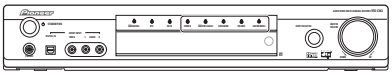
Pioneer *sound.vision.soul*

Service Manual



VSX-C302-S

ORDER NO.
RRV2939

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-C302-S

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

Model	Type	Power Requirement	Remarks
VSX-C302-S	KUCXU	AC120V	

For details, refer to "Important symbols for good services".

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

T-ZZR MAY 2004 printed in Japan

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.

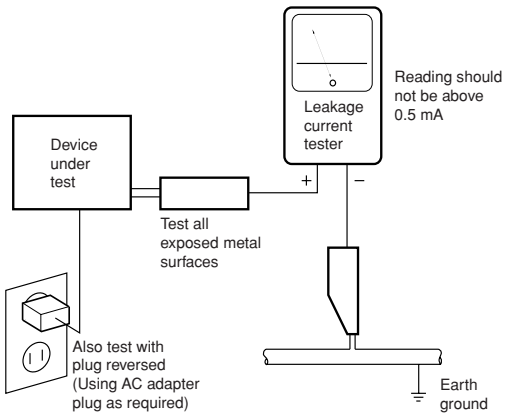
(FOR USA MODEL ONLY)

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 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



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.

[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

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

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

CONTENTS

1. SPECIFICATIONS

Specifications

Amplifier section

Continuous average power output of 28 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 (STEREO mode)

Front. . . . . 28 W + 28 W
(FTC 20–20 kHz, THD 0.9 %, 6 Ω)

RMS Power Output

Front. . . . . 75 W/ch (DIN 1 kHz, THD 10 %, 6 Ω)
Center . . . . . 75 W (DIN 1 kHz, THD 10 %, 6 Ω)
Surround . . . . . 75 W/ch (DIN 1 kHz, THD 10 %, 6 Ω)

Audio section

Input (Sensitivity/Impedance) . . . . . 200 mV/47 kΩ
Output (Level/Impedance)
DVR/VCR . . . . . 200 mV/2.2 kΩ

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

Video section

Input (Sensitivity/Impedance) . . . . . 1 Vp-p/75 Ω
Output (Level/Impedance) . . . . . 1 Vp-p/75 Ω

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: 76.0 dB (at 85 dBf)
Stereo: 72.0 dB (at 85 dBf)
Distortion. . . . . Stereo: 0.6 % (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 step)
Sensitivity (IHF, Loop antenna) . . . . . 350 µV/m
Selectivity . . . . . 30 dB
Signal-to-Noise Ratio . . . . . 50 dB
Antenna . . . . . Loop antenna

Miscellaneous

Power Requirements . . . . . AC 120 V, 60 Hz
Power Consumption . . . . . 130 W
In standby. . . . . 0.3 W
Dimensions . . . . . 16 9/16(W) x 2 13/16(H) x 15 1/8(D) in.
Weight (without package) . . . . . 14 lb 6 oz

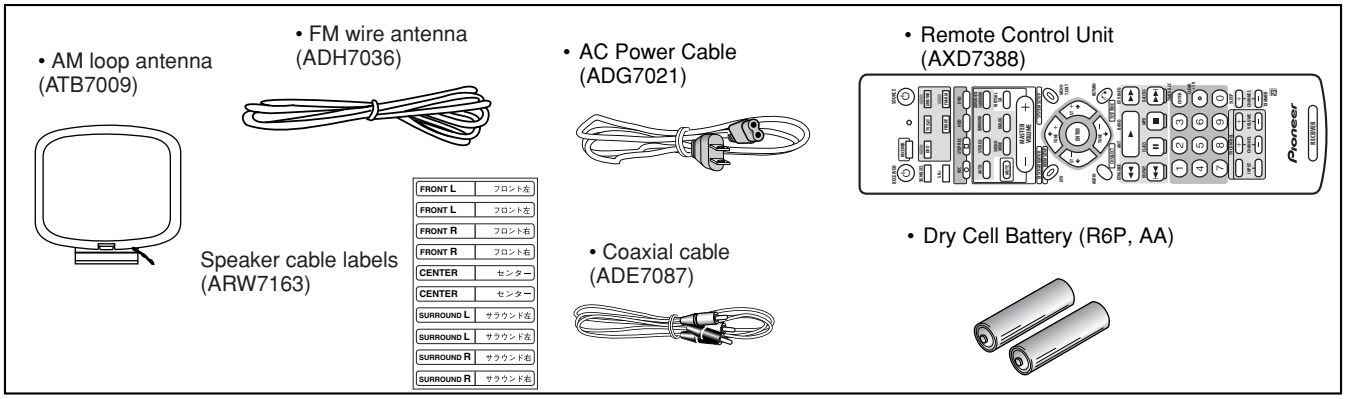
Furnished parts

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

Note

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

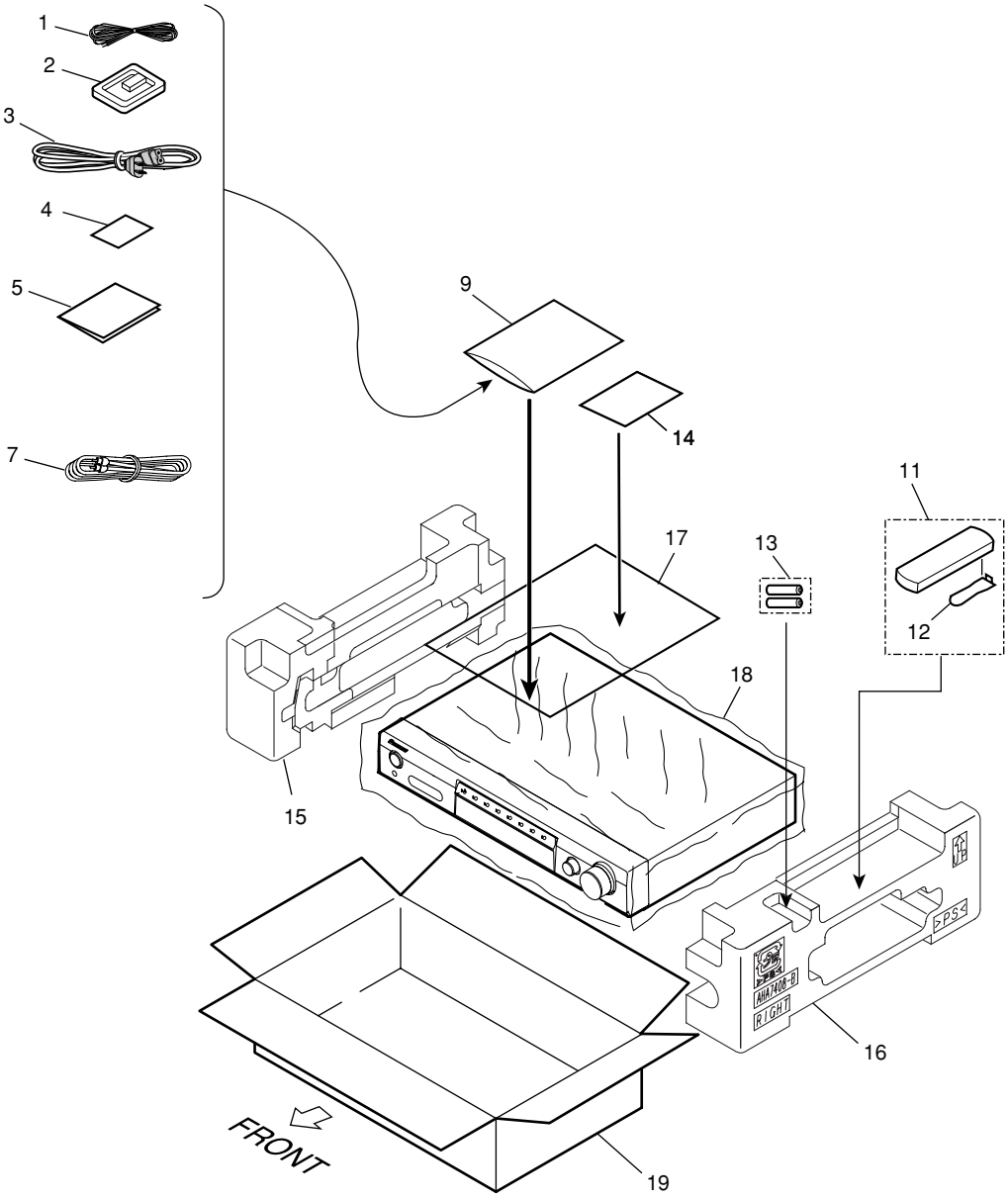
● Accessories



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

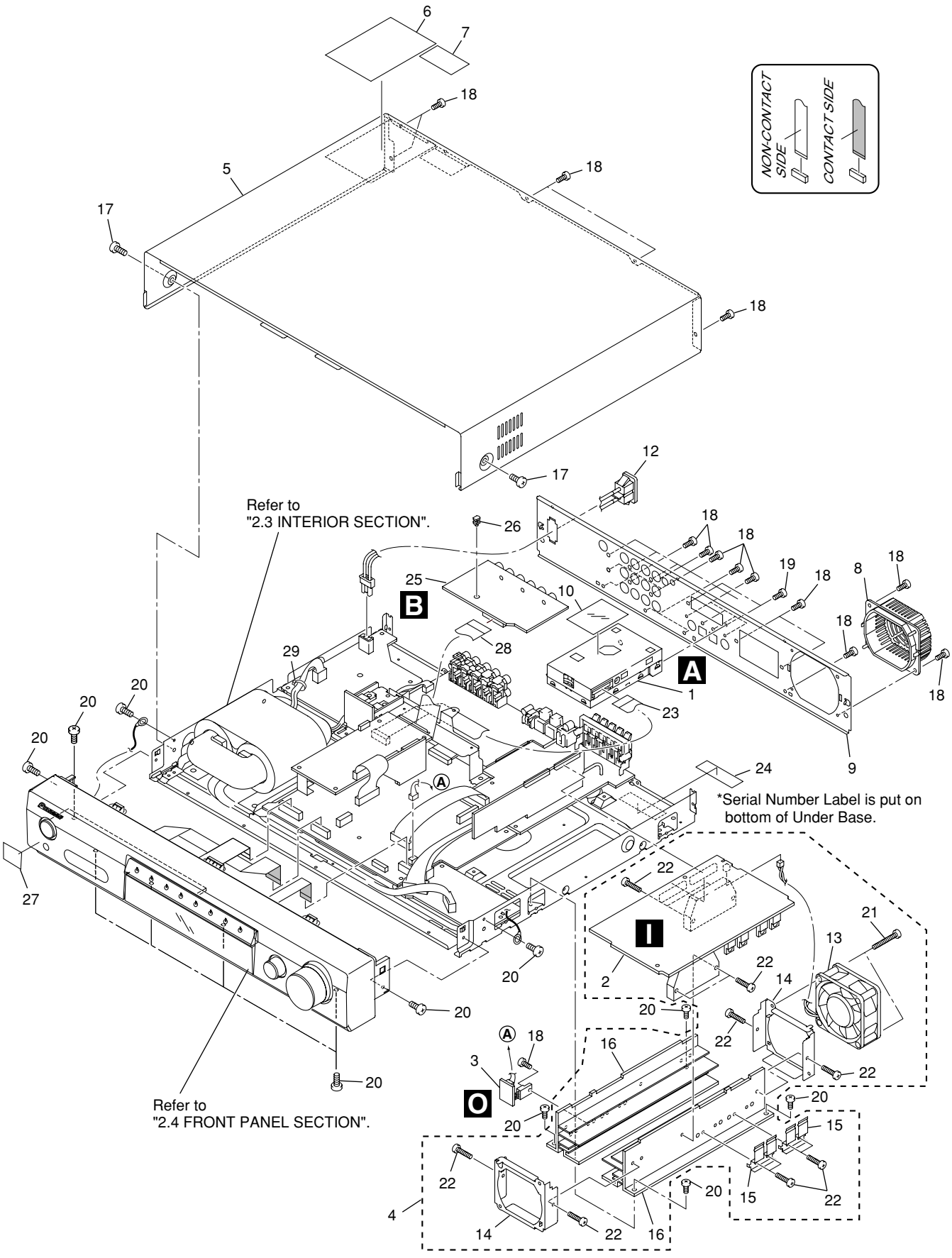
2.1 PACKING



PACKING parts List

Mark	No.	Description	Part No.
	1	FM Wire Antenna	ADH7036
	2	AM Loop Antenna	ATB7009
⚠	3	Power Cable	ADG7021
	4	Speaker Cable Label	ARW7163
	5	Operating instructions 302 (English and French)	ARE7340
	6	• • • • • •	
	7	Coaxial cable	ADE7087
	8	• • • • • •	
NSP	9	Polyethylene Bag (0.03*230*340)	Z21-038
	10	• • • • • •	
	11	Remote Control Unit	AXD7388
	12	Battery Cover	AZA7424
NSP	13	Dry cell batteries (R6P,AA)	VEM1030
NSP	14	Warranty Card	ARY7045
	15	Left Pad 301	AHA7407
	16	Right Pad 301	AHA7408
	17	Spacer	AHB7088
	18	Packing Sheet	AHG7015
	19	Packing Case	AHD8269

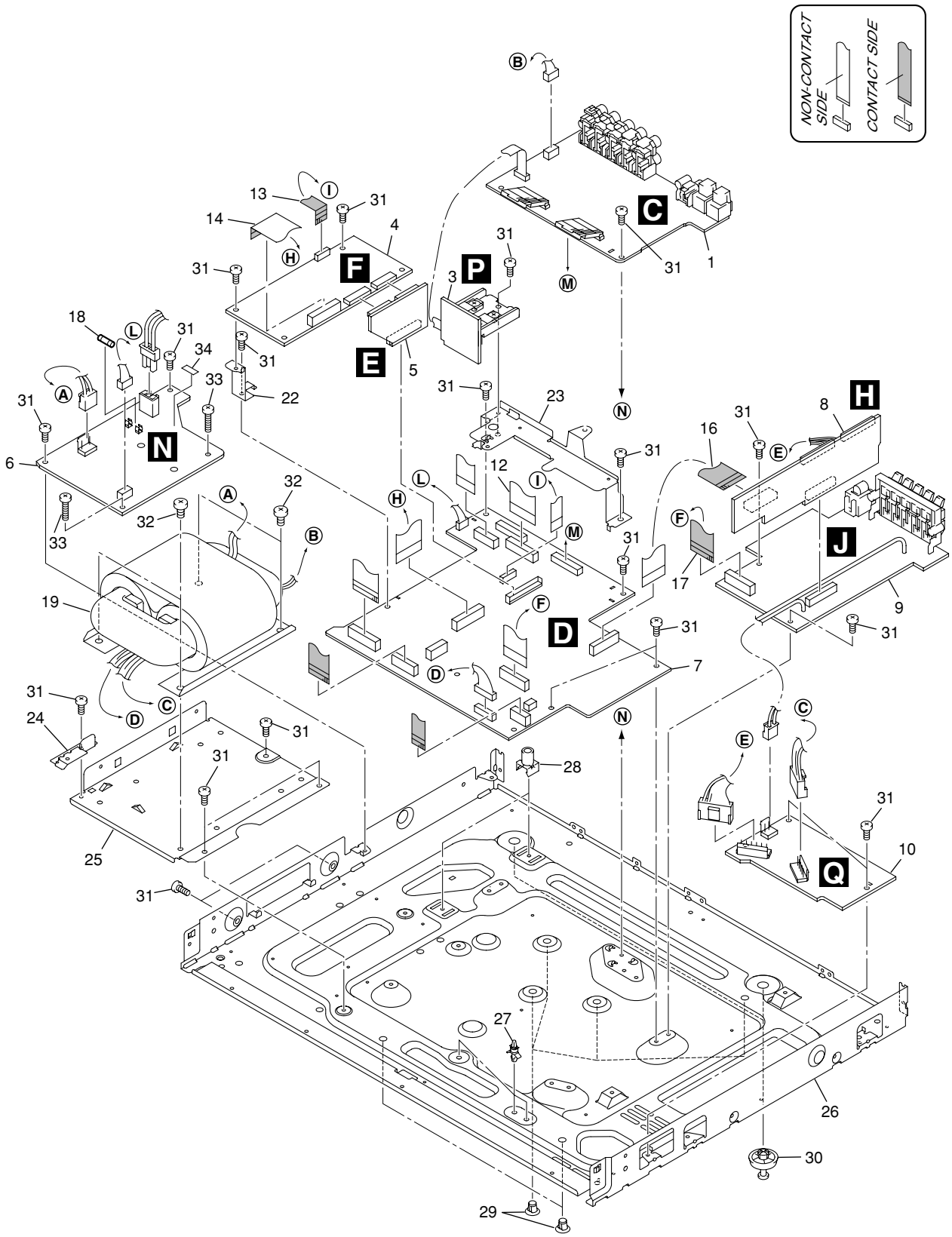
2.2 EXTERIOR SECTION



EXTERIOR SECTION parts List

Mark	No.	Description	Part No.
	1	FM/AM TUNER MODULE	AXQ7245
	2	6CH AMP Assy	AWM7786
	3	D5V Assy	AWX8224
NSP	4	AMP MODULE 6CH	AXQ7255
	5	Bonnet Case 302	AZN7983
	6	Label	ARW7217
	7	License Label	ARW7276
	8	Fan Cover	AMR7446
	9	Rear Panel 302SKU	ANC8273
	10	Tuner Barrier	AEC7383
	11	• • • • • •	
⚠	12	AC Inlet Assy	VKP2126
	13	DC Fan Motor	AXM7025
	14	Fan Plate	ANG7462
	15	FET Bracket A	ANG7418
NSP	16	Heat Sink	ANH7161
	17	Screw	BCZ40P060FNI
	18	Screw	BBZ30P080FNI
	19	Screw	PPZ30P100FNI
	20	Screw	BBZ30P060FTC
	21	Screw	BBZ30P300FTC
	22	Screw	BBZ30P140FTC
	23	J1905 13P FFC/60V	ADD7402
NSP	24	Label	VRW1629
	25	VIDEO Assy	AWX8225
NSP	26	PCB Spacer	AEC7156
NSP	27	Energy Star Label	AAX8022
	28	J1911 19P FFC/60V	ADD7422
NSP	29	Binder	ZCA-BK1

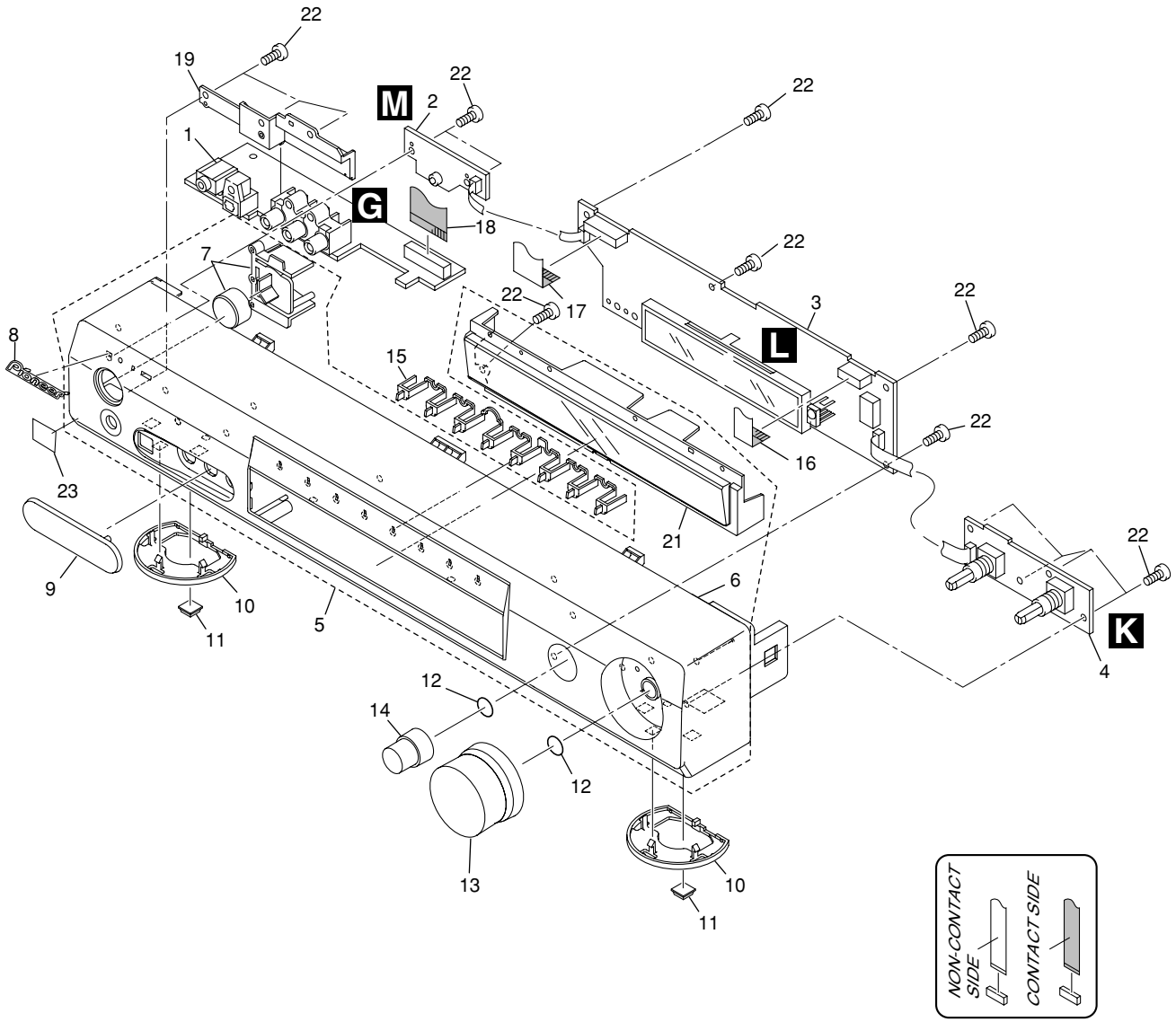
2.3 INTERIOR SECTION



INTERIOR SECTION parts List

Mark	No.	Description	Part No.
	1	AUDIO-INPUT Assy	AWX8227
	2	• • • • • •	
	3	12V Assy	AWX8170
	4	DSP Assy	AWX8241
	5	DSP KAWA Assy	AWX8167
	6	PRIMARY Assy	AWX8190
	7	MOTHER Assy	AWX8423
	8	AMP KAWA Assy	AWX8223
	9	AMP OUT Assy	AWX8177
	10	VHVL Assy	AWX8259
	11	• • • • • •	
	12	J1911 19P FFC/60V	ADD7422
	13	J1906 10P FFC/60V	ADD7405
	14	J1909 19P FFC/60V	ADD7422
	15	• • • • • •	
	16	J1901 17P FFC/60V	ADD7398
	17	J1904 17P FFC/60V	ADD7401
⚠	18	FU1 Fuse (6.3A)	REK1069
⚠	19	T1 Power Transformer	ATS7347
	20	• • • • • •	
	21	• • • • • •	
	22	Core Stay A	ANG7447
	23	Core Stay B	ANG7448
	24	Jack Stay	ANG7493
	25	Trans Frame	ANG7446
NSP	26	Under Base	ANA7151
	27	PCB Support	AEC7365
	28	PCB Mold	AMR2533
NSP	29	PC Support	VEC1749
	30	Foot Assy	REC-434
	31	Screw	BBZ30P060FTC
	32	Screw	BCZ40P060FNI
	33	Screw	BBZ30P180FTC
NSP	34	Fuse Card	AAX2374

2.4 FRONT PANEL SECTION



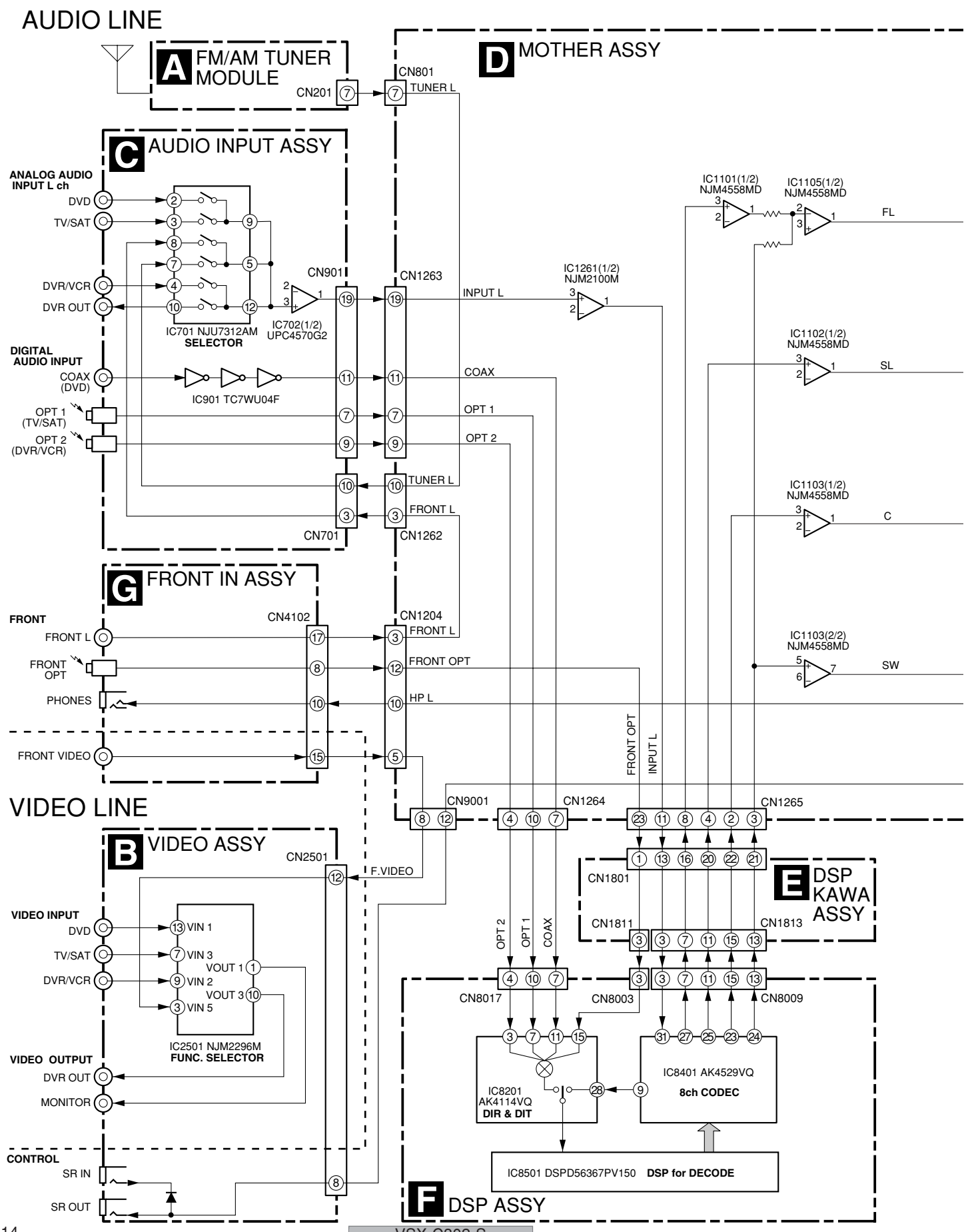
FRONT PANEL SECTION parts List

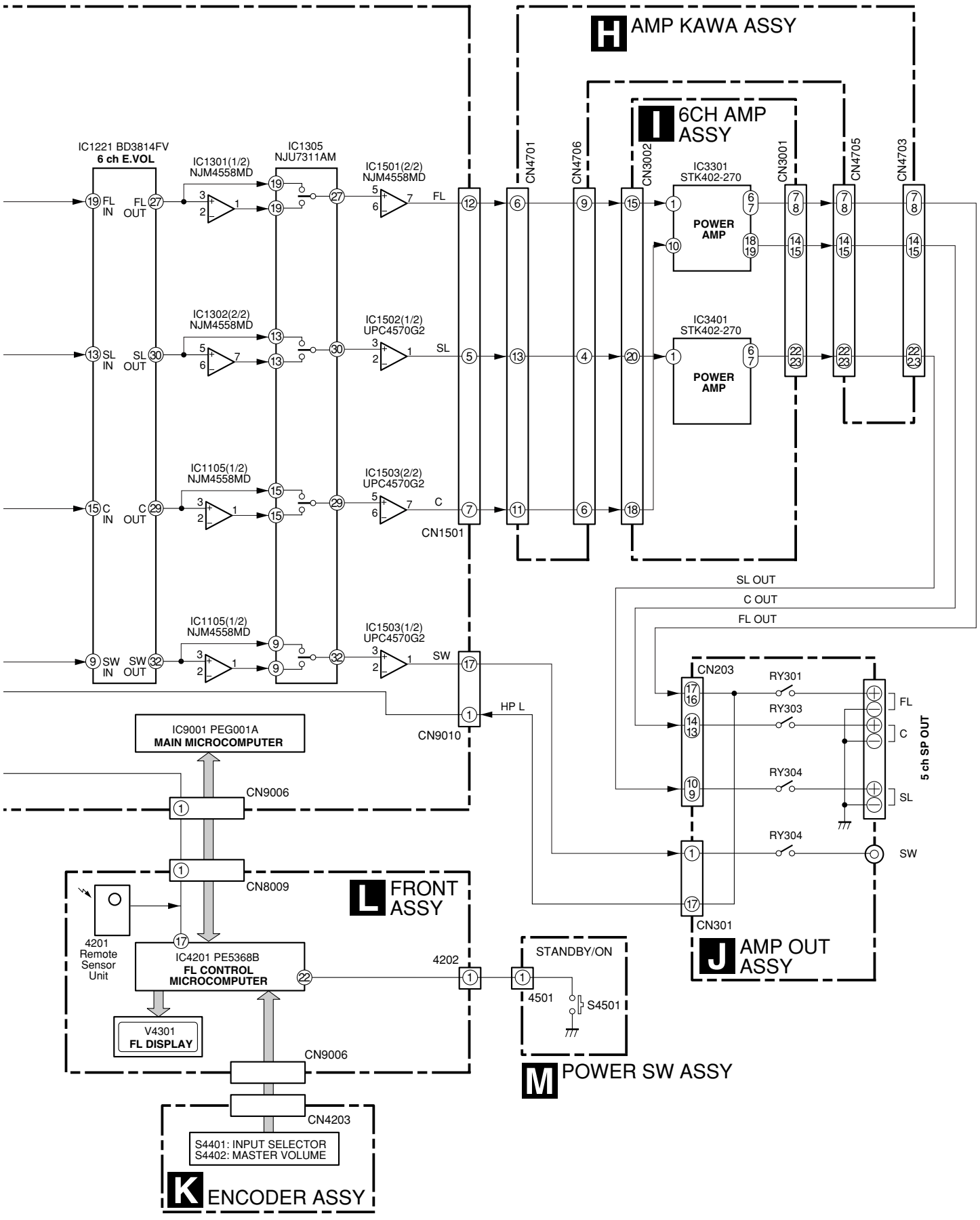
Mark	No.	Description	Part No.
	1	FRONT IN Assy	AWX8219
	2	POWER SW Assy	AWX8174
	3	FRONT Assy	AWX8199
	4	ENCODER Assy	AWX8175
	5	Front Panel 302SKU Assy	AXG7223
NSP	6	Front Panel 302SKU	
NSP	7	Power Button	
	8	PIONEER Name Plate	VAM1129
	9	Terminal Cover	AAK8188
	10	Insulator Ring	AAK8091
	11	Rubber Foot	VEB1325
	12	VOL Ring	ABH7220
	13	Volume Knob 302S Assy	AAA7027
	14	Select Knob 302S Assy	AAA7029
	15	LED Lens 301	AAK8084
	16	J1903 9P FFC/60V	ADD7400
	17	J1902 15P FFC/60V	ADD7399
	18	J1911 19P FFC/60V	ADD7422
	19	Jack Cover	AMR7447
	20	• • • •	
NSP	21	Display Panel 302	
	22	Screw	PPZ30P080FTC
NSP	23	ENERGY STAR LABEL	AAX8022

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

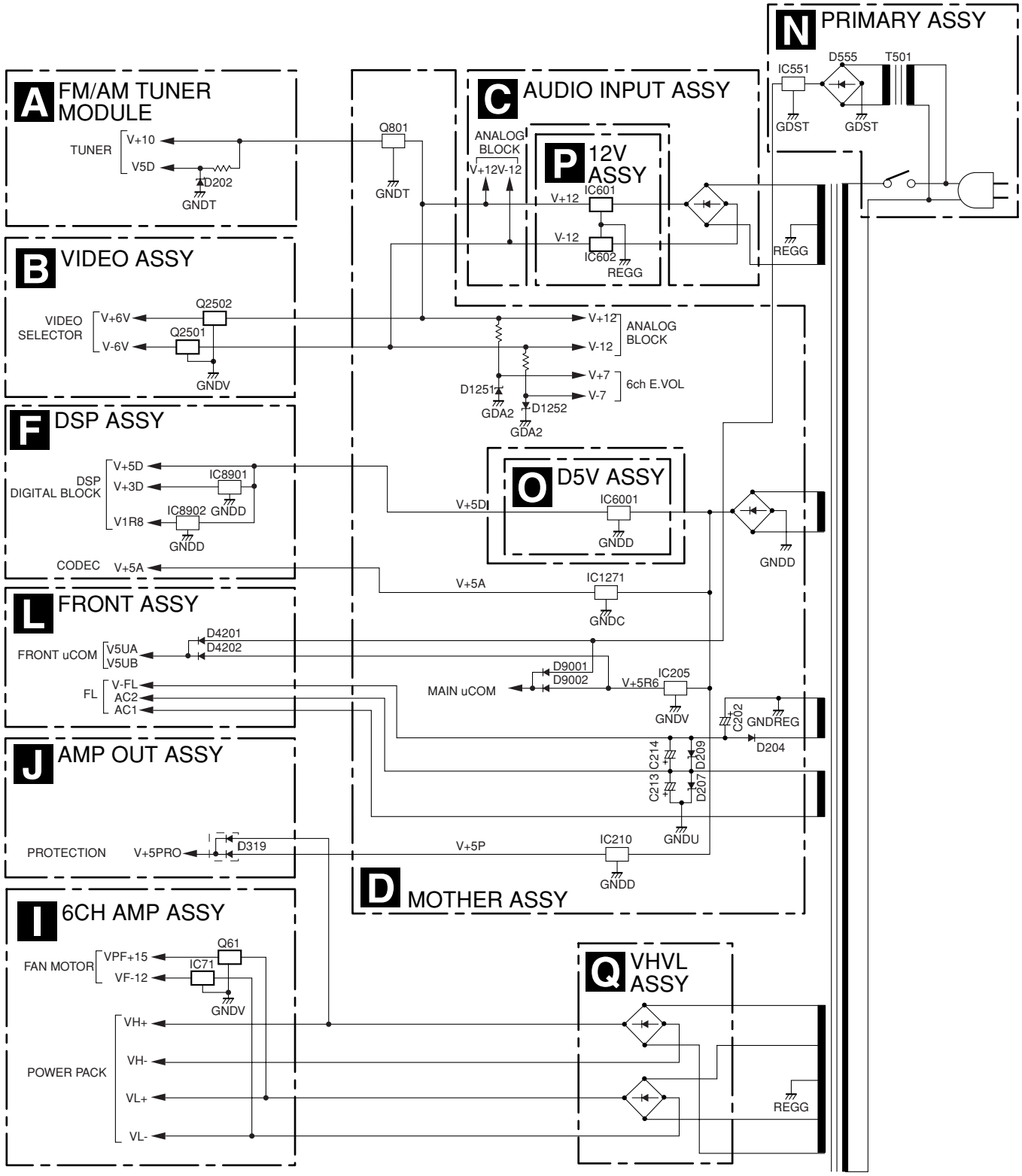
3.1 BLOCK DIAGRAM

3.1.1 AUDIO AND VIDEO BLOCK




H AMP KAWA ASSY
I 6CH AMP ASSY
IC1221 BD3814FV
6 ch E.VOL
IC1301(1/2)
NJM4558MD
IC1305
NJU7311AM
IC1501(2/2)
NJM4558MD
IC1302(2/2)
NJM4558MD
IC1502(1/2)
UPC4570G2
IC1105(1/2)
NJM4558MD
IC1503(2/2)
UPC4570G2
IC1105(1/2)
NJM4558MD
IC1503(1/2)
UPC4570G2
FL IN
FL OUT
SL IN
SL OUT
C IN
C OUT
SW IN
SW OUT
FL
SL
C
SW
CN1501
CN4701
CN4706
CN3002
IC3301
STK402-270
IC3401
STK402-270
POWER AMP
POWER AMP
CN3001
CN4705
CN4703
SL OUT
C OUT
FL OUT
HP L
CN9010
CN203
RY301
RY303
RY304
RY304
FL
C
SL
SW
5 ch SP OUT
CN301
J AMP OUT ASSY
IC9001 PEG001A
MAIN MICROCOMPUTER
CN9006
CN8009
L FRONT ASSY
4201
Remote Sensor Unit
IC4201 PE5368B
FL CONTROL MICROCOMPUTER
V4301
FL DISPLAY
4202
STANDBY/ON
4501
S4501
M POWER SW ASSY
CN9006
CN4203
S4401: INPUT SELECTOR
S4402: MASTER VOLUME
K ENCODER ASSY

3.1.2 POWER SUPPLY BLOCKS



A

B

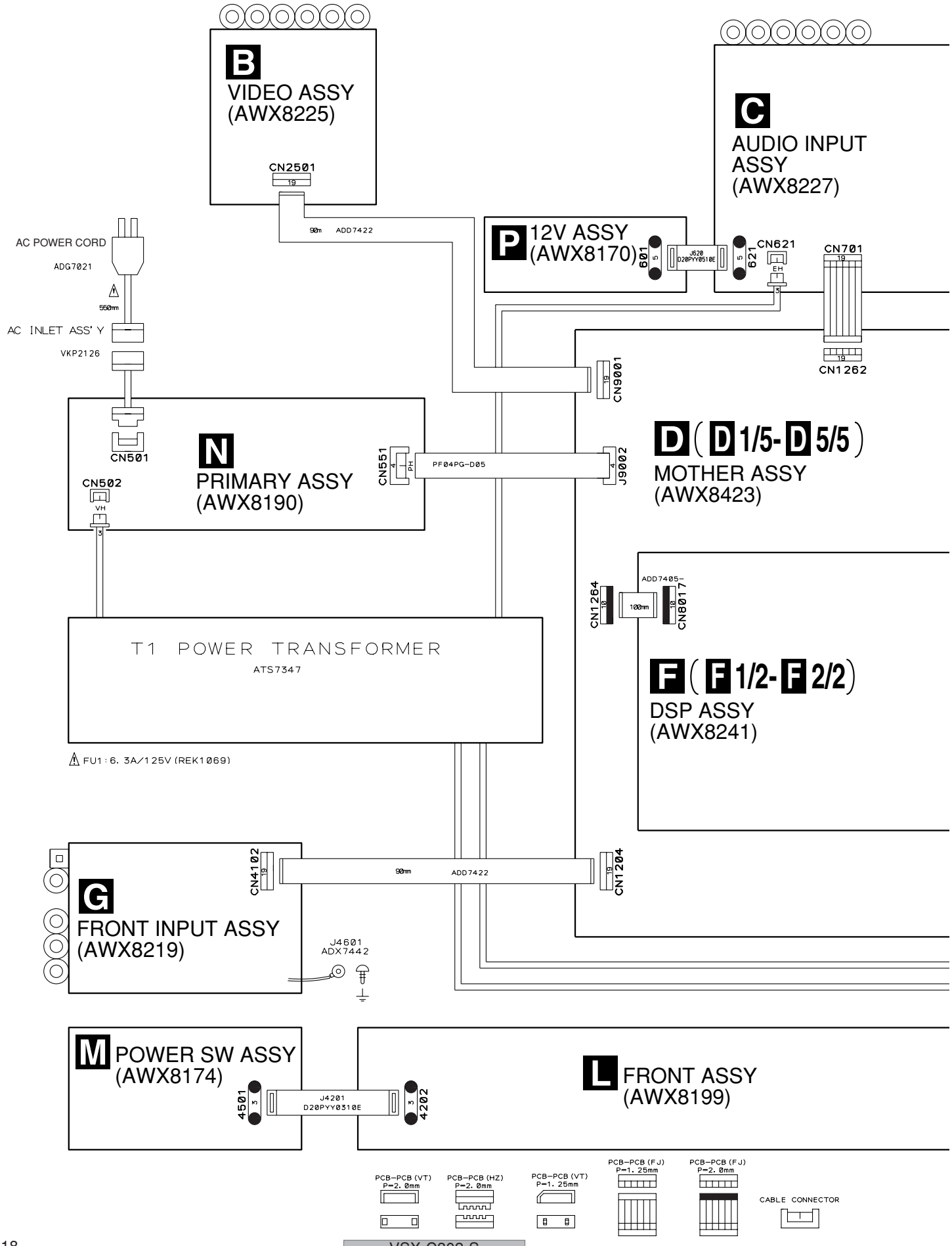
C

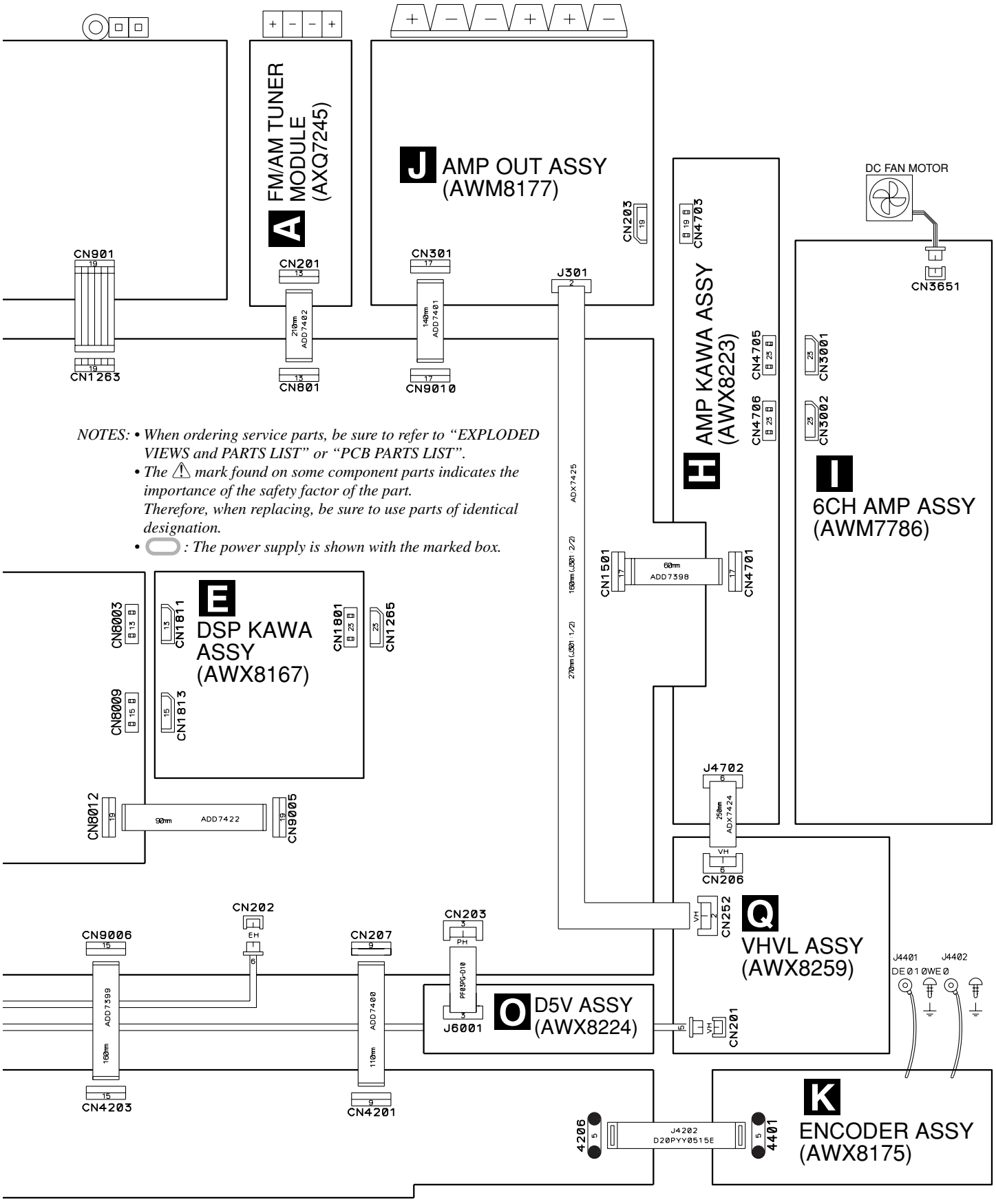
D

E

F

3.2 OVERALL WIRING DIAGRAM

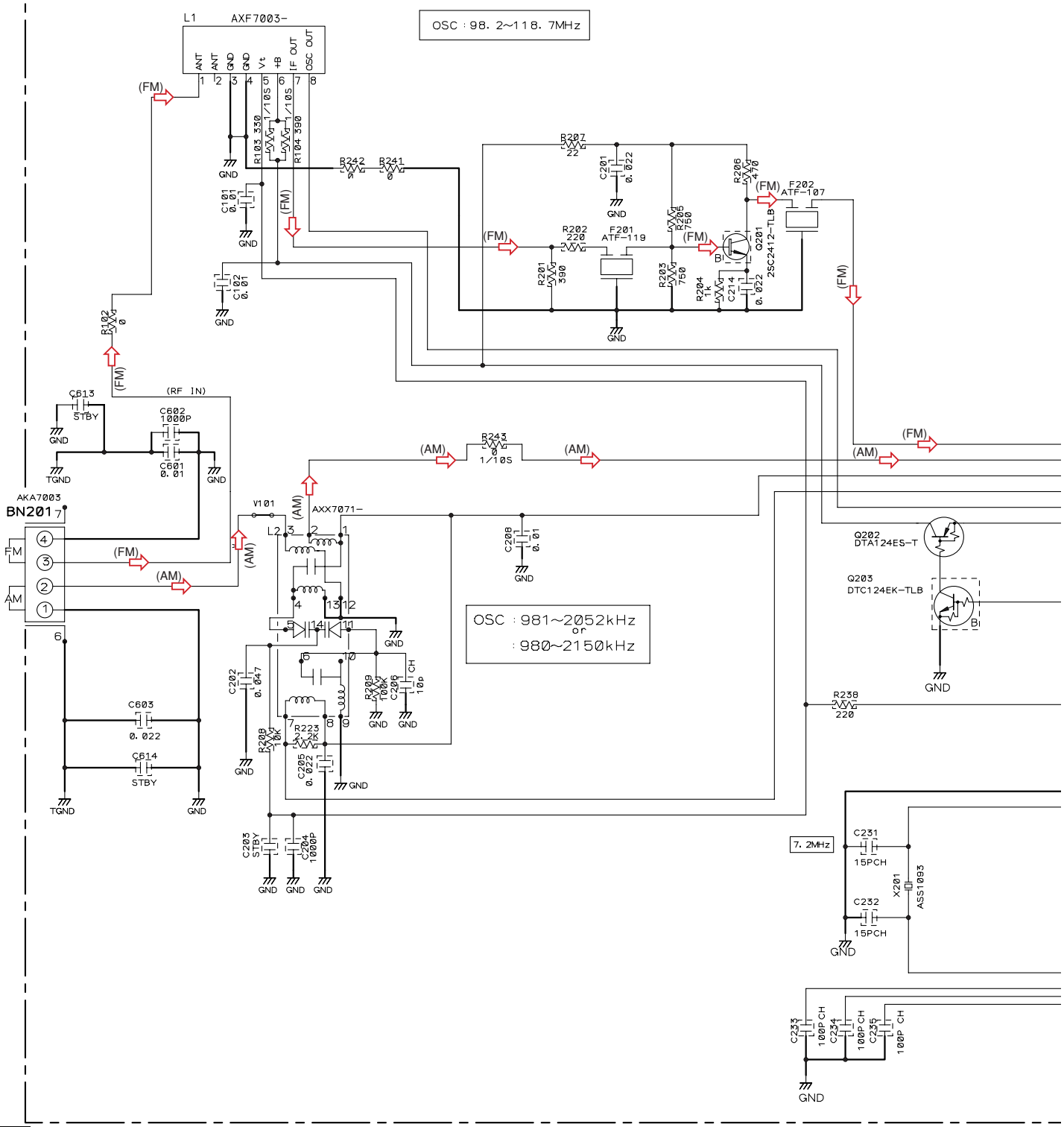




NOTES: • *When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".*
• *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
• *: The power supply is shown with the marked box.*

3.3 FM/AM TUNER MODULE

A FM/AM TUNER MODULE(AXQ7245)



Notes

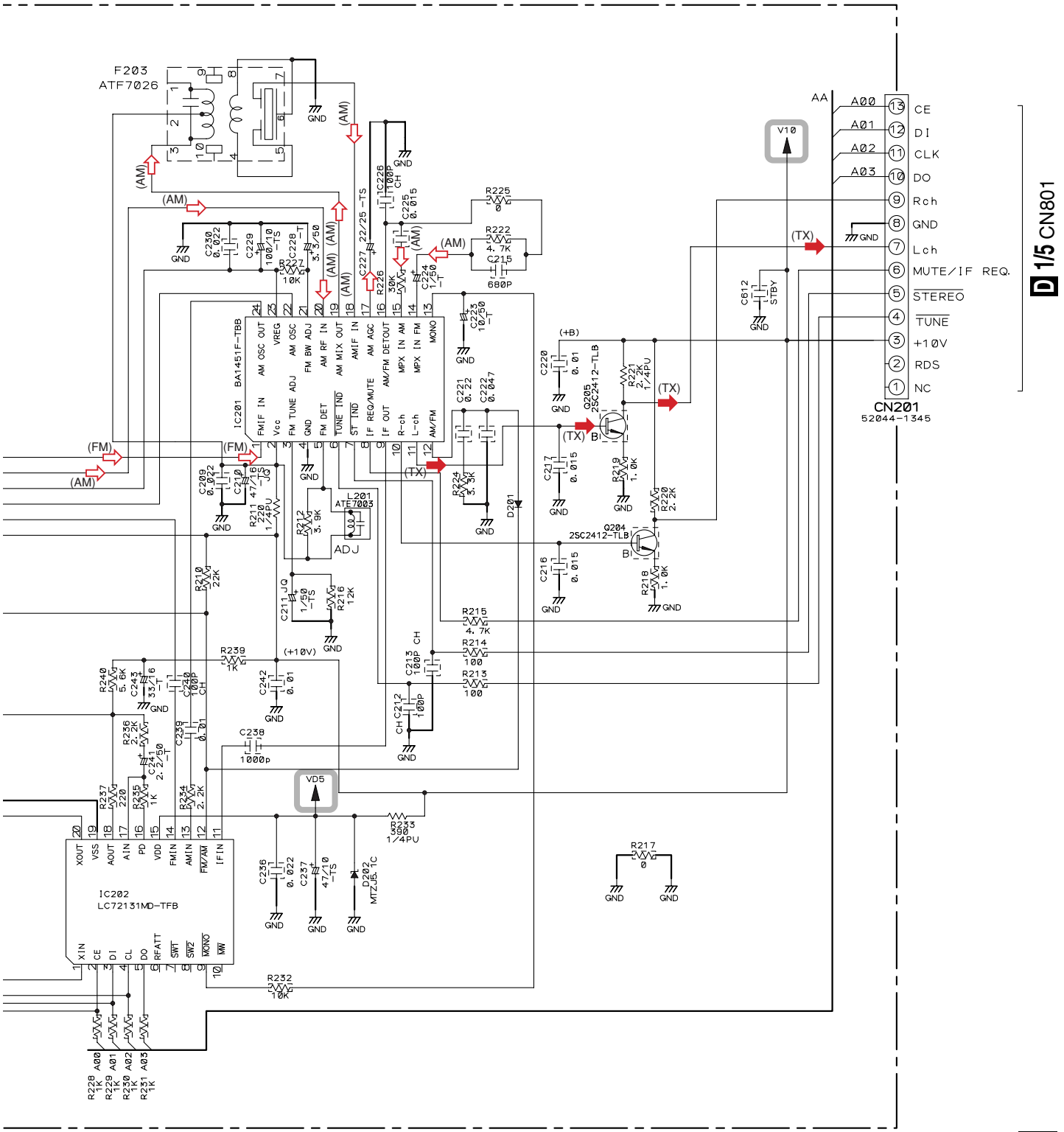
1. RESISTORS
   Indicated in Ω, 1/16W±5% Tolerance unless otherwise noted K;KΩ, M;MΩ.
2. CAPACITORS
   Indicated in Capacity(μF)/VOLTAGE(V) unless otherwise noted P;PF.
3. DIODES
   No mark diode is 1SS133.

: The power supply is shown with the marked vox.

(TX) : AUDIO SIGNAL ROUTE

(AM) : AM SIGNAL ROUTE

(FM) : FM SIGNAL ROUTE



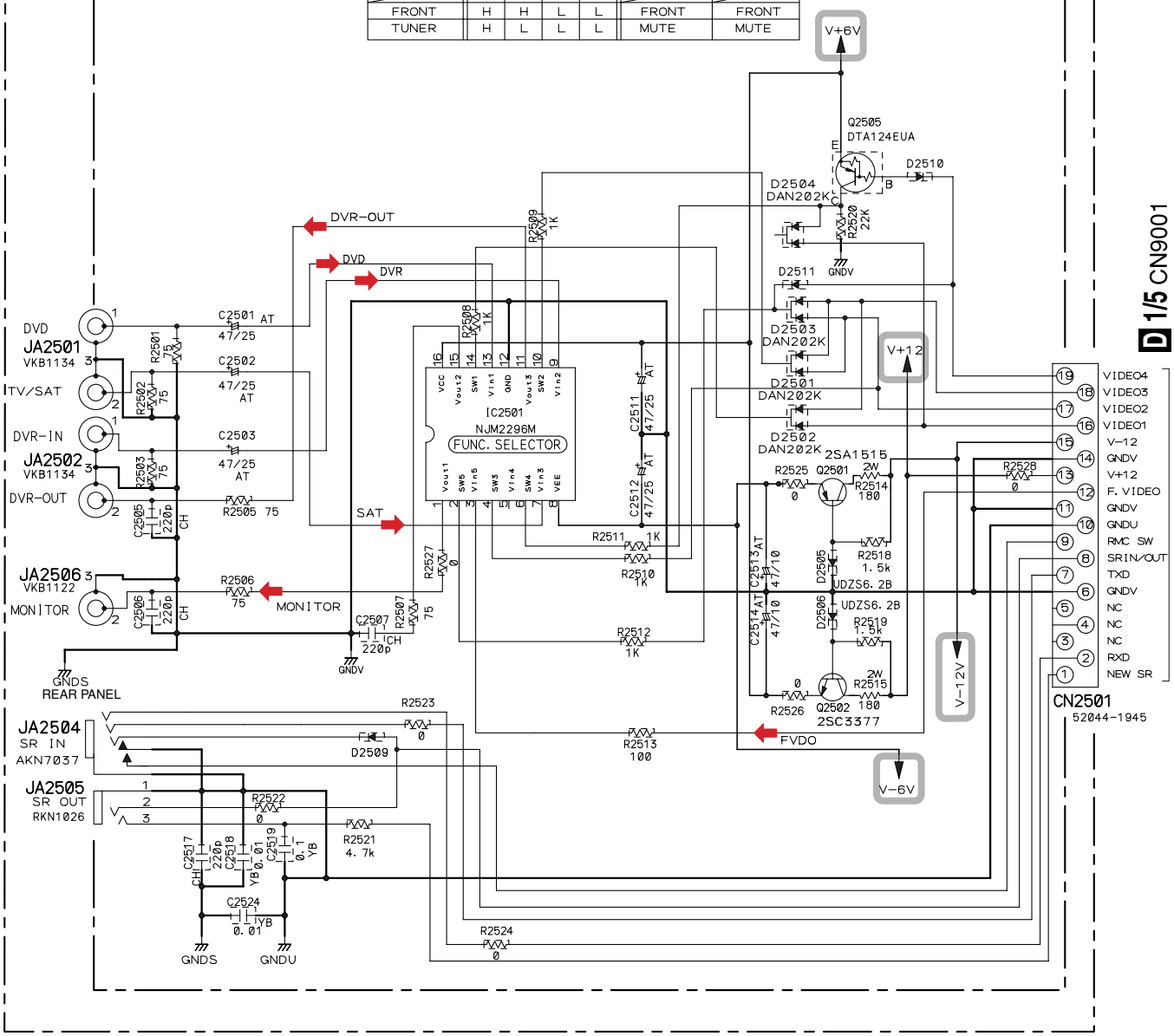
D 1/5 CN801

A

3.4 VIDEO ASSY

B VIDEO ASSY(AWX8225)

	VIDEO				NJM2296	
	1	2	3	4	VOUT1	VOUT3
DVD	L	H	L	H	DVD	DVD
DVR/VCR	H	L	L	H	DVR	MUTE
TV/SAT	L	H	H	H	SAT	SAT
	H	L	H	L		
FRONT	H	H	L	L	FRONT	FRONT
TUNER	H	L	L	L	MUTE	MUTE



D 1/5 CN9001

NOTES

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.
   AT:CEAT
   Rated Voltage: 50V expect for electrolytic capacitors.
3. DIODES
   Indicated in 1SS355.

: VIDEO SIGNAL ROUTE

: The power supply is shown with the marked vox.

A

B

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D

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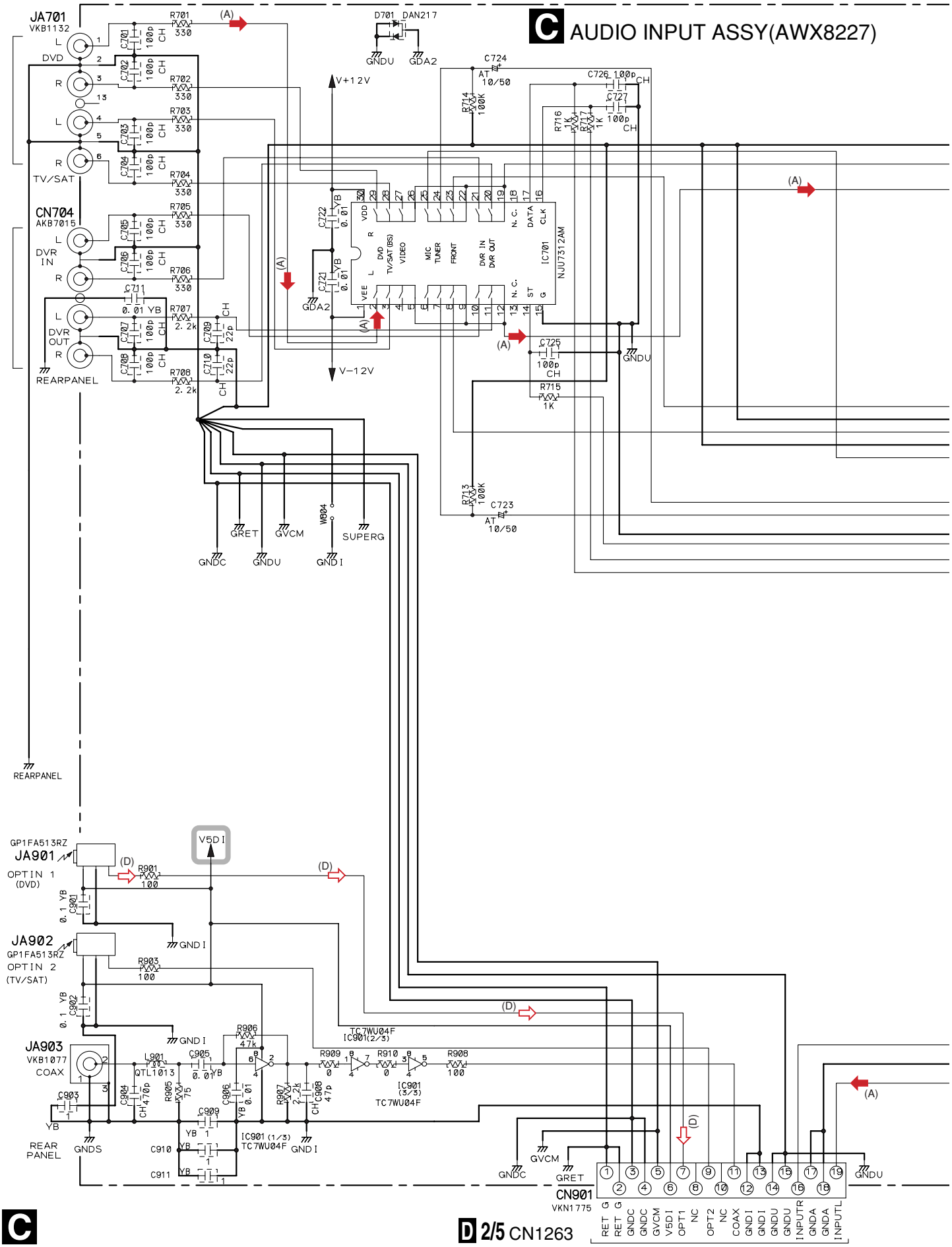
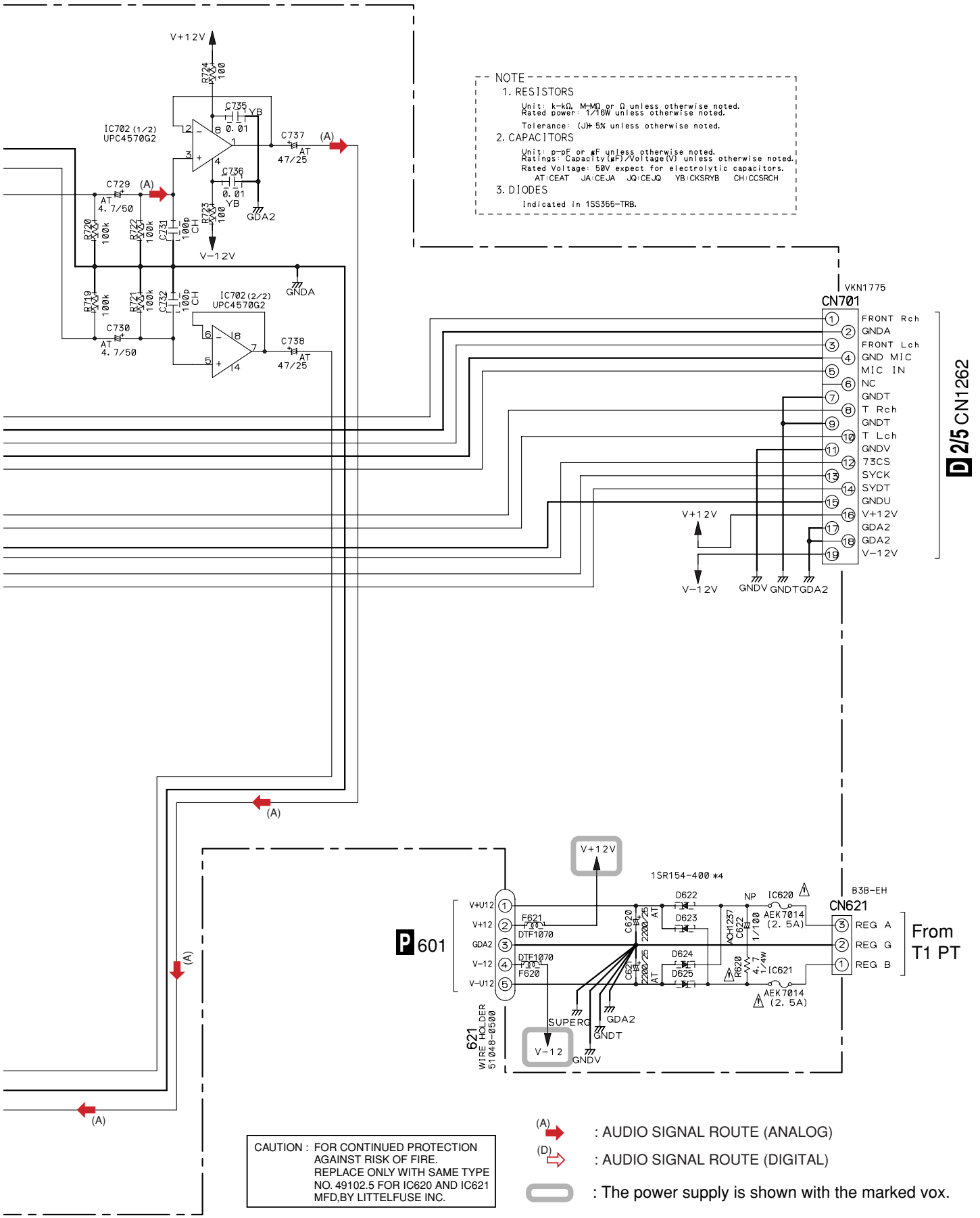
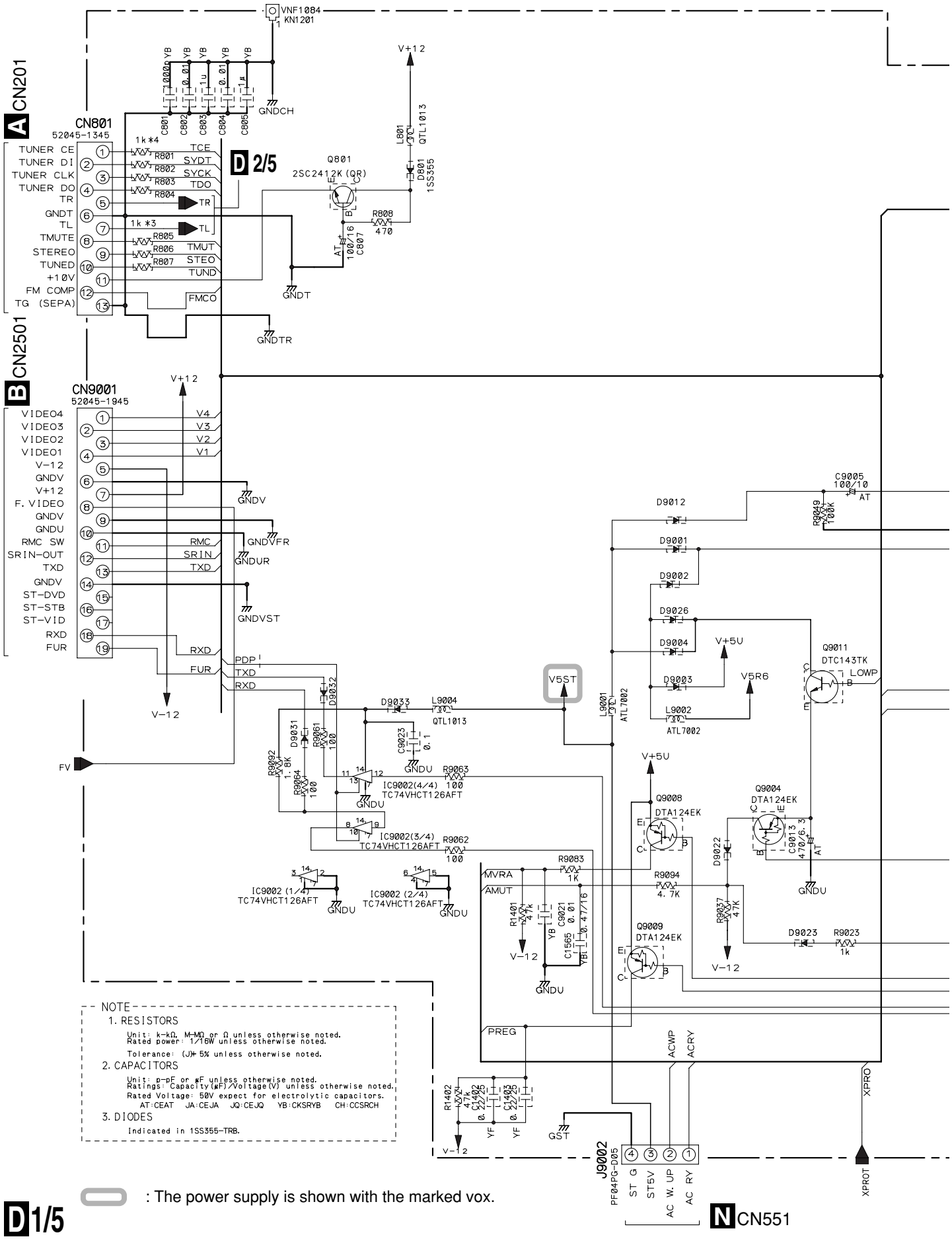
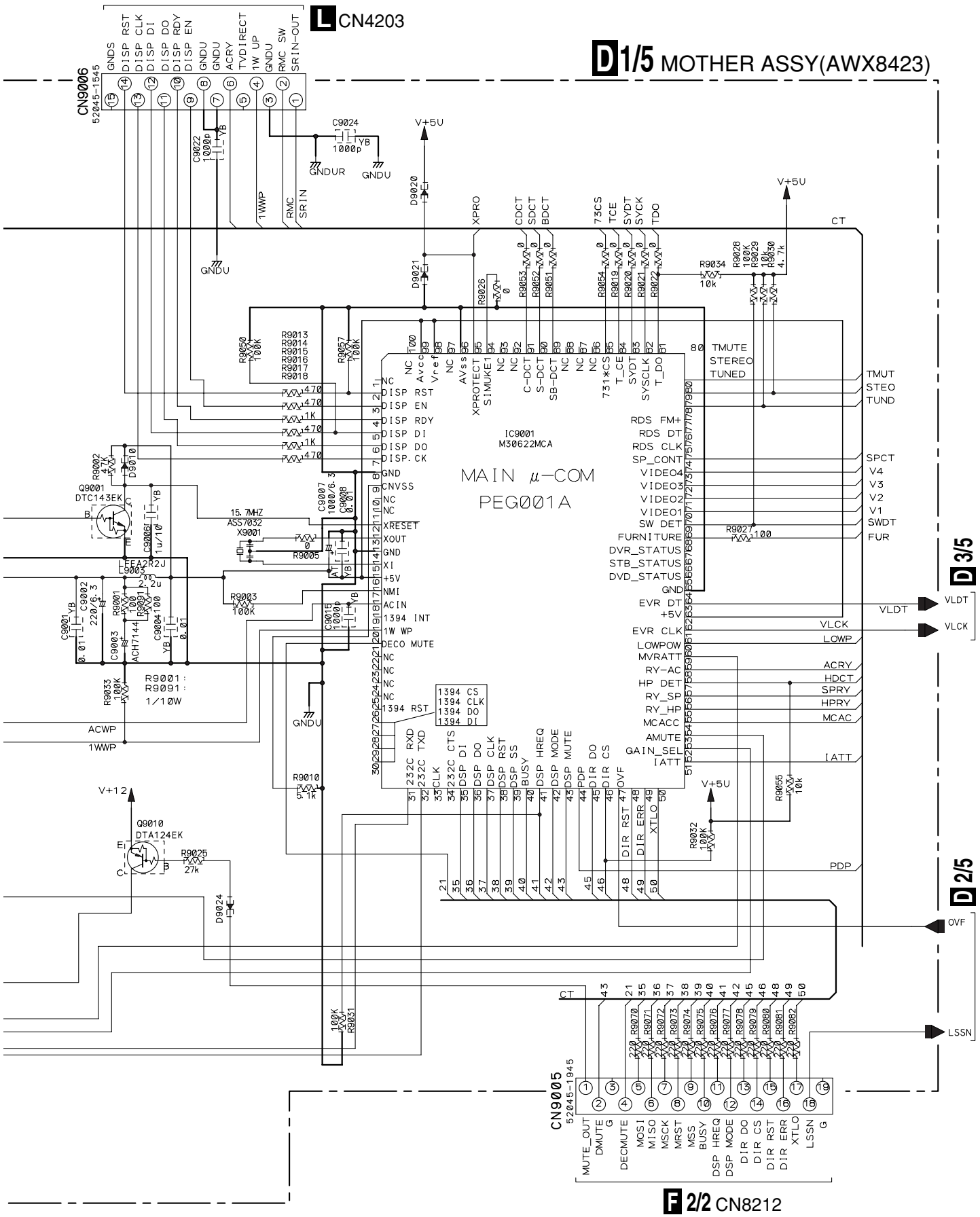
3.5 AUDIO INPUT ASSY



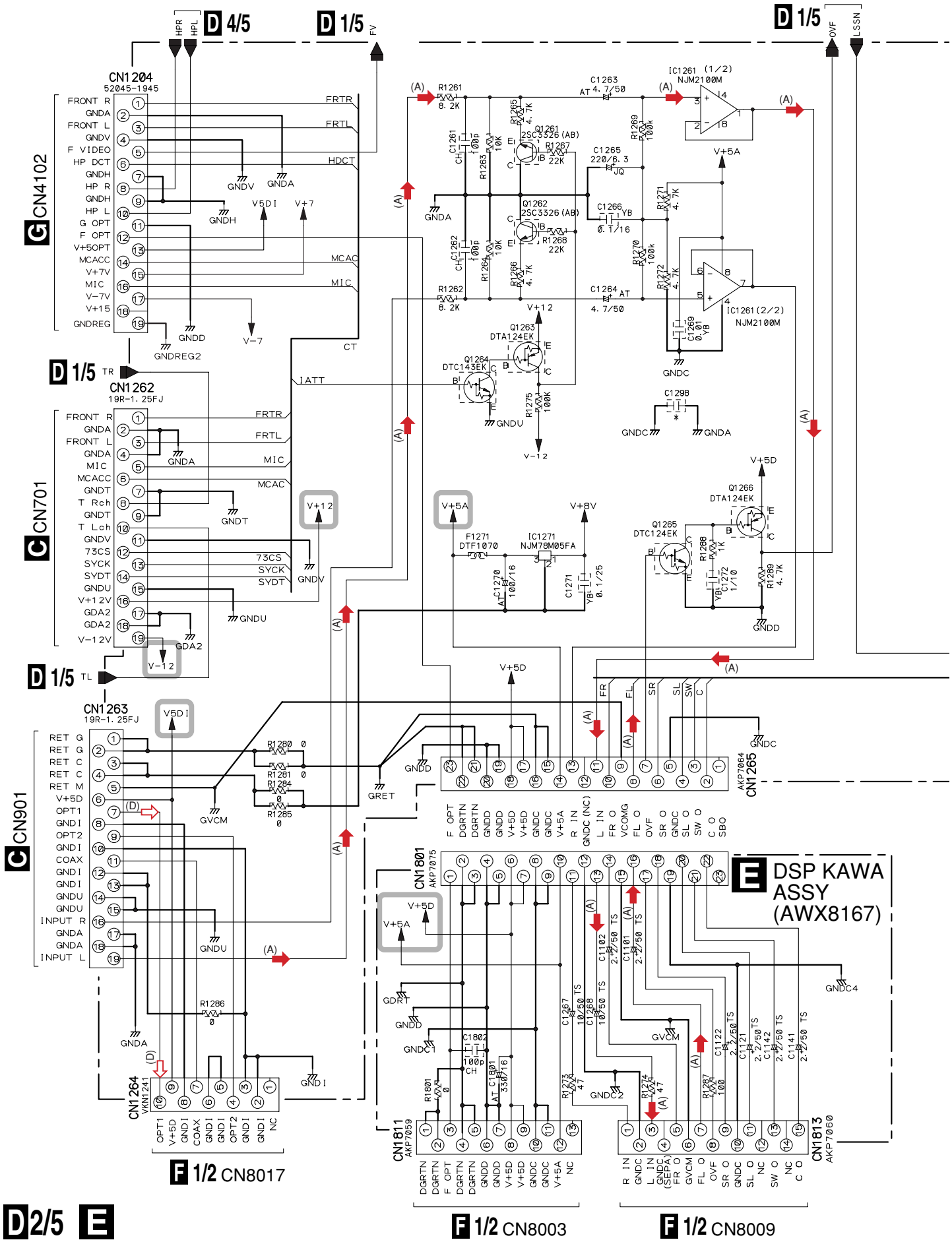

NOTE
1. RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/16W unless otherwise noted.
Tolerance: (J)± 5% unless otherwise noted.
2. CAPACITORS
Unit: p-pF or μF unless otherwise noted.
Ratings: Capacity (μF)/Voltage(V) unless otherwise noted.
Rated Voltage: 50V expect for electrolytic capacitors.
AT:CEAT JA:CEJA JQ:CEJQ YB:CKSRYB CH:CCSRCH
3. DIODES
Indicated in 1SS355-TRB.
V+12V
V-12V
GNDA
GDA2
IC702 (1/2) UPC4570G2
IC702 (2/2) UPC4570G2
C729
C730
C731
C732
C735
C736
C737
C738
R719
R720
R721
R722
R723
R724
VKN1775
CN701
FRONT Rch
GNDA
FRONT Lch
GND MIC
MIC IN
NC
GNDT
T Rch
GNDT
T Lch
GNDV
73CS
SYCK
SYDT
GNDU
V+12V
GDA2
GDA2
V-12V
D 2/5 CN1262
GNDV
GNDT
P 601
V+U12
V+12
GDA2
V-12
V-U12
F621
F620
DTF1070
1SR154-400 *4
D622
D623
D624
D625
IC620
AEK7014 (2.5A)
IC621
AEK7014 (2.5A)
B3B-EH
CN621
REG A
REG G
REG B
From T1 PT
621 WIRE HOLDER 51048-0500
SUPERG
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 49102.5 FOR IC620 AND IC621 MFD,BY LITTELFUSE INC.
(A) : AUDIO SIGNAL ROUTE (ANALOG)
(D) : AUDIO SIGNAL ROUTE (DIGITAL)
: The power supply is shown with the marked vox.

3.6 MOTHER ASSY (1/5)

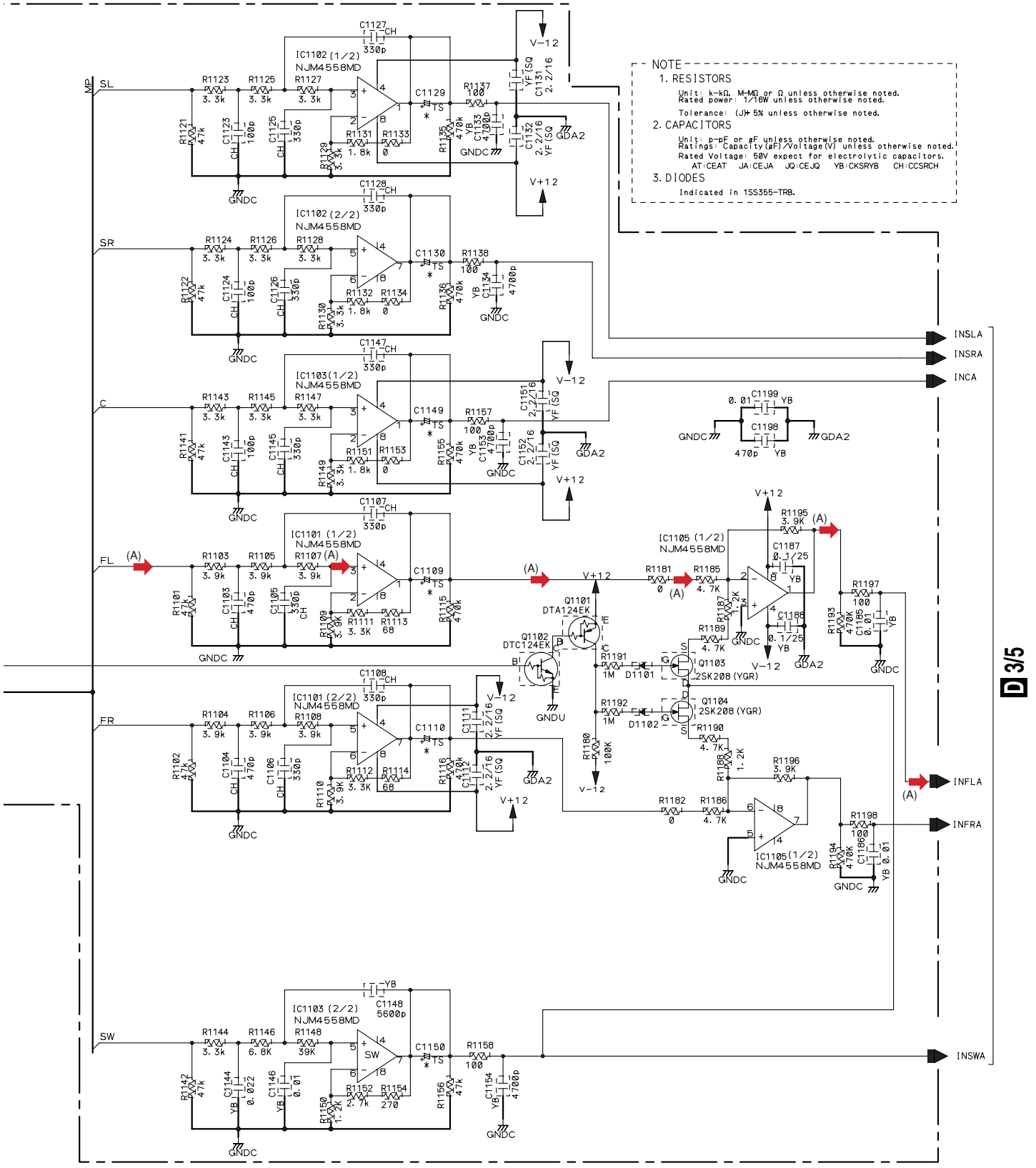



L CN4203
D 1/5 MOTHER ASSY(AWX8423)
CN9006
52045-1545
GNDS
DISP RST
DISP CLK
DISP DI
DISP DO
DISP RDY
DISP EN
GNDU
GNDU
ACRY
TVDIRECT
1W UP
GNDU
RMC SW
SRIN-OUT
C9024
1000p
YB
GNDUR
GNDU
C9022
1000p
YB
GNDU
1WWP
RMC
SRIN
V+5U
D9020
D9021
XPRO
CDCT
SDCT
BDCT
73CS
TCE
SYDT
SYCK
TDO
V+5U
CT
R9034
10k
R9028
100K
R9029
100K
R9030
4.7k
R9026
0
R9053
0
R9052
0
R9051
0
R9054
0
R9019
0
R9020
0
R9021
0
R9022
0
R9050
100K
R9013
R9014
R9015
R9016
R9017
R9018
R9057
100K
470
470
1K
470
1K
470
NC
DISP RST
DISP EN
DISP RDY
DISP DI
DISP DO
DISP. CK
GND
CNVSS
NC
NC
XRESET
XOUT
GND
XI
+5V
NMI
ACIN
1394 INT
1W WP
DECO MUTE
NC
NC
NC
NC
1394 RST
T00
NC
Avcc
Vref
NC
AVss
XPROTECT
SIMUKE1
NC
NC
C-DCT
S-DCT
SB-DCT
NC
NC
NC
731*CS
T_CE
SYDT
SYSCLK
T_DO
80
TMUTE
STEREO
TUNED
RDS FM+
RDS DT
RDS CLK
SP_CONT
VIDEO4
VIDEO3
VIDEO2
VIDEO1
SW DET
FURNITURE
DVR_STATUS
STB_STATUS
DVD_STATUS
GND
EVR DT
+5V
EVR CLK
LOWPOW
MVRATT
RY-AC
HP DET
RY_SP
RY_HP
MCACC
AMUTE
GAIN_SEL
IATT
IC9001
M30622MCA
MAIN μ-COM
PEG001A
TMUT
STEO
TUND
SPCT
V4
V3
V2
V1
SWDT
FUR
R9027
100
R9002
47K
D9010
Q9001
DTC143EK
15.7MHZ
ASS7032
X9001
R9005
0
C9006
1u/10
LEFA2R2J
C9005
2.2u
C9002
220/6.3
R9001
100
R9091
2.2
C9004
100
ACH7144
C9003
0.01
C9001
0.01
YB
R9003
100K
C9007
1000/6.3
C9008
0.01
C9015
10000p
R9033
100K
R9001:
R9091:
1/10W
ACWP
1WWP
GNDU
1394 CS
1394 CLK
1394 DO
1394 DI
1394 RXD
1394 TXD
232C CTS
232C DI
232C CLK
DSP DI
DSP DO
DSP CLK
DSP RST
DSP SS
DSP BUSY
DSP HREQ
DSP MODE
DSP MUTE
PDP
DIR DO
DIR CS
OVF
DIR RST
DIR ERR
XTLO
R9010
1k
V+12
Q9010
DTA124EK
R9025
27k
D9024
V+5U
R9032
100K
R9055
10k
PDP
D 2/5
OVF
LSSN
CT
R9070
R9071
R9072
R9073
R9074
R9075
R9076
R9077
R9078
R9079
R9080
R9081
R9082
R9031
100K
CN9005
52045-1945
MUTE_OUT
DMUTE
G
DECMUTE
MOSI
MISO
MSCK
MRST
MSS
BUSY
DSP HREQ
DSP MODE
DIR DO
DIR CS
DIR RST
DIR ERR
XTLO
LSSN
G
F 2/2 CN8212
D 3/5
VLDT
VLCK
LOWP
ACRY
HDCT
SPRY
HPRY
MCAC
IATT
VLDT
VLCK

3.7 MOTHER ASSY (2/5) and DSP KAWA ASSY



D2/5 MOTHER ASSY(AWX8423)



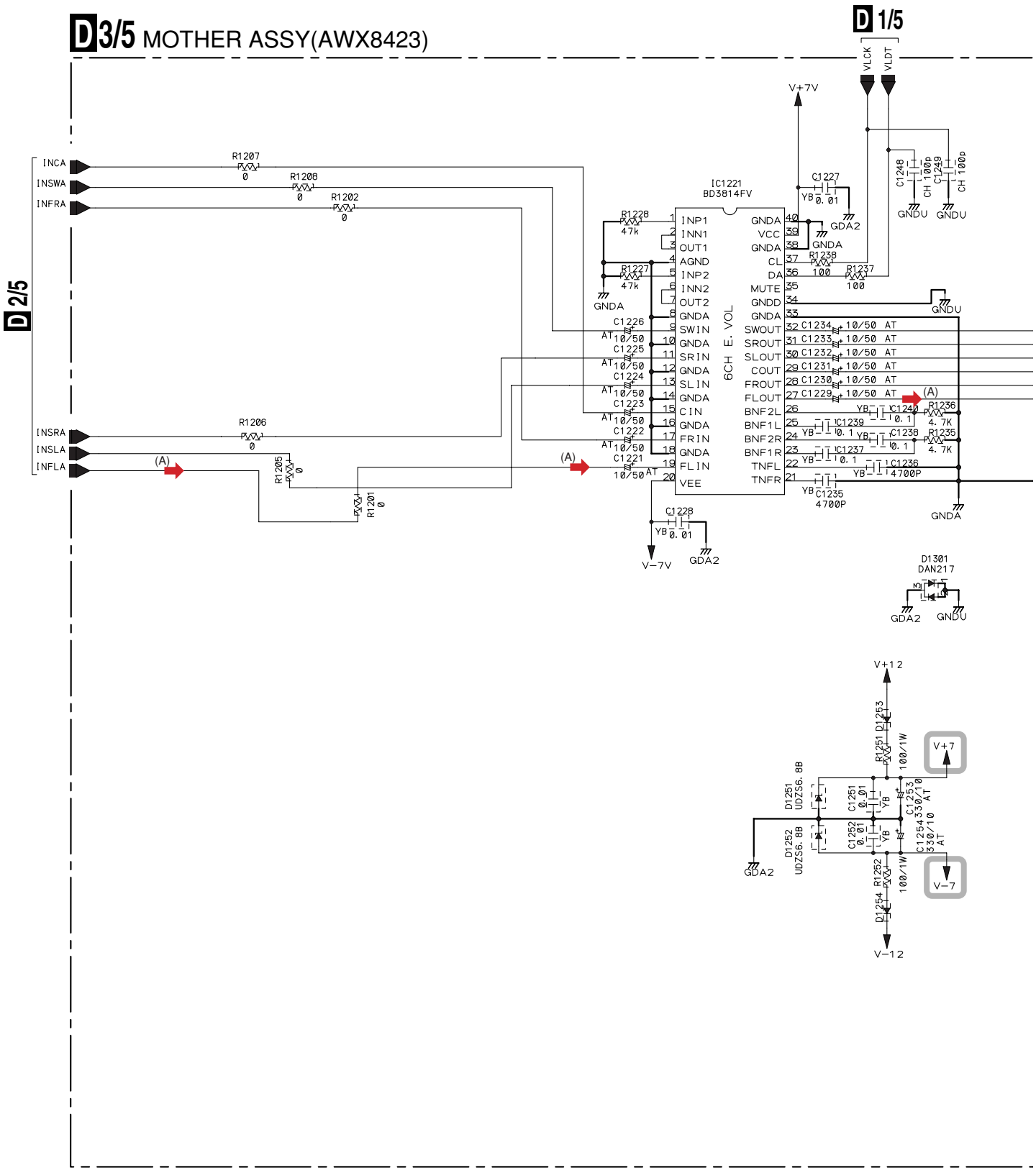
(A) : AUDIO SIGNAL ROUTE (ANALOG)

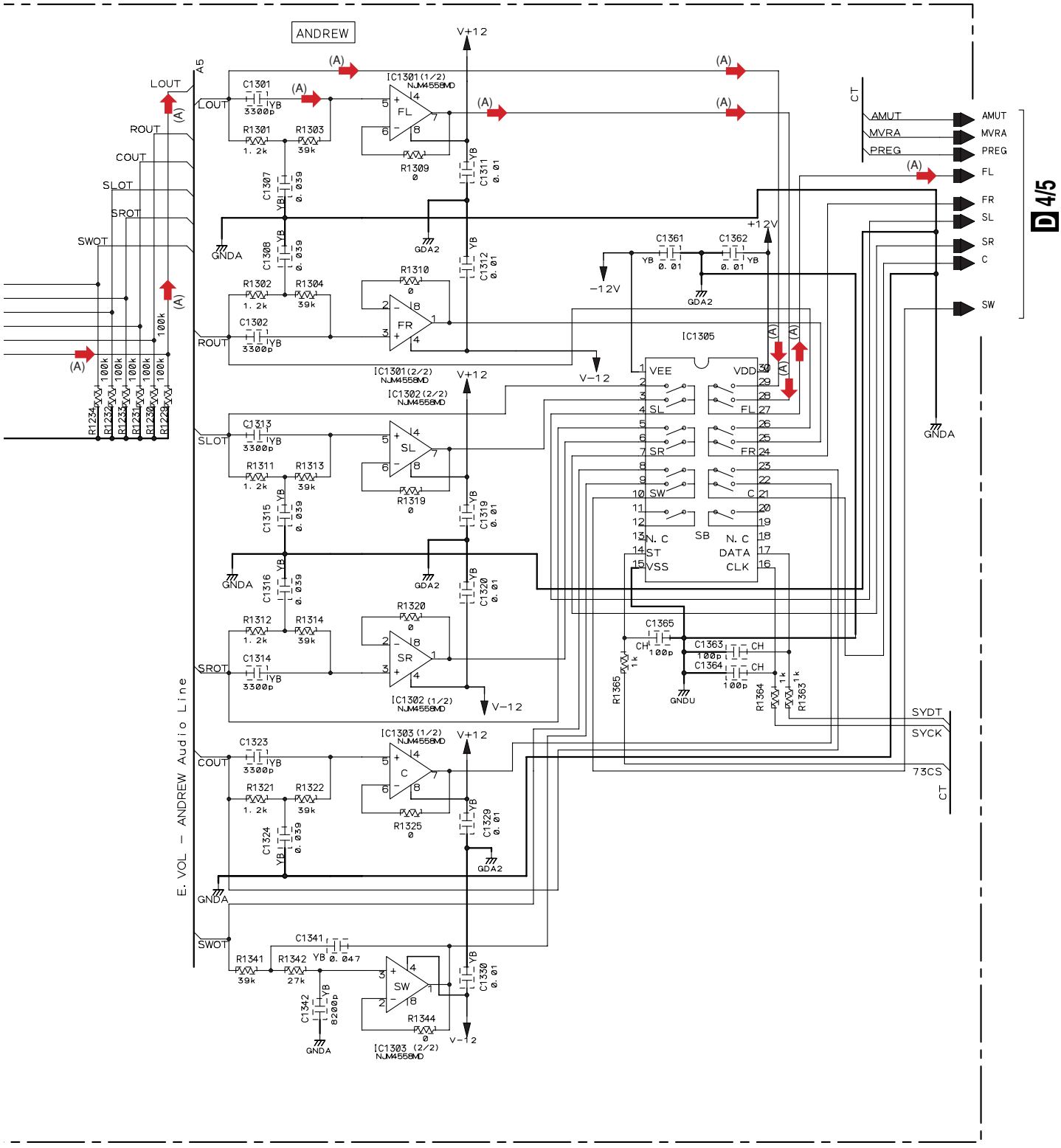
(D) : AUDIO SIGNAL ROUTE (DIGITAL)

: The power supply is shown with the marked vox.

D3/5

D2/5


D3/5 MOTHER ASSY(AWX8423)
D 1/5
D 2/5
VLCK
VLDT
V+7V
INCA
INSWA
INFRA
INSRA
INSLA
INFLA
R1207
R1208
R1202
R1206
R1205
R1201
IC1221
BD3814FV
6CH E. VOL
INP1
INN1
OUT1
AGND
INP2
INN2
OUT2
GNDA
SWIN
SRIN
SLIN
CIN
FRIN
FLIN
VEE
GNDD
VCC
CL
DA
MUTE
SWOUT
SROUT
SLOUT
COUT
FROUT
FLOUT
BNF2L
BNF1L
BNF2R
BNF1R
TNFL
TNFR
R1228
R1227
R1238
R1237
C1227
C1226
C1225
C1224
C1223
C1222
C1221
C1234
C1233
C1232
C1231
C1230
C1229
C1240
C1239
C1238
C1237
C1236
C1235
C1228
C1248
C1249
R1236
R1235
GNDU
GDA2
V−7V
D1301
DAN217
V+12
V−12
V+7
V−7
D1251
D1252
D1253
D1254
R1251
R1252
C1251
C1252
C1253
C1254
(A)



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 JA:CEJA JQ:CEJQ YB:CKSRYB CH:CCSRCH

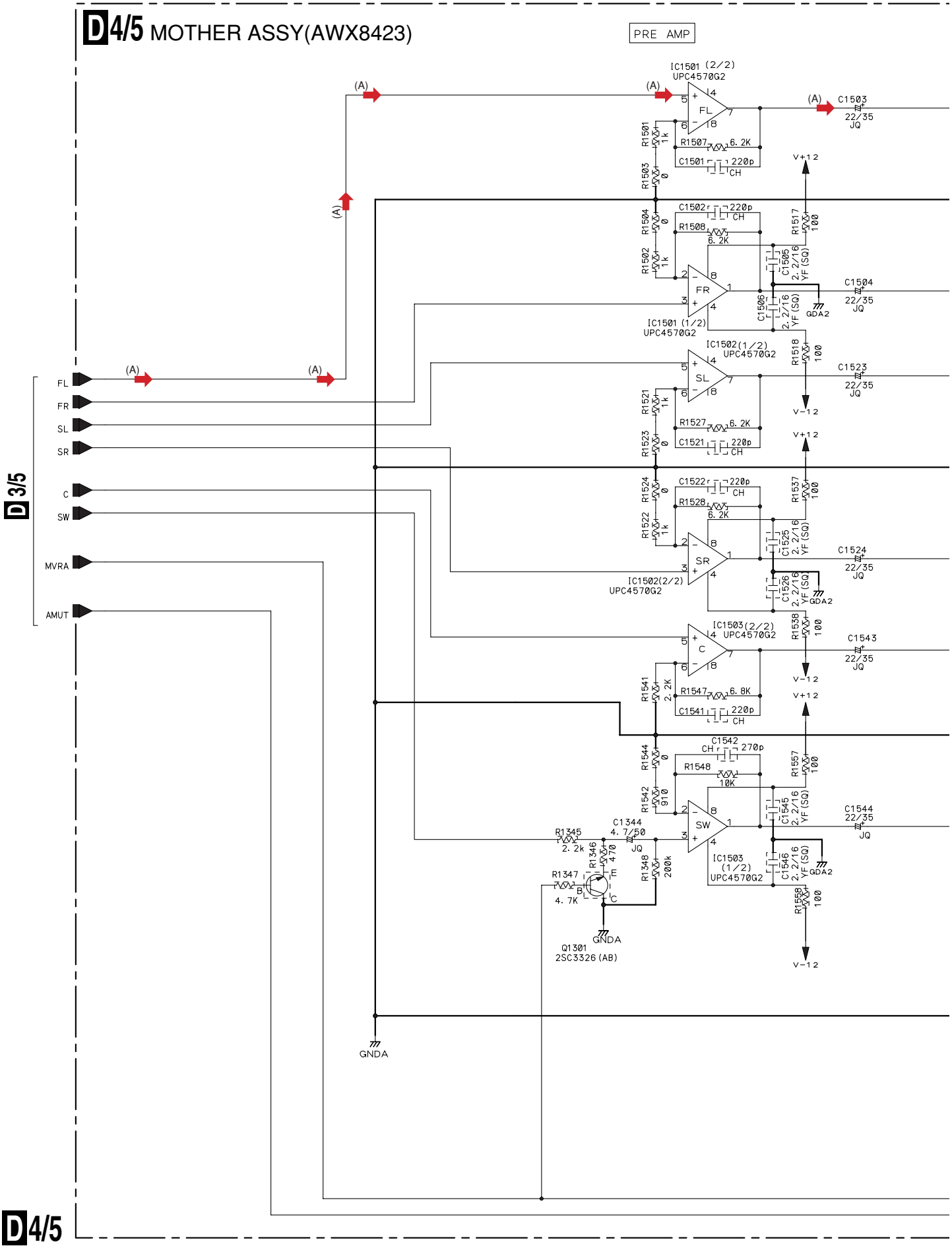
3. DIODES

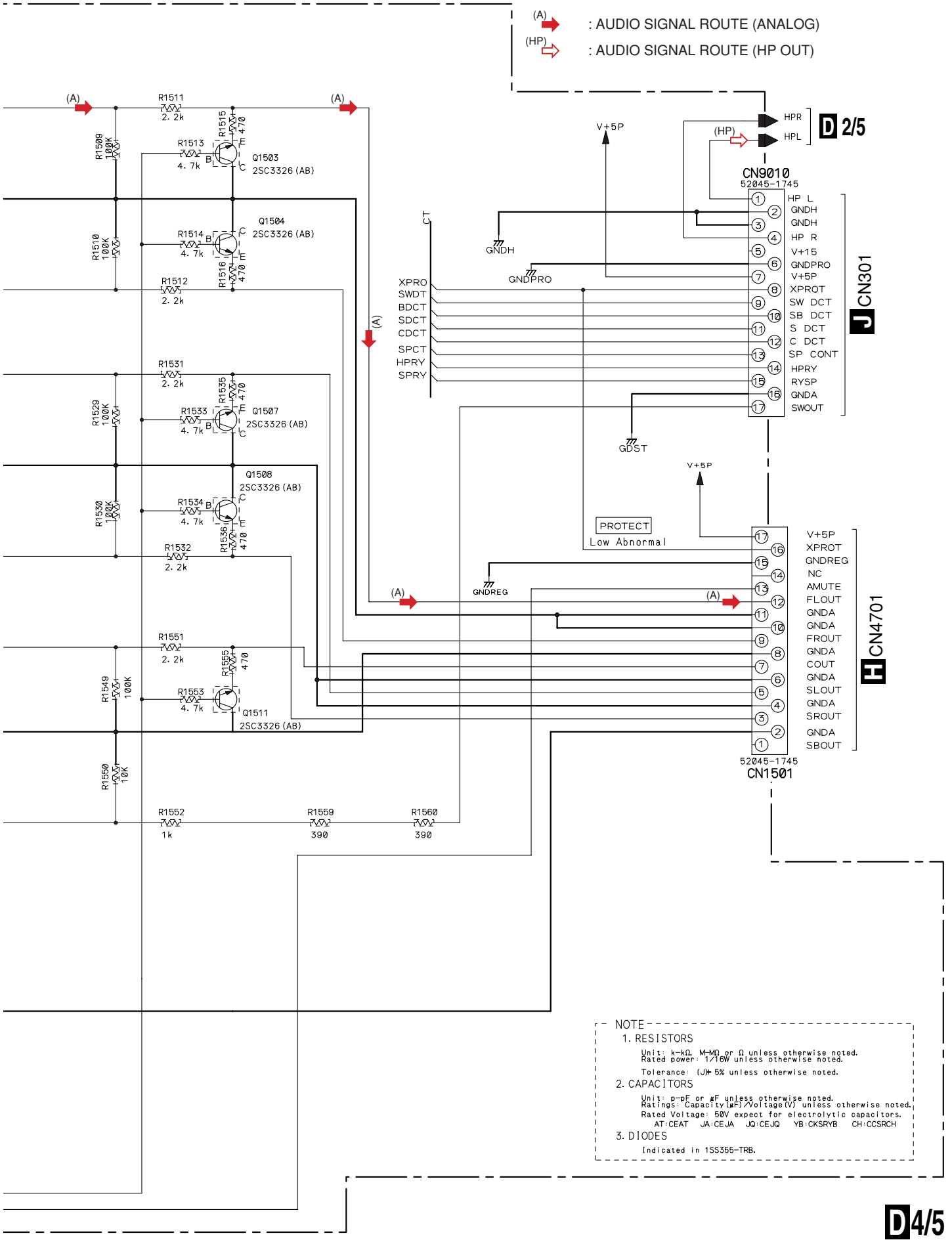
Indicated in 1SS355-TRB.

(A) : AUDIO SIGNAL ROUTE (ANALOG)

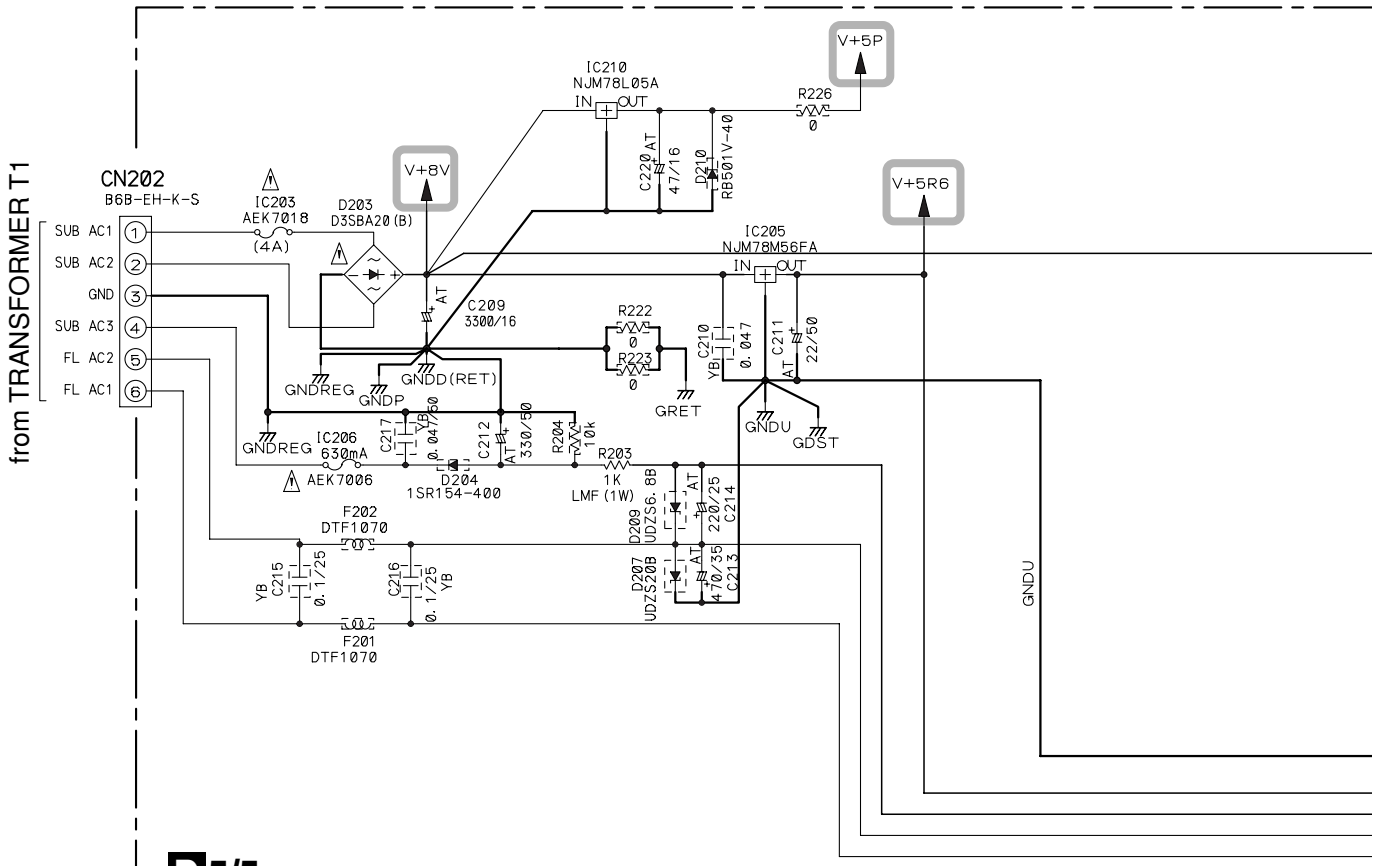
: The power supply is shown with the marked vox.

3.9 MOTHER ASSY (4/5)




(A) : AUDIO SIGNAL ROUTE (ANALOG)
(HP) : AUDIO SIGNAL ROUTE (HP OUT)
R1511 2.2k
R1513 4.7k
R1515 470
Q1503 2SC3326 (AB)
R1509 100K
R1514 4.7k
R1516 470
Q1504 2SC3326 (AB)
R1510 100K
R1512 2.2k
R1531 2.2k
R1533 4.7k
R1535 470
Q1507 2SC3326 (AB)
R1529 100K
R1534 4.7k
R1536 470
Q1508 2SC3326 (AB)
R1530 100K
R1532 2.2k
R1551 2.2k
R1553 4.7k
R1555 470
Q1511 2SC3326 (AB)
R1549 100K
R1550 10K
R1552 1k
R1559 390
R1560 390
CT
XPRO
SWDT
BDCT
SDCT
CDCT
SPCT
HPRY
SPRY
GNDH
GNDPRO
GDST
GNDREG
V+5P
HPR
HPL
D 2/5
CN9010
52045-1745
HP L
GNDH
GNDH
HP R
V+15
GNDPRO
V+5P
XPROT
SW DCT
SB DCT
S DCT
C DCT
SP CONT
HPRY
RYSP
GNDA
SWOUT
J CN301
PROTECT
Low Abnormal
V+5P
XPROT
GNDREG
NC
AMUTE
FLOUT
GNDA
GNDA
FROUT
GNDA
COUT
GNDA
SLOUT
GNDA
SROUT
GNDA
SBOUT
H CN4701
52045-1745
CN1501
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 JA:CEJA JQ:CEJQ YB:CKSRYB CH:CCSRCH
3. DIODES
Indicated in 1SS355-TRB.
D 4/5

3.10 MOTHER ASSY (5/5)

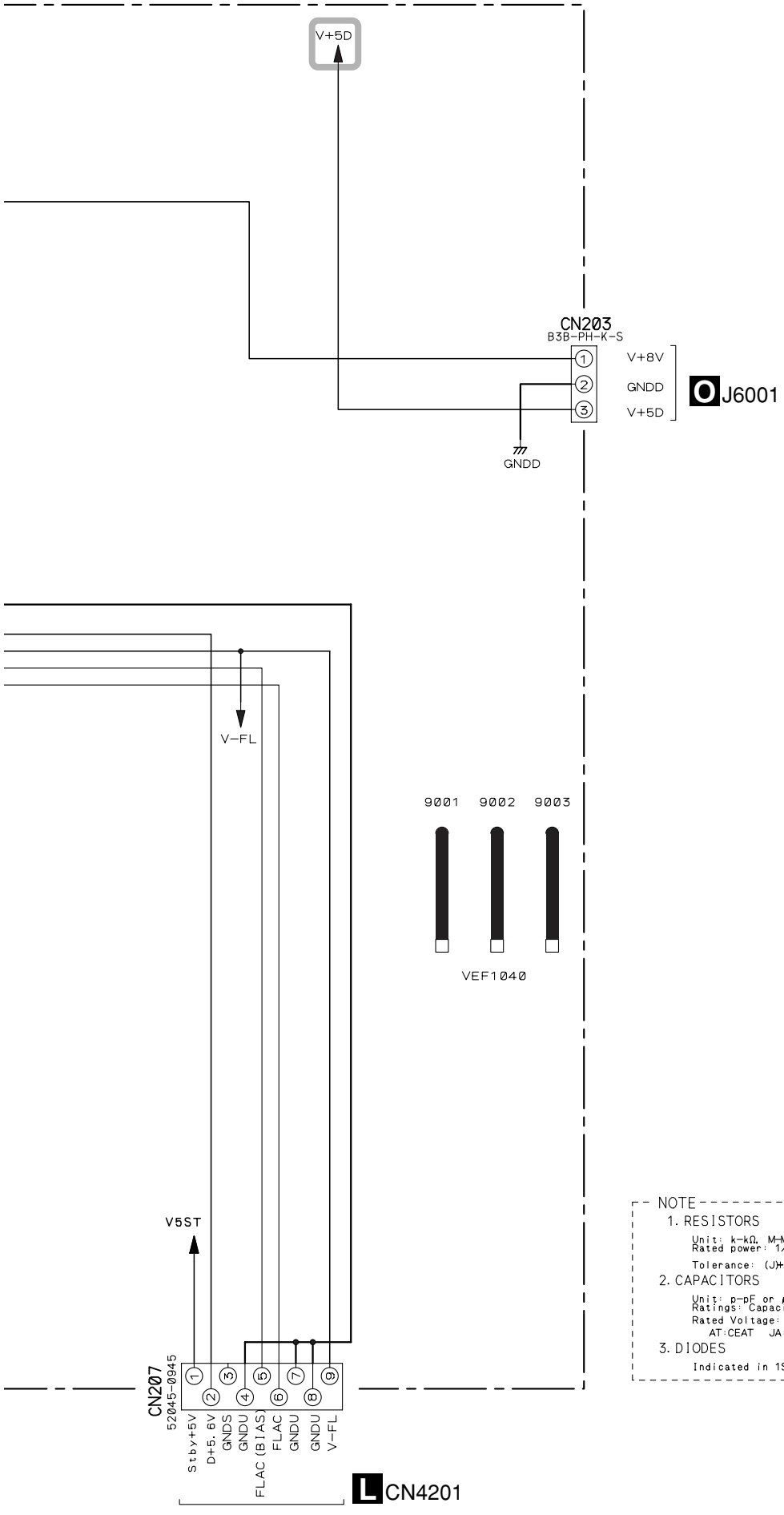


D5/5 MOTHER ASSY(AWX8423)

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491004 FOR IC203 MFD,BY LITTELFUSE INC.

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.630 FOR IC206 MFD,BY LITTELFUSE INC.

: The power supply is shown with the marked vox.



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.

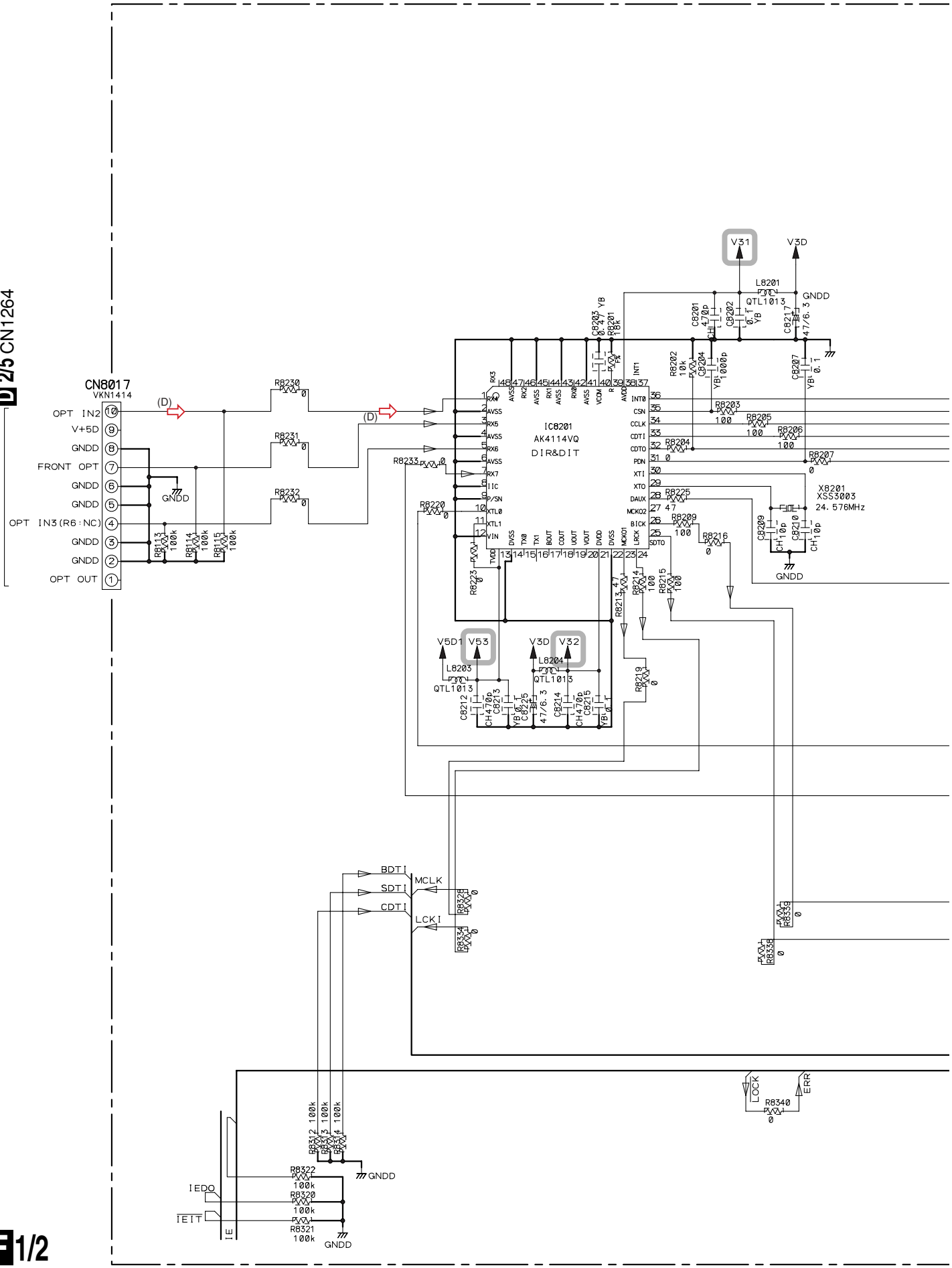
2. CAPACITORS

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 JA:CEJA JQ:CEJQ YB:CKSRYB CH:CCSRCH

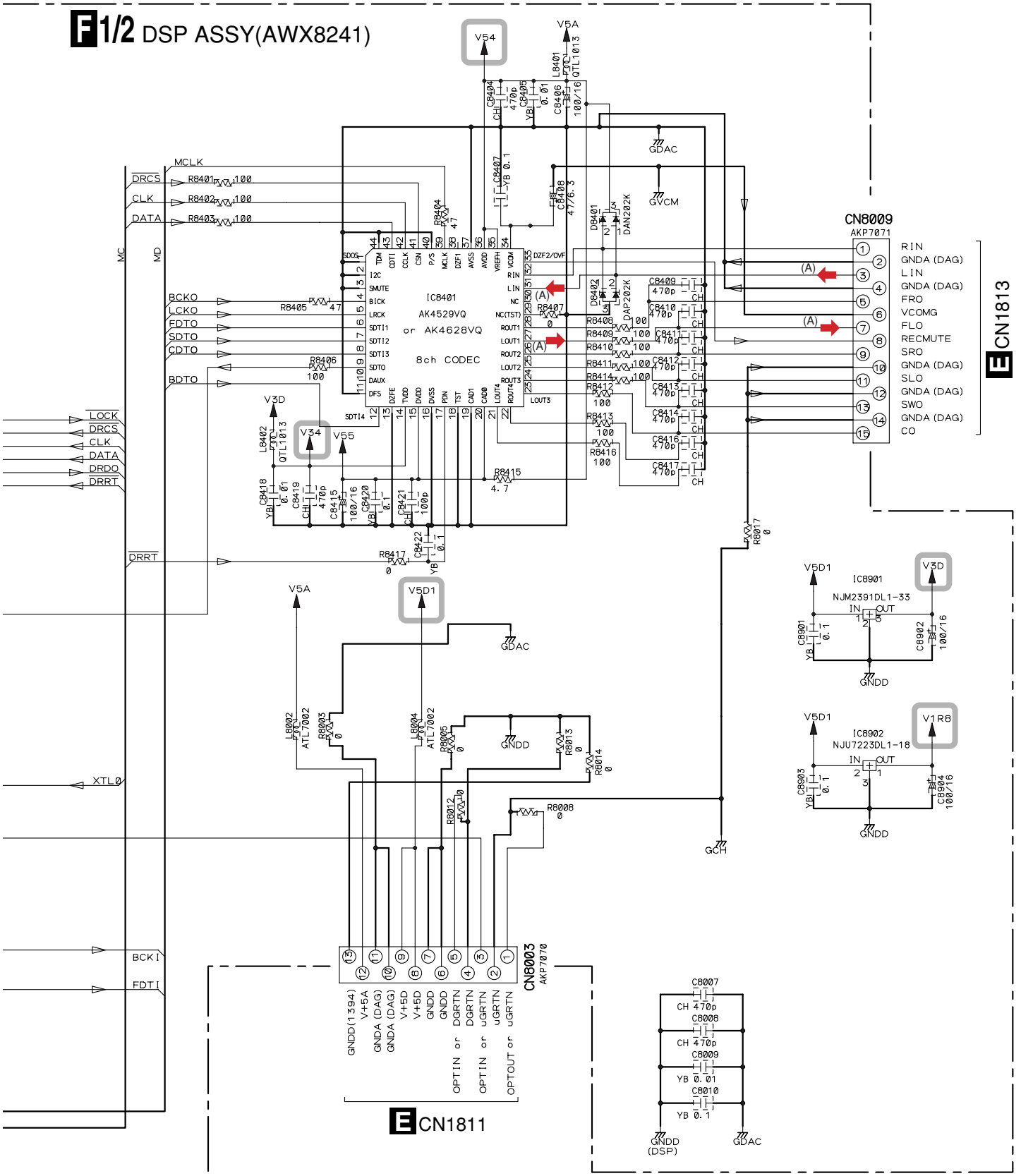
3. DIODES

Indicated in 1SS355-TRB.

3.11 DSP ASSY (1/2)



F 1/2 DSP ASSY(AWX8241)



NOTES:

NO INDICATED PARTS IS...

CCSRCH****50-T
CKSRYB****50-T
CKSRYB333K16-T
CKSRYB104K16-T
CKSRYB105K6R3-T

CEV***M***-T

RS1/16S***J-T

UNLESS OTHERWISE NOTED

(A) : AUDIO SIGNAL ROUTE (ANALOG)

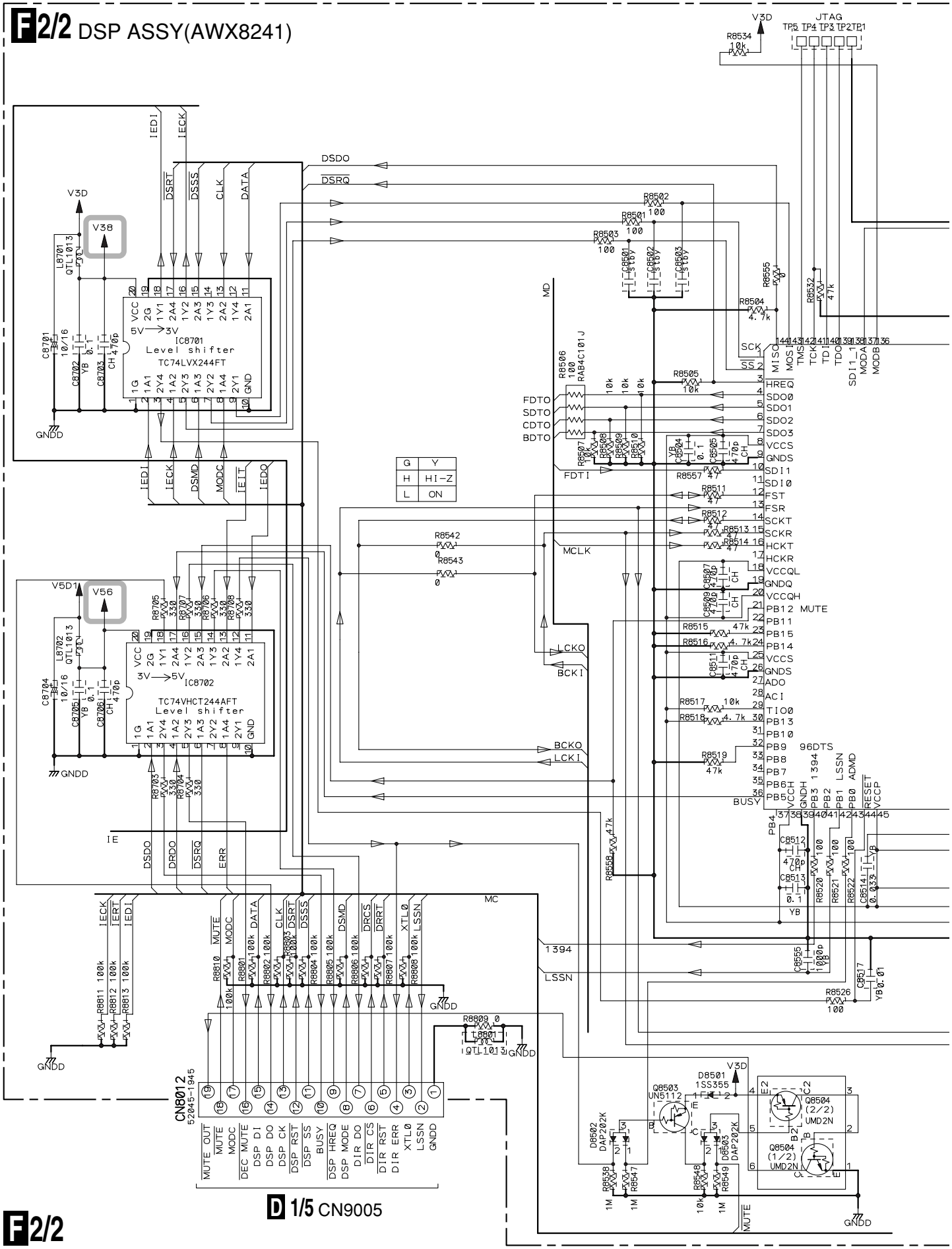
(D) : AUDIO SIGNAL ROUTE (DIGITAL)

: The power supply is shown with the marked vox.

F 1/2

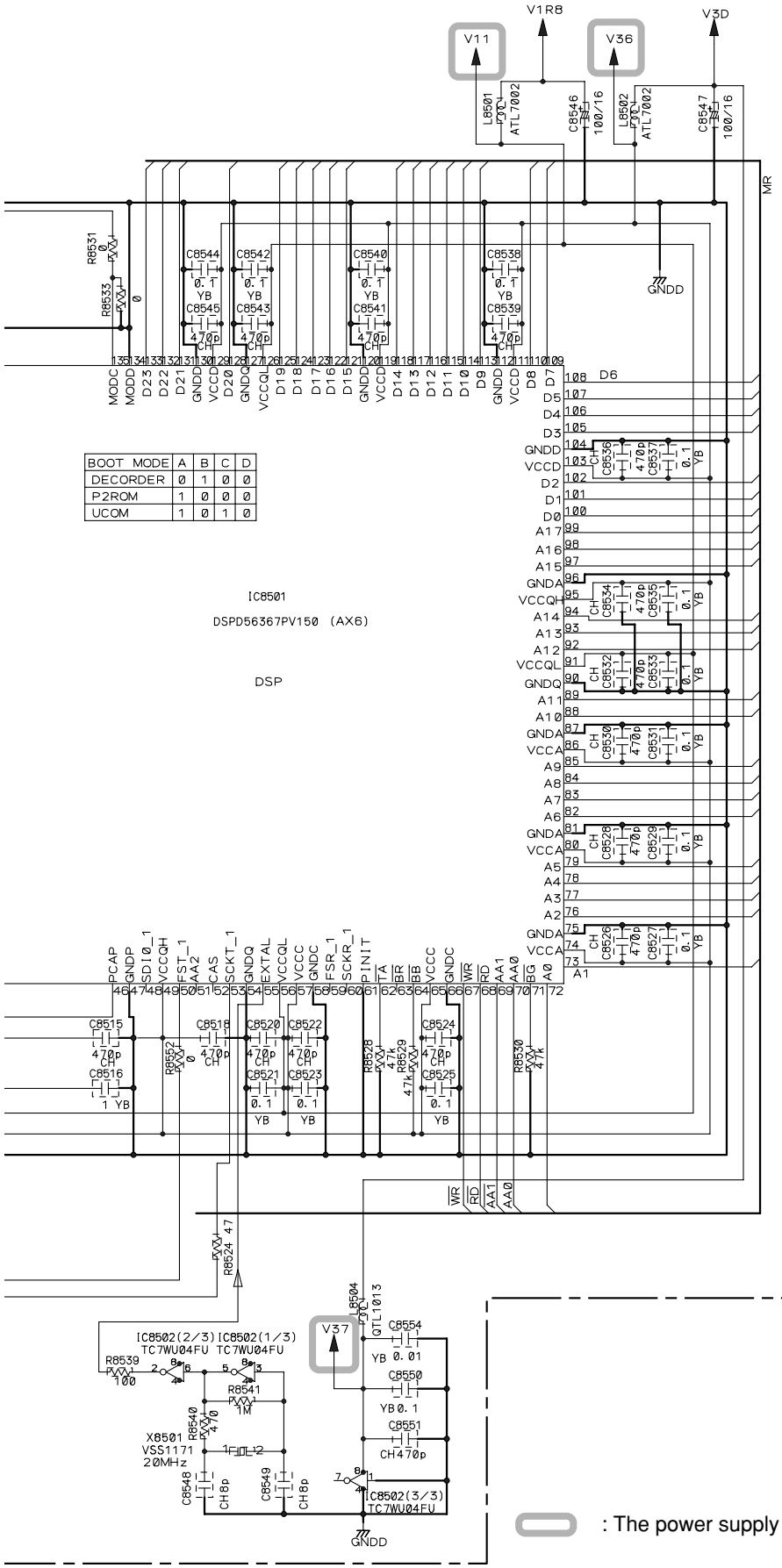
3.12 DSP ASSY (2/2)

F 2/2 DSP ASSY(AWX8241)



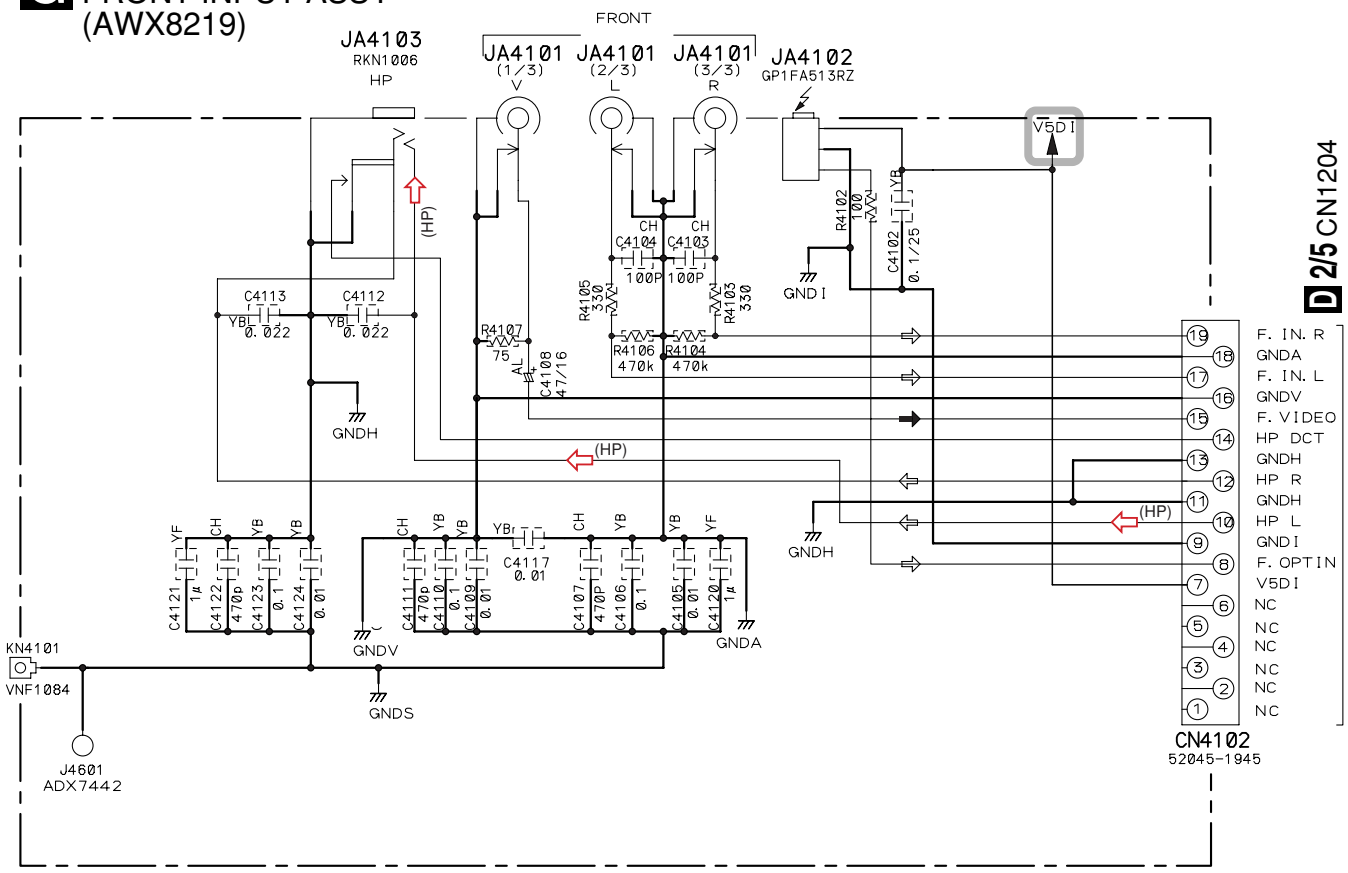
D 1/5 CN9005

F 2/2


V1R8
V3D
V11
V36
L8501 ATL7002
L8502 ATL7002
C8546 100/16
C8547 100/16
MR
GNDD
R8531 0
R8533 0
C8544 0.1 YB
C8545 470p CH
C8542 0.1 YB
C8543 470p CH
C8540 0.1 YB
C8541 470p CH
C8538 0.1 YB
C8539 470p CH
MODC MODD D23 D22 D21 GNDD VCCD D20 GNDQ VCCQL D19 D18 D17 D16 D15 GNDD VCCD D14 D13 D12 D11 D10 D9 GNDD VCCD D8 D7
D6 D5 D4 D3 GNDD VCCD D2 D1 D0 A17 A16 A15 GNDA VCCQH A14 A13 A12 VCCQL GNDQ A11 A10 GNDA VCCA A9 A8 A7 A6 GNDA VCCA A5 A4 A3 A2 GNDA VCCA A1
C8536 470p C8537 0.1 YB
C8534 470p C8535 0.1 YB
C8532 470p C8533 0.1 YB
C8530 470p C8531 0.1 YB
C8528 470p C8529 0.1 YB
C8526 470p C8527 0.1 YB
BOOT_MODE A B C D
DECORDER 0 1 0 0
P2ROM 1 0 0 0
UCOM 1 0 1 0
IC8501
DSPD56367PV150 (AX6)
DSP
PCAP GNDP SDIO_1 VCCQH FST_1 AA2 CAS SCKT_1 GNDQ EXTAL VCCQL VCCC GNDC FSR_1 SCKR_1 PINIT TA BR BB VCCC GNDC WR RD AA1 AA0 BG A0
C8515 470p CH
C8516 1 YB
R8552 0
C8518 470p CH
C8520 470p CH
C8522 470p CH
C8521 0.1 YB
C8523 0.1 YB
R8528 47k
R8529 47k
C8524 470p CH
C8525 0.1 YB
R8530 47k
WR RD AA1 AA0
R8524 4.7
L8504 QTL1013
V37
C8554 YB 0.01
C8550 YB 0.1
C8551 CH470p
IC8502(2/3) IC8502(1/3) TC7WU04FU TC7WU04FU
R8539 100
R8541 1M
R8540 470
X8501 VSS1171 20MHz
C8548 CH6p
C8549 CH6p
IC8502(3/3) TC7WU04FU
GNDD
: The power supply is shown with the marked vox.

3.13 FRONT IN and AMP KAWA ASSYS

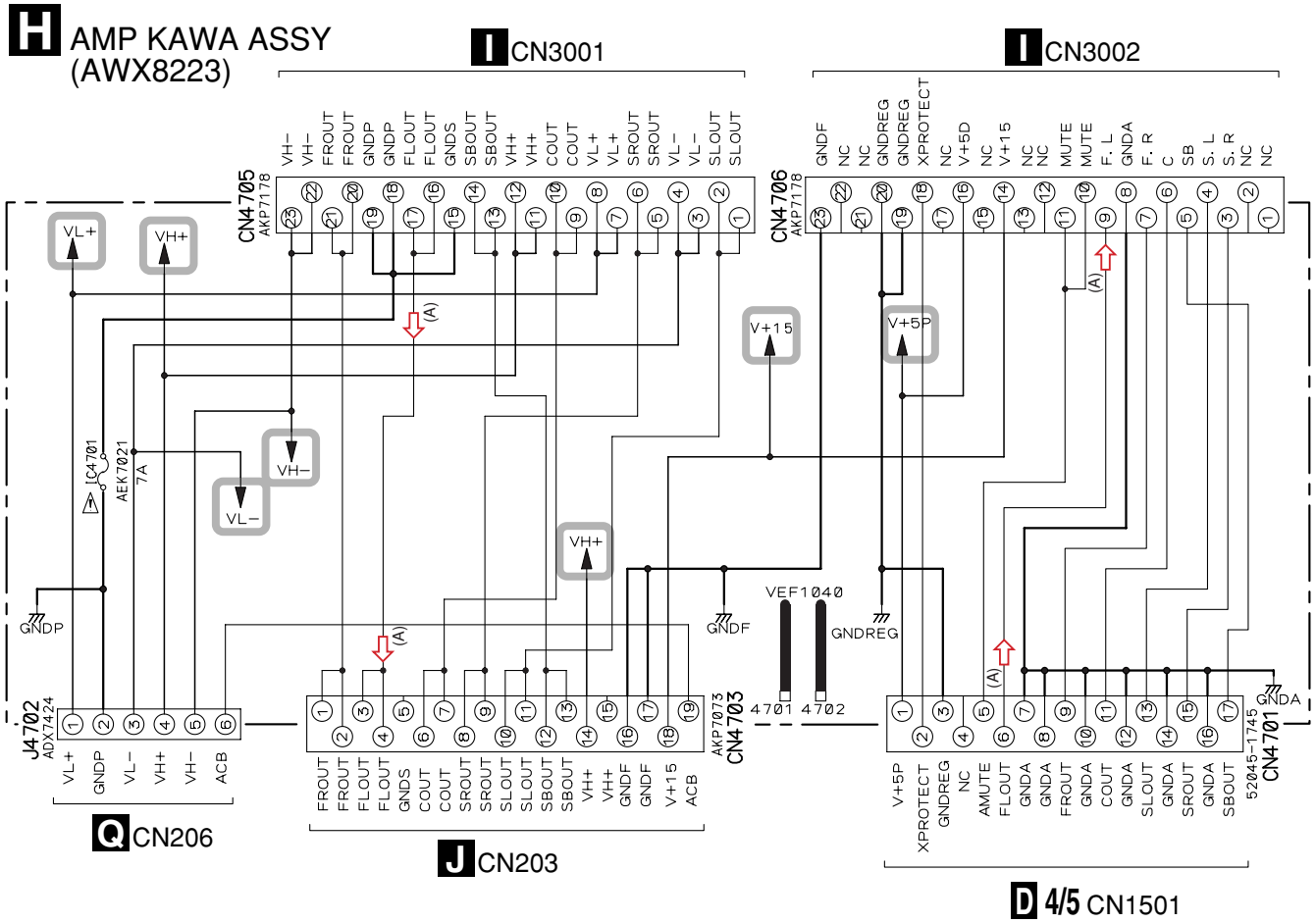
G FRONT INPUT ASSY (AWX8219)



(HP) : AUDIO SIGNAL ROUTE (HP OUT)

: The power supply is shown with the marked vox.

H AMP KAWA ASSY (AWX8223)



CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491007 FOR IC4701 MFD,BY LITTELFUSE INC.

(A) : AUDIO SIGNAL ROUTE (ANALOG)

: The power supply is shown with the marked vox.

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.

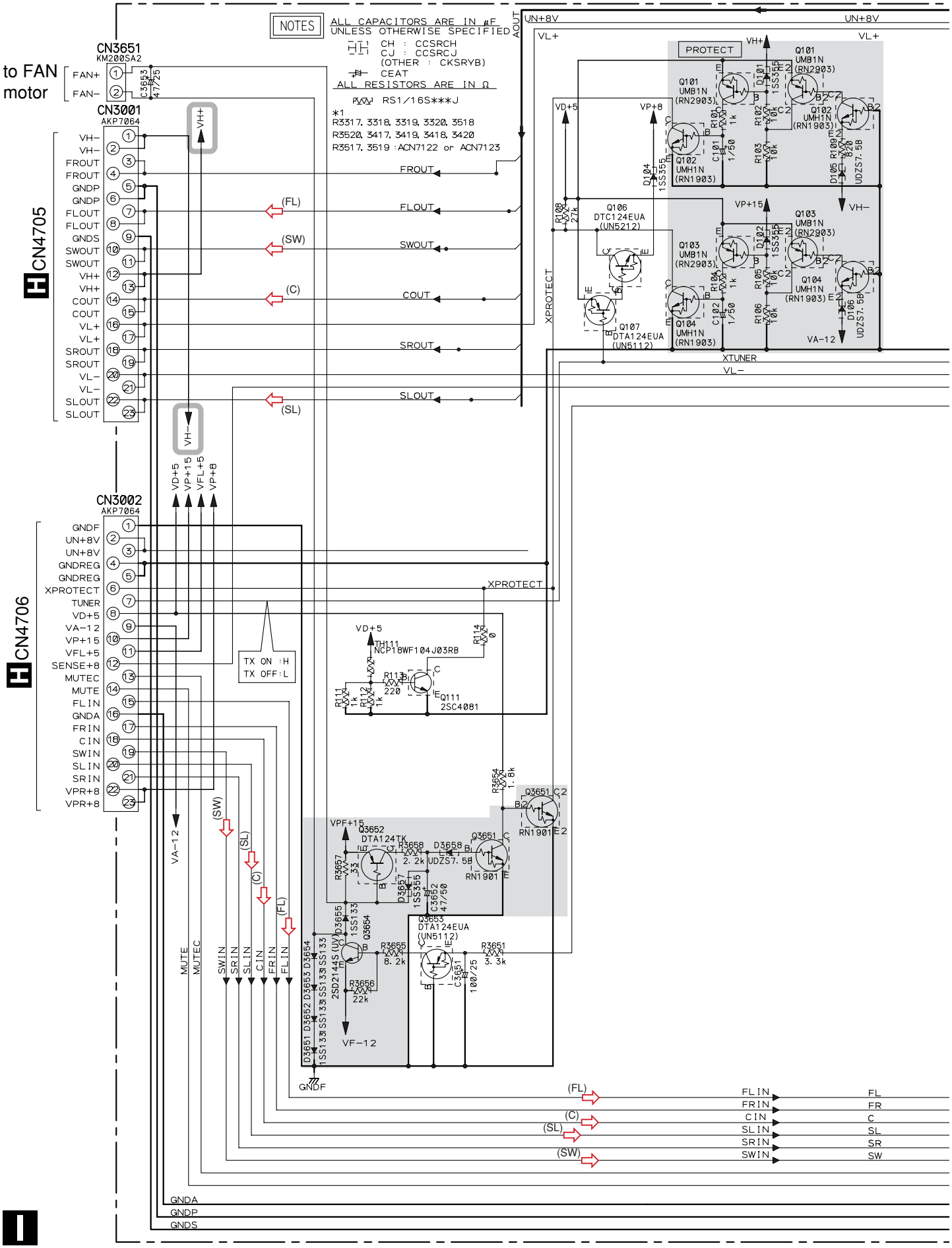
2. CAPACITORS

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 JA:CEJA JQ:CEJQ YB:CKSRYB CH:CCSRCH

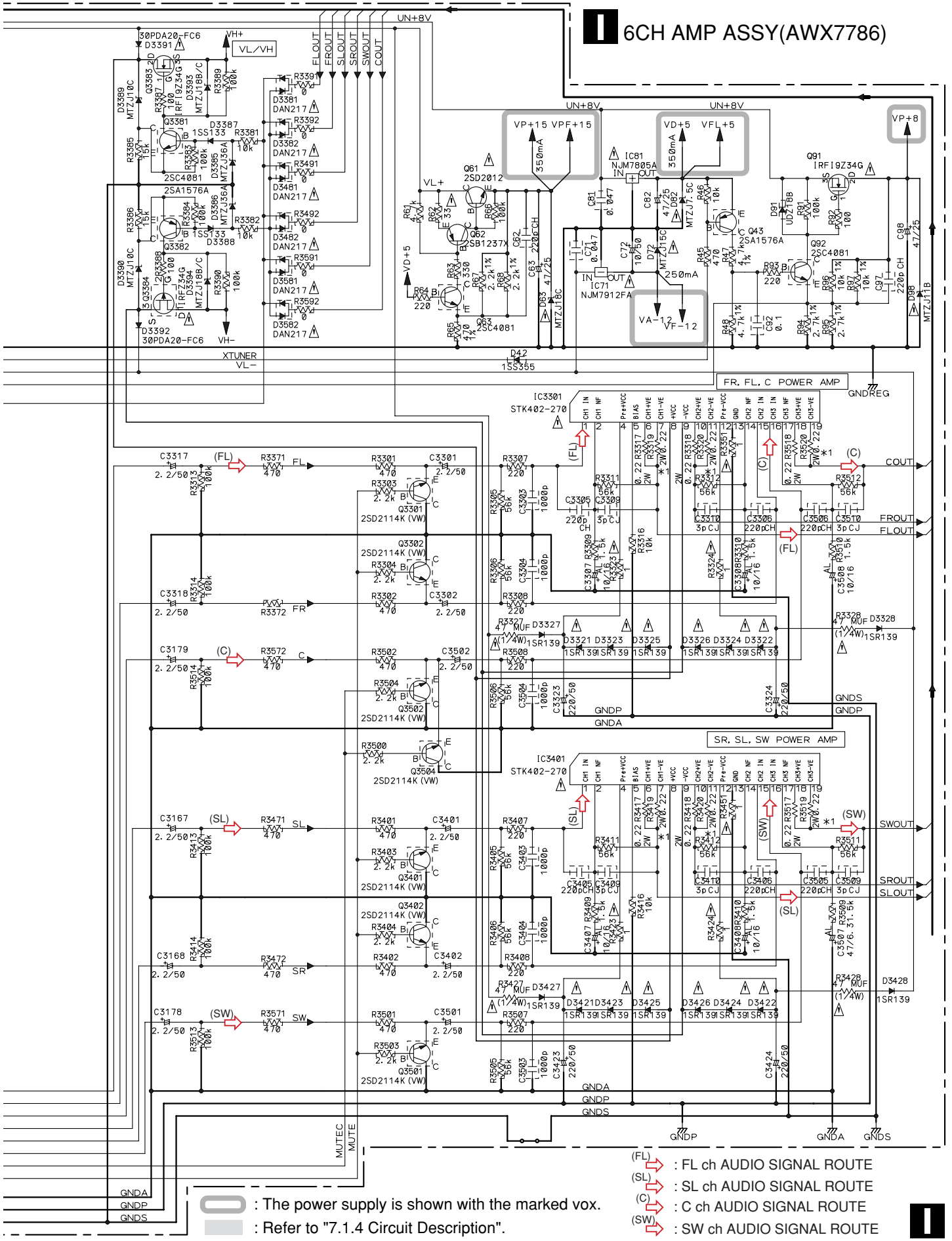
3. DIODES

Indicated in 1SS355-TRB.

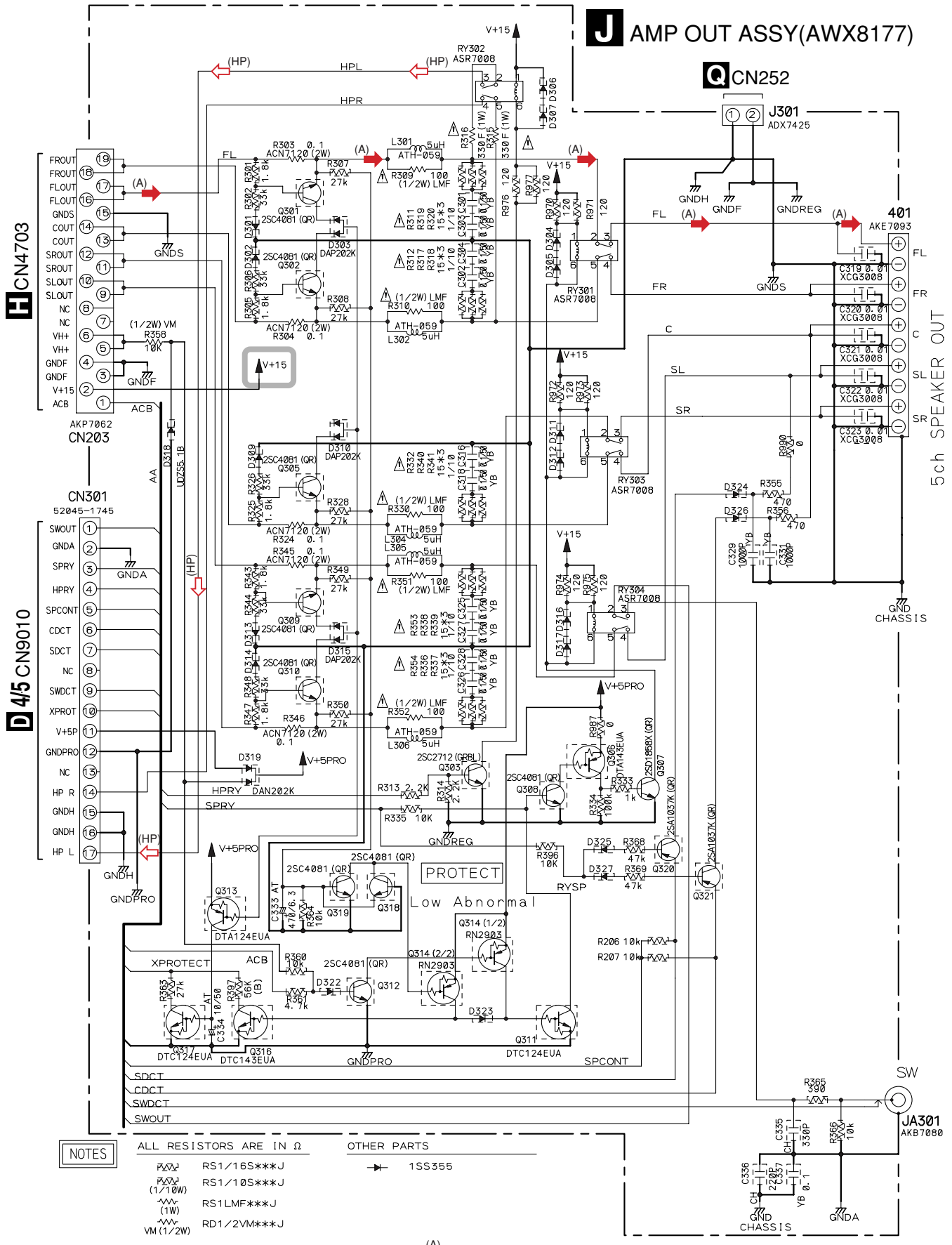
3.14 6CH AMP ASSY



6CH AMP ASSY(AWX7786)



3.15 AMP OUT ASSY



A

B

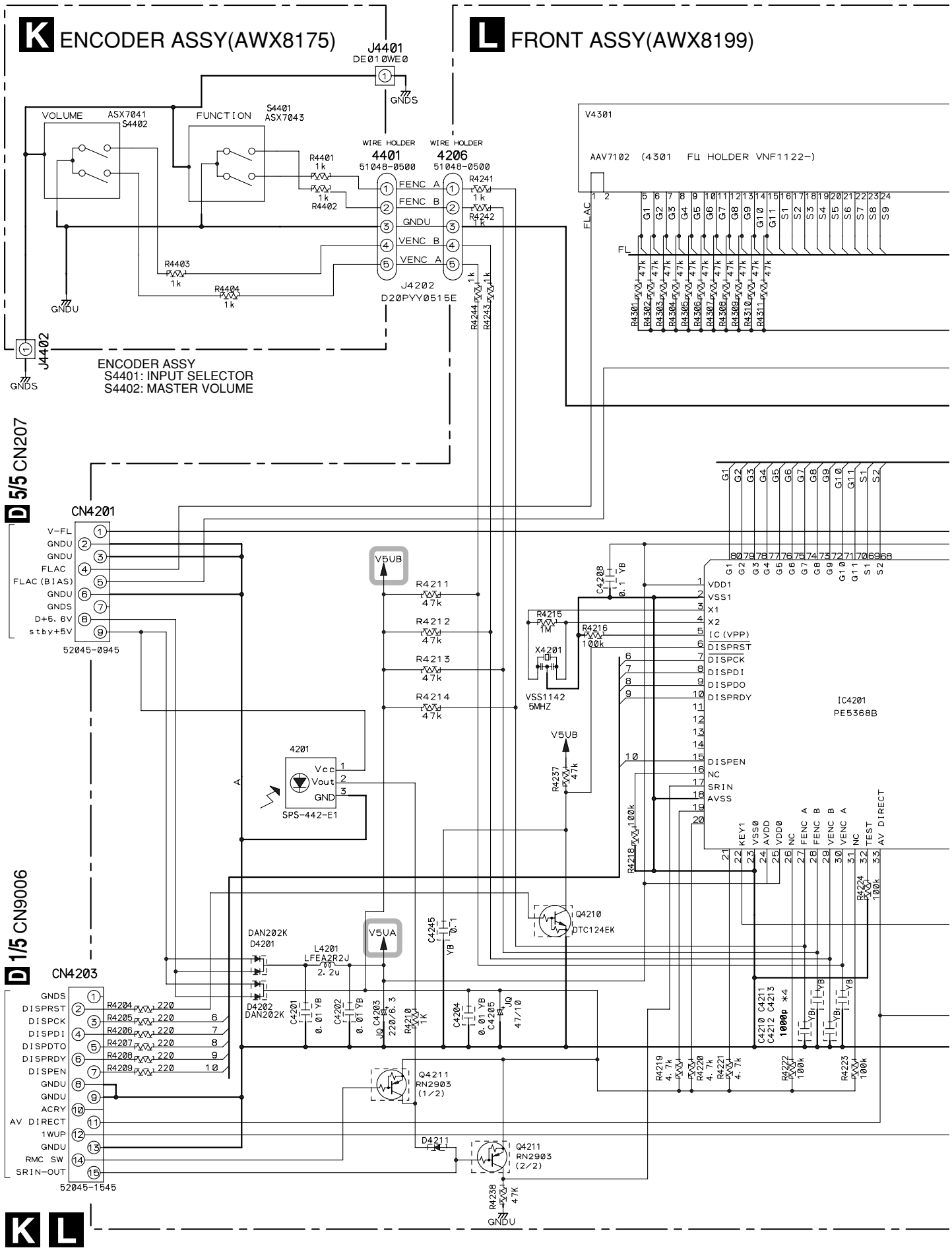
C

D

E

F

3.16 ENCODER, FRONT and POWER SW ASSYS



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.

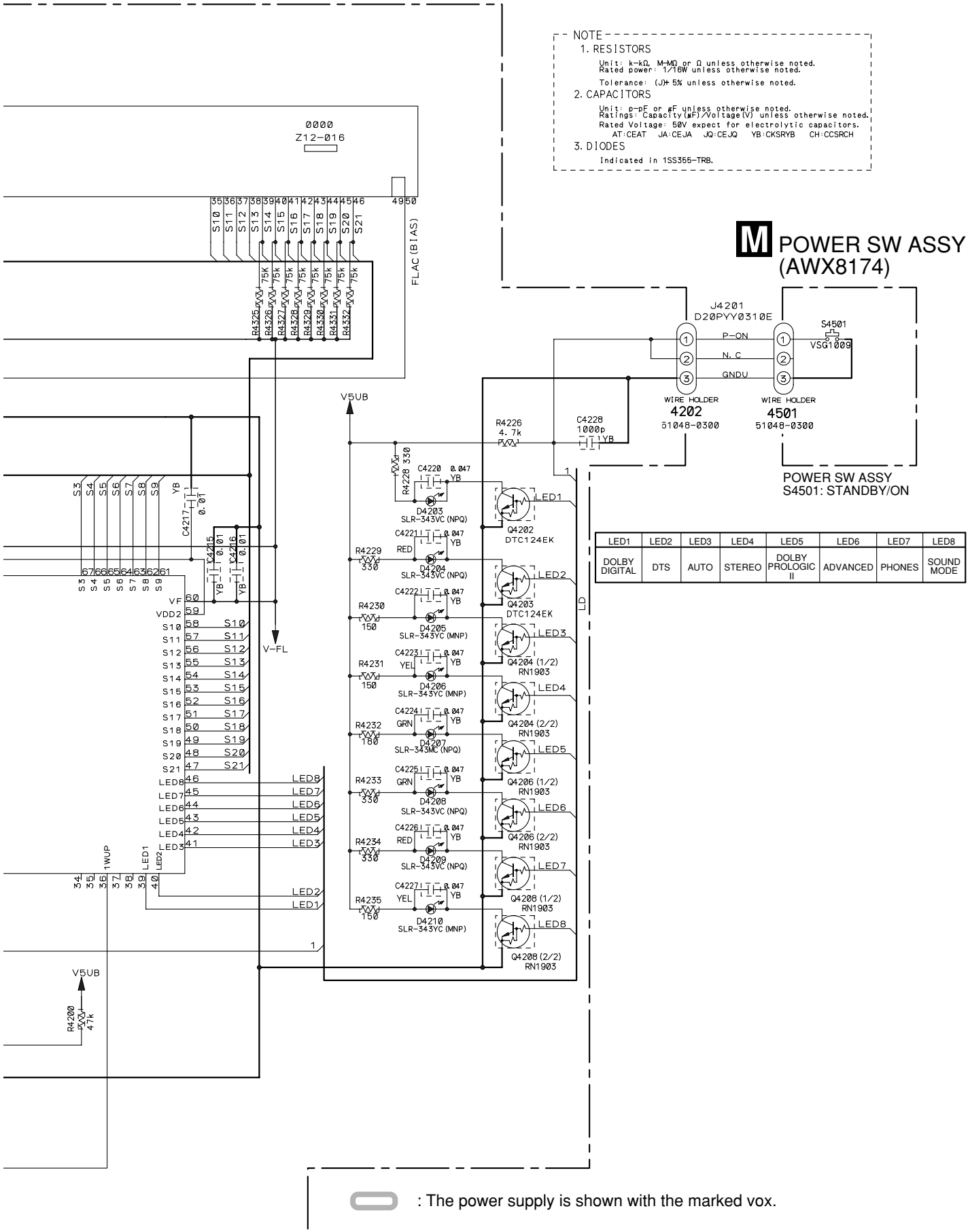
2. CAPACITORS

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 JA:CEJA JQ:CEJQ YB:CKSRYB CH:CCSRCH

3. DIODES

Indicated in 1SS355-TRB.

M POWER SW ASSY (AWX8174)

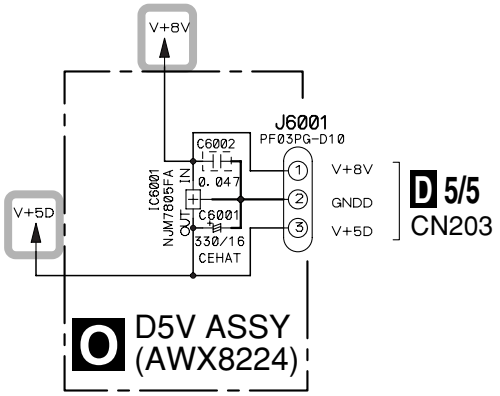


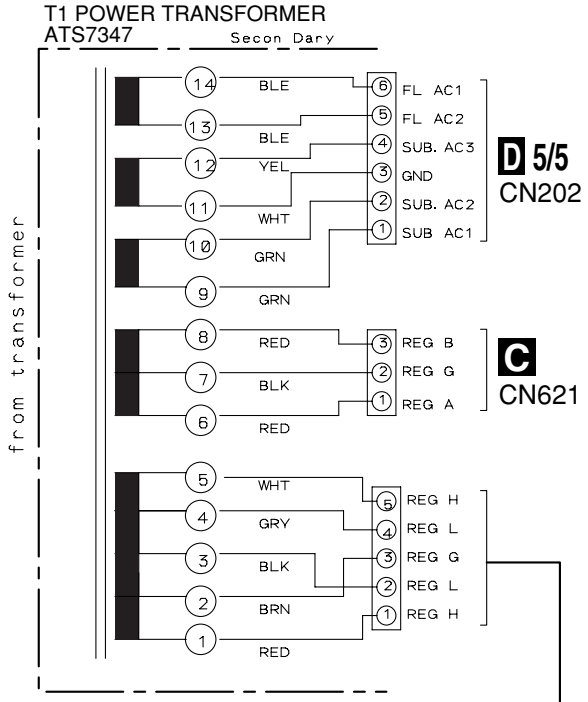
LED1	LED2	LED3	LED4	LED5	LED6	LED7	LED8
DOLBY DIGITAL	DTS	AUTO	STEREO	DOLBY PROLOGIC II	ADVANCED	PHONES	SOUND MODE

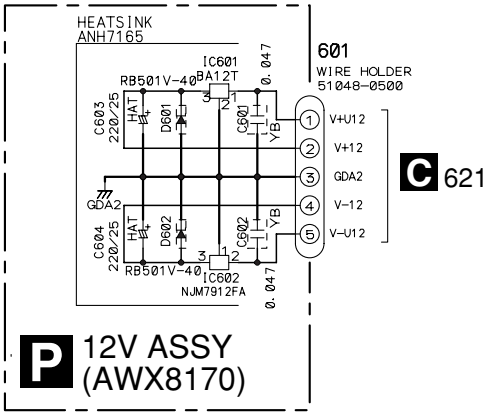
: The power supply is shown with the marked vox.

3.17 PRIMARY, D5V, 12V and VHVL ASSYS

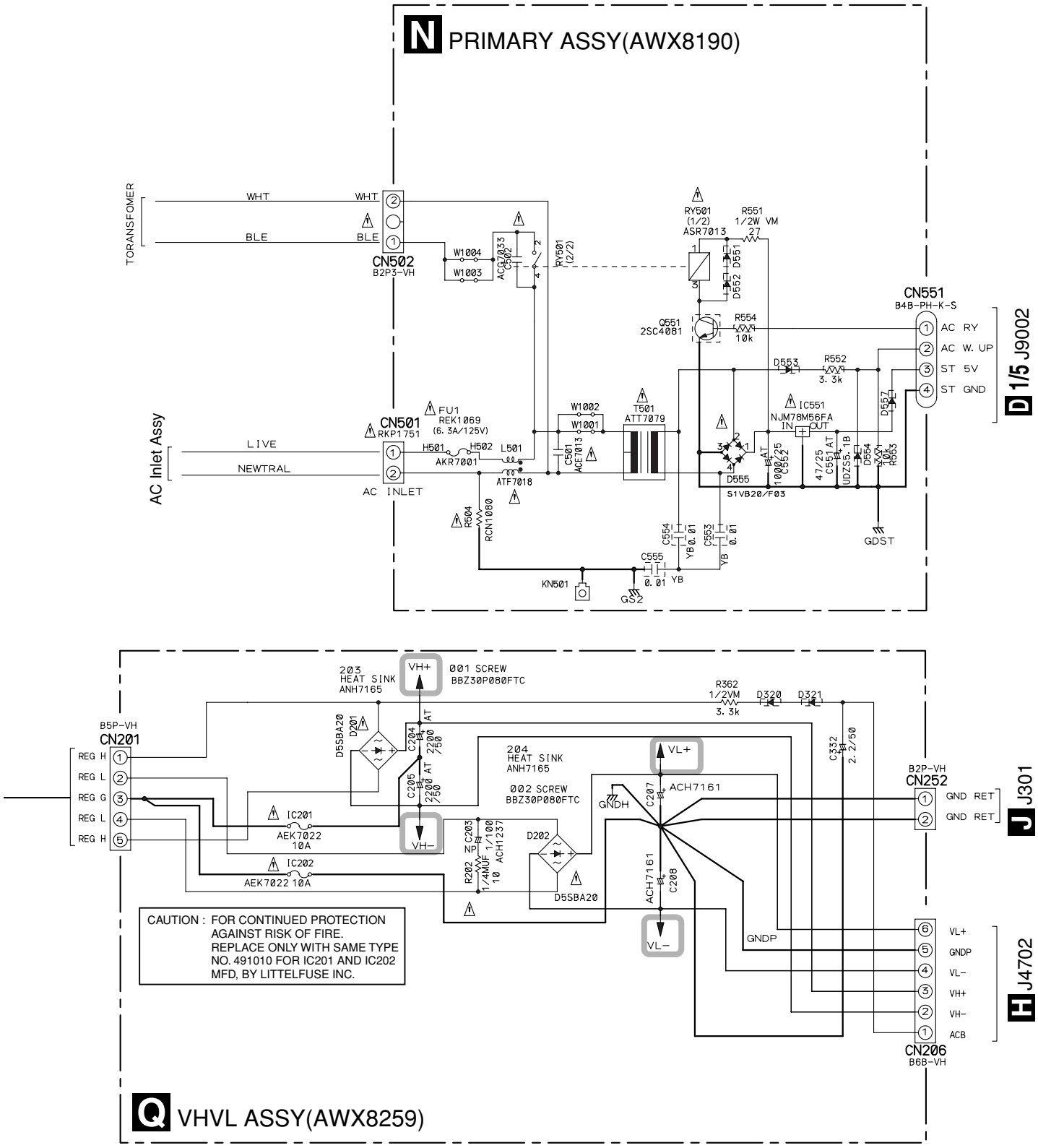
NOTE
1. RESISTORS
Unit: k-kΩ, M-MΩ or Ω unless otherwise noted.
Rated power: 1/16W unless otherwise noted.
Tolerance: (J)± 5% unless otherwise noted.
2. CAPACITORS
Unit: p-pF or μF unless otherwise noted.
Ratings: Capacity(μF)/Voltage(V) unless otherwise noted.
Rated Voltage: 50V expect for electrolytic capacitors.
AT:CEAT JA:CEJA JQ:CEJQ YB:CKSRYB CH:CCSRCH
3. DIODES
Indicated in 1SS355-TRB.







O P



: The power supply is shown with the marked vox.

•NOTE FOR FUSE REPLACEMENT

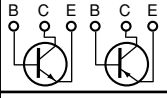
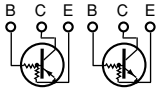
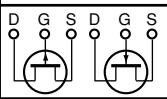
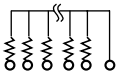
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.
REPLACE WITH SAME TYPE AND RATINGS OF FUSE.

N Q

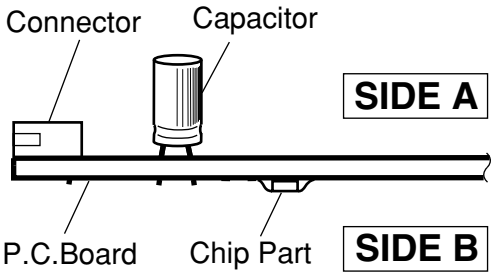
4. PCB CONNECTION DIAGRAM

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
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

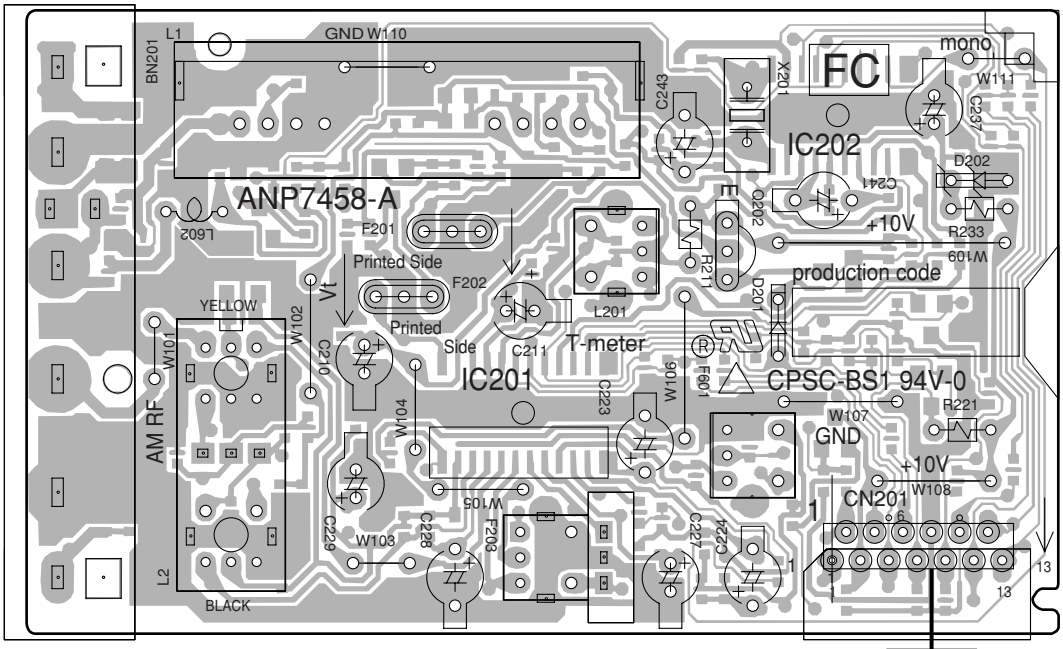
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



4.1 FM/AM TUNER MODULE

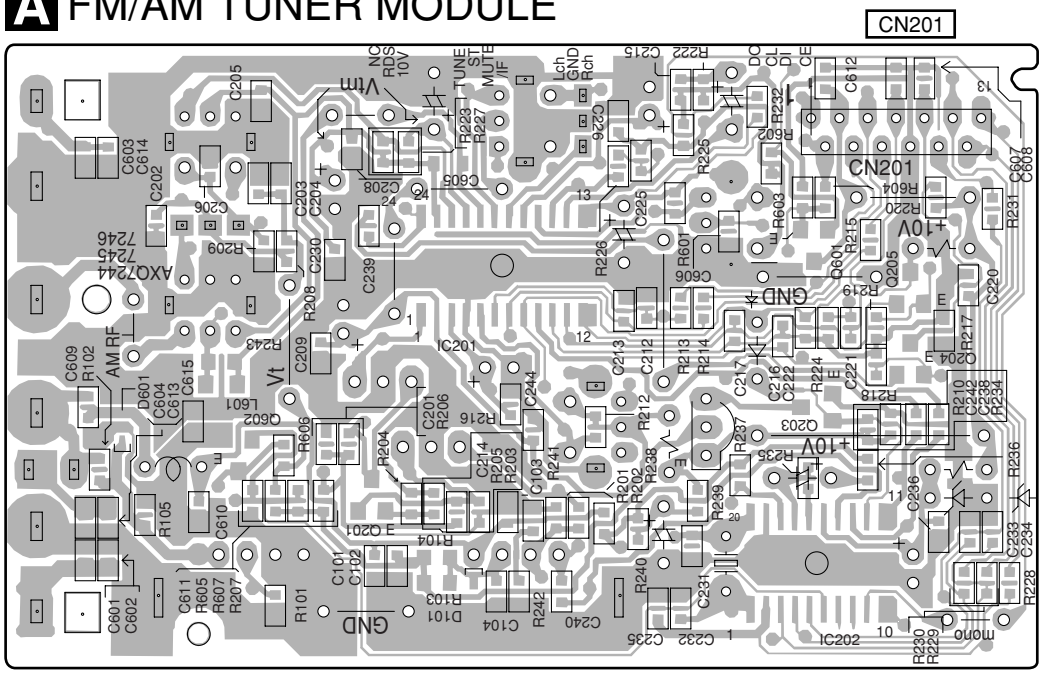
SIDE A **SIDE A**

A FM/AM TUNER MODULE



SIDE B **SIDE B**

A FM/AM TUNER MODULE

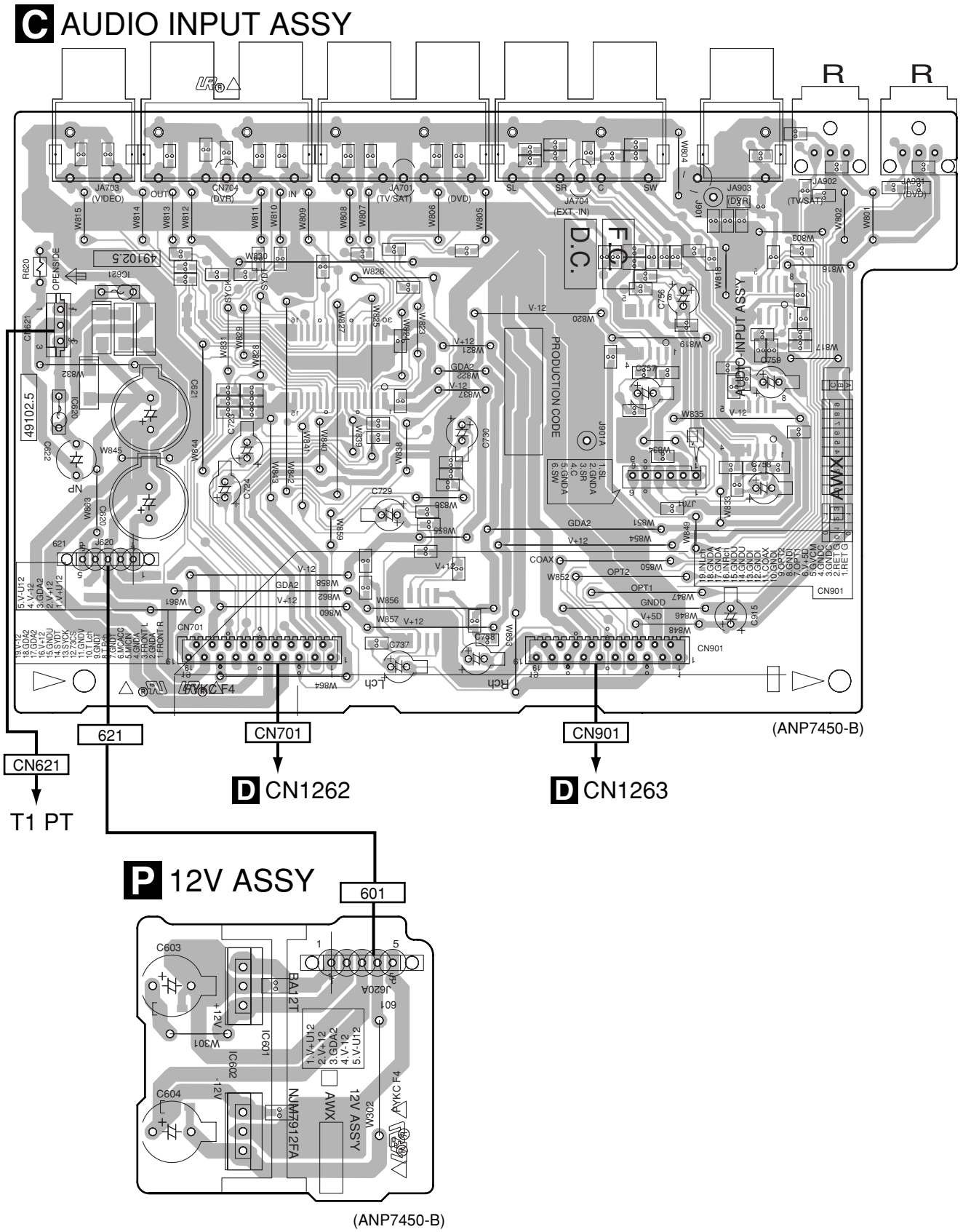


A **A**

4.2 AUDIO INPUT and 12V ASSYS

SIDE A **SIDE A**

IC620 IC621



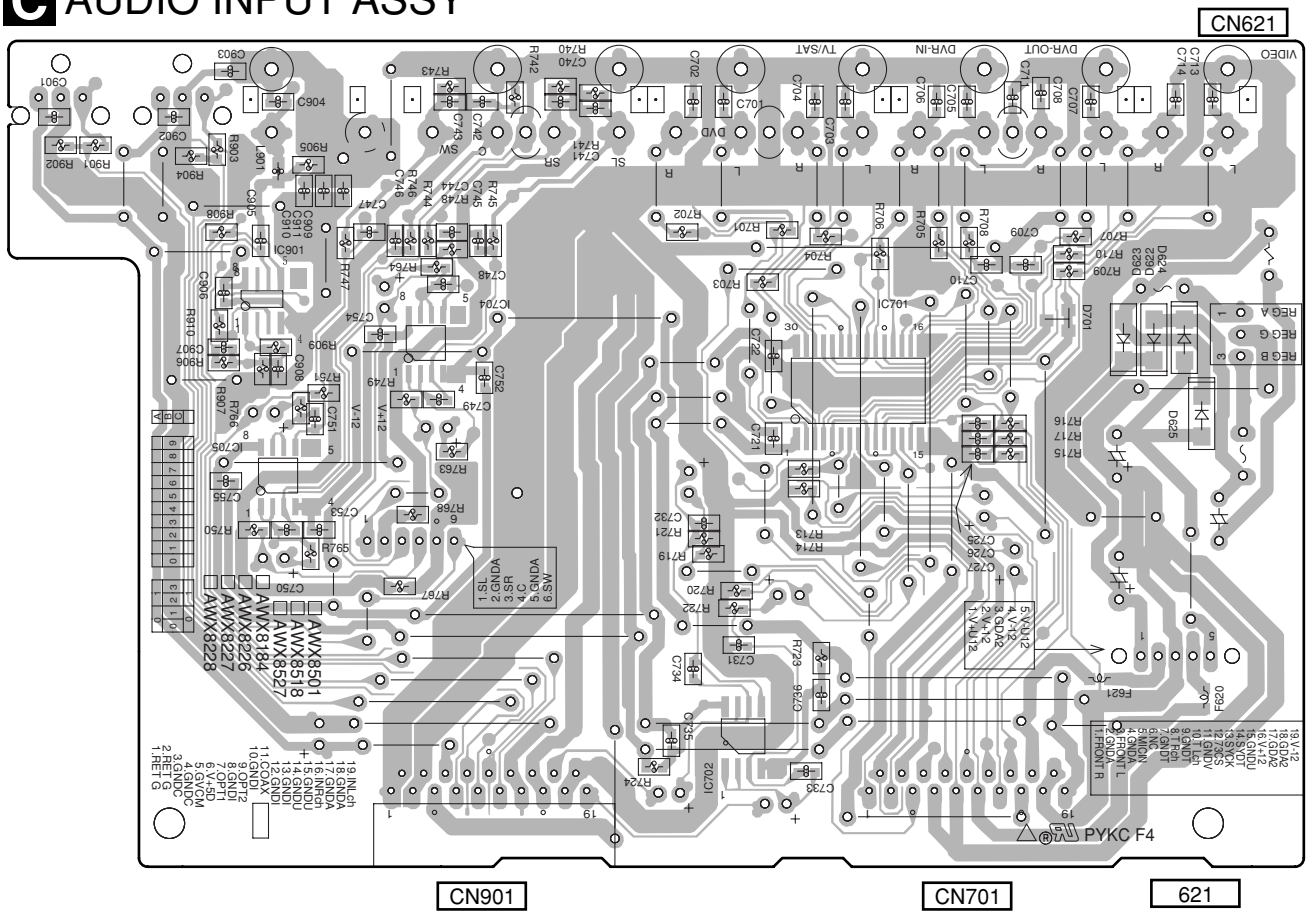
C P C P

SIDE B

SIDE B

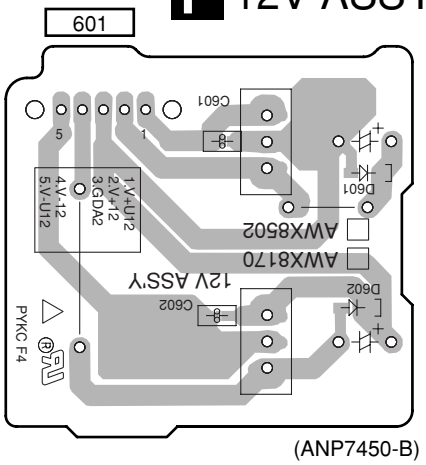
IC901 IC704 IC701
IC705 IC702

C AUDIO INPUT ASSY



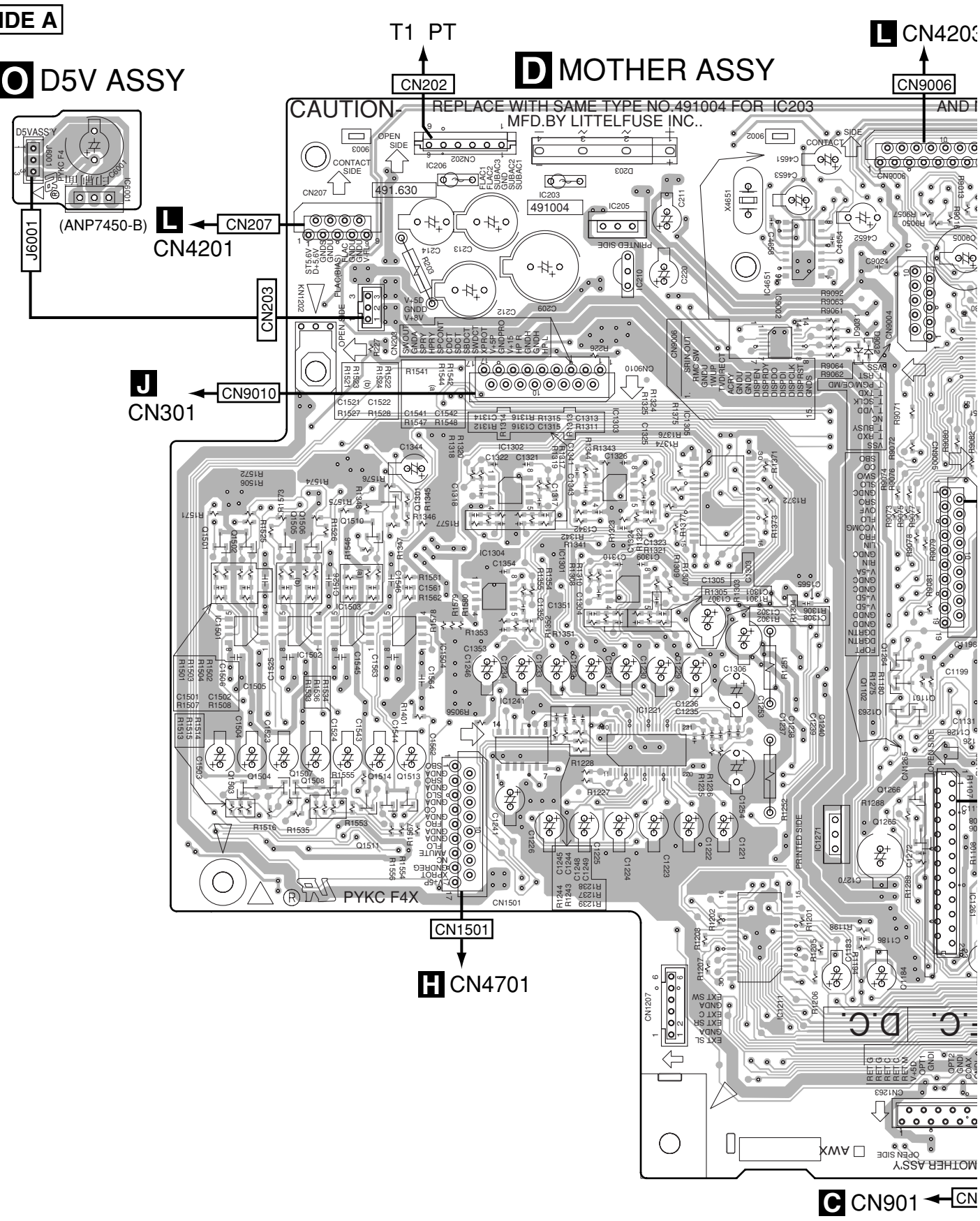
(ANP7450-B)

P 12V ASSY

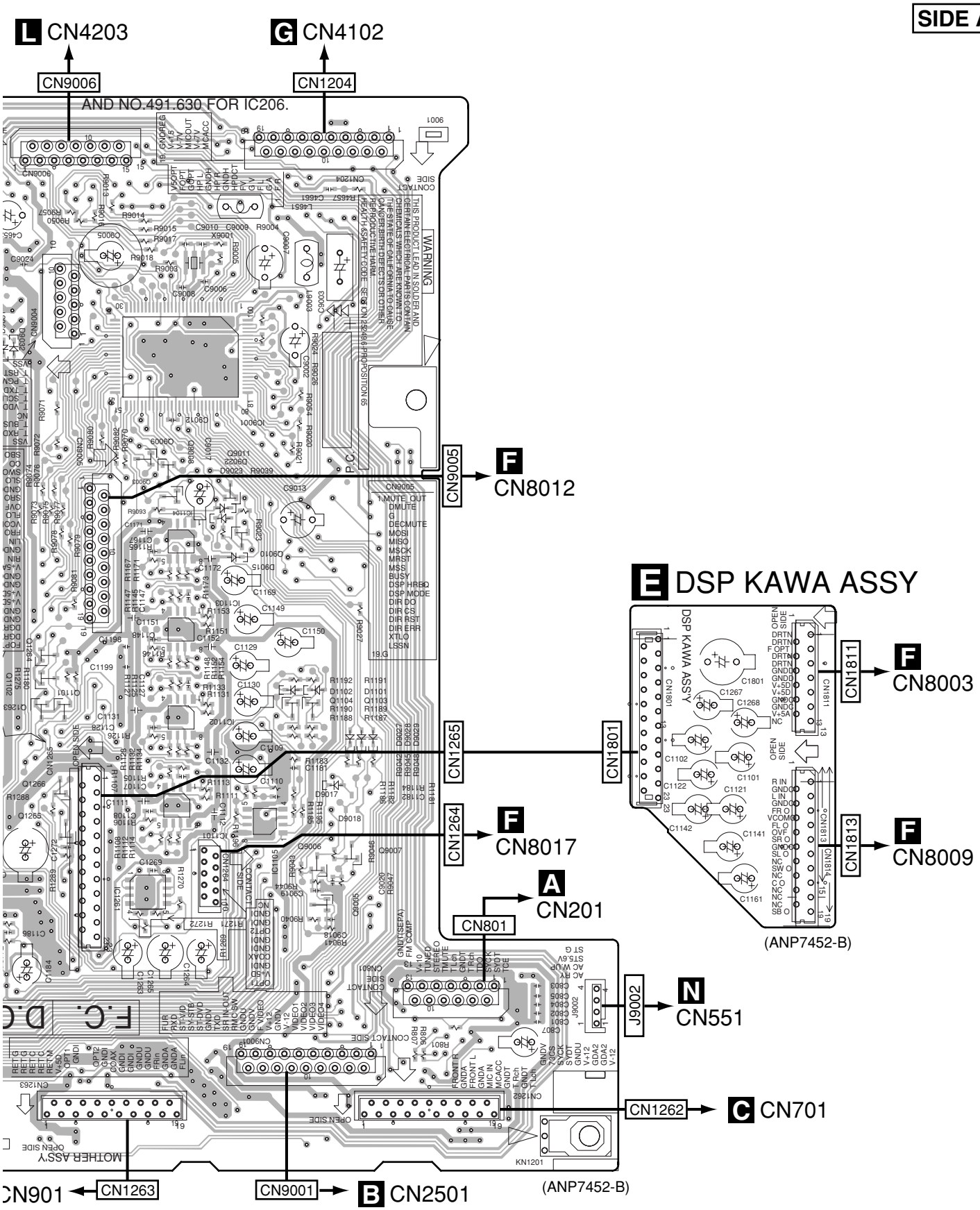


(ANP7450-B)

4.3 MOTHER, DSP KAWA and D5V ASSYS



SIDE A

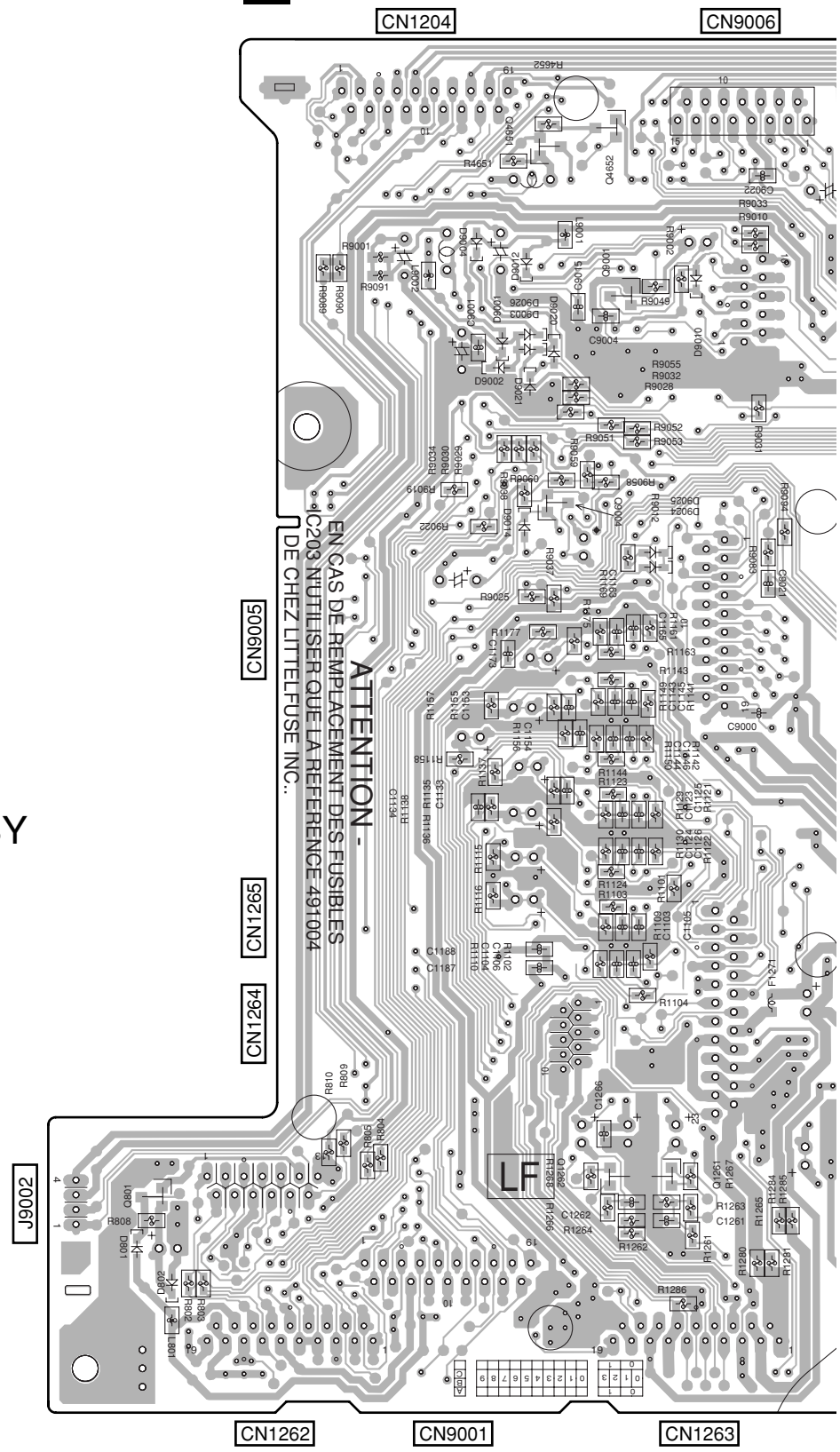


IC9001
Q1264 Q9009 Q9008 Q9011
Q1102 Q9003 Q9010 Q1104 Q1103
Q1263 Q1101 IC1101-IC1104 IC1105 Q9006 Q9007
Q1266 Q1265 IC1261 Q9005

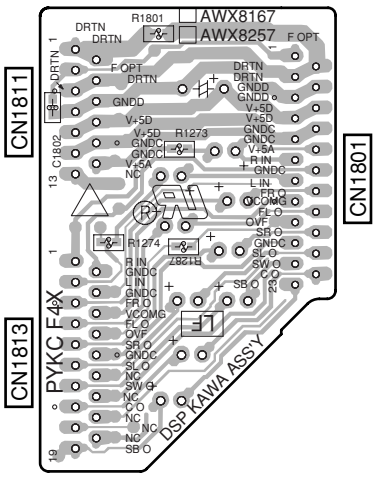
D E

SIDE B

D MOTHER ASSY



E DSP KAWA ASSY



(ANP7452-B)

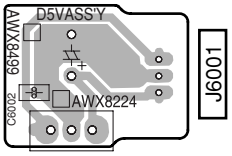
Q801

Q4651 Q4652
Q9004 Q9001
Q1262 Q1261

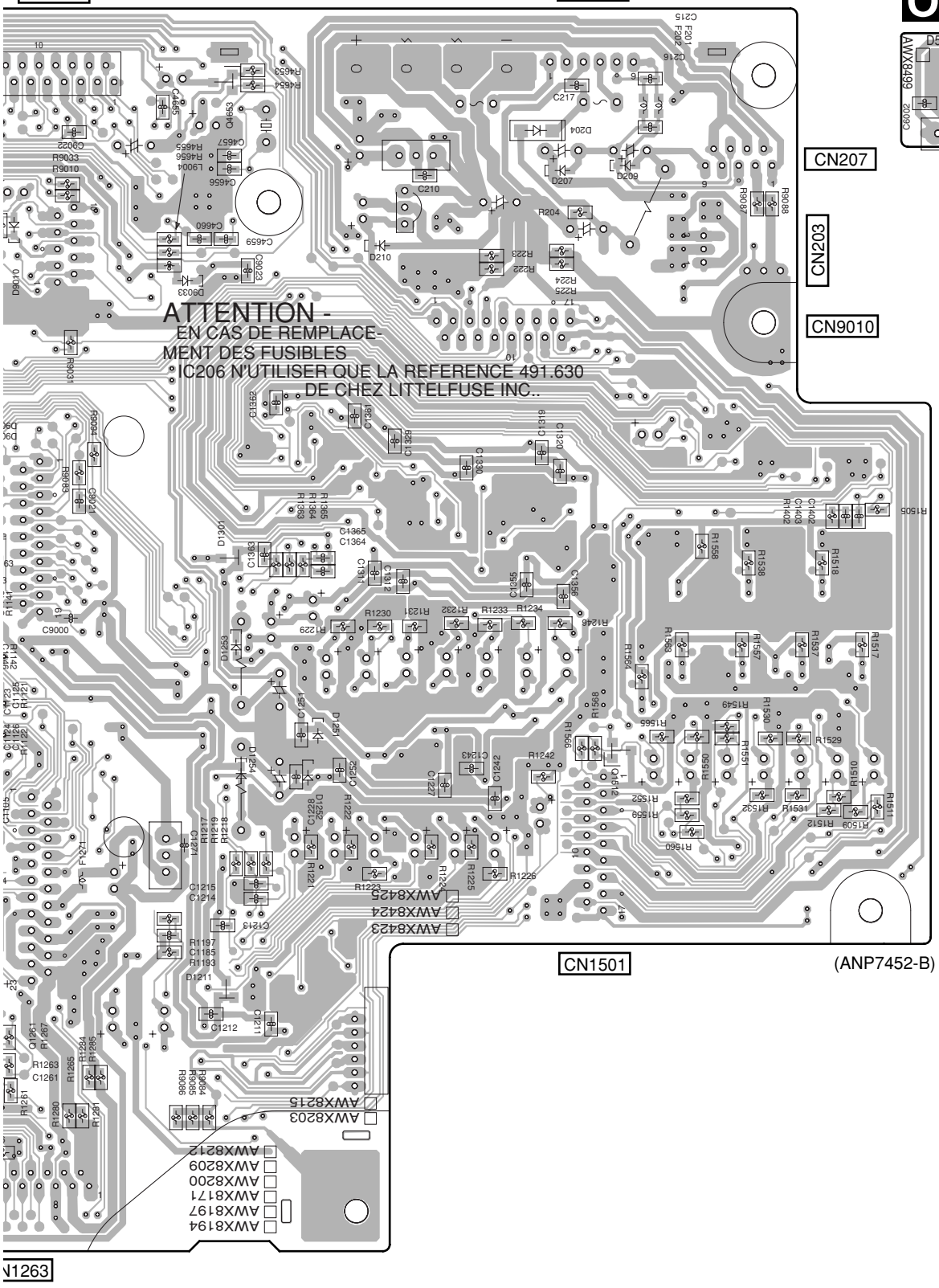
D E

SIDE B

D5V ASSY



(ANP7450-B)

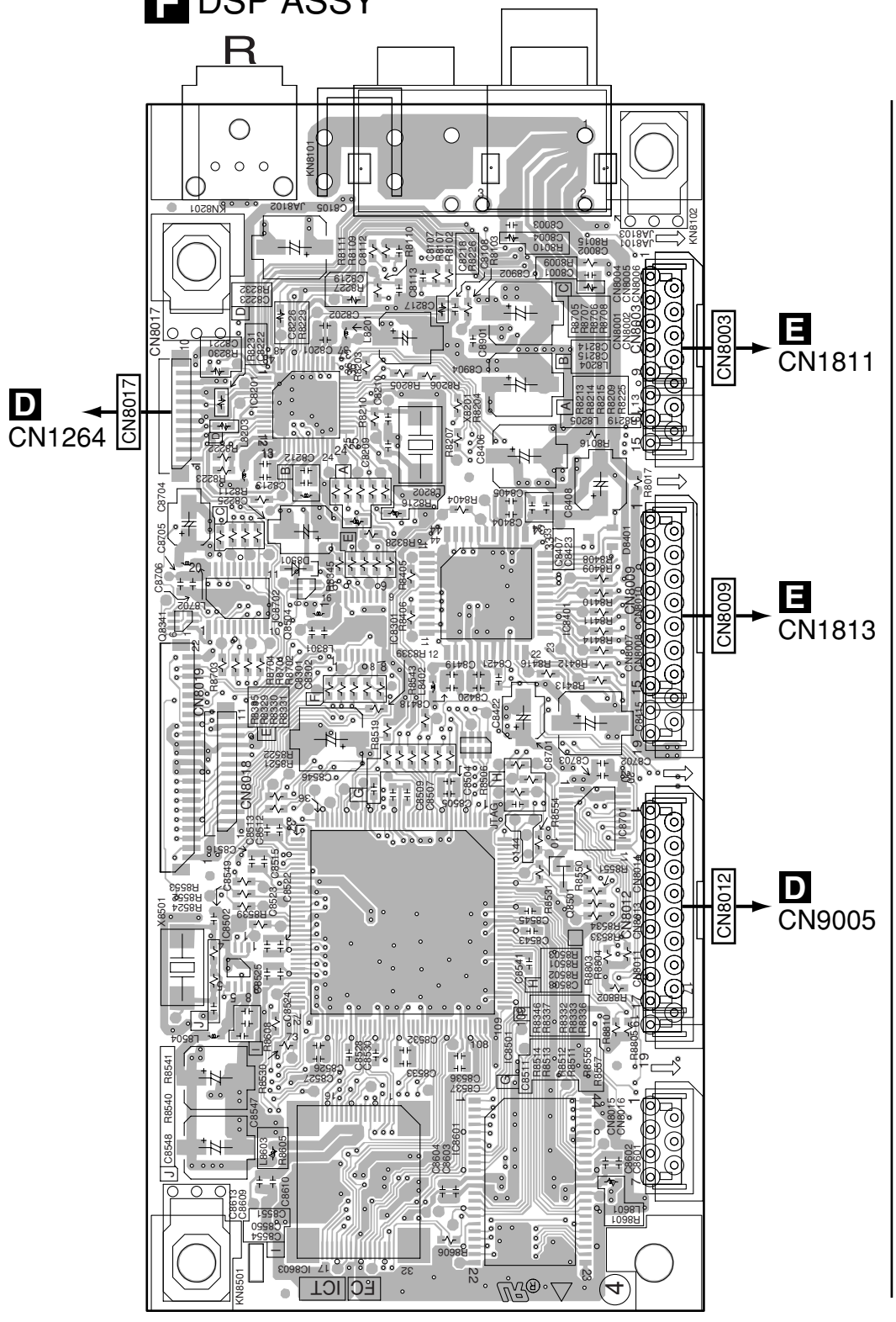


(ANP7452-B)

4.4 DSP ASSY

SIDE A **SIDE A**

F DSP ASSY



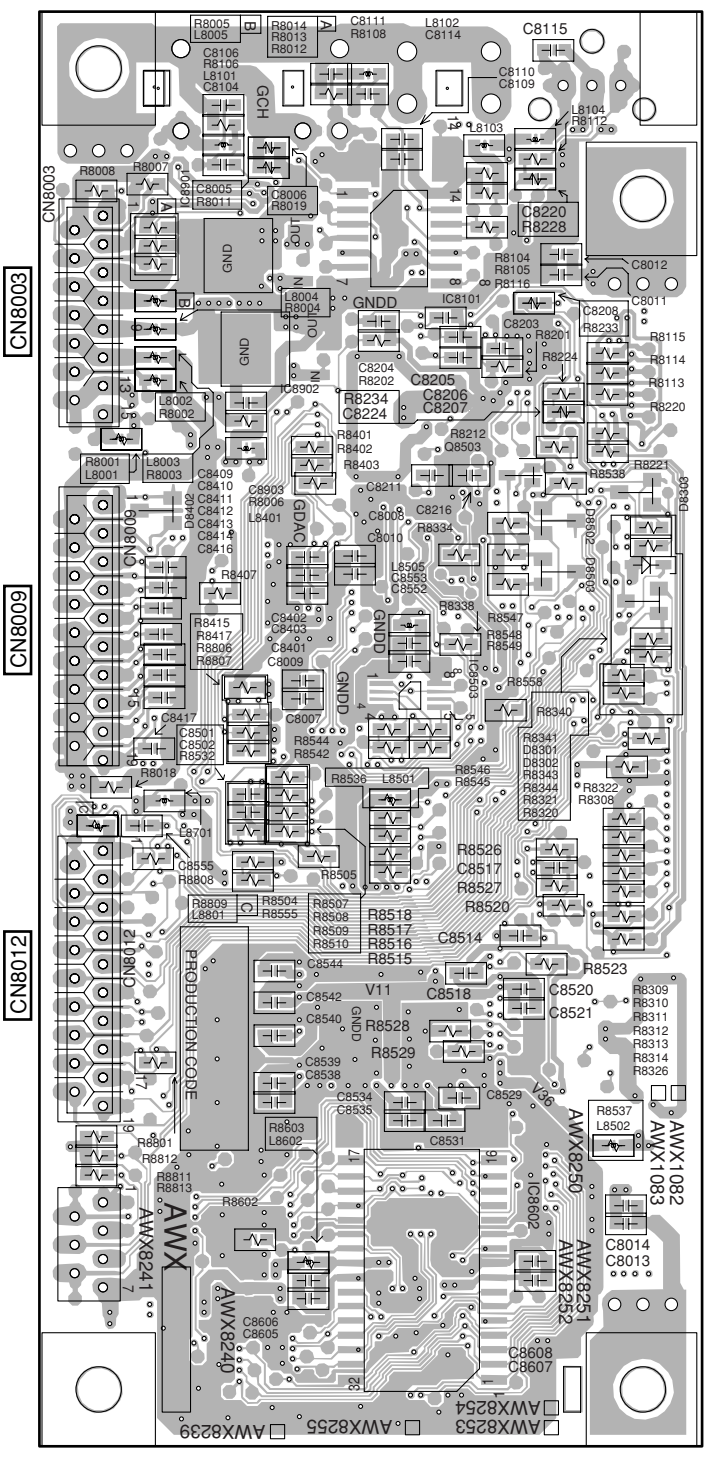
(ANP7465-A)

F **F**

SIDE B

SIDE B

F DSP ASSY



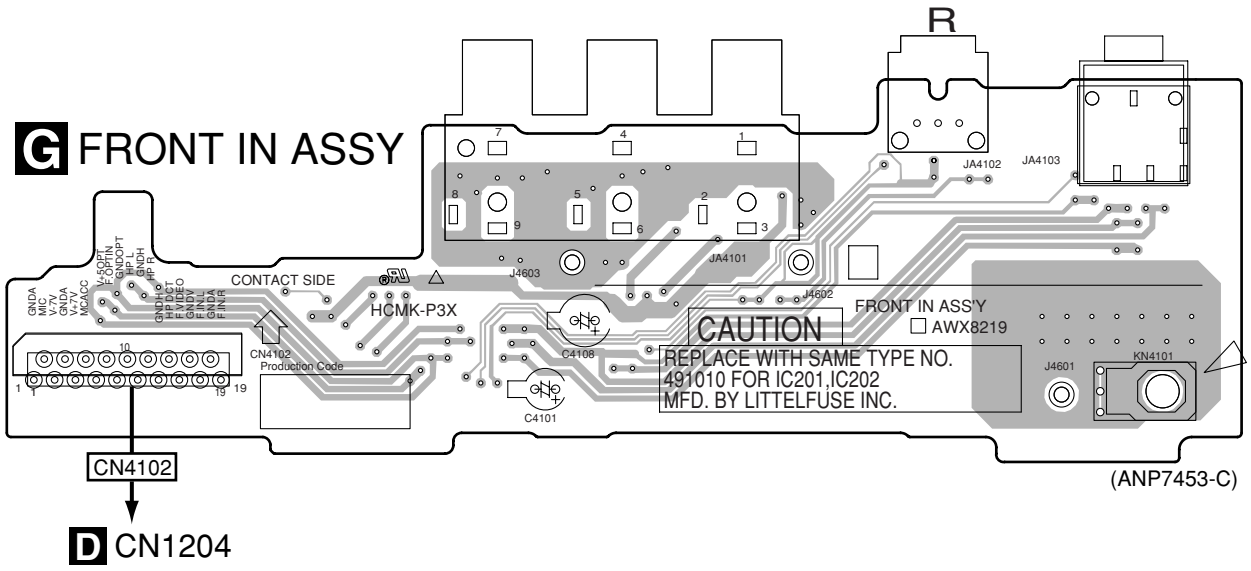
(ANP7465-A)

F

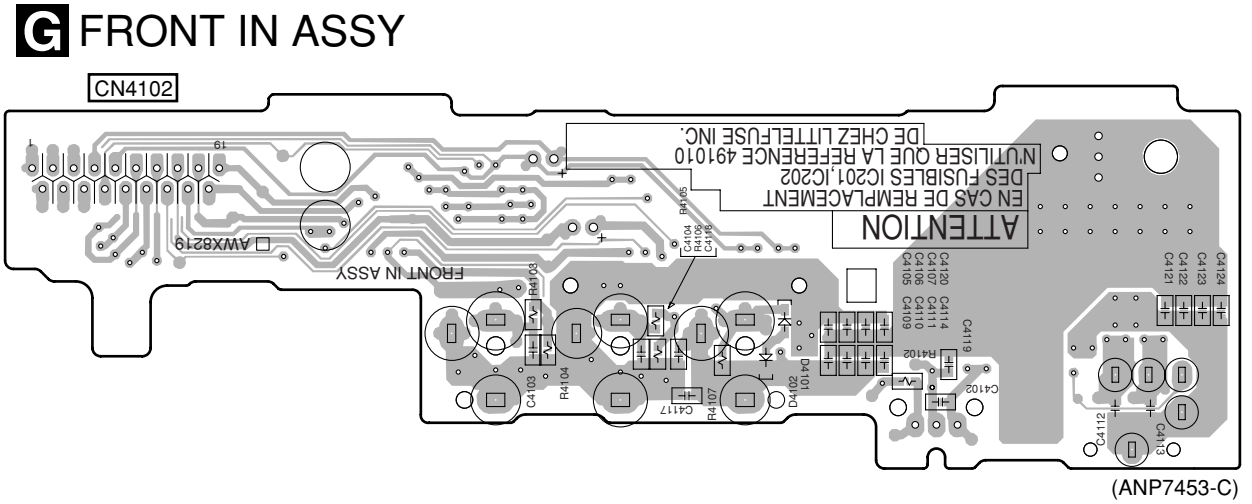
F

4.5 FRONT IN ASSY

SIDE A **SIDE A**

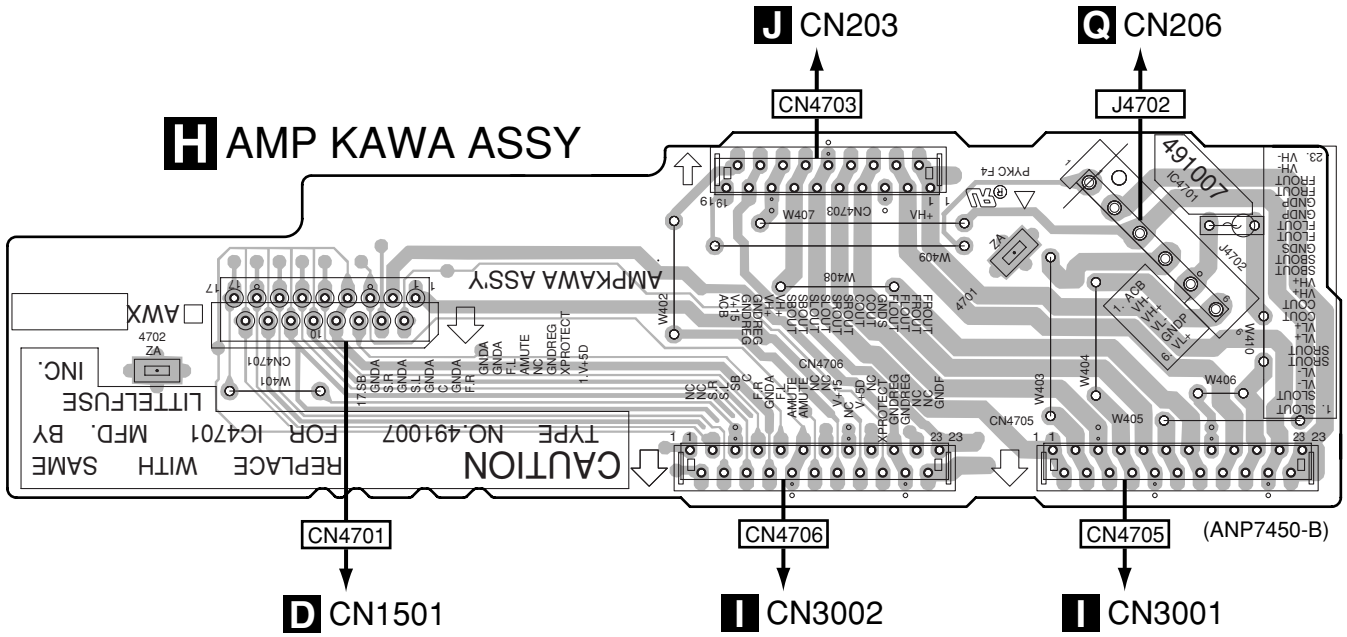


SIDE B **SIDE B**

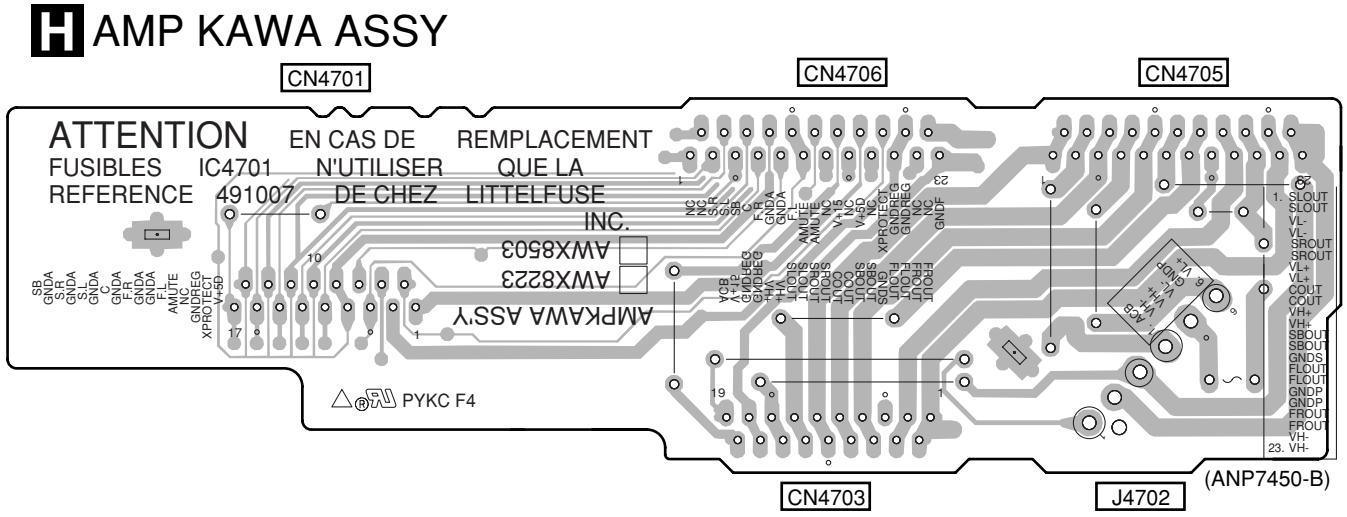


4.6 AMP KAWA ASSY

SIDE A **SIDE A**



SIDE B **SIDE B**



4.7 6CH AMP ASSY

SIDE A **SIDE A**

A

B

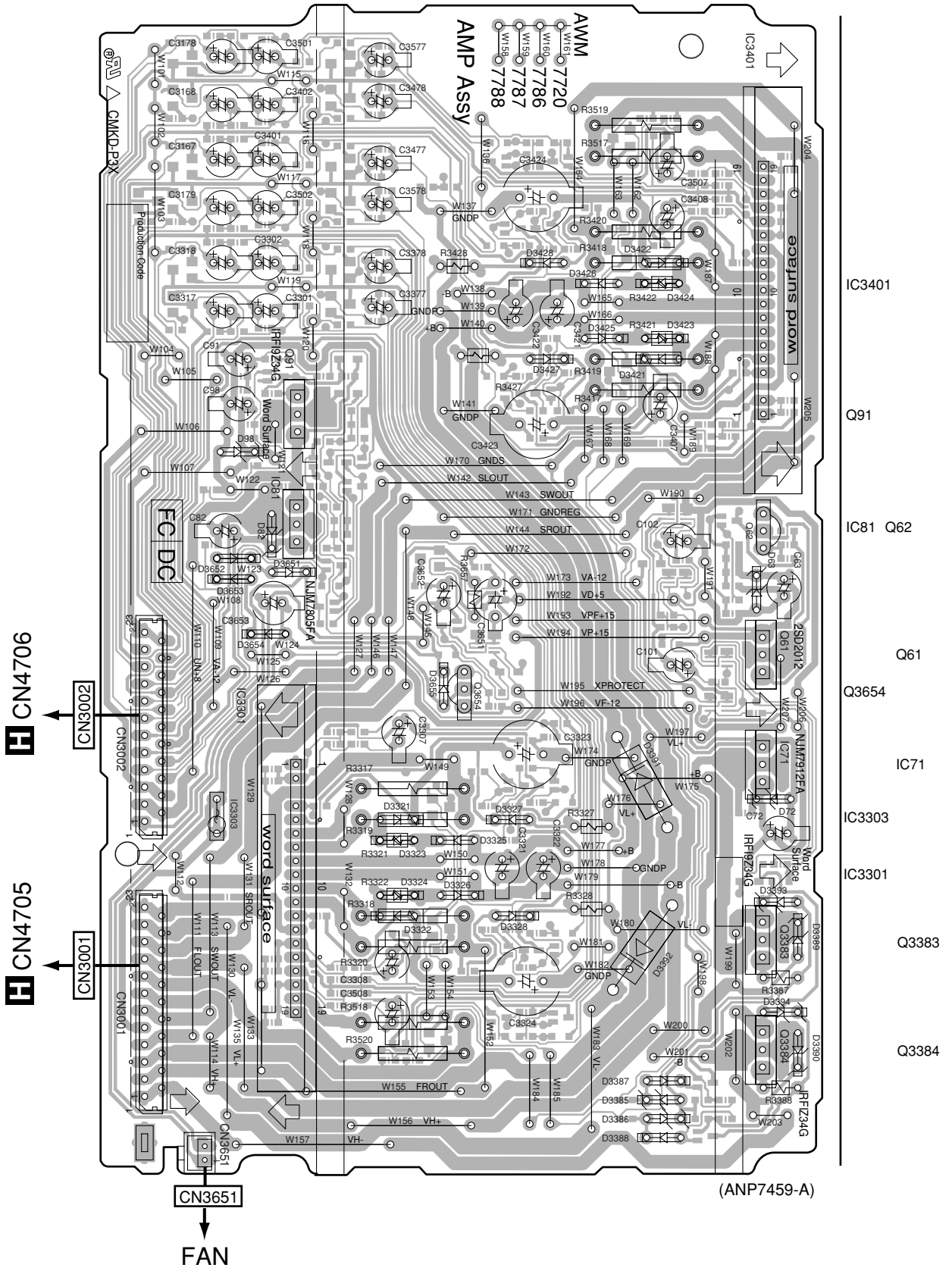
C

D

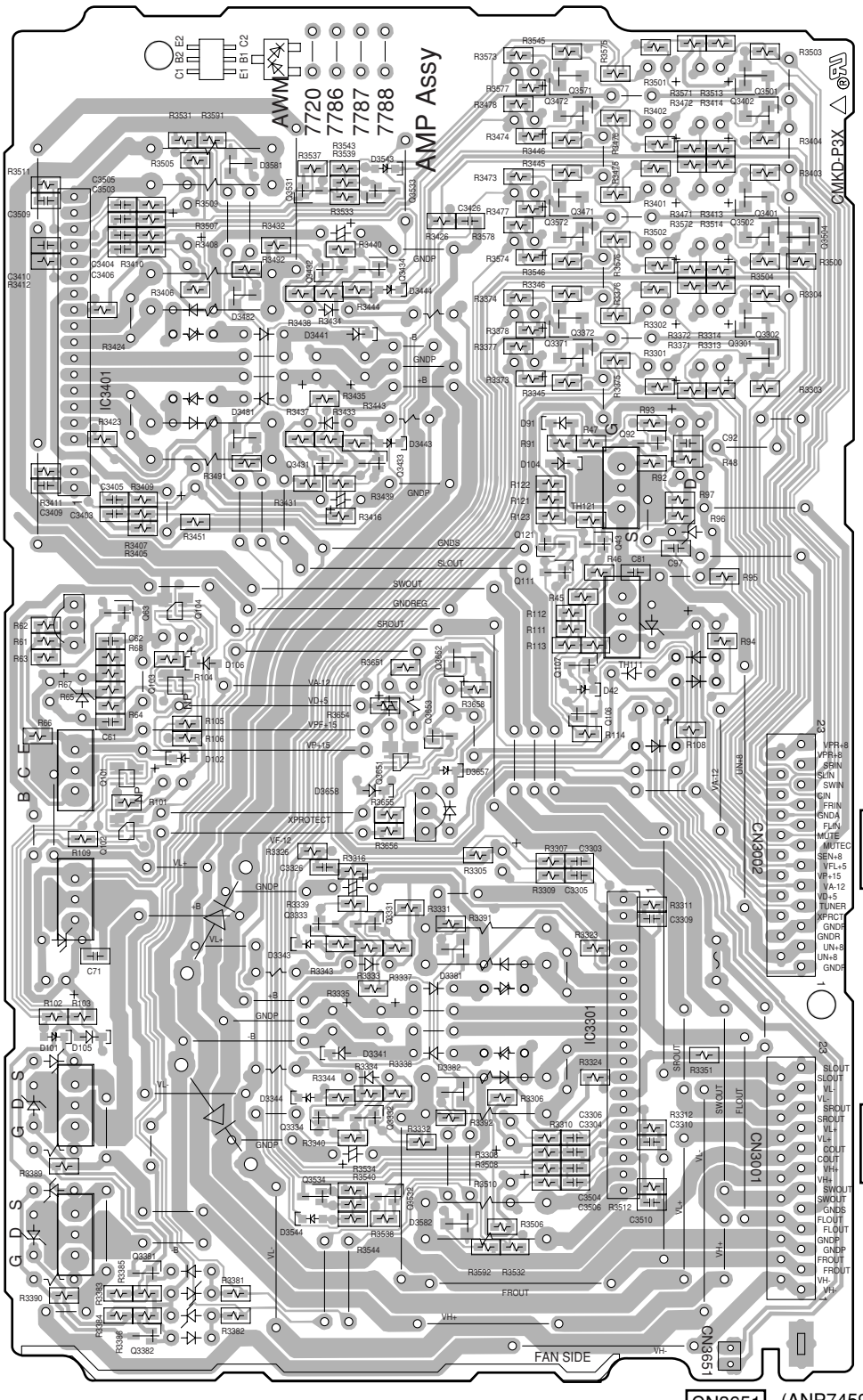
E

F

6CH AMP ASSY



6CH AMP ASSY

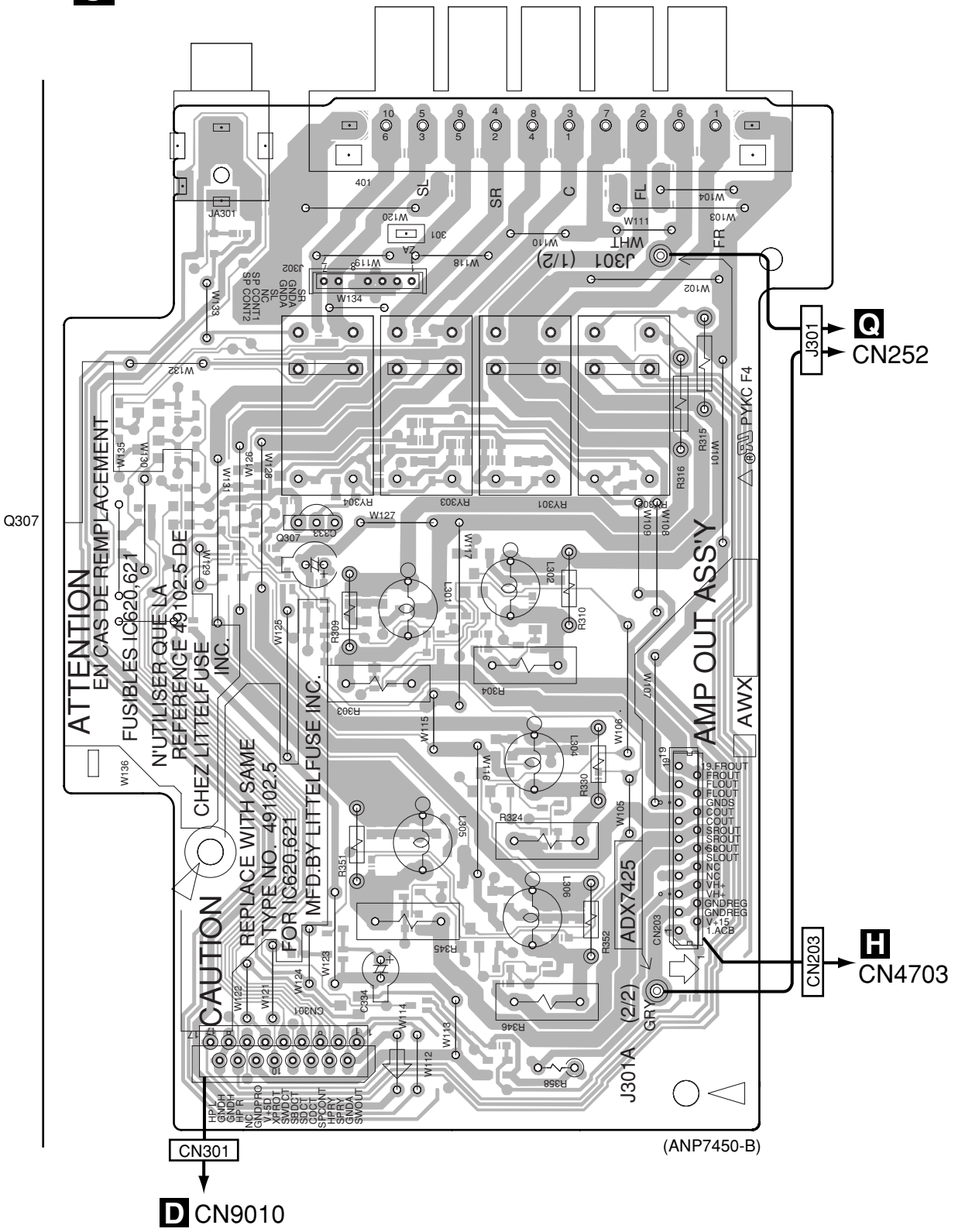

AWM
7720
7786
7787
7788
AMP Assy
CMKD-P3X
IC3401
IC3301
CN3002
CN3001
CN3651
FAN SIDE
Q3571 Q3501
Q3472 Q3402
Q3531
Q3533 Q3471 Q3401
Q3572 Q3502 Q3504
Q3432
Q3434
Q3372 Q3302
IC3401
Q3371 Q3301
Q3431
Q3433
Q121 Q43
Q111
Q63
Q104
Q3652 Q107
Q103
Q106
Q3653
Q3651
Q101
Q102
Q3333 Q3331
IC3301
Q3334 Q3332
Q3534 Q3532
Q3381
Q3382
(ANP7459-A)

4.8 AMP OUT ASSY

SIDE A

SIDE A

J AMP OUT ASSY

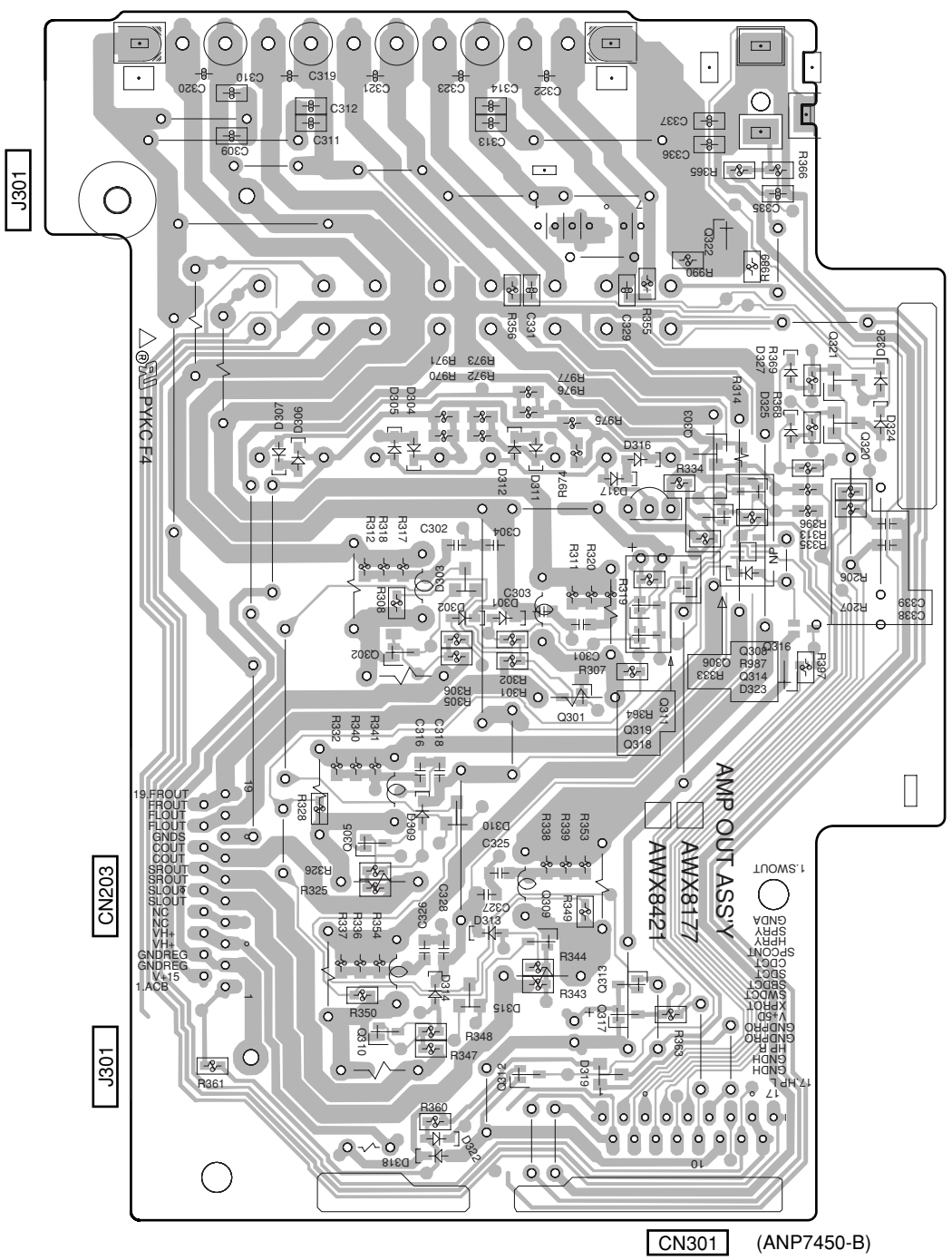


J

SIDE B

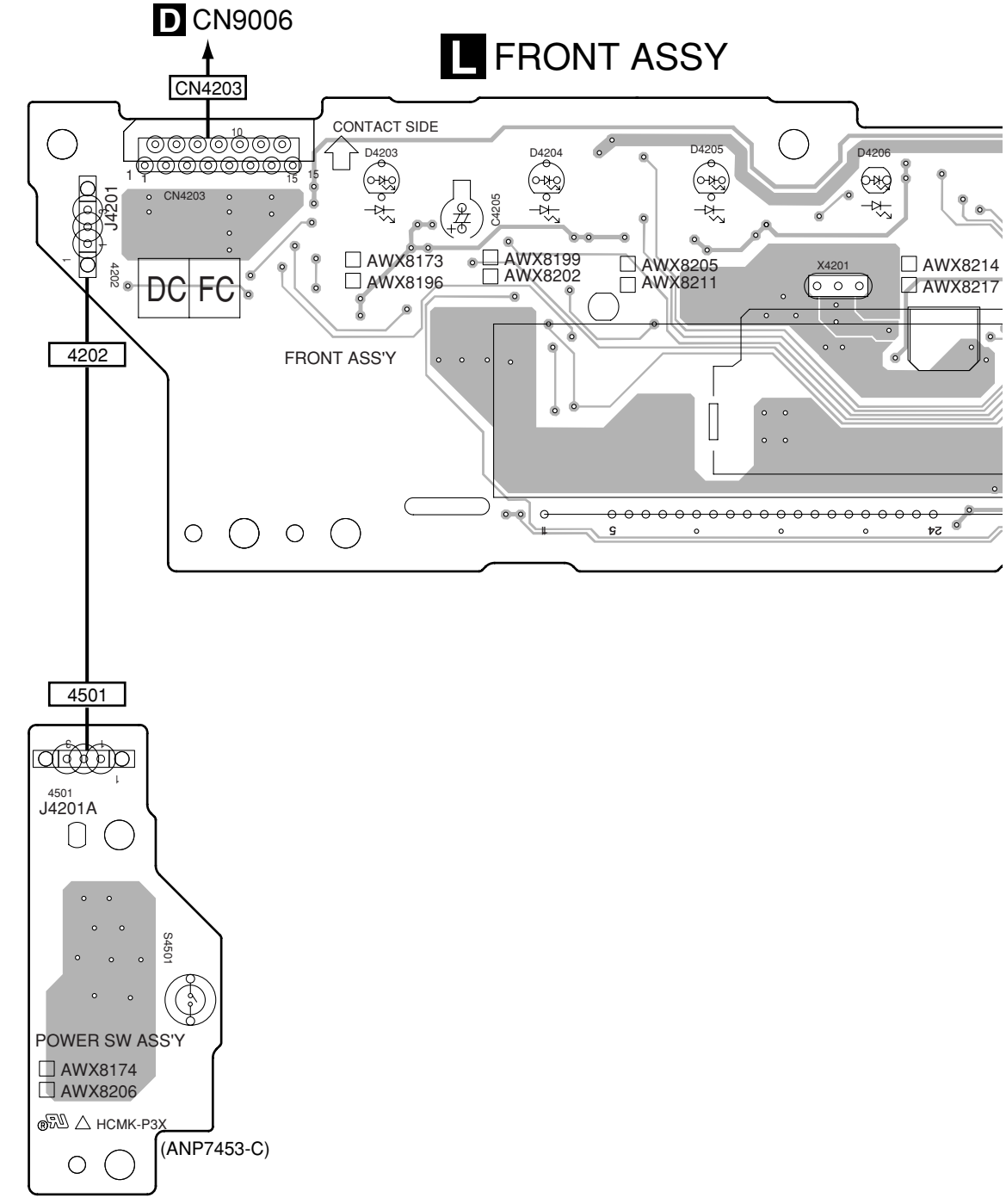
SIDE B

J AMP OUT ASSY



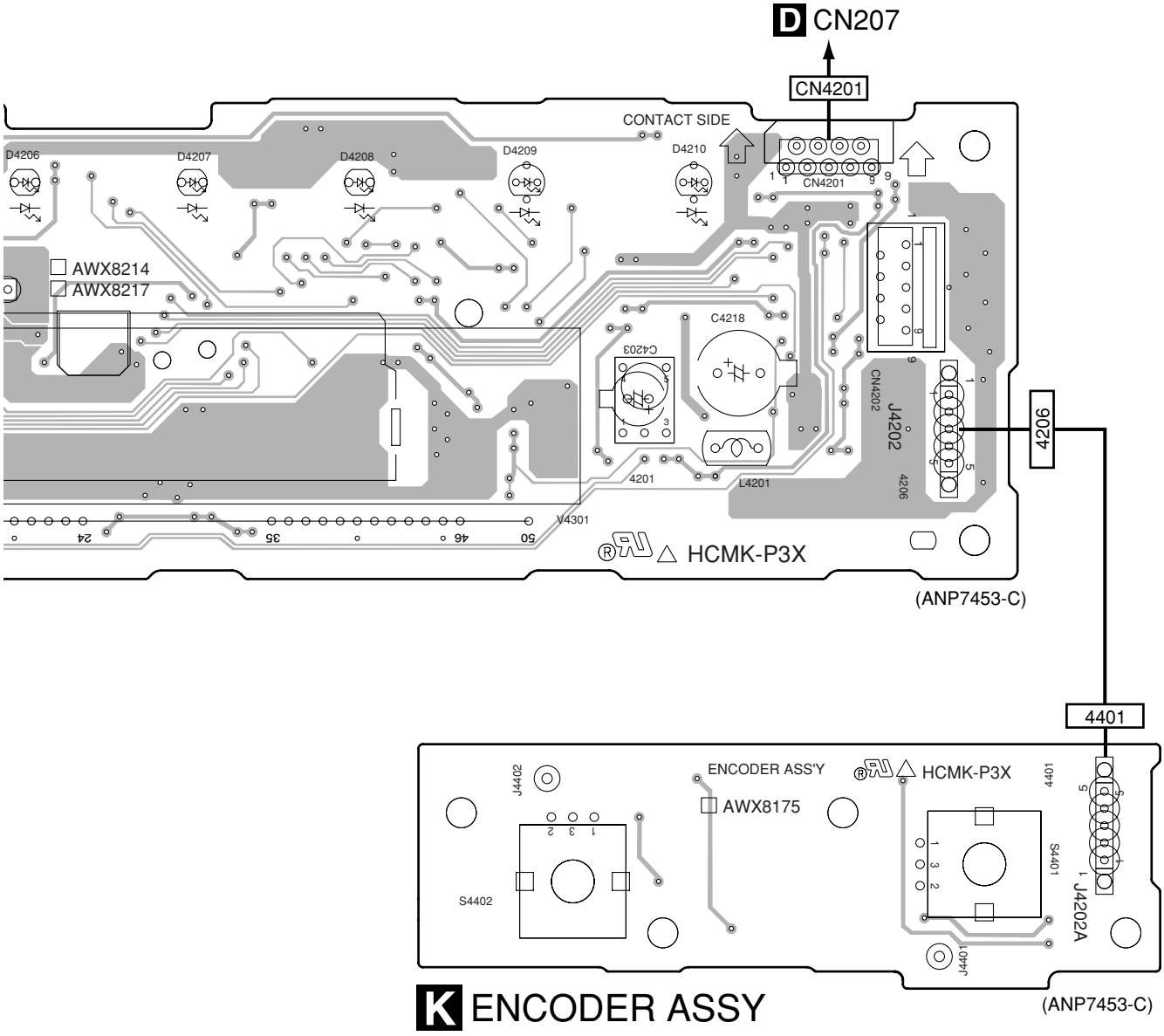
4.9 ENCODER, FRONT and POWER SW ASSYS

SIDE A



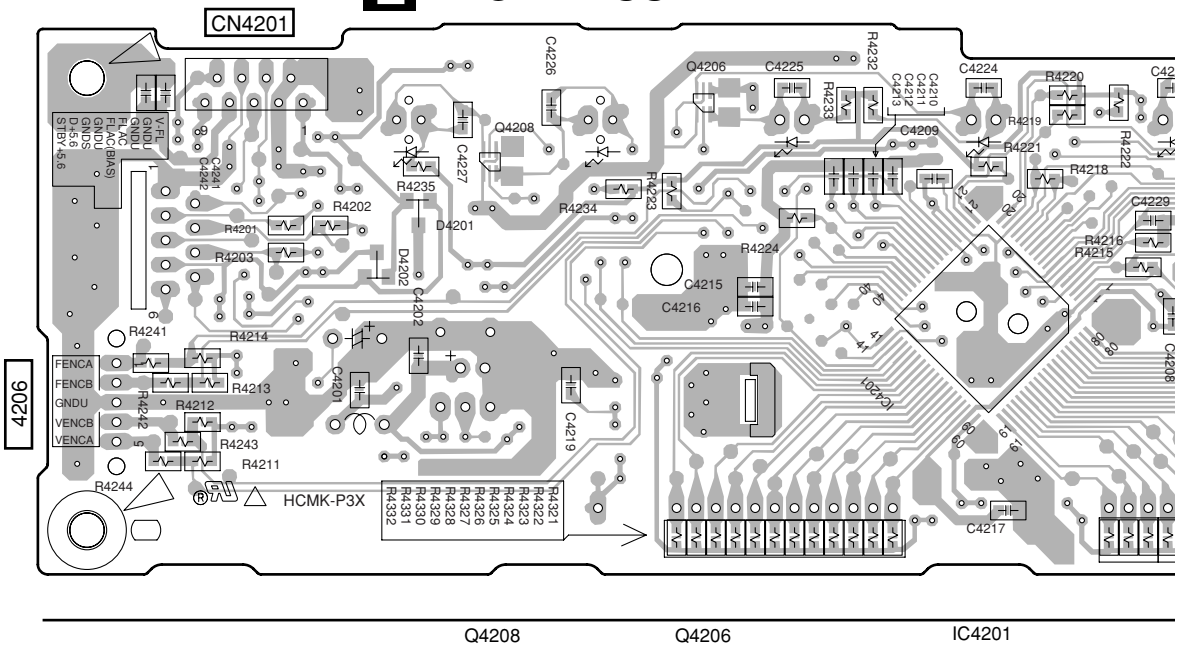
L **M**

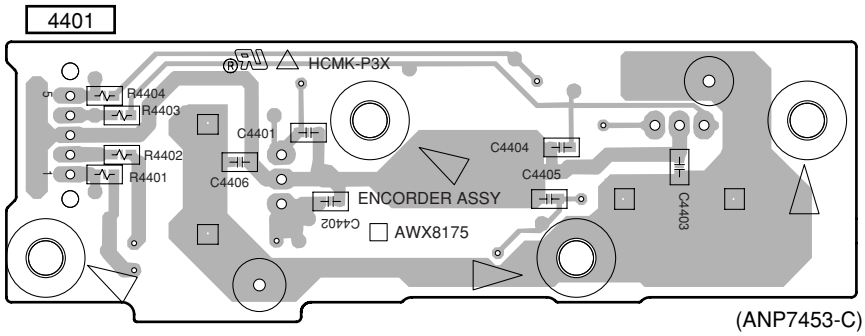
SIDE A


D CN207
CN4201
CONTACT SIDE
D4206
D4207
D4208
D4209
D4210
CN4201
AWX8214
AWX8217
C4218
C4203
CN4202
J4202
4206
4201
L4201
V4301
HCMK-P3X
(ANP7453-C)
4401
ENCODER ASS'Y
AWX8175
HCMK-P3X
J4402
S4402
S4401
J4202A
J4401
K ENCODER ASSY
(ANP7453-C)

SIDE B

L FRONT ASSY

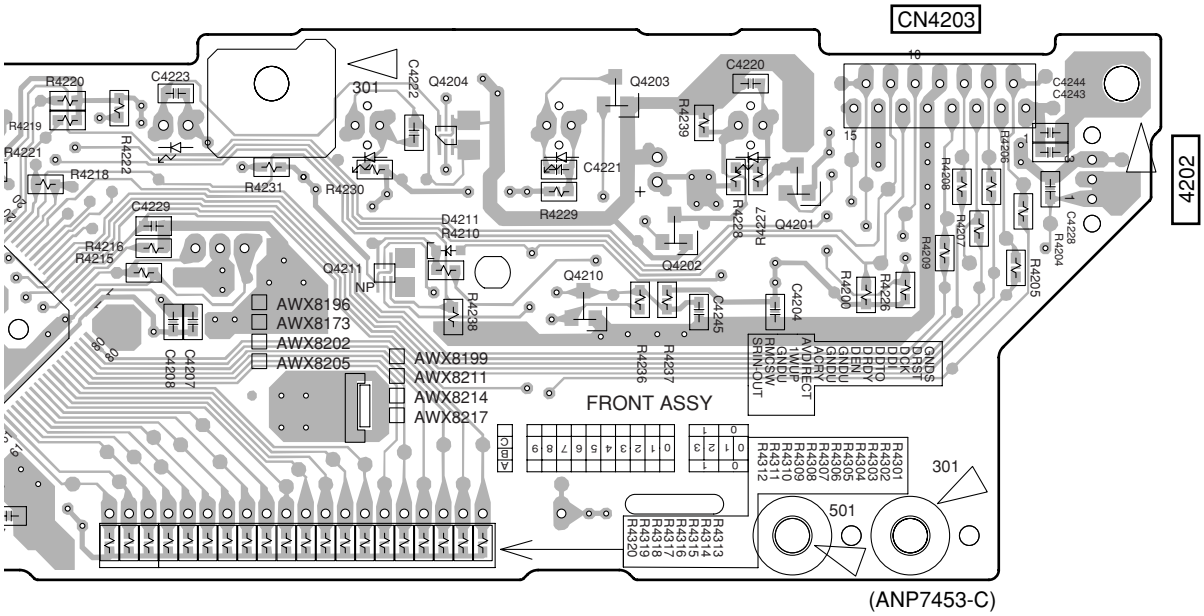




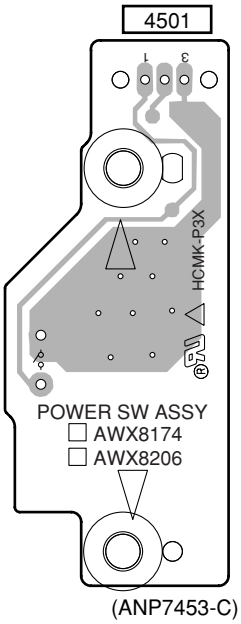
(ANP7453-C)

K ENCODER ASSY

SIDE B



1 Q4204 Q4203
Q4210 Q4202 Q4201

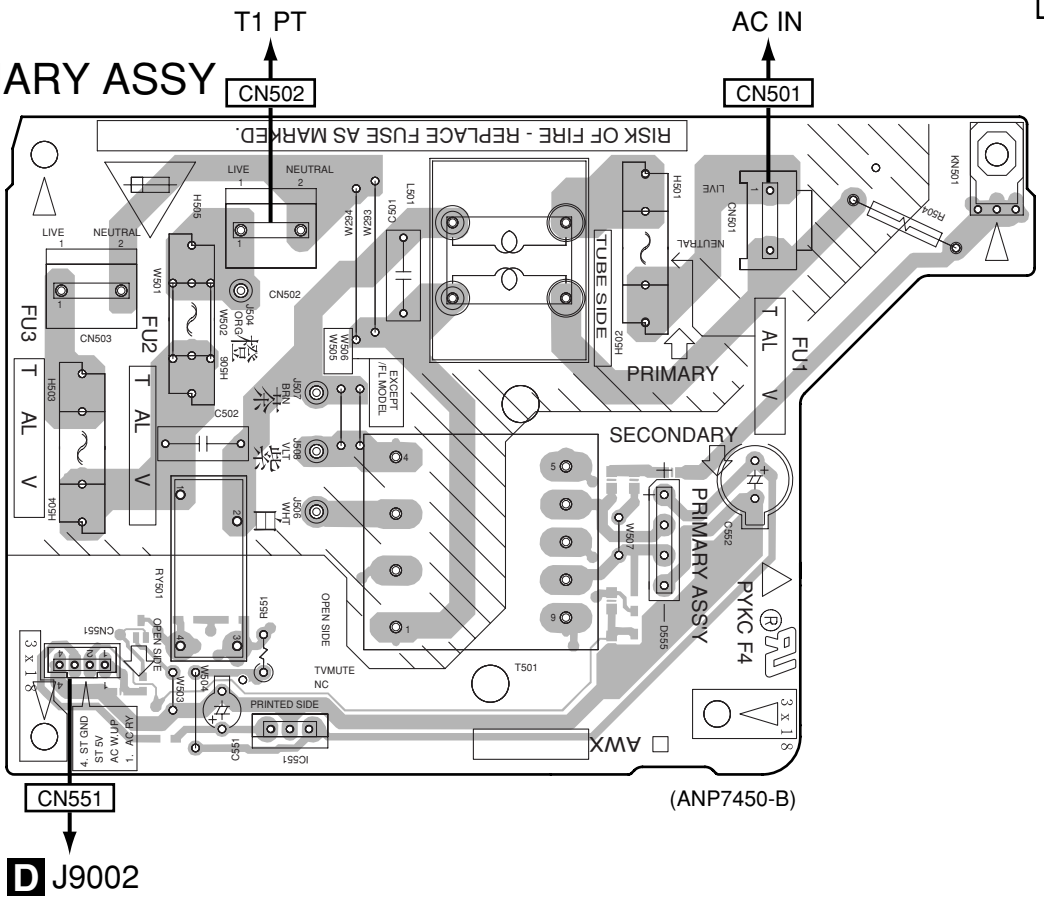


M POWER SW ASSY

4.10 PRIMARY ASSY

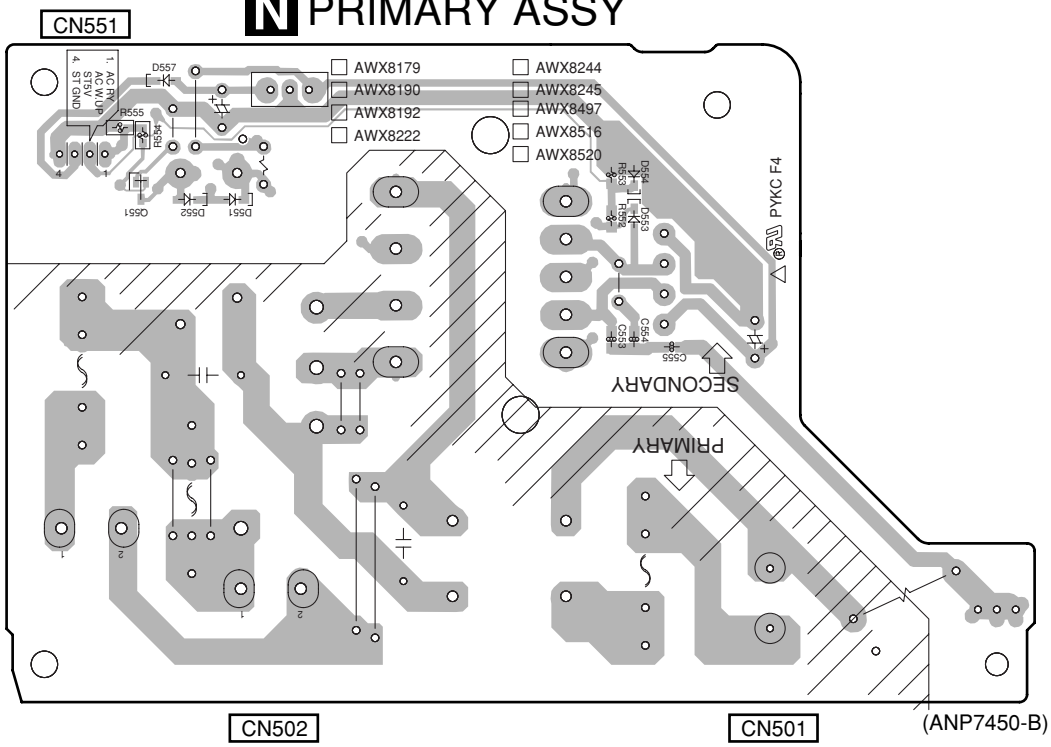
SIDE A **SIDE A**

N PRIMARY ASSY



SIDE B **SIDE B**

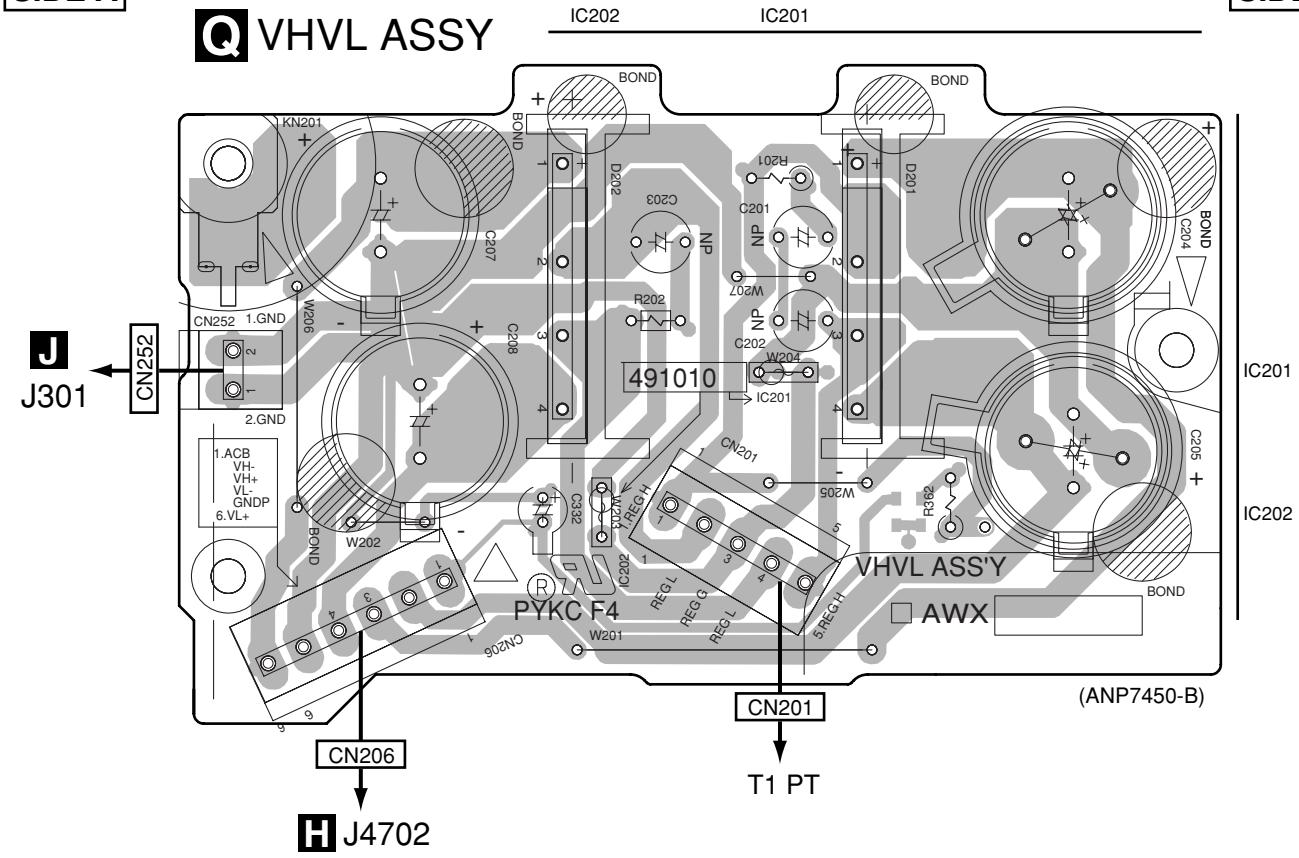
N PRIMARY ASSY



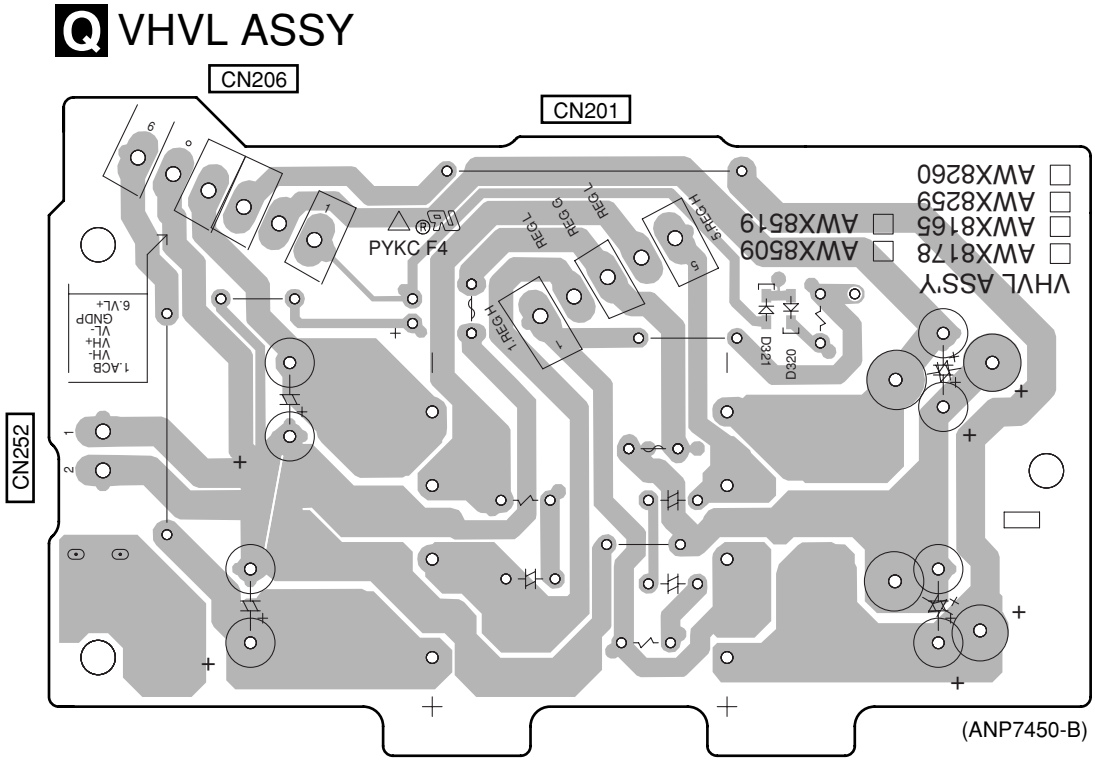
N **N**

4.11 VHVL ASSY

SIDE A



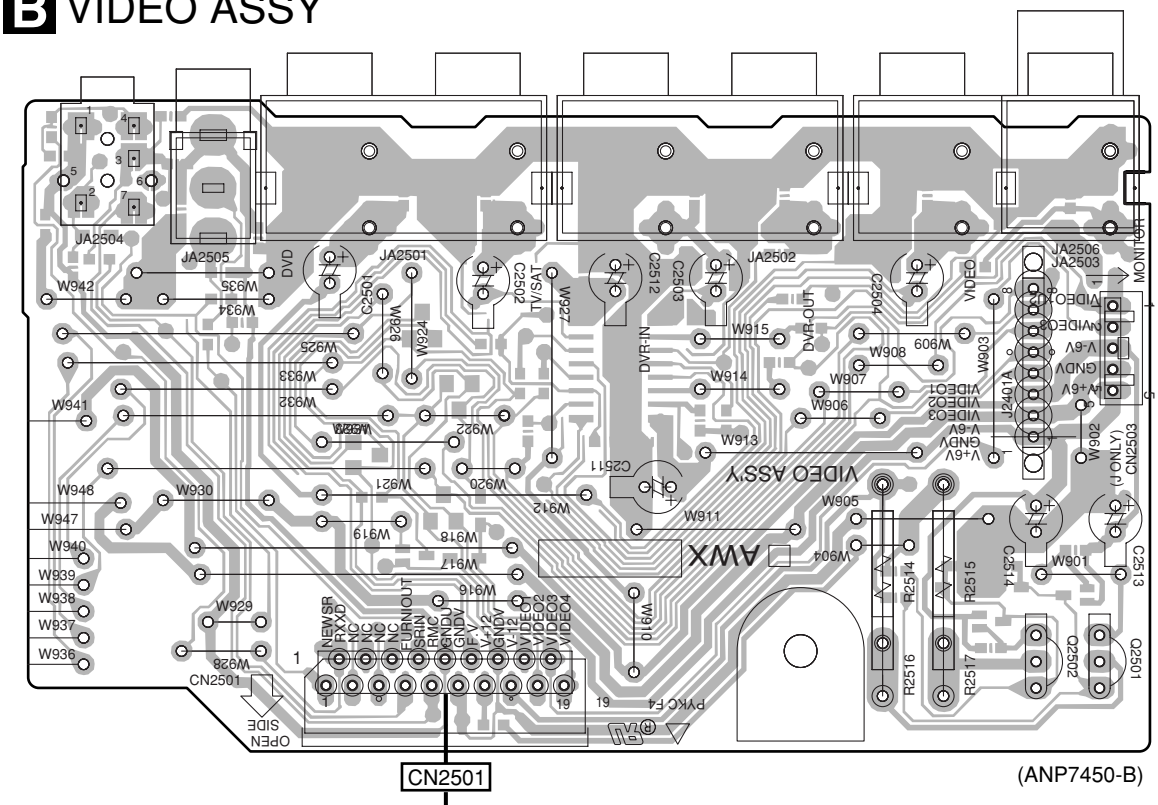
SIDE B



4.12 VIDEO ASSYS

SIDE A **SIDE A**

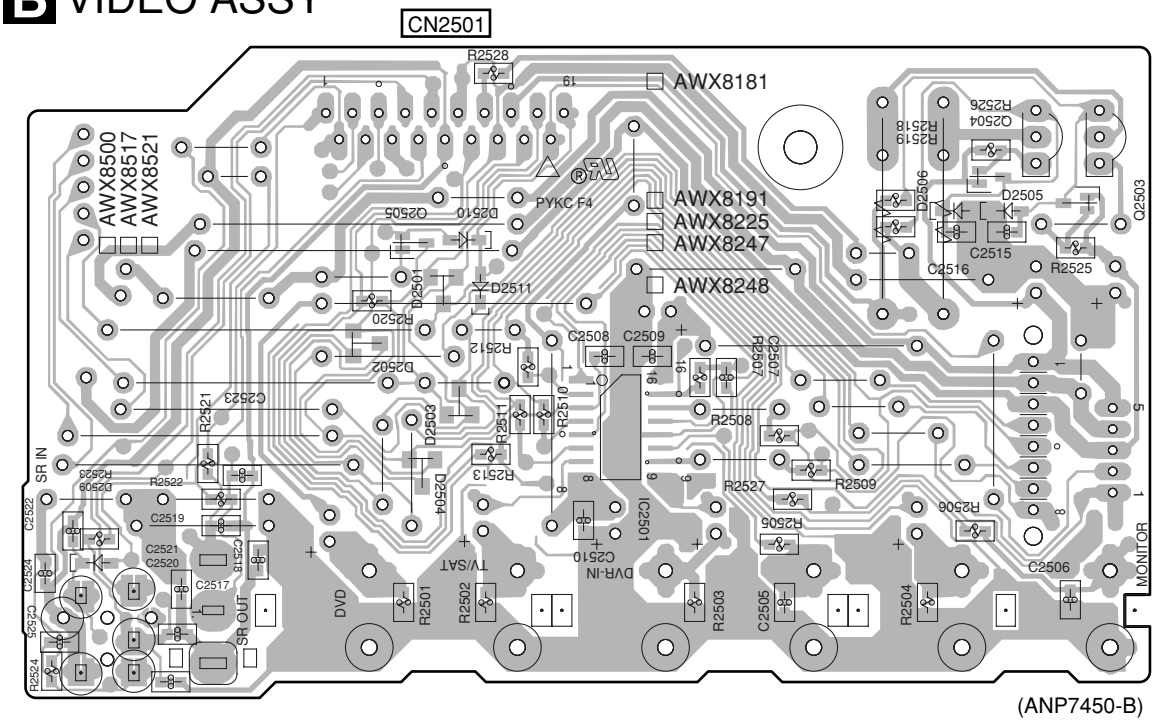
B VIDEO ASSY



CN2501

SIDE B **D** CN9001 **SIDE B**

B VIDEO ASSY



Q2505 IC2501 Q2504 Q2503

B **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 x 10^1 → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47 x 10^3 → 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 x 10^1 → 5621 ..... RN1/4PC 5 6 2 1 F

Mark	No.	Description	Part No.

LIST OF ASSEMBLIES

NSP	1	..COMPLEX ASSY	AWM7765
	2	..12V ASSY	AWX8170
	2	..AMP OUT ASSY	AWX8177
	2	..PRIMARY ASSY	AWX8190
	2	..AMP KAWA ASSY	AWX8223
	2	..D5V ASSY	AWX8224
	2	..VIDEO ASSY	AWX8225
	2	..AUDIO INPUT ASSY	AWX8227
	2	..VHVL ASSY	AWX8259
NSP	1	..MOTHER ASSY	AWM7884
	2	..DSP KAWA ASSY	AWX8167
	2	..MOTHER ASSY	AWX8423
NSP	1	..FRONT ASSY	AWM7780
	2	..FRONT ASSY	AWX8199
	2	..POWER SW ASSY	AWX8174
	2	..ENCODER ASSY	AWX8175
	2	..FRONT-IN ASSY	AWX8219
NSP	1	..AMP MODULE 6CH	AXQ7255
	2	..6CH AMP ASSY	AWM7786
	1	..FM/AM TUNER MODULE	AXQ7245
	1	..DSP ASSY	AWX8241

Mark	No.	Description	Part No.

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

Mark	No.	Description	Part No.
	C206		CCSRCH100D50
	C212, C213, C226, C233–C235		CCSRCH101J50
	C240		CCSRCH101J50
	C231, C232		CCSRCH150J50
	C223		CEAT100M50
	C229		CEAT101M10
	C224		CEAT1R0M50
	C227		CEAT220M25
	C241		CEAT2R2M50
	C243		CEAT330M16
	C228		CEAT3R3M50
	C237		CEAT470M10
	C211		CEJQ1R0M50
	C210		CEJQ470M16
	C204, C238, C602		CKSRYB102K50
	C101, C102, C208, C220, C239		CKSRYB103K50
	C242, C601		CKSRYB103K50
	C216, C217, C225		CKSRYB153K50
	C201, C205, C209, C214, C230		CKSRYB223K50
	C236, C603		CKSRYB223K50
	C221		CKSRYB224K10
	C202, C222		CKSRYB473K16
	C215		CKSRYB681K50

RESISTORS

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

OTHERS

CN201	13P CONNECTOR	52044-1345
BN201	TERMINAL 4-P	AKA7003
	(SHIELD CASE T)	ANK7072
	(SHIELD CASE B)	ANK7073
X201	CRYSTAL RESONATOR (7.2MHz)	ASS1093
	FM FRONTEND	AXF7003
	AM RF TUNING BLOCK	AXX7071

B VIDEO ASSY

SEMICONDUCTORS

IC2501		NJM2296M
Q2501		2SA1515

Mark No.	Description	Part No.
	Q2502	2SC3377
	Q2505	DTA124EUA
	D2509-D2511	1SS355
	D2501-D2504	DAN202K
	D2505,D2506	UDZS6.2B
	CAPACITORS	
	C2505-C2507,C2517	CCSRCH221J50
	C2513,C2514	CEAT470M10
	C2501-C2504,C2511,C2512	CEAT470M25
	C2518,C2524	CKSRYB103K50
	C2519	CKSRYB104K25
	RESISTORS	
	R2514,R2515	RS2LMF181J
	Other Resistors	RS1/16S###J
	OTHERS	
	CN2501 19P CONNECTOR	52044-1945
	JA2504 MINI JACK	AKN7037
	JA2505 REMOCON JACK	RKN1026
	JA2506 1P PIN JACK	VKB1122
	JA2501,JA2502 2P PIN JACK	VKB1134

C AUDIO INPUT ASSY

SEMICONDUCTORS

	⚠IC620, IC621 PROTECTOR(2.5A)	AEK7014
	IC701	NJU7312AM
	IC901	TC7WU04F
	IC702	UPC4570G2
	D622–D625	1SR154-400
	D701	DAN217
	COILS AND FILTERS	
	F620, F621 CHIP BEADS	DTF1070
	L901 CHIP SOLID INDUCTOR	QTL1013
	CAPACITORS	
	C622 (1/100V)	ACH1237
	C701–C708, C725–C727	CCSRCH101J50
	C731, C732	CCSRCH101J50
	C709, C710	CCSRCH220J50
	C908	CCSRCH470J50
	C904	CCSRCH471J50
	C723, C724	CEAT100M50
	C620, C621	CEAT222M25
	C737, C738	CEAT470M25
	C729, C730	CEAT4R7M50
	C711, C721, C722, C735, C736	CKSRYB103K50
	C905, C906	CKSRYB103K50
	C901, C902	CKSRYB104K25
	C903, C909–C911	CKSRYB105K10
	RESISTORS	
	⚠R620	RD1/4MUF4R7J
	Other Resistors	RS1/16S###J
	OTHERS	
	621 5P CABLE HOLDER	51048-0500
	CN704 4P PIN JACK	AKB7015
	CN621 3P TOP POST	B3B-EH
	J620 JUMPER WIRE 5P	D20PYY0510E
	JA901, JA902 OPT. LINK IN	GP1FA513RZ
	JA903 1P PIN JACK	VKB1077
	JA701 4P PIN JACK	VKB1132
	CN701, CN901 19P CONNECTOR	VKN1775

D MOTHER ASSY

SEMICONDUCTORS

	⚠IC206 PROTECTOR(630mA)	AEK7006
	⚠IC203 PROTECTOR(4A)	AEK7018
	IC1221	BD3814FV
	IC1261	NJM2100M
	IC1101-IC1103,IC1105,IC1301-IC1303	NJM4558MD
	IC210	NJM78L05A
	IC1271	NJM78M05FA
	IC205	NJM78M56FA
	IC1305	NJU7311AM
	IC9001	PEG001A
	IC1501-IC1503	UPC4570G2
	IC9061	TC74VHCT126AFT
	Q801	2SC2412K
	Q1261,Q1262,Q1301,Q1503,Q15042	SC3326
	Q1507,Q1508,Q1511	2SC3326
	Q1103,Q1104	2SK208
	Q1101,Q1263,Q1266,Q9004	DTA124EK
	Q9008-Q9010	DTA124EK
	Q1102,Q1265	DTC124EK
	Q1264,Q9001	DTC143EK
	Q9011	DTC143TK
	D204	1SR154-400
	D1101,D1102,D1253,D1254,D801	1SS355
	D9001-D9004,D9010,D9012	1SS355
	D9020-D9024,D9026,D9031-D9033	1SS355
	⚠D203	D3SBA20
	D1301	DAN217
	D210	RB501V-40
	D207	UDZS20B
	D1251,D1252,D209	UDZS6.8B
	COILS AND FILTERS	
	L9001,L9002 CHIP FELITE BEADS	ATL7002
	F1271,F201, F202 CHIP BEADS	DTF1070
	L9003 RADIAL INDUCTOR	LFEA2R2J
	L801,L9004 CHIP SOLID INDUCTOR	QTL1013
	CAPACITORS	
	C9003 (0.22F/5.5V)	ACH7144
	C1123,C1124,C1143,C1248,C1249	CCSRCH101J50
	C1261,C1262,C1363-C1365	CCSRCH101J50
	C1501,C1502,C1521,C1522	CCSRCH221J50
	C1542	CCSRCH271J50
	C1105-C1108,C1125-C1128,C1145	CCSRCH331J50
	C1147	CCSRCH331J50
	C1103,C1104	CCSRCH471J50
	C1221-C1226,C1229-C1234	CEAT100M50
	C9005	CEAT101M10
	C1270,C807	CEAT101M16
	C9007	CEAT102M6R3
	C211	CEAT220M50
	C214	CEAT221M25
	C9002	CEAT221M6R3
	C1253,C1254	CEAT331M10
	C212	CEAT331M50

Mark No.	Description	Part No.
C209		CEAT332M16
C220		CEAT470M16
C213		CEAT471M35
C9013		CEAT471M6R3
C1263,C1264		CEAT4R7M50
C1265		CEJQ221M6R3
C1344,C1503,C1504,C1523,C1524		CEJQ4R7M50
C1543,C1544		CEJQ4R7M50
C1111,C1112,C1131,C1132		CKSQYF225Z16
C1151,C1152,C1505,C1506		CKSQYF225Z16
C1525,C1526,C1545,C1546		CKSQYF225Z16
C801, C9015,C9022,C9024		CKSRYB102K50
C1146,C1185,C1186,C1199		CKSRYB103K50
C1227,C1228,C1251,C1252,C1269		CKSRYB103K50
C1311,C1312,C1319,C1320		CKSRYB103K50
C1329,C1330,C1361,C1362,C802		CKSRYB103K50
C804, C9001,C9004,C9008,C9021		CKSRYB103K50
C1266		CKSRYB104K16
C1187,C1188,C1237-C1240,C1271		CKSRYB104K25
C215, C216,C9023		CKSRYB104K25
C1272,C803, C805, C9006		CKSRYB105K10
C1144		CKSRYB223K50
C1301,C1302,C1313,C1314,C1323		CKSRYB332K50
C1307,C1308,C1315,C1316,C1324		CKSRYB393K25
C1198		CKSRYB471K50
C1133,C1134,C1153,C1154		CKSRYB472K50
C1235,C1236		CKSRYB472K50
C1341		CKSRYB473K25
C210, C217		CKSRYB473K50
C1148		CKSRYB562K50
C1342		CKSRYB822K50
C1402,C1403		CKSRYF224Z25
C1565		CKSRYF474Z16
RESISTORS		
R9001,R9091		RS1/10S101J
R1251,R1252		RS1LMF101J
R203		RS1LMF102J
Other Resistors		RS1/16S###J
OTHERS		
CN1262,CN1263 19P CONNECTOR		19R-1.25FJ
CN207 9P FFC CONNECTOR		52045-0945
CN801 13P FFC CONNECTOR		52045-1345
CN9006 15P FFC CONNECTOR		52045-1545
CN1501,CN9010 17P FFC CONNECTOR		52045-1745
CN1204,CN9001,CN9005 19P FFC CONNECTOR		52045-1945
CN1265 23P PLUG		AKP7064
CN203 3P CONNECTOR POST		B3B-PH-K
CN202 6P CONNECTOR		B6B-EH
J9002 CONNECTOR ASSY		PF04PG-D05
9001-9003 PCB BINDER		VEF1040
CN1264 10P FFC CONNECTOR		VKN1241
KN1201 WRAPPING TERMINAL		VNF1084
X9001 CERAMIC RESONATOR (15.7 MHz)		ASS7032

E DSP KAWA ASSY

CAPACITORS

Mark No.	Description	Part No.
C1802		CCSRCH101J50
C1267,C1268		CEAT100M50
C1101,C1102,C1121,C1122		CEAT2R2M50
C1141,C1142,C1161		CEAT2R2M50
C1801		CEAT331M16
RESISTORS		
All Resistors		RS1/16S###J
OTHERS		
CN1811 13P PLUG		AKP7059
CN1813 15P PLUG		AKP7060
CN1801 23P SOCKET		AKP7075

F DSP ASSY

SEMICONDUCTORS

IC8201	AK4114VQ
IC8401	AK4529VQ
IC8501	DSPD56367PV150
IC8901	NJM2391DL1-33
IC8902	NJU7223DL1-18
IC8701	TC74LVX244FT
IC8702	TC74VHCT244AFT
IC8502	TC7WU04FU
Q8504	UMD2N
Q8503	UN5112
D8501	1SS355
D8401	DAN202K
D8402,D8502,D8503	DAP202K

COILS AND FILTERS

L8002,L8004,L8501,L8502 CHIP FELITE BEADS	ATL7002
L8201,L8203,L8204,L8401,L8402	QTL1013
L8504,L8701,L8702 CHIP SOLID INDUCTOR	QTL1013

CAPACITORS

C8209,C8210	CCSRCH100D50
C8421	CCSRCH101J50
C8007,C8008,C8201,C8212,C8214	CCSRCH471J50
C8404,C8409-C8414,C8416,C8417	CCSRCH471J50
C8419,C8505,C8507,C8509	CCSRCH471J50
C8511,C8512,C8515,C8518,C8520	CCSRCH471J50
C8522,C8524,C8526,C8528,C8530	CCSRCH471J50
C8532,C8534,C8536,C8539,C8541	CCSRCH471J50
C8543,C8545,C8551,C8703,C8706	CCSRCH471J50
C8548,C8549	CCSRCH8R0D50
C8701,C8704	CEV100M16
C8406,C8415,C8546,C8547,C8902	CEV101M16
C8904	CEV101M16
C8217,C8225,C8408	CEV470M6R3
C8204,C8555	CKSRYB102K50
C8009,C8405,C8418,C8517,C8554	CKSRYB103K50
C8010,C8202,C8207,C8213,C8215	CKSRYB104K16
C8407,C8420,C8422,C8504,C8513	CKSRYB104K16
C8521,C8523,C8525,C8527,C8529	CKSRYB104K16
C8531,C8533,C8535,C8537,C8538	CKSRYB104K16
C8540,C8542,C8544,C8550,C8702	CKSRYB104K16
C8705,C8901,C8903	CKSRYB104K16
C8516	CKSRYB105K6R3
C8514	CKSRYB333K16
C8203	CKSRYB473K50

Mark	No.	Description	Part No.
		RESISTORS	
	R8506		RAB4C101J
A	R8201		RS1/16S1802F
	Other Resistors		RS1/16S###J
		OTHERS	
	CN8012	19P FFC CONNECTOR	52045-1945
	CN8003	13P SOCKET	AKP7070
	CN8009	15P SOCKET	AKP7071
	CN8017	10P FFC CONNECTOR	VKN1414
	X8501	CRYSTAL RESONATOR (20MHz)	VSS1171
	X8201	CRYSTAL RESONATOR (24.576MHz)	XSS3003
B			
		G FRONT-IN ASSY	
		CAPACITORS	
	C4103,C4104		CCSRCH101J50
	C4107,C4111,C4122		CCSRCH471J50
	C4108		CEAL470M16
	C4105,C4109,C4117,C4124		CKSRYB103K50
	C4102,C4106,C4110,C4123		CKSRYB104K25
	C4112,C4113		CKSRYB223K50
C	C4120,C4121		CKSRYF105Z10
		RESISTORS	
	All Resistors		RS1/16S###J
		OTHERS	
	CN4102	19P FFC CONNECTOR	52045-1945
	J4601	BOARD IN LEAD WIRE	ADX7442
	JA4101	PIN JACK(3P)GOLD	AKB7098
	JA4102	OPT. LINK IN	GP1FA513RZ
	JA4103	HEADPHONE JACK	RKN1006
	KN4101	WRAPPING TERMINAL	VNF1084
D			
		H AMP KAWA ASSY	
		SEMICONDUCTORS	
	⚠IC4701	PROTECTOR(7A)	AEK7021
		OTHERS	
	CN4701	17P FFC CONNECTOR	52045-1745
	J4702	LEAD WITH HOUSING	ADX7424
	CN4703	19P SOCKET	AKP7073
	CN4705,CN4706	23P SOCKET	AKP7178
E	4701,4702	PCB BINDER	VEF1040
		I 6CH AMP ASSY	
		SEMICONDUCTORS	
	⚠IC71		NJM7912FA
	⚠IC3301,IC3401		STK402-270
	Q3382		2SA1576A
	Q62		2SB1237X
	Q111, Q3381,Q63		2SC4081
	⚠Q61		2SD2012
F	Q3301,Q3302,Q3401,Q3402		2SD2114K
	Q3501,Q3502,Q3504		2SD2114K
	Q3654		2SD2144S
	Q3653		DTA124EUA
	Q3652		DTA124TK
	⚠Q3383		IRFI9Z34G
	⚠Q3384		IRFIZ34G
	Q3651		RN1901
	Q101, Q103		UMB1N
	Q102, Q104		UMH1N
	⚠D3321-D3326		1SR139-400
	D3327,D3328		1SR139-400
	⚠D3421-D3426		1SR139-400
	D3427,D3428		1SR139-400
	D3387,D3388,D3651-D3655		1SS133
	D101, D102, D3657,D42		1SS355
	⚠D3391,D3392		30PDA20-FC6
	⚠D3381,D3382,D3481,D3482		DAN217
	⚠D3581,D3582		DAN217
	D3389,D3390		MTZJ10C
	⚠D72		MTZJ15C
	D3393,D3394		MTZJ18B
	⚠D63		MTZJ18C
	D3385,D3386		MTZJ36A
	D105, D106, D3658		UDZS7.5B
	TH111		NCP18WF104J03RB
		CAPACITORS	
	C3305,C3306,C3405,C3406		CCSRCH221J50
	C3505,C3506,C62		CCSRCH221J50
	C3309,C3310,C3409,C3410		CCSRCJ3R0C50
	C3509,C3510		CCSRCJ3R0C50
	C3307,C3308,C3407,C3408,C3508		CEAL100M16
	C3507		CEAL470M6R3
	C72		CEAT100M50
	C3651		CEAT101M25
	C101, C102		CEAT1R0M50
	C3323,C3324,C3423,C3424		CEAT221M50
	C3167,C3168,C3178,C3179		CEAT2R2M50
	C3301,C3302,C3317,C3318		CEAT2R2M50
	C3401,C3402,C3501,C3502		CEAT2R2M50
	C3652,C63		CEAT470M25
	C3653		CEAT470M35
	C3321,C3322,C3421,C3422		CEATR22M50
	C3303,C3304,C3403,C3404		CKSRYB102K50
	C3503,C3504		CKSRYB102K50
	C71		CKSRYB473K50
		RESISTORS	
	R3317-R3320,R3417-R3420		ACN7122
	R3517-R3520 (0.22/2W)		ACN7122
	⚠R3327,R3328,R3427,R3428		RD1/4MUF470J
	R3387,R3388		RD1/4PU101J
	R3657		RD1/4PU330J
	⚠R3323,R3324,R3351,R3423,R3424		RS1/16S1R0J
	⚠R3451		RS1/16S1R0J
	R67, R68		RS1/16S2201F
	⚠R62		RS1/16S330J
	R65		RS1/16S4700F
	Other Resistors		RS1/16S###J
		OTHERS	
	CN3001,CN3002	23P PLUG	AKP7064
	CN3651	PLUG(2P)	KM200SA2

Mark No.	Description	Part No.

JAMP OUT ASSY

SEMICONDUCTORS

	Q320, Q321	2SA1037K
	Q303	2SC2712
	Q301, Q302, Q305, Q308–Q310	2SC4081
	Q312, Q318, Q319	2SC4081
	Q307	2SD1858X
	Q313	DTA124EUA
	Q306	DTA143EUA
	Q311, Q317	DTC124EUA
	Q316	DTC143EUA
	Q314	RN2903
	D301, D302, D304–D307, D309	1SS355
	D311–D314, D316, D317	1SS355
	D322–D327	1SS355
	D319	DAN202K
	D303, D310, D315	DAP202K
	D318	UDZS5.1B

COILS AND FILTERS

	L301, L302, L304–L306 AF CHOCKCOIL	ATH-059

SWITCHES AND RELAYS

	RY301–RY304	ASR7008

CAPACITORS

	C336	CCSRCH221J50
	C335	CCSRCH331J50
	C334	CEAT100M50
	C333	CEAT471M6R3
	C301–C304, C316, C318	CKSQYB104K50
	C325–C328	CKSQYB104K50
	C329, C331	CKSRYB102K50
	C337	CKSRYB104K25
	C319–C323	XCG3008

RESISTORS

	R303, R304, R324, R345, R346 (0.1, 2W)	ACN7120
⚠	R309, R310, R330, R351, R352	RD1/2LMF101J
	R358	RD1/2VM103J
⚠	R311, R312, R317–R320, R332	RS1/10S150J
⚠	R336–R341, R353, R354	RS1/10S150J
	R313, R314	RS1/10S222J
⚠	R315, R316	RS1LMF331J
	Other Resistors	RS1/16S###J

OTHERS

	CN301 17P FFC CONNECTOR	52045-1745
	J301 2P CONNECTOR ASSY	ADX7425
	JA301 PIN JACK(1P)	AKB7080
	401 SPEAKER TERMINAL10-P	AKE7093
	CN203 19P PLUG	AKP7062

KENCODER ASSY

SWITCHES AND RELAYS

	S4402	ASX7041
	S4401	ASX7043

RESISTORS

	All Resistors	RS1/16S###J

OTHERS

	4401 5P CABLE HOLDER	51048-0500

LFRONT ASSY

SEMICONDUCTORS

	IC4201	PE5368B
	Q4202,Q4203,Q4210	DTC124EK
	Q4204,Q4206,Q4208	RN1903
	Q4211	RN2903
	D4211	1SS355
	D4201,D4202	DAN202K
	D4207	SLR-343MC
	D4203,D4204,D4208,D4209	SLR-343VC
	D4205,D4206,D4210	SLR-343YC

COILS AND FILTERS

	L4201	LFEA2R2J

CAPACITORS

	C4203	CEJQ221M6R3
	C4205	CEJQ470M10
	C4210-C4213,C4228	CKSRYB102K50
	C4201,C4202,C4204,C4215-C4217	CKSRYB103K50
	C4208,C4245	CKSRYB104K25
	C4220-C4227	CKSRYB473K50

RESISTORS

	All Resistors	RS1/16S###J

OTHERS

	4202 3P CABLE HOLDER	51048-0300
	4206 5P CABLE HOLDER	51048-0500
	CN4201 9P FFC CONNECTOR	52045-0945
	CN4203 15P FFC CONNECTOR	52045-1545
	V4301 FL TUBE	AAV7093
	J4201 JUMPER WIRE 3P	D20PYY0310E
	J4202 JUMPER WIRE 5P	D20PYY0515E
	4201 REMOTE RECEIVER UNIT	SPS-442-E1
	4301 FL HOLDER	VNF1122
	X4201 CERAMIC RESONATOR(5MHz)	VSS1142

MPOWER SW ASSY

SWITCHES AND RELAYS

	S4501	VSG1009

OTHERS

	4501 3P CABLE HOLDER	51048-0300

NPRIMARY ASSY

SEMICONDUCTORS

⚠	IC551	NJM78M56FA
	Q551	2SC4081
	D551–D553, D557	1SS355
⚠	D555	S1VB20/F03
	D554	UDZS5.1B

COILS AND FILTERS

⚠	L501 LINE FILTER	ATF7018

Mark	No.	Description	Part No.
		TRANSFORMERS	
⚠	T501	STANDBY TRANSFORMER	ATT7079
		SWITCHES AND RELAYS	
⚠	RY501		ASR7013
		CAPACITORS	
⚠	C501	(0.01/AC275V)	ACE7013
⚠	C502	(10000P/AC250V)	ACG7033
	C552		CEAT102M25
	C551		CEAT470M25
	C553–C555		CKSRYB103K50
		RESISTORS	
⚠	R504	2.2M/ 1/2W	RCN1080
	R551		RD1/2VM270J
	Other Resistors		RS1/16S###J
		OTHERS	
	H501, H502	FUSE CLIP	AKR7001
⚠	CN502	2P-VH CONNECTOR	B2P3-VH
	CN551	4P CONNECTOR	B4B-PH-K
⚠	CN501	AC CORD SOCKET	RKP1751
	KN501	WRAPPING TERMINAL	VNF1084

OD5V ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTORS	
	IC6001		NJM7805FA
		CAPACITORS	
	C6001		CEHAT331M16
	C6002		CKSRYB473K50
		OTHERS	
	J6001	CONNECTOR ASSY	PF03PG-D10

P12V ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTORS	
	IC601		BA12T
	IC602		NJM7912FA
	D601, D602		RB501V-40
		CAPACITORS	
	C603, C604		CEHAT221M25
	C601, C602		CKSRYB473K50
		OTHERS	
	601	5P CABLE HOLDER	51048-0500

QVHVL ASSY

Mark	No.	Description	Part No.
		SEMICONDUCTORS	
⚠	IC201, IC202	PROTECTOR(10A)	AEK7022
	D320, D321		1SS355
⚠	D201, D202		D5SBA20
		CAPACITORS	
	C203	1/100V	ACH1237
	C207, C208		ACH7161
	C204, C205		CEAT222M50
	C332		CEAT2R2M50
		RESISTORS	
	R362		RD1/2VM332J
⚠	R202		RD1/4MUF100J
		OTHERS	
	CN252	2P-VH CONNECTOR	B2P-VH
	CN201	5P-VH CONNECTOR	B5P-VH
	CN206	6P-VH CONNECTOR	B6P-VH

6. ADJUSTMENT
6.1 TUNER SECTION

■ AM Tuner Section
• There is no adjustment in the AM tuner.

■ FM Tuner Section
• Set the mode selector to FM BAND.
• Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	ANT. Input level and signal condition			Adjustment	
		Frequency (MHz)	Modulation	Input Level (dBμV)	Adjust point	Contents
1	T-METER Adjustment	98	OFF	80	L201	Adjust L201 so that the DC voltage between Pin 21 and Pin 23 of IC201 (Test point Vtm) gets within 0 ± 50mV.

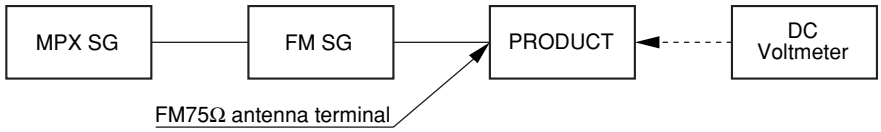


Fig.1 Adjustment Wiring Diagram

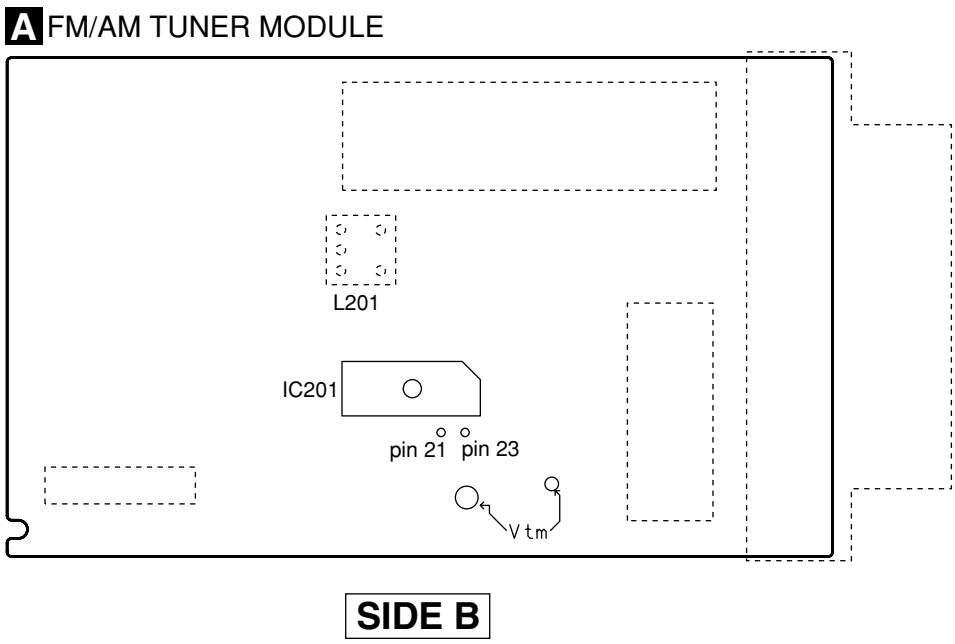


Fig.2 Adjustment Point

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 Test Mode

• How to Enter the Test Mode

With the attached Remote Control Unit

1. Test mode ON "MENU" key

When Test mode is entered, "TEST" is indicated for 5 seconds. Settings other than those described below return to the factory-preset values.

- Function: TV/SAT
- Signal select: AUTO
- Settings for the speakers: All large, SW ON
- No automatic speaker detection
- PRO LOGIC2 EMU mode
- The tuner is preset for Test mode.
- SOUND MODE: OFF

The Protection process (Key Mask for 1 min.) is canceled.

2. Test mode OFF "9" key

When the code is received, Test mode is terminated, and all settings return to the factory-preset values.

With "RECEIVER ⏻ " key, Test mode is also terminated, and all settings return to the factory-preset values.

3.FL/LED check "0" key

Each time the remote control code is received, the indications on the FL and LED change cyclically, as shown below.

All segments on the FL and LED light. → All segments on the FL and LED go off. → "ABCDEFGH" are displayed on the FL, and 1, 3, 5, 7 are displayed on the LED. → "IJKLMNOP" are displayed on the FL, and 2, 4, 6, 8 are displayed on the LED. → Usual display → . . . .

When the code is first received, all segments light.

4. SP relay change "1" key

Each time the remote control code is received, the SP relay is turned off then back on. When the code is first received, the SP relay is turned off.

5. DOLBY Pro Logic2 mode "2" key

When the code is received, settings other than those described below return to the factory-preset values.

- Function: DVD/LD
- Signal select: AUTO
- Distance of Rear speaker: 5 feet
- STANDARD PRO LOGIC2 EMU mode
- Speaker setting: LLLLY

7. MASTER VOL CHANGE "4" key

Each time the remote control code is received, the master volume is changed as follows: minus infinity → 0 dB → . . . .

Each trim becomes 0 dB.

When the code is first received, the master volume becomes minus infinity (MUTE.)

8. 9K/10K CHANGE "5" key

For the FL (international) model only, when the code is received, 9K and 10K can be switched.

When the code is first received, 10K is selected.

9. MIC check "6" key

- Function: TV/SAT
- Signal Select: Analog

When the code is received while the microphone input is being checked, the data for the Function, Listening mode, and Signal Select are returned to those immediately before Microphone Input Check mode was entered, then Microphone Input Check mode is terminated.

- If you wish to hear the sound picked up by the microphone from the speakers, set NJU7312AM to MIC.

10. Automatic detection of speakers "7" key

When the remote control code is received, detection of speakers starts automatically. The results (C_S_W_) will be displayed for 5 seconds. The symbol "O" means the speaker is connected, and "×" means the speaker is not connected.

C301: C×S× W×

11. Analog input check "8" key

When the remote control code is received, Forced Analog Input, and 2-channel STEREO mode are set for all functions.

- Settings for the speakers: All large, SW ON
- When Analog Input Check mode is entered, "SIG:ANA" is displayed for 5 seconds.

12. Digital input check "3" key

When the remote control code is received, Forced Digital Input, and 2-channel STEREO mode are set for all functions.

- Settings for the speakers: All large, SW ON
- When Digital Input Check mode is entered, "SIG:DIG" is displayed for 5 seconds.

13. Bidirectional UART check "STOP" key

TXD (Pin 31) is for output, and RXD (Pin 32) is for input. The unit checks if the input is "L" when the "L" signal is output, and if the output is "H" when the "H" signal is output. After the unit confirms the above, it displays the confirmation "UART OK" for 5 seconds.

14. Version display "1" key

When the code is received, the versions of the main microcomputer, display microcomputer, and DSP are displayed. After the versions of microcomputers are displayed for 5 seconds, DSP version is displayed for 5 seconds.

Examples:

"M011F001": Main microcomputer: Ver. 011, display microcomputer: Ver. 001

"PPP. 031": DSP: Ver. 031

Note : Test mode of No. 1-12 is Preset ID 150.
Test mode of No. 13, 14 is Preset ID 156.

7.1.2 Protection Circuit

● DC detection

Detection method	XPROTECT port (A/D)R397: 56 K-ohms Less than 0.6-0.8 Vdd
Detection start time	2.8 sec after
Process	Mute: On Speaker Relay: Off Shifting to STBY after 3 sec
Display	"AMP ERR" flashes for 3 sec
Recovery	Hold the STANDBY key pressed for 10 sec.
Remarks	The unit will recover if the duration of detection is 3 sec or less.

● Overload detection

Detection method	XPROTECT port (A/D)R363: 27 K-ohms 0.4-0.6 Vdd
Detection start time	2.8 sec after
Process	Mute: On Speaker Relay: Off Shifting to STBY after 3 sec
Display	"OVERLOAD" flashes for 3 sec
Recovery	Press the STANDBY key.
Remarks	

● Fan (temperature) and short-circuit of the power supply circuit

Detection method	XPROTECT port (A/D) 0.4 Vdd or less
Detection start time	1.0 sec after
Process	Mute: On Speaker Relay: Off Shifting to STBY
Display	No display
Recovery	Hold the STANDBY key pressed for 10 sec.
Remarks	

● Fan stop

Detection method	XPROTECT port (A/D) 0.4 Vdd or less
Detection start time	1.0 sec after
Process	Mute: On Speaker Relay: Off Shifting to STBY
Display	No display
Recovery	Hold the STANDBY key pressed for 10 sec.
Remarks	

7.1.3 Specifications of Speaker Detection

1. Purposes

Automatic detection of connected speakers and automatic selection of settings appropriate for the detected speakers allow you to easily play surround-sound without your making cumbersome speaker settings.

2. Speaker detection method

Automatic detection of connected speakers starts 1120 ms after the power is turned on.

• Detection of the center and surround speakers

The microcomputer sends a detection signal and reads the logic of the response signal to judge whether the speaker is connected or not. The response signal is read at A/D input, and a voltage of 3 V or more is judged as no speaker 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 a speaker is connected or not.

3. Speaker settings

According to the results of detection, speaker settings are made as shown below.

Rules: The setting for the front speakers depends on whether a subwoofer is connected or not. If a subwoofer is connected, the setting for the front speakers is "small." Settings for other speakers are "small" or "not connected" depending on the results of detection. Settings for the rear surround speakers are in effect only when surround speakers are connected.

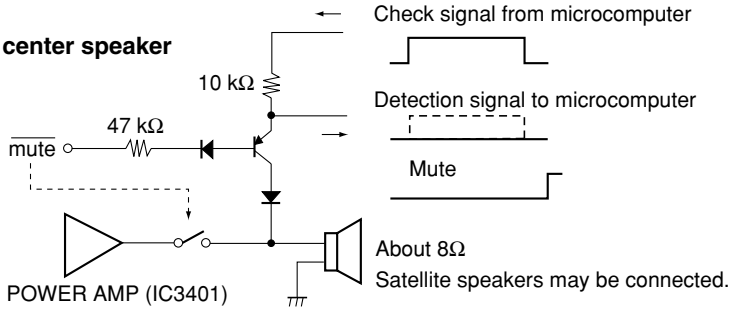
Results of the Detections			Speaker Setting			
Center SP	Surround SP	Sub-woofer	Front SP	Center SP	Surround SP	Sub-woofer
Connected	Connected	Connected	Small	Small	Small	ON
Connected	Connected	Not connected	Large	Small	Small	OFF
Connected	Not connected	Connected	Small	Small	Not connected	ON
Connected	Not connected	Not connected	Large	Small	Not connected	OFF
Not connected	Connected	Connected	Small	Not connected	Small	ON
Not connected	Connected	Not connected	Large	Not connected	Small	OFF
Not connected	Not connected	Connected	Small	Not connected	Not connected	ON
Not connected	Not connected	Not connected	Large	Not connected	Not connected	OFF

4 User's settings

More detailed speaker settings can be made in Setup mode. Once the user's settings are made in Setup mode, those settings have priority. However, if the configuration of connected speakers changes, 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

Detection of the center speaker

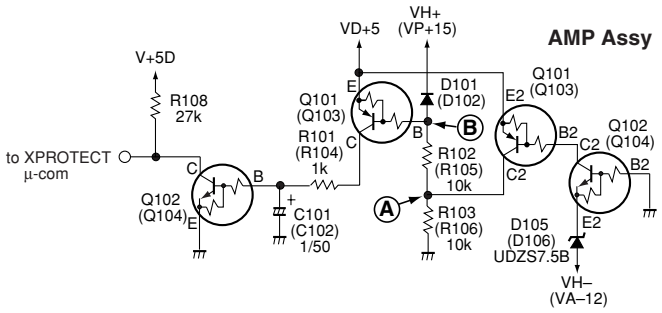


7.1.4 Circuit Description

* Refer to "3. 14 6CH AMP ASSY".

1 Short-circuit-detection circuit for the amplifier power circuit (+15 V[VP+15], VD+5, -12 V [VA-12])

Circuit for shutting the power off when VP+15, VD+5, or VA-12 is short-circuited to ground (GND)



- In Normal mode, as Q101 (Q103) (E2, B2, C2) and Q102 (Q104) (E2, B2, C2) are on, the voltage at Point Ⓐ is about 5 V. The voltage at Point Ⓑ is therefore about the same. As Q101 (Q103) (E, C, B) is off, Q102 (Q104) (E, C, B) is also off.

(1) When VH+(VP+15) is short-circuited to GND

As the voltage at Point Ⓑ becomes almost ground potential, and Q101 (Q103) (E, C, B) then Q102 (Q104) (E, C, B) are turned on, the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

(2) When VH–(VA–12) is short-circuited

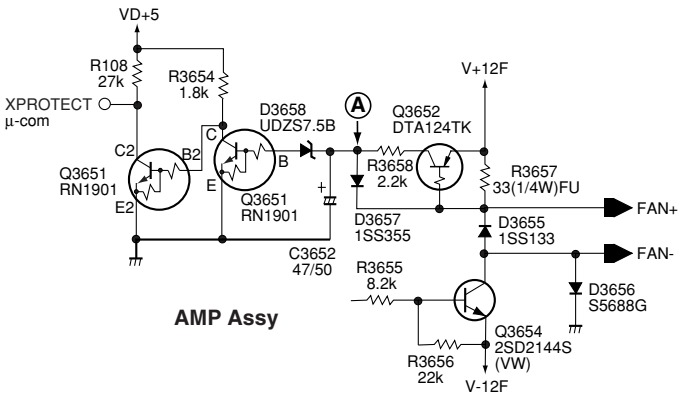
As the electric potential of VE at Q102 (Q104) (E2, C2, B2) becomes the same as that at VB, Q102 (Q104) (E2, C2, B2) is turned off. Following this, Q101 (Q103) (E2, B2, C2) is turned off, which changes the voltage at Points Ⓐ and Ⓑ to a value other than 5 V. Therefore, Q101 (Q103) (E, C, B) then Q102 (Q104) (E, C, B) are turned on, the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

(3) When VD+5 is short-circuited

The level of the XPROTECT line becomes low. The microcomputer detects the XPROTECT level and shuts the power to the unit off.

2 FAN Detection Circuit

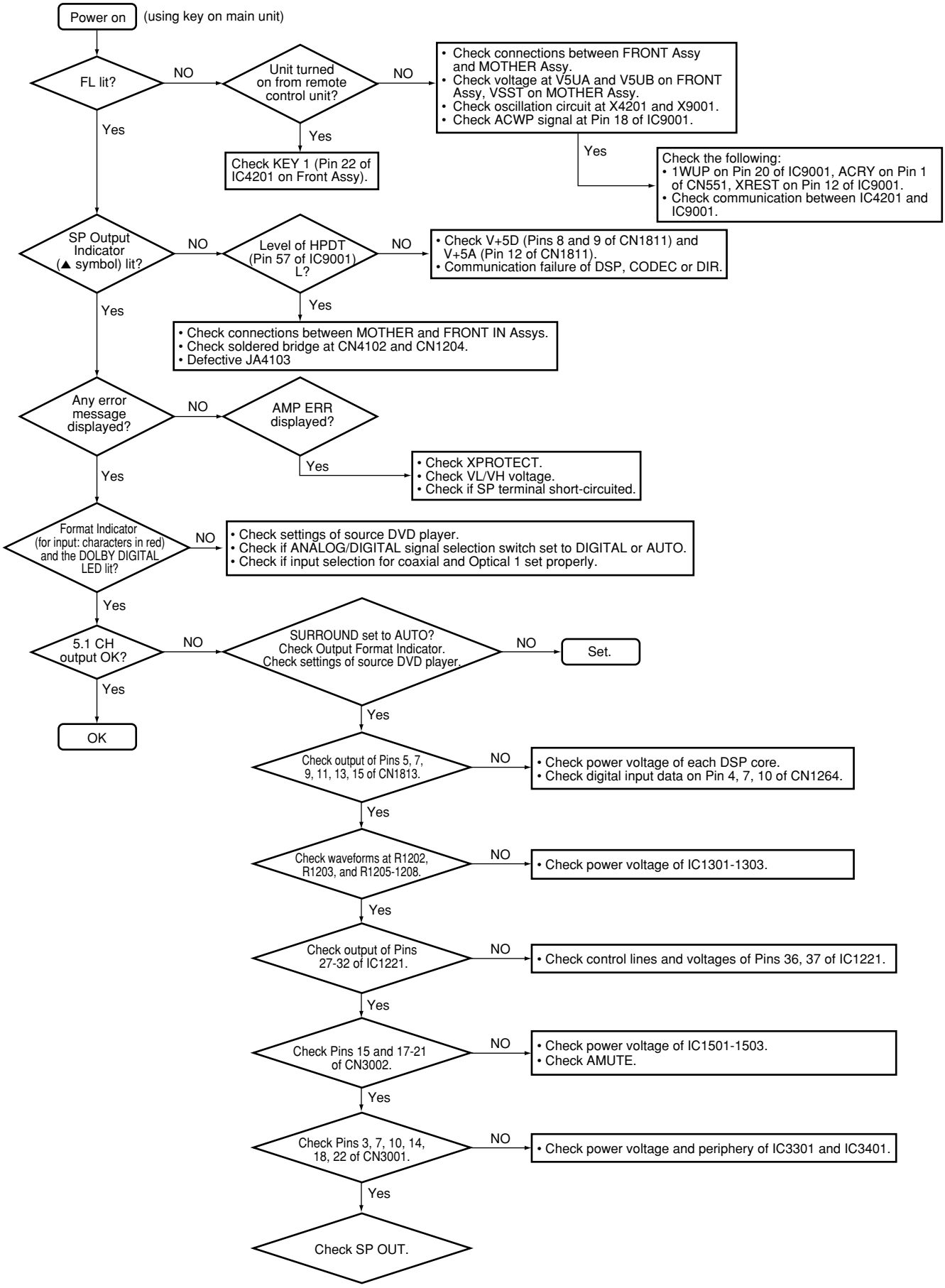


If no fan is connected between FAN+ and FAN-, or when the fan cannot rotate because of a foreign object caught in the blades, the BASE of Q3652 becomes OPEN, and Q3652 and Q3651 (E, C, B) are turned off. Then Q3651 (E2, B2, C2) is turned on, and the level of XPROTECT becomes low.

→ The microcomputer detects the XPROTECT level and shuts the power to the unit off.

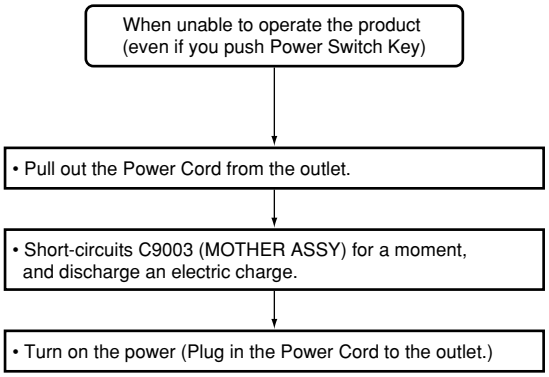
When FAN+ and FAN- are short-circuited, the electric potential at Point (A) becomes higher than GND level by the addition of the values at D3656 and D3657. As this value is lower than that at D3658, Q3651 (E, C, B) is turned off, Q3651 (E2, B2, C2) is turned on, and the level of XPROTECT becomes low.

7.1.5 Troubleshooting



Troubleshooting 2

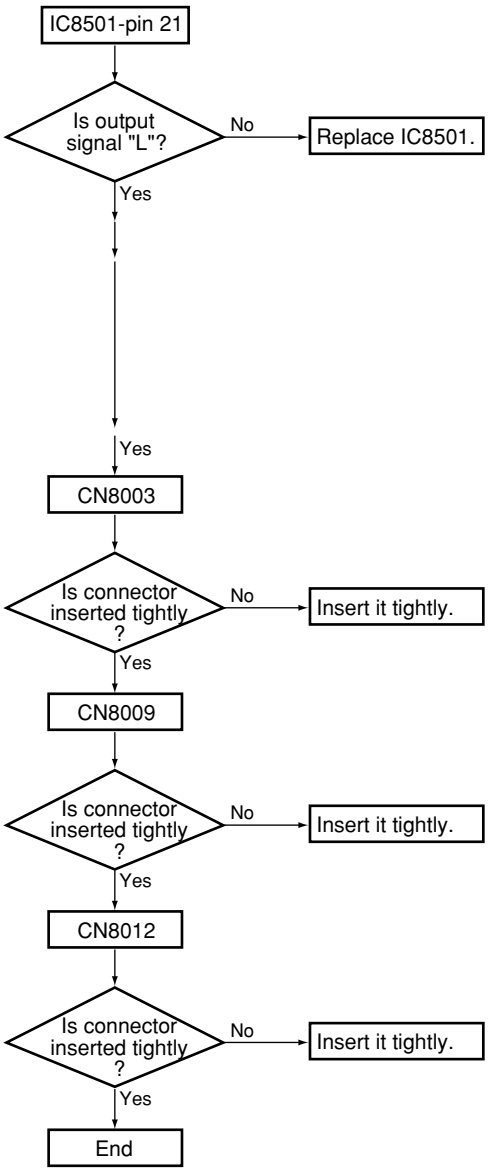
• This troubleshooting is the repair method when the Microcomputer is hanged up by unexpected use environment.



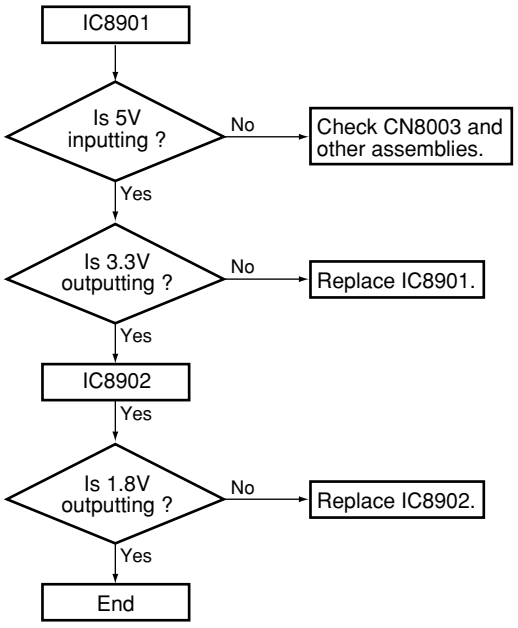
7.1.6 DSP troubleshooting

- When a sound is not out in the surround mode with the digital signal input.
- Suppose C,R parts to be poor contact and that is not damaged.
- This shows failure analysis of DSP Assy.

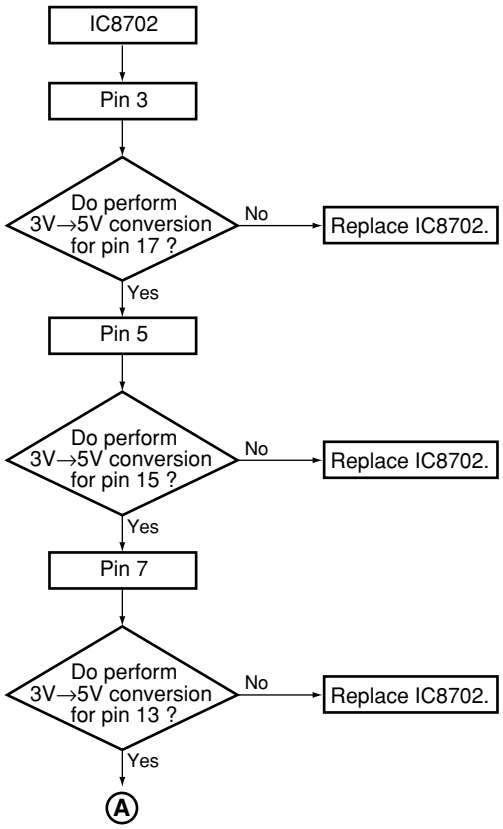
Step 1

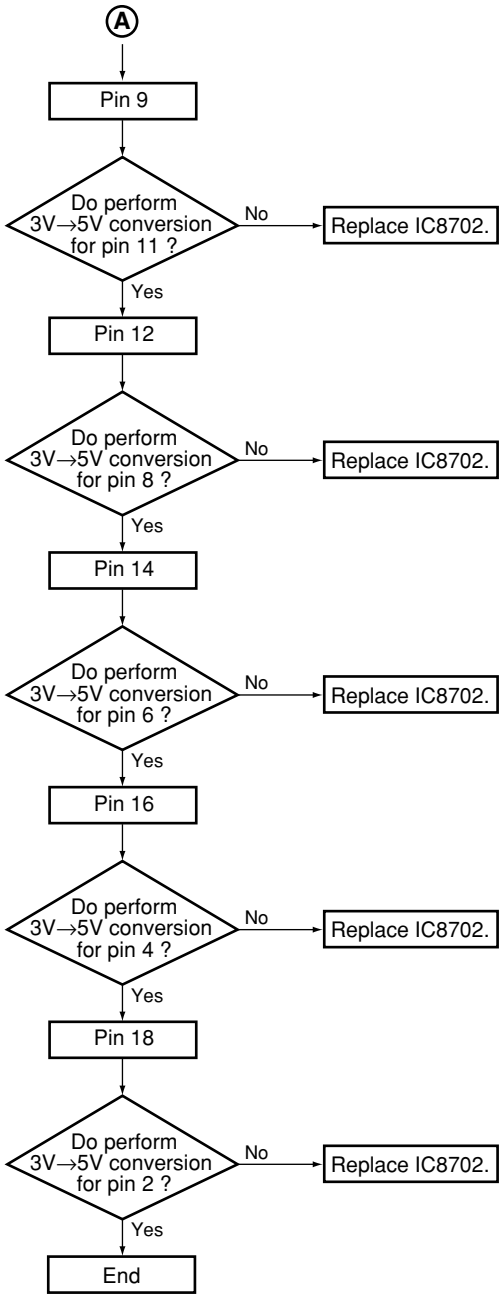


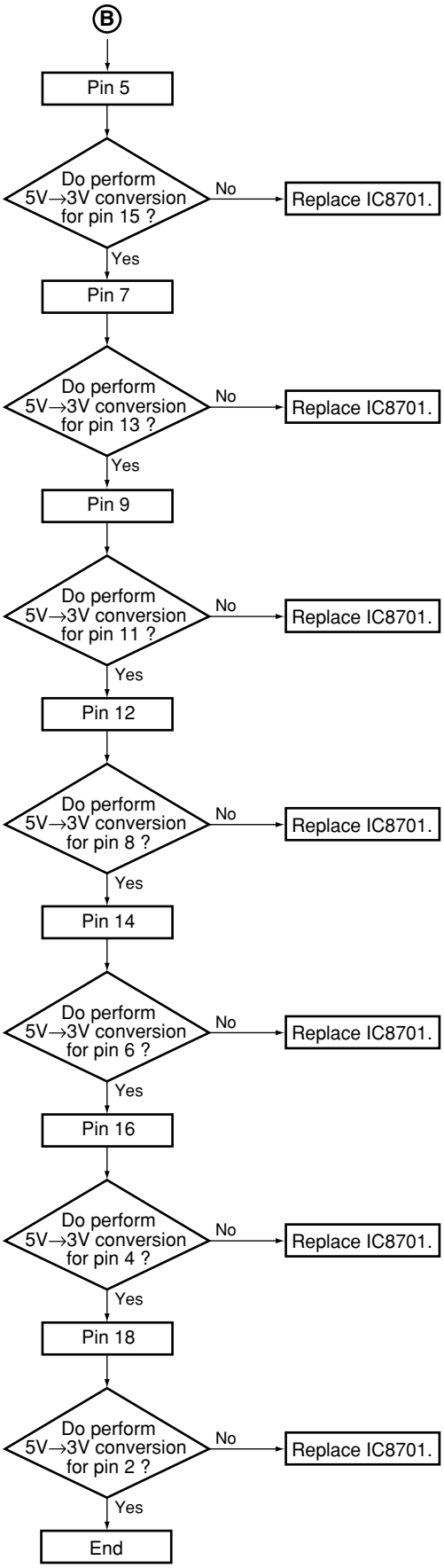
Step 2



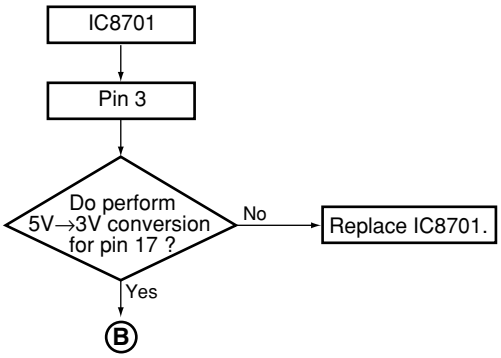
Step 3



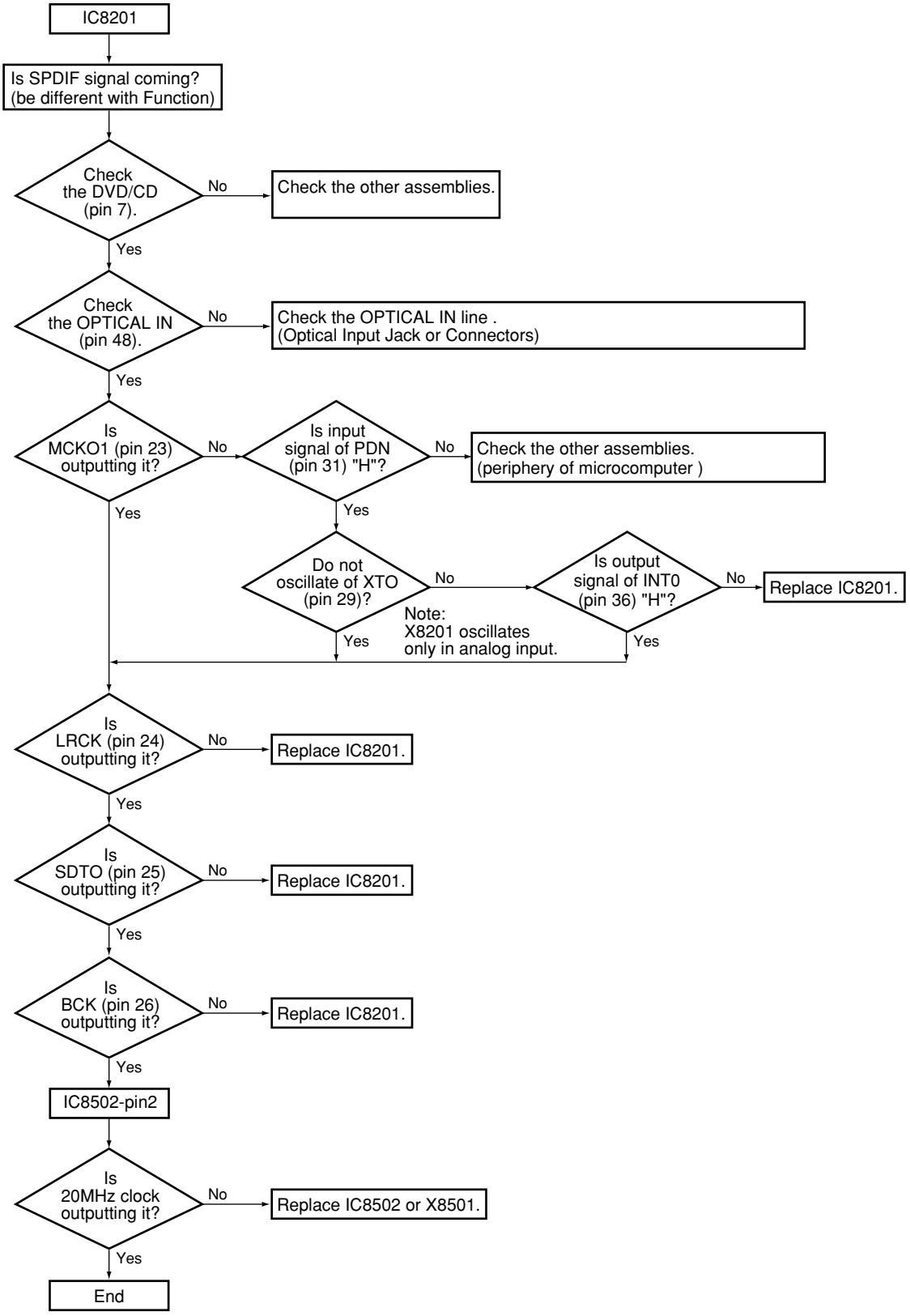

A
Pin 9
Do perform 3V→5V conversion for pin 11 ?
No
Replace IC8702.
Yes
Pin 12
Do perform 3V→5V conversion for pin 8 ?
No
Replace IC8702.
Yes
Pin 14
Do perform 3V→5V conversion for pin 6 ?
No
Replace IC8702.
Yes
Pin 16
Do perform 3V→5V conversion for pin 4 ?
No
Replace IC8702.
Yes
Pin 18
Do perform 3V→5V conversion for pin 2 ?
No
Replace IC8702.
Yes
End


B
Pin 5
Do perform 5V→3V conversion for pin 15 ?
No
Replace IC8701.
Yes
Pin 7
Do perform 5V→3V conversion for pin 13 ?
No
Replace IC8701.
Yes
Pin 9
Do perform 5V→3V conversion for pin 11 ?
No
Replace IC8701.
Yes
Pin 12
Do perform 5V→3V conversion for pin 8 ?
No
Replace IC8701.
Yes
Pin 14
Do perform 5V→3V conversion for pin 6 ?
No
Replace IC8701.
Yes
Pin 16
Do perform 5V→3V conversion for pin 4 ?
No
Replace IC8701.
Yes
Pin 18
Do perform 5V→3V conversion for pin 2 ?
No
Replace IC8701.
Yes
End

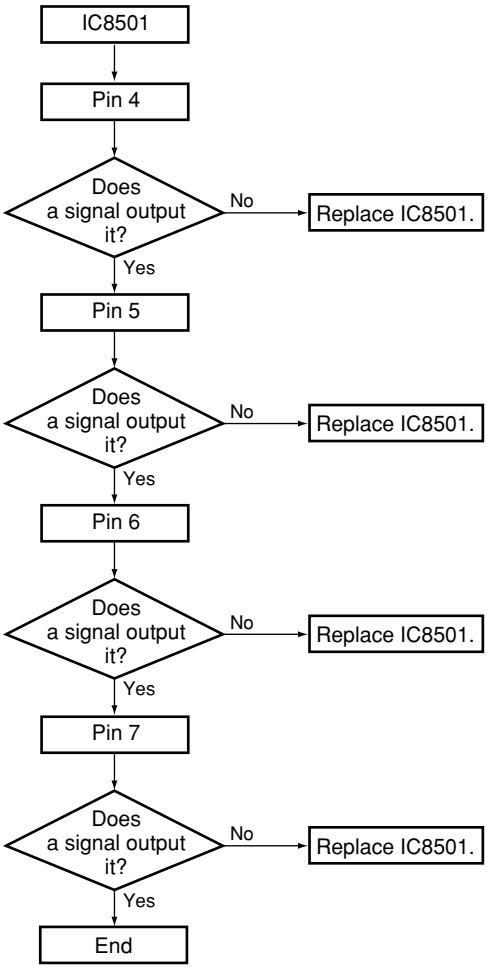
Step 4


IC8701
Pin 3
Do perform 5V→3V conversion for pin 17 ?
No
Replace IC8701.
Yes
B

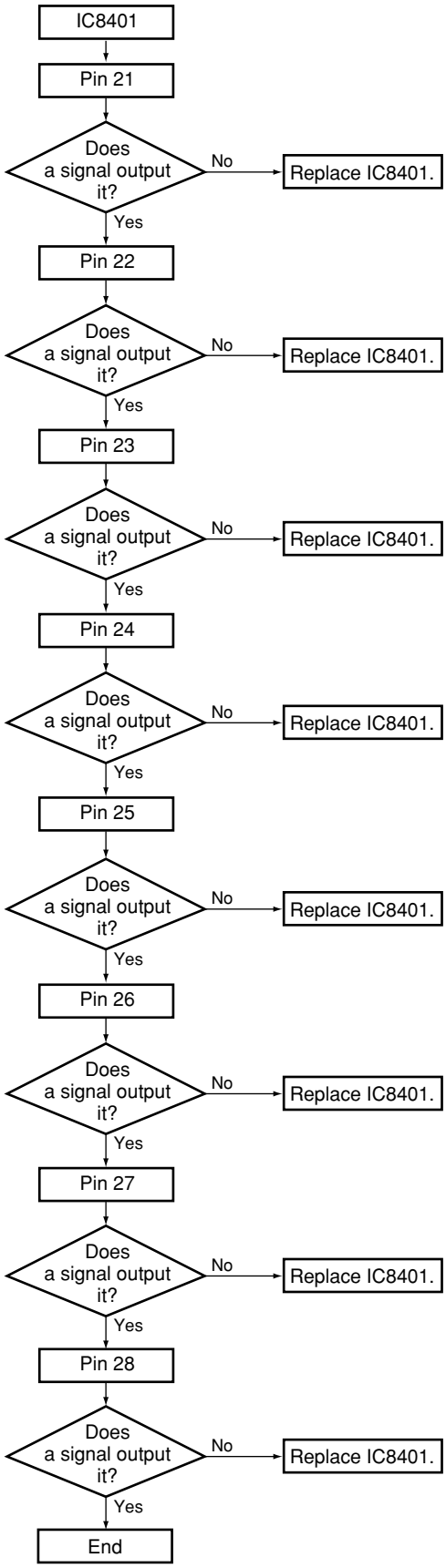
Step 5


IC8201
Is SPDIF signal coming? (be different with Function)
Check the DVD/CD (pin 7).
No
Check the other assemblies.
Yes
Check the OPTICAL IN (pin 48).
No
Check the OPTICAL IN line . (Optical Input Jack or Connectors)
Yes
Is MCKO1 (pin 23) outputting it?
No
Is input signal of PDN (pin 31) "H"?
No
Check the other assemblies. (periphery of microcomputer)
Yes
Yes
Do not oscillate of XTO (pin 29)?
No
Is output signal of INT0 (pin 36) "H"?
No
Replace IC8201.
Note: X8201 oscillates only in analog input.
Yes
Yes
Is LRCK (pin 24) outputting it?
No
Replace IC8201.
Yes
Is SDTO (pin 25) outputting it?
No
Replace IC8201.
Yes
Is BCK (pin 26) outputting it?
No
Replace IC8201.
Yes
IC8502-pin2
Is 20MHz clock outputting it?
No
Replace IC8502 or X8501.
Yes
End

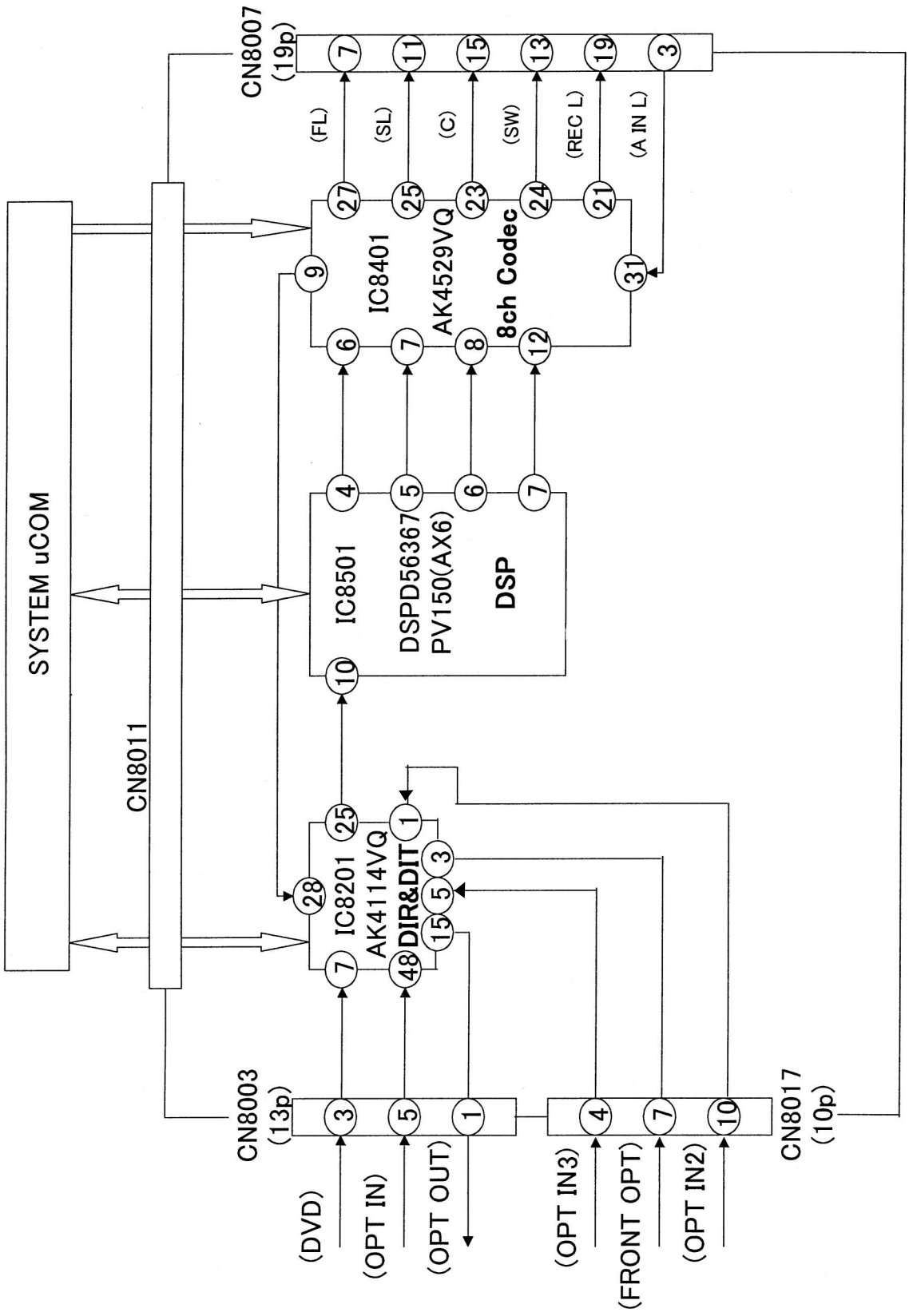
Step 6


IC8501
Pin 4
Does a signal output it?
No
Replace IC8501.
Yes
Pin 5
Does a signal output it?
No
Replace IC8501.
Yes
Pin 6
Does a signal output it?
No
Replace IC8501.
Yes
Pin 7
Does a signal output it?
No
Replace IC8501.
Yes
End

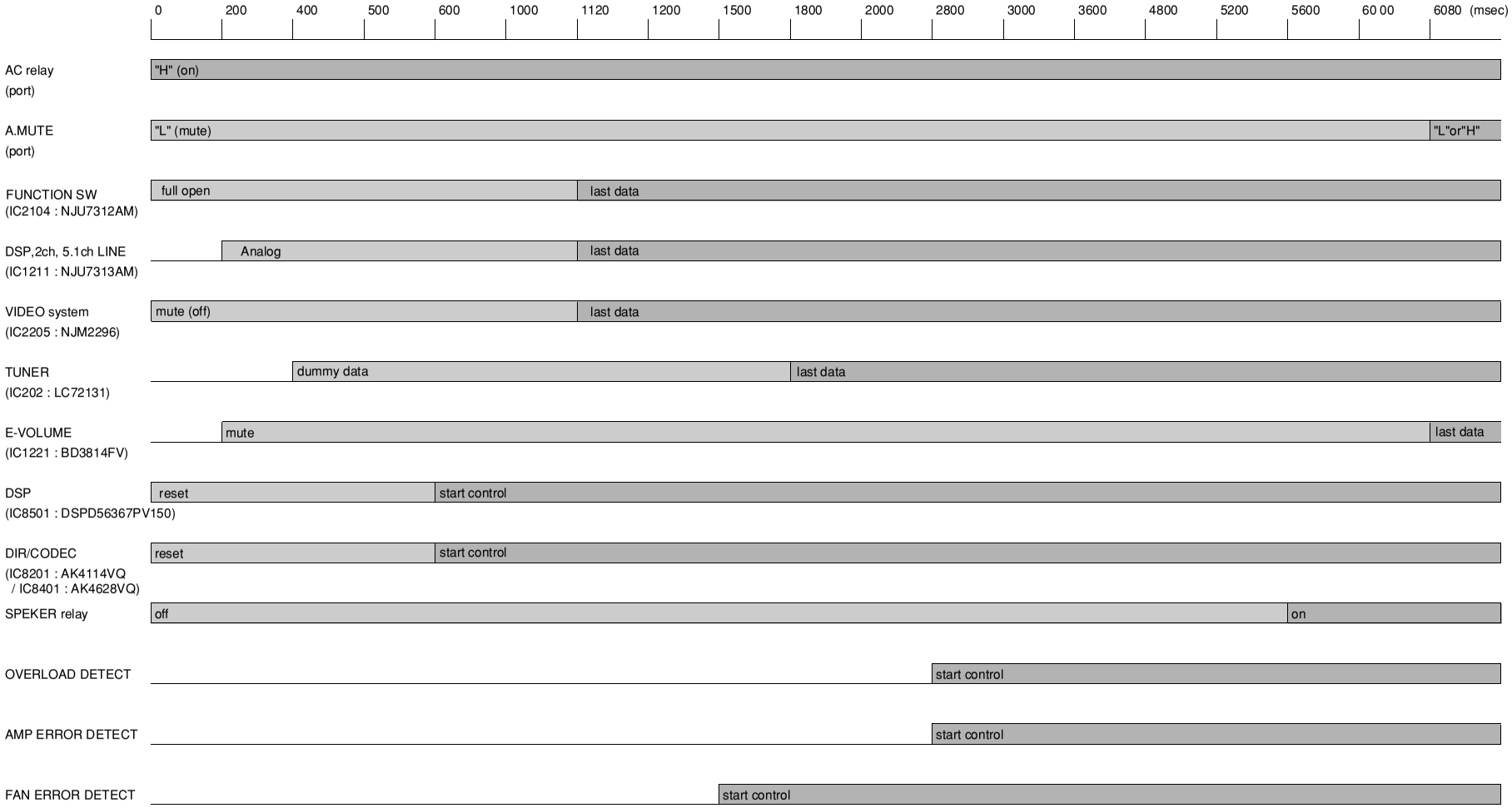
Step 7


IC8401
Pin 21
Does a signal output it?
No
Replace IC8401.
Yes
Pin 22
Does a signal output it?
No
Replace IC8401.
Yes
Pin 23
Does a signal output it?
No
Replace IC8401.
Yes
Pin 24
Does a signal output it?
No
Replace IC8401.
Yes
Pin 25
Does a signal output it?
No
Replace IC8401.
Yes
Pin 26
Does a signal output it?
No
Replace IC8401.
Yes
Pin 27
Does a signal output it?
No
Replace IC8401.
Yes
Pin 28
Does a signal output it?
No
Replace IC8401.
Yes
End

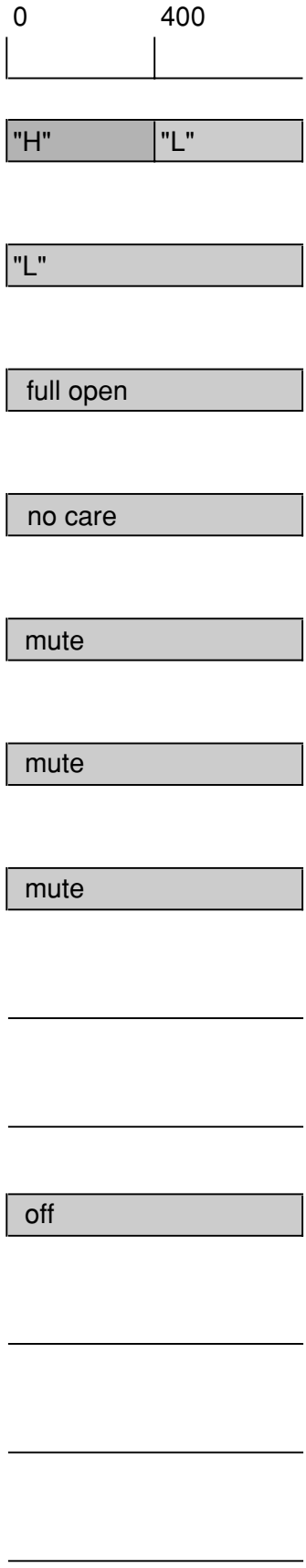
• **DSP WIRING DIAGRAM**



■ Power ON initial timing chart

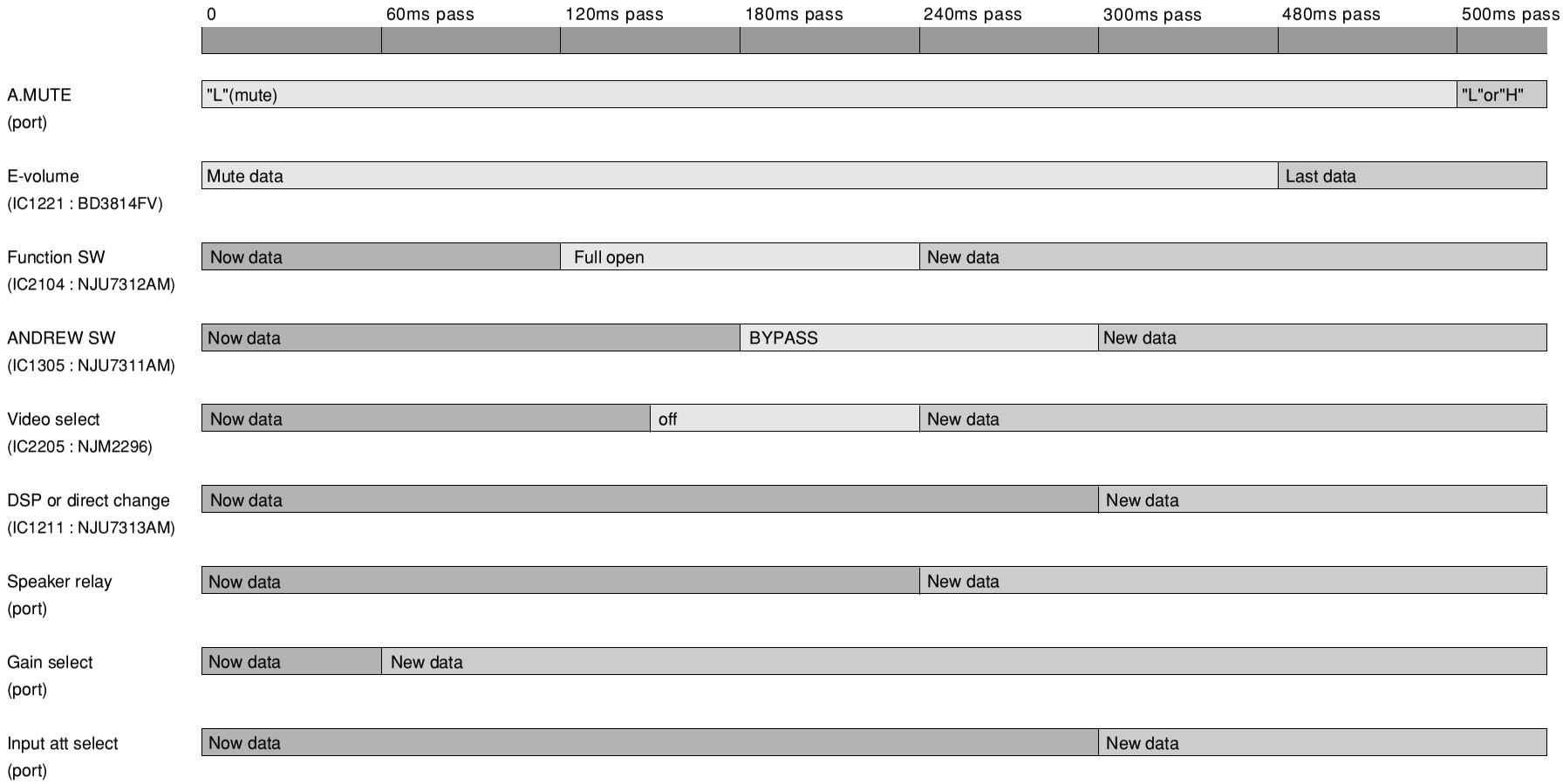


■ Power OFF initial timing chart



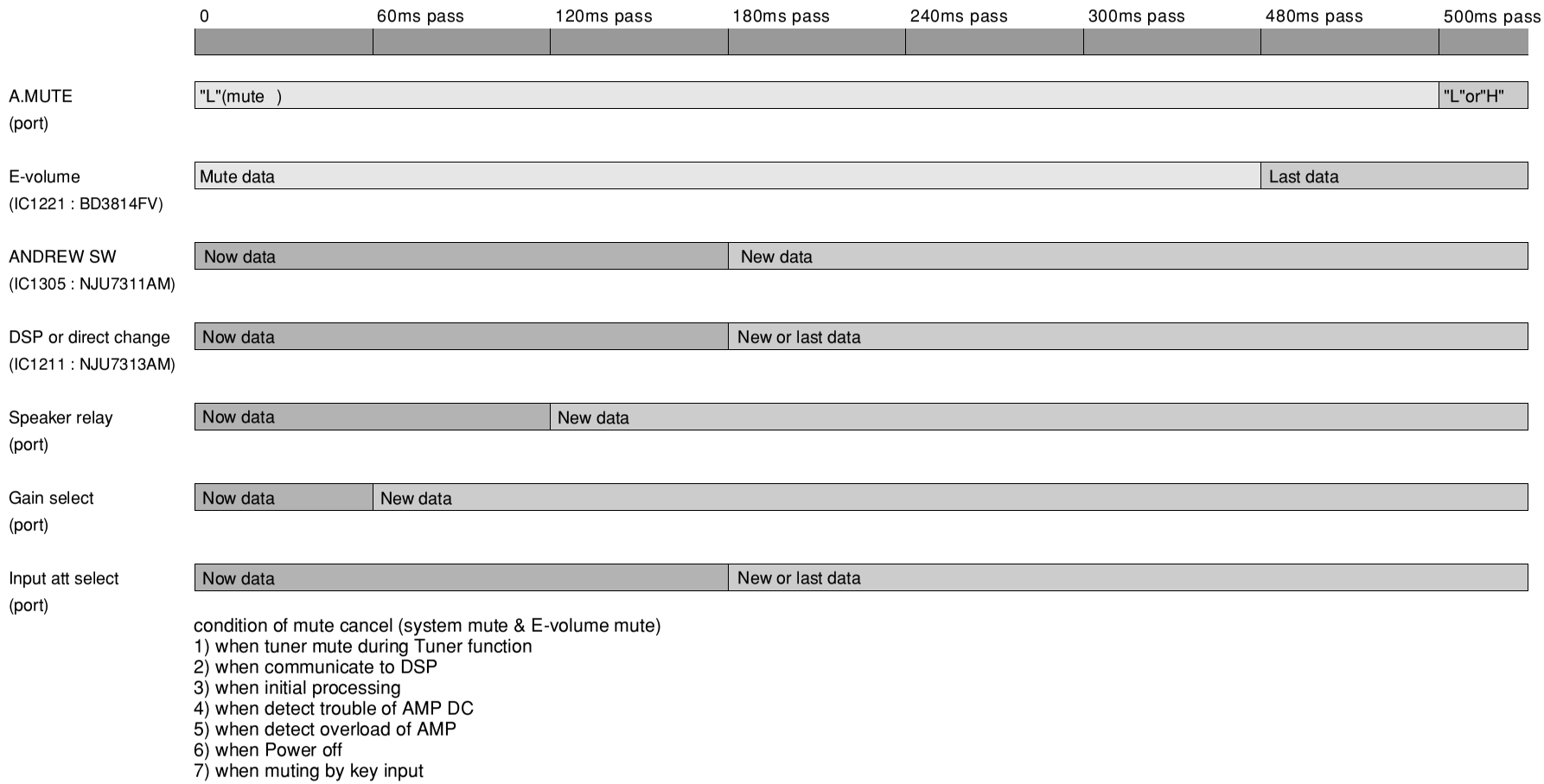
■ IC data transmission timing chart

1.When function chage



Condition of mute cancel (system mute & E-volume mute)
1) when tuner mute during Tuner function
2) when communicate to DSP
3) when initial processing
4) when detect trouble of AMP DC
5) when detect overload of AMP
6) when Power off
7) when muting by key input

2. When except function change



condition of mute cancel (system mute & E-volume mute)
1) when tuner mute during Tuner function
2) when communicate to DSP
3) when initial processing
4) when detect trouble of AMP DC
5) when detect overload of AMP
6) when Power off
7) when muting by key input

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.

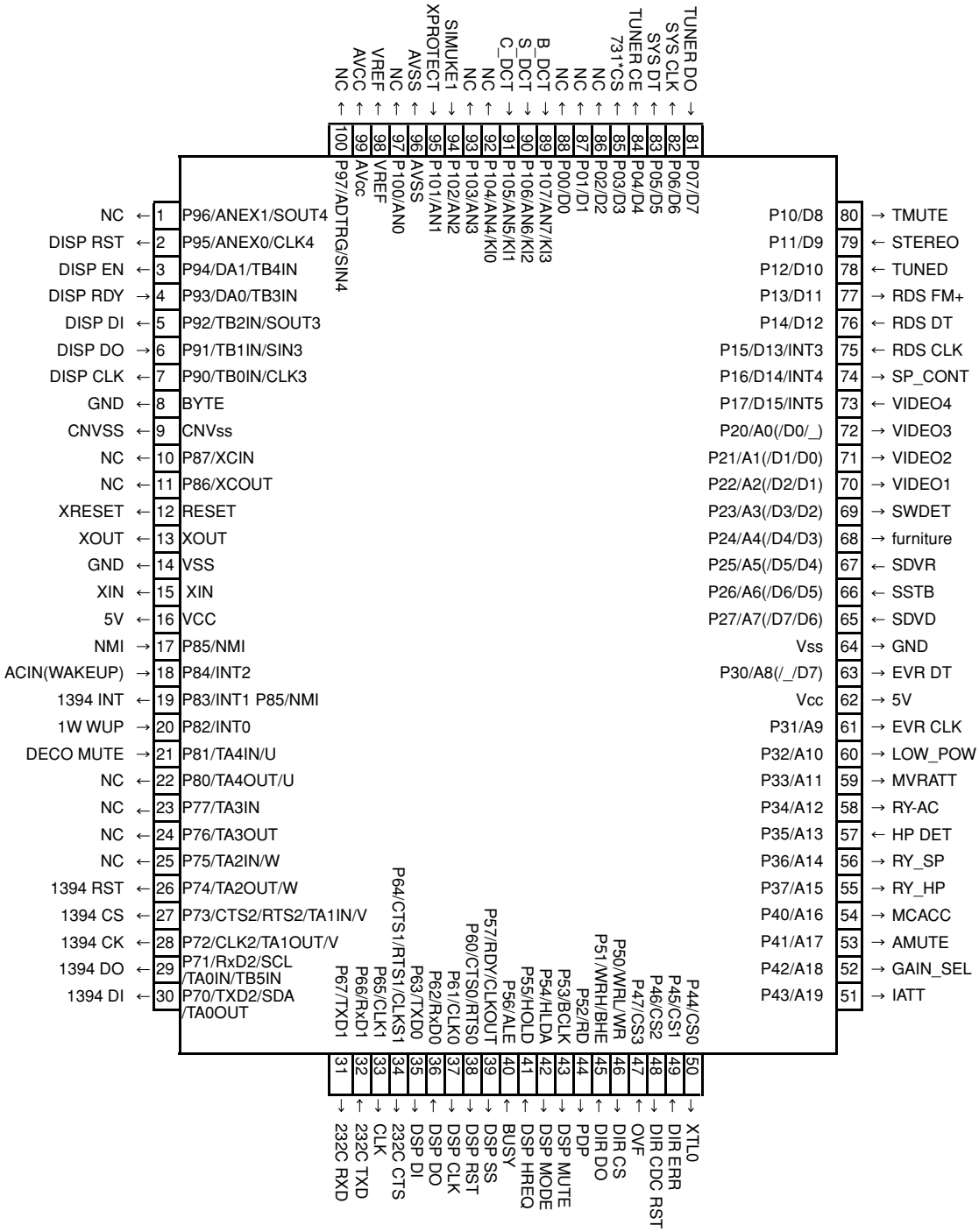
• List of IC

PEG001A, PE5368B, BA7613F

■ PEG001A (MOTHER ASSY : IC9001)

• Main Microcomputer

● Pin Arrangement (Top View)



• Pin Function

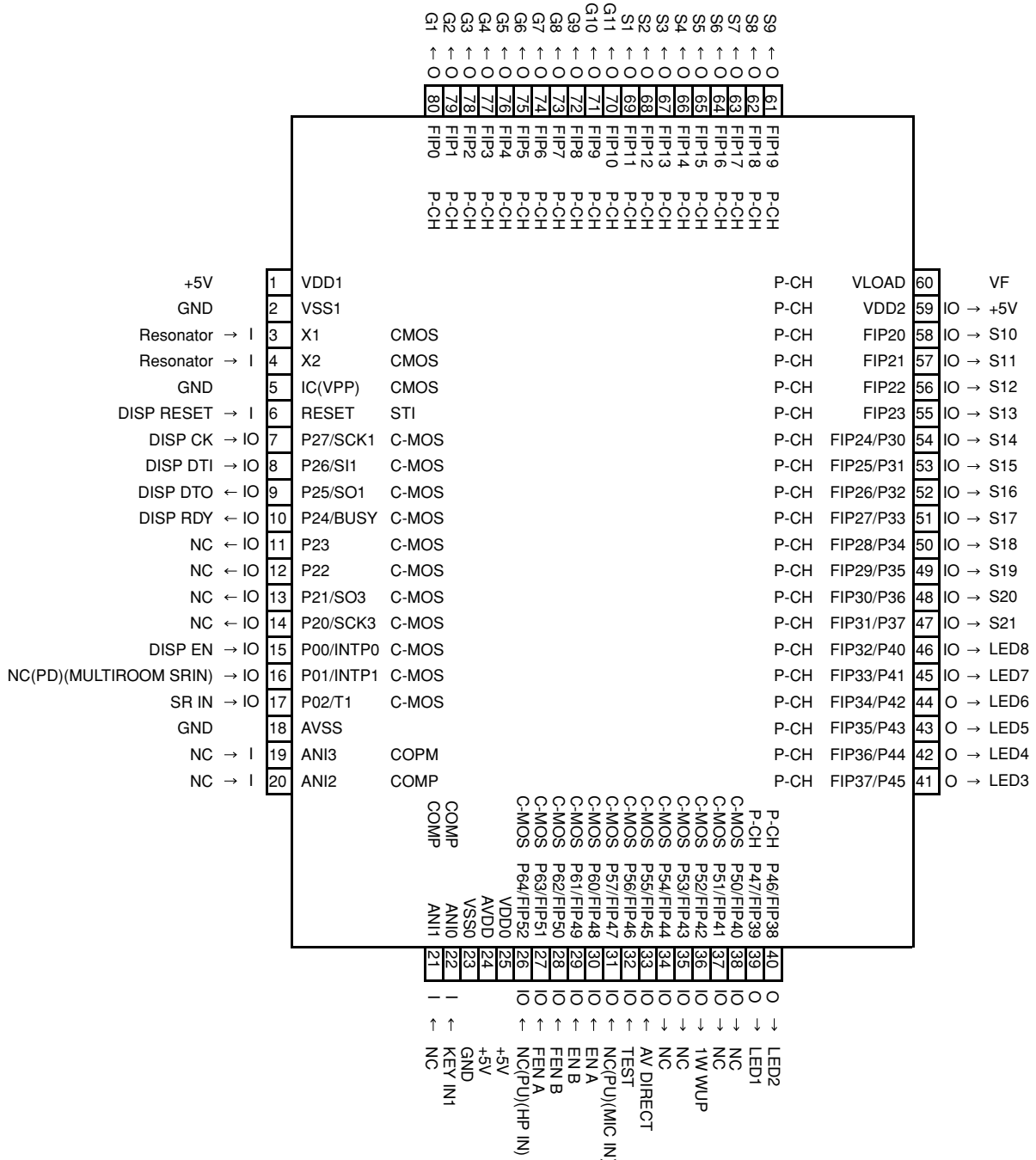
No.	Port	Pin Name	I/O	Pin Function
1	P96/ANEX1/SOUT4	NC	O	"L" fixed
2	P95/ANEX0/CLK4	DISP RST	O	Reset signal to display u-com (H: reset, L: release)
3	P94/DA1/TB4IN	DISP EN	O	Enable signal for communication to display u-com
4	P93/DA0/TB3IN	DISP RDY	I	Ready signal for communication from display u-com
5	P92/TB2IN/SOUT3	DISP DI	O	Data output signal with display u-com
6	P91/TB1IN/SIN3	DISP DO	I	Data input signal with display u-com
7	P90/TB0IN/CLK3	DISP CLK	O	Clock signal for communication with display u-com
8	BYTE	GND	-	
9	CNVss	CNVSS	-	Pull-down by 5k ohm
10	P87/XCIN	NC	O	"L" fixed
11	P86/XCOUT	NC	O	"L" fixed
12	RESET	XRESET	-	
13	XOUT	XOUT	-	
14	VSS	GND	-	
15	XIN	XIN	-	
16	VCC	5V	-	
17	P85/NMI	NMI	I	Not used (pull-up by 100k ohm)
18	P84/INT2	ACIN(WAKEUP)	I	AC pulse input (wakeup)
19	P83/INT1 P85/NMI	1394 INT	O	Not used (Standby for 1394)
20	P82/INT0	1W WUP	I	Wake up signal from display u-com in standby
21	P81/TA4IN/U	DECO MUTE	I	1st DSP detect port
22	P80/TA4OUT/U	NC	O	"L" fixed
23	P77/TA3IN	NC	O	"L" fixed
24	P76/TA3OUT	NC	O	"L" fixed
25	P75/TA2IN/W	NC	O	"L" fixed
26	P74/TA2OUT/W	1394 RST	O	Not used (Standby for 1394) "L" fixed
27	P73/CTS2/RTS2/TA1IN/V	1394 CS	O	Not used (Standby for 1394) "L" fixed
28	P72/CLK2/TA1OUT/V	1394 CK	O	Not used (Standby for 1394) "L" fixed
29	P71/RxD2/SCL/TA0IN/TB5IN	1394 DO	O	Not used (Standby for 1394) "L" fixed
30	P70/TXD2/SDA/TA0OUT	1394 DI	O	Not used (Standby for 1394) "L" fixed
31	P67/TXD1	232C RXD	O	For rewriting 232C (Data output)
32	P66/RxD1	232C TXD	I	For rewriting 232C (Data input)
33	P65/CLK1	CLK	O	It is necessary when writing for JIG
34	P64/CTS1/RTS1/CLKS1	232C CTS	O	For rewriting 232C (Admit communication)
35	P63/TXD0	DSP DI	O	Data output signal for communication with DSP and DIR
36	P62/RxD0	DSP DO	I	Data input signal for communication with DSP
37	P61/CLK0	DSP CLK	O	Clock signal for communication with DSP and DIR
38	P60/CTS0/RTS0	DSP RST	O	Reset signal for DSP (L: reset, H: release)
39	P57/RDY/CLKOUT	DSP SS	O	Slave select signal to DSP
40	P56/ALE	BUSY	I	Not used (Use it in MCACC)
41	P55/HOLD	DSP HREQ	I	DSP error detect signal (pull-down by 100k ohm)
42	P54/HLDA	DSP MODE	O	Mode select of DSP (ROM/RAM) (H: ROM mode, L: RAM mode)
43	P53/BCLK	DSP MUTE	O	DSP ASSY mute
44	P52/RD	PDP	O	H: Data transfer to PDP, L: others
45	P51/WRH/BHE	DIR DO	I	Data input signal for communication with DIR/DAC
46	P50/WRL/WR	DIR CS	O	Chip select signal for communication with DIR/DAC
47	P47/CS3	OVF	I	DIR codec over flag
48	P46/CS2	DIR CDC RST	O	Reset signal for DIR codec
49	P45/CS1	DIR ERR	I	Lock/unlock signal
50	P44/CS0	XTL0	O	DIR X'tal change

No.	Port	Pin Name	I/O	Pin Function
51	P43/A19	IATT	O	Input ATT control signal
52	P42/A18	GAIN_SEL	O	Gain select (5.1ch and Stereo of analog input : H)
53	P41/A17	AMUTE	O	System mute (L: mute ON)
54	P40/A16	MCACC	O	Not used (HP/MIC switching control)
55	P37/A15	RY_HP	O	Headphone relay ON/OFF
56	P36/A14	RY_SP	O	All ch speaker relays ON/OFF
57	P35/A13	HP DET	I	HP detect
58	P34/A12	RY-AC	O	AC relay ON/OFF
59	P33/A11	MVRATT	O	ATT control of master volume (less than -15dB : L)
60	P32/A10	LOW_POW	O	H: Normal mode, L: Stop mode
61	P31/A9	EVR CLK	O	Clock signal for E-volume
62	Vcc	5V	-	
63	P30/A8(/_/D7)	EVR DT	O	Data signal for E-volume
64	Vss	GND	-	
65	P27/A7(/D7/D6)	SDVD	I	Status signal input of DVD SCART
66	P26/A6(/D6/D5)	SSTB	I	Status signal input of STB SCART
67	P25/A5(/D5/D4)	SDVR	I	Status signal input of DVD SCART
68	P24/A4(/D4/D3)	furniture	O	Furniture control signal
69	P23/A3(/D3/D2)	SWDET	I	SWSP detect
70	P22/A2(/D2/D1)	VIDEO1	O	Video signal control 1
71	P21/A1(/D1/D0)	VIDEO2	O	Video signal control 2
72	P20/A0(/D0/_)	VIDEO3	O	Video signal control 3
73	P17/D15/INT5	VIDEO4	O	Video signal control 4
74	P16/D14/INT4	SP_CONT	O	Output signal for SP auto-detection
75	P15/D13/INT3	RDS CLK	I	Clock input signal for RDS module
76	P14/D12 RDS	RDS_DT	I	Data input signal for RDS module
77	P13/D11 RDS	RDS FM+	O	Power ON/OFF of RDS decoder
78	P12/D10	TUNED	I	L : TUNED
79	P11/D9	STEREO	I	L :STEREO
80	P10/D8	TMUTE	O	Tuner mute
81	P07/D7	TUNER DO	I	Data input signal for tuner contorol
82	P06/D6	SYS CLK	O	Clock signal for NJU7312AM switch and tuner contorol
83	P05/D5	SYS DT	O	Data output signal for NJU7312AM switch and tuner contorol
84	P04/D4	TUNER CE	O	Chip select signal for tuner contorol
85	P03/D3	731*CS	O	Chip select signal for NJU7312AM switch
86	P02/D2	NC	O	"L" fixed
87	P01/D1	NC	O	"L" fixed
88	P00/D0	NC	O	"L" fixed
89	P107/AN7/KI3	B_DCT	I	Not used (surround back ch SP detect)
90	P106/AN6/KI2	S_DCT	I	Surround ch SP detect
91	P105/AN5/KI1	C_DCT	I	Center ch SP detect
92	P104/AN4/KI0	NC	O	"L" fixed
93	P103/AN3	NC	O	"L" fixed
94	P102/AN2	SIMUKE1	I	Input 1 to switch region
95	P101/AN1	XPROTECT	I	Ptotection circuit detect for amp. module
96	AVSS	AVSS	-	Connect to VSS
97	P100/AN0	NC	O	"L" fixed
98	VREF	VREF	-	Connect to VCC
99	AVcc	AVCC	-	Connect to VCC
100	P97/ADTRG/SIN4	NC	O	"L" fixed

■ PE5368B (FRONT ASSY : IC4201)

• Display Microcomputer

● Pin Arrangement (Top View)



• **Pin Function**

No.	Port	Pin Name	I/O	Pin Function
1	VDD1	+5V	-	Positive power supply
2	VSS1	GND	-	Ground potential
3	X1	Resonator	-	Crystal connection for system clock oscillation
4	X2	Resonator	-	Crystal connection for system clock oscillation
5	IC(VPP)	GND	-	
6	RESET	DISP RESET	-	Receive reset signal from main u-com
7	P27/SCK1	DISP CK	I	Clock signal from main u-com
8	P26/SI1	DISP DTI	I	Datain from main u-com
9	P25/SO1	DISP DTO	O	Data out to main u-com
10	P24/BUSY	DISP RDY	O	Ready signal from main u-com
11	P23	NC	O/L	
12	P22	NC	O/L	
13	P21/SO3	NC	O/L	
14	P20/SCK3	NC	O/L	
15	P00/INTP0	DISP EN	I	Enable signal from main u-com
16	P01/INTP1	NC	I	
17	P02/T1	SR IN	I	Remote control signal input from main room
18	AVSS	GND	-	Ground potential for A/D converter
19	ANI3	NC	I	
20	ANI2	NC	I	
21	ANI1	NC	I	
22	ANI0	KEY IN1	I	
23	VSS0	GND	-	Ground potential for ports
24	AVDD	'+5V	-	Analog power voltage input to A/D converter
25	VDD0	'+5V	-	Positive power supply to ports
26	P64/FIP52	NC	I	
27	P63/FIP51	FEN A	I	MULTI JOG(Right)
28	P62/FIP50	FEN B	I	MULTI JOG(Left)
29	P61/FIP49	EN B	I	VOLUME JOG1(-)
30	P60/FIP48	EN A	I	VOLUME JOG1(+)
31	P57/FIP47	NC	I	
32	P56/FIP46	TEST	I	Test mode input for checker
33	P55/FIP45	AV DIRECT	I	
34	P54/FIP44	NC	O	
35	P53/FIP43	NC	O	
36	P52/FIP42	1W WUP	O	Output wakeup signal to main u-com
37	P51/FIP41	NC	O/L	
38	P50/FIP40	NC	O/L	
39	P47/FIP39	LED1	O	LED output
40	P46/FIP38	LED2	O	LED output

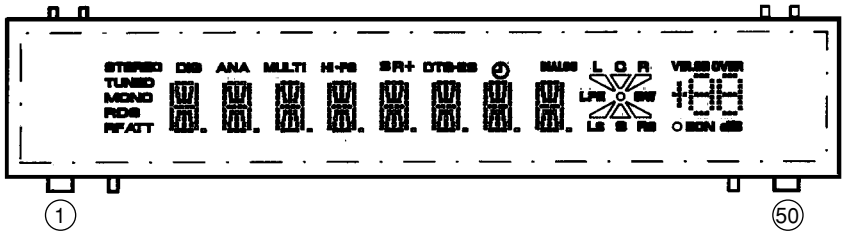
No.	Port	Pin Name	I/O	Pin Function
41	FIP37/P45	LED3	O	LED output
42	FIP36/P44	LED4	O	LED output
42	FIP35/P43	LED5	O	LED output
44	FIP34/P42	LED6	O	LED output
45	FIP33/P41	LED7	O	LED Output
46	FIP32/P40	LED8	O	LED output
47	FIP31/P37	S21	O	Display
48	FIP30/P36	S20	O	Display
49	FIP29/P35	S19	O	Display
50	FIP28/P34	S18	O	Display
51	FIP27/P33	S17	O	Display
52	FIP26/P32	S16	O	Display
53	FIP25/P31	S15	O	Display
54	FIP24/P30	S14	O	Display
55	FIP23	S13	O	Display
56	FIP22	S15	O	Display
57	FIP21	S11	O	Display
58	FIP20	S10	O	Display
59	VDD2	'+5V	-	Positive power supply to FIP controller.
60	VLOAD	VF	-	Pull down resistor connection of FIP controller
61	FIP19	S9	O	Display
62	FIP18	S8	O	Display
63	FIP17	S7	O	Display
64	FIP16	S6	O	Display
65	FIP15	S5	O	Display
66	FIP14	S4	O	Display
67	FIP13	S3	O	Display
68	FIP12	S2	O	Display
69	FIP11	S1	O	Display
70	FIP10	G11	O	Display
71	FIP9	G10	O	Display
72	FIP8	G9	O	Display
73	FIP7	G8	O	Display
74	FIP6	G7	O	Display
75	FIP5	G6	O	Display
76	FIP4	G5	O	Display
77	FIP3	G4	O	Display
78	FIP2	G3	O	Display
79	FIP1	G2	O	Display
80	FIP0	G1	O	Display

7.2.2 DISPLAY

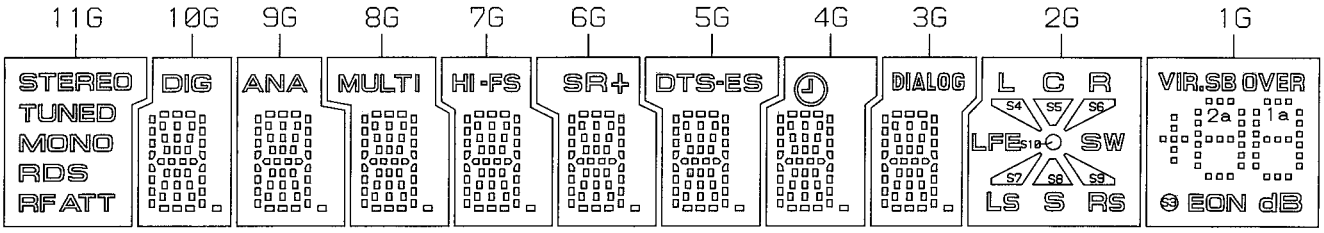
■ AAV7102 (FRONT ASSY : V4301)

• FL Display

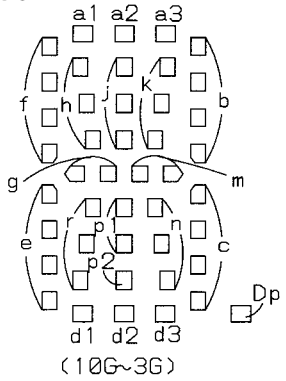
● Pin Assignment

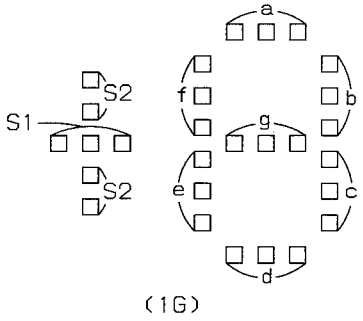


● Grid Assignment



● Segment Designation





● Pin Connection

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
CONNECTION	F1	NX	NP	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	P1	P2	P3	P4	P5	P6	P7	P8	P9	NX	NX	NX	NX	NX	NX	NX	NX	NX	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	NP	NP	NX	F2

NOTE
1) F1,F2 --- Filament
2) NP ------ No pin
3) NX ------ No extend pin
4) DL ------ Datum Line
5) 1G~11G --- Grid
6) Solder composition is Sn-3Ag-0.5Cu.

● **Anode Connection**

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	STEREO	a1	a1	a1	a1	a1	a1	a1	a1	L	OVER
P2	TUNED	a2	a2	a2	a2	a2	a2	a2	a2	S4	2a
P3	MONO	h	h	h	h	h	h	h	h	C	2b
P4	RDS	j	j	j	j	j	j	j	j	S5	2f
P5	RF	k	k	k	k	k	k	k	k	R	2g
P6	ATT	b	b	b	b	b	b	b	b	S6	2c
P7	–	f	f	f	f	f	f	f	f	LFE	2e
P8	–	m	m	m	m	m	m	m	m	S10	2d
P9	–	g	g	g	g	g	g	g	g	SW	1a
P10	–	c	c	c	c	c	c	c	c	S7	1b
P11	–	e	e	e	e	e	e	e	e	S8	1f
P12	–	r	r	r	r	r	r	r	r	S9	1g
P13	–	p1	p1	p1	p1	p1	p1	p1	p1	LS	1c
P14	–	n	n	n	n	n	n	n	n	S	1e
P15	–	d1	d1	d1	d1	d1	d1	d1	d1	RS	1d
P16	–	d2	d2	d2	d2	d2	d2	d2	d2	–	S1
P17	–	Dp	Dp	Dp	Dp	Dp	Dp	Dp	Dp	–	S3
P18	–	a3	a3	a3	a3	a3	a3	a3	a3	–	VIR.SB
P19	–	p2	p2	p2	p2	p2	p2	p2	p2	–	EON
P20	–	d3	d3	d3	d3	d3	d3	d3	d3	–	S2
P21	–	DIG	ANA	MULTI	HI-FS	DEX	DTS-ES		DIALOG	–	dB

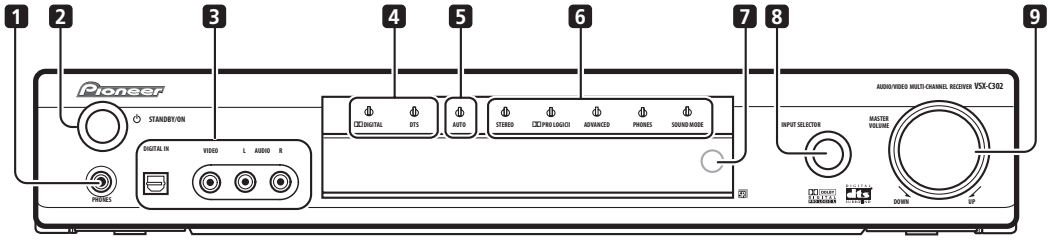
7.3 CLEANING

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

8. PANEL FACILITIES

Front panel



1 PHONES jack
When headphones are connected there is no sound output from the speakers.

2 ⏻ STANDBY/ON button
Press to switch the receiver on or into standby.

3 FRONT INPUT jacks
Use to connect an audio/video component.

4 Digital surround format indicators

DIGITAL indicator
Lights when the current source is Dolby Digital.

DTS indicator
Lights when the current source is DTS.

5 AUTO indicator
Lights when Auto audio format decoding is selected.

6 Listening mode indicators

STEREO indicator
Lights when the source is stereo and/or the listening mode has been set to**STEREO**.

PRO LOGIC II indicator
Lights when one of the Dolby Pro Logic II surround modes is active with a 2 channel (stereo) source.

ADVANCED indicator
Lights when one of the Advanced Surround modes is active.

PHONES indicator
Lights when phones surround mode is active.

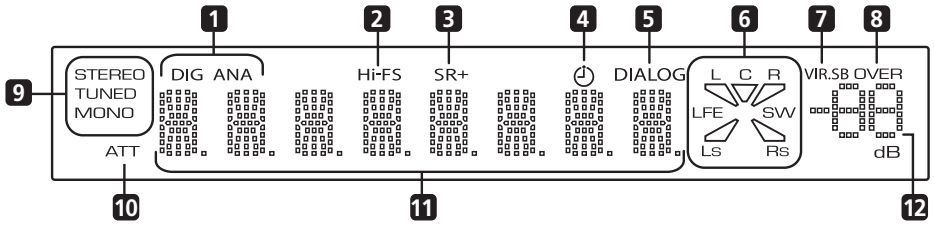
SOUND MODE indicator
Lights when one of the Sound Modes is active.

7 Remote control sensor

8 INPUT SELECTOR knob
Turn to cycle through the various inputs. The current input is shown in the front panel display.

9 MASTER VOLUME knob
Use to adjust the volume.

Display



1 DIG (digital) / ANA (analog)
Indicates whether the current input source is analog or digital.

2 Hi-FS
Lights when the current input signal is 88.2/96 kHz digital.

3 SR+
Lights when the Control Mode Setting is set to**SR+ ON** for a connected plasma display to control this receiver.

4 Sleep timer indicator
Lights when the sleep timer has been set.

5 DIALOG indicator
Lights when Dialog Enhancement is on

6 Input/output channel indicators
The letters**L**, **C**, **R**, **LFE**, **Ls** and **Rs** indicate the input channels coming into the receiver. The segments and **SW** (subwoofer) indicate the active speaker output channels.

7 VIR.SB indictor
Lights when the Virtual Surround Back effect is on.

8 OVER
Lights when the input signal is too high, risking distortion. Use the input attenuator to reduce the level.

9 Tuner indicators

STEREO
Lights when listening to a stereo FM broadcast in auto/stereo mode.

TUNED
Lights when tuned to a broadcast.

MONO
Lights when the tuner MPX mode is set to mono.

10 ATT
Lights when the input attenuator is on.

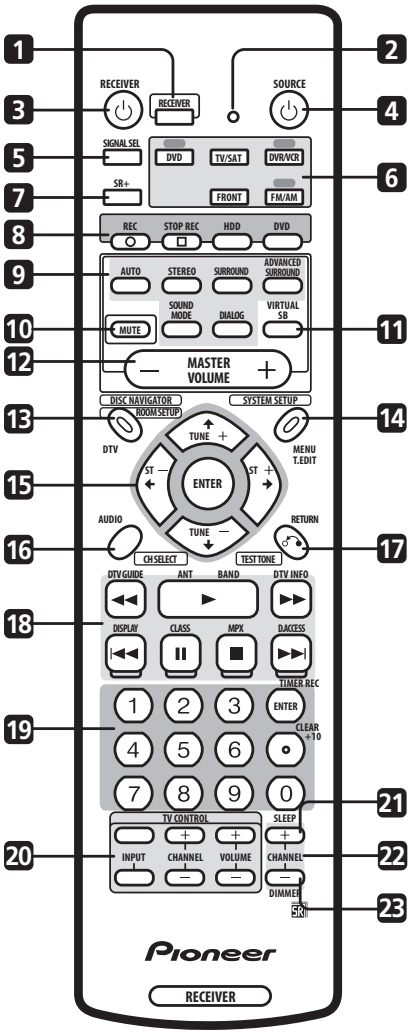
11 Character display

12 Volume level indicator
Indicates the volume level in dB.

Remote control

Function names printed in green on the remote control are receiver-related functions. Function names printed in blue are for the built-in tuner .

Other functions relate to other equipment that you can control using this remote.



1 RECEIVER
Press to put the remote in ërecieverí mode (i.e., the remote controls the receiver functions).

2 LED
Indicates a remote control operation.

3 ⏻ RECEIVER
Press to switch the receiver on or into standby.

4 ⏻ SOURCE
Press to switch the current source component on or into standby.

5 SIGNAL SEL
Use to select the analog (**ANA**) or digital (**DIG**)signal for the **DVD**, **TV/SAT**, **DVR/VCR** and **FRONT** inputs.

6 Input/remote control mode select buttons

When the Remote Direct function is set to on, these buttons (except **FM/AM**) change the remote mode and the receiver input simultaneously. When set to off, they only switch the remote mode.

DVD
Press to select **DVD** as the current input.

TV/SAT
Press to select **TV/SAT** (sattellite tuner) as the current input.

DVR/VCR
Press to select **DVR/VCR** as the current input.

FRONT
Press to select **FRONT** (the front panel audio/video inputs) as the current input.

FM/AM
Press to select **FM/AM** (the built-in tuner) as the current input.

7 SR+
Switches the SR+ mode on/off.

8 DVD recorder control buttons
When set up, these buttons can be used to control a Pioneer DVD recorder.

REC ●
Press to start recording.

STOP REC □
Press to stop recording.

HDD
Press to switch the recorder to HDD playback/ recording.

DVD
Press to switch the recorder to DVD playback/ recording.

9 Sound buttons

AUTO
Press to select the **AUTO** (default) sound for the current source (stereo, Dolby Digital, DTS, etc.) and switch off all other sound processing.

STEREO
Press to hear the current source in stereo.

SURROUND
Use to select a **SURROUND** mode for the current source.

ADVANCED SURROUND
Use to select an **ADVANCED SURROUND** mode for the current source.

SOUND MODE
Use to select a **SOUND MODE** for the current source.

DIALOG
Press to switch on/off **DIALOG** (dialog enhancement).

10 MUTE
Press to mute all output. Press again (or adjust the volume using the **MASTER VOLUME** control) to restore the sound.

11 VIRTUAL SB
Press to switch on/off the virtual surround back mode.

12 MASTER VOLUME
Use to adjust the volume.

13 ROOM SETUP
Use to select a preset room setup.

14 SYSTEM SETUP
Press to access the **SYSTEM SETUP** menu to make detailed receiver settings.

15 Cursor keys and ENTER
Use to navigate menus and select options/execute commands.

16 CH SELECT
First press **RECEIVER**, then press **CH SELECT** repeatedly to select a speaker channel to adjust.

17 TEST TONE
First press **RECEIVER**, then press **TEST TONE** to start/stop the test tone.

18 Playback controls
Playback controls for external components, such as DVD and CD players.

Functions printed in blue control the built-in tuner; other functions control other external equipment.

19 Number buttons
Use for numerical input of track numbers, radio frequencies, and so on.

20 TV CONTROL buttons
Use to control your TV (after setting up the remote control to work with your TV).

21 SLEEP
Use to set the sleep timer.

22 CHANNEL +/–
Use to change channels on a satellite receiver, cable box, VCR or DVR.

23 DIMMER
First press **RECEIVER**, then press **DIMMER** repeatedly to change the brightness/switch off the front panel display. The display will light brightly for about two seconds when you operate the receiver with the display off or dimmed. (Note that the master volume indicator always remains lit, even when the rest of the display is off.)

Operating range of the remote control

The remote control may not work properly if:

There are obstacles between the remote control and the receiver's remote sensor.

Direct sunlight or fluorescent light is shining onto the remote sensor.

The receiver is located near a device that is emitting infrared rays.

The receiver is operated simultaneously with another infrared remote control unit.