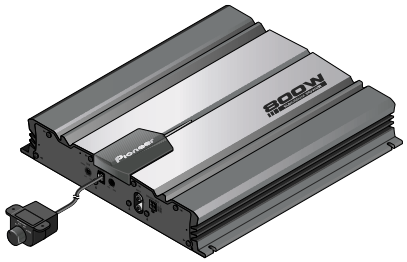
Pioneer *sound.vision.soul*

Service Manual



GM-7100M/XU/EW

ORDER NO.
CRT3371

MONO POWER AMPLIFIER

GM-7100M/XU/EW
GM-7100M/XU/UC
GM-7100M/XU/ES
GM-7100M/XU/CN
GM-7150M/XU/UC

For details, refer to "Important check points for good servicing".

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE NV Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZB. DEC. 2004 Printed in Japan

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

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

● **Service Precaution**

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

1. SPECIFICATIONS

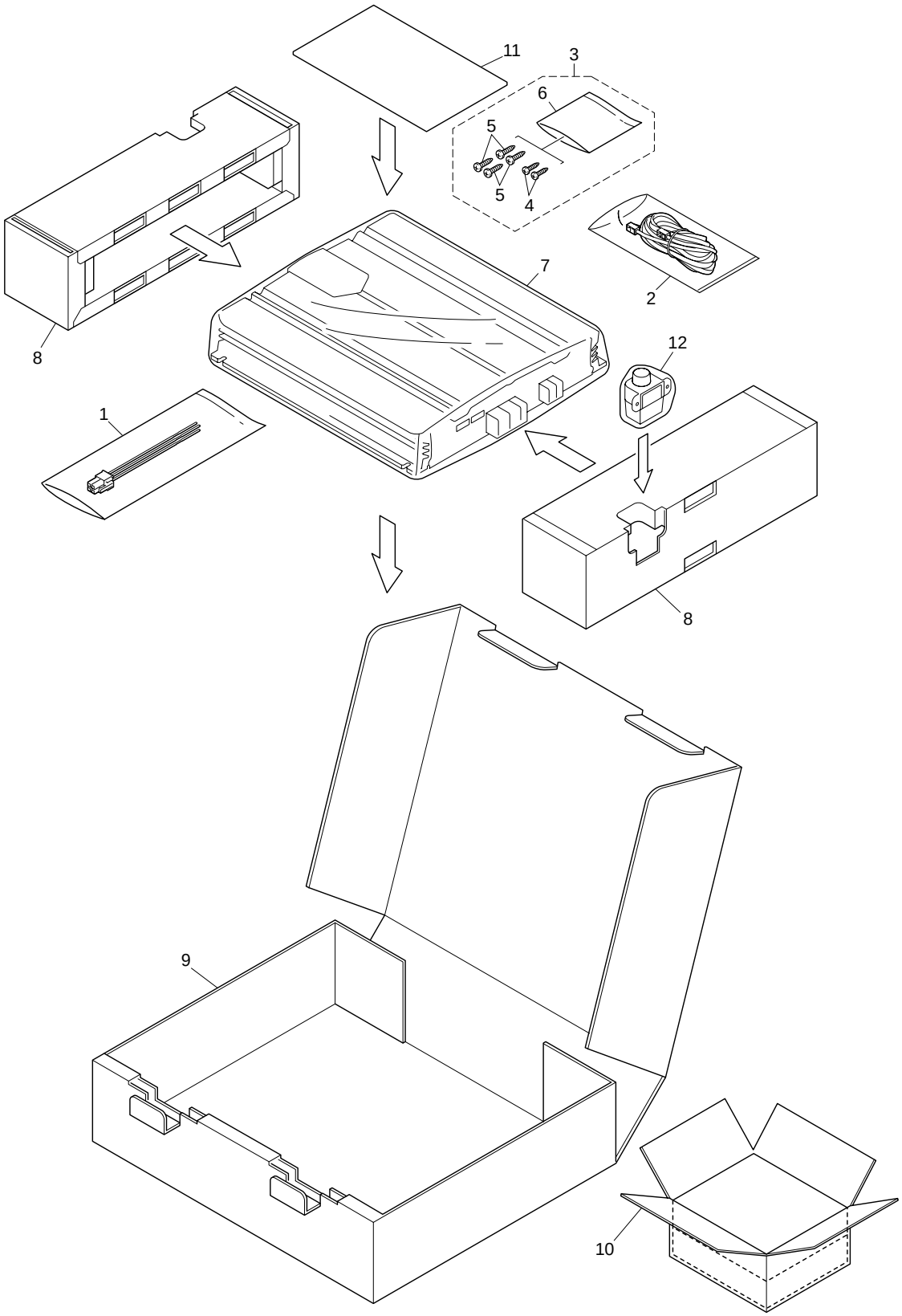
Power source	14.4 V DC (10.8 — 15.1 V allowable)
Grounding system	Negative type
Current consumption	33.0 A (at continuous power, 4 Ω)
Backup current	3 mA or less
Average current drawn*	9.0 A (4 Ω for one channel)
	16.0 A (2 Ω for one channel)
Fuse	30 A × 2
Dimensions	300 (W) × 60 (H) × 327 (D) mm
Weight	4.7 kg (Leads for wiring not included)
Maximum power output	500 W × 1 (4 Ω) / 800 W × 1 (2 Ω)
Continuous power output	250 W × 1 (at 14.4 V, 4 Ω, 20 — 240 Hz 0.5% THD)
	360 W × 1 (at 14.4 V, 2 Ω, 20 — 240 Hz 0.8% THD)
Continuous power output (DIN power)	380 W × 1 (4 Ω) (DIN45324, +B=14.4 V)
Load impedance	4 Ω (2 — 8 Ω allowable)
Frequency response	10 — 240 Hz (+0 dB, –3 dB)
Signal-to-noise ratio	100 dB (IEC-A network)
Distortion	0.03 % (10 W, 120 Hz)
Low pass filter	Cut off frequency: 40 — 240 Hz
	Cut off slope: –12 dB/oct
Bass Boost	Frequency: 50 Hz
	Level: 0/6/9/12 dB
Gain control	RCA: 200 mV — 6.5 V
	Speaker: 0.8 — 26 V
Maximum input level / impedance	RCA: 6.5 V / 22 kΩ
	Speaker: 26 V / 40 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.

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.
- 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.
- Screws adjacent to ∇ mark on the product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)

● PACKING SECTION PARTS LIST

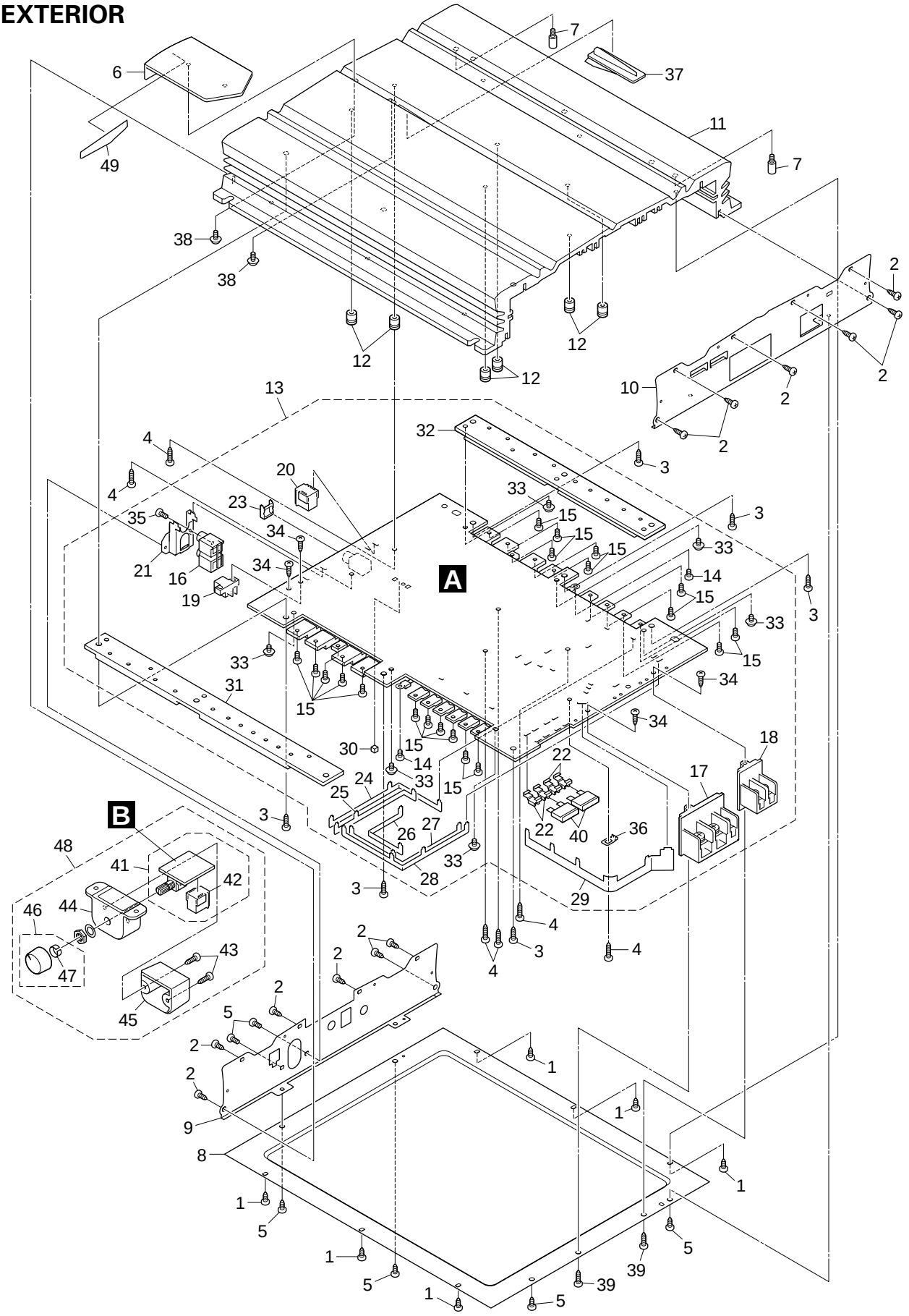
Mark	No.	Description	Part No. GM-7100M/XU/EW	GM-7100M/XU/UC	GM-7100M/XU/ES	GM-7100M/XU/CN
	1	Cord Assy	CDE7736	CDE7736	CDE7736	CDE7736
	2	Cord Assy	CDE7804	Not used	Not used	Not used
	3	Screw Assy	CEA4836	CEA4835	CEA4835	CEA4835
	4	Screw	BYC30P100FZK	Not used	Not used	Not used
	5	Screw	BYC40P180FZK	BYC40P180FZK	BYC40P180FZK	BYC40P180FZK
*	6	Polyethylene Sheet	CNM4338	CNM4338	CNM4338	CNM4338
	7	Polyethylene Bag	CEG1317	CEG1351	CEG1317	CEG1317
	8	Protector	CHP2911	CHP2911	CHP2911	CHP2911
	9	Carton	CHG5364	CHG5366	CHG5365	CHG5466
	10	Contain Box	CHL5364	CHL5366	CHL5365	CHL5466
	11-1	Polyethylene Bag	CEG1116	CEG1116	CEG1116	CEG1116
	11-2	Owner's Manual	CRD3920	CRD3922	CRD3923	CRB2042
*	11-3	Warranty Card	CRY1157	Not used	Not used	ARY7046
*	11-4	Card	Not used	ARY1048	Not used	Not used
	11-5	Owner's Manual	Not used	Not used	CRD3924	Not used
	12	Remote Control Assy	CXC4064	Not used	Not used	Not used

Mark	No.	Description	Part No. GM-7150M/XU/UC
	1	Cord Assy	CDE7736
	2	Cord Assy	CDE7804
	3	Screw Assy	CEA4836
	4	Screw	BYC30P100FZK
	5	Screw	BYC40P180FZK
*	6	Polyethylene Sheet	CNM4338
	7	Polyethylene Bag	CEG1351
	8	Protector	CHP2911
	9	Carton	CHG5367
	10	Contain Box	CHL5367
	11-1	Polyethylene Bag	CEG1116
	11-2	Owner's Manual	CRD3921
*	11-3	Warranty Card	CRY1070
*	11-4	Card	Not used
	11-5	Owner's Manual	Not used
	12	Remote Control Assy	CXC4064

● Owner's Manual

Part No.	Language
CRD3920	English, Spanish, German, French, Italian, Dutch
CRD3921	English, French, Spanish
CRD3922	English, French, Spanish
CRD3923	English, Spanish
CRD3924	Arabic, Portuguese(B)
CRB2042	Traditional Chinese

2.2 EXTERIOR



● EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BBZ30P060FTC
	2	Screw	BBZ30P080FZK
	3	Screw	BBZ30P100FZK
	4	Screw	BBZ30P120FTC
	5	Screw	BSZ30P050FZK
*	6	Badge	See Contrast table(2)
	7	Screw	CBA1810
	8	Case	CNB3072
	9	Panel	See Contrast table(2)
	10	Panel	See Contrast table(2)
	11	Heat Sink	See Contrast table(2)
	12	Spacer	CNV8256
	13	Amp Unit	See Contrast table(2)
	14	Screw	BBZ30P060FZK
	15	Screw	BBZ30P080FZK
	16	Pin Jack(CN111)	See Contrast table(2)
	17	Terminal(CN853)	See Contrast table(2)
	18	Terminal(CN855)	See Contrast table(2)
	19	Socket(CN801)	CKM1463
	20	Connector(CN701)	See Contrast table(2)
	21	Holder	CND2456
	22	Terminal	CND2458
	23	Holder	CND2466
	24	Buss Bar	CND2467
	25	Buss Bar	CND2468
	26	Buss Bar	CND2469
	27	Buss Bar	CND2471
	28	Buss Bar	CND2472
	29	Buss Bar	CND2729
	30	Spacer	CNM9570
	31	Sub Heat Sink	CNR1778
	32	Sub Heat Sink	CNR1779
	33	Screw	IMS30P050FZK
	34	Screw	PPZ30P100FSN
	35	Screw	PPZ30P100FZK
	36	Terminal(CN850)	VNF1084
	37	Lighting Conductor Unit	CXC4334
	38	Screw	IBZ30P060FTC
	39	Screw	PPZ30P100FZK
⚠	40	Fuse(FU100,101)(30A)	CEK1330
	41	Remote Control Unit	See Contrast table(2)
	42	Connector(CN1351)	See Contrast table(2)
	43	Screw	See Contrast table(2)
	44	Grille	See Contrast table(2)
	45	Cover	See Contrast table(2)
	46	Knob Unit	See Contrast table(2)
	47	Spring	See Contrast table(2)
	48	Remote Control Assy	See Contrast table(2)
	49	Sheet	CNM9571

(2) CONTRAST TABLE

GM-7100M/XU/EW, GM-7100M/XU/UC, GM-7100M/XU/ES,GM-7100M/XU/CN and GM-7150M/XU/UC are constructed the same except for the following:

Mark	No.	Description	Part No.			
			GM-7100M/XU/EW	GM-7100M/XU/UC	GM-7100M/XU/ES	GM-7100M/XU/CN
*	6	Badge	CAH1919	CAH1919	CAH1916	CAH1916
	9	Panel	CNB3057	CNB3059	CNB3060	CNB3060
	10	Panel	CNB3125	CNB3061	CNB3124	CNB3124
	11	Heat Sink	CNR1765	CNR1765	CNR1766	CNR1766
	13	Amp Unit	CWH1270	CWH1271	CWH1271	CWH1271
	16	Pin Jack(CN111)	CKB1069	CKB1068	CKB1068	CKB1068
	17	Terminal(CN853)	CKE1054	CKE1055	CKE1055	CKE1055
	18	Terminal(CN855)	CKE1056	CKE1057	CKE1057	CKE1057
	20	Connector(CN701)	CKS4962	Not used	Not used	Not used
	41	Remote Control Unit	CWM9848	Not used	Not used	Not used
	42	Connector(CN1351)	CKS4962	Not used	Not used	Not used
	43	Screw	BPZ20P100FZK	Not used	Not used	Not used
	44	Grille	CNS8140	Not used	Not used	Not used
	45	Cover	CNS8141	Not used	Not used	Not used
	46	Knob Unit	CXC4335	Not used	Not used	Not used
	47	Spring	CBL1692	Not used	Not used	Not used
	48	Remote Control Assy	CXC4064	Not used	Not used	Not used

Mark	No.	Description	Part No.
			GM-7150M/XU/UC
*	6	Badge	CAH1917
	9	Panel	CNB3058
	10	Panel	CNB3114
	11	Heat Sink	CNR1792
	13	Amp Unit	CWH1270
	16	Pin Jack(CN111)	CKB1069
	17	Terminal(CN853)	CKE1054
	18	Terminal(CN855)	CKE1056
	20	Connector(CN701)	CKS4962
	41	Remote Control Unit	CWM9848
	42	Connector(CN1351)	CKS4962
	43	Screw	BPZ20P100FZK
	44	Grille	CNS8140
	45	Cover	CNS8141
	46	Knob Unit	CXC4335
	47	Spring	CBL1692
	48	Remote Control Assy	CXC4064

A

B

C

D

E

F

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

Large size SCH diagram

Guide page

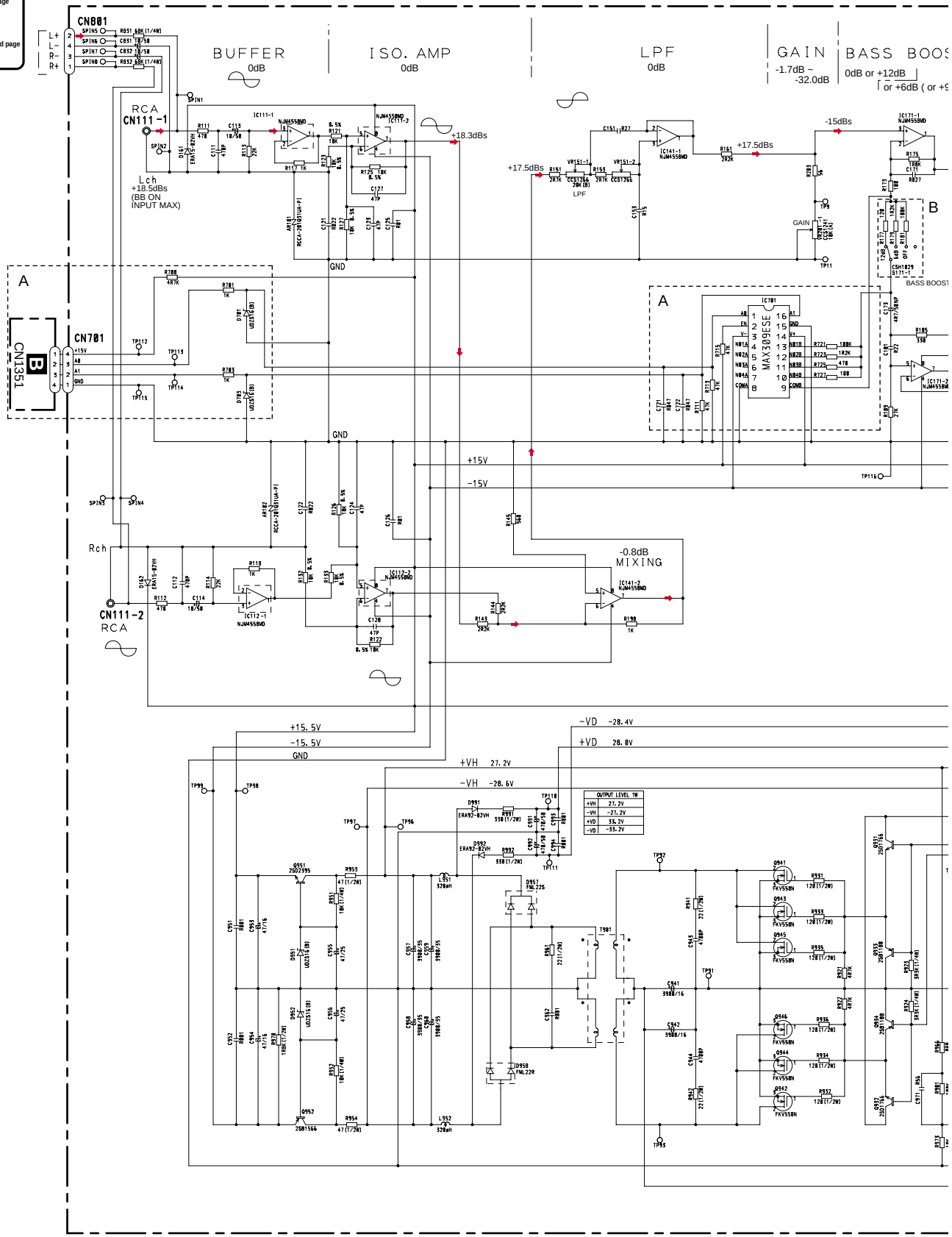
Detailed page

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

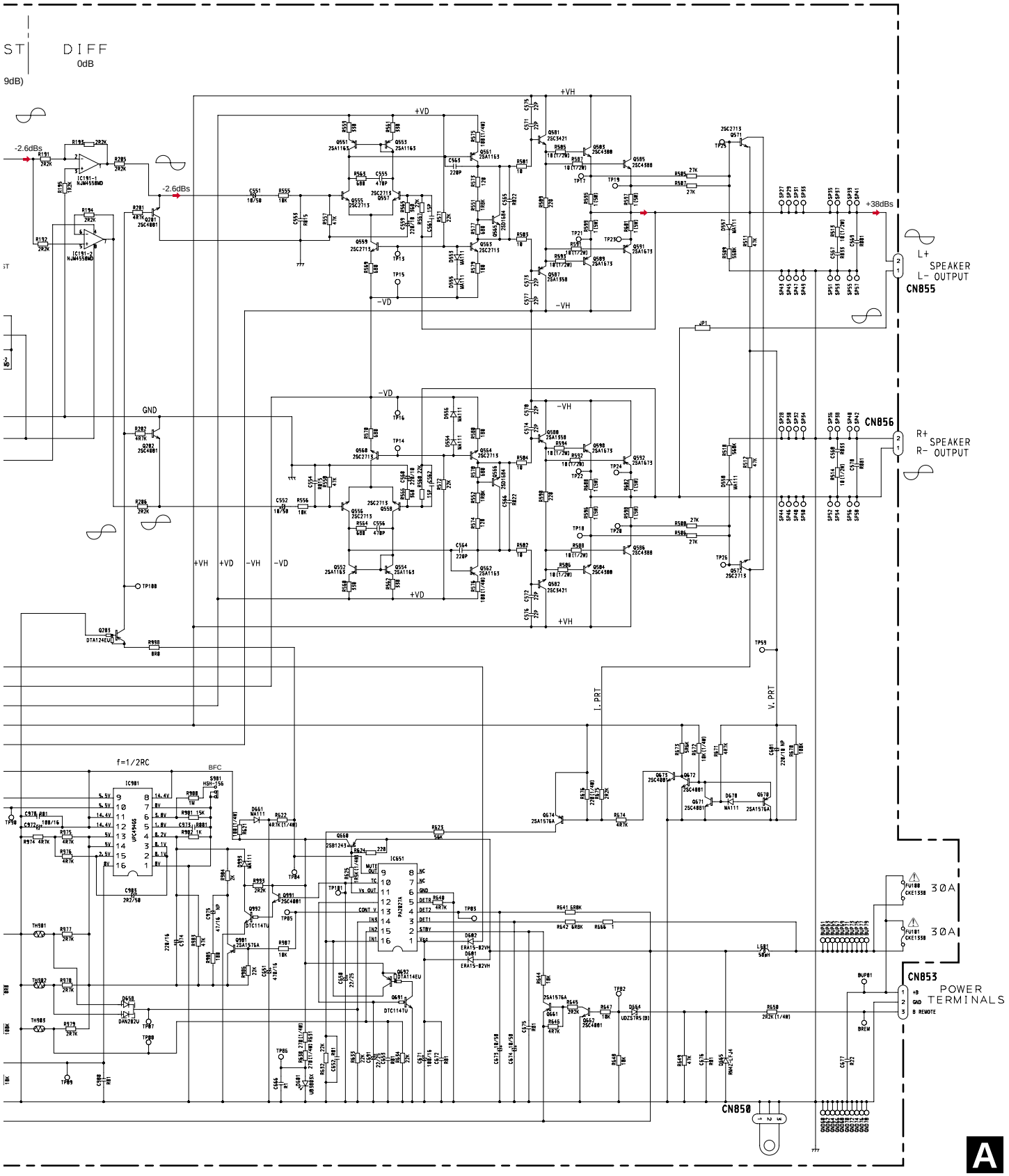
The ⚠ mark found on some component parts indicate the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

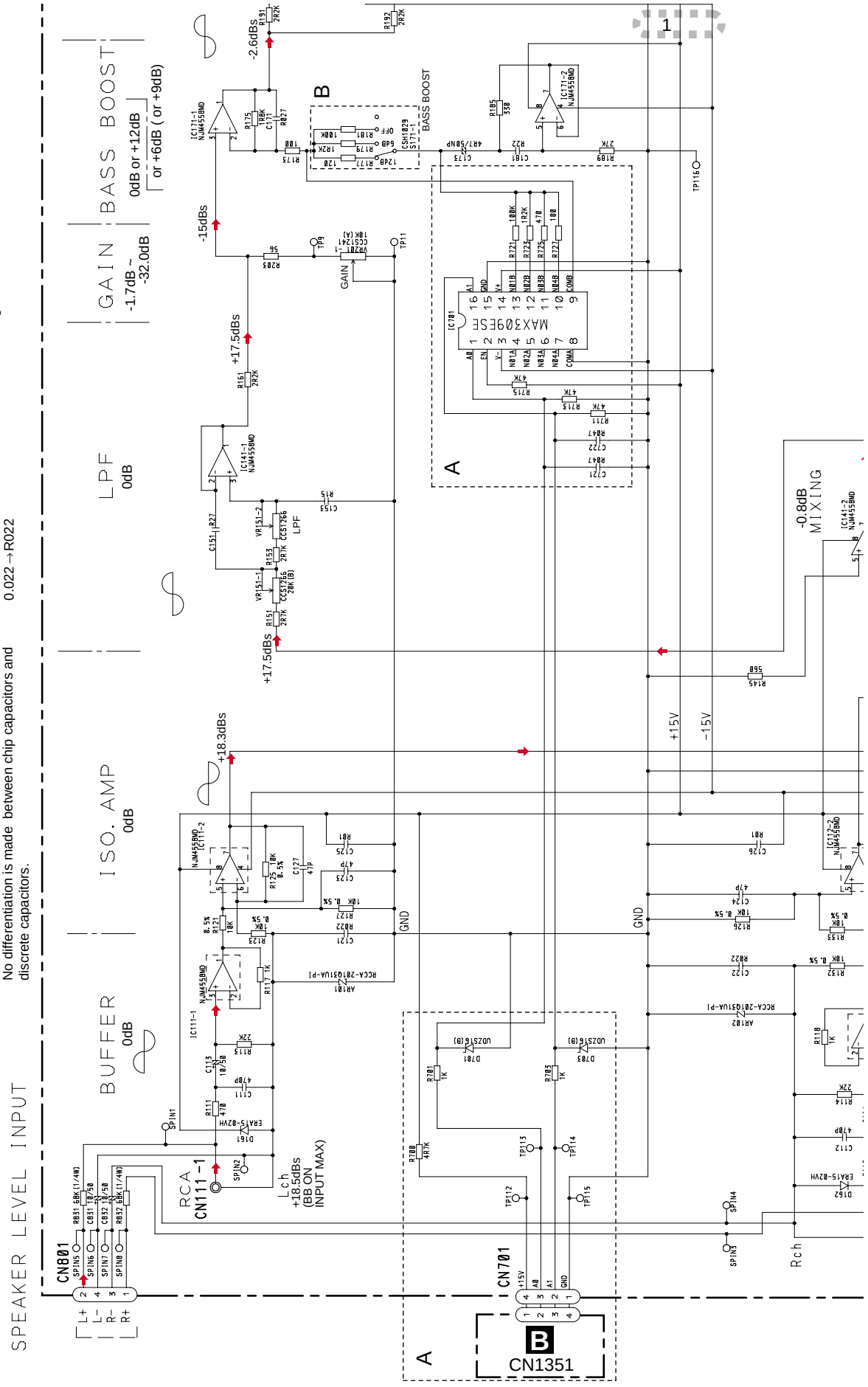


A-b

GM-7100M/XU/EW GM-7150M/XU/UC	A
GM-7100M/XU/UC GM-7100M/XU/ES GM-7100M/XU/CN	B

A AMP UNIT





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
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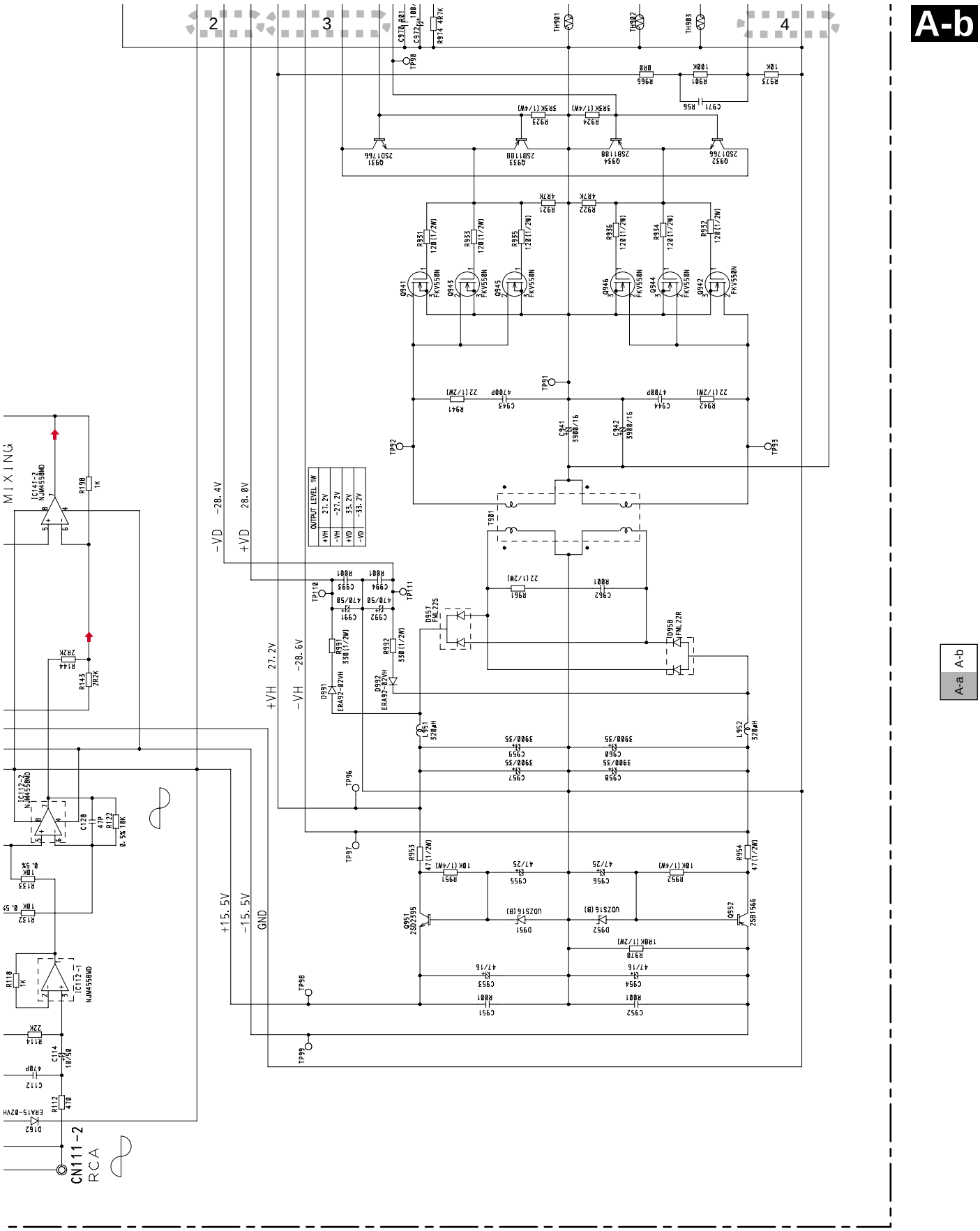
A-a A-b

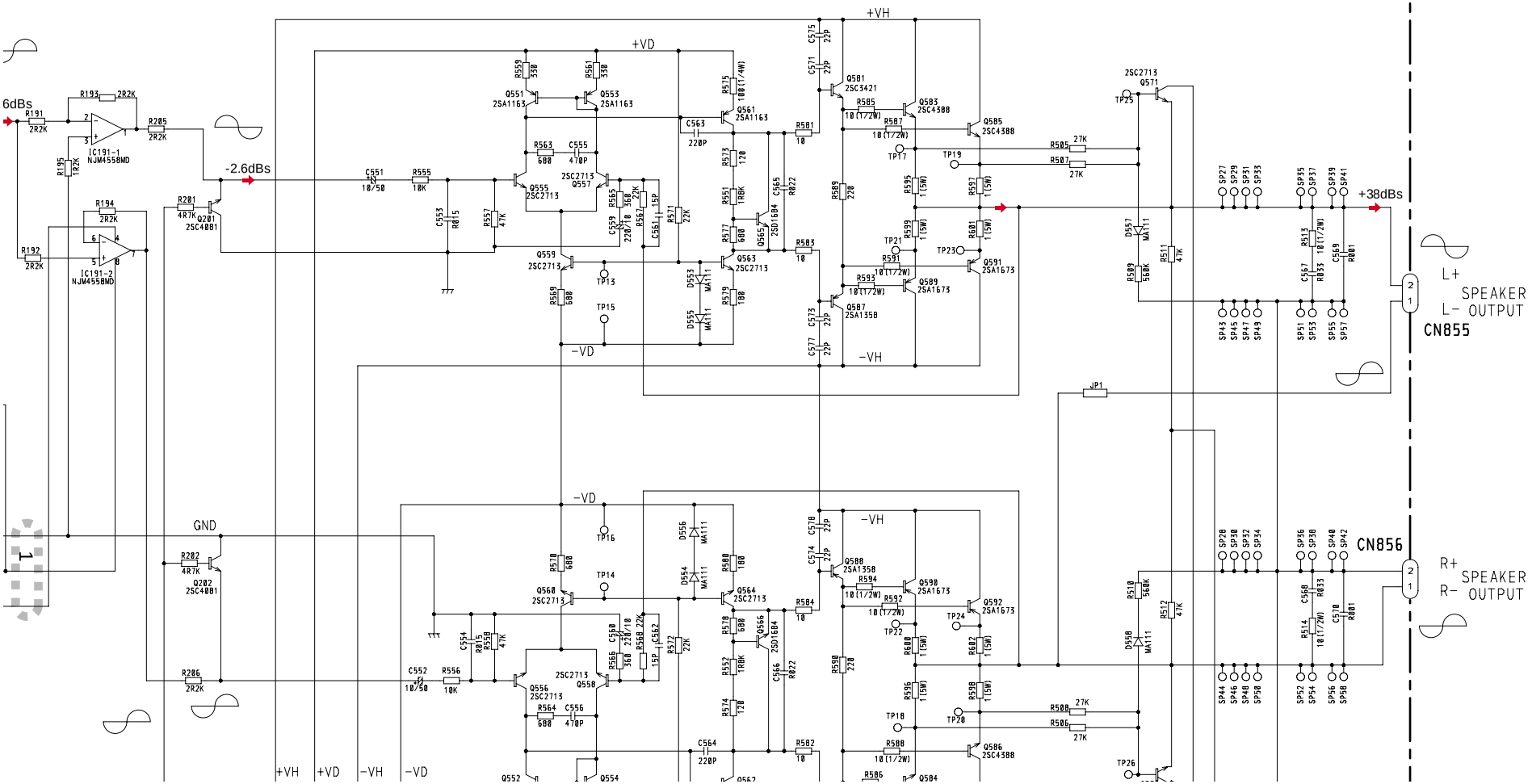

A-b
A-a
MIXING
CN111-2
RCA
-VD -28.4V
+VD 28.8V
+VH 27.2V
-VH -28.6V
+15.5V
-15.5V
GND
OUTPUT LEVEL 1W
+VH 27.2V
-VH -27.2V
+VD 33.2V
-VD -33.2V

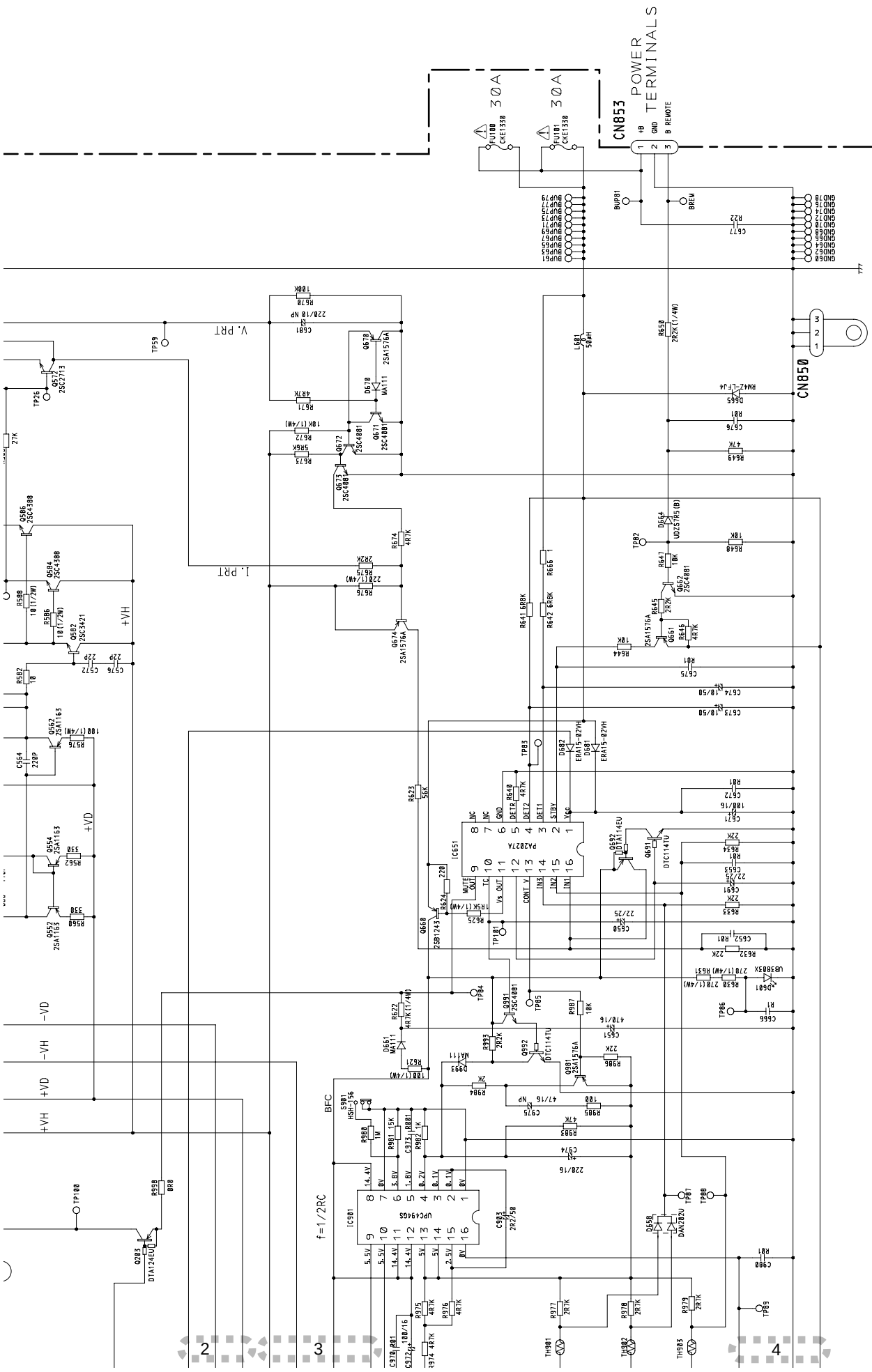
A-a | A-b

GM-7100M/XU/EW GM-7150M/XU/UC	A
GM-7100M/XU/UC GM-7100M/XU/ES GM-7100M/XU/CN	B

A AMP UNIT

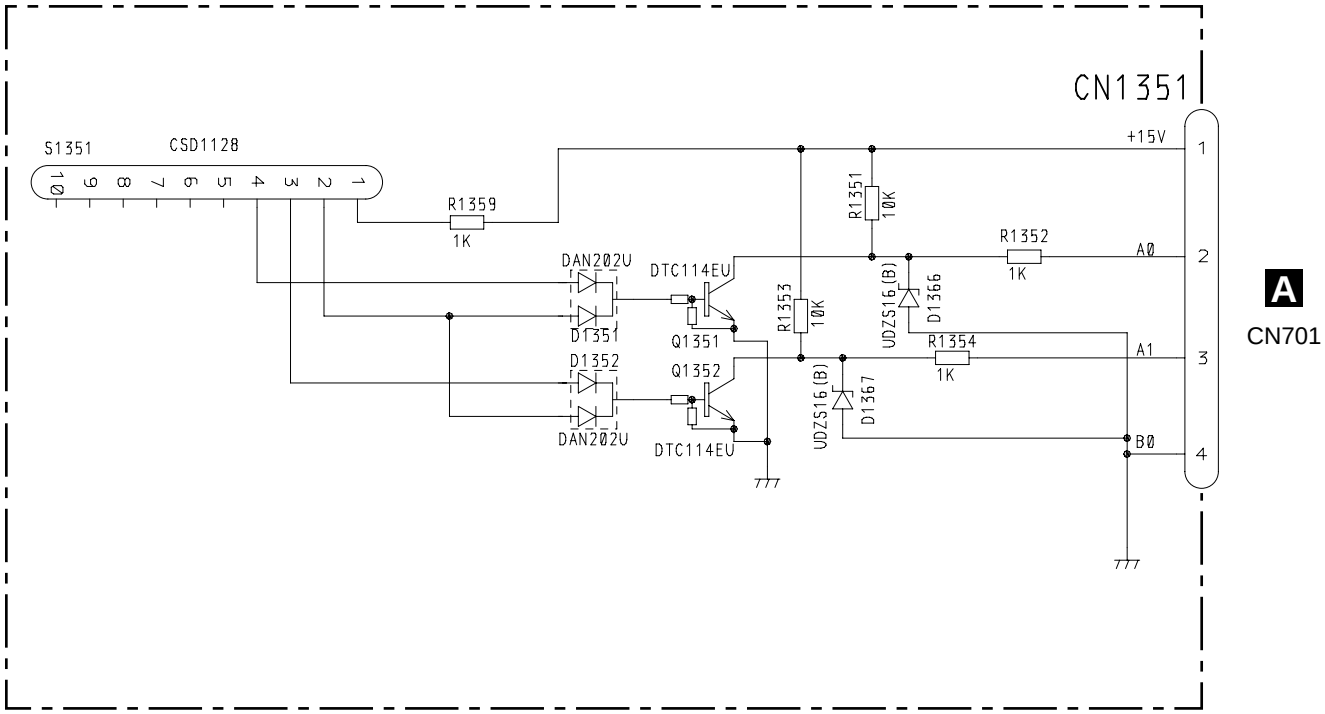
GM-7100M/XU/EW




CN853
POWER TERMINALS
+B
GND
B REMOTE
30A
30A
FU100 CKE1350
FU101 CKE1350
CN850
V. PRT
I. PRT
+VH
+VD
-VD
-VH
BFC
f=1/2RC
IC651 PA2027A
IC981 UPC4945
A
B
C
D
E
F
2
3
4
A-a
A-b

3.2 REMOTE CONTROL UNIT (GM-7100M/XU/EW, GM-7150M/XU/UC)

B REMOTE CONTROL UNIT



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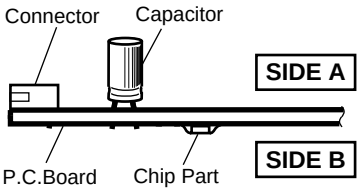
4. PCB CONNECTION DIAGRAM

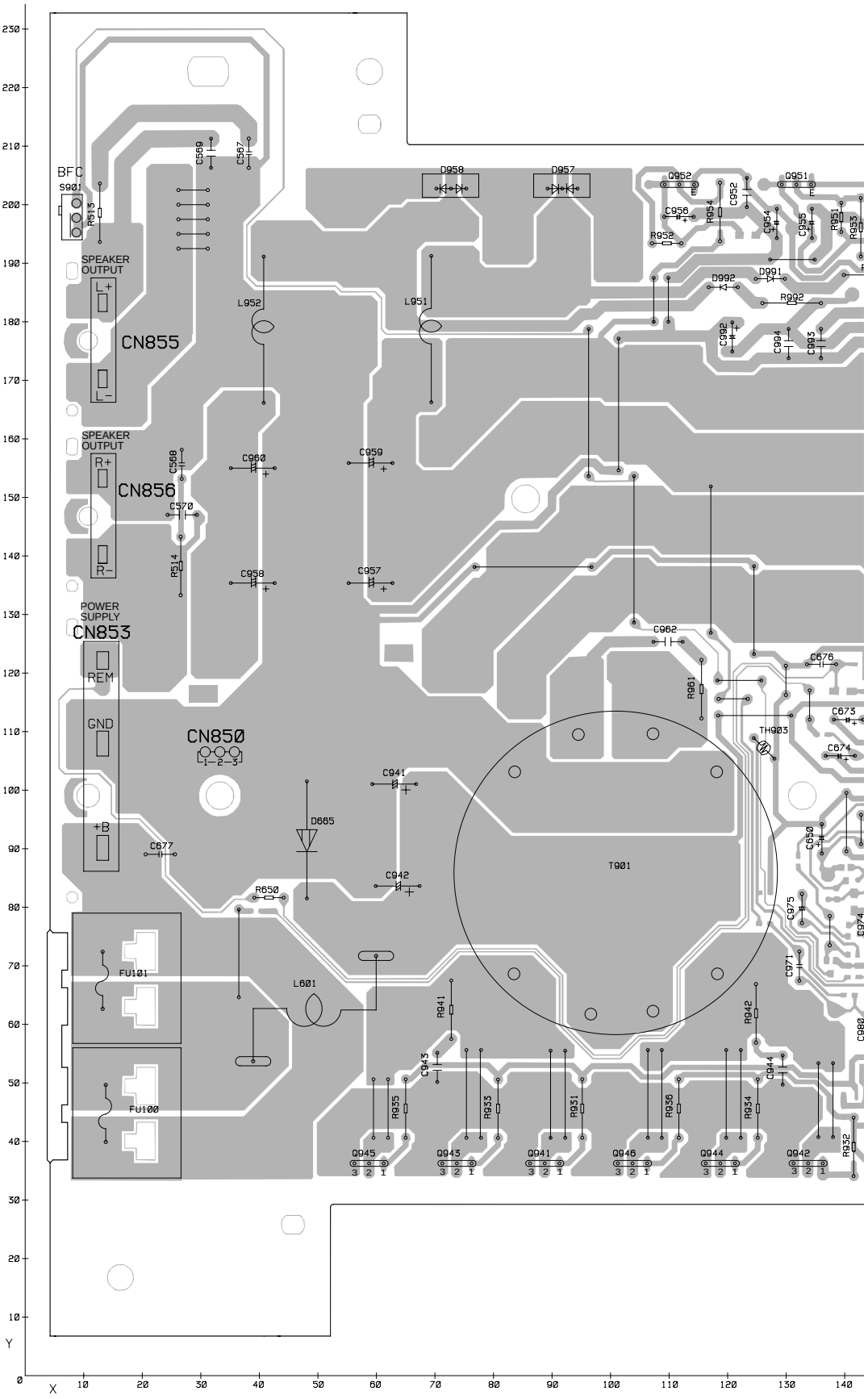
4.1 AMP UNIT

NOTE FOR PCB DIAGRAMS

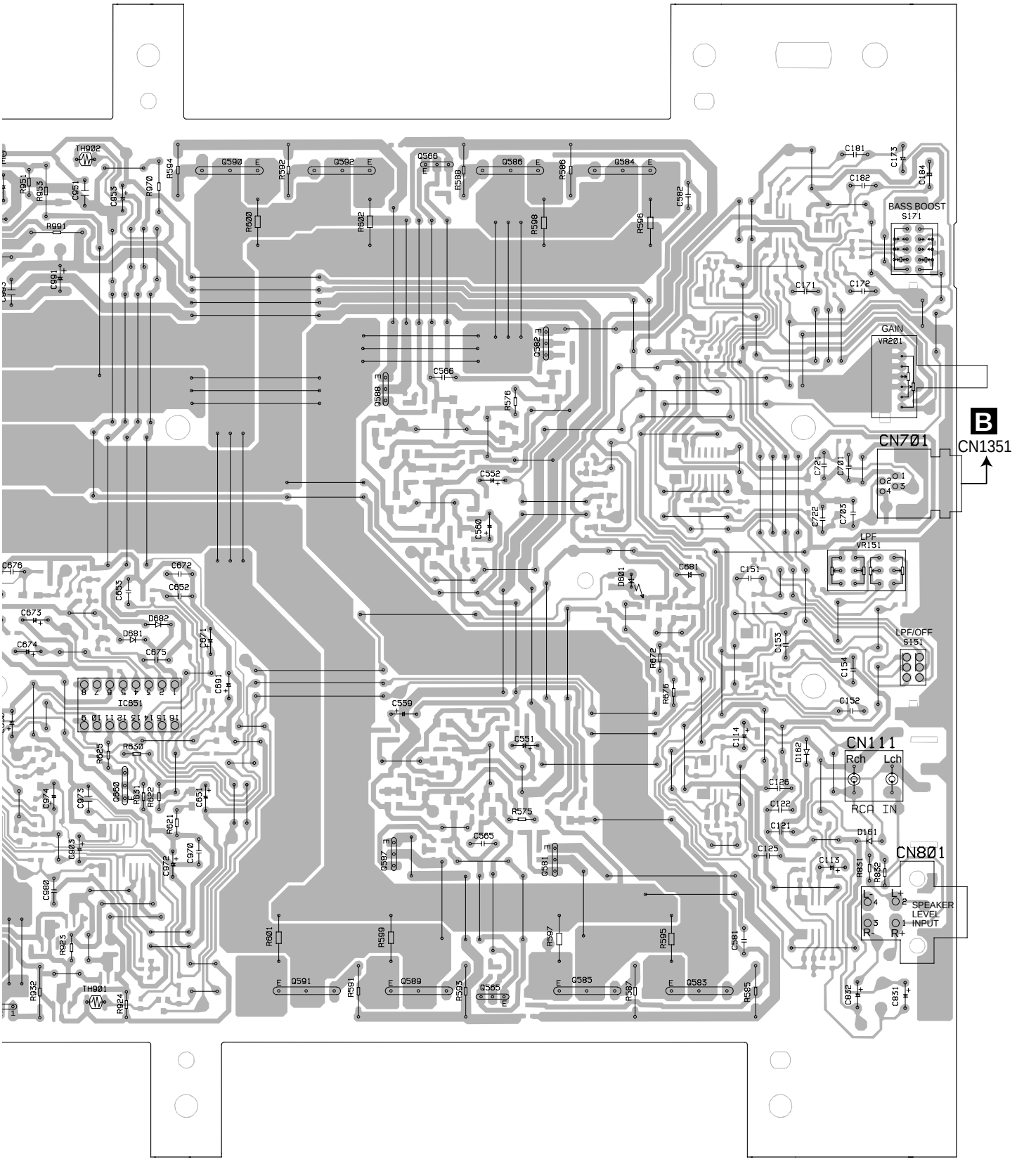
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



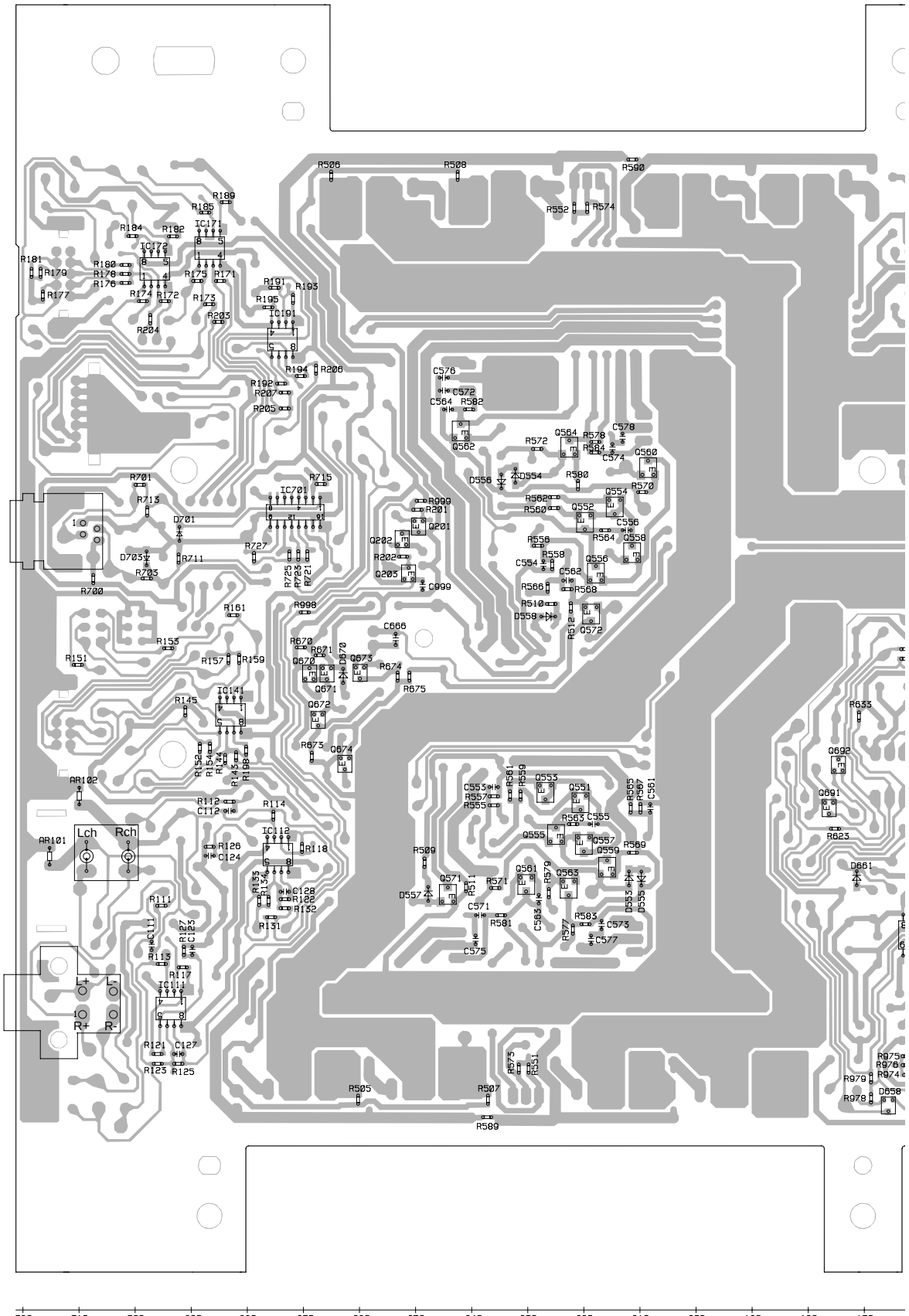
A AMP UNIT



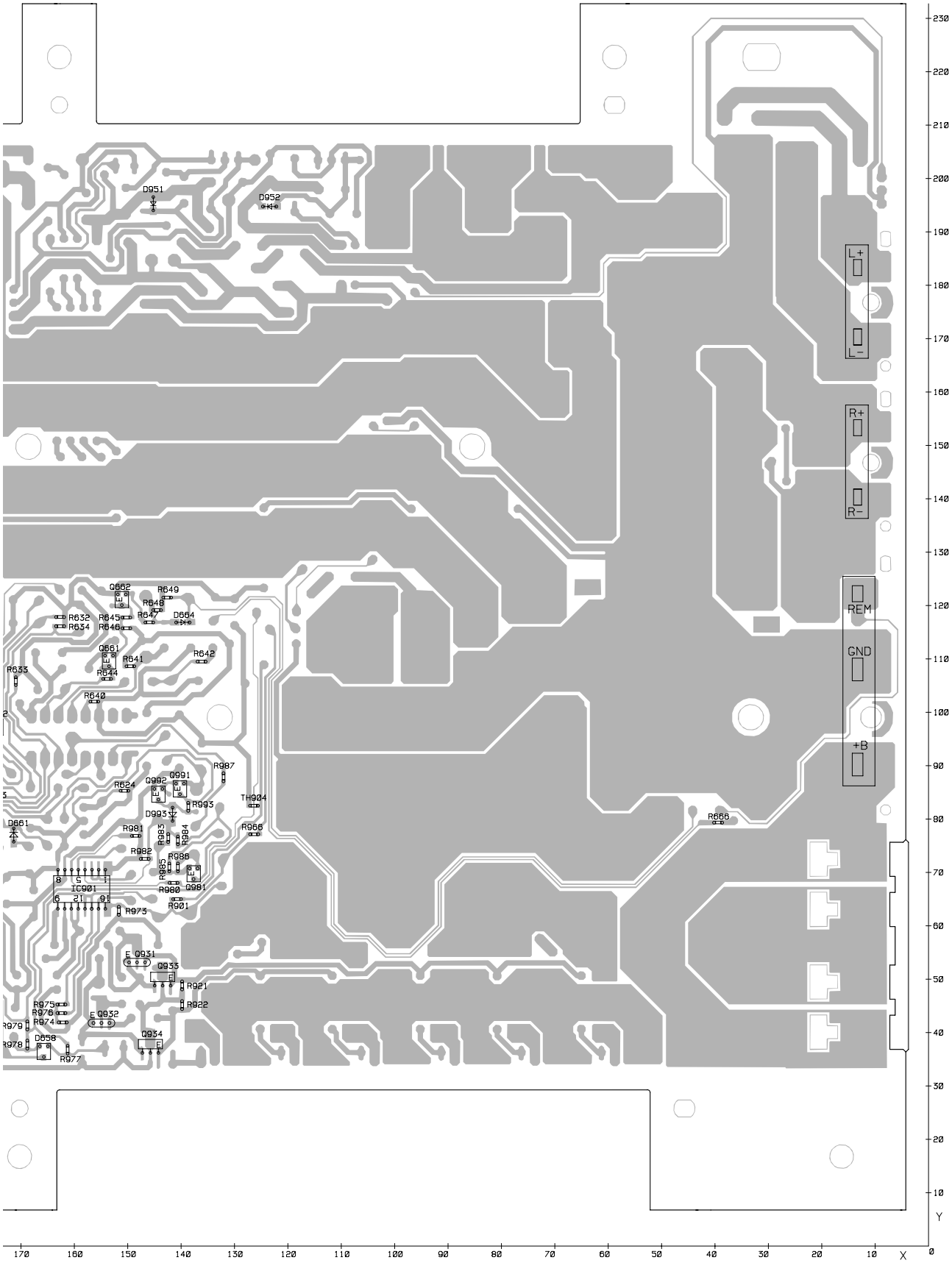
SIDE A


BASS BOOST
S171
GAIN
VR201
CN7Ø1
B
CN1351
LPF
VR151
LPF/OFF
S151
CN111
Rch
Lch
RCA IN
CN8Ø1
SPEAKER
LEVEL
INPUT
IC651

A AMP UNIT

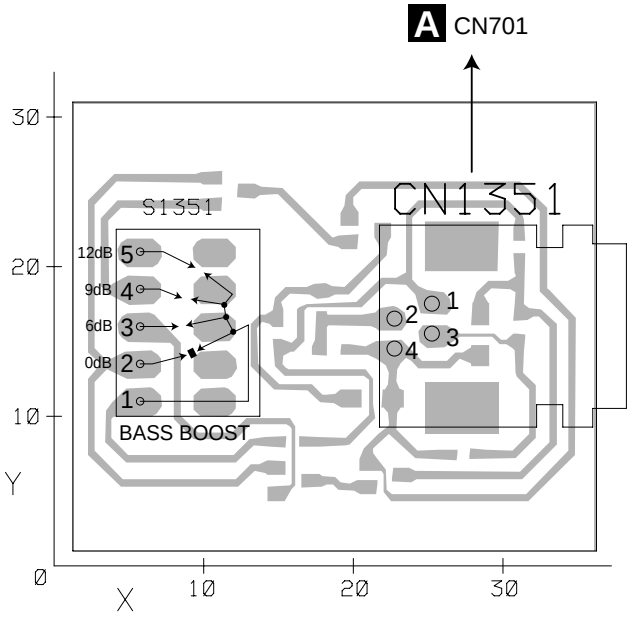

R506
R508
R509
R552
R574
R180
R185
IC171
R184
R182
IC172
R181
R179
R180
R178
R176
R177
R175
R171
R174
R172
R173
R204
R205
R191
R193
R195
IC191
R194
R206
R192
R207
R205
C576
C572
C564
R582
Q562
Q564
R572
R578
R584
C574
C578
Q560
D556
D554
R580
R570
R562
R560
Q554
Q552
C556
R564
R556
C558
R558
C554
Q556
C562
R566
R568
R510
D558
R512
Q572
R701
R713
IC701
R715
D701
D703
R711
R703
R700
R727
R725
R723
R721
R999
R201
Q201
Q202
R202
Q205
C999
R998
C666
R161
R155
R151
R157
R159
R670
R671
Q670
Q671
Q672
D670
Q673
R674
R675
IC141
R145
R673
Q674
R152
R154
R147
R108
AR102
AR101
Lch
Rch
R112
C112
R114
IC112
R126
C124
R118
R133
R134
C128
R122
R132
R131
R111
C111
R127
C123
R113
R117
IC111
R121
C127
R123
R125
R505
R507
R503
R573
R551
C553
R557
R555
Q553
R561
R559
Q551
R565
R567
C561
R563
C555
Q555
Q557
R569
C559
R509
Q571
D557
R511
R571
Q561
R579
Q563
D553
D555
C571
R581
C563
R577
R583
C573
C577
C575
R633
Q692
Q691
R623
D661
R975
R976
R974
R979
R978
D658
320 310 300 290 280 270 260 250 240 230 220 210 200 190 180 170

SIDE B

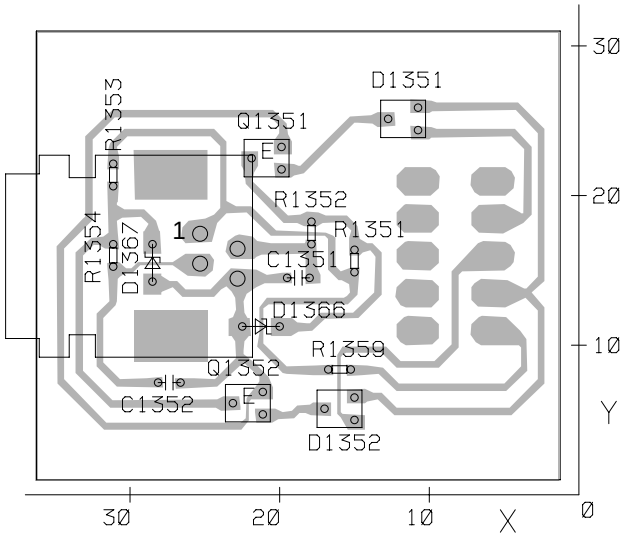

D951
D952
L+
L-
R+
R-
REM
GND
+B
Q662
R649
R648
R647
D664
R632
R634
R645
R646
Q661
R641
R642
R633
R644
R640
R987
R624
Q992
Q991
R993
TH904
D993
D661
R981
R983
R984
R966
R982
R985
R986
IC901
R980
Q981
R901
R973
R666
Q931
Q933
R921
R922
R975
R976
R974
Q932
R979
R978
D658
Q934
R977
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Y
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
X

4.2 REMOTE CONTROL UNIT (GM-7100M/XU/EW, GM-7150M/XU/UC)

B REMOTE CONTROL UNIT **SIDE A**



B REMOTE CONTROL UNIT **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.....
- *The ⚠ mark found on some component parts indicatesthe importance of the safety factor of the part.*
- *Therefore, when replacing, be sure to use parts of identical designation.*

Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

A Unit Number : CWH1270(EW,7150M/UC)
Unit Number : CWH1271(UC,ES,CN)
Unit Name : Amp Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	111	(B,294,54) IC	NJM4558MD
IC	112	(B,275,81) IC	NJM4558MD
IC	141	(B,283,106) IC	NJM4558MD
IC	171	(B,287,189) IC	NJM4558MD
IC	191	(B,274,173) IC	NJM4558MD
IC	651	(A,168,99) IC	PA2027A
IC	701	(B,271,142) IC(EW,7150M/UC)	MAX309ESE
IC	901	(B,159,67) IC	UPC494GS
Q	201	(B,249,140) Transistor	2SC4081
Q	202	(B,252,137) Transistor	2SC4081
Q	203	(B,251,131) Transistor	DTA124EU
Q	551	(B,221,90) Transistor	2SA1163
Q	552	(B,220,140) Transistor	2SA1163
Q	553	(B,227,92) Transistor	2SA1163
Q	554	(B,215,143) Transistor	2SA1163
Q	555	(B,225,85) Transistor	2SC2713
Q	556	(B,218,131) Transistor	2SC2713
Q	557	(B,220,83) Transistor	2SC2713
Q	558	(B,211,135) Transistor	2SC2713
Q	559	(B,216,79) Transistor	2SC2713
Q	560	(B,209,150) Transistor	2SC2713
Q	561	(B,230,76) Transistor	2SA1163
Q	562	(B,242,157) Transistor	2SA1163
Q	563	(B,223,75) Transistor	2SC2713
Q	564	(B,223,154) Transistor	2SC2713
Q	565	(A,230,38) Transistor	2SD1684
Q	566	(A,219,201) Transistor	2SD1684
Q	571	(B,244,74) Transistor	2SC2713
Q	572	(B,219,124) Transistor	2SC2713
Q	581	(A,243,65) Transistor	2SC3421
Q	582	(A,241,166) Transistor	2SC3421
Q	583	(A,276,39) Transistor	2SC4388
Q	584	(A,250,200) Transistor	2SC4388
Q	585	(A,254,39) Transistor	2SC4388
Q	586	(A,228,200) Transistor	2SC4388
Q	587	(A,211,66) Transistor	2SA1358
Q	588	(A,209,157) Transistor	2SA1358
Q	589	(A,221,39) Transistor	2SA1673
Q	590	(A,173,200) Transistor	2SA1673
Q	591	(A,199,39) Transistor	2SA1673
Q	592	(A,195,200) Transistor	2SA1673
Q	660	(A,158,77) Transistor	2SB1243
Q	661	(B,154,110) Transistor	2SA1576A
Q	662	(B,151,121) Transistor	2SC4081
Q	670	(B,269,113) Transistor	2SA1576A

=====Circuit Symbol and No.		===Part Name	Part No.
Q	671	(B,266,113) Transistor	2SC4081
Q	672	(B,267,105) Transistor	2SC4081
Q	673	(B,260,114) Transistor	2SC4081
Q	674	(B,263,97) Transistor	2SA1576A
Q	691	(B,176,89) Transistor	DTC114TU
Q	692	(B,175,97) Transistor	DTA114EU
Q	931	(B,148,55) Transistor	2SD1766
Q	932	(B,155,44) Transistor	2SD1766
Q	933	(B,143,50) Transistor	2SB1188
Q	934	(B,146,38) Transistor	2SB1188
Q	941	(A,91,36) Transistor	FKV550N
Q	942	(A,136,36) Transistor	FKV550N
Q	943	(A,76,36) Transistor	FKV550N
Q	944	(A,121,36) Transistor	FKV550N
Q	945	(A,61,36) Transistor	FKV550N
Q	946	(A,106,36) Transistor	FKV550N
Q	951	(A,129,203) Transistor	2SD2395
Q	952	(A,109,203) Transistor	2SB1566
Q	981	(B,138,70) Transistor	2SA1576A
Q	991	(B,140,86) Transistor	2SC4081
Q	992	(B,144,85) Transistor	DTC114TU
D	161	(A,307,69) Diode	ERA15-02VH
D	162	(A,292,89) Diode	ERA15-02VH
D	553	(B,212,77) Diode	MA111
D	554	(B,232,149) Diode	MA111
D	555	(B,210,77) Diode	MA111
D	556	(B,235,148) Diode	MA111
D	557	(B,248,74) Diode	MA111
D	558	(B,226,124) Diode	MA111
D	601	(A,258,121) LED	UB3803X
D	658	(B,166,36) Diode	DAN202U
D	661	(B,171,77) Diode	MA111
D	664	(B,140,117) Diode	UDZS7R5(B)
D	665	(A,48,102) Diode	RM4Z-LFJ4
D	670	(B,263,113) Diode	MA111
D	681	(A,157,108) Diode	ERA15-02VH
D	682	(A,162,111) Diode	ERA15-02VH
D	701	(B,292,138) Diode(EW,7150M/UC)	UDZS16(B)
D	703	(B,298,134) Diode(EW,7150M/UC)	UDZS16(B)
D	951	(B,145,195) Diode	UDZS16(B)
D	952	(B,123,195) Diode	UDZS16(B)
D	957	(A,89,203) Diode	FML22S
D	958	(A,70,203) Diode	FML22R
D	991	(A,125,187) Diode	ERA92-02VH
D	992	(A,122,186) Diode	ERA92-02VH
D	993	(B,142,81) Diode	MA111
L	601	(A,60,72) Choke Coil 50μH	CTH1323
L	951	(A,69,166) Choke Coil 320μH	CTH1326
L	952	(A,41,166) Choke Coil 320μH	CTH1326
T	901	(A,101,86) Transformer	CTT1123

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

Symbol	No.	Part Name	Part No.
TH	901	(A,151,37) Thermistor	CCX1013
TH	902	(A,149,202) Thermistor	CCX1013
TH	903	(A,128,105) Thermistor	CCX1064
S	171	(A,314,181) Switch (UC,ES,CN)(BASS BOOST)	CSH1029
S	901	(A,9,200) Switch(BFC)	HSH-156
VR	151	(A,309,119) Volume 20kΩ(E)(LPF)	CCS1266
VR	201	(A,311,154) Volume 10kΩ(A)(GAIN)	CCS1241
⚠ FU	100	(A,20,45) Fuse 30A	CEK1330
⚠ FU	101	(A,20,68) Fuse 30A	CEK1330
AR	101	(B,315,81) Surge Protector	RCCA-201Q31UA-PI
AR	102	(B,310,92) Surge Protector	RCCA-201Q31UA-PI

RESISTORS

Symbol	No.	Part Name	Part No.
R	111	(B,295,72)	RS1/16S471J
R	112	(B,283,91)	RS1/16S471J
R	113	(B,295,62)	RS1/16S223J
R	114	(B,275,88)	RS1/16S223J
R	117	(B,292,61)	RS1/16S102J
R	118	(B,270,82)	RS1/16S102J
R	121	(B,296,46)	RS1/16S1002D
R	122	(B,273,73)	RS1/16S1002D
R	123	(B,296,44)	RS1/16S1002D
R	125	(B,292,44)	RS1/16S1002D
R	126	(B,287,83)	RS1/16S1002D
R	127	(B,291,64)	RS1/16S1002D
R	132	(B,273,72)	RS1/16S1002D
R	133	(B,278,73)	RS1/16S1002D
R	143	(B,282,99)	RS1/16S222J
R	144	(B,284,98)	RS1/16S222J
R	145	(B,291,107)	RS1/16S561J
R	151	(B,310,115)	RS1/16S272J
R	153	(B,294,118)	RS1/16S272J
R	161	(B,283,124)	RS1/16S222J
R	173	(B,287,179)	RS1/16S101J
R	175	(B,289,184)	RS1/16S182J
R	177	(B,316,181) (UC,ES,CN)	RS1/16S121J
R	179	(B,317,185) (UC,ES,CN)	RS1/16S122J
R	181	(B,318,185) (UC,ES,CN)	RS1/16S104J
R	185	(B,288,196)	RS1/16S331J
R	189	(B,284,198)	RS1/16S273J
R	191	(B,275,182)	RS1/16S222J
R	192	(B,274,165)	RS1/16S222J
R	193	(B,272,180)	RS1/16S222J
R	194	(B,270,167)	RS1/16S222J
R	195	(B,276,179)	RS1/16S122J
R	198	(B,280,100)	RS1/16S102J
R	201	(B,250,143)	RS1/16S472J
R	202	(B,252,134)	RS1/16S472J
R	203	(B,285,176)	RS1/16S560J
R	205	(B,273,161)	RS1/16S222J
R	206	(B,268,168)	RS1/16S222J
R	505	(B,260,38)	RS1/16S273J
R	506	(B,265,202)	RS1/16S273J
R	507	(B,237,38)	RS1/16S273J
R	508	(B,243,202)	RS1/16S273J
R	509	(B,248,80)	RS1/16S564J
R	510	(B,226,126)	RS1/16S564J
R	511	(B,241,75)	RS1/16S473J
R	512	(B,222,125)	RS1/16S473J
R	513	(A,13,204)	RD1/2PM100J
R	514	(A,27,143)	RD1/2PM100J
R	551	(B,230,43)	RS1/16S182J
R	552	(B,222,197)	RS1/16S182J
R	555	(B,236,90)	RS1/16S103J
R	556	(B,228,136)	RS1/16S103J
R	557	(B,236,92)	RS1/16S473J
R	558	(B,226,133)	RS1/16S473J
R	559	(B,231,92)	RS1/16S331J

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

Symbol	No.	Part Name	Part No.
R	560	(B,225,143)	RS1/16S331J
R	561	(B,233,92)	RS1/16S331J
R	562	(B,225,145)	RS1/16S331J
R	563	(B,222,87)	RS1/16S681J
R	564	(B,216,139)	RS1/16S681J
R	565	(B,212,89)	RS1/16S361J
R	566	(B,226,129)	RS1/16S361J
R	567	(B,210,89)	RS1/16S223J
R	568	(B,223,129)	RS1/16S223J
R	569	(B,211,82)	RS1/16S681J
R	570	(B,210,146)	RS1/16S681J
R	571	(B,236,75)	RS1/16S223J
R	572	(B,228,154)	RS1/16S223J
R	573	(B,232,43)	RS1/16S121J
R	574	(B,219,197)	RS1/16S121J
R	575	(A,234,73)	RD1/4PU101J
R	576	(A,235,157)	RD1/4PU101J
R	577	(B,222,68)	RS1/16S681J
R	578	(B,218,155)	RS1/16S681J
R	579	(B,226,74)	RS1/16S181J
R	580	(B,221,147)	RS1/16S181J
R	581	(B,235,70)	RS1/16S100J
R	582	(B,240,161)	RS1/16S100J
R	583	(B,220,69)	RS1/16S100J
R	584	(B,218,153)	RS1/16S100J
R	585	(A,282,34)	RD1/2PM100J
R	586	(A,246,205)	RD1/2PM100J
R	587	(A,258,34)	RD1/2PM100J
R	588	(A,225,205)	RD1/2PM100J
R	589	(B,237,34)	RS1/16S221J
R	590	(B,211,205)	RS1/16S221J
R	591	(A,204,34)	RD1/2PM100J
R	592	(A,190,205)	RD1/2PM100J
R	593	(A,225,34)	RD1/2PM100J
R	594	(A,169,205)	RD1/2PM100J
R	595	(A,265,54) 1Ω	CCN1151
R	596	(A,261,195) 1Ω	CCN1151
R	597	(A,243,54) 1Ω	CCN1151
R	598	(A,240,195) 1Ω	CCN1151
R	599	(A,210,45) 1Ω	CCN1151
R	600	(A,184,186) 1Ω	CCN1151
R	601	(A,188,45) 1Ω	CCN1151
R	602	(A,206,186) 1Ω	CCN1151
R	621	(A,168,70)	RD1/4PU101J
R	622	(A,165,75)	RD1/4PU472J
R	623	(B,175,86)	RS1/16S563J
R	624	(B,151,85)	RS1/16S221J
R	625	(A,155,88)	RD1/4PU152J
R	630	(A,163,86)	RD1/4PU271J
R	631	(A,162,80)	RD1/4PU271J
R	632	(B,163,118)	RS1/16S223J
R	633	(B,171,106)	RS1/16S223J
R	634	(B,163,116)	RS1/16S223J
R	640	(B,156,102)	RS1/16S472J
R	641	(B,150,109)	RS1/16S682J
R	642	(B,136,110)	RS1/16S682J
R	644	(B,154,106)	RS1/16S103J
R	645	(B,150,118)	RS1/16S222J
R	646	(B,150,116)	RS1/16S472J
R	647	(B,146,117)	RS1/16S103J
R	648	(B,145,119)	RS1/16S103J
R	649	(B,143,122)	RS1/16S473J
R	650	(A,44,82)	RD1/4PU222J
R	666	(B,39,79)	RS1/16S1R0J
R	670	(B,270,118)	RS1/16S104J

=====Circuit Symbol and No.		===Part Name	Part No.
R	671	(B,267,117)	RS1/16S472J
R	672	(A,263,107)	RD1/4PU103J
R	673	(B,269,99)	RS1/16S562J
R	674	(B,253,113)	RS1/16S472J
R	675	(B,251,113)	RS1/16S222J
R	676	(A,266,100)	RD1/4PU221J
R	700	(B,307,130) (EW,7150M/UC)	RS1/16S472J
R	701	(B,299,147) (EW,7150M/UC)	RS1/16S102J
R	703	(B,298,130) (EW,7150M/UC)	RS1/16S102J
R	711	(B,292,134) (EW,7150M/UC)	RS1/16S473J
R	713	(B,298,142) (EW,7150M/UC)	RS1/16S473J
R	715	(B,267,147) (EW,7150M/UC)	RS1/16S473J
R	721	(B,269,135) (EW,7150M/UC)	RS1/16S104J
R	723	(B,271,135) (EW,7150M/UC)	RS1/16S122J
R	725	(B,273,135) (EW,7150M/UC)	RS1/16S471J
R	727	(B,279,134) (EW,7150M/UC)	RS1/16S101J
R	831	(A,304,66)	RD1/4PU683J
R	832	(A,307,65)	RD1/4PU683J
R	901	(B,141,65)	RS1/16S104J
R	921	(B,140,49)	RS1/16S472J
R	922	(B,140,45)	RS1/16S472J
R	923	(A,148,50)	RD1/4PU332J
R	924	(A,159,34)	RD1/4PU332J
R	931	(A,95,41)	RD1/2PM121J
R	932	(A,142,34)	RD1/2PM121J
R	933	(A,81,41)	RD1/2PM121J
R	934	(A,125,41)	RD1/2PM121J
R	935	(A,65,41)	RD1/2PM121J
R	936	(A,112,41)	RD1/2PM121J
R	941	(A,73,68)	RD1/2PM220J
R	942	(A,125,57)	RD1/2PM220J
R	951	(A,139,200)	RD1/4PU103J
R	952	(A,112,193)	RD1/4PU103J
R	953	(A,143,201)	RD1/2PM470J
R	954	(A,119,204)	RD1/2PM470J
R	961	(A,116,112)	RD1/2PM220J
R	966	(B,126,77)	RS1/16S0R0J
R	970	(A,165,202)	RD1/2PM182J
R	973	(B,152,63)	RS1/16S103J
R	974	(B,162,42)	RS1/16S472J
R	975	(B,162,45)	RS1/16S472J
R	976	(B,162,44)	RS1/16S472J
R	977	(B,161,37)	RS1/16S272J
R	978	(B,169,38)	RS1/16S272J
R	979	(B,169,41)	RS1/16S272J
R	980	(B,141,68)	RS1/16S105J
R	981	(B,149,77)	RS1/16S153J
R	982	(B,147,73)	RS1/16S102J
R	983	(B,142,76)	RS1/16S473J
R	984	(B,141,76)	RS1/16S202J
R	985	(B,142,71)	RS1/16S101J
R	986	(B,141,71)	RS1/16S223J
R	987	(B,132,88)	RS1/16S103J
R	991	(A,140,188)	RD1/2PM331J
R	992	(A,126,183)	RD1/2PM331J
R	993	(B,139,82)	RS1/16S222J
R	998	(B,270,124)	RS1/16S0R0J

CAPACITORS

C	111	(B,297,65)	CKSRYB471K50
C	112	(B,283,89)	CKSRYB471K50
C	113	(A,299,64)	CEAT100M50
C	114	(A,280,92)	CEAT100M50
C	121	(A,284,71)	CFTNA223J50
C	122	(A,284,75)	CFTNA223J50
C	123	(B,290,64)	CCSRCH470J50
C	124	(B,287,81)	CCSRCH470J50
C	125	(A,287,66)	CFTNA103J50
C	126	(A,284,79)	CFTNA103J50
C	127	(B,292,46)	CCSRCH470J50
C	128	(B,273,75)	CCSRCH470J50
C	151	(A,283,120)	CFTNA274J50
C	153	(A,288,105)	CFTNA154J50
C	171	(A,289,176)	CFTNA273J50
C	173	(A,311,205)	CEANP4R7M50
C	181	(A,299,203)	CFTNA224J50
C	551	(A,239,87)	CEAT100M50
C	552	(A,233,139)	CEAT100M50
C	553	(B,236,93)	CKSRYB153K50
C	554	(B,227,133)	CKSRYB153K50
C	555	(B,218,87)	CKSRYB471K50
C	556	(B,212,139)	CKSRYB471K50
C	559	(A,210,94)	CEAT221M10
C	560	(A,230,128)	CEAT221M10
C	561	(B,208,89)	CCSRCH150J50
C	562	(B,223,130)	CCSRCH150J50
C	563	(B,228,73)	CCSRCH221J50
C	564	(B,244,161)	CCSRCH221J50
C	565	(A,231,68)	CFTNA223J50
C	566	(A,218,160)	CFTNA223J50
C	567	(A,38,206)	CFTNA333J50
C	568	(A,27,158)	CFTNA333J50
C	569	(A,32,209)	CQHA102J2A
C	570	(A,27,147)	CQHA102J2A
C	571	(B,239,70)	CCSRCH220J50
C	572	(B,245,164)	CCSRCH220J50
C	573	(B,217,69)	CCSRCH220J50
C	574	(B,215,154)	CCSRCH220J50
C	575	(B,239,66)	CCSRCH220J50
C	576	(B,245,166)	CCSRCH220J50
C	577	(B,219,66)	CCSRCH220J50
C	578	(B,213,156)	CCSRCH220J50
C	650	(A,136,89)	CEAT220M25
C	651	(A,174,80)	CEAT471M16
C	652	(A,171,117)	CFTNA103J50
C	653	(A,159,120)	CFTNA103J50
C	666	(B,254,120)	CKSQYB104K50
C	671	(A,175,105)	CEAT101M16
C	672	(A,171,121)	CFTNA103J50
C	673	(A,143,112)	CEAT100M50
C	674	(A,142,106)	CEAT100M50
C	675	(A,167,104)	CFTNA103J50
C	676	(A,134,122)	CFTNA103J50
C	677	(A,26,89)	CFTNA224J50
C	681	(A,271,121)	CEANP221M10
C	691	(A,179,97)	CEAT220M25
C	721	(A,295,145) (EW,7150M/UC)	CFTNA473J50
C	722	(A,295,129) (EW,7150M/UC)	CFTNA473J50
C	831	(A,311,41)	CEAT100M50
C	832	(A,302,41)	CEAT100M50
C	903	(A,149,70)	CEAT2R2M50
C	941	(A,67,101) 3900µF/16V	CCH1644(P35)
C	942	(A,67,84) 3900µF/16V	CCH1644(P35)
C	943	(A,70,53)	CQHA472J2A
C	944	(A,129,52)	CQHA472J2A
C	951	(A,150,196)	CQHA102J2A
C	952	(A,123,202)	CQHA102J2A
C	953	(A,158,197)	CEAT470M16
C	954	(A,128,194)	CEAT470M16

	=====Circuit Symbol and No.===		Part Name	Part No.
C	955	(A,134,194)		CEAT470M25
C	956	(A,114,198)		CEAT470M25
C	957	(A,63,135)	3900µF/35V	CCH1645(P35)
C	958	(A,43,135)	3900µF/35V	CCH1645(P35)
C	959	(A,63,156)	3900µF/35V	CCH1645(P35)
C	960	(A,43,155)	3900µF/35V	CCH1645(P35)
C	962	(A,110,125)		CQHA102J2A
C	970	(A,173,64)		CFTNA103J50
C	971	(A,132,67)		CFTNA564J50
C	972	(A,168,67)		CEAT101M16
C	973	(A,151,77)		CQHA102J2A
C	974	(A,144,75)		CEAT221M16
C	975	(A,133,77)		CEANP470M16
C	980	(A,144,56)		CFTNA103J50
C	991	(A,146,182)		CEAT471M50(P45)
C	992	(A,121,180)		CEAT471M50(P45)
C	993	(A,136,176)		CQHA102J2A
C	994	(A,130,176)		CQHA102J2A

B Unit Number : CWM9848(EW,7150M/UC)
Unit Name : Remote Control Unit

MISCELLANEOUS

Q	1351	(B,21,23) Transistor	DTC114EU
Q	1352	(B,22,6) Transistor	DTC114EU
D	1351	(B,12,25) Diode	DAN202U
D	1352	(B,16,6) Diode	DAN202U
D	1366	(B,21,11) Diode	UDZS16(B)
D	1367	(B,29,16) Diode	UDZS16(B)
S	1351	(A,6,11) Switch(BASS BOOST)	CSD1128

RESISTORS

R	1351	(B,15,16)	RS1/16S103J
R	1352	(B,18,18)	RS1/16S102J
R	1353	(B,31,21)	RS1/16S103J
R	1354	(B,31,16)	RS1/16S102J
R	1359	(B,16,8)	RS1/16S102J

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● **Removing the Case (Fig. 1)**

1. Remove two black screws (M3 x 10).
2. Remove six white screws (M3 x 6).
3. Remove four black screws (M3 x 5).

Caution)
When you disassemble/re-assemble the Product with it placed upside down, take care not to damage the top surface.

The Product uses several different types of screws. Take care not to confuse them during re-assembly.

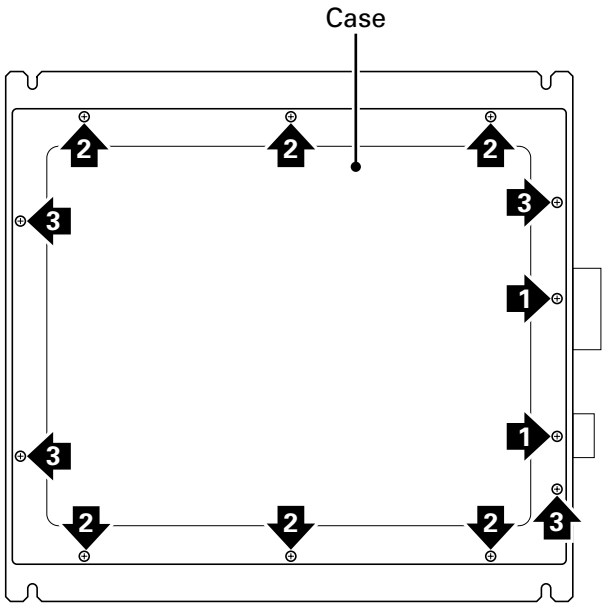


Fig. 1

● **Removing the Panel (Fig. 2)**

Panels are used for two sides individually, one for the RCA side and the other for the Power Terminal side.

Panel for the RCA side

1. Remove six black screws (M3 x 8).
2. Remove two black screws (M3 x 5). (They are used to secure the RCA Holder.)

Panel for the Power Terminal side

3. Remove six black screws (M3 x 8).

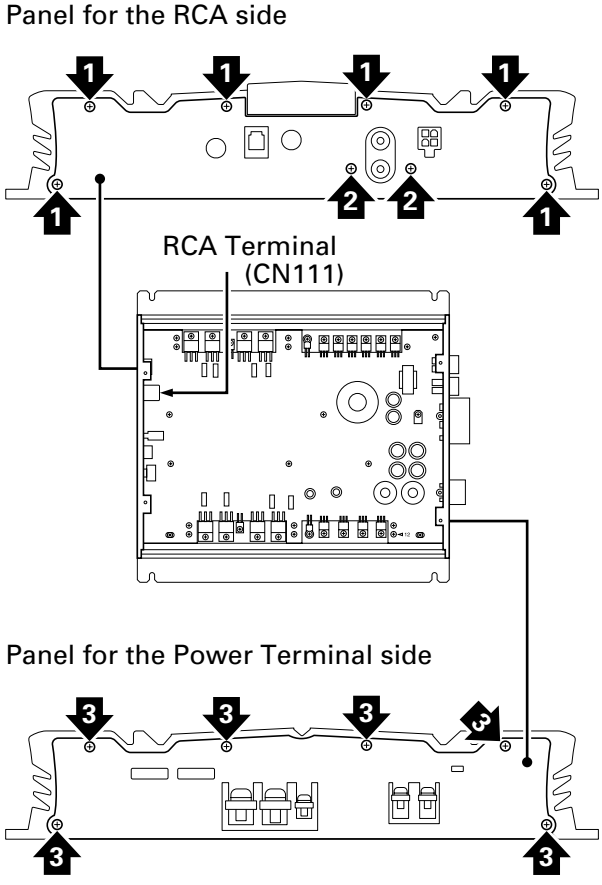


Fig. 2

● Removing the Amp Unit (Fig. 3)

1 Remove six black screws (M3 x 10).

2 Remove six white screws (M3 x 12).

A Screw holes in the PCB are printed with numbers 1 to 12.

Remove screws in numerical order.
Re-assembly takes the reverse order of disassembly.

Caution)
The Amp Unit is adhered on the Heat Sink with silicon grease. This means forcibly removing the Amp Unit from the Heat Sink may break the PCB.

3 Remove all of twelve screws. Then, remove the two black screws (M3 x 5).
Tighten screws whose length is M3 x 8 or more into the two screw holes so as to raise the Amp Unit above the Heat Sink. Then, remove the Amp Unit.
(Since screw threads differ, 1 and 2 screws cannot be used.)

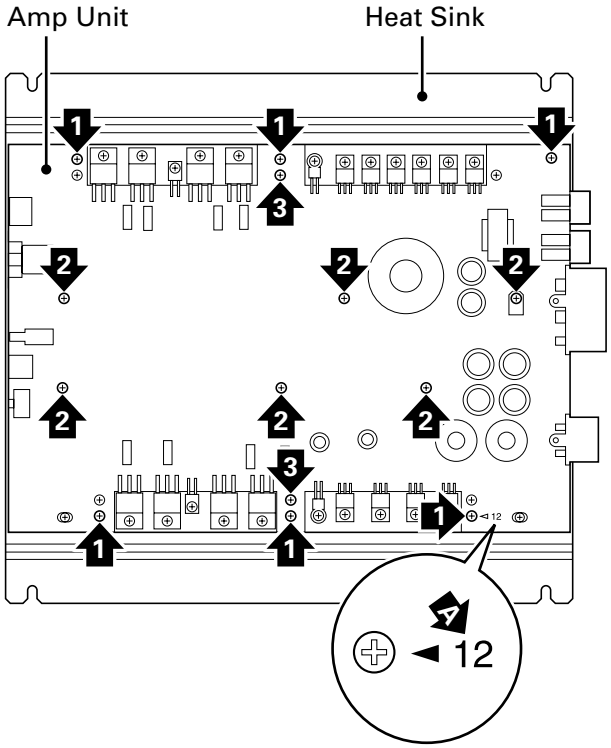


Fig. 3

● Caution when re-assembling the Amp Unit and the Heat Sink

Be aware that the RCA Terminal may break unless the Amp Unit and the Heat Sink are assem-bled following the correct procedures given below.

1) Secure the RCA-side Panel on the Heat Sink with screws. (Fig. 2)

2) Place the Amp Unit on the Heat Sink aligning with two studs. (Fig. 4)

3) Move the Amp Unit until the RCA Holder on the Amp Unit comes in contact with the inside of the Panel. (Fig. 4)

Caution in steps 2) and 3)
When you place the Amp Unit on the Heat Sink, you will find no positioning marks to determine the direction of two panels. To position them correctly, the Amp Unit needs to be moved to the place where it comes in contact with the RCA-side panel.
If you do not position them, an excessive force can be applied to the RCA Terminal. This may result in breakage.

4) Secure the RCA-side Panel and the RCA Holder with screws. (Fig. 2)

5) Secure the Amp Unit on the Heat Sink with screws. (Fig. 3)

6) Secure the Panel for the Power Terminal side in place with screws. (Fig. 2)

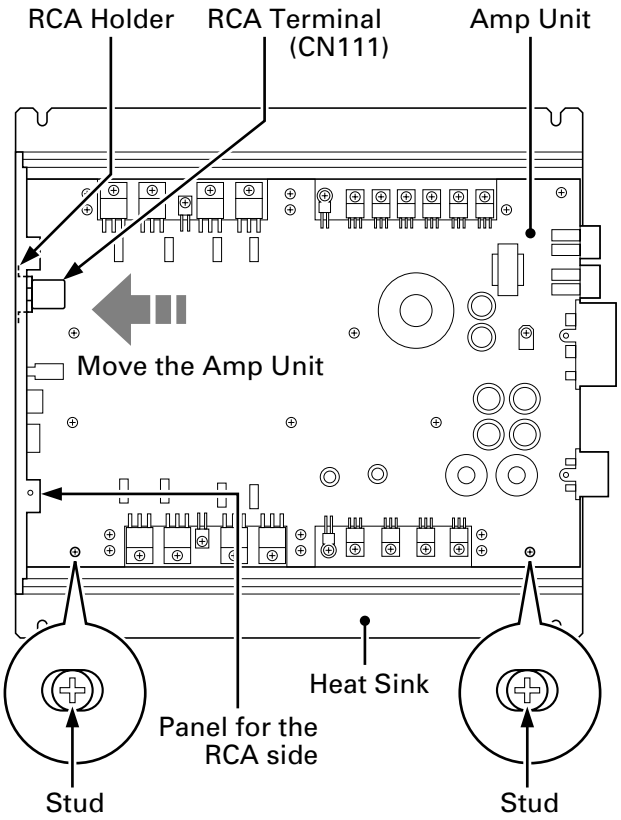
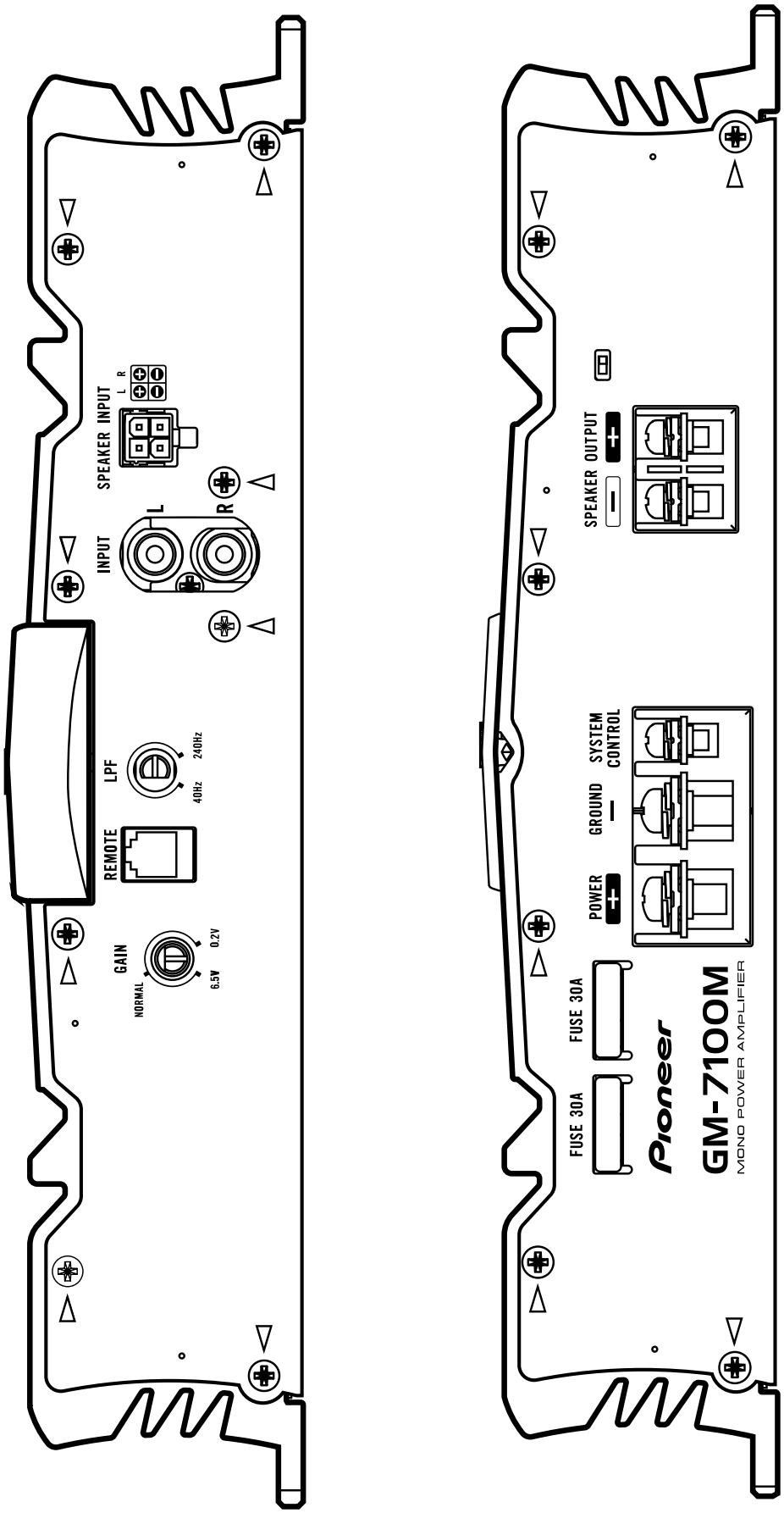


Fig. 4

7.1.2 CONNECTOR FUNCTION DESCRIPTION (GM-7100M/XU/EW)



8. OPERATIONS (GM-7100M/XU/EW)