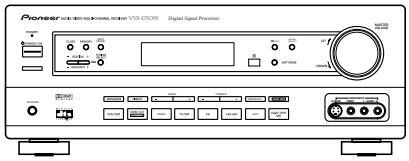
Service Manual



ORDER NO.
RRV2253

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-D509S

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	VSX-D509S		
KUXJI	◯	AC120V	
KCXJI	◯	AC120V	

CONTENTS

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

T – ZZK JAN. 2000 Printed in Japan

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 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

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

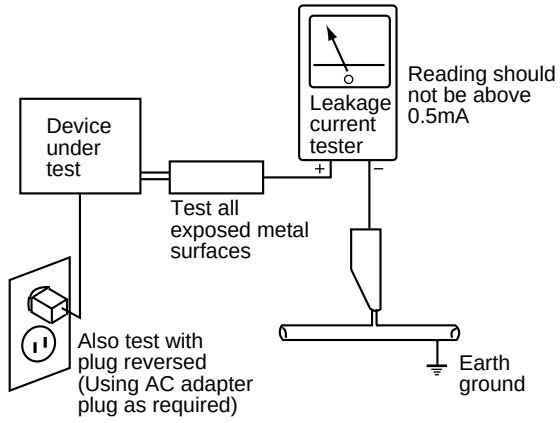
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

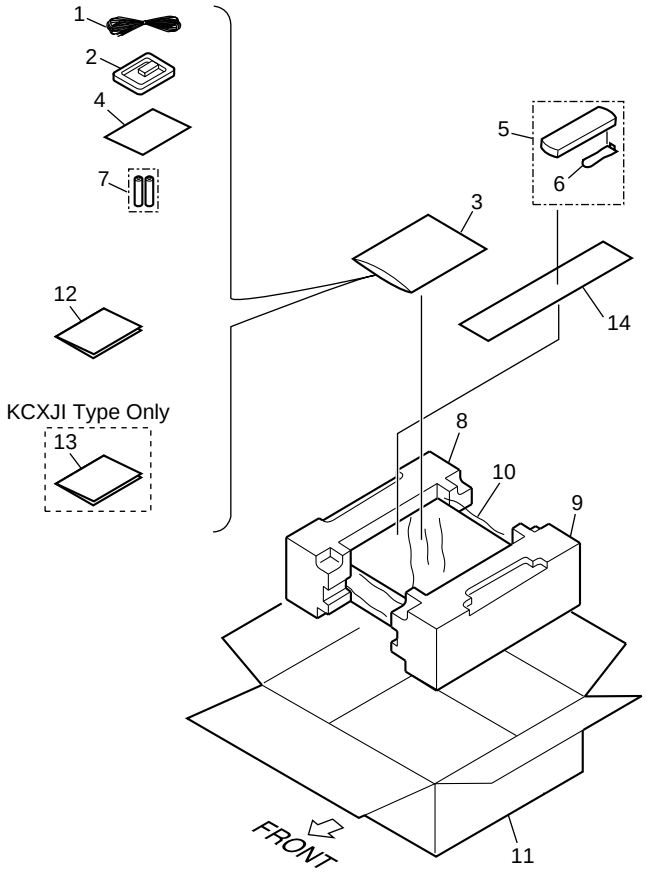
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" 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.*

2.1 PACKING



(1) PACKING PARTS LIST

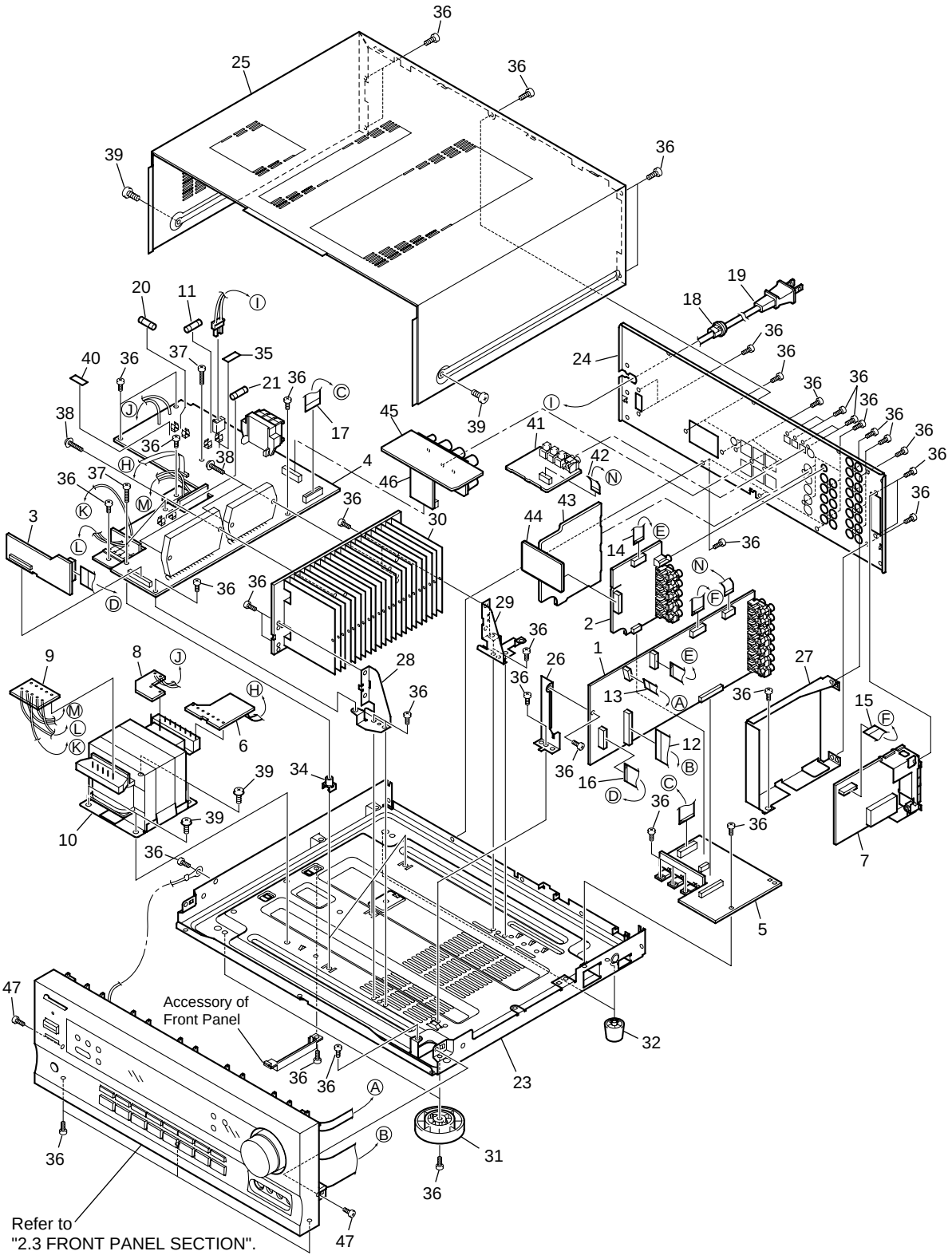
Mark	No.	Description	Part No.
	1	FM Wire Antenna	ADH7004
	2	AM Loop Antenna	ATB7009
	3	Polyethylene Bag (0.03 × 230 × 340)	Z21-038
NSP	4	Warranty Card	ARY7045
	5	Remote Control Unit	AXD7248
	6	Battery Cover	AZN7826
NSP	7	Dry Cell Battery (LR6, AA)	VEM1021
	8	Left Pad	AHA7263
	9	Right Pad	AHA7264
	10	Packing Sheet	AHG7069
	11	Packing Case	AHG7827
	12	Operating Instructions (English)	ARB7219
	13	Operating Instructions (French)	See Contrast table (2)
	14	RC Holder	AHB7035

(2) CONTRAST TABLE

VSX-D509S/KUXJI and KCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			VSX-D509S /KUXJI	VSX-D509S /KCXJI	
	13	Operating Instructions (French)	Not used	ARC7289	

2.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

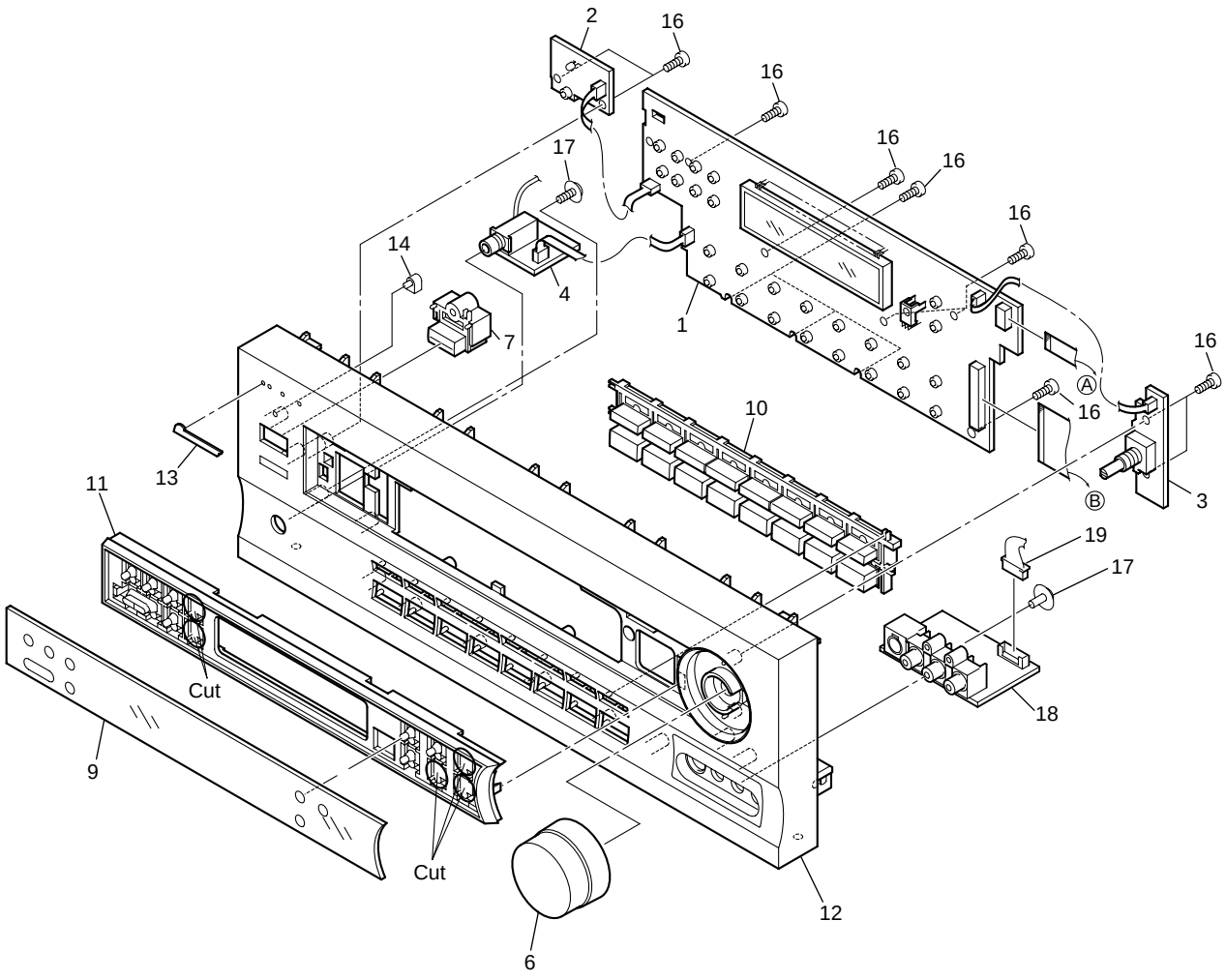
Mark	No.	Description	Part No.
	1	D.D & INPUT Assy	AWX7502
	2	VIDEO&6CH IN Assy	AWX7474
NSP	3	AMP INPUT Assy	AWX7382
	4	AMP&PRIMARY Assy	AWX7480
	5	REGULATOR Assy	AWX7467
	6	TRANS 2 Assy	AWX7468
	7	FM/AM TUNER Unit	AXX7046
NSP	8	TRANS 1 Assy	AWX7390
NSP	9	TRANS 3 Assy	AWX7392
⚠	10	Power Transformer (AC120V)	ATS7264
⚠	11	Fuse (FU1 : 10A)	REK1087
	12	FFC (J31 : 32P/180 BD 60V) (D.D & INPUT CN102 ↔ FRONT CN402)	ADD7222
	13	FFC (J32 : 19P/200 BD 60V) (D.D & INPUT CN103 ↔ FRONT CN401)	ADD7221
	14	FFC (J33 : 13P/200 BD 60V) (D.D & INPUT CN104 ↔ VIDEO&6CH IN CN303)	ADD7220
	15	FFC (J34 : 13P/80 BD 60V) (D.D & INPUT CN105 ↔ FM/AM TUNER CN1)	ADD7189
	16	FFC (J35 : 17P/90 BD 60V) (D.D & INPUT CN106 ↔ AMP INPUT CN290)	ADD7219
	17	FFC (J36 : 22P/80 BD 60V) (REGULATOR CN801 ↔ AMP&PRIMARY CN53)	ADD7224
	18	Strain Relief	CM-22C
⚠	19	AC Power Cord	ADG7024
⚠	20	Fuse (FU2 : 8A)	REK1086
⚠	21	Fuse (FU701 : 10A)	REK1087
	22	• • • • • •	
NSP	23	Under Base 409	ANA7094
	24	Rear Panel	See Contrast table (2)
	25	Bonnet Case	AZN7818
	26	PCB Angle	ANG7253
	27	Shield R3	ANG7277
	28	Heat Sink Angle F	ANG7251
	29	Heat Sink Angle R	ANG7252
NSP	30	Heat Sink 0.4	ANH7109
	31	Insulator	AMR7198
	32	Foot Assy	REC1263
	33	• • • • • •	
	34	PCB Mold	AMR2533
NSP	35	Fuse Card	AXX7096
	36	Screw	BBZ30P080FMC
	37	Screw	BBZ30P200FMC
	38	Screw	ABA7043
	39	Screw	FBT40P080FZK
NSP	40	Fuse Card	AXX2332
	41	DIGITAL IN Assy	AWX7505
	42	FFC (J37 : 6P/150 BD 60V) (D.D & INPUT CN1501 ↔ DIGITAL IN CN1901)	ADD7223
	43	S. VIDEO Assy	AWX7462
	44	BOARD TO BOARD Assy	AWX7463
	45	LARGE SP Assy	AWX7503
	46	LARGE SP CONNECTION Assy	AWX7504
	47	Screw	IBZ30P080FMC

(2) CONTRAST TABLE

VSX-D509S/KUXJI and KCXJI are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			VSX-D509S /KUXJI	VSX-D509S /KCXJI	
	24	Rear Panel	ANC7892	ANC7891	

2.3 FRONT PANEL SECTION



● FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	FRONT Assy	AWX7479
	2	POWER SW Assy	AWX7385
NSP	3	R. ENCODER Assy	AWX7386
NSP	4	H.P. Assy	AWX7556
	5	• • • • • •	
	6	Volume Knob	AAB7179
	7	Power Button	AAD7440
	8	• • • • • •	
	9	Window	AAK7719
	10	F Button	AAD7564
	11	Sub Panel	AAD7552
	12	F Panel	AMB7669
	13	Name Plate	PAM1776
	14	LED Lens	PNW2019
	15	• • • • • •	
	16	Screw	PPZ30P080FMC
	17	Screw	ABA7009
	18	FRONT VIDEO Assy	AWX7460
	19	8P Shield Cable	ADX7306

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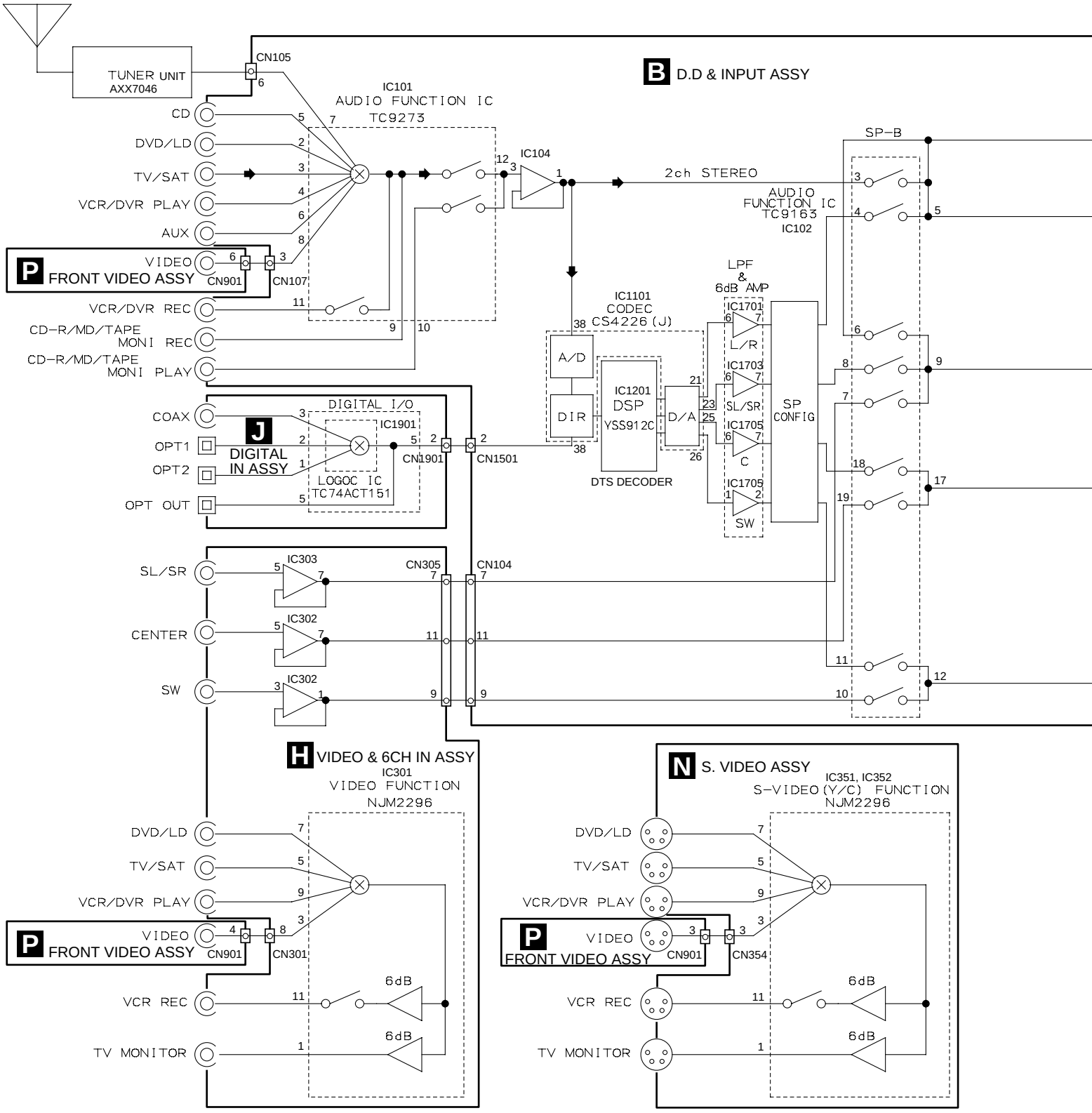
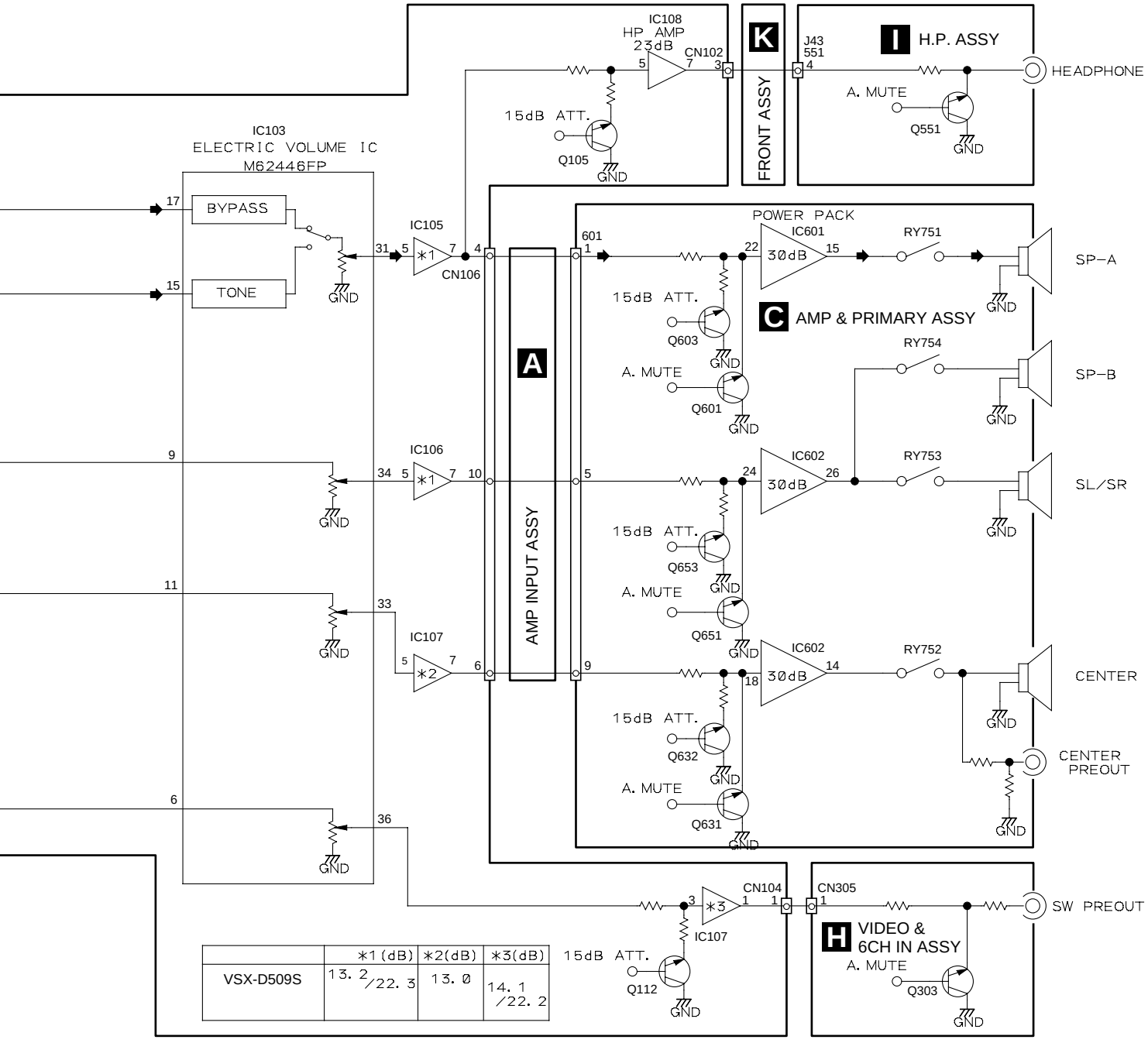
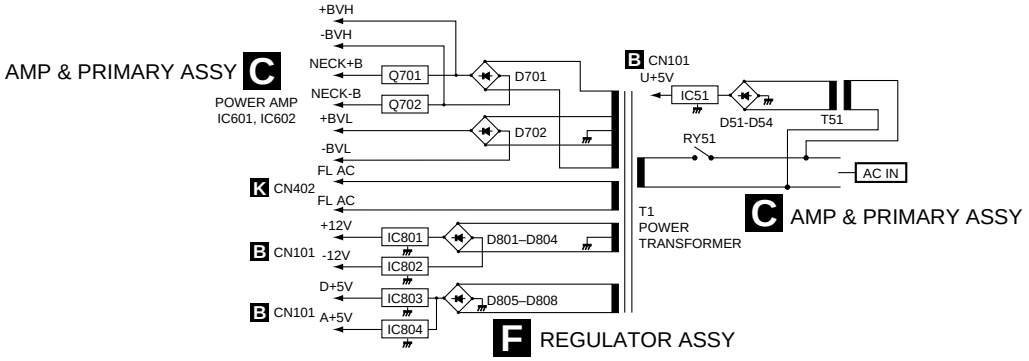
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

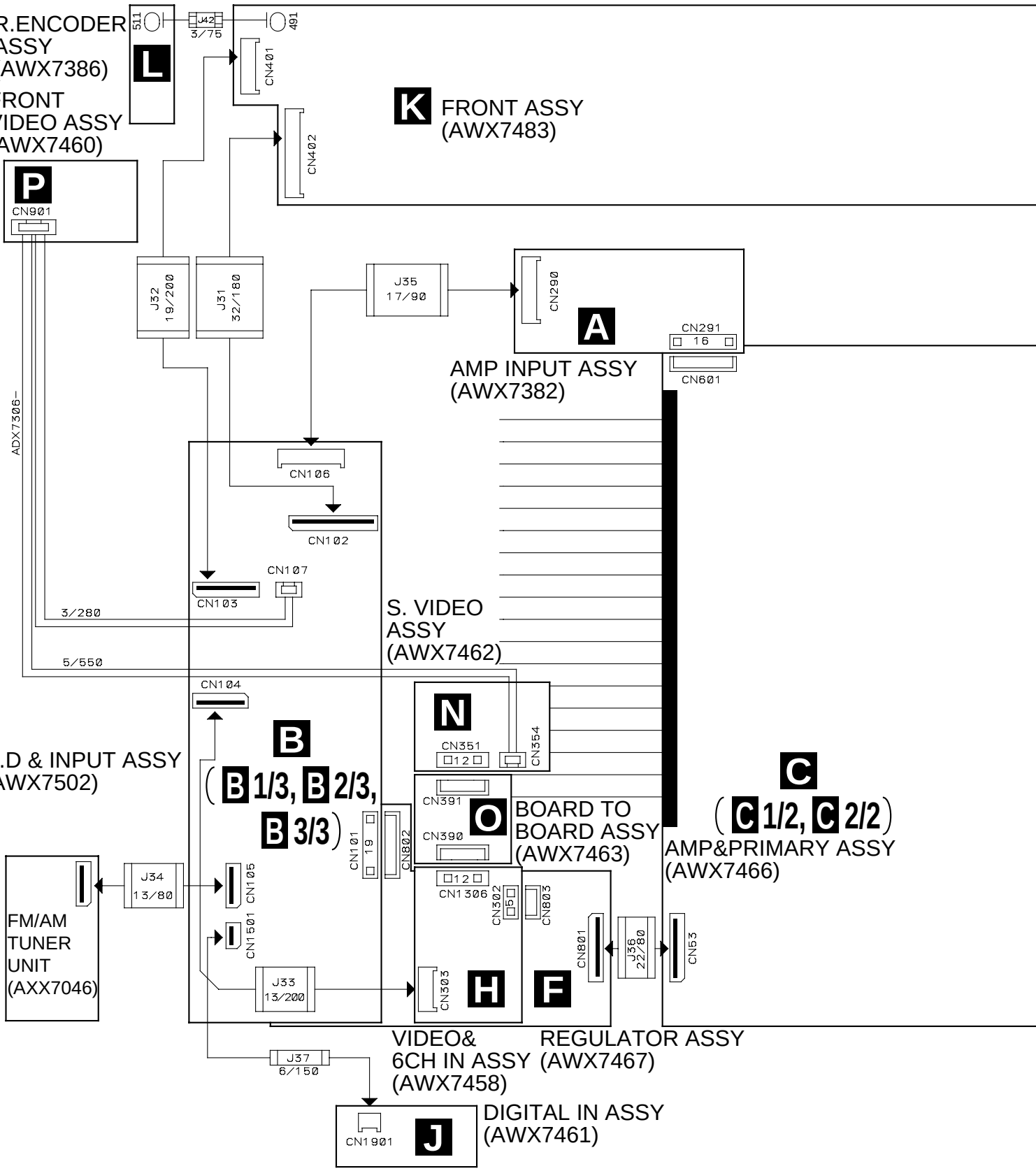




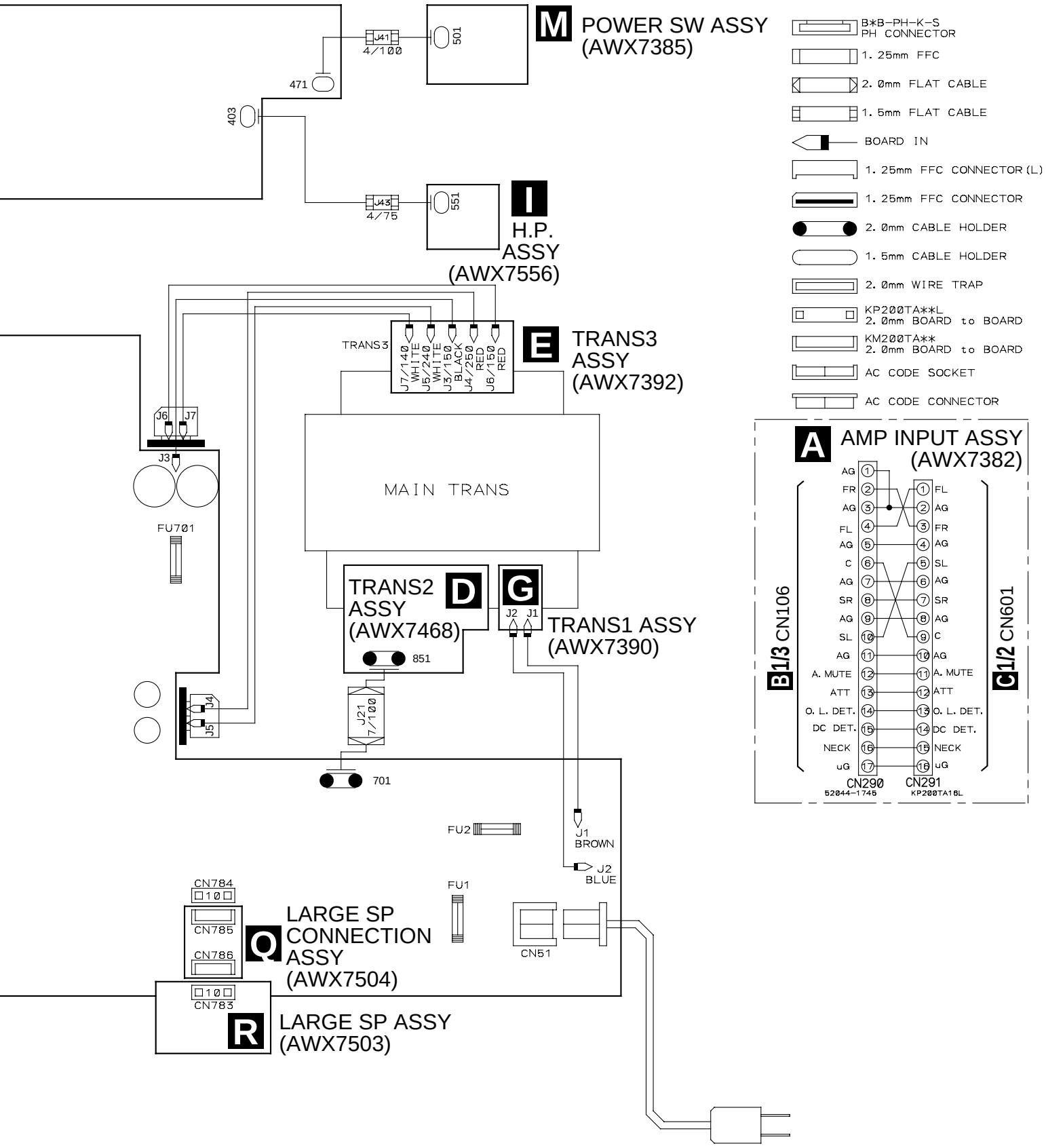
	∗1(dB)	∗2(dB)	∗3(dB)
VSX-D509S	13.2/22.3	13.0	14.1/22.2



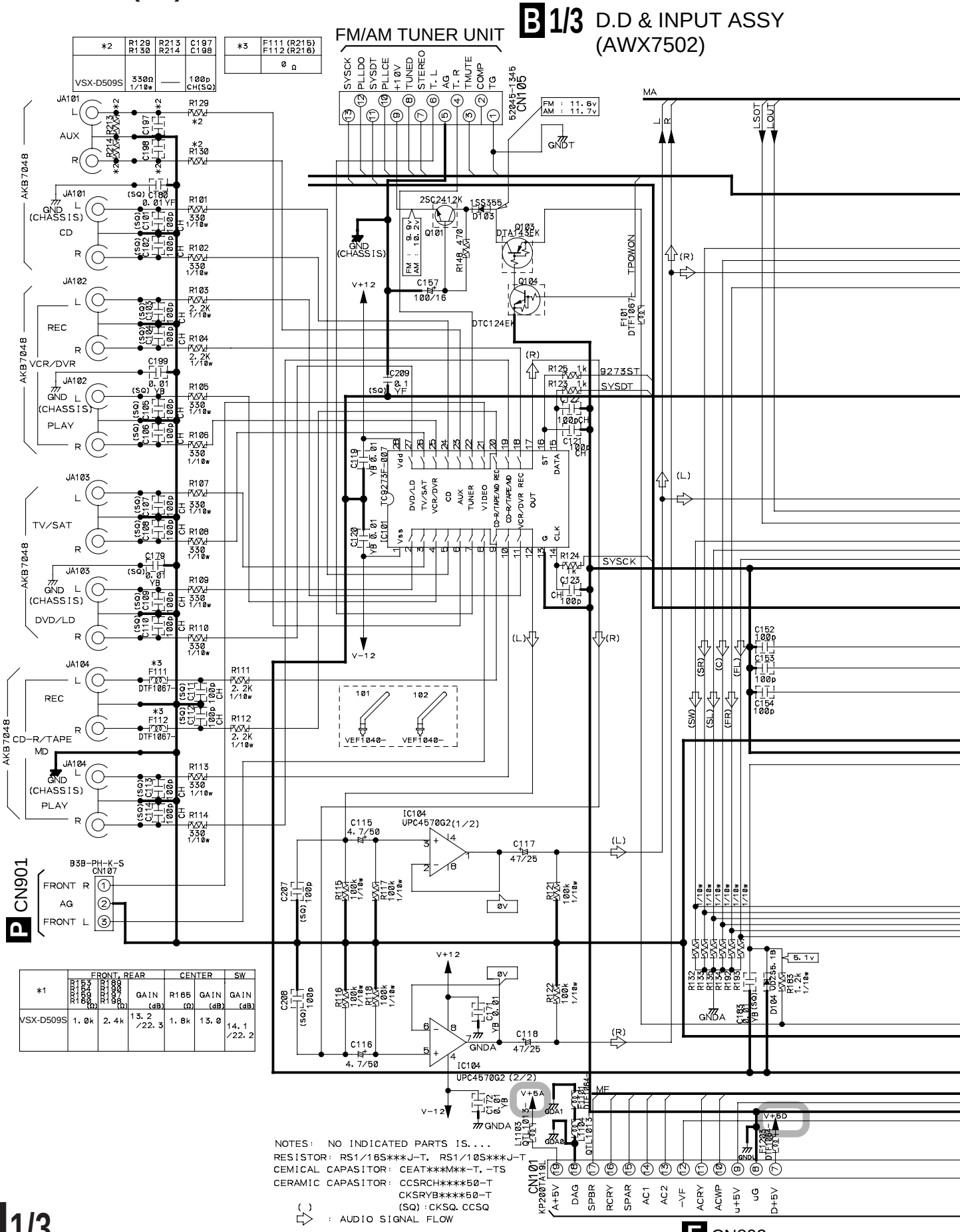
3.2 OVERALL WIRING CONNECTION DIAGRAM and AMP INPUT ASSY



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



3.3 D.D & INPUT (1/3) ASSY

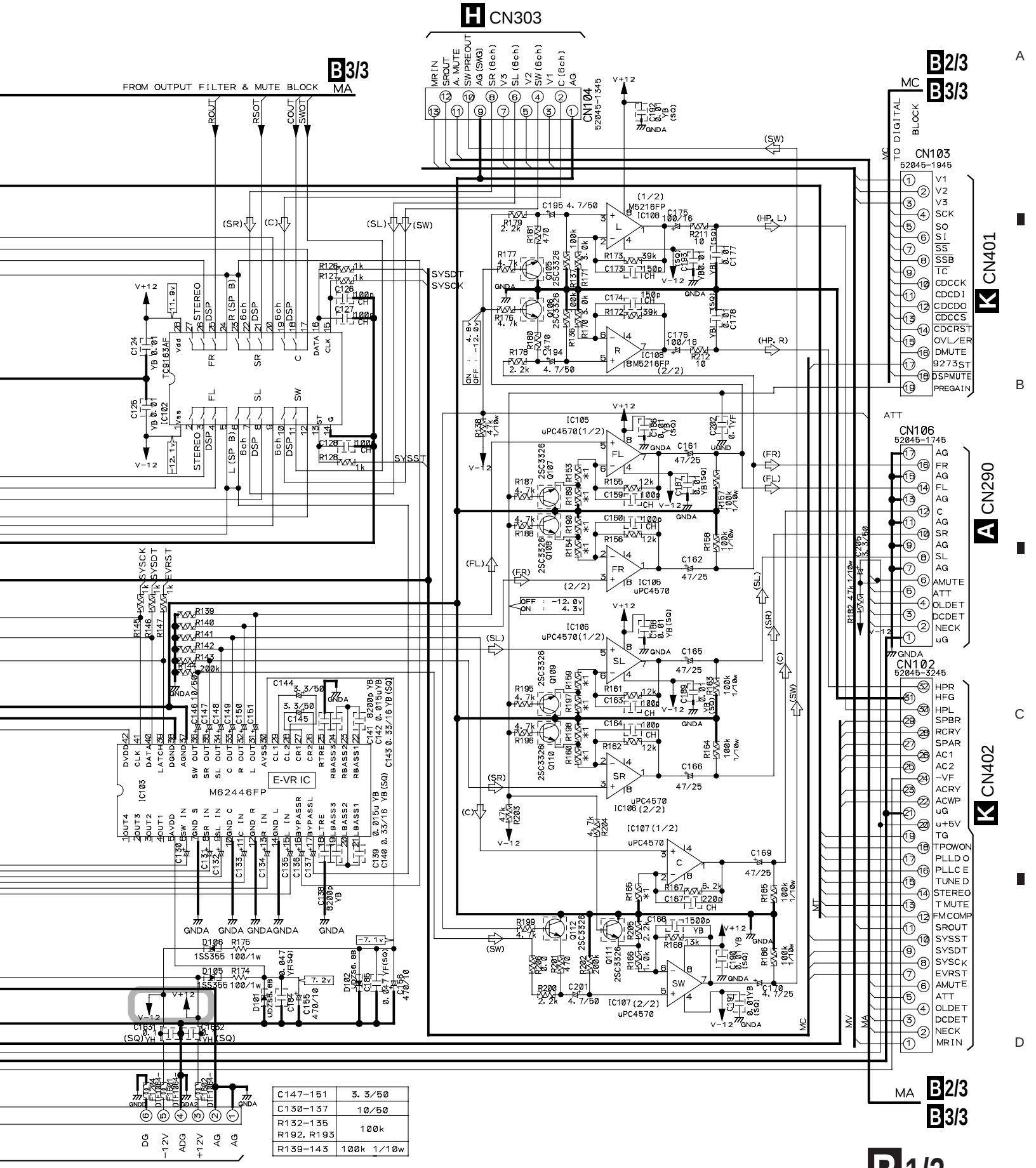


*2	R129 R130	R213 R214	C197 C198
VSX-D509S	330Ω 1/10w	——	100p CH(SQ)

*3	F111 (R215) F112 (R216)
	0 Ω

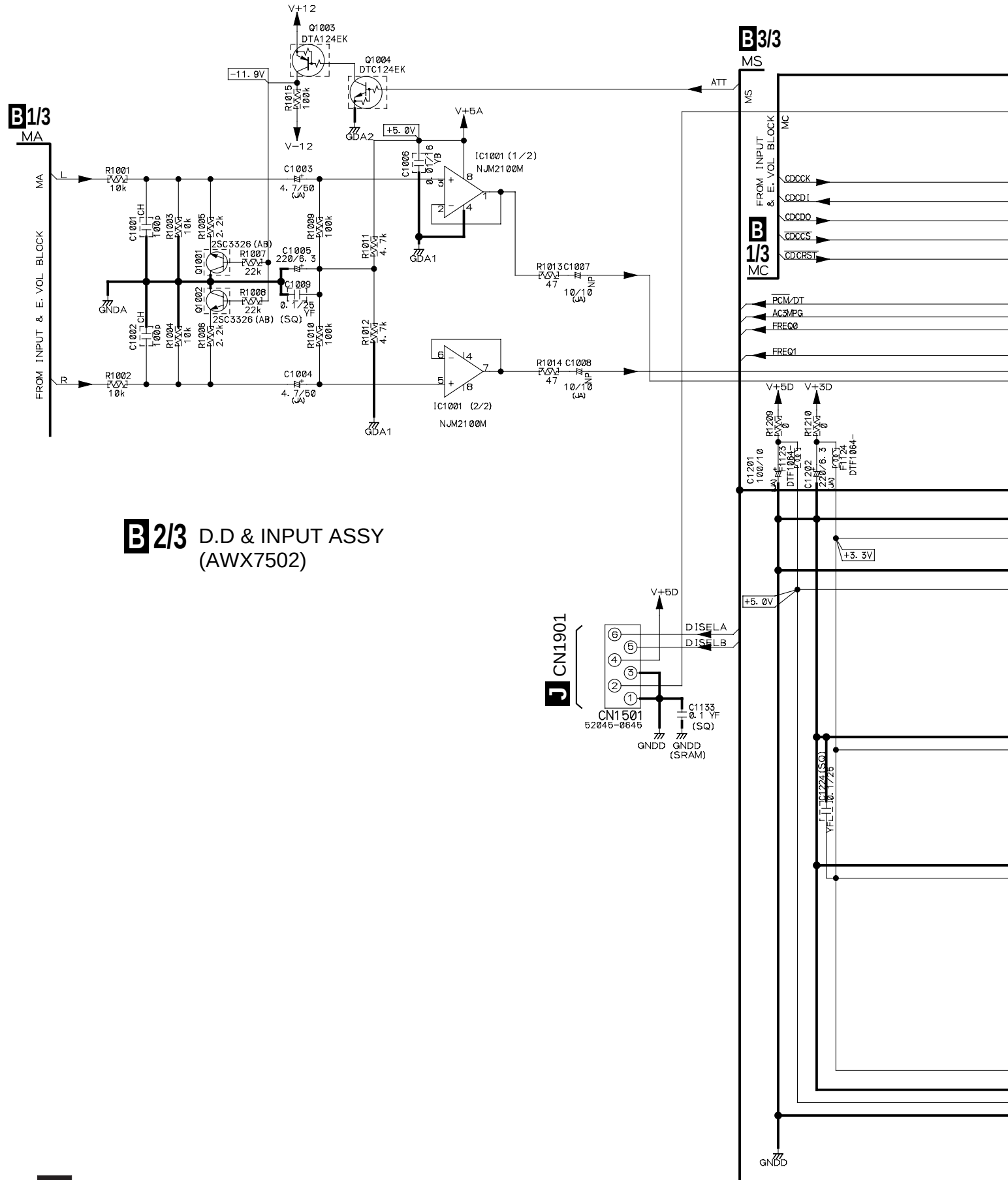
*1	FRONT, REAR			CENTER		SW
	8Ω 6Ω 4Ω (Ω)	8Ω 6Ω 4Ω (Ω)	GAIN (dB)	R165 (Ω)	GAIN (dB)	GAIN (dB)
VSX-D509S	1.0k	2.4k	13.2 /22.3	1.8k	13.0	14.1 /22.2

: The power supply is shown with the marked box.



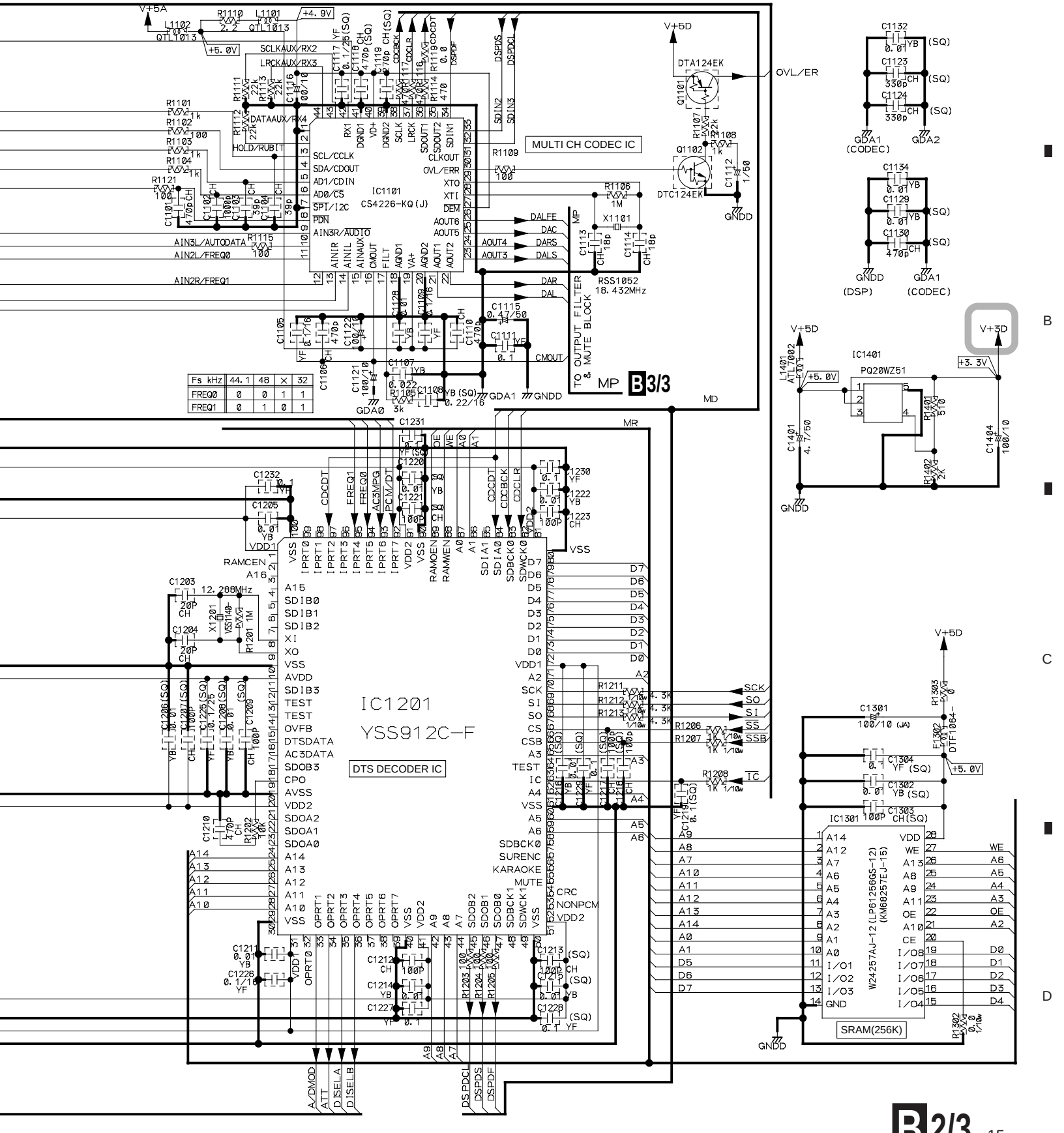
C147–151	3.3/50
C130–137	10/50
R132–135 R192, R193	100k
R139–143	100k 1/10w

3.4 D.D & INPUT ASSY (2/3)



B 2/3 D.D & INPUT ASSY
(AWX7502)

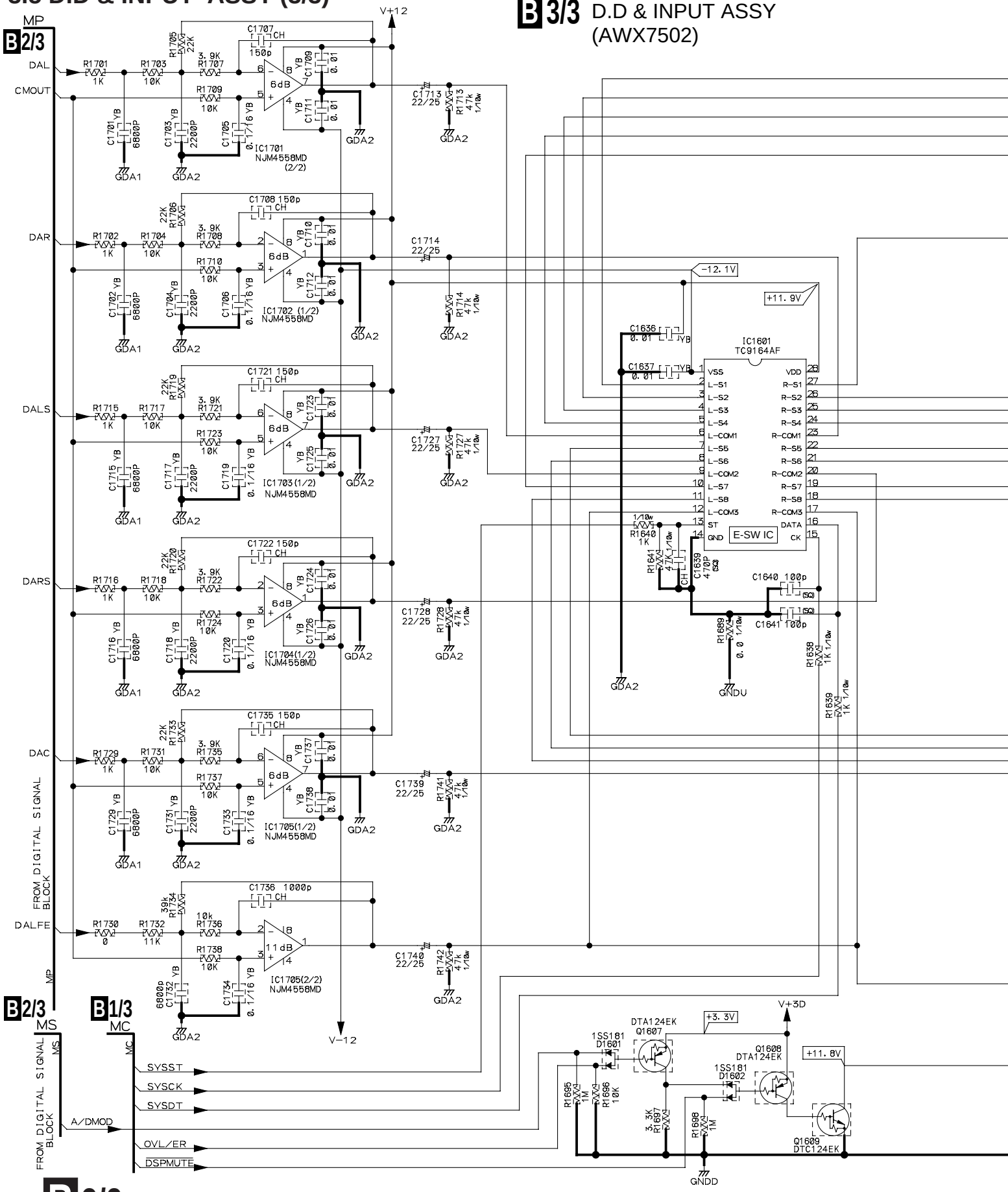
: The power supply is shown with the marked box.

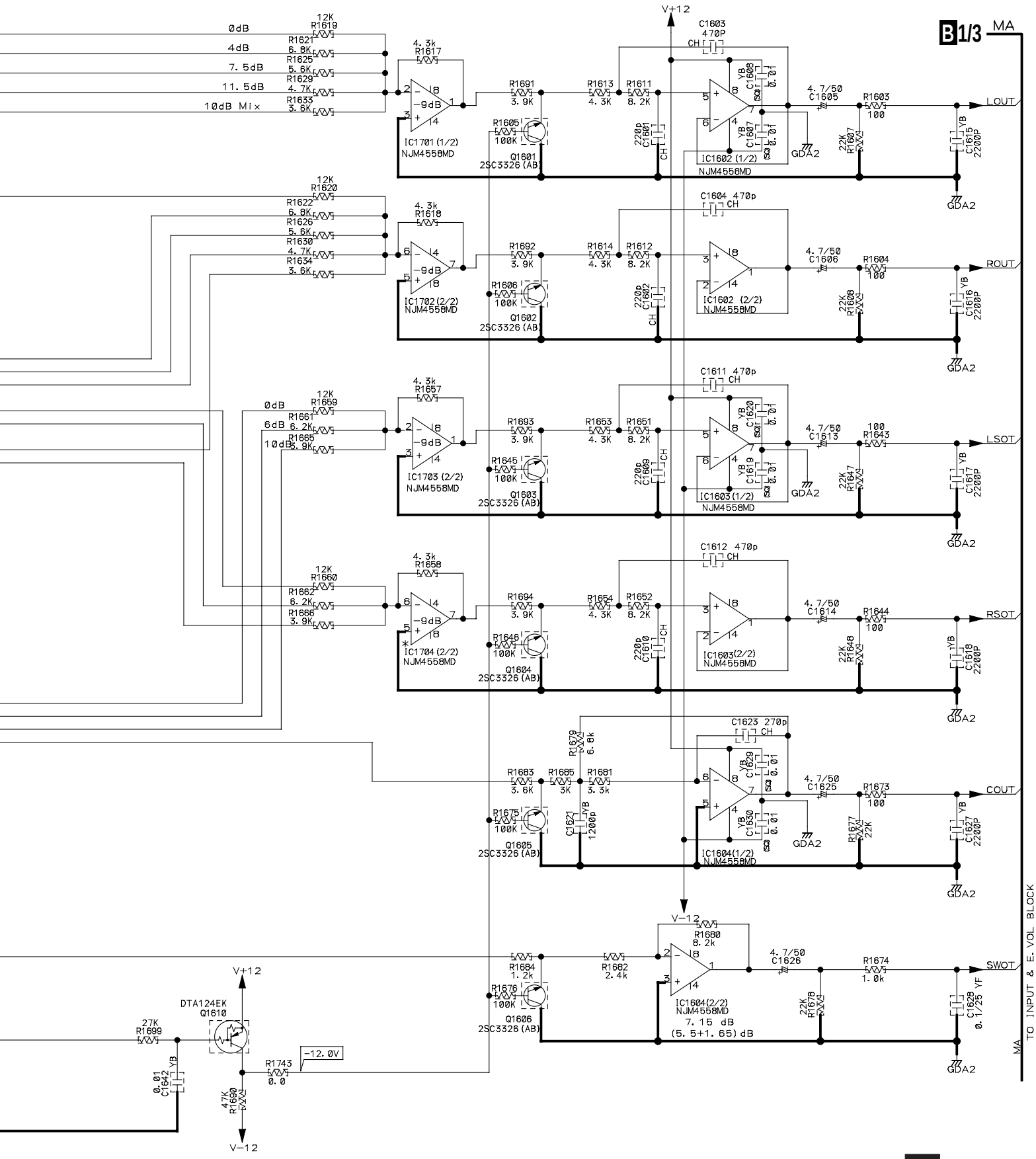


Fs kHz	44.1	48	×	32
FREQ0	0	0	1	1
FREQ1	0	1	0	1

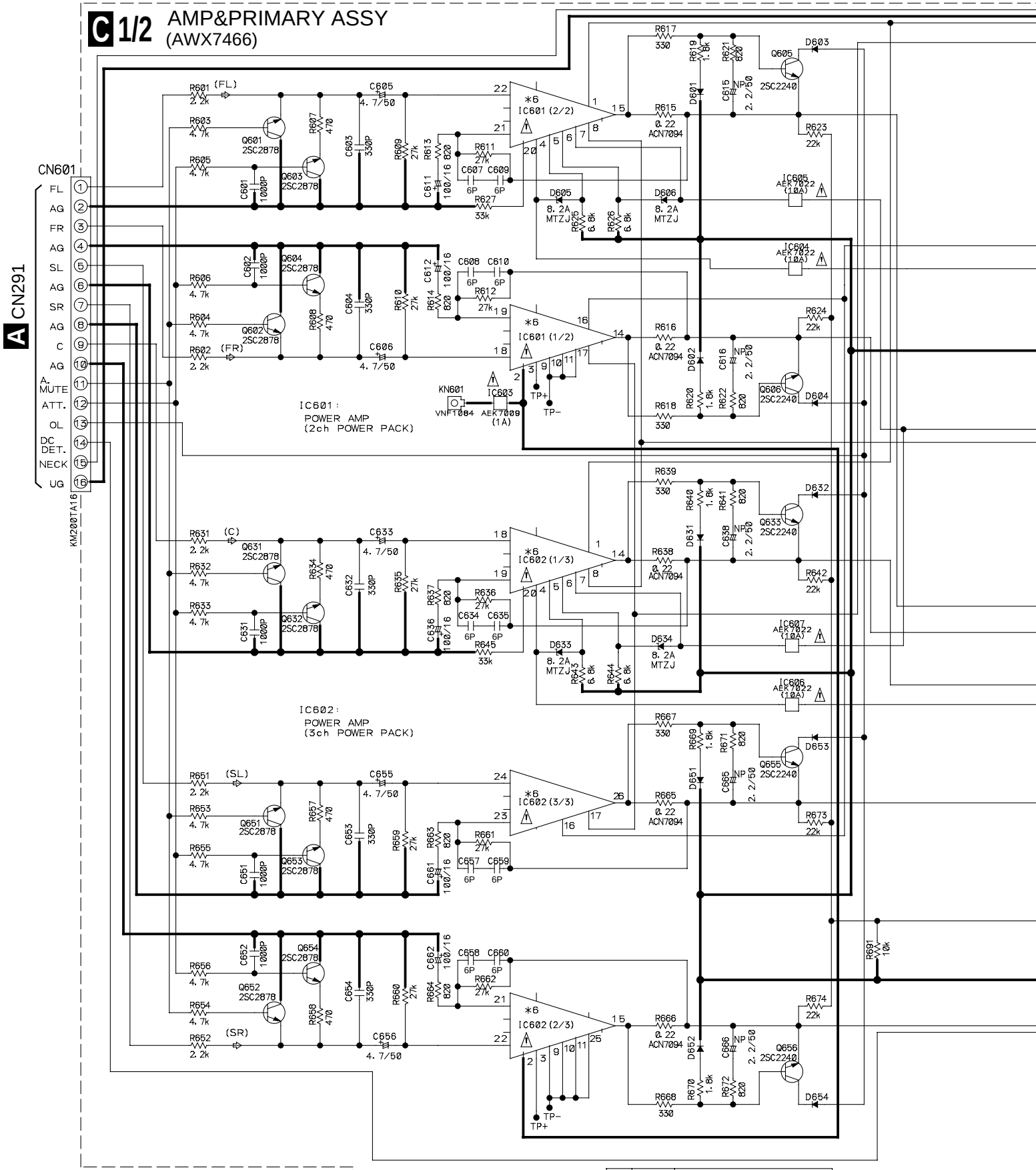
3.5 D.D & INPUT ASSY (3/3)

B 3/3 D.D & INPUT ASSY (AWX7502)




B1/3 MA
0dB
4dB
7.5dB
11.5dB
10dB Mix
12K R1619
R1621 6.8K
R1625 5.6K
R1629 4.7K
R1633 3.6K
4.3k R1617
[IC1701(1/2) NJM4558MD
R1691 3.9K
R1605 100K
Q1601 2SC3326(AB)
R1613 4.3K
R1611 8.2K
C1603 470P CH
[IC1602(1/2) NJM4558MD
220p C1601 CH
4.7/50 C1605
R1603 100
LOUT
GDA2
12K R1620
R1622 6.8K
R1626 5.6K
R1630 4.7K
R1634 3.6K
4.3k R1618
[IC1702(2/2) NJM4558MD
R1692 3.9K
R1606 100K
Q1602 2SC3326(AB)
R1614 4.3K
R1612 8.2K
C1604 470p CH
[IC1602(2/2) NJM4558MD
220p C1602 CH
4.7/50 C1606
R1604 100
ROUT
GDA2
0dB
6dB
10dB
12K R1659
R1661 6.2K
R1665 3.9K
4.3k R1657
[IC1703(2/2) NJM4558MD
R1693 3.9K
R1645 100K
Q1603 2SC3326(AB)
R1653 4.3K
R1651 8.2K
C1611 470p CH
[IC1603(1/2) NJM4558MD
220p C1609 CH
4.7/50 C1613
100 R1643
LSOT
GDA2
12K R1660
R1662 6.2K
R1666 3.9K
4.3k R1658
[IC1704(2/2) NJM4558MD
R1694 3.9K
R1646 100K
Q1604 2SC3326(AB)
R1654 4.3K
R1652 8.2K
C1612 470p CH
[IC1603(2/2) NJM4558MD
220p C1610 CH
4.7/50 C1614
R1644 100
RSOT
GDA2
C1623 270p CH
R1679 6.8k
R1683 3.6K
R1685 3K
R1681 3.3k
R1675 100K
Q1605 2SC3326(AB)
C1621 1200p
[IC1604(1/2) NJM4558MD
4.7/50 C1625
R1673 100
COUT
GDA2
V+12
V-12
R1680 8.2k
R1684 1.2k
R1676 100K
Q1606 2SC3326(AB)
R1682 2.4k
[IC1604(2/2) NJM4558MD
7.15 dB
(5.5+1.65) dB
4.7/50 C1626
R1674 1.0k
SWOT
GDA2
DTA124EK Q1610
27K R1699
R1743 0.0
-12.0V
47K R1690
0.01 C1642
TO INPUT & E.VOL BLOCK
MA

3.6 AMP&PRIMARY (1/2), TRANS2 and TRANS3 ASSYS

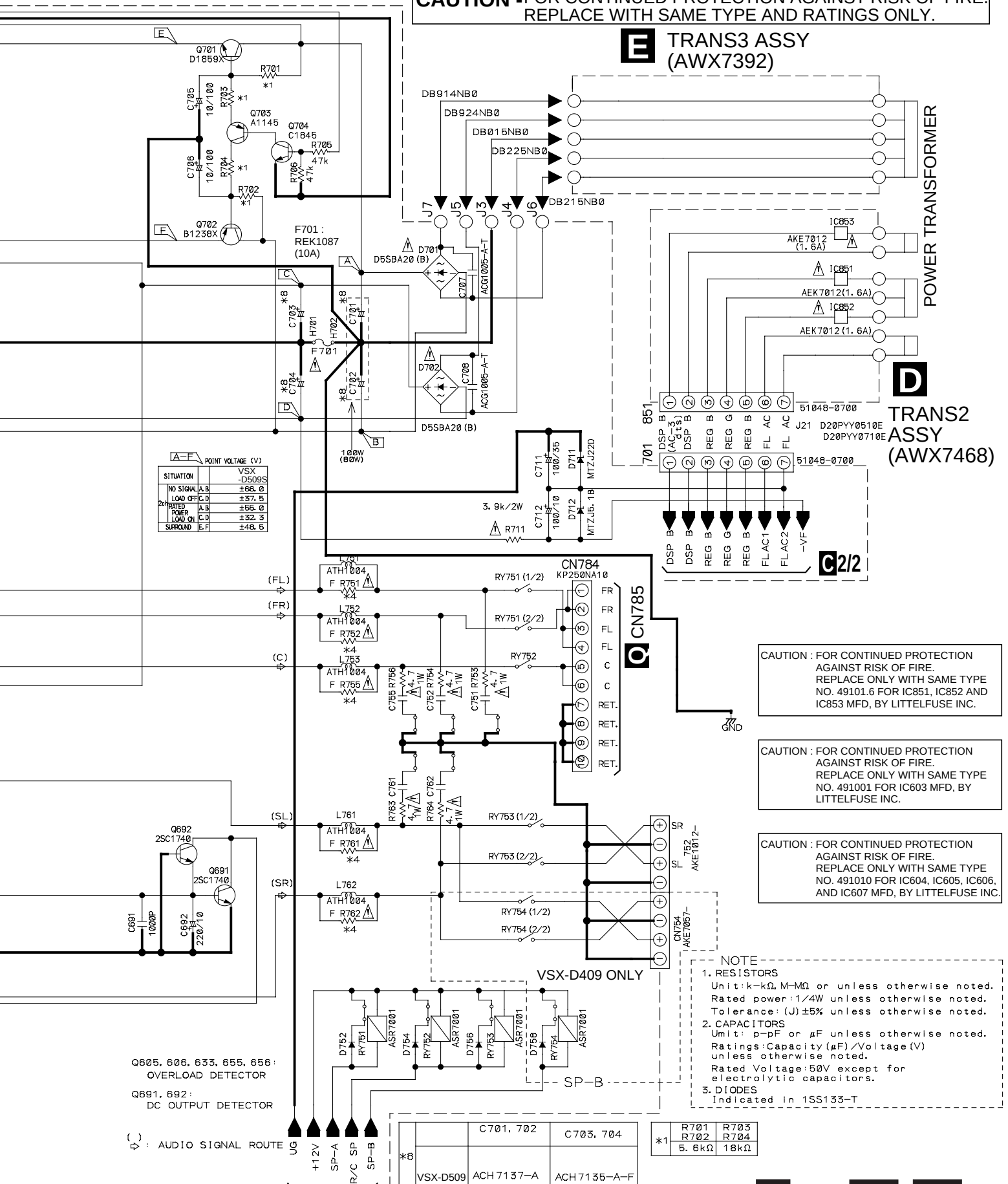


*4	R751, 752, 755, 761, 762	100 1/4W
*5	C751, 752, 755, 761, 762	0.1 YA

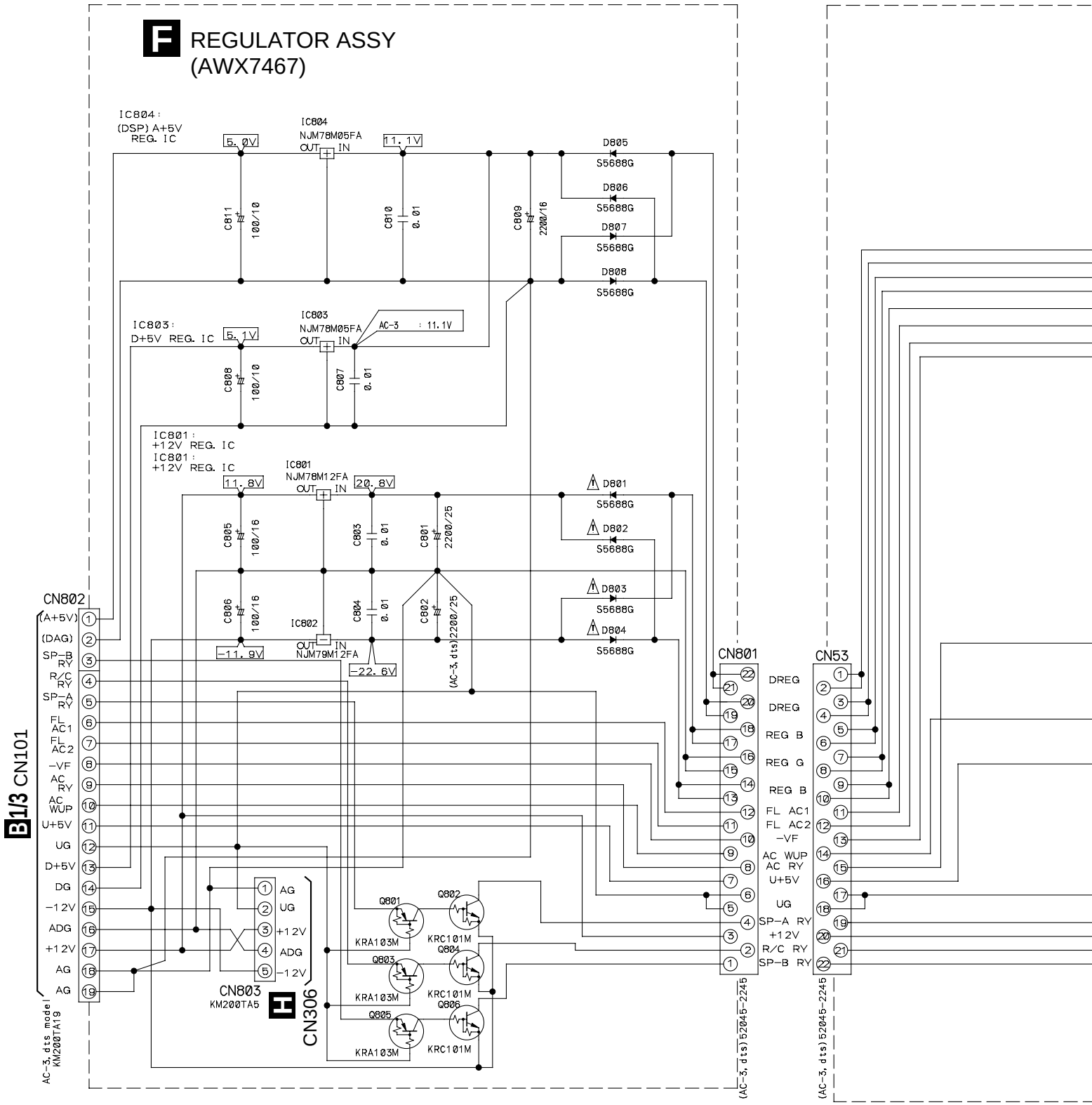
*6		VSX-D509S
	IC601	PAC010A
	IC602	PAC011A

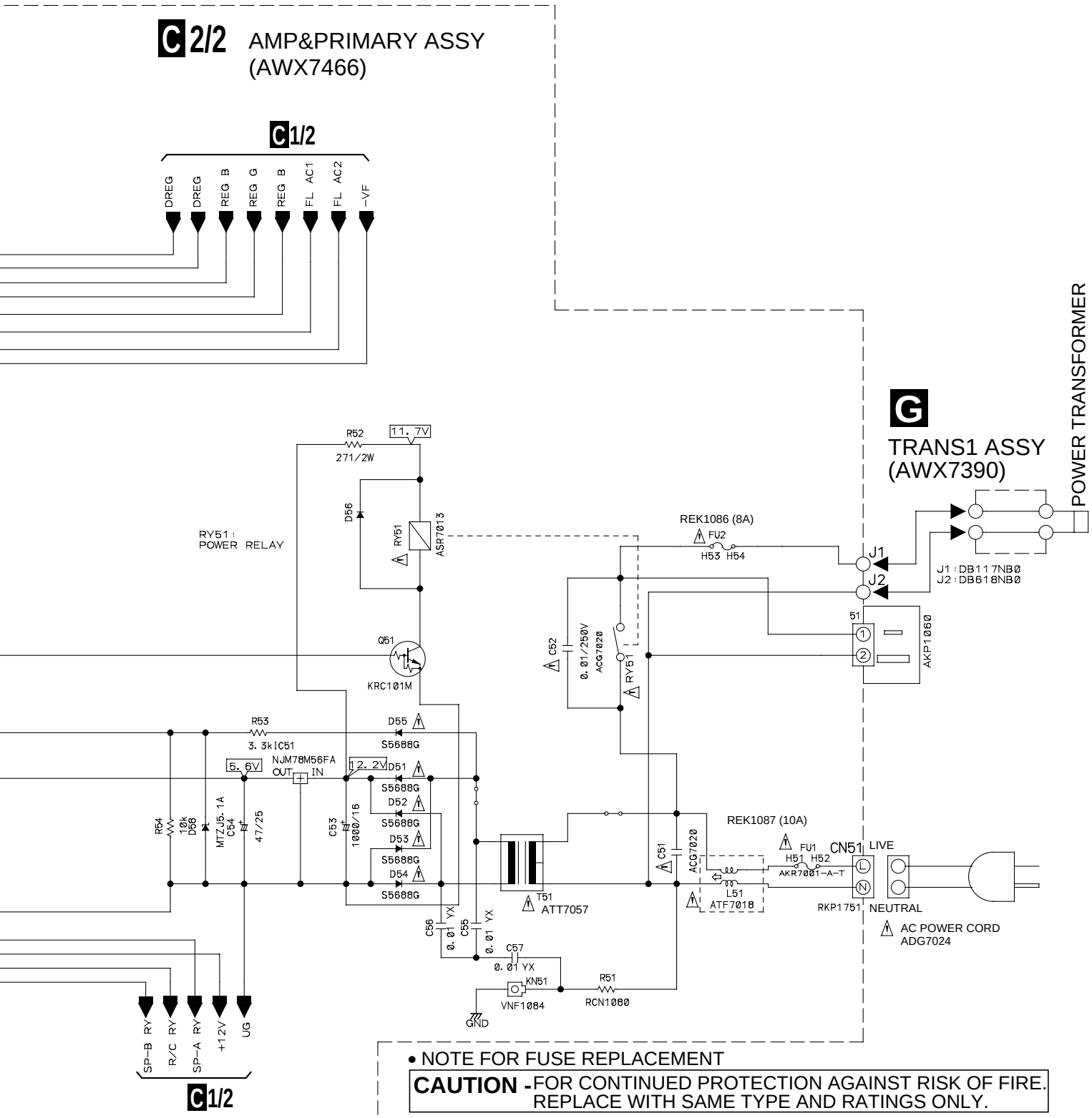
• NOTE FOR FUSE REPLACEMENT

CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.



3.7 AMP&PRIMARY (2/2), REGULATOR and TRANS1 ASSYS

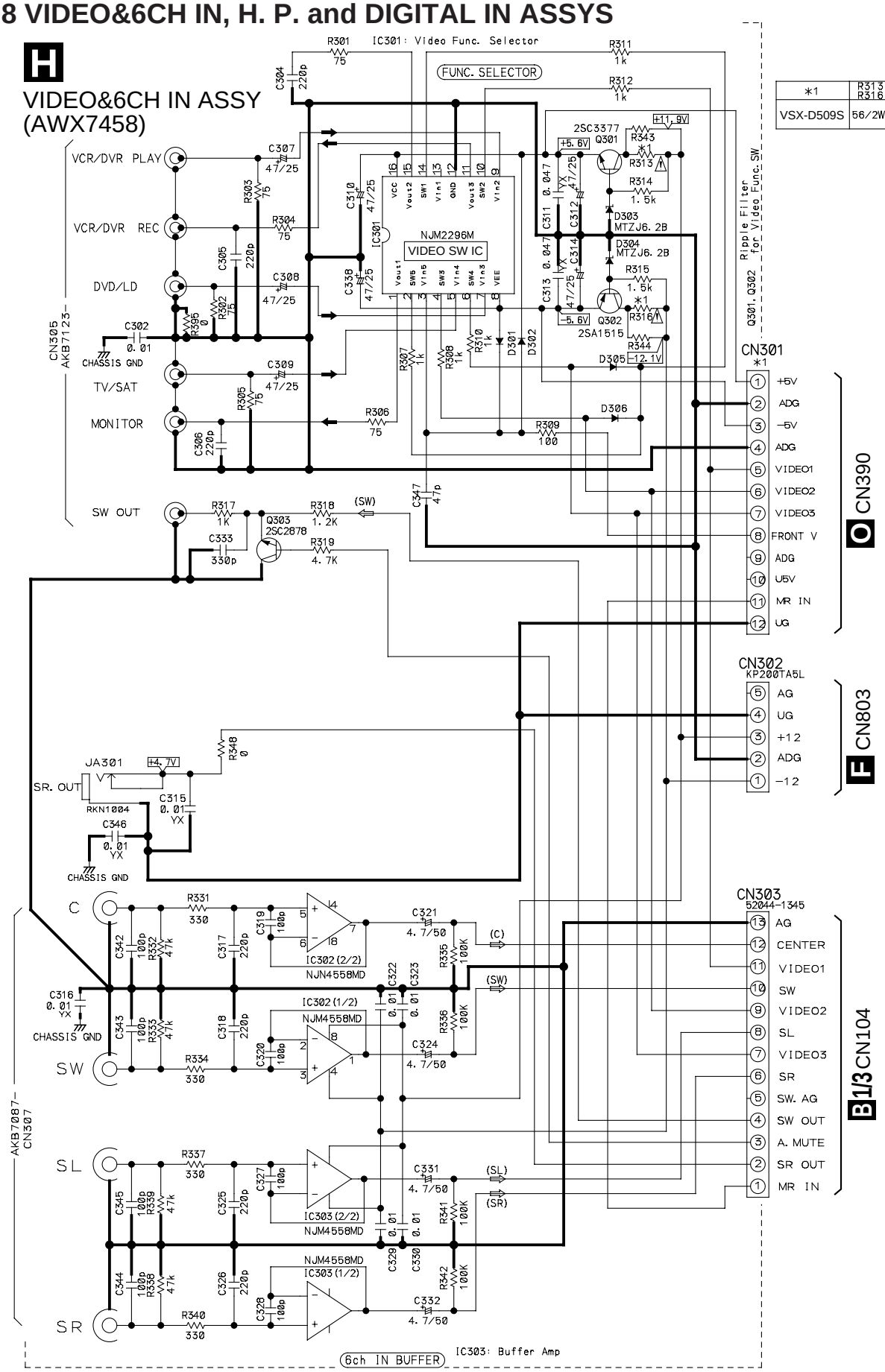



C 2/2 AMP&PRIMARY ASSY
(AWX7466)
C 1/2
DREG
DREG
REG B
REG G
REG B
FL AC1
FL AC2
-VF
G
TRANS1 ASSY
(AWX7390)
POWER TRANSFORMER
J1 : DB117NB0
J2 : DB618NB0
J1
J2
R52
271/2W
11.7V
D56
RY51
ASR7013
RY51 :
POWER RELAY
REK1086 (8A)
FU2
H53 H54
Q51
KRC101M
C52
0.01/250V
ACG7020
RY51
51
AKP1060
R53
3.3kIC51
D55
S5688G
5.6V
NJM78M56FA
OUT IN
2.2V
D51
D52
D53
D54
S5688G
R54
10k
D58
MTZJ5.1A
C54
47/25
C53
1000/16
REK1087 (10A)
FU1
H51 H52
AKR7001-A-T
CN51
LIVE
NEUTRAL
RKP1751
C51
ACG7020
L51
ATF7018
T51
ATT7057
C56
0.01 YX
C55
0.01 YX
C57
0.01 YX
KN51
VNF1084
R51
RCN1060
GND
AC POWER CORD
ADG7024
SP-B RY
R/C RY
SP-A RY
+12V
UG
C 1/2
• NOTE FOR FUSE REPLACEMENT
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS ONLY.

3.8 VIDEO&6CH IN, H. P. and DIGITAL IN ASSYS

H

VIDEO&6CH IN ASSY
(AWX7458)



*1	R313 R316	R343 R344	CN301
VSX-D509S	56/2W	ST. BY	KP200 TA12L

NJM2296D control port status

SW1	SW2	SW3	SW4	SW5	Vout1	Vout2	Vout3
1	Ø	(1)	Ø	1	Vin2	Vin2	mute
1	1	(1)	Ø	1	Vin3	Vin3	Vin3
1	1	Ø	1	1	Vin4	Vin4	Vin4
1	1	1	1	1	Vin5	Vin5	Vin5
Ø	Ø	(Ø)	(Ø)	Ø	mute	mute	mute

VIN 2. VCR/DVR
VIN 3. DVD/LD
VIN 4. TV/SAT
VIN 5. FRONT VIDEO

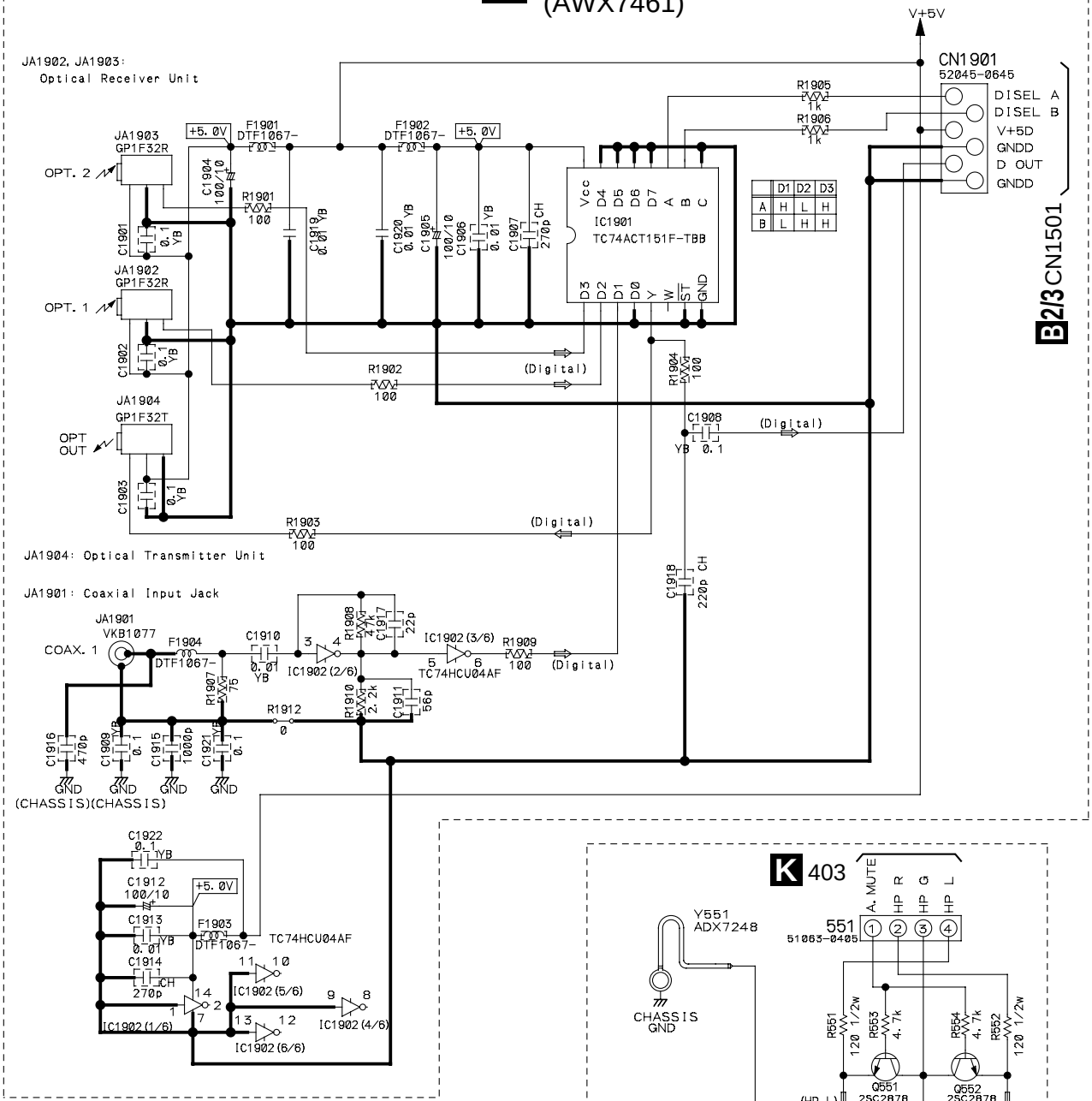
Vout1. MONITOR out
Vout2. MR out
Vout3. VCR/DVR out

NOTE

1. RESISTORS
   Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
   Rated power: 1/10W unless otherwise noted.
   Tolerance: (J)±5% unless otherwise noted.
2. CAPACITORS
   Unit: p-pF or μF unless otherwise noted.
   Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
   Rated Voltage: 50V expect for electrolytic capacitors.
3. DIODES
   Indicated in 1SS355-TRB

Video Signal Flow
Audio Signal Flow

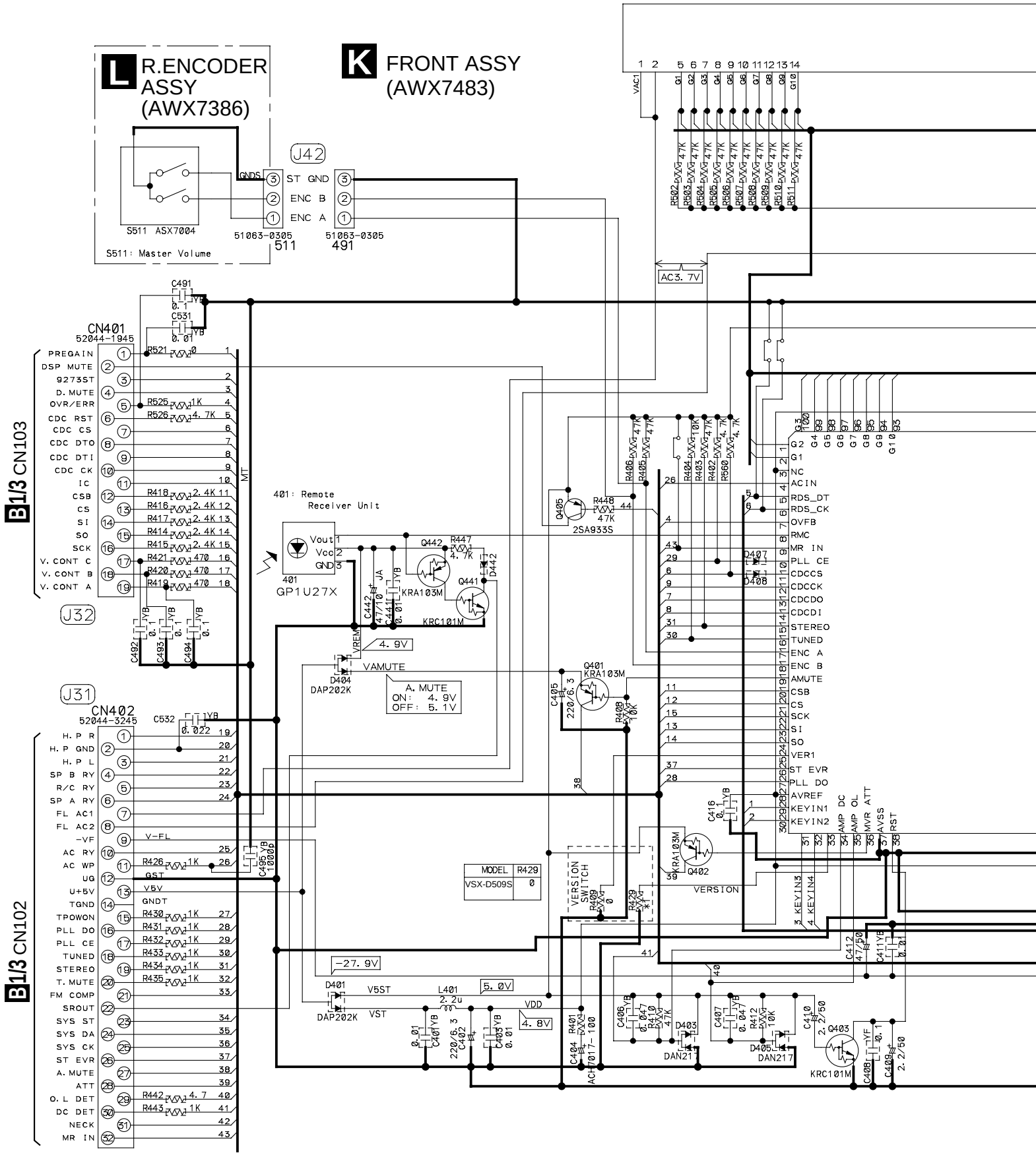
J DIGITAL IN ASSY (AWX7461)

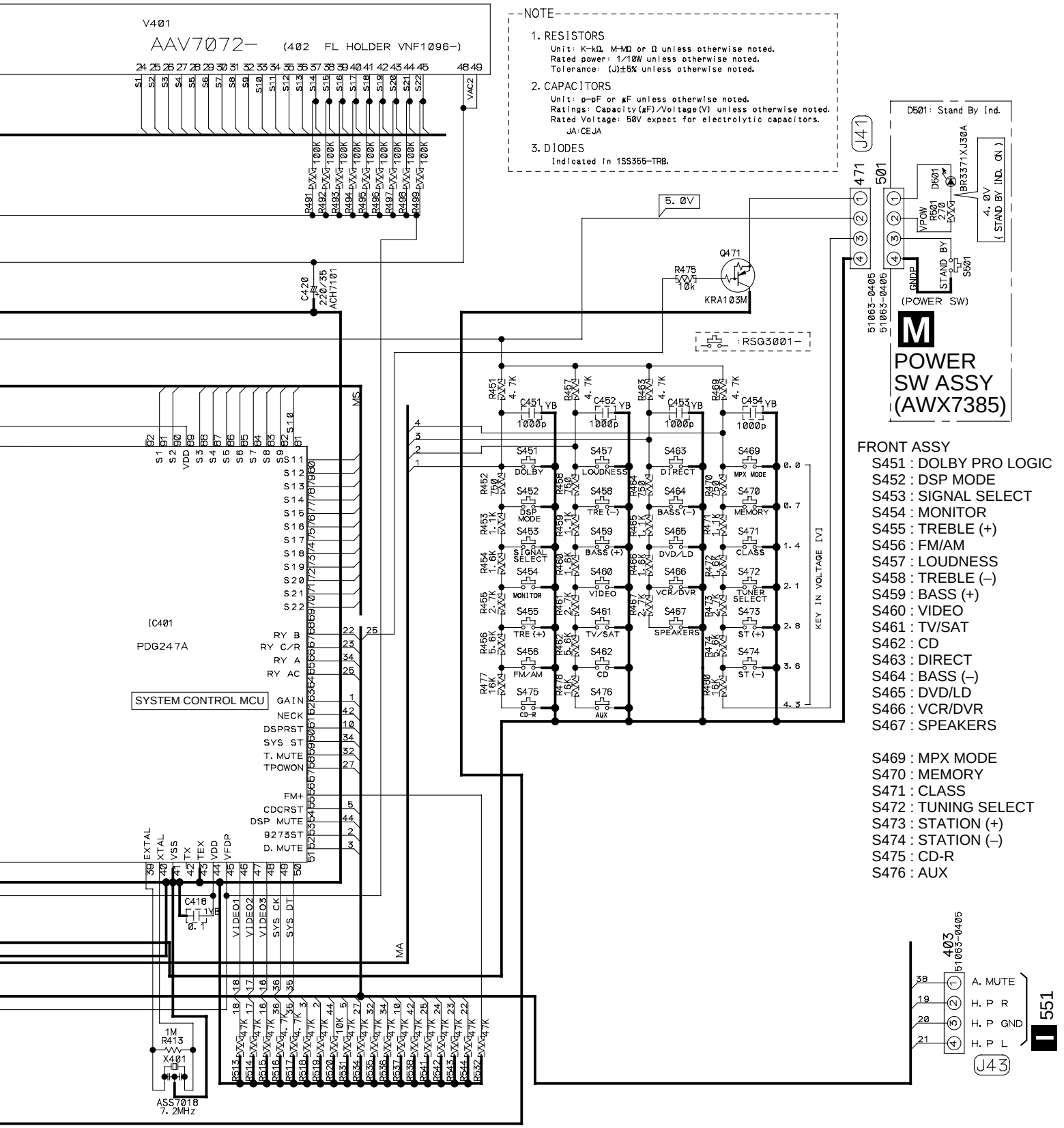


K 403

I H.P. ASSY (AWX7556)

3.9 FRONT, R. ENCODER and POWER SW ASSYS




-NOTE-
1. RESISTORS
Unit: K-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/10W unless otherwise noted.
Tolerance: (J)±5% unless otherwise noted.
2. CAPACITORS
Unit: p-pF or μF unless otherwise noted.
Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
Rated Voltage: 50V expect for electrolytic capacitors.
JA:CEJA
3. DIODES
Indicated in 1SS355-TRB.
V401
AAV7072- (402 FL HOLDER VNF1096-)
IC401
PDG247A
SYSTEM CONTROL MCU
Q471
KRA103M
D501: Stand By Ind.
POWER SW ASSY (AWX7385)
:RSG3001-
FRONT ASSY
S451 : DOLBY PRO LOGIC
S452 : DSP MODE
S453 : SIGNAL SELECT
S454 : MONITOR
S455 : TREBLE (+)
S456 : FM/AM
S457 : LOUDNESS
S458 : TREBLE (–)
S459 : BASS (+)
S460 : VIDEO
S461 : TV/SAT
S462 : CD
S463 : DIRECT
S464 : BASS (–)
S465 : DVD/LD
S466 : VCR/DVR
S467 : SPEAKERS
S469 : MPX MODE
S470 : MEMORY
S471 : CLASS
S472 : TUNING SELECT
S473 : STATION (+)
S474 : STATION (–)
S475 : CD-R
S476 : AUX
KEY IN VOLTAGE [V]
A. MUTE
H. P R
H. P GND
H. P L

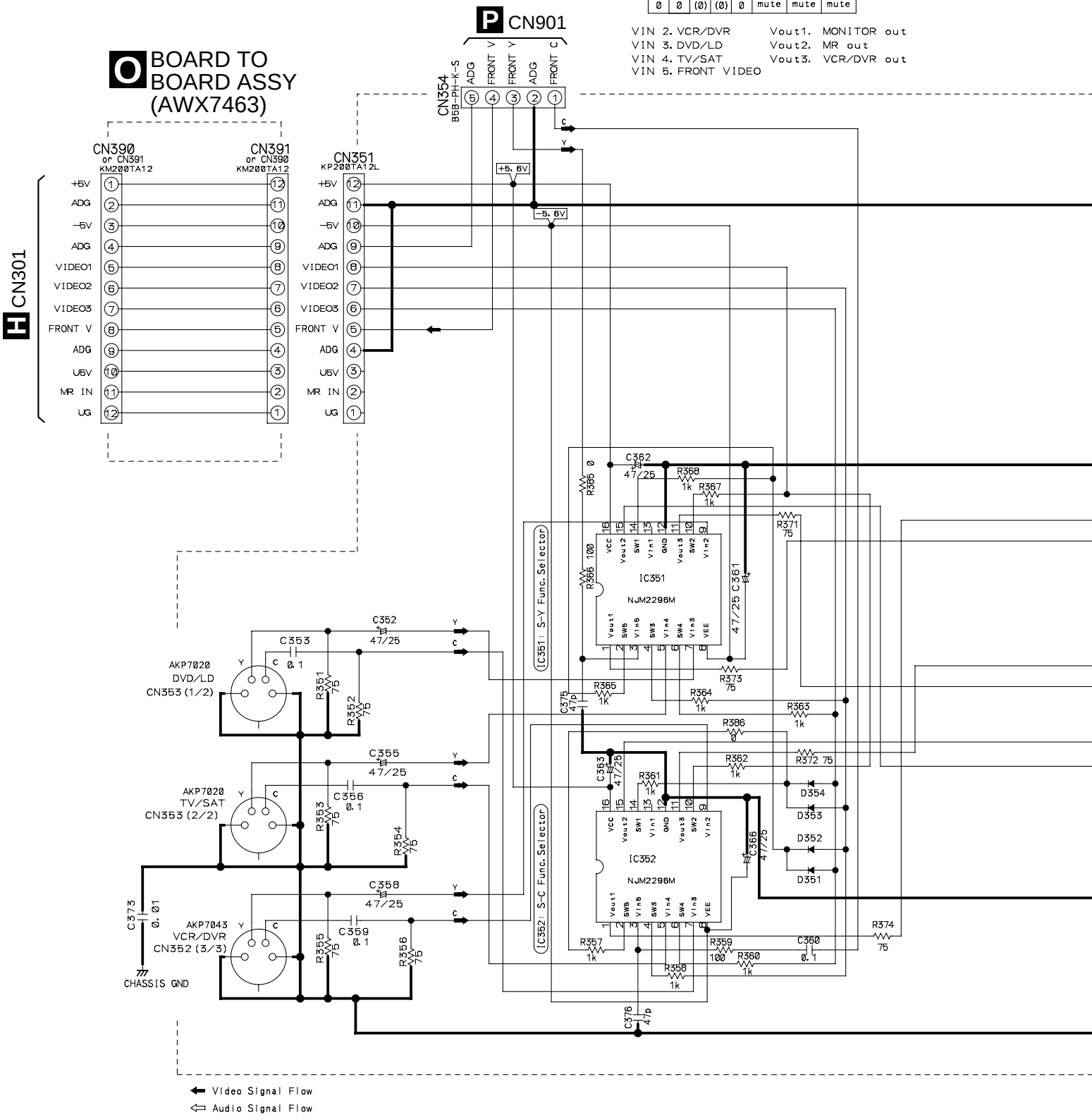
3.10 S. VIDEO, BOARD TO BOARD, FRONT VIDEO, LARGE SP CONNECTION and LARGE SP ASSYS

NJM2296D control port status

SW1	SW2	SW3	SW4	SW5	Vout1	Vout2	Vout3
1	0	(1)	0	1	Vin2	Vin2	mute
1	1	(1)	0	1	Vin3	Vin3	Vin3
1	1	0	1	1	Vin4	Vin4	Vin4
1	1	1	1	1	Vin5	Vin5	Vin5
0	0	(0)	(0)	0	mute	mute	mute

VIN 2. VCR/DVR
VIN 3. DVD/LD
VIN 4. TV/SAT
VIN 5. FRONT VIDEO

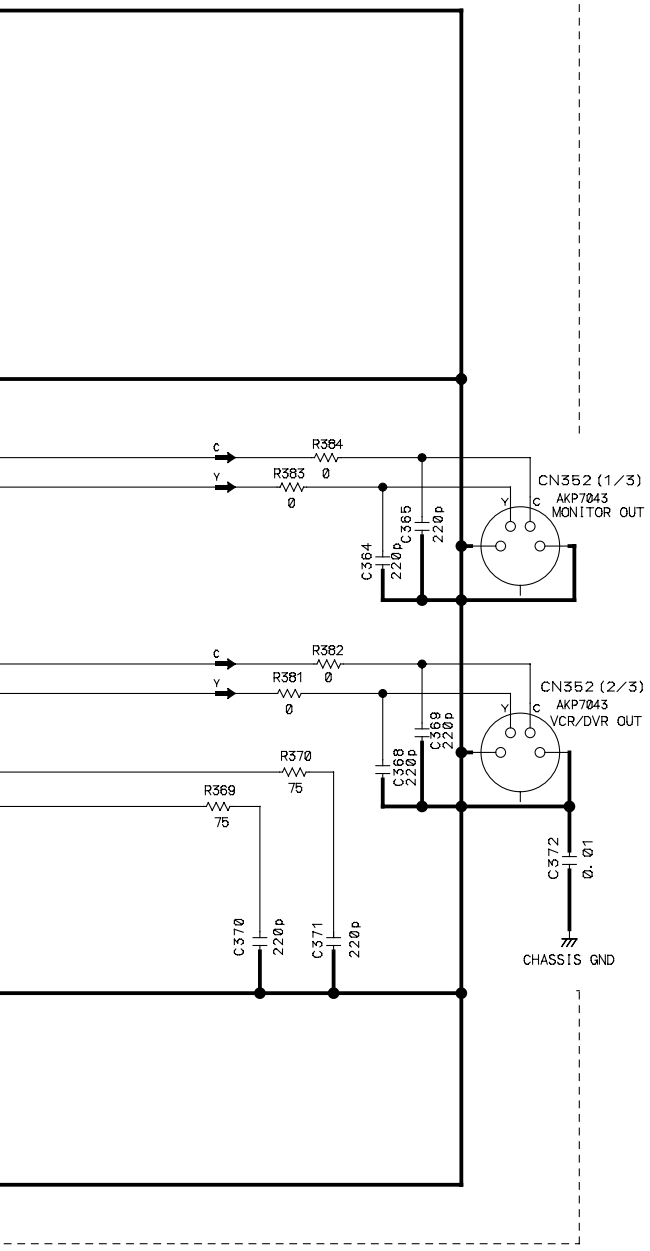
Vout1. MONITOR out
Vout2. MR out
Vout3. VCR/DVR out



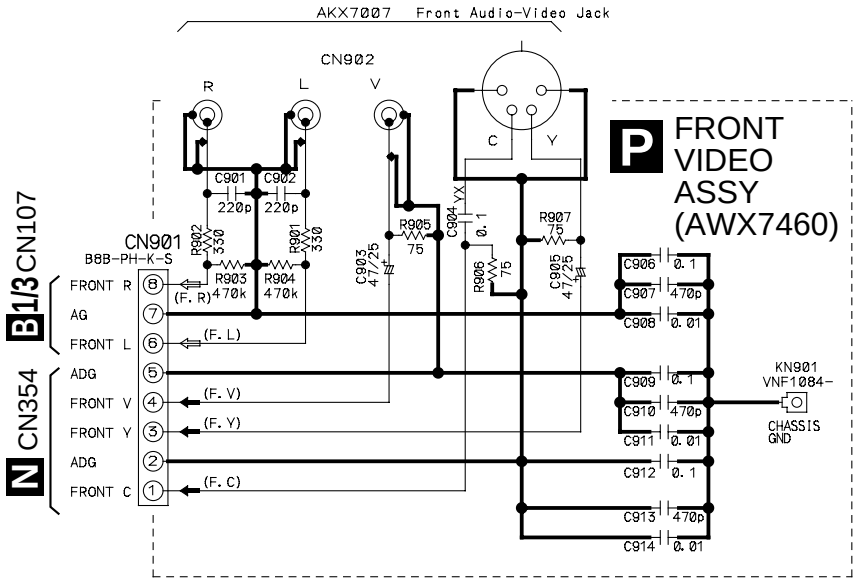
NOTE

1. RESISTORS
   Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
   Rated power: 1/10W unless otherwise noted.
   Tolerance: (J)±5% unless otherwise noted.
2. CAPACITORS
   Unit: p-pF or µF unless otherwise noted.
   Ratings: Capacity(µF)/Voltage(V) unless otherwise noted.
   Rated Voltage: 50V expect for electrolytic capacitors.
3. DIODES
   Indicated in 1SS355-TRB

N S. VIDEO ASSY (AWX7462)



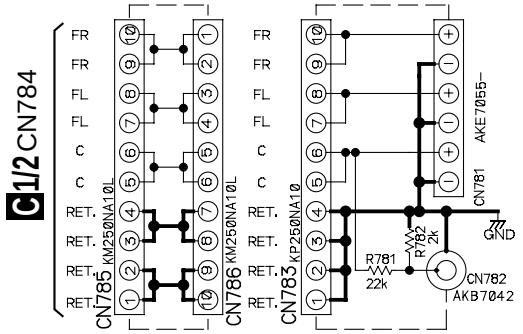
AKX7007 Front Audio-Video Jack



P FRONT VIDEO ASSY (AWX7460)

Q LARGE SP CONNECTION ASSY (AWX7504)

R LARGE SP ASSY (AWX7503)



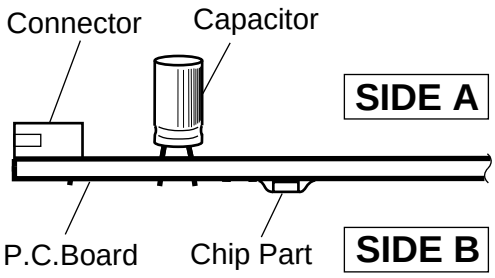
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

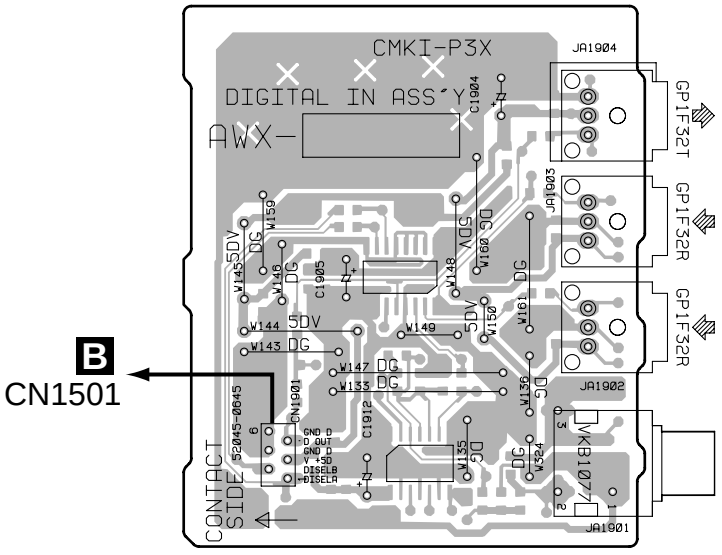
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



4.1 DIGITAL IN ASSY

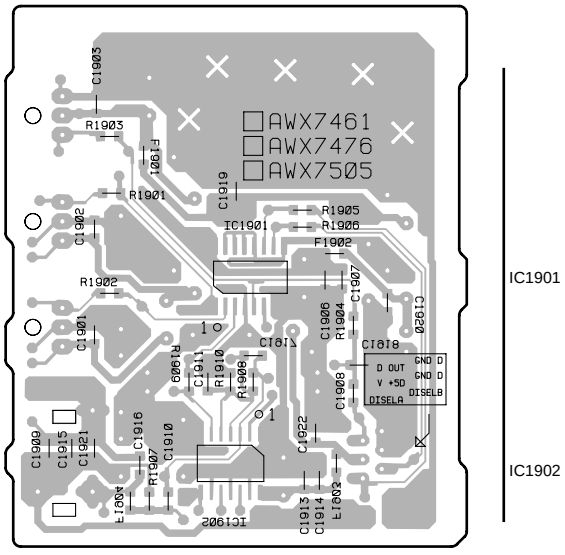
J DIGITAL IN ASSY



(ANP7341-A)

SIDE A

J DIGITAL IN ASSY

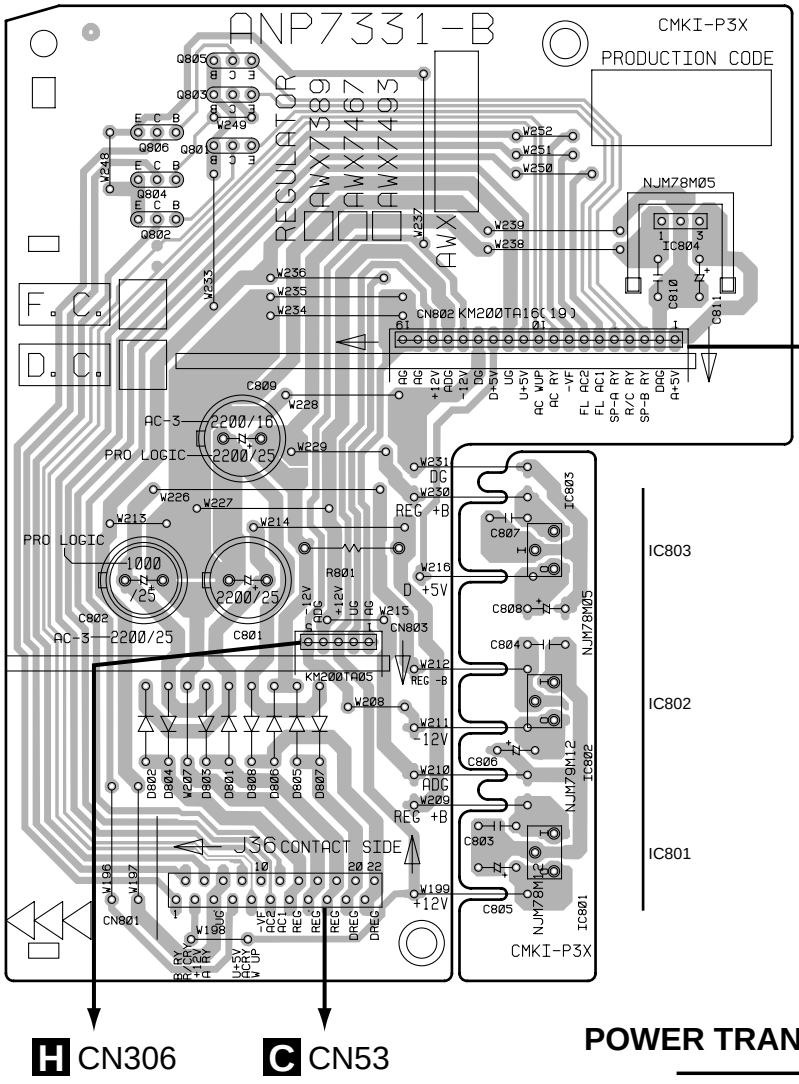


(ANP7341-A)

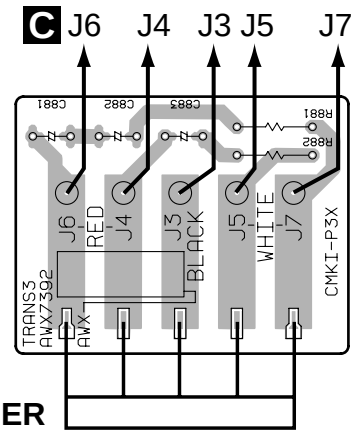
SIDE B

4.2 TRANS2, TRANS3, REGULATOR and TRANS1 ASSYS

F REGULATOR ASSY

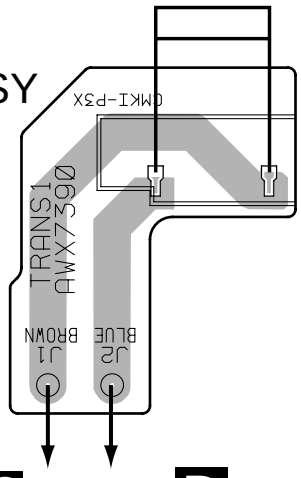


E TRANS3 ASSY



POWER TRANSFORMER

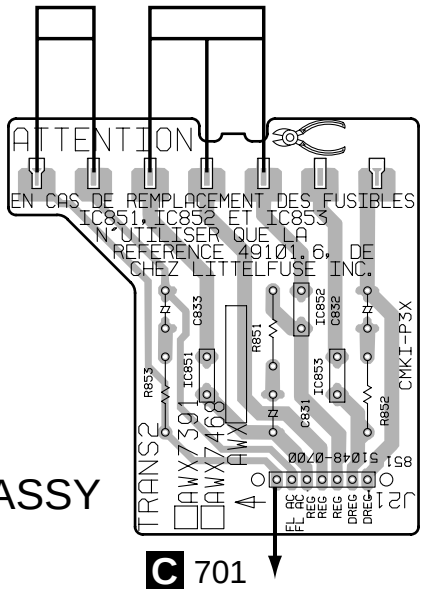
G TRANS1 ASSY



(ANP7331-B)

SIDE A

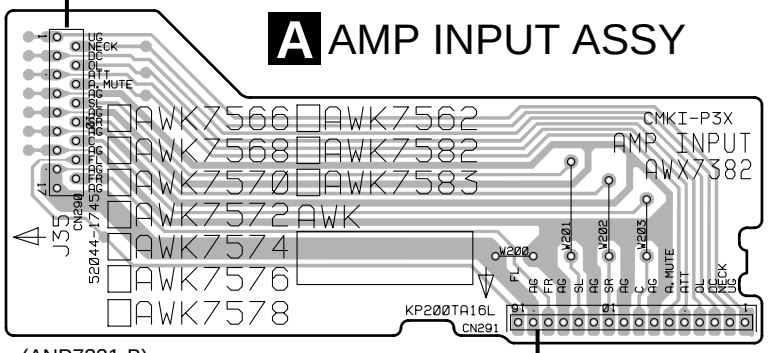
D TRANS2 ASSY



4.3 AMP INPUT and AMP&PRIMARY ASSYS

B CN106

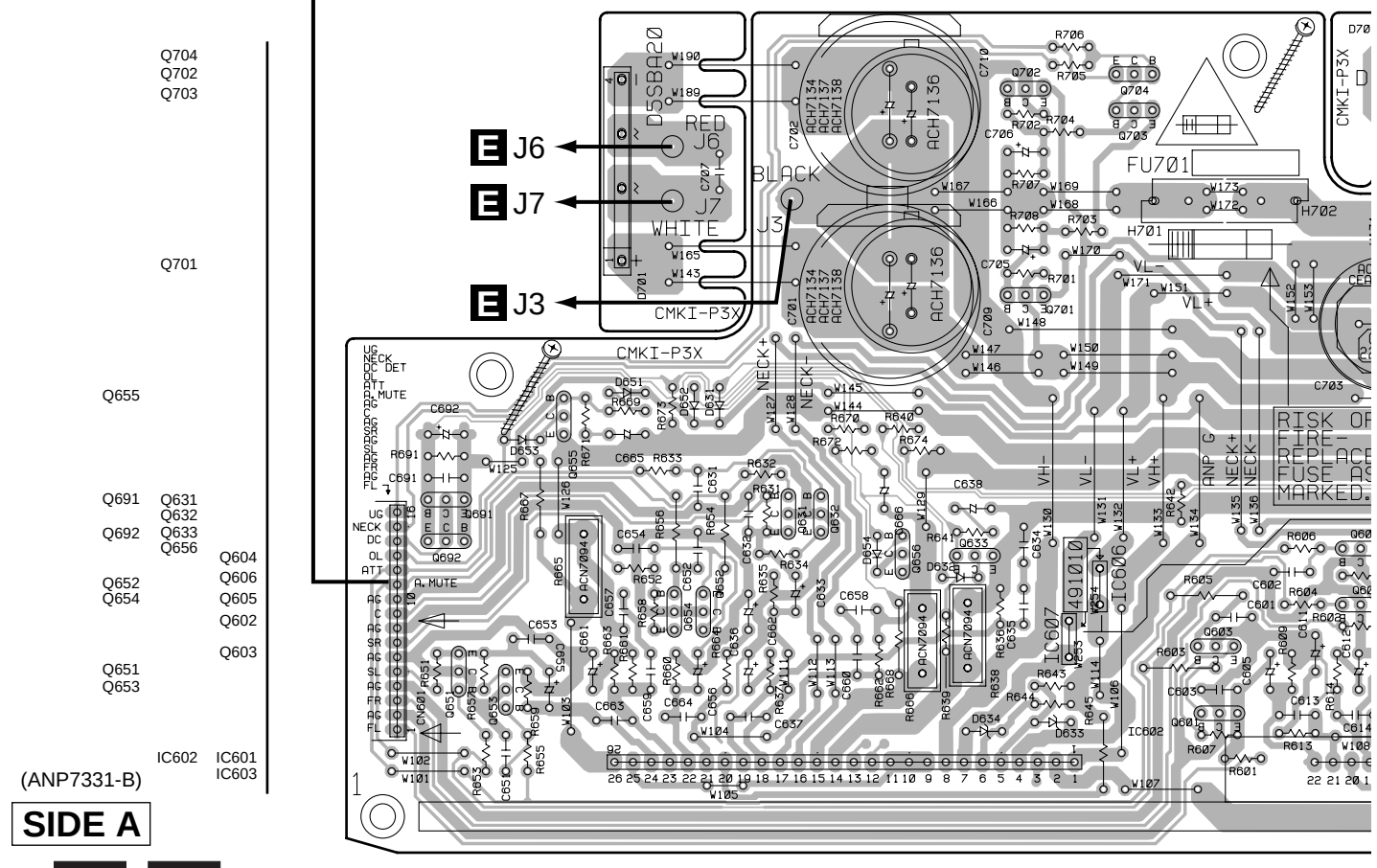
A AMP INPUT ASSY



(ANP7331-B)

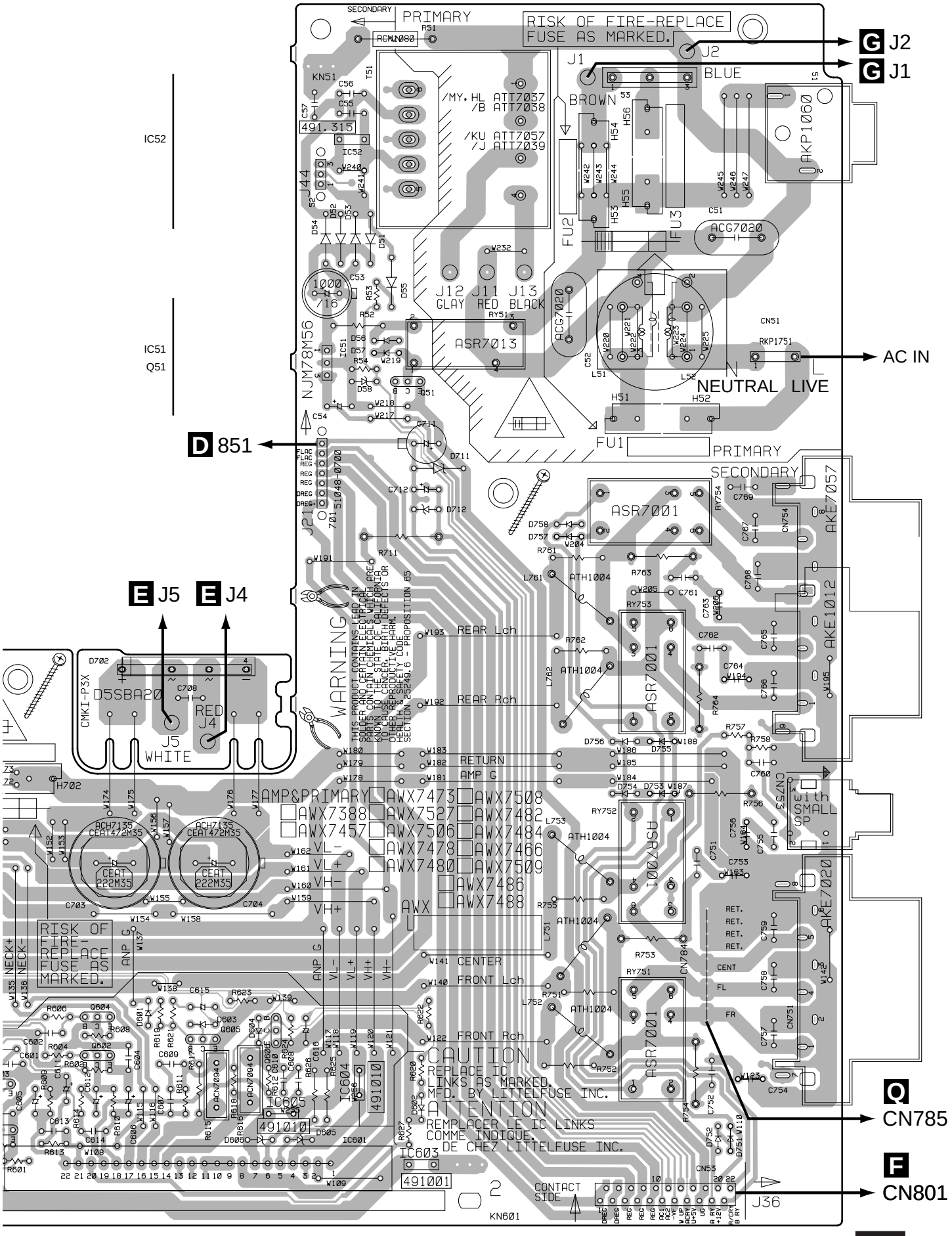
SIDE A

C AMP&PRIMARY ASSY



(ANP7331-B)

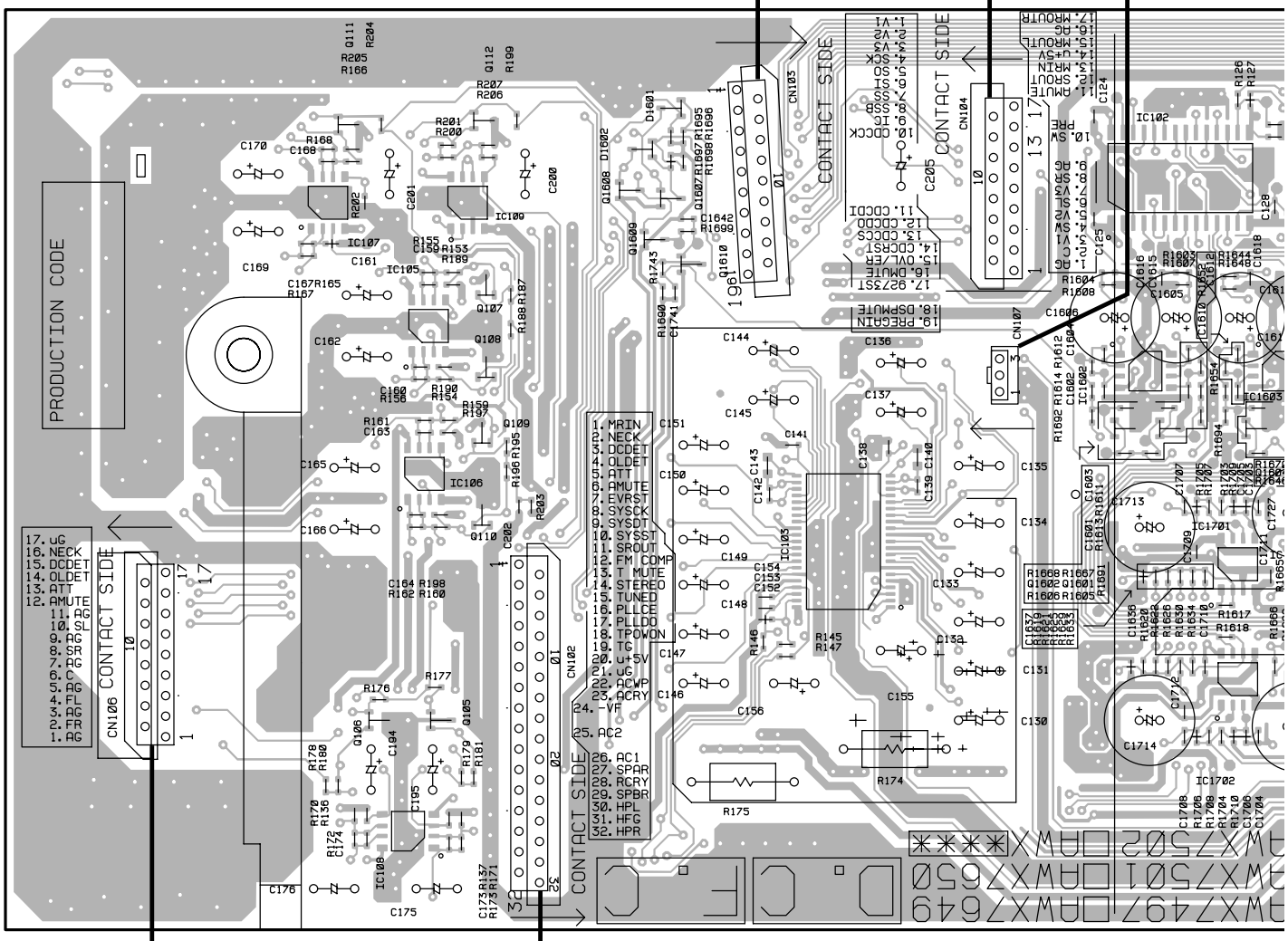
SIDE A


SECONDARY
PRIMARY
RISK OF FIRE-REPLACE FUSE AS MARKED.
J2
J1
BLUE
BROWN
/MY, HL ATT7037
/B ATT7038
/KU ATT7057
/J ATT7039
AKP1060
ACG7020
ASR7013
J12 J11 J13
GLAY RED BLACK
RKP1751
AC IN
NEUTRAL LIVE
FU1
FU2
FU3
PRIMARY
SECONDARY
ASR7001
AKE7057
AKE1012
AKE7020
NJM78M56
IC52
IC51
Q51
J44
J21
D851
E J5
E J4
D5SBA20
CMKI-P3X
J5 WHITE
J4 RED
WARNING
THIS PRODUCT CONTAINS LEAD IN SOLDER AND CERTAIN ELECTRICAL COMPONENTS KNOWN TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. HEALTH & SAFETY CODE SECTION 25249.6 - PROPOSITION 65
REAR Lch
REAR Rch
RETURN
AMP G
FRONT Lch
FRONT Rch
CENTER
VL-
VL+
VH-
VH+
AMP&PRIMARY
AWX7473 AWX7508
AWX7388 AWX7527 AWX7482
AWX7457 AWX7506 AWX7484
AWX7478 AWX7466
AWX7480 AWX7509
AWX7486
AWX7488
CAUTION
REPLACE IC
LINKS AS MARKED.
MFD. BY LITTELFUSE INC.
ATTENTION
REMPLACER LE IC LINKS
COMME INDIQUE.
DE CHEZ LITTELFUSE INC.
RISK OF FIRE-REPLACE FUSE AS MARKED.
CONTACT SIDE
KN601
J36
CN785
CN801
Q CN785
F CN801

4.4 D.D & INPUT ASSY

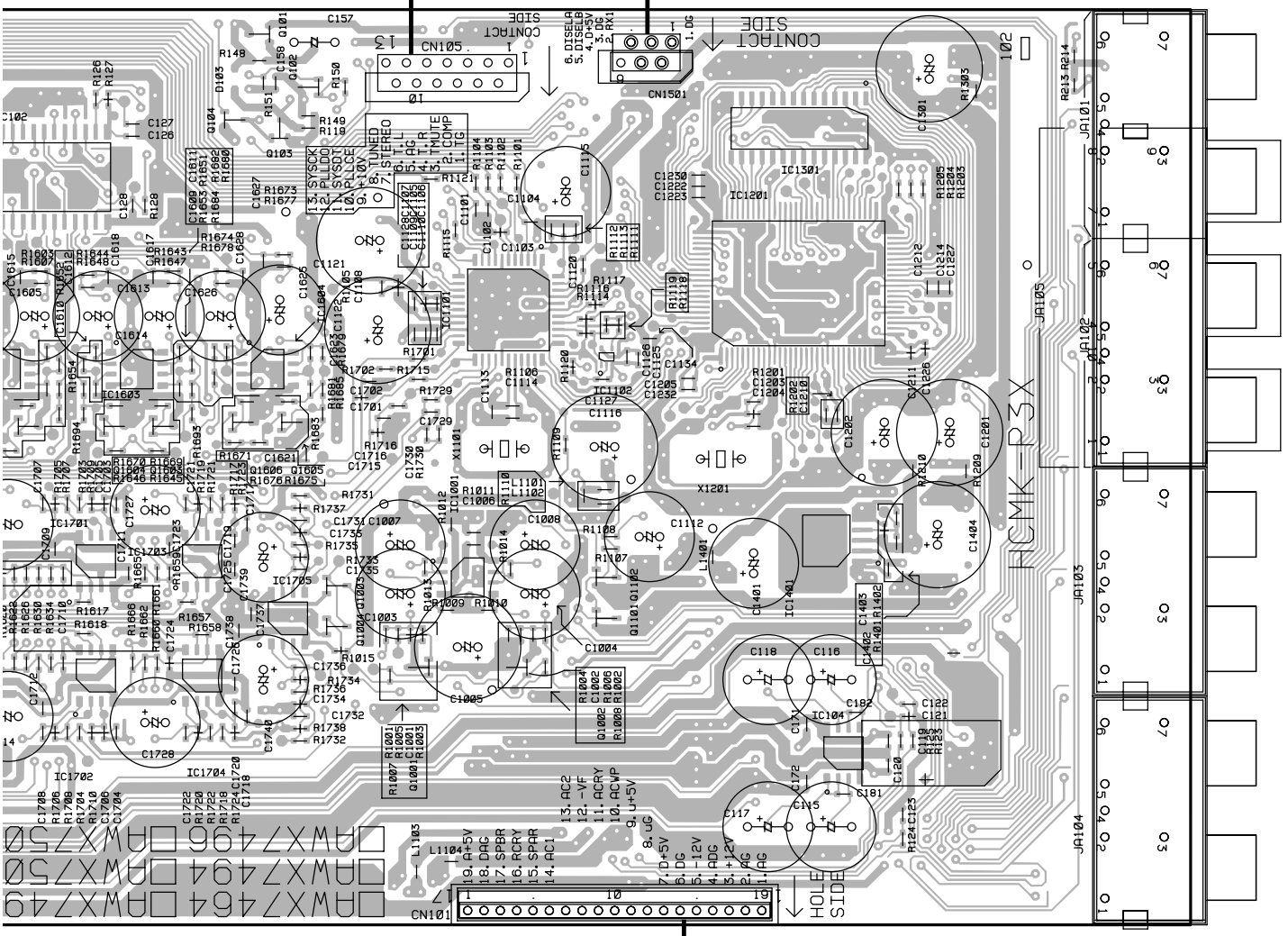
K CN401 **H** CN303 **P** CN901

B D.D & INPUT ASSY



A CN290 **K** CN402

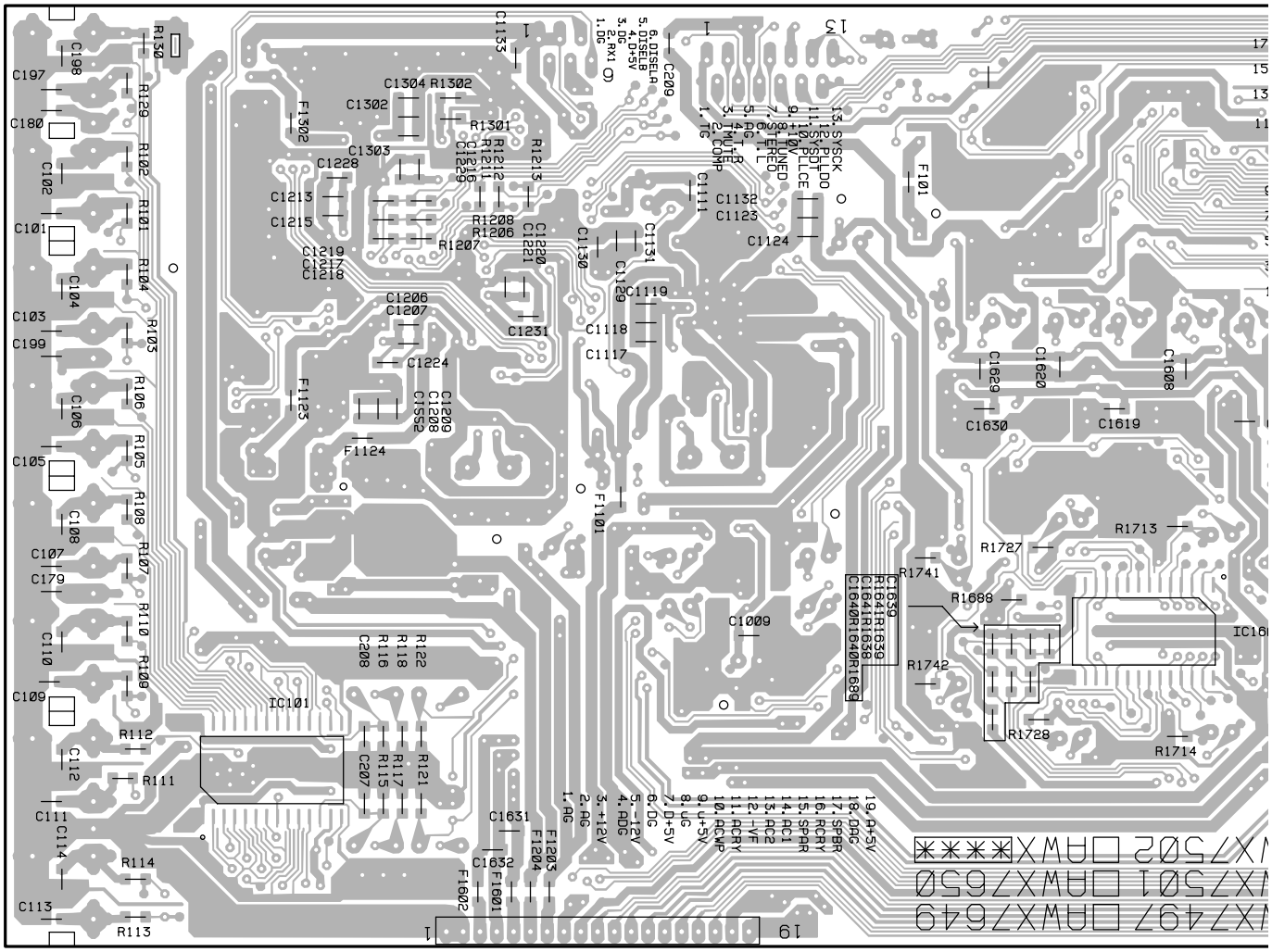
CN901 FM/AM TUNER UNIT J CN1901



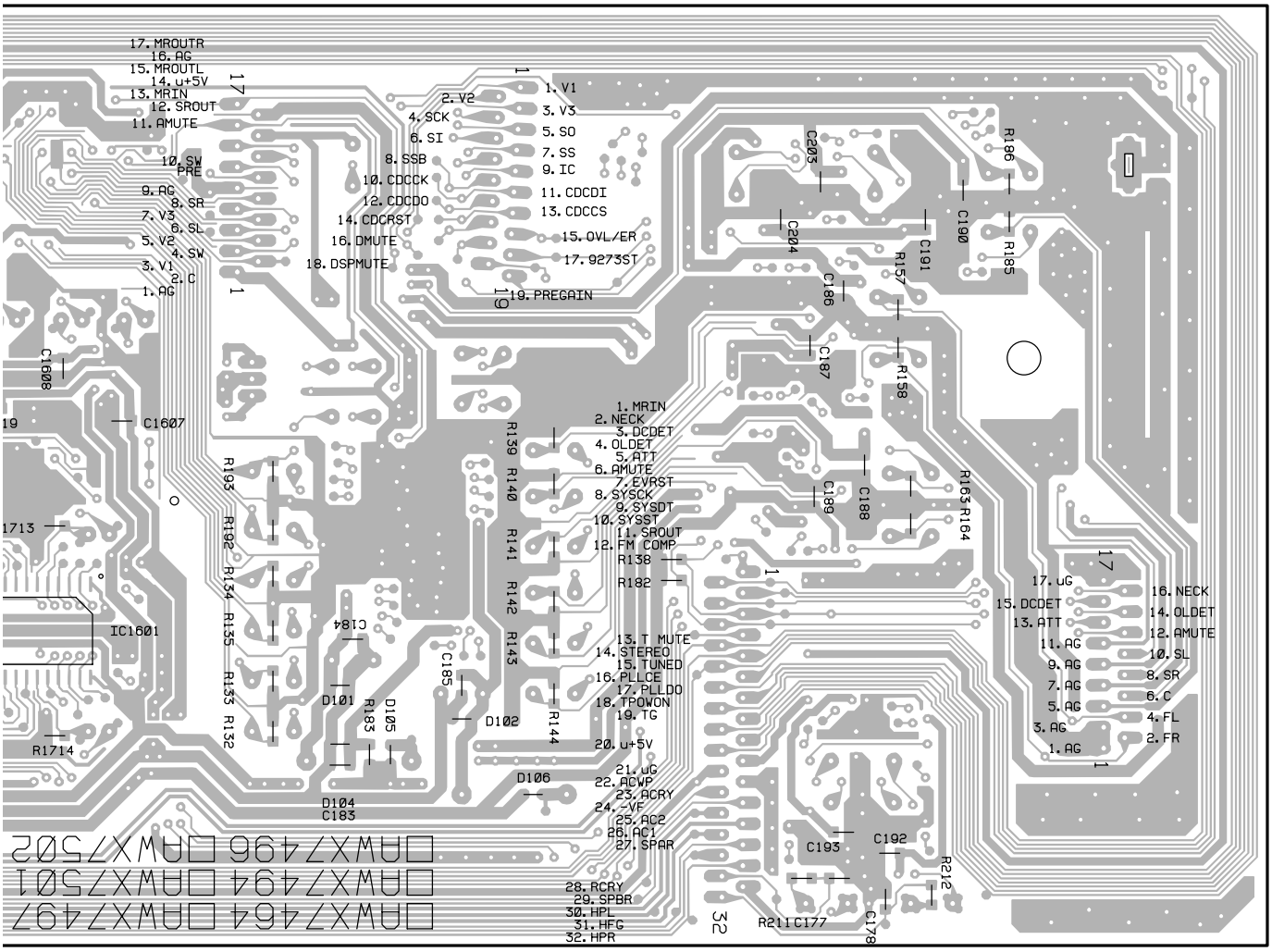
SIDE A

F CN802

B D.D & INPUT ASSY



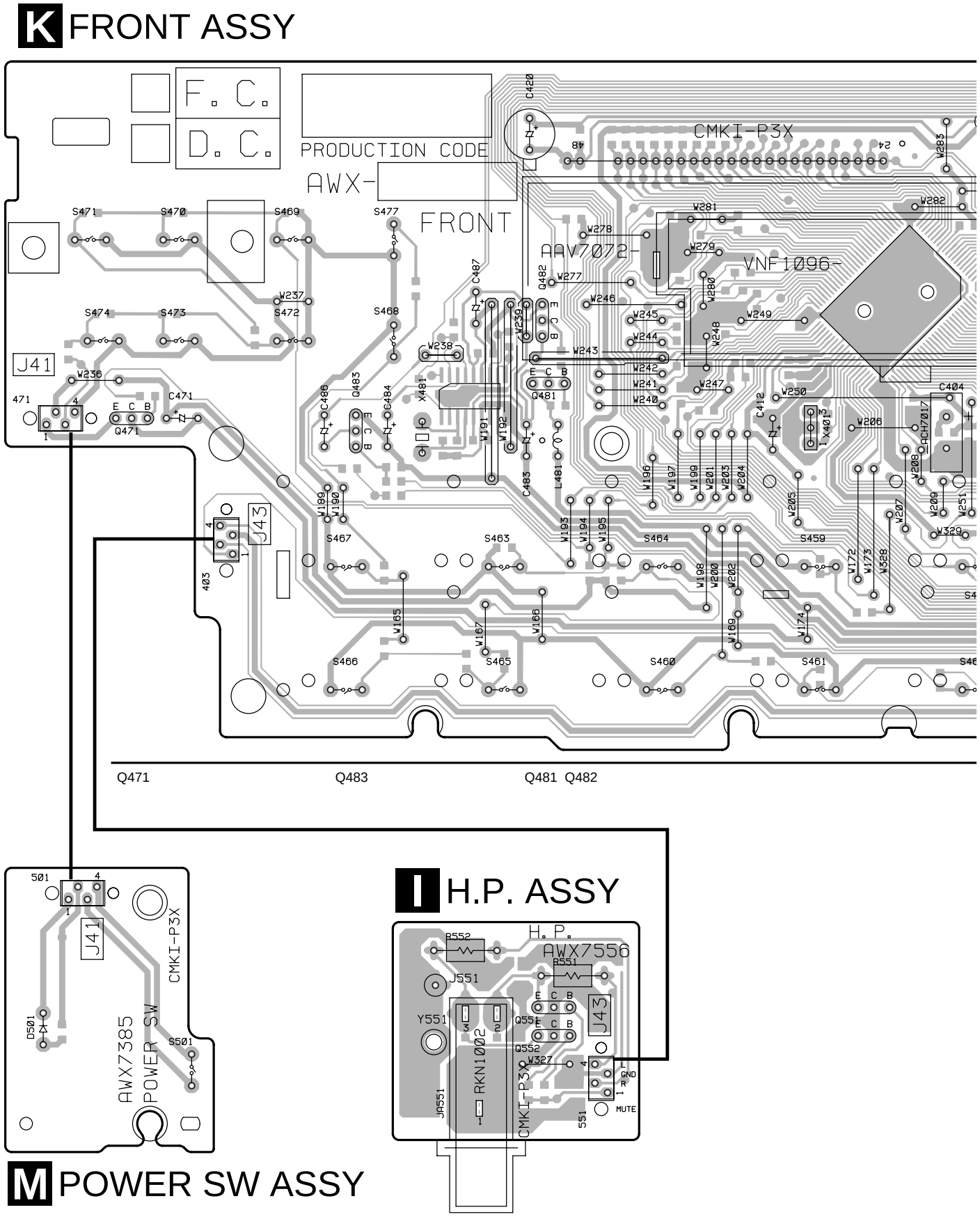
IC101 IC1801

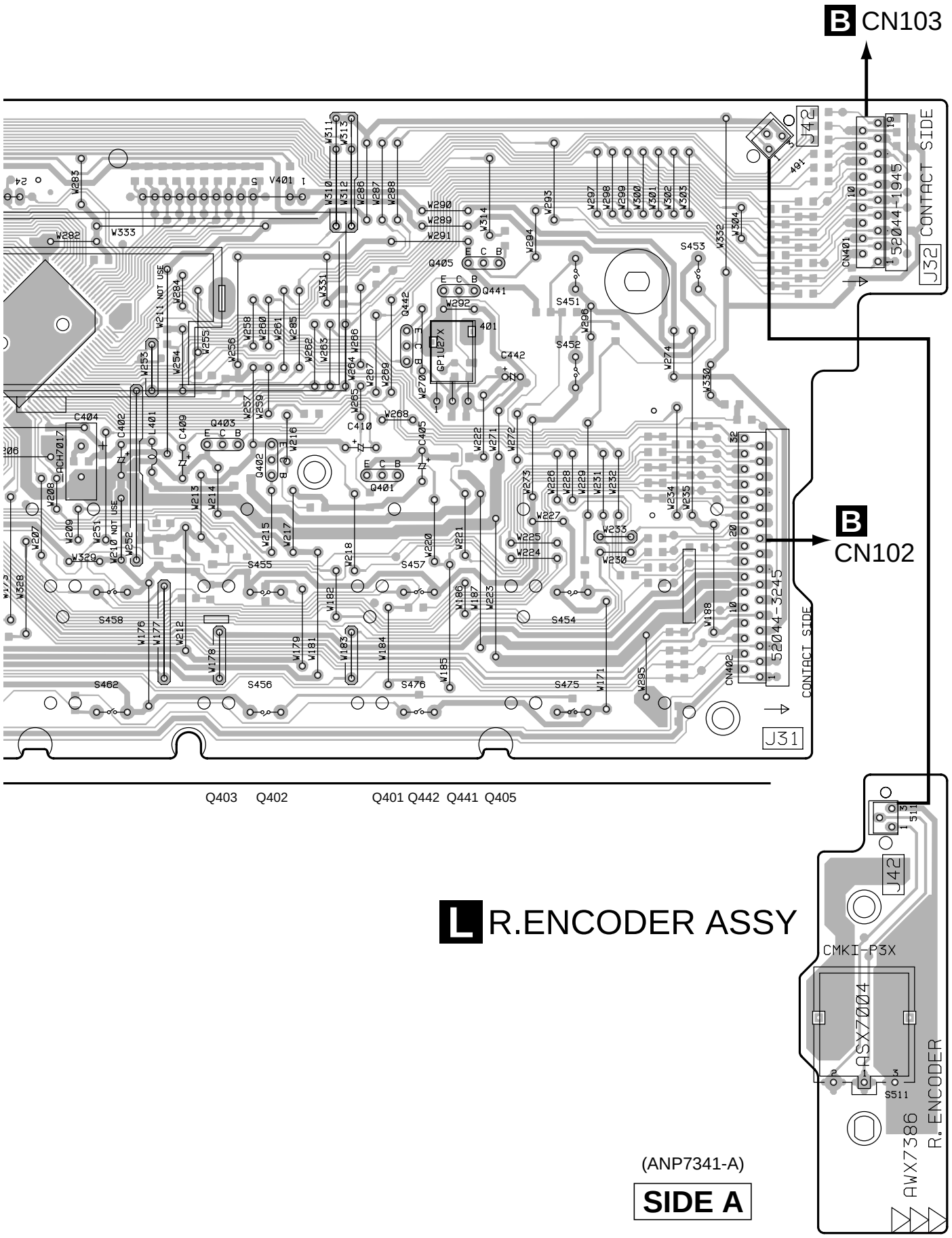


(ANP7342-A)

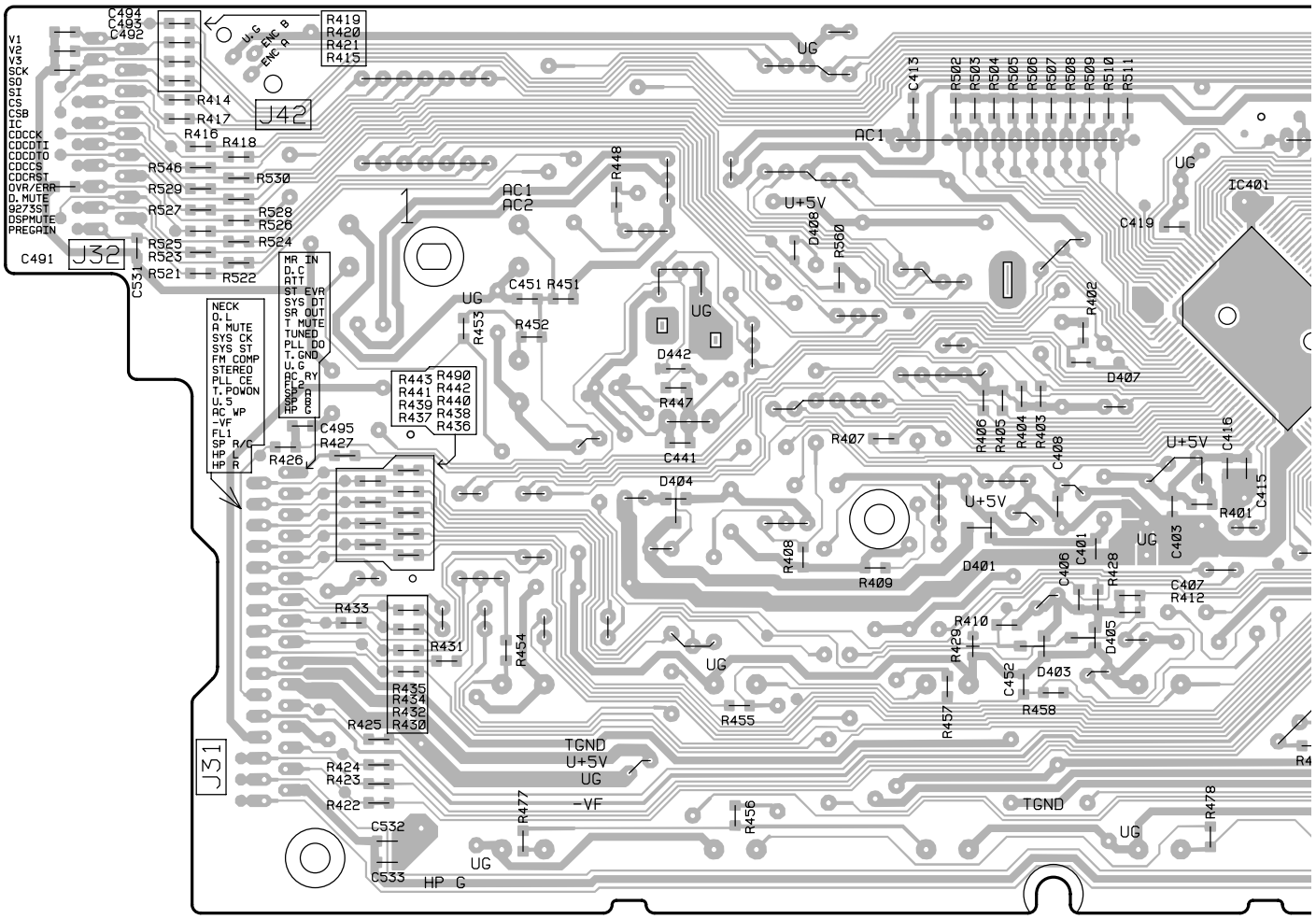
SIDE B

4.5 H.P., FRONT, R.ENCODER and POWER SW ASSYS

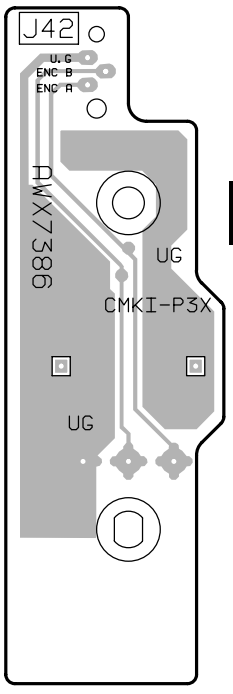



B CN103
B CN102
J42
J32 CONTACT SIDE
CN401
52044-1945
J31
CONTACT SIDE
CN402
52044-3245
Q403 Q402 Q401 Q442 Q441 Q405
L R.ENCODER ASSY
CMKI-P3X
QSX7004
S511
R.ENCODER
AWX7386
(ANP7341-A)
SIDE A

K FRONT ASSY



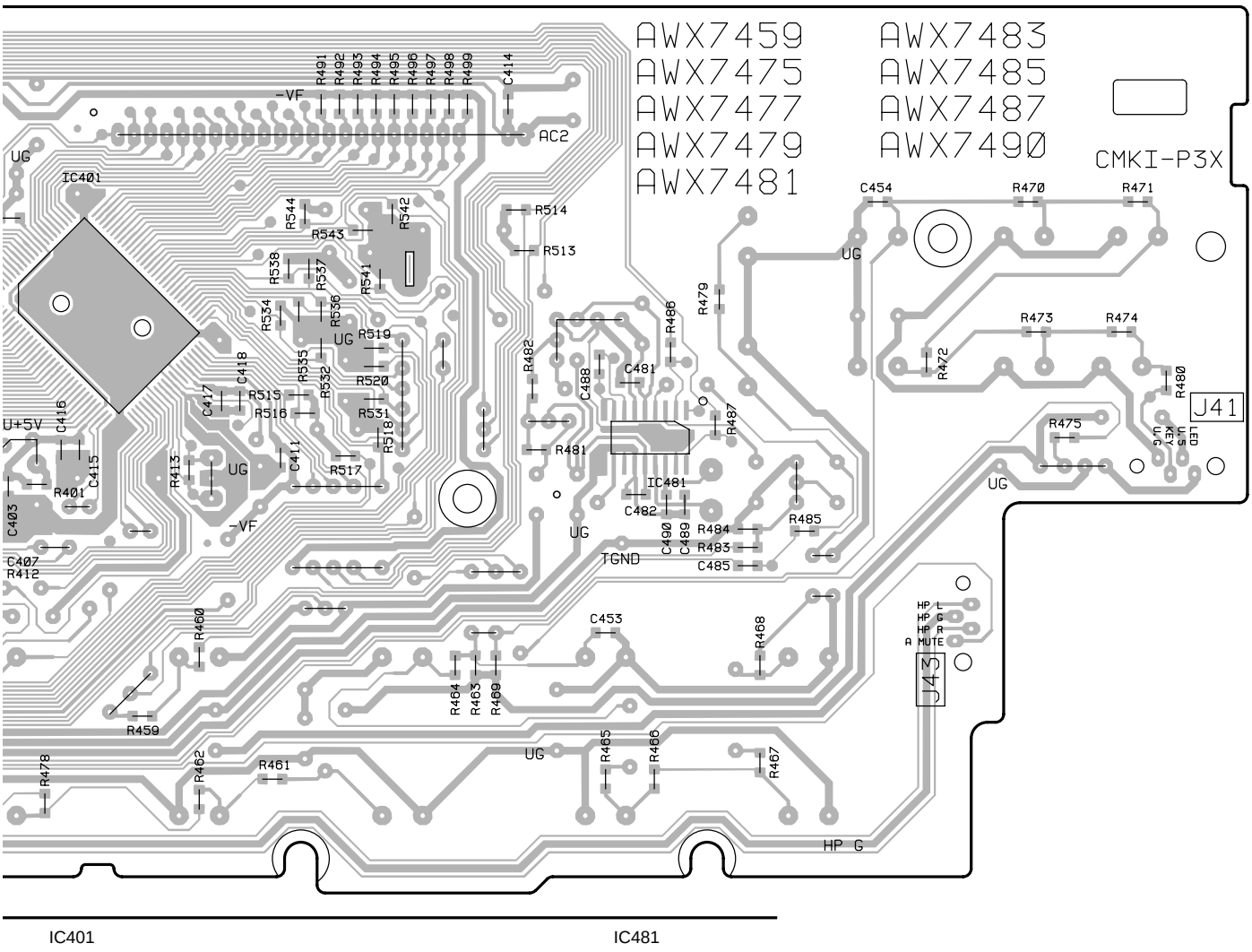
IC401



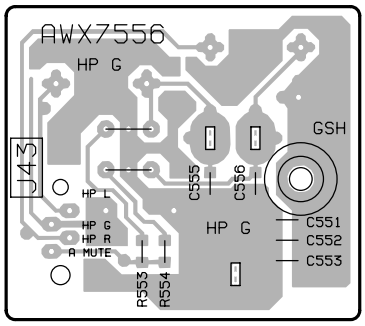
L R.ENCODER ASSY

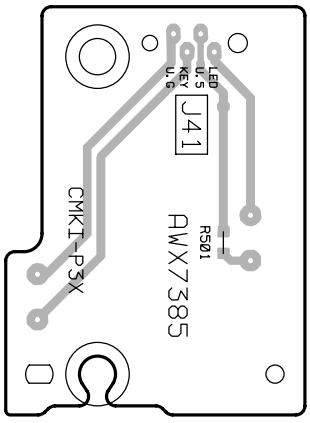
(ANP7341-A)

SIDE B



I H.P. ASSY

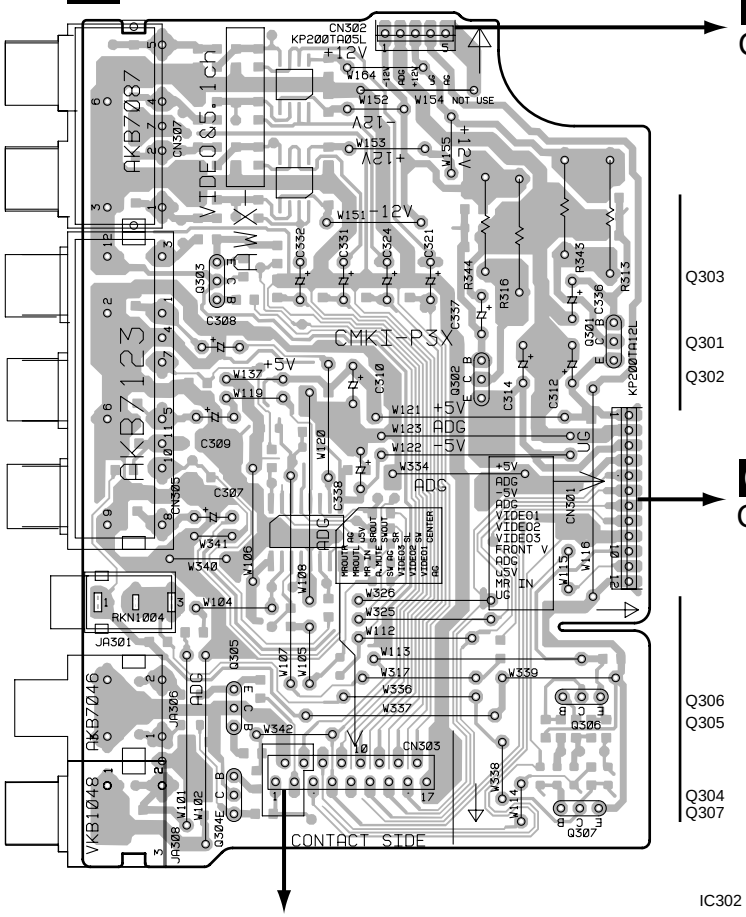




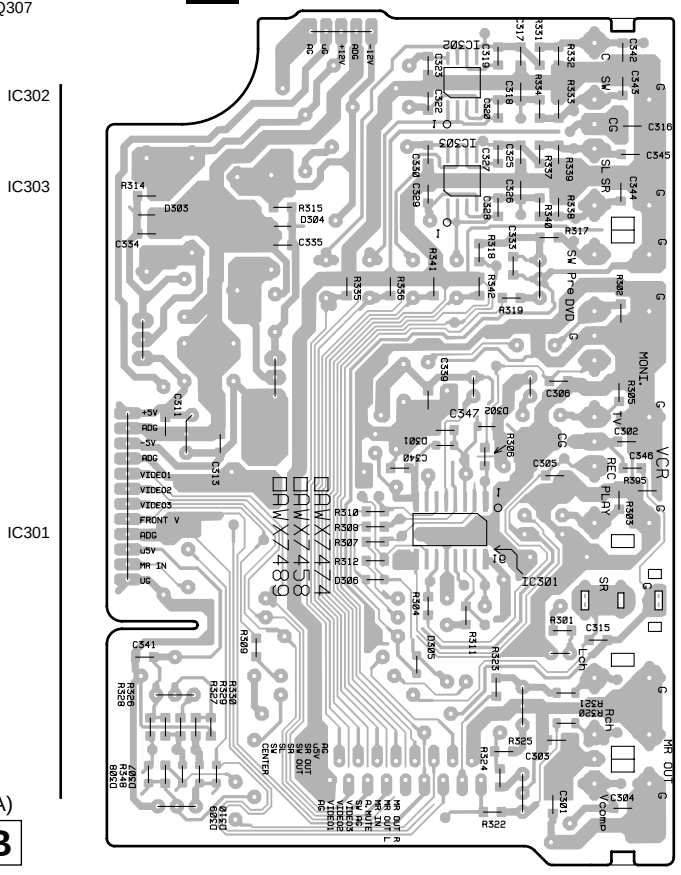
M POWER SW ASSY

4.6 VIDEO&6CH IN ASSY

H VIDEO&6CH IN ASSY

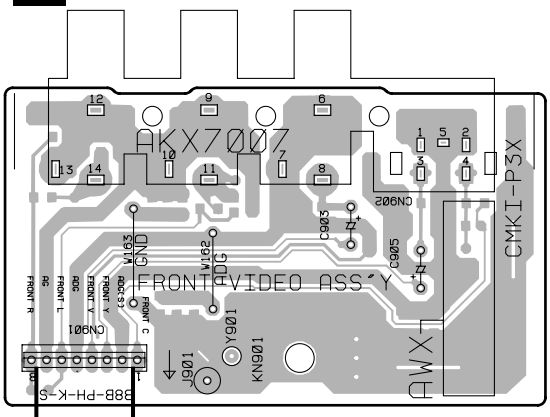


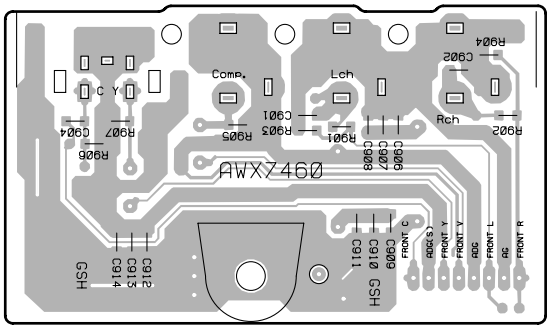
H VIDEO&6CH IN ASSY



4.7 S.VIDEO, BOARD TO BOARD and FRONT VIDEO ASSYS

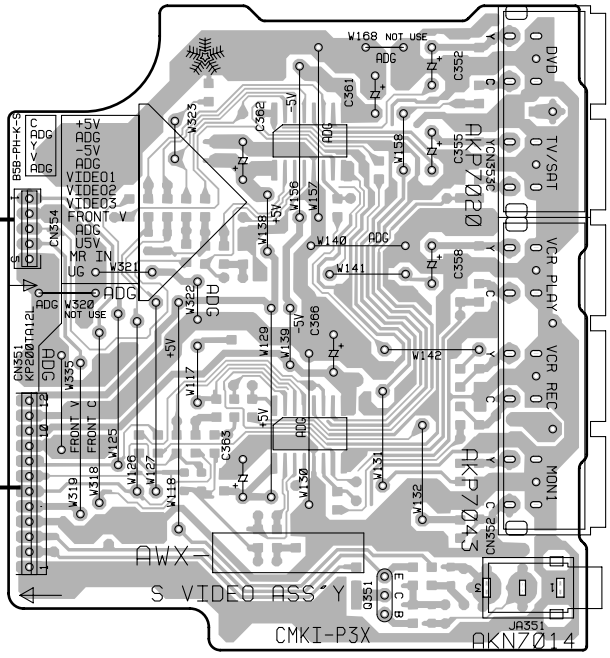
P FRONT VIDEO ASSY

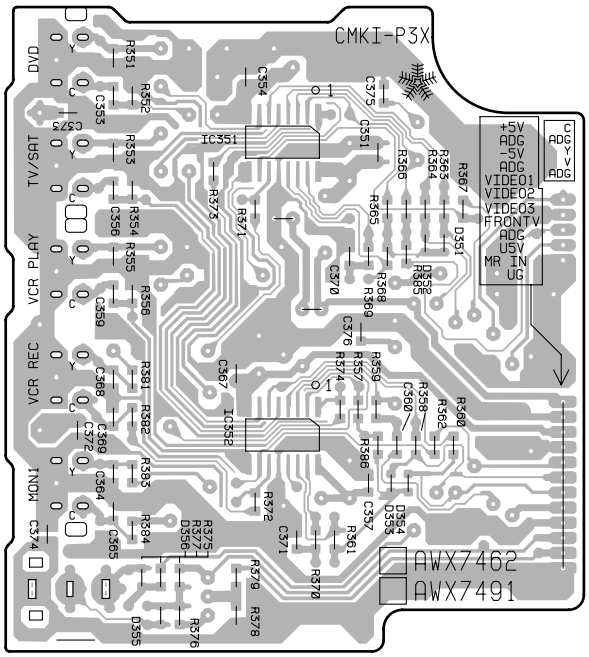




B CN107

N S. VIDEO ASSY

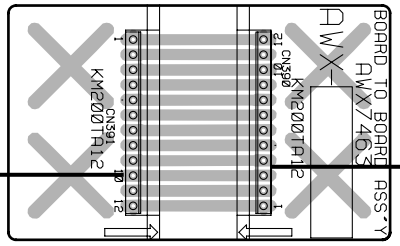




Q351

IC351 IC352

O BOARD TO BOARD ASSY



H CN301

(ANP7341-A)

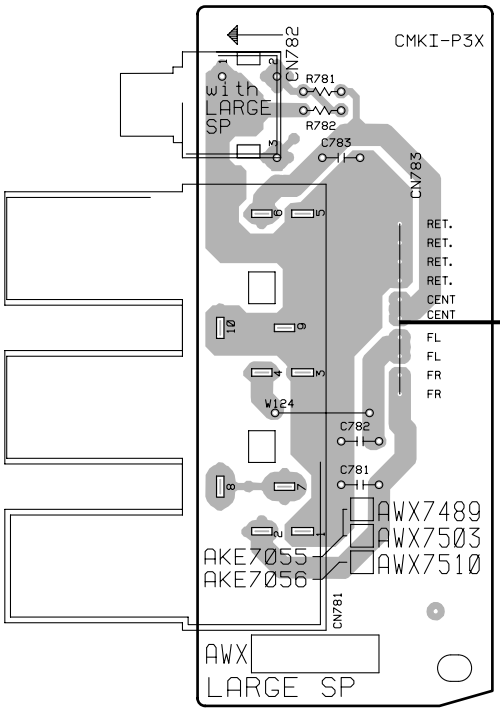
SIDE A

(ANP7341-A)

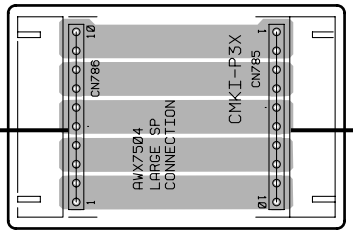
SIDE B

4.8 LARGE SP CONNECTION and LARGE SP ASSYS

R LARGE SP ASSY



Q LARGE SP CONNECTION ASSY



C
CN784

(ANP7331-B)

SIDE A

5. PCB PARTS LIST

NOTES: ●*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.*

●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × 10¹ → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47 × 10³ → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4PC 5 6 2 1 F

Mark	No.	Description	Part No.
NSP		COMPLEX ASSY	AWK7560
	├	POWER SW ASSY	AWX7385
NSP	├	R.ENCODER ASSY	AWX7386
	├	VIDEO&6CH IN ASSY	AWX7458
	├	FRONT VIDEO ASSY	AWX7460
	├	DIGITAL IN ASSY	AWX7461
	├	S. VIDEO ASSY	AWX7462
	├	BOARD TO BOARD ASSY	AWX7463
	├	FRONT ASSY	AWX7483
NSP	└	H.P. ASSY	AWX7556
NSP		AMP&PS ASSY	AWK7562
NSP	├	AMP INPUT ASSY	AWX7382
	├	AMP&PRIMARY ASSY	AWX7466
	├	REGULATOR ASSY	AWX7467
	├	TRANS2 ASSY	AWX7468
	├	LARGE SP ASSY	AWX7503
	├	LARGE SP CONNECTION ASSY	AWX7504
NSP	├	TRANS1 ASSY	AWX7390
NSP	└	TRANS3 ASSY	AWX7392
		D.D & INPUT ASSY	AWX7502

A AMP INPUT ASSY

OTHERS

CN290	52044-1745
CN291	KP200TA16L

B D.D & INPUT ASSY

SEMICONDUCTORS

IC1101	CS4226-KQ(J)
IC1301	KM68257EJ-15
IC108	M5216FP
IC103	M62446FP
IC1001	NJM2100M
IC1602–IC1604,IC1701-IC1705	NJM4558MD
IC1401	PQ20WZ51
IC102	TC9163AF
IC1601	TC9164AF
IC101	TC9273F-007
IC104–IC107	UPC4570G2
IC1201	YSS912C
Q101	2SC2412K
Q1001, Q1002, Q105–Q112	2SC3326
Q1601–Q1606	2SC3326
Q1003, Q1101, Q1607, Q1608, Q1610	DTA124EK
Q103	DTA143EK
Q1004, Q104, Q1102, Q1609	DTC124EK
D1601, D1602	1SS181
D103, D105, D106	1SS355
D104	UDZS5.1B
D101, D102	UDZS6.8B

COILS AND FILTERS

L1401 CHIP SOLID INDUCTOR	ATL7002
F1101, F1123, F1124, F1203, F1204	DTF1064
F1302, F1601, F1602 CHIP BEAD	DTF1064
F101 CHIP BEAD	DTF1067
L1101–L1104 CHIP SOLID INDUCTOR	QTL1013

CAPACITORS

C101–C114, C1207, C1209, C1213	CCSQCH101J50
C1217, C1218, C1221, C1303	CCSQCH101J50
C1640, C1641, C197, C198	CCSQCH101J50
C207, C208	CCSQCH101J50
C1119	CCSQCH271J50
C1123, C1124	CCSQCH331J50
C1118, C1130, C1639	CCSQCH471J50
C1001, C1002, C121, C1212, C122	CCSRCH101J50
C1223, C123, C126–C128	CCSRCH101J50
C152–C154, C159, C160	CCSRCH101J50
C163, C164	CCSRCH101J50
C1102, C1736	CCSRCH102J50
C1707, C1708, C1721, C1722, C173	CCSRCH151J50
C1735, C174	CCSRCH151J50
C1113, C1114	CCSRCH180J50
C1203, C1204	CCSRCH200J50
C1601, C1602, C1609, C1610, C167	CCSRCH221J50
C1623	CCSRCH271J50
C1103, C1104	CCSRCH390J50
C1101, C1106, C1110, C1210	CCSRCH471J50
C1603, C1604, C1611, C1612	CCSRCH471J50
C130–C137, C146	CEAT100M50
C1116, C1121, C1122, C1201, C1404	CEAT101M10
C157, C175, C176	CEAT101M16
C1112	CEAT1R0M50
C1713, C1714, C1727, C1728	CEAT220M25
C1739, C1740	CEAT220M25
C1005, C1202	CEAT221M6R3
C144, C145, C147–C151, C205	CEAT3R3M50
C117, C118, C161, C162	CEAT470M25

Mark	No.	Description	Part No.
	C165, C166, C169		CEAT470M25
	C155, C156		CEAT471M10
	C1003, C1004, C115, C116, C1401		CEAT4R7M50
	C1605, C1606, C1613, C1614		CEAT4R7M50
	C1625, C1626, C170, C194, C195		CEAT4R7M50
	C201		CEAT4R7M50
	C1115		CEATR47M50
	C1301		CEJA101M10
	C1007, C1008		CEJANP100M10
	C1129, C1132, C1206, C1208		CKSQYB103K50
	C1215, C1216, C1220, C1302		CKSQYB103K50
	C1607, C1608, C1619, C1620		CKSQYB103K50
	C1629, C1630, C177–C180, C183		CKSQYB103K50
	C186–C193, C199		CKSQYB103K50
	C1108		CKSQYB224K16
	C140, C143		CKSQYB334K16
	C1009, C1111, C1117, C1133, C1219		CKSQYF104Z25
	C1224, C1225, C1228, C1229, C1231		CKSQYF104Z25
	C1304, C1631, C1632, C209		CKSQYF104Z25
	C184, C185		CKSQYF473Z50
	C1006, C1128, C1134, C119, C120		CKSRYB103K50
	C1205, C1211, C1214, C1222		CKSRYB103K50
	C124, C125, C1636, C1637, C1642		CKSRYB103K50
	C1709, C171, C1710–C1712, C172		CKSRYB103K50
	C1723–C1726, C1737, C1738		CKSRYB103K50
	C1705, C1706, C1719, C1720		CKSRYB104K16
	C1733, C1734		CKSRYB104K16
	C1621		CKSRYB122K50
	C168		CKSRYB152K50
	C139, C142		CKSRYB153K50
	C1615–C1618, C1627, C1703, C1704		CKSRYB222K50
	C1717, C1718, C1731		CKSRYB222K50
	C1107		CKSRYB223K50
	C1701, C1702, C1715, C1716, C1729		CKSRYB682K50
	C1732		CKSRYB682K50
	C138, C141		CKSRYB822K50
	C1105, C1109, C1226, C1227, C1230		CKSRYF104Z16
	C1232, C202		CKSRYF104Z16
	C1628		CKSRYF104Z50

RESISTORS

	R1302, R1689, R215, R216		RS1/10S0R0J
	R211, R212		RS1/10S100J
	R1206–R1208, R1638–R1640		RS1/10S102J
	R115–R118, R121, R122		RS1/10S104J
	R132–R135, R139–R143		RS1/10S104J
	R157, R158, R163, R164		RS1/10S104J
	R185, R186, R192, R193		RS1/10S104J
	R183		RS1/10S122J
	R144		RS1/10S204J
	R103, R104, R111, R112		RS1/10S222J
	R101, R102, R105–R110		RS1/10S331J
	R113, R114, R129, R130		RS1/10S331J
	R1211–R1213		RS1/10S472J
	R138, R1641, R1713, R1714		RS1/10S473J
	R1727, R1728, R1741, R1742, R182		RS1/10S473J
⚠	R174, R175		RS1LMF101J
	Other Resistors		RS1/16S□□□J

Mark	No.	Description	Part No.

OTHERS

	CN1501	CONNECTOR 6P	52045-0645
	CN104, CN105	13P CONNECTOR	52045-1345
	CN106	17P CONNECTOR	52045-1745
	CN103	19P CONNECTOR	52045-1945
	CN102	32P CONNECTOR	52045-3245
	JA101–JA104	PIN JACK(4P)	AKB7048
	CN107	3P CONNECTOR POST	B3B-PH-K-S
	CN101	19P SOCKET	KP200TA19L
	101, 102	PCB BINDER	VEF1040
	X1101	CRYSTAL RESONATOR (18.432MHz)	RSS1052
	X1201	CRYSTAL RESONATOR (12.288MHz)	VSS1140

C AMP&PRIMARY ASSY

SEMICONDUCTORS

⚠	IC603	PROTECTOR (1A)	AEK7009
⚠	IC604–IC607	PROTECTOR (10A)	AEK7022
	IC51		NJM78M56FA
⚠	IC601		PAC010A
⚠	IC602		PAC011A
	Q703		2SA1145
	Q702		2SB1238X
	Q691, Q692		2SC1740S
	Q704		2SC1845
	Q605, Q606, Q633, Q655, Q656		2SC2240
	Q601–Q604, Q631, Q632		2SC2878
	Q651–Q654		2SC2878
	Q701		2SD1859X
	Q51		KRC101M
	D56, D601–D604, D631, D632		1SS133
	D651–D654, D752, D754, D756		1SS133
	D758		1SS133
⚠	D701, D702		D5SBA20(B)
	D711		MTZJ22D
	D58		MTZJ5.1A
	D712		MTZJ5.1B
	D605, D606, D633, D634		MTZJ8.2A
⚠	D51–D55		S5688G

COILS AND FILTERS

⚠	L51	LINE FILTER	ATF7018
	L751–L753, L761, L762	COIL	ATH1004

SWITCHES AND RELAYS

	RY751–RY754		ASR7001
⚠	RY51	JOE LOWPOWER RELAY	ASR7013

CAPACITORS

	C707, C708	(0.01µF/AC250V)	ACG1005
⚠	C51, C52	(10000pF/AC250V)	ACG7020
	C703, C704	(3300µF/42V)	ACH7135
	C701, C702	(4700µF/71V)	ACH7137
	C607–C610, C634, C635		CCCSL6R0D50
	C657–C660		CCCSL6R0D50
	C615, C616, C638, C665, C666		CEANP2R2M50
	C705, C706		CEAT100M2A
	C712		CEAT101M10
	C611, C612, C636, C661, C662		CEAT101M16

Mark	No.	Description	Part No.
	C711		CEAT101M35
	C53		CEAT102M16
	C692		CEAT221M10
	C54		CEAT470M25
	C605, C606, C633, C655, C656		CEAT4R7M50
	C751, C752, C755, C761, C762		CFTYA104J50
	C55–C57		CGCYX103M25
	C601, C602, C631, C651, C652		CKCYB102K50
	C691		CKCYB102K50
	C603, C604, C632, C653, C654		CKCYB331K50
RESISTORS			
⚠	R615, R616, R638, R665, R666	(0.22Ω/5W)	ACN7094
⚠	R51	(2.2MΩ/ 1/2W)	RCN1080
⚠	R52		RD1/2PM270J
⚠	R751, R752, R755, R761, R762		RD1/4PMF101J
⚠	R753, R754, R756, R763, R764		RS1LMF4R7J
⚠	R711		RS2LMF392J
	Other Resistors		RD1/4PU□□□J
OTHERS			
	701	7P CABLE HOLDER	51048-0700
	CN53	22P CONNECTOR	52045-2245
	CN754	SPEAKER TERMINAL 8-P	AKE7057
	51	AC SOCKET 1-P	AKP1060
	H51–H54, H701, H702	FUSE CLIP	AKR7001
⚠	T51	STANDBY TRANSFORMER	ATT7057
	CN601	16P PLUG	KM200TA16
	CN784	10P SOCKET	KP250NA10
	CN51	AC CODE SOCKET	RKP1751
	KN51, KN601		VNF1084
		EARTH METAL FITTING	

D TRANS2 ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
⚠	IC851–IC853	PROTECTOR (1.6A)	AEK7012
OTHERS			
	851	7P CABLE HOLDER	51048-0700

E TRANS3 ASSY

TRANS3 ASSY has no service part.

F REGULATOR ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC803, IC804		NJM78M05FA
	IC801		NJM78M12FA
	IC802		NJM79M12FA
	Q801, Q803, Q805		KRA103M
	Q802, Q804, Q806		KRC101M
⚠	D801–D808		S5688G
CAPACITORS			
	C808, C811		CEAT101M10
	C805, C806		CEAT101M16
	C809		CEAT222M16
	C801, C802		CEAT222M25
	C803, C804, C807, C810		CGCYX103M25
OTHERS			
	CN801	22P CONNECTOR	52045-2245
	CN802	19P PLUG	KM200TA19
	CN803	5P PLUG	KM200TA5

G TRANS1 ASSY

TRANS1 ASSY has no service part.

H VIDEO&6CH IN ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC301		NJM2296M
	IC302, IC303		NJM4558MD
	Q302		2SA1515
	Q303		2SC2878
	Q301		2SC3377
	D301, D302, D305, D306		1SS355
	D303, D304		UDZS6.2B
CAPACITORS			
	C319, C320, C327, C328		CCSQCH101J50
	C342–C345		CCSQCH101J50
	C347		CCSQCH470J50
	C307–C310, C312, C314, C338		CEAT470M25
	C321, C324, C331, C332		CEAT4R7M50
	C302, C315, C316, C322, C323		CKSQYB103K50
	C329, C330		CKSQYB103K50
	C346		CKSQYB104K16
	C304–C306, C317, C318		CKSQYB221K50
	C325, C326		CKSQYB221K50
	C333		CKSQYB331K50
	C311, C313		CKSQYB473K50
RESISTORS			
⚠	R313, R316		RS2LMF560J
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN303	13P CONNECTOR	52044-1345
	CN307	PIN JACK(4P)	AKB7087
	CN305	6P PIN JACK	AKB7123
	CN301	12P SOCKET	KP200TA12L
	CN302	5P SOCKET	KP200TA5L
	JA301	JACK	RKN1004

I H.P. ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	Q551, Q552		2SC2878
CAPACITORS			
	C553		CCSQCH471J50
	C552		CKSQYB103K50
	C551		CKSQYB104K16
	C555, C556		CKSQYB223K50
RESISTORS			
⚠	R551, R552		RS1/2LMF121J
	Other Resistors		RS1/10S□□□J

Mark	No.	Description	Part No.
OTHERS			
	551	CABLE HOLDER(4P)	51063-0405
	JA551	JACK	RKN1002

J DIGITAL IN ASSY

SEMICONDUCTORS			
	IC1901		TC74ACT151F
	IC1902		TC74HCU04AF
COILS AND FILTERS			
	F1901–F1904	CHIP BEAD	DTF1067
CAPACITORS			
	C1917		CCSQCH220J50
	C1918		CCSQCH221J50
	C1907, C1914		CCSQCH271J50
	C1916		CCSQCH471J50
	C1911		CCSQCH560J50
	C1904, C1905, C1912		CEAT101M10
	C1915		CKSQYB102K50
	C1906, C1910, C1913, C1919, C1920		CKSQYB103K50
	C1922		CKSQYB103K50
	C1901–C1903, C1908, C1909, C1921		CKSQYB104K25
RESISTORS			
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN1901	CONNECTOR 6P	52045-0645
	JA1902,JA1903	OPTICAL RECEIV MOD.	GP1F32R
	JA1904	OPTICAL LINK OUT	GP1F32T
	JA1901	JACK	VKB1077

K FRONT ASSY

SEMICONDUCTORS			
	IC401		PDG247A
	Q405		2SA933S
	Q401, Q402, Q442, Q471		KRA103M
	Q403, Q441		KRC101M
	D407, D408, D442		1SS355
	D403, D405		DAN217
	D401, D404		DAP202K
COILS AND FILTERS			
	L401		LFEA2R2J
SWITCHES AND RELAYS			
	S451–S467, S469–S476		XSG3001
CAPACITORS			
	C404	(0.047F/5.5V)	ACH7017
	C420	(220µF/35V)	ACH7101
	C402, C405		CEAT221M6R3
	C409, C410		CEAT2R2M50
	C412		CEAT470M50
	C442		CEJA470M10
	C451–C454, C495		CKSQYB102K50
	C401, C403, C411, C441, C531		CKSQYB103K50
	C408, C416, C418, C491–C494		CKSQYB104K16
	C532		CKSQYB223K25
	C406, C407		CKSQYB473K16
RESISTORS			
	Other Resistors		RS1/10S□□□J
OTHERS			
	491	CABLE HOLDER(3P)	51063-0305
	403, 471	CABLE HOLDER(4P)	51063-0405
	CN401	19P CONNECTOR	52044-1945
	CN402	32P CONNECTOR	52044-3245
	V401	FL TUBE	AAV7072
	X401	CERAMIC RESONATOR (7.2MHz)	ASS7018
	401	REMOTE RECEIVER UNIT	GP1U27X

L R.ENCODER ASSY

SWITCHES AND RELAYS			
	S511		ASX7004
OTHERS			
	511	CABLE HOLDER(3P)	51063-0305

M POWER SW ASSY

SEMICONDUCTORS			
	D501		BR3371XJ30A
SWITCHES AND RELAYS			
	S501		XSG3001
RESISTORS			
	Other Resistors		RS1/10S□□□J
OTHERS			
	501	CABLE HOLDER(4P)	51063-0405

N S. VIDEO ASSY

SEMICONDUCTORS			
	IC351, IC352		NJM2296M
	D351–D354		1SS355
CAPACITORS			
	C375, C376		CCSQCH470J50
	C352, C355, C358, C361–C363		CEAT470M25
	C366		CEAT470M25
	C372, C373		CKSQYB103K50
	C353, C356, C359, C360		CKSQYB104K25
	C364, C365, C368–C371		CKSQYB221K50
RESISTORS			
	Other Resistors		RS1/10S□□□J

Mark	No.	Description	Part No.
OTHERS			
	CN353	MINI DIN SOCKET 2P	AKP7020
	CN352	MINI DIN SOCKET 3P	AKP7043
	CN354	CONNECTOR POST	B5B-PH-K-S
	CN351	12P SOCKET	KP200TA12L

O BOARD TO BOARD ASSY

OTHERS			
	CN390, CN391	12P PLUG	KM200TA12

P FRONT VIDEO ASSY

CAPACITORS			
	C903, C905		CEAT470M25
	C908, C911, C914		CKSQYB103K50
	C904, C906, C909, C912		CKSQYB104K25
	C901, C902		CKSQYB221K50
	C907, C910, C913		CKSQYB471K50
RESISTORS			
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN902	PIN JACK(4P)	AKX7007
	KN901	EARTH METAL FITTING	VNF1084

Q LARGE SP CONNECTION ASSY

OTHERS			
	CN785, CN786	10P PLUG	KM250NA10L

R LARGE SP ASSY

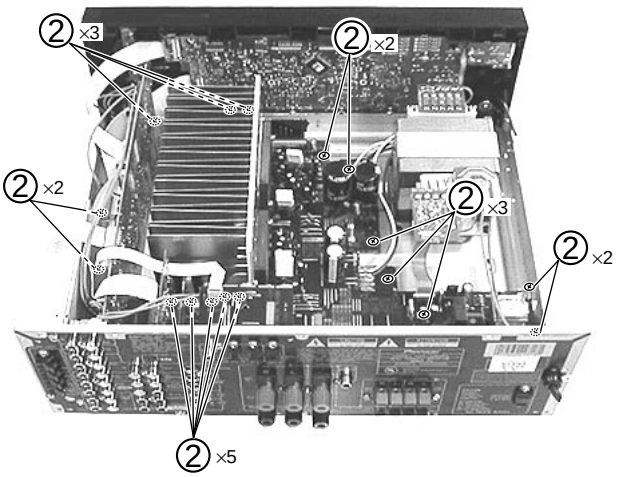
RESISTORS			
	Other Resistors		RD1/4PU□□□J
OTHERS			
	CN782	PIN JACK 1P	AKB7042
	CN781	SPEAKER TERMINAL 6P	AKE7055
	CN783	10P SOCKET	KP250NA10

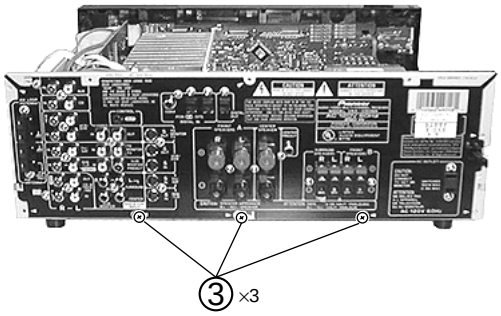
6. ADJUSTMENT

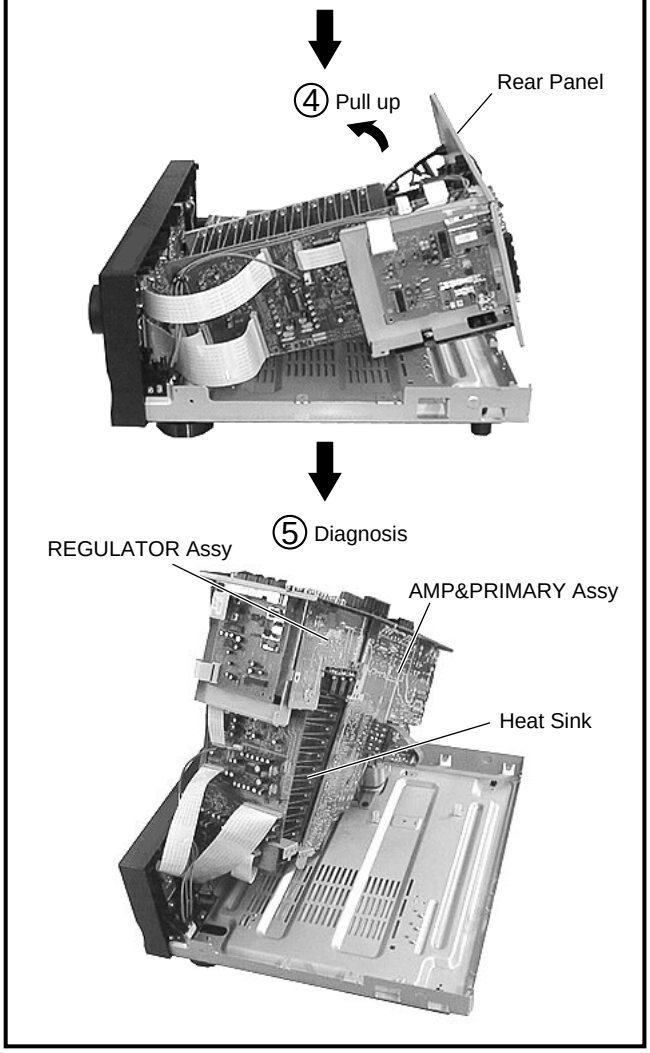
There is no information to be shown in this chapter.

7. GENERAL INFORMATION
7.1 DISASSEMBLY
■ Diagnosis

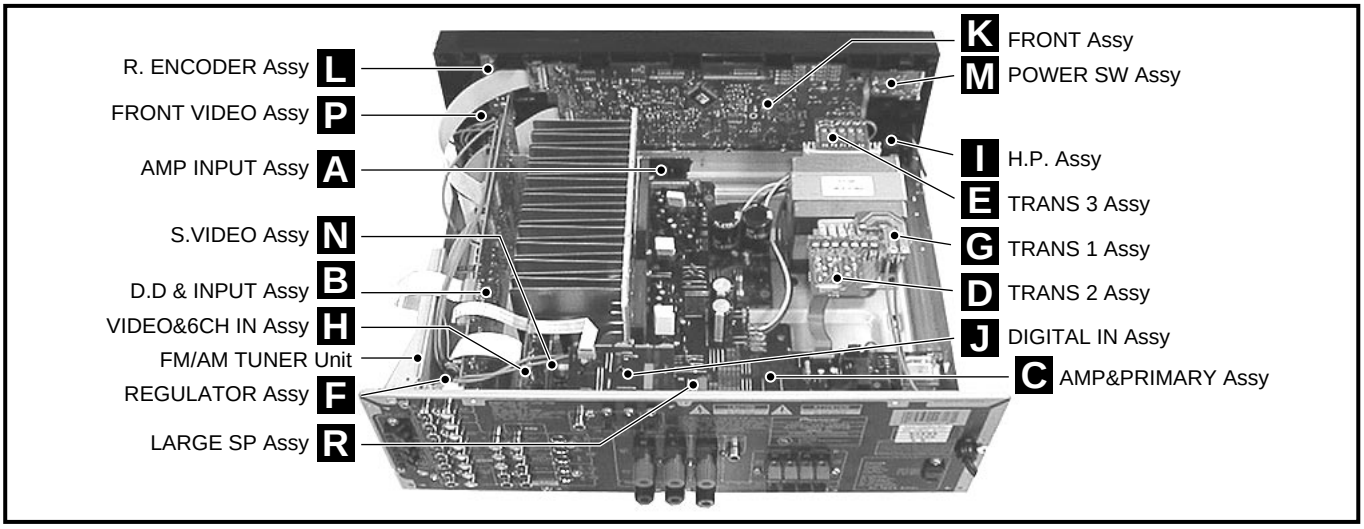
① Remove the Bonnet (seven screws).







■ PCB Location



7.2 PARTS

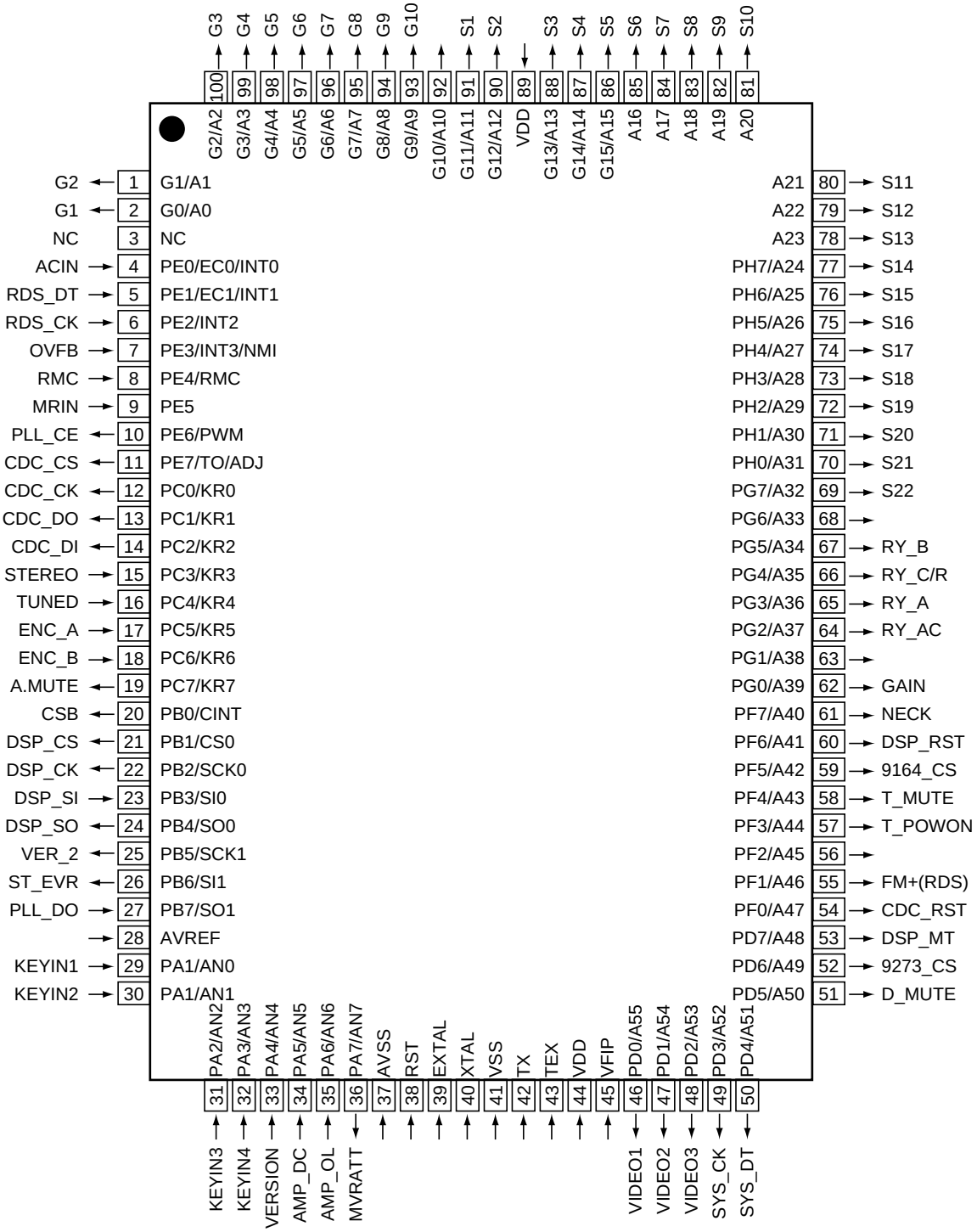
7.2.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PDG247A (FRONT ASSY : IC401)

• System Control MCU

● Pin Arrangement (Top View)



● Pin Function

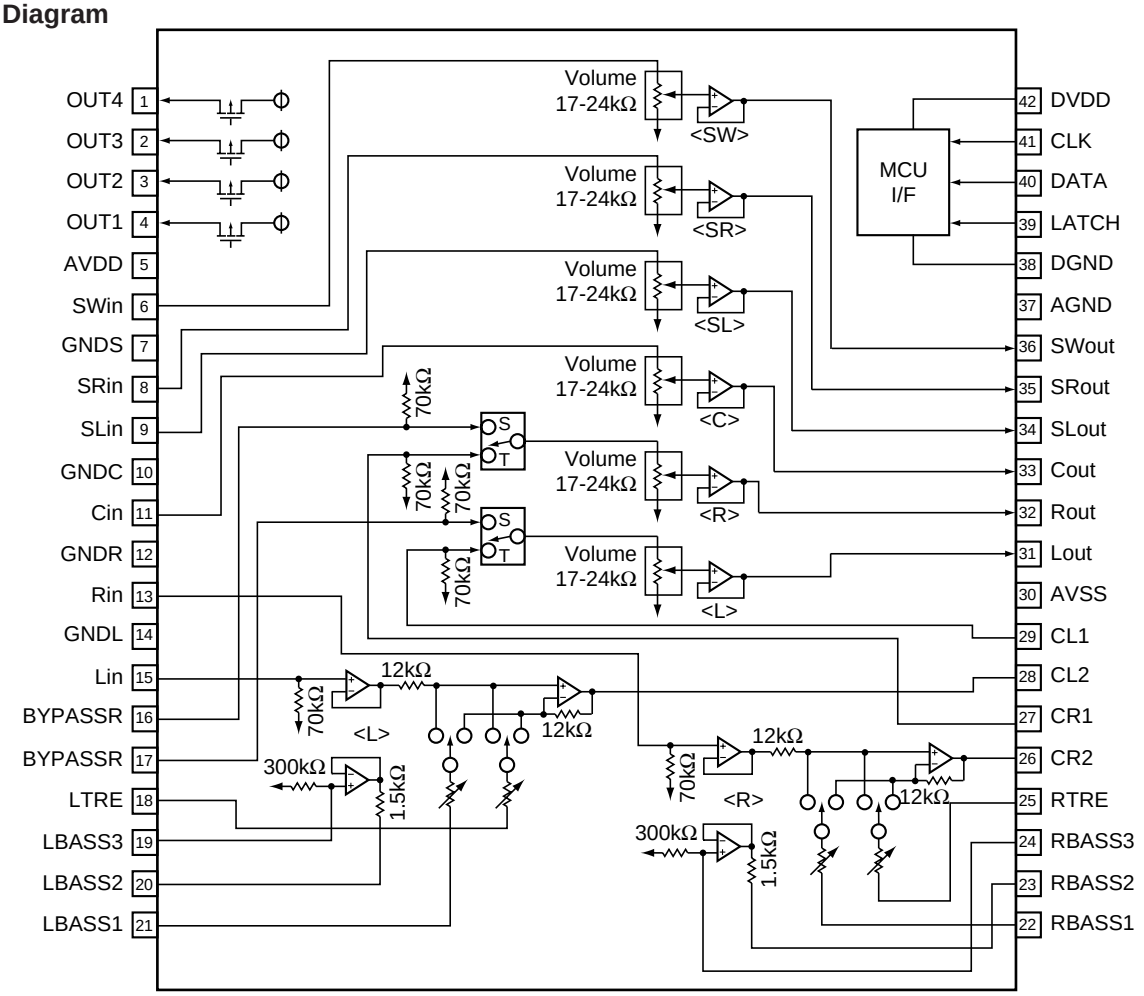
No.	Pin Name	I/O	Pin Function	Active
1	G2	O	Grid output 2	H
2	G1	O	Grid output 1	H
3	NC	–	Connect to VDD	
4	ACIN	I	AC pulse input	
5	RDS_DT	I	Serial control DATA signal of RDS communication	
6	RDS_CK	I	Serial control CLOCK signal of RDS communication	
7	DIRLOCK	I	ERR/OVER input from CODEC	
8	RMC	I	Remote control signal input (no-carrier signal)	
9	MRIN	I	MULTI-ROOM input	
10	PLL_CE	O	Chip select signal for communication with LC72131 (tuner)	H
11	CDC_CS	O	CODEC chip serect	
12	CDC_CK	O	CODEC, TC9164 control clock	
13	CDC_DO	O	CODEC, TC9164 control data output	
14	CDC_DI	I	Data input from CODEC	
15	STEREO	I	Stereo/Monoral signal judgment signal	
16	TUNED	I	TUNED information	
17	ENC_A	I	Rotary encoder signal input A	
18	ENC_B	I	Rotary encoder signal input B	
19	AMUTE	O	Audio mute	L
20	CSB	O	Chip select for control of YSS912 sub DSP	L
21	DSP_CS	O	Chip select for control of YSS912 main DSP	L
22	DSP_CK	O	Clock signal for communication with YSS912	H
23	DSP_SI	I	DATA input for communication with YSS912	
24	DSP_SO	O	DATA output signal for communication with YSS912	H
25	VER_2	I	Destination switch 2	
26	ST_EVR	O	Strobe signal for communication with electric volume IC	H
27	PLL_DO	I	Data input signal for communication with LC72131 (tuner)	
28	AVref	–	Connect to VDD	
29	KEYIN1	I	Key input A/D conversion port 1	
30	KEYIN2	I	Key input A/D conversion port 2	
31	KEYIN3	I	Key input A/D conversion port 3	
32	KEYIN4	I	Key input A/D conversion port 4	
33	VER 1	I	Destination switch (A/D input)	
34	AMP_DC	I	DC abnormality detection of protection circuit (L : Abnormality detection)	L
35	AMP_OL	I	Over-load detection of protection circuit (L : Abnormality detection)	L
36	MVRATT	O	ATT control of master volume (L : Less than -15dB)	H
37	AVSS	–	Connect to VSS	
38	RST	–	Reset	
39	EXTAL	–	Connect to the oscillator (7.2MHz)	
40	XTAL	–		
41	VSS	–	Connect to VSS	
42	TX	–	Open	
43	TEX	–	Connect to VSS	
44	VDD	–	+5V	
45	VFDP	–	-30V	
46	VIDEO1	O	NJM2296D control	H
47	VIDEO2			
48	VIDEO3			
49	SYS_DT	O	Data signal for communication with M62446, TC9163, TC9164 and PLL	H
50	SYS_CK	O	Clock signal for communication with M62446, TC9163, TC9164 and PLL	H

No.	Pin Name	I/O	Pin Function	Active
51	D_MUTE	O	Digital mute (Not used)	H
52	9273_CS	O	TC9273 Chip select	H
53	DSP_MT	O	DSP mute (ASSY mute)	H
54	CDC_RST	O	CODEC reset	H
55	FM+(RDS)	O	Tr switch ON/OFF for power supply of RDS decoder (L : AM, power OFF , H : Other)	H
56		O	Not used	
57	T_POWON	O	Tuner module ON/OFF (North America model only)	H
58	T_MUTE	O	Tuner mute	H
59	9164 CS	O	TC9163, TC9164 Chip select	H
60	DSP_RST	O	YSS912 reset	
61	NECK_SEL	O	5.1ch, surround mode and A+B Stereo : H / Stereo : L	H/L
62	GAIN_SEL	O	Gain select (5.1ch and Stereo of analog input : H)	H
63		O	Not used	H
64	RY_AC	O	AC relay ON/OFF	H
65	RY_A	O	Speaker A relay ON/OFF	H
66	RY_C/R	O	Rear/Center Speaker relay ON/OFF	H
67		O	Not used	H
68		O	Not used	H
69	S22	O	Segment output 22	H
70	S21		Segment output 21	
71	S20		Segment output 20	
72	S19		Segment output 19	
73	S18		Segment output 18	
74	S17		Segment output 17	
75	S16		Segment output 16	
76	S15		Segment output 15	
77	S14		Segment output 14	
78	S13		Segment output 13	
79	S12		Segment output 12	
80	S11		Segment output 11	
81	S10		Segment output 10	
82	S9		Segment output 9	
83	S8		Segment output 8	
84	S7		Segment output 7	
85	S6		Segment output 6	
86	S5		Segment output 5	
87	S4		Segment output 4	
88	S3		Segment output 3	
89	VDD	–	5V	
90	S2	O	Segment output 2	H
91	S1		Segment output 1	
92			Not used (Fixed Vfdp)	
93	G10	O	Grid output 10	H
94	G9		Grid output 9	
95	G8		Grid output 8	
96	G7		Grid output 7	
97	G6		Grid output 6	
98	G5		Grid output 5	
99	G4		Grid output 4	
100	G3		Grid output 3	

M62446FP (D.D & INPUT ASSY : IC103)

• Sound Controller IC (Volume and Tone Control)

● Block Diagram



● Pin Function

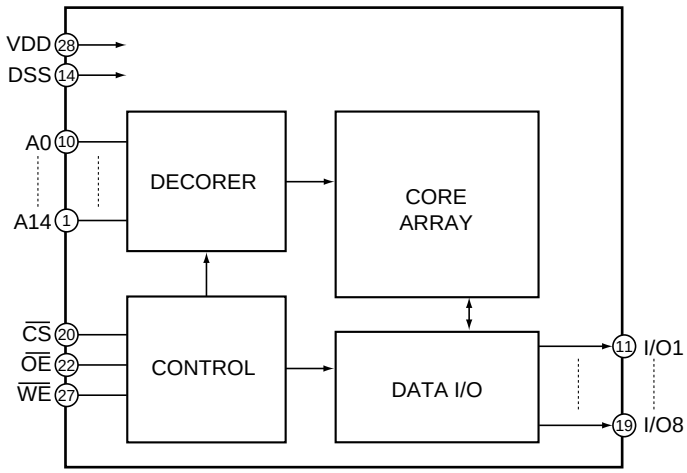
No.	Pin Name	Function
1	OUT4	Output port (open drain of PchTr)
2	OUT3	
3	OUT2	
4	OUT1	
5	AVDD	Analog positive power supply port
7	GNDS	GND (connect to analog ground)
10	GNDC	
12	GNDR	
14	GNDL	
6	SWin	Volume input
8	SRin	
9	SLin	
11	Cin	
36	SWout	Volume output
35	SRout	
34	SLout	
33	Cout	
13	Rin	TONE input
15	Lin	
16	BYPASSR	L and R Volume input at bypass
17	BYPASSL	
31	Lout	L output
32	Rout	R output

No.	Pin Name	Function
18	LTRE	TONE TREBLE frequency control port
25	RTRE	
19	LBASS3	TONE BASS frequency control port
24	RBASS3	
20	LBASS2	
23	RBASS2	
21	LBASS1	
22	RBASS1	
26	CR2	TONE output port
28	CL2	
27	CR1	L and R volume input
29	CL1	
31	Lout	L output
32	Rout	R output
30	AVSS	Analog negative power supply port
37	AGND	Analog ground port
38	DGND	Digital ground port
39	LATCH	Latch input port
40	DATA	Data input port
41	CLK	Clock input port for data transmission
42	DVDD	Digital power supply port

W24257AJ-12 (D.D & INPUT ASSY : IC1301)

- **32K × 8 High-Speed CMOS Static RAM**

● Block Diagram



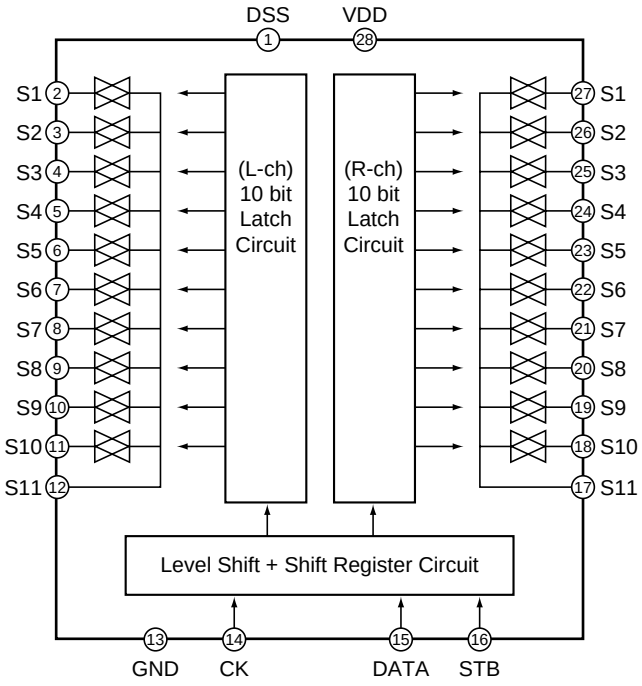
● Pin Function

No.	Pin Name	Function
1	A14	Addres Inputs
2	A12	
3	A7	
4	A6	
5	A5	
6	A4	
7	A3	
8	A2	
9	A1	
10	A0	
21	A10	
23	A11	
24	A9	
25	A8	
26	A13	
11	I/O1	Data Inputs/Outputs
12	I/O2	
13	I/O3	
15	I/O4	
16	I/O5	
17	I/O6	
18	I/O7	
19	I/O8	
14	Vss	Ground
20	CS	Chip Select Input
22	OE	Output Enable Input
27	WE	Write Enable Input
28	Vdd	Power Supply

TC9273F-007 (D.D & INPUT ASSY : IC101)

- **Analog Switch Array**

● Block Diagram



● Pin Function

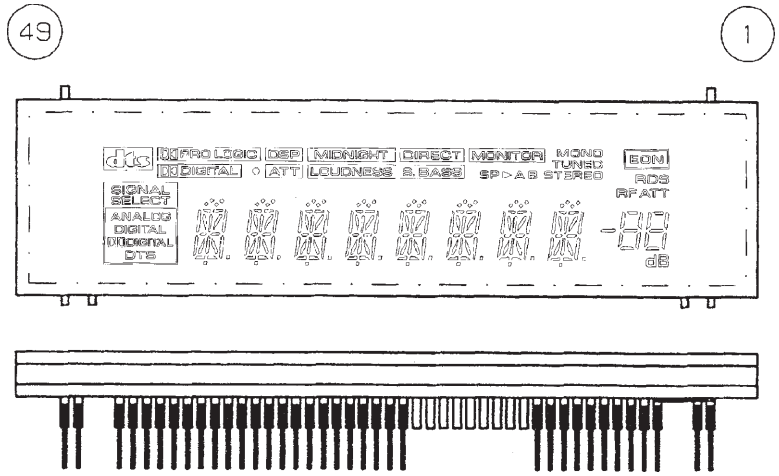
No.	Pin Name	Function
1	VSS	Minus Power Supply
2, 27	S1	Input and Output
3, 26	S2	
4, 25	S3	
5, 24	S4	
6, 23	S5	
7, 22	S6	
8, 21	S7	
9, 20	S8	
10, 19	S9	
21, 18	S10	
26, 17	S11	
13	GND	Digital Ground
14	CK	Clock Input
15	DATA	Data Input
16	STB	Strobe Input
28	VDD	Plus Power Supply

7.2.2 DISPLAY

■ AAV7072 (FRONT ASSY : V401)

- **FL DISPLAY**

● Pin Assignment

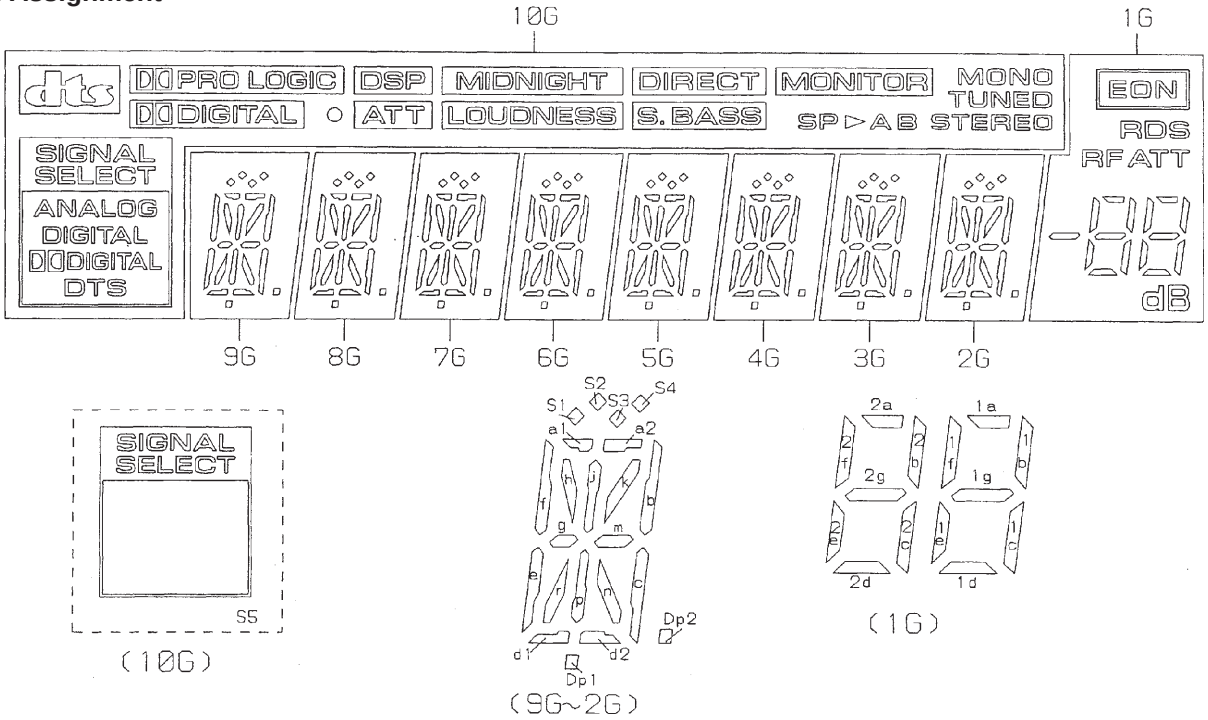


● Pin Connection

PIN NO.	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	F2	NP	NP	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NX	NX	NX	NX	NX	NX	NX	NX	NX	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	F1	F1

NOTE 1) F1,F2 --- Filament
2) NP ------ No pin
3) NX ------ No extend pin
4) DL ------ Datum Line
5) 1G~10G --- Grid

● Grid Assignment



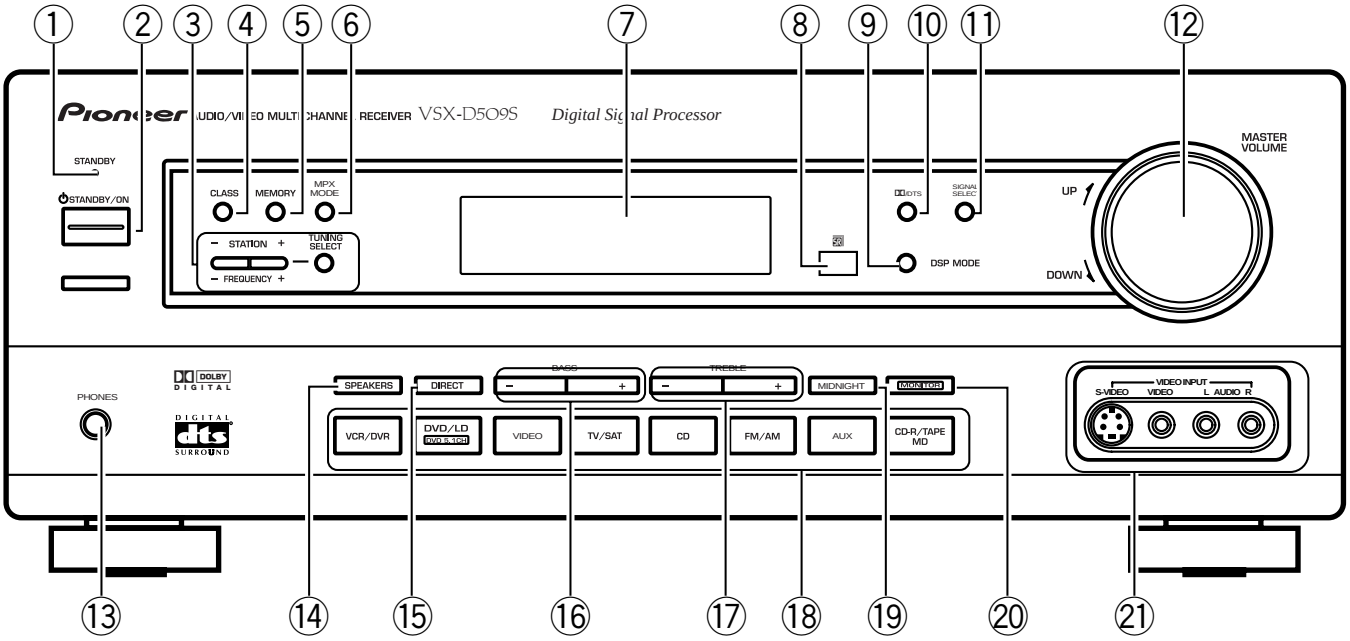
● **Anode Connection**

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	STEREO	a1	a1	a1	a1	a1	a1	a1	a1	dB
P2	TUNED	a2	a2	a2	a2	a2	a2	a2	a2	2a
P3	MONO	h	h	h	h	h	h	h	h	2b
P4	B	j	j	j	j	j	j	j	j	2f
P5	A	k	k	k	k	k	k	k	k	2g
P6	SP ▷	b	b	b	b	b	b	b	b	2c
P7	MONITOR	f	f	f	f	f	f	f	f	2e
P8	S. BASS	m	m	m	m	m	m	m	m	2d
P9	DIRECT	g	g	g	g	g	g	g	g	1a
P10	LOUDNESS	c	c	c	c	c	c	c	c	1b
P11	MIDNIGHT	e	e	e	e	e	e	e	e	1f
P12	ATT	r	r	r	r	r	r	r	r	1g
P13	DSP	p	p	p	p	p	p	p	p	1c
P14	○	n	n	n	n	n	n	n	n	1e
P15	DIGITAL	d1	d1	d1	d1	d1	d1	d1	d1	1d
P16	PRO LOGIC	d2	d2	d2	d2	d2	d2	d2	d2	⬭
P17	DTS	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	RDS
P18	DIGITAL	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	RF ATT
P19	DIGITAL	S1	S1	S1	S1	S1	S1	S1	S1	EON
P20	ANALOG	S4	S4	S4	S4	S4	S4	S4	S4	(EON)
P21	S5	S2	S2	S2	S2	S2	S2	S2	S2	-
P22	dts	S3	S3	S3	S3	S3	S3	S3	S3	-

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

Front Panel



① **STANDBY indicator**

Lights when the receiver is in standby mode (note that the receiver consumes a small amount of power (1W) in standby mode).

② ⏻ **STANDBY/ON button**

Switches the receiver between on and standby.(note that the receiver consumes a small amount of power (1W) in standby mode).

③ **STATION (+/–), FREQUENCY (+/–), TUNING SELECT buttons**

STATION (+/–)
Selects station memories when using the tuner.
FREQUENCY (+/–)
Selects the frequency when using the tuner.
TUNING SELECT
Switches between station memory and frequency select modes.

④ **CLASS button**

Switches between the three banks (classes) of station memories.

⑤ **MEMORY button**

Press to memorize a station for recall using the STATION **(+/–)** buttons.

⑥ **MPX button**

If the **TUNED** or **STEREO** indicators don't light when tuning to an FM station because the signal is weak, press the MPX button to switch the receiver into mono reception mode. This should improve the sound quality and allow you to enjoy the broadcast.

⑦ **Display**

⑧ **Remote sensor**

Receives the signals from the remote control.

⑨ **DSP MODE button**

Use to switch between the various DSP modes available (**HALL1, HALL 2, JAZZ, DANCE, THEATER1, THEATER 2**) and **DSP off**. Use to create different surround sound effects from any stereo source.

⑩ **/DTS button**

Use to switch between the various Dolby/DTS surround modes.

⑪ **SIGNAL SELECT button**

Use to select between an analog or digital signal.

⑫ **MASTER VOLUME**

Use to set the overall listening volume.

⑬ **PHONES jack**

Use to connect headphones but this does not switch the speakers off.

⑭ **SPEAKER button**

Use to switch the speaker system A → B → A+B → off.

⑮ **DIRECT button**

Use to switch DIRECT playback on or off. This mode bypasses the tone controls and channel levels for the most accurate reproduction of a program source.

⑯ **BASS (+/–) buttons**

Use to increase/decrease bass (within a range of -6dB to 6dB in 2dB steps).

⑰ **TREBLE (+/–) buttons**

Use to increase/decrease treble (within a range of -6dB to 6dB in 2dB steps).

⑱ **Function buttons**

Use to select a source for playback or recording.

⑲ **MIDNIGHT button**

Use when listening to movie soundtracks at low volume. This feature will enable you to hear quiet sounds and not get jolted by loud or sudden sound effects.

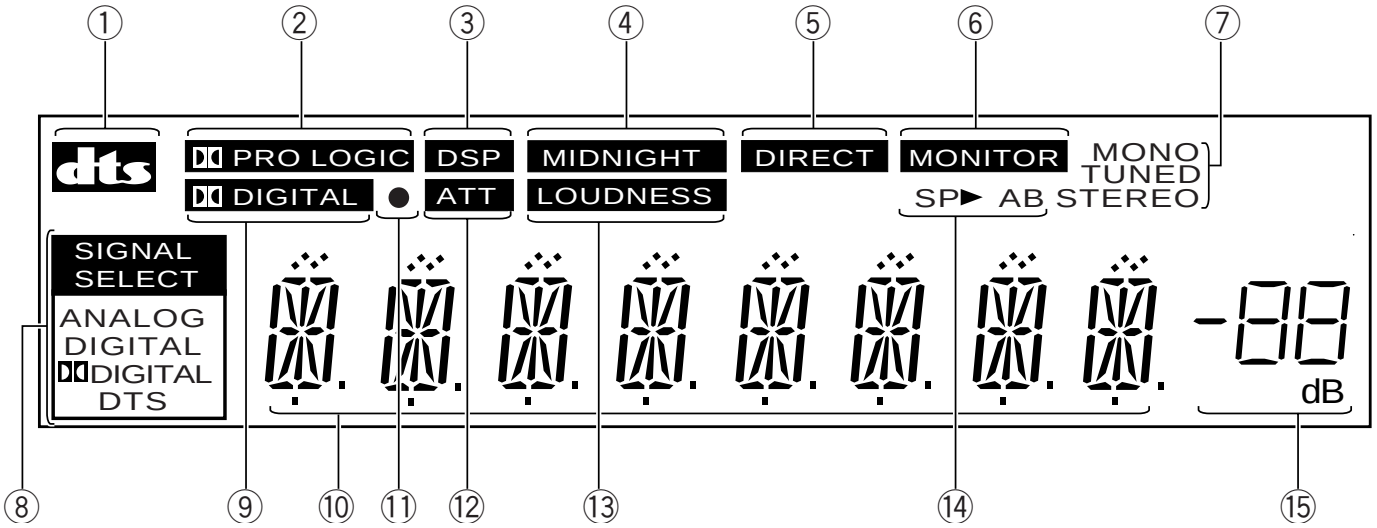
⑳ **MONITOR button**

Press to switch tape monitoring on/off.

㉑ **VIDEO INPUT jacks**

Connect a video camera, video game system, etc. to the VIDEO INPUT jacks.

Display



① **DTS indicator**
Lights when DTS mode is being used.

② **PRO LOGIC indicator**
When the (DOLBY)/DTS mode of the receiver is on, this lights to indicate playback of a two channel source.

③ **DSP indicator**
Lights when any Advanced Theater or DSP mode is selected.

④ **MIDNIGHT indicator**
Lights when MIDNIGHT listening mode is in use.

⑤ **DIRECT indicator**
Lights when source DIRECT is in use. This function bypasses all tone, balance, DSP and Dolby Surround effects.

⑥ **MONITOR indicator**
Lights when **MONITOR** is selected to hear a recording as it's being made.

⑦ **TUNER indicators**
MONO:
Lights when the mono mode is set using the MPX MODE button.
TUNED:
Lights when a broadcast is being received.
STEREO:
Lights when a stereo FM broadcast is being received in auto stereo mode.

⑧ **SIGNAL SELECT indicators**
Light to indicate the type of input signal assigned for the current component (see “Front Panel“, ⑪, SIGNAL SELECT).
ANALOG : Lights when an analog signal is selected.
DIGITAL : Lights when a digital audio signal is selected.
DIGITAL : Lights when a DOLBY DIGITAL signal is played.
DTS: Lights when a source with DTS audio signals is played.

⑨ **DIGITAL indicator**
When the (DOLBY)/DTS mode of the receiver is on, this lights to indicate playback of a Dolby Digital signal. However, PRO LOGIC lights during 2 channel playback of Dolby Digital.

⑩ **CHARACTER display**
Shows the radio frequency or function (DVD/LD, CD, etc.) receiver is using .

⑪ **OVERLOAD indicator**
This lights when an analog signal is too strong (the SIGNAL SELECT needs to be on ANALOG). It indicates the sound is distorting and the signal should be reduced.

⑫ **ATT indicator**
Lights when ATT is used to attenuate (reduce) the level of the input signal (can only be used in ANALOG mode).

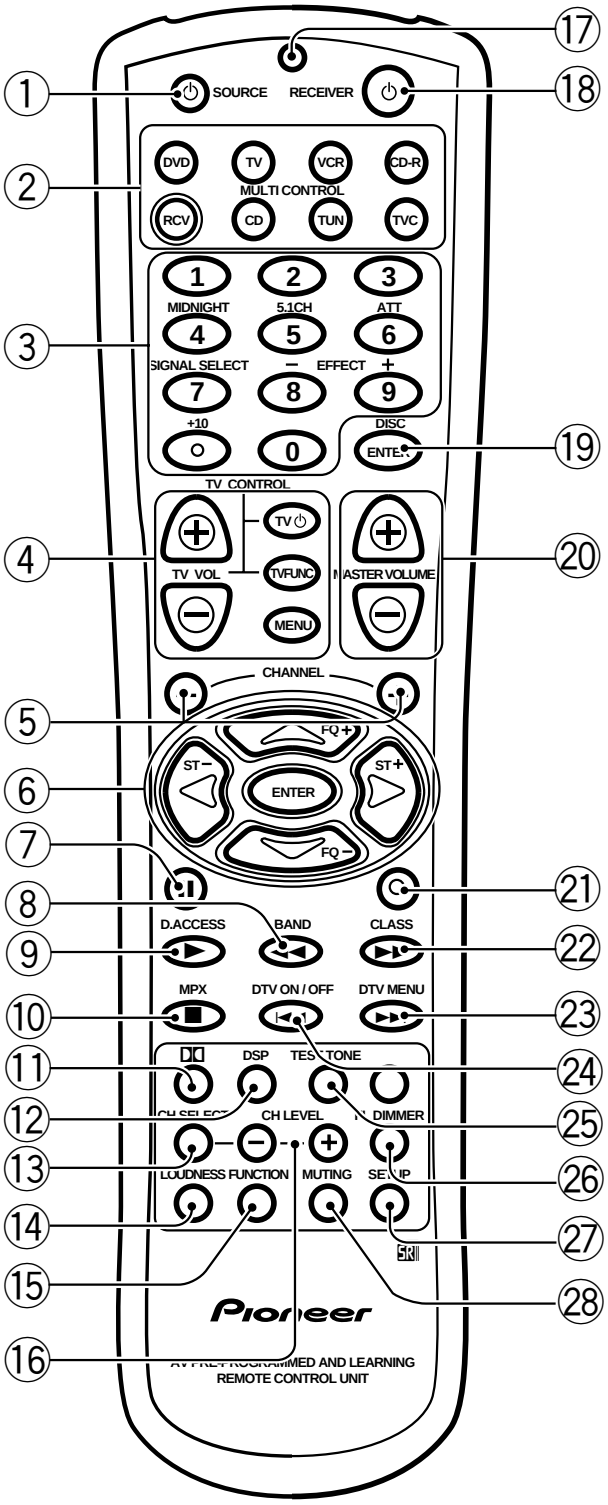
⑬ **LOUDNESS indicator**
Lights when the LOUDNESS, used to boost the bass and treble in quiet listening, is on.

⑭ **SPEAKER indicator**
Shows if the speaker system is on or not. SP ►A and/or B means speakers are switched on. SP ► means speakers are switched off.

⑮ **MASTER VOLUME LEVEL**
Shows the overall volume level. Volume level is maintained even when the power is off. ---dB indicates the minimum level, and 0dB indicates the maximum level.

- Depending on the level settings you make for individual channels, the MAX level can range between –10dB and 0dB.

Remote Control



① SOURCE ⏻ button

Use to turn on/off other components coneccted to the receiver.

② MULTI CONTROL buttons

Use to put the receiver/remote control in the stated mode.

③ NUMBER/MODE buttons

Use the number buttons to select the radio frequency in tuner DIRECT ACCESS mode or the tracks in CD, DVD mode etc.

Also, buttons marked with the following names have special functions. If you try to use one of these functions but the display flashes it means that function cannot be used in the current mode (for example DSP modes cannot be used when 5.1 CH setting is on).

MIDNIGHT
Use to put receiver in MIDNIGHT mode. To use first press the RECEIVER button then operate this button.

5.1 CH
When the DVD/LD or DVD 5.1 CH function is selected each press switches the DVD/LD input between DVD/LD and DVD 5.1 CH. To use first press the RECEIVER button then operate this button.

ATT
Use to attenunate (lower) the level of an analog input signal and prevent distortion. To use first press the RECEIVER button then operate this button.

SIGNAL SELECT
Use to select the proper signal (analog, digital) for the source your are inputting. To use first press the RECEIVER button then operate this button.

EFFECT +/– buttons
Use to add or subtract the amount of effect in different DSP sound modes or advanced listening modes.

④ THE FOLLOWING FOUR SETS OF BUTTONS ARE DEDICATED TV CONTROL. THEY ARE ONLY USED FOR CONTROLLING YOUR TV.

TV VOLUME +/– buttons
Use to adjust the volume on your TV.

TV ⏻ button
Use to turn on the power of the TV.

TV FUNC button
Use select the TV function.

MENU button
Use to access different menus associated with your Satellite TV, cable TV, etc.

⑤ CHANNEL +/– buttons

Use to adjust the volume on your TV.

⑥ ◄ ► ▲▼ (FQ +/–) & ENTER buttons

Use these arrow buttons when setting up your surround sound system. These buttons are also used to control DVD menus/options. The FQ +/– buttons can be used to find radio frequencies.

⑦ **II button**

Use to pause other components.

⑧ **◄◄ button (BAND)**

Use to fast reverse search on CDs etc.

Use to switch between the AM and FM band when in TUNER mode.

⑨ **► button (DIRECT ACCESS)**

Use to play other components. Also use to directly access a radio station by pressing the number of the station you want.

⑩ **■ button (MPX)**

Use to stop other components. Also use to switch between auto stereo and mono reception of FM broadcasts. If the signal is weak then switching to MONO will improve the sound quality.

⑪ **DD button**

Use to put receiver in DOLBY DIGITAL, DOLBY SURROUND and DTS modes. To use first press the RECEIVER button then operate this button.

⑫ **DSP button**

Use to put receiver in one of the DSP modes. To use first press the RECEIVER button then operate this button.

⑬ **CHANNEL SELECT**

Use to select a speaker when setting up the surround sound of the receiver. To use first press the RECEIVER button then operate this button.

⑭ **LOUDNESS button**

Use to switch on the loudness. This feature is useful for getting good bass and treble sounds listening at low volumes.

⑮ **FUNCTION button**

Use to select the playback or recording source. This button lets you cycle through the different functions of the receiver in the following order: CD, tuner, AUX, CD-R/TAPE/MD, VCR/DVR, DVD/LD, VIDEO and TV/SAT.

⑯ **CHANNEL LEVEL +/– buttons**

Use to adjust the output level of the selected channel(s).

⑰ **LED DISPLAY**

This display flashes when a command is sent from the remote control to the receiver. It also flashes at other times, for example when teaching the receiver preset codes, with specific meanings.

⑱ **RECEIVER button**

This switches between STANDBY mode and power ON for this receiver.

⑲ **ENTER button (DISC)**

Use for controlling other components only.

⑳ **MASTER VOLUME +/– buttons**

Use to set the overall listening volume.

㉑ **● button**

Use to record with other components.

㉒ **►► button (CLASS)**

Use to fast forward search on CDs etc. Also use the CLASS feature to switch between the three banks (classes) of station memories.

㉓ **►►I button (DTV MENU)**

Use to skip forward tracks on CD players etc. Also use to access DTV menus.

㉔ **I◄◄ button (DTV ON/OFF)**

Use to skip reverse tracks on CD players etc. Also use to turn DTV on/off.

㉕ **TEST TONE**

Use to sound the TEST TONE when setting up the surround sound of the receiver. To use first press the RECEIVER button then operate this button.

㉖ **FL DIMMER button**

Use this button to make the fluorescent display (FL) dimmer or brighter. There are three brightness settings as well as an off setting.

㉗ **SETUP button**

Use this button when setting up the remote control to control other components.

㉘ **MUTING button**

Use to mute the sound or restore the sound if it has been muted.

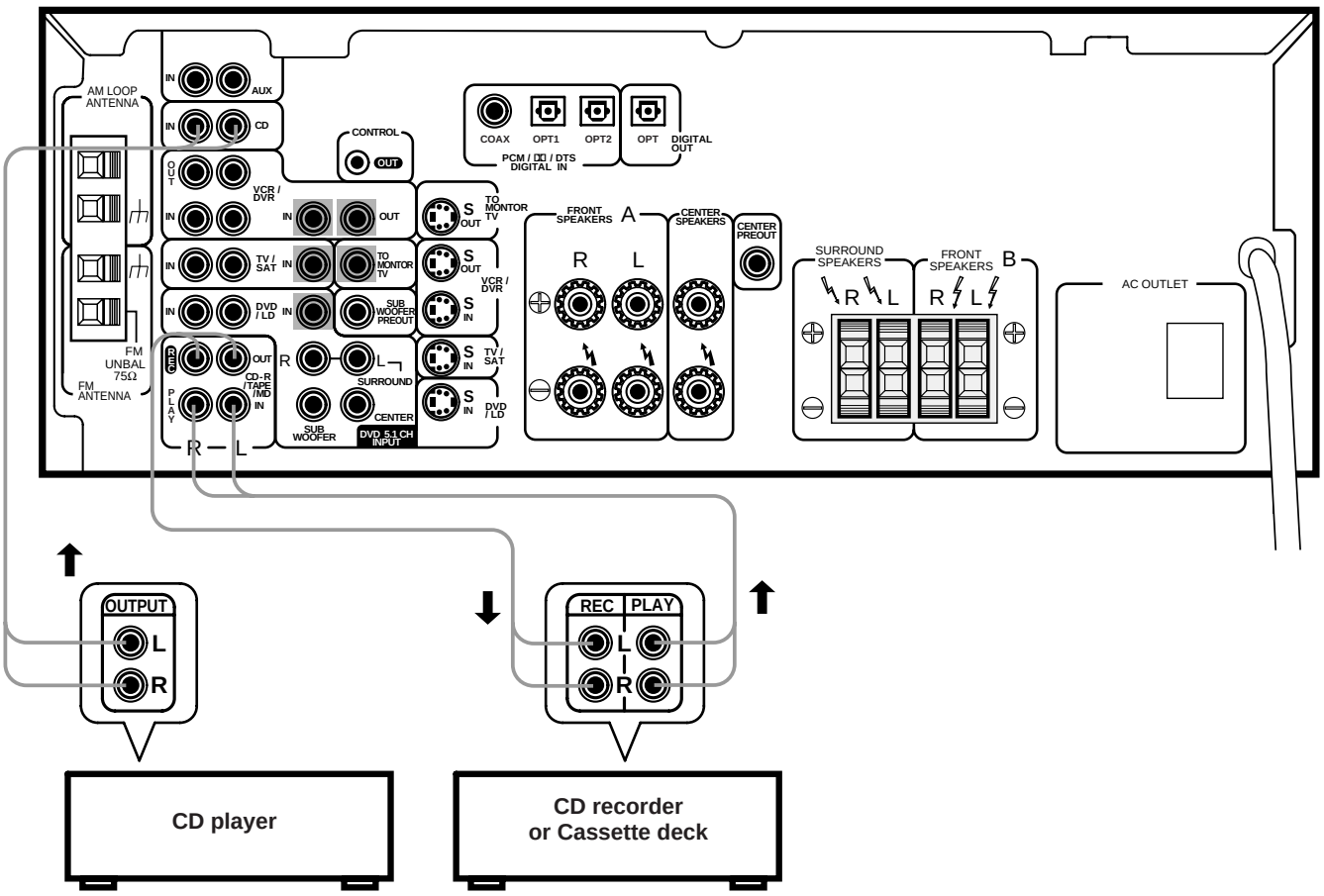
Connecting Audio Components

To begin set up, connect your audio components to the jacks as shown below. These are all analog connections and your analog audio components (cassette deck) use these jacks. Remember that for components you want to record with you need to hook up four plugs (a set of stereo ins and a set of stereo outs), but for components that only play you only need to hook up one set of stereo plugs (two plugs). To use Digital source features you must hook up your digital components to the digital inputs but it is also a good idea to hook up your digital components to analog audio jacks. If you want to record to/from digital components (like an MD) to/from analog components, you must hook up your digital equipment with these analog connections. See p.11-12 for more on digital connections. When connecting your equipment, always make sure the power is turned off and the power cord is disconnected from the wall outlet.

NOTE

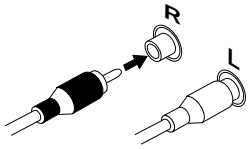
- **Only the VSX-D509S has S-video jacks and optical digital out jack.**
- **The arrows indicate the direction of the audio signal.**

VSX-D509S



■ Audio cords

Use audio cords (not supplied) to connect the audio components.



Connect red plugs to R (right) and white plugs to L (left).
Be sure to insert completely.

Depending on where the cassette deck is placed, noise may occur during playback of your cassette deck which is caused by leakage flux from the transformer in the receiver. If you experience noise, move the cassette deck farther away from the receiver.

8.2 SPECIFICATIONS

Amplifier Section

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.2 % total harmonic distortion (front).**

Continuous Power Output
Front ..... 100 W per channel (1kHz, 0.8 %, 8 Ω)
Center ..... 100 W (1kHz, 0.8 %, 8 Ω)
Surround ..... 100 W per channel (1kHz, 0.8 %, 8 Ω)

Input (Sensitivity/Impedance)
CD, AUX, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT, VIDEO ..... 200 mV/47 kΩ
Frequency Response
CD, AUX, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT, VIDEO ..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB
Output (Level/Impedance)
VCR/DVR REC, CD-R/TAPE/MD REC ..... 200 mV/2.2 kΩ
Tone Control
BASS ..... ± 6 dB (100 Hz)
TREBLE ..... ± 6 dB (10 kHz)
LOUDNESS ..... +9 dB/+9 dB (100 Hz/10 kHz)

Signal-to-Noise Ratio (IHF, short circuited, A network)
CD, AUX, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT, VIDEO.... ..... 96 dB
Signal-to Noise Ratio [EIA, at 1 W (1 kHz)]
CD, AUX, VCR/DVR, CD-R/TAPE/MD, DVD/LD, TV/SAT, VIDEO... ..... 79 dB

Video Section

Input (Sensitivity/Impedance)
VCR/DVR, DVD/LD, TV/SAT, VIDEO ..... 1 Vp-p/75 Ω
Output (Level/Impedance)
VCR/DVR ..... 1 Vp-p/75 Ω
Frequency Response
VCR/DVR, DVD/LD, TV/SAT, VIDEO → MONITOR ..... 5 Hz to 7 MHz $^{+0}_{-3}$ dB
Signal-to-Noise Ratio ..... 55 dB
Cross Talk ..... 55 dB

FM Tuner Section

Frequency Range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... Mono:13.2 dBf, IHF (1.3 µV/ 75 Ω)
50 dB Quieting Sensitivity ..... Mono: 20.2 dB
Stereo: 38.6 dBf
Signal-to-Noise Ratio ..... Mono: 73 dB (at 85 dBf)
Stereo: 70 dB (at 85 dBf)
Distortion ..... Stereo: 0.5 % (1 kHz)
Alternate Channel Selectivity ..... 60 dB (400 kHz)
Stereo Separation ..... 40 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz (±1) dB
Antenna Input (DIN) ..... 75 Ω unbalanced

AM Tuner Section

Frequency Range ..... 530 kHz to 1,700 kHz
Sensitivity (IHF, Loop antenna) ..... 350 µV/m
Selectivity ..... 25 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop antenna

Miscellaneous

Power Requirements ..... AC 120 V, 60 Hz
Power Consumption ..... 250 W
In Standby ..... 1 W
AC Outlet ..... 100 W MAX. (SWITCHED)
Dimensions ..... 420 (W) x 158 (H) x 401 (D) mm
(16-9/16 (W) x 6-4/16 (H) x 15-13/16 (D) in.)
Weight (without package) ..... 8.4 kg (18 lb 8 oz)

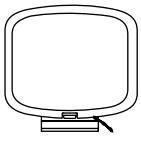
Furnished Parts

FM Antenna 1
AM Loop Antenna 1
Dry Cell Batteries Size AA / IEC LR6 2
Remote Control Unit 1
Operating Instructions 1

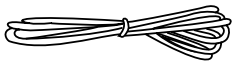
NOTE:
Specifications and the design are subject to possible modifications without notice, due to improvements.

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.
** Measured by Audio Spectrum Analyzer.

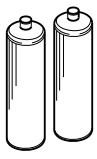
Accessories



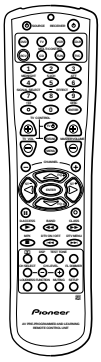
AM loop antenna (ATB7009)



FM wire antenna (ADH7004)



AA size IEC LR6 batteries (x2)



Remote control unit (AXD7248)

Pioneer

Service Manual

ORDER NO.
RRV2294

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-D509S
VSX-D509S-G
VSX-D409
VSX-D409-G

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model				Power Requirement	The voltage can be converted by the following method.
	VSX-D509S	VSX-D509S-G	VSX-D409	VSX-D409-G		
BXJI	○	○	○	○	AC110V/120-127V/220V/240V	With the voltage selector
HLXJI	–	○	–	○	AC220-230V	AC240V, ✻

✻ : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in this Manual.

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Remarks
VSX-709RDS/MYXJIEW VSX-609RDS/MYXJIEW	RRV2274	

CONTENTS

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE, 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

T – ZZK MAY 2000 Printed in Japan

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- *Parts marked by "NSP" 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 product are used for disassembly.*
- *Reference Nos. indicate the pages and Nos. in the service manual for the base model.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 → 56 x 10^1 → 561 ..... RD1/4PU 5 6 1 J
47k → 47 x 10^3 → 473 ..... RD1/4PU 4 7 3 J
0.5 → R50 ..... RN2H R 5 0 K
1 → 1R0 ..... RS1P 1 R 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k → 562 x 10^1 → 5621 ..... RN1/4PC 5 6 2 1 F

■ CONTRAST TABLE

VSX-D509S/BXJI, VSX-D509S-G/BXJI, HLXJI and VSX-709RDS/MYXJIEW are constructed the same except for the following :

Ref. No.	Mark	Symbol and Description	Part No.				Remarks
			VSX-709RDS /MYXJIEW	VSX-D509S /BXJI	VSX-D509S-G /BXJI	VSX-D509S-G /HLXJI	
		PCB ASSEMBLIES					
P5- 1		D.D & INPUT ASSY	AWX7464	AWX7501	AWX7501	AWX7501	
	NSP	AMP&PS ASSY	AWK7574	AWK7576	AWK7576	AWK7574	
P5- 4		├ AMP&PRIMARY ASSY	AWX7484	AWX7486	AWX7486	AWX7484	
P5- 8	NSP	├ TRANS 1ASSY	AWX7390	Not used	Not used	AWX7390	
		└ VOLTAGE SELECT SW ASSY	Not used	AWX7442	AWX7442	Not used	No. 1
	NSP	COMPLEX ASSY	AWK7573	AWK7575	AWK7575	AWK7575	
P7- 1		└ FRONT ASSY	AWX7459	AWX7485	AWX7485	AWX7485	
		PACKING SECTION					
P3- 1		FM Wire Antenna	ADH7005	ADH7004	ADH7004	ADH7004	
P3- 4	NSP	Warranty Card	ARY7022	Not used	Not used	Not used	
P3- 5		Remote Control Unit	AXD7249	AXD7248	AXD7248	AXD7248	
P3-11		Packing Case	AHD7832	AHD7828	AHD7830	AHD7829	
P3-12		Operating Instructions (English)	ARB7215	Not used	Not used	Not used	
P3-13		Operating Instructions (German)	ARC7273	Not used	Not used	Not used	
P3-14		Operating Instructions (Spanish/Portuguese)	ARC7274	Not used	Not used	Not used	
P3-15		Operating Instructions (Italian/French)	ARC7275	Not used	Not used	Not used	
P3-16		Operating Instructions (Dutch/Swedish)	ARC7276	Not used	Not used	Not used	
		Operating Instructions (Spanish)	Not used	ARC7277	ARC7277	Not used	
		Operating Instructions (English/Chinese)	Not used	ARE7247	ARE7247	ARE7247	
		Caution 220V Label	Not used	ARR1003	ARR1003	Not used	
	⚠	AC Plug Adapter	Not used	AKX7011	AKX7011	Not used	Accessories
		EXTERIOR SECTION					
P5- 7		FM/AM TUNER Unit	AXX7048	AXX7047	AXX7047	AXX7047	
P5-10	⚠	Power Transformer (AC220-230V)	ATS7259	Not used	Not used	ATS7259	
P5-10	⚠	Power Transformer (AC110V/120-127V/220V/240V)	Not used	ATS7261	ATS7261	Not used	
P5-11	⚠	Fuse (FU1 : T2.5A/250V)	REK1026	Not used	Not used	REK1026	
P5-11	⚠	Fuse (FU1 : T5A/250V)	Not used	REK1029	REK1029	Not used	
P5-19	⚠	AC Power Cord	VDG1061	VDG1080	VDG1080	VDG1077	
P5-22		Top Cover	AME7375	AME7375	AME7376	AME7376	
P5-24		R Panel	ANC7897	ANC7893	ANC7895	ANC7894	
P5-25		Bonnet Case	AZN7779	AZN7779	AZN7819	AZN7819	

Ref. No.	Mark	Symbol and Description	Part No.				Remarks
			VSX-709RDS /MYXJIEW	VSX-D509S /BXJI	VSX-D509S-G /BXJI	VSX-D509S-G /HLXJI	
P5-31		Insulator (Front side)	PNW2766	AMR7198	PNW2766	PNW2766	
P5-31		Insulator/Foot Assy (Rear side)	PNW2766	REC1263	REC1263	REC1263	
P5-33		Push Rivet	AEC7025	AEC7025	AEC7205	AEC7205	
P5-35	NSP	Fuse Card	AAX7277	AAX7098	AAX7098	AAX7277	
		Screw (Both sides of Bonnet Case)	FBT40P080FZK	FBT40P080FZK	FBT40P080FNI	FBT40P080FNI	
	⚠	Fuse (FU2, FU3 : T2.5A/250V)	Not used	REK1026	REK1026	Not used	No. 2
	NSP	Fuse Card	Not used	AAX7277	AAX7277	Not used	No. 3
	⚠	Voltage Selector	Not used	AKX-507	AKX-507	Not used	No. 4
		FRONT PANEL SECTION					
P7- 6		Volume Knob	AAB7179	AAB7179	AAB7180	AAB7180	
P7- 7		Power Button	AAD7440	AAD7440	AAD7485	AAD7485	
P7- 8		Power Button M	AAD7442	AAD7442	AAD7491	AAD7491	
P7- 9		Window	AAK7721	AAK7719	AAK7720	AAK7720	
P7-10		F Button	AAD7564	AAD7564	AAD7565	AAD7565	
P7-12		F Panel	AMB7677	AMB7671	AMB7673	AMB7673	
P7-13		Name Plate	PAM1776	PAM1776	PAM1779	PAM1779	

Notes : ●The numbers in the remarks column correspond to the numbers on the " EXPLODED VIEWS ".
● For PCB ASSEMBLIES, Refer to "CONTRAST OF PCB ASSEMBLIES", "PCB PARTS LIST", "2. SCHEMATIC DIAGRAM" and "3. PCB CONNECTION DIAGRAM".

VSX-D409/BXJI, VSX-D409-G/BXJI, HLXJI and VSX-609RDS/MYXJIEW are constructed the same except for the following :

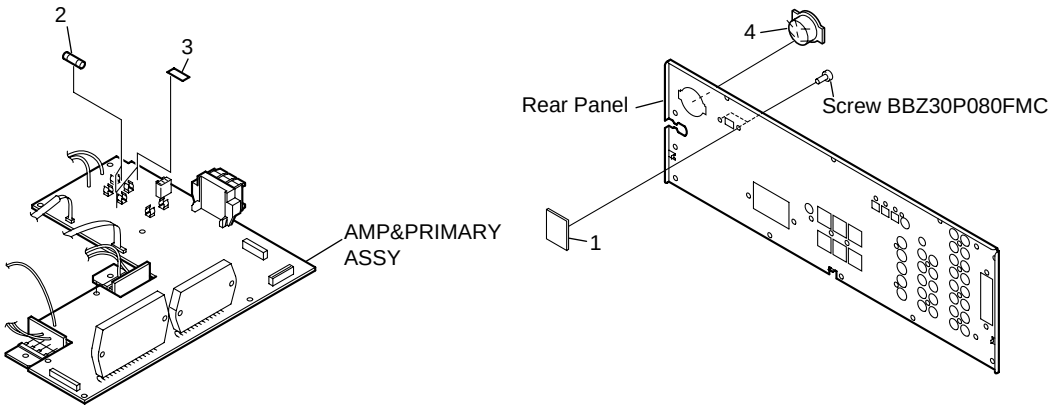
Ref. No.	Mark	Symbol and Description	Part No.				Remarks
			VSX-609RDS /MYXJIEW	VSX-D409 /BXJI	VSX-D409-G /BXJI	VSX-D409-G /HLXJI	
		PCB ASSEMBLIES					
P5- 1		D.D & INPUT ASSY	AWX7497	AWX7650	AWX7650	AWX7650	
	NSP	AMP&PS ASSY	AWK7568	AWK7572	AWK7572	AWK7568	
P5- 4		├ AMP&PRIMARY ASSY	AWX7478	AWX7482	AWX7482	AWX7478	
P5- 8	NSP	├ TRANS 1ASSY	AWX7390	Not used	Not used	AWX7390	
		└ VOLTAGE SELECT SW ASSY	Not used	AWX7442	AWX7442	Not used	No. 1
	NSP	COMPLEX ASSY	AWK7567	AWK7571	AWK7571	AWK7571	
P7- 1		└ FRONT ASSY	AWX7477	AWX7481	AWX7481	AWX7481	
		PACKING SECTION					
P3- 1		FM Wire Antenna	ADH7005	ADH7004	ADH7004	ADH7004	
P3- 4	NSP	Warranty Card	ARY7022	Not used	Not used	Not used	
P3- 5		Remote Control Unit	AXD7247	AXD7246	AXD7246	AXD7246	
P3- 6		Battery Cover	AZA7378	RZN1156	RZN1156	RZN1156	
P3- 8		Left Pad	AHA7263	AHA7275	AHA7275	AHA7275	
P3- 9		Right Pad	AHA7264	AHA7276	AHA7276	AHA7276	
P3-11		Packing Case	AHD7831	AHD7824	AHD7826	AHD7825	
P3-12		Operating Instructions (English)	ARB7215	Not used	Not used	Not used	
P3-13		Operating Instructions (German)	ARC7273	Not used	Not used	Not used	
P3-14		Operating Instructions (Spanish/Portuguese)	ARC7274	Not used	Not used	Not used	
P3-15		Operating Instructions (Italian/French)	ARC7275	Not used	Not used	Not used	
P3-16		Operating Instructions (Dutch/Swedish)	ARC7276	Not used	Not used	Not used	
		Operating Instructions (Spanish)	Not used	ARC7277	ARC7277	Not used	
		Operating Instructions (English/Chinese)	Not used	ARE7247	ARE7247	ARE7247	
		Caution 220V Label	Not used	ARR1003	ARR1003	Not used	
	⚠	AC Plug Adapter	Not used	AKX7011	AKX7011	Not used	Accessories

Ref. No.	Mark	Symbol and Description	Part No.				Remarks
			VSX-609RDS /MYXJIEW	VSX-D409 /BXJI	VSX-D409-G /BXJI	VSX-D409-G /HLXJI	
		EXTERIOR SECTION					
P5- 7		FM/AM TUNER Unit	AXX7048	AXX7047	AXX7047	AXX7047	
P5-10	⚠	Power Transformer (AC220-230V)	ATS7259	Not used	Not used	ATS7259	
P5-10	⚠	Power Transformer (AC110V/120-127V/220V/240V)	Not used	ATS7261	ATS7261	Not used	
P5-11	⚠	Fuse (FU1 : T2.5A/250V)	REK1026	Not used	Not used	REK1026	
P5-11	⚠	Fuse (FU1 : T5A/250V)	Not used	REK1029	REK1029	Not used	
P5-19	⚠	AC Power Cord	VDG1061	VDG1080	VDG1080	VDG1077	
P5-22		Top Cover	AME7375	AME7375	AME7376	AME7376	
P5-24		R Panel	ANC7896	ANC7888	ANC7890	ANC7889	
P5-25		Bonnet Case	AZN7779	AZN7779	AZN7819	AZN7819	
P5-31		Insulator (Front side)	PNW2766	AMR7198	PNW2766	PNW2766	
P5-31		Insulator/Foot Assy (Rear side)	PNW2766	REC1263	REC1263	REC1263	
P5-33		Push Rivet	AEC7025	AEC7025	AEC7205	AEC7205	
P5-35	NSP	Fuse Card	AAX7277	AAX7098	AAX7098	AAX7277	
		Screw (Both sides of Bonnet Case)	FBT40P080FZK	FBT40P080FZK	FBT40P080FNI	FBT40P080FNI	
	⚠	Fuse (FU2, FU3 : T2.5A/250V)	Not used	REK1026	REK1026	Not used	No. 2
	NSP	Fuse Card	Not used	AAX7277	AAX7277	Not used	No. 3
	⚠	Voltage Selector	Not used	AKX-507	AKX-507	Not used	No. 4
		FRONT PANEL SECTION					
P7- 6		Volume Knob	AAB7179	AAB7179	AAB7180	AAB7180	
P7- 7		Power Button	AAD7440	AAD7440	AAD7485	AAD7485	
P7- 8		Power Button M	AAD7442	AAD7442	AAD7491	AAD7491	
P7- 9		Window	AAK7721	AAK7719	AAK7720	AAK7720	
P7-10		F Button	AAD7562	AAD7562	AAD7563	AAD7563	
P7-12		F Panel	AMB7675	AMB7665	AMB7667	AMB7667	
P7-13		Name Plate	PAM1776	PAM1776	PAM1779	PAM1779	

Notes : ●The numbers in the remarks column correspond to the numbers on the " EXPLODED VIEWS ".
● For PCB ASSEMBLIES, Refer to "CONTRAST OF PCB ASSEMBLIES", "PCB PARTS LIST", "2. SCHEMATIC DIAGRAM" and "3. PCB CONNECTION DIAGRAM".

■ EXPLODED VIEWS

● EXTERIOR SECTION



■ CONTRAST OF PCB ASSEMBLIES

BF D.D & INPUT ASSY

AWX7501, AWX7650 and AWX7464 are constructed the same except for the following :

Mark	Symbol and Description	Part No.			Remarks
		AWX7464	AWX7501	AWX7650	
	Q102	2SC2412K	Not used	Not used	
	Q103	Not used	DTA143EK	DTA143EK	
	Q104	Not used	DTC124EK	DTC124EK	
	F111, F112	DTF1067	Not used	Not used	
	C158	CKSRYB103K50	Not used	Not used	
	C211, C212	CCSQCH220J50	Not used	Not used	
	R119	RS1/16S0R0J	Not used	Not used	
	R149	RS1/16S101J	Not used	Not used	
	R150	RS1/16S221J	Not used	Not used	
	R151	RS1/16S472J	Not used	Not used	
	R215, R216	Not used	RS1/10S0R0J	RS1/10S0R0J	
	CN107 3P CONNECTOR POST	B3B-PH-K-S	B3B-PH-K-S	Not used	
	101, 102 PCB BINDER	VEF1040	VEF1040	Not used	

CF AMP&PRIMARY ASSY

AWX7486, AWX7482 and AWX7484 are constructed the same except for the following :

Mark	Symbol and Description	Part No.			Remarks
		AWX7484	AWX7486	AWX7482	
⚠	L51	Not used	ATF7018	ATF7018	
⚠	L52	ATF3001	Not used	Not used	
⚠	T51 STANDBY TRANSFORMER	ATT7037	ATT7038	ATT7038	
	C607–C610, C634, C635, C657–C660	CCCSL120J50	CCCSL6R0D50	CCCSL6R0D50	
	C613, C614, C637, C663, C664	CCCSL221J50	Not used	Not used	
	C765–C768	CQMBA472J50	Not used	Not used	
	C769	CKCYB102K50	Not used	Not used	
	R757	Not used	Not used	RD1/4PU223J	∗
	R758	Not used	Not used	RD1/4PU242J	∗
	CN751 SPEAKER TERMINAL 6-P	Not used	Not used	AKE7020	∗
	CN753 PIN JACK 1-P	Not used	Not used	AKB7042	∗
	CN784 10P SOCKET	KP250NA10	KP250NA10	Not used	
	H53–H56 FUSE CLIP	Not used	AKR7001	AKR7001	

∗ : These parts are used for VSX-609RDS. Refer to page 19 on the service manual RRV2274.

KF FRONT ASSY

AWX7485, AWX7481 and AWX7459 are constructed the same except for the following :

Mark	Symbol and Description	Part No.			Remarks
		AWX7459	AWX7485	AWX7481	
	IC481	BU1923F	Not used	Not used	
	Q481	2SA1515	Not used	Not used	
	Q482	KRC101M	Not used	Not used	
	Q483	2SC1740S	Not used	Not used	
	L481	LFEA2R2J	Not used	Not used	
	S468, S477	XSG3001	Not used	Not used	
	C481, C482	CKSQYB102K50	Not used	Not used	
	C483, C487	CEAT101M10	Not used	Not used	
	C484	CEAT2R2M50	Not used	Not used	
	C485	CKSQYB472K50	Not used	Not used	
	C486	CEAT1R0M50	Not used	Not used	
	C488	CKSQYB561K50	Not used	Not used	
	C489, C490	CCSQCH270J50	Not used	Not used	
	R407	RS1/10S472J	Not used	Not used	
	R409	Not used	RS1/10S0R0J	RS1/10S0R0J	
	R428	Not used	RS1/10S472J	RS1/10S472J	
	R429	RS1/10S0R0J	RS1/10S332J	RS1/10S622J	
	R468	RS1/10S562J	Not used	Not used	
	R479	RS1/10S163J	Not used	Not used	
	R481	RS1/10S473J	Not used	Not used	
	R482	RS1/10S222J	Not used	Not used	
	R483	RS1/10S333J	Not used	Not used	
	R484	RS1/10S104J	Not used	Not used	
	R485–R487	RS1/10S102J	Not used	Not used	
	X481 CRYSTAL RESONATOR (4.332MHz)	ASS7004	Not used	Not used	

■ PCB PARTS LIST

Mark	No.	Description	Part No.

SF VOLTAGE SELECT SW ASSY

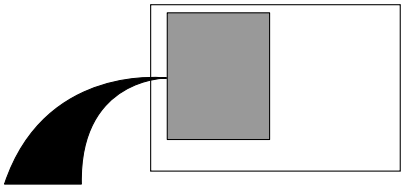
SWITCHES

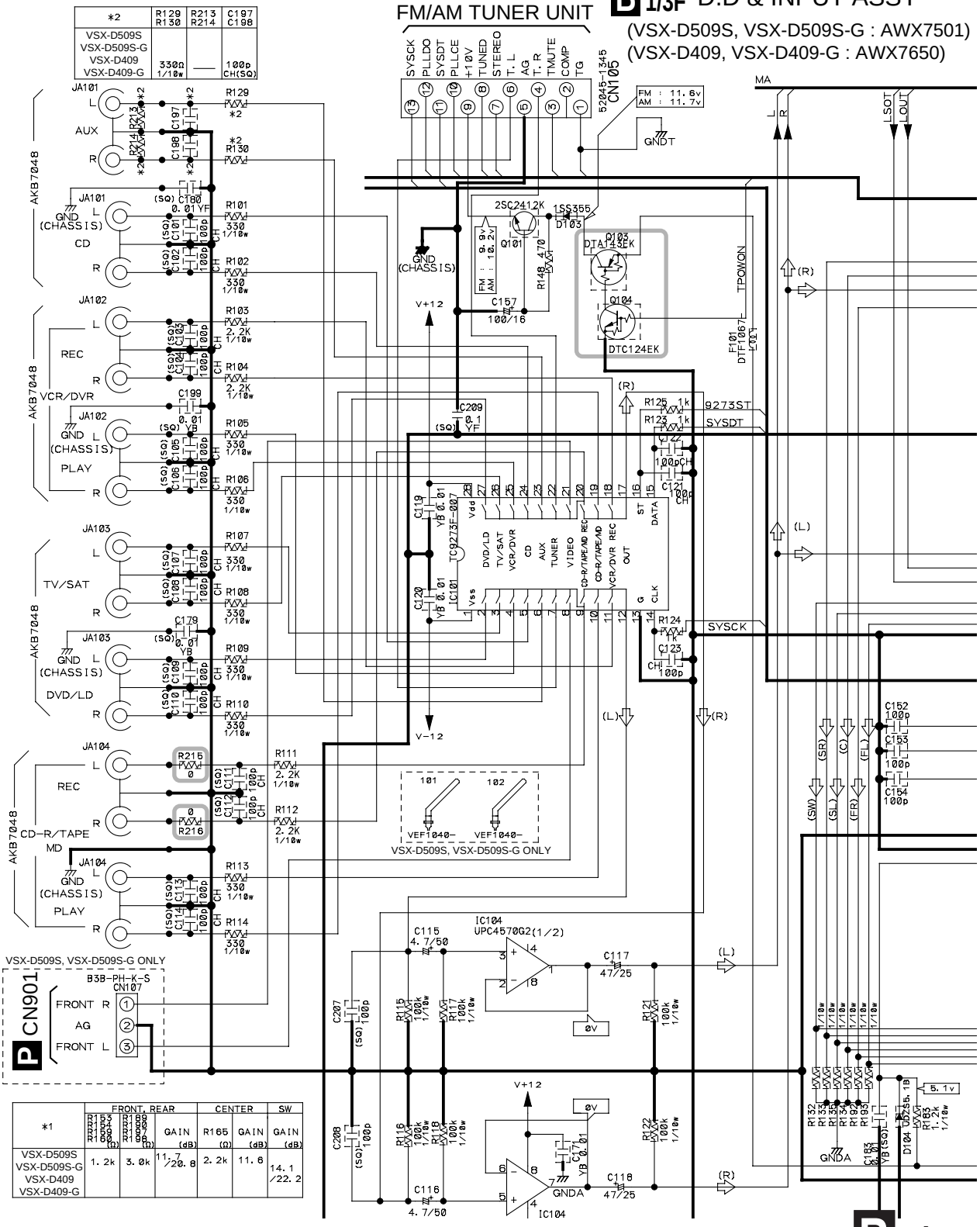
Mark	No.	Description	Part No.
⚠	S51	VOLTAGE SELECTOR	AKX1033

2. SCHEMATIC DIAGRAM

Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST"

2.1 D.D & INPUT (1/3) ASSY





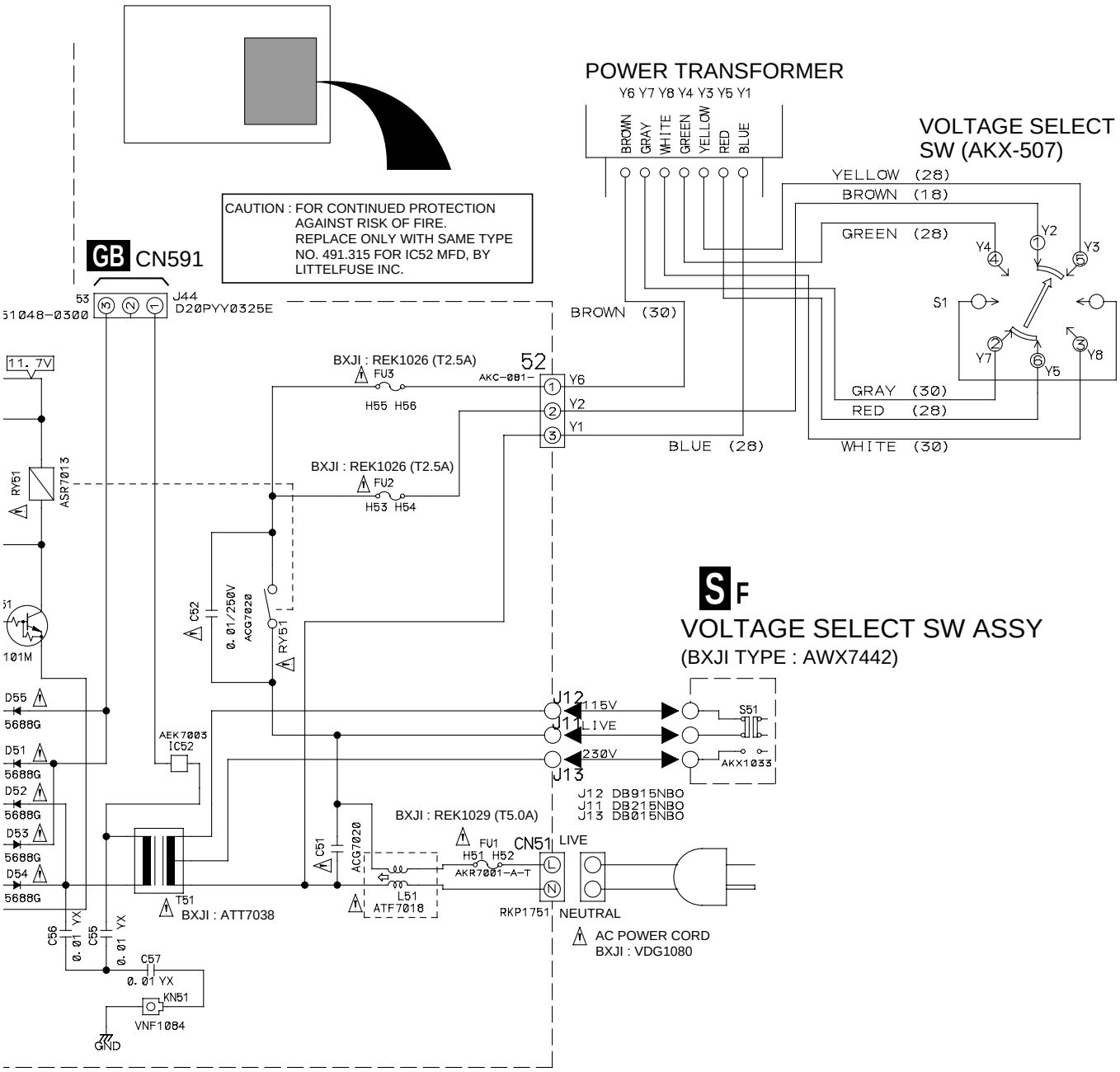
*2	R129 R130	R213 R214	C197 C198
VSX-D509S VSX-D509S-G VSX-D409 VSX-D409-G	330Ω 1/10w	—	100p CH(SQ)

*1	FRONT, REAR R151 R154 R157 R160 (Ω)	R152 R155 R158 R161 (Ω)	GAIN (dB)	CENTER R165 (Ω)	GAIN (dB)	SW GAIN (dB)
VSX-D509S VSX-D509S-G VSX-D409 VSX-D409-G	1.2k	3.0k	11.7 /20.8	2.2k	11.6	14.1 /22.2

2.2 AMP&PRIMARY (2/2) and VOLTAGE SELECT SW ASSY ASSYS

C 2/2F AMP&PRIMARY ASSY

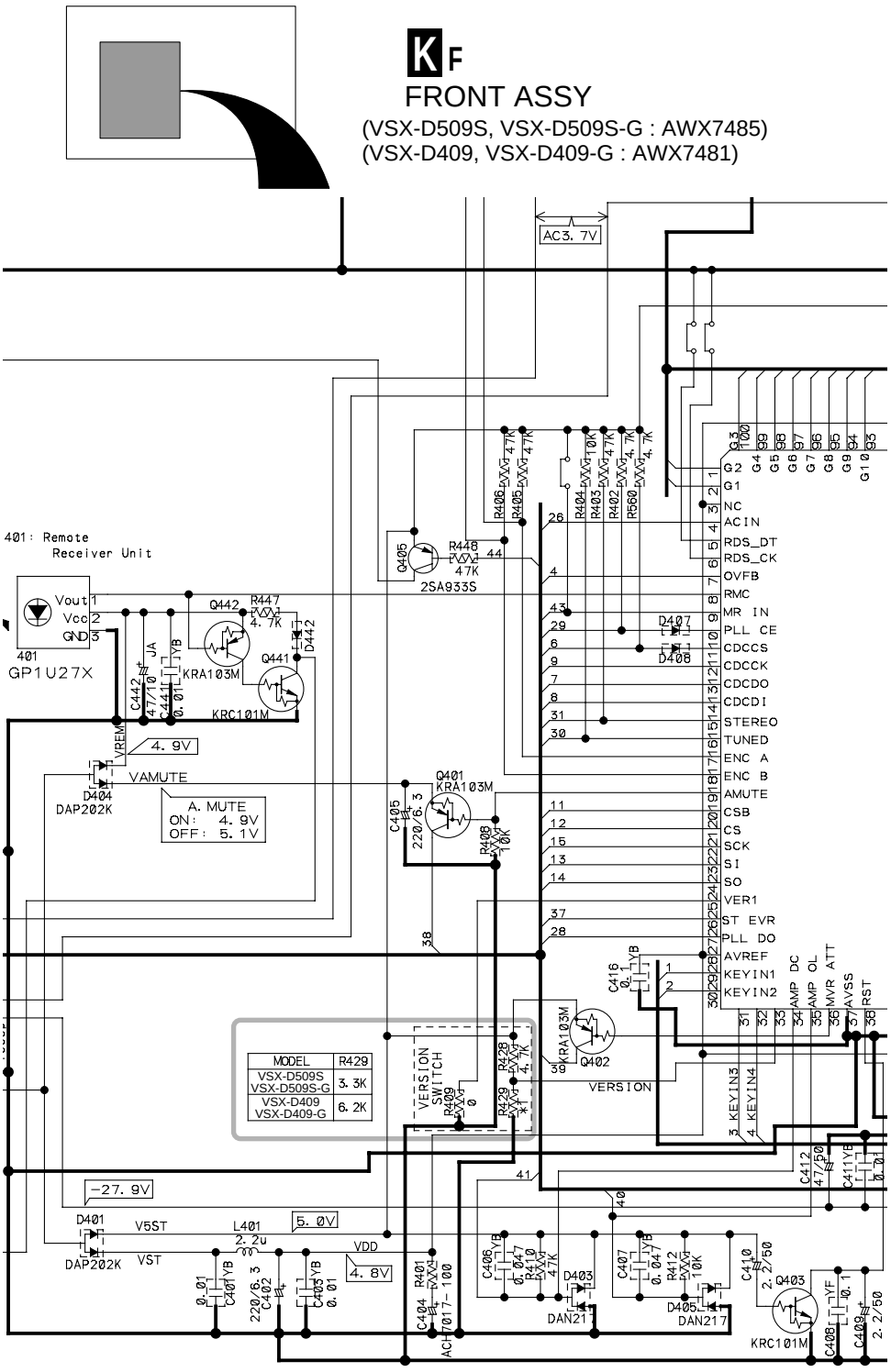
(VSX-D509S, VSX-D509S-G/BXJI : AWX7486)
(VSX-D409, VSX-D409-G/BXJI : AWX7482)



• NOTE FOR FUSE REPLACEMENT

CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS ONLY.

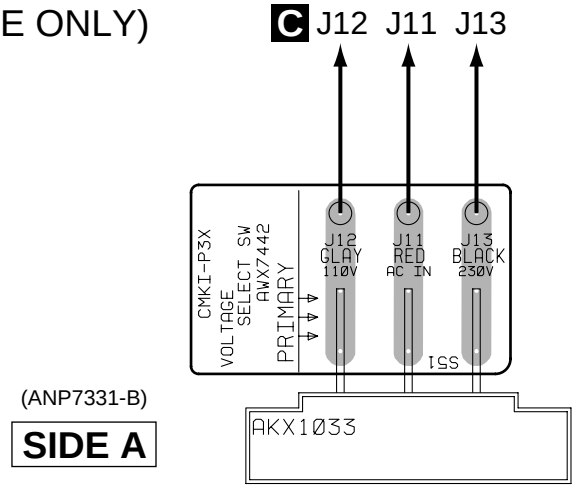
2.3 FRONT ASSY



3. PCB CONNECTION DIAGRAM

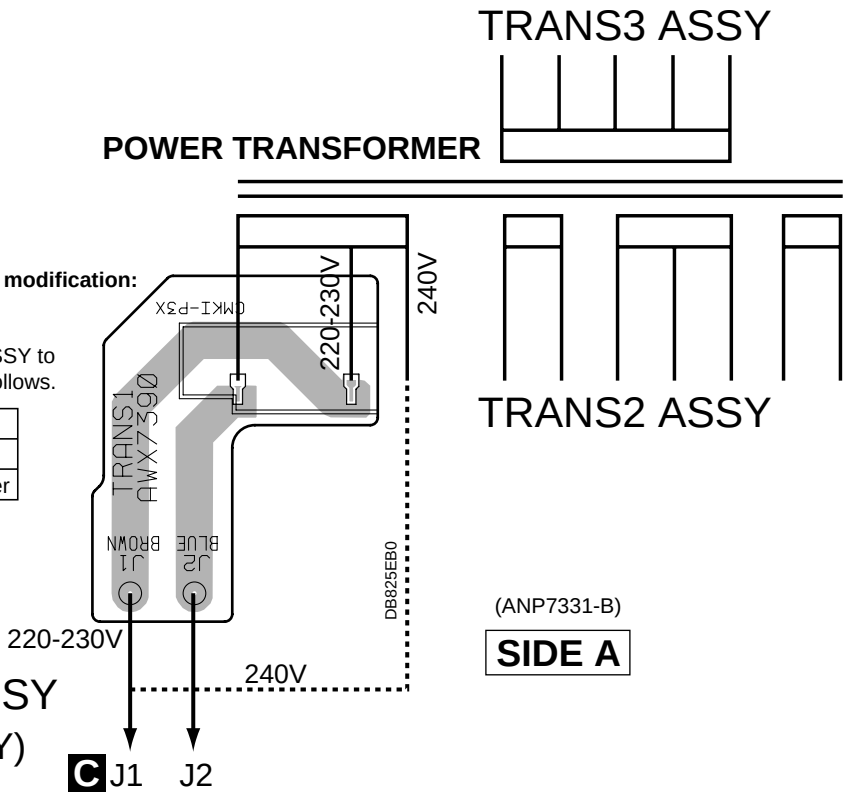
3.1 VOLTAGE SELECT SW and TRANS1 ASSYS

SF VOLTAGE SELECT SW ASSY
(BXJI TYPE ONLY)



(ANP7331-B)

SIDE A



● **Line Voltage Selection**

Line Voltage can be changed by the following modification:

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the connection wire from TRANS 1 ASSY to AMP&PRIMARY ASSY (Terminal No. J1) as follows.

Voltage	Terminal No.
220-230V	J1 of TRANS 1 ASSY
240V	240V terminal of power transformer

4. Stick a line voltage label on the rear panel.

Description	Part No.
220V label	AAX-193
240V label	AAX-192

(ANP7331-B)

SIDE A

GA TRANS1 ASSY
(HLXJI TYPE ONLY)