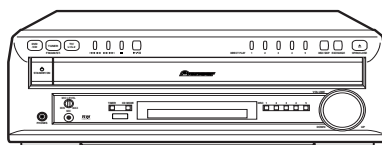


Service Manual



XV-HTD7

ORDER NO.
RRV2799

DVD/CD RECEIVER

XV-HTD7

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

Model	Type	Power Requirement	Region No.	Remarks
XV-HTD7	DDRXJ	AC120-127/220-230/240V	4	
XV-HTD7	DDXJ/RA	AC120-127/220-230/240V	1	
XV-HTD7	DDXJ/RB	AC120-127/220-230/240V	2	
XV-HTD7	DLXJ/NC	AC120-127/220-230/240V	3	
XV-HTD7	DPWXJ/RD	AC120-127/220-230/240V	4	
XV-HTD7	DTXJN/RC	AC120-127/220-230/240V	3	



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

SAFETY INFORMATION



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

WARNING

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

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

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

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

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

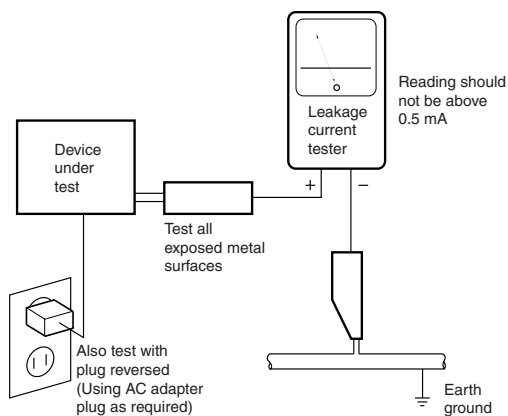
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

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

LEAKAGE CURRENT CHECK

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



AC Leakage Test

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

2. PRODUCT SAFETY NOTICE

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

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

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

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

[Important symbols for good services]

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

1. Product safety



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

2. Adjustments



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

3. Cleaning



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

4. Shipping mode and shipping screws



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

5. Lubricants, glues, and replacement parts



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

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1. SPECIFICATIONS

Specifications

Amplifier section

Continuous Power Output (RMS):
Front, center, surround. . . . 100 W per channel
(1 kHz, 10 % T.H.D., 6 Ω)
Subwoofer . . . 100 W (100 Hz, 10 % T.H.D., 6 Ω)

Disc section

Digital audio characteristics DVD fs: 96 kHz, 24-bit
Type DVD system, video CD system and compact disc digital audio system
Frequency response. 4 Hz to 44 kHz
Wow and Flutter. Limit of measurement
(±0.001 % W.PEAK) or less (JEITA)

FM tuner section

Frequency range. 87.5 – 108 MHz
Antenna 75 Ω, unbalanced

AM tuner section

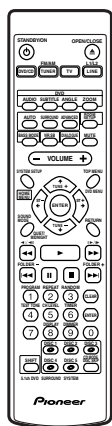
Frequency range
With 9 kHz step. 531 kHz to 1,602 kHz
With 10 kHz step. 530 kHz to 1,700 kHz
(Except for Saudi Arabia model)
Antenna Loop antenna

Miscellaneous

Power requirements
. AC 120-127V / 220-230V / 240V / 50/60Hz
Power consumption 180 W
Power consumption in standby
. 0.40 W (120V/ 60Hz)
. 0.58 W (127V/ 50/60Hz)
Dimensions . . . 420 (W) x 125 (H) x 448 (D) mm
Weight 9.8 kg

Accessories

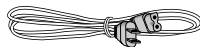
- Remote Control Unit
x 1 (AXD7353)



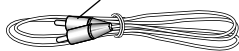
- FM Antenna x 1
(ADH7004)



- Power Cord x 1
(ADG1158)



- Video Cord x 1
(VDE1065) Yellow (L=1.5m)



- AA/R6P Dry Cell
Batteries x 2



- AM Loop Antenna x 1
(ATB7009)



Accessories (DVD/CD receiver)

Remote control. 1
AA/R6P dry cell batteries. 2
Video cable (yellow plugs). 1
AM loop antenna 1
FM antenna 1
Power cable 1
(Central and South American model x2)
Power plug adapter 1
(Central and South American model, PX model and Duty-free model within Japan only)
Warranty card 1
(Australian and New Zealand model only)
Operating instructions

Speaker System

Front speakers

Enclosure Closed-box bookshelf type
(magnetically shielded)
System. 2-way system
Speakers
Woofer 10 cm cone type
Tweeter 5.2 cm cone type
Nominal impedance. 6 Ω
Frequency range 60 Hz to 20 kHz
Maximum Input Power. 100 W
Dimensions . . . 145 (W) x 235 (H) x 204 (D) mm
Weight 2 kg

Center speaker

Enclosure Closed-box bookshelf type
(magnetically shielded)
System. 8.7 cm 1-way system
Speakers. 8.7 cm cone type
Nominal impedance. 6 Ω
Frequency range 70 Hz to 20 kHz
Maximum Input Power. 100 W
Dimensions . . . 310 (W) x 110 (H) x 85 (D) mm
Weight 1 kg

Surround speakers

Enclosure Closed-box bookshelf type
(magnetically shielded)
System. 8.7 cm 1-way system
Speakers. 8.7 cm cone type
Nominal impedance. 6 Ω
Frequency range 90 Hz to 20 kHz
Maximum Input Power. 100 W
Dimensions . . . 110 (W) x 155 (H) x 82 (D) mm
Weight 0.8 kg

Subwoofer

Enclosure Bass-reflex floor type
System. 16 cm 1-way system
Speaker. 16 cm cone type
Nominal impedance. 6 Ω
Frequency range 35 Hz to 2 kHz
Maximum Input Power. 100 W
Dimensions . . . 190 (W) x 360 (H) x 327 (D) mm
Weight 5.0 kg

Accessories (Speaker system)

Speaker cables 6
non-skid pads. 1 sheet



Note

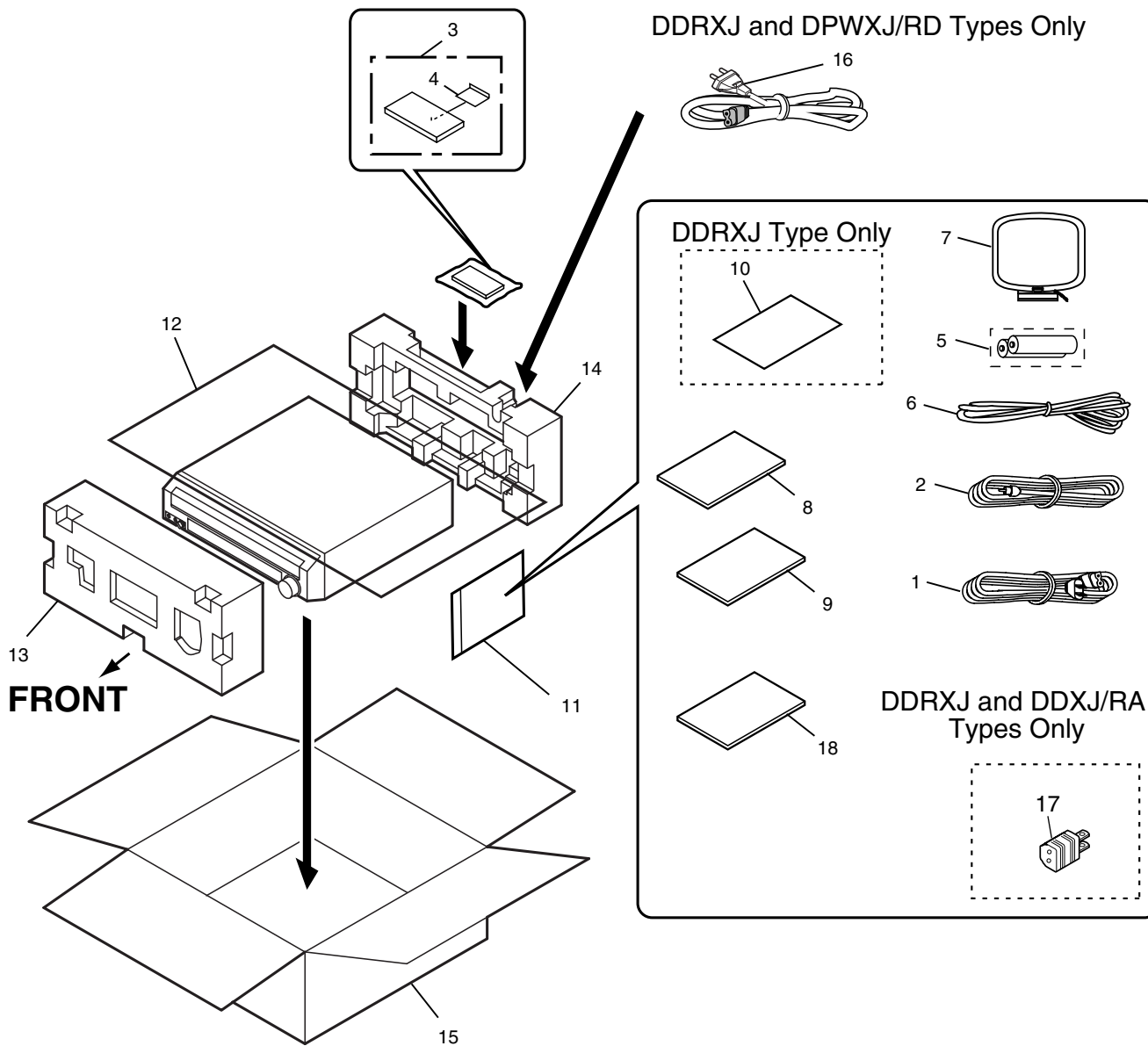
- Specifications and design subject to possible modification without notice, due to improvements.

2. EXPLODED VIEWS AND PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to ▼ mark on product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING



PACKING parts List

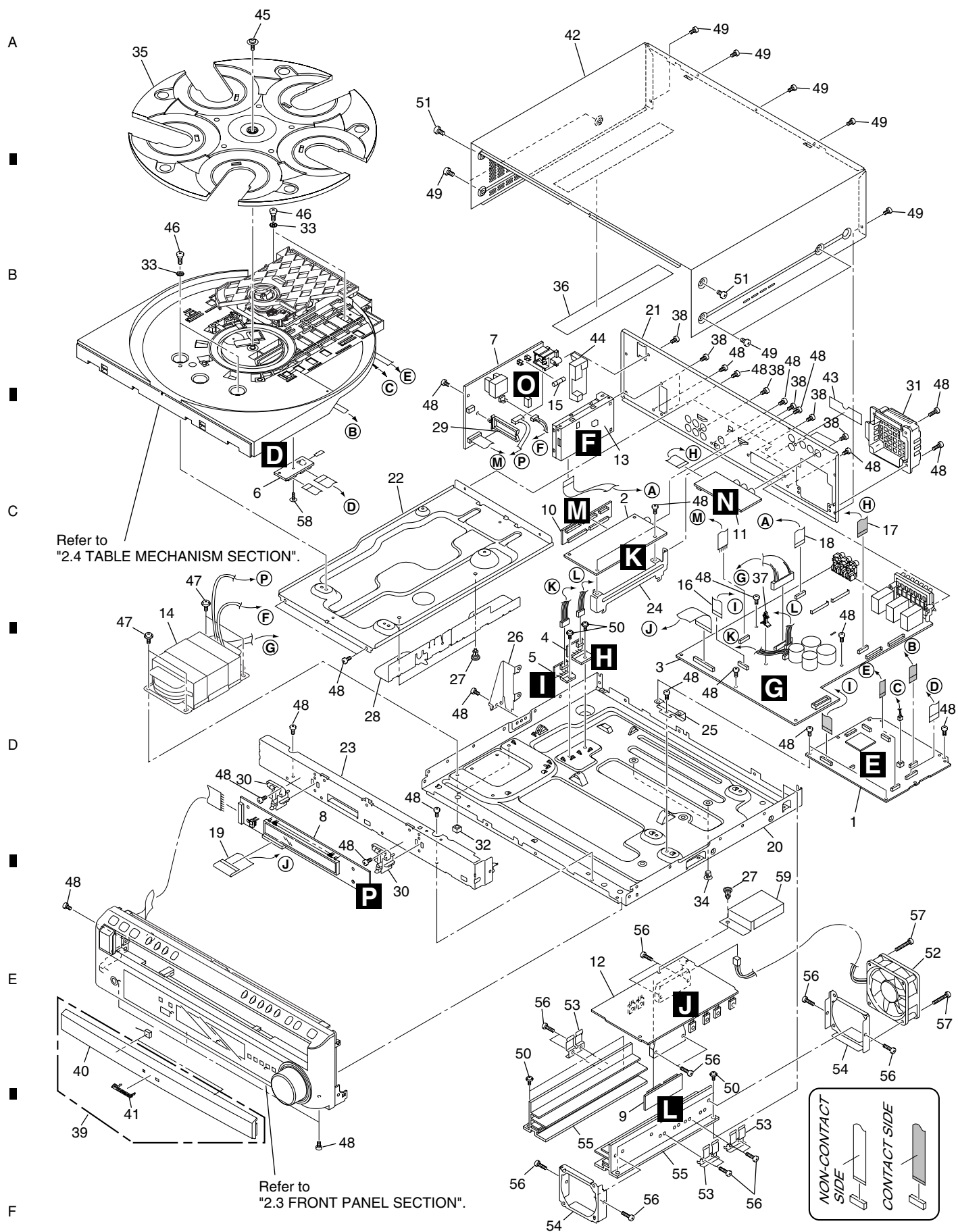
Mark No.	Description	Part No.	Mark No.	Description	Part No.
⚠ 1	Power Cord	See Contrast table(2)	10	Caution Sheet	See Contrast table(2)
2	Video Cord (L = 1.5m)	VDE1065	NSP 11	Polyethylene Bag (0.03 x 230 x 340)	Z21-038
3	Remote Control Unit	AXD7353	12	Packing Sheet	AHG7010
4	Battery Cover	AZN7933	13	Front Pad HTM	AHA7412
NSP 5	Dry Cell Battery (R6P, AA)	VEM1031	14	Rear Pad HTM	AHA7413
6	FM Antenna	ADH7004	15	Packing Case HTM	See Contrast table(2)
7	AM Loop Antenna	ATB7009	⚠ 16	Power Cord	See Contrast table(2)
8	Operating Instructions (English)	See Contrast table(2)	17	Power Plug Adapter	See Contrast table(2)
9	Operating Instructions	See Contrast table(2)	NSP 18	Warranty Card	See Contrast table(2)

(2) CONTRAST TABLE

XV-HTD7/DDRXXJ, DDXJ/RA, DDXJ/RB, DLXJ/NC, DPWXJ/RD and DTXJN/RC are constructed the same except for the following :

Mark	No.	Symbol and Description	XV-HTD7					
			DDRXXJ	DDXJ/RA	DDXJ/RB	DLXJ/NC	DPWXJ/RD	DTXJN/RC
⚠	1	AC Power Cord	ADG1158	ADG1158	ADG1158	ADG1154	Not used	ADG1154
	8	Operating Instructions (English)	ARB7295	ARB7295	ARB7295	ARB7295	ARB7295	Not used
	9	Operating Instructions	ARC7512 (Spanish)	Not used	ARC7513 (Arabic)	ARC7514 (Chinese)	Not used	ARC7515 (Thai)
	10	Caution Sheet	XRH3002	Not used	Not used	Not used	Not used	Not used
	15	Packing Case	AHD8210	AHD8211	AHD8212	AHD8213	AHD8214	AHD8233
⚠	16	AC Power Cord	XDG3009	Not used	Not used	Not used	ADG1160	Not used
	17	Power Plug Adapter	XKM3002	XKM3002	Not used	Not used	Not used	Not used
NSP	18	Warranty Card	Not used	Not used	Not used	Not used	ARY7047	Not used

2.2 EXTERIOR SECTION



EXTERIOR parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	DVDM Assy	AWM7807	29	Wire Saddle	AEC7477	
2	DSP Assy	AWX8251	30	PCB Holder HTM	See Contrast table(2)	A
3	AF Assy	AWU8094				
4	DIODE L Assy	AWU8095	31	Fan Cover HTM	AMR7451	
5	DIODE S Assy	AWU8071	32	Disc Guard	See Contrast table(2)	
			33	Mech. Spacer(T1.5)	VEB1339	
6	SSIB Assy	AWU8157	NSP 34	PC Support	VEC1749	
7	PRIMARY Assy	AWU8066	35	Rotary Tray	VNK4923	
8	DISPLAY Assy	AWU8058				
9	AMP TRADE Assy	AWU8059	36	Bonnet Cushion	XEB3027	
10	DSP TRADE Assy	AWU8060	NSP 37	PCB Support	XEC3020	
			38	Screw	BPZ30P100FZK	
11	VIDEO JACK Assy	AWU8061	39	Tray Cap Assy HTM	See Contrast table(2)	B
12	6CH AMP Assy	AWM7720	40	Tray Cap HTM	AAK8099	
13	FM/AM TUNER Module	AXQ7228				
⚠ 14	Power Transformer (T1)	ATS7355	41	Name Plate	VAM1129	
⚠ 15	Fuse (FU1 : 5.0A/250V)	REK1029	42	Bonnet HTM	AZN7932	
			43	Speaker Label HTM	AAX7976	
16	18P F.F.C/60V (DVDM CN923 - AF CN5102)	ADD7409	44	VS Knob	AAD7690	
17	17P F.F.C/30V (AF CN5103 - VIDIO JACK CN8001)	ADD7410	45	Screw	ABA7069	
18	13P F.F.C/30V (AF CN5701 - TUNER CN201)	ADD7411	46	Screw	ABA7094	
19	27P F.F.C/60V (AF CN5711 - DISPLAY CN5721)	ADD7412	47	Screw	ASZ40P060FMC	
NSP 20	Chassis HTM	See Contrast table(2)	48	Screw	BBZ30P060FMC	C
			49	Screw	BBZ30P060FZK	
			50	Screw	IPZ30P080FMC	
21	Rear Panel HTM	See Contrast table(2)	51	Screw	VPZ30P100FZK	
22	Mecha Frame HTM	See Contrast table(2)	52	DC Fan Motor	AXM7025	
23	Front Frame HTM	ANG7452	53	FET Bracket A	ANG7418	
24	DSP Holder HTM	ANG7455	54	Fan Plate	See Contrast table(2)	
25	DVD Angle HTM	ANG7457	NSP 55	Heat Sink	See Contrast table(2)	
26	PCB Angle	XNG3057	56	Screw	BBZ30P140FMC	
27	Push Rivet	AEC7370	57	Screw	BBZ30P300FZK	D
28	Barrier A HTM	AEC7469	58	Screw	Z39-019	
			59	Barrier B HTM	AEC7470	

(2) CONTRAST TABLE

XV-HTD7/DDRXXJ,DDXJ/RA, DDXJ/RB, DLXJ/NC, DPWXJ/RD and DTXJN/RC are constructed the same except for the following :

Mark	No.	Symbol and Description	XV-HTD7					
			DDRXXJ	DDXJ/RA	DDXJ/RB	DLXJ/NC	DPWXJ/RD	DTXJN/RC
NSP	20	Chassis HTM	ANA7153	ANA7153	ANA7153	ANA7153	ANA7153	ANA7160
	21	Rear Panel HTM	ANC8238	ANC8239	ANC8240	ANC8177	ANC8241	ANC8242
	22	Mech.Frame HTM	ANG7451	ANG7451	ANG7451	ANG7451	ANG7451	ANG7477
	30	PCB Holder HTM	AMR7450	AMR7450	AMR7450	AMR7450	AMR7450	AMR7473
	32	Disc Guard	PNM1245	PNM1245	PNM1245	PNM1245	PNM1245	Not used
	32	S-Cover	Not used	Not used	Not used	Not used	Not used	AEB7262
	39	Tray Cap Assy HTM	AXG7199	AXG7199	AXG7199	AXG7199	AXG7199	AXG7219
	54	Fan Plate	ANG7462	ANG7462	ANG7462	ANG7462	ANG7462	ANG7425
NSP	55	Heat Sink	ANH7166	ANH7166	ANH7166	ANH7166	ANH7166	ANH7161

2.3 FRONT PANEL SECTION

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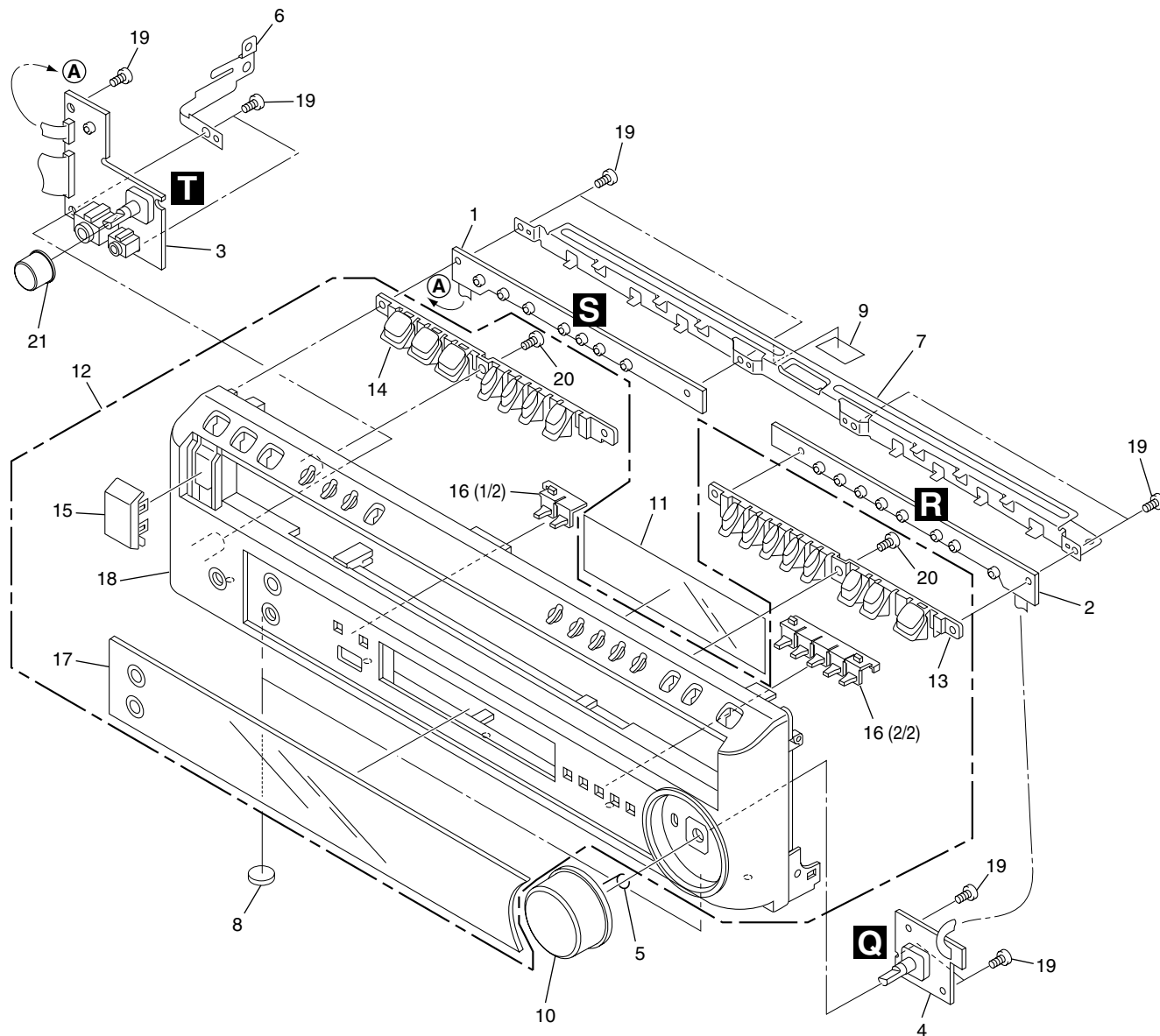
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FRONT PANEL SECTION parts List

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	FUNCTION KEY Assy	AWU8062	12	Front Panel Assy HTM	See Contrast table(2)
2	DISC KEY Assy	AWU8063	13	Disc Button HTM	AAD7701
3	H. P MIC Assy	AWU8068	14	Func. Button HTM	AAD7702
4	JOG Assy	AWU8065	15	Power Cap HTM	AAK8095
5	VOL Ring	ABH7230			
6	GND Plate L HTM	ANG7453	16	Lens HTM	AAK8096
7	Top Frame	XNG3077	17	Display Window HTM	AAK8102
8	Leg	AEB7090	18	Front Panel HTM	AMB7845
9	Sensor Cushion	XEB3026	19	Screw	BPZ30P100FZK
10	VOL Knob HTM	AAK8103	20	Screw	BPZ30P100FMC
			21	MIC knob	See Contrast table(2)
11	FL Filter HTM	AAK8100			

(2) CONTRAST TABLE

XV-HTD7/DDRXXJ,DDXJ/RA, DDXJ/RB, DLXJ/NC, DPWXJ/RD and DTXJN/RC are constructed the same except for the following :

Mark	No.	Symbol and Description	XV-HTD7					
			DDRXXJ	DDXJ/RA	DDXJ/RB	DLXJ/NC	DPWXJ/RD	DTXJN/RC
	12	Front Panel Assy HTM	AXG7216	AXG7216	AXG7216	AXG7216	AXG7216	AXG7220
	21	MIC knob	XAA3024	XAA3024	XAA3024	XAA3024	XAA3024	XAA3025

2.4 TABLE MECHANISM SECTION

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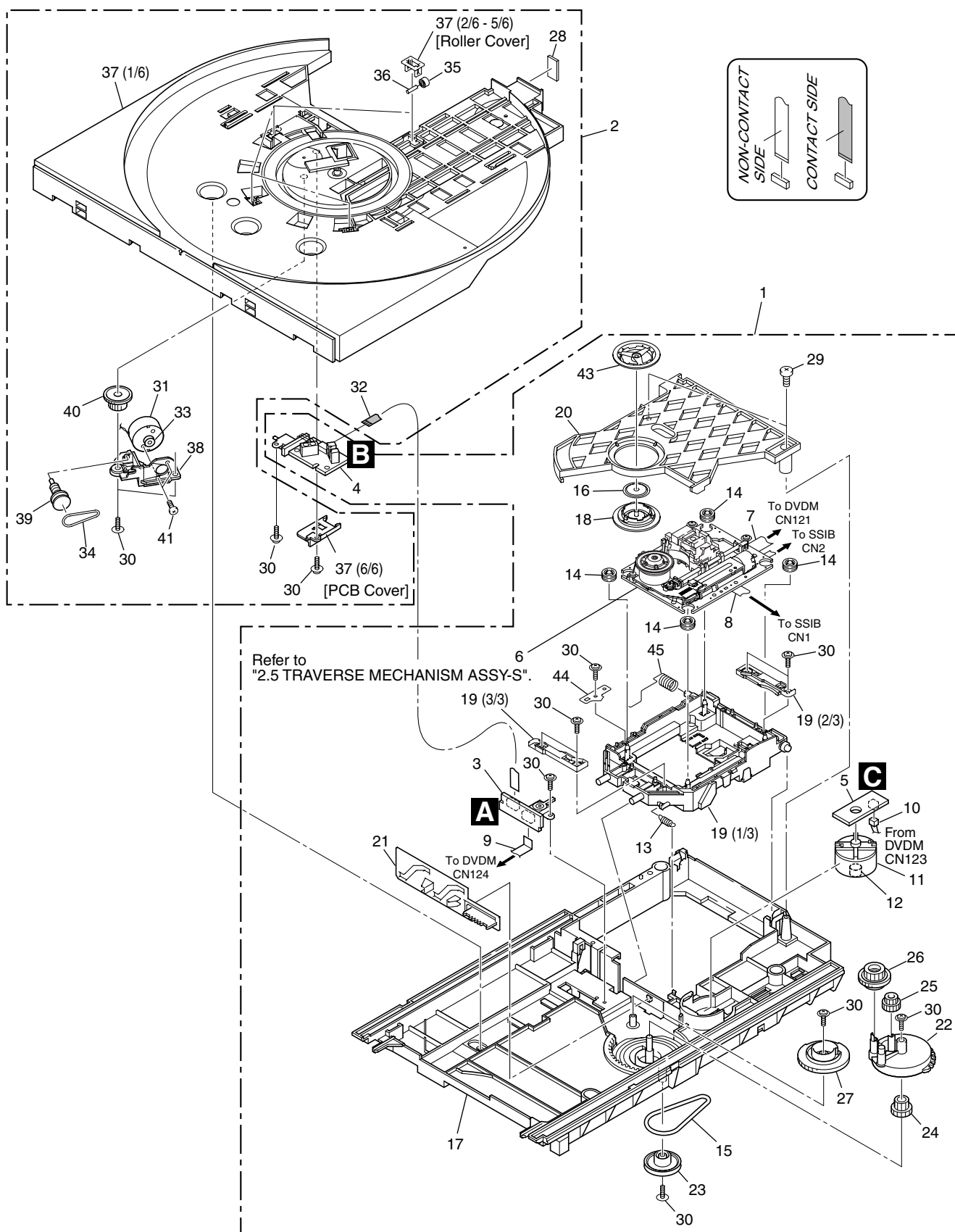


TABLE MECHANISM SECTION parts List

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
NSP 1	5C Mech. Base Assy	AXA7129
NSP 2	5C Table Mech. Assy	AXA7130
NSP 3	TRSB Assy	AWU8154
NSP 4	SSRB Assy	AWU8155
NSP 5	LOMB Assy	AWU8156
6	Traverse Mechanism Assy-S	VXX2871
7	Flexible Cable 24P	ADD7418
8	Flexible Cable 17P	ADD7419
9	Flexible Cable 8P	ADD7420
10	Housing Assy 2P	VKP2249
11	Slider Motor (LOADING)	VXM1033
12	Motor Pulley	PNW1634
13	Spring	VBH1333
14	Floating Rubber	VEB1351
15	Load Belt	VEB1316
16	Clamper Plate	VNE2251
17	Mech. Base	VNK5340
18	Clamper	VNL1935
19	Float Base	VNL1933
20	Clamper Holder	VNL1939
21	Clamp Cam	VNL1934
22	Planet Base	ANW7258
23	Gear Pulley	ANW7261
24	Loading Gear (1)	ANW7262
25	Loading Gear (2)	ANW7263
26	Drive Gear	ANW7264
27	Change Gear	ANW7260
28	CR cushion T2	XEB3020
29	Screw	BPZ30P100FMC
30	Screw	Z39-019
31	Motor (TRAY)	DXM1143
32	Flexible Cable (7P)	VDA1835
33	Motor Pulley	PNW1634
34	Tray Belt	VEB1317
35	Rubber Roller	VEB1318
36	Roller Shaft	VLL1511
37	Slide Table	VNK4751
38	Motor Holder	ANW7259
39	Worm Gear	ANW7269
40	Tray Gear	ANW7265
41	Screw	JGZ17P028FMC
42		
43	Cap	VNL1936
44	TM Stopper	ANG7460
45	Thrust Spring	VBH1339

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2.5 TRAVERSE MECHANISM ASSY-S

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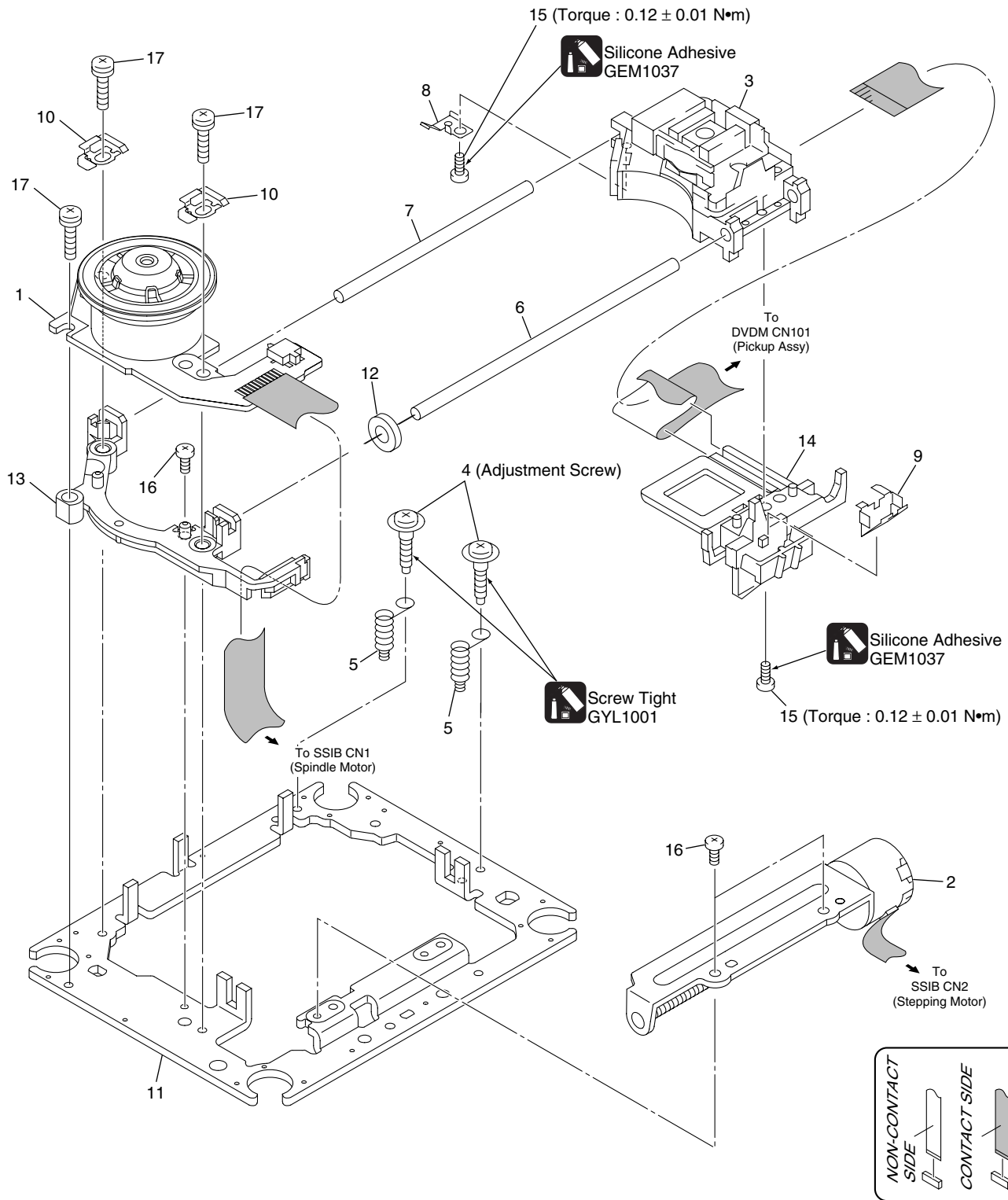
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TRaverse Mechanism AssY-S parts List

Mark No.	Description	Part No.	
1	Spindle Motor	VXM1099	A
2	Stepping Motor	VXM1101	
3	Pickup assy-S	OXX8005	
4	Skew Screw	VBA1080	
5	Skew Spring	VBH1335	
6	Guide Bar	VLL1514	■
7	Sub Guide Bar	VLL1515	
8	Leaf Spring	VNC1023	
9	Joint Spring	VNC1019	
10	Support Spring	VNC1020	
NSP 11	Mechanism Chassis	VNE2248	B
12	Damper Sheet	VEB1335	■
13	Spacer	VNL1913	
14	Joint 03	VNL1949	
15	Tapping Screw	OBA8016	
16	Screw	BBZ20P050FZK	
17	Screw	PMA26P100FMC	

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3.1 BLOCK DIAGRAM DVD SECTION

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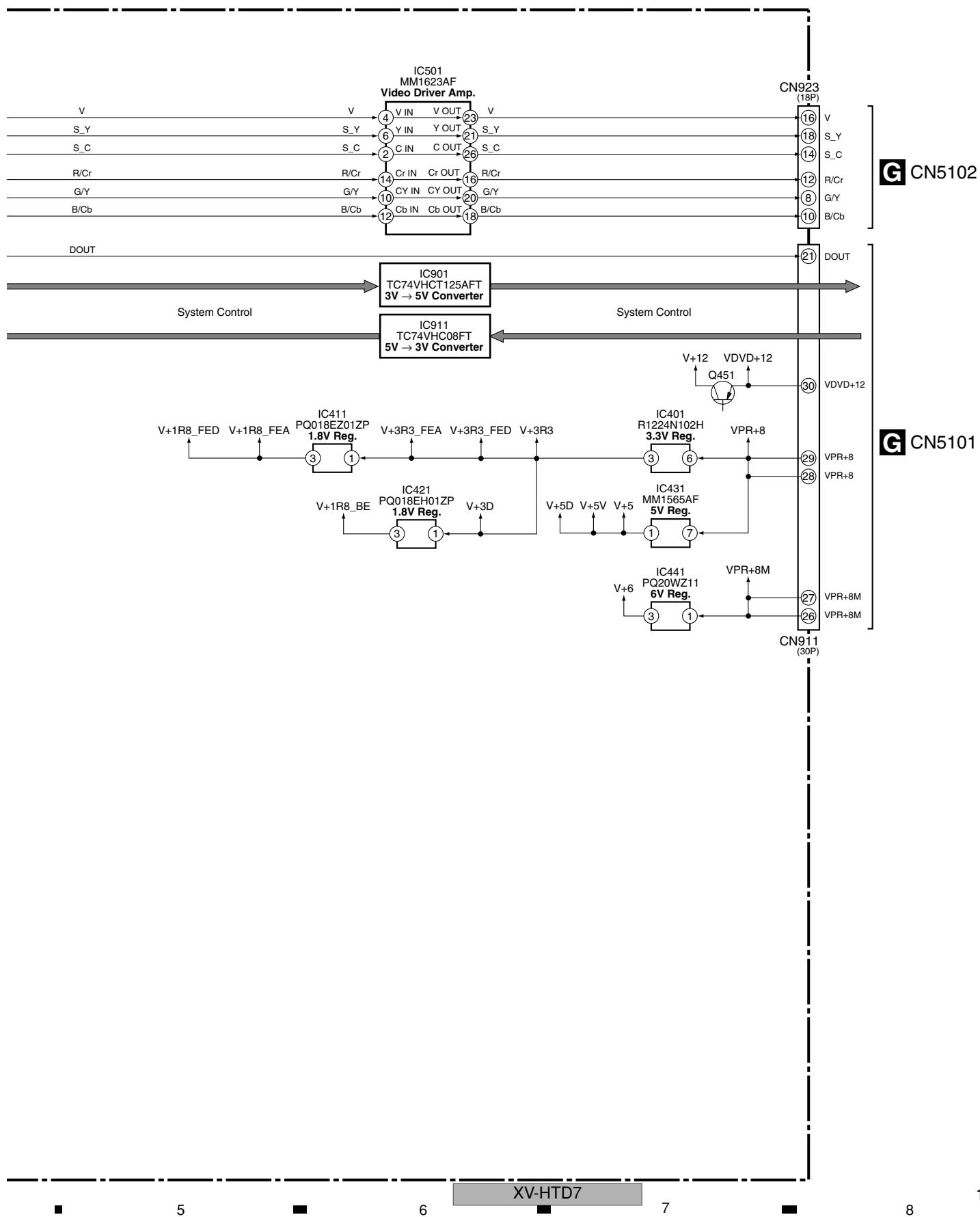
B

C

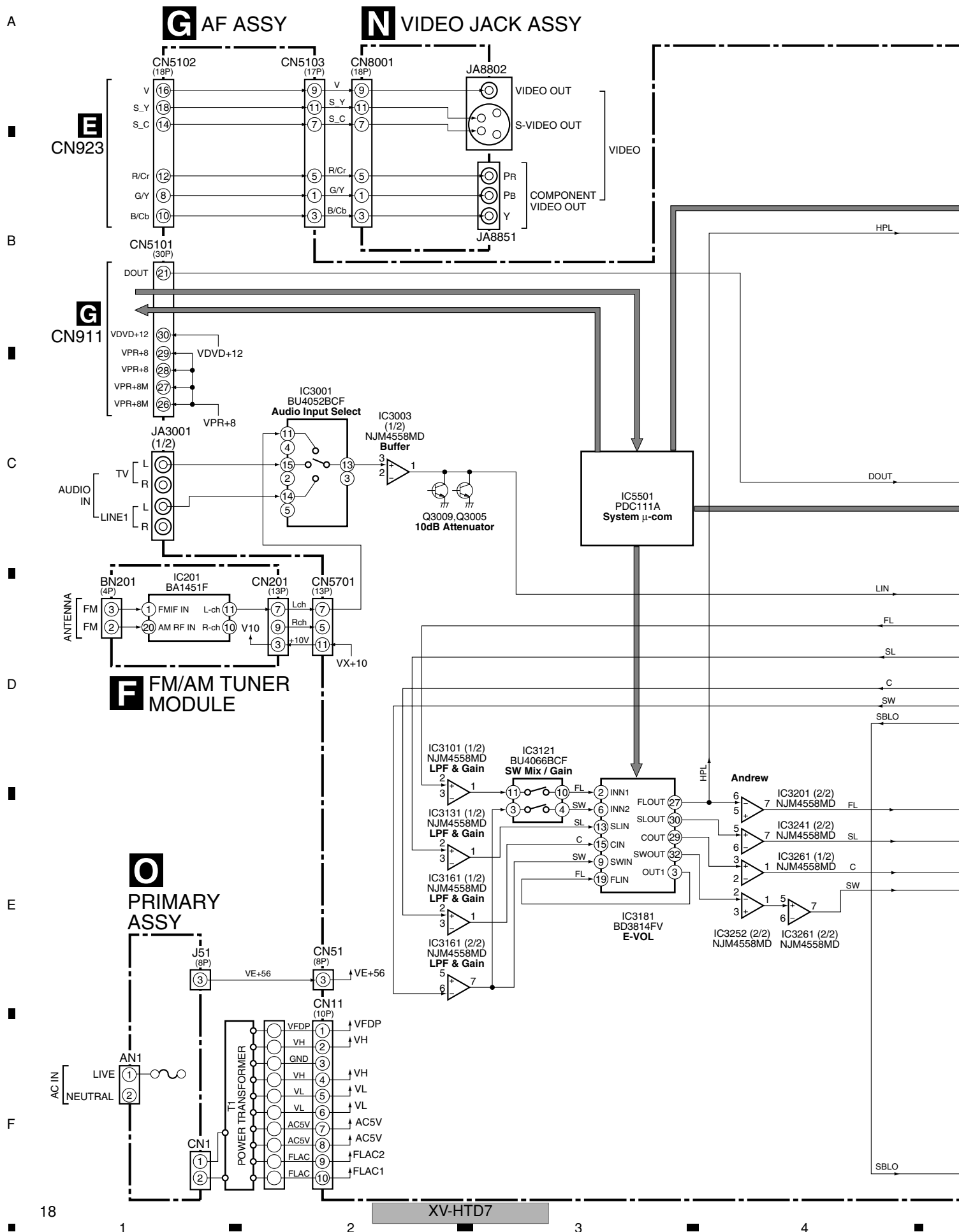
D

E

F



3.2 BLOCK DIAGRAM MAIN SECTION



P DISPLAY ASSY

T HP MIC ASSY

Q JOG ASSY

S FUNCTION KEY ASSY

R DISC KEY ASSY

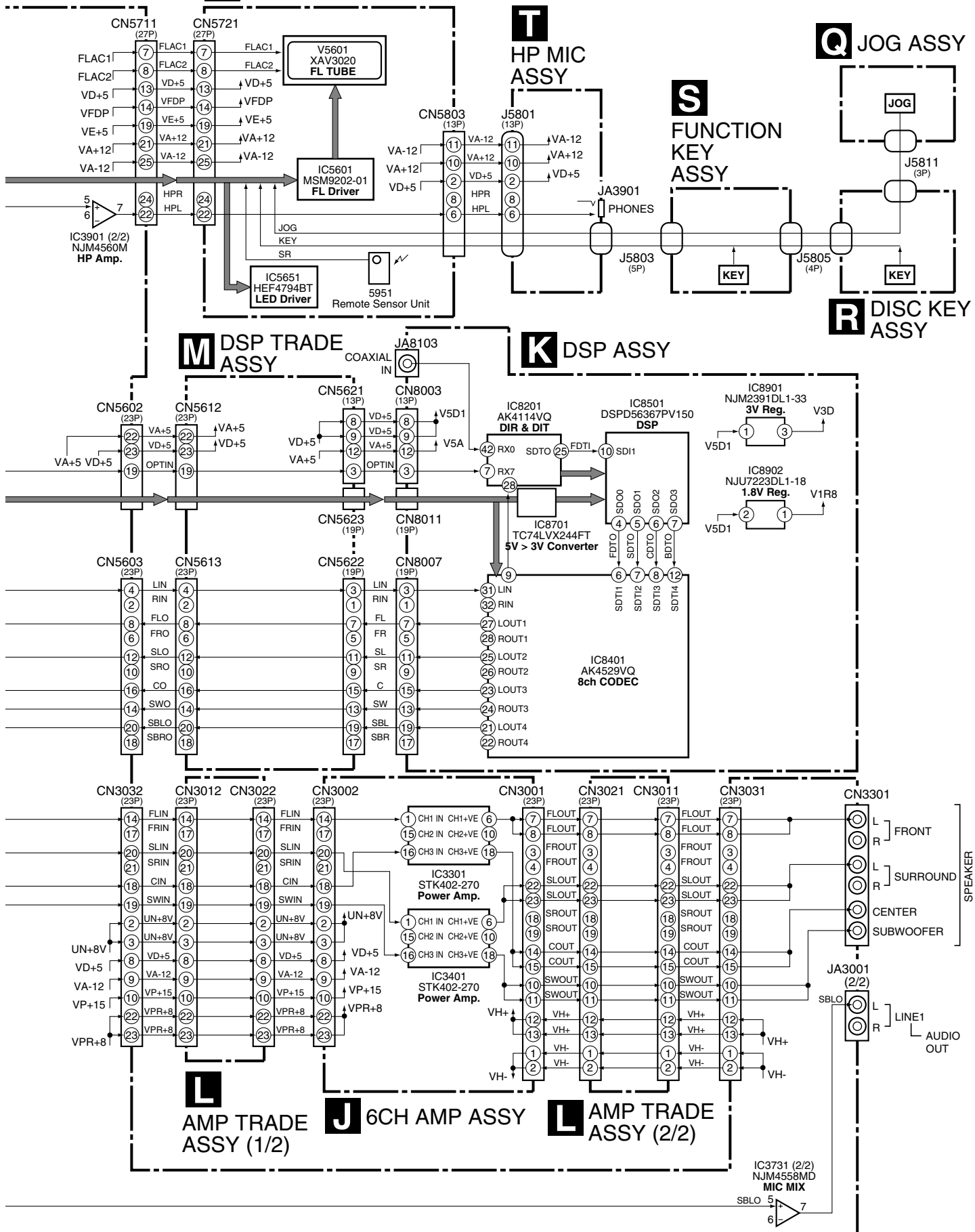
M DSP TRADE ASSY

K DSP ASSY

L AMP TRADE ASSY (1/2)

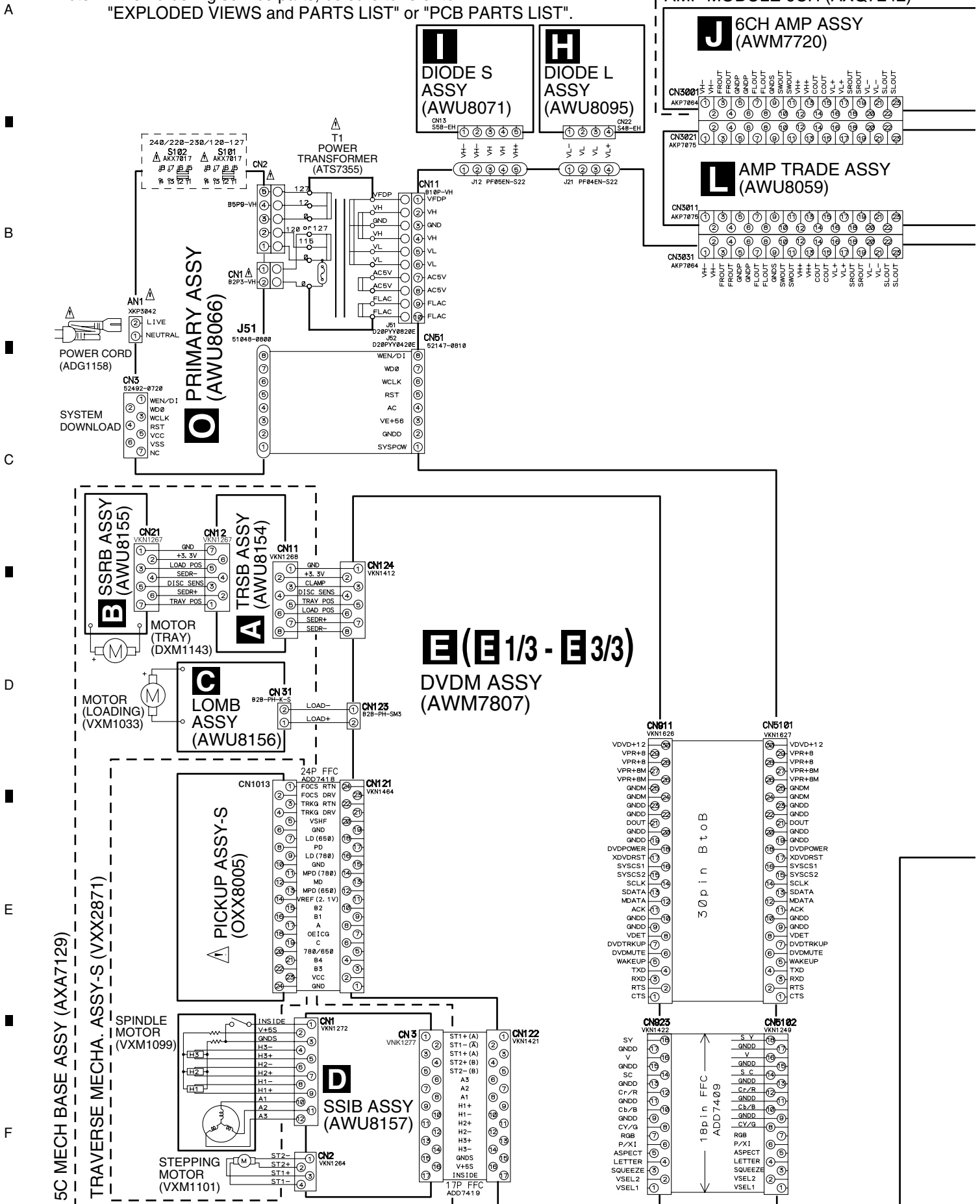
J 6CH AMP ASSY

L AMP TRADE ASSY (2/2)



3.3 OVERALL WIRING DIAGRAM

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



A

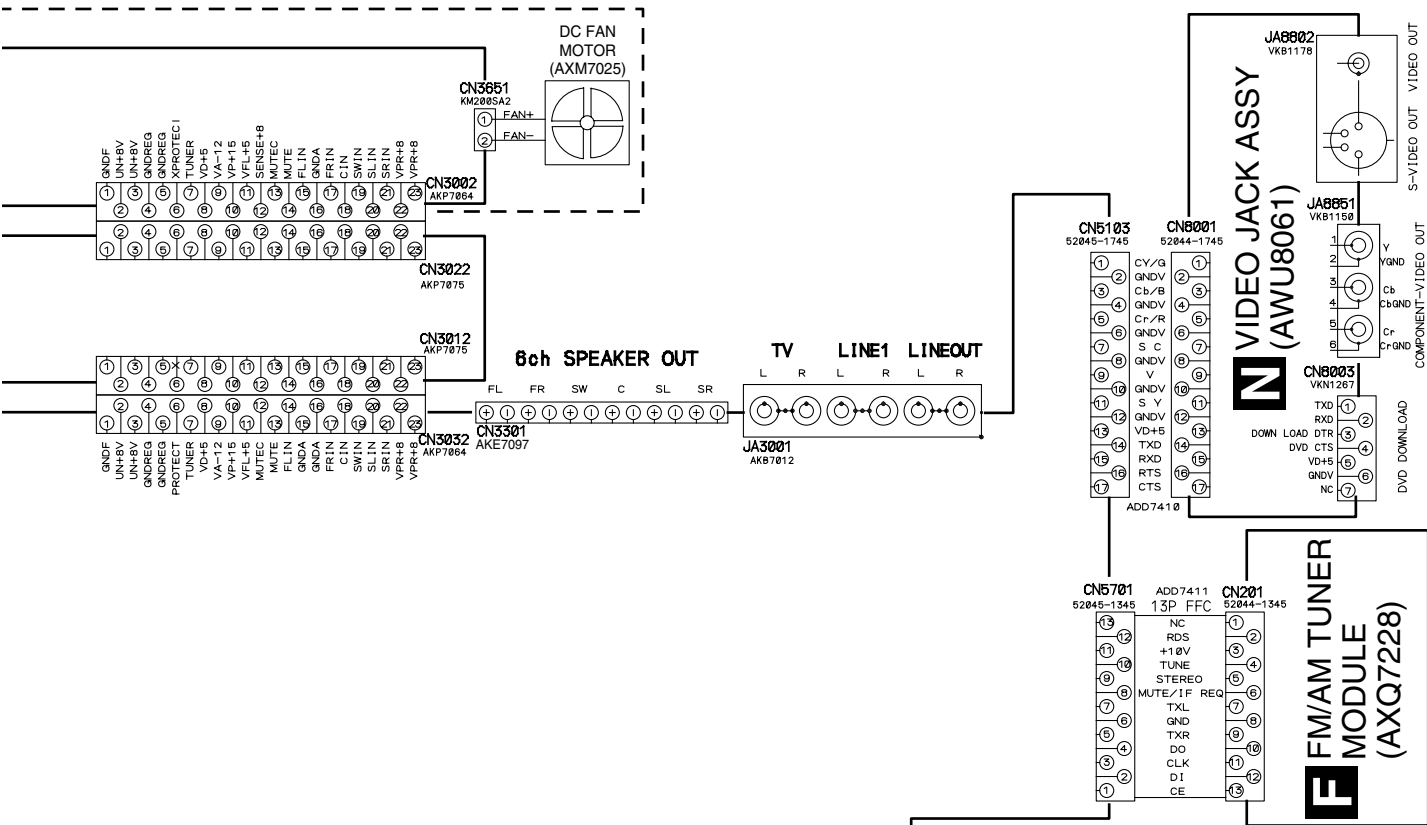
B

C

D

E

F



G (G 1/4 - G 4/4)

AF ASSY (AWU8094 : Other)
(AWU8151 : DDXJ/RB Only)

P
DISPLAY ASSY
(AWU8058)

T
HP MIC ASSY
(AWU8068)

M DSP TRADE ASSY
(AWU8060)

K (K 1/2 - K 2/2)
DSP ASSY (AWX8251)

Q
JOG ASSY
(AWU8065)

R
DISC KEY ASSY
(AWU8063)

S
FUNCTION KEY
ASSY
(AWU8062)

3.4 TRSB, SSRB, LOMB and SSIB ASSYS

A

B

C

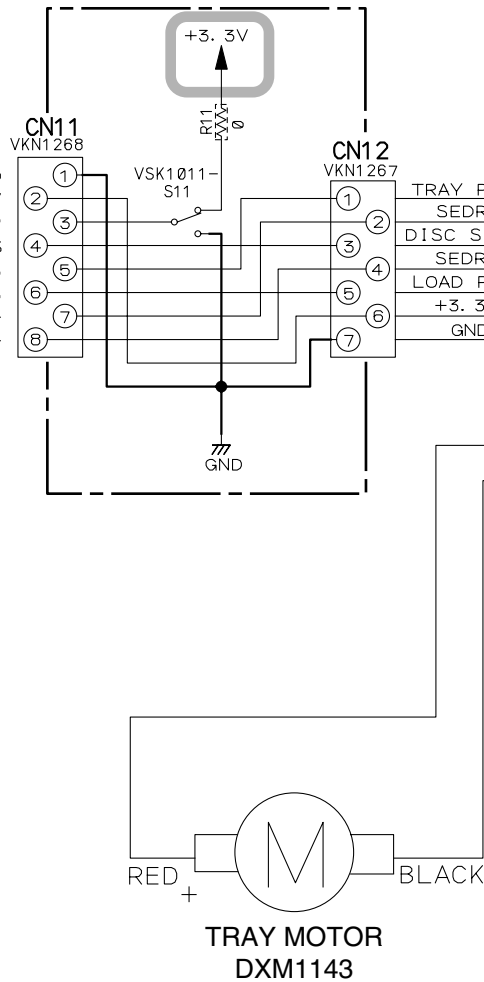
D

E

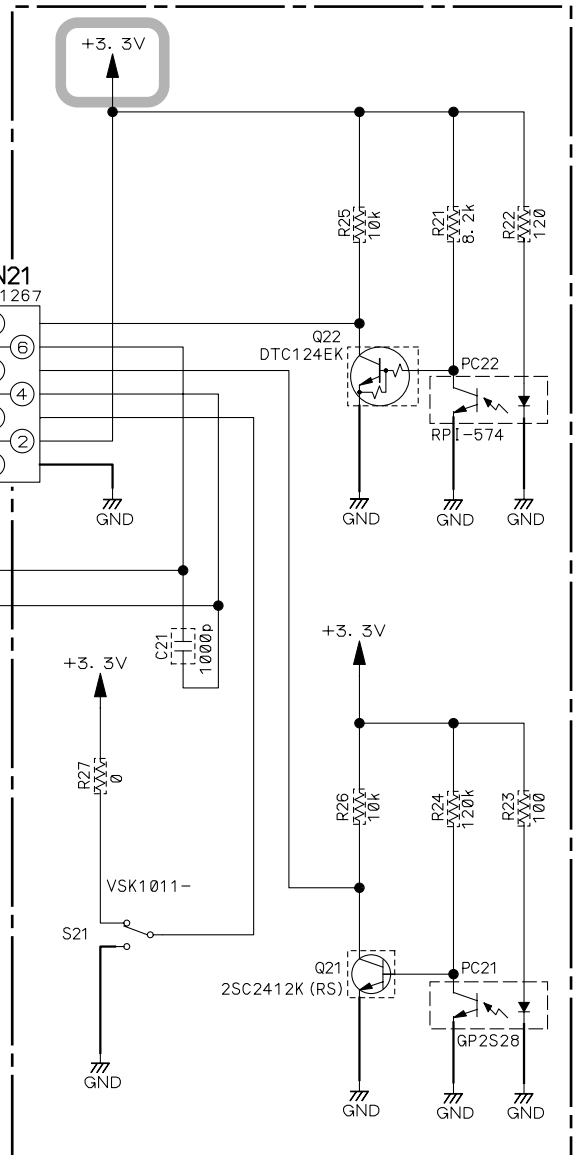
F

E1/3 CN124

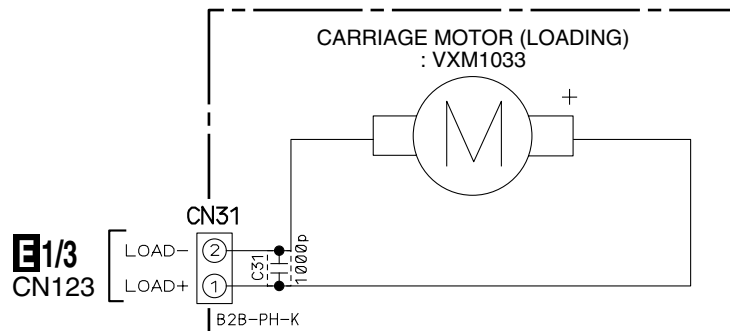
A TRSB ASSY (AWU8154)



B SSRB ASSY (AWU8155)



C LOMB ASSY (AWU8156)



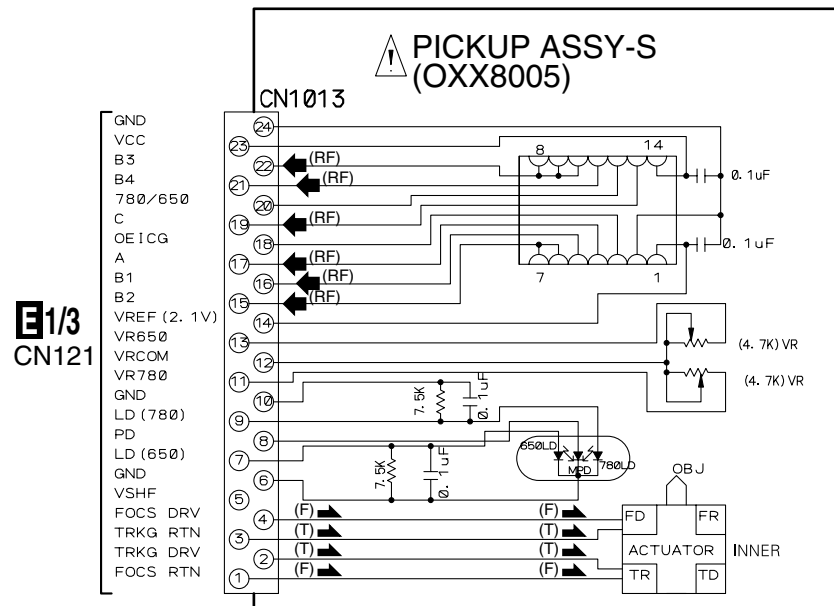
 : The power supply is shown with the marked box.

A B C

A

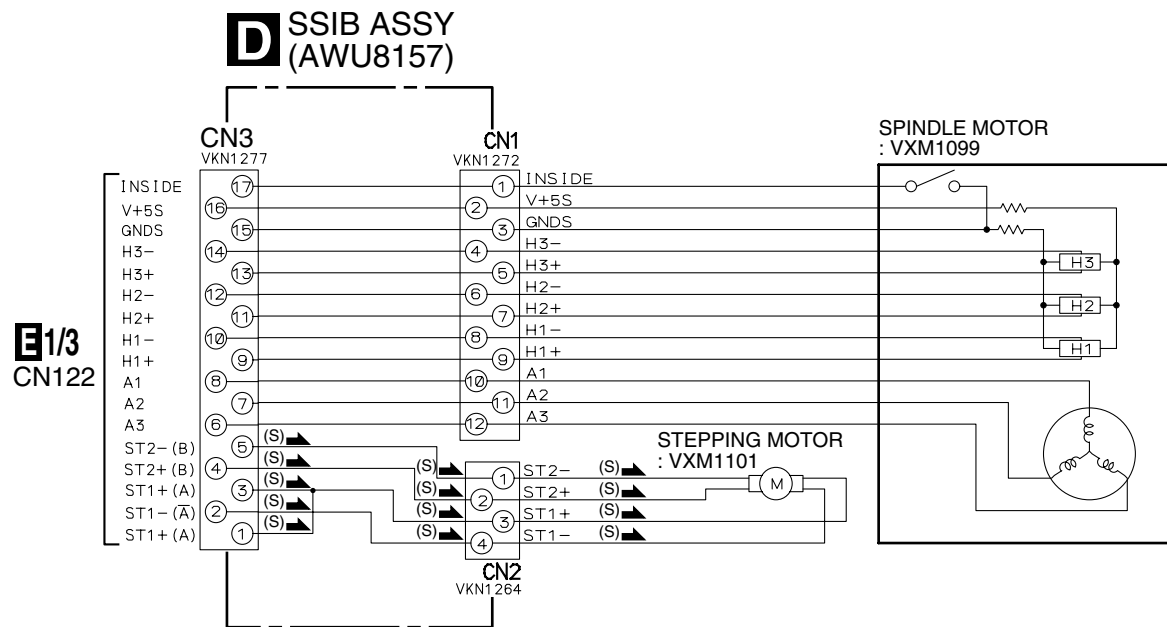
(RF) : RF SIGNAL ROUTE
 (F) : FOCUS SERVO LOOP LINE
 (T) : TRACKING SERVO LOOP LINE
 (S) : STEPPING SERVO LOOP LINE

B



C

D



E

F

D

3.5 DVDM ASSY (1/3)

A

A
CN11

CN124
VKN1412
(Top type)

① GND5
② V+3D
③ CLAMP
④ DISCSSENS
⑤ TRYPOS
⑥ OPEN
⑦ SEDR+
⑧ SEDR-
⑨ GND

C
CN31

CN123
B2B-PH-SM3
(Top type)

① LOAD+
② LOAD-
③ GND

B

C

D
CN3

CN122
VKN1421
(Top type)

① ST1+(A)
② ST1-(A)
③ ST1+(A)
④ ST2+(B)
⑤ ST2-(B)
⑥ A3
⑦ A2
⑧ A1
⑨ H1+
⑩ H1-
⑪ H2+
⑫ H2-
⑬ H3+
⑭ H3-
⑮ GND5
⑯ V+5S
⑰ INSIDE
⑱ GND

D

E

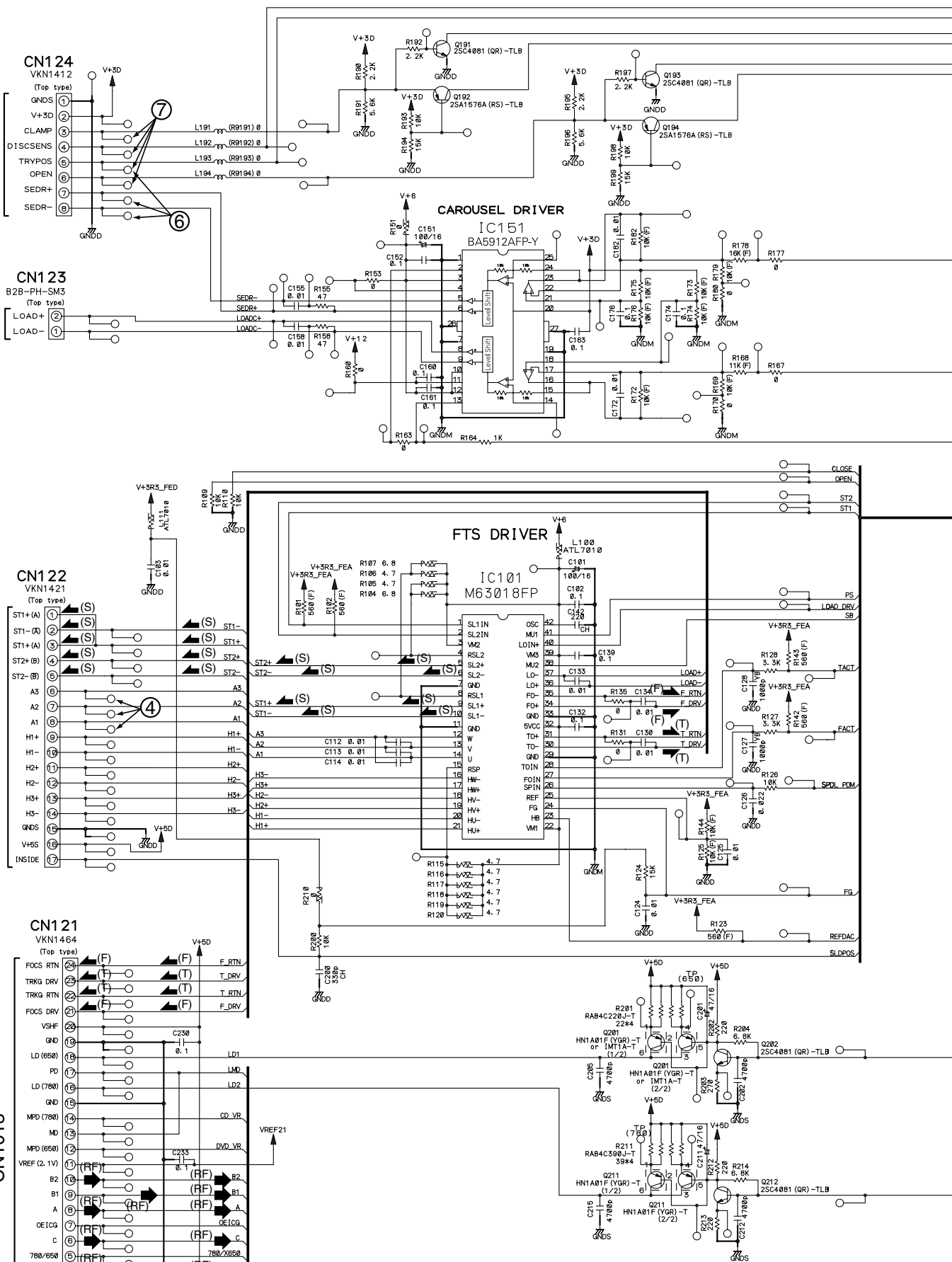
E
PICKUP ASSY-S
CN1013

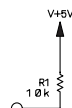
CN121
VKN1464
(Top type)

① FOCUS RTN
② TRKG DRV
③ TRKG RTN
④ FOCUS DRV
⑤ VSHF
⑥ GND
⑦ LD (650)
⑧ PD
⑨ LD (780)
⑩ GND
⑪ MPD (780)
⑫ MD
⑬ MPD (650)
⑭ VREF (2.1V)
⑮ B2
⑯ B1
⑰ A
⑱ OE1CG
⑲ C
⑳ 780/650
㉑ B4
㉒ B3
㉓ VCC
㉔ GND

F

E 1/3





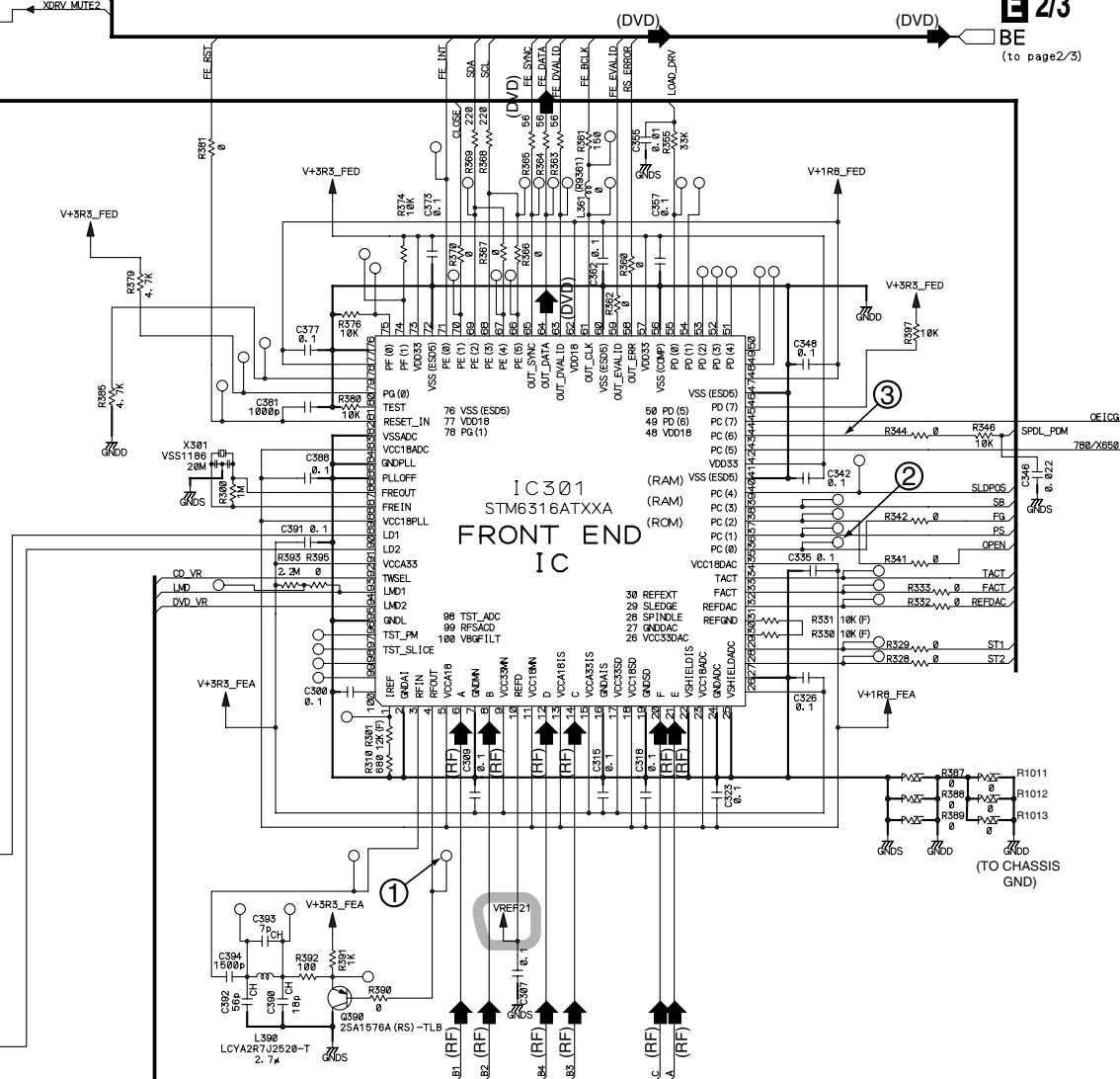
A

- (RF) : RF SIGNAL ROUTE
(DVD) : DVD DATA SIGNAL ROUTE
(F) : FOCUS SERVO LOOP LINE
(T) : TRACKING SERVO LOOP LINE
(S) : STEPPING SERVO LOOP LINE

1

E 2/3
☐ BE
(to page 2/3)

C



: The power supply is shown with the marked box.

E 1/3

3.6 DVDMM ASSY (2/3)

A

B

C

D

E

F

FLASH ROM

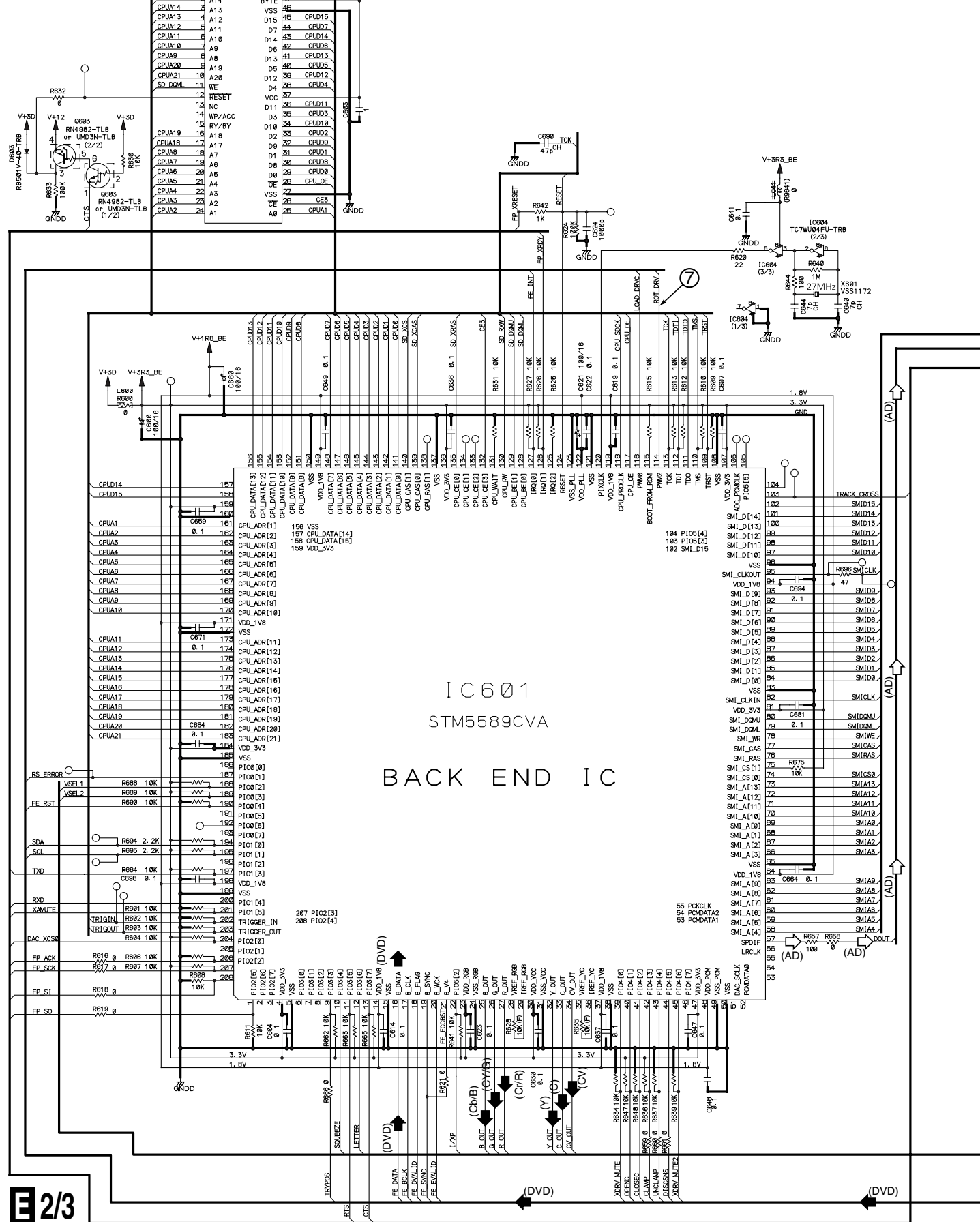
IC603

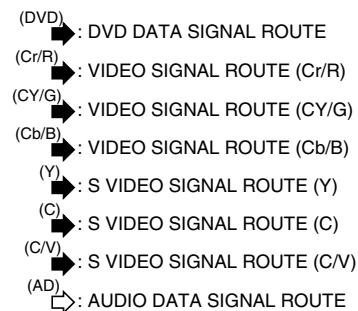
VW2078

MBM29LV160TE-90PFTN

V+5R3_BE

2/3 DVDMM ASSY (AWM7807)





A

B

C

D

E

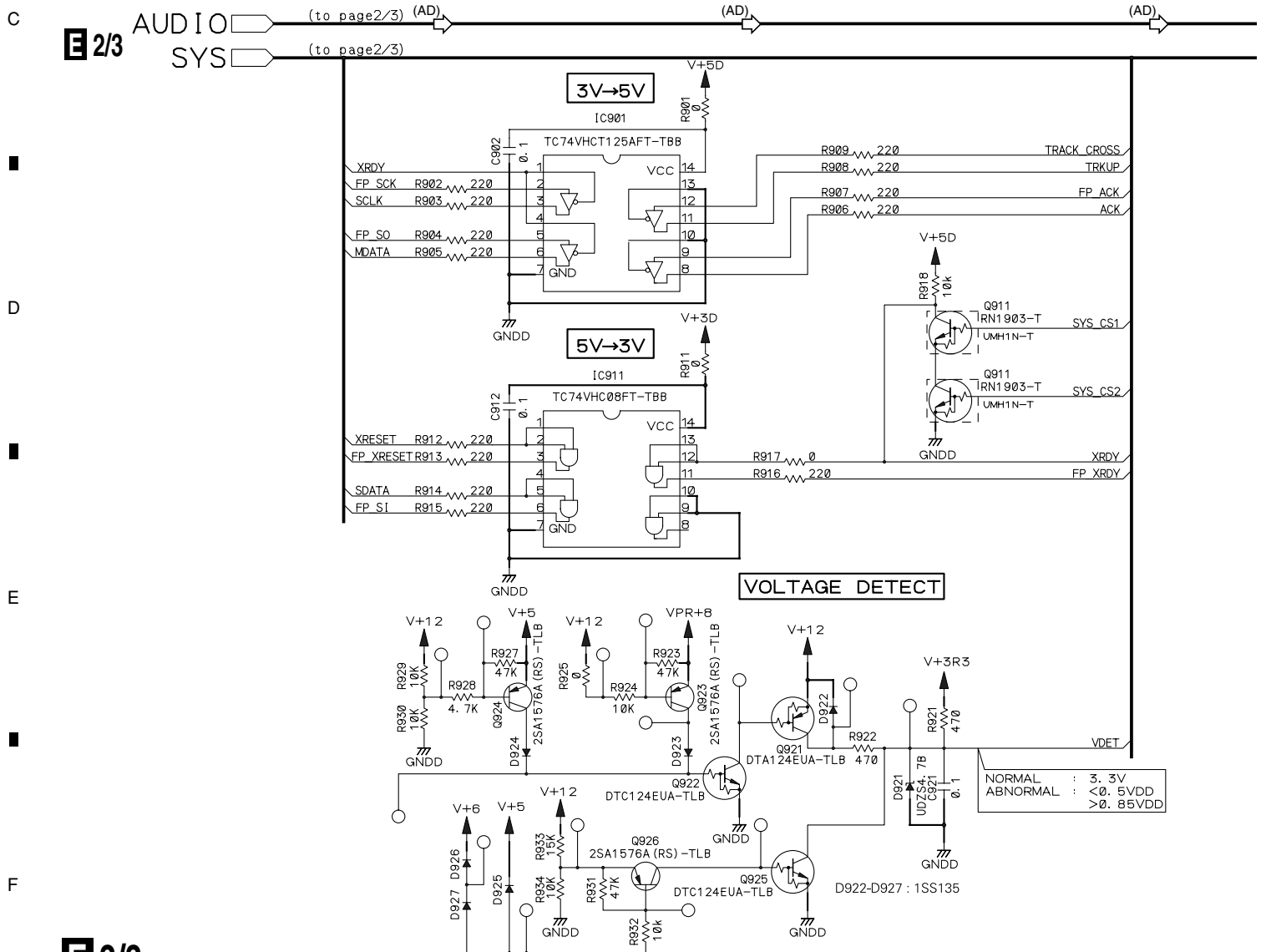
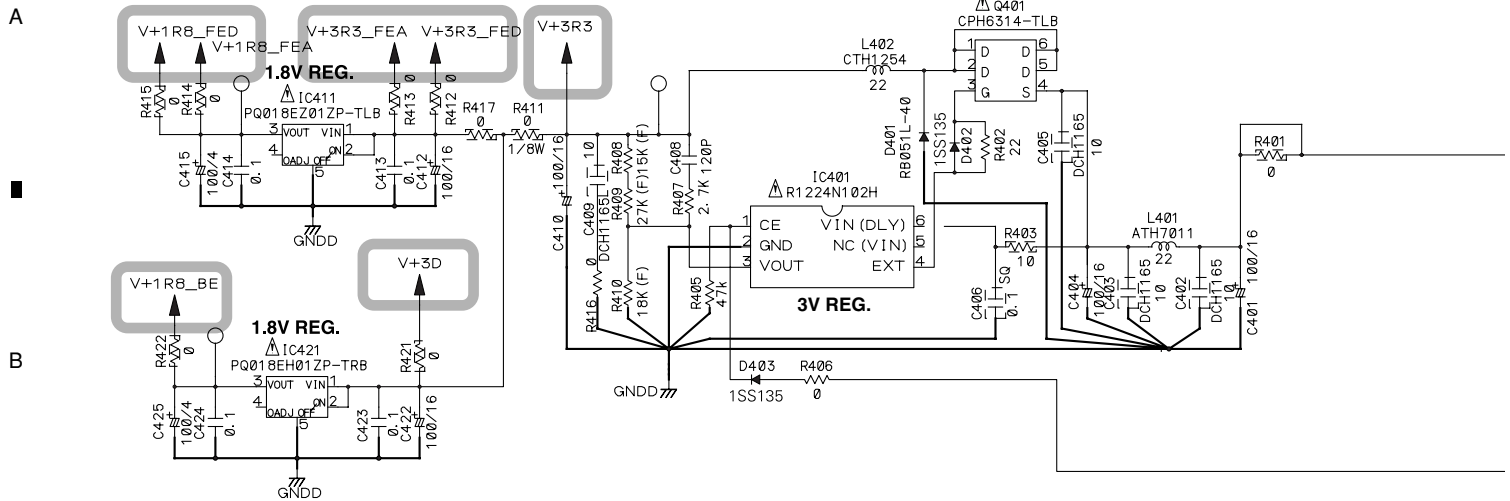
F



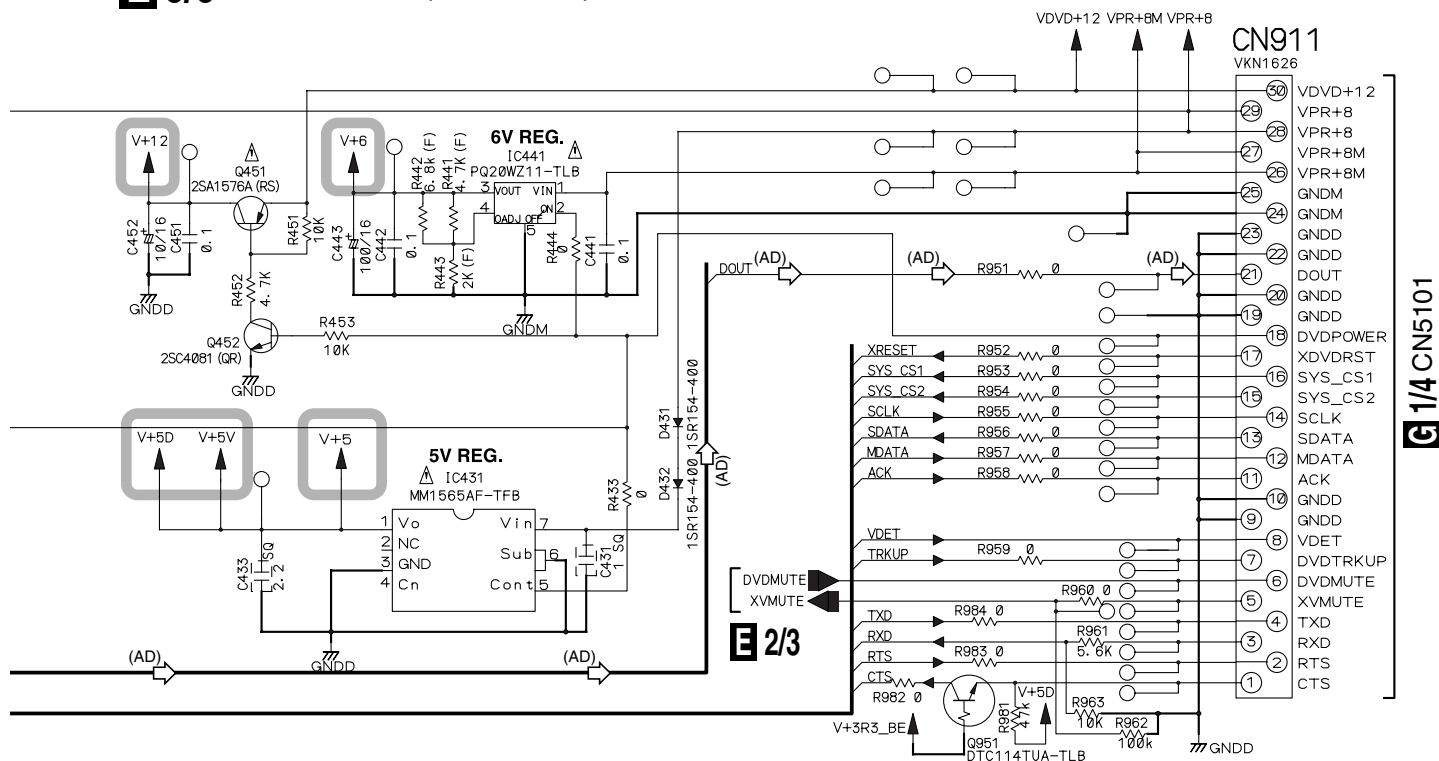
E 2/3

E 2/3

3.7 DVDM ASSY (3/3)



E 3/3 DVDM ASSY (AWM7807)



: The power supply is shown with the marked box.

E 3/3

3.8 FM/AM TUNER MODULE

A

Notes

1. RESISTORS

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

2. CAPACITORS

Indicated in Capacity (μF)/VOLTAGE (V) unless otherwise noted P:PF.

3. DIODES

No mark diode is 1SS133.

FM/AM TUNER MODULE (AXQ7228)

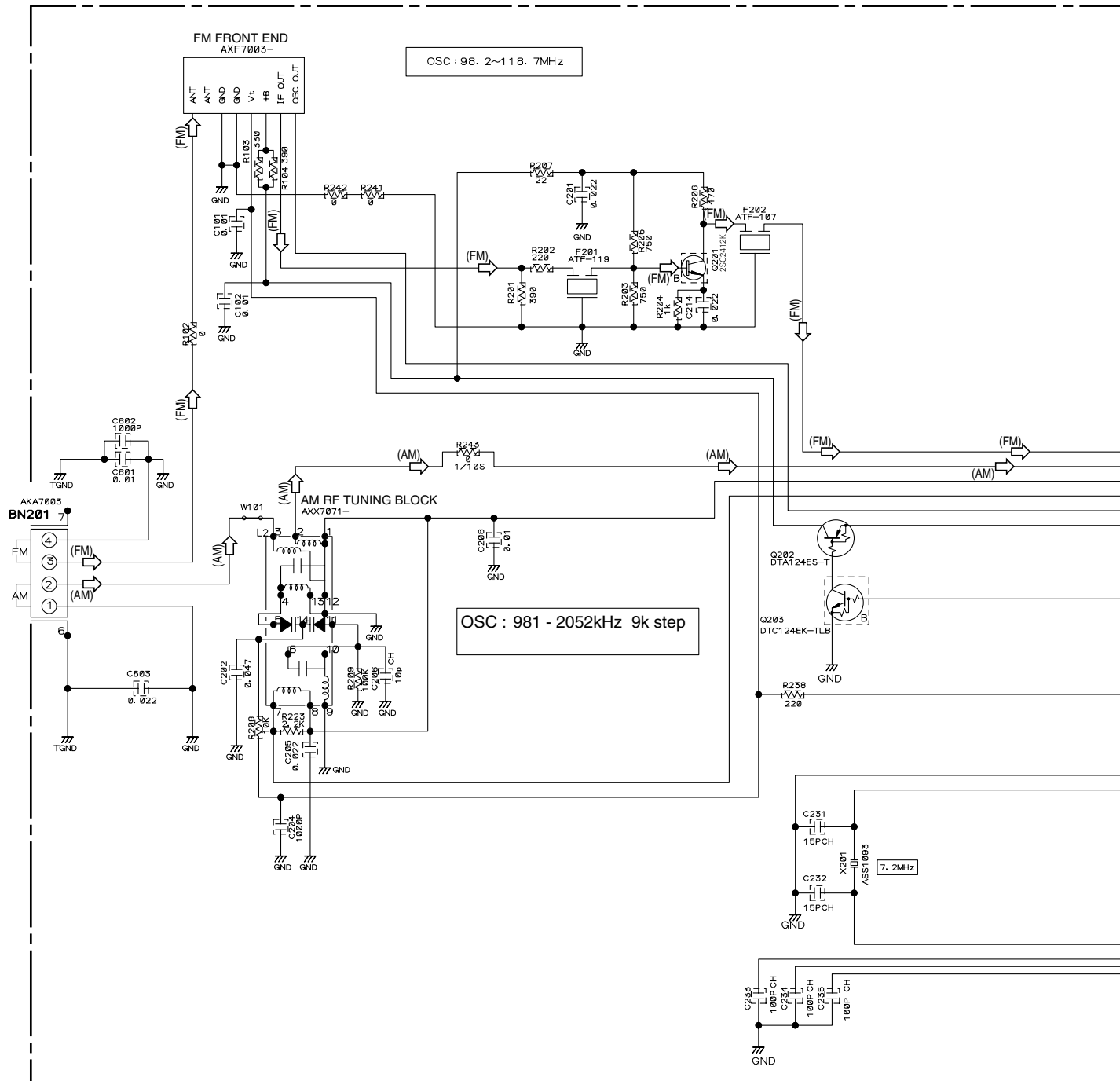
B

C

D

E

F



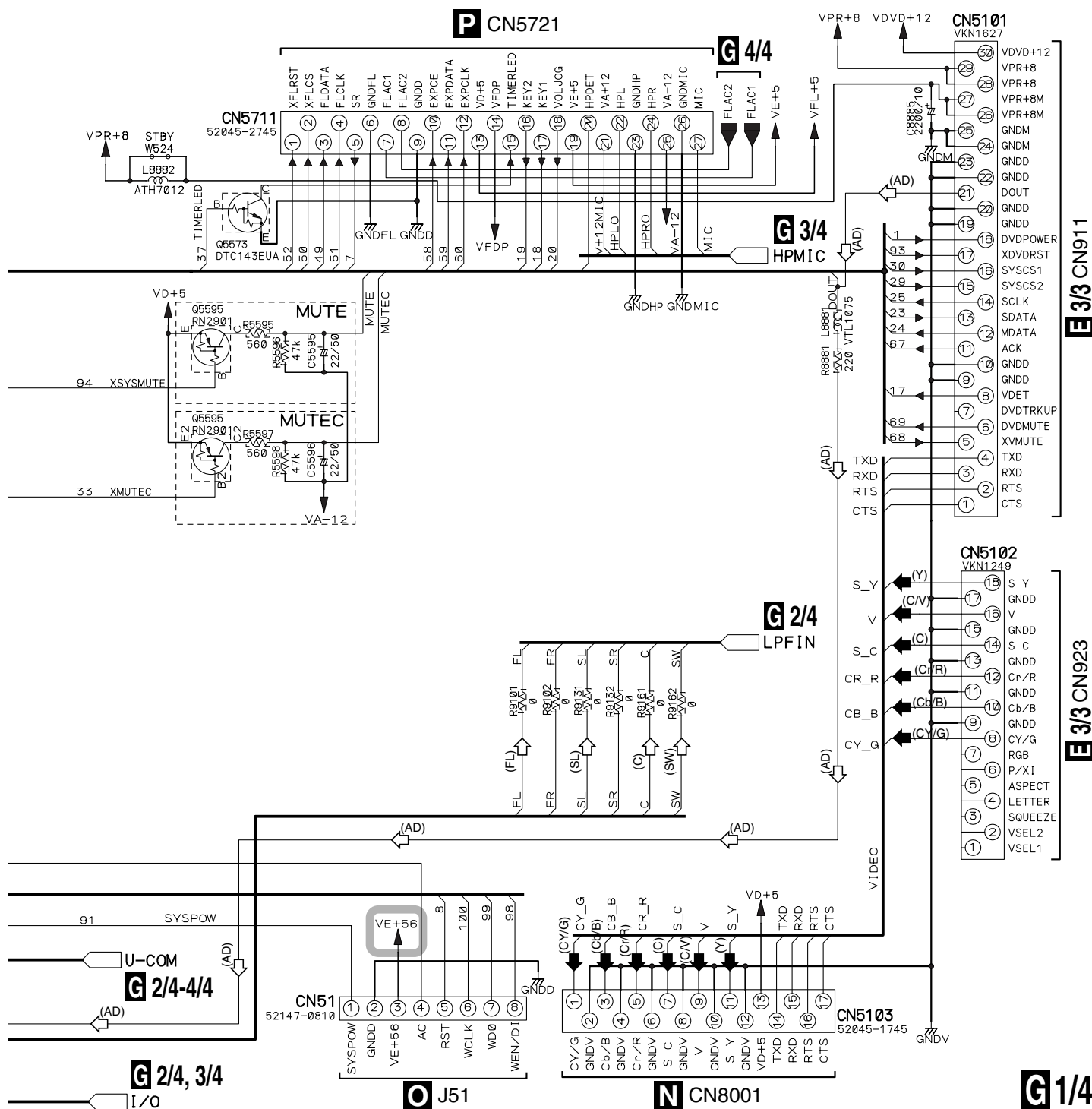
A **G 1/4** AF ASSY (AWU8094 : Other)
(AWU8151 : DDXJ/RB Only)



(Cr/R) → VIDEO SIGNAL ROUTE (Cr/R)
 (CY/G) → VIDEO SIGNAL ROUTE (CY/G)
 (Cb/B) → VIDEO SIGNAL ROUTE (Cb/B)
 (Y) → S VIDEO SIGNAL ROUTE (Y)
 (C) → S VIDEO SIGNAL ROUTE (C)
 (C/V) → S VIDEO SIGNAL ROUTE (C/V)

- (AD)  AUDIO DATA SIGNAL ROUTE
- (FL)  AUDIO SIGNAL ROUTE (Front L ch)
- (SL)  AUDIO SIGNAL ROUTE (Surround L ch)
- (C)  AUDIO SIGNAL ROUTE (Center ch)
- (SW)  AUDIO SIGNAL ROUTE (Sub Woofer ch)

: The power supply is shown with the marked box.



3.10 AF ASSY (2/4)

A

G 2/4 AF ASSY (AWU8094)

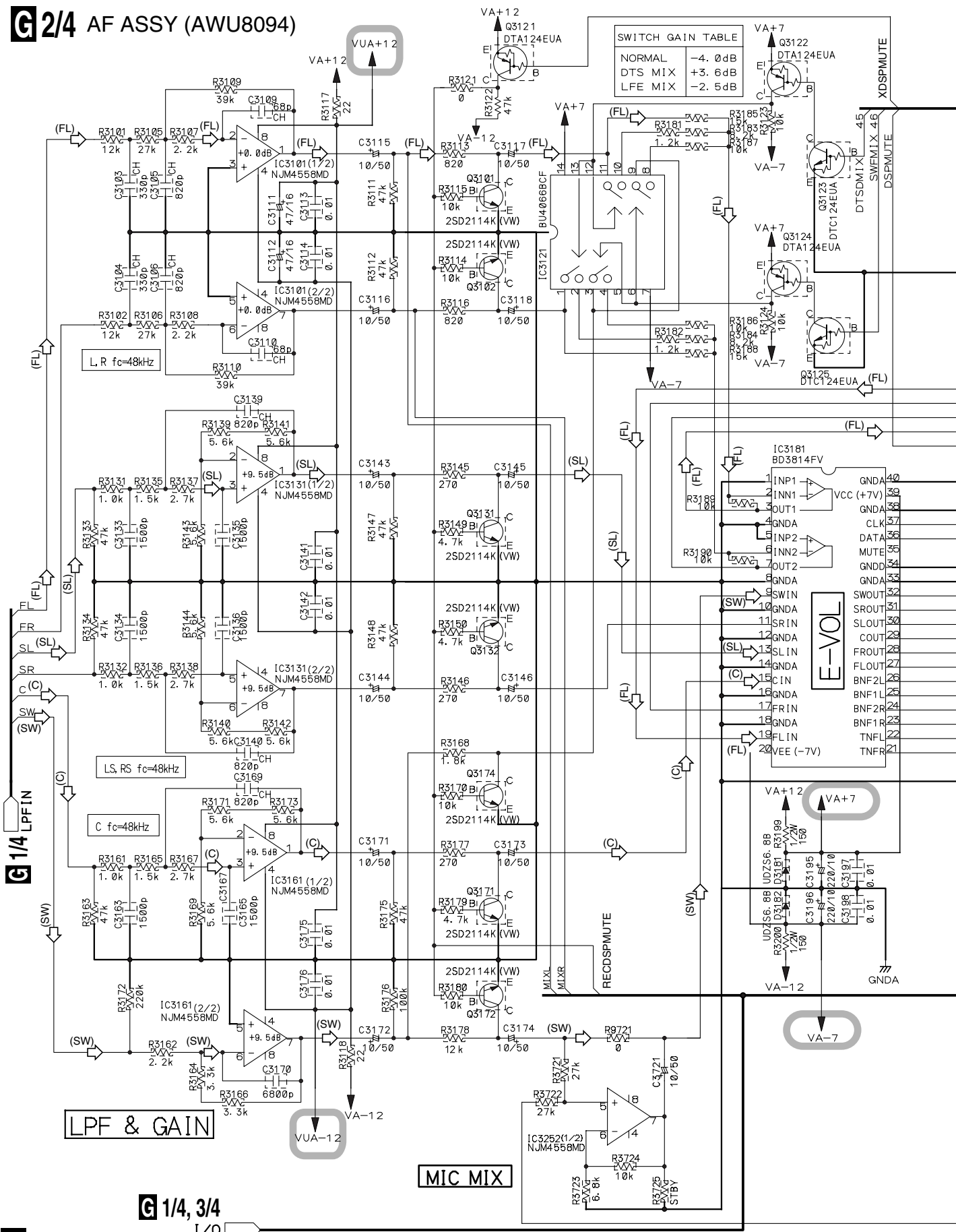
B

C

D

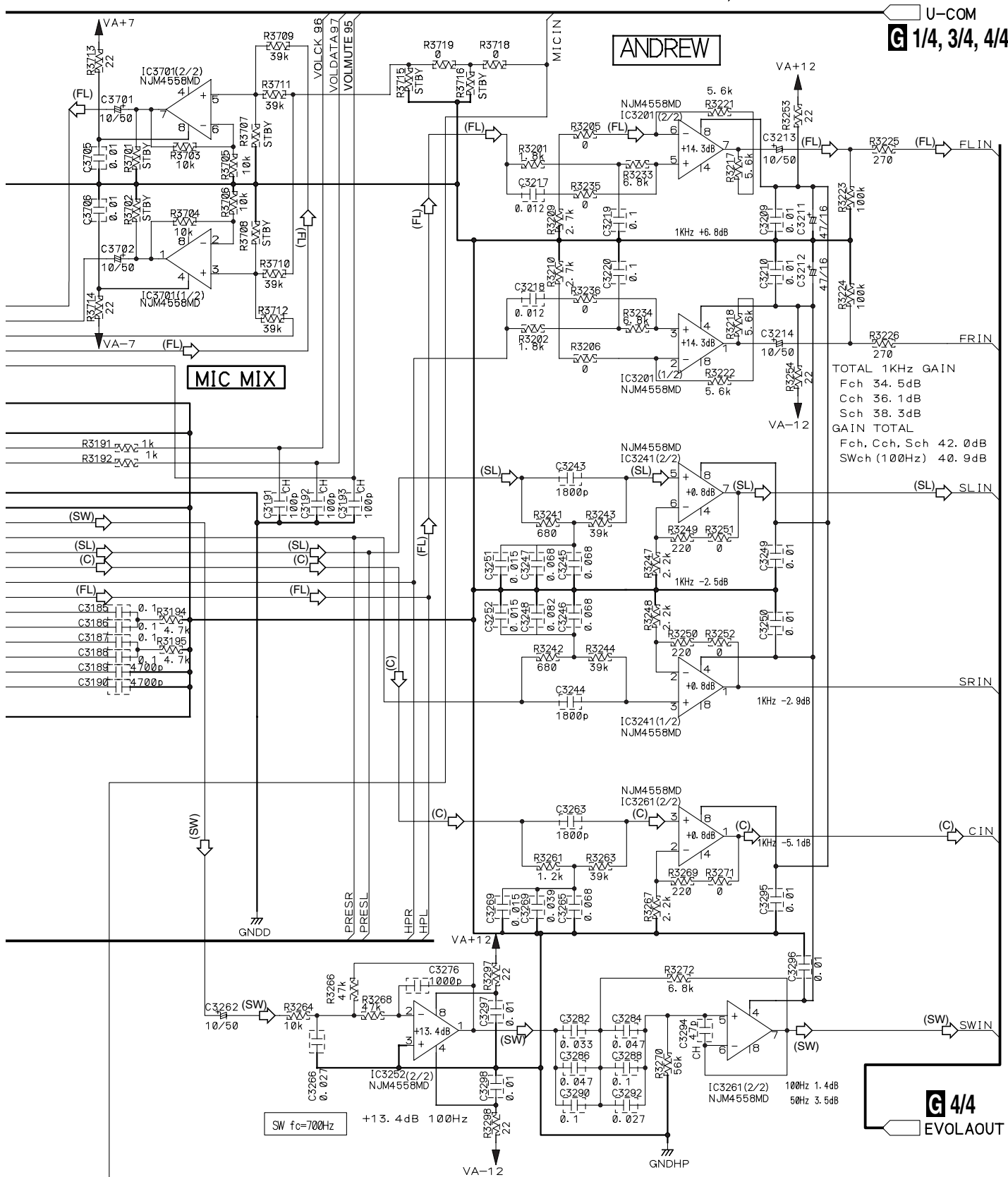
E

F



- (FL) → AUDIO SIGNAL ROUTE (Front L ch)
 (SL) → AUDIO SIGNAL ROUTE (Surround L ch)
 (C) → AUDIO SIGNAL ROUTE (Center ch)
 (SW) → AUDIO SIGNAL ROUTE (Sub Woofer ch)

A



B

C

D

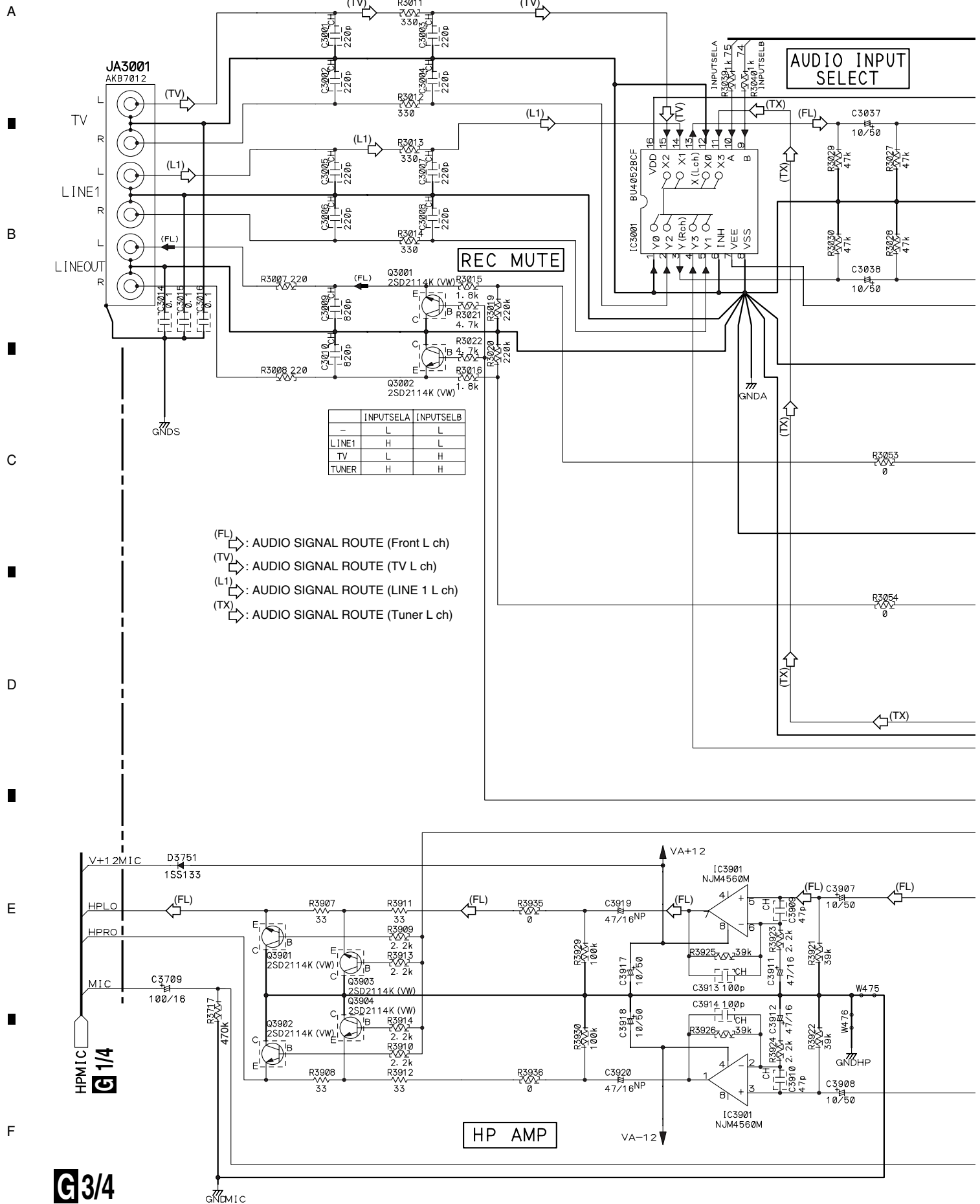
E

F

⓪ : The power supply is shown with the marked box.

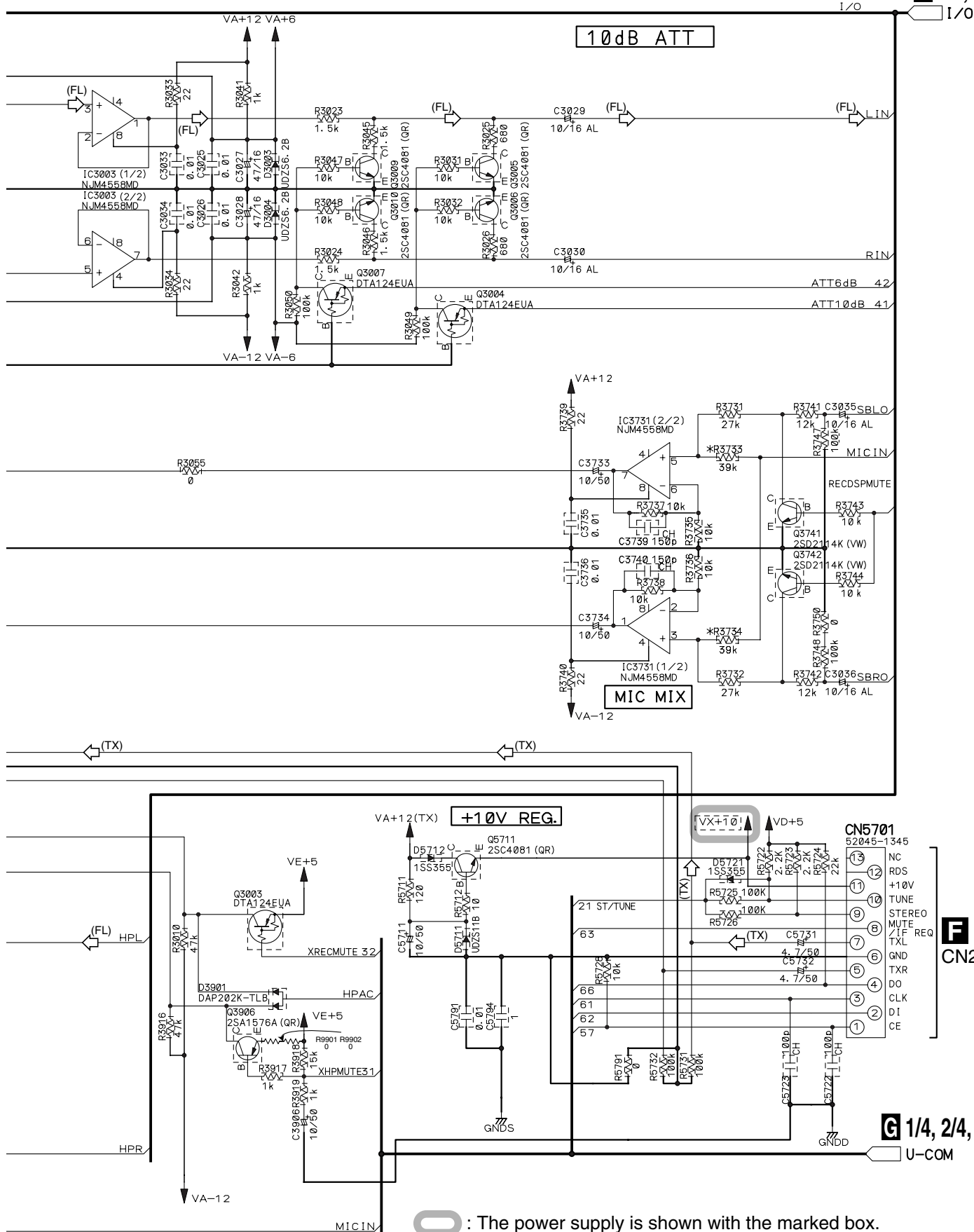
G 2/4

3.11 AF ASSY (3/4)



G 3/4 AF ASSY (AWU8094)

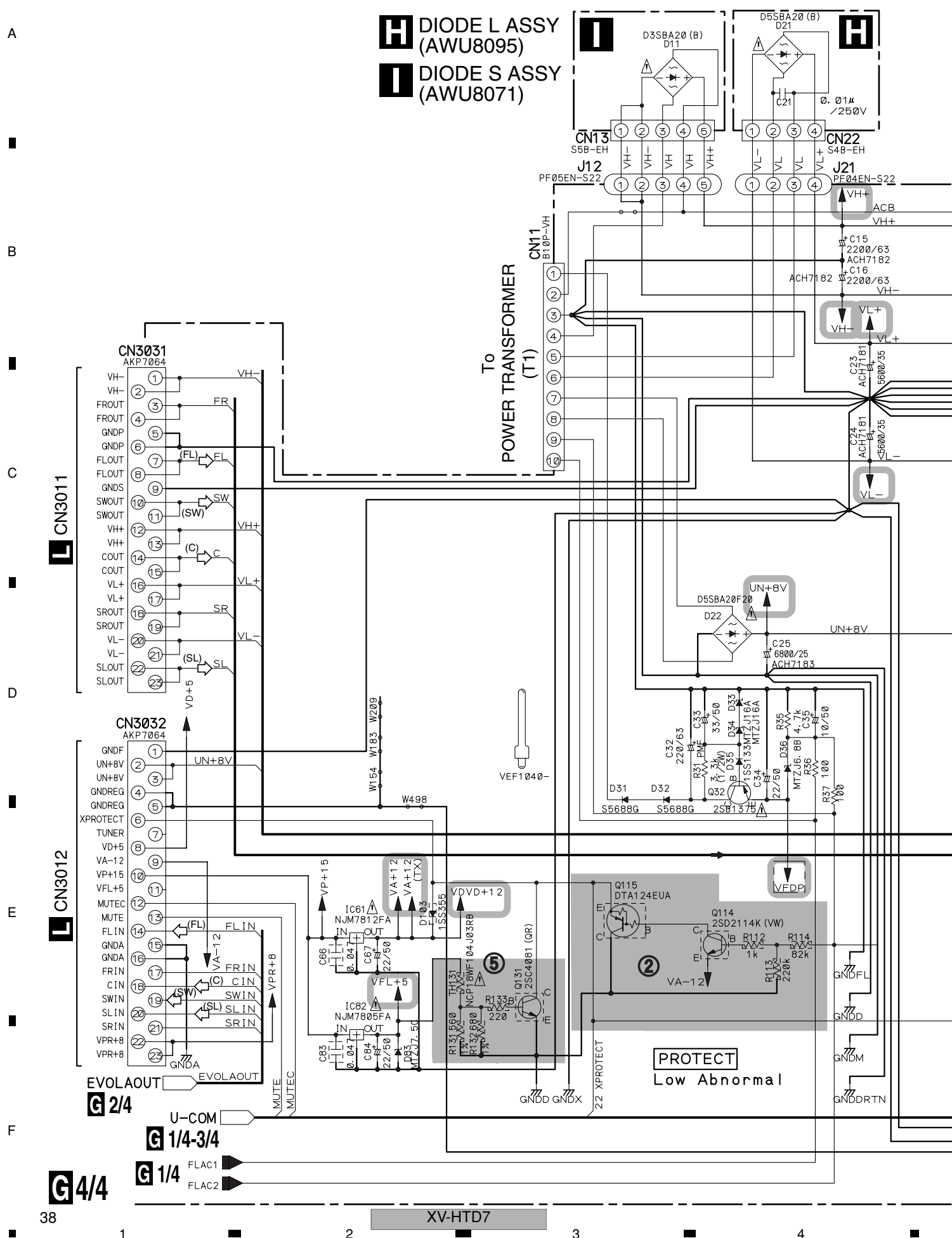
G 1/4, 2/4



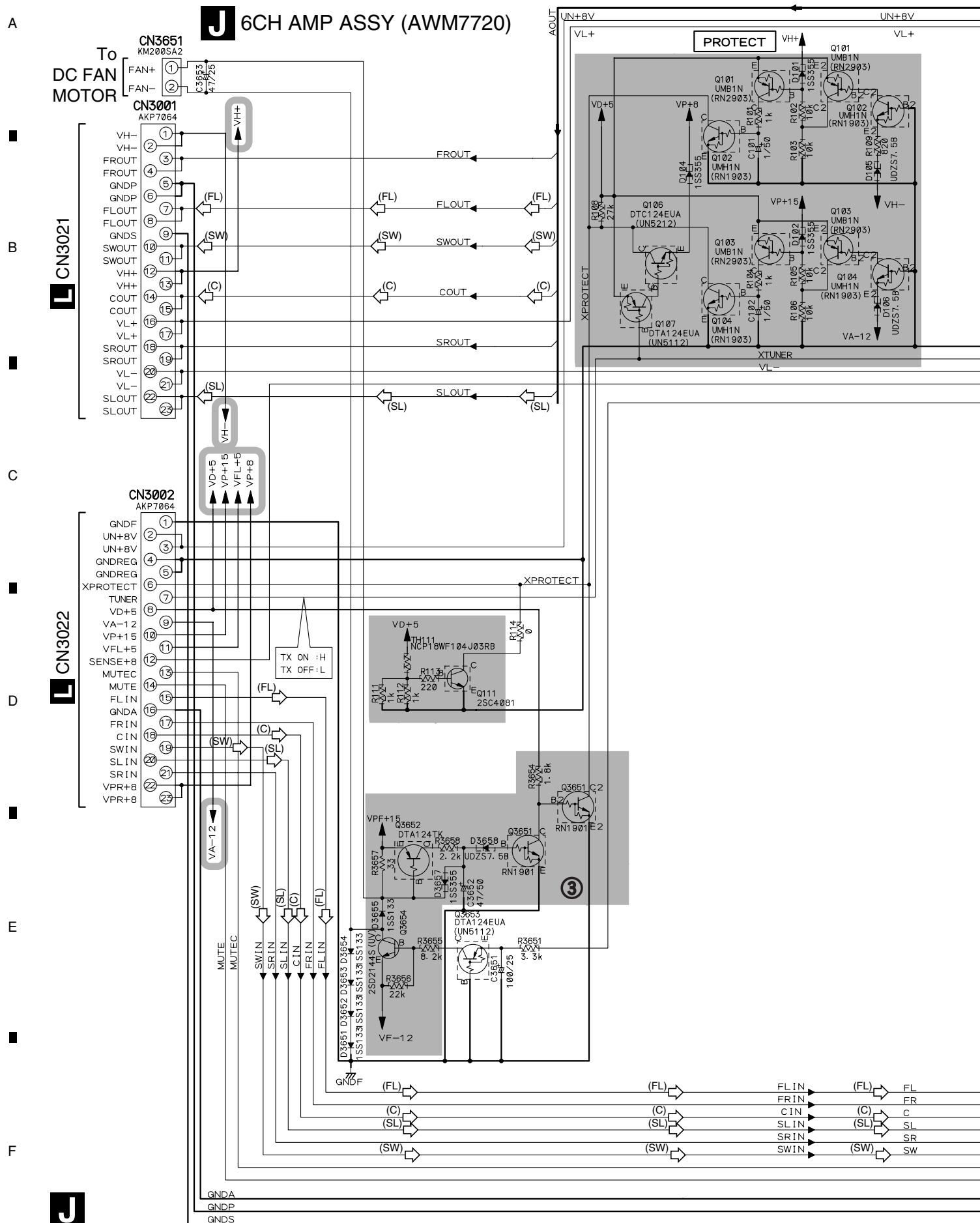
: The power supply is shown with the marked box.

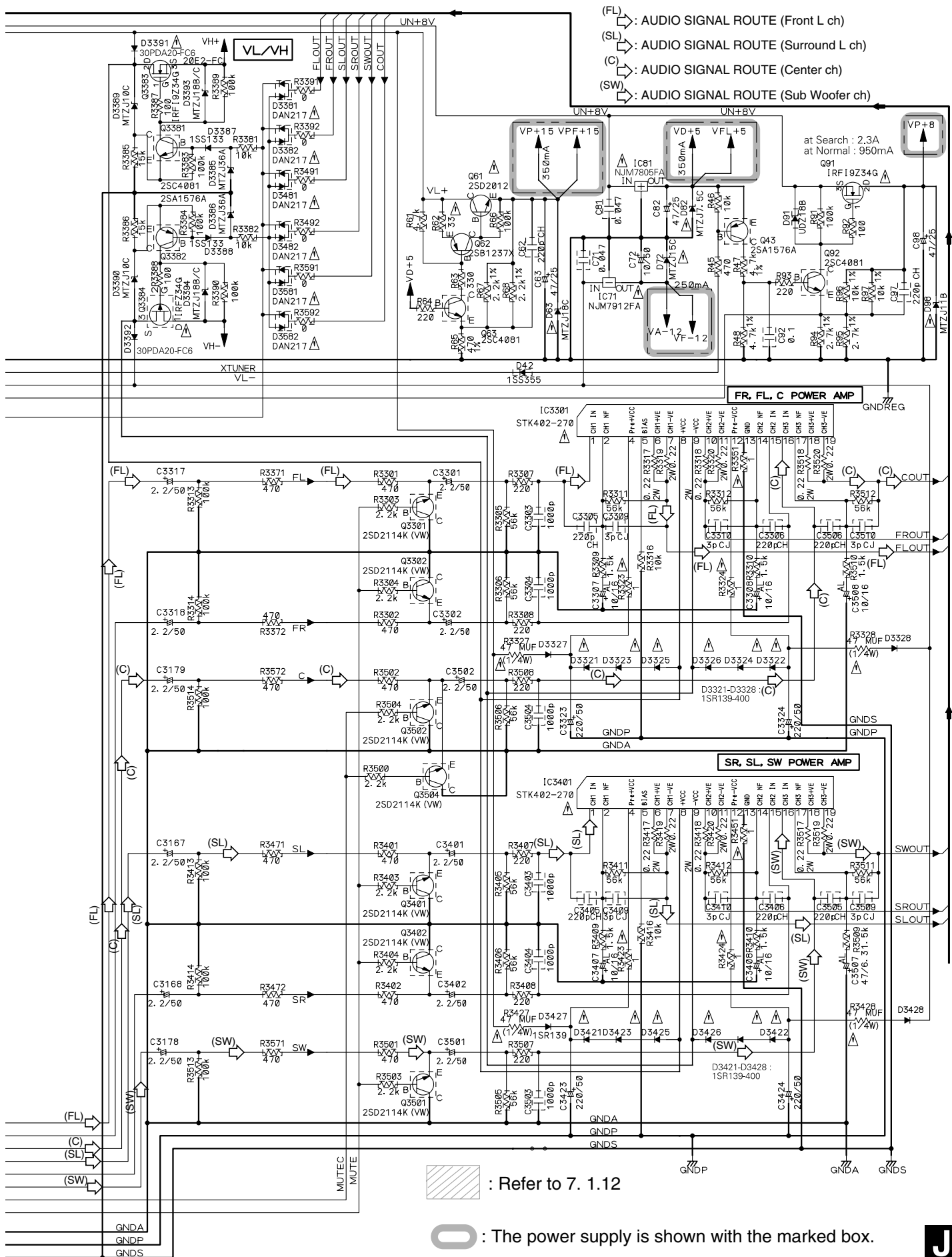
G 3/4

3.12 AF(4/4), DIODE L and DIODE S ASSYS



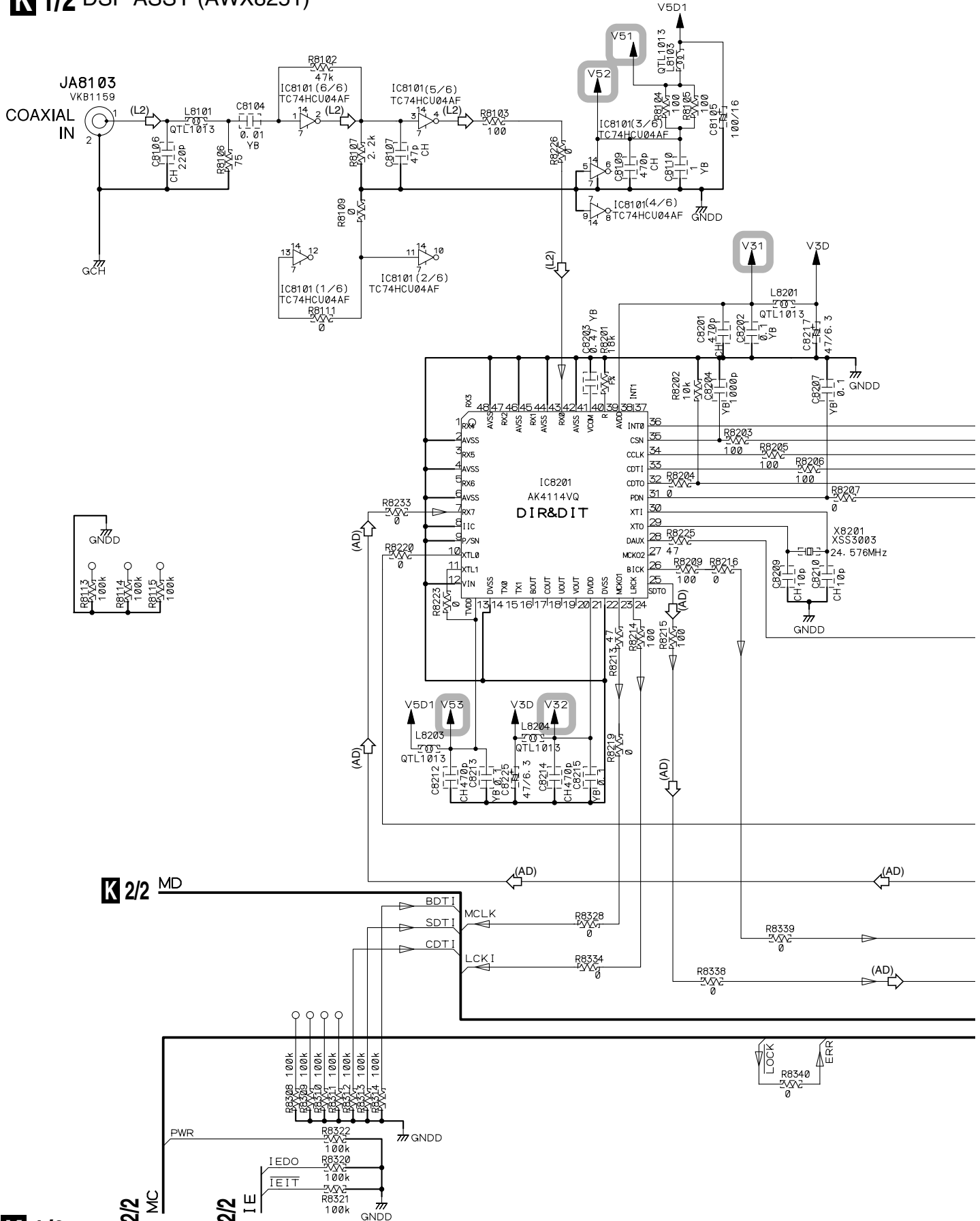
3.13 6CH AMP ASSY





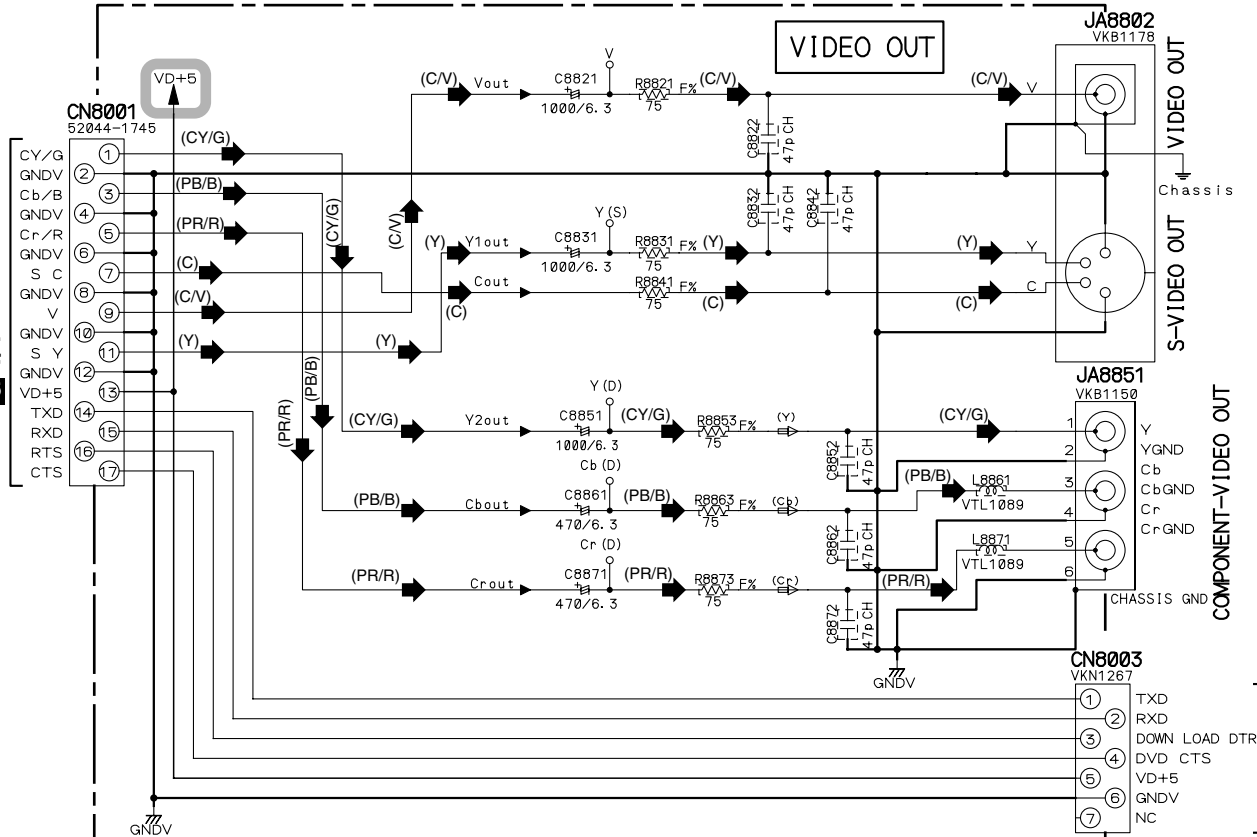
3.14 DSP ASSY (1/2)

A **K 1/2** DSP ASSY (AWX8251)

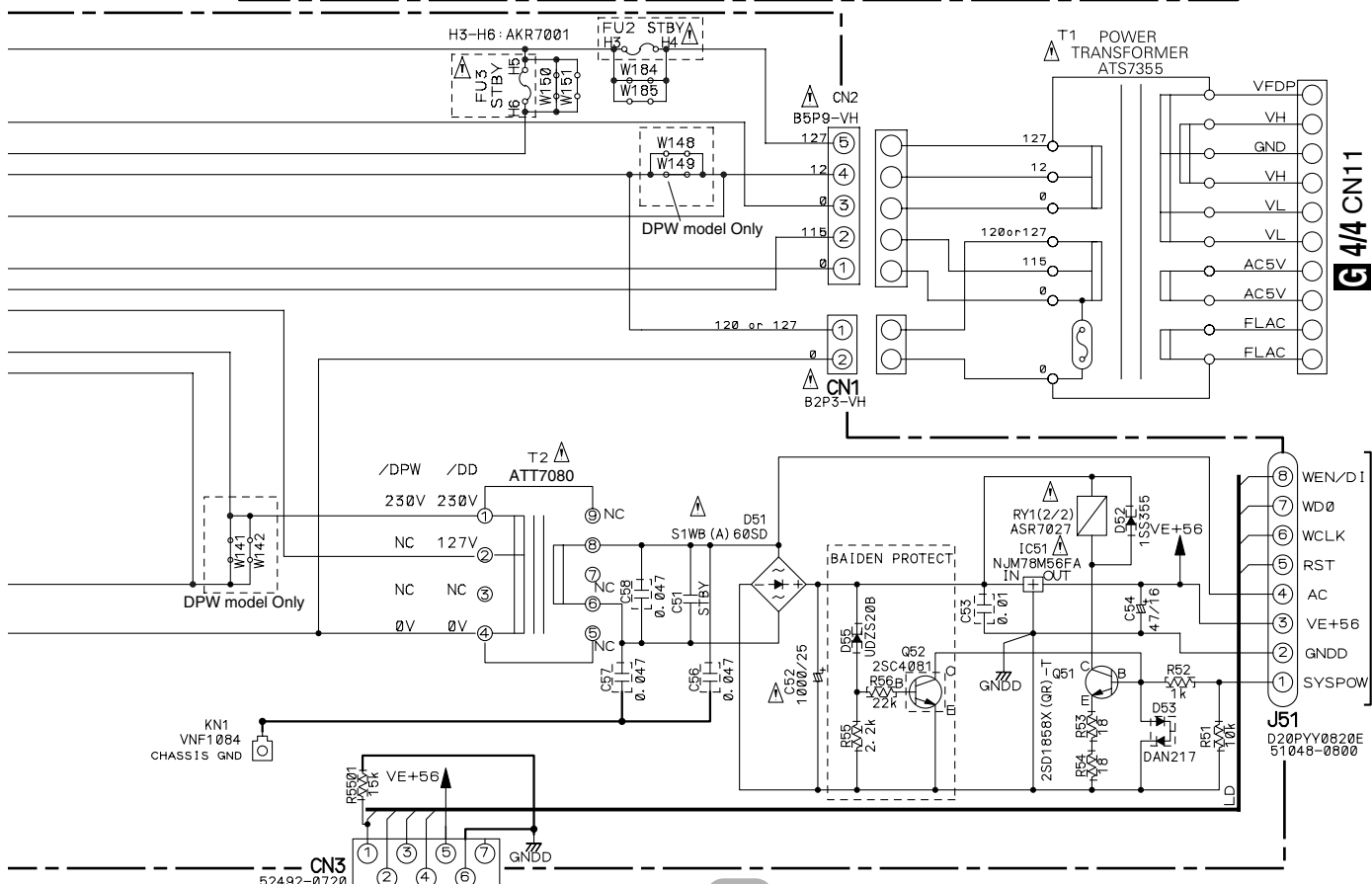


VIDEO JACK ASSY (AWU8061)

G 1/4 CN5103



DVD DOWNLOAD



The power supply is shown with the marked box.

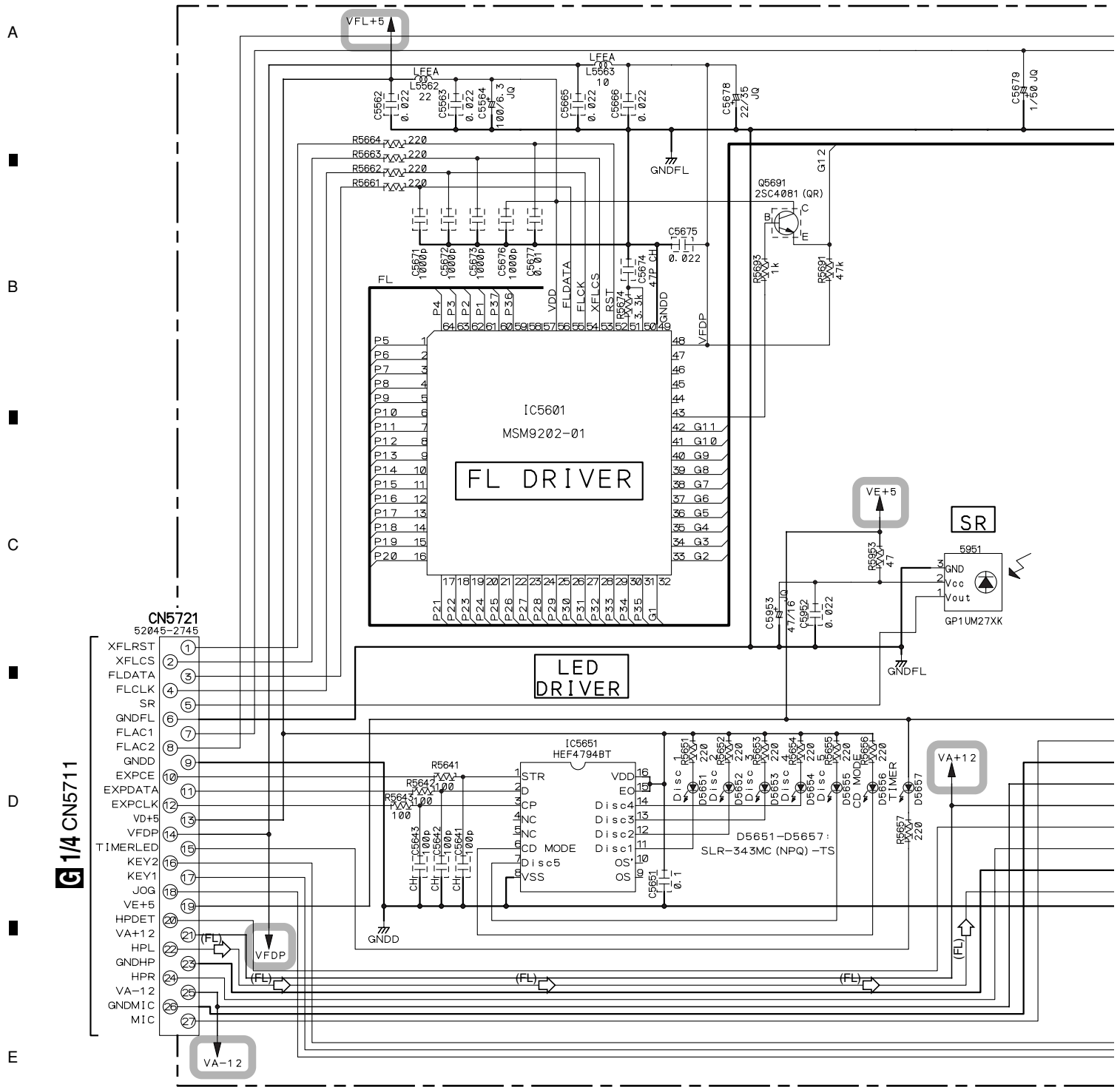
SYSTEM
DOWNLOAD

NO

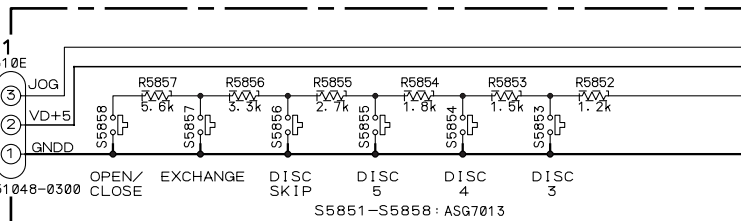
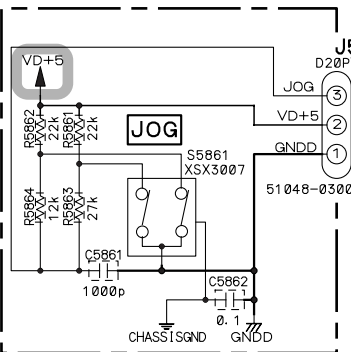
XV-HTD7

47

3.17 DISPLAY, JOG, DISC KEY, HP MIC and FUNCTION KEY ASSYS



Q JOG ASSY (AWU8065)



R DISC KEY ASSY (AWU8063)

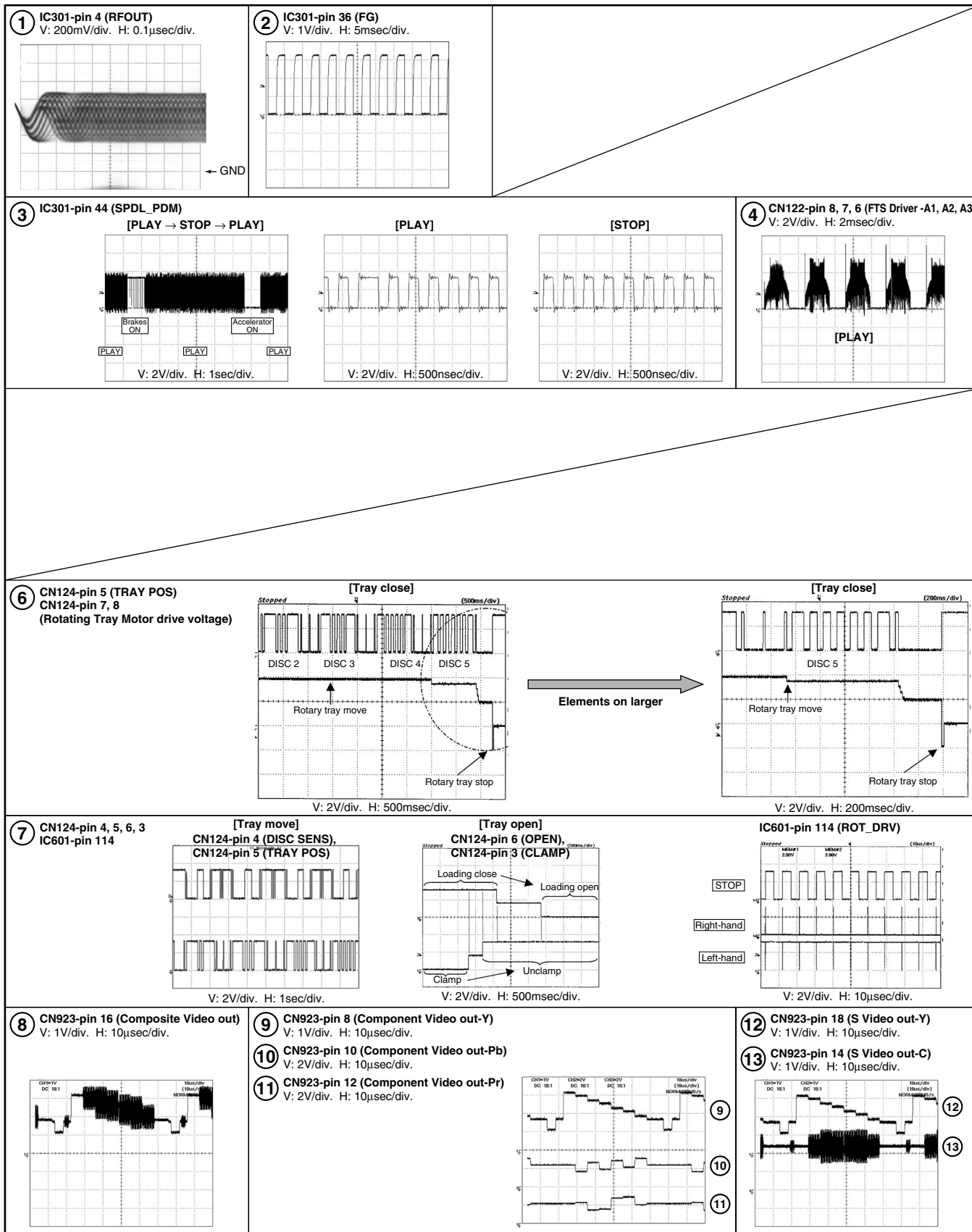
P Q R

3.18 DVDM WAVEFORMS

E DVDM ASSY

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

Measurement condition : No. 1 to 2 and 8 to 13 : reference A1 (DVD), T2-chp 19, Color -bar



■ 5 ■ 6 ■ 7 ■ 8 ■

A

■

B

■

C

■

D

■

E

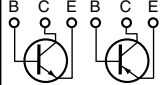
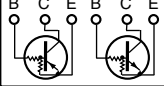
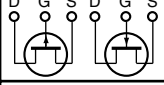
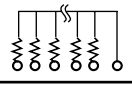
■

F

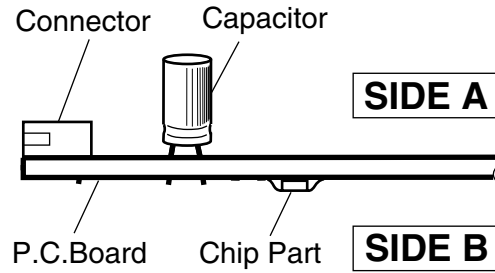
4. PCB CONNECTION DIAGRAM

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

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



4.2 DVDM ASSY

SIDE A

SIDE A

E DVDM ASSY

D CN3

PICKUP ASSY

A CN11

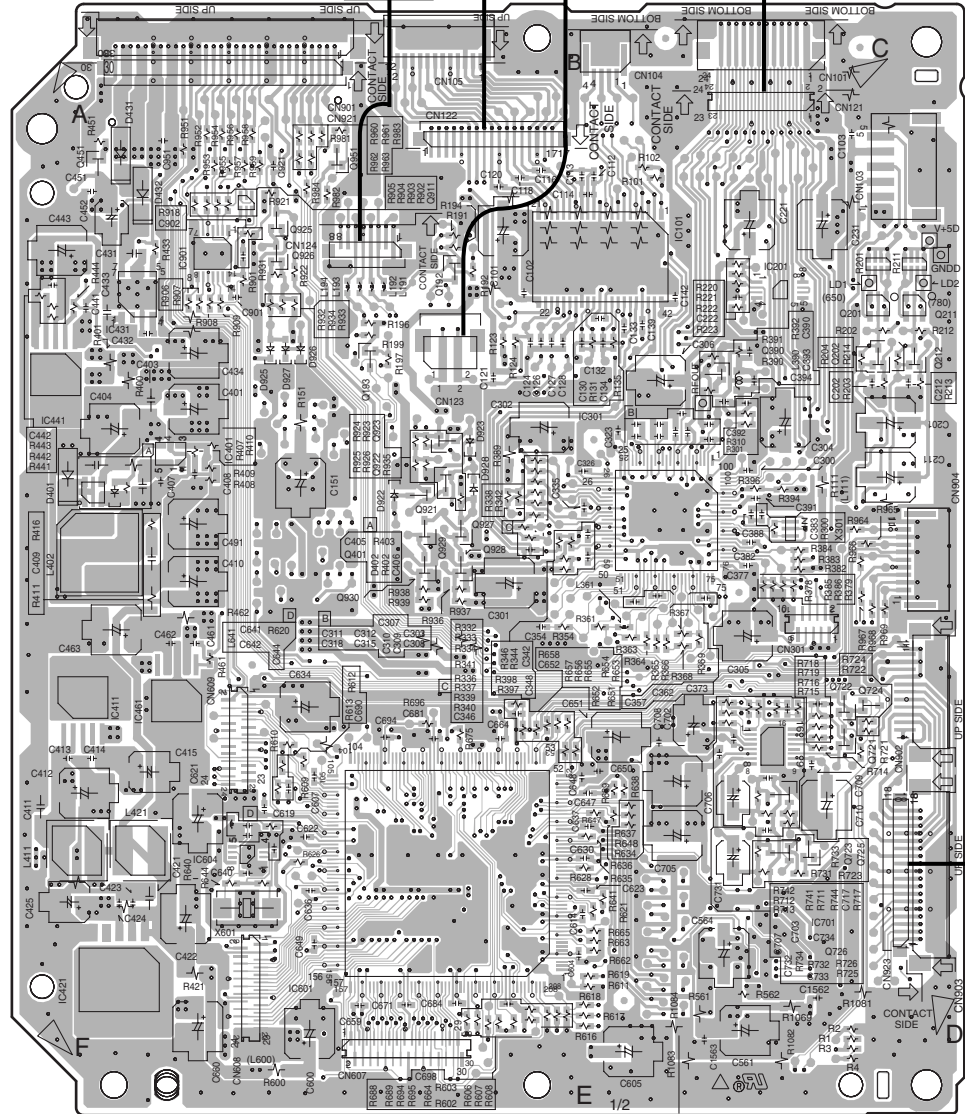
C CN31

CN121

CN122

CN124

CN123



CN923

G CN5102

(ANP7463-B)

E

E

SIDE A





A

B

C

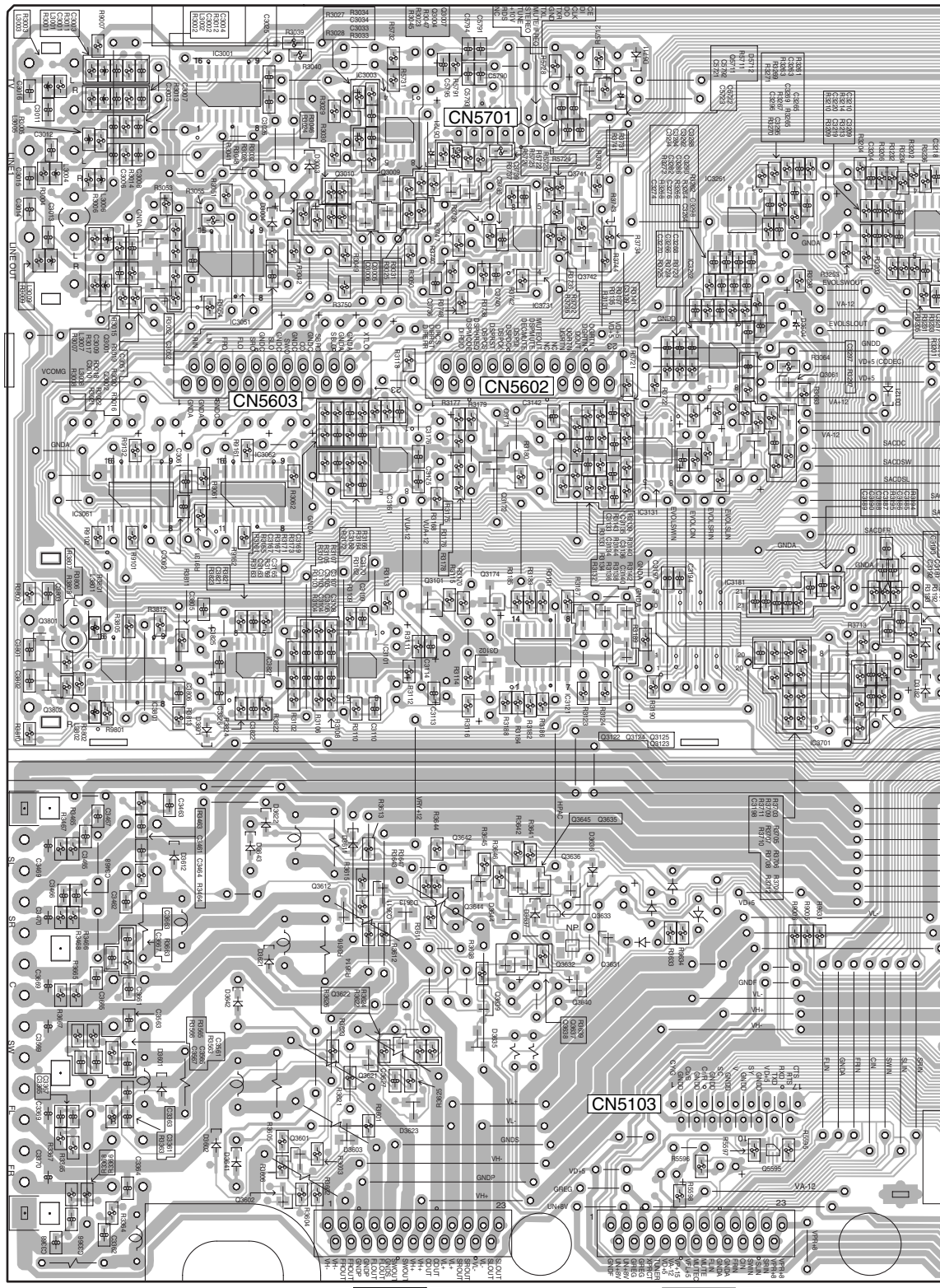
D

E

F

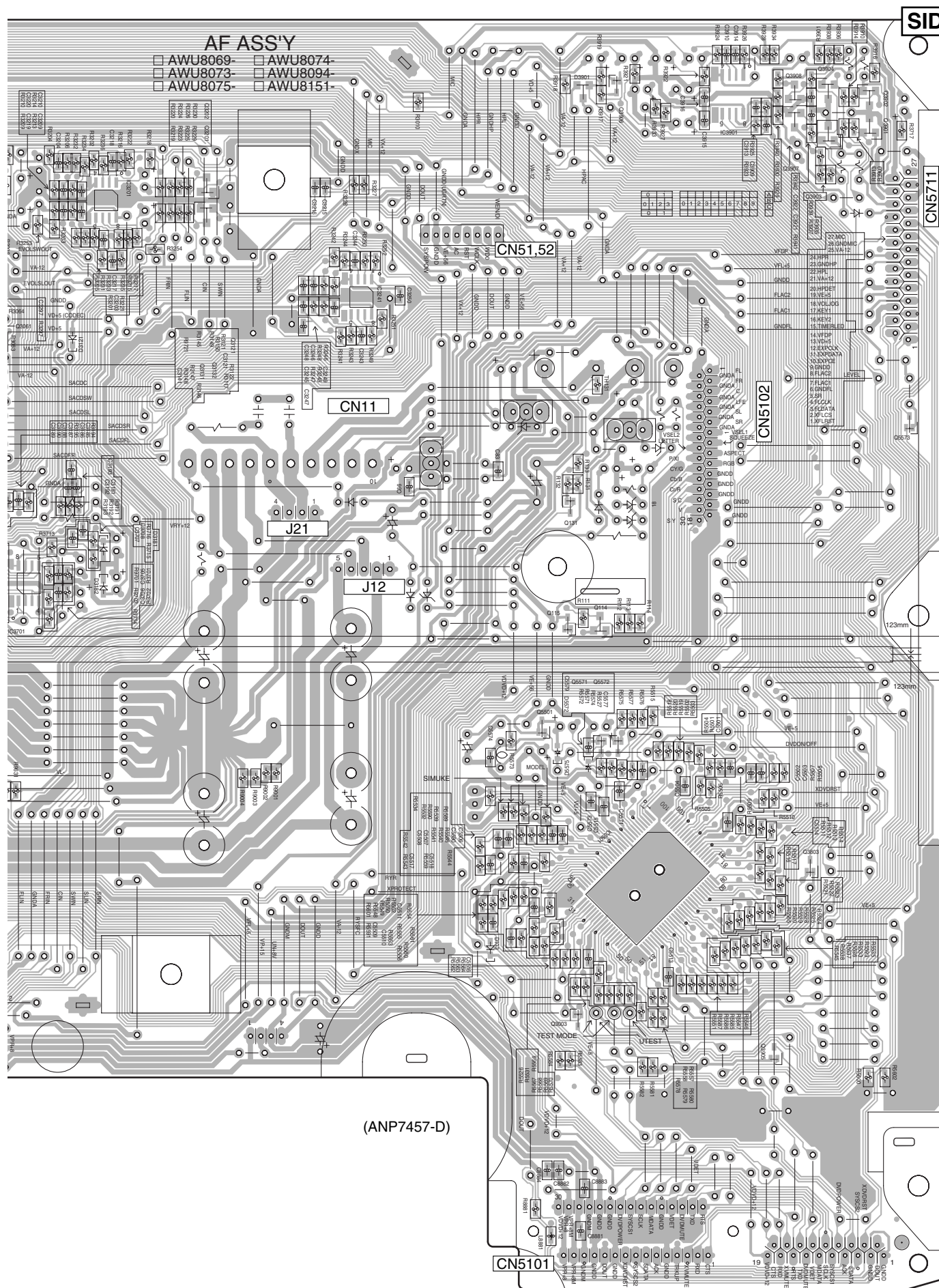
SIDE B

- Q3004 Q3007
- IC3001 Q5711 Q3908 Q3904
- IC3003 Q3902 Q3202 Q3906 Q3901 Q3201
- IC3901 Q3009 Q3741 Q3261 Q3010 Q3907
- IC3201 Q3903
- IC3252 Q3006 Q3005 Q3742
- IC3731 IC3051 IC3241 Q3001
- Q3002 Q3061 Q3121 Q3171 Q3131 Q3132
- IC3062
- IC3161 Q3172 Q5573
- IC3131
- IC3181 Q3101 Q3174
- Q3801 Q131
- IC3101 Q3102 IC3821
- IC3121 IC3801
- Q3802 Q115 Q114
- IC3701 Q3122 Q3124 Q3125 Q3123
- Q5571 Q5572 Q3645 Q3635
- Q3642 Q5501 Q3636
- Q3612 Q3644 Q3611 Q3633
- Q3632 Q3631 IC5501
- Q3622 Q3639 Q3640 Q3638 Q3637 Q3803
- Q3621
- Q3601
- Q5595
- Q3602 Q3003 Q3905



GAFF ASSY





4.4 6CH AMP, DIODE S and DIODE L ASSYS

SIDE A**SIDE A**

J 6CH AMP ASSY

DC FAN MOTOR

L
CN3021

L
CN3022

(ANP7461-A)

I DIODE S ASSY

H DIODE L ASSY

G J12 ◀

G J21

(ANP7457-D)

(ANP7457-D)

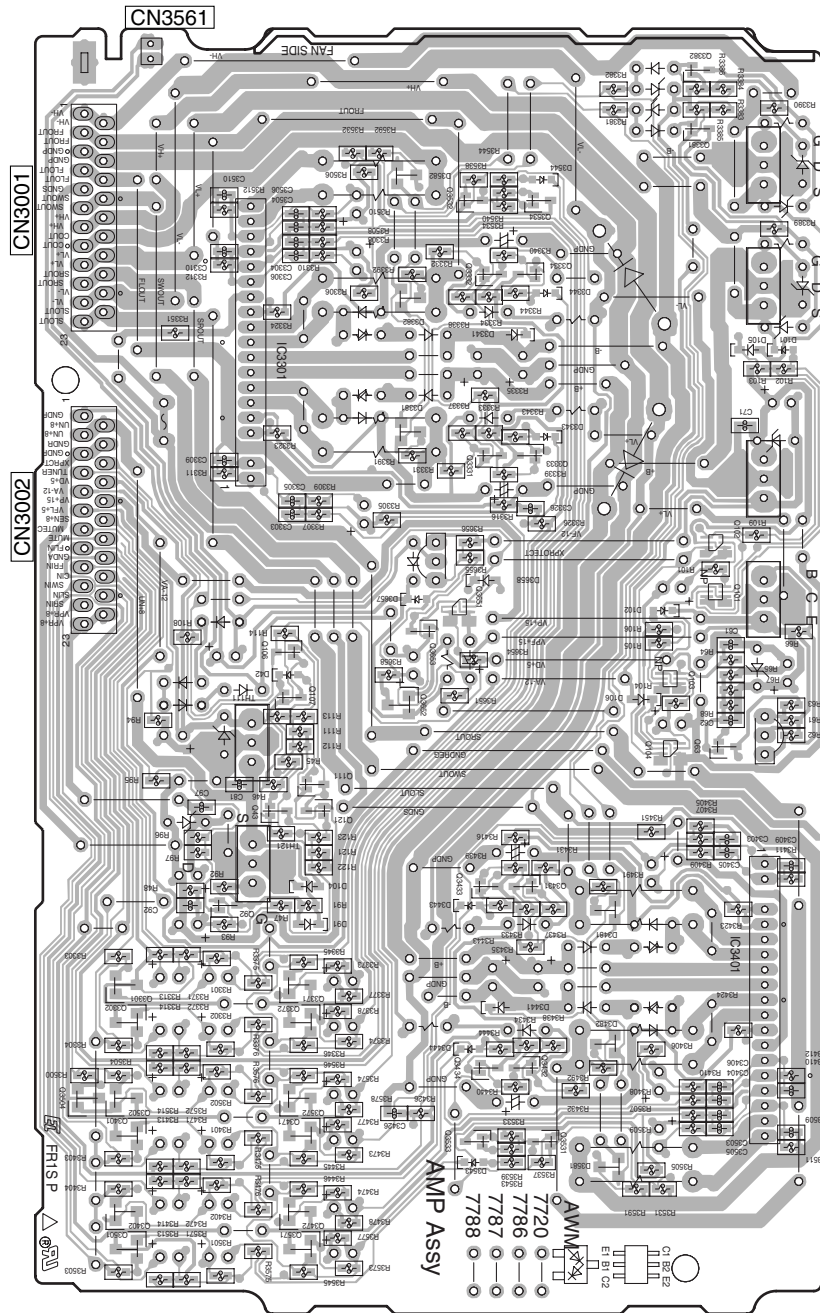
60

XV-HTD7

SIDE B

SIDE B

A

J 6CH AMP ASSY

Q3382
Q3381
Q3532 Q3534
Q3332 Q3334
IC3301
Q3331 Q3333
Q102
Q3651
Q101
Q3653
Q106 Q103
Q107 Q3652
Q104 Q63
Q111
Q43 Q121
Q3433 Q3431
Q92 Q92
IC3401
Q3301 Q3371
Q3302 Q3372
Q3434 Q3432
Q3504 Q3502 Q3572
Q3401 Q3471
Q3533 Q3531
Q3402 Q3472
Q3501 Q3571

C

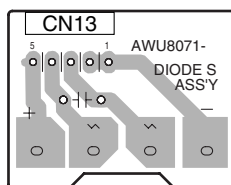
D

E

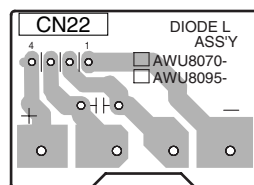
F

I DIODE S ASSY**H** DIODE L ASSY

(ANP7461-A)



(ANP7457-D)



(ANP7457-D)

H I J**H I J**

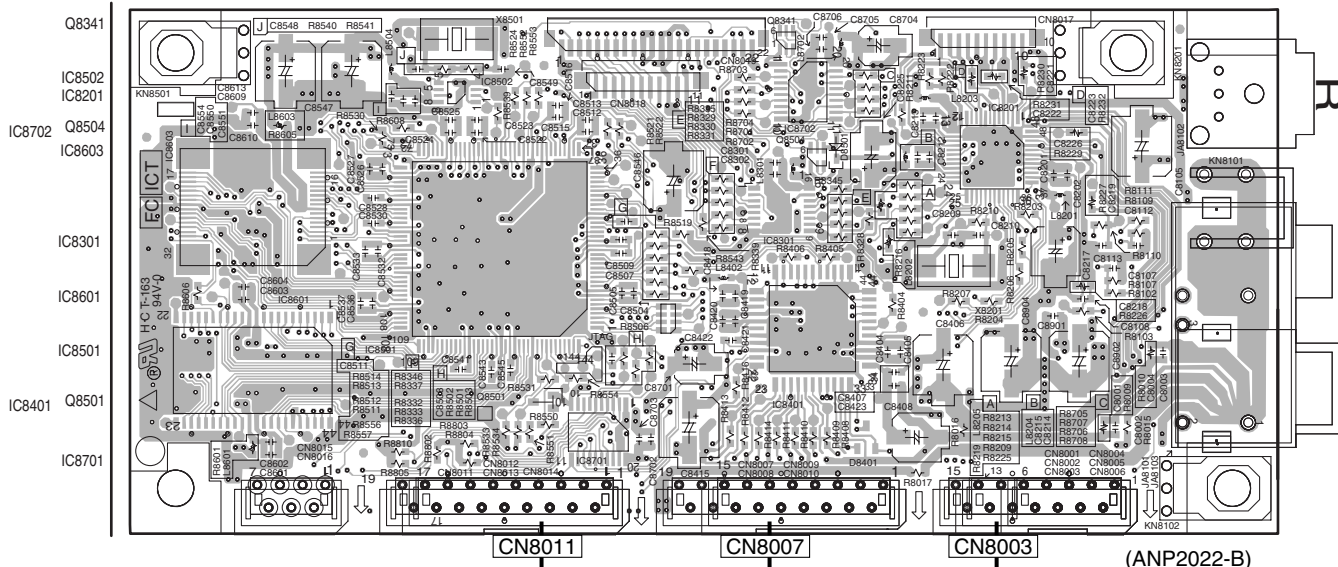
XV-HTD7

4.5 DSP, DSP TRADE and AMP TRADE ASSYS

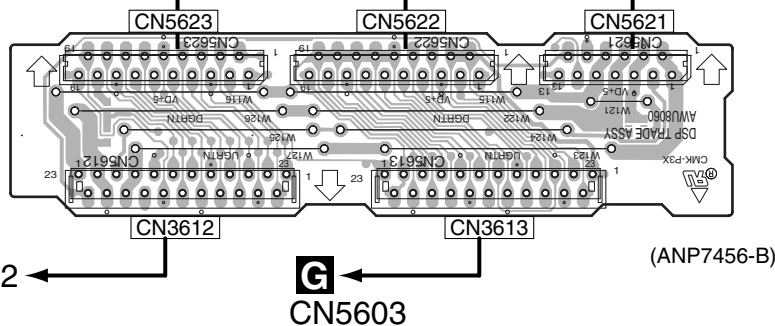
SIDE A

SIDE A

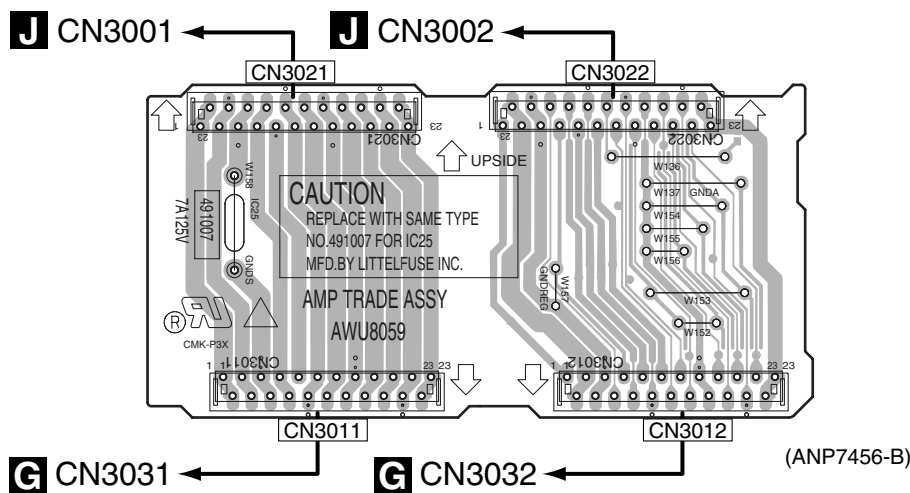
K DSP ASSY



M DSP TRADE ASSY

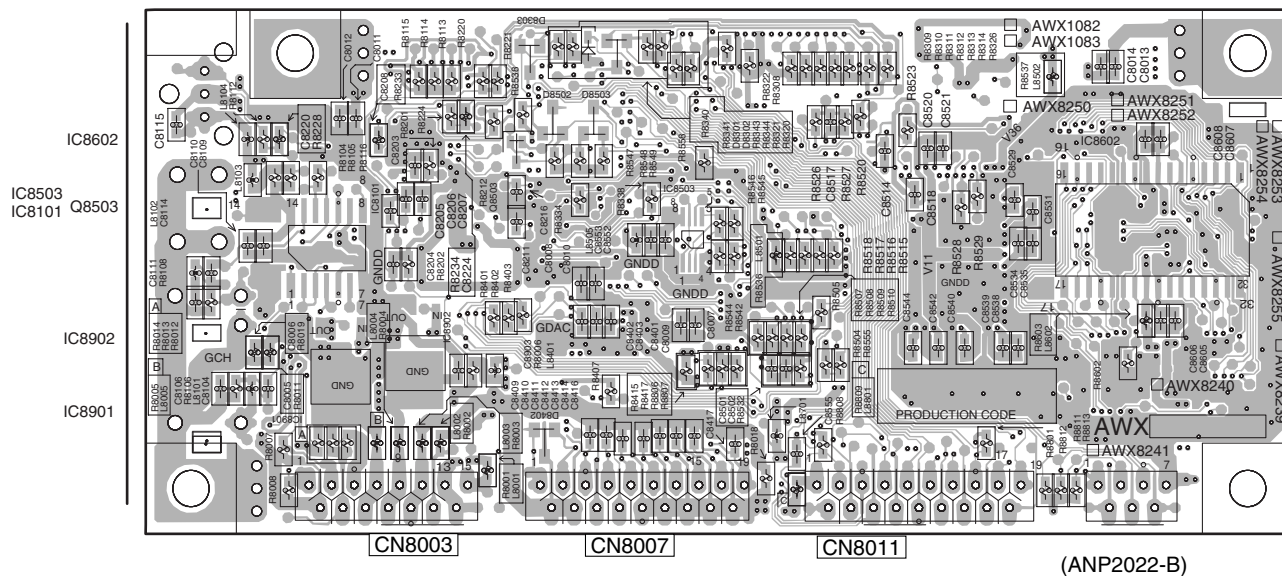
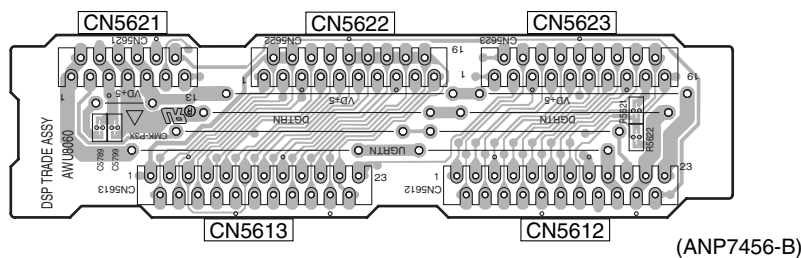
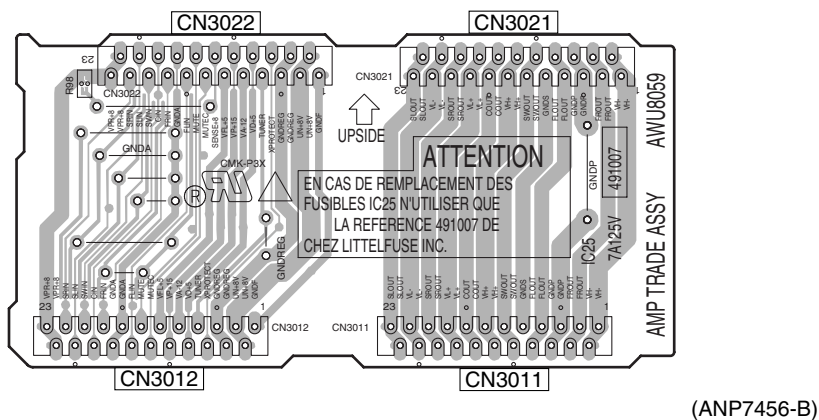


L AMP TRADE ASSY



K L M

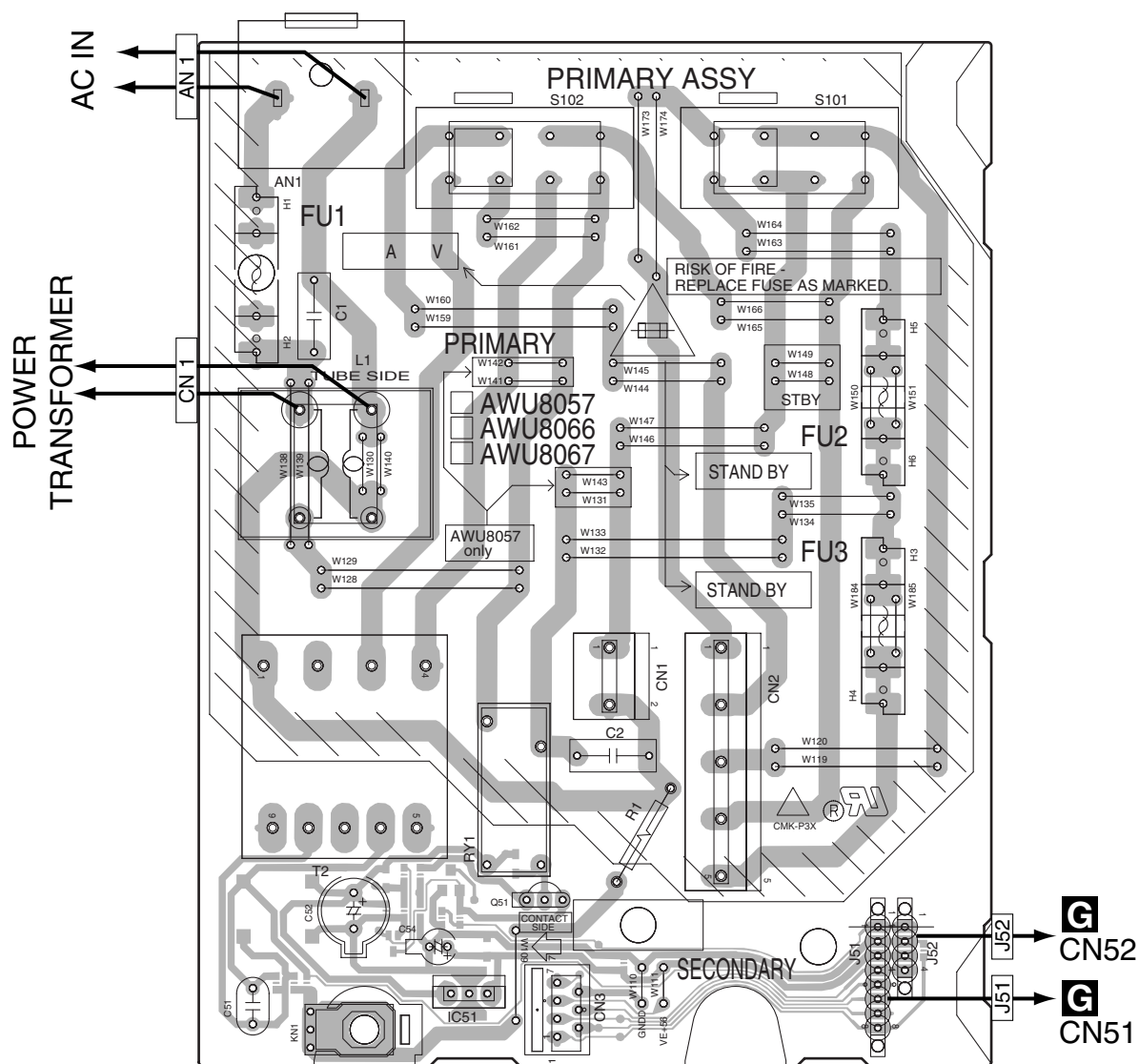
K L M

SIDE B**SIDE B****K** DSP ASSY**M** DSP TRADE ASSY**L** AMP TRADE ASSY**K L M****K L M**

4.6 VIDEO JACK and PRIMARY ASSYS

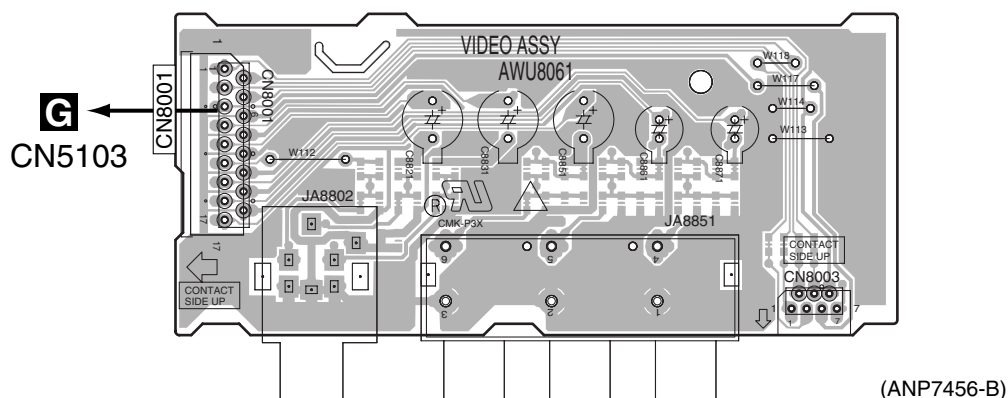
SIDE A**SIDE A**

PRIMARY ASSY



(ANP7456-B)

N VIDEO JACK ASSY



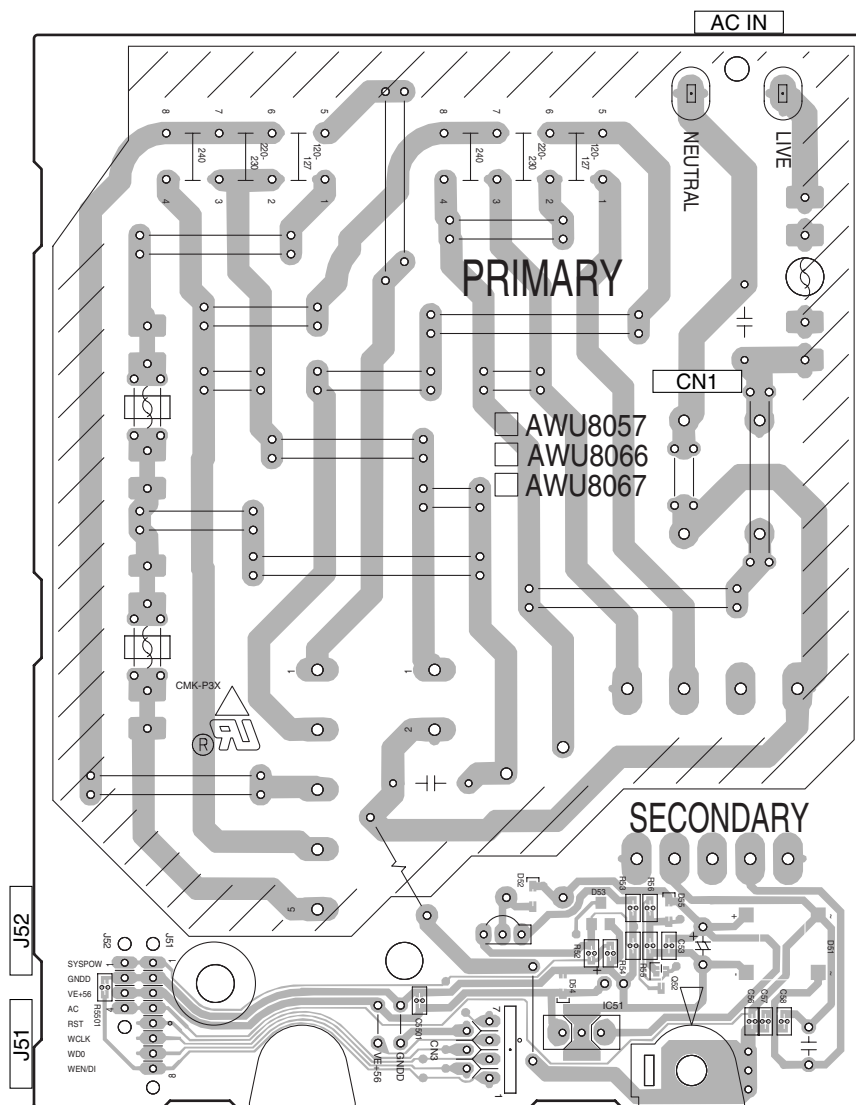
(ANP7456-B)

SIDE B

SIDE B

A

O PRIMARY ASSY



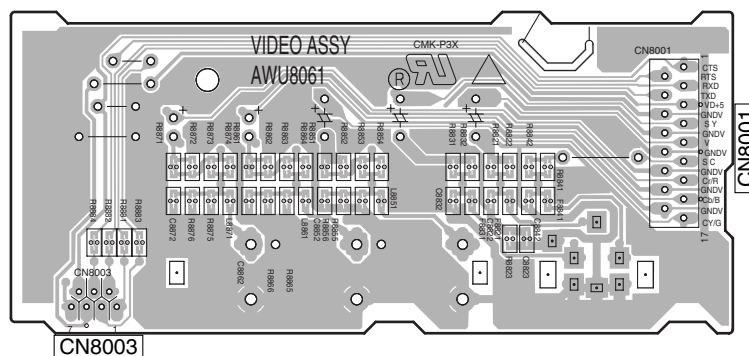
B

C

D

N VIDEO JACK ASSY

(ANP7456-B)



(ANP7456-B)

E

F

NO

NO

SIDE A

Figure 1 is a detailed schematic diagram of the HP MIC ASSY (ANP7456-B). The diagram shows the internal components and their connections. Key components include:

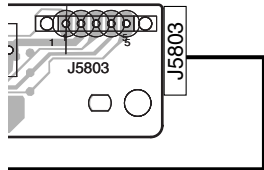
- VR5801**: A variable resistor at the top left.
- JAS501**: A connector at the top right.
- C5808**, **C5814**, **C5802**, **C5803**: Capacitors in the upper right section.
- S5831**: A switch or sensor component on the left side.
- CMK-P3X**: A component with a triangle and 'P' symbol on the left.
- STANDBY/ON**: A label for the switch area.
- HP MIC ASSY**: The main assembly label in the center.
- W177a**, **W177b**, **W177c**, **W177d**: Various resistors and components in the center.
- W177e**, **W177f**, **W177g**, **W177h**: More resistors and components in the center.
- W177i**, **W177j**, **W177k**, **W177l**: More resistors and components in the center.
- W177m**, **W177n**, **W177o**, **W177p**: More resistors and components in the center.
- W177q**, **W177r**, **W177s**, **W177t**: More resistors and components in the center.
- W177u**, **W177v**, **W177w**, **W177x**: More resistors and components in the center.
- W177y**, **W177z**: More resistors and components in the center.
- W177aa**, **W177ab**, **W177ac**, **W177ad**: More resistors and components in the center.
- W177ae**, **W177af**, **W177ag**, **W177ah**: More resistors and components in the center.
- W177ai**, **W177aj**, **W177ak**, **W177al**: More resistors and components in the center.
- W177am**, **W177an**, **W177ao**, **W177ap**: More resistors and components in the center.
- W177aq**, **W177ar**, **W177as**, **W177at**: More resistors and components in the center.
- W177au**, **W177av**, **W177aw**, **W177ax**: More resistors and components in the center.
- W177ay**, **W177az**: More resistors and components in the center.
- W177ba**, **W177bb**, **W177bc**, **W177bd**: More resistors and components in the center.
- W177be**, **W177bf**, **W177bg**, **W177bh**: More resistors and components in the center.
- W177bi**, **W177bj**, **W177bk**, **W177bl**: More resistors and components in the center.
- W177bm**, **W177bn**, **W177bo**, **W177bp**: More resistors and components in the center.
- W177bq**, **W177br**, **W177bs**, **W177bt**: More resistors and components in the center.
- W177bu**, **W177bv**, **W177bw**, **W177bx**: More resistors and components in the center.
- W177by**, **W177bz**: More resistors and components in the center.
- W177ca**, **W177cb**, **W177cc**, **W177cd**: More resistors and components in the center.
- W177ce**, **W177cf**, **W177cg**, **W177ch**: More resistors and components in the center.
- W177ci**, **W177cj**, **W177ck**, **W177cl**: More resistors and components in the center.
- W177cm**, **W177cn**, **W177co**, **W177cp**: More resistors and components in the center.
- W177cq**, **W177cr**, **W177cs**, **W177ct**: More resistors and components in the center.
- W177cu**, **W177cv**, **W177cw**, **W177cx**: More resistors and components in the center.
- W177cy**, **W177cz**: More resistors and components in the center.
- W177da**, **W177db**, **W177dc**, **W177dd**: More resistors and components in the center.
- W177de**, **W177df**, **W177dg**, **W177dh**: More resistors and components in the center.
- W177di**, **W177dj**, **W177dk**, **W177dl**: More resistors and components in the center.
- W177dm**, **W177dn**, **W177do**, **W177dp**: More resistors and components in the center.
- W177dq**, **W177dr**, **W177ds**, **W177dt**: More resistors and components in the center.
- W177du**, **W177dv**, **W177dw**, **W177dx**: More resistors and components in the center.
- W177dy**, **W177dz**: More resistors and components in the center.
- W177ea**, **W177eb**, **W177ec**, **W177ed**: More resistors and components in the center.
- W177ee**, **W177ef**, **W177eg**, **W177eh**: More resistors and components in the center.
- W177ei**, **W177ej**, **W177ek**, **W177el**: More resistors and components in the center.
- W177em**, **W177en**, **W177eo**, **W177ep**: More resistors and components in the center.
- W177eq**, **W177er**, **W177es**, **W177et**: More resistors and components in the center.
- W177eu**, **W177ev**, **W177ew**, **W177ex**: More resistors and components in the center.
- W177ey**, **W177ez**: More resistors and components in the center.
- W177fa**, **W177fb**, **W177fc**, **W177fd**: More resistors and components in the center.
- W177fe**, **W177ff**, **W177fg**, **W177fh**: More resistors and components in the center.
- W177fi**, **W177fj**, **W177fk**, **W177fl**: More resistors and components in the center.
- W177fm**, **W177fn**, **W177fo**, **W177fp**: More resistors and components in the center.
- W177fq**, **W177fr**, **W177fs**, **W177ft**: More resistors and components in the center.
- W177fu**, **W177fv**, **W177fw**, **W177fx**: More resistors and components in the center.
- W177fy**, **W177fz**: More resistors and components in the center.
- W177ga**, **W177gb**, **W177gc**, **W177gd**: More resistors and components in the center.
- W177ge**, **W177gf**, **W177gg**, **W177gh**: More resistors and components in the center.
- W177gi**, **W177gj**, **W177gk**, **W177gl**: More resistors and components in the center.
- W177gm**, **W177gn**, **W177go**, **W177gp**: More resistors and components in the center.
- W177gq**, **W177gr**, **W177gs**, **W177gt**: More resistors and components in the center.
- W177gu**, **W177gv**, **W177gw**, **W177gx**: More resistors and components in the center.
- W177gy**, **W177gz**: More resistors and components in the center.
- W177ha**, **W177hb**, **W177hc**, **W177hd**: More resistors and components in the center.
- W177he**, **W177hf**, **W177hg**, **W177hh**: More resistors and components in the center.
- W177hi**, **W177hj**, **W177hk**, **W177hl**: More resistors and components in the center.
- W177hm**, **W177hn**, **W177ho**, **W177hp**: More resistors and components in the center.
- W177hq**, **W177hr**, **W177hs**, **W177ht**: More resistors and components in the center.
- W177hu**, **W177hv**, **W177hw**, **W177hx**: More resistors and components in the center.
- W177hy**, **W177hz**: More resistors and components in the center.
- W177ia**, **W177ib**, **W177ic**, **W177id**: More resistors and components in the center.
- W177ie**, **W177if**, **W177ig**, **W177ih**: More resistors and components in the center.
- W177ii**, **W177ij**, **W177ik**, **W177il**: More resistors and components in the center.
- W177im**, **W177in**, **W177io**, **W177ip**: More resistors and components in the center.
- W177iq**, **W177ir**, **W177is**, **W177it**: More resistors and components in the center.
- W177iu**, **W177iv**, **W177iw**, **W177ix**: More resistors and components in the center.
- W177iy**, **W177iz**: More resistors and components in the center.
- W177ja**, **W177jb**, **W177jc**, **W177jd**: More resistors and components in the center.
-

G CN5711

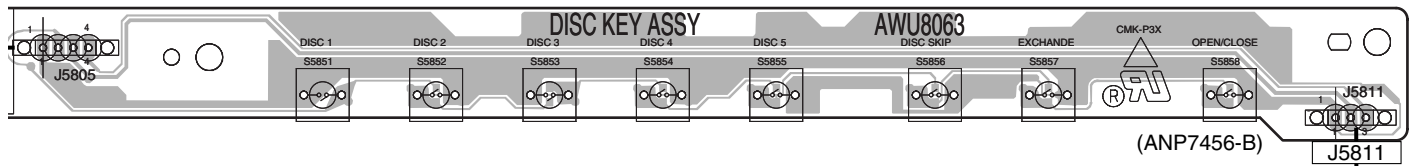
P S T

SIDE A

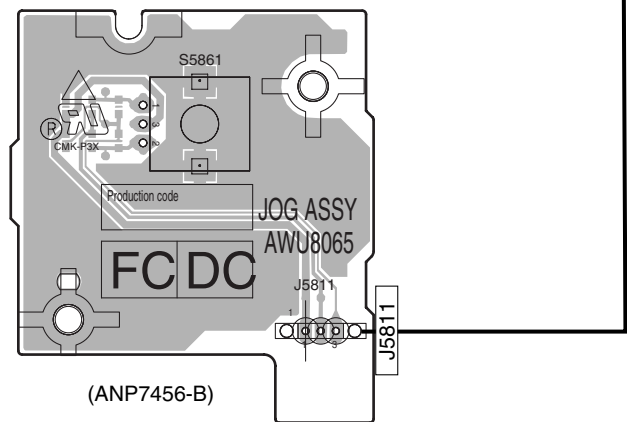
A

**R** DISC KEY ASSY

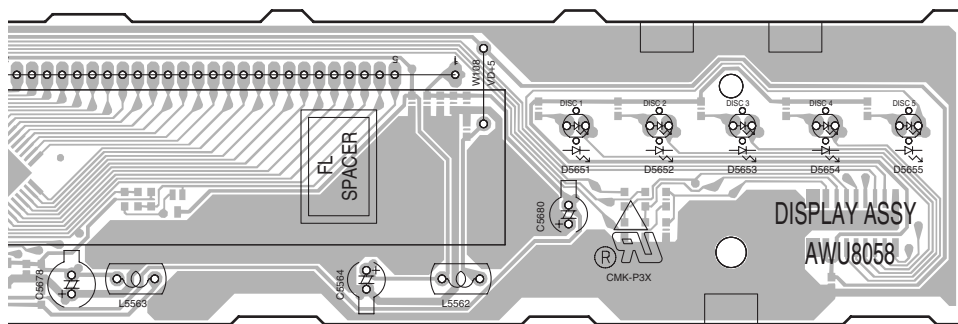
B

**Q** JOG ASSY

C



D



(ANP7456-B)

E

F

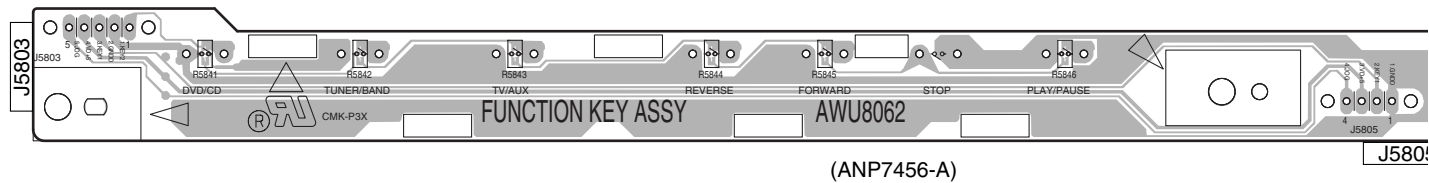
P Q R

A

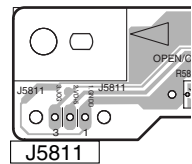
SIDE B

B

FUNCTION KEY ASSY

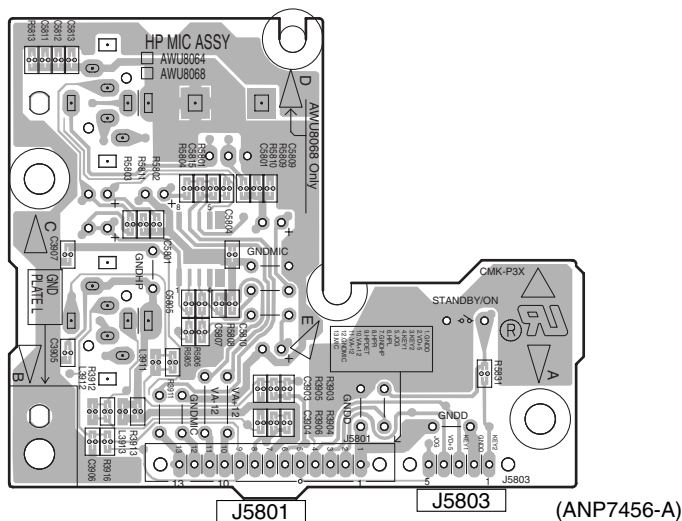


(ANP7456-A)



C

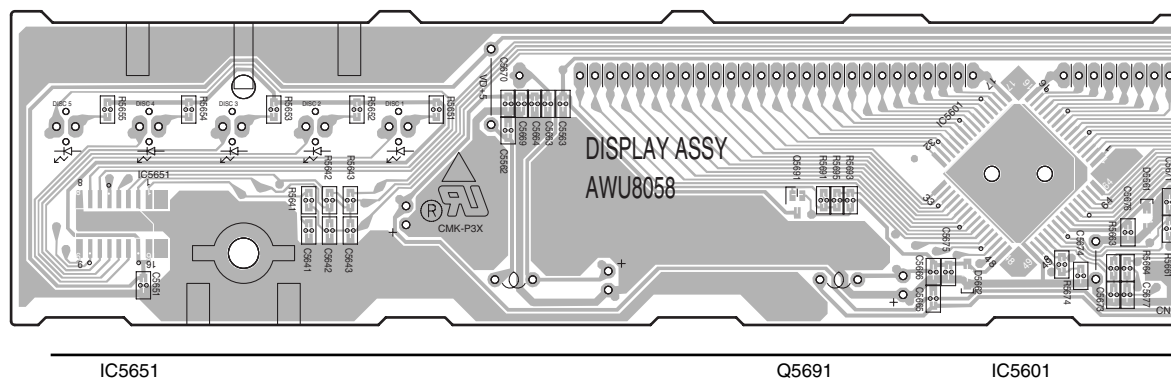
HP MIC ASSY



D

E

DISPLAY ASSY



F

P S T

SIDE B

A

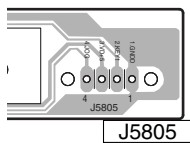
B

C

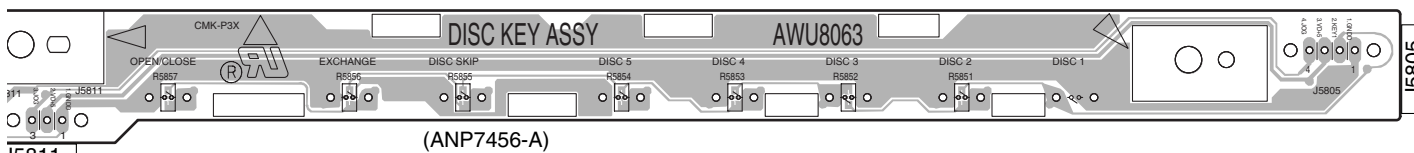
D

E

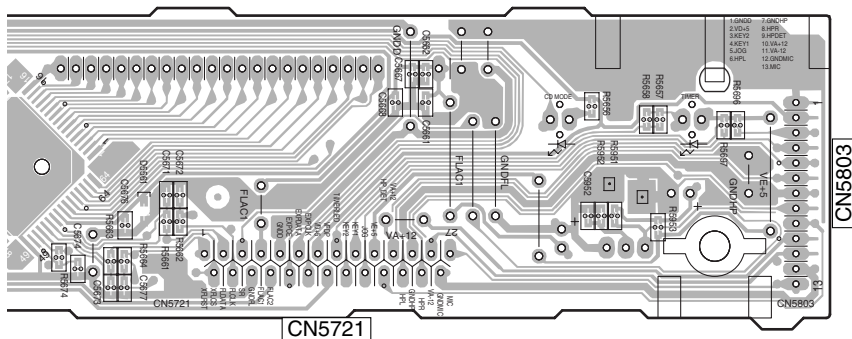
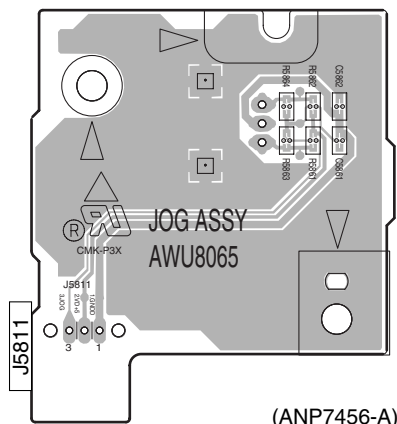
F



R DISC KEY ASSY



Q JOG ASSY



5601

(ANP7456-A)

P Q R

A

B

C

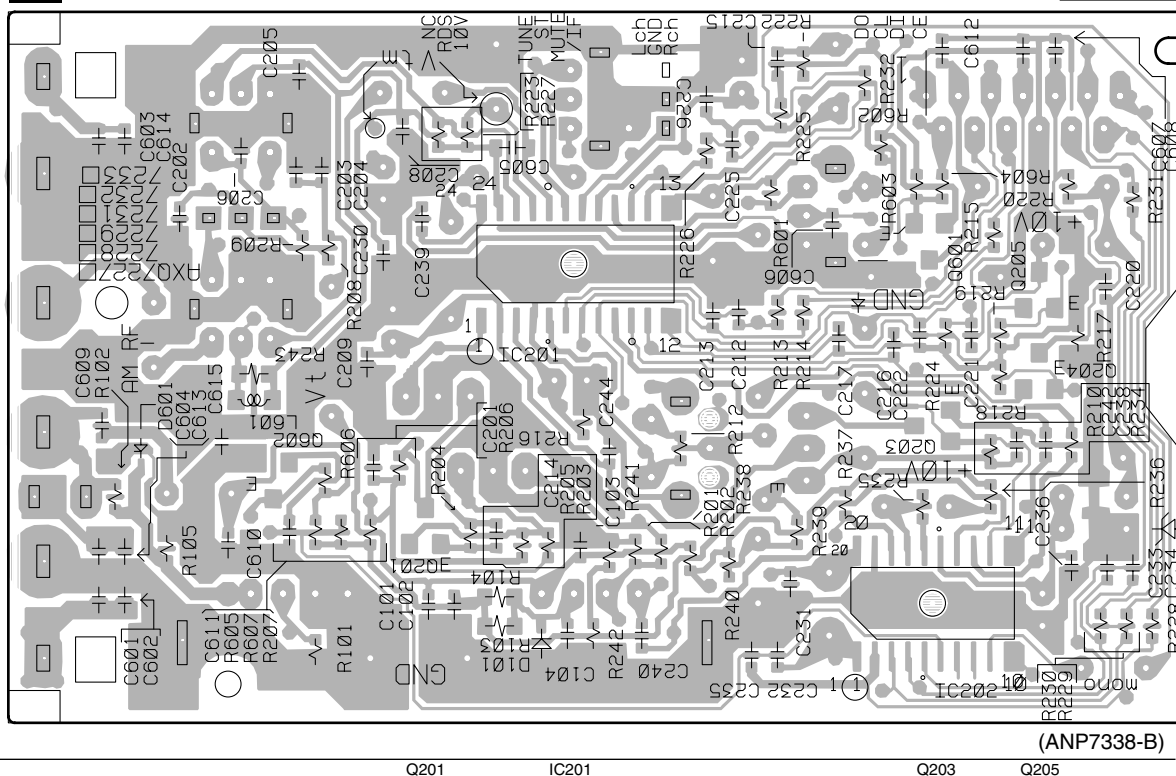
D

E

F

F FM/AM TUNER MODULE

F FM/AM TUNER MODULE

SIDE B

5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

●The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

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

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

560 Ω $\rightarrow$ 56 x 10¹ $\rightarrow$ 561 RD1/4PU567J
47k Ω $\rightarrow$ 47 x 10³ $\rightarrow$ 473 RD1/4PU473J
0.5 Ω $\rightarrow$ R50 RN2H50K
1 Ω $\rightarrow$ 1R0 RS1P1R0K

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

5.62k Ω $\rightarrow$ 562 x 10¹ $\rightarrow$ 5621 RN1/4PC5621F

Mark No. Description Part No.

LIST OF ASSEMBLIES

NSP	1..MECB ASSY	AWM7873
NSP	2..TRSB ASSY	AWU8154
NSP	2..SSRB ASSY	AWU8155
NSP	2..LOMB ASSY	AWU8156
NSP	2..SSIB ASSY	AWU8157
	1..DVDM ASSY	AWM7807
	1..FM/AM TUNER MODULE	AXQ7228
NSP	1..MAIN ASSY	AWM7829
	2..AF ASSY	AWU8094
	2..DIODE L ASSY	AWU8095
	2..DIODE S ASSY	AWU8071
NSP	1..AMP MODULE 6CH	AXQ7242
	2..6CH AMP ASSY	AWM7720
	1..DSP ASSY	AWX8251
NSP	1..COMPLEX ASSY	AWM7801
	2..AMP TRADE ASSY	AWU8059
	2..DSP TRADE ASSY	AWU8060
	2..VIDEO JACK ASSY	AWU8061
	2..PRIMARY ASSY	AWU8066
	2..DISPLAY ASSY	AWU8058
	2..JOG ASSY	AWU8065
	2..DISC KEY ASSY	AWU8063
	2..FUNCTION KEY ASSY	AWU8062
	2..HP MIC ASSY	AWU8068

Mark No. Description Part No.

A TRSB ASSY

SWITCHES AND RELAYS

S11 REAF SWITCH VSK1011

RESISTORS

R11 RESISTOR RS1/10S0R0J

OTHERS

CN11 8P CONNECTOR VKN1268
CN12 7P CONNECTOR VKN1267

Mark No. Description Part No.

B SSRB ASSY

SEMICONDUCTORS

Q21 TRANSISTOR 2SC2412K
Q22 TRANSISTOR DTC124EK
PC21 PHOTO INTERRUPTER GP2S28
PC22 PHOTO INTERRUPTER RPI-574

SWITCHES AND RELAYS

S21 REAF SWITCH VSK1011

CAPACITORS

C21 CAPACITOR CKSQYB102K50

RESISTORS

All Resistors RS1/10S###J

OTHERS

CN21 7P CONNECTOR VKN1267

C LOMB ASSY

CAPACITORS

C31 CAPACITOR CKSQYB102K50

OTHERS

CN31 CONNECTOR POST B2B-PH-K

D SSIB ASSY

OTHERS

CN1 12P CONNECTOR VKN1272
CN2 4P CONNECTOR VKN1264
CN3 17P CONNECTOR VKN1277

E DVDM ASSY

SEMICONDUCTORS

IC101 6CH BTL DRIVER IC M63018FP
IC151 DRIVER IC BA5912AFP-Y
IC301 FRONT END IC STM6316ATXXA
 Δ IC401 DC/DC CONTROLLER IC R1224N102H
 Δ IC411 REGULATOR IC (1.8V) PQ018EZ01ZP

Δ IC421 REGULATOR IC PQ018EH01ZP
 Δ IC431 REGULATOR IC (5.0V) MM1565AF
 Δ IC441 REGULATOR IC PQ20WZ11
IC501 DVD VIDEO AMP IC MM1623AF
IC601 BACK END IC STM5589CVA

A	IC602	SDRAM (64M)	K4S641632F-TC75	C128	CAPACITOR	CKSRYB102K50
	IC603	FLASH ROM	VYW2078		CAPACITOR	CKSRYB102K50
	IC604	IC	TC7WU04FU		CAPACITOR	CKSRYB104K16
	IC901	IC	TC74VHCT125AFT		CAPACITOR	CKSRYB103K50
	IC911	IC	TC74VHC08FT		CAPACITOR	CKSRYB103K50
B	Q191	TRANSISTOR	2SC4081	C139	CAPACITOR	CKSRYB104K16
	Q192	TRANSISTOR	2SA1576A		CAPACITOR	CCSRCH221J50
	Q193	TRANSISTOR	2SC4081		CAPACITOR	CEV101M16
	Q194	TRANSISTOR	2SA1576A		CAPACITOR	CKSRYB104K16
	Q201	CHIP TRANSISTOR	HN1A01F		CAPACITOR	CKSRYB103K50
C	Q202	TRANSISTOR	2SC4081	C158	CAPACITOR	CKSRYB103K50
	Q211	CHIP TRANSISTOR	HN1A01F		CAPACITOR	CKSRYB104K16
	Q212	TRANSISTOR	2SC4081		CAPACITOR	CKSRYB104K16
	Q390	TRANSISTOR	2SA1576A		CAPACITOR	CKSRYB104K16
	Q401	POWER MOS FET	CPH6314		CAPACITOR	CKSRYB103K50
D	Q451	TRANSISTOR	2SA1576A	C174	CAPACITOR	CKSRYB104K16
	Q452	TRANSISTOR	2SC4081		CAPACITOR	CKSRYB104K16
	Q603	CHIP TRANSISTOR	RN4982		CAPACITOR	CKSRYB103K50
	Q724	CHIP TRANSISTOR	DTC114YUA		CAPACITOR	CCSRCH331J50
	Q911	CHIP TRANSISTOR	RN1903		CAPACITOR	CEV470M16
E	Q921	CHIP DIGITAL TRANS.	DTA124EUA	C202	CAPACITOR	CKSRYB472K50
	Q922	DIGITAL TRANSISTOR	DTC124EUA		CAPACITOR	CKSRYB472K50
	Q923	TRANSISTOR	2SA1576A		CAPACITOR	CEV470M16
	Q924	TRANSISTOR	2SA1576A		CAPACITOR	CKSRYB472K50
	Q925	DIGITAL TRANSISTOR	DTC124EUA		CAPACITOR	CKSRYB472K50
F	Q926	TRANSISTOR	2SA1576A	C230	CAPACITOR	CKSRYB104K16
	Q951	CHIP TRANSISTOR	DTC114TUA		CAPACITOR	CKSRYB104K16
	Q977	CHIP TRANSISTOR	DTC114YUA		CAPACITOR	CKSRYB104K16
	D401	DIODE	RB051L-40		CAPACITOR	CKSRYB104K16
	D402	DIODE	1SS355		CAPACITOR	CKSRYB104K16
G	D403	DIODE	1SS355	C309	CAPACITOR	CKSRYB104K16
	D431	DIODE	1SR154-400		CAPACITOR	CKSRYB104K16
	D432	DIODE	1SR154-400		CAPACITOR	CKSRYB104K16
	D603	CHIP DIODE	RB501V-40		CAPACITOR	CKSRYB104K16
	D921	CHIP ZENER DIODE	UDZS4.7B		CAPACITOR	CKSRYB104K16
H	D922	DIODE	1SS355	C335	CAPACITOR	CKSRYB104K16
	D923	DIODE	1SS355		CAPACITOR	CKSRYB104K16
	D924	DIODE	1SS355		CAPACITOR	CKSRYB223K50
	D925	DIODE	1SS355		CAPACITOR	CKSRYB104K16
	D926	DIODE	1SS355		CAPACITOR	CKSRYB103K50
I	D927	DIODE	1SS355	C357	CAPACITOR	CKSRYB104K16
					CAPACITOR	CKSRYB104K16
					CAPACITOR	CKSRYB104K16
					CAPACITOR	CKSRYB104K16
					CAPACITOR	CKSRYB102K50
COILS AND FILTERS				C388	CAPACITOR	CKSRYB104K16
J	L100	CHIP BEADS	ATL7010		CAPACITOR	CCSRCH180J50
	L111	CHIP BEADS	ATL7010		CAPACITOR	CKSRYB104K16
	L390	CHIP COIL	LCYA2R7J2520		CAPACITOR	CKSRYB104K16
	L401	POWER INDUCTOR	ATH7011		CAPACITOR	CCSRCH560J50
	L402	INDUCTOR	CTH1254		CAPACITOR	CCSRCH7R0D50
K	L623	CHIP BEADS	ATL7010	C394	CAPACITOR	CKSRYB152K50
					CAPACITOR	CEV101M16
					CHIP CERAMIC C.	DCH1165
					CHIP CERAMIC C.	DCH1165
					CAPACITOR	CEV101M16
L	C101	CAPACITOR	CEV101M16	C405	CHIP CERAMIC C.	DCH1165
	C102	CAPACITOR	CKSRYB104K16		CAPACITOR	CKSQYB104K25
	C103	CAPACITOR	CKSRYB103K50		CAPACITOR	CCSRCH121J50
	C112	CAPACITOR	CKSRYB103K50		CAPACITOR	DCH1165
	C113	CAPACITOR	CKSRYB103K50		CAPACITOR	CEV101M16
M	C114	CAPACITOR	CKSRYB103K50	C406	CHIP CERAMIC C.	DCH1165
	C124	CAPACITOR	CKSRYB103K50		CAPACITOR	CKSQYB104K25
	C125	CAPACITOR	CKSRYB103K50		CAPACITOR	CCSRCH121J50
	C126	CAPACITOR	CKSRYB223K50		CHIP CERAMIC C.	DCH1165
	C127	CAPACITOR	CKSRYB102K50		CAPACITOR	CEV101M16
N				C408	CAPACITOR	CKSQYB104K25
					CAPACITOR	CCSRCH121J50
					CHIP CERAMIC C.	DCH1165
					CAPACITOR	CEV101M16
					CAPACITOR	CKSQYB104K25
O				C409	CHIP CERAMIC C.	DCH1165
					CAPACITOR	CEV101M16
					CAPACITOR	CKSQYB104K25
					CAPACITOR	CCSRCH121J50
					CHIP CERAMIC C.	DCH1165
P				C410	CAPACITOR	CEV101M16
					CAPACITOR	CKSQYB104K25
					CAPACITOR	CCSRCH121J50
					CHIP CERAMIC C.	DCH1165
					CAPACITOR	CEV101M16

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
C412	CAPACITOR	CEV101M16	C690	CAPACITOR	CCSRCH470J50	A
C413	CAPACITOR	CKSRYB104K16	C694	CAPACITOR	CKSRYB104K16	
C414	CAPACITOR	CKSRYB104K16	C698	CAPACITOR	CKSRYB104K16	
C415	CAPACITOR	CEV101M40	C902	CAPACITOR	CKSRYB104K16	
C422	CAPACITOR	CEV101M16	C912	CAPACITOR	CKSRYB104K16	
C423	CAPACITOR	CKSRYB104K16	C921	CAPACITOR	CKSRYB104K16	B
C424	CAPACITOR	CKSRYB104K16	RESISTORS			
C425	CAPACITOR	CEV101M40	R101	RESISTOR	RS1/16S5600F	
C431	CAPACITOR	CKSQYB105K16	R1011	RESISTOR	RS1/10S0R0J	
C433	CAPACITOR	CKSQYB225K10	R1012	RESISTOR	RS1/10S0R0J	
C441	CAPACITOR	CKSRYB104K16	R1013	RESISTOR	RS1/10S0R0J	C
C442	CAPACITOR	CKSRYB104K16	R102	RESISTOR	RS1/16S5600F	
C443	CAPACITOR	CEV101M16	R104	RESISTOR	RS1/10S6R8J	
C451	CAPACITOR	CKSRYB104K16	R105	RESISTOR	RS1/10S4R7J	
C452	CAPACITOR	CEV100M16	R115	RESISTOR	RS1/10S4R7J	
C501	CAPACITOR	CKSRYB105K10	R116	RESISTOR	RS1/10S4R7J	D
C511	CAPACITOR	CKSRYB104K16	R117	RESISTOR	RS1/10S4R7J	
C521	CAPACITOR	CKSRYB105K10	R118	RESISTOR	RS1/10S4R7J	
C531	CAPACITOR	CKSRYB104K16	R119	RESISTOR	RS1/10S4R7J	
C541	CAPACITOR	CKSRYB105K10	R120	RESISTOR	RS1/10S4R7J	
C551	CAPACITOR	CKSRYB104K16	R123	RESISTOR	RS1/16S5600F	E
C561	CAPACITOR	CEV101M16	R125	RESISTOR	RS1/16S1002F	
C562	CAPACITOR	CKSRYB102K50	R142	RESISTOR	RS1/16S5600F	
C563	CAPACITOR	CKSRYB102K50	R143	RESISTOR	RS1/16S5600F	
C564	CAPACITOR	CEV101M16	R144	RESISTOR	RS1/16S1002F	
C565	CAPACITOR	CKSRYB104K16	R151	RESISTOR	RS1/10S0R0J	F
C571	CAPACITOR	CKSRYB104K16	R168	RESISTOR	RS1/16S1102F	
C600	CAPACITOR	CEV101M16	R169	RESISTOR	RS1/16S1002F	
C603	CAPACITOR	CKSRYB105K10	R172	RESISTOR	RS1/16S1002F	
C604	CAPACITOR	CKSRYB104K16	R173	RESISTOR	RS1/16S1002F	
C607	CAPACITOR	CKSRYB104K16	R174	RESISTOR	RS1/16S1002F	G
C614	CAPACITOR	CKSRYB104K16	R175	RESISTOR	RS1/16S1002F	
C619	CAPACITOR	CKSRYB104K16	R176	RESISTOR	RS1/16S1002F	
C620	CAPACITOR	CKSRYB105K10	R178	RESISTOR	RS1/16S1602F	
C621	CAPACITOR	CEV101M16	R179	RESISTOR	RS1/16S1002F	
C622	CAPACITOR	CKSRYB104K16	R182	RESISTOR	RS1/16S1002F	H
C623	CAPACITOR	CKSRYB104K16	R201	RESISTOR	RAB4C220J	
C624	CAPACITOR	CKSRYB102K50	R210	RESISTOR	RS1/10S0R0J	
C625	CAPACITOR	CKSRYB105K10	R211	CHIP RESISTOR ARRAY	RAB4C390J	
C626	CAPACITOR	CKSRYB104K16	R301	RESISTOR	RS1/16S1202F	
C627	CAPACITOR	CKSRYB104K16	R330	RESISTOR	RS1/16S1002F	I
C628	CAPACITOR	CKSRYB104K16	R331	RESISTOR	RS1/16S1002F	
C629	CAPACITOR	CKSRYB104K16	R387	RESISTOR	RS1/10S0R0J	
C630	CAPACITOR	CKSRYB104K16	R388	RESISTOR	RS1/10S0R0J	
C631	CAPACITOR	CKSRYB104K16	R389	RESISTOR	RS1/10S0R0J	
C632	CAPACITOR	CKSRYB104K16	R403	RESISTOR	RS1/10S100J	J
C636	CAPACITOR	CKSRYB104K16	R408	RESISTOR	RS1/16S1502F	
C637	CAPACITOR	CKSRYB104K16	R409	RESISTOR	RS1/16S2702F	
C640	CAPACITOR	CCSRCH7R0D50	R410	RESISTOR	RS1/16S1802F	
C641	CAPACITOR	CKSRYB104K16	R411	RESISTOR	RS1/8S0R0J	
C644	CAPACITOR	CCSRCH7R0D50	R412	RESISTOR	RS1/10S0R0J	K
C647	CAPACITOR	CKSRYB104K16	R413	RESISTOR	RS1/10S0R0J	
C648	CAPACITOR	CKSRYB104K16	R414	RESISTOR	RS1/10S0R0J	
C649	CAPACITOR	CKSRYB104K16	R415	RESISTOR	RS1/10S0R0J	
C659	CAPACITOR	CKSRYB104K16	R417	RESISTOR	RS1/10S0R0J	
C660	CAPACITOR	CEV101M16	R421	RESISTOR	RS1/10S0R0J	L
C664	CAPACITOR	CKSRYB104K16	R422	RESISTOR	RS1/10S0R0J	
C671	CAPACITOR	CKSRYB104K16	R441	RESISTOR	RS1/16S4701F	
C681	CAPACITOR	CKSRYB104K16				
C684	CAPACITOR	CKSRYB104K16				

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	Mark No.	Description	Part No.		Mark No.	Description	Part No.					
A	R442	RESISTOR	RS1/16S6801F	C217	CAPACITOR	CKSRYB123K50						
	R443	RESISTOR	RS1/16S2001F	C220	CAPACITOR	CKSRYB103K50						
	R502	RESISTOR	RS1/16S1500F	C221	CAPACITOR	CKSRYB224K10						
	R512	RESISTOR	RS1/16S1500F	C222	CAPACITOR	CKSRYB473K16						
	R522	RESISTOR	RS1/16S1500F	C223	CAPACITOR	CEAT100M50						
	R532	RESISTOR	RS1/16S1500F	C224	CAPACITOR	CEAT1R0M50						
	R542	RESISTOR	RS1/16S1500F	C225	CAPACITOR	CKSRYB153K50						
	R552	RESISTOR	RS1/16S1500F	C226	CAPACITOR	CCSRCH101J50						
	R561	RESISTOR	RS1/10S0R0J	C227	ELECT. CAPACITOR	CEAT220M25						
	R600	RESISTOR	RS1/10S0R0J	C228	CAPACITOR	CEAT3R3M50						
	R628	RESISTOR	RS1/16S1002F	C229	CAPACITOR	CEAT101M10						
	R635	RESISTOR	RS1/16S1002F	C230	CAPACITOR	CKSRYB223K50						
B	Other Resistors		RS1/16S###J	C231	CAPACITOR	CCSRCH150J50						
				C232	CAPACITOR	CCSRCH150J50						
				C233	CAPACITOR	CCSRCH101J50						
				C234	CAPACITOR	CCSRCH101J50						
				C235	CAPACITOR	CCSRCH101J50						
				C236	CAPACITOR	CKSRYB223K50						
				C237	CAPACITOR	CEAT470M10						
				C238	CAPACITOR	CKSRYB102K50						
	CN121	24P CONNECTOR	VKN1464	C239	CAPACITOR	CKSRYB103K50						
	CN122	17P CONNECTOR	VKN1421	C240	CAPACITOR	CCSRCH101J50						
	CN123	CONNECTOR	B2B-PH-SM3	C241	CAPACITOR	CEAT2R2M50						
	CN124	8P CONNECTOR	VKN1412	C242	CAPACITOR	CKSRYB103K50						
	CN911	CONNECTOR	VKN1626	C243	CAPACITOR	CEAT330M16						
	CN923	18P CONNECTOR	VKN1422	C601	CAPACITOR	CKSRYB103K50						
	X301	CERAMIC RESONATOR (20MHz)	VSS1186	C602	CAPACITOR	CKSRYB102K50						
	X601	CRYSTAL RESONATOR (27MHz)	VSS1172	C603	CAPACITOR	CKSRYB223K50						
C												
F												
FM/AM TUNER MODULE												
SEMICONDUCTORS												
	IC201	AM/FM IF+MPX IC	BA1451F									
	IC202	PLL IC	LC72131MD									
	Q201	TRANSISTOR	2SC2412K									
	Q202	TRANSISTOR	DTA124ES									
D	Q203	TRANSISTOR	DTC124EK									
	Q204	TRANSISTOR	2SC2412K									
	Q205	TRANSISTOR	2SC2412K									
	D201	DIODE	1SS133									
	D202	ZENER DIODE	MTZJ5.1C									
COILS AND FILTERS												
	F201	CERAMIC FILTER	ATF-119									
	F202	CERAMIC FILTER	ATF-107									
	F203	AM CERAMIC FILTER	ATF1155									
	L201	FM DETECTOR COIL	ATE7003									
CAPACITORS												
E	C101	CAPACITOR	CKSRYB103K50									
	C102	CAPACITOR	CKSRYB103K50									
	C201	CAPACITOR	CKSRYB223K50									
	C202	CAPACITOR	CKSRYB473K16									
	C204	CAPACITOR	CKSRYB102K50									
	C205	CAPACITOR	CKSRYB223K50									
	C206	CAPACITOR	CCSRCH100D50									
	C208	CAPACITOR	CKSRYB103K50									
	C209	CAPACITOR	CKSRYB223K50									
	C210	CAPACITOR	CEJQ470M16									
	C211	CAPACITOR	CEJA1R0M50									
	C212	CAPACITOR	CCSRCH101J50									
F	C213	CAPACITOR	CCSRCH101J50									
	C214	CAPACITOR	CKSRYB223K50									
	C215	CAPACITOR	CKSRYB681K50									
	C216	CAPACITOR	CKSRYB123K50									
G												
AF ASSY												
SEMICONDUCTORS												
	IC3001	LOGICIC	BU4052BCF									
	IC3003	IC	NJM4558MD									
	IC3101	IC	NJM4558MD									
	IC3121	IC	BU4066BCF									
	IC3131	IC	NJM4558MD									
	IC3161	IC	NJM4558MD									
	IC3181	ELECTRIC VOL IC 6CH	BD3814FV									
	IC3201	IC	NJM4558MD									
	IC3241	IC	NJM4558MD									
	IC3252	IC	NJM4558MD									
	IC3261	IC	NJM4558MD									
XV-HTD7												
74	1		2		3		4					

Mark No.	Description	Part No.
IC3731	IC	NJM4558MD
IC3901	OP-AMP IC	NJM4560M
IC5501	CPU	PDC111A
⚠ IC61	REGULATOR IC	NJM7812FA
⚠ IC82	IC	NJM7805FA
Q114	TRANSISTOR	2SD2114K
Q115	CHIP DIGITAL TRANS.	DTA124EUA
Q131	TRANSISTOR	2SC4081
Q3001	TRANSISTOR	2SD2114K
Q3002	TRANSISTOR	2SD2114K
Q3003	CHIP DIGITAL TRANS.	DTA124EUA
Q3004	CHIP DIGITAL TRANS.	DTA124EUA
Q3005	TRANSISTOR	2SC4081
Q3006	TRANSISTOR	2SC4081
Q3007	CHIP DIGITAL TRANS.	DTA124EUA
Q3009	TRANSISTOR	2SC4081
Q3010	TRANSISTOR	2SC4081
Q3061	CHIP DIGITAL TRANS.	DTA124EUA
Q3122	CHIP DIGITAL TRANS.	DTA124EUA
Q3101	TRANSISTOR	2SD2114K
Q3102	TRANSISTOR	2SD2114K
Q3131	TRANSISTOR	2SD2114K
Q3132	TRANSISTOR	2SD2114K
Q3171, Q3172, Q3174		2SD2114K
Q3123	DIGITAL TRANSISTOR	DTC124EUA
Q3124	CHIP DIGITAL TRANS.	DTA124EUA
Q3125	DIGITAL TRANSISTOR	DTC124EUA
⚠ Q32	TRANSISTOR	2SB1375
Q3601	TRANSISTOR	2SC4081
Q3602	TRANSISTOR	2SC4081
Q3611	TRANSISTOR	2SC4081
Q3612	TRANSISTOR	2SC4081
Q3621	TRANSISTOR	2SC4081
Q3622	TRANSISTOR	2SC4081
Q3631	TRANSISTOR	2SC4081
Q3632	CHIP TR (PNP X2)	UMB1N
Q3633	CHIP TRANSISTOR	RN1901
Q3635	CHIP DIGITAL TRANS.	DTA124EUA
Q3636	DIGITAL TRANSISTOR	DTC124EUA
Q3637	TRANSISTOR	2SC4081
Q3638	TRANSISTOR	2SC4081
Q3639	CHIP DIGITAL TRANS.	DTA124EUA
Q3640	DIGITAL TRANSISTOR	DTC124EUA
Q3641	TRANSISTOR	2SD1858X
Q3642	TRANSISTOR	2SC4081
Q3644	TRANSISTOR	2SC4081
Q3645	DIGITAL TRANSISTOR	DTA143EUA
Q3741	TRANSISTOR	2SD2114K
Q3742	TRANSISTOR	2SD2114K
Q3901	TRANSISTOR	2SD2114K
Q3902	TRANSISTOR	2SD2114K
Q3903	TRANSISTOR	2SD2114K
Q3904	TRANSISTOR	2SD2114K
Q3906	TRANSISTOR	2SA1576A
Q5501	TRANSISTOR	2SC4081
Q5571	DIGITAL TRANSISTOR	DTC143EUA
Q5572	TRANSISTOR	2SC4081
Q5573	DIGITAL TRANSISTOR	DTC143EUA
Q5595	CHIP TR (DUAL)	RN2901
Q5711	TRANSISTOR	2SC4081

Mark No.	Description	Part No.
D103	DIODE	1SS355
⚠ D22	DIODE	D5SBA20F20
D3003	CHIP ZENER DIODE	UDZS6.2B
D3004	CHIP ZENER DIODE	UDZS6.2B
D31	DIODE	S5688G
D3181	CHIP ZENER DIODE	UDZS6.8B
D3182	CHIP ZENER DIODE	UDZS6.8B
D32	DIODE	S5688G
D33	ZENERDIODE	MTZJ16A
D34	ZENER DIODE	MTZJ16A
D35	DIODE	1SS133
D36	ZENER DIODE	MTZJ6.8B
D3601	DIODE	1SS355
D3602	DIODE	1SS355
D3603	DIODE	DAP202K
D3604	DIODE	1SS355
D3611	DIODE	1SS355
D3612	DIODE	1SS355
D3613	DIODE	DAP202K
D3621	DIODE	1SS355
D3622	DIODE	1SS355
D3623	DIODE	DAP202K
D3631	ZINER DIODE	MTZJ5.1A
D3632	DIODE	1SS133
D3633	DIODE	1SS133
D3635	DIODE	DAN202K
D3636	DIODE	1SS355
D3637	DIODE	1SS355
D3641	DIODE	1SS355
D3642	DIODE	1SS355
D3643	DIODE	1SS355
D3644	DIODE	DAN217
D3751	DIODE	1SS133
D3901	DIODE	DAP202K
D5575	DIODE	1SS355
D5711	CHIP ZENER DIODE	UDZS11B
D5712	DIODE	1SS355
D5721	DIODE	1SS355
D83	ZENER DIODE	MTZJ7.5C

⚠ TH131	THERMISTOR	NCP18WF104J03RB
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SWITCHES AND RELAYS

RY3641	SP RELAY	ASR7008
RY3642	SP RELAY	ASR7008
RY3643	SP RELAY	ASR7008

COILS AND FILTERS

L3361	COIL	ATH-059
L3362	COIL	ATH-059
L3461	COIL	ATH-059
L3462	COIL	ATH-059
L3561	COIL	ATH-059
L3661	COIL	ATH-059
L5571	AXIAL INDUCTOR	LAU220J
L8881	CHIP BEADS	VTL1075

CAPACITORS

C15	ELECT. CAPACITOR	ACH7182
C16	ELECT. CAPACITOR	ACH7182
C23	ELECT. CAPACITOR	ACH7181
C24	ELECT. CAPACITOR	ACH7181
C25	ELECT. CAPACITOR	ACH7183

1			2			3			4		
Mark No. Description Part No.			Mark No. Description Part No.			Mark No. Description Part No.			Mark No. Description Part No.		
A	C3001	CAPACITOR	CCSRCH221J50			C3170	CAPACITOR	CKSRYB682K50			
	C3002	CAPACITOR	CCSRCH221J50			C3171	CAPACITOR	CEAT100M50			
	C3003	CAPACITOR	CCSRCH221J50			C3172	CAPACITOR	CEAT100M50			
	C3004	CAPACITOR	CCSRCH221J50			C3173	CAPACITOR	CEAT100M50			
	C3005	CAPACITOR	CCSRCH221J50			C3174	CAPACITOR	CEAT100M50			
	C3006	CAPACITOR	CCSRCH221J50			C3175	CAPACITOR	CKSRYB103K50			
	C3007	CAPACITOR	CCSRCH221J50			C3176	CAPACITOR	CKSRYB103K50			
	C3008	CAPACITOR	CCSRCH221J50			C3185	CAPACITOR	CKSRYB104K16			
	C3009	CAPACITOR	CCSRCH821J50			C3186	CAPACITOR	CKSRYB104K16			
	C3010	CAPACITOR	CCSRCH821J50			C3187	CAPACITOR	CKSRYB104K16			
B	C3014	CAPACITOR	CKSRYB104K16			C3188	CAPACITOR	CKSRYB104K16			
	C3015	CAPACITOR	CKSRYB104K16			C3189	CAPACITOR	CKSRYB472K50			
	C3016	CAPACITOR	CKSRYB104K16			C3190	CAPACITOR	CKSRYB472K50			
	C3025	CAPACITOR	CKSRYB103K50			C3191	CAPACITOR	CCSRCH101J50			
	C3026	CAPACITOR	CKSRYB103K50			C3192	CAPACITOR	CCSRCH101J50			
	C3027	CAPACITOR	CEAT470M16			C3193	CAPACITOR	CCSRCH101J50			
	C3028	CAPACITOR	CEAT470M16			C3195	CAPACITOR	CEAT221M10			
	C3029	CAPACITOR	CEAL100M16			C3196	CAPACITOR	CEAT221M10			
	C3030	CAPACITOR	CEAL100M16			C3197	CAPACITOR	CKSRYB103K50			
	C3033	CAPACITOR	CKSRYB103K50			C3198	CAPACITOR	CKSRYB103K50			
C	C3034	CAPACITOR	CKSRYB103K50			C32	ELECT. CAPACITOR	CEAT221M63			
	C3035	CAPACITOR	CEAL100M16			C3209	CAPACITOR	CKSRYB103K50			
	C3036	CAPACITOR	CEAL100M16			C3210	CAPACITOR	CKSRYB103K50			
	C3037	CAPACITOR	CEAT100M50			C3211	CAPACITOR	CEAT470M16			
	C3038	CAPACITOR	CEAT100M50			C3212	CAPACITOR	CEAT470M16			
	C3101	CAPACITOR	CEAT100M50			C3213	CAPACITOR	CEAT100M50			
	C3102	CAPACITOR	CEAT100M50			C3214	CAPACITOR	CEAT100M50			
	C3103	CAPACITOR	CCSRCH331J50			C3217	CAPACITOR	CKSRYB123K50			
	C3104	CAPACITOR	CCSRCH331J50			C3218	CAPACITOR	CKSRYB123K50			
	C3105	CAPACITOR	CCSRCH821J50			C3219	CAPACITOR	CKSRYB104K16			
D	C3106	CAPACITOR	CCSRCH821J50			C3220	CAPACITOR	CKSRYB104K16			
	C3109	CAPACITOR	CCSRCH680J50			C3243	CAPACITOR	CKSRYB182K50			
	C3110	CAPACITOR	CCSRCH680J50			C3244	CAPACITOR	CKSRYB182K50			
	C3111	CAPACITOR	CEAT470M16			C3245	CAPACITOR	CKSRYB683K16			
	C3112	CAPACITOR	CEAT470M16			C3246	CAPACITOR	CKSRYB683K16			
	C3113	CAPACITOR	CKSRYB103K50			C3247	CHIP CAPACITOR	CKSRYB683K25			
	C3114	CAPACITOR	CKSRYB103K50			C3248	CHIP CAPACITOR	CKSRYB683K25			
	C3115	CAPACITOR	CEAT100M50			C3249	CAPACITOR	CKSRYB103K50			
	C3116	CAPACITOR	CEAT100M50			C3250	CAPACITOR	CKSRYB103K50			
	C3117	CAPACITOR	CEAT100M50			C3251, C3252	CAPACITOR	CKSRYB153K50			
E	C3118	CAPACITOR	CEAT100M50			C3261	CAPACITOR	CKSRYB153K50			
	C3131	CAPACITOR	CEAT100M50			C3262	CAPACITOR	CEAT100M50			
	C3132	CAPACITOR	CEAT100M50			C3263	CAPACITOR	CKSRYB182K50			
	C3133	CAPACITOR	CKSRYB152K50			C3265	CHIP CAPACITOR	CKSRYB683K25			
	C3134	CAPACITOR	CKSRYB152K50			C3266	CAPACITOR	CKSRYB273K16			
	C3135	CAPACITOR	CKSRYB152K50			C3269	CAPACITOR	CKSRYB393K25			
	C3136	CAPACITOR	CKSRYB152K50			C3276	CAPACITOR	CKSRYB102K50			
	C3139	CAPACITOR	CCSRCH821J50			C3282	CAPACITOR	CKSRYB333K16			
	C3140	CAPACITOR	CCSRCH821J50			C3284	CAPACITOR	CKSRYB473K50			
	C3141	CAPACITOR	CKSRYB103K50			C3286	CAPACITOR	CKSRYB473K50			
	C3142	CAPACITOR	CKSRYB103K50			C3288	CAPACITOR	CKSRYB104K16			
	C3143	CAPACITOR	CEAT100M50			C3290	CAPACITOR	CKSRYB104K16			
	C3144	CAPACITOR	CEAT100M50			C3292	CAPACITOR	CKSRYB273K16			
	C3145	CAPACITOR	CEAT100M50			C3294	CAPACITOR	CCSRCH470J50			
	C3146	CAPACITOR	CEAT100M50			C3295	CAPACITOR	CKSRYB103K50			
F	C3161	CAPACITOR	CEAT100M50			C3296	CAPACITOR	CKSRYB103K50			
	C3162	CAPACITOR	CEAT100M50			C3297	CAPACITOR	CKSRYB103K50			
	C3163	CAPACITOR	CKSRYB152K50			C3298	CAPACITOR	CKSRYB103K50			
	C3165	CAPACITOR	CKSRYB152K50			C33	ELECT. CAPACITOR	CEAT330M50			
	C3169	CAPACITOR	CCSRCH821J50			C3361	CAPACITOR	CKSRYB223K50			

Mark No.	Description	Part No.
C3168	CAPACITOR	CEAT2R2M50
C3178	CAPACITOR	CEAT2R2M50
C3179	CAPACITOR	CEAT2R2M50
C3301	CAPACITOR	CEAT2R2M50
C3302	CAPACITOR	CEAT2R2M50
C3303	CAPACITOR	CKSRYB102K50
C3304	CAPACITOR	CKSRYB102K50
C3305	CAPACITOR	CCSRCH221J50
C3306	CAPACITOR	CCSRCH221J50
C3307	CAPACITOR	CEAL100M16
C3308	CAPACITOR	CEAL100M16
C3309	CAPACITOR	CCSRCJ3R0C50
C3310	CAPACITOR	CCSRCJ3R0C50
C3317	CAPACITOR	CEAT2R2M50
C3318	CAPACITOR	CEAT2R2M50
C3323	CAPACITOR	CEAT221M50
C3324	CAPACITOR	CEAT221M50
C3401	CAPACITOR	CEAT2R2M50
C3402	CAPACITOR	CEAT2R2M50
C3403	CAPACITOR	CKSRYB102K50
C3404	CAPACITOR	CKSRYB102K50
C3405	CAPACITOR	CCSRCH221J50
C3406	CAPACITOR	CCSRCH221J50
C3407	CAPACITOR	CEAL100M16
C3408	CAPACITOR	CEAL100M16
C3409	CAPACITOR	CCSRCJ3R0C50
C3410	CAPACITOR	CCSRCJ3R0C50
C3423	CAPACITOR	CEAT221M50
C3424	CAPACITOR	CEAT221M50
C3501	CAPACITOR	CEAT2R2M50
C3502	CAPACITOR	CEAT2R2M50
C3503	CAPACITOR	CKSRYB102K50
C3504	CAPACITOR	CKSRYB102K50
C3505	CAPACITOR	CCSRCH221J50
C3506	CAPACITOR	CCSRCH221J50
C3507	CAPACITOR	CEAL470M6R3
C3508	CAPACITOR	CEAL100M16
C3509	CAPACITOR	CCSRCJ3R0C50
C3510	CAPACITOR	CCSRCJ3R0C50
C3651	CAPACITOR	CEAT101M25
C3652	ELECT. CAPACITOR	CEAT470M25
C3653	ELECT. CAPACITOR	CEAT470M35
C62	CAPACITOR	CCSRCH221J50
C63	ELECT. CAPACITOR	CEAT470M25
C71	CAPACITOR	CKSRYB473K50
C72	CAPACITOR	CEAT100M50
C81	CAPACITOR	CKSRYB473K50
C82	ELECT. CAPACITOR	CEAT470M25
C92	CAPACITOR	CKSRYB104K16
C97	CAPACITOR	CCSRCH221J50
C98	ELECT. CAPACITOR	CEAT470M25

RESISTORS

R3317	METALOXIDE RESISTOR	ACN7122
R3318	METALOXIDE RESISTOR	ACN7122
R3319	METALOXIDE RESISTOR	ACN7122
R3320	METALOXIDE RESISTOR	ACN7122
⚠ R3323	RESISTOR	RS1/16S1R0J
⚠ R3324	RESISTOR	RS1/16S1R0J
⚠ R3327	CARBON FILM RESISTOR	RD1/4MUF470J

Mark No.	Description	Part No.
⚠ R3328	CARBON FILM RESISTOR	RD1/4MUF470J
⚠ R3351	RESISTOR	RS1/16S1R0J
R3387	RESISTOR	RD1/4PU101J
R3388	RESISTOR	RD1/4PU101J
R3417	METALOXIDE RESISTOR	ACN7122
R3418	METALOXIDE RESISTOR	ACN7122
R3419	METALOXIDE RESISTOR	ACN7122
R3420	METALOXIDE RESISTOR	ACN7122
⚠ R3423	RESISTOR	RS1/16S1R0J
⚠ R3424	RESISTOR	RS1/16S1R0J
⚠ R3427	CARBON FILM RESISTOR	RD1/4MUF470J
⚠ R3428	CARBON FILM RESISTOR	RD1/4MUF470J
⚠ R3451	RESISTOR	RS1/16S1R0J
R3517	METALOXIDE RESISTOR	ACN7122
R3518	METALOXIDE RESISTOR	ACN7122
R3519	METALOXIDE RESISTOR	ACN7122
R3520	METALOXIDE RESISTOR	ACN7122
R3657	RESISTOR	RD1/4PU330J
⚠ R62	RESISTOR	RS1/16S330J
R65	RESISTOR	RS1/16S4700F
R67	CHIP RESISTOR	RS1/16S2201F
R68	CHIP RESISTOR	RS1/16S2201F
R94	RESISTOR	RS1/16S2701F
R95	RESISTOR	RS1/16S2701F
R96	RESISTOR	RS1/16S1002F
R97	RESISTOR	RS1/16S1002F
Other Resistors		RS1/16S###J

OTHERS

CN3001	23P PLUG	AKP7064
CN3002	23P PLUG	AKP7064
CN3651	PLUG (2P)	KM200SA2

K DSP ASSY SEMICONDUCTORS

IC8101	IC	TC74HCU04AF
IC8201	DA I/F TRANSCEIVER	AK4114VQ
IC8401	CODEC IC	AK4529VQ
IC8501	DSP IC	DSPD56367PV150
IC8502	IC	TC7WU04FU
IC8701	IC	TC74LVX244FT
IC8702	OCTAL BUS BUFFER IC	TC74VHCT244AFT
IC8901	IC	NJM2391DL1-33
IC8902	REGULATOR IC	NJU7223DL1-18
Q8503	DIGITAL TR (PNP)	UN5112
Q8504	TRANSISTOR	UMD2N
D8401	DIODE	DAN202K
D8402	DIODE	DAP202K
D8501	DIODE	1SS355
D8502	DIODE	DAP202K
D8503	DIODE	DAP202K

COILS AND FILTERS

L8002	CHIP SOLID INDUCTOR	ATL7002
L8004	CHIP SOLID INDUCTOR	ATL7002
L8101	CHIP SOLID INDUCTOR	QTL1013
L8103	CHIP SOLID INDUCTOR	QTL1013
L8201	CHIP SOLID INDUCTOR	QTL1013
L8203	CHIP SOLID INDUCTOR	QTL1013
L8204	CHIP SOLID INDUCTOR	QTL1013

	1		2		3		4
	Mark No.	Description	Part No.		Mark No.	Description	Part No.
A	L8401	CHIP SOLID INDUCTOR	QTL1013		C8516	CAPACITOR	CKSRYB105K6R3
	L8402	CHIP SOLID INDUCTOR	QTL1013		C8517	CAPACITOR	CKSRYB103K50
	L8501	CHIP SOLID INDUCTOR	ATL7002		C8518	CAPACITOR	CCSRCH471J50
					C8520	CAPACITOR	CCSRCH471J50
	L8502	CHIP SOLID INDUCTOR	ATL7002				
	L8504	CHIP SOLID INDUCTOR	QTL1013		C8521	CAPACITOR	CKSRYB104K16
	L8701	CHIP SOLID INDUCTOR	QTL1013		C8522	CAPACITOR	CCSRCH471J50
	L8702	CHIP SOLID INDUCTOR	QTL1013		C8523	CAPACITOR	CKSRYB104K16
					C8524	CAPACITOR	CCSRCH471J50
					C8525	CAPACITOR	CKSRYB104K16
	CAPACITORS						
B	C8007	CAPACITOR	CCSRCH471J50		C8526	CAPACITOR	CCSRCH471J50
	C8008	CAPACITOR	CCSRCH471J50		C8527	CAPACITOR	CKSRYB104K16
	C8009	CAPACITOR	CKSRYB103K50		C8528	CAPACITOR	CCSRCH471J50
	C8010	CAPACITOR	CKSRYB104K16		C8529	CAPACITOR	CKSRYB104K16
	C8104	CAPACITOR	CKSRYB103K50		C8530	CAPACITOR	CCSRCH471J50
	C8105	CAPACITOR	CEV101M16		C8531	CAPACITOR	CKSRYB104K16
	C8106	CAPACITOR	CCSRCH221J50		C8532	CAPACITOR	CCSRCH471J50
	C8107	CAPACITOR	CCSRCH470J50		C8533	CAPACITOR	CKSRYB104K16
	C8109	CAPACITOR	CCSRCH471J50		C8534	CAPACITOR	CCSRCH471J50
	C8110	CAPACITOR	CKSRYB105K6R3		C8535	CAPACITOR	CKSRYB104K16
C	C8201	CAPACITOR	CCSRCH471J50		C8536	CAPACITOR	CCSRCH471J50
	C8202	CAPACITOR	CKSRYB104K16		C8537	CAPACITOR	CKSRYB104K16
	C8203	CAPACITOR	CKSRYB473K50		C8538	CAPACITOR	CKSRYB104K16
	C8204	CAPACITOR	CKSRYB102K50		C8539	CAPACITOR	CCSRCH471J50
	C8207	CAPACITOR	CKSRYB104K16		C8540	CAPACITOR	CKSRYB104K16
	C8209	CAPACITOR	CCSRCH100D50		C8541	CAPACITOR	CCSRCH471J50
	C8210	CAPACITOR	CCSRCH100D50		C8542	CAPACITOR	CKSRYB104K16
	C8212	CAPACITOR	CCSRCH471J50		C8543	CAPACITOR	CCSRCH471J50
	C8213	CAPACITOR	CKSRYB104K16		C8544	CAPACITOR	CKSRYB104K16
	C8214	CAPACITOR	CCSRCH471J50		C8545	CAPACITOR	CCSRCH471J50
D	C8215	CAPACITOR	CKSRYB104K16		C8546	CAPACITOR	CEV101M16
	C8217	CAPACITOR	CEV470M6R3		C8547	CAPACITOR	CEV101M16
	C8225	CAPACITOR	CEV470M6R3		C8548	CAPACITOR	CCSRCH8R0D50
	C8404	CAPACITOR	CCSRCH471J50		C8549	CAPACITOR	CCSRCH8R0D50
	C8405	CAPACITOR	CKSRYB103K50		C8550	CAPACITOR	CKSRYB104K16
	C8406	CAPACITOR	CEV101M16		C8551	CAPACITOR	CCSRCH471J50
	C8407	CAPACITOR	CKSRYB104K16		C8554	CAPACITOR	CKSRYB103K50
	C8408	CAPACITOR	CEV470M6R3		C8555	CAPACITOR	CKSRYB102K50
	C8409	CAPACITOR	CCSRCH471J50		C8701	CAPACITOR	CEV100M16
	C8410	CAPACITOR	CCSRCH471J50		C8702	CAPACITOR	CKSRYB104K16
E	C8411	CAPACITOR	CCSRCH471J50		C8703	CAPACITOR	CCSRCH471J50
	C8412	CAPACITOR	CCSRCH471J50		C8704	CAPACITOR	CEV100M16
	C8413	CAPACITOR	CCSRCH471J50		C8705	CAPACITOR	CKSRYB104K16
	C8414	CAPACITOR	CCSRCH471J50		C8706	CAPACITOR	CCSRCH471J50
	C8415	CAPACITOR	CEV101M16		C8901	CAPACITOR	CKSRYB104K16
	C8416	CAPACITOR	CCSRCH471J50		C8902	CAPACITOR	CEV101M16
	C8417	CAPACITOR	CCSRCH471J50		C8903	CAPACITOR	CKSRYB104K16
	C8418	CAPACITOR	CKSRYB103K50		C8904	CAPACITOR	CEV101M16
	C8419	CAPACITOR	CCSRCH471J50				
	C8420	CAPACITOR	CKSRYB104K16				
F	C8421	CAPACITOR	CCSRCH101J50		RESISTORS		
	C8422	CAPACITOR	CKSRYB104K16		R8201	RESISTOR	RS1/16S1802F
	C8504	CAPACITOR	CKSRYB104K16		R8506	RESISTOR	RAB4C101J
	C8505	CAPACITOR	CCSRCH471J50		Other Resistors		
	C8507	CAPACITOR	CCSRCH471J50				RS1/16S###J
	C8509	CAPACITOR	CCSRCH471J50		OTHERS		
	C8511	CAPACITOR	CCSRCH471J50		CN8003	13P SOCKET	AKP7070
	C8512	CAPACITOR	CCSRCH471J50		CN8007	19P SOCKET	AKP7073
	C8513	CAPACITOR	CCSRCH471J50		CN8011	19P SOCKET	AKP7073
	C8514	CAPACITOR	CKSRYB104K16		JA8103	JACK	VKB1159
			CKSRYB333K16		X8201	CRYSTAL RESONATOR (24.576MHz)	XSS3003
	C8515	CAPACITOR	CCSRCH471J50				

Mark No.	Description	Part No.
X8501	CRYSTAL RESONATOR (20MHz)	VSS1171

L AMP TRADE ASSY SEMICONDUCTORS

⚠ IC25	PROTECTOR (7A)	AEK7047
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RESISTORS

All Resistors	RS1/16S###J
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OTHERS

CN3011	23P SOCKET	AKP7075
CN3012	23P SOCKET	AKP7075
CN3021	23P SOCKET	AKP7075
CN3022	23P SOCKET	AKP7075

M DSP TRADE ASSY RESISTORS

All Resistors	RS1/16S###J
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OTHERS

CN5612	23P SOCKET	AKP7075
CN5613	23P SOCKET	AKP7075
CN5621	13P PLUG	AKP7059
CN5622	19P PLUG	AKP7062
CN5623	19P PLUG	AKP7062

N VIDEO JACK ASSY COILS AND FILTERS

L8861	CHIP BEADS	VTI1089
L8871	CHIP BEADS	VTI1089

CAPACITORS

C8821	ELECT. CAPACITOR	CEAT102M6R3
C8822	CAPACITOR	CCSRCH470J50
C8831	ELECT. CAPACITOR	CEAT102M6R3
C8832	CAPACITOR	CCSRCH470J50
C8842	CAPACITOR	CCSRCH470J50

C8851	ELECT. CAPACITOR	CEAT102M6R3
C8852	CAPACITOR	CCSRCH470J50
C8861	CAPACITOR	CEAT471M6R3
C8862	CAPACITOR	CCSRCH470J50
C8871	CAPACITOR	CEAT471M6R3

C8872	CAPACITOR	CCSRCH470J50
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RESISTORS

All Resistors	RS1/16S###F
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OTHERS

CN8001	17P CONNECTOR	52044-1745
CN8003	7P CONNECTOR	VKN1267
JA8802	JACK	VKB1178
JA8851	JACK	VKB1150

O PRIMARY ASSY SEMICONDUCTORS

⚠ IC51	REGULATORIC	NJM78M56FA
Q51	TRANSISTOR	2SD1858X
Q52	TRANSISTOR	2SC4081

Mark No.	Description	Part No.
⚠ D51	BRIDGE DIODE	S1WB(A)60SD
D52	DIODE	1SS355
D53	DIODE	DAN217
D55	CHIP ZENERDIODE	UDZS20B

COILS AND RELAYS

⚠ L1	LINE FILTER	ATF7018
⚠ RY1	RELAY	ASR7027

CAPACITORS

⚠ C1	FILM CAPACITOR	ACE7022
⚠ C2	FILM CAPACITOR	ACE7022
⚠ C52	ELECT. CAPACITOR	CEAT102M25
C53	CAPACITOR	CKSRYB103K50
C54	CAPACITOR	CEAT470M16
C56	CAPACITOR	CKSRYB473K50
C57	CAPACITOR	CKSRYB473K50
C58	CAPACITOR	CKSRYB473K50

RESISTORS

⚠ R1	RESISTOR(2.2M, 1/2W)	RCN1080
	Other Resistors	RS1/16S###J

OTHERS

1	8P CABLE HOLDER	51048-0800
⚠ AN1	ACINLET 1P	XKP3042
⚠ CN1	CONNECTOR	B2P3-VH
CN3	CONNECTOR7P	52492-0720
H1	FUSE CLIP	AKR7001
H2	FUSE CLIP	AKR7001
J51	JUMPERWIRE	D20PYY0820E
KN1	WRAPPING TERMINAL	VNF1084
⚠ T2	STANDBY TRANSFORMER	ATT7079

P DISPLAY ASSY SEMICONDUCTORS

IC5601	DISPLAY IC	MSM9202-01
IC5651	LOGICIC	HEF4794BT
Q5691	TRANSISTOR	2SC4081
D5651	LED(GREEN)	SLR-343MC
D5652	LED(GREEN)	SLR-343MC

D5653	LED(GREEN)	SLR-343MC
D5654	LED(GREEN)	SLR-343MC
D5655	LED(GREEN)	SLR-343MC
D5656	LED(GREEN)	SLR-343MC
D5657	LED(GREEN)	SLR-343MC

COILS AND FILTERS

L5562	INDUCTOR	LFEA220J
L5563	RADIALINDUCTOR	LFEA100J

CAPACITORS

C5562	CAPACITOR	CKSRYB223K50
C5563	CAPACITOR	CKSRYB223K50
C5564	CAPACITOR	CEJQ101M6R3
C5641	CAPACITOR	CCSRCH101J50
C5642	CAPACITOR	CCSRCH101J50

C5643	CAPACITOR	CCSRCH101J50
C5651	CAPACITOR	CKSRYB104K16
C5665	CAPACITOR	CKSRYB223K50
C5666	CAPACITOR	CKSRYB223K50
C5671	CAPACITOR	CKSRYB102K50

Mark No.	Description	Part No.
A	C5672	CAPACITOR
	C5673	CAPACITOR
	C5674	CAPACITOR
	C5675	CAPACITOR
	C5676	CAPACITOR
	C5677	CAPACITOR
	C5678	ELECT. CAPACITOR
	C5679	CAPACITOR
	C5680	CAPACITOR
	C5952	CAPACITOR

CKSRYB102K50
CKSRYB102K50
CCSRCH470J50
CKSRYB223K50
CKSRYB102K50

CKSRYB103K50
CEJQ220M35
CEJQ1R0M50
CEJQ1R0M50
CKSRYB223K50

C5953 CAPACITOR

CEJQ470M16

RESISTORS

All Resistors

RS1/16S###J

OTHERS

5671 FLSPACER
5951 REMOTE RECEIVERUNIT
CN5721 27P CONNECTOR
CN5803 13PJUMPERCONNECTOR
V5601 FL TUBE

AEB7069
GP1UM27XK
52045-2745
52151-1310
XAV3020

Q JOG ASSY

SWITCHES AND RELAYS

S5861 ROTARY ENCODER

XSX3007

CAPACITORS

C5861 CAPACITOR
C5862 CAPACITOR

CKSRYB102K50
CKSRYB104K16

RESISTORS

All Resistors

RS1/16S###J

OTHERS

0 3P CABLE HOLDER
J5811 JUMPERWIRE

51048-0300
D20PYY0310E

R DISC KEY ASSY

SWITCHES AND RELAYS

S5851 SWITCH
S5852 SWITCH
S5853 SWITCH
S5854 SWITCH
S5855 SWITCH

ASG7013
ASG7013
ASG7013
ASG7013
ASG7013

S5856 SWITCH
S5857 SWITCH
S5858 SWITCH

ASG7013
ASG7013
ASG7013

RESISTORS

All Resistors

RS1/16S###J

OTHERS

0 3P CABLE HOLDER
0 4P CABLE HOLDER
J5805 JUMPERWIRE

51048-0300
51048-0400
D20PYY0410E

S FUNCTION KEY ASSY

SWITCHES AND RELAYS

S5841 SWITCH
S5842 SWITCH

ASG7013
ASG7013

Mark No.	Description	Part No.
S5843	SWITCH	ASG7013
S5844	SWITCH	ASG7013
S5845	SWITCH	ASG7013
S5846	SWITCH	ASG7013
S5847	SWITCH	ASG7013

RESISTORS

All Resistors

RS1/16S###J

OTHERS

0 4P CABLE HOLDER
0 5P CABLE HOLDER
J5803 JUMPER WIRE

51048-0400
51048-0500
D20PYY0510E

T HP MIC ASSY

SEMICONDUCTORS

IC5801 IC

NJM4558MD

SWITCHES AND RELAYS

S5831 SWITCH

ASG7013

CAPACITORS

C3903 CAPACITOR
C3904 CAPACITOR
C3905 CAPACITOR
C3906 CAPACITOR
C3907 CAPACITOR

CKSRYB223K50
CKSRYB223K50
CKSRYB104K16
CKSRYB103K50
CKSRYB104K16

C5801, C5807
C5802, C5806, C5808
C5804, C5810
C5805 CAPACITOR
C5811 CAPACITOR

CCSRCH101J50
CEAL100M16
CKSRYB474K50
CCSRCH471J50
CKSRYB104K16

C5809 CAPACITOR
C5816 CAPACITOR

CCSRCH681J50
CKSRYB33K25

RESISTORS

VR5801
All Resistors

XCS3007
RS1/16S###J

OTHERS

0 5P CABLE HOLDER
0 13P CABLE HOLDER
J5801 JUMPER WIRE 13P
JA3901 MINI TURE JACK
JA5801 MINI STEREO JACK

51048-0500
51048-1300
D20PYY1315E
AKN7005
AKN7005

6. ADJUSTMENT

6.1 TUNER SECTION



■ AM Tuner Section

- There is no adjustment in the AM tuner.

■ FM Tuner Section

- Set the mode selector to FM BAND.
- Connect the wiring as shown in Fig. 1.

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

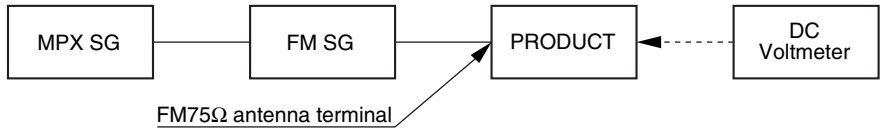


Fig.1 Adjustment Wiring Diagram

F FM/AM TUNER MODULE

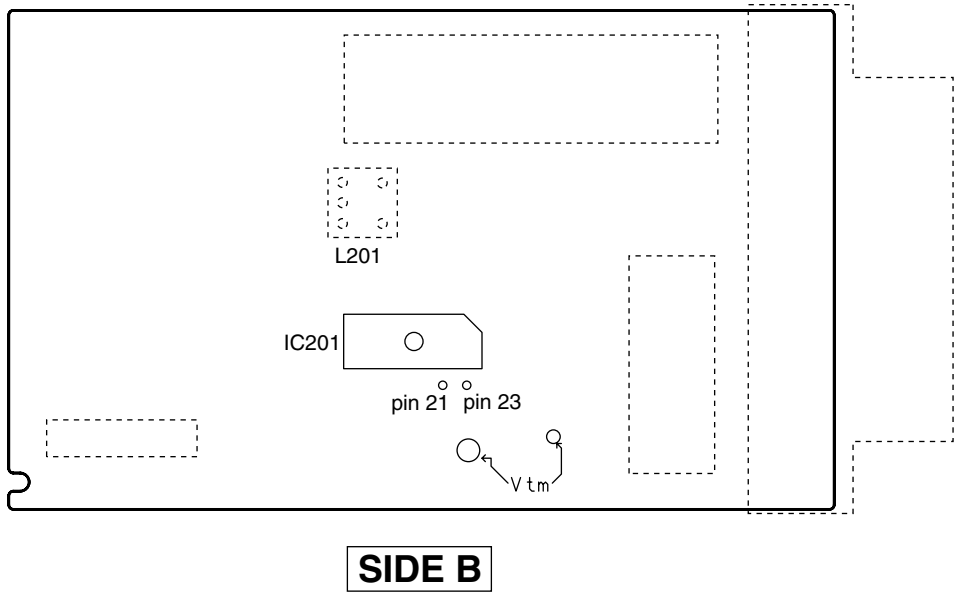


Fig.2 Adjustment Point

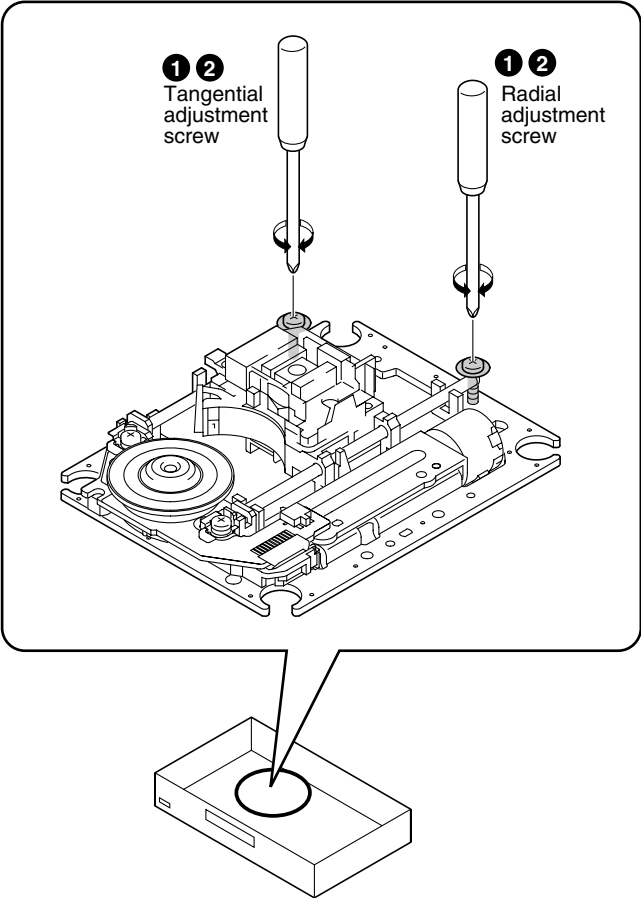
6.2 ADJUSTMENT ITEMS AND LOCATION

■ Adjustment Items

■ Adjustment Points (Mechanism Part)

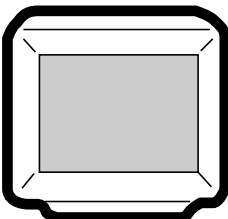
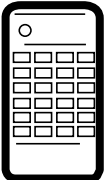
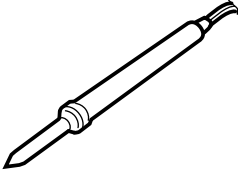
- [Mechanism Part]
- 1 Tangential and Radial Height Coarse Adjustment
 - 2 DVD Jitter Adjustment

Cautions: After adjustment, adjustment screw locks with the Screw tight.



[Electrical Part]
Electrical adjustments are not required.

6.3 JIGS AND MEASURING INSTRUMENTS

 ⊕ Screwdriver (large)	 ⊕ Screwdriver (medium)	 TV monitor	 Test mode remote control unit (GGF1381)
 ⊕ Precise screwdriver	 DVD test disc (GGV1025)	 Soldering iron	Screw tight (GYL1001)

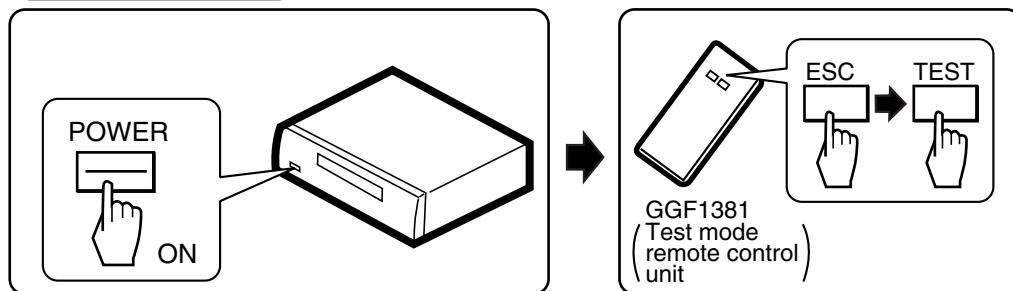
6.4 NECESSARY ADJUSTMENT POINTS

When	Adjustment Points	
■ Exchange Parts of Mechanism Assy		
Exchange the Pickup	Mechanical point ①, ② * After adjustment, screw locks with the Screw tight.	A
	Electric point _____	■
Exchange the Traverse Mechanism	Mechanical point _____	B
	Electric point _____	■
Exchange the Spindle Motor	Mechanical point ② * After adjustment, screw locks with the Screw tight.	■
	Electric point _____	C
■ Exchange PCB Assy		
Exchange PC Board LOAB and DVDM ASSY	Mechanical point _____	■
	Electric point _____	D
		■
		E
		■
		F

6.5 TEST MODE

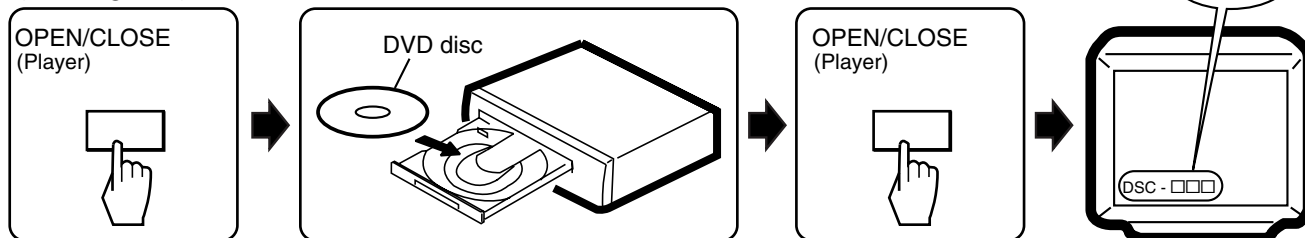
- A • The TEST MODE functions that are used only during adjustment are described here. For details, see "7.1.1 TEST MODE".

TEST MODE: ON



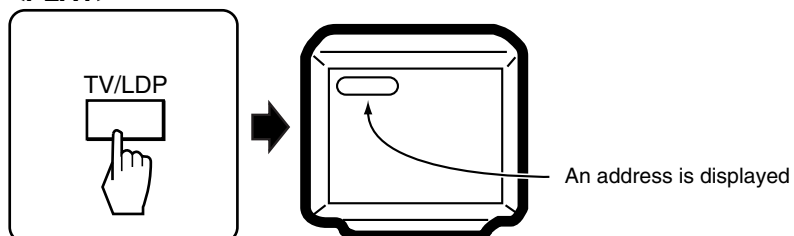
TEST MODE: DISC SET

<TRAY OPEN>



TEST MODE: PLAY

<PLAY>

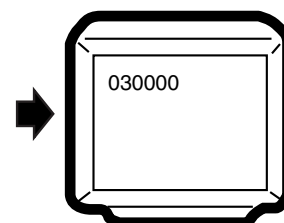


CAUTION:
Perform only trace, video and audio outputs
are nothing.

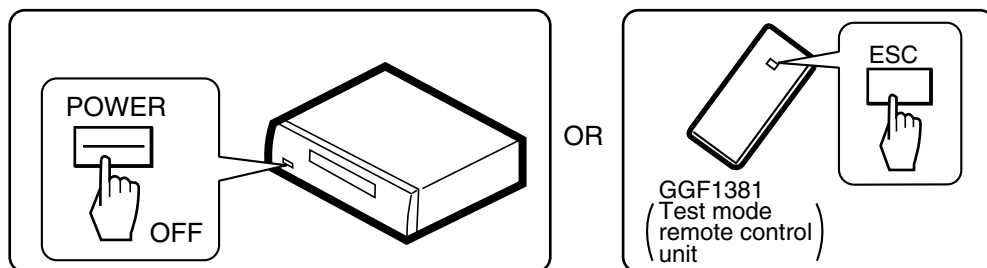
< When playback with the target address of disc (DVD)>

For example, when playback with # 30000

During PLAY +10 → 3 → 0 → 0 → 0 → 0 → CHP/TIM Press keys in order



TEST MODE: OFF



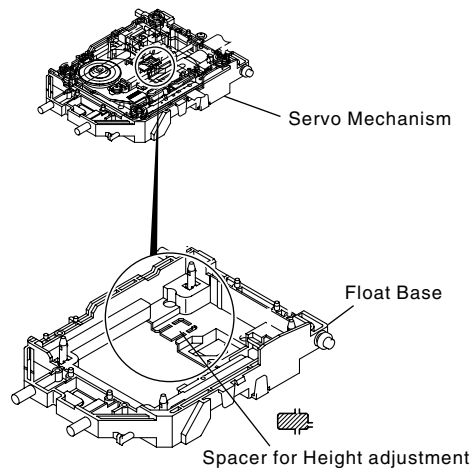
6.6 MECHANISM ADJUSTMENT



1 Tangential and Radial Height Coarse Adjustment

START

- Remove the servo mechanism.
- Remove a Spacer for height adjustment attached to the back side (shaded area) of the Servo Mechanism (Float Base) with nippers.

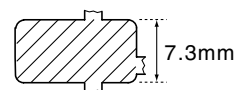


Note:

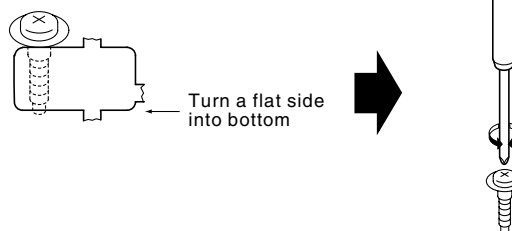
Turn the Short switch to Short side when removing the Pickup Flexible Cable. (Refer to "7.1.13 DISASSEMBLY".)

Cautions:

Because there is not a Spacer for height adjustment in adjustment after the second time, will keep it at need. (This parts is Traverse mechanism exclusive use of a model for 2003 years)



Put a spacer between a Tangential (or Radial) adjustment screw and Mechanism Base and turn each screw to adjust the height. (Refer to "6.2 ADJUSTMENT ITEMS AND LOCATION".)



2 DVD Jitter Adjustment

- Playback method of inner and outer address for the purpose is referred to "6.4 TEST MODE".
- Jitter indication of the monitor is referred to "7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE".

Use disc: GGV1025

START

- Test mode
- Play the DVD test disc at outer track (around #200000)

Mechanism Assy
Adjust the Tangential Adjustment Screw so that jitter becomes minimum.

J : Min

- Play the DVD test disc at inner track (around #30000)

Mechanism Assy
Adjust the Radial Adjustment Screw so that jitter becomes minimum.

J : Min

- Play the DVD test disc at outer track (around #200000)

Mechanism Assy
Readjust the Tangential Adjustment Screw so that jitter becomes minimum.

J : Min

CHECK

Confirm the error rate that is displayed "OK"
(Example ERROR RATE: 6.6×10^{-6} OK)

Turn the POWER OFF in case of NG once, and perform the adjustment once again.

If error rate is OK, locks a root of tangential and radial adjustment screws with the Screw tight.

Screw tight: GYL1001

Disc playback normally.
• The measurement of block error rate



Test mode end

NG

OK

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

A

Test Mode Functional Specification

① Test mode entry

In the power ON state, press the [ESC] (A8-5F) key and [TEST / RANDOM] (A8-5E) key in order of the Test mode remote control unit.

- Light the all FL and LEDs, and goes out the FL and LEDs when pressing the keys of something.
- OSD displays test mode. Refer to the "7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE".

② Release the Test mode

- Turn off the power.
- Press the [ESC] (A8-5F) key of the remote control unit and reset it.

B

③ Tray open / close

- Press the [REPEAT A-B] (A8 - 48) key of the remote control unit.
- Press the [OPEN / CLOSE] key of the main unit from the stop state.

④ Playback stop

1. Press the [REPEAT] (A8 - 44) key of the remote control unit from the playback state.
2. Press the [STOP] key of the remote control unit or main unit from the playback state.
(Playback stops, but the loaded disc keeps rotating.)

⑤ LD ON

- DVD : Press the [TEST] (A8-5E) and [1] (A8-01) keys in order, and turn on the laser diode (650nm).
CD : Press the [TEST] (A8-5E) and [4] (A8-04) keys in order, and turn on the laser diode (780nm).

C

⑥ Focus on / sweep

1. Lock the focus by pressing the [TEST] (A8-5E) and [2] (A8-02) keys in order.
2. Repeat focus sweep by pressing the [TEST] (A8-5E) and [3] (A8-03) keys in order.

⑦ Spindle FG servo

- CAV : Press the [TEST] (A8-5E) and [5] (A8-05) keys in order, then rise up the spindle and FG servo becomes on.
CLV : Press the [TEST] (A8-5E) and [9] (A8-09) keys in order, then rise up the spindle and FG servo becomes on.

⑧ Tracking open / close

1. Open tracking by pressing the [STEP FWD] (A8-54) key of the remote control unit in the play state.
2. Close tracking by pressing the [STEP REV] (A8-50) key of the remote control unit in the play state.

D

⑨ Slider servo on/off

1. Turn on the slider servo by pressing the [TEST] (A8-5E) and [CX] (A8-0E) keys in order.
2. Turn off the slider servo by pressing the [TEST] (A8-5E) and [TV/LDP] (A8-0F) keys in order.

⑩ Slider in / out

- Slider in : In the tracking off state, press the [SCAN REV] (A8-11) key of the remote control unit.
Slider out : In the tracking off state, press the [SCAN FWD] (A8-10) key of the remote control unit.

⑪ Play (perform only the ID search and trace to the specified location)

- Press the [TV/LDP] (A8-0F) key of the remote control unit from the stop state.
Perform only trace, video and audio outputs are nothing.

E

⑫ Screen display ON/OFF

1. Turn off the display by pressing the [AUDIO] (A8-1E) key of the remote control unit.
2. Turn on the display by pressing the [DISPLAY] (A8-43) key of the remote control unit.

F

⑬ Search

1. Search address input entry

- It becomes the address input mode when pressing the [+10] (A8-1F) key. (Most significant digit of an address displays "<".)
- In this time, display the last address as the initial state.

2. Search address input

- Press the [0] to [9] (A8-00 to 09) keys of the remote control unit. In the DVD, set an address with hexadecimal.
- In the address input mode, turn to the hexadecimal input by pressing the [PROGRAM] (A8-4C) key (display a "*" mark), and [1] to [6] keys are each input as A to F.
- Hexadecimal input and decimal input can switch with toggle.
- In case of CD, perform only the absolute time search.

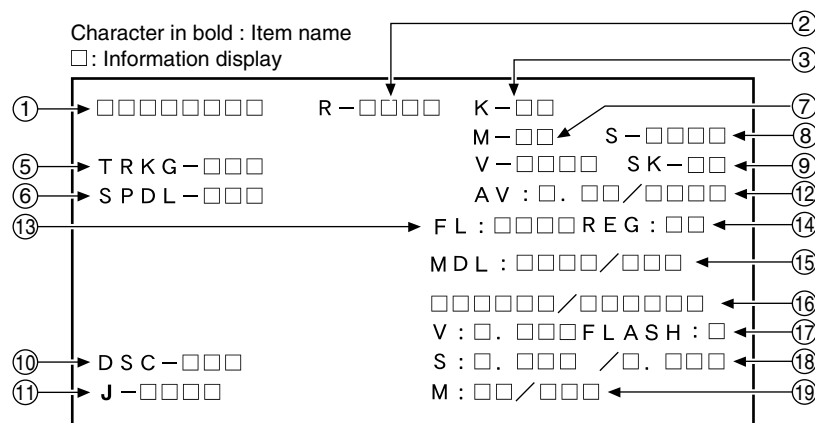
3. Search execution

- Press the [CHP/TM] (A8-13) key of the remote control unit.
- After the search, perform only trace and video and audio outputs are nothing.

4. Release the Search address input

- Clear the address by pressing the [CLEAR] (A8-45) key. Release the address input mode when pressing the [CLEAR] key once again.

7.1.2 DISPLAY SPECIFICATION OF THE TEST MODE



① Address indication

The address being traced is displayed in number.
(as for the DVD, indication of decimal number is possible.)
DVD : ID indication (hexadecimal number, 8 digits)
[*****]
CD : A-TIME (min. sec.) [0000****]

② Code indication of remote control unit [R-****]

In case of double code, display a 2nd code.

③ Main unit keycode indication [K-***]

⑤ Tracking status [TRKG-***]

Tracking on : [ON]
Tracking off : [OFF]

⑥ Spindle status [SPDL-***]

[OFF], [ACC/BRK], [CAV], [CLV]

⑦ Mechanism (loading) position value [M-***]

Unknown : [01] or [41]
Open state : [04]
Close state : [08]
During opening : [12]
During closing : [22]

⑧ Slider position [S-****]

In Side Switch ON : [01]
In Side Switch OFF : [00]

⑨ Output video system [V-****]

NTSC system : [NTSC]
PAL system : [PAL]
Automatic setting : [AUTO]

Scart terminal output [SK-***]

(Display only the WY model which can do the output setting of scart terminal.)

VIDEO : [00]
S-VIDEO : [01]
RGB : [02]

⑩ Disc sensing [DSC-****]

The type of discs loaded is displayed.
[DVD], [CD], [VCD], []

⑪ Jitter value [J-****]

⑫ Version of the AV-1 chip / version of firmware [AV: ** / ****]

⑬ Version of the FL controller [FL: ****]

⑭ Region setting of the player [REG: *]

Setting value : [1] to [6]

⑮ Destination setting of the FL controller [MDL: **** / ****]

Four characters in the front represent the type of model.
Three characters in the back represent the destination code.
J: /J, K: /KU, /KC, /KU/KC, R: /RL/RD, RAM: /RAM,
LB: /LB, WY: /WY

⑯ Part number of the flash ROM and system controller [***** / *****]

⑰ Version of the flash ROM [V: *.***] Flash ROM size [FLASH = **]

⑱ Revision of the system controller [S: *.*** / *.***] version . revision / build number of the ST core

⑲ Revision of the DVD mechanism controller [M: ** / ***] Kinds of version / firmware of the FE. RAM or ROM

7.1.3 FUNCTIONAL SPECIFICATION OF THE SHORTCUT KEY

Only during normal playback, the following shortcut keys can be assigned by pressing a required key after pressing the ESC key of the remote control unit. To quit, press the ESC key

Command Contents	Conditions	Remote Control Key Name	Remote Control Code
Memory clear and resion / revision indication		CLEAR (*1)	A8-45
Average value measurement of DVD error rate		5 (*1)	A8-05
CD error rate measurement		5 (*1)	A8-05
Aspect : Pan scan		2	AF-A2
Aspect : Letter box		3	AF-A3
Aspect : Wide		4	AF-A4
Digital : AC3		5	AF-A5
Digital : AC-3 > PCM		6	AF-A6
Virtual surround : OFF	Only for models having the corresponding functions	7	AF-A7
Virtual surround : TruSurround		8	AF-A8
Digital output ON		REPEAT A	AF-E8
Digital output OFF		REPEAT B	AF-E4
DTS Digital output ON		STEP FWD	AF-B7
DTS Digital output OFF		STEP REV	AF-B8
Scart terminal output : VIDEO	WY, models equipped with Scart terminal	AUDIO	AF-BE
Scart terminal output : S-VIDEO		SUBTITLE	AF-36
Scart terminal output : RGB		ANGLE	AF-B5
Progressive OFF	Only for progressive models	R_SKIP	A3-9D
Progressive ON		F_SKIP	A3-9C
Audio 5.1 CH ON	Only for models having the corresponding functions	KD_ENTER	AF-EF
FL indication of EDC / ID error		CX (*1)	A8-0E
FL indication of ID number		STEREO (*1)	A8-4A
ZOOM ON (X4)		ZOOM	AF-37
ZOOM OFF		< X3 (*1)	A8-59
Service mode indication (error rate indication, etc.)		CHP/TIM (*1)	A8-13
Model information indication		CHAP (*1)	A8-40
Background color change		+10 (*1)	A8-1F
Audio last stage mute ON		9	AF-A9
Audio last stage mute OFF		0	AF-A0
Title search Input mode IN Title No. input Search execution		SIDE A (*1) Numbers (*1) PLAY (*1)	A8-4D A8-00 to A8-09 A8-17
Region confirmation mode		AUDIO (*1) Numbers (*1)	A8-1E A8-01 to A8-08

• Service mode indication (ESC + CHP/TIM keys)

*1 : Test mode remote control unit

ID Address

The error rate is always displayed in exponential notation, e.g., *.* * e - *, for both DVDs and CDs.

EDC/ID/AV 1 error history (ID Address, EDC/ID/AV 1 Error, last eight errors)

Self-diagnosis functions (If a mechanical error has occurred, the mechanical-error history is also displayed.)

• Calculation of the average error rate (ESC + "5" [Test mode remote control unit] keys)

The average of the last eight error rates is calculated and indicated in exponential notation. After the calculation is completed, "OK" or "NG" is displayed. If "NG" is displayed, the disc tray will open (for both DVDs and CDs)

For DVDs: OK with 5.0e-4 or less, for CDs: OK with 7.6e-3 or less

• Indication of model information (ESC + CHAP keys)

The items from 12 to 19 of the TEST MODE Indications are displayed. However, in the indications, S in the standard test mode is changed to B.E VERSION, and M is changed to F.E VERSION. For details, see 7.1.4.

• Change of the background colors (ESC + "+10" [Test mode remote control unit] keys)

Every time the keys are pressed, the background color is changed between blue and green alternately.

(The green background is used in SETUP NAVIGATOR.)

• Region confirmation mode (ESC + AUDIO [Test mode remote control unit] + "1"- "8" [Test mode remote control unit] keys)

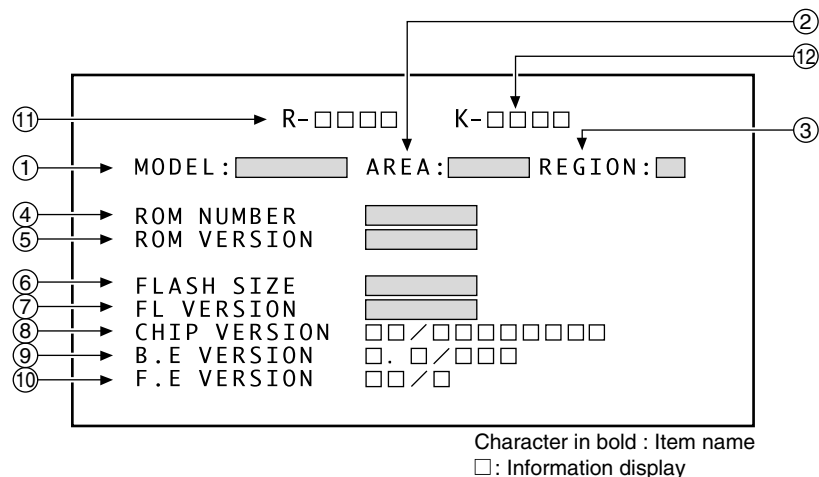
After you press the AUDIO key while holding the ESC key pressed and then input the region number, if the number is different from that set in the unit, an error message is displayed, and the tray opens.

7.1.4 SPECIFICAION OF MODEL INFORMATION DISPLAY

To display model information : Press the ESC key then the CHAP key.

To close the model information display : Press the ESC key.

• Display contents



① Model name

Display it according to model information set from the FL controller.

② Destination indication

Display it according to model information set from the FL controller.

③ Region No.

④ Part number

⑤ ROM version

⑥ Flash size

⑦ FL controller version

⑧ CHIP VERSION

Version of ST CHIP

CUT ID / JTAG ID

↑ ↑
(two columns) (eight columns)

⑨ B.E VERSION

Version of BACK END (version of ST core software)

□.□ / □□□
softwareVersion . softwareRevision / buildNumber

⑩ F.E VERSION

Version of FRONT END (version of mechanism controller CHIP software)

□□ / □
MainVersion / Kinds of firmware RAM or ROM

⑪ Remote control code

⑫ Key code of Main unit

7.1.6 MECHANICAL ERROR HISTORY

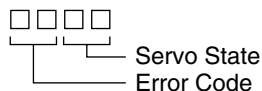
Mechanical Error History

Only if a mechanical error (FE error) has been generated, a mechanical error history containing up to the last eight errors is displayed if you press the CHP/TIM key in Service Mode.
Errors are displayed in descending order, with the latest one at the top.

Description of the mechanical error history

① Error number

The first two digits are for the error code, and the second two digits are for the servo state.



Note: When an error has been generated, if the servo state is "Disc judge," the disc tray opens, and if the servo state is other than "Disc judge," the unit stops (excluding a case of a device error with the error code 0xd*).

② Error number

The elapsed time from the time when the system was turned on until an error was generated is displayed.

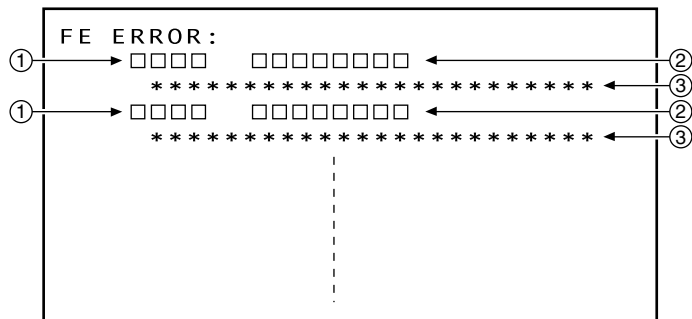
Note: If a later error time is shorter than the previous error time, it means that the unit was turned off then on again.

③ Description of errors

Error messages are displayed.

Example: If the error code is 0x13 (Focus lost timeout) and the servo state is 0x05 (Disc judge), the message becomes "Focus lost timeout in Disc judge."

Indication contents



• List of the error codes

FOCUS ERROR	0x0*	FOCUS TIMEOUT	0x1*
Focus on error	0x01	Focus on timeout	0x11
Focus off error	0x02	Focus off timeout	0x12
Focus lost error	0x03	Focus lost timeout	0x13
Focus balance adjust error	0x04	Focus balance adjust timeout	0x14
Focus gain adjust error	0x05	Focus gain adjust timeout	0x15
Focus sweep error	0x06	Focus sweep timeout	0x16
TRACKING ERROR	0x2*	TRACKING TIMEOUT	0x3*
Tracking on error	0x21	Tracking on timeout	0x31
Tracking off error	0x22	Tracking off timeout	0x32
Tracking lost error	0x23	Tracking lost timeout	0x33
Tracking balance adjust error	0x24	Tracking balance adjust timeout	0x34
Tracking gain adjust error	0x25	Tracking gain adjust timeout	0x35
STEPPING ERROR	0x4*	STEPPING TIMEOUT	0x5*
Stepping on error	0x41	Stepping on timeout	0x51
Stepping off error	0x42	Stepping off timeout	0x52
Stepping lost error	0x43	Stepping lost timeout	0x53
Stepping move error	0x44	Stepping move timeout	0x54
SPINDLE ERROR	0x6*	SPINDLE TIMEOUT	0x7*
Spindle on error	0x61	Spindle on timeout	0x71
Spindle off error	0x62	Spindle off timeout	0x72
Spindle lost error	0x63	Spindle lost timeout	0x73
Spindle CAV error	0x64	Spindle CAV timeout	0x74
Spindle CLV error	0x65	Spindle CLV timeout	0x75
ACQUISITION ERROR	0x8*	ACQUISITION TIMEOUT	0x9*
PLL lost error	0x83	PLL lost timeout	0x93
DECODER ERROR	0xa*	DECODER TIMEOUT	0xb*
ID lost error	0xa3	ID lost timeout	0xb3
		FAIL SAFE	0xe*
		Unexpected error	0xe1

• List of the servo states

0x00	Reset
0x01	Stop (inside position)
0x02	Stop (any position)
0x03	Braking for stop
0x04	New disc
0x05	Disc judge
0x06	Reserved 1
0x07	Playing
0x08	Start up
0x09	Seeking
0x0A	Pausing
0x0B	Reading BCA
0x0C	Reserved 2
0x0D	
0x0E	Tray open
0x0F	Tray moving

Note : 0 x □ □
code
(Only this part is displayed to a display)

■ Protection Specifications and Service Mode

● Protection Specifications

- A The system microcomputer (AF Assy IC5501) for this unit always monitors if abnormality of the power is generated, and as soon as an abnormality is detected shuts off the power. The specifications of the microcomputer terminal for monitoring are as follows:

Name of microcomputer terminal		XPROTECT (Pin 22)	VDET (Pin 17)
Monitoring item		Abnormality of AMP-system power Short-circuiting of the SP terminal, etc.	Abnormality of power inside the DVDM Assy
Voltage at terminal	In normal conditions	0.71 Vdd* or more	0.5 Vdd-0.85 Vdd*
	In abnormal conditions	0.36 Vdd-0.71 Vdd*	
	In failure	0.36 Vdd* or less	0.85 Vdd* or more 0.5 Vdd* or less
Monitoring start time		1.5 sec after power is turned on	1.5 sec after power is turned on
Time required for determining abnormality		0.5 sec after detection	0.5 sec after detection

*Vdd = Approx. 5 V (depending on the unit)

In abnormal conditions or in failure, the TIMER LED flashes after the power is shut off. If the power was shut off because of an abnormality, it can be turned on by pressing the STANDBY/ON key. However, if the power was shut off because of failure, for one minute after a shutdown the STANDBY/ON key is disabled in order to protect against possible ignition of fumes. If the AC power cord is pulled out during this one minute of standby, when the AC power cord is reconnected, the STANDBY/ON key will still be disabled until the remaining seconds have elapsed.

This unit has Service Test mode for analyzing the above power abnormality. Its specifications are as follows:

1. Specific conditions for Service Test mode

- VDET is neglected.
- XPROTECT is neglected.
- Even if the unit is urgently shut down in failure in Normal mode, you can turn it on without waiting for one minute.

2. How to enter Service Test mode

- While holding the DISK 1 key and STOP key pressed, connect AC power cord.

3. How to quit Service Test mode, and the conditions for quitting

- To quit Service Test mode, turn the power off or disconnect the AC power cord.
- When quitting Service Test mode, only data on protection in RAM are cleared.

4. Indications when Service Test mode starts

- Indications on the FL display when Service Test mode starts differ depending on whether the unit was turned off normally or if the unit was urgently shut down because the abnormality of the power, as described below.

[After the power is turned off normally]

FL display: **W e l c o m e !**
↓
FL display: **V o l u m e 0**
↓
FL display: **D V S E R V I C E**

[After the power is shut down because of a failure in the AMP system]

FL display: **P R T C T E R R**
↓
FL display: **V o l u m e 0**
↓
FL display: **D V S E R V I C E**

[After the power is shut down because of an abnormality in the AMP system]

FL display: **P R T C T W N G**
↓
FL display: **V o l u m e 0**
↓
FL display: **D V S E R V I C E**

[After the power is shut down because of a failure in the DVD system]

FL display: **D V D P R T E C T**
↓
FL display: **V o l u m e 0**
↓
FL display: **D V S E R V I C E**

5. Operations during Service Test mode

- Basically, operations in Service Test mode are the same as in Normal mode. However, to clarify that it is in Service Test mode, during this mode, when functions are changed, the indications on the FL display become as follows:

[Functions]	[Indications on the FL display]
DVD/CD	D V S E R V I C E
TUNER	T X S E R V I C E
LINE1	L 1 S E R V I C E

[Functions]	[Indications on the FL display]
LINE2	L 2 S E R V I C E
TV	T V S E R V I C E

Error Code Table

Error Name	No.	Causes	Check Item	Possibility of Trouble	Remarks
FOCUS ERROR (0 x 0*)					
Focus on error	0 x 01	Focus on could not be completed	Are not there a dirt or a scratch in the Disc? Does LD become weak? Does the lens move up and down?	1. Pickup 2. Driver 3. Front End IC	
Focus off error	0 x 02	Focus off could not be completed	Unknown		
Focus lost error	0 x 03	Focus servo is lost	Are not there a dirt or a scratch in the Disc? Does LD become weak?	1. Pickup	
Focus balance adjust error	0 x 04	AFB on could not be completed			
Focus gain adjust error	0 x 05	Focus AGC could not be completed			
Focus sweep error	0 x 06				
FOCUS TIMEOUT (0 x 1*)					
Focus on timeout	0 x 11	Did timeout at focus on	Are not there a dirt or a scratch in the Disc? Does LD become weak? Does the lens move up and down?	1. Pickup 2. Driver 3. Front End IC	
Focus off timeout	0 x 12	Did timeout at focus off			
Focus lost timeout	0 x 13	Did timeout at focus backup			
Focus balance adjust timeout	0 x 14	Did timeout at AFB			
Focus gain adjust timeout	0 x 15	Did timeout at AGC			
Focus sweep timeout	0 x 16				
TRACKING ERROR (0 x 2*)					
Tracking on error	0 x 21	Tracking on could not be completed		1. Pickup 2. Driver 3. Front End IC	
Tracking off error	0 x 22	Tracking off could not be completed			
Tracking lost error	0 x 23	Tracking servo is lost		1. Pickup	
Tracking balance adjust error	0 x 24	ATB could not be completed		1. Pickup	
Tracking gain adjust error	0 x 25	AGC could not be completed		1. Pickup	
Tracking jump error	0 x 26	Tracking jump could not be completed			
TRACKING TIMEOUT (0 x 3*)					
Tracking on timeout	0 x 31	Did timeout at tracking on	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Driver 3. Front End IC	
Tracking off timeout	0 x 32	Did timeout at tracking off			
Tracking lost timeout	0 x 33	Did timeout at tracking backup	Are not there a dirt or a scratch in the Disc?	1. Pickup	
Tracking balance adjust timeout	0 x 34	Did timeout at ATB		1. Pickup	
Tracking gain adjust timeout	0 x 35	Did timeout at AGC		1. Pickup	
Tracking jump timeout	0 x 36	Did timeout at tracking jump			
STEPPING ERROR (0 x 4*)					
Stepping on error	0 x 41	Stepping on could not be completed		1. Pickup 2. Driver 3. Front End IC	
Stepping off error	0 x 42	Stepping off could not be completed			
Stepping lost error	0 x 43	Stepping servo is lost			
Stepping move error	0 x 44	Stepping could not move	Do move to inner and outer periphery of the stepping in the test mode? Do indicate "S-04" at the most inner periphery of the stepping?	1. Stepping motor 2. Inside switch 3. Driver	
STEPPING TIMEOUT (0 x 5*)					
Stepping on timeout	0 x 51	Did timeout at stepping on		1. Pickup 2. Driver 3. Front End IC	
Stepping off timeout	0 x 52	Did timeout at stepping off			
Stepping lost timeout	0 x 53	Did timeout at stepping backup			
Stepping move timeout	0 x 54	Did timeout at stepping movement	Do move to inner and outer periphery of the stepping in the test mode? Do indicate "S-04" at the most inner periphery of the stepping?	1. Stepping motor 2. Inside switch 3. Driver	

A

Error Name	No.	Causes	Check Item	Possibility of Trouble	Remarks
SPINDLE ERROR (0 x 6*)					
Spindle on error	0 x 61	Spindle on could not be completed			
Spindle off error	0 x 62	Spindle off could not be completed			
Spindle lost error	0 x 63	Spindle lost control			
Spindle CAV error	0 x 64	CAV on could not be completed			
Spindle CLV error	0 x 65	CLV on could not be completed			
SPINDLE TIMEOUT (0 x 7*)					
Spindle on timeout	0 x 71	Did timeout at spindle on			
Spindle off timeout	0 x 72	Did timeout at spindle stop			
Spindle lost timeout	0 x 73	Did timeout at spindle backup	Are not there a dirt or a scratch in the Disc? Is FG output from the driver?	1. Spindle motor 2. Spindle driver	
Spindle CAV timeout	0 x 74	Did timeout at CAV on	Is spindle rotating? Is FG output from the driver? Is the PDM output from Front End?	1. Spindle motor 2. Spindle driver 3. Front End IC	
Spindle CLV timeout	0 x 75	Did timeout at CLV on			
ACQUISITION ERROR (0 x 8*)					
PLL lost error	0 x 83	PLL is lost	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
ACQUISITION TIMEOUT (0 x 9*)					
PLL lost timeout	0 x 93	Did timeout at PLL backup	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
DECODER ERROR (0 x a*)					
ID lost error	0 x a3	ID is not readable	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
DECODER TIMEOUT (0 x b*)					
ID lost timeout	0xb3	Did timeout at ID backup	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Front End IC	
FAILSAFE (0 x e*)					
Unexpected error	0 x e1	Unexpected error		1. Hardware broken 2. Software bug	

D

E

F

7.1.7 ID NUMBER AND ID DATA SETTING

Caution:

For the DVD players compatible with DVD-RW, for playback of a DVD-RW disc (CPRM), it is necessary that an individual ID number and ID data are set for each player. If the ID number and ID data be not properly set in the manner described below, future operations cannot be guaranteed. The ID number is written on the yellow label at the rear panel of the player.

If there is no yellow label, before downloading FLASH ROM, take note of the ID number set following the procedures outlined in "ID Number Confirmation Mode" on the next page.

Note: Enter ID numbers while the unit is in Stop mode so that the values set will be immediately written to the flash ROM.

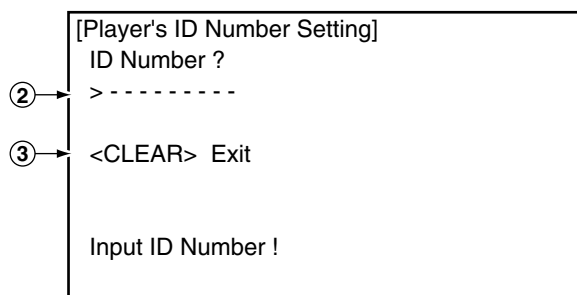
The following operations are all made with the TEST MODE remote control unit (GGF1381).

■ ID Number Input Mode

- ① To enter ID Number Input Mode, with no ID number set, such as in a case of immediately after upgrading the firmware, press the ESC key then the STEREO key.

Note: If a previous ID number and ID data, such as a factory-preset ID number and ID data, are maintained, the unit enters ID Number Confirmation Mode when the above keys are pressed. However, if only an ID number is maintained, the unit enters ID Data Input Mode.

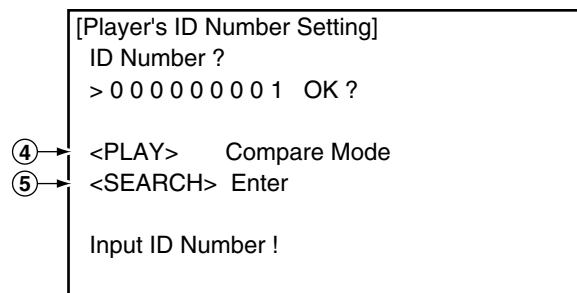
- ② Enter a 9-digit ID number. The ID number is also displayed on the FL display.
- ③ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.



- ④ After entering all 9 digits, if you press the PLAY key, the unit enters Compare mode. Enter the same ID number again. Only if your two input numbers match, the ID number is set. Compare mode helps eliminate mistyping of the ID number.

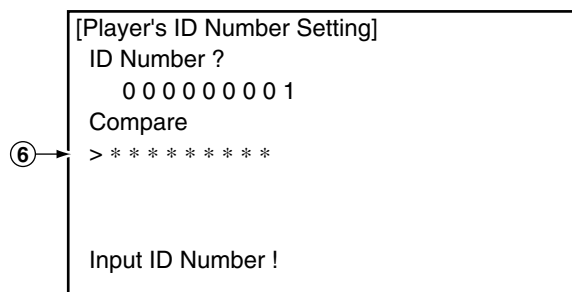
Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ② without doing anything else.

- ⑤ After entering all 9 digits, if you press the SEARCH key, the unit unconditionally sets the input number as the ID number. Then the unit automatically enters Player's Data Input Mode. (The SEARCH key is not accepted after all 9 digits have been entered.)



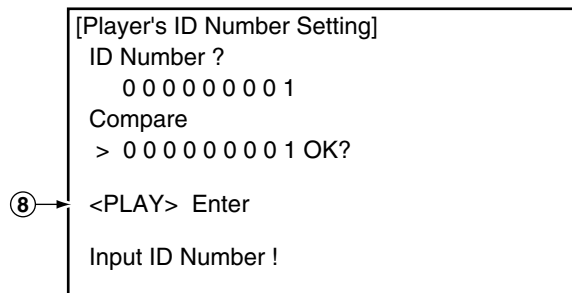
- ⑥ This display appears when the PLAY key is pressed in Step 4. Enter a 9-digit number to compare. The number is also displayed on the FL display.

- ⑦ By pressing the CLEAR key without having input a number, the unit returns to Step ② without doing anything else. Each press of this key after a number has been input deletes one digit.



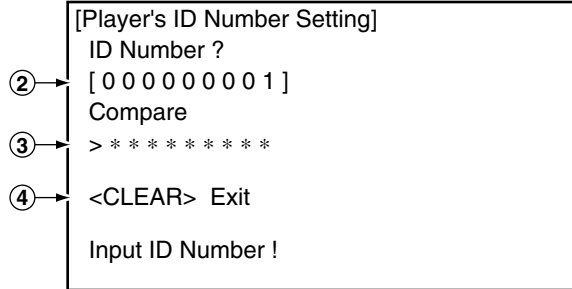
- ⑧ After entering all 9 digits, if you press the PLAY key, the unit compares the numbers input in Steps ② and ⑥, and only if the numbers match, that number is set as the ID. Then the unit automatically enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Input Mode.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ⑥ without doing anything else.



ID Number Confirmation Mode

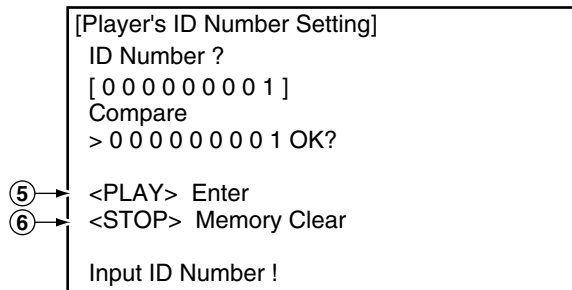
- ① To enter ID Number Confirmation Mode after the ID number and the ID data are set, press the ESC key then the STEREO key.
- ② The ID number already set is displayed.
(It is also displayed on the FL display.)
- ③ Enter a 9-digit number for comparison. This is not required when you only wish to check the ID number visually.
(The number is also displayed on the FL display.)
- ④ By pressing the CLEAR key without having input a number, you can exit this mode. Each press of this key after a number has been input deletes one digit.



- ⑤ After entering all 9 digits, if you press the PLAY key, the unit compares the number entered in Step ② with the ID number set, and only if the numbers match, the unit automatically exits ID Number Confirmation Mode. If an ID data has not been entered, the unit enters ID DATA Input Mode. If the numbers do not match, the disc tray is opened, and the unit exits ID Number Confirmation Mode.

Note: If you press the PLAY button before inputting a 9-digit ID number, the unit returns to Step ④ without doing anything else.

- ⑥ After entering all 9 digits, if you press the STOP key, the unit compares the number entered in Step ③ with the ID number set, and only if the numbers match, the unit automatically deletes the ID number and exits this mode. If the numbers do not match, the disc tray is opened, and the unit exits this mode. (The STOP key is not accepted after all 9 digits have been entered.)



• Indication of an ID number already set

An ID number already set is displayed in the following cases:

- 1) When the ESC key then the CLEAR key are pressed, user settings are cleared, then the ID number set is displayed on the screen. In this case, the ID number is not displayed on the FL display.
- 2) When the unit enters ID Number Confirmation Mode by your pressing the ESC key then the CLEAR key, the ID number set is displayed. In this case, the ID number is also displayed on the FL display.

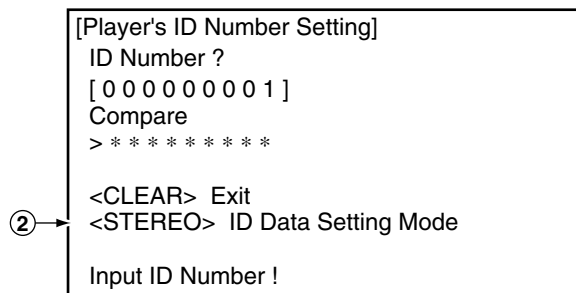
If you only need to confirm the ID number, you can exit this mode by pressing the CLEAR key or turning off the power.

• Indication when no ID number is set

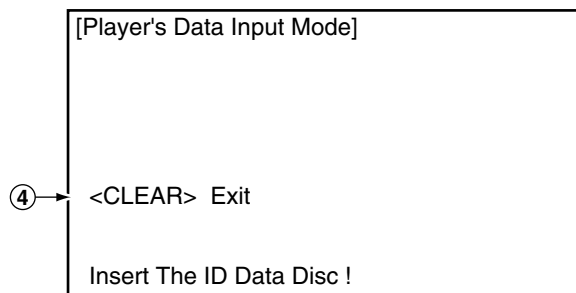
If no ID number is set, the message "No ID Number!" flashes on the screen and FL display for a few seconds after the power is turned on or during Stop mode.

■ ID DATA Input Mode

- ① To enter ID DATA Input Mode, with the ID number set, press the ESC key then the STEREO key.
- ② When the STEREO key is pressed, the unit enters ID DATA Input Mode.

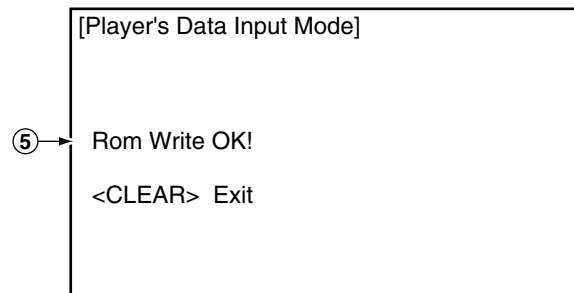


- ③ If the DVD DATA DISC (GGV1133) is loaded in this mode, the unit automatically starts reading the data.
(If the ID DISC has already been loaded, the unit does not start reading the data. In this case, open then close the tray.)
- ④ To exit this mode, press the CLEAR key. While data are being read from the DVD DATA DISC (GGV1133), you cannot exit this mode.

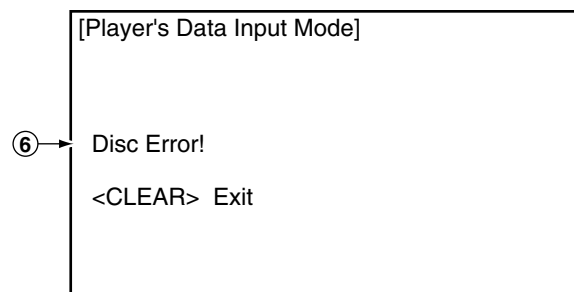


- ⑤ When writing of the data read from the disc to flash ROM is completed, "Rom Write OK!" is displayed. After seeing this message, you can exit this mode by pressing the CLEAR key.

Note: Whether or not the data have been written to flash ROM can be confirmed by watching for the message "Rom Write OK!" being displayed after the disc is read.



- ⑥ If the data cannot be read from the disc, "Disc Error!" is displayed on the screen, and the disc is ejected.



• Indication when the data have not been set

If no ID data are set after the ID number is changed, the message "NO ID DATA" flashes on the screen and FL display for a few seconds after the power is turned on or during Stop mode.

7.1.8 TROUBLE SHOOTING

Microcomputer Section (AF Assy : IC5501)

A

Symptom	Possible Cause	Check Method
The unit cannot be turned on.	The microcomputer was not reset.	Check if the level of the terminal XRESET (Pin 8) is "H." If it is not, check the RESET circuit.
	The AC pulse is not input.	Check if the AC pulse is input to Pin 4 of the AC input terminal. If it is not, check the AC pulse generation circuit.
	The oscillation circuit of the microcomputer does not function.	The microcomputer or the oscillation circuit is broken. Change the microcomputer or the oscillation circuit.
The unit shuts itself off soon after it is turned on.	- If the Function is DVD, the voltage of the VDET input (Pin 17) is either 0.5 Vdd or less or 0.85 Vdd or more. - The voltage of the PROTECT input (Pin 22) is 0.71 Vdd or less.	If the voltage at Pin 17 of the VDET terminal of the microcomputer is either 0.5 Vdd or less or 0.85 Vdd or more, adjust so that it stays between 0.5 and 0.85 Vdd.
- DVD does not operate at all. - Time is not displayed in FL display during DVD function.	Communication with the DVD microcomputer has not been established.	- Check that the terminal (Pins 23-25, 29, and 30) for communication with the DVD microcomputer is live, and if it is not, check if the flexible cable is disconnected. - Check if an "H" signal is output to Pin 93 of the XDVRST terminal.
All operation keys re disabled.	The unit recognizes that an operation key has already been pressed.	If no operation key has been pressed, check if the voltage at Pins 18 and 19 of the KEY input terminal is 5 V. If it is not, check if the operation switch on the line is in failure.

C

D

E

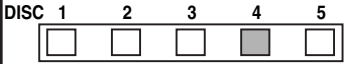
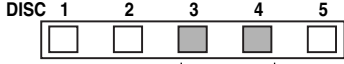
F

DVD Section

No.	Symptoms	Diagnosis Contents	Possible Defective Points
1	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Is the level at both IC5501-pin 93 (XDVRST) and pin 1(DVD ON/OFF) on the AF Assy "H" ?	μcom (AF IC5501)
		Check the voltage of CN911-pin 28 and 29 (VPR+8) on the DVDM Assy.	DVDM Assy CN911
		Check that the following voltages are output : IC411-pin 3 : 1.8V, IC421-pin 3 : 1.8V and IC431-pin 1 : 5V on the DVDM Assy	Each regulator on the DVDM Assy
		Are resonators (27MHz, 20MHz) on the DVDM Assy oscillating ?	Crystal resonator (DVDM Assy X601 and X301)
		Refer to contents of an FE error displayed on the FL display. (SRAM defectiveness, I2C communication line defectiveness, etc.)	FRONT END IC (DVDM IC301)
		- Is a signal input into IC601-pin 132 (CE3) on the DVDM Assy ? (Is a signal fluctuating for several seconds after the power is turned on ?) → Communication with flash ROM - Are the signals input into IC602-pin 16 (SMIWE), pin 19 (SMICS0) and pin 38 (SMICLK) on the DVDM Assy ? (Is a signal fluctuating ?) → Communication with flash ROM	- BACK END IC (DVDM IC601) - Flash ROM (DVDM IC603) 64M SDRAM (DVDM IC602)
		Is a signal output from IC603-pin 28 (CPU_OE) on the DVDM Assy? (Is a signal fluctuating for several seconds after the power is turned on ?)	- BACK END IC (DVDM IC601) - Flash ROM (DVDM IC603)
		Is a signal input into IC5501-pin 67 (DVDACK) on the AF Assy ? (Is a signal fluctuating ?) → Communication with μcom	μcom (AF IC5501)
		Is a signal output from IC5501-pin 29 and 30 (SYS_1, 2) on the AF Assy ? (Is a signal fluctuating in the range of 0-5V ?)	μcom (AF IC5501)
2	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Are the signals output from IC5501-pin 23, 24 and 25 on the AF Assy ? (in the range of 0-5V)	μcom (AF IC5501) – BACK END IC (DVDM IC601) communication line
		Check the video signal path between BACK END IC (DVDM IC601) and video-out terminal (see the block diagram)	DVDM Assy - Video circuit - after BACK END IC (IC601)
3	A tray cannot be opened. (An opening screen is displayed on the monitor)	- Are wires of CN123 on the DVDM Assy disconnected or damaged ? - Does the voltage of CN124 pin 3 to pin 6 on the DVDM Assy change normally ? - CN124 pin 6 (OPEN): Tray is fully closed: "H", Tray is fully opened: "L" - CN124 pin 3 (CLAMP): Clamping: "L", Releasing the clamber: "H"	Connector / wire LOADING SW (SSRB S21) CLAMP SW (TRSB S11)
		- Is a LOAD-DRVC signal reaching ? - Are the signals output from IC151 pin 9 and pin 8 on the DVDM Assy ? Pin 9: Approx. 6V during opening tray approx. 0V during closing tray. Pin 8: Approx. 0V during opening tray approx. 6V during closing tray. - Does the voltage of CN122 pin 17 change by pressing the Inside switch.	BACK END IC (DVDM IC601) Carousel driver (DVDM IC151) Inside switch
4	Rotary tray does not turn (Opening screen is OK)	- Check each cable (DVDM – TRSB/TRSB – SSRB/SSRB – TRAY motor) - Is a signal output from IC601-pin 114 (ROT DRV) on the DVDM Assy ? (Is a signal fluctuating of 0-3.3V ?) - Is the motor drive voltage output it at CN124 pin 7 and pin 8 ?	Connector / cable BACK END IC (DVDM IC601) IC151 and peripheral parts of the DVDM Assy

No.	Symptoms	Diagnosis Contents	Possible Defective Points
5	Initialization operation of the table mechanism is not completed. (Rotary tray does not stop at the right position.)	- While a tray rotates, is a signal output from CN124-pin 5 (TRAY POS) on the DVDM Assy ? (Is a signal fluctuating in the range of 0-3V ?) - While a tray rotates, is a signal outputting from CN124-pin 4 (DISC SENS) on the DVDM Assy ? (Is a signal fluctuating in the range of 0-3V ?)	Connector / cable Tray Position Sensor (SSRB PC22) Disc Sensor (SSRB PC21)
6	Playback impossible (no focusing)	Are the signals output from IC101-pin 34 (F_DRV) and pin 35 (F_RTN) on the DVDM Assy ?	FTS Driver IC (DVDM IC101)
		Does 650-nm LD emit light ? Does a pickup lens move up / down ? Does an actuator spring bend ?	Pickup
		- Are plastic parts damaged? Or is a shaft detached? - Is the turntable detached or tilted?	Mechanism section
		Is flexible cable of CN121 on the DVDM Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC301-pin 33 (FACT) on the DVDM Assy ? (Device control of about 2.6 V is output usually. It is fluctuated by about ± 100 mV with focus up / down.)	FRONT END IC (DVDM IC301)
7	Playback impossible (Spindle does not turn)	Are the signals output from IC101-pin 12 (A3), pin 13 (A2) and pin 14 (A1) on the DVDM Assy ? Is pin 41 fixed LOW and is pin 38 fixed HIGH ?	FTS Driver IC (DVDM IC101)
		Is there any part detached from the spindle motor? Or Is there any foreign object lodged in it?	Mechanism section (Spindle motor)
		Are wires of CN122 (DVDM Assy) and CN3 (SSIB Assy) disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC301-pin 44 (SPDL_PDM) on the DVDM Assy ?	FRONT END IC (DVDM IC301)
8	Playback impossible (Playback stops)	Does 650-nm LD deteriorate ? If the voltage at both ends of R201 on the DVDM Assy is 0.7 V or more, the 650-nm LD is definitely deteriorated.	650-nm LD deteriorated. (When playback of a DVD is impossible)
		Does 780-nm LD deteriorate ? If the voltage at both ends of R211 on the DVDM Assy is 1.5 V or more, the 780-nm LD is definitely deteriorated.	780-nm LD deteriorated. (When playback of CD is impossible)
		Is there abnormality in FG waveform ?	FG output : FTS Driver IC (DVDM IC101)
		Are there scratches or dirt on the disc ?	Disc
9	Picture disturbance during playback (block noise, freeze, other)	Are there scratches or dirt on the disc ?	Disc
		Is there a problem with the format of the disc?	Disc
10	No sound (Picture is normal)	 Is signal output from DOUT signal (CN911-pin 21) on the DVDM Assy ?	DVDM CN911-pin 21

Table Mechanism Section

Symptom	Possible Cause	Location of Trouble
The tray does not open. (Nothing works) Press the ▲ (OPEN) key. → The "OPEN" indication does not disappear. Press the ► (PLAY) key. → The indication changes from "NO DISC" to "OPEN," and the unit does not operate. (When a disc is not loaded in the tray.)	• Damage of the loading motor • Disconnection, breaking, or damage of the jumper wire	 ①
The tray opens by itself when the power is turned on and stays open.	• Disconnection, breaking, or damage of the flexible cable (8P)	 ④
The rotary tray does not stop at its home position. (It may stop suddenly during rotation.)	• Breaking or damage of the tray position detect sensor (PC22)	 ⑤
The indication "CHANGE" does not change when the power is turned on. The rotary tray does not rotate. (Opening and closing of the tray are possible.)	• Damage of the motor for the rotary tray drive • Disconnection, breaking, or damage of the jumper wire	 ⑥
A clatter is heard when the disc is clamped.	• The gears of the planet base are not engaged correctly.	 ⑦
The rotation of the rotary tray does not stop after the power is turned on. Two or more disc loading indications light for tray Nos. 1 to 5. Examples: Normal condition:  One indication lights. Abnormal condition:  Two indications light.	The slit part on the bottom of the rotary tray is damaged.	 ⑧
The rotary tray rattles while rotating. When the rotary tray rotates, a rattling sound is heard.	• Damage of the worm gear • Insufficient lubricant	 ⑨
Even during playback, the indication "NO DISC" is displayed. It takes longer than normal until playback starts.	• Breaking or damage of the disc detect sensor (PC21)	 ⑩

Location

A

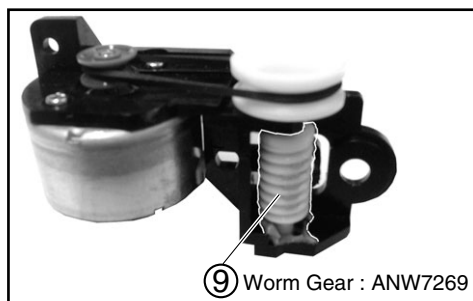
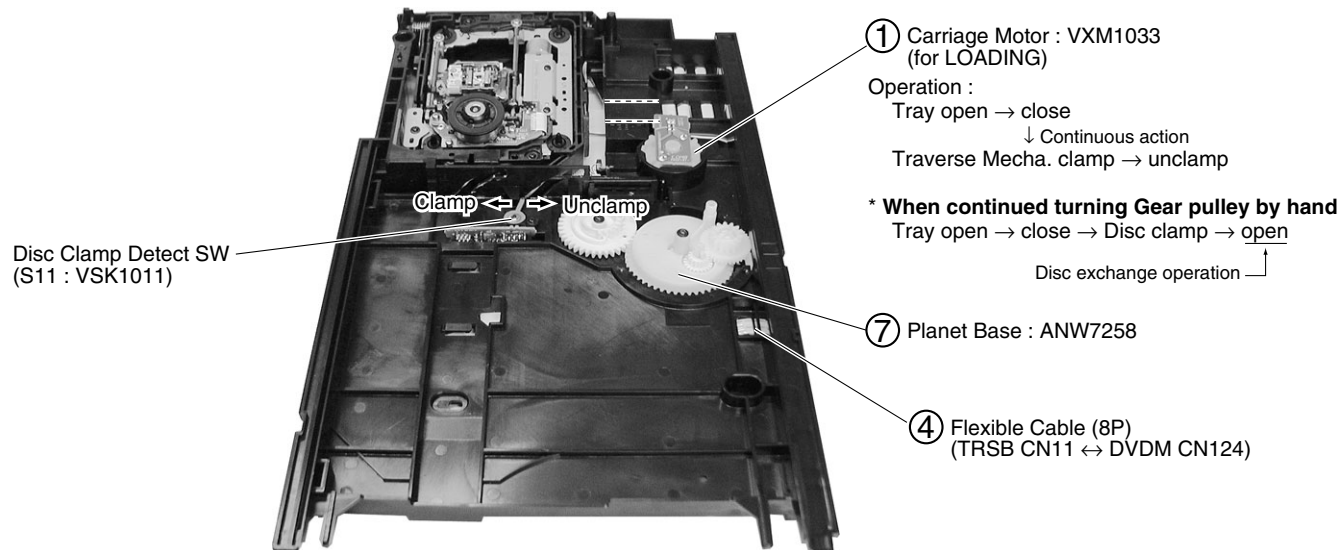
B

C

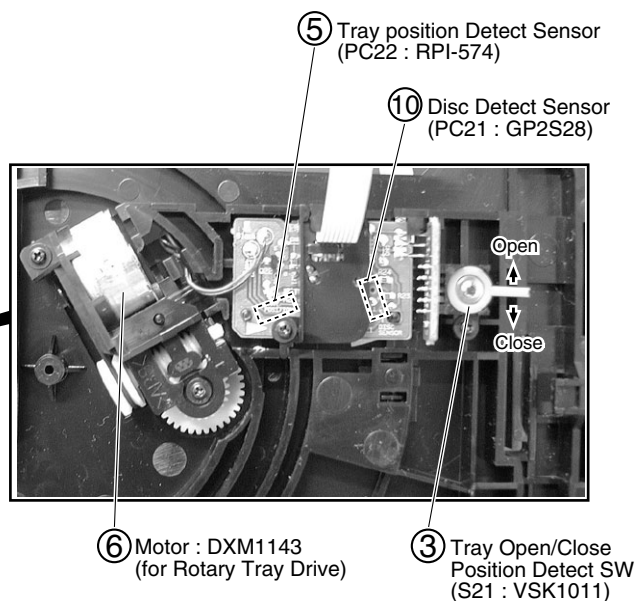
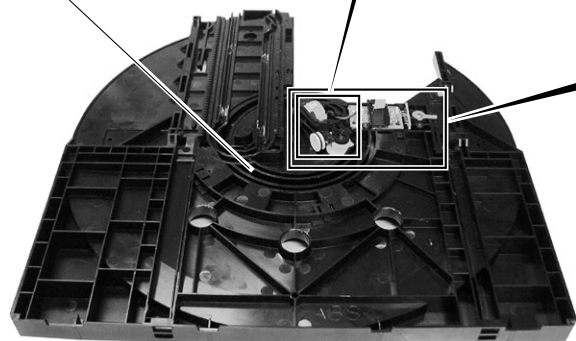
D

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F



⑧ Rotary Tray : VNK4923

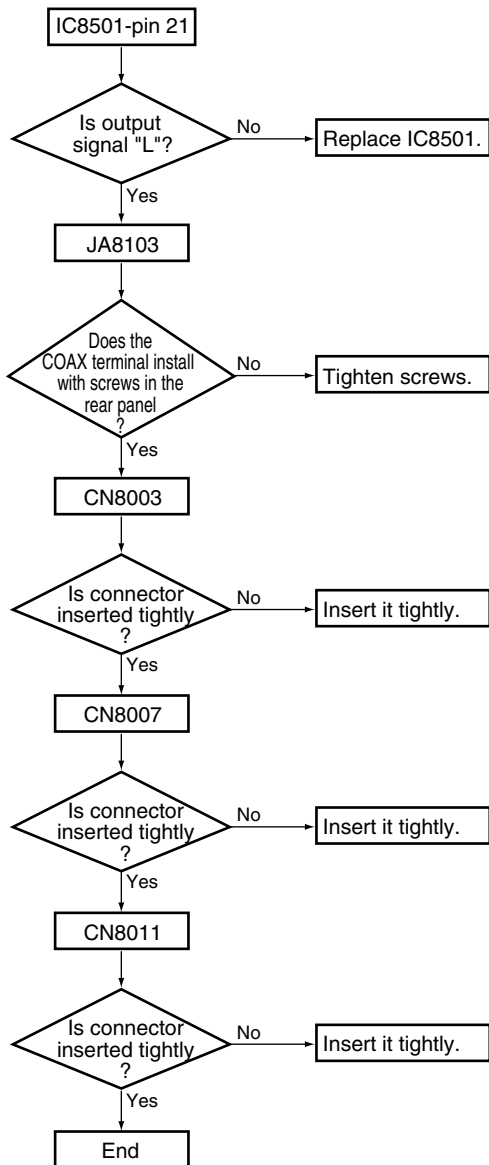


7.1.9 DSP TROUBLE SHOOTING

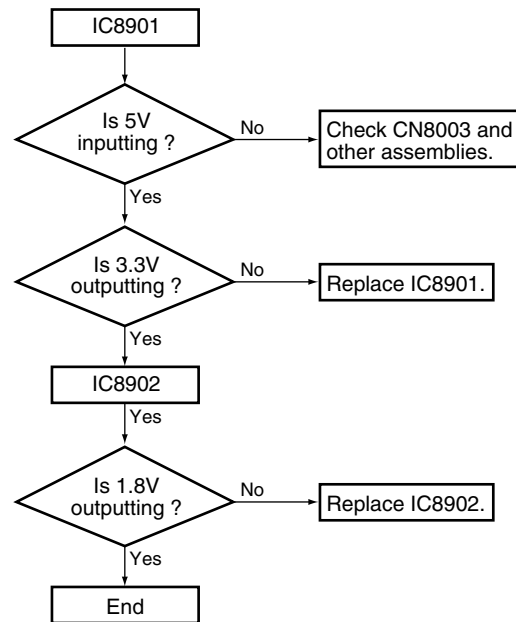
- When a sound is not out in the surround mode with the digital signal input.
- Suppose CR to be poor contact and that is not damaged.
- This shows failure analysis of DSP Assy.

A

Step 1



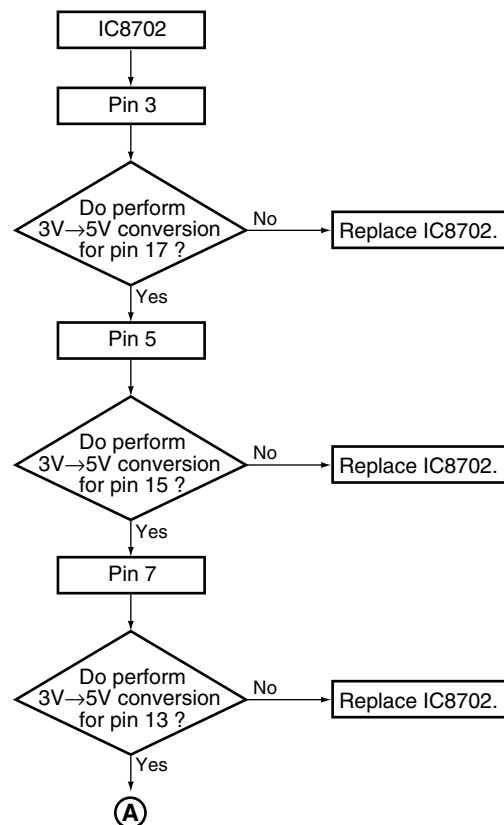
Step 2



B

C

Step 3

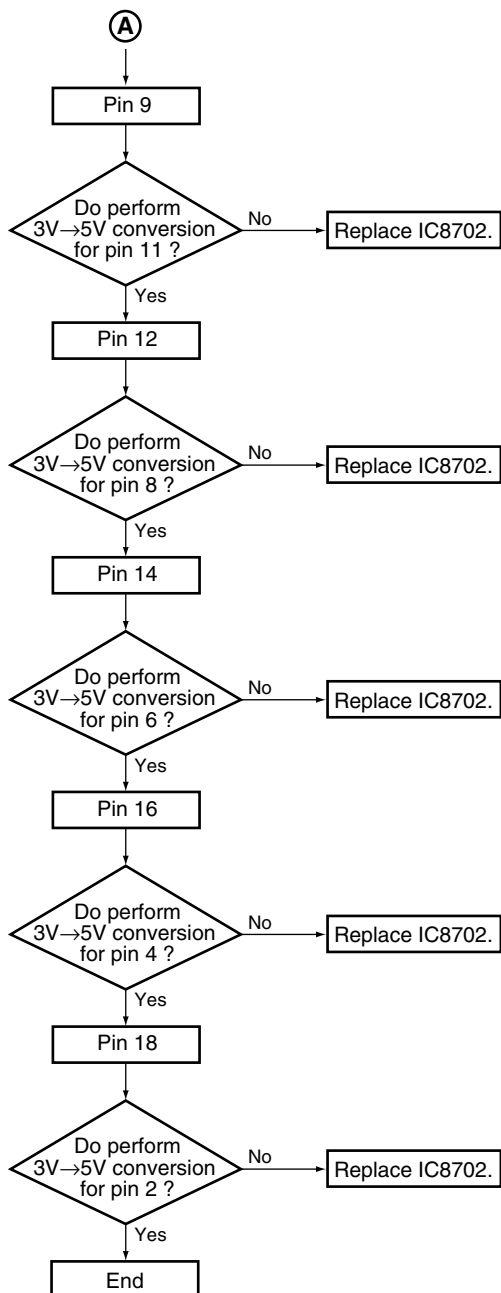


D

E

F

A



B

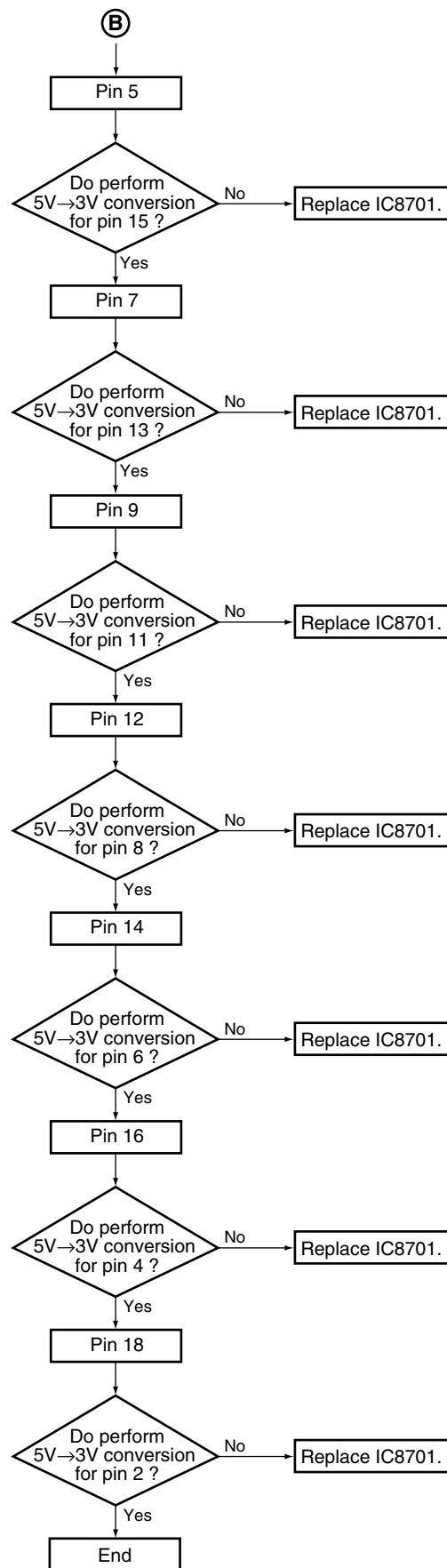
C

D

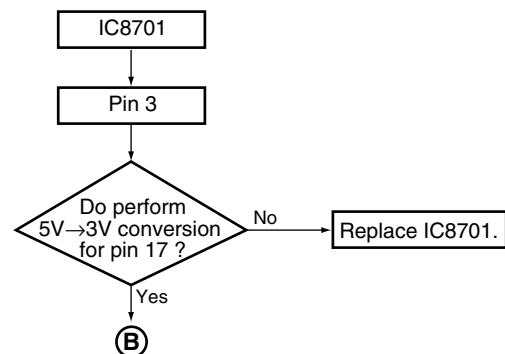
E

F

B



Step 4



Step 5

A

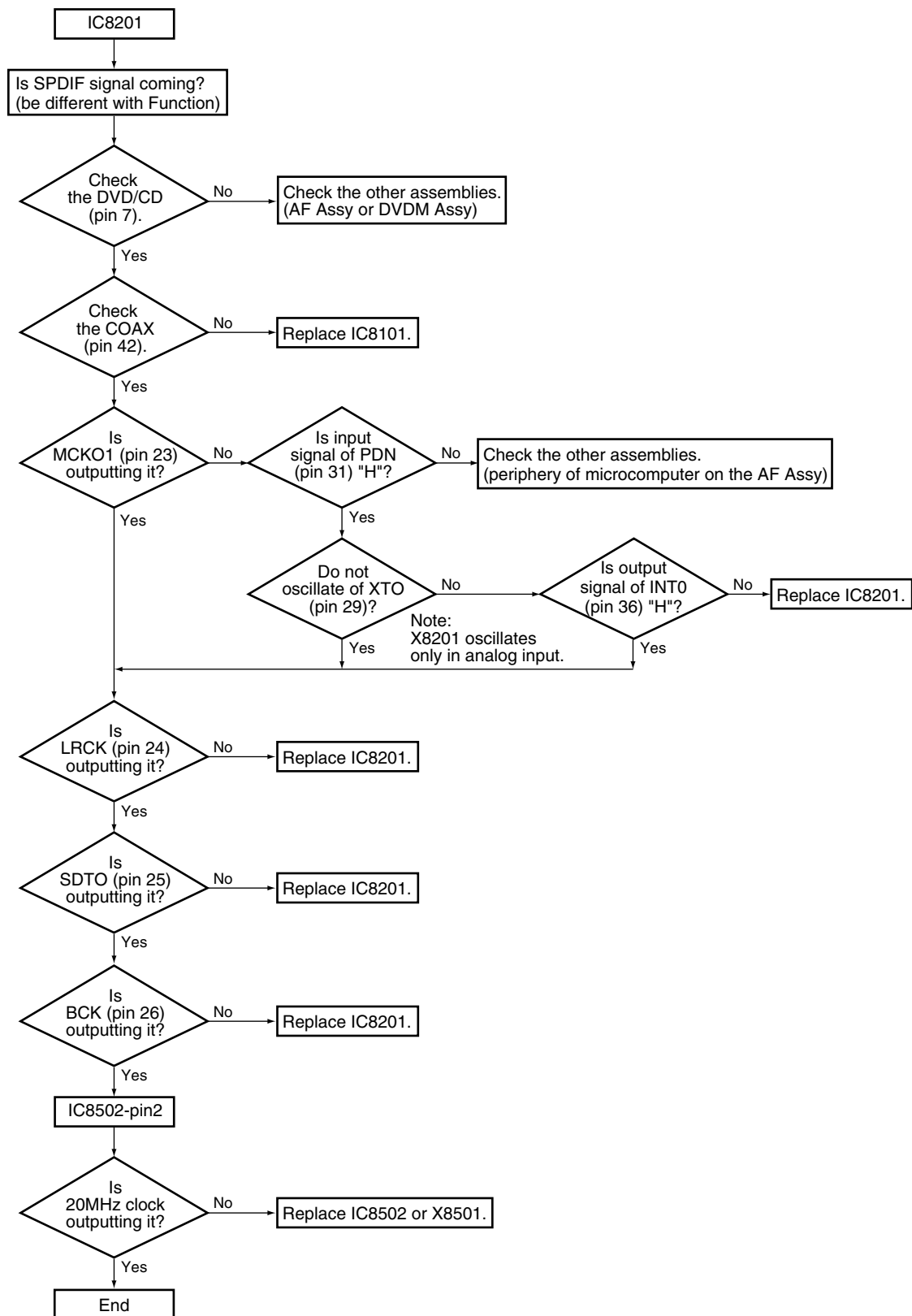
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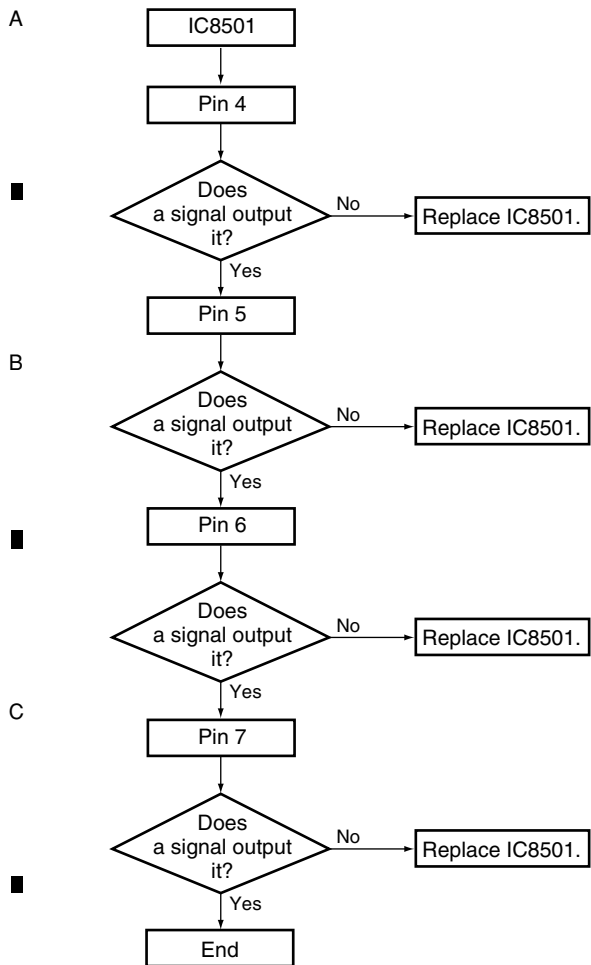
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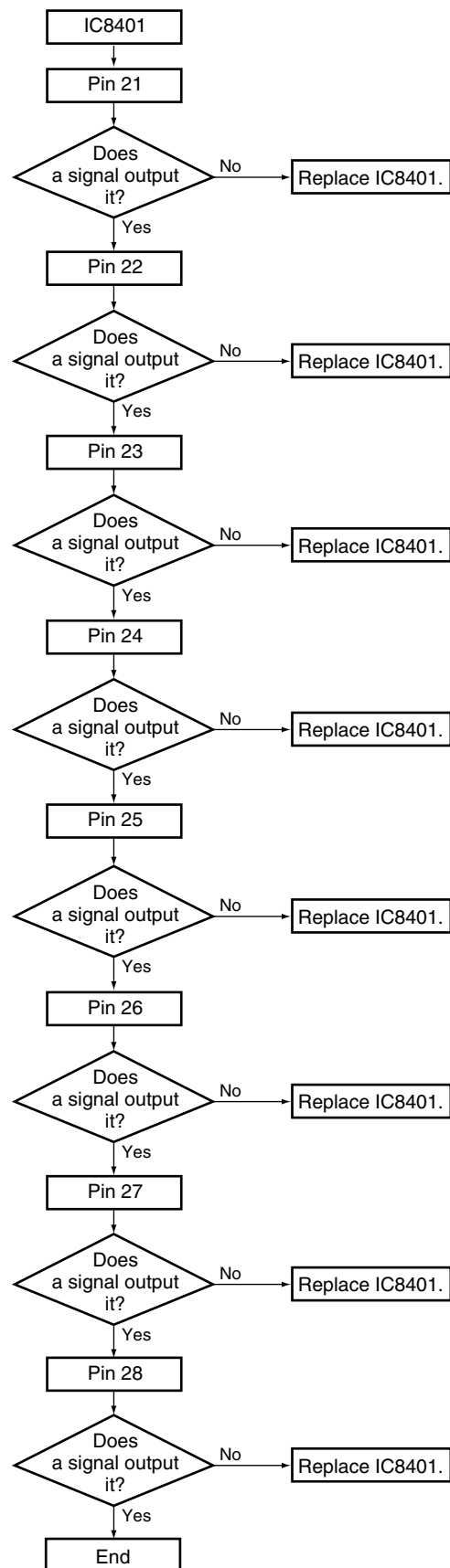
F



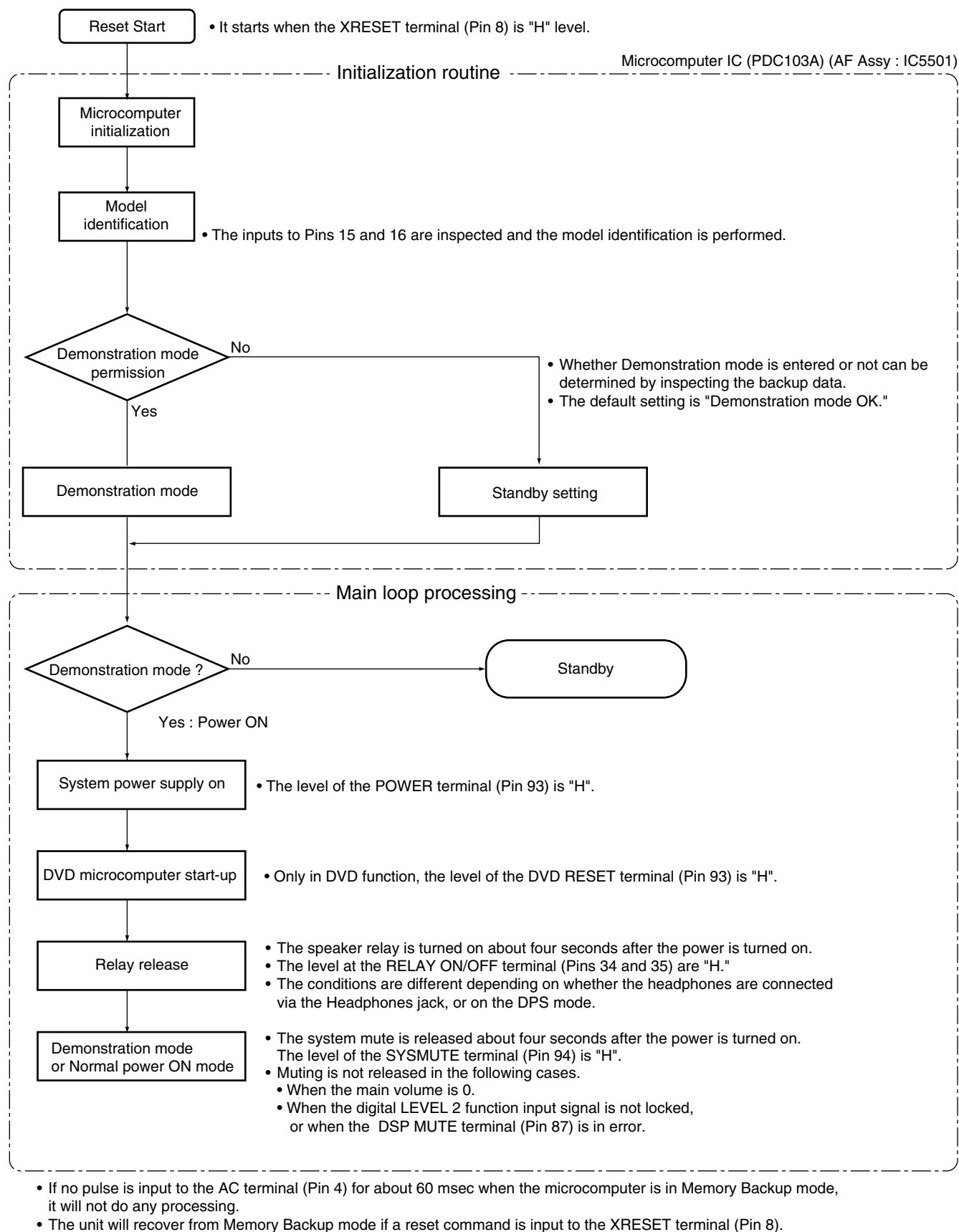
Step 6



Step 7



7.1.10 POWER ON SEQUENCE

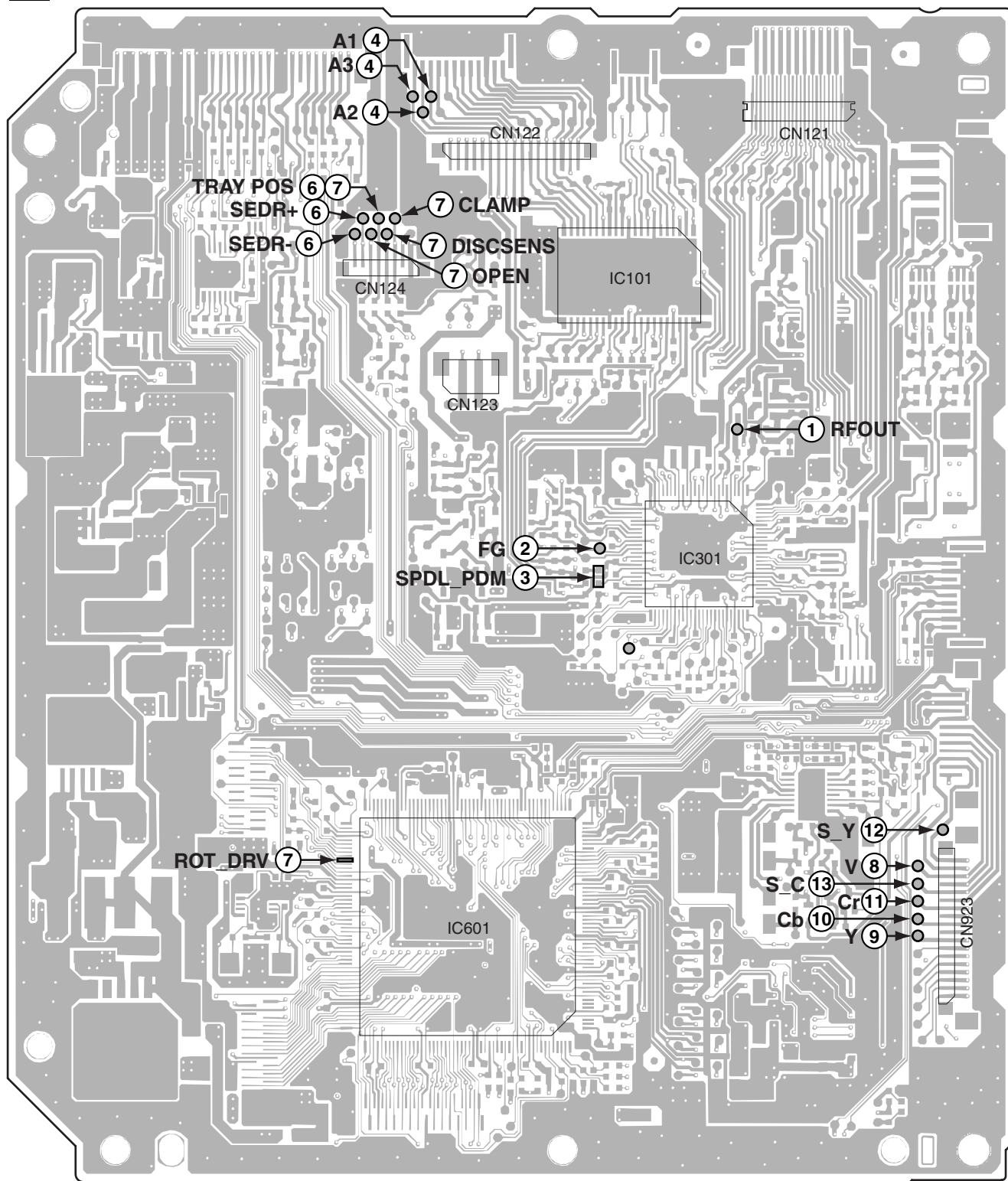


7.1.11 WAVEFORM POINTS LOCATION

SIDE A

SIDE A

DVDM ASSY

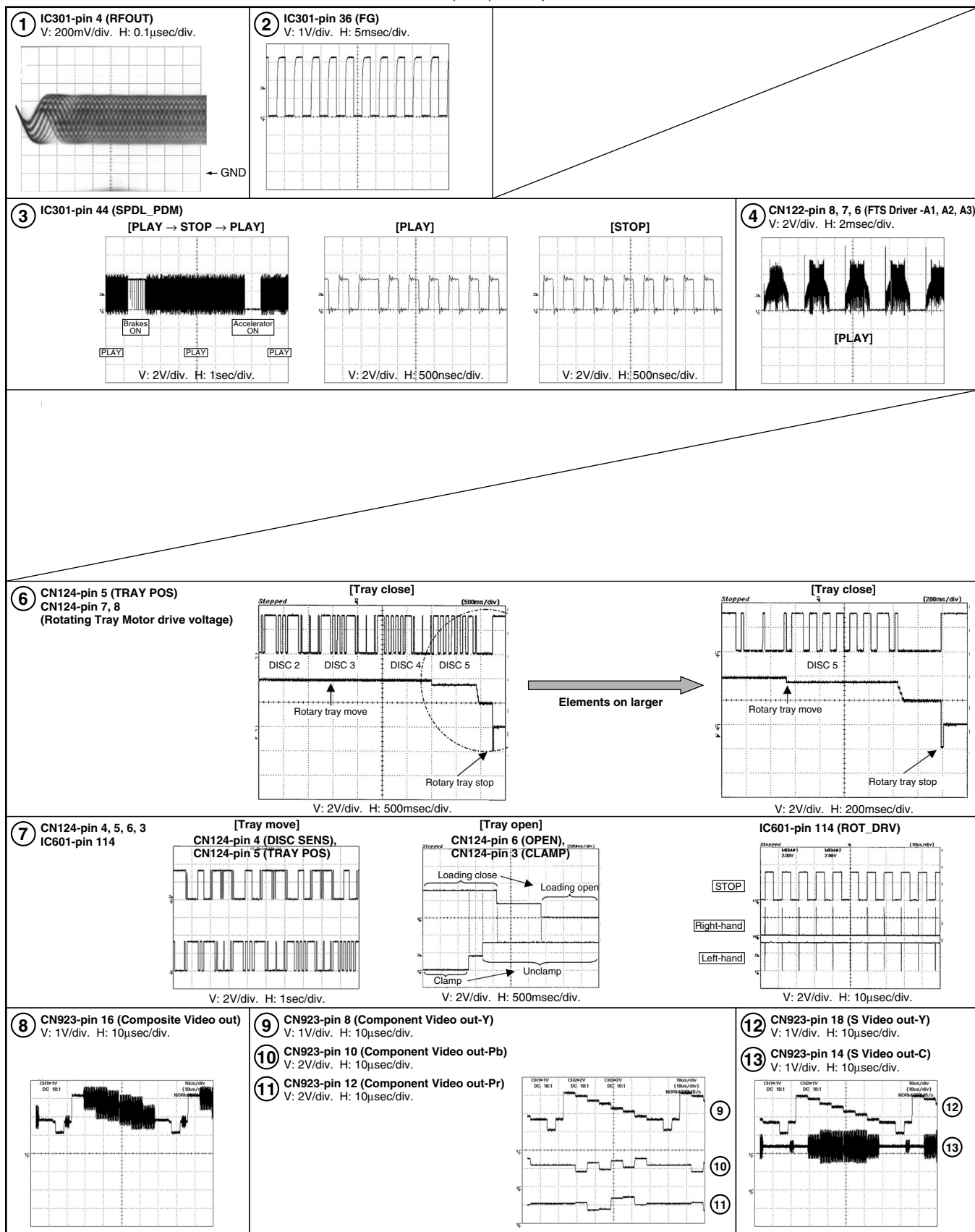


➔ Front Side

E DVDM ASSY

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

Measurement condition : No. 1 to 2 and 8 to 13 : reference A1 (DVD), T2-chp 19, Color -bar



7.1.12 PROTECTION CIRCUIT

If the TIMER LED on the front panel flashes, check the protection circuit.

Note: If the protection circuit activates, the unit will not recover for 60 seconds even if the AC power cord is disconnected then reconnected. If you activate Service Test mode, the protection circuit becomes invalid, which makes diagnosis easy. (To activate Service Test mode, while holding the STOP key and the DISC 1 key pressed, press the STANDBY/ON key.)

There are three types of operations for the protection circuit, which are indicated on the FL display when Service Test mode is entered:

PRTECT WNG: The unit was shut down because of an abnormality in the AMP system. (The PROTECT line operates at the MID level.)

PRTECT ERR: The unit was shut down because of a failure in the AMP system. (The PROTECT line operates at the LO level.)

DVD PRTECT: The unit was shut down because of a failure in the DVD system. (The VDET line operates at the HI or LO level.)

Conditions for the protect circuit operations

	Voltage		Conditions	FL display in Service Test mode
PROTECT	HI level	>3.55V	Normal	
	MID level	1.8V - 3.5V	The unit is shut down because of an abnormality.	PRTCT WNG
	LO level	<1.8V	The unit is shut down because of a failure.	PRTCT ERR
VDET	HI level	>4.25V	The unit is shut down because of a failure.	DVD PRTECT
	MID level	3.3V	Normal	
	LO level	<2.5V	The unit is shut down because of an abnormality.	DVD PRTECT

The possible failures for each error message are as follows:

PRTCT WNG:

- The Speaker terminal became overloaded because of short-circuit. (See ①.)

PRTCT ERR:

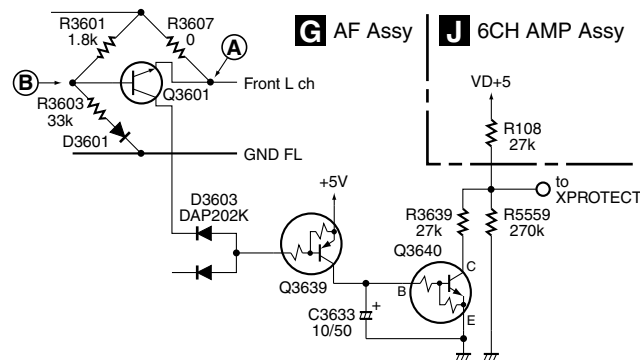
- The main power supply became LO level because of short-circuit or disconnection of connectors. (See ②.)
- Disconnection of the FAN connector or interruption of rotation of the fan (See ③.)
- DC was generated at the output because of a failure in the AMP system, etc. (See ④.)
- Abnormal temperature was detected by the thermistor. (See ⑤.)

DVD PRTECT:

- An error was generated in the main power supply inside the DVD. (See ⑥.)

Protection circuit that activates against a PRTCT WNG error

① When the Speaker terminal becomes overloaded



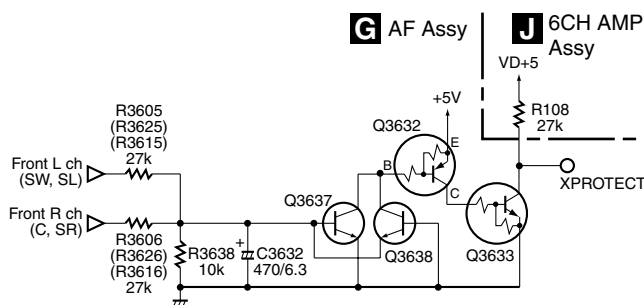
In Normal mode, the speaker (6 ohms) is connected between the FL and GND FL points. Because the voltage at Point (A) is higher than that at Point (B), Q3601 does not operate.

If the resistance between the FL and GND FL points becomes 1.83 ohms or less, Q3601 begins to operate, Q3639 is turned on, Q3640 (E, C, and B) is turned on, and the level of XPROTECT becomes MID.

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

④ When DC is generated at the output because of a failure in the AMP system, etc.

A



B

- In Normal mode, both Q3637 and Q3638 are off.

(1) When positive (+) DC voltage is generated at the SP terminal

When positive (+) DC voltage is generated at the L or R channel, and VB of Q3637 becomes higher than that at the operation point, Q3632 (E, C, B) is turned on, and the level of XPROTECT becomes low.

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

C

(2) When negative (-) DC voltage was generated at the SP terminal

Q3638 is turned on, and XPROTECT is activated.

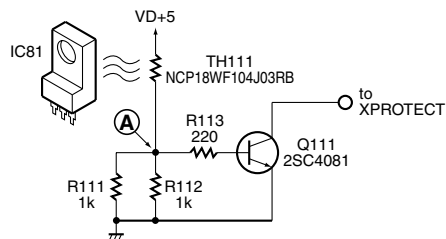
D

E

F

⑤ When abnormally high temperature is detected by the thermistor

⑤ -1 IC81 abnormal temperature detection circuit

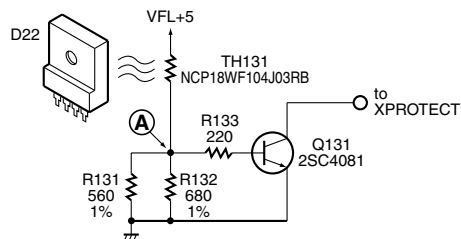


The voltage at Point (A) becomes the divided voltage of TH111 and R111/R112 (combined resistance of parallel-connected resistors R111 and R112.) In Normal mode, the resistance at TH111 is much higher than R111/R112, and Q111 is off. (Note that the resistance at TH111 becomes lower as the temperature increases.) If the solder temperature at IC81 increases abnormally, the temperature at TH111 (thermistor) mounted closest to the land of IC81 increases accordingly, and the resistance at TH111 decreases.

When the temperature at TH111 reaches 90-110_C (varying according to conditions,) the voltage at Point (A) becomes high enough to turn Q111 on, and the level of the XPROTECT line becomes low. The microcomputer detects the XPROTECT level and shuts the power to the unit off.

⑤ -2 D22 abnormal temperature detection circuit

If the solder temperature at D22 becomes abnormally high because of short-circuiting between AC - and +, or AC - and -, this protection circuit is activated.



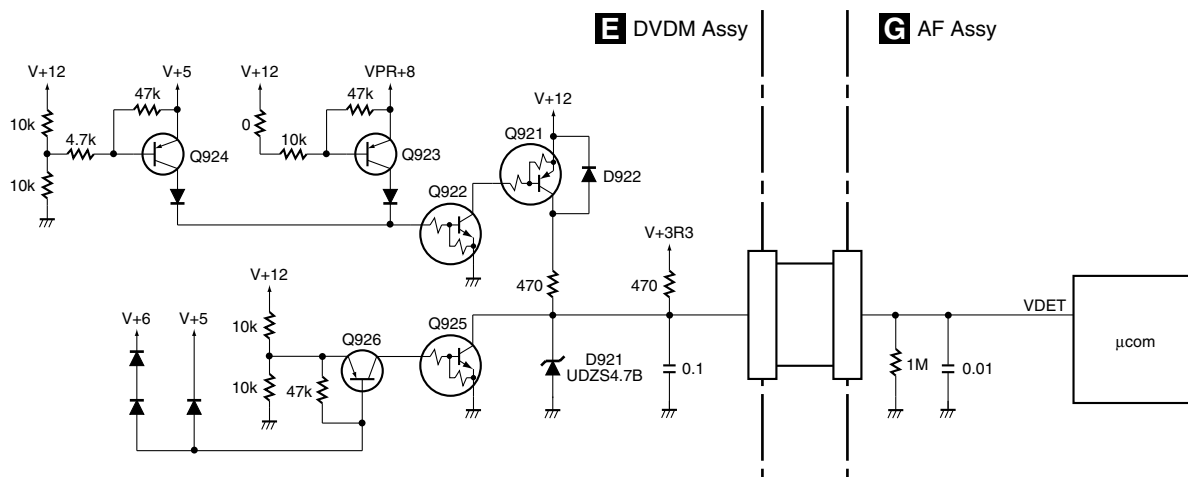
The voltage at Point (A) becomes the divided voltage of TH131 and R131/R132 (combined resistance of parallel-connected resistors R131 and R132.) In Normal mode, the resistance at TH131 is much higher than R131/R132, and Q131 is off. (Note that the resistance at TH131 becomes lower as the temperature increases.) If the solder temperature at D22 increases abnormally, the temperature at TH131 (thermistor) mounted closest to the land of D22 increases accordingly, and the resistance at TH131 decreases.

When the temperature at TH131 reaches 107-125_C (varying according to conditions,) the voltage at Point (A) becomes high enough to turn Q131 on, and the level of the XPROTECT line becomes low. The microcomputer detects the XPROTECT level and shuts the power to the unit off.

Protection circuit that activates against a DVD PRTECT error

⑥ The DVDM monitors the voltage of the main power supply by VDET signals.

In Normal mode, the VDET signal is at the MID level (3.3 V). In the following conditions, the VDET signal level becomes L or H, and the microcomputer is notified of this abnormality.



Items to be detected by VDET

(1) When the power voltages inside the DVDM become abnormal, as shown in the table below

Status	Power	Voltage	Operation								VDET voltage
			Q923	Q924	Q922	Q921	D921	D922	Q926	Q925	
In Normal mode			off	off	off	off	off	off	off	off	Mid
When an abnormality is generat	VDVD+12	<1V	(on)	(on)	(on)	(off)	off	on	off	off	L
		>15.5V	off	off	off	off	off	off	on	on	L
	VPR+8	<5.2V	–	off	off	off	off	–	on	on	L
		>12.6V	–	on	on	on	on	–	off	off	H
	V+6	<3V	–	–	–	–	–	–	on	on	L
	V+5	<3.6V	–	off	off	off	off	–	on	on	L
		>6.6V	–	on	on	on	on	–	off	off	H
	V+3R3	<2.5V	–	–	–	–	–	–	–	–	L
		>4.25V	–	–	–	–	(on)	–	–	–	H

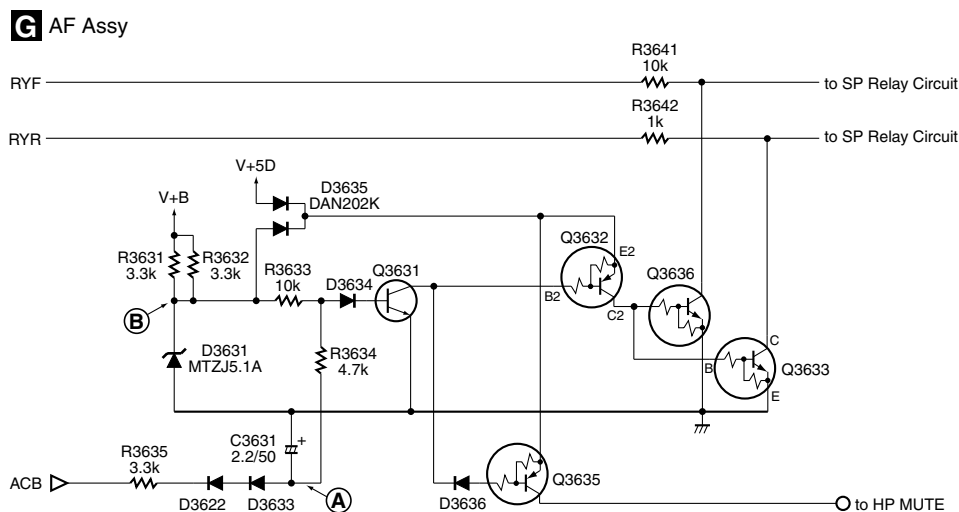
(2) When the VDET signal to the microcomputer is interrupted because of defective soldering of the 30-pin connector or incomplete insertion of FFC

→ The VDET level is lowered by the pull-down resistor (1 Mohms) on the side of the microcomputer.

Other protection circuit

AC detection circuit

A This is a protection circuit that prevents popping sounds in the Speaker and Headphones output when the AC power cord is connected or disconnected.



- The voltage at Point ① is a DC voltage which has been generated by half-wave rectification on the minus side of the AC power.
- The voltage at Point ② is approx. 5 V.

- The base voltage at Q3631 is a voltage between Points ① and ② divided by R3633 and R3634. As this voltage is negative (-) in Normal mode, Q3631 is off.
When the AC power cord is disconnected and there is no AC power input, the base voltage at Q3631 becomes +0.6 V or more, and Q3631 is turned on. Then, the operations below follow.

(1) SP Relay

Q3632 (E2, C2, B2), Q3633, and Q3636 (E, C, B) are turned on, the line to activate the SP relay becomes low level, and the SP Relay is turned off.

(2) HP MUTE

Q3635 is turned on, and the MUTE circuit for HP is turned on.

7.1.13 DISASSEMBLY

DIAGNOSIS OF PCBs

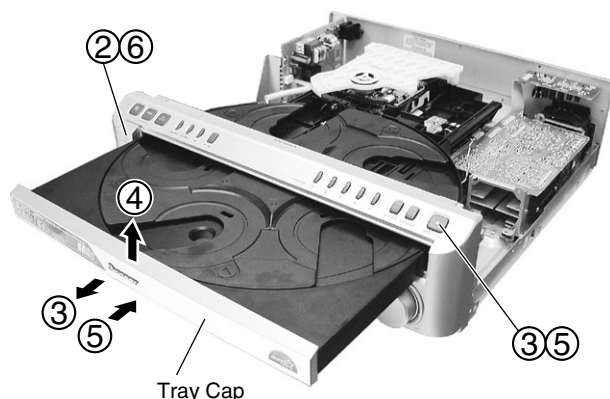
Note: For performing the diagnosis shown below, the following jig cables for service are required:

- GGD1160
- GGD1228
- GGD1315 (x2)

NOTE : This photograph is XV-HTD330/KUXJ

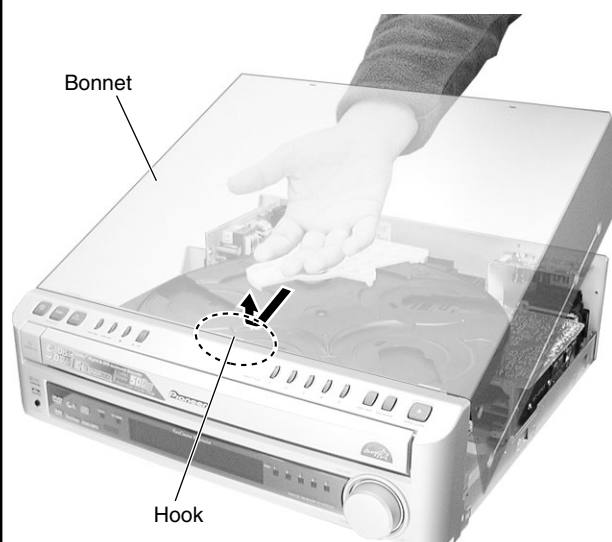
1 Bonnet and Tray Cap

- ① Remove the bonnet by removing the eleven screws.
- ② Press the STANDBY/ON button to turn on the power.
- ③ Press the OPEN/CLOSE button to open the tray.
- ④ Remove the tray cap.
- ⑤ Press the OPEN/CLOSE button to close the tray.
- ⑥ Press the STANDBY/ON button to turn off the power.



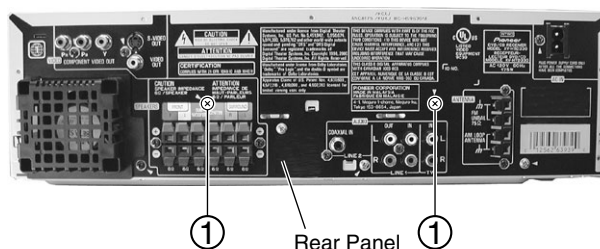
● Note when reattaching the bonnet

When reattaching the bonnet, to avoid damaging the unit, hook the bonnet by supporting and lightly pushing it upward by hand from the rear, as shown in the photo below.

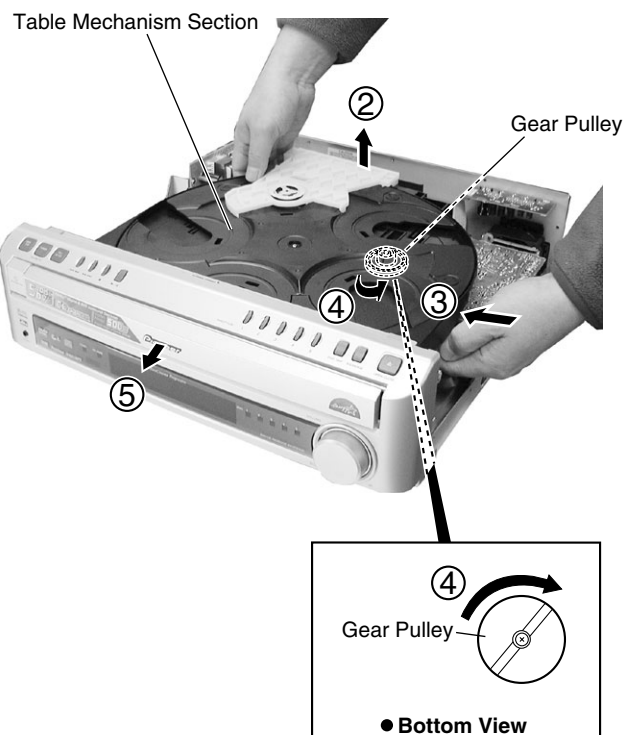


● How to open the Tray when the power cannot be on

- ① Remove the two screws.



- ② Create a little gap between the main unit and the Table Mechanism Section by holding and pulling up the rear side of the Table Mechanism Section by hand.
- ③ Insert your hand through the gap below the Table Mechanism Section.
- ④ Turn the gear pulley counterclockwise as viewed from the top.
- ⑤ If the tray pops out a little, fully pull it out by a hand.



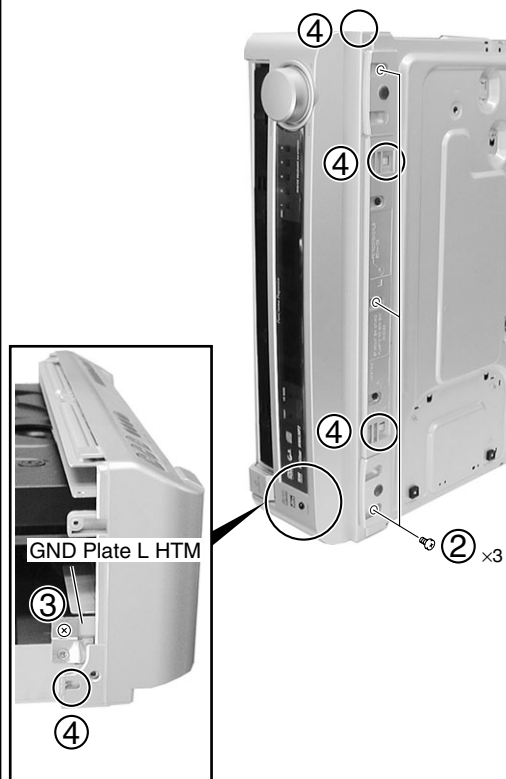
2 Front Panel Section

① Remove the bonnet and tray cap. (See Step 1.)

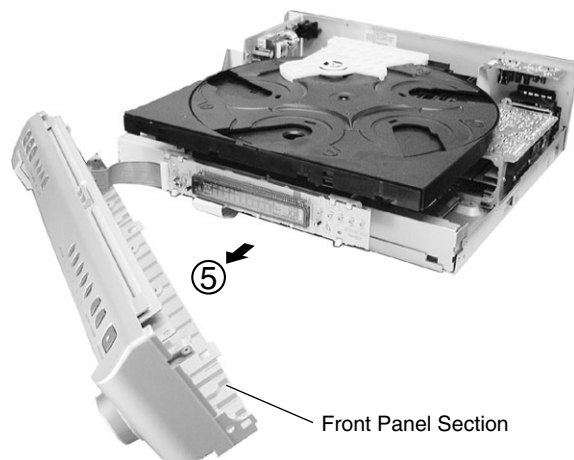
② Remove the three screws.

③ Remove the one screw.

④ Remove the four hooks.

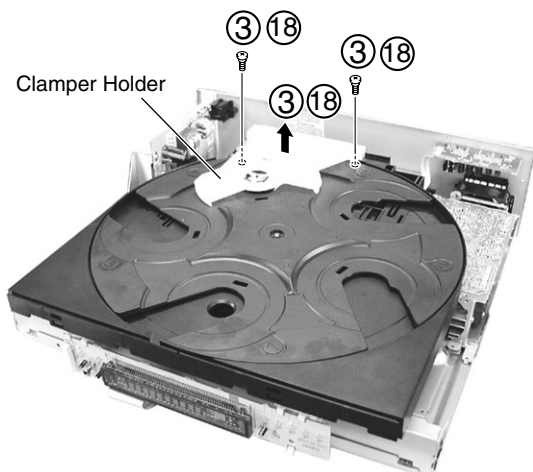


⑤ Remove the Front Panel Section.



3 DVDM Assy

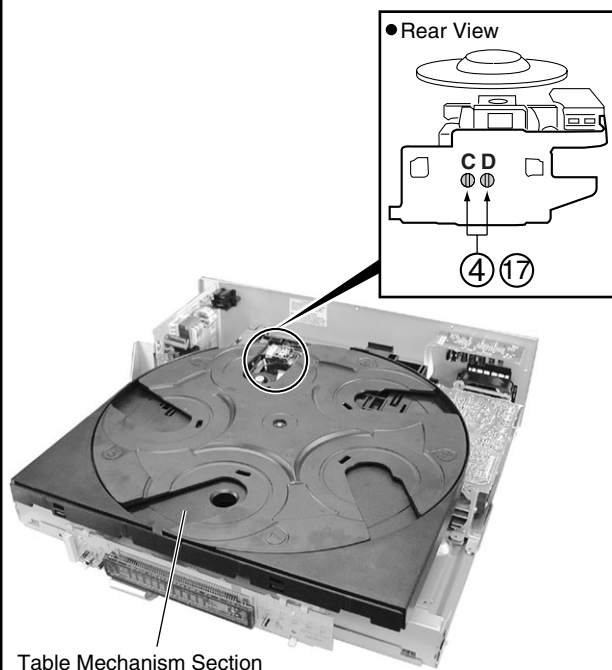
- ① Remove the bonnet and tray cap. (See Step 1.)
- ② Remove the Front Panel Section. (See Step 2.)
- ③ Remove the clamber holder by removing the two screws.



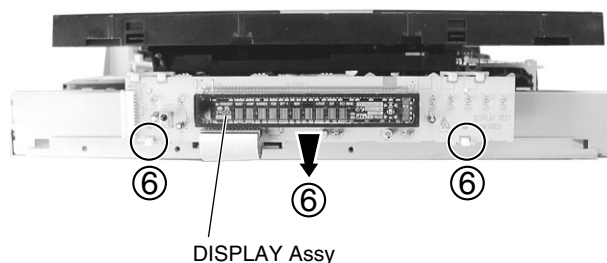
- ④ Short-circuit two points of C and D by soldering.

Note : After replacement, connect the flexible cable, then remove the soldered joint (open).

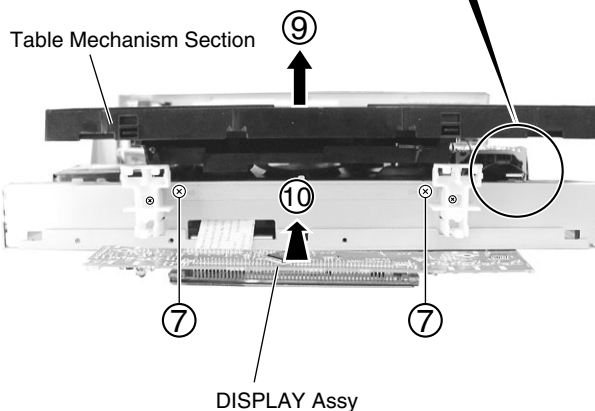
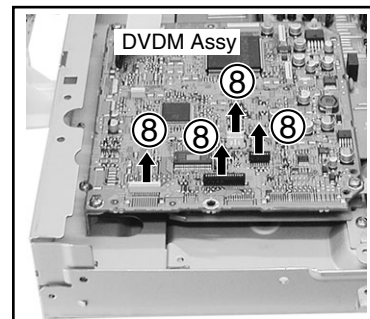
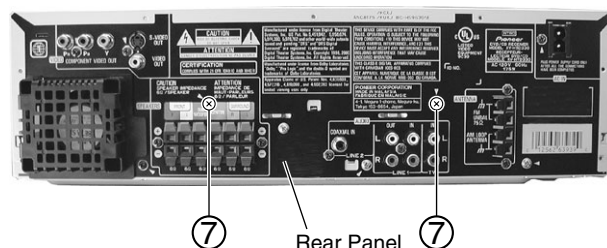
- ⑤ Reattach the clamber holder by tighten the two screws.



- ⑥ Remove the DISPLAY Assy by removing the two hooks.



- ⑦ Remove the four screws.
- ⑧ Disconnect the three flexible cables and the one connector.
- ⑨ Remove the Table Mechanism Section.
- ⑩ Reattach the DISPLAY Assy.



11 Remove the three screws.

12 Remove the PCB support.

13 Remove the flexible cable and disconnect the connector.

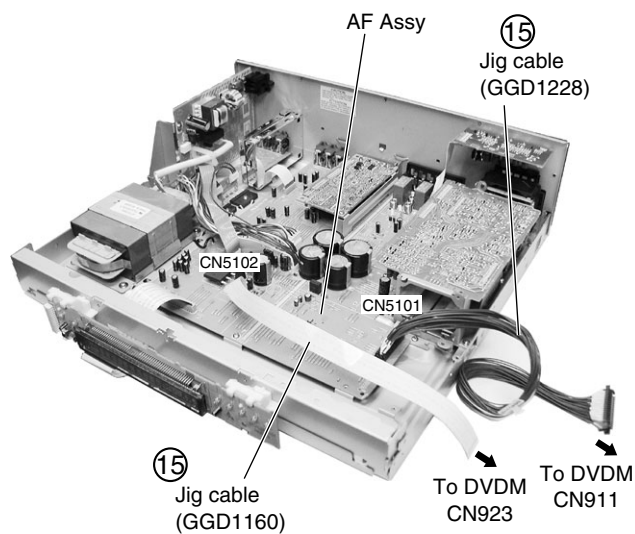
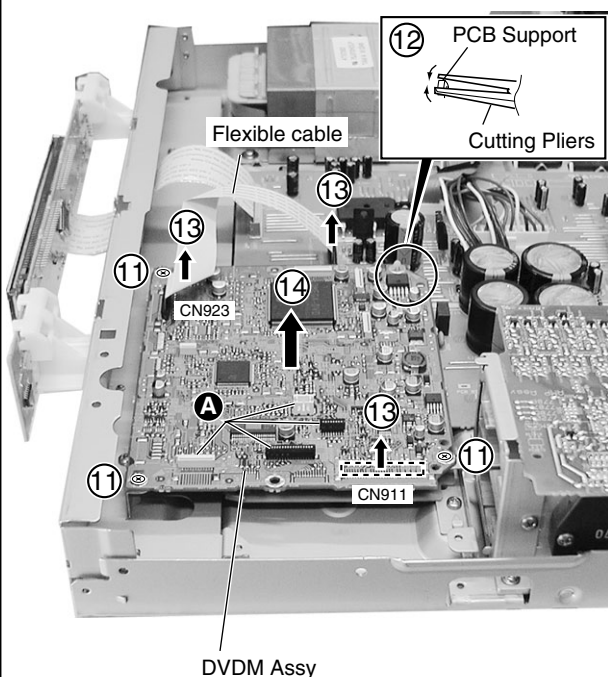
14 Remove the DVDM Assy.

15 Connect the two jig cables.

16 Reattach the three flexible cables(A) and the one connector (A) from the Table Mechanism Section.

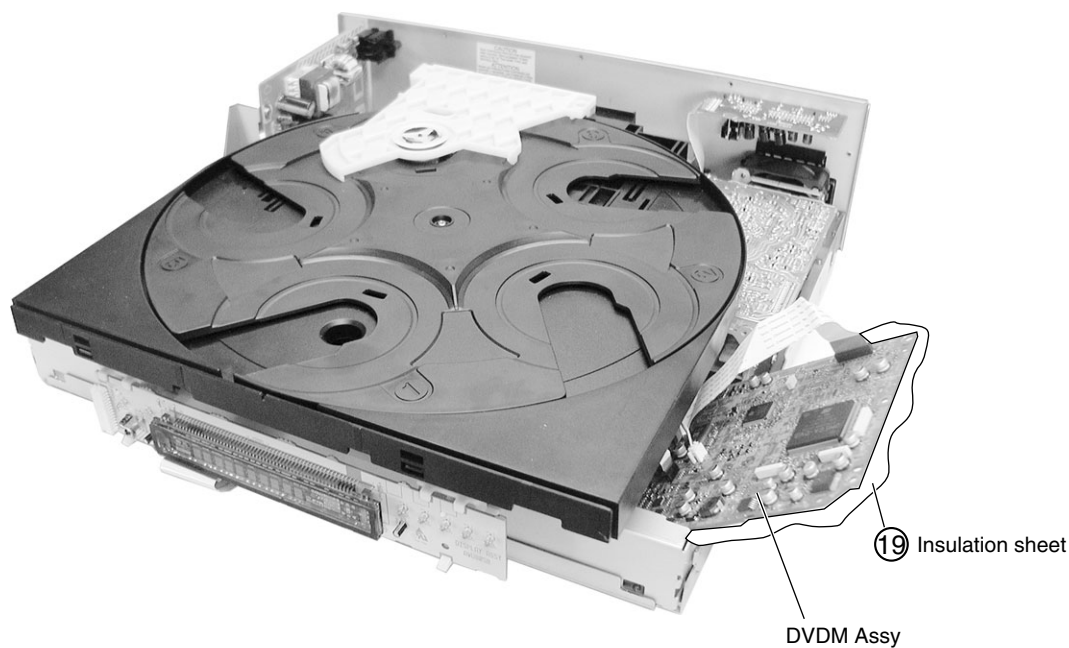
17 Remove the soldered joint pickup short point.

18 Reattach the clamber holder by reattaching the two screws.



19 Insert the insulation sheet between the DVDM Assy and the chassis.

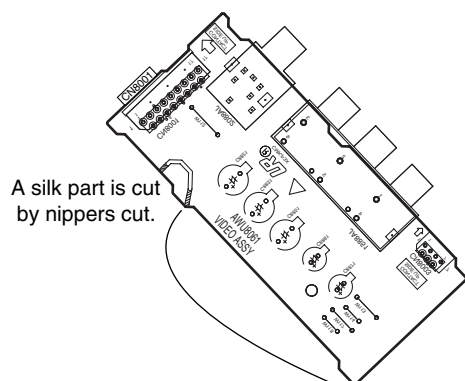
20 Arrange the cables as shown in the photo below.



4 AMP Module Section

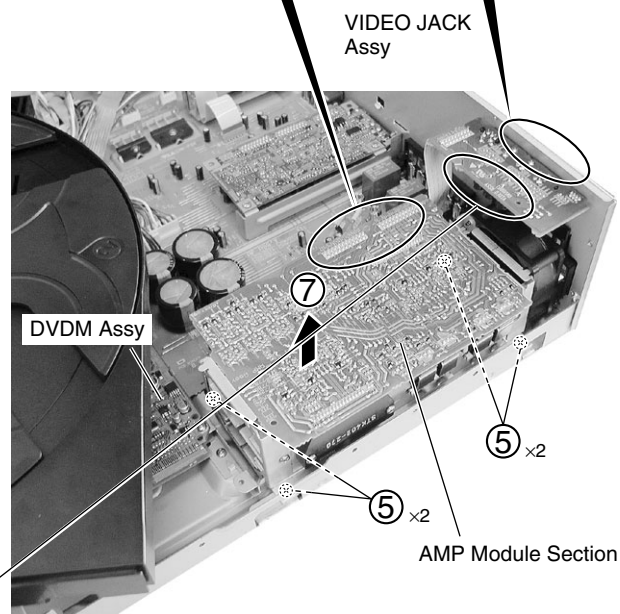
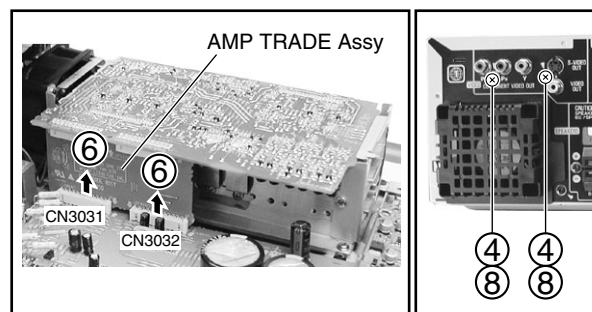
- ① Remove the bonnet and tray cap. (See Step 1.)
- ② Remove the Front Panel Section. (See Step 2.)
- ③ Remove the Table Mechanism Section. (See Step 3.)
(Do not disconnect the flexible cables that connects to the DVDM Assy.)

- ④ Remove the VIDEO JACK Assy by removing the two screws.
- ⑤ Remove the four screws.
- ⑥ Disconnect the two connectors.
- ⑦ Remove the Amp Module Section.
- ⑧ Reattach the VIDEO JACK Assy by tighten the two screws.

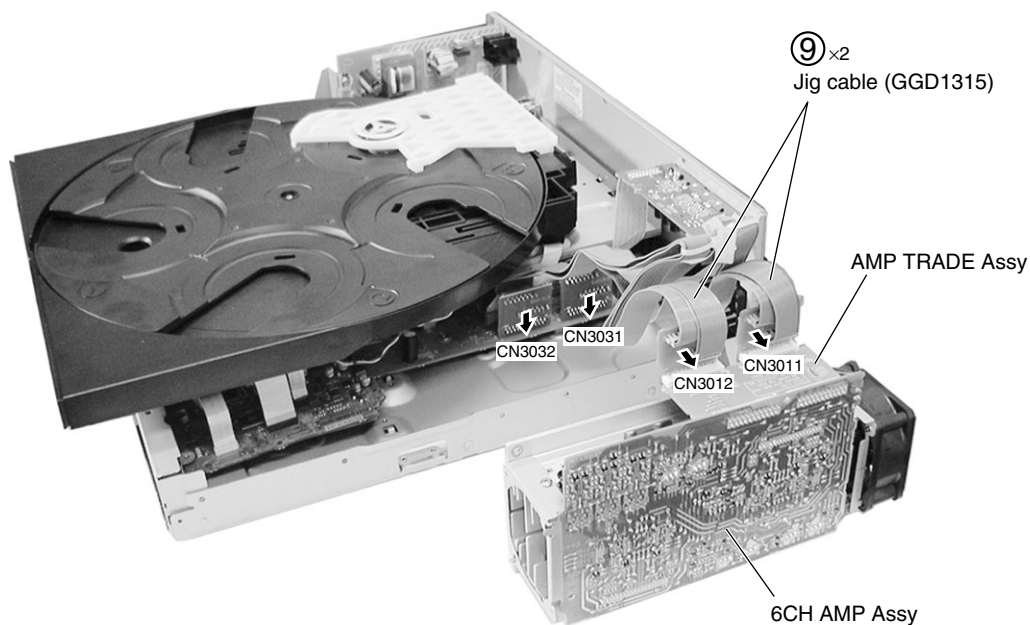


Note :

The screw(⑤) of AMP Module can be removed even if it does not remove VIDEO JACK Assy.

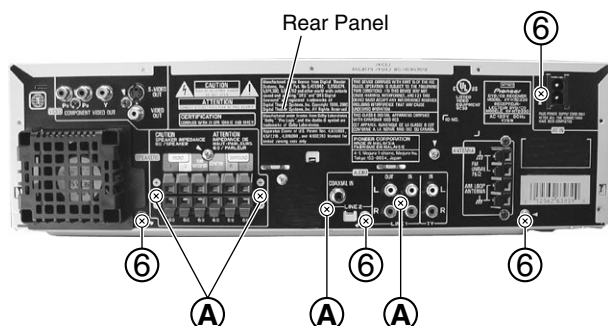


- ⑨ Connect the two jig cables.
- ⑩ Arrange the cables as shown in the photo below.



5 AF Assy

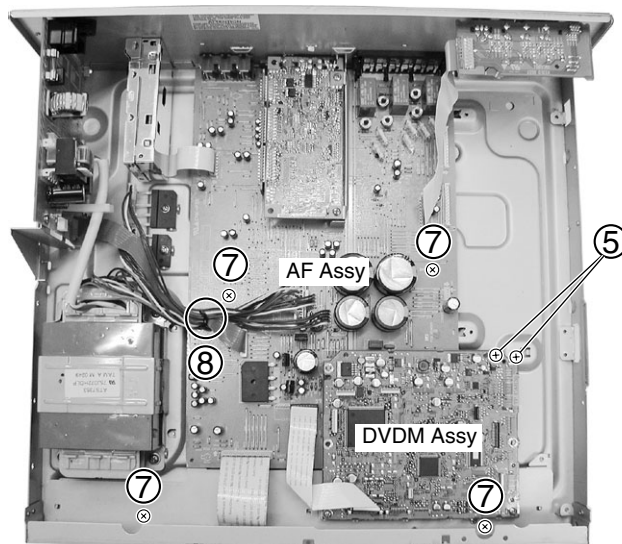
- ① Remove the bonnet and tray cap. (See Step 1.)
- ② Remove the Front Panel Section. (See Step 2.)
- ③ Remove the Table Mechanism Section. (See Step 3.)
- ④ Remove the AMP Module Section. (See Step 4.)
- ⑤ Remove the DVD Angle HTM by removing the two screws.
- ⑥ Remove the four screws.



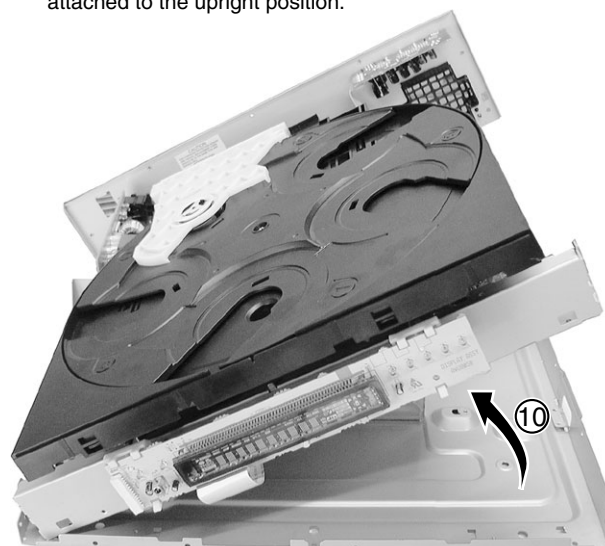
⚠ Note on handling the rear panel

During diagnosis, be sure NOT to remove the four screws marked Ⓐ in the above photo. This unit will not operate if the Audio Output connectors and the Speaker Output connectors of the AF Assy are separated from the rear panel, because that would break the circuit.

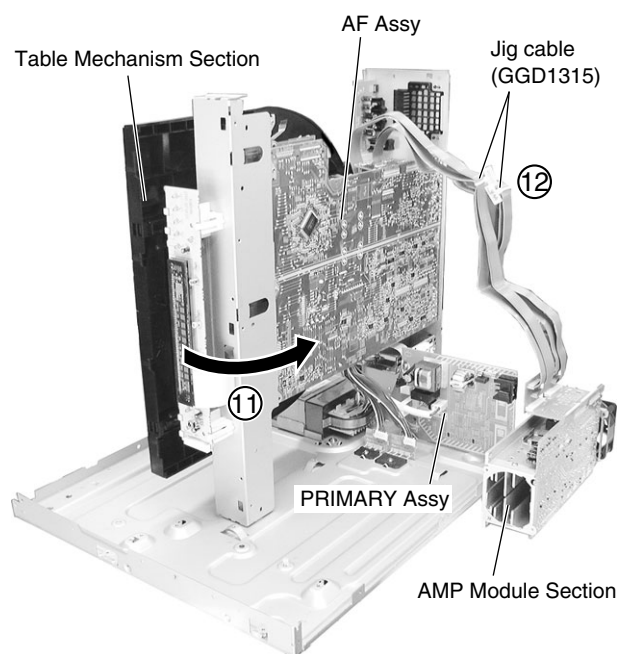
- ⑦ Remove the four screws.
- ⑧ Loosen the cord holder.



- ⑨ Reattach the Table Mechanism Section. (Be sure to secure it in place with screws.)
- ⑩ Turn the AF Assy with the Table Mechanism Section attached to the upright position.

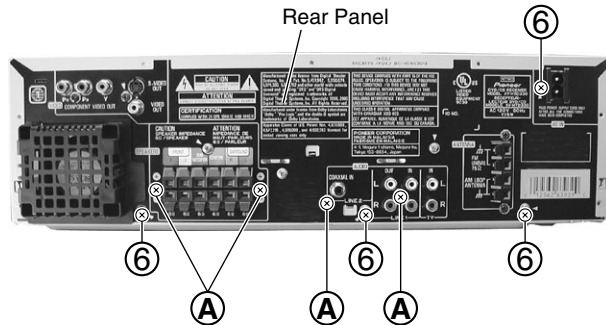


- ⑪ Arrange the cables as shown in the photo below.
- ⑫ Connect the AF Assy with the AMP Module Section using a jig cable.



5 AF Assy

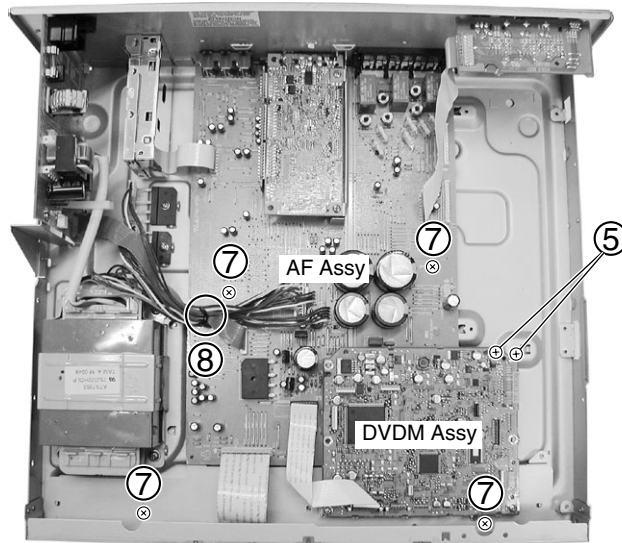
- ① Remove the bonnet and tray cap. (See Step 1.)
- ② Remove the Front Panel Section. (See Step 2.)
- ③ Remove the Table Mechanism Section. (See Step 3.)
- ④ Remove the AMP Module Section. (See Step 4.)
- ⑤ Remove the DVD Angle HTM by removing the two screws.
- ⑥ Remove the four screws.



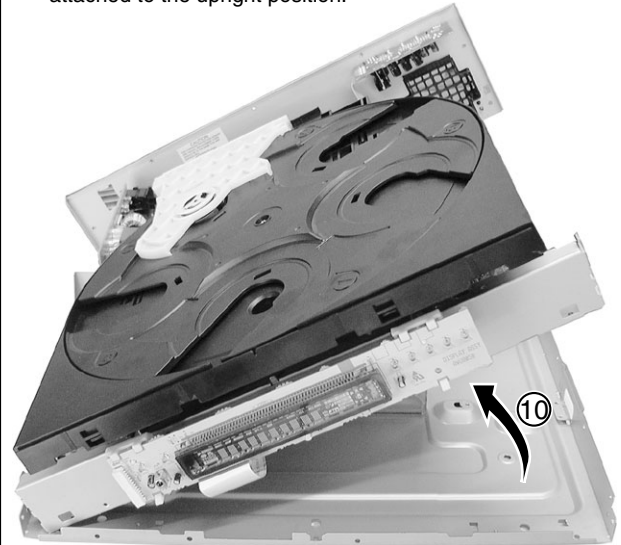
⚠ Note on handling the rear panel

During diagnosis, be sure NOT to remove the four screws marked Ⓐ in the above photo. This unit will not operate if the Audio Output connectors and the Speaker Output connectors of the AF Assy are separated from the rear panel, because that would break the circuit.

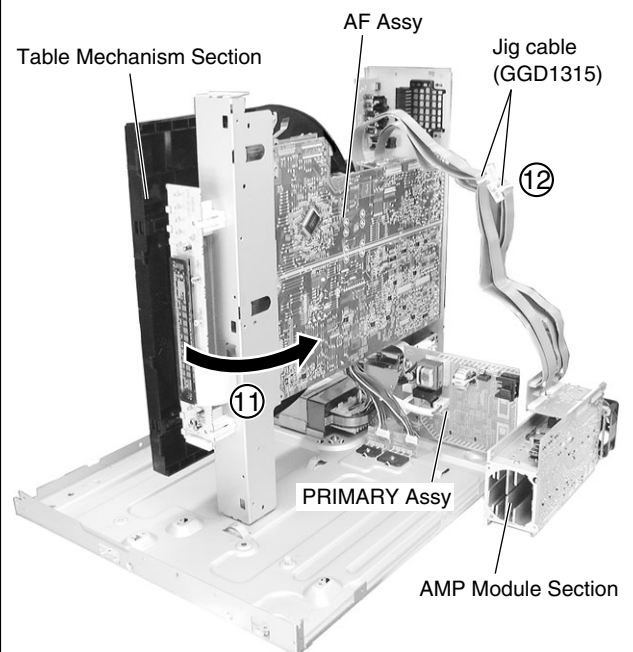
- ⑦ Remove the four screws.
- ⑧ Loosen the cord holder.



- ⑨ Reattach the Table Mechanism Section. (Be sure to secure it in place with screws.)
- ⑩ Turn the AF Assy with the Table Mechanism Section attached to the upright position.



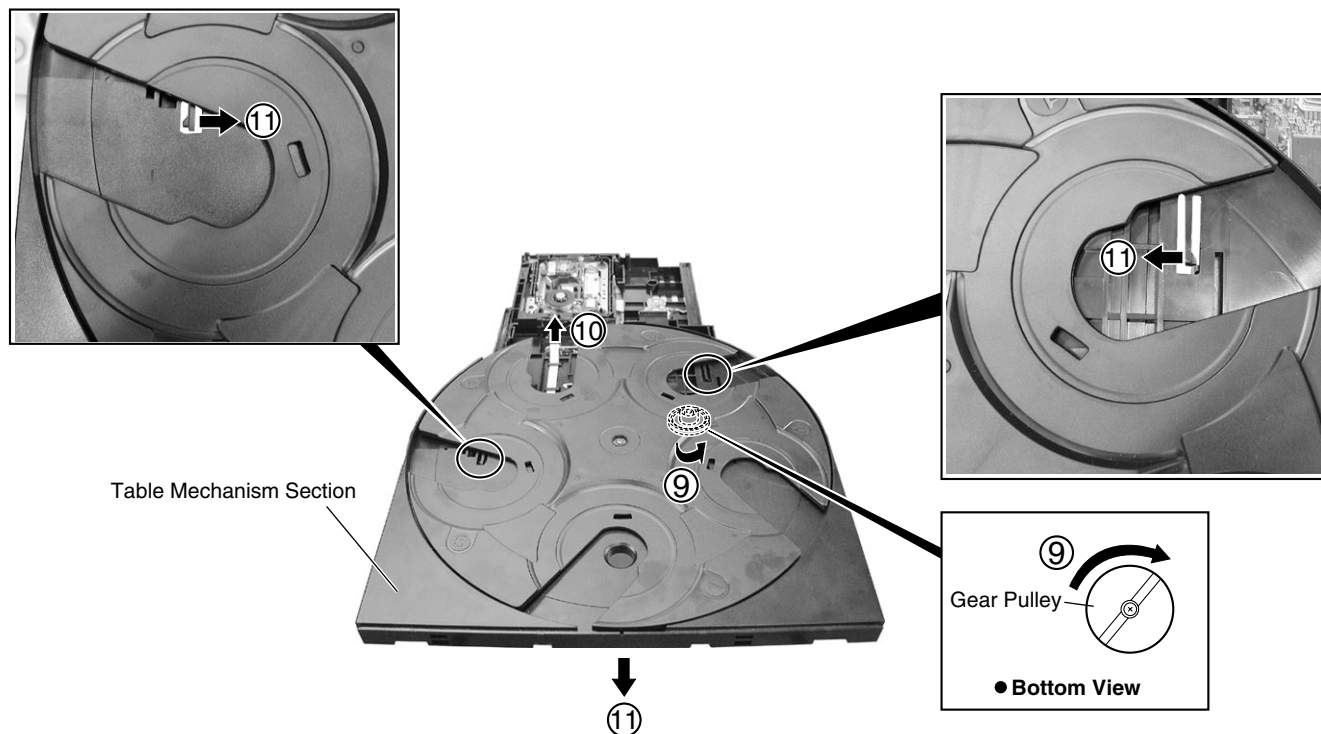
- ⑪ Arrange the cables as shown in the photo below.
- ⑫ Connect the AF Assy with the AMP Module Section using a jig cable.



- ⑨ Open the tray by turning the gear pulley counterclockwise viewed from the top.
(After the tray pops out a little, fully pull it out by hand.)

- ⑩ Disconnect the flexible cable.

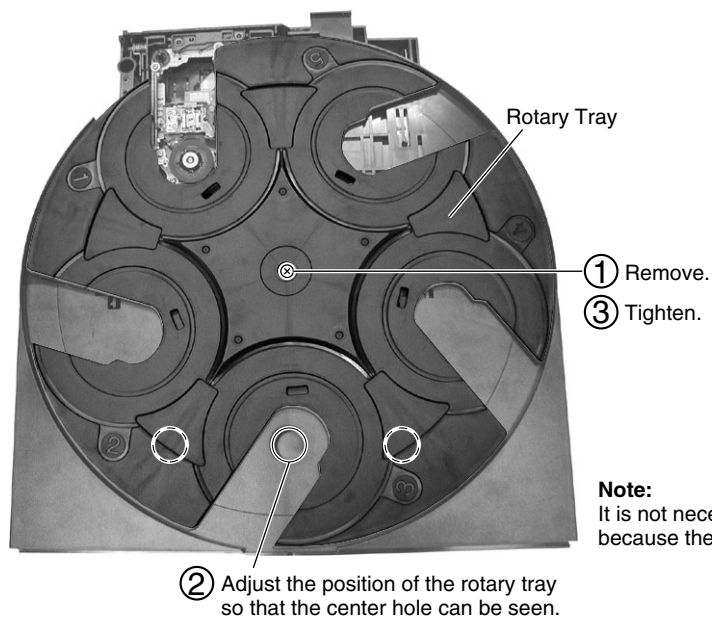
- ⑪ Remove the Table Mechanism Section by unhooking at the two points.



● If the Table Mechanism Section cannot be removed

Displacement of the rotary tray may be the cause. (If this is the case, in Step ⑪ above, the two hooks cannot be seen, because they are covered by the rotary tray.)

In this case, set the rotary tray in the correct position, following the steps below.



Note:

It is not necessary to set the Disc No. of the rotary tray, because the Automatic Disc No. Detection system will function.

- ⑨ Open the tray by turning the gear pulley counterclockwise viewed from the top.
(After the tray pops out a little, fully pull it out by hand.)

- ⑩ Disconnect the flexible cable.

- ⑪ Remove the Table Mechanism Section by unhooking at the two points.

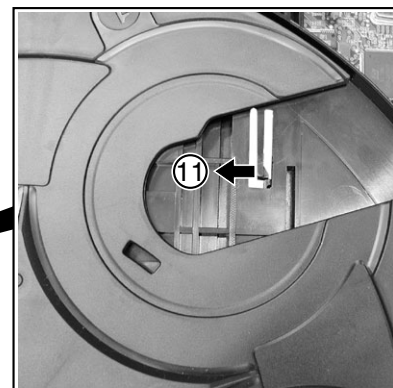
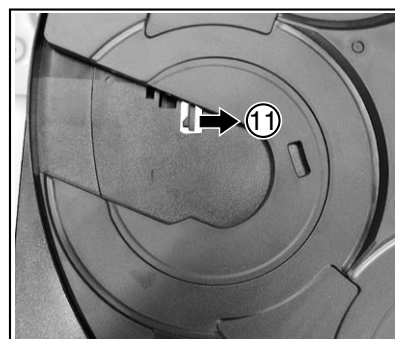
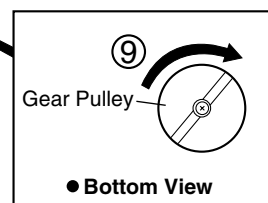
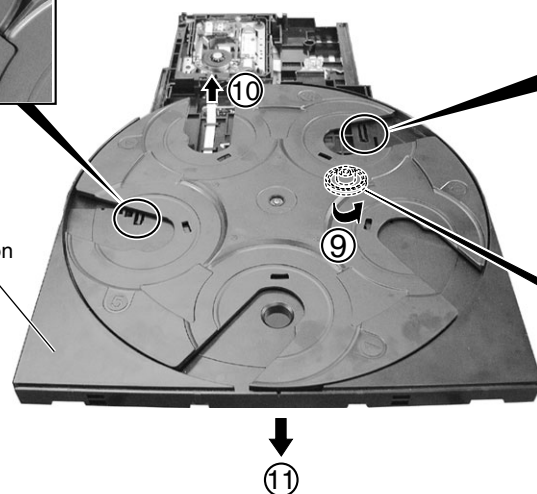


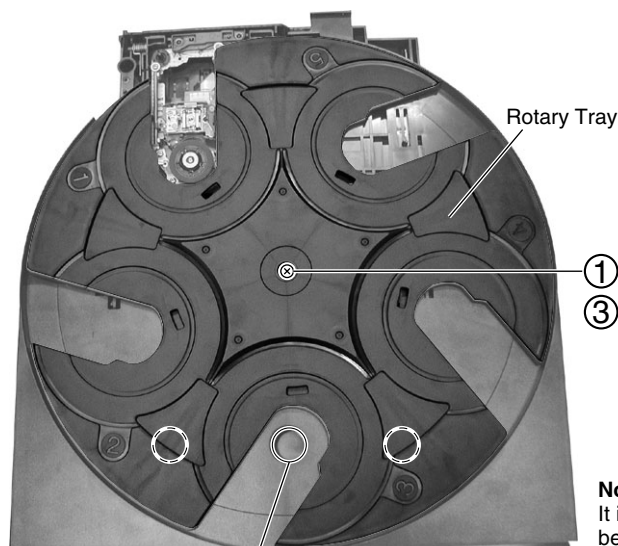
Table Mechanism Section



● If the Table Mechanism Section cannot be removed

Displacement of the rotary tray may be the cause. (If this is the case, in Step ⑪ above, the two hooks cannot be seen, because they are covered by the rotary tray.)

In this case, set the rotary tray in the correct position, following the steps below.



- ① Remove.

- ③ Tighten.

- ② Adjust the position of the rotary tray so that the center hole can be seen.

Note:

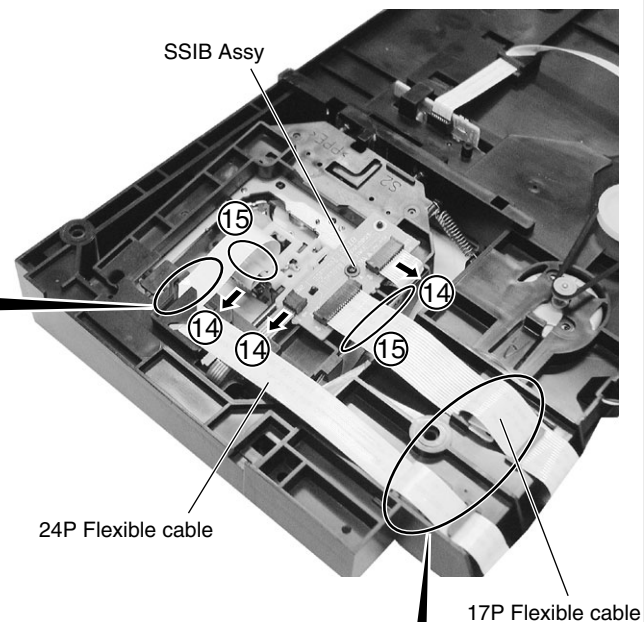
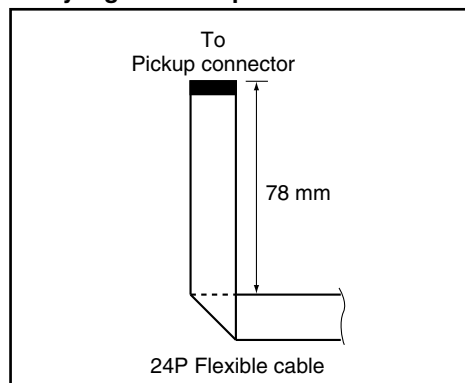
It is not necessary to set the Disc No. of the rotary tray, because the Automatic Disc No. Detection system will function.



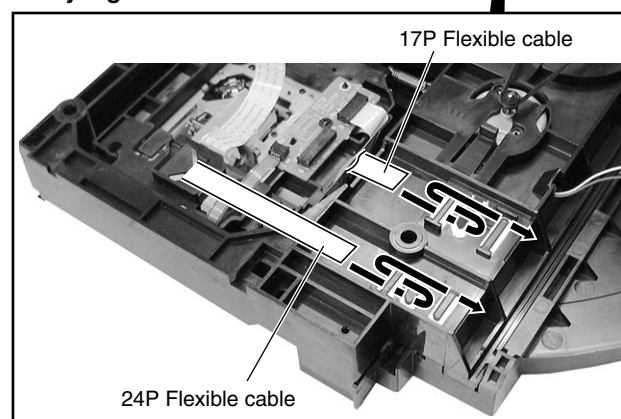
⑭ Remove the three flexible cables.

⑮ Set the arranged flexible cables out of the way.

● Styling the Pickup flexible cable

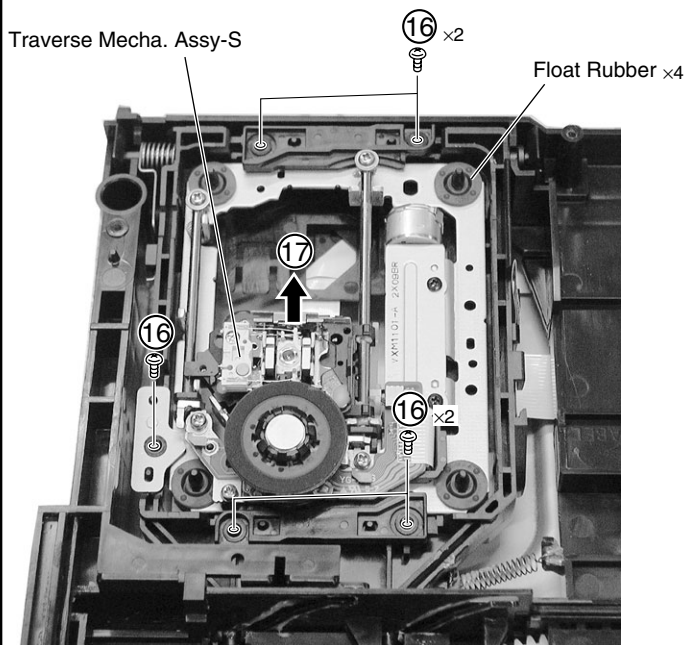


● Styling the flexible cable installation

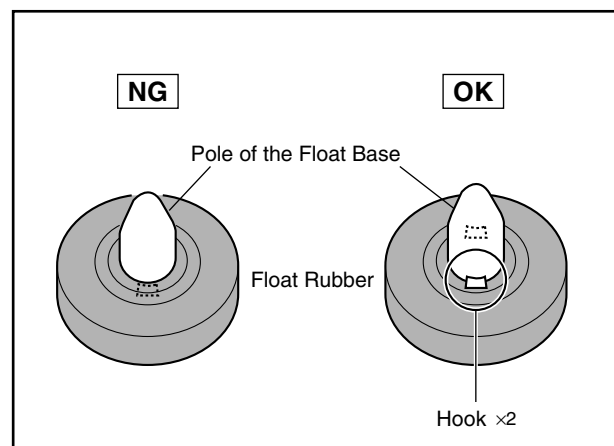


⑯ Remove the five screws.

⑰ Remove the Traverse Mecha. Assy-S.

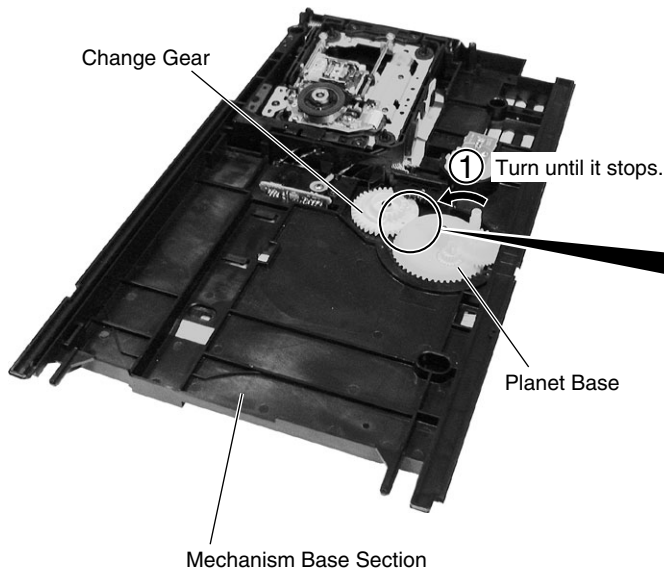


● Note on the Float Rubber Installation

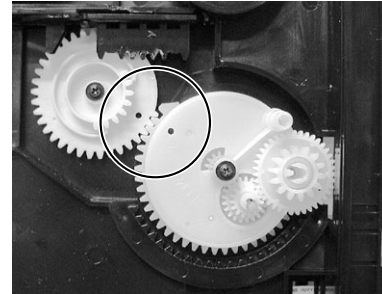


Procedures and Notes on Assembling the Table Mechanism Section

- ① Turn the planet base as shown below.

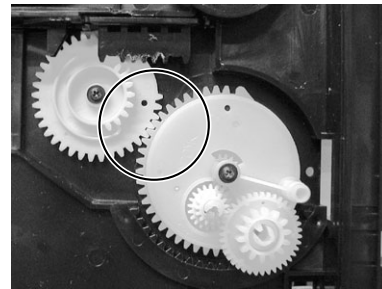


OK



If the first teeth (marked by dots) of the gears engage, it is OK.

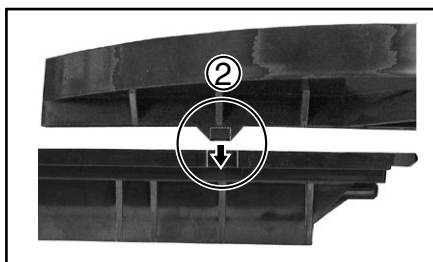
NG



If the engaged teeth of the gears are displaced by two teeth or more, a strange sound is generated, and a problem occurs.



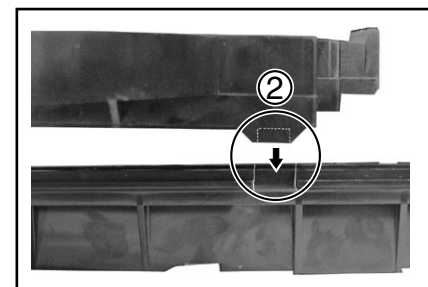
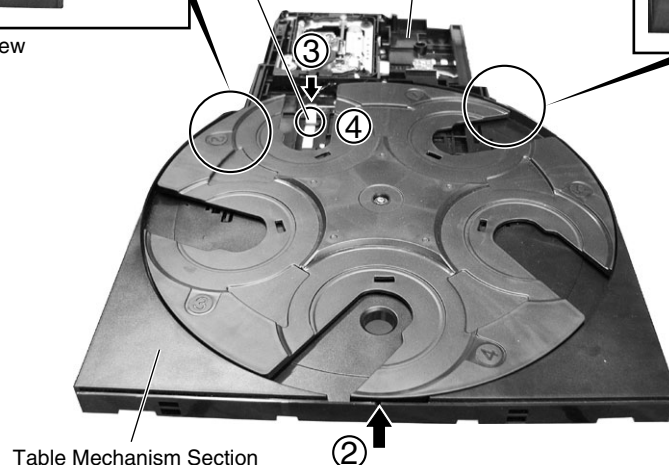
- ② Mount the Table Mechanism Section on the Mechanism Base Section.
 ③ Connect the flexible cable.
 ④ Bring an extra flexible cable close to the front side.



● Side View

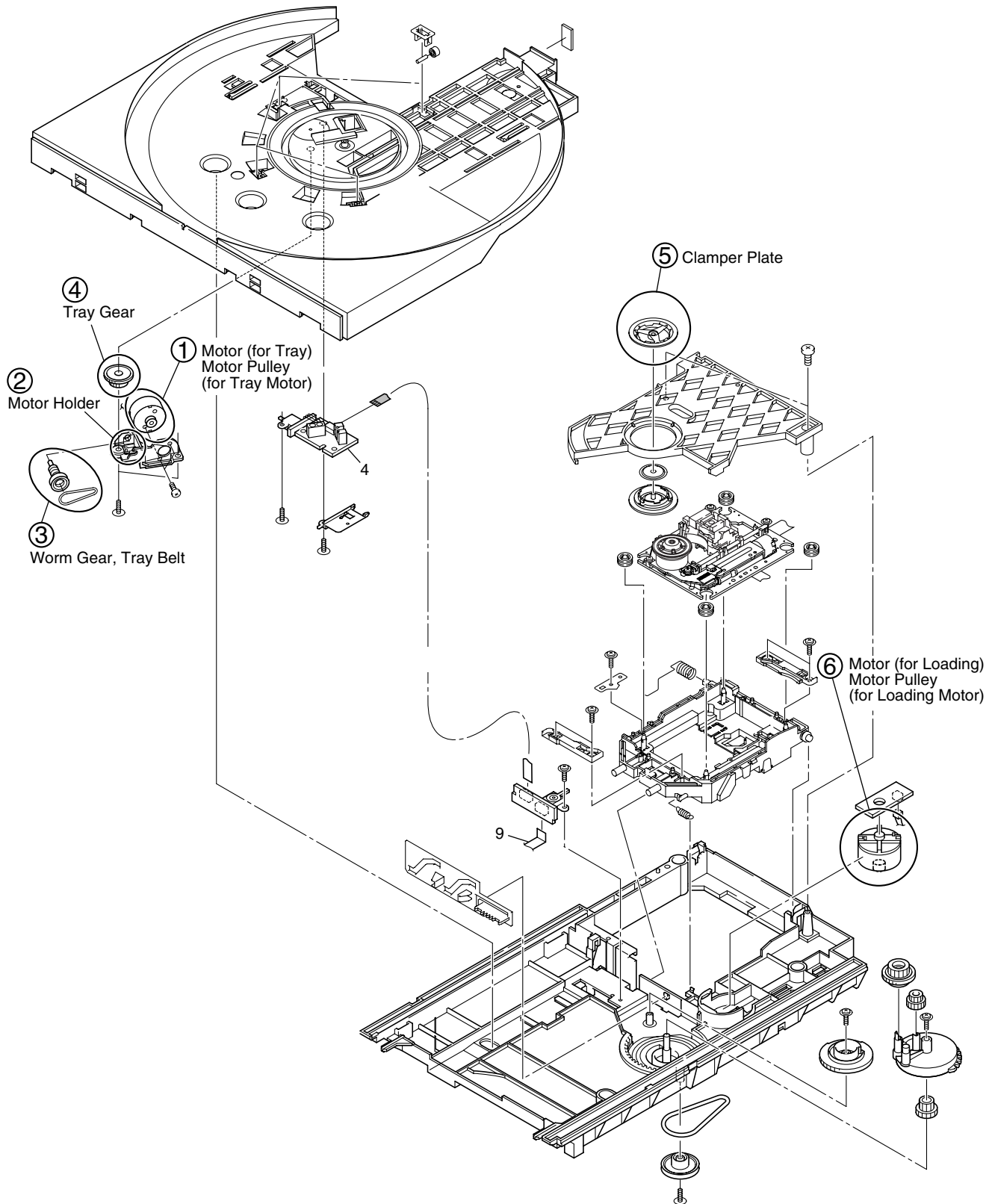
Flexible cable

Mechanism Base Section



● Side View

● Notes on Assembling the Mechanism Section



A

B

C

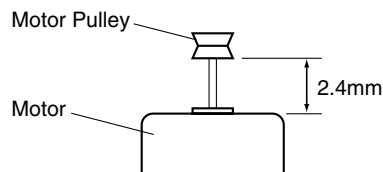
D

E

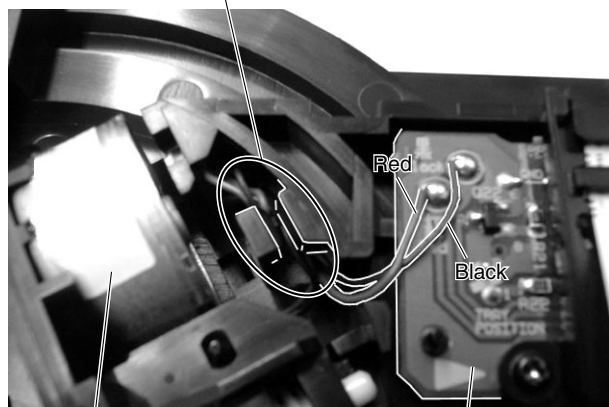
F

① Motor (for Tray), Motor Pulley (for Tray Motor)

Adjust the height of the motor pulley to 2.4mm.



Tuck the lead wires under the hook of the motor holder so that they do not disturb the tray's opening or closing.



Motor

SSRB Assy

② Motor Holder

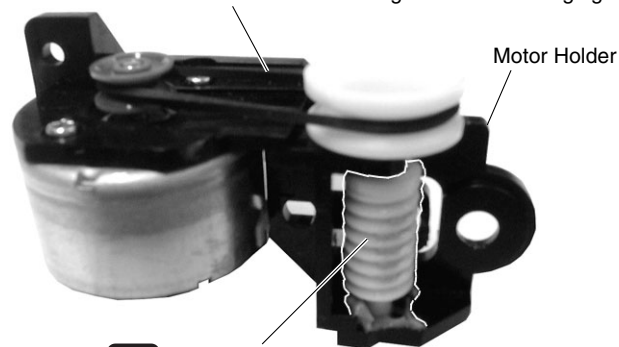
Apply lubricating oil (GYA1001) to the holder part.



Apply lubricating oil (GYA1001).

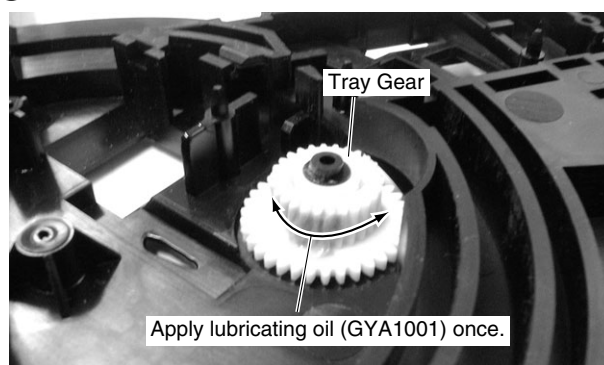
③ Worm Gear and Tray Belt

Tray Belt
Be careful not to damage it when exchanging.



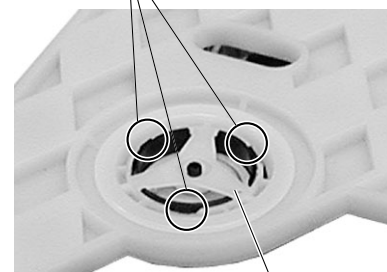
Worm Gear
Apply lubricating oil (GYA1001) once.

④ Tray Gear



⑤ Clamper Plate

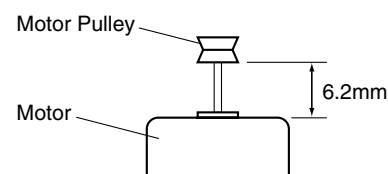
Apply adhesive on the inside of hooks.
(Prevention of dripping)



Clamper Plate

⑥ Motor (for Loading), Motor Pulley (for Loading Motor)

Adjust the height of the motor pulley to 6.2mm.



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.

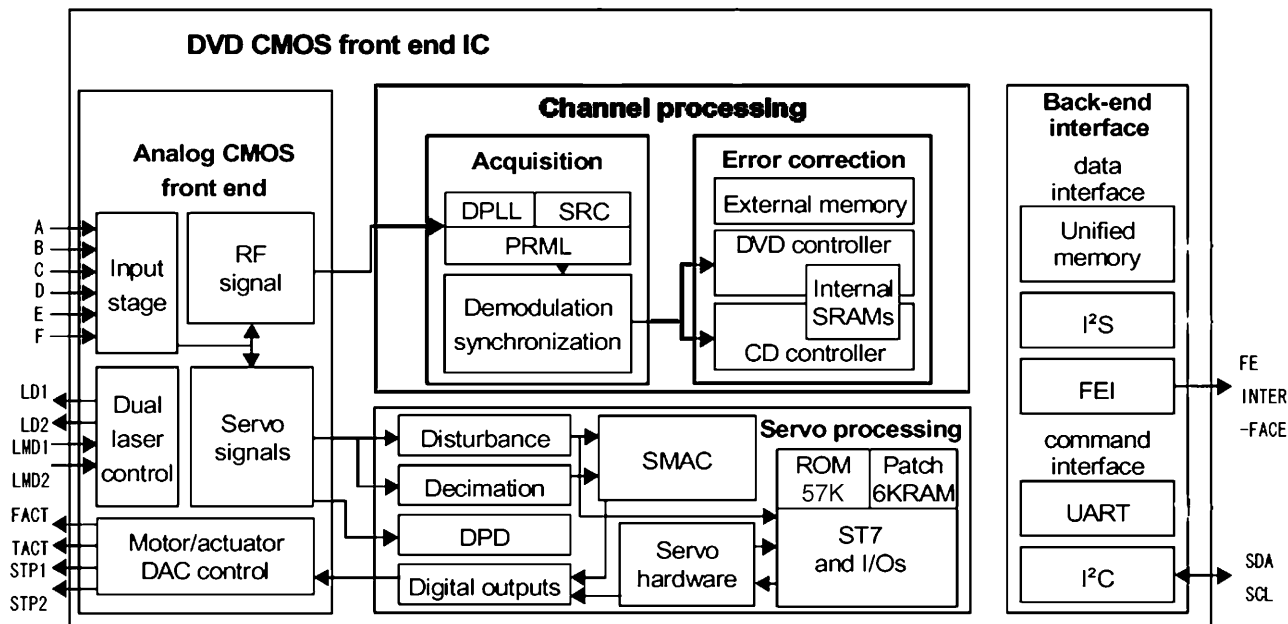
• List of IC

STM6316ATXXA, STM5589CVA, PDC111A

■ STM6316ATXXA (DVDM ASSY : IC301)

• FRONT END IC

● Block Diagram



A

● Pin Function

No.	PIN name	description	detail
1	IREF	12.7kF	Analog block reference part
2	GNDAI	GNDA	analog gnd
3	RFIN	capacitor	RF signal C association input to a demodulation block
4	RFOUT	capacitor	B1+B2+B3+B4 mixture listing from an analog block
5	VCCA18	1V8A	analog 1V8
6	A	B1	PU - B1 input
7	GNDMN	GNDA	analog gnd
8	B	B2	PU - B2 input
9	VCC33MN	3V3A	analog 3V3
10	REFD	to pick up	2V1 output for PU
11	VCC18MN	1V8A	analog 1V8
12	D	B4	PU - B4 input
13	VCCA18IS	1V8A	analog 1V8
14	C	B3	PU - B3 input
15	VCCA33IS	3V3A	analog 3V3
16	GND AIS	GNDA	analog gnd
17	VCC33SD	3V3A	analog 3V3
18	VCC18SD	1V8A	analog 1V8
19	GNDSD	GNDA	analog gnd
20	F	C	PU-3 beam C input
21	E	A	PU-3 beam A input
22	VSHIELDIS	GNDA	analog gnd
23	VCC18ADC	1V8A	analog 1V8
24	GNDADC	GNDA	analog gnd
25	VSHIELDADC	GNDA	analog gnd
26	VCC33DAC	3V3A	analog 3V3
27	GNDDAC	GNDA	analog gnd
28	SPINDLE	560ohm(st2)	DAC current listing for stepper drive
29	SLEDGE	560ohm(st1)	DAC current listing for stepper drive
30	REFEXT	20K1%	Reference for DAC
31	REFGND	refext	analog gnd
32	REFDAC	560ohm1%	DAC reference
33	FACT	560ohm1%	DAC current listing for focus
34	TACT	560ohm1%	DAC current listing for tracking
35	VCC18DAC	1V8A	analog 1V8
36	PC0	FG	FG pulse input
37	PC1	PS	Driver control signal
38	PC2	tray SW1(open)	SW input for tray OPEN position
39	PC3	SB	Driver control signal
40	PC4	SLD position	Inside SW input

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No.	PIN name	description	detail
41	VSS	GNDD	digital gnd
42	VDD33	3V3D	digital 3V3
43	PC5	780/X650	780nm/650nmLD change control signal
44	PC6	spinde PDM	Control PDM listing for spindle drive
45	PC7	opicgain	OEIC gain control signal
46	PD7	03PU/X02PU	Pull-up settlement
47	VSS	GNDD	digital gnd
48	VDD18	1V8D	digital 1V8
49	PD6	(debug)	test
50	PD5	(debug)	test
51	PD4	(DSPclk)	test
52	PD3	(DSPdata)	test
53	PD2	(DSPstrb1)	test
54	PD1	error monitor	Terminal for TRKG error monitor (30KHzLPF add need)
55	PD0	tray PDM drive	Control PDM signal for tray drive
56	VSS	GNDD	digital gnd
57	VDD33	3V3D	digital 3V3
58	OUT_ERR	RS_ERROR	BE DATA I/F
59	OUT_EVALID	RS_ERR_EN	BE DATA I/F
60	VSS	GNDD	digital gnd
61	OUT_CLK	RS_BCLK	BE DATA I/F
62	VDD18	1V8D	digital 1V8
63	OUT_DVALID	RS_DVALID	BE DATA I/F
64	OUT_DATA	RS_DATA	BE DATA I/F
65	OUT_SYNC	RS_ECCBST	BE DATA I/F
66	PE5	SCL(DMA)	FE routine download input
67	PE4	SDA(DMA)	FE routine download input
68	PE3	SCL	BE command I/F
69	PE2	SDA	BE command I/F
70	PE1	tray SW2(close)	SW input for tray CLOSE position
71	PE0	DXXINT	FE status propagation signal
72	VSS	GNDD	digital gnd
73	VDD33	3V3D	digital 3V3
74	PF1	10K-pullup	Built-in facility setting terminal
75	PF0	10K-pulldown	Built-in facility setting terminal
76	VSS	GNDD	digital gnd
77	VDD18	1V8D	digital 1V8
78	PG1	to EMULATOR	Built-in facility setting terminal
79	PG0	to EMULATOR	Built-in facility setting terminal
80	TEST	10K-pulldown	test

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No.	PIN name	description	detail
81	RESET_N	RESET	RESET input
82	VSSADC	GNDA	analog gnd
83	VDD18ADC	1V8A	analog 1V8
84	GNDPLL	GNDA	analog gnd
85	PLLOFF	GNDA	analog gnd
86	FREOUT	20MXtal	SYSTEMCLK oscillating circuit
87	FREIN	20MXtal	SYSTEMCLK oscillating circuit
88	VCC18PLL	1V8A	analog 1V8
89	LD1	650nmLD	650nmLD driving signal
90	LD2	780nmLD	780nmLD driving signal
91	VCCA33	3V3A	digital 3V3
92	TWSEL	CD_VR/GND	Monitor diodes VR junction terminal for CD
93	LMD1	LMD/LMD1	Monitor voltage junction terminal
94	LMD2	DVD_VR/LMD2	Monitor diodes VR junction terminal for DVD
95	GNDL	GNDA	analog gnd
96	TST_PM	nc	tset
97	TST_SLICE	nc	test
98	TST_ADC	nc	test
99	RFSACD	SACD_IC	RF signal output
100	VBGFILT	capacitor	Condenser junction terminal for inside reference stability

■ STM5589CVA (DVDM ASSY : IC601)

• BACK END IC

● Pin Function

No.	Pin Name	Dir.	Pin Function
1	FP_SO	OUT	Front Panel / DAC interface. Serial transfer data output.
2	A_DATA3	OUT	reserved
3	VCLK	OUT	reserved
4	VDD_3V3	-	3.3 V Power supply
5	VSS	-	Ground
6	B_DATA	OUT	reserved
7	B_BCLK	OUT	reserved
8	B_FLAG	OUT	reserved
9	TRYPOS	OUT	It is not connected except 5 Disc Changer.
		IN	Only 5 Disc Changer. Tray rotation pulse input. CAPTURE_IN0 can be used.
10	SQUEEZE	OUT	Output signal for S-Video output S1/S2 control. 'H' : squeeze output mode.
11	RTS	OUT	UART(RS-232C) Request To Send signal output.
12	LETTER	OUT	Output signal for S-Video output S1/S2 control & EURO(SCART) connector (FUNCTION SWITCHING) signal. 'H' : letter-box output mode.
13	CTS	IN	UART(RS-232C) Clear To Send signal input.
14	VDD_1V8	-	1.8 V Power supply
15	VSS	-	Ground
16	FE_DATA	IN	Front-End L6316 stream interface. Serial data input.
17	FE_BCLK	IN	Front-End L6316 stream interface. Serial clock input.
18	FE_DVALID	IN	Front-End L6316 stream interface. Data valid flag input.
19	FE_SYNC	IN	Front-End L6316 stream interface. Serial synchronize flag input.
20	FE_EVALID	IN	Front-End L6316 stream interface. Error valid flag for RS_split.
21	FE_ECCBST	IN	Front-End L6316 stream interface. ECC block start flag for RS_split.
22	I/XP	OUT	Output signal for a change of interlace/Progressive output for video driver. 'L' : progressive 'H' : interlace
23	VDD_RGB	-	RGB circuit 3.3 V Power supply
24	VSS_RGB	-	RGB circuit Ground
25	B_OUT	OUT	B / Cb
26	G_OUT	OUT	G / Y
27	R_OUT	OUT	R / Cr
28	VREF_RGB	IN	RGB DAC reference
29	IREF_RGB	IN	RGB DAC current reference
30	VDD_YCC	-	YC circuit 3.3 V Power supply
31	VSS_YCC	-	YC circuit Ground
32	Y_OUT	OUT	Y
33	C_OUT	OUT	C
34	CV_OUT	OUT	CV
35	VREF_YCC	IN	YCC DAC reference
36	IREF_YCC	IN	YCC DAC current reference
37	VDD_1V8	-	1.8 V Power supply
38	VSS	-	Ground

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No.	Pin Name	Dir.	Pin Function
39	XDRVMUTE	OUT	It is not connected except 5 Disc Changer. Only 5 Disc Changer. Output signal for motor driver muting. 'L' : muting
40	OPEN	OUT	It is not connected except 5 Disc Changer.
		IN	Only 5 Disc Changer. Input signal for tray position. 'H' : complete OPEN position.
41	CLOSE	OUT	It is not connected except 5 Disc Changer.
		IN	Only 5 Disc Changer. Input signal for tray position. 'H' : complete CLOSE position.
42	CLAMP	OUT	It is not connected except 5 Disc Changer.
		IN	Only 5 Disc Changer. Input signal for showing disc clamp position. 'H' : complete disc clamp position.
43	UNCLAMP	OUT	It is not connected except 5 Disc Changer.
		IN	Only 5 Disc Changer. Input signal for showing disc un-clamp position. 'H' : complete disc clamp position.
44	DISC_SNS	OUT	It is not connected except 5 Disc Changer.
		IN	Only 5 Disc Changer. Input signal for disc existing. 'L' : existing
45	XDRVMUTE2	OUT	reserved
46	TP-x	OUT	reserved
47	VDD_3V3	-	3.3 V Power supply
48	VDD_PCM	-	1.8 V Power supply
49	VSS_PCM	-	Ground
50	VSS	-	Ground
51	A_BCK	OUT	Audio DAC clock
52	A_DATA0	OUT	Audio DAC Front L,R data
53	A_DATA1	OUT	reserved
54	A_DATA2	OUT	reserved
55	A_MCLK	OUT	Audio DAC Master clock
56	A_LRCK	OUT	Audio DAC L/R clock
57	A_DOUT	OUT	S/PDIF(IEC60958) digital audio output.
58	SMI_A4	OUT	SMI SDRAM Address
59	SMI_A5		
60	SMI_A6		
61	SMI_A7		
62	SMI_A8		
63	SMI_A9		
64	VDD_1V8	-	1.8 V Power supply
65	VSS	-	Ground
66	SMI_A3	OUT	SMI SDRAM Address
67	SMI_A2		
68	SMI_A1		
69	SMI_A0		
70	SMI_A10		
71	SMI_A11		
72	SMI_A12		
73	SMI_A13		

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No.	Pin Name	Dir.	Pin Function
74	SMI_CS0	OUT	SMI SDRAM chip select 'L'.
75	SMI_CS1	OUT	reserved
76	SMI_RAS	OUT	SMI SDRAM RAS 'L'
77	SMI_CAS	OUT	SMI SDRAM CAS 'L'
78	SMI_WE	OUT	SMI SDRAM Write Enable 'L'
79	SMI_DQML	OUT	SMI SDRAM Lower DQM 'L': Lower select
80	SMI_DQMU	OUT	SMI SDRAM Upper DQM 'L': Upper select
81	VDD_3V3	-	3.3 V Power supply
82	SMI_CLKIN	IN	External SDRAM clock input.
83	VSS	-	Ground
84	SMI_D0	I/O	SMI SDRAM Data
85	SMI_D1		
86	SMI_D2		
87	SMI_D3		
88	SMI_D4		
89	SMI_D5		
90	SMI_D6		
91	SMI_D7		
92	SMI_D8		
93	SMI_D9		
94	VDD_1V8	-	1.8 V Power supply
95	SMI_CLKOUT	OUT	SDRAM clock output.
96	VSS	-	Ground
97	SMI_D10	I/O	SMI SDRAM Data
98	SMI_D11		
99	SMI_D12		
100	SMI_D13		
101	SMI_D14		
102	SMI_D15		
103	TRACK_CROSS	OUT	reserved
104	DSD_XPCM	OUT	reserved
105	DAC_XRST	OUT	reserved
106	ADC_PCMCLK	OUT	reserved
107	VDD_3V3	-	3.3 V Power supply
108	VSS	-	Ground
109	XTRST	IN	Diagnostic Control Unit interface
110	TMS	IN	Diagnostic Control Unit interface
111	TDO	OUT	Diagnostic Control Unit interface
112	TDI	IN	Diagnostic Control Unit interface
113	TCK	IN	Diagnostic Control Unit interface
114	ROTDRV	OUT	Only 5 disc changer. PWM output for tray rotation.
115	BOOT_FROM_ROM	IN	Boot select 'L' : Boot from DCU. 'H' : Boot form ROM.
116	LOAD_DRV	OUT	Only 5 disc changer. PWM output for tray Open/Close drive.
117	CPU_OE	OUT	OE signal for 16M bits FLASH memory for firmware. 'L': enable

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No.	Pin Name	Dir.	Pin Function
118	CPU_SDCK	OUT	CLOCK for 64M bits SDRAM for debugging firmware.
119	VDD_1V8	-	1.8 V Power supply
120	PIXCLK	IN	Master 27MHz system clock input.
121	VSS	-	Ground
122	VDD_PLL	-	Clock PLL circuit 1.8 V Power supply
123	VSS_PLL	-	Clock PLL circuit Ground
124	XRESET	IN	Power ON system RESET signal. 'L': reset
125	SACD_IRQ	IN	reserved
126	FP_XRDY	IN	Front Panel interface. Hand-shake input.
127	FE_INT	IN	Interrupt input signal from Front-End L6316.
128	F_XWE, SD_DQML	OUT	Flash memory write enable. Debug SDRAM/SRAM Lower DQM. 'L': enable, Lower select.
129	SD_DQMU	OUT	Debug SDRAM/SRAM Upper DQM 'L':upper select
130	SD_RXW	OUT	Debug SDRAM Read/Write 'L':write, 'H':read
131	CPU_WAIT	IN	CPU wait 'H' input
132	CE_FLASH	OUT	Flash memory Chip Enable 'L'.
133	CPU_CE2	OUT	reserved
134	CPU_CE1	OUT	reserved
135	SD_XRAS	OUT	Debug SDRAM RAS 'L' Debug SRAM chip enable 'L'
136	VDD_3V3	-	3.3 V Power supply
137	VSS	-	Ground
138	CPU_RAS1	OUT	reserved
139	SD_XCAS	OUT	Debug SDRAM CAS 'L'
140	SD_XCS	OUT	Debug SDRAM Chip Select 'L'
141	CPU_D0	I/O	FLASH, Debug SDRAM/SRAM data
142	CPU_D1		
143	CPU_D2		
144	CPU_D3		
145	CPU_D4		
146	CPU_D5		
147	CPU_D6		
148	CPU_D7		
149	VDD_1V8	-	1.8 V Power supply
150	VSS	-	Ground
151	CPU_D8	I/O	FLASH, Debug SDRAM/SRAM data
152	CPU_D9		
153	CPU_D10		
154	CPU_D11		
155	CPU_D12		
156	CPU_D13		
157	CPU_D14		
158	CPU_D15		
159	VDD_3V3	-	3.3 V Power supply
160	VSS	-	Ground

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No.	Pin Name	Dir.	Pin Function
161	CPU_A1	OUT	FLASH, Debug SDRAM/SRAM Address
162	CPU_A2		
163	CPU_A3		
164	CPU_A4		
165	CPU_A5		
166	CPU_A6		
167	CPU_A7		
168	CPU_A8		
169	CPU_A9		
170	CPU_A10		
171	VDD_1V8	-	1.8 V Power supply
172	VSS	-	Ground
173	CPU_A11	OUT	FLASH, Debug SDRAM/SRAM Address
174	CPU_A12		
175	CPU_A13		
176	CPU_A14		
177	CPU_A15		
178	CPU_A16		
179	CPU_A17		
180	CPU_A18		
181	CPU_A19		
182	CPU_A20		
183	CPU_A21		
184	VDD_3V3	-	3.3 V Power supply
185	VSS	-	Ground
186	XEXPE	OUT	reserved
187	FE_ERROR	IN	Front-End L6316 stream interface. ECC Error flag
188	VSEL1	OUT	EURO(SCART) connector (BLINKING) output signal 'L' : RGB output disable 'H' : RGB output enable
189	VSEL2	OUT	EURO(SCART) connector V/Y, R/C signal. 'L' : VRGB output = YCGB 'H' : VRGB output = VRGB
190	FE_RST	OUT	Front-End L6316. Hardware reset output. 'L' : reset
191	SACD_XRST	OUT	reserved
192	XMMUTE	OUT	reserved
193	B_SYNC	OUT	reserved
194	SDA	I/O	Front-End L6316 command interface I2C bus serial data line.
195	SCL	OUT	Front-End L6316 command interface I2C bus serial clock line.
196	B_WCLK	OUT	reserved
197	TXD	OUT	UART(RS-232C) data output
198	VDD_1V8		1.8 V Power supply
199	VSS	-	Ground
200	RXD	IN	UART(RS-232C) data input

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No.	Pin Name	Dir.	Pin Function
201	XAMUTE	OUT	Output signal for analog audio output line muting. 'L' : muting
202	TRIGIN	IN	Diagnostic Control Unit interface
203	TRIGOUT	OUT	Diagnostic Control Unit interface
204	DAC_XCS0	OUT	Chip enable for audio DAC serial control. 'L' : enable
205	DAC_XCS1	OUT	reserved
206	FP_ACK	OUT	Front Panel / DAC interface. Hand-shake (acknowledge) output 'H'.
207	FP_SCK	OUT	Front Panel / DAC interface. Serial transfer clock output.
208	FP_SI	IN	Front Panel interface. Serial transfer data input.

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■ PDC111A (AF ASSY : IC5501)

• System Control Microcomputer

● Pin Functions

No.	Mark	Pin Name	I/O	Function
1	PA3/WR#	DVDON/OFF	O	Control power supply for DVD module
2	PA4/RD#	HPDET	I	Detect to insert headphone
3	PA5/RS	NC	O	NC
4	P70 / INT0 / T0LCP / AN8	ACPULSE	I	AC PULSE input (Interruption)
5	P71 / INT1 / T0HCP / AN9	NC	O	NC
6	P72 / INT2 / T0IN	NC	I (O)	NC
7	P73 / INT3 / T0IN	REMOCON	I	REMOCON signal input (Interruption)
8	RES#	XRESET	I	μ-com reset input
9	XT1 / AN10	XT1	–	(When this port don't use , please connect VDD)
10	XT2 / AN11	XT2	–	(When this port don't use , please set open)
11	VSS1	VSS1	–	
12	CF1	CF1	–	
13	CF2	CF2	–	
14	VDD1	VDD1	–	
15	P80 / AN0	SIMUKE	I	Destination distinction input
16	P81 / AN1	MODEL	I	model distinction input
17	P82 / AN2	VDET	I	DVD 3.3V detection input
18	P83 / AN3	KEY1	I	Key1 input
19	P84 / AN4	KEY2	I (O)	Key2
20	P85 / AN5	VOLJOG	I (O)	VOLME JOG key input
21	P86 / AN6	ST/TUNE	I	STEREO tuned detection input
22	P87 / AN7	XPROTECT	I	Protection and Fan Error detection input
23	P10/SO0	SDATA	O	System bus data output (AMP side output)
24	P11 / SI0 / SB0	MDATA	I	System bus data input (AMP side input)
25	P12 / SCK0	SCLK	I	System bus clock input
26	P13 / SO1	DSPDI	O	Data output to DSP (MOTOROLA) and DIR
27	P14 / SI1 / SB1	DSPDO	I	Data input from DSP (MOTOROLA)
28	P15 / SCK1	DSPCK	O	Clock output to DSP (MOTOROLA) and DIR
29	P16/T1PWML	SYSCS2	O	Chip select 2 for system bus
30	P17/T1PWMH/BUZ	SYSCS1	O	Chip select 1 for system bus
31	PE0	XHPMUTE	O	HP MUTE ON/OFF
32	PE1	XRECMUTE	O	REC OUTPUT MUTE ON/OFF
33	PE2	XMUTE	O	Cch MUTE ON/OFF
34	PE3	RYR	O	REAR RELAY ON/OFF
35	PE4	RYFSC	O	FRONT/SW/CENTER RELAY ON/OFF
36	PE5	NC	O	
37	PE6	TIMERLED	O	Control TIMER LED
38	PE7	LEVELSHIFT	O	VOL 0 to 5 : H
39	VSS4	VSS4		
40	VDD4	VDD4		

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No.	Mark	Pin Name	I/O	Function
41	PF0	ATT10dB	O	Control ATT 10dB
42	PF1	ATT6dB	O	Control ATT 6dB
43	PF2	STEST	I	Set TEST MODE for Service
44	PF3	UTEST	I	Set UNIT CHECK for checker
45	PF4	DTSDMIX	O	Control of gain-up for dts down-mix
46	PF5	SWFMIX	O	Control for subwoofer mix
47	PF6	NC	I	(When this port don't use , please connect GND)
48	PF7	NC	I	(When this port don't use , please connect GND)
49	SI2P0/SO2	FLDAT	O	Data for FL driver
50	SI2P1/SI2/SB2	FLCS	O	Chip enable for FL driver
51	SI2P2/SCK2	FLCLK	O	Clock for FL driver
52	SI2P3/SCK20	XFLRST	O	Reset for FL driver
53	PWM1	NC		NC
54	PWM0	NC		NC
55	VDD2	VDD2		
56	VSS2	VSS2		
57	P00	TXCE	O	Chip enable for tuner LSI
58	P01	EXPCE	O	Chip enable for expander of LED control
59	P02	EXPDATA	O	DATA for expander of LED control
60	P03	EXPCLK	O	Clock for expander of LED control
61	P04	TXCLK	O	Clock for tuner LSI
62	P05	TXODATA	O	Data for tuner LSI
63	P06	TXMUTE	O	Control mute of tuner
64	P07	NC	O	NC
65	P20/INT4/T11IN	NC	I (O)	NC
66	P21/INT4/T11IN	TXIDATA	I	Input data from tuner LSI
67	P22/INT4/T11IN	DVDACK	I	Acknowledgement from DVD MODULE (Interruption)
68	P23/INT4/T11IN	XVMUTE	O	VIDEO MUTE request to DVD MODULE
69	P24/INT5/T11IN	DVDMUTE	I	Request of MUTE from DVD MODULE (Interruption)
70	P25/INT5/T11IN	AUDIOSELA	O	SW for AUDIO in DVD-A MODEL
71	P26/INT5/T11IN	NC	O	NC
72	P27/INT5/T11IN	XWMUTE	O	WIRE LESS MUTE request
73	P30	WSELA	O	WIRE LESS OUTPUT SELECT A
74	P31	INPUTSELB	O	AUDIO INPUT SELECT B
75	P32	INPUTSELA	O	AUDIO INPUT SELECT A
76	P33	XTL0	O	Selection X'tal to DIR
77	P34	DIRERR	I	LOCK/UNLOCK from DIR
78	P35	DIRRST	O	Reset to DIR /CODEC
79	P36	DIRCS	O	Chip select to DIR/CODEC
80	PB7/D7	DIRDO	I	Data input from DIR/CODEC

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No.	Mark	Pin Name	I/O	Function
81	PB6/D6	DSPMODE	O	MODE selection (ROM/RAM) to DSP (MOTOROLA)
82	PB5/D5	DSPHREQ	I	Error detection from DSP (MOTOROLA)
83	PB4/D4	NC	O	NC
84	PB3/D3	DSPSS	O	Slave selection to DSP (MOTOROLA)
85	PB2/D2	XDSPRST	O	RESET to DSP (MOTOROLA) MODULE
86	PB1/D1	DECMUTE	I	Detection of 1st DSP boot success from DSP MODULE
87	PB0/D0	XDSPMUTE	O	MUTE request to DSP MODULE
88	VSS3	VSS3	–	
89	VDD3	VDD3	–	
90	PC7/A7	NC	O	NC
91	PC6/A6	SYSPOW	O	Control power supply of system
92	PC5/A5	NC	O	NC
93	PC4/A4	XDVRST	O	RESET to DVD MODULE
94	PC3/A3	XSYSMUTE	O	Control mute of system
95	PC2/A2	(VOLMUTE)	O	(Control mute of E-vol IC)
96	PC1/A1	VOLCLK	O	Clock for E-vol IC
97	PC0/A0	VOLDATA/CE	O	Data/CE for E-vol IC
98	PA0/CS2#	FLASHE/D	–	for FLASH writing
99	PA1/CS1#	FLASHDO	–	for FLASH writing
100	PA2/CS0#	FLASHCLK	–	for FLASH writing

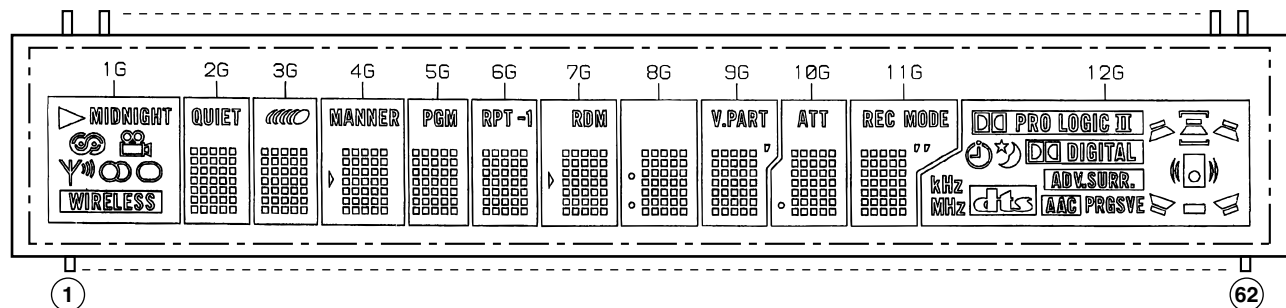
- Port0 (P00-P07) can be selected for input or output by each 4 bits (P00-P03,P04-P07). Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
 - Port1 (P10-P17) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1bit in option.
 - Port2 (P20-P27) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
 - Port3 (P30-P36) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
 - Port7 (P70-P73) can be selected for input or output by each 1 bit. Set for input when reset.
 - Port8 (P80-P87) can be selected for input or output by each 1 bit. Set for input when reset.
 - PortA (PA0-PA5) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
 - PortB (PB0-PB7) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
 - PortC (PC0-PC7) can be selected for input or output by each 1 bit. Set for input when reset. And it can be set C-MOS or Nch-OD by each 1 bit in option.
 - PortE and PortF can be selected for input or output by each 2 bits.
- In case of without RDS, it is best that RDSDATA and RDSCLK are assigned as I/O port which can be set output and output low level.

7.2.2 DISPLAY

A ■ XAV3020 (DISPLAY ASSY :V5601)

• FL DISPLAY

• Pin Assignment



• Anode Connection

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G
P1	MIDNIGHT	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	EX PRO LOGIC II
P2	QUIET	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	DCI DIGITAL
P3	MANNER	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	ADV.SURR.
P4	PGM	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	AAC PRGVE
P5	RPT-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	kHz
P6	RDM	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	MHz
P7	V.PART	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	-
P8	ATT	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	-
P9	REC MODE	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	-
P10	-	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	-
P11	-	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	-
P12	-	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	-
P13	-	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	-
P14	-	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	-
P15	-	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	-
P16	-	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	-
P17	-	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	-
P18	-	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	-
P19	-	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	-
P20	-	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	-
P21	-	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	-
P22	-	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	-
P23	-	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	-
P24	-	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	-
P25	-	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	-
P26	-	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	-
P27	-	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	-
P28	-	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	-
P29	-	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	-
P30	-	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	-
P31	-	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	-
P32	-	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	-
P33	-	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	-
P34	-	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	-
P35	-	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	-
P36	QUIET	MANNER	PGM	RPT-1	RDM	col 1	V.PART	ATT	REC MODE	-	-	-
P37	-	-	-	-	-	-	-	-	-	-	-	-

• Pin Connection

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Connection	F1	NX	NP	NP	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	P35	P34	P33	P32	P31
Pin No.	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Connection	P30	P29	P28	P27	P26	P25	P24	P23	P22	P21	NX	NX	NX	NX	NX	P20	P19	P18	P17	P16	P15
Pin No.	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	
Connection	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	P37	P36	NP	NP	NX	F2	

Note

- (1) F1, F2 : Filament
- (2) NP : No pin
- (3) NX : No extend pin
- (4) DL : Datum Line
- (5) 1G to 12G : Grid

7.2.3 CLEANING



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

Position to be cleaned	Cleaning tools
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

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

A

B

C

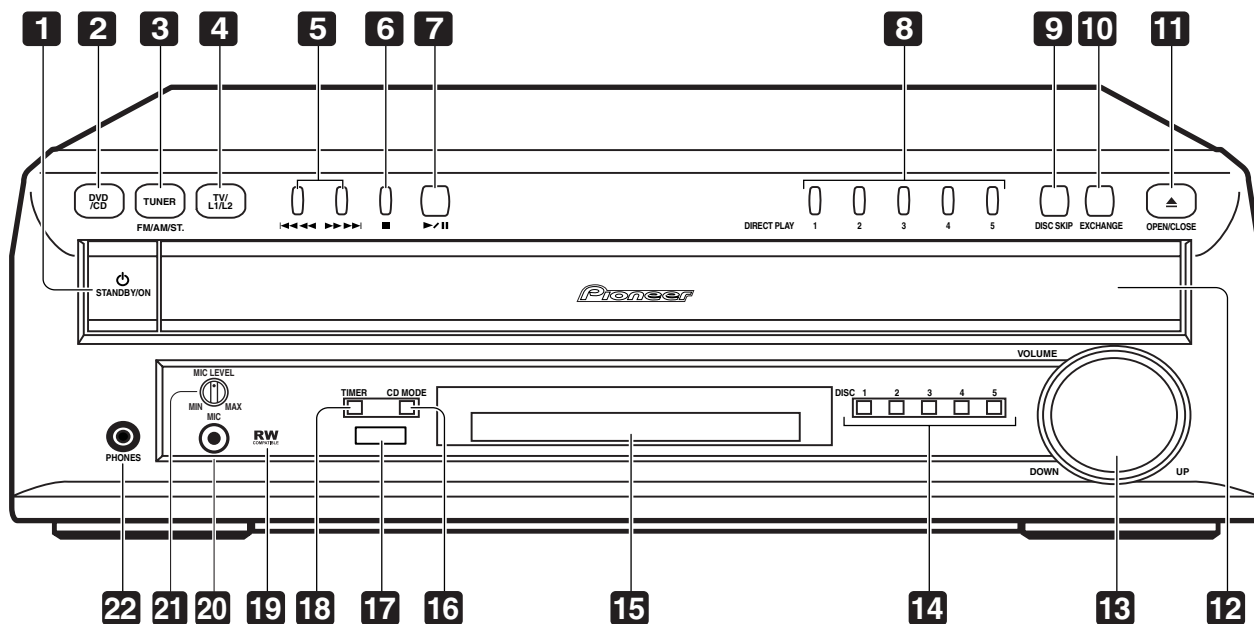
D

E

F

8. PANEL FACILITIES

Front panel



1 **STANDBY/ON**

Press to switch the system on or into standby.

2 **DVD/CD**

Press to switch to the **DVD/CD** function. Also starts/pauses/resumes playback.

3 **TUNERFM/AM/ST.**

Press to switch to the tuner function, then between bands and station presets.

4 **TV/L1/L2**

Press to switch between the external sources, **TV**, **LINE 1 (L1)** and **LINE 2 (L2)**.

5 **I◀◀ and ▶▶II**

Press to skip tracks/chapters; press and hold to scan backwards/forwards.

- When in listening to the tuner, use to tune to stations or select presets.

6

Press to stop playback.

7

Press to start or resume playback. During playback, press to pause; press again to restart playback.

8 **DIRECT PLAY** buttons

Press to start playback of any disc in the player.

9 **DISC SKIP**

- During playback, press to start playing the next disc in the player.
- If the disc tray is open while no disc is playing, the tray rotates one disc space.
- If the disc tray was opened using the **EXCHANGE** button, then pressing **DISC SKIP** rotates the disc tray two disc spaces.

10 **EXCHANGE**

Press during playback to open the disc tray without stopping playback. Press again to close the disc tray.

11 **OPEN/CLOSE**

Press to open/close the disc tray.

12 **Disc tray**

13 **VOLUME** control

Use to adjust the volume.

14 **DISC** indicators

Shows which disc spaces are currently occupied.

15 **Display**

See *Display* for detailed information.

16 **CD MODE** indicator

Lights when the CD Mode is on. In this mode, the system only plays audio CDs and WMA/MP3 discs.

17 **Remote** sensor

18 **Timer** indicator

Lights when the timer is set.

19 **RW** COMPATIBLE

This mark indicates compatibility with DVD-RW discs recorded on a DVD recorder in Video Recording (VR) mode.

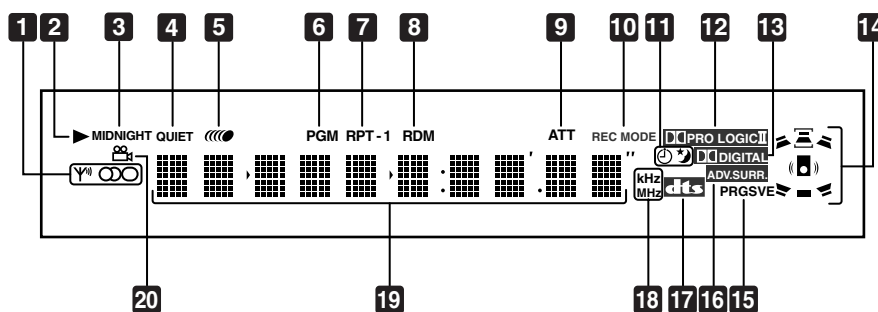
20 **Mic** jack

21 **MIC** volume

22 **PHONES** jack

Headphone jack.

Display



1 Tuner indicators



Lights when a broadcast is being received.



Lights when a stereo FM broadcast is being received in auto stereo mode.



Lights when FM mono reception is selected.

2 ▶

Lights when a disc is playing.

3 MIDNIGHT

Lights when the Midnight mode is selected.

4 QUIET

Lights when the Quiet mode is selected.



Lights to indicate random or repeat play of all discs loaded.

6 PGM

Lights when a program list has been programmed.

7 RPT and RPT-1

RPT lights during repeat play. **RPT-1** lights during repeat one-track play.

8 RDM

Lights during random play.

9 ATT

Lights when the input attenuator is active for the currently selected analog input.

10 REC MODE

Lights when Rec Mode is on.

11 Timer indicators

⌚ Lights when the timer is set

🌙 Lights when the sleep timer is active

12 PRO LOGIC II

Lights during Dolby Pro Logic decoding.

13 DIGITAL

Lights during playback of a Dolby Digital source.

14 Speaker indicators

These show which speakers are being used to output the current source. The illustrations below show some example displays.



5.1 channel surround sound



Stereo (2.1 channel) sound



3.1 channel sound with Dialogue enhancement on the center channel



5.1 channel surround sound with Virtual Surround Back mode active

(When headphones are connected, none of the speaker indicators are lit.)

15 PRGSVE

Lights when progressive scan video output is selected.

16 ADV. SURR.

Lights when one of the Advanced Surround listening modes is selected.

17 DTS

Lights during playback of a DTS source.

18 kHz / MHz

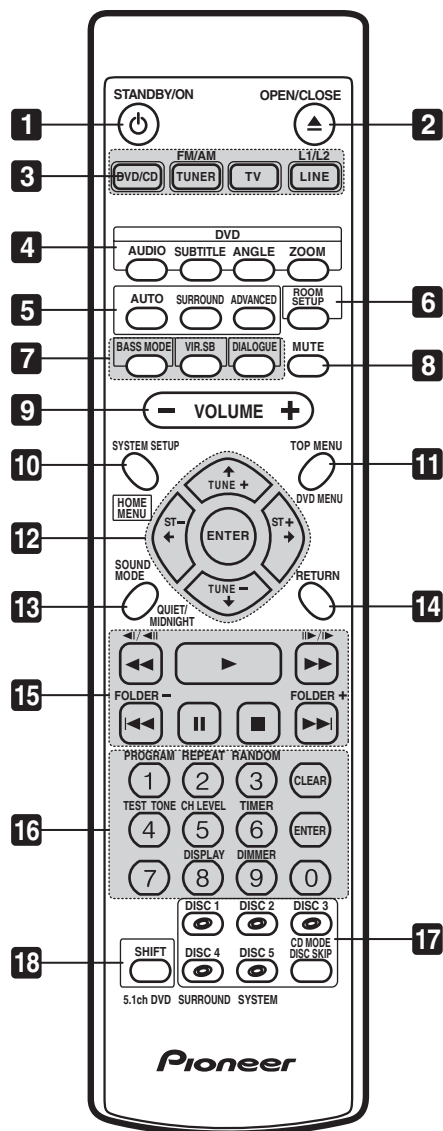
Indicates the unit of the frequency shown in the character display (**kHz** for AM, **MHz** for FM)

19 Character display



Lights during multi-angle scenes on a DVD disc

Remote control



1 **STANDBY/ON**

Press to switch the system on or into standby.

2 **OPEN/CLOSE**

Press to open/close the disc tray.

3 **Function select buttons**

Press to select the source you want to listen to (DVD/CD, TUNER, TV, LINE)

4 **DVD buttons**

AUDIO

Press to select an audio channel or language.

SUBTITLE

Press to display/change the subtitle display.

ANGLE

Press to change the camera angle during DVD multi-angle scene playback.

ZOOM

Press to change the screen zoom level.

5 **Surround sound mode buttons**

AUTO

Press to select the default decoding for the current source.

SURROUND

Use to select a Surround mode.

ADVANCED

Use to select an Advanced Surround mode.

6 **ROOM SETUP**

Press to start Room Setup.

7 **Sound enhancement buttons**

BASS MODE

Use to select a Bass Modes.

VIR. SB

Press to switch the Virtual Surround back speaker effect on/off.

DIALOGUE

Use to select a Dialogue mode.

8 **MUTE**

Press to mute all sound from the speakers and headphones (press again to cancel).

9 **VOLUME**

Use to adjust the volume.

10 **HOME MENU / SYSTEM SETUP**

- Press to display (or exit) the on-screen menu for Initial Settings, Play Mode functions, etc.
- Use with **SHIFT** for **SYSTEM SETUP**: Use to make various system and surround sound settings.

11 **DVD MENU / TOP MENU**

- Press to display a DVD-Video disc menu, or the Disc Navigator if a VR mode DVD-RW, CD, Video CD, MP3, WMA or JPEG disc is loaded.
- Use with **SHIFT** for **TOP MENU**: Use to display the top menu of a DVD disc in the play position (this may be the same as pressing **DVD MENU**)

12 **TUNE +/-, ST +/-, cursor control buttons and ENTER**

- Use the **TUNE +/-** and **ST +/-** buttons when listening to the radio to tune into stations, or select preset stations.
- Use the cursor buttons (/ / /) and enter to navigate on-screen displays and menus; **ENTER** selects an option or executes a command.

13 **SOUND MODE / QUIET/MIDNIGHT**

- Use to adjust the tone and effect level.
- Use with **SHIFT** for **QUIET/MIDNIGHT**: Use to select the Quiet and Midnight modes.

14 **RETURN**

Press to return to a previous menu screen.

15 Playback controls



Press to start or resume playback.

◀◀ and ◀|/◀||

Use for reverse slow motion playback, frame reverse and reverse scanning.

▶▶ and ||▶/|▶

Use for forward slow motion playback, frame advance and forward scanning.

◀◀|/ FOLDER –

Press to jump to the beginning of the current chapter/track, then to previous chapters/tracks.

Press **SHIFT** + ◀◀| to jump to the beginning of the previous folder

▶▶|/ FOLDER +

Press to jump to the next chapter/track (or folder by pressing **SHIFT** + ▶▶|).



Press to pause playback; press again to restart.



Press to Stop playback.

16 Number buttons and SHIFT functions

Use the number buttons for selecting chapters /tracks from a disc directly; use with the **SHIFT** button to access the functions printed in green.

PROGRAM (SHIFT + 1)

Use to program/play a program list.

REPEAT (SHIFT + 2)

Use to select a repeat play mode.

RANDOM (SHIFT +3)

Use to select a random play mode.

TEST TONE (SHIFT + 4)

Use to output the test tone (for speaker setup).

CH LEVEL (SHIFT +5)

Use to adjust the speaker level.

TIMER (SHIFT +6)

Press to display the clock and to access the timer menu.

DISPLAY (SHIFT +8)

Press to display/change disc information shown on-screen.

DIMMER (SHIFT +9)

Press to switch between normal and dimmed front panel display.

CLEAR

Press to clear an entry.

ENTER

Press to select menu options, etc. (works exactly the same as the **ENTER** button in 12 above).

17 Disc selection buttons

DISC select buttons

Use to select discs in the player.

DISC SKIP / CD MODE

- During playback, press to start playing the next disc in the player.
- If the disc tray is open while no disc is playing, the tray rotates one disc space.
- If the disc tray was opened using the **EXCHANGE** button (front panel only), then pressing **DISC SKIP** rotates the disc tray two disc spaces.
- Use with **SHIFT** for **CD MODE**: Use to switch CD Mode on/off.

18 SHIFT

Use to access the functions/commands printed in green on the remote (press the button for the function you want while holding down **SHIFT**).