

Service Manual

PIONEER®
The Art of Entertainment

GM-X1024/X1R/UC



ORDER NO.
CRT2191

BRIDGEABLE FOUR-CHANNEL POWER AMPLIFIER

GM-X1024 X1R/UC

GM-X924 X1R/UC,EW,ES

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K-FED. MAR. 1998 Printed in Japan

1. SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health and Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING

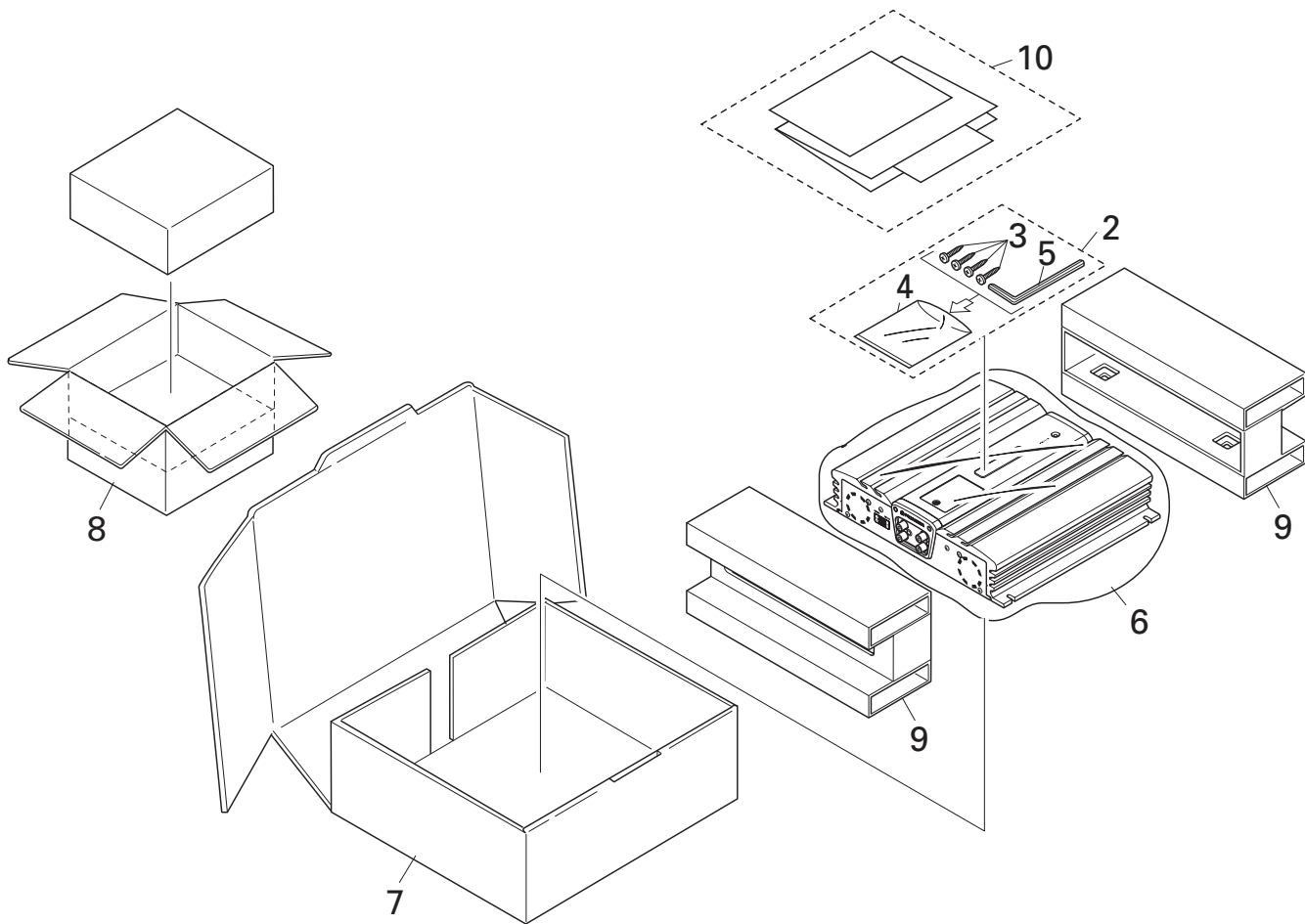


Fig. 1

NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

(1) PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
	1 *****		6	Polyethylene Bag	HEG0013
*	2 Screw Assy	HEA0044	7	Carton	See Contrast table (2)
	3 Screw	BYC40P180FZK	8	Contain Box	See Contrast table (2)
	4 Polyethylene Bag	HEG0011	9	Protector	HHP0025
	5 Wrench	HLP0001	10-1	Owner's Manual	See Contrast table (2)
			*	10-2 Card	See Contrast table (2)
			*	10-3 Warranty Card	See Contrast table (2)
			10-4	Owner's Manual	See Contrast table (2)

(2) CONTRAST TABLE

GM-X1024/X1R/UC, GM-X924/X1R/UC, GM-X924/X1R/EW and GM-X924/X1R/ES are constructed the same except for the following:

Mark No.	Symbol and Description	Part No.			
		GM-X1024	GM-X924		
		X1R/UC	X1R/UC	X1R/EW	X1R/ES
7	Carton	HHG0154	HHG0155	HHG0158	HHG0157
8	Contain Box	HHL0154	HHL0155	HHL0158	HHL0157
10-1	Owner's Manual	HRD0056	HRD0057	HRD0059	HRD0058
*	10-2 Card	Not used	ARY1048	Not used	Not used
*	10-3 Warranty Card	HRY1070	Not used	HRY1087	Not used
10-4	Owner's Manual	Not used	Not used	Not used	HRD0068

● Owner's Manual

Model	Part No.	Language
GM-X1024/X1R/UC	HRD0056	English, French
GM-X924/X1R/UC	HRD0057	English, French
GM-X924/X1R/EW	HRD0059	English, French, German, Dutch, Spanish, Italian
GM-X924/X1R/ES	HRD0058	English, Spanish
	HRD0068	Arabic, Portuguese (B)

2.2 EXTERIOR

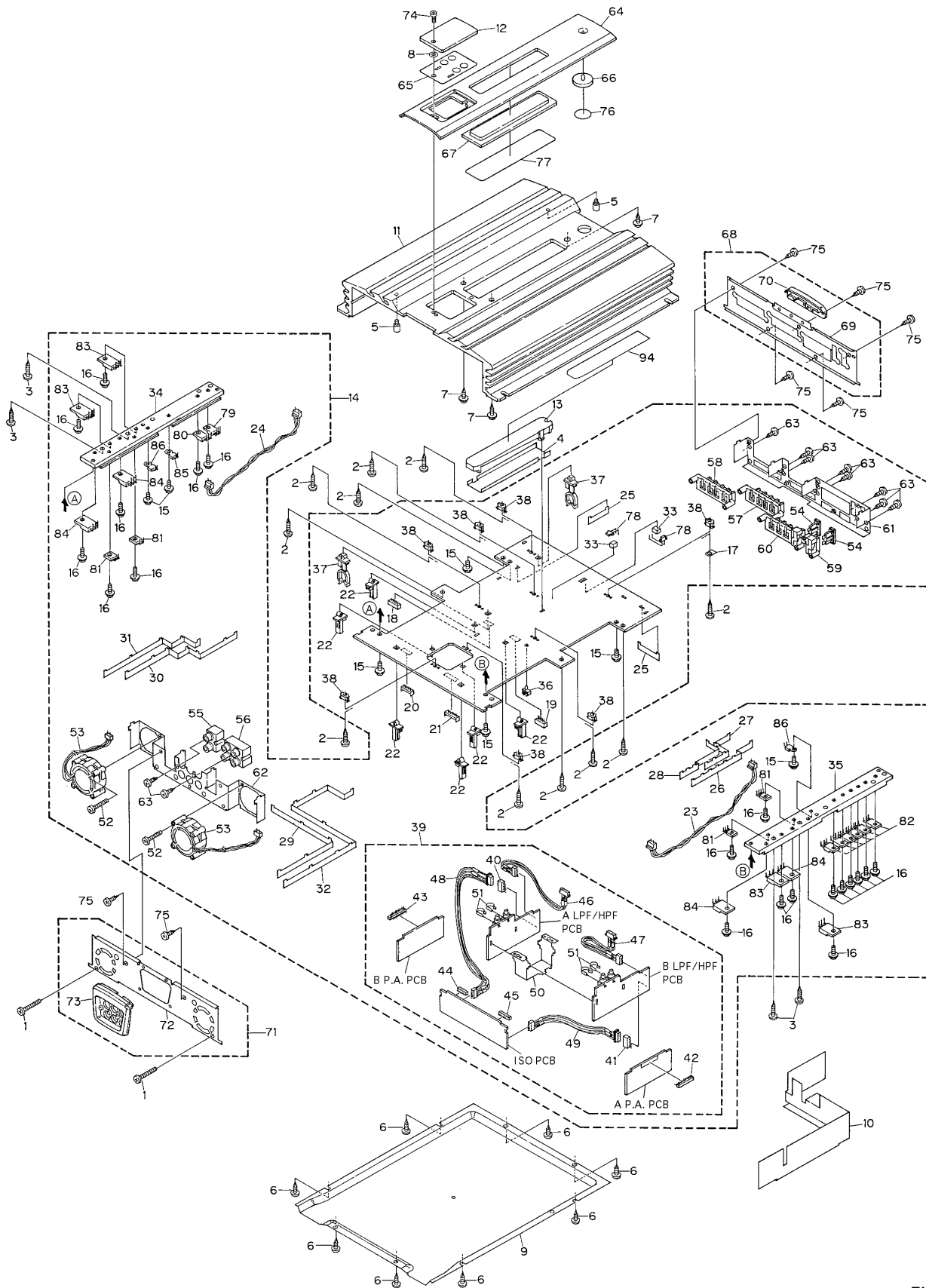


Fig. 2

(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw(M3×25)	HBA0013	46	Cord(CN502)	HDE5501
2	Screw(M3×12)	CBA1323	47	Cord(CN552)	HDE5501
3	Screw(M3×14)	CBA1382	48	Cord(CN854)	HDE5501
4	Sheet	CNM5852	49	Cord(CN855)	HDE5501
5	Screw(M3×5)	HBA0006	50	Holder	HNC0029
6	Screw(M3×8)	HBA0011	51	Clip	HNC0054
7	Screw(M2.6×6)	HBA0012	52	Screw(M3×25)	HBA0013
8	Washer	HBFB0005	53	Fan Motor	CXM1102
9	Case	HNB0036	54	Fuse	HEK0030
10	Separator	HNM0046	55	Pin Jack(CN801)	HKB0002
11	Heat Sink	See Contrast table (2)	56	Pin Jack(CN851)	HKB0004
12	Window	HNS0053	57	Terminal(CN101)	HKE0010
13	Lighting Conductor	HNV0012	58	Terminal(CN301)	HKE0010
14	Amp Unit	See Contrast table (2)	59	Fuse Holder(CN902)	HKE0012
15	Screw	BMS30P060FZK	60	Terminal(CN901)	HKE0014
16	Screw	BMS30P080FMC	61	Holder	HNC0027
17	Terminal(CN905)	CKF1059	62	Holder	HNC0028
18	Plug(CN503)	CKS1039	63	Screw	PPZ30P060FZK
19	Plug(CN553)	CKS1039	64	Plate Unit	See Contrast table (2)
20	Connector(CN853)	CKS3813	65	Sheet Unit	See Contrast table (2)
21	Connector(CN852)	CKS3814	66	Light Pipe Unit	HXA0201
22	Holder	CNV4017	67	Plate Unit	See Contrast table (2)
23	Cord(CN104)	HDE5500	68	Panel Unit	See Contrast table (2)
24	Cord(CN304)	HDE5500	69	Panel	See Contrast table (2)
25	Bass Bar	HNC0043	70	Plate	See Contrast table (2)
26	Bass Bar	HNC0044	71	Panel Unit	See Contrast table (2)
27	Bass Bar	HNC0046	72	Front Panel	See Contrast table (2)
28	Bass Bar	HNC0047	73	Plate	See Contrast table (2)
29	Bass Bar	HNC0049	74	Screw	SMZ30H080FCR
30	Bass Bar	HNC0050	75	Screw	BSZ30P050FZK
31	Bass Bar	HNC0052	76	Film	See Contrast table (2)
32	Bass Bar	HNC0055	77	Film	See Contrast table (2)
33	Spacer	HNM0053	78	LED(D903,904)	NSPWF50S(AQ)
34	Heat Sink	HNR0079	79	Diode(D961)	FML22R
35	Heat Sink	HNR0080	80	Diode(D962)	FML22S
36	Clamper	HNV0003	81	Transistor(Q112,212,312,412)	2SC1568
37	Clamper	HNV0015	82	FET(Q963-968)	IRFIZ44N
38	Spacer	HNV3975	83	Transistor(Q115,215,315,415)	2SC5101
39	Network Unit	See Contrast table (2)	84	Transistor(Q116,216,316,416)	2SA1919
40	Plug(CN501)	CKS1039	85	Thermistor(TH901)	CCX1027
41	Plug(CN551)	CKS1039	86	Thermistor(TH902,903)	CCX1035
42	Plug(CN102)	CKS1621	87-93	
43	Plug(CN302)	CKS1621	94	Sheet	CNM5950
44	Connector(CN857)	CKS3815			
45	Connector(CN856)	CKS3816			

GM-X1024,GM-X924

(2) CONTRAST TABLE

GM-X1024/X1R/UC, GM-X924/X1R/UC, GM-X924/X1R/EW and GM-X924/X1R/ES are constructed the same except for the following:

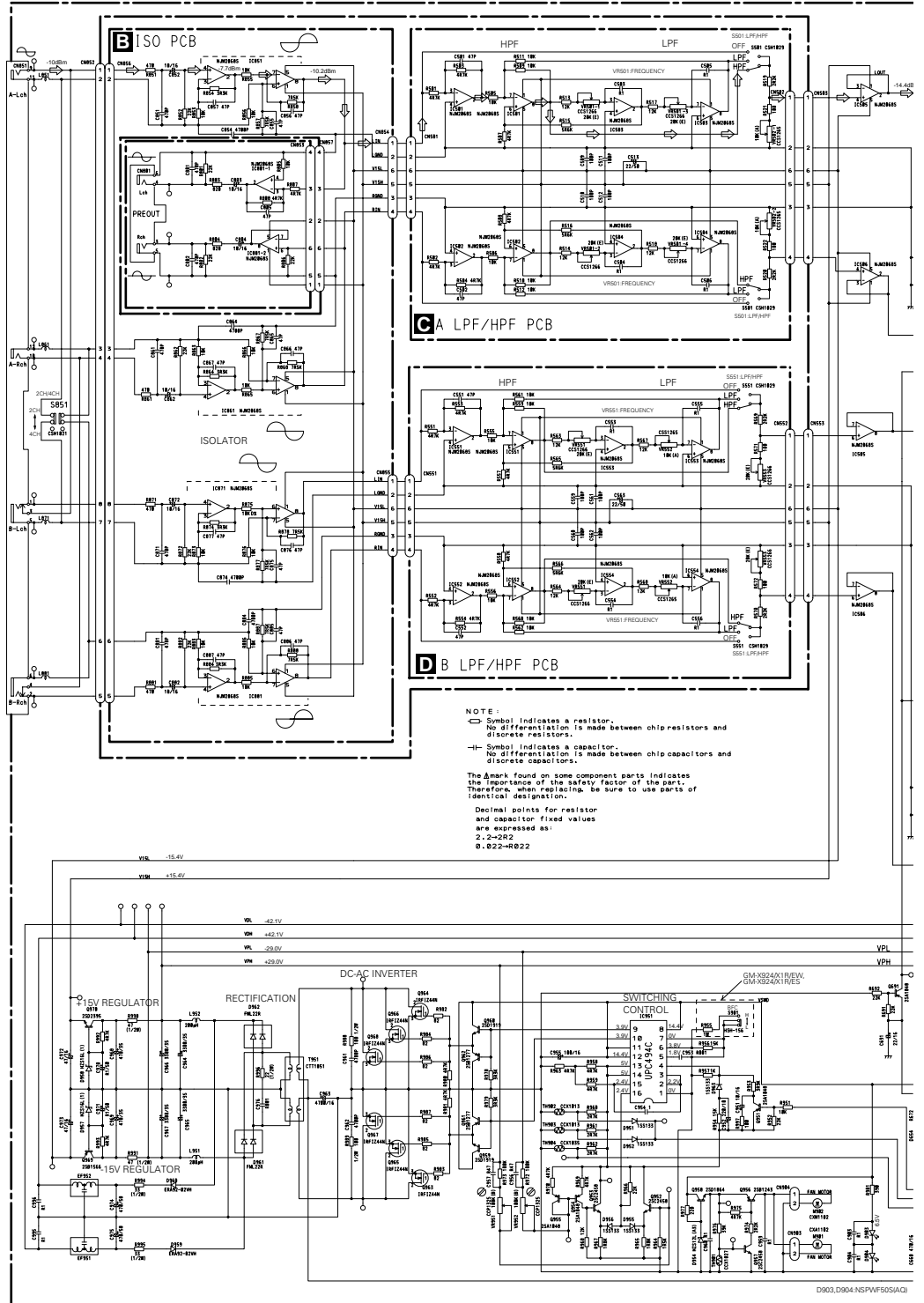
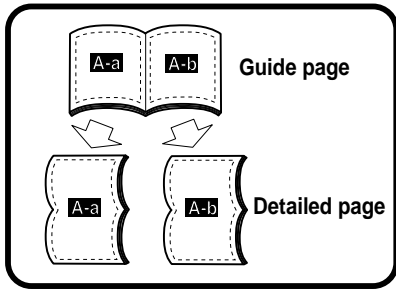
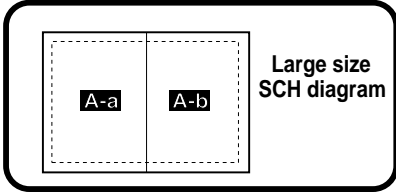
Mark	No.	Symbol and Description	Part No.			
			GM-X1024	GM-X924		
			X1R/UC	X1R/UC	X1R/EW	X1R/ES
	11	Heat Sink	HNR0073	HNR0093	HNR0093	HNR0093
	14	Amp Unit	HWH0066	HWH0067	HWH0064	HWH0065
	39	Network Unit	HWG0008	HWG0009	HWG0006	HWG0007
	64	Plate Unit	HXA0262	HXA0112	HXA0112	HXA0112
	65	Sheet Unit	HXA0264	HXA0116	HXA0116	HXA0116
	67	Plate Unit	HXA0205	HXA0202	HXA0202	HXA0202
	68	Panel Unit	HXA0249	HXA0244	HXA0244	HXA0244
	69	Panel	* HNB0064	HNB0038	HNB0038	HNB0038
	70	Plate	* HNS0064	HNS0039	HNS0039	HNS0039
	71	Panel Unit	HXA0251	HXA0247	HXA0247	HXA0247
	72	Panel	* HNB0066	HNB0043	HNB0043	HNB0043
	73	Plate	* HNS0065	HNS0046	HNS0046	HNS0046
	76	Film	CNM5856	CNM5949	CNM5949	CNM5949
	77	Film	CNM5853	CNM5948	CNM5948	CNM5948

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A-a



A B C D

A-b

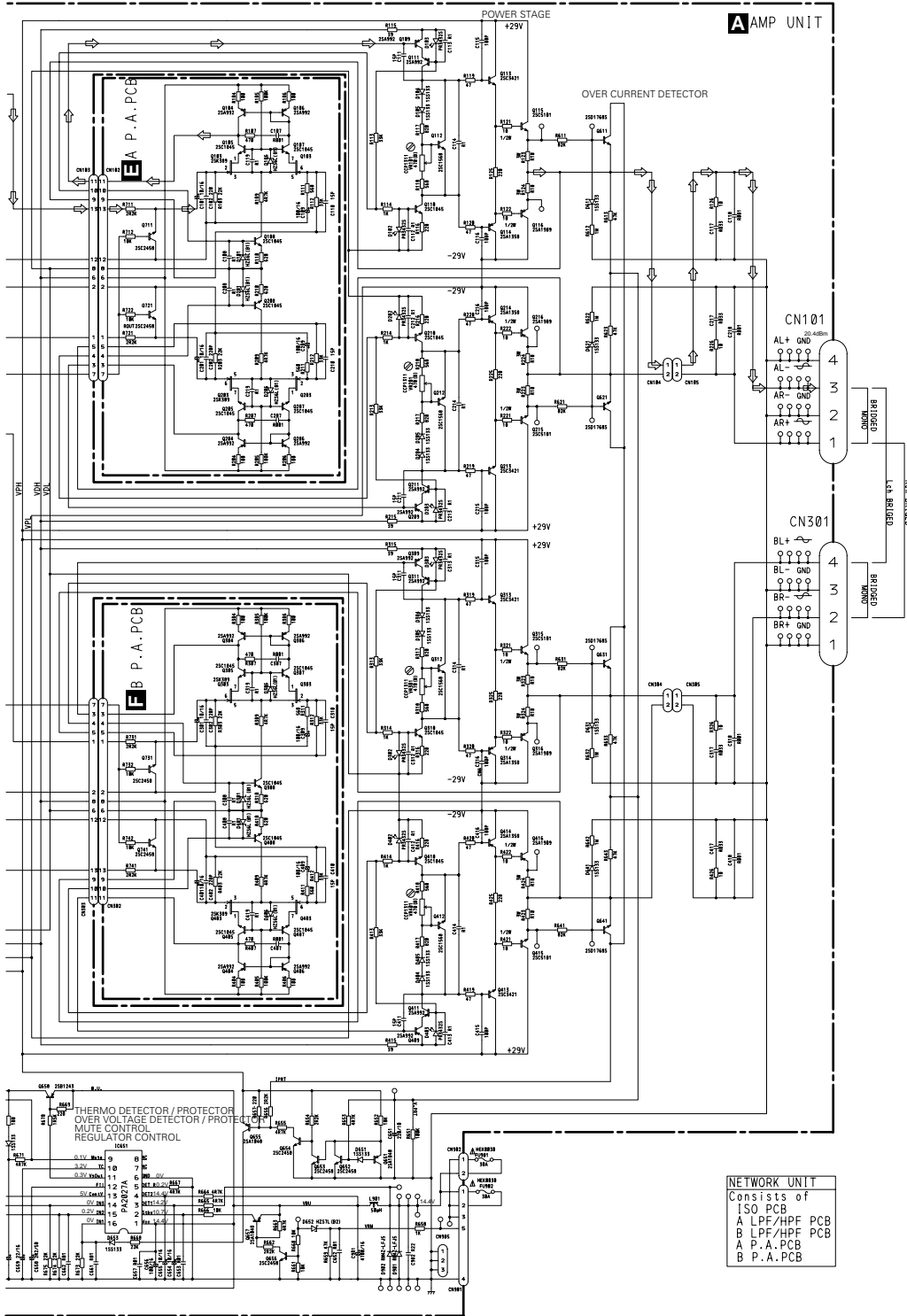


Fig. 3



A

A-a A-b

B

C

D

A

B

C

D

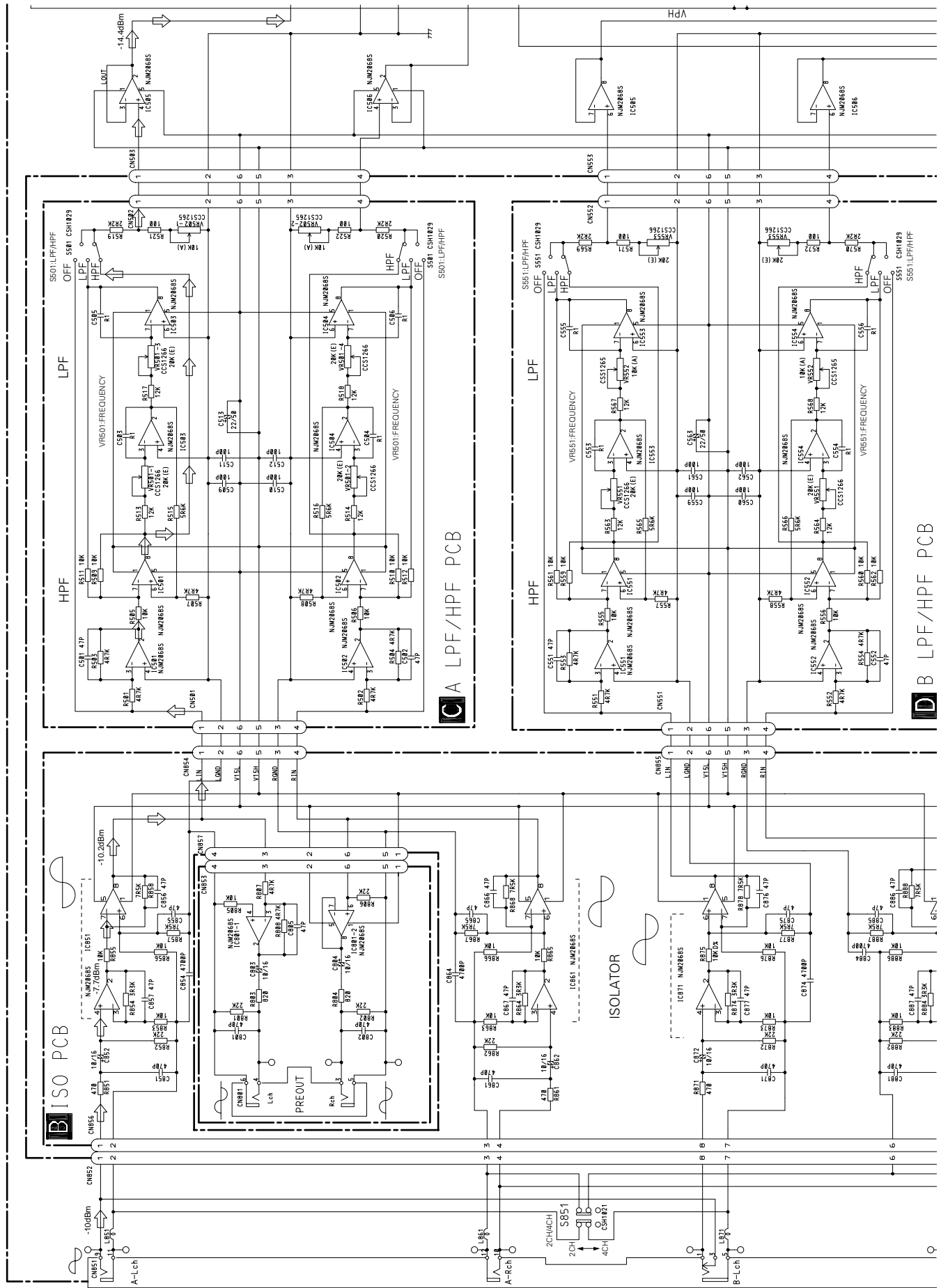
A-a B C D

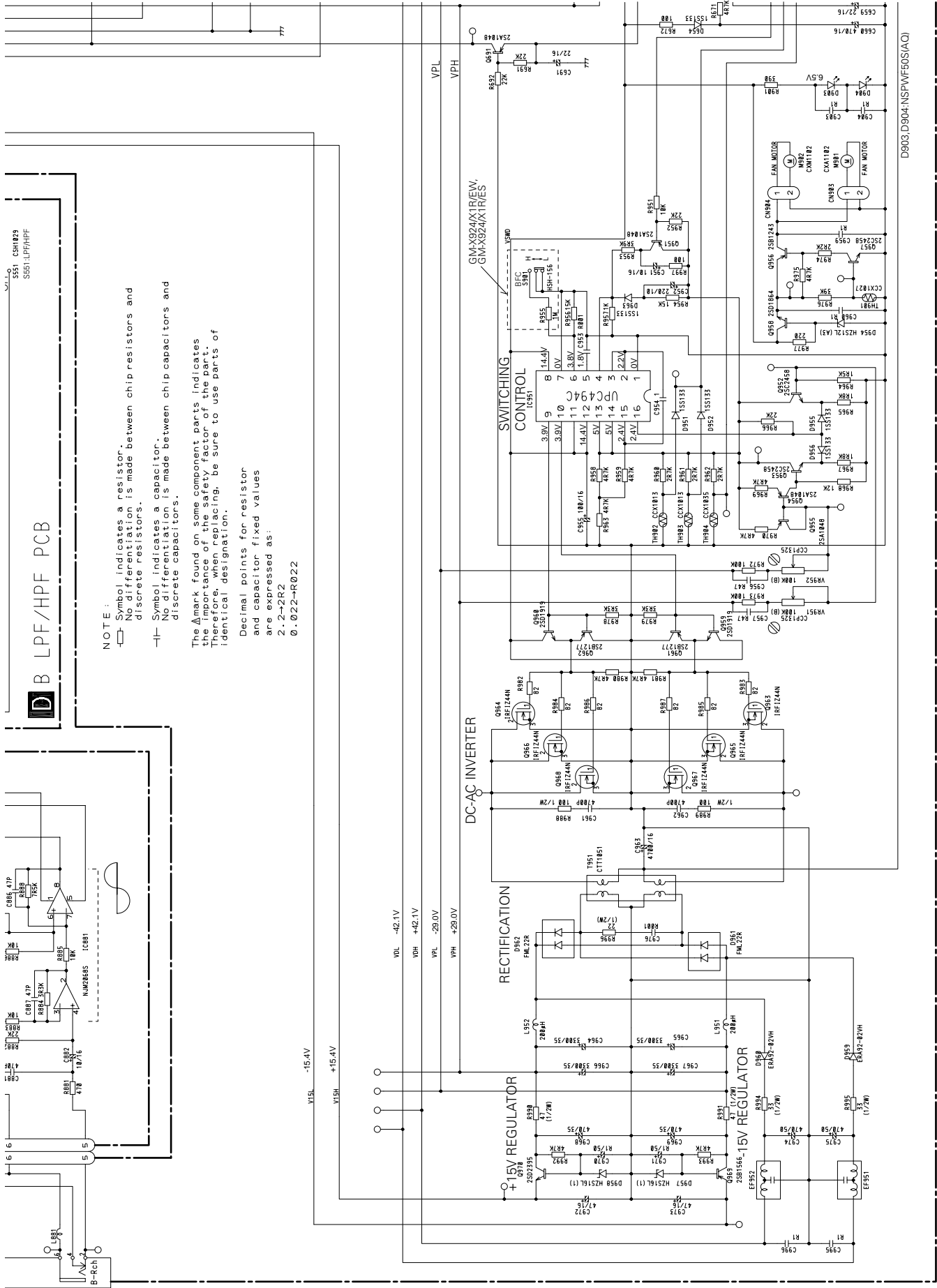
1

2

3

4





NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Decimal points for resistor and capacitor fixed values are expressed as:

- 2.2→2R2
- 0.022→R022

A-a A-b

Fig. 4

A-a B D

A-a A-b

A AMP UNIT

OVER CURRENT DETECTOR

POWER STAGE

C

D

-14.4dBm

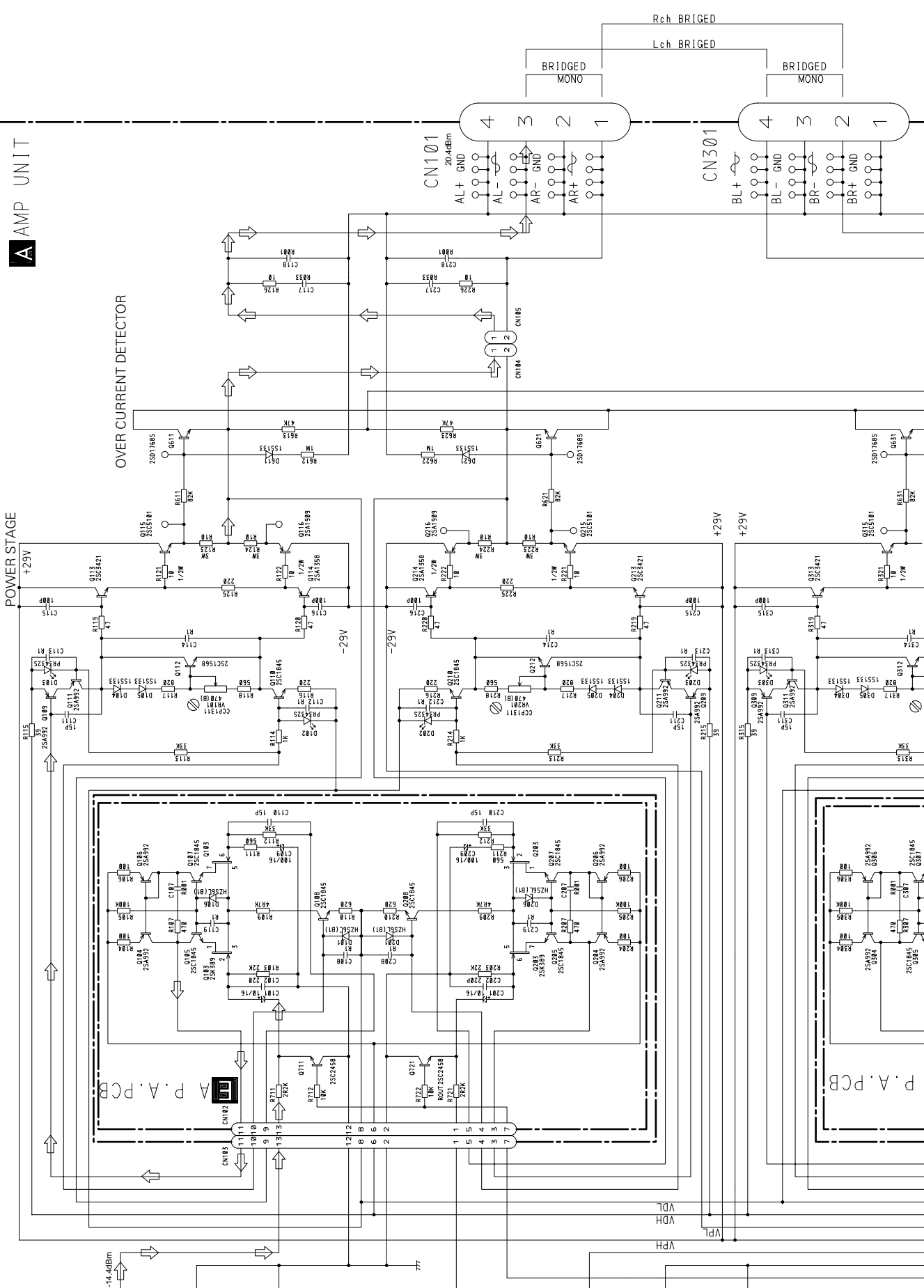
A-b E F

A

B

C

D

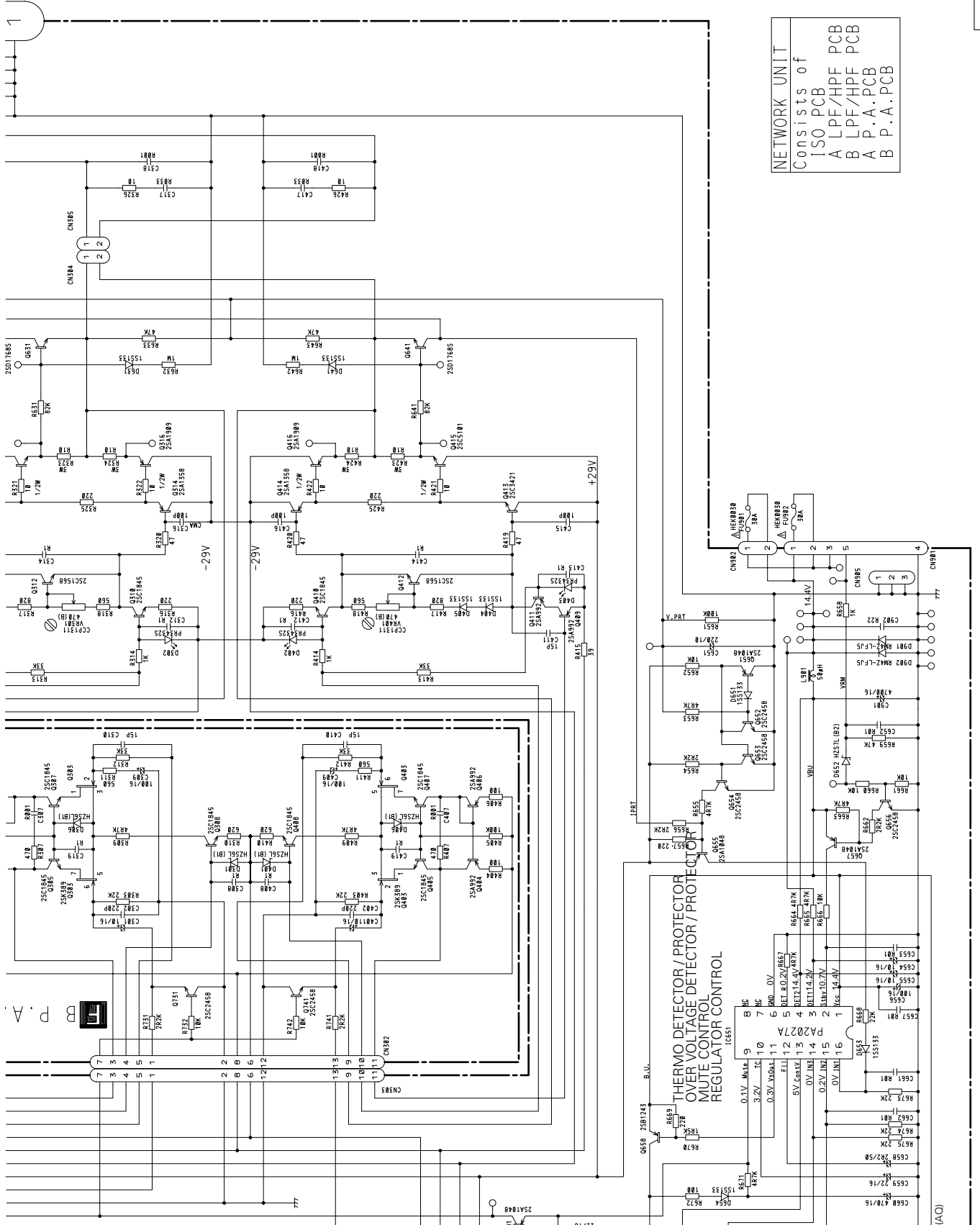


1

2

3

4



NETWORK UNIT
 Consists of
 ISO PCB
 A LPF/HPF PCB
 B LPF/HPF PCB
 A P.A.PCB
 B P.A.PCB

A-a A-b

Fig. 5



NOTE FOR PCB DIAGRAMS

- The parts mounted on this PCB include all necessary parts for several destination.
- For further information for respective destinations, be sure to check with the schematic diagram.

4. PCB CONNECTION DIAGRAM

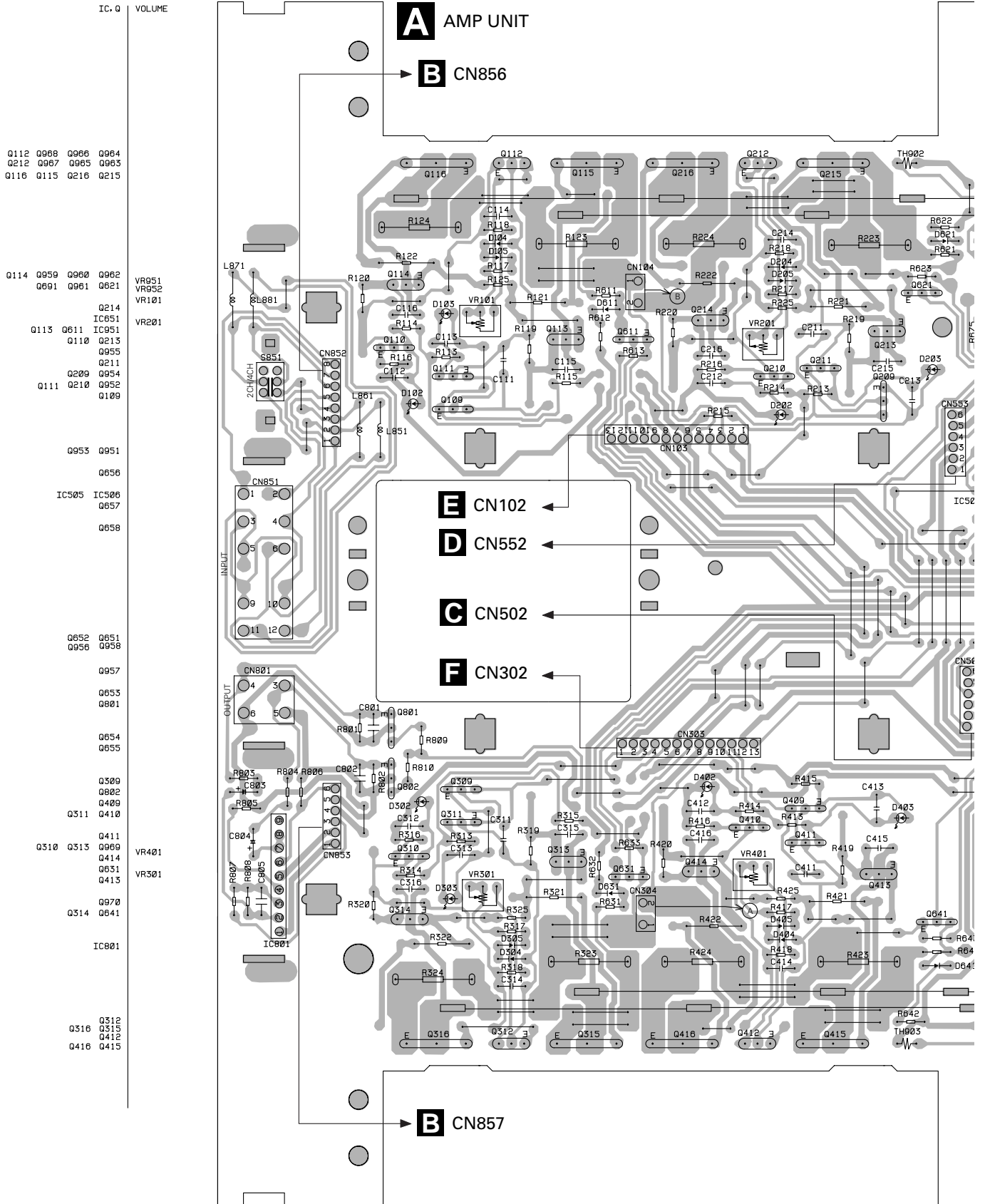
4.1 AMP UNIT

A

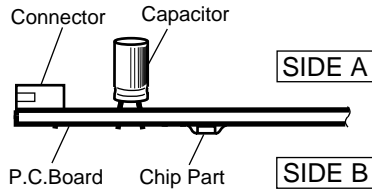
B

C

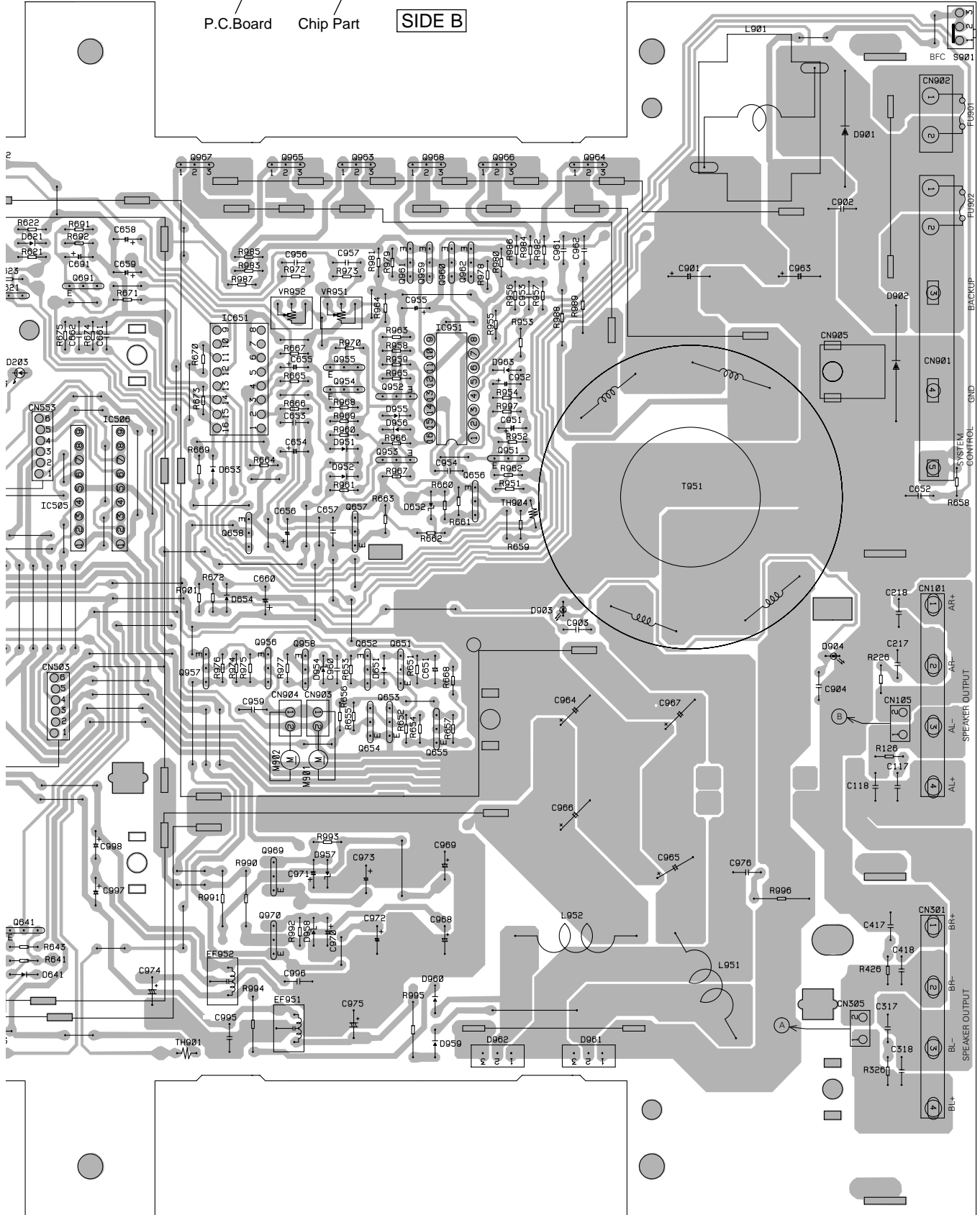
D



2. Viewpoint of PCB diagrams



SIDE A



A
B
C
D

Fig. 6



4.2 ISO PCB

SIDE A

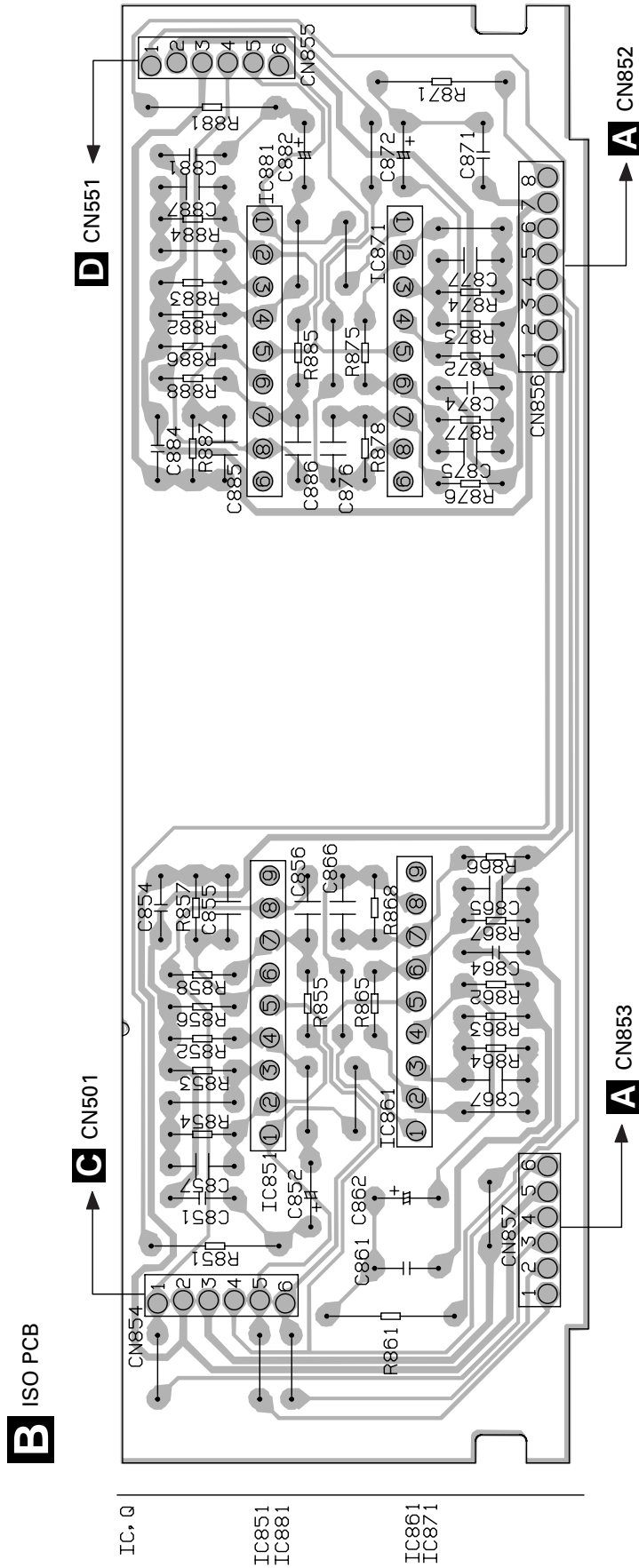
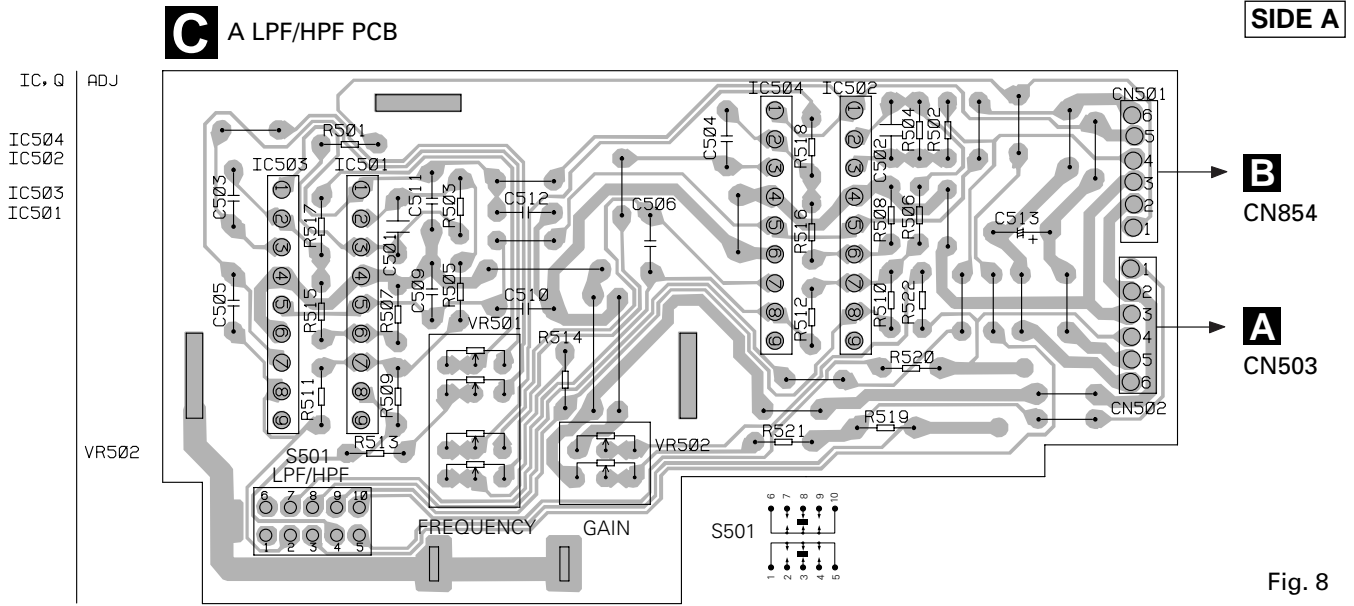
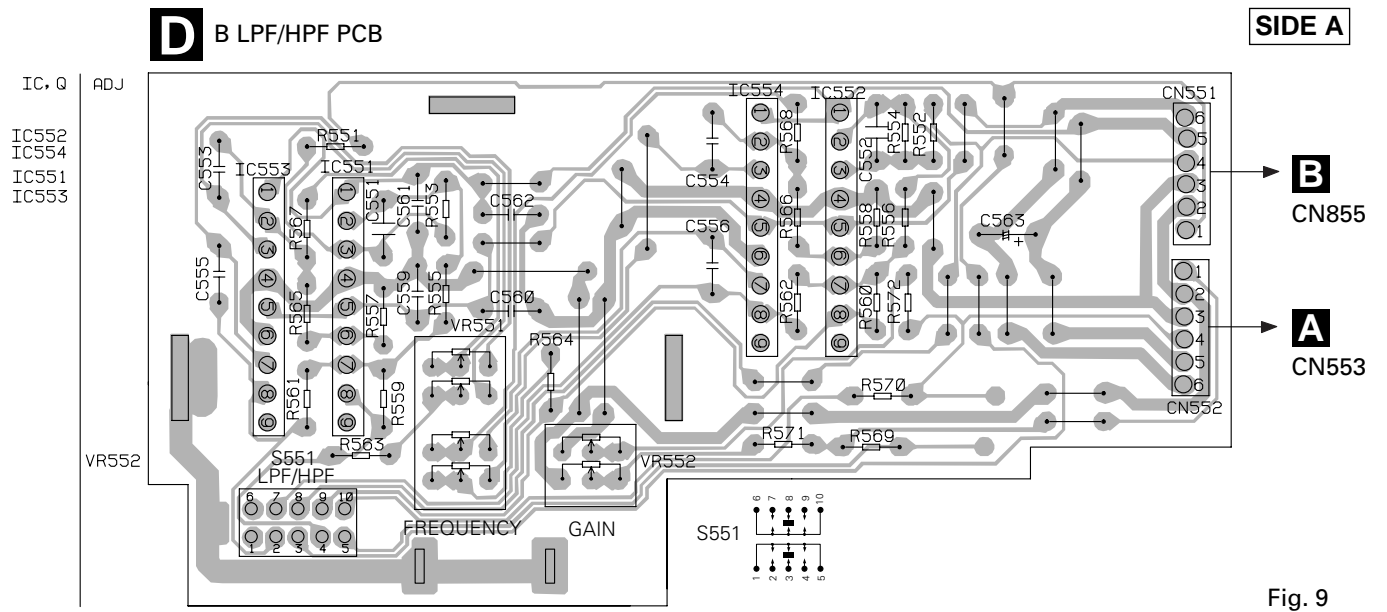


Fig. 7

4.3 A LPF/HPF PCB



4.4 B LPF/HPF PCB



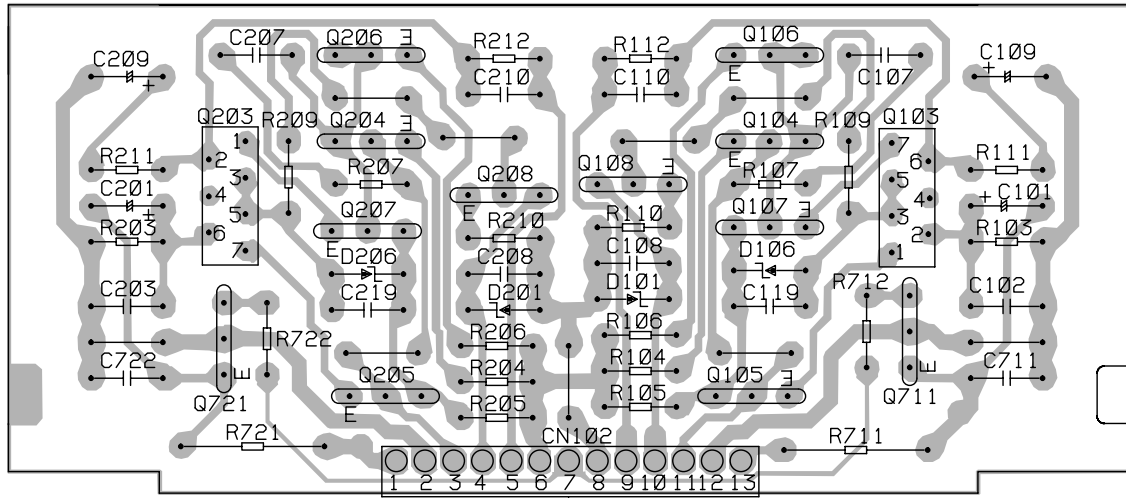
4.5 A P.A. PCB

SIDE A

E

A P.A. PCB

IC, Q
 Q206 Q106
 Q204 Q104
 Q208 Q108
 Q203 Q103
 Q207 Q107
 Q721 Q711
 Q205 Q105



A CN103

Fig. 10

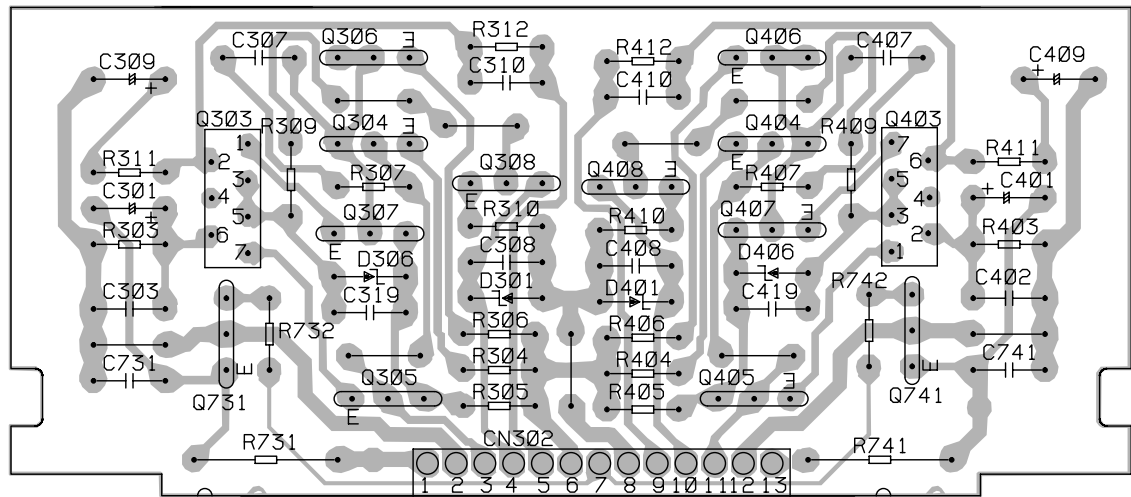
4.6 B P.A. PCB

SIDE A

F

B P.A. PCB

IC, Q
 Q306 Q406
 Q304 Q404
 Q308 Q408
 Q303 Q403
 Q307 Q407
 Q731 Q741
 Q305 Q405



A CN303

Fig. 11

5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/OS○○○○J,RS1/○○S○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol and No.===Part Name Part No. =====Circuit Symbol and No.===Part Name Part No.

Network Unit
Consists of
ISO PCB
A LPF/HPF PCB
B LPF/HPF PCB
A P.A.PCB
B P.A.PCB

B C D E F

Unit Number : HWG0008
(GM-X1024/X1R/UC)
Unit Number : HWG0009
(GM-X924/X1R/UC)
Unit Number : HWG0006
(GM-X924/X1R/EW)
Unit Number : HWG0007
(GM-X924/X1R/ES)
Unit Name : Network Unit

MISCELLANEOUS

IC 501	IC	NJM2068S
IC 502	IC	NJM2068S
IC 503	IC	NJM2068S
IC 504	IC	NJM2068S
IC 551	IC	NJM2068S
IC 552	IC	NJM2068S
IC 553	IC	NJM2068S
IC 554	IC	NJM2068S
IC 851	IC	NJM2068S
IC 861	IC	NJM2068S
IC 871	IC	NJM2068S
IC 881	IC	NJM2068S
Q 103	Transistor	2SK389
Q 104	Transistor	2SA992
Q 105	Transistor	2SC1845
Q 106	Transistor	2SA992
Q 107	Transistor	2SC1845
Q 108	Transistor	2SC1845
Q 203	Transistor	2SK389
Q 204	Transistor	2SA992
Q 205	Transistor	2SC1845
Q 206	Transistor	2SA992
Q 207	Transistor	2SC1845
Q 208	Transistor	2SC1845
Q 303	Transistor	2SK389
Q 304	Transistor	2SA992
Q 305	Transistor	2SC1845
Q 306	Transistor	2SA992
Q 307	Transistor	2SC1845
Q 308	Transistor	2SC1845
Q 403	Transistor	2SK389
Q 404	Transistor	2SA992
Q 405	Transistor	2SC1845
Q 406	Transistor	2SA992
Q 407	Transistor	2SC1845

Q 408	Transistor	2SC1845
Q 711	Transistor	2SC2458
Q 721	Transistor	2SC2458
Q 731	Transistor	2SC2458
Q 741	Transistor	2SC2458
D 101	Diode	HZS6L(B1)
D 106	Diode	HZS6L(B1)
D 201	Diode	HZS6L(B1)
D 206	Diode	HZS6L(B1)
D 301	Diode	HZS6L(B1)
D 306	Diode	HZS6L(B1)
D 401	Diode	HZS6L(B1)
D 406	Diode	HZS6L(B1)
S 501	Switch(LPF/HPF)	CSH1029
S 551	Switch(LPF/HPF)	CSH1029
VR 501	Volume 20kΩ(E)	CCS1266
VR 502	Volume 10kΩ(A)	CCS1265
VR 551	Volume 20kΩ(E)	CCS1266
VR 552	Volume 10kΩ(A)	CCS1265

RESISTORS

R 103	RD1/4PU223J
R 104	RD1/4PU101J
R 105	RD1/4PU104J
R 106	RD1/4PU101J
R 107	RD1/4PU471J
R 109	RD1/4PU472J
R 110	RD1/4PU621J
R 111	RD1/4PU561J
R 112	RD1/4PU333J
R 203	RD1/4PU223J
R 204	RD1/4PU101J
R 205	RD1/4PU104J
R 206	RD1/4PU101J
R 207	RD1/4PU471J
R 209	RD1/4PU472J
R 210	RD1/4PU621J
R 211	RD1/4PU561J
R 212	RD1/4PU333J
R 303	RD1/4PU223J
R 304	RD1/4PU101J
R 305	RD1/4PU104J
R 306	RD1/4PU101J
R 307	RD1/4PU471J
R 309	RD1/4PU472J
R 310	RD1/4PU621J
R 311	RD1/4PU561J
R 312	RD1/4PU333J
R 403	RD1/4PU223J
R 404	RD1/4PU101J
R 405	RD1/4PU104J

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
C 510	CKCYB101K50	Q 216	Transistor
C 511	CKCYB101K50	Q 309	Transistor
C 512	CKCYB101K50	Q 310	Transistor
C 513	CEAS220M50	Q 311	Transistor
C 551	CCPUSL470J50	Q 312	Transistor
C 552	CCPUSL470J50	Q 313	Transistor
C 553	CFTLA104J50	Q 314	Transistor
C 554	CFTLA104J50	Q 315	Transistor
C 555	CFTLA104J50	Q 316	Transistor
C 556	CFTLA104J50	Q 409	Transistor
C 559	CKCYB101K50	Q 410	Transistor
C 560	CKCYB101K50	Q 411	Transistor
C 561	CKCYB101K50	Q 412	Transistor
C 562	CKCYB101K50	Q 413	Transistor
C 563	CEAS220M50	Q 414	Transistor
C 851	CQMA471J50	Q 415	Transistor
C 852	CEJANP100M16	Q 416	Transistor
C 854	CQMA472J50	Q 611	Transistor
C 855	CCPUSL470J50	Q 621	Transistor
C 856	CCPUSL470J50	Q 631	Transistor
C 857	CCPUSL470J50	Q 641	Transistor
C 861	CQMA471J50	Q 651	Transistor
C 862	CEJANP100M16	Q 652	Transistor
C 864	CQMA472J50	Q 653	Transistor
C 865	CCPUSL470J50	Q 654	Transistor
C 866	CCPUSL470J50	Q 655	Transistor
C 867	CCPUSL470J50	Q 656	Transistor
C 871	CQMA471J50	Q 657	Transistor
C 872	CEJANP100M16	Q 658	Transistor
C 874	CQMA472J50	Q 691	Transistor
C 875	CCPUSL470J50	Q 951	Transistor
C 876	CCPUSL470J50	Q 952	Transistor
C 877	CCPUSL470J50	Q 953	Transistor
C 881	CQMA471J50	Q 954	Transistor
C 882	CEJANP100M16	Q 955	Transistor
C 884	CQMA472J50	Q 956	Transistor
C 885	CCPUSL470J50	Q 957	Transistor
C 886	CCPUSL470J50	Q 958	Transistor
C 887	CCPUSL470J50	Q 959	Transistor
		Q 960	Transistor
		Q 961	Transistor
		Q 962	Transistor
		Q 963	FET
		Q 964	FET
		Q 965	FET
		Q 966	FET
		Q 967	FET
		Q 968	FET
		Q 969	Transistor
		Q 970	Transistor
		D 102	Diode
		D 103	Diode
		D 104	Diode
		D 105	Diode
		D 202	Diode
		D 203	Diode
		D 204	Diode
		D 205	Diode
		D 302	Diode
		D 303	Diode
		D 304	Diode
		D 305	Diode
		D 402	Diode
		D 403	Diode
		D 404	Diode
IC 505	IC NJM2068S		IRFIZ44N
IC 506	IC NJM2068S		IRFIZ44N
IC 651	IC PA2027A		IRFIZ44N
IC 801	IC NJM2068S		2SB1566
IC 951	IC UPC494C		2SD2395
Q 109	Transistor 2SA992		PR3432S
Q 110	Transistor 2SC1845		PR3432S
Q 111	Transistor 2SA992		1SS133
Q 112	Transistor 2SC1568		1SS133
Q 113	Transistor 2SC3421		PR3432S
Q 114	Transistor 2SA1358		PR3432S
Q 115	Transistor 2SC5101		1SS133
Q 116	Transistor 2SA1909		1SS133
Q 209	Transistor 2SA992		PR3432S
Q 210	Transistor 2SC1845		PR3432S
Q 211	Transistor 2SA992		1SS133
Q 212	Transistor 2SC1568		1SS133
Q 213	Transistor 2SC3421		PR3432S
Q 214	Transistor 2SA1358		PR3432S
Q 215	Transistor 2SC5101		1SS133

A

Unit Number : HWH0066(GM-X1024/X1R/UC)
Unit Number : HWH0067(GM-X924/X1R/UC)
Unit Number : HWH0064(GM-X924/X1R/EW)
Unit Number : HWH0065(GM-X924/X1R/ES)
Unit Name : Amp Unit

MISCELLANEOUS

GM-X1024,GM-X924

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
D 405 Diode	1SS133	R 214	RD1/4PU102J
D 611 Diode	1SS133	R 215	RD1/4PU390J
D 621 Diode	1SS133	R 216	RD1/4PU221J
D 631 Diode	1SS133	R 217	RD1/4PU821J
D 641 Diode	1SS133	R 218	RD1/4PU561J
D 651 Diode	1SS133	R 219	RD1/4PU470J
D 652 Diode	HZS7L(B2)	R 220	RD1/4PU470J
D 653 Diode	1SS133	R 221	RD1/2PM100J
D 654 Diode	1SS133	R 222	RD1/2PM100J
D 901 Diode	RM4Z-LFJ5	R 223	0.1Ω/5W CCN1090
D 902 Diode	RM4Z-LFJ5	R 224	0.1Ω/5W CCN1090
D 903 LED	NSPWF50S(AQ)	R 225	RD1/4PU221J
D 904 LED	NSPWF50S(AQ)	R 226	RD1/4PU100J
D 951 Diode	1SS133	R 313	RD1/4PU333J
D 952 Diode	1SS133	R 314	RD1/4PU102J
D 954 Diode	HZS12L(A3)	R 315	RD1/4PU390J
D 955 Diode	1SS133	R 316	RD1/4PU221J
D 956 Diode	1SS133	R 317	RD1/4PU821J
D 957 Diode	HZS16L(1)	R 318	RD1/4PU561J
D 958 Diode	HZS16L(1)	R 319	RD1/4PU470J
D 959 Diode	ERA92-02VH	R 320	RD1/4PU470J
D 960 Diode	ERA92-02VH	R 321	RD1/2PM100J
D 961 Diode	FML22R	R 322	RD1/2PM100J
D 962 Diode	FML22S	R 323	0.1Ω/5W CCN1090
D 963 Diode	1SS133	R 324	0.1Ω/5W CCN1090
L 851 Ferri-Inductor	CTF1007	R 325	RD1/4PU221J
L 861 Ferri-Inductor	CTF1007	R 326	RD1/4PU100J
L 871 Ferri-Inductor	CTF1007	R 413	RD1/4PU333J
L 881 Ferri-Inductor	CTF1007	R 414	RD1/4PU102J
L 901 Choke Coil 50μH	CTH1144	R 415	RD1/4PU390J
L 951 Choke Coil 200μH	CTH1211	R 416	RD1/4PU221J
L 952 Choke Coil 200μH	CTH1211	R 417	RD1/4PU821J
T 951 Transformer	CTT1051	R 418	RD1/4PU561J
TH 901 Thermistor	CCX1027	R 419	RD1/4PU470J
TH 902 Thermistor	CCX1013	R 420	RD1/4PU470J
TH 903 Thermistor	CCX1013	R 421	RD1/2PM100J
TH 904 Thermistor	CCX1035	R 422	RD1/2PM100J
S 851 Switch(2CH/4CH)	CSH1021	R 423	0.1Ω/5W CCN1090
S 901 Switch(BFC)	See Contrast table	R 424	0.1Ω/5W CCN1090
VR 101 Semi-fixed 470Ω(B)	CCP1311	R 425	RD1/4PU221J
VR 201 Semi-fixed 470Ω(B)	CCP1311	R 426	RD1/4PU100J
VR 301 Semi-fixed 470Ω(B)	CCP1311	R 611	RD1/4PU823J
VR 401 Semi-fixed 470Ω(B)	CCP1311	R 612	RD1/4PU105J
VR 951 Semi-fixed 100kΩ(B)	CCP1325	R 613	RD1/4PU473J
VR 952 Semi-fixed 100kΩ(B)	CCP1325	R 621	RD1/4PU823J
EF 951 Capacitor	CCG-081	R 622	RD1/4PU105J
EF 952 Capacitor	CCG-081	R 623	RD1/4PU473J
M 901 Fan Motor	CXM1102	R 631	RD1/4PU823J
M 902 Fan Motor	CXM1102	R 632	RD1/4PU105J
FU 901 Fuse 30A	HEK0030	R 633	RD1/4PU473J
FU 902 Fuse 30A	HEK0030	R 641	RD1/4PU823J
		R 642	RD1/4PU105J
		R 643	RD1/4PU473J
		R 651	RD1/4PU104J
		R 652	RD1/4PU103J
RESISTORS			
R 113	RD1/4PU333J		
R 114	RD1/4PU102J		
R 115	RD1/4PU390J	R 653	RD1/4PU472J
R 116	RD1/4PU221J	R 654	RD1/4PU222J
R 117	RD1/4PU821J	R 655	RD1/4PU472J
		R 656	RD1/4PU222J
		R 657	RD1/4PU221J
R 118	RD1/4PU561J		
R 119	RD1/4PU470J		
R 120	RD1/4PU470J	R 658	RD1/4PU102J
R 121	RD1/2PM100J	R 659	RD1/4PU473J
R 122	RD1/2PM100J	R 660	RD1/4PU103J
		R 661	RD1/4PU103J
		R 662	RD1/4PU222J
R 123	0.1Ω/5W CCN1090		
R 124	0.1Ω/5W CCN1090		
R 125	RD1/4PU221J		
R 126	RD1/4PU100J		
R 213	RD1/4PU333J		

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 663	RD1/4PU472J	R 994	RD1/2PM330J
R 664	RD1/4PU472J	R 995	See Contrast table
R 665	RD1/4PU472J	R 996	RD1/2PM220J
R 666	RD1/4PU103J	R 997	RD1/4PU101J
R 667	RD1/4PU472J		
		CAPACITORS	
R 668	RD1/4PU223J	C 111	CMA150J2H
R 669	RD1/4PU221J	C 112	CFTLA104J50
R 670	RD1/4PU152J	C 113	CFTLA104J50
R 671	RD1/4PU472J	C 114	CFTLA104J50
R 672	RD1/4PU101J	C 115	CMA101J2H
		C 116	CMA101J2H
R 673	RD1/4PU223J	C 117	CFTLA333J50
R 674	RD1/4PU223J	C 118	CQPA102G2A
R 675	RD1/4PU223J	C 211	CMA150J2H
R 691	RD1/4PU223J	C 212	CFTLA104J50
R 692	RD1/4PU223J		
		C 213	CFTLA104J50
R 801	RD1/4PU223J	C 214	CFTLA104J50
R 802	RD1/4PU223J	C 215	CMA101J2H
R 803	RD1/4PU821J	C 216	CMA101J2H
R 804	RD1/4PU821J	C 217	CFTLA333J50
R 805	RD1/4PU103J		
		C 218	CQPA102G2A
R 806	RD1/4PU223J	C 311	CMA150J2H
R 807	RD1/4PU472J	C 312	CFTLA104J50
R 808	RD1/4PU472J	C 313	CFTLA104J50
R 901	RD1/4PU391J	C 314	CFTLA104J50
R 951	RD1/4PU103J		
		C 315	CMA101J2H
R 952	RD1/4PU223J	C 316	CMA101J2H
R 953	RD1/4PU392J	C 317	CFTLA333J50
R 954	RD1/4PU153J	C 318	CQPA102G2A
R 956	RD1/4PU153J	C 411	CMA150J2H
R 957	RD1/4PU102J		
		C 412	CFTLA104J50
R 958	RD1/4PU472J	C 413	CFTLA104J50
R 959	RD1/4PU472J	C 414	CFTLA104J50
R 960	RD1/4PU272J	C 415	CMA101J2H
R 961	RD1/4PU272J	C 416	CMA101J2H
R 962	RD1/4PU272J		
		C 417	CFTLA333J50
R 963	RD1/4PU472J	C 418	CQPA102G2A
R 964	RD1/4PU153J	C 651	CCH1036
R 965	RD1/4PU182J	C 652	CFTLA103J50
R 966	RD1/4PU223J	C 653	CFTLA103J50
R 967	RD1/4PU182J		
		C 654	CEAS100M16
R 968	RD1/4PU123J	C 655	CEAS100M16
R 969	RD1/4PU472J	C 656	CEAS101M16
R 970	RD1/4PU472J	C 657	CFTLA103J50
R 972	RD1/4PU104J	C 658	CEAS2R2M50
R 973	RD1/4PU104J		
		C 659	CEAS220M16
R 974	RD1/4PU222J	C 660	CCH1183
R 975	RD1/4PU472J	C 661	CFTLA103J50
R 976	RD1/4PU393J	C 662	CFTLA103J50
R 977	RD1/4PU221J	C 691	CEAS220M16
R 978	RD1/4PU332J		
		C 801	CKPUYB471K50
R 979	RD1/4PU332J	C 802	CKPUYB471K50
R 980	RD1/4PU472J	C 803	CEAS100M16
R 981	RD1/4PU472J	C 804	CEAS100M16
R 982	RD1/4PU820J	C 805	CCPUSL470J50
R 983	RD1/4PU820J		
		C 901	CCH1310
R 984	RD1/4PU820J	C 902	CFTLA224J50
R 985	RD1/4PU820J	C 903	CFTLA104J50
R 986	RD1/4PU820J	C 904	CFTLA104J50
R 987	RD1/4PU820J	C 951	CEAS100M16
R 988	RD1/2PM100J		
		C 952	CEAS221M10
R 989	RD1/2PM100J	C 953	CQPA102J2A
R 990	RD1/2PM470J	C 954	CFTLA105J50
R 991	RD1/2PM470J	C 955	CEAS101M16
R 992	RD1/4PU472J	C 956	CFTLA474J50
R 993	RD1/4PU472J		

GM-X1024,GM-X924

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
C 957	CFTLA474J50	C 968	CEAS471M35
C 959	CFTLA104J50	C 969	CEAS471M35
C 960	CFTLA104J50	C 970	CEASR10M50
C 961	CQMA472J50	C 971	CEASR10M50
C 962	CQMA472J50	C 972	CEAS470M16
C 963 4700μF/16V	CCH1310	C 973	CEAS470M16
C 964	CEAS332M35	C 974	CEKA471M50
C 965	CEAS332M35	C 975	CEKA471M50
C 966	CEAS332M35	C 976	CQPA102J2A
C 967	CEAS332M35	C 995	CFTLA104J50
		C 996	CFTLA104J50

CONTRAST TABLE of AMP UNIT

GM-X1024/X1R/UC, GM-X924/X1R/UC, GM-X924/X1R/EW and GM-X924/X1R/ES are constructed the same except for the following:

Symbol and Description	Part No.			
	GM-X1024/X1R/UC	GM-X924/X1R/UC	GM-X924/X1R/EW	GM-X924/X1R/ES
S901 Switch	Not used	Not used	HSH-156	HSH-156
R955	Not used	Not used	RD1/4PU105J	RD1/4PU105J

6. ADJUSTMENT

No.	Item	Conditions	Adjustment point	Specifications
1	Idling current (adjustment)	Input ; adjust 30 seconds after 1kΩ terminate power is switched on, and within 20 seconds.	VR101(A Lch) VR201(A Rch) VR301(B Lch) VR401(B Rch)	mV Meter(1) : 20±6mV
2	DC-DC Converter voltage (adjustment)	Input ; adjust 30 seconds after 1kΩ terminate power is switched on, and within 20 seconds.	VR951 VR952	mV Meter(2) : +29±3V mV Meter(3) : -29±3V

● Connection Diagram

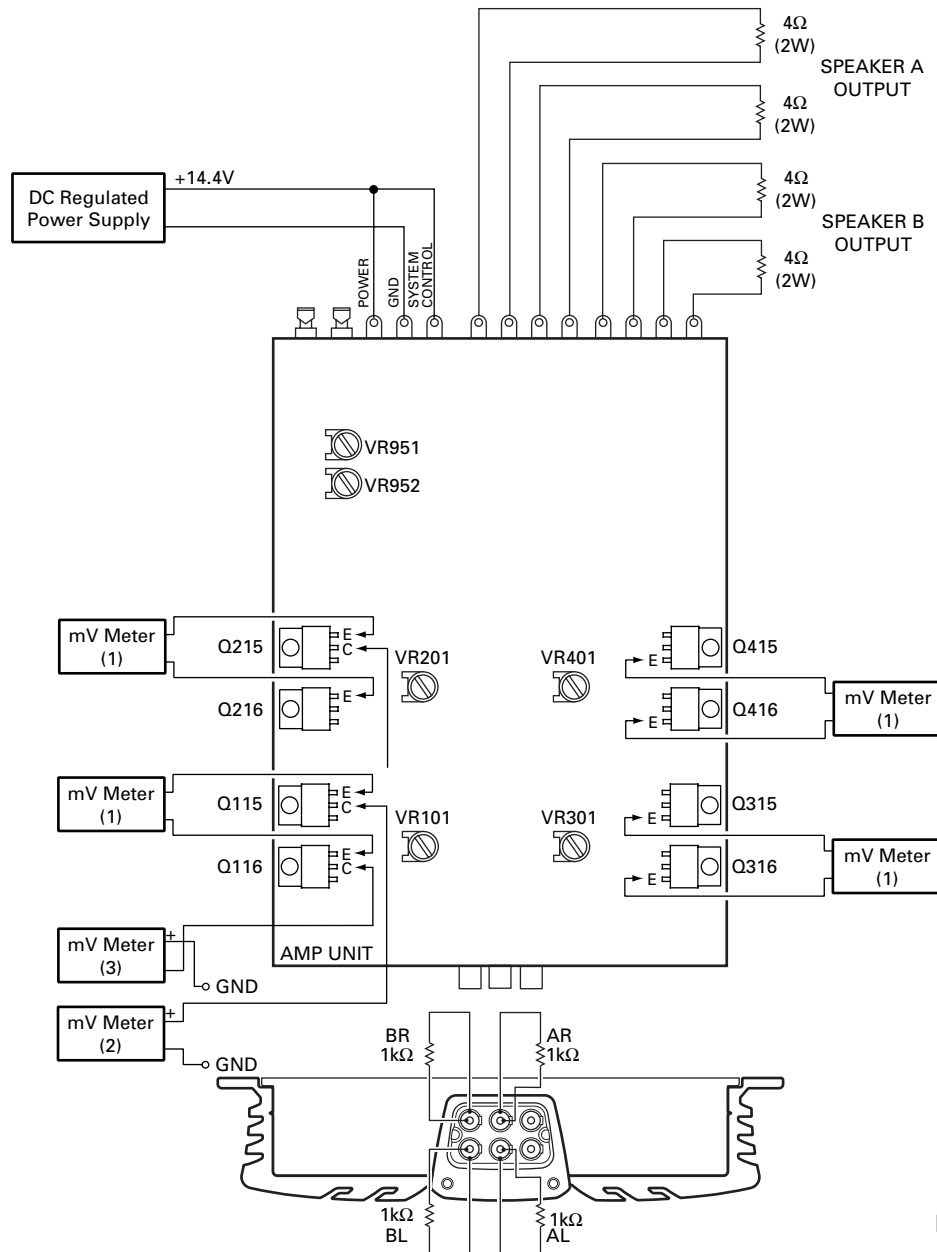
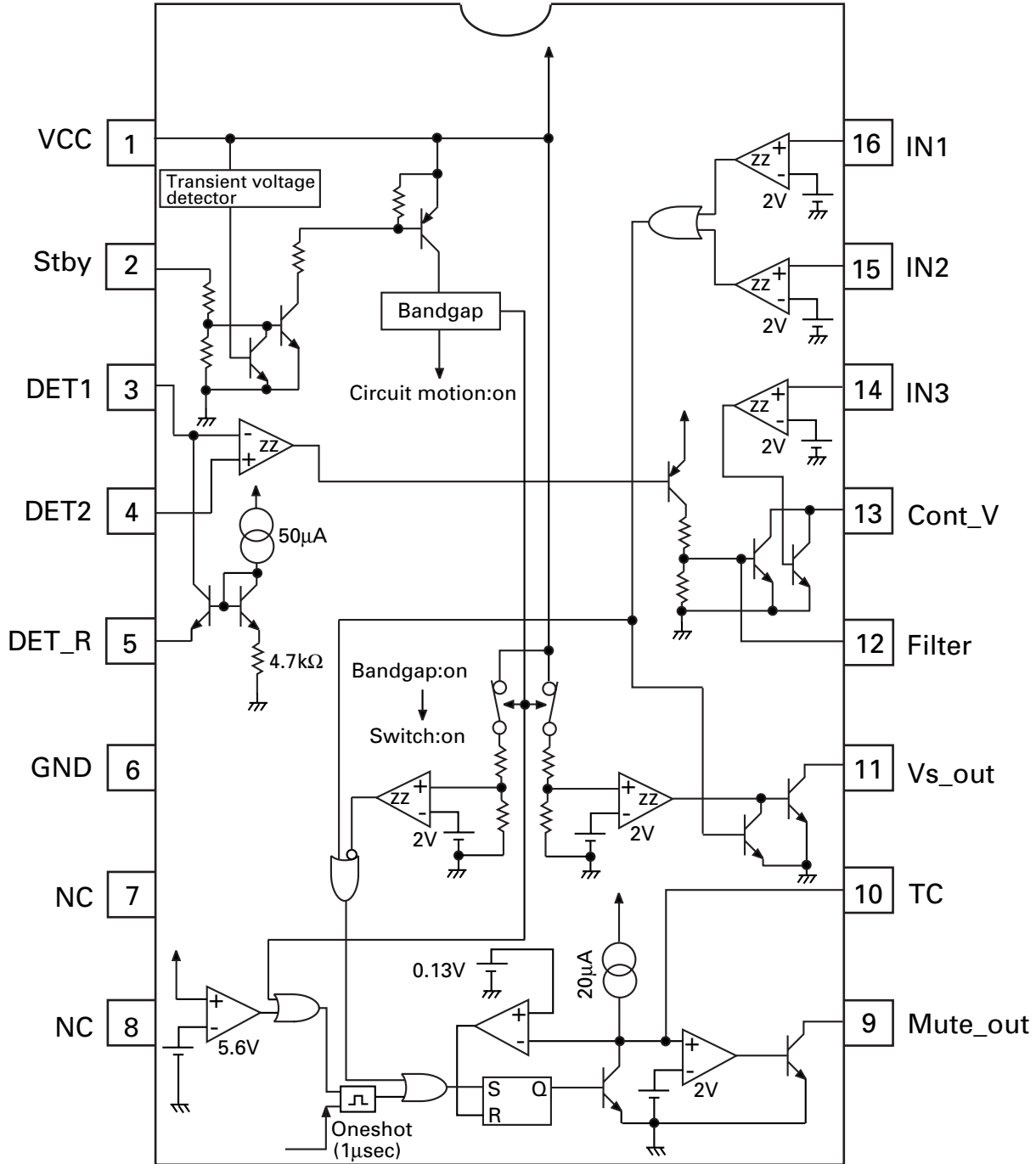


Fig. 12

7. GENERAL INFORMATION

7.1 IC

PA2027A



7.2 DISASSEMBLY

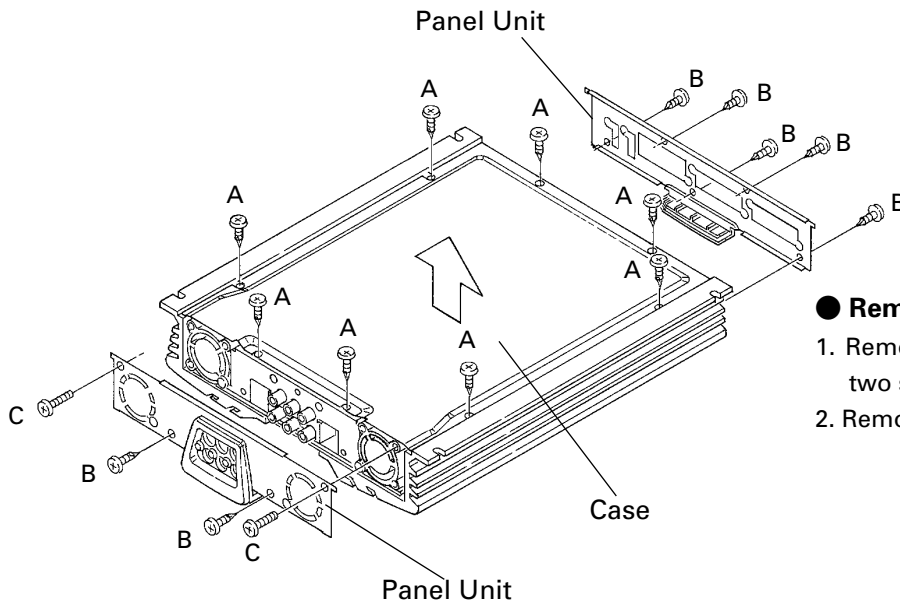


Fig. 13

● Removing the Case and the Panel Unit

1. Remove eight screws A, seven screws B and two screws C.
2. Remove Case and Panel Units.

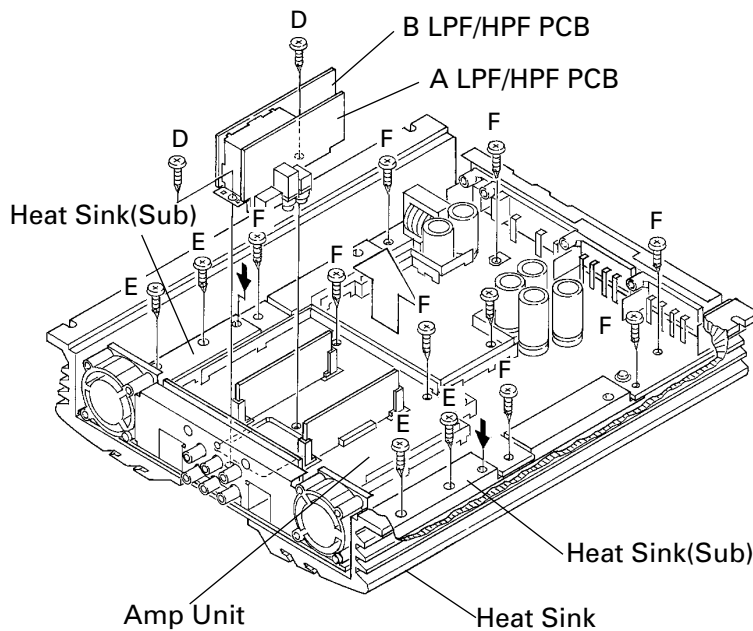


Fig. 14

● Removing the Heat Sink

Some silicone glue has been applied between the Heat Sink and the Heat Sink(Sub). therefore, to remove the Amp Unit from the Heat Sink.

1. Remove two screws D.
2. Remove A LPF/HPF PCB and B LPF/HPF PCB.
3. Remove four screws E and eight screws F.
4. Use 2 pcs. of screw E and insert them into the two holes marked with an arrow.
5. Alternately tighten them little by little until the Heat Sink(Sub) separates from the Heat Sink.

7.3 BLOCK DIAGRAM

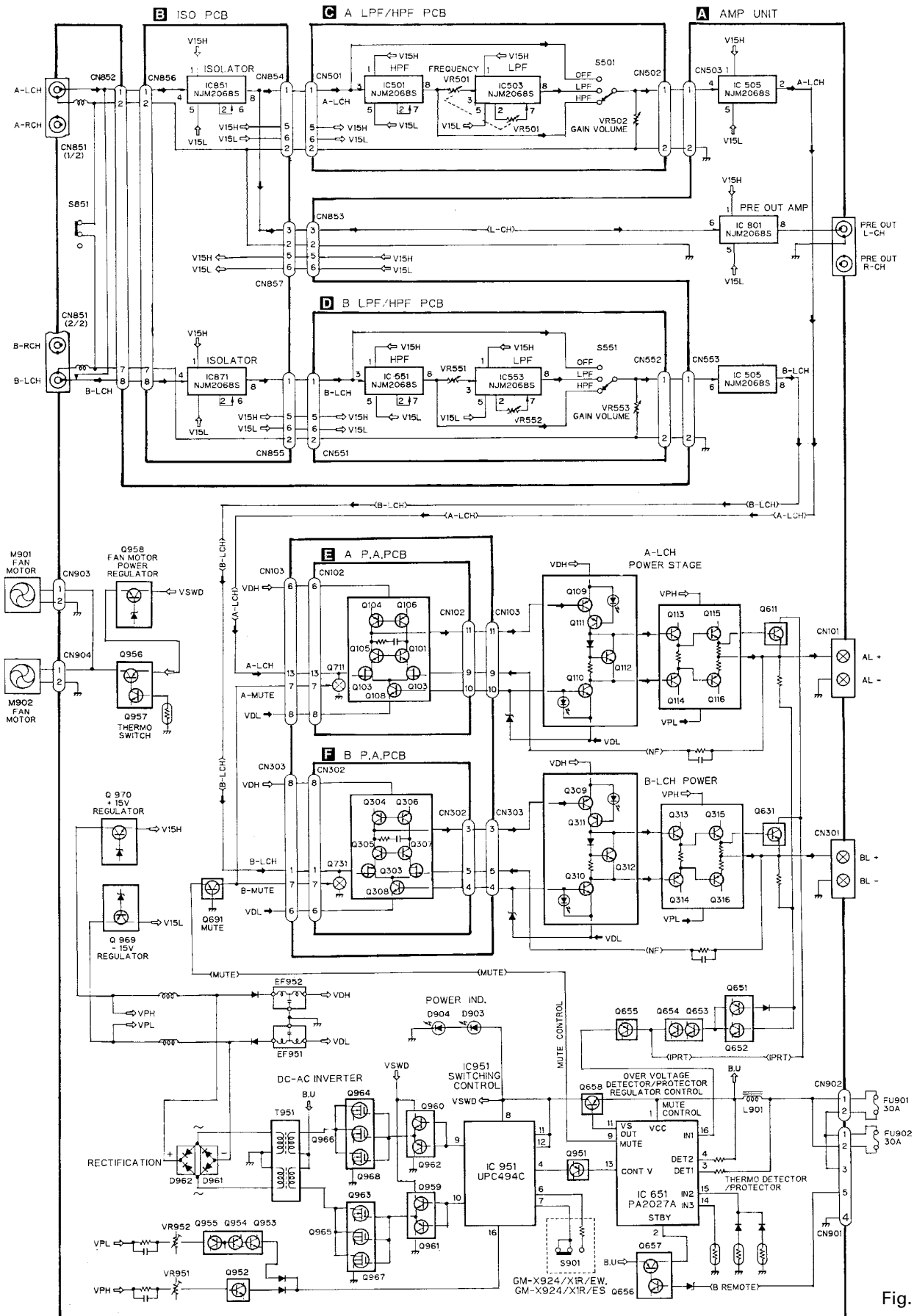


Fig. 15

8. OPERATIONS AND SPECIFICATIONS

8.1 OPERATIONS

● GM-X1024/X1R/UC

Setting the Unit

Gain Control

Adjusting the gain controls A and B will help match the output of the car stereo to the Pioneer amplifier. Normally, set the switch to the "NORMAL" position. If the output is low, even when the volume of the car stereo is turned up, turn these controls clockwise. If there is distortion when the volume of the car stereo is turned up, turn these controls counter-clockwise.

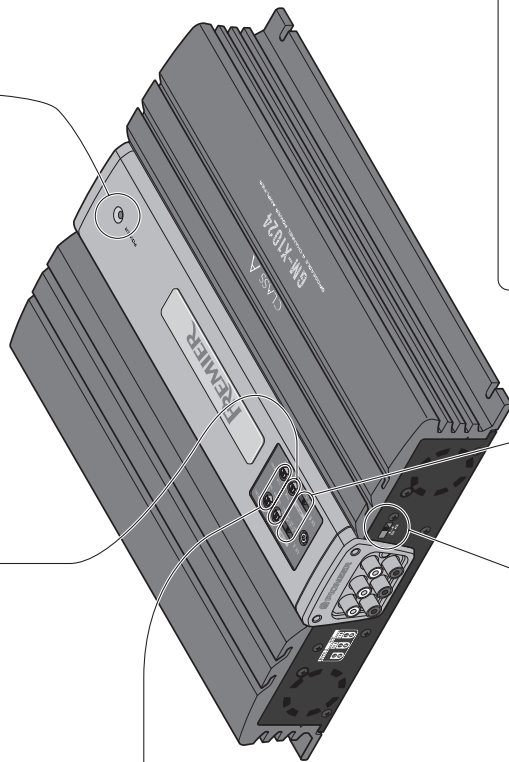
- If you only use one input plug, set the gain controls for speaker outputs A and B to the same position.
- Set the gain control to "NORMAL" when this amplifier is connected to a Pioneer car stereo with RCA output jacks. If the sound level is too low or distorts, adjust the gain control.
- Adjust the gain control to the "MIN" side of "NORMAL" when this amplifier is connected to a Pioneer car stereo (High voltage output type).

Cut Off Frequency Control

If the LPF/HPF select switch is set to LPF or HPF, you can select a cut off frequency from 50 to 120 Hz.

Power Indicator

The power indicator lights when the power is switched on.



LPF (Low-Pass Filter)/HPF (High-Pass Filter) Select Switch

Set the LPF/HPF select switch as follows according to the type of speaker that is connected to the speaker output connector and the car stereo system:

LPF/HPF Select Switch	Audio frequency range to be output	Speaker Type	Remarks
LPF (left)	— 50 to 120 Hz	Sub-woofer	Connect a sub-woofer.
OFF (center)	Full range	Full range	
HPF (right)	50 to 120 Hz —	Full range	Use if you want to cut the very-low-frequency range because it is not necessary for the speakers you are using.

RCA Input Select Switch

For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.

Connecting the Unit

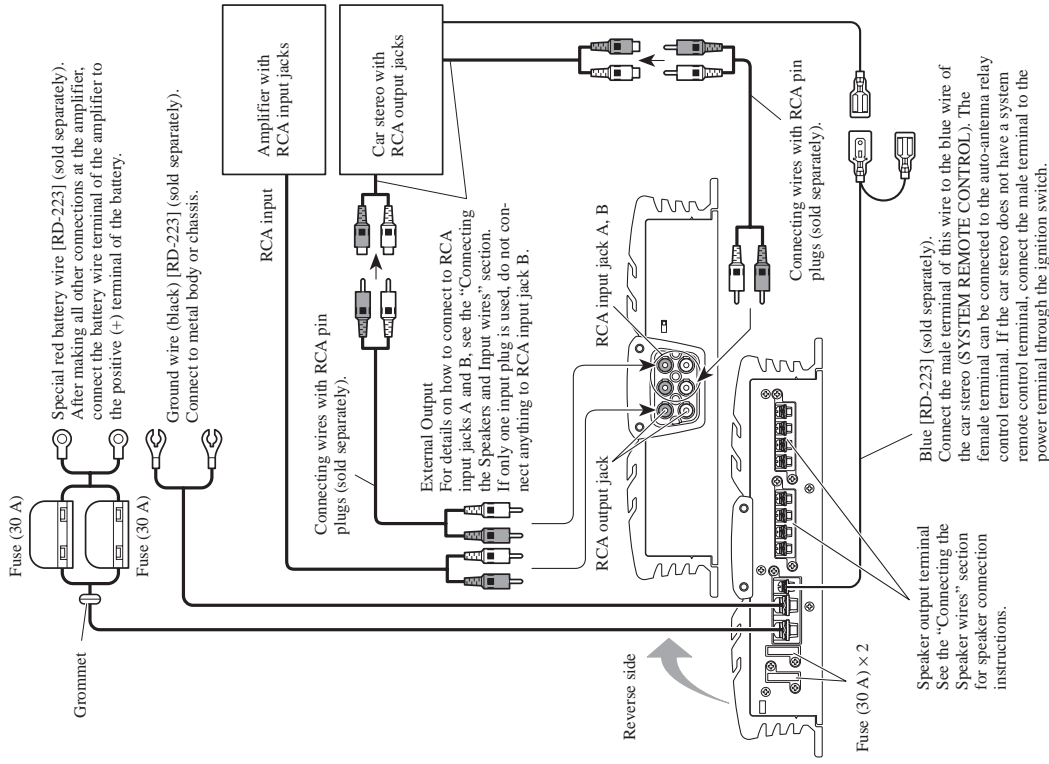
CAUTION

- Disconnect the negative (-) terminal of the battery to avoid the risk of short-circuit and damage to the unit.
- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around it where they lie against metal parts.
- Do not route wires where they will get hot, for example where the heater will blow over them. If the insulation heats up, it may become damaged, resulting in a short-circuit through the vehicle body.

To prevent damage

- Do not ground the speaker wire directly or connect a negative (-) lead wire for several speakers.
- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- If the car stereo is kept on for a long time while the engine is at rest or idling, the battery may go dead. Turn the car stereo off when the engine is at rest or idling.
- If the blue wire of the amplifier is connected to the power terminal through the ignition switch (12 V DC), the amplifier will always be on when the stereo is on—regardless of whether the car stereo is on or off. Because of this, the battery could go dead if the engine is at rest or idle.

Connection Diagram



Speaker Channel	Speaker Type	Power
Four-channel	Sub-woofer	Nominal input: Min. 65 W
	Other than sub-woofer	Max. input: Min. 130 W
Two-channel	Sub-woofer	Nominal input: Min. 150 W
	Other than sub-woofer	Max. input: Min. 300 W
Three-channel	Sub-woofer	Nominal input: Min. 65 W
Speaker output A	Other than sub-woofer	Max. input: Min. 130 W
Three-channel	Sub-woofer	Nominal input: Min. 150 W
	Other than sub-woofer	Max. input: Min. 300 W

● GM-X924/X1R/EW

Setting the Unit

Gain Control

Adjusting the gain controls A and B will help match the output of the car stereo to the Pioneer amplifier. Normally, set the switch to the "NORMAL" position. If the output is low, even when the volume of the car stereo is turned up, turn these controls clockwise. If there is distortion when the volume of the car stereo is turned up, turn these controls counter-clockwise.

- If you only use one input plug, set the gain controls for speaker outputs A and B to the same position.
- Set the gain control to "NORMAL" when this amplifier is connected to a Pioneer car stereo with RCA output jacks. If the sound level is too low or distorts, adjust the gain control.
- Adjust the gain control to the "MIN" side of "NORMAL" when this amplifier is connected to a Pioneer car stereo (High voltage output type).

Cut Off Frequency Control

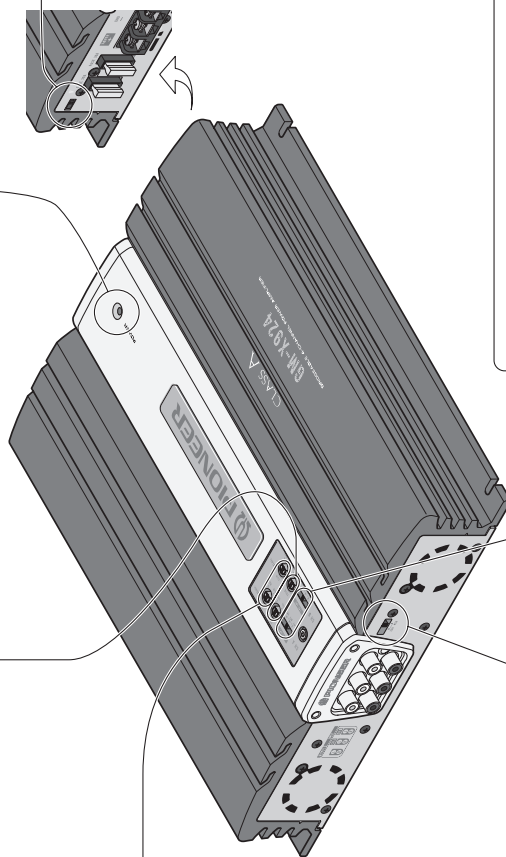
If the LPF/HPF select switch is set to LPF or HPF, you can select a cut off frequency from 50 to 120 Hz.

Power Indicator

The power indicator lights when the power is switched on.

BFC (Beat Frequency Control) Switch

If you hear a beat while listening to an AM broadcast with your car stereo, change the BFC switch using a small screwdriver.



LPF (Low-Pass Filter)/HPF (High-Pass Filter) Select Switch

Set the LPF/HPF select switch as follows according to the type of speaker that is connected to the speaker output connector and the car stereo system:

LPF/HPF Select Switch	Audio frequency range to be output	Speaker Type	Remarks
LPF (Left)	— 50 to 120 Hz	Sub-woofer	Connect a sub-woofer.
OFF (Center)	Full range	Full range	
HPF (Right)	50 to 120 Hz —	Full range	Use if you want to cut the very-low-frequency range because it is not necessary for the speakers you are using.

RCA Input Select Switch

For two-channel input, slide this switch to the left. For four-channel input, slide this switch to the right.

Connecting the Unit

CAUTION

- Disconnect the negative (-) terminal of the battery to avoid the risk of short-circuit and damage to the unit.
- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around it where they lie against metal parts.
- Do not route wires where they will get hot, for example where the heater will blow over them. If the insulation heats up, it may become damaged, resulting in a short-circuit through the vehicle body.

To prevent damage

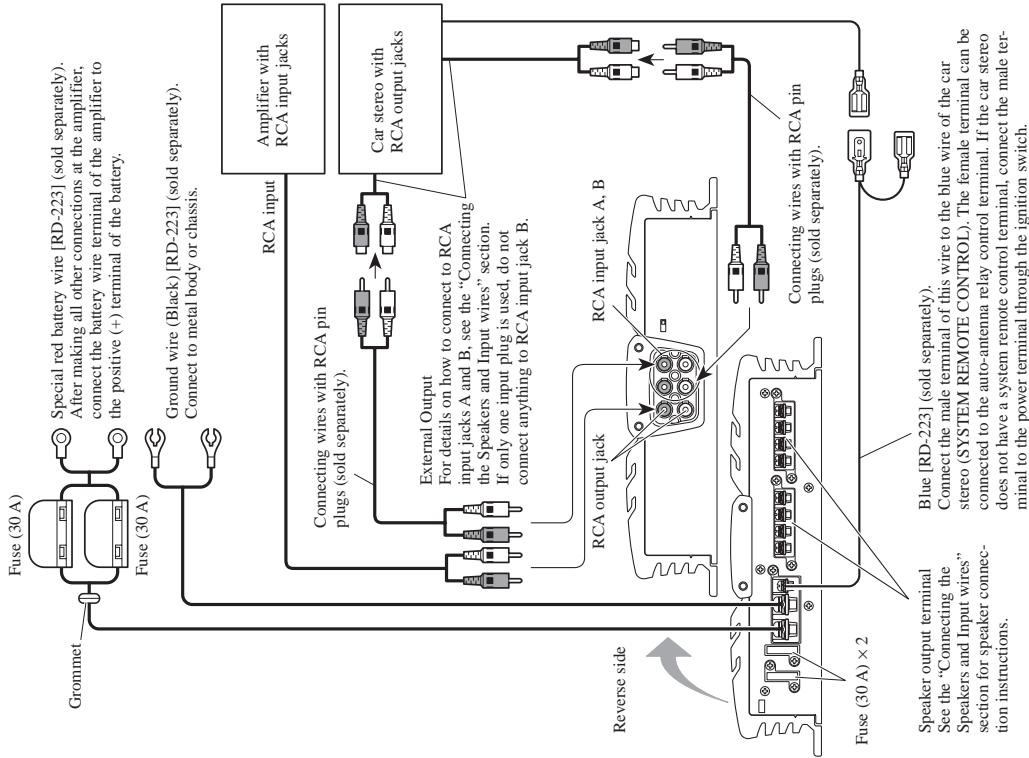
- Do not ground the speaker wire directly or connect a negative (-) lead wire for several speakers.
- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- If the car stereo is kept on for a long time while the engine is at rest or idling, the battery may go dead. Turn the car stereo off when the engine is at rest or idling.
- If the blue wire of the amplifier is connected to the power terminal through the ignition switch (12 V DC), the amplifier will always be on when the ignition is on—regardless of whether the car stereo is on or off. Because of this, the battery could go dead if the engine is at rest or idle.

- Make sure that wires will not interfere with moving parts of the vehicle, such as the gearshift, handbrake or seat sliding mechanism.
- Do not shorten any wires. Otherwise the protection circuit may fail to work when it should.
- Never feed power to other equipment by cutting the insulation of the power supply wire to tap from the wire. The current capacity of the wire will be exceeded, causing overheating.

- Install and route the separately sold battery wire as far away as possible from the speaker wires. Install and route the separately sold battery wire and ground wire, speaker wires, and the amplifier as far away as possible from the antenna, antenna cable and tuner.
- Speakers to be connected to the amplifier should conform with the standards listed below. Otherwise damage will occur to the speaker. The speaker impedance must be 1 to 8 ohms. (2 to 8 Ω for stereo, monaural and other bridge connections.)

Speaker Channel	Speaker Type	Power
Four-channel	Sub-woofer	Nominal input: Min. 65 W
	Other than sub-woofer	Max. input: Min. 130 W
Two-channel	Sub-woofer	Nominal input: Min. 150 W
	Other than sub-woofer	Max. input: Min. 300 W
Three-channel	Sub-woofer	Nominal input: Min. 65 W
	Other than sub-woofer	Max. input: Min. 130 W
Three-channel	Sub-woofer	Nominal input: Min. 150 W
	Other than sub-woofer	Max. input: Min. 300 W

Connection Diagram



8.2 SPECIFICATIONS

● GM-X1024/X1R/UC

Specifications

Power source	14.4 V DC (10.8 — 15.1 V allowable)
Grounding system	Negative type
Current consumption	39 A (at continuous power, 4 Ω)
Average current drawn*	11 A (4 Ω for four channels) 18 A (4 Ω for two channels)
Fuse	30 A × 2
Dimensions	255 (W) × 61 (H) × 310 (D) mm [10 (W) × 2.38 (H) × 12-1/4 (D) in.]
Weight	4.1 kg (9.0 lbs.) (Leads for wiring not included)
Maximum power output	130 W × 4 / 300 W × 2 (EIAJ)
Continuous power output	65 W × 4 (at 14.4 V, 4 Ω, 20 — 20,000 Hz, 0.04% THD) 150 W × 2 (at 14.4 V, 4 Ω, 20 — 20,000 Hz, 0.4% THD) 75 W × 4 (at 14.4 V, 2 Ω, 20 — 20,000 Hz, 0.4% THD)
Load impedance	4 Ω (1 — 8 Ω allowable) (Bridge connection: 2 — 8 Ω allowable)
Frequency response	10 — 50,000 Hz (+0 dB, -1 dB)
Signal-to-noise ratio	105 dB (HF-A network)
Distortion	0.003% (10 W, 1 kHz)
Separation	70 dB (1 kHz)
Low pass filter	Cut off frequency: 50 — 120 Hz
High pass filter	Cut off slope: -12 dB/oct
Input level / impedance	Cut off frequency: 50 — 120 Hz Cut off slope: -12 dB/oct 0.4 — 6.5 V/22 kΩ

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

***Average current drawn**

- The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.

● GM-X924/X1R/UC, GM-X924/X1R/EW, GM-X924/X1R/ES

Specifications

Power source	14.4 V DC (10.8 — 15.1 V allowable)
Grounding system	Negative type
Current consumption	39 A (at continuous power, 4 Ω)
Average current drawn*	11 A (4 Ω for four channels) 18 A (4 Ω for two channels)
Fuse	30 A × 2
Dimensions	255 (W) × 61 (H) × 310 (D) mm [10 (W) × 2.38 (H) × 12-1/4 (D) in.]
Weight	4.1 kg (Leads for wiring not included)
Maximum power output	130 W × 4 / 300 W × 2 (EIAJ)
Continuous power output (GM-X924/X1R/EW)	110 W × 4 / 220 W × 2 (DIN45324, +B=14.4 V)
Continuous power output (GM-X924/X1R/UC, ES)	65 W × 4 (at 14.4 V, 4Ω, 20 — 20,000 Hz, 0.04% THD) 150 W × 2 (at 14.4 V, 4Ω, 20 — 20,000 Hz, 0.4% THD) 75 W × 4 (at 14.4 V, 2Ω, 20 — 20,000 Hz, 0.4% THD)
Load impedance	4 Ω (1 — 8 Ω allowable) (Bridge connection: 2 — 8 Ω allowable)
Frequency response	10 — 50,000 Hz (+0 dB, -1 dB)
Signal-to-noise ratio	105 dB (IEC-A network)
Distortion	0.003% (10 W, 1 kHz)
Separation	70 dB (1 kHz)
Low pass filter	Cut off frequency: 50 — 120 Hz
High pass filter	Cut off slope: -12 dB/oct
Input level / impedance	Cut off frequency: 50 — 120 Hz Cut off slope: -12 dB/oct 0.4 — 6.5 V/22 kΩ

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

***Average current drawn**

- The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.