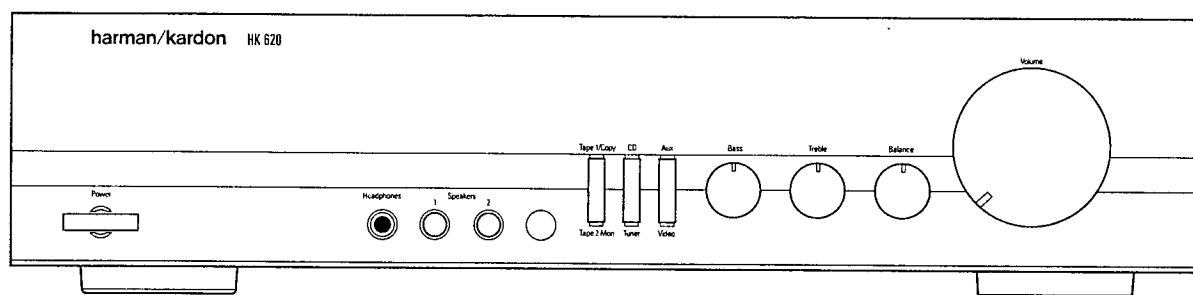


# The Harman Kardon Model HK620 INTEGRATED AMPLIFIER

Manual 197A

## 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
- IB** : International model Black version
- I** : International model
- WB** : Asia/Oceania model Black version

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**harman/kardon**

Parts and Service Office  
80 Crossways Park West, Woodbury, N.Y. 11797  
1112-HK620-A K9502 1500 Printed in Japan

**SPECIFICATIONS**

	Nominal	Limit		Nominal	Limit
RMS Output Power			Damping Factor (at 1Hz):	106	≥ 90
8 Ω, 1kHz THD 0.1%	50.7W	≥ 40W	Phono-Overload		
4 Ω, 1kHz THD 0.3%	69.4W	≥ 60W	Option Phono (MM):	109mV	
High-instantaneous Current Capability (HCC)	41A	≥ 30A	Option Phono (MC):	5.6mV	
Half Power Bandwidth (THD 0.1%)	<10Hz-62kHz	<10Hz-50kHz	Tone Control Characteristics		
Frequency Response (at -3dB down)	0.4Hz-106kHz	<1Hz- ≥ 80kHz	Bass (at 50Hz)	Boost	10dB ± 2dB
Input Sensitivity				Cut	10dB ± 2dB
(at 40W output) Tuner/CD:	135mV	> 135mV ± 35mV/17kΩ ± 5kΩ	Treble (at 10kHz)	Boost	10dB ± 2dB
Option Phono (MM):	2.4mV/49kohm			Cut	10dB ± 2dB
Option Phono (MC):	131μV/56Ω		DC Output Voltage (at 8Ω)		
Signal to Noise Ratio			L channel	0mV ± 60mV	
Tuner/CD:	86.5dB	≥ 75dB	R channel	0mV ± 60mV	
Option Phono (MM):	79dB		Idling Current (at 8Ω)	75mA ± 5mA	
Option Phono (MC):	75dB		Dimensions	17.4" × 4.1" × 14.1"	
Channel Separation (at 10kHz):	56.6dB	≥ 45dB	(W × H × D)	(443 × 104 × 359 mm)	
Option Phono (MM):	65dB		Weight	16.3 lbs./7.4kg	
Option Phono (MC):	65dB		Power Supplies		
IM Distortion Ratio (at 1W):	0.033%	≤ 0.1%	North America area model	AC 120V, 60Hz	
			International and Asia/		
			Oceania models	AC 230V, 50/60Hz	
			Power Consumption	160W <b>BK</b>	
				180W <b>IB I WB</b>	

These specifications are service target specs.

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

**DISASSEMBLY PROCEDURES (REFER TO PAGES 4 AND 12)**

**1 CABINET TOP (131) 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 3 Rotary Knobs (151).
3. Remove 5 screws (B) and then remove the 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. Disconnect the Connector (CW703) from 1 Connector (CN703) on the CPU P.C. Board (PCB-5).
3. Pull out the Rotary Knob (150) and 2 Push Buttons (146).
4. Disconnect the 3 Connectors (JL501, CW704 and W-502) from 3 Connectors (CN503, CN704 and H503) on the VR P.C. Board (PCB-10).
5. Disconnect the Jumper Lead (JL702) from Connector (CN702B) on the Main P.C. Board (PCB-1).
6. Remove 3 hexagon nuts (C).
7. Remove 8 screws (D) and then remove the Chassis (161) with CPU P.C. Board (PCB-5), Power LED P.C. Board (PCB-7), VR P.C. Board (PCB-10) and SP SW P.C. Board (PCB-2).
8. Remove 11 screws (E) and then remove the Main P.C. Board (PCB-1).  
If necessary unsolder the lead wire.

**4 CPU P.C. BOARD (PCB-5) REMOVAL**

1. Remove the Cabinet Top (131), referring to the previous step 1.
2. Disconnect the Jumper Lead (JL702) from Connector (CN702A) on the CPU P.C. Board (PCB-5).
3. Disconnect the Connector (CW703) from Connector (CN703) on the CPU P.C. Board (PCB-5).
4. Disconnect the Connector (CW701) from Connector (CN701) on the Power Ind P.C. Board (PCB-7).
5. Disconnect the Connector (CW282) from Connector (CN282) on the I/O P.C. Board (PCB-6).
6. Remove 4 screws (F) and then remove CPU P.C. Board (PCB-5).

**5 VOLUME P.C. BOARD (PCB-10) REMOVAL**

1. Remove the Front Panel Ass'y (AA), referring to the previous step 2.
2. Disconnect the Connector (CW703) from Connector (CN703) on the CPU P.C. Board (PCB-5).
3. Disconnect 3 Connectors (JL501, CW704 and W-502) from 3 Connectors (CN503, CN704 and H503) on the Volume P.C. Board (PCB-10).
4. Remove hexagon nut (G) and then remove the Volume P.C. Board (PCB-10).

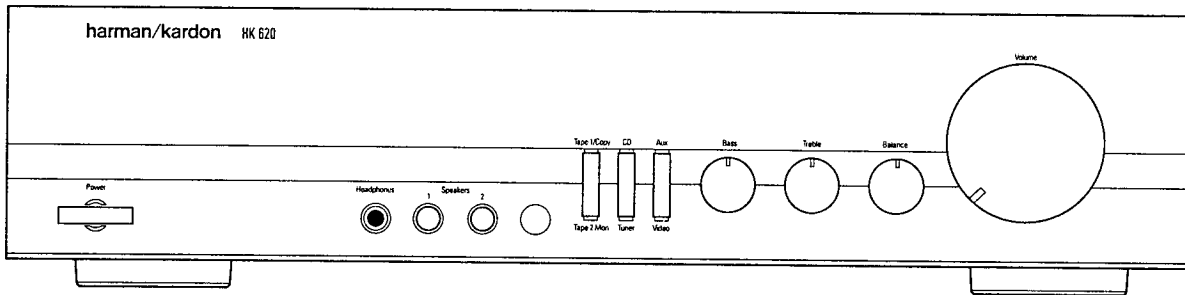
**6 I/O P.C. BOARD (PCB-6) REMOVAL**

1. Remove the Cabinet Top (131), referring to the previous step 1.
2. Remove 2 screws (H) and then remove SP Terminal P.C. Board (PCB-4).
3. Disconnect the Connector (PG1) from Connector (CN1) on the I/O P.C. Board (PCB-6).
4. Disconnect 2 Connectors (CW281 and CW282) from 2 Connectors (CN281 and CN282) on the I/O P.C. Board (PCB-6).
5. Remove 5 screws (I) and then remove I/O P.C. Board (PCB-6).

**7 OPTION PHONO P.C. BOARD (PCB-101) REMOVAL**

1. Remove the Cabinet Top (131), referring to the previous step 1.
2. Remove 1 screw (199) and then disconnect 2 Connectors (CW602 and W601) from 2 Connectors (CN102 and CN101) on the Main P.C. Board (PCB-1).

## CONTROLS AND FUNCTIONS



### Power Switch

Press to turn the unit on and off.

### Headphone Jack

Plug in headphones if desired. (With both Speakers 1 and 2 switches in Off position, output is supplied only to headphones.)

### Speakers Switches

Push in to select either of two sets of speakers, or both, or neither (headphone output only).

### Function Selector Buttons

Select desired input source by pressing the corresponding button.

### Bass Control

Turn to increase or decrease the proportion of low frequency sound.

### Treble Control

Turn to increase or decrease the proportion of high frequency sound.

### Balance Control

Turn to adjust relative output level of left and right speakers.

### Volume Control

Turn to raise or lower output volume.

**ALIGNMENT PROCEDURES (REFER TO PAGES 6 AND 15)**

- **Conditions :**
  - Set the Function selector to the "CD" position.
  - Set the Volume control to minimum.
  - Make the adjustment at a room temperature of 77°F (25°C).

■ **DC BALANCE CONFIRMATION**

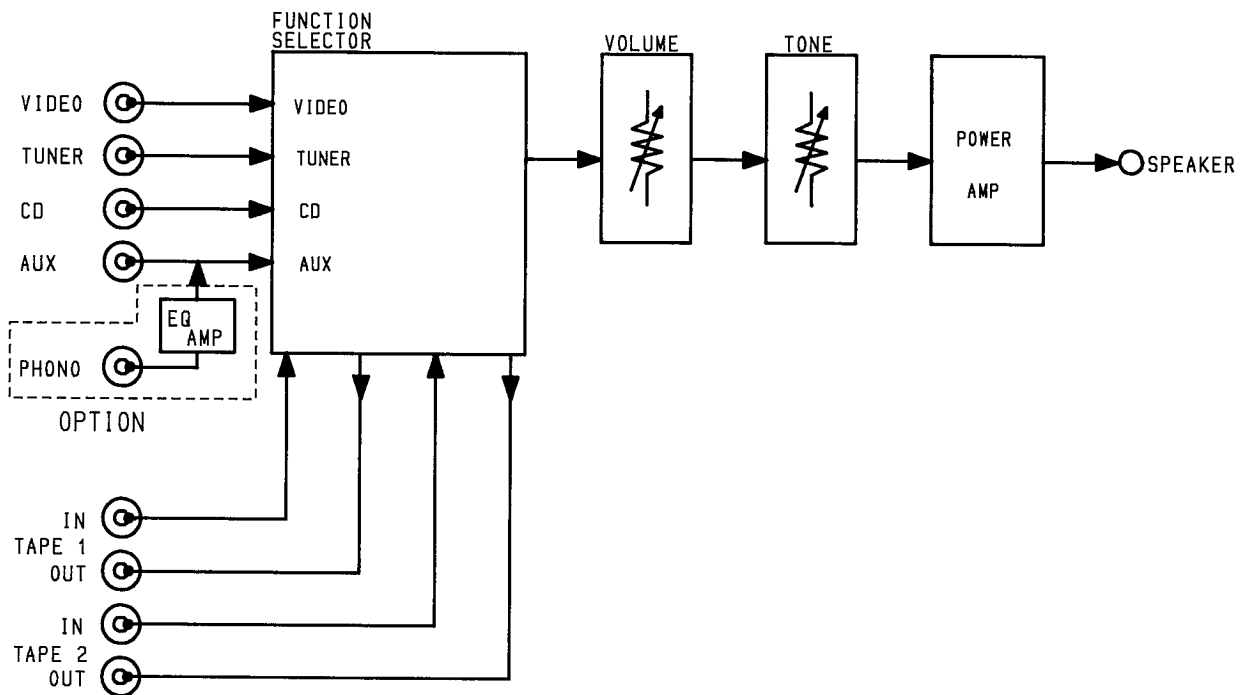
Step	Connection Equipments	Adjustment	For
1	Connect the Digital Volt Meter to Speaker output (L ch).		0 ± 60mV
2	Connect the Digital Volt Meter to Speaker output (R ch).		0 ± 60mV

■ **IDLING CURRENT ADJUSTMENT**

Step	Connection Equipments	Adjustment	For
1	Connect the Digital Volt Meter to TP401 and TP403.	VR401	7 ± 0.5mV
2	Connect the Digital Volt Meter to TP402 and TP404.	VR402	7 ± 0.5mV

- After the above adjustment, leave the unit with its power on for longer than 15 minutes and then repeat the same adjustment.

**BLOCK DIAGRAM**



F

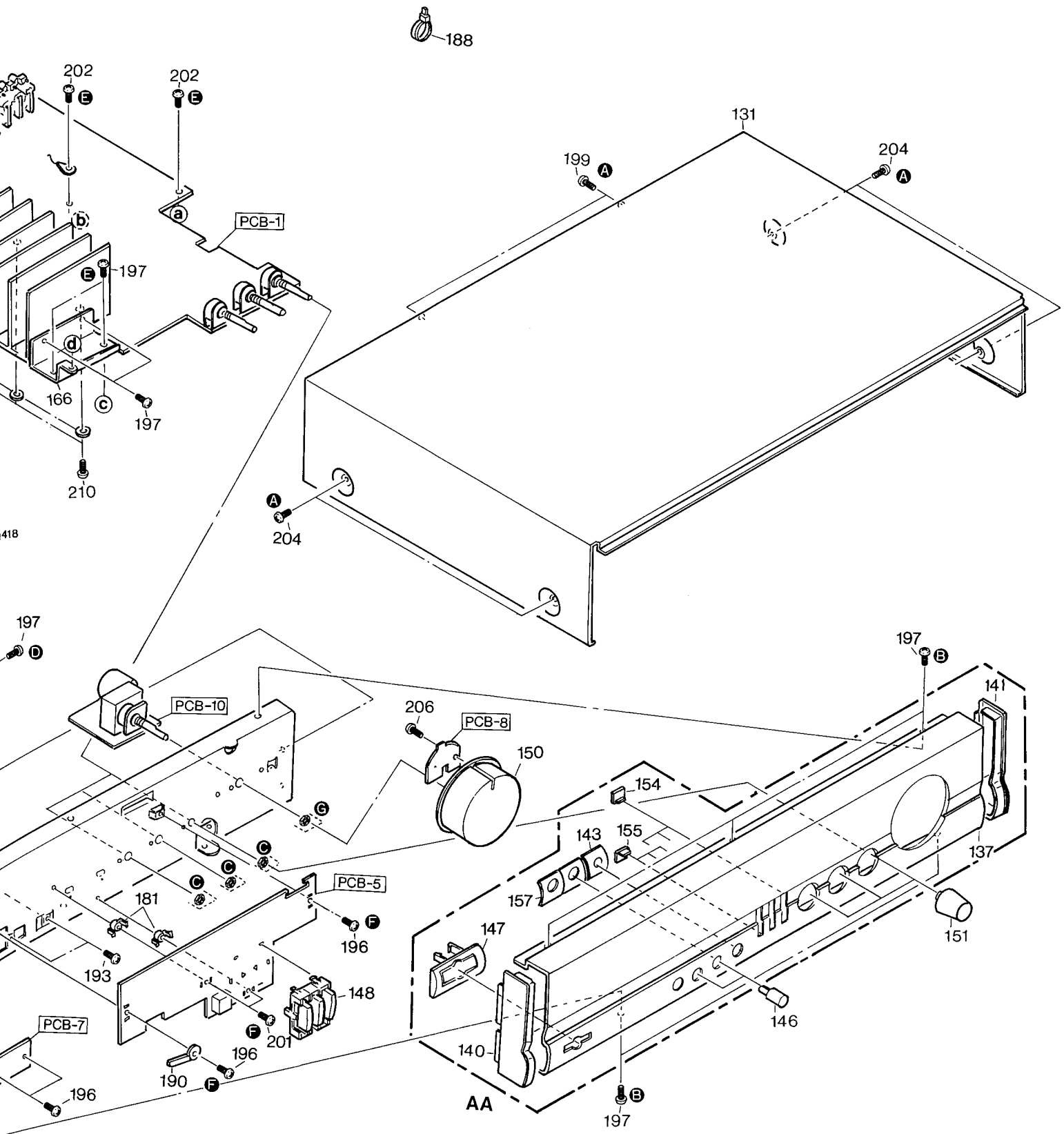
G

H

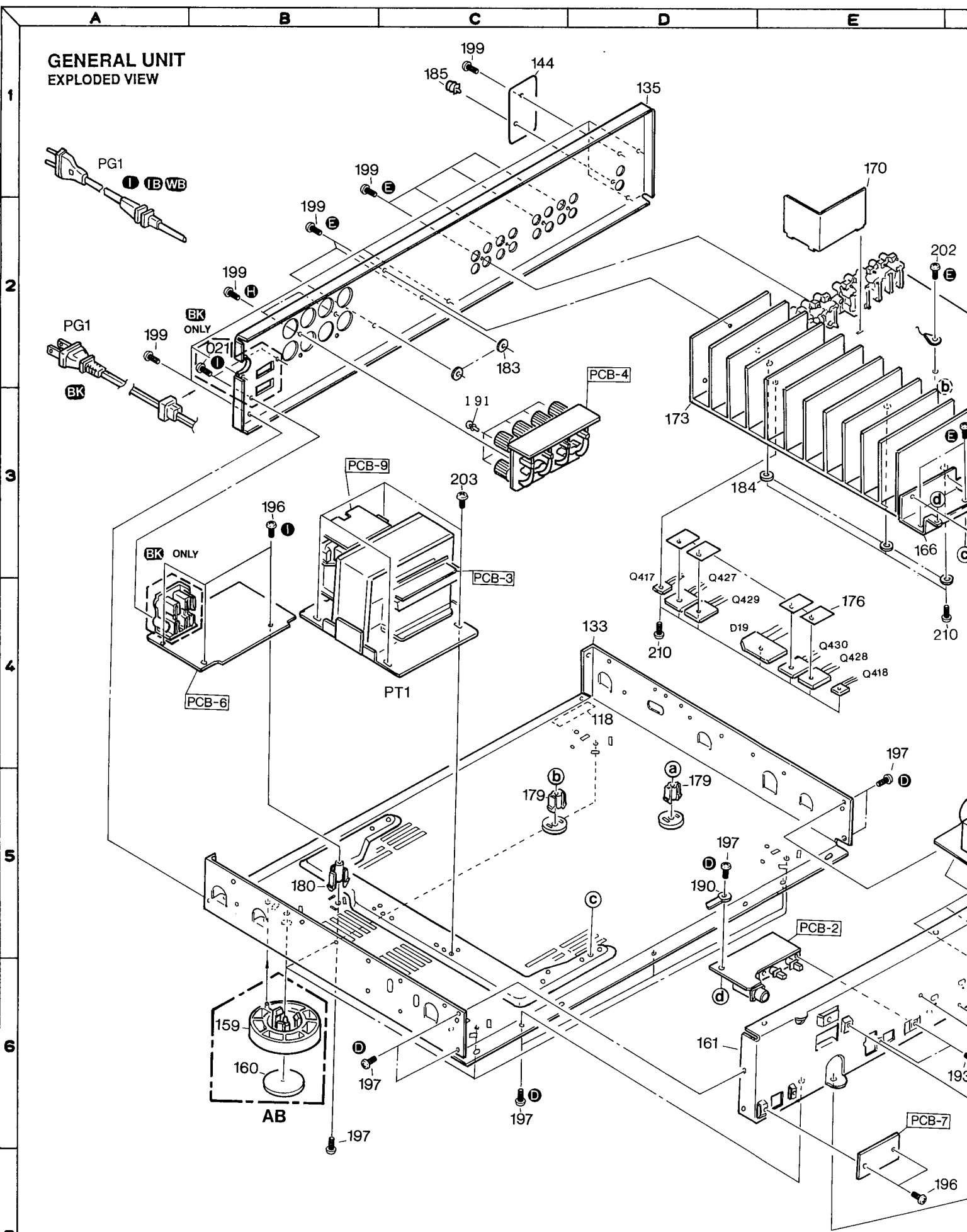
I

J

70



**GENERAL UNIT  
EXPLODED VIEW**

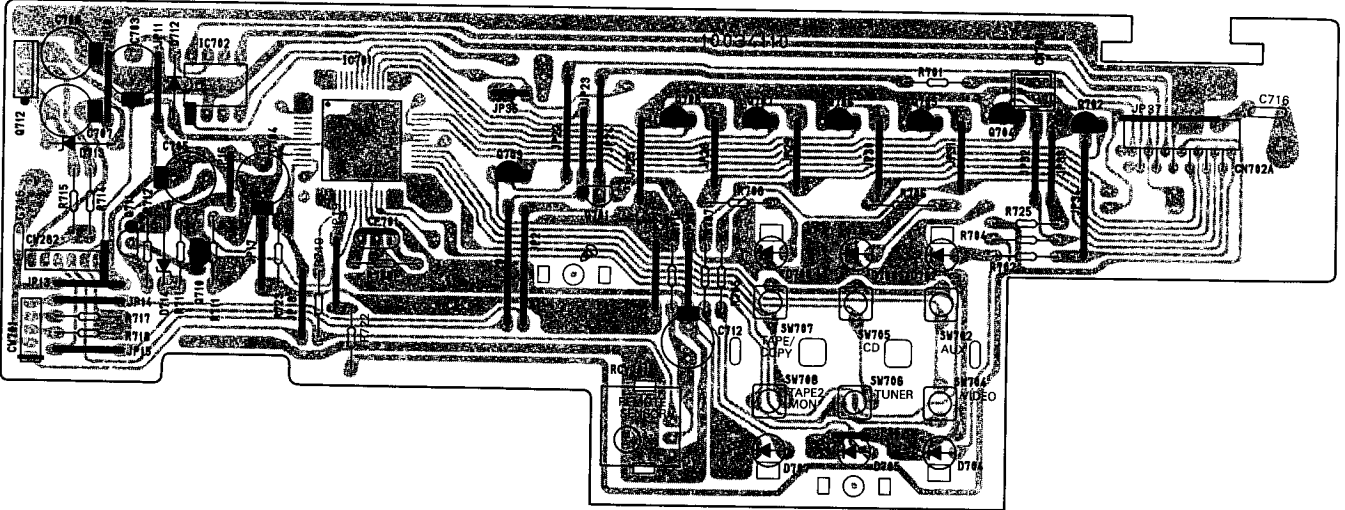


## GENERAL UNIT PARTS LIST

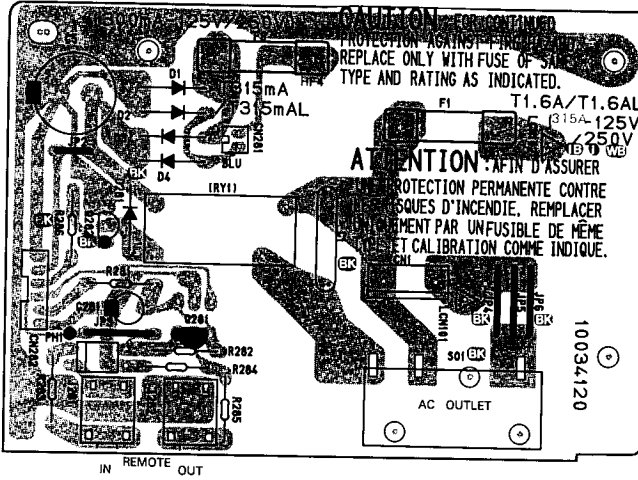
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
AA	A443-HK6220A	FRONT PANEL ASSEMBLY <b>IB</b> <b>BK</b> <b>WB</b>	154	1732-09801	INDICATOR, TAPE1/COPY, CD, AUX (×3)
AA	A443-HK6220B	FRONT PANEL ASSEMBLY <b>I</b>	155	1732-09901	INDICATOR, TAPE2 MON, TUNER, VIDEO (×3)
AB	A319-HK6220A	LEG ASSEMBLY (×4)	157	1742-09402	ORNAMENT, SPEAKERS BUTTON <b>BK</b> <b>IB</b> <b>WB</b>
021	2347-R0130084	SCREW, BND T+ (×2) <b>BK</b>	157	1742-09401	ORNAMENT, SPEAKERS BUTTON <b>I</b>
118	1117-78	SERIAL LABEL	159	1319-04303	LEG (×4)
131	1414-17004	CABINET, TOP <b>BK</b>	160	1319-04601	LEG, SPONGE (×4)
131	1414-17002	CABINET, TOP <b>IB</b> <b>I</b> <b>WB</b>	161	2211-7331	CHASSIS
133	1424-38501	CABINET BACK, BOTTOM	166	2219-8425	METAL FITTG, HEAT SINK
135	1424-38602	CABINET BACK, REAR <b>BK</b>	170	2216-7210	SHIELD PLATE
135	1424-38601	CABINET BACK, REAR <b>IB</b> <b>I</b>	173	2222-7343	HEAT SINK
135	1424-38603	CABINET BACK, REAR <b>WB</b>	176	2224-7134	INSULATOR, POWER Tr (×4)
137	1443-15301	FRONT PANEL <b>BK</b> <b>IB</b> <b>WB</b>	179	2360-7021	BOSS, SPE, MAIN PCB (×2)
137	1443-15302	FRONT PANEL <b>I</b>	180	2360-7022	BOSS, SPE, I/O PCB
140	1562-09802	FRAME, L <b>BK</b> <b>IB</b> <b>WB</b>	181	2360-7026	BOSS, SPE, CPU PCB (×2)
140	1562-09801	FRAME, L <b>I</b>	183	2402-0374	WASHER, PLASTIC, HEAT SINK REAR (×2)
141	1562-09902	FRAME, R <b>BK</b> <b>IB</b> <b>WB</b>	184	2402-0374	WASHER, PLASTIC (×3)
141	1562-09901	FRAME, R <b>I</b>	185	2459-3003511	RIVET, PLASTIC, EQ PLATE
143	1532-22801	WINDOW, REMOTE SENSOR	188	2240-R0101	HOLDER, WIRING (×19)
144	1511-23601	PLATE, EQ	190	2218-R0130	BRACKET, FIX (×2)
146	1662-67202	PUSH BUTTON, SPEAKER (×2) <b>BK</b> <b>IB</b> <b>WB</b>	191	2459-3004511	RIVET, PLASTIC (×8) <b>IB</b> <b>I</b>
146	1662-67201	PUSH BUTTON, SPEAKER (×2) <b>I</b>	193	2327-R0130062	SCREW, BND+ (3×6 mm) (×2)
147	1660-02302	PUSH BUTTON, POWER <b>BK</b> <b>IB</b> <b>WB</b>	196	2347-R0130082	SCREW, BND T+ (3×8 mm) (×7)
147	1660-02301	PUSH BUTTON, POWER <b>I</b>	197	2347-R0130082	SCREW, BND T+ (3×8 mm) (×18)
148	1662-71902	PUSH BUTTON, TAPE1/TAPE2/CD/TUNER/ AUX/VIDEO <b>BK</b> <b>IB</b> <b>WB</b>	199	2347-R0130084	SCREW, BND T+ (3×8 mm) (×17)
148	1662-71901	PUSH BUTTON, TAPE1/TAPE2/CD/TUNER/ AUX/VIDEO <b>I</b>	201	2347-R0130122	SCREW, BND T+ (3×12 mm) (×2)
150	1630-05002	ROTARY KNOB, VOLUME <b>BK</b> <b>IB</b> <b>WB</b>	202	2347-R0130202	SCREW, BND T+ (3×20 mm) (×2)
150	1630-05001	ROTARY KNOB, VOLUME <b>I</b>	203	2347-R0140082	SCREW, BND T+ (4×8 mm) (×4)
151	1632-20702	ROTARY KNOB, BASS/TREBLE/BALANCE (×3) <b>BK</b> <b>IB</b> <b>WB</b>	204	2347-R0140064	SCREW, BND T+ (4×6 mm) (×4)
151	1632-20701	ROTARY KNOB, BASS/TREBLE/BALANCE (×3) <b>I</b>	206	2347-R0126082	SCREW, BND T+ (2.6×8 mm)
			210	2557-F301426	SCREW, B SPW + (3×14 mm) (×10)

P.C. BOARDS

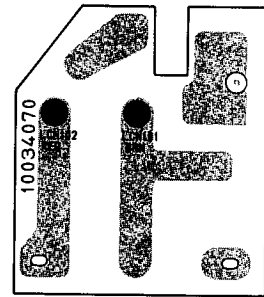
1 PCB-5 CPU P.C.BOARD



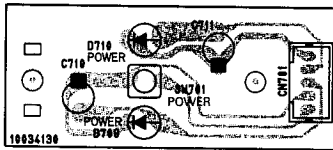
3 PCB-6 I/O P.C.BOARD



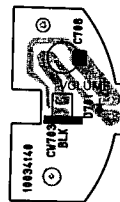
PCB-9 PR P.C.BOARD



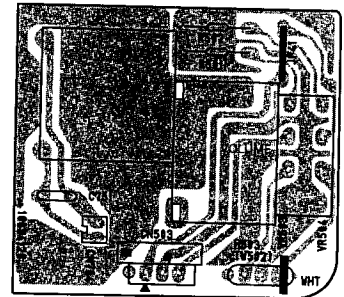
5 PCB-7 POWER IND P.C.BOARD



PCB-8 VR IND P.C.BOARD



PCB-10 VR P.C.BOARD

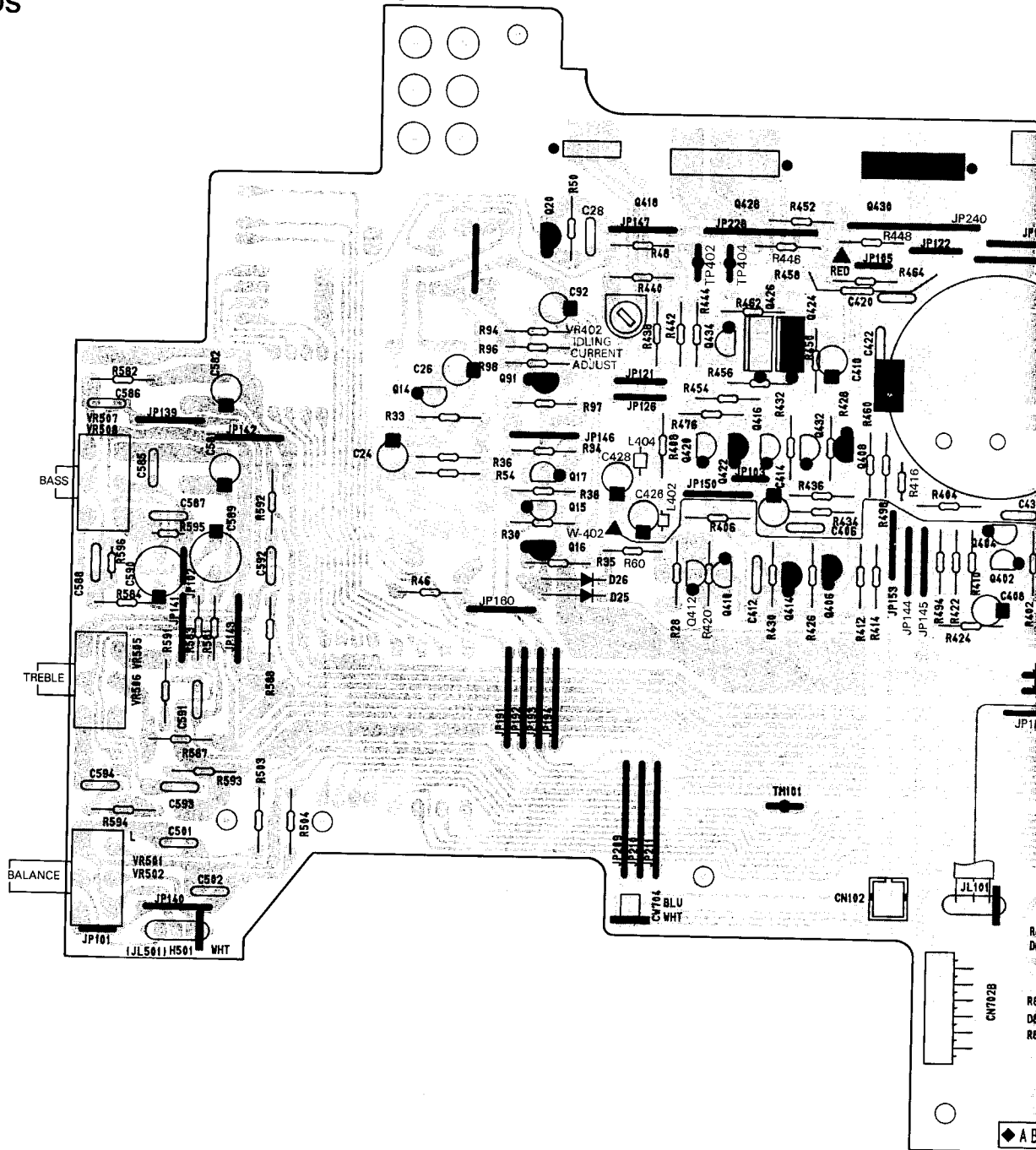




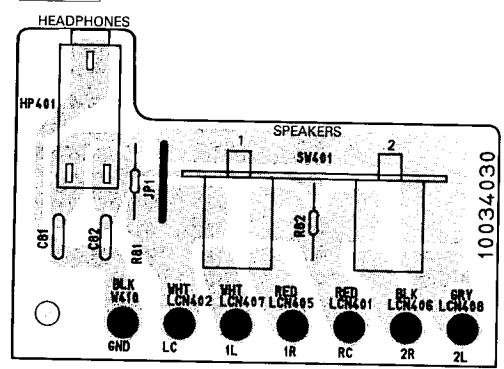


P.C. BOARDS

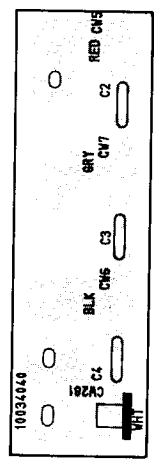
PCB-1 MAIN P.C. BOARD







PCB-2 SP SW P.C. BOARD



PCB-3 SECOND P.C. BOARD



## 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>							
724	△	C17	5341-S44FM129				CAP, ELE 12000U/50V
724	△	C19	5341-S44FM129				CAP, ELE 12000U/50V
691		C24	5345-334F0962				CAP, MINI ELE .33U/50V
693		C26	5345-104F0962				CAP, MINI ELE .1U/50V
692		C27	5354-124593				CAP, MYL .12U
692		C28	5354-124593				CAP, MYL .12U
694		C92	5345-476D0962				CAP, MINI ELE 47U/25V
601		C401	5345-227A0962				CAP, MINI ELE 220U/6.3V
601		C402	5345-227A0962				CAP, MINI ELE 220U/6.3V
602		C405	5361-020DSL				CAP, CER 2P
602		C406	5361-020DSL				CAP, CER 2P
603		C407	5345-337A0962				CAP, MINI ELE 330U/6.3V
603		C408	5345-337A0962				CAP, MINI ELE 330U/6.3V
607		C409	5345-106F0962				CAP, MINI ELE 10U/50V
607		C410	5345-106F0962				CAP, MINI ELE 10U/50V
606		C411	5361-070DSL				CAP, CER 7P
606		C412	5361-070DSL				CAP, CER 7P
604		C413	5345-106C0962				CAP, MINI ELE 10U/16V
604		C414	5345-106C0962				CAP, MINI ELE 10U/16V
605		C419	5354-224593				CAP, MYL .22U
605		C420	5354-224593				CAP, MYL .22U
605		C421	5354-224593				CAP, MYL .22U
605		C422	5354-224593				CAP, MYL .22U
608		C425	5345-105F0962				CAP, MINI ELE 1U/50V 
608		C426	5345-105F0962				CAP, MINI ELE 1U/50V 
608		C427	5345-105F0962				CAP, MINI ELE 1U/50V 
608		C428	5345-105F0962				CAP, MINI ELE 1U/50V 
610		C429	5359-S010K221				CAP, PPP 220P
610		C430	5359-S010K221				CAP, PPP 220P
670		C501	5359-S010K471				CAP, PPP 470P
670		C502	5359-S010K471				CAP, PPP 470P
661		C581	5345-225F0962				CAP, MINI ELE 2.2U/50V
661		C582	5345-225F0962				CAP, MINI ELE 2.2U/50V
669		C585	5354-273J1HM				CAP, MYL .027U
669		C586	5354-273J1HM				CAP, MYL .027U
663		C587	5354-154593				CAP, MYL .15U
663		C588	5354-154593				CAP, MYL .15U
664		C589	5345-106C0962				CAP, MINI ELE 10U/16V
664		C590	5345-106C0962				CAP, MINI ELE 10U/16V
666		C591	5354-682J1HM				CAP, MYL 6800P
666		C592	5354-682J1HM				CAP, MYL 6800P
668		C593	5354-393J1HM				CAP, MYL .039U
668		C594	5354-393J1HM				CAP, MYL .039U
876		C801	5352-S110J104				CAP, MTL .1U
876		C802	5352-S110J104				CAP, MTL .1U
876		C803	5352-S110J104				CAP, MTL .1U
876		C804	5352-S110J104				CAP, MTL .1U
879		C805	5352-S110J224				CAP, MTL .22U
879		C807	5352-S110J224				CAP, MTL .22U
879		C808	5352-S110J224				CAP, MTL .22U
876		C809	5352-S110J104				CAP, MTL .1U
877		C831	5345-337F0962				CAP, MINI ELE 330U/50V
880		C832	5345-337D0962				CAP, MINI ELE 330U/25V
878		C833	5345-107D0962				CAP, MINI ELE 100U/25V
<b>RESISTORS</b>							
702		R27	5134-104J25P				RES, CBN 1/4P 100K
702		R28	5134-104J25P				RES, CBN 1/4P 100K
708		R30	5134-683J25P				RES, CBN 1/4P 68K
702		R33	5134-104J25P				RES, CBN 1/4P 100K
704		R34	5134-472J25P				RES, CBN 1/4P 4.7K
705		R35	5134-223J25P				RES, CBN 1/4P 22K
705		R36	5134-223J25P				RES, CBN 1/4P 22K
708		R38	5134-683J25P				RES, CBN 1/4P 68K
709		R45	5134-682J25P				RES, CBN 1/4P 6.8K
709		R46	5134-682J25P				RES, CBN 1/4P 6.8K
710		R47	5134-182J25P				RES, CBN 1/4P 1.8K
710		R48	5134-182J25P				RES, CBN 1/4P 1.8K
711		R49	5134-821J25P				RES, CBN 1/4P 820
711		R50	5134-821J25P				RES, CBN 1/4P 820
705		R54	5134-223J25P				RES, CBN 1/4P 22K
712		R59	5134-123J25P				RES, CBN 1/4P 12K
712		R60	5134-123J25P				RES, CBN 1/4P 12K
714		R94	5134-104J25P				RES, CBN 1/4P 100K
704		R96	5134-472J25P				RES, CBN 1/4P 4.7K
705		R97	5134-223J25P				RES, CBN 1/4P 22K
713		R98	5134-473J25P				RES, CBN 1/4P 47K
631		R401	5134-683J25P				RES, CBN 1/4P 68K
631		R402	5134-683J25P				RES, CBN 1/4P 68K
627		R403	5134-562J25P				RES, CBN 1/4P 5.6K
627		R404	5134-562J25P				RES, CBN 1/4P 5.6K
628	△	R405	5102-3R35116				RES, FUSE 3.3
628	△	R406	5102-3R35116				RES, FUSE 3.3
628	△	R407	5102-3R35116				RES, FUSE 3.3
628	△	R408	5102-3R35116				RES, FUSE 3.3
633		R409	5134-473J25P				RES, CBN 1/4P 47K
633		R410	5134-473J25P				RES, CBN 1/4P 47K
634	△	R411	5102-1025116				RES, FUSE 1K
634	△	R412	5102-1025116				RES, FUSE 1K
632	△	R413	5102-1024715				RES, FUSE 1K
632	△	R414	5102-1024715				RES, FUSE 1K
629	△	R415	5102-S081J470				RES, FUSE 47
629	△	R416	5102-S081J470				RES, FUSE 47
635		R419	5134-271J25P				RES, CBN 1/4P 270
635		R420	5134-271J25P				RES, CBN 1/4P 270
636		R421	5134-224J25P				RES, CBN 1/4P 220K
636		R422	5134-224J25P				RES, CBN 1/4P 220K
637		R423	5134-151J25P				RES, CBN 1/4P 150
637		R424	5134-151J25P				RES, CBN 1/4P 150
645	△	R425	5102-8205116				RES, FUSE 82
645	△	R426	5102-8205116				RES, FUSE 82
648	△	R427	5102-6805116				RES, FUSE 68
648	△	R428	5102-6805116				RES, FUSE 68
645	△	R429	5102-8205116				RES, FUSE 82
645	△	R430	5102-8205116				RES, FUSE 82
645	△	R431	5102-8205116				RES, FUSE 82
645	△	R432	5102-8205116				RES, FUSE 82
638		R433	5134-153J25P				RES, CBN 1/4P 15K
638		R434	5134-153J25P				RES, CBN 1/4P 15K
638		R435	5134-153J25P				RES, CBN 1/4P 15K
638		R436	5134-153J25P				RES, CBN 1/4P 15K
656		R437	5134-751J25P				RES, CBN 1/4P 750
656		R438	5134-751J25P				RES, CBN 1/4P 750
640		R439	5134-561J25P				RES, CBN 1/4P 560
640		R440	5134-561J25P				RES, CBN 1/4P 560
639		R441	5134-272J25P				RES, CBN 1/4P 2.7K
639		R442	5134-272J25P				RES, CBN 1/4P 2.7K
655		R443	5134-122J25P				RES, CBN 1/4P 1.2K
655		R444	5134-122J25P				RES, CBN 1/4P 1.2K
650		R445	5272-S010JR22				RES, CEM 2P .22
650		R446	5272-S010JR22				RES, CEM 2P .22
650		R447	5272-S010JR22				RES, CEM 2P .22
650		R448	5272-S010JR22				RES, CEM 2P .22
646	△	R449	5102-2215116				RES, FUSE 220
646	△	R450	5102-2215116				RES, FUSE 220
651		R451	5272-S010KR10				RES, CEM 2P .1
651		R452	5272-S010KR10				RES, CEM 2P .1
644	△	R453	5102-1014715				RES, FUSE 100
644	△	R454	5102-1014715				RES, FUSE 100
644	△	R455	5102-1014715				RES, FUSE 100
644	△	R456	5102-1014715				RES, FUSE 100
652		R457	5173-3R3583				RES, MTL 2P 3.3
652		R458	5173-3R3583				RES, MTL 2P 3.3
641		R459	5134-332J25P				RES, CBN 1/4P 3.3K
641		R460	5134-332J25P				RES, CBN 1/4P 3.3K
649	△	R461	5102-4R75116				RES, FUSE 4.7
649	△	R462	5102-4R75116				RES, FUSE 4.7
649	△	R463	5102-4R75116				RES, FUSE 4.7
649	△	R464	5102-4R75116				RES, FUSE 4.7
642		R465	5134-331J25P				RES, CBN 1/4P 330
642		R466	5134-331J25P				RES, CBN 1/4P 330
647	△	R475	5102-3914715				RES, FUSE 390
647	△	R476	5102-3914715				RES, FUSE 390
642		R493	5134-331J25P				RES, CBN 1/4P 330

Ser. No.	Ref. No.	Part No.	Description
642	R494	5134-331J25P	RES, CBN 1/4P 330
633	R497	5134-473J25P	RES, CBN 1/4P 47K
633	R498	5134-473J25P	RES, CBN 1/4P 47K
671	R503	5134-102J25P	RES, CBN 1/4P 1K
671	R504	5134-102J25P	RES, CBN 1/4P 1K
672	R581	5134-153J25P	RES, CBN 1/4P 15K
672	R582	5134-153J25P	RES, CBN 1/4P 15K
673	R583	5134-272J25P	RES, CBN 1/4P 2.7K
673	R584	5134-272J25P	RES, CBN 1/4P 2.7K
674	R587	5134-331J25P	RES, CBN 1/4P 330
674	R588	5134-331J25P	RES, CBN 1/4P 330
676	R591	5134-122J25P	RES, CBN 1/4P 1.2K
676	R592	5134-122J25P	RES, CBN 1/4P 1.2K
677	R593	5134-121J25P	RES, CBN 1/4P 120
677	R594	5134-121J25P	RES, CBN 1/4P 120
678	R595	5232-104J16P	RES, CBN 1/6P 100K
678	R596	5232-104J16P	RES, CBN 1/6P 100K
896	R801	5134-102J25P	RES, CBN 1/4P 1K
896	R802	5134-102J25P	RES, CBN 1/4P 1K
896	R803	5134-102J25P	RES, CBN 1/4P 1K
896	R804	5134-102J25P	RES, CBN 1/4P 1K
896	R805	5134-102J25P	RES, CBN 1/4P 1K
896	R806	5134-102J25P	RES, CBN 1/4P 1K
896	R807	5134-102J25P	RES, CBN 1/4P 1K
896	R808	5134-102J25P	RES, CBN 1/4P 1K
896	R811	5134-102J25P	RES, CBN 1/4P 1K
896	R812	5134-102J25P	RES, CBN 1/4P 1K
896	R813	5134-102J25P	RES, CBN 1/4P 1K
897	R814	5134-102J25P	RES, CBN 1/4P 1K
897	R815	5134-102J25P	RES, CBN 1/4P 1K
897	R816	5134-102J25P	RES, CBN 1/4P 1K
897	R817	5134-102J25P	RES, CBN 1/4P 1K
897	R818	5134-102J25P	RES, CBN 1/4P 1K
894	R819	5134-225J25P	RES, CBN 1/4P 2.2M
894	R820	5134-225J25P	RES, CBN 1/4P 2.2M
894	R821	5134-225J25P	RES, CBN 1/4P 2.2M
894	R822	5134-225J25P	RES, CBN 1/4P 2.2M
893	R823	5232-225J16P	RES, CBN 1/6P 2.2M
898	R824	5134-225J25P	RES, CBN 1/4P 2.2M
899	R825	5134-155J25P	RES, CBN 1/4P 1.5M
899	R826	5134-155J25P	RES, CBN 1/4P 1.5M
894	R827	5134-225J25P	RES, CBN 1/4P 2.2M
900	R829	5134-104J25P	RES, CBN 1/4P 100K
900	R830	5134-104J25P	RES, CBN 1/4P 100K
900	R831	5134-104J25P	RES, CBN 1/4P 100K
900	R832	5134-104J25P	RES, CBN 1/4P 100K
900	R834	5134-104J25P	RES, CBN 1/4P 100K
900	R835	5134-104J25P	RES, CBN 1/4P 100K
900	R836	5134-104J25P	RES, CBN 1/4P 100K
900	R839	5134-104J25P	RES, CBN 1/4P 100K
895	R841	5232-225J16P	RES, CBN 1/6P 2.2M
895	R842	5232-225J16P	RES, CBN 1/6P 2.2M
895	R843	5232-225J16P	RES, CBN 1/6P 2.2M
895	R844	5232-225J16P	RES, CBN 1/6P 2.2M
895	R845	5232-225J16P	RES, CBN 1/6P 2.2M
895	R846	5232-225J16P	RES, CBN 1/6P 2.2M
895	R847	5232-225J16P	RES, CBN 1/6P 2.2M
895	R848	5232-225J16P	RES, CBN 1/6P 2.2M
895	R849	5232-225J16P	RES, CBN 1/6P 2.2M
895	R850	5232-225J16P	RES, CBN 1/6P 2.2M
903	△ R851	5102-2205116	RES, FUSE 22
906	R852	5134-222J25P	RES, CBN 1/4P 2.2K
904	R853	5134-682J25P	RES, CBN 1/4P 6.8K
905	R854	5134-222J25P	RES, CBN 1/4P 2.2K
901	R862	5134-152J25P	RES, CBN 1/4P 1.5K
901	R863	5134-152J25P	RES, CBN 1/4P 1.5K
901	R864	5134-152J25P	RES, CBN 1/4P 1.5K
901	R865	5134-152J25P	RES, CBN 1/4P 1.5K
901	R866	5134-152J25P	RES, CBN 1/4P 1.5K
901	R867	5134-152J25P	RES, CBN 1/4P 1.5K

**TRANSISTORS**

696	Q14	5613-1740(S)	XISTOR, NPN R
696	Q15	5613-1740(S)	XISTOR, NPN R
697	Q16	5611-933(S)	XISTOR, PNP R

Ser. No.	Ref. No.	Part No.	Description
696	Q17	5613-1740(S)	XISTOR, NPN R
698	Q19	5611-970(BL)	XISTOR, PNP R
698	Q20	5611-970(BL)	XISTOR, PNP R
697	Q91	5611-933(S)	XISTOR, PNP R
613	Q401	5613-1775(F)	XISTOR, NPN R
613	Q402	5613-1775(F)	XISTOR, NPN R
613	Q403	5613-1775(F)	XISTOR, NPN R
613	Q404	5613-1775(F)	XISTOR, NPN R
614	Q405	5612-646A(C)	XISTOR, PNP A
614	Q406	5612-646A(C)	XISTOR, PNP A
614	Q407	5612-646A(C)	XISTOR, PNP A
614	Q408	5612-646A(C)	XISTOR, PNP A
615	Q409	5613-2240(BL)	XISTOR, NPN R
615	Q410	5613-2240(BL)	XISTOR, NPN R
615	Q411	5613-2240(BL)	XISTOR, NPN R
615	Q412	5613-2240(BL)	XISTOR, NPN R
614	Q413	5612-646A(C)	XISTOR, PNP A
614	Q414	5612-646A(C)	XISTOR, PNP A
616	Q415	5614-666A(C)	XISTOR, NPN A
616	Q416	5614-666A(C)	XISTOR, NPN A
617	Q417	5613-3423(Y)	XISTOR, NPN R
617	Q418	5613-3423(Y)	XISTOR, NPN R
618	Q419	5614-667A(C)	XISTOR, NPN A
618	Q420	5614-667A(C)	XISTOR, NPN A
619	Q421	5612-647A(C)	XISTOR, PNP A
619	Q422	5612-647A(C)	XISTOR, PNP A
620	Q423	5611-1837(Y)	XISTOR, PNP R
620	Q424	5611-1837(Y)	XISTOR, PNP R
621	Q425	5613-4793(Y)	XISTOR, NPN R
621	Q426	5613-4793(Y)	XISTOR, NPN R
623	Q427	5613-3182(O)	XISTOR, NPN R
623	Q428	5613-3182(O)	XISTOR, NPN R
624	Q429	5611-1265(O)	XISTOR, PNP R
624	Q430	5611-1265(O)	XISTOR, PNP R
612	Q431	5613-1775(F)	XISTOR, NPN R
612	Q432	5613-1775(F)	XISTOR, NPN R
611	Q433	5614-666A(C)	XISTOR, NPN A
611	Q434	5614-666A(C)	XISTOR, NPN A
887	Q801	5616-2SK364BL	FET, N-CH
887	Q802	5616-2SK364BL	FET, N-CH
887	Q803	5616-2SK364BL	FET, N-CH
887	Q804	5616-2SK364BL	FET, N-CH
887	Q805	5616-2SK364BL	FET, N-CH
887	Q806	5616-2SK364BL	FET, N-CH
887	Q807	5616-2SK364BL	FET, N-CH
887	Q808	5616-2SK364BL	FET, N-CH
887	Q811	5616-2SK364BL	FET, N-CH
887	Q812	5616-2SK364BL	FET, N-CH
889	Q813	5616-2SK364BL	FET, N-CH
889	Q814	5616-2SK364BL	FET, N-CH
887	Q815	5616-2SK364BL	FET, N-CH
888	Q816	5616-2SK364BL	FET, N-CH
888	Q817	5616-2SK364BL	FET, N-CH
888	Q818	5616-2SK364BL	FET, N-CH
890	Q820	5611-A144ES	XISTOR, PNP R
890	Q821	5611-A144ES	XISTOR, PNP R
890	Q822	5611-A144ES	XISTOR, PNP R
890	Q823	5611-A144ES	XISTOR, PNP R
890	Q824	5611-A144ES	XISTOR, PNP R
890	Q825	5611-A144ES	XISTOR, PNP R
890	Q826	5611-A144ES	XISTOR, PNP R
890	Q827	5611-A144ES	XISTOR, PNP R
891	Q828	5613-C144ES	XISTOR, NPN R
891	Q829	5613-C144ES	XISTOR, NPN R
885	Q831	5613-2320L(F)	XISTOR, NPN R
892	Q832	5613-C144ES	XISTOR, NPN R
892	Q833	5613-C144ES	XISTOR, NPN R
892	Q834	5613-C144ES	XISTOR, NPN R
892	Q835	5613-C144ES	XISTOR, NPN R
892	Q836	5613-C144ES	XISTOR, NPN R
892	Q837	5613-C144ES	XISTOR, NPN R

**DIODES**

725	△ D19	5685-D5SB20	SILICON, BRIG
695	D25	5631-1S2473	DIODE, DET

Ser. No.	Ref. No.	Part No.	Description
695	D26	5631-1S2473	DIODE, DET
882	D801	5631-1S2473	DIODE, DET
882	D802	5631-1S2473	DIODE, DET
882	D803	5631-1S2473	DIODE, DET
882	D804	5631-1S2473	DIODE, DET
882	D805	5631-1S2473	DIODE, DET
882	D806	5631-1S2473	DIODE, DET
882	D807	5631-1S2473	DIODE, DET
882	D808	5631-1S2473	DIODE, DET
882	D811	5631-1S2473	DIODE, DET
882	D812	5631-1S2473	DIODE, DET
882	D813	5631-1S2473	DIODE, DET
883	D814	5631-1S2473	DIODE, DET
883	D815	5631-1S2473	DIODE, DET
883	D816	5631-1S2473	DIODE, DET
883	D817	5631-1S2473	DIODE, DET
883	D818	5631-1S2473	DIODE, DET
881	D819	5631-1S2473	DIODE, DET
881	D820	5631-1S2473	DIODE, DET
886	D821	5631-1S2473	DIODE, DET
884	D831	5635-HZ20-2L	DIODE, ZENER
884	D832	5635-HZ20-2L	DIODE, ZENER
<b>CONTROLS</b>			
654	VR401	5101-30101934	RES, SEMI FIX 300, IDLING CURRENT
654	VR402	5101-30101934	RES, SEMI FIX 300, IDLING CURRENT
824	VR501/502	5113-S2005104	RES, V CBN 16 100K, BALANCE
822	VR505/506	5113-50342122	RES, V CBN 16 50K, TREBLE
820	VR507/508	5113-10441122	RES, V CBN 16 100K, BASS
<b>MISCELLANEOUS</b>			
805	CN101	4443-030185	CONNECTOR, 3 PIN
783	CN102	4443-0201140	CONNECTOR, 2 PIN
809	CN702B	4443-05501013	CONNECTOR, 13 PIN
795	CW5	4163-0130025	CONNECTOR W/W
793	CW6	4163-0130024	CONNECTOR W/W
794	CW7	4163-0130026	CONNECTOR W/W
796	CW704	4163-S5302151	CONNECTOR W/W, 2 PIN
813	J1	4489-04303008	PIN JACK, MLT, AUX/VIDEO/TUNER/CD
813	J2	4489-04303008	PIN JACK, MLT, TAPE 1/TAPE 2 IN/OUT
800	JL101	4242-R0503101	JUMPER LEAD, 3 WIRE
785	JL431	4132-R0202101	CORD, 2C, 2 WIRE
800	JL501	4242-R0503101	JUMPER LEAD, 3 WIRE
630	L401	5597-45502	CORE, BEADS
630	L402	5597-45502	CORE, BEADS
630	L403	5597-45502	CORE, BEADS
630	L404	5597-45502	CORE, BEADS
763	LCN401	4163-0140025	CONNECTOR W/W
764	LCN402	4163-0140027	CONNECTOR W/W
761	LCN403	4163-0140024	CONNECTOR W/W
762	LCN404	4163-0140026	CONNECTOR W/W
792	LCN411	4163-0117024	CONNECTOR W/W
782	TM101	4214-262	TERMINAL
782	TM102	4214-262	TERMINAL
782	TM103	4214-262	TERMINAL
782	TM104	4214-262	TERMINAL
782	TM105	4214-262	TERMINAL
784	TP401	4214-262	TERMINAL
784	TP402	4214-262	TERMINAL
784	TP403	4214-262	TERMINAL
784	TP404	4214-262	TERMINAL
787	W401	4162-01201700	LUG W/WIRE
770	W402	4122-00280121	WIRE
770	W403	4122-00280121	WIRE
798	W410	4122-00280401	WIRE
799	W502	4142-00151301	SHLD WIRE, 2C
779		2240-Z031	HOLDER, H504(W-502)
780		2240-Z032	HOLDER, H101(JL101), H501(JL501)

**PCB-2 SP SW P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
758	C81	5361-101KB	CAP, CER 100P
758	C82	5361-101KB	CAP, CER 100P
<b>RESISTORS</b>			
760	R81	5134-471J25P	RES, CBN 1/4P 470
760	R82	5134-471J25P	RES, CBN 1/4P 470
<b>MISCELLANEOUS</b>			
829	HP401	4451-00158	JACK, 1P, HEADPHONES
765	LCN405	4163-0140025	CONNECTOR W/W, 1 PIN
767	LCN406	4163-0140024	CONNECTOR W/W, 1 PIN
766	LCN407	4163-0140027	CONNECTOR W/W, 1 PIN
768	LCN408	4163-0140026	CONNECTOR W/W, 1 PIN
817	SW401	4431-S0319204	SWITCH, PUSH, SPEAKERS 1/2

**PCB-3 SECOND P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
721	C2	5354-104593	CAP, MYL .1U
721	C3	5354-104593	CAP, MYL .1U
721	C4	5354-104593	CAP, MYL .1U
<b>MISCELLANEOUS</b>			
790	△ CW281	4163-S5302301	CONNECTOR W/W, 2 WIRE

**PCB-4 SP TERMINAL P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
657	C83	5361-151KB	CAP, CER 150P <b>IB I WB</b>
657	C84	5361-151KB	CAP, CER 150P <b>IB I WB</b>
657	C85	5361-151KB	CAP, CER 150P <b>IB I WB</b>
657	C86	5361-151KB	CAP, CER 150P <b>IB I WB</b>
<b>MISCELLANEOUS</b>			
812	TM402	4214-239	TERMINAL, SPEAKER SYSTEMS 1/2

**PCB-5 GPU P.C. BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
841	C703	5345-107B0961	CAP, MINI ELE 100U/10V
842	C704	5345-107B0961	CAP, MINI ELE 100U/10V
841	C705	5345-107B0961	CAP, MINI ELE 100U/10V
844	C706	5345-227B0961	CAP, MINI ELE 220U/10V
844	C707	5345-227B0961	CAP, MINI ELE 220U/10V
842	C712	5345-107B0961	CAP, MINI ELE 100U/10V
843	C715	5354-104593	CAP, MYL .1U
843	C716	5354-104593	CAP, MYL .1U
<b>RESISTORS</b>			
861	R701	5134-331J25P	RES, CBN 1/4P 330
862	R702	5134-471J25P	RES, CBN 1/4P 470
862	R704	5134-471J25P	RES, CBN 1/4P 470
862	R705	5134-471J25P	RES, CBN 1/4P 470
862	R706	5134-471J25P	RES, CBN 1/4P 470
863	R707	5134-561J25P	RES, CBN 1/4P 560
862	R708	5134-471J25P	RES, CBN 1/4P 470
864	R709	5134-105J25P	RES, CBN 1/4P 1M
866	R711	5134-103J25P	RES, CBN 1/4P 10K
862	R712	5134-471J25P	RES, CBN 1/4P 470
867	R713	5134-102J25P	RES, CBN 1/4P 1K
868	△ R714	5102-4R75116	RES, FUSE 4.7
869	R715	5134-392J25P	RES, CBN 1/4P 3.9K
865	R716	5134-101J25P	RES, CBN 1/4P 100
862	R717	5134-471J25P	RES, CBN 1/4P 470
862	R718	5134-471J25P	RES, CBN 1/4P 470

Ser. No.	Ref. No.	Part No.	Description
867	R719	5134-102J25P	RES, CBN 1/4P 1K
840	R722	5134-103J25P	RES, CBN 1/4P 10K
866	R723	5134-103J25P	RES, CBN 1/4P 10K
847	R725	5134-104J25P	RES, CBN 1/4P 100K

**INTEGRATED CIRCUITS**

855	IC701	5654-T7C2BF-1	IC, DIGITAL
856	IC702	5653-LB1639	IC, LINEAR

**TRANSISTORS**

850	Q701	5613-C114TS	XISTOR, NPN R
857	Q702	5611-A143ES	XISTOR, PNP R
857	Q704	5611-A143ES	XISTOR, PNP R
857	Q705	5611-A143ES	XISTOR, PNP R
857	Q706	5611-A143ES	XISTOR, PNP R
857	Q707	5611-A143ES	XISTOR, PNP R
857	Q708	5611-A143ES	XISTOR, PNP R
857	Q709	5611-A143ES	XISTOR, PNP R
858	Q710	5611-A114ES	XISTOR, PNP R
859	Q711	5613-1740(S)	XISTOR, NPN R
860	Q712	5614-2012	XISTOR, NPN A

**DIODES**

832	D702	5637-S2410E6A	LED, AUX
831	D704	5637-S2410E1A	LED, VIDEO
831	D705	5637-S2410E1A	LED, TUNER
832	D706	5637-S2410E6A	LED, CD
833	D707	5637-S2210S1	LED, TAPE2 MON
832	D708	5637-S2410E6A	LED, TAPE1/COPY
852	D712	5631-1S2473	DIODE, DET
853	D713	5635-HZ6A2L	DIODE, ZENER
854	D714	5635-HZ3B2	DIODE, ZENER

**MISCELLANEOUS**

846	CF701	5693-FC4004A4	OSC, CER
807	CN703	4443-0201140	CONNECTOR, 2 PIN
808	CN702A	4443-05401013	CONNECTOR, 13 PIN
791	CW282	4163-S5306451	CONNECTOR W/W, 6 PIN
802	CW701	4163-S0205800	CONNECTOR W/W, 5 PIN
870	RCV701	6143-00804	RECEIV UNIT, REMOTE SENSOR
818	SW702	4437-01201	SWITCH, PU-TC, AUX
818	SW704	4437-01201	SWITCH, PU-TC, VIDEO
818	SW705	4437-01201	SWITCH, PU-TC, CD
818	SW706	4437-01201	SWITCH, PU-TC, TUNER
818	SW707	4437-01201	SWITCH, PU-TC, TAPE1/COPY
818	SW708	4437-01201	SWITCH, PU-TC, TAPE2 MON

**CAPACITORS**

044A	△ C1	5352-S010M103	CAP, MTL .01U <b>BK</b>
733	C5	5345-108D0962	CAP, MINI ELE 1000U/25V
739	C281	5345-476D0962	CAP, MINI ELE 47U/25V

**RESISTORS**

747	R281	5134-470J25P	RES, CBN 1/4P 47
748	R282	5134-392J25P	RES, CBN 1/4P 3.9K
749	R283	5134-271J25P	RES, CBN 1/4P 270
750	R284	5134-473J25P	RES, CBN 1/4P 47K
747	R285	5134-470J25P	RES, CBN 1/4P 47
046A	R286	5134-102J25P	RES, CBN 1/4P 1K <b>BK</b>

**TRANSISTORS**

744	Q281	5611-A143ES	XISTOR, PNP R
042A	Q282	5613-3246(H)	XISTOR, NPN R <b>BK</b>

**DIODES**

734	△ D1	5632-S5566B	DIODE, RECT
734	△ D2	5632-S5566B	DIODE, RECT
734	△ D3	5632-S5566B	DIODE, RECT
734	△ D4	5632-S5566B	DIODE, RECT
045A	D281	5631-1S2473	DIODE, DET <b>BK</b>

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
810	△ CN1	4443-09501002	CONNECTOR, 2 PIN
803	△ CN281	4443-0201140	CONNECTOR, 2 PIN
804	CN282	4443-0601140	CONNECTOR, 6 PIN
727A	△ F1	5732-312031	FUSE, 3.15A 125V/250V <b>BK</b>
727	△ F1	5732-01601162	FUSE, T1.6A/T1.6AL 250V <b>IB</b> <b>I WB</b>
729A	△ F3	5732-01501301	FUSE, 300mA 125V/250V <b>BK</b>
729	△ F3	5732-01601311	FUSE, T315mA/T315mAL 250V <b>IB I WB</b>
728	△ HF1	4472-04901	HOLDER, FUSE
728	△ HF2	4472-04901	HOLDER, FUSE
728	△ HF3	4472-04901	HOLDER, FUSE
728	△ HF4	4472-04901	HOLDER, FUSE
814	J281	4451-52701	JACK, 1P, REMOTE IN
814	J282	4451-52701	JACK, 1P, REMOTE OUT
788	△ LCN101	4163-S5101150	CONNECTOR W/W, 1 PIN
789	△ LCN102	4163-S5201150	CONNECTOR W/W, 1 PIN
743	PH1	5624-PC817	PHOTO COUPLR
043A	△ RY1	4331-01702	RELAY, DC <b>BK</b>
041A	△ SO1	4474-02903	SOCKET, AC OUTLET <b>BK</b>

**PCB POWER I/O BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITORS</b>			
848	C710	5345-106B0961	CAP, MINI ELE 10U/10V
848	C711	5345-106B0961	CAP, MINI ELE 10U/10V

Ser. No.	Ref. No.	Part No.	Description
<b>DIODES</b>			
837	D709	5637-S2410E1A	LED, POWER
837	D710	5637-S2410E1A	LED, POWER

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
815	CN701	4443-0501141	CONNECTOR, 5 PIN
816	SW701	4437-01202	SWITCH, PU-TC, POWER

**PCB SVR I/O BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITOR</b>			
845	C708	5345-106B0961	CAP, MINI ELE 10U/10V

835	D701	5637-SLR33MC3	LED, VOLUME
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Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
786	△ CW703	4163-01525002	CONNECTOR W/W, 2 WIRE

**PCB I/O VR I/O BOARD**

Ser. No.	Ref. No.	Part No.	Description
<b>CAPACITOR</b>			
828	C751	5352-S110J104	CAP, MTL .1U

Ser. No.	Ref. No.	Part No.	Description
<b>RESISTORS</b>			
830	R501	5134-152J25P	RES, CBN 1/4P 1.5K
830	R502	5134-152J25P	RES, CBN 1/4P 1.5K

Ser. No.	Ref. No.	Part No.	Description
<b>CONTROLS</b>			
826	VR503/504	6161-00902	VR BLOCK, 30K, VOLUME

Ser. No.	Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>			
806	CN503	4443-030185	CONNECTOR, 3 PIN
797	CN704	4443-0201140	CONNECTOR, 2 PIN
781		2240-Z031	HOLDER, H503(W-502)

Ser. No. Ref. No. Part No. Description

**CHASSIS MISCELLANEOUS**

**TRANSFORMER**

723A	△ PT1	5584-T4407	XFORMER, POWER <b>BK</b>
723	△ PT1	5584-T4402	XFORMER, POWER <b>IB I WB</b>

**MISCELLANEOUS**

801	JL702	4242-S0313251	JUMPER LEAD, 13 WIRE
811A	△ PG1	4161-09401202	CORD W/PLUG AC120V/60Hz <b>BK</b>
811	△ PG1	4161-10201202	CORD W/PLUG AC230V 50Hz/60Hz <b>IB I WB</b>
917	PCB-9	4551-10034070	P.C. BOARD, PR

**PACKING PARTS LIST**

021B	1756-23601	LABEL, (CH)LABEL, CARTON BOX <b>I</b>
022A	1113-02501	OWNER CARD, REPLY CARD <b>BK</b>
023A	1116-03802	GUARANT CARD, WARRANTY <b>BK</b>
024A	1119-04502	ATTACH SHEET, SERVICE GUIDE <b>BK</b>
025A	1119-05301	ATTACH SHEET, UL SAFETY <b>BK</b>
108A	1111-1630M152	OWNER GUIDE <b>BK WB</b>
108	1111-1620M152	OWNER GUIDE <b>IB I</b>
116A	1756-03108	LABEL, (I) LABEL, CARTON BOX (x2) <b>IB I</b>
116C	1756-03101	LABEL, (W) LABEL, CARTON BOX (x2) <b>WB</b>
120	1241-R0160601	POLYETHY BAG, SET
121	1241-R0123351	POLYETHY BAG, IB
124	1221-34008	CARTON BOX
126	1222-7413	CUSHION, L
127	1222-7414	CUSHION, R
128	1223-R0420055	SOFT SHEET
909	6142-08101	REMOTE CONTROL ASSEMBLY
910	1135-00301	ACCESSRY BAT
911	4161-08201102	CORD W/PLUG RCA TYPE (x3)

**ABBREVIATIONS IN PARTS LIST**

**CAPACITORS**

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

**RESISTORS**

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

**TRANSISTORS**

XISTOR	: Transistor
FET	: Field Effect Transistor

**CONTROLS**

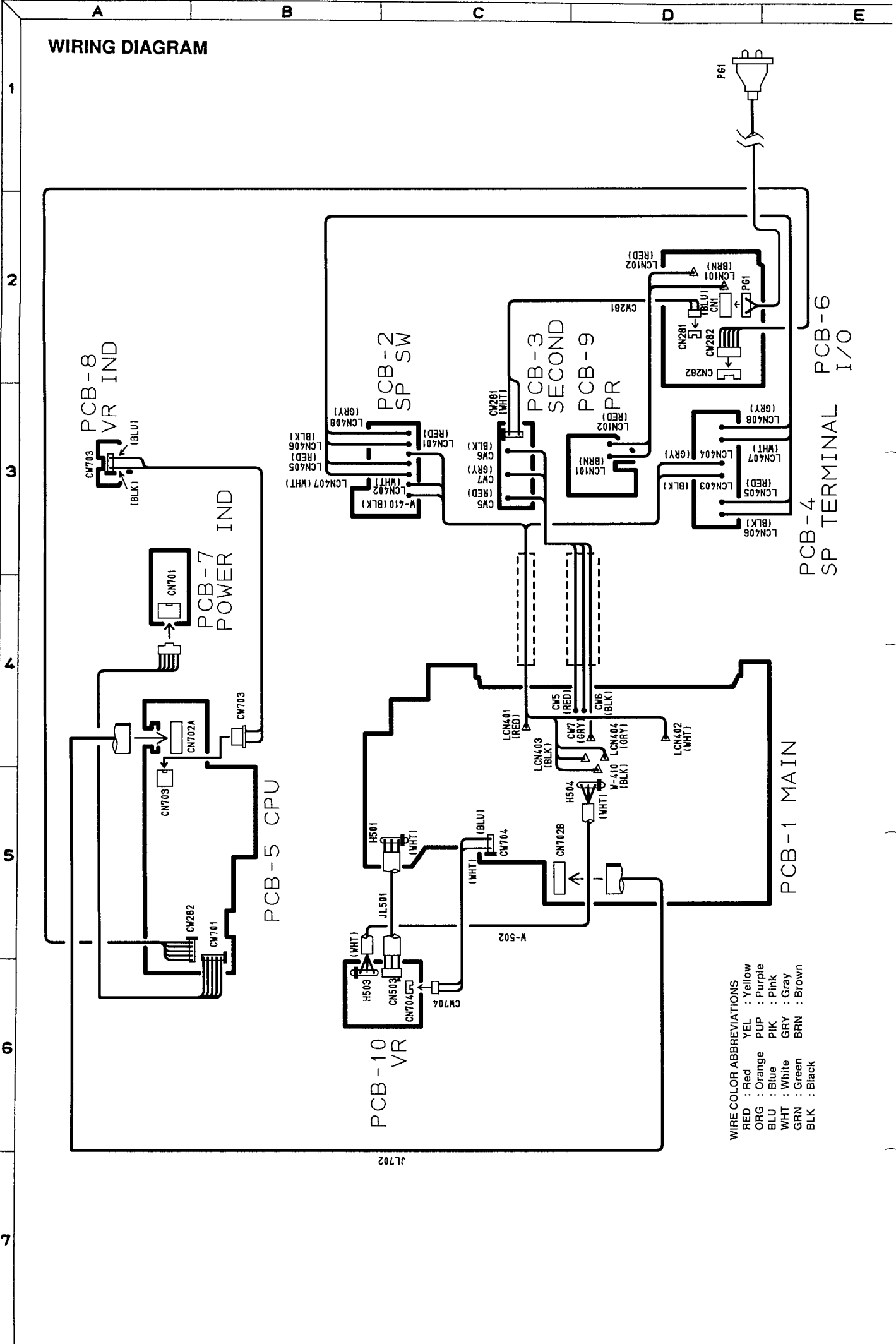
RES, V CBN	: Variable Carbon Resistor
RES, SEMI FIX	: Semi-fixed Resistor

**NOTE**



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

WIRING DIAGRAM



JL702



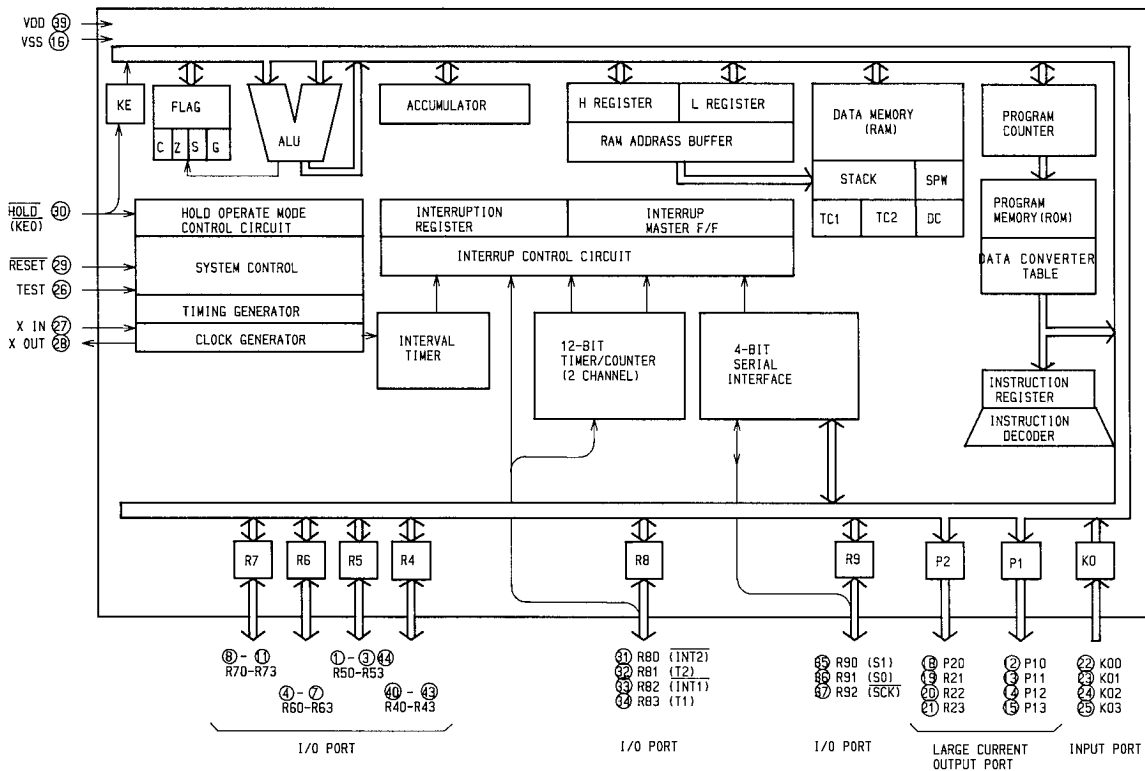
## IC TERMINAL FUNCTION

### IC701: TMP47C200BF

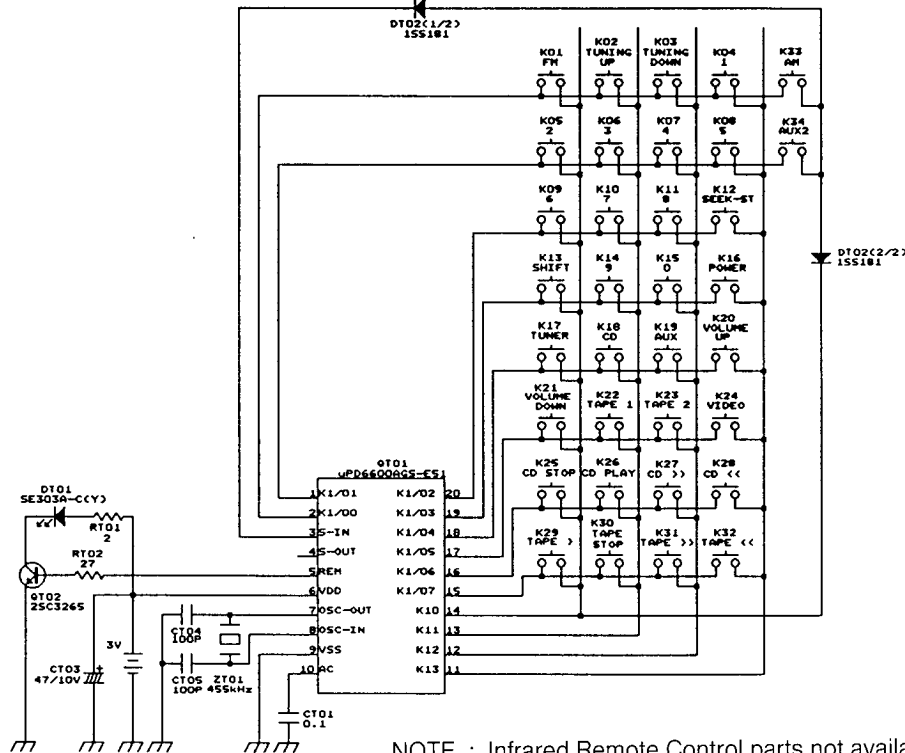
Pin No.	Pin Name	I/O	Function
1	R51	I/O	4-bit w/latch input/output port
2	R52	I/O	4-bit w/latch input/output port
3	R53	I/O	4-bit w/latch input/output port
4	R60	I/O	4-bit w/latch input/output port
5	R61	I/O	4-bit w/latch input/output port
6	R62	I/O	4-bit w/latch input/output port
7	R63	I/O	4-bit w/latch input/output port
8	R70	I/O	4-bit w/latch input/output port
9	R71	I/O	4-bit w/latch input/output port
10	R72	I/O	4-bit w/latch input/output port
11	R73	I/O	4-bit w/latch input/output port
12	P10	O	4-bit w/latch output port
13	P11	O	4-bit w/latch output port
14	P12	O	4-bit w/latch output port
15	P13	O	4-bit w/latch output port
16	VSS	I	0V (GND)
17	N.C.	-	Non connect
18	P20	O	4-bit w/latch output port
19	P21	O	4-bit w/latch output port
20	P22	O	4-bit w/latch output port
21	P23	O	4-bit w/latch output port
22	K00	I	4-bit input port
23	K01	I	4-bit input port
24	K02	I	4-bit input port
25	K03	I	4-bit input port
26	TEST	I	Test point terminal
27	XIN	I	Crystal oscillator input
28	XOUT	O	Crystal oscillator output
29	RESET	I	Reset signal input
30	HOLD(KEO)	I	Sens input
31	R80(INT2)	I/O	External interruption 2 input
32	R81(T2)	I/O	Timer/counter 2 input
33	R82(INT1)	I/O	External interruption 1 input
34	R83(T1)	I/O	4-bit w/latch input/output, timer/counter input
35	R90(SI)	I	Serial data input
36	R91(SO)	O	Serial data output
37	R92(SCK)	I/O	Serial clock input/output
38	N.C.	-	Non connect
39	VDD	I	+5V Power supply
40	R40	I/O	4-bit input/output port
41	R41	I/O	4-bit input/output port
42	R42	I/O	4-bit input/output port
43	R43	I/O	4-bit input/output port
44	R50	I/O	4-bit input/output port

IC BLOCK DIAGRAM

IC701: TMP47C200BF



INFRARED REMOTE CONTROL SCHEMATIC DIAGRAM



NOTE : Infrared Remote Control parts not available.  
Schematic diagram is supplied for reference only.

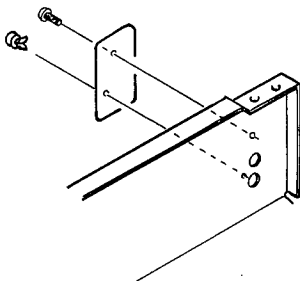
## PH600 Phono PCB Option:

When this option is installed, MM or MC turntables can be connected to the RCA jacks on the Phono PCB. To use the Phono input, the function selector switch on the front panel must be set to the AUX position. Please note that when the Phono PCB option is installed, signal wires shall not be connected to the AUX RCA connectors. Signal applied to the AUX input with the Phono option installed, will be attenuated and may be distorted. Installation of Optional Phono PCB (PH600):

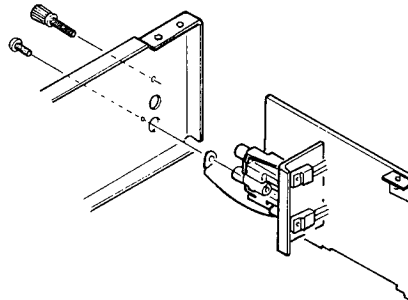
(Please re-print the information from information sheet you already prepared.)

### HOW TO INSTALL

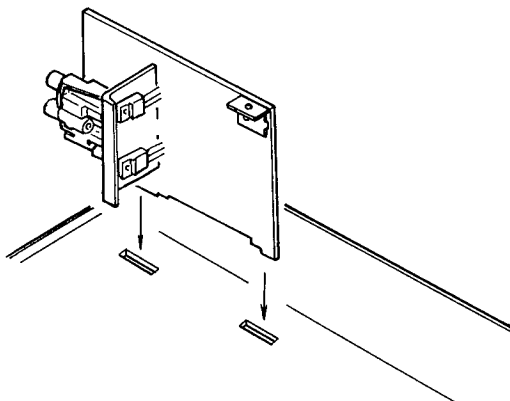
- ① Remove 6 screws and then remove the Top Cover.
- ② Remove a screw and a rivet and then remove the plate.



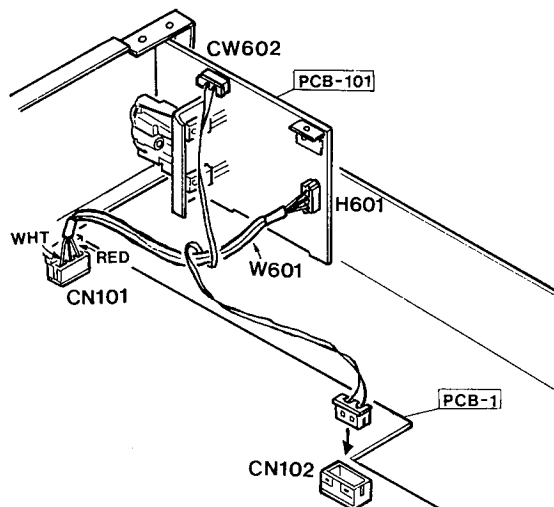
- ④ Secure the screw removed from the plate and the ground terminal screw (included).



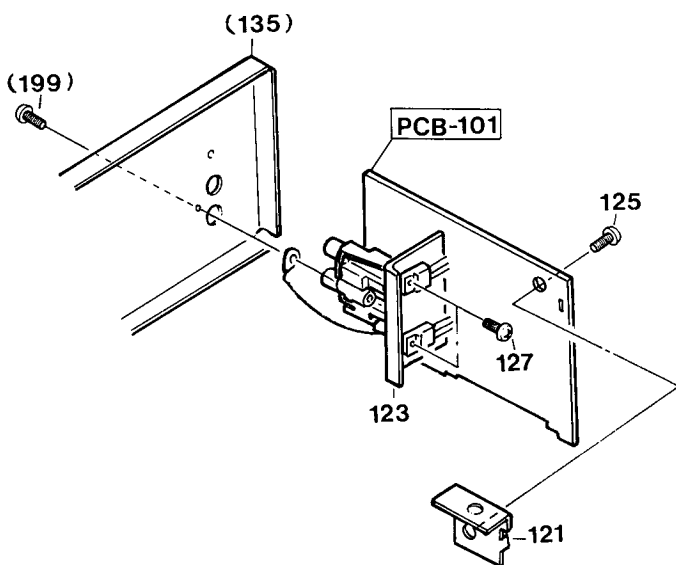
- ③ Insert PH600 into two slots of the bottom.



- ⑤ Connect the 2 cables precisely as shown in the illustration.



### GENERAL UNIT



### GENERAL UNIT PARTS LIST

Ser. No.	Ref. No.	Part No.	Description
121	2219-8350		METAL FITTING
123	2222-7179		HEAT SINK
125	2347-R0130062		SCREW, BND T+ (3×6 mm)
127	2347-R0130082		SCREW, BND T+ (3×8 mm) (×2)

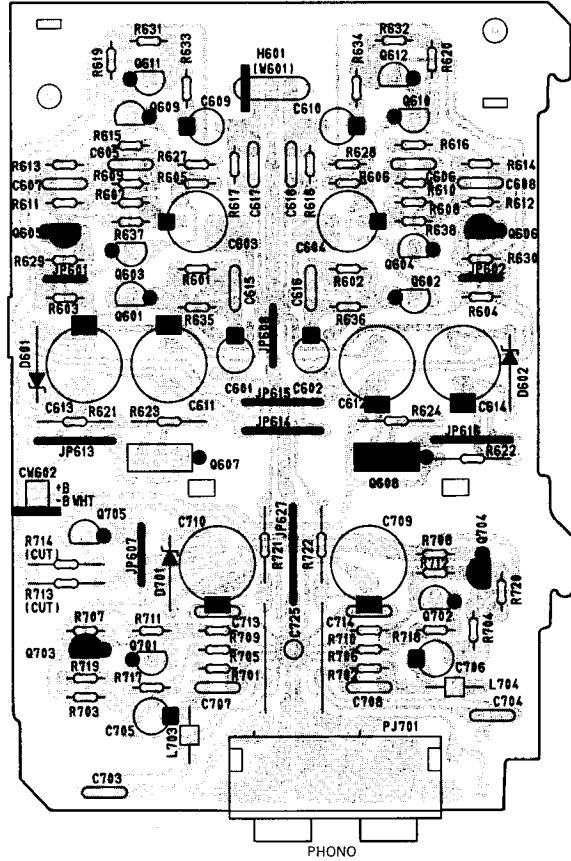
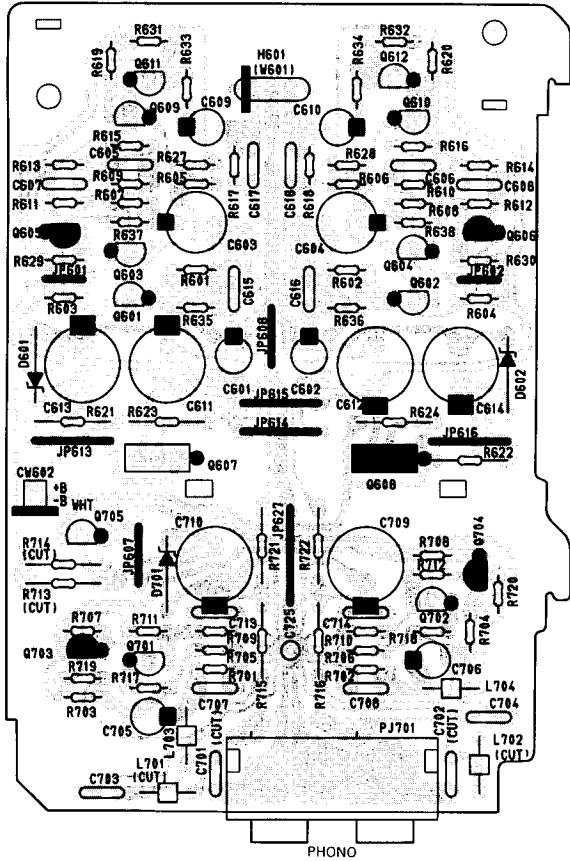
### P.C. BOARD

The PH600 is set at the factory as a high gain MC EQ amplifier. It can easily be converted to a MM EQ amplifier by making these changes:

1. Remove L701 and L702 (bare wires with ferrite beads),
2. Remove C701 and C702 (0.022 $\mu$ F capacitors, marked 223J),
3. Remove R715 and R716 (1k $\Omega$  resistors), and
4. Add 2 jumper wires (JP) along the dotted lines on the circuit board (near the location of R715 and R716).

PCB-101 **MC VERSION** (Factory setting)

PCB-101 **MM VERSION**



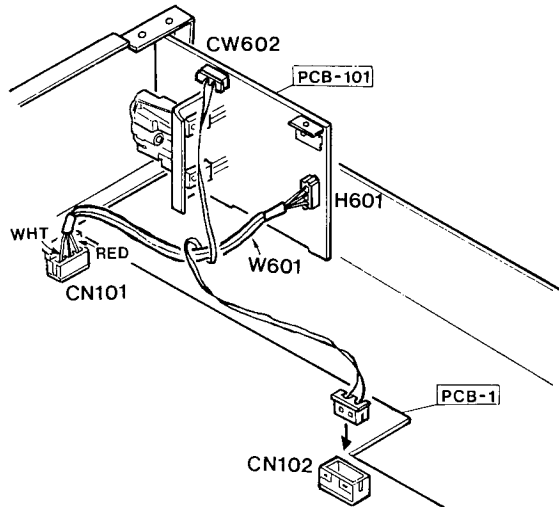
L701, L702 → Delete

C701, C702 → Delete

R715, R716 → Delete

Add 2 jumper wires (JP) along dotted lines

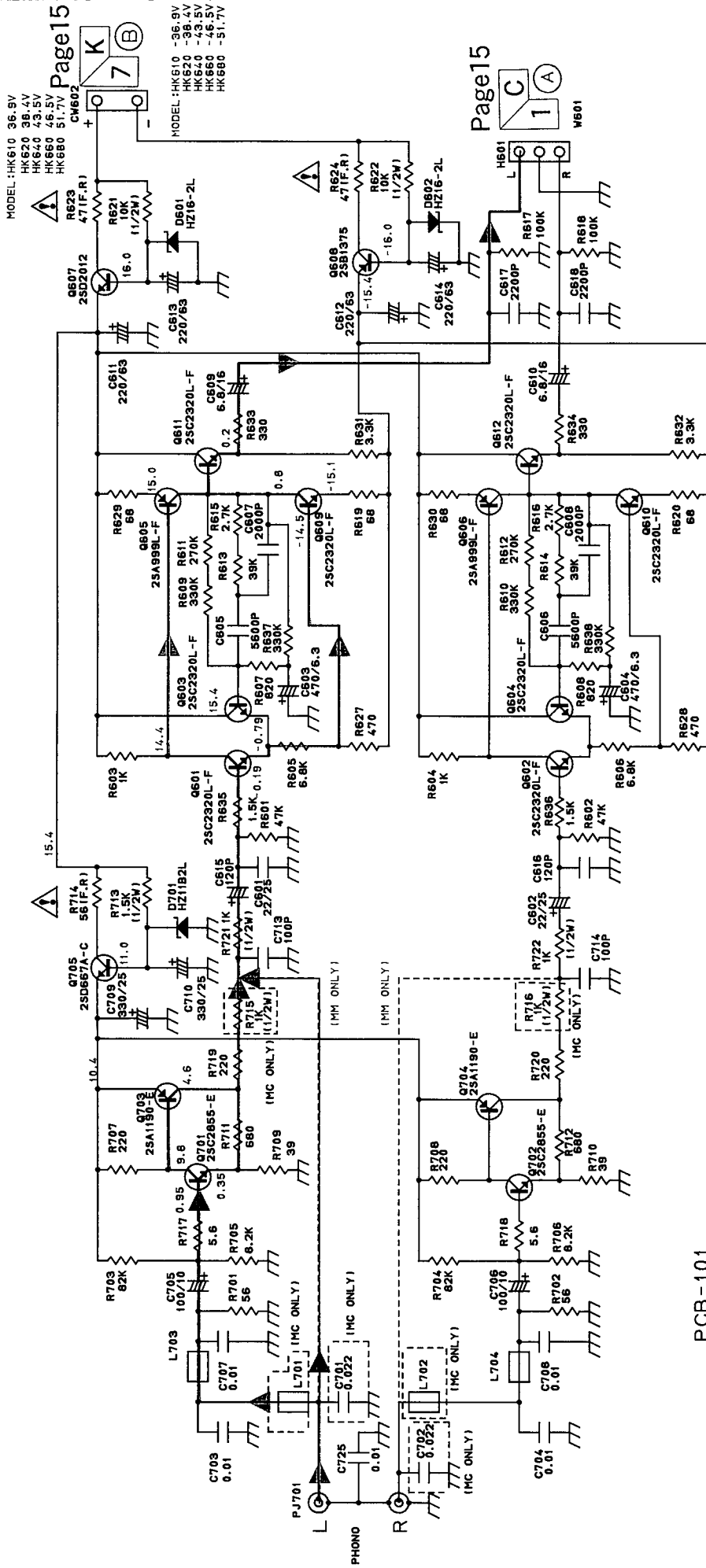
### WIRING DIAGRAM



SCHEMATIC DIAGRAM

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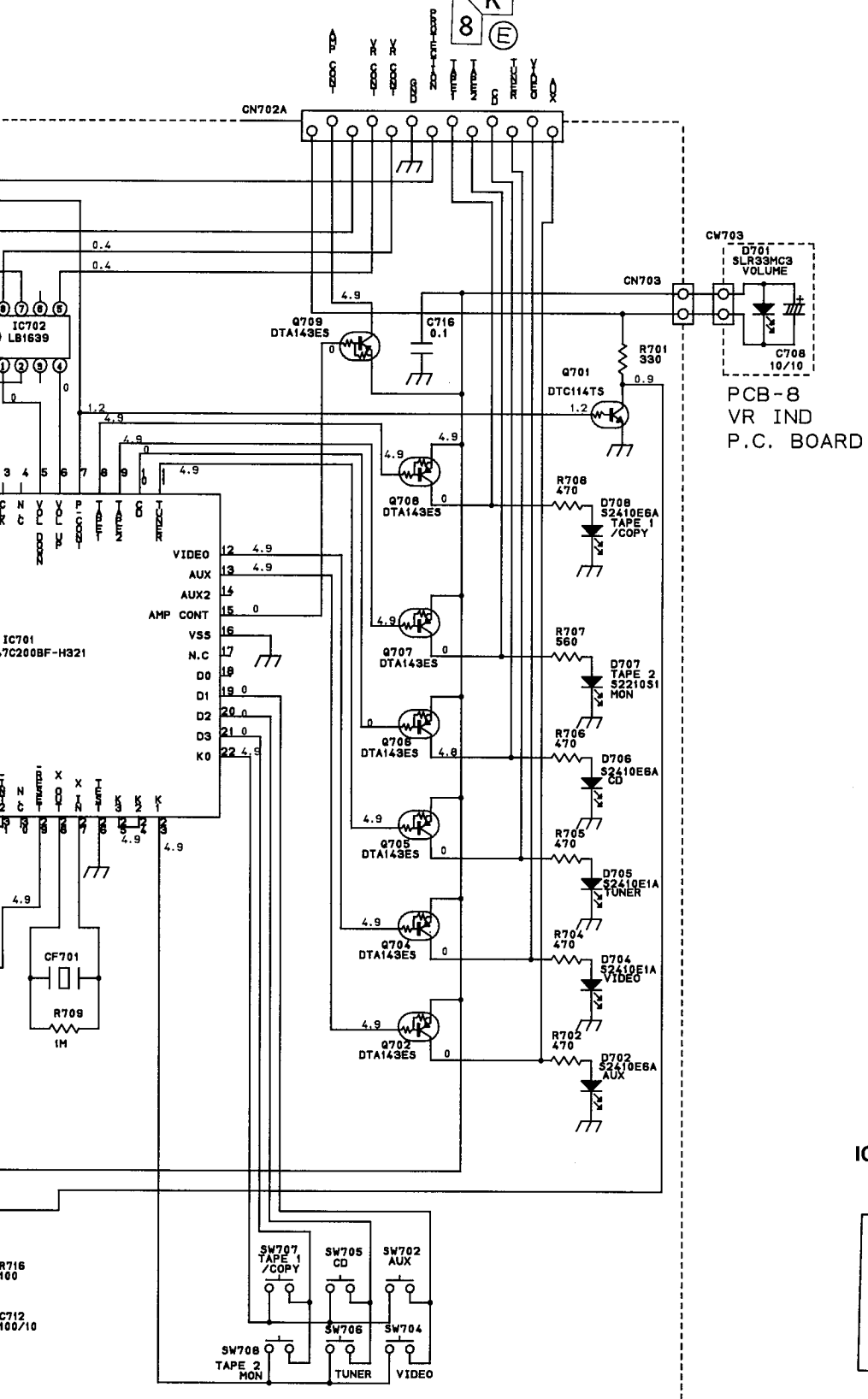
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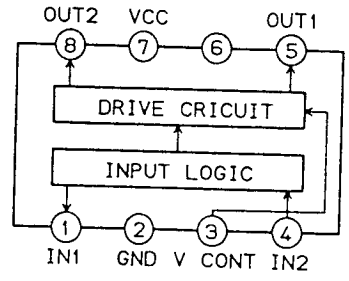
PCB-101  
PHONO P.C. BOARD

## ELECTRICAL PARTS LIST

Ser. No.	Ref. No.	Part No.	Description	Ser. No.	Ref. No.	Part No.	Description
<b>PCB-101 PHONO P.C. BOARD</b>							
<b>CAPACITORS</b>							
400	C601	5345-S29DM226	CAP, MINI ELE 22U/25V	417	R638	5178-334381	RES, MTL 1/6P 330K
400	C602	5345-S29DM226	CAP, MINI ELE 22U/25V	450	R701	5130-R010J560	RES, CBN 1/6P 56
401	C603	5345-S29AD477	CAP, MINI ELE 470U/6.3V	450	R702	5130-R010J560	RES, CBN 1/6P 56
401	C604	5345-S29AD477	CAP, MINI ELE 470U/6.3V	456	R703	5130-R010J823	RES, CBN 1/6P 82K
402	C605	5359-5625851	CAP, PPP 5600P	456	R704	5130-R010J823	RES, CBN 1/6P 82K
402	C606	5359-5625851	CAP, PPP 5600P	451	R705	5130-R010J822	RES, CBN 1/6P 8.2K
403	C607	5359-2025851	CAP, PPP 2000P	451	R706	5130-R010J822	RES, CBN 1/6P 8.2K
403	C608	5359-2025851	CAP, PPP 2000P	458	R707	5130-R010J221	RES, CBN 1/6P 220
404	C609	5345-685C0951	CAP, MINI ELE 6.8U/16V	458	R708	5130-R010J221	RES, CBN 1/6P 220
404	C610	5345-685C0951	CAP, MINI ELE 6.8U/16V	452	R709	5178-390381	RES, MTL 1/6P 39
405	C611	5345-S25GM227	CAP, MINI ELE 220U/63V	452	R710	5178-390381	RES, MTL 1/6P 39
405	C612	5345-S25GM227	CAP, MINI ELE 220U/63V	453	R711	5178-681381	RES, MTL 1/6P 680
405	C613	5345-S25GM227	CAP, MINI ELE 220U/63V	453	R712	5178-681381	RES, MTL 1/6P 680
405	C614	5345-S25GM227	CAP, MINI ELE 220U/63V	454	R713	5130-R030J152	RES, CBN 1/2P 1.5K
406	C615	5359-1215851	CAP, PPP 120P	457	△ R714	5102-5604713	RES, FUSE 56
406	C616	5359-1215851	CAP, PPP 120P	459	R715	5130-R030J102	RES, CBN 1/2P 1K
430	C617	5359-2225851	CAP, PPP 2200P	459	R716	5130-R030J102	RES, CBN 1/2P 1K
430	C618	5359-2225851	CAP, PPP 2200P	440	R717	5130-R010J5R6	RES, CBN 1/6P 5.6
441	C701	5359-S010J223	CAP, PPP .022U	440	R718	5130-R010J5R6	RES, CBN 1/6P 5.6
441	C702	5359-S010J223	CAP, PPP .022U	458	R719	5130-R010J221	RES, CBN 1/6P 220
442	C703	5359-S010J103	CAP, PPP .01U	458	R720	5130-R010J221	RES, CBN 1/6P 220
442	C704	5359-S010J103	CAP, PPP .01U	459	R721	5130-R030J102	RES, CBN 1/2P 1K
443	C705	5345-S29BM107	CAP, MINI ELE 100U/10V	459	R722	5130-R030J102	RES, CBN 1/2P 1K
443	C706	5345-S29BM107	CAP, MINI ELE 100U/10V	<b>TRANSISTORS</b>			
442	C707	5359-S010J103	CAP, PPP .01U	409	Q601	5613-2320L(F)	XISTOR, NPN R
442	C708	5359-S010J103	CAP, PPP .01U	409	Q602	5613-2320L(F)	XISTOR, NPN R
444	C709	5345-S25DM337	CAP, MINI ELE 330U/25V	409	Q603	5613-2320L(F)	XISTOR, NPN R
444	C710	5345-S25DM337	CAP, MINI ELE 330U/25V	409	Q604	5613-2320L(F)	XISTOR, NPN R
438	C713	5359-S010K101	CAP, PPP 100P	410	Q605	5611-999L(F)	XISTOR, PNP R
438	C714	5359-S010K101	CAP, PPP 100P	410	Q606	5611-999L(F)	XISTOR, PNP R
439	C725	5359-S010J103	CAP, PPP .01U	411	Q607	5614-2012	XISTOR, NPN A
<b>RESISTORS</b>							
413	R601	5130-R010J473	RES, CBN 1/6P 47K	412	Q608	5612-1375	XISTOR, PNP A
413	R602	5130-R010J473	RES, CBN 1/6P 47K	426	Q609	5613-2320L(F)	XISTOR, NPN R
414	R603	5130-R010J102	RES, CBN 1/6P 1K	426	Q610	5613-2320L(F)	XISTOR, NPN R
414	R604	5130-R010J102	RES, CBN 1/6P 1K	426	Q611	5613-2320L(F)	XISTOR, NPN R
415	R605	5130-R010J682	RES, CBN 1/6P 6.8K	426	Q612	5613-2320L(F)	XISTOR, NPN R
415	R606	5130-R010J682	RES, CBN 1/6P 6.8K	447	Q701	5613-2855(E)	XISTOR, NPN R
416	R607	5178-821381	RES, MTL 1/6P 820	447	Q702	5613-2855(E)	XISTOR, NPN R
416	R608	5178-821381	RES, MTL 1/6P 820	448	Q703	5611-1190(E)	XISTOR, PNP R
417	R609	5178-334381	RES, MTL 1/6P 330K	448	Q704	5611-1190(E)	XISTOR, PNP R
417	R610	5178-334381	RES, MTL 1/6P 330K	449	Q705	5614-667A(C)	XISTOR, NPN A
418	R611	5178-274381	RES, MTL 1/6P 270K	<b>DIODES</b>			
418	R612	5178-274381	RES, MTL 1/6P 270K	408	D601	5635-HZ16-2L	DIODE, ZENER
419	R613	5178-393381	RES, MTL 1/6P 39K	408	D602	5635-HZ16-2L	DIODE, ZENER
419	R614	5178-393381	RES, MTL 1/6P 39K	445	D701	5635-HZ11B2L	DIODE, ZENER
420	R615	5178-272381	RES, MTL 1/6P 2.7K	<b>MISCELLANEOUS</b>			
420	R616	5178-272381	RES, MTL 1/6P 2.7K	407	CW602	4163-S0202201	CONNECTOR W/W, 2 PIN
421	R617	5130-R010J104	RES, CBN 1/6P 100K	446	PJ701	4489-04006002	PIN JACK, MLT, PHONO
421	R618	5130-R010J104	RES, CBN 1/6P 100K	455	L701	5597-3	CORE, BEADS
428	R619	5130-R010J680	RES, CBN 1/6P 68	455	L702	5597-3	CORE, BEADS
428	R620	5130-R010J680	RES, CBN 1/6P 68	455	L703	5597-3	CORE, BEADS
422	R621	5130-R030J103	RES, CBN 1/2P 10K	455	L704	5597-3	CORE, BEADS
422	R622	5130-R030J103	RES, CBN 1/2P 10K	431	W601	4142-00151241	SHLD WIRE, 2C
423	△ R623	5102-4705116	RES, FUSE 47	437		4211-4	LUG, C725
423	△ R624	5102-4705116	RES, FUSE 47	432		2240-Z031	HOLDER, H601(W601)
429	R627	5130-R010J471	RES, CBN 1/6P 470	<b>CHASSIS MISCELLANEOUS</b>			
429	R628	5130-R010J471	RES, CBN 1/6P 470	<b>MISCELLANEOUS</b>			
428	R629	5130-R010J680	RES, CBN 1/6P 68	460		4214-168	TERMINAL, GND
428	R630	5130-R010J680	RES, CBN 1/6P 68	<b>PACKING UNIT PARTS LIST</b>			
427	R631	5130-R010J332	RES, CBN 1/6P 3.3K	<b>MISCELLANEOUS</b>			
427	R632	5130-R010J332	RES, CBN 1/6P 3.3K	107		1111-1780J152	OWNER GUIDE
424	R633	5130-R010J331	RES, CBN 1/6P 330	109		1231-00401	GIFT BOX
424	R634	5130-R010J331	RES, CBN 1/6P 330	113		1241-00501	POLYETHY BAG, SET
433	R635	5130-R010J152	RES, CBN 1/6P 1.5K	115		1756-00307	LABEL, OPTIONAL PHONO BOARD
433	R636	5130-R010J152	RES, CBN 1/6P 1.5K				
417	R637	5178-334381	RES, MTL 1/6P 330K				



IC702: LB1639 Volume Motor Driver



A B C D E

SCHEMATIC DIAGRAM (1)

1

2

3

4

5

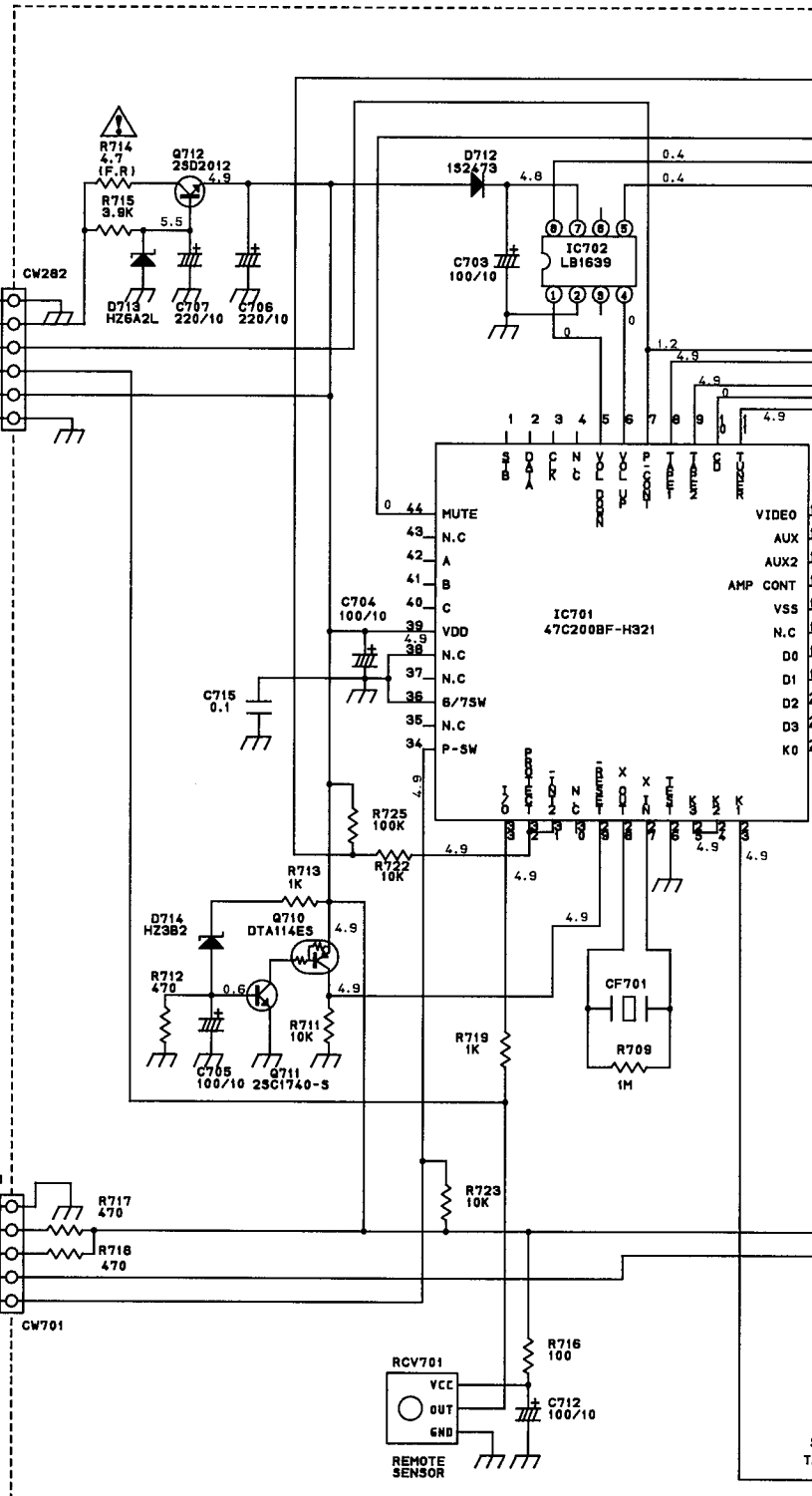
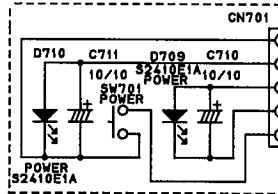
6

7

PCB-5 CPU P.C. BOARD

Page 15  
M  
6  
C

PCB-7  
POWER IND  
P.C. BOARD





# SCHEMATIC DIAGRAM(2)

A B C D E F G

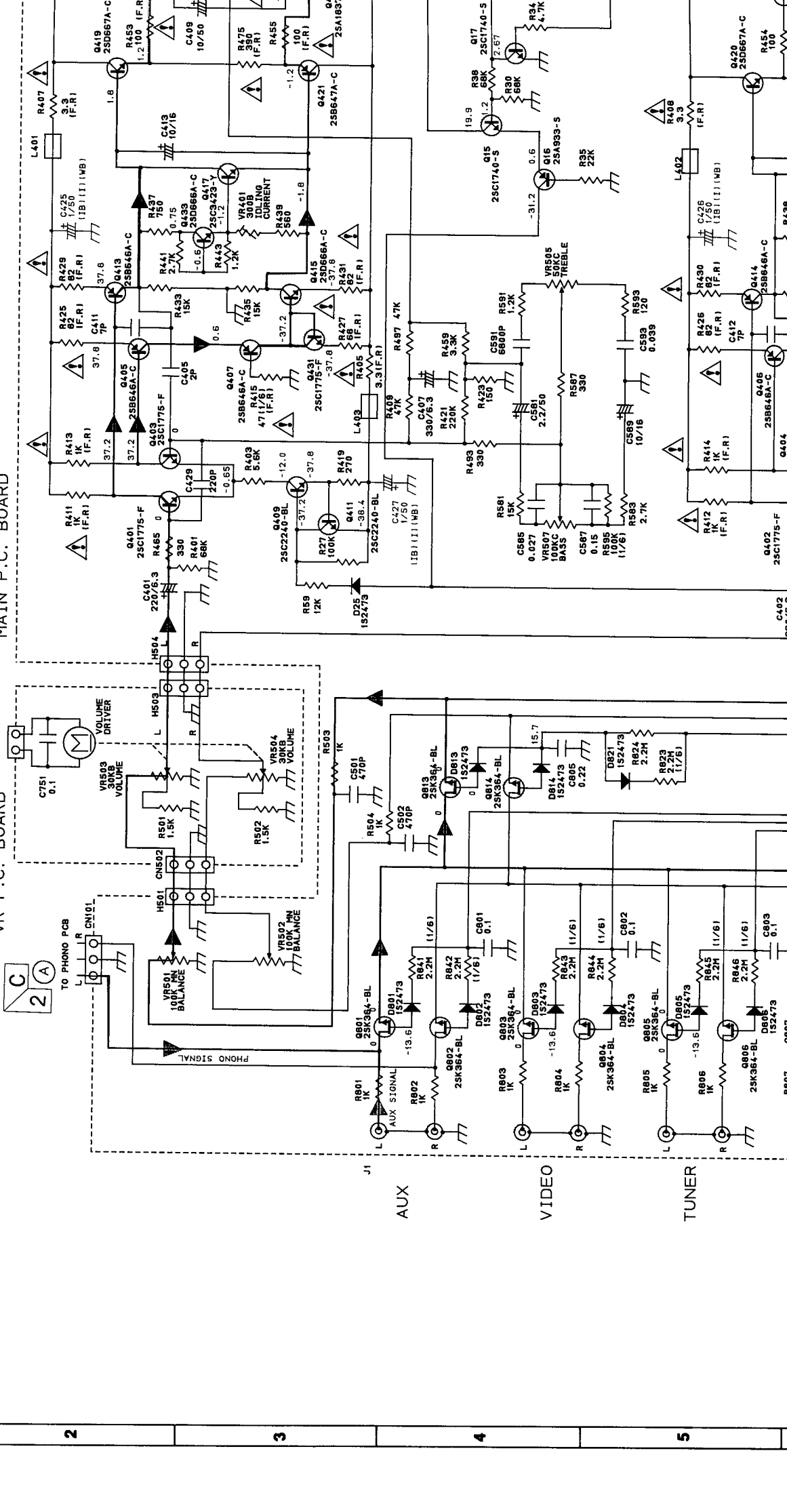
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Page 15

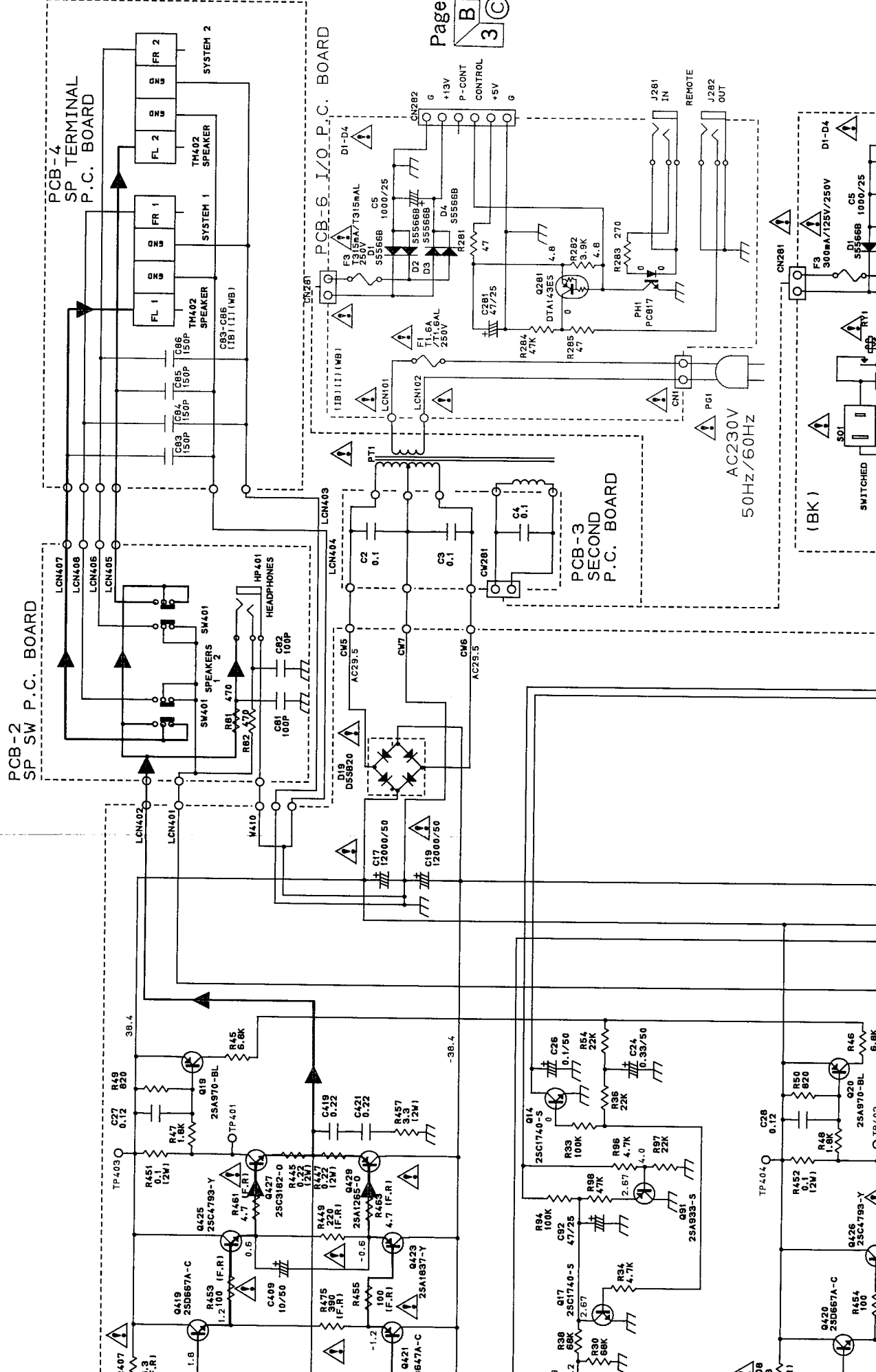
Page 19 PCB-10

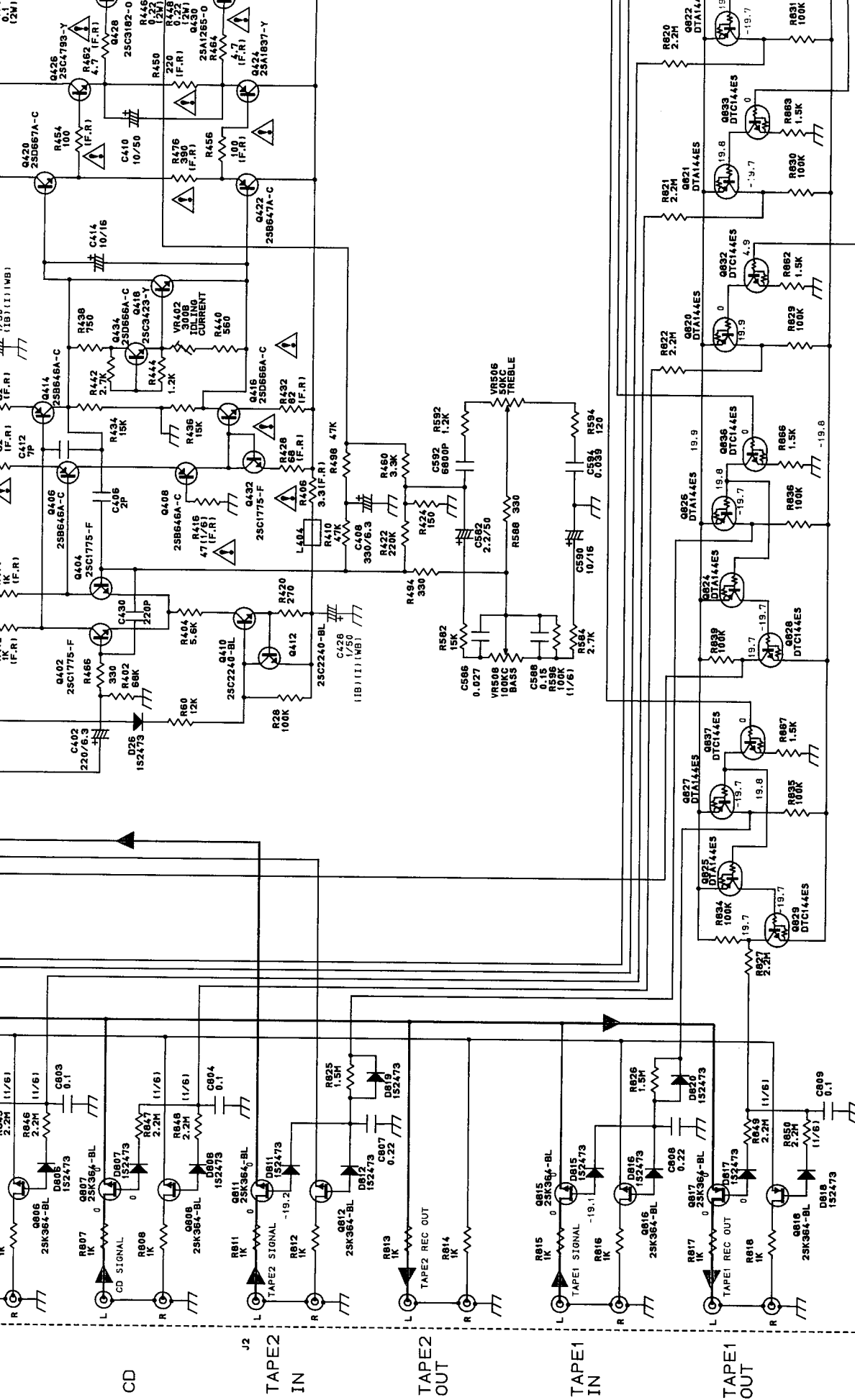
PCB-1 MAIN P.C. BOARD

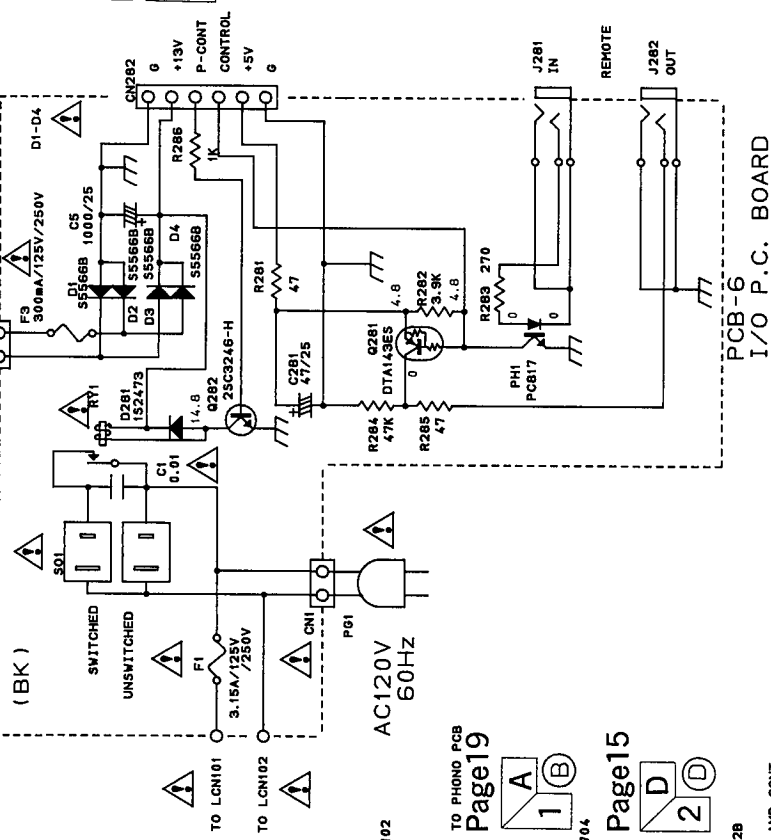
VR PCB-10 VR P.C. BOARD



G H I J K L M N

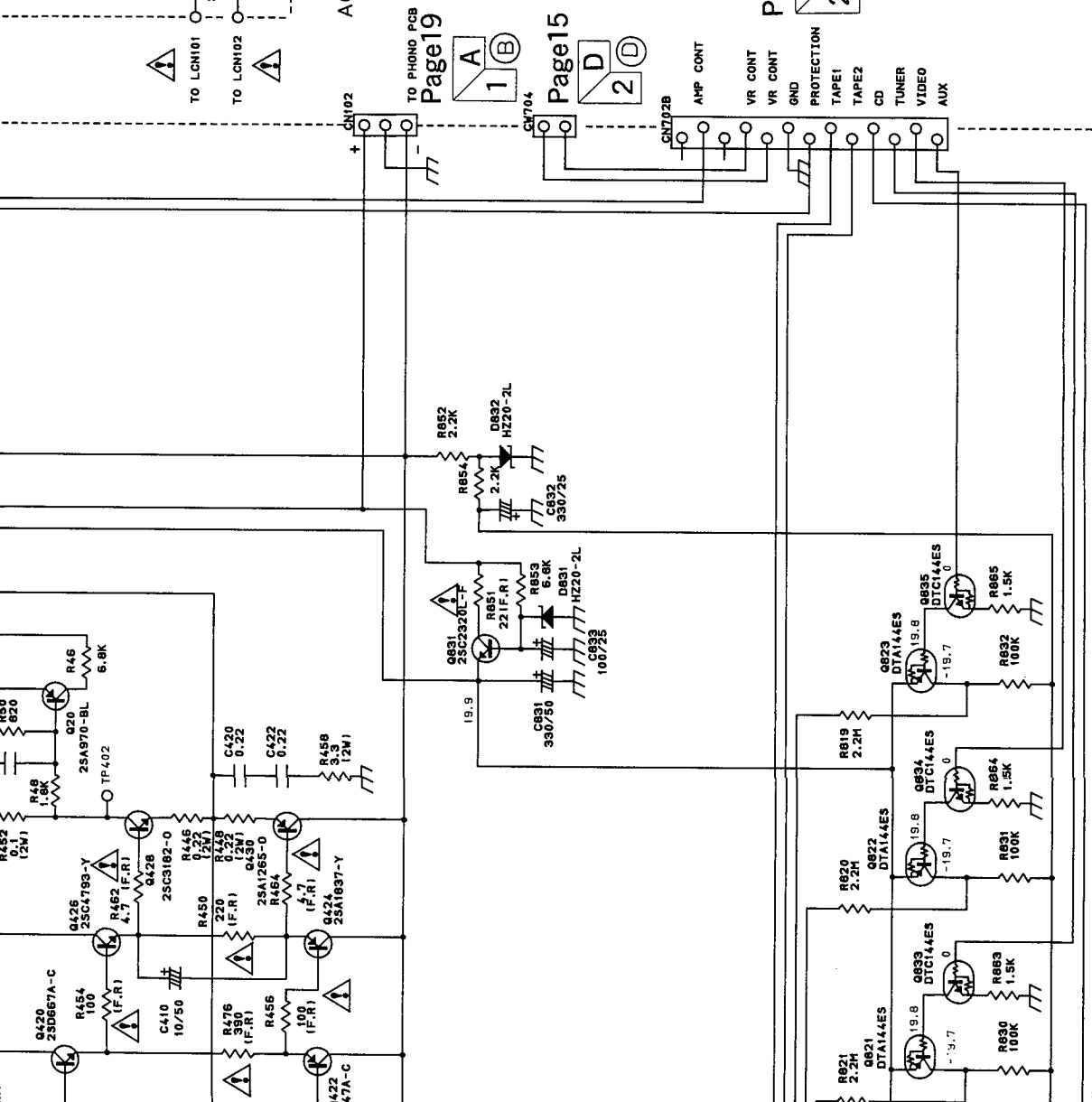






NOTE

1. ALL RESISTANCES VALUES ARE IN ohm Kohm=1000ohm.Mohm=1000Kohm.
2. THE WATTAGE OF RESISTORS IS 1/4W UNLESS OTHERWISE NOTED.
3. ALL CAPACITANCES VALUES ARE IN uF UNLESS OTHERWISE NOTED. P=uuF.
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.



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