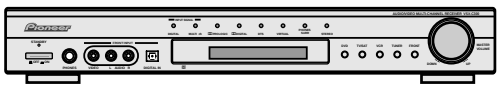
Pioneer sound.vision.soul

Service Manual



ORDER NO.
RRV2524

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-C300

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

Type	Model	Power Requirement	Remarks
	VSX-C300		
KUXJI/CA	◯	AC120V	

CONTENTS

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PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
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T – ZZR SEPT. 2001 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.

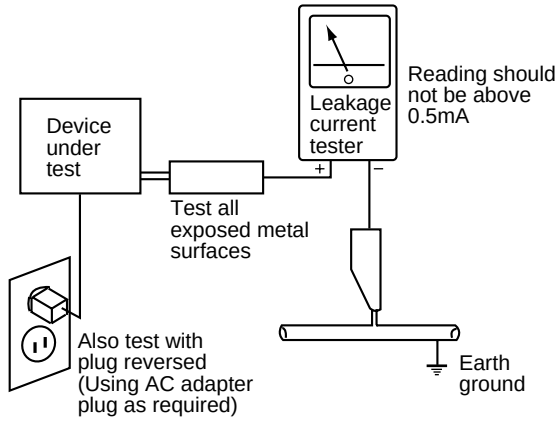
(FOR USA MODEL ONLY)

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.

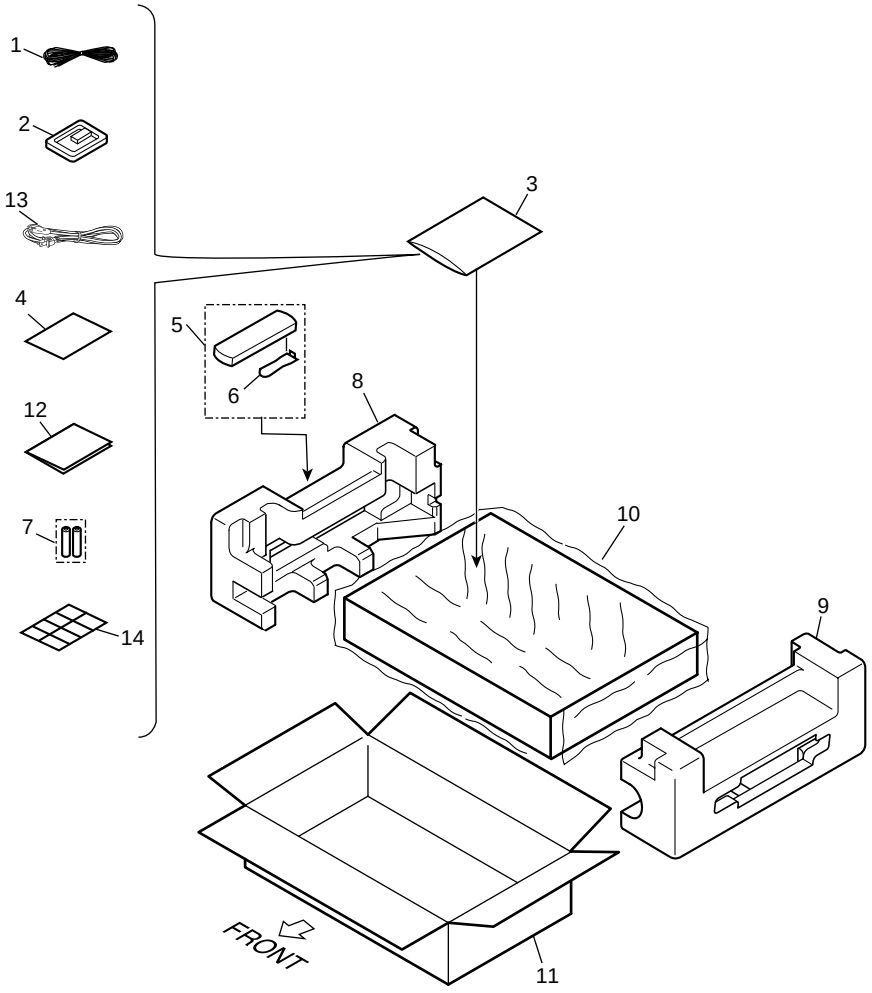
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

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.*

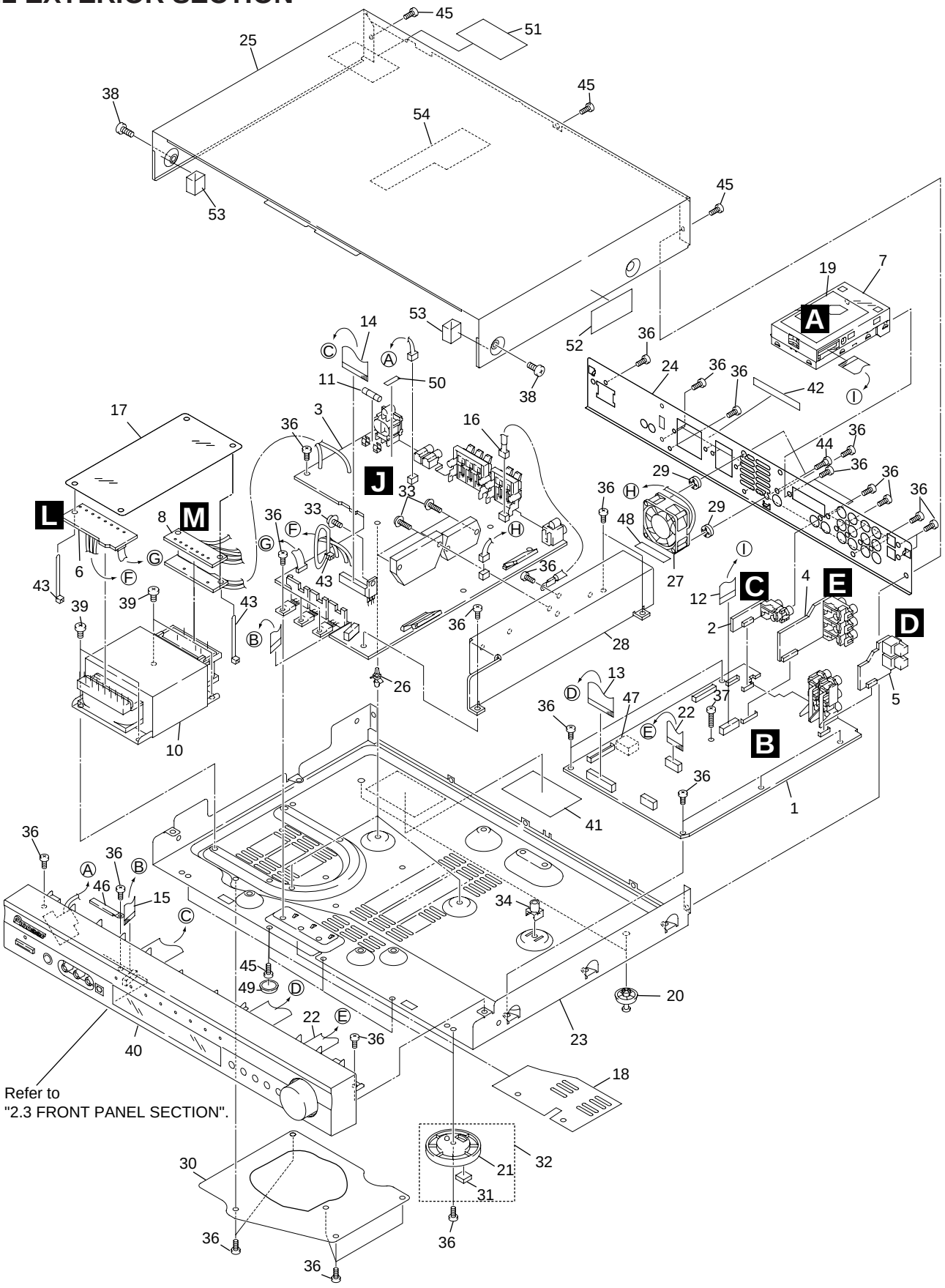
2.1 PACKING



● PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	FM Wire Antenna	ADH7004
	2	AM Loop Antenna	ATB7009
NSP	3	Polyethylene Bag (0.03 × 230 × 340)	Z21-038
NSP	4	Warranty Card	ARY7045
	5	Remote Control Unit	AXD7310
	6	Battery Cover	AZA7378
NSP	7	Dry Cell Battery (R6P, AA)	VEM-013
	8	Left Pad	AHA7349
	9	Right Pad	AHA7350
	10	Packing Sheet	AHG7015
	11	Packing Case	AHD8010
	12	Operating Instructions (English)	ARB7248
⚠	13	AC Power Cord	ADG7022
	14	Cable Label	ARW7145

2.2 EXTERIOR SECTION

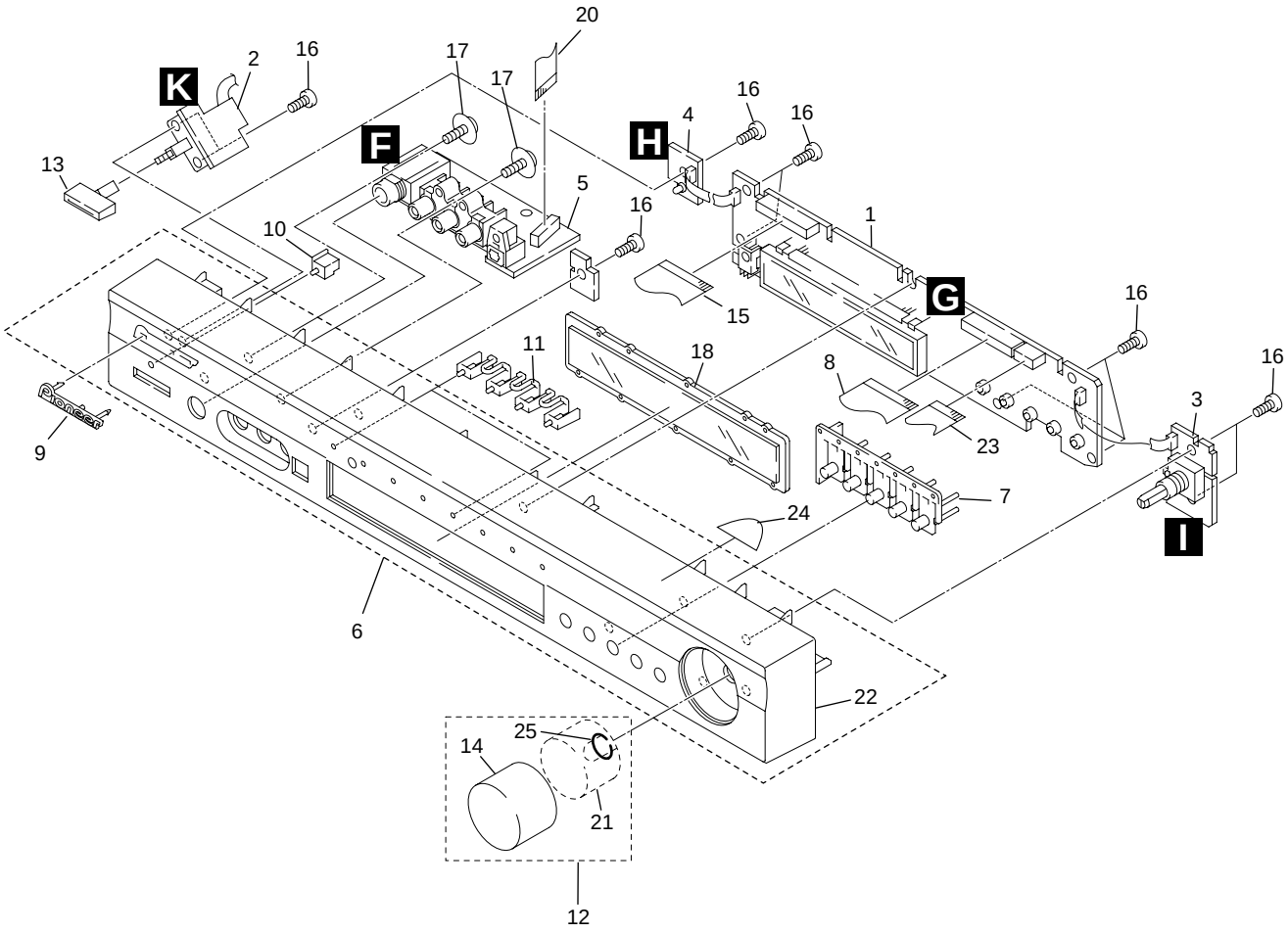


● EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	DSP ASSY	AWX7937
	2	2P - JACK ASSY	AWX7926
	3	POWER ASSY	AWX7910
	4	VIDEO ASSY	AWX7928
	5	OPT - IN ASSY	AWX7908
	6	TRANS 2 Assy	AWX7907
	7	FM/AM TUNER MODULE	AXQ7231
NSP	8	TRANS 1 Assy	AWX7906
	9	• • • • •	
⚠	10	Power Transformer (AC120V)	ATS7317
⚠	11	Fuse (FU1 : 2.5A)	REK1112
	12	FFC (J804 : 13P/180 BD 60V) (DSP CN803 ↔ TUNER CN201)	ADD7242
	13	FFC (J1702 : 23P/180 BD 60V) (DSP CN1702 ↔ FRONT CN4202)	ADD7293
	14	FFC (J4201 : 23P/200 BD 60V) (POWER CN303 ↔ FRONT CN4201)	ADD7293
	15	FFC (J4101 : 11P/100 BD 60V) (POWER CN304 ↔ FRONT INPUT CN4101)	ADD7336
	16	Thermistor (POWER CN306 ↔ TH9014)	AEX7004
	17	Trans Shield Barrier	AEC7380
	18	REG. Cover	AEC7384
⚠	19	Tuner Barrier	AEC7383
	20	Leg Assy	REC-434
	21	Insulator 50	AMR7363
	22	FFC (J803 : 7P/150 BD 60V) (DSP CN804 ↔ FRONT CN203)	ADD7292
NSP	23	Under Base	ANA7129
	24	Rear Panel	ANC8017
	25	Bonnet Case S (Box)	AZN7886
	26	PCB Support	AEC7365
	27	DC Fan Motor	AXM7017
NSP	28	Heat Sink HL	ANH7144
	29	Damper BK	AEB7231
NSP	30	Trans Stabilizer	ANG7362

Mark	No.	Description	Part No.
	31	Rubber Cushion	AEB7235
	32	Insulator 50 Assy	AMR7379
	33	Screw With Washer	ABA7080
	34	PCB Mold	AMR2534
	35	• • • • •	
	36	Screw	BBZ30P080FZK
	37	Screw	BBZ30P140FMC
	38	Screw	BBZ40P080FNI
	39	Screw	BBZ40P060FCC
	40	Front Panel Assy	AMB7778
	41	Dolby DTS. Label	ARW7136
	42	Speaker Label E	AAX7870
	43	Binder	ZCA–BK1
	44	Screw (3x11.5)	ABA7071
	45	Screw	BBZ30P080FNI
	46	Cord Clamper	RNH-184
	47	Cushion H11	AEB7239
	48	Damper Cushion	AED7055
	49	Cushion Circle 16S	AED7054
	50	Fuse Card	AAX2344
	51	65 Label	ARW7050
	52	Caution Label	ARW7143
	53	Rubber Cushion	AEB7235
	54	Support PCB	ANZ7133

2.3 FRONT PANEL SECTION

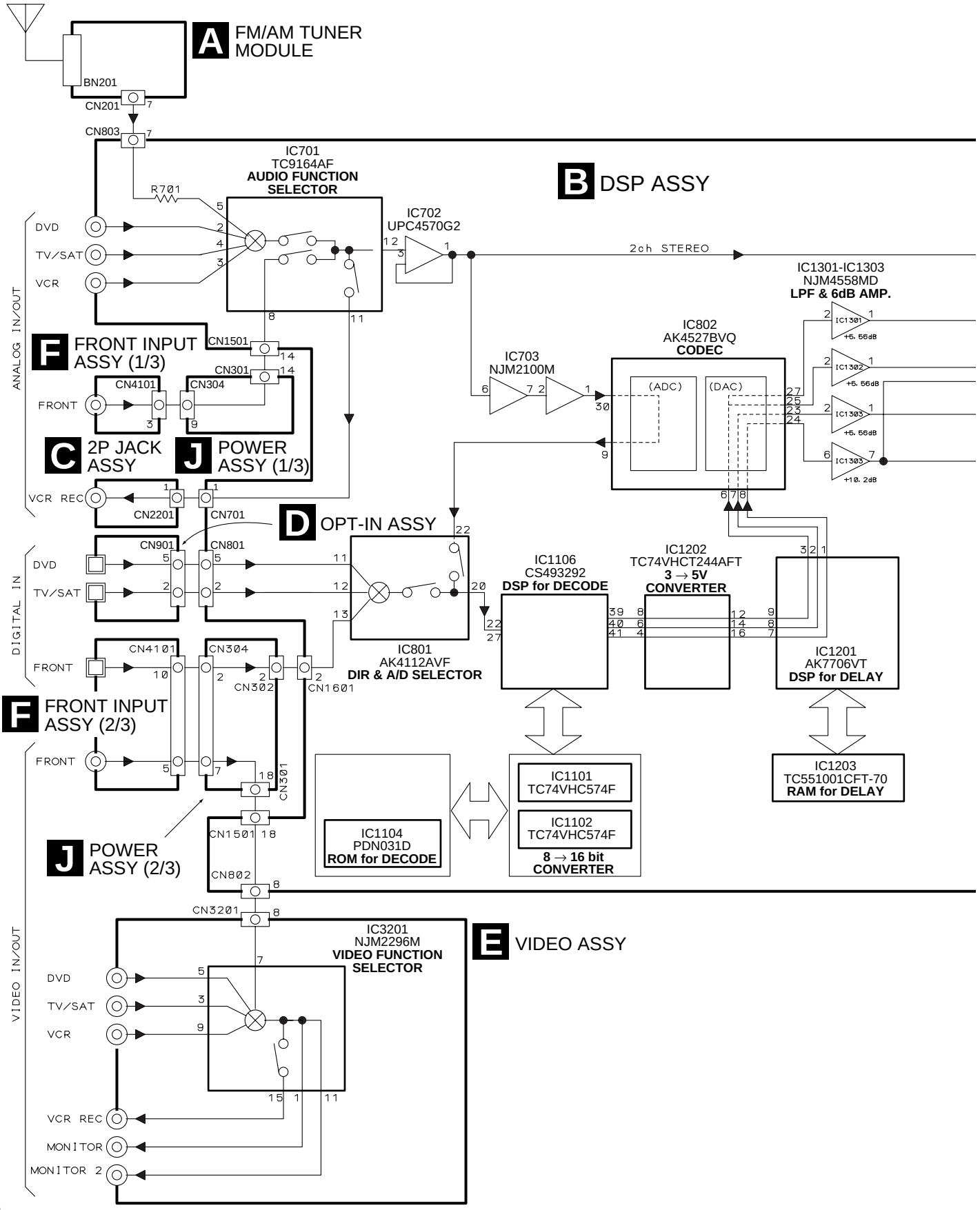


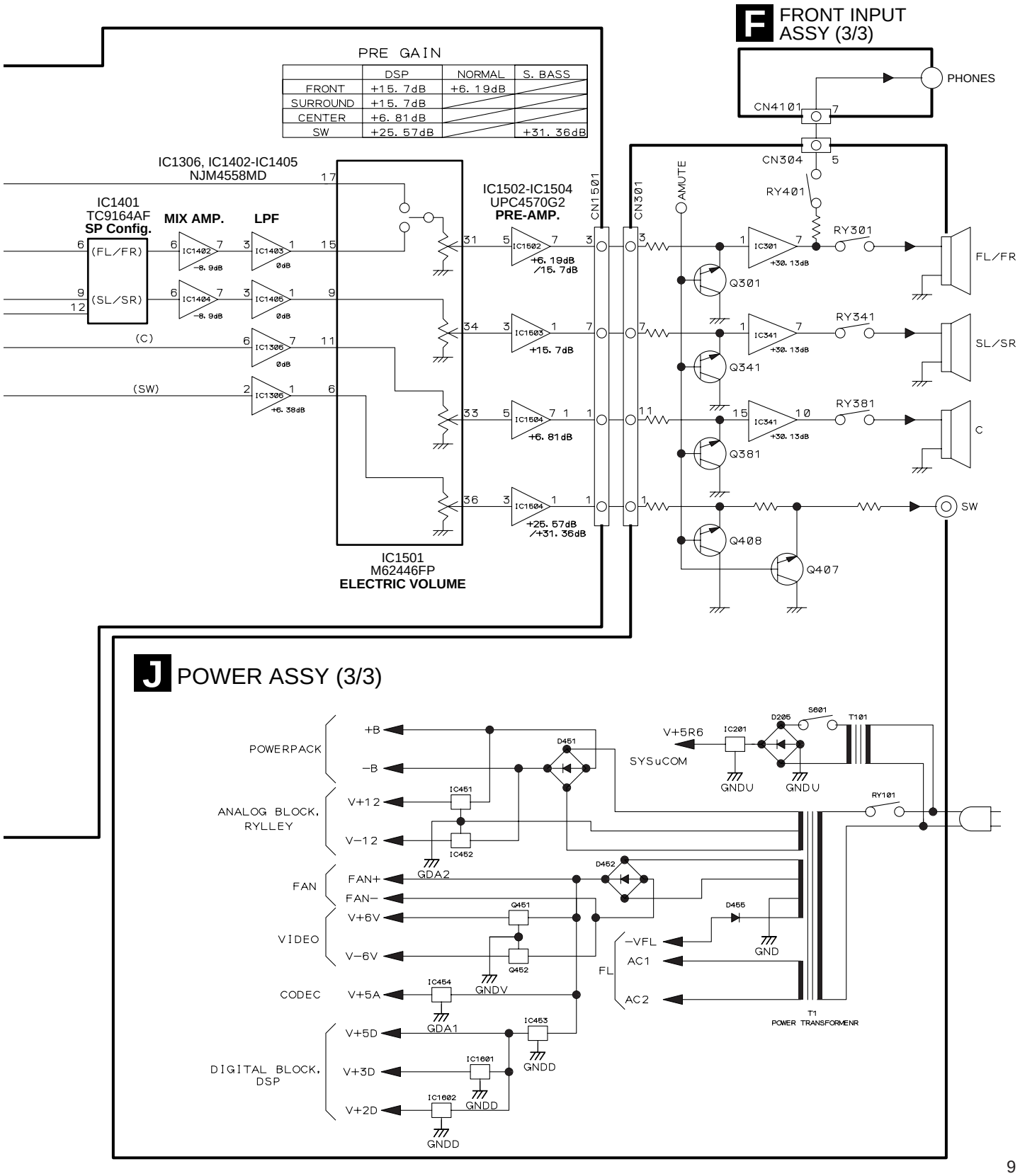
● FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	FRONT ASSY	AWX7933
	2	POWER SW ASSY	AWX7904
	3	ENCODER ASSY	AWX7914
NSP	4	LED ASSY	AWX7913
	5	FRONT INPUT ASSY	AWX7916
	6	Front Panel Assy	AMB7778
	7	Function Button	AAD7633
	8	FFC (J1702 : 23P Front CN4202 ↔DSP CN1702)	ADD7293
	9	Name Plate	VAM1129
	10	Standby Lens	AAK7902
	11	LED Lens	AAK7903
	12	Volume Knob P Assy	AAB7239
	13	Power Button	AAD7630
	14	Volume Cap	AAC7032
	15	FFC (J4201 : 23P Front CN4201↔Power CN303)	ADD7293
	16	Screw	BPZ30P080FMC
	17	Screw (FE)	ABA7009
	18	Display Panel	AAK7904
	19	• • • •	
	20	FFC (J4101 : 11P Front input CN4101↔Power CN304)	ADD7336
	21	Volume Mold	AAC7033
	22	Front Panel	AMB7776
	23	FFC (J803 : 7P Front CN4203↔DSP CN804)	ADD7292
	24	Energy Star Label	AAX7876
	25	Ring	ABH7213

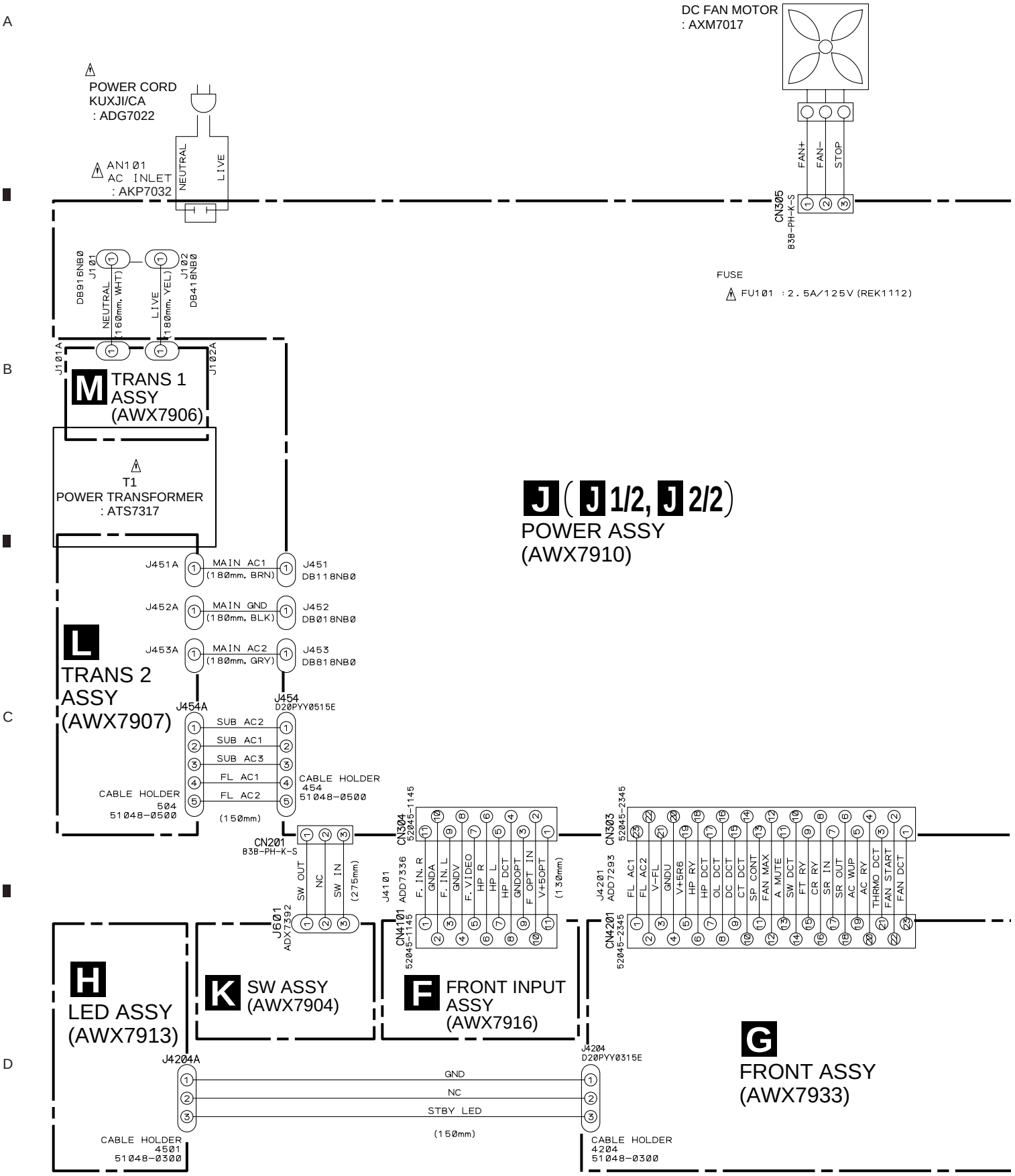
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

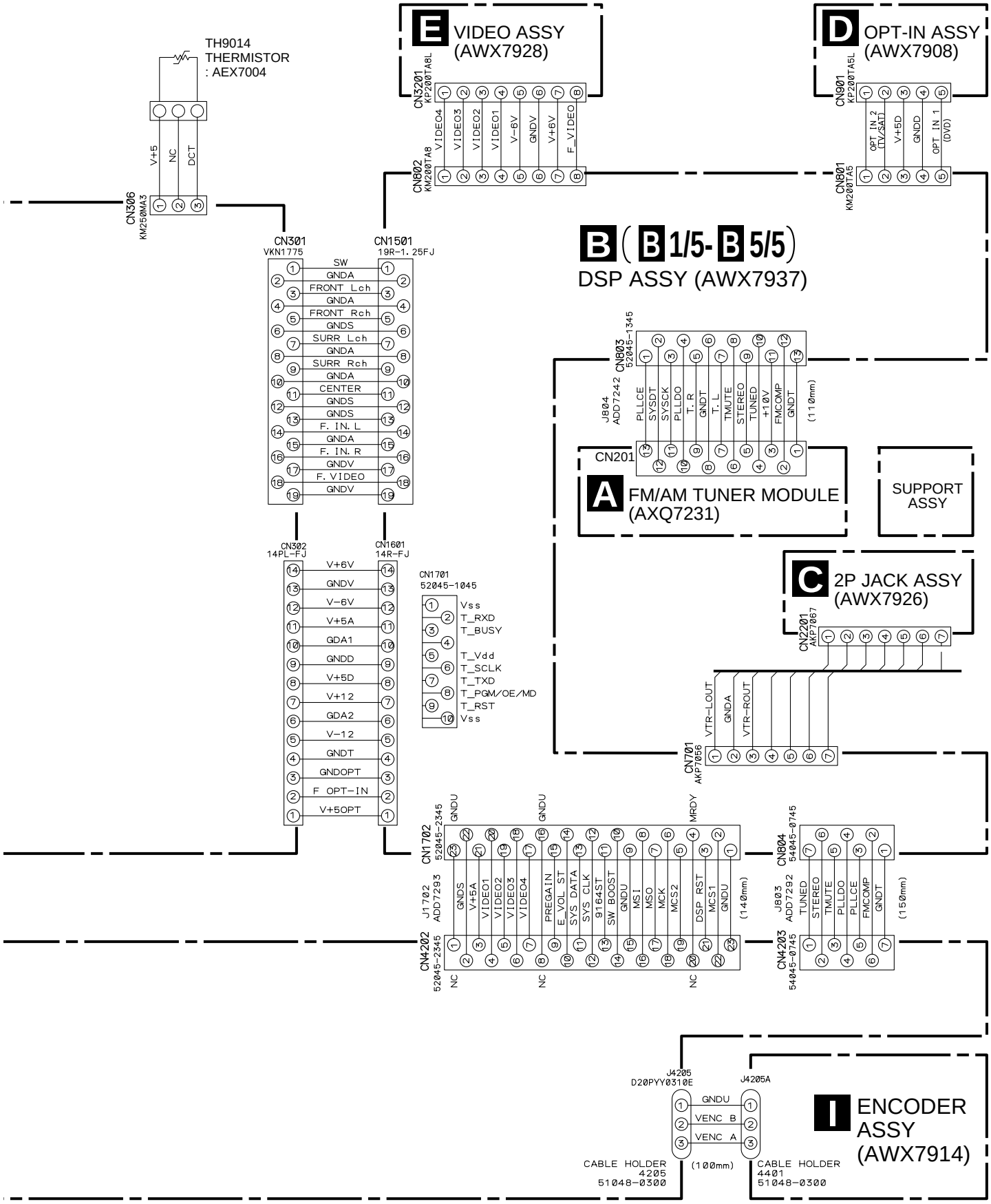



F FRONT INPUT ASSY (3/3)
PRE GAIN
DSP NORMAL S. BASS
FRONT +15. 7dB +6. 19dB
SURROUND +15. 7dB
CENTER +6. 81dB
SW +25. 57dB +31. 36dB
IC1306, IC1402-IC1405
NJM4558MD
IC1401
TC9164AF
SP Config.
MIX AMP.
LPF
(FL/FR)
(SL/SR)
(C)
(SW)
IC1502-IC1504
UPC4570G2
PRE-AMP.
CN1501
CN301
AMUTE
PHONES
CN4101
CN304
RY401
RY301
RY341
RY381
Q301
Q341
Q381
Q408
Q407
FL/FR
SL/SR
C
SW
IC1501
M62446FP
ELECTRIC VOLUME
J POWER ASSY (3/3)
POWERPACK
+B
−B
ANALOG BLOCK, RYLLEY
V+12
V−12
FAN
FAN+
FAN−
VIDEO
V+6V
V−6V
CODEC
V+5A
DIGITAL BLOCK, DSP
V+5D
V+3D
V+2D
V+5R6
SYSuCOM
GNDU
GDA2
GDA1
GNDV
GNDD
FL
−VFL
AC1
AC2
GND
T1
POWER TRANSFORMENR

3.2 OVERALL WIRING DIAGRAM

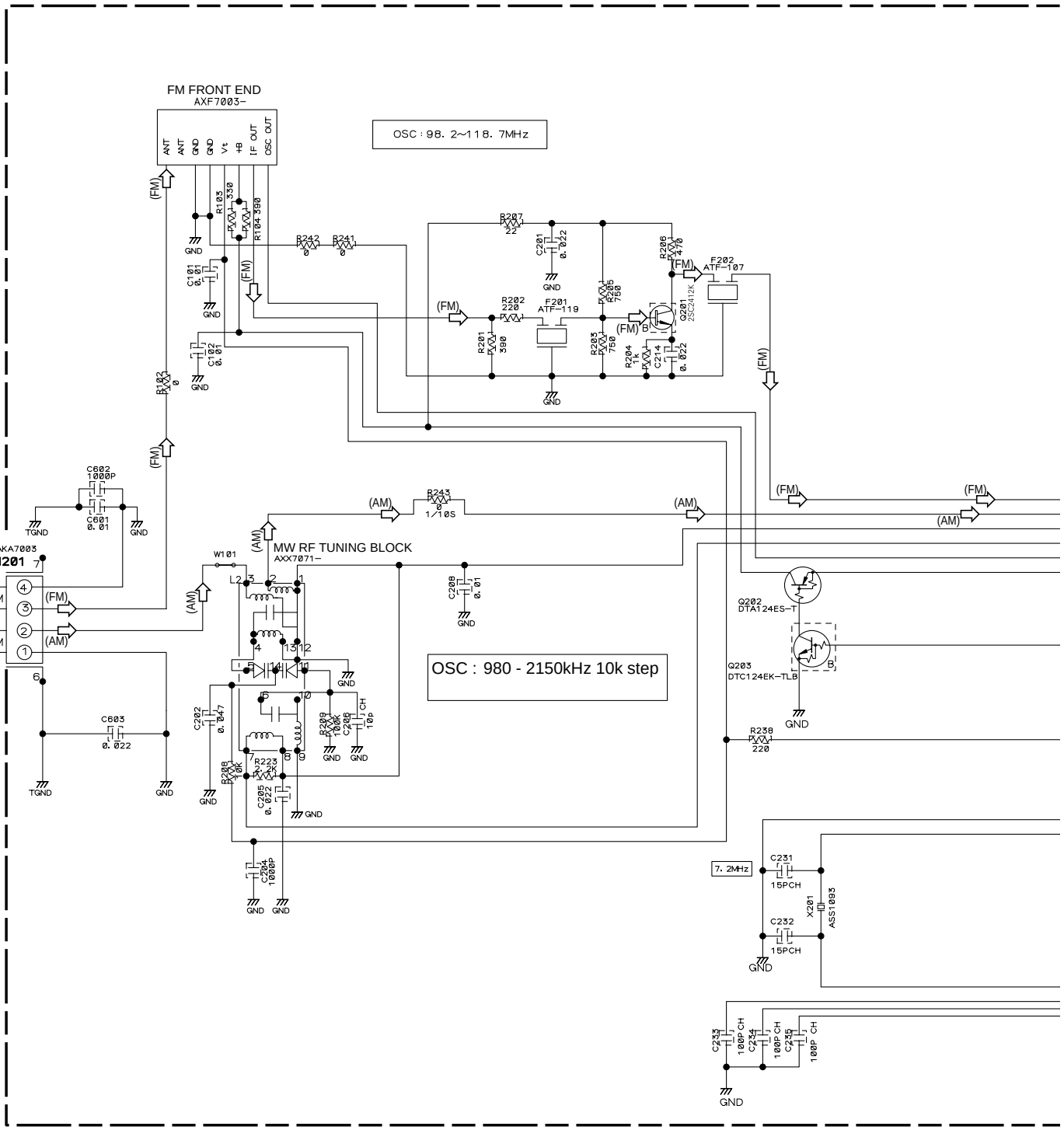


Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



3.3 FM/AM TUNER MODULE

A FM/AM TUNER UNIT MODULE (AXQ7231)

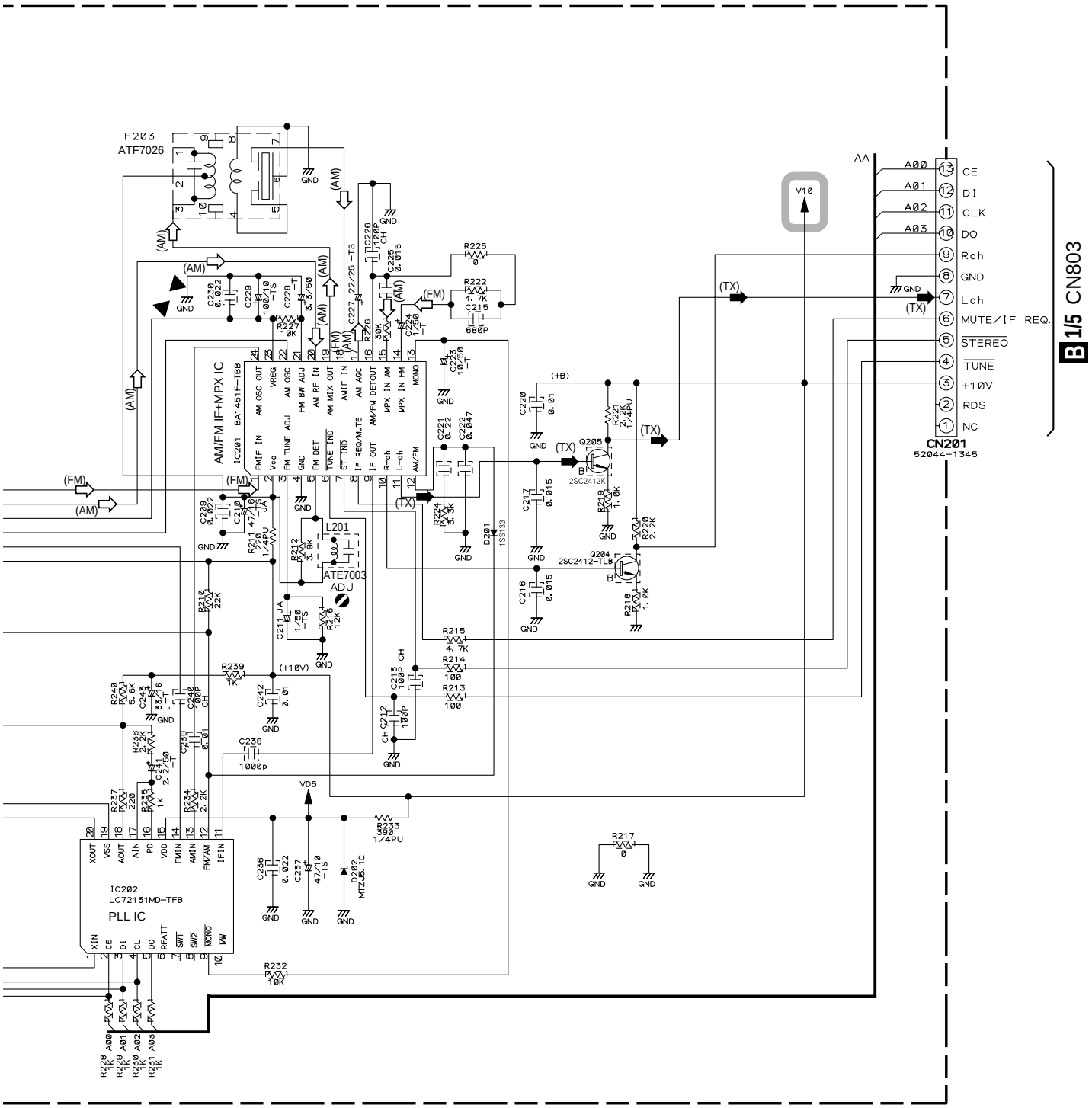


Notes

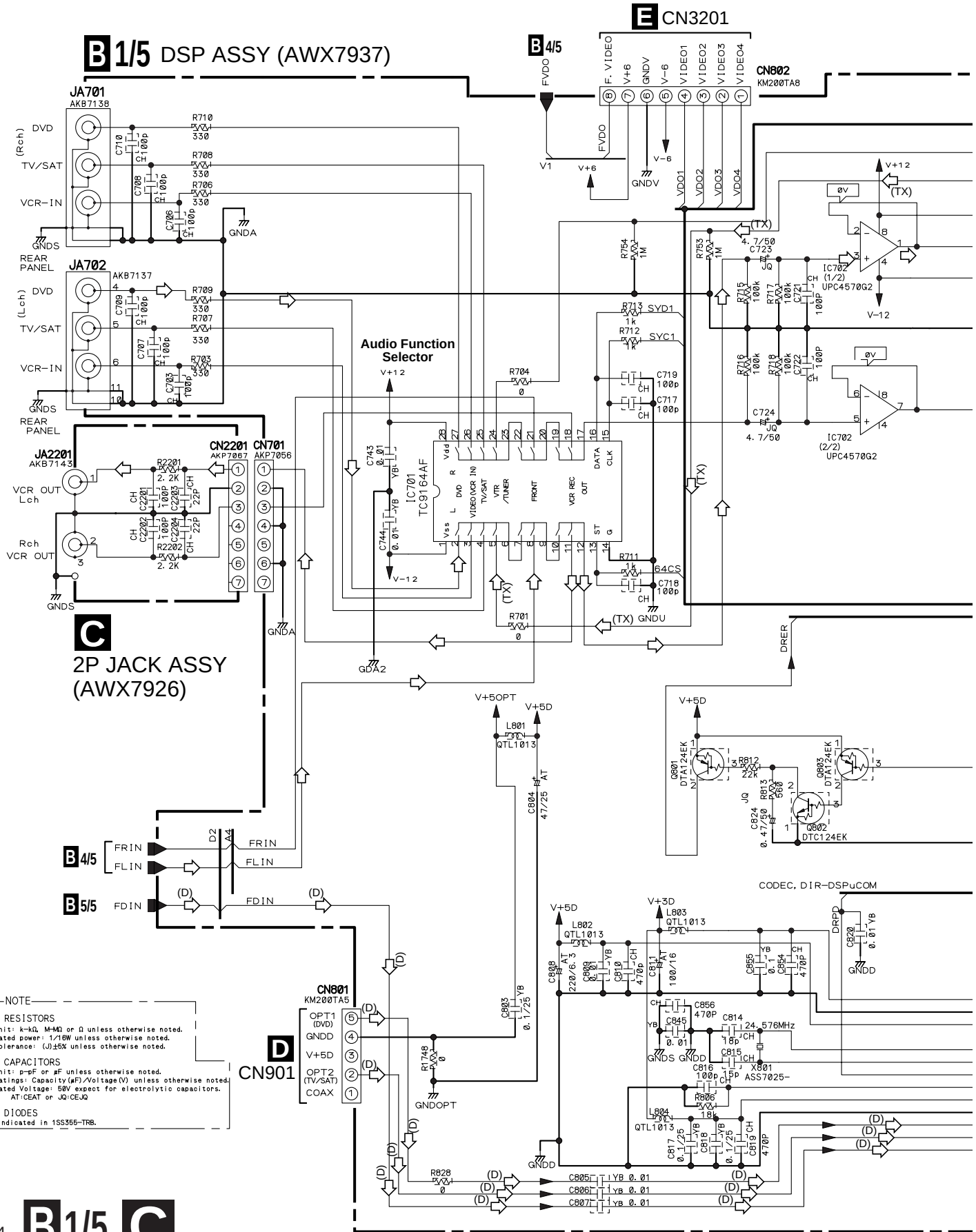
: The power supply is shown with the marked box.

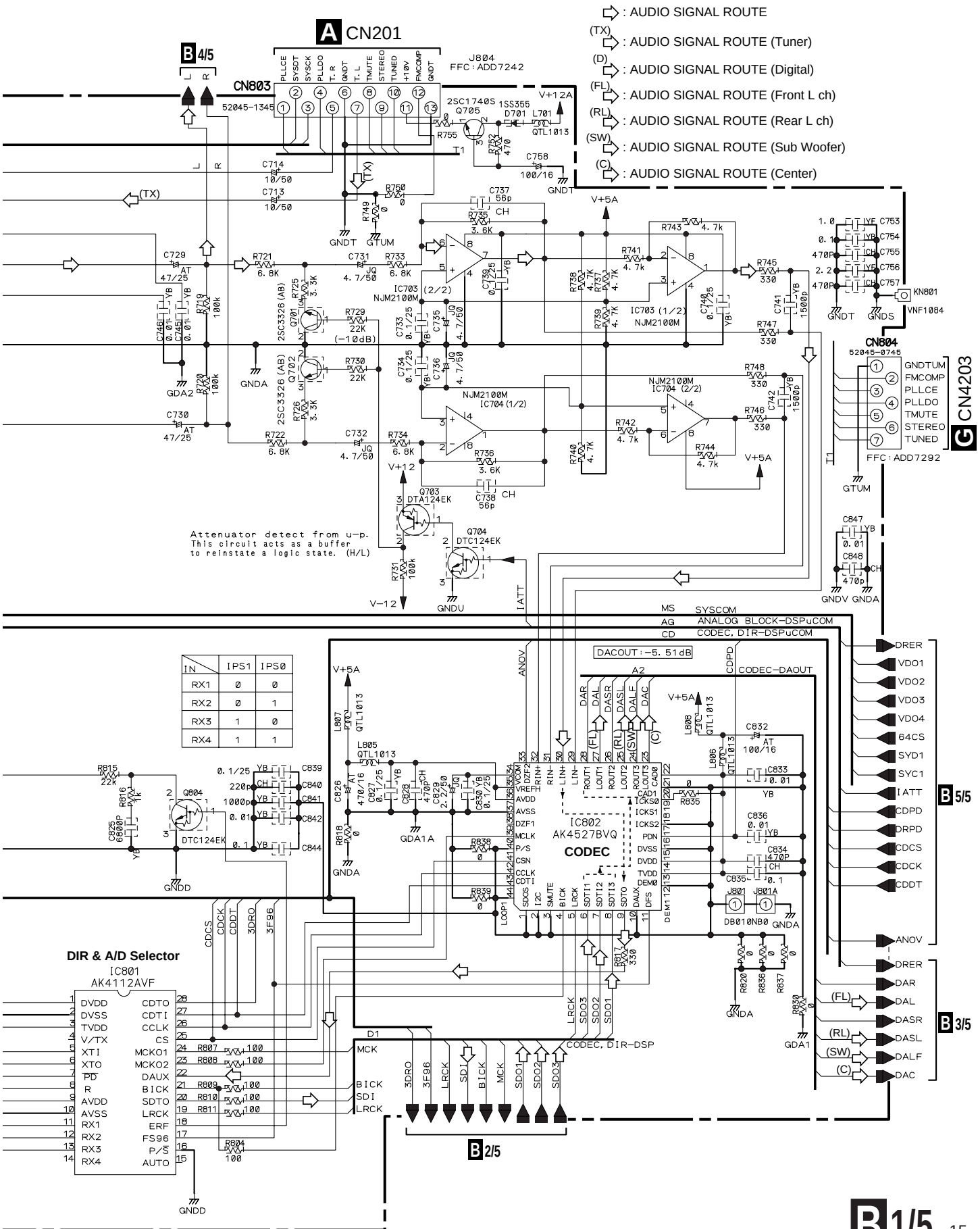
1. RESISTORS
   Indicated in Ω, 1/16W±5% Tolerance unless otherwise noted K:KΩ, M:MΩ.
2. CAPACITORS
   Indicated in Capacity(μF)/VOLTAGE(V) unless otherwise noted P:PF.
3. DIODES
   No mark diode is 1SS133.

(TX) : AUDIO SIGNAL ROUTE (TUNER)
(AM) : AM SIGNAL ROUTE
(FM) : FM SIGNAL ROUTE

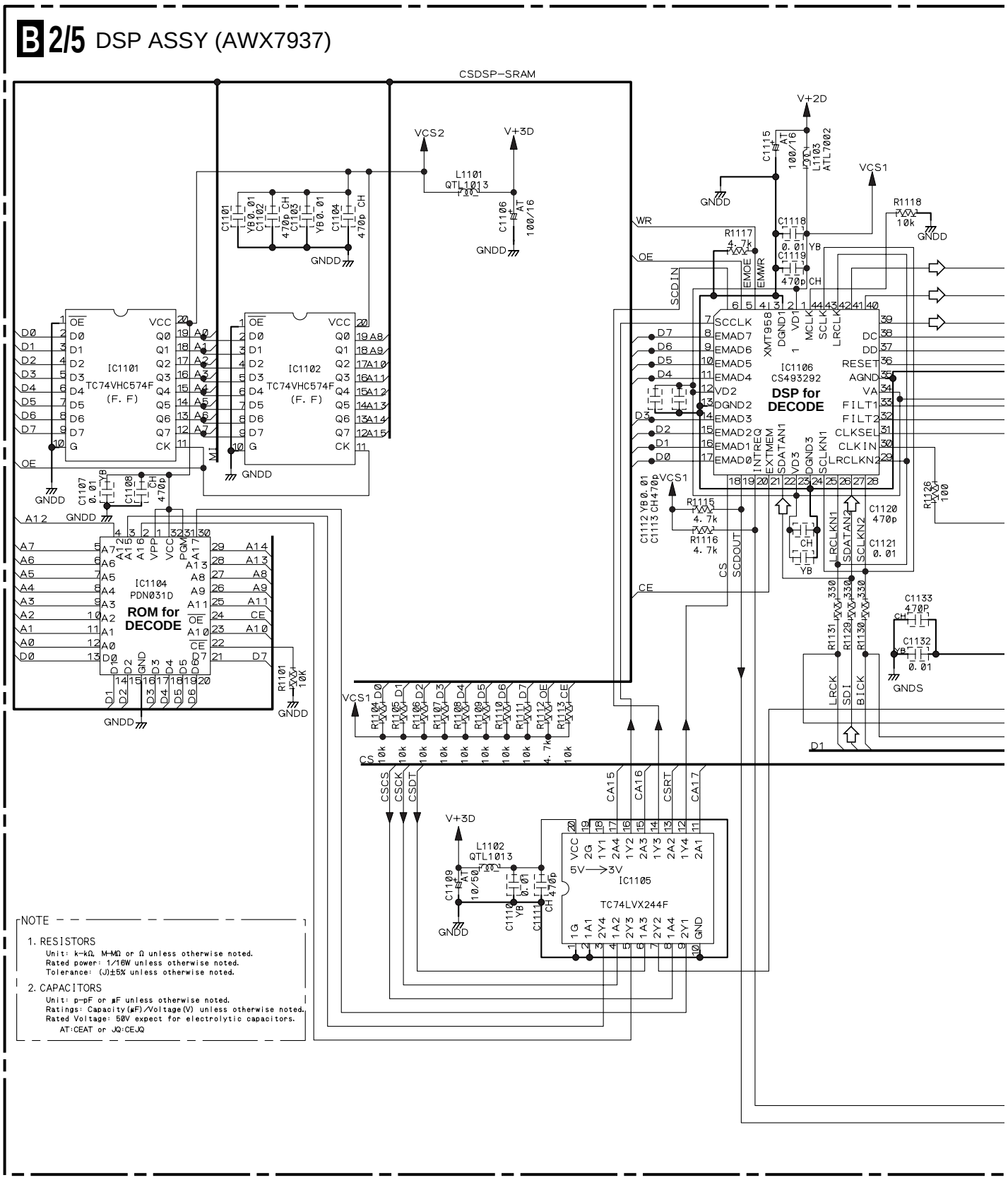


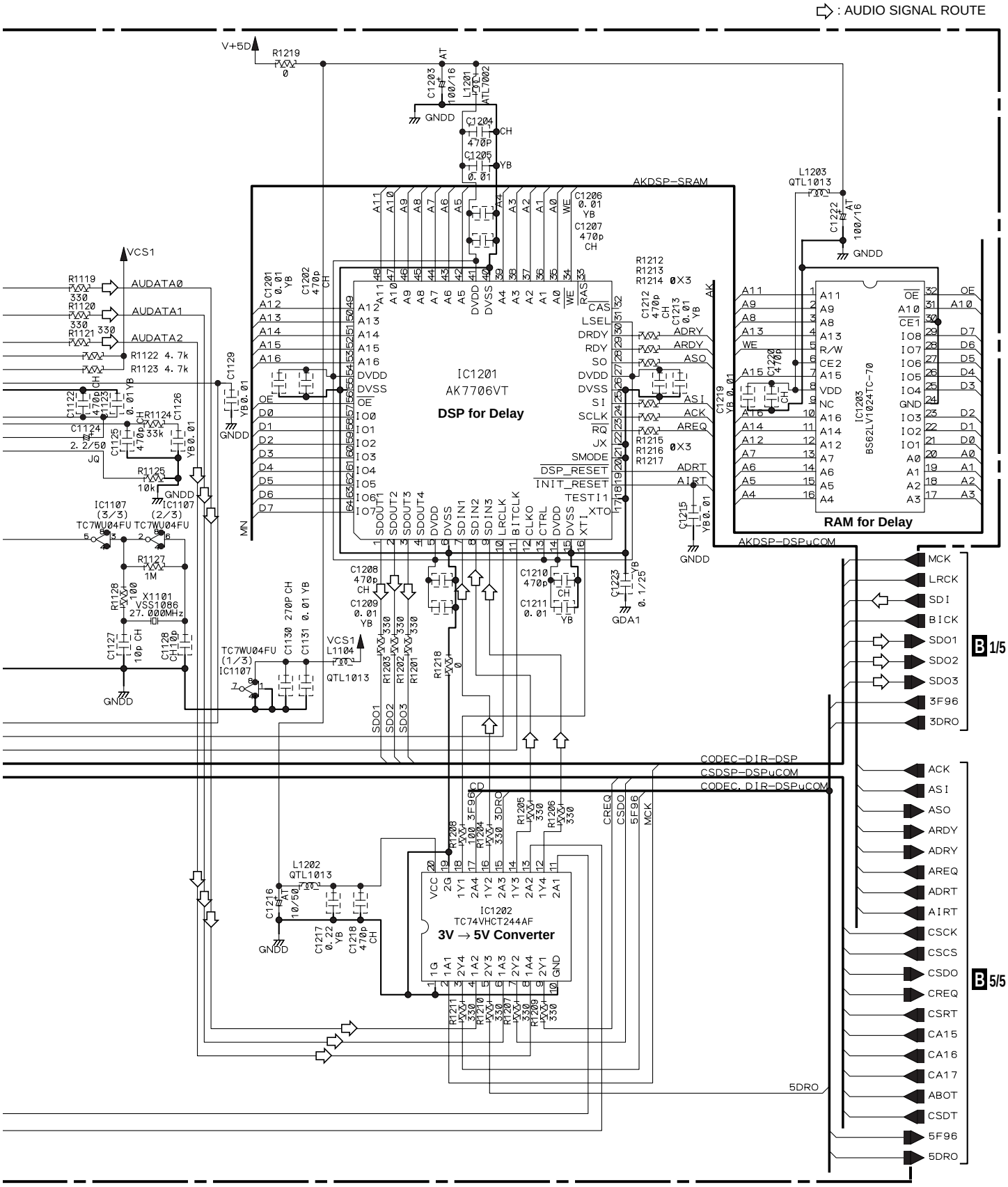
3.4 DSP (1/5) and 2P JACK ASSYS



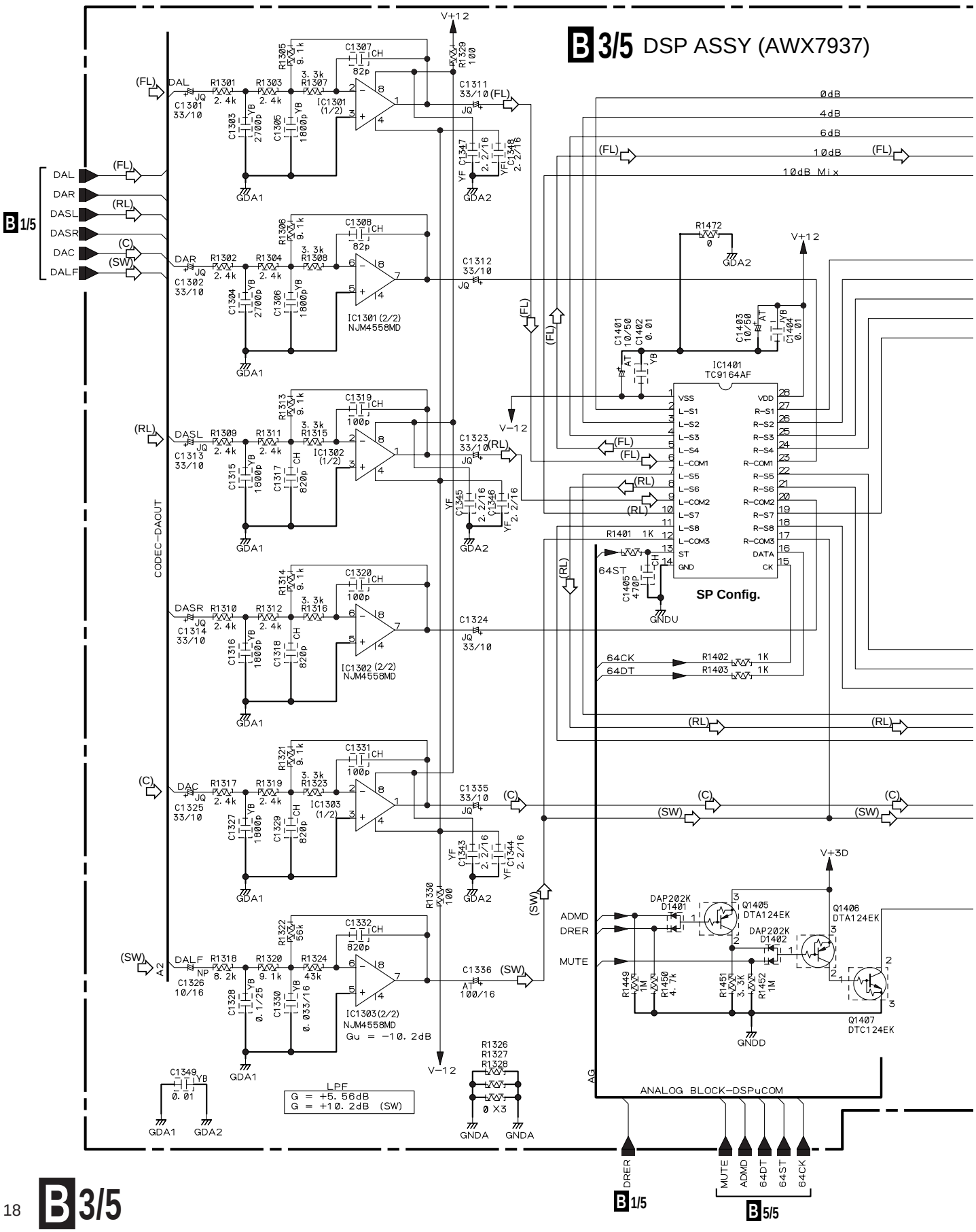

: AUDIO SIGNAL ROUTE
(TX) : AUDIO SIGNAL ROUTE (Tuner)
(D) : AUDIO SIGNAL ROUTE (Digital)
(FL) : AUDIO SIGNAL ROUTE (Front L ch)
(RL) : AUDIO SIGNAL ROUTE (Rear L ch)
(SW) : AUDIO SIGNAL ROUTE (Sub Woofer)
(C) : AUDIO SIGNAL ROUTE (Center)
A CN201
B 4/5
CN803
52045-1345
J804
FFC : ADD7242
PLLCE SYSDT SYSCK PLLDO GNDT T. R T. L TMUTE STEREO TUNED +10V FMCOMP GNDT
V+12A
2SC1740S Q705
1SS355 D701
L701 QTL1013
R755
R752 470
C758 100/16
T1
C714 10/50
C713 10/50
R750 0
R749 0
GNDT GTUM
C737 56p CH
R735 3.6K
IC703 (2/2) NJM2100M
V+5A
R743 4.7k
R741 4.7k
IC703 (1/2) NJM2100M
R745 330
R747 330
R738 4.7k
R739 4.7k
C739 0.1/25 YB
C740 0.1/25 YB
C741 1500p YB
C742 1500p YB
C753 1.0 YF
C754 0.1 YB
C755 470P CH
C756 2.2 YF
C757 470P CH
KN801
VNF1084
GNDT GNDS
C729 AT 47/25
R721 6.8K
C731 4.7/50 JQ
R733 6.8K
C735 0.1/25 YB
C736 4.7/50 JQ
R729 22K (−10dB)
R730 22K
2SC3326 (AB) Q701
2SC3326 (AB) Q702
R725 3.3K
R726 3.3K
R719 100k
R720 100k
C746 0.01 YB
C745 0.01 YB
GDA2
GNDA
C730 AT 47/25
R722 6.8K
C732 4.7/50 JQ
R734 6.8K
R736 3.6K
C738 56p CH
NJM2100M IC704 (1/2)
NJM2100M IC704 (2/2)
R748 330
R746 330
R742 4.7k
R744 4.7k
R740 4.7k
V+5A
V+12
Q703 DTA124EK
Q704 DTC124EK
R731 100k
V−12
GNDU
IATT
Attenuator detect from u−p.
This circuit acts as a buffer
to reinstate a logic state. (H/L)
G CN4203
CN804
52045−0745
GNDTUM
FMCOMP
PLLCE
PLLDO
TMUTE
STEREO
TUNED
FFC : ADD7292
GTUM
C847 0.01 YB
C848 470p CH
GNDV GNDA
MS SYSCOM
AG ANALOG BLOCK−DSPuCOM
CD CODEC, DIR−DSPuCOM
DACOUT : −5. 51dB
CDPD CODEC−DAOUT
A2
ANOV
V+5A
L807 QTL1013
L805 QTL1013
L808 QTL1013
L806 QTL1013
C832 AT 100/16
C833 0.01 YB
C836 0.01 YB
C834 470P CH
C835 0.1
R835 0
DAR DAL DASR DASL DALF DAC
(FL) (RL) (SW) (C)
IC802 AK4527BVQ CODEC
ICKS0 ICKS1 ICKS2 PDN DVSS DVDD TVDD DEM0 DFS
CAD0 CAD1
J801 J801A
DB010NB0
GNDA
DREER VDO1 VDO2 VDO3 VDO4 64CS SYD1 SYC1 IATT CDPD DRPD CDCS CDCK CDDT
B 5/5
ANOV
DREER DAR DAL DASR DASL DALF DAC
B 3/5
R820 0
R836 0
R837 0
R830 0
GDA1
C826 470/16 YB
C827 4.7/25 YB
C828 470 CH
C829 2.2/50 JQ
C830 0.1/25 YB
R838 0
R839 0
GDA1A
GNDA
R815 22k
R816 1k
C825 6800P YB
Q804 DTC124EK
GNDD
0.1/25 YB C839
220p CH C840
1000p YB C841
0.01 YB C842
0.1 YB C844
IN IPS1 IPS0
RX1 0 0
RX2 0 1
RX3 1 0
RX4 1 1
DIR & A/D Selector
IC801 AK4112AVF
DVDD DVSS TVDD V/TX XTI XTO PD R AVDD AVSS RX1 RX2 RX3 RX4
CDTO CDTI CCLK CS MCKO1 MCKO2 DAUX BICK SDTO LRCK ERF FS96 P/S AUTO
R807 100
R808 100
R809 100
R810 100
R811 100
R804 100
GNDD
CDCS CDCK CDDT 3DRO 3F96
D1
MCK BICK SDI LRCK
3DRO 3F96 LRCK SDI BICK MCK SDO1 SDO2 SDO3
CODEC, DIR−DSP
B 2/5
B 1/5

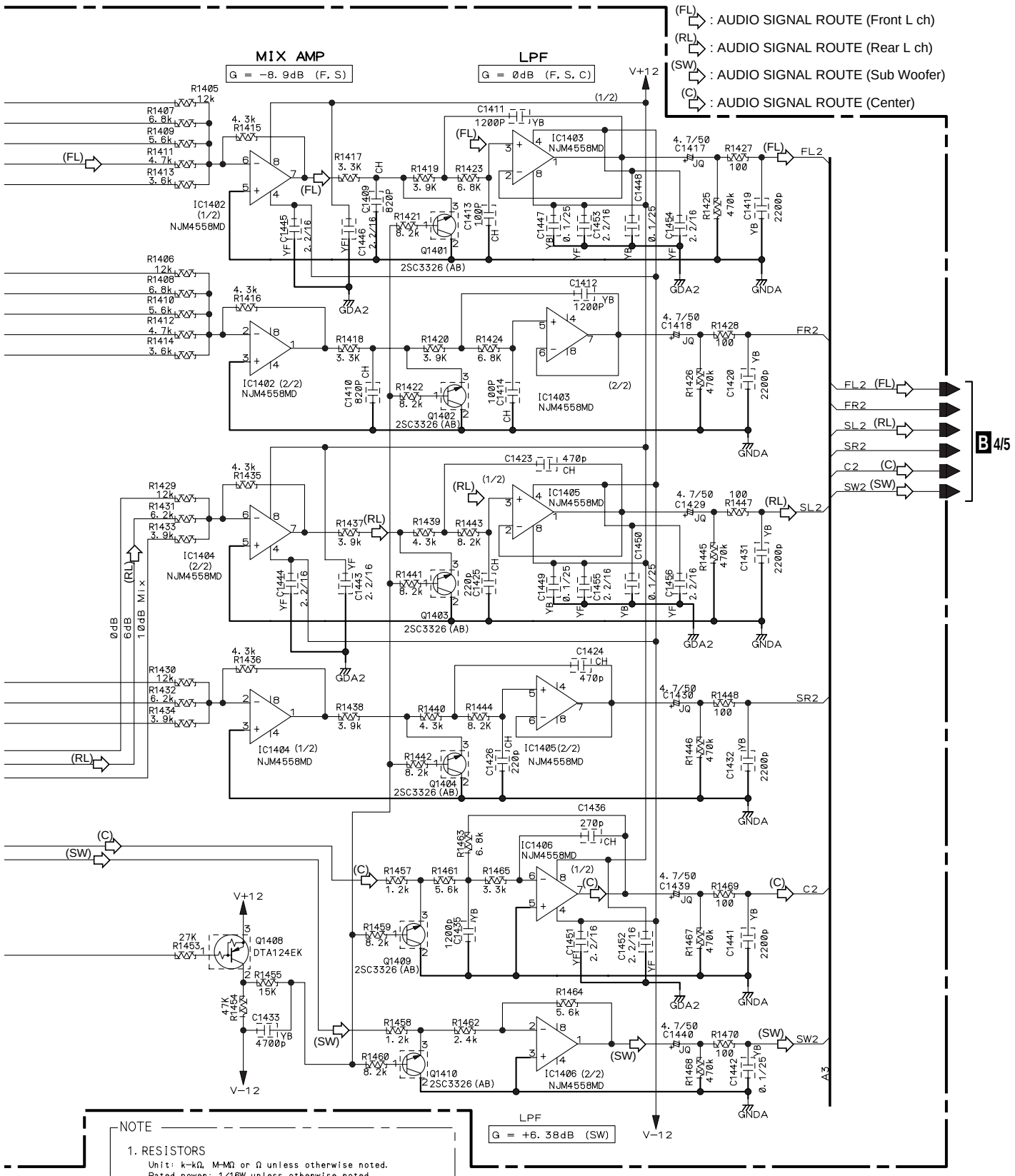
3.5 DSP ASSY (2/5)




: AUDIO SIGNAL ROUTE
AKDSP-SRAM
IC1201
AK7706VT
DSP for Delay
IC1202
TC74VHCT244AF
3V → 5V Converter
IC1203
BS62LV1024TC-70
RAM for Delay
AKDSP-DSPuCOM
CODEC-DIR-DSP
CSDSP-DSPuCOM
CODEC_DIR-DSPuCOM
AUDATA0
AUDATA1
AUDATA2
VCS1
X1101
VSS1086
27.000MHz
MCK
LRCK
SDI
BICK
SDO1
SDO2
SDO3
3F96
3DRO
ACK
ASI
ASO
ARDY
ADRY
AREQ
ADRT
AIRT
CSCK
CSCS
CSDO
CREQ
CSRT
CA15
CA16
CA17
ABOT
CSDT
5F96
5DRO
B 1/5
B 5/5
B 2/5

3.6 DSP ASSY (3/5)

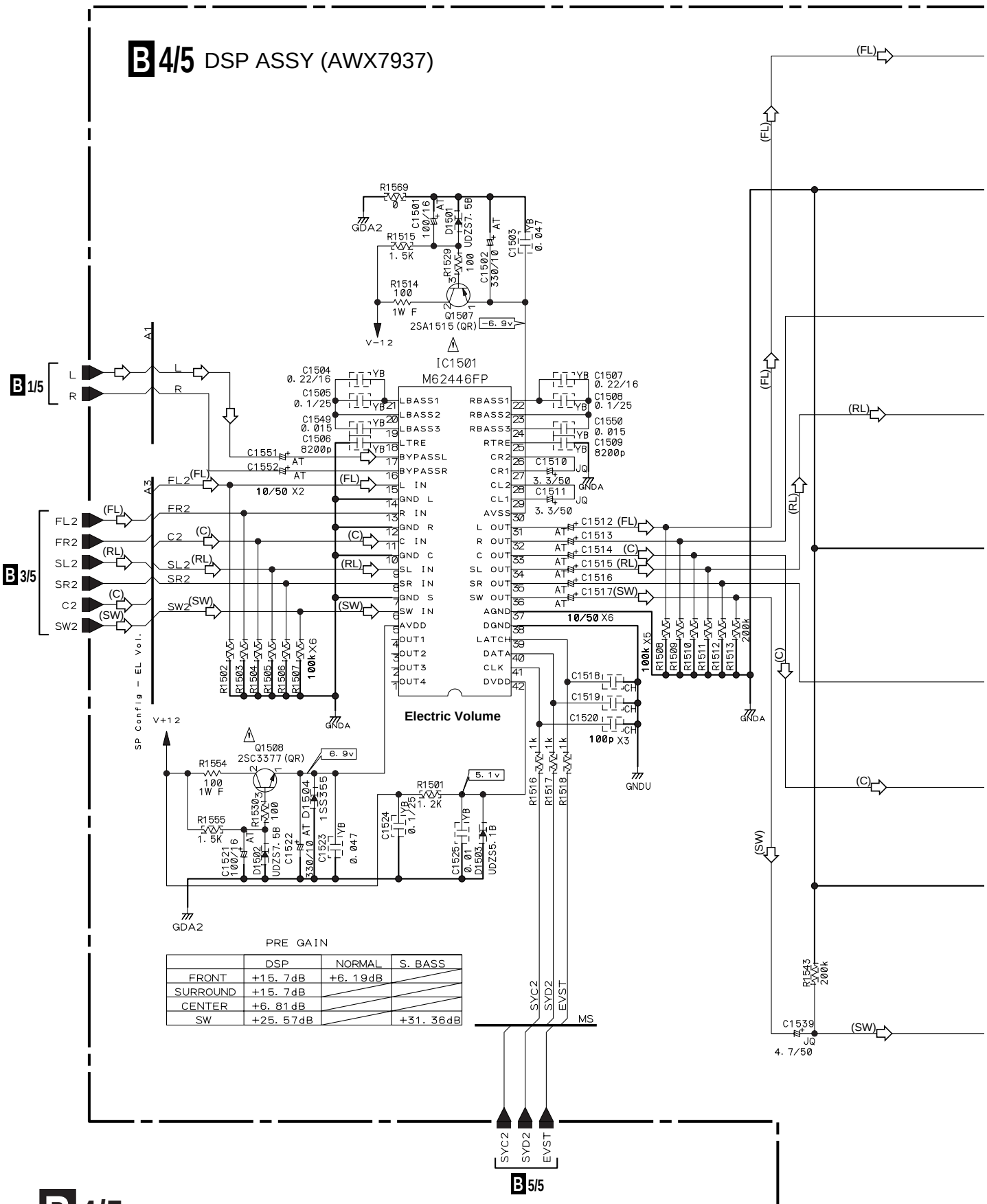


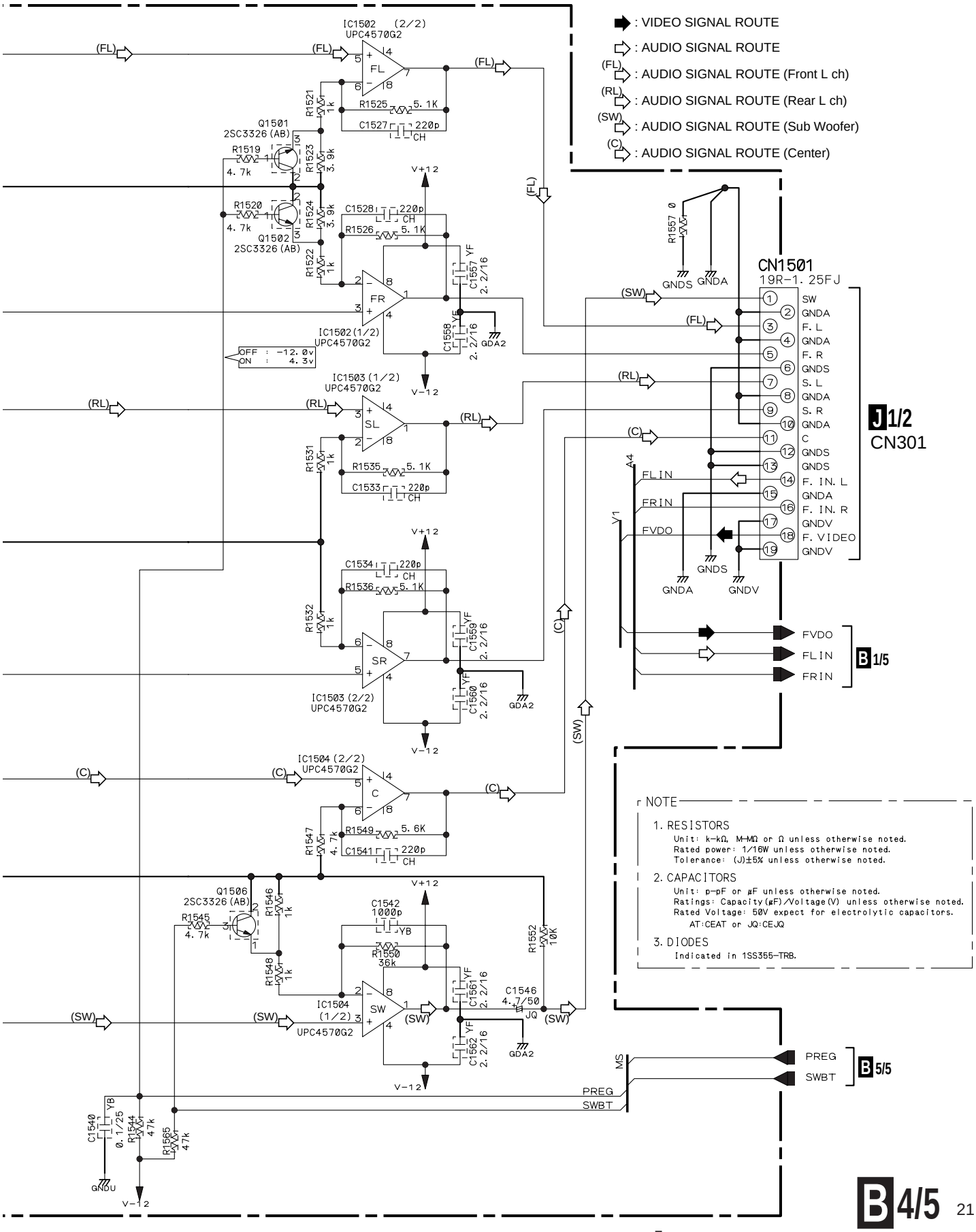


NOTE

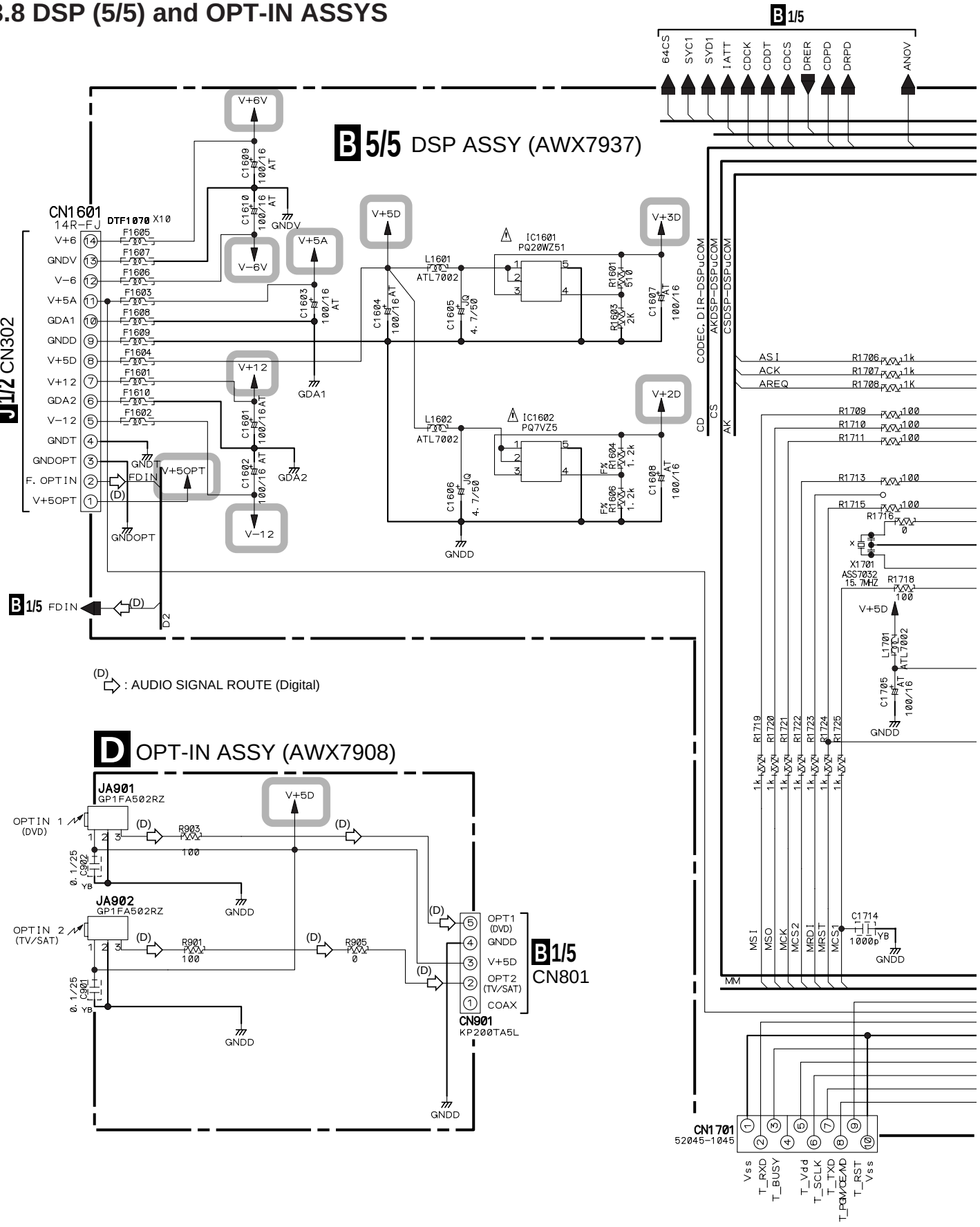
1. RESISTORS
   Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
   Rated power: 1/16W unless otherwise noted.
   Tolerance: (J)±5% unless otherwise noted.
2. CAPACITORS
   Unit: p-pF or µF unless otherwise noted.
   Ratings: Capacity(µF)/Voltage(V) unless otherwise noted.
   Rated Voltage: 50V expect for electrolytic capacitors.
   AT:CEAT or JQ:CEJQ

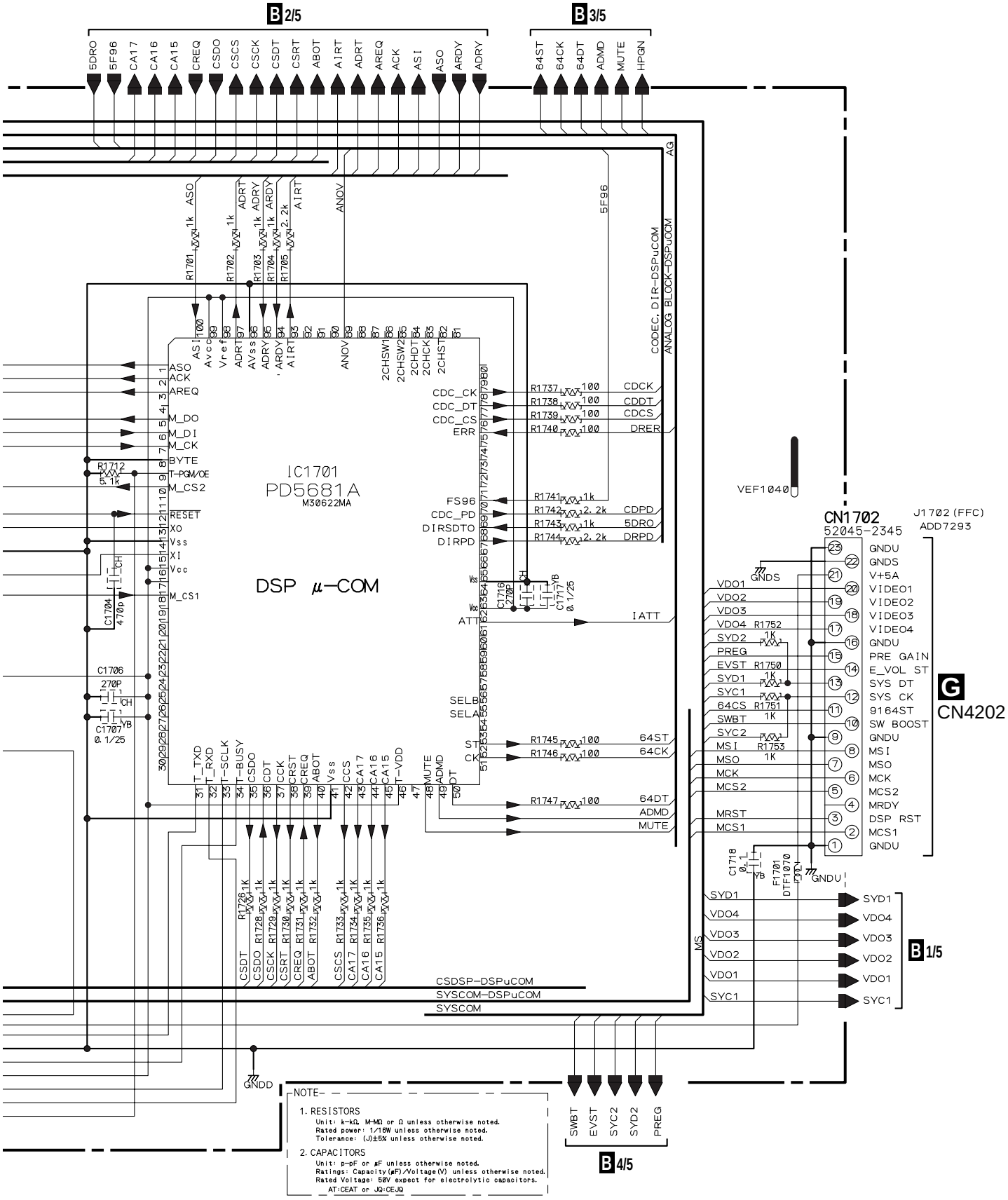
3.7 DSP ASSY (4/5)




: VIDEO SIGNAL ROUTE
: AUDIO SIGNAL ROUTE
(FL) : AUDIO SIGNAL ROUTE (Front L ch)
(RL) : AUDIO SIGNAL ROUTE (Rear L ch)
(SW) : AUDIO SIGNAL ROUTE (Sub Woofer)
(C) : AUDIO SIGNAL ROUTE (Center)
IC1502 (2/2) UPC4570G2
IC1502(1/2) UPC4570G2
IC1503 (1/2) UPC4570G2
IC1503 (2/2) UPC4570G2
IC1504 (2/2) UPC4570G2
IC1504 (1/2) UPC4570G2
Q1501 2SC3326 (AB)
Q1502 2SC3326 (AB)
Q1506 2SC3326 (AB)
OFF : -12.0v
ON : 4.3v
CN1501 19R-1.25FJ
SW
GNDA
F. L
F. R
GNDS
S. L
S. R
C
F. IN. L
F. IN. R
GNDV
F. VIDEO
FLIN
FRIN
FVDO
J 1/2 CN301
B 1/5
B 5/5
PREG
SWBT
NOTE
1. RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/16W 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.
AT:CEAT or JQ:CEJQ
3. DIODES
Indicated in 1SS355-TRB.

3.8 DSP (5/5) and OPT-IN ASSYS

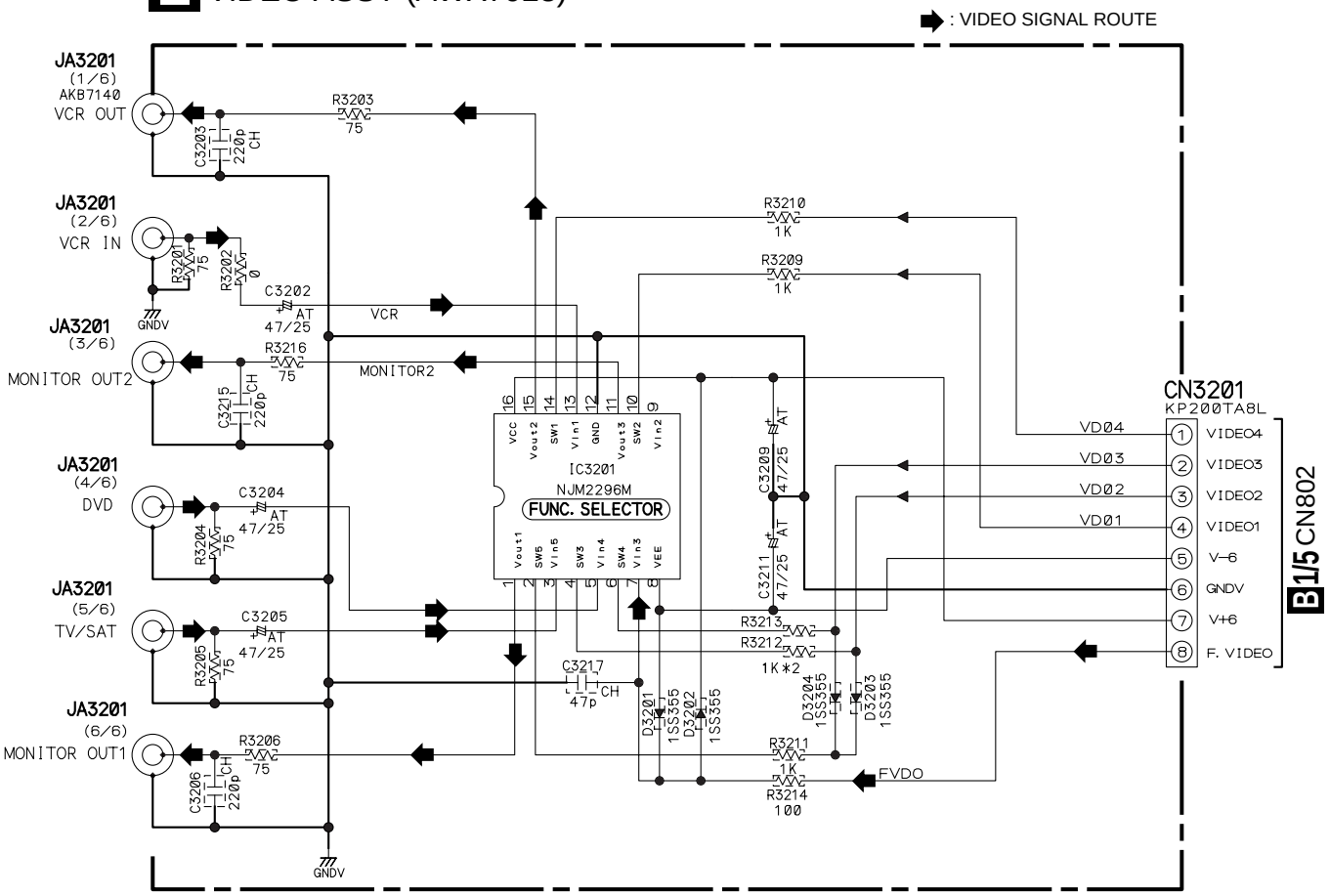




: The power supply is shown with the marked box.

3.9 VIDEO ASSY

E VIDEO ASSY (AWX7928)



NJM2296M control port status

SW1	SW2	SW3	SW4	SW5	Vout1	Vout2	Vout3
0	1	(1)	(0)	1	Vin1	mute	Vin1
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 1. VCR
VIN 2. N. C.
VIN 3. FRONT
VIN 4. DVD/LD
VIN 5. TV/SAT

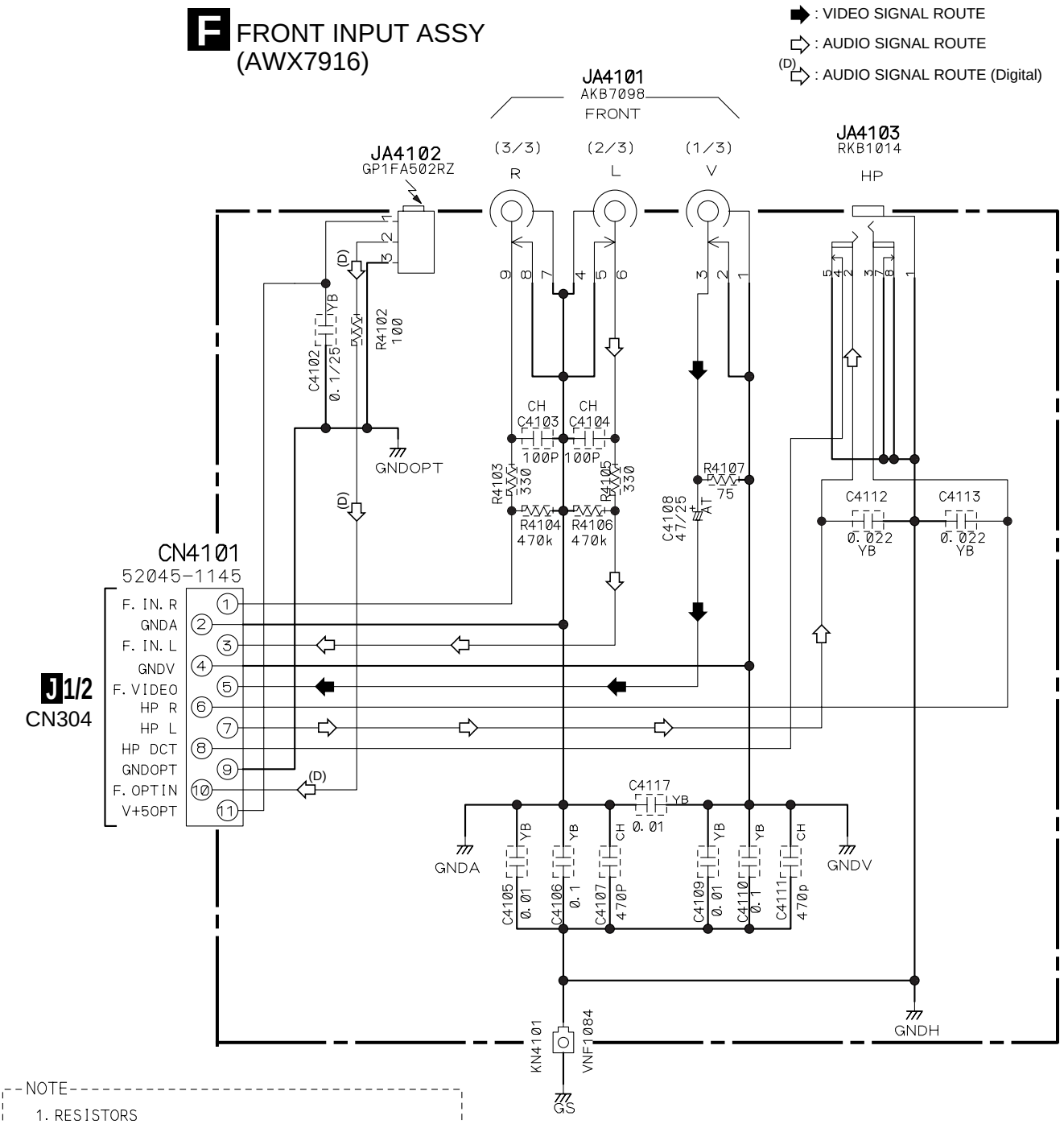
Vout1. MON out
Vout2. VCR OUT
Vout3. N. C.

SW1. VIDEO4
SW2. VIDEO1
SW3. VIDEO2
SW4. VIDEO3
SW5. VIDEO2 or VIDEO3

NOTE

1. RESISTORS
   Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
   Rated power: 1/16W 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.
   AT:CEAT or AL:CEAL
3. DIODES
   Indicated in 1SS355-TRB

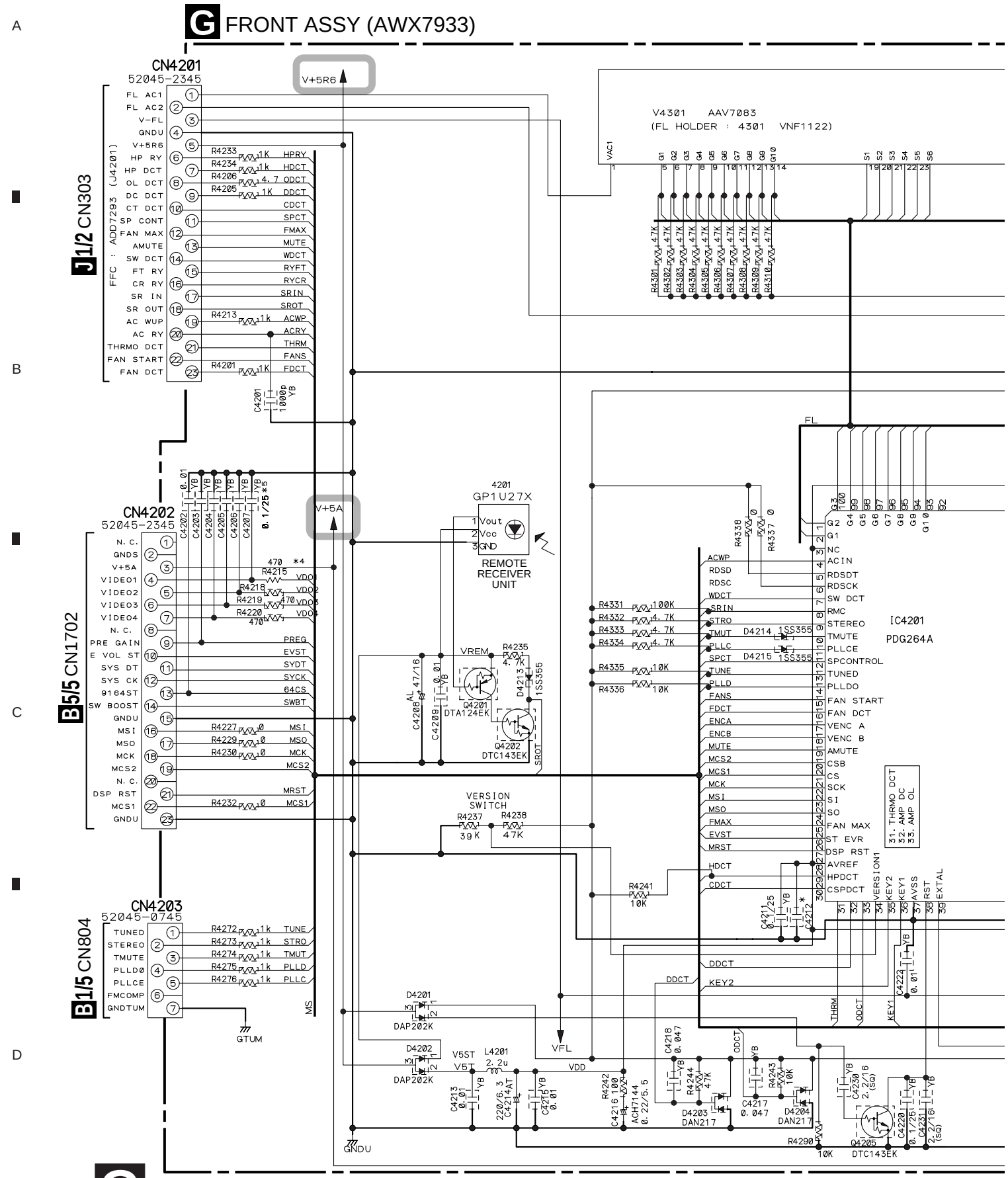
3.10 FRONT INPUT ASSY



NOTE

1. RESISTORS
   Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
   Rated power: 1/16W 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.
   AT:CEAT or AL:CEAL
3. DIODES
   Indicated in 1SS355-TRB

3.11 FRONT, LED and ENCODER ASSYS



: The power supply is shown with the marked box.

NOTE
1. RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/16W 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.
AL:CEAL or JQ:CEJQ
3. DIODES
Indicated in 1SS355-TRB.

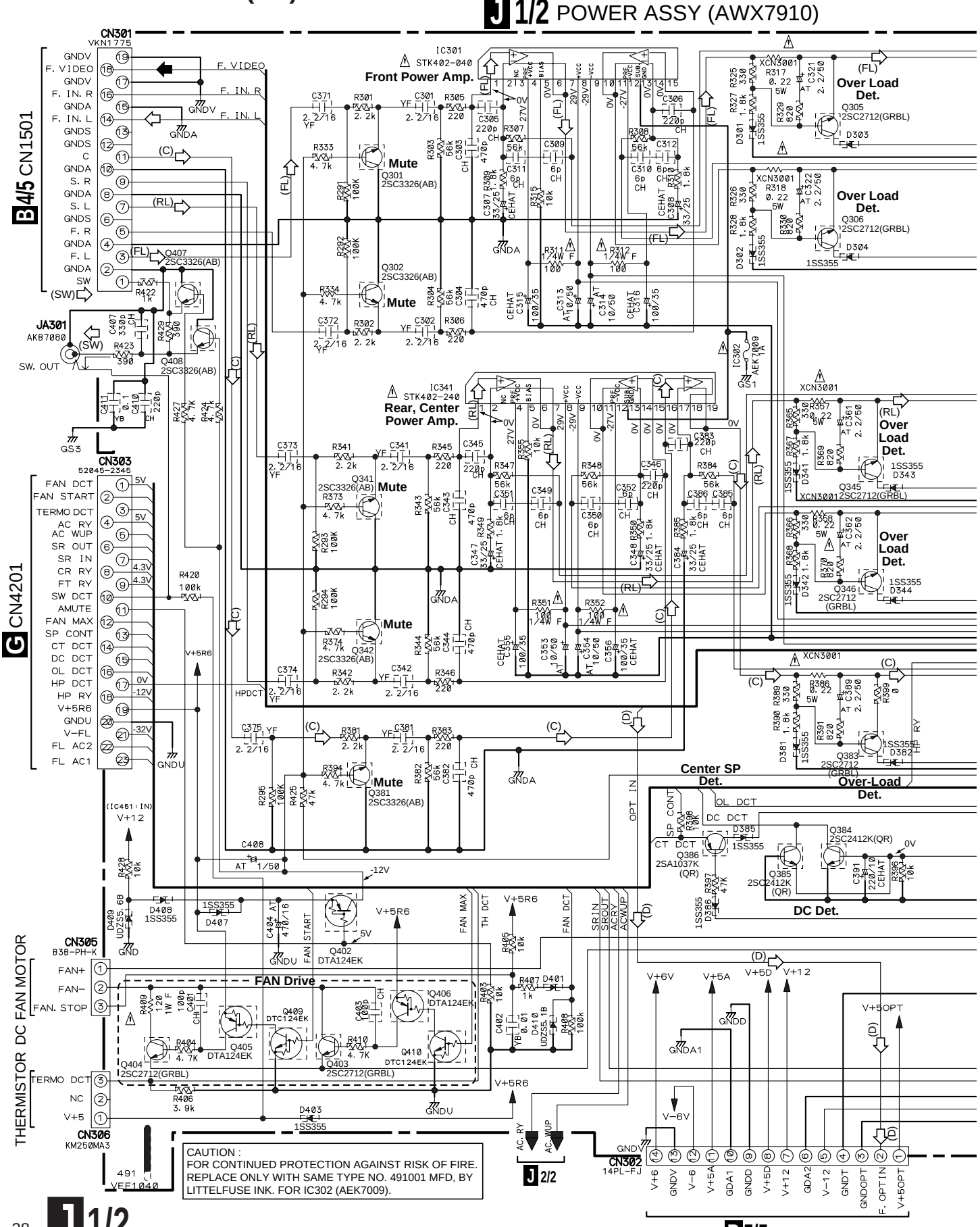
FRONT ASSY
S4201 : DVD
S4202 : TV / SAT
S4203 : VCR
S4204 : TUNER
S4205 : FRONT

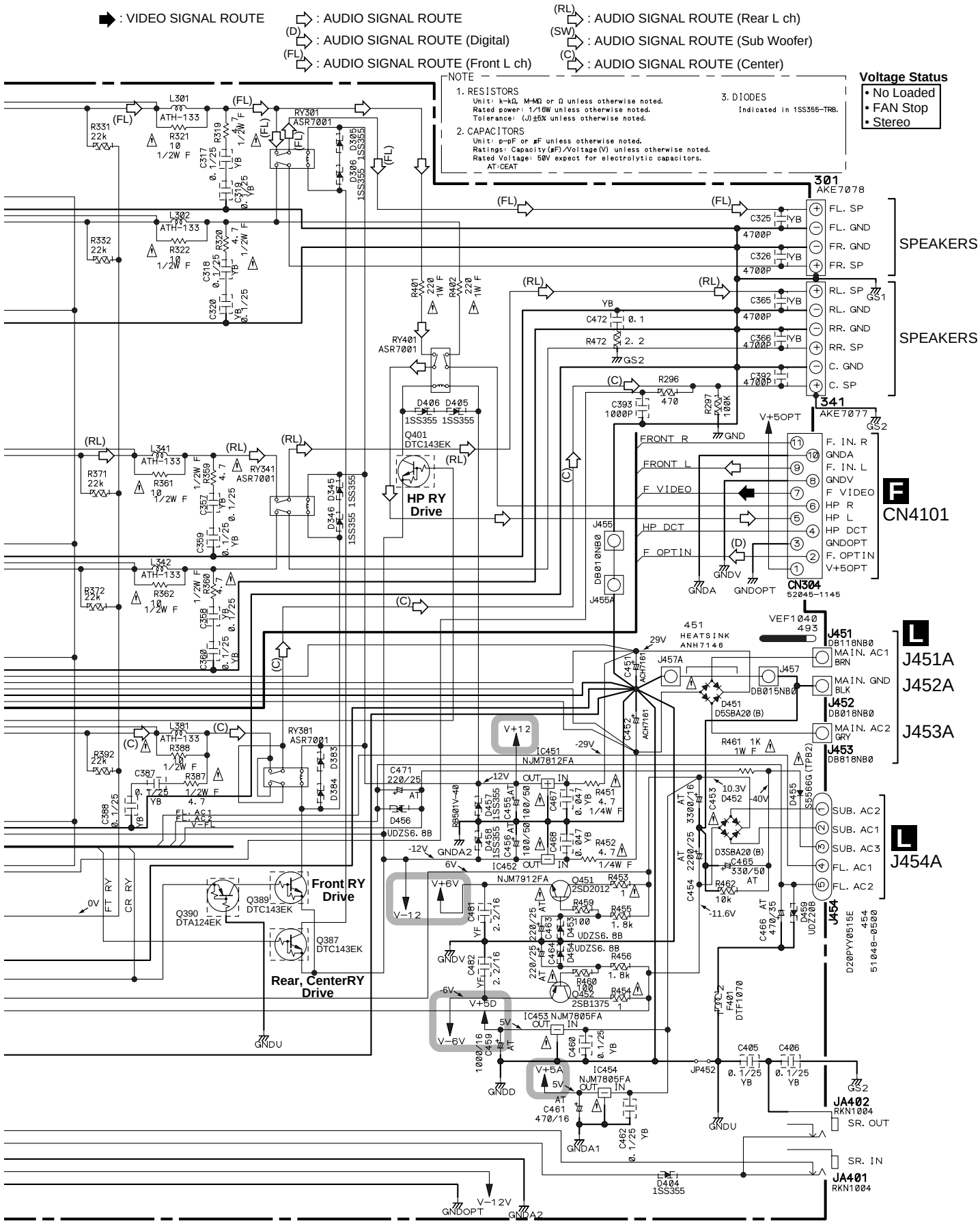
ENCODER ASSY
S4401 : MASTER VOLUM

H LED ASSY (AWX7913)

I ENCODER ASSY (AWX7914)

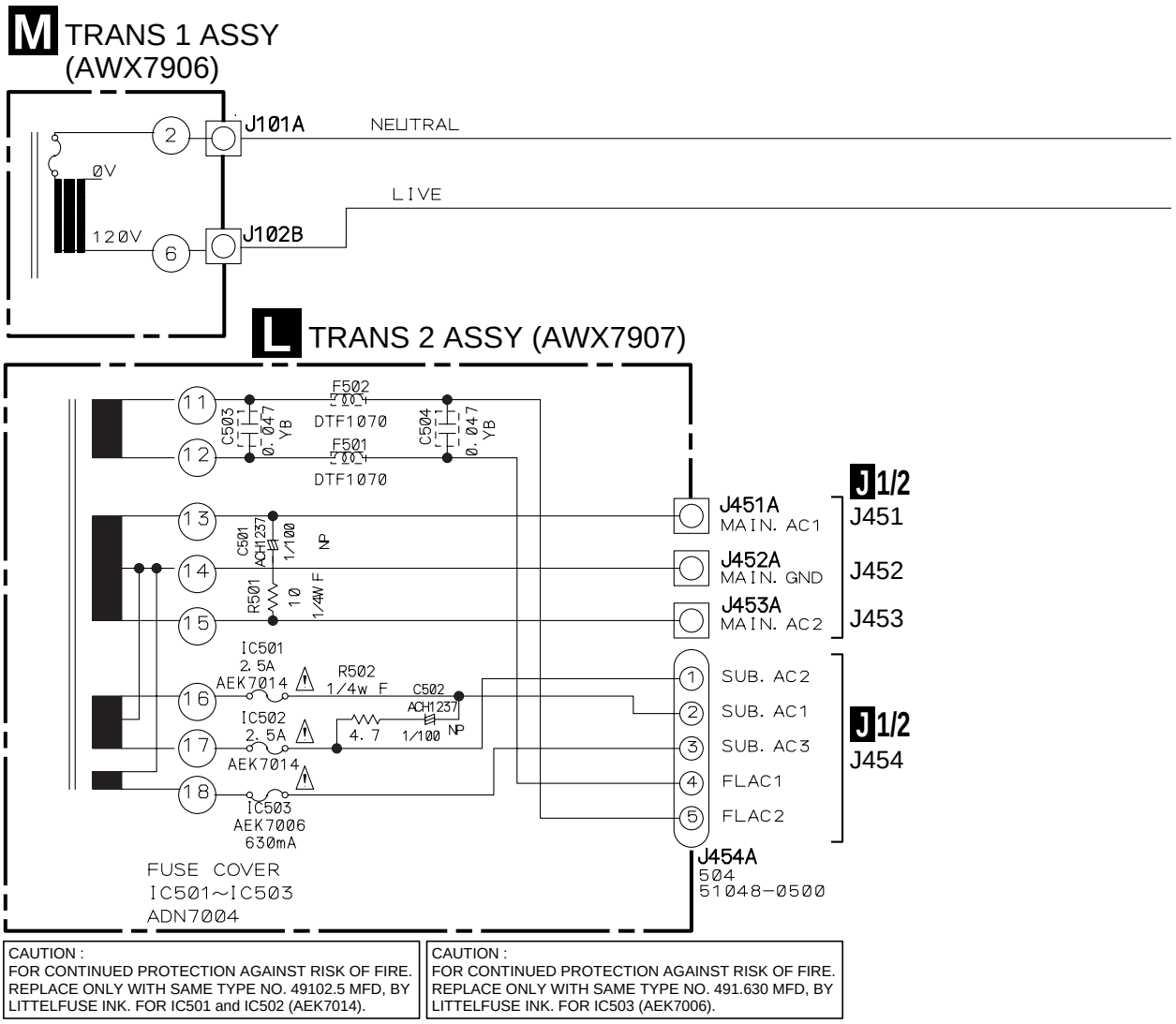
3.12 POWER ASSY (1/2)





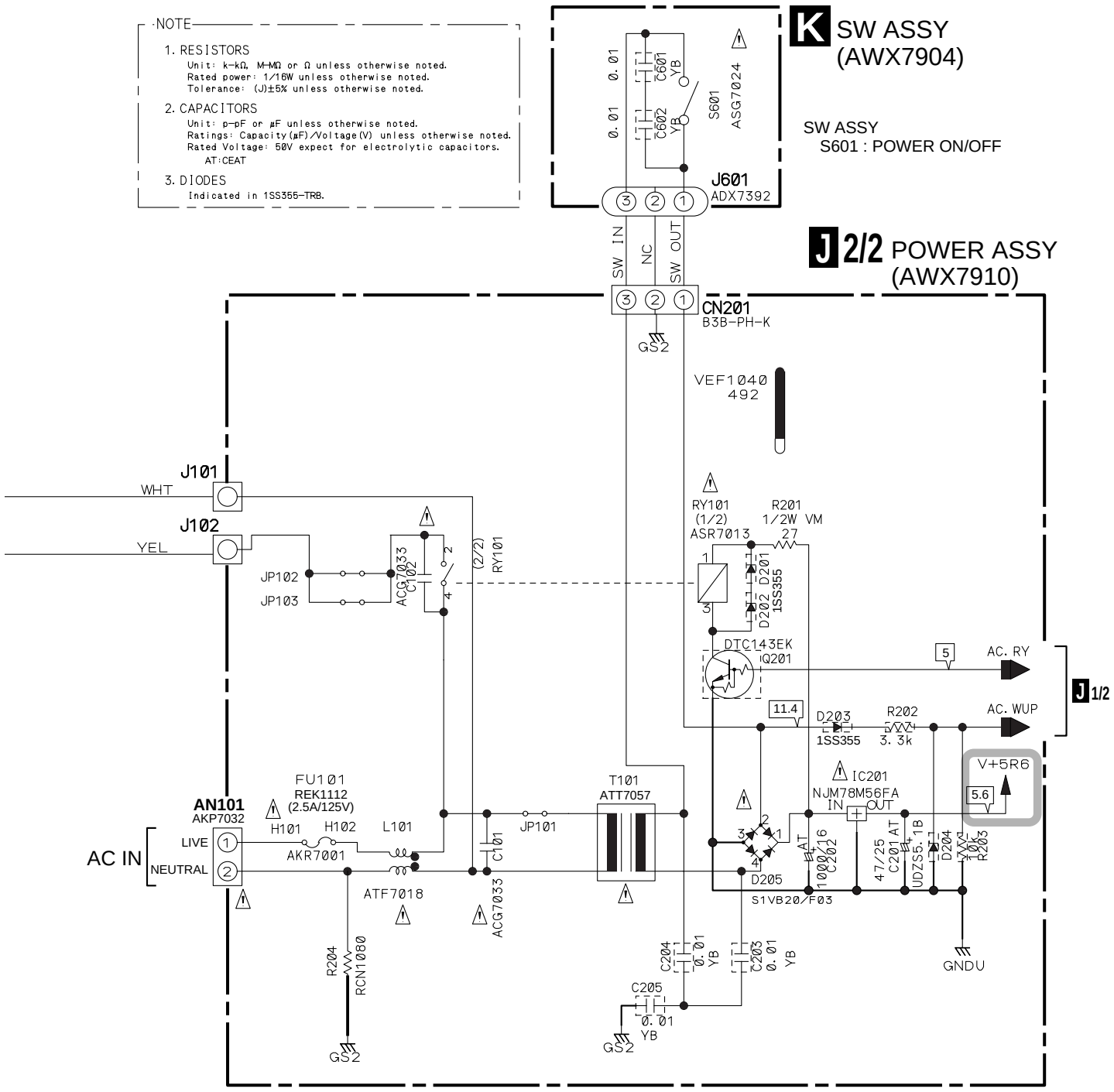
: The power supply is shown with the marked box.

3.13 POWER (2/2), SW, TRANS 2 and TRANS 1 ASSYS



CAUTION :
FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 49102.5 MFD, BY LITTELFUSE INK. FOR IC501 and IC502 (AEK7014).

CAUTION :
FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.630 MFD, BY LITTELFUSE INK. FOR IC503 (AEK7006).



• NOTE FOR FUSE REPLACEMENT

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

: The power supply is shown with the marked box.

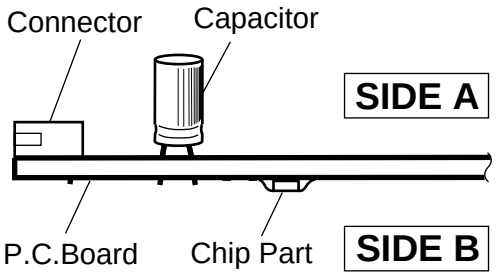
4. PCB CONNECTION DIAGRAM

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.

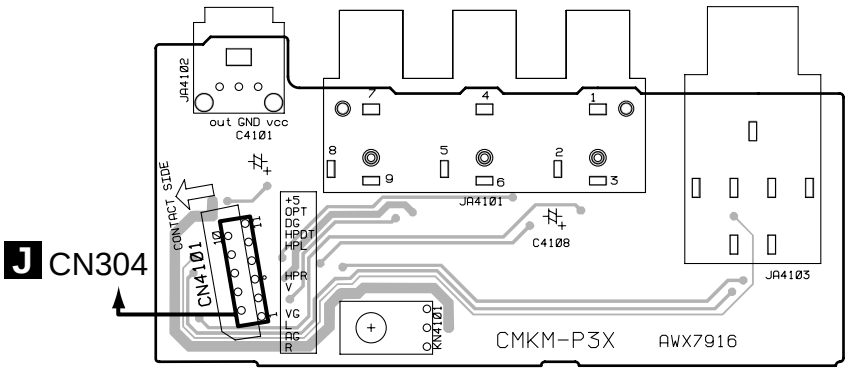
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

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.



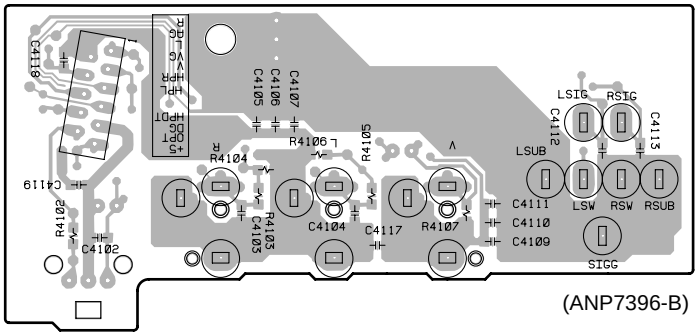
4.1 FRONT INPUT ASSY

F FRONT INPUT ASSY



(ANP7396-B) **SIDE A**

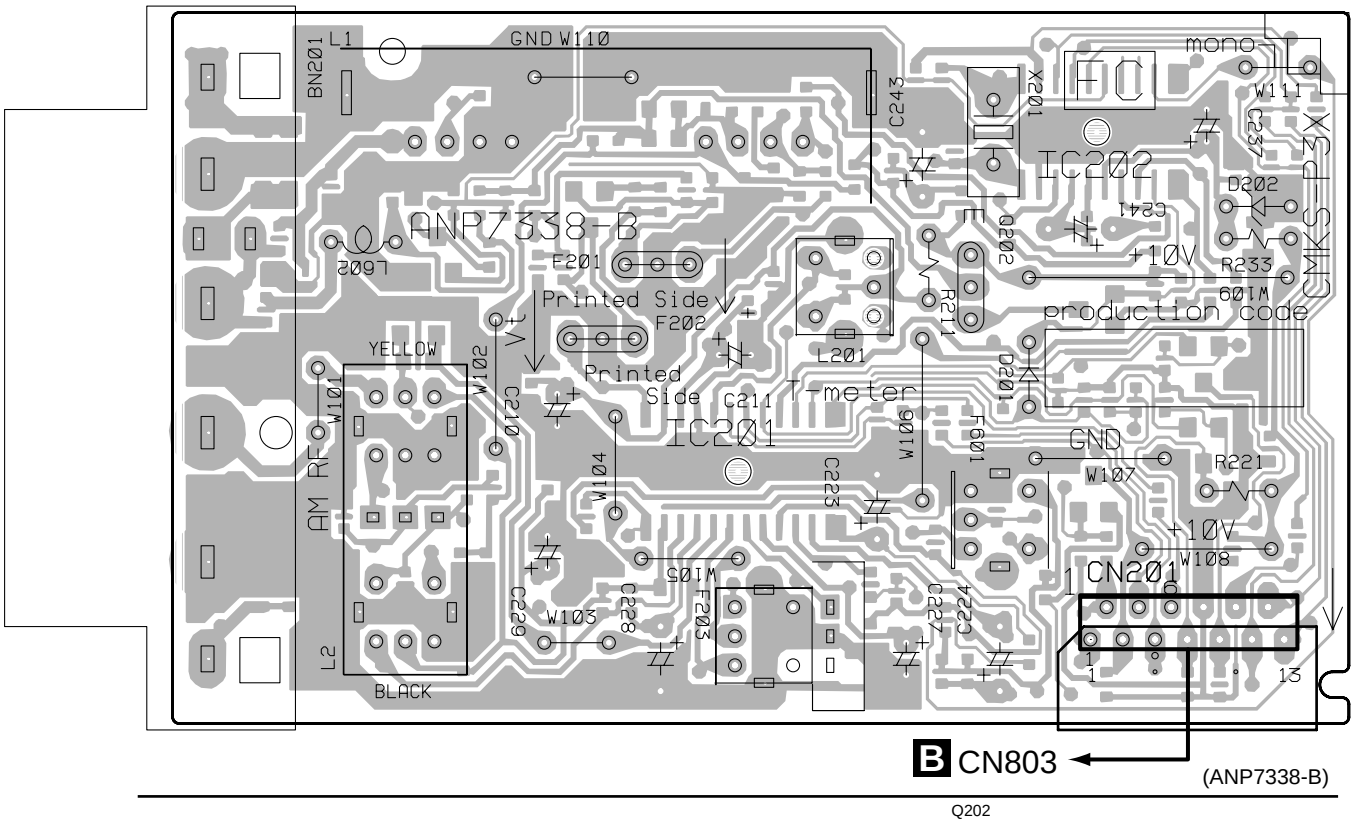
F FRONT INPUT ASSY



(ANP7396-B) **SIDE B**

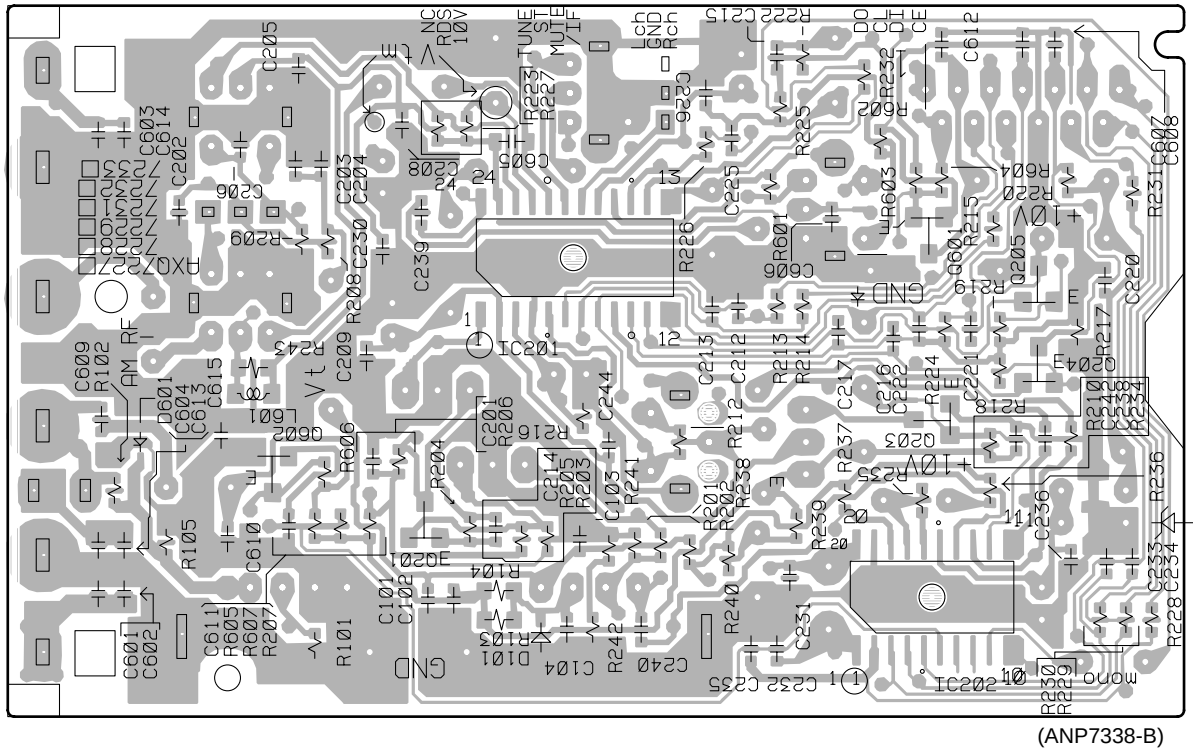
4.2 FM/AM TUNER MODULE

A FM/AM TUNER MODULE — SIDE A



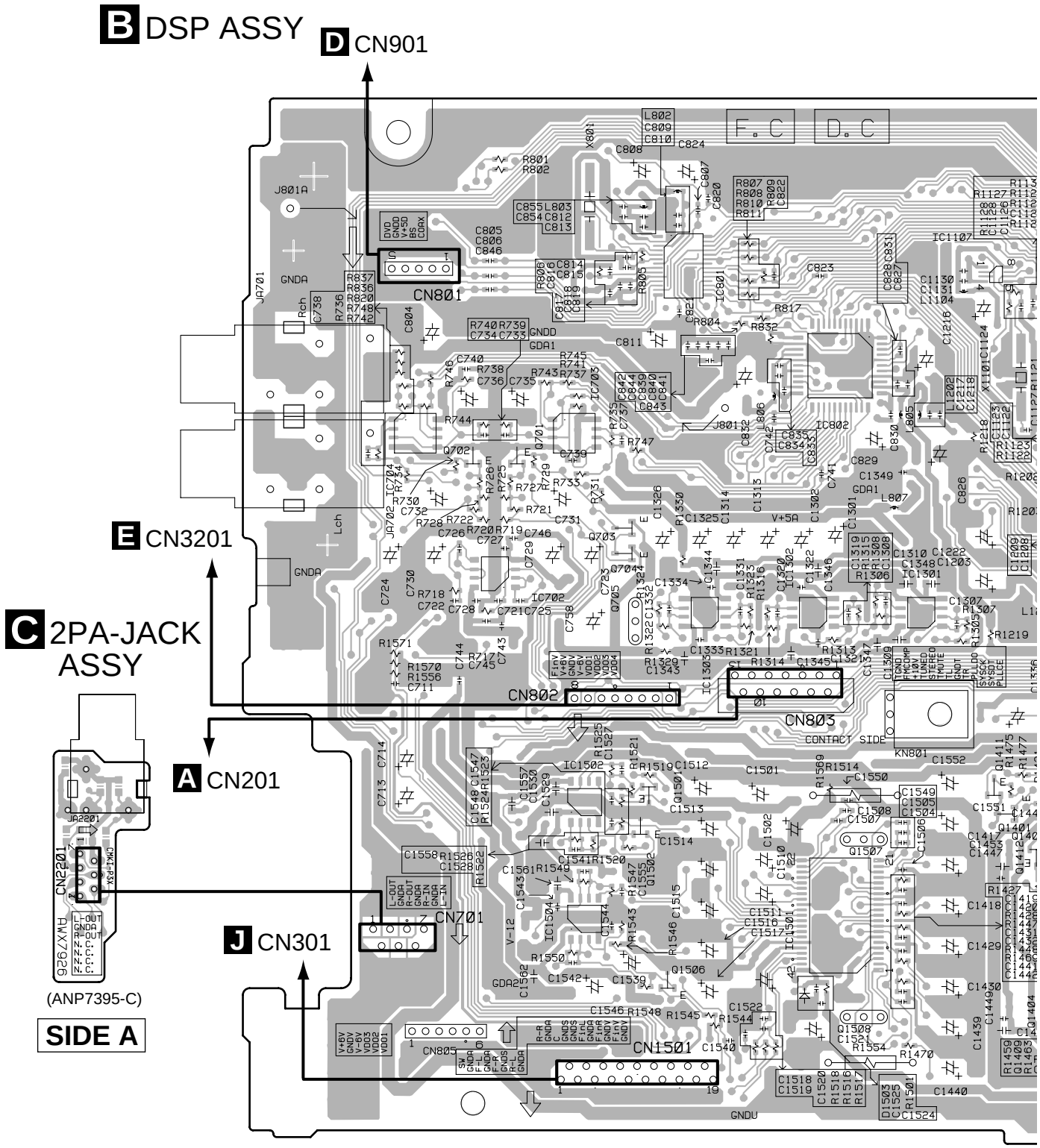
Q202

A FM/AM TUNER MODULE — SIDE B

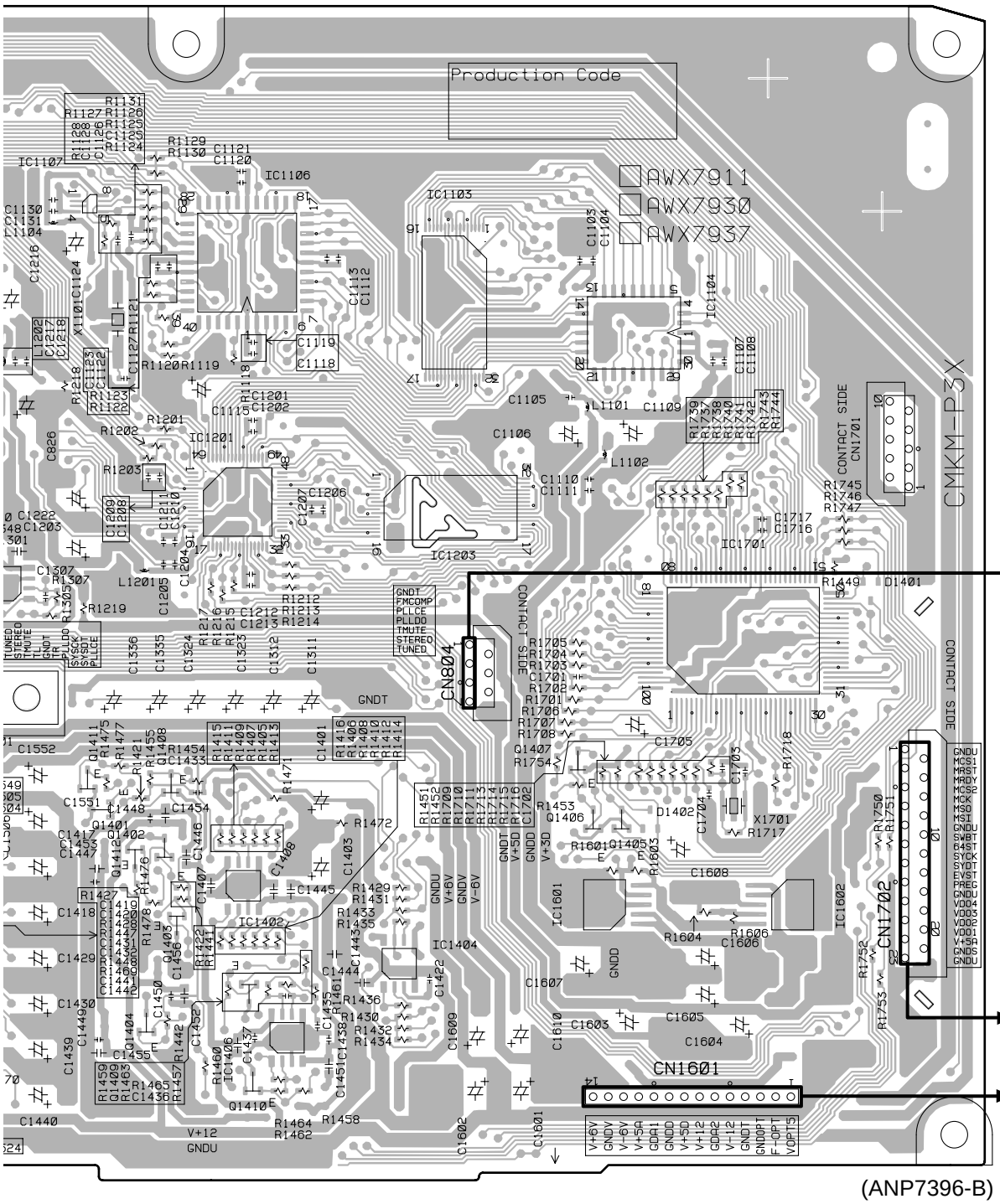


Q201 IC201 Q203 IC202 Q205 Q204

4.3 DSP and 2P-JACK ASSYS



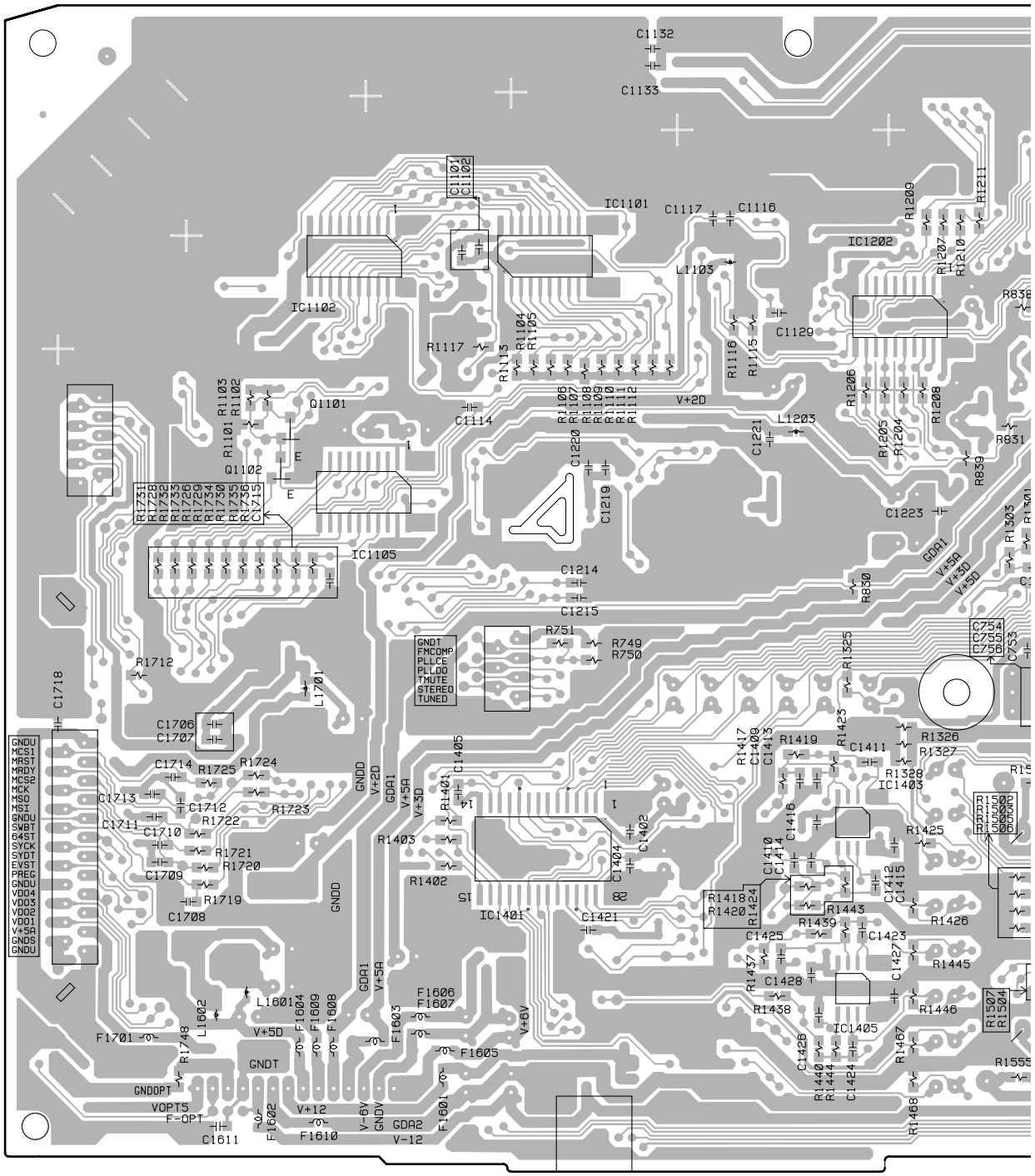
SIDE A



(ANP7396-B)

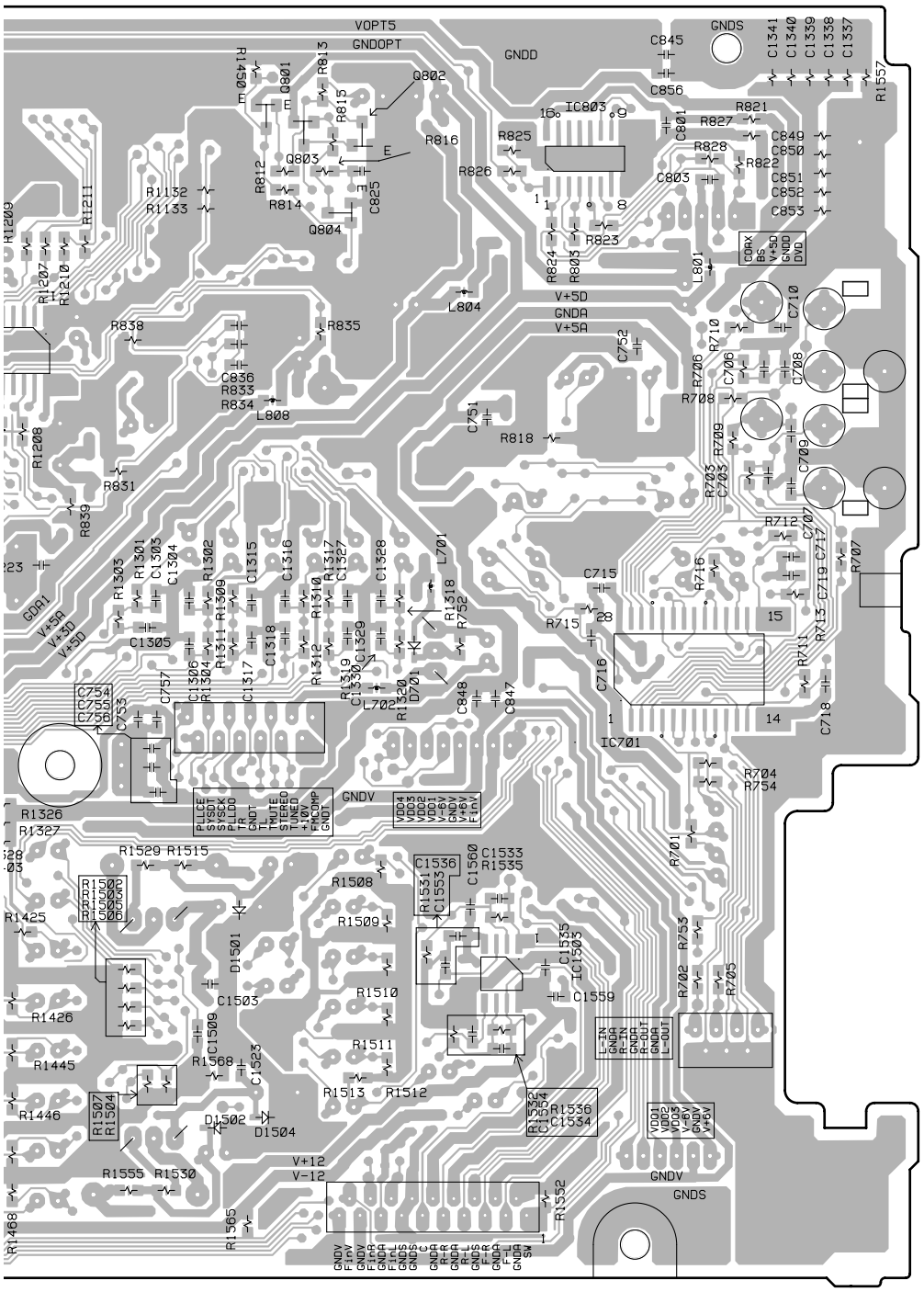
IC1107 IC1106 IC1103 IC1104 IC1701 IC1602
301 Q1411 Q1408 IC1201 IC1203 Q1407 Q1405
Q1401 Q1402 IC1402 IC1404 Q1406
Q1412 Q1403 IC1406 IC1601
Q1404

B DSP ASSY



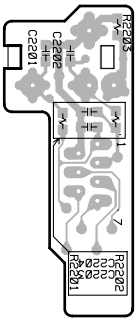
Q1101 IC1102 IC1101 IC1202
Q1102 IC1105 IC1401 IC1403
IC1405

SIDE B



(ANP7396-B)

C 2PA-JACK ASSY

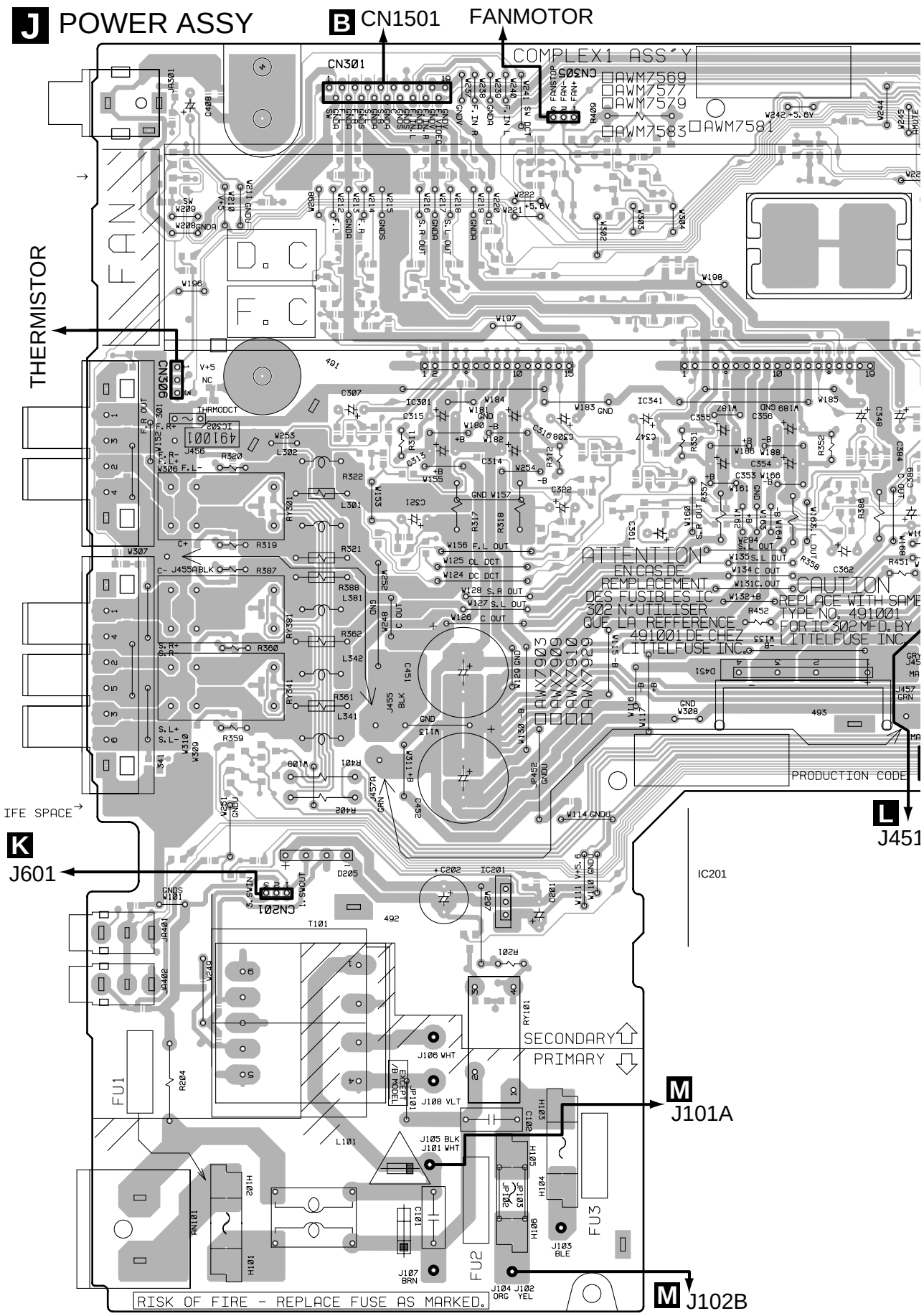


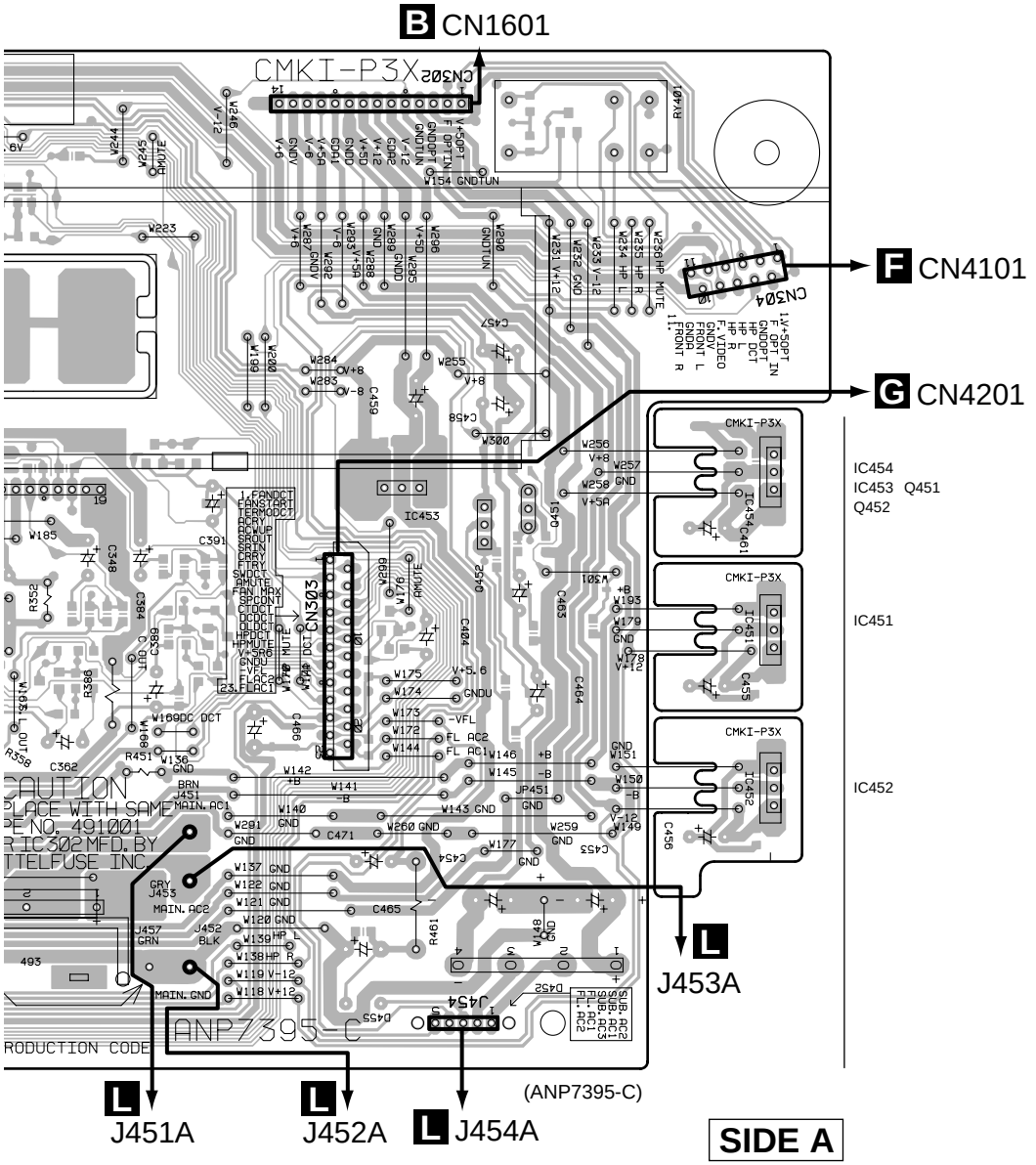
(ANP7395-C)

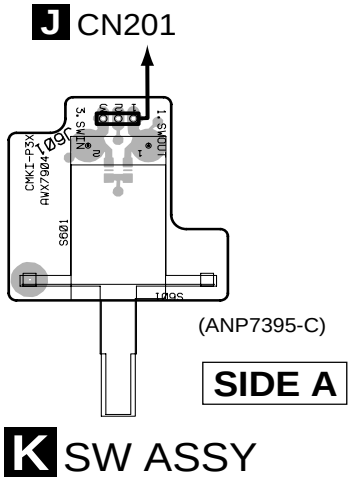
SIDE B

Q801 Q803 IC1503 IC803 IC701

4.4 POWER and SW ASSYS

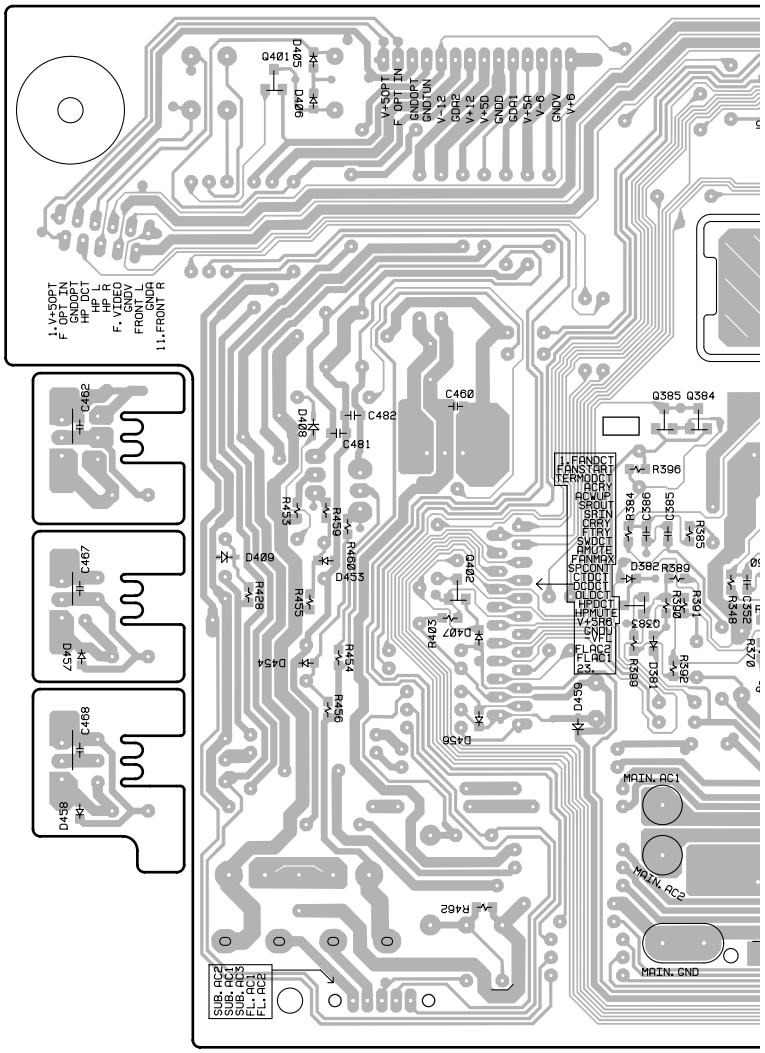



B CN1601
F CN4101
G CN4201
IC454
IC453 Q451
Q452
IC451
IC452
L J453A
L J451A
L J452A
L J454A
(ANP7395-C)
SIDE A

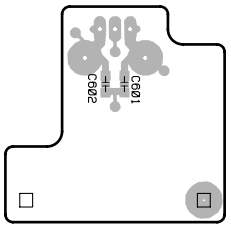

J CN201
(ANP7395-C)
SIDE A
K SW ASSY

J POWER ASSY

Q401
Q386 Q404 Q403
Q408
Q405 Q406 Q407
Q409
Q410
Q381 Q301
Q342 Q341 Q302
Q385 Q384
Q402
Q383
Q306
Q305
Q389 Q390
Q387 Q388

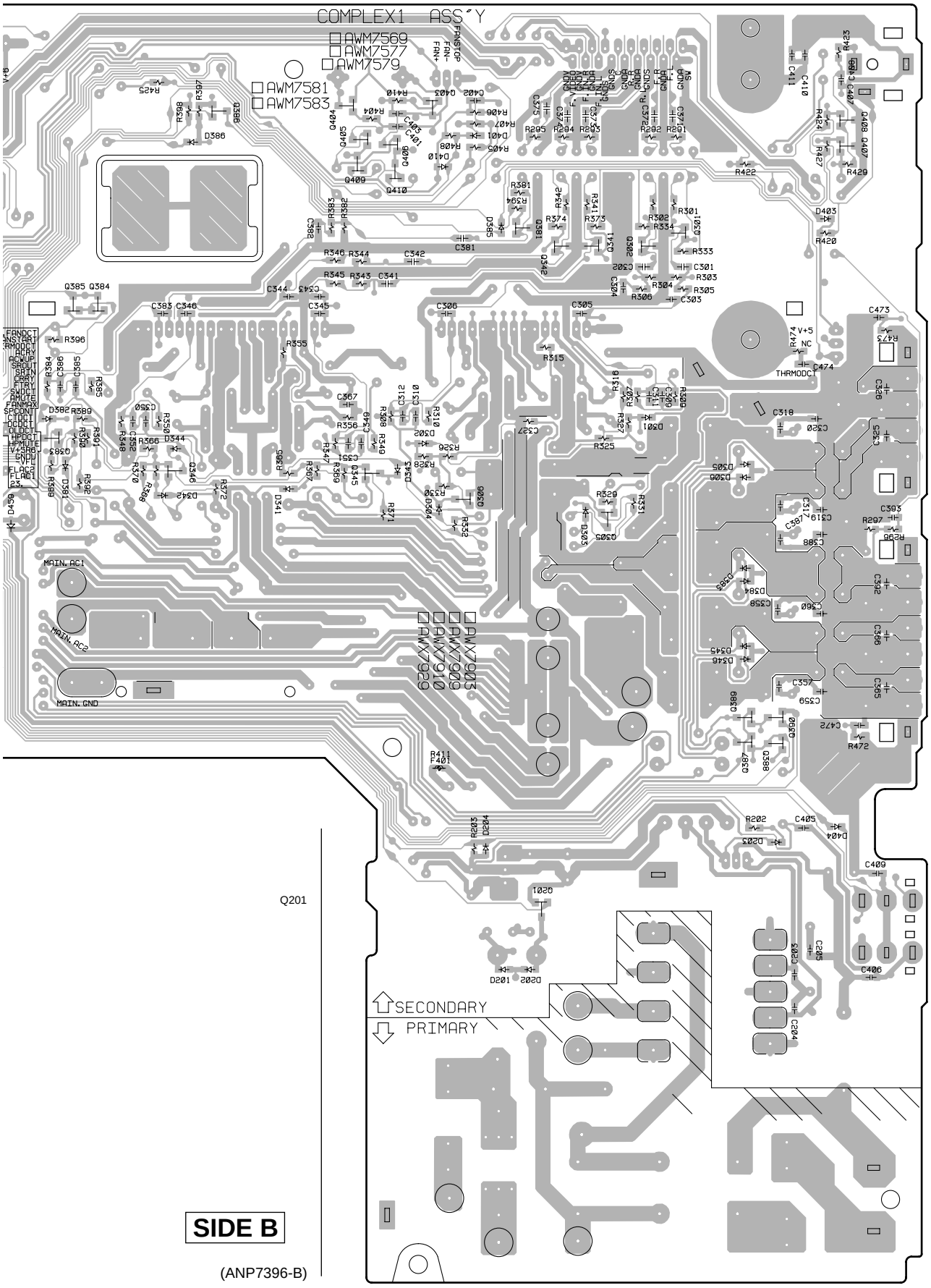


K SW ASSY



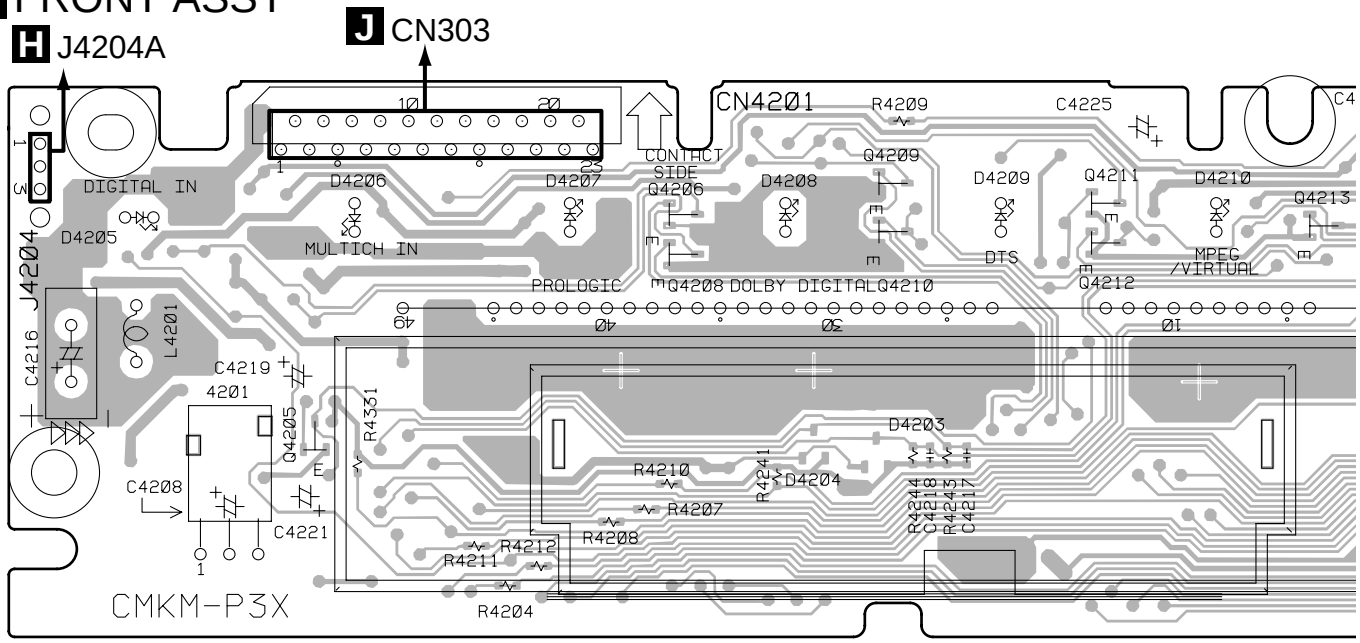
(ANP7395-C)

SIDE B


COMPLEX1 ASS'Y
AWM7569
AWM7577
AWM7579
AWM7581
AWM7583
PWX7902
PWX7905
PWX7910
PWX7926
MAIN. AC1
MAIN. AC2
MAIN. GND
Q201
SECONDARY
PRIMARY
SIDE B
(ANP7396-B)

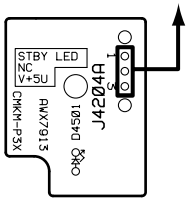
4.5 FRONT, VIDEO, OPT-IN, TRANS1 and TRANS2 ASSYS

G FRONT ASSY



H LED ASSY

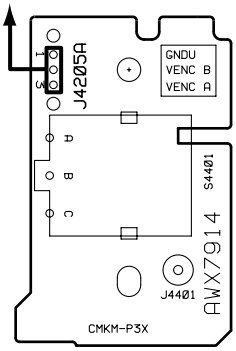
G J4204



(ANP7396-B)

I ENCODER ASSY

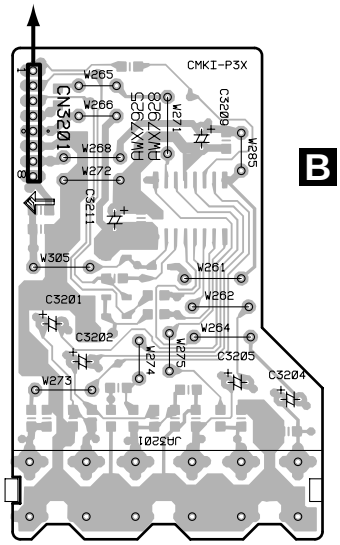
G J4205



(ANP7396-B)

E VIDEO ASSY

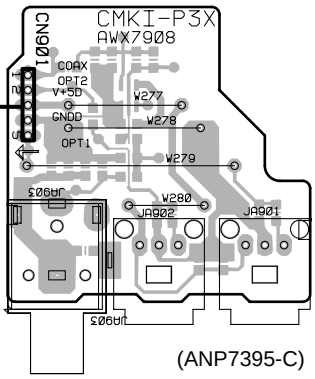
B CN802



(ANP7395-C)

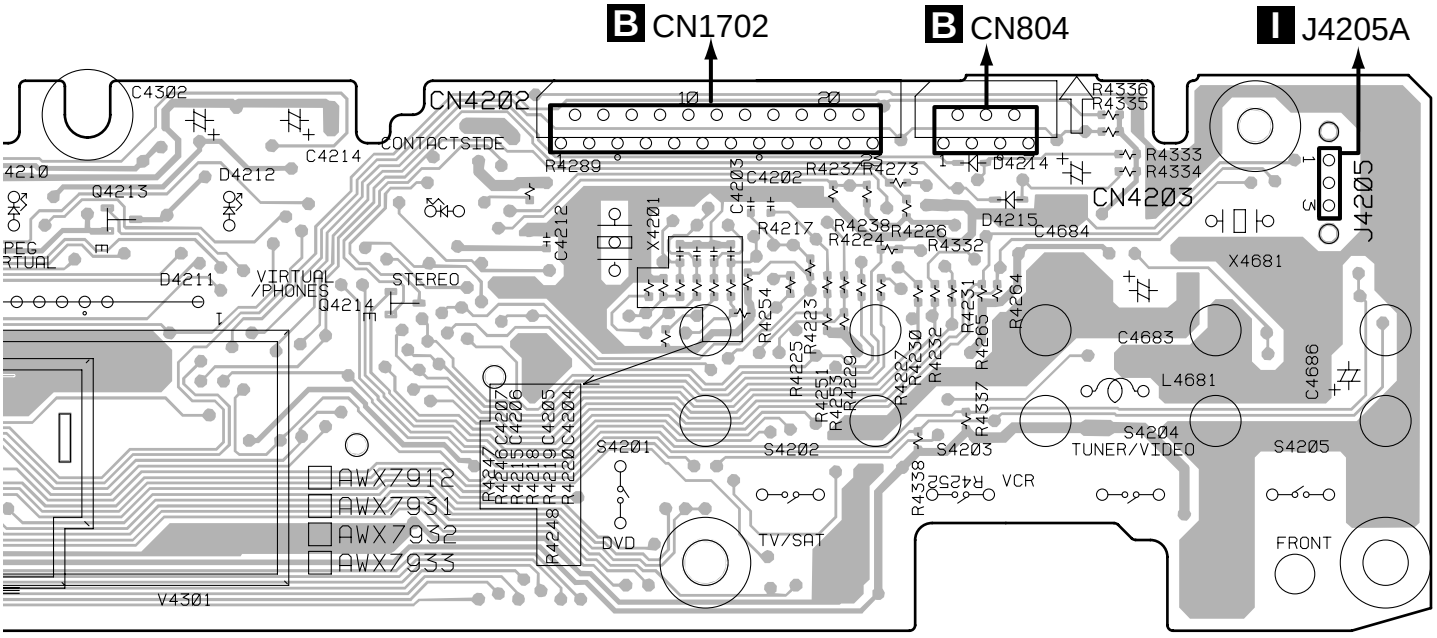
D OPT-IN ASSY

B CN801



(ANP7395-C)

SIDE A



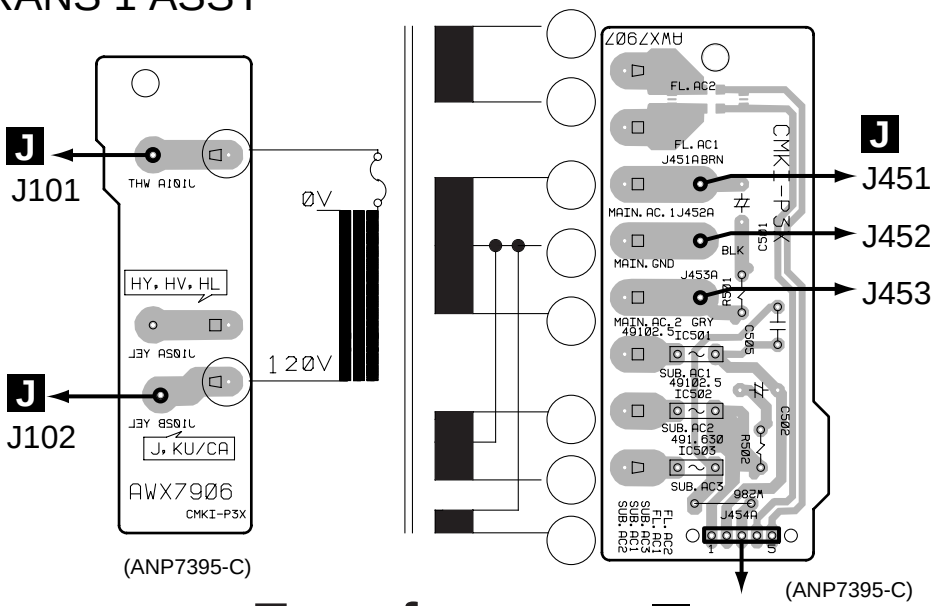
(ANP7396-B)

SIDE A

Q4213

L TRANS2 ASSY

M TRANS 1 ASSY



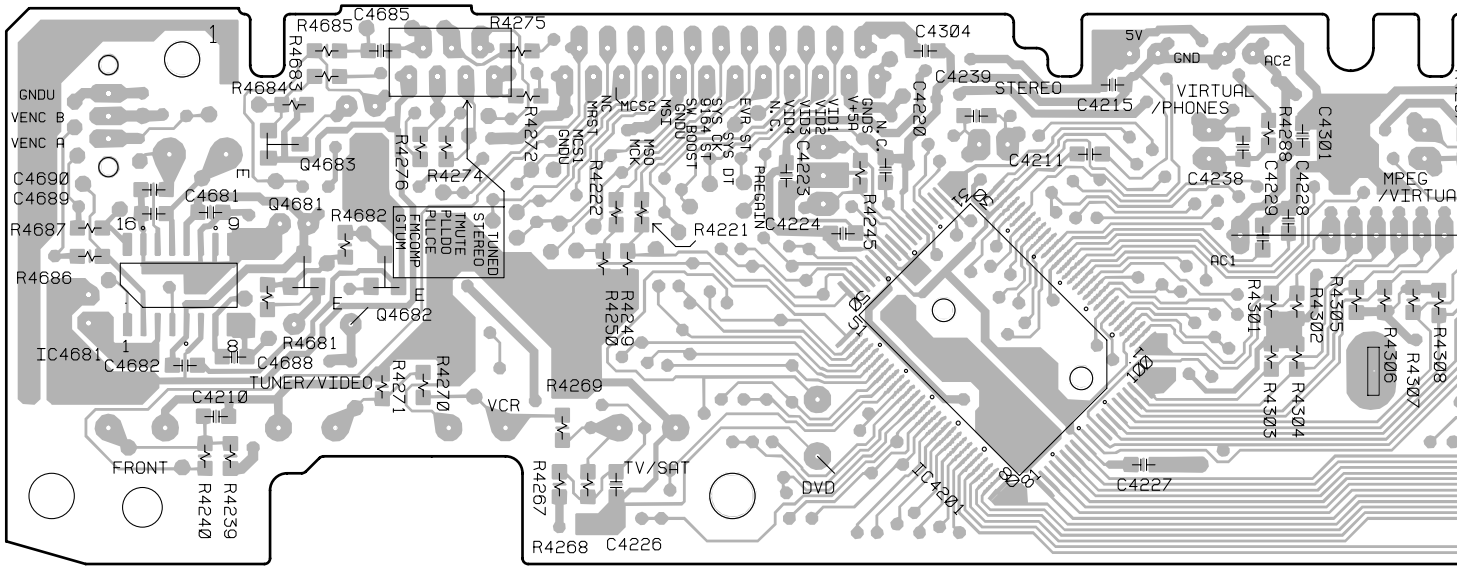
(ANP7395-C)

(ANP7395-C)

Transformer

SIDE A

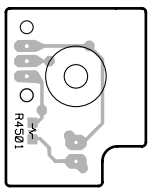
G FRONT ASSY



IC4681 Q4683 Q4682 IC4201

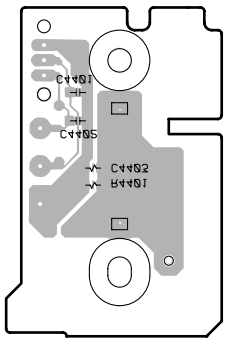
Q4681

H LED ASSY



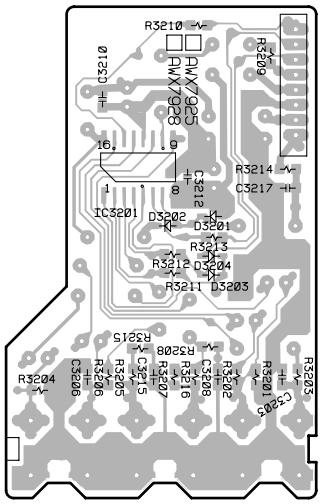
(ANP7396-B)

I ENCORDER ASSY



(ANP7396-B)

E VIDEO ASSY

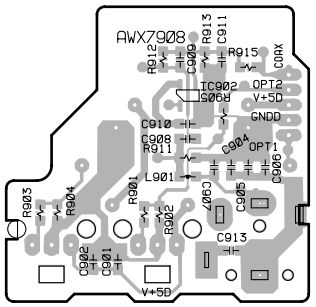


IC3201

(ANP7395-C)

SIDE B

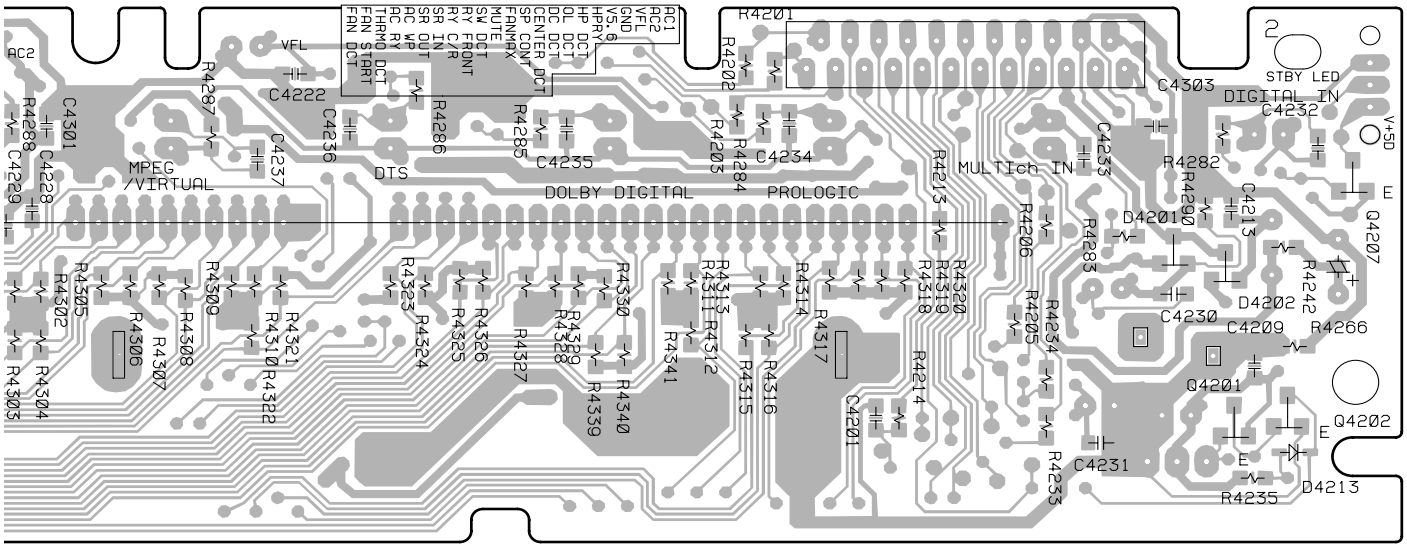
D OPT-IN ASSY



(ANP7395-C)

SIDE B

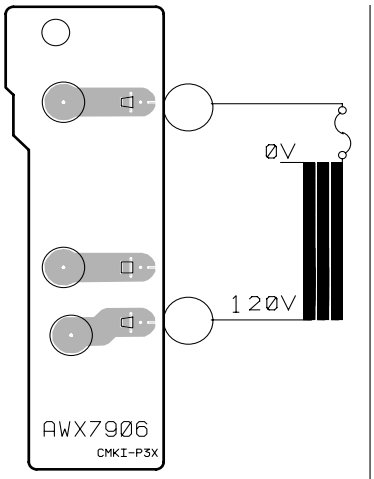
SIDE B



(ANP7396-B)

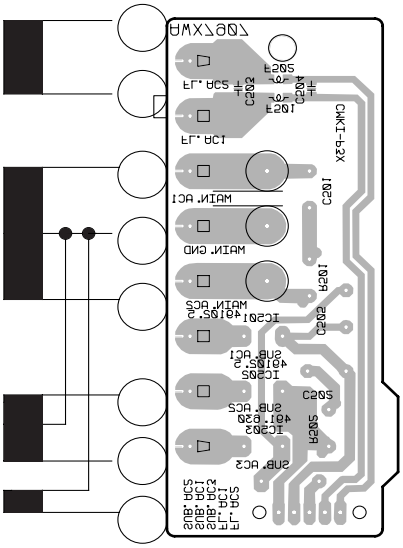
Q4201 Q4202 Q4207

M TRANS 1 ASSY



(ANP7395-C)

L TRANS 2 ASSY



(ANP7395-C)

Transformer

SIDE B

5. PCB 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.*
- *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

LIST OF PCB ASSEMBLIES

Mark	No.	Description	Part No.
		FM/AM TUNER MODULE	AXQ7231
NSP		COMPLEX 1 ASSY	AWM7579
		├ SW ASSY	AWX7904
		├ TRANS 2 ASSY	AWX7907
		├ OPT-IN ASSY	AWX7908
		├ POWER ASSY	AWX7910
		├ 2P JACK ASSY	AWX7926
		└ VIDEO ASSY	AWX7928
NSP		COMPLEX 2 ASSY	AWM7580
NSP		├ LED ASSY	AWX7913
		├ ENCODER ASSY	AWX7914
		├ FRONT INPUT ASSY	AWX7916
		├ DSP ASSY	AWX7937
		└ FRONT ASSY	AWX7933

A FM/AM TUNER MODULE

SEMICONDUCTORS

IC201		BA1451F
IC202		LC72131MD
Q201, Q204, Q205		2SC2412K
Q202		DTA124ES
Q203		DTC124EK
D201		1SS133
D202		MTZJ5.1C

COILS AND FILTERS

L201	FM DETECTOR COIL	ATE7003
F202	CERAMIC FILTER	ATF-107
F201	CERAMIC FILTER	ATF-119
F203	AM CERAMIC FILTER	ATF7026

CAPACITORS

C212, C213, C226, C233-C235	CCSRCH101J50
C240	CCSRCH101J50
C206	CCSRCH100D50
C231, C232	CCSRCH150J50
C223	CEAT100M50
C229	CEAT101M10
C224	CEAT1R0M50
C227	CEAT220M25
C241	CEAT2R2M50
C243	CEAT330M16
C228	CEAT3R3M50
C237	CEAT470M10
C211	CEJA1R0M50
C210	CEJA470M16
C204, C238, C602	CKSRYB102K50
C101, C102, C208, C220	CKSRYB103K50
C239, C242, C601	CKSRYB103K50
C225, C216, C217	CKSRYB153K50
C201, C205, C214, C230, C236	CKSRYB223K50
C209	CKSRYB223K50
C221	CKSRYB224K10
C603	CKSRYB223K50
C215	CKSRYB681K50
C202, C222	CKSRYB473K16

RESISTORS

R211	RD1/4PU221J
R221	RD1/4PU222J
R233	RD1/4PU391J
R243	RD1/10S0R0J
R103	RS1/10S331J
R104	RS1/10S391J
OtherResistors	RS1/16S□□□J

OTHERS

CN201	13P SOCKET	52044-1345
BN201	4P ANTENNA TERM.	AKA7003
	SHIELD CASE T	ANK7072
	SHIELD CASE B	ANK7073
X201	CRYSTAR RES.(7.2MHz)	ASS1093
	FM FRONT END	AXF7003
	AM RF TUNING BLOCK	AXX7071

Mark	No.	Description	Part No.

B DSP ASSY

SEMICONDUCTORS

	IC801	AK4112AVF
	IC802	AK4527BVQ
	IC1201	AK7706VT
	IC1203	BS62LV1024TC-70
	IC1106	CS493292
	IC1501	M62446FP
	IC703, IC704	NJM2100M
	IC1301-IC1303, IC1402-IC1406	NJM4558MD
	IC1701	PD5681A
	IC1104	PDN031D
⚠	IC1601	PQ20WZ51
⚠	IC1602	PQ7VZ5
	IC1105	TC74LVX244F
	IC1101, IC1102	TC74VHC574F
	IC1202	TC74VHCT244AF
	IC1107	TC7WU04FU
	IC1401, IC701	TC9164AF
	IC1502-IC1504, IC702	UPC4570G2
⚠	Q1507	2SA1515
	Q705	2SC1740S
	Q1401-Q1404, Q1409, Q1410	2SC3326
	Q1501, Q1502, Q1506, Q701, Q702	2SC3326
⚠	Q1508	2SC3377
	Q1405, Q1406, Q1408, Q703, Q801	DTA124EK
	Q803	DTA124EK
	Q1407, Q704, Q802, Q804	DTC124EK
	D1504, D701	1SS355
	D1401, D1402	DAP202K
	D1503	UDZS5.1B
	D1501, D1502	UDZS7.5B

COILS AND FILTERS

	L1103, L1201, L1601, L1602, L1701	ATL7002
	F1601-F1610, F1701	DTF1070
	L1101, L1102, L1104, L1202, L1203	QTL1013
	L701, L801-L808	QTL1013

CAPACITORS

	C1127, C1128	CCSRCH100D50
	C1319, C1320, C1331, C1413, C1414	CCSRCH101J50
	C1518-C1520, C703, C706-C710	CCSRCH101J50
	C717-C719, C721, C722, C816	CCSRCH101J50
	C815	CCSRCH150J50
	C814	CCSRCH180J50
	C1425, C1426, C1527, C1528	CCSRCH221J50
	C1533, C1534, C1541, C840	CCSRCH221J50
	C1130, C1436, C1706, C1716	CCSRCH271J50
	C1102, C1104, C1108, C1111, C1113	CCSRCH471J50
	C1119, C1120, C1122, C1125, C1133	CCSRCH471J50
	C1202, C1204, C1207, C1208, C1210	CCSRCH471J50
	C1212, C1218, C1220, C1405	CCSRCH471J50
	C1423, C1424, C1704, C755, C757	CCSRCH471J50
	C810, C819, C828, C834, C848	CCSRCH471J50
	C854, C856	CCSRCH471J50
	C737, C738	CCSRCH560J50
	C1307, C1308	CCSRCH820J50
	C1317, C1318, C1329, C1332	CCSRCH821J50
	C1409, C1410	CCSRCH821J50
	C1326	CEANP100M16
	C1109, C1216, C1401, C1403	CEAT100M50
	C1512-C1517, C1551, C1552	CEAT100M50
	C713, C714	CEAT100M50
	C1106, C1115, C1203, C1222, C1336	CEAT101M16
	C1501, C1521, C1601-C1604	CEAT101M16
	C1607-C1610, C1705, C758, C811	CEAT101M16
	C832	CEAT101M16
	C808	CEAT221M6R3
	C1502, C1522	CEAT331M10
	C729, C730, C804	CEAT470M25
	C826	CEAT471M16
	C1124, C829	CEJQ2R2M50
	C1301, C1302, C1311-C1314	CEJQ330M10
	C1323-C1325, C1335	CEJQ330M10
	C1510, C1511	CEJQ3R3M50
	C1417, C1418, C1429, C1430	CEJQ4R7M50
	C1439, C1440, C1539, C1546	CEJQ4R7M50
	C1605, C1606, C723, C724	CEJQ4R7M50
	C731, C732, C735, C736	CEJQ4R7M50
	C824	CEJQR47M50
	C753	CKSQYF105Z16
	C1343-C1348, C1443-C1446	CKSQYF225Z16
	C1451-C1456, C1557-C1562, C756	CKSQYF225Z16
	C1542, C1714, C841	CKSRYB102K50
	C1101, C1103, C1107, C1110, C1112	CKSRYB103K50
	C1118, C1121, C1123, C1126, C1129	CKSRYB103K50
	C1131, C1132, C1201, C1205, C1206	CKSRYB103K50
	C1209, C1211, C1213, C1215, C1219	CKSRYB103K50
	C1349, C1402, C1404, C1525	CKSRYB103K50
	C743–C746, C805-C807, C809	CKSRYB103K50
	C820, C833, C836, C842, C845	CKSRYB103K50
	C847	CKSRYB103K50
	C1223, C1328, C1442, C1447-C1450	CKSRYB104K25
	C1505, C1508, C1524, C1540, C1707	CKSRYB104K25
	C1717, C1718, C733, C734	CKSRYB104K25
	C739, C740, C754, C803	CKSRYB104K25
	C817, C818, C827, C830, C835	CKSRYB104K25
	C839, C844, C855	CKSRYB104K25
	C1411, C1412, C1435	CKSRYB122K50
	C741, C742	CKSRYB152K50
	C1549, C1550	CKSRYB153K50
	C1305, C1306, C1315, C1316, C1327	CKSRYB182K50
	C1419, C1420, C1431, C1432, C1441	CKSRYB222K50
	C1217, C1504, C1507	CKSRYB224K16
	C1303, C1304	CKSRYB272K50
	C1330	CKSRYB333K16
	C1433	CKSRYB472K50
	C1503, C1523	CKSRYB473K50
	C825	CKSRYB682K50
	C1506, C1509	CKSRYB822K50

RESISTORS

	R1604, R1606	RS1/16S1201F
	R1514, R1554	RS1LMF101J
	OtherResistors	RS1/16S□□□J

OTHERS

CN1601	FJ CONNECTOR 14P	14R-FJ
CN1501	1.25 FJ CONNECTOR 19P	19R-1.25FJ
CN804	7P FFC CONNECTOR	52045-0745
CN1701	10P FFC CONNECTOR	52045-1045
CN803	13P FFC CONNECTOR	52045-1345

Mark	No.	Description	Part No.
	CN1702	23P FFC CONNECTOR	52045-2345
	JA702	3P PIN JACK	AKB7137
	JA701	3P PIN JACK	AKB7138
	CN701	7P PLUG	AKP7056
	X801	CRYSTAL RESO.(24MHz)	ASS7025
	X1701	CERAMIC RESO.(17MHz)	ASS7032
	CN801	5P PLUG	KM200TA5
	CN802	8P PLUG	KM200TA8
	0	PCB BINDER	VEF1040
	KN801	EARTH METAL FITTING	VNF1084
	X1101	CRYSTAL RESO.(27MHz)	VSS1086
	J801	JUMPER WIRE	DB010NB0

C 2P JACK ASSY

CAPACITORS

	C2201, C2202	CCSRCH101J50
	C2203, C2204	CCSRCH220J50

RESISTORS

	OtherResistors	RS1/16S□□□J

OTHERS

	2201	2P PIN JACK	AKB7143
	CN2201	7P SOCKET	AKP7067

D OPT-IN ASSY

CAPACITORS

	C901, C902	CKSRYB104K25

RESISTORS

	OtherResistors	RS1/16S□□□J

OTHERS

	JA901, JA902	OPTICAL RECEIVE MOD.	GP1FA502RZ
	CN901	5P SOCKET	KP200TA5L

E VIDEO ASSY

SEMICONDUCTORS

	IC3201	NJM2296M
	D3201-D3204	1SS355

CAPACITORS

	C3203, C3206, C3215	CCSRCH221J50
	C3217	CCSRCH470J50
	C3202, C3204, C3205, C3209, C3211	CEAT470M25

RESISTORS

	OtherResistors	RS1/16S□□□J

OTHERS

	JA3201	6P PIN JACK	AKB7140
	CN3201	8P SOCKET	KP200TA8L

J POWER ASSY

SEMICONDUCTORS

⚠	IC302	AEK7009
⚠	IC453, IC454	NJM7805FA

Mark	No.	Description	Part No.
⚠	IC451		NJM7812FA
⚠	IC201		NJM78M56FA
⚠	IC452		NJM7912FA
⚠	IC301		STK402-040
⚠	IC341		STK402-240
	Q386		2SA1037K
⚠	Q452		2SB1375
	Q384, Q385		2SC2412K
	Q305, Q306, Q345, Q346, Q383		2SC2712
	Q403, Q404		2SC2712
	Q301, Q302, Q341, Q342, Q381		2SC3326
	Q407, Q408		2SC3326
⚠	Q451		2SD2012
	Q390, Q402, Q405, Q406		DTA124EK
	Q409, Q410		DTC124EK
	Q201, Q387, Q389, Q401		DTC143EK
	D201-D203, D301-D306		1SS355
	D341-D346, D381-D386, D401		1SS355
	D403-D408		1SS355
⚠	D452		D3SBA20(B)
⚠	D451		D5SBA20(B)
	D457, D458		RB501V-40
⚠	D205		S1VB20/F03
⚠	D455		S5566G(TPB2)
	D459		UDZ20B
	D204, D410		UDZS5.1B
	D409		UDZS5.6B
	D453, D454, D456		UDZS6.8B

COILS AND FILTERS

⚠	L101		ATF7018
	L301, L302, L341, L342, L381		ATH-133
	F401		DTF1070

SWITCHESANDRELAYS

	RY301, RY341, RY381, RY401		ASR7001
⚠	RY101		ASR7013

CAPACITORS

⚠	C101, C102		ACG7033
	C451, C452 (4700µF/35v)		ACH7161
	C401, C403		CCSRCH101J50
	C305, C306, C345, C346, C383		CCSRCH221J50
	C410		CCSRCH221J50
	C407		CCSRCH331J50
	C303, C304, C343, C344, C382		CCSRCH471J50
	C309-C312, C349-C352		CCSRCH6R0D50
	C385, C386		CCSRCH6R0D50
	C313, C314, C353, C354		CEAT100M50
	C202, C459		CEAT102M16
	C408		CEAT1R0M50
	C463, C464, C471		CEAT221M25
	C454		CEAT222M25
	C321, C322, C361, C362, C389		CEAT2R2M50
	C465		CEAT331M50
	C453		CEAT332M16
	C201		CEAT470M25
	C404, C461		CEAT471M16
	C466		CEAT471M35
	C315, C316, C355, C356		CEHAT101M35
	C391		CEHAT221M10
	C455, C456		CEAT101M50

Mark	No.	Description	Part No.
	C307, C308, C347, C348, C384		CEHAT330M25
	C301, C302, C341, C342		CKSQYF225Z16
	C371-C375, C381, C481, C482		CKSQYF225Z16
	C393		CKSRYB102K50
	C203-C205, C402		CKSRYB103K50
	C317-C320, C357-C360		CKSRYB104K25
	C387, C388, C405, C406, C411		CKSRYB104K25
	C460, C462, C472		CKSRYB104K25
	C325, C326, C365, C366, C392		CKSRYB472K50
	C467, C468		CKSRYB473K50

RESISTORS

Mark	No.	Description	Part No.
⚠	R321, R322, R361, R362, R388		RD1/2LMF100J
⚠	R319, R320, R359, R360, R387		RD1/2MMF4R7J
	R201		RD1/2VM270J
⚠	R311, R312, R351, R352		RD1/4MUF101J
⚠	R451, R452		RD1/4MUF4R7J
⚠	R453, R454		RS1/16S1R0J
⚠	R461		RS1LMF102J
⚠	R409		RS1LMF121J
⚠	R401, R402		RS1LMF221J
⚠	R317, R318, R357, R358, R386		XCN3001
	R204		RCN1080
	OtherResistors		RS1/16S□□□J

OTHERS

Mark	No.	Description	Part No.
	CN302	FJ CONNECTOR 14P	14PL-FJ
	454	5P CABLE HOLDER	51048-0500
	CN304	11P FFC CONNECTOR	52045-1145
	CN303	23P FFC CONNECTOR	52045-2345
	JA301	1P PIN JACK	AKB7080
	341	6P SPEAKER TERMINAL	AKE7077
	301	4P SPEAKER TERMINAL	AKE7078
	H101, H102	FUSE CLIP	AKR7001
	451	D. HEAT SINK	ANH7146
⚠	T101	SUB TRANS FORMER	ATT7057
	CN201, CN305	3P CONNECTOR	B3B-PH-K
⚠	AN101	AC INLET	AKP7032
	J454	5P JUMPER	D20PYY0515E
	J457	JUMPER WIR UNIT	DB015NB0
	CN306	3P PLUG	KM250MA3
	JA401, JA402	REMOTE JACK	RKN1004
	491- 493	PCB BINDER	VEF1040
	CN301	19P 1.25FJ CONNECTOR	VKN1775
	J455	JUMPER WIR	DB010NB0

F FRONT INPUT ASSY

CAPACITORS

Mark	No.	Description	Part No.
	C4103, C4104		CCSRCH101J50
	C4107, C4111		CCSRCH471J50
	C4108		CEAT470M25
	C4105, C4109, C4117		CKSRYB103K50
	C4102, C4106, C4110		CKSRYB104K25
	C4112, C4113		CKSRYB223K50

RESISTORS

Mark	No.	Description	Part No.
	OtherResistors		RS1/16S□□□J

OTHERS

Mark	No.	Description	Part No.
	CN4101	11P FFC CONNECTOR	52045-1145
	JA4101	3P PIN JACK	AKB7098
	JA4102	OPTICAL LINK	GP1FA502RZ
	JA4103	HP. JACK	RKB1014
	KN4101	EARTH METAL FITTING	VNF1084

G FRONT ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC4201		PDG264A
	Q4201, Q4207		DTA124EK
	Q4202, Q4205, Q4206, Q4208-Q4214		DTC143EK
	D4213-D4215		1SS355
	D4203, D4204		DAN217
	D4201, D4202		DAP202K
	D4206, D4208–D4210		SLR-343MC(NPQ)
	D4205, D4212		SLR-343VC(NPQ)
	D4207, D4211		SLR-343YC(MNP)

COILS AND FILTERS

Mark	No.	Description	Part No.
	L4201		LFEA2R2J

SWITCHESANDRELAYS

Mark	No.	Description	Part No.
	S4201-S4205		VSG1009

CAPACITORS

Mark	No.	Description	Part No.
	C4216		ACH7144
	C4208		CEAL470M16
	C4214		CEAT221M6R3
	C4230, C4231		CKSQYF225Z16
	C4201, C4210, C4226		CKSRYB102K50
	C4202, C4209, C4213, C4215, C4222		CKSRYB103K50
	C4203-C4207, C4211, C4220, C4224		CKSRYB104K25
	C4217, C4218, C4232-C4239		CKSRYB473K50

RESISTORS

Mark	No.	Description	Part No.
	OtherResistors		RS1/16S□□□J

OTHERS

Mark	No.	Description	Part No.
	4204, 4205	3P CABLE HOLDER	51048-0300
	CN4203	7P FFC CONNECTOR	52045-0745
	CN4201, CN4202	FFC CONNECTOR	52045-2345
	V4301	FL TUBE	AAV7083
	X4201	CERAMIC RESO. (7.2MHz)	ASS7039
	J4205	3P JUMPER WIRE	D20PYY0310E
	J4204	3P JUMPER WIRE	D20PYY0315E
	4201	REMOTE RECEIVER UNIT	GP1U27X
	4301	FL HOLDER	VNF1122

H LED ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	D4501		SLR-343VC(NPQ)

RESISTORS

Mark	No.	Description	Part No.
	R4501		RS1/16S471J

OTHERS

Mark	No.	Description	Part No.
	4501	3P CABLE HOLDER	51048-0300

Mark	No.	Description	Part No.

I ENCODER ASSY

SEMICONDUCTORS

	S4401	ROTARY ENCODER	ASX7040

CAPACITORS

	C4401, C4402		CKSRYB102K50

OTHERS

	4401	3P CABLE HOLDER	51048-0300

K SW ASSY

SWITCHES AND RELAYS

⚠	S601		ASG7024

CAPACITORS

	C601, C602		CKSRYB103K50

OTHERS

	J601	3P SHIELD HOUSING	ADX7392

L TRANS 2 ASSY

SEMICONDUCTORS

⚠	IC503	PROTECTOR(0.63A)	AEK7006
⚠	IC501, IC502	PROTECTOR(2.5A)	AEK7014

COILS AND FILTERS

	F501, F502		DTF1070

CAPACITORS

	C501, C502		ACH1237
	C503, C504		CKSRYB473K50

RESISTORS

	R501		RD1/4MUF100J
	R502		RD1/4MUF4R7J

OTHERS

	504	5P CABLE HOLDER	51048-0500

M TRANS 1 ASSY

TRANS 1 ASSY has no service part.

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 Test Mode

• How to Enter the Test Mode

With the attatched Remote Control Unit

1. For Preset mode, set the remote control

(1) Enter [REMOTE SETUP] + [1] keys.
(Simul taneous aggressiveness)
(2) Enter [1], [5], [0] keys.
(Call a PRESET ID code 150)
(3) Enter [Front] key. (Assign a function key)
(4) Enter [REMOTE SETUP] key. (Confirm PRESET mode)

2. Test mode ON " +10 " key

• "TEST" is displayed for 5 seconds when Test mode is entered.
• Function: TV/SAT
• Speaker setting: All high volume, SW ON
No automatic speaker detection
• STANDARD mode
• Presetting of the tuner for Test mode will be carried out.
Other settings will be returned to the factory-preset values.

3. FL & LED light-emission check " 1 " key

Each time the remote-control code is received, the displays of the FL and LED change cyclically as follows:
Normal display → All lights for the FL and LED on → All lights for the FL and LED off → FL: "ABCDEFGH" displayed; and LED: Every other letter of the alphabets is displayed → FL: "IJKLMNOP" displayed; and LED: Every other letter of the alphabets is displayed highlighted → Normal display → ...

4. Rear-and-center-relay switch " 2 " key

Each time the remote-control code is received, the rear-and-center relay is toggled on or off.

5. DOLBY Pro Logic mode " 3 " key

• Distance setting for the front and center speakers: 10 feet
• Distance setting for the rear speaker: 5 feet
• STANDARD mode
• Speaker setting: All high volume, SW ON
All settings other than the above will be returned to the factory-preset values.

6. FAN ON/OFF switch " 4 " key

The fan is turned on or off and rotates as follows:
Low speed → High speed → Off ...

7. Master volume switch " 5 " key

The master volume is switched between minus infinity and 0 dB, and each trim is 0 dB.
When the remote-control code is received for the first time, the master volume is set to minus infinity.

8. 9k/10k switch " 6 " key

For the models HL, SB and SP only, when the $A55F+$A505 code is received, this switches between 9k and 10k.

9. Thermistor A/D value, time display
" 7 " key

When the remote-control code is received, the A/D value (0-255) of the thermistor is displayed on the FL display. Time is displayed until 60:00, and then stops.
While the A/D value and time are displayed, if the remote-control code is received again, the display will return to the normal display. Time counting will not stop.

10. Speaker auto-detection check " 8 " key

When the remote-control code is received, automatic detection of the speaker starts, and the result will be displayed for 5 seconds, as "C:_SW:_", where O¸ indicates connected, and × indicates that no speaker is connected.

11. Analog inputs check " 9 " key

When the remote-control code is received, forced analog inputs and 2-channel stereo mode are set for all functions.
• Speaker setting: All high volume, SW ON
• When this mode is entered, "SJG:ANA" will be displayed for 5 seconds.

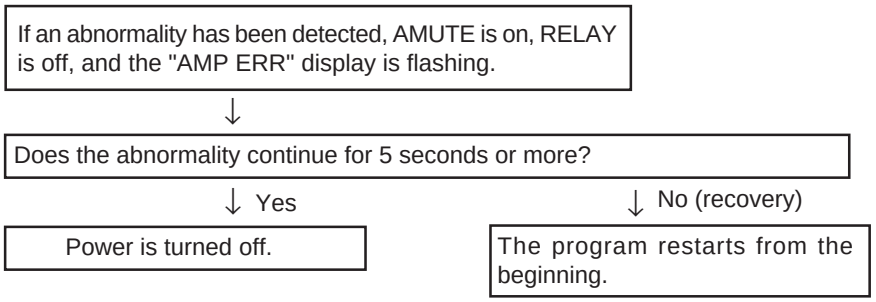
12. STBY mode " 0 " key

STBY mode is entered when the remote-control code is received.

7.1.2 Protection of the Amplifier Line

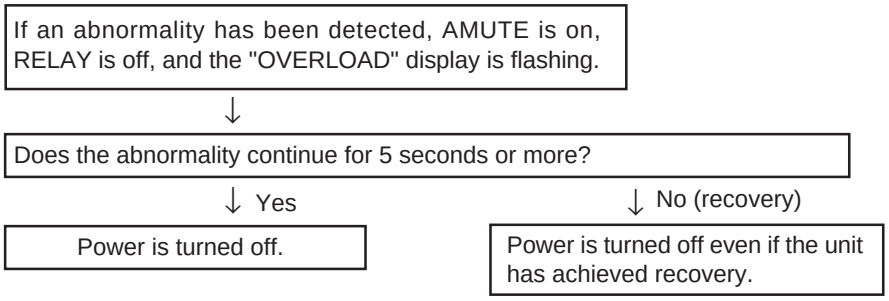
1. Detection of abnormalities in DC circuits

This detection has priority over the overload detection and abnormality detection for the fan and thermistor.



2. Detection of overload

This detection has priority over the abnormality detection of the fan and thermistor.



While the unit is recovering from the abnormality, the "OVERLOAD" display continues flashing.

7.1.3 Operation of the Fan-Control Line

1. Detection of the heat sink

The detection is carried out every other second by taking in the voltage of the thermistor at A/D (PORT 31).

2. According to the temperature detected, the following operation will be executed:

31 pin		15 pin	25 pin	64,66,67 pin	19 pin	
THRMO DCT	**Set voltage of A/D**	**FAN START**	**FAN MAX**	**SP RELAY**	**AMUTE**	**Display**
0 to 0.1V	< 5	L	L	L	L	"THDCT NG" flashes for 5 seconds.
0.1V to 2.4V	5 to 122(60°C)	L	L	H	H	
2.6V to 2.8V	(70°C)134 –	H	L	H	H	
2.8V to 3.4V	(75°C)145 –	L	H	H	H	
3.4V to 4.1V	(90°C)174 –	L	H	H	H	"HEAT UP" flashes for 5 seconds at 20-sec intervals.
4.1V –	(115°C)210 –	L	H	L	L	"OVERHEAT" flashes.

- If you wish to switch FAN START from "H" to "L" and FAN MAX from "L" to "H," first set FAN START to "L," then after 100 µs, set FAN MAX to "H."
- While "OVERHEAT" is flashing, only the POWER key is functional.

3. FAN operation

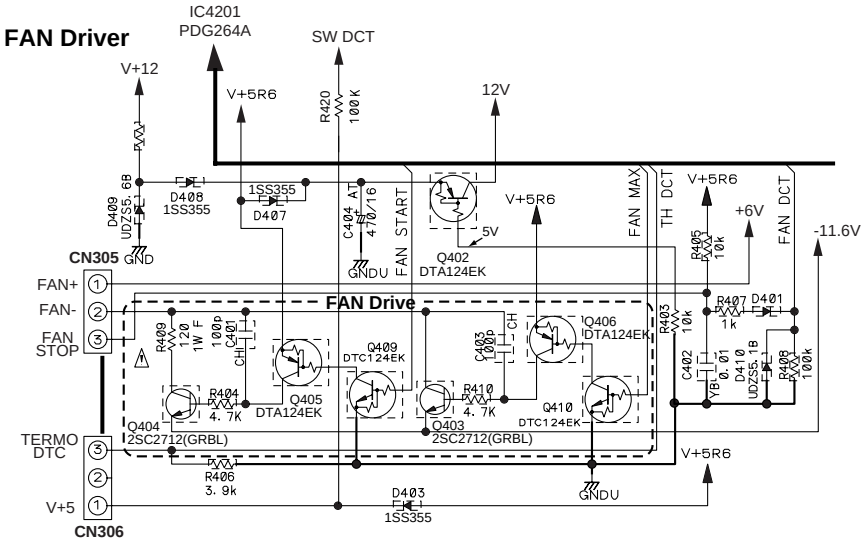
- Once the fan starts rotating, it continues to rotate at the same speed until the temperature falls to 65°C.
- Once the fan starts rotating, it continues to rotate for at least 20 seconds even after the temperature falls to the above-mentioned level.

4. Detection of abnormalities in the fan

- If any abnormality is detected in the fan 5 seconds after it starts rotating at high speed, and if H (abnormal) is indicated for the FANDCT connector, "FAN STOP" is displayed for 5 seconds, then the power is turned off.
- While "FAN STOP" is displayed, AMUTE is on, and RELAY is off.
- While "FAN STOP" is displayed, only the POWER key is functional.
- While the fan is rotating at low speed, abnormality detection is not carried out.

5. Abnormality in the thermistor

If an abnormality (A/D voltage: 0.1 V or less) is detected in the thermistor, "THDCT NG" is displayed for 5 seconds, then the power is turned off.



7.1.4 Specifications of Speaker Detection

1. Purposes

Whether the speakers are connected or not is automatically detected, and settings appropriate for the detected speakers are made to allow you to easily play surround-sound without making cumbersome speaker settings.

2. Method of detecting speakers

Whether a center speaker and/or subwoofer is connected or not is detected 600 ms after the power is turned on.

< Detection of the center speaker >

The microcomputer sends a detection signal and after 10 ms will read the logic of the responding signal to judge whether the speaker is connected or not. The response signal will be read at A/D. A voltage of 3.5 V or more is judged as no speaker connected.
The response signals at A/D are read every 2 ms, and if the same results (less or more than 3.5 V) are obtained, the detection result is considered correct. If a different result is obtained for the second detection, a third detection is carried out, and the two results that agree will outvote the other. If detection fails three times, then it is judged that no center speaker is connected.

< Detection of the subwoofer >

The logic of the signal from the phono jack with a switch is read by the microcomputer to judge whether the speaker is connected or not. The signals are read every 1 ms, and if the same results are obtained, the detection result is considered correct.
If a different result is obtained for the second detection, a third detection is carried out, and the two results that agree will outvote the other. If detection fails three times, then it is judged that no subwoofer is connected.

3. Speaker settings

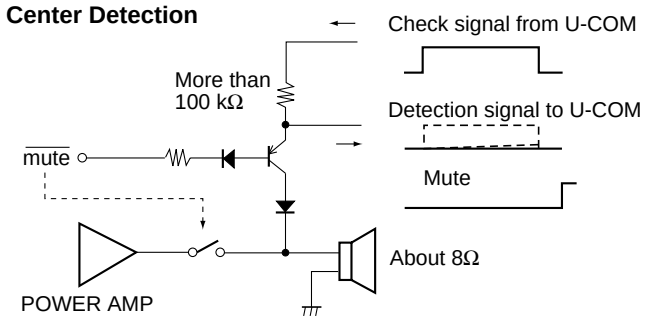
According to the results of the detection, speaker settings are made as follows:

Results of the Detections		Speaker Settings			
Center SP	Sub-woofer	Front SP	Center SP	Surround SP	Subwoofer
Connected	Connected	low	low	low	ON
Connected	Not connected	high	low	low	OFF
Not connected	Connected	low	Not connected	low	ON
Not connected	Not connected	high	Not connected	low	OFF

4. User's settings

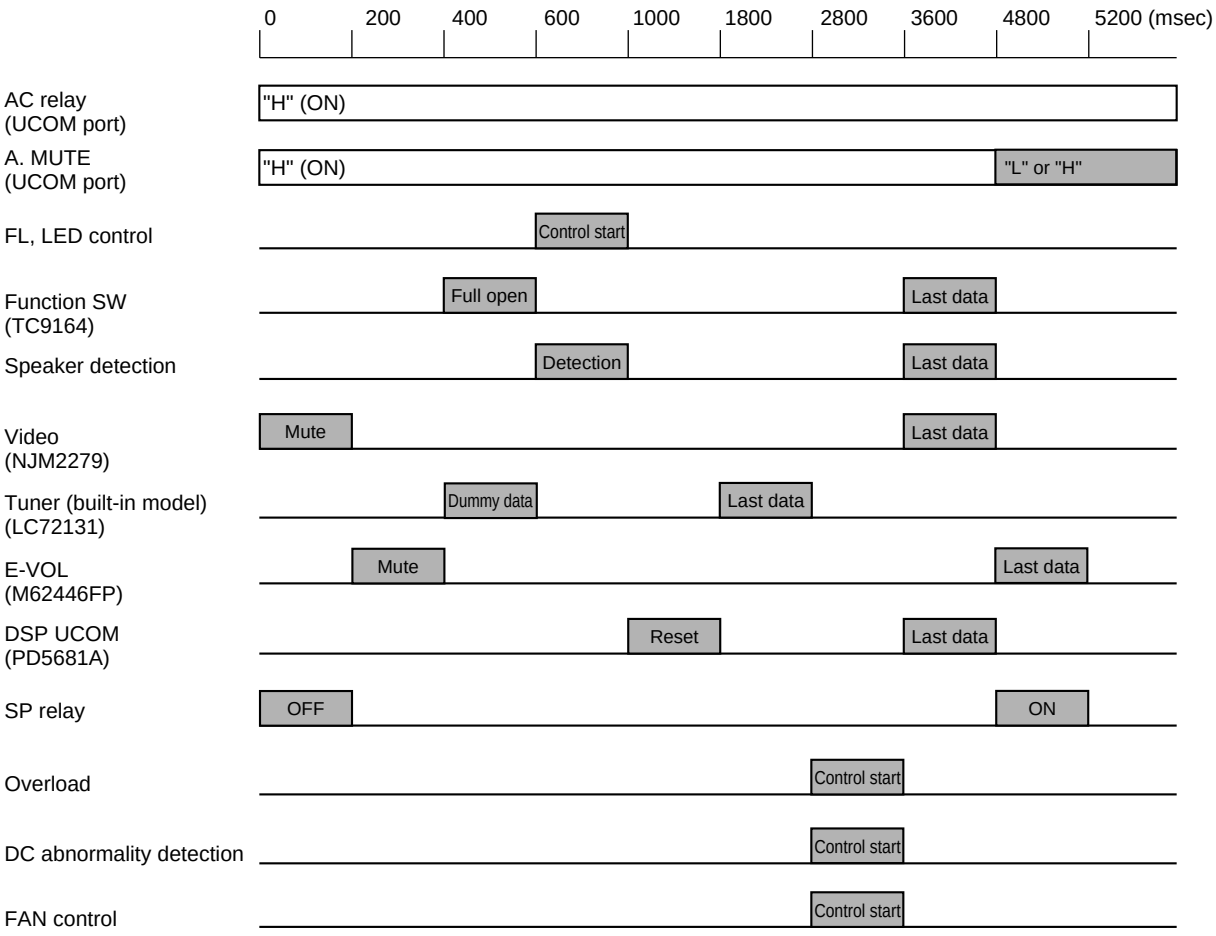
In Setup mode, more detailed speaker settings are available. Once the user's settings are made, those settings have priority.
However, if the configuration of connected speakers has changed, then the detection results become valid and have priority over the user's settings until new user's settings are made.

5. Detection circuit for the center speaker

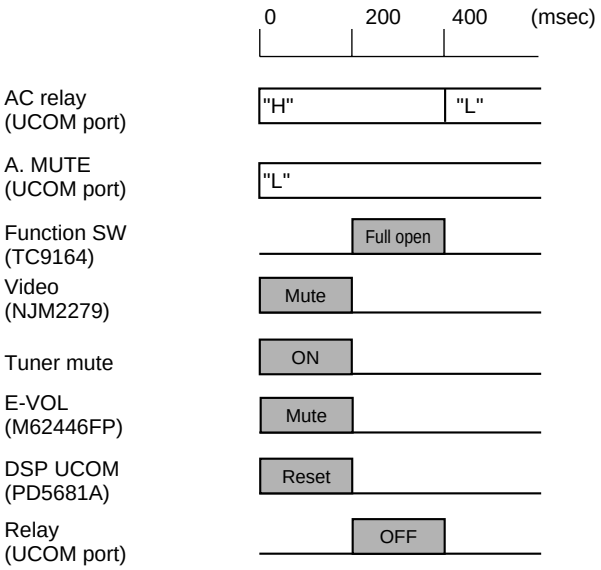


7.1.5 Timing Chart

● Timing Chart of Power ON Initial



● Timing Chart of Power OFF Initial



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.

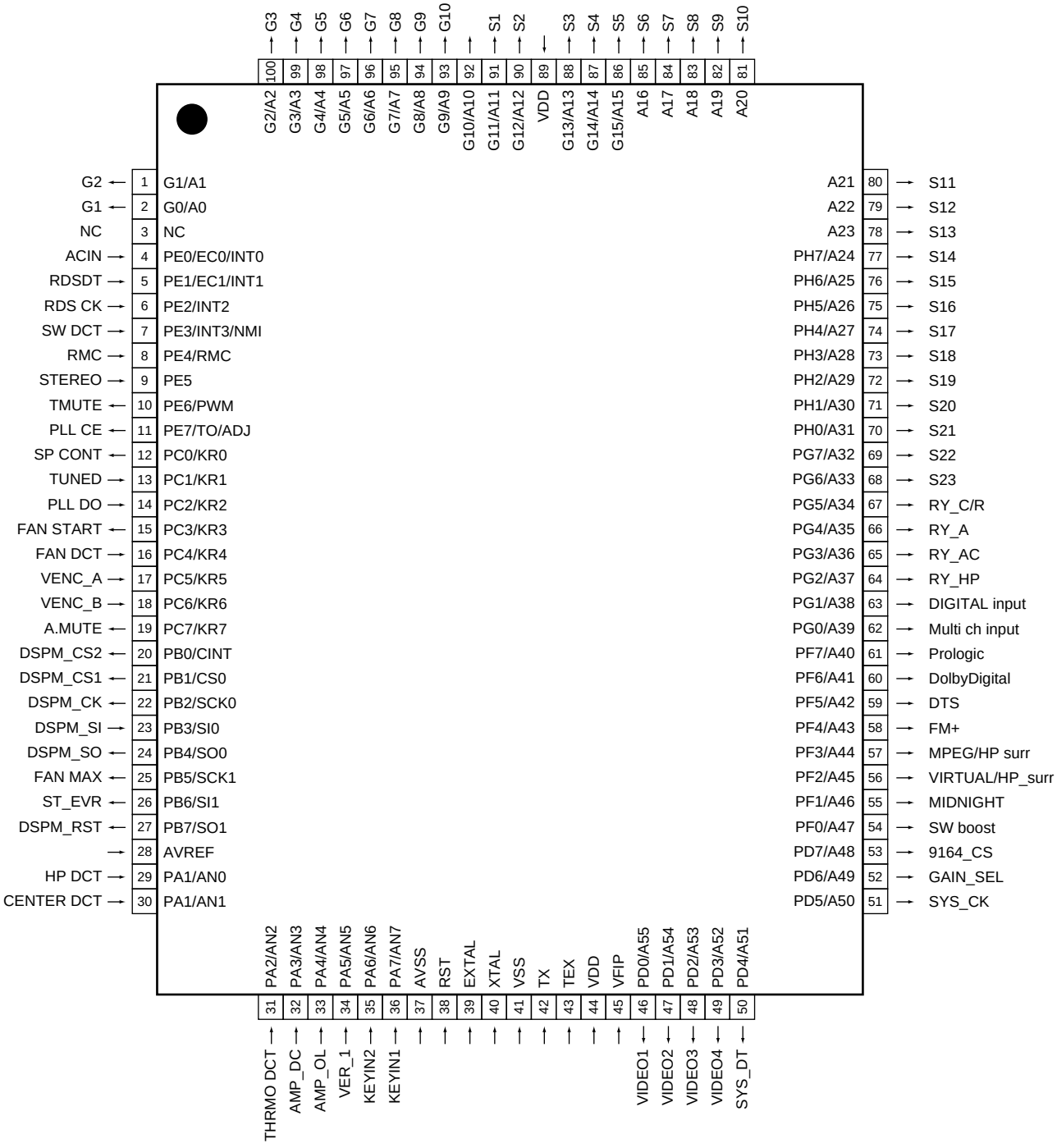
●List of IC

PDG264A, PD5681A

■ PDG264A (FRONT ASSY : IC4201)

• Mode Control IC

● Pin Assignment (Top view)



● Pin Function

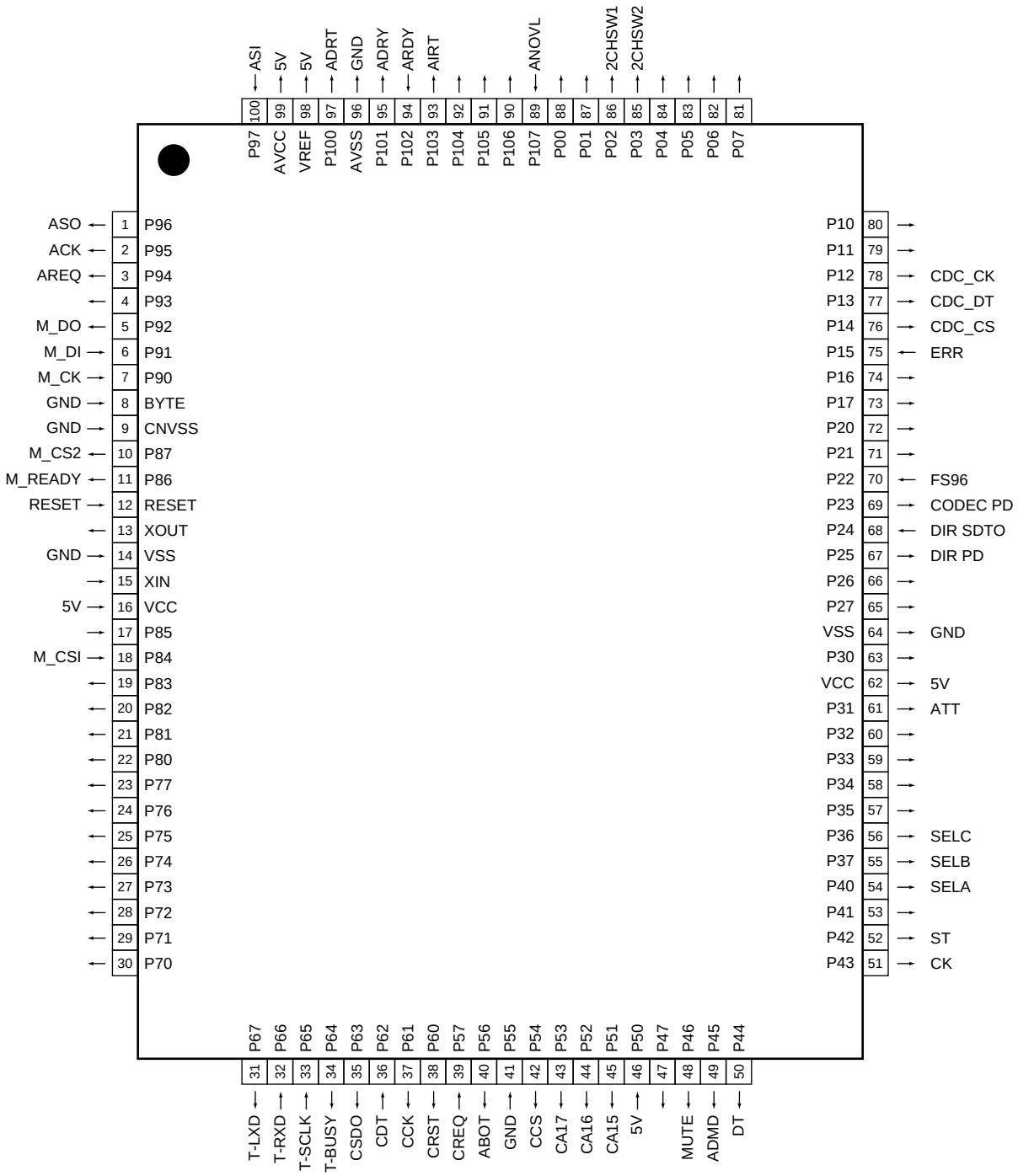
No.	Pin Name	I/O	Function	Active
1	G2	O	Grid output 2	H
2	G1		Grid output 1	H
3	NC	–	Connect to Vdd	
4	ACIN	I	AC pulse input	
5	RDS DT	I	Serial control data signal for RDS communication	
6	RDS CK	I	Serial control clock signal for RDS communication (Use for external interrupt)	
7	SW DCT	I	Subwoofer detection signal input	
8	RMC	I	Remote control signal input (non carrier signal)	
9	STEREO	I	Discrimination signal of Stereo/Mono signal	
10	T_MUTE	O	Tuner mute	
11	PLL_CE	O	Chip select signal for communicate with LC72131 (tuner)	
12	SP CONT	O	Signal output for center speaker detection	H
13	TUNED	I	TUNED information	
14	PLL_DO	I	Data input signal for communicate with LC72131 (tuner)	
15	FAN START	O	FAN rotation signal output	H
16	FAN DCT	I	FAN STOP detection signal	
17	VENC_A	I	EVOL rotary encoder signal input A	
18	VENC_B		EVOL rotary encoder signal input B	
19	AMUTE	O	Audio mute	L
20	DSPM_CS2	I	CS input for DSP microcomputer control	
21	DSPM_CS1	O	CS output for DSP microcomputer control	L
22	DSPM_CK	O	Clock signal for communicate with the DSP microcomputer	H
23	DSPM_SI	I	Data input signal for communicate with the DSP microcomputer	
24	DSPM_SO	O	Data output signal for communicate with the DSP microcomputer	H
25	FAN_MAX	O	FAN rotation signal output	H
26	ST_EVR	O	Strobe signal for communicate with the E-VOL IC	H
27	DSPM_RST	O	DSP microcomputer reset	
28	AVref	–	Connect to Vdd	
29	HP DCT	I	Headphone detection signal input	
30	CENTER DCT	I	Center speaker detection signal input	
31	THRMO DCT	I	Thermal detection signal input	
32	AMP_DC	I	DC abnormal detection of the protection circuit (L: Abnormal detection)	
33	AMP_OL	I	Overload abnormal detection of the protection circuit (L: Abnormal detection)	
34	VER_1	I	Destination switch (A/D take-in)	
35	KEYIN2	I	A/D conversion port of key input	
36	KEYIN1			
37	AVSS	–	Connect to Vss	
38	RST	–	Reset	
39	EXTAL	–	Connect an 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	NJM2296 control	
47	VIDEO2			H
48	VIDEO3			H
49	VIDEO4			H
50	SYS_DT	O	Data signal for communicate with M62446, TC9163 and PLL	H

No.	Pin Name	I/O	Function	Active
51	SYS_CK	O	Clock signal for communicate with M62446, TC9163 and PLL	H
52	GAIN_SEL	O	Gain switch L at Stereo and Flat of analog input	H
53	9164_CS	O	TC9164 chip select	H
54	SW boost	O	Subwoofer boost at S. BASS	H
55	STEREO	O	LED display, Lights at stereo	H
56	Virtual/HP surr	O	LED display, K,S: HP sudd , J, H: at HP SURR, virtual	H
57	MPEG/virtual	O	LED display, MPEGAAC, J,H: at BC playback, K: at VIRTUAL	H
58	FM + (RDS)	O	Switching ON/$\overline{\text{OFF}}$ for power supply Tr of RDS decoder (L: AM, power OFF, H: others)	H
59	DTS	O	LED display, Lights at DTS multi-channel playback	H
60	DolbyDigital	O	LED display, Lights at dolby digital decode playback	H
61	Prologic	O	LED display, Lights at prologic playback	H
62	Multich input	O	Lights at digital input signal is excepted for 2ch	H
63	DIGITAL input	O	Lights at digital input signal is locked	H
64	RY_HP	O	HP relay ON/$\overline{\text{OFF}}$	H
65	RY_AC	O	AC relay ON/$\overline{\text{OFF}}$	H
66	RY_A	O	Speaker A relay ON/$\overline{\text{OFF}}$	H
67	RY_C/R	O	Rear/Center relay ON/$\overline{\text{OFF}}$	H
68	S23	O	Segment output 3 to 23	H
69	S22			H
70	S21			H
71	S20			H
72	S19			H
73	S18			H
74	S17			H
75	S16			H
76	S15			H
77	S14			H
78	S13			H
79	S12			H
80	S11			H
81	S10			H
82	S9			H
83	S8			H
84	S7			H
85	S6			H
86	S5			H
87	S4			H
88	S3			H
89	VDD	–	5V	
90	S2	O	Segment output 1 and 2	H
91	S1			H
92	Not used	O	Not used (fixed to VFDP)	
93	G10	O	Grid output 3 to 10	H
94	G9			H
95	G8			H
96	G7			H
97	G6			H
98	G5			H
99	G4			H
100	G3			H

PD5681A (DSP ASSY : IC1701)

- **DSP Microcomputer**

● Pin Assignment (Top view)



● Pin Function

No.	Pin Name	I/O	Function
1	ASO	O	DSP
2	ACK		
3	AREQ		
4	Not used	O	Not used
5	M_DO	O	Data output to the main microcomputer
6	M_DI	I	Data input from the main microcomputer
7	M_CK	I	Clock input for communicate with the main microcomputer
8	BYTE	I	GND
9	T-PGM/OE	I	Pull-down to CNVss and GND (for FLASH rewrite)
10	M_CS2	O	CS output for main microcomputer communication
11	M_READY	O	READY output for main microcomputer communication
12	RESET	–	Reset from the main microcomputer
13	XOUT	–	Oscillator
14	Vss	–	GND
15	XIN	–	Oscillator
16	Vcc	–	5V
17	NMI	I	5V
18	M_CS1	I	CS input for main microcomputer communication
19	Not used	O	Not used
20	Not used		
21	Not used		
22	Not used		
23	Not used		
24	Not used		
25	Not used		
26	Not used		
27	Not used		
28	Not used		
29	Not used		
30	Not used		
31	TXD	O	For FLASH rewrite
32	RXD	I	
33	T-SCLK	I	
34	T-BUSY	O	
35	CSDO	O	For crystal DSP
36	CDT	I	
37	CCK	O	
38	CRST	O	
39	CREQ	I	
40	ABOT	O	
41	Vss	-	
42	CCS	O	For crystal DSP
43	CA17	O	
44	CA16		
45	CA15		
46	T-Vdd	I	5V
47	Not used	O	Not used
48	MUTE	O	For E-SW (TC9164)
49	ADMD		
50	DT		

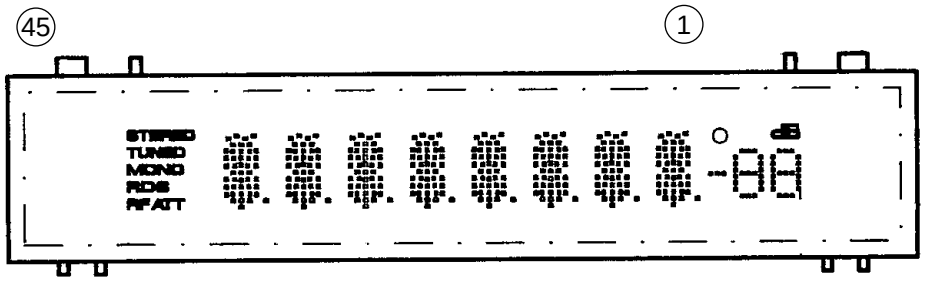
No.	Pin Name	I/O	Function
51	CK	O	For E-SW (TC9164)
52	ST		
53	Not used	O	Not used
54	SELA	O	For Logic IC, TC74ACT151F
55	SELB		
56	SELC		
57	Not used	O	Not used
58	Not used		
59	Not used		
60	Not used		
61	ATT	O	ATT output
62	Vcc	–	5V
63	Not used	O	Not used
64	Vss	–	GND
65	Not used	O	Not used
66	Not used		
67	DIR PD	O	Power down for DIR
68	DIR STDO	I	DIR data input
69	CDC_PD	O	CODEC power down
70	FS96	I	96k
71	Not used	O	Not used
72	Not used		
73	Not used		
74	Not used		
75	ERR	I	DIR
76	CDC_CS	O	CS for CODEC communication
77	CDC_DT	O	Data output for CODEC communication
78	CDC_CK	O	Clock for CODEC communication
79	Not used	O	Not used
80	Not used		
81	Not used		
82	Not used		
83	Not used		
84	Not used		
85	2CHSW2	O	For TC9215 control (SW H: PASSIV, L: POWERRED)
86	2CHSW1		For TC9215 control (SB H: DSP, L: 6CH)
87	Not used	O	Not used
88	Not used		
89	ANOV	I	Overload detection of analog input (A/D)
90	Not used	O	Not used
91	Not used		
92	Not used		
93	AIRT	O	DSP INIT reset (control at rising edge of power supply only)
94	ARDY	I	DSP
95	ADRY	O	
96	AVss	–	GND
97	ADRT	O	DSP reset
98	Vref	–	5V
99	AVcc	–	5V
100	ASI	I	DSP

7.2.2 DISPLAY

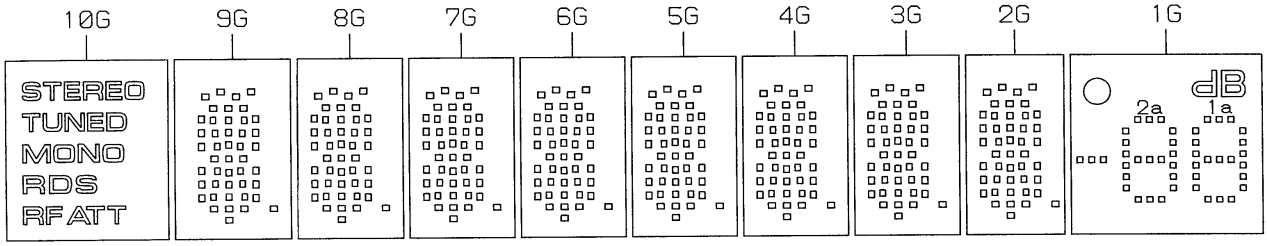
■ AAV7083 (FRONT ASSY : V4301)

• FL DISPLAY

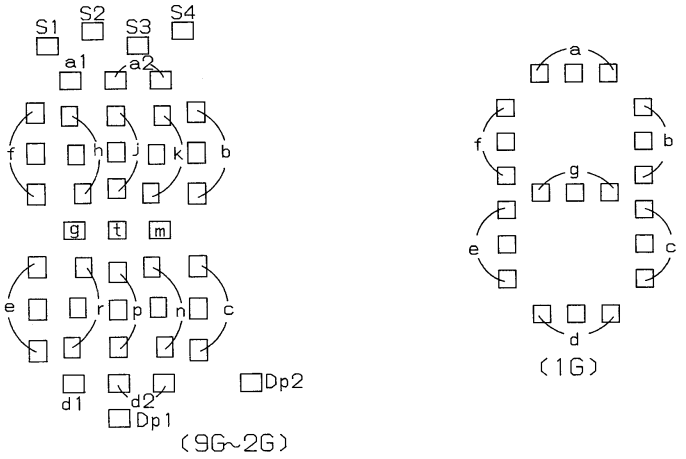
• Pin Assignment



• Grid Assignment



• Segment Designation



• Pin Connection

PIN NO.	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	NX	NP	NP	P23	P22	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NX	NX	NX	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	NX	F1

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

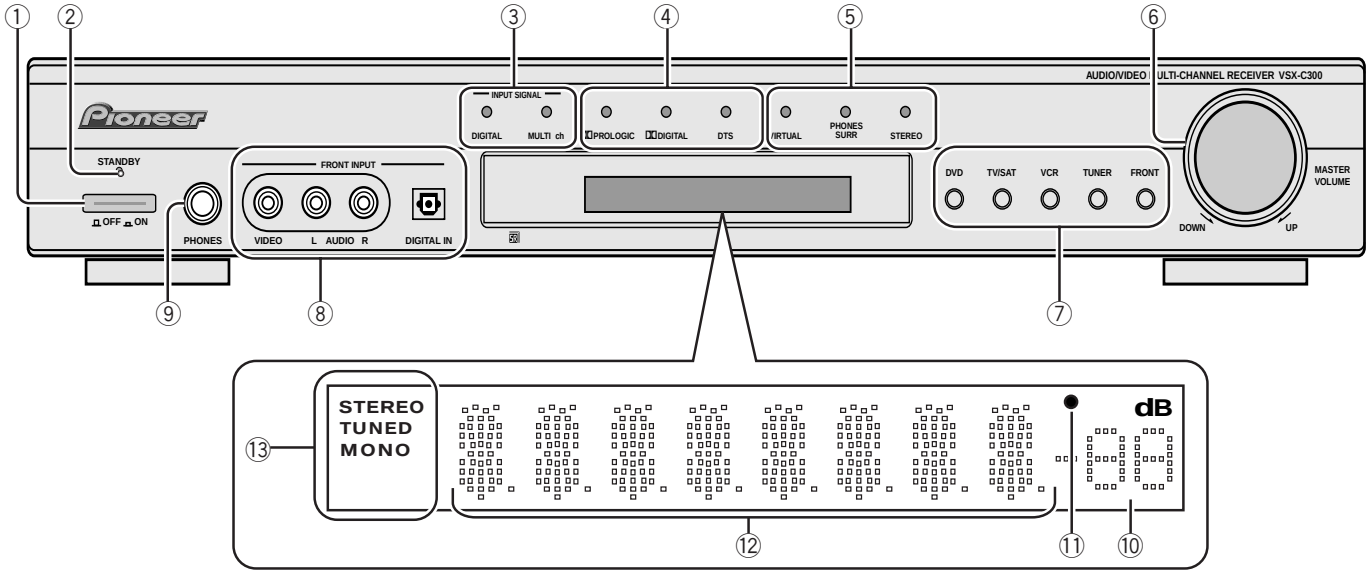
• Anode Connection

	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	RDS	j	j	j	j	j	j	j	j	2f
P5	RF	k	k	k	k	k	k	k	k	2g
P6	ATT	b	b	b	b	b	b	b	b	2c
P7	–	f	f	f	f	f	f	f	f	2e
P8	–	m	m	m	m	m	m	m	m	2d
P9	–	g	g	g	g	g	g	g	g	1a
P10	–	c	c	c	c	c	c	c	c	1b
P11	–	e	e	e	e	e	e	e	e	1f
P12	–	r	r	r	r	r	r	r	r	1g
P13	–	p	p	p	p	p	p	p	p	1c
P14	–	n	n	n	n	n	n	n	n	1e
P15	–	d1	d1	d1	d1	d1	d1	d1	d1	1d
P16	–	d2	d2	d2	d2	d2	d2	d2	d2	□ □ □
P17	–	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	–
P18	–	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	Dp1	–
P19	–	S1	S1	S1	S1	S1	S1	S1	S1	–
P20	–	S4	S4	S4	S4	S4	S4	S4	S4	–
P21	–	S2	S2	S2	S2	S2	S2	S2	S2	–
P22	–	S3	S3	S3	S3	S3	S3	S3	S3	–
P23	–	t	t	t	t	t	t	t	t	○

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

Front Panel



① ■ OFF/ ▬ ON button
Press this button to the ON position so that the power button on the remote control will be operational. If the button is OFF (■), the power of the receiver is shut off and the RECEIVER ⏻ button on the remote control does not function. When this button is ON, the power button on the remote control toggles between ON and STANDBY mode.

② STANDBY indicator
Lights when the receiver is in standby mode. The receiver uses a small amount of electricity (1W) in standby mode.

③ INPUT SIGNAL indicators
Indicates the kind of input signal.
DIGITAL :
When a digital source is input this indicator will light.
MULTI :
When a multichannel source is input this indicator will light.

④ DECODE MODE indicators
Indicates how the signal is being decoded.
PRO LOGIC:
Lights when PRO LOGIC decoding is in use.
DIGITAL:
Lights when playing a DIGITAL sound source
DTS:
lights when playing a DTS sound source .

⑤ 2 Ch Listening Mode indicators
When these indicators are lit sound is only coming from the front speakers (and possibly the subwoofer in some settings) or headphones.
VIRTUAL.:
Lights when the VIRTUAL sound modes are selected.
PHONES SURR.:
Lights when the PHONES SURR. listening modes are selected.
STEREO: Lights in stereo mode.

⑥ MASTER VOLUME
Use to set the overall listening volume.

⑦ Input buttons
Use to select the playback source: the possibilities are DVD, TV/SAT, VCR, TUNER and FRONT.
If the receiver is in standby mode pressing these buttons will also turn the power on.

⑧ FRONT jacks
You can connect a portable DVD player, video camera, video game system, or whatever equipment you would like to have handy, to the **FRONT** jacks

⑨ PHONES jack
Use to connect headphones (this switches the speakers off).

⑩ Volume level indicator

⑪ MIDNIGHT indicator
Lights when Midnight Listening mode is on.

⑫ CHARACTER display
Shows the current input (DVD, TV/SAT, etc.), listening mode, radio frequency, etc.

⑬ TUNER indicators
STEREO: Lights when a stereo FM broadcast is being received in auto stereo mode.
TUNED: Lights when a broadcast is being received.
MONO: Lights when the mono mode is set using the MPX button.

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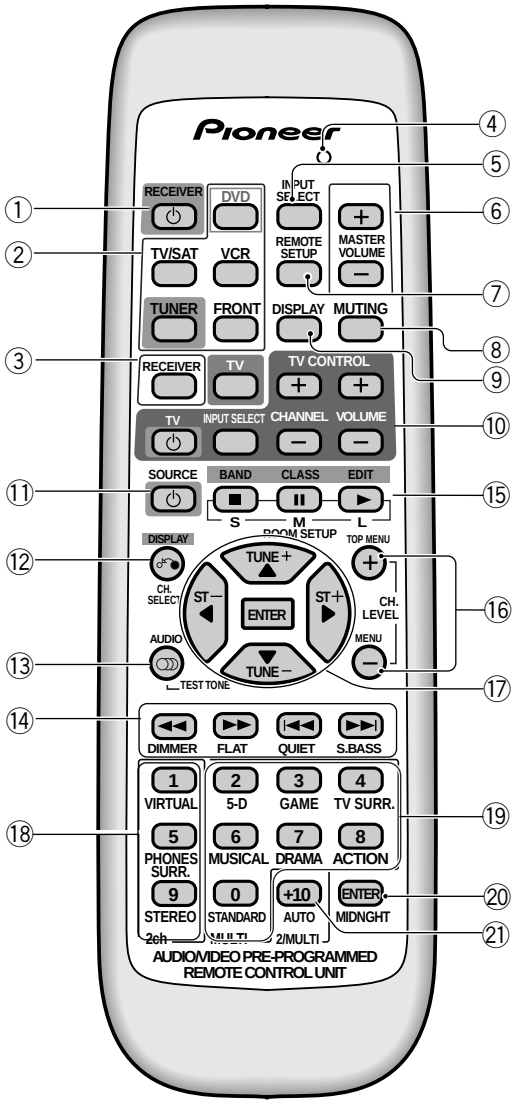
Remote Control



① RECEIVER ⏻ (Power) button:
This switches between STANDBY mode and power ON for this receiver.

② Input/Control Mode Select buttons
Use to put the receiver/remote control in the input stated on the button. If the Direct Selection is off, then these buttons won't put the receiver in the input written on the button.

③ Control Mode Select buttons:
Use these buttons to put the remote control in receiver or TV mode .

④ LED indicator :
This indicator flashes when a command is sent from the remote control to the receiver. It also flashes at when teaching the receiver preset codes.

⑤ INPUT SELECT button :
Use to select the playback source. This button lets you cycle through the different inputs: DVD, TV/SAT, VCR, TUNER and FRONT.

⑥ MASTER VOLUME
+/– buttons: Use to set the overall listening volume.

⑦ REMOTE SETUP button :
Use this button when setting up the remote control with the REMOTE SETUP feature.

⑧ MUTING button :
Use to mute the sound or restore the sound if it has been muted.

⑨ DISPLAY button :
Use to display information. You can confirm what settings have been made by going through the various displays.

⑩ TV ⏻ (POWER) button :
Use to turn on/off the power of the TV.

ⓐ INPUT SELECT button :
Use to select the TV input.

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

ⓒ CHANNEL +/– buttons :
Use to select channels on your TV.

⑪ SOURCE ⏻ (Power) button :
Use this button to turn on and off the power of other components.

⑫ CH SELECT button :
Use to select a speaker when setting the volume level of each channel.

⑬ TEST TONE button :
Use to sound the TEST TONE when setting the volume level of each channel.

⑭ DIMMER button :
Press to change the display brightness. The DIMMER button allows you to cycle through the four different brightness strengths for the display.

ⓐ Tone Effect buttons:
FLAT button - Press for FLAT mode. This mode plays as recorded with no tone adjustments.
QUIET button - Press for QUIET mode. This mode is for delicate soundtracks.
S. BASS button - Press for S.BASS mode, which adds additional bass to the sound.

⑮ ROOM SETUP (S-M-L) buttons :
Use these functions when setting up the surround sound speaker distances with the Quick Start, easy-to-do method.

⑯ CH.LEVEL +/– buttons :
Use these buttons to control the volume level of each channel or add or subtract the amount of effect in a listening mode.

⑰ ◄►▲▼ & ENTER buttons :
Use these arrow buttons when setting up your surround system.

⑱ 2 channel listening mode buttons :
VIRTUAL button- Press for VIRTUAL listening mode. This listening mode imitates surround sound but only uses two channels.
PHONES SURR. button-
Press for PHONES SURR. listening mode. This listening mode imitates surround sound for headphones (also only two channel reproduc tion).
STEREO button-
Press for STEREO listening mode. This is regular stereo reproduction (always two channel sound).

⑲ MULTI channel listening mode buttons :
STANDARD button-Press for STANDARD listening mode. This is the basic listening mode for listening to Dolby Digital 5.1, DTS 5.1 and other surround soundtracks as well as Dolby Surround soundtracks. It offers pure decoding of the signal with no added effects. 2 channel sources will get decoded and played back as Dolby Pro Logic surround soundtracks.
5-D button-Press for 5-D sound mode. This listening mode takes two channel sources and simulates surround sound.
GAME button-Press for GAME listening mode. This listening mode is best for games and other soundtracks with lots of electronic sounds.
TV SURR. button-Press for TV SURR. listening mode. This listening mode takes mono (TV sound) sources and simulates surround sound.
MUSICAL button- Press for MUSICAL listening mode. This listening mode is best for music and other soundtracks with lots of melody.
DRAMA button-Press for DRAMA listening mode. This listening mode is best for dramatic movies and other soundtracks with lots of dialog.
ACTION button-Press for ACTION listening mode. This listening mode is best for action movies and other soundtracks with lots of animated sounds.

⑳ MIDNIGHT button :
Use to put receiver in MIDNIGHT mode.

㉑ 2/MULTI channel listening mode button :
AUTO button: Use to put receiver in the AUTO mode, where the receiver automatically switches between STEREO (2 ch) and STANDARD (MULTI) according to the input.

8.2 SPECIFICATIONS

Amplifier Section

Continuous average power output of 21 watts* per channel, min., at 6 ohms, from 20 Hz to 20,000 Hz with no more than 0.9 %** total harmonic distortion (front).

Continuous Power Output (SURROUND MODE)
FRONT ..... 33 W / ch (1 kHz, THD 1 %, 6 Ω)
CENTER ..... 33W (1 kHz, THD 1 %, 6 Ω)
SURROUND ..... 33 W / ch (1 kHz, THD 1 %, 6 Ω)

RMS Power Output (SURROUND MODE)
FRONT ..... 40 W / ch (1 kHz, THD 10 %, 6 Ω)
CENTER ..... 40 W (1 kHz, THD 10 %, 6 Ω)
SURROUND ..... 40 W / ch (1 kHz, THD 10 %, 6 Ω)

Input (Sensitivity/Impedance)
DVD, TV/SAT, VCR, FRONT ..... 200 mV/47 kΩ
Frequency Response
DVD, TV/SAT, VCR, FRONT
..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB
Output (Level/Impedance)
VCR OUT ..... 200 mV/2.2 kΩ

Signal-to-Noise Ratio (IHF, short circuited, A network)
DVD, TV/SAT, VCR, FRONT ..... 97 dB
Signal-to Noise Ratio [EIA, at 1 W (1 kHz)]
DVD, TV/SAT, VCR, FRONT ..... 79 dB

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

VIDEO Section

Input (Sensitivity/Impedance)
DVD, TV/SAT, VCR, FRONT ..... 1 Vp-p/75 Ω
Output (Level/Impedance)
VCR, MONITOR ..... 1 Vp-p/75 Ω
Frequency Response
DVD, TV/SAT, VCR, FRONT → MONITOR
..... 5 Hz to 7 MHz $^{+0}_{-3}$ dB
Signal-to-Noise Ratio ..... 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 dBf
..... 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 (±1dB)
Antenna Input (DIN) ..... 75 Ω unbalanced

AM Tuner Section

Frequency Range ..... 530 kHz to 1,700 kHz (10 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 ..... 130 W
In Standby ..... 1 W
Dimensions ..... 420 (W) x 65 (H) x 322(D) mm
..... 16 9/16 (W) x 2 9/16 (H) x 12 11/16(D) in.
Weight (without package) ..... 5.2 kg (11 lb 8 oz)

Furnished Parts

AM loop antenna 1
FM wire antenna 1
Dry cell batteries (AA size IEC R6P) 2
Remote control unit 1
Power cord 1
Speaker cord labels 1
Operating instructions 1

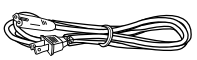
NOTE:

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

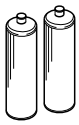
Accessories

AM loop antenna
(ATB7009)

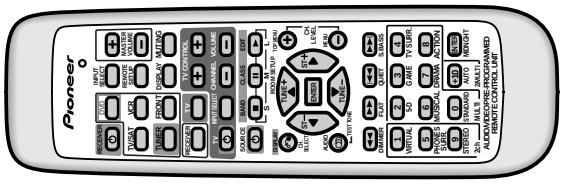
FM wire antenna
(ADH7004)



AC Power cord
(ADG7022)



AA size IEC R6P
Dry cell batteries (x2)



Remote control unit
(AXD7310)