Service Manual

GM-X944/X1R/UC

ORDER NO.
CRT2483

BRIDGEABLE FOUR-CHANNEL POWER AMPLIFIER

GM-X944

X1R/UC,EW,ES

CONTENTS

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1. SAFETY INFORMATION

● **GM-X944/X1R/UC**

CAUTION

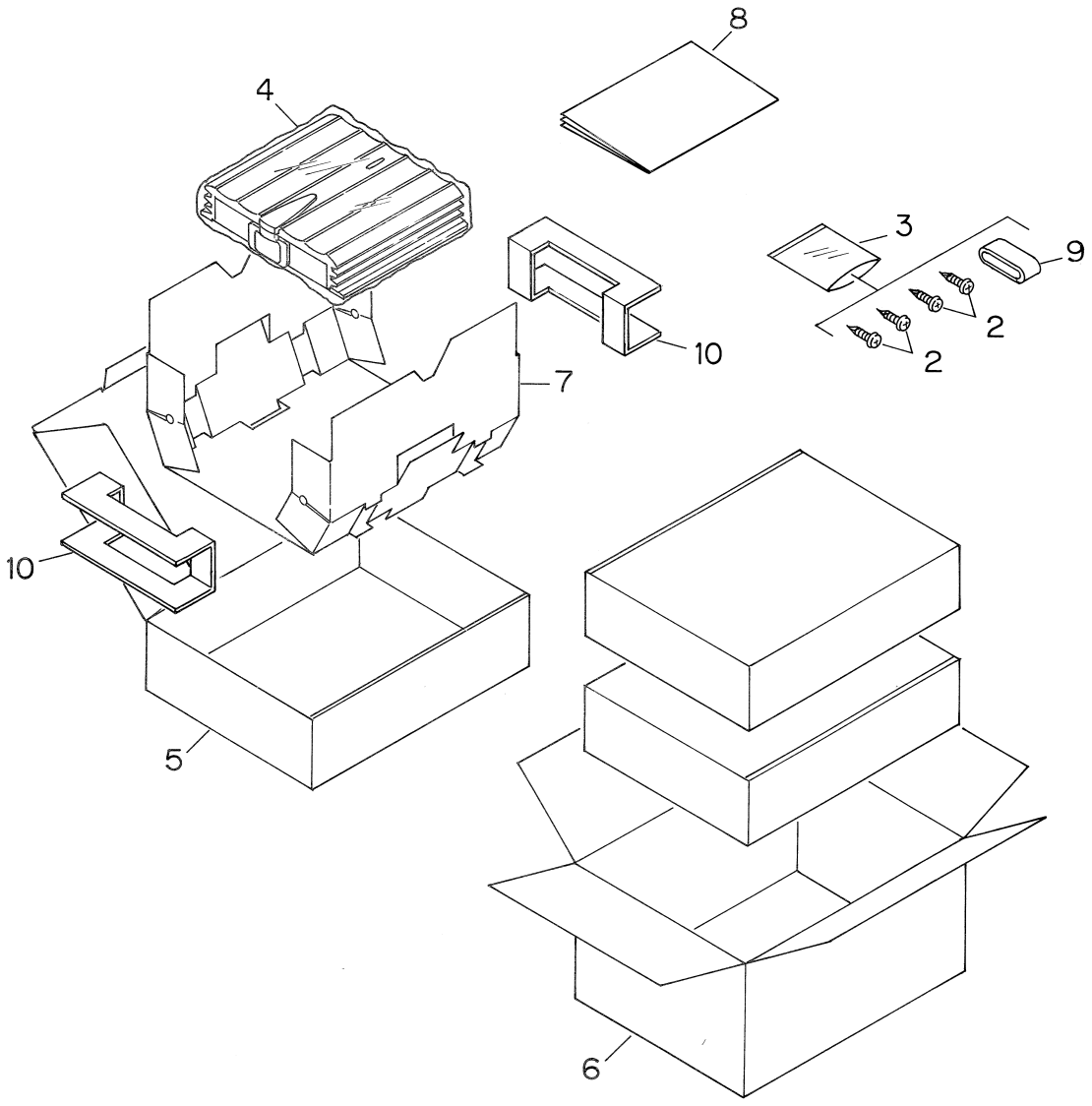
This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly 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

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



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.

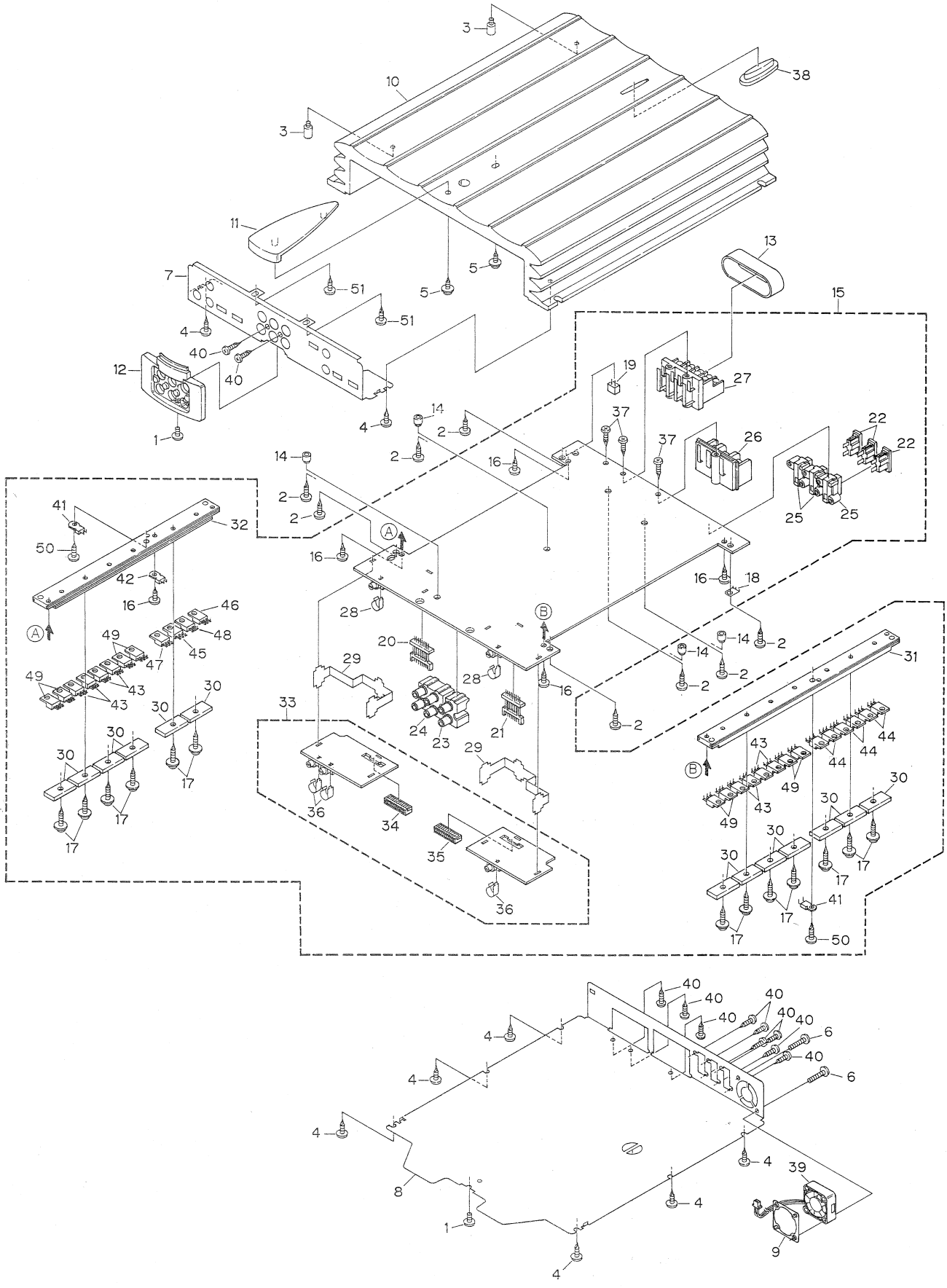
● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No. GM-X944/X1R/UC	Part No. GM-X944/X1R/EW	Part No. GM-X944/X1R/ES
	1	•••••			
	2	Screw	BYC40P180FZK	BYC40P180FZK	BYC40P180FZK
	3	Polyethylene Bag	HEG0011	HEG0011	HEG0011
	4	Polyethylene Bag	HEG0021	HEG0021	HEG0021
	5	Carton	HHG0248	HHG0249	HHG0250
	6	Contain Box	HHL0248	HHL0249	HHL0250
	7	Protector	HHP0079	HHP0079	HHP0079
	8-1	Owner's Manual	HRD0138	HRD0139	HRD0140
	8-2	Owner's Manual	Not used	Not used	HRD0141
*	8-3	Warranty Card	Not used	HRY1157	Not used
*	8-4	Card	ARY1048	Not used	Not used
*	8-5	PRC	HRY0012	Not used	Not used
	9	Cover	HNS0101	HNS0101	HNS0101
	10	Protector	HHP0096	HHP0096	HHP0096

● Owner's Manual

Model	Part No.	Language
GM-X944/X1R/UC	HRD0138	English, French
GM-X944/X1R/EW	HRD0139	English, Spanish, German, French, Italian, Dutch
GM-X944/X1R/ES	HRD0140	English, Spanish
	HRD0141	Portuguese(B), Arabic

2.2 EXTERIOR



(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw	BSZ30P050FZK
2	Screw(M3x12)	CBA1323
3	Screw(M3x5)	HBA0006
4	Screw(M3x8)	HBA0011
5	Screw(M2.6x6)	HBA0012
6	Screw(M3x16)	HBA0020
7	Panel	See Contrast table(2)
8	Case	See Contrast table(2)
9	Holder	HNC0078
10	Heat Sink	See Contrast table(2)
11	Plate	HNS0077
12	Plate	HNS0080
13	Cover	HNS0101
14	Spacer	HNV0016
15	Amp Unit	See Contrast table(2)
16	Screw	BBZ30P060FMC
17	Screw(M3x14)	CBA1382
18	Terminal(CN905)	CKF1059
19	Plug(CN906)	CKS1035
20	Connector(CN101)	CKS3146
21	Connector(CN103)	CKS3146
22	Fuse	HEK0030
23	Pin Jack(CN852)	HKB0002
24	Pin Jack(CN851)	HKB0006
25	Fuse Holder	HKE0012
26	Terminal(CN901)	HKE0020
27	Connector(CN301)	HKE0030
28	Clip	HNC0054
29	Holder	HNC0076
30	Bar	HNR0124
31	Heat Sink	HNR0148
32	Heat Sink	HNR0149
33	Network Unit	See Contrast table(2)
34	Connector(CN102)	CKS3145
35	Connector(CN104)	CKS3145
36	Clip	HNC0054
37	Screw	PPZ30P100SAD
38	Light Pipe Unit	HXA0322
39	Fan Motor	HXM0001
40	Screw	PPZ30P100FZK
41	Thermistor(TH901, 902)	CCX1013
42	Thermistor(TH904)	CCX1027
43	FET (Q361, 362, 363, 364, 365, 366, 367, 368)	94-4981
44	FET (Q905, 906, 911, 912, 913, 914)	STP50NE08
45	Transistor(Q907)	2SD2395
46	Diode(D910)	FML22R
47	Transistor(Q908)	2SB1566
48	Diode(D907)	FML22S
49	FET (Q353, 354, 355, 356, 357, 358, 359, 360)	94-4980
50	Screw	BBZ30P140FMC
51	Screw	BBZ30P060FMC

(2) CONTRAST TABLE

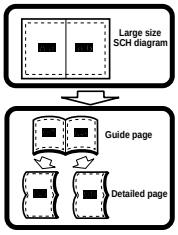
GM-X944/X1R/UC, EW and ES are constructed the same except for the following:

Mark No.	Description	Part No.		
		GM-X944/X1R/UC	GM-X944/X1R/EW	GM-X944/X1R/ES
7	Panel	HNB0121	HNB0104	HNB0121
8	Case	HNB0122	HNB0106	HNB0122
10	Heat Sink	HNR0160	HNR0165	HNR0160
15	Amp Unit	HWH0134	HWH0123	HWH0135
33	Network Unit	HWG0020	HWG0016	HWG0021

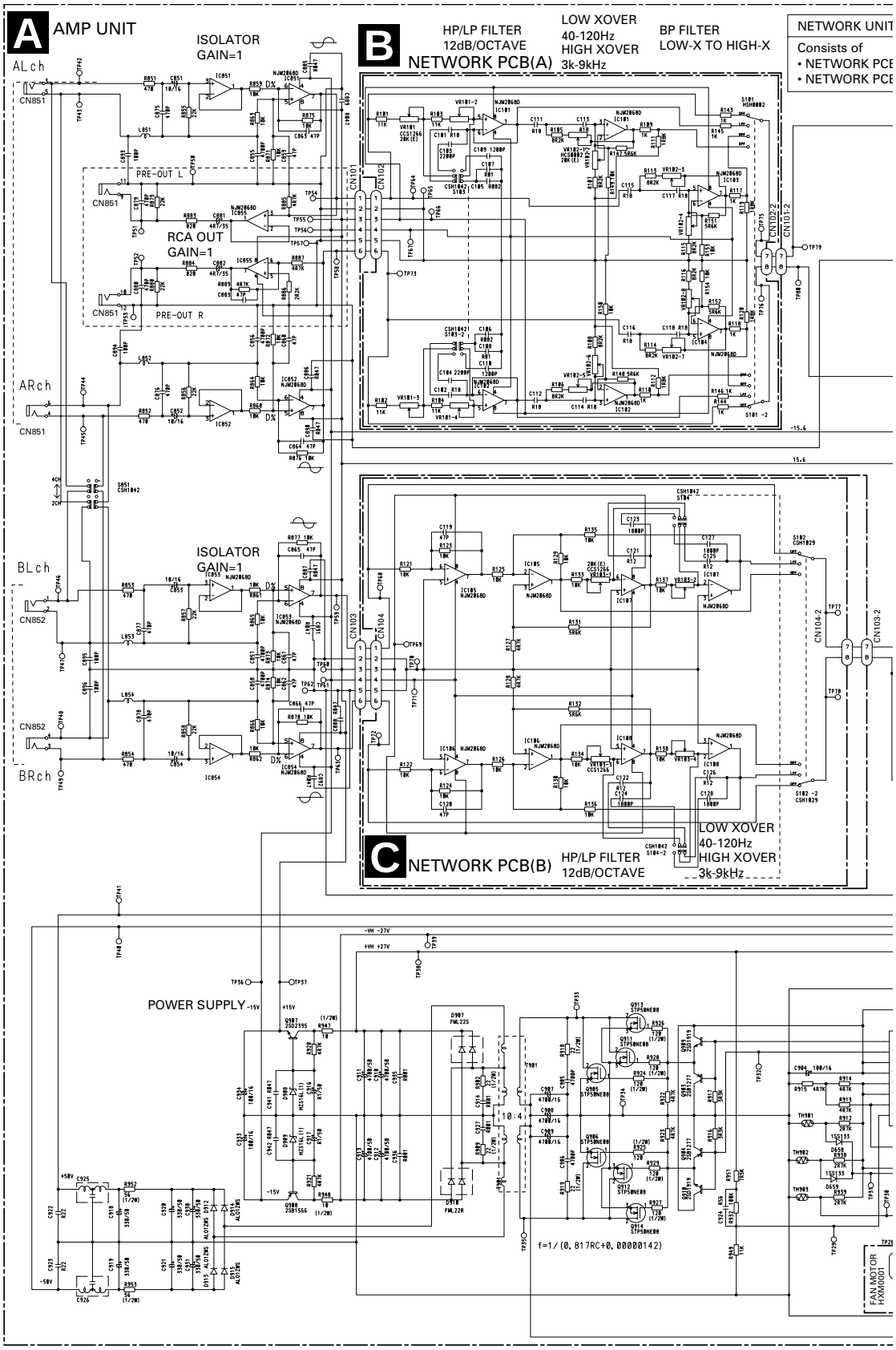
3. SCHEMATIC DIAGRAM

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".

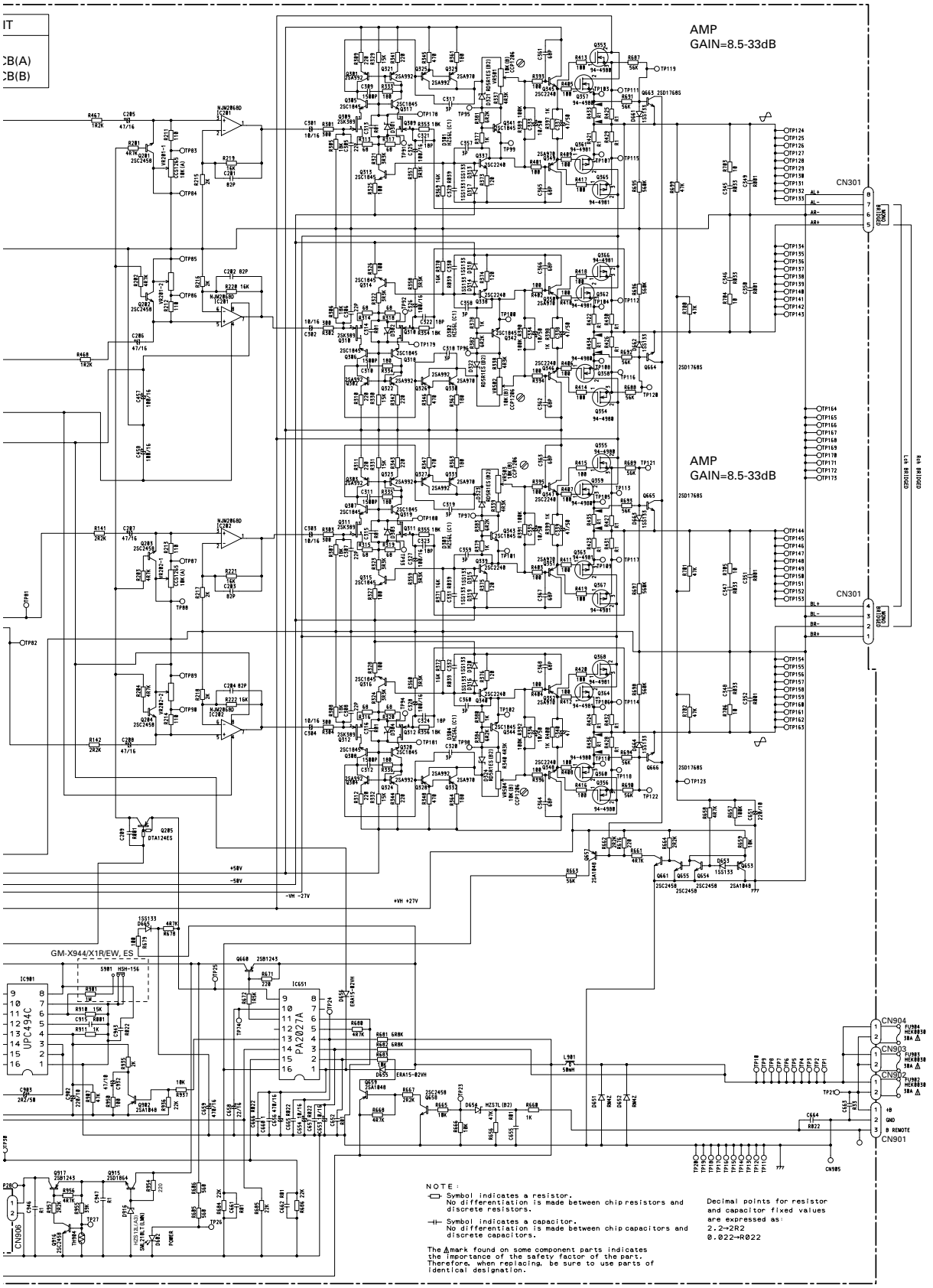


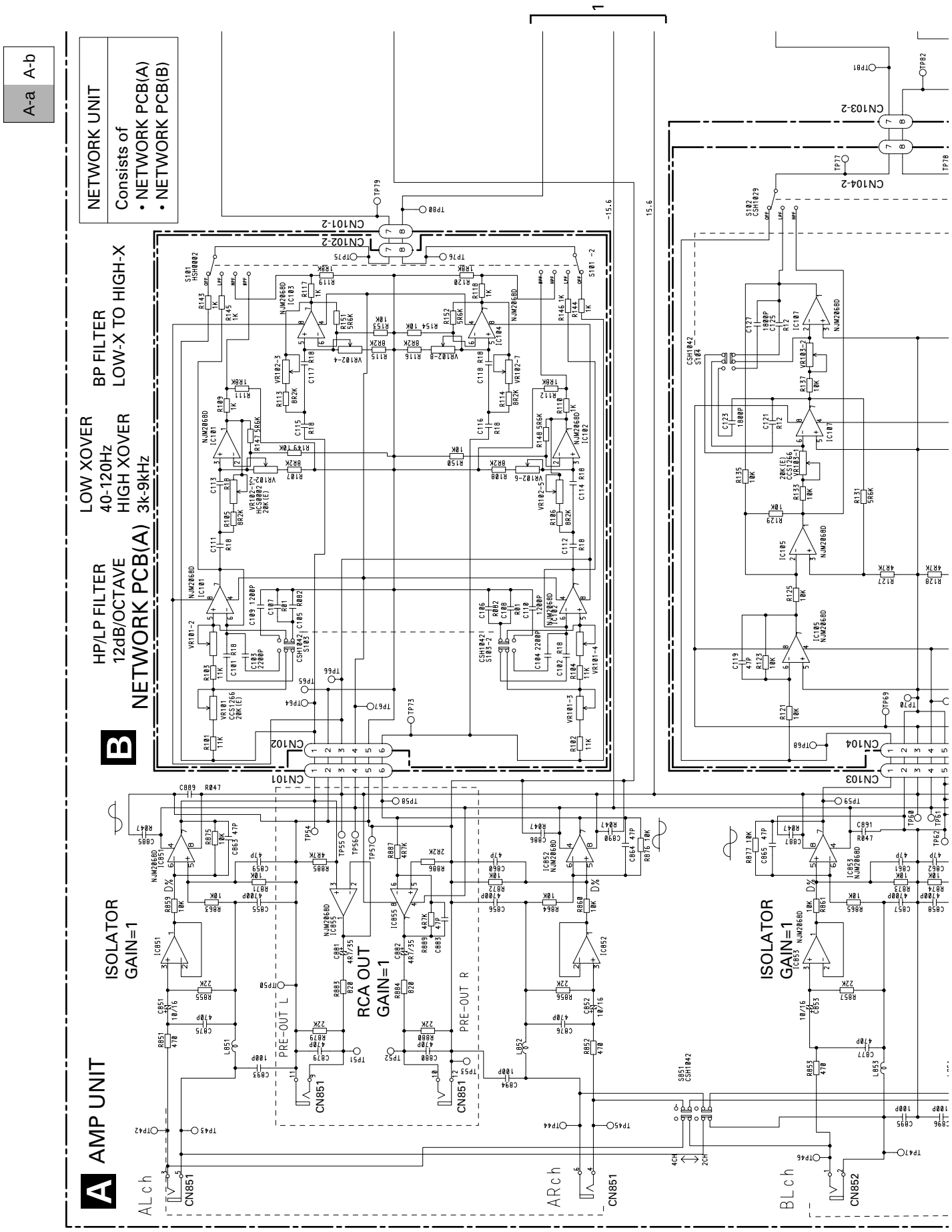
A-a



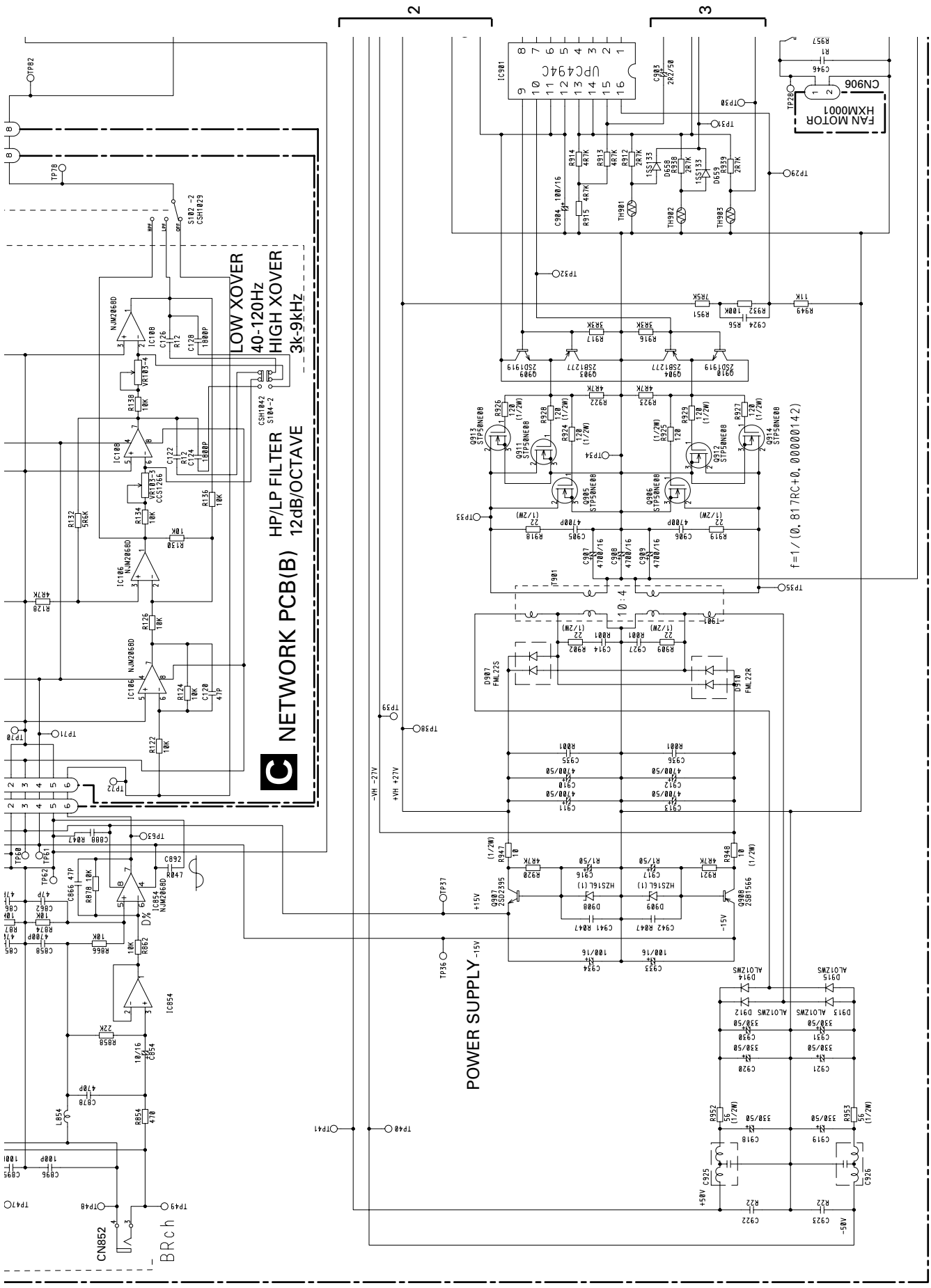
A B C

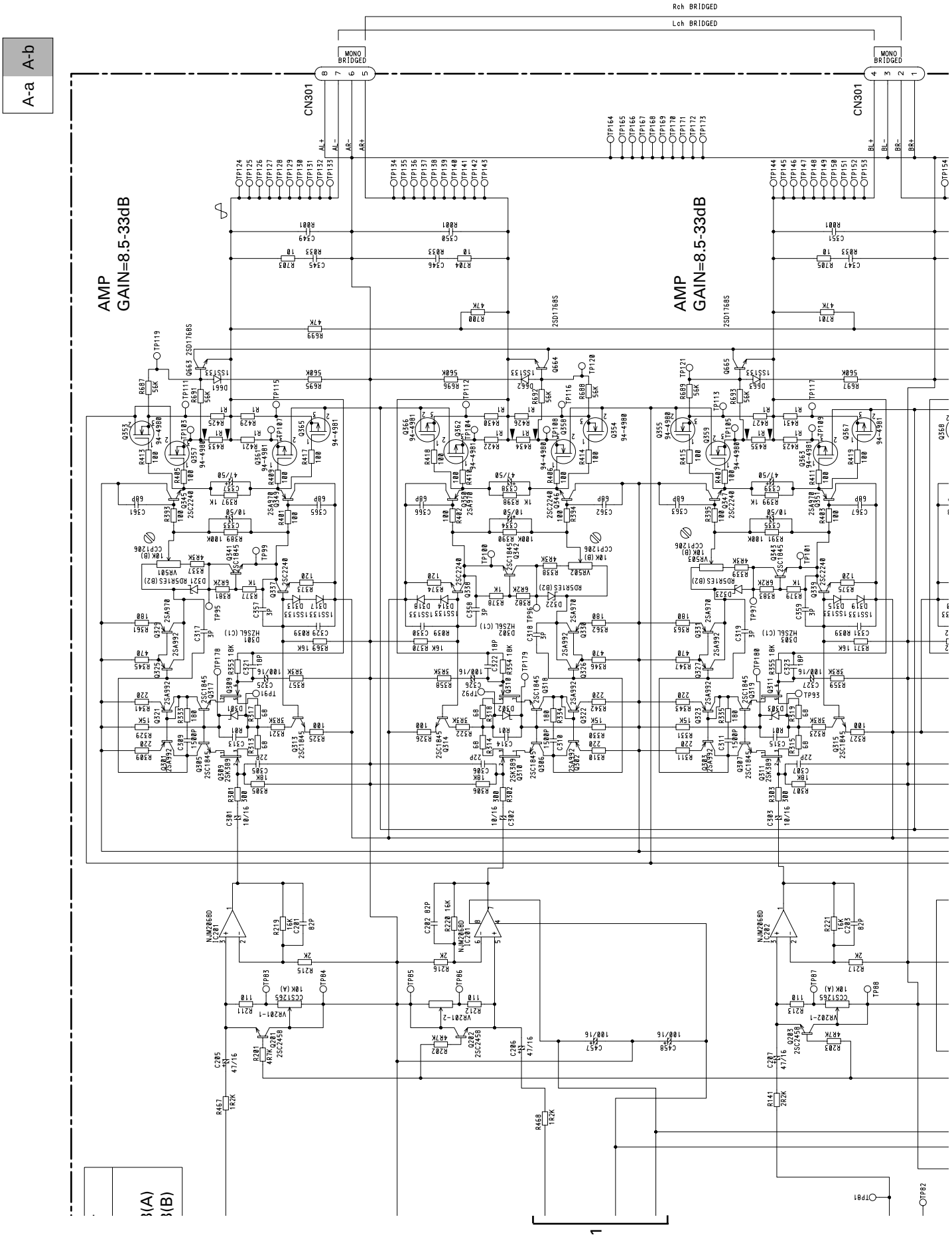
A-b

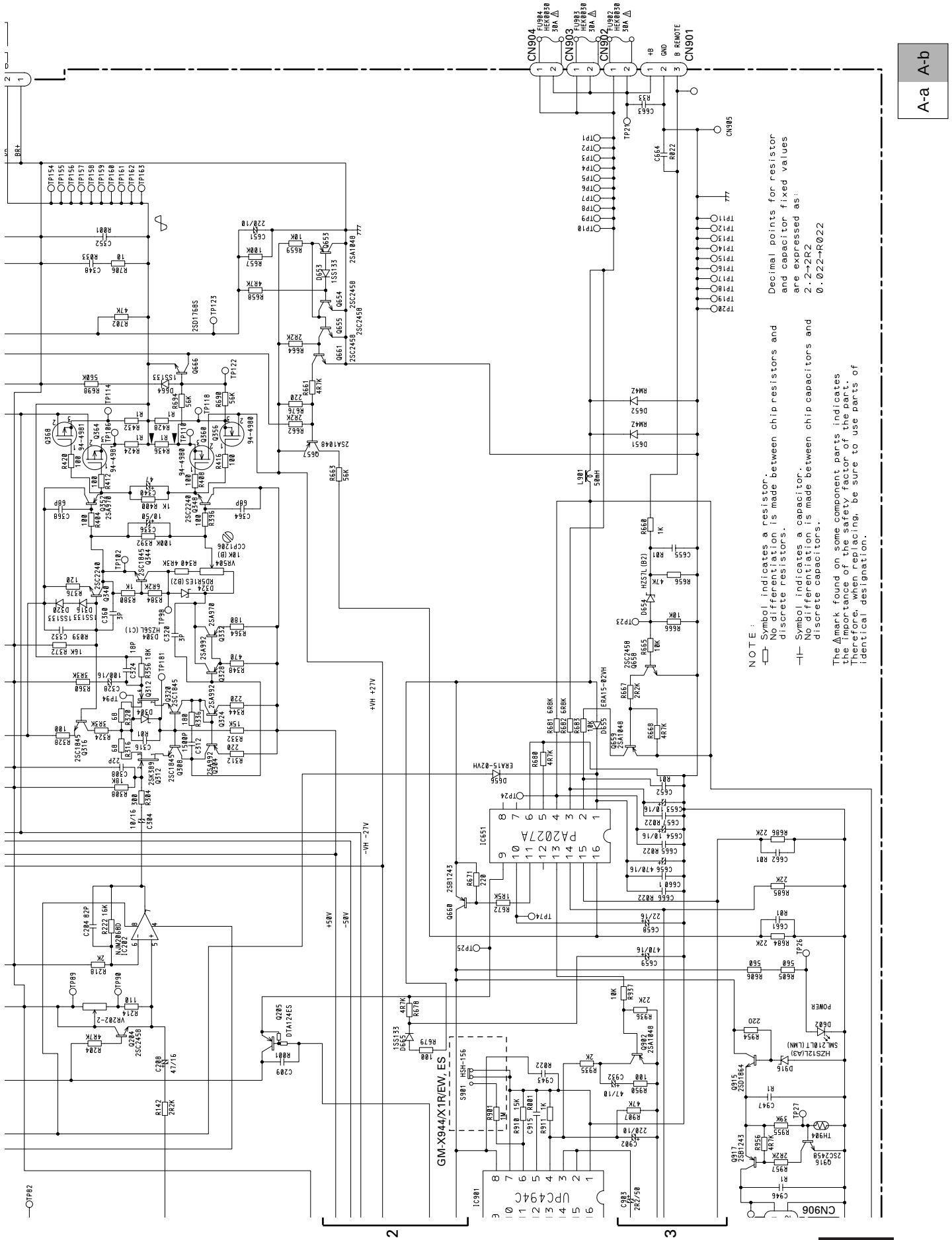

AMP
GAIN=8.5-33dB
AMP
GAIN=8.5-33dB
CN301
CN301
GM-X944/X1R/EW, ES
CN904
CN903
CN902
CN901
CN906
CN905
NOTE:
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The 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-b
A-a
NETWORK UNIT
Consists of
• NETWORK PCB(A)
• NETWORK PCB(B)
B
NETWORK PCB(A)
HP/LP FILTER
12dB/OCTAVE
LOW XOVER
40-120Hz
HIGH XOVER
3k-9kHz
BP FILTER
LOW-X TO HIGH-X
A
AMP UNIT
ISOLATOR
GAIN=1
RCA OUT
GAIN=1
PRE-OUT L
PRE-OUT R
ALch
ARch
BLch
CN851
CN852
CN101
CN102
CN103
CN104
CN101-2
CN102-2
CN103-2
CN104-2

A-a B C


C NETWORK PCB(B)
HP/LP FILTER 12dB/OCTAVE
LOW XOVER 40-120Hz
HIGH XOVER 3k-9kHz
POWER SUPPLY -15V
FAN MOTOR HXM0001
CN906
CN852
f=1/(0.817RC+0.000001142)
A-b
A-a


A-b
A-a
Rch BRIDGED
Lch BRIDGED
MONO BRIDGED
CN301
AMP
GAIN=8.5-33dB
2SD1768S
NJW2868D
2SC1845
2SA970
2SA992
2SC2240
2SK389
94-4980
94-4981
CCP1206
RDSR1ES (B2)
HZ5.6L (C1)

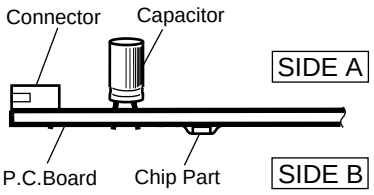

CN904
CN903
CN902
CN901
+B
GND
B REMOTE
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The △mark found on some component parts indicates 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
GM-X944/X1R/EW, ES
IC901
UPC494C
IC651
PA2027A
IC202
NJM2068D
CN906
A-a
A-b
A-b

4. PCB CONNECTION DIAGRAM

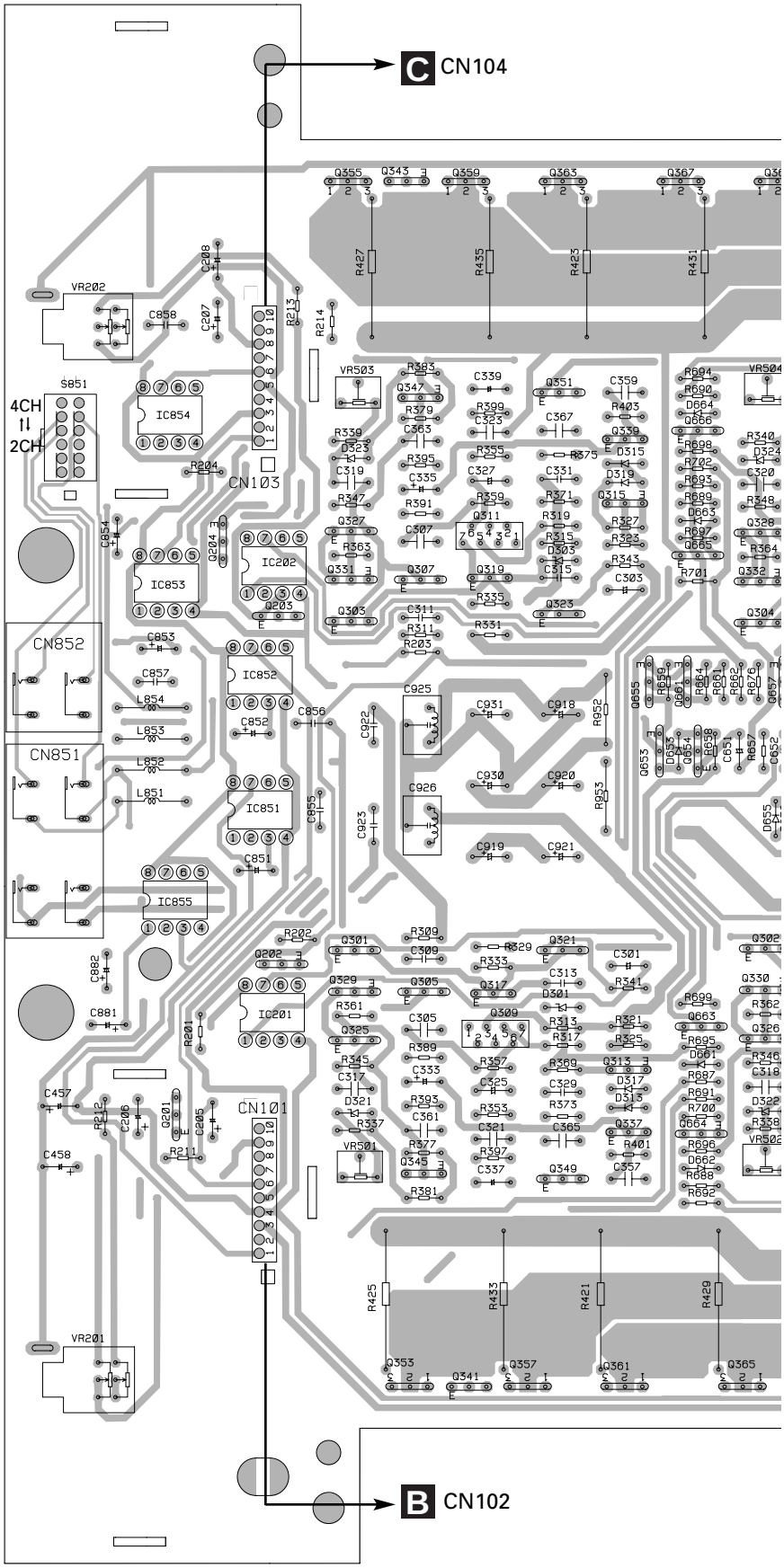
4.1 AMP UNIT

NOTE FOR PCB DIAGRAMS

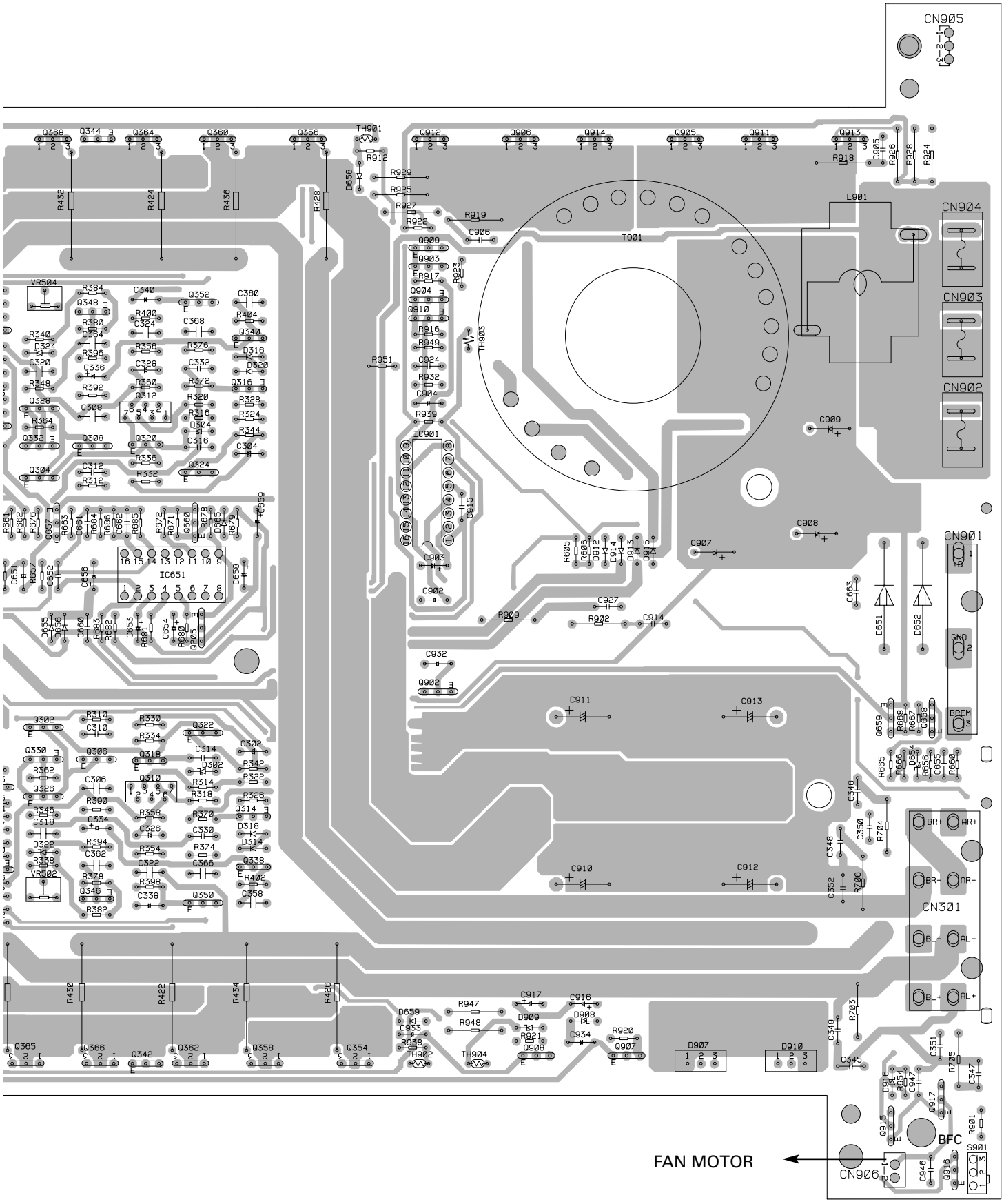
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



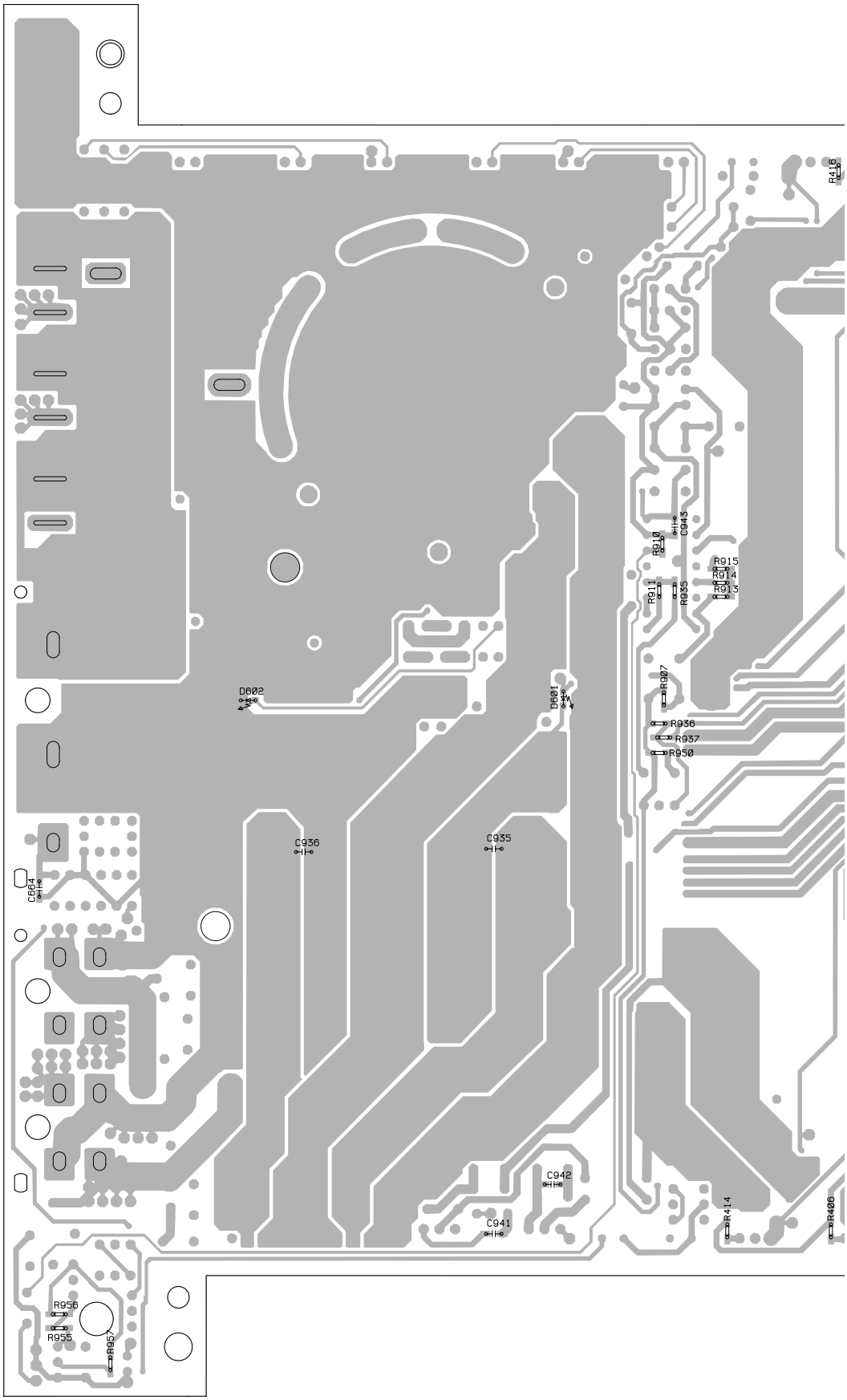
A AMP UNIT



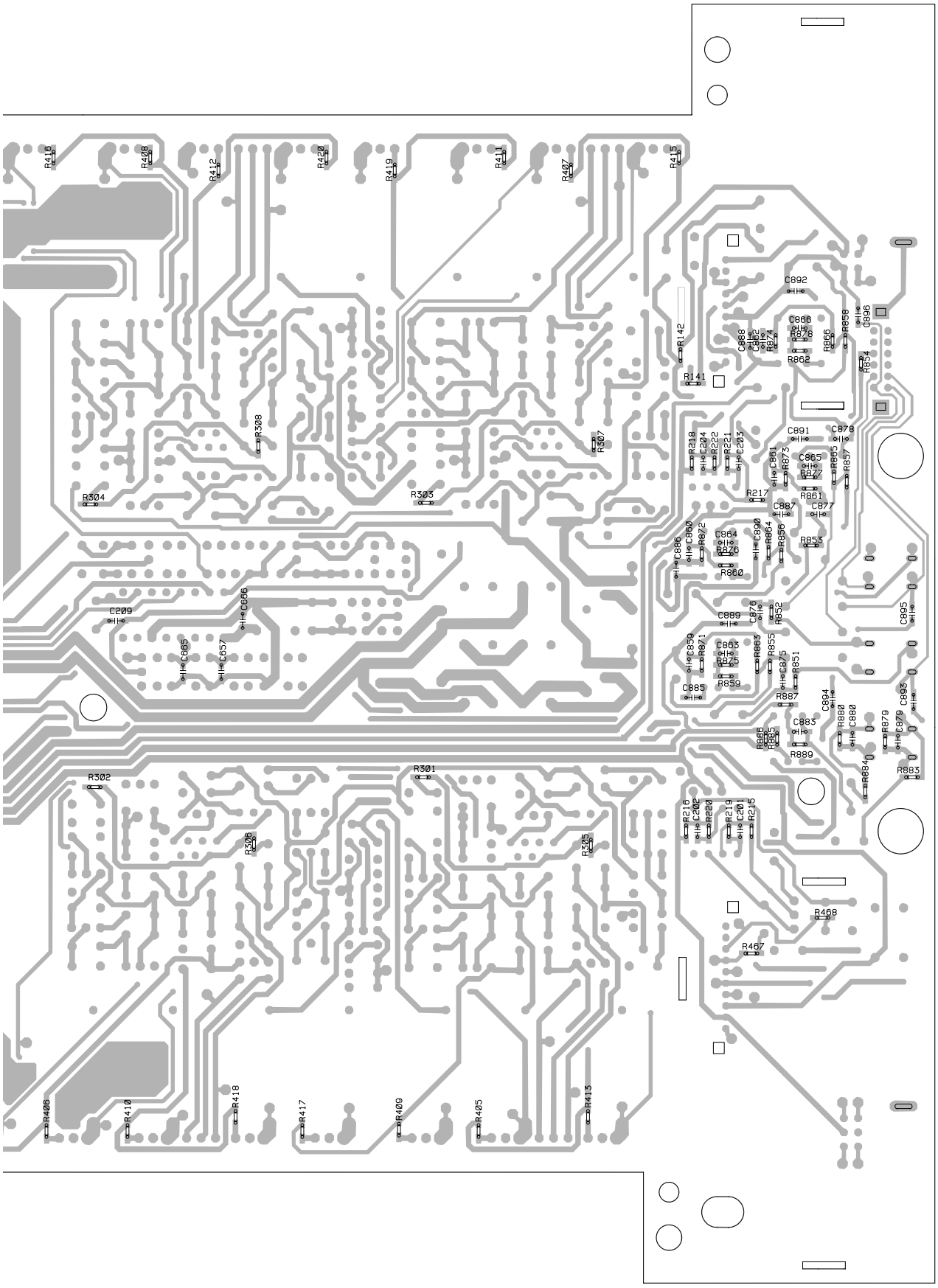
SIDE A


CN905
CN904
CN903
CN902
CN901
CN301
CN906
L901
T901
IC901
IC651
FAN MOTOR
BFC
S901
BR+
BR-
AR+
AR-
BL-
BL+
AL-
AL+
GND
BREM

A AMP UNIT


R416
C943
R910
R915
R914
R913
R911
R935
R907
D602
D601
R936
R937
R950
C936
C935
C934
C942
C941
R414
R406
R956
R955
R957

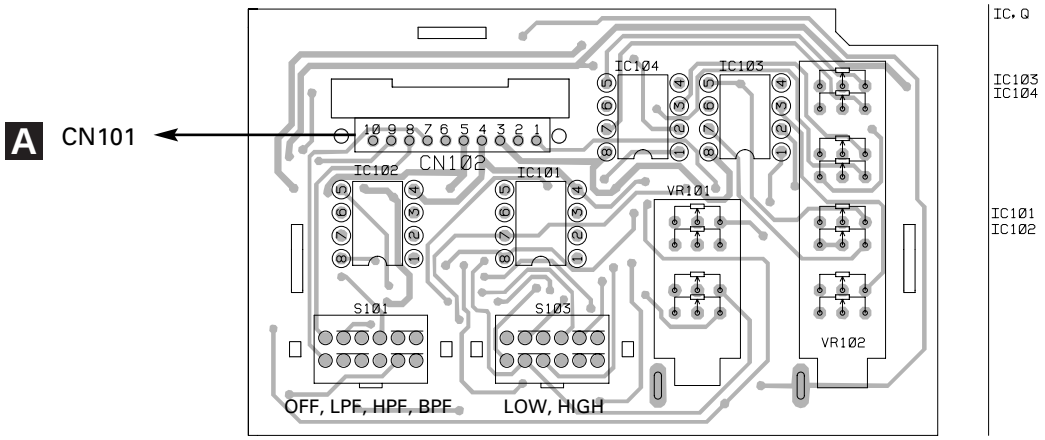
SIDE B


R416
R408
R412
R420
R419
R411
R407
R415
C892
C896
R858
C866
R862
R854
R142
R141
R308
R307
C891
C878
R218
C204
R221
C203
C861
R873
C865
R865
R857
R304
R303
R217
C887
C877
R861
C880
R872
C864
R856
C890
R864
R853
C886
R860
C209
C666
C889
C876
R852
C895
C665
C657
C859
R871
C863
R863
R855
C875
R851
C885
R859
R887
C894
C893
R880
C880
C885
R879
C879
R886
R889
R884
R883
R302
R301
R216
C202
R220
R219
C201
R215
R306
R305
R468
R467
R406
R410
R418
R417
R409
R405
R413

4.2 NETWORK PCB(A)

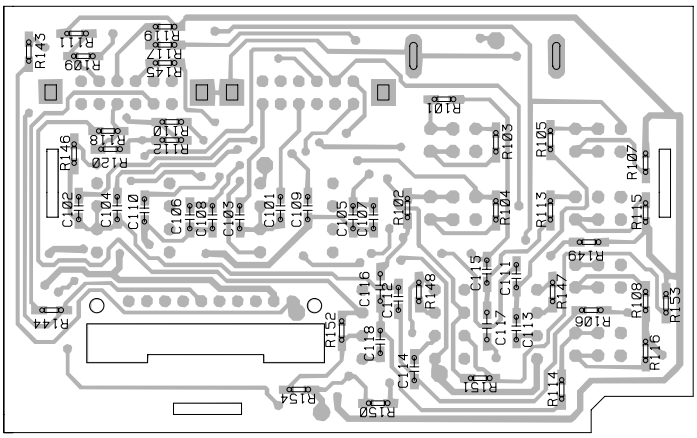
B NETWORK PCB(A)

SIDE A



B NETWORK PCB(A)

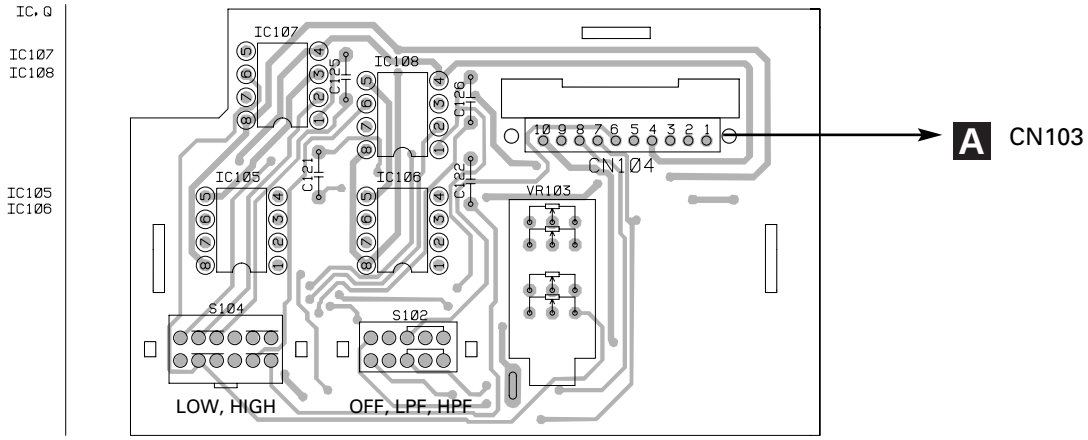
SIDE B



4.3 NETWORK PCB(B)

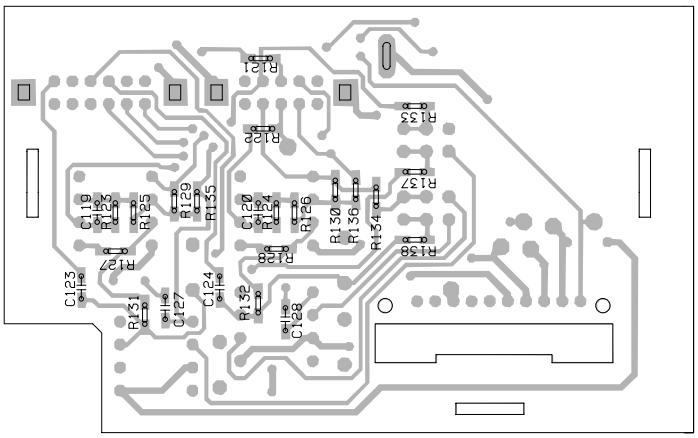
C NETWORK PCB(B)

SIDE A



C NETWORK PCB(B)

SIDE B



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/○S○○○J,RS1/○○S○○○J

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

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

Circuit Symbol and No.		Part Name	Part No.
Network Unit			
Consists of			
Network PCB(A)			
Network PCB(B)			
B C	Unit Number	: HWG0020(GM-X944/X1R/UC)	
		: HWG0016(GM-X944/X1R/EW)	
		: HWG0021(GM-X944/X1R/ES)	
	Unit Name	: Network Unit	
MISCELLANEOUS			
IC	101	IC	NJM2068D
IC	102	IC	NJM2068D
IC	103	IC	NJM2068D
IC	104	IC	NJM2068D
IC	105	IC	NJM2068D
IC	106	IC	NJM2068D
IC	107	IC	NJM2068D
IC	108	IC	NJM2068D
S	101	Switch(OFF, LPF, HPF, BPF)	HSH0002
S	102	Switch(OFF, LPF, HPF)	CSH1029
S	103	Slide Switch(LOW, HIGH)	CSH1042
S	104	Slide Switch(LOW, HIGH)	CSH1042
VR	101	Variable Resistor 20kΩ(E)	CCS1266
VR	102	Volume 20kΩ(E)	HCS0002
VR	103	Variable Resistor 20kΩ(E)	CCS1266
RESISTORS			
R	101		RS1/10S113J
R	102		RS1/10S113J
R	103		RS1/10S113J
R	104		RS1/10S113J
R	105		RS1/10S822J
R	106		RS1/10S822J
R	107		RS1/10S822J
R	108		RS1/10S822J
R	109		RS1/10S102J
R	110		RS1/10S102J
R	111		RS1/10S182J
R	112		RS1/10S182J
R	113		RS1/10S822J
R	114		RS1/10S822J
R	115		RS1/10S822J
R	116		RS1/10S822J
R	117		RS1/10S102J
R	118		RS1/10S102J
R	119		RS1/10S182J
R	120		RS1/10S182J
R	121		RS1/10S103J
R	122		RS1/10S103J
R	123		RS1/10S103J
R	124		RS1/10S103J
R	125		RS1/10S103J
R	126		RS1/10S103J
R	127		RS1/10S472J
R	128		RS1/10S472J
R	129		RS1/10S103J
R	130		RS1/10S103J
R	131		RS1/10S562J
R	132		RS1/10S562J
R	133		RS1/10S103J
R	134		RS1/10S103J
R	135		RS1/10S103J
R	136		RS1/10S103J
R	137		RS1/10S103J
R	138		RS1/10S103J
R	143		RS1/10S102J
R	144		RS1/10S102J
R	145		RS1/10S102J
R	146		RS1/10S102J
R	147		RS1/10S562J
R	148		RS1/10S562J
R	149		RS1/10S103J
R	150		RS1/10S103J
R	151		RS1/10S562J
R	152		RS1/10S562J
R	153		RS1/10S103J
R	154		RS1/10S103J
CAPACITORS			
C	101		CKSQYB184K16
C	102		CKSQYB184K16
C	103		CKSQYB222K50
C	104		CKSQYB222K50
C	105		CKSQYB823K50
C	106		CKSQYB823K50
C	107		CKSQYB103K25
C	108		CKSQYB103K25
C	109		CKSQYB122K50
C	110		CKSQYB122K50
C	111		CKSQYB184K16
C	112		CKSQYB184K16
C	113		CKSQYB184K16
C	114		CKSQYB184K16
C	115		CKSQYB184K16
C	116		CKSQYB184K16
C	117		CKSQYB184K16
C	118		CKSQYB184K16
C	119		CCSQCH470J50
C	120		CCSQCH470J50
C	121		CFTLA124J50
C	122		CFTLA124J50
C	123		CKSQYB182K50
C	124		CKSQYB182K50
C	125		CFTLA124J50

=====Circuit Symbol and No.	===Part Name	Part No.
C 126		CFTLA124J50
C 127		CKSQYB182K50
C 128		CKSQYB182K50

A Unit Number : HWH0134(GM-X944/X1R/UC)
: HWH0123(GM-X944/X1R/EW)
: HWH0135(GM-X944/X1R/ES)

Unit Name : Amp Unit

MISCELLANEOUS

IC 201	IC	NJM2068D
IC 202	IC	NJM2068D
IC 651	IC	PA2027A
IC 851	IC	NJM2068D
IC 852	IC	NJM2068D
IC 853	IC	NJM2068D
IC 854	IC	NJM2068D
IC 855	IC	NJM2068D
IC 901	IC	UPC494C
Q 201	Transistor	2SC2458
Q 202	Transistor	2SC2458
Q 203	Transistor	2SC2458
Q 204	Transistor	2SC2458
Q 205	Transistor	DTA124ES
Q 301	Transistor	2SA992
Q 302	Transistor	2SA992
Q 303	Transistor	2SA992
Q 304	Transistor	2SA992
Q 305	Transistor	2SC1845
Q 306	Transistor	2SC1845
Q 307	Transistor	2SC1845
Q 308	Transistor	2SC1845
Q 309	Transistor	2SK389
Q 310	Transistor	2SK389
Q 311	Transistor	2SK389
Q 312	Transistor	2SK389
Q 313	Transistor	2SC1845
Q 314	Transistor	2SC1845
Q 315	Transistor	2SC1845
Q 316	Transistor	2SC1845
Q 317	Transistor	2SC1845
Q 318	Transistor	2SC1845
Q 319	Transistor	2SC1845
Q 320	Transistor	2SC1845
Q 321	Transistor	2SA992
Q 322	Transistor	2SA992
Q 323	Transistor	2SA992
Q 324	Transistor	2SA992
Q 325	Transistor	2SA992
Q 326	Transistor	2SA992
Q 327	Transistor	2SA992
Q 328	Transistor	2SA992
Q 329	Transistor	2SA970
Q 330	Transistor	2SA970
Q 331	Transistor	2SA970
Q 332	Transistor	2SA970
Q 337	Transistor	2SC2240
Q 338	Transistor	2SC2240
Q 339	Transistor	2SC2240
Q 340	Transistor	2SC2240
Q 341	Transistor	2SC1845
Q 342	Transistor	2SC1845
Q 343	Transistor	2SC1845
Q 344	Transistor	2SC1845
Q 345	Transistor	2SC2240

=====Circuit Symbol and No.	===Part Name	Part No.
Q 346	Transistor	2SC2240
Q 347	Transistor	2SC2240
Q 348	Transistor	2SC2240
Q 349	Transistor	2SA970
Q 350	Transistor	2SA970
Q 351	Transistor	2SA970
Q 352	Transistor	2SA970
Q 353	FET	94-4980
Q 354	FET	94-4980
Q 355	FET	94-4980
Q 356	FET	94-4980
Q 357	FET	94-4980
Q 358	FET	94-4980
Q 359	FET	94-4980
Q 360	FET	94-4980
Q 361	FET	94-4981
Q 362	FET	94-4981
Q 363	FET	94-4981
Q 364	FET	94-4981
Q 365	FET	94-4981
Q 366	FET	94-4981
Q 367	FET	94-4981
Q 368	FET	94-4981
Q 653	Transistor	2SA1048
Q 654	Transistor	2SC2458
Q 655	Transistor	2SC2458
Q 657	Transistor	2SA1048
Q 658	Transistor	2SC2458
Q 659	Transistor	2SA1048
Q 660	Transistor	2SB1243
Q 661	Transistor	2SC2458
Q 663	Transistor	2SD1768S
Q 664	Transistor	2SD1768S
Q 665	Transistor	2SD1768S
Q 666	Transistor	2SD1768S
Q 902	Transistor	2SA1048
Q 903	Transistor	2SB1277
Q 904	Transistor	2SB1277
Q 905	FET	STP50NE08
Q 906	FET	STP50NE08
Q 907	Transistor	2SD2395
Q 908	Transistor	2SB1566
Q 909	Transistor	2SD1919
Q 910	Transistor	2SD1919
Q 911	FET	STP50NE08
Q 912	FET	STP50NE08
Q 913	FET	STP50NE08
Q 914	FET	STP50NE08
Q 915	Transistor	2SD1864
Q 916	Transistor	2SC2458
Q 917	Transistor	2SB1243
D 301	Diode	HZS6L(C1)
D 302	Diode	HZS6L(C1)
D 303	Diode	HZS6L(C1)
D 304	Diode	HZS6L(C1)
D 313	Diode	1SS133
D 314	Diode	1SS133
D 315	Diode	1SS133
D 316	Diode	1SS133
D 317	Diode	1SS133
D 318	Diode	1SS133
D 319	Diode	1SS133
D 320	Diode	1SS133
D 321	Diode	RD5R1ES(B2)
D 322	Diode	RD5R1ES(B2)

=====Circuit Symbol and No.		===Part Name	Part No.
D	323	Diode	RD5R1ES(B2)
D	324	Diode	RD5R1ES(B2)
D	602	LED	SML210LT(LMN)
D	651	Diode	RM4Z
D	652	Diode	RM4Z
D	653	Diode	1SS133
D	654	Diode	HZS7L(B2)
D	655	Diode	ERA15-02VH
D	656	Diode	ERA15-02VH
D	658	Diode	1SS133
D	659	Diode	1SS133
D	661	Diode	1SS133
D	662	Diode	1SS133
D	663	Diode	1SS133
D	664	Diode	1SS133
D	665	Diode	1SS133
D	907	Diode	FML22S
D	908	Diode	HZS16L(1)
D	909	Diode	HZS16L(1)
D	910	Diode	FML22R
D	912	Diode	ALO1ZWS
D	913	Diode	ALO1ZWS
D	914	Diode	ALO1ZWS
D	915	Diode	ALO1ZWS
D	916	Diode	HZS12L(A3)
L	851	Ferri-Inductor	CTF1007
L	852	Ferri-Inductor	CTF1007
L	853	Ferri-Inductor	CTF1007
L	854	Ferri-Inductor	CTF1007
L	901	Choke Coil 50mH	CTH1144
T	901	Transformer	HTT0010
TH	901	Thermistor	CCX1013
TH	902	Thermistor	CCX1013
TH	903	Thermistor	CCX1035
TH	904	Thermistor	CCX1027
S	851	Slide Switch(4CH⇄2CH)	CSH1042
S	901	Switch(BFC)(GM-X944/X1R/EW, ES)	HSH-156
VR	201	Variable Resistor 10kΩ(A)	CCS1265
VR	202	Variable Resistor 10kΩ(A)	CCS1265
VR	501	Semi-fixed 10kΩ(B)	CCP1206
VR	502	Semi-fixed 10kΩ(B)	CCP1206
VR	503	Semi-fixed 10kΩ(B)	CCP1206
VR	504	Semi-fixed 10kΩ(B)	CCP1206
FU	902	Fuse 30A	HEK0030
FU	903	Fuse 30A	HEK0030
FU	904	Fuse 30A	HEK0030
		Network Unit(GM-X944/X1R/UC)	HWG0020
		Network Unit(GM-X944/X1R/EW)	HWG0016
		Network Unit(GM-X944/X1R/ES)	HWG0021

RESISTORS

=====Circuit Symbol and No.		===Part Name	Part No.
R	141		RS1/10S222J
R	142		RS1/10S222J
R	201		RD1/4PU472J
R	202		RD1/4PU472J
R	203		RD1/4PU472J
R	204		RD1/4PU472J
R	211		RD1/4PU111J
R	212		RD1/4PU111J
R	213		RD1/4PU111J
R	214		RD1/4PU111J
R	215		RS1/10S202J
R	216		RS1/10S202J
R	217		RS1/10S202J
R	218		RS1/10S202J
R	219		RS1/10S163J
R	220		RS1/10S163J
R	221		RS1/10S163J
R	222		RS1/10S163J
R	301		RS1/10S301J
R	302		RS1/10S301J
R	303		RS1/10S301J
R	304		RS1/10S301J
R	305		RS1/10S183J
R	306		RS1/10S183J
R	307		RS1/10S183J
R	308		RS1/10S183J
R	309		RD1/4PU221J
R	310		RD1/4PU221J
R	311		RD1/4PU221J
R	312		RD1/4PU221J
R	313		RD1/4PU680J
R	314		RD1/4PU680J
R	315		RD1/4PU680J
R	316		RD1/4PU680J
R	317		RD1/4PU680J
R	318		RD1/4PU680J
R	319		RD1/4PU680J
R	320		RD1/4PU680J
R	321		RD1/4PU332J
R	322		RD1/4PU332J
R	323		RD1/4PU332J
R	324		RD1/4PU332J
R	325		RD1/4PU101J
R	326		RD1/4PU101J
R	327		RD1/4PU101J
R	328		RD1/4PU101J
R	329		RD1/4PU153J
R	330		RD1/4PU153J
R	331		RD1/4PU153J
R	332		RD1/4PU153J
R	333		RD1/4PU181J
R	334		RD1/4PU181J
R	335		RD1/4PU181J
R	336		RD1/4PU181J
R	337		RD1/4PU432J
R	338		RD1/4PU432J
R	339		RD1/4PU432J
R	340		RD1/4PU432J
R	341		RD1/4PU221J
R	342		RD1/4PU221J
R	343		RD1/4PU221J
R	344		RD1/4PU221J
R	345		RD1/4PU471J
R	346		RD1/4PU471J
R	347		RD1/4PU471J
R	348		RD1/4PU471J
R	353		RD1/4PU183J
R	354		RD1/4PU183J
R	355		RD1/4PU183J
R	356		RD1/4PU183J
R	357		RD1/4PU332J
R	358		RD1/4PU332J
R	359		RD1/4PU332J
R	360		RD1/4PU332J
R	361		RD1/4PU181J
R	362		RD1/4PU181J
R	363		RD1/4PU181J
R	364		RD1/4PU181J
R	369		RD1/4PU163J
R	370		RD1/4PU163J

Circuit Symbol and No.	Part Name	Part No.
R 371		RD1/4PU163J
R 372		RD1/4PU163J
R 373		RD1/4PU121J
R 374		RD1/4PU121J
R 375		RD1/4PU121J
R 376		RD1/4PU121J
R 377		RD1/4PU102J
R 378		RD1/4PU102J
R 379		RD1/4PU102J
R 380		RD1/4PU102J
R 381		RD1/4PU622J
R 382		RD1/4PU622J
R 383		RD1/4PU622J
R 384		RD1/4PU622J
R 389		RD1/4PU104J
R 390		RD1/4PU104J
R 391		RD1/4PU104J
R 392		RD1/4PU104J
R 393		RD1/4PU101J
R 394		RD1/4PU101J
R 395		RD1/4PU101J
R 396		RD1/4PU101J
R 397		RD1/4PU102J
R 398		RD1/4PU102J
R 399		RD1/4PU102J
R 400		RD1/4PU102J
R 401		RD1/4PU101J
R 402		RD1/4PU101J
R 403		RD1/4PU101J
R 404		RD1/4PU101J
R 405		RS1/10S101J
R 406		RS1/10S101J
R 407		RS1/10S101J
R 408		RS1/10S101J
R 409		RS1/10S101J
R 410		RS1/10S101J
R 411		RS1/10S101J
R 412		RS1/10S101J
R 413		RS1/10S101J
R 414		RS1/10S101J
R 415		RS1/10S101J
R 416		RS1/10S101J
R 417		RS1/10S101J
R 418		RS1/10S101J
R 419		RS1/10S101J
R 420		RS1/10S101J
R 421		SPR30R1J
R 422		SPR30R1J
R 423		SPR30R1J
R 424		SPR30R1J
R 425		SPR30R1J
R 426		SPR30R1J
R 427		SPR30R1J
R 428		SPR30R1J
R 429		SPR30R1J
R 430		SPR30R1J
R 431		SPR30R1J
R 432		SPR30R1J
R 433		SPR30R1J
R 434		SPR30R1J
R 435		SPR30R1J
R 436		SPR30R1J
R 467		RS1/10S122J
R 468		RS1/10S122J
R 605		RD1/4PU561J
R 606		RD1/4PU561J
R 656		RD1/4PU473J
R 657		RD1/4PU104J
R 658		RD1/4PU472J
R 659		RD1/4PU103J
R 660		RD1/4PU102J
R 661		RD1/4PU472J
R 662		RD1/4PU222J
R 663		RD1/4PU563J
R 664		RD1/4PU222J
R 665		RD1/4PU103J
R 666		RD1/4PU103J
R 667		RD1/4PU222J
R 668		RD1/4PU472J
R 671		RD1/4PU221J
R 672		RD1/4PU152J
R 676		RD1/4PU221J
R 678		RD1/4PU472J
R 679		RD1/4PU101J
R 680		RD1/4PU472J
R 681		RD1/4PU682J
R 682		RD1/4PU682J
R 683		RD1/4PU103J
R 684		RD1/4PU223J
R 685		RD1/4PU223J
R 686		RD1/4PU223J
R 687		RD1/4PU563J
R 688		RD1/4PU563J
R 689		RD1/4PU563J
R 690		RD1/4PU563J
R 691		RD1/4PU563J
R 692		RD1/4PU563J
R 693		RD1/4PU563J
R 694		RD1/4PU563J
R 695		RD1/4PU564J
R 696		RD1/4PU564J
R 697		RD1/4PU564J
R 698		RD1/4PU564J
R 699		RD1/4PU473J
R 700		RD1/4PU473J
R 701		RD1/4PU473J
R 702		RD1/4PU473J
R 703		RS1/2PMF100J
R 704		RS1/2PMF100J
R 705		RS1/2PMF100J
R 706		RS1/2PMF100J
R 851		RS1/10S471J
R 852		RS1/10S471J
R 853		RS1/10S471J
R 854		RS1/10S471J
R 855		RS1/10S223J
R 856		RS1/10S223J
R 857		RS1/10S223J
R 858		RS1/10S223J
R 859		RN1/10SE1002D
R 860		RN1/10SE1002D
R 861		RN1/10SE1002D
R 862		RN1/10SE1002D
R 863		RN1/10SE1002D
R 864		RN1/10SE1002D
R 865		RN1/10SE1002D
R 866		RN1/10SE1002D
R 871		RN1/10SE1002D
R 872		RN1/10SE1002D
R 873		RN1/10SE1002D

=====Circuit Symbol and No.		===Part Name	Part No.
R	874		RN1/10SE1002D
R	875		RN1/10SE1002D
R	876		RN1/10SE1002D
R	877		RN1/10SE1002D
R	878		RN1/10SE1002D
R	879		RS1/10S223J
R	880		RS1/10S223J
R	883		RS1/10S821J
R	884		RS1/10S821J
R	885		RS1/10S472J
R	886		RS1/10S222J
R	887		RS1/10S472J
R	889		RS1/10S472J
R	901	(GM-X944/X1R/EW, ES)	RD1/4PU105J
R	902		RS1/2PMF220J
R	907		RS1/10S473J
R	909		RS1/2PMF220J
R	910		RS1/10S153J
R	911		RS1/10S102J
R	912		RD1/4PU272J
R	913		RS1/10S472J
R	914		RS1/10S472J
R	915		RS1/10S472J
R	916		RD1/4PU332J
R	917		RD1/4PU332J
R	918		RS1/2PMF220J
R	919		RS1/2PMF220J
R	920		RD1/4PU472J
R	921		RD1/4PU472J
R	922		RD1/4PU472J
R	923		RD1/4PU472J
R	924		RS1/2PMF121J
R	925		RS1/2PMF121J
R	926		RS1/2PMF121J
R	927		RS1/2PMF121J
R	928		RS1/2PMF121J
R	929		RS1/2PMF121J
R	932		RD1/4PU104J
R	935		RS1/10S202J
R	936		RS1/10S223J
R	937		RS1/10S103J
R	938		RD1/4PU272J
R	939		RD1/4PU272J
R	947		RS1/2PMF100J
R	948		RS1/2PMF100J
R	949		RD1/4PU113J
R	950		RS1/10S101J
R	951		RD1/4PU752J
R	952		RS1/2PMF560J
R	953		RS1/2PMF560J
R	954		RD1/4PU221J
R	955		RS1/10S393J
R	956		RS1/10S472J
R	957		RS1/10S222J

CAPACITORS

=====Circuit Symbol and No.		===Part Name	Part No.
C	201		CCSQCH820J50
C	202		CCSQCH820J50
C	203		CCSQCH820J50
C	204		CCSQCH820J50
C	205		CEJA470M16
C	206		CEJA470M16
C	207		CEJA470M16
C	208		CEJA470M16
C	209		CKSQYB102K50
C	301		CEJANP100M16
C	302		CEJANP100M16
C	303		CEJANP100M16
C	304		CEJANP100M16
C	305		CMA220J2H
C	306		CMA220J2H
C	307		CMA220J2H
C	308		CMA220J2H
C	309		CQMA152J50
C	310		CQMA152J50
C	311		CQMA152J50
C	312		CQMA152J50
C	313		CQMA103J50
C	314		CQMA103J50
C	315		CQMA103J50
C	316		CQMA103J50
C	317		CMA030D2H
C	318		CMA030D2H
C	319		CMA030D2H
C	320		CMA030D2H
C	321		CMA180J2H
C	322		CMA180J2H
C	323		CMA180J2H
C	324		CMA180J2H
C	325	100µF/16V	HCH0002
C	326	100µF/16V	HCH0002
C	327	100µF/16V	HCH0002
C	328	100µF/16V	HCH0002
C	329		CFTLA393J50
C	330		CFTLA393J50
C	331		CFTLA393J50
C	332		CFTLA393J50
C	333		CEAS100M50
C	334		CEAS100M50
C	335		CEAS100M50
C	336		CEAS100M50
C	337		CEAS470M50
C	338		CEAS470M50
C	339		CEAS470M50
C	340		CEAS470M50
C	345		CFTLA333J50
C	346		CFTLA333J50
C	347		CFTLA333J50
C	348		CFTLA333J50
C	349		CQMA102J50
C	350		CQMA102J50
C	351		CQMA102J50
C	352		CQMA102J50
C	357		CMA030D2H
C	358		CMA030D2H
C	359		CMA030D2H
C	360		CMA030D2H
C	361		CMA680J2H
C	362		CMA680J2H
C	363		CMA680J2H
C	364		CMA680J2H
C	365		CMA680J2H
C	366		CMA680J2H
C	367		CMA680J2H
C	368		CMA680J2H
C	457		CEJA101M16
C	458		CEJA101M16
C	651	220µF/10V	CCH1036
C	652		CFTLA103J50
C	653		CEAS100M16
C	654		CEAS100M16

=====Circuit Symbol and No.		===Part Name	Part No.
C	655		CFTLA103J50
C	656	470µF/16V	CCH1183
C	657		CKSQYB223K50
C	658		CEAS220M16
C	659	470µF/16V	CCH1183
C	660		CFTLA105J50
C	661		CFTLA103J50
C	662		CFTLA103J50
C	663		CFTLA334J50
C	664		CKSQYB223K50
C	665		CKSQYB223K50
C	666		CKSQYB223K50
C	851		CEAS100M16
C	852		CEAS100M16
C	853		CEAS100M16
C	854		CEAS100M16
C	855		CQMA472J50
C	856		CQMA472J50
C	857		CQMA472J50
C	858		CQMA472J50
C	859		CCSQCH470J50
C	860		CCSQCH470J50
C	861		CCSQCH470J50
C	862		CCSQCH470J50
C	863		CCSQCH470J50
C	864		CCSQCH470J50
C	865		CCSQCH470J50
C	866		CCSQCH470J50
C	875		CKSQYB471K50
C	876		CKSQYB471K50
C	877		CKSQYB471K50
C	878		CKSQYB471K50
C	879		CKSQYB471K50
C	880		CKSQYB471K50
C	881		CEAS4R7M35
C	882		CEAS4R7M35
C	883		CCSQCH470J50
C	885		CKSQYB473K50
C	886		CKSQYB473K50
C	887		CKSQYB473K50
C	888		CKSQYB473K50
C	889		CKSQYB473K50
C	890		CKSQYB473K50
C	891		CKSQYB473K50
C	892		CKSQYB473K50
C	893		CCSSL101J50
C	894		CCSSL101J50
C	895		CCSSL101J50
C	896		CCSSL101J50
C	902		CEAS221M10
C	903		CEAS2R2M50
C	904		CEAS101M16
C	905		CQMA472J50
C	906		CQMA472J50
C	907	4700µF/16V	CCH1310
C	908	4700µF/16V	CCH1310
C	909	4700µF/16V	CCH1310
C	910		478LBA050M2DC
C	911		478LBA050M2DC
C	912		478LBA050M2DC
C	913		478LBA050M2DC
C	914		CQMA102J50
C	915		CQMA102J50
C	916		CEASR10M50
C	917		CEASR10M50

=====Circuit Symbol and No.		===Part Name	Part No.
C	918		337RZM050M1020
C	919		337RZM050M1020
C	920		337RZM050M1020
C	921		337RZM050M1020
C	922		CFTLA224J50
C	923		CFTLA224J50
C	924		CFTLA564J50
C	925		CCG-081
C	926		CCG-081
C	927		CQMA102J50
C	930		337RZM050M1020
C	931		337RZM050M1020
C	932		CEAS470M10
C	933		CEAS101M16
C	934		CEAS101M16
C	935		CKSQYB102K50
C	936		CKSQYB102K50
C	941		CKSQYB473K50
C	942		CKSQYB473K50
C	943		CKSQYB223K50
C	946		CFTNA104J50
C	947		CFTNA104J50

Miscellaneous Parts List

Fan Motor	HXM0001

6. ADJUSTMENT

● Setting Idle Current

The following is the instructions for setting Idle current:

Setting the idle current to the following ranges will require you to measure the voltage across the indicated resistors and adjusting the indicated variable resistors to set the required voltage range. This adjustment is performed with no loads on the outputs with no signal input.

Specification:	45 mA ± 5mA
Voltage Range:	4.0 mV to 5.0 mV

1. Measure voltage across Resistor R433 and set VR501 to Voltage Range.
2. Measure voltage across Resistor R434 and set VR502 to Voltage Range.
3. Measure voltage across Resistor R435 and set VR503 to Voltage Range.
4. Measure voltage across Resistor R436 and set VR504 to Voltage Range.

Notes:

The Idle current should be set when the amplifier has not been run for awhile, and set at room temperature.

7. GENERAL INFORMATION

7.1 DISASSEMBLY

● **Removing the Case and the Plate (Fig.1)**

1. Remove the six screws.
2. Remove the screw.
3. Remove the three screws.
4. Remove the six screws.

Disconnect the connector and then remove the Case.

5. Remove the screw and then remove the Plate.

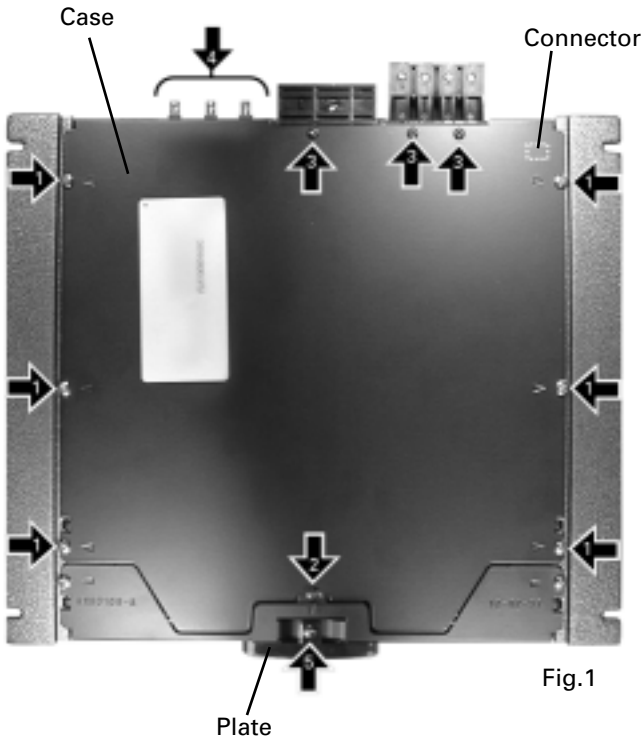


Fig.1

● **Removing the Amp Unit (Fig.2)**

1. Remove the two screws.
2. Remove the two screws.
3. Remove the eight screws and then remove the Amp Unit.

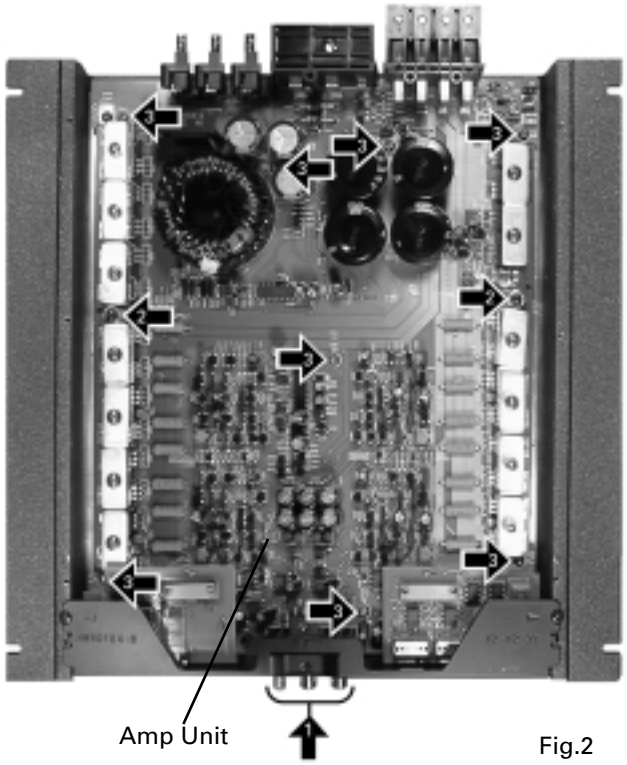
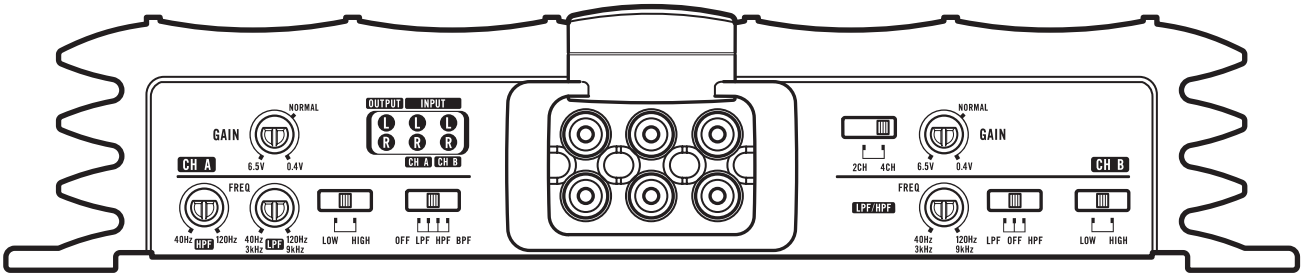
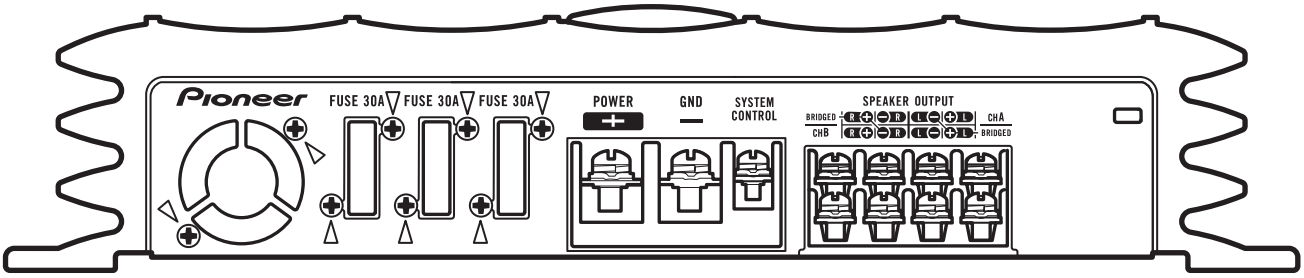


Fig.2

8. OPERATIONS AND SPECIFICATIONS

8.1 OPERATIONS





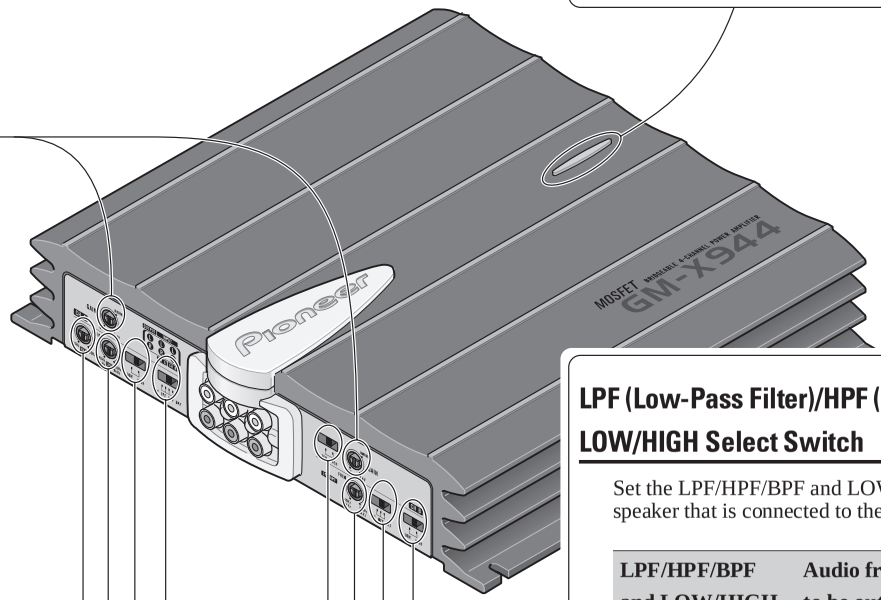
Gain Control

Adjusting the gain controls A and B will help match the output of the car stereo to the Pioneer amplifier. Normally, set the gain controls 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.
- When using with an RCA equipped car stereo (standard output of 500 mV), set to the NORMAL position. When using with an RCA equipped Pioneer car stereo with max. output of 4 V or more, adjust level to match the car stereo output level.

Power Indicator

The power indicator lights when the power is switched on.



LPF (Low-Pass Filter)/HPF (High-Pass Filter)/BPF (Band-Pass Filter) and LOW/HIGH Select Switch

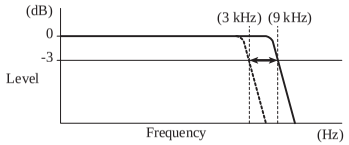
Set the LPF/HPF/BPF and LOW/HIGH select switch as follows according to the type of speaker that is connected to the speaker output connector and the car stereo system:

LPF/HPF/BPF and LOW/HIGH Select Switch		Audio frequency range to be output	Speaker Type	Remarks
LPF	HIGH	— 3k to 9k Hz	Mid	Connect a mid range speaker.
	LOW	— 40 to 120 Hz	Subwoofer	Connect a subwoofer.
HPF	HIGH	*2 3k to 9k Hz —	Tweeter*3	Connect a tweeter.
	LOW	40 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.
BPF (for CH A)*4		40 to 120 Hz — — 3k to 9k Hz	Mid	Connect a mid range speaker.
OFF		Full range	Full range	

*2 With CH A, even if the setting is HPF-HIGH, you can only select the same cut off frequency as with HPF-LOW (40 to 120 Hz).
*3 If you connect the tweeter directly, you must set the CH B to HPF-HIGH.
*4 Be sure to set the LOW/HIGH select switch to HIGH.

Cut Off Frequency Control

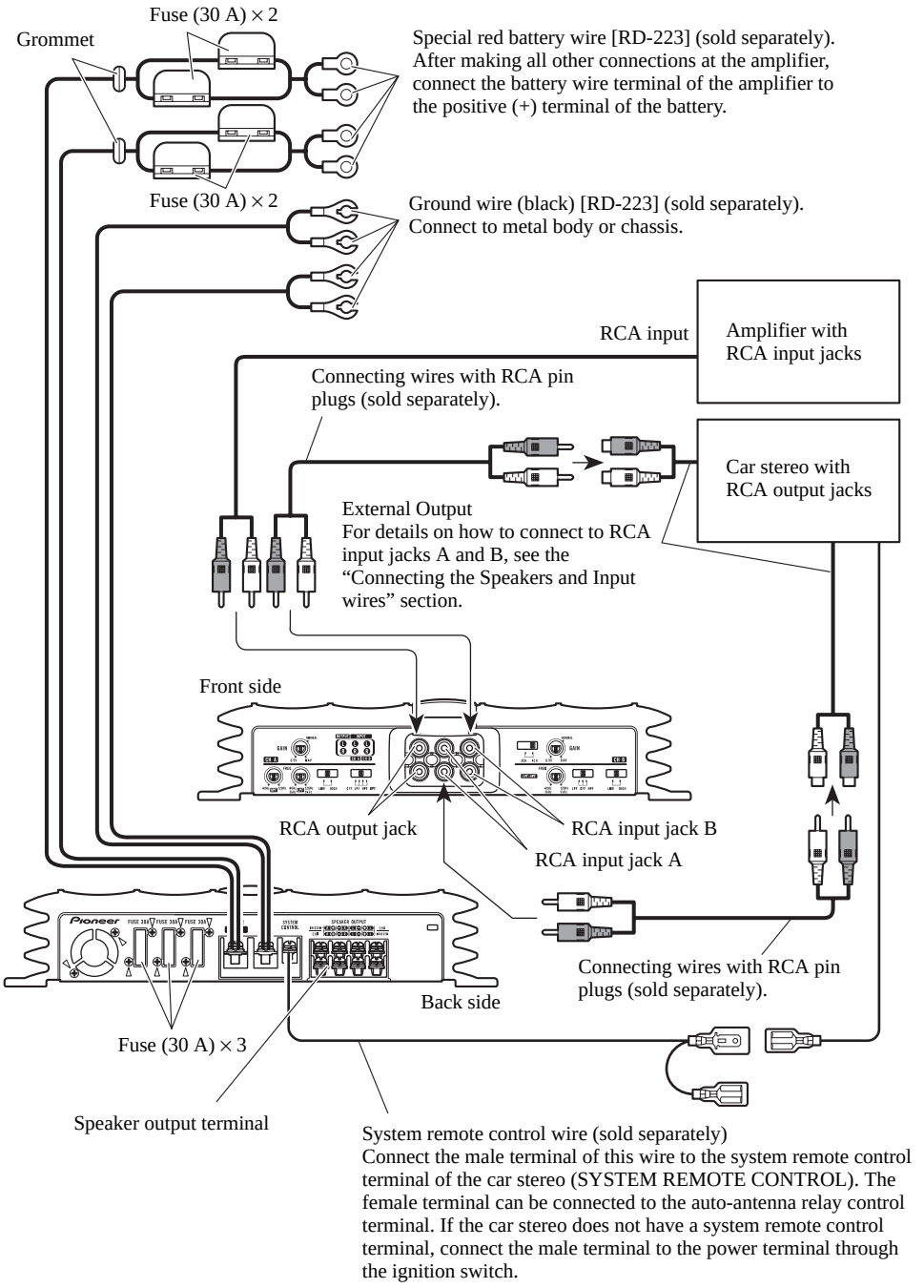
Combining LPF/HPF/BPF and LOW/HIGH select switch settings lets you select between cut off frequencies from 40 to 120 Hz and 3k to 9k Hz. (Example: LPF and HIGH)



RCA Input Select Switch

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

Connection Diagram



8.2 SPECIFICATIONS

● GM-X944/X1R/UC

Power source ..... 14.4 V DC (10.8 — 15.1 V allowable)
Grounding system ..... Negative type
Current consumption ..... 43.7 A (at continuous power, 4 Ω)
Average current drawn* ..... 14.5 A (4 Ω for four channels)
26.5 A (4 Ω for two channels)
Fuse ..... 30 A × 3
Dimensions ..... 270 (W) × 60 (H) × 297 (D) mm
[10-5/8 (W) × 2-3/8 (H) × 11-3/4 (D) in]
Weight ..... 5.4 kg (11.9 lbs) (Leads for wiring not included)
Maximum power output ..... 150 W × 4 / 500 W × 2
Continuous power output ..... 75 W × 4 (at 14.4 V, 4 Ω, 20 — 20,000 Hz, 0.04% THD)
250 W × 2 (at 14.4 V, 4 Ω, 20 — 20,000 Hz, 0.4% THD)
125 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 (IHF–A network)
Distortion ..... 0.005% (10 W, 1 kHz)
Separation ..... 65 dB (1 kHz)
Variable crossover network
A CH: LPF-L/LPF-H/HPF-L/BPF
B CH: LPF-L/LPF-H/HPF-L/HPF-H
Cut off frequency ..... Low frequency: 40 — 120 Hz
High frequency: 3k — 9k Hz
Cut off slope ..... –12 dB/oct
Maximum input level/impedance ..... RCA: 6.5 V/22 kΩ (0.4 — 6.5 V)

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-X944/X1R/EW

Power source	14.4 V DC (10.8 — 15.1 V allowable)
Grounding system	Negative type
Current consumption	43.7 A (at continuous power, 4 Ω)
Average current drawn*	14.5 A (4 Ω for four channels)
	26.5 A (4 Ω for two channels)
Fuse	30 A × 3
Dimensions	270 (W) × 60 (H) × 297 (D) mm
Weight	5.4 kg (Leads for wiring not included)
Maximum power output	150 W × 4 / 500 W × 2
Continuous power output	75 W × 4 (at 14.4V, 4 Ω, 20 — 20,000Hz, 0.04% THD)
	250 W × 2 (at 14.4V, 4 Ω, 20 — 20,000Hz, 0.4% THD)
	125 W × 4 (at 14.4V, 2 Ω, 20 — 20,000Hz, 0.4% THD)
	115 W × 4 / 360 W × 2 (DIN45324, +B=14.4 V)
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	0.005% (10 W, 1 kHz)
Separation	65 dB (1 kHz)
Varibale crossover network	
A CH: LPF-L/LPF-H/HPF-L/BPF	
B CH: LPF-L/LPF-H/HPF-L/HPF-H	
Cut off frequency	Low frequency: 40 — 120 Hz
	High frequency: 3k — 9k Hz
Cut off slope	–12 dB/oct
Maximum input level/impedance	RCA: 6.5 V/22 kΩ (0.4 — 6.5 V)

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-X944/X1R/ES

Power source ..... 14.4 V DC (10.8 — 15.1 V allowable)
Grounding system ..... Negative type
Current consumption ..... 43.7 A (at continuous power, 4 Ω)
Average current drawn* ..... 14.5 A (4 Ω for four channels)
26.5 A (4 Ω for two channels)
Fuse ..... 30 A × 3
Dimensions ..... 270 (W) × 60 (H) × 297 (D) mm
Weight ..... 5.4 kg (Leads for wiring not included)
Maximum power output ..... 150 W × 4 / 500 W × 2
Continuous power output ..... 75 W × 4 (at 14.4 V, 4 Ω, 20 — 20,000 Hz, 0.04% THD)
250 W × 2 (at 14.4 V, 4 Ω, 20 — 20,000 Hz, 0.4% THD)
125 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 (IEC-A network)
Distortion ..... 0.005% (10 W, 1 kHz)
Separation ..... 65 dB (1 kHz)
Variable crossover network
A CH: LPF-L/LPF-H/HPF-L/BPF
B CH: LPF-L/LPF-H/HPF-L/HPF-H
Cut off frequency ..... Low frequency: 40 — 120 Hz
High frequency: 3k — 9k Hz
Cut off slope ..... –12 dB/oct
Maximum input level/impedance ..... RCA: 6.5 V/22 kΩ (0.4 — 6.5 V)

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.