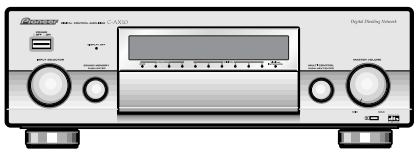
Service Manual



ORDER NO.
RRV2327

DIGITAL CONTROL AMPLIFIER

C-AX10

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

Type	Model	Power Requirement	Remarks
	C-AX10		
KU/CA	○	AC120V	
NY	○	AC230V	

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PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

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

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

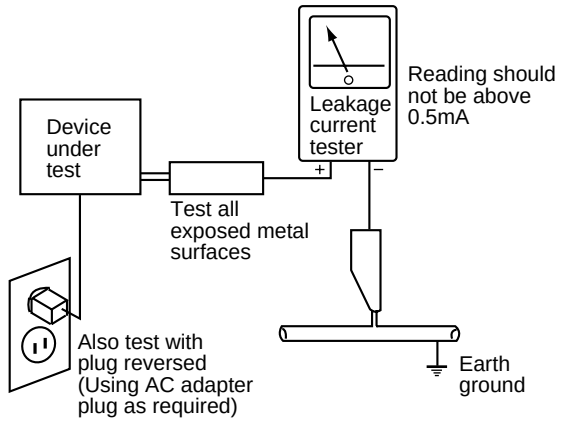
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

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

LEAKAGE CURRENT CHECK

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



AC Leakage Test

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

2. PRODUCT SAFETY NOTICE

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

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

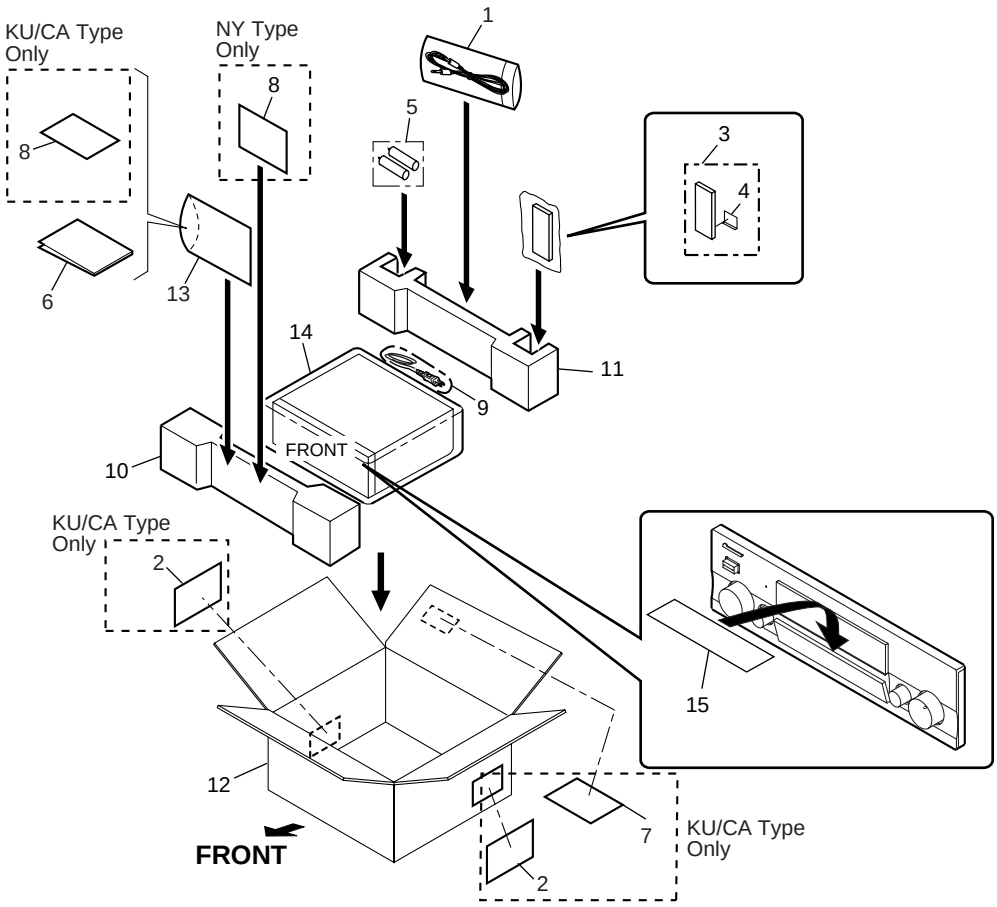
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

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

2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on the product are used for disassembly.*

2.1 PACKING



(1) PACKING PARTS LIST

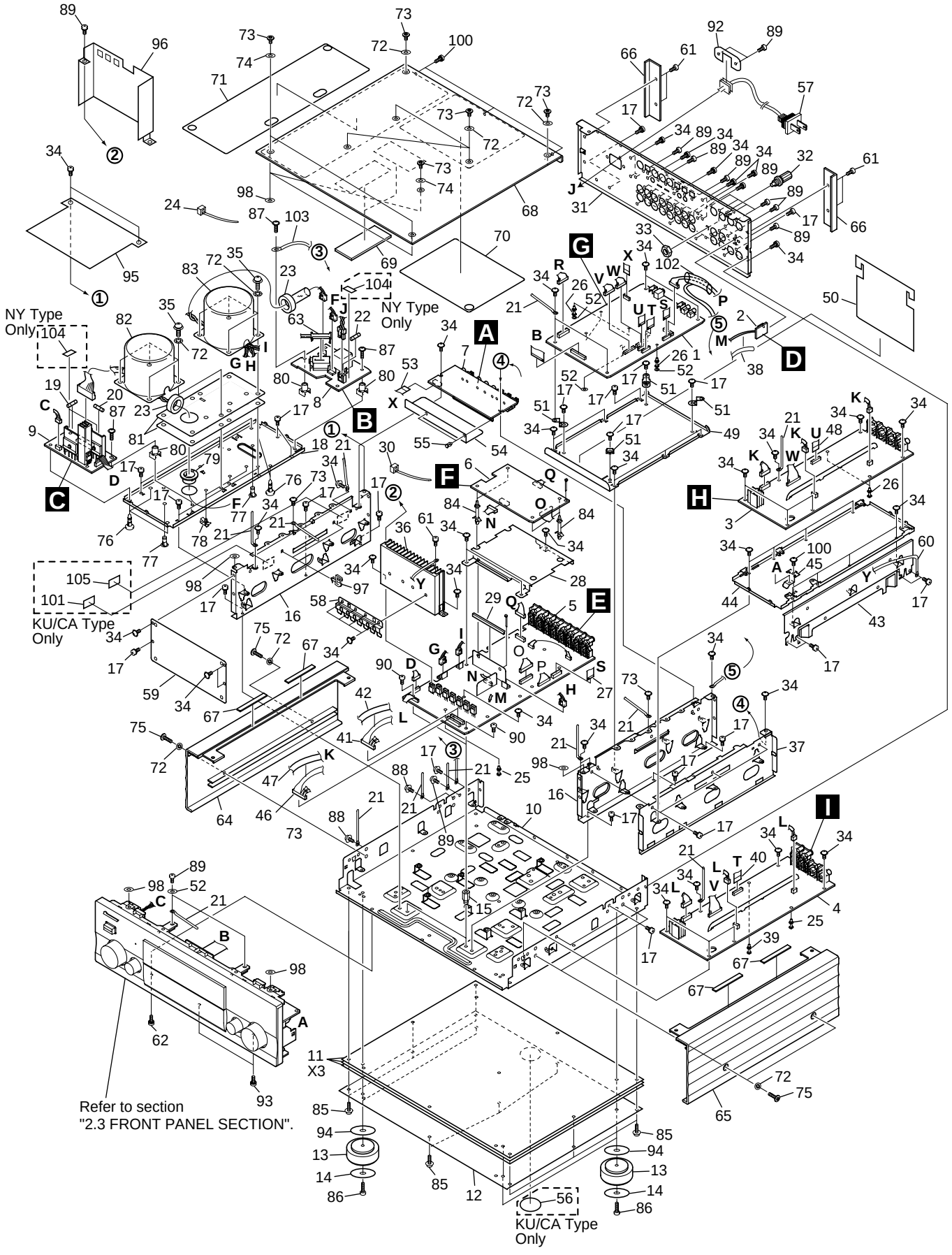
Mark	No.	Description	Part No.
	1	PDIF Connection Cable	ADE1087
	2	Recycle Label	See Contrast table (2)
	3	Remote Control Unit (CU-C005)	AXD7198
	4	Battery Cover	AZN7813
NSP	5	Dry Cell Battery (R6P,AA)	VEM-013
	6	Operating Instructions (English)	ARB7221
	7	POS Code Label	See Contrast table (2)
NSP	8	Warranty Card	See Contrast table (2)
	9	Mirror Mat Bag	VHL1004
	10	Front Pad	AHA9016
	11	Rear Pad	AHA9017
	12	Packing Case	AHD7858
NSP	13	Polyethylene Bag	AHG-117
	14	Packing Sheet	AHG7008
	15	Door Sheet	AHG7067

(2) CONTRAST TABLE

C-AX10/KU/CA and NY are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			KU/CA Type	NY Type	
	2	Recycle Label	ARW7091	Not used	
	7	POS Code Label	ARW7090	Not used	
NSP	8	Warranty Card	ARY7045	ARY7022	

2.2 EXTERIOR


NY Type Only
KU/CA Type Only
Refer to section "2.3 FRONT PANEL SECTION".
X3
KU/CA Type Only

(1) EXTERIOR PARTS LIST

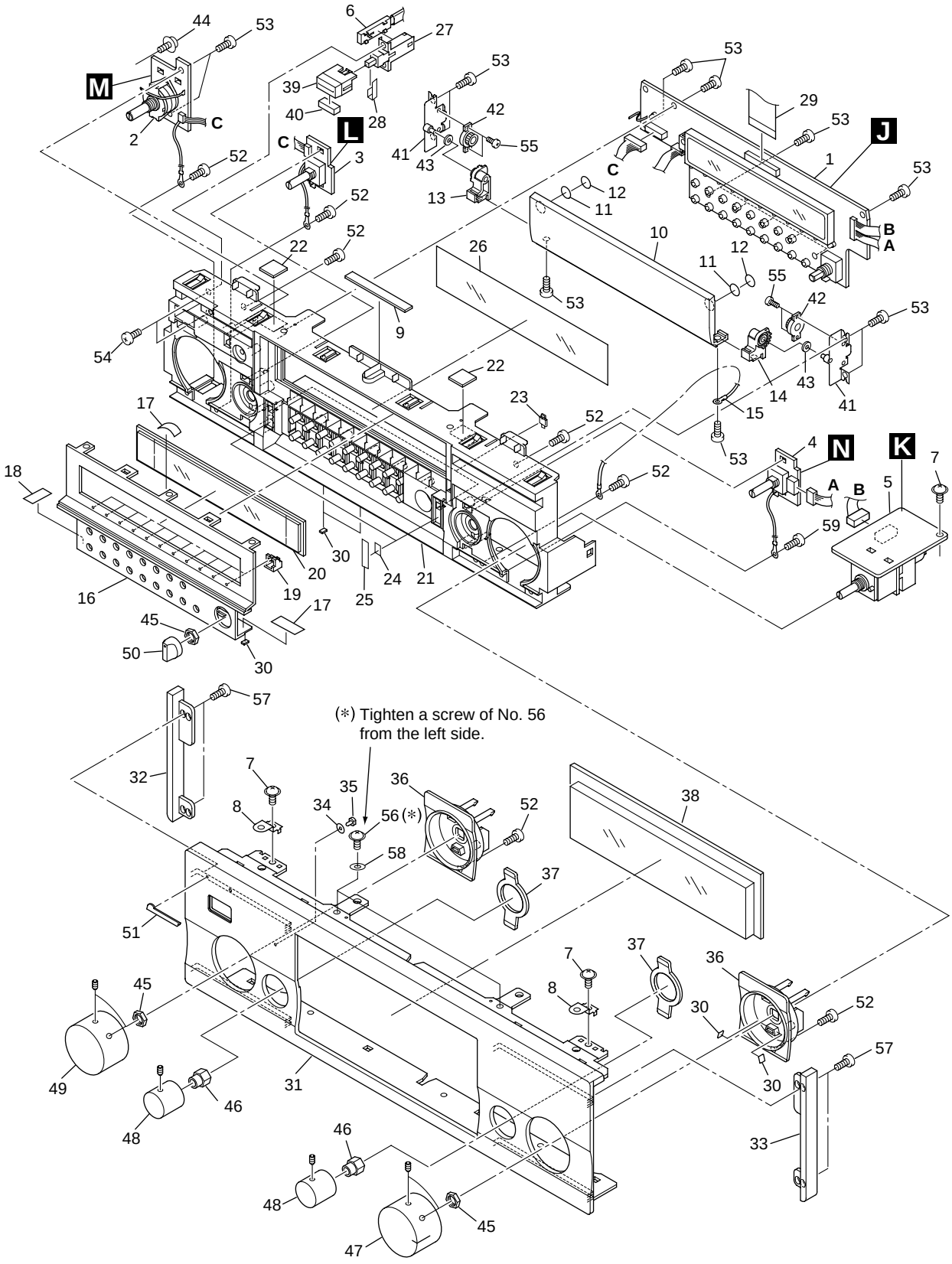
Mark	No.	Description	Part No.
NSP	1	DSP Assy	See Contrast table (2)
	2	SG Assy	AWX7444
	3	AUDIO A Assy	AWX7530
	4	AUDIO B Assy	AWX7531
	5	FRAD Assy	AWX7532
	6	CRAD Assy	AWX7535
	7	DIGITAL I/O Assy	AWX7533
	8	AC Assy	See Contrast table (2)
	9	PS Assy	See Contrast table (2)
NSP	10	Under Base	ANA9010
NSP	11	Bottom Plate	PNA2376
NSP	12	Bottom Plate B	ANF7021
	13	Insulator	ANL7013
	14	Stopper	AEC7224
	15	PCB Support	AEC9079
	16	Side Wall	ANG9104
	17	Screw	ABA1207
	18	Subchassis B2	ANA9013
⚠	19	FU201 Fuse (4A)	See Contrast table (2)
⚠	20	FU202 Fuse (4A)	See Contrast table (2)
	21	Cord Holder	RNH1005
⚠	22	FU101 Fuse (4A)	See Contrast table (2)
	23	Ferrite Core	ATH7008
NSP	24	Binder	ZCA-T30L
NSP	25	Card Spacer	AEC7081
NSP	26	Card Spacer	REC1156
	27	J1202 16P FFC/30V (FRAD CN1201↔DSP CN2101)	ADD7131
	28	Shield Plate I	AMR7322
NSP	29	Edging E	PEC1008
NSP	30	Binder	ZCA-BK1
	31	Rear Panel	See Contrast table (2)
	32	Earth Terminal with Knob	AKE-046
	33	Nut	NK70FCU
	34	Screw	ABA1011
	35	Screw	ABA1014
NSP	36	Heat Sink Assy	ANH7125
	37	Side Support C	ANK9027
	38	Shrink Shield (AL)	ADM7002
NSP	39	PCB Spacer (3 × 8)	AEC1371
	40	J1001 17P FFC/30V (AUDIO B CN1001↔DSP CN2103)	ADD7132
	41	J1003 Connector Assy 11P (FRAD CN404↔AUDIO B CN1002, CN1003, CN1004)	ADX7274
	42	Shrink Shield (AL)	ADM7004
	43	Side Frame A	VNE2181
	44	Subchassis T2	ANA9014
	45	PCB Holder	ANG9106
	46	J903 Connector Assy 11P (FRAD CN403↔AUDIO A CN902, CN903, CN904)	ADX7272
	47	Shrink Shield (AL)	ADM7003
	48	J901 15P FFC/30V (AUDIO A CN901↔DSP CN2102)	ADD7133
NSP	49	Main Shield	ANG9103
	50	Shield Plate E	AMR7290
NSP	51	PCB Base	RNE1849
	52	Washer	ABE-053
	53	J1401 14P FFC/30V (DIGITAL I/O CN1401↔DSP CN1601)	ADD7130
	54	Shield Plate C	AMR7270
	55	Nylon Rivet	AEC-525
	56	UL Caution Card	See Contrast table (2)
⚠	57	Power Cord	See Contrast table (2)
	58	Transistor Holder	ANG9105
NSP	59	Subplate	ANG7279
	60	Earth Lead Unit	ADX7326
	61	Screw	ABA7017
	62	Screw	ABA1208
	63	FLEX SW Wire	ADH7021
	64	Side Alum. L	AAH7040
	65	Side Alum. R	AAH7041
	66	Rear Mole	AAH7044
	67	Dump Rubber	VEB1172
	68	Top Plate	AAH7039
NSP	69	Stabilizer B	AMR7278
	70	Shield Plate F	AMR7297
	71	Shield Plate D	AMR7288
	72	Washer	WG40FCC
	73	SH Screw	PBA1049
	74	Washer	ABF7008
	75	Screw	ABA7006
	76	Locking Card Spacer	DEC1908
NSP	77	PCB Holder	AEC7057
	78	Clamper	DEC2007
NSP	79	Bushing 19	AEC7206
NSP	80	PCB Mold	AMR1525
NSP	81	Subplate	ANG7278
⚠	82	T301 Power Trans. (Digital)	See Contrast table (2)
⚠	83	T401 Power Trans. (Audio)	See Contrast table (2)
NSP	84	PCB Support	REC1248
	85	Screw	IBZ30P120FCC
	86	Screw	ABA1022
	87	Screw	IBZ30P180FCC
	88	Screw	IBZ40P060FCC
	89	Screw	BBZ30P080FCC
	90	Screw	BMZ30P060FCU
	91	Screw	BBZ30P060FCC
	92	Power Cord Spacer	ANG1153
	93	Screw	ABA1050
	94	Foot Spacer	AMR7283
	95	Shield Plate H	AMR7309
	96	Shield Plate G	AMR7308
	97	Cord Clamp S	DEC1574
	98	Washer	AED7043
	99	• • • •	
	100	Screw	BBT30P080FCC
	101	Fuse Caution Label	See Contrast table (2)
NSP	102	Shield Tube	VDM1004
NSP⚠	103	Earth Lead Unit	PDF1150
NSP	104	Fuse Label	See Contrast table (2)
	105	65 Label	See Contrast table (2)

(2) CONTRAST TABLE

C-AX10/KU/CA and NY are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			KU/CA Type	NY Type	
	1	DSP Assy	AWK7589	AWK7590	
	8	AC Assy	AWX7298	AWX7536	
	9	PS Assy	AWX7299	AWX7537	
⚠	19	FU201 Fuse (4A)	VEK1023	REK-106	
⚠	20	FU202 Fuse (4A)	VEK1023	REK-106	
⚠	22	FU101 Fuse (4A)	VEK1023	REK-106	
	31	Rear Panel	ANC7900	ANC7899	
	56	UL Caution Card	AAX-313	Not used	
⚠	57	Power Cord	ADG7028	ADG7029	
⚠	82	T301 Power Trans. (Digital)	ATS7274	ATS7276	
⚠	83	T401 Power Trans. (Audio)	ATS7273	ATS7275	
	101	Fuse Caution Label	ARW7089	Not used	
NSP	104	Fuse Label	Not used	AAX1589	
	105	65 Label	ARW7050	Not used	

2.3 FRONT PANEL SECTION



● FRONT PANEL SECTION PARTS LIST

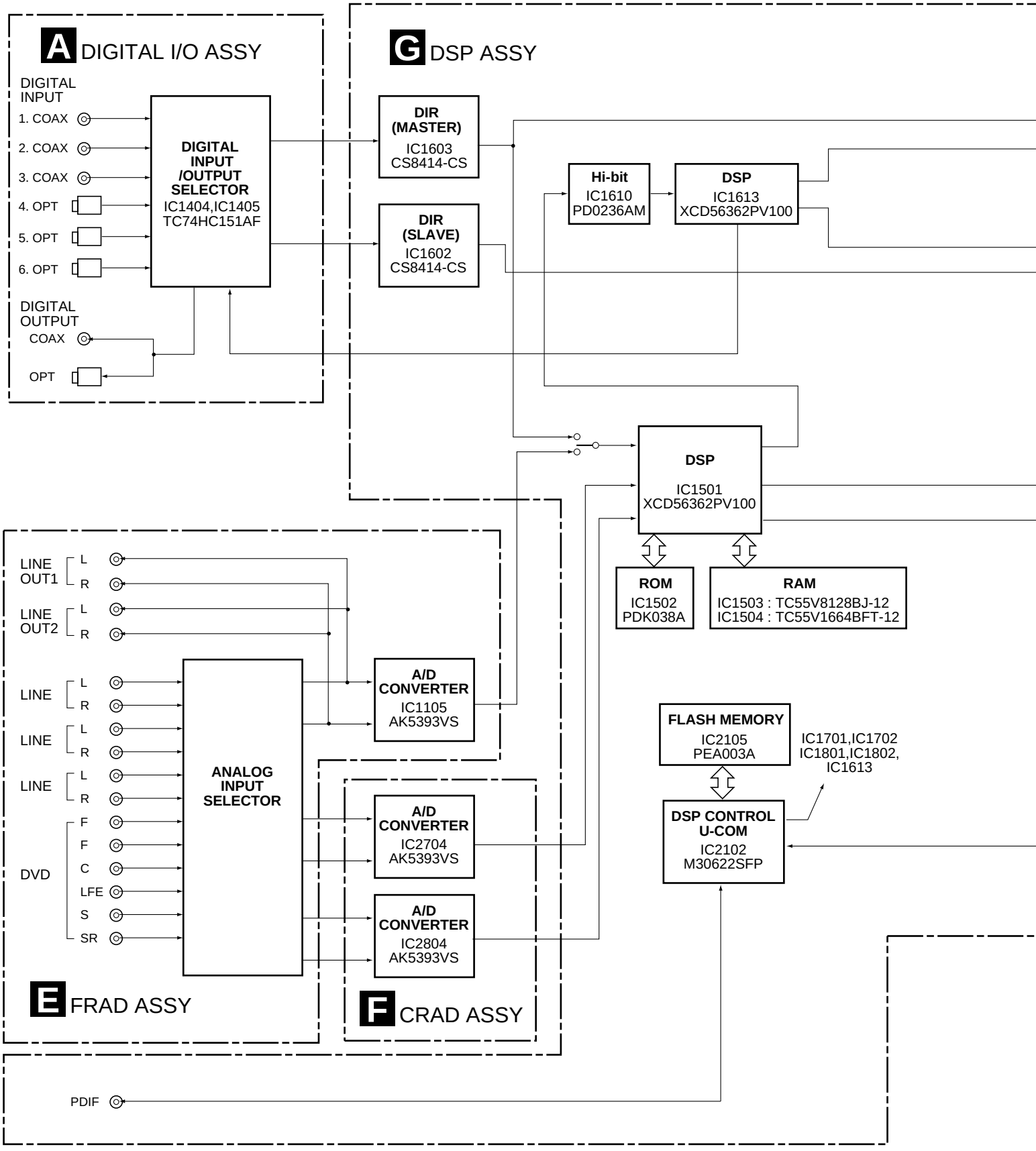
Mark	No.	Description	Part No.
	1	DISPLAY Assy	AWX7305
	2	INPUT SW Assy	AWX7332
	3	ENC A Assy	AWX7303
	4	ENC B Assy	AWX7304
	5	VOLUME Assy	AWX7302
	6	FLEX SW Wire	ADH7021
	7	Screw	ABA1011
	8	Top Stay	VNE2139
	9	Dump Rubber	VEB1172
	10	Door Panel	ANB7190
	11	Door Yoke	ANB7187
	12	Door Cushion	AED9014
	13	Door Hinge L	AMR9199
	14	Door Hinge R	AMR9200
NSP	15	Earth Lead	ADH7022
	16	Inner Panel	ANB7226
NSP	17	Spacer Film A	AEC7255
NSP	18	Spacer Film B	AEC7256
	19	Lens	AAK9050
	20	FL Panel S	AAK9052
	21	Panel Base	AMB9021
NSP	22	Rubber Spacer	AEB7182
	23	Magnet	AMF7004
NSP	24	Spacer Film C	AEC7257
	25	Magnet Cover	AAK9045
	26	FL Filter	AEC9078
	27	Function Switch (POWER)	PSG1011
NSP	28	Tape	PNM1249
	29	J2201 28P FFC/300V (DISPLAY CN2201↔DSP CN2108)	ADD7156

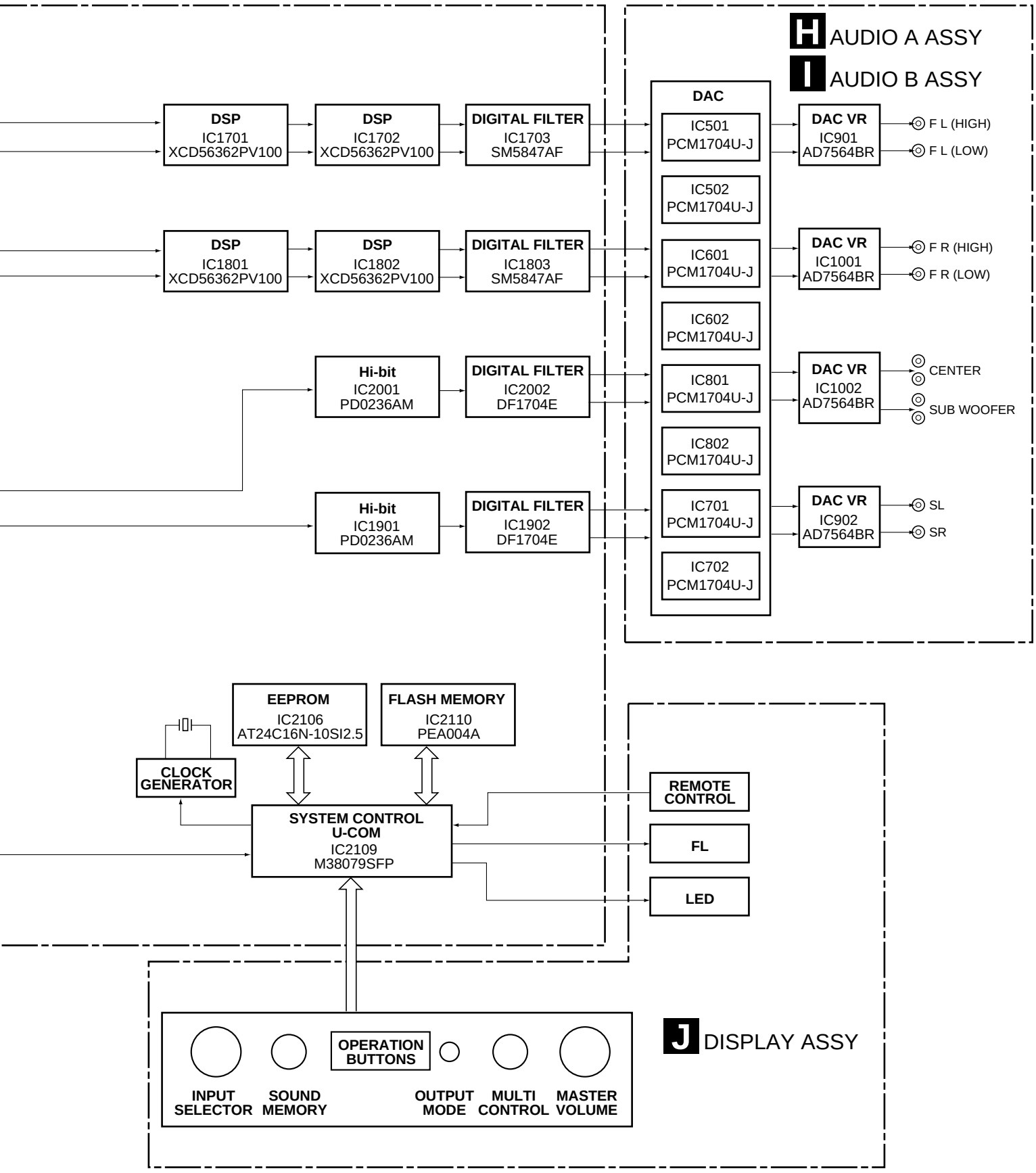
Mark	No.	Description	Part No.
NSP	30	Stopper Rubber	AEB1325
	31	Front Panel	ANB7225
	32	Side Panel L	AAH7042
	33	Side Panel R	AAH7043
NSP	34	Spacer	PNM1135
	35	LED Lens	VNK4400
	36	Escutcheon L	AMR9201
	37	Escutcheon S	AMR9202
	38	FL Panel L	AAK9051
	39	Power Button	VNK4159
	40	Block	ANL7015
	41	Door Axis Metal Assy	ANG9100
	42	Dumper Assy	AXA9013
	43	Washer	ABF7007
	44	Screw	ABA1005
	45	Nut	NK90FCU
	46	Bearing	ANL7014
	47	Rotary Knob L	AAB7202
	48	Rotary Knob M	AAB7203
	49	Rotary Knob L	AAB7204
	50	Rotary Knob S	AAB7200
	51	PIONEER Badge G	PAN1377
	52	Screw	BBZ30P080FCC
	53	Screw	BPZ30P080FMC
	54	Screw	PMZ30P080FMC
	55	Screw	PSZ20P060FMC
	56	Screw	IPZ30P100FMC
	57	Screw	ABA7017
	58	Washer	AED7043
	59	Screw	BBT30P080FCC

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

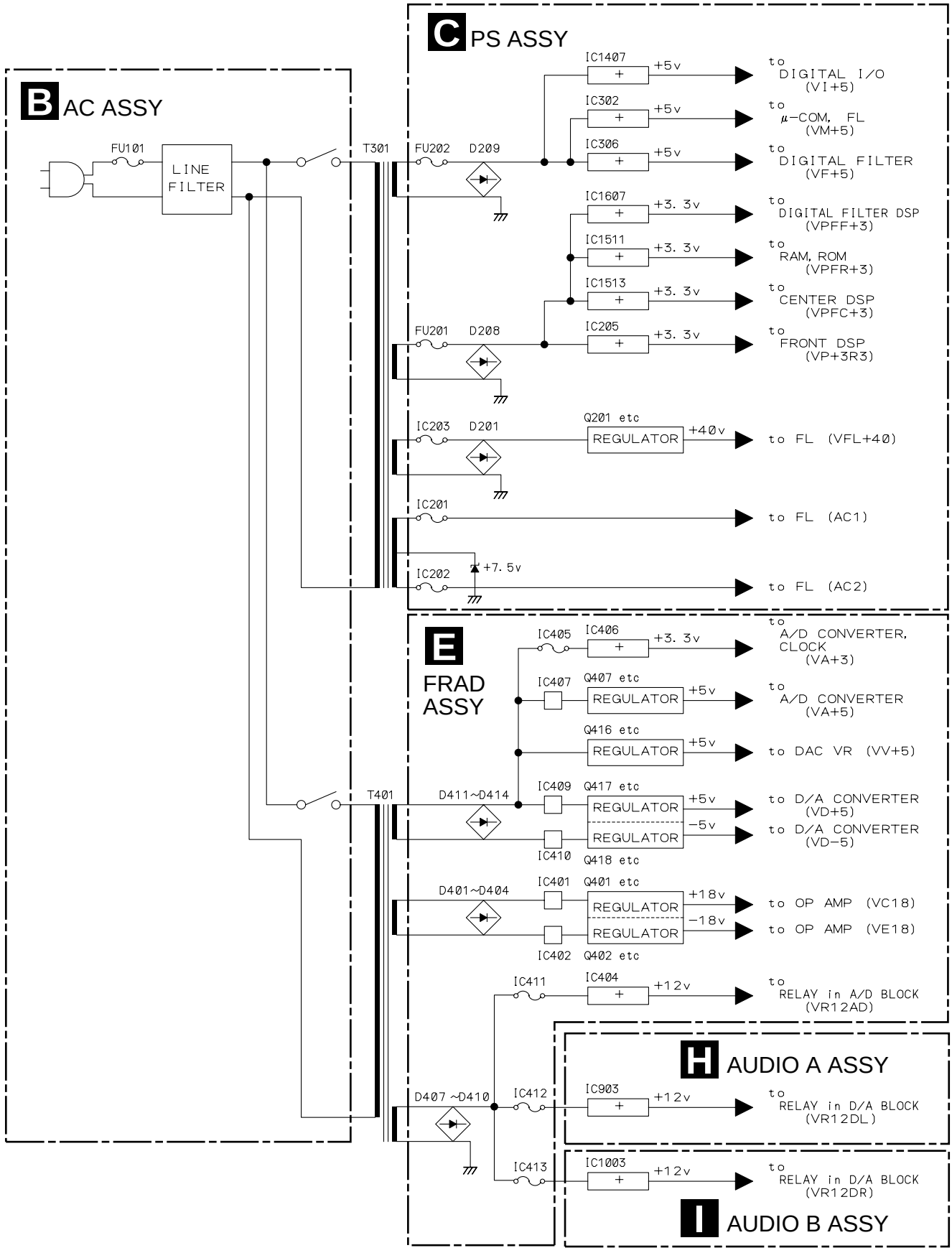
3.1 BLOCK DIAGRAM

3.1.1 I/O BLOCK

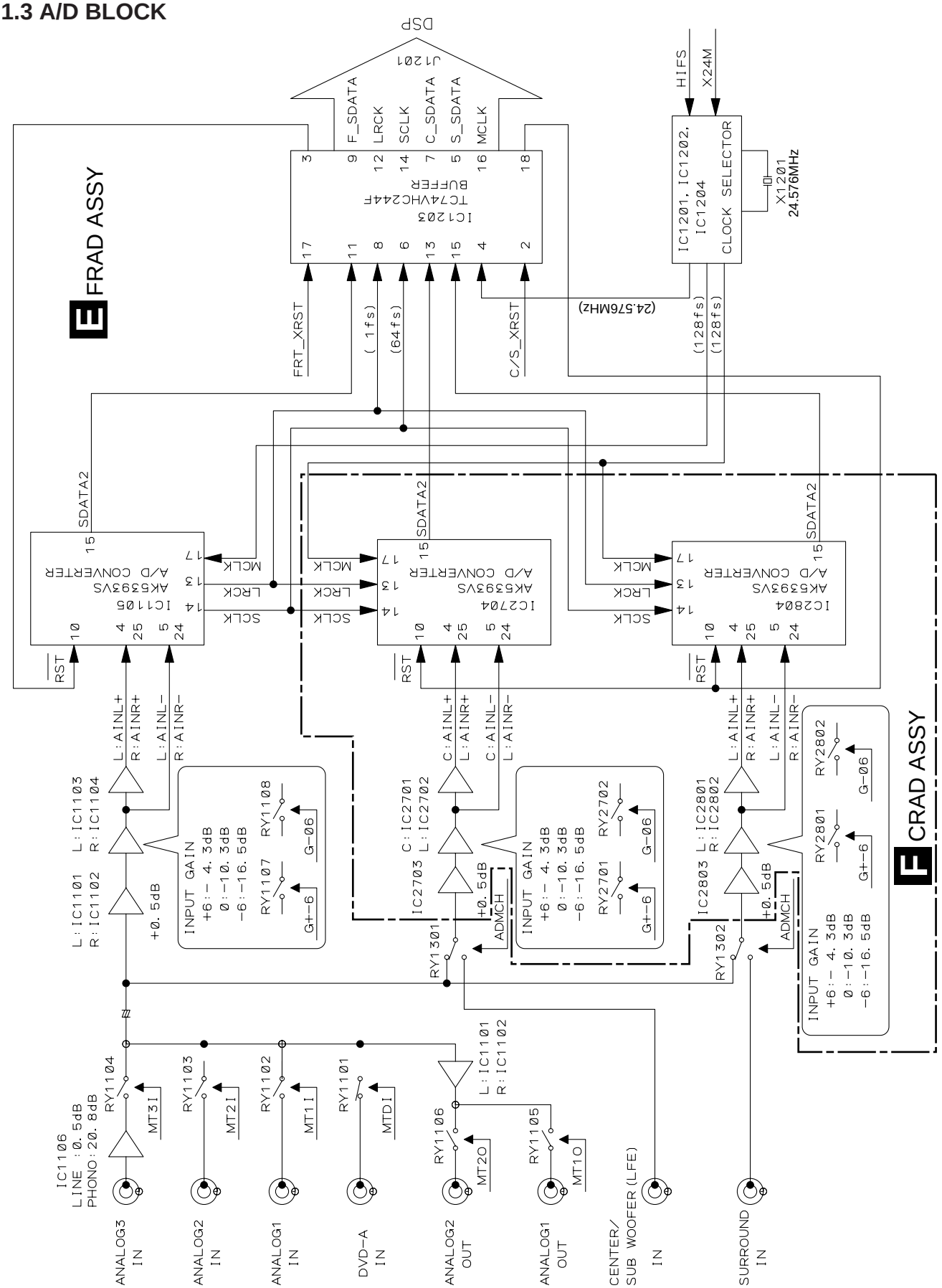



H AUDIO A ASSY
I AUDIO B ASSY
DSP
IC1701
XCD56362PV100
DSP
IC1702
XCD56362PV100
DIGITAL FILTER
IC1703
SM5847AF
DSP
IC1801
XCD56362PV100
DSP
IC1802
XCD56362PV100
DIGITAL FILTER
IC1803
SM5847AF
Hi-bit
IC2001
PD0236AM
DIGITAL FILTER
IC2002
DF1704E
Hi-bit
IC1901
PD0236AM
DIGITAL FILTER
IC1902
DF1704E
DAC
IC501
PCM1704U-J
IC502
PCM1704U-J
IC601
PCM1704U-J
IC602
PCM1704U-J
IC801
PCM1704U-J
IC802
PCM1704U-J
IC701
PCM1704U-J
IC702
PCM1704U-J
DAC VR
IC901
AD7564BR
DAC VR
IC1001
AD7564BR
DAC VR
IC1002
AD7564BR
DAC VR
IC902
AD7564BR
F L (HIGH)
F L (LOW)
F R (HIGH)
F R (LOW)
CENTER
SUB WOOFER
SL
SR
EEPROM
IC2106
AT24C16N-10SI2.5
FLASH MEMORY
IC2110
PEA004A
CLOCK GENERATOR
SYSTEM CONTROL
U-COM
IC2109
M38079SFP
REMOTE CONTROL
FL
LED
OPERATION BUTTONS
INPUT SELECTOR
SOUND MEMORY
OUTPUT MODE
MULTI CONTROL
MASTER VOLUME
J DISPLAY ASSY

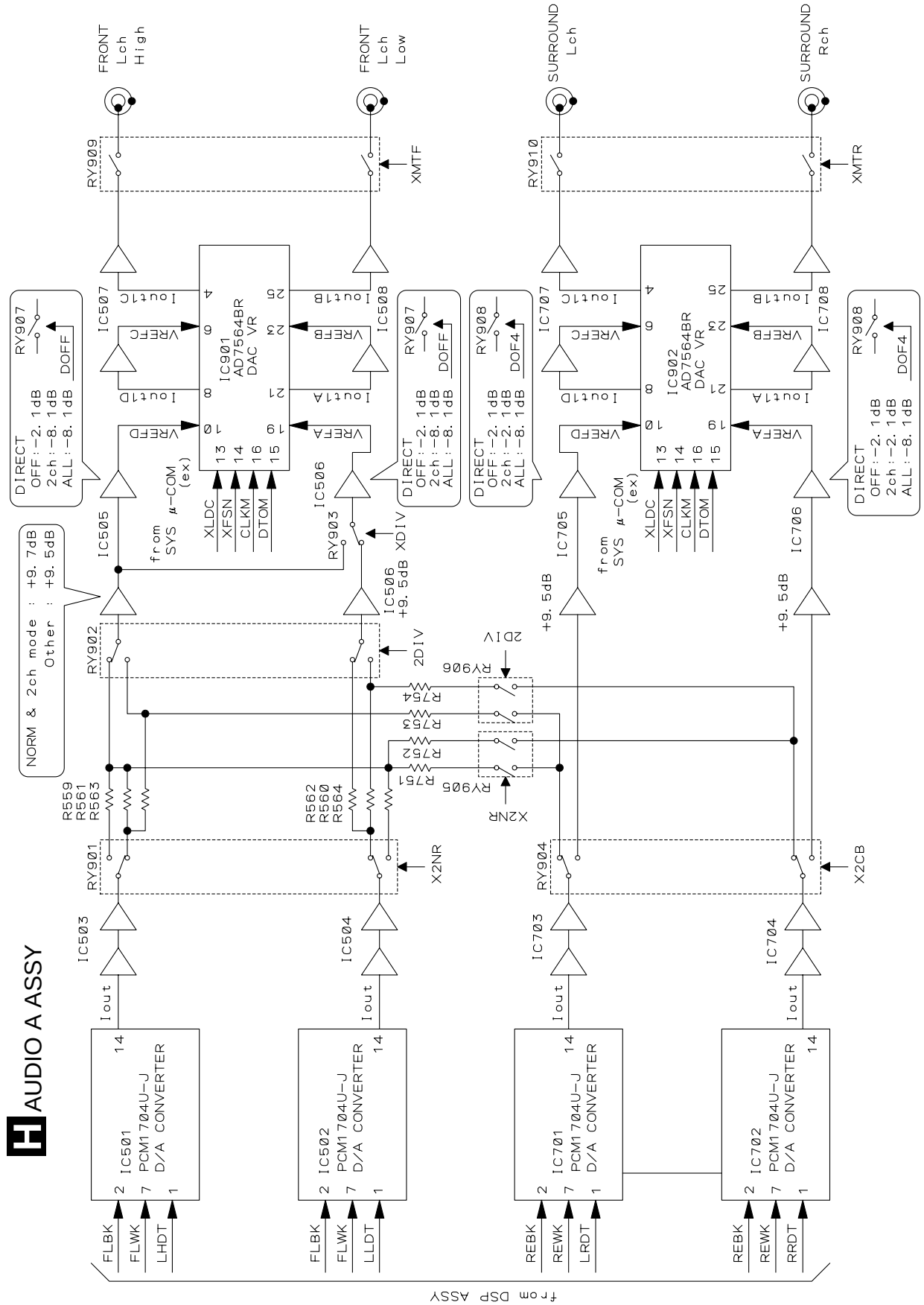
3.1.2 POWER SUPPLY BLOCK



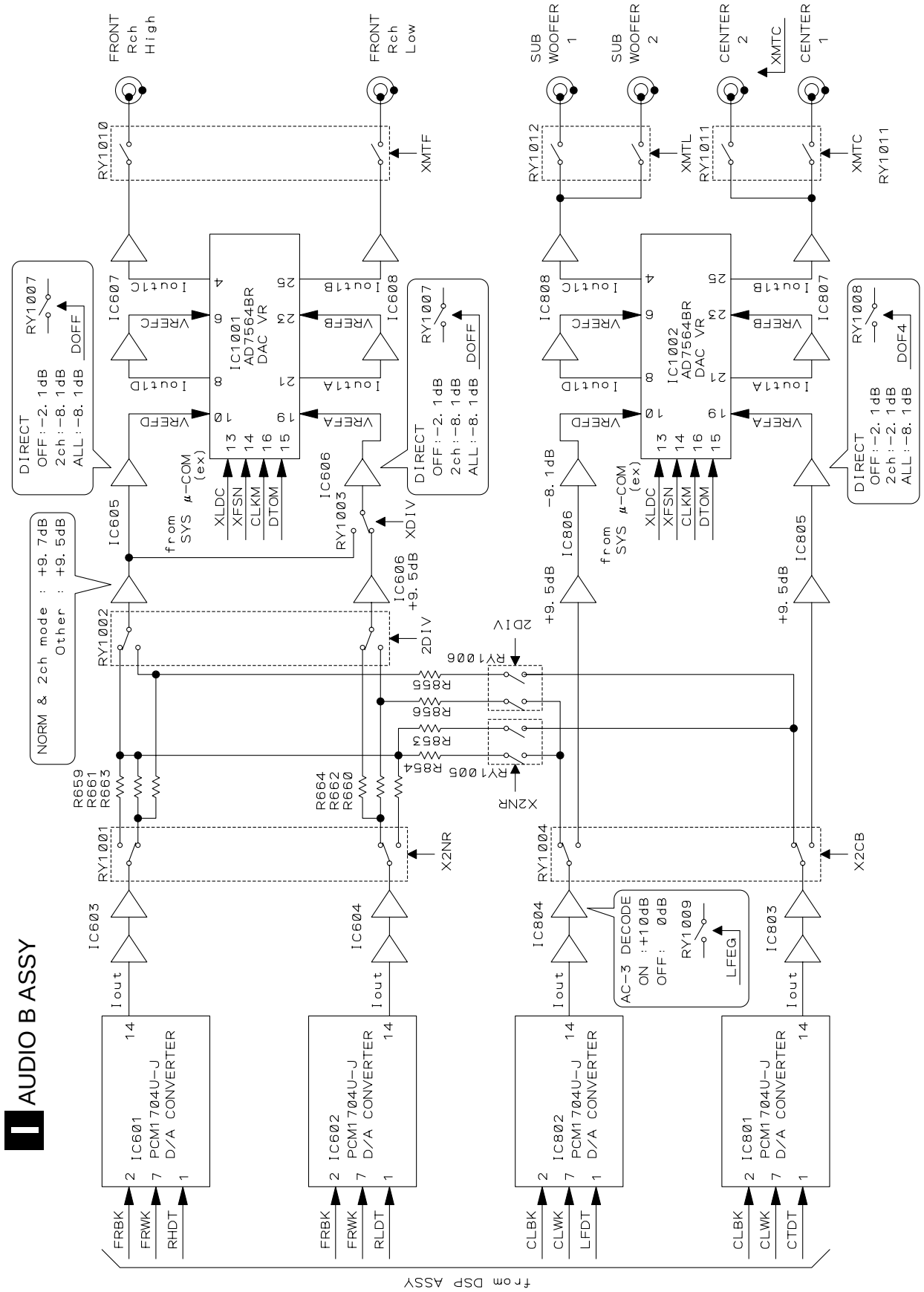
3.1.3 A/D BLOCK


E FRAD ASSY
F CRAD ASSY
DSP
J1201
F_SDATA
LRCK
SCLK
C_SDATA
S_SDATA
MCLK
IC1203
TC74VHC244F
BUFFER
HIFS
X24M
IC1201, IC1202,
IC1204
CLOCK SELECTOR
X1201
24.576MHz
(24.576MHz)
FRT_XRST
C/S_XRST
(1fs)
(64fs)
(128fs)
(128fs)
SDATA2
IC1105
IC2704
IC2804
AK5393VS
A/D CONVERTER
RST
MCLK
LRCK
SCLK
L:AINL+
R:AINR+
L:AINL−
R:AINR−
C:AINL+
C:AINR+
C:AINL−
C:AINR−
L:IC1101
R:IC1102
L:IC1103
R:IC1104
C:IC2701
L:IC2702
IC2703
L:IC2801
R:IC2802
IC2803
+0.5dB
INPUT GAIN
+6:− 4.3dB
0:−10.3dB
−6:−16.5dB
G+−6
G−06
RY1107
RY1108
RY2701
RY2702
RY2801
RY2802
ADMCH
RY1301
RY1302
IC1106
LINE :0.5dB
PHONO:20.8dB
RY1104
RY1103
RY1102
RY1101
RY1106
RY1105
MT3I
MT2I
MT1I
MTDI
MT2O
MT1O
ANALOG3 IN
ANALOG2 IN
ANALOG1 IN
DVD−A IN
ANALOG2 OUT
ANALOG1 OUT
CENTER/ SUB WOOFER (LFE) IN
SURROUND IN

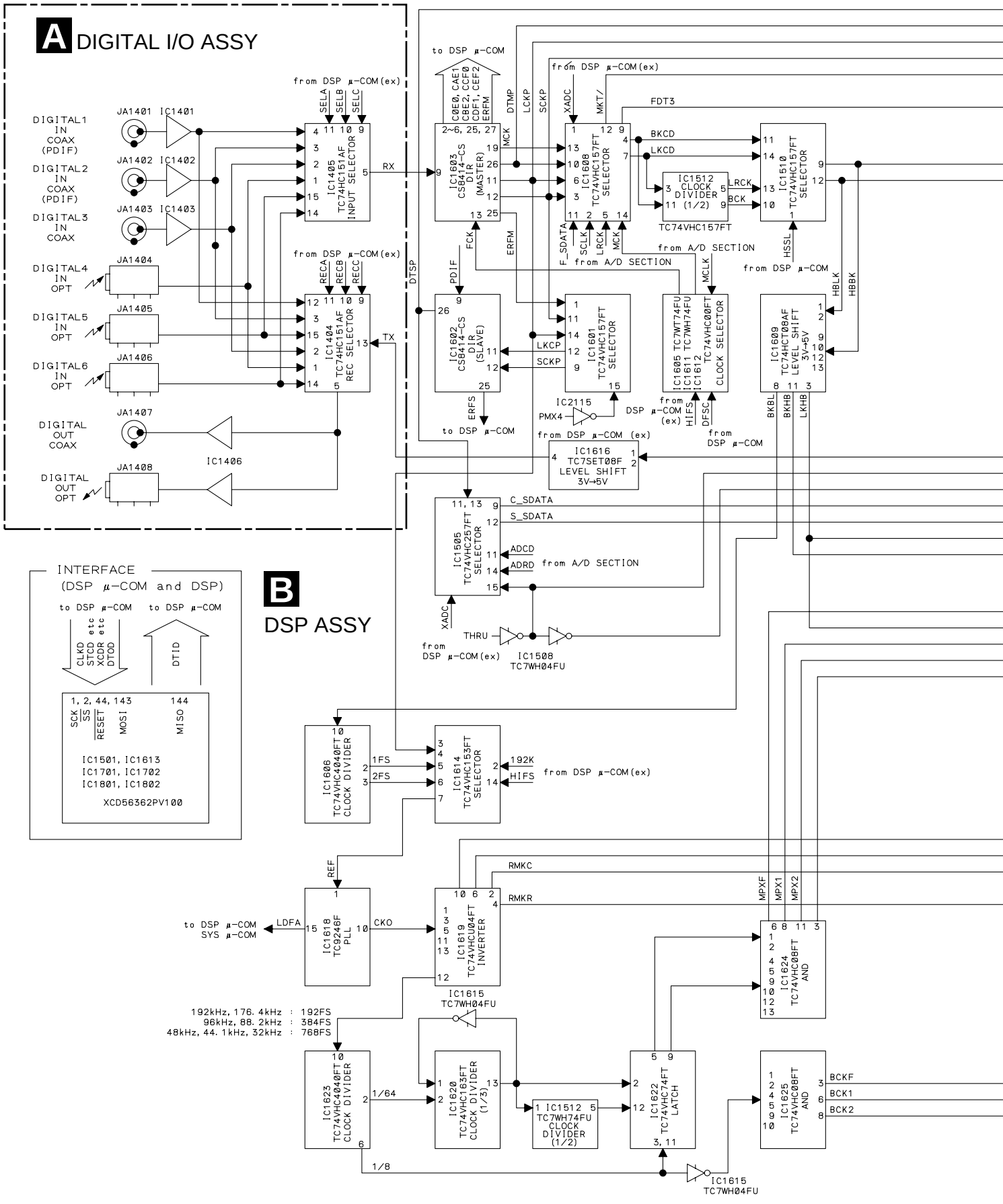
3.1.4 D/A BLOCK (AUDIO A ASSY)

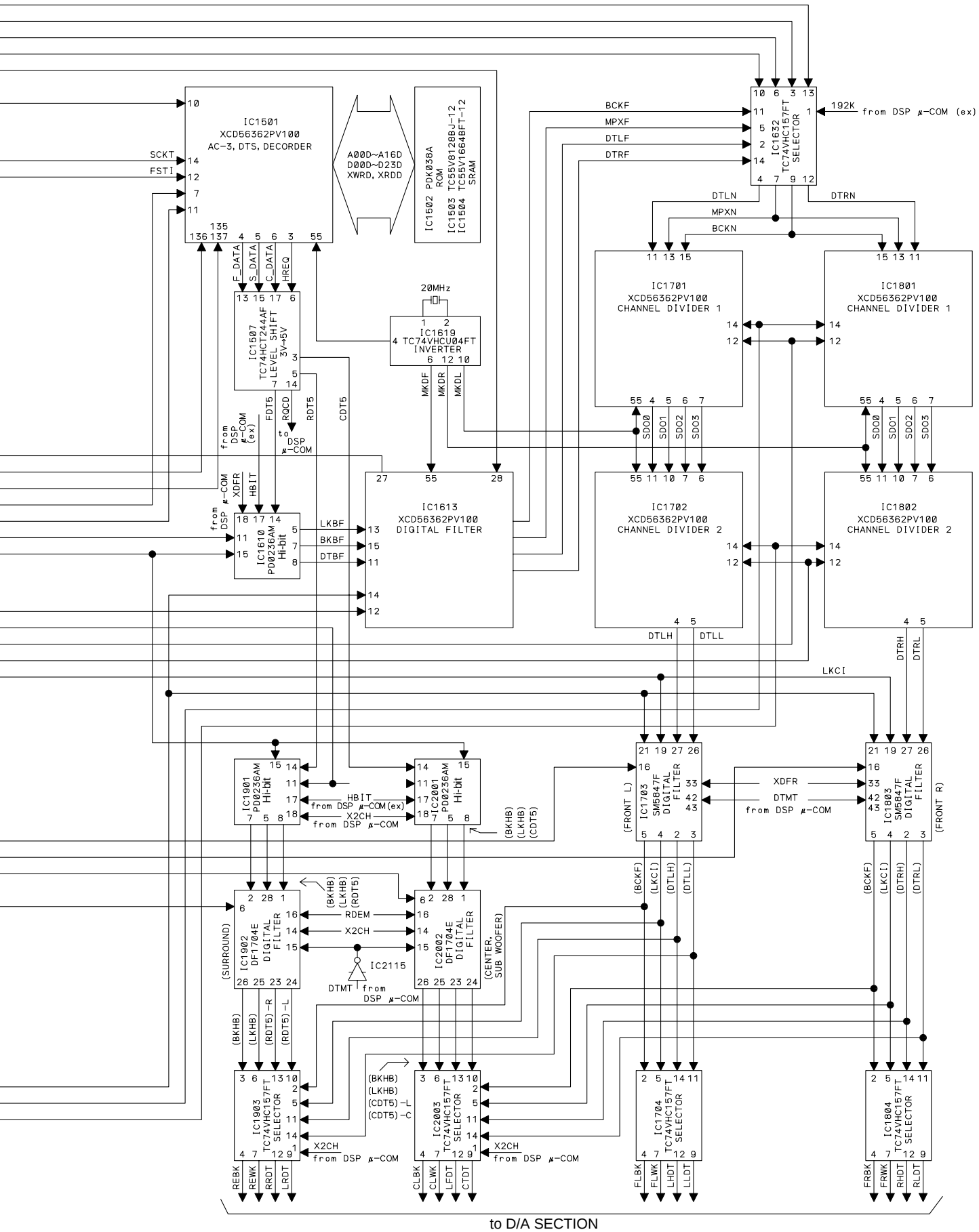


3.1.5 D/A BLOCK (AUDIO B ASSY)

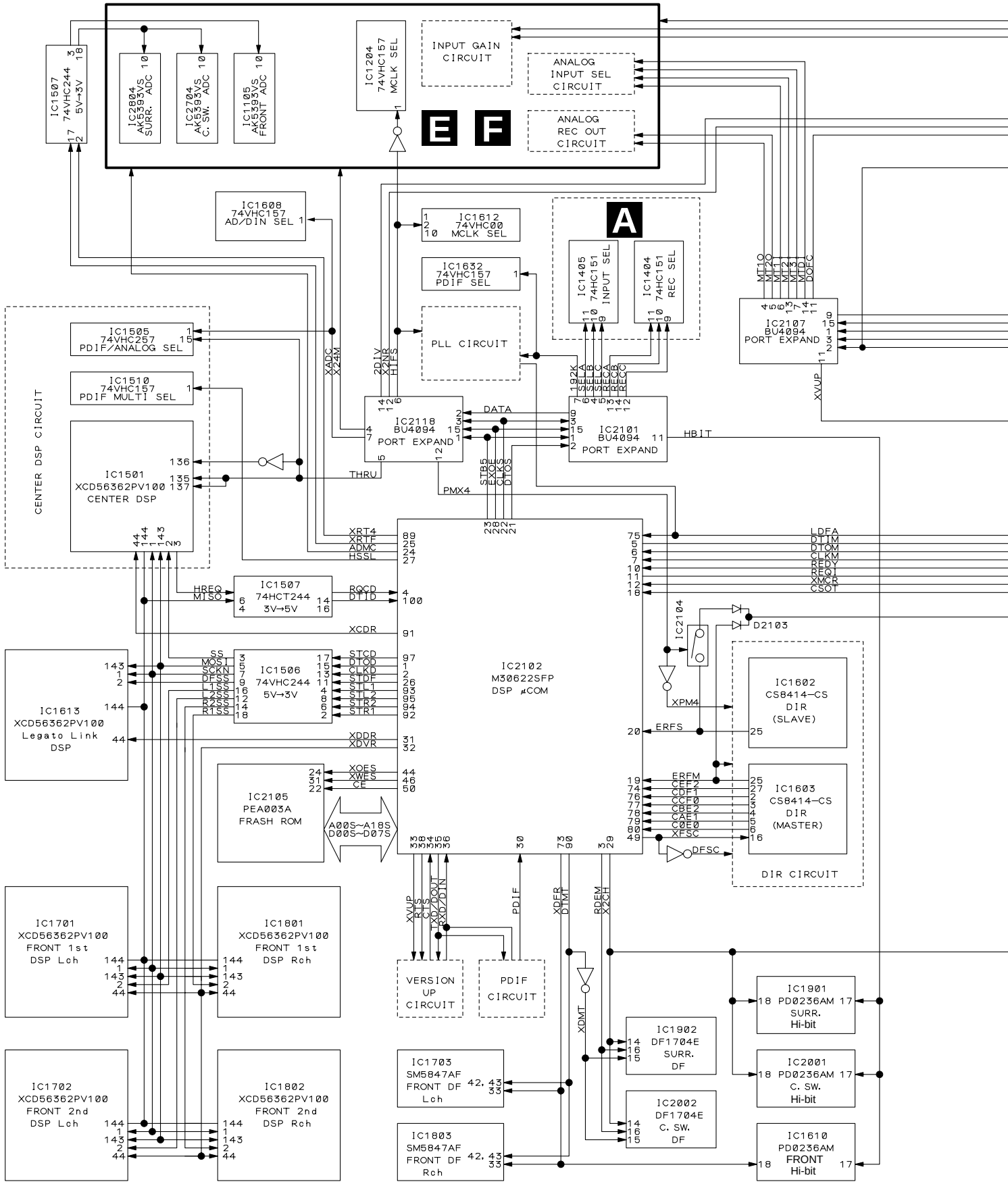


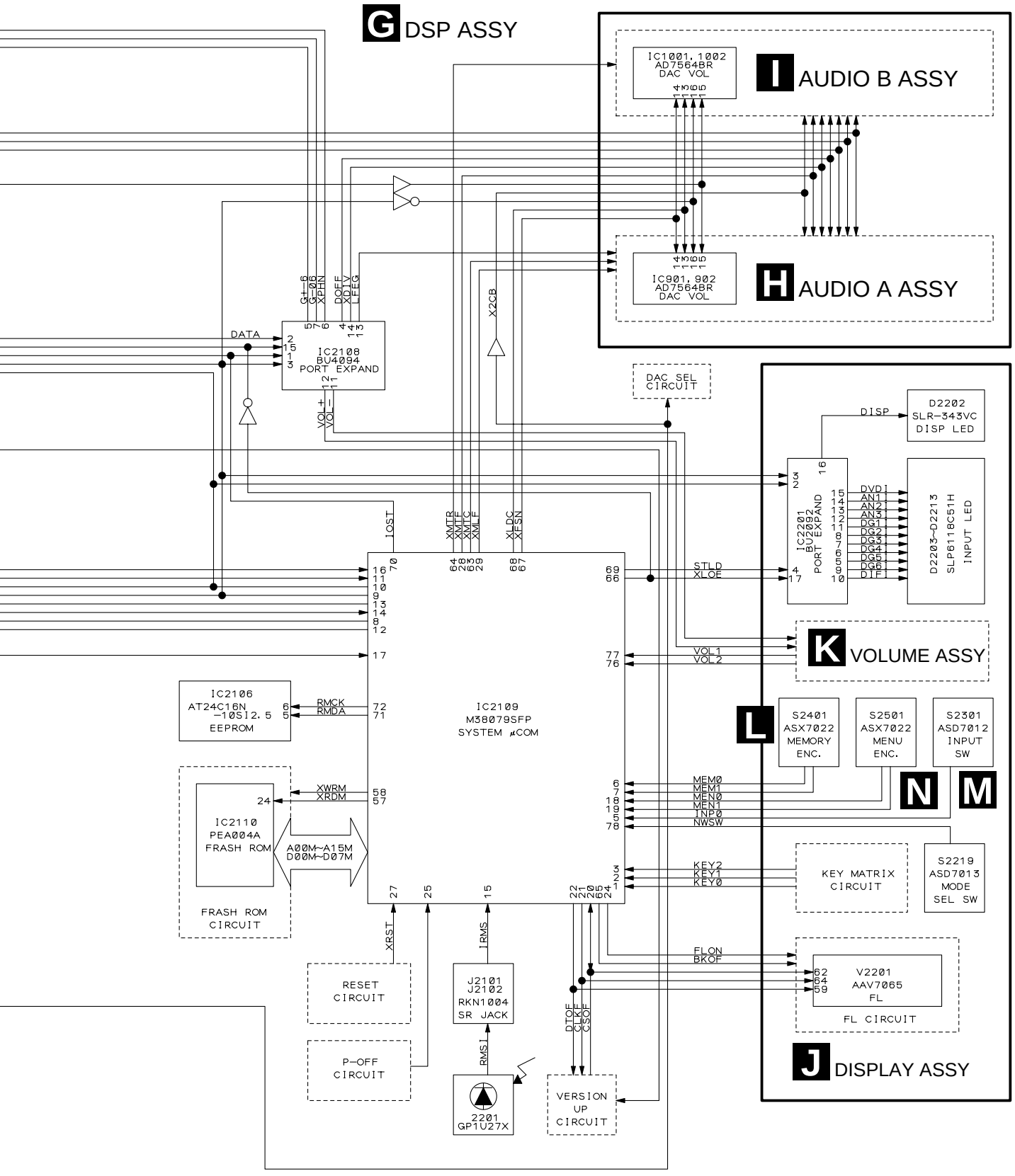
3.1.6 DIGITAL SIGNAL BLOCK



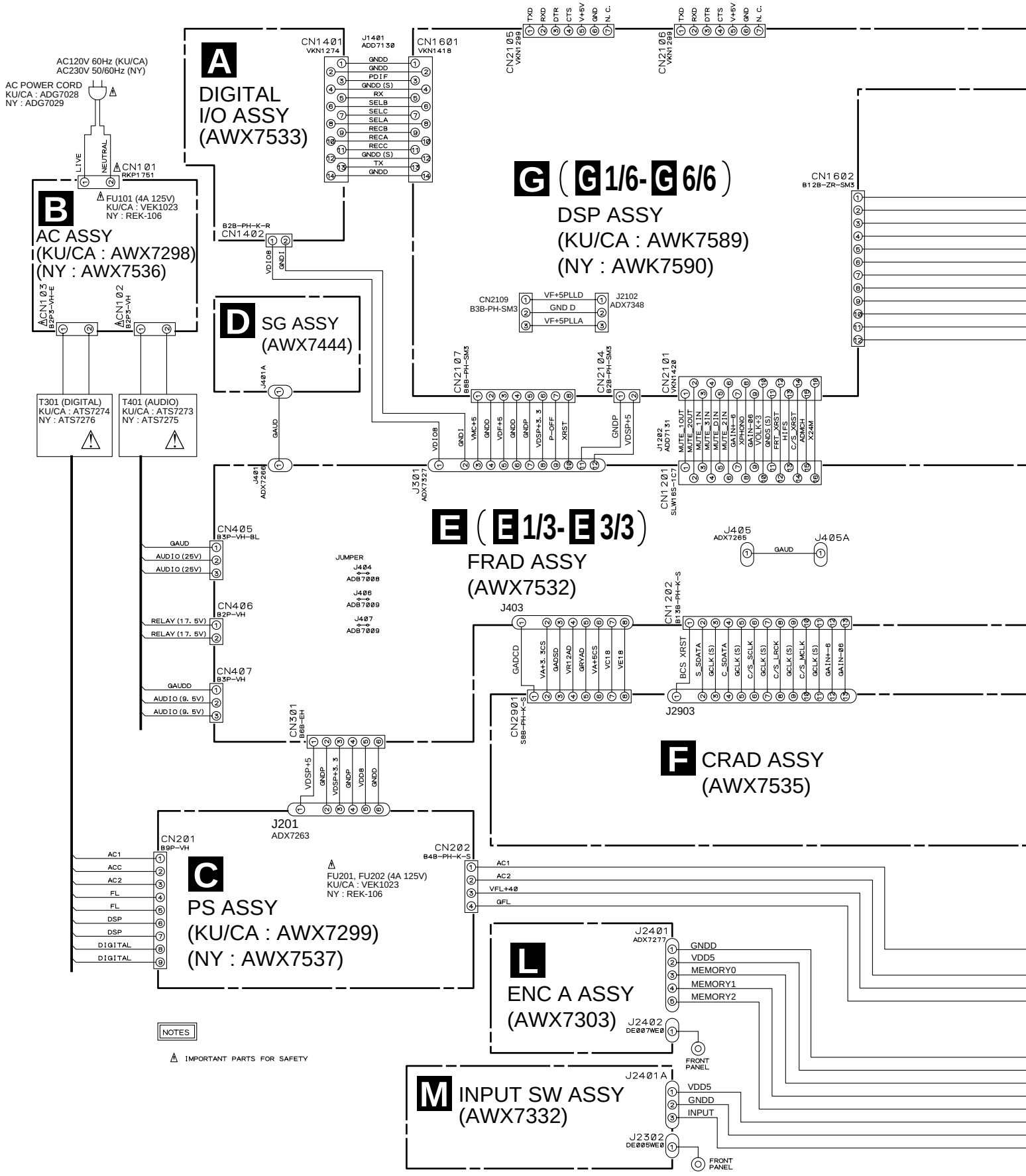

IC1501
XCD56362PV100
AC-3, DTS, DECORDER
A00D~A16D
D00D~D23D
XWRD, XRDD
IC1502 PDK038A
ROM
IC1503 TC55V8128BJ-12
IC1504 TC55V16648FT-12
SRAM
SCKT
FSTI
F_DATA
S_DATA
C_DATA
HREQ
IC1507
TC74HCT244AF
LEVEL SHIFT
3V→5V
20MHz
IC1619
TC74VHCU04FT
INVERTER
MKDF
MKDR
MKDL
CDT5
RDT5
FDT5
RQCD
from DSP μ-COM (ex)
to DSP μ-COM
XDFR
HBIT
IC1610
PD0236AM
Hi-bit
LKBF
BKBF
DTBF
IC1613
XCD56362PV100
DIGITAL FILTER
BCKF
MPXF
DTLF
DTRF
IC1632
TC74VHC157FT
SELECTOR
192K
from DSP μ-COM (ex)
DTLN
DTRN
MPXN
BCKN
IC1701
XCD56362PV100
CHANNEL DIVIDER 1
IC1801
XCD56362PV100
CHANNEL DIVIDER 1
SDO0
SDO1
SDO2
SDO3
IC1702
XCD56362PV100
CHANNEL DIVIDER 2
IC1802
XCD56362PV100
CHANNEL DIVIDER 2
DTLH
DTLL
DTRH
DTRL
LKCI
IC1901
PD0236AM
Hi-bit
IC2001
PD0236AM
Hi-bit
HBIT
from DSP μ-COM(ex)
X2CH
from DSP μ-COM
(BKHB)
(LKHB)
(CDT5)
IC1703
SM5847F
DIGITAL FILTER
(FRONT L)
IC1803
SM5847F
DIGITAL FILTER
(FRONT R)
XDFR
DTMT
from DSP μ-COM
(BCKF)
(LKCI)
(DTLH)
(DTLL)
(DTRH)
(DTRL)
IC1902
DF1704E
DIGITAL FILTER
(SURROUND)
IC2002
DF1704E
DIGITAL FILTER
(CENTER, SUB WOOFER)
RDEM
X2CH
IC2115
DTMT
from DSP μ-COM
(RDT5)-R
(RDT5)-L
(CDT5)-L
(CDT5)-C
IC1903
TC74VHC157FT
SELECTOR
IC2003
TC74VHC157FT
SELECTOR
IC1704
TC74VHC157FT
SELECTOR
IC1804
TC74VHC157FT
SELECTOR
REBK
REWK
RRDT
LRDT
CLBK
CLWK
LFDT
CTDT
FLBK
FLWK
LHDT
LLDT
FRBK
FRWK
RHDT
RLDT
to D/A SECTION

3.1.7 μ-COM PORT BLOCK

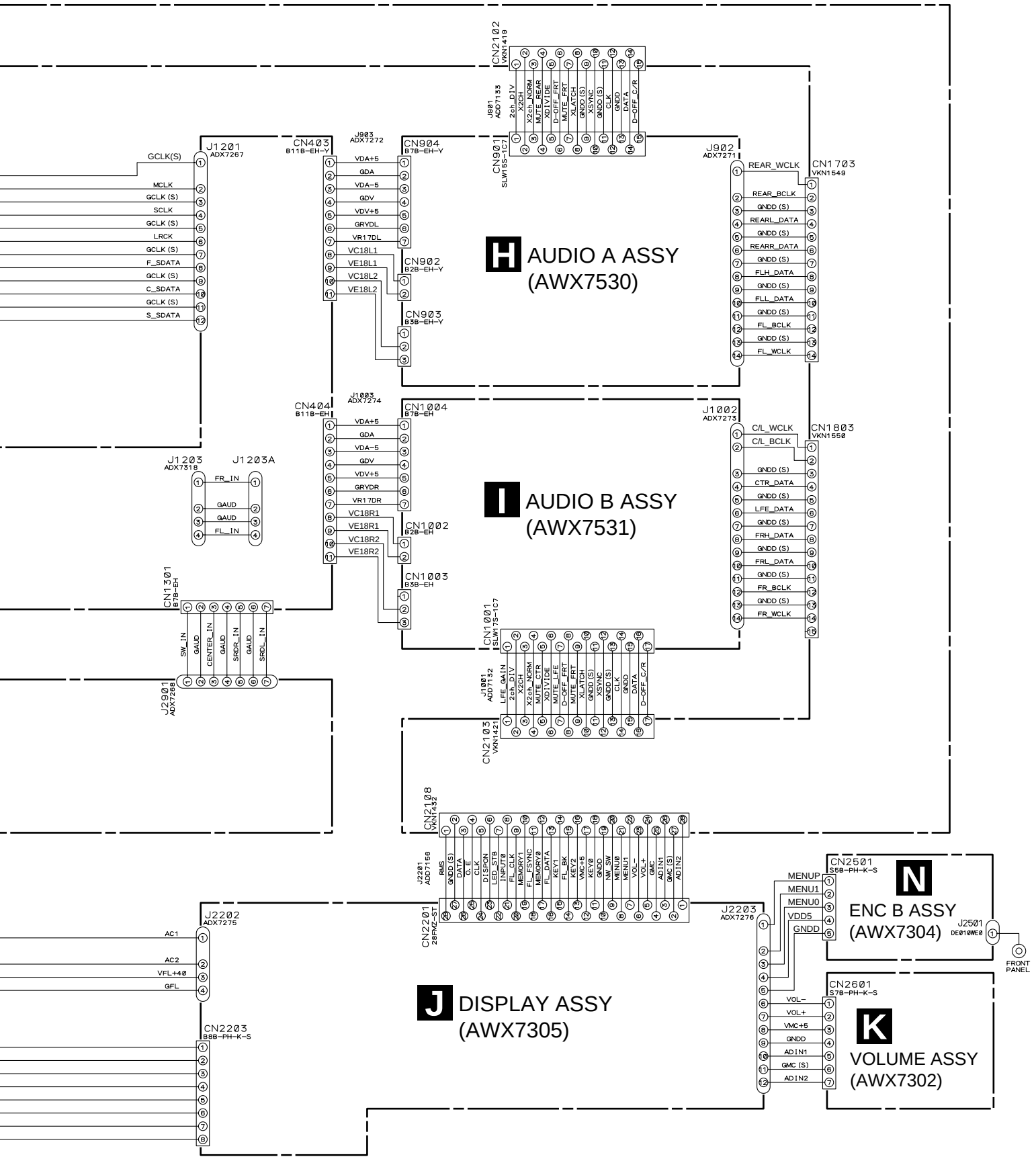



G DSP ASSY
I AUDIO B ASSY
IC1001, 1002
AD7564BR
DAC VOL
H AUDIO A ASSY
IC901, 902
AD7564BR
DAC VOL
DAC SEL
CIRCUIT
IC2108
BU4094
PORT EXPAND
DATA
VOL+
VOL-
X2CB
D2202
SLR-343VC
DISP LED
DISP
IC2201
BU2092
PORT EXPAND
D2203-D2213
SLP6118C51H
INPUT LED
IC2109
M38079SFP
SYSTEM µCOM
STLD
XLOE
K VOLUME ASSY
VOL1
VOL2
IC2106
AT24C16N
-10S12.5
EEPROM
RMCK
RMDA
L
S2401
ASX7022
MEMORY
ENC.
S2501
ASX7022
MENU
ENC.
S2301
ASD7012
INPUT
SW
N
M
IC2110
PEA004A
FRASH ROM
A00M~A15M
D00M~D07M
FRASH ROM
CIRCUIT
XWRM
XRDM
MEM0
MEM1
MEN0
MEN1
INP0
NWSW
KEY2
KEY1
KEY0
KEY MATRIX
CIRCUIT
S2219
ASD7013
MODE
SEL SW
XRST
IRMS
RESET
CIRCUIT
J2101
J2102
RKN1004
SR JACK
FLON
BKOF
V2201
AAV7065
FL
FL CIRCUIT
P-OFF
CIRCUIT
RMSI
2201
GP1U27X
VERSION
UP
CIRCUIT
J DISPLAY ASSY

3.2 OVERALL WIRING DIAGRAM

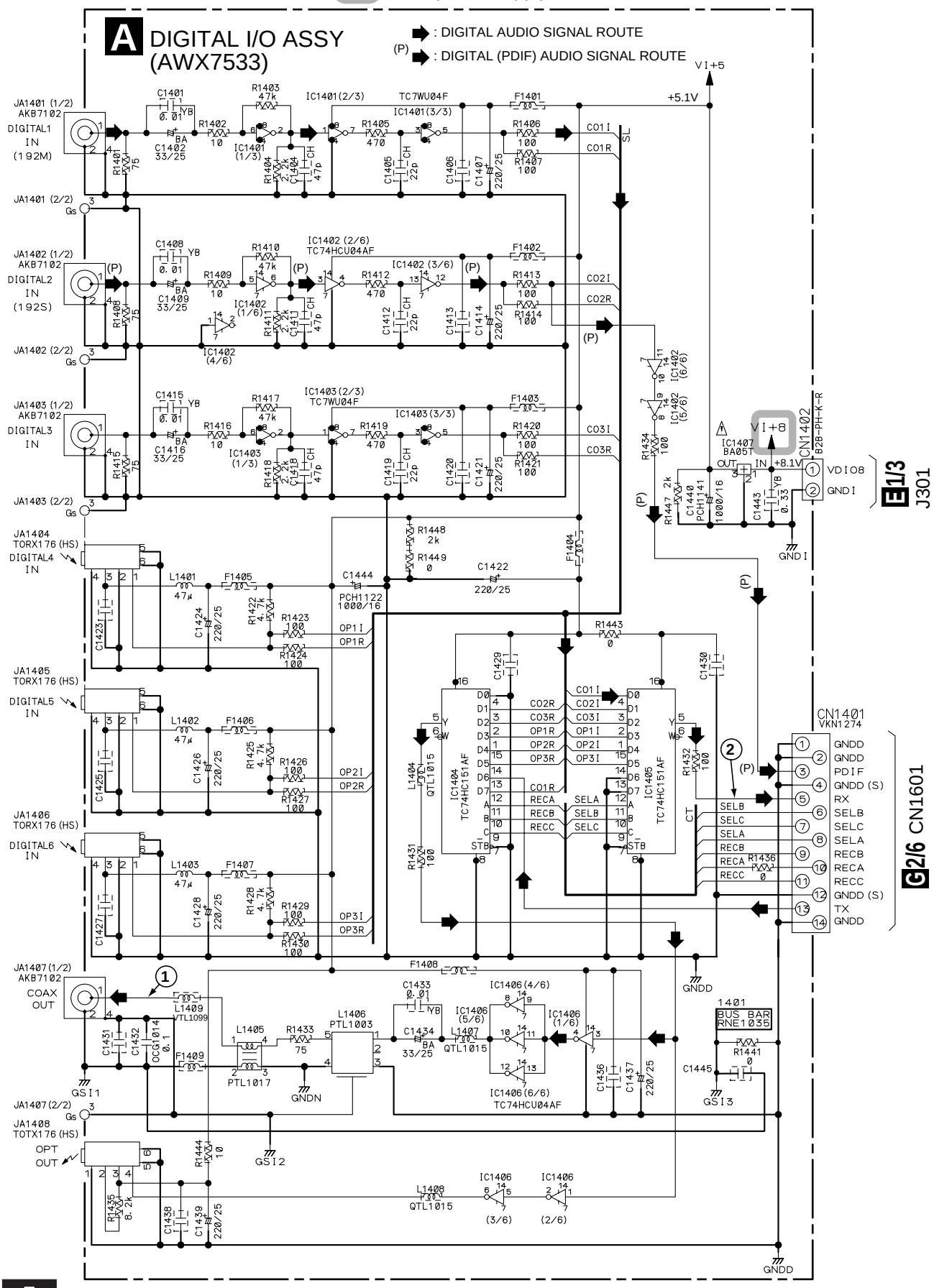


Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

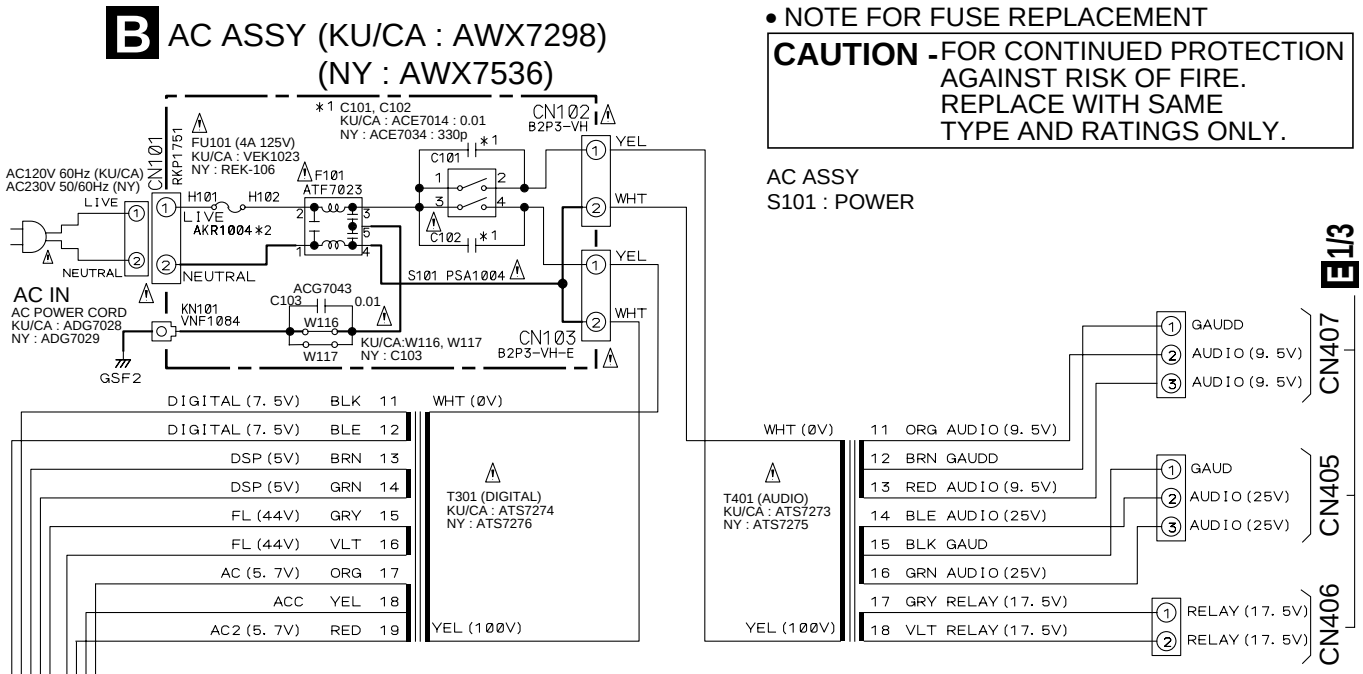


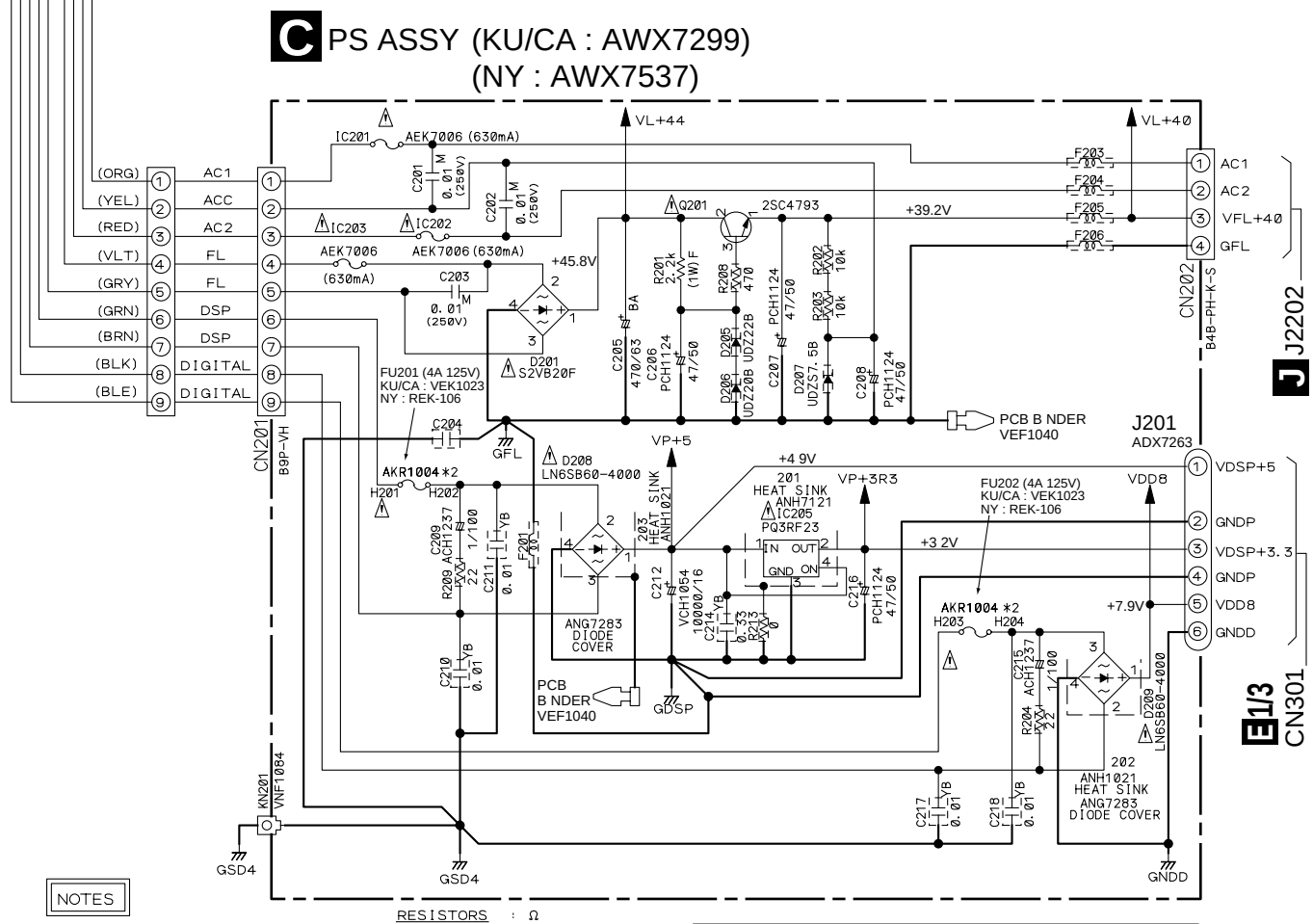
3.3 DIGITAL I/O ASSY

: The power supply is shown with the marked box.



3.4 AC and PS ASSYS





NOTES

⚠ IMPORTANT PARTS FOR SAFETY

INDUCTORS Unmarked Unit : μH
LFEA□□□J

FERRITES
DTF1070

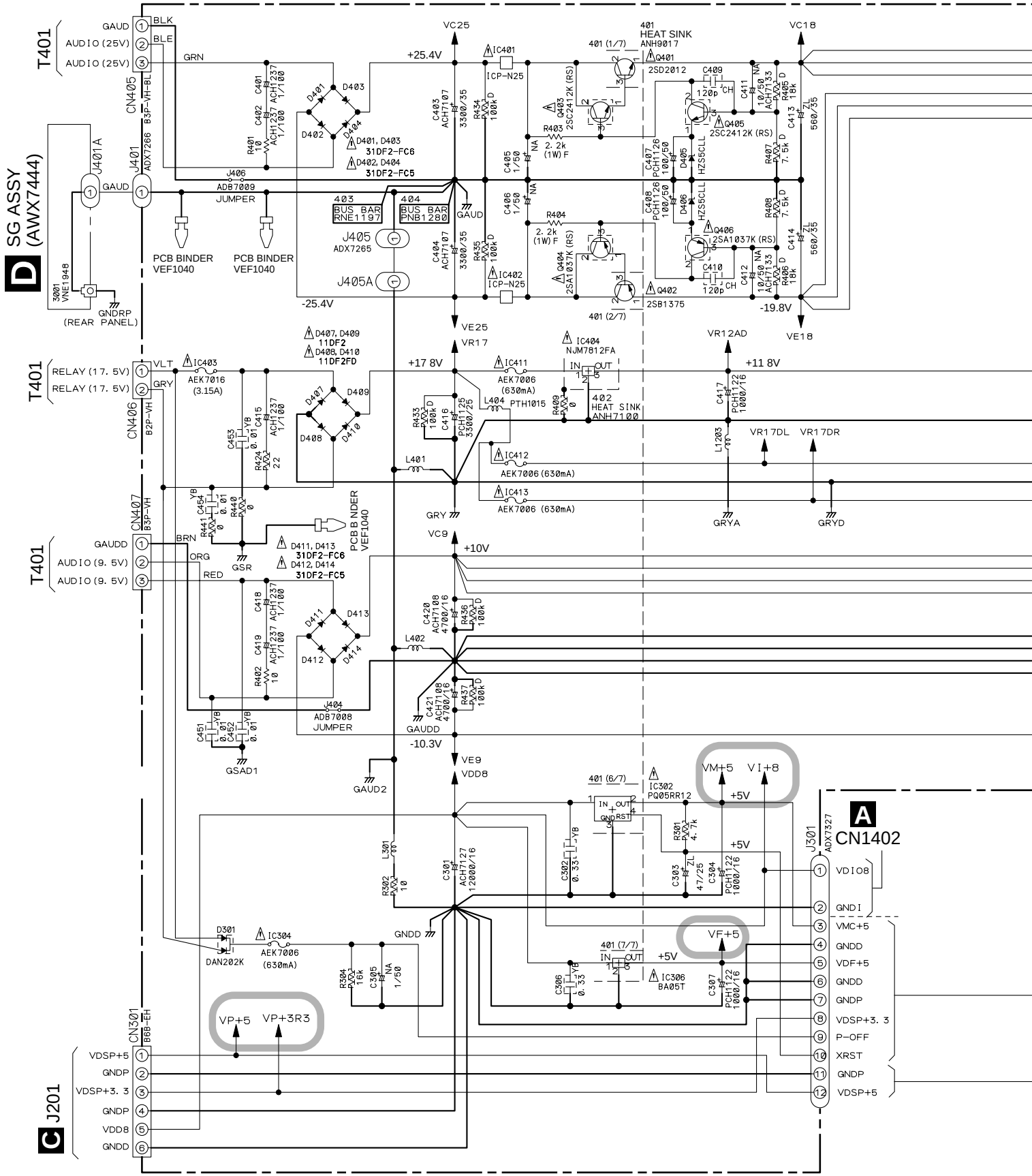
RESISTORS : Ω
RS1/10S□□□J
RD1/4PU□□□J

CAPACITORS : μF
PCH1128 (220μF/25V)
CKSQYB104K25

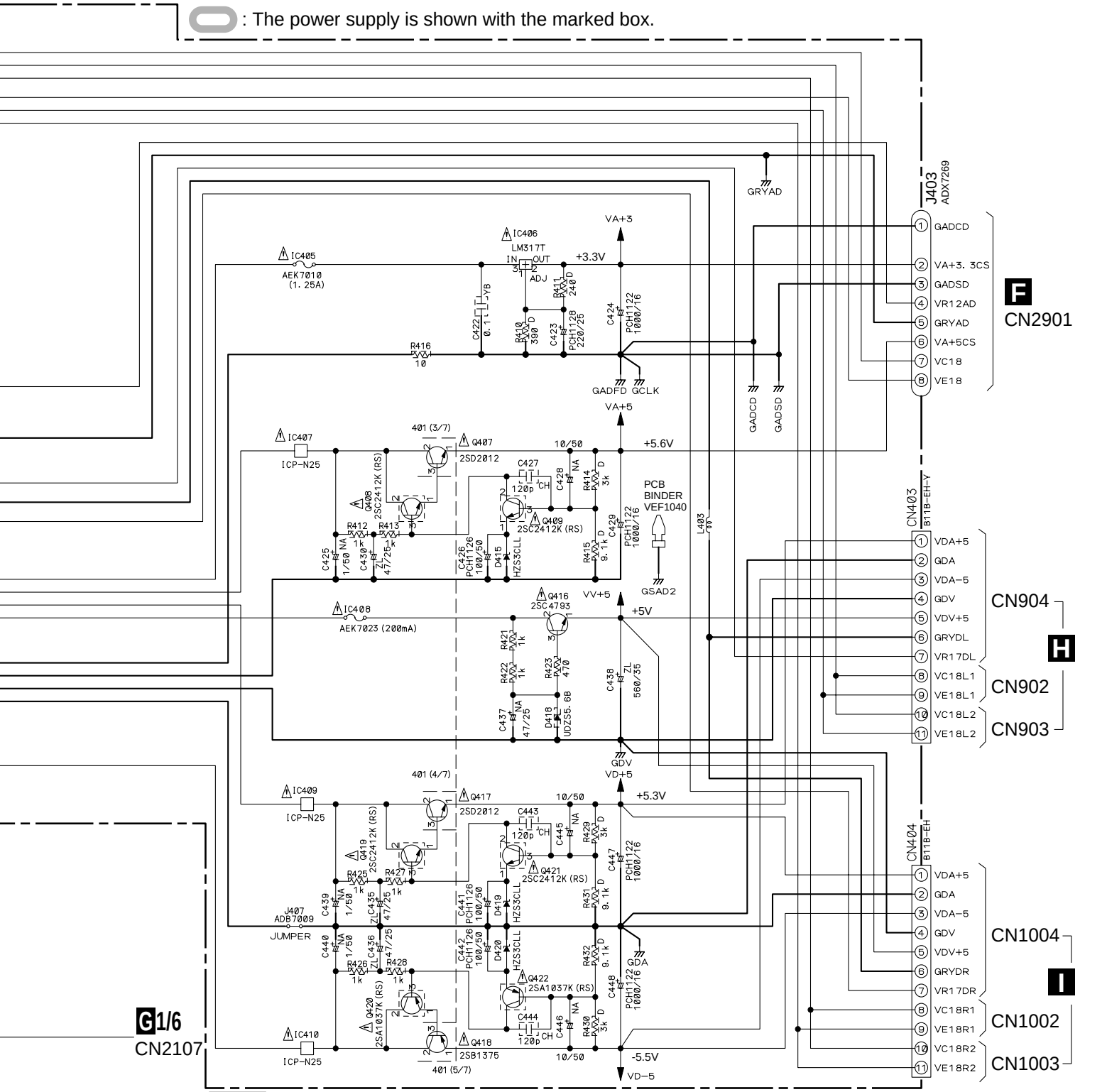
CAUTION : FOR CONT NUED PROTECTION AGA NST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.630 MFD, BY LITTELFUSE INC. FOR IC201-IC203 (AEK7006).

3.5 SG and FRAD (1/3) ASSYS

E 1/3 FRAD ASSY (AWX7532)



: The power supply is shown with the marked box.



NOTES

⚠ IMPORTANT PARTS FOR SAFETY

RESISTORS Unmarked Unit : Ω

RS1/10S□□□J

RS1/10SE□□□□D

RDR1/4PM□□□J

FERRITES

RTF1167

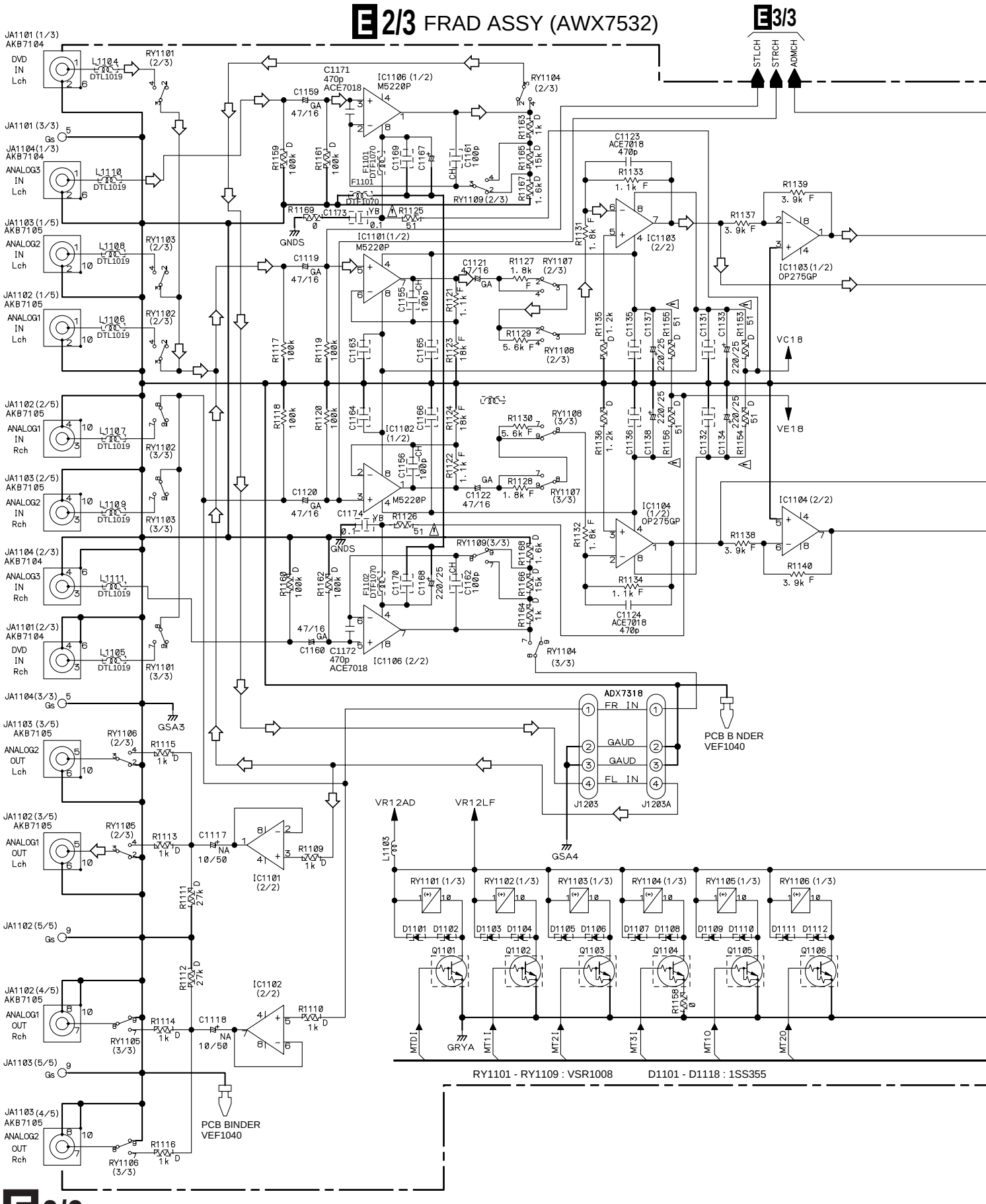
CAUTION : FOR CONT NUED PROTECTION AGA NST RISK OF F RE. REPLACE ONLY WITH SAME TYPE NO. 491.630 MFD, BY LITTELFUSE INC. FOR IC304, IC411-IC413 (AEK7006).

CAUTION : FOR CONT NUED PROTECTION AGA NST RISK OF F RE. REPLACE ONLY WITH SAME TYPE NO. 4911.25 MFD, BY LITTELFUSE INC. FOR IC405 (AEK7010).

CAUTION : FOR CONT NUED PROTECTION AGA NST RISK OF F RE. REPLACE ONLY WITH SAME TYPE NO. 4913.15 MFD, BY LITTELFUSE INC. FOR IC403 (AEK7016).

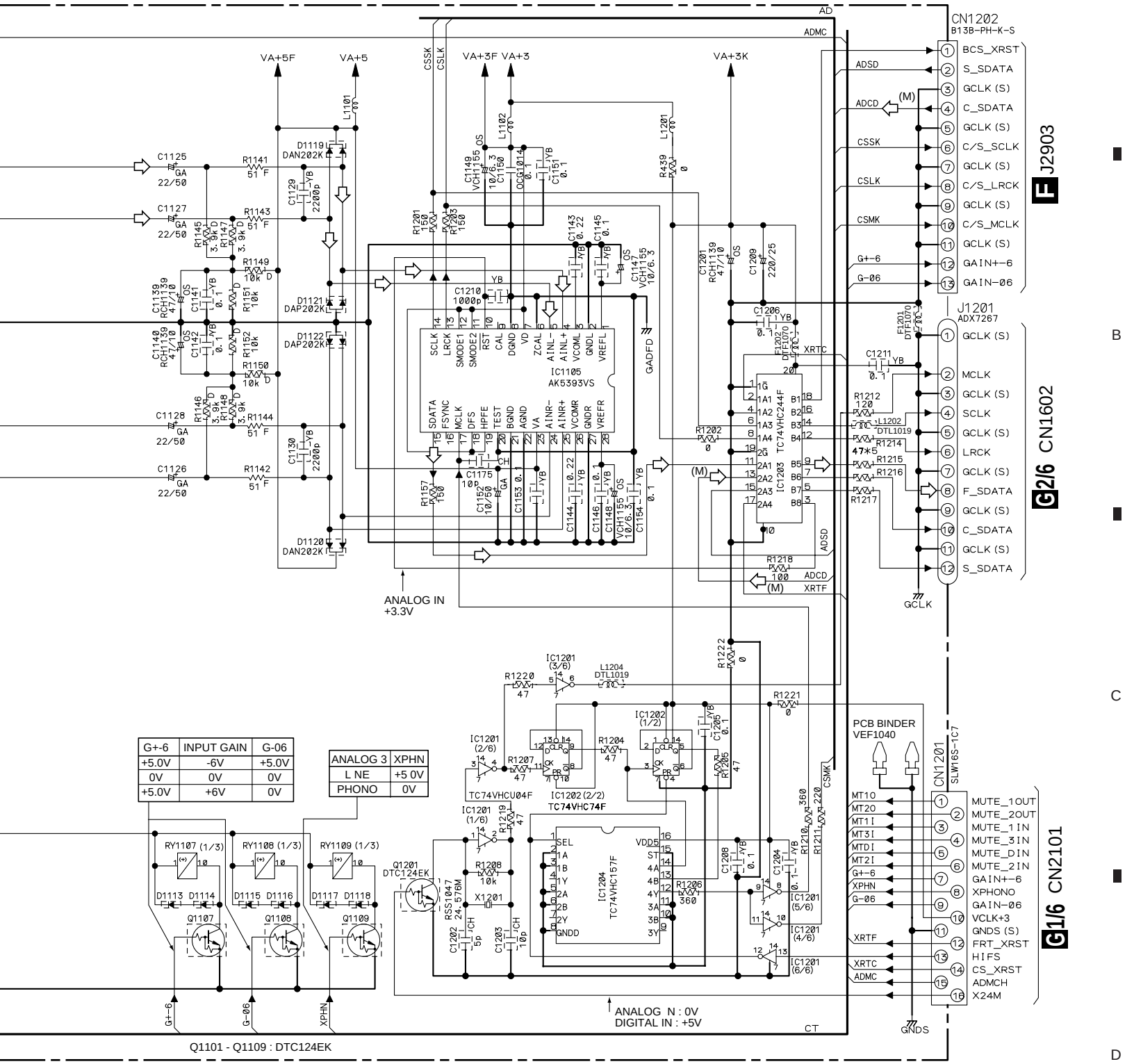
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF F RE REPLACE ONLY WITH SAME TYPE NO. 491.200 MFD, BY LITTELFUSE INC FOR IC408 (AEK7023).

3.6 FRAD ASSY (2/3)



: ANALOG AUDIO SIGNAL ROUTE (FRONT)

(M) : ANALOG AUDIO SIGNAL ROUTE (Multi)



G+-6	INPUT GAIN	G-06
+5.0V	-6V	+5.0V
0V	0V	0V
+5.0V	+6V	0V

ANALOG 3	XPHN
L NE	+5 0V
PHONO	0V

Q1101 - Q1109 : DTC124EK

NOTES

CAPACITORS Unmarked Unit : μF

PCH1128 (220μF/25V)

CKSQYB473K50 (0.047μF/50V)

RESISTORS : Ω

RDR1/4PM□□□□F

RDR1/4PM□□□J

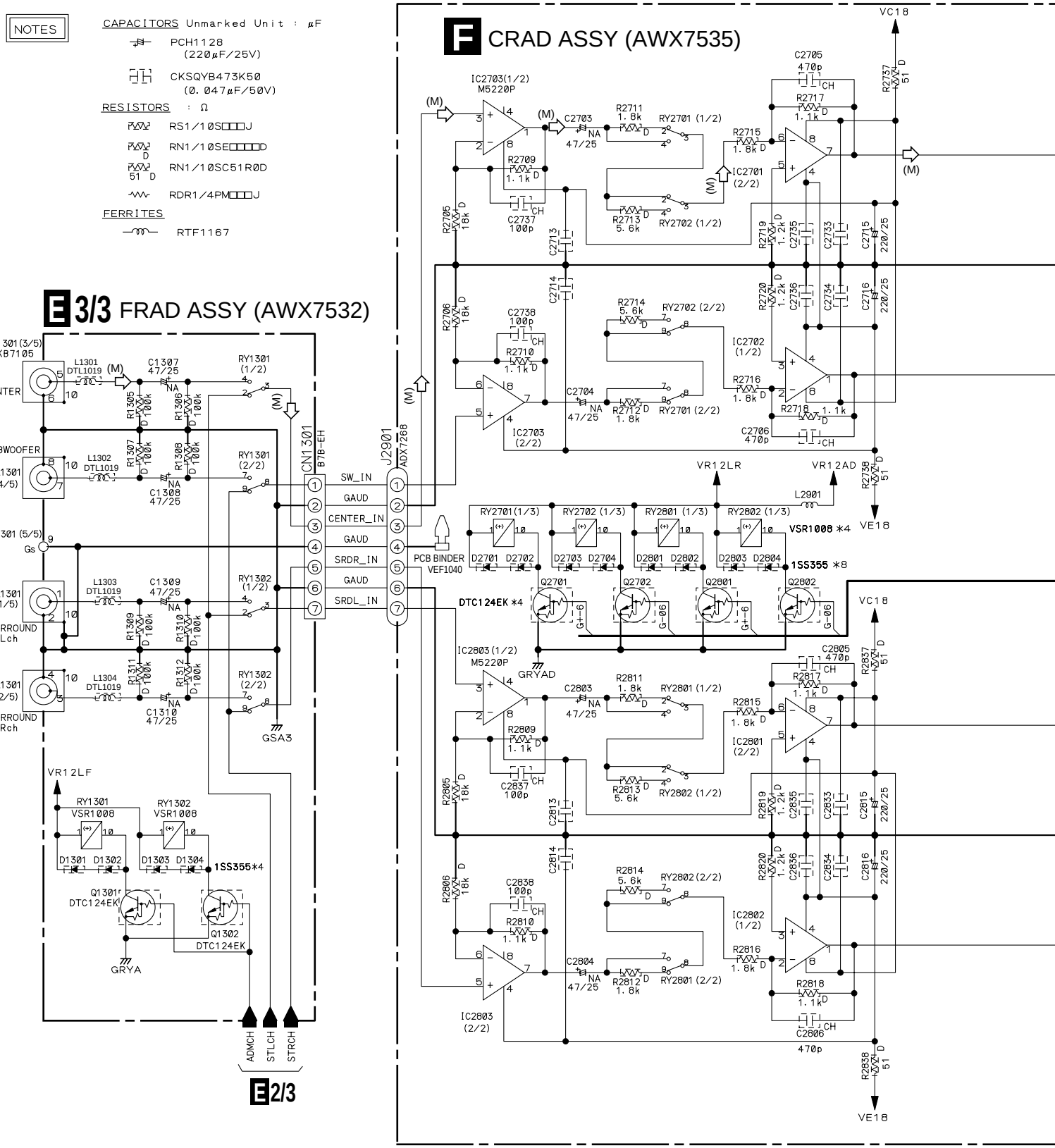
RS1/10S□□□J

RN1/10SE□□□□D

FERRITES

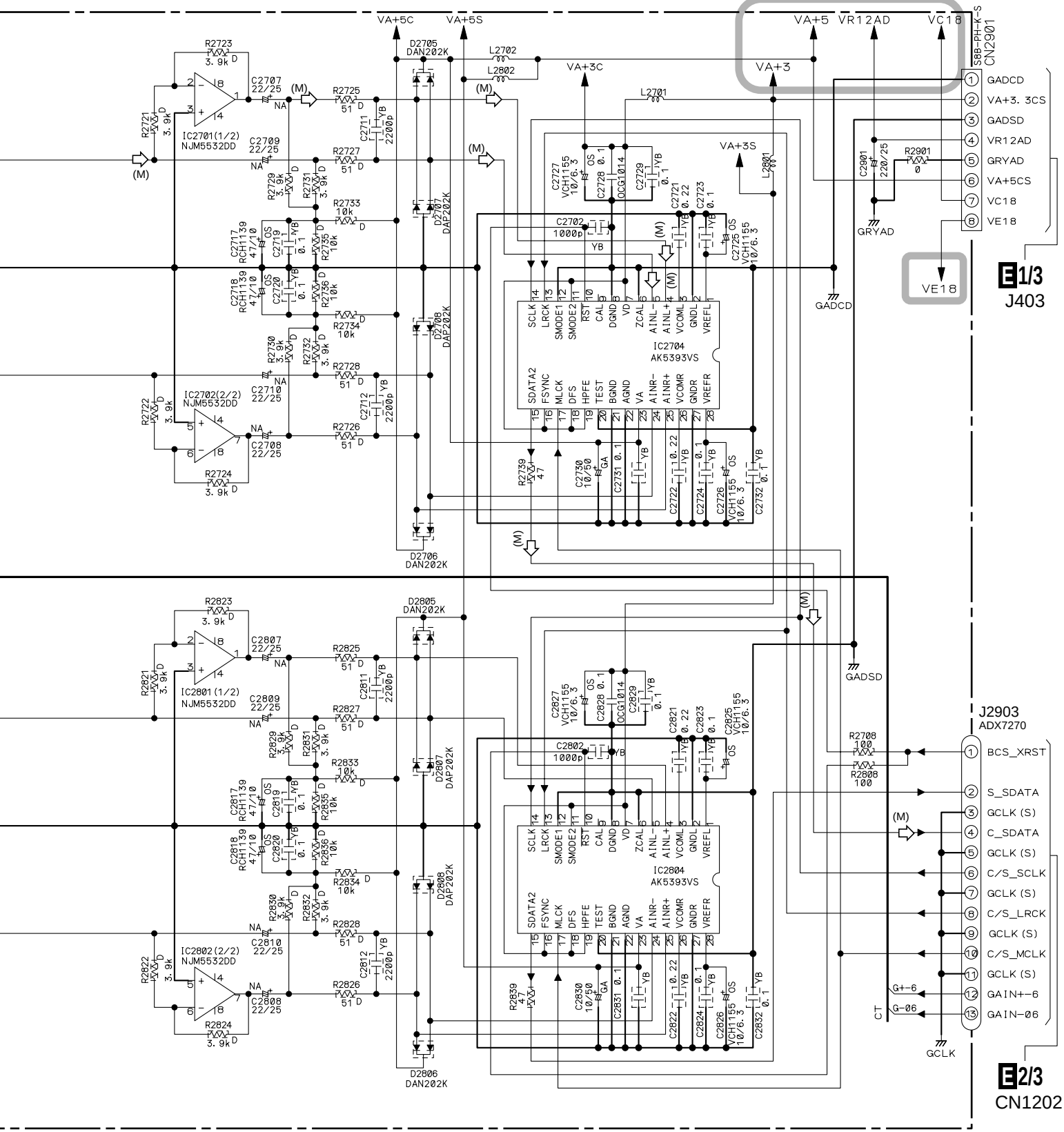
RTF1167

3.7 FRAD (3/3) and CRAD ASSYS

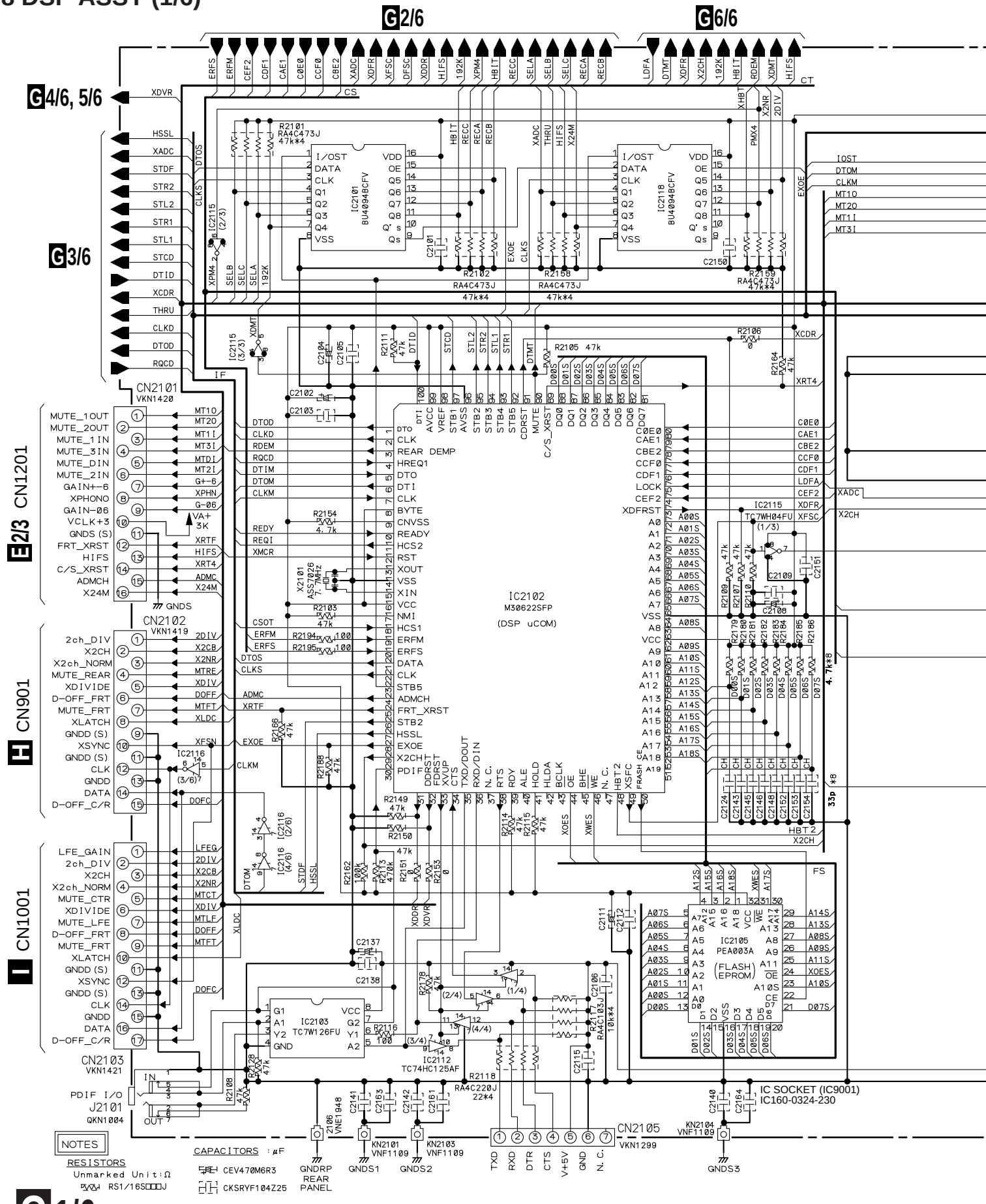


: The power supply is shown with the marked box.

(M) : ANALOG AUDIO SIGNAL ROUTE (Multi)

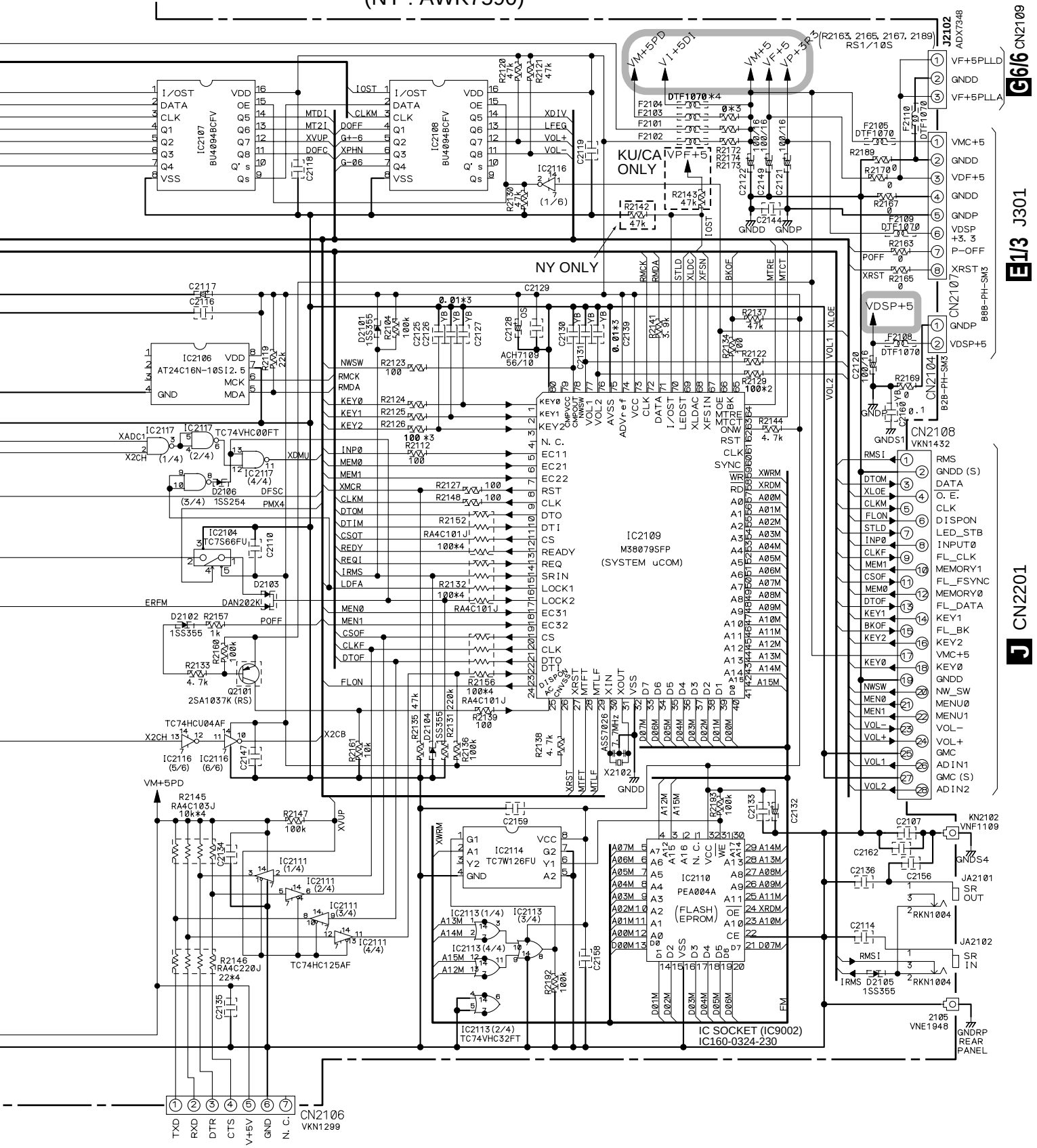


3.8 DSP ASSY (1/6)

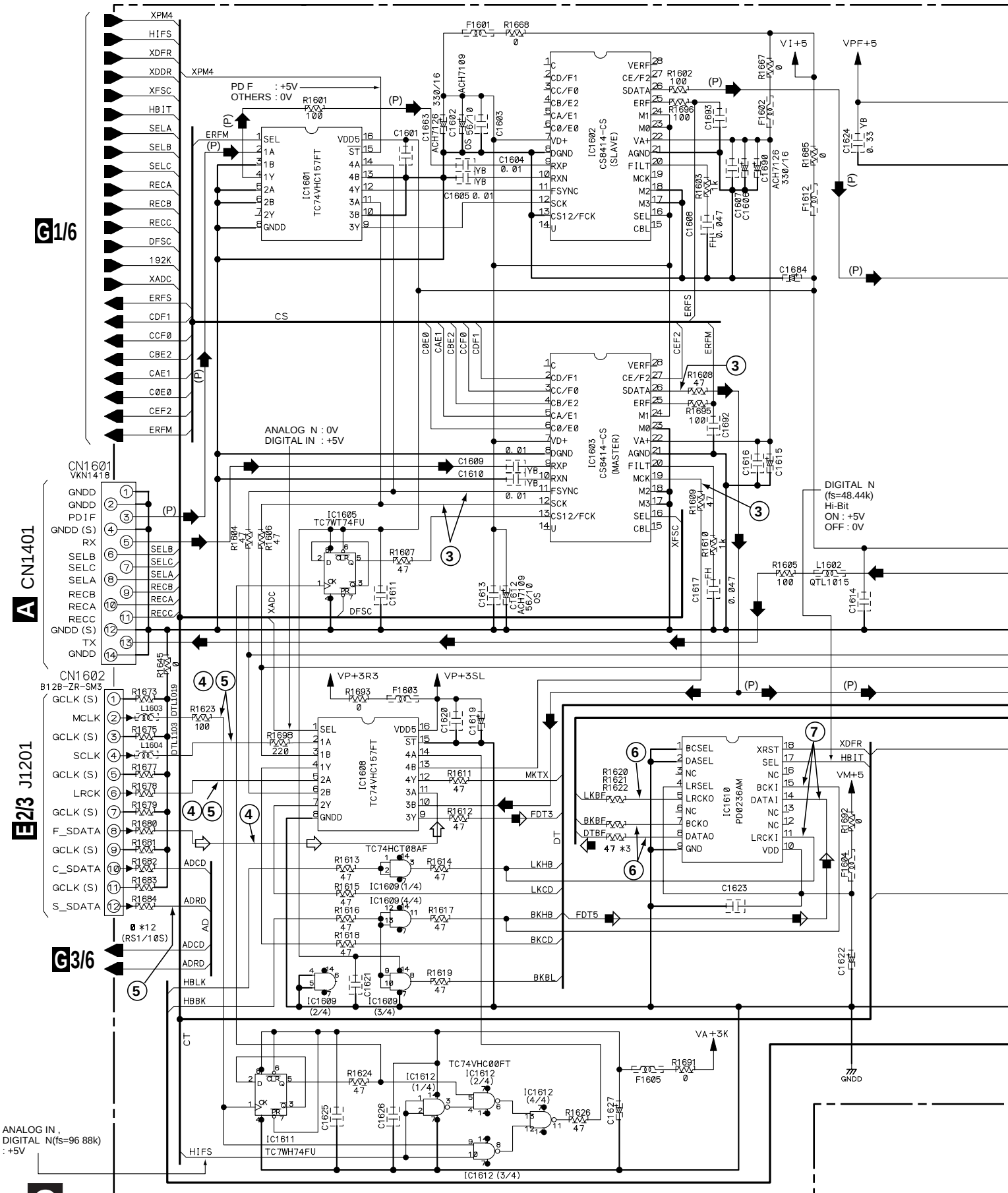


G 1/6 DSP ASSY (KU/CA : AWK7589) (NY : AWK7590)

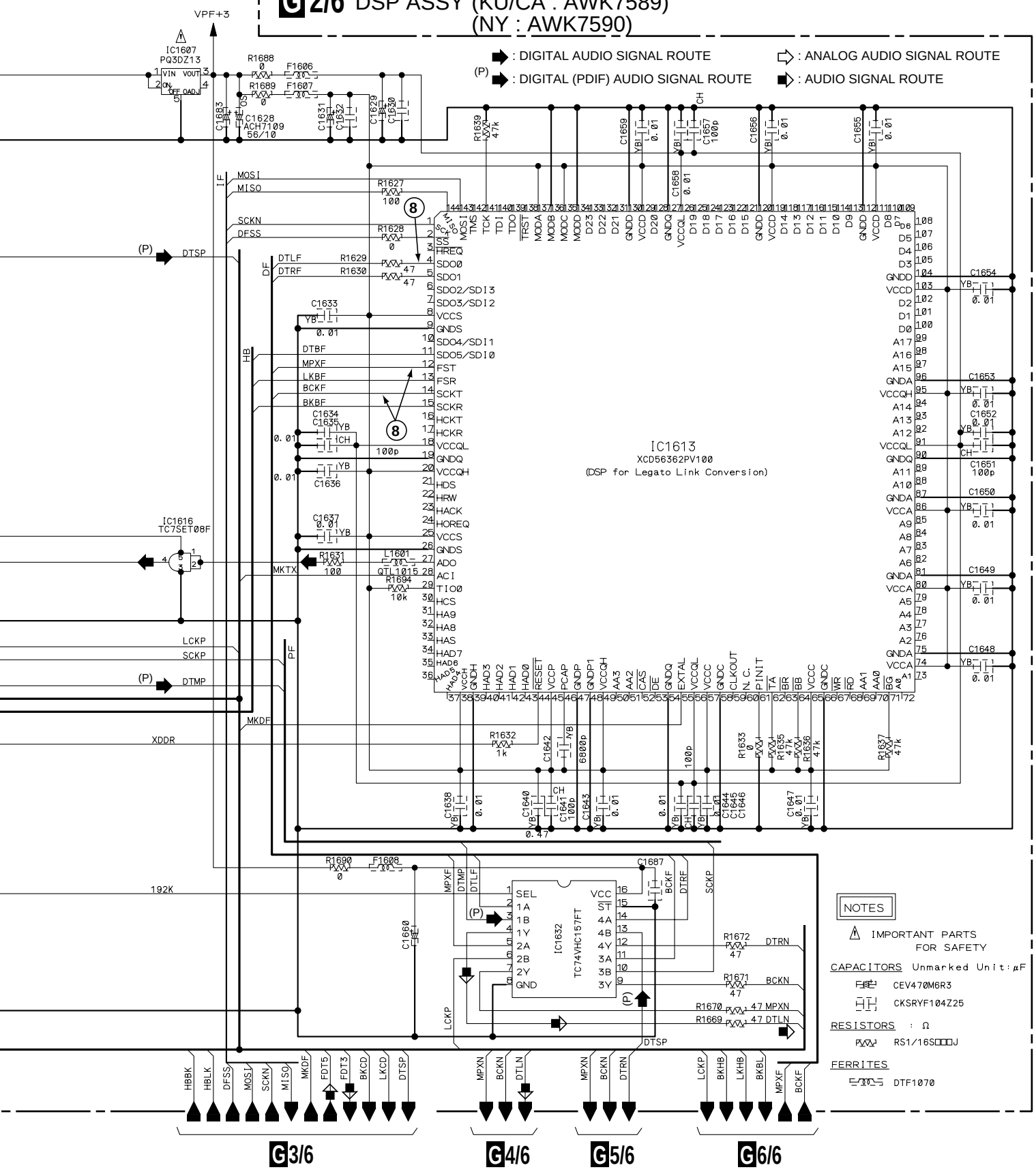
: The power supply is shown with the marked box.



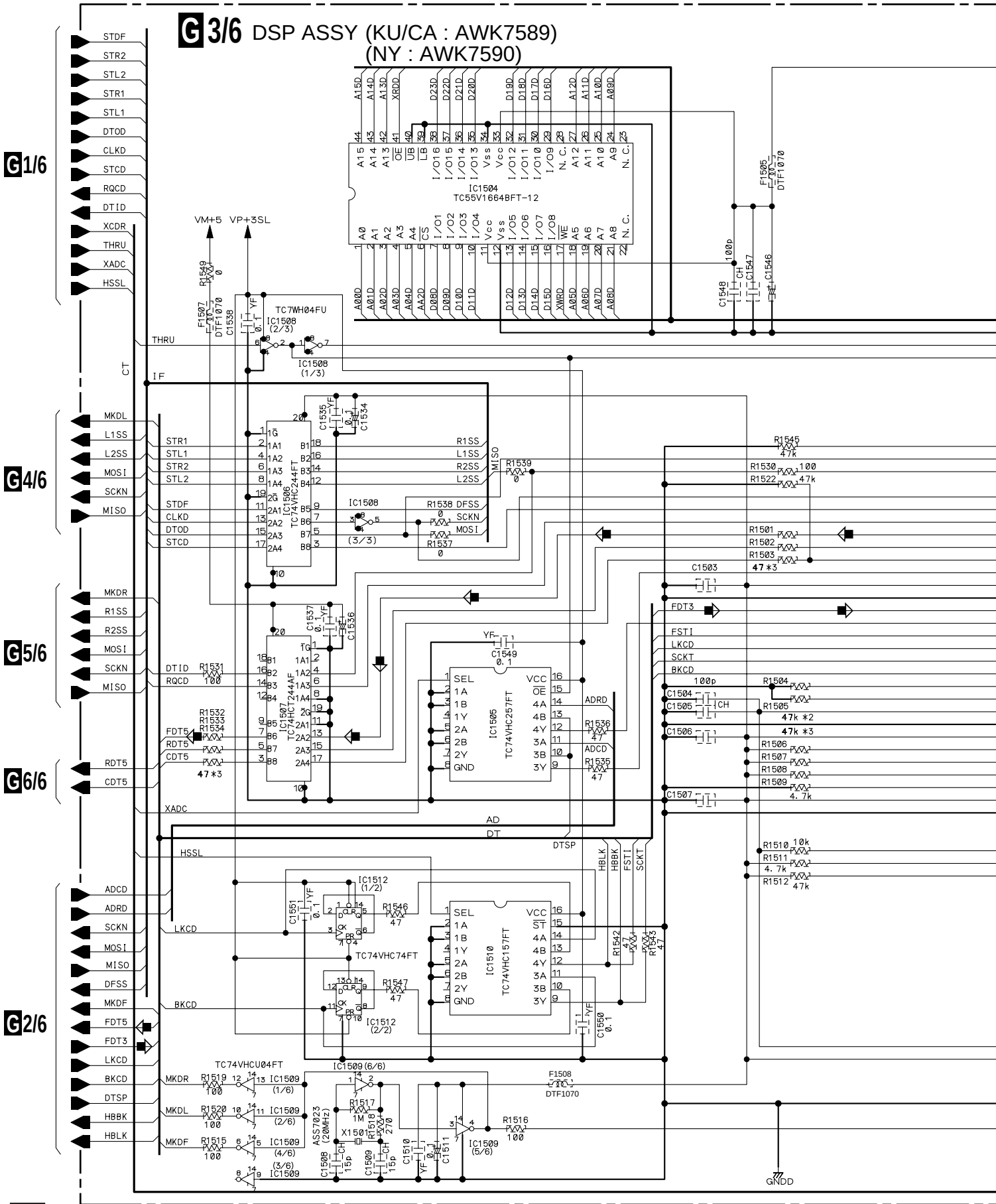
3.9 DSP ASSY (2/6)



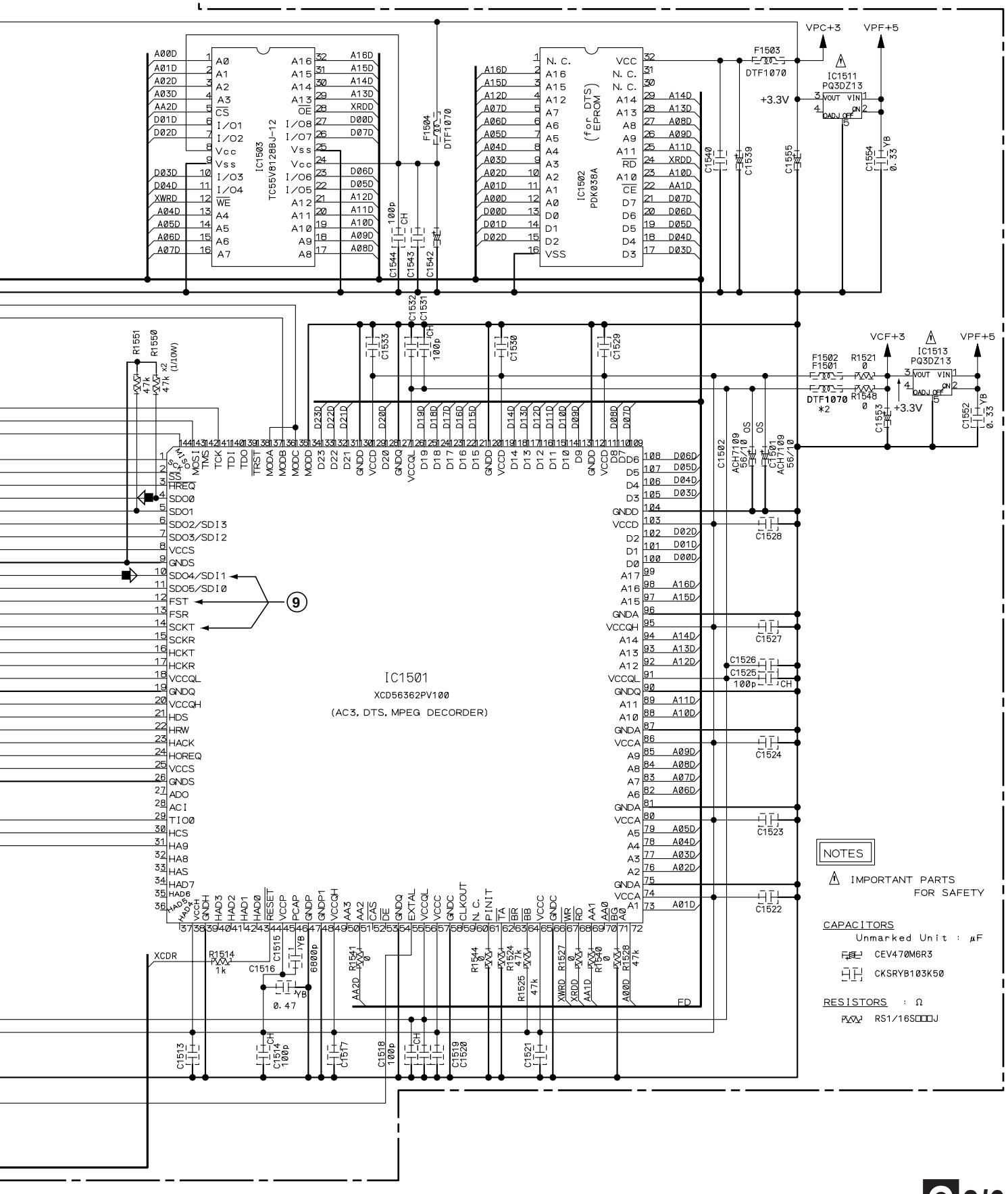
G 2/6 DSP ASSY (KU/CA : AWK7589)
(NY : AWK7590)



3.10 DSP ASSY (3/6)

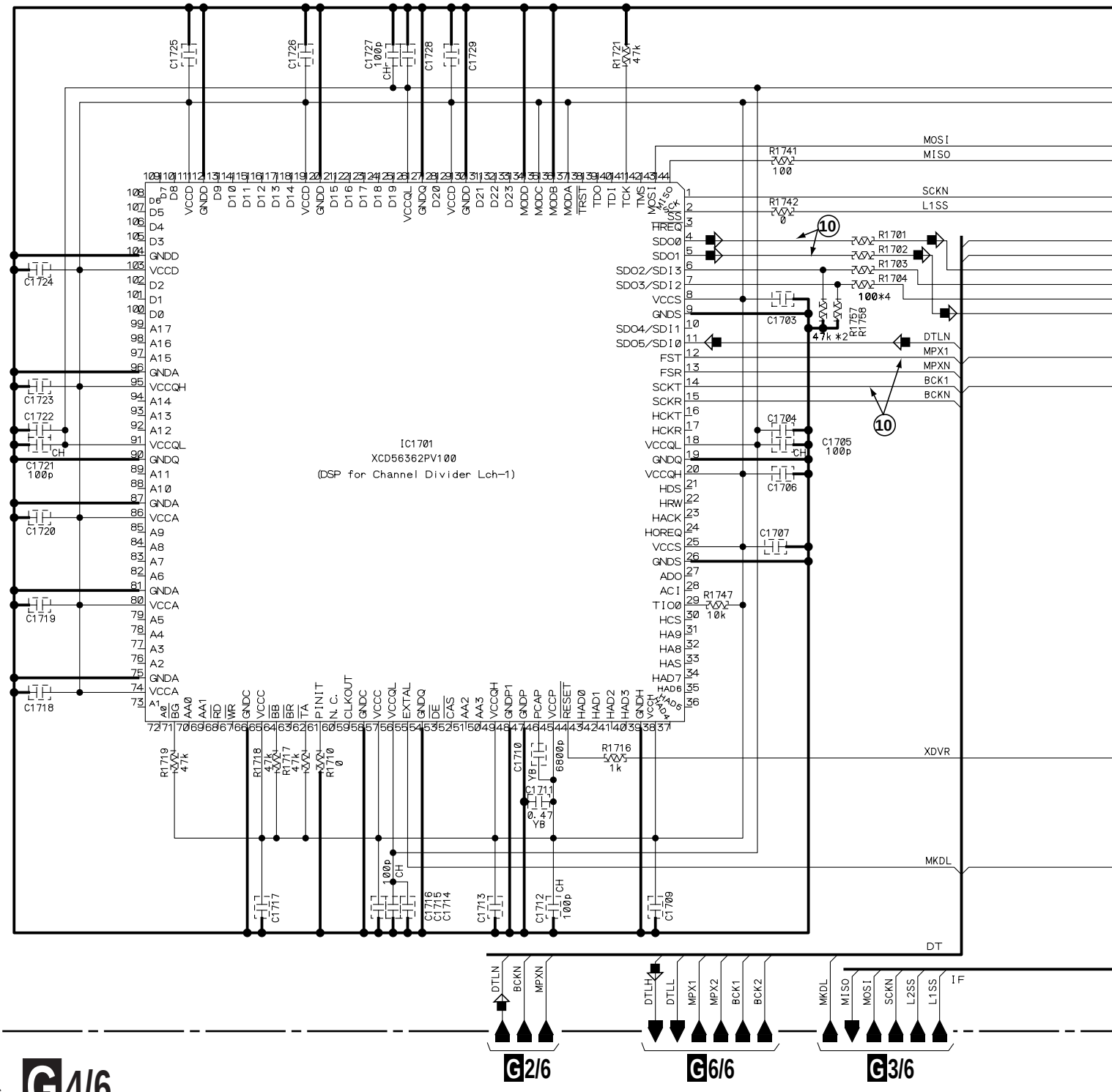


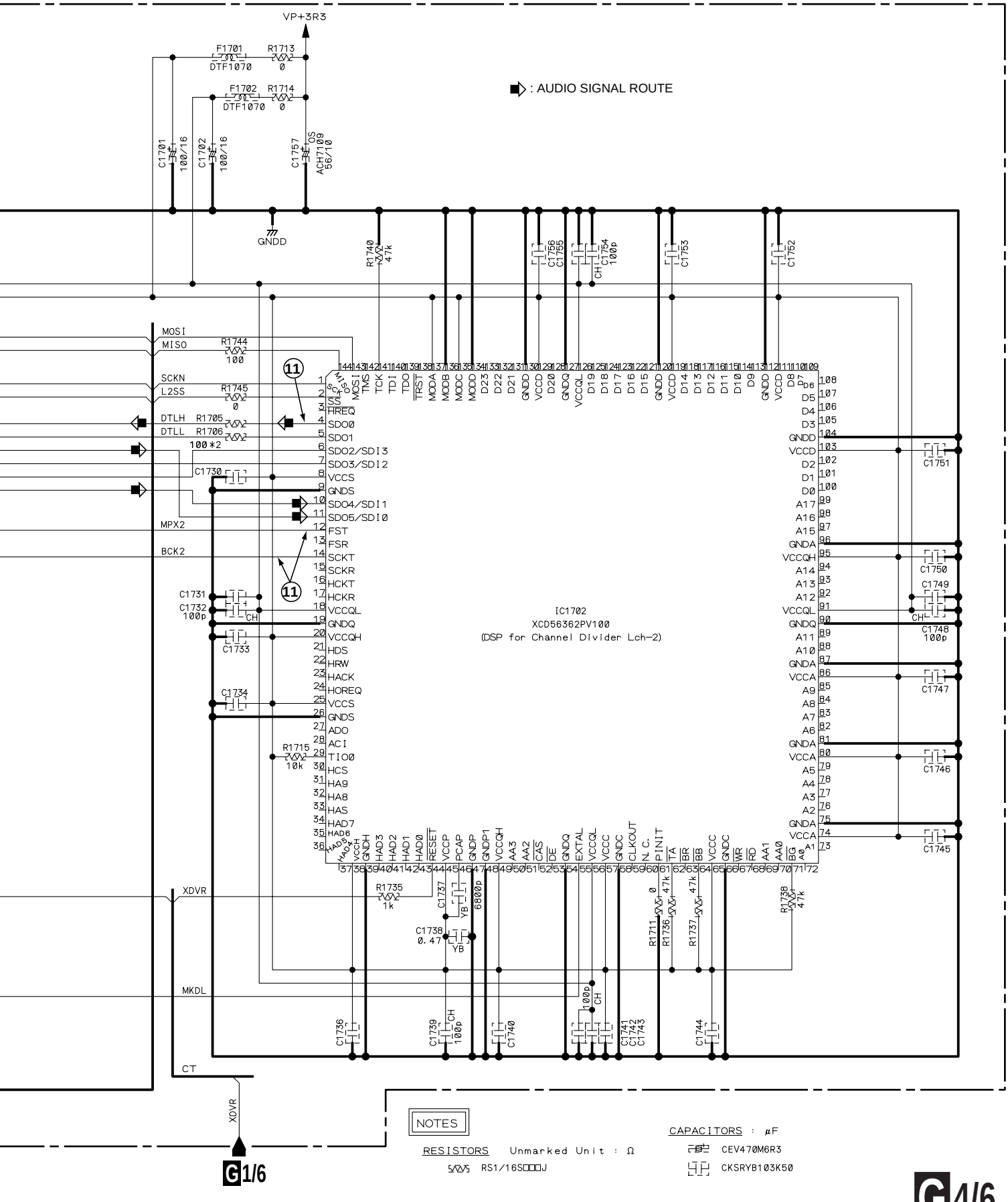
: AUDIO SIGNAL ROUTE



3.11 DSP ASSY (4/6)

G 4/6 DSP ASSY (KU/CA : AWK7589)
(NY : AWK7590)





NOTES

RESISTORS Unmarked Unit : Ω

RS1/16S□□□J

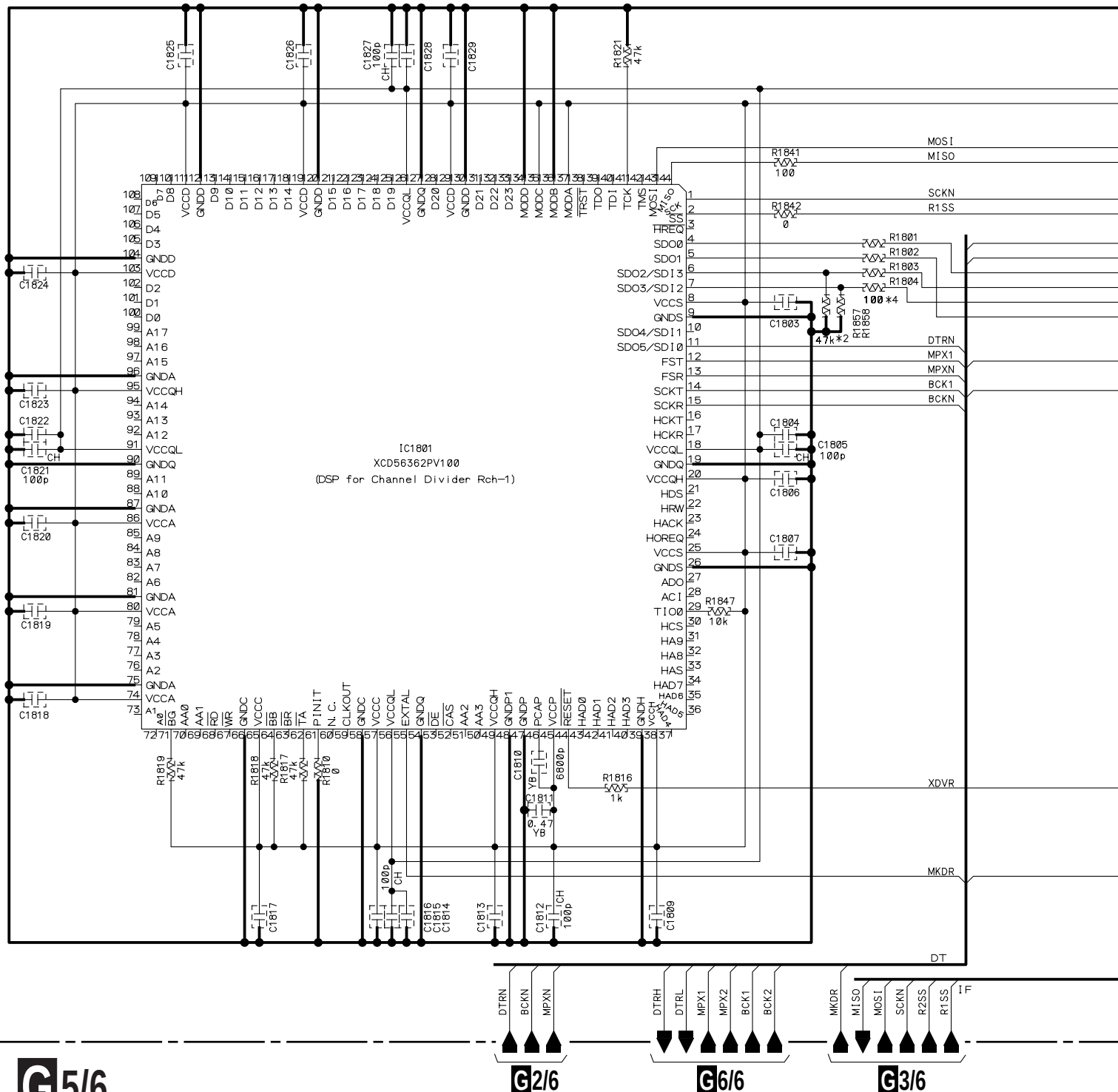
CAPACITORS : μF

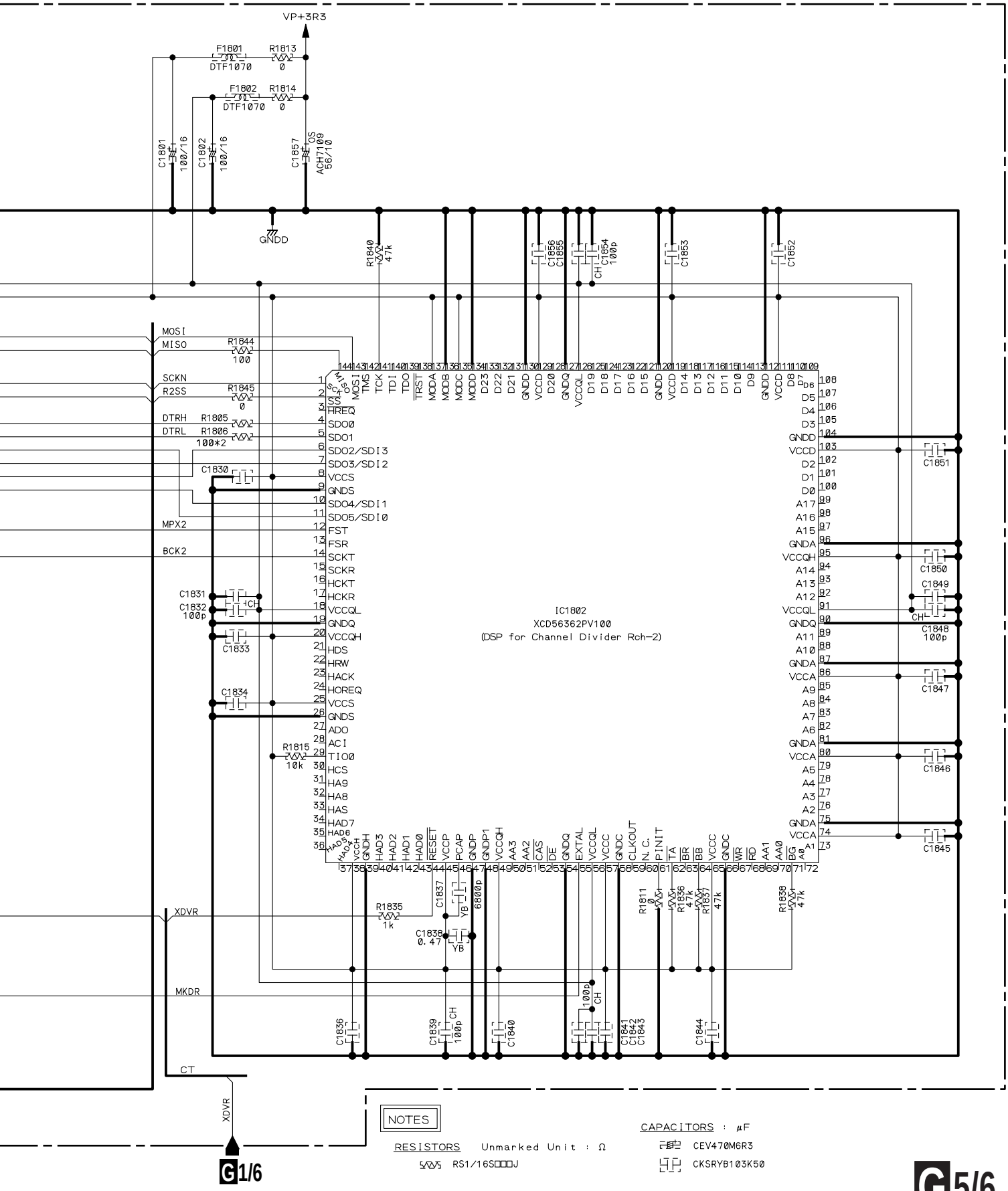
CEV470M6R3

CKSRYB103K50

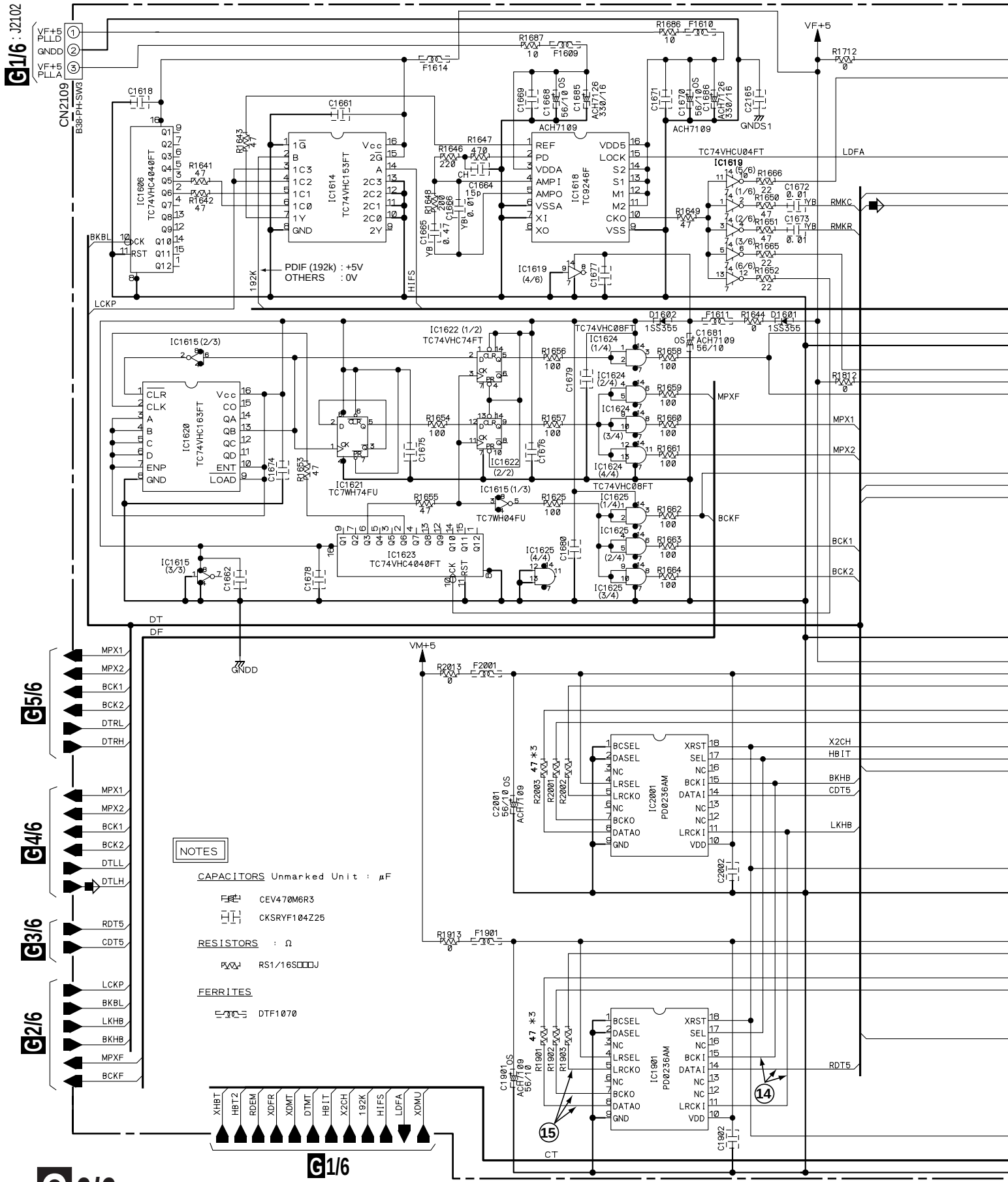
3.12 DSP ASSY (5/6)

G 5/6 DSP ASSY (KU/CA : AWK7589)
(NY : AWK7590)



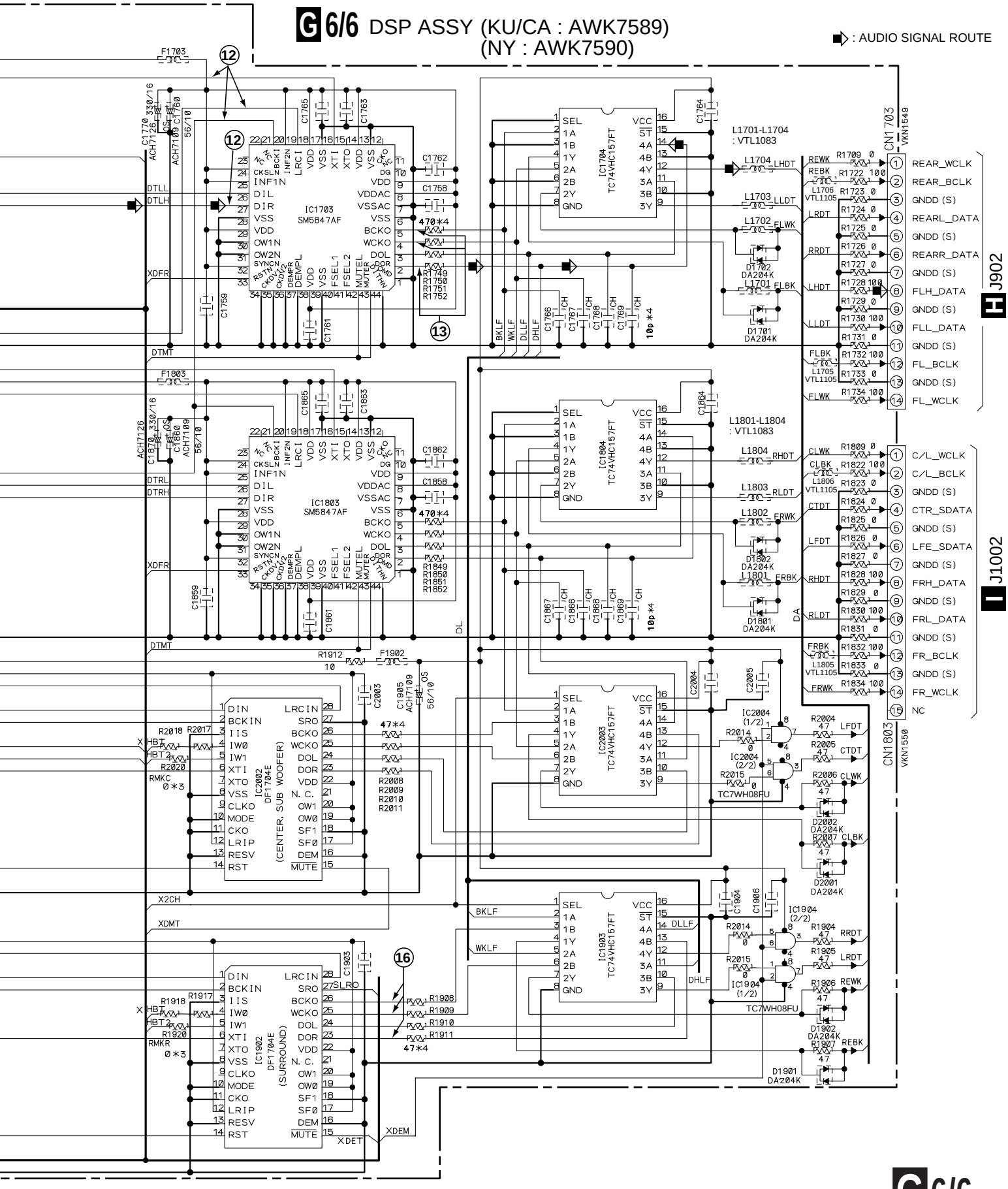

VP+3R3
F1801
DTF1070
R1813
0
F1802
DTF1070
R1814
0
C1801
100/16
C1802
100/16
C1857
ACH7109
56/10
GNDD
R1840
47k
C1856
C1855
C1854
100p
CH
C1853
C1852
MOSI
MISO
R1844
100
SCKN
R2SS
R1845
0
DTRH
R1805
DTRL
R1806
100*2
C1830
MPX2
BCK2
C1831
C1832
100p
CH
C1833
C1834
R1815
10k
XDVR
R1835
1k
C1837
6800p
C1838
0.47
YB
MKDR
C1836
C1839
100p
CH
C1840
C1841
C1842
C1843
100p
CH
C1844
R1811
0
R1836
47k
R1837
47k
R1838
47k
C1851
C1850
C1849
CH
C1848
100p
C1847
C1846
C1845
IC1802
XCD56362PV100
(DSP for Channel Divider Rch-2)
CT
XDVR
NOTES
RESISTORS Unmarked Unit : Ω
RS1/16S□□□J
CAPACITORS : μF
CEV470M6R3
CKSRYB103K50
G1/6
G5/6
39

3.13 DSP ASSY (6/6)

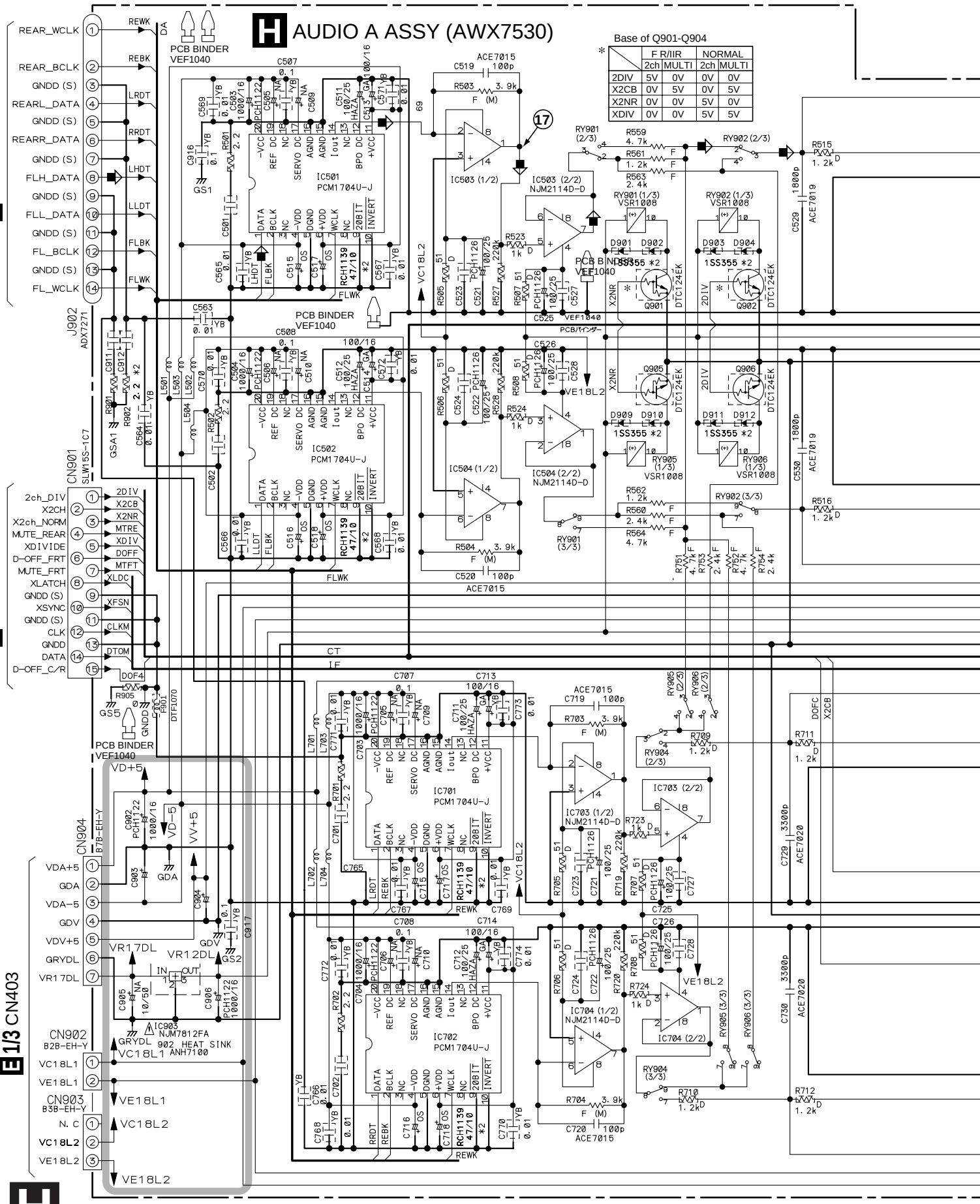


G 6/6 DSP ASSY (KU/CA : AWK7589)
(NY : AWK7590)

: AUDIO SIGNAL ROUTE



3.14 AUDIO A ASSY



NOTES

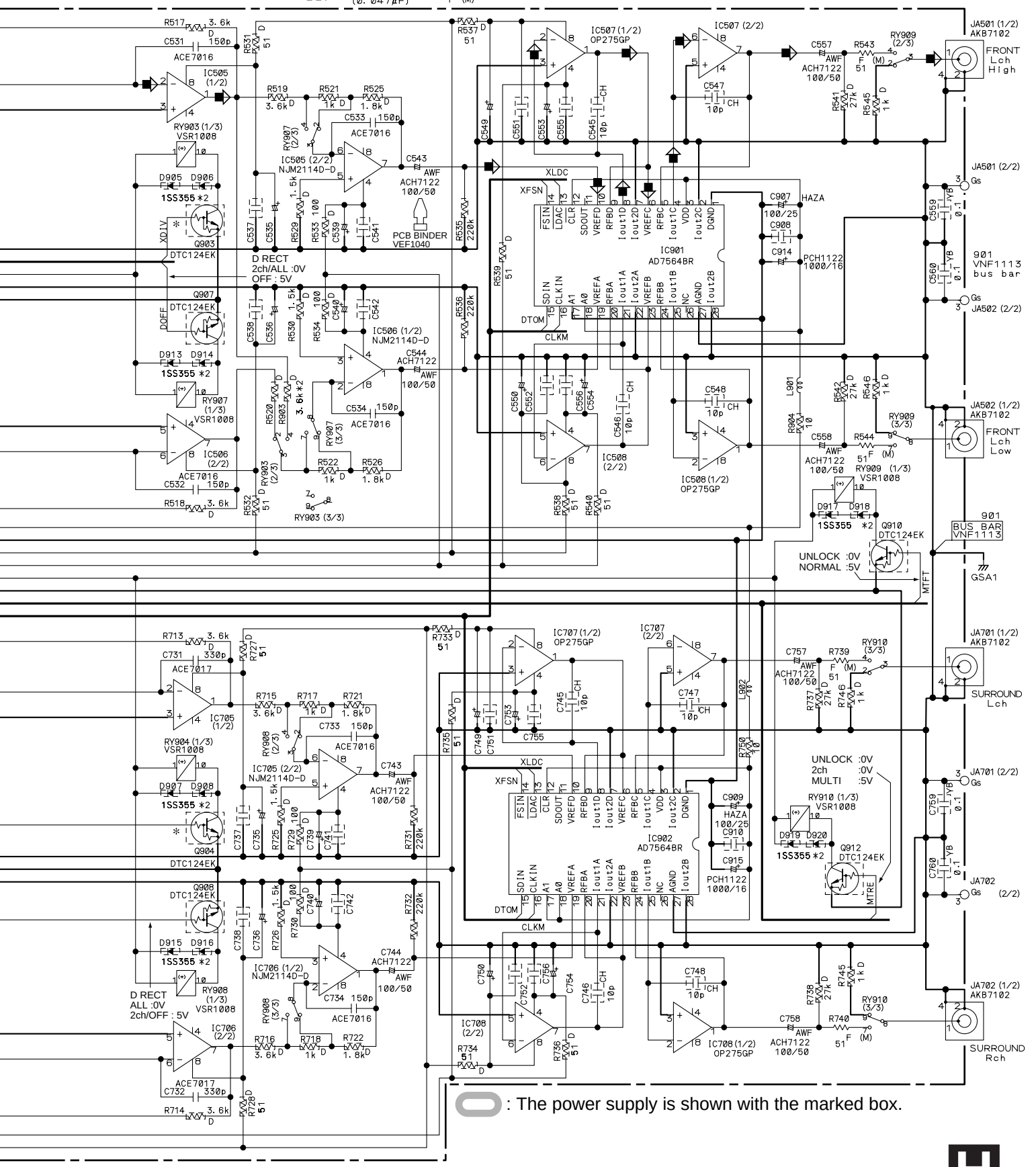
⚠ IMPORTANT PARTS FOR SAFETY

FERRITES
RTF1167

CAPACITORS
Unmarked Unit : μF
CENA101M25 (100μF/25V)
PCH1128 (220μF/25V)
CKSQYB473K50 (0.047μF)

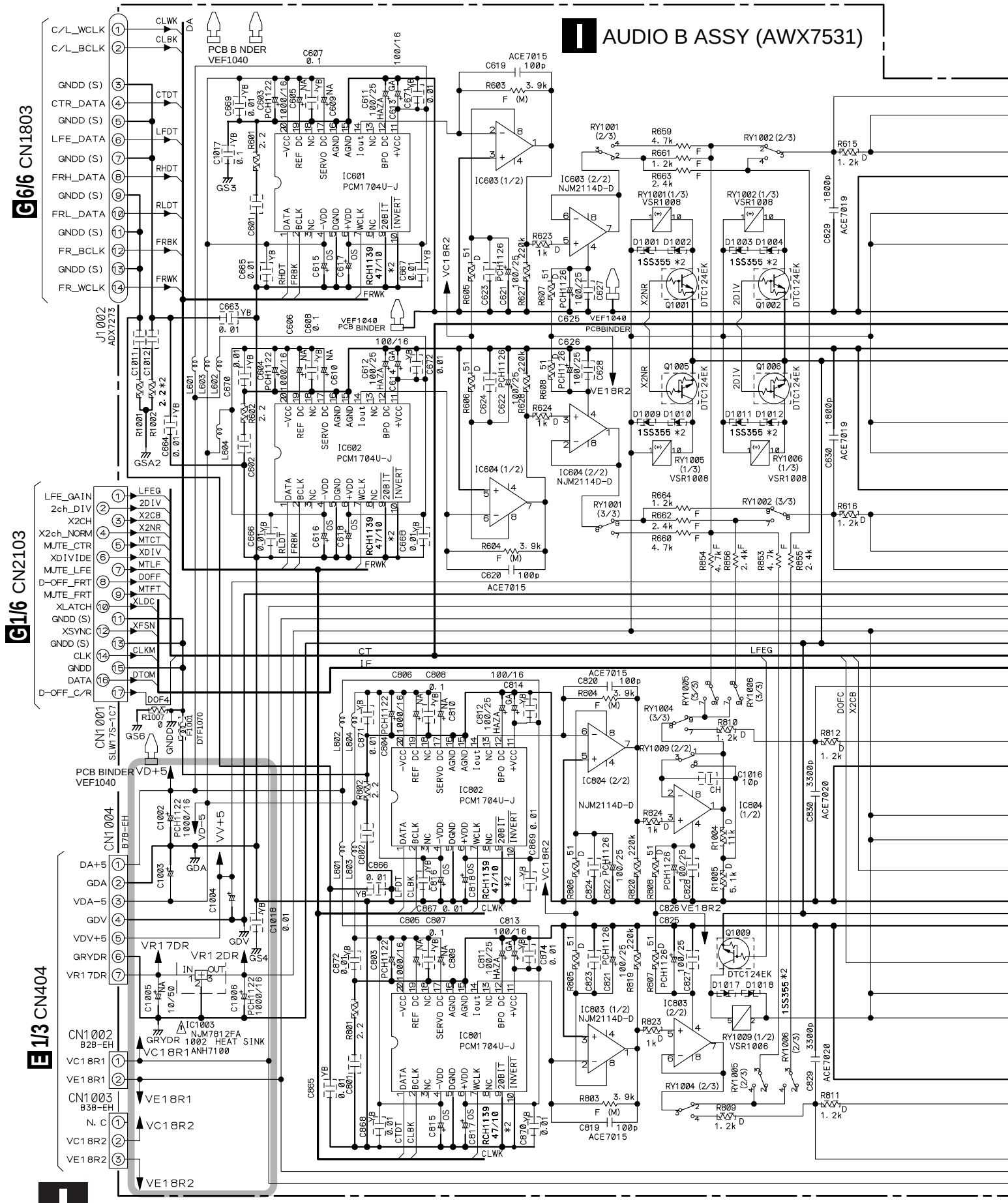
RESISTORS : Ω
RS1/10S□□□J
RN1/10SE□□□□D
RDR1/4PM□□□□F
RDM1/2P□□□□F

: AUDIO SIGNAL ROUTE



: The power supply is shown with the marked box.

3.15 AUDIO B ASSY



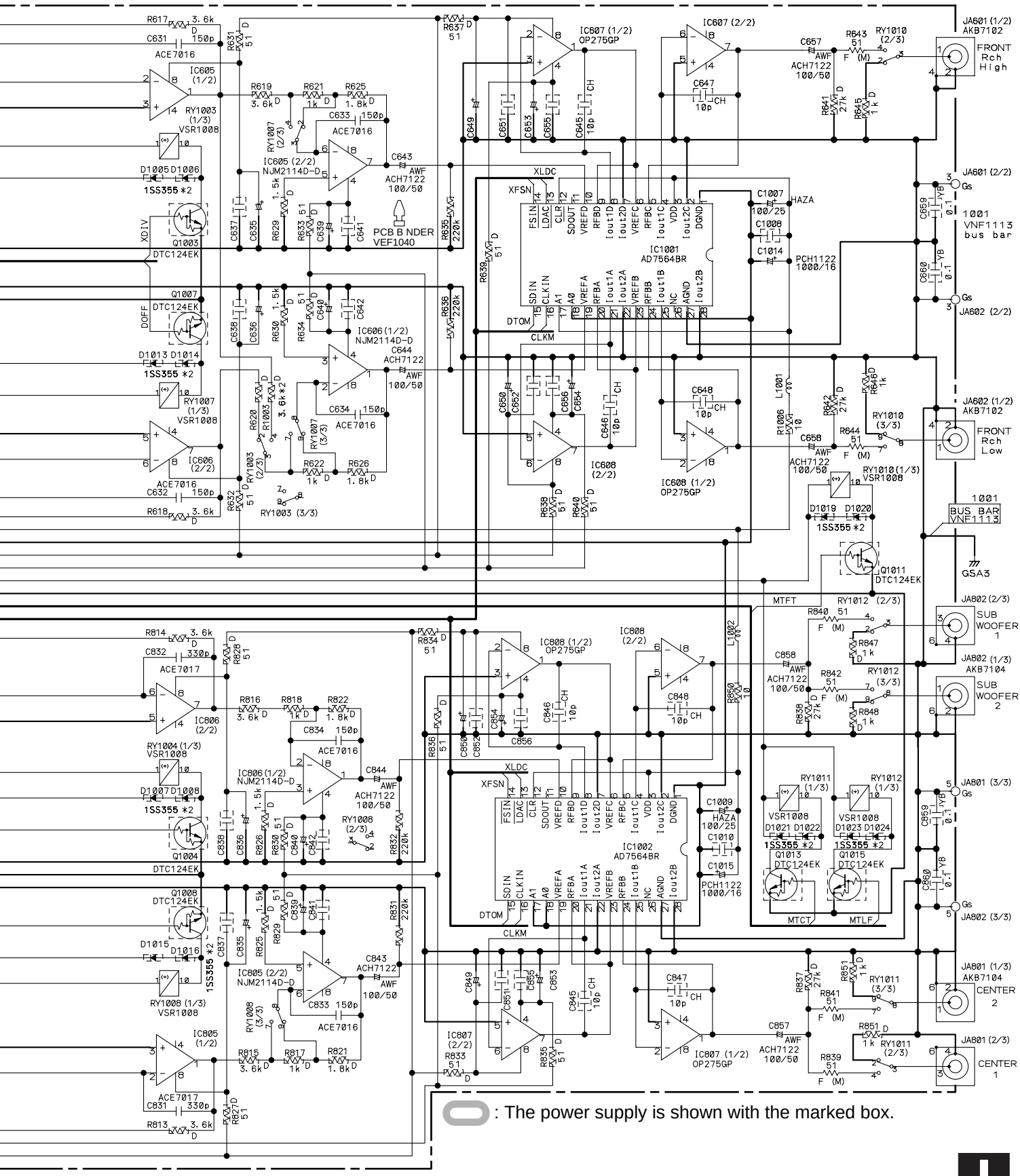
NOTES

⚠ IMPORTANT PARTS FOR SAFETY

FERRITES
RTF1167

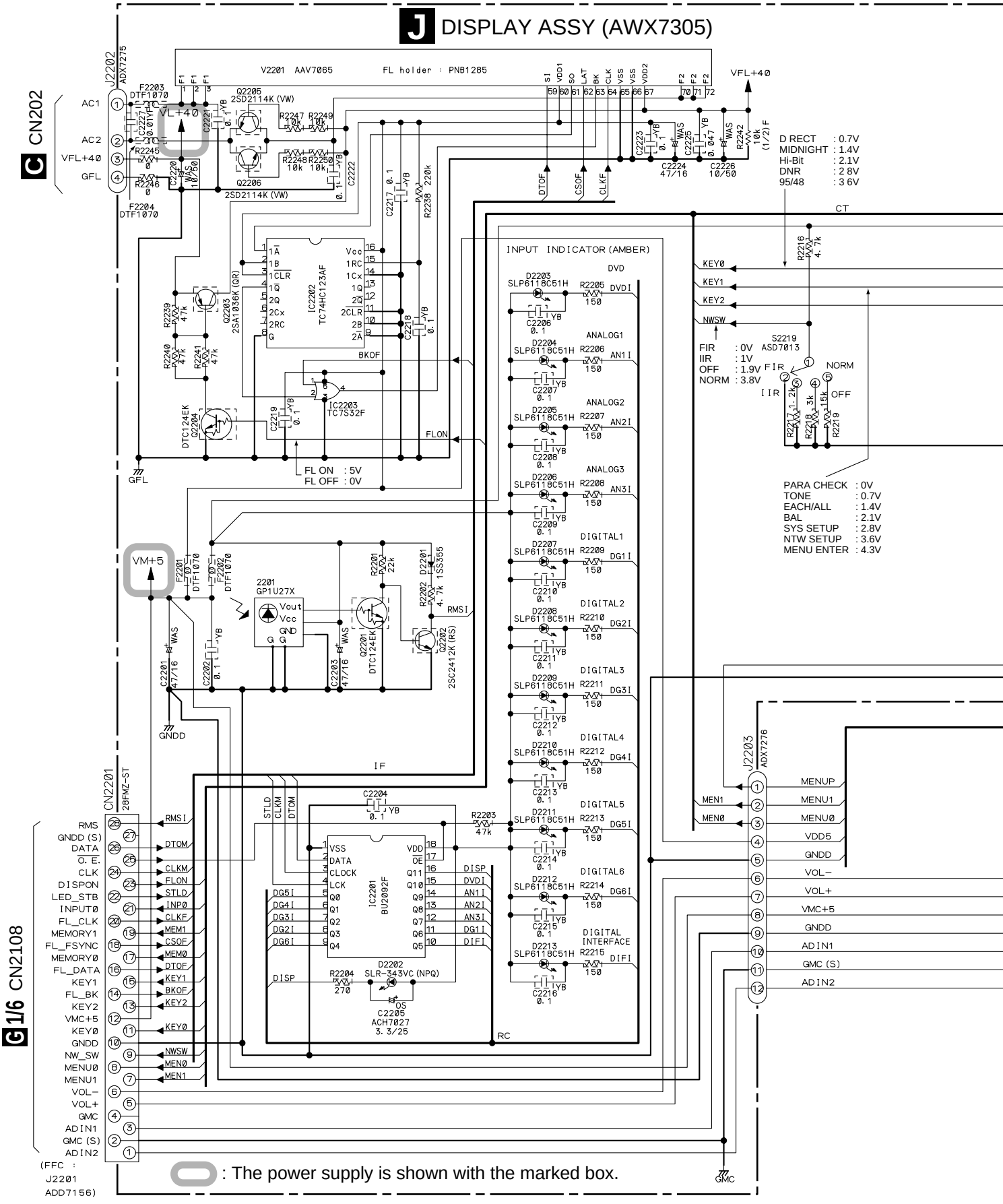
CAPACITORS
Unmarked Unit : μF
NA CENA101M25 (100μF/25V)
PCH1128 (220μF/25V)
CKSQYB473K50 (0.047μF)

RESISTORS : Ω
RS1/10S□□□J
RN1/10SE□□□□D
RDR1/4PM□□□□F
RDM1/2P□□□□F
F (M)



: The power supply is shown with the marked box.

3.16 DISPLAY, VOLUME, ENC A, INPUT SW and ENC B ASSYS

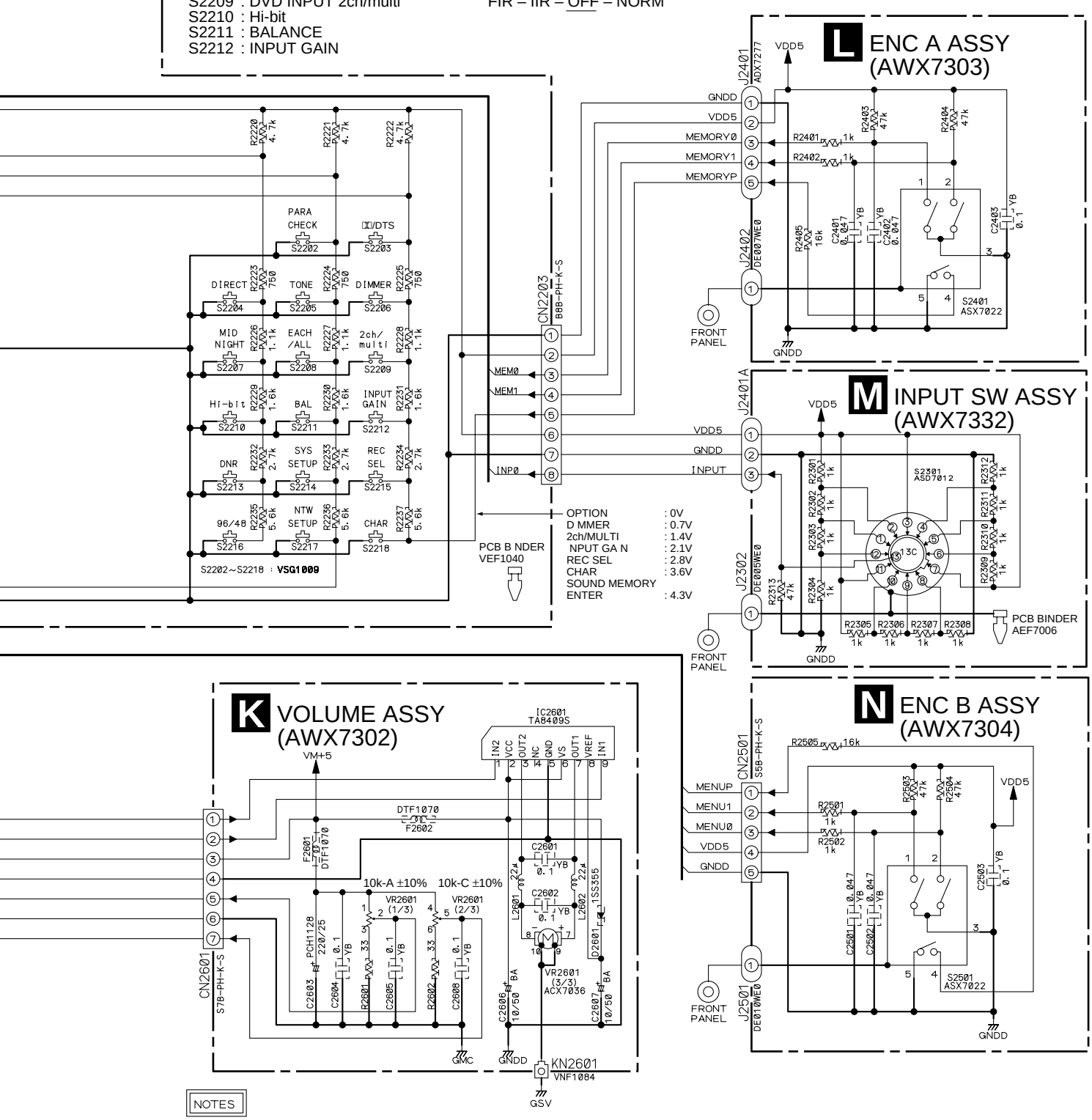


DISPLAY ASSY
S2202 : PARAMETER CHECK
S2203 : □□/DTS
S2204 : DIRECT
S2205 : TONE
S2206 : DIMMER
S2207 : MIDNIGHT
S2208 : EACH/ALL
S2209 : DVD INPUT 2ch/multi
S2210 : Hi-bit
S2211 : BALANCE
S2212 : INPUT GAIN
S2213 : DIGITAL NR
S2214 : SYSTEM SETUP
S2215 : REC SELECTOR (DIGITAL)
S2216 : fs (96k/48k)
S2217 : NETWORK SETUP
S2218 : CHARACTER INPUT
S2219 : OUTPUT MODE
FIR – IIR – OFF – NORM

INPUT SW ASSY
S2301 : INPUT SELECTOR

ENC A ASSY
S2401 : SOUND MEMORY (PUSH NEXT/ENTER)

ENC B ASSY
S2501 : MULTI CONTROL (PUSH NEXT/ENTER)



NOTES

INDUCTORS Unmarked Unit : μH

LFEA□□□J

WAVEFORMS

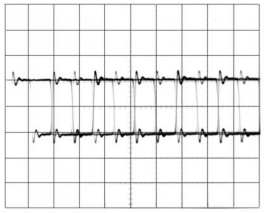
Note : The encircled numbers denote measuring point in the schematic diagram.

Measurement condition ;

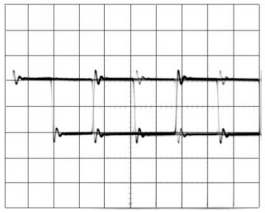
No. 1-1 : DIGITAL OUT, fs = 96kHz
No. 1-2 : DIGITAL OUT, fs = 48kHz
No. 2 and 3 : DIGITAL IN, fs = 96kHz, 20 bit (data support to 16 through 24 bit.)
No. 4 : ANALOG IN
No. 5, 14 to 16 : ANALOG IN, multi
No. 6 : ANALOG IN (24 bit data output with Hi-bit "ON" at DIGITAL IN)
No. 7 and 9 : ANALOG IN (data support to 16 through 24 bit.)
No. 8, 10 to 13 : ANALOG IN (DIGITAL IN is the same)
No. 17 : DIRECT : ON at full scale output
No. 12-2 : ANALOG IN at DIGITAL IN (96k, 48k, 192k)

A DIGITAL I/O ASSY

① -1 COAX OUT (JA1407-pin 1) fs=96kHz
V: 500mV/div. H: 0.1µsec/div.

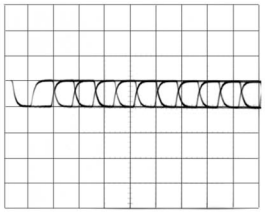


① -2 COAX OUT (JA1407-pin 1) fs=48kHz
V: 500mV/div. H: 0.1µsec/div.

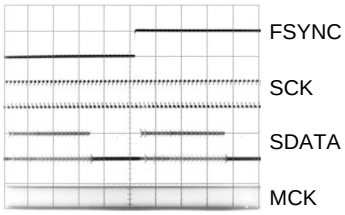


G DSP ASSY

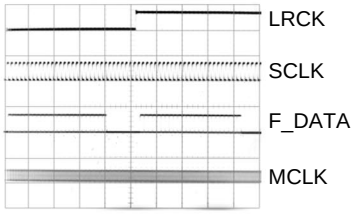
② DIGITAL IN : RX (CN1401-pin 5)
V: 5V/div. H: 0.1µsec/div.



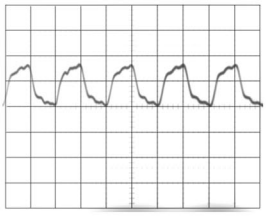
③ DIR OUT (IC1603-pin 11 :FSYNC, pin 12 :SCK, pin 26 :SDATA, pin 19 :MCK)
V: 5V/div. H: 1µsec/div.



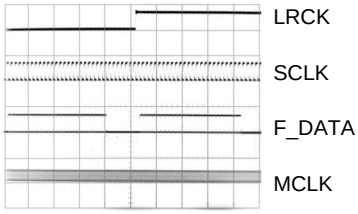
④ -1 Front A/D Converter and MCLK outputs (IC1608-pin 2 :SCLK, pin 5 :LRCK, pin 11 :F_DATA, IC1611-pin 1 :MCLK)
V: 5V/div. H: 1µsec/div.



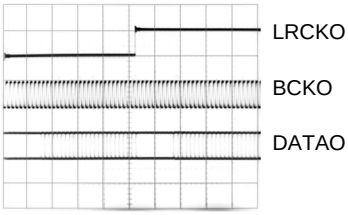
④ -2 MCLK (IC1611-pin 1 :MCLK)
V: 5V/div. H: 20nsec/div.



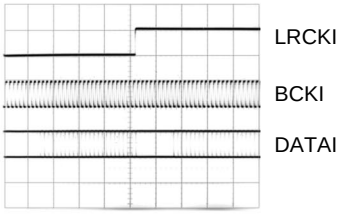
⑤ Rear A/D Converter output (IC1608-pin 2 :SCLK, pin 5 :LRCK, pin 11 :F_DATA, IC1611-pin 1 :MCLK)
V: 5V/div. H: 1µsec/div.



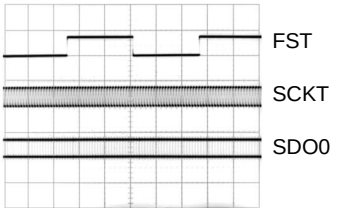
⑥ Front Hi-bit output (IC1610-pin 5 :LRCKO, pin 7 :BCKO, pin 8 :DATAO)
V: 5V/div. H: 1µsec/div.



⑦ Front Hi-bit input (IC1610-pin 11 :LRCKI, pin 15 :BCKI, pin 14 :DATAI)
V: 5V/div. H: 1µsec/div.

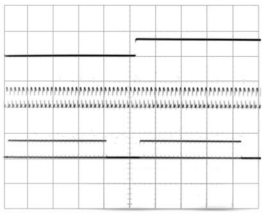


⑧ DF DSP OUT (IC1613-pin 12 :FST, pin 14 :SCKT, pin 4 :SDO0)
V: 5V/div. H: 2µsec/div.

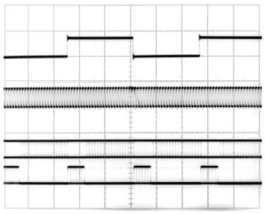


H AUDIO A ASSY

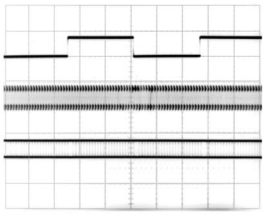
⑨ Center DSP input
(IC1501-pin 12 :FST, pin 14 :SCKT, pin 10 :SDI1)
V: 5V/div. H: 1µsec/div.



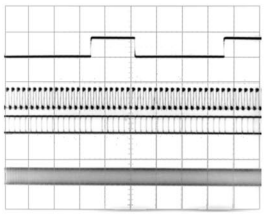
⑩ Front 1st DSP output
(IC1701-pin 12 :MPX1, pin 14 :BCK1, pin 4 :SDO0, pin 5 :SDO1)
V: 5V/div. H: 2µsec/div.



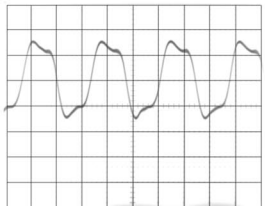
⑪ Front 2nd DSP output
(IC1702-pin 12 :MPX2, pin 14 :BCK2, pin 4 :DTLH)
V: 5V/div. H: 2µsec/div.



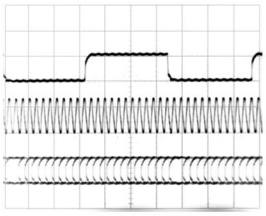
⑫-1 Front DF input
(IC1703-pin 19 :LRCI, pin 21 :BCKI, pin 27 :DTLH, pin 16 :XTI(37MHz))
V: 5V/div. H: 1µsec/div.



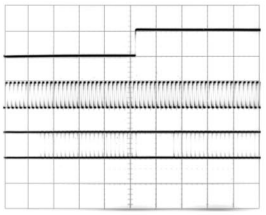
⑫-2 Front DF input XTI (37MHz)
(IC1703-pin 16 : XTI(37MHz))
V: 5V/div. H: 10nsec/div.



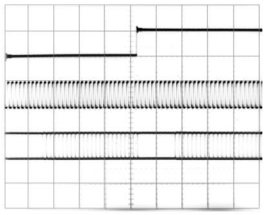
⑬ Front DF output
(IC1703-pin 4 :WCKO, pin 5 :BCKO, pin 2 :DOR)
V: 5V/div. H: 0.2µsec/div.



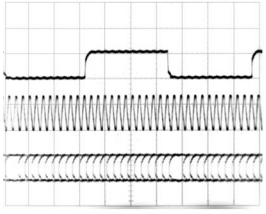
⑭ Rear Hi-bit input
(IC1901-pin 11 :LRCKI, pin 14 :DATAI, pin 15 :BCKI)
V: 5V/div. H: 1µsec/div.



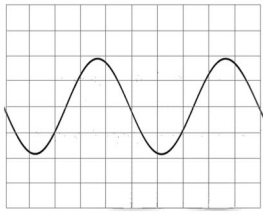
⑮ Rear Hi-bit output
(IC1901-pin 5 :LRCKO, pin 7 :BCKO, pin 8 :DATAO)
V: 5V/div. H: 1µsec/div.



⑯ Rear DF output
(IC1902-pin 23 :DOR, pin 25 :WCKO, pin 26 :BCKO)
V: 5V/div. H: 0.2µsec/div.



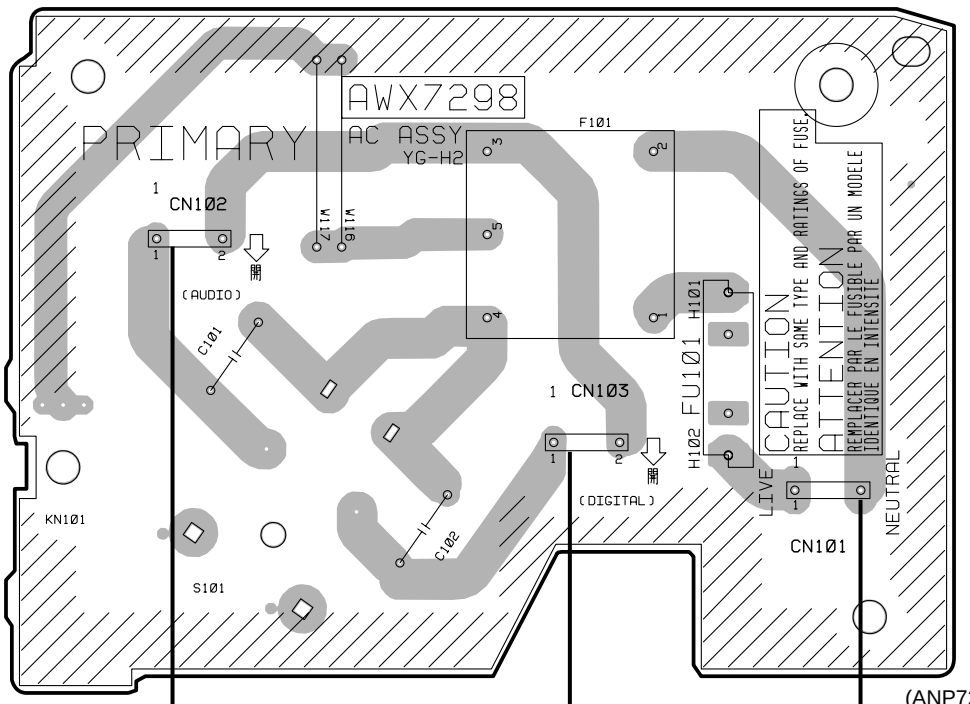
⑰ DAC output (f=1kHz)
(IC503-pin 1)
V: 5V/div. H: 0.2msec/div.



4. PCB CONNECTION DIAGRAM

4.1 AC, PS ASSYS

B AC ASSY



(ANP7293-A)

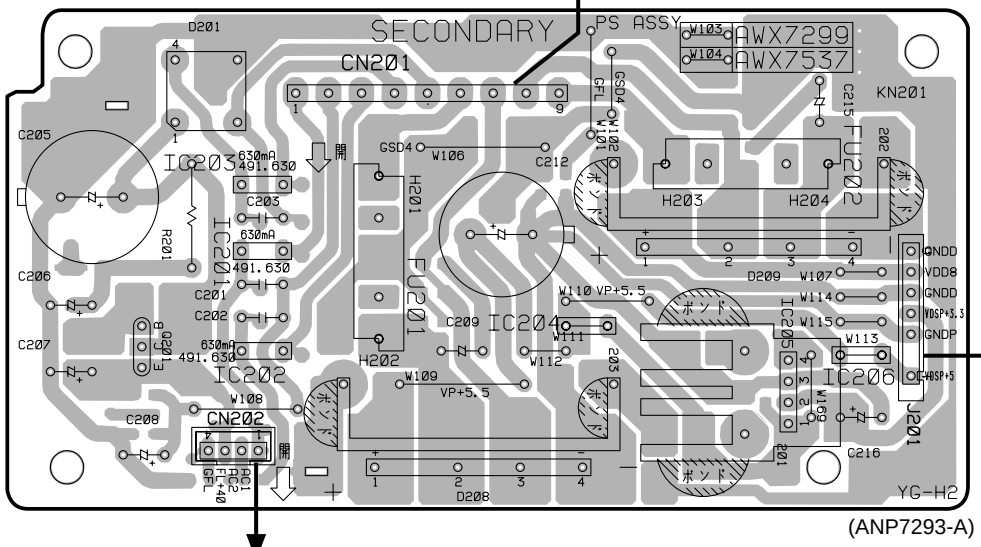
T401

T301

AC INLET ASSY

E CN405 – CN407

C PS ASSY



(ANP7293-A)

E CN301

J J2202

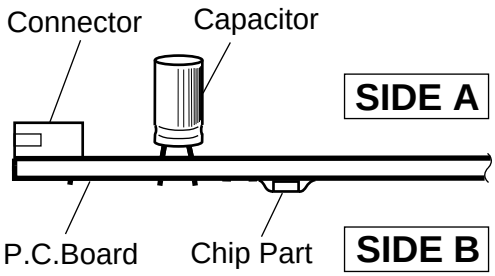
SIDE A

NOTE FOR PCB DIAGRAMS :

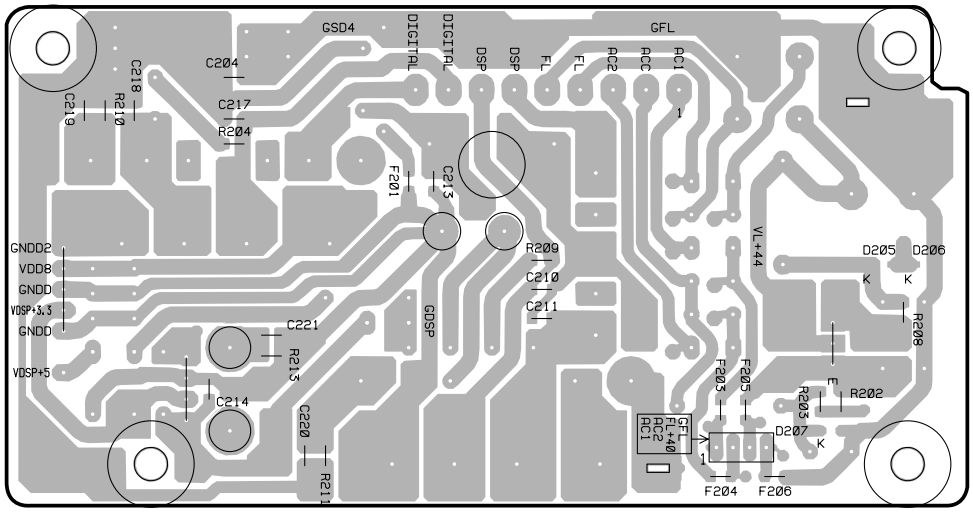
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

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

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



C PS ASSY

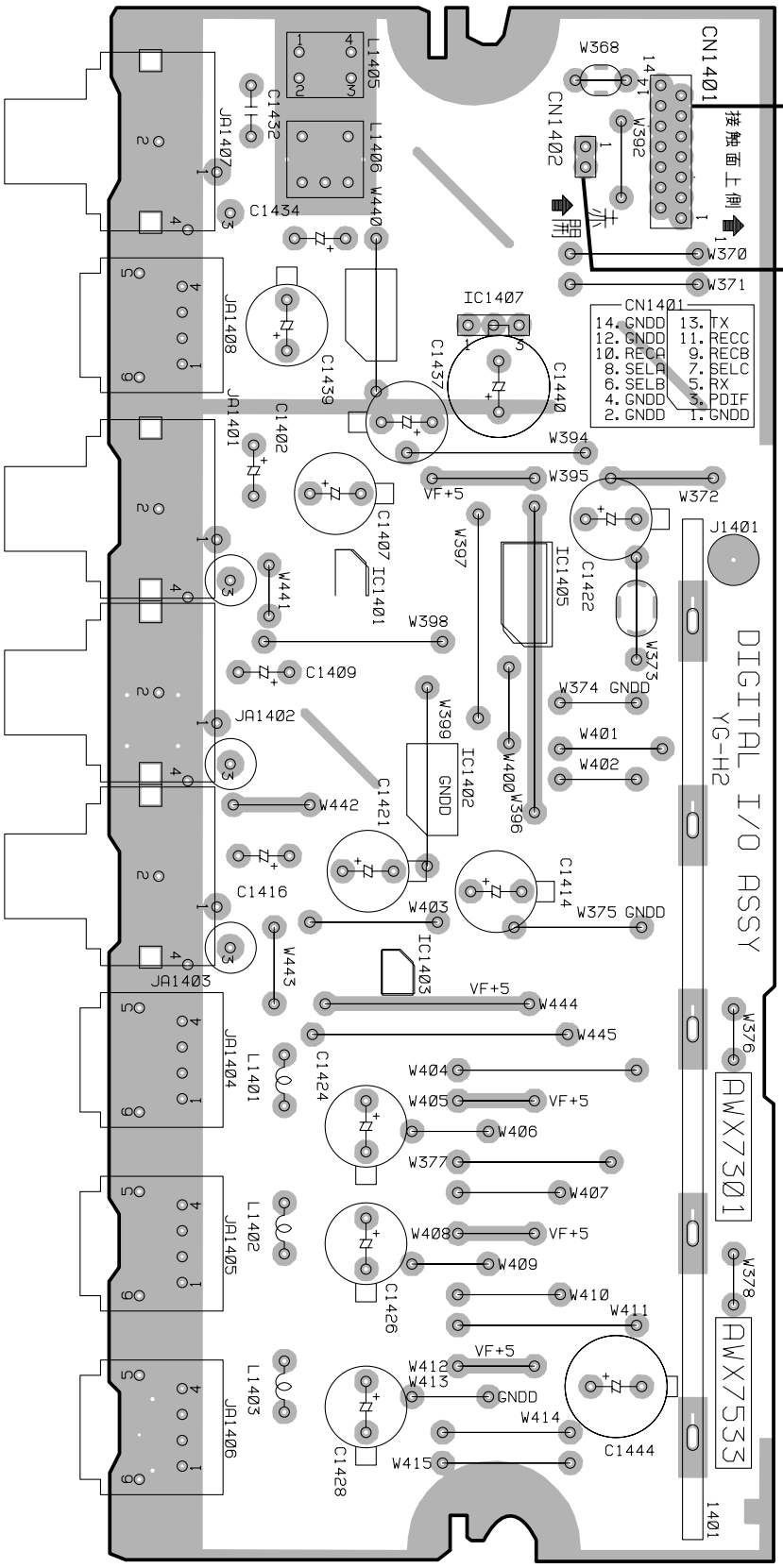


(ANP7293-A)

SIDE B

4.2 DIGITAL I/O ASSY

A DIGITAL I/O ASSY

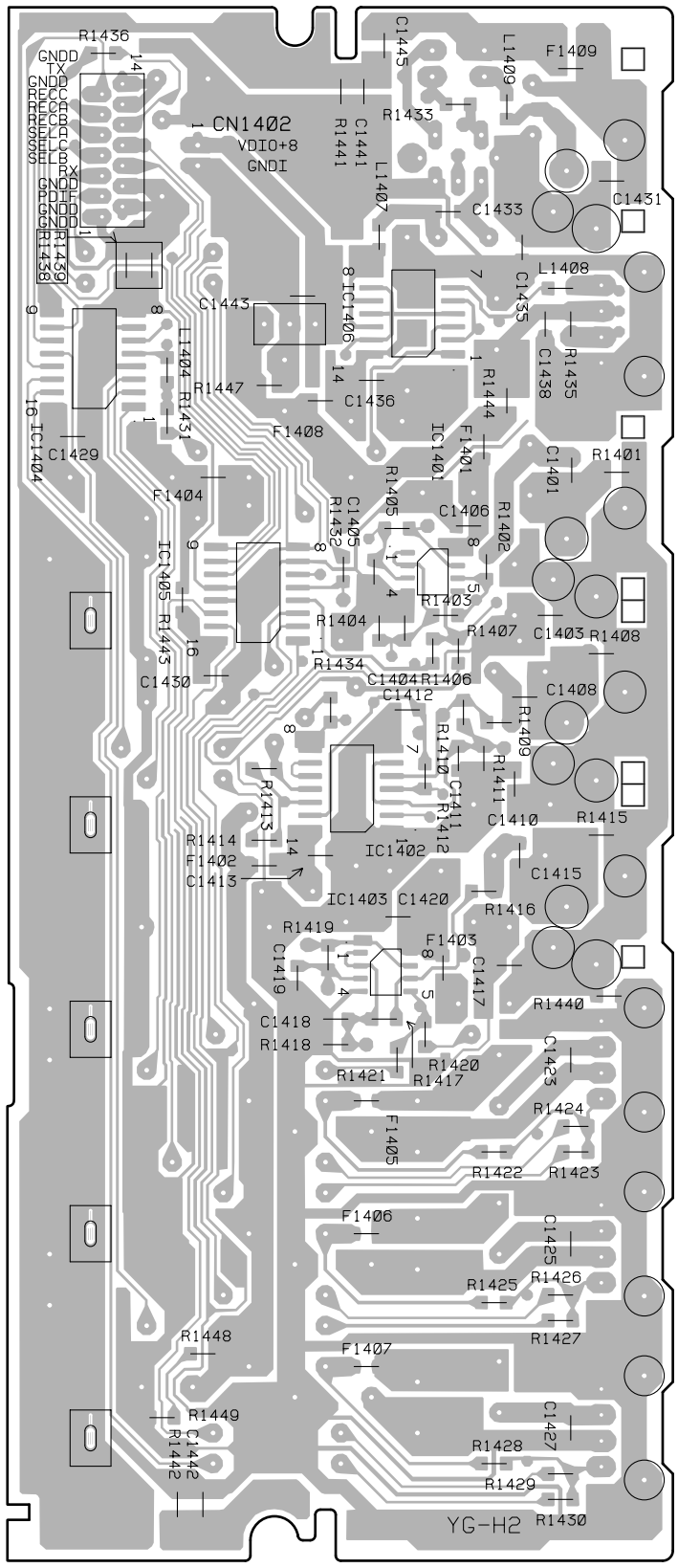


SIDE A

(ANP7292-B)

A DIGITAL I/O ASSY

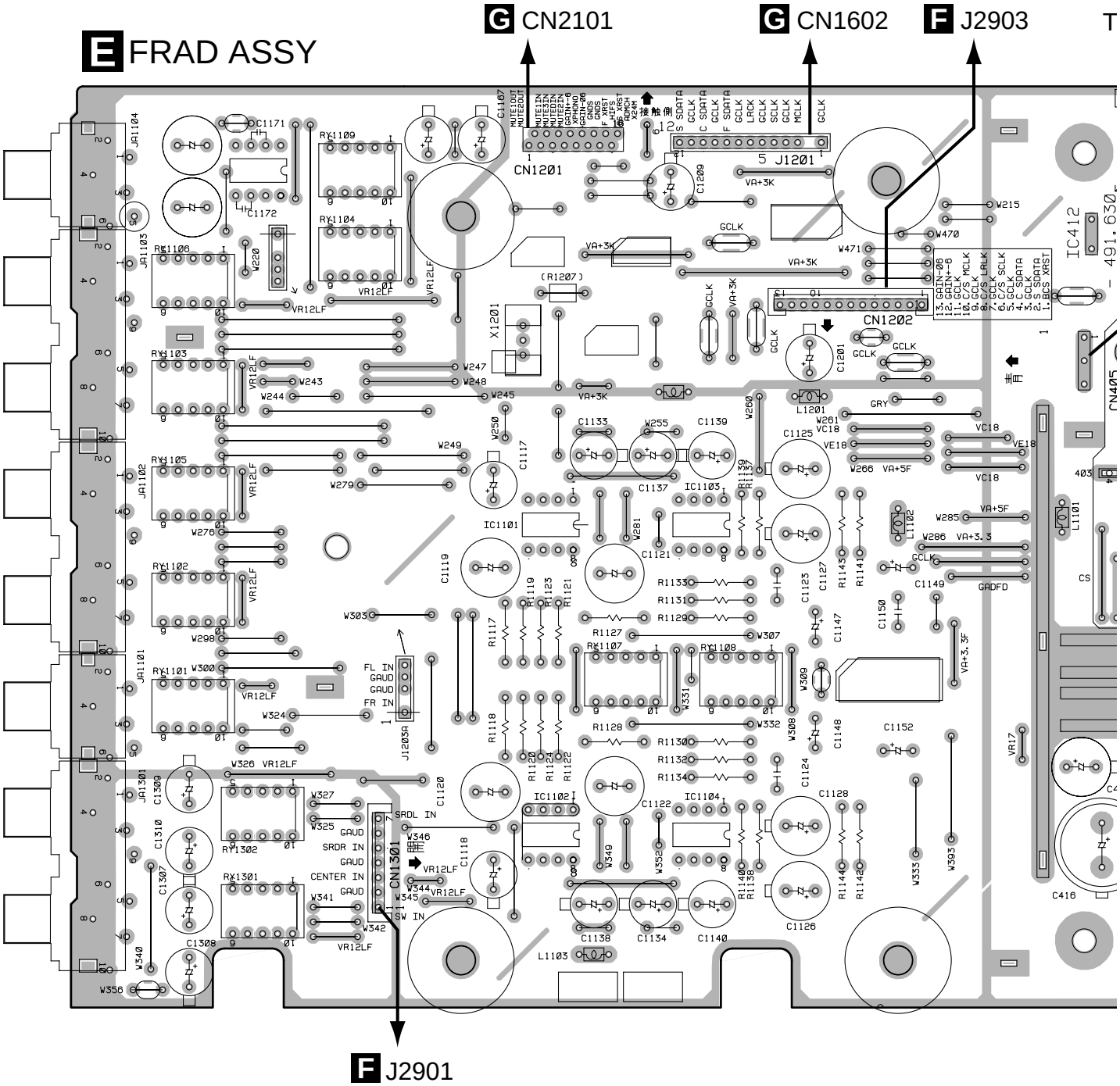
IC1406
IC1404
IC1401
IC1405
IC1402
IC1403

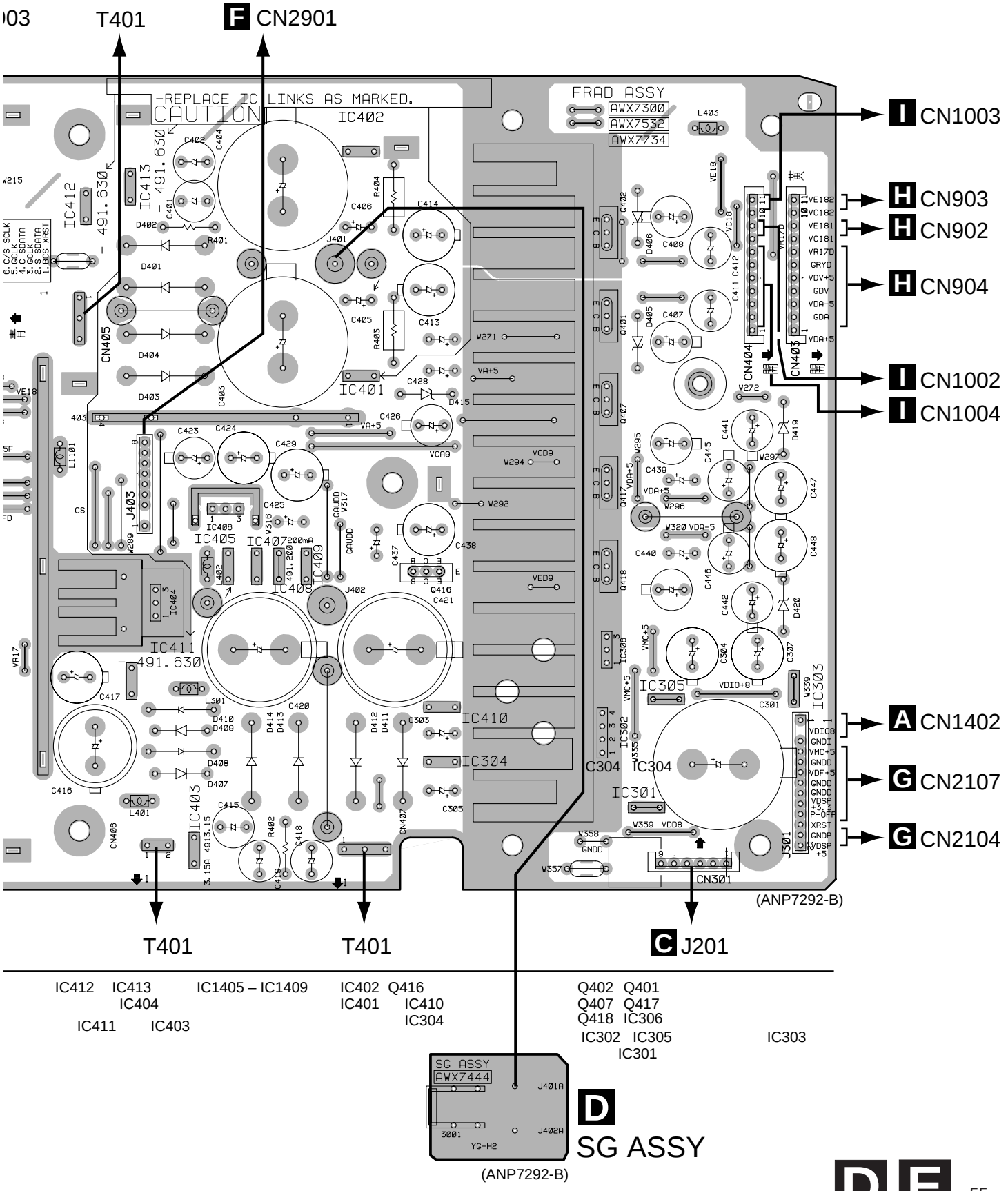


(ANP7292-B)

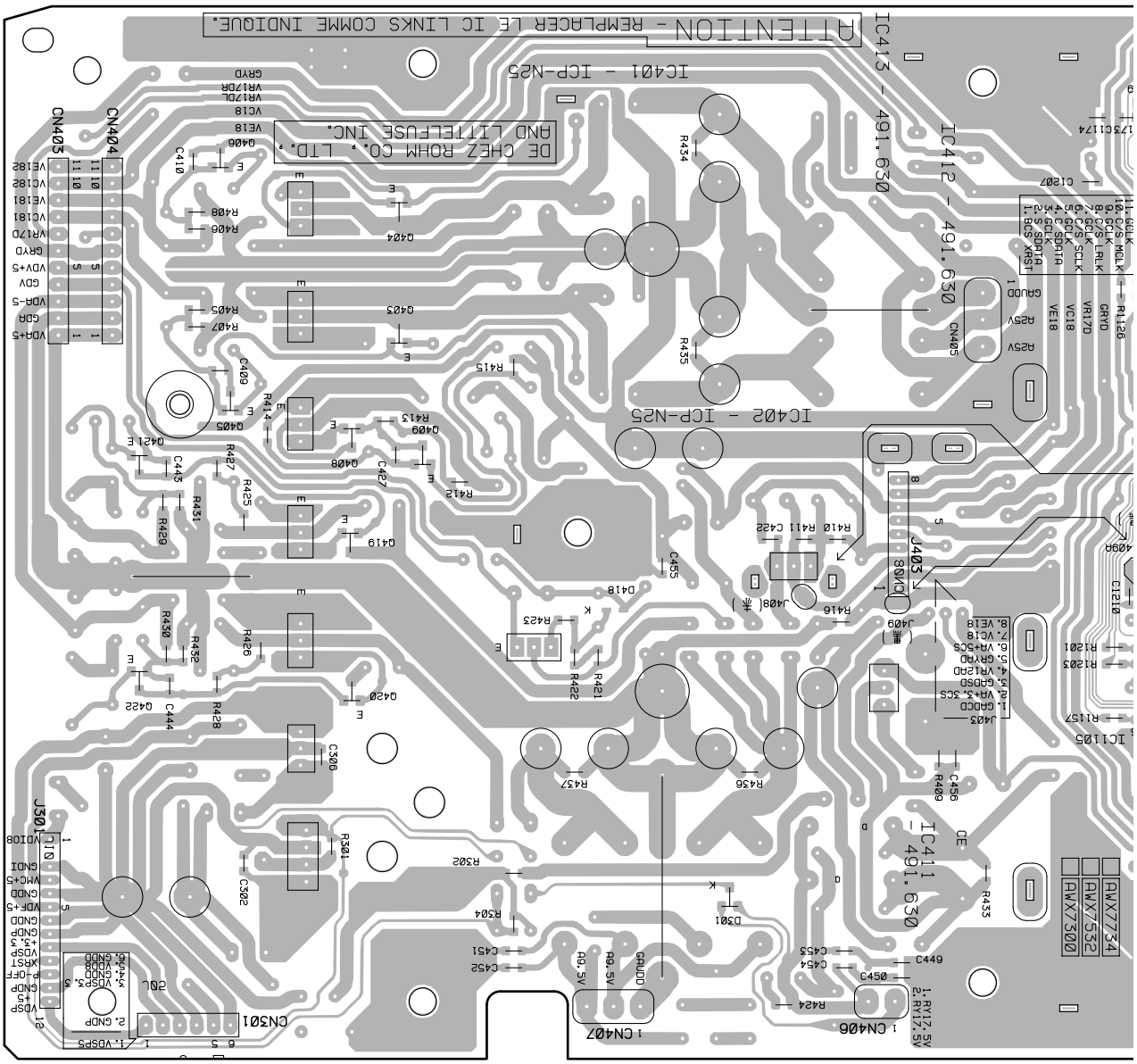
SIDE B

4.3 SG, FRAD ASSYS



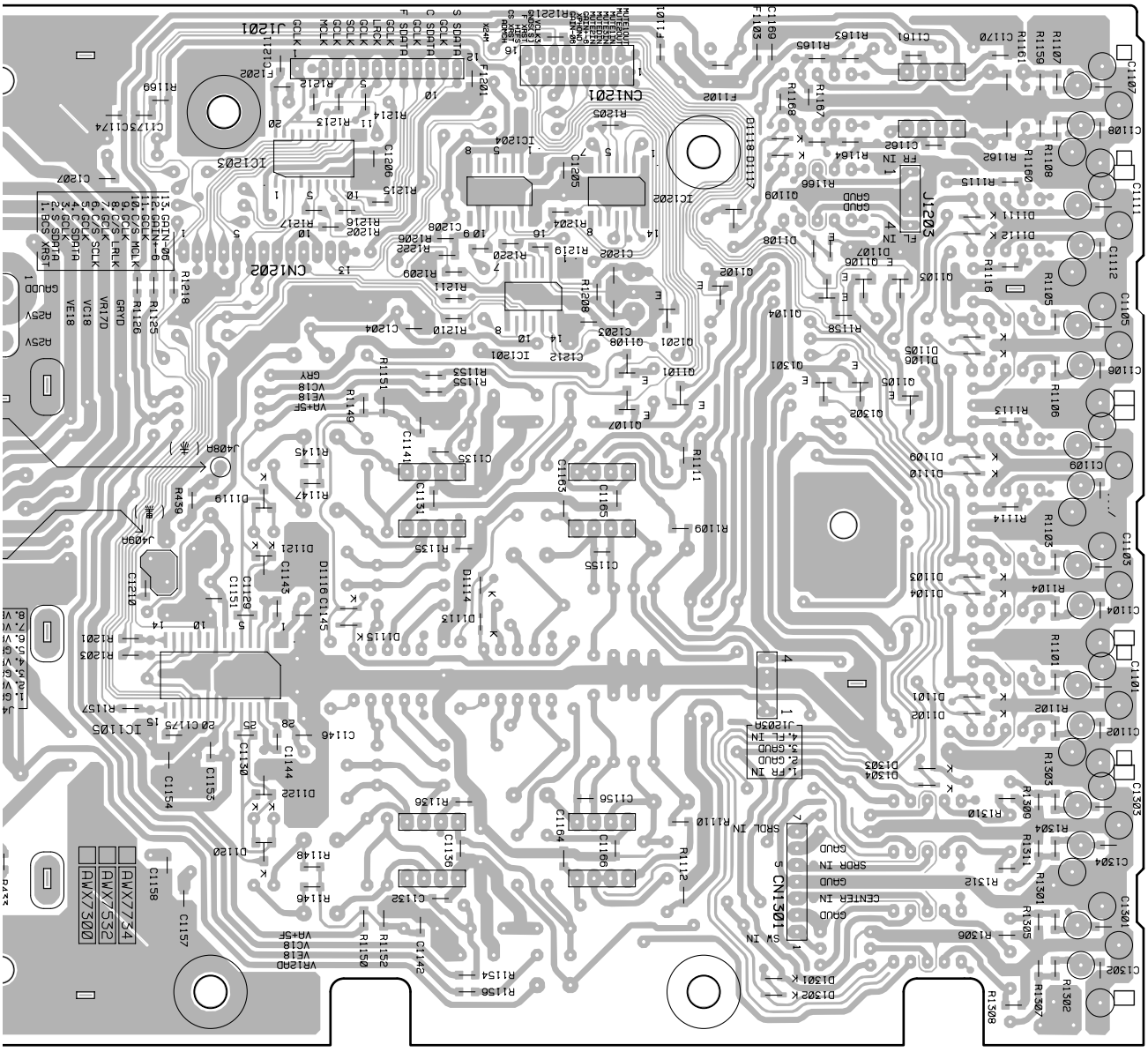

T401
F CN2901
-REPLACE IC LINKS AS MARKED.
CAUTION
IC402
FRAD ASSY
AWX7300
AWX7532
AWX7734
I CN1003
H CN903
H CN902
H CN904
I CN1002
I CN1004
A CN1402
G CN2107
G CN2104
C J201
T401
T401
(ANP7292-B)
IC412 IC413 IC1405 – IC1409 IC402 Q416 Q402 Q401
IC404 IC401 IC410 Q407 Q417
IC411 IC403 IC304 Q418 IC306
IC302 IC305 IC303
IC301
SG ASSY
AWX7444
D
SG ASSY
(ANP7292-B)

E FRAD ASSY



Q406 Q408 Q404
Q421 Q405 Q419 Q403
Q422 Q420 Q409

D SG ASSY

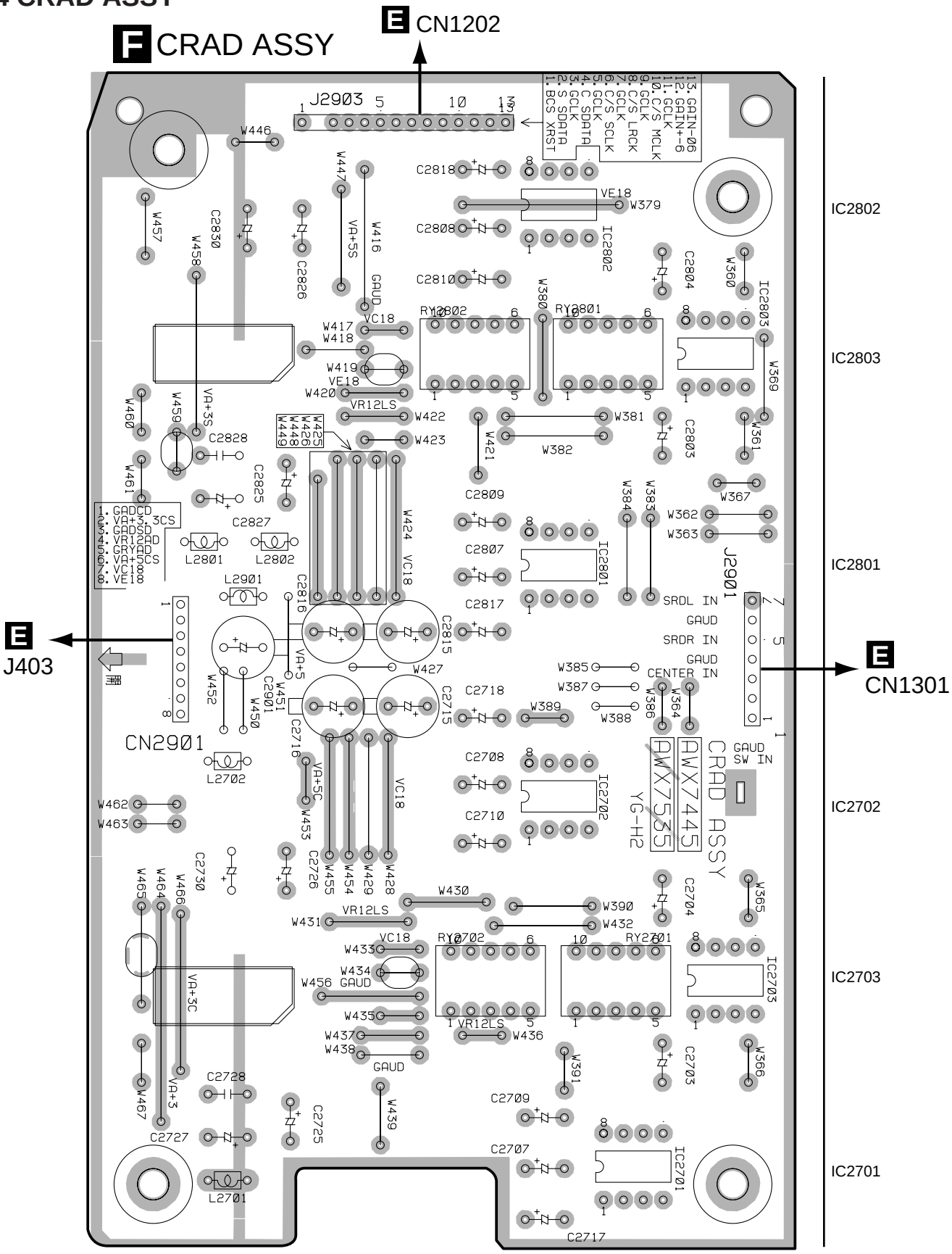


(ANP7292-B)

IC1105 IC1203 IC1204 IC1202
IC1201 Q1108 Q1201 Q1109 Q1104 Q1106 Q1103
Q1107 Q1101 Q1102 Q1301 Q1302 Q1105

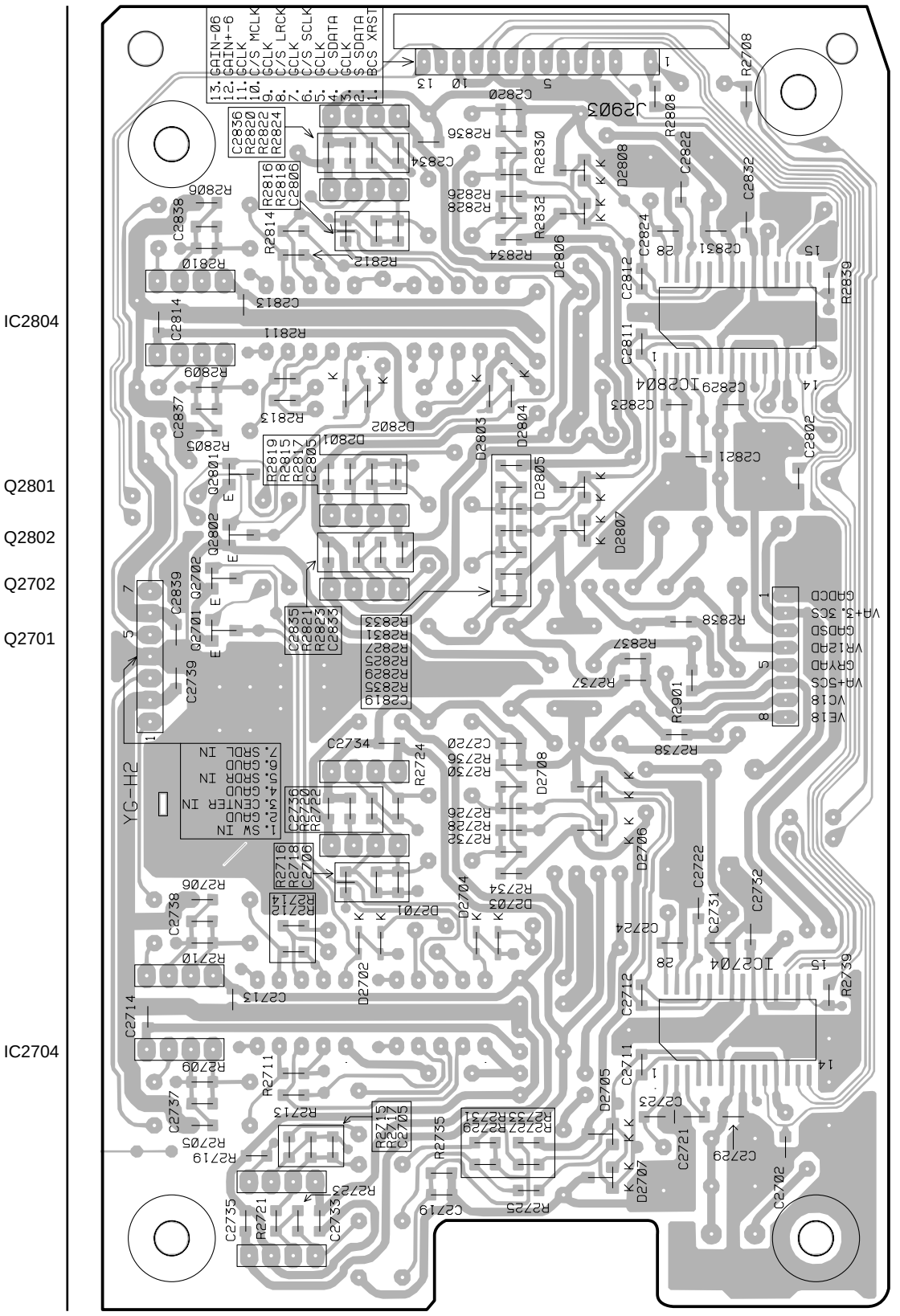
SIDE B

4.4 CRAD ASSY



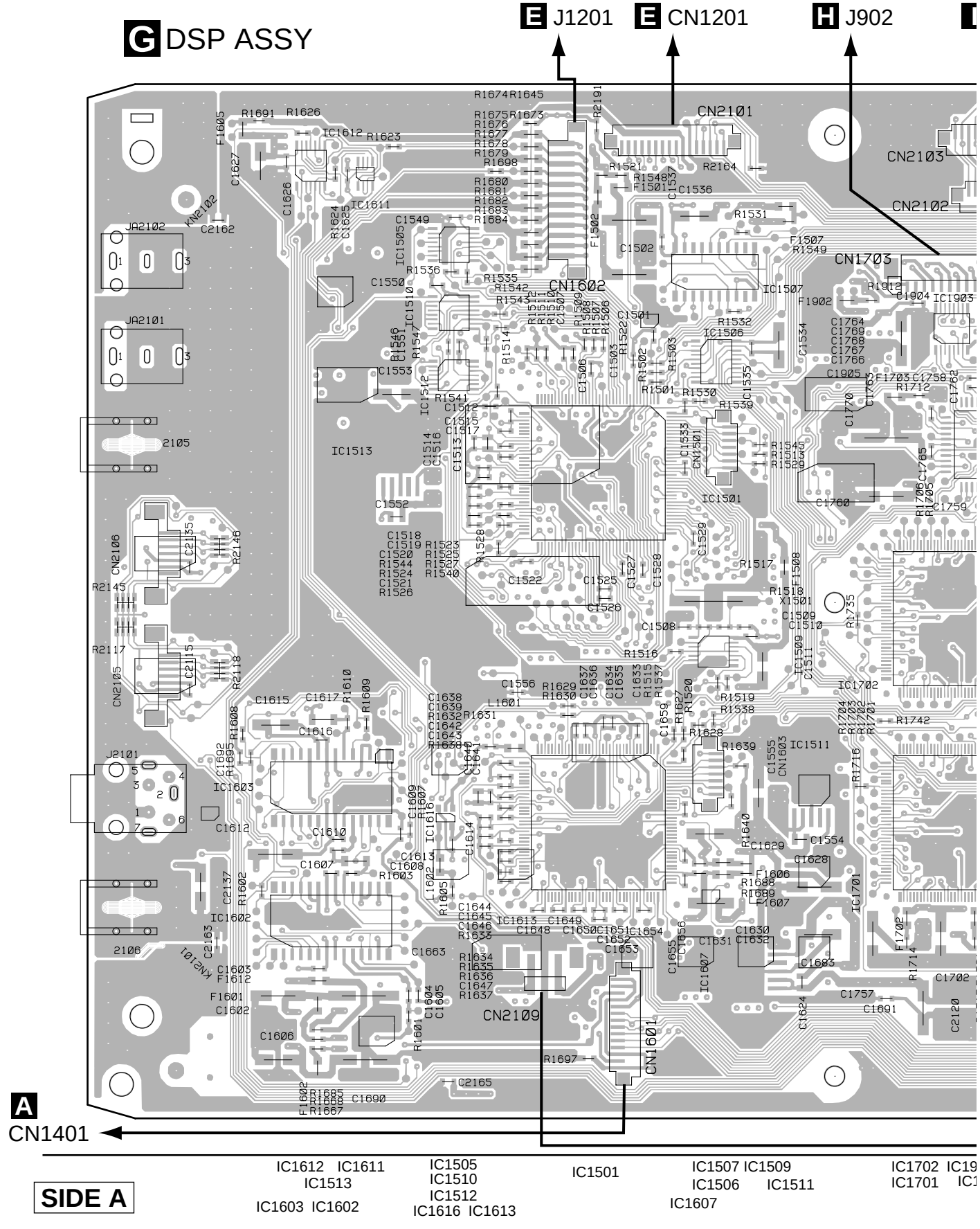
(ANP7292-B)

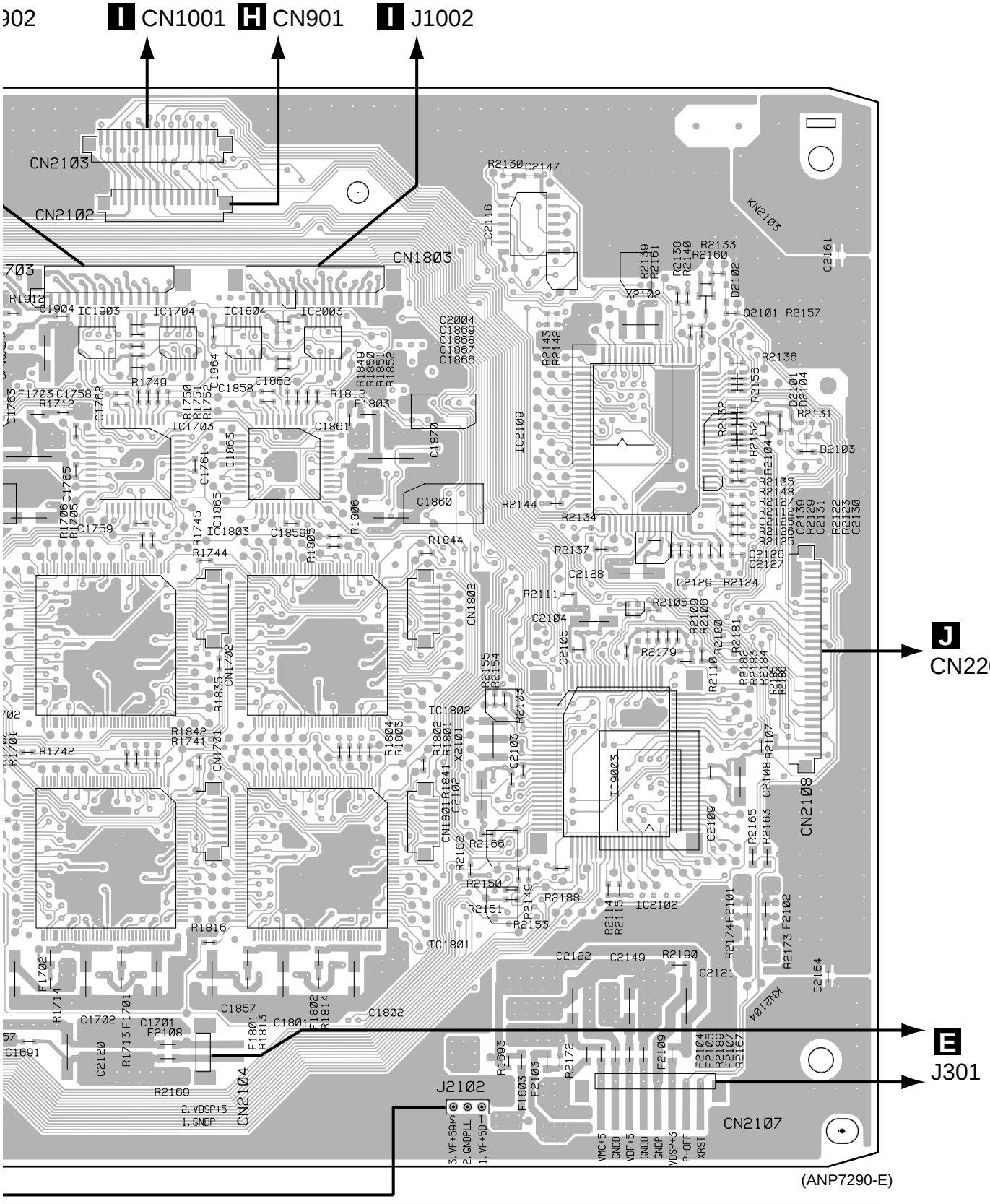
F CRAD ASSY



(ANP7292-B)

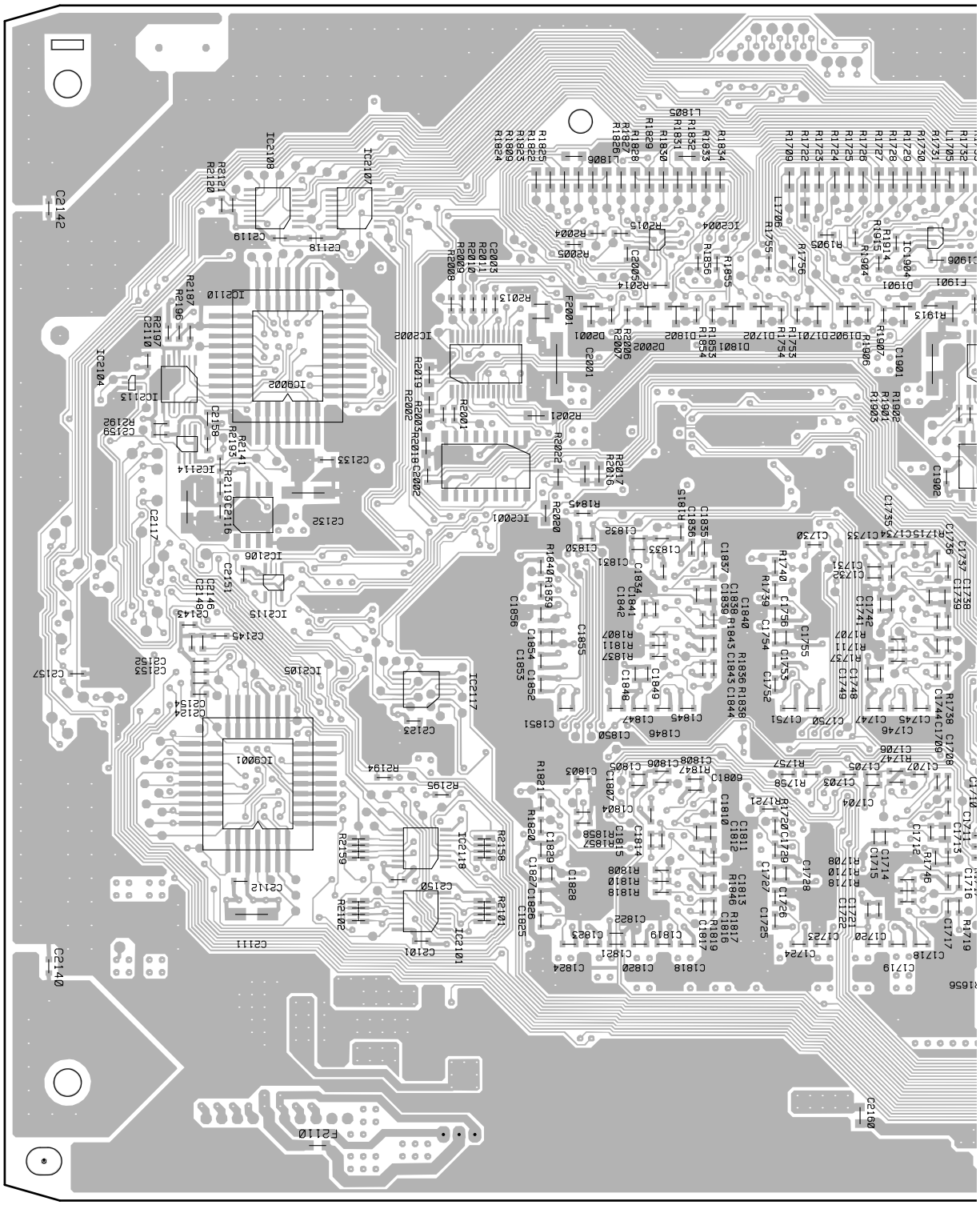
4.5 DSP ASSY


G DSP ASSY
E J1201
E CN1201
H J902
CN2101
CN2103
CN2102
CN1703
CN1602
CN2109
CN1601
CN1401
A
SIDE A
IC1612 IC1611
IC1513
IC1603 IC1602
IC1505
IC1510
IC1512
IC1616 IC1613
IC1501
IC1507 IC1509
IC1506 IC1511
IC1607
IC1702 IC19
IC1701 IC1



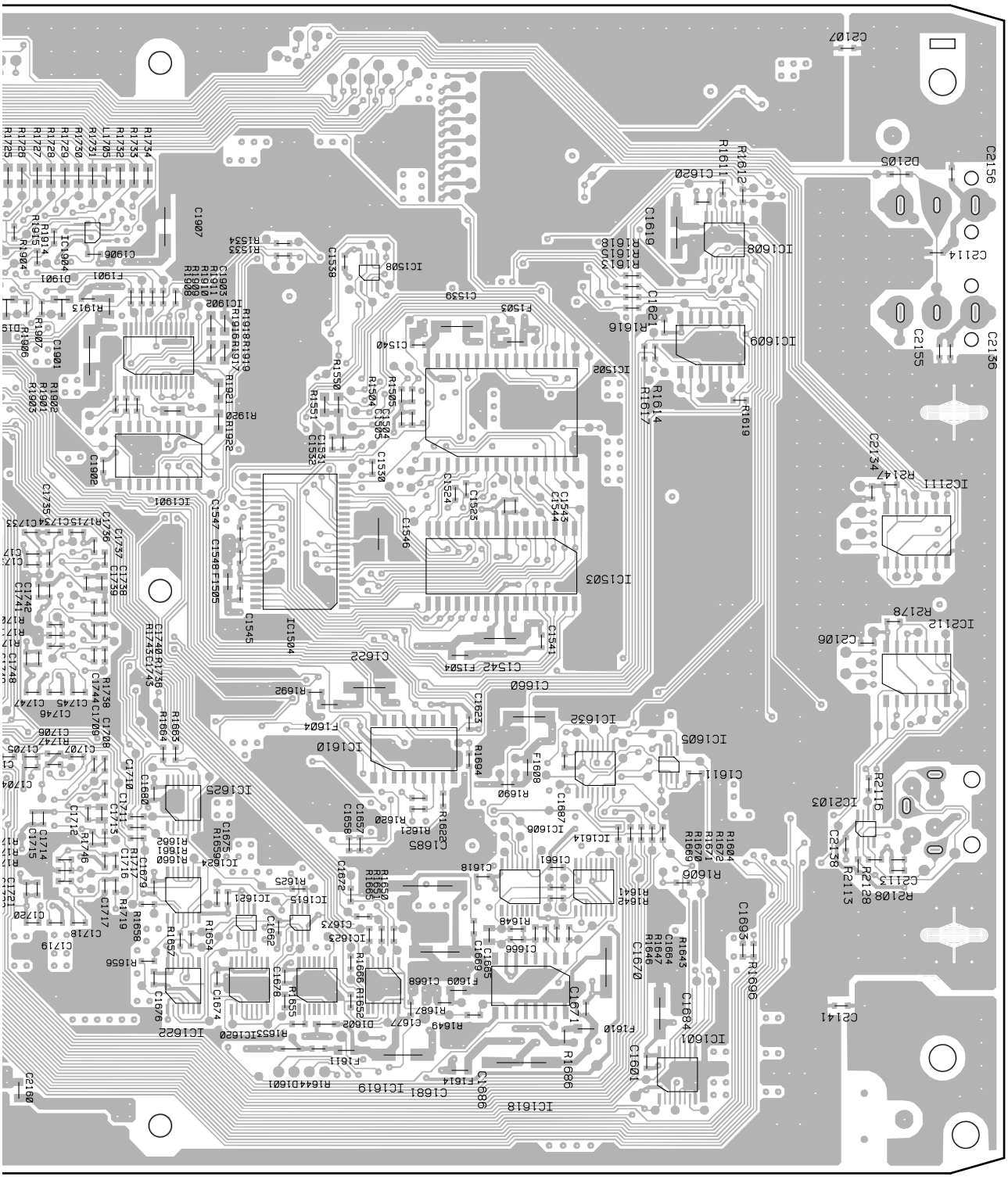
IC1702 IC1903 IC1704 IC1804 IC2003 IC2116 IC2109 Q2101
IC1701 IC1703 IC1803 IC1802 IC9003
IC1801 IC2102

G DSP ASSY



IC2104 IC2113 IC2108 IC2107 IC2002 IC1
IC2110 IC9002 IC2118 IC2001 IC1
IC2114 IC2106 IC2101
IC9001 IC2115

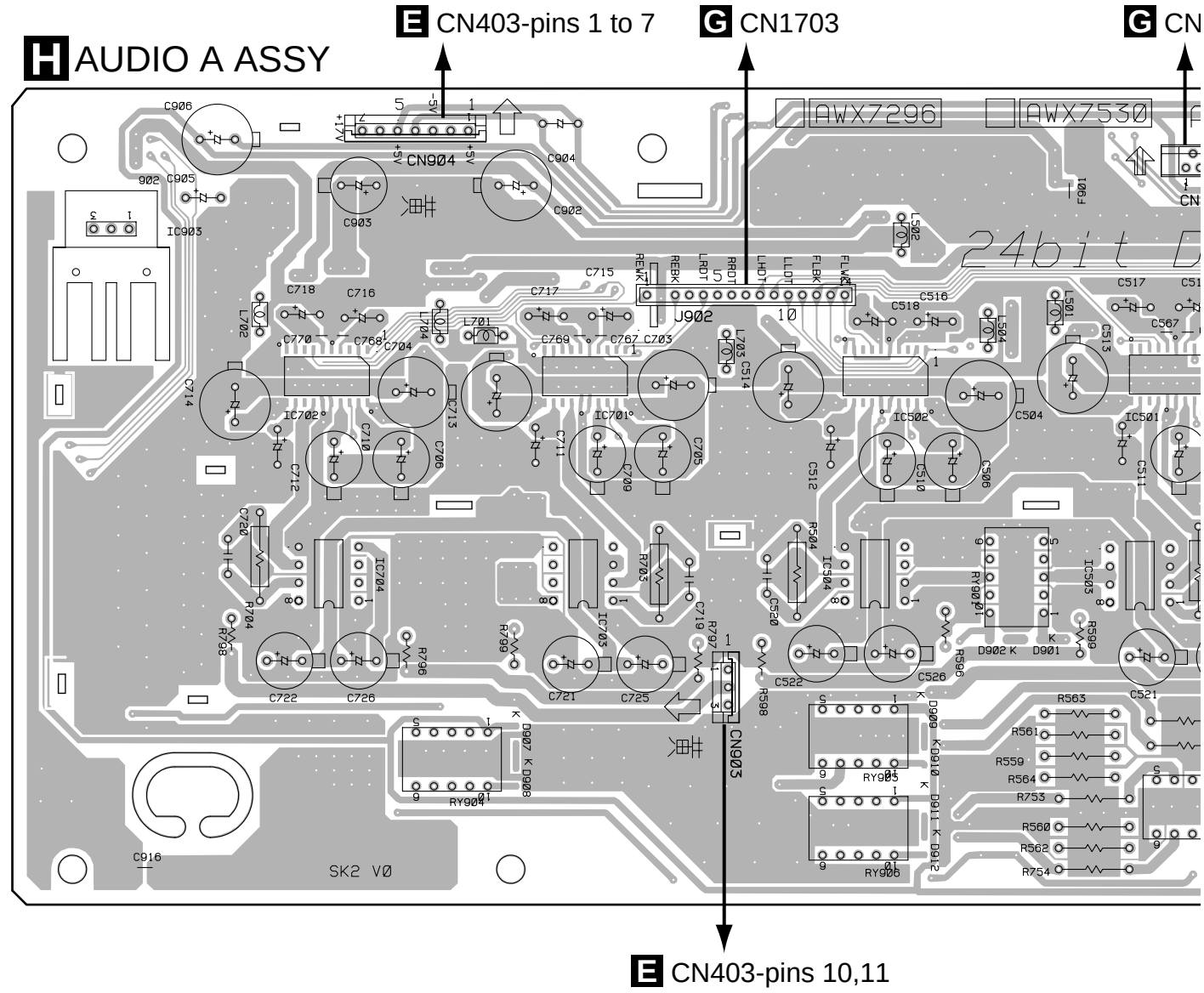
SIDE B



(ANP7290-E)

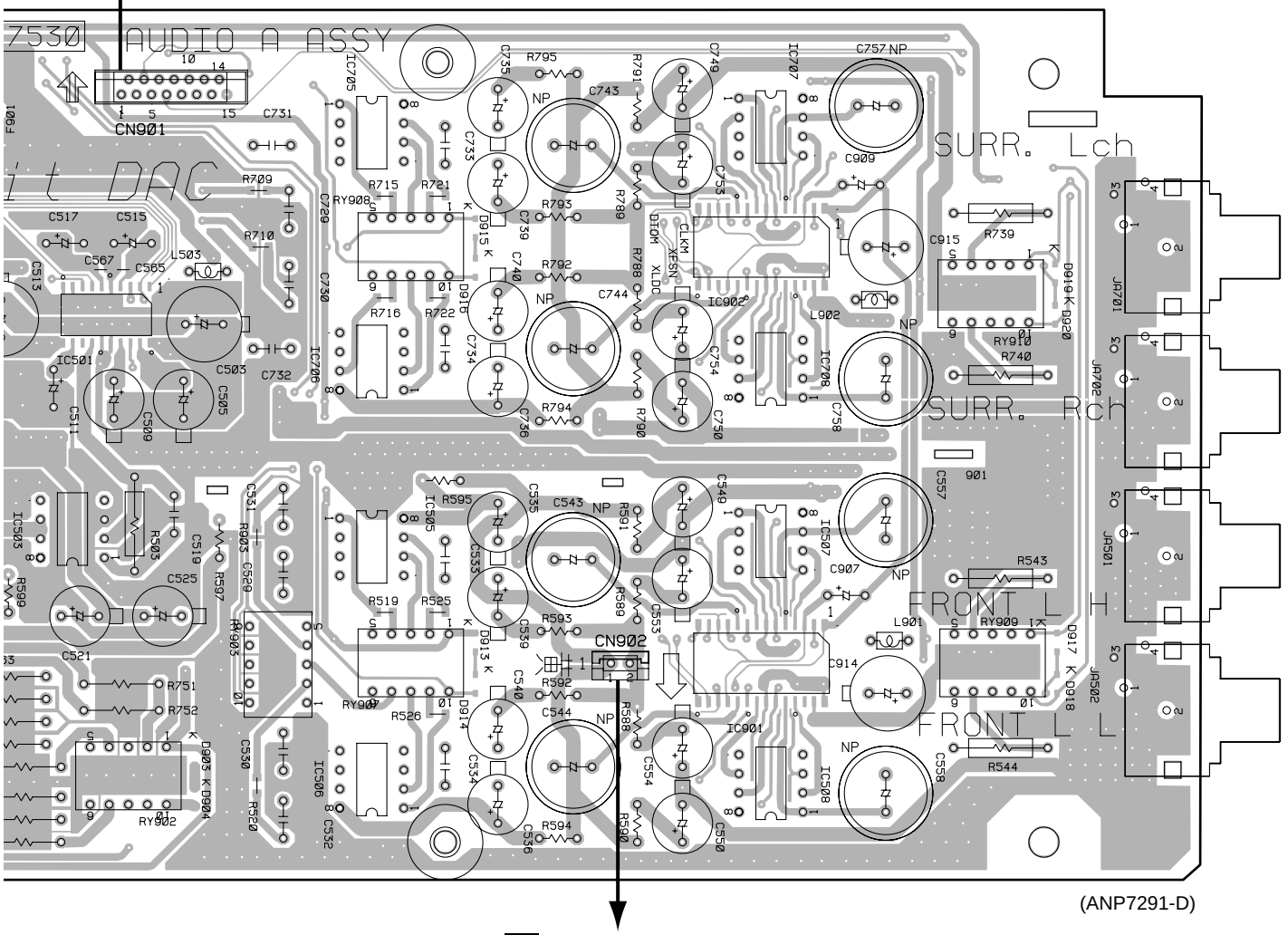
IC1902 IC1504 IC1508 IC1502 IC1503 IC1608 IC1609 IC2111
IC1901 IC2112
IC1625 IC1610 IC1632 IC1605 IC2103
IC1624 IC1621 IC1615 IC1606 IC1614 IC1601
IC1622 IC1620 IC1623 IC1619 IC1618

4.6 AUDIO A ASSY



SIDE A

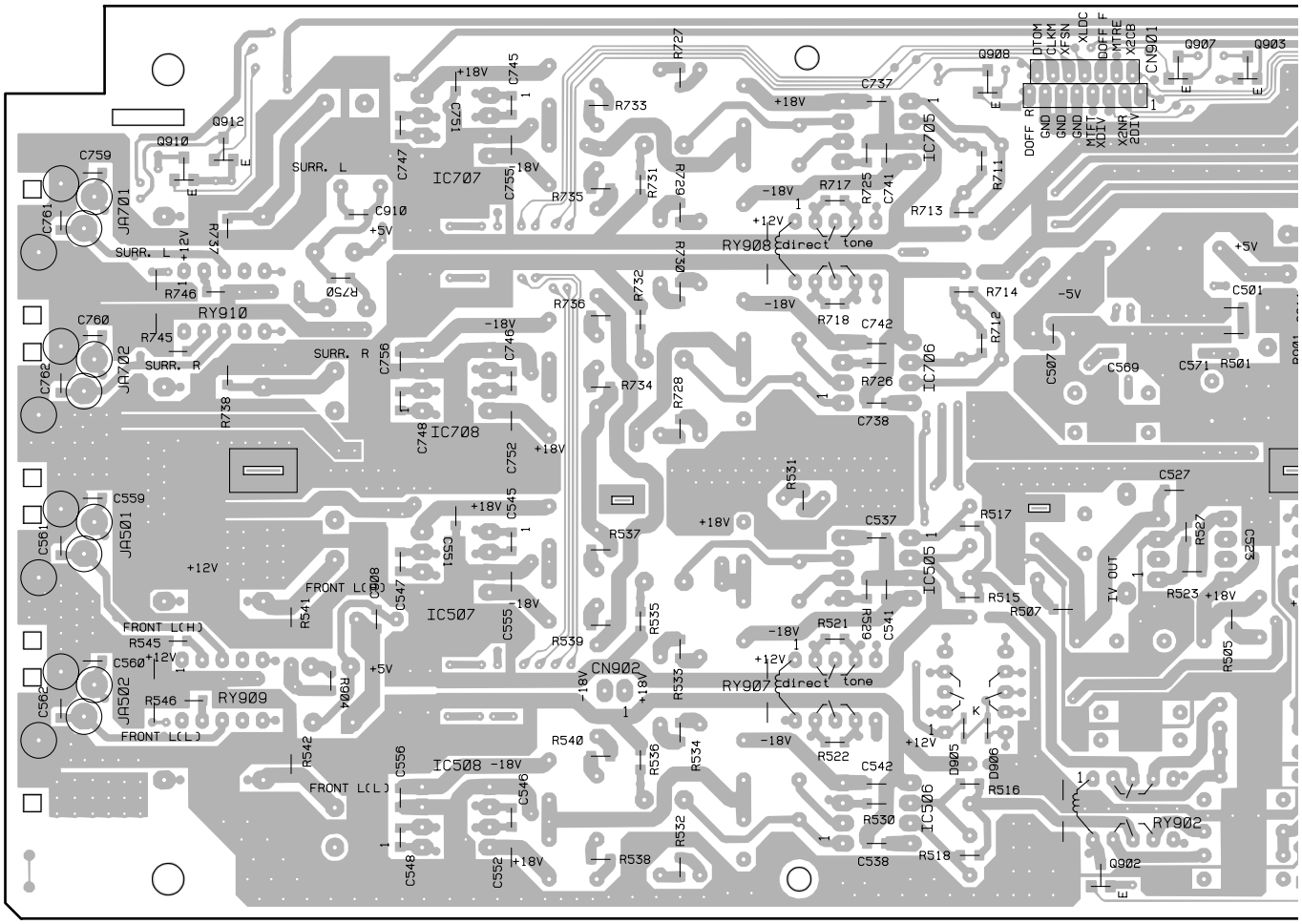
G CN2102



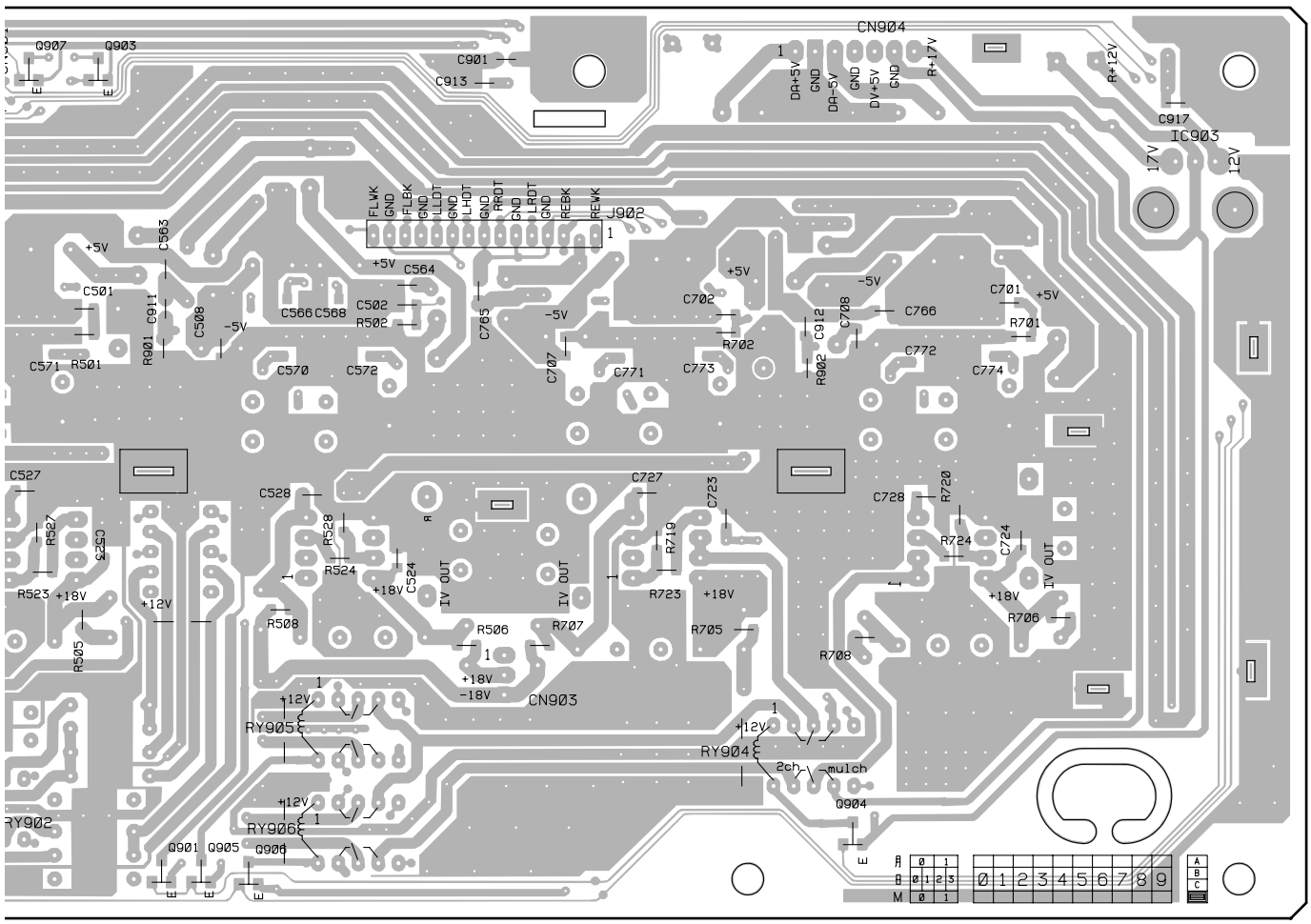
(ANP7291-D)

E CN403-pins 8,9

H AUDIO A ASSY



SIDE B

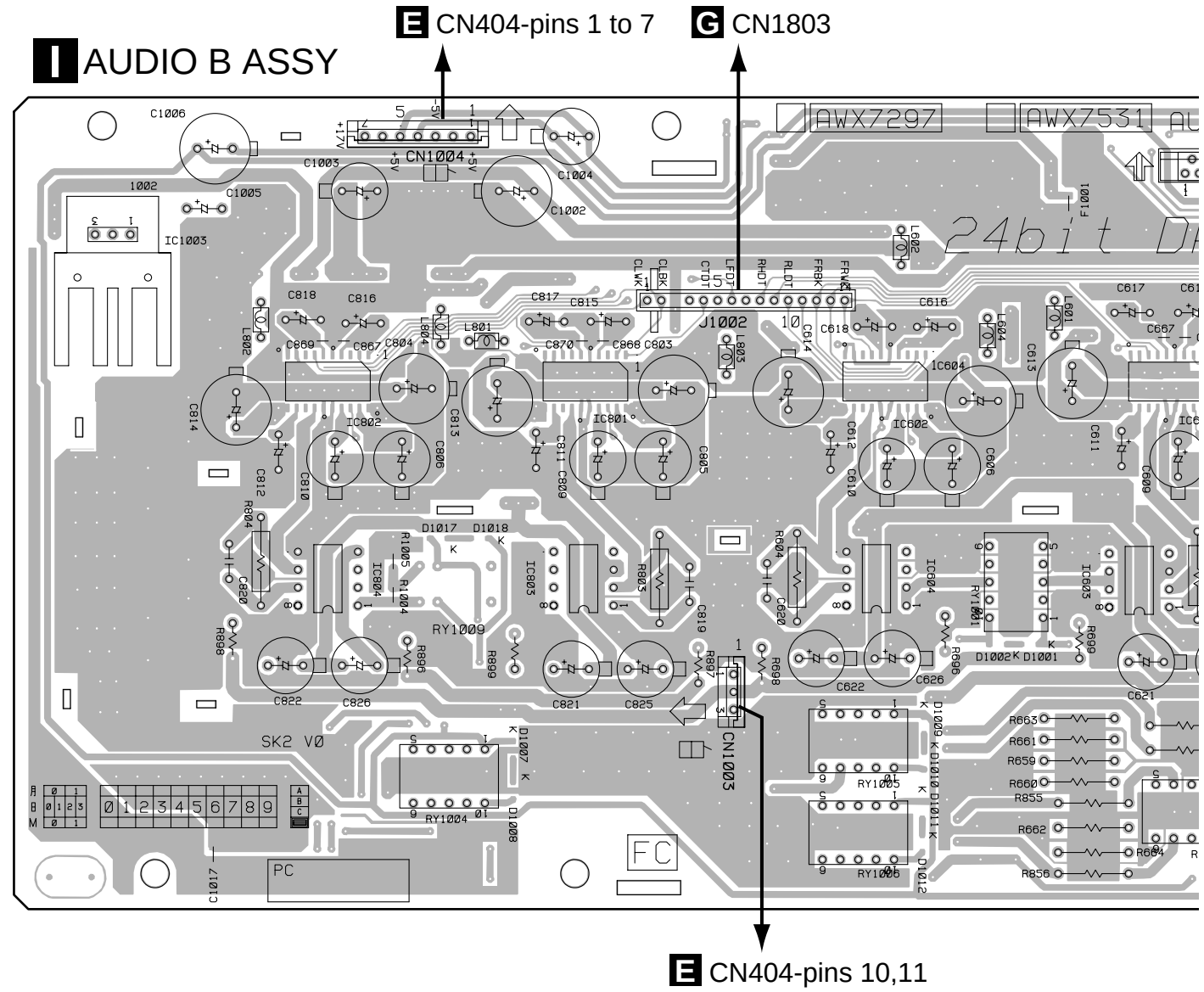


(ANP7291-D)

907 Q903

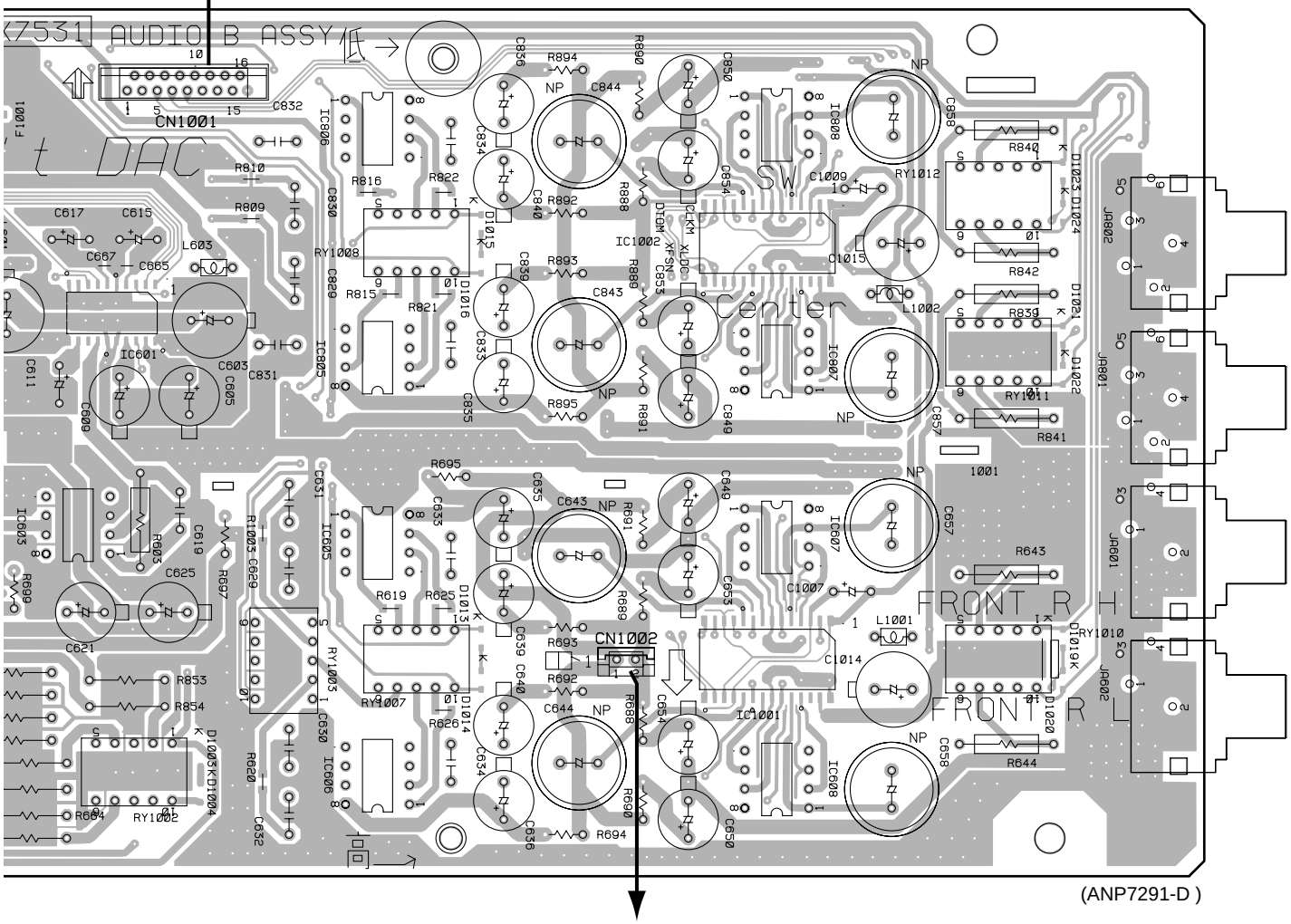
Q901 Q905 Q906 Q904

4.7 AUDIO B ASSY



SIDE A

G CN2103

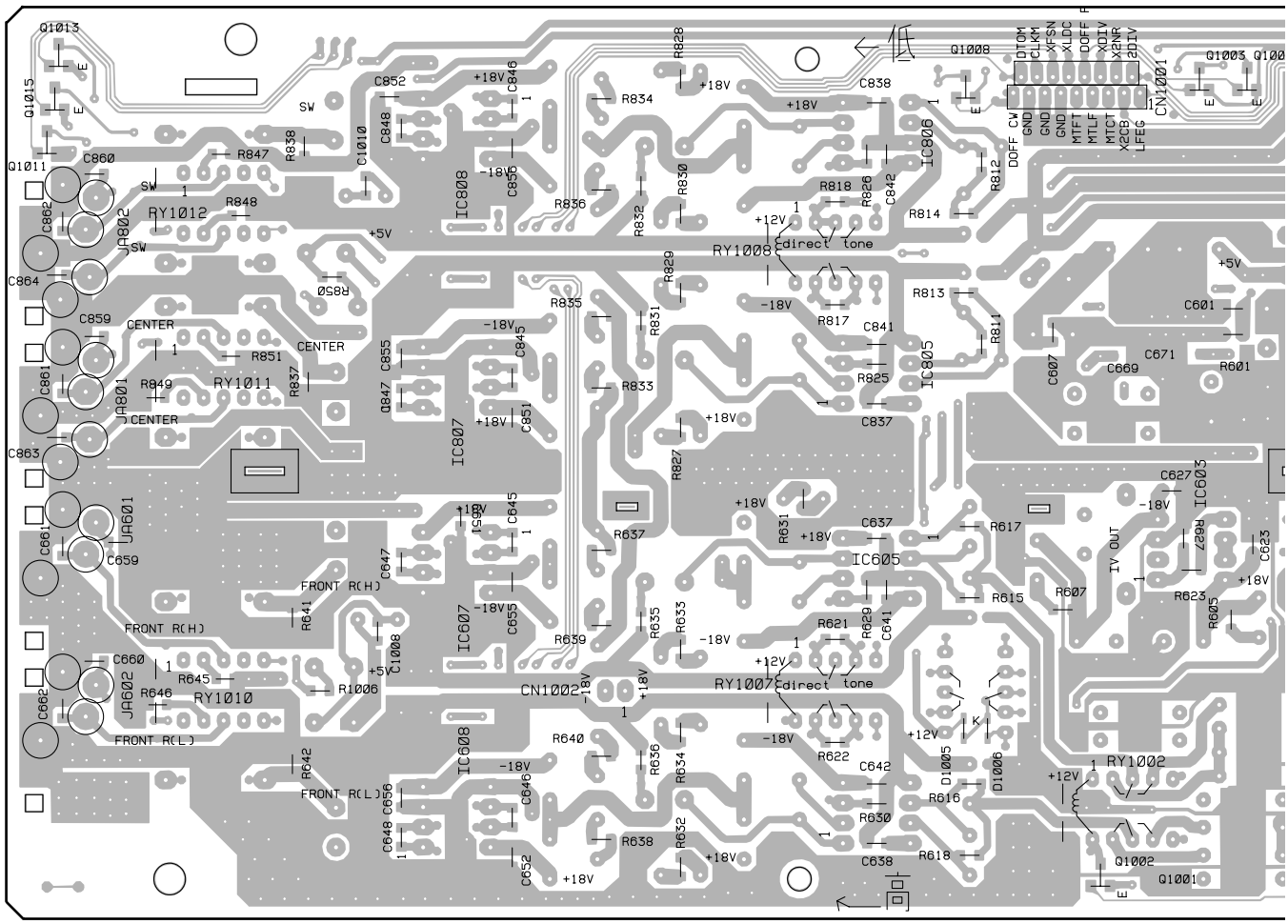


(ANP7291-D)

E CN404-pins 8,9

IC601
IC603
IC805
IC806
IC605
IC606
IC808
IC1002 IC807
IC1001 IC607
IC608

AUDIO B ASSY



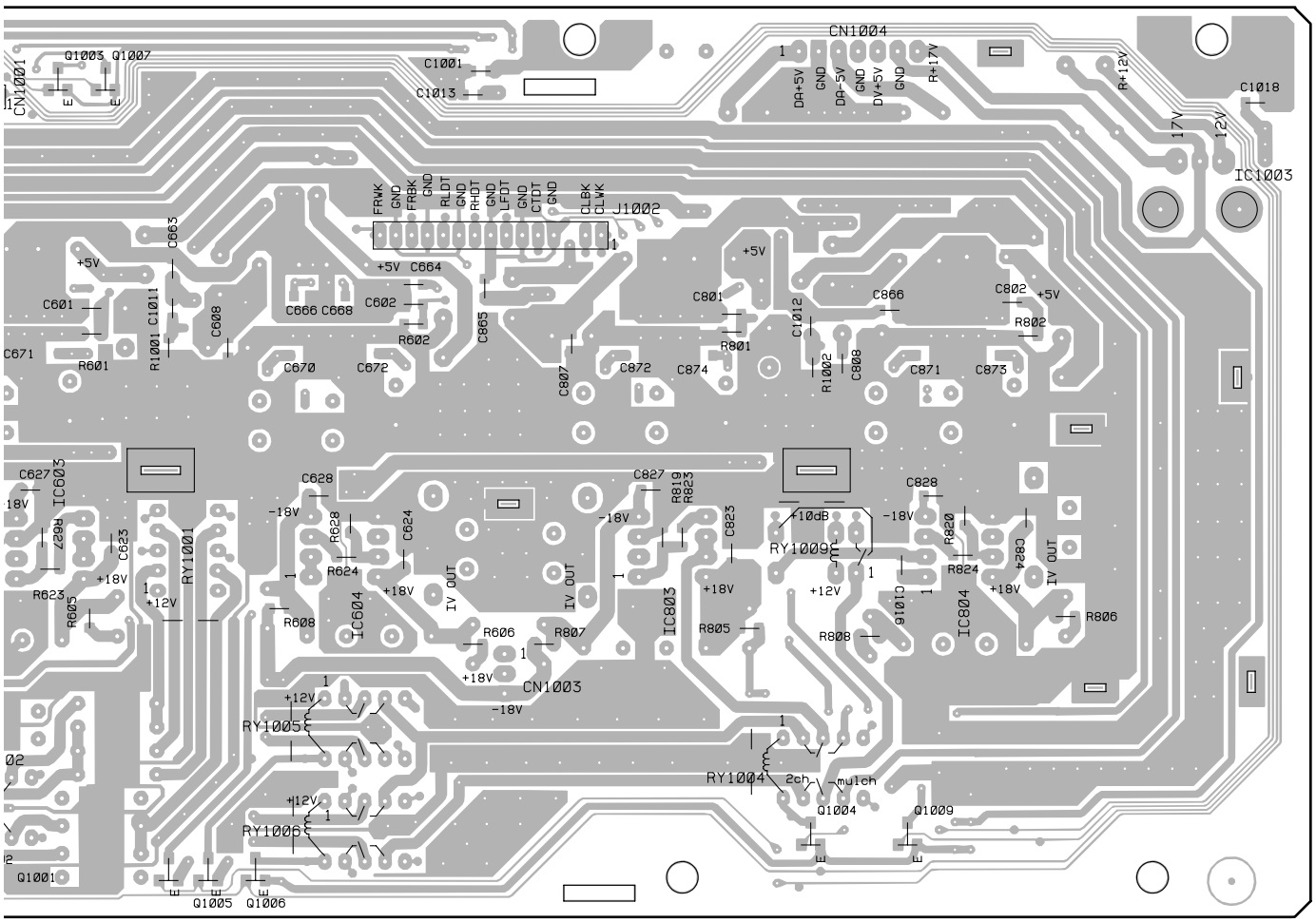
Q1013
Q1015
Q1011

Q1008

Q1003 Q1007

Q1002 Q100

SIDE B

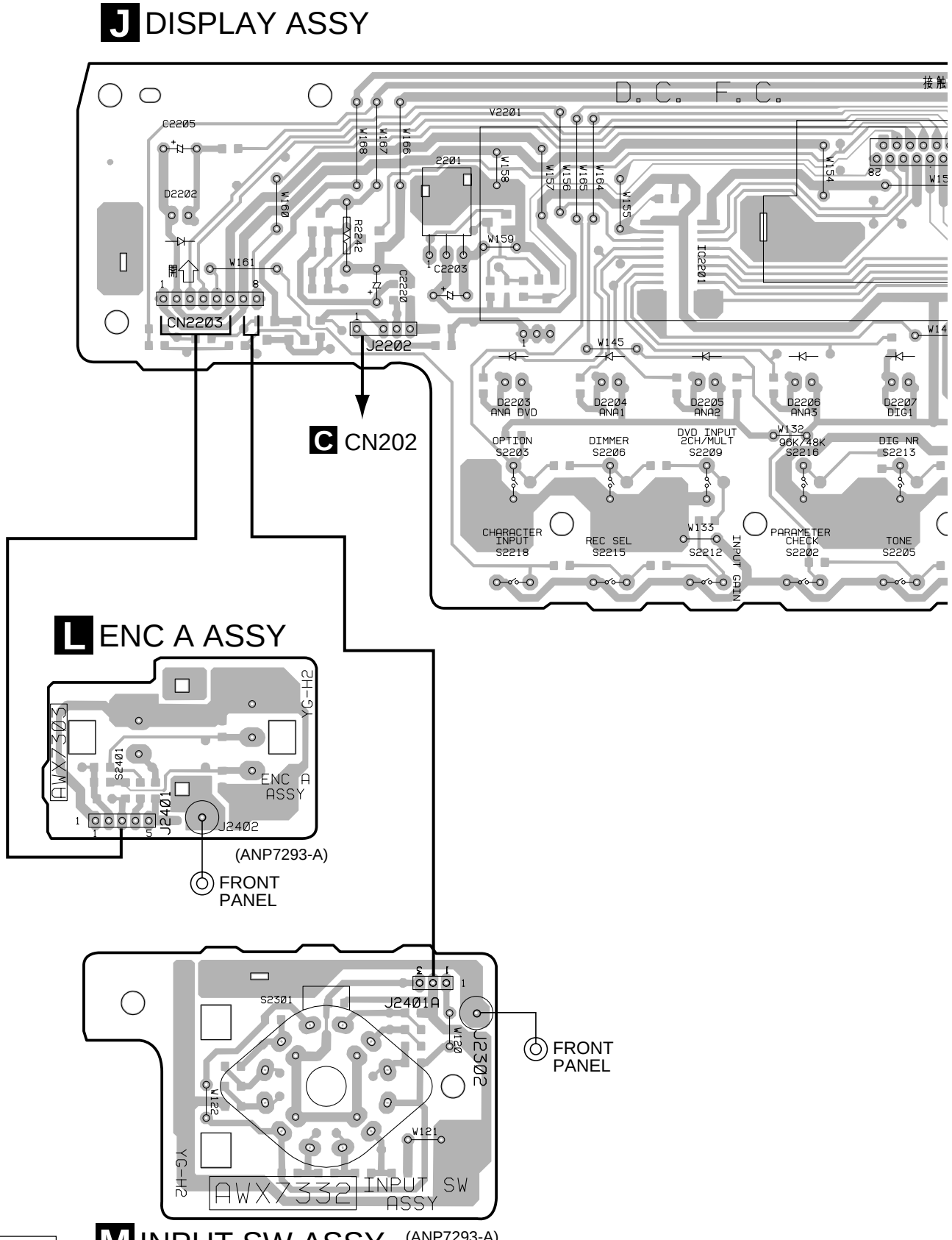


(ANP7291-D)

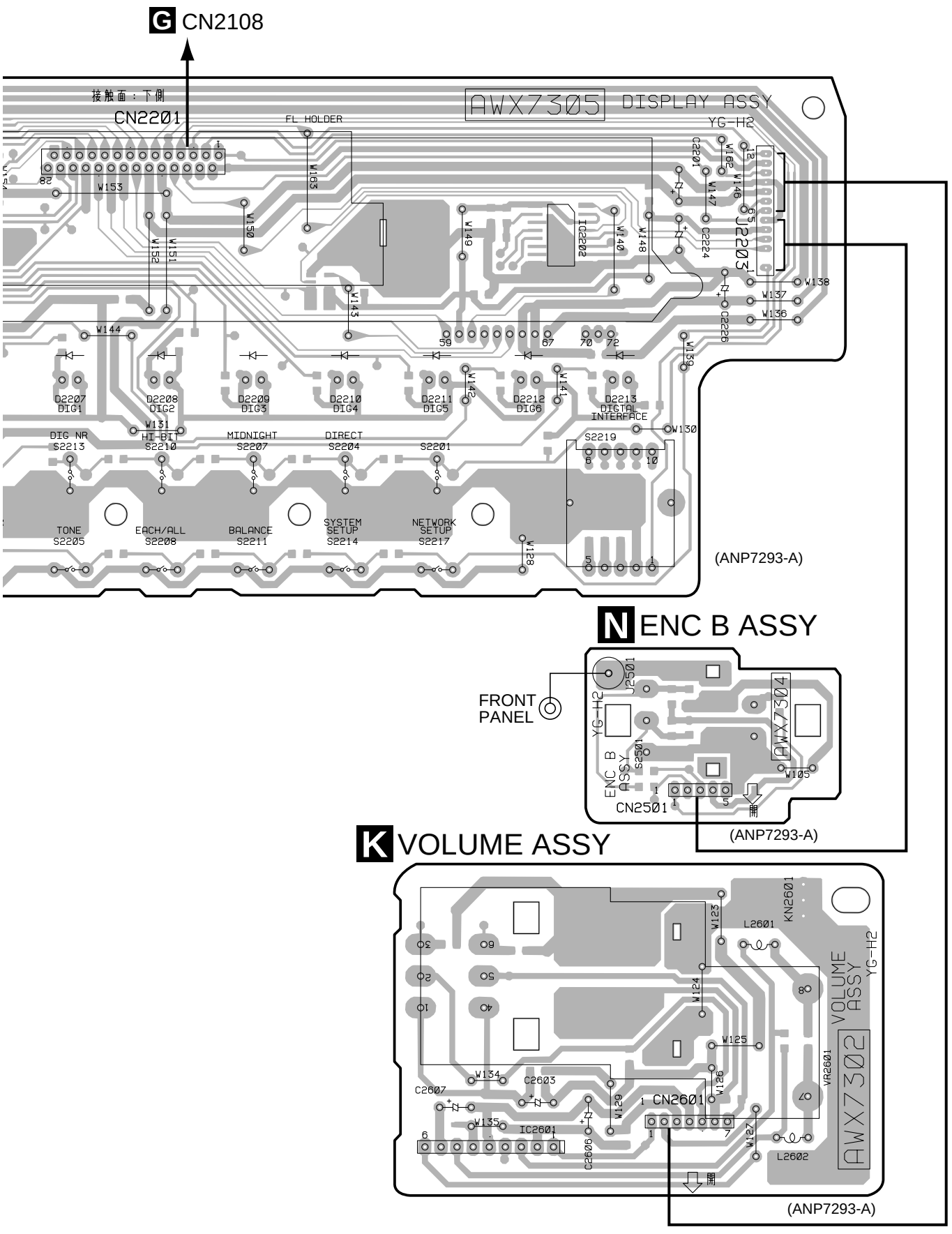
)1003 Q1007

Q1001 Q1005 Q1006 Q1004 Q1009

4.8 DISPLAY, VOLUME, ENC A, INPUT SW, ENC B ASSYS

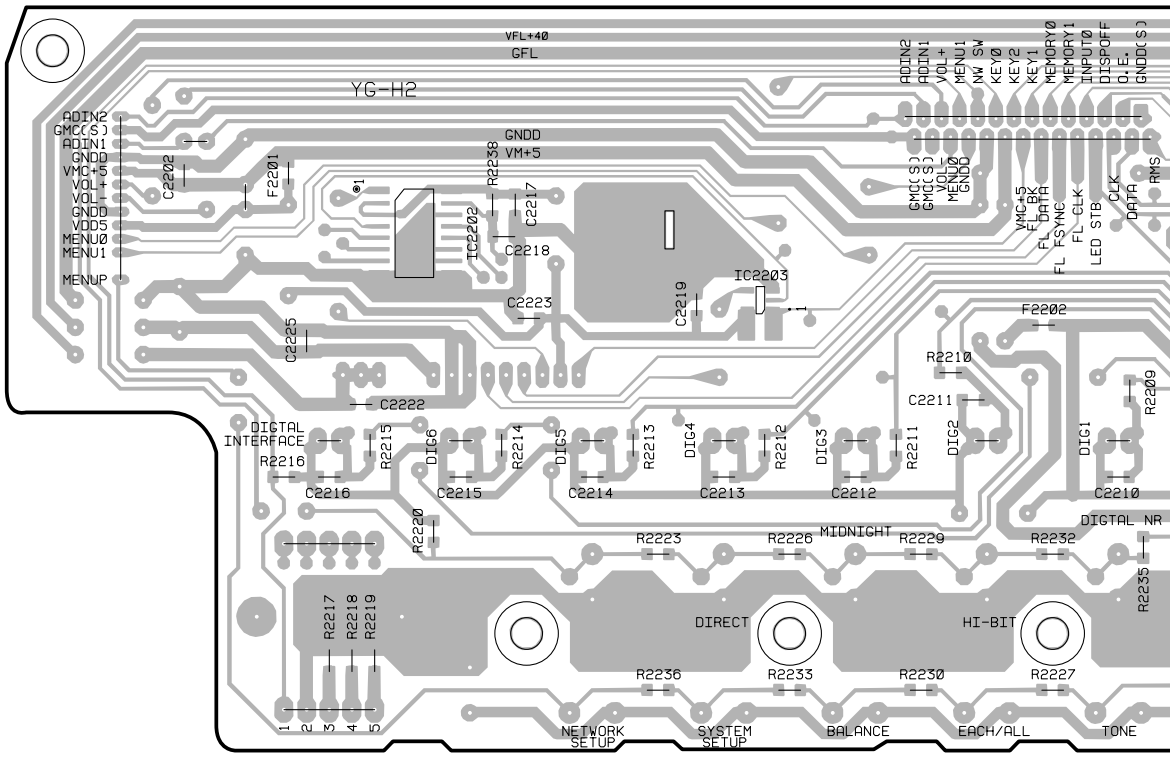


SIDE A

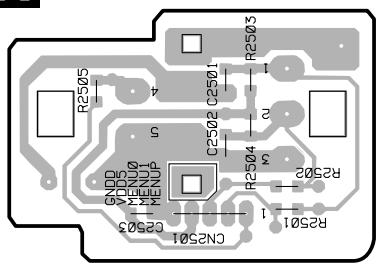

G CN2108
CN2201
接触面：下側
AWX7305 DISPLAY ASSY
YG-H2
FL HOLDER
W153
W163
W150
W152
W151
W149
IC2202
W140
W148
W147
C2224
J2203
W138
W137
W136
C2226
W143
W144
W139
W142
W141
D2207 DIG1
D2208 DIG2
D2209 DIG3
D2210 DIG4
D2211 DIG5
D2212 DIG6
D2213 DIGTAL INTERFACE
W131
W130
DIG NR S2213
HI-BIT S2210
MIDNIGHT S2207
DIRECT S2204
S2201
S2219
TONE S2205
EACH/ALL S2208
BALANCE S2211
SYSTEM SETUP S2214
NETWORK SETUP S2217
W128
(ANP7293-A)
N ENC B ASSY
FRONT PANEL
J2501
AWX7304
ENC B ASSY
YG-H2
J2502
W105
CN2501
(ANP7293-A)
K VOLUME ASSY
KN2601
L2601
W123
W124
W125
W126
W127
W134
C2603
C2607
W135
IC2601
C2606
CN2601
VR2601
L2602
AWX7302
VOLUME ASSY
YG-H2
(ANP7293-A)

J DISPLAY ASSY

IC2202 IC2203

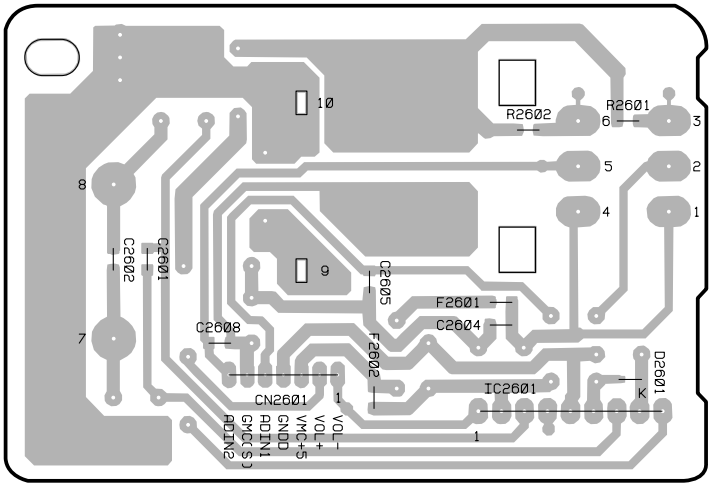


N ENC B ASSY



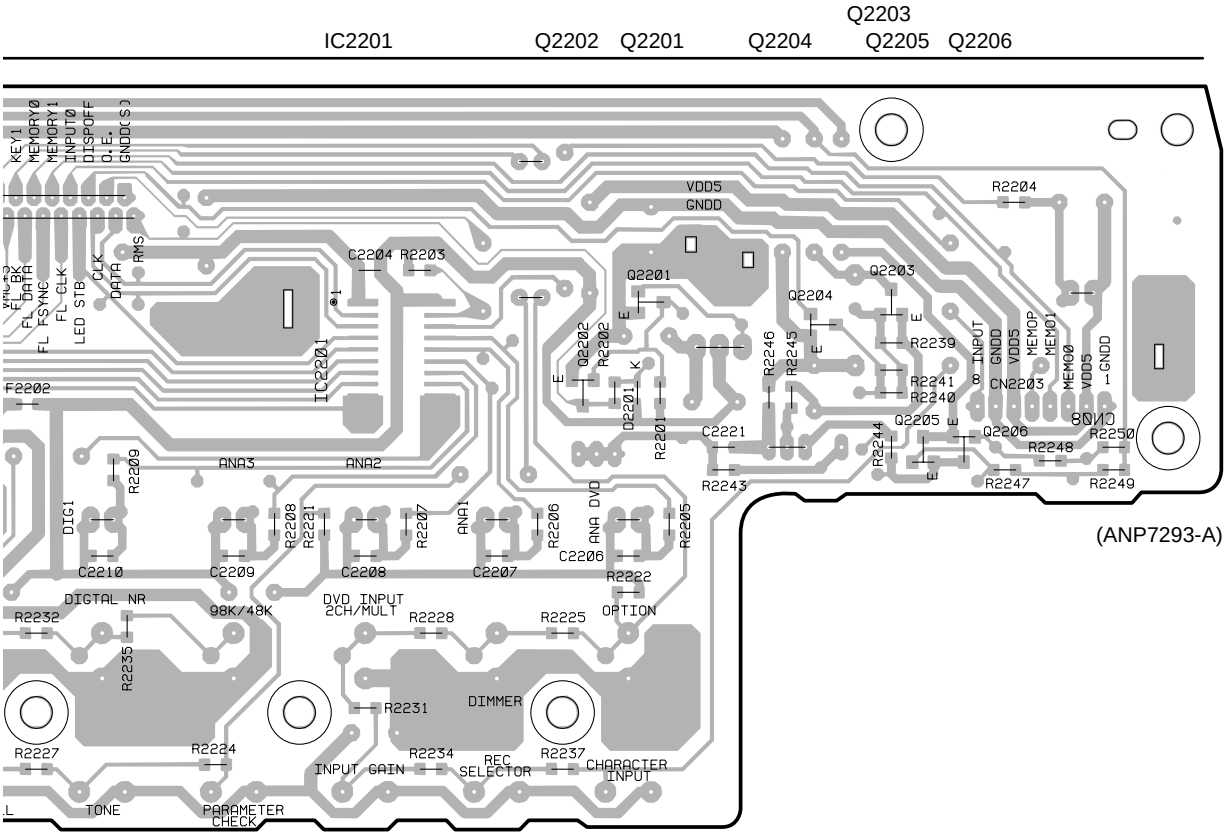
(ANP7293-A)

K VOLUME ASSY



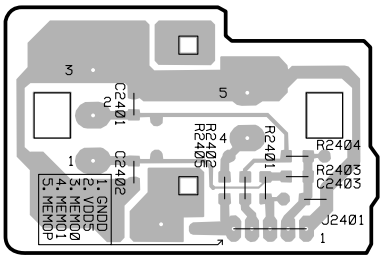
(ANP7293-A)

SIDE B



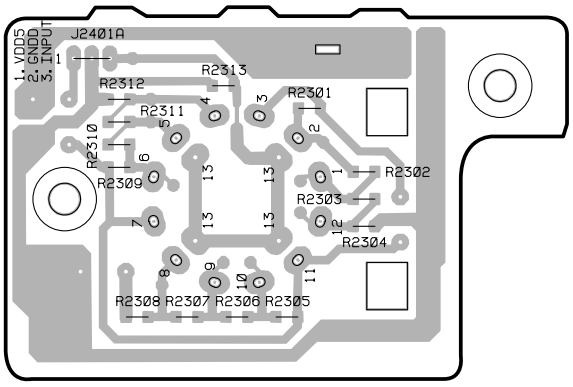
(ANP7293-A)

L ENC A ASSY



(ANP7293-A)

M INPUT SW ASSY



(ANP7293-A)

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 → 56×10^1 → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47×10^3 → 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 → 562×10^1 → 5621 ..... RN1/4PC 5 6 2 1 F

■LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	Part No.		Remarks
		KU/CA Type	NY Type	
NSP	PSAD ASSY	AWM7490	AWM7490	
	├DIGITAL I/O ASSY	AWX7533	AWX7533	
	├SG ASSY	AWX7444	AWX7444	
	├FRAD ASSY	AWX7532	AWX7532	
	└CRAD ASSY	AWX7535	AWX7535	
NSP	CONTROL ASSY	AWM7467	AWM7491	
	├AC ASSY	AWX7298	AWX7536	
	├PS ASSY	AWX7299	AWX7537	
	├DISPLAY ASSY	AWX7305	AWX7305	
	├VOLUME ASSY	AWX7302	AWX7302	
	├ENC A ASSY	AWX7303	AWX7303	
	├INPUT SW ASSY	AWX7332	AWX7332	
	└ENC B ASSY	AWX7304	AWX7304	
NSP	DSP ASSY	AWK7589	AWK7590	
NSP	AUDIO ASSY	AWM7489	AWM7489	
	├AUDIO A ASSY	AWX7530	AWX7530	
	└AUDIO B ASSY	AWX7531	AWX7531	

B AC ASSY

AWX7298 and AWX7536 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWX7298	AWX7536	
⚠	C101, C102	ACE7014(0.01μF/275V)	ACE7034(3300pF/275V)	
⚠	C103 (4700pF/250V)	Not used	ACG7043	
	CAPACITOR COVER	Not used	VEC-063	

C PS ASSY

Althrough AWX7299 and AWX7537 are different in part number, they consist of the same components.

G DSP ASSY

AWK7589 and AWK7590 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		AWK7589	AWK7590	
	R2142	Not used	RS1/16S473J	
	R2143	RS1/16S473J	Not used	

PCB PARTS LIST FOR C-AX10/KU/CA UNLESS OTHERWISE NOTED

Mark	No.	Description	Part No.

A DIGITAL I/O ASSY

SEMICONDUCTORS

⚠	IC1407		BA05T
	IC1404,IC1405		TC74HC151AF
	IC1402,IC1406		TC74HCU04AF
	IC1401,IC1403		TC7WU04F

COILS AND FILTERS

	F1401-F1409	CHIP BEAD	DTF1070
	L1401-L1403		LFEA470J
	L1406	PULSE TRANS.	PTL1003
	L1405	CHOKE COIL	PTL1017
	L1404,L1408	CHIP SOLID INDUCTOR	QTL1015
	L1407,L1409	CHIP BEAD	VTL1099

CAPACITORS

	C1405,C1412,C1419		CCSQCH220J50
	C1404,C1411,C1418		CCSQCH470J50
	C1402,C1409,C1416,C1434		CEBA330M25
	C1401,C1408,C1415,C1433		CKSQYB103K50
	C1406,C1413,C1420,C1423,C1425		CKSQYB104K25
	C1427,C1429-C1431,C1436,C1438		CKSQYB104K25
	C1445		CKSQYB104K25
	C1443		CKSQYB334K16
	C1432 (0.1µF)		OCG1014
	C1444 (1000µF/16V)		PCH1122
	C1407,C1414,C1421,C1422,C1424 (220µF/25V)		PCH1128
	C1426,C1428,C1437,C1439 (220µF/25V)		PCH1128
	C1440 (1000µF/16V)		PCH1141

RESISTORS

	All Resistors		RS1/10S□□□J

OTHERS

	JA1401-JA1403,JA1407	1P PIN JACK	AKB7102
	JA1404-JA1406	OPTICAL RECEIVER MODULE	TORX176(HS)
	JA1408	OPTICAL SEND MODULE	TOTX176(HS)
	CN1401	14P FFC CONNECTOR	VKN1274

B AC ASSY

FILTER

⚠	F101	EMC FILTER	ATF7023

SWITCH

⚠	S101		PSA1004

CAPACITORS

⚠	C101,C102 (0.01µF/275V)		ACE7014

OTHERS

	H101,H102	FUSE CLIP	AKR1004
⚠	CN102	2P VH CONNECTOR	B2P3-VH
⚠	CN103	2P VH CONNECTOR	B2P3-VH-E
⚠	CN101	SOCKET FOR AC CORD	RKP1751
	KN101	EARTH METAL FITTING	VNF1084

C PS ASSY

SEMICONDUCTORS

⚠	IC201-IC203		AEK7006
⚠	IC205		PQ3RF23
⚠	Q201		2SC4793
⚠	D208,D209		LN6SB60-4000
⚠	D201		S2VB20F
	D206		UDZ20B
	D205		UDZ22B
	D207		UDZS7.5B

FILTERS

	F201,F203-F206	CHIP BEAD	DTF1070

CAPACITORS

	C209,C215 (1µF/100V)		ACH1237
	C205		CEBA471M63
	C210,C211,C217,C218		CKSQYB103K50
	C204		CKSQYB104K25
	C214		CKSQYB334K16
	C201-C203		CQMA103K2E
	C206-C208,C216 (47µF/50V)		PCH1124
	C212 (10000µF/16V)		VCH1054

RESISTORS

	R201		RS1LMF222J
	Other Resistors		RS1/10S□□□J

OTHERS

	J201	CONNECTOR ASSY 6P	ADX7263
	H201-H204	FUSE CLIP	AKR1004
	202,203	HEAT SINK B	ANH1021
	201	HEAT SINK	ANH7121
	CN202	KR CONNECTOR	B4B-PH-K-S
	CN201	9P TOP POST	B9P-VH
		PCB BINDER	VEF1040
	KN201	EARTH METAL FITTING	VNF1084

D SG ASSY

OTHERS

	3001	SCREW TERMINAL	VNE1948

Mark	No.	Description	Part No.

E FRAD ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
⚠	IC304,IC411-IC413		AEK7006
⚠	IC405		AEK7010
⚠	IC403		AEK7016
⚠	IC408		AEK7023
	IC1105		AK5393VS
⚠	IC306		BA05T
⚠	IC401,IC402,IC407,IC409,IC410		ICP-N25
⚠	IC406		LM317T
	IC1101,IC1102,IC1106		M5220P
⚠	IC404		NJM7812FA
	IC1103,IC1104		OP275GP
⚠	IC302		PQ05RR12
	IC1204		TC74VHC157F
	IC1203		TC74VHC244F
	IC1202		TC74VHC74F
	IC1201		TC74VHCU04F
⚠	Q404,Q406,Q420,Q422		2SA1037K
⚠	Q402,Q418		2SB1375
⚠	Q403,Q405,Q408,Q409,Q419		2SC2412K
⚠	Q421		2SC2412K
⚠	Q416		2SC4793
⚠	Q401,Q407,Q417		2SD2012
	Q1101-Q1109,Q1201,Q1301,Q1302		DTC124EK
⚠	D407,D409		11DF2
⚠	D408,D410		11DF2FD
	D1101-D1118,D1301-D1304		1SS355
⚠	D402,D404,D412,D414		31DF2-FC5
⚠	D401,D403,D411,D413		31DF2-FC6
	D1119,D1120,D301		DAN202K
	D1121,D1122		DAP202K
	D415,D419,D420		HZS3CLL
	D405,D406		HZS5CLL
	D418		UDZS5.6B

COILS AND FILTERS

	F1101-F1103,F1201,F1202	CHIP BEAD	DTF1070
	L1104-L1111,L1202,L1204	CHIP BEAD FILTER	DTL1019
	L1301-L1304	CHIP BEAD FILTER	DTL1019
	L404	FERRITE BEAD	PTH1015
	L1101-L1103,L1201,L1203,L1205	NOISE FILTER	RTF1167
	L301,L401-L403	NOISE FILTER	RTF1167

RELAYS

	RY1101-RY1109,RY1301,RY1302	VSR1008

CAPACITORS

	C1123,C1124,C1171,C1172 (470pF)	ACE7018
	C401,C402,C415,C418,C419 (1µF/100V)	ACH1237
	C403,C404 (3300µF/35V)	ACH7107
	C420,C421 (4700µF/16V)	ACH7108
	C301 (12000µF/16V)	ACH7127
	C411,C412 (10µF/50V)	ACH7133
	C1175,C1203	CCSQCH100D50
	C1155,C1156,C1161,C1162	CCSQCH101J50
	C409,C410,C427,C443,C444	CCSQCH121J50
	C1202	CCSQCH5R0C50
	C1152	CEGA100M50
	C1125-C1128	CEGA220M50
	C1119-C1122,C1159,C1160	CEGANP470M16
	C303,C430,C435,C436	CEHAZL470M25
	C413,C414,C438	CEHAZL561M35
	C1117,C1118,C428,C445,C446	CENA100M50
	C305,C405,C406,C425	CENA1R0M50
	C439,C440	CENA1R0M50
	C1307-C1310,C437	CENA470M25
	C1210	CKSQYB102K50
	C1211,C1212,C451-C454	CKSQYB103K50
	C1141,C1142,C1145,C1146,C1151	CKSQYB104K25
	C1153,C1154,C1173,C1174	CKSQYB104K25
	C1204-C1206,C1208,C422	CKSQYB104K25
	C1129,C1130	CKSQYB222K50
	C1143,C1144	CKSQYB224K16
	C302,C306	CKSQYB334K16
	C1131,C1132,C1135,C1136	CKSQYB473K50
	C1163-C1166,C1169,C1170	CKSQYB473K50
	C1150 (0.1µF)	OCG1014
	C304,C307,C417,C424,C429 (1000µF/16V)	PCH1122
	C447,C448 (1000µF/16V)	PCH1122
	C416 (3300µF/25V)	PCH1125
	C407,C408,C426,C441,C442 (100µF/50V)	PCH1126
	C1133,C1134,C1137,C1138 (220µF/25V)	PCH1128
	C1167,C1168,C1209,C423 (220µF/25V)	PCH1128
	C1139,C1140,C1201 (47µF/10V)	RCH1139
	C1147-C1149 (10µF/6.3V)	VCH1155

RESISTORS

	R1207	RD1/4PU470J
	R401,R402	RDR1/4PM100J
	R1117-R1120	RDR1/4PM104J
	R1121,R1122,R1133,R1134	RDR1/4PM1101F
	R1127,R1128,R1131,R1132	RDR1/4PM1801F
	R1123,R1124	RDR1/4PM1802F
	R1137-R1140	RDR1/4PM3901F
	R1141-R1144	RDR1/4PM51R0F
	R1129,R1130	RDR1/4PM5601F
	R1109,R1110,R1113-R1116	RN1/10SE1001D
	R1163,R1164	RN1/10SE1001D
	R1149-R1152	RN1/10SE1002D
	R1159-R1162,R1305-R1312	RN1/10SE1003D
	R433-R437	RN1/10SE1003D
	R1135,R1136	RN1/10SE1201D
	R1165,R1166	RN1/10SE1502D
	R1167,R1168	RN1/10SE1601D
	R405,R406	RN1/10SE1802D
	R411	RN1/10SE2400D
	R1111,R1112	RN1/10SE2702D
	R414,R429,R430	RN1/10SE3001D
	R410	RN1/10SE3900D
	R1145-R1148	RN1/10SE3901D
	R407,R408	RN1/10SE7501D
	R415,R431,R432	RN1/10SE9101D
⚠	R1125,R1126,R1153-R1156	RS1/10S510J
	R403,R404	RS1LMF222J
	Other Resistors	RS1/10S□□□J

Mark	No.	Description	Part No.
OTHERS			
	J405	CONNECTOR ASSY 1P	ADX7265
	J401	CONNECTOR ASSY 1P	ADX7266
	J1201	CONNECTOR ASSY 12P	ADX7267
	J403	CONNECTOR ASSY 8P	ADX7269
	J1203	CONNECTOR ASSY 4P	ADX7318
	J301	CONNECTOR ASSY 12P	ADX7327
	JA1101,JA1104	2P PIN JACK	AKB7104
	JA1102,JA1103,JA1301	4P PIN JACK	AKB7105
	402	HEAT SINK	ANH7100
	CN1202	KR CONNECTOR	B13B-PH-K-S
	CN406	2P VH CONNECTOR	B2P-VH
	CN407	3P VH CONNECTOR	B3P-VH
	CN405	3P VH CONNECTOR	B3P-VH-BL
	X1201	CRYSTAL RESONATOR (24MHz)	RSS1047
	CN1201	FFC CONNECTOR	SLW16S-1C7
		PCB BINDER	VEF1040

F CRAD ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC2704,IC2804		AK5393VS
	IC2703,IC2803		M5220P
	IC2701,IC2702,IC2801,IC2802		NJM5532DD
	Q2701,Q2702,Q2801,Q2802		DTC124EK
	D2701-D2704,D2801-D2804		1SS355
	D2705,D2706,D2805,D2806		DAN202K
	D2707,D2708,D2807,D2808		DAP202K
COILS			
	L2701,L2702,L2801,L2802,L2901	NOISE FILTER	RTF1167
RELAYS			
	RY2701,RY2702,RY2801,RY2802		VSR1008
CAPACITORS			
	C2737,C2738,C2837,C2838		CCSQCH101J50
	C2705,C2706,C2805,C2806		CCSQCH471J50
	C2730,C2830		CEGA100M50
	C2707-C2710,C2807-C2810		CENA220M25
	C2703,C2704,C2803,C2804		CENA470M25
	C2702,C2802		CKSQYB102K50
	C2719,C2720,C2723,C2724,C2729		CKSQYB104K25
	C2731,C2732,C2819,C2820		CKSQYB104K25
	C2823,C2824,C2829,C2831,C2832		CKSQYB104K25
	C2711,C2712,C2811,C2812		CKSQYB222K50
	C2721,C2722,C2821,C2822		CKSQYB224K16
	C2713,C2714,C2733-C2736		CKSQYB473K50
	C2813,C2814,C2833-C2836		CKSQYB473K50
	C2728,C2828 (0.1µF)		OCG1014
	C2715,C2716,C2815,C2816,C2901	(220µF/25V)	PCH1128
	C2717,C2718,C2817,C2818	(47µF/10V)	RCH1139
	C2725-C2727,C2825-C2827	(10µF/6.3V)	VCH1155

Mark	No.	Description	Part No.
RESISTORS			
	R2725-R2728,R2825-R2828		RN1/10SC51R0D
	R2733-R2736,R2833-R2836		RN1/10SE1002D
	R2709,R2710,R2717,R2718		RN1/10SE1101D
	R2809,R2810,R2817,R2818		RN1/10SE1101D
	R2719,R2720,R2819,R2820		RN1/10SE1201D
	R2711,R2712,R2715,R2716		RN1/10SE1801D
	R2811,R2812,R2815,R2816		RN1/10SE1801D
	R2705,R2706,R2805,R2806		RN1/10SE1802D
	R2721-R2724,R2729-R2732		RN1/10SE3901D
	R2821-R2824,R2829-R2832		RN1/10SE3901D
	R2713,R2714,R2813,R2814		RN1/10SE5601D
⚠	R2737,R2738,R2837,R2838		RS1/10S510J
	Other Resistors		RS1/10S□□□J
OTHERS			
	J2901	CONNECTOR ASSY 7P	ADX7268
	J2903	CONNECTOR ASSY13P	ADX7270
		PCB BINDER	VEF1040

G DSP ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC2106		AT24C16N-10SI2.5
	IC2101,IC2107,IC2108,IC2118		BU4094BCFV
	IC1602,IC1603		CS8414-CS
	IC1902,IC2002		DF1704E
	IC1610,IC1901,IC2001		PD0236AM
	IC1502		PDK038A
	IC2105		PEA003A
	IC2110		PEA004A
⚠	IC1511,IC1513,IC1607		PQ3DZ13
	IC1703,IC1803		SM5847AF
	IC1504		TC55V1664BFT-12
	IC1503		TC55V8128BJ-12
	IC2111,IC2112		TC74HC125AF
	IC1609		TC74HCT08AF
	IC1507		TC74HCT244AF
	IC2116		TC74HCU04AF
	IC1612,IC2117		TC74VHC00FT
	IC1624,IC1625		TC74VHC08FT
	IC1614		TC74VHC153FT
	IC1510,IC1601,IC1608,IC1632,IC1704		TC74VHC157FT
	IC1804,IC1903,IC2003		TC74VHC157FT
	IC1620		TC74VHC163FT
	IC1506		TC74VHC244FT
	IC1505		TC74VHC257FT
	IC2113		TC74VHC32FT
	IC1606,IC1623		TC74VHC4040FT
	IC1512,IC1622		TC74VHC74FT
	IC1509,IC1619		TC74VHCU04FT
	IC2104		TC7S66FU
	IC1616		TC7SET08F
	IC2103,IC2114		TC7W126FU
	IC1508,IC1615,IC2115		TC7WH04FU
	IC1904,IC2004		TC7WH08FU
	IC1611,IC1621		TC7WH74FU
	IC1605		TC7WT74FU

Mark	No.	Description	Part No.
	IC1618		TC9246F
	IC1501,IC1613,IC1701,IC1702		XCD56362PV100
	IC1801,IC1802		XCD56362PV100
	Q2101		2SA1037K
	D2106		1SS254
	D1601,D1602,D2101,D2102		1SS355
	D2104,D2105		1SS355
	D1701,D1702,D1801,D1802		DA204K
	D1901,D1902,D2001,D2002		DA204K
	D2103		DAN202K

COILS AND FILTERS

F1501-F1505,F1507,F1508	CHIP BEAD	DTF1070
F1601-F1612,F1614,F1701-F1703	CHIP BEAD	DTF1070
F1801-F1803,F1901,F1902,F2001	CHIP BEAD	DTF1070
F2101-F2105,F2108-F2110	CHIP BEAD	DTF1070
L1603	CHIP BEAD FILTER	DTL1019
L1601,L1602	CHIP SOLID INDUCTOR	QTL1015
L1701-L1704,L1801-L1804	CHIP BEAD	VTL1083
L1604	CHIP BEAD	VTL1103
L1705,L1706,L1805,L1806	CHIP BEAD	VTL1105

CAPACITORS

C1501,C1502,C1602,C1612,C1628	(56µF/10V)	ACH7109
C1668,C1670,C1681,C1757,C1760	(56µF/10V)	ACH7109
C1857,C1860,C1901,C1905,C2001	(56µF/10V)	ACH7109
C2128 (56µF/10V)		ACH7109
C1663,C1685,C1686,C1690,C1770	(330µF/16V)	ACH7126
C1870 (330µF/16V)		ACH7126
C1766-C1769,C1866-C1869		CCSRCH100D50
C1504,C1514,C1518,C1525,C1531		CCSRCH101J50
C1544,C1548,C1635,C1641,C1645		CCSRCH101J50
C1651,C1657,C1705,C1712,C1715		CCSRCH101J50
C1721,C1727,C1732,C1739,C1742		CCSRCH101J50
C1748,C1754,C1805,C1812,C1815		CCSRCH101J50
C1821,C1827,C1832,C1839,C1842		CCSRCH101J50
C1848,C1854		CCSRCH101J50
C1508,C1509,C1664		CCSRCH150J50
C2124,C2143,C2145,C2146,C2148		CCSRCH330J50
C2152-C2154		CCSRCH330J50
C1701,C1702,C1801,C1802,C1907		CEV101M16
C2120-C2122,C2149		CEV101M16
C1511,C1534,C1536,C1539,C1542		CEV470M6R3
C1546,C1553,C1555,C1606,C1615		CEV470M6R3
C1619,C1622,C1627,C1629,C1631		CEV470M6R3
C1660,C1683,C1684,C2102,C2104		CEV470M6R3
C2108,C2111,C2117,C2132,C2137		CEV470M6R3
C1608,C1617		CFHS473J16
C2160		CKSQYB104K25
C1552,C1554,C1624		CKSQYB334K16

Mark	No.	Description	Part No.
	C1516,C1640,C1665,C1711,C1738		CKSQYB474K16
	C1811,C1838		CKSQYB474K16
	C1503,C1505-C1507,C1513,C1517		CKSRYB103K50
	C1519-C1524,C1526-C1530		CKSRYB103K50
	C1532,C1533,C1540,C1543,C1547		CKSRYB103K50
	C1604,C1605,C1609,C1610		CKSRYB103K50
	C1633,C1634,C1636-C1638		CKSRYB103K50
	C1643,C1644,C1646-C1650		CKSRYB103K50
	C1652-C1656,C1658,C1659,C1666		CKSRYB103K50
	C1672,C1673,C1703,C1704		CKSRYB103K50
	C1706,C1707,C1709,C1713,C1714		CKSRYB103K50
	C1716-C1720,C1722-C1726		CKSRYB103K50
	C1728-C1731,C1733,C1734,C1736		CKSRYB103K50
	C1740,C1741,C1743-C1747		CKSRYB103K50
	C1749-C1753,C1755,C1756		CKSRYB103K50
	C1803,C1804,C1806,C1807,C1809		CKSRYB103K50
	C1813,C1814,C1816-C1820		CKSRYB103K50
	C1822-C1826,C1828-C1831		CKSRYB103K50
	C1833,C1834,C1836,C1840,C1841		CKSRYB103K50
	C1843-C1847,C1849-C1853		CKSRYB103K50
	C1855,C1856,C2125-C2127		CKSRYB103K50
	C2130,C2131,C2139		CKSRYB103K50
	C1515,C1642,C1710,C1737,C1810		CKSRYB682K50
	C1837		CKSRYB682K50
	C1510,C1535,C1537,C1538		CKSRYF104Z25
	C1549-C1551,C1601,C1603,C1607		CKSRYF104Z25
	C1611,C1613,C1614,C1616,C1618		CKSRYF104Z25
	C1620,C1621,C1623,C1625,C1626		CKSRYF104Z25
	C1630,C1632,C1661,C1662,C1669		CKSRYF104Z25
	C1671,C1674-C1680,C1687		CKSRYF104Z25
	C1692,C1693,C1758,C1759		CKSRYF104Z25
	C1761-C1765,C1858,C1859		CKSRYF104Z25
	C1861-C1865,C1902-C1904,C1906		CKSRYF104Z25
	C2002-C2005,C2101,C2103		CKSRYF104Z25
	C2105-C2107,C2109,C2110,C2112		CKSRYF104Z25
	C2114-C2116,C2118,C2119,C2123		CKSRYF104Z25
	C2129,C2133-C2136,C2138		CKSRYF104Z25
	C2140-C2142,C2144,C2147		CKSRYF104Z25
	C2150,C2151,C2156,C2158,C2159		CKSRYF104Z25
	C2161-C2165		CKSRYF104Z25

RESISTORS

R2132,R2152,R2156	RA4C101J
R2117,R2145	RA4C103J
R2118,R2146	RA4C220J
R2101,R2102,R2158,R2159	RA4C473J
R1673,R1675,R1677-R1684,R1709	RS1/10S0R0J
R1723-R1727,R1729,R1731,R1733	RS1/10S0R0J
R1809,R1823-R1827,R1829,R1831	RS1/10S0R0J
R1833,R1917,R1918,R1920	RS1/10S0R0J
R2017,R2018,R2020,R2163,R2165	RS1/10S0R0J
R2167,R2169,R2170,R2189	RS1/10S0R0J
R1722,R1728,R1730,R1732,R1734	RS1/10S101J
R1822,R1828,R1830,R1832,R1834	RS1/10S101J
R2002	RS1/10S470J
R1550,R1551	RS1/10S473J
Other Resistors	RS1/16S□□□J

Mark	No.	Description	Part No.
OTHERS			
	IC9001,IC9002	IC SOCKET	IC160-0324-230
	J2102	CONNECTOR ASSY 3P	ADX7348
	X1501	CRYSTAL RESONATOR (20MHz)	ASS7023
	X2101,X2102	CERAMIC RESONATOR (7.7MHz)	ASS7026
	CN1602	CONNECTOR 12P	B12B-ZR-SM3
	CN2104	PH CONNECTOR	B2B-PH-SM3
	CN2109	PH CONNECTOR	B3B-PH-SM3
	CN2107	PH CONNECTOR	B8B-PH-SM3
	J2101	STEREO MINI JACK	QKN1004
	JA2101,JA2102	REMOTE CONTROL JACK	RKN1004
	CN2105,CN2106	7P FFC CONNECTOR	VKN1299
	CN1601	14P FFC CONNECTOR	VKN1418
	CN2102	15P FFC CONNECTOR	VKN1419
	CN2101	16P FFC CONNECTOR	VKN1420
	CN2103	17P FFC CONNECTOR	VKN1421
	CN2108	28P FFC CONNECTOR	VKN1432
	CN1703	14P CONNECTOR	VKN1549
	CN1803	15P CONNECTOR	VKN1550
	2105,2106	SCREW TERMINAL	VNE1948
	KN2101-KN2104	EARTH METAL FITTING	VNF1109

H AUDIO A ASSY

SEMICONDUCTORS

	IC901,IC902		AD7564BR
	IC503-IC506,IC703-IC706		NJM2114D-D
⚠	IC903		NJM7812FA
	IC507,IC508,IC707,IC708		OP275GP
	IC501,IC502,IC701,IC702		PCM1704U-J
	Q901-Q908,Q910,Q912		DTC124EK
	D901-D920		1SS355

COILS AND FILTER

	F901	CHIP BEAD	DTF1070
	L501-L504,L701-L704	NOISE FILTER	RTF1167
	L901,L902	NOISE FILTER	RTF1167

RELAYS

	RY901-RY910		VSR1008

CAPACITORS

	C519,C520,C719,C720 (100pF)		ACE7015
	C531-C534,C733,C734 (150pF)		ACE7016
	C731,C732 (330pF)		ACE7017
	C529,C530 (1800pF)		ACE7019
	C729,C730 (3300pF)		ACE7020
	C543,C544,C557,C558 (100µF/50V)		ACH7122
	C743,C744,C757,C758 (100µF/50V)		ACH7122
	C545-C548,C745-C748		CCSQCH100D50
	C513,C514,C713,C714		CEGA101M16
	C511,C512,C711,C712,C907		CEHAZA101M25
	C909		CEHAZA101M25
	C905		CENA100M50
	C505,C506,C509,C510		CENA101M25
	C705,C706,C709,C710		CENA101M25
	C563,C564,C566,C568-C572		CKSQYB103K50
	C765,C766,C771-C774		CKSQYB103K50
	C507,C508,C559,C560		CKSQYB104K25
	C707,C708,C759,C760		CKSQYB104K25
	C916,C917		CKSQYB104K25
	C501,C502,C523,C524		CKSQYB473K50
	C527,C528,C537,C538		CKSQYB473K50
	C541,C542,C551,C552		CKSQYB473K50
	C555,C556,C701,C702		CKSQYB473K50
	C723,C724,C727,C728		CKSQYB473K50
	C737,C738,C741,C742		CKSQYB473K50
	C751,C752,C755,C756,C908		CKSQYB473K50
	C910-C912		CKSQYB473K50
	C565,C567,C767-C770		CKSRYB103K50
	C503,C504,C703,C704,C902	(1000µF/16V)	PCH1122
	C906,C914,C915 (1000µF/16V)		PCH1122
	C521,C522,C525,C526 (100µF/25V)		PCH1126
	C721,C722,C725,C726 (100µF/25V)		PCH1126
	C535,C536,C539,C540 (220µF/25V)		PCH1128
	C549,C550,C553,C554 (220µF/25V)		PCH1128
	C735,C736,C739,C740 (220µF/25V)		PCH1128
	C749,C750,C753,C754 (220µF/25V)		PCH1128
	C903,C904 (220µF/25V)		PCH1128
	C515-C518,C715-C718 (47µF/10V)		RCH1139

RESISTORS

	R503,R504,R703,R704		RDM1/2P3901F
	R543,R544,R739,R740		RDM1/2P51R0F
	R561,R562		RDR1/4PM1201F
	R560,R563,R753,R754		RDR1/4PM2401F
	R559,R564,R751,R752		RDR1/4PM4701F
	R521-R524,R545,R546		RN1/10SE1001D
	R717,R718,R723,R724		RN1/10SE1001D
	R745,R746		RN1/10SE1001D
	R515,R516,R709-R712		RN1/10SE1201D
	R529,R530,R725,R726		RN1/10SE1501D
	R525,R526,R721,R722		RN1/10SE1801D
	R541,R542,R737,R738		RN1/10SE2702D
	R517-R520,R713-R716,R903		RN1/10SE3601D
⚠	R505-R508,R531-R534		RS1/10S510J
⚠	R537-R540,R705-R708		RS1/10S510J
⚠	R727-R730,R733-R736		RS1/10S510J
	Other Resistors		RS1/10S□□□J

OTHERS

	J902	CONNECTOR ASSY 14P	ADX7271
	JA501,JA502,JA701,JA702	1P PIN JACK	AKB7102
	902	HEAT SINK	ANH7100
	CN901	FFC CONNECTOR	SLW15S-1C7
		PCB BINDER	VEF1040
	901	BUS LINE B	VNF1113

I AUDIO B ASSY

SEMICONDUCTORS

	IC1001,IC1002		AD7564BR
	IC603-IC606,IC803-IC806		NJM2114D-D
⚠	IC1003		NJM7812FA
	IC607,IC608,IC807,IC808		OP275GP
	IC601,IC602,IC801,IC802		PCM1704U-J

Mark	No.	Description	Part No.
	Q1001-Q1009,Q1011,Q1013,Q1015		DTC124EK
	D1001-D1024		1SS355

COILS AND FILTER

	F1001	CHIP BEAD	DTF1070
	L1001,L1002,L601-L604	NOISE FILTER	RTF1167
	L801-L804	NOISE FILTER	RTF1167

RELAYS

	RY1009		VSR1006
	RY1001-RY1008,RY1010-RY1012		VSR1008

CAPACITORS

	C619,C620,C819,C820 (100pF)		ACE7015
	C631-C634,C833,C834 (150pF)		ACE7016
	C831,C832 (330pF)		ACE7017
	C629,C630 (1800pF)		ACE7019
	C829,C830 (3300pF)		ACE7020
	C643,C644,C657,C658 (100µF/50V)		ACH7122
	C843,C844,C857,C858 (100µF/50V)		ACH7122
	C1016,C645-C648,C845-C848		CCSQCH100D50
	C613,C614,C813,C814		CEGA101M16
	C1007,C1009,C611,C612		CEHAZA101M25
	C811,C812		CEHAZA101M25
	C1005		CENA100M50
	C605,C606,C609,C610		CENA101M25
	C805,C806,C809,C810		CENA101M25
	C663,C664,C666,C668-C672		CKSQYB103K50
	C865,C866,C871-C874		CKSQYB103K50
	C1017,C1018,C607,C608		CKSQYB104K25
	C659,C660,C807,C808		CKSQYB104K25
	C859,C860		CKSQYB104K25
	C1008,C1010-C1012,C601,C602		CKSQYB473K50
	C623,C624,C627,C628		CKSQYB473K50
	C637,C638,C641,C642		CKSQYB473K50
	C651,C652,C655,C656		CKSQYB473K50
	C801,C802,C823,C824		CKSQYB473K50
	C827,C828,C837,C838		CKSQYB473K50
	C841,C842,C851,C852		CKSQYB473K50
	C855,C856		CKSQYB473K50
	C665,C667,C867-C870		CKSRYB103K50
	C1002,C1006,C1014,C1015	(1000µF/16V)	PCH1122
	C603,C604,C803,C804	(1000µF/16V)	PCH1122
	C621,C622,C625,C626 (100µF/25V)		PCH1126
	C821,C822,C825,C826 (100µF/25V)		PCH1126
	C1003,C1004,C635,C636	(220µF/25V)	PCH1128
	C639,C640,C649,C650 (220µF/25V)		PCH1128
	C653,C654,C835,C836 (220µF/25V)		PCH1128
	C839,C840,C849,C850 (220µF/25V)		PCH1128
	C853,C854 (220µF/25V)		PCH1128
	C615-C618,C815-C818 (47µF/10V)		RCH1139

RESISTORS

	R603,R604,R803,R804		RDM1/2P3901F
	R643,R644,R839-R842		RDM1/2P51R0F
	R661,R664		RDR1/4PM1201F
	R662,R663,R855,R856		RDR1/4PM2401F
	R659,R660,R853,R854		RDR1/4PM4701F
	R621-R624,R645,R646		RN1/10SE1001D
	R817,R818,R823,R824		RN1/10SE1001D
	R847-R849,R851		RN1/10SE1001D
	R1004		RN1/10SE1102D
	R615,R616,R809-R812		RN1/10SE1201D
	R629,R630,R825,R826		RN1/10SE1501D
	R625,R626,R821,R822		RN1/10SE1801D
	R641,R642,R837,R838		RN1/10SE2702D
	R1003,R617-R620,R813-R816		RN1/10SE3601D
	R1005		RN1/10SE5101D
⚠	R605-R608,R631-R634		RS1/10S510J
⚠	R637-R640,R805-R808		RS1/10S510J
⚠	R827-R830,R833-R836		RS1/10S510J
	Other Resistors		RS1/10S□□□J

OTHERS

	J1002	CONNECTOR ASSY 14P	ADX7273
	JA601,JA602	1P PIN JACK	AKB7102
	JA801,JA802	2P PIN JACK	AKB7104
	1002	HEAT SINK	ANH7100
	CN1002	2P TOP POST	B2B-EH
	CN1003	3P TOP POST	B3B-EH
	CN1001	FFC CONNECTOR	SLW17S-1C7
		PCB BINDER	VEF1040
	1001	BUS LINE B	VNF1113

J DISPLAY ASSY

SEMICONDUCTORS

	IC2201		BU2092F
	IC2202		TC74HC123AF
	IC2203		TC7S32F
⚠	Q2203		2SA1036K
	Q2202		2SC2412K
	Q2205,Q2206		2SD2114K
	Q2201,Q2204		DTC124EK
	D2201		1SS355
	D2203-D2213		SLP6118C51H
	D2202		SLR-343VC(NPQ)

FILTERS

	F2201-F2204	CHIP BEAD	DTF1070

SWITCHES

	S2219		ASD7013
	S2202-S2218		VSG1009

CAPACITORS

	C2205 (3.3µF/25V)		ACH7027
	C2220,C2226		CEWAS100M50
	C2201,C2203,C2224		CEWAS470M16
	C2227		CKCYF103Z50
	C2202,C2204,C2206-C2219		CKSQYB104K25
	C2221-C2223		CKSQYB104K25
	C2225		CKSQYB473K50

RESISTORS

	R2242		RD1/2LMF103J
	Other Resistors		RS1/10S□□□J

Mark	No.	Description	Part No.
OTHERS			
	CN2201	FFC CONNECTOR 28P	28FMZ-ST
	V2201	FL TUBE	AAV7065
	J2202	CONNECTOR ASSY 4P	ADX7275
	J2203	CONNECTOR ASSY 12P	ADX7276
	2201	REMOTE RECEIVER UNIT	GP1U27X
		PCB BINDER	VEF1040

K VOLUME ASSY

SEMICONDUCTORS			
	IC2601		TA8409S
	D2601		1SS355
COILS AND FILTERS			
	F2601,F2602	CHIP BEAD	DTF1070
	L2601,L2602		LFEA220J
CAPACITORS			
	C2606,C2607		CEBA100M50
	C2601,C2602,C2604,C2605,C2608		CKSQYB104K25
	C2603 (220µF/25V)		PCH1128
RESISTORS			
	VR2601	MOTOR VOLUME	ACX7036
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN2601	KR CONNECTOR	S7B-PH-K-S
	KN2601	EARTH METAL FITTING	VNF1084

L ENC A ASSY

SWITCH			
	S2401		ASX7022
CAPACITORS			
	C2403		CKSQYB104K25
	C2401,C2402		CKSQYB473K50
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
	J2401	CONNECTOR ASSY 8P	ADX7277

M INPUT SW ASSY

SWITCH			
	S2301		ASD7012
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
		PCB BINDER	AEF7006
	J2302	EARTH LEAD UNIT	DE005WE0

Mark	No.	Description	Part No.

N ENC B ASSY

SWITCH			
	S2501		ASX7022
CAPACITORS			
	C2503		CKSQYB104K25
	C2501,C2502		CKSQYB473K50
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
	CN2501	KR CONNECTOR	S5B-PH-K-S

6. ADJUSTMENT

There is no information to be shown in this chapter.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 Test Mode

(1) How to enter the test mode

Turn the OUTPUT MODE switch to "OFF" in the POWER OFF state, and turn the POWER ON. Enter the test mode that continues pressing "DIGITAL NR", "TONE" and "REC SELECTOR" keys together for two seconds after passing afterwards more than 15 seconds (In the meantime, because do not accept key operation).

Indicate it with "TEST MODE" in FL.

Set all states to the factory setting state except destination code.

SACD, HDCD lights during test mode.

(2) FL All lights / All lights out

Enter the FL and LED light confirmation mode when pressing the "NETWORK SETUP + DIRECT" keys during test mode.
Change the FL indication and LED indication as follows whenever pressing the "NETWORK + DIRECT" keys.

Normal indication → FL, LED all light → FL, LED all light out → Normal indication → ...

(3) Delay confirmation

FL indicates it with "DELAY CHECK" when pressing the "NETWORK SETUP + Hi-bit" keys during test mode and it beomes following setting.

- INPUT selector set to the MULTI-ch mode with the DVD.
- As for the setting of delay, FRONT ch and CENTER ch are 3.0m (10 feet), SURROUND ch is 1.5m (5 feet), and SURROUND ch delays 5 msec only.

Note: Please turn a little MASTER VOLUME after this.

(4) Gain switching confirmation in TONE on/off

Enter the gain switching confirmation mode of analog circuit when pressing the "NETWORK SETUP + MIDNIGHT" keys during test mode.
Switch as follows whenever pressing the "NETWORK + MID NIGHT" keys.

Gain +6dB (last state) → gain 0dB → gain +6dB → ...

(5) Master VOLUME operation confirmation

Enter the operation confirmation mode of master VOLUME when pressing the "NETWORK SETUP + DIGITAL NR" keys during test mode.
Switch as follows whenever pressing the "NETWORK+DIGITAL NR" keys.

(MIN) (MIN)
Last state → - ∞ → -12dB → - ∞ → ...

(6) Communication confirmation with dts ROM

Enter the communication confirmation mode with dts ROM when pressing the "NETWORK SETUP + fs 96k/48k" keys during test mode.
INPUT SELECTOR becomes "DIGITAL 6", then repeat virtual OPTION: on/off whenever pressing the "NETWORK + fs" keys.
Indicate it with "DTS ON" at on, and decode of compression audio is possible.
Perform the decode operation when inputs the dts signal in this state.
If a communication with the dts ROM is performed, outputs it correctly decoded.

Note: Please turn a little MASTER VOLUME after this.

(7) How to cancel the test mode

Turn the POWER OFF, then finish the above operations and cancel the test mode.

(8) Microcomputer version confirmation

Turn the OUTPUT MODE switch to "OFF" and turn the POWER ON. Indicates the version of the microcomputer (system controller and DSP controller) in the FL indicator that continues pressing "PARAMETER CHECK", "MIDNIGHT" and "REC SELECTOR" keys together for two seconds after passing afterwards more than 15 seconds.

Indication example:	(System controller)	SYS: ***
	(DSP controller)	DSP: ***

(9) Key list of the main unit to use

DIGITAL NR + TONE + REC SELECTOR : Enter the test mode

NETWORK SETUP + DIRECT : FL, LED all light / all light out confirmation mode

NETWORK SETUP + Hi-bit : Delay confirmation mode

NETWORK SETUP + MIDNIGHT : TONE gain switching confirmation mode

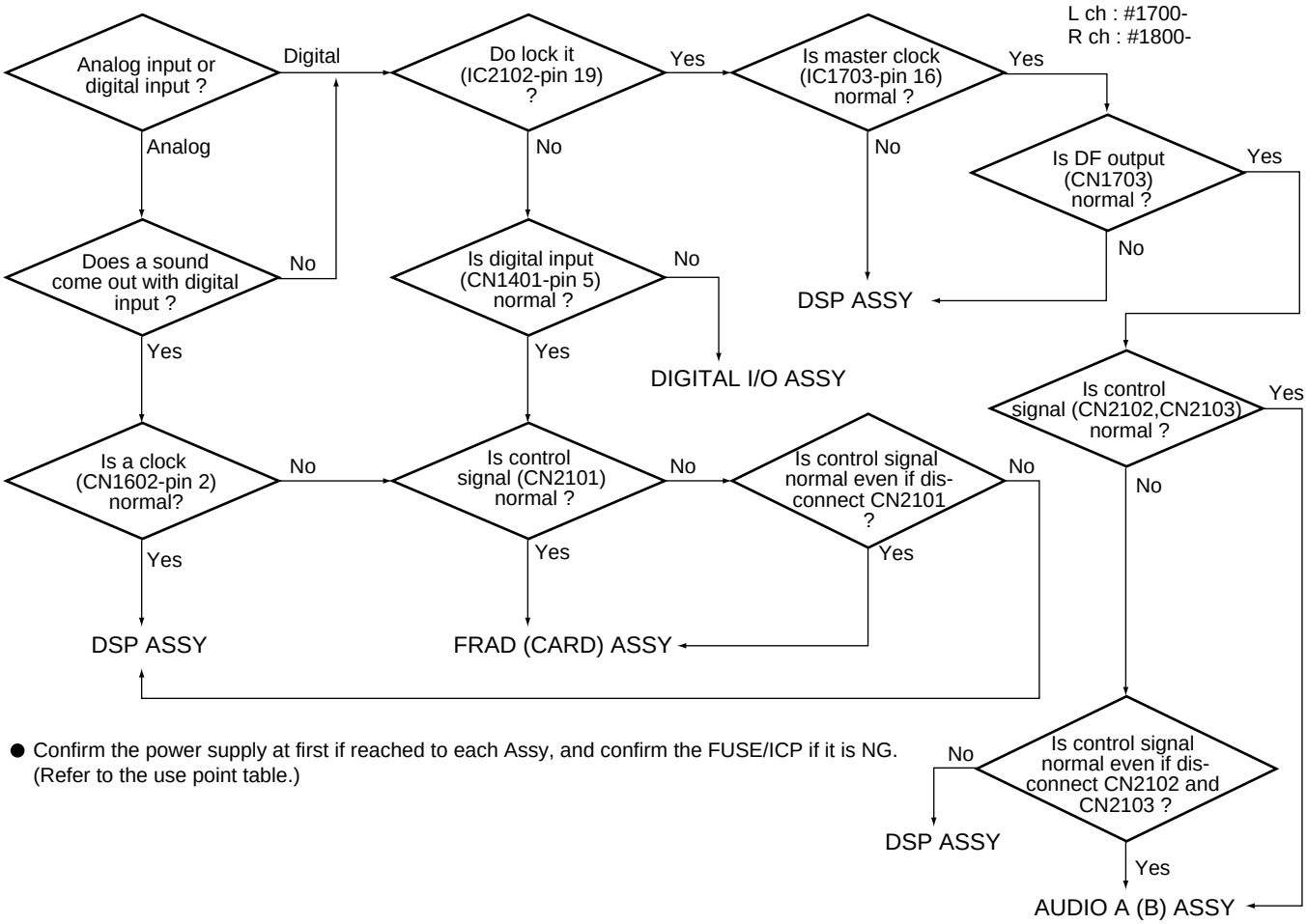
NETWORK SETUP + DIGITAL NR : Master VOLUME operation confirmation

NETWORK SETUP + fs 96k/48k : dts ROM operation confirmation

PARAMETER CHECK + MIDNIGHT + REC SELECTOR : Microcomputer version confirmation

7.1.2 Troubleshooting

Firstly confirm that connection of each connector and FFC are correctly.



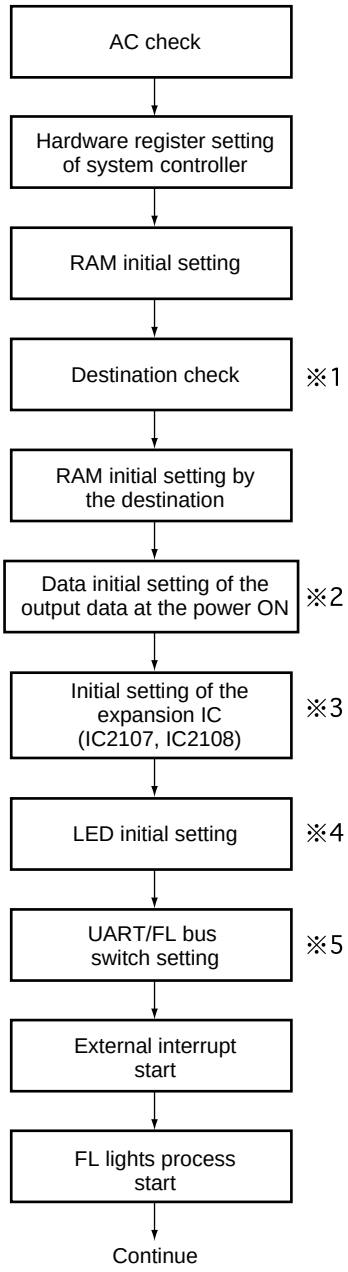
● Confirm the power supply at first if reached to each Assy, and confirm the FUSE/ICP if it is NG. (Refer to the use point table.)

● Use point table of FUSE/ICP

FUSE/ICP No.	Part No.		Use Point	Assy Name
	KU/CA Type	NY Type		
FU101	VEK1023 (4A 125V)	REK-106 (T4AL250V)	Primary side	AC ASSY
FU201	VEK1023 (4A 125V)	REK-106 (T4AL250V)	DSP winding	PS ASSY
FU202	VEK1023 (4A 125V)	REK-106 (T4AT250V)	Digital winding	PS ASSY
IC201	AEK7006 (630mA)	AEK7006 (630mA)	FLAC winding	PS ASSY
IC202	AEK7006 (630mA)	AEK7006 (630mA)	FLAC winding	PS ASSY
IC203	AEK7006 (630mA)	AEK7006 (630mA)	FL winding	PS ASSY
IC304	AEK7006 (630mA)	AEK7006 (630mA)	P-OFF	FRAD ASSY
IC401	ICP-N25 (1A)	ICP-N25 (1A)	Audio +25V (VC25)	FRAD ASSY
IC402	ICP-N25 (1A)	ICP-N25 (1A)	Auidio -25V (VE25)	FRAD ASSY
IC403	AEK7016 (3.15A)	AEK7016 (3.15A)	Relay winding	FRAD ASSY
IC405	AEK7010 (1.25A)	AEK7010 (1.25A)	Regulator input (VC9) for A/D +3.3V	FRAD ASSY
IC407	ICP-N25 (1A)	ICP-N25 (1A)	Regulator input (VC9) for A/D +5V	FRAD ASSY
IC408	AEK7023 (200mA)	AEK7023 (200mA)	Regulator input (VV5) for DAC VOL +5V	FRAD ASSY
IC409	ICP-N25 (1A)	ICP-N25 (1A)	Regulator input (VC9) for D/A +5V	FRAD ASSY
IC410	ICP-N25 (1A)	ICP-N25 (1A)	Regulator input (VC9) for D/A -5V	FRAD ASSY
IC411	AEK7006 (630mA)	AEK7006 (630mA)	Relay (analog input) +17V (VR17)	FRAD ASSY
IC412	AEK7006 (630mA)	AEK7006 (630mA)	Relay (analog output L ch) +17V (VR17)	FRAD ASSY
IC413	AEK7006 (630mA)	AEK7006 (630mA)	Relay (analog output R ch) +17V (VR17)	FRAD ASSY

7.1.3 Power ON Sequence

■ Main Microcomputer (1/2) (IC2109)



※1 Destination check

Port 70 (I/O ST)	Destination
H	KU/CA
L	NY

Distinction of the speaker distance "m" and "feet".

Use port 70 as a destination port only in the power ON state, and use it as a strobe port of the expansion IC in normal state.

※2 Data initial setting of the output data at the power ON

Port		Setting
24	DISPOFF	H
66	OE	L

※3 Expansion IC initialized

IC2107

Port			Setting
4	Q1	MT10	L
5	Q2	MT20	L
6	Q3	MT1I	L
7	Q4	MT3I	L
11	Q8		L
12	Q7	XVUP	L
13	Q6	MT2I	L
14	Q5	MTDI	L

IC2108

Port			Setting
4	Q1	DOFF	L
5	Q2	G+-6	L
6	Q3	XPHN	L
7	Q4	G-06	L
11	Q8	VOL-	L
12	Q7	VOL+	L
13	Q6	LFEG	L
14	Q5	XDIV	L

※4 LED data initialized

IC2107

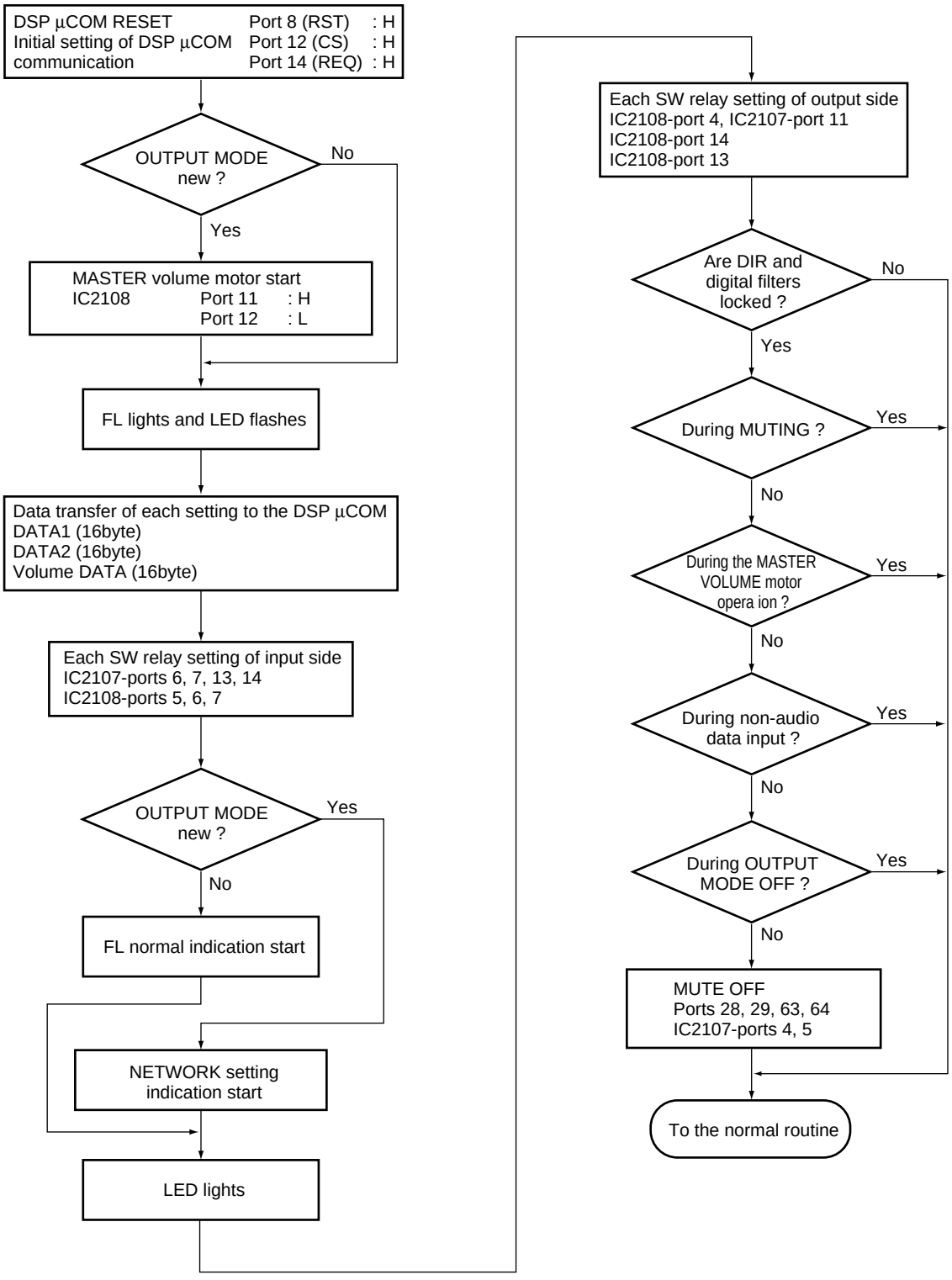
Port			Setting
5	Q0	DG5I	L
6	Q1	DG4I	L
7	Q2	DG3I	L
8	Q3	DG2I	L
9	Q4	DG6I	L
10	Q5	DIFI	L
11	Q6	DG1I	L
12	Q7	AN3I	L
13	Q8	AN2I	L
14	Q9	AN1I	L
15	Q10	DVDI	L
16	Q11	DISP	L

L : Lights out
H : Lights

※5 UART/FL bus switch

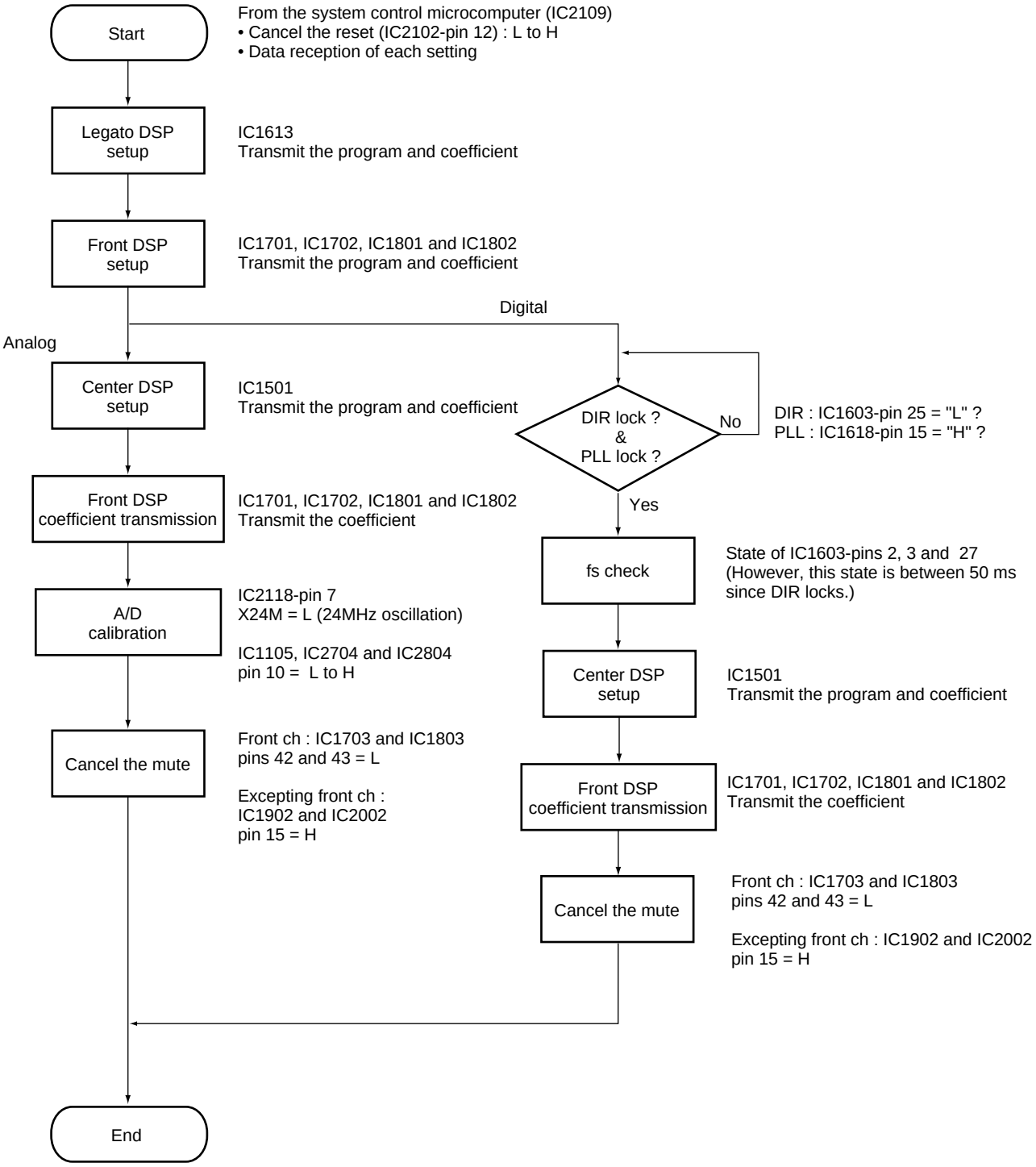
	Port 12 (XVUP) of IC2107
In normal use	H
In memory rewriting	L

■ Main Microcomputer (2/2) (IC2109)

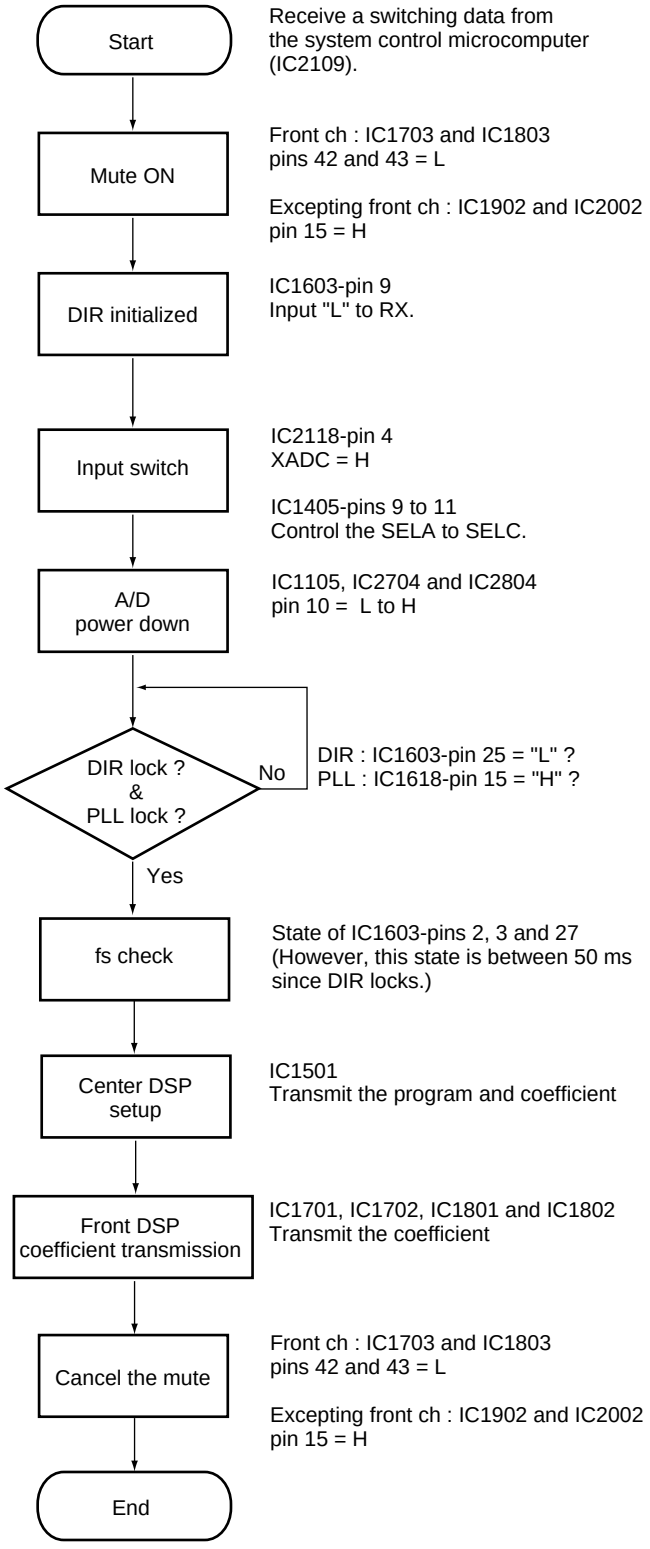


■ DSP Control Microcomputer (IC2102)

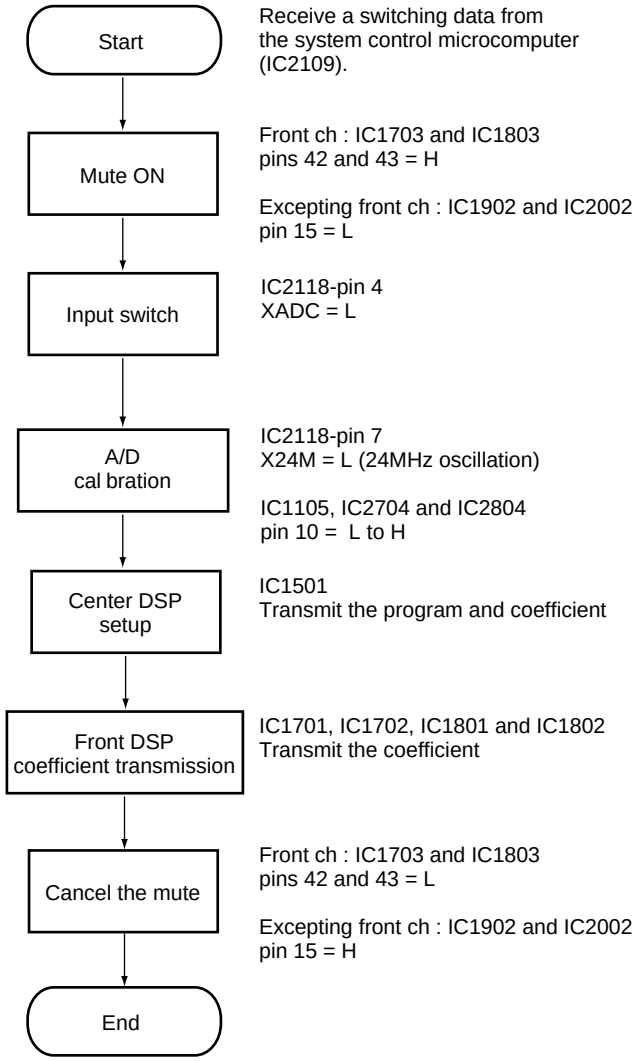
• POWER ON



• Input switch (Analog to Digital)

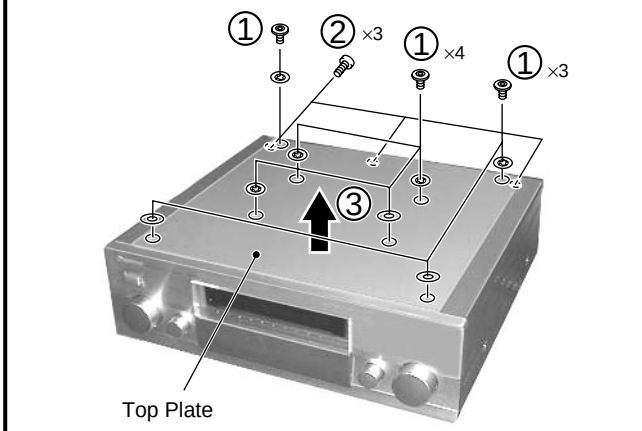


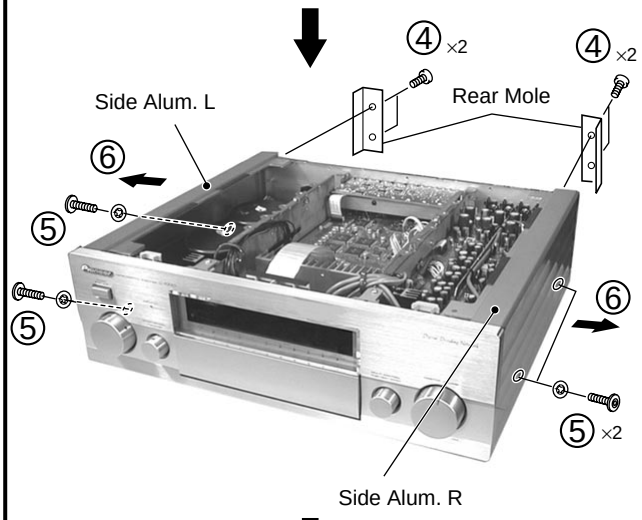
• Input switch (Digital to Analog)



7.1.4 Disassembly

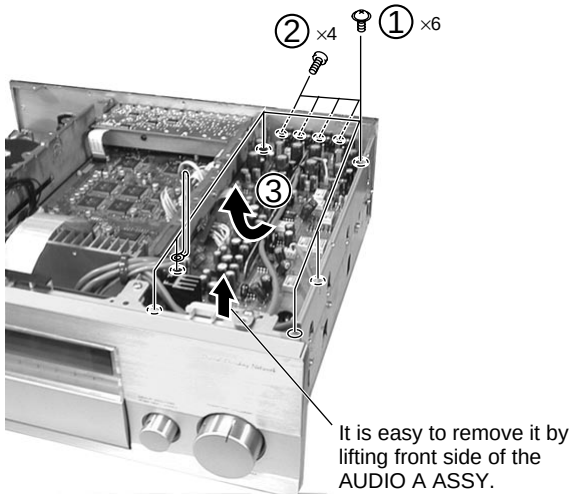
■ Top Plate, Side Alum. L and R



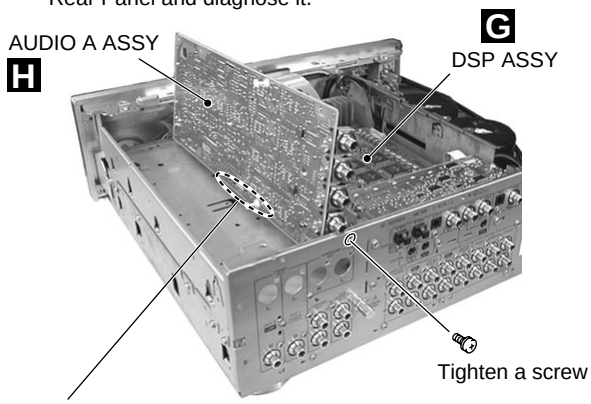


To disasembly of each Assy

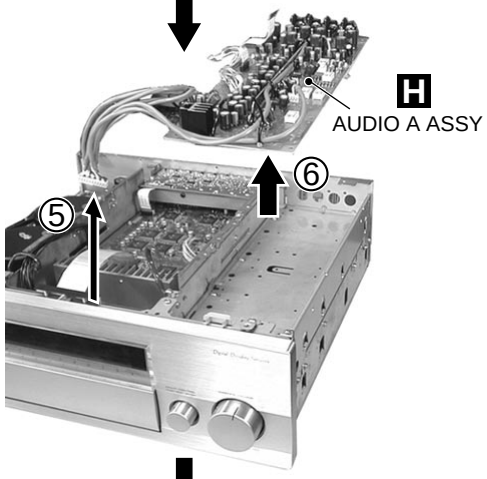
■ AUDIO A ASSY



④ Stand the AUDIO A ASSY, and tighten a screw from the Rear Panel and diagnose it.



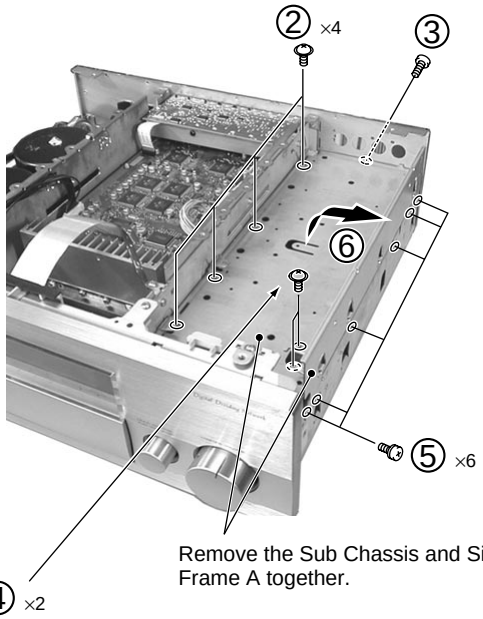
Caution:
- Reonnect FFC to the DSP ASSY after removing it once.
- Connect the bus bar and chassis on the PC Board with lead wires (for earth).



To AUDIO B ASSY

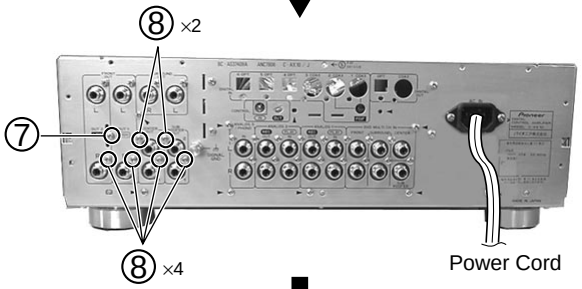
■ AUDIO B ASSY

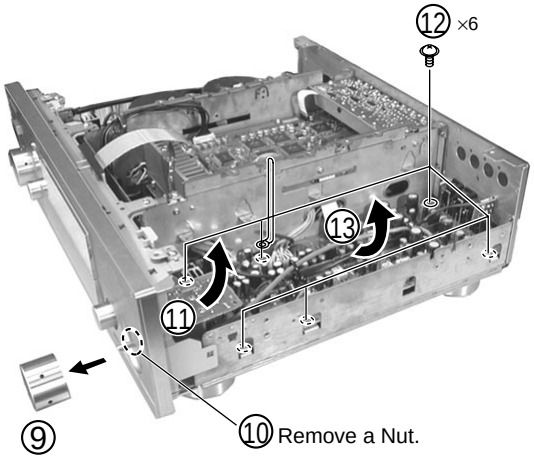
① Remove the AUDIO A ASSY.



Remove the Sub Chassis and Side Frame A together.

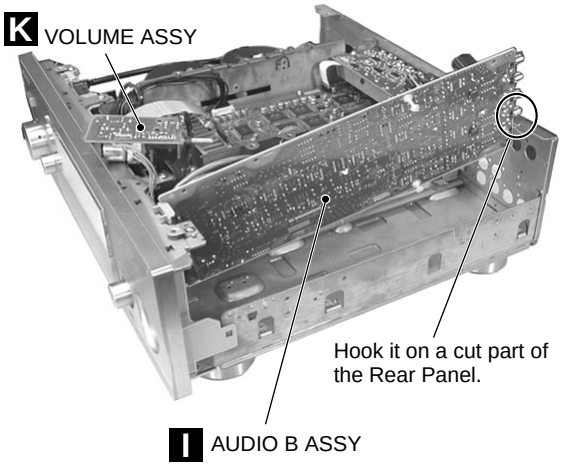
Remove a PCB Holder after removing two screws.



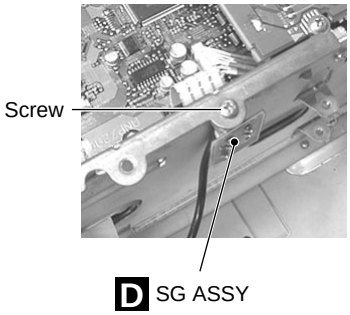


Loosen two screws and remove a Rotary Knob L.

⑭ Stand the AUDIO B ASSY and diagnose it.
(AUDIO B ASSY works even if removes the AUDIO A ASSY.)

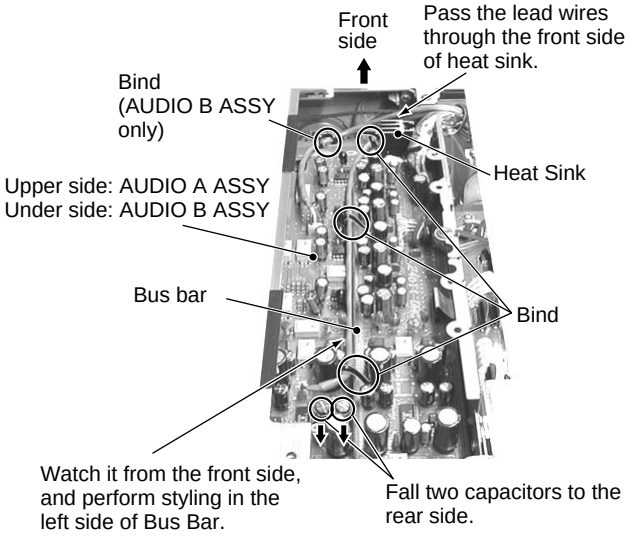


Caution:
- Fix the SG ASSY to the suitable place with a screw (for earth).
- Reconnect FFC to the DSP ASSY after removing it once.

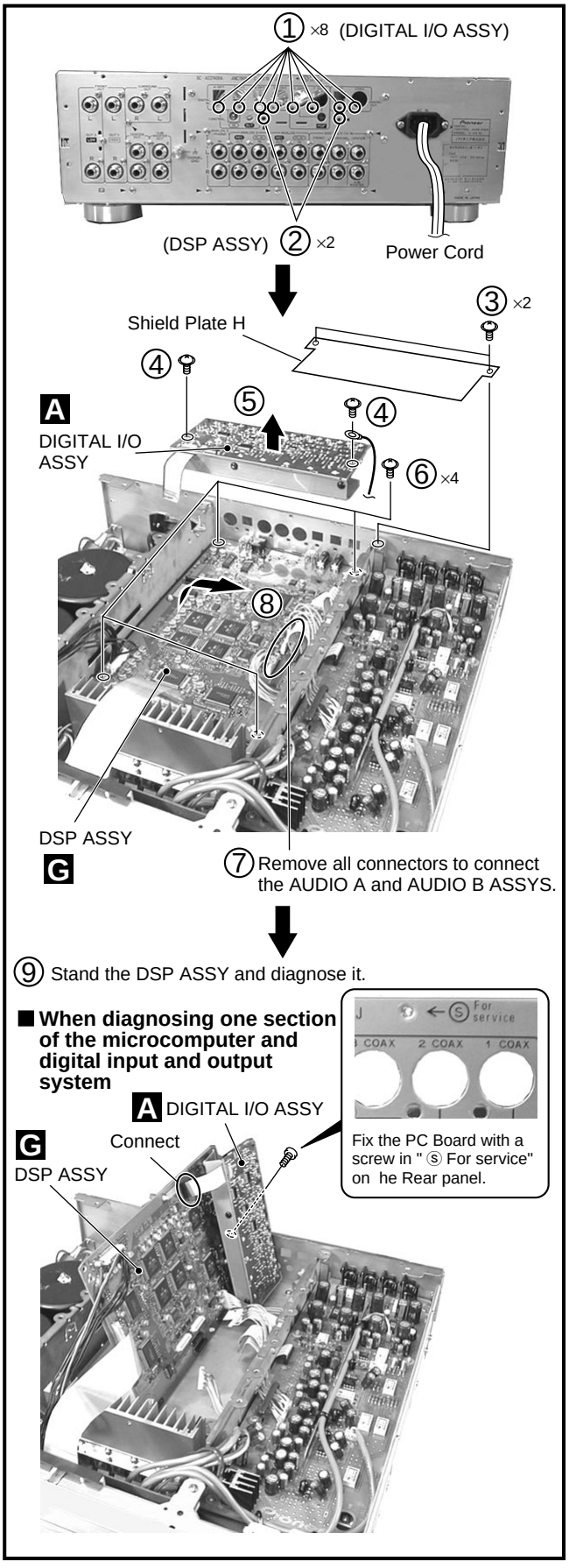


● **Styling in installation (AUDIO A and AUDIO B ASSYS)**

Caution: Perform styling if possible to under side. (do not seem to rise to upper side)



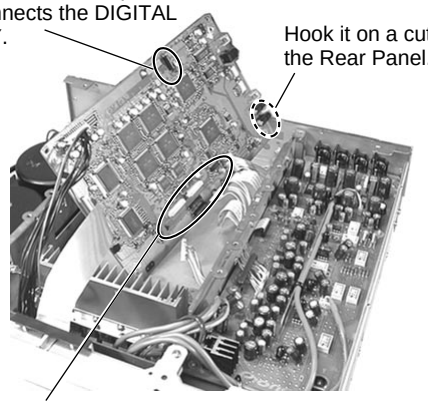
■ DIGITAL I/O and DSP ASSYS



■ **When diagnosing the analog input and output system**

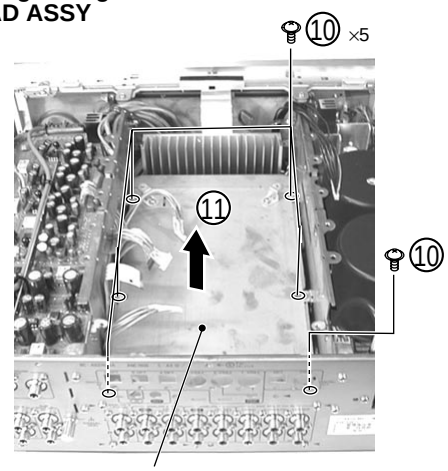
All diagnoses are completed when connects the DIGITAL I/O ASSY.

Hook it on a cut part of the Rear Panel.



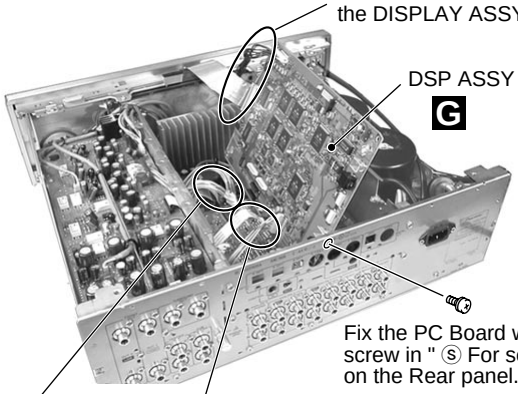
Connect all connectors from the AUDIO A and AUDIO B ASSYS.

■ **When diagnosing the A/D section of the FRAD ASSY**



⑫ Install the DSP ASSY.

Connect all connectors to the DISPLAY ASSY.



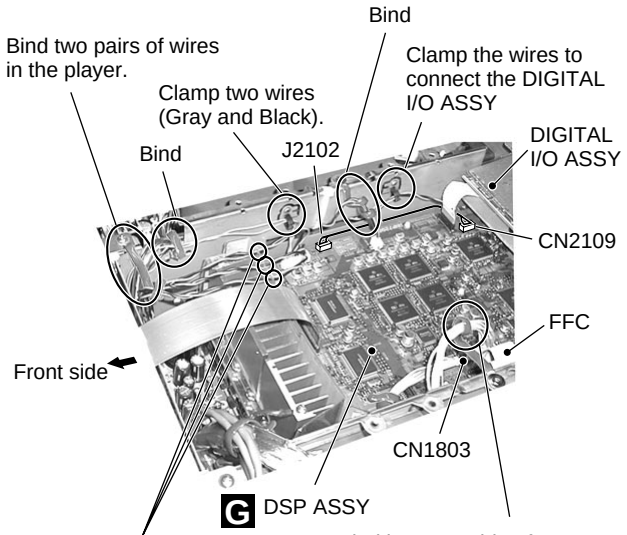
Connect all connectors to the FRAD ASSY.

May remove the connectors to the AUDIO A and AUDIO B ASSYS.

To FRAD ASSY

● **Styling in installation (DSP ASSY)**

Caution: Perform styling so that each wire does not come near.

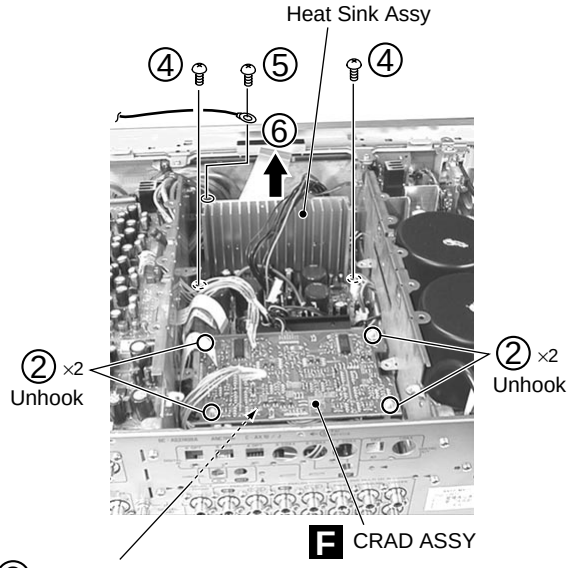


Pass a wire through a slit of the shield plate every one set (three sets).
Note:
It becomes an equal interval wires of each group.

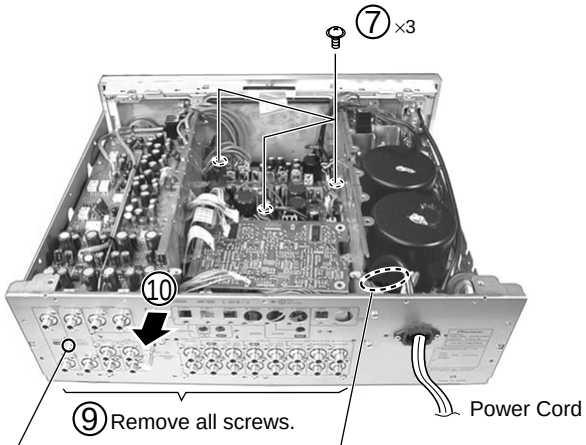
Bind in upper side of CN1803. Keep distance with wire of CN1803 and FFC away and bind it.

■ FRAD ASSY

① Remove the DIGITAL I/O ASSY, DSP ASSY and Main Shield.



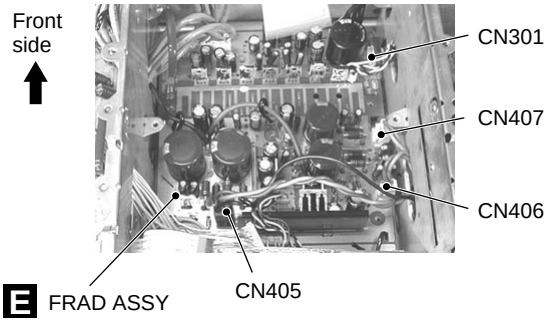
③ Remove the Shield Plate B where is in the bottom of CRAD ASSY. (Three screws)

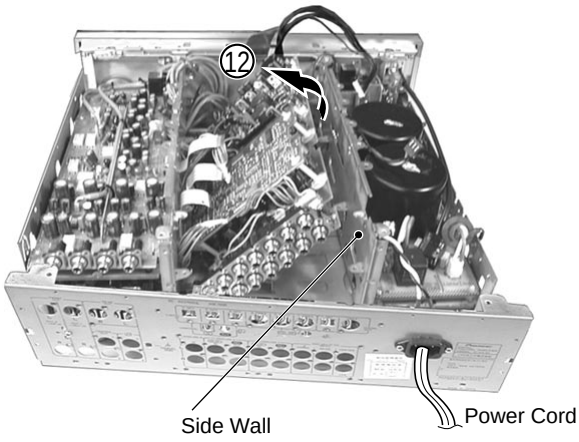


Note:
Do not remove a screw of the SG ASSY.

⑧ Remove a CN101 from the Power Cord.

⑪ Remove four connectors.





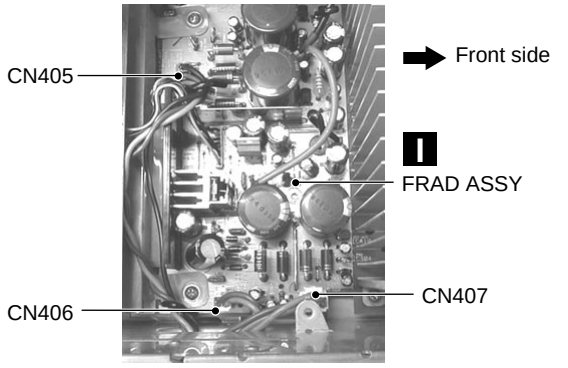
Note:
Slide the PC Board to rear slide (2 or 3 cm away) after removing screws, connectors, Heat Sink ASSY and Rear Panel. And PC Board can lift to upper side when matches a projection part of the Side Wall with a cut part of the PC Board.

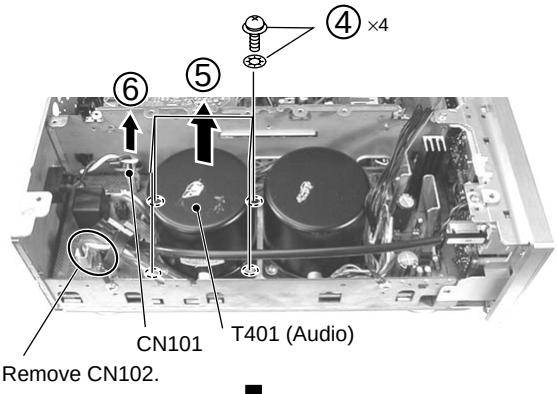
■ Power Transformer (T301, T401)

■ When replacing the Analog Transformer (T401) (① to ⑤)

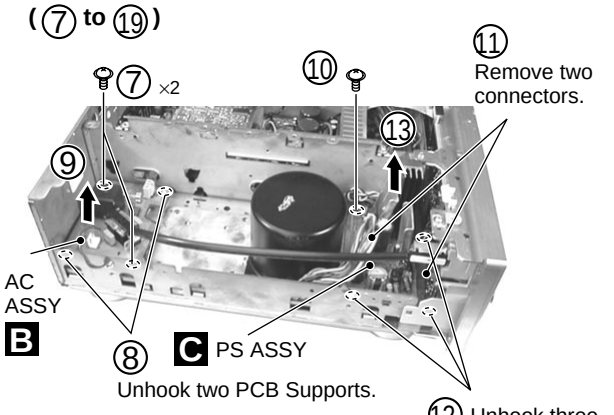
① Remove the DIGITAL I/O ASSY, DSP ASSY and Main Shield.

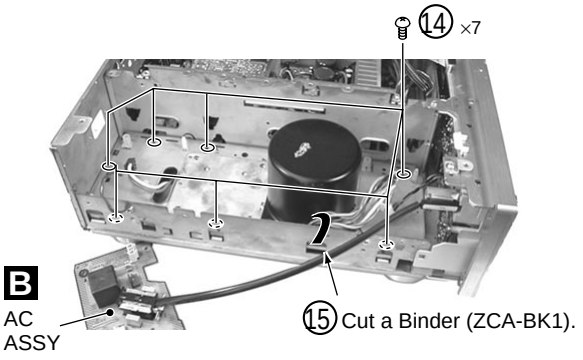
② Remove three connectors.

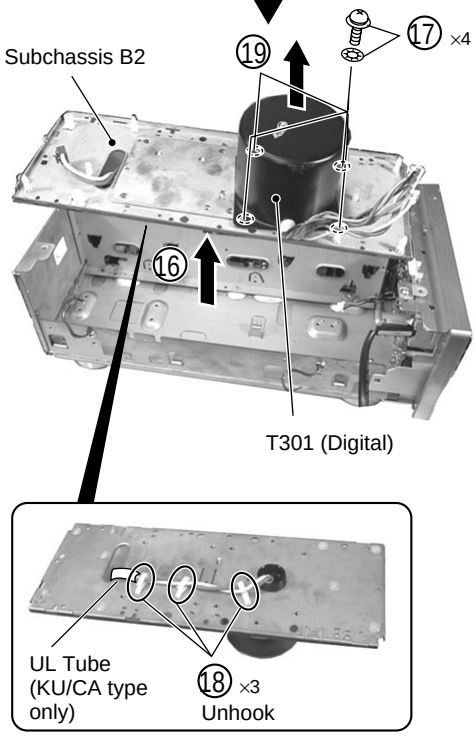




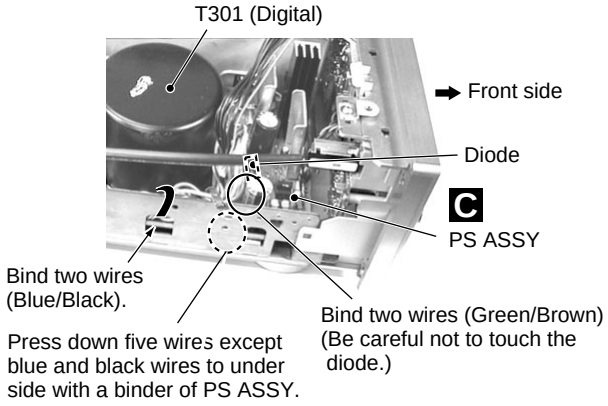
■ When replacing the Digital Transformer (T301) (⑦ to ⑲)





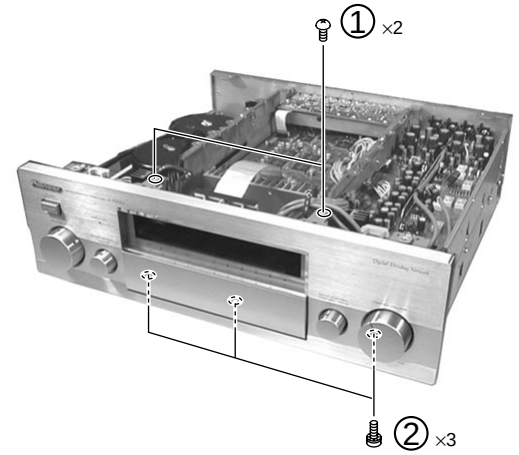


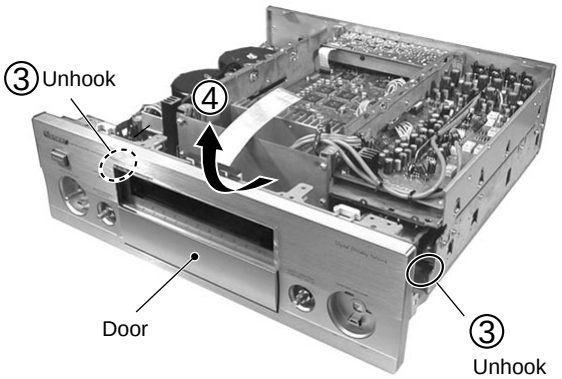
● Styling in installation (PS ASSY)

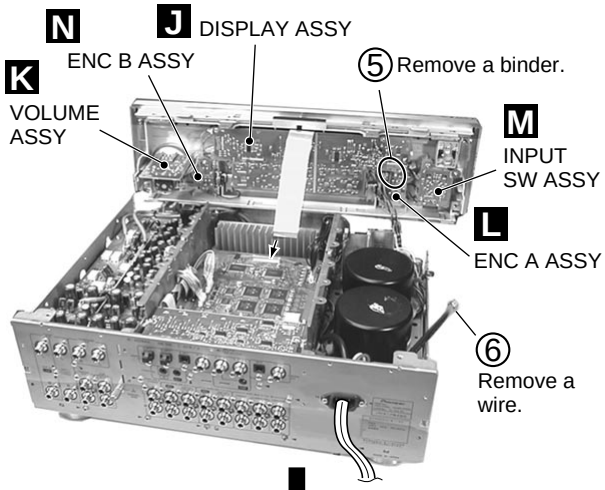


Caution: Keep Blue/Black wires, Green/Brown wires and other five wires away each other, and perform styling.

■ Front Panel Section





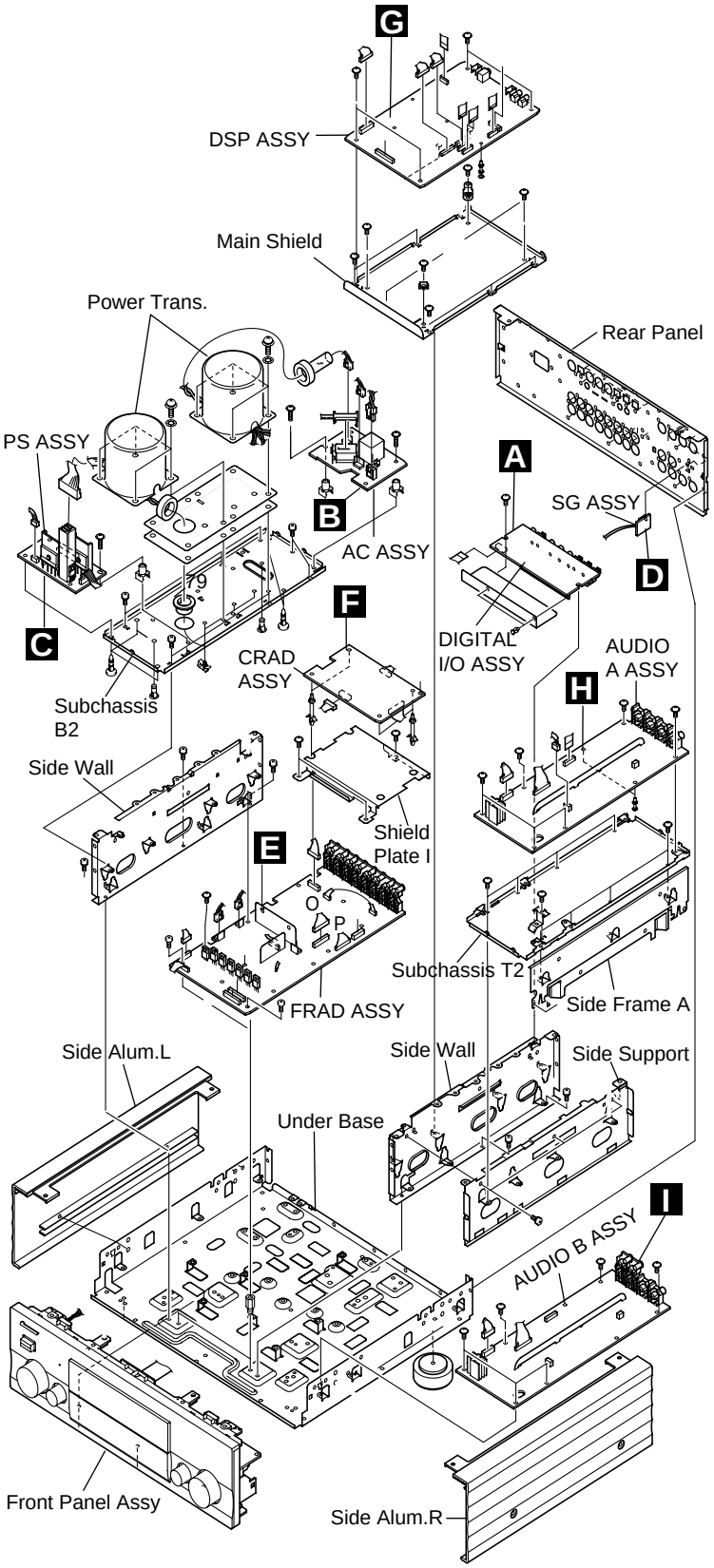


Diagnosis

● **Caution in installation**

Install the Door by the opened state when installing the Front Panel. (so that an installed earth wire is caught between the Door, and there is the case that the Door does not opend.)

7.1.5 PCB LAYOUT



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.

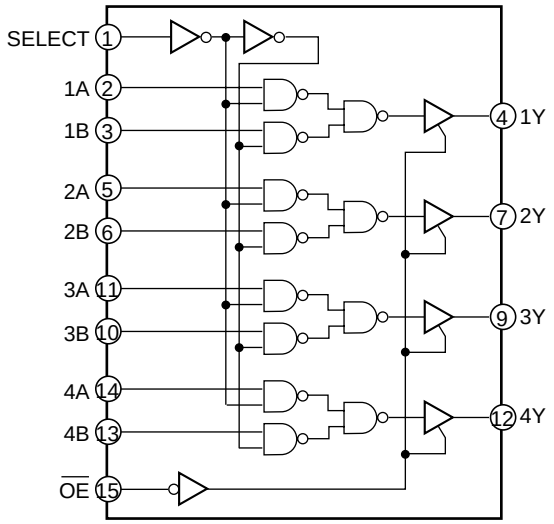
● List of IC

TC74VHC257FT, TC74VHC244F, TC7WT74FU, TC74VHC4040FT, TC74VHC153FT, TC74VHC157F, TC74VHC163FT,
DF1704E, BC4094BCFV, TC7W126FU, AT24C16N-10SI2.5, M30622SFP, M38079SFP, AK5393VS

■ TC74VHC257FT (DSP ASSY : IC1505)

• Quad 2-Channel Multiplexer (3-state)

● Block Diagram



● Truth Table

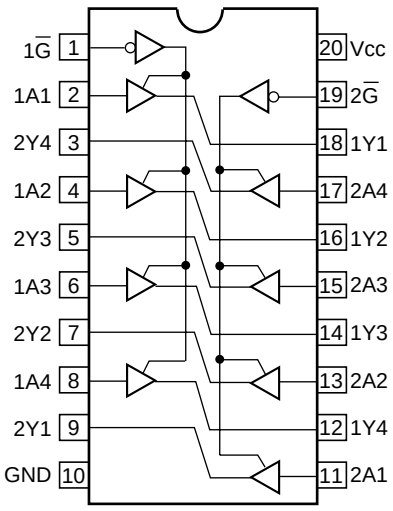
INPUTS				OUTPUTS
$\overline{OE}$	SELECT	A	B	
H	X	X	X	Z
L	L	L	X	L
L	L	H	X	H
L	H	X	L	L
L	H	X	H	H

X : Don't Care
Z : High Impedance

■ TC74VHC244F (DSP ASSY : IC1506)

• Octal Bus Buffer

● Pin Arrangement (Top view)



● Truth Table

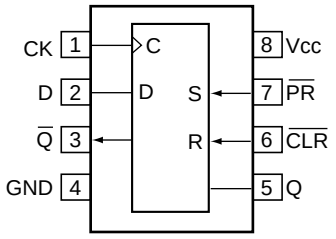
INPUTS		OUTPUTS
$\overline{G}$	An	Yn
L	L	L
L	H	H
H	X	Z

X : Don't Care
Z : High Impedance
Yn : TC74VHC244F

TC7WT74FU (DSP ASSY : IC1605)

• D-type Flip Flop with Present and Clear

● Pin Arrangement (Top view)



● Truth Table

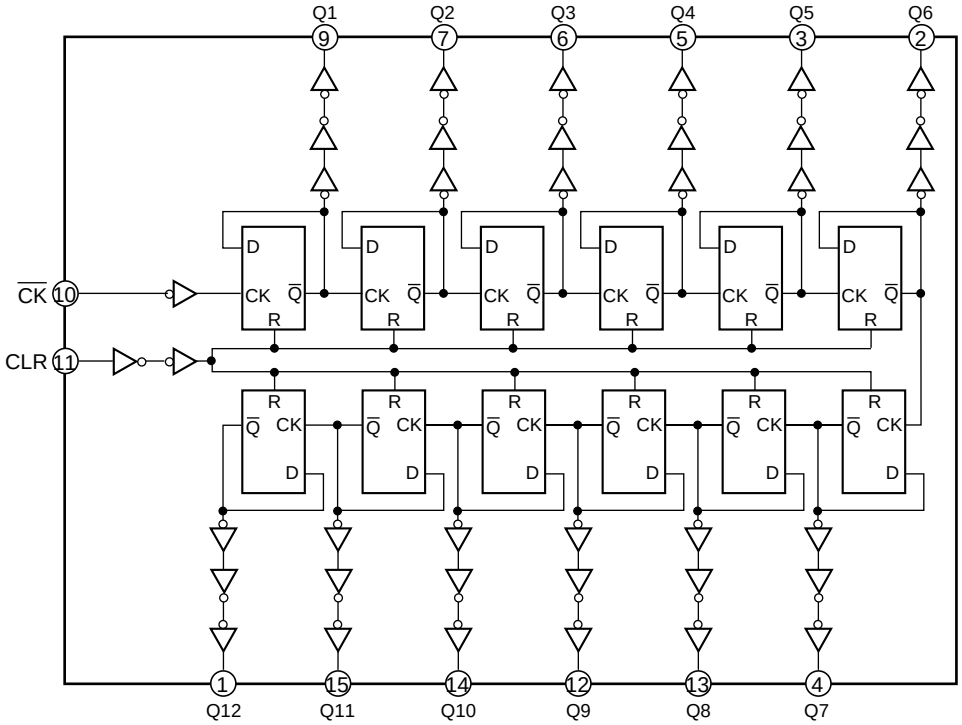
INPUTS				OUTPUTS		FUNCTION
$\overline{CLR}$	$\overline{PR}$	D	CK	Q	$\overline{Q}$	
L	H	X	X	L	H	CLEAR
H	L	X	X	H	L	PRESET
L	L	X	X	H	H	——
H	H	L	↑	L	H	——
H	H	H	↑	H	L	——
H	H	X	↓	Qn	$\overline{Qn}$	NO CHANGE

X : Don't Care

TC74VHC4040FT (DSP ASSY : IC1606, IC1623)

• 12-stage Ripple-carry Binary Counter

● Block Diagram



● Truth Table

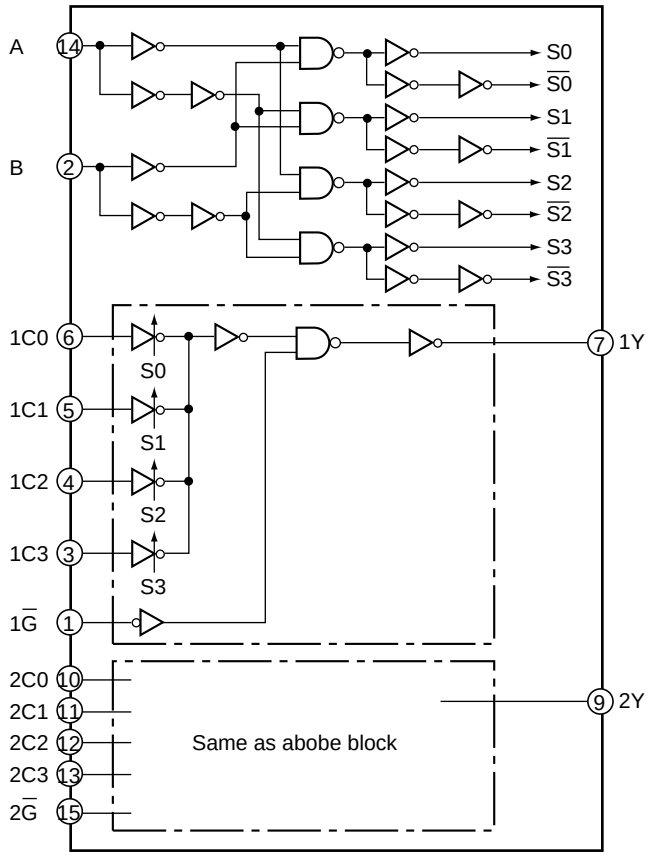
$\overline{CK}$	CLR	Output State
X	H	All outputs "L"
↑	L	Don't change
↓	L	Go to the next state

X : Don't Care

TC74VHC153FT (DSP ASSY : IC1614)

• Dual 4-channel Multiplexer

● Block Diagram



● Truth Table

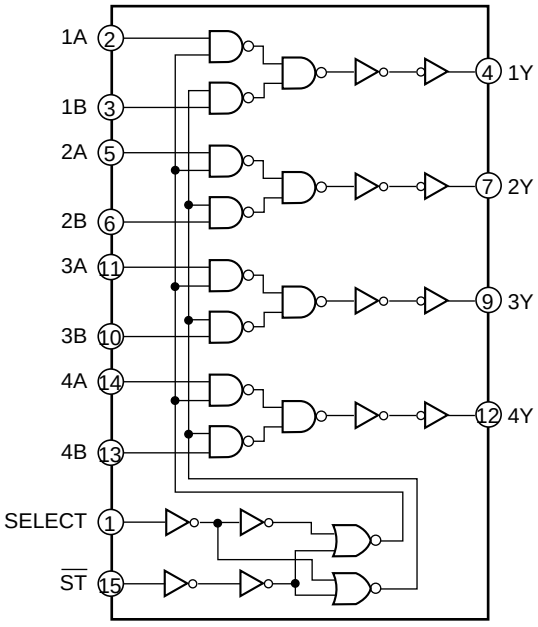
SELECT INPUTS		DATA INPUTS				STROBE	OUTPUT
B	A	C0	C1	C2	C3	$\overline{G}$	Y
X	X	X	X	X	X	H	L
L	L	L	X	X	X	L	L
L	L	H	X	X	X	L	H
L	H	X	L	X	X	L	L
L	H	X	H	X	X	L	H
H	L	X	X	L	X	L	L
H	L	X	X	H	X	L	H
H	H	X	X	X	L	L	L
H	H	X	X	X	H	L	H

X : Don't Care

TC74VHC157F (DSP ASSY : IC1704, IC1804, IC1903, IC2003)

• Quad 2-channel Multiplexer

● Block Diagram



● Truth Table

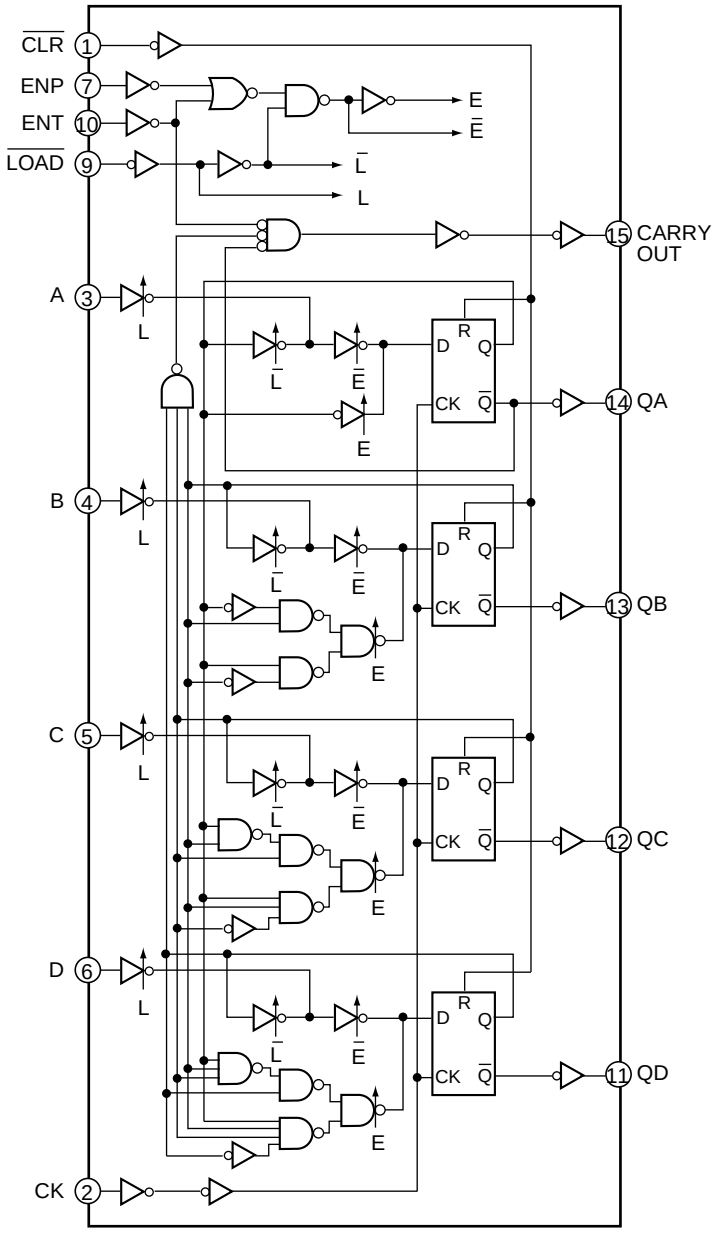
INPUTS				OUTPUT
$\overline{ST}$	SELECT	A	B	
H	X	X	X	L
L	L	L	X	L
L	L	H	X	H
L	H	X	L	L
L	H	X	H	H

X : Don't Care

■ TC74VHC163FT (DSP ASSY : IC1620)

• **Synchronous Presettable 4-bit Counter**

● **Block Diagram**



● **Truth Table**

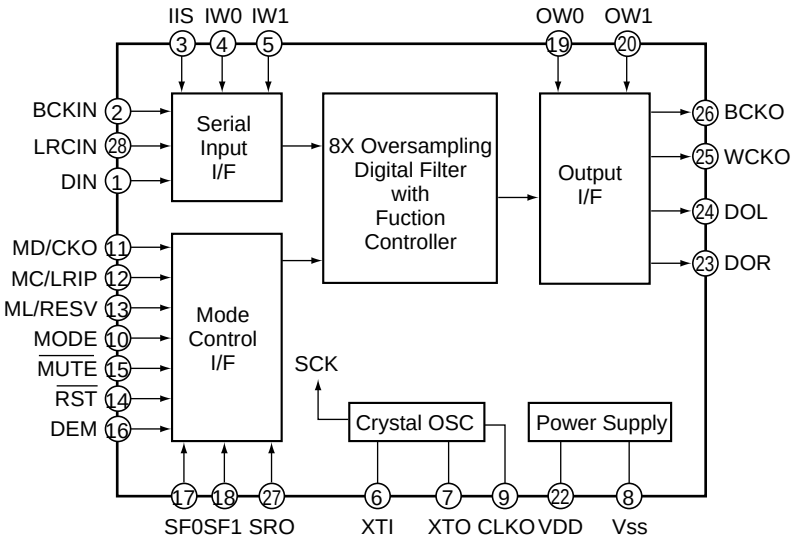
D	CK	R	Q	$\overline{Q}$
X	↑	H	L	H
L	↑	L	L	H
H	↑	L	H	L
X	↓	X	*	*

X : Don't Care
* : No Change

■ DF1704E (DSP ASSY : IC1902, IC2002)

• Digital Filter

● Block Diagram



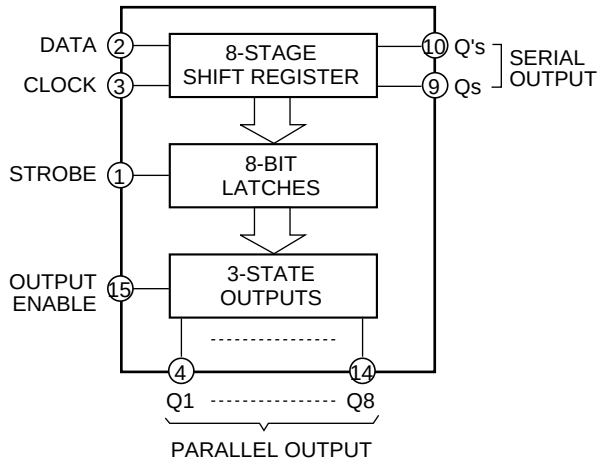
● Pin Function

No.	Pin Name	I/O	Pin Function
1	DIN	I	Serial audio data input
2	BCKIN	I	Bit clock input for serial audio data
3	IIS	I	Format selection of input audio data
4	IW0	I	Word selection of input audio data
5	IW1	I	Word selection of input audio data
6	XTI	I	Connect an oscillator or external clock input
7	XTO	O	Oscillator output
8	Vss	–	Ground
9	CLKO	O	Buffer output of system clock
10	MODE	I	Mode control selection (H: Software mode, L: hardware mode)
11	MD/CKO	I	Mode control, data / 1/2 divided clock selection
12	MC/LRIP	I	Mode control, clock / LRCIN polarity selection
13	ML/RESV	I	Mode control, latch, clock / Not used
14	$\overline{\text{RST}}$	I	Reset It becomes reset state during this pin is L.
15	$\overline{\text{MUTE}}$	I	Mute control
16	DEM	I	Deemphasis control
17	SF0	I	Deemphasis Sampling rate selection
18	SF1	I	Deemphasis Sampling rate selection
19	OW0	I	Data word selection of output audio
20	OW1	I	Data word selection of output audio
21	NC	–	Non connection
22	VDD	–	Power supply +5V
23	DOR	O	Serial audio data output of R ch
24	DOL	O	Serial audio data output of L ch
25	WCKO	O	Word clock output for serial audio data output
26	BCKO	O	Bit clock output for serial audio data output
27	SRO	I	Filter characteristic selection
28	LRCIN	I	L/R clock input (fs)

■ BU4094BCFV (DSP ASSY : IC2101, IC2107, IC2108, IC2118)

• Port Expander

● Block Diagram



● Truth Table

CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	Qs	Q's
↑	L	X	X	Z	Z	Qs	No Chg.
↓	L	X	X	Z	Z	No Chg.	Qs
↑	H	L	X	No Chg.	No Chg.	Q7	No Chg.
↑	H	H	L	L	Qn-1	Q7	No Chg.
↑	H	H	H	H	Qn-1	Q7	No Chg.
↓	H	X	X	No Chg.	No Chg.	No Chg.	Qs

X : Don't Care
Z : High Impedance

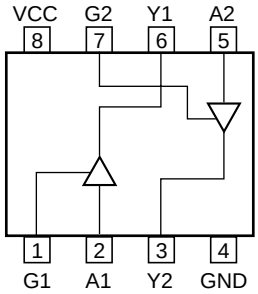
● Pin Function

No.	Mark	Pin Name	I/O	Pin Function
1	STROBE_	STB	I	Strobe input (IC2102 pin 23)
2	SERIAL IN	DATA	I	Serial data input (IC2102 pin21)
3	CLOCK	CLOCK	I	Serial clock input (IC2102 pin 22)
4	Q1	INPUT SEL 1	O	INPUT selector 1
5	Q2	INPUT SEL 2		INPUT selector 2
6	Q3	INPUT SEL 3		INPUT selector 3
7	Q4	192KHz	O	192kHz playback H: PDIF 192kHz signal
8	VSS	VSS	–	VSS
9	QS	QS	O	Connect to pin 2 (DATA) of IC2118
10	QS'	QS'	O	Not used
11	Q8	HI-BIT	O	Hi-bit playback H: Hi-bit playback
12	Q7	REC SEL 3	O	REC selector 3
13	Q6	REC SEL 2		REC selector 2
14	Q5	REC SEL 1		REC selector 1
15	OUTPUT ENABLE	OE	I	Chip enable input (IC2102 pin 28)
16	VDD	VDD	–	VDD

■ TC7W126FU (DSP ASSY : IC2103, IC2114)

• Dual Bus Buffer

● Pin Arrangement (Top view)



● Truth Table

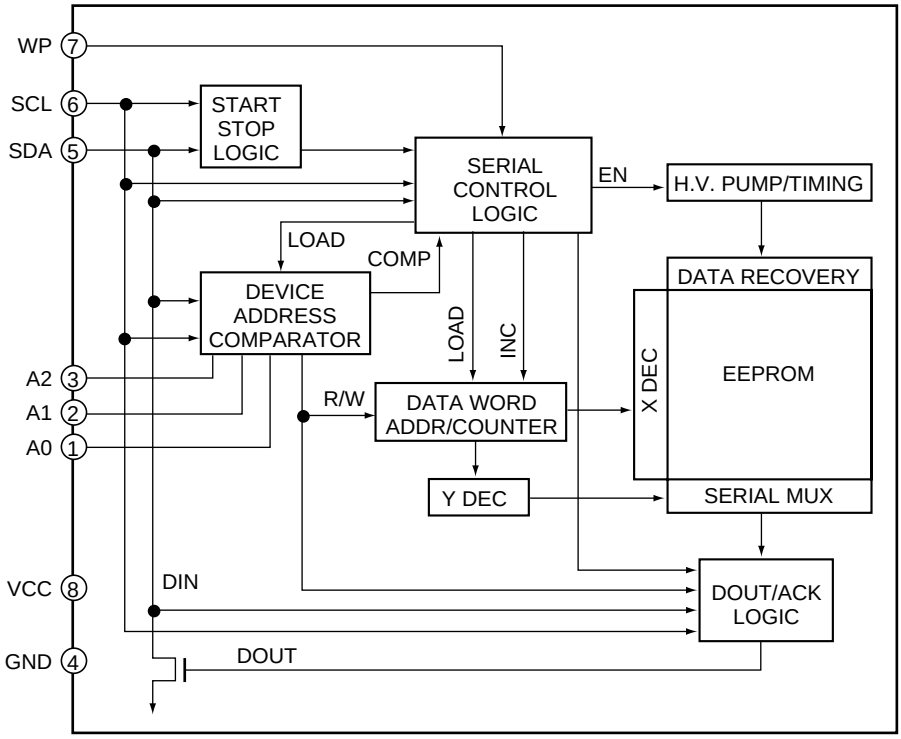
INPUTS		OUTPUTS
G	A	Y
L	X	Z
H	L	L
H	H	H

X : Don't Care
Z : High Impedance

■ AT24C16N-10SI2.5 (DSP ASSY : IC2106)

• 2-wire Serial CMOS EEPROM

● Block Diagram



● Pin Function

No.	Pin Name	Pin Function
1	A0	Address input
2	A1	
3	A2	
4	GND	Ground
5	SDA	Serial data
6	SCL	Serial clock input
7	WP	Write protect
8	VCC	Power supply

■ M30622SFP (DSP ASSY : IC2102)

• DSP Microcomputer

● Pin Function

No.	Mark	Pin Name	I/O	Pin Function
1	P96/ANEX1/SOUT4	DSP MOSI	O	DSP communication data output (→DSP)
2	P95/ANEX0/CLK4	DSP SCK	O	DSP communication clock output
3	P94/DA1/TB4IN	DF DEM	O	Deemphasis control of Surround and Center (IC1902 and IC2002) H: Deemphasis ON
4	P93/DA0/TB3IN	DSP HREQ1	I	DSP communication ready (←center DSP) H: Communication busy
5	P92/TB2IN/SOUT3	DATA out	O	Communcation data output of microcomputer (→main microcomputer)
6	P91/TB1IN/SIN3	DATA in	I	Communcation data input of microcomputer (←main microcomputer)
7	P90/TB0IN/CLK3	CLOCK	I	Communcation clock input of microcomputer
8	BYTE	BYTE	I	VOC (data length: 8 bit)
9	CNVSS	CNVSS	I	Pull-up to VCC (external memory use mode)
10	P87/XCIN	READY	O	Microcomputer communication ready (→main microcomputer) H: Communication busy
11	P86/XCOUT	HCS2	O	Microcomputer communication data request (→main microcomputer) L: Data request
12	RESET_	RESET	I	Reset input (←main microcomputer)
13	XOUT	XOUT	O	Connect a 7.7MHz ceramic resonator
14	VSS	VSS	–	VSS
15	XIN	XIN	I	Connect a 7.7MHz ceramic resonator
16	VCC	VCC	–	VCC
17	P85/NMI_	NMI	I	(Not used) →Pull-up to VCC
18	P84/INT2_	HCS1	I	Microcomputer communication data request (←main microcomputer) L: Data request
19	P83/INT1_	ERFM	I	Master DIR (IC1603) error H: unlock
20	P82/INT0_	ERFS	I	Slave DIR (IC1602) error H: unlock
21	P81/TA4IN/U_	S DATA	O	Serial data output
22	P80/TA4OUT/U	S CLOCK	O	Serial clock output
23	P77/TA3IN	EXSTB	O	Strobe output of expansion IC (IC2101 and IC2118) L: Strobe ON
24	P76/TA3OUT	ADPARA	O	A/D (IC1105, IC2704 and IC2804) 3-parallel operation L: Analog 2ch input
25	P75/TA2IN/W_	FADPD	O	Front A/D (IC1105) power down L: Power down
26	P74/TA2OUT/W	SSDF	O	Legato DSP (IC1613) communication strobe L: Strobe ON
27	P73/CTS2_/RTS2_ /TA1IN/V_	HSSEL	O	CLK selection of center DSP (IC1501) H: PDIF 48 kHz/24 bit multi-channel
28	P72/CLK2/TA1OUT/V	EXPOE	O	Output enable of expansion IC (IC2101 and IC2118) H: Output enable
29	P71/RXD2/SCL /TA0IN/TB5IN	X2CH	O	Digital filter (IC1903 and IC2003) reset of surround and center L: Reset
30	P70/TXD2/SDA/TA0OUT	PDIF	I	PDIF cable detection H: Cable exist
31	P67/TXD1	DDRST	O	Legato DSP (IC1613) reset L: Reset
32	P66/RXD1	FDRST	O	Front DSP (IC1701, IC1702, IC1801 and IC1802) reset L: Reset
33	P65/CLK1	VERUP	O	TC74HC125AF (IC2112) control L: Version up
34	P64/CTS1_/RTS1_ /CTS0_/CLKS1	CTS	I	←P/C data request (version up) L: Communication ready
35	P63/TXD0	DATA out/ TXD (UART)	O	Data output (→PDIF mutual certification of DV-AX10) / data output (version up)
36	P62/RXD0	DATA in/ RXD (UART)	I	Data input (←PDIF mutual certification of DV-AX10) / data input (version up)
37	P61/CLK0		O	(Not used)
38	P60/CTS0_/RTS0_	RTS	O	→P/C data request (version up) L: Communication ready
39	P57/RDY_/CLKOUT	RDY_	I	(Not used) →Pull-up to VCC
40	P56/ALE	ALE	O	(Not used)
41	P55/HOLD_	HOLD_	I	(Not used) →Pull-up to VCC
42	P54/HLDA_	HLDA_	O	(Not used)
43	P53/BCLK	BCLK		
44	P52/RD_	OE#	O	Output enable of Flash memory (IC2105) L: Output enable
45	P51/WRH_/BHE_	BHE_	O	(Not used)
46	P50/WRL_/WR_	WE#	O	Write enable of Flash memory (IC2105) L: Write enable
47	P47/CS3_		O	(Not used)
48	P46/CS2_			
49	P45/CS1_	CFSEL	O	DIR (IC1603) CS/freq_ selection H: CS select
50	P44/CS0_	FLSHCS	O	CS control of Flash memory (IC2105) L: Chip enable

No.	Mark	Pin Name	I/O	Pin Function
51	P43/A19	A19	O	(Not used)
52	P42/A18	A18	O	Communication address output of Flash memory (IC2105)
53	P41/A17	A17		
54	P40/A16	A16		
55	P37/A15	A15		
56	P36/A14	A14		
57	P35/A13	A13		
58	P34/A12	A12		
59	P33/A11	A11		
60	P32/A10	A10		
61	P31/A9	A9		
62	VCC	VCC	–	VCC
63	P30/A8(/-/D7)	A8	O	Communication address output of Flash memory (IC2105)
64	VSS	VSS	–	VSS
65	P27/A7(/D7/D6)	A7	O	Communication address output of Flash memory (IC2105)
66	P26/A6(/D6/D5)	A6		
67	P25/A5(/D5/D4)	A5		
68	P24/A4(/D4/D3)	A4		
69	P23/A3(/D3/D2)	A3		
70	P22/A2(/D2/D2)	A2		
71	P21/A1(/D1/D0)	A1		
72	P20/A0(/D0/-)	A0		
73	P17/D15/INT5_	DFRST	O	Front digital filter (IC1703 and IC1803) reset L: Reset
74	P16/D14/INT4_	DIR Ce/F2	I	DIR (IC1603) CSe / freq report 2
75	P15/D13/INT3_	LOCK	I	PLL LOCK input H: PLL unlock
76	P14/D12	DIR Cd/F1	I	DIR (IC1603) CSd / freq report 1
77	P13/D11	DIR Cc/F0	I	DIR (IC1603) CSc / freq report 0
78	P12/D10	DIR Cb/E2	I	DIR (IC1603) CSb / error condition 2
79	P11/D9	DIR Ca/E1	I	DIR (IC1603) CSa / error condition 1
80	P10/D8	DIR C0_/E0	I	DIR (IC1603) CS0_ / error condition 0
81	P07/D7	DQ7	I/O	Communication data input / output of Flash memory (IC2105)
82	P06/D6	DQ6		
83	P05/D5	DQ5		
84	P04/D4	DQ4		
85	P03/D3	DQ3		
86	P02/D2	DQ2		
87	P01/D1	DQ1		
88	P00/D0	DQ0		
89	P107/AN7/KI3_	CRADPD	O	Center and surround A/D (IC2704 and IC2804) power down L: Power down
90	P106/AN6/KI2_	DSPMUTE	O	Digital filter (IC1703, IC1803, IC1902 and IC2002) mute H: Mute ON
91	P105/AN5/KI1_	CDRST	O	Center DSP (IC1501) reset L: Reset
92	P104/AN4/KI0_	DSP SSR1	O	Communication strobe of front DSP R1 (IC1801) L: Strobe ON
93	P103/AN3	DSP SSL1	O	Communication strobe of front DSP L1 (IC1701) L: Strobe ON
94	P102/AN2	DSP SSR2	O	Communication strobe of front DSP R2 (IC1802) L: Strobe ON
95	P101/AN1	DSP SSL2	O	Communication strobe of front DSP L2 (IC1702) L: Strobe ON
96	AVSS	AVSS	–	VSS
97	P100/AN0	DSP SSCT	O	Communication strobe of center DSP (IC1501) L: Strobe ON
98	VREF	VREF	–	VCC
99	AVCC	AVCC		
100	P97/ADTRG_/SIN4	DSP MISO	I	DSP communication data input (←DSP)

■ M38079SFP (DSP ASSY : IC2109)

• System Microcomputer

● Pin Function

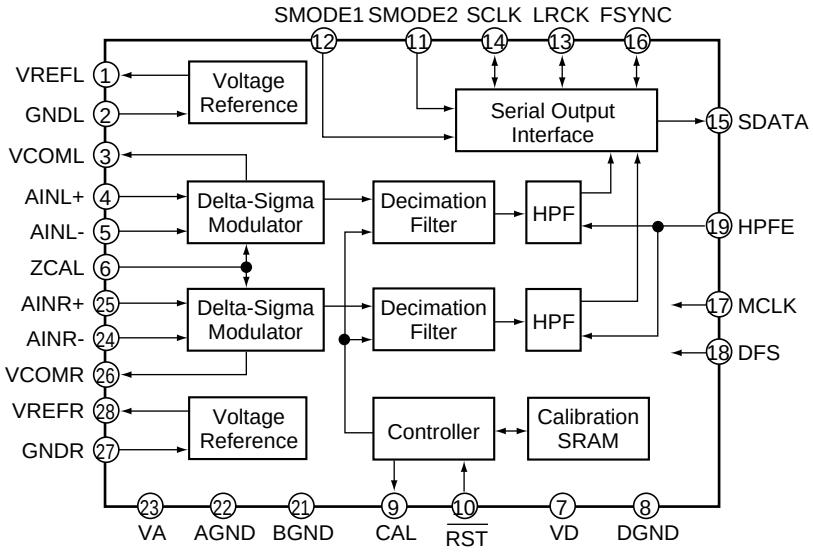
No.	Pin Name	I/O	Pin Function
1	P62/AN7	AD	Main unit key input
2	P61/AN6		
3	P60/AN5		
4	P77/AN4	AD	Not used
5	P76/AN3	AD	Encoder
6	P75/AN2	I	
7	P74/AN1	I	
8	P73/Srdy2/AN0	O	DSP MC bus (reset)
9	P72/Sclk2	O	General-purpose bus (clock)
10	P71/Sout2	O	General-purpose bus (dataout)
11	P70/Sin2	I	DSP MC bus (atain)
12	P57/DA2	O	DSP MC bus (cs)
13	P56/DA1	I	DSP MC bus (ready)
14	P55/CNTR1	I	DSP MC bus (interrupt) (request)
15	P54/CNTR0	I	SR signal input (interrupt)
16	P53/INT4	I	Digital filter lock detection (interrupt)
17	P52/INT3	I	DIR lock detection (interrupt)
18	P51/Scmp2/INT2	I	Encoder
19	P50/Tout		
20	P47/Srdy1	O	FL bus UART bus (lat/cts (I))
21	P46/Sclk1		FL bus UART bus (lock/dtr (O))
22	P45/TxD		FL bus UART bus (dataout/txd)
23	P44/RxD	I	FL bus UART bus (datain/rxd)
24	P43/INT1		FL40V line control (dispoff)
25	P42/INT0	I	AC input (interrupt)
26	CNVss		VSS connection (pull-down with 1kΩ to 10kΩ)
27	RESET		Reset input
28	P41/Xcin	O	Output relay (F)
29	P40/Xcout		Output relay (SW)
30	Xin		Oscillator input
31	Xout		Oscillator output
32	Vss	–	GND
33	P27/DB7	O	Data bus of Flash ROM (db7 to db0)
34	P26/DB6		
35	P25/DB5		
36	P24/DB4		
37	P23/DB3		
38	P22/DB2		
39	P21/DB1		
40	P20/DB0		

No.	Pin Name	I/O	Pin Function
41	P17/AD15	O	Address bus of Flash ROM (ad15 to ad2)
42	P16/AD14		
43	P15/AD13		
44	P14/AD12		
45	P13/AD11		
46	P12/AD10		
47	P11/AD9		
48	P10/AD8		
49	P07/AD7		
50	P06/AD6		
51	P05/AD5		
52	P04/AD4		
53	P03/AD3		
54	P02/AD2		
55	P01/AD1	O	Address bus of Flash ROM (ad1 to ad0)
56	P00/AD0		
57	P37/RD	I	Flash ROM (read)
58	P36/WR	O	Flash ROM (write)
59	P35/SYNC	O	Flash ROM (sync)
60	P34/Ckout/ϕ	O	Flash ROM (clock)
61	P33/RESETout	O	Flash ROM (reset)
62	P32/ONW	I	Flash ROM (cnw)
63	P31/RTP7	O	Output relay (C)
64	P30/RTP6	O	Output relay (SL/SR)
65	P87/RTP5	O	FL bus (bk)
66	P86/RTP4	O	Output enable for BU1092 XLOE
67	P85/RTP3	O	DAC VOL (general-purpose bus) fsin
68	P84/RTP2	O	DAC VOL (general-purpose bus) ldac
69	P83/RTP1	O	LED driver (general-purpose bus) strobe
70	P82/RTP0	O	I/O expander (general-purpose bus) strobe
71	P81/DA4/AN12	O	EEPROM backup
72	P80/DA3/AN11	O	EEPROM backup
73	Vcc	–	Power supply voltage 5.0V
74	ADVref		Reference voltage Hi input for A/D converter
75	AVss		Reference voltage Low input for A/D converter
76	P65/DAVref/AN10	AD	Position detect input 1 of Main volume
77	P64/CMPref/AN9	AD	Position detect input 0 of Main volume
78	P63/CMPin/AN8	AD	DNW SW input
79	CMPout	–	Not used
80	CMPVcc		

■ AK5393VS (FRAD ASSY : IC1105 and CRAD ASSY : IC2704, IC2804)

• Enhanced Dual-bit 108kHz 24-bit 2ch ADC

● Block Diagram



● Pin Function

No.	Pin Name	I/O	Pin Function
1	VREF	O	Reference voltage output pin for L ch, 3.75V Connect an 10μF electrolytic capacitor and a 0.1μF ceramic capacitor between this pin and GNDL.
2	GNDL	–	Reference ground pin for L ch, 0V
3	VCOML	O	Common voltage pin for L ch, 2.75V
4	AINL+	I	Analog positive input pin for L ch
5	AINL-	I	Analog negative input pin for L ch
6	ZCAL	I	Zero calibration Selects the reference signal for using the offset calibration. "L": VCOML, VCOMR , "H": Analog input pin (AIN ±, AINR ±)
7	VD	–	Power supply pin for digital section, 3.3V
8	DGND	–	Ground pin for digital section
9	CAL	O	Calibration status pin Indicates that the during offset calibration at "H". Starts the calibration when $\overline{RST}$ pin becomes "H", and it beomes "L" after 8704LRCK cycled at DFS=L. It becomes "L" after 17408LRCK cycled at DFS=H.
10	$\overline{RST}$	I	Reset pin Digital section is power downed at "L". When it becomes "H", the offset calibration is started. Please activate the calibration in power supply injection once.
11	SMODE2	I	Serial interface mode select pin MSB first, 2'S complement
12	SMODE1		
13	LRCK	I/O	Clock pin of L/R channel selection At SMODE1="H", it becomes "H" when SMODE2="L", and if becomes "L" when SMODE2="H" in the reset.

SMODE2	SMODE1	MODE	LRCK
L	L	Slave mode: Front shorten	H/L
L	H	Master mode: Quasi I^2S	H/L
H	L	Slave mode: I^2S	L/H
H	H	Master mode: I^2S	L/H

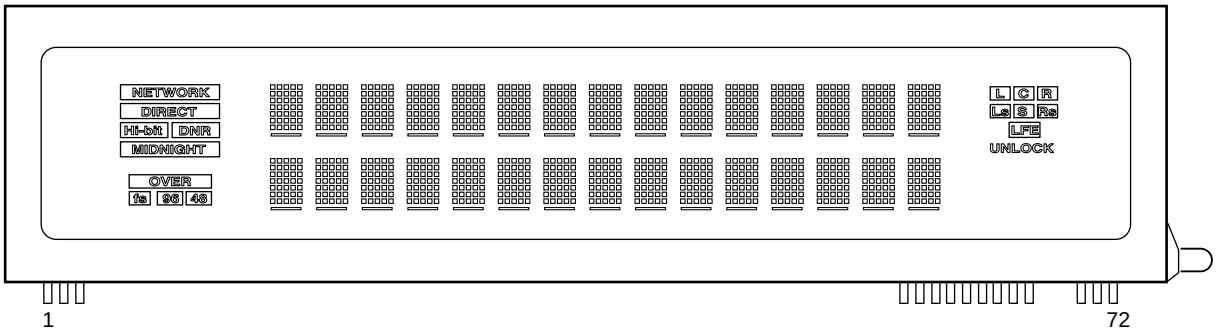
No.	Pin Name	I/O	Pin Function
14	SCLK	I/O	Serial data clock pin Output data outputs 1-bit at falling edge of this pin. Slave mode: clock more than 48fs is necessary Master mode: Output 128fs (DFS="L") and 64fs (DFS="H") clocks At reset= "L"
15	SDATA	O	Serial data output pin MSB first, 2'S complement At reset= "L"
16	FSYNC	I/O	Frame synchronous clock pin Slave mode: SDATA output is enabled at "H" Master mode: 2fs clock output At reset= "L"
17	MCLK	I	Master clock input pin 256fs at DFS="L", 128fs at DFS="H"
18	DFS	I	Double speed sampling mode select pin "L": Normal speed, "H": Double speed
19	HPFE	I	HPF enable pin "L": OFF, "H": ON
20	TEST	I	Test pin Connect to DGND.
21	BGND	–	PCB ground pin, 0V
22	AGND	–	Ground pin for analog section, 0V
23	VA	–	Power supply pin for analog section, 5V
24	AINR-	I	Analog positive input pin for R ch
25	AINR+	I	Analog negative input pin for R ch
26	VCOMR	O	Common voltage pin for R ch, 2.5V
27	GNDR	–	Reference ground pin for R ch, 0V
28	VREFR	O	Reference voltage output pin for R ch, 3.75V Connect an 10µF electrolytic capacitor and a 0.1µF ceramic capacitor between this pin and GNDR.

7.2.2 Display

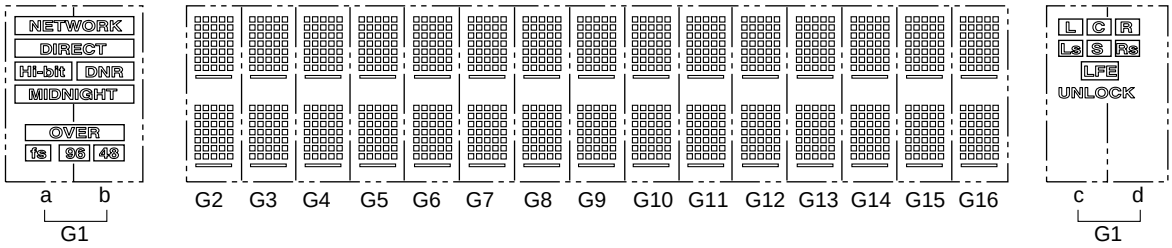
■ AAV7065 (DISPLAY ASSY : V2201)

• FL Display

• Pin Assignment



• Grid Assignment



• Pin Connection

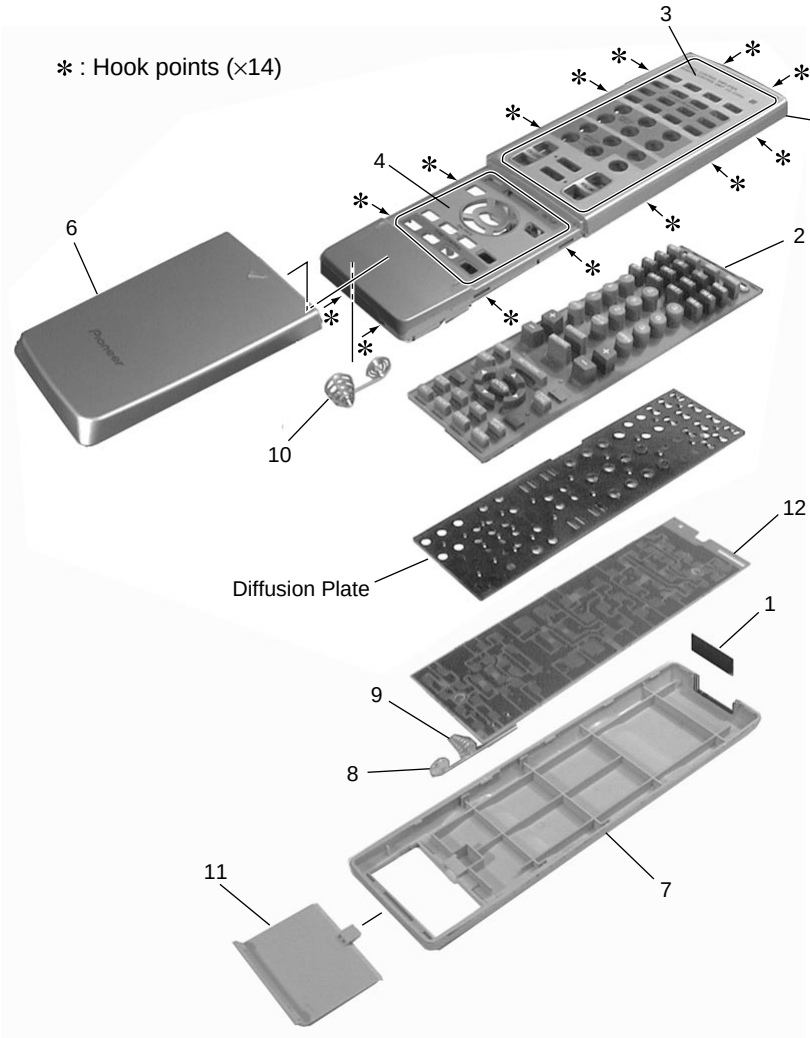
Pin No.	1	2	3	4 - 58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
Connection	F1	F1	F1	NP	SI	VDD1	SO	LAT	BK	CLK	VSS	VSS	VDD2	NP	NP	F2	F2	F2

BD system pin out

7.3 REMOTE CONTROL UNIT (CU-C005)

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on the product are used for disassembly.*

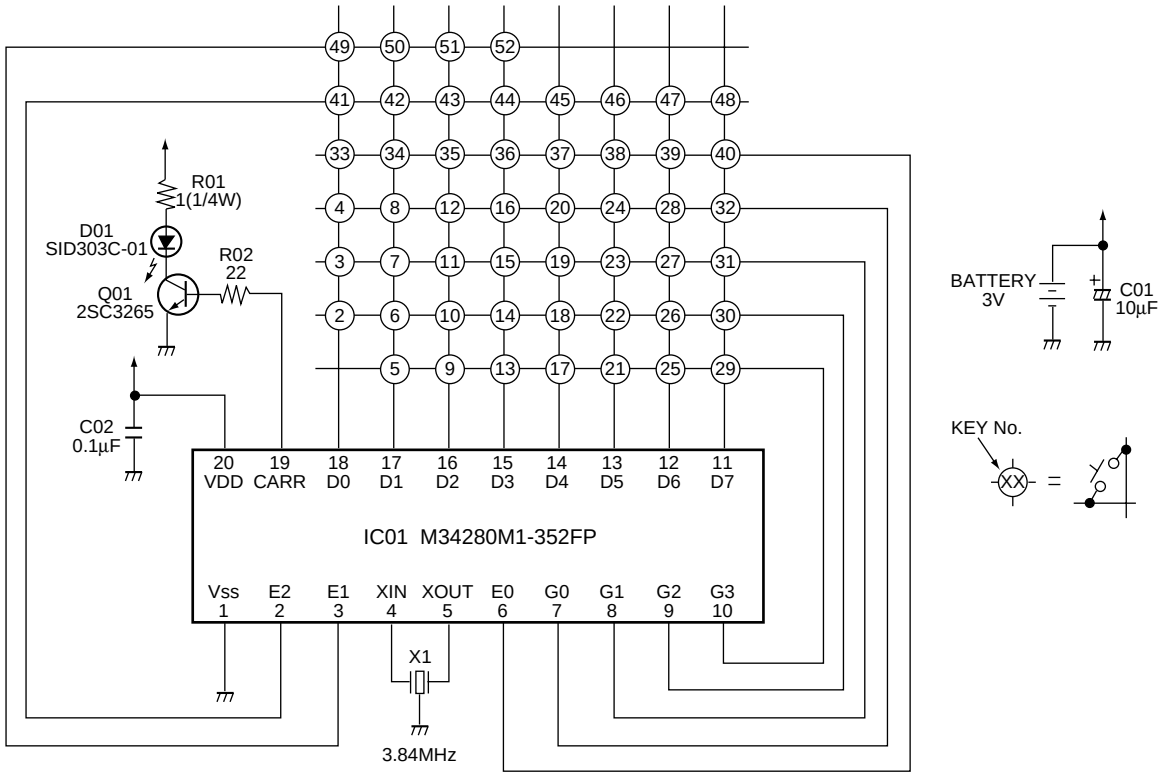
7.3.1 Exploded View and Parts List



Expladed View Parts List

Mark	No.	Description	Part No.
	1	Filter	AZA7340
	2	Rubber Sheet	AZA7372
	3	Name Plate A	AZA7373
	4	Name Plate B	AZA7374
	5	Case A	AZN7810
	6	Slide Case	AZN7812
	7	Case B	AZN7811
	8	Terminal A (+)	AZB7141
	9	Terminal B (-)	AZB7142
	10	Contact Spring	AZB7143
	11	Battery Cover	AZN7813
	12	PCB for Remote Control Unit (AXD7198)	AZW7256

7.3.2 Schematic Diagram



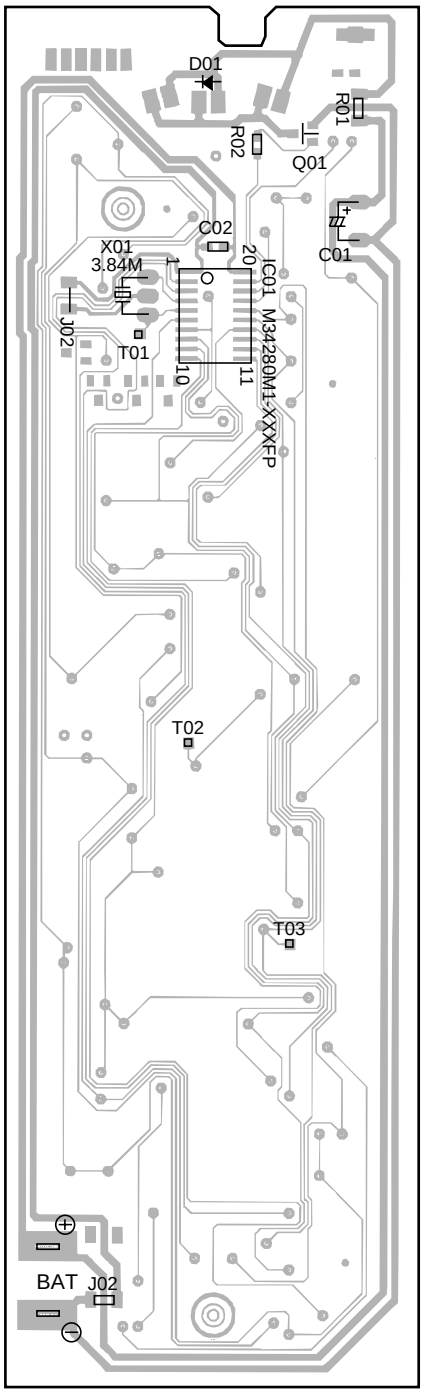
SWITCHES

KEY No.	NAME
2	: DIGITAL NR
3	: Hi-bit
4	: MID-NIGHT
5	: DIRECT
6	: SOUND MEMORY A
7	: SOUND MEMORY B
8	: SOUND MEMORY C
9	: MEMO
10	: M1
11	: M2
12	: M3
13	: M4
14	: M5
15	: M6
16	: M7
17	: M8
18	: DIGITAL IN 1
19	: DIGITAL IN 2
20	: DIGITAL IN 3
21	: DIGITAL IN 4
22	: DIGITAL IN 5
23	: DIGITAL IN 6
24	: ANALOG1
25	: ANALOG2
26	: ANALOG3

KEY No.	NAME
27	: DVD
28	: 2ch/multi ch
29	: DIMMER
30	: CH LEVEL +
31	: CH LEVEL -
32	: CH SELECT
33	: VOL +
34	: VOL -
35	: MUTING
36	: SYSTEM
37	: NETWORK
38	: CHECK
39	: TEST TONE
40	: ▲
41	: ◄
42	: ►
43	: ▼
44	: ENTER
45	: REMOTE ON/OFF
46	: BALANCE - L
47	: BALANCE - R
48	: INPUT GAIN
49	: ALL
50	: FRONT
51	: CENTER
52	: SURR.

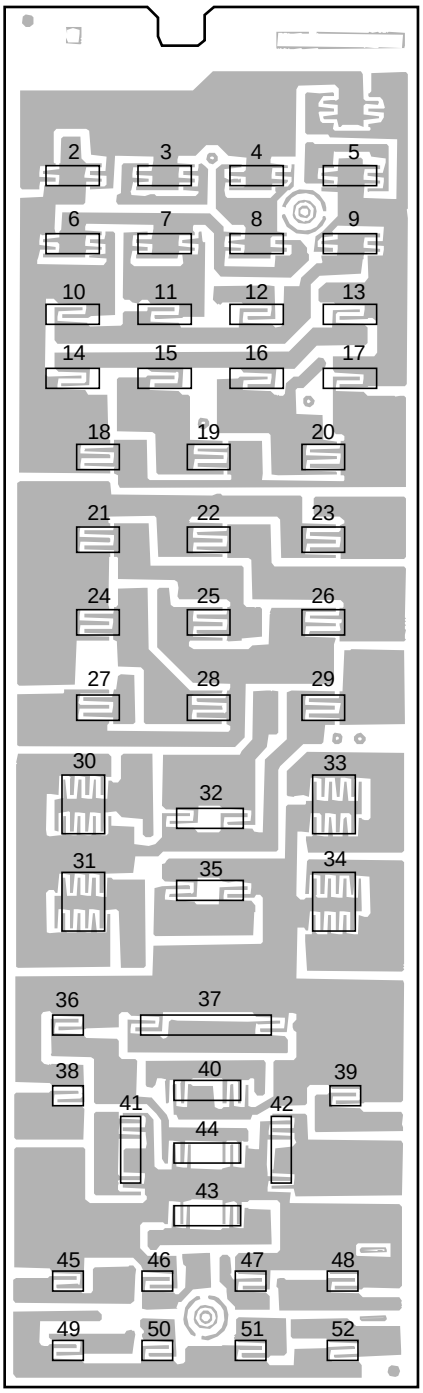
7.3.3 PCB Diagram

PCB for Remote Control Unit (AXD7198)



SIDE A

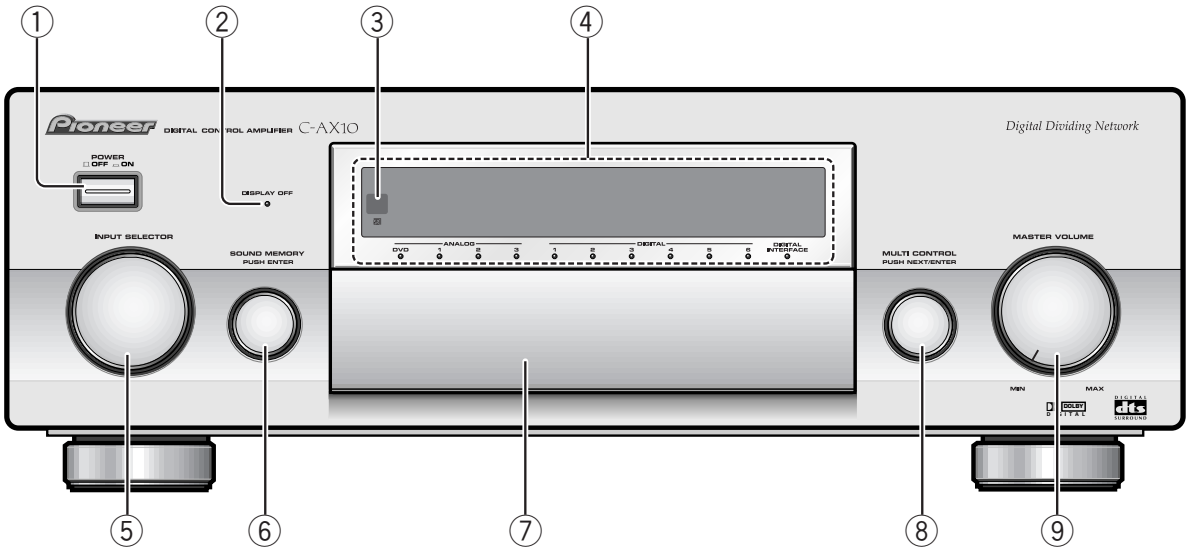
PCB for Remote Control Unit (AXD7198)



SIDE B

8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES



① **Power switch (POWER ■OFF/▂ON)**
Press the power switch to turn the amplifier on and off.

② **DISPLAY OFF indicator**
This indicator turns on when the display is turned off by the Brightness Selection button (⑪).

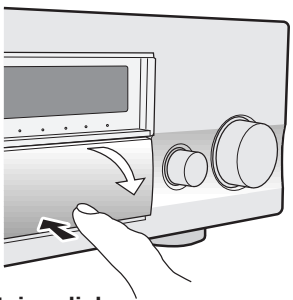
③ **Remote control sensor**
Point the remote control towards this sensor when operating the amplifier.

④ **Display**

⑤ **INPUT SELECTOR**
This is used to select the input signal.

⑥ **SOUND MEMORY jog dial**
You can save and recall up to 16 tone control setting patterns and 8 speaker setup patterns and change the memory number display.

⑦ **Front flip-down door**
Press lightly on the bottom of this door to open it.



⑧ **MULTI CONTROL jog dial**
This jog dial is used to make various settings.
Turn the dial to select the setting, and then press to enter (ENTER/NEXT). Refer to the page of the specific function for more details.

⑨ **MASTER VOLUME knob**
This knob is used to adjust the volume. Turning this knob adjusts the volume for all channels simultaneously.

⑩ **DD/DTS button**
When this mode is selected, Dolby Digital, Dolby Pro Logic, or DTS Surround Mode is turned on automatically according to the input signal.

⑪ **Brightness Selection button (DIMMER)**
The display brightness can be adjusted to four levels including Display Off.
When Display Off is selected, the Display Off indicator (②) turns on.

⑫ **DVD Input Selector button (DVD INPUT 2 ch/multi ch)**
When DVD-A input is selected, this button is used to choose either two-channel input or multichannel (six channel) input.

⑬ **Sampling Frequency Selector button (fs 96k/48k)**
When an analogue input signal is output from the digital output jack (DIGITAL OUT), this button is used to select whether the sampling frequency (fs) remains unmodified at 96 kHz or drops down to 48 kHz.

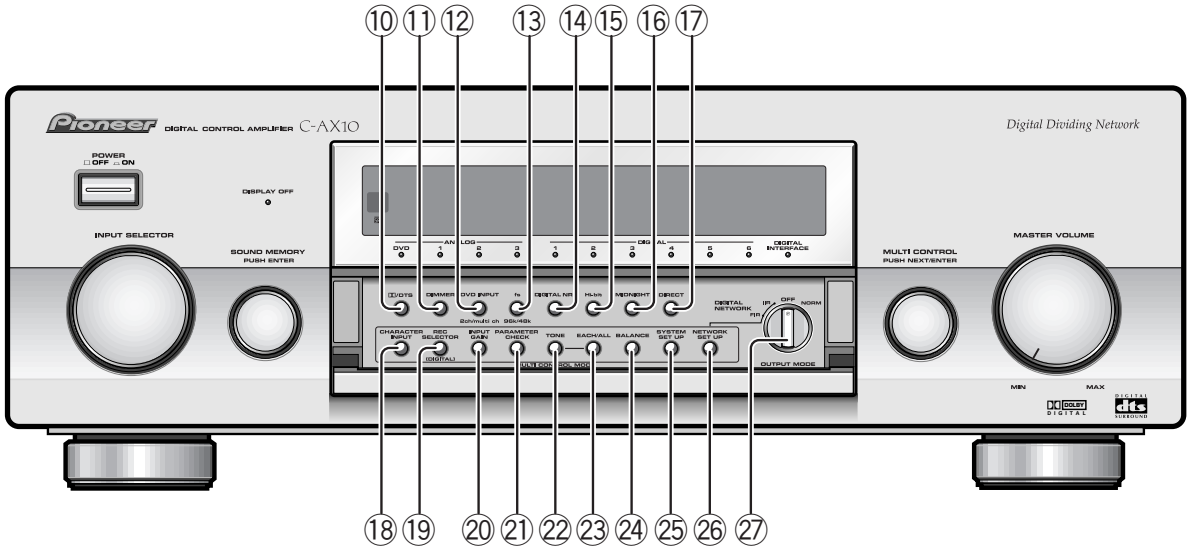
⑭ **DIGITAL NR button**
This button is used to select the Digital NR function mode.

⑮ **Hi-bit button**
This button is used to turn the Hi-bit function on and off.

⑯ **MIDNIGHT button**
This button turns the Midnight function on and off.

⑰ **DIRECT button**
This button is used to select the Direct function mode.

When the front flip-down door is opened



⑱ **CHARACTER INPUT button***
This button is used to enter the Character Input mode for changing the input signal or sound memory setting to a user-selected name.

⑲ **Digital REC Selector button (REC SELECTOR [DIGITAL])***
This button is used to enter the mode for selecting the REC OUT signal that is output from the digital output jack.

⑳ **INPUT GAIN button***
This button is used to enter the mode for adjusting the analogue input and digital input gain.

㉑ **PARAMETER CHECK button***
This button is used to enter the mode for checking the current settings.

㉒ **Tone Control button (TONE)***
This button is used to enter Tone Control mode.

㉓ **Tone Control Channel button (EACH/ALL)***
This button is used to switch between EACH mode and ALL mode.
- EACH mode : The front, centre, and surround channels can each be set individually.
- ALL mode : The front, centre, and surround channels are set to the same settings.

㉔ **Balance Control button (BALANCE)***
This button is used to enter the mode for adjusting the balance of the front left and right channels.

㉕ **SYSTEM SET UP button***
This button is used to enter System Setup mode for speaker setup or selecting modes.

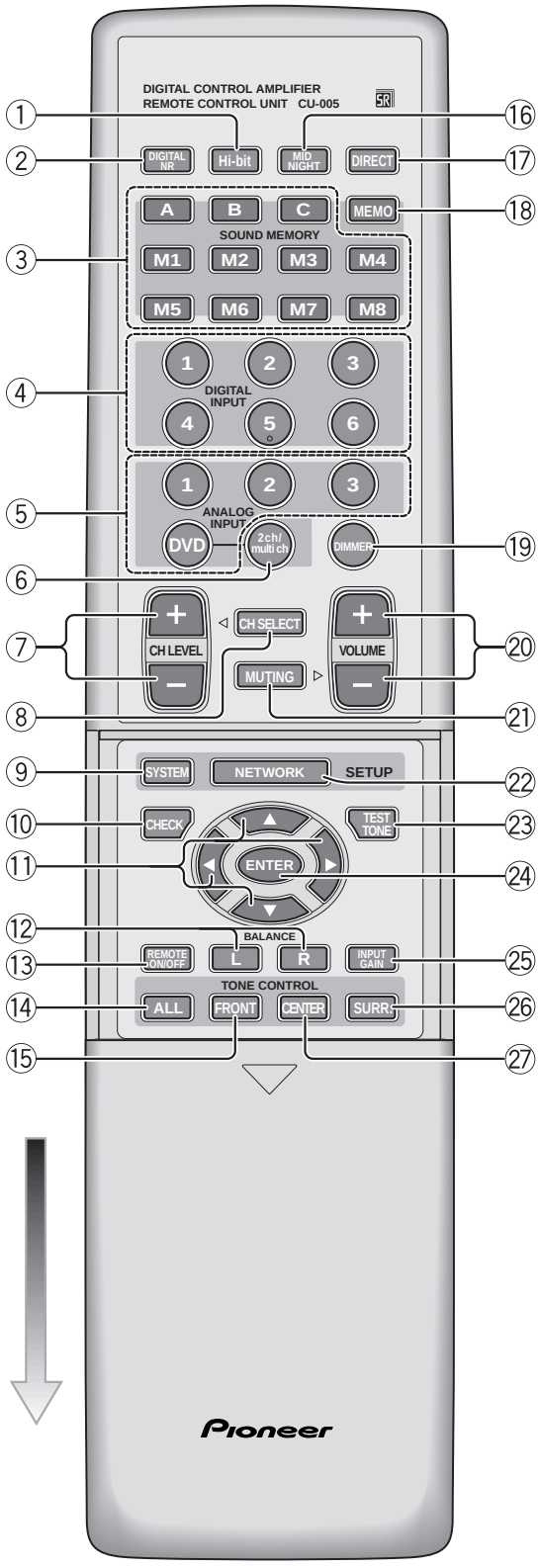
㉖ **NETWORK SET UP button***
This button is used to enter Network Setup mode when the OUTPUT MODE selector (㉗) is set to Digital Network FIR mode or Digital Network IIR mode.

㉗ **OUTPUT MODE selector**
This selector is used to set to one of the following four modes.
- Digital Network FIR mode
- Digital Network IIR mode
- Normal mode
- OFF (Output off)

memo

✻ After pressing the buttons in ⑱ to ㉖, use the MULTI CONTROL jog dial ⑧ to make the settings and adjustments.

■ Remote Control Unit (CU-C005)



This figure shows the remote control when the slide cover has been pulled down.
To open the slide cover, press on the ▽ mark on the cover and the indentation on the back of the remote control, and then pull the cover down slightly so that the lock releases with a clicking sound.

① **Hi-bit button**
This button is used to turn the Hi-bit function on and off.

② **DIGITAL NR button**
This button is used to select the Digital NR function mode.

③ **SOUND MEMORY buttons**
These buttons are used to save and recall up to 16 tone control setting patterns and 8 speaker setup patterns. The three buttons A, B, and C can be selected within the eight buttons M1 to M8.

④ **Digital Input selector (DIGITAL INPUT 1 to 6)**

These buttons are used to select the digital input signal.

⑤ **Analogue Input selector (ANALOG INPUT 1 to 3, DVD)**
These buttons are used to select the analogue input signal.

⑥ **2ch/multi ch (□□/DTS) button**
When DVD-A input is selected, this button is used to select two-channel input, multichannel (six channel) input, or multichannel output after conversion of the two-channel signal to Dolby Pro Logic.
If an input other than DVD-A input is selected, OFF (2ch) and ON (multi) for Dolby Digital, Dolby Pro Logic, DTS, and Surround Mode are set according to the signal that is input.

⑦ **Channel Level buttons (CHANNEL LEVEL +, –)**

⑧ **Channel Select buttons (CH SELECT)**
To adjust the channel level, use this button to choose the channel, and then use the CHANNEL LEVEL + and – buttons (⑦) to adjust the level.

⑨ **SYSTEM SET UP button**
This button is used to enter System Setup mode for speaker setup or selecting modes.

⑩ **CHECK button**
This button is used to enter the mode for checking the current settings.

⑪ **◄/►/▲/▼ buttons**
These buttons are used to make selections and settings.

⑫ **Balance Control buttons (BALANCE L, R)**

These buttons are used to adjust the balance of the front left and right channels.

⑬ **REMOTE ON/OFF button**
This button is used to select whether the amplifier can receive operations from the remote control (ON) or not (OFF). Set to OFF when more than one Pioneer amplifier is operating at the same time. When set to OFF, the amplifier can be operated only from the amplifier unit.

⑭ **All Tone Control button (ALL)**
This button is used to perform total tone control at the same settings for the front, centre, and surround channels.

⑮ **Front Tone Control button (FRONT)**
This button is used to perform tone control for the front channels.

⑯ **MIDNIGHT button**
This button turns the Midnight function on and off.

⑰ **DIRECT button**
This button is used to select the Direct function mode.

⑱ **Memory button (MEMO)**
This button is used when saving the sound memory settings.

⑲ **Brightness Selection button (DIMMER)**
The display brightness can be adjusted to four levels including Display Off.

⑳ **Master Volume buttons (VOLUME +, –)**
These buttons are used to adjust the volume.

㉑ **Muting button (MUTING)**
This button is used to temporarily turn off the sound.

㉒ **NETWORK SET UP button**
This button is used to enter Network Setup mode when the Output mode is set to Digital Network (IIR or FIR).

㉓ **TEST TONE button**
This button is used to adjust the level using the test tone.

㉔ **ENTER button**
This button is used to enter selections and make settings.

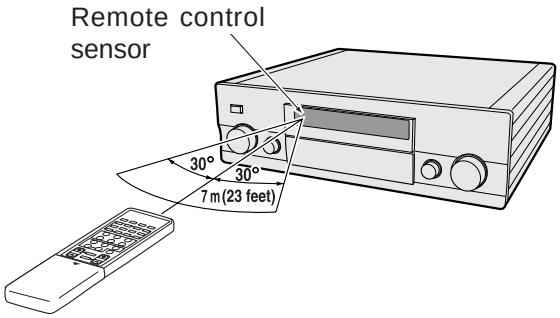
㉕ **INPUT GAIN button**
This button is used to enter the mode for adjusting the analogue input and digital input gain.

㉖ **Surround Tone Control button (SURR.)**
This button is used to perform tone control for the surround channels.

㉗ **Centre Tone Control button (CENTER)**
This button is used to perform tone control for the centre channel.

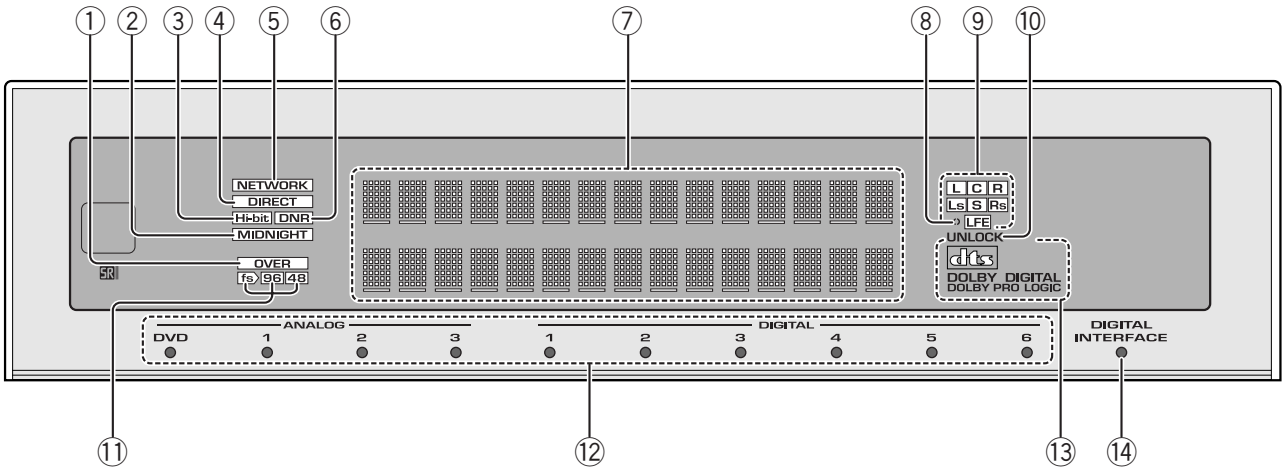
Operating Range of the Remote Control

When using the remote control to operate the amplifier, point the remote control towards the remote control sensor on the front panel.



- The remote control may not operate when there are objects between the remote control and amplifier or when the remote control is used at a wide angle from the sensor.
- The amplifier may malfunction if sunlight, fluorescent lights, or other strong lighting shines directly on the remote control sensor.
- The amplifier may malfunction if it is used near devices that emit infrared beams or when other remote control devices that use infrared beams are used. Conversely, this remote control can also cause other similar devices to malfunction when used in the same area.

■ Display



① **OVER indicator**
This indicator turns on when the input level of the analogue signal is too high or when the signal level during the internal DSP operation is too high.
Adjust the input gain when this indicator turns on.

② **MIDNIGHT indicator**
This indicator turns on when the Midnight function is on.

③ **Hi-bit indicator**
This indicator turns on when the Hi-bit function is on.

④ **DIRECT indicator**
This indicator turns on when the Direct function is on.

⑤ **NETWORK indicator**
This indicator turns on when the amplifier is set to Digital Network (Channel Divider) mode.

⑥ **DNR indicator**
This indicator turns on when the digital NR function is on.

⑦ **Character display**
This display shows alphanumeric characters and symbols to convey various types of information.

⑧ **LFE indicator**
The LFE indicator turns on when LFEs (low frequency effect) are contained in the playback software. When LFE signals are actually played back (LFE signals do not exist in the entire sound track), the ● mark next to the LFE indicator turns on.

⑨ **Program Format indicator**
The channel indicators corresponding to the input signals turn on when a PDIF connection is made or when a Dolby Digital or DTS signal is input.

- **L:** Front left channel
- **C:** Centre channel
- **R:** Front right channel
- **LS:** Surround left channel
- **S:** Surround channel (monaural)
- **RS:** Surround right channel
- **LFE:** LFE signal

⑩ **UNLOCK indicator**
This indicator turns on when the digital input signal is cut off.

⑪ **Sampling Frequency indicator**
This indicator displays the sampling frequency (fs) of the digital REC OUT signal selected in the section “Selecting the Digital Output Sampling Frequency during Analogue Input”.
96 : 96 kHz
48 : 48 kHz

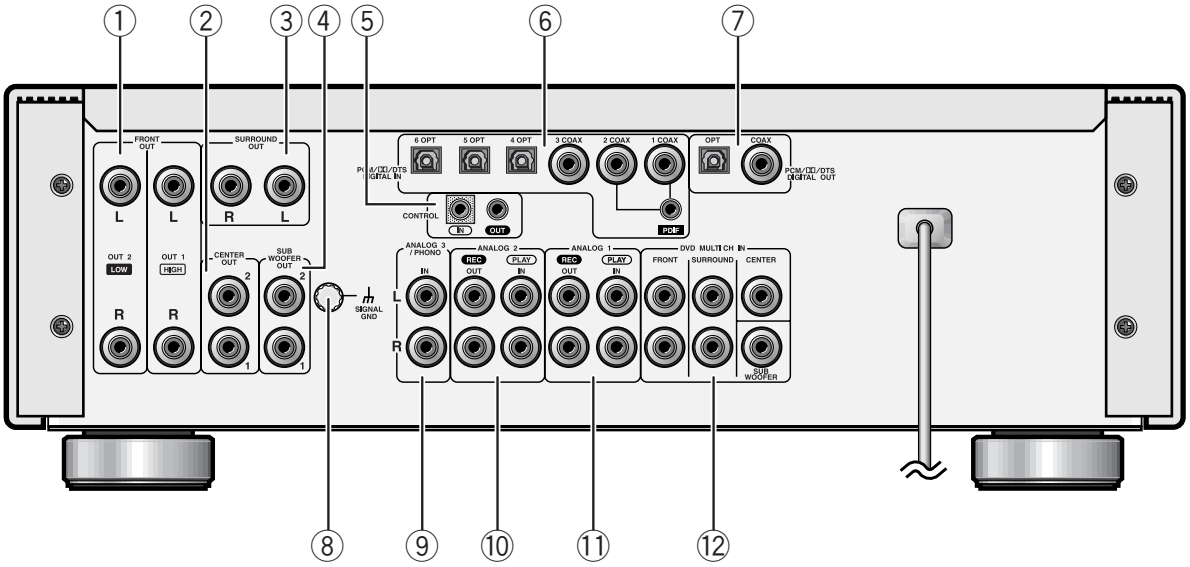
⑫ **Input indicator**
The indicator for the input signal selected by the INPUT SELECTOR turns on.

⑬ **□□ Surround/DTS Mode indicator**

DTS:	This indicator turns on when DTS signals are input while □□/DTS mode is on.
DOLBY DIGITAL:	This indicator turns on when playing back Dolby digital signals while Dolby Surround/ mode is on. However, DOLBY PRO LOGIC turns on when playing back Dolby Digital signals recorded in two channels.
DOLBY PRO LOGIC:	This indicator turns on when playing back a two-channel source in DOLBY PRO LOGIC while Dolby Surround/DTS button is on.

⑭ **DIGITAL INTERFACE indicator**
This indicator turns on when using the INPUT SELECTOR to choose the input signals when a PDIF connection is made.

■ REAR PANEL



① **Front output jacks (FRONT OUT)**
These are the front channel output jacks.
In Normal mode, OUT 1 and OUT 2 have the same output.
In Network mode, OUT 1 has high range (HIGH) output and OUT 2 has low range (LOW) output.

② **Centre output jacks (CENTER OUT)**
These are the centre channel output jacks during multichannel (six channel) output. Both 1 and 2 have the same output.

③ **Surround output jacks (SURROUND OUT)**
These are the surround channel output jacks during multichannel (six channel) output.

④ **Subwoofer output jacks (SUB WOOFER OUT)**
These are the subwoofer channel output jacks during multichannel (six channel) output. Both 1 and 2 have the same output.

⑤ **Control input/output jacks (CONTROL IN, OUT)**
These jacks are used for controlling multiple Pioneer devices having the SR mark from the remote control sensor of a single device.

⑥ **Digital input jacks (PCM/□□/DTS DIGITAL IN)**
Jacks 1 to 3 are for coaxial cables (COAX) and jacks 4 to 6 are for fiber-optic cables (OPT).
In a PDIF connection, the PDIF jack, 1 COAX jack and 2 COAX jack are used. For details, see page 47.

⑦ **Digital output jacks (PCM/□□/DTS DIGITAL OUT)**
These output jacks are for a coaxial cable (COAX) and a fiber-optic cable (OPT).

⑧ **Signal ground terminal (SIGNAL GND)**
Use this terminal when using an analogue record player or other device where a signal ground is required.
CAUTION
This terminal is provided to reduce noise. It is not a safety ground.

⑨ **ANALOG 3/PHONO input jacks**
These jacks are used to select line input or phono input. See page 45 for the selection method.

⑩ **ANALOG 2 input/output jacks**
These jacks are used for making analogue connections to recording or playback devices through the line input/output jacks.

⑪ **ANALOG 1 input/output jacks**
These jacks are used for making analogue connections to recording or playback devices through the line input/output jacks.

⑫ **DVD multichannel input jacks (DVD MULTI CH IN)**
These jacks are used to connect to a DVD-Audio player having 6-channel output or a DVD player or other device having 5.1 channel output.

8.2 SPECIFICATIONS

■Digital preamplifier

Number of quantizing bits

Digital input ..... 16 – 24 bits/linear
Analogue input ..... 24 bits/linear

Sampling frequency

Digital input ..... 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, (automatic 96 kHz, 176.4 kHz, 192 kHz detection)
(176.4 kHz and 192 kHz are possible only when using PDIF connections.)
Analogue input ..... 96 kHz

Frequency characteristics (Direct function is on)

Digital input ..... 5 Hz – 44 kHz
..... (Sampling frequency: 96 kHz)
Analogue input LINE ..... 5 Hz – 44 kHz
PHONO (MM) ..... 20 Hz – 20 kHz ±0.3 dB

S/N ratio (Normal, 2-channel mode)

Digital input ..... 118 dB min. (acoustic correction)
Analogue input
LINE ..... 115 dB min. (acoustic correction)
PHONO(MM) ..... 84 dB min. (IHF A network, short circuit)
..... (when 6 mV is input)

Dynamic range (Direct function is on, Normal, 2-channel mode)

Digital input ..... 110 dB min.
Analogue input ..... 108 dB min. (except for PHONO)

Total harmonic distortion
(Direct function is on, Normal, 2-channel mode)

Digital input ..... 0.0010% max.
Analogue input ..... 0.0012% max. (except for PHONO)

Channel separation (Normal and 2-channel mode)

Digital input ..... 115 dB min. (20 kHz)

Tone control ..... ±6 dB 0.5 dB-steps
BASS ..... 150 Hz, 300 Hz
MID ..... 400 Hz, 500 Hz, 630 Hz, 800 Hz, 1.0 kHz, 1.2 kHz
TREBLE ..... 3 kHz, 10 kHz

Analogue maximum allowable input (Input gain: –6 dB)

LINE ..... 5 V
PHONO (MM) ..... 45 mV (1 kHz)

■Input/output jacks

Analogue input jack ..... RCA 4-line(Input impedance: 50 kΩ)
..... (one of these lines supports multichannel input)

Analogue output jacks

Preout
[Output impedance: 100 Ω (max.)] ..... Front:2 RCA lines
..... Surround: 1 RCA line
..... Centre: 2 RCA lines
..... Subwoofer: 2 RCA lines
..... REC out: 2 RCA lines
..... (Output impedance: 1 kΩ)

Digital input jacks

Coaxial 3-line: ..... 0.5 Vp-p(Input impedance: 75 Ω)
Optical 3-line

Digital output jacks

Coaxial 1-line: ..... 0.5 Vp-p (Output impedance: 75 Ω)
Optical 1-line

● The signal format during PDIF mode is Pioneer's own custom format, and it does not conform to the IEC60958 standards.

■Power supply/miscellaneous

Supply voltage ..... AC 230 V, 50/60Hz (For European model)
..... AC 120V, 60Hz (For American model)
Power consumption ..... 52 W
Dimensions ..... 440 (W) × 150 (H) × 410 (D) mm
..... $17\,^{5}/_{16}$ (W) × $5\,^{7}/_{8}$ (H) × $16\,^{1}/_{8}$ (D) in.
Weight ..... 22.2 kg48.9 lbs(without package)

■Accessories

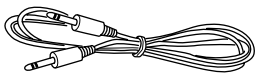
Operating instructions 1
Warranty 1
Remote control 1
AA batteries (R6P) 2
PDIF connection cable (stereo mini-plug) 1

✻ The audio characteristics are values measured at a sampling frequency of 96 kHz and 24 bits.

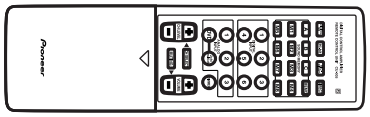
● The above specifications and product appearance are subject to change without notice for incorporating product improvements.

■ Accessories

● PDIF Connection Cable
(ADE1087)



● Remote control unit (CU-C005)
(AXD7198)



● Dry Cell Batteries (R6P)