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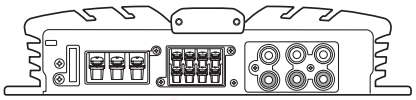
The Art of Entertainment

Service Manual



ORDER NO.
CRT2168

BRIDGEABLE FOUR-CHANNEL POWER AMPLIFIER

GM-X424 X1R/UC, ES, EW
GM-X324 X1R/UC

CONTENTS

1. SAFETY INFORMATION

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 mot risk trying to do so and refer the repair to a qualified service technician.

UC model

CAUTION

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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 & 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.

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K-ZEU. JAN. 1998 Printed in Japan

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING

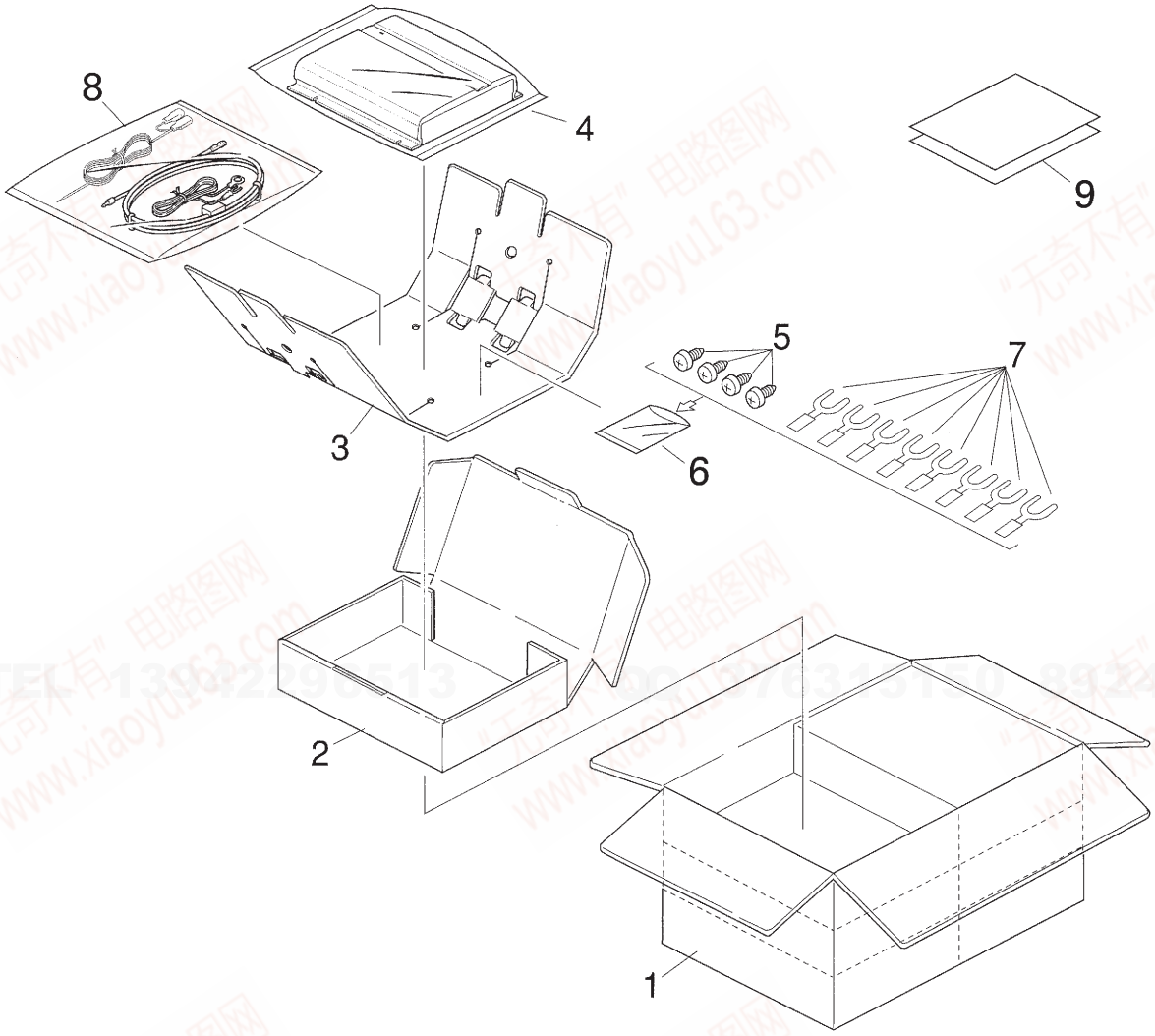


Fig. 1

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.
	1	Contain Box	See Contrast table (2)
	2	Carton	See Contrast table (2)
	3	Protector	HHP0020
	4	Polyethylene Bag	HEG0009
	5	Screw(x4)	BYC40P180FZK
	6	Polyethylene Bag	HEG0011
	7	Terminal(x8)	See Contrast table (2)
	8	Cord Assy	See Contrast table (2)
	9-1	Owner's Manual	See Contrast table (2)
	9-2	Owner's Manual	See Contrast table (2)
*	9-3	Warranty Card	See Contrast table (2)
*	9-4	Caution Card	See Contrast table (2)
*	9-5	Card	See Contrast table (2)

(2) CONTRAST TABLE

GM-X424/X1R/UC, GM-X424/X1R/ES, GM-X424/X1R/EW and GM-X324/X1R/UC are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.			
			GM-X424			GM-X324
			X1R/UC	X1R/ES	X1R/EW	X1R/UC
	1	Contain Box	HHL0142	HHL0143	HHL0144	HHL0141
	2	Carton	HHG0142	HHG0143	HHG0144	HHG0141
	7	Terminal(x8)	HKC0001	HKC0003	HKC0003	HKC0003
	8	Cord Assy	Not used	HDE4419	HDE4419	Not used
	9-1	Owner's Manual	HRD0052	HRD0050	HRD0055	HRD0054
	9-2	Owner's Manual	Not used	HRD0053	Not used	Not used
*	9-3	Warranty Card	HRY1070	Not used	HRY1087	Not used
*	9-4	Caution Card	HRP0006	Not used	Not used	Not used
*	9-5	Card	Not used	Not used	Not used	ARY1048

● Owner's Manual

Model	Part No.	Language
GM-X424/X1R/UC	HRD0052	English, French
GM-X424/X1R/ES	HRD0050	English, Spanish
	HRD0053	Arabic, Portuguese(B)
GM-X424/X1R/EW	HRD0055	English, French, German, Dutch, Spanish, Italian
GM-X324/X1R/UC	HRD0054	English, French

2.2 EXTERIOR

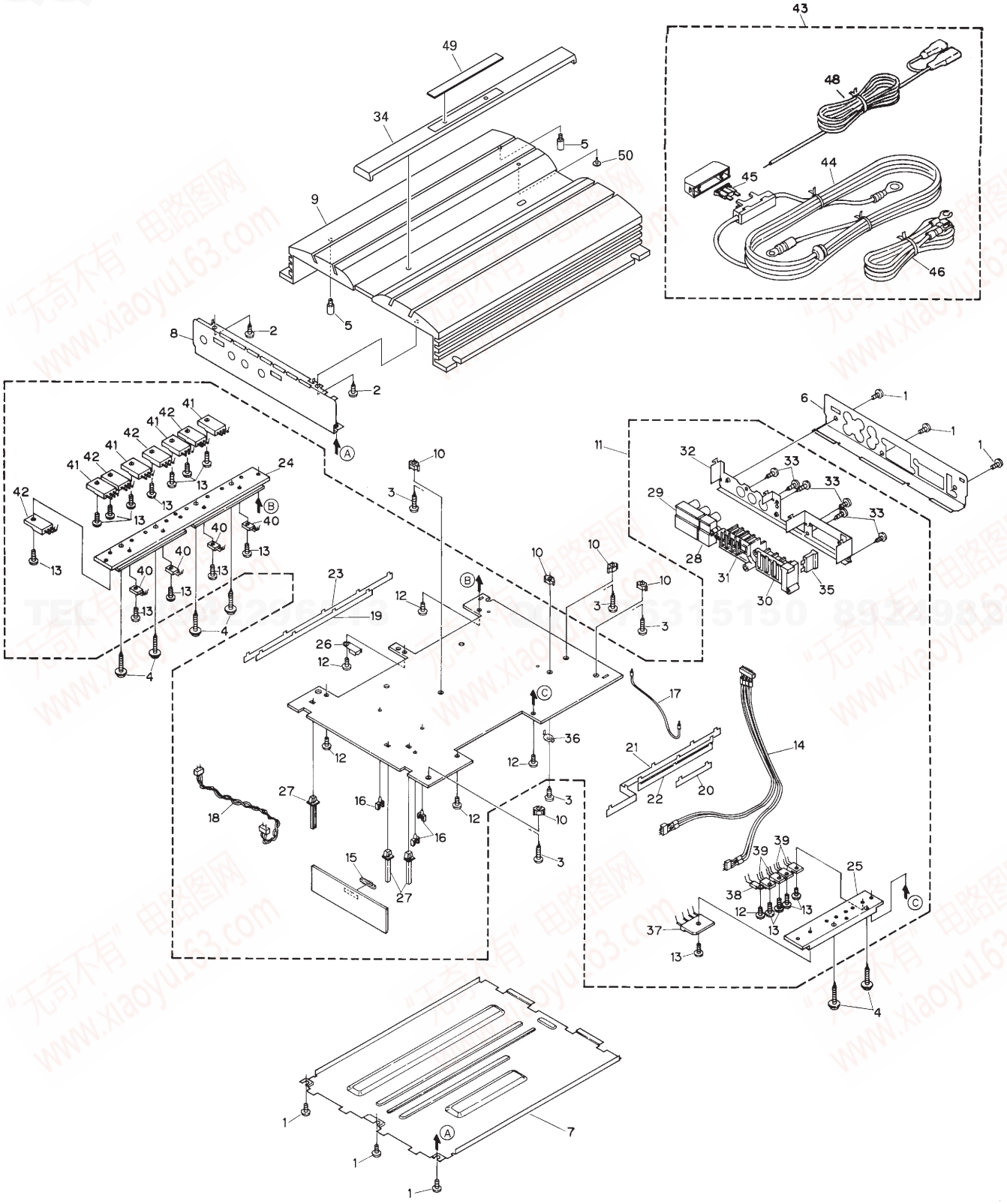


Fig. 2

(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BSZ30P050FZK
	2	Screw(M3x6)	CBA1320
	3	Screw(M3x12)	CBA1323
	4	Screw	CBA1382
	5	Screw	HBA0006
	6	Panel	See Contrast table (2)
	7	Case	HNB0015
	8	Panel	See Contrast table (2)
	9	Heat Sink	See Contrast table (2)
	10	Spacer	HNV3975
	11	Amp Unit	See Contrast table (2)
	12	Screw	BMS30P060FZK
	13	Screw	BMS30P080FMC
	14	Connector(CN854)	HDE5212
	15	Plug(CN863)	CKS1618
	16	Clamper	HNV0006
	17	Cord(CN901)	HDC1030
	18	Cord(CN602)	HDE4610
	19	Bass Bar	HNC0014
	20	Holder	HNC5538
	21	Holder	HNC5540
	22	Holder	HNC5541
	23	Holder	HNC5841
	24	Heat Sink(Sub Heat Sink)	HNR0050
	25	Heat Sink(Sub Heat Sink)	HNR0052
	26	Clamper	HNV0003
	27	Holder	HNV0005
	28	Pin Jack(CN852)	See Contrast table (2)
	29	Pin Jack(CN851)	See Contrast table (2)
	30	Terminal(CN601)	See Contrast table (2)
	31	Terminal(CN303)	See Contrast table (2)
	32	Holder	HNC0006
	33	Screw	PPZ30P060FZK
	34	Plate Unit	See Contrast table (2)
	35	Fuse(FU999)(25A)	HEK0025
	36	Holder	CNC5399
	37	Diode(D609)	RBV-602L
	38	Thermistor(TH603)	CCX1013
	39	FET(Q610-613)	IRFIZ44N
	40	Transistor(Q313-316)	2SD2343
	41	Transistor(Q329-332)	2SB1587
	42	Transistor(Q325-328)	2SD2438
	43	Cord Assy	See Contrast table (2)
	44	Special Red Battery Wire	See Contrast table (2)
	45	Fuse(30A)	See Contrast table (2)
	46	Ground Wire(Black)	See Contrast table (2)
	47	•••••	
	48	System Remote Control	See Contrast table (2)
	49	Badge Unit	See Contrast table (2)
	50	Light Pipe Unit	HXA0182

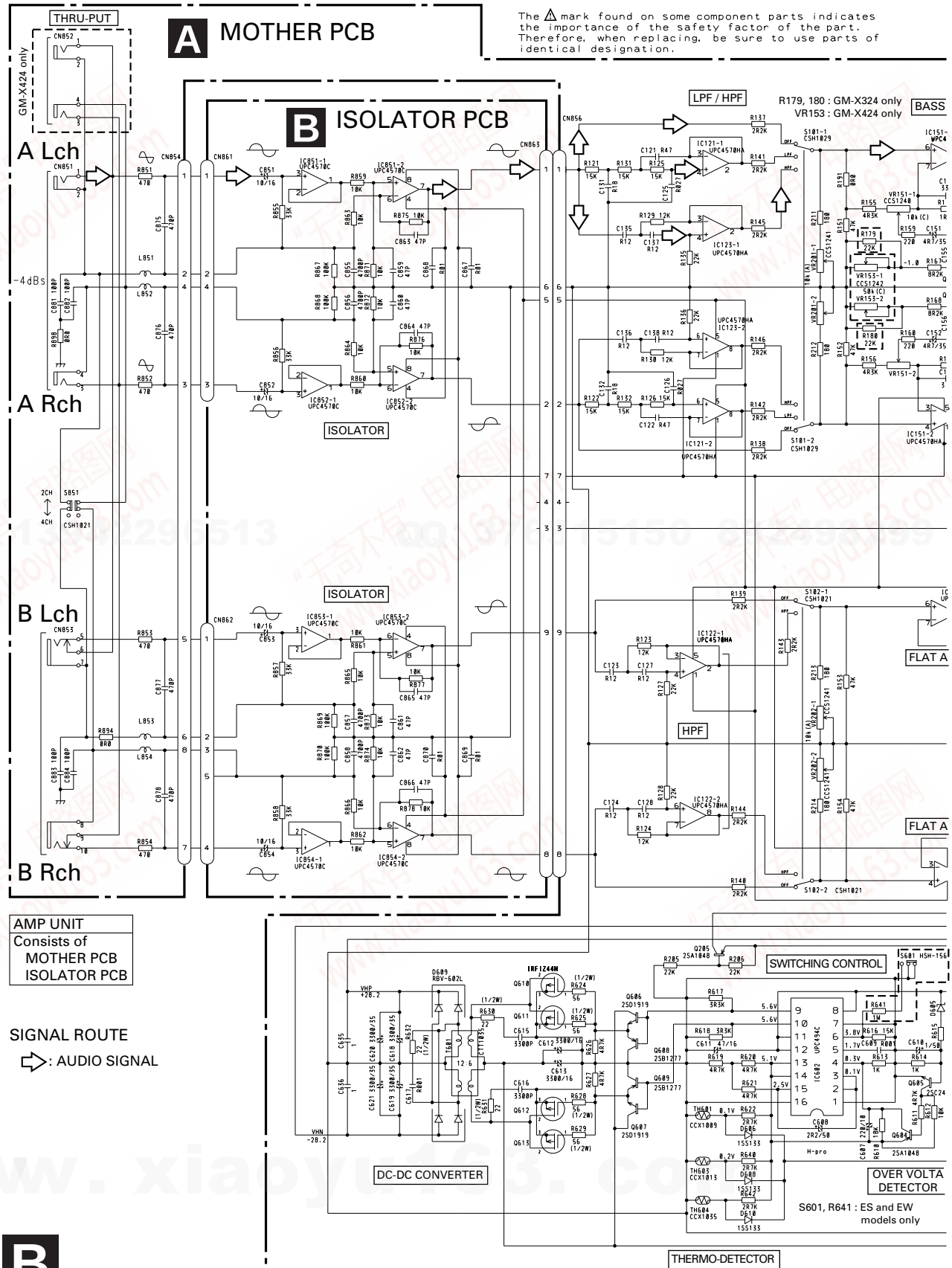
(2) CONTRAST TABLE

GM-X424/X1R/UC, GM-X424/X1R/ES, GM-X424/X1R/EW and GM-X324/X1R/UC are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.			
			GM-X424			GM-X324
			X1R/UC	X1R/ES	X1R/EW	X1R/UC
	6	Panel	HNB0053	HNB0071	HNB0071	HNB0054
	8	Panel	HNB0048	HNB0070	HNB0070	HNB0049
	9	Heat Sink	HNR0091	HNR0098	HNR0098	HNR0095
	11	Amp Unit	HWH0054	HWH0052	HWH0051	HWH0053
	28	Pin Jack(CN852)	HKB0002	HKB0001	HKB0001	Not used
	29	Pin Jack(CN851)	HKB0004	HKB0003	HKB0003	HKB0003
	30	Terminal(CN601)	HKE0002	HKE0001	HKE0001	HKE0001
	31	Terminal(CN303)	HKE0006	HKE0005	HKE0005	HKE0005
	34	Plate Unit	HXA0165	HXA0162	HXA0162	HXA0162
	43	Cord Assy	Not used	HDE4419	HDE4419	Not used
	44	Special Red Battery Wire	Not used	HDE4423	HDE4423	Not used
	45	Fuse(30A)	Not used	HEK0030	HEK0030	Not used
	46	Ground Wire(Black)	Not used	HDE4455	HDE4455	Not used
	48	System Remote Control	Not used	HDE0007	HDE0007	Not used
	49	Badge Unit	HXA0168	HXA0164	HXA0164	HXA0164

3. SCHEMATIC DIAGRAM

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



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.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

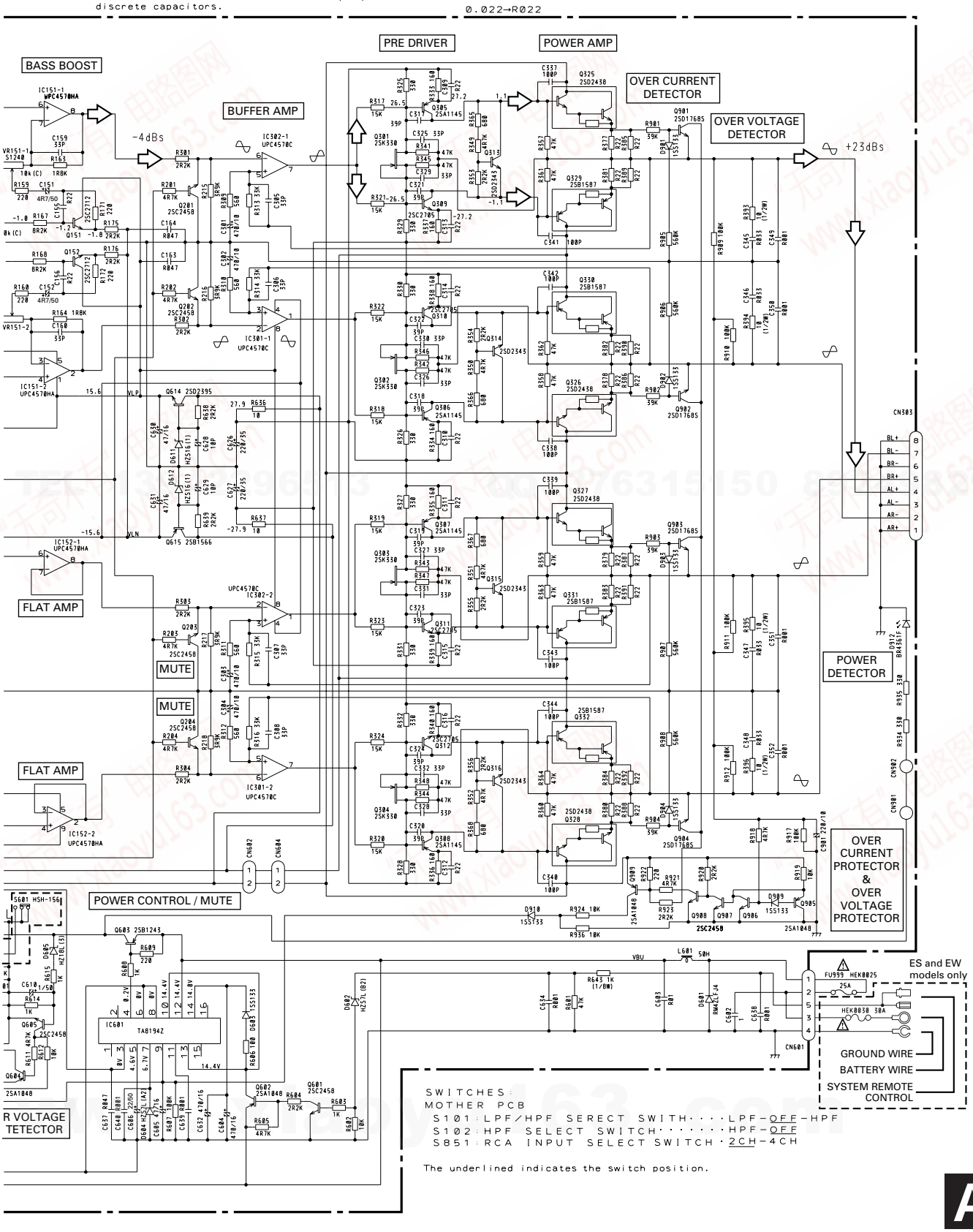


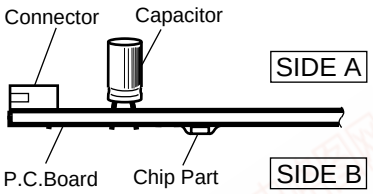
Fig. 3

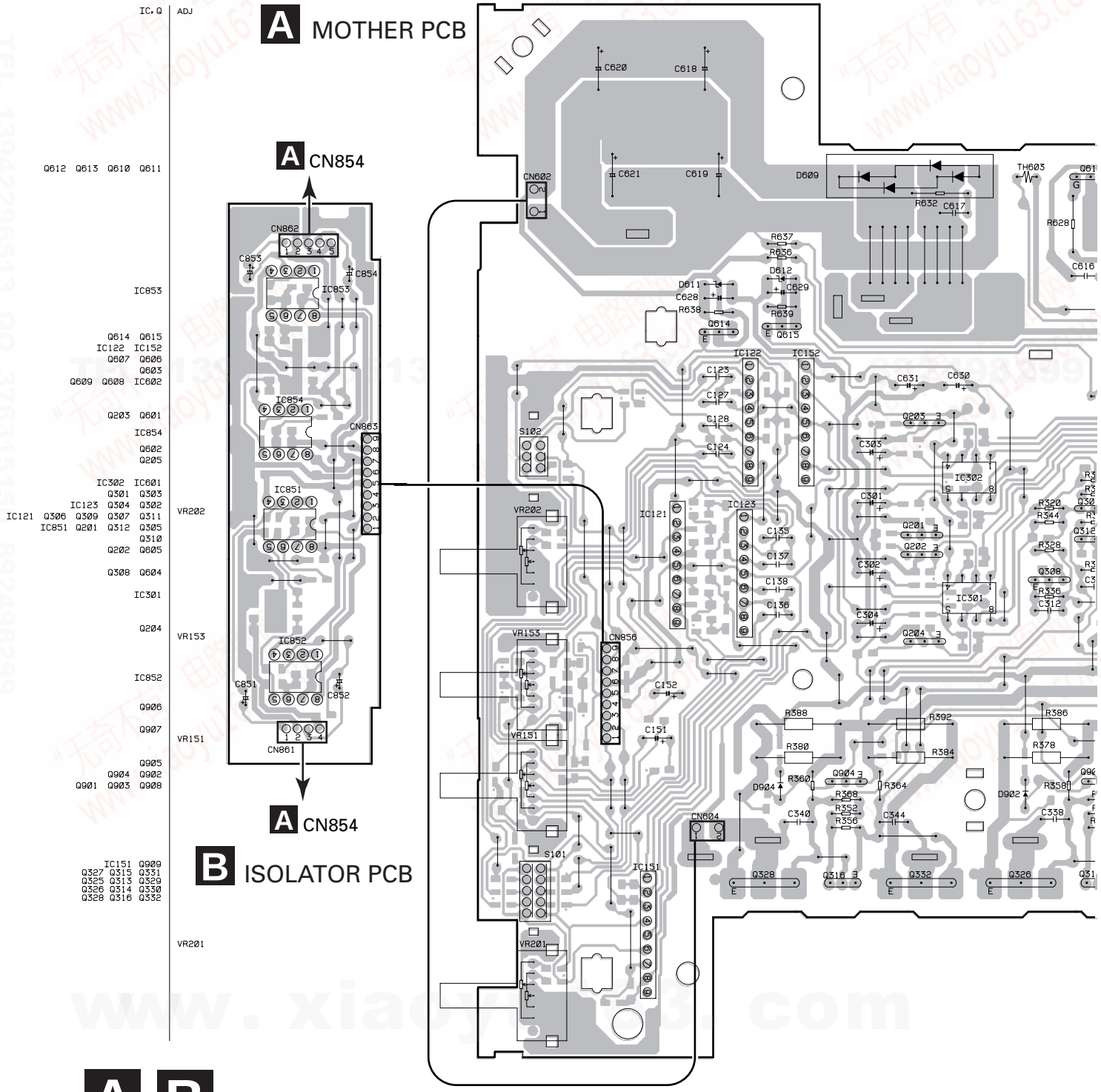
4. PCB CONNECTION DIAGRAM

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





SIDE A

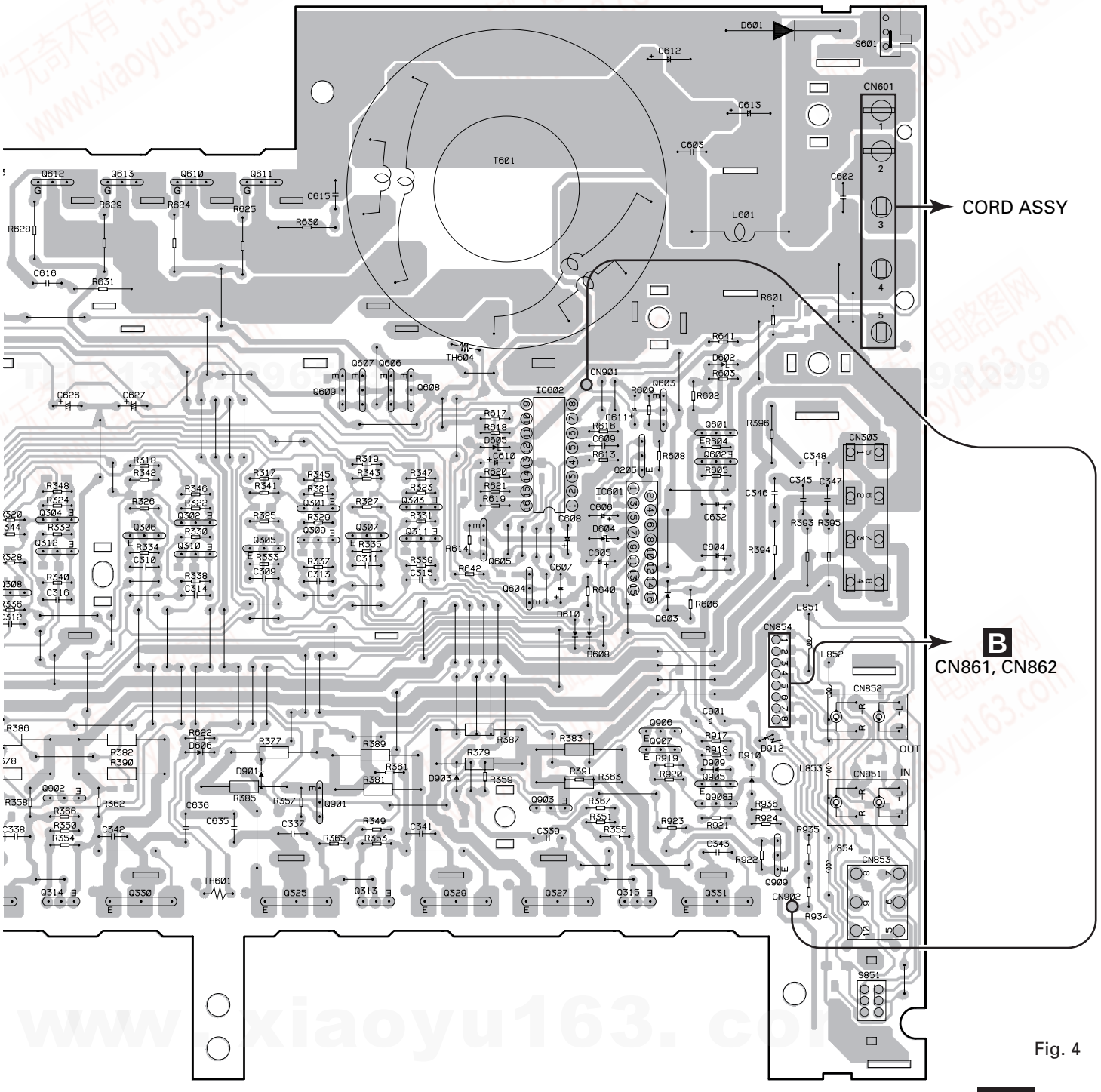
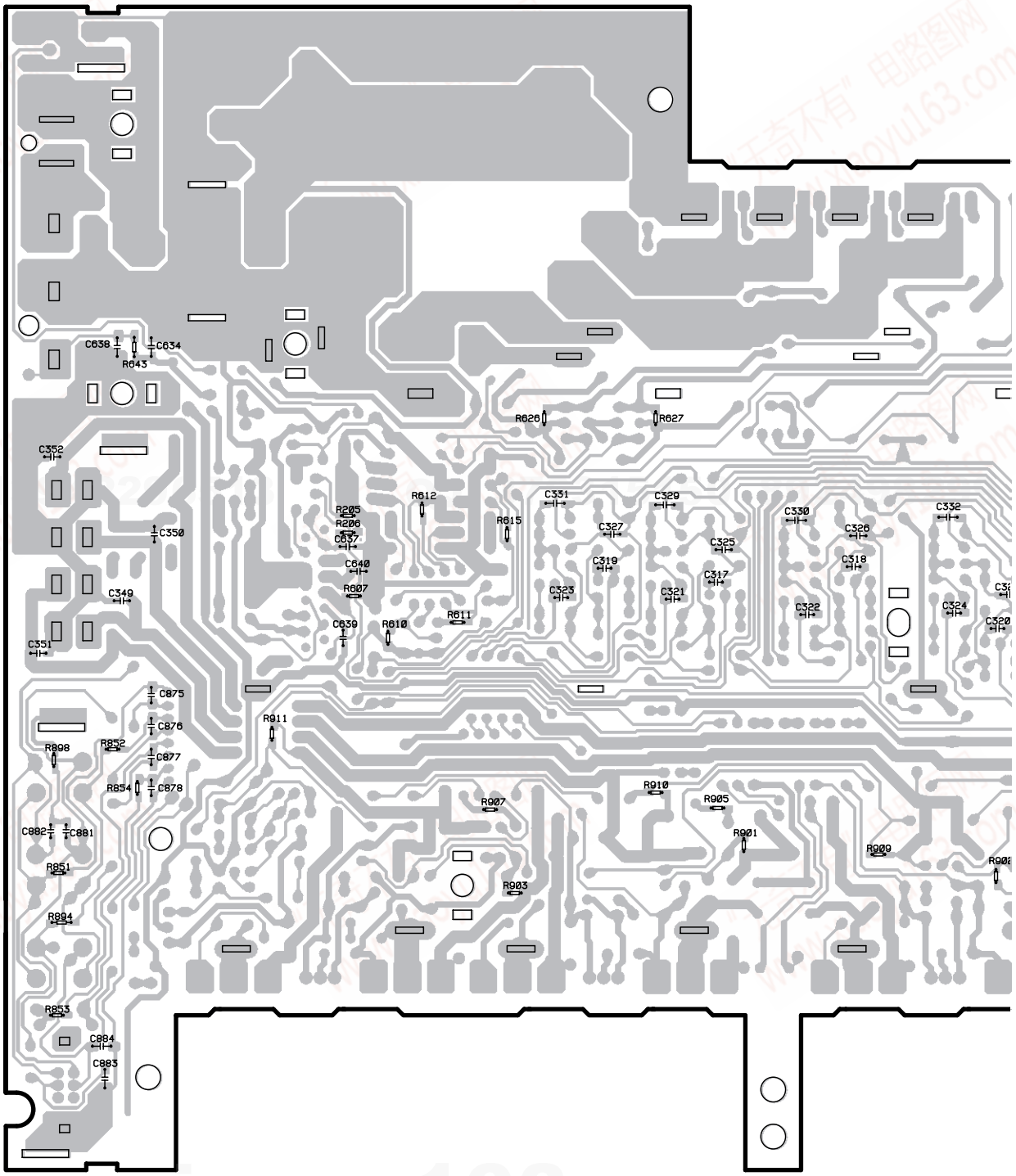
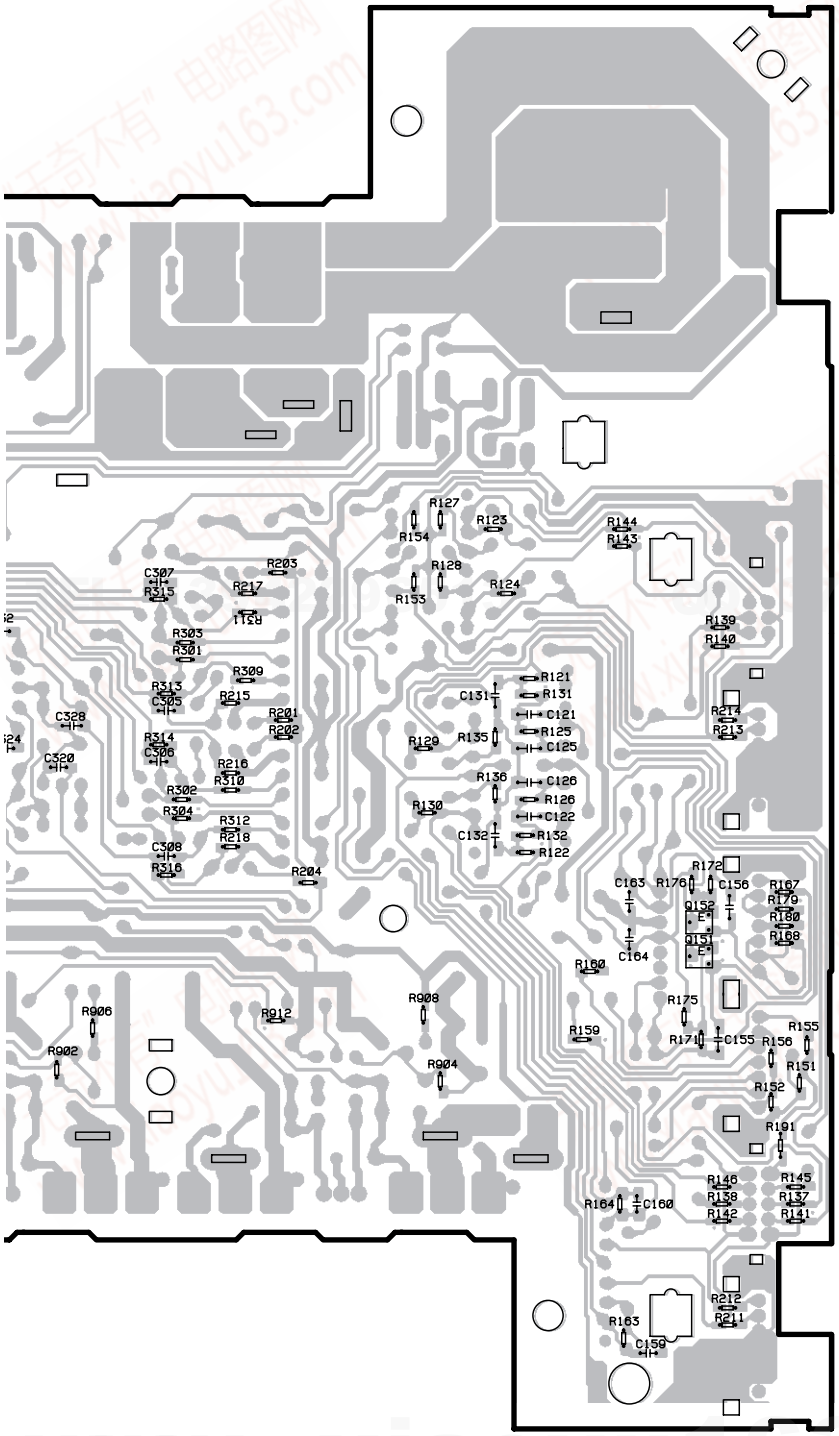


Fig. 4

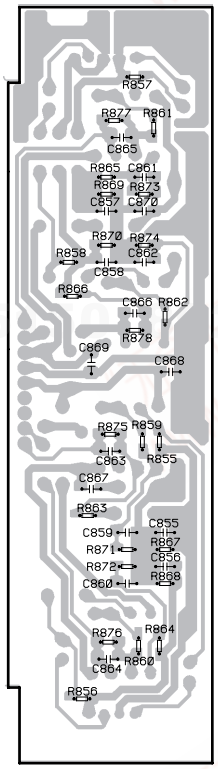
A MOTHER PCB



SIDE B



B ISOLATOR PCB



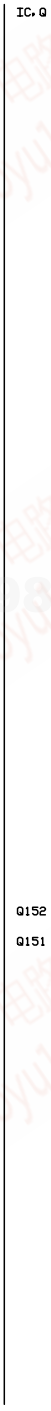


Fig. 5

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.....

GM-X424/X1R/UC

AMP UNIT
Consists of
MOTHER PCB
ISOLATOR PCB

A B Unit Number : HWH0054
Unit Name : Amp Unit

MISCELLANEOUS

=====Circuit Symbol and No.	===Part Name	Part No.
IC 121	IC	UPC4570HA
IC 122	IC	UPC4570HA
IC 123	IC	UPC4570HA
IC 151	IC	UPC4570HA
IC 152	IC	UPC4570HA
IC 301	IC	UPC4570C
IC 302	IC	UPC4570C
IC 601	IC	TA8194Z
IC 602	IC	UPC494C
IC 851	IC	UPC4570C
IC 852	IC	UPC4570C
IC 853	IC	UPC4570C
IC 854	IC	UPC4570C
Q 151	Transistor	2SC2712
Q 152	Transistor	2SC2712
Q 201	Transistor	2SC2458
Q 202	Transistor	2SC2458
Q 203	Transistor	2SC2458
Q 204	Transistor	2SC2458
Q 205	Transistor	2SA1048
Q 301	Transistor	2SK330
Q 302	Transistor	2SK330
Q 303	Transistor	2SK330
Q 304	Transistor	2SK330
Q 305	Transistor	2SA1145
Q 306	Transistor	2SA1145
Q 307	Transistor	2SA1145
Q 308	Transistor	2SA1145
Q 309	Transistor	2SC2705
Q 310	Transistor	2SC2705
Q 311	Transistor	2SC2705
Q 312	Transistor	2SC2705
Q 313	Transistor	2SD2343
Q 314	Transistor	2SD2343
Q 315	Transistor	2SD2343
Q 316	Transistor	2SD2343
Q 325	Transistor	2SD2438
Q 326	Transistor	2SD2438
Q 327	Transistor	2SD2438
Q 328	Transistor	2SD2438

=====Circuit Symbol and No.	===Part Name	Part No.
Q 329	Transistor	2SB1587
Q 330	Transistor	2SB1587
Q 331	Transistor	2SB1587
Q 332	Transistor	2SB1587
Q 601	Transistor	2SC2458
Q 602	Transistor	2SA1048
Q 603	Transistor	2SB1243
Q 604	Transistor	2SA1048
Q 605	Transistor	2SC2458
Q 606	Transistor	2SD1919
Q 607	Transistor	2SD1919
Q 608	Transistor	2SB1277
Q 609	Transistor	2SB1277
Q 610	FET	IRFIZ44N
Q 611	FET	IRFIZ44N
Q 612	FET	IRFIZ44N
Q 613	FET	IRFIZ44N
Q 614	Transistor	2SD2395
Q 615	Transistor	2SB1566
Q 901	Transistor	2SD1768S
Q 902	Transistor	2SD1768S
Q 903	Transistor	2SD1768S
Q 904	Transistor	2SD1768S
Q 905	Transistor	2SA1048
Q 906	Transistor	2SC2458
Q 907	Transistor	2SC2458
Q 908	Transistor	2SC2458
Q 909	Transistor	2SA1048
D 601	Diode	RM4Z
D 602	Diode	HZS7L(B2)
D 603	Diode	1SS133
D 604	Diode	HZS7L(A2)
D 605	Diode	HZS18L(3)
D 606	Diode	1SS133
D 608	Diode	1SS133
D 609	Diode	RBV-602L
D 610	Diode	1SS133
D 611	Diode	HZS16L(1)
D 612	Diode	HZS16L(1)
D 901	Diode	1SS133
D 902	Diode	1SS133
D 903	Diode	1SS133
D 904	Diode	1SS133
D 909	Diode	1SS133
D 910	Diode	1SS133
D 912	LED	BR4361F
L 601	Choke Coil 50H	CTH1142
L 851	Ferri-Inductor	CTF1007
L 852	Ferri-Inductor	CTF1007
L 853	Ferri-Inductor	CTF1007
L 854	Ferri-Inductor	CTF1007
T 601	Transformer	HTT1035
TH 601	Thermistor	CCX1009
TH 603	Thermistor	CCX1013
TH 604	Thermistor	CCX1035

=====Circuit Symbol and No.		===Part Name	Part No.
S	101	Switch	CSH1029
S	102	Switch	CSH1021
S	851	Switch	CSH1021
VR	151	Volume 10kΩ(C)	CCS1240
VR	153	Volume 50kΩ(C)	CCS1242
VR	201	Volume 10kΩ(A)	CCS1241
VR	202	Volume 10kΩ(A)	CCS1241
FU	999	Fuse	HEK0025
RESISTORS			
R	121		RS1/10S153J
R	122		RS1/10S153J
R	123		RS1/10S123J
R	124		RS1/10S123J
R	125		RS1/10S153J
R	126		RS1/10S153J
R	127		RS1/10S223J
R	128		RS1/10S223J
R	129		RS1/10S123J
R	130		RS1/10S123J
R	131		RS1/10S153J
R	132		RS1/10S153J
R	135		RS1/10S223J
R	136		RS1/10S223J
R	137		RS1/10S222J
R	138		RS1/10S222J
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R	142		RS1/10S222J
R	143		RS1/10S222J
R	144		RS1/10S222J
R	145		RS1/10S222J
R	146		RS1/10S222J
R	151		RS1/10S473J
R	152		RS1/10S473J
R	153		RS1/10S473J
R	154		RS1/10S473J
R	155		RS1/10S432J
R	156		RS1/10S432J
R	159		RS1/10S221J
R	160		RS1/10S221J
R	163		RS1/10S182J
R	164		RS1/10S182J
R	167		RS1/10S822J
R	168		RS1/10S822J
R	171		RS1/10S221J
R	172		RS1/10S221J
R	175		RS1/10S222J
R	176		RS1/10S222J
R	191		RS1/8S0R0J
R	201		RS1/10S472J
R	202		RS1/10S472J
R	203		RS1/10S472J
R	204		RS1/10S472J
R	205		RS1/10S223J
R	206		RS1/10S223J
R	211		RS1/10S181J
R	212		RS1/10S181J
R	213		RS1/10S181J
R	214		RS1/10S181J
R	215		RS1/10S392J
R	216		RS1/10S392J
R	217		RS1/10S392J
R	218		RS1/10S392J

=====Circuit Symbol and No.		===Part Name	Part No.
R	301		RS1/10S222J
R	302		RS1/10S222J
R	303		RS1/10S222J
R	304		RS1/10S222J
R	309		RS1/10S561J
R	310		RS1/10S561J
R	311		RS1/10S561J
R	312		RS1/10S561J
R	313		RS1/10S333J
R	314		RS1/10S333J
R	315		RS1/10S333J
R	316		RS1/10S333J
R	317		RD1/4PU153J
R	318		RD1/4PU153J
R	319		RD1/4PU153J
R	320		RD1/4PU153J
R	321		RD1/4PU153J
R	322		RD1/4PU153J
R	323		RD1/4PU153J
R	324		RD1/4PU153J
R	325		RD1/4PU331J
R	326		RD1/4PU331J
R	327		RD1/4PU331J
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R	362		RD1/4PU473J
R	363		RD1/4PU473J
R	364		RD1/4PU473J
R	365		RD1/4PU681J
R	366		RD1/4PU681J
R	367		RD1/4PU681J
R	368		RD1/4PU681J
R	377	0.22Ω	CCN1013

=====Circuit Symbol and No.		===Part Name	Part No.
R	378	0.22Ω	CCN1013
R	379	0.22Ω	CCN1013
R	380	0.22Ω	CCN1013
R	381	0.22Ω	CCN1013
R	382	0.22Ω	CCN1013
R	383	0.22Ω	CCN1013
R	384	0.22Ω	CCN1013
R	385	0.22Ω	CCN1013
R	386	0.22Ω	CCN1013
R	387	0.22Ω	CCN1013
R	388	0.22Ω	CCN1013
R	389	0.22Ω	CCN1013
R	390	0.22Ω	CCN1013
R	391	0.22Ω	CCN1013
R	392	0.22Ω	CCN1013
R	393		RS1/2PMF100J
R	394		RS1/2PMF100J
R	395		RS1/2PMF100J
R	396		RS1/2PMF100J
R	601		RD1/4PU473J
R	602		RD1/4PU103J
R	603		RD1/4PU103J
R	604		RD1/4PU222J
R	605		RD1/4PU472J
R	606		RD1/4PU101J
R	607		RS1/10S104J
R	608		RD1/4PU102J
R	609		RD1/4PU221J
R	610		RS1/10S183J
R	611		RS1/10S472J
R	612		RS1/10S103J
R	613		RD1/4PU102J
R	614		RD1/4PU102J
R	615		RS1/10S102J
R	616		RD1/4PU153J
R	617		RD1/4PU332J
R	618		RD1/4PU332J
R	619		RD1/4PU472J
R	620		RD1/4PU472J
R	621		RD1/4PU472J
R	622		RD1/4PU272J
R	624		RS1/2PMF560J
R	625		RS1/2PMF560J
R	626		RS1/10S472J
R	627		RS1/10S472J
R	628		RS1/2PMF560J
R	629		RS1/2PMF560J
R	630		RS1/2PMF220J
R	631		RS1/2PMF220J
R	632		RS1/2PMF220J
R	636		RD1/4PU100J
R	637		RD1/4PU100J
R	638		RD1/4PU222J
R	639		RD1/4PU222J
R	640		RD1/4PU272J
R	642		RD1/4PU272J
R	643		RS1/8S102J
R	851		RS1/10S471J
R	852		RS1/10S471J
R	853		RS1/10S471J
R	854		RS1/10S471J
R	855		RS1/10S333J
R	856		RS1/10S333J
R	857		RS1/10S333J
R	858		RS1/10S333J

=====Circuit Symbol and No.		===Part Name	Part No.
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	867		RS1/10S104J
R	868		RS1/10S104J
R	869		RS1/10S104J
R	870		RS1/10S104J
R	871		RN1/10SE1002D
R	872		RN1/10SE1002D
R	873		RN1/10SE1002D
R	874		RN1/10SE1002D
R	875		RN1/10SE1002D
R	876		RN1/10SE1002D
R	877		RN1/10SE1002D
R	878		RN1/10SE1002D
R	894		RS1/8S0R0J
R	898		RS1/10S0R0J
R	901		RS1/10S393J
R	902		RS1/10S393J
R	903		RS1/10S393J
R	904		RS1/10S393J
R	905		RS1/10S564J
R	906		RS1/10S564J
R	907		RS1/10S564J
R	908		RS1/10S564J
R	909		RS1/10S104J
R	910		RS1/10S104J
R	911		RS1/10S104J
R	912		RS1/10S104J
R	917		RD1/4PU104J
R	918		RD1/4PU472J
R	919		RD1/4PU103J
R	920		RD1/4PU222J
R	921		RD1/4PU472J
R	922		RD1/4PU221J
R	923		RD1/4PU222J
R	924		RD1/4PU103J
R	934		RD1/4PU331J
R	935		RD1/4PU331J
R	936		RD1/4PU103J

CAPACITORS

C	121		CKSYB474K16
C	122		CKSYB474K16
C	123		CFTNA124J50
C	124		CFTNA124J50
C	125		CKSYB273K25
C	126		CKSYB273K25
C	127		CFTNA124J50
C	128		CFTNA124J50
C	131		CKSYB184K16
C	132		CKSYB184K16
C	135		CFTNA124J50
C	136		CFTNA124J50
C	137		CFTNA124J50
C	138		CFTNA124J50
C	151		CEAS4R7M50
C	152		CEAS4R7M50
C	155		CKSYB224K16
C	156		CKSYB224K16
C	159		CCSQCH330J50
C	160		CCSQCH330J50

=====Circuit Symbol and No.	===Part Name	Part No.
C 163		CKSQYB473K25
C 164		CKSQYB473K25
C 301		CEAS471M10
C 302		CEAS471M10
C 303		CEAS471M10
C 304		CEAS471M10
C 305		CCSQCH330J50
C 306		CCSQCH330J50
C 307		CCSQCH330J50
C 308		CCSQCH330J50
C 309		CFTNA224J50
C 310		CFTNA224J50
C 311		CFTNA224J50
C 312		CFTNA224J50
C 313		CFTNA224J50
C 314		CFTNA224J50
C 315		CFTNA224J50
C 316		CFTNA224J50
C 317		CCSQCH390J50
C 318		CCSQCH390J50
C 319		CCSQCH390J50
C 320		CCSQCH390J50
C 321		CCSQCH390J50
C 322		CCSQCH390J50
C 323		CCSQCH390J50
C 324		CCSQCH390J50
C 325		CCSQCH330J50
C 326		CCSQCH330J50
C 327		CCSQCH330J50
C 328		CCSQCH330J50
C 329		CCSCH330J50
C 330		CCSCH330J50
C 331		CCSCH330J50
C 332		CCSCH330J50
C 337		CCCSL101J50
C 338		CCCSL101J50
C 339		CCCSL101J50
C 340		CCCSL101J50
C 341		CCCSL101J50
C 342		CCCSL101J50
C 343		CCCSL101J50
C 344		CCCSL101J50
C 345		CFTNA333J50
C 346		CFTNA333J50
C 347		CFTNA333J50
C 348		CFTNA333J50
C 349		CKSQYB102K50
C 350		CKSQYB102K50
C 351		CKSQYB102K50
C 352		CKSQYB102K50
C 602		CFTNA105J50
C 603		CFTNA103J50
C 604	470µF/16V	CCH1183
C 605		CEAS470M16
C 606		CEAS220M50

=====Circuit Symbol and No.	===Part Name	Part No.
C 607		CEAS221M10
C 608		CEAS2R2M50
C 609		CQMA102J50
C 610		CEAS1R0M50
C 611		CEAS470M16
C 612	3300µF/16V	CCH1130
C 613	3300µF/16V	CCH1130
C 615		CQMA332J50
C 616		CQMA332J50
C 617		CQMA102J50
C 618	3300µF/35V	CCH1200
C 619	3300µF/35V	CCH1200
C 620	3300µF/35V	CCH1200
C 621	3300µF/35V	CCH1200
C 626		CEAS221M35
C 627		CEAS221M35
C 628		CEAS100M50
C 629		CEAS100M50
C 630		CEAS470M16
C 631		CEAS470M16
C 632	470µF/16V	CCH1183
C 634		CKSYB102K50
C 635		CFTNA105J50
C 636		CFTNA105J50
C 637		CKSQYB473K16
C 638		CKSYB102K50
C 639		CKSQYB102K50
C 640		CKSQYB102K50
C 851		CEAL100M16
C 852		CEAL100M16
C 853		CEAL100M16
C 854		CEAL100M16
C 855		CKSQYB472K50
C 856		CKSQYB472K50
C 857		CKSQYB472K50
C 858		CKSQYB472K50
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 867		CKSQYB103K50
C 868		CKSQYB103K50
C 869		CKSQYB103K50
C 870		CKSQYB103K50
C 875		CKSQYB471K50
C 876		CKSQYB471K50
C 877		CKSQYB471K50
C 878		CKSQYB471K50
C 881		CCSSL101J50
C 882		CCSSL101J50
C 883		CCSSL101J50
C 884		CCSSL101J50
C 901	220µF/10V	CCH1036

GM-X424/X1R/UC, GM-X424/X1R/ES, GM-X424/X1R/EW and GM-X324/X1R/UC are constructed the same except for the following:

● Amp Unit

Symbol and Description	Part No.			
	GM-X424/X1R/UC	GM-X424/X1R/ES	GM-X424/X1R/EW	GM-X324/X1R/UC
S601 Switch	Not used	HSH-156	HSH-156	Not used
V153 Volume 50kΩ(C)	CCS1242	CCS1242	CCS1242	Not used
R179, 180	Not used	Not used	Not used	RD1/10S223J
R641	Not used	RD1/4PU105J	RD1/4PU105J	Not used

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DISASSEMBLY

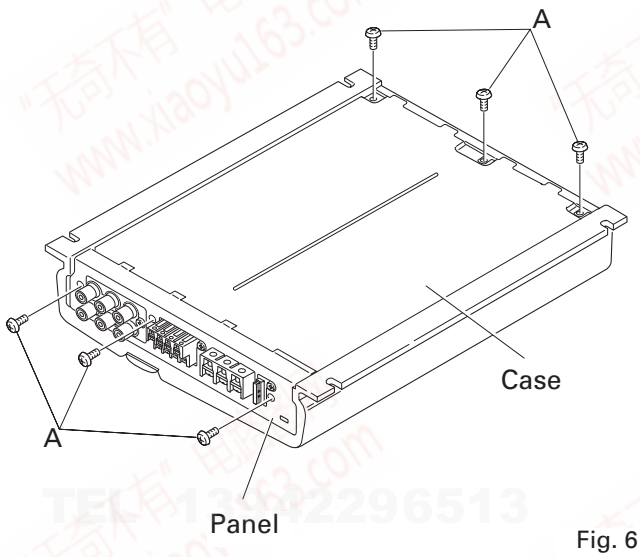


Fig. 6

● **Removing the Case and Panel**

1. Remove six screws A, and then remove case.
2. Remove panel.

● **Removing the Amp Unit**

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

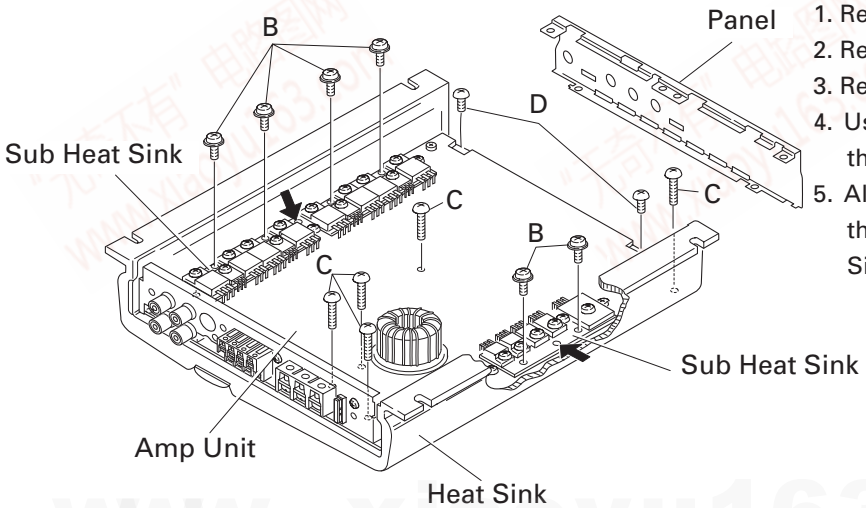


Fig. 7

1. Remove two screws D.
2. Remove Panel.
3. Remove six screws B and five screws C.
4. Use 2 pcs. of screw B and insert them into the two holes marked with an arrow.
5. Alternately tighten them little by little until the Sub Heat Sink separates from the Heat Sink.

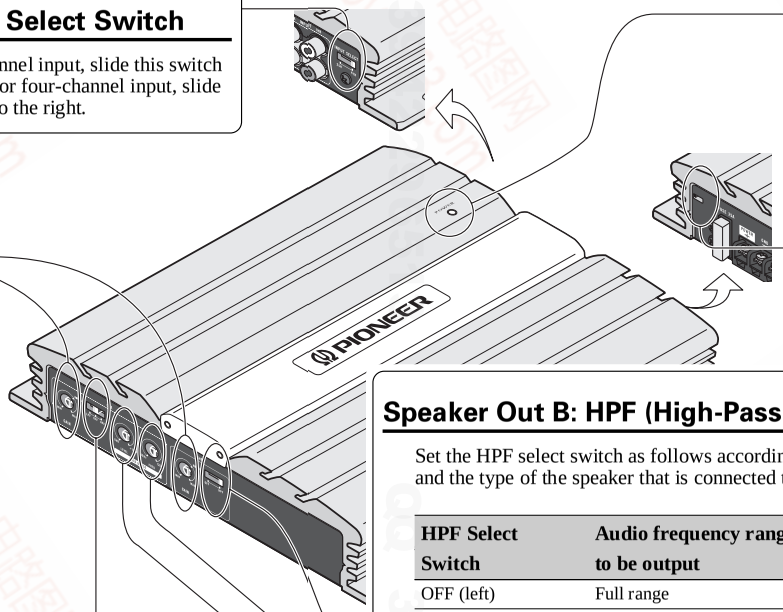
Gain Control

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 is too low or distorts, adjust the gain control.

RCA Input Select Switch

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



Power Indicator

The power indicator lights when the power is switched on.

BFC (Beat Frequency Control) Switch (ES and EW models)

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

Speaker Out B: HPF (High-Pass Filter) Select Switch

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

HPF Select Switch	Audio frequency range to be output	Speaker Type	Remarks
OFF (left)	Full range	Full range	
HPF (right)	Low-frequency range to high-frequency range	Tweeter	If you want to cut the very-low-frequency range because it is not necessary for the speaker you use.

Speaker Out A: LPF (Low-Pass Filter)/HPF (High-Pass Filter) Select Switch

Set the LPF/HPF select switch as follows according to the type of the 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)	Very-low-frequency range	Sub-woofer	Connect a sub-woofer.
OFF (center)	Full range	Full range	
HPF (right)	Low-frequency range to high-frequency range	Tweeter	If you want to cut the very-low-frequency range because it is not necessary for the speaker you use.

Speaker Out A: Bass Boost Level Control

Bass boost level control can boost the level around the frequency selected by the bass boost frequency control to 0 to 12 dB.

Speaker Out A: Bass Boost Frequency Control (GM-X424)

You can select a bass boost frequency from 40 to 120 Hz with the bass boost control.

- Bass Boost Level Control, Bass Boost Frequency Control can be adjusted only when the LPF/HPF select switch is set to a position other than HPF.

Fig. 8

● CONNECTION DIAGRAM

(1) GM-X424/X1R/UC

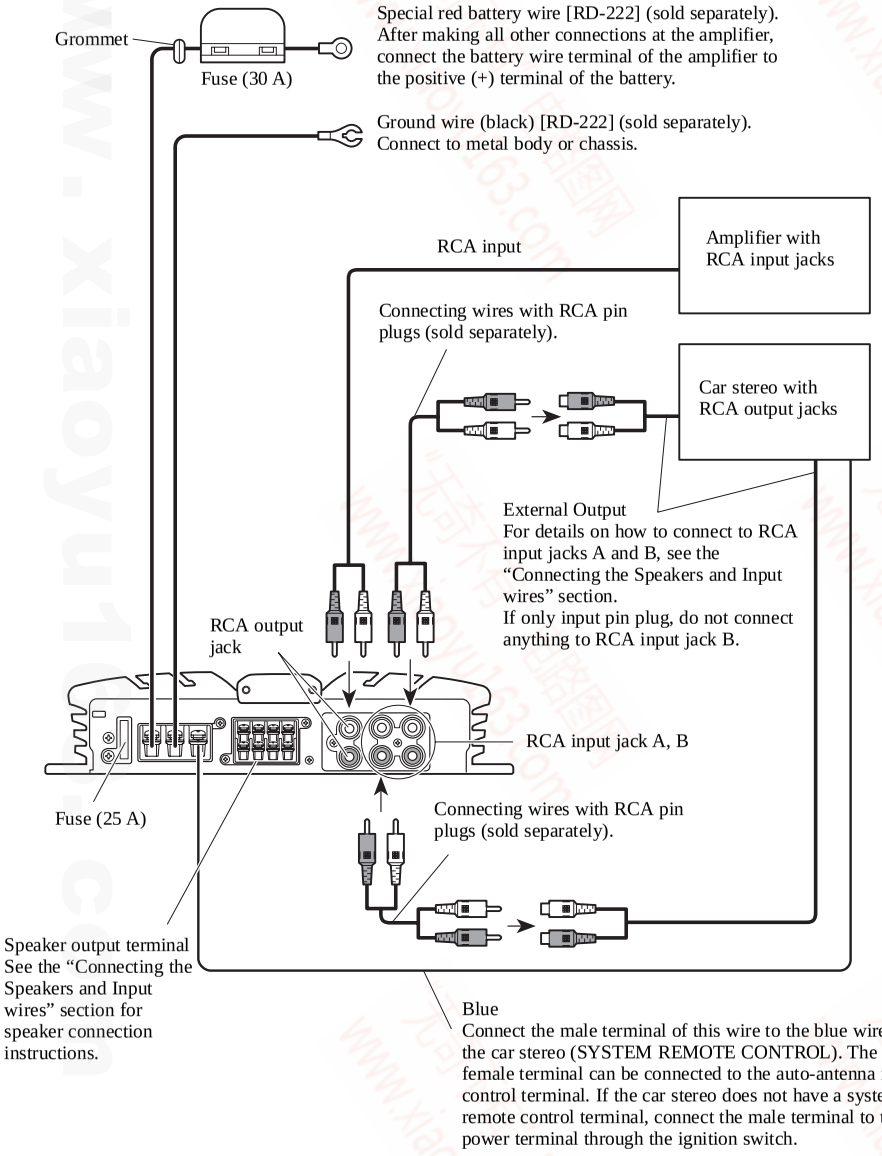


Fig. 9

(2) GM-X424/X1R/ES, GM-X424/X1R/EW

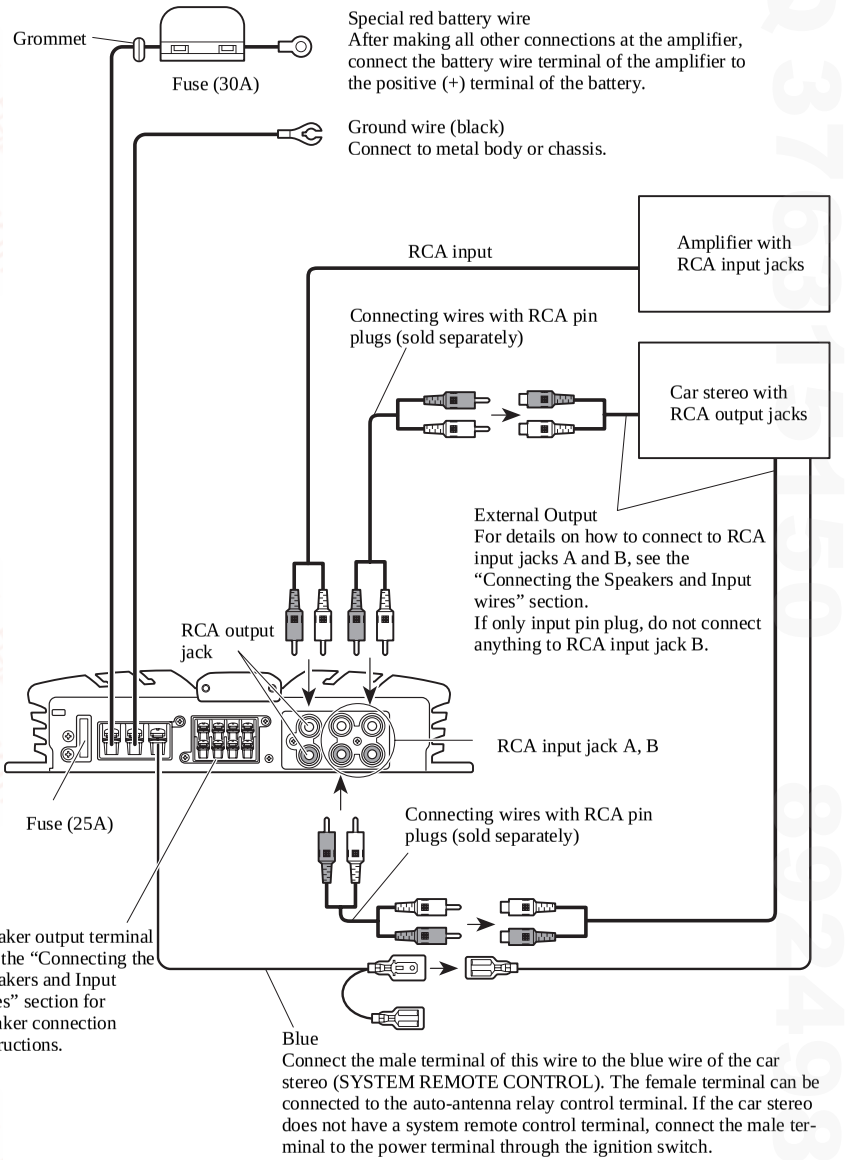


Fig. 10

(3) GM-X324/X1R/UC

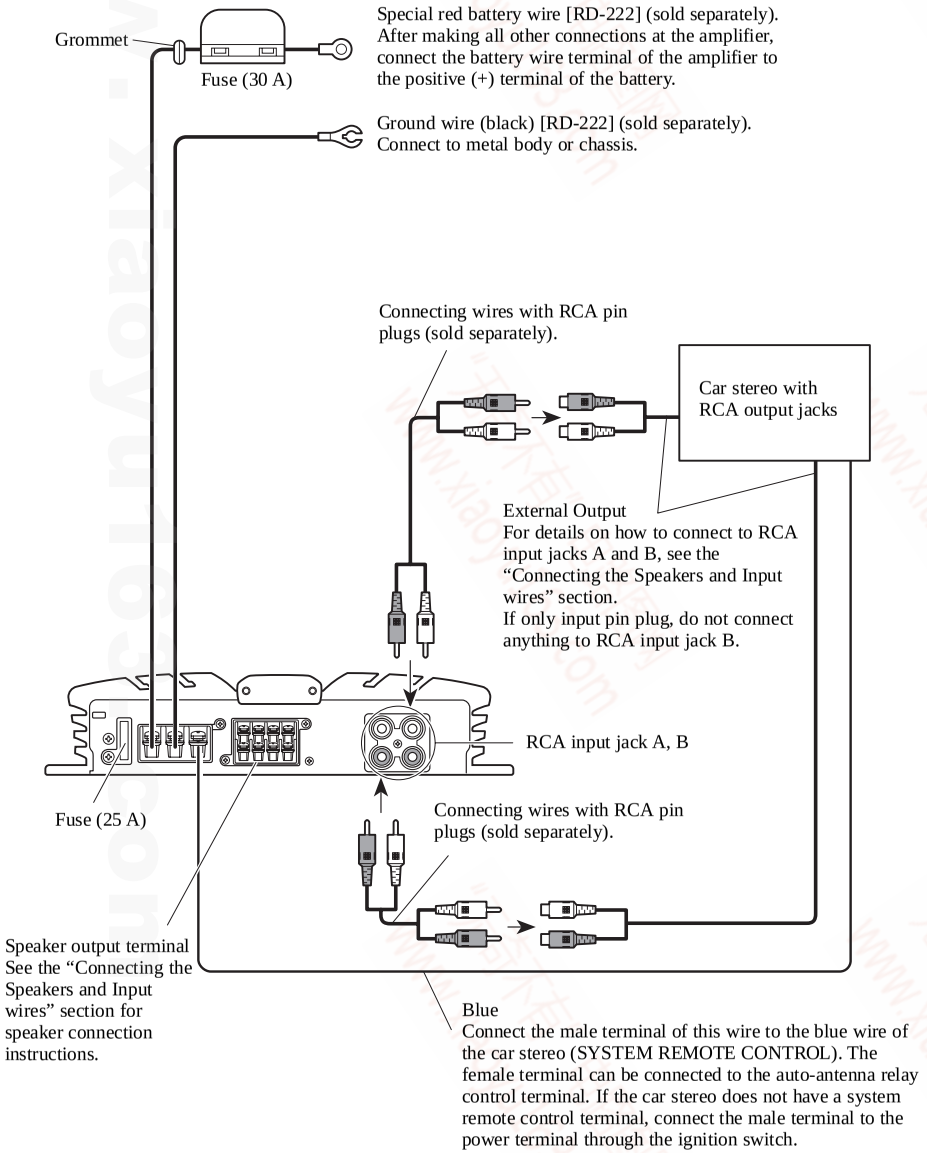


Fig. 11

● CONNECTING THE POWER TERMINAL

- Be sure to use the special red battery wire supplied with the amplifier and connect directly to the battery. Use the supplied black ground wire and connect to the vehicle body.

1. Pass the battery wire from the engine compartment to the interior of the vehicle.

- After making all other connections to the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.

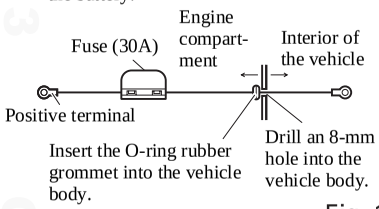


Fig. 12

2. Connect the wires to the terminal.

- Fix the wires securely with the terminal screws.

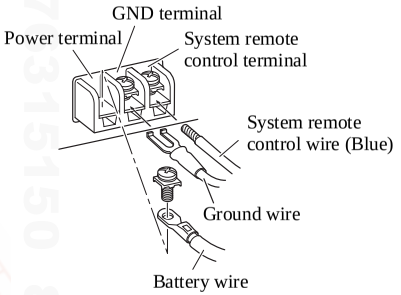


Fig. 13

● CONNECTING THE SPEAKER TERMINALS

1. Expose the end of the speaker wires by about 10 mm and twist it using nippers or a cutter.

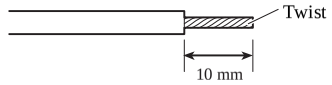


Fig. 14

2. Attach lugs to speaker wire ends.

- Use pliers, etc., to crimp lugs to wires.

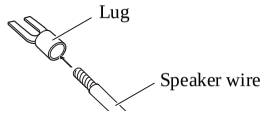


Fig. 15

3. Connect the speaker wires to the speaker output terminals.

- Fix the speaker wires securely with the terminal screws.

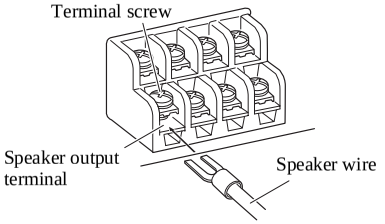


Fig. 16

● CONNECTING THE SPEAKERS AND INPUT WIRES

The speaker output mode can be four-channel, three-channel (stereo + mono) or two-channel (stereo, mono). Connect the speakers according to figures on the following pages.

Four-channel mode

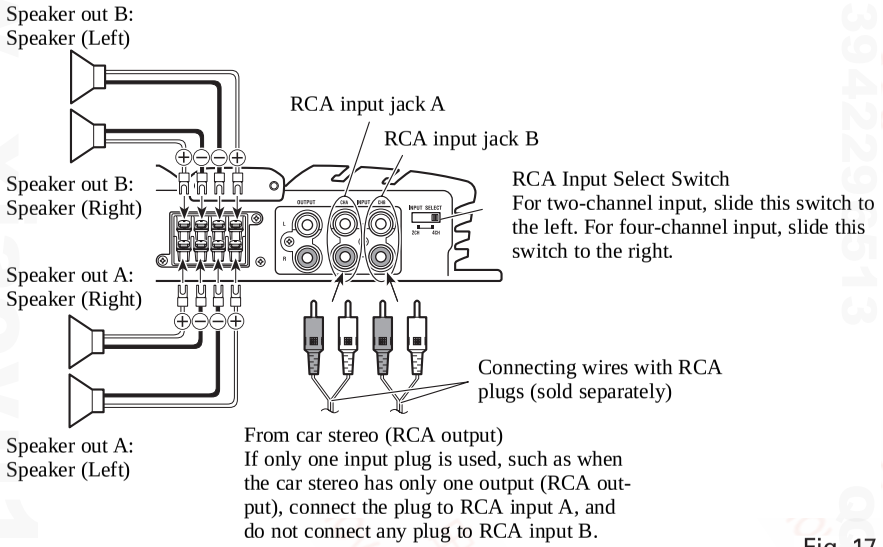


Fig. 17

Three-channel mode

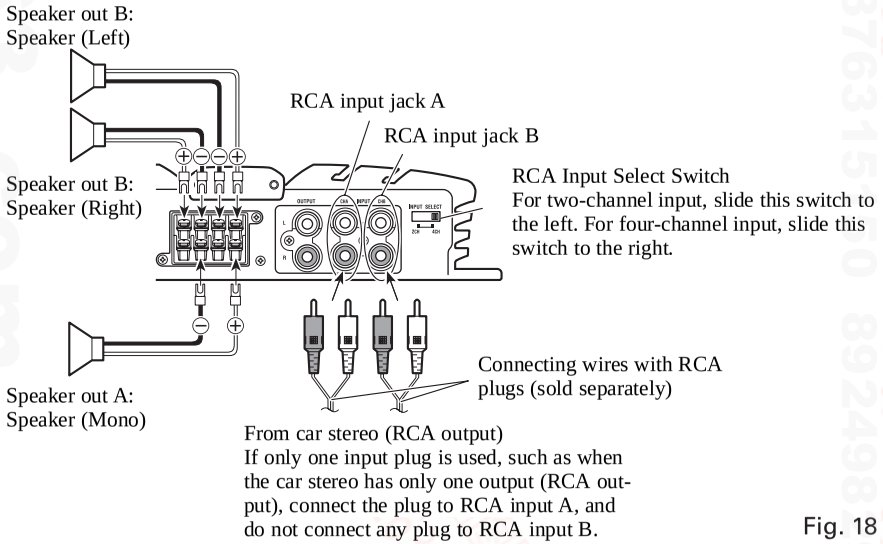


Fig. 18

Two-channel mode (stereo)

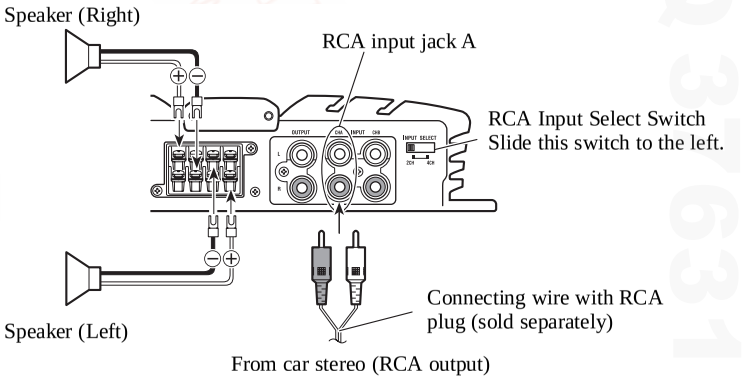


Fig. 19

Two-channel mode (mono)

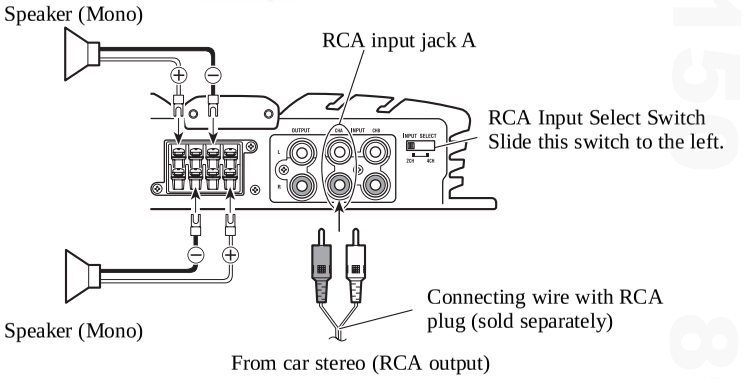


Fig. 20

SPECIFICATIONS

Power source	14.4 V DC (10.8 — 15.1 V allowable)
Grounding system	Negative type
Current consumption	18 A (at continuous power, 4 Ω)
Average current drawn*	5.5 A (4 Ω for four channels)
	10 A (4 Ω for two channels)
Fuse	25 A
Dimensions	216 (W) × 52 (H) × 270 (D) mm
	[8-1/2 (W) × 2-1/8 (H) × 10-5/8 (D) in.]
Weight	3.2 kg (7.1 lbs.) (Leads for wiring not included)
Maximum power output	60 W × 4 / 140 W × 2 (EIAJ)
Continuous power output (UC and ES models)	30 W × 4 (at 14.4V, 4 Ω, 20 — 20,000 Hz, 0.08% THD)
	70 W × 2 (at 14.4V, 4 Ω, 20 — 20,000 Hz, 0.8% THD)
	35 W × 4 (at 14.4V, 2 Ω, 20 — 20,000 Hz, 0.8% THD)
Continuous power output (EW model)	40 W × 4 / 90 W × 2 (DIN45324, +B=14.4 V)
Load impedance	4 Ω (2 — 8 Ω allowable)
	(Bridge connection: 4 — 8 Ω allowable)
Frequency response	10 — 50,000 Hz (+0 dB, –1 dB)
Signal-to-noise ratio (UC and ES models)	108 dB (IHF–A network)
Signal-to-noise ratio (EW model)	108 dB (IEC–A network)
Distortion	0.008% (1 W, 1 kHz)
Separation	65 dB (1 kHz)
Low pass filter	Cut off frequency: 80 Hz
	Cut off slope: –18 dB/oct
High pass filter	Cut off frequency: 80 Hz
	Cut off slope: –12 dB/oct
Bass boost	Frequency: 40 — 120 Hz
	Gain: 0 — 12 dB
Input level / impedance	0.4 — 4 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.