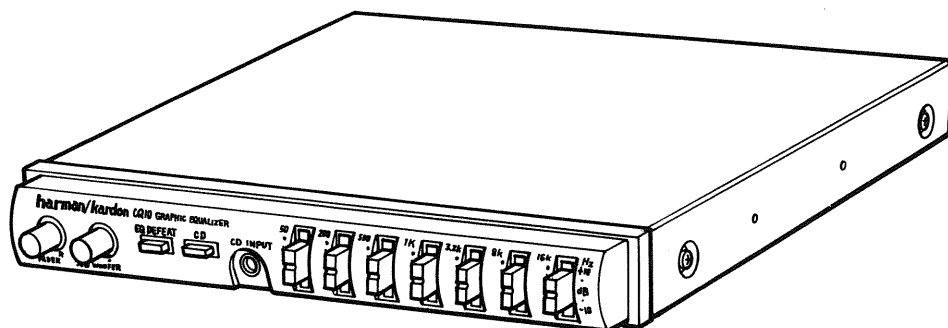


The Harman Kardon Model CQ10 GRAPHIC EQUALIZER

Manual 136A

Technical Manual



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

- G** : General model
- N** : Japan model

harman/kardon

240 Crossways Park West, Woodbury, N.Y. 11797
1112-3152136A6 P-088803 1200 Printed in Japan

SPECIFICATIONS

Frequency Bands	: 7
Center Frequencies	: 50Hz, 200Hz, 500Hz, 1kHz, 3.2kHz, 8kHz, 16kHz
Boost/Cut Range	: ± 10 dB
Input Sensitivity/Impedance	: 0.1—1.0V/30k Ohms
Output Level/Load	: 0.1—1.0V/10k Ohms
Subwoofer Low-Pass Filter	: 80Hz, 125Hz, 200Hz, 12dB/Octave

Dimensions (W × H × D)	: 7-1/8" × 1" × 5-7/8" (180 × 25 × 149 mm)
Chassis Dimensions (W × H × D)	: 7" × 1" × 5-1/8" (178 × 25 × 130 mm)
Weight	: 1.5lbs. (0.7kg)

Specifications and components subject to change without notice.
Overall performance will be maintained or improved.

DISASSEMBLY PROCEDURES (REFER TO PAGES 3 AND 8)

1 CABINET TOP (119) REMOVAL

Remove 4 screws (A) and then remove the Cabinet Top (119).

2 FRONT PANEL (122) REMOVAL

1. Remove the Cabinet Top (119), referring to the previous step 1.
2. Pull out the equalizer level knob (128).
3. Remove 2 screws (B) and then remove the Front Panel (122).

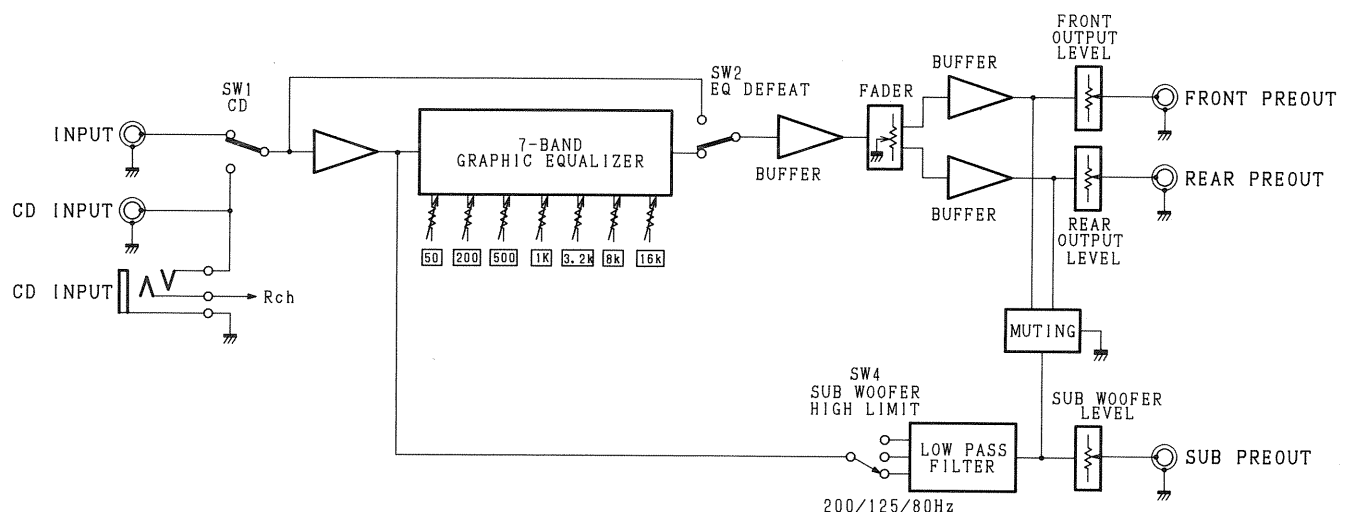
3 MAIN P. C. BOARD (PCB-1) REMOVAL

1. Remove the Cabinet Top (119) and Front Panel (122), referring to the previous steps 1 and 2.
2. Remove 2 screws (C) and then remove the Cabinet Bottom ass'y (AA) and then remove the Knob (130).
3. Remove 4 connectors on the Main P. C. Board (PCB-1) and then disconnect lead wires.
4. Remove 4 screws (D) and then remove the Main P. C. Board (PCB-1).
5. Remove the attached a Nuts from VR201/302, VR401/402.

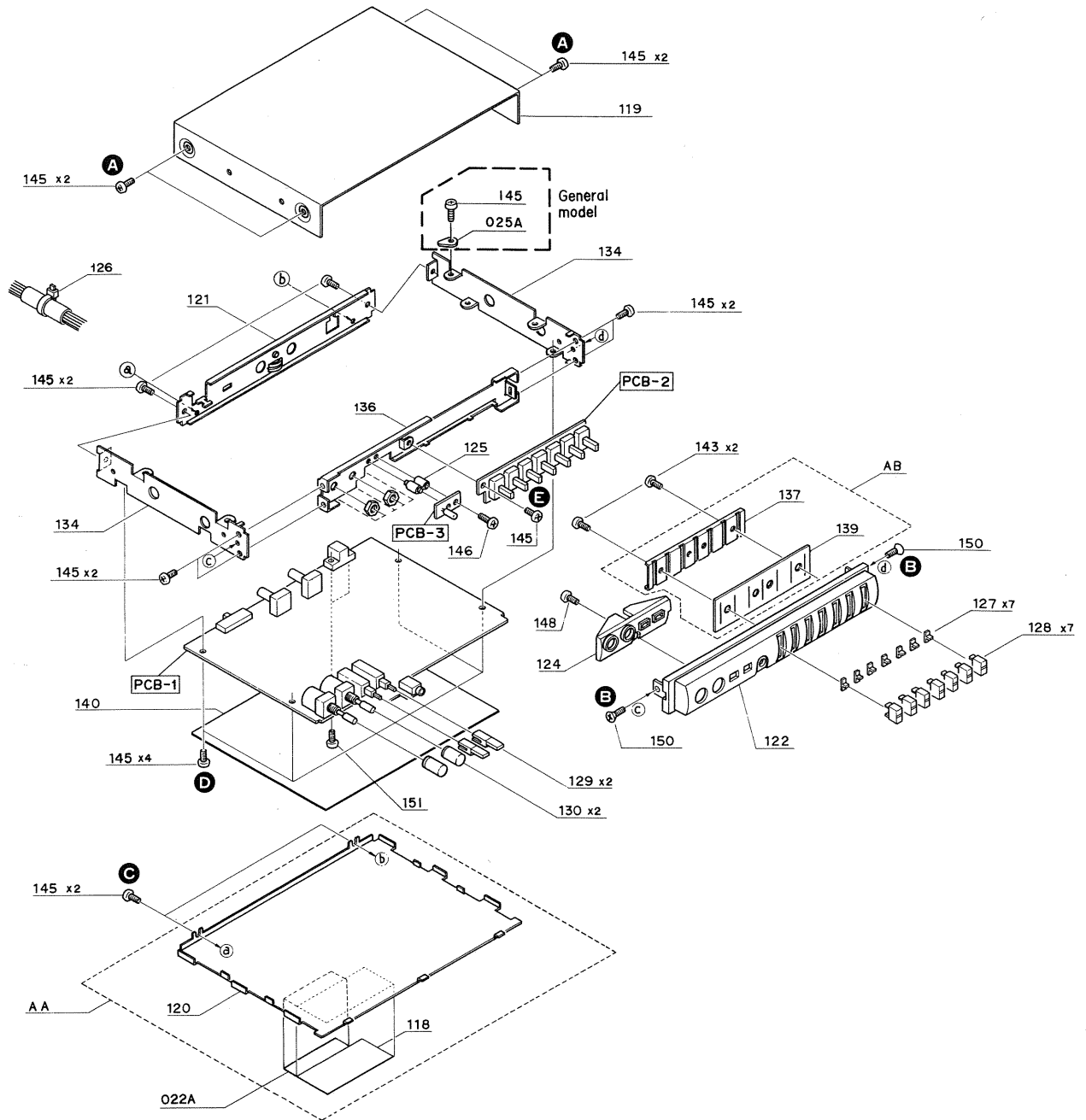
4 CONTROL P. C. BOARD (PCB-2) REMOVAL

1. Remove the Cabinet Top (119) and Front Panel (122), referring to the previous steps 1 and 2.
2. Remove 4 connectors on the Main P. C. Board (PCB-1) and then disconnect lead wires.
3. Remove 1 screw (E) and then remove the Control P. C. Board (PCB-2).

BLOCK DIAGRAM



GENERAL UNIT
EXPLODED VIEW

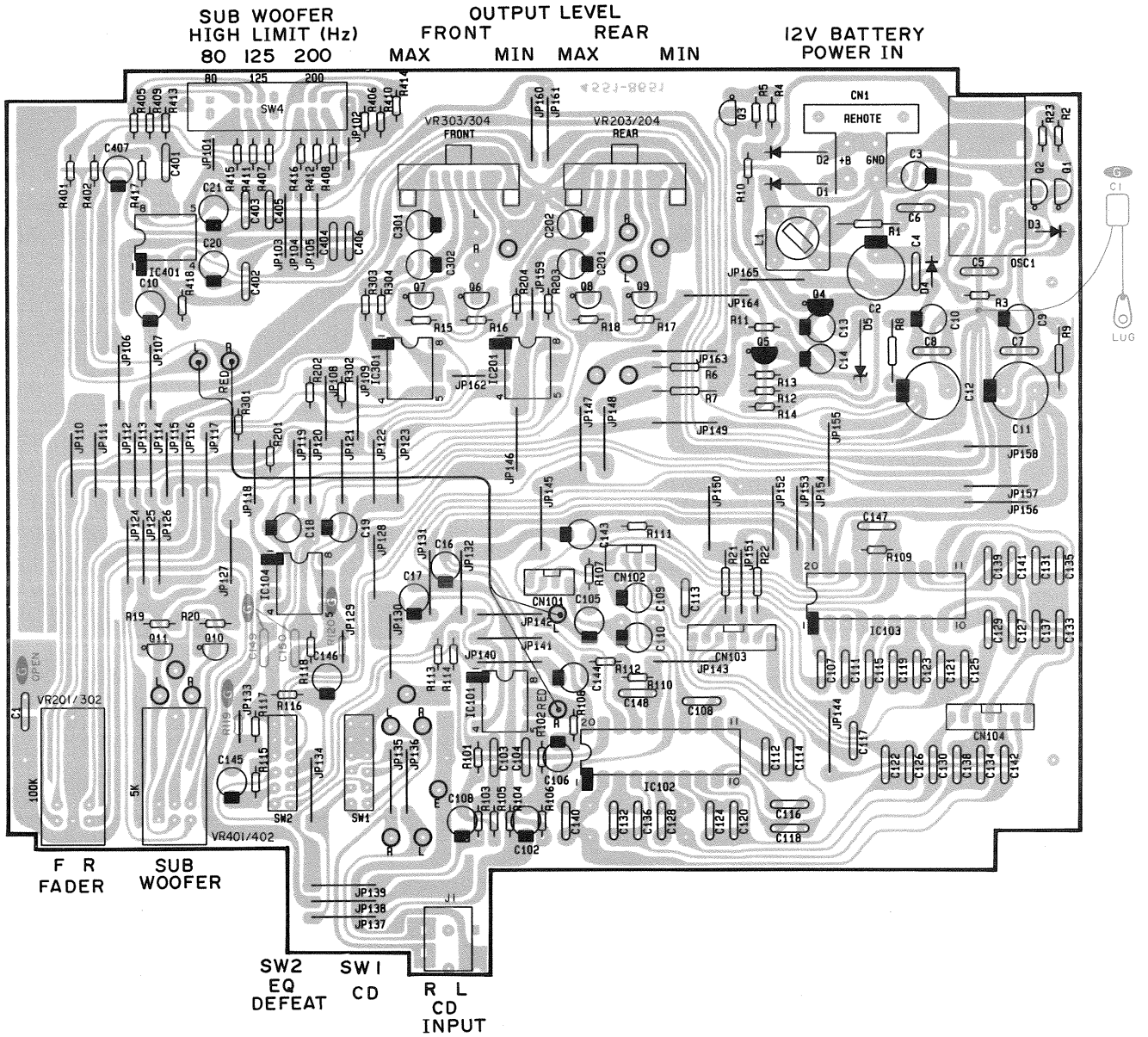


PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
AA	A424-CQ10A	CABINET BACK ASS'Y	130	1632-17601	ROTARY KNOB
AB	B219-CQ10A	METAL FITTG ASS'Y	134	2219-8227	METAL FITTG
022A	1756-14509	LABEL G	136	2219-8226	METAL FITTG
118	1751-10012	LABEL	137	2219-8228	METAL FITTG
119	1414-12001	CABINET TOP	139	2112-201	SPONGE
120	1424-25601	CABINET BACK	140	2224-7124	INSULATOR
121	1424-25701	CABINET BACK	143	2347-R0120052	SCREW
122	1442-18201	FRONT PANEL	145	2347-260547	SCREW
124	1722-03501	INDICATOR PLATE	146	2347-261227	SCREW
125	2240-7345	HOLDER	148	2347-R0120082	SCREW
126	2240-7120	HOLDER	150	2343-260527	SCREW
127	1732-04701	INDICATOR	151	2343-300822	SCREW
128	1642-14201	KNOB	025A	4211-4	LUG G
129	1662-38901	PUSH BUTTON			

P. C. BOARDS

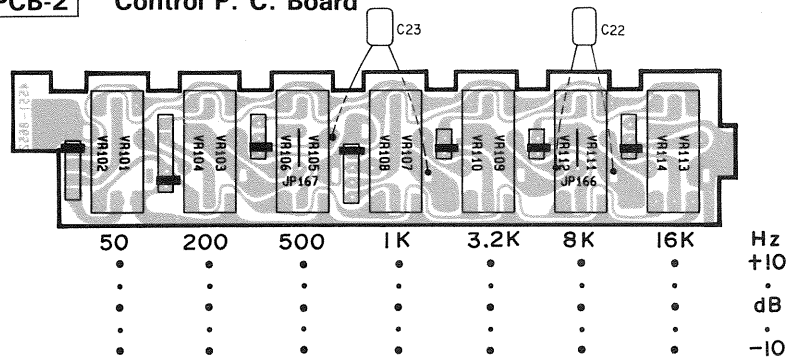
PCB-1 Main P. C. Board



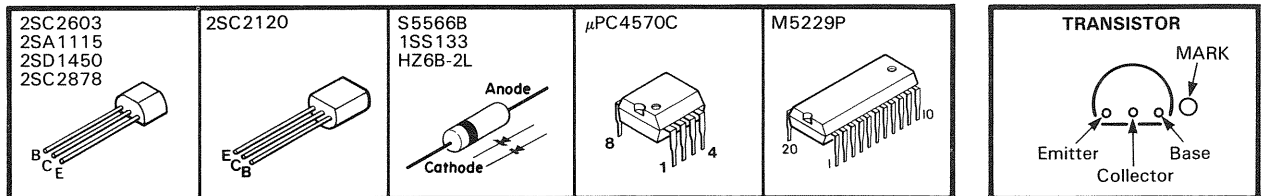
PCB-3 Lamp P. C. Board



PCB-2 Control P. C. Board



PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.



ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
PCB-1 MAIN P.C. BOARD							
CAPACITORS							
609	C1	5354-104593	CAP, MYL .1 μ	522	C148	5359-S010J471	CAP, PPP 470P
601	C2	5345-477C045	CAP, MINI ELE 470 μ /16V	024A	C149	5359-S010J471	CAP, PPP 470P G
603	C3	5345-476C041	CAP, MINI ELE 47 μ /16V	024A	C150	5359-S010J471	CAP, PPP 470P G
606	C4	5359-S010J223	CAP, PPP .022 μ	563	C201	5345-475D0951	CAP, MINI ELE 4.7 μ /25V
606	C5	5359-S010J223	CAP, PPP .022 μ	563	C202	5345-475D0951	CAP, MINI ELE 4.7 μ /25V
606	C6	5359-S010J223	CAP, PPP .022 μ	563	C301	5345-475D0951	CAP, MINI ELE 4.7 μ /25V
606	C7	5359-S010J223	CAP, PPP .022 μ	563	C302	5345-475D0951	CAP, MINI ELE 4.7 μ /25V
606	C8	5359-S010J223	CAP, PPP .022 μ	567	C401	5354-684593	CAP, MYL .68 μ
603	C9	5345-476C041	CAP, MINI ELE 47 μ /16V	567	C402	5354-684593	CAP, MYL .68 μ
603	C10	5345-476C041	CAP, MINI ELE 47 μ /16V	568	C403	5354-474593	CAP, MYL .47 μ
604	C11	5345-107C041	CAP, MINI ELE 100 μ /16V	568	C404	5354-474593	CAP, MYL .47 μ
604	C12	5345-107C041	CAP, MINI ELE 100 μ /16V	569	C405	5354-393593	CAP, MYL .039 μ
602	C13	5345-106C041	CAP, MINI ELE 10 μ /16V	569	C406	5354-393593	CAP, MYL .039 μ
602	C14	5345-106C041	CAP, MINI ELE 10 μ /16V	563	C407	5345-475D0951	CAP, MINI ELE 4.7 μ /25V
603	C16	5345-476C041	CAP, MINI ELE 47 μ /16V	563	C408	5345-475D0951	CAP, MINI ELE 4.7 μ /25V
603	C17	5345-476C041	CAP, MINI ELE 47 μ /16V	RESISTORS			
603	C18	5345-476C041	CAP, MINI ELE 47 μ /16V	622	R1	5135-221522	RES, CBN 1/2P 220
603	C19	5345-476C041	CAP, MINI ELE 47 μ /16V	616	R2	5232-103J16P	RES, CBN 1/6P 10K
603	C20	5345-476C041	CAP, MINI ELE 47 μ /16V	616	R3	5232-103J16P	RES, CBN 1/6P 10K
603	C21	5345-476C041	CAP, MINI ELE 47 μ /16V	615	R4	5232-223J16P	RES, CBN 1/6P 22K
607	C22	5359-S010J103	CAP, PPP 0.01 μ	615	R5	5232-223J16P	RES, CBN 1/6P 22K
607	C23	5359-S010J103	CAP, PPP 0.01 μ	623	R6	5135-470522	RES, CBN 1/2P 47
505	C101	5345-335F0951	CAP, MINI ELE 3.3 μ /50V	624	R7	5135-181522	RES, CBN 1/2P 180
505	C102	5345-335F0951	CAP, MINI ELE 3.3 μ /50V	623	R8	5135-470522	RES, CBN 1/2P 47
523	C103	5359-S010K121	CAP, PPP 120P	623	R9	5135-470522	RES, CBN 1/2P 47
523A	C103	5359-S010J471	CAP, PPP 470P G	615	R10	5232-223J16P	RES, CBN 1/6P 22K
523	C104	5359-S010K121	CAP, PPP 120P	614	R11	5232-222J16P	RES, CBN 1/6P 2.2K
523A	C104	5359-S010J471	CAP, PPP 470P G	619	R12	5232-333J16P	RES, CBN 1/6P 33K
506	C105	5345-476C0951	CAP, MINI ELE 47 μ /16V	617	R13	5232-104J16P	RES, CBN 1/6P 100K
506	C106	5345-476C0951	CAP, MINI ELE 47 μ /16V	617	R14	5232-104J16P	RES, CBN 1/6P 100K
510	C107	5354-224593	CAP, MYL .22 μ	616	R15	5232-103J16P	RES, CBN 1/6P 10K
510	C108	5354-224593	CAP, MYL .22 μ	616	R16	5232-103J16P	RES, CBN 1/6P 10K
507	C109	5345-225F0951	CAP, MINI ELE 2.2 μ /50V	616	R17	5232-103J16P	RES, CBN 1/6P 10K
507	C110	5345-225F0951	CAP, MINI ELE 2.2 μ /50V	616	R18	5232-103J16P	RES, CBN 1/6P 10K
512	C111	5354-563593	CAP, MYL .056 μ	616	R19	5232-103J16P	RES, CBN 1/6P 10K
512	C112	5354-563593	CAP, MYL .056 μ	616	R20	5232-103J16P	RES, CBN 1/6P 10K
511	C113	5354-474593	CAP, MYL .47 μ	621	R21	5135-471522	RES, CBN 1/2P 470
511	C114	5354-474593	CAP, MYL .47 μ	622	R22	5135-221522	RES, CBN 1/2P 220
515	C115	5359-S010J223	CAP, PPP .022 μ	617	R23	5232-104J16P	RES, CBN 1/6P 100K
515	C116	5359-S010J223	CAP, PPP .022 μ	529	R101	5232-102J16P	RES, CBN 1/6P 1K
514	C117	5354-184593	CAP, MYL .18 μ	529A	R101	5232-222J16P	RES, CBN 1/6P 2.2K G
514	C118	5354-184593	CAP, MYL .18 μ	529	R102	5232-102J16P	RES, CBN 1/6P 1K
517	C119	5359-S010J102	CAP, PPP 1000P	529A	R102	5232-222J16P	RES, CBN 1/6P 2.2K G
517	C120	5359-S010J102	CAP, PPP 1000P	528	R103	5232-224J16P	RES, CBN 1/6P 220K
517	C121	5359-S010J102	CAP, PPP 1000P	528	R104	5232-224J16P	RES, CBN 1/6P 220K
517	C122	5359-S010J102	CAP, PPP 1000P	527	R105	5232-104J16P	RES, CBN 1/6P 100K
516	C123	5359-S010J103	CAP, PPP .01 μ	527	R106	5232-104J16P	RES, CBN 1/6P 100K
516	C124	5359-S010J103	CAP, PPP .01 μ	530	R107	5232-182J16P	RES, CBN 1/6P 1.8K
513	C125	5354-823593	CAP, MYL .082 μ	530	R108	5232-182J16P	RES, CBN 1/6P 1.8K
513	C126	5354-823593	CAP, MYL .082 μ	530	R109	5232-182J16P	RES, CBN 1/6P 1.8K
519	C127	5359-S010J332	CAP, PPP 3300P	531	R110	5232-182J16P	RES, CBN 1/6P 1.8K
519	C128	5359-S010J332	CAP, PPP 3300P	531	R111	5232-331J16P	RES, CBN 1/6P 330
518	C129	5359-S010J273	CAP, PPP .027 μ	532	R112	5232-331J16P	RES, CBN 1/6P 330
518	C130	5359-S010J273	CAP, PPP .027 μ	532	R113	5232-104J16P	RES, CBN 1/6P 100K
521	C131	5359-S010J681	CAP, PPP 680P	532	R114	5232-104J16P	RES, CBN 1/6P 100K
521	C132	5359-S010J681	CAP, PPP 680P	534	R115	5232-564J16P	RES, CBN 1/6P 560K
516	C133	5359-S010J103	CAP, PPP .01 μ	534	R116	5232-564J16P	RES, CBN 1/6P 560K
516	C134	5359-S010J103	CAP, PPP .01 μ	533	R117	5232-563J16P	RES, CBN 1/6P 56K
521	C135	5359-S010J681	CAP, PPP 680P	533	R118	5232-563J16P	RES, CBN 1/6P 56K
521	C136	5359-S010J681	CAP, PPP 680P	023A	R119	5232-222J16P	RES, CBN 1/6P 2.2K G
517	C137	5359-S010J102	CAP, PPP 1000P	023A	R120	5232-222J16P	RES, CBN 1/6P 2.2K G
517	C138	5359-S010J102	CAP, PPP 1000P	573	R201	5232-562J16P	RES, CBN 1/6P 5.6K
521	C139	5359-S010J681	CAP, PPP 680P	573	R202	5232-562J16P	RES, CBN 1/6P 5.6K
521	C140	5359-S010J681	CAP, PPP 680P	581	R203	5232-221J16P	RES, CBN 1/6P 220
520	C141	5359-S010J562	CAP, PPP 5600P	573	R301	5232-562J16P	RES, CBN 1/6P 5.6K
520	C142	5359-S010J562	CAP, PPP 5600P	573	R302	5232-562J16P	RES, CBN 1/6P 5.6K
505	C143	5345-335F0951	CAP, MINI ELE 3.3 μ /50V	581	R303	5232-221J16P	RES, CBN 1/6P 220
505	C144	5345-335F0951	CAP, MINI ELE 3.3 μ /50V	581	R304	5232-221J16P	RES, CBN 1/6P 220
505	C145	5345-335F0951	CAP, MINI ELE 3.3 μ /50V	574	R401	5232-101J16P	RES, CBN 1/6P 100
505	C146	5345-335F0951	CAP, MINI ELE 3.3 μ /50V	574	R402	5232-101J16P	RES, CBN 1/6P 100
522	C147	5359-S010J471	CAP, PPP 470P	577	R405	5232-162J16P	RES, CBN 1/6P 1.6K
				577	R406	5232-162J16P	RES, CBN 1/6P 1.6K
				576	R407	5232-202J16P	RES, CBN 1/6P 2K

Ser. No.	Ref. No.	Part No.	Description
576	R408	5232-202J16P	RES, CBN 1/6P 2K
575	R409	5232-392J16P	RES, CBN 1/6P 3.9K
575	R410	5232-392J16P	RES, CBN 1/6P 3.9K
578	R411	5232-472J16P	RES, CBN 1/6P 4.7K
578	R412	5232-472J16P	RES, CBN 1/6P 4.7K
579	R413	5232-272J16P	RES, CBN 1/6P 2.7K
579	R414	5232-272J16P	RES, CBN 1/6P 2.7K
580	R415	5232-302J16P	RES, CBN 1/6P 3K
580	R416	5232-302J16P	RES, CBN 1/6P 3K
581	R417	5232-221J16P	RES, CBN 1/6P 220
581	R418	5232-221J16P	RES, CBN 1/6P 220

INTEGRATED CIRCUITS

502	IC101	5653-UPC4570C	IC, LINEAR
501	IC102	5653-M5229P	IC, LINEAR
501	IC103	5653-M5229P	IC, LINEAR
561	IC104	5653-UPC4570C	IC, LINEAR
561	IC201	5653-UPC4570C	IC, LINEAR
561	IC301	5653-UPC4570C	IC, LINEAR
561	IC401	5653-UPC4570C	IC, LINEAR

TRANSISTORS

591	Q1	5613-2603(E)OR(F)	XISTOR, NPN R
591	Q2	5613-2603(E)OR(F)	XISTOR, NPN R
592	Q3	5613-2120(Y)	XISTOR, NPN R
593	Q4	5611-1115(E)OR(F)	XISTOR, PNP R
593	Q5	5611-1115(E)OR(F) or 5613-2878(B)	XISTOR, PNP R
594	Q6	5614-1450(S)OR(T) or 5613-2878(B)	XISTOR, NPN A
594	Q7	5614-1450(S)OR(T) or 5613-2878(B)	XISTOR, NPN A
594	Q8	5614-1450(S)OR(T) or 5613-2878(B)	XISTOR, NPN A
594	Q9	5614-1450(S)OR(T) or 5613-2878(B)	XISTOR, NPN A
594	Q10	5614-1450(S)OR(T) or 5613-2878(B)	XISTOR, NPN A
594	Q11	5614-1450(S)OR(T) or 5613-2878(B)	XISTOR, NPN A

DIODES

597	D1	5632-S5566B	DIODE, RECT
597	D2	5632-S5566B	DIODE, RECT
598	D3	5631-ISS133	DIODE, DET
598	D4	5631-ISS133	DIODE, DET
599	D5	5635-HZ6B-2L	DIODE, ZENER

MISCELLANEOUS

588	J101/ I02	4163-01803002	CONNECTOR W/W
589	J103/ I04	4163-01804002	CONNECTOR W/W
587	J201/ 202	4163-01802002	CONNECTOR W/W
586	J301/ 302	4163-01801002	CONNECTOR W/W
590	J401/ 402	4163-01805002	CONNECTOR W/W
611	LI	5933-10301	COIL CASE, 10
637	W2	4132-R0202101	CORD, 2C
638	CN1	4443-02201008	CONNECTOR
639	CN101	4443-0401140	CONNECTOR
639	CN102	4443-0401140	CONNECTOR
640	CN103	4443-0701140	CONNECTOR
640	CN104	4443-0701140	CONNECTOR
628	SW1	4431-S0609104	SWITCH, PUSH
628	SW2	4431-S0609104	SWITCH, PUSH
629	SW4	4421-00401043	SWITCH, SLIDE
630	J1	4451-50201	JACK, 1P
632	VR201/ 302	5110-S0202104	RES, V CBN 9 100K
631	VR203/ 204	5109-S0101502	RES, V CBN 5K
631	VR303/ 304	5109-S0101502	RES, VCBN 5K
633	VR401/ 402	5110-S0203502	RES, V CBN 9 5K
612	OSC1	6171-01901	OS BLOCK

PCB-2 CONTROL P.C.BOARD

CAPACITORS

607	C22	5359-S010J103	CAP, PPP .01μ
607	C23	5359-S010J103	CAP, PPP .01μ

MISCELLANEOUS

634	VR101/ I02	5226-S0101203	RES, V SL 10 20K
634	VR103/ I04	5226-S0101203	RES, V SL 10 20K
634	VR105/ I06	5226-S0101203	RES, V SL 10 20K
634	VR107/ I08	5226-S0101203	RES, V SL 10 20K
634	VR109/ I10	5226-S0101203	RES, V SL 10 20K
634	VR111/ I12	5226-S0101203	RES, V SL 10 20K
634	VR113/ I14	5226-S0101203	RES, V SL 10 20K
644	LCN101	4163-01510004	CONNECTR W/W
641	LCN102	4163-01509004	CONNECTR W/W
646	LCN103	4163-01508007	CONNECTR W/W
645	LCN104	4163-01507007	CONNECTR W/W

PCB-3 LAMP P.C.BOARD

MISCELLANEOUS

636	WI	4132-R0202201	CORD, 2C
626	LPI	5731-00401141	LAMP

ABBREVIATIONS IN PARTS LIST

CAPACITORS

CAP, MINI ELE : Electrolytic
CAP, MYL : Mylar
CAP, PPP : Polypropylene

RESISTORS

RES, CBN 1/2P : Carbon 1/2W
RES, CBN 1/6P : Carbon 1/6W

TRANSISTORS

XISTOR : Transistor

CONTROLS

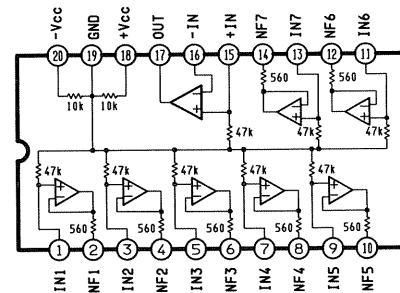
RES, V CBN : Variable Carbon Resistor

NOTE

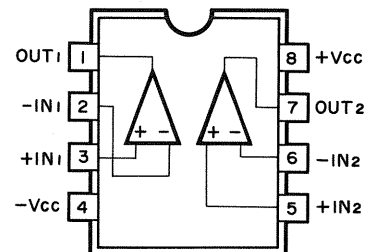
▲ SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

IC BLOCK DIAGRAM

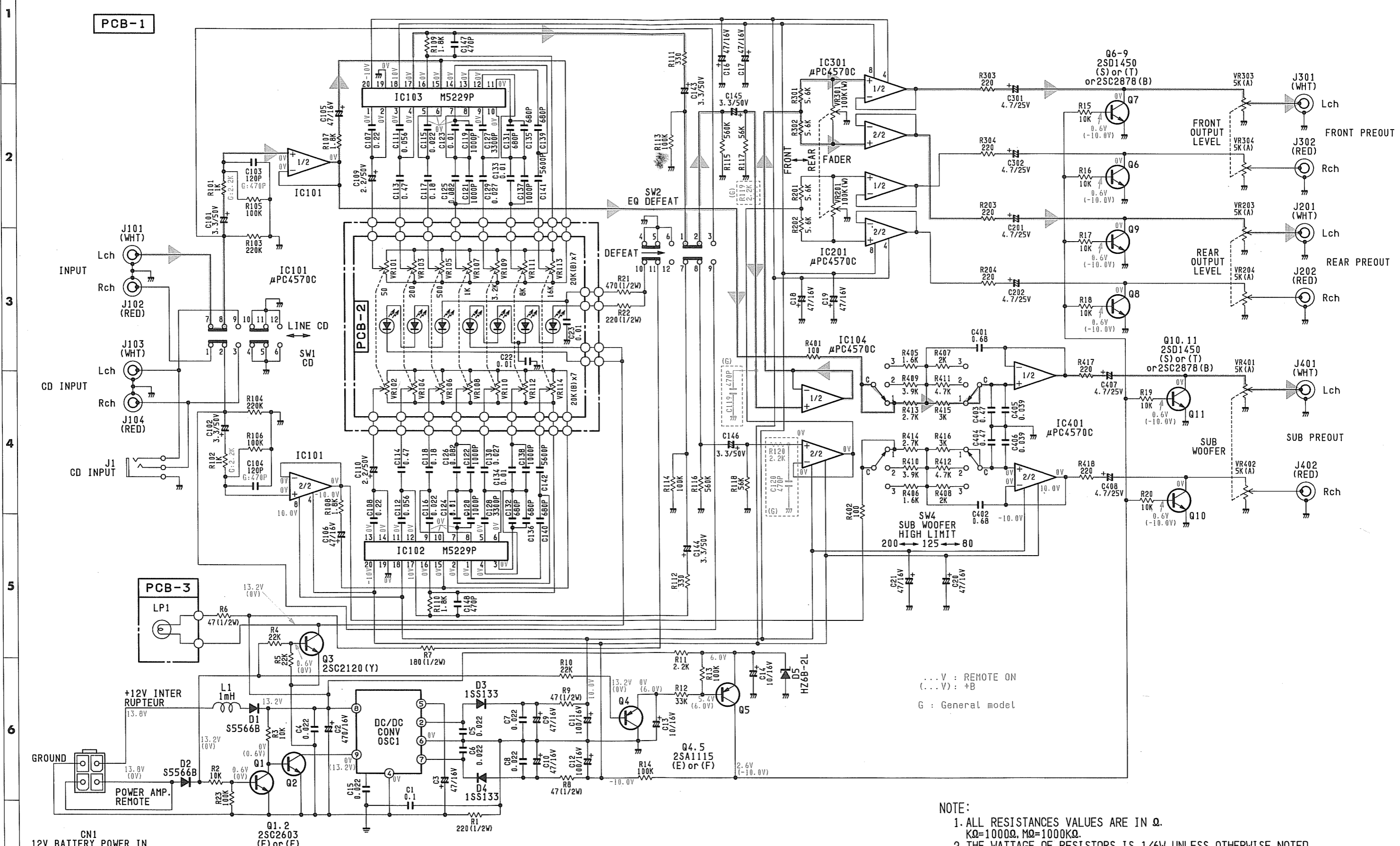
M5229P : IC102, 103 EQUALIZER AMP



μPC4570C : IC101, 104, 201, 301, 401 DUAL OPE AMP



SCHEMATIC DIAGRAM

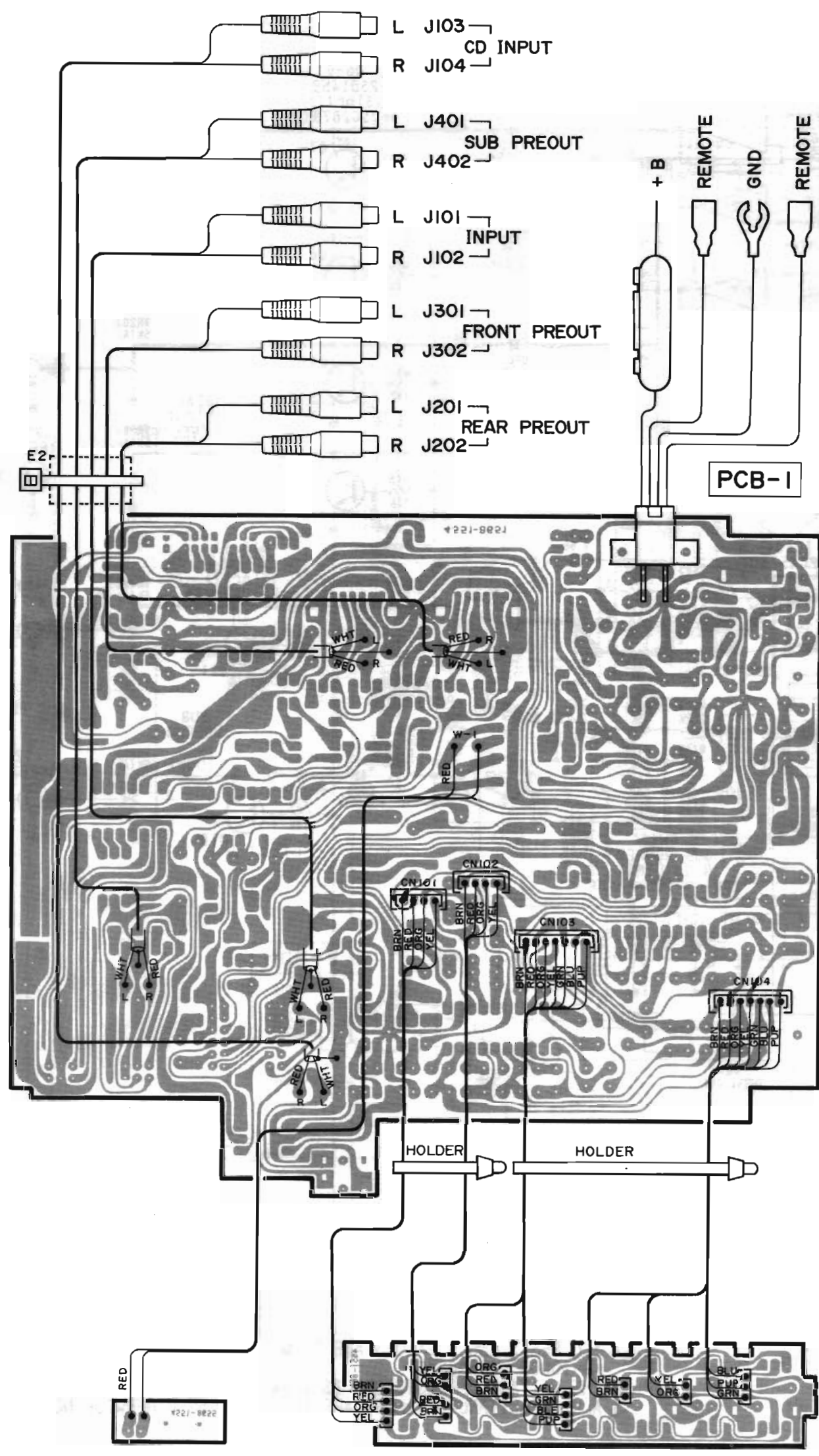


...V : REMOTE ON
 (...V) : +B
 G : General model

- NOTE:**
1. ALL RESISTANCES VALUES ARE IN Ω .
 $K\Omega=1000\Omega$, $M\Omega=1000K\Omega$.
 2. THE WATTAGE OF RESISTORS IS 1/6W UNLESS OTHERWISE NOTED.
 3. ALL CAPACITANCES VALUES ARE IN μF UNLESS OTHERWISE NOTED. $P=\mu F$.

WIRING DIAGRAM

1
2
3
4
5
6
7



● WIRE COLOR ABBREVIATIONS

- RED : Red
- ORG : Orange
- BLU : Blue
- WHT : White
- BLK : Black
- YEL : Yellow
- PUP : Purple
- GRN : Green

PACKAGE

