

**Service
Manual**



VSX-C402-S

ORDER NO.
RRV2919

AUDIO/VIDEO MULTI-CHANNEL RECEIVER

VSX-C402-S
VSX-C402-K

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

Model	Type	Power Requirement	Remarks
VSX-C402-S	MYXU	AC220-230V	
VSX-C402-K	MYXU	AC220-230V	
VSX-C402-S	NVXU	AC230V	



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

1234

SAFETY INFORMATION

A



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.

B

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

C

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.

Device under test

Test all exposed metal surfaces

Also test with plug reversed (Using AC adapter plug as required)

Leakage current tester

Reading should not be above 0.5 mA

Earth ground

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.

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VSX-C402-S

[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.

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1. SPECIFICATIONS

Amplifier section

Continuous Power Output (STEREO mode)

Front. 40 W + 40 W
(DIN 1 kHz, THD 1 %, 8 Ω)

Continuous Power Output (SURROUND mode)

Front. 50 W/ch (DIN 1 kHz, THD 1 %, 8 Ω)
Center 50 W (DIN 1 kHz, THD 1 %, 8 Ω)
Surround. 50 W/ch (DIN 1 kHz, THD 1 %, 8 Ω)

RMS Power Output

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

- Above specifications are applicable when the power supply is 230V.

Audio section

Input (Sensitivity/Impedance) 200 mV/47 kΩ
Output (Level/Impedance)
VIDEO, DVR/TV. 200 mV/2.2 kΩ

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:15.2 dBf, IHF (1.6 μV/ 75 Ω)
50 dB Quieting Sensitivity. Mono: 20.2 dBf
Stereo: 41.2 dBf
Signal-to-Noise Ratio. Mono: 76 dB (at 85 dBf)
Stereo: 72 dB (at 85 dBf)
Signal-to-Noise Ratio (DIN). Mono: 62 dB
Stereo: 58 dB

Distortion Stereo: 0.6 % (1 kHz)
Alternate Channel Selectivity 70 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. 531 kHz to 1,602 kHz (9 kHz step)
Sensitivity (IHF, Loop antenna). 350 μV/m
Selectivity 30 dB
Signal-to-Noise Ratio. 50 dB
Antenna. Loop antenna

Miscellaneous

Power Requirements

UK model AC 230 V, 50/60 Hz
European model. AC 220 – 230 V, 50/60 Hz
Power Consumption 150 W
In standby (AV Direct off) 0.4 W
Dimensions. 420 (W) × 70 (H) × 383 (D) mm
Weight (without package) 6.5 kg

Furnished parts

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

Note

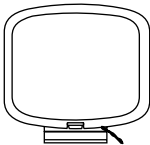
- Specifications and the design are subject to possible modifications without notice, due to improvements.

Manufactured under license from Dolby Laboratories.
"Dolby", "Pro Logic", and the double-D symbol are
trademarks of Dolby Laboratories.

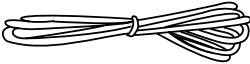
"DTS" and "DTS Digital Surround" are trademarks of
Digital Theater Systems, Inc.

● Accessories

• AM loop antenna
(ATB7009)



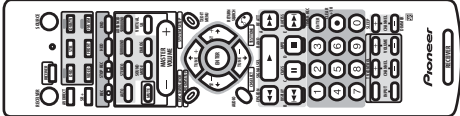
• FM wire antenna
(ADH7030)



• Power Cable (MYXU Type)
(ADG1154)



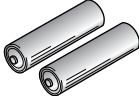
• Remote Control Unit
(AXD7386)



• Power Cable (NVXU Type)
(ADG1156)



• Dry Cell Battery (R6P, AA)

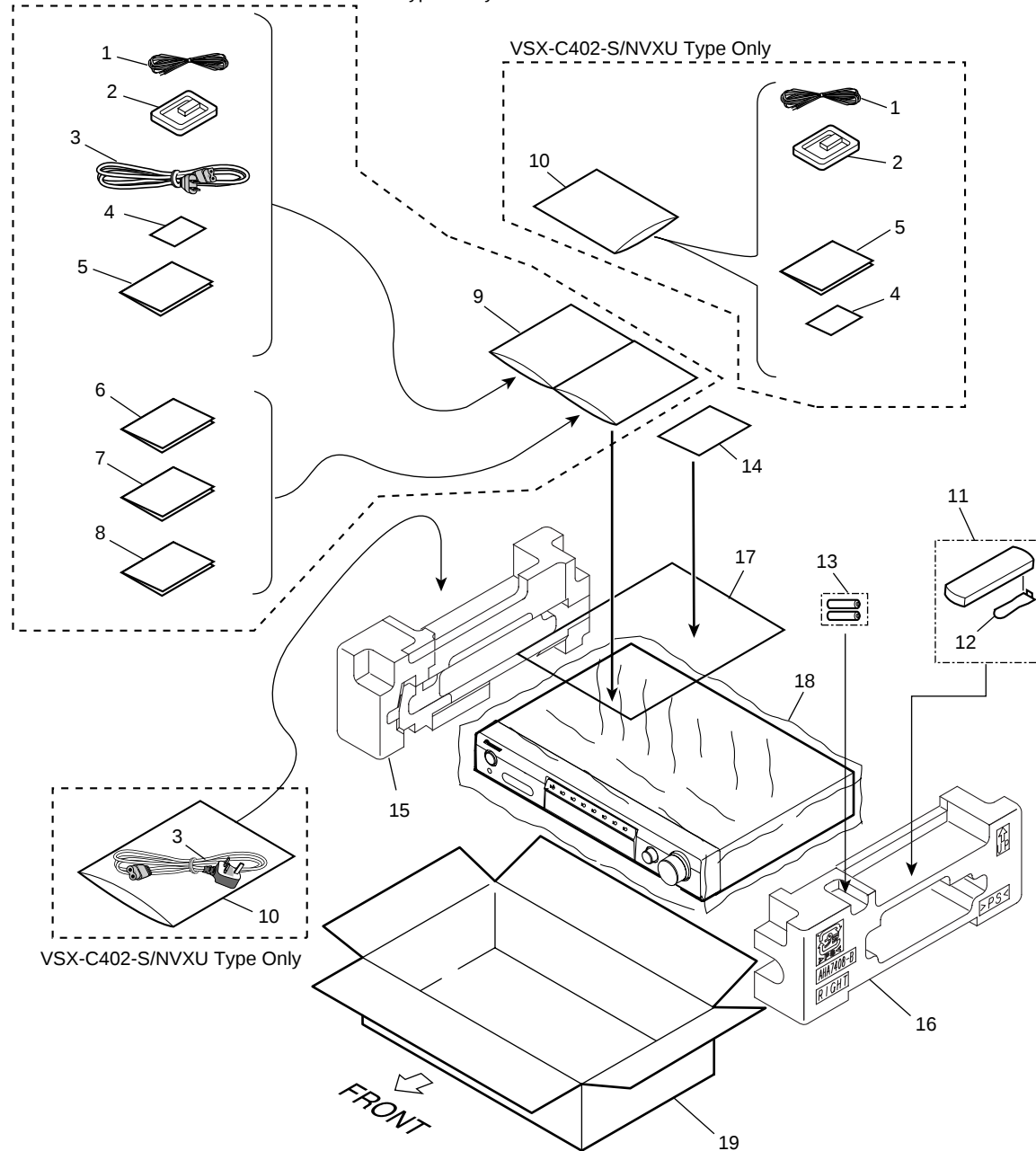


2. EXPLODED VIEWS AND PARTS LIST

- 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

VSX-C402-S/MYXU and VSX-C402-K/MYXU Types Only



PACKING parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	FM Wire Antenna	ADH7030	10	Polyethylene Bag (0.03x230x340)	See Contrast table(2)
2	AM Loop Antenna	ATB7009	11	Remote Control Unit	AXD7386
⚠ 3	Power Cable	See Contrast table(2)	12	Battery Cover	AZA7424
4	Speaker Cable Label	ARW7163	NSP 13	Dry cell batteries (R6P,AA)	VEM1010
5	Operating instructions 402 (English)	ARB7303	NSP 14	Warranty Card	ARY7065
6	Operating instructions 402 (German)	See Contrast table(2)	15	Left Pad 402	AHA7407
7	Operating instructions 402 (French, Italian)	See Contrast table(2)	16	Right Pad 402	AHA7408
8	Operating instructions 402 (Dutch, Spanish)	See Contrast table(2)	17	Spacer	AHB7088
NSP 9	Polyethylene Bag (A4x2)	See Contrast table(2)	18	Packing Sheet	AHG7015
			19	Packing Case	See Contrast table(2)

(2) CONTRAST TABLE

VSX-C402-S/MYXU, VSX-C402-K/MYXU and VSX-C402-S/NVXU are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-C402-S/ MYXU	VSX-C402-K/ MYXU	VSX-C402-S/ NVXU
⚠	3	Power Cable	ADG1154	ADG1154	ADG1156
	6	Operating instructions 402 (German)	ARC7531	ARC7531	Not used
	7	Operating instructions 402 (French, Italian)	ARC7532	ARC7532	Not used
	8	Operating instructions 402 (Dutch, Spanish)	ARC7533	ARC7533	Not used
NSP	9	Polyethylene Bag (A4x2)	AHG7097	AHG7097	Not used
NSP	10	Polyethylene Bag (0.03x230x340)	Not used	Not used	Z21-038
	19	Packing Case 402SMY	AHD8266	Not used	Not used
	19	Packing Case 402KMY	Not used	AHD8267	Not used
	19	Packing Case 402SNV	Not used	Not used	AHD8268

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2.2 EXTERIOR SECTION

A

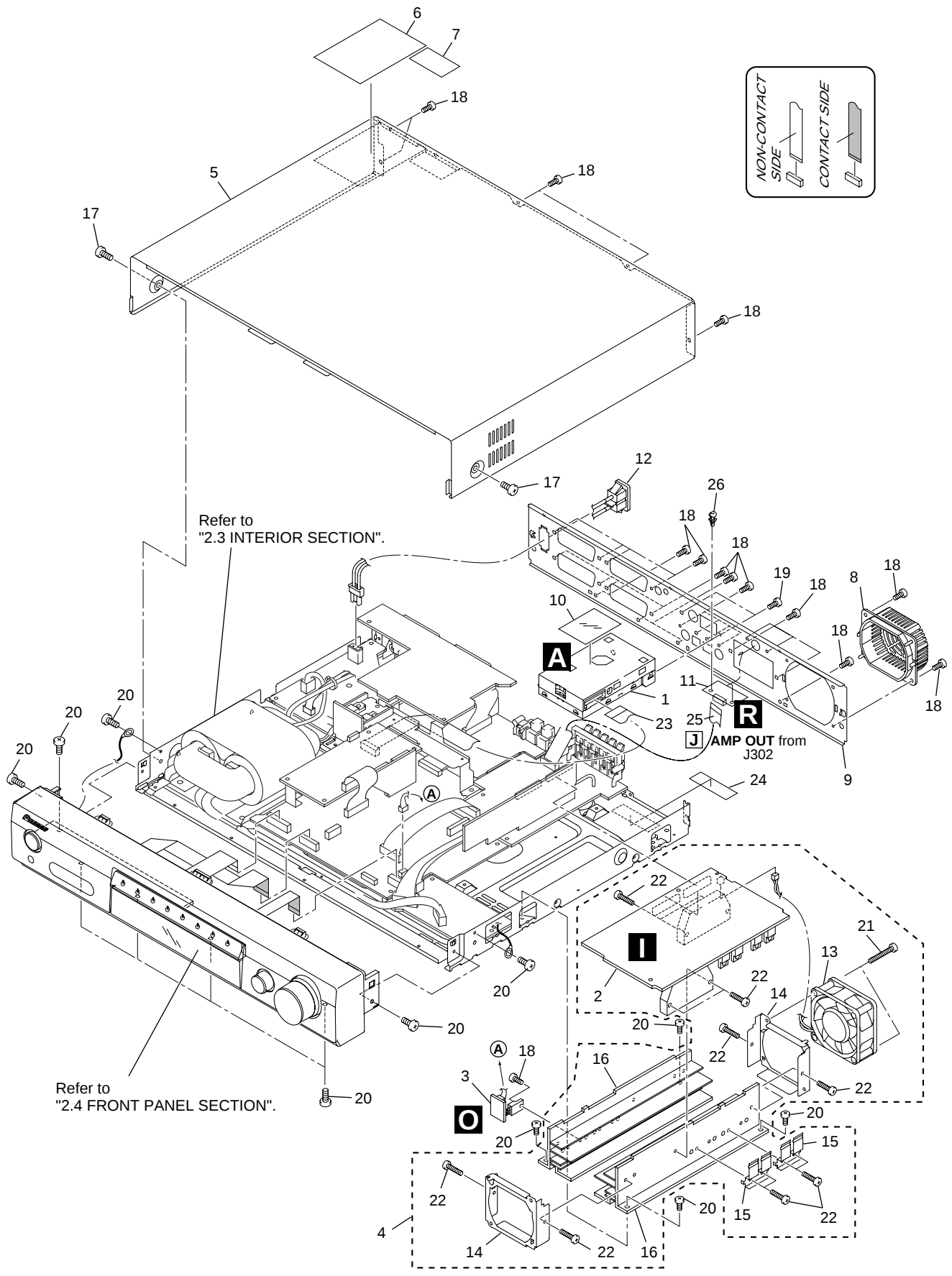
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EXTERIOR SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	FM/AM TUNER MODULE	AXQ7246	14	Fan Plate	ANG7462
2	6CH AMP Assy	AWM7786	15	FET Bracket A	ANG7418
3	D5V Assy	AWX8499			
NSP 4	AMP MODULE 6CH	AXQ7255	NSP 16	Heat Sink	ANH7161
5	Bonnet Case	See Contrast table(2)	17	Screw	See Contrast table(2)
			18	Screw	BBZ30P080FNI
6	Label	See Contrast table(2)	19	Screw	PPZ30P100FNI
7	License Label	ARW7276	20	Screw	BBZ30P060FTC
8	Fan Cover	AMR7446			
9	Rear Panel 402SMY	ANC8296	21	Screw	BBZ30P300FTC
10	Tuner Barrier	AEC7383	22	Screw	BBZ30P140FTC
			23	J1905 13P FFC/60V	ADD7402
11	SUR OUT Assy	AWX8493	NSP 24	Label	VRW1629
⚠ 12	AC Inlet Assy	VKP2116	25	J302 6P FFC/60V	ADD7462
13	DC Fan Motor	AXM7025	26	Card Spacer	AEC7214

(2) CONTRAST TABLE

VSX-C402-S/MYXU, VSX-C402-K/MYXU and VSX-C402-S/NVXU are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-C402-S/ MYXU	VSX-C402-K/ MYXU	VSX-C402-S/ NVXU
	5	Bonnet Case S	AZN7983	Not used	AZN7983
	5	Bonnet Case K	Not used	AZN7935	Not used
	6	Label C402SMY	ARW7277	Not used	Not used
	6	Label C402KMY	Not used	ARW7278	Not used
	6	Label C402SNV	Not used	Not used	ARW7279
	17	Screw	BCZ40P060FNI	BCZ40P060FZK	BCZ40P060FNI

1 2 3 4

2.3 INTERIOR SECTION

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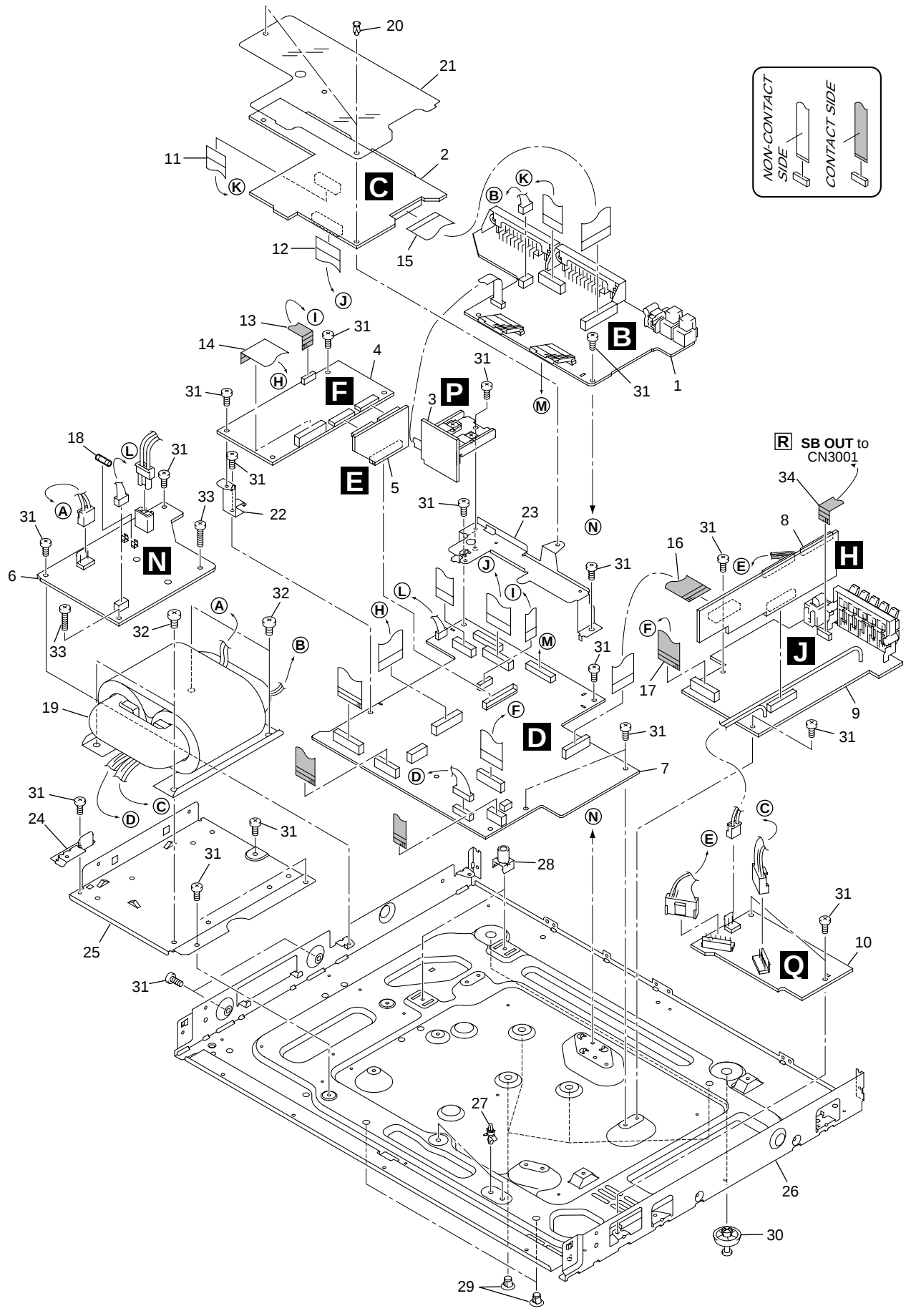
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INTERIOR SECTION parts List

Mark No.	Description	Part No.	
1	SCART-1F Assy	AWX8505	A
2	SCART-2F Assy	AWX8506	
3	12V Assy	AWX8502	
4	DSP Assy	AWX8241	
5	DSP KAWA Assy	AWX8167	
6	PRIMARY Assy	AWX8496	B
7	MOTHER Assy	AWX8424	
8	AMP KAWA Assy	AWX8503	
9	AMP OUT Assy	AWX8420	
10	VHVL Assy	AWX8507	
11	J1908 15P FFC/60V	ADD7408	C
12	J1911 19P FFC/60V	ADD7422	
13	J1906 10P FFC/60V	ADD7405	
14	J1909 19P FFC/60V	ADD7422	
15	J1907 23P FFC/60V	ADD7407	
16	J1901 17P FFC/60V	ADD7398	D
17	J1904 17P FFC/60V	ADD7401	
 18	FU1 Fuse (T2.5A/250V)	REK1026	
 19	T1 Power Transformer	ATS7346	
20	Nylon Rivet	AEC7436	
21	Scart Barrier	AEC7458	E
22	Core Stay A	ANG7447	
23	Core Stay B	ANG7448	
24	Jack Stay	ANG7493	
25	Trans Frame	ANG7446	
NSP 26	Under Base	ANA7151	F
27	PCB Support	AEC7365	
28	PCB Mold	AMR2533	
NSP 29	PC Support	VEC1749	
30	Foot Assy	REC-434	
31	Screw	BBZ30P060FTC	F
32	Screw	BCZ40P060FNI	
33	Screw	BBZ30P180FTC	
34	J302 6P FFC/60V	ADX7462	

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2.4 FRONT PANEL SECTION

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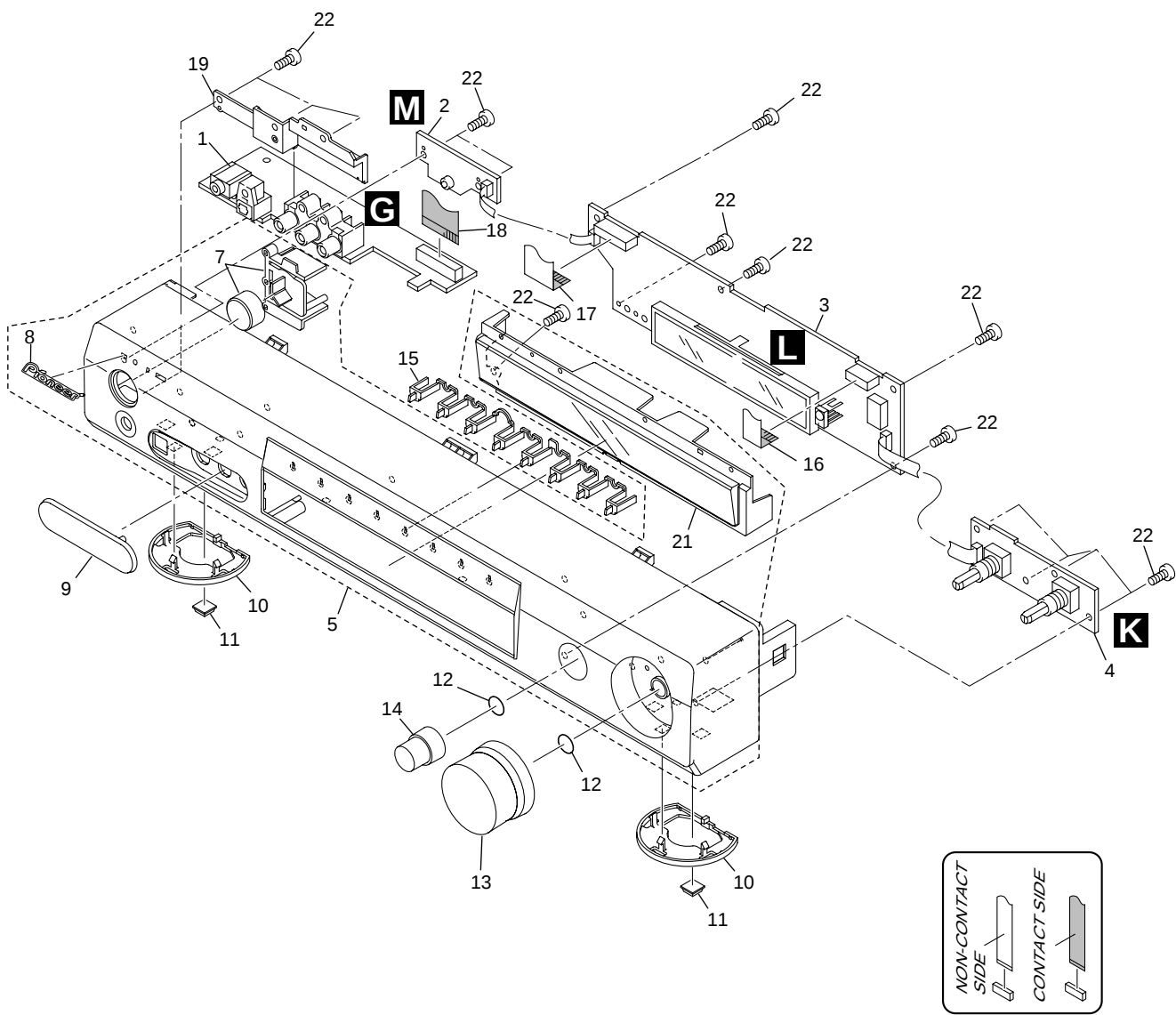
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FRONT PANEL SECTION parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	FRONT IN Assy	AWX8219	13	Volume Knob Assy	See Contrast table(2)
2	POWER SW Assy	AWX8174	14	Select Knob Assy	See Contrast table(2)
3	FRONT Assy	AWX8173	15	LED Lens 301	AAK8084
4	ENCODER Assy	AWX8175			
NSP 5	Front Panel Assy	See Contrast table(2)	16	J1903 9P FFC/60V	ADD7400
			17	J1902 15P FFC/60V	ADD7399
6	Front Panel	See Contrast table(2)	18	J1911 19P FFC/60V	ADD7422
NSP 7	Power Button	See Contrast table(2)	19	Jack Cover	AMR7447
NSP 8	PIONEER Name Plate	See Contrast table(2)	NSP 20	Sub Panel 402	AAK8190
9	Terminal Cover	See Contrast table(2)			
10	Insulator Ring	AAK8091	NSP 21	Display Panel 302	AAK8192
			22	Screw	PPZ30P080FTC
11	Rubber Foot	VEB1325			
12	VOL Ring	ABH7220			

(2) CONTRAST TABLE

VSX-C402-S/MYXU, VSX-C402-K/MYXU and VSX-C402-S/NVXU are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-C402-S/ MYXU	VSX-C402-K/ MYXU	VSX-C402-S/ NVXU
	5	Front Panel 402SMY Assy	AXG7221	Not used	AXG7221
	5	Front Panel 402KMY Assy	Not used	AXG7222	Not used
NSP	6	Front Panel 402SMY	AMB7873	Not used	AMB7873
NSP	6	Front Panel 402KMY	Not used	AMB7874	Not used
NSP	7	Power Button S	AAD7720	Not used	AAD7720
NSP	7	Power Button K	Not used	AAD7697	Not used
NSP	8	PIONEER Name Plate	VAM1129	VAM1130	VAM1129
	9	Terminal Cover S	AAK8188	Not used	AAK8188
	9	Terminal Cover B	Not used	AAK8189	Not used
	13	Volume Knob Assy S	AAA7027	Not used	AAA7027
	13	Volume Knob Assy K	Not used	AAA7028	Not used
	14	Select Knob Assy S	AAA7029	Not used	AAA7029
	14	Select Knob Assy K	Not used	AAA7030	Not used

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

3.1.1 AUDIO BLOCK

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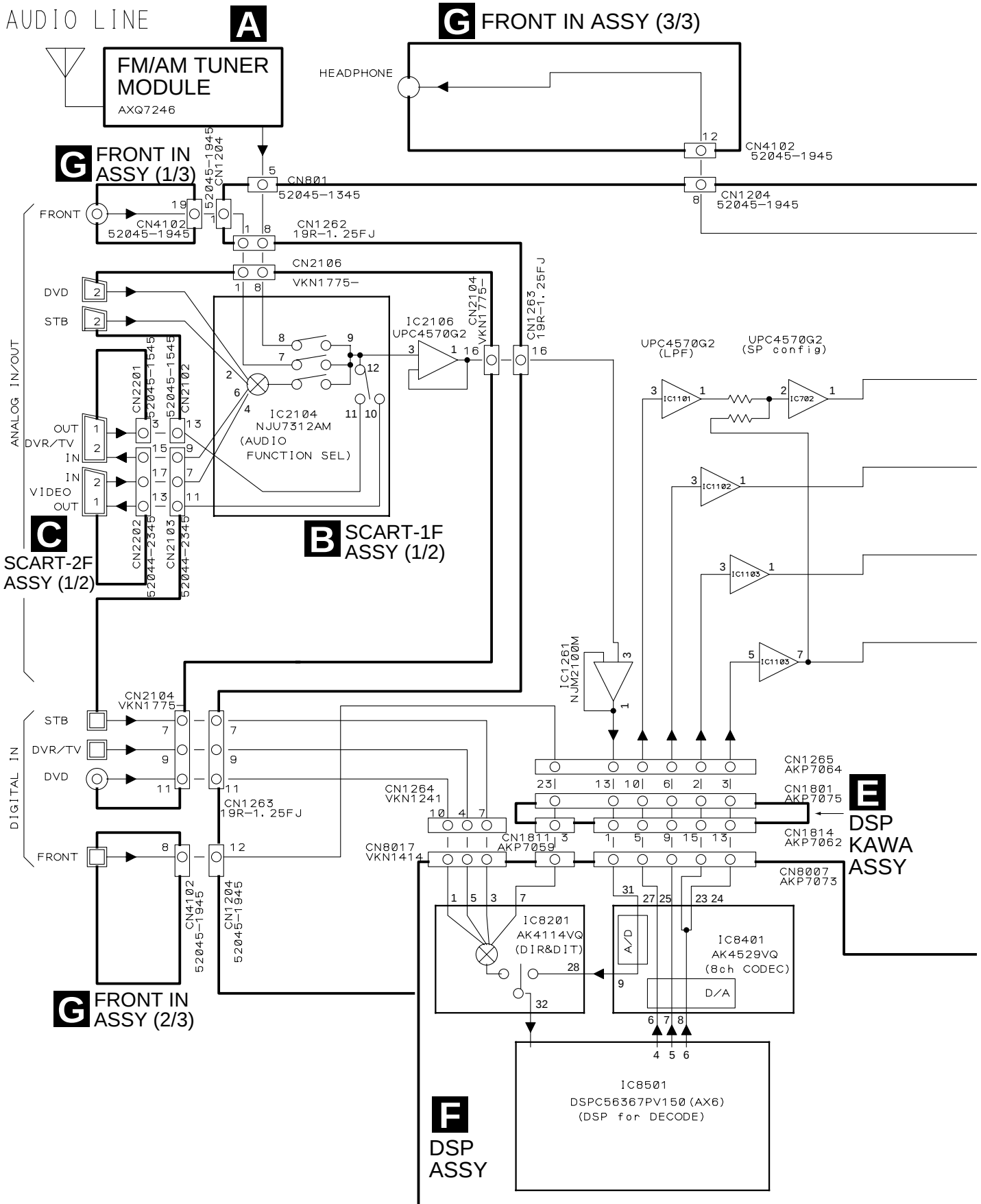
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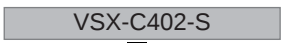
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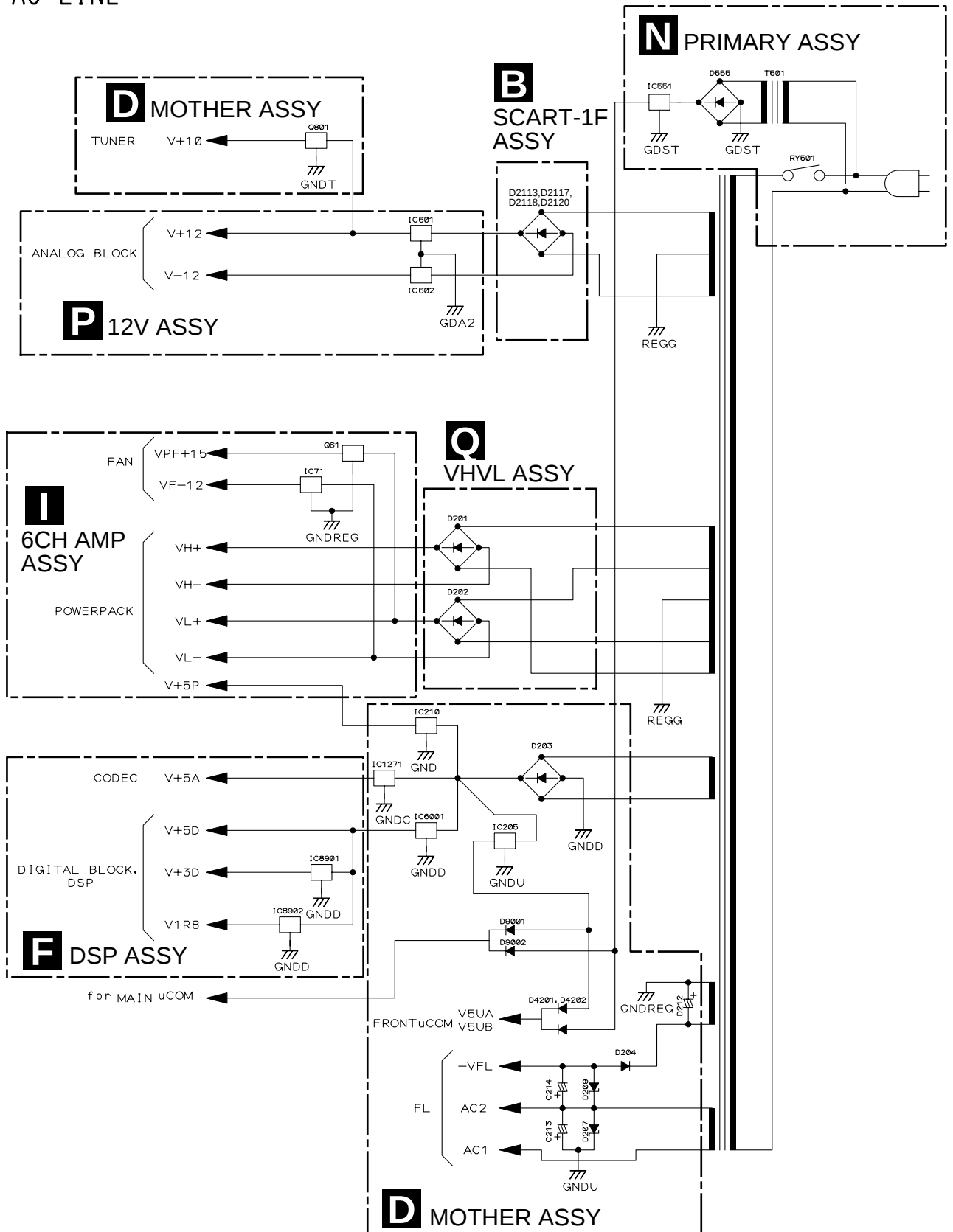




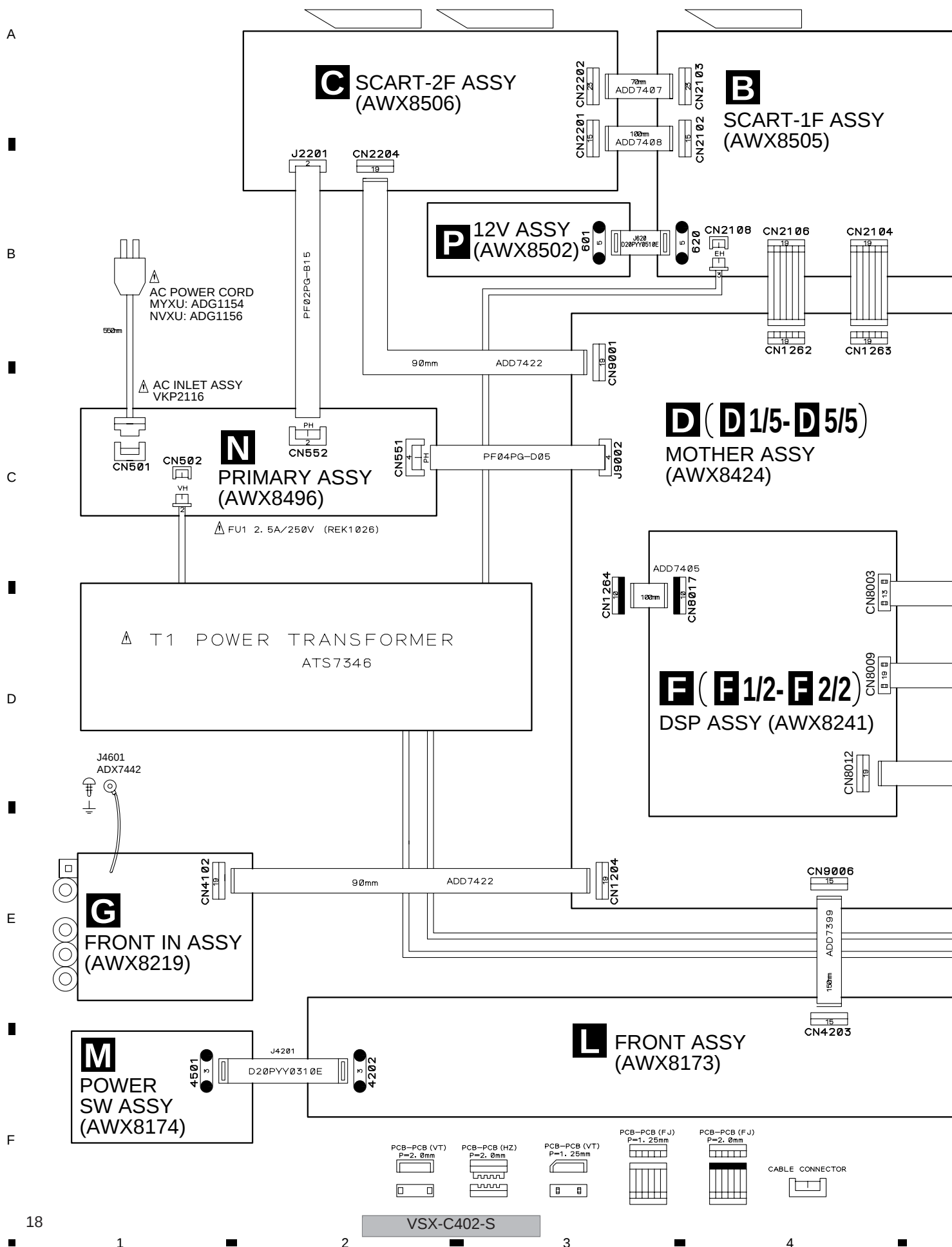
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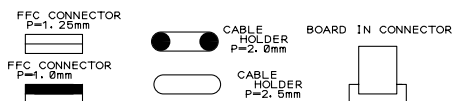
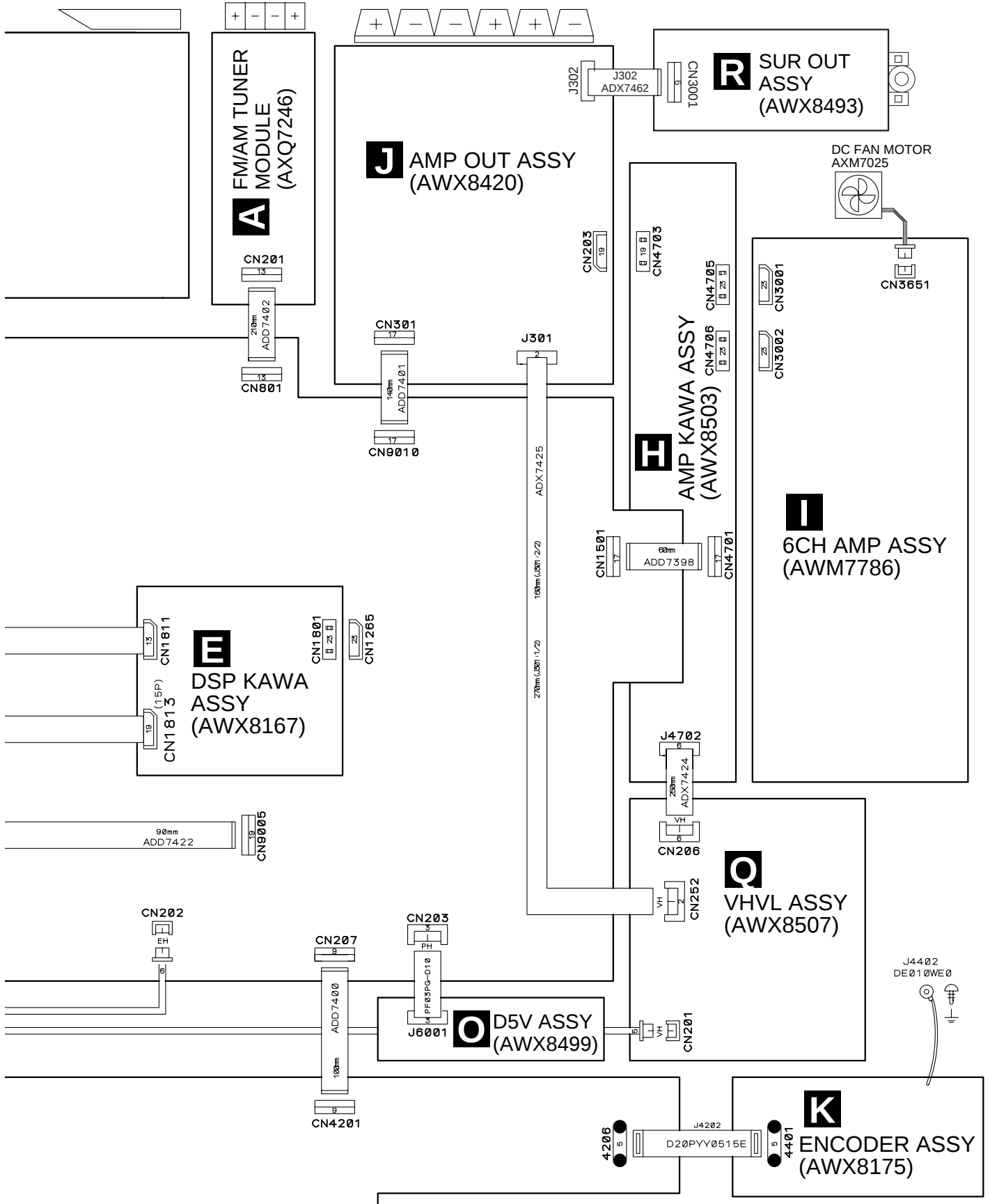
AC LINE



3.2 OVERALL WIRING DIAGRAM



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



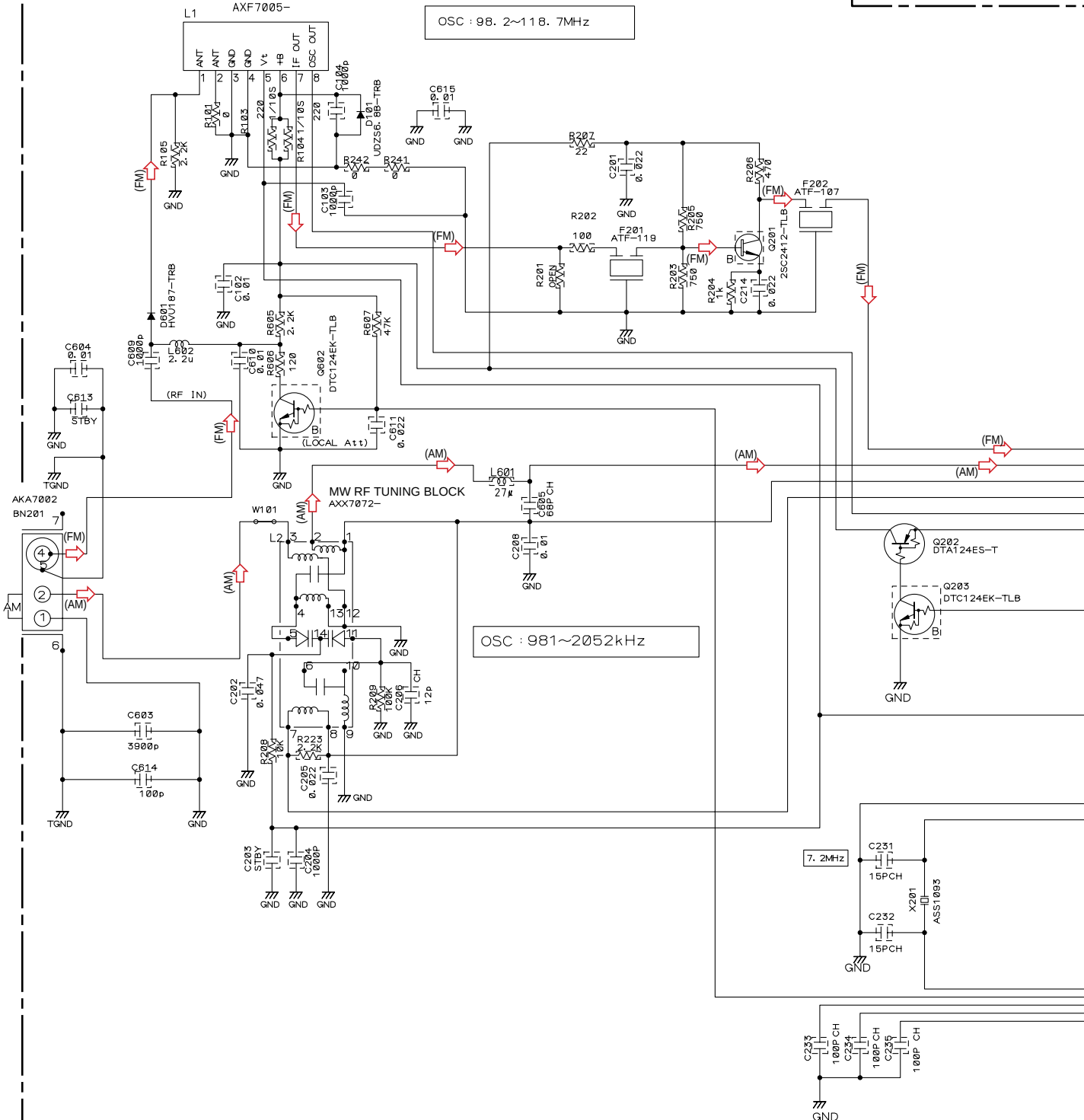
3.3 FM/AM TUNER MODULE

FM/AM TUNER MODULE (AXQ7246)

MITSUMI FM FE

FM FRONT END
AXF7005-

OSC : 98. 2~118. 7MHz



Notes

- ## 1. RESISTORS

Indicated in Ω , $1/16W \pm 5\%$ Tolerance unless otherwise noted K; $K\Omega$, M; $M\Omega$.

- ## 2. CAPACITORS

Indicated in Capacity (μ F)/VOLTAGE (V) unless otherwise noted P;PF.

- ### 3. DIODES

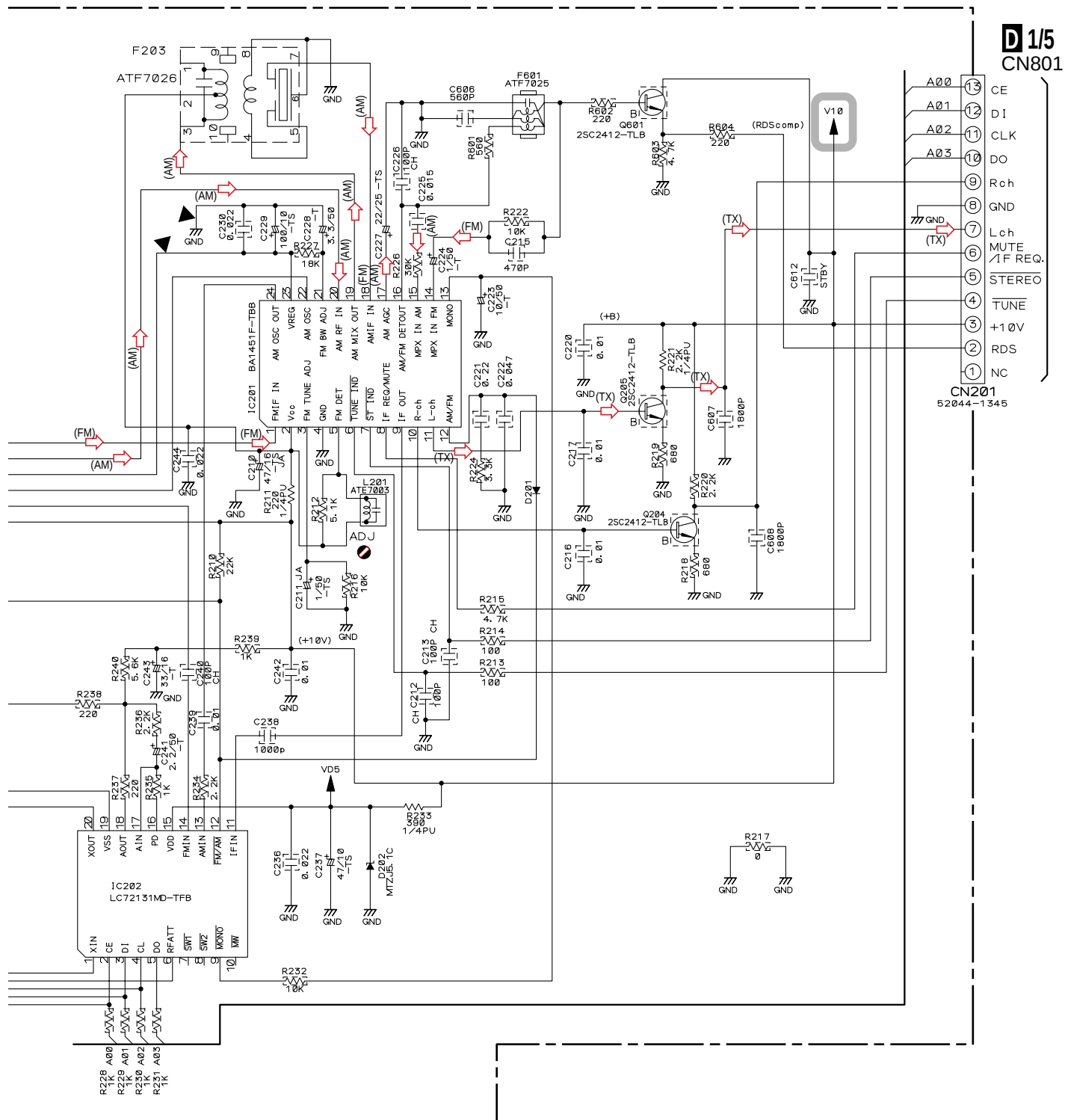
No mark diode is 1SS133.

 : The power supply is shown with the marked box.

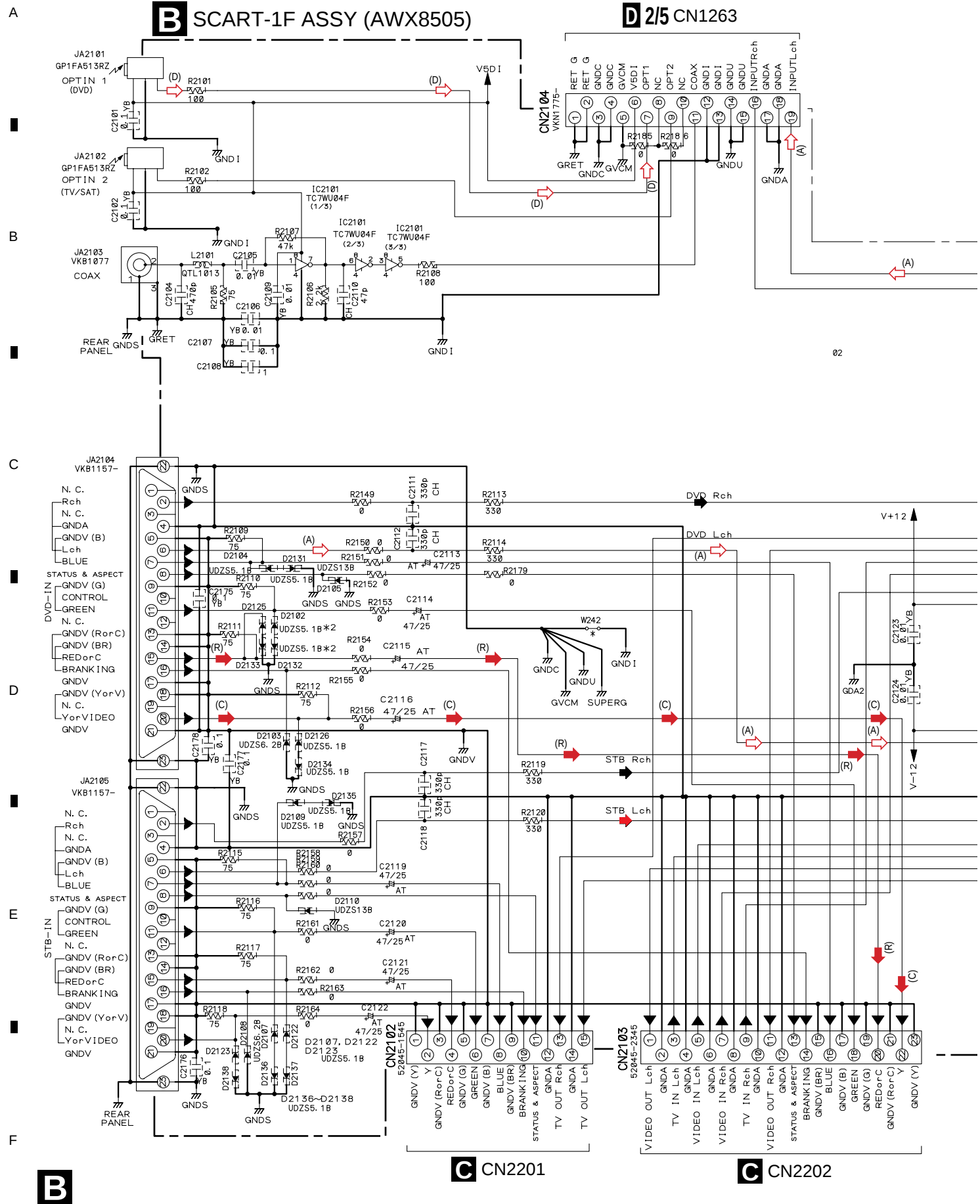
(TX)  : AUDIO SIGNAL ROUTE (TUNER)

(AM) : AM SIGNAL ROUTE

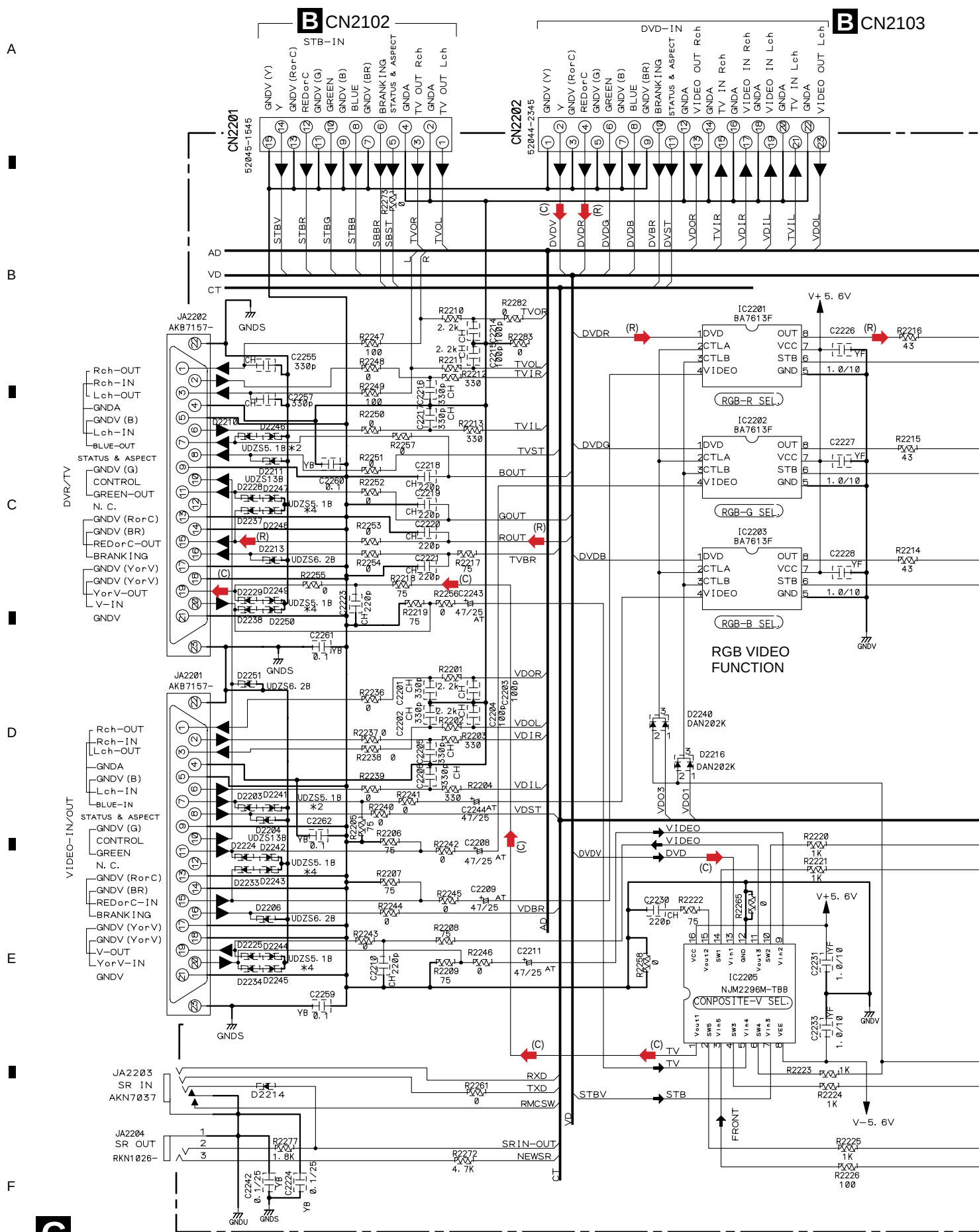
(FM)  : FM SIGNAL ROUTE



3.4 SCART-1F ASSY

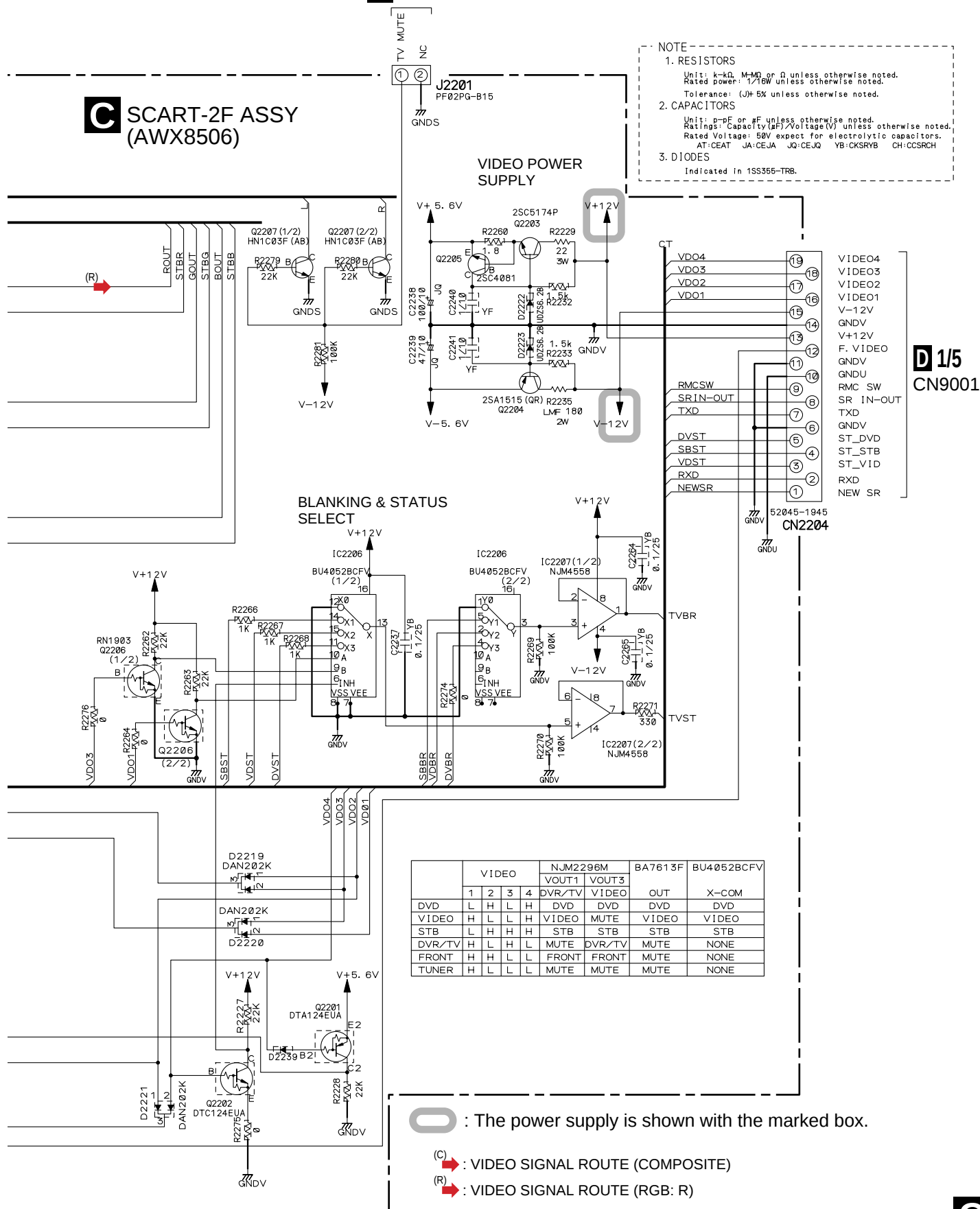


3.5 SCART-2F ASSY



N CN552

C SCART-2F ASSY (AWX8506)

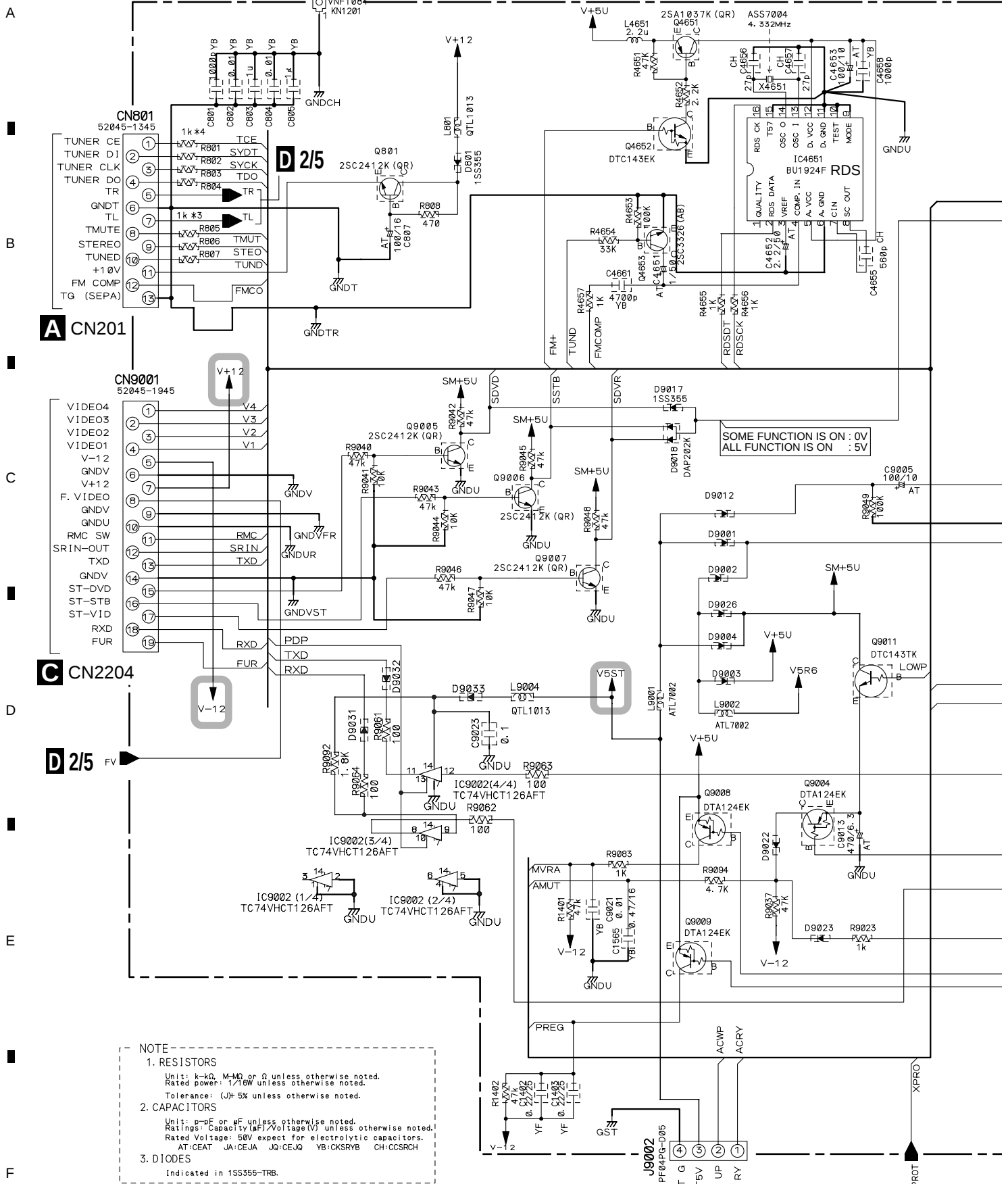


O : The power supply is shown with the marked box.

(C) : VIDEO SIGNAL ROUTE (COMPOSITE)

(R) : VIDEO SIGNAL ROUTE (RGB: R)

3.6 MOTHER ASSY (1/5)



NOTE

- RESISTORS**
Unit: k- Ω , M-M Ω or Ω unless otherwise noted.
Rated power: 1/10W unless otherwise noted.
Tolerance: (J)-5% unless otherwise noted.
- CAPACITORS**
Unit: p-pF or μ F unless otherwise noted.
Ratings: Capacity (μ F)/Voltage (V) unless otherwise noted.
Rated Voltage: 50V except for electrolytic capacitors.
ATT-CEAT JA-CEJA JQ-CEJQ YB-CKSRVB CH-CCSRCH
- DIODES**
Indicated in 1SS355-TRB.

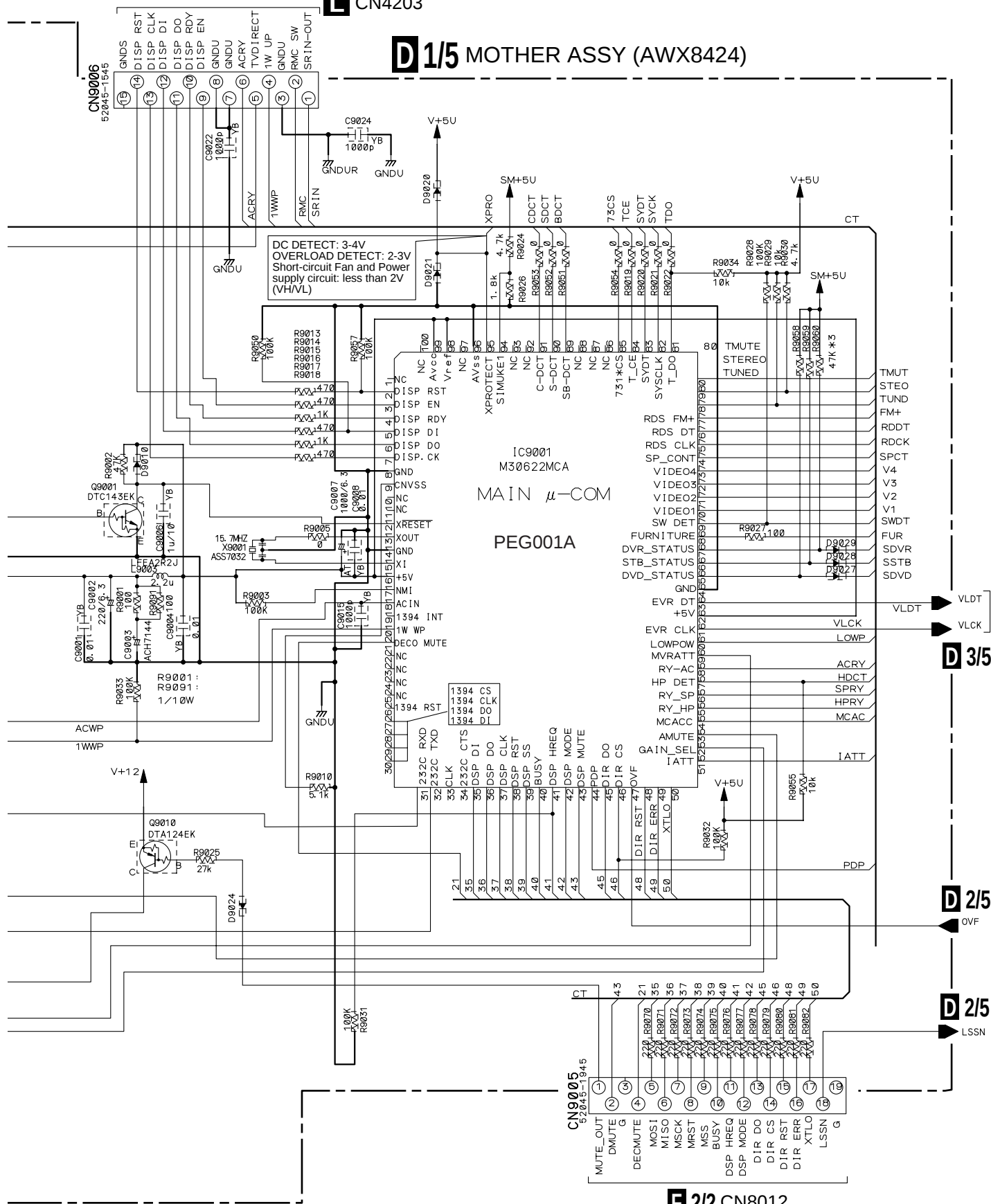
D 1/5

VSX-C402-S : The power supply is shown with the marked box.

N CN551

L CN4203

D 1/5 MOTHER ASSY (AWX8424)



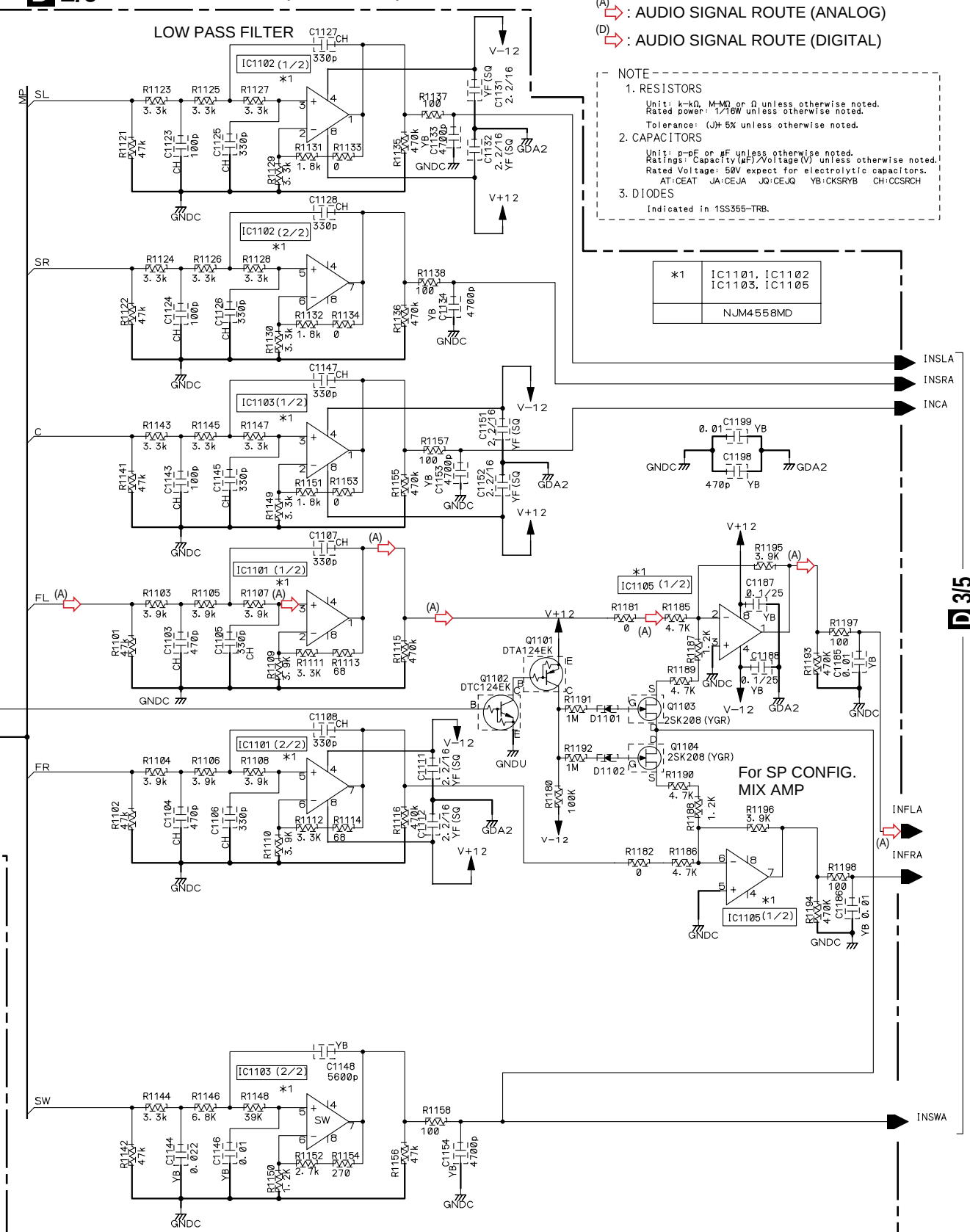
F 2/2 CN8012

D 1/5

4



D 2/5 MOTHER ASSY (AWX8424)



: The power supply is shown with the marked box.

△



3.9 MOTHER ASSY (4/5)

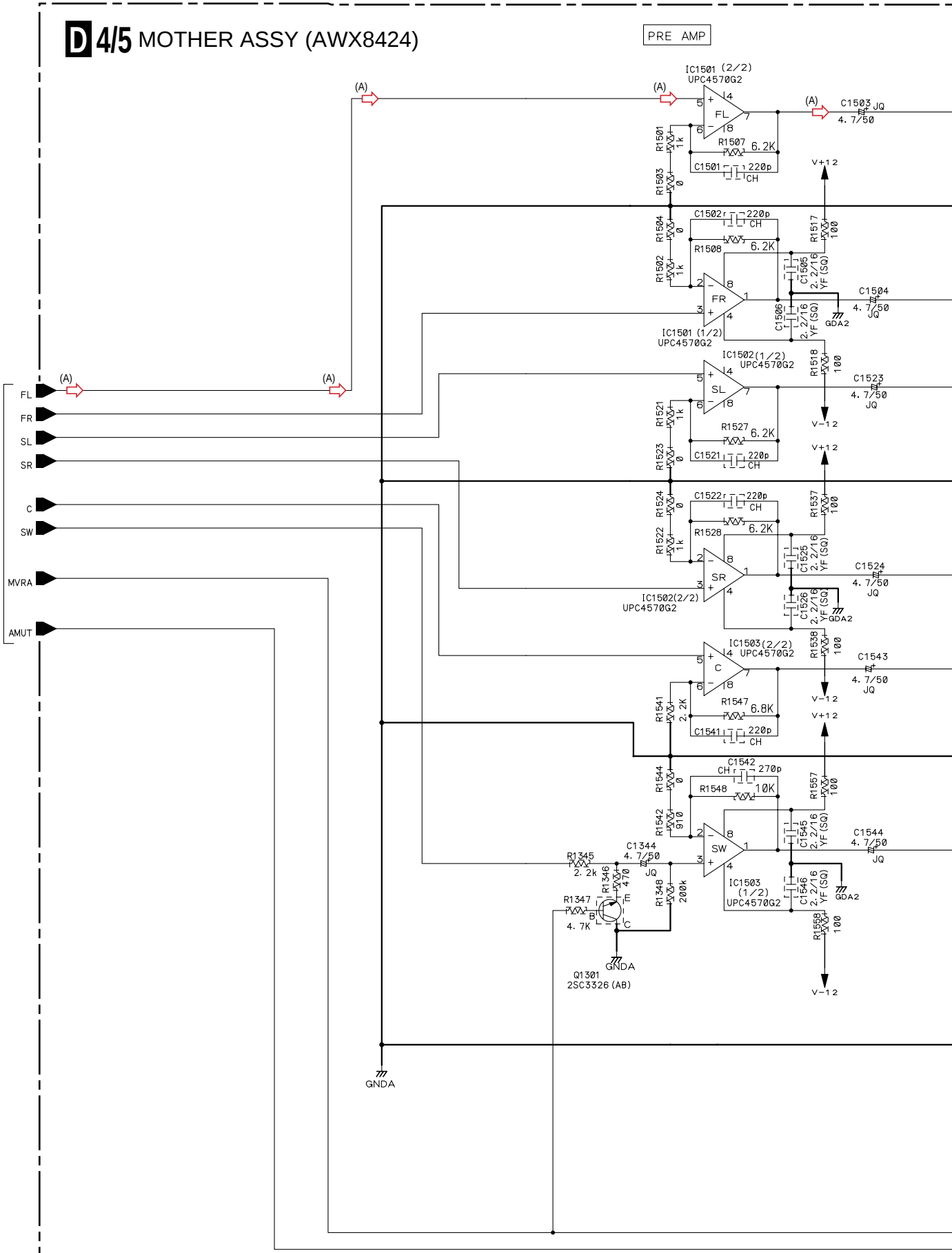
D 4/5 MOTHER ASSY (AWX8424)

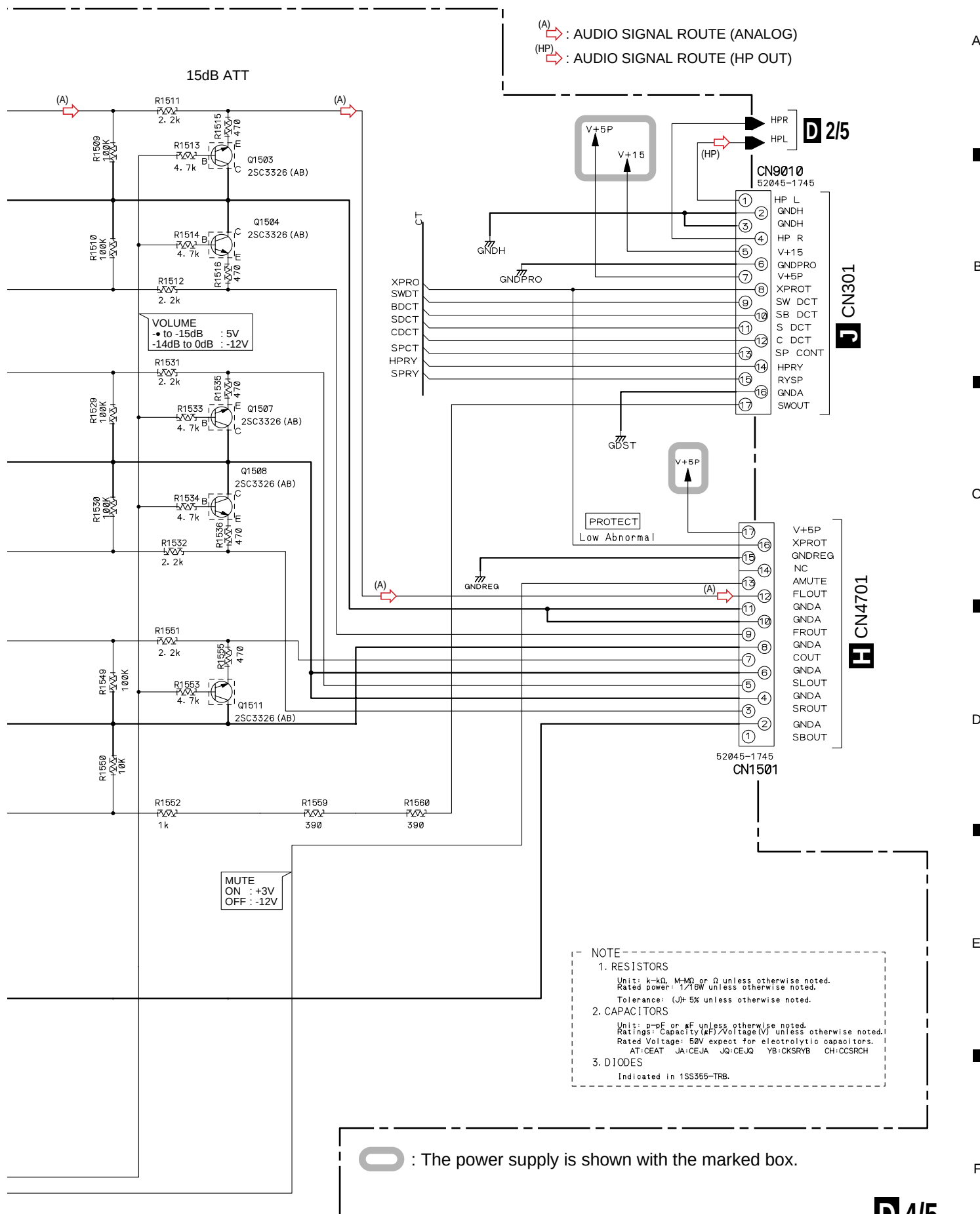
PRE AMP

A
B
C
D
E
F

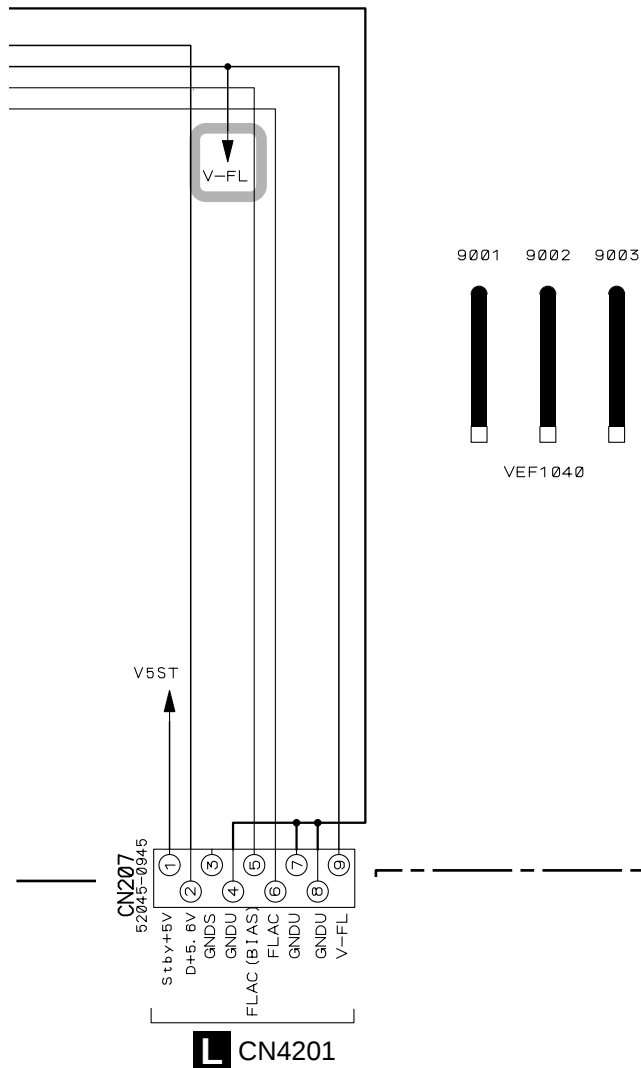
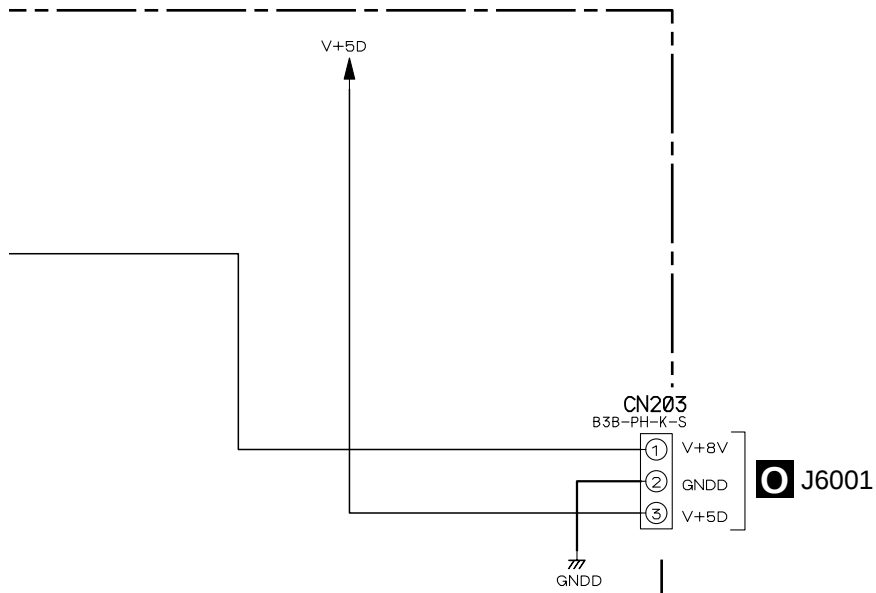
D 3/5

D 4/5



A
B
C
D
E
F

 : The power supply is shown with the marked box.



NOTE

1. RESISTORS

Unit: k- Ω , M- Ω or Ω unless otherwise noted.
Rated power: 1/16W unless otherwise noted.

Tolerance: (J) $\pm 5\%$ unless otherwise noted.

2. CAPACITORS

Unit: p-pF or μ F unless otherwise noted.
Ratings: Capacity(μ F)/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)

A

B

C

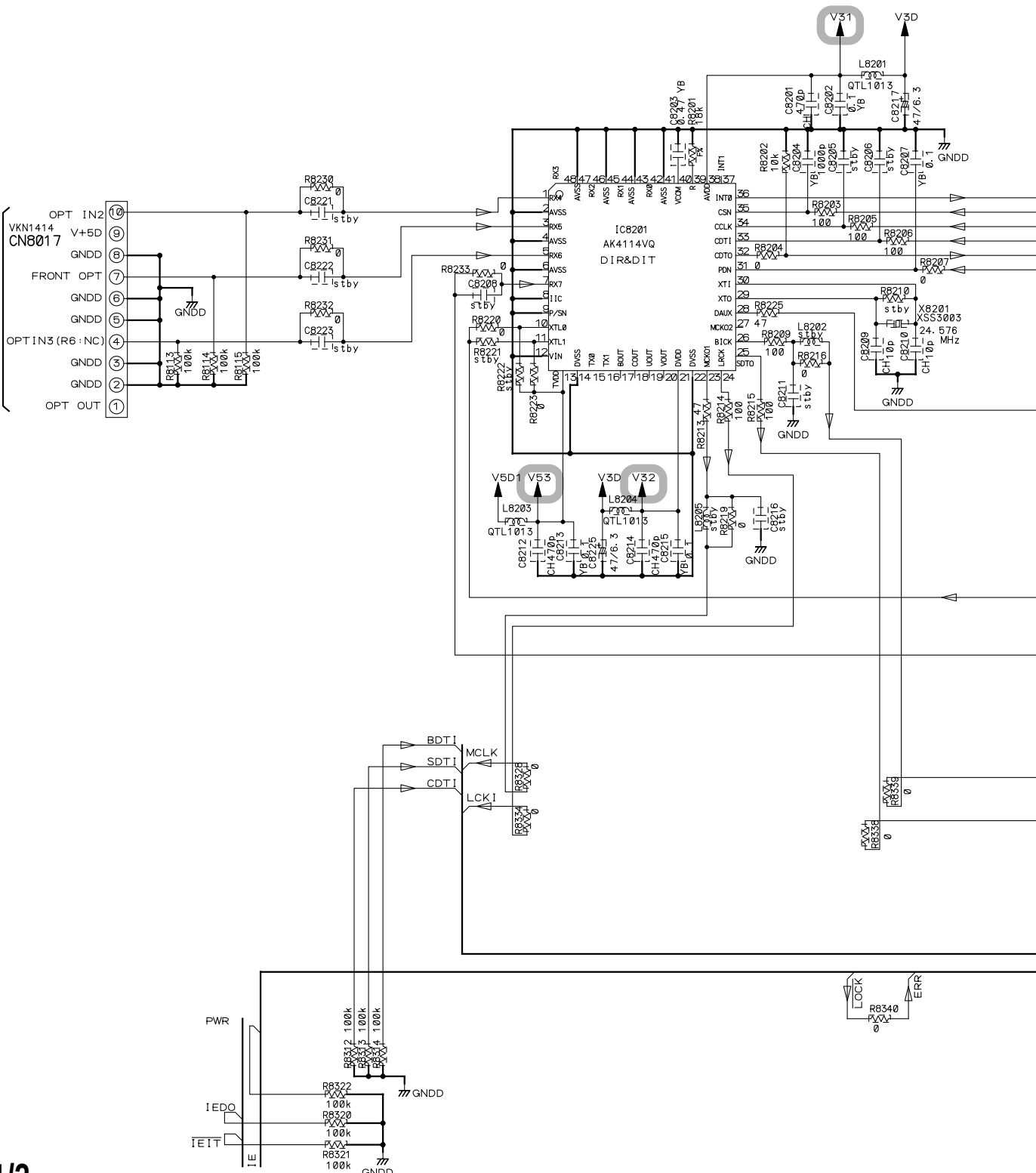
D

E

F

D 2/5 CN1264

E 1/2

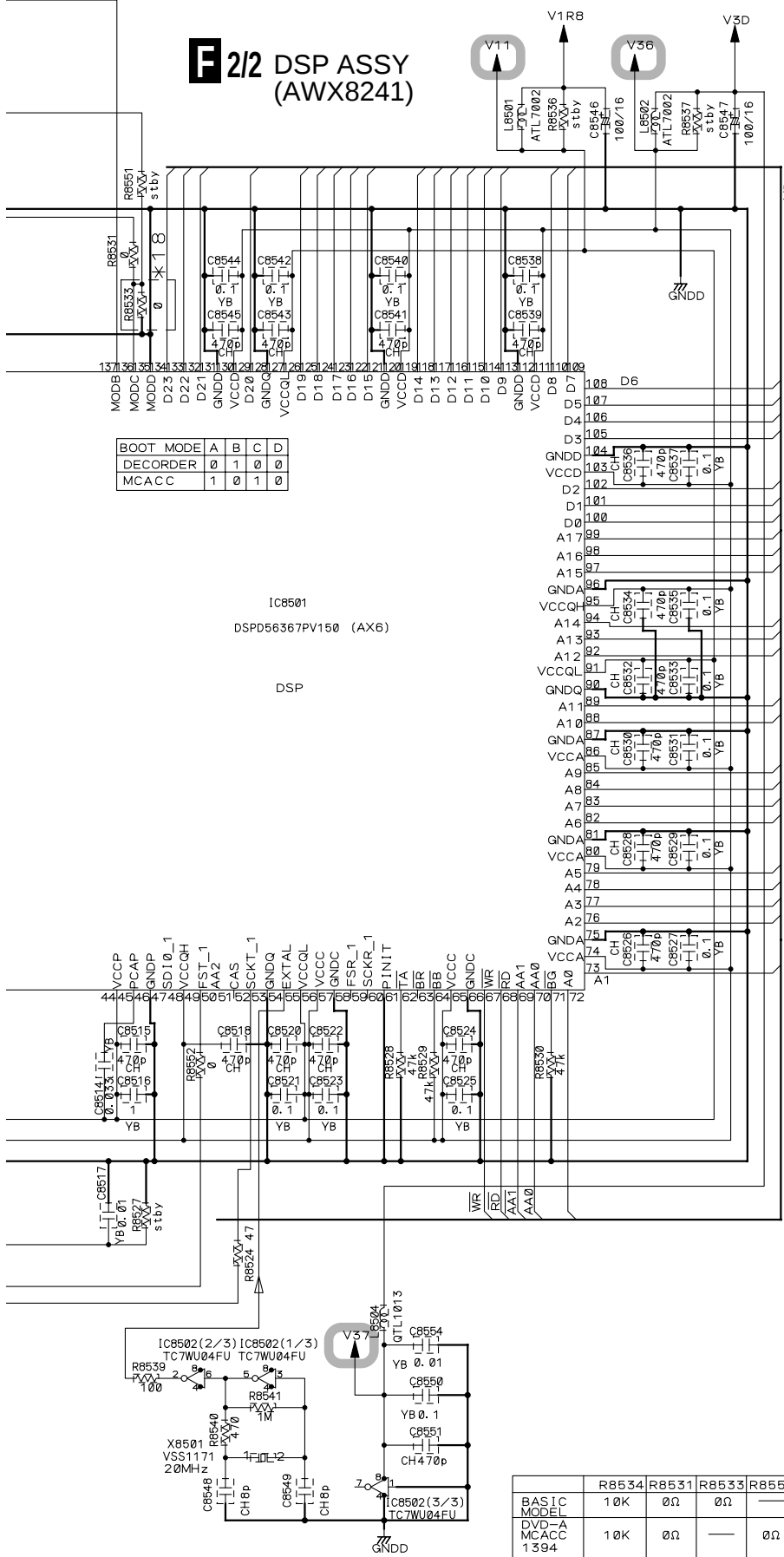


4



VSX-C402-S

F 2/2 DSP ASSY (AWX8241)



	IC8601 C8601 C8602 C8603 C8604 L8601	IC8602 C8605 C8606 C8607 C8608 L8602	IC8603 C8609 C8610 L8603	R8523
BASIC MODEL	NO USE	NO USE	NO USE	NO USE
AAC&96DTS	USE	USE	NO USE	USE
MCACC	USE	NO USE	USE	USE
AAC&96DTS &MCACC	USE	USE	USE	USE

	R8534	R8531	R8533	R8550	R8551	Q8501
BASIC MODEL	10K	0Ω	0Ω	—	—	—
DVD-A MCACC 1394	10K	0Ω	—	0Ω	—	UN5212

3.13 FRONT IN, SUR OUT and AMP KAWA ASSYS

A

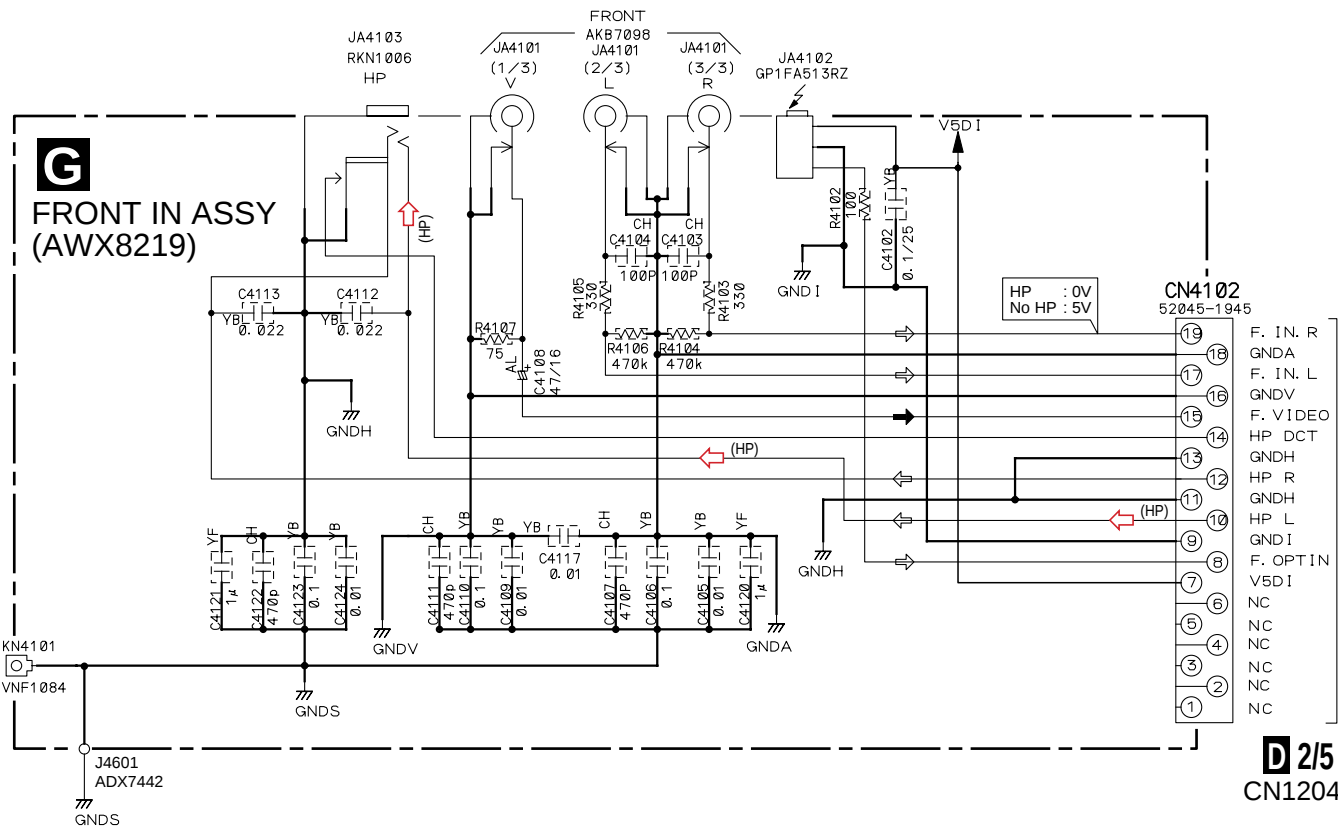
B

C

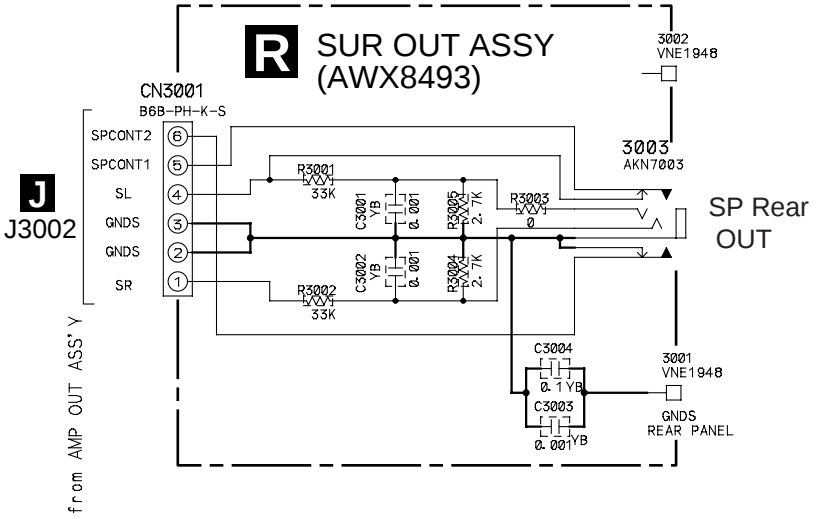
D

E

F



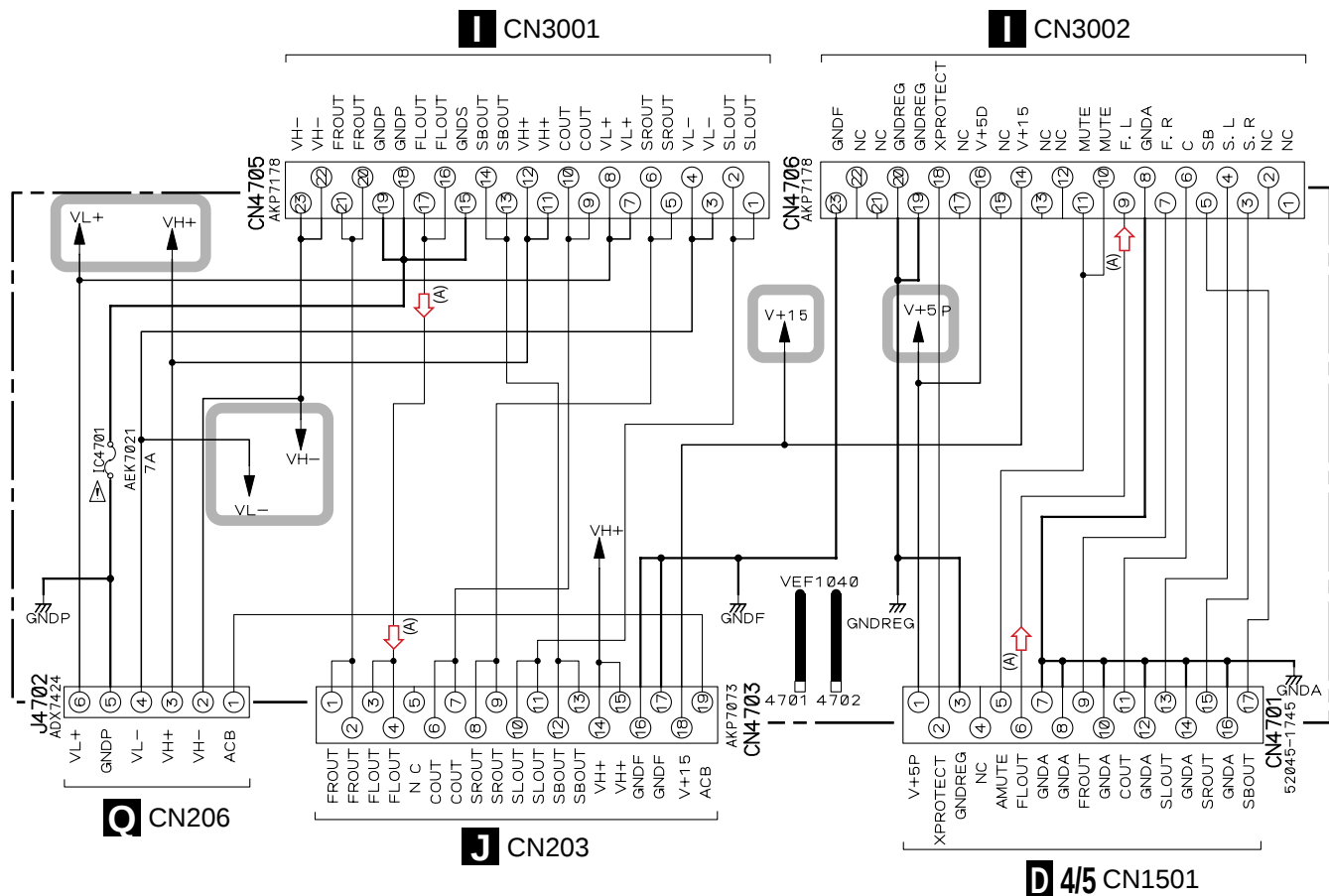
D 2/5
CN1204



G R

VSX-C402-S

AMP KAWA ASSY (AWX8503)



(A) : AUDIO SIGNAL ROUTE (ANALOG)

○ : The power supply is shown with the marked box.

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

NOTE

1. RESISTORS

Unit: k-Ω, M-Ω 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 JG:CEJQ YB:CKSRBYB CH:CCSRCH

3. DIODES

Indicated in 1SS355-TRB.

4



3.15 AMP OUT ASSY

J AMP OUT ASSY (AWX8420)

A

B

C

D

E

F

H CN4703

D 4/5 CN9010

5ch SPEAKER OUT

R CN3001

NOTES

ALL RESISTORS ARE IN Ω

OTHER PARTS

$\frac{1}{100k}$ RS1/16S***J
 $\frac{1}{10k}$ RS1/10S***J
 $\frac{1}{100k}$ RS1LMF***J
 $\frac{1}{100k}$ RD1/2VM***J
 $\frac{1}{100k}$ VM(1/2W)

ALL CAPACITORS ARE IN μF

UNLESS OTHERWISE SPECIFIED

$\frac{1}{100k}$ CH : CCSRCH
 (OTHER : CKSRYB)
 $\frac{1}{100k}$ CEAT

(A) : AUDIO SIGNAL ROUTE (ANALOG)

(HP) : AUDIO SIGNAL ROUTE (HP OUT)

 : The power supply is shown with the marked box.

■

5

■

6

■

7

■

8

■

A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

■

7

■

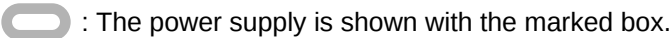
8

■

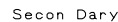
VSX-C402-S

4





A





N Q

1234

4. PCB CONNECTION DIAGRAM

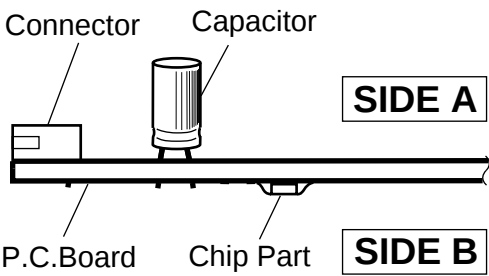
NOTE FOR PCB DIAGRAMS :

- A
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

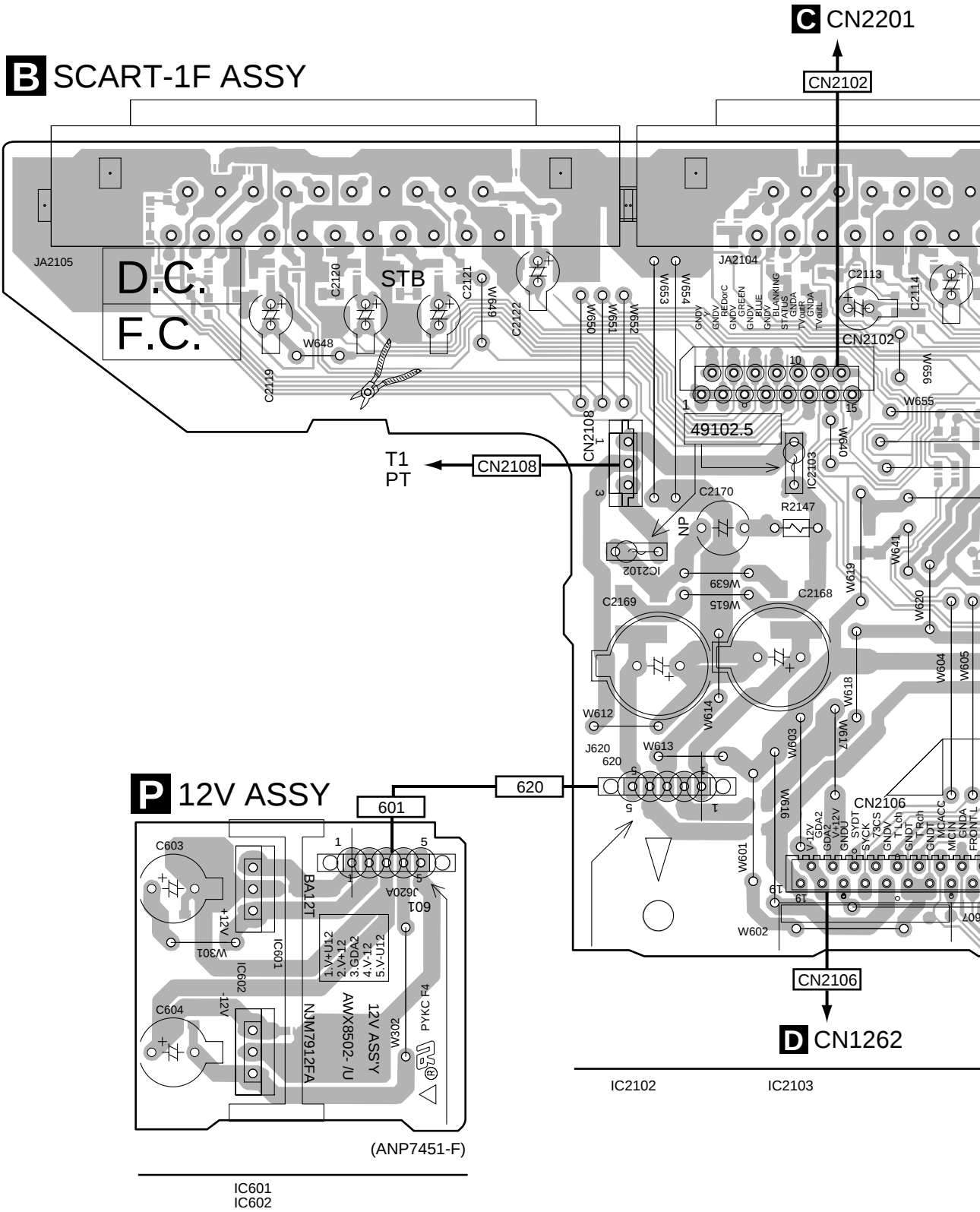
3. The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



1 2 3 4

4.2 SCART-1F and 12V ASSYS

SIDE A

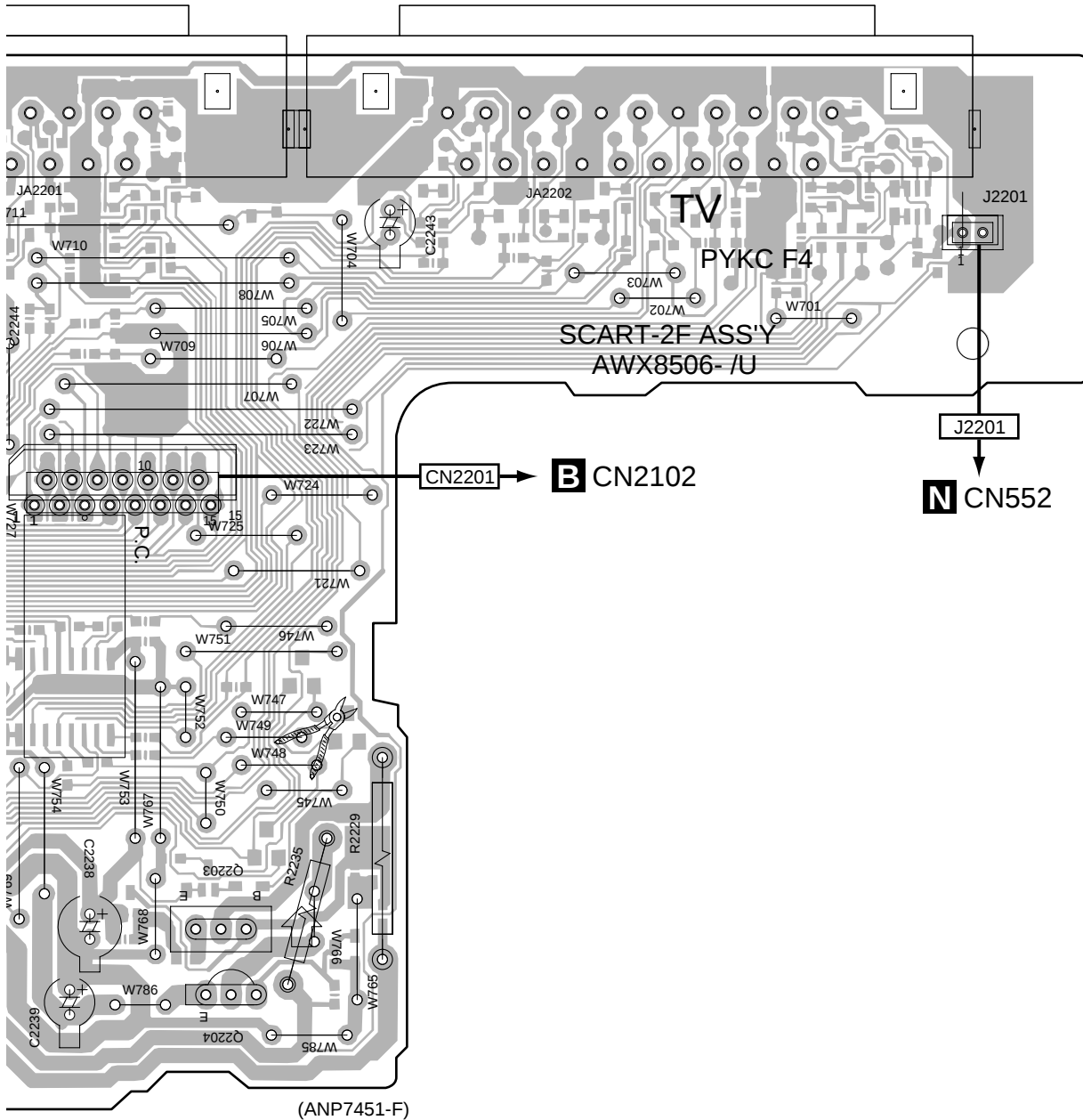


B P

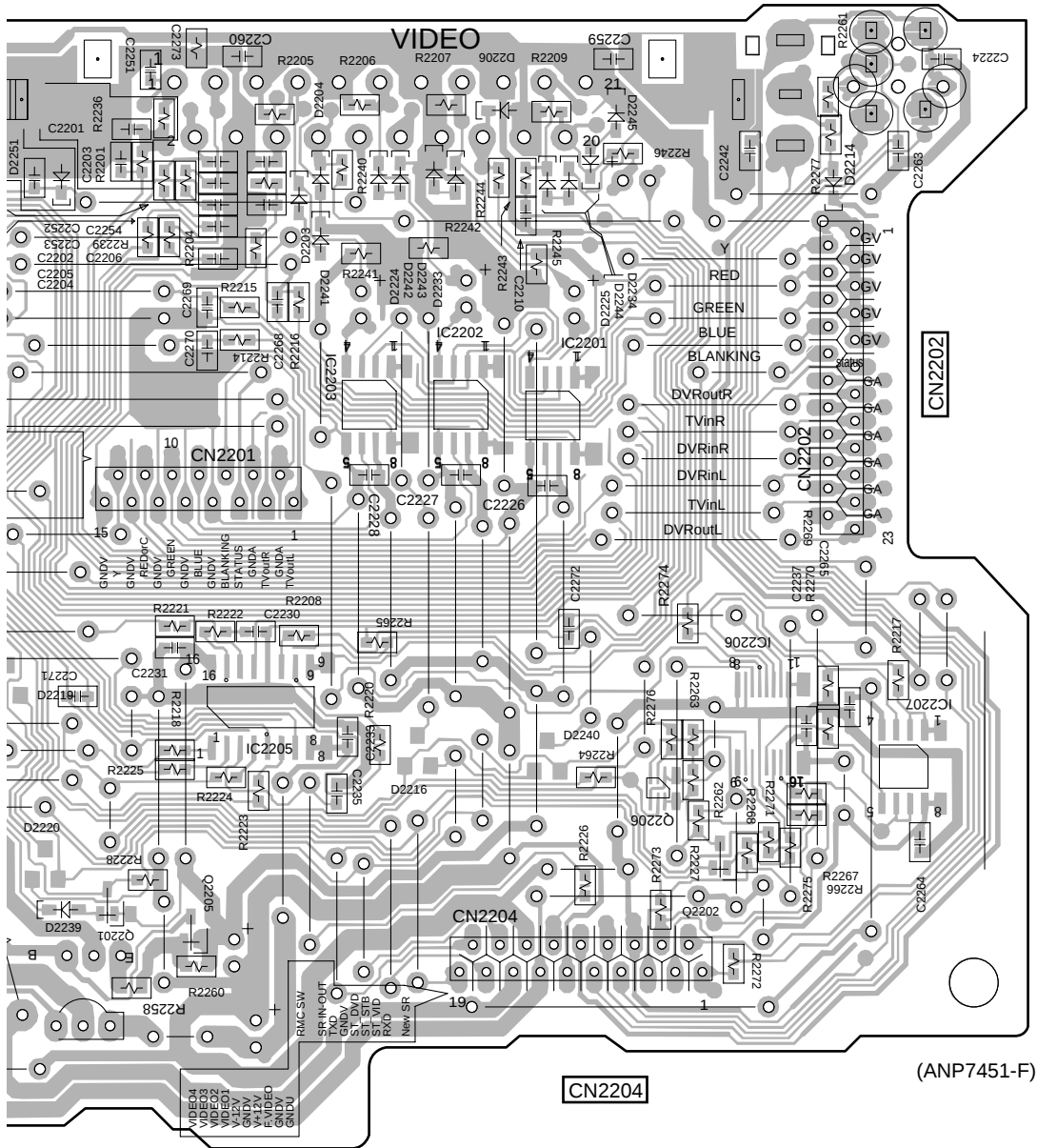
SIDE A

D CN9001

Q2203
Q2204



Q2201 IC2205 IC2203 IC2202 IC2201 Q2206 IC2206
Q2205 Q2202 IC2207



CN2204

(ANP7451-F)

4.4 MOTHER, DSP KAWA and D5V ASSYS

SIDE A

D5V ASSY

MOTHER ASSY

A

B

C

D

E

F

T1 PT

CN4203

CN9006

CN4201

CN301

CN4701

CN2104

Q1501 Q1502 Q1503 Q1504 Q1505 Q1506 Q1507 Q1301 Q1510 Q1501 IC1502 IC1503 Q1508 Q1511 Q1514 Q1514 Q1301 IC206 IC1302 IC1304 IC1241 IC203 IC205 IC210 IC1303 IC1301 IC1221 IC4651 IC9002 Q1264 Q1102 Q1263 Q1101 Q1266 Q1265

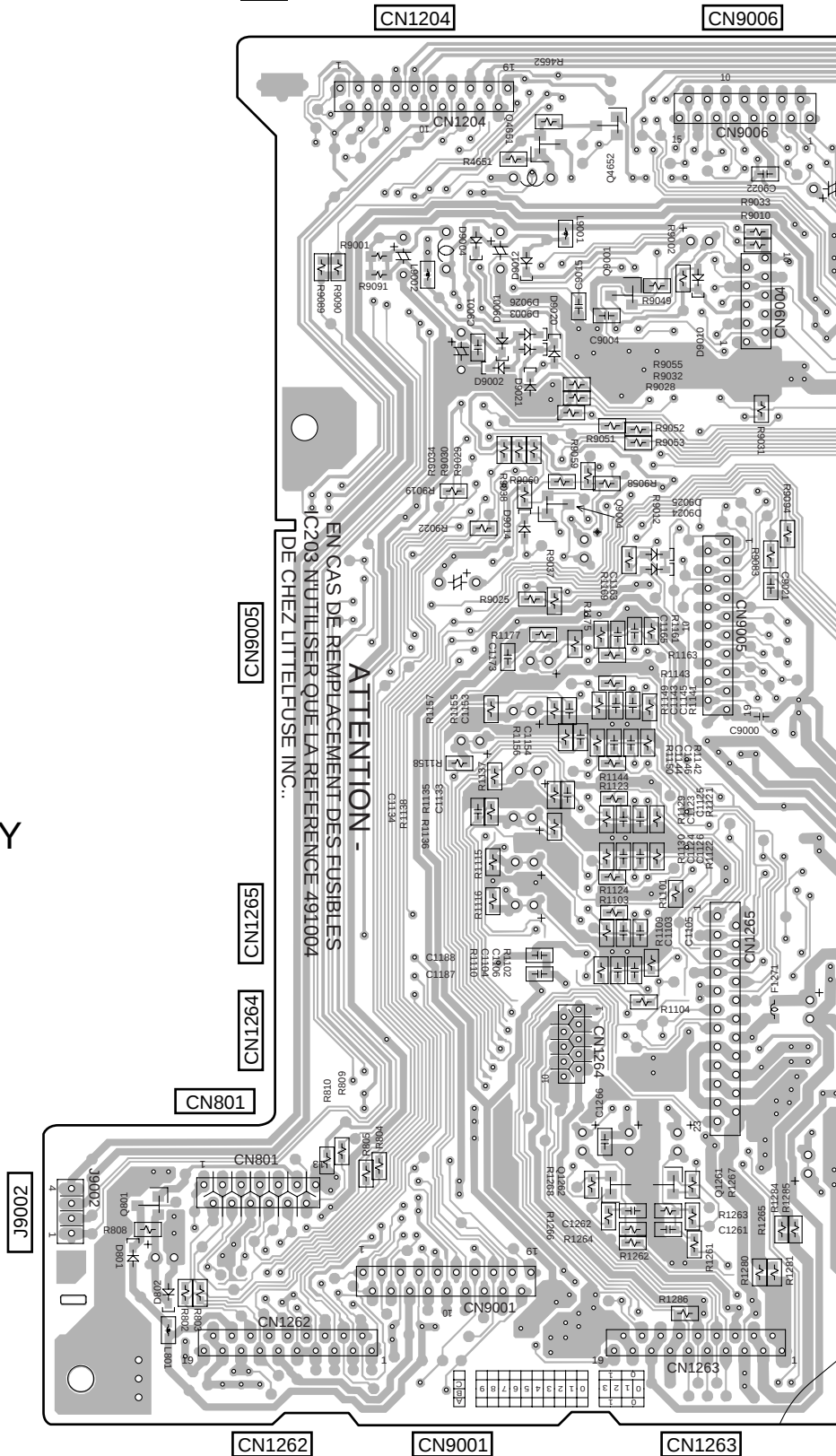
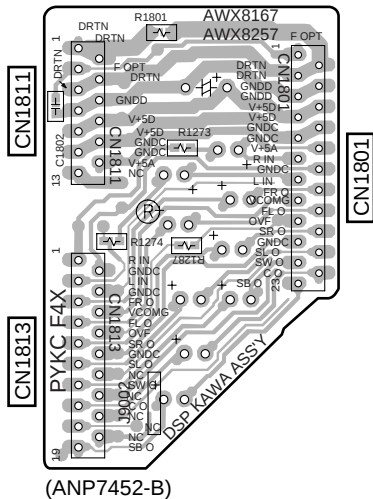
VSX-C402-S

F

SIDE B

MOTHER ASSY

DSP KAWA ASSY



Q801

Q4651 Q4652
Q9004 Q9001
Q1262 Q1261

4.5 DSP ASSY

SIDE A

SIDE A

F DSP ASSY

D CN1264

CN8017

E CN1811

CN8003

E CN1813

CN8009

D CN9005

CN8012

IC8201

Q8504
IC8702 IC8301
Q8341

IC8701

Q8501
IC8501

IC8502

IC8603
IC8601

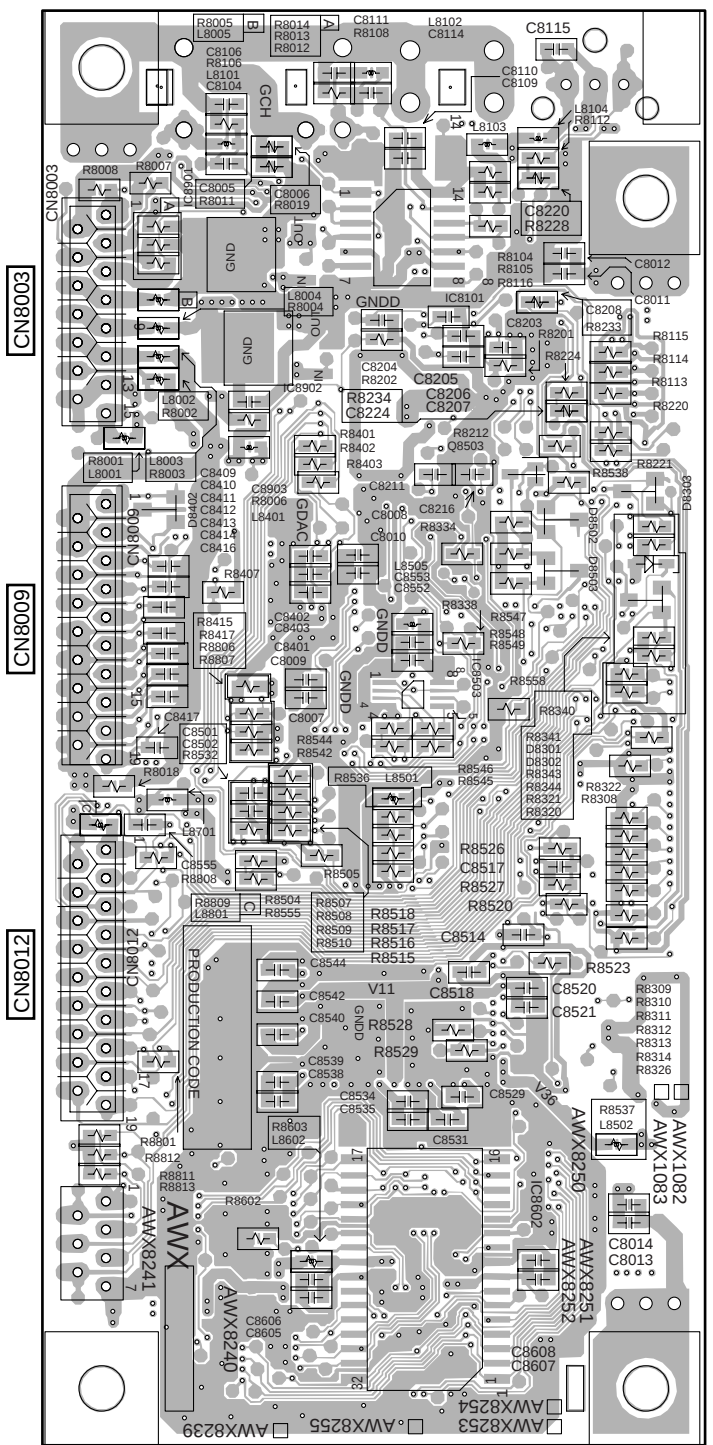
(ANP7465-A)

VSX-C402-S

SIDE B

SIDE B

F DSP ASSY



(ANP7465-A)

IC8901
IC8101

IC8902

Q8503

IC8503

IC8602

F

F

△

SIDE A

D CN1204

SIDE B

CN4102

G

The logo of the German Society for Quality Management (DGQ) is a black square containing a white capital letter 'G'.

SIDE A

SIDE A

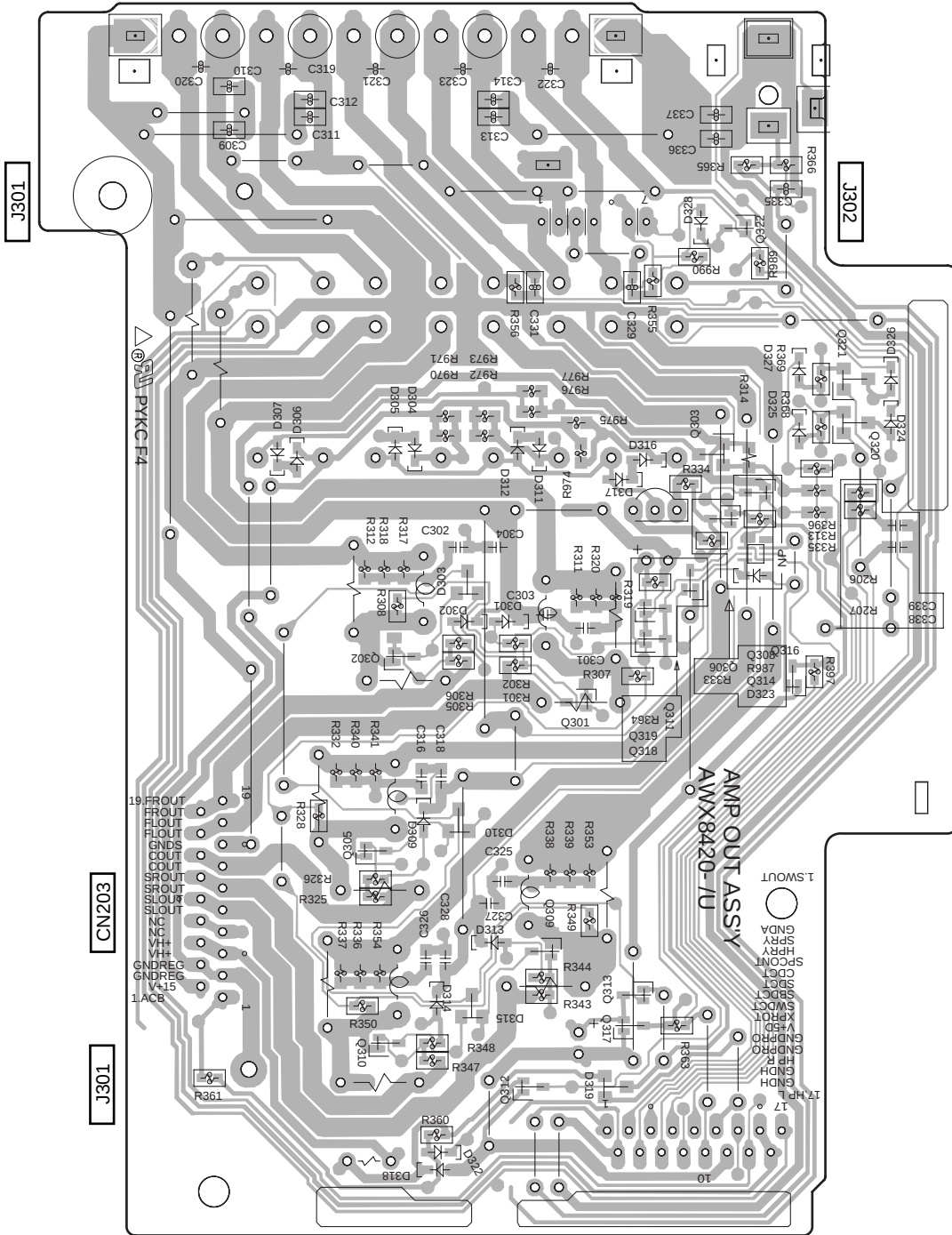
D CN9010



SIDE B

SIDE B

J AMP OUT ASSY



CN301 (ANP7451-F)

1 2 3 4

4.10 ENCODER, FRONT, POWER SW and SUR OUT ASSYS

SIDE A

A

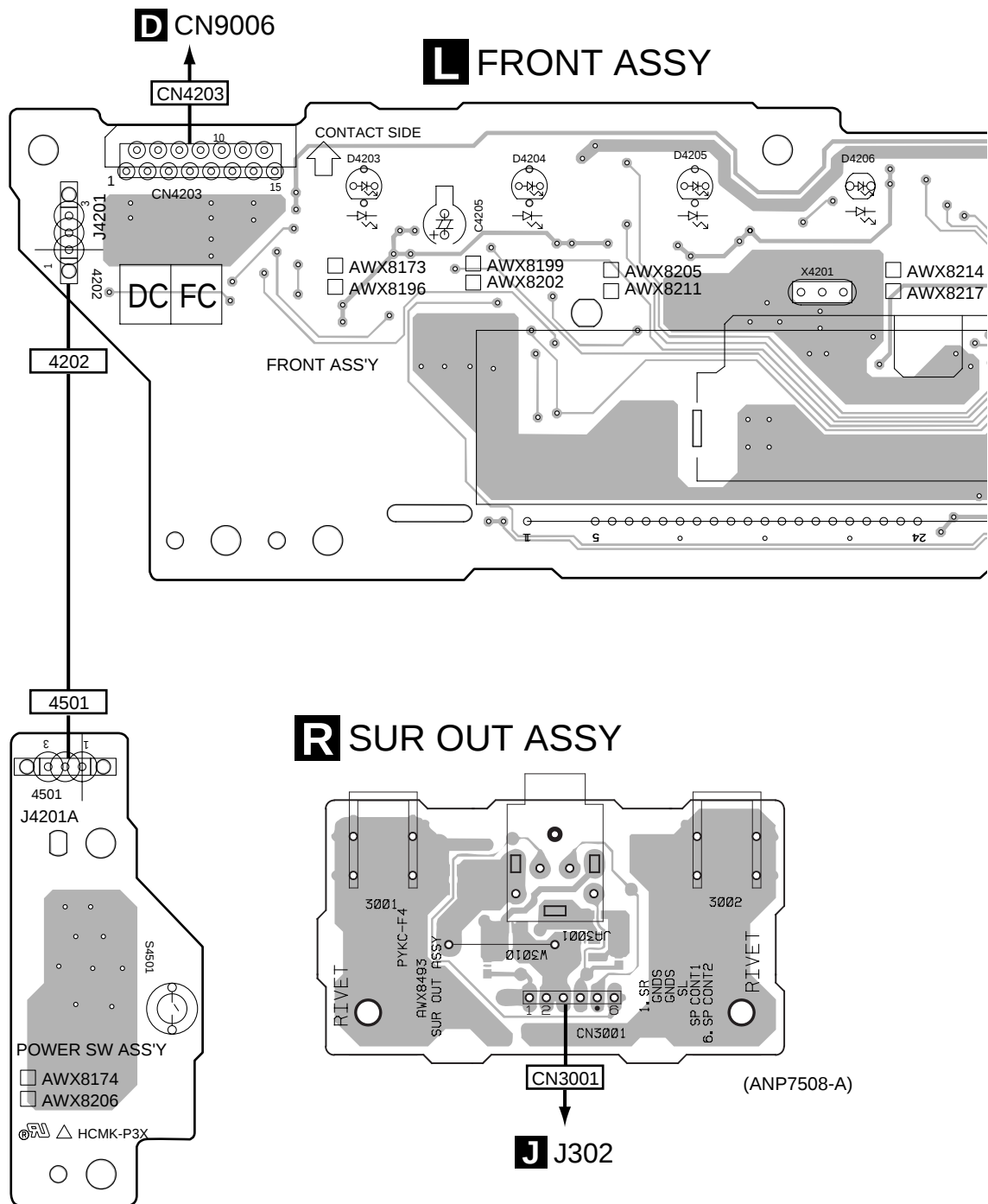
B

C

D

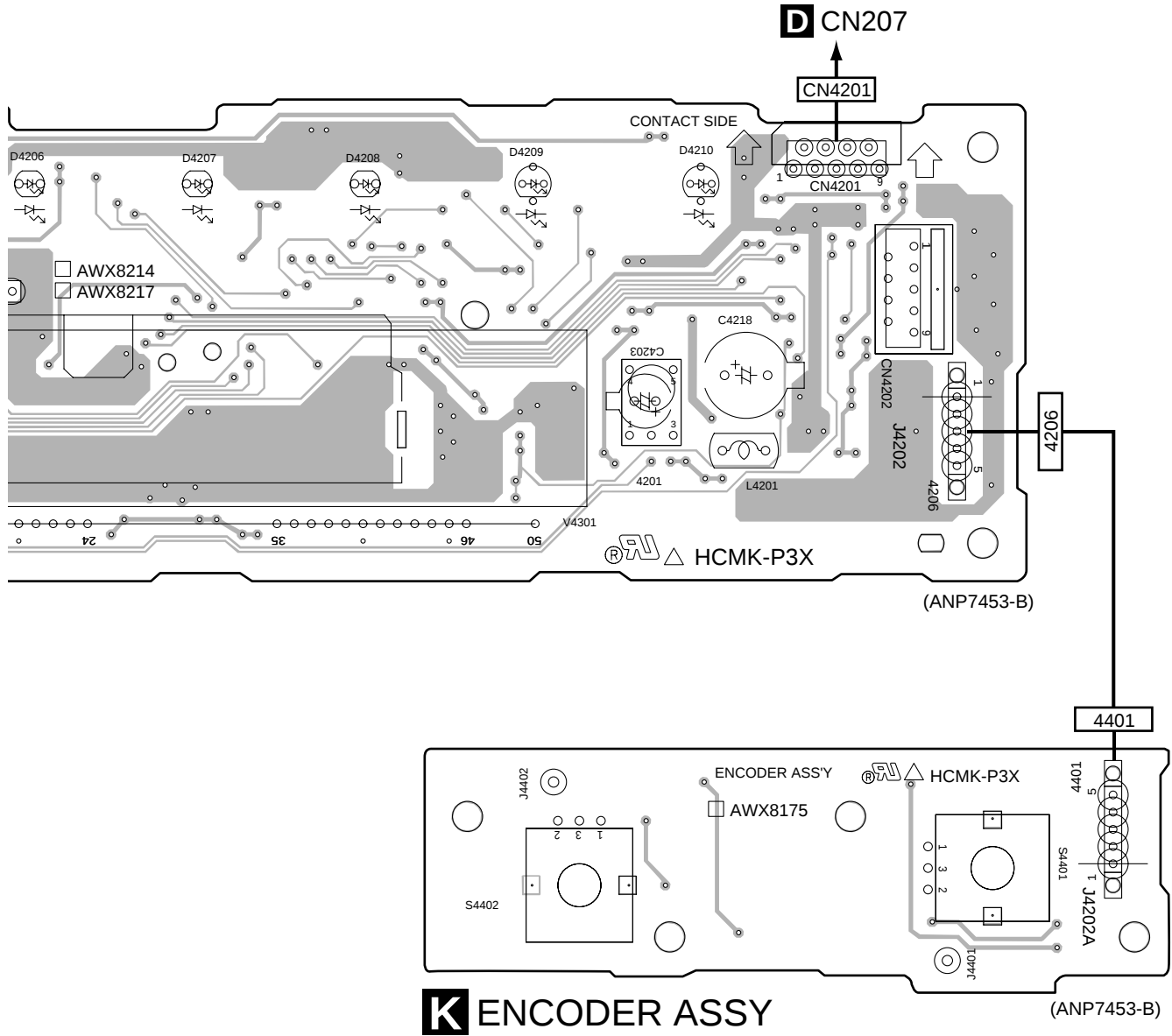
E

F



M POWER SW ASSY

L M R



A)

SIDE B

A

B

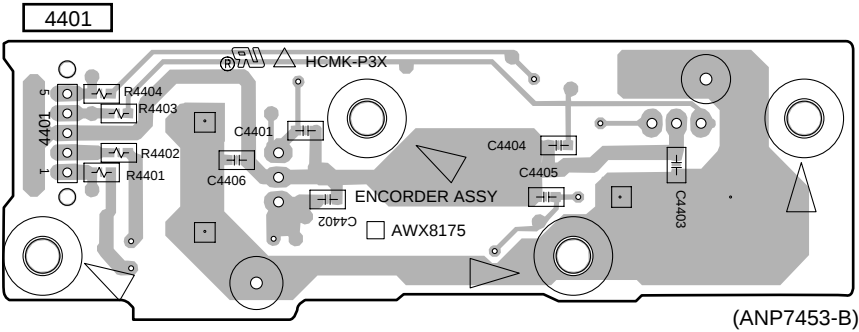
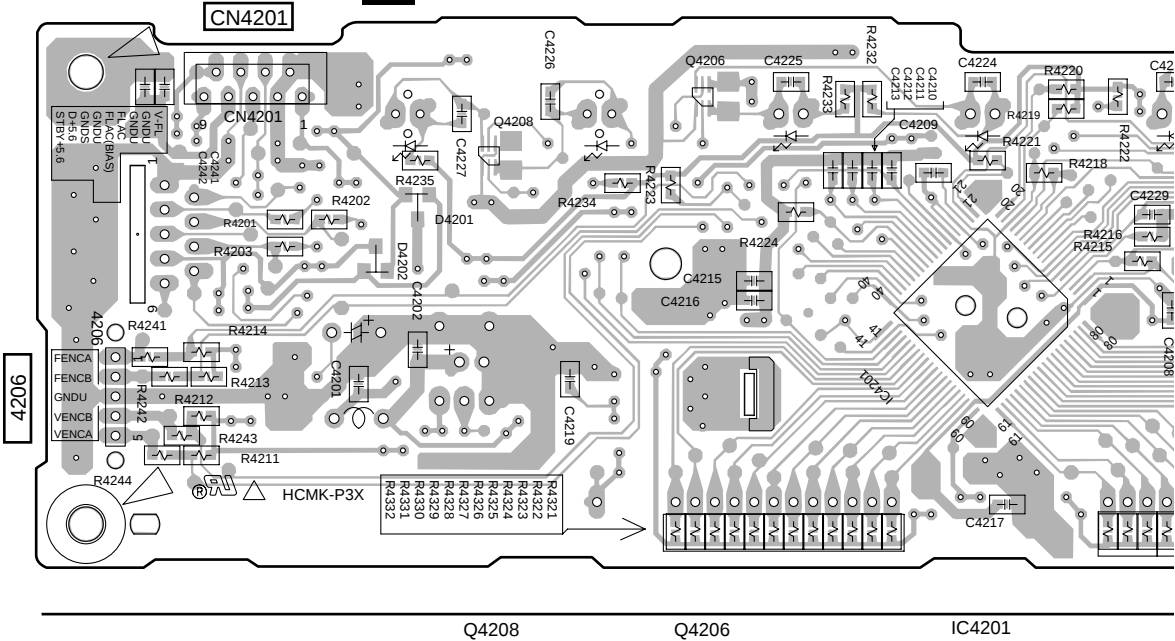
C

D

E

F

L FRONT ASSY



K ENCODER ASSY

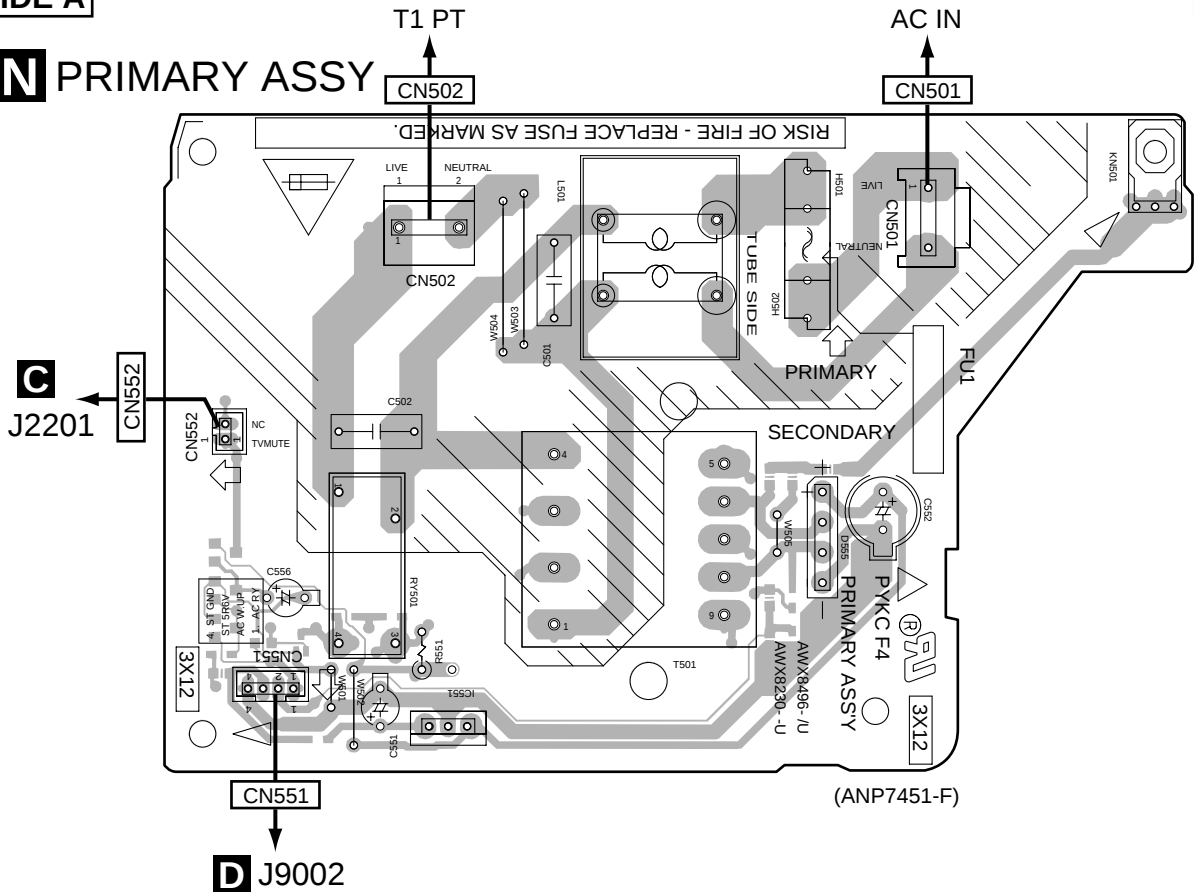
K L

4.11 PRIMARY ASSY

SIDE A

SIDE A

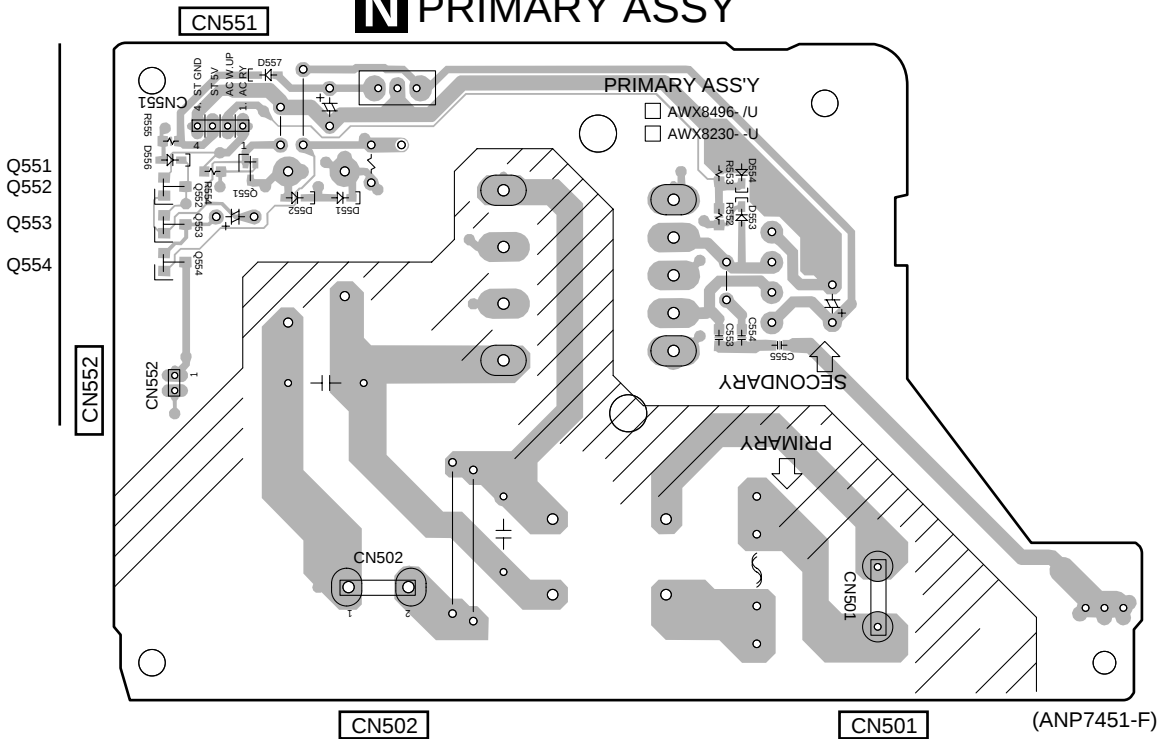
N PRIMARY ASSY



SIDE B

SIDE B

N PRIMARY ASSY



N

N

5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
●The Δ 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 $\rightarrow$ 56 x 10¹ $\rightarrow$ 561 RD1/4PU561J
47k Ω $\rightarrow$ 47 x 10³ $\rightarrow$ 473 RD1/4PU473J
0.5 Ω $\rightarrow$ R50 RN2H R50K
1 Ω $\rightarrow$ 1R0 RS1P 1R0K
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω $\rightarrow$ 562 x 10¹ $\rightarrow$ 5621 RN1/4PC5621F

Mark No.	Description	Part No.
----------	-------------	----------

LIST OF ASSEMBLIES

LIST OF ASSEMBLIES		
NSP	1..SCART ASSY	AWM7887
	2..AMP OUT ASSY	AWX8420
	2..PRIMARY ASSY	AWX8496
	2..SCART-1F ASSY	AWX8505
	2..SCART-2F ASSY	AWX8506
	2..12V ASSY	AWX8502
	2..AMP KAWA ASSY	AWX8503
	2..D5V ASSY	AWX8499
	2..VHVL ASSY	AWX8507
NSP	1..MOTHER ASSY	AWM7885
	2..DSP KAWA ASSY	AWX8167
	2..MOTHER ASSY	AWX8424
NSP	1..FRONT ASSY	AWM7782
	2..FRONT ASSY	AWX8173
	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	AXQ7246
	1..DSP ASSY	AWX8241
	1..SUR OUT ASSY	AWX8493

Mark No.	Description	Part No.
----------	-------------	----------

FM/AM TUNER MODULE

SEMICONDUCTORS

	IC201	BA1451F
	IC202	LC72131MD
	Q201,Q204,Q205,Q601	2SC2412K
	Q202	DTA124ES
	Q203,Q602	DTC124EK
	D201	1SS133
	D601	HVU187
	D202	MTZJ5.1C
	D101	UDZS6.8B

COILS AND FILTERS

	L201	ATE7003
	F202	ATF-107
	F201	ATF-119
	F601	ATF7025
	F203	ATF7026
	L602	LAU2R2J

Mark No.	Description	Part No.
----------	-------------	----------

L601 LCTA270J2520

CAPACITORS		
	C605	CCSQCH680J50
	C212,C213,C226,C233-C235	CCSRCH101J50
	C240,C614	CCSRCH101J50
	C206	CCSRCH120J50
	C231,C232	CCSRCH150J50
	C223	CEAT100M50
	C229	CEAT101M10
	C224	CEAT1R0M50
	C227	CEAT220M25
	C241	CEAT2R2M50
	C243	CEAT330M16
	C228	CEAT3R3M50
	C237	CEAT470M10
	C211	CEJQ1R0M50
	C210	CEJQ470M16
	C103,C104,C204,C238,C609	CKSRYB102K50
	C102,C208,C216,C217,C220	CKSRYB103K50
	C239,C242,C604,C610,C615	CKSRYB103K50
	C225	CKSRYB153K50
	C607,C608	CKSRYB182K50
	C201,C205,C214,C230,C236	CKSRYB223K50
	C244,C611	CKSRYB223K50
	C221	CKSRYB224K10
	C603	CKSRYB392K50
	C215	CKSRYB471K50
	C202,C222	CKSRYB473K16
	C606	CKSRYB561K50

RESISTORS		
	R211	RD1/4PU221J
	R221	RD1/4PU222J
	R233	RD1/4PU391J
	R103,R104	RS1/10S221J
	Other Resistors	RS1/16S####J

OTHERS		
	CN201 13P FFC CONNECTOR	52044-1345
	BN201 2P TERMINAL WITH PAL	AKA7002
	0 SHIELD CASE T(MTL)	ANK7072
	0 SHIELD CASE B(MTL)	ANK7073
	X201 CRYSTAL RESONATOR (7.2MHz)	ASS1093
	FM FRONT END	AXF7005
	AM RF TUNING BLOCK	AXX7072

5		6		7		8
Mark No. Description Part No.			Mark No. Description Part No.			
B SCART-1F ASSY						
SEMICONDUCTORS						
IC2101		TC7WU04F	Q2207		HN1C03F	
IC2106		UPC4570G2	Q2206		RN1903	
⚠ IC2102,IC2103 PROTECTOR(2.5A)		AEK7014	D2214,D2239		1SS355	
IC2104		NJU7312AM	D2216,D2219-D2221,D2240		DAN202K	
⚠ D2113,D2117,D2118,D2120		1SR154-400	D2204,D2211		UDZS13B	
			D2203,D2210,D2224,D2225		UDZS5.1B	
			D2228,D2229,D2233,D2234		UDZS5.1B	
D2127		DAN217	D2237,D2238,D2241-D2250		UDZS5.1B	
D2105,D2110		UDZS13B	D2206,D2213,D2222,D2223,D2251		UDZS6.2B	
D2102,D2104,D2107,D2109		UDZS5.1B				
D2122,D2123,D2125,D2126		UDZS5.1B				
D2131-D2138		UDZS5.1B				
D2103,D2108		UDZS6.2B				
COILS AND FILTERS			CAPACITORS			
F2102,F2103		DTF1070	C2203,C2204,C2214,C2215		CCSRCH101J50	
L2101		QTL1013	C2210,C2218-C2221,C2223,C2230		CCSRCH221J50	
			C2201,C2202,C2205,C2206		CCSRCH331J50	
			C2216,C2217,C2255,C2257		CCSRCH331J50	
			C2208,C2209,C2211,C2243,C2244		CEAT470M25	
			C2238		CEJQ101M10	
			C2239		CEJQ470M10	
			C2224,C2237,C2242,C2259-C2262		CKSRYB104K25	
			C2264,C2265		CKSRYB104K25	
			C2240,C2241		CKSRYB105K10	
			C2226-C2228,C2231,C2233		CKSRYF105Z10	
</						

Mark No. Description**Part No.****Mark No. Description****Part No.**

⚠ D204
D1101,D1102,D1253,D1254,D801
D9001-D9004,D9010,D9012,D9017
D9020-D9024,D9026-D9029
D9031- D9033

1SR154-400
1SS355
1SS355
1SS355
1SS355

D203
D1301
D9018
D210
D207

D3SBA20
DAN217
DAP202K
RB501V-40
UDZS20B

D1251,D1252,D209

UDZS6.8B

COILS AND FILTERS

L9001,L9002
F1271,F201,F202
L4651,L9003
L801, L9004

ATL7002
DTF1070
LFEA2R2J
QTL1013

CAPACITORS

C9003 (0.22F/5.5V)
C1123,C1124,C1143,C1248,C1249
C1261,C1262
C1501,C1502,C1521,C1522,C1541
C4656,C4657

ACH7144
CCSRCH101J50
CCSRCH101J50
CCSRCH221J50
CCSRCH270J50

C1542
C1105-C1108,C1125-C1128,C1145
C1147
C1103,C1104
C4655

CCSRCH271J50
CCSRCH331J50
CCSRCH331J50
CCSRCH471J50
CCSRCH561J50

C1221-C1226,C1229-C1234
C4653,C9005
C1270,C807
C9007
C4651

CEAT100M50
CEAT101M10
CEAT101M16
CEAT102M6R3
CEAT1R0M50

C211
C214
C9002
C4652
C1253,C1254

CEAT220M50
CEAT221M25
CEAT221M6R3
CEAT2R2M50
CEAT331M10

C212
C209
C220
C213
C9013

CEAT331M50
CEAT332M16
CEAT470M16
CEAT471M35
CEAT471M6R3

C1263,C1264
C1265
C1344,C1503,C1504,C1523,C1524
C1543,C1544
C1111,C1112,C1131,C1132

CEAT4R7M50
CEJQ221M6R3
CEJQ4R7M50
CEJQ4R7M50
CKSQYF225Z16

C1151,C1152,C1505,C1506
C1525,C1526,C1545,C1546
C4658,C801,C9015,C9022,C9024
C1146,C1185,C1186,C1199
C1227,C1228,C1251,C1252,C1269

CKSQYF225Z16
CKSQYF225Z16
CKSRYB102K50
CKSRYB103K50
CKSRYB103K50

C802,C804,C9001,C9004,C9008
C9021
C1266
C1187,C1188,C1237-C1240,C1271
C215,C216, C9023

CKSRYB103K50
CKSRYB103K50
CKSRYB104K16
CKSRYB104K25
CKSRYB104K25

C1272,C803,C805,C9006
C1144

CKSRYB105K10
CKSRYB223K50

RESISTORS

R9001,R9091
R1251,R1252
R203
Other Resistors

RS1/10S101J
RS1LMF101J
RS1LMF102J
RS1/16S####J

OTHERS

X4651 CRYSTAL RESONATOR
(4.332 MHz)
X9001 CERAMIC RESONATOR
(15.7 MHz)
CN1262,CN1263 19P CONNECTOR

CN207 9P FFC CONNECTOR
CN801 13P FFC CONNECTOR
CN9006 15P FFC CONNECTOR
CN1501,CN9010
17P FFC CONNECTOR

ASS7004

ASS7032

19R-1.25FJ

52045-0945

52045-1345

52045-1545

52045-1745

52045-1945

AKP7064

B3B-PH-K

B6B-EH

PF04PG-D05

VEF1040

VKN1241

VNF1084

**DSP KAWA ASSY
CAPACITORS**

C1802
C1267,C1268
C1101,C1102,C1121,C1122
C1141,C1142,C1161
C1801

CCSRCH101J50
CEAT100M50
CEAT2R2M50
CEAT2R2M50
CEAT331M16

RESISTORS

All Resistors

RS1/16S####J

OTHERS

CN1811 13P PLUG
CN1813 15P PLUG
CN1801 23P SOCKET

AKP7059

AKP7060

AKP7075

**DSP ASSY
SEMICONDUCTORS**

IC8201
IC8401
IC8501
IC8901
IC8902

AK4114VQ
AK4529VQ
DSPD56367PV150
NJM2391DL1-33
NJU7223DL1-18

IC8701
IC8702
IC8502

TC74LVX244FT
TC74VHCT244AFT
TC7WU04FU

Mark No.	Description
Q8504	
Q8503	
D8501	
D8401	
D8402,D8502,D8503	

COILS AND FILTERS

L8002,L8004,L8501,L8502
L8201,L8203,L8204,L8401,L8402
L8504,L8701,L8702

CAPACITORS

C8209,C8210
C8421
C8007,C8008,C8201,C8212,C8214
C8404,C8409-C8414,C8416,C8417
C8419,C8505,C8507,C8509

C8511,C8512,C8515,C8518,C8520
C8522,C8524,C8526,C8528,C8530
C8532,C8534,C8536,C8539,C8541
C8543,C8545,C8551,C8703,C8706
C8548,C8549

C8701,C8704
C8406,C8415,C8546,C8547,C8902
C8904
C8217,C8225,C8408
C8204,C8555

C8009,C8405,C8418,C8517,C8554
C8010,C8202,C8207,C8213,C8215
C8407,C8420,C8422,C8504,C8513
C8521,C8523,C8525,C8527,C8529
C8531,C8533,C8535,C8537,C8538

C8540,C8542,C8544,C8550,C8702
C8705,C8901,C8903
C8516
C8514
C8203

RESISTORS

R8506
R8201
Other Resistors

OTHERS

X8501 CRYSTAL RESONATOR (20MHz)
X8201 CRYSTAL RESONATOR (24.576MHz)
CN8012 19P FFC CONNECTOR

CN8003 13P SOCKET
CN8009 15P SOCKET
CN8017 10P FFC CONNECTOR

FRONT-IN ASSY CAPACITORS

C4103,C4104
C4107,C4111,C4122
C4108
C4105,C4109,C4117,C4124
C4102,C4106,C4110,C4123

C4112,C4113
C4120,C4121

Part No.
UMD2N
UN5112
1SS355
DAN202K
DAP202K

ATL7002
QTL1013
QTL1013

CCSRCH100D50
CCSRCH101J50
CCSRCH471J50
CCSRCH471J50
CCSRCH471J50

CCSRCH471J50
CCSRCH471J50
CCSRCH471J50
CCSRCH471J50
CCSRCH8R0D50

CEV100M16
CEV101M16
CEV101M16
CEV470M6R3
CKSRYB102K50

CKSRYB103K50
CKSRYB104K16
CKSRYB104K16
CKSRYB104K16
CKSRYB104K16

CKSRYB104K16
CKSRYB104K16
CKSRYB105K6R3
CKSRYB333K16
CKSRYB473K50

RAB4C101J
RS1/16S1802F
RS1/16S####J

VSS1171
XSS3003
52045-1945

AKP7070
AKP7071
VKN1414

CKSRYB223K50
CKSRYF105Z10

Mark No.	Description
RESISTORS	
All Resistors	
OTHERS	
CN4102 19P FFC CONNECTOR	
JA4101 PIN JACK(3P)GOLD	
JA4102 OPT. LINK IN	
JA4103 HEADPHONE JACK	
KN4101 WRAPPING TERMINAL	
J4601 BOARD IN LEAD WIRE	

52045-1945
AKB7098
GP1FA513RZ
RKN1006
VNF1084

ADX7442

HAMP KAWA ASSY SEMICONDUCTORS

⚠ IC4701 PROTECTOR(7A)

OTHERS

CN4701 17P FFC CONNECTOR
J4702 LEAD WITH HOUSING
CN4703 19P SOCKET
CN4705,CN4706 23P SOCKET
4701,4702 PCB BINDER

I6CH AMP ASSY SEMICONDUCTORS

⚠ IC71
⚠ IC3301,IC3401
Q3382
Q62
Q111,Q3381,Q63

⚠ Q61
Q3301,Q3302,Q3401,Q3402
Q3501,Q3502,Q3504
Q3654
Q3653

Q3652
⚠ Q3383
⚠ Q3384
Q3651
Q101,Q103

Q102,Q104
⚠ D3321-D3326
D3327,D3328
⚠ D3421-D3426
D3427,D3428

D3387,D3388,D3651-D3655
D101,D102,D3657,D42
⚠ D3391,D3392
⚠ D3381,D3382,D3481,D3482
⚠ D3581,D3582

D3389,D3390
⚠ D72
D3393,D3394
⚠ D63
D3385,D3386

D105,D106,D3658
TH111

CAPACITORS

81
UDZS7.5B
NCP18WF104J03RB

Mark No. Description**Part No.****Mark No. Description****Part No.**

C3305,C3306,C3405,C3406
C3505,C3506,C62
C3309,C3310,C3409,C3410
C3509,C3510
C3307,C3308,C3407,C3408,C3508

CCSRCH221J50
CCSRCH221J50
CCSRCJ3R0C50
CCSRCJ3R0C50
CEAL100M16

C3507
C72
C3651
C101,C102
C3323,C3324,C3423,C3424

CEAL470M6R3
CEAT100M50
CEAT101M25
CEAT1R0M50
CEAT221M50

C3167,C3168,C3178,C3179
C3301,C3302,C3317,C3318
C3401,C3402,C3501,C3502
C3652,C63
C3653

CEAT2R2M50
CEAT2R2M50
CEAT2R2M50
CEAT470M25
CEAT470M35

C3321,C3322,C3421,C3422
C3303,C3304,C3403,C3404
C3503,C3504
C71

CEATR22M50
CKSRYB102K50
CKSRYB102K50
CKSRYB473K50

CAPACITORS

C336
C335
C334
C333
C301-C304,C316,C318

CCSRCH221J50
CCSRCH331J50
CEAT100M50
CEAT471M6R3
CKSQYB104K50

C325-C328
C329,C331
C337
C319-C323

CKSQYB104K50
CKSRYB102K50
CKSRYB104K25
XCG3008

RESISTORS

R303,R304,R324,R345,R346
(0.1ohm, 2W)
R309,R310,R330,R351,R352
R358

ACN7120

⚠ R311,R312,R317-R320,R332

RD1/2LMF101J
RD1/2VM103J
RS1/10S150J

⚠ R336-R341,R353,R354
R313,R314
R315,R316
Other Resistors

RS1/10S150J
RS1/10S222J
RS1LMF331J
RS1/16S####J

OTHERS

CN301 17P FFC CONNECTOR
J301 2P CONNECTOR ASSY
JA301 PIN JACK(1P)
401 SPEAKER TERMINAL10-P
CN203 19P PLUG

52045-1745
ADX7425
AKB7080
AKE7093
AKP7062

J302 6P JUMPER WIRE
301 PCB Binder

ADX7462
VEF1040

**K ENCODER ASSY
SWITCHES AND RELAYS**

S4402
S4401

ASX7041
ASX7043

RESISTORS

All Resistors

RS1/16S####J

OTHERS

4401 5P CABLE HOLDER

51048-0500

**L FRONT ASSY
SEMICONDUCTORS**

IC4201
Q4202,Q4203,Q4210
Q4204,Q4206,Q4208
Q4211
D4211

PE5368A
DTC124EK
RN1903
RN2903
1SS355

D4201,D4202
D4207
D4204,D4205,D4208,D4209
D4203,D4206,D4210

DAN202K
SLR-343MC
SLR-343VC
SLR-343YC

COILS AND FILTERS

L4201

LFEA2R2J

CAPACITORS

C4203
C4205
C4210-C4213,C4228

CEJQ221M6R3
CEJQ470M10
CKSRYB102K50

RESISTORS

R3317-R3320,R3417-R3420(0.22/2W)
R3517-R3520 (0.22/2W)

ACN7122
ACN7122
RD1/4MUF470J
RD1/4PU101J
RD1/4PU330J

⚠ R3327,R3328,R3427,R3428
R3387,R3388
R3657

⚠ R3323,R3324,R3351,R3423,R3424
⚠ R3451
R67,R68
⚠ R62
R65

RS1/16S1R0J
RS1/16S1R0J
RS1/16S2201F
RS1/16S330J
RS1/16S4700F

Other Resistors

RS1/16S####J

OTHERS

CN3001,CN3002 23P PLUG
CN3651 PLUG(2P)

AKP7064
KM200SA2

**J AMP OUT ASSY
SEMICONDUCTORS**

Q320,Q321
Q303
Q301,Q302,Q305,Q308-Q310
Q312,Q318,Q319
Q307

2SA1037K
2SC2712
2SC4081
2SC4081
2SD1858X

Q313
Q306
Q311,Q317,Q322
Q316
Q314

DTA124EUA
DTA143EUA
DTC124EUA
DTC143EUA
RN2903

D301,D302,D304-D307,D309
D311-D314,D316,D317,D328
D322-D327
D319
D303,D310,D315

1SS355
1SS355
1SS355
DAN202K
DAP202K

D318

UDZS5.1B

COILS AND FILTERS

L301,L302,L304-L306

ATH-059

SWITCHES AND RELAYS

RY301-RY304

ASR7008

1

2

3

4

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.

B

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.

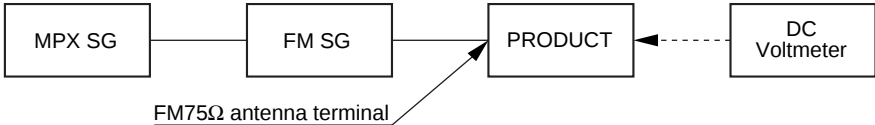


Fig.1 Adjustment Wiring Diagram

■

A

FM/AM TUNER MODULE

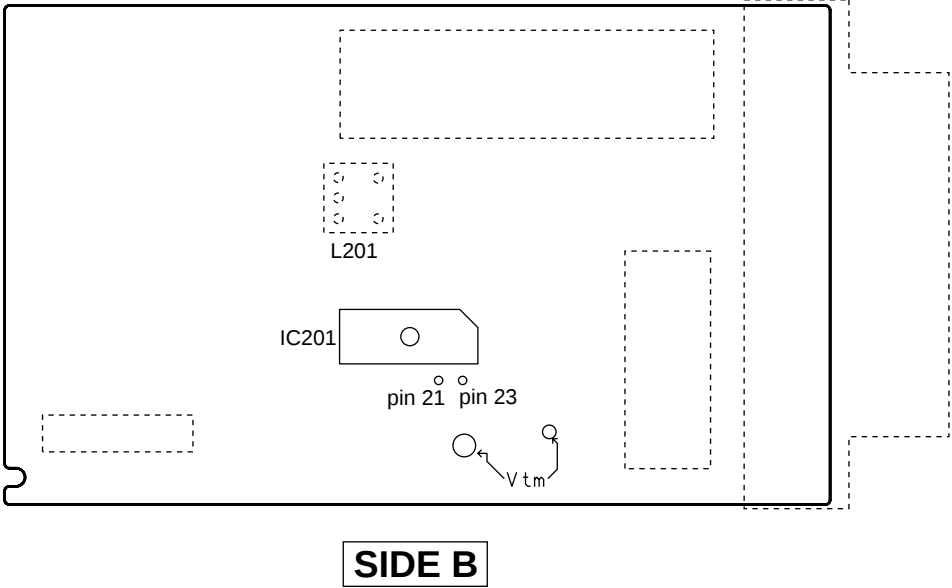


Fig.2 Adjustment Point

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 "x" means the speaker is not connected.

C301: CxSx Wx

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.

A

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

B

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

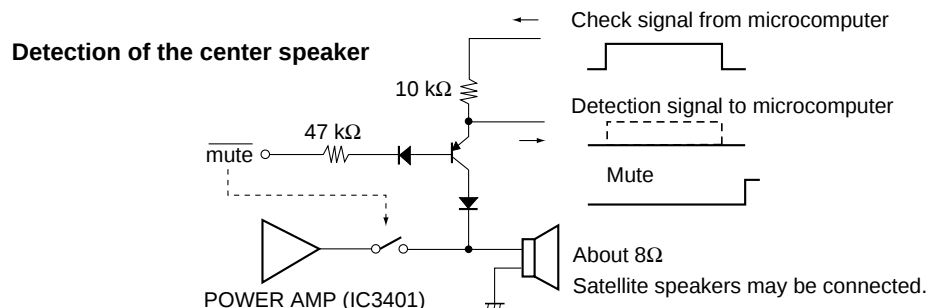
C

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

E

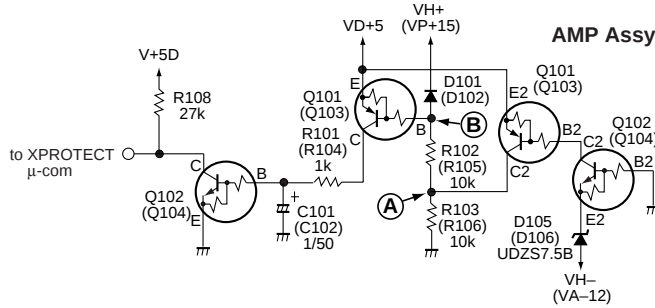


7.1.4 Circuit Description

* 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 (A) is about 5 V. The voltage at Point (B) 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 (B) 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

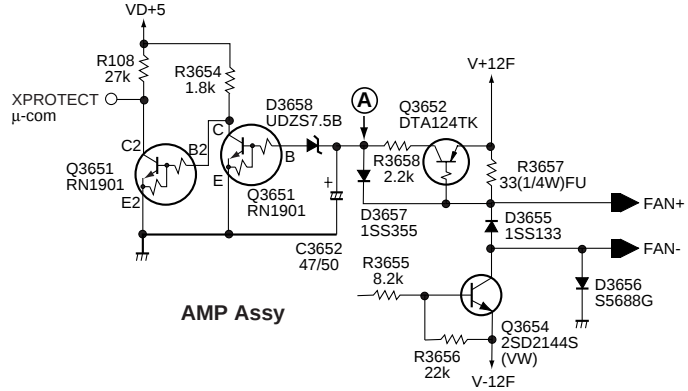
As the electric potential of VE at Q102 (Q104) (E2, C2, B2) becomes the same as that at VB, Q102 (Q104) (E2, C2, B2) is turned off. Following this, Q101 (Q103) (E2, B2, C2) is turned off, which changes the voltage at Points (A) and (B) to a value other than 5 V. Therefore, Q101 (Q103) (E, C, B) then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

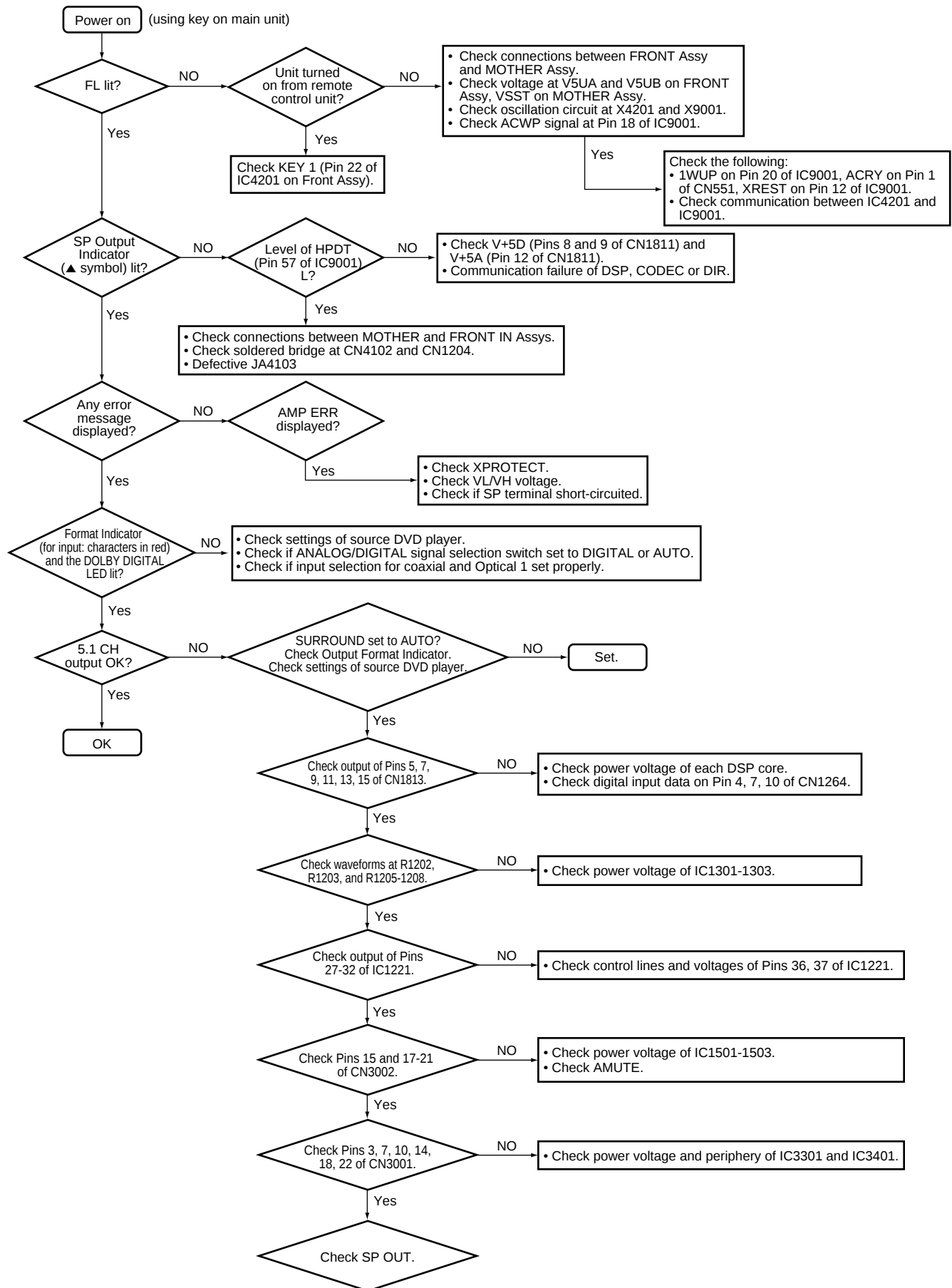


If no fan is connected between FAN+ and FAN-, or when the fan cannot rotate because of a foreign object caught in the blades, the BASE of Q3652 becomes OPEN, and Q3652 and Q3651 (E, C, B) are turned off. Then Q3651 (E2, B2, C2) is turned on, and the level of XPROTECT becomes low.

→ 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.

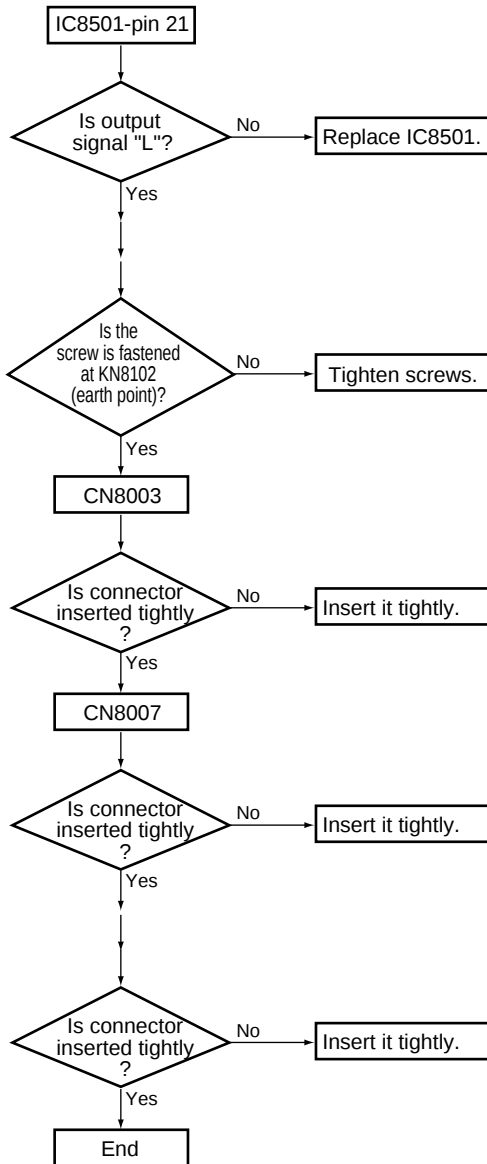
7.1.5 Troubleshooting



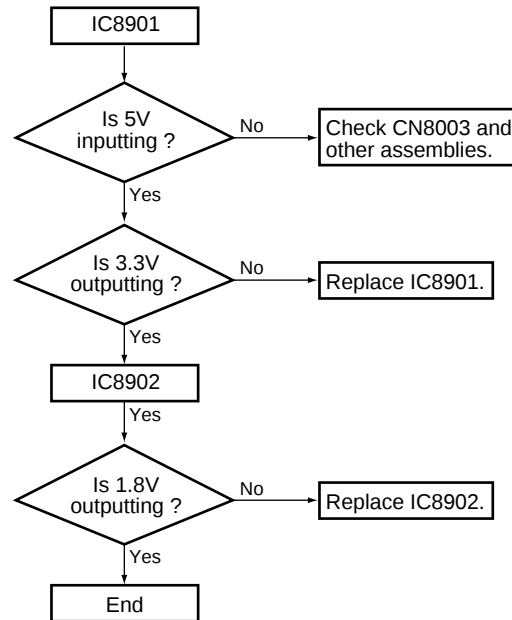
7.1.6 DSP Trouble shooting

- 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.

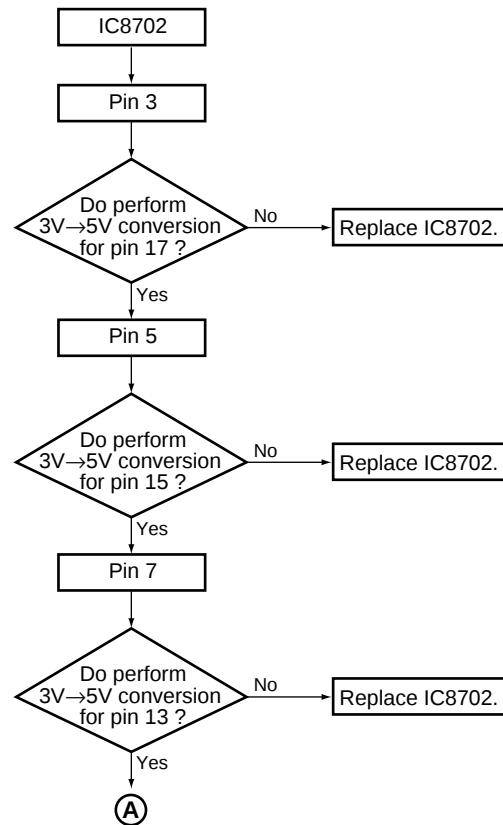
Step 1

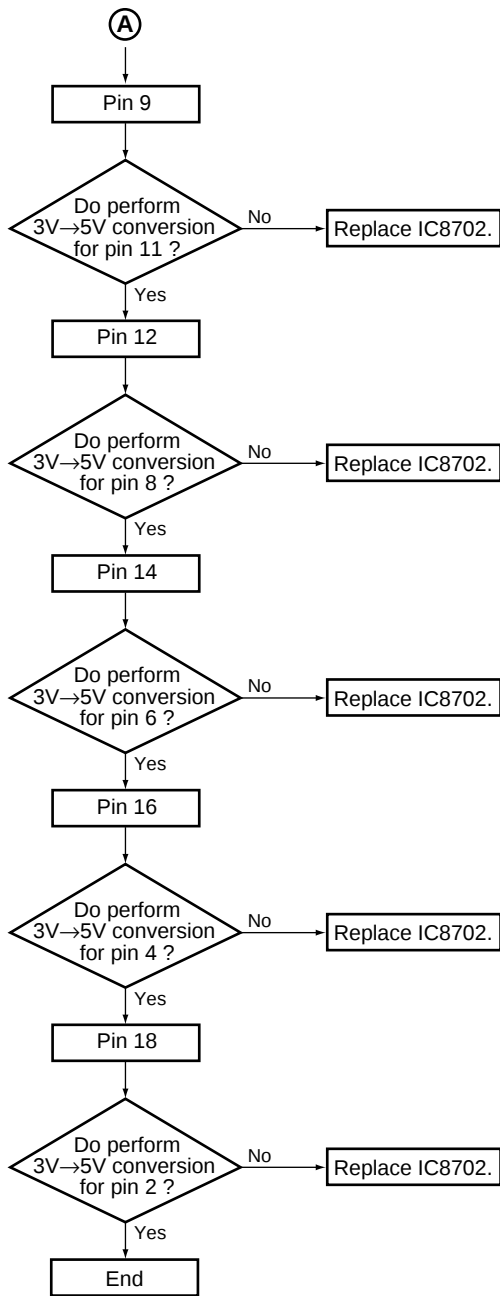


Step 2

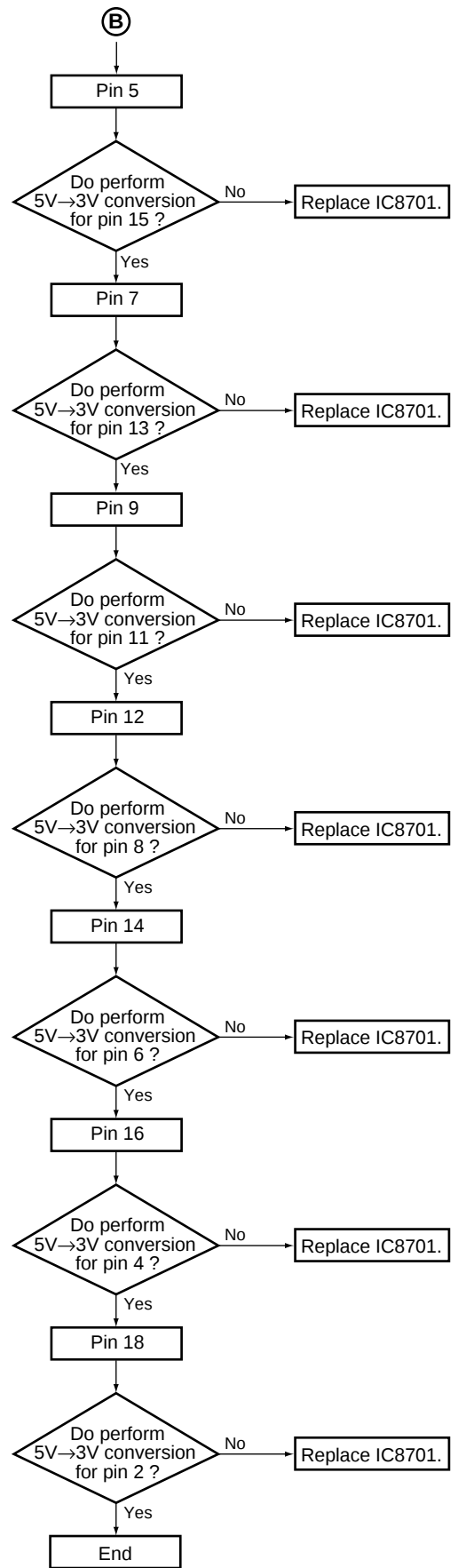
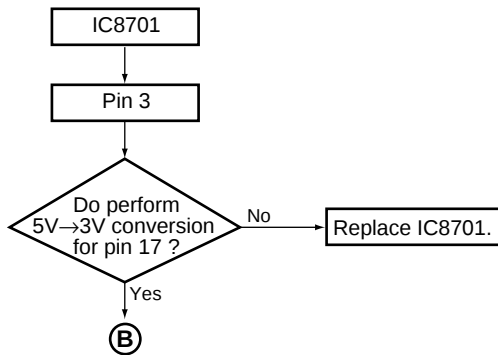


Step 3





Step 4



Step 5

A

IC8201

Is SPDIF signal coming?
(be different with Function)

Check
the DVD/CD
(pin 7).

No

Check the other assemblies.

Yes

B

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

C

Do not
oscillate of XTO
(pin 29)?

No

Is output
signal of INT0
(pin 36) "H"?

No

Replace IC8201.

Yes

Note:
X8201 oscillates
only in analog input.

Yes

Is
LRCK (pin 24)
outputting it?

No

Replace IC8201.

Yes

D

Is
SDTO (pin 25)
outputting it?

No

Replace IC8201.

Yes

Is
BCK (pin 26)
outputting it?

No

Replace IC8201.

Yes

IC8502-pin2

E

Is
20MHz clock
outputting it?

No

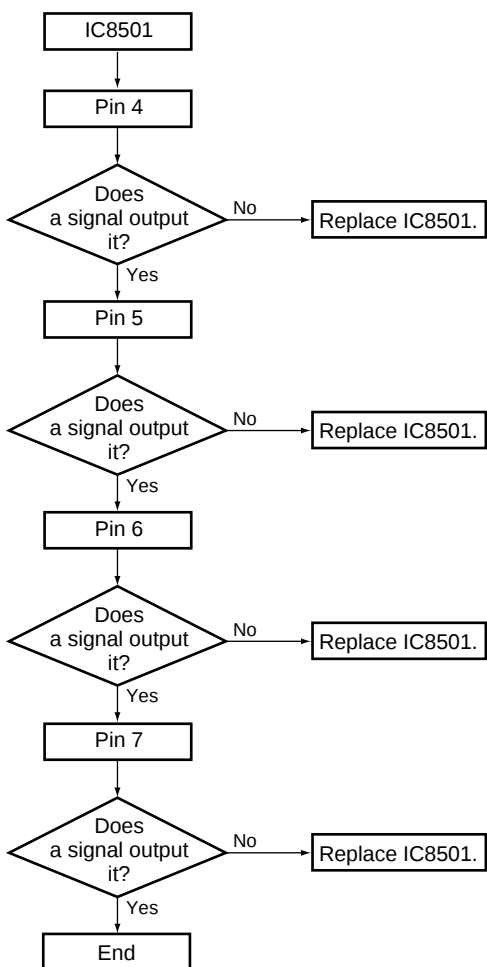
Replace IC8502 or X8501.

Yes

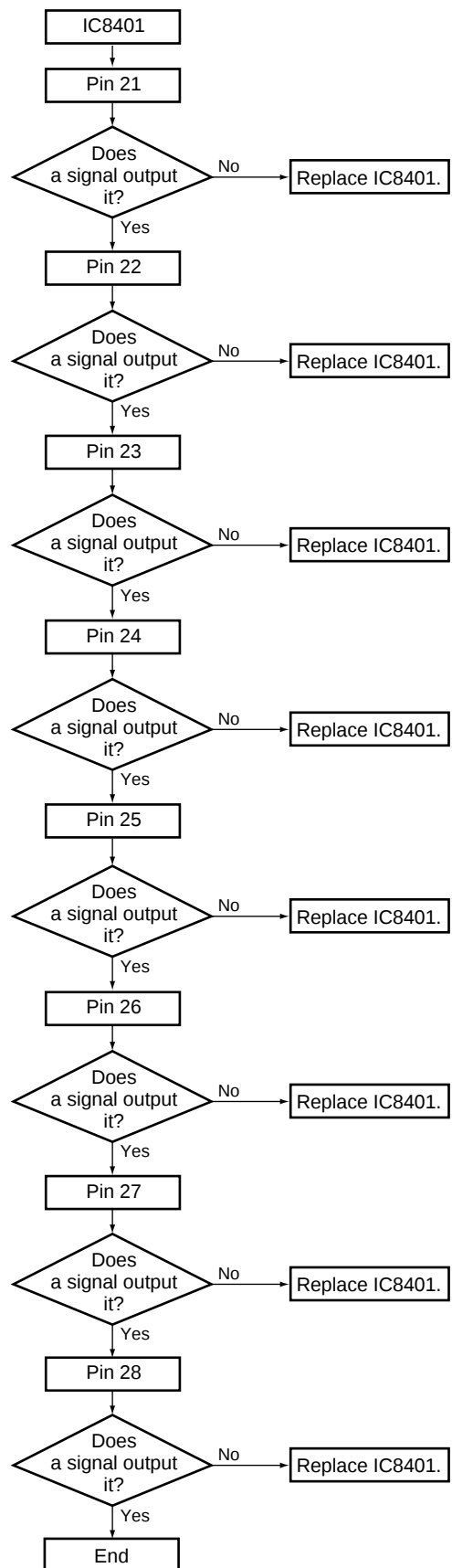
End

F

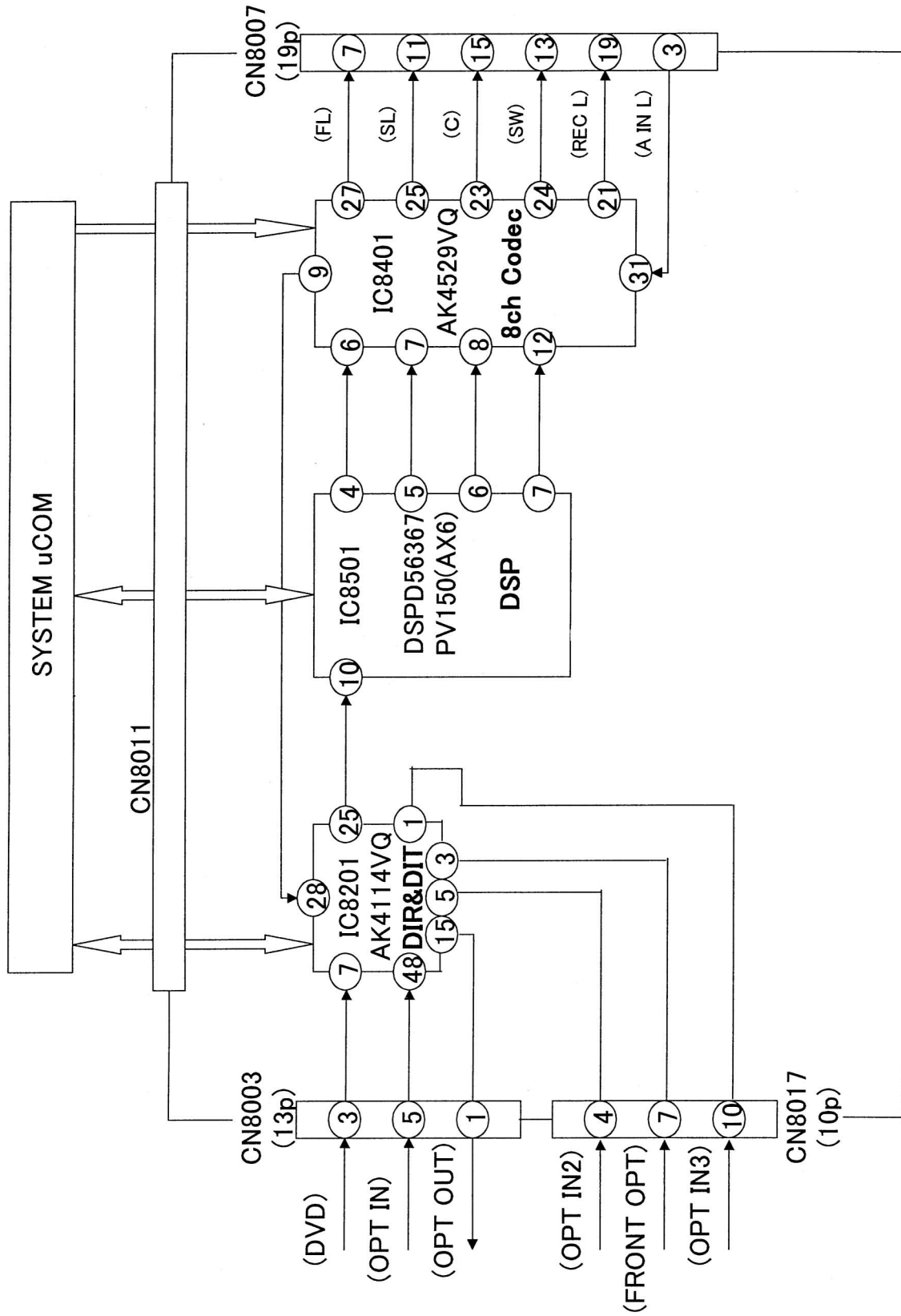
Step 6



Step 7

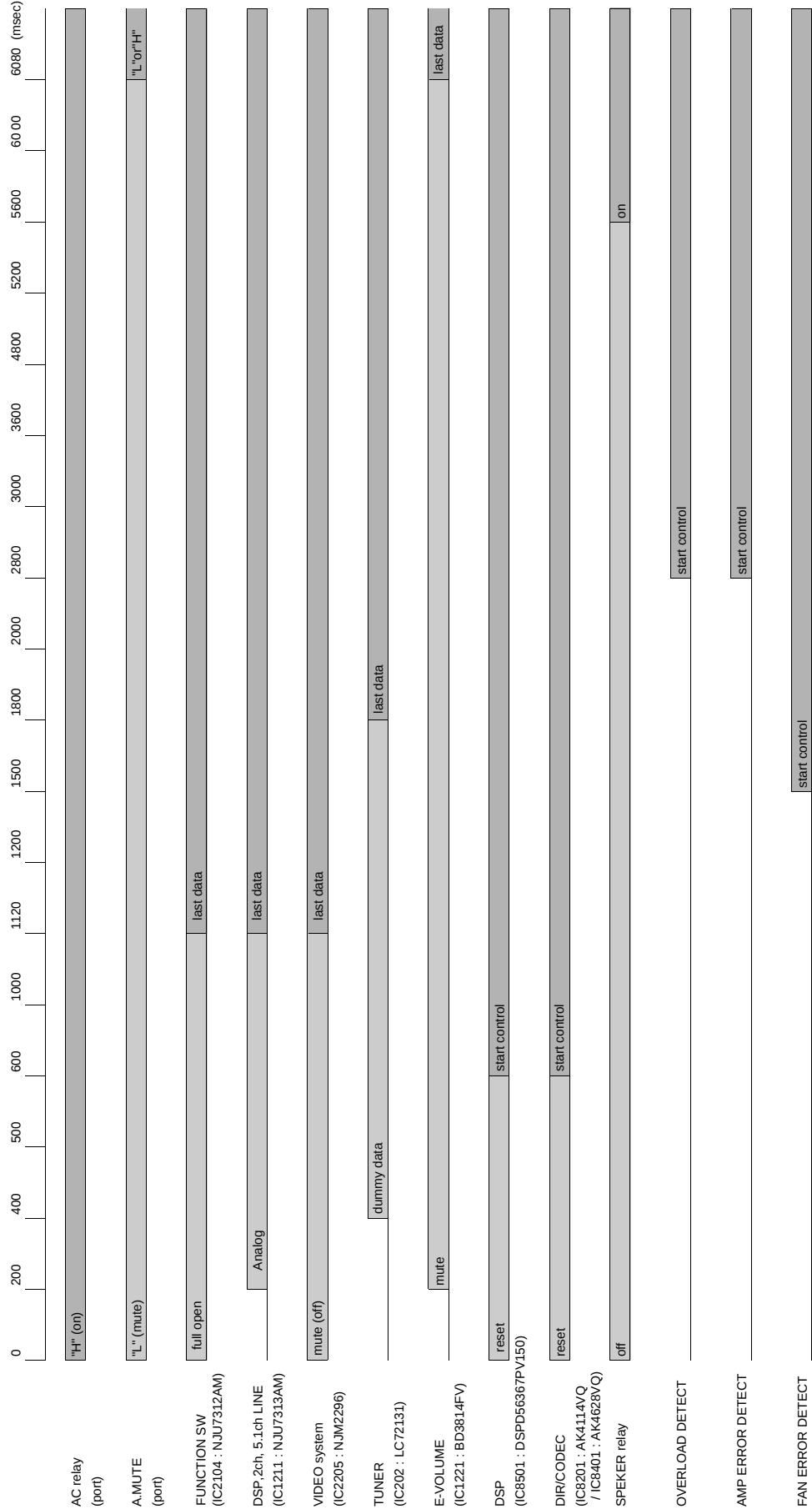


• DSP WIRING DIAGRAM

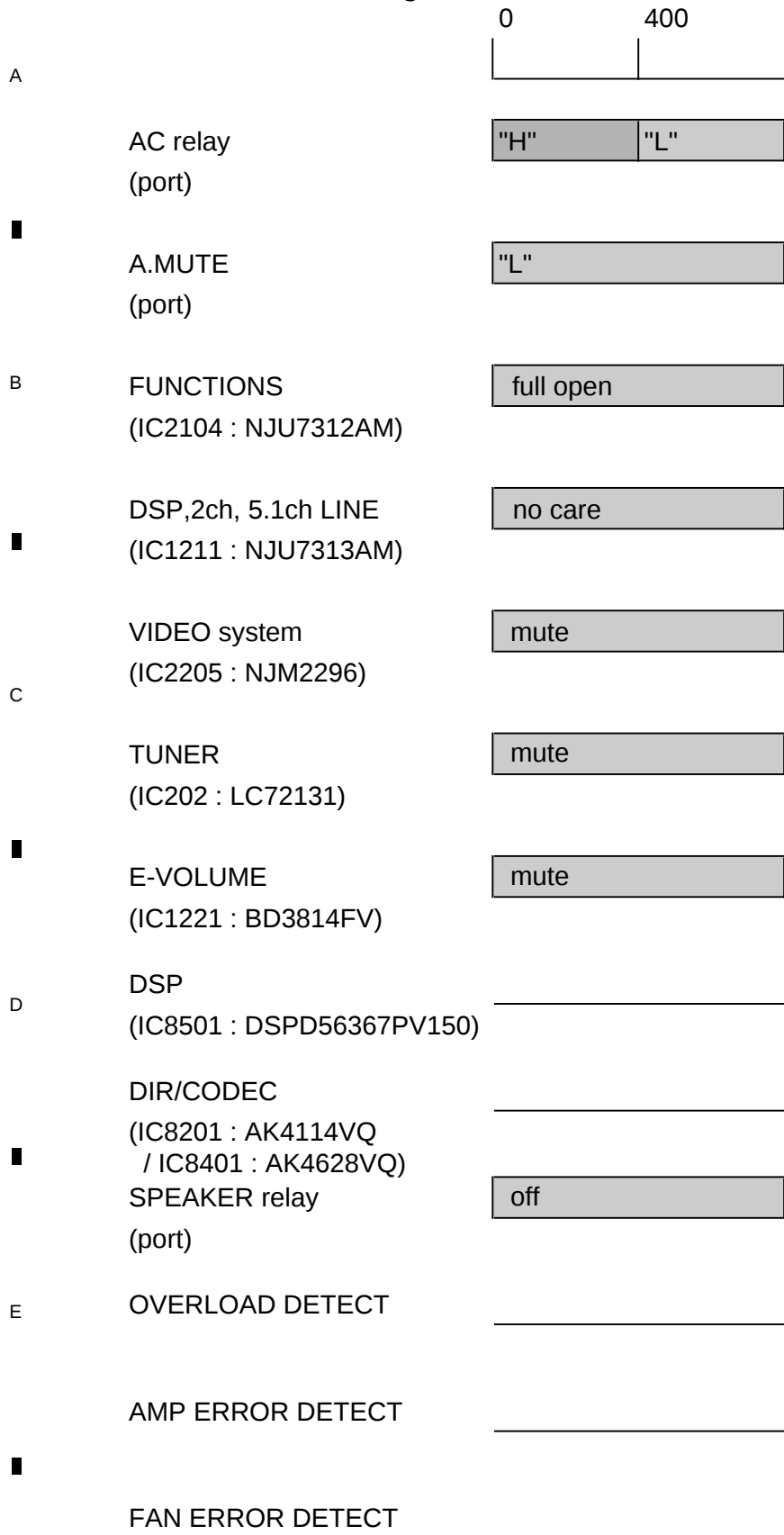


7.1.7 Timing Chart

Power ON initial timing chart

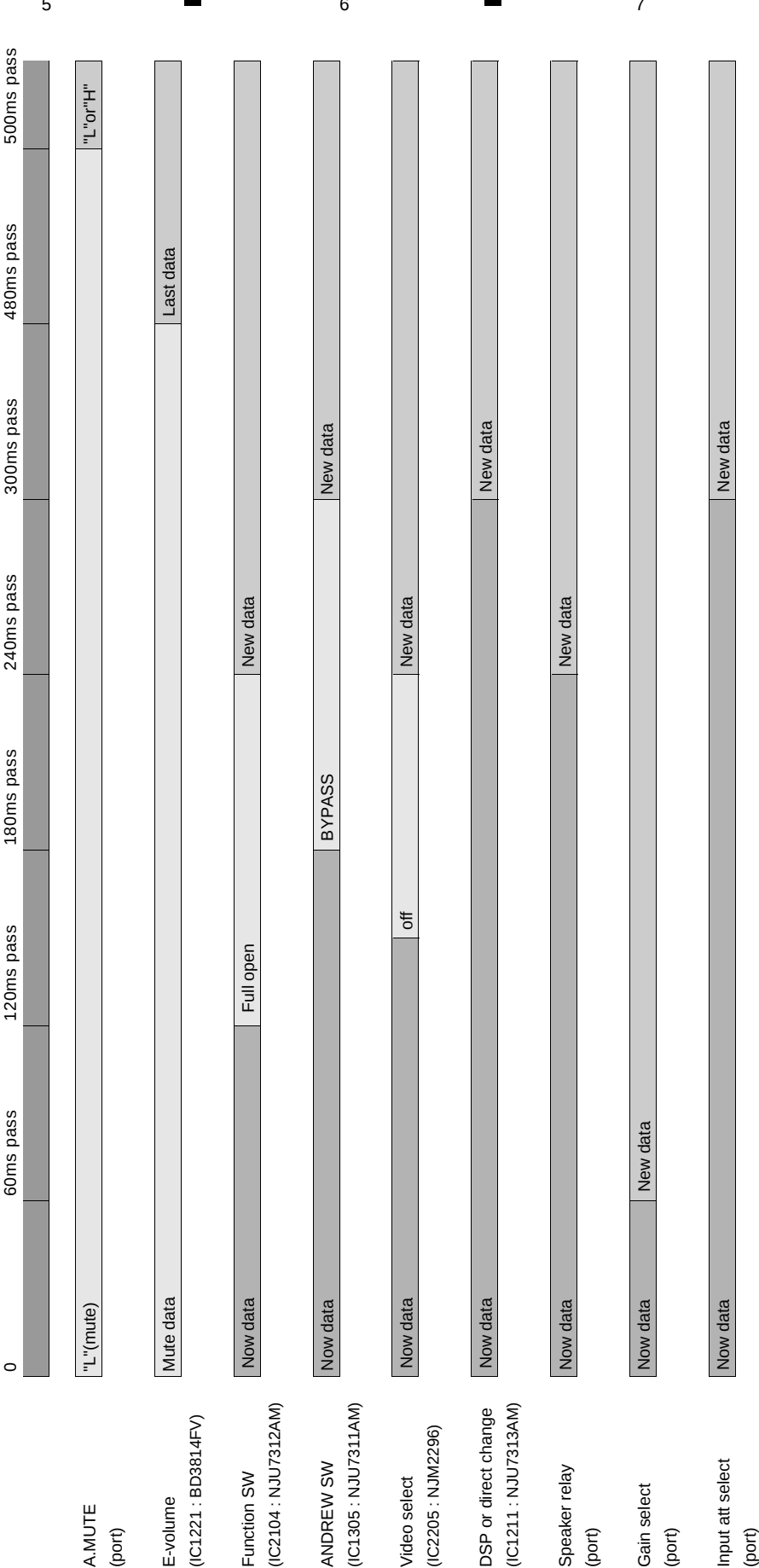


■ Power OFF initial timing chart



■ 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

1

1

2

2

3

3

4

4



A.MUTE (port)
"L"(mute)
"L"or"H"

E-volume (IC1221 : BD3814FV)
Mute data
Last data

ANDREW SW (IC1305 : NJU7311AM)
Now data
New data

DSP or direct change (IC1211 : NJU7313AM)
Now data
New or last data

Speaker relay (port)
Now data
New data

Gain select (port)
Now data
New data

Input att select (port)
Now data
New or last data

- 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.

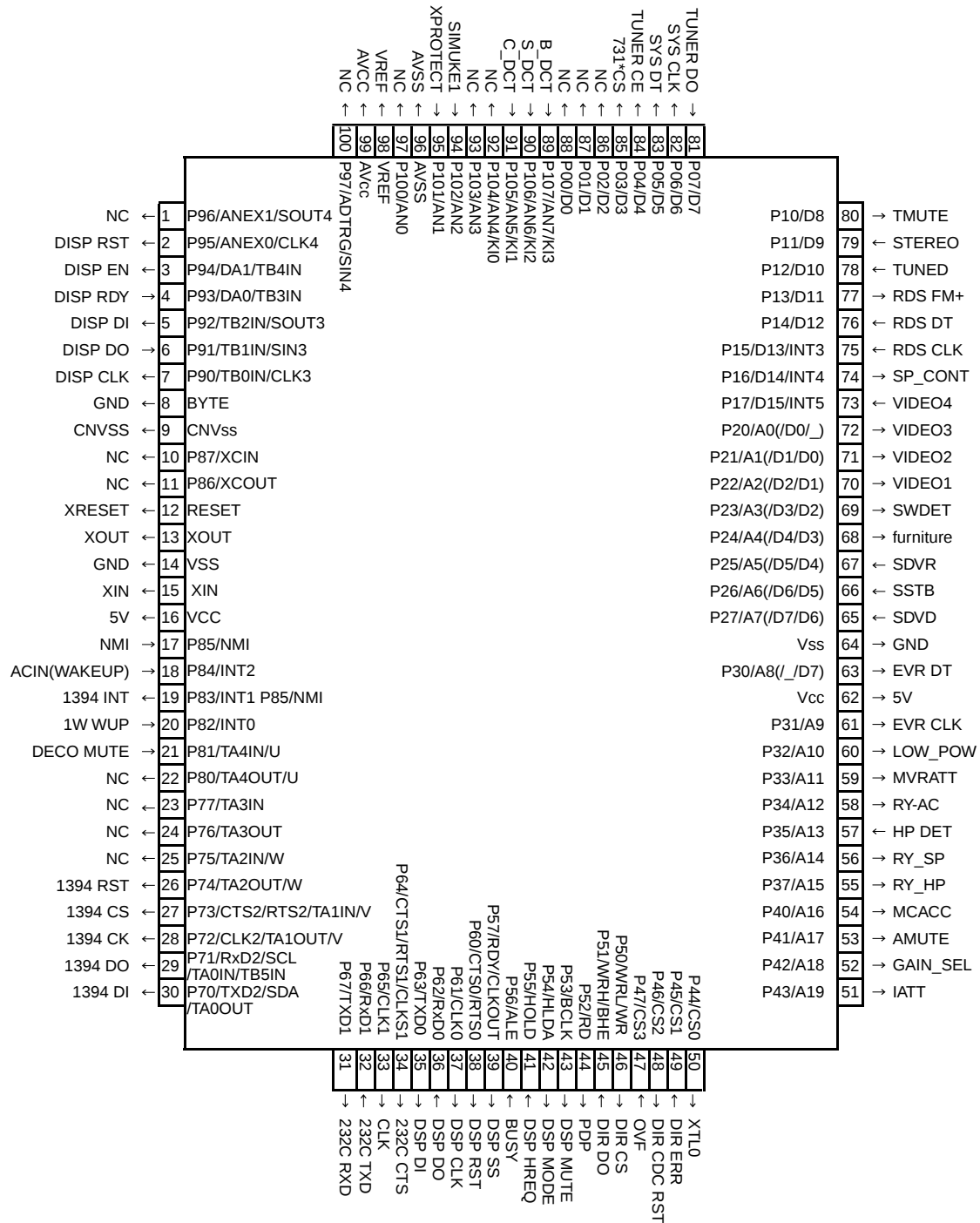
• List of IC

PEG001A, PE5368B

■ PEG001A (MOTHER ASSY : IC9001)

• Main Microcomputer

• Pin Arrangement (Top View)



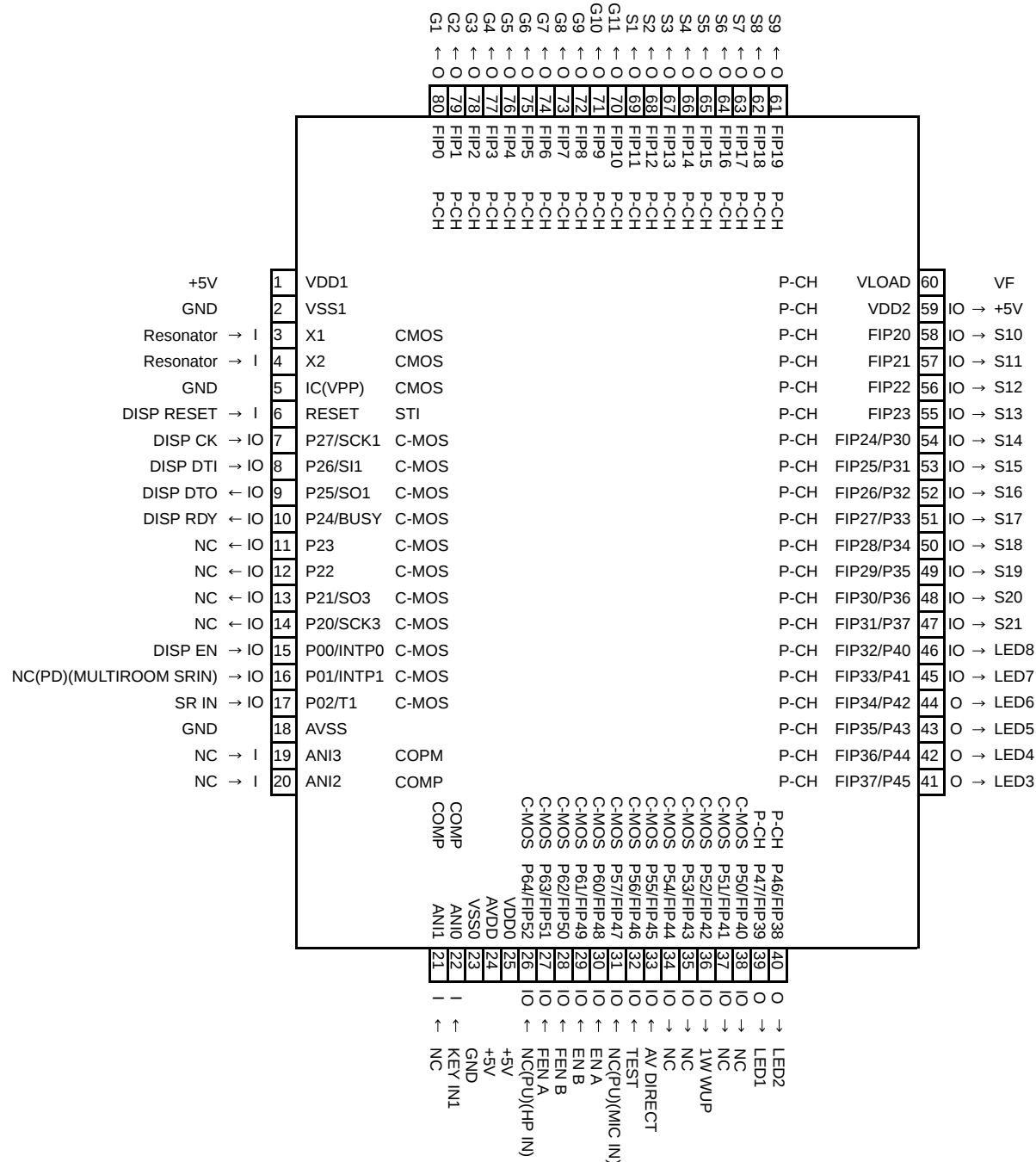
• Pin Function

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 control
82	P06/D6	SYS CLK	O	Clock signal for NJU7312AM switch and tuner control
83	P05/D5	SYS DT	O	Data output signal for NJU7312AM switch and tuner control
84	P04/D4	TUNER CE	O	Chip select signal for tuner control
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	Protection 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

A

B

C

D

E

F

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

- **FL Display**

- 105

● Anode Connection

A

	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	DDEX	DTS-ES	Ⓢ	DIALOG	—	dB

B

C

D

7.3 CLEANING



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

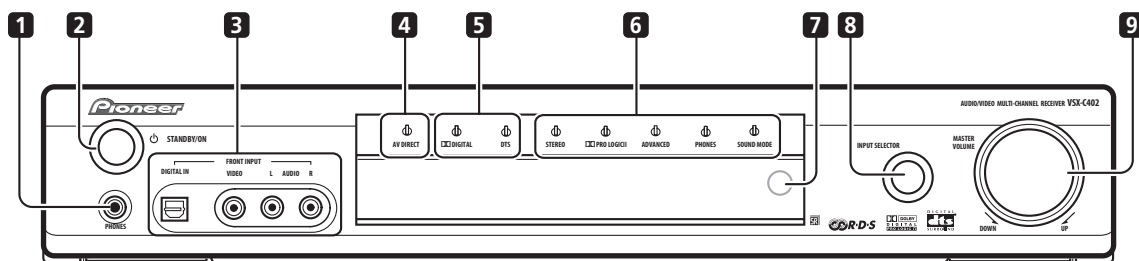
Position to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

E

F

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 AV DIRECT indicator

Lights in standby when the receiver is passing an audio/video signal from one SCART AV connector to another.

5 Digital surround format indicators

DIGITAL indicator

Lights when the current source is Dolby Digital.

DTS indicator

Lights when the current source is DTS.

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

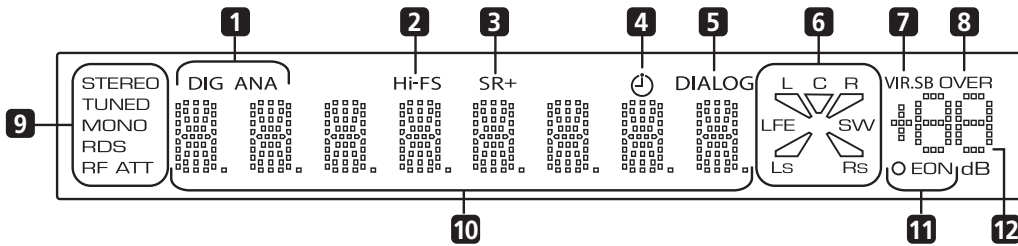
8 INPUT SELECTOR knob

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 indicator

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.

RDS

Lights when listening to a station that is broadcasting RDS information.

RF ATT

Lights when the RF attenuator is switched on.

10 Character display

11 EON indicators

EON lights when EON is set. The dot indicator to the left lights when the current broadcast carries the EON data service.

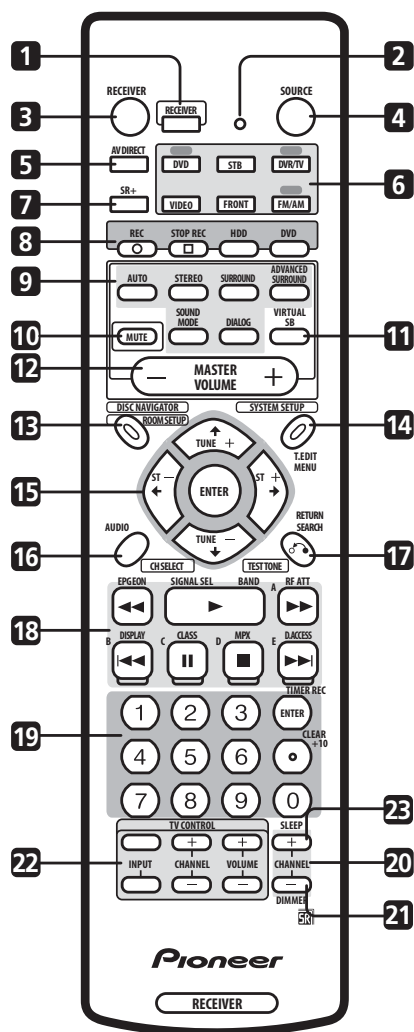
12 Volume level indicator

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 'receiver' 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 AV DIRECT

Press to switch the AV Direct function on/off.

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.

STB

Press to select **STB** (set-top box) as the current input.

DVR/TV

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

VIDEO

Press to select **VIDEO** 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 select virtual surround options.

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 CHANNEL +/-

Use to change channels on a satellite receiver, cable box, VCR or DVR.

21 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.)

22 TV CONTROL buttons

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

23 SLEEP

First press **RECEIVER**, then press **SLEEP** repeatedly to put the receiver into sleep mode and select the length of time before the receiver turns off.

Operating range of the remote control

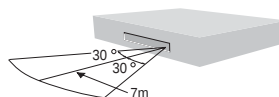
The remote control may not work properly if:

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

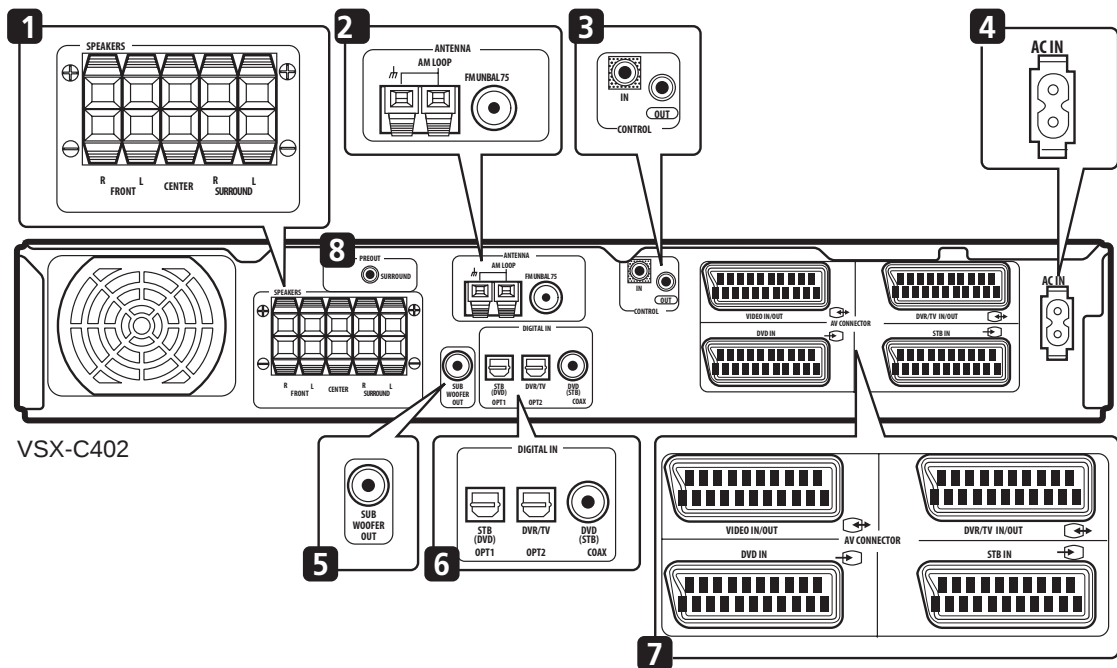
Direct sunlight or fluorescent light is shining onto the remote sensor.

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

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



Rear panel



Important

Before making or changing the connections, switch off the power and disconnect the power cable from the power outlet.

1 SPEAKERS terminals

FRONT L/R, CENTER and SURROUND L/R speaker terminals.

2 Antenna connections

AM LOOP

Connect the supplied AM loop antenna or an outdoor antenna if reception is bad.

FM UNBAL 75Ω antenna terminal

Connect the supplied FM wire or an outdoor antenna if reception is bad.

3 CONTROL IN jack / CONTROL OUT jack

Use to connect to other Pioneer components.

4 AC IN

Connect the supplied AC power cable.

5 SUBWOOFER OUT jack

Connect a powered (active) subwoofer.

6 Digital connections

The three digital audio jacks are all inputs. Connect to the digital outputs of digital source components such as DVD and CD players, satellite receivers, etc.

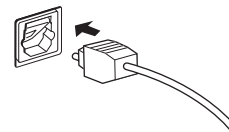
STB(DVD) OPT1 jack

Optical digital audio jack for the **STB** input (although it is possible to reassign it to the **DVD** input).

DVR/TV OPT2 jack

Optical digital audio jack for the **DVR/TV** input.

When connecting optical cables, be careful when inserting the plug not to damage the shutter protecting the optical socket.



When storing optical cable, coil loosely. The cable may be damaged if bent around sharp corners.

DVD(STB) COAX jack

Coaxial digital audio jack for the **DVD** input (although it is possible to reassign it to the **STB** input).

7 SCART AV connectors

The four SCART-type AV connectors carry video and analog audio.

VIDEO IN/OUT AV connector

AV connector for the **VIDEO** input. When the receiver is set to any other input, that signal is output from the **VIDEO IN/OUT AV connector**.

DVR/TV IN/OUT AV connector

AV connector for the **DVR/TV** input. When the receiver is set to any other input, that signal is output from the **DVR/TV IN/OUT AV connector**.

DVD IN AV connector

AV connector for the **DVD** input.

STB IN AV connector

AV connector for the **STB** input.

The table below shows the input and output video formats available for each AV connector.

Connector	Input	Output
DVD	Composite, S-video RGB	–
STB	Composite, S-video RGB	–
VIDEO	Composite, S-video RGB	Composite
DVR/TV	Composite	Composite, S-video RGB



Note

- All AV connectors also have audio in. The **VIDEO** and **DVR/TV** connectors also have audio out.
- The **VIDEO** and **DVR/TV** connectors are compatible with i/o -Link.A, T-V Link, Easy Link, MegaLogic, SMARTLINK, Q-Link, DATALOGIC, NextTVView Link, etc.

8 SURROUND PREOUT

For XW-HTD525 wireless speaker system only:
The **SURROUND PREOUT** terminal is intended for use with a wireless system. See your wireless speaker manual for more details on connecting up.

The AV Direct mode

The AV Direct mode allows the receiver to pass audio/video signals arriving at one of the AV connector inputs to the AV connector outputs without the sound being output through the speakers connected to the receiver. This allows you to operate your other components as if they were connected directly to each other without the

receiver being on. One use for this is if you want to record from your satellite receiver to your VCR (both connected to this receiver) without the receiver being switched on. You could also use the AV Direct mode to watch a video, using your TV's speakers for the audio, without switching on the receiver.

You can switch into AV Direct mode (from either standby or on) using the **AV DIRECT** button on the remote control. However, it's also possible to set the receiver to switch the AV Direct function on automatically when an incoming signal is detected. See also *AV Direct setting on*.

The diagram below shows how the **AV DIRECT** and the **STANDBY/ON** buttons switch the receiver between standby, AV Direct mode, and on.



Installing the receiver

- When installing this unit, make sure to put it on a secure and level plane that is stable.
- Don't place it on the following places:
 - on a color TV (the screen may distort)
 - near a cassette deck (or close to a device that gives off a magnetic field). This may interfere with the sound.
 - in direct sunlight
 - in damp or wet areas
 - in extremely hot or cold areas
 - in places where there is a vibration or other movement
 - in places that are very dusty
 - in places that have hot fumes or oils (such as a kitchen)

When making cable connections

Be careful not to arrange cables in a manner that bends the cables over the top of this unit. If the cables are laid on top of the unit, the magnetic field produced by the transformers in this unit may cause a humming noise to come from the speakers.

