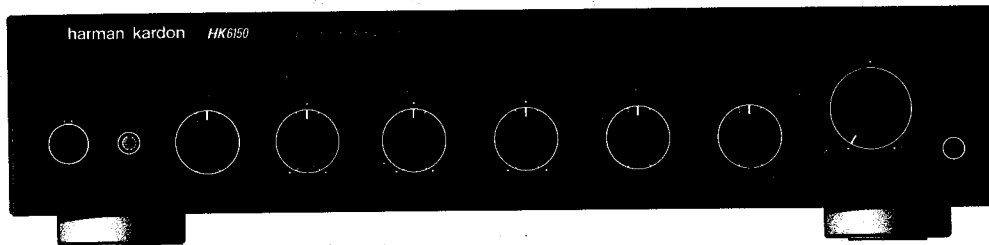


# The Harman Kardon Model HK6150 INTEGRATED AMPLIFIER

Manual 181A

## Technical Manual



The following marks found in the parts list of this manual identify the models as follows.

- BK** : North America area model Black version
- G** : German model
- GB** : German model Black version
- BB** : Australian model Black version
- IB** : International model Black version

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**harman/kardon**

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HK6150

**SPECIFICATIONS**

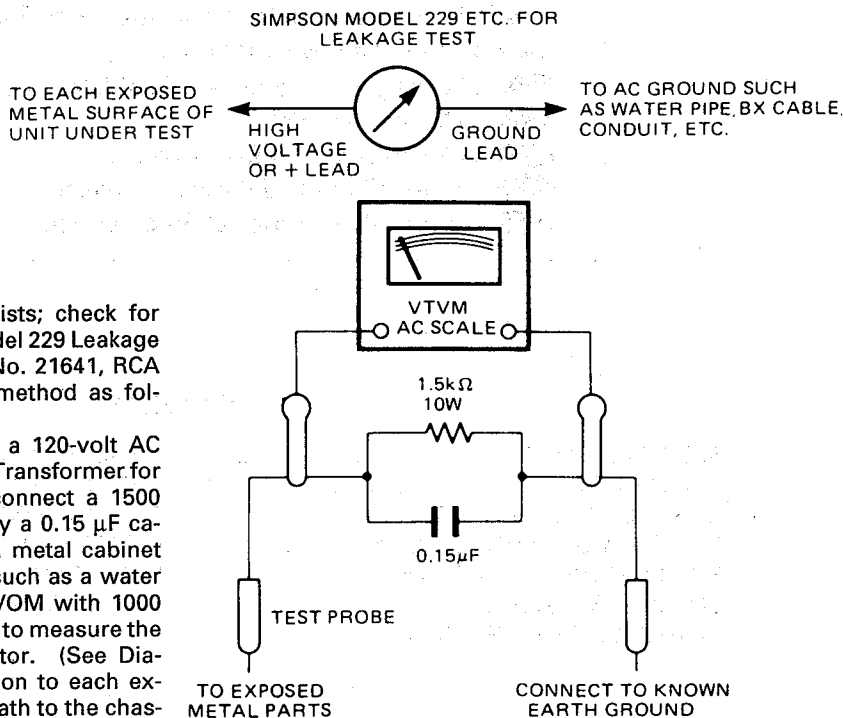
	Nominal	Limit		Nominal	Limit
Continuous Average Power FTC, both channels drive, 20 - 20,000Hz	30 Watts per channel	@ less than 0.1% THD into 8 Ohms	Boost Cut	±10 dB ± 2 dB	±10 dB ± 2 dB
High-instantaneous Current Capability (HCC)	22.4	≥ 15A	Loudness Control (with Volume Control at -40 dB)	3 dB ± 1 dB	10 dB ± 2 dB
Half Power Bandwidth (8 Ohms)	10 Hz~100 kHz	10 Hz~70 kHz	DC Output Voltage		
* Frequency Responce (at -3 dB Down)	0.5 Hz~200 kHz	1 Hz~150 kHz	L channel	6 mV ± 60 mV	
Input Sensitivity			R channel	7 mV ± 60 mV	
Tuner	135 mV	± 25mV	RIAA Equalization (at Tape Out) (20 Hz/20 kHz) (No load)	-0.03 dB±0.5 dB/-0.18 dB±0.5 dB	
Phono	2.2 mV	+0.4 mV -0.2 mV	Phono Over Load (No load)		
Signal to Noise Ratio			Phono (MM)	110 mV ≥ 90 mV	
Tuner	84 dB	≥ 77 dB	Dimensions (W x H x D)	17-1/2" x 4" x 14-1/4"	(443 x 103 x 361 mm)
Phono	80 dB	≥ 73 dB	Weight	14 lbs. 1 oz.(6.4 kg)	
Channel Separation at 10 kHz			Power Supplies		
Tuner	54 dB	≥ 45 dB	North America area model	AC 120 V, 60 Hz	
Phono	57 dB	≥ 45 dB	International model	AC 230/240 V, 50/60 Hz	
IM Distortion Ratio	0.04%	≤ 0.1%	Power Consumption		
Damping Factor (at 1 kHz)	70	≥ 50	North America area model	120 W	
Tone Control Characteristics			International model	150 W	
Bass Turnover Frequency (200Hz/400Hz)			* Frequency Responce (at -3 dB Down)	0.5 Hz ~170 kHz	1 Hz~150 kHz
Bass at 50 Hz			International model		
Boost	±10 dB	± 2 dB			
Cut	±10 dB	± 2 dB			
Treble Turnover Frequency (2kHz/6kHz)					
Treble at 10 kHz					

These specifications are service target specs.  
Specifications and components are subject to change without notice.  
Overall performance will be maintained or improved.

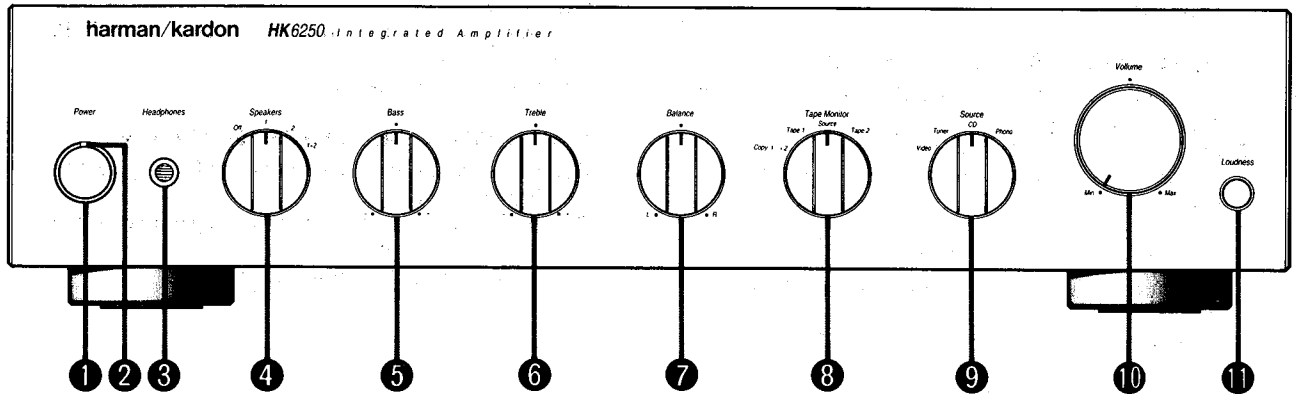
**LEAKAGE TEST (FOR SERVICE ENGINEERS IN THE U.S.A)**

Before returning the unit to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the unit.
2. Be sure that any protective devices such as nonmetallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc. which were removed for servicing are properly reinstalled.
3. Be sure that no shock hazard exists; check for leakage current using Simpson Model 229 Leakage Tester, standard equipment item No. 21641, RCA Model WT540A or use alternate method as follows:  
Plug the power cord directly into a 120-volt AC receptacle (do not use an Isolation Transformer for this test). Using two clip leads, connect a 1500 Ohm, 10-watt resistor paralleled by a 0.15 μF capacitor, in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit. Use a VTVM or VOM with 1000 Ohms per volt, or higher sensitivity to measure the AC voltage drop across the resistor. (See Diagram.) Move the resistor connection to each exposed metal part having a return path to the chassis (antenna, metal, cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor. (This test should be performed with the power switch in both the On and Off positions.)  
A reading of 0.35 volt RMS or more is excessive and indicates a potential shock hazard which must be corrected before returning the unit to the owner.



## CONTROLS AND FUNCTIONS



### ❶ POWER SWITCH (*POWER*)

Pressing this switch will turn on the power and the *Power* indicator lights up. Press the switch again to turn the power off.

### ❷ POWER INDICATOR

When the *POWER* switch is pressed, this indicator lights up in green.

### ❸ HEADPHONE JACK (*HEADPHONES*)

Stereo headphones with a standard 1/4 inch plug can be connected to this jack. When the *SPEAKERS* selector is in the *Off* position, sound can still be obtained via the headphone jack.

### ❹ SPEAKER SELECTOR (*SPEAKERS*)

This selector is used to select the desired speaker system(s). *Off*: Select this position to listen to sound via the headphone with no sound from the speaker system(s).

*1*: Select this position to actuate the speaker system connected to the *SPEAKER SYSTEM 1* terminal.

*2*: Select this position to actuate the speaker system connected to the *SPEAKER SYSTEM 2* terminal.

*1 + 2*: Select this position to actuate simultaneously the two speaker systems connected to the *SPEAKER SYSTEM 1* and *2* terminals respectively.

### ❺ BASS CONTROL KNOB (*BASS*)

This knob controls the low frequency sound level. Turn it clockwise to boost or counterclockwise to reduce the low frequency sound level.

### ❻ TREBLE CONTROL KNOB (*TREBLE*)

This knob controls the high frequency sound level. Turn it clockwise to boost or counterclockwise to reduce the high frequency sound level.

### ❼ BALANCE CONTROL KNOB (*BALANCE*)

This knob is used to balance the left and the right channels. Usually, it is set at the center. Turn it to the left or right to balance the sound if it seems unbalanced from the speakers or the headphones.

### ❽ TAPE MONITOR SELECTOR (*TAPE MONITOR*)

This selector is used when playing a tape deck, or monitoring during recording.

*Copy 1* → *2*: Select this position to duplicate a tape in the tape deck connected to the *TAPE 1* jacks onto the tape in the tape deck connected to the *TAPE 2* jacks.

*Tape 1*: Select this position to play a tape, or to monitor during recording on the tape deck connected to the *TAPE 1* jacks.

*Source*: Select this position to listen to a program source other than a tape.

*Tape 2*: Select this position to play a tape, or to monitor during recording on the tape deck connected to the *TAPE 2* jacks.

### ❾ SOURCE SELECTOR (*SOURCE*)

This selector is used to select a program source other than a tape.

*Video*: Select this position to listen to the sound from a video component connected to the *VIDEO* jacks.

*Tuner*: Select this position to listen to an FM or AM broadcast from the stereo tuner connected to the *TUNER* jacks.

*CD*: Select this position to listen to the sound from a compact disc player connected to the *CD* jacks.

*Phono*: Select this position to listen to a disc played on the turntable connected to the *PHONO* jacks.

### ❿ VOLUME CONTROL KNOB (*VOLUME*)

This knob controls the sound level. Turning clockwise increases the sound volume, and turning counterclockwise decreases it. Set this knob at a minimum level before turning the power on or changing the sound source to protect the speakers from being damaged by a sudden high level sound.

### ⓫ LOUDNESS SWITCH (*LOUDNESS*)

This switch is pressed to create a natural sound quality when listening at a low volume by boosting the low and high frequency ranges.

**DISASSEMBLY PROCEDURES (REFER TO PAGES 7 AND 14)**

**1 CABINET TOP REMOVAL**

Remove 6 screws (A) and then remove the Cabinet Top (131).

**2 FRONT PANEL ASS'Y (AA) REMOVAL**

1. Remove the Cabinet Top (131), referring to the previous step 1.
2. Pull out Volume Rotary knob (150).
3. Remove 5 screws (B) and then Front Panel Ass'y (AA).

**3 MAIN P. C. BOARD (PCB-1) REMOVAL**

1. Remove the Front Panel Ass'y (AA), referring to the previous step 2.
2. Open the lid of connector (CN601) on the Main P. C. Board (PCB-1).
3. Pull out 6 Rotary Knobs (152).

4. Remove 6 hexagon nuts (C) and then remove the Speaker Switch and Function P. C. Board (PCB-5 and PCB-9).

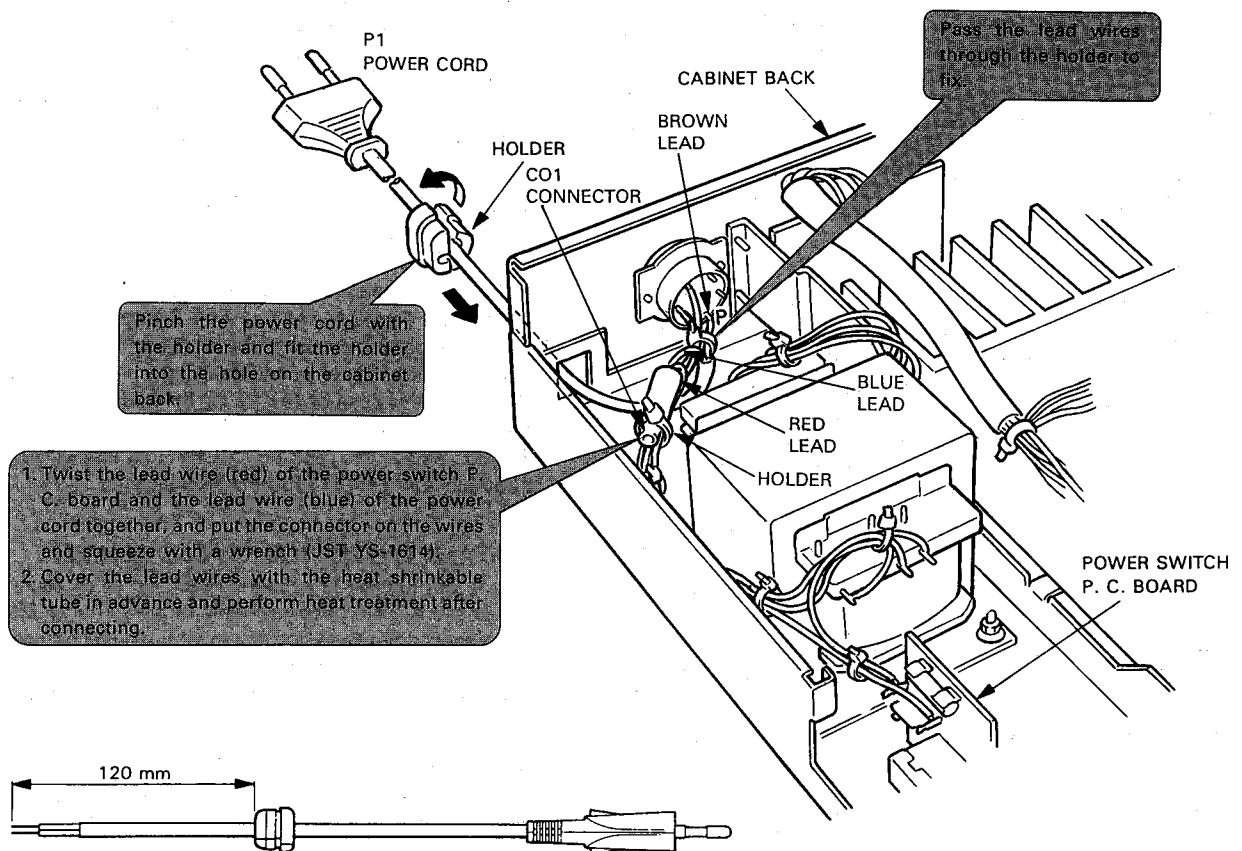
5. Remove 6 screws (D) and then remove the Main P. C. Board (PCB-1).  
If necessary, unsolder the lead wires.

**4 EQUALIZER P. C. BOARD (PCB-10) REMOVAL**

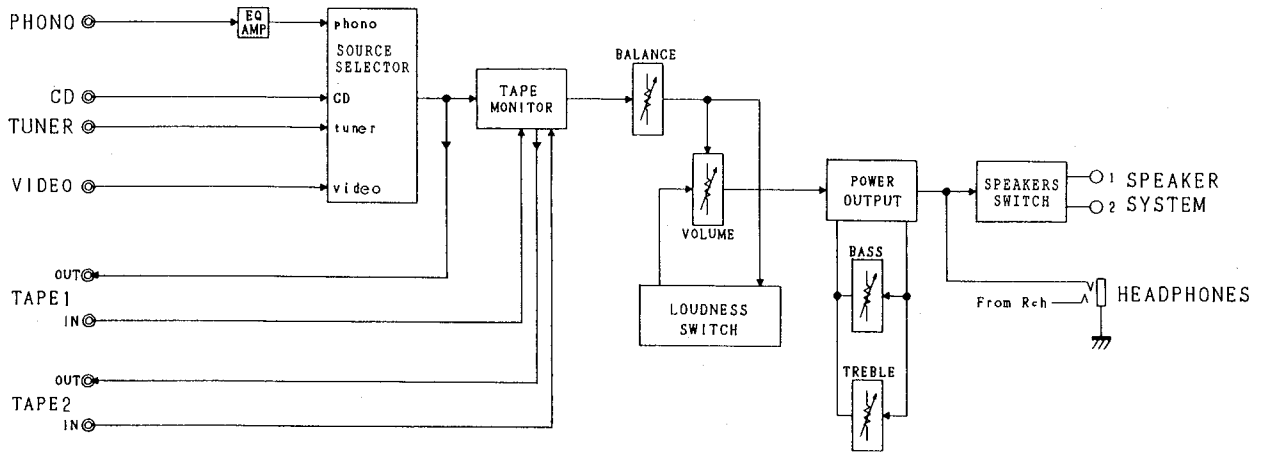
1. Remove the Cabinet Top (131), referring to the previous step 1.
2. Remove 4 screws (E) and then remove the Equalizer P. C. Board (PCB-10).  
If necessary, unsolder the lead wires.

**POWER CORD REPLACEMENT (FOR SERVICE ENGINEERS OTHER THAN NORTH AMERICA)**

In order to prevent fire or shock hazard when replacing the power cord, follow the procedure below to replace the parts with the standard supply parts.



**BLOCK DIAGRAM**



**ALIGNMENT PROCEDURES (REFER TO PAGES 9 AND 13)**

- Conditions :**
- Set the Volume control to minimum.
  - Set the Speakers selector to "1 + 2" position.
  - Make the adjustment at a room temperature of 77°F (25°C).
  - After the Power switch is pushed on, wait for 30 minutes before measuring to be sure of the most stable operation.

**■ IDLING CURRENT ADJUSTMENT**

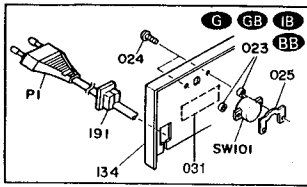
Step	Connection Equipments	Adjustment	For
1	Connect the Digital Volt Meter to TP1 and TP2.	VR401 (L ch)	40 mV ±2 mV
2	Connect the Digital Volt Meter to TP3 and TP4.	VR402 (R ch)	40 mV ±2 mV

**GENERAL UNIT PARTS LIST**

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
AA	A443-HK6150A	CABINET FRONT ASSEMBLY (G)	155	1742-08302	ORNAMENT, POWER (BK GB BB IB)
AA	A443-HK6150B	CABINET FRONT ASSEMBLY (BK GB BB IB)	156	1742-08401	ORNAMENT, LOUDNESS (G)
AB	A424-HK6150A	CABINET BACK ASSEMBLY (BK)	156	1742-08402	ORNAMENT, LOUDNESS (BK GB BB IB)
AB	A424-HK6150C	CABINET BACK ASSEMBLY (G GB BB IB)	157	1319-02201	LEG, BOTTOM (x2)
AC	A424-HK6150B	CABINET BOTTOM ASSEMBLY (BK)	158	1319-03301	LEG, BOTTOM (x2)
AD	A414-HK6150A	CABINET TOP ASSEMBLY	161	2211-7295	CHASSIS
023	2132-7116	SPACER, VOLTAGE SELECTOR (x2) (G GB BB IB)	163	2219-8179	METAL FITTG, MAIN HEAT SINK
024	2327-R0130124	SCREW, BND+ (x2) (G GB BB IB)	166	2219-8347	METAL FITTG, BOTTOM
025	2440-7017	NUT, SPE (G GB BB IB)	167	2219-8348	METAL FITTG, BOTTOM CENTER
026	1756-R01TS122	LABEL, FUSE (G GB BB IB)	173	2219-8207	METAL FITTG, BOTTOM
029	2218-7011	BRACKET, FIX, WIRING (IB)	174	2219-8346	METAL FITTG, HEADPHONES JACK
030	2347-R0130062	SCREW, BND T+ (IB)	177	2222-7227	HEAT SINK, MAIN (BK)
031	1756-21901	LABEL, DBP NO. (G GB)	177	2222-7232	HEAT SINK, MAIN (G GB BB IB)
113	1117-78	SERIAL LABEL	191	2240-364	HOLDER, AC CORD
116	1756-05910	LABEL, FUSE CAUTION (BK)	193	2240-R0101	HOLDER (x18)
119	1756-CSA	LABEL, CSA (BK)	197	2112-11771	SPONGE, CABINET
131	1414-11501	CABINET, TOP	199	2112-11803	SPONGE, METAL
133	1424-35601	CABINET BOTTOM	201	2218-89	BRACKET, FIX, HEADPHONES JACK
134	1424-27007	CABINET BACK (BK)	203	2218-R0230	BRACKET, FIX, SPEAKER LEAD
134	1424-27008	CABINET BACK (G GB BB IB)	204	2224-7137	INSULATOR (x2)
136	1443-14001	PANEL, FRONT (G)	205	2224-7134	INSULATOR (x4)
136	1443-14002	PANEL, FRONT (BK GB BB IB)	206	2216-7199	SHIELD PLATE
141	1562-08201	FRAME, L-SIDE (G)	208	2360-7026	BOSS, SPE
141	1562-08202	FRAME, L-SIDE (BK GB BB IB)	213	2672-7018	LEVER, POWER
142	1562-08301	FRAME, R-SIDE (G)	219	2651-110518	SPRING, VOLUME
142	1562-08302	FRAME, R-SIDE (BK GB BB IB)	220	2651-2101728	SPRING, PUSH BUTTON
146	1662-66901	PUSH BUTTON, POWER (G)	230	2327-R0130064	SCREW, BND+ (x4)
146	1662-66902	PUSH BUTTON, POWER (BK GB BB IB)	235	2347-R0130062	SCREW, BND T+ (x2)
147	1662-67001	PUSH BUTTON, LOUDNESS (G)	236	2347-R0130062	SCREW, BND T+ (x30)
147	1662-67002	PUSH BUTTON, LOUDNESS (BK GB BB IB)	237	2347-R0130084	SCREW, BND T+ (x15)
150	1630-04302	ROTARY KNOB, VOLUME (G)	239	2347-R0130102	SCREW, BND T+
150	1630-04301	ROTARY KNOB, VOLUME (BK GB BB IB)	240	2347-R0130102	SCREW, BND T+
152	1632-21501	ROTARY KNOB, FUNCTION, BASS, TREBEL, BALANCE (x6) (G)	241	2347-R0140064	SCREW, BND T+ (x4)
152	1632-21502	ROTARY KNOB, FUNCTION, BASS, TREBEL, BALANCE (x6) (BK GB BB IB)	242	2327-R0140102	SCREW, BND+ (x4) (BK)
154	1732-08801	INDICATOR, POWER LED	242	2347-400827	SCREW, BND T+ (x4) (G GB BB IB)
155	1742-08301	ORNAMENT, POWER (G)	243	2440-60	NUT, SPE (x4) (BK)
			245	2557-301429	SCREW, B SPW+ (x4)
			248	2401-0373	WASHER, METAL (x2)
			553	4214-168	TERMINAL, GND
			650	4211-4	LUG, CHASSIS EARTH
			712	2440-62	NUT, SPE

# GENERAL UNIT EXPLODED VIEW

1



2

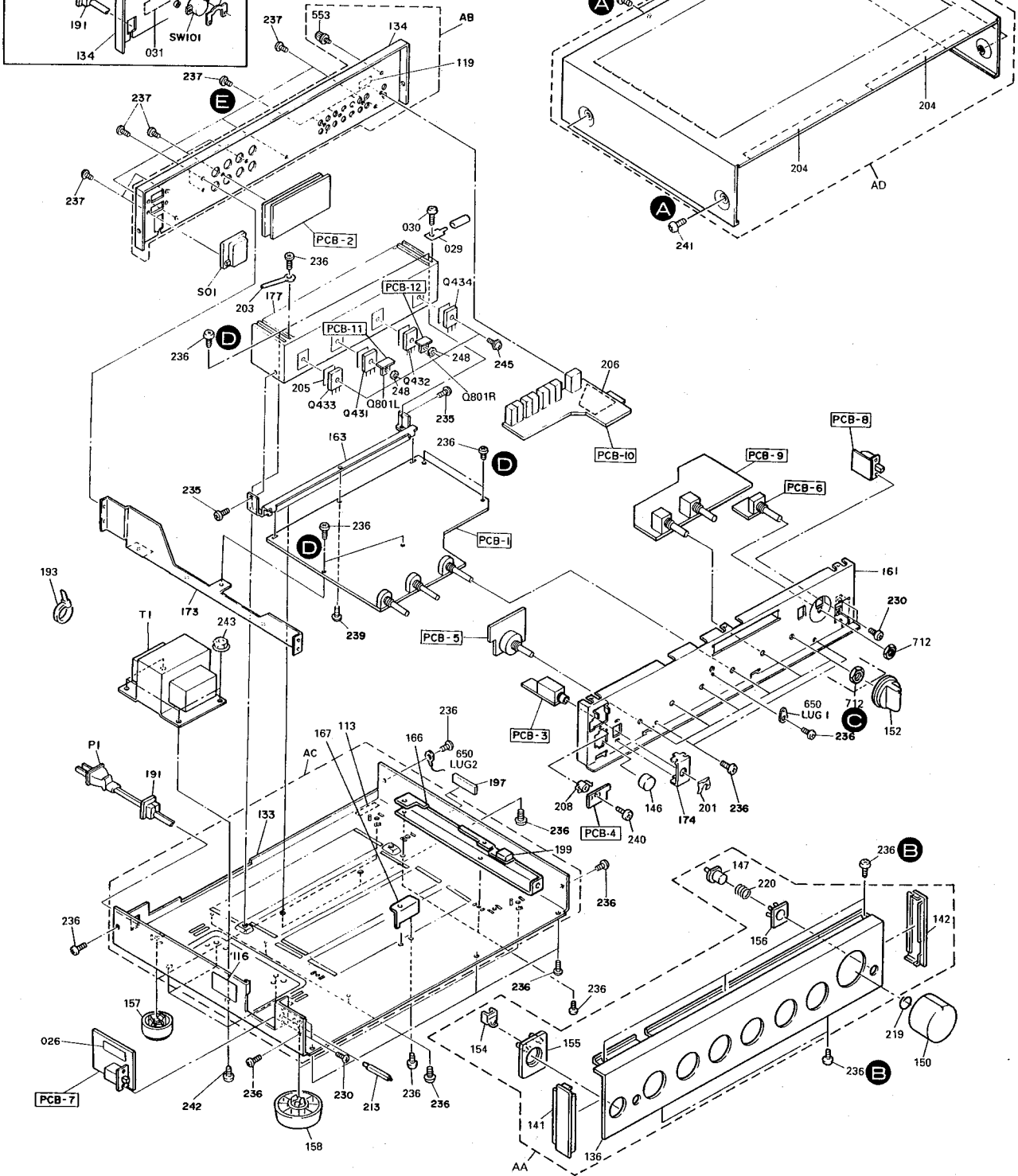
3

4

5

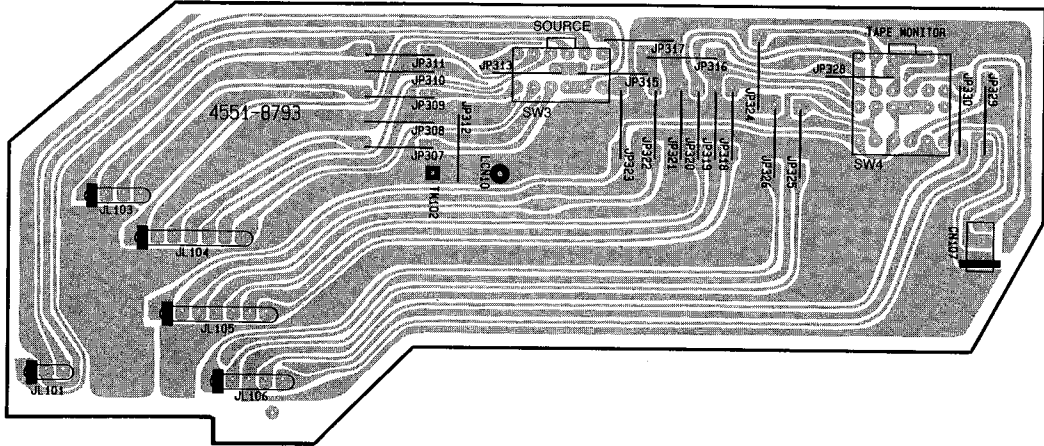
6

7

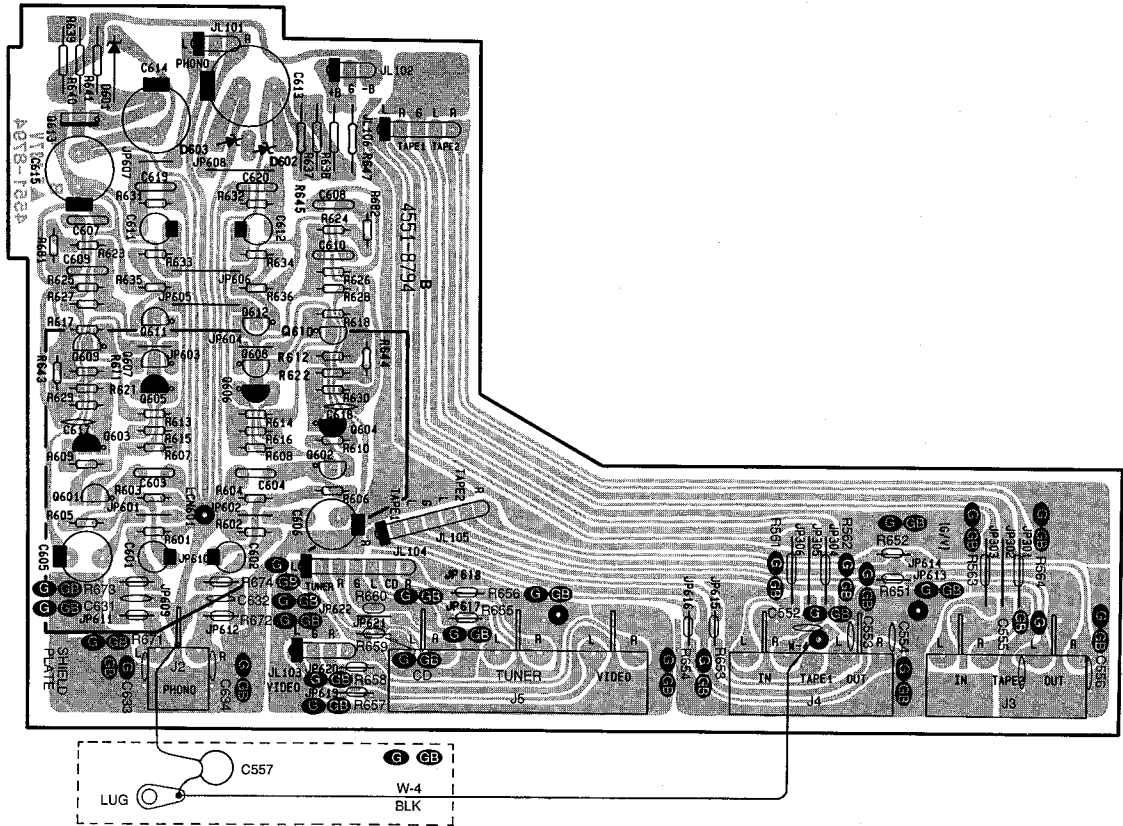


# P. C. BOARD (1)

PCB-9 Function P.C. Board



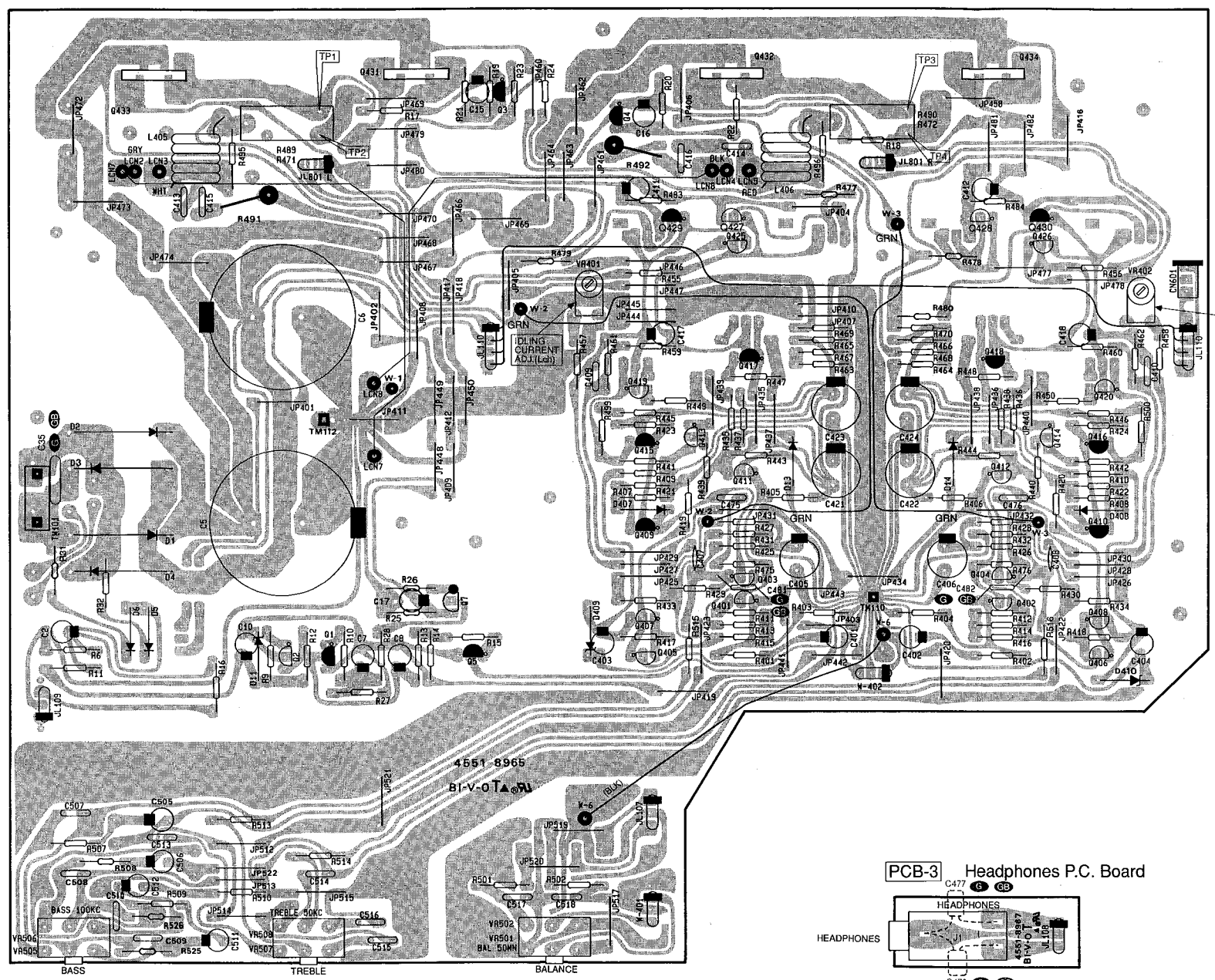
PCB-10 Equalizer P.C. Board



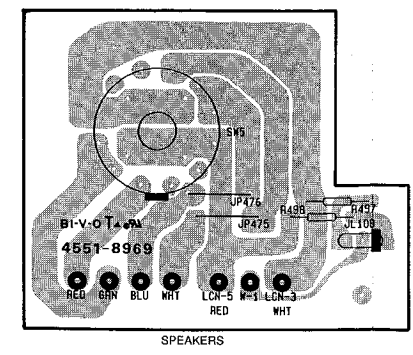


### P. C. BOARDS (2)

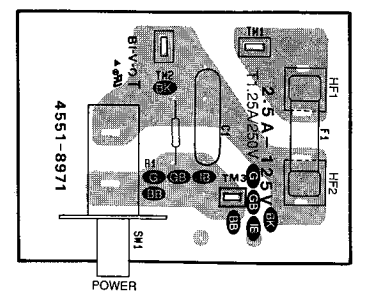
**PCB-1** Main P.C. Board



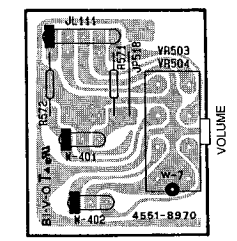
**PCB-5** Speaker Switch P.C. Board



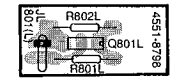
**PCB-7** Power Switch P.C. Board



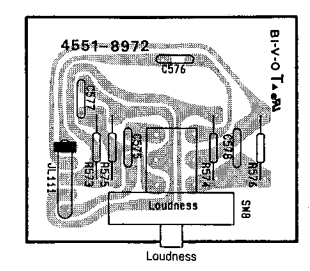
**PCB-6** VR P.C. Board



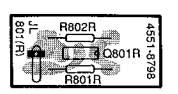
**PCB-11** Bias P.C. Board (Lch)



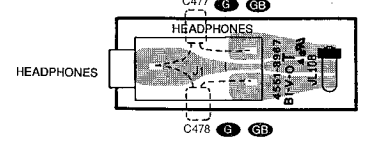
**PCB-8** Loudness P.C. Board



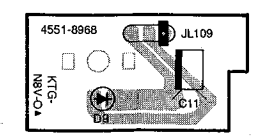
**PCB-12** Bias P.C. Board (Rch)



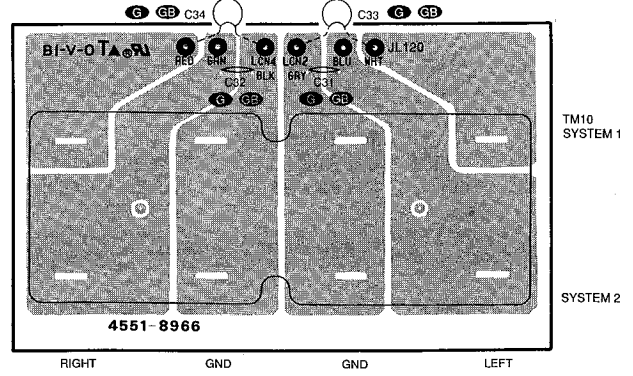
**PCB-3** Headphones P.C. Board



**PCB-4** LED P.C. Board

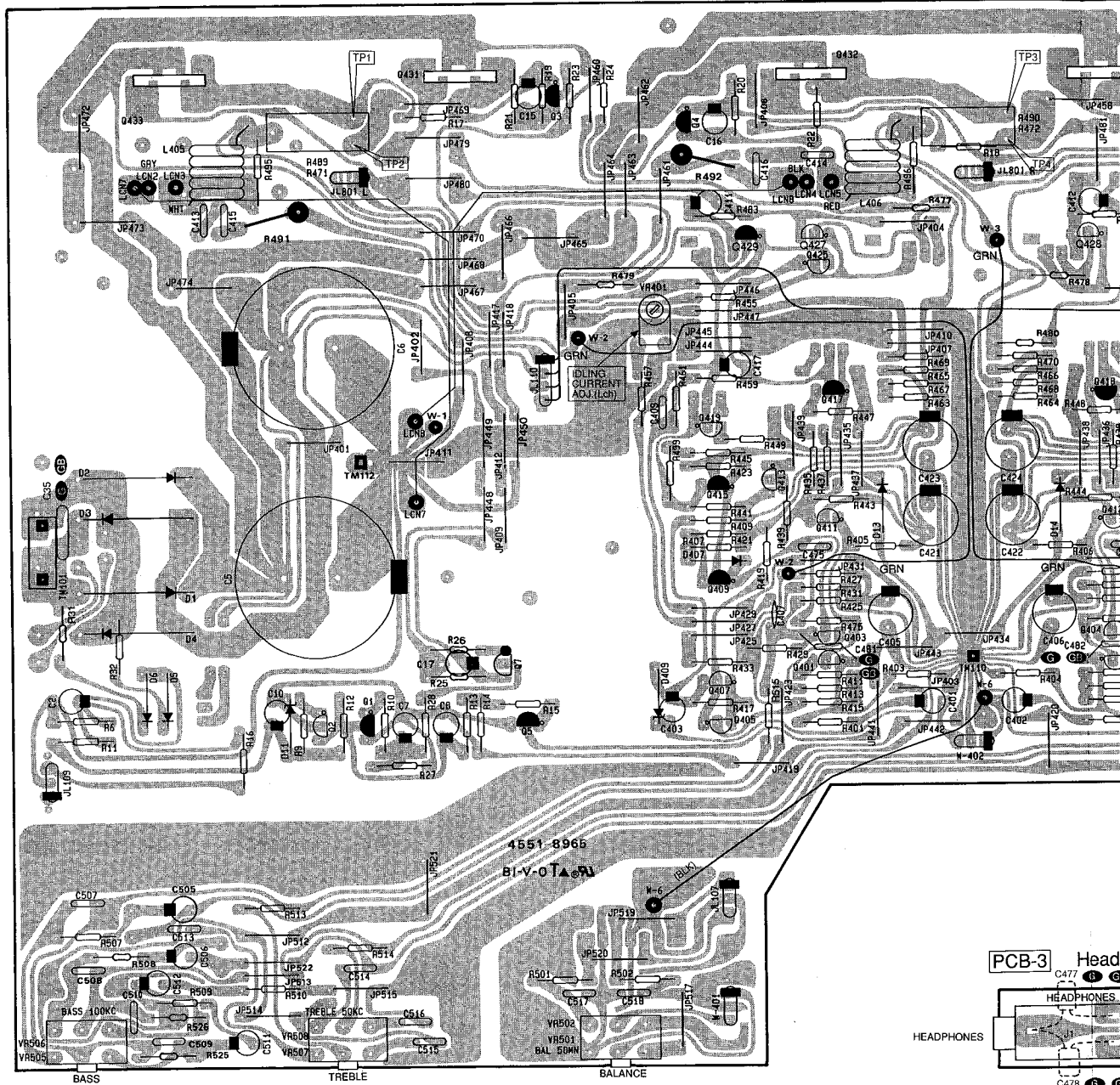


**PCB-2** Speaker Terminal P.C. Board

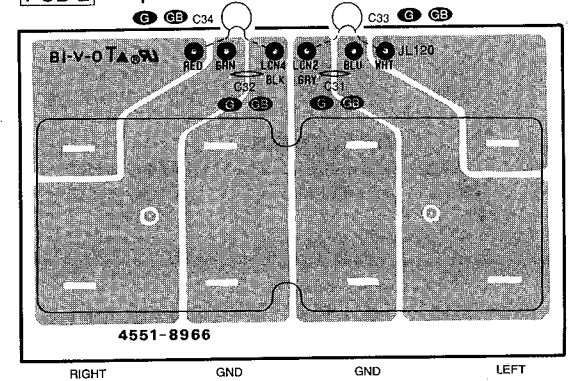


# P. C. BOARDS (2)

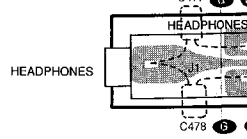
PCB-1 Main P.C. Board



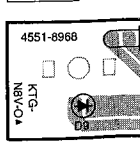
PCB-2 Speaker Terminal P.C. Board



PCB-3 Headphones



PCB-4 LED





## ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
<b>PCB-1 MAIN P.C. BOARD</b>															
<b>CAPACITORS</b>															
662	C2	5345-106F041	CAP, MINI ELE 10 $\mu$ /50V	666	R31	5135-681522	RES, CBN 1/2P 680	616	R483	5135-820522	RES, CBN 1/2P 82	644	L406	5991-7125	SPRING COIL
687	$\Delta$ C5	5341-S07FM822	CAP, ELE 8200 $\mu$ /50V	666	R32	5135-681522	RES, CBN 1/2P 680	616	R484	5135-820522	RES, CBN 1/2P 82				
687	$\Delta$ C6	5341-S07FM822	CAP, ELE 8200 $\mu$ /50V	603	R401	5135-331522	RES, CBN 1/2P 330	627	R491	5175-100581	RES, MTL 3P 10	641	VR401	5101-50171913	RES, SEMI FIX 500
660	C7	5345-106F041	CAP, MINI ELE 10 $\mu$ /50V	603	R402	5135-331522	RES, CBN 1/2P 330	627	R492	5175-100581	RES, MTL 3P 10	641	VR402	5101-50171913	RES, SEMI FIX 500
661	C8	5345-S19BM107	CAP, MINI ELE 100 $\mu$ /10V	604	R403	5135-683522	RES, CBN 1/2P 68K	626	R495	5171-1R0581	RES, MTL 1P 1	720	VR501/	5113-S1501503	RES, V CBN 16 50K, BALANCE
659	C10	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V	604	R404	5135-683522	RES, CBN 1/2P 68K	626	R496	5171-1R0581	RES, MTL 1P 1				
663	C15	5345-S19FM334	CAP, MINI ELE .33 $\mu$ /50V	622	R405	5135-681522	RES, CBN 1/2P 680	607	R499	5135-680522	RES, CBN 1/2P 68	714	VR505/	5113-10447122	RES, V CBN 16 100K, BASS
663	C16	5345-S19FM334	CAP, MINI ELE .33 $\mu$ /50V	622	R406	5135-681522	RES, CBN 1/2P 680	607	R500	5135-680522	RES, CBN 1/2P 68				
664	C17	5345-S19FM105	CAP, MINI ELE 1 $\mu$ /50V	622	R407	5135-681522	RES, CBN 1/2P 680	619	R501	5135-331522	RES, CBN 1/2P 330	717	VR507/	5113-50348122	RES, V CBN 16 50K, TREBLE
057B	C35	5352-1041957	CAP, MTL .1 $\mu$ <b>G GB</b>	606	R409	5135-682522	RES, CBN 1/2P 6.8K	620	R507	5135-153522	RES, CBN 1/2P 15K				
581	C401	5345-S19BM476	CAP, MINI ELE 47 $\mu$ /10V	606	R410	5135-682522	RES, CBN 1/2P 6.8K	620	R508	5135-153522	RES, CBN 1/2P 15K	699	CN601	4443-030185	CONNECTOR
581	C402	5345-S19BM476	CAP, MINI ELE 47 $\mu$ /10V	608	R411	5135-390522	RES, CBN 1/2P 39	621	R509	5135-272522	RES, CBN 1/2P 2.7K	764	JL107	4242-R0203600	JUMPER LEAD
587	C403	5345-S19CM476	CAP, MINI ELE 47 $\mu$ /16V	608	R412	5135-390522	RES, CBN 1/2P 39	621	R510	5135-272522	RES, CBN 1/2P 2.7K	763	JL109	4242-R0203201	JUMPER LEAD
587	C404	5345-S19CM476	CAP, MINI ELE 47 $\mu$ /16V	608	R413	5135-390522	RES, CBN 1/2P 39	628	R513	5135-331522	RES, CBN 1/2P 330	762	JL110	4242-R0104181	JUMPER LEAD
582	C405	5345-S19AM227	CAP, MINI ELE 220 $\mu$ /6.3V	608	R414	5135-390522	RES, CBN 1/2P 39	628	R514	5135-331522	RES, CBN 1/2P 330	755	JL801L	4132-R0202101	CORD, 2C
582	C406	5345-S19AM227	CAP, MINI ELE 220 $\mu$ /6.3V	623	R415	5135-222522	RES, CBN 1/2P 2.2K	628	R515	5135-331522	RES, CBN 1/2P 330	755	JL801R	4132-R0202101	CORD, 2C
592	C407	5353-020934	CAP, MCA 2P	623	R416	5135-222522	RES, CBN 1/2P 2.2K	604	R516	5135-331522	RES, CBN 1/2P 330	747	LCN2	4163-0140026	CONNECTOR W/W
592	C408	5353-020934	CAP, MCA 2P	609	R417	5135-331522	RES, CBN 1/2P 330	604	R525	5135-683522	RES, CBN 1/2P 68K	748	LCN3	4163-0140027	CONNECTOR W/W
590	C409	5359-1015851	CAP, PPP 100P	604	R419	5135-683522	RES, CBN 1/2P 68K	604	R526	5135-683522	RES, CBN 1/2P 68K	749	LCN4	4163-0140024	CONNECTOR W/W
590	C410	5359-1015851	CAP, PPP 100P	604	R420	5135-683522	RES, CBN 1/2P 68K					750	LCN5	4163-0140025	CONNECTOR W/W
583	C411	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V	638	$\Delta$ R421	5102-3315116	RES, FUSE 330	652	Q1	5611-933S(S)	XISTOR, PNP R	751	LCN7	4163-0112024	CONNECTOR W/W
583	C412	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V	638	$\Delta$ R422	5102-3315116	RES, FUSE 330	651	Q2	5613-1740S(S)	XISTOR, NPN R	751	LCN8	4163-0112024	CONNECTOR W/W
595	C413	5354-683593	CAP, MYL .068 $\mu$	638	$\Delta$ R423	5102-3315116	RES, FUSE 330	655	Q3	5611-970(BL)	XISTOR, PNP R	694	$\Delta$ TM101	4214-11023	TERMINAL
595	C414	5354-683593	CAP, MYL .068 $\mu$	638	$\Delta$ R424	5102-3315116	RES, FUSE 330	653	Q4	5611-970(BL)	XISTOR, PNP R	646	$\Delta$ TM110	4214-11013	TERMINAL
595	C415	5354-683593	CAP, MYL .068 $\mu$	610	R425	5135-473522	RES, CBN 1/2P 47K	653	Q5	5611-970(BL)	XISTOR, PNP R	646	$\Delta$ TM112	4214-11013	TERMINAL
595	C416	5354-683593	CAP, MYL .068 $\mu$	610	R426	5135-473522	RES, CBN 1/2P 47K	651	Q7	5613-1740S(S)	XISTOR, NPN R				
583	C417	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V	610	R427	5135-473522	RES, CBN 1/2P 47K	561	Q401	5613-2240(BL)	XISTOR, NPN R				
583	C418	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V	610	R428	5135-473522	RES, CBN 1/2P 47K	561	Q402	5613-2240(BL)	XISTOR, NPN R				
584	$\Delta$ C421	5345-337F041	CAP, MINI ELE 330 $\mu$ /50V	611	R429	5135-224522	RES, CBN 1/2P 220K	561	Q403	5613-2240(BL)	XISTOR, NPN R				
584	$\Delta$ C422	5345-337F041	CAP, MINI ELE 330 $\mu$ /50V	611	R430	5135-224522	RES, CBN 1/2P 220K	561	Q404	5613-2240(BL)	XISTOR, NPN R				
584	$\Delta$ C423	5345-337F041	CAP, MINI ELE 330 $\mu$ /50V	618	R431	5135-121522	RES, CBN 1/2P 120	562	Q405	5613-2320L(F)	XISTOR, NPN R				
584	$\Delta$ C424	5345-337F041	CAP, MINI ELE 330 $\mu$ /50V	618	R432	5135-121522	RES, CBN 1/2P 120	562	Q406	5613-2320L(F)	XISTOR, NPN R				
593	C475	5359-3315851	CAP, PPP 330P	612	R433	5135-222522	RES, CBN 1/2P 2.2K	562	Q407	5613-2320L(F)	XISTOR, NPN R				
593	C476	5359-3315851	CAP, PPP 330P	612	R434	5135-222522	RES, CBN 1/2P 2.2K	562	Q408	5613-2320L(F)	XISTOR, NPN R				
071B	C481	5359-1015851	CAP, PPP 100P <b>G GB</b>	613	R435	5135-223522	RES, CBN 1/2P 22K	563	Q409	5611-970(BL)	XISTOR, PNP R				
071B	C482	5359-1015851	CAP, PPP 100P <b>G GB</b>	613	R436	5135-223522	RES, CBN 1/2P 22K	563	Q410	5611-970(BL)	XISTOR, PNP R	761	JL120	4242-043805	JUMPER LEAD
585	C505	5345-S19FM225	CAP, MINI ELE 2.2 $\mu$ /50V	613	R437	5135-223522	RES, CBN 1/2P 22K	574	Q411	5613-2320L(F)	XISTOR, NPN R	743	$\Delta$ TM10	4214-156	TERMINAL, SPEAKER
585	C506	5345-S19FM225	CAP, MINI ELE 2.2 $\mu$ /50V	613	R438	5135-223522	RES, CBN 1/2P 22K	574	Q412	5613-2320L(F)	XISTOR, NPN R				
596	C507	5354-273J1HM	CAP, MYL .027 $\mu$	624	R439	5135-153522	RES, CBN 1/2P 15K	573	Q413	5613-2240(BL)	XISTOR, NPN R				
596	C508	5354-273J1HM	CAP, MYL .027 $\mu$	624	R440	5135-153522	RES, CBN 1/2P 15K	573	Q414	5613-2240(BL)	XISTOR, NPN R				
588	C509	5354-154593	CAP, MYL .15 $\mu$	614	R441	5135-123522	RES, CBN 1/2P 12K	578	Q415	5611-999L(F)	XISTOR, PNP R				
588	C510	5354-154593	CAP, MYL .15 $\mu$	614	R442	5135-123522	RES, CBN 1/2P 12K	578	Q416	5611-999L(F)	XISTOR, PNP R				
586	C511	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V	633	R443	5174-222381	RES, MTL 1/4P 2.2K	564	Q417	5612-646A(C)	XISTOR, PNP A				
586	C512	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V	633	R444	5174-222381	RES, MTL 1/4P 2.2K	564	Q418	5612-646A(C)	XISTOR, PNP A				
597	C513	5354-682J1HM	CAP, MYL 6800P	633	R445	5174-222381	RES, MTL 1/4P 2.2K	565	Q419	5614-666A(C)	XISTOR, NPN A				
597	C514	5354-682J1HM	CAP, MYL 6800P	633	R446	5174-222381	RES, MTL 1/4P 2.2K	565	Q420	5614-666A(C)	XISTOR, NPN A				
598	C515	5354-393J1HM	CAP, MYL .039 $\mu$	636	$\Delta$ R447	5102-4705116	RES, FUSE 47	566	Q425	5613-945(P)	XISTOR, NPN R	736	J1	4451-51501	JACK, 1P, HEADPHONES
598	C516	5354-393J1HM	CAP, MYL .039 $\mu$	636	$\Delta$ R448	5102-4705116	RES, FUSE 47	566	Q426	5613-945(P)	XISTOR, NPN R				
591	C517	5359-6805851	CAP, PPP 68P	636	$\Delta$ R449	5102-4705116	RES, FUSE 47	567	Q427	5614-667A(C)	XISTOR, NPN A				
591	C518	5359-6805851	CAP, PPP 68P	636	$\Delta$ R450	5102-4705116	RES, FUSE 47	567	Q428	5614-667A(C)	XISTOR, NPN A				
				609	R455	5135-331522	RES, CBN 1/2P 330	568	Q429	5612-647A(C)	XISTOR, PNP A				
				609	R456	5135-331522	RES, CBN 1/2P 330	568	Q430	5612-647A(C)	XISTOR, PNP A				
				615	R457	5135-391522	RES, CBN 1/2P 390	569	$\Delta$ Q431	5613-3181(O)	XISTOR, NPN R	665	C11	5345-S19CM106	CAP, MINI ELE 10 $\mu$ /16V
				615	R458	5135-391522	RES, CBN 1/2P 390	569	$\Delta$ Q432	5613-3181(O)	XISTOR, NPN R				
				625	R459	5135-183522	RES, CBN 1/2P 18K	571	$\Delta$ Q433	5611-1264(O)	XISTOR, PNP R				
				625	R460	5135-183522	RES, CBN 1/2P 18K	571	$\Delta$ Q434	5611-1264(O)	XISTOR, PNP R	741	D9	5637-SLR33MC3	LED, POWER
				625	R461	5135-183522	RES, CBN 1/2P 18K								
				625	R462	5135-183522	RES, CBN 1/2P 18K								
				617	R463	5135-100522	RES, CBN 1/2P 10								
				617	R464	5135-100522	RES, CBN 1/2P 10								
				617	R465	5135-100522	RES, CBN 1/2P 10								
				617	R466	5135-100522	RES, CBN 1/2P 10								
				637	$\Delta$ R467	5102-1005116	RES, FUSE 10								
				637	$\Delta$ R468	5102-1005116	RES, FUSE 10								
				637	$\Delta$ R469	5102-1005116	RES, FUSE 10								

## ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
<b>PCB-1 MAIN P.C. BOARD</b>							
<b>CAPACITORS</b>							
662		C2	5345-106F041	666		R31	5135-681522
687	△	C5	5341-S07FM822	666		R32	5135-681522
687	△	C6	5341-S07FM822	603		R401	5135-331522
660		C7	5345-106F041	603		R402	5135-331522
661		C8	5345-S19BM107	604		R403	5135-683522
659		C10	5345-S19CM106	604		R404	5135-683522
663		C15	5345-S19FM334	622		R405	5135-681522
663		C16	5345-S19FM334	622		R406	5135-681522
664		C17	5345-S19FM105	622		R407	5135-681522
057B		C35	5352-1041957	622		R408	5135-681522
581		C401	5345-S19BM476	606		R409	5135-682522
581		C402	5345-S19BM476	606		R410	5135-682522
587		C403	5345-S19CM476	608		R411	5135-390522
587		C404	5345-S19CM476	608		R412	5135-390522
582		C405	5345-S19AM227	608		R413	5135-390522
582		C406	5345-S19AM227	608		R414	5135-390522
592		C407	5353-020934	623		R415	5135-222522
592		C408	5353-020934	623		R416	5135-222522
590		C409	5359-1015851	609		R417	5135-331522
590		C410	5359-1015851	609		R418	5135-331522
583		C411	5345-S19CM106	604		R419	5135-683522
583		C412	5345-S19CM106	604		R420	5135-683522
595		C413	5354-683593	638	△	R421	5102-3315116
595		C414	5354-683593	638	△	R422	5102-3315116
595		C415	5354-683593	638	△	R423	5102-3315116
595		C416	5354-683593	638	△	R424	5102-3315116
583		C417	5345-S19CM106	610		R425	5135-473522
583		C418	5345-S19CM106	610		R426	5135-473522
584	△	C421	5345-337F041	610		R427	5135-473522
584	△	C422	5345-337F041	610		R428	5135-473522
584	△	C423	5345-337F041	611		R429	5135-224522
584	△	C424	5345-337F041	611		R430	5135-224522
593		C475	5359-3315851	618		R431	5135-121522
593		C476	5359-3315851	618		R432	5135-121522
071B		C481	5359-1015851	612		R433	5135-222522
071B		C482	5359-1015851	612		R434	5135-222522
585		C505	5345-S19FM225	613		R435	5135-223522
585		C506	5345-S19FM225	613		R436	5135-223522
596		C507	5354-273J1HM	613		R437	5135-223522
596		C508	5354-273J1HM	613		R438	5135-223522
588		C509	5354-154593	624		R439	5135-153522
588		C510	5354-154593	624		R440	5135-153522
586		C511	5345-S19CM106	614		R441	5135-123522
586		C512	5345-S19CM106	614		R442	5135-123522
597		C513	5354-682J1HM	614		R443	5174-222381
597		C514	5354-682J1HM	633		R444	5174-222381
598		C515	5354-393J1HM	633		R445	5174-222381
598		C516	5354-393J1HM	633		R446	5174-222381
591		C517	5359-6805851	636	△	R447	5102-4705116
591		C518	5359-6805851	636	△	R448	5102-4705116
<b>RESISTORS</b>							
668		R6	5135-103522	636	△	R449	5102-4705116
670		R9	5135-472522	636	△	R450	5102-4705116
670		R10	5135-472522	609		R455	5135-331522
667		R11	5135-822522	609		R456	5135-331522
669		R12	5135-104522	615		R457	5135-391522
675		R13	5135-683522	615		R458	5135-391522
676		R14	5135-333522	625		R459	5135-183522
672		R15	5135-223522	625		R460	5135-183522
679		R16	5135-122522	625		R461	5135-183522
674		R17	5135-392522	625		R462	5135-183522
674		R18	5135-392522	617		R463	5135-100522
673		R19	5135-821522	617		R464	5135-100522
673		R20	5135-821522	617		R465	5135-100522
678		R21	5135-101522	617		R466	5135-100522
678		R22	5135-101522	637	△	R467	5102-1005116
677		R23	5135-222522	637	△	R468	5102-1005116
677		R24	5135-222522	637	△	R469	5102-1005116
669		R25	5135-104522	637	△	R470	5102-1005116
675		R26	5135-683522	639		R471/489	5273-R27672
671		R27	5135-335522	639		R472/490	5273-R27672
667		R28	5135-822522	605		R475	5135-331522
				605		R476	5135-331522
				640	△	R477	5102-4R75116
				640	△	R478	5102-4R75116
				640	△	R479	5102-4R75116
				640	△	R480	5102-4R75116
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							RES, CBN 1/2P 330
							RES, CBN 1/2P 330
							RES, FUSE 4.7
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							RES, FUSE 4.7
							RES, FUSE 4.7

Ser. No.	Ref. No.	Part No.	Description
616	R483	5135-820522	RES, CBN 1/2P 82
616	R484	5135-820522	RES, CBN 1/2P 82
627	R491	5175-100581	RES, MTL 3P 10
627	R492	5175-100581	RES, MTL 3P 10
626	R495	5171-1R0581	RES, MTL 1P 1
626	R496	5171-1R0581	RES, MTL 1P 1
607	R499	5135-680522	RES, CBN 1/2P 68
607	R500	5135-680522	RES, CBN 1/2P 68
619	R501	5135-331522	RES, CBN 1/2P 330
619	R502	5135-331522	RES, CBN 1/2P 330
620	R507	5135-153522	RES, CBN 1/2P 15K
620	R508	5135-153522	RES, CBN 1/2P 15K
621	R509	5135-272522	RES, CBN 1/2P 2.7K
621	R510	5135-272522	RES, CBN 1/2P 2.7K
628	R513	5135-331522	RES, CBN 1/2P 330
628	R514	5135-331522	RES, CBN 1/2P 330
628	R515	5135-331522	RES, CBN 1/2P 330
628	R516	5135-331522	RES, CBN 1/2P 330
604	R525	5135-683522	RES, CBN 1/2P 68K
604	R526	5135-683522	RES, CBN 1/2P 68K

### TRANSISTORS

652	Q1	5611-933S(S)	XISTOR, PNP R
651	Q2	5613-1740S(S)	XISTOR, NPN R
655	Q3	5611-970(BL)	XISTOR, PNP R
653	Q4	5611-970(BL)	XISTOR, PNP R
653	Q5	5611-970(BL)	XISTOR, PNP R
651	Q7	5613-1740S(S)	XISTOR, NPN R
561	Q401	5613-2240(BL)	XISTOR, NPN R
561	Q402	5613-2240(BL)	XISTOR, NPN R
561	Q403	5613-2240(BL)	XISTOR, NPN R
561	Q404	5613-2240(BL)	XISTOR, NPN R
562	Q405	5613-2320L(F)	XISTOR, NPN R
562	Q406	5613-2320L(F)	XISTOR, NPN R
562	Q407	5613-2320L(F)	XISTOR, NPN R
562	Q408	5613-2320L(F)	XISTOR, NPN R
563	Q409	5611-970(BL)	XISTOR, PNP R
563	Q410	5611-970(BL)	XISTOR, PNP R
574	Q411	5613-2320L(F)	XISTOR, NPN R
574	Q412	5613-2320L(F)	XISTOR, NPN R
573	Q413	5613-2240(BL)	XISTOR, NPN R
573	Q414	5613-2240(BL)	XISTOR, NPN R
578	Q415	5611-999L(F)	XISTOR, PNP R
578	Q416	5611-999L(F)	XISTOR, PNP R
564	Q417	5612-646A(C)	XISTOR, PNP A
564	Q418	5612-646A(C)	XISTOR, PNP A
565	Q419	5614-666A(C)	XISTOR, NPN A
565	Q420	5614-666A(C)	XISTOR, NPN A
566	Q425	5613-945(P)	XISTOR, NPN R
566	Q426	5613-945(P)	XISTOR, NPN R
567	Q427	5614-667A(C)	XISTOR, NPN A
567	Q428	5614-667A(C)	XISTOR, NPN A
568	Q429	5612-647A(C)	XISTOR, PNP A
568	Q430	5612-647A(C)	XISTOR, PNP A
569	△ Q431	5613-3181(O)	XISTOR, NPN R
569	△ Q432	5613-3181(O)	XISTOR, NPN R
571	△ Q433	5611-1264(O)	XISTOR, PNP R
571	△ Q434	5611-1264(O)	XISTOR, PNP R

### DIODES

681	△ D1	5632-ERC402FL	DIODE, RECT
681	△ D2	5632-ERC402FL	DIODE, RECT
681	△ D3	5632-ERC402FL	DIODE, RECT
681	△ D4	5632-ERC402FL	DIODE, RECT
656	△ D5	5636-1S2471	DIODE, SWITCH
656	△ D6	5636-1S2471	DIODE, SWITCH
657	D11	5635-HZ6B-1L	DIODE, ZENER
658	D13	5631-1S2473	DIODE, DET
658	D14	5631-1S2473	DIODE, DET
575	D407	5631-1S2473	DIODE, DET
575	D408	5631-1S2473	DIODE, DET
576	D409	5635-HZ12B2L	DIODE, ZENER
576	D410	5635-HZ12B2L	DIODE, ZENER

### COILS

644	L405	5991-7125	SPRING COIL
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Ser. No.	Ref. No.	Part No.	Description
644	L406	5991-7125	SPRING COIL
<b>CONTROLS</b>			
641	VR401	5101-50171913	RES, SEMI FIX 500
641	VR402	5101-50171913	RES, SEMI FIX 500
720	VR501/	5113-S1501503	RES, V CBN 16 50K,
	502		BALANCE
714	VR505/	5113-10447122	RES, V CBN 16 100K,
	506		BASS
717	VR507/	5113-50348122	RES, V CBN 16 50K,
	508		TREBLE
<b>MISCELLANEOUS</b>			
699	CN601	4443-030185	CONNECTOR
764	JL107	4242-R0203600	JUMPER LEAD
763	JL109	4242-R0203201	JUMPER LEAD
762	JL110	4242-R0104181	JUMPER LEAD
755	JL801L	4132-R0202101	CORD, 2C
755	JL801R	4132-R0202101	CORD, 2C
747	LCN2	4163-0140026	CONNECTOR W/W
748	LCN3	4163-0140027	CONNECTOR W/W
749	LCN4	4163-0140024	CONNECTOR W/W
750	LCN5	4163-0140025	CONNECTOR W/W
751	LCN7	4163-0112024	CONNECTOR W/W
751	LCN8	4163-0112024	CONNECTOR W/W
694	△ TM101	4214-11023	TERMINAL
646	△ TM110	4214-11013	TERMINAL
646	△ TM112	4214-11013	TERMINAL

### PCB-2 SPEAKER TERMINAL P.C. BOARD

<b>CAPACITORS</b>			
072B	C31	5359-S010K151	CAP, PPP 150P <b>G GB</b>
072B	C32	5359-S010K151	CAP, PPP 150P <b>G GB</b>
073B	C33	5359-S010K151	CAP, PPP 150P <b>G GB</b>
073B	C34	5359-S010K151	CAP, PPP 150P <b>G GB</b>
<b>MISCELLANEOUS</b>			
761	JL120	4242-043805	JUMPER LEAD
743	△ TM10	4214-156	TERMINAL, SPEAKER

### PCB-3 HEADPHONES P.C. BOARD

<b>CAPACITORS</b>			
074B	C477	5359-S010K331	CAP, PPP 330P <b>G GB</b>
074B	C478	5359-S010K331	CAP, PPP 330P <b>G GB</b>
<b>MISCELLANEOUS</b>			
736	J1	4451-51501	JACK, 1P, HEADPHONES

### PCB-4 LED P.C. BOARD

<b>MISCELLANEOUS</b>			
665	C11	5345-S19CM106	CAP, MINI ELE 10μ/16V
<b>DIODE</b>			
741	D9	5637-SLR33MC3	LED, POWER

### PCB-5 SPEAKER SWITCH P.C. BOARD

<b>RESISTORS</b>			
632	R497	5135-471522	RES, CBN 1/2P 470
632	R498	5135-471522	RES, CBN 1/2P 470
<b>MISCELLANEOUS</b>			
765	JL108	4242-R0103101	JUMPER LEAD
729	SW5	4411-00306403	SWITCH, ROTARY, SPEAKERS

### PCB-6 VR P.C. BOARD

<b>RESISTORS</b>			
631	R571	5135-273522	RES, CBN 1/2P 27K
631	R572	5135-273522	RES, CBN 1/2P 27K

Ser. No.	Ref. No.	Part No.	Description
<b>CONTROLS</b>			
711	VR503/504	5113-S1401104	RES, V CBN 16 100K, VOLUME

**PCB-7 POWER SWITCH P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
688	△ C1	5352-S010M103	CAP, MTL .01μ (BK)
688B	△ C1	5352-1030958	CAP, MTL .01μ (G GB BB IB)

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTOR</b>			
054B	△ R1	5135-335522	RES, CBN 1/2P 3.3M (G GB BB IB)

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
684	△ HF1	4472-04501	HOLDER, FUSE
684	△ HF2	4472-04501	HOLDER, FUSE
732	△ SW1	4433-00401	SWITCH, PU-PW, POWER
696	TM1	4214-122	TERMINAL
696	TM2	4214-122	TERMINAL (BK)
696	TM3	4214-122	TERMINAL

**PCB-8 LOUDNESS P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
589	C575	5359-1815851	CAP, PPP 180P
589	C576	5359-1815851	CAP, PPP 180P
594	C577	5354-823J1HM	CAP, MYL .082μ
594	C578	5354-823J1HM	CAP, MYL .082μ

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>			
629	R573	5135-472522	RES, CBN 1/2P 4.7K
629	R574	5135-472522	RES, CBN 1/2P 4.7K
630	R575	5135-273522	RES, CBN 1/2P 27K
630	R576	5135-273522	RES, CBN 1/2P 27K

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
766	JL111	4242-R0105800	JUMPER LEAD
733	SW8	4431-S2601102	SWITCH,PUSH, LOUDNESS

**PCB-9 FUNCTION P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
700	CN107	4443-030185	CONNECTOR
768	JL101	4242-R0103181	JUMPER LEAD
769	JL103	4242-R0104301	JUMPER LEAD
772	JL104	4242-R0107301	JUMPER LEAD
771	JL105	4242-R0107251	JUMPER LEAD
770	JL106	4242-R0105181	JUMPER LEAD
753	LCN10	4163-0112039	CONNECTOR W/W
723	SW3	4411-00214204	SWITCH, ROTARY, SOURCE
726	SW4	4411-00213404	SWITCH, ROTARY, TAPE MONITOR
695	△ TM102	4214-11013	TERMINAL

**PCB-10 EQUALIZER P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
066B	C552	5361-103ZF	CAP, CER .01μ (G GB)
069B	C553	5361-101KSL	CAP, CER 100P (G GB)
069B	C554	5361-101KSL	CAP, CER 100P (G GB)
070B	C555	5361-101KSL	CAP, CER 100P (G GB)
070B	C556	5361-101KSL	CAP, CER 100P (G GB)
066B	C557	5361-103ZF	CAP, CER .01μ (G GB)
513	C601	5345-S19CM336	CAP, MINI ELE 33μ/16V
513	C602	5345-S19CM336	CAP, MINI ELE 33μ/16V
520	C603	5359-1215851	CAP, PPP 120P
520	C604	5359-1215851	CAP, PPP 120P
514	C605	5345-S19AM227	CAP, MINI ELE 220μ/6.3V
514	C606	5345-S19AM227	CAP, MINI ELE 220μ/6.3V
521	C607	5359-5625851	CAP, PPP 5600P
521	C608	5359-5625851	CAP, PPP 5600P
522	C609	5359-2025851	CAP, PPP 2000P

Ser. No.	Ref. No.	Part No.	Description
522	C610	5359-2025851	CAP, PPP 2000P
515	C611	5345-S19CM106	CAP, MINI ELE 10μ/16V
515	C612	5345-S19CM106	CAP, MINI ELE 10μ/16V
517	C613	5345-337F041	CAP, MINI ELE 330μ/50V
516	C614	5345-227D041	CAP, MINI ELE 220μ/25V
516	C615	5345-227D041	CAP, MINI ELE 220μ/25V
523	C617	5353-040934	CAP, MCA 4P
523	C618	5353-040934	CAP, MCA 4P
519	C619	5359-6825851	CAP, PPP 6800P
519	C620	5359-6825851	CAP, PPP 6800P
056B	C631	5353-101534	CAP, MCA 100P (G GB)
056B	C632	5353-101534	CAP, MCA 100P (G GB)
069B	C633	5361-101KSL	CAP, CER 100P (G GB)
069B	C634	5361-101KSL	CAP, CER 100P (G GB)

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>			
064B	R561	5135-102522	RES, CBN 1/2P 1K (G GB)
064B	R562	5135-102522	RES, CBN 1/2P 1K (G GB)
064B	R563	5135-102522	RES, CBN 1/2P 1K (G GB)
064B	R564	5135-102522	RES, CBN 1/2P 1K (G GB)
526	R601	5232-823J16P	RES, CBN 1/6P 82K
526	R602	5232-823J16P	RES, CBN 1/6P 82K
527	R603	5232-124J16P	RES, CBN 1/6P 120K
527	R604	5232-124J16P	RES, CBN 1/6P 120K
528	R605	5232-221J16P	RES, CBN 1/6P 220
528	R606	5232-221J16P	RES, CBN 1/6P 220
529	R607	5178-122381	RES, MTL 1/6P 1.2K
529	R608	5178-122381	RES, MTL 1/6P 1.2K
530	R609	5178-220381	RES, MTL 1/6P 22
530	R610	5178-220381	RES, MTL 1/6P 22
531	R611	5178-122381	RES, MTL 1/6P 1.2K
531	R612	5178-122381	RES, MTL 1/6P 1.2K
532	R613	5232-473J16P	RES, CBN 1/6P 47K
532	R614	5232-473J16P	RES, CBN 1/6P 47K
541	R615	5232-820J16P	RES, CBN 1/6P 82
541	R616	5232-820J16P	RES, CBN 1/6P 82
533	R617	5232-121J16P	RES, CBN 1/6P 120
533	R618	5232-121J16P	RES, CBN 1/6P 120
534	R621	5232-821J16P	RES, CBN 1/6P 820
534	R622	5232-821J16P	RES, CBN 1/6P 820
535	R623	5232-393J16P	RES, CBN 1/6P 39K
535	R624	5232-393J16P	RES, CBN 1/6P 39K
536	R625	5232-564J16P	RES, CBN 1/6P 560K
536	R626	5232-564J16P	RES, CBN 1/6P 560K
537	R627	5232-334J16P	RES, CBN 1/6P 330K
537	R628	5232-334J16P	RES, CBN 1/6P 330K
538	R629	5232-102J16P	RES, CBN 1/6P 1K
538	R630	5232-102J16P	RES, CBN 1/6P 1K
539	R631	5232-104J16P	RES, CBN 1/6P 100K
539	R632	5232-104J16P	RES, CBN 1/6P 100K
543	R633	5232-331J16P	RES, CBN 1/6P 330
543	R634	5232-331J16P	RES, CBN 1/6P 330
542	R635	5232-222J16P	RES, CBN 1/6P 2.2K
542	R636	5232-222J16P	RES, CBN 1/6P 2.2K
546	R637	5135-681522	RES, CBN 1/2P 680
550	R638	5135-681522	RES, CBN 1/2P 680
551	△ R639	5102-1814715	RES, FUSE 180
545	R640	5135-151522	RES, CBN 1/2P 150
544	R641	5135-472522	RES, CBN 1/2P 4.7K
547	R643	5232-105J16P	RES, CBN 1/6P 1M
547	R644	5232-105J16P	RES, CBN 1/6P 1M
546	R645	5135-681522	RES, CBN 1/2P 680
550	R647	5135-681522	RES, CBN 1/2P 680
055B	R651	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R652	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R653	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R654	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R655	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R656	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R657	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R658	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R659	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R660	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R671	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R672	5232-102J16P	RES, CBN 1/6P 1K (G GB)
055B	R673	5232-102J16P	RES, CBN 1/6P 1K (G GB)

Ser. No.	Ref. No.	Part No.	Description
055B	R674	5232-102J16P	RES, CBN 1/6P 1K (G GB)
540	R681	5232-222J16P	RES, CBN 1/6P 2.2K
540	R682	5232-222J16P	RES, CBN 1/6P 2.2K

Ser. No.	Ref. No.	Part No.	Description
<b>TRANSISTORS</b>			
501	Q601	5613-2320L(F)	XISTOR, NPN R
501	Q602	5613-2320L(F)	XISTOR, NPN R
503	Q603	5611-999L(F)	XISTOR, PNP R
503	Q604	5611-999L(F)	XISTOR, PNP R
504	Q605	5611-999L(F)	XISTOR, PNP R
504	Q606	5611-999L(F)	XISTOR, PNP R
501	Q607	5613-2320L(F)	XISTOR, NPN R
501	Q608	5613-2320L(F)	XISTOR, NPN R
501	Q609	5613-2320L(F)	XISTOR, NPN R
501	Q610	5613-2320L(F)	XISTOR, NPN R
501	Q611	5613-2320L(F)	XISTOR, NPN R
501	Q612	5613-2320L(F)	XISTOR, NPN R
505	Q613	5612-647A(C)	XISTOR, PNP A

Ser. No.	Ref. No.	Part No.	Description
<b>DIODES</b>			
509	D601	5635-HZ15-2L	DIODE, ZENER
510	D602	5635-HZ9B2L	DIODE, ZENER
510	D603	5635-HZ9B2L	DIODE, ZENER

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
737	△ J2	4482-0133	PIN JACK, 2P, PHONO
738	△ J3	4484-46	PIN JACK, 4P, TAPE 1 IN/OUT
738	△ J4	4484-46	PIN JACK, 4P, TAPE 2 IN/OUT
739	△ J5	4486-15	PIN JACK, 6P, TUNER/ CD/VIDEO
767	JL102	4242-R0203101	JUMPER LEAD
752	LCN601	4163-0145039	CONNECTOR W/W

**PCB-11 BIAS P.C. BOARD (LCH)**

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>			
634	R801L	5135-152522	RES, CBN 1/2P 1.5K
635	R802L	5135-122522	RES, CBN 1/2P 1.2K

Ser. No.	Ref. No.	Part No.	Description
<b>TRANSISTOR</b>			
579	Q801L	5613-2682(Q)	XISTOR, NPN R

**PCB-12 BIAS P.C. BOARD (RCH)**

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>			
634	R801R	5135-152522	RES, CBN 1/2P 1.5K
635	R802R	5135-122522	RES, CBN 1/2P 1.2K

Ser. No.	Ref. No.	Part No.	Description
<b>TRANSISTOR</b>			
579	Q801R	5613-2682(Q)	XISTOR, NPN R

**CHASSIS MISCELLANEOUS**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
689	C3	5354-104593	CAP, MYL .1μ
689	C4	5354-104593	CAP, MYL .1μ

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
052B	△ C01	4443-712	CONNECTOR (G GB BB IB)
685	△ F1	5732-252031	FUSE, 2.5A/125V (BK)
685B	△ F1	5732-122052	FUSE, T1.25A/250V (G GB BB IB)
062B	LUG	4211-4	LUG, MAIN HEAD-PHONES (G GB)
745	△ P1	4161-71151	CORD W/PLUG (BK)
745B	△ P1	4161-7256	CORD W/PLUG (G GB IB)
745D	△ P1	4161-04100	CORD W/PLUG (BB)
744	△ S01	4474-227	SOCKET, AC OUTLET (BK)
051B	△ SW101	4467-012	SELECTOR, VOLTAGE (G GB BB IB)

Ser. No.	Ref. No.	Part No.	Description
<b>CONTROLS</b>			
711	VR503/ 504	5113-S1401104	RES, V CBN 16 100K, VOLUME

### PCB-7 POWER SWITCH P.C. BOARD

<b>CAPACITORS</b>			
688	△ C1	5352-S010M103	CAP, MTL .01μ <b>BK</b>
688B	△ C1	5352-1030958	CAP, MTL .01μ <b>G GB BB IB</b>

<b>RESISTOR</b>			
054B	△ R1	5135-335522	RES, CBN 1/2P 3.3M <b>G GB BB IB</b>

<b>MISCELLANEOUS</b>			
684	△ HF1	4472-04501	HOLDER, FUSE
684	△ HF2	4472-04501	HOLDER, FUSE
732	△ SW1	4433-00401	SWITCH, PU-PW, POWER
696	TM1	4214-122	TERMINAL
696	TM2	4214-122	TERMINAL <b>BK</b>
696	TM3	4214-122	TERMINAL

### PCB-8 LOUDNESS P.C. BOARD

<b>CAPACITORS</b>			
589	C575	5359-1815851	CAP, PPP 180P
589	C576	5359-1815851	CAP, PPP 180P
594	C577	5354-823J1HM	CAP, MYL .082μ
594	C578	5354-823J1HM	CAP, MYL .082μ

<b>RESISTORS</b>			
629	R573	5135-472522	RES, CBN 1/2P 4.7K
629	R574	5135-472522	RES, CBN 1/2P 4.7K
630	R575	5135-273522	RES, CBN 1/2P 27K
630	R576	5135-273522	RES, CBN 1/2P 27K

<b>MISCELLANEOUS</b>			
766	JL111	4242-R0105800	JUMPER LEAD
733	SW8	4431-S2601102	SWITCH, PUSH, LOUDNESS

### PCB-9 FUNCTION P.C. BOARD

<b>MISCELLANEOUS</b>			
700	CN107	4443-030185	CONNECTOR
768	JL101	4242-R0103181	JUMPER LEAD
769	JL103	4242-R0104301	JUMPER LEAD
772	JL104	4242-R0107301	JUMPER LEAD
771	JL105	4242-R0107251	JUMPER LEAD
770	JL106	4242-R0105181	JUMPER LEAD
753	LCN10	4163-0112039	CONNECTOR W/W
723	SW3	4411-00214204	SWITCH, ROTARY, SOURCE
726	SW4	4411-00213404	SWITCH, ROTARY, TAPE MONITOR
695	△ TM102	4214-11013	TERMINAL

### PCB-10 EQUALIZER P.C. BOARD

<b>CAPACITORS</b>			
066B	C552	5361-103ZF	CAP, CER .01μ <b>G GB</b>
069B	C553	5361-101KSL	CAP, CER 100P <b>G GB</b>
069B	C554	5361-101KSL	CAP, CER 100P <b>G GB</b>
070B	C555	5361-101KSL	CAP, CER 100P <b>G GB</b>
070B	C556	5361-101KSL	CAP, CER 100P <b>G GB</b>
066B	C557	5361-103ZF	CAP, CER .01μ <b>G GB</b>
513	C601	5345-S19CM336	CAP, MINI ELE 33μ/16V
513	C602	5345-S19CM336	CAP, MINI ELE 33μ/16V
520	C603	5359-1215851	CAP, PPP 120P
520	C604	5359-1215851	CAP, PPP 120P
514	C605	5345-S19AM227	CAP, MINI ELE 220μ/6.3V
514	C606	5345-S19AM227	CAP, MINI ELE 220μ/6.3V
521	C607	5359-5625851	CAP, PPP 5600P
521	C608	5359-5625851	CAP, PPP 5600P
522	C609	5359-2025851	CAP, PPP 2000P

Ser. No.	Ref. No.	Part No.	Description
522	C610	5359-2025851	CAP, PPP 2000P
515	C611	5345-S19CM106	CAP, MINI ELE 10μ/16V
515	C612	5345-S19CM106	CAP, MINI ELE 10μ/16V
517	C613	5345-337F041	CAP, MINI ELE 330μ/50V
516	C614	5345-227D041	CAP, MINI ELE 220μ/25V
516	C615	5345-227D041	CAP, MINI ELE 220μ/25V
523	C617	5353-040934	CAP, MCA 4P
523	C618	5353-040934	CAP, MCA 4P
519	C619	5359-6825851	CAP, PPP 6800P
519	C620	5359-6825851	CAP, PPP 6800P
056B	C631	5353-101534	CAP, MCA 100P <b>G GB</b>
056B	C632	5353-101534	CAP, MCA 100P <b>G GB</b>
069B	C633	5361-101KSL	CAP, CER 100P <b>G GB</b>
069B	C634	5361-101KSL	CAP, CER 100P <b>G GB</b>

### RESISTORS

064B	R561	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>
064B	R562	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>
064B	R563	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>
064B	R564	5135-102522	RES, CBN 1/2P 1K <b>G GB</b>
526	R601	5232-823J16P	RES, CBN 1/6P 82K
526	R602	5232-823J16P	RES, CBN 1/6P 82K
527	R603	5232-124J16P	RES, CBN 1/6P 120K
527	R604	5232-124J16P	RES, CBN 1/6P 120K
528	R605	5232-221J16P	RES, CBN 1/6P 220
528	R606	5232-221J16P	RES, CBN 1/6P 220
529	R607	5178-122381	RES, MTL 1/6P 1.2K
529	R608	5178-122381	RES, MTL 1/6P 1.2K
530	R609	5178-220381	RES, MTL 1/6P 22
530	R610	5178-220381	RES, MTL 1/6P 22
531	R611	5178-122381	RES, MTL 1/6P 1.2K
531	R612	5178-122381	RES, MTL 1/6P 1.2K
532	R613	5232-473J16P	RES, CBN 1/6P 47K
532	R614	5232-473J16P	RES, CBN 1/6P 47K
541	R615	5232-820J16P	RES, CBN 1/6P 82
541	R616	5232-820J16P	RES, CBN 1/6P 82
533	R617	5232-121J16P	RES, CBN 1/6P 120
533	R618	5232-121J16P	RES, CBN 1/6P 120
534	R621	5232-821J16P	RES, CBN 1/6P 820
534	R622	5232-821J16P	RES, CBN 1/6P 820
535	R623	5232-393J16P	RES, CBN 1/6P 39K
535	R624	5232-393J16P	RES, CBN 1/6P 39K
536	R625	5232-564J16P	RES, CBN 1/6P 560K
536	R626	5232-564J16P	RES, CBN 1/6P 560K
537	R627	5232-334J16P	RES, CBN 1/6P 330K
537	R628	5232-334J16P	RES, CBN 1/6P 330K
538	R629	5232-102J16P	RES, CBN 1/6P 1K
538	R630	5232-102J16P	RES, CBN 1/6P 1K
539	R631	5232-104J16P	RES, CBN 1/6P 100K
539	R632	5232-104J16P	RES, CBN 1/6P 100K
543	R633	5232-331J16P	RES, CBN 1/6P 330
543	R634	5232-331J16P	RES, CBN 1/6P 330
542	R635	5232-222J16P	RES, CBN 1/6P 2.2K
542	R636	5232-222J16P	RES, CBN 1/6P 2.2K
546	R637	5135-681522	RES, CBN 1/2P 680
550	R638	5135-681522	RES, CBN 1/2P 680
551	△ R639	5102-1814715	RES, FUSE 180
545	R640	5135-151522	RES, CBN 1/2P 150
544	R641	5135-472522	RES, CBN 1/2P 4.7K
547	R643	5232-105J16P	RES, CBN 1/6P 1M
547	R644	5232-105J16P	RES, CBN 1/6P 1M
546	R645	5135-681522	RES, CBN 1/2P 680
550	R647	5135-681522	RES, CBN 1/2P 680
055B	R651	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R652	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R653	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R654	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R655	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R656	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R657	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R658	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R659	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R660	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R671	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R672	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>
055B	R673	5232-102J16P	RES, CBN 1/6P 1K <b>G GB</b>



Ser. No.	Ref. No.	Part No.	Description
055B	R674	5232-102J16P	RES, CBN 1/6P 1K <b>G</b> <b>GB</b>
540	R681	5232-222J16P	RES, CBN 1/6P 2.2K
540	R682	5232-222J16P	RES, CBN 1/6P 2.2K

**TRANSISTORS**

501	Q601	5613-2320L(F)	XISTOR, NPN R
501	Q602	5613-2320L(F)	XISTOR, NPN R
503	Q603	5611-999L(F)	XISTOR, PNP R
503	Q604	5611-999L(F)	XISTOR, PNP R
504	Q605	5611-999L(F)	XISTOR, PNP R
504	Q606	5611-999L(F)	XISTOR, PNP R
501	Q607	5613-2320L(F)	XISTOR, NPN R
501	Q608	5613-2320L(F)	XISTOR, NPN R
501	Q609	5613-2320L(F)	XISTOR, NPN R
501	Q610	5613-2320L(F)	XISTOR, NPN R
501	Q611	5613-2320L(F)	XISTOR, NPN R
501	Q612	5613-2320L(F)	XISTOR, NPN R
505	Q613	5612-647A(C)	XISTOR, PNP A

**DIODES**

509	D601	5635-HZ15-2L	DIODE, ZENER
510	D602	5635-HZ9B2L	DIODE, ZENER
510	D603	5635-HZ9B2L	DIODE, ZENER

**MISCELLANEOUS**

737	△ J2	4482-0133	PIN JACK, 2P, PHONO
738	△ J3	4484-46	PIN JACK, 4P, TAPE 1 IN/OUT
738	△ J4	4484-46	PIN JACK, 4P, TAPE 2 IN/OUT
739	△ J5	4486-15	PIN JACK, 6P, TUNER/CD/VIDEO
767	JL102	4242-R0203101	JUMPER LEAD
752	LCN601	4163-0145039	CONNECTOR W/W

**PCB-11 BIAS P.C. BOARD (LCH)**

**RESISTORS**

634	R801L	5135-152522	RES, CBN 1/2P 1.5K
635	R802L	5135-122522	RES, CBN 1/2P 1.2K

**TRANSISTOR**

579	Q801L	5613-2682(Q)	XISTOR, NPN R
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**PCB-12 BIAS P.C. BOARD (RCH)**

**RESISTORS**

634	R801R	5135-152522	RES, CBN 1/2P 1.5K
635	R802R	5135-122522	RES, CBN 1/2P 1.2K

**TRANSISTOR**

579	Q801R	5613-2682(Q)	XISTOR, NPN R
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**CHASSIS MISCELLANEOUS**

**CAPACITORS**

689	C3	5354-104593	CAP, MYL .1μ
689	C4	5354-104593	CAP, MYL .1μ

**MISCELLANEOUS**

052B	△ C01	4443-712	CONNECTOR <b>G</b> <b>GB</b> <b>BB</b> <b>IB</b>
685	△ F1	5732-252031	FUSE, 2.5A/125V <b>BK</b>
685B	△ F1	5732-122052	FUSE, T1.25A/250V <b>G</b> <b>GB</b> <b>BB</b> <b>IB</b>
062B	LUG	4211-4	LUG, MAIN HEAD- PHONES <b>G</b> <b>GB</b>
745	△ P1	4161-71151	CORD W/PLUG <b>BK</b>
745B	△ P1	4161-7256	CORD W/PLUG <b>G</b> <b>GB</b> <b>IB</b>
745D	△ P1	4161-04100	CORD W/PLUG <b>BB</b>
744	△ S01	4474-227	SOCKET, AC OUTLET <b>BK</b>
051B	△ SW101	4467-012	SELECTOR, VOLTAGE <b>G</b> <b>GB</b> <b>BB</b> <b>IB</b>

Ser. No.	Ref. No.	Part No.	Description
683	△ T1	5584-T0601	XFORMER, POWER <b>BK</b>
683B	△ T1	5584-T0602	XFORMER, POWER <b>G</b> <b>GB</b> <b>BB</b> <b>IB</b>
053B	△	4150-8	TUBING, SPE <b>G</b> <b>GB</b> <b>BB</b> <b>IB</b>

**PACKING PARTS LIST**

021B	1756-06304	LABEL 230V/50Hz <b>G</b> <b>GB</b> <b>BB</b> <b>IB</b>
022B	1756-03124	LABEL (G), (x2) <b>G</b> <b>GB</b>
022D	1756-03111	LABEL (B), <b>BB</b>
022E	1756-03108	LABEL (I), <b>IB</b>
027D	1756-08501	LABEL <b>BB</b>
028D	1111-J30319	OWNER GUIDE, ADDENDUM FOR AUSTRALIA <b>BB</b>
107	1111-0250J152	OWNER GUIDE, OG <b>BK</b>
107B	1111-0260J152	OWNER GUIDE, OG <b>G</b> <b>GB</b> <b>IB</b>
108	1113-02501	OWNER CARD, REPLAY CARD <b>BK</b>
109	1116-03801	GUARANTY CARD, WARRANTY <b>BK</b>
110	1119-04501	ATTACH SHEET, SERVICE GUIDE <b>BK</b>
111	1119-01201	ATTACH SHEET, UL <b>BK</b>
121	1241-R0123351	POLYETHY BAG, OG
122	1241-R0160601	POLYETHY BAG, SET
124	1221-7087144	CARTON BOX <b>G</b>
124	1221-7097144	CARTON BOX <b>BK</b> <b>GB</b> <b>BB</b> <b>IB</b>
125	1222-7216	CUSHION (x2)
127	1223-11729	SOFT SHEET

**ABBREVIATIONS IN PARTS LIST**

**CAPACITORS**

CAP, MINI ELE	: Electrolytic
CAP, CER	: Ceramic
CAP, PPP	: Polypropylene
CAP, MYL	: Mylar
CAP, MCA	: Mica
470μ	: 470μF
6800P	: 6800pF
.047μ	: 0.047μF

**RESISTORS**

RES, CBN 1/6P	: Carbon 1/6W
2.2K	: 2.2kΩ
220	: 220Ω
RES, FUSE	: Fuse
RES, CEM 5P	: Cement 5W
RES, MTL 1P	: Metal 1W

**TRANSISTORS**

XISTOR	: Transistor
FET	: Field Effect Transistor

**CONTROLS**

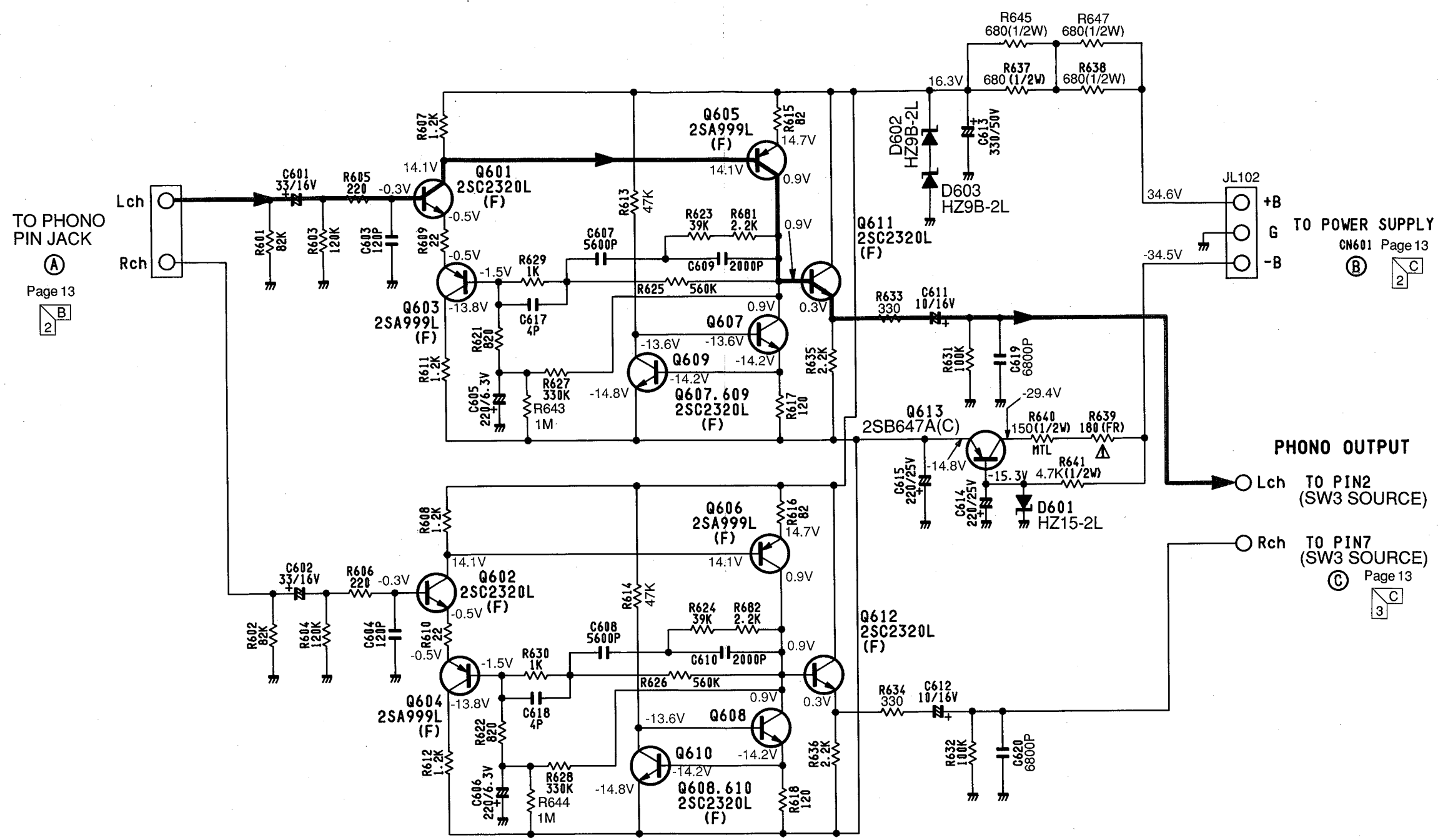
RES, V CBN	: Variable Carbon Resistor
RES, SEMI FIX	: Semi - fixed Resistors



NOTE: SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

SCHEMATIC DIAGRAM (1) (PHONO AMP SECTION)

PCB-10 EQUALIZER P. C. BOARD



NOTE:

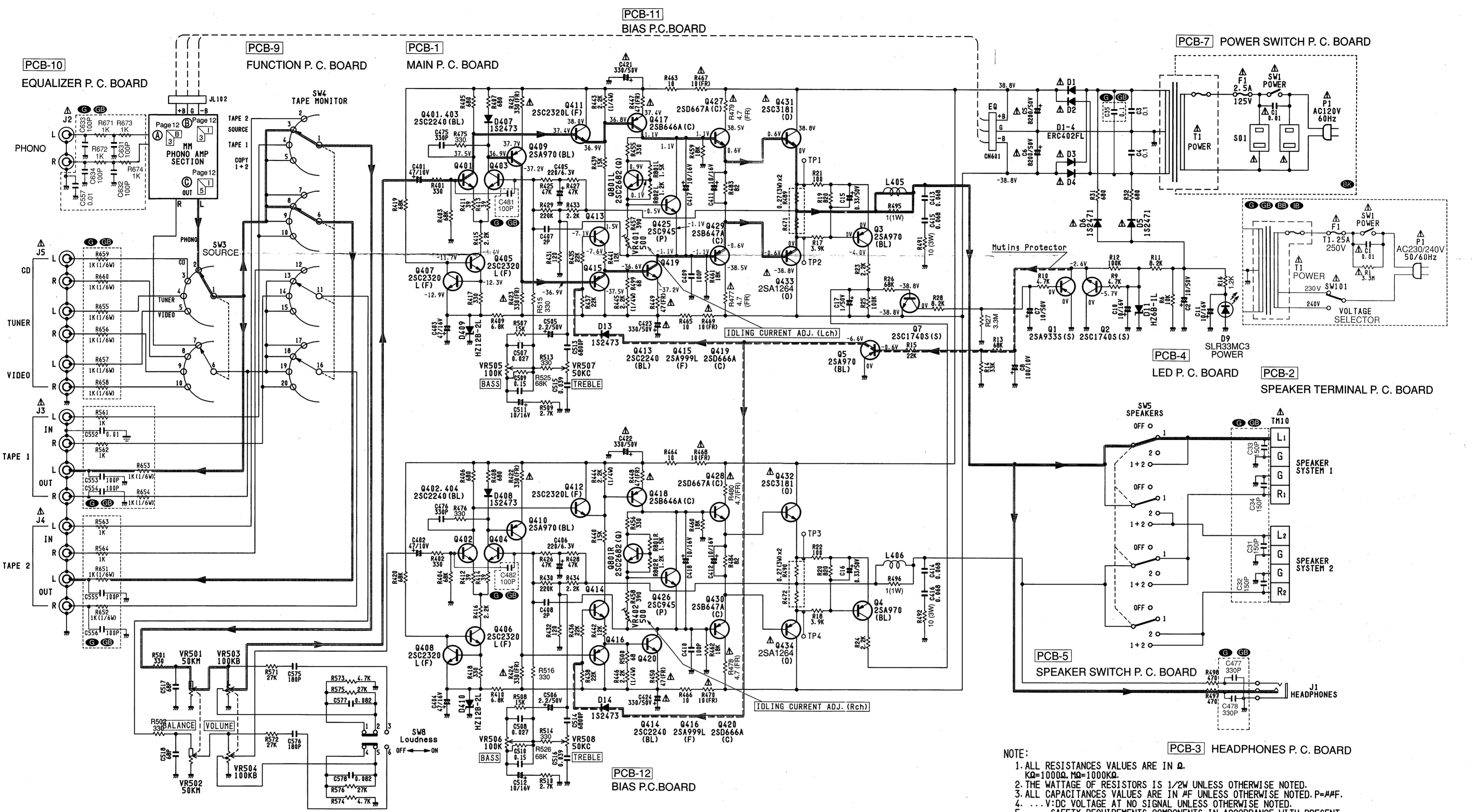
1. ALL RESISTANCES VALUES ARE IN  $\Omega$ .  
K $\Omega$ =1000 $\Omega$ . M $\Omega$ =1000K $\Omega$ .
2. THE WATTAGE OF RESISTORS IS 1/6W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN  $\mu$ F UNLESS OTHERWISE NOTED. P= $\mu$ F.
4. ...V:DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
5. SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS. THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

TO PHONO PIN JACK  
 (A)  
 Page 13  
 (B)  
 2

TO POWER SUPPLY  
 CN601 Page 13  
 (B)  
 (C)  
 2

PHONO OUTPUT  
 Lch TO PIN2 (SW3 SOURCE)  
 Rch TO PIN7 (SW3 SOURCE)  
 (C)  
 Page 13  
 (C)  
 3

SCHEMATIC DIAGRAM (2)



NOTE:

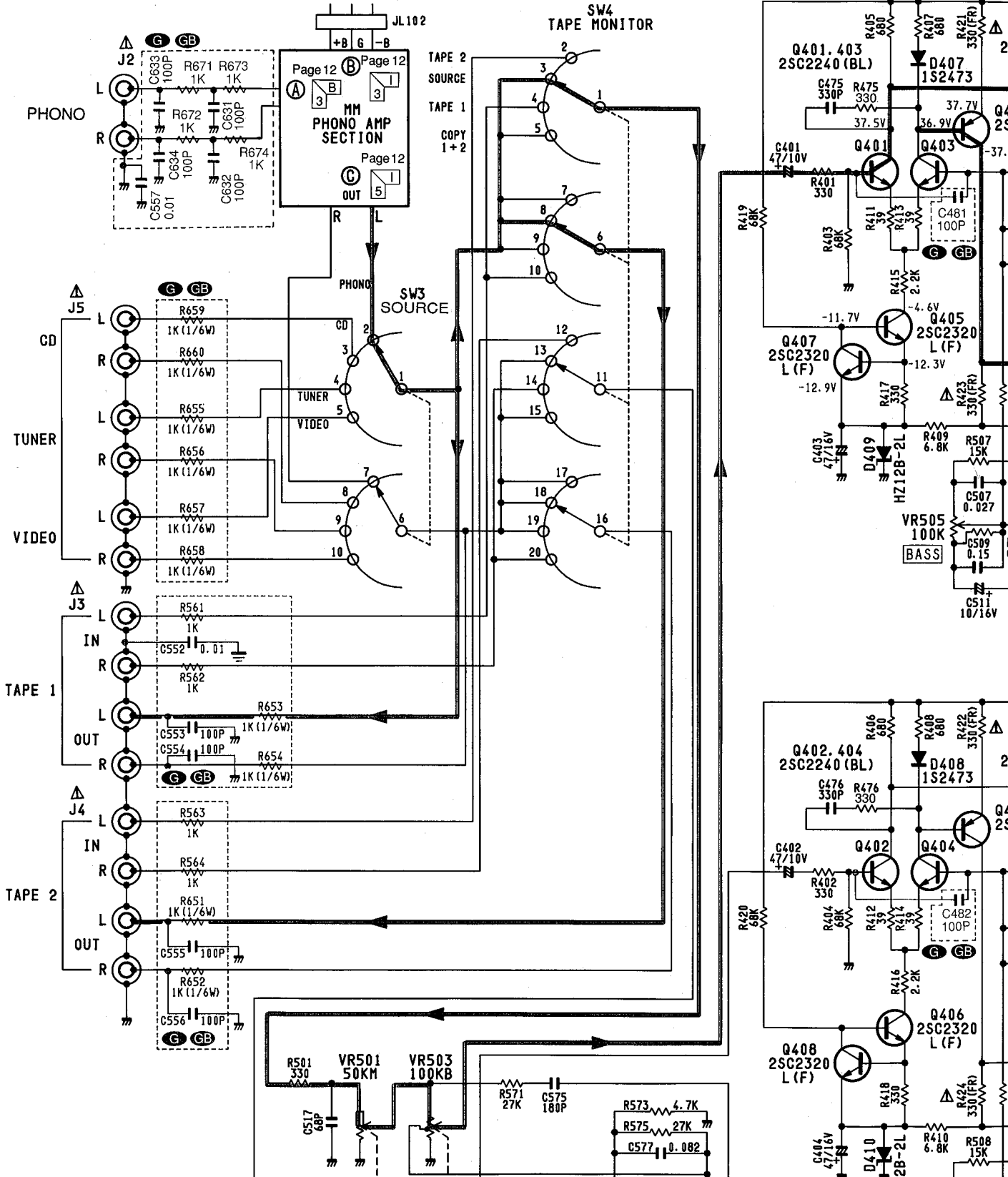
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K $\Omega$ =1000 $\Omega$ , M $\Omega$ =1000K $\Omega$ .
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN  $\mu$ F UNLESS OTHERWISE NOTED. P=#F.
4. ... V:DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
5. SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

# SCHEMATIC DIAGRAM (2)

**PCB-10**  
EQUALIZER P. C. BOARD

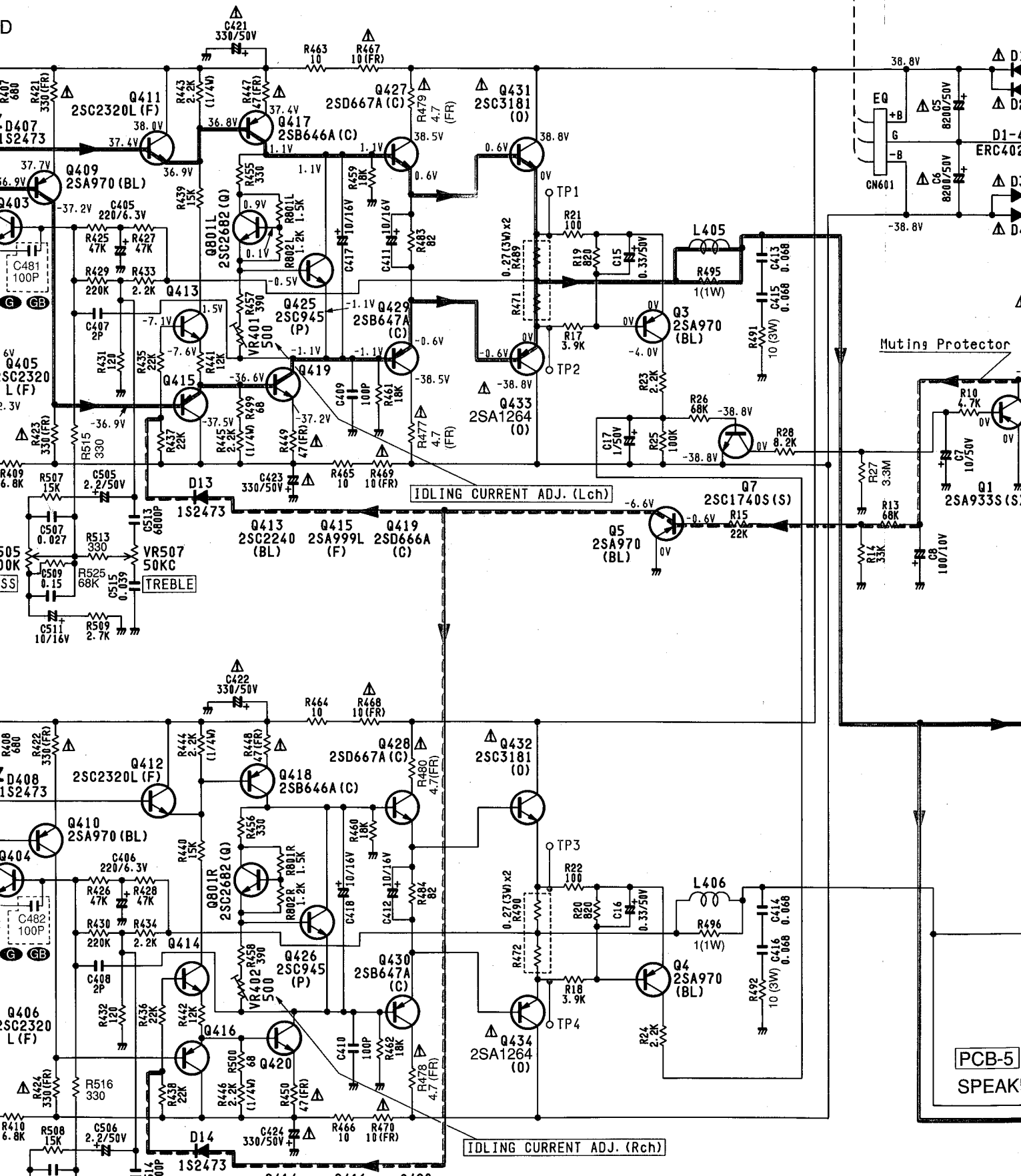
**PCB-9**  
FUNCTION P. C. BOARD

**PCB-1**  
MAIN P. C. BOARD



PCB-11  
BIAS P.C.BOARD

D



Muting Protector

IDLING CURRENT ADJ. (Lch)

IDLING CURRENT ADJ. (Rch)

PCB-5  
SPEAK

J

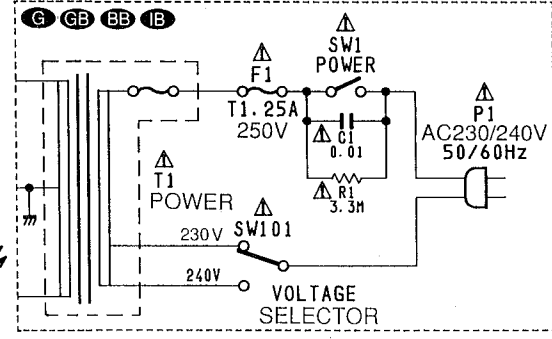
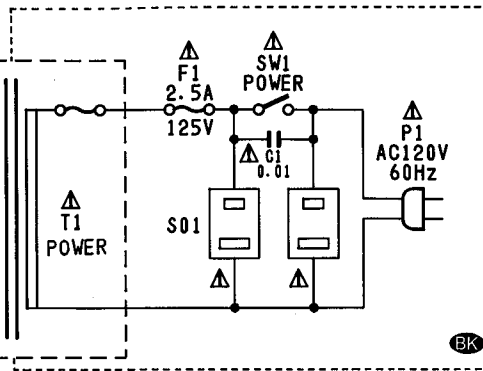
K

L

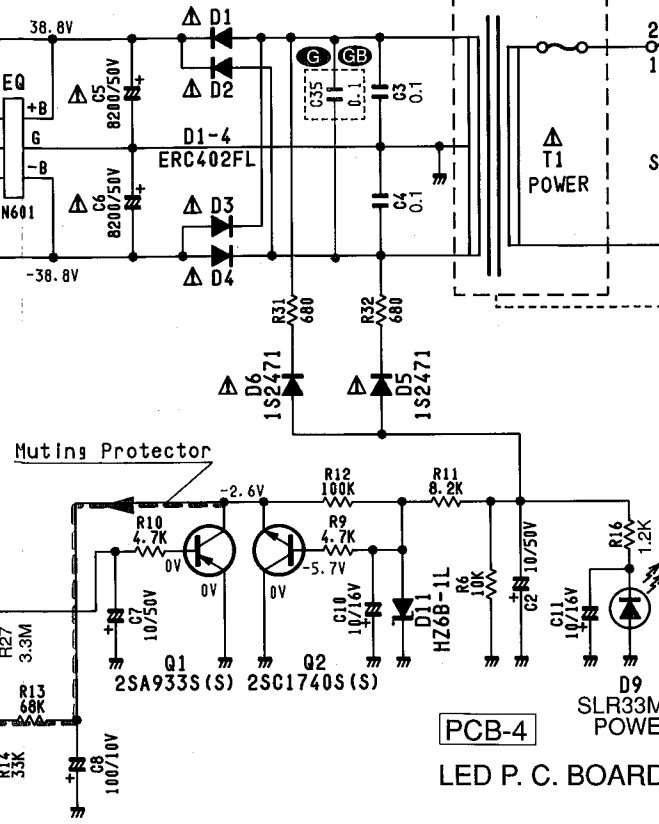
M

N

PCB-7 POWER SWITCH P. C. BOARD

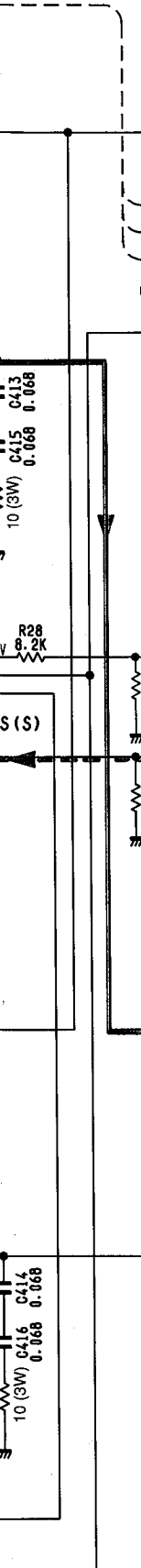
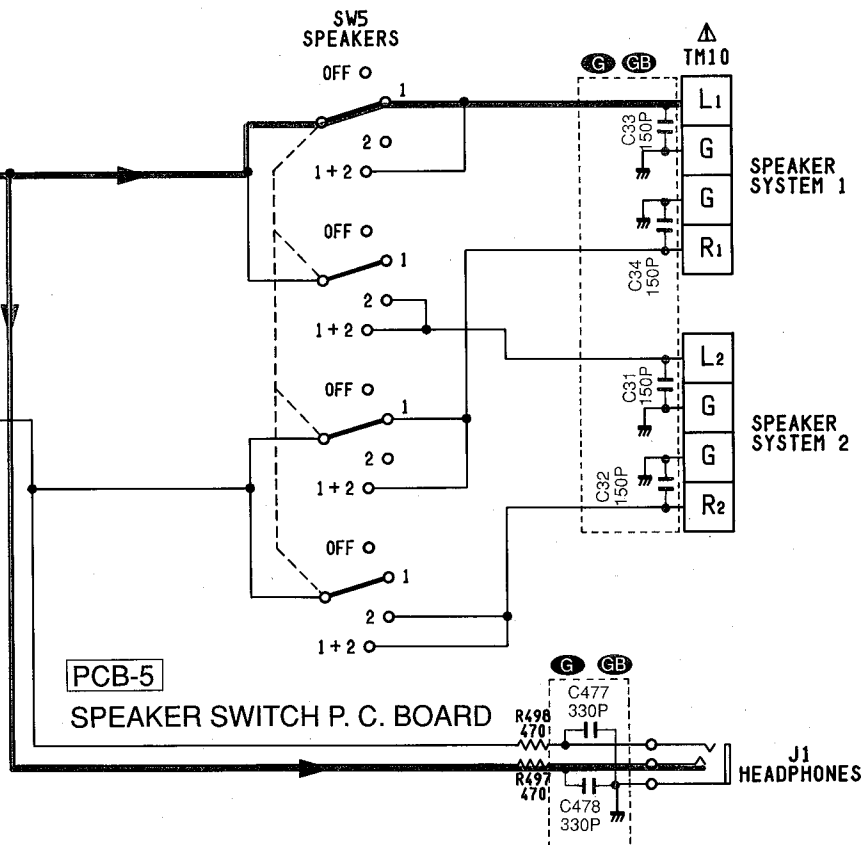


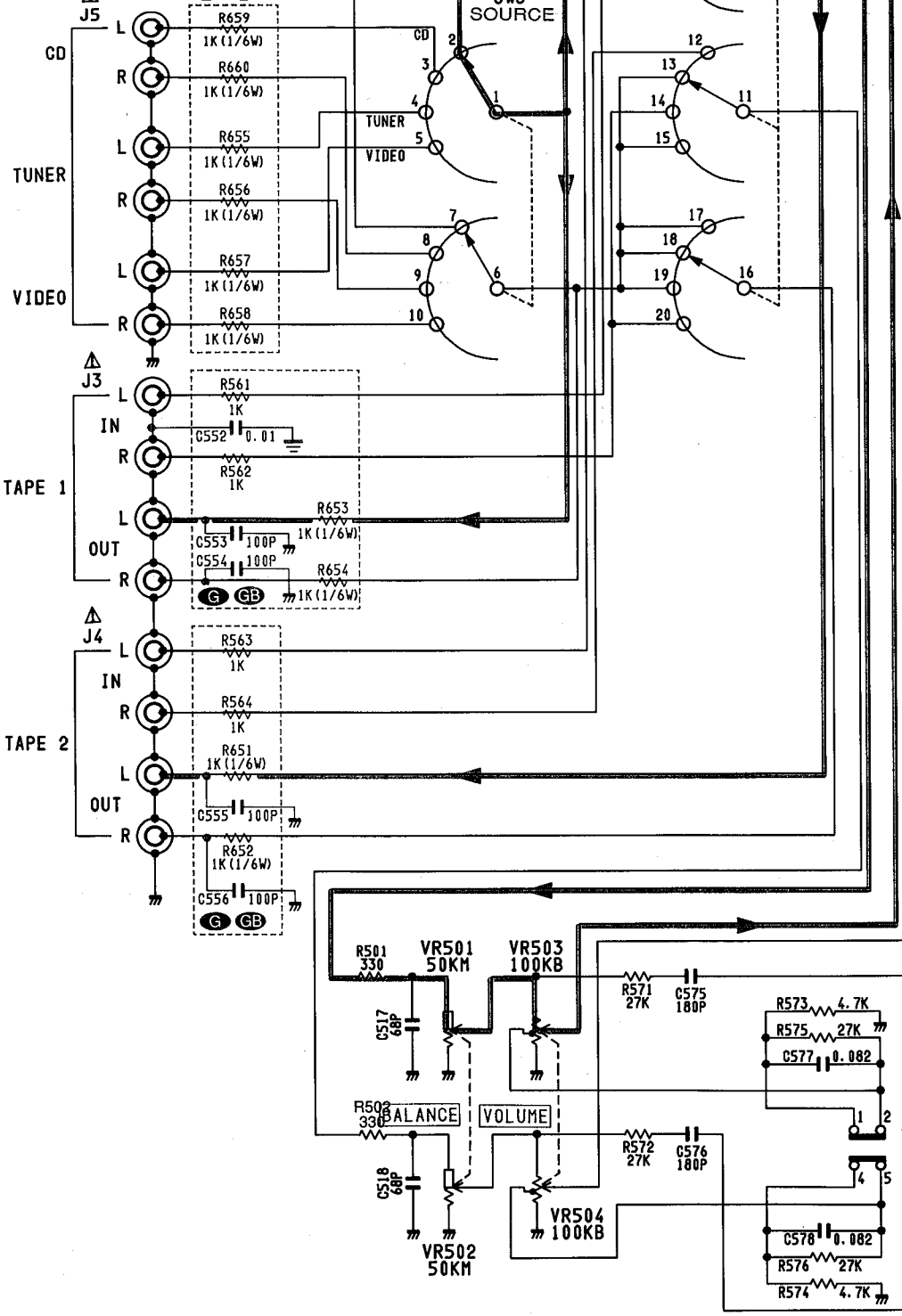
PCB-4 LED P. C. BOARD



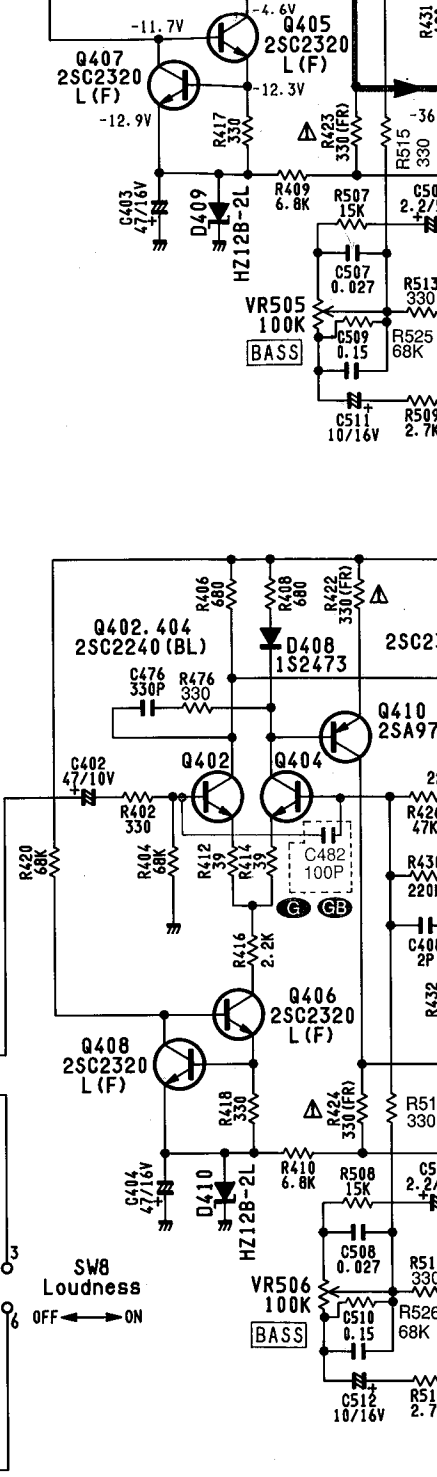
PCB-2 SPEAKER TERMINAL P. C. BOARD

PCB-5 SPEAKER SWITCH P. C. BOARD

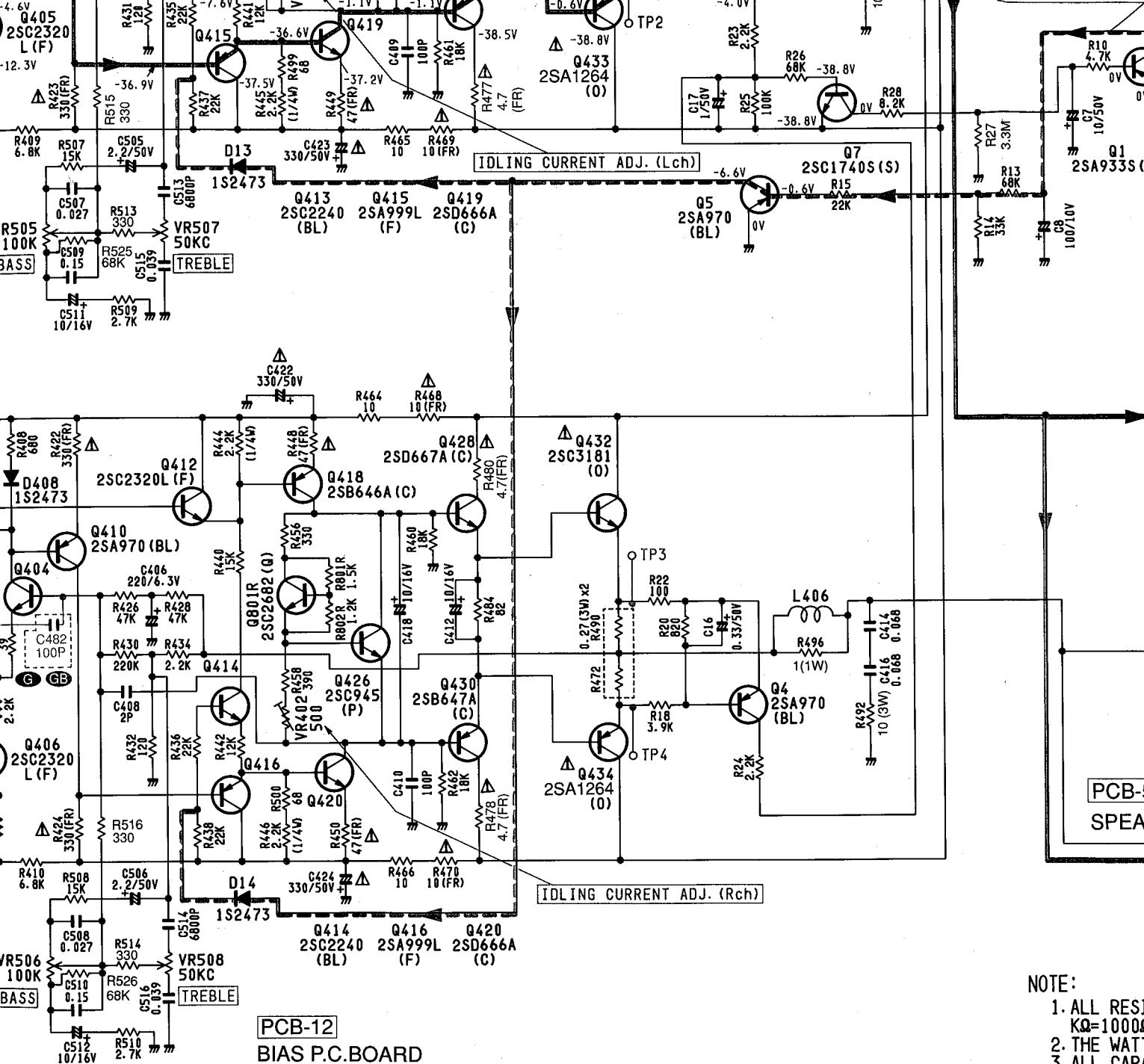




PCB-6 VR P.C. BOARD



PCB-8 LOUDNESS P.C. BOARD

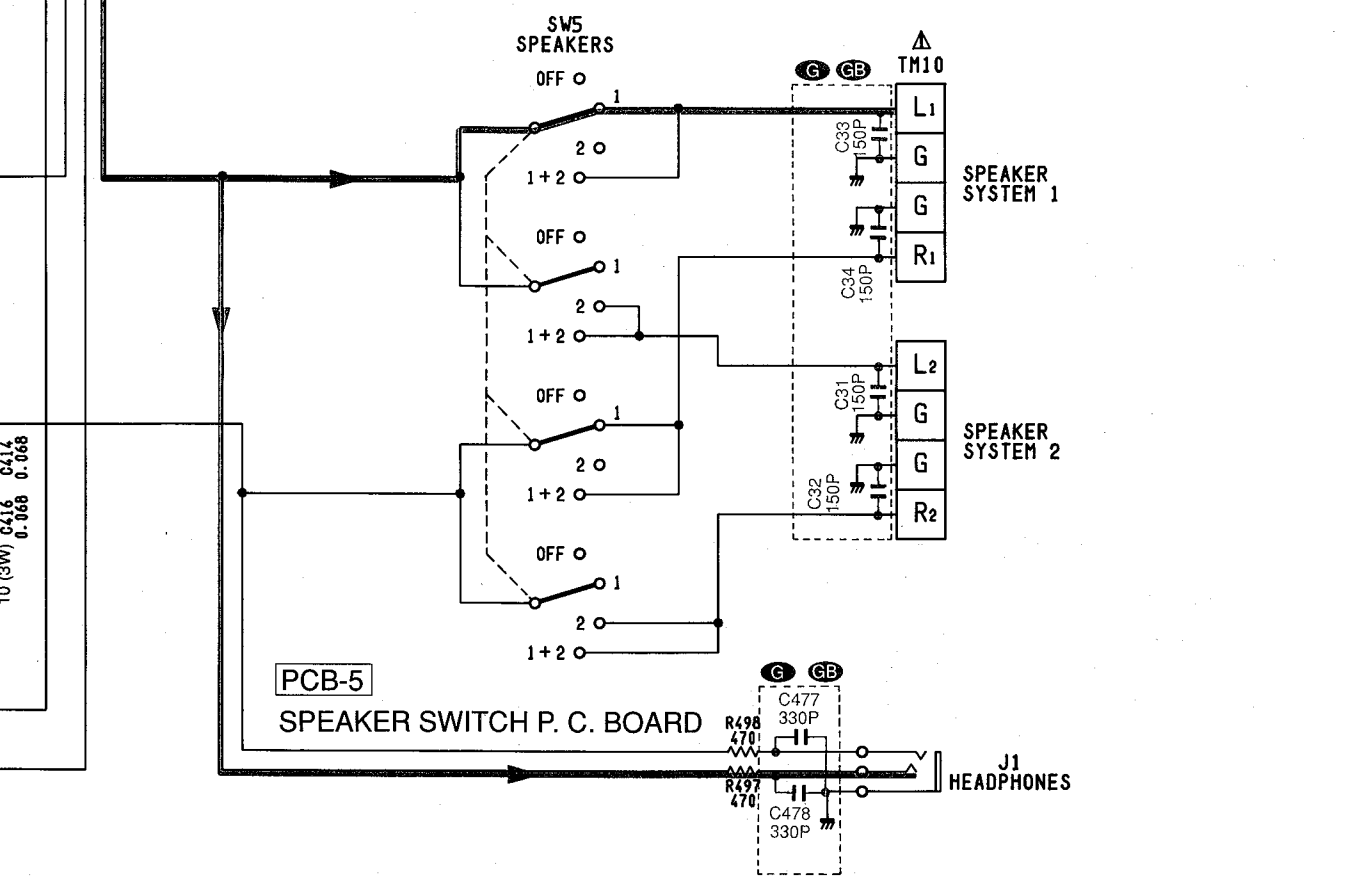
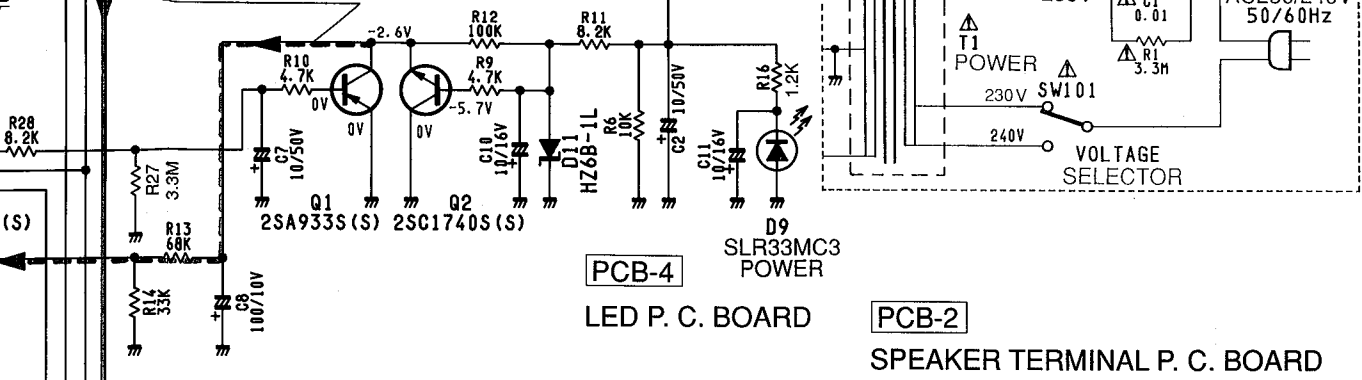


**NOTE:**

1. ALL RES. KΩ=1000
2. THE WAT
3. ALL CAP
4. ... V:D
5. SA
- SA
- BY



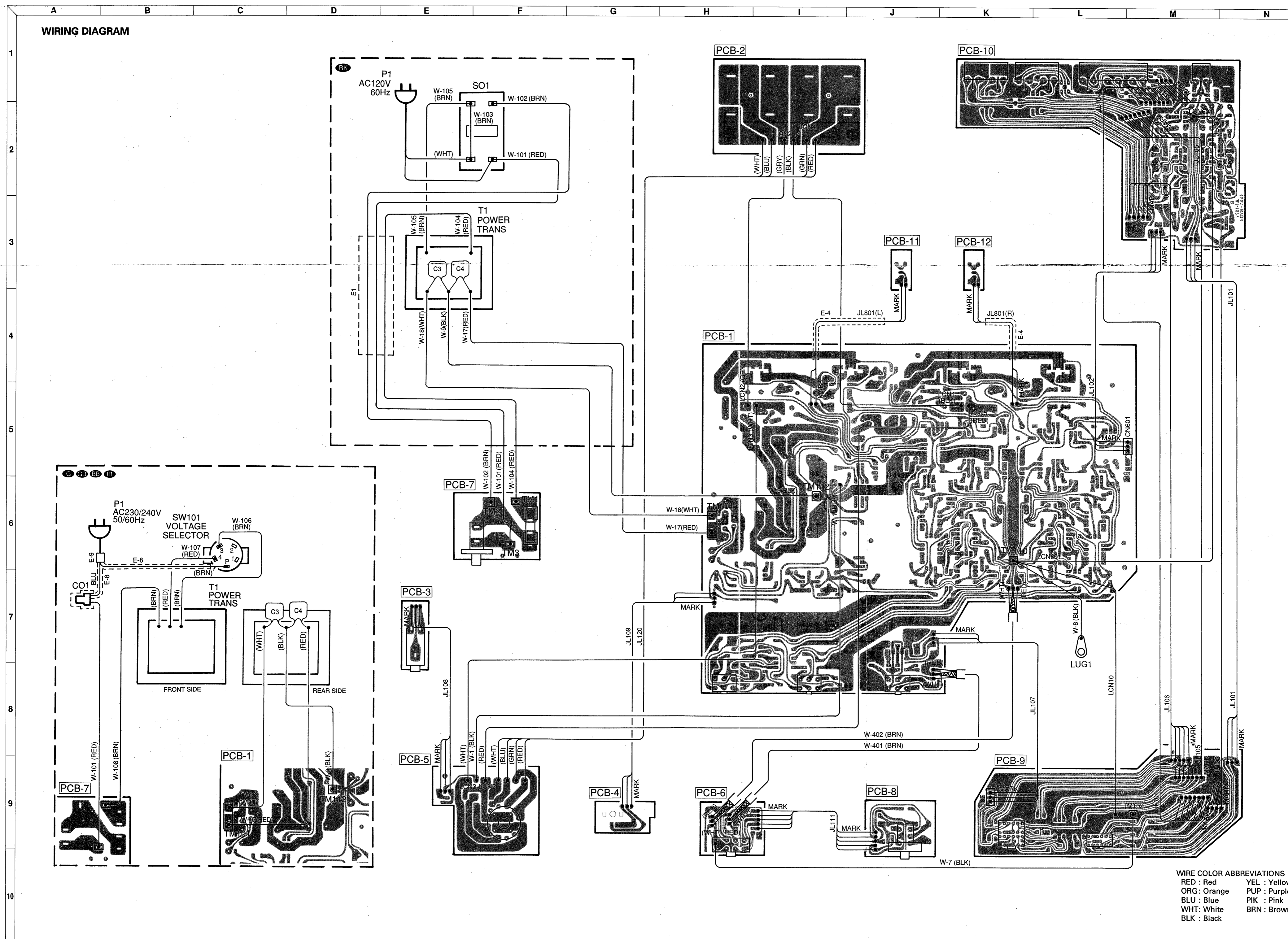




**NOTE:**

1. ALL RESISTANCES VALUES ARE IN  $\Omega$ .  
K $\Omega$ =1000 $\Omega$ , M $\Omega$ =1000K $\Omega$ .
2. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN  $\mu$ F UNLESS OTHERWISE NOTED. P= $\mu$ F.
4. ...V:DC VOLTAGE AT NO SIGNAL UNLESS OTHERWISE NOTED.
5. SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS, THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

WIRING DIAGRAM



WIRE COLOR ABBREVIATIONS

RED : Red	YEL : Yellow
ORG : Orange	PUP : Purple
BLU : Blue	PIK : Pink
WHT : White	BRN : Brown
BLK : Black	

WIRING DIAGRAM

1

2

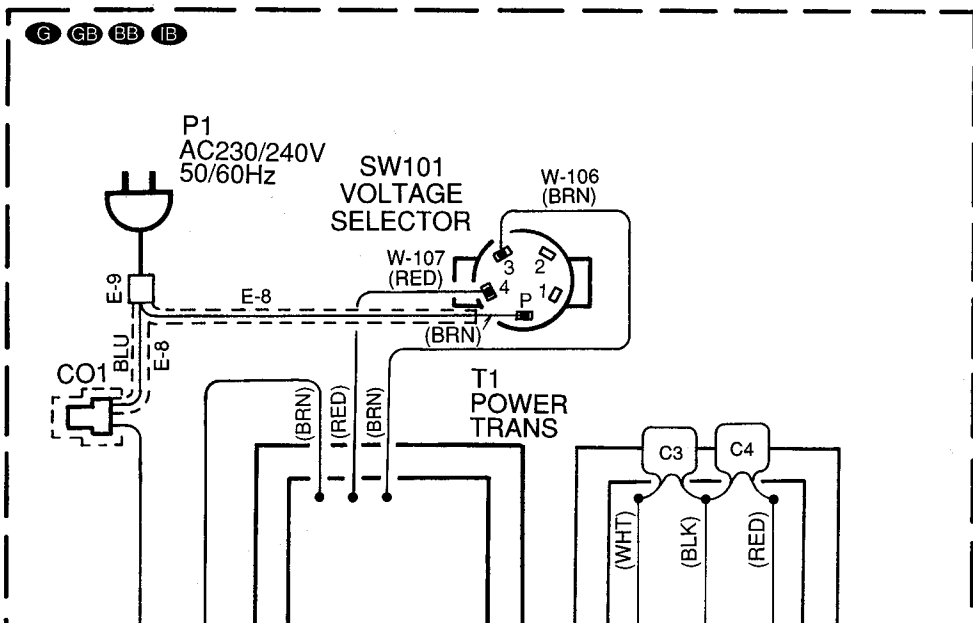
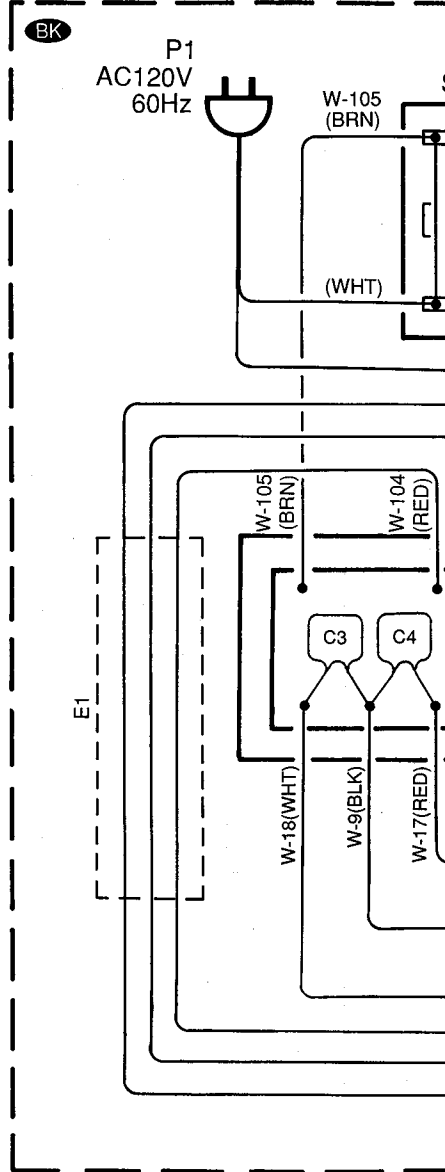
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4

5

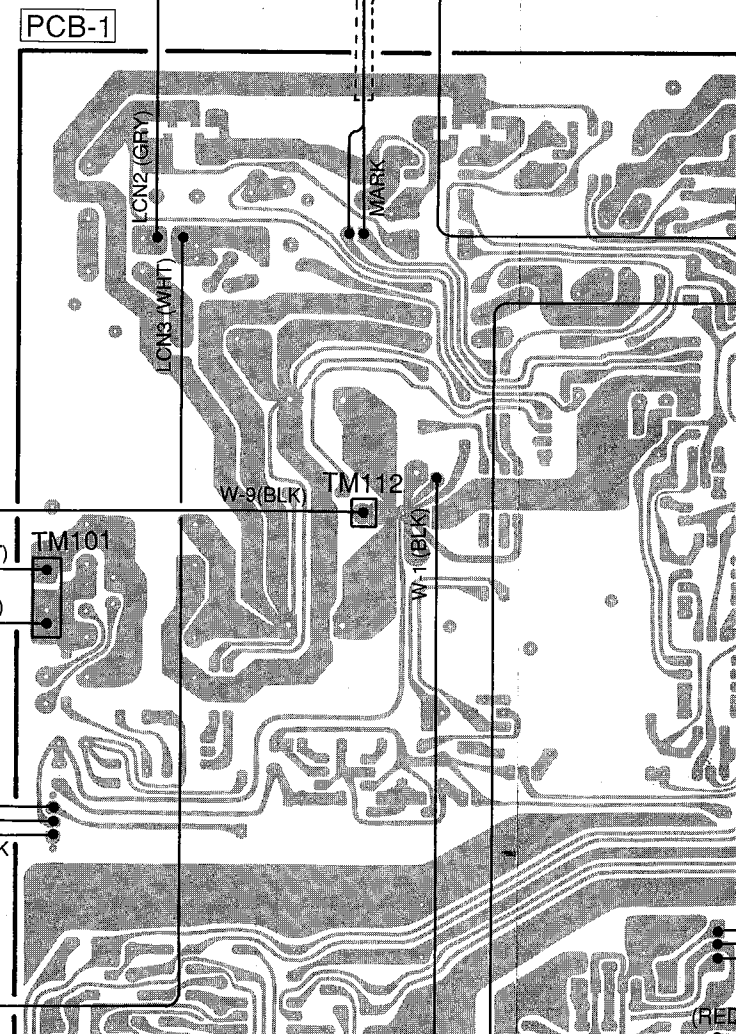
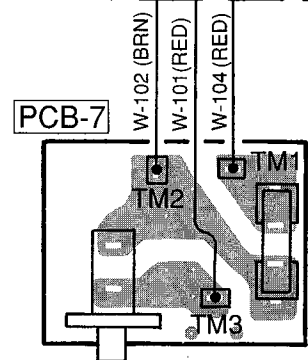
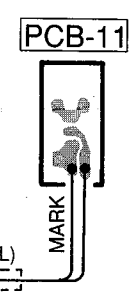
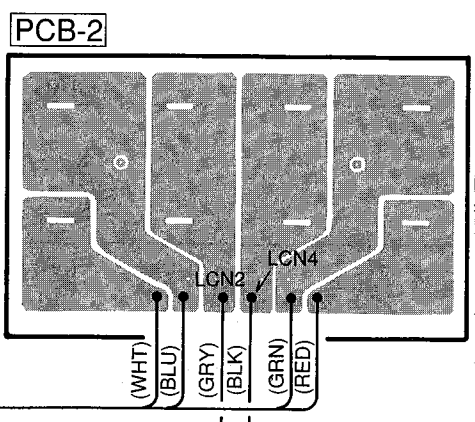
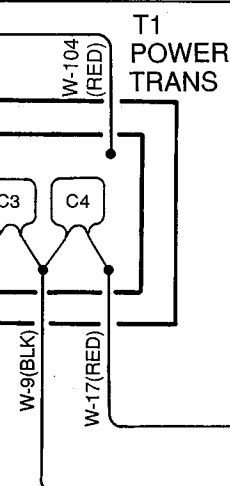
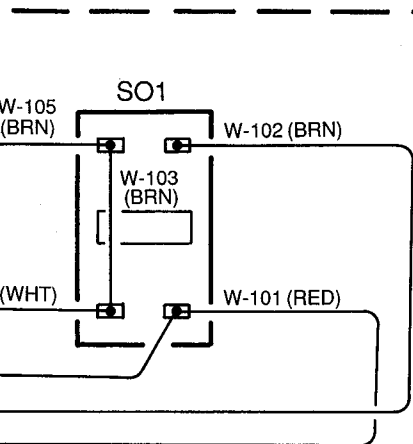
6

7



PCB-7

PCB-3



J

K

L

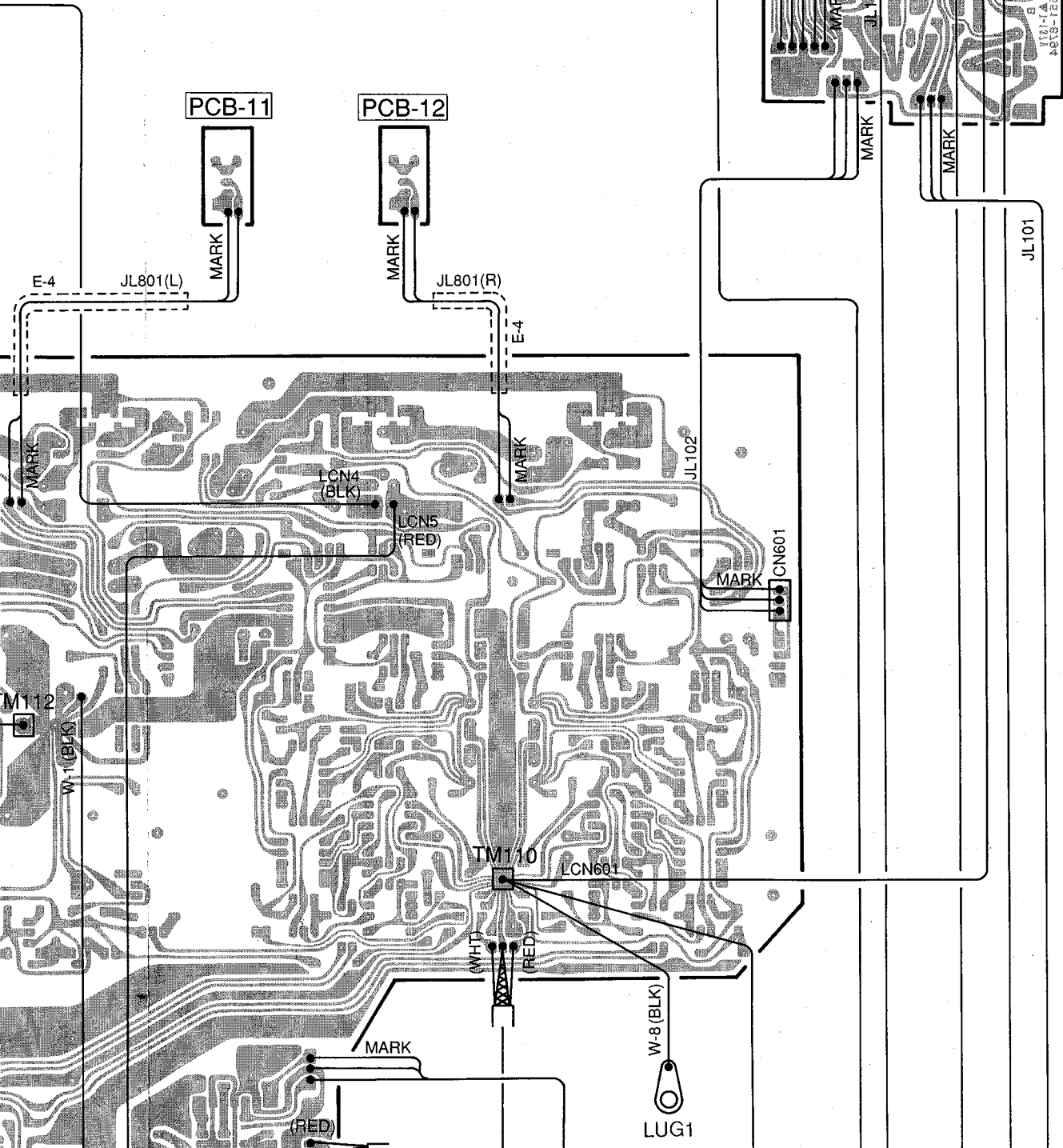
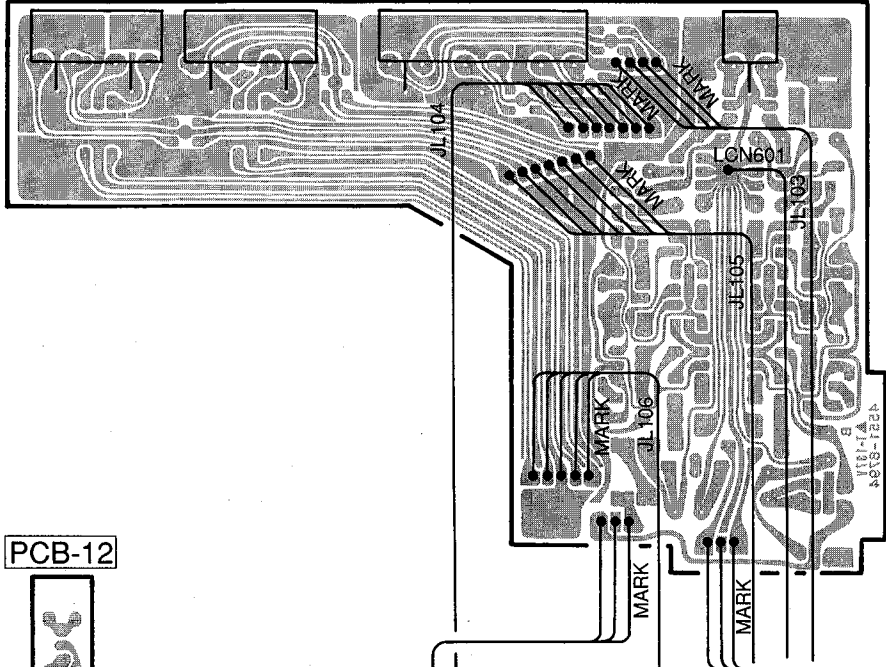
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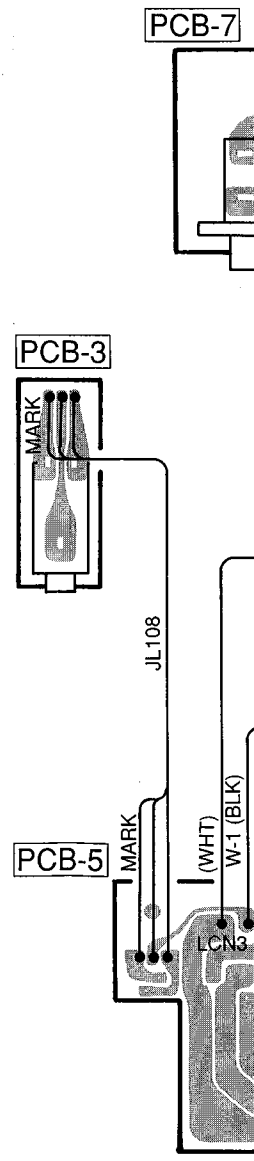
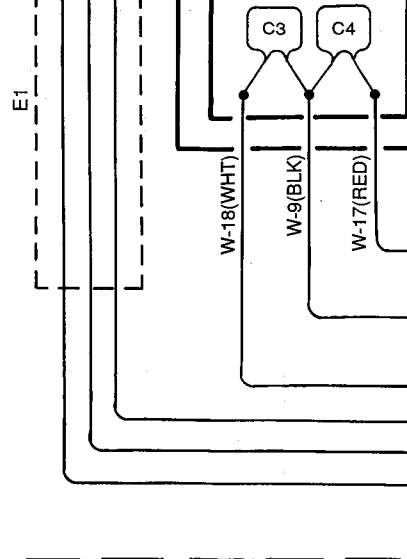
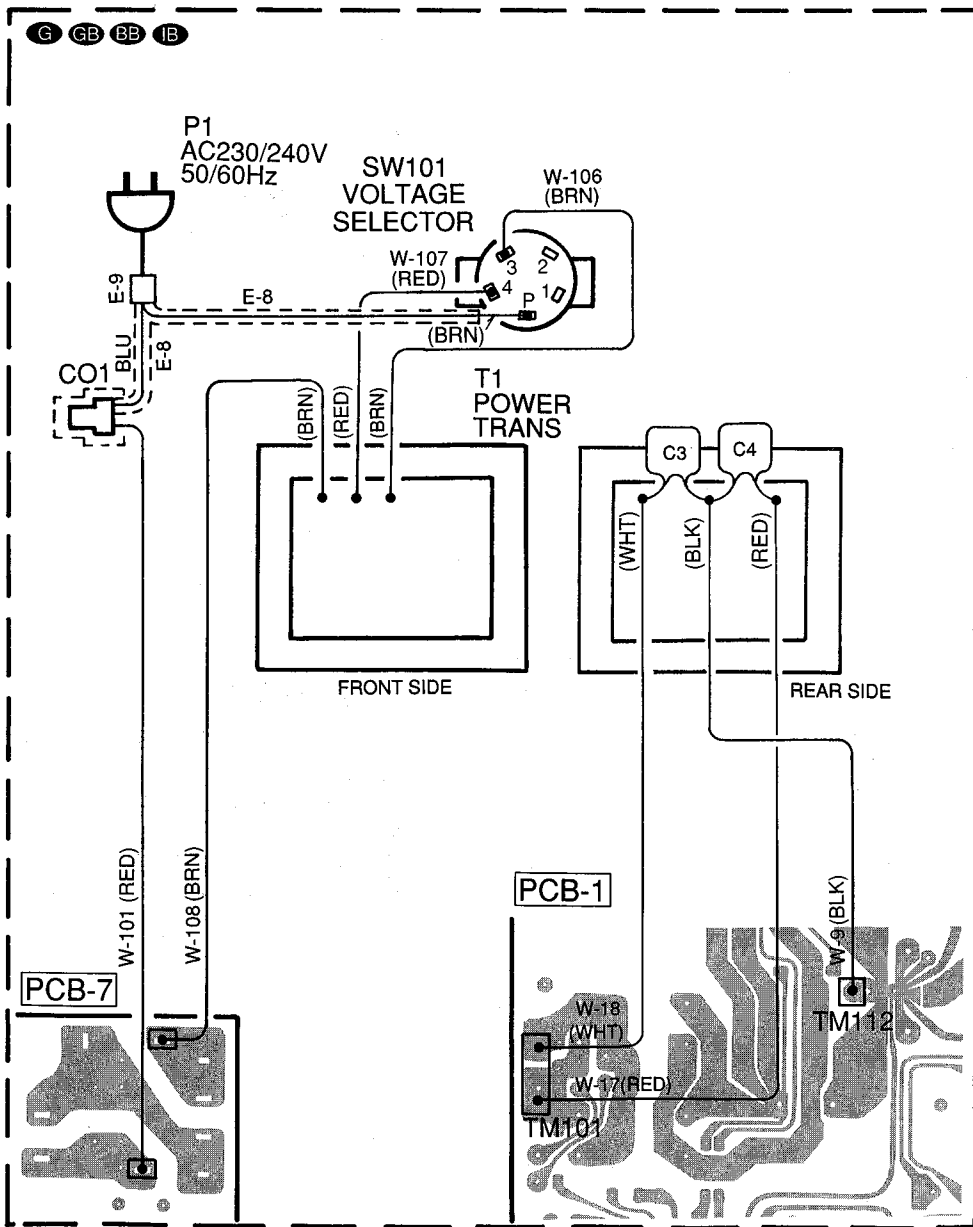
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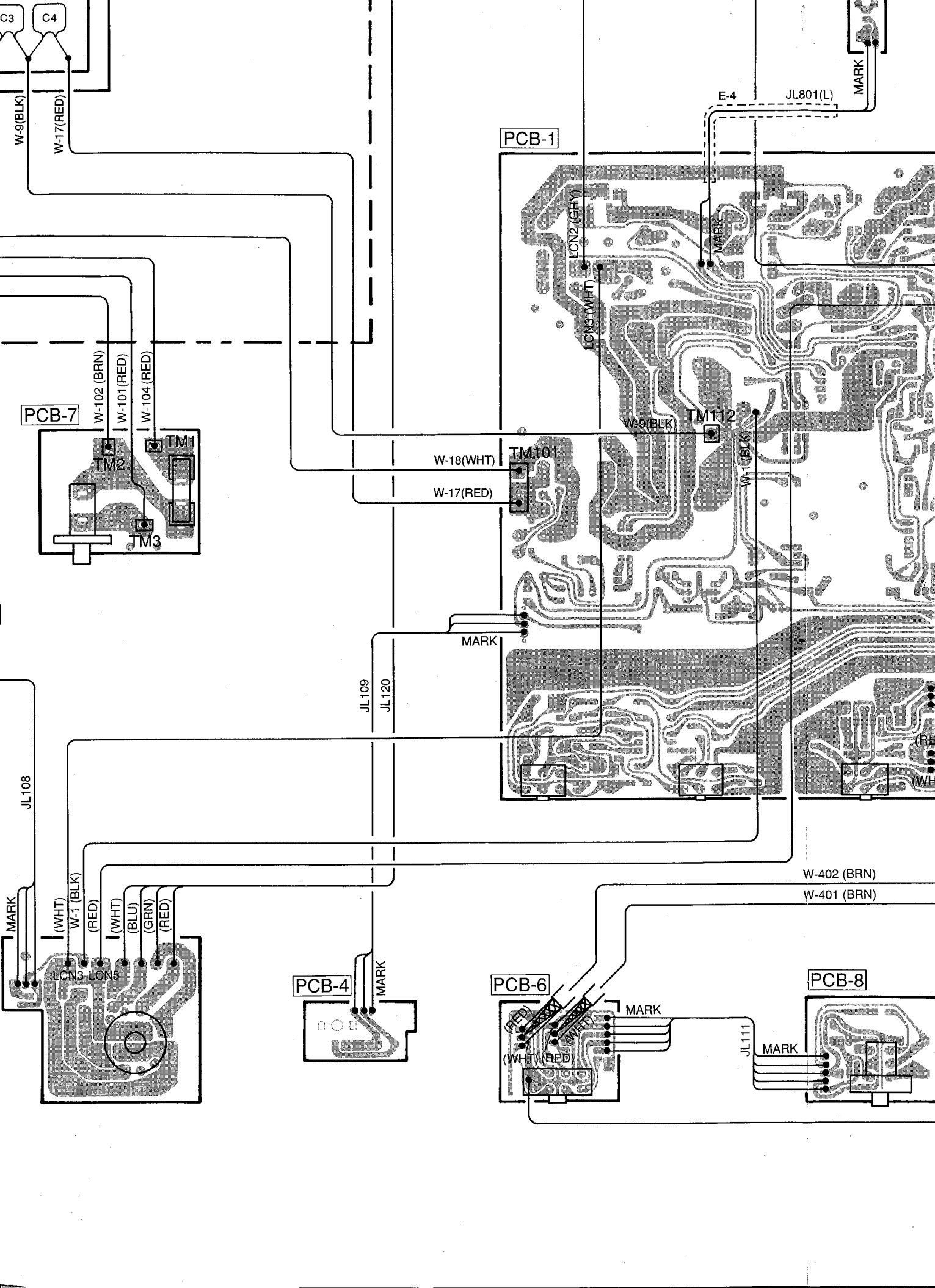
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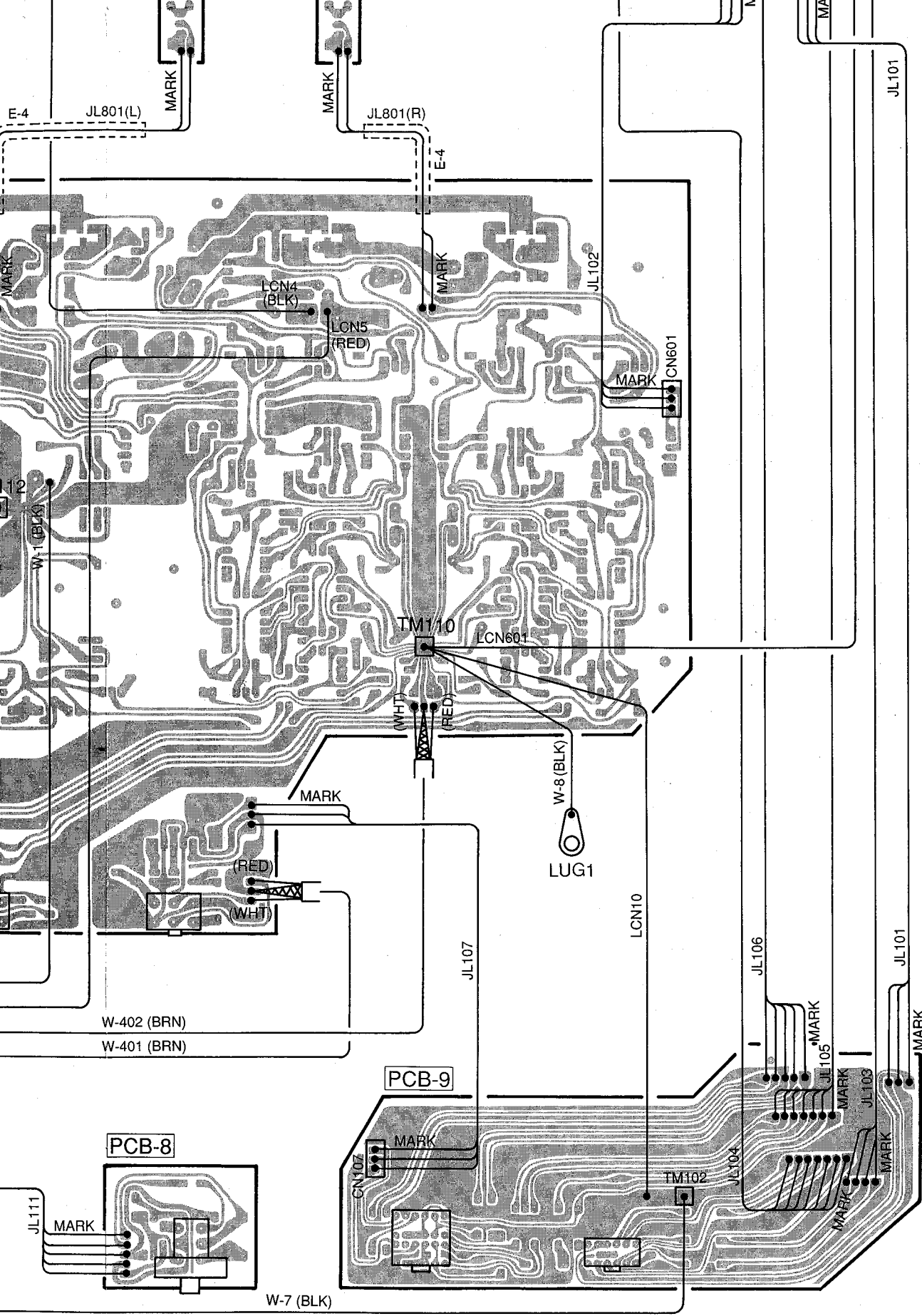
PCB-12



4  
5  
6  
7  
8  
9  
10







**WIRE COLOR ABBREVIATIONS**

RED : Red	YEL : Yellow
ORG : Orange	PUP : Purple
BLU : Blue	PIK : Pink
WHT: White	BRN : Brown
BLK : Black	