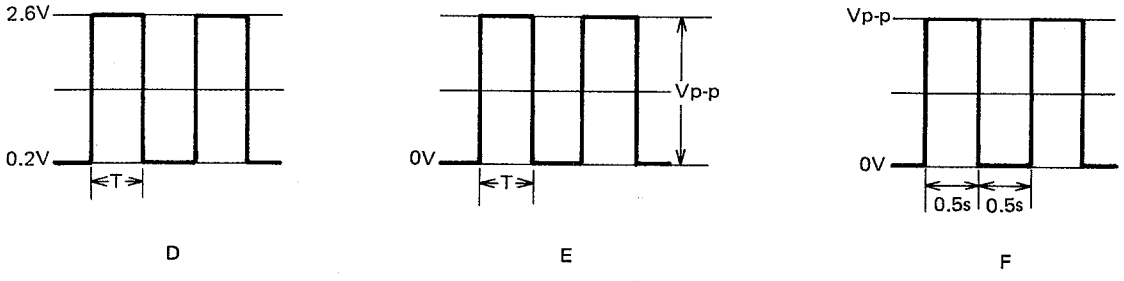
FET's

Symbol No.	Mode	Source	Drain	Gate
Q5501	P	0.04	0.04	−9.62
	R	0.04	0.04	−9.62
Q5502	P	0.03	0.03	−9.62
	R	0.03	0.03	−9.62
Q5503	P	0.04	0.04	−11.01
	R	0.04	0.04	−11.01
Q5504	P	0.03	0.01	−11.01
	R	0.03	0.01	−11.01
Q5505	P	0.04	0.04	−11.08
	R	0.04	0.04	−11.08
Q5506	P	0.03	0.03	−11.09
	R	0.03	0.03	−11.09
Q5507	P	0.04	0.04	0
	R	0.04	0.04	0
Q5508	P	0.03	0.03	0
	R	0.03	0.03	0
Q5509	P	0.02	0.02	−9.61
	R	0.02	0.02	−9.61
Q5510	P	0.01	0.01	−9.65
	R	0.01	0.01	−9.65
Q5511	P	0.02	0.02	−11.01
	R	0.02	0.02	−11.01
Q5512	P	0.01	0.01	−11.01
	R	0.01	0.01	−11.01
Q5513	P	0.02	0.02	−11.08
	R	0.02	0.02	−11.08
Q5514	P	0.01	0.01	−11.08
	R	0.01	0.01	−11.08
Q5515	P	0.02	0.02	0
	R	0.02	0.02	0
Q5516	P	0.01	0.01	0
	R	0.01	0.01	0

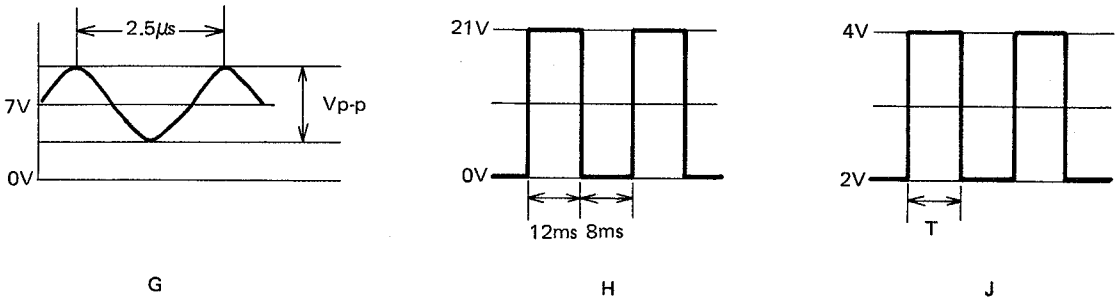
IC's

Symbol No.	IC5501		IC5502	
Pin No. \ Mode	P	R	P	R
1	0.02	0.02	0.01	0.01
2	0.02	0.02	0.01	0.01
3	0.02	0.02	0.01	0.01
4	−13.04	−13.04	−13.04	−13.04
5	0.04	0.04	0.03	0.03
6	0.04	0.04	0.03	0.03
7	0.04	0.04	0.03	0.03
8	12.98	12.98	12.98	12.98





Note: In Figs. D and E, period T varies as amount of tape wound changes.



NOTE [※1] ASSIST MOTOR DRIVEN MODE (Head Base is being moved)
UP: STOP → PLAY
DOWN: PLAY → STOP

Symbol No.	Pin No.	UP	DOWN	Symbol No	Pin No	UP	DOWN
Q6013	E	9.42	9.42	Q6016	E	GND	
	C	8.22	7.45		C	8.22	0.8
	B	7.45	8.4		B	0	1.53
Q6014	E	9.42	9.42	IC6001	①	0.01	9.86
	C	0.81	8.26	IC6001	㊷	9.84	0.01
	B	8.35	7.46				
Q6015	E	GND					
	C	0.81	8.26				
	B	1.52	0				

NOTE [※2] TAPE RUN → STOP (Electromagnetic Brake Operation Mode)

Symbol No.	Pin No.	TAPE RUN →STOP
Q6018	E	GND
	C	0.95
	B	1.64
IC6001	⑤	9.88

NOTE [3] POWER ON/OFF MUTE

Symbol No.	Pin No.	POWER ON/OFF
IC6001	㉚	10
IC6006	④	10
IC6007	③	9.32
	⑭	0
Q6021	E	24.5
	C	24.4
	B	23.5

NOTE [4] EXECUTION PULSE MUTE

Symbol No.	Pin No.	STOP → PLAY	PLAY → STOP
Q6301	E	GND	
	C	0	—
	B	0.74	–0.6

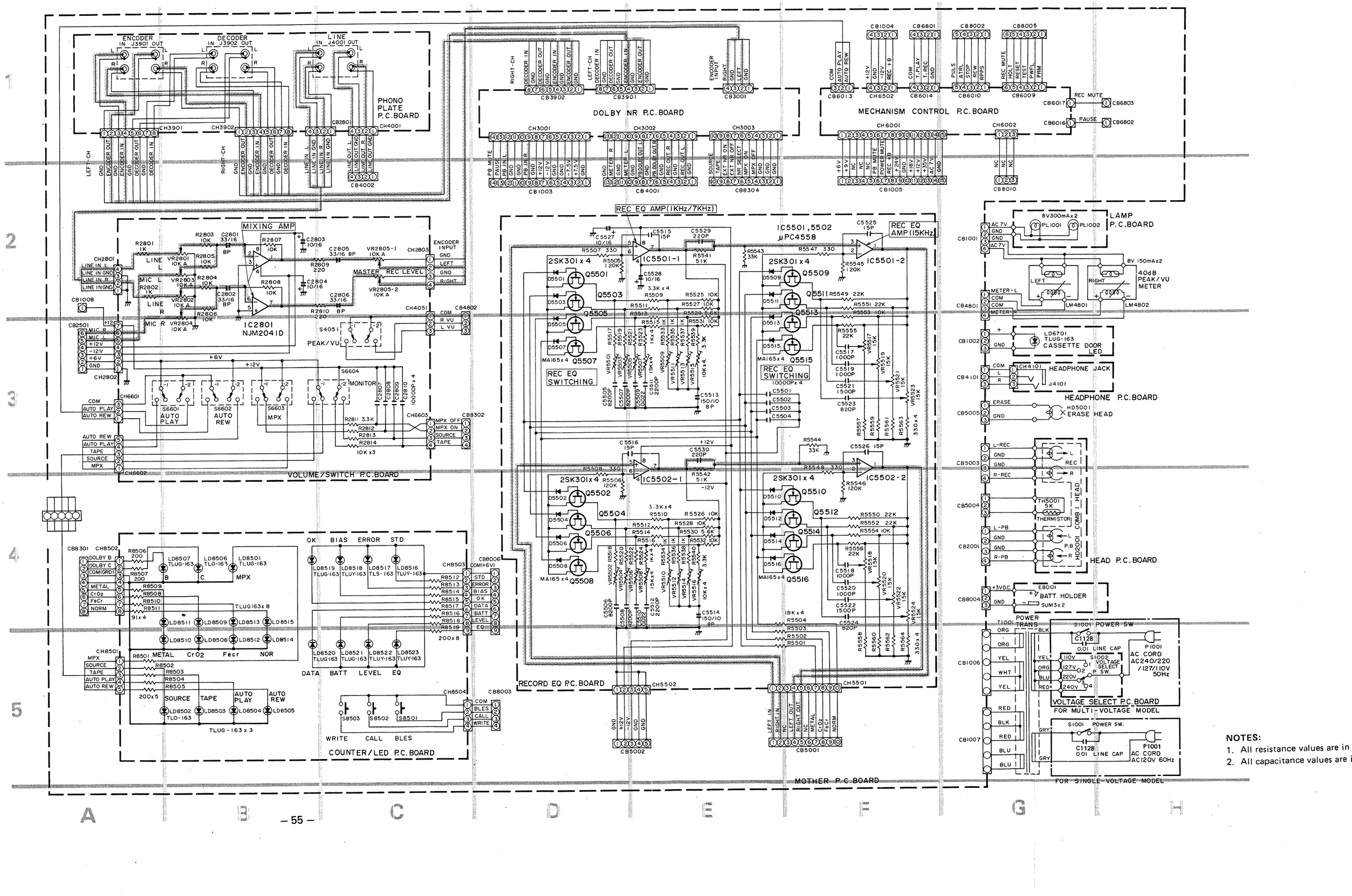
NOTE [5] COUNTER TAPE → TIME SWITCHING MODE

Symbol No.	Pin No.	TIME
IC6001	⑪	10.1
IC6003	⑥	10.1
	⑪	0
Q6001	E	24.1
	C	24.1
	B	23.4

NOTE [6] COUNTER EXECUTION ON

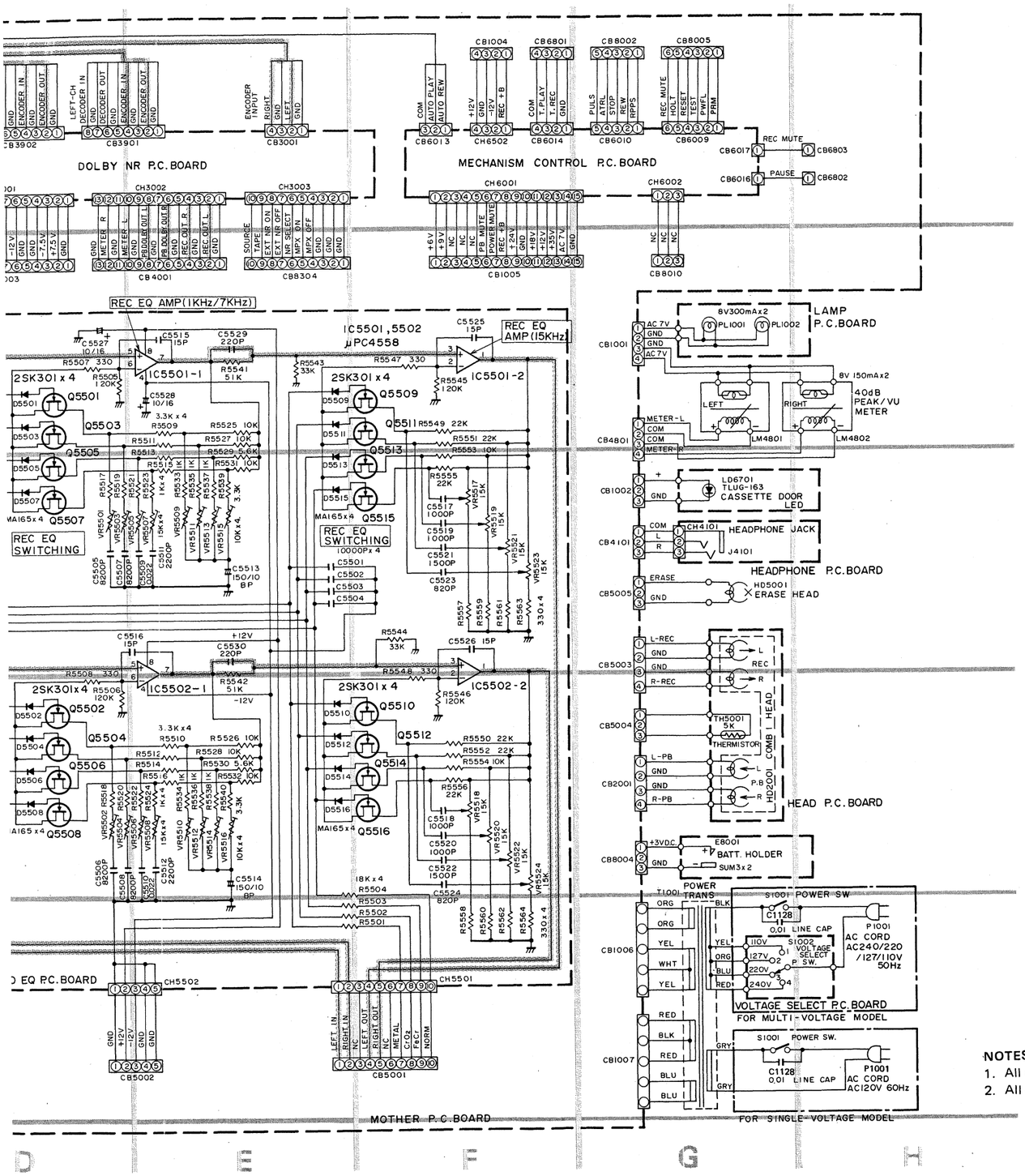
Symbol No.	Pin No.	ON
IC6001	⑩	10.8
IC6004	①	10.8
	⑯	0.13

Schematic Diagram (1/4)



NOTES:

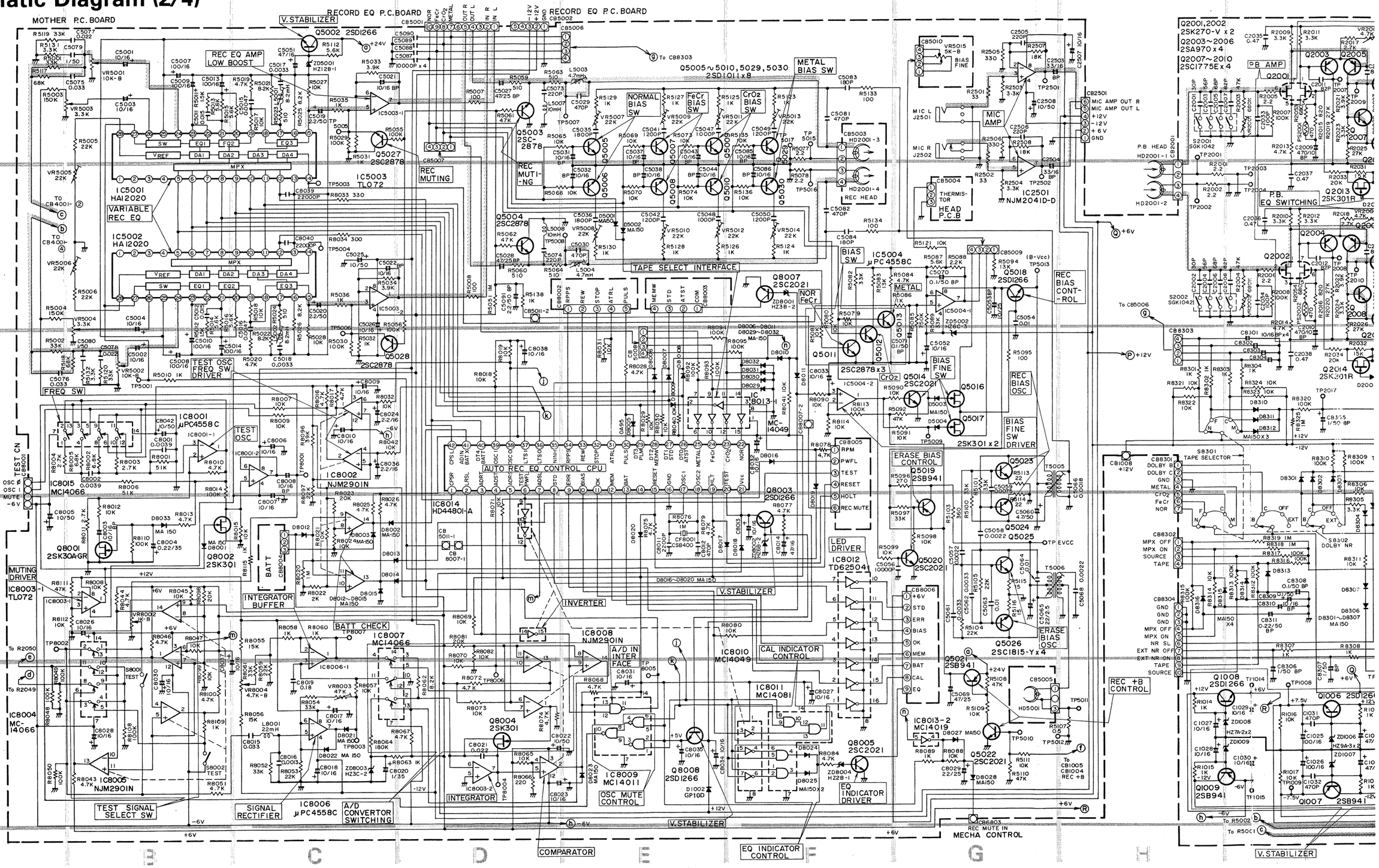
1. All resistance values are in
2. All capacitance values are i

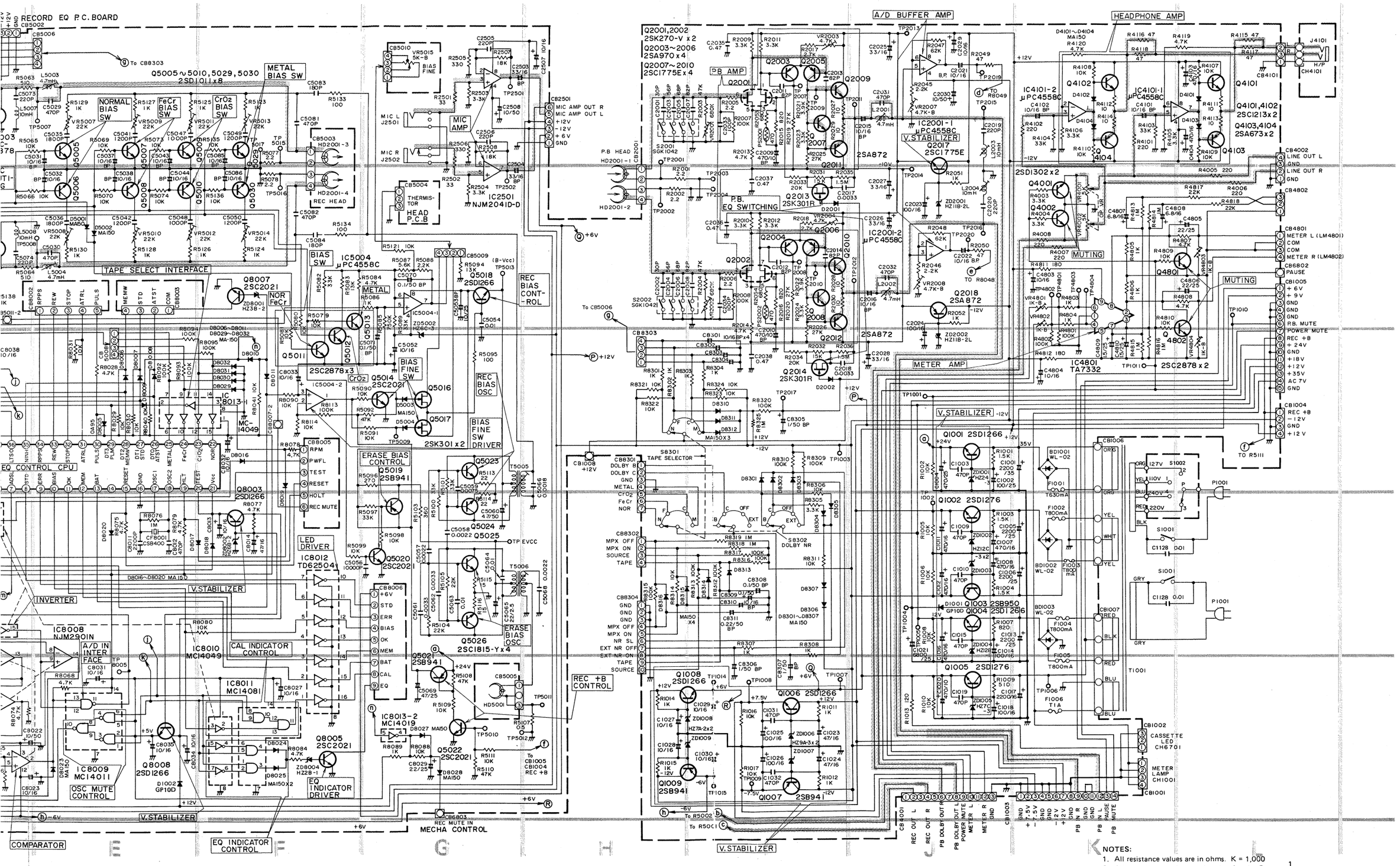


NOTES:

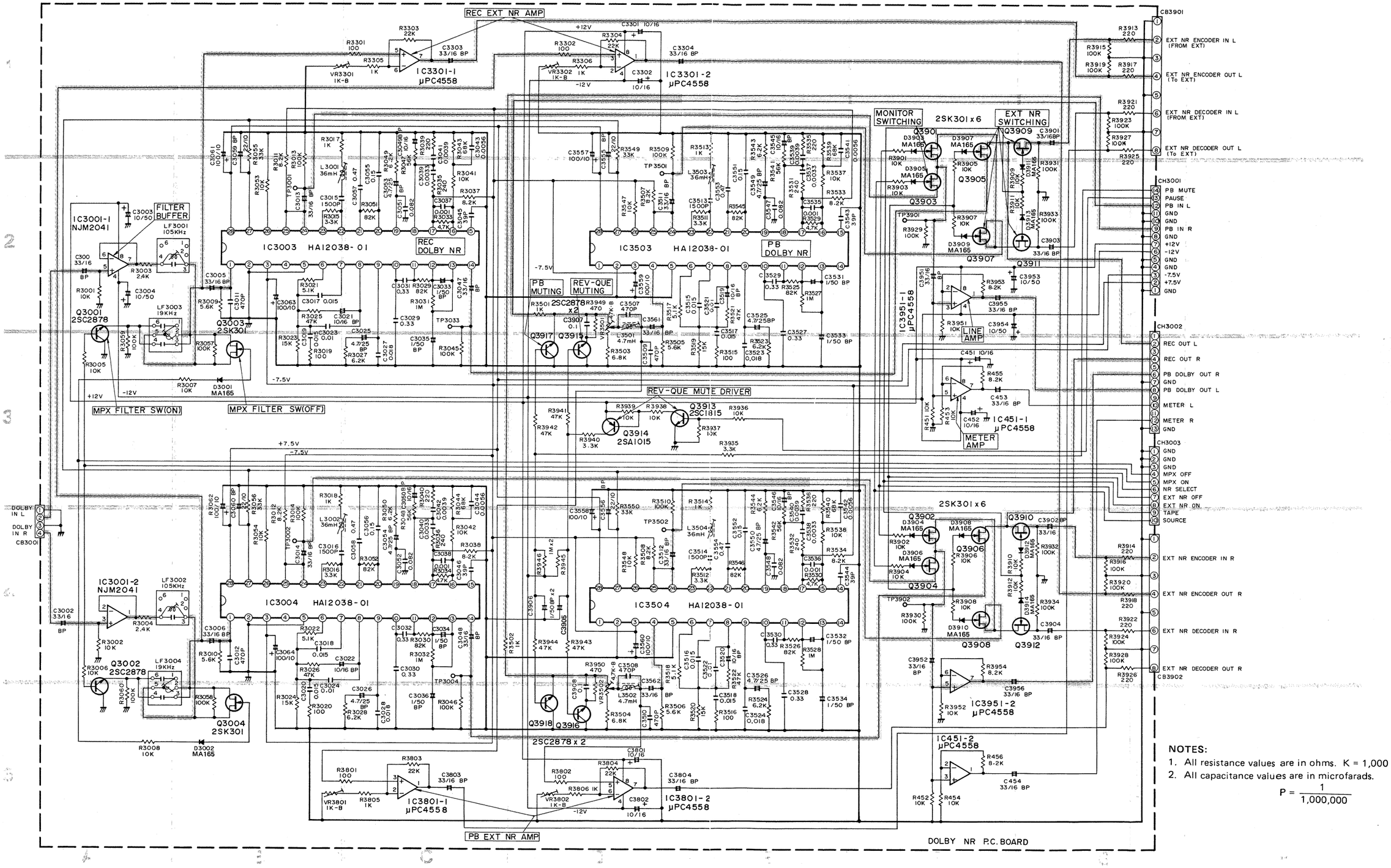
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (2/4)




RECORD EQ P.C. BOARD
CB5002
CB5006
To CB8303
Q5005~5010,5029,5030
2SD1011x8
METAL BIAS SW
NORMAL BIAS SW
FeCr BIAS SW
CrO2 BIAS SW
TAPE SELECT INTERFACE
BIAS SW
IC5004 µPC4558C
METAL
BIAS FINE SW
REC BIAS CONTROL
REC BIAS OSC
BIAS FINE SW DRIVER
ERASE BIAS CONTROL
LED DRIVER
IC8012 TD62504
REC HEAD
ERASE BIAS OSC
MIC AMP
MIC L J2501
MIC R J2502
BIAS FINE
THERMISTOR HEAD P.C.B
IC2501 NJM2041D-D
MIC AMP OUT R
MIC AMP OUT L
+12V
-12V
+6V
GND
P.B HEAD HD2001-1
HD2001-2
REC HEAD
HD2001-3
HD2001-4
Q8007 2SC2021
NOR FeCr
Q5011
2SC2878x3
CrO2
Q5014 2SC2021
Q5016
Q5017
2SK301x2
Q5018 2SD1266
Q5013
Q5012
IC5004-1
IC5004-2
IC 38013-H
MC-14049
EQ CONTROL CPU
Q8003 2SD1266
Q5019 2SB941
Q5020 2SC2021
Q5023
Q5024
Q5025
Q5026 2SC1815-Yx4
Q5021 2SB941
Q8005 2SC2021
Q8008 2SD1266
IC8008 NJM2901N
A/D IN INTERFACE
IC8009 MC14011
OSC MUTE CONTROL
IC8010 MC14049
CAL INDICATOR CONTROL
IC8011 MC14081
EQ INDICATOR DRIVER
IC8013-2 MC14019
INVERTER
V.STABILIZER
COMPARATOR
EQ INDICATOR CONTROL
REC MUTE IN
MECHA CONTROL
CB6803
To CB1005 CB1004 REC +B
REC +B CONTROL
A/D BUFFER AMP
Q2001,2002 2SK270-V x2
Q2003~2006 2SA970 x4
Q2007~2010 2SC1775E x4
P.B AMP
Q2001
Q2003
Q2005
Q2009
Q2007
Q2011
2SA872
P.B. EQ SWITCHING
Q2013 2SK301R
Q2004
Q2006
Q2010
Q2002
Q2008
Q2012
Q2014 2SK301R
IC2001-1 µPC4558C
V.STABILIZER
Q2017 2SC1775E
IC2001-2 µPC4558C
Q2018 2SA872
METER AMP
IC4801 TA7332
2SC2878x2
HEADPHONE AMP
IC4101-2 µPC4558C
IC4101-1 µPC4558C
Q4101 Q4102
Q4101,4102 2SC1213x2
Q4103,4104 2SA673x2
J4101
H/P
CH4101
2SD1302x2
Q4001
Q4002
MUTING
Q4801
IC4801 TA7332
2SC2878x2
CB4002 LINE OUT L
LINE OUT R
GND
CB4802
CB4801 METER L (LM4801)
COM
COM
METER R (LM4802)
CB6802 PAUSE
CB1005 +6V +9V GND GND GND P.B. MUTE POWER MUTE REC +8 +24V GND +18V +12V +35V AC 7V GND
CB1004 REC +8 -12V GND +12V
Q1001 2SD1266
Q1002 2SD1276
Q1003 2SB950
Q1004 2SD1266
Q1005 2SD1276
Q1006 2SD1266
Q1007 2SB941
Q1008 2SD1266
Q1009 2SB941
V.STABILIZER
BD1001 WL-02
BD1002 WL-02
BD1003 WL-02
F1001 T630mA
F1002 T800mA
F1003 T800mA
F1004 T800mA
F1005 T800mA
F1006 T1A
S1001
S1002
P1001
T1001
CB1006
CB1007
CB1002 CASSETTE LED CH6701
CB1001 METER LAMP CH1001
S8301 TAPE SELECTOR
S8302 DOLBY NR
To R5002
To R5001
TO R5111
TO R8048
TO R8049
NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = 1/1,000,000

Schematic Diagram (3/4)

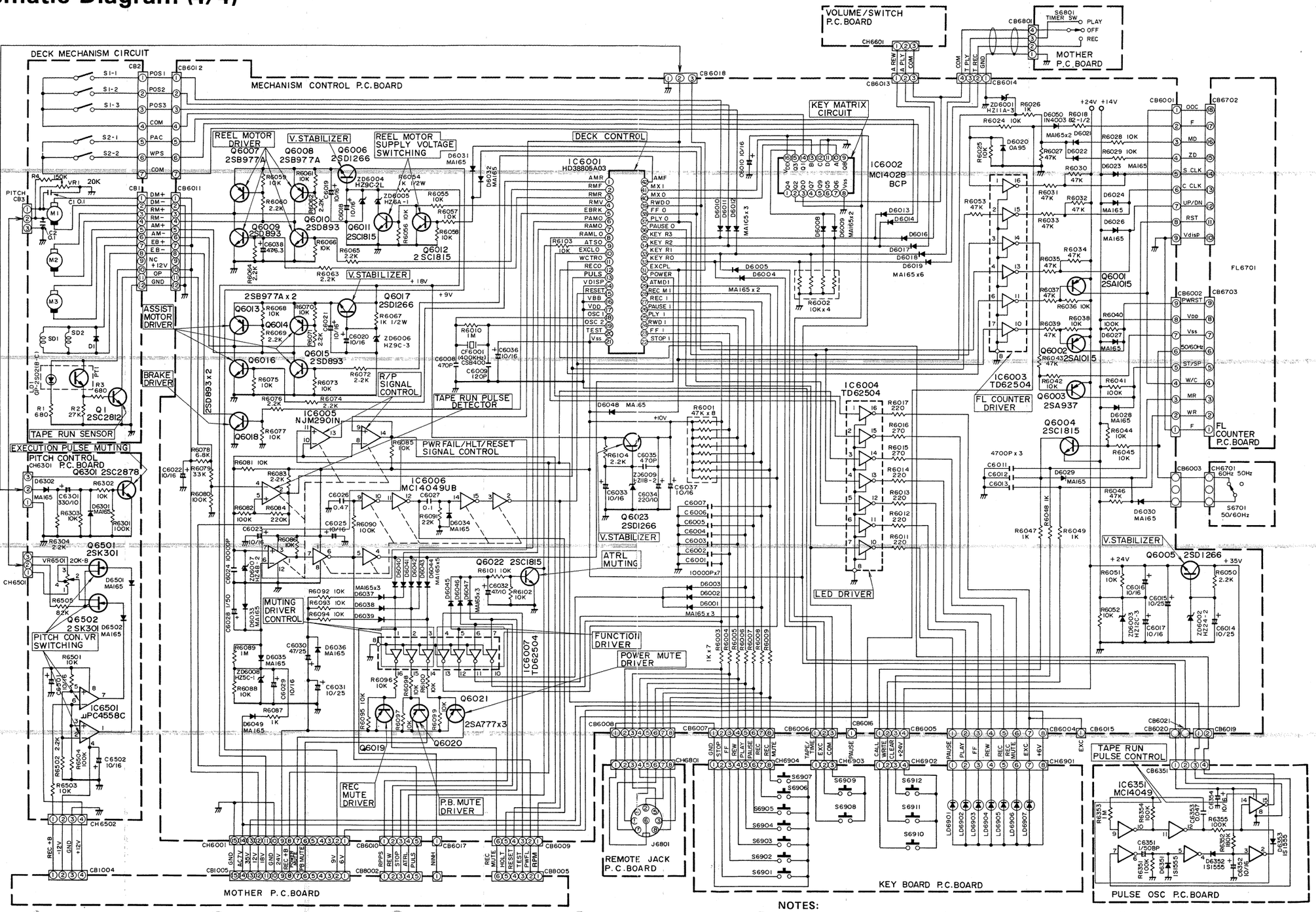


NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads.

$$P = \frac{1}{1{,}000{,}000}$$

Schematic Diagram (4/4)



Electrical Parts List

Resistors (All resistors are carbon film, ¼W, ±5% unless otherwise noted.)
uF = microfarads, pF = picofarads

Symbol No.	Part No.	Description
Mother P.C. Board		
IC's		
IC2001	51S43471U02	μPC4558C
IC2501	51T52155F01	NJM2041D-D
IC4101	51S43471U02	μPC4558C
IC4801	51T47740F01	TA7332P
IC5001	51T52145F01	HA12020
IC5002	51T52145F01	HA12020
IC5003	51T57775F01	TL072
IC5004	51S43471U02	μPC4558C
IC8001	51S43471U02	μPC4558C
IC8002	51T52154F01	NJM2901N
IC8003	51T57775F01	TL072
IC8004	51T40941U01	MC14066BCP
IC8005	51T52154F01	NJM2901N
IC8006	51S43471U02	μPC4558C
IC8007	51T40941U01	MC14066BCP
IC8008	51T52154F01	NJM2901N
IC8009	51T40242T01	MC14011BCP
IC8010	51T51781F01	MC14049UB
IC8011	51T52157F01	MC14081
IC8012	51T52158F01	TD62504
IC8013	51T51781F01	MC14049UB
IC8014	51T51993F01	HD44801A48
IC8015	51T40941U01	MC14066BCP

Symbol No.	Part No.	Description
Transistors		
Q1001	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q1002	48T56029F01	2SD1276-P, Q
Q1003	48T56028F01	2SB950-P, Q
Q1004	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q1005	48T56029F01	2SD1276-P, Q
Q1006	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42629F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q1007	48T56030F01	2SB941-P, Q
or	48T44652P01	2SA490-Y
Q1008	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q1009	48T56030F01	2SB-941-P, Q
or	48T44652P01	2SA490-Y
Q2001	48T56375F04	FET. 2SK270-V
Q2002	48T56375F04	FET. 2SK270-V
Q2003	48T52545F01	2SA970BL
Q2004	48T52545F01	2SA970BL
Q2005	48T52545F01	2SA970BL
Q2006	48T52545F01	2SA970BL
Q2007	48T51175F01	2SC1775E
Q2008	48T51175F01	2SC1775E
Q2009	48T51175F01	2SC1775E
Q2010	48T51175F01	2SC1775E
Q2011	48T52148F01	2SA872E
Q2012	48T52148F01	2SA872E
Q2013	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P

Symbol No.	Part No.	Description
Q2014	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S43538U03	FET. 2SK127-P
Q2017	48T51175F01	2SC1775E
Q2018	48T52148F01	2SA872E
Q4001	48T57305F01	2SD1302-S, T
Q4002	48T57305F01	2SD1302-S, T
Q4101	48S42172J04	2SC1213-D
Q4102	48S42172J04	2SC1213-D
Q4103	48T40338U02	2SA673-D
Q4104	48T40338U02	2SA673-D
Q4801	48T51878F01	2SC2878A, B
Q4802	48T51878F01	2SC2878A, B
Q5002	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q5003	48T51878F01	2SC2878A, B
Q5004	48T51878F01	2SC2878A, B
Q5005	48T56967F01	2SD1011
Q5006	48T56967F01	2SD1011
Q5007	48T56967F01	2SD1011
Q5008	48T56967F01	2SD1011
Q5009	48T56967F01	2SD1011
Q5010	48T56967F01	2SD1011
Q5011	48T51878F01	2SC2878A, B
Q5012	48T51878F01	2SC2878A, B
Q5013	48T51878F01	2SC2878A, B
Q5014	48T51091F01	2SC2021-R, S
or	48S43525F05	2SC1815-Y, GR
or	48S44578J01	2SC945L-P
Q5016	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5017	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P

Symbol No.	Part No.	Description
Q5018	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q5019	48T56030F01	2SB941-P, Q
or	48T44652P01	2SA490-Y
Q5020	48T51091F01	2SC2021-R, S
or	48S43525F05	2SC1815-Y, GR
or	48S44578J01	2SC945L-P
Q5021	48T56030F01	2SB941-P, Q
or	48T44562P01	2SA490-Y
Q5022	48T51091F01	2SC2021-R, S
or	48S43525F05	2SC1815-Y, GR
or	48S44578J01	2SC945L-P
Q5023	48S43525F02	2SC1815-Y
Q5024	48S43525F02	2SC1815-Y
Q5025	48S43525F02	2SC1815-Y
Q5026	48S43525F02	2SC1815-Y
Q5027	48T51878F01	2SC2878A, B
Q5028	48T51878F01	2SC2878A, B
Q5029	48T56967F01	2SD1011
Q5030	48T56967F01	2SD1011
Q8001	48T52152F01	FET. 2SK30A-GR
Q8002	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q8003	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q8004	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q8005	48T51091F01	2SC2021-R, S
or	48S43525F05	2SC1815-Y, GR
or	48S44578J01	2SC945L-P
Q8007	48T51091F01	2SC2021-R, S
or	48S43525F05	2SC1815-Y, GR
or	48S44578J01	2SC945L-P

Symbol No.	Part No.	Description
Q8008	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Diodes		
D1001	48T55186F01	GP10D
D1002	48T55186F01	GP10D
D2001	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D2002	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D4101	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D4102	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D4103	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D4104	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D5001	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D5002	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D5003	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D5004	48T51582F01	MA-150
or	48T51881F01	DS442-BT

Symbol No.	Part No.	Description
D8001	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8002	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8003	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8005	48T43982F01	0A95
D8006	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8007	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8008	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8009	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8010	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8011	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8012	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8013	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8014	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8015	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8016	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8017	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8018	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8019	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8020	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8021	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8022	48T51582F01	MA-150
or	48T51881F01	DS442-BT

Symbol No.	Part No.	Description
D8023	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8024	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8025	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8027	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8028	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8029	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8030	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8031	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8032	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8033	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8301	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8302	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8303	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8304	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8305	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8306	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8307	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8310	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8311	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8312	48T51582F01	MA-150
or	48T51881F01	DS442-BT
D8313	48T51582F01	MA-150

Symbol No.	Part No.	Description
D8314	48T51582F01	MA-150
D8315	48T51582F01	MA-150
D8316	48T51582F01	MA-150
BD1001	48T50629F01	Bridge WL-02
BD1002	48T50629F01	Bridge WL-02
BD1003	48T50629F01	Bridge WL-02
ZD1001	48T52739F93	Zener HZ24-3
or	48T40732F70	Zener RD27E-B1
ZD1002	48T52740F09	Zener HZ12C-3
or	48T40732F51	Zener RD15E-B2
ZD1003	48T52740F09	Zener HZ12C-3
or	48T40732F51	Zener RD15E-B2
ZD1004	48T52739F73	Zener HZ12B-1
or	48T40732F47	Zener RD13E-B1
ZD1005	48T52739F51	Zener HZ7C-3
or	48T40732F32	Zener RD8.2E-B1
ZD1006	48T52739F54	Zener HZ9A-3
or	48T40732F34	Zener RD8.2E-B3
ZD1007	48T52739F54	Zener HZ9A-3
or	48T40732F34	Zener RD8.2E-B3
ZD1008	48T52739F44	Zener HZ7A-2
or	48T40732F27	Zener RD6.8E-B2
ZD1009	48T52739F44	Zener HZ7A-2
or	48T40732F27	Zener RD6.8E-B2
ZD2001	48T52741F32	Zener HZ11B-2L
ZD2002	48T52741F32	Zener HZ11B-2L
ZD5001	48T52739F73	Zener HZ12B-1
or	48T40732F47	Zener RD13E-B1
ZD5002	48T52739F42	Zener HZ6C-3
or	48T40732F25	Zener RD6.2E-B3
ZD8001	48T52739F11	Zener HZ3B-2
or	48T40732F03	Zener RD3.0E-B1
ZD8002	48T52739F38	Zener HZ6B-2
or	48T40732F22	Zener RD5,6E-B3
ZD8003	48T52739F14	Zener HZ3C-2
or	48T40732F05	Zener RD3.3E-B1
ZD8004	48T52739F01	Zener HZ2B-1

Symbol No.	Part No.	Description
Fuses		
F1001	65T42077U14	T630mA
F1002	65T42077U15	T800mA
F1003	65T42077U15	T800mA
F1004	65T42077U15	T800mA
F1005	65T42077U15	T800mA
F1006	65T42077U16	T1A
Coils		
L2001	24T51914F01	Trap 4.7mH (BLK)
L2002	24T51914F01	Trap 4.7mH (BLK)
L2003	24T51914F02	Trap 10mH (BLK)
L2004	24T51914F02	Trap 10mH (BLK)
L5001	24T51914F04	Trap 8.2mH (BLK)
L5002	24T51914F04	Trap 8.2mH (BLK)
L5003	24T51914F01	Trap 4.7mH (BLK)
L5004	24T51914F01	Trap 4.7mH (BLK)
L5007	24T51914F02	Trap 10mH (BLK)
L5008	24T51914F02	Trap 10mH (BLK)
L8001	24T51914F07	Trap 22mH (BLK)
Jacks		
J2501	9T52845F11	M1658 AVCA (Mic Jack)
J2502	9T52845F11	M1658 AVCA (Mic Jack)

Symbol No.	Part No.	Description
Filter & Posistor		
CF8001	91T52156F01	Ceramic OSC 400KHz
PS2001	48T56034F01	Posistor 470Ω
PS2002	48T56034F01	Posistor 470Ω
Switches & Transformer		
S2001	40T52528F01	DIP 4P SGK 1042
S2002	40T52528F01	DIP 4P SGK 1042
S8001	40T56373F01	Slide SSS312 (TEST)
S8002	40T56373F01	Slide SSS312 (TEST)
T5005	25T56004F01	Trans OSC
T5006	25T56004F01	Trans OSC
Capacitors		
C1001	23S41198U73	Electrolytic 2200 uF/35V
C1002	23S41198U35	Electrolytic 100 uF/25V
C1003	8S44505P45	Ceramic 470 pF
C1004	23S41198U57	Electrolytic 470 uF/25V
C1005	23S41198U72	Electrolytic 2200 uF/25V
C1006	23S41198U72	Electrolytic 2200 uF/25V
C1007	23S41198U56	Electrolytic 470 uF/16V
C1008	23S41198U56	Electrolytic 470 uF/16V
C1009	8S44505P45	Ceramic 470 pF
C1010	8S44505P45	Ceramic 470 pF

Symbol No.	Part No.	Description
C1011	23S41198U56	Electrolytic 470 uF/16V
C1012	23S41198U56	Electrolytic 470 uF/16V
C1013	23S41198U72	Electrolytic 2200 uF/25V
C1014	23S40657F14	Electrolytic 100 uF/16V
C1015	8S44505P45	Ceramic 470 pF
C1016	23S41198U56	Electrolytic 470 uF/16V
C1017	23S41198U71	Electrolytic 2200 uF/16V
C1018	23S40657F14	Electrolytic 100 uF/16V
C1019	8S44505P45	Ceramic 470 pF
C1020	23S41198U55	Electrolytic 470 uF/10V
C1021	23T55493F01	Electrolytic 6800 uF/25V
C1023	23S41198U27	Electrolytic 47 uF/16V
C1024	23S41198U27	Electrolytic 47 uF/16V
C1025	23S40657F14	Electrolytic 100 uF/16V
C1026	23S40657F14	Electrolytic 100 uF/16V
C1027	23S40657F10	Electrolytic 10 uF/16V
C1028	23S40657F10	Electrolytic 10 uF/16V
C1029	23S40657F10	Electrolytic 10 uF/16V
C1030	23S40657F10	Electrolytic 10 uF/16V
C1031	8S44505P45	Ceramic 470 pF
C1032	8S44505P45	Ceramic 470 pF
C2001	8T55119F18	Mica 30 pF
C2002	8T55119F18	Mica 30 pF
C2003	8T55119F28	Mica 56 pF
C2004	8T55119F28	Mica 56 pF
C2005	8T55119F30	Mica 68 pF
C2006	8T55119F30	Mica 68 pF
C2007	8T55119F32	Mica 82 pF
C2008	8T55119F32	Mica 82 pF
C2009	23T41366F14	Electrolytic (B.P) 470 uF/10V
C2010	23T41366F14	Electrolytic (B.P) 470 uF/10V
C2011	8T55119F32	Mica 82 pF
C2012	8T55119F32	Mica 82 pF
C2013	8T55119F32	Mica 82 pF
C2014	8T55119F32	Mica 82 pF
C2015	23T42477F06	Electrolytic (B.P) 10 uF/16V
C2016	23T42477F06	Electrolytic (B.P) 10 uF/16V
C2017	8S40656F07	Mylar 0.0033 uF
C2018	8S40656F07	Mylar 0.0033 uF
C2019	8S44505P41	Ceramic 220 pF

Symbol No.	Part No.	Description
C2020	8S44505P41	Ceramic 220 pF
C2021	23T41366F16	Electrolytic (B.P) 10 uF/16V
C2022	23T42477F06	Electrolytic (B.P) 10 uF/16V
C2023	23T40475U30	Electrolytic (L.N) 100 uF/16V
C2024	23T40475U30	Electrolytic (L.N) 100 uF/16V
C2025	23T40475U22	Electrolytic (L.N) 33 uF/16V
C2026	23T40475U22	Electrolytic (L.N) 33 uF/16V
C2027	23T40475U22	Electrolytic (L.N) 33 uF/16V
C2028	23T40475U22	Electrolytic (L.N) 33 uF/16V
C2029	23S40657F10	Electrolytic 10 uF/16V
C2030	23S41198U12	Electrolytic 10 uF/50V
C2031	8S40505P45	Ceramic 470 pF
C2032	8S44505P45	Ceramic 470 pF
C2033	8T55119F34	Mica 100 pF
C2034	8T55119F34	Mica 100 pF
C2035	8T50579F21	T.F. 0.47 uF
C2036	8T50579F21	T.F. 0.47 uF
C2037	8T50579F21	T.F. 0.47 uF
C2038	8T50579F21	T.F. 0.47 uF
C2503	23T41366F18	Electrolytic (B.P) 33 uF/16V
C2504	23T41366F18	Electrolytic (B.P) 33 uF/16V
C2505	8S44505P41	Ceramic 220 pF
C2506	8S44505P41	Ceramic 220 pF
C2507	23S40657F10	Electrolytic 10 uF/16V
C2508	23S41198U12	Electrolytic 10 uF/50V
C4101	23T42477F06	Electrolytic (B.P) 10 uF/16V
C4102	23T42477F06	Electrolytic (B.P) 10 uF/16V
C4103	23S41198U56	Electrolytic 470 uF/16V
C4104	23S41198U56	Electrolytic 470 uF/16V
C4803	23S40657F10	Electrolytic 10 uF/16V
C4804	23S40657F10	Electrolytic 10 uF/16V
C4805	23S40657F18	Electrolytic 22 uF/25V
C4806	23S40657F18	Electrolytic 22 uF/25V
C4807	23S41059P22	Tantalum 6.8 uF/16V
C4808	23S41059P22	Tantalum 6.8 uF/16V
C4809	23S41059P09	Tantalum 1.5 uF/25V
C4810	23S41059P09	Tantalum 1.5 uF/25V
C5001	23T42478F05	Electrolytic (L.N) 10 uF/16V
C5002	23T42478F05	Electrolytic (L.N) 10 uF/16V
C5003	23T40475U14	Electrolytic (L.N) 10 uF/16V

Symbol No.	Part No.	Description
C5004	23T42478F05	Electrolytic (L.N) 10 uF/16V
C5007	23S40657F14	Electrolytic 100 uF/16V
C5008	23S40657F14	Electrolytic 100 uF/16V
C5009	23S41198U34	Electrolytic 100 uF/16V
C5010	23S41198U34	Electrolytic 100 uF/16V
C5011	8T52448F41	Polystyrol 0.015 uF
C5012	8T52448F41	Polystyrol 0.015 uF
C5013	23S40657F14	Electrolytic 100 uF/16V
C5014	23S40657F14	Electrolytic 100 uF/16V
C5015	8S40656F09	Mylar 0.0047 uF
C5016	8S40656F09	Mylar 0.0047 uF
C5017	8S40656F07	Mylar 0.0033 uF
C5018	8S40656F07	Mylar 0.0033 uF
C5019	23T42748F26	Electrolytic (L.N) 2.2 uF/50V
C5020	23T42748F26	Electrolytic (L.N) 2.2 uF/50V
C5021	23T58027F01	Electrolytic (B.P)10uF/16V(J)
C5022	23T58027F01	Electrolytic (B.P)10uF/16V(J)
C5025	23S41198U12	Electrolytic 10 uF/50V
C5026	23S40657F10	Electrolytic 10 uF/16V
C5027	23T41366F29	Electrolytic (B.P) 47 uF/25V
C5028	23T41366F29	Electrolytic (B.P) 47 uF/25V
C5029	8S44505P45	Ceramic 470 pF
C5030	8S44505P45	Ceramic 470 pF
C5031	23T41366F16	Electrolytic (B.P) 10 uF/16V
C5032	23T42477F06	Electrolytic (B.P) 10 uF/16V
C5035	8S44505P52	Ceramic 1800 pF
C5036	8S44505P52	Ceramic 1800 pF
C5037	23T41366F16	Electrolytic (B.P) 10 uF/16V
C5038	23T42477F06	Electrolytic (B.P) 10 uF/16V
C5041	8S44505P50	Ceramic 1200 pF
C5042	8S44505P50	Ceramic 1200 pF
C5043	23T41366F16	Electrolytic (B.P) 10 uF/16V
C5044	23T42477F06	Electrolytic (B.P) 10 uF/16V
C5047	8S44505P49	Ceramic 1000 pF
C5048	8S44505P49	Ceramic 1000 pF
C5049	8S44505P50	Ceramic 1200 pF
C5050	8S44505P50	Ceramic 1200 pF
C5051	23S40657F13	Electrolytic 47 uF/16V
C5052	23S40657F10	Electrolytic 10 uF/16V
C5053	23T42477F11	Electrolytic (B.P) 10 uF/25V
C5054	8T52448F37	Polystyrol 0.01 uF
C5056	8S44505P61	Ceramic 10000 pF
C5057	8T44481F21	Polystyrol 0.0022 uF
C5058	8T52448F21	Polystyrol 0.0022 uF
C5059	8T52448F34	Polystyrol 0.0075 uF

Symbol No.	Part No.	Description
C5060	23S41198U09	Electrolytic 4.7 uF/50V
C5061	8S40656F07	Mylar 0.0033 uF
C5062	8S40656F07	Mylar 0.0033 uF
C5063	8T52448F37	Polystyrol 0.01 uF
C5064	8T44481F37	Polystyrol 0.01 uF
C5065	23S41198U15	Electrolytic 22 uF/25V
C5066	8T52448F19	Polystyrol 0.0018 uF
C5068	8T52448F21	Polystyrol 0.0022 uF
C5069	23T41366F29	Electrolytic (B.P) 47 uF/25V
C5070	23T42477F50	Electrolytic (B.P) 0.1 uF/50V
C5071	23T42477F50	Electrolytic (B.P) 0.1 uF/50V
C5073	8S44505P41	Ceramic 220 pF
C5074	8S44505P41	Ceramic 220 pF
C5075	8T52448F49	Polystyrol 0.033 uF
C5076	8T52448F49	Polystyrol 0.033 uF
C5077	8S44503P17	Mylar 0.022 uF/50V
C5078	8S44503P17	Mylar 0.022 uF/50V
C5079	8T50579F25	T.F. 1 uF
C5080	8T50579F25	T.F. 1 uF
C5081	8S44505P45	Ceramic 470 pF
C5082	8S44505P45	Ceramic 470 pF
C5083	8S44505P40	Ceramic 180 pF
C5084	8S44505P40	Ceramic 180 pF
C5085	23T41366F16	Electrolytic (B.P) 10 uF/16V
C5086	23T42477F06	Electrolytic (B.P) 10 uF/16V
C5087	8S44505P61	Ceramic 10000 pF
C5088	8S44505P61	Ceramic 10000 pF
C5089	8S44505P61	Ceramic 10000 pF
C5090	8S44505P61	Ceramic 10000 pF
C5091	23T42477F18	Electrolytic (B.P) 2.2 uF/50V
C8001	8T52448F27	Polystyrol 0.0039 uF
C8002	8T52448F27	Polystyrol 0.0039 uF
C8003	23T42477F06	Electrolytic (B.P) 10 uF/16V
C8004	23S41059P03	Tantalum 0.22 uF/35V
C8005	23S41198U12	Electrolytic 10 uF/50V
C8006	23S40657F10	Electrolytic 10 uF/16V
C8007	23S40657F10	Electrolytic 10 uF/16V
C8008	23T42477F06	Electrolytic (B.P) 10 uF/16V
C8009	23S40657F10	Electrolytic 10 uF/16V
C8010	23S40657F10	Electrolytic 10 uF/16V
C8011	8S44505P53	Ceramic 2200 pF
C8012	8S44505P45	Ceramic 470 pF
C8013	23S41059P26	Tantalum 10 uF/16V
C8014	23S40657F13	Electrolytic 47 uF/16V
C8015	8T44481F49	Polystyrol 0.033 uF

Symbol No.	Part No.	Description
C8016	8T52448F16	Polystyrol 0.0013 uF
C8017	23S40657F10	Electrolytic 10 uF/16V
C8018	23S40657F10	Electrolytic 10 uF/16V
C8019	8T50579F16	T.F. 0.18 uF
C8020	23S41059P08	Tantalum 1 uF/35V
C8021	8T52448F45	Polystyrol 0.022 uF
C8022	23S41198U12	Electrolytic 10 uF/50V
C8023	23S40657F10	Electrolytic 10 uF/16V
C8024	23S41059P11	Tantalum 2.2 uF/16V
C8026	23S40657F10	Electrolytic 10 uF/16V
C8027	23S40657F10	Electrolytic 10 uF/16V
C8028	23S40657F10	Electrolytic 10 uF/16V
C8029	23S40657F18	Electrolytic 22 uF/25V
C8030	23S40657F10	Electrolytic 10 uF/16V
C8031	23S40657F10	Electrolytic 10 uF/16V
C8032	23S40657F10	Electrolytic 10 uF/16V
C8033	23S40657F10	Electrolytic 10 uF/16V
C8034	23S40657F10	Electrolytic 10 uF/16V
C8035	23S40657F10	Electrolytic 10 uF/16V
C8036	23S41059P11	Tantalum 2.2 uF/16V
C8037	23S40657F10	Electrolytic 10 uF/16V
C8038	23S40657F10	Electrolytic 10 uF/16V
C8039	8S44505P63	Ceramic 22000 pF
C8040	8S44505P63	Ceramic 22000 pF
C8042	23S41198U12	Electrolytic 10 uF/50V
C8301	23T41366F16	Electrolytic (B.P) 10 uF/16V
C8302	23T42477F06	Electrolytic (B.P) 10 uF/16V
C8303	23T41366F16	Electrolytic (B.P) 10 uF/16V
C8304	23T42477F06	Electrolytic (B.P) 10 uF/16V
C8305	23T42477F16	Electrolytic (B.P) 1 uF/50V
C8306	23S41192U04	Electrolytic (B.P) 1 uF/50V
C8307	23T42477F16	Electrolytic (B.P) 1 uF/50V
C8308	23T42477F50	Electrolytic (B.P) 0.1 uF/50V
C8309	8T50579F13	Electrolytic 0.1 uF/50V
C8310	23T41366F16	Electrolytic (B.P) 10 uF/16V
C8311	23T42477F52	Electrolytic (B.P) 0.22 uF/50V
Resistors		
R1001	6S44593P69	1.5K ohm
R1002	6S44593P89	10K ohm
R1003	6S44593P69	1.5K ohm
R1004	6S44593P69	1.5K ohm
R1005	6S44593P89	10K ohm

Symbol No.	Part No.	Description
R1006	6S44593P89	10K ohm
R1007	6S44593P63	820 ohm
R1008	6S44593P89	10K ohm
R1009	6S44593P58	510 ohm
R1010	6S44593P89	10K ohm
R1011	6S44593P65	1K ohm
R1012	6S44593P65	1K ohm
R1013	6S44593P43	120 ohm
R1014	6S44593P65	1K ohm
R1015	6S44593P65	1K ohm
R1016	6S44593P89	10K ohm
R1017	6S44593P89	10K ohm
R2001	6S44593P01	2.2 ohm
R2002	6S44593P01	2.2 ohm
R2003	6S44594P06	47K ohm
R2004	6S44594P06	47K ohm
R2005	6S44593P01	2.2 ohm
R2006	6S44593P01	2.2 ohm
R2007	6S44594P14	100K ohm
R2008	6S44594P14	100K ohm
R2009	6S44593P77	3.3K ohm
R2010	6S44593P77	3.3K ohm
R2011	6S44593P77	3.3K ohm
R2012	6S44593P77	3.3K ohm
R2013	6S44593P81	4.7K ohm
R2014	6S44593P81	4.7K ohm
R2015	6S44593P63	820 ohm
R2016	6S44593P63	820 ohm
R2017	6S44593P75	2.7K ohm
R2018	6S44593P75	2.7K ohm
R2019	6S44593P99	27K ohm
R2020	6S44593P99	27K ohm
R2021	6S44593P79	3.9K ohm
R2022	6S44593P79	3.9K ohm
R2023	6S44593P77	3.3K ohm
R2024	6S44593P77	3.3K ohm
R2025	6S44593P99	27K ohm
R2026	6S44593P99	27K ohm
R2027	6S44593P17	10 ohm
R2028	6S44593P17	10 ohm
R2029	6S44593P17	10 ohm
R2030	6S44593P17	10 ohm
R2031	6S44593P93	15K ohm
R2032	6S44593P93	15K ohm
R2033	6S44593P96	20K ohm

Symbol No.	Part No.	Description
R2034	6S44593P96	20K ohm
R2035	6S40106T42	1.5M ohm
R2036	6S40106T42	1.5M ohm
R2045	6S44593P73	2.2K ohm
R2046	6S44593P73	2.2K ohm
R2047	6S44594P09	62K ohm
R2048	6S44594P09	62K ohm
R2049	6S44593P33	47 ohm
R2050	6S44593P33	47 ohm
R2051	6S44593P65	1K ohm
R2052	6S44593P65	1K ohm
R2053	6S44593P61	680 ohm
R2054	6S44593P61	680 ohm
R2501	6S44593P29	33 ohm
R2502	6S44593P29	33 ohm
R2503	6S44593P77	3.3K ohm
R2504	6S44593P77	3.3K ohm
R2505	6S44593P53	330 ohm
R2506	6S44593P53	330 ohm
R2507	6S44593P95	18K ohm
R2508	6S44593P95	18K ohm
R4003	6S44593P77	3.3K ohm
R4004	6S44593P77	3.3K ohm
R4005	6S44593P49	220 ohm
R4006	6S44593P49	220 ohm
R4007	6S44593P49	220 ohm
R4008	6S44593P49	220 ohm
R4101	6S44593P49	220 ohm
R4102	6S44593P49	220 ohm
R4103	6S44594P02	33K ohm
R4104	6S44594P02	33K ohm
R4105	6S44593P77	3.3K ohm
R4106	6S44593P77	3.3K ohm
R4107	6S44593P89	10K ohm
R4108	6S44593P89	10K ohm
R4109	6S44593P89	10K ohm
R4110	6S44593P89	10K ohm
R4111	6S44593P17	10 ohm
R4112	6S44593P17	10 ohm
R4113	6S44593P17	10 ohm
R4114	6S44593P17	10 ohm
R4115	6S44593P33	47 ohm
R4116	6S44593P33	47 ohm
R4117	6S44593P33	47 ohm
R4118	6S44593P33	47 ohm

Symbol No.	Part No.	Description
R4119	6S44593P81	4.7K ohm
R4120	6S44593P81	4.7K ohm
R4801	6S44594P14	100K ohm
R4802	6S44594P14	100K ohm
R4803	6S44593P65	1K ohm
R4804	6S44593P65	1K ohm
R4805	6S44593P65	1K ohm
R4806	6S44593P65	1K ohm
R4807	6S44593P81	4.7K ohm
R4808	6S44593P81	4.7K ohm
R4809	6S44593P89	10K ohm
R4810	6S44593P89	10K ohm
R4811	6S44593P47	180 ohm
R4812	6S44593P47	180 ohm
R4813	6S44594P38	1M ohm
R4814	6S44594P38	1M ohm
R4815	6S44594P38	1M ohm
R4816	6S44594P38	1M ohm
R4817	6S44593P97	22K ohm
R4818	6S44593P97	22K ohm
R5001	6S44594P02	33K ohm
R5002	6S44594P02	33K ohm
R5003	6S44594P18	150K ohm
R5004	6S44594P18	150K ohm
R5005	6S44593P97	22K ohm
R5006	6S44593P97	22K ohm
R5007	6S44593P41	100 ohm
R5008	6S44593P41	100 ohm
R5010	6S44593P65	1K ohm
R5011	6S44593P69	1.5K ohm
R5012	6S44593P69	1.5K ohm
R5013	6S44593P83	5.6K ohm
R5014	6S44593P83	5.6K ohm
R5015	6S44593P83	5.6K ohm
R5016	6S44593P83	5.6K ohm
R5017	6S44593P89	10K ohm
R5018	6S44593P89	10K ohm
R5019	6S44593P81	4.7K ohm
R5020	6S44593P81	4.7K ohm
R5021	6S44593P87	8.2K ohm
R5022	6S44593P87	8.2K ohm
R5023	6S44593P58	510 ohm
R5024	6S44593P58	510 ohm
R5025	6S44593P87	8.2K ohm
R5026	6S44593P87	8.2K ohm

Symbol No.	Part No.	Description
R5027	6S44593P89	10K ohm
R5028	6S44593P89	10K ohm
R5029	6S44594P14	100K ohm
R5030	6S44594P14	100K ohm
R5031	6S44593P65	1K ohm
R5032	6S44593P65	1K ohm
R5033	6S44593P79	3.9K ohm
R5034	6S44593P79	3.9K ohm
R5035	6S44593P65	1K ohm
R5036	6S44593P65	1K ohm
R5051	6S44594P38	1M ohm
R5055	6S44594P14	100K ohm
R5056	6S44594P14	100K ohm
R5059	6S44593P58	510 ohm
R5060	6S44593P58	510 ohm
R5061	6S44594P06	47K ohm
R5062	6S44594P06	47K ohm
R5063	6S44593P58	510 ohm
R5064	6S44593P58	510 ohm
R5065	6S44593P89	10K ohm
R5066	6S44593P89	10K ohm
R5069	6S44593P89	10K ohm
R5070	6S44593P89	10K ohm
R5073	6S44593P89	10K ohm
R5074	6S44593P89	10K ohm
R5077	6S44593P01	2.2 ohm
R5078	6S44593P01	2.2 ohm
R5079	6S44593P89	10K ohm
R5080	6S44593P89	10K ohm
R5081	6S44593P89	10K ohm
R5082	6S44594P02	33K ohm
R5083	6S44593P92	13K ohm
R5084	6S44593P81	4.7K ohm
R5085	6S44594P35	750K ohm
R5086	6S44593P65	1K ohm
R5087	6S44593P83	5.6K ohm
R5088	6S44593P73	2.2K ohm
R5089	6S44594P02	33K ohm
R5090	6S44593P89	10K ohm
R5091	6S44593P89	10K ohm
R5092	6S44594P06	47K ohm
R5094	6S44593P92	13K ohm
R5095	6S44593P41	100 ohm
R5096	6S44593P51	270 ohm
R5097	6S44594P02	33K ohm

Symbol No.	Part No.	Description
R5098	6S44593P89	10K ohm
R5099	6S44593P89	10K ohm
R5100	6S44594P02	33K ohm
R5101	6S44594P02	33K ohm
R5103	6S44593P54	360 ohm
R5104	6S44593P97	22K ohm
R5105	6S44593P97	22K ohm
R5107	6C43205J01	Metal Film 0.5 ohm ½W
R5108	6S44594P06	47K ohm
R5109	6S44593P89	10K ohm
R5110	6S44594P06	47K ohm
R5111	6S44593P89	10K ohm
R5112	6S44593P83	5.6K ohm
R5113	6S44593P25	22 ohm
R5114	6S44593P25	22 ohm
R5115	6S44593P21	15 ohm
R5116	6S44593P21	15 ohm
R5117	6S44594P10	68K ohm
R5118	6S44594P10	68K ohm
R5119	6S44594P02	33K ohm
R5120	6S44594P02	33K ohm
R5121	6S44593P89	10K ohm
R5123	6S44593P65	1K ohm
R5124	6S44593P65	1K ohm
R5125	6S44593P65	1K ohm
R5126	6S44593P65	1K ohm
R5127	6S44593P65	1K ohm
R5128	6S44593P65	1K ohm
R5129	6S44593P65	1K ohm
R5130	6S44593P65	1K ohm
R5131	6S44593P77	3.3K ohm
R5132	6S44593P77	3.3K ohm
R5133	6S44593P41	100 ohm
R5134	6S44593P41	100 ohm
R5135	6S44593P89	10K ohm
R5136	6S44593P89	10K ohm
R5138	6S44593P65	1K ohm
R8001	6S44594P07	51K ohm
R8002	6S44593P85	6.8K ohm
R8003	6S44593P75	2.7K ohm
R8004	6S44593P75	2.7K ohm
R8005	6S44593P85	6.8K ohm
R8006	6S44594P07	51K ohm
R8007	6S44593P89	10K ohm
R8008	6S44593P89	10K ohm

Symbol No.	Part No.	Description
R8009	6S44593P89	10K ohm
R8010	6S44593P81	4.7K ohm
R8011	6S44593P75	2.7K ohm
R8012	6S44593P89	10K ohm
R8013	6S44593P81	4.7K ohm
R8014	6S44594P14	100K ohm
R8015	6S44593P89	10K ohm
R8016	6S44593P81	4.7K ohm
R8017	6S44593P81	4.7K ohm
R8018	6S44593P89	10K ohm
R8019	6S44593P89	10K ohm
R8020	6S44594P38	1M ohm
R8021	6S44593P89	10K ohm
R8022	6S44593P72	2K ohm
R8023	6S44593P96	20K ohm
R8024	6S44593P89	10K ohm
R8025	6S44593P81	4.7K ohm
R8026	6S44593P81	4.7K ohm
R8028	6S44593P81	4.7K ohm
R8029	6S44593P89	10K ohm
R8030	6S44593P89	10K ohm
R8031	6S44593P89	10K ohm
R8032	6S44593P89	10K ohm
R8033	6S44593P52	300 ohm
R8034	6S44593P52	300 ohm
R8040	6S44593P89	10K ohm
R8041	6S44593P89	10K ohm
R8042	6S44593P89	10K ohm
R8043	6S44593P81	4.7K ohm
R8044	6S44593P81	4.7K ohm
R8045	6S44593P89	10K ohm
R8046	6S44593P81	4.7K ohm
R8047	6S44593P89	10K ohm
R8048	6S44594P14	100K ohm
R8049	6S44594P14	100K ohm
R8050	6S44594P14	100K ohm
R8051	6S44593P81	4.7K ohm
R8052	6S44594P02	33K ohm
R8053	6S44593P97	22K ohm
R8054	6S44594P02	33K ohm
R8055	6S44593P93	15K ohm
R8056	6S44593P93	15K ohm
R8057	6S44593P89	10K ohm
R8058	6S44593P65	1K ohm
R8059	6S44593P97	22K ohm

Symbol No.	Part No.	Description
R8060	6S44593P65	1K ohm
R8061	6S44594P02	33K ohm
R8062	6S44593P87	8.2K ohm
R8063	6S44593P65	1K ohm
R8064	6S44594P20	180K ohm
R8065	6S44593P89	10K ohm
R8066	6S44593P49	220 ohm
R8067	6S44593P81	4.7K ohm
R8068	6S44593P81	4.7K ohm
R8069	6S44593P89	10K ohm
R8070	6S44593P89	10K ohm
R8071	6S44593P89	10K ohm
R8072	6S44593P81	4.7K ohm
R8073	6S44593P89	10K ohm
R8074	6S44593P81	4.7K ohm
R8075	6S44593P81	4.7K ohm
R8076	6S44594P38	1M ohm
R8077	6S44593P81	4.7K ohm
R8078	6S44593P81	4.7K ohm
R8079	6S44593P81	4.7K ohm
R8080	6S44593P89	10K ohm
R8081	6S44593P96	20K ohm
R8082	6S44593P89	10K ohm
R8084	6S44593P81	4.7K ohm
R8088	6S44593P89	10K ohm
R8089	6S44593P65	1K ohm
R8090	6S44593P89	10K ohm
R8092	6S44594P14	100K ohm
R8093	6S44594P14	100K ohm
R8094	6S44594P14	100K ohm
R8095	6S44594P14	100K ohm
R8096	6S44594P04	39K ohm
R8097	6S44593P97	22K ohm
R8098	6S44593P96	20K ohm
R8099	6S44593P89	10K ohm
R8100	6S44593P81	4.7K ohm
R8108	6S44594P14	100K ohm
R8109	6S44593P65	1K ohm
R8110	6S44594P14	100K ohm
R8111	6S44594P06	47K ohm
R8112	6S44593P89	10K ohm
R8113	6S44594P14	100K ohm
R8114	6S44593P89	10K ohm
R8115	6S44593P65	1K ohm
R8301	6S44593P65	1K ohm

Symbol No.	Part No.	Description
R8302	6S44593P65	1K ohm
R8303	6S44593P65	1K ohm
R8304	6S44593P65	1K ohm
R8305	6S44593P77	3.3K ohm
R8306	6S44593P89	10K ohm
R8307	6S44593P65	1K ohm
R8308	6S44593P65	1K ohm
R8309	6S44594P14	100K ohm
R8310	6S44594P14	100K ohm
R8311	6S44593P89	10K ohm
R8312	6S44594P14	100K ohm
R8313	6S44594P14	100K ohm
R8314	6S44593P89	10K ohm
R8315	6S44594P14	100K ohm
R8316	6S44594P14	100K ohm
R8317	6S44594P14	100K ohm
R8318	6S44594P38	1M ohm
R8319	6S44594P38	1M ohm
R8320	6S44594P14	100K ohm
R8321	6S44593P89	10K ohm
R8322	6S44593P89	10K ohm
R8323	6S44593P89	10K ohm
R8324	6S44593P89	10K ohm
R8325	6S44594P38	1M ohm
VR2001	18B44064J06	Variable 680K ohm ½W
VR2002	18B44064J06	Variable 680K ohm ½W
VR2003	18B44064J02	Variable 4.7K ohm ½W
VR2004	18B44064J02	Variable 4.7K ohm ½W
VR2007	18C41732G03	Variable 4.7K ohm-B
VR2008	18C41732G03	Variable 4.7K ohm-B
VR4801	18C41732G07	Variable 1K ohm-B
VR4802	18C41732G07	Variable 1K ohm-B
VR4803	18C41732G07	Variable 1K ohm-B
VR4804	18C41732G07	Variable 1K ohm-B
VR5001	18C41732G06	Variable 10K ohm-B
VR5002	18C41732G06	Variable 10K ohm-B
VR5003	18C41732G05	Variable 3.3K ohm
VR5004	18C41732G05	Variable 3.3K ohm
VR5005	18C41732G08	Variable 22K ohm-B
VR5006	18C41732G08	Variable 22K ohm-B
VR5007	18C41732G08	Variable 22K ohm-B
VR5008	18C41732G08	Variable 22K ohm-B
VR5009	18C41732G08	Variable 22K ohm-B
VR5010	18C41732G08	Variable 22K ohm-B
VR5011	18C41732G08	Variable 22K ohm-B
VR5012	18C41732G08	Variable 22K ohm-B
VR5013	18C41732G08	Variable 22K ohm-B
VR5014	18C41732G08	Variable 22K ohm-B
VR8002	18C41732G07	Variable 1K ohm-B
VR8003	18B44064J04	Variable 47K ohm ½W
VR8004	18B44064J02	Variable 4.7K ohm ½W

Volume/Switch P.C. Board

IC

IC2801	51T52155F01	NJM2041D-D

Switches

S4051	40T52408F01	SUT110 (PEAK/VU)
S6601	40T52408F01	SUT110 (AUTO PLAY)
S6602	40T52408F01	SUT110 (AUTO REW)
S6603	40T52408F01	SUT110 (MPX)
S6604	40T52408F01	SUT110 (TAPE/SOURCE)

Volumes

VR2801	18T52409F01	S3013G 10K ohm (LINE L)
VR2802	18T52409F01	S3013G 10K ohm (LINE R)
VR2803	18T52409F01	S3013G 10K ohm (MIC L)
VR2804	18T52409F01	S3013G 10K ohm (MIC R)
VR2805	18T52410F01	S6023G 10K ohm x 2 (MASTER)

Capacitors

C2801	23T42477F38	Electrolytic (B.P) 33 uF/16V
C2802	23T42477F38	Electrolytic (B.P) 33 uF/16V
C2803	23S40657F10	Electrolytic 10 uF/16V
C2804	23S40657F10	Electrolytic 10 uF/16V
C2805	23T42477F38	Electrolytic (B.P) 33 uF/16V
C2806	23T42477F38	Electrolytic (B.P) 33 uF/16V
C2807	8T55260F61	Ceramic 10000 pF
C2808	8T55260F61	Ceramic 10000 pF
C2809	8T55260F61	Ceramic 10000 pF
C2810	8T55260F61	Ceramic 10000 pF

Symbol No.	Part No.	Description
Resistors (All resistors are carbon film, 1/6W, ±5% unless otherwise noted)		
R2801	6S55065F65	1K ohm
R2802	6S55065F65	1K ohm
R2803	6S55065F89	10K ohm
R2804	6S55065F89	10K ohm
R2805	6S55065F89	10K ohm
R2806	6S55065F89	10K ohm
R2807	6S55065F89	10K ohm
R2808	6S55065F89	10K ohm
R2809	6S55065F49	220 ohm
R2810	6S55065F49	220 ohm
R2811	6S55065F77	3.3K ohm
R2812	6S55065F89	10K ohm
R2813	6S55065F89	10K ohm
R2814	6S55065F89	10K ohm
Dolby NR P.C. Board		
IC's		
IC451	51S43471U02	μPC4558C
IC3001	51T52155F01	NJM2041D-D
IC3003	51T52160F01	HA12038-01
IC3004	51T52160F01	HA12038-01
IC3301	51S43471U02	μPC4558C
IC3503	51T52160F01	HA12038-01
IC3504	51T52160F01	HA12038-01
IC3801	51S43471U02	μPC4558C
IC3951	51S43471U02	μPC4558C
Transistors		
Q3001	48T51878F01	2SC2878-A, B
Q3002	48T51878F01	2SC2878-A, B
Q3003	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P

Symbol No.	Part No.	Description
Q3004	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3901	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3902	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3903	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3904	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3905	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3906	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3907	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3908	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P

Symbol No.	Part No.	Description
Q3909	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3910	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3911	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3912	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q3913	48S43525F05	2SC1815-Y, GR
or	48T51091F01	2SC2021-R, S
or	48S44578J01	2SC945L-P
Q3914	48T51118F01	2SA1015-Y
or	48T40081T01	2SA733-R
or	48T40081T02	2SA733-Q
or	48T40081T03	2SA733-P
or	48T51089F01	2SA937-Q, R
Q3915	48T51878F01	2SC2878-A, B
Q3916	48T51878F01	2SC2878-A, B
Q3917	48T51878F01	2SC2878-A, B
Q3918	48T51878F01	2SC2878-A, B
Diodes		
D3001	48T44813F01	MA165TA
D3002	48T44813F01	MA165TA
D3903	48T44813F01	MA165TA
D3904	48T44813F01	MA165TA
D3905	48T44813F01	MA165TA
D3906	48T44813F01	MA165TA
D3907	48T44813F01	MA165TA
D3908	48T44813F01	MA165TA
D3909	48T44813F01	MA165TA
D3910	48T44813F01	MA165TA

Symbol No.	Part No.	Description
D3911	48T44813F01	MA165TA
D3912	48T44813F01	MA165TA
D3913	48T44813F01	MA165TA
D3914	48T44813F01	MA165TA
Coils & Filters		
L3001	24T52159F01	Inductor 36mH (BLK)
L3002	24T52159F01	Inductor 36mH (BLK)
L3501	24T51914F01	Trap 4.7mH (BLK)
L3502	24T51914F01	Trap 4.7mH (BLK)
L3503	24T52159F01	Inductor 36mH (BLK)
L3504	24T52159F01	Inductor 36mH (BLK)
LF3001	51T44717P01	Filter MPX 105B (BLK)
LF3002	51T44717P01	Filter MPX 105B (BLK)
LF3003	51T44717P02	Filter MPX 19B (BLK)
LF3004	51T44717P02	Filter MPX 19B (BLK)
Capacitors		
C451	23S40657F10	Electrolytic 10 uF/16V
C452	23S40657F10	Electrolytic 10 uF/16V
C453	23T42477F38	Electrolytic (B.P) 33 uF/16V
C454	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3001	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3002	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3003	23S40657F32	Electrolytic 10 uF/50V
C3004	23S40657F32	Electrolytic 10 uF/50V
C3005	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3006	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3011	8T55260F45	Ceramic 470 pF
C3012	8T55260F45	Ceramic 470 pF
C3013	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3014	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3015	8S40656F03	Mylar 0.0015 uF
C3016	8S40656F03	Mylar 0.0015 uF
C3017	8S40656F15	Mylar 0.015 uF
C3018	8S40656F15	Mylar 0.015 uF
C3019	8S40656F15	Mylar 0.015 uF
C3020	8S40656F15	Mylar 0.015 uF

Symbol No.	Part No.	Description
C3021	23T42477F06	Electrolytic (B.P) 10 uF/16V
C3022	23T42477F06	Electrolytic (B.P) 10 uF/16V
C3023	8S40656F13	Mylar 0.01 uF
C3024	8S40656F13	Mylar 0.01 uF
C3025	23T42477F09	Electrolytic (B.P) 4.7 uF/25V
C3026	23T42477F09	Electrolytic (B.P) 4.7 uF/25V
C3027	8S40656F16	Mylar 0.018 uF
C3028	8S40656F16	Mylar 0.018 uF
C3029	8T50579F19	T.F. 0.33 uF
C3030	8T50579F19	T.F. 0.33 uF
C3031	8T50579F19	T.F. 0.33 uF
C3032	8T50579F19	T.F. 0.33 uF
C3033	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3034	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3035	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3036	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3037	8S40656F01	Mylar 0.001 uF
C3038	8S40656F01	Mylar 0.001 uF
C3039	8S40656F07	Mylar 0.0033 uF
C3040	8S40656F07	Mylar 0.0033 uF
C3041	8S40656F08	Mylar 0.0039 uF
C3042	8S40656F08	Mylar 0.0039 uF
C3043	8S40656F10	Mylar 0.0056 uF
C3044	8S40656F10	Mylar 0.0056 uF
C3045	8T55260F27	Ceramic 39 pF
C3046	8T55260F27	Ceramic 39 pF
C3047	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3048	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3049	23T42477F06	Electrolytic (B.P) 10 uF/16V
C3050	23T42477F06	Electrolytic (B.P) 10 uF/16V
C3051	8S40656F24	Mylar 0.082 uF
C3052	8S40656F24	Mylar 0.082 uF
C3053	23T42477F09	Electrolytic (B.P) 4.7 uF/25V
C3054	23T42477F09	Electrolytic (B.P) 4.7 uF/25V
C3055	8T50579F15	T.F. 0.15 uF
C3056	8T50579F15	T.F. 0.15 uF
C3057	8T50579F21	T.F. 0.47 uF
C3058	8T50579F21	T.F. 0.47 uF
C3059	23T42477F02	Electrolytic (B.P) 22 uF/10V
C3060	23T42477F02	Electorlytic (B.P) 22 uF/10V
C3061	23S40657F08	Electrolytic 100 uF/10V
C3062	23S40657F08	Electrolytic 100 uF/10V
C3063	23S40657F08	Electrolytic 100 uF/10V
C3064	23S40657F08	Electrolytic 100 uF/10V
C3301	23S40657F10	Electrolytic 10 uF/16V

Symbol No.	Part No.	Description
C3302	23S40657F10	Electrolytic 10 uF/16V
C3303	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3304	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3507	8T55260F45	Ceramic 470 pF
C3508	8T55260F45	Ceramic 470 pF
C3509	8T55260F45	Ceramic 470 pF
C3510	8T55260F45	Ceramic 470 pF
C3511	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3512	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3513	8S40656F03	Mylar 0.0015 uF
C3514	8S40656F03	Mylar 0.0015 uF
C3515	8S40656F15	Mylar 0.015 uF
C3516	8S40656F15	Mylar 0.015 uF
C3517	8S40656F15	Mylar 0.015 uF
C3518	8S40656F15	Mylar 0.015 uF
C3519	23T42477F06	Electrolytic (B.P) 10 uF/16V
C3520	23T42477F06	Electrolytic (B.P) 10 uF/16V
C3521	8S40656F13	Mylar 0.01 uF
C3522	8S40656F13	Mylar 0.01 uF
C3523	8S40656F16	Mylar 0.018 uF
C3524	8S40656F16	Mylar 0.018 uF
C3525	23T42477F09	Electrolytic (B.P) 4.7 uF/25V
C3526	23T42477F09	Electrolytic (B.P) 4.7 uF/25V
C3527	8T50579F19	T.F. 0.33 uF
C3528	8T50579F19	T.F. 0.33 uF
C3529	8T50579F19	T.F. 0.33 uF
C3530	8T50579F19	T.F. 0.33 uF
C3531	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3532	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3533	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3534	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3535	8S40656F01	Mylar 0.001 uF
C3536	8S40656F01	Mylar 0.001 uF
C3537	8S40656F07	Mylar 0.0033 uF
C3538	8S40656F07	Mylar 0.0033 uF
C3539	8S40656F08	Mylar 0.0039 uF
C3540	8S40656F08	Mylar 0.0039 uF
C3541	8S40656F10	Mylar 0.0056 uF
C3542	8S40656F10	Mylar 0.0056 uF
C3543	8T55260F27	Ceramic 39 pF
C3544	8T55260F27	Ceramic 39 pF
C3545	23T42477F06	Electrolytic (B.P) 10 uF/16V
C3546	23T42477F06	Electrolytic (B.P) 10 uF/16V
C3547	8S40656F24	Mylar 0.082 uF
C3548	8S40656F24	Mylar 0.082 uF

Symbol No.	Part No.	Description
C3549	23T42477F09	Electrolytic (B.P) 4.7 uF/25V
C3550	23T42477F09	Electrolytic (B.P) 4.7 uF/25V
C3551	8T50579F15	T.F. 0.15 uF
C3552	8T50579F15	T.F. 0.15 uF
C3553	8T50579F21	T.F. 0.47 uF
C3554	8T50579F21	T.F. 0.47 uF
C3555	23T42477F02	Electrolytic (B.P) 22 uF/10V
C3556	23T42477F02	Electrolytic (B.P) 22 uF/10V
C3557	23S40657F08	Electrolytic 100 uF/10V
C3558	23S40657F08	Electrolytic 100 uF/10V
C3559	23S40657F08	Electrolytic 100 uF/10V
C3560	23S40657F08	Electrolytic 100 uF/10V
C3561	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3562	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3801	23S40657F10	Electrolytic 10 uF/16V
C3802	23S40657F10	Electrolytic 10 uF/16V
C3803	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3804	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3901	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3902	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3903	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3904	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3905	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3906	23T42477F16	Electrolytic (B.P) 1 uF/50V
C3907	8S40656F25	Mylar 0.1 uF
C3908	8S40656F25	Mylar 0.1 uF
C3951	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3952	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3953	23S40657F32	Electrolytic 10 uF/50V
C3954	23S40657F32	Electrolytic 10 uF/50V
C3955	23T42477F38	Electrolytic (B.P) 33 uF/16V
C3956	23T42477F38	Electrolytic (B.P) 33 uF/16V

Resistors (All resistors are carbon film, 1/6W, ±5% unless otherwise noted)

R451	6S55065F89	10K ohm
R452	6S55065F89	10K ohm
R453	6S55065F89	10K ohm
R454	6S55065F89	10K ohm
R455	6S55065F87	8.2K ohm
R456	6S55065F87	8.2K ohm
R3001	6S55065F89	10K ohm
R3002	6S55065F89	10K ohm
R3003	6S55065F74	2.4K ohm
R3004	6S55065F74	2.4K ohm

Symbol No.	Part No.	Description
R3005	6S55065F89	10K ohm
R3006	6S55065F89	10K ohm
R3007	6S55065F89	10K ohm
R3008	6S55065F89	10K ohm
R3009	6S55065F83	5.6K ohm
R3010	6S55065F83	5.6K ohm
R3011	6S55065F87	8.2K ohm
R3012	6S55065F87	8.2K ohm
R3013	6S55066F14	100K ohm
R3014	6S55066F14	100K ohm
R3015	6S55065F77	3.3K ohm
R3016	6S55065F77	3.3K ohm
R3017	6S55065F65	1K ohm
R3018	6S55065F65	1K ohm
R3019	6S55065F41	100 ohm
R3020	6S55065F41	100 ohm
R3021	6S55065F82	5.1K ohm
R3022	6S55065F82	5.1K ohm
R3023	6S55065F93	15K ohm
R3024	6S55065F93	15K ohm
R3025	6S55066F06	47K ohm
R3026	6S55066F06	47K ohm
R3027	6S55065F84	6.2K ohm
R3028	6S55065F84	6.2K ohm
R3029	6S55066F12	82K ohm
R3030	6S55066F12	82K ohm
R3031	6S55066F38	1M ohm
R3032	6S55066F38	1M ohm
R3033	6S55065F81	4.7K ohm
R3034	6S55065F81	4.7K ohm
R3035	6S55065F50	240 ohm
R3036	6S55065F50	240 ohm
R3037	6S55065F87	8.2K ohm
R3038	6S55065F87	8.2K ohm
R3039	6S55065F49	220 ohm
R3040	6S55065F49	220 ohm
R3041	6S55065F89	10K ohm
R3042	6S55065F89	10K ohm
R3043	6S55066F10	68K ohm
R3044	6S55066F10	68K ohm
R3045	6S55066F14	100K ohm
R3046	6S55066F14	100K ohm
R3047	6S55066F08	56K ohm
R3048	6S55066F08	56K ohm
R3049	6S55065F84	6.2K ohm

Symbol No.	Part No.	Description
R3050	6S55065F84	6.2K ohm
R3051	6S55066F12	82K ohm
R3052	6S55066F12	82K ohm
R3053	6S55065F89	10K ohm
R3054	6S55065F89	10K ohm
R3055	6S55066F02	33K ohm
R3056	6S55066F02	33K ohm
R3057	6S55066F14	100K ohm
R3058	6S55066F14	100K ohm
R3059	6S55066F14	100K ohm
R3060	6S55066F14	100K ohm
R3301	6S55065F41	100 ohm
R3302	6S55065F41	100 ohm
R3303	6S55065F97	22K ohm
R3304	6S55065F97	22K ohm
R3305	6S55065F65	1K ohm
R3306	6S55065F65	1K ohm
R3501	6S55065F65	1K ohm
R3502	6S55065F65	1K ohm
R3503	6S55065F85	6.8K ohm
R3504	6S55065F85	6.8K ohm
R3505	6S55065F83	5.6K ohm
R3506	6S55065F83	5.6K ohm
R3507	6S55065F87	8.2K ohm
R3508	6S55065F87	8.2K ohm
R3509	6S55066F14	100K ohm
R3510	6S55066F14	100K ohm
R3511	6S55065F77	3.3K ohm
R3512	6S55065F77	3.3K ohm
R3513	6S55065F65	1K ohm
R3514	6S55065F65	1K ohm
R3515	6S55065F41	100 ohm
R3516	6S55065F41	100 ohm
R3517	6S55065F82	5.1K ohm
R3518	6S55065F82	5.1K ohm
R3519	6S55065F93	15K ohm
R3520	6S55065F93	15K ohm
R3521	6S55066F06	47K ohm
R3522	6S55066F06	47K ohm
R3523	6S55065F84	6.2K ohm
R3524	6S55065F84	6.2K ohm
R3525	6S55066F12	82K ohm
R3526	6S55066F12	82K ohm
R3527	6S55066F38	1M ohm
R3528	6S55066F38	1M ohm

Symbol No.	Part No.	Description
R3529	6S55065F81	4.7K ohm
R3530	6S55065F81	4.7K ohm
R3531	6S55065F50	240 ohm
R3532	6S55065F50	240 ohm
R3533	6S55065F87	8.2K ohm
R3534	6S55065F87	8.2K ohm
R3535	6S55065F49	220 ohm
R3536	6S55065F49	220 ohm
R3537	6S55065F89	10K ohm
R3538	6S55065F89	10K ohm
R3539	6S55066F10	68K ohm
R3540	6S55066F10	68K ohm
R3541	6S55066F08	56K ohm
R3542	6S55066F08	56K ohm
R3543	6S55065F84	6.2K ohm
R3544	6S55065F84	6.2K ohm
R3545	6S55066F12	82K ohm
R3546	6S55066F12	82K ohm
R3547	6S55065F89	10K ohm
R3548	6S55065F89	10K ohm
R3549	6S55066F02	33K ohm
R3550	6S55066F02	33K ohm
R3801	6S55065F41	100 ohm
R3802	6S55065F41	100 ohm
R3803	6S55065F97	22K ohm
R3804	6S55065F97	22K ohm
R3805	6S55065F65	1K ohm
R3806	6S55065F65	1K ohm
R3901	6S55065F89	10K ohm
R3902	6S55065F89	10K ohm
R3903	6S55065F89	10K ohm
R3904	6S55065F89	10K ohm
R3905	6S55065F89	10K ohm
R3906	6S55065F89	10K ohm
R3907	6S55065F89	10K ohm
R3908	6S55065F89	10K ohm
R3909	6S55065F89	10K ohm
R3910	6S55065F89	10K ohm
R3911	6S55065F89	10K ohm
R3912	6S55065F89	10K ohm
R3913	6S55065F49	220 ohm
R3914	6S55065F49	220 ohm
R3915	6S55066F14	100K ohm
R3916	6S55066F14	100K ohm
R3917	6S55065F49	220 ohm

Symbol No.	Part No.	Description	
R3918	6S55065F49		220 ohm
R3919	6S55066F14		100K ohm
R3920	6S55066F14		100K ohm
R3921	6S55065F49		220 ohm
R3922	6S55065F49		220 ohm
R3923	6S55066F14		100K ohm
R3924	6S55066F14		100K ohm
R3925	6S55065F49		220 ohm
R3926	6S55065F49		220 ohm
R3927	6S55066F14		100K ohm
R3928	6S55066F14		100K ohm
R3929	6S55066F14		100K ohm
R3930	6S55066F14		100K ohm
R3931	6S55066F14		100K ohm
R3932	6S55066F14		100K ohm
R3933	6S55066F14		100K ohm
R3934	6S55066F14		100K ohm
R3935	6S55065F77		3.3K ohm
R3936	6S55065F89		10K ohm
R3937	6S55065F89		10K ohm
R3938	6S55065F89		10K ohm
R3939	6S55065F89		10K ohm
R3940	6S55065F77		3.3K ohm
R3941	6S55066F06		47K ohm
R3942	6S55066F06		47K ohm
R3943	6S55066F06		47K ohm
R3944	6S55066F06		47K ohm
R3945	6S55066F38		1M ohm
R3946	6S55066F38		1M ohm
R3949	6S55065F57		470 ohm
R3950	6S55065F57		470 ohm
R3951	6S55065F89		10K ohm
R3952	6S55065F89		10K ohm
R3953	6S55065F87		8.2K ohm
R3954	6S55065F87		8.2K ohm
VR3301	18T43733P10	Variable	1K ohm ½W
VR3302	18T43733P10	Variable	1K ohm ½W
VR3501	18T43733P01	Variable	4.7K ohm ½W
VR3502	18T43733P01	Variable	4.7K ohm ½W
VR3801	18T43733P10	Variable	1K ohm ½W
VR3802	18T43733P10	Variable	1K ohm ½W

Symbol No.	Part No.	Description
Record EQ P.C. Board		
IC's		
IC5501	51S43471U02	μPC4558C
IC5502	51S43471U02	μPC4558C
Transistors		
Q5501	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5502	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5503	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5504	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5505	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5506	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5507	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P

Symbol No.	Part No.	Description
Q5508	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5509	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5510	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5511	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5512	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5513	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5514	48T52122F01	FET. 2SK301-R
or	48T52122F01	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5515	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q5516	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P

Symbol No.	Part No.	Description
Diodes		
D5501	48T44813F01	MA165TA
D5502	48T44813F01	MA165TA
D5503	48T44813F01	MA165TA
D5504	48T44813F01	MA165TA
D5505	48T44813F01	MA165TA
D5506	48T44813F01	MA165TA
D5507	48T44813F01	MA165TA
D5508	48T44813F01	MA165TA
D5509	48T44813F01	MA165TA
D5510	48T44813F01	MA165TA
D5511	48T44813F01	MA165TA
D5512	48T44813F01	MA165TA
D5513	48T44813F01	MA165TA
D5514	48T44813F01	MA165TA
D5515	48T44813F01	MA165TA
D5516	48T44813F01	MA165TA
Capacitors		
C5501	8T55260F61	Ceramic 10000 pF
C5502	8T55260F61	Ceramic 10000 pF
C5503	8T55260F61	Ceramic 10000 pF
C5504	8T55260F61	Ceramic 10000 pF
C5505	8T52448F35	Polystyrol 0.0082 uF
C5506	8T52448F35	Polystyrol 0.0082 uF
C5507	8T52448F35	Polystyrol 0.0082 uF
C5508	8T52448F35	Polystyrol 0.0082 uF
C5509	8T52448F45	Polystyrol 0.022 uF
C5510	8T52448F45	Polsytyrol 0.022 uF
C5511	8T52448F21	Polystyrol 0.0022 uF
C5512	8T52448F21	Polystyrol 0.0022 uF
C5513	23T42477F37	Electrolytic (B.P) 150 uF/10V
C5514	23T42477F37	Electrolytic (B.P) 150 uF/10V
C5515	8T55260F17	Ceramic 15 pF
C5516	8T55260F17	Ceramic 15 pF
C5517	8T52448F13	Polystyrol 0.001 uF
C5518	8T52448F13	Polystyrol 0.001 uF
C5519	8T52448F13	Polystyrol 0.001 uF
C5520	8T52448F13	Polystyrol 0.001 uF

Symbol No.	Part No.	Description
C5521	8T52448F17	Polystyrol 0.0015 uF
C5522	8T52448F17	Polystyrol 0.0015 uF
C5523	8T52448F11	Polystyrol 820 pF
C5524	8T52448F11	Polystyrol 820 pF
C5525	8T55260F17	Ceramic 15 pF
C5526	8T55260F17	Ceramic 15 pF
C5527	23S40657F10	Electrolytic 10 uF/16V
C5528	23S40657F10	Electrolytic 10 uF/16V
C5529	8T55260F41	Ceramic 220 pF
C5530	8T55260F41	Ceramic 220 pF
Resistors (All resistors are carbon film, 1/6W, ±5% unless otherwise noted)		
R5501	6S55065F95	18K ohm
R5502	6S55065F95	18K ohm
R5503	6S55065F95	18K ohm
R5504	6S55065F95	18K ohm
R5505	6S55066F16	120K ohm
R5506	6S55066F16	120K ohm
R5507	6S55065F53	330 ohm
R5508	6S55065F53	330 ohm
R5509	6S55065F77	3.3K ohm
R5510	6S55065F77	3.3K ohm
R5511	6S55065F77	3.3K ohm
R5512	6S55065F77	3.3K ohm
R5513	6S55065F77	3.3K ohm
R5514	6S55065F77	3.3K ohm
R5515	6S55065F77	3.3K ohm
R5516	6S55065F77	3.3K ohm
R5517	6S55065F65	1K ohm
R5518	6S55065F65	1K ohm
R5519	6S55065F65	1K ohm
R5520	6S55065F65	1K ohm
R5521	6S55065F65	1K ohm
R5522	6S55065F65	1K ohm
R5523	6S55065F65	1K ohm
R5524	6S55065F65	1K ohm
R5525	6S55065F89	10K ohm
R5526	6S55065F89	10K ohm
R5527	6S55065F89	10K ohm
R5528	6S55065F89	10K ohm
R5529	6S55065F83	5.6K ohm
R5530	6S55065F83	5.6K ohm

Symbol No.	Part No.	Description
R5531	6S55065F89	10K ohm
R5532	6S55065F89	10K ohm
R5533	6S55065F65	1K ohm
R5534	6S55065F65	1K ohm
R5535	6S55065F65	1K ohm
R5536	6S55065F65	1K ohm
R5537	6S55065F65	1K ohm
R5538	6S55065F65	1K ohm
R5539	6S55065F77	3.3K ohm
R5540	6S55065F77	3.3K ohm
R5541	6S55066F07	51K ohm
R5542	6S55066F07	51K ohm
R5543	6S55066F02	33K ohm
R5544	6S55066F02	33K ohm
R5545	6S55066F16	120K ohm
R5546	6S55066F16	120K ohm
R5547	6S55065F53	330 ohm
R5548	6S55065F53	330 ohm
R5549	6S55065F97	22K ohm
R5550	6S55065F97	22K ohm
R5551	6S55065F97	22K ohm
R5552	6S55065F97	22K ohm
R5553	6S55065F89	10K ohm
R5554	6S55065F89	10K ohm
R5555	6S55065F97	22K ohm
R5556	6S55065F97	22K ohm
R5557	6S55065F53	330 ohm
R5558	6S55065F53	330 ohm
R5559	6S55065F53	330 ohm
R5560	6S55065F53	330 ohm
R5561	6S55065F53	330 ohm
R5562	6S55065F53	330 ohm
R5563	6S55065F53	330 ohm
R5564	6S55065F53	330 ohm
VR5501	18T45040F14	Variable 15K ohm 0.3W
VR5502	18T45040F14	Variable 15K ohm 0.3W
VR5503	18T45040F14	Variable 15K ohm 0.3W
VR5504	18T45040F14	Variable 15K ohm 0.3W
VR5505	18T45040F14	Variable 15K ohm 0.3W
VR5506	18T45040F14	Variable 15K ohm 0.3W
VR5507	18T45040F14	Variable 15K ohm 0.3W
VR5508	18T45040F14	Variable 15K ohm 0.3W
VR5509	18T45040F13	Variable 10K ohm 0.3W
VR5510	18T45040F13	Variable 10K ohm 0.3W
VR5511	18T45040F13	Variable 10K ohm 0.3W

Symbol No.	Part No.	Description
VR5512	18T45040F13	Variable 10K ohm 0.3W
VR5513	18T45040F13	Variable 10K ohm 0.3W
VR5514	18T45040F13	Variable 10K ohm 0.3W
VR5515	18T45040F13	Variable 10K ohm 0.3W
VR5516	18T45040F13	Variable 10K ohm 0.3W
VR5517	18T45040F14	Variable 15K ohm 0.3W
VR5518	18T45040F14	Variable 15K ohm 0.3W
VR5519	18T45040F14	Variable 15K ohm 0.3W
VR5520	18T45040F14	Variable 15K ohm 0.3W
VR5521	18T45040F14	Variable 15K ohm 0.3W
VR5522	18T45040F14	Variable 15K ohm 0.3W
VR5523	18T45040F14	Variable 15K ohm 0.3W
VR5524	18T45040F14	Variable 15K ohm 0.3W
Mechanism Control P.C. Board		
IC's		
IC6001	51T51994F01	HD38805A03
IC6002	51T51782F01	MC14028BCP
IC6003	51T52158F01	TD62504
IC6004	51T52158F01	TD62504
IC6005	51T52154F01	NJM2901N
IC6006	51T51781F01	MC14049UB
IC6007	51T52158F01	TD62504
Transistors		
Q6001	48T51118F01	2SA1015-Y
or	48T51089F01	2SA937-Q, R
or	48T40081T01	2SA733-R
or	48T40081T02	2SA733-Q
or	48T40081T03	2SA733-P
Q6002	48T51118F01	2SA1015-Y
or	48T51089F01	2SA937-Q, R
or	48T40081T01	2SA733-R
or	48T40081T02	2SA733-Q
or	48T40081T03	2SA733-P

Symbol No.	Part No.	Description
Q6003	48T51118F01	2SA1015-Y
or	48T51089F01	2SA937-Q, R
or	48T40081T01	2SA733-R
or	48T40081T02	2SA733-Q
or	48T40081T03	2SA733-P
Q6004	48S43525F05	2SC1815-Y, GR
or	48T51091F01	2SC2021-R, S
or	48S44578J01	2SC945L-P
Q6005	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q6006	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q6007	48T56032F01	2SB977-A
Q6008	48T56032F01	2SB977-A
Q6009	48T41365F01	2SD893-P
or	48T41365F02	2SD893-Q
Q6010	48T41365F01	2SD893-P
or	48T41365F02	2SD893-Q
Q6011	48S43525F05	2SC1815-Y, GR
or	48T51091F01	2SC2021-R, S
or	48S44578J01	2SC945L-P
Q6012	48S43525F05	2SC1815-Y, GR
or	48T51091F01	2SC2021-R, S
or	48S44578J01	2SC945L-P
Q6013	48T56032F01	2SB977-A
Q6014	48T56032F01	2SB977-A
Q6015	48T41365F01	2SD893-P
or	48T41365F02	2SD893-Q
Q6016	48T41365F01	2SD893-P
or	48T41365F02	2SD893-Q
Q6017	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Q6018	48T41365F01	2SD893-P
or	48T41365F02	2SD893-Q
Q6019	48T41197U03	2SA777-R
or	48T41197U04	2SA777-S

Symbol No.	Part No.	Description
Q6020	48T41197U03	2SA777-R
or	48T41197U04	2SA777-S
Q6021	48T41197U03	2SA777-R
or	48T41197U04	2SA777-S
Q6022	48S43525F05	2SC1815-Y, GR
or	48T51091F01	2SC2021-R, S
or	48S44578J01	2SC945L, P
Q6023	48T56031F01	2SD1266-P, Q
or	48S40662G05	2SD235-Y
or	48T42620F02	2SD880-Y
or	48T42620F03	2SD880-GR
Diodes		
D6001	48T44813F01	MA165TA
D6002	48T44813F01	MA165TA
D6003	48T44813F01	MA165TA
D6004	48T44813F01	MA165TA
D6005	48T44813F01	MA165TA
D6008	48T44813F01	MA165TA
D6009	48T44813F01	MA165TA
D6010	48T44813F01	MA165TA
D6011	48T44813F01	MA165TA
D6012	48T44813F01	MA165TA
D6013	48T44813F01	MA165TA
D6014	48T44813F01	MA165TA
D6016	48T44813F01	MA165TA
D6017	48T44813F01	MA165TA
D6018	48T44813F01	MA165TA
D6019	48T44813F01	MA165TA
D6020	48T43982F01	0A95
D6021	48T44813F01	MA165TA
D6022	48T44813F01	MA165TA
D6023	48T44813F01	MA165TA
D6024	48T44813F01	MA165TA
D6026	48T44813F01	MA165TA
D6027	48T44813F01	MA165TA
D6028	48T44813F01	MA165TA

Symbol No.	Part No.	Description
D6029	48T44813F01	MA165TA
D6030	48T44813F01	MA165TA
D6031	48T44813F01	MA165TA
D6032	48T44813F01	MA165TA
D6033	48T44813F01	MA165TA
D6034	48T44813F01	MA165TA
D6035	48T44813F01	MA165TA
D6036	48T44813F01	MA165TA
D6037	48T44813F01	MA165TA
D6038	48T44813F01	MA165TA
D6039	48T44813F01	MA165TA
D6040	48T44813F01	MA165TA
D6041	48T44813F01	MA165TA
D6042	48T44813F01	MA165TA
D6043	48T44813F01	MA165TA
D6044	48T44813F01	MA165TA
D6045	48T44813F01	MA165TA
D6046	48T44813F01	MA165TA
D6047	48T44813F01	MA165TA
D6048	48T44813F01	MA165TA
D6049	48T44813F01	MA165TA
D6050	48S40477U01	1N4003
ZD6001	48T40150U54	Zener HZ11A-3
or	48T40732F40	Zener RD10E-B3
ZD6002	48T40150U86	Zener HZ24-2
or	48T40732F69	Zener RD24E-B4
ZD6003	48T40150U69	Zener HZ12C-3
or	48T40732F51	Zener RD15E-B2
ZD6004	48T40059U26	Zener HZ9C-2L
or	48T40732F38	Zener RD10E-B1
ZD6005	48T40150U28	Zener HZ6A-1
or	48T40732F20	Zener RD5.6E-B1
ZD6006	48T40059U27	Zener HZ9C-3L
or	48T40732F39	Zener RD10E-B2
ZD6007	48T40150U14	Zener HZ4B-2
or	48T40732F10	Zener RD3.9E-B2
ZD6008	48T40150U25	Zener HZ5C-1
or	48T40732F17	Zener RD5.1E-B1
ZD6009	48T40150U56	Zener HZ11B-2
or	48T40732F42	Zener RD11E-B2
Filter		
CF6001	91T52156F01	Ceramic OSC 400KHz

Symbol No.	Part No.	Description
Capacitors		
C6001	8T55260F61	Ceramic 10000 pF
C6002	8T55260F61	Ceramic 10000 pF
C6003	8T55260F61	Ceramic 10000 pF
C6004	8T55260F61	Ceramic 10000 pF
C6005	8T55260F61	Ceramic 10000 pF
C6006	8T55260F61	Ceramic 10000 pF
C6007	8T55260F61	Ceramic 10000 pF
C6008	8T55260F45	Ceramic 470 pF
C6009	8T55260F38	Ceramic 120 pF
C6010	23S40657F10	Electrolytic 10 uF/16V
C6011	8T55260F58	Ceramic 4700 pF
C6012	8T55260F58	Ceramic 4700 pF
C6013	8T55260F58	Ceramic 4700 pF
C6014	23S40657F17	Electrolytic 10 uF/25V
C6015	23S40657F17	Electrolytic 10 uF/25V
C6016	23S40657F10	Electrolytic 10 uF/16V
C6017	23S40657F10	Electrolytic 10 uF/16V
C6018	23S40657F10	Electrolytic 10 uF/16V
C6019	23S40657F10	Electrolytic 10 uF/16V
C6020	23S40657F10	Electrolytic 10 uF/16V
C6021	23S40657F10	Electrolytic 10 uF/16V
C6022	23S40657F10	Electrolytic 10 uF/16V
C6023	23S40657F10	Electrolytic 10 uF/16V
C6024	8T55260F61	Ceramic 10000 pF
C6025	23S40657F10	Electrolytic 10 uF/16V
C6026	8T50579F21	T.F. 0.47 uF
C6027	8S40656F25	Mylar 0.1 uF
C6028	23T42478F24	Electrolytic (L.N) 1 uF/50V
C6029	23S40657F10	Electrolytic 10 uF/16V
C6030	23T40475U27	Electrolytic (L.N) 47 uF/25V
C6031	23S40657F17	Electrolytic 10 uF/25V
C6032	23S40657F07	Electrolytic 47 uF/10V
C6033	23S40657F10	Electrolytic 10 uF/16V
C6034	23S40657F09	Electrolytic 220 uF/10V
C6035	8T55260F45	Ceramic 470 pF
C6036	23S40657F10	Electrolytic 10 uF/16V
C6037	23S40657F10	Electrolytic 10 uF/16V
C6038	23S41059P34	Tantalum 47 uF/6.3V

Symbol No.	Part No.	Description
Resistors (All resistors are carbon film, 1/6W, ±5% unless otherwise noted)		
R6001	51T52333F01	Allay 47K ohm x 8
R6002	51T52333F02	Allay 10K ohm x 4
R6003	6S55065F65	1K ohm
R6004	6S55065F65	1K ohm
R6005	6S55065F65	1K ohm
R6006	6S55065F65	1K ohm
R6007	6S55065F65	1K ohm
R6008	6S55065F65	1K ohm
R6009	6S55065F65	1K ohm
R6010	6S55066F38	1M ohm
R6011	6S55065F49	220 ohm
R6012	6S55065F49	220 ohm
R6013	6S55065F49	220 ohm
R6014	6S55065F49	220 ohm
R6015	6S55065F51	270 ohm
R6016	6S55065F51	270 ohm
R6017	6S55065F49	220 ohm
R6018	6T51015F19	82 ohm ½W
R6024	6S55065F89	10K ohm
R6025	6S55065F89	10K ohm
R6026	6S55065F65	1K ohm
R6027	6S55066F06	47K ohm
R6028	6S55065F89	10K ohm
R6029	6S55065F89	10K ohm
R6030	6S55066F06	47K ohm
R6031	6S55066F06	47K ohm
R6032	6S55066F06	47K ohm
R6033	6S55066F06	47K ohm
R6034	6S55066F06	47K ohm
R6035	6S55066F06	47K ohm
R6036	6S55065F89	10K ohm
R6037	6S55066F06	47K ohm
R6038	6S55065F89	10K ohm
R6039	6S55066F06	47K ohm
R6040	6S55066F14	100K ohm
R6041	6S55066F14	100K ohm
R6042	6S55065F89	10K ohm
R6043	6S55066F06	47K ohm
R6044	6S55065F89	10K ohm
R6045	6S55065F89	10K ohm

Symbol No.	Part No.	Description
R6046	6S55066F06	47K ohm
R6047	6S55065F65	1K ohm
R6048	6S55065F65	1K ohm
R6049	6S55065F65	1K ohm
R6050	6S55065F73	2.2K ohm
R6051	6S55065F89	10K ohm
R6052	6S55065F89	10K ohm
R6053	6S55066F06	47K ohm
R6054	6D44744G32	1K ohm ½W
R6055	6S55065F89	10K ohm
R6056	6S55065F89	10K ohm
R6057	6S55065F89	10K ohm
R6058	6S55065F89	10K ohm
R6059	6S55065F89	10K ohm
R6060	6S55065F73	2.2K ohm
R6061	6S55065F89	10K ohm
R6062	6S55065F73	2.2K ohm
R6063	6S55065F73	2.2K ohm
R6064	6S55065F73	2.2K ohm
R6065	6S55065F73	2.2K ohm
R6066	6S55065F89	10K ohm
R6067	6D44744G32	1K ohm ½W
R6068	6S55065F89	10K ohm
R6069	6S55065F73	2.2K ohm
R6070	6S55065F89	10K ohm
R6071	6S55065F73	2.2K ohm
R6072	6S55065F73	2.2K ohm
R6073	6S55065F89	10K ohm
R6074	6S55065F73	2.2K ohm
R6075	6S55065F89	10K ohm
R6076	6S55065F73	2.2K ohm
R6077	6S55065F89	10K ohm
R6078	6S55065F85	6.8K ohm
R6079	6S55066F02	33K ohm
R6080	6S55066F14	100K ohm
R6081	6S55065F89	10K ohm
R6082	6S55066F14	100K ohm
R6083	6S55065F73	2.2K ohm
R6084	6S55066F22	220K ohm
R6085	6S55065F89	10K ohm
R6086	6S55065F89	10K ohm
R6087	6S55065F65	1K ohm
R6088	6S55065F89	10K ohm
R6089	6S55066F38	1M ohm
R6090	6S55066F14	100K ohm

Symbol No.	Part No.	Description
R6091	6S55065F97	22K ohm
R6092	6S55065F89	10K ohm
R6093	6S55065F89	10K ohm
R6094	6S55065F89	10K ohm
R6095	6S55065F89	10K ohm
R6096	6S55065F89	10K ohm
R6097	6S55065F89	10K ohm
R6098	6S55065F89	10K ohm
R6099	6S55065F89	10K ohm
R6100	6S55065F89	10K ohm
R6101	6S55065F89	10K ohm
R6102	6S55065F89	10K ohm
R6103	6S55065F89	10K ohm
R6104	6S55065F73	2.2K ohm

Pulse OSC P.C. Board

IC

IC6351	51T51781F01	MC14049UB

Diodes

D6351	48T43189F01	1S1555
or	48T51881F01	DS442-BT
D6352	48T43189F01	1S1555
or	48T51881F01	DS442-BT
D6353	48T43189F01	1S1555
or	48T51881F01	DS442-BT

Capacitors

C6351	23T42477F16	Electrolytic 1 uF/50V
C6352	23S40657F10	Electrolytic 10 uF/16V
C6353	8S40656F21	Mylar 0.047 uF
C6354	23S40657F10	Electrolytic 10 uF/16V

Resistors

R6351	6S44594P14	100K ohm
R6352	6S44594P20	180K ohm
R6353	6S44594P38	1M ohm
R6354	6S44594P14	100K ohm
R6355	6S44594P14	100K ohm

Symbol No.	Part No.	Description
Pitch Control P.C. Board		
IC		
IC6501	51S43471U02	μPC4558C
Transistors		
Q6301	48T51878F01	2SC2878-A, B
Q6501	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Q6502	48T52122F01	FET. 2SK301-R
or	48T52122F02	FET. 2SK301-Q
or	48S42538U01	FET. 2SK127-Q
or	48S42538U02	FET. 2SK127-R
or	48S42538U03	FET. 2SK127-P
Diodes		
D6301	48T44813F01	MA165TA
D6302	48T44813F01	MA165TA
D6501	48T44813F01	MA165TA
D6502	48T44813F01	MA165TA
Capacitors		
C6301	23S40657F51	Electrolytic 330 uF/10V
C6501	23S40657F10	Electrolytic 10 uF/16V
C6502	23S40657F10	Electrolytic 10 uF/16V
Resistors (All resistors are carbon film, 1/6W, ±5% unless otherwise noted)		
R6301	6S55066F14	100K ohm
R6302	6S55065F89	10K ohm
R6303	6S55065F89	10K ohm
R6304	6S55065F73	2.2K ohm
R6501	6S55065F89	10K ohm
R6502	6S55065F73	2.2K ohm
R6503	6S55065F89	10K ohm
R6504	6S55066F14	100K ohm
R6505	6S55066F12	82K ohm

Symbol No.	Part No.	Description
Keyboard P.C. Board		
LED's		
LD6901	48T52608F01	TLUY 163 YEL (PAUSE)
LD6902	48T52606F01	TLUG 163 GRN (PLAY)
LD6903	48T52606F01	TLUG 163 GRN (FF)
LD6904	48T52606F01	TLUG 163 GRN (REW)
LD6905	48T52607F01	TLS 163 RED (REC)
LD6906	48T52607F01	TLS 163 RED (REC MUTE)
LD6907	48T52606F01	TLUG 163 GRN (EXC)
Switches		
S6901	40T44505F01	STOP
S6902	40T44505F01	FF
S6903	40T44505F01	REW
S6904	40T44505F01	PLAY
S6905	40T44505F01	PAUSE
S6906	40T44505F01	REC
S6907	40T44505F01	REC MUTE
S6908	40T44505F01	TAPE/TIME
S6909	40T44505F01	EXC
S6910	40T44505F01	CALL
S6911	40T44505F01	WRITE
S6912	40T44505F01	CLEAR
Counter/LED P.C. Board		
LED's		
LD8501	48T52606F01	TLUG 163 GRN (MPX)
LD8502	48T52609F01	TLO163 ORG (SOURCE)
LD8503	48T52606F01	TLUG 163 GRN (TAPE)
LD8504	48T52606F01	TLUG 163 GRN (A/P)
LD8505	48T52606F01	TLUG 163 GRN (A/R)
LD8506	48T52609F01	TLO 163 ORG (DOLBY C)
LD8507	48T52606F01	TLUG 163 GRN (DOLBY B)
LD8508	48T52606F01	TLUG 163 GRN (CrO_2)
LD8509	48T52606F01	TLUG 163 GRN (CrO_2)
LD8510	48T52606F01	TLUG 163 GRN (METAL)

Symbol No.	Part No.	Description
LD8511	48T52606F01	TLUG 163 GRN (METAL)
LD8512	48T52606F01	TLUG 163 GRN (FeCr)
LD8513	48T52606F01	TLUG 163 GRN (FeCr)
LD8514	48T52606F01	TLUG 163 GRN (NORM)
LD8515	48T52606F01	TLUG 163 GRN (NORM)
LD8516	48T52608F01	TLUY 163 YEL (STD)
LD8517	48T52607F01	TLS 163 RED (ERR)
LD8518	48T52608F01	TLUY 163 YEL (BIAS)
LD8519	48T52606F01	TLUG 163 GRN (OK)
LD8520	48T52606F01	TLUG 163 GRN (DATA)
LD8521	48T52606F01	TLUG 163 GRN (BATT)
LD8522	48T52608F01	TLUY 163 YEL (LEVEL)
LD8523	48T52608F01	TLUY 163 YEL (EQ)
Switches		
S8501	40T56504F01	BLES
S8502	40T56504F01	STD/CALL
S8503	40T56504F01	WRITE
Resistors		
R8501	6S44593P48	200 ohm
R8502	6S44593P48	200 ohm
R8503	6S44593P48	200 ohm
R8504	6S44593P48	200 ohm
R8505	6S44593P48	200 ohm
R8506	6S44593P48	200 ohm
R8507	6S44593P48	200 ohm
R8508	6S44593P40	91 ohm
R8509	6S44593P40	91 ohm
R8510	6S44593P40	91 ohm
R8511	6S44593P40	91 ohm
R8512	6S44593P48	200 ohm
R8513	6S44593P48	200 ohm
R8514	6S44593P48	200 ohm
R8515	6S44593P48	200 ohm
R8516	6S44593P48	200 ohm
R8517	6S44593P48	200 ohm
R8518	6S44593P48	200 ohm
R8519	6S44593P48	200 ohm

Symbol No.		Part No.	Description
Miscellaneous			
C1128	○	8T43867F01	Capacitor, M.P 0.01 μF
	△	8T43867F01	Capacitor, M.P 0.01 μF
	☆	8T57437F09	Capacitor, Ceramic 0.01 μF
	■	8T52995F01	Capacitor, Ceramic 0.01 μF
D1		48E0011S01	Diode, S5277B
FL6701		65T47743F01	Counter, FL
HD2001		88E00113S01	Head, R/P Combination
HD5001		88T52095F01	Head, Erase
J3901		9T52570F02	Plate, Phono 4P
J3902		9T52570F02	Plate, Phono 4P
J4001		9T52570F02	Plate, Phono 4P
J4101		9T52845F12	Jack, M1658 AYCA (HEAD PHONE)
J6801		9T53104F01	Socket, Din 8P
LD1, PT1		48E00217S01	LED, Sensor
LD6701		48T52606F01	LED, GRN TLUG 163
LM4801		72T50769F01	Meter, Level
LM4802		72T50769F01	Meter, Level
M1		59E00038S01	Assembly, DD, Motor Unit
M2		59E00060S01	Assembly, Motor Reel
M3		59E00035S01	Assembly, Pad, Motor
P1001	○	28T50179F03	Plug, AC Cord
	☆	28T44061F03	Plug, AC Cord
	△	28T45338F01	Plug, AC Cord
	■	28T40916U01	Plug, AC Cord
PL1001		65T56033F01	Lamp, Pilot 8V-300mA
PL1002		65T56033F01	Lamp, Pilot 8V-300mA
S1-1		40E00037S01	Switch, Leaf
S1-2		40E00037S01	Switch, Leaf
S1-3		40E00037S01	Switch, Leaf
S2-1		40E00053S01	Switch, Leaf
S2-2		40E00054S01	Switch, Leaf
S1001	●	40T45561F02	Switch, Power (SDLIP)
	■	40T47454F01	Switch, Power
S1002	●	40T55015F01	Switch, Volt Select
S6701		40T50262F01	Switch, Slide (50/60 Hz)
S6801		40T55386F01	Switch, Rotary SBU 1023 TIMER
S8301		40T55387F02	Switch, Rotary SBU 1024 (TAPE SELECT)
S8302		40T55387F02	Switch, Rotary SBU 1024 (NR SELECT)

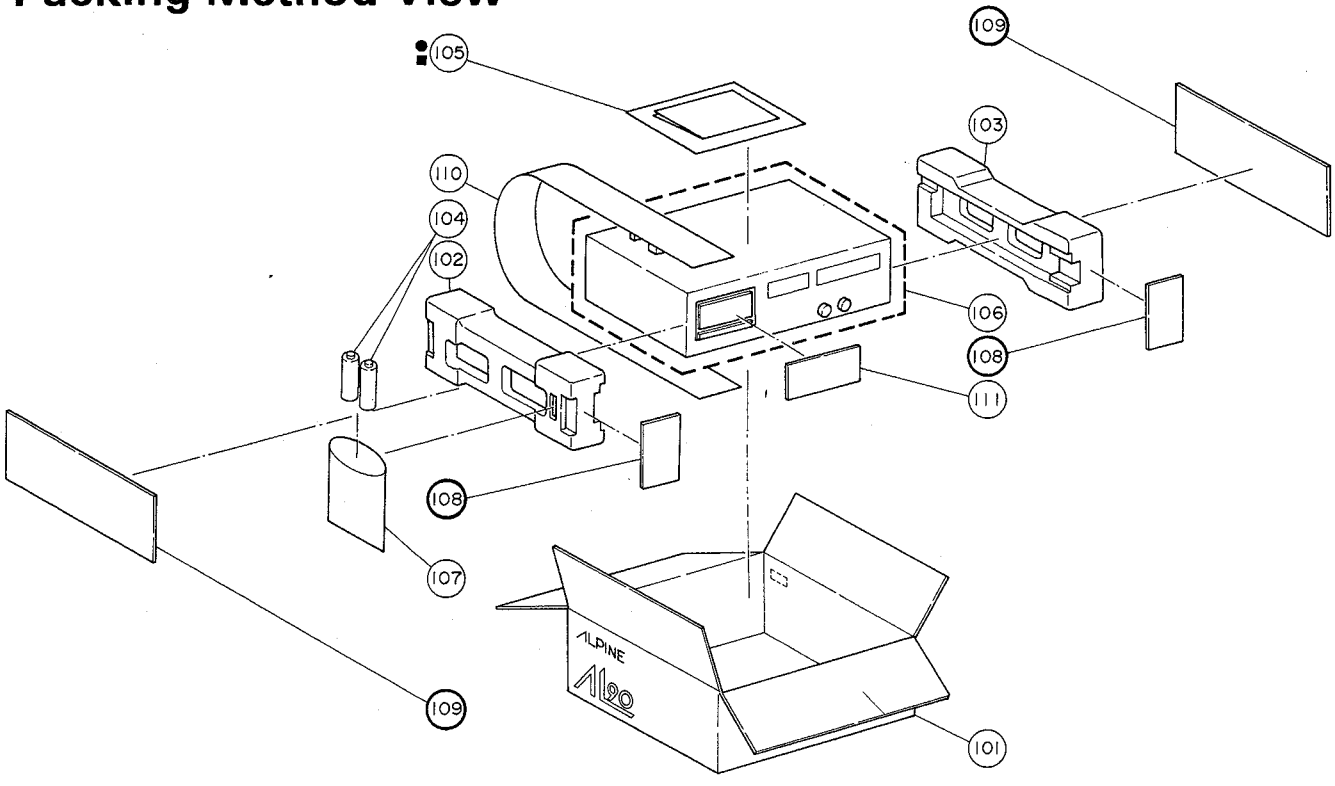
●: For multi-voltage model only [○: General foreign model, △: Australian model, ☆: English model], ■: For single voltage model only [North American model] Others: Common

Symbol No.		Part No.	Description
T1001	●	25T52407F01	Trans. Power
	■	25T56027F01	Trans. Power
TH5001		48E00121S01	Thermistor
VR1		18E00116S01	Resistor, Variable 20K ohm
VR4001		18T55388F01	Volume Rotary K162-5KAx2 (OUTPUT)
VR5015		18T55389F01	Volume Rotary K161-5KB (BIAS FINE)
VR6501		18T52411F02	Volume, Rotary K161-20KB (Pitch Control)
SD1		25E00032S01	Coil, Reel
SD2		25E00032S01	Coil, Reel

Symbol No.	Part No.	Description

●: For multi-voltage model only [○: General foreign model, △: Australian model, ☆: English model], ■: For single voltage model only [North American model] Others: Common

Packing Method View



Packing Assembly Parts List

Symbol No.		Part No.	Description
101		56C50570F02	Carton, Packing
102		56D50737F01	Tray, Packing
103		56D50737F02	Tray, Packing
104		60T58064F01	Battery, UM3
105	○	1V53600F01	Assembly, Pamphlet
	△	1V53600F01	Assembly, Pamphlet
	☆	1V59600F56	Assembly, Pamphlet
	■	1V58300F78	Assembly, Pamphlet
105-1		※	Sack, Polyethylene
105-2		68P50150F84	Manual, Owner's
105-3		28T55189F01	Plug, Audio Cable
105-4		68P55888F35	Illustration Manual
105-5	☆	54A58435F01	Card, BEAB
	■	68P44370P57	Limited Warranty
106		56B40442T07	Packing, Front Frame
107		56B40230G27	Sack, Polyethylene
108		※	Pad, Packing
109		※	Pad, Packing
110		56A57698F01	Packing, Belt
111		56B40442T11	Packing, Front Frame

Symbol No.		Part No.	Description
			Label
		54B42541F06	Label, Safety (Rear Cover)
		54B42124G01	Label, Serial No. (Rear Cover, Carton, Owner's)
		54B42124G02	Label, Date Code (Carton)
	☆	54A47794F01	Label, Fuse (AC Cord)
	☆	54A47795F01	Label, AC (AC Cord)
	☆	54A40521U01	Label, MADE IN JAPAN (Front Panel)
	■	54C43752J13	Label, Fuse (Rear Cover, Inside)
	■	54A41728P03	Label, Caution B (Top Cover, Side (L))
	■	54A41728P01	Label, Caution A (Bottom Cover)

NOTE: ※The parts whose parts numbers are not entered will not be supplied.

●: For multi-voltage model only [○: General foreign model, △: Australian model, ☆: English model], ■: For single voltage model only [North American model] Others: Common

Cabinet Assembly Parts List

Symbol No.		Index	Part No.	Description
1			3A44642J03	Screw, Bind (M3 x 5)
2			※	Bracket, Switch & Volume
3		3-A	※	Assembly, Pitch Con. P.C. Board
4		4-A	3S44205G16	Screw, Countersink (M3 x 6)
5		4-A	36A47129F04	Knob, Pitch Control
6		5-A	1V53500F97	Assembly, Front Panel
7			3S44205G38	Screw, Bind (M3 x 6)
8		5-A	36A56607F01	Knob, Control
9		2-A	29A41233G01	Lug
10	●	3-A	※	Chassis, Bottom
	■		※	Chassis, Bottom
11			5B41635J03	Rivet, Push
12			3S40036U01	Screw, W/Washer (M4 x 8)
13		2-B	3S52360F14	Screw, Countersink (M4 x 8)
14			43A57348F01	Spacer, Panel
15		2-C	15D52135F01	Cover, Top
16			3A44642J01	Screw, Bind (M3 x 6)
17	●	2-C	※	P.C. Board, Volt Select
18			75A42565P21	Rubber, Cushion
19	●	2-C	43B41625J02	Support, Cord
	■		43B41625J01	Support Cord
20		3-C	3C40014G09	Screw, W/Washer (M3 x 5)
21		4-C	45A50705F01	Lever, Power Switch
22		4-C	36A45460F04	Knob, Power
23		5-C	36A47374F04	Knob, Push (A/P, A/R)
24		5-C	36A47373F02	Knob, Push (MPX, MONITOR, PEAK/VU)
25		5-C	41A41324F01	Spring, Push
26		3-D	※	Shield, Dolby
27			5B41635J02	Rivet, Push
28			75A51145F01	Pad, 1023
29		4-D	※	Cover, Bottom
30		2-D	※	Bracket, Panel
31		3-D	※	Assembly, Dolby P.C. Board
32	○	3-D	3C40014G18	Screw, W/Washer (M2.6 x 6)
	△		3C40014G18	Screw, W/Washer (M2.6 x 6)
	☆		3S40019G74	Screw, F-Lock (M2.6 x 6)
33		1-E	43A44685F01	Spacer, Switch
34		2-E	※	P.C. Board, Remote Jack
35		2-E	※	Shield, Phone Plate Panel
36		2-E	※	Bracket, Panel (L)
37		2-E	※	Assembly, Control P.C. Board
38		3-E	※	Shaft, Panel
39			75B44632G04	Pad, Cushion
40		2-F	※	P.C. Board, Phono Plate
41		3-F	29A41814G01	Lug
42		3-F	9T45548F01	Holder, Fuse
43		3-F	※	Shield, Pre-Amp
44		4-F	※	Bracket, Panel (R)
45		4-F	※	Assembly, Rec EQ P.C. Board
46		1-G	3S43997P88	Screw, Bind (M2 x 6)
47		1-G	3S40011G91	Screw, Bind (M2.6 x 5)
48		1-G	75A56670F01	Cushion, Frame
49		4-G	※	Shield, Pre-Amp
50		3-G	43A57514F01	Spacer, P.C. Board
51		3-G	※	Heat Sink, IC1625MT
52		5-G	41A57347F01	Spring, Earth
53		2-H	15B50733F01	Case, Battery
54		2-H	3S40012G41	Screw, Pan (M3 x 8)
55	●	2-H	15D50693F01	Cover, Rear
	■		15D50693F02	Cover, Rear
56		3-H	※	Bracket, Heat Sink
57		3-H	※	Assembly, Mother P.C. Board
58		4-H	※	Chassis, Side
59		2-J	1V53900F97	Assembly, Cassette Bracket
60			4C42091G12	Ring "E" (M1.2)
61			43A52612F01	Sleeve Holder
62		2-J	7B50711F01	Bracket, Cassette
63		3-J	3S40012G55	Screw, Tapping (M3 x 8)
64		3-J	1V53500F98	Assembly, Door
65		3-J	1V53500F90	Assembly, Key Board Switch
66		3-J	36A50729F01	Knob, Cassette Control
67		3-C	※	Support Chassis
68		3-J	36A50728F01	Knob, Memory
69		3-J	36A50730F01	Knob, Counter
70		1-K	1V53600F51	Assembly, Dust Cover
71		1-K	3S40012G58	Screw, Tapping (M2 x 5)
72		2-K	84E53121F05	P.C. Board, LED
73		2-K	3S44205G34	Screw, Pan (M2.6 x 5)
74		3-K	※	P.C. Board, Lamp
75		1-L	14S53017F88	Insulator, Cover
76			4C42091G04	Ring "E" (M3)
77		1-L	45B50732F01	Lever, Lock
78		1-L	41A50738F01	Spring, Lock
79		1-L	3S40011G75	Screw, Bind (M2 x 14)

NOTE: ※The parts whose parts numbers are not entered will not be supplied.

●: For multi-voltage model only [○: General foreign model, △: Australian model, ☆: English model], ■: For single voltage model only [North American model] Others: Common

Symbol No.	Index	Part No.	Description
80	1-L	1B44427F01	Assembly, Dumper
81		3A43852J02	Screw, Pan (M2.5 x 5)
82	2-L	※	Bracket, Deck (L)
83	2-L	41A50740F01	Spring, C. Lever
84	2-L	45B50707F01	Lever, Cassette
85	4-L	※	Shield, Meter Volume
86	3-L	※	Shaft, Deck
87		41A57612F01	Spring, Jack
88	4-L	3S40011G99	Screw, Bind (M3 x 5)
89	4-L	3S43997P33	Screw, Bind (M2 x 6)
90	5-L	36A52101F01	Knob, Slide (L) (MIC, LINE)
91	5-L	36A52102F01	Knob, Slide (R) (MIC, LINE)
92	5-L	36A52099F01	Knob, Slide (MASTER REC LEVEL)
93	5-L	64A50722F01	Panel, Slide Volume
94		3S40012G78	Screw, Tapping (M2 x 6)
95	5-L	1V53500F85	Assembly, Meter Volume & Switch
96	2-M	※	Bracket, Deck (R)
97	2-M	41A57485F01	Spring, Dumper
98	3-M	※	P.C. Board, Head Phone
99	3-M	3S52360F02	Screw, Flat (M2 x 12)
100	3-M	※	Shield, Meter
101	4-M	45A50724F01	Lever, Push Switch
102	2-N	81T52096F01	Deck, Cassette (FR87E010)
103	2-N	42A44230U01	Lug. Wrap Through
104	2-N	3S44205G43	Screw, Bind (M2.6 x 4)
105	2-N	1V53500F88	Assembly, Counter & LED
106	2-N	61B50718F01	Crystal, Counter
107	3-N	※	Bracket, Frame (L)
109	4-N	1V53500F87	Assembly, Volume & Switch P.C. Board
110	2-O	※	Bracket, Front
111	2-O	※	Bracket, Frame (U)
113	3-O	※	Support, LED
114	3-O	36A50727F02	Knob, Start (BLES)
115	3-O	36A50727F01	Knob, Start (STD/CALL, WRITE)
116	3-O	※	Shield, Counter
117	3-O	※	Shield, Counter
118	4-O	※	Chassis, Front

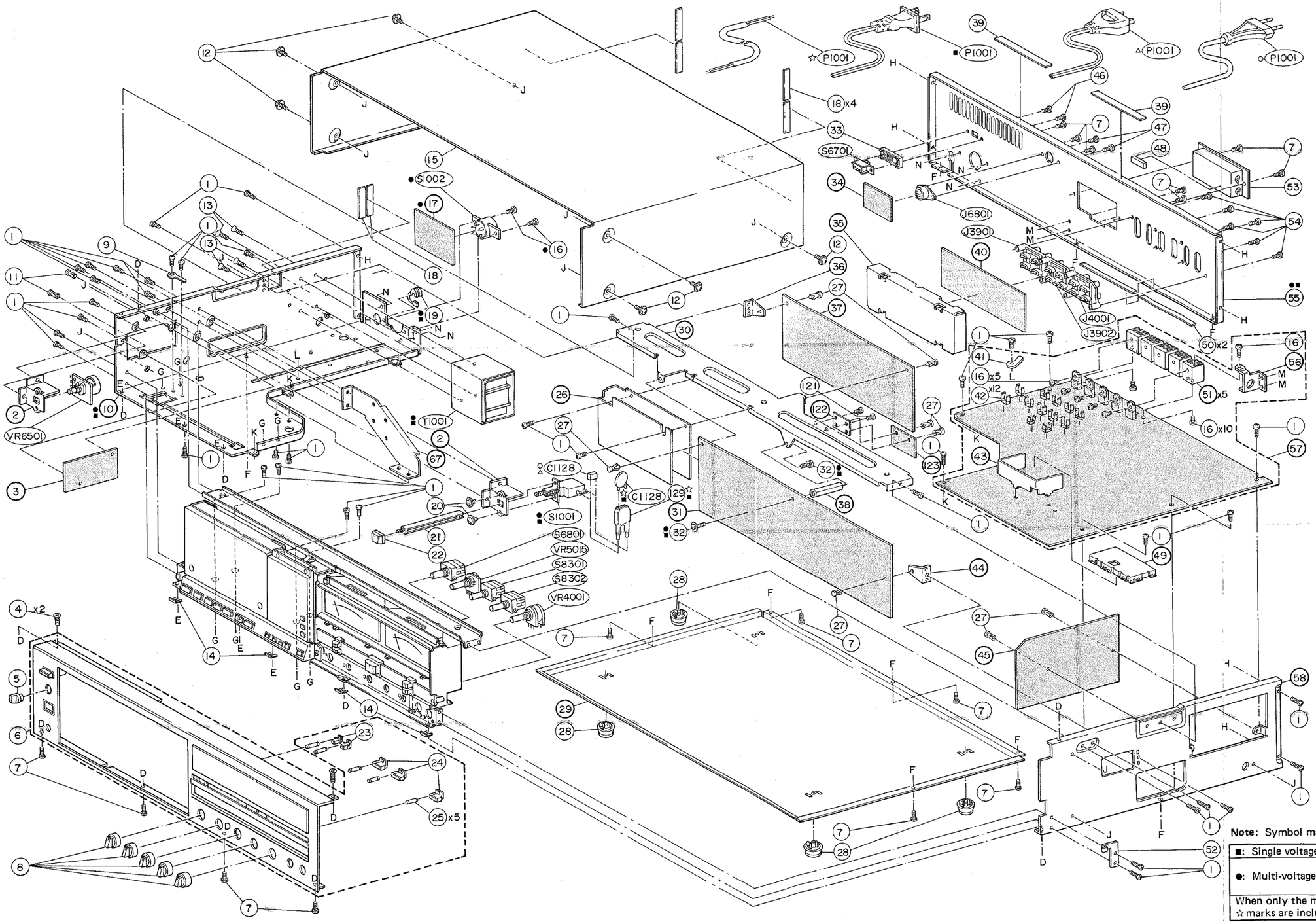
Symbol No.	Index	Part No.	Description
119	5-O	75A56279F01	Cushion, Meter
120	5-O	64B50710F01	Plate, Meter
121	3-E	3S44205G01	Screw, Pan (M3 x 6)
122	3-E	※	Bracket, Panel
123	3-F	※	Assembly, Pulse OSC
124	1-M	3S52360F16	Screw, Pan (M1.7 x 1.5)
125	1-M	45A57432F02	Arm, Lifter
126	1-M	7A57431F01	Frame, Lifter
127	1-M	3S42155U01	Screw, Set (–) (M2 x 5)
128	1-M	45A57432F01	Arm, Lifter
129 ☆	6-H	43T53136F01	Bush, Cap TP150-301
■		43T53136F01	Bush, Cap TP150-301

NOTE: ※The parts whose parts numbers are not entered will not be supplied.

●: For multi-voltage model only [○: General foreign model, △: Australian model, ☆: English model], ■: For single voltage model only

[North American model] Others' Common

Exploded View (Cabinet) (1/2)

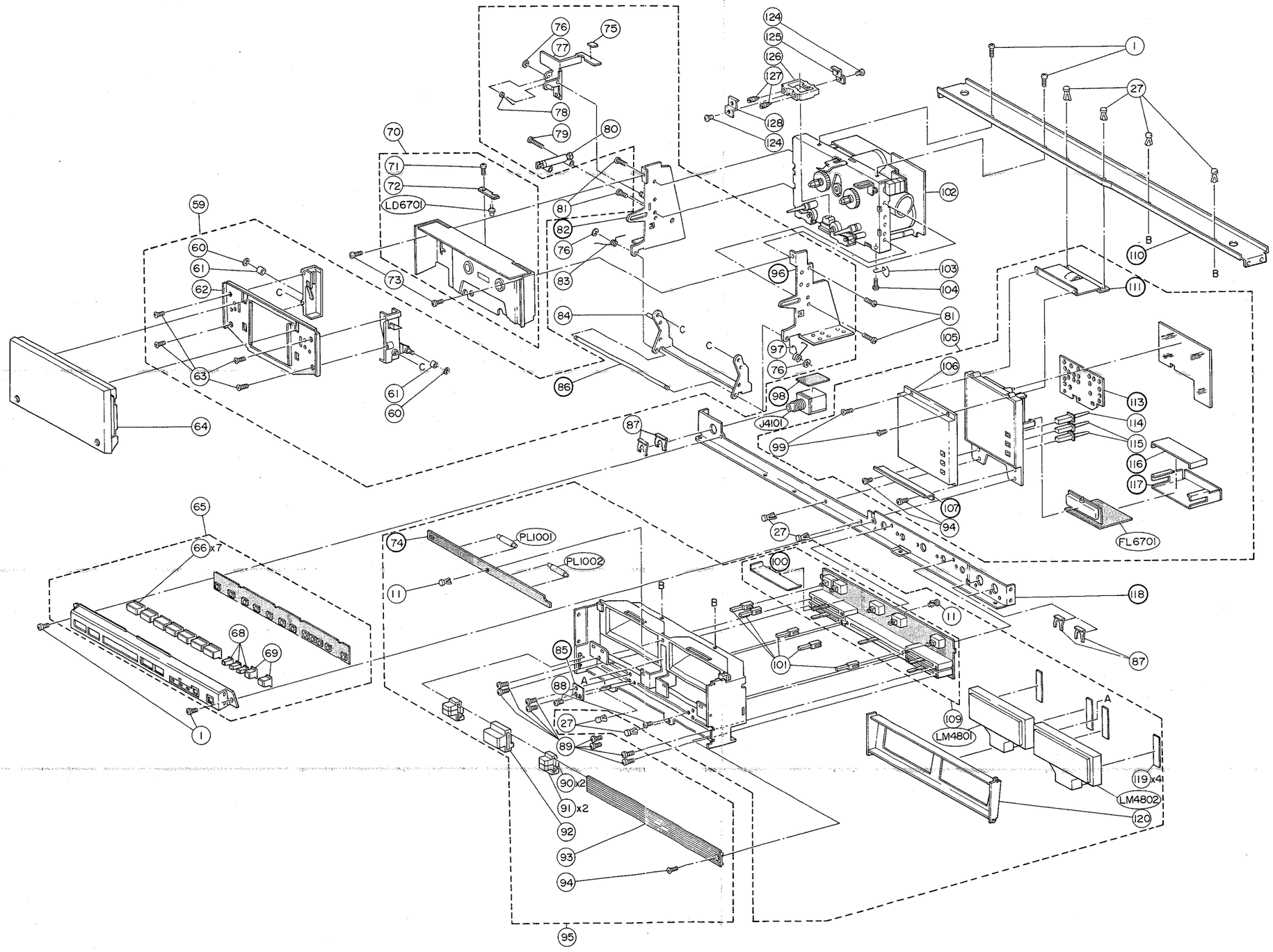


Note: Symbol marks as follows.

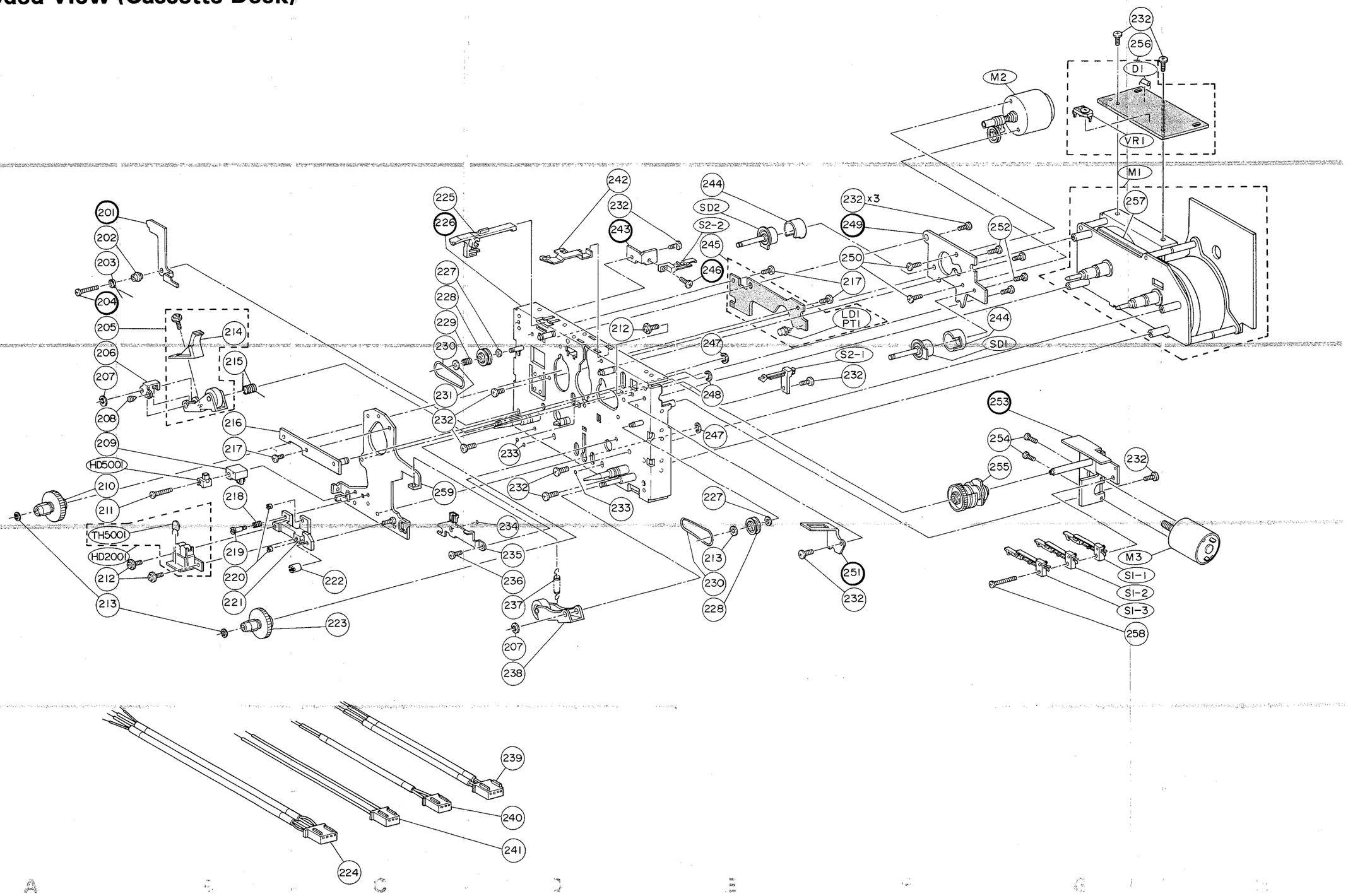
■: Single voltage	North American model
●: Multi-voltage	○: General Foreign model
	△: Australian model
	☆: English model

When only the mark "●" is used, all ○, △ and ☆ marks are included.

Exploded View (Cabinet) (2/2)



Exploded View (Cassette Deck)



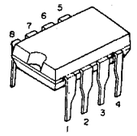
Cassette Deck Assembly Parts List

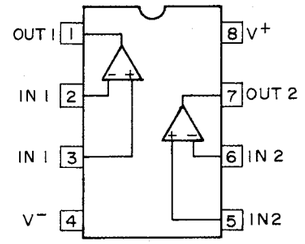
Symbol No.	Index	Part No.	Description
201	2-A	※	Lock, Lever
202	2-A	43E00049S01	Spacer
203	2-A	41E00050S01	Spring, Pull
204	2-A	※	Screw, Pan (M2.5 x 10)
205	2-A	1E00044S01	Assembly, Pinch Roller (S)
206	3-A	7E00047S01	Support, Pinch Roller
207		4C42091G05	Ring, "E" (M2)
208	3-A	3E00109S02	Screw, SET (—) (M2 x 3)
209	3-A	46E00026S01	Block, Erase Head
210	3-A	49E00040S01	Reel, Supply
211	3-A	3E00027S01	Screw, W/Washer (M2 x 20)
212		3C40014G07	Screw, W/Washer (M2 x 4)
213		4E00062S02	Washer
214	2-B	43E00194S01	Guide, Tape
215	3-B	41E00046S01	Spring, Pinch Roller
216	3-B	1E00020S01	Assembly, Connection Bracket
217		3E00108S01	Screw, Pan (M2.5 x 4)
218	3-B	41E00022S01	Spring, Adjustment
219	4-B	3E00023S01	Screw
220	4-B	3E00109S01	Screw, SET (—) (M2 x 4)
221	4-B	46E00021S01	Block, R/P Head
222	4-C	2E00024S01	Nut
223	4-C	49E00039S01	Reel, Take-up
224	5-C	1E00056S01	Cable, Connector (Rec) 4P
225	2-C	45E00052S01	Lever, Record
226	2-C	※	Assembly, Chassis Rivet
227		4E00062S03	Washer
228		49E00041S01	Pulley
229	2-C	41E00061S01	Spring, Pull
230		42E00042S01	Belt, Reel
231	3-C	4E00062S01	Washer, Flat
232		3A43852J02	Screw, Pan (M2.5 x 5)
233	3-D	43E00028S01	Ball. Steel (M2)
234	3-D	43E00028S02	Ball, Steel (M3)
235	4-D	41E00029S01	Spring, Head Base
236	4-D	3S40011G21	Screw, Pan (M3 x 4)
237	4-D	41E00045S01	Spring, Pull
238	4-D	1E00043S01	Assembly, Pinch Roller (T)
239	5-D	1E00057S01	Cable, Connector (P.B) 4P
240	5-D	1E00058S01	Cable, Connector (E) 3P
241	5-D	1E00059S01	Cable, Connector (Thermistor) 3P
242	2-D	41E00033S01	Spring, Cassette Guide
243	2-D	※	Bracket, Leaf Switch
244		15E00031S01	Case, Reel
245	2-E	1E00018S01	Assembly, Sensor P.C. Board (Include R1, R2, R3, Q1)
246	2-E	※	Screw, Pan (M2.5 x 6)
247		4C42091G04	Ring, "E" (M3)
248	3-E	4C42091G11	Ring, "E" (M2.5)
249	2-F	※	Bracket, Motor
250	2-F	3S43997P36	Screw, Bind (M2.6 x 3)
251	4-F	※	Guide, Bracket
252	2-G	3E00110S01	Screw, Bind (M2.3 x 4)
253	3-G	※	Assembly, Pad Bracket
254	3-G	3E00111S01	Screw, Pan (M2 x 3)
255	3-G	44E00036S01	Cam, Gear
256	1-G	1E00055S01	Assembly, Terminal P.C. Board (Include C1, C2, R4)
257	2-G	42E00112S01	Belt
258	4-G	3E00108S03	Screw, Pan (M2.5 x 20)
259	3-C	1E00019S01	Assembly, Head Base Rivet

NOTE: ※ The parts whose parts numbers are not entered will not be supplied.

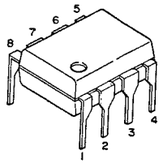
Semi-Conductor Lead Identifications

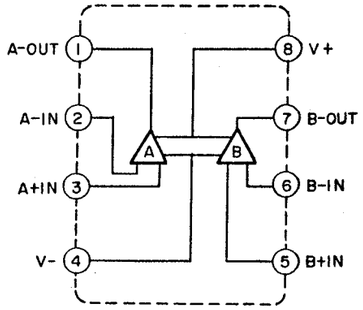
μPC4558C: IC451, 2001, 3301, 3801, 3951, 4101
IC5004, 5501, 5502
IC6501, 8001, 8006



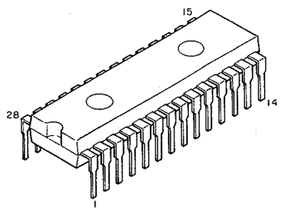


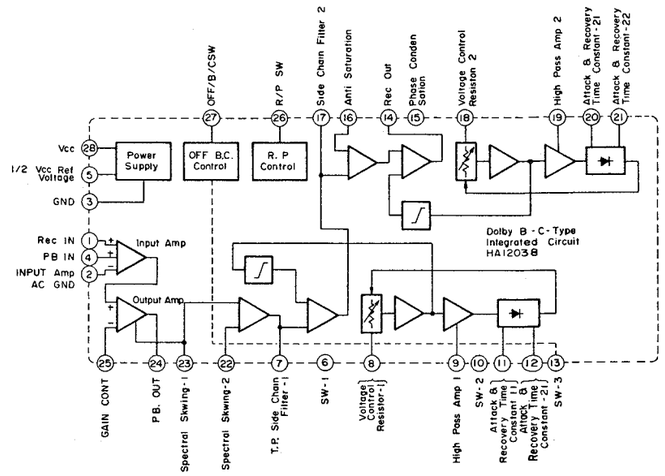
NJM2041D-D: IC2501, 2801, 3001



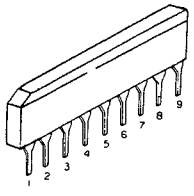


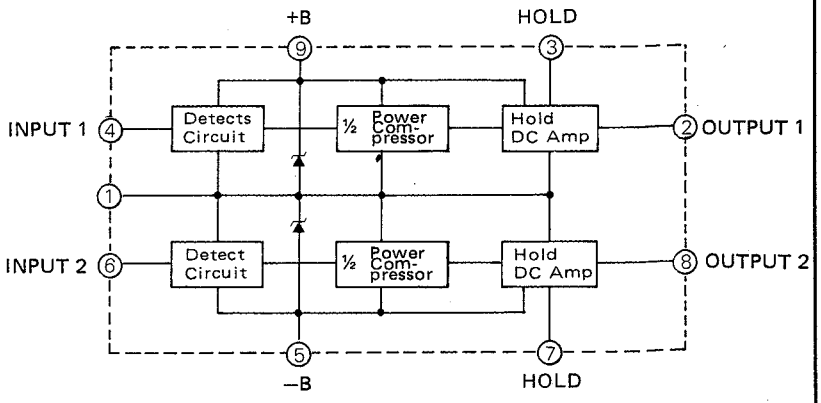
HA12038-01: IC3003, 3004, 3503, 3504



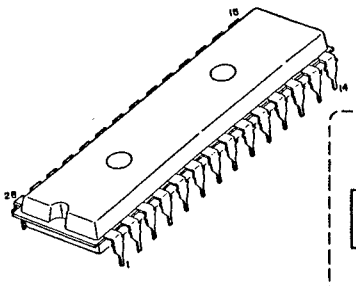


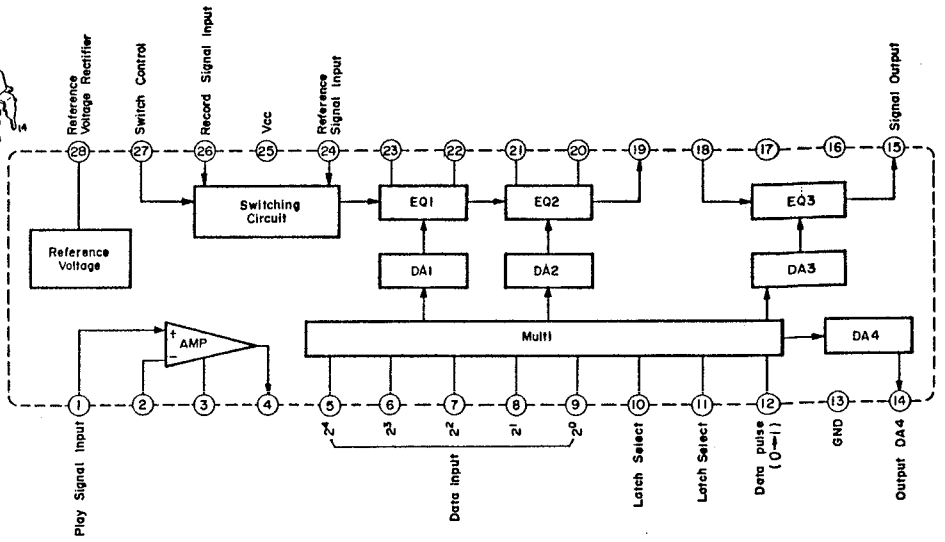
TA7332P: IC4801



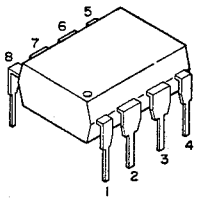


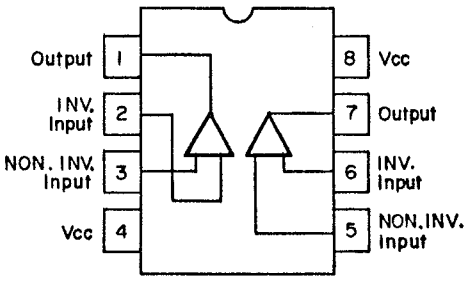
HA12020: IC5001, 5002



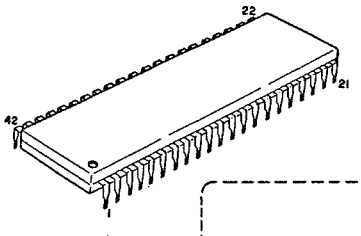


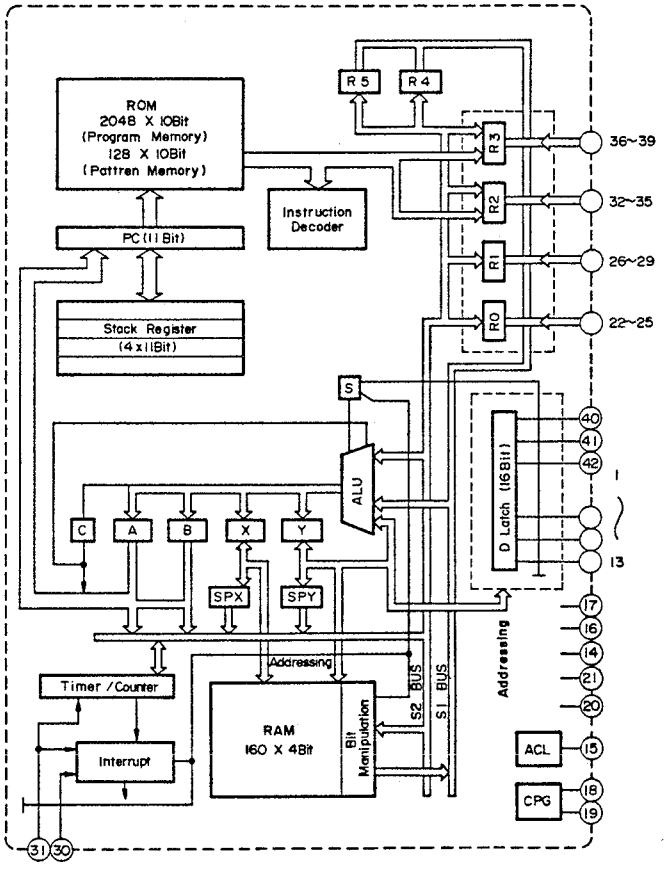
TL072: IC5003, 8003





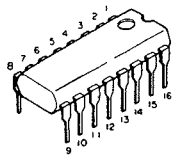
HD38805A03: IC6001

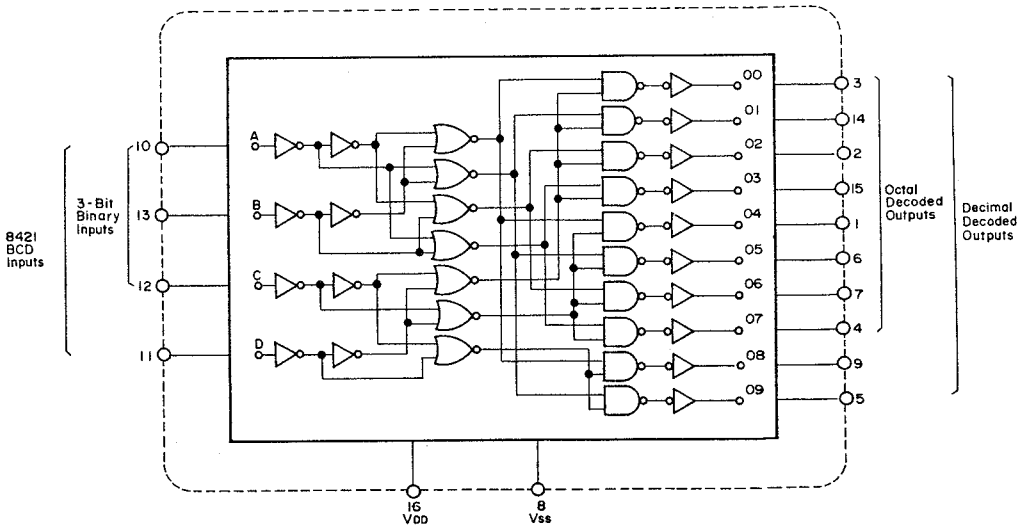




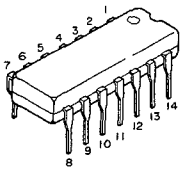
Pin No.	Code	Description
1	AMR	ASSIST MOTOR REVERSE
2	RMF	REEL MOTOR FORWARD
3	RMR	REEL MOTOR REVERSE
4	RMV	REEL MOTOR VOLTAGE
5	EBRK	ELECTROMAGNETIC BRAKE
6	PAMO	PLAY AMP MUTE OUT
7	RAMO	RECORD AMP MUTE OUT
8	RAMLO	RECORD AMP MUTE LED OUT
9	ATSO	AUTO TEST STOP OUT
10	EXCLO	EXECUTION LED OUT
11	WCTRO	WATCH COUNTER OUT
12	RECO	REC OUT
13	PALS	PULSE IN
14	VDISP	GND
15	RESET	
16	VBB	GND
17	VDD	
18	OSC1	
19	OSC2	
20	TEST	
21	Vss	
22	STOP I	FUNCTION KEY
23	FF I	
24	RWD I	
25	PLY I	
26	PAUSE I	
27	REC I	REC IN
28	REC M I	REC MUTE IN
29	ATMD I	AUTO TEST MODE IN (REC EQ TEST IN)
30	POWER	POWER ON OFF IN
31	EXCPL	EXECUTION PULSE IN
32	KEY R0	KEY MATRIX RETURN
33	KEY R1	
34	KEY R2	
35	KEY R3	
36	PAUSE O	PAUSE OUT
37	PLAY O	PLAY OUT
38	FF O	FF OUT
39	RWD O	REW OUT
40	MX0	MATRIX STROBE LINE 0
41	MX1	MATRIX STROBE LINE 1
42	AMF	ASSIST MOTOR FORWARD

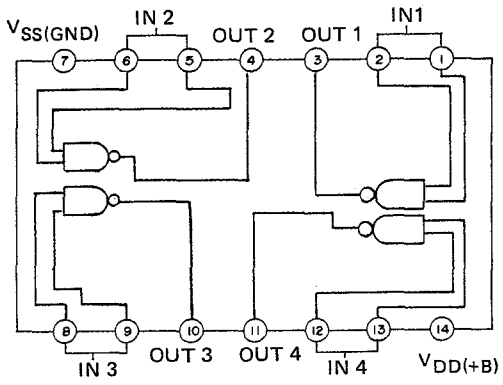
MC14028BCP: IC6002



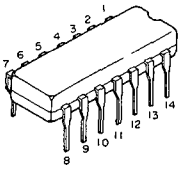


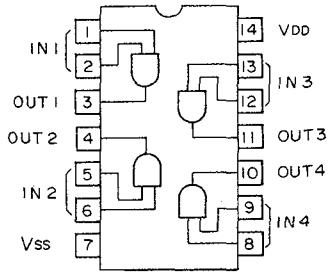
MC14011BCP: IC8009



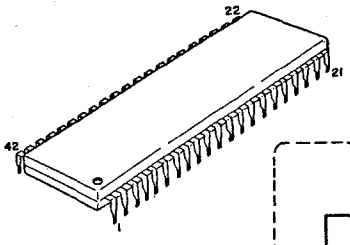


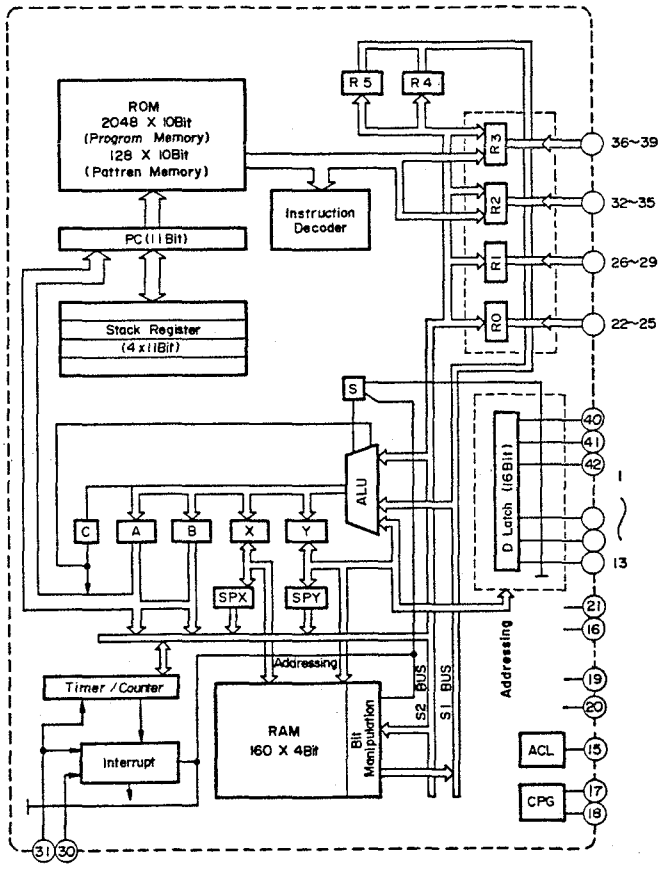
MC14081: IC8011





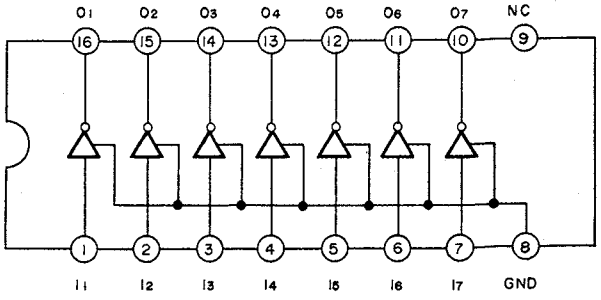
HD44801A48: IC8014



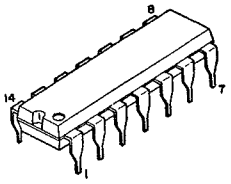


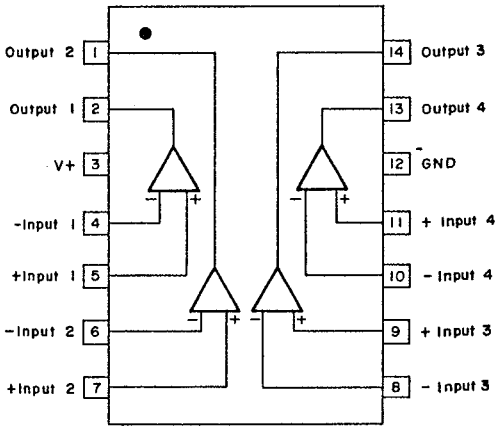
Pin No.	Code	Description
1	CPSR	CODING PULSE R
2	LRSL	L-R SELECT
3	ADRT	A/D RETURN
4	ADST	A/D START
5	ADRS	A/D RESET
6	TEST PWFL	TEST OUT POWER FAILIN
7	ADSL	A/D SELECT
8	STD	LED
9	ERR	
10	BIAS	
11	OK	
12	MEM	
13	BAT	
14		
15	RESET	RESET IN
16	GND	GROUND
17	OSC1	
18	OSC2	
19	HLT	HOLT IN
20	TEST	
21	Vcc	Vcc
22	NOR	TAPE SELECT IN
23	CrO_2	
24	FeCr	
25	METAL	
26	DT0 ATST	REC EQ DATA LINE BLES START SW
27	DT1 STD	REC EQ DATA LINE STD MEMORY SW
28	DT2 MEMW	REC EQ DATA LINE STD MEMORY
29	DT3 PLM	REC EQ DATA LINE REC PB SIGNAL DETECT
30	PULS	TAPE RUN PULSE IN
31	ATRL	AUTO TEST RELEASE
32	STOP	STOP OUT
33	REW	REW OUT
34	RPPS	REC PLAY PAUSE OUT
35	NINH	NOISE INHI OUT
36	LTS0	REC EQ IC SELECT
37	LTS1	
38	OSC0	OSC SELECT
39	OSC1	
40	DT4 BATT	REC EQ DATA LINE BATTERY CHECK
41	ADIN BATX	A/D IN BATTERY CHECK
42	CPS L	CODING PULSE L

TD62504: IC6003, 6004, 6007, 8012

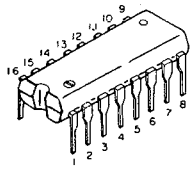


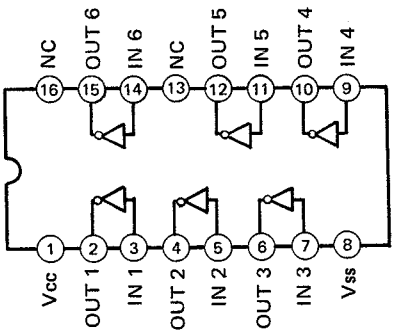
NJM2901N: IC6005, 8002, 8005, 8008



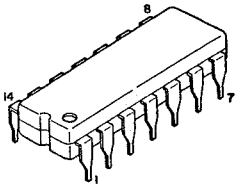


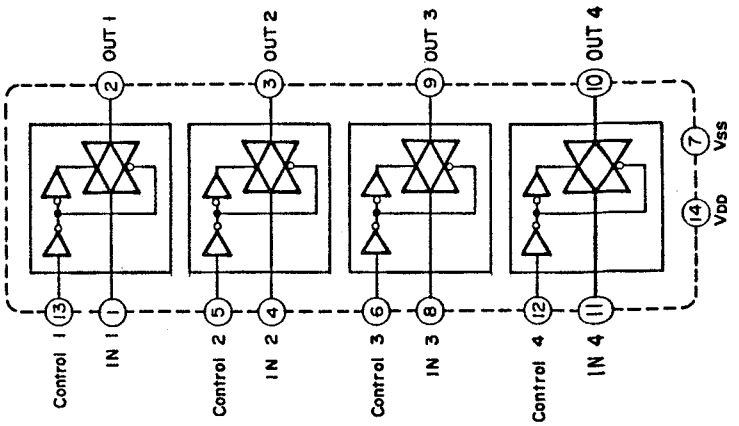
MC14049UB: IC6006, 6351, 8010, 8013



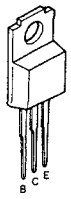


MC14066BCP: IC8004, 8007, 8015

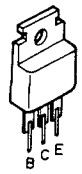




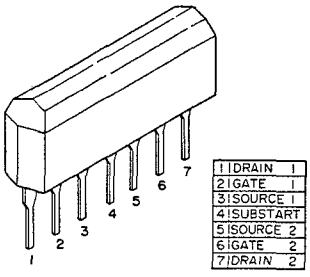
2SD1266: Q1001, 1004, 1006, 1008, 5002, 5018, Q6005, 6006, 6017, 6023, 8003, 8008
2SD1276: Q1002, 1005
2SB950: Q1003
2SB941: Q1007, 1009, 5019, 5021



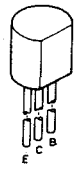
2SD235
2SD880 } : Q1001, 1004, 1006, 1008, 5002, 5018, Q6005, 6006, 6017, 6023, 8003, 8008
2SA490: Q1007, 1009, 5019, 5021



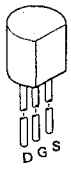
2SK270: Q2001, 2002



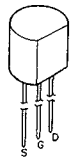
2SA970: Q2003 ∿ 2006
2SC1775E: Q2007 ∿ 2010, 2017
2SA872E: Q2011, 2012, 2018
2SA1015
2SA733 } : Q3914, 6001 ∿ 6003
2SC2878: Q3001, 3002, 3915 ∿ 3918, Q4801, 4802, 5003, 5004,5011 ∿ 5013, Q5027, 5028, 6301
2SD1302: Q4001, 4002
2SC1213: Q4101, 4102
2SA673: Q4103, 4104
2SC1815: Q3913, 5014, 5020, 5022 ∿ 5026, Q6004, 6011, 6012, 6022, 8005, 8007
2SD1011: Q5005 ∿ 5010, 5029, 5030
2SC945: Q3913, 5014, 5020, 5022, 6004, Q6011, 6012, 6022, 8005, 8007
2SB977A: Q6007, 6008, 6013, 6014
2SD893: Q6009, 6010, 6015, 6016, 6018



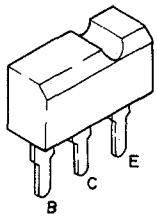
2SK301: Q2013, 2014, 3003, 3004, Q3901 ∿ 3912, 5016, Q5017, 5501 ∿ 5516, Q6501, 6502, 8002, 8004



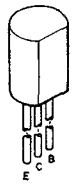
2SK127: Q2013, 2014, 3003, 3004, Q3901 ∿ 3912, 5016, Q5017, 5501 ∿ 5516, Q6501, 6502, 8002, 8004



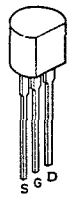
2SC2021: Q3913, 5014, 5020, 5022, 6004, Q6011, 6012, 6022, 8005, 8007
2SA937: Q3914, 6001 ∿ 6003



2SA777: Q6019 ∿ 6021



2SK30A: Q8001



ALPINE ELECTRONICS INC.
Tokyo Office: 1-7 Yukigaya Otsuka-cho
Ota-ku Tokyo, Japan
Phone 03-727-5311 Telex 246-6076

Iwaki Office: Oyasaku Yoshima-cho
Iwaki-shi Fukushima, Japan
Phone 0246-36-4111 Telex 8927-61

ALPINE ELECTRONICS OF CANADA INC.
101 Amber Street units 18-21 Markham,
Ontario L3R 3B2
Canada Phone 416-475-7280 Telex 06986789

ALPINE ELECTRONICS GmbH
Münsterstr. 330 D-4000 Düsseldorf
F.R. Germany
Tel. 0211-626806 Telex 8588 296 ALPI D

ALPINE ELECTRONICS OF AMERICA INC.
LATIN AMERICAN DIVISION
3102 Kashiwa Street, Torrance
California 90505
Phone 213-326-8000 Telex 230-181890

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