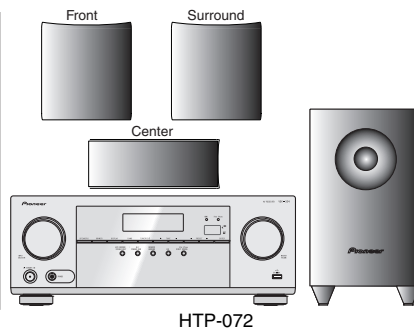


Pioneer

Service Manual



ORDER NO.
RRV4432

Home Theater Package

HTP-072

Home Cinema Package

HTP-073

AV Receiver

VSX-324-K-P

Subwoofer

S-22W-P

Speaker System

S-11A-P

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

Model	Type	Power Requirement	Remarks
HTP-072	CMXESM	AC 120 V	
HTP-072	YXE8	AC 220 V to 230 V	
HTP-072, HTP-073	VYXE8	AC 220 V to 230 V	
HTP-072	DLXE	AC 110 V to 127 V/220 V to 240 V	
HTP-072	PWXE	AC 220 V to 230 V	
HTP-072	AXQ5	AC 220 V	
VSX-324-K-P	CMXESM	AC 120 V	
VSX-324-K-P	YXE8	AC 220 V to 230 V	
VSX-324-K-P	VYXE8	AC 220 V to 230 V	
VSX-324-K-P	DLXE	AC 110 V to 127 V/220 V to 240 V	
VSX-324-K-P	PWXE	AC 220 V to 230 V	
VSX-324-K-P	AXQ5	AC 220 V	
S-22W-P	_____	_____	
S-11A-P	_____	_____	

HTP-072 and HTP-073 is a Home Cinema Package and consists of VSX-324-K-P, S-22W-P and S-11A-P.



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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 may contain a chemical known to the State of California to cause cancer, or birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

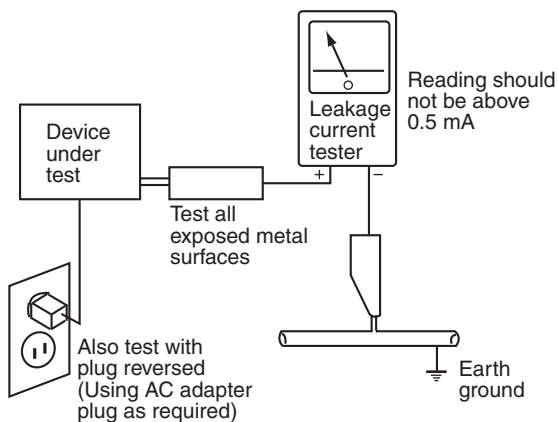
(FOR USA MODEL ONLY)

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 120 V 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.

CONTENTS

SAFETY INFORMATION.....	2	
1. SERVICE PRECAUTIONS.....	4	
1.1 NOTES ON SOLDERING.....	4	A
1.2 NOTES ON REPLACING PARTS.....	4	
1.3 SERVICE NOTICE.....	4	
2. SPECIFICATIONS.....	5	
3. BASIC ITEMS FOR SERVICE.....	7	
3.1 CHECK POINTS AFTER SERVICING.....	7	
3.2 JIGS LIST.....	7	
3.3 PCB LOCATIONS.....	8	
4. BLOCK DIAGRAM.....	10	
4.1 OVERALL WIRING DIAGRAM.....	10	
4.2 OVERALL BLOCK DIAGRAM.....	12	
4.3 VCC BLOCK DIAGRAM.....	14	
4.4 GND BLOCK DIAGRAM.....	16	B
5. DIAGNOSIS.....	18	
5.1 TROUBLESHOOTING.....	18	
5.2 PROTECTION CIRCUIT.....	23	
5.3 IC INFORMATION.....	24	
6. SERVICE MODE.....	27	
7. DISASSEMBLY.....	31	
7.1 VSX-324-K-P.....	31	
7.2 S-22W-P.....	35	
7.3 S-11A-P.....	36	
8. EACH SETTING AND ADJUSTMENT.....	37	
8.1 UPDATING OF THE FIRMWARE.....	37	
9. EXPLODED VIEWS AND PARTS LIST.....	42	C
9.1 PACKING SECTION.....	42	
9.2 VSX-324-K-P.....	44	
9.3 S-22W-P.....	47	
9.4 S-11A-P.....	48	
10. SCHEMATIC DIAGRAM.....	50	
10.1 MAIN ASSY (1/3).....	50	
10.2 MAIN ASSY (2/3).....	52	
10.3 MAIN ASSY (3/3).....	54	
10.4 OPTCO ASSY.....	55	
10.5 D-MAIN ASSY (1/3).....	56	
10.6 D-MAIN ASSY (2/3).....	58	
10.7 D-MAIN ASSY (3/3).....	60	D
10.8 AMP6 ASSY.....	62	
10.9 CPU ASSY.....	64	
10.10 FRONT, INSEL, HP and FUSB ASSYS.....	66	
10.11 CNT ASSY.....	68	
10.12 STBY and V_SEL ASSYS.....	70	
10.13 S-11A-P.....	72	
11. PCB CONNECTION DIAGRAM.....	74	
11.1 MAIN and OPTCO ASSYS.....	74	
11.2 D-MAIN ASSY.....	78	
11.3 AMP6 ASSY.....	82	
11.4 CPU ASSY.....	84	E
11.5 FRONT, INSEL, HP and FUSB ASSYS.....	86	
11.6 CNT ASSY.....	88	
11.7 STBY ASSY.....	89	
11.8 V_SEL, G-L, G-T and G-CNT ASSYS.....	90	
12. PCB PARTS LIST.....	91	

1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C.
Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

1.2 NOTES ON REPLACING PARTS

The part listed below is difficult to replace as a discrete component part.
When the part listed in the table is defective, replace whole Assy.

Assy Name	Parts that is Difficult to Replace			
	Ref No.	Function	Part No.	Remarks
D-MAIN Assy	IC2012	INTERFACE IC	_____	IC with heat-pad
	IC2013	D-MAIN 1.2 V Power Supply IC	_____	IC with heat-pad
	IC2015	D-MAIN 1.8 V Power Supply IC	_____	IC with heat-pad
	IC2016	DSP IC	_____	IC with heat-pad
	IC2017	Low Dropout Power Supply IC	_____	IC with heat-pad
	IC2020	APPLE AUTHENTICATION IC	_____	IC with heat-pad
	IC2211	D-MAIN 5 V Power Supply IC	J126780500450-IL	IC with heat-pad
	IC2213	D-MAIN 3.3 V Power Supply IC	_____	IC with heat-pad
	IC2214	D-MAIN 5 V Power Supply IC	_____	IC with heat-pad
	IC400	ADJUSTABLE LDO REGULATOR	J126238700010-IL	IC with heat-pad

1.3 SERVICE NOTICE

- Discharging**
For more detail, please refer to "7. DISASSEMBLY - 1. Discharging".

2. SPECIFICATIONS

[VSX-324-K-P]

Amplifier section

(CMXESM only)

Continuous average power output of 60 watts* per channel, min., at 8 ohms, from 40 Hz to 20 000 Hz with no more than 0.2 %** total harmonic distortion.

Front (stereo) 60 W + 60 W
Rated power output

Front, Center, Surround 100 W per channel (1 kHz, 6 Ω , 0.7 %)

Guaranteed speaker impedance 6 Ω to 16 Ω

Audio section

(CMXESM)

Input (Sensitivity/Impedance)

LINE 200 mV/47 k Ω

Output (Level/Impedance)

REC 200 mV/2.2 k Ω

Signal-to-Noise Ratio (IHF, short circuited, A network)

LINE 98 dB

* Measured pursuant to the Federal Trade Commission's Trade

Regulation rule on Power Output Claims for Amplifiers

** Measured by Audio Spectrum Analyzer

(YXE8, VYXE8, PWXE)

Rated power output (Front, Center, Surround)

..... 100 W per channel (1 kHz, 6 Ω , 0.7 %)

Total Harmonic Distortion 0.06 % (20 Hz to 20 kHz, 8 W, 50 W/ch)

Frequency response (LINE Pure Direct mode) ... 10 Hz to 70 kHz $\pm 0_{-3}$ dB

Guaranteed speaker impedance 6 Ω to 16 Ω

Input (Sensitivity/Impedance)

LINE 200 mV/47 k Ω

Output (Level/Impedance)

REC 200 mV/2.2 k Ω

Signal-to-Noise Ratio (IHF, short circuited, A network)

LINE 98 dB

(DLXE)

Rated power output (Front, Center, Surround)

..... 100 W per channel (1 kHz, 6 Ω , 0.7 %)

Maximum power output (Front, Center, Surround)

..... 120 W per channel (1 kHz, 6 Ω , 10 %)

Total Harmonic Distortion 0.06 % (20 Hz to 20 kHz, 8 W, 50 W/ch)

Frequency response (LINE Pure Direct mode) ... 10 Hz to 70 kHz $\pm 0_{-3}$ dB

Guaranteed speaker impedance 6 Ω to 16 Ω

Input (Sensitivity/Impedance)

LINE 200 mV/47 k Ω

Output (Level/Impedance)

REC 200 mV/2.2 k Ω

Signal-to-Noise Ratio (IHF, short circuited, A network)

LINE 98 dB

(AXQ5)

Rated power output (Front, Center, Surround)

..... 90 W per channel (1 kHz, 6 Ω , 0.7 %)

Maximum power output (Front, Center, Surround)

..... 110 W per channel (1 kHz, 6 Ω , 10 %)

Guaranteed speaker impedance 6 Ω to 16 Ω

Video section

Signal level

Composite 1 Vp-p (75 Ω)

Tuner section

(CMXESM)

Frequency Range (FM) 87.5 MHz to 108 MHz

Antenna Input (FM) 75 Ω unbalanced

Frequency Range (AM) 530 kHz to 1 700 kHz

Antenna (AM) Loop antenna

(YXE8, VYXE8, PWXE)

Frequency Range (FM) 87.5 MHz to 108 MHz

Antenna Input (FM) 75 Ω unbalanced

Frequency Range (AM) 531 kHz to 1602 kHz

Antenna (AM) Loop antenna

(DLXE, AXQ5)

Frequency Range (FM) 87.5 MHz to 108 MHz

Antenna Input (FM) 75 Ω unbalanced

Frequency Range (AM)

9 kHz step 531 kHz to 1602 kHz

10 kHz step 530 kHz to 1700 kHz

Antenna (AM) Loop antenna

Digital In/Out section

HDMI terminal Type A (19-pin)

HDMI output type 5 V, 100 mA

USB (iPod) terminal USB2.0 Full Speed (Type A) 5 V, 1 A

Miscellaneous

(CMXESM)

Power Requirements AC 120 V, 60 Hz

Power Consumption 185 W

In standby 0.45 W

Dimensions 435 mm (W) x 168 mm (H) x 362.5 mm (D)

171/8 in. (W) x 65/8 in. (H) x 145/16 in. (D)

Weight (without package) 7.5 kg (16 lb 9 oz)

(YXE8, VYXE8, PWXE)

Power Requirements AC 220 V to 230 V, 50 Hz/60 Hz

Power Consumption 185 W

In standby 0.45 W

Dimensions 435 mm (W) x 168 mm (H) x 362.5 mm (D)

Weight (without package) 7.5 kg

(DLXE)

Power Requirements ... AC 110 V to 127 V/220 V to 240 V, 50 Hz/60 Hz

Power Consumption 195 W

In standby 0.45 W

Dimensions 435 mm (W) x 168 mm (H) x 362.5 mm (D)

Weight (without package) 7.5 kg

(AXQ5)

Power Requirements AC 220 V, 50 Hz/60 Hz

Power Consumption 185 W

In standby 0.45 W

Dimensions 435 mm (W) x 168 mm (H) x 362.5 mm (D)

Weight (without package) 7.5 kg

A [S-22W-P]

Cabinet	Bass-reflex, floor type
Speaker	16 cm cone type
Nominal impedance	6 Ω
Outline Dimension	230 mm (W) x 418 mm (H) x 358 mm (D) (9 1/16 in.(W) x 16 7/16 in.(H) x 14 1/8 in.(D))
Weight (without package)	5.1 kg (11 lb 4 oz)

[S-11A-P]

Front speakers / Surround speakers

Enclosure

B	Front speakers.....	Closed-box bookshelf type
	Surround speakers	Closed-box bookshelf type
	System.....	7.7 cm 1-way system
	Speaker	7.7 cm cone type
	Nominal impedance.....	6 Ω
Dimensions..... 106 mm (W) x 116 mm (H) x 106 mm (D)		
(4 3/16 in.(W) x 4 9/16 in.(H) x 4 3/16 in.(D))		
■ Weight		
	Front speakers.....	0.6 kg (1 lb 5 oz)
	Surround speakers	0.6 kg (1 lb 5 oz)

Center speaker

Enclosure.....	Closed-box bookshelf type
System.....	7.7 cm 1-way system
Speaker.....	7.7 cm cone type
Nominal impedance.....	6 Ω
Dimensions.....	270 mm (W) x 100 mm (H) x 106 mm (D) (10 5/8 in.(W) x 3 15/16 in.(H) x 4 3/16 in.(D))
Weight.....	0.8 kg (1 lb 13 oz)

Accessories



Remote control (AXD7690)
(8300769000010-IL)



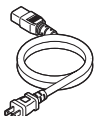
Dry cell batteries
(AAA size IEC R03) x2



FM wire antenna
(E605010140010-IL)



AM loop antenna
(E601019000010-IL)



Power cord (VYXE8, DLXE only)
(VYXE8: L068250100040-IL)
(DLXE: L068250160020-IL)

Speaker cord (4 m) x 4
(8952S11005480-IL)

Speaker cord (10 m) x 2
(8952S11005490-IL)

Non-skid pads x 20
(8952S11005510-IL)

Operating instructions (CD-ROM) (YXE8, VYXE8, PWXE only)
(HTP-072/YXE8, VYXE8, PWXE: 6517000001380-IL)
(HTP-073/VYXE8: L068250160020-IL)

Quick start guide (YXE8, VYXE8, PWXE only)
(HTP-072/YXE8, VYXE8, PWXE: 5707000008050-IL)
(HTP-073/VYXE8: 5707000008060-IL)

Operating instructions
(HTP-072/CMXESM: 5707000008070-IL, 5707000008080-IL)
(HTP-072/YXE8, VYXE8, PWXE:
ARC8230, ARB7529, ARC8231, ARC8229, ARC8232, ARC8233,
ARC8235, ARB7531, ARC8236, ARC8234, ARC8237, ARC8238)
(HTP-072/DLXE: 5707000008090-IL, 5707000008100-IL)
(HTP-072/AXQ5: 5707000008110-IL, 5707000008120-IL)
(HTP-073/YXE8:
ARC8245, ARB7530, ARC8246, ARC8244, ARC8247, ARC8248
ARC8240, ARB7532, ARC8241, ARC8239, ARC8242, ARC8243)

Warranty card (YXE8, VYXE8, AXE5 only)

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

Items to be checked after servicing

To keep the product quality after servicing, confirm recommended check points shown below.

No.	Procedures	Check points
1	Confirm whether the customer complain has been solved. If the customer complain occurs with the particular source, such as Dolby Digital, DTS, AAC, DVD-A and HDMI, input it for the operation check.	The customer complain must not be reappeared. Video, Audio and operations must be normal.
2	Check the analog audio playback. (Make the analog connections with a DVD player.)	Each channel audio and operations must be normal.
3	Check the digital audio playback. (Make the digital connections with a DVD player.)	Each channel audio and operations must be normal.
4	Check surround playback. (Select Surround mode and check the multichannel operations via the DSP circuit.)	Each channel audio and operations must be normal.
5	Check the video outputs. (Connect with a DVD player.)	Video and operations must be normal.
6	Check the tuner (AM and FM) operations.	Audio and operations must be normal.
7	Check the sound from headphone output.	Sound must be normal, without noise.
8	Check the appearance of the product.	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding video and audio.

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Flicker	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

3.2 JIGS LIST

Jigs List

Jig Name	Part No.	Remarks
RS-232C update jig (Jig + 10P FFC)	GGF1642	MAIN microcomputer firmware update
RS-232C cable (9-pin to 9-pin, straight cable)	(Marketing product)	(RS-232C ↔ Rear panel)
RS-232C update jig	GGF1646	HDMI & CEC (SUB) microcomputer firmware update
USB cable (USB A-Type ↔ USB B-Type)	(Marketing product)	(USB ↔ Rear panel)
10P extension jig cable	GGD1628	Diagnosis (AMP Assy ↔ MAIN Assy)
3P extension jig cable	GGD1773	Diagnosis (AMP Assy ↔ CPU Assy)
Board to board extension jig cable	GGD1849	Diagnosis (D-MAIN Assy ↔ CPU Assy)
Board to board extension jig cable	GGD1850	Diagnosis (D-MAIN Assy ↔ CPU Assy)
Board to board extension jig cable	GGD1851	Diagnosis (D-MAIN Assy ↔ CNT Assy)

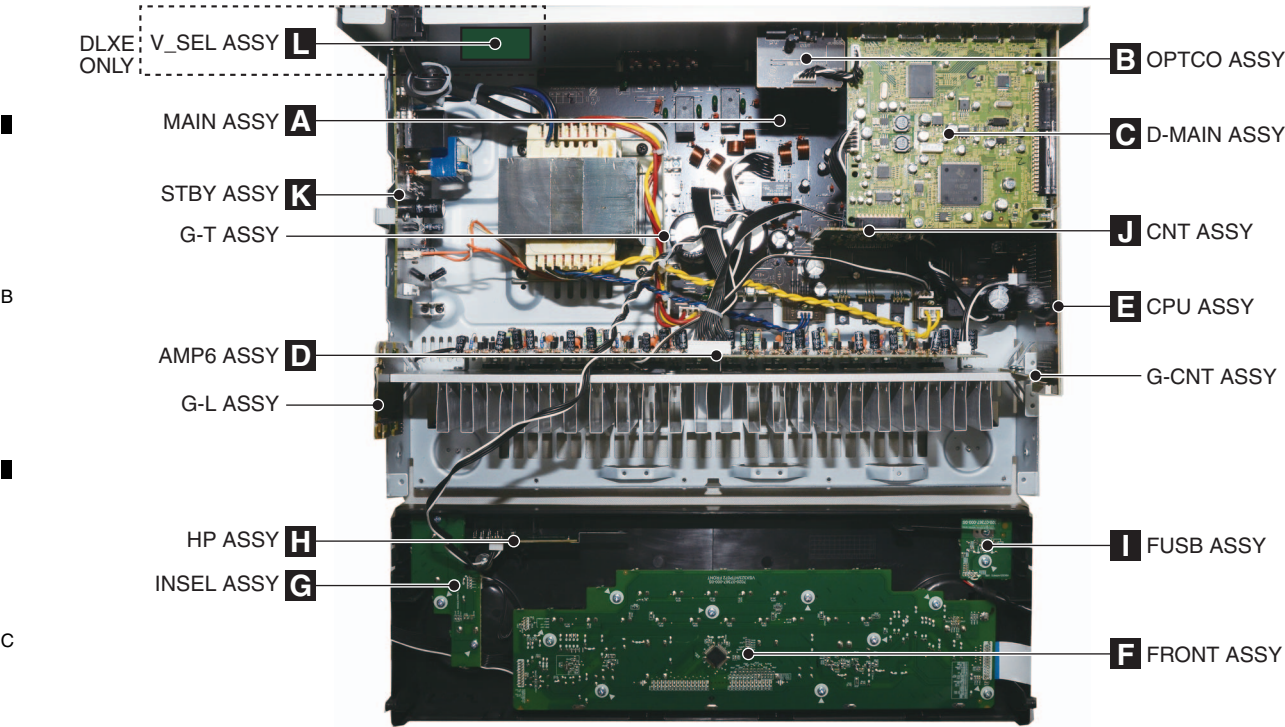
Lubricants and Glues List



Name	Part No.	Remarks
Silicon grease	GEM1057	Refer to "9.2 VSX-324-K-P SECTION".
Silicon adhesive	GYA1011 (KE40RTV-W)	Refer to "9.2 VSX-324-K-P SECTION".

3.3 PCB LOCATIONS

A ■ VSX-324-K-P



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.

LIST OF ASSEMBLIES

Mark	Symbol and Description	VSX-324-K-P /CMXESM	VSX-324-K-P /YXE8	VSX-324-K-P /VYXE8	VSX-324-K-P /DLXE	VSX-324-K-P /PWXE	VSX-324-K-P /AXQ5
NSP	1..PCB TTL ASSY MAIN	7025HK1215070-IL	7025HK1215010-IL	7025HK1215050-IL	7025HK1215040-IL	7025HK1215030-IL	7025HK1215020-IL
	2.. MAIN ASSY (PCB SUB ASSY MAIN)	7028073701040-IL	7028073701010-IL	7028073701010-IL	7028073701030-IL	7028073701020-IL	7028073701020-IL
	2.. OPTCO ASSY (PCB SUB ASSY OPTCO)	7028073702010-IL	7028073702010-IL	7028073702010-IL	7028073702010-IL	7028073702010-IL	7028073702010-IL
	2.. G-L ASSY (PCB SUB ASSY G-L)	7028073704010-IL	7028073704010-IL	7028073704010-IL	7028073704010-IL	7028073704010-IL	7028073704010-IL
	2.. G-T ASSY (PCB SUB ASSY G-T)	7028073705010-IL	7028073705010-IL	7028073705010-IL	7028073705010-IL	7028073705010-IL	7028073705010-IL
	2.. G-CNT ASSY (PCB SUB ASSY G-CNT)	7028073706010-IL	7028073706010-IL	7028073706010-IL	7028073706010-IL	7028073706010-IL	7028073706010-IL
	2.. V_SEL ASSY (PCB SUB ASSY V_SEL)	Not used	Not used	Not used	7028073703020-IL	Not used	Not used
NSP	1..PCB TTL ASSY DMAIN	7025HK1215071-IL	7025HK1215011-IL	7025HK1215051-IL	7025HK1215041-IL	7025HK1215031-IL	7025HK1215021-IL
	2.. D-MAIN ASSY (PCB SUB ASSY DMAIN)	7028073691010-IL	7028073691010-IL	7028073691010-IL	7028073691010-IL	7028073691010-IL	7028073691010-IL
	1..PCB TTL ASSY FRONT	7025HK1215072-IL	7025HK1215012-IL	7025HK1215052-IL	7025HK1215042-IL	7025HK1215032-IL	7025HK1215022-IL
	2.. FRONT ASSY (PCB SUB ASSY FRONT)	7028073671010-IL	7028073671010-IL	7028073671010-IL	7028073671010-IL	7028073671010-IL	7028073671010-IL
	2.. HP ASSY (PCB SUB ASSY HP)	7028073672020-IL	7028073672020-IL	7028073672020-IL	7028073672020-IL	7028073672020-IL	7028073672020-IL
NSP	2.. FUSB ASSY (PCB SUB ASSY FUSB)	7028073673010-IL	7028073673010-IL	7028073673010-IL	7028073673010-IL	7028073673010-IL	7028073673010-IL
	2.. INSEL ASSY (PCB SUB ASSY INSEL)	7028073674010-IL	7028073674010-IL	7028073674010-IL	7028073674010-IL	7028073674010-IL	7028073674010-IL
	1..PCB TTL ASSY CPU	7025HK1215073-IL	7025HK1215013-IL	7025HK1215053-IL	7025HK1215043-IL	7025HK1215033-IL	7025HK1215023-IL
	2.. CPU ASSY (PCB SUB ASSY CPU)	7028073681070-IL	7028073681010-IL	7028073681050-IL	7028073681040-IL	7028073681030-IL	7028073681020-IL
	2.. STBY ASSY (PCB SUB ASSY STBY)	7028073682050-IL	7028073682010-IL	7028073682030-IL	7028073682040-IL	7028073682010-IL	7028073682020-IL
NSP	2.. CNT ASSY (PCB SUB ASSY CNT)	7028073683010-IL	7028073683010-IL	7028073683010-IL	7028073683010-IL	7028073683010-IL	7028073683010-IL
	1..PCB TTL ASSY AMP6	7025HK1215074-IL	7025HK1215014-IL	7025HK1215054-IL	7025HK1215044-IL	7025HK1215034-IL	7025HK1215024-IL
	2.. AMP6 ASSY (PCB SUB ASSY AMP6)	7028073711010-IL	7028073711010-IL	7028073711010-IL	7028073711010-IL	7028073711010-IL	7028073711010-IL

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HTP-072

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4. BLOCK DIAGRAM

4.1 OVERALL WIRING DIAGRAM

A

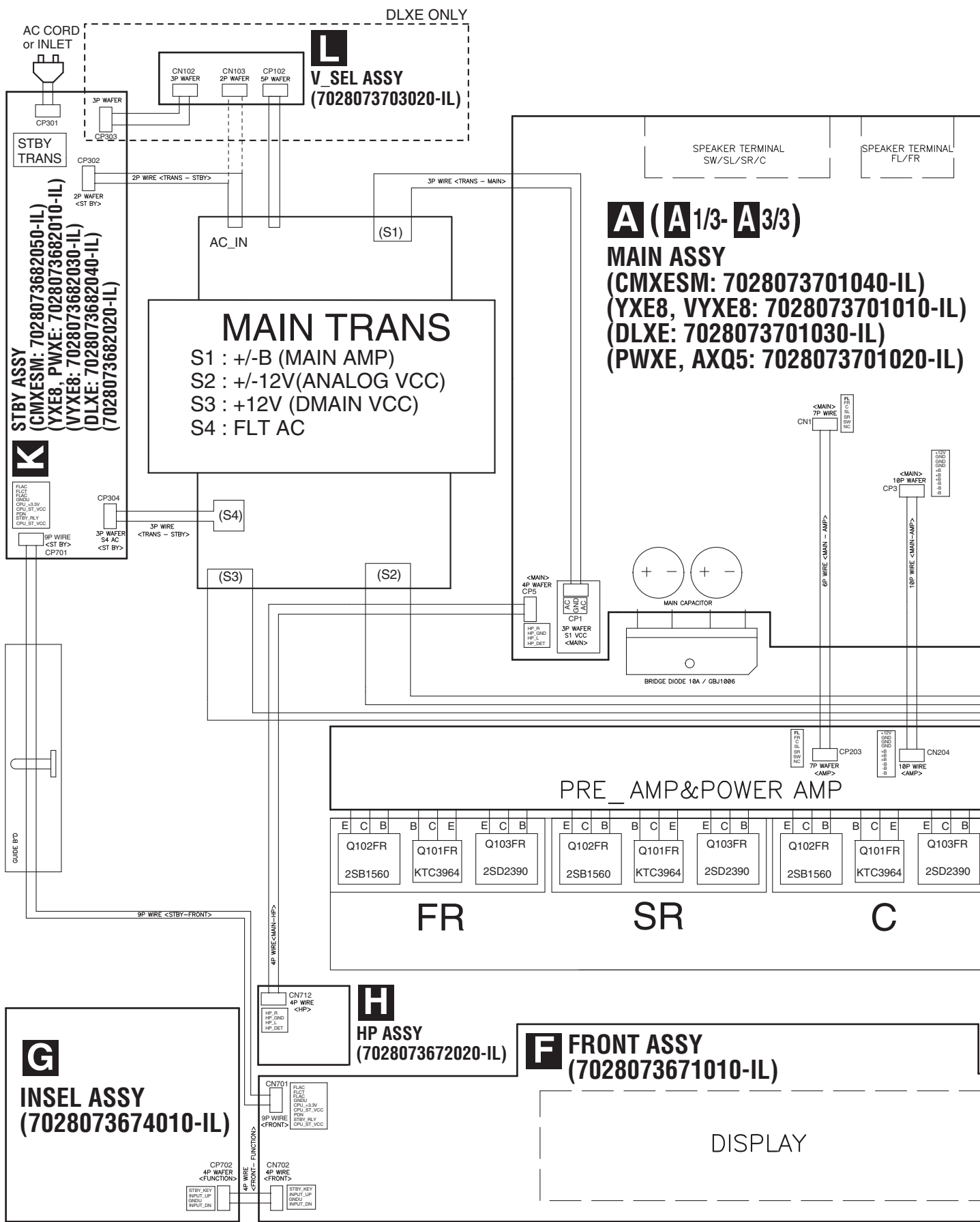
B

C

D

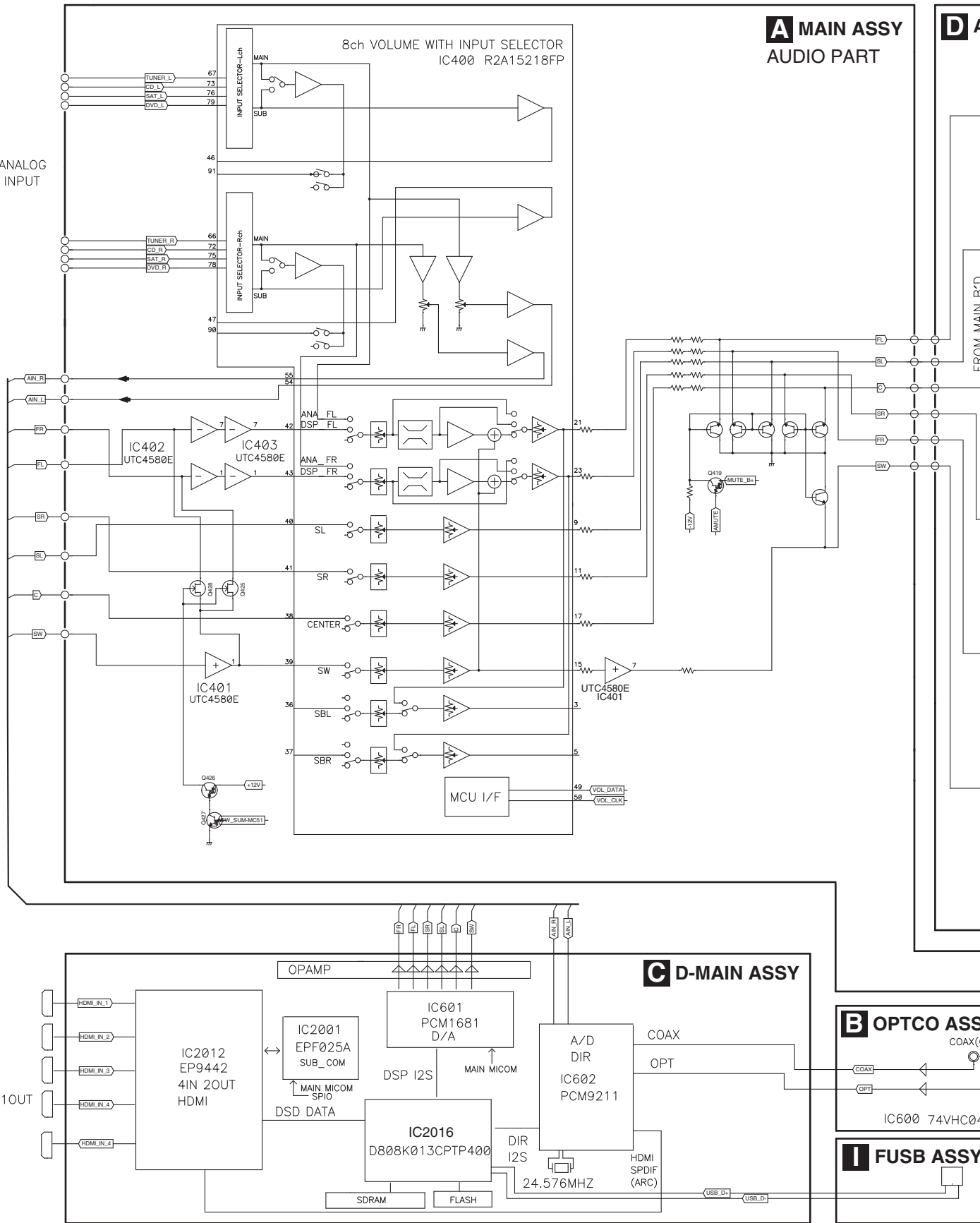
E

F



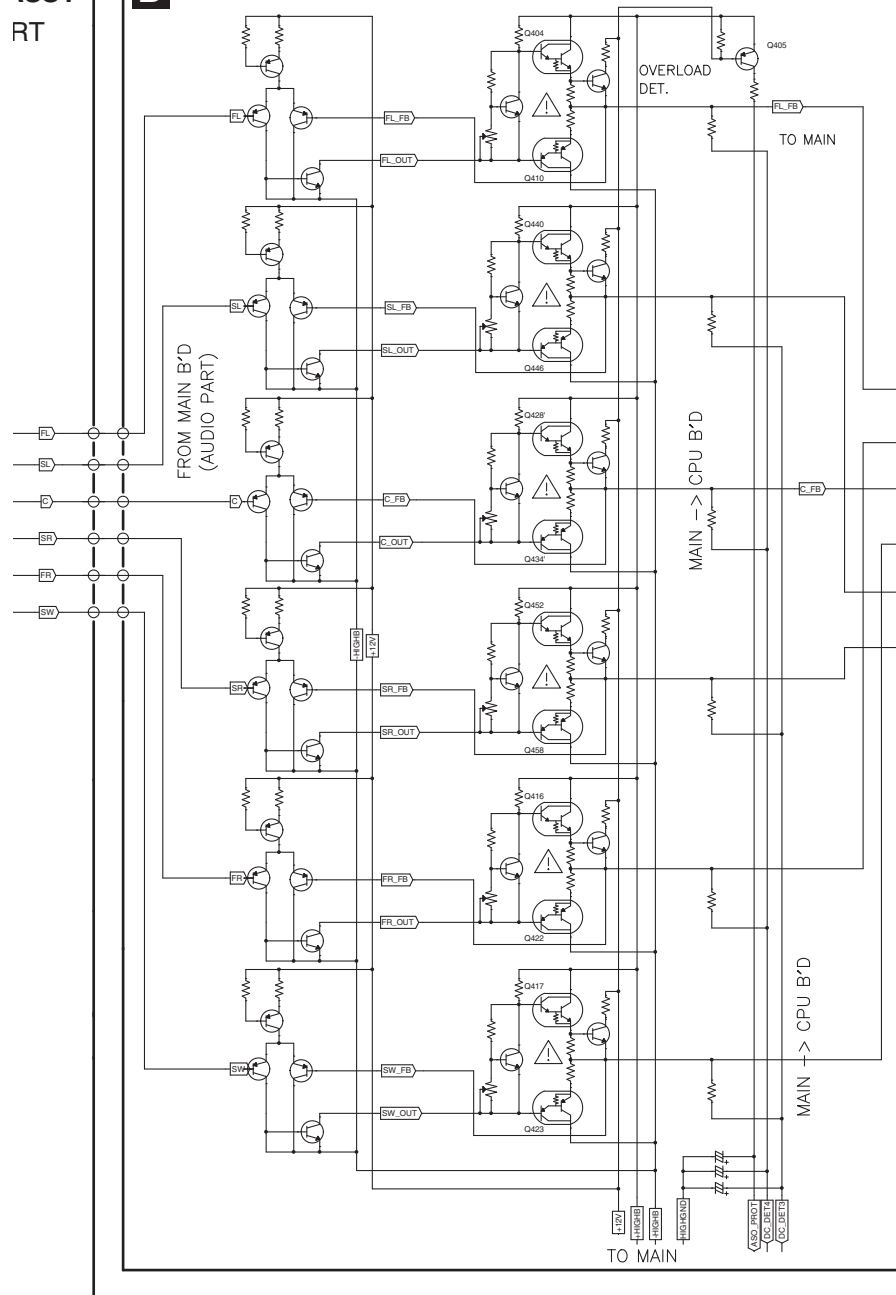
4.2 OVERALL BLOCK DIAGRAM

A
B
C
D
E
F



ASSY
RT

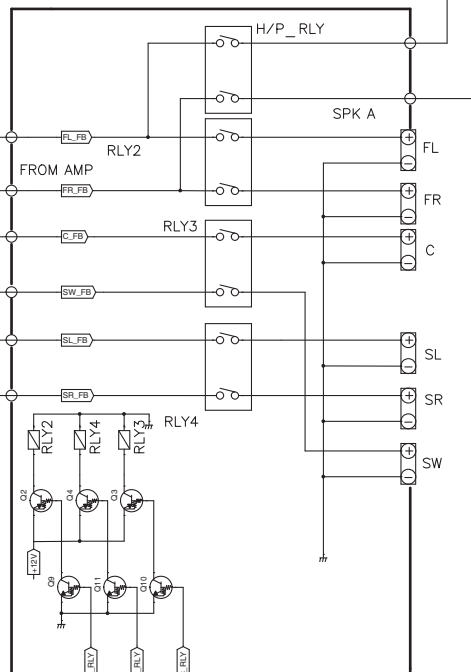
D AMP6 ASSY



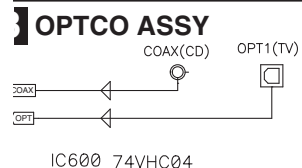
F FRONT ASSY

H HP ASSY

HPL OUT (HP.LO)
HPR OUT (HP.HI)



A MAIN ASSY (RLY PART)



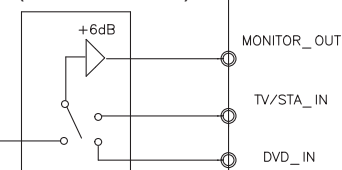
FUSB ASSY

J CNT ASSY

A MAIN ASSY

(OSD PART)

(VIDEO PART)

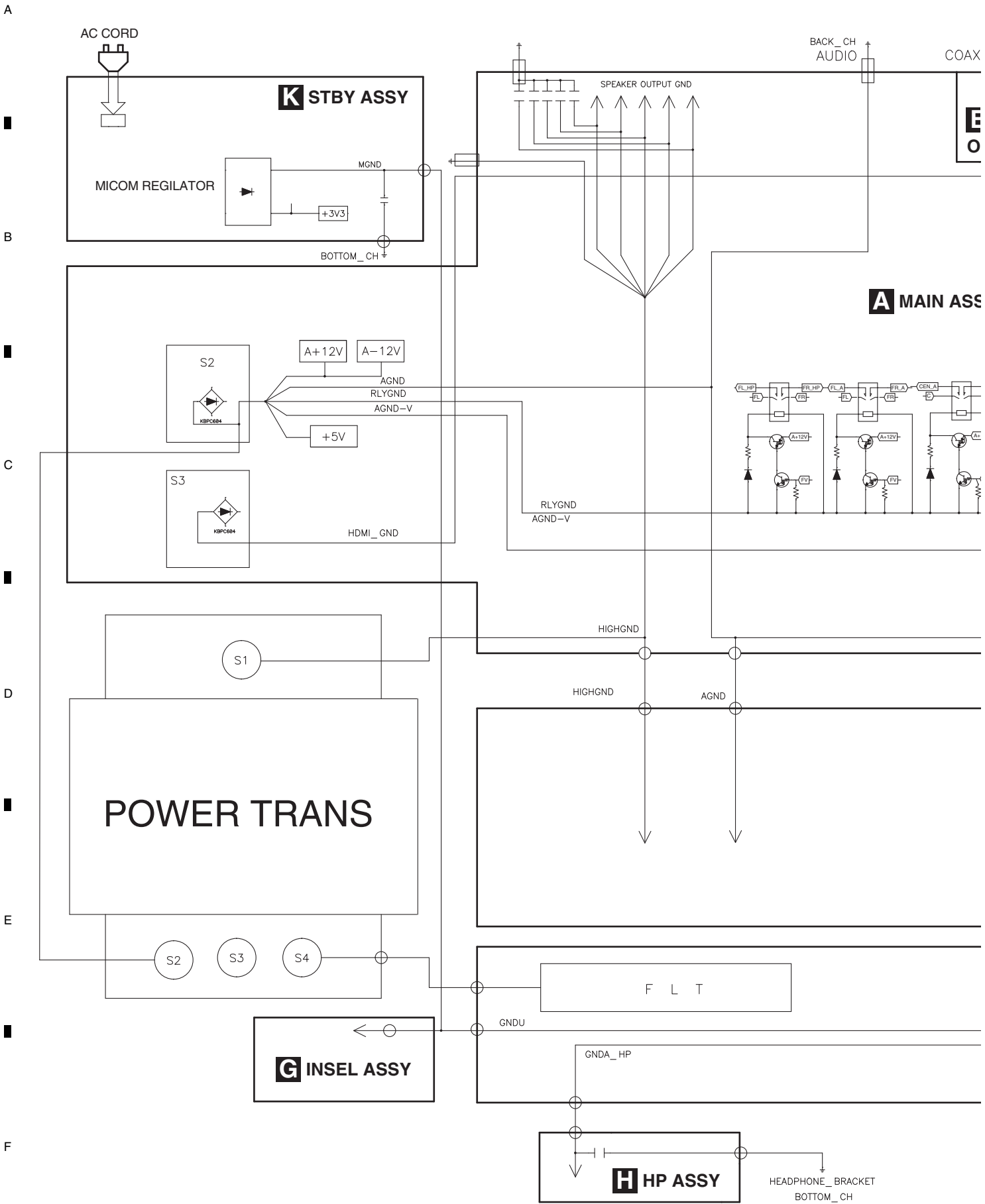


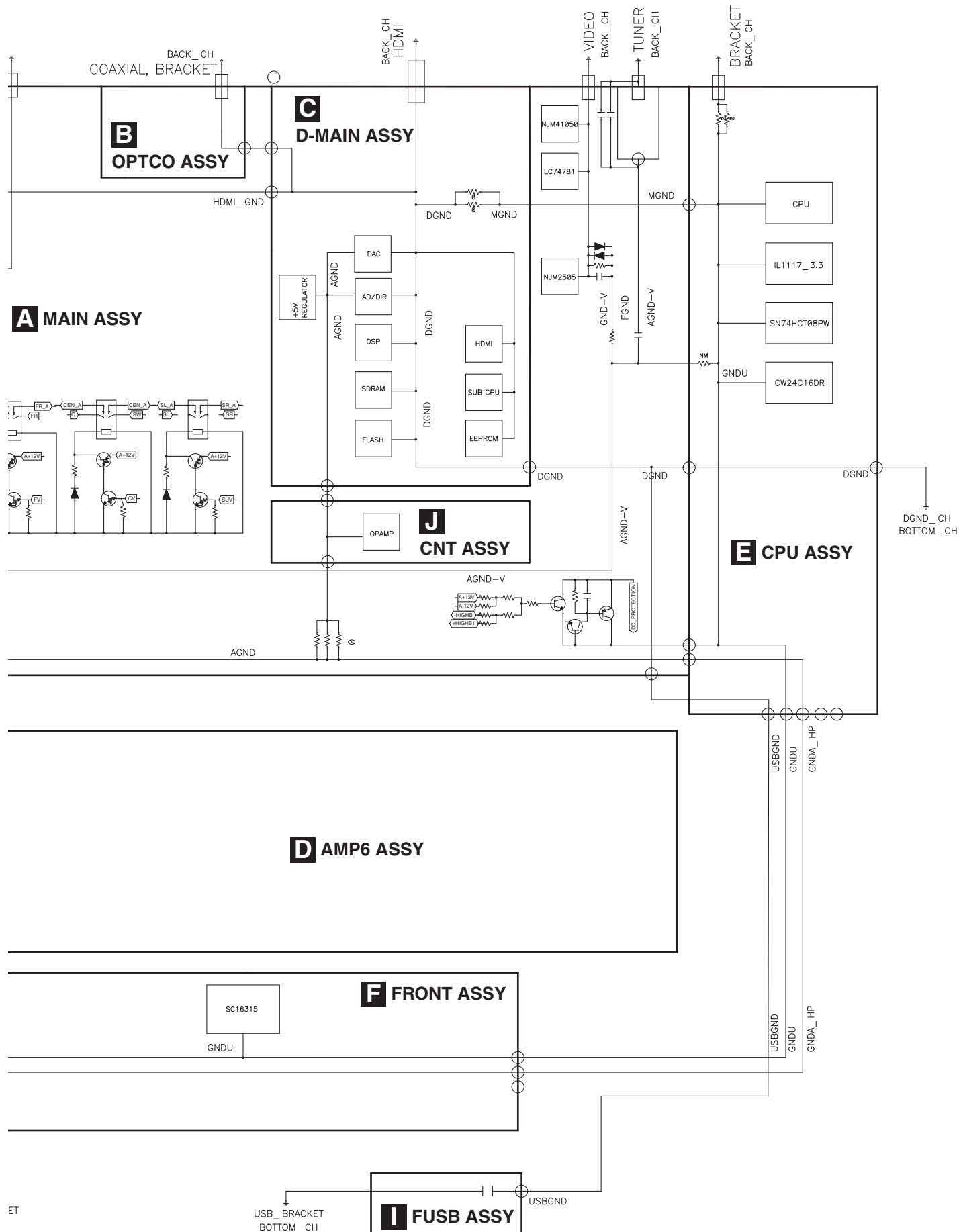
△

F









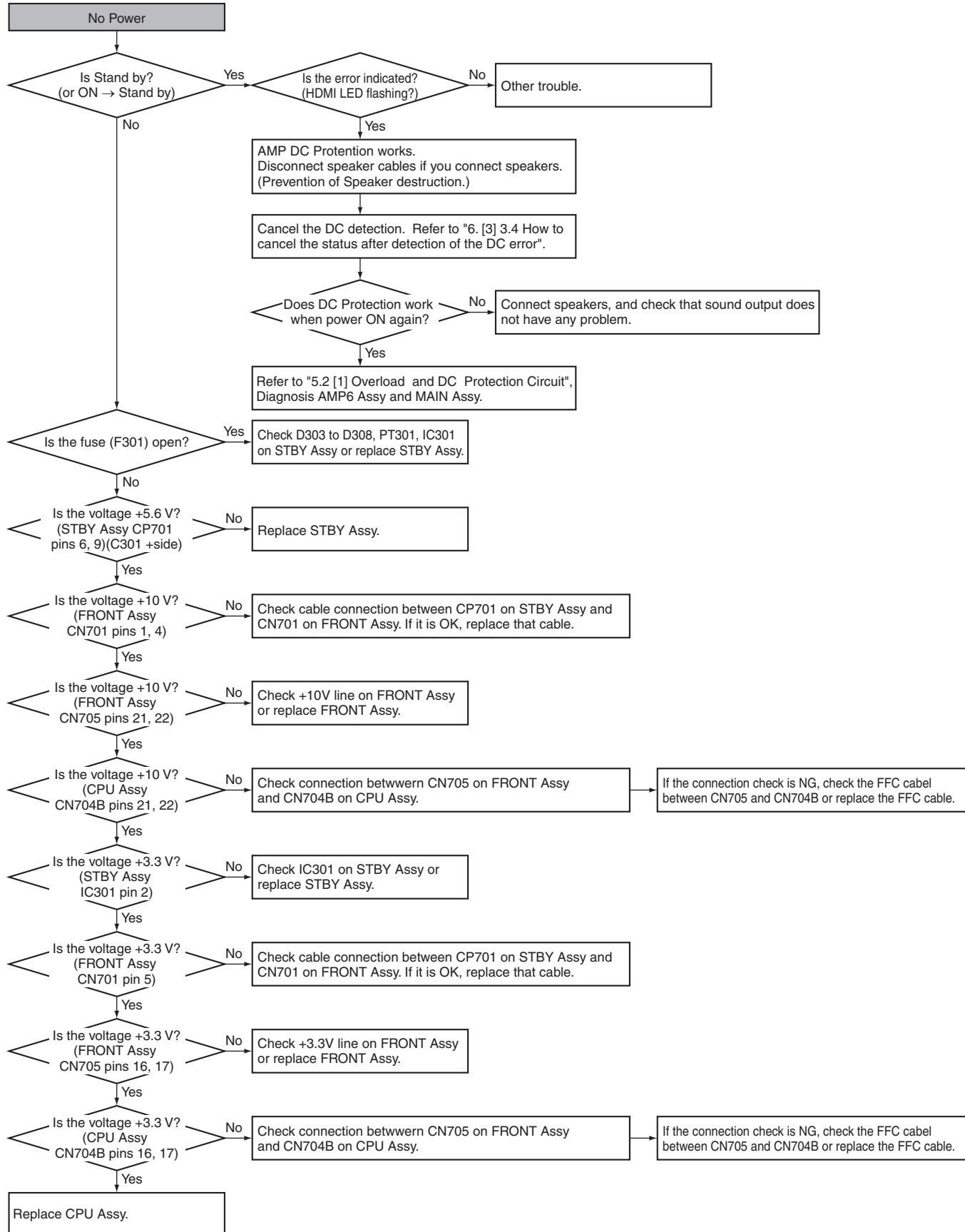
ET

5. DIAGNOSIS

5.1 TROUBLESHOOTING

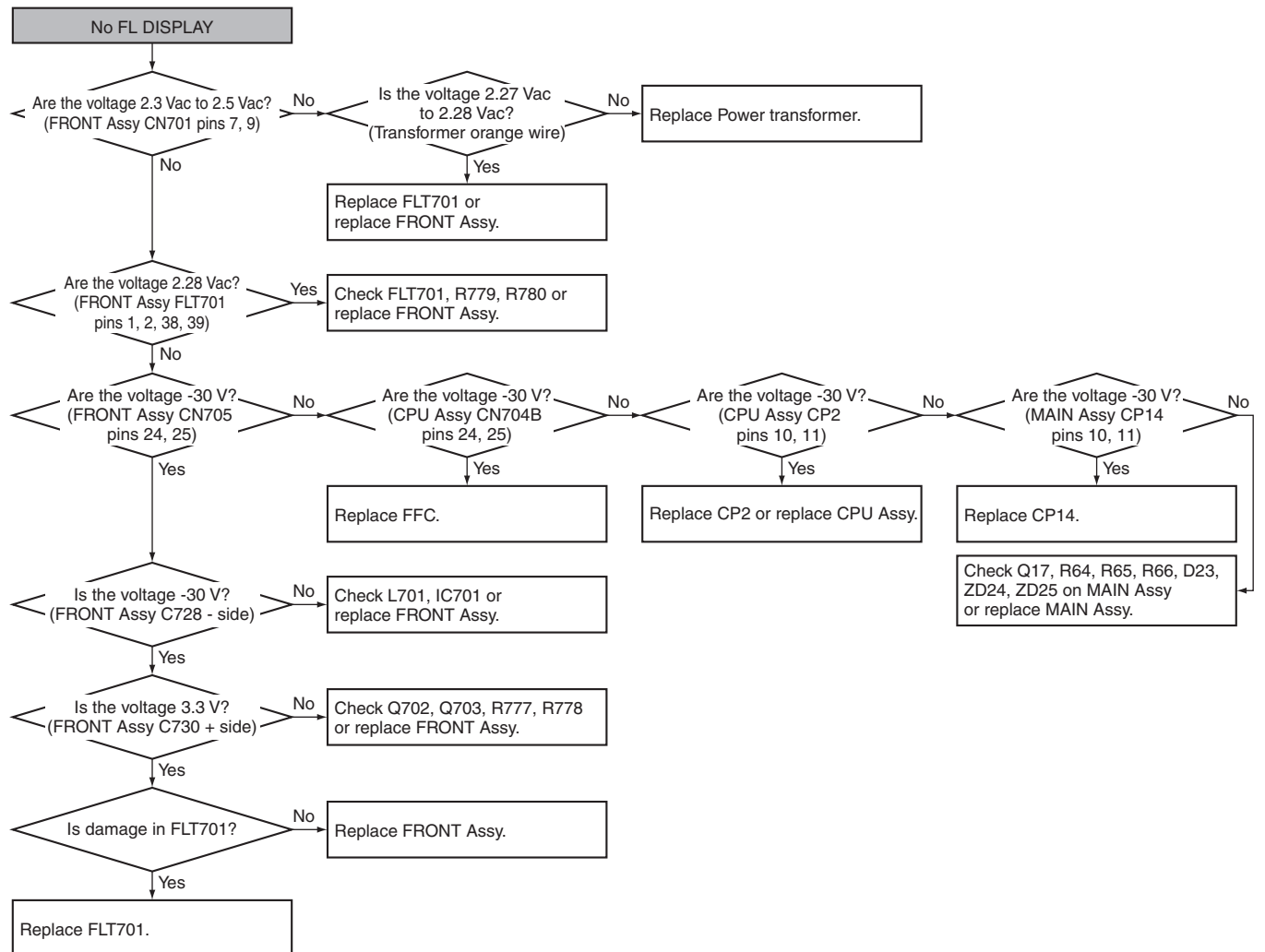
No Power

This is just for general reference and does not including every single case.



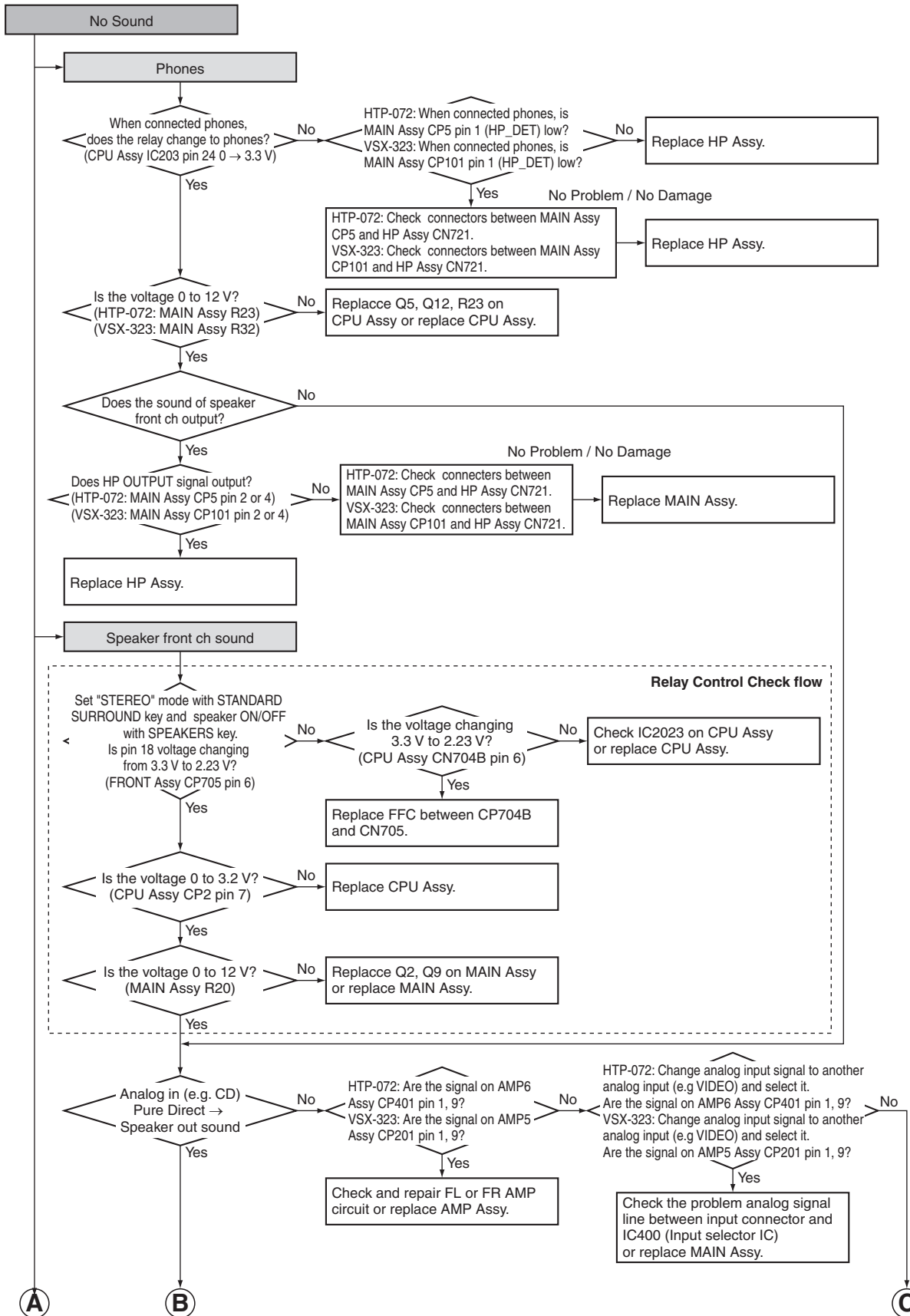
No FL DISPLAY

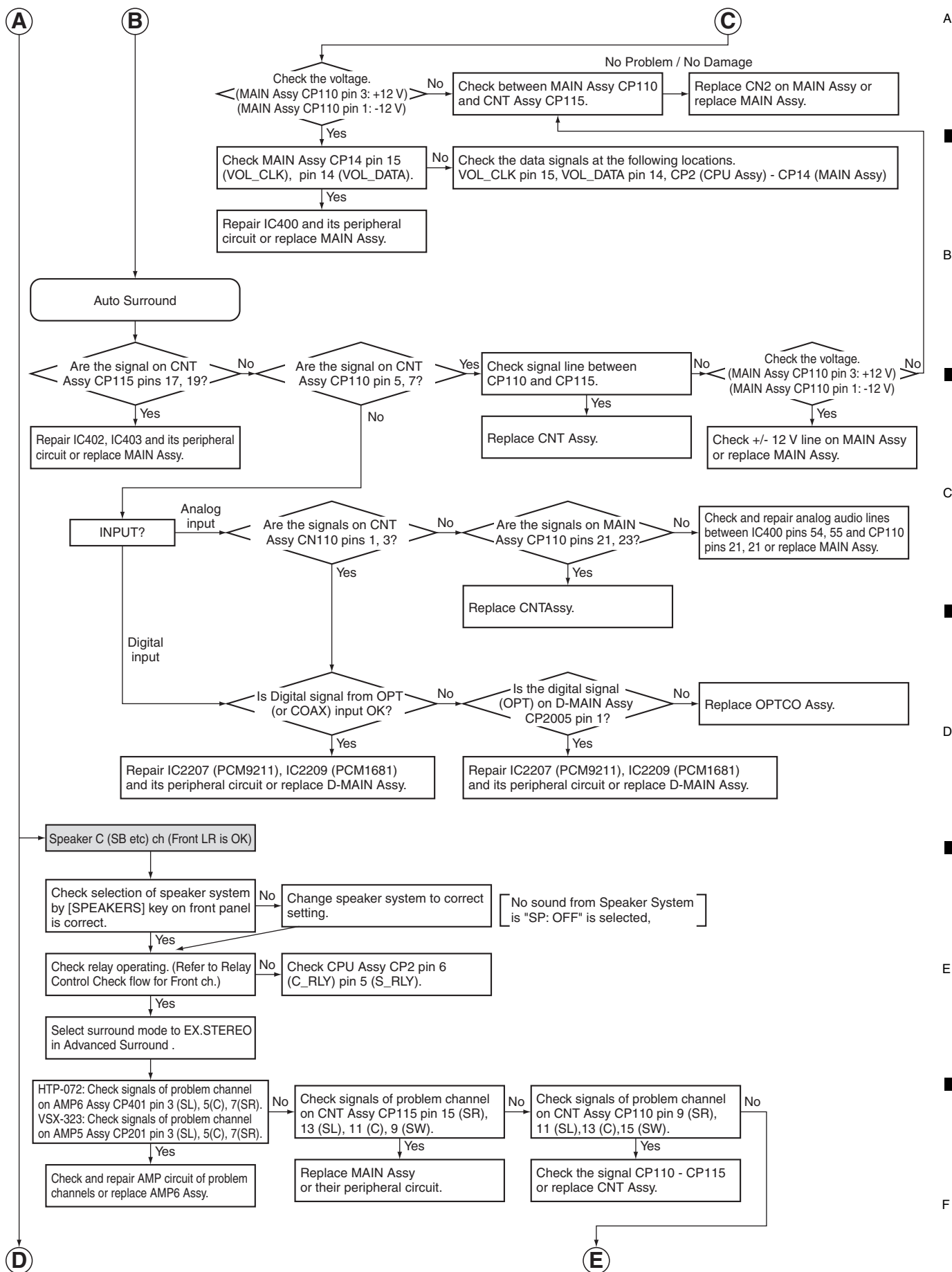
This is just for general reference and does not including every single case.

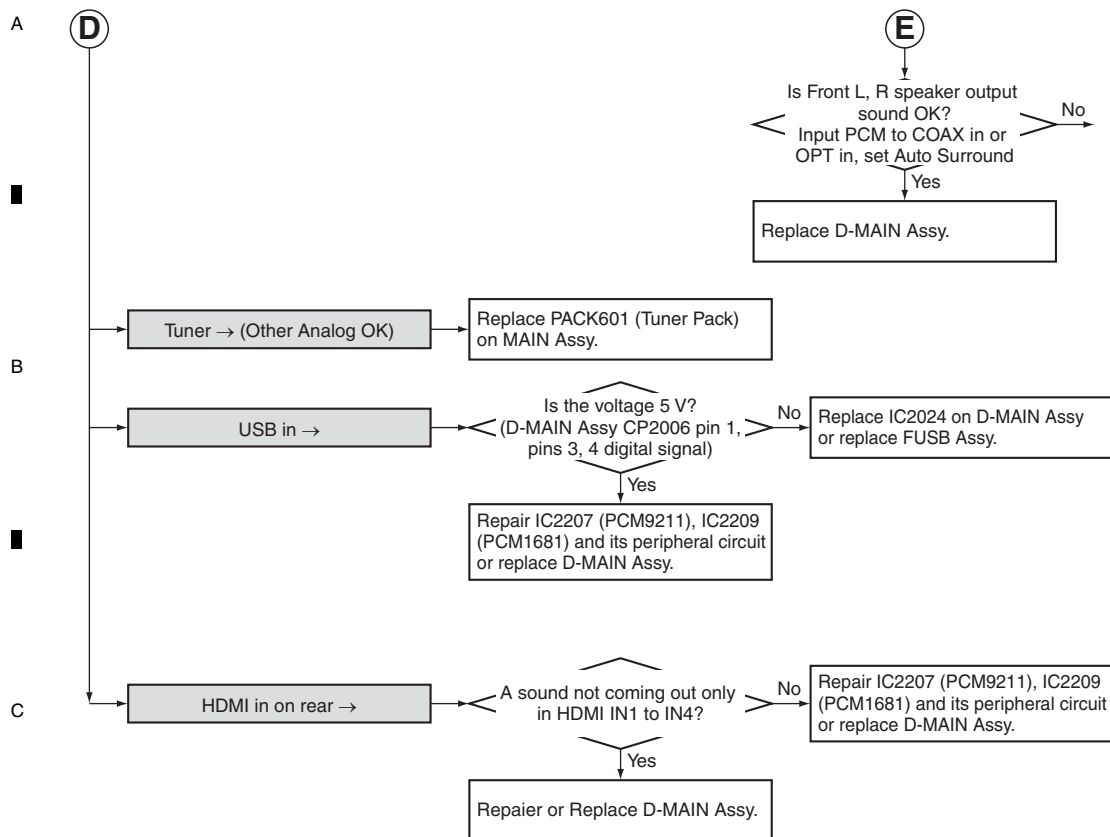


No Sound

This is just for general reference and does not including every single case.

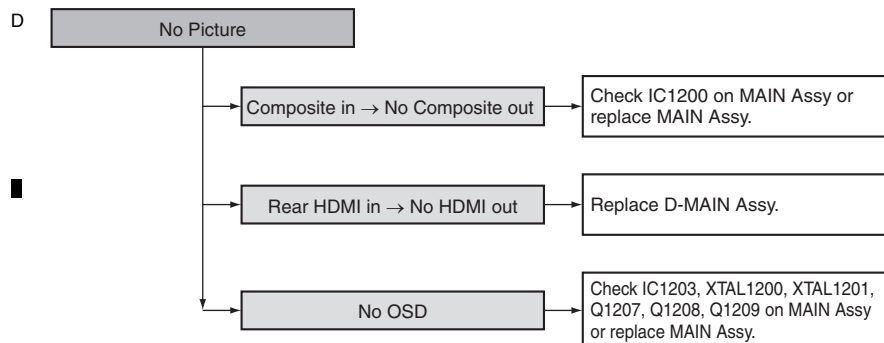






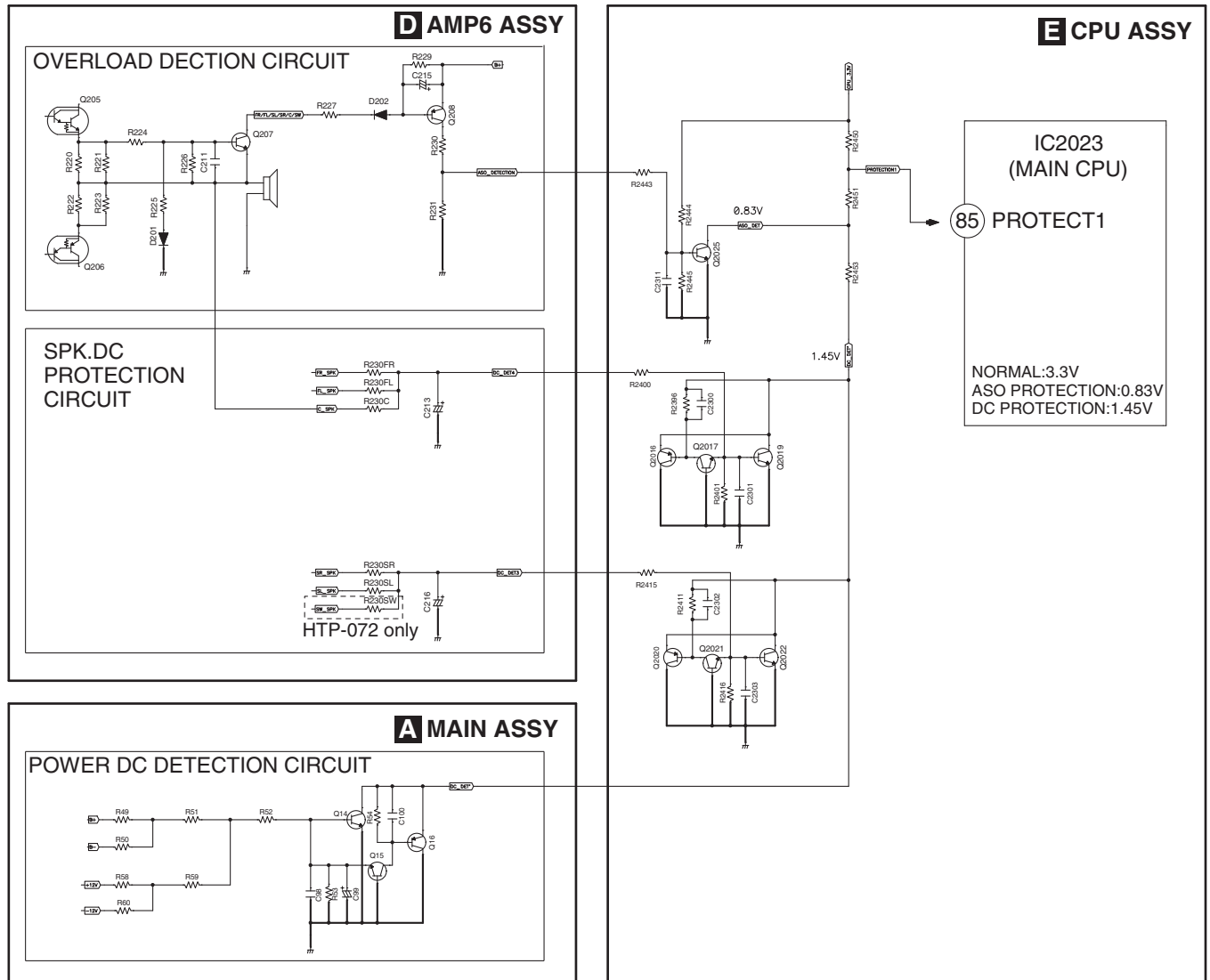
No Picture

This is just for general reference and does not including every single case.

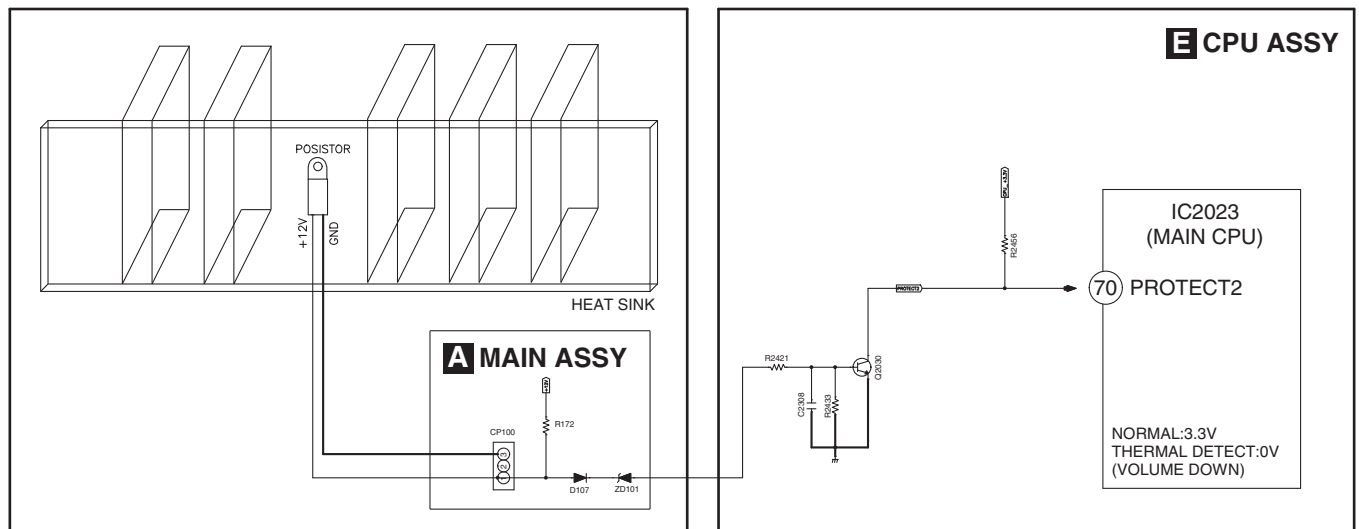


5.2 PROTECTION CIRCUIT

[1] Overload and DC Protection Circuit



[2] TEMP Detection Circuit



5.3 IC INFORMATION

(M3030RFGPFP_256k)(CPU Assy: IC2023)

MAIN UCOM

• Pin Function

No.	Symbol	I/O	Description
1	A_MUTE	O	Audio output control pins at Mute Tr (active at L)
2	DC/DC_ON2	O	Control pin DC/DC IC +5V (on: H)
3	F_RLY	O	Tr driven control pins at the Front speaker output relay. (active at H)
4	S_RLY	O	Tr driven control pins at the Surround speaker output relay. (active at H)
5	C_RLY	O	Tr driven control pins at the Center speaker output relay.(active at H)
6	AC_VOLT_DET		Not used
7	RMC	I	Remote control signal input pin
8	GND		Ground
9	CNVSS_UP	I	Switches processor mode
10	24C16_SDA	I/O	Data signal input & output for data backup of MAIN UCOM
11	24C16_SCL	O	Clock signal output for data backup of MAIN UCOM
12	RESET	I	Microcomputer reset signal input pin (active at L)
13	XOUT	O	Output for 16 MHz crystal
14	GND		Ground
15	XIN	I	Input for 16 MHz crystal
16	3V3		+3.3 V power supply
17	NMI		Pull up
18	TUNER_INT	I	Tuner Interrupt signal input pin
19	PDN	O	Output for MAIN UCOM power down
20	OSD/FLT_DATA	O	OSD or FLT Data pin
21	MUTE_B+_CTL	O	Power control pin mute B+
22	VIDEO_MUTE	O	Output for video IC MUTE condition
23	HP_DET	I	Monitoring the input pin headphone connection
24	OSD_CE	O	OSD IC enable signal output and UPGRADE pin
25	V5+V_DET	I	Detection pin V+5V protection (Not used)
26	V_CTL_A	O	IC control signal A output pin for selecting the video input
27	V_CTL_B	O	IC control signal B output pin for selecting the video input
28	OSD/FLT_CLK	O	OSD & FL drive IC output pin of the Clock
29	NC	O	Not used
30	NC	O	Not used
31	232_RX/U_TX	O	Output for Upgrade (UART)
32	232TX/U_RX	I	Input for Upgrade (UART)
33	SCLK_JTAG	I	Serial clock input and Protection pin
34	BUSY_JTAG	O	Output for JTAG BUSY/TRIGGER1_ON/OFF SIGNAL
35	3959_SDA	I/O	MFI IC DATA signal
36	3959_SCL	I/O	MFI IC CLK signal
37	PULL_DOWN		PULL_DOWN
38	HDMI_3V3_ON	O	Control pin HDMI IC +3.3V (on: H)
39	OSD_RESET	O	OSD IC reset signal output pin
40	TUNER_SCLK	O	Clock signal output for Tuner Pack
41	EPM_UP	I	UPGRADE
42	TUNER_SDIO	I/O	Data signal input & output for Tuner Pack
43	TUNER_SEN	O	Output for Tuner Pack Serial Enable Input (active at L)
44	TUNER_RST	O	Output to reset Tuner Pack (active at L)
45	D+3.3V_ON	O	Control pin DSP IC +3.3V (on: H)
46	U_CE	O	OSD IC enable signal output and UPGRADE pin
47	3959_PWR	O	MFI IC Power control pin
48	3959_RESET	O	MFI IC reset signal
49	VOL_DATA	O	Data signal output for R2A15219 (I2C)
50	VOL_CLK	O	CLK signal output for R2A15219 (I2C)

No.	Symbol	I/O	Description
51	SW_SUM	I	Output for Sub Woofer SUMMING Control (H: SUMMING)
52	HP_RLY	O	Headphone audio output control pins at Mute Tr (active at L)
53	D+1.2V_ON	O	Control pin DSP IC +1.2V (on: H)
54	HDMI_1V8_ON	O	Control pin HDMI IC +1.8V (on: H)
55	DC/DC_ON1	O	Control pin DC/DC IC +3.3V (on: H)
56	CODEC_ADR	I	Format control input 1 for H/W (SPI OR I2C)
57	9211_RST	O	Output to reset PCM9211
58	9211_SDA	I/O	Data signal output for PCM9211 (I2C)
59	9211_SCL	O	Clock signal output for PCM9211 (I2C)
60	DSP_SIMO	O	Data signal Input for DA808
61	DSP_SPICLK/B7	O	Clock signal output for DA808 (SPI)
62	3V3		+3.3V power supply
63	DSP_RST	O	Output to reset DA808
64	GND		Ground
65	USB5V_DET	I	USB+5 voltage monitor input pin overcurrent protection
66	DSP_SOMI	I	Data signal output for DA808 (SPI)
67	DSP_SPICS	O	Chip select signal output for DA808
68	DSP_SPIEN	I	SPI Enable signal input from DA808
69	HDMI_SEL	O	IC signal of the control pins at select HDMI or analog audio
70	PROTECT2	I	AMP6 Assy input signal of the RADIATOR THERMAL pin (L = VOLUME DOWN)
71	MAIN_IRQ	O	Interrupt signal output pin to SUB UCOM
72	SUB_ON	O	Control pin SUB UCOM IC +3.3V REG. IC (on: H)
73	USB5V_ON	O	Control pin NCP380 FOR USB +5V (on: H)
74	HD_MUTE	I	Input for HDMI_RX_MUTE condition
75	SUB_IRQ	I	Interrupt signal output pin to MAIN UCOM
76	CODEC_SCL	O	Clock signal output for PCM1681 (I2C)
77	SUB_RST	O	Output to reset SUB UCOM
78	CODEC_SDA	I/O	Data signal output for PCM1681 (I2C)
79	SCDO_MAIN	O	Data signal output to SUB UCOM
80	CCLK_MAIN	O	Clock signal output for SUB UCOM
81	SET_OPTION	I	Input for Set option
82	STEP_OPTION	I	Input for Step (Group) option
83	NC		Not used
84	NC		Not used
85	PROTECT1	I	AMP6 Assy protection detection signal input pin (ASO = 0.82 V, DC = 1.39 V)
86	VOL_DN	I	Data input for VOLUME encoder (VOLUME DOWN is counterclockwise direction)
87	VOL_UP	I	Data input for VOLUME encoder (VOLUME UP is clockwise direction)
88	IN_DN	I	Data input for INPUT selector encoder
89	NC		Not used
90	KEY1	I	Data input for Key1 scan
91	KEY3	I	Data input for Key3 scan
92	KEY2	I	Data input for Key2 scan
93	IN_UP	I	Data input for INPUT selector encoder
94	FLT_CE	O	Output for chip enable of SC16315
95	D+1.8V_ON	O	control pin DSP IC +1.8V (on: H)
96	GND		Ground
97	THRU_LED	O	HDMI LED on/off control pin if Speaker DC protection
98	3V3		+3.3 V Power Supply
99	3V3		+3.3 V Power Supply
100	STBY_RLY	O	Output to ST-BY Relay ON/OFF (active at H)

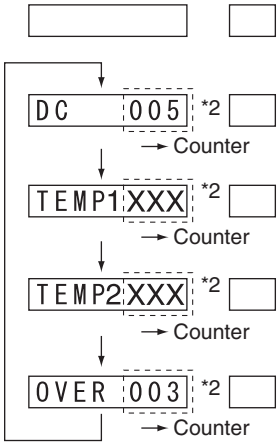
A ■ (EPF025A)(D-MAIN Assy: IC2023)

SUB UCOM

• Pin Function

No.	Symbol	I/O	Description
1	PULL DOWN		Pull down
2	CSCK_MAIN	I	Clock signal input from MAIN UCOM
3	SCDO_MAIN	I	Data signal Input from MAIN UCOM
4	HSCL	I/O	IIC clock signal output pin
5	HSDA	I/O	IIC data signal in/output pin
6	PULL UP		Pull up
7	PULL UP		Pull up
8	3V3		+3.3 V power supply
9	GND		Ground
10	PULL DOWN		Pull down
11	NC		Not used
12	3V3		+3.3 V power supply
13	NC		Not used
14	NC		Not used
15	SUB_RST	I	SUB UCOM reset signal input pin
16	SUB_OPO	I	Chip operation mode select signal input pin (0: normal)
17	GND		Ground
18	NC		Not used
19	NC		Not used
20	NC		Not used
21	NC		Not used
22	NC		Not used
23	NC		Not used
24	NC		Not used
25	NC		Not used
26	NC		Not used
27	DDC_SCL	I/O	IIC clock signal output pin
28	DDC_SDA	I/O	IIC data signal in/output pin
29	NC		Not used
30	NC		Not used
31	NC		Not used
32	NC		Not used
33	NC		Not used
34	NC		Not used
35	MAIN_IRQ	O	Interrupt signal output pin to SUB UCOM
36	SUB_IRQ	O	Interrupt signal output pin to MAIN UCOM
37	THRU_LED	O	HDMI LED on/off control pin
38	NC		Not used
39	3V3		+3.3 V power supply
40	GND		Ground
41	XIN	I	Input for 24 MHz crystal
42	XO	O	output for 24 MHz crystal
43	3V3		+3.3 V power supply
44	GND		Ground
45	RSTb	O	Reset signal output pin to HDMI IC
46	NC		Not used
47	NC		Not used
48	PULL UP		Pull up
49	HDMI_CEC	I/O	Data signal input from HDMI_CEC
50	GND		Ground
51	HT0_CTLB	O	Hot plug detect signal output pin (DVD FUNCTION)
52	HT1_CTLB	O	Hot plug detect signal output pin (SAT/CBL FUNCTION)
53	HT2_CTLB	O	Hot plug detect signal output pin (GAME FUNCTION)
54	HT3_CTLB	O	Hot plug detect signal output pin(BD FUNCTION)
55	NC		Not used
56	NC		Not used
57	NC		Not used
58	INTb	I	Interrupt signal input pin from EP9442
59	NC		Not used
60	HPD_IN	I	Input for HDMIOUT HPD
61	GND		Ground
62	SUB_RXD	I	Soft update UART communication data input pin (UPDATE JIG B'D)
63	SUB_TXD	O	Soft update UART communication data output pin (UPDATE JIG B'D)
64	HDMI_CEC	I/O	Data signal input from HDMI_CEC

[1] Display mode for numbers of protection detections

[Purpose] The numbers of detections for various protection processes are displayed.			
[How to enter/exit] During Standby mode, simultaneously press and hold the [PRESET ◀] and [STANDBY/ON] keys for 2 seconds to enter this mode. The display will return to the normal indication when no key operation is performed for 5 seconds.			
[Basic operations]			
Key Operation	FL Display	Time (sec.)	Description of Indications
(STANDBY state) [PRESET ◀] + [STANDBY/ON] keys (Initial display) ↓ [ENTER] key ↓ [ENTER] key ↓ [ENTER] key ↓ (Initial display)		5 (-> normal) *1 5 (-> normal) *1 5 (-> normal) *1 5 (-> normal) *1	Number of DC error detections Number of abnormal-temperature error detections Number of abnormal-temperature error detections Number of OVERLOAD error detections
*1 "5 (-> normal)" denotes that the display will return to the normal indication when no key operation is performed for 5 seconds. *2 Variable range: 0 to 255			

The above-mentioned Display mode is available only when the product operates properly.

If any protection function is activated while the product is in use, the product cannot be turned ON and enter the above Display mode. In such a case, cancel the protection function, referring to "[3] 3.4 How to cancel the status after detection of the DC error." If a protection function is activated immediately after the previous protection function is canceled, cancel that protection function again then enter STBY mode immediately. You can then see the error logs, following the above procedures, until a next protection function is activated.

[2] Reset mode for numbers of protection detections


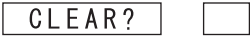
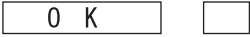

[Purpose]

For clearing all the counts of protection detections.
(This mode resets the counts of protection detections.)

[How to enter/exit]

During Standby mode, simultaneously press and hold the [ALC/STANDARD SURR] and [STANDBY/ON] keys for 10 seconds to enter this mode.
The display will return to the normal indication when no key operation is performed for 5 seconds.

[Basic operations]

Key Operation	FL Display	Time (sec.)	Description of Indications
(STANDBY state)			
[ALC/STANDARD SURR] + [STANDBY/ON] keys (press and hold the keys for 10 seconds.)		5 (-> normal) *1	
[ENTER] key ↓		5 (-> normal) *1	
(Counter Clear end)			
(Normal display)	 *2	usually	

*1 "5 (-> normal)" denotes that the display will return to the normal indication when no key operation is performed for 5 seconds.

*2 Indication when the BD function is selected

[Detailed explanations]

- When the procedures for Reset mode for numbers of protection detections are completed, all the counters will be reset to "000."
- Prohibitions:
The protection detection counts cannot be cleared (reset to 000) with the MEMORY CLEAR process.
They can only be cleared when the procedures of Reset mode are completed.




[3] The unit's operation when a error is detected

[Purpose]

- The unit's operation when a DC/OVER/TEMP error is detected is described here.
- How to cancel the status after detection of a DC error is described here, because no key input will be accepted after a DC error detection.




[Basic operations]

3.1 DC (AMP is abnormality) error detection

Key Operation	FL Display	Time (sec.)	Description of Indications
(Normal display)		usually	Normal display
(DC detection)			
↓ (Auto) (RECEIVER POWER OFF)			

If the AC power cord is plugged in while the AVR is prohibited from being ON because of DC detection, the HDMI LED will flash at intervals of 500 msec.

3.2 OVERLOAD (overcurrent) error detection

Key Operation	FL Display	Time (sec.)	Description of Indications
(Normal display)		usually	Normal display
(OVERLOAD detection)			
↓ (Auto) (RECEIVER POWER OFF)			

3.3 TEMP (AMP overheat) error detection

For detection of a TEMP error, the unit monitors both the THER_DET and OVERLOAD & DC_DET signals. If a TEMP error is detected, the processes shown below will be performed. The processes shown below are rough operational specifications and are not the actual commands from the mounted components. After a TEMP error is detected, the count of protection activation detections will be updated.

Counter: Temp2

PROTECT2
P2_2 (pin 70)
(THER_DET from MAIN Assy)

Counter: OVER / DC

PROTECT1
P0_3 (pin 85)
(OVERLOAD & DC_DET from AMP6 Assy)

PROTECT1 Function

<PROTECT1: Voltage at Pin 85>

NORMAL: 3.3 V

When ASO destruction (excess current) is detected: 0.83 V

When DC is detected: 1.45 V

<Operation upon detection>

When ASO destruction is detected: POWER OFF (STBY)

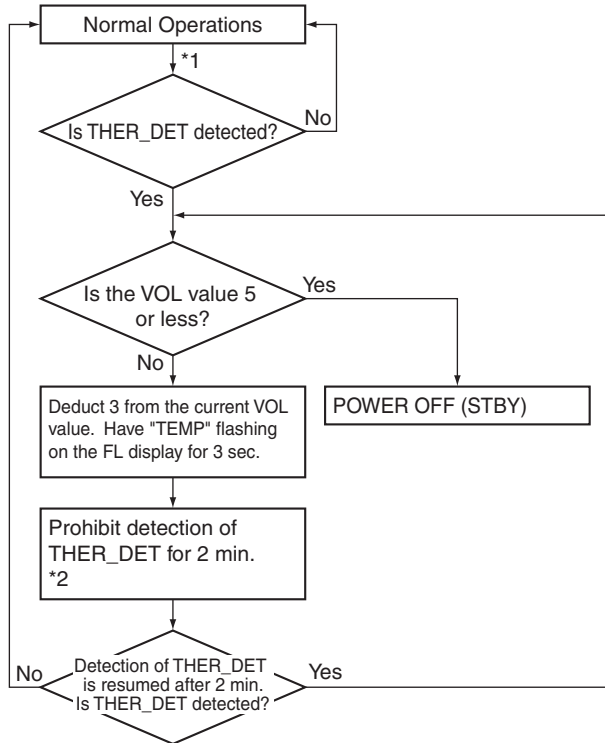
When DC is detected:

CASE 1 (Instantaneous detection [for less than 3 sec]): Speaker RELAY OFF

CASE 2 (Continuous detection [for 3 sec or longer]): Shutdown and flashing of the HDMI LED

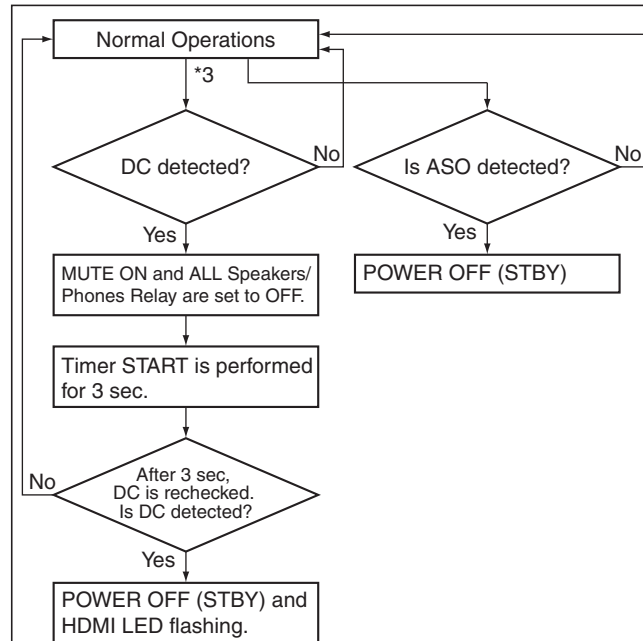
(To turn the unit back ON again, simultaneous pressing of the two keys is necessary.

-> See "3.4 How to cancel the status after detection of the DC error".)



*1: The detection interval must be 1 sec or less.

*2: If PROTECT 2 is detected while THER_DET detection is prohibited for 2 min, the PROTECT 2 function will be activated.



*3: The detection interval must be 1 sec or less.

3.4 How to cancel the status after detection of the DC error

Key Operation	FL Display	Time (sec.)	Description of Indications
(STANDBY state) [ADVANCED SURROUND] + [STANDBY/ON] keys (press and hold the keys for 2 seconds.) ↓ (Normal display)			
		usually	Normal display

[Detailed explanations]

Simultaneously holding the [ADVANCED SURROUND] and [STANDBY/ON] keys on the front panel pressed for 2 seconds will cancel Key Input Inhibition mode after a DC error detection and turn the unit ON.

If the AC power cord is plugged in while the AVR is prohibited from being ON because of DC detection, the HDMI LED will flash at intervals of 500 msec.

7. DISASSEMBLY

7.1 VSX-324-K-P

Note:

Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

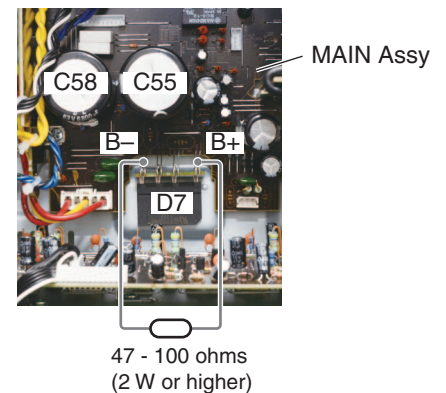
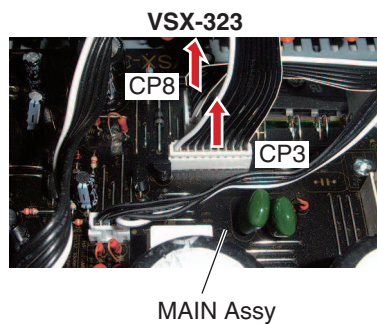
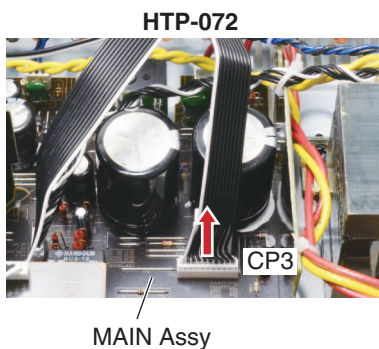
Some connections of the housing wires or connectors may be tight. When disconnecting those wires or connectors, be careful not to damage them.

1. Discharging

[1] MAIN Assy Capacitor (C55, C58)

[Procedures]

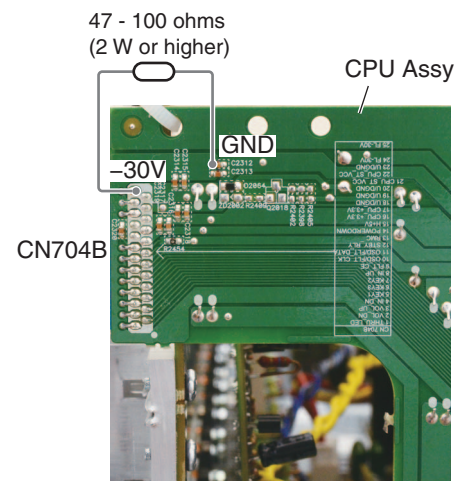
- (1) Unplug the power cord.
- (2) Disconnect the 10P connector from CP3 of the MAIN Assy between CN204 of the AMP6 Assy.
In case of VSX-323, also disconnect the 6P connector from CP8 of the MAIN Assy.
- (3) Connect B+ and B- terminal of the D7, using resistor leads with 47 - 100 ohms (2 W or higher), for discharging.
* Discharging time: 30 - 60 seconds, depending on the level of resistance.
- (4) Check that the voltage between the B+ and B- terminals is less than 1 V, using a tester.
* Be sure to connect the GND terminal of the tester to the chassis.
* If the voltage is still 1 V or higher, repeat Step (3).



[2] FL-30 V Capacitor (MAIN Assy C101)

[Procedures]

- (1) Unplug the power cord.
- (2) Connect pins 24, 25 (-30V) of the CN704B and GND on the CPU Assy, using resistor leads with 47-100 ohms (2 W or higher), for discharging.
* Discharging time: 5 - 10 seconds, depending on the level of resistance.
- (3) Check that the voltage between the -30V terminal is less than 1 V, using a tester.
* Be sure to connect the GND terminal of the tester to the chassis.
* If the voltage is still 1 V or higher, repeat Step (2).



A 2. Disassembly

Note:

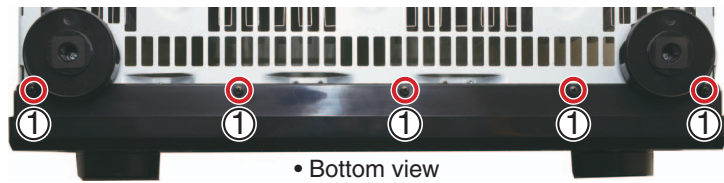
For performing the diagnosis shown below, the following jigs for service is required:

- 10P extension jig cable (GGD1628)
- 3P extension jig cable (GGD1773)
- Board to board extension jig cable (GGD1849)
- Board to board extension jig cable (GGD1850)
- Board to board extension jig cable (GGD1851)

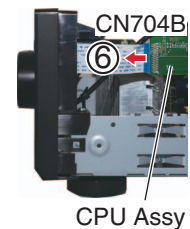
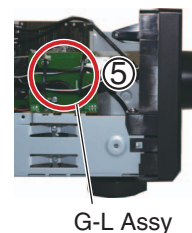
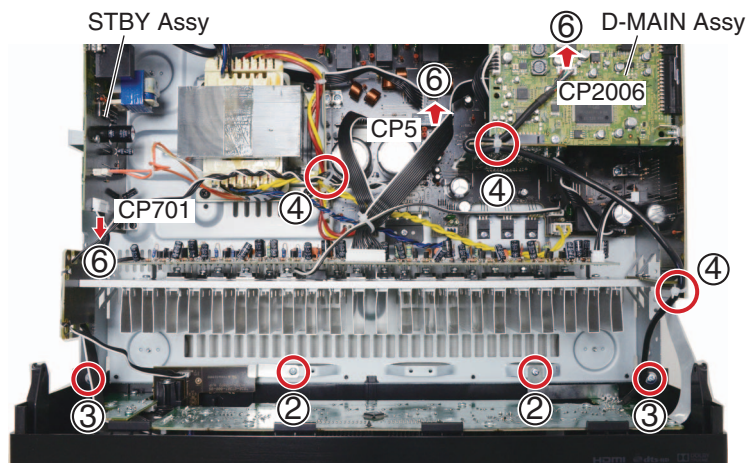
B [1] Front Panel Section

Remove the cabinet by removing the 10 screws.

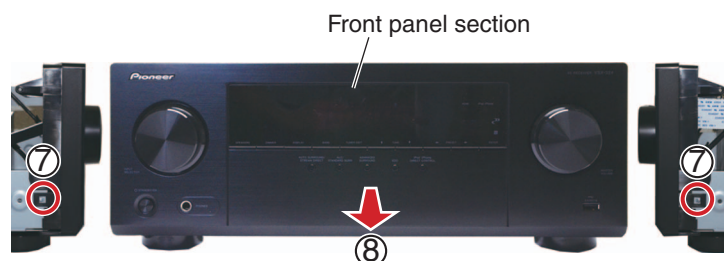
- (1) Remove the five screws.
(BBZ30P080FTB)



- (2) Remove the two screws.
(BBZ30P080FTC)
- (3) Remove the two screws.
(1500001206010-IL)
- (4) Cut the three binders.
- (5) Release the two jumper wires.
- (6) Disconnect the one flexible cable and three connectors.
(CN704B, CP5, CP701, CP2006)



- (7) Unhook the two hooks.
- (8) Remove the front panel section.

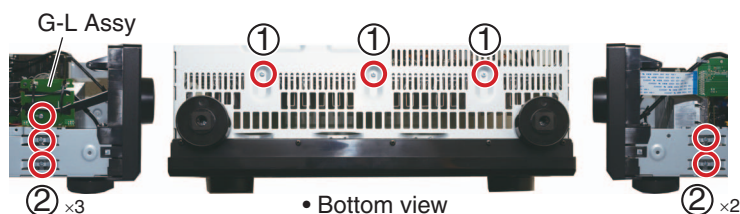


[2] Heatsink Section

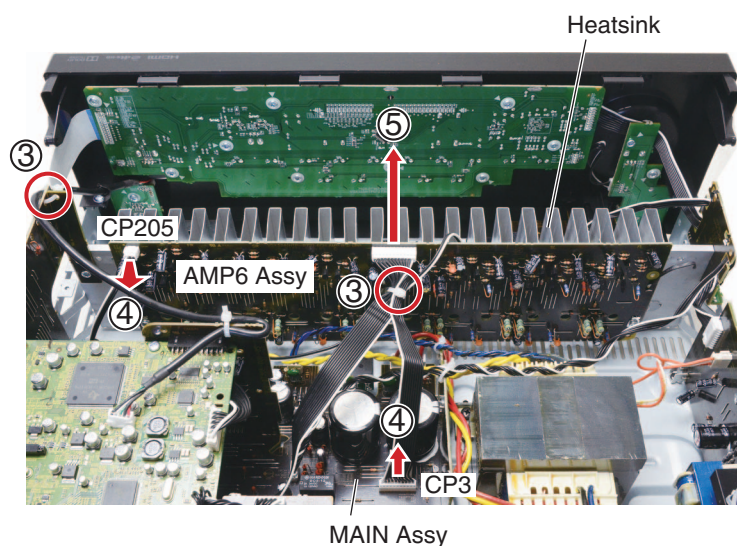
Caution: Heatsink section in work becomes hot, and be careful with it.

Remove the cabinet by removing the 10 screws.

- (1) Remove the three screws.
(BBZ30P080FTC)
- (2) Remove the five screws.
(BBZ30P080FTC)

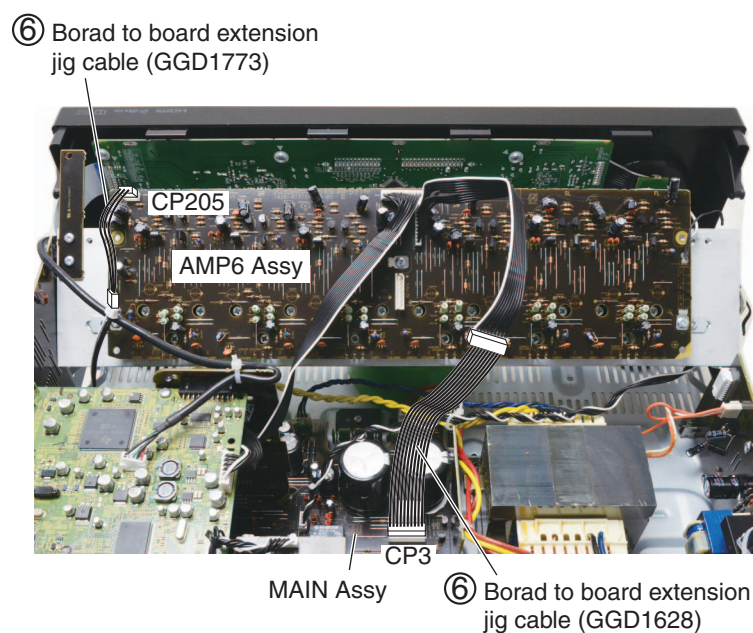


- (3) Cut the two binders.
- (4) Disconnect the two connectors.
(CP3, CP205)
- (5) Remove the heatsink section.



- (6) Connect the two extension jig cables.

Diagnosis

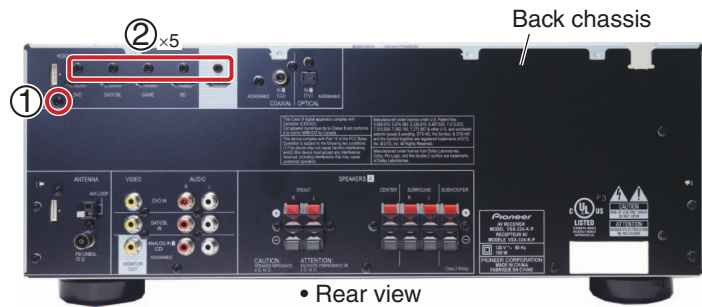


A [3] D-MAIN Assy

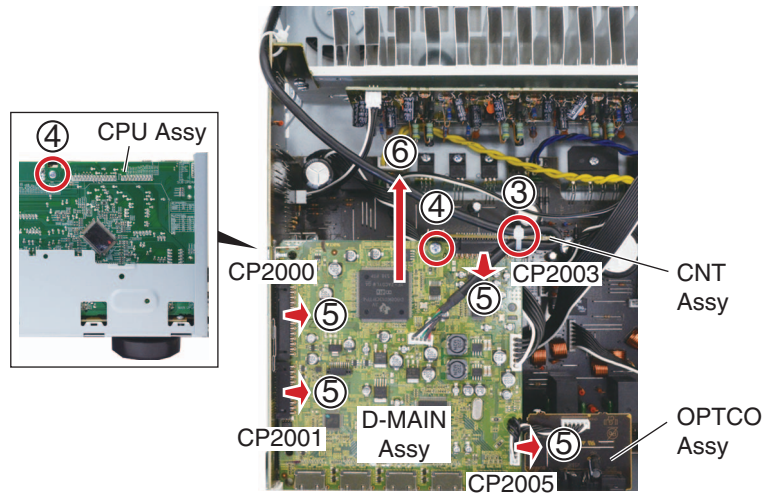
Remove the cabinet by removing the 10 screws.

[3-1] Disassembly

- (1) Remove the one screw.
(BBT30P100FTB)
- (2) Remove the five screws.
(BSZ30P040FTB)



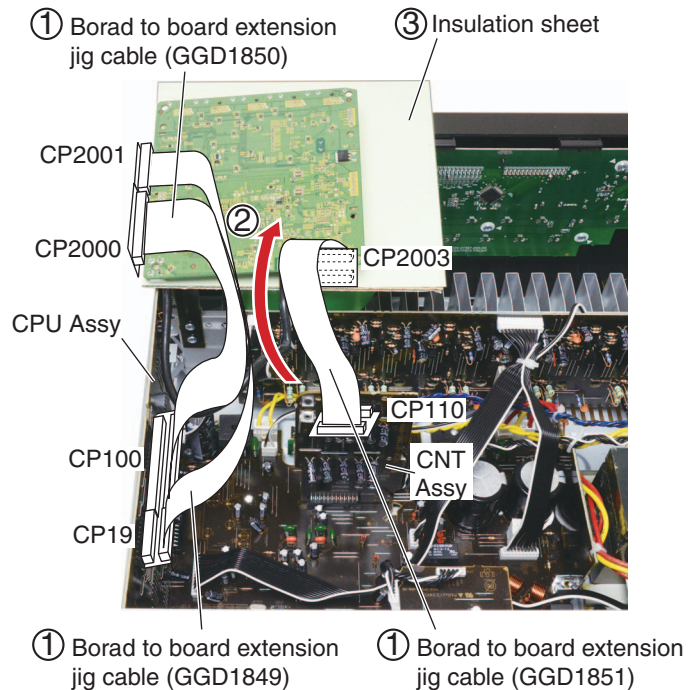
- (3) Cut the one binder.
- (4) Remove the two screws.
(BBZ30P080FTC)
- (5) Disconnect the three B to B connectors and one connector.
(CP2000, CP2001, CP2003, CP2005)
- (6) Remove the D-MAIN Assy.



[3-2] Diagnosis of D-MAIN and MAIN Assemblies

- (1) Connect the three extension jig cables.
- (2) Arrange the D-MAIN Assy in the photo below.
- (3) Insert any insulation sheet.

Diagnosis

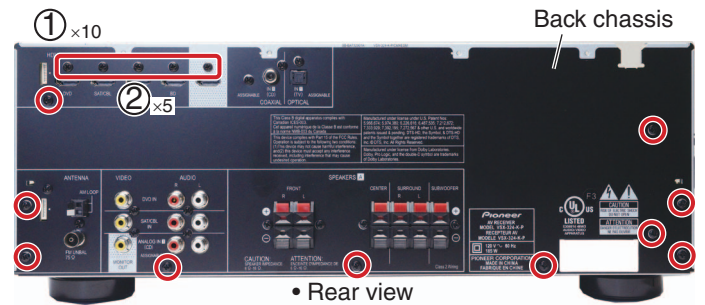


[4] MAIN Assy

Remove the cabinet by removing the 10 screws.

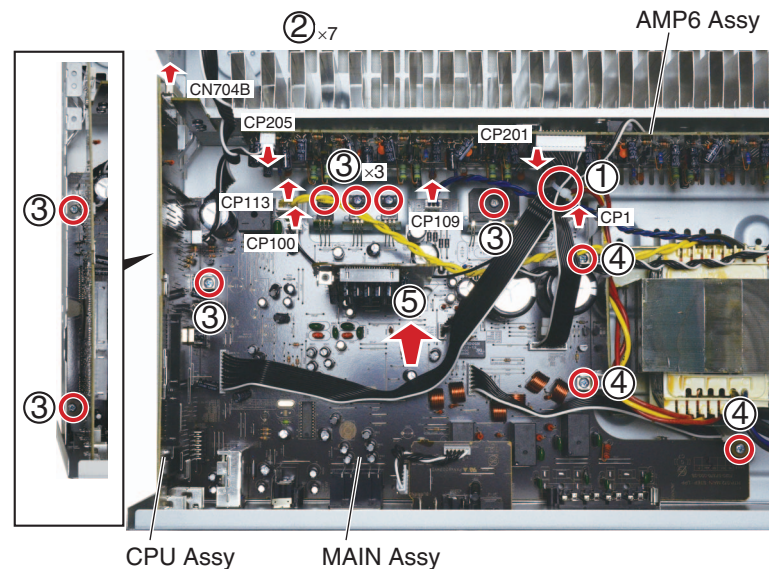
[4-1] Back chassis, D-MAIN Assy

- (1) Remove the 10 screws.
(BBT30P100FTB)
- (2) Remove the five screws.
(BSZ30P040FTB)
- (3) Remove the D-MAIN Assy.
(See procedure [3].)



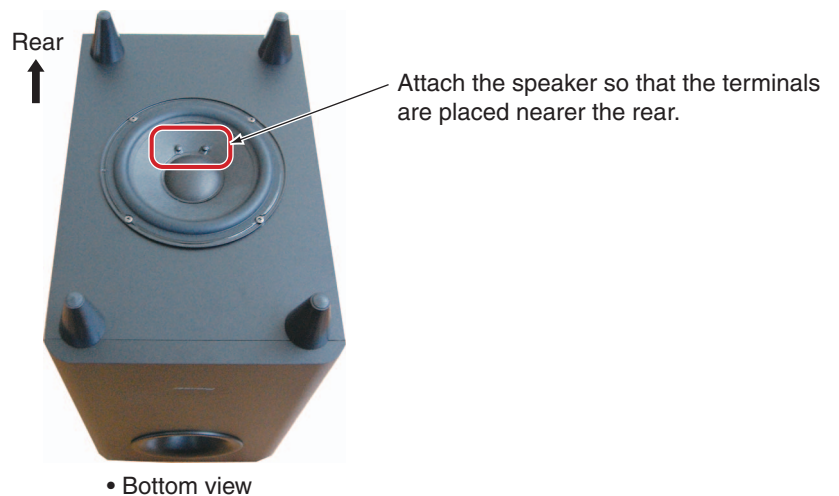
[4-2] MAIN Assy

- (1) Cut the one binder.
- (2) Disconnect the one flexible cable and seven connectors.
(CN704B, CP1, 100, 109, 113, 201, 205)
- (3) Remove the seven screws.
(BBZ30P080FTC)
- (4) Remove the three screws.
(BBZ30P180FTC)
- (5) Remove the MAIN Assy with CPU Assy and back chassis.



7.2 S-22W-P

Orientation of the Speaker during Attachment



7.3 S-11A-P

A Removing the FRONT / SURROUND SPEAKER

1. Remove the four screws.
2. Press on the grille bottom with both thumbs and slide it in frontward direction of the speaker while pressing with sufficient force. (Fig.1)
3. Press on the grille bottom with both thumbs and slide it in frontward direction of the speaker while pressing with sufficient force. (Fig.2)
4. Disconnect the cable, and then remove the speaker unit.

Note: When attaching speaker unit, face its terminal leftward.

Use other fingers
to support the
Cabinet front.



Fig.1

Use other fingers to
support the Cabinet front.



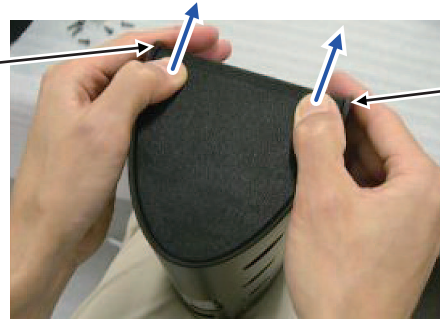
Fig.2

Removing the CENTER SPEAKER

1. Remove the eight screws.
2. Press on the side of the grille with both thumbs and slide it in frontward direction of the speaker while pressing with sufficient force. (Fig.3)
3. Similar procedures for the sides of the opposite end.
4. Disconnect the cable, and then remove the speaker unit.

Note: When attaching speaker unit, face its terminal leftward.

Use other fingers
to support the
Cabinet front.



Use other fingers to
support the Cabinet front.

Fig.3

8. EACH SETTING AND ADJUSTMENT

8.1 UPDATING OF THE FIRMWARE

[Purpose]

Refer to this section when updating the firmware of each microcomputer is required by the service information, etc.

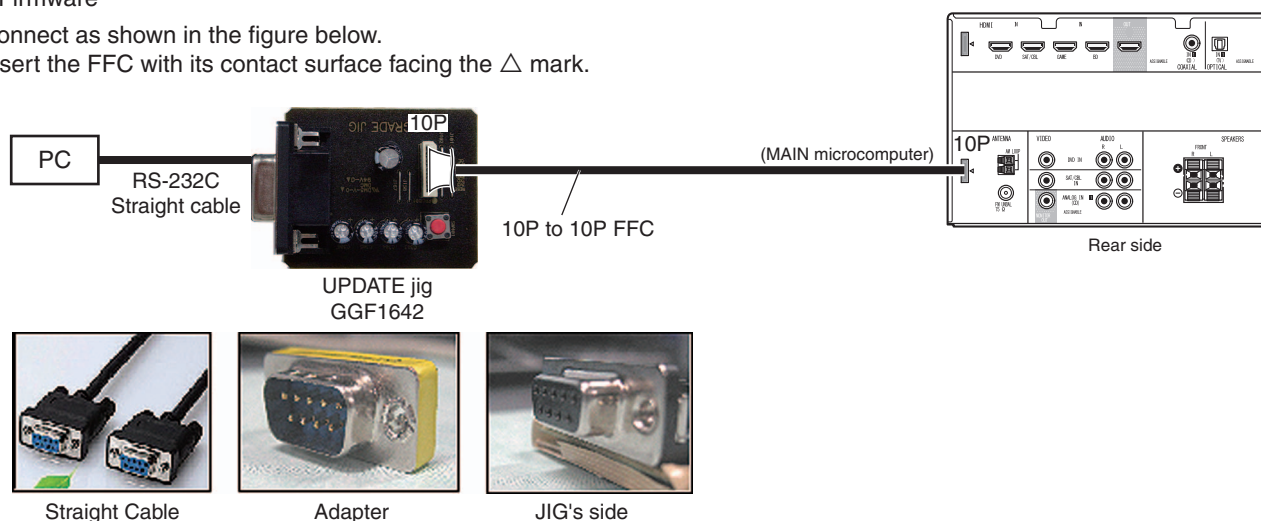
[Necessary Tools and Connections]

① MAIN microcomputer

- PC with a serial port
- RS-232C cable (9-pin to 9-pin, straight cable) (Marketing product)
- UPDATE jig: GGF1642 (Use FFC of GGF1642. (10P to 10P FFC))
- Firmware

Connect as shown in the figure below.

Insert the FFC with its contact surface facing the △ mark.



② HDMI & CEC (SUB) microcomputer

- PC with a USB port
- USB cable (Marketing product)
- UPDATE jig: GGF1646 (Use FFC of GGF1642. (10P to 10P FFC))
- Firmware

<PC setting>

1. Thaw the upgrade programII.zip.
Appear the below folderes and files.
Folder name: CDM20812
Folder name: EPFlash

* Store the EPFlash.exe file in the desktop of the PC.

2. Install the driver.

Request the driver at the time of the connecting the Upgrade Jig and the PC with the USB cable.
Install the Driver (CDM20812).

3. Install .NET Framework 3.0 service pack1.

To work EPFlash.exe (application for rewriting the HDMI u-co), request to be installed the .NET Framework 3.0 service pack1 on the PC.

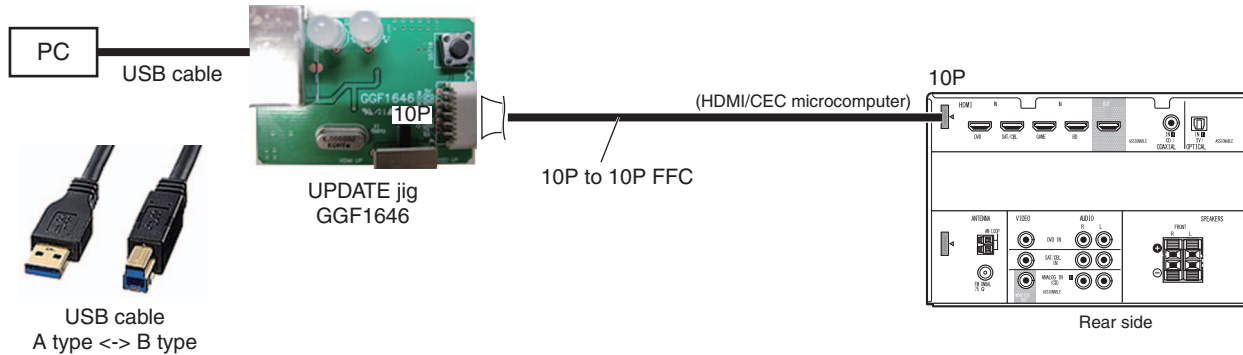
For installation of .NET Framework, Internet connection is required.

To confirm if .NET Framework 3.0 Service Pack 1 has been installed on your PC or not, select Settings > Control Panel > Add or Remove Programs. This confirmation method may be different, depending on the PC. Refer to the operation manual of the PC you use on how to execute Add or Remove Programs.

A

Connect as shown in the figure below.
Insert the FFC with its contact surface facing the Δ mark.

B

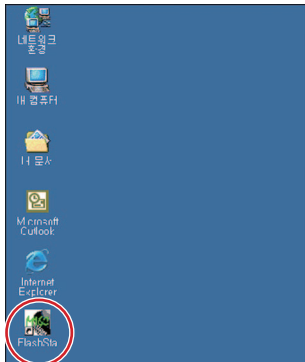


Microcomputers update

[Procedures]

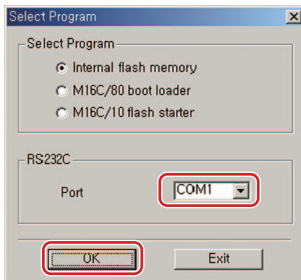
■ for MAIN microcomputer

1. Unplug the AC cord.
Connect the FFC cable. (MAIN microcomputer)
Start up application FlashSta on the PC.



2. Plug the AC cord. (STANDBY mode)
For updating of the MAIN microcomputer, proceed with the following steps in STANDBY mode.

3. Press the OK button.



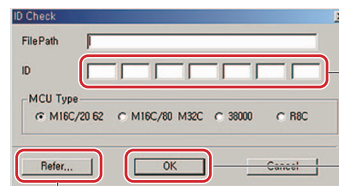
Select for COM port.

[if the following messages are displayed]



Please push the cancel button and press the JIG's RESET button.
And confirm a connection of FFC.
Please return to procedure 1.

4. Select the update file and enter ID.

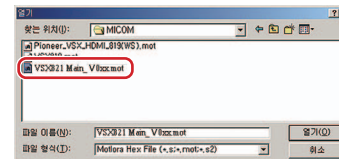


② Enter ID.
Enter "ff" in all field.

③ Press OK button to go to next step.

① Selection of upgrade file

① Select the update file

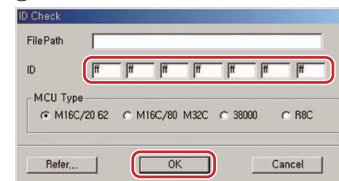


Select "VSX324 Main V1xx.mot" file to update the MCU.



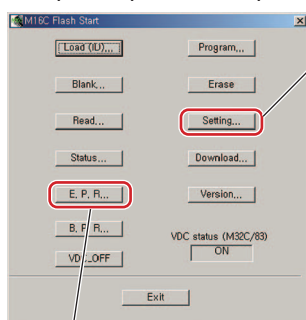
Press the OK button.

② Enter ID.



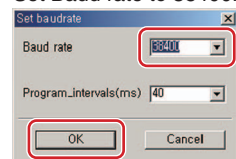
Press the OK button.

5. Set speed update and update the MCU.



① Set speed of update.

① Set speed of update.
Set Baud rate to 38400.



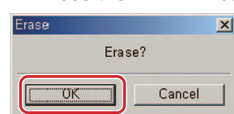
Press the OK button.

② Update the MCU.

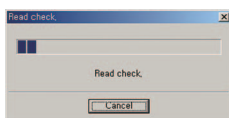
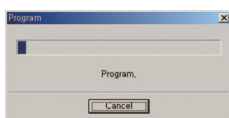
E.P.R=>Erase+Program+Read

② Update the MCU

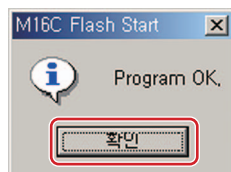
Press the E.P.R ... button



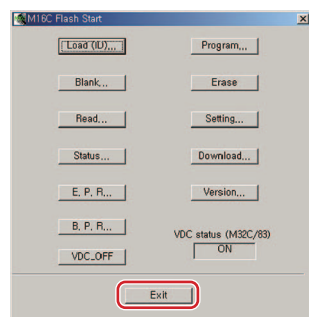
Press OK button.



6. Update Finished MAIN microcomputer.



Press the OK button.

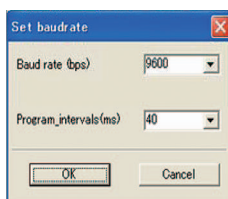


Press the Exit button.
Please wait for until this window disappears.

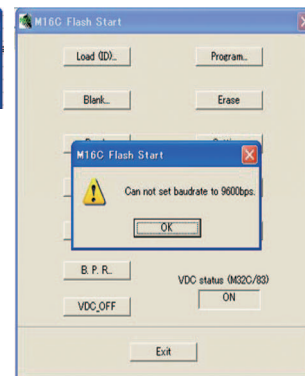
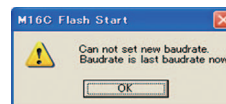
If the following messages are displayed, shut the update program down, and start the update again from step 1.



Push the JIG's RESET button during 1 sec.
Press the OK button.



Select the 9600 of the Board rate then press the OK button



7. Unplug the AC cord.

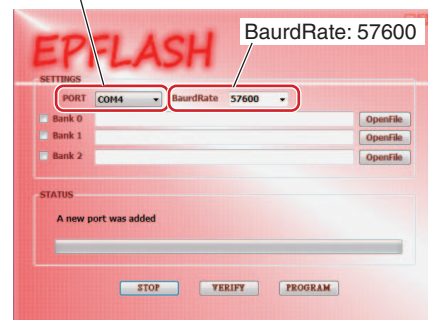
Disconnect the FFC cable.

for HDMI & CEC (SUB) microcomputer

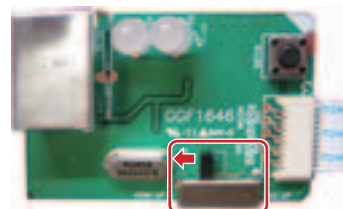
1. Unplug the AC cord.

Start up the application EPFlash on the PC.

When the PC and the Upgrade Jig is connecting, the COM PORT is set automatically.

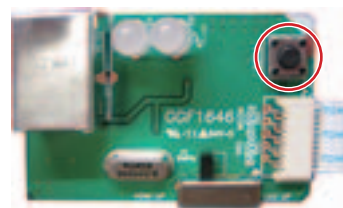


2. Select "HDMI UP" on the Upgrade Jig.

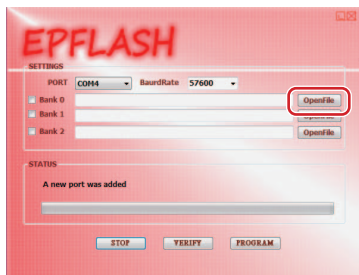


Connect the PC and the Upgrade Jig.
Connect the FFC cable. (HDMI microcomputer)

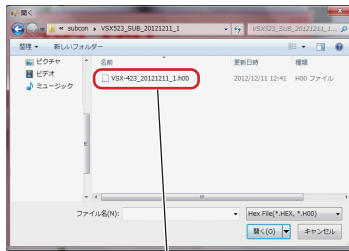
3. Holding down the tact switch (RESET) of the Upgrade Jig in AC OFF state. Release the tact switch after AC ON, power ON (2-3 seconds later).



4. Select the update file. Press the "OpenFile" button.

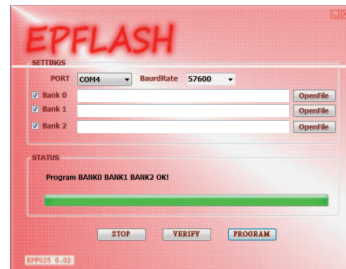


Be chosen automatically to Bank 2 when you choose file of H00 in Bank 0.

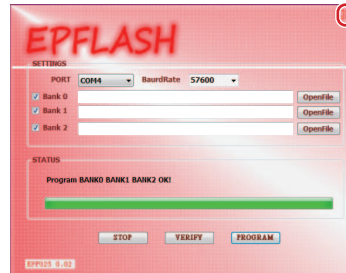


Select "VSX-423_*****.h00" file to update MCU.

6. Update Finished HDMI microcomputer.



End the application EPFlash.



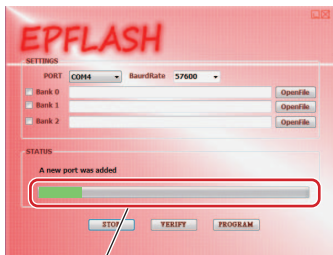
5. Press the "PROGRAM" button to update the firmware.



If a message of "Program BANK0 BANK1 BANK2 OK!" is indicated, let update is the normalcy end, and EPFLASH down.

If a message except the above is indicated, does AC OFF, and confirm a PC, Upgrade Jig, connection of FFC Cable, and start the update again from step 1.

7. Turn the unit off. (STANDBY mode)
Unplug the AC cord, and be around one minute, and Disconnect the FFC cable.

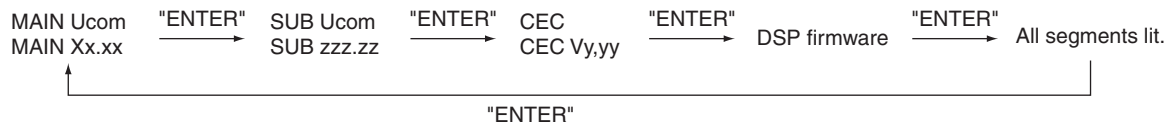


Rate of the progression is appeared.

Check to the software version of MAIN, HDMI & CEC (SUB) microcomputers

1. Make sure that the main unit is in STANDBY mode.

Press and hold the "ENTER" and "STANDBY/ON" keys, then press the "ENTER" key to display each UCOM version. Each time the "ENTER" key is pressed, then indications on the FL display change as follows:



2. Turn the unit off.

■ DSP firmware update

A

[Procedures]

1. Select TV function, and, with Signal select as OPTICAL1 then set the unit to STBY_Off mode.
2. Press the SPEAKERS and STANDBY/ON keys simultaneously to enter DSP UpDate mode. ("DSP UP" is displayed.)
3. When "PLAY" is displayed, playback of the .wav file starts. (Play the file only once. NEVER repeat playback.) ("PLAY" is displayed.)
4. After playback is finished and "ENTER" is displayed, press the ENTER key on the front panel. ("ENTER" is displayed.)
5. "WRITING" is automatically displayed.
6. After writing is completed, "COMPLETE" is displayed.
7. Turn the unit off then confirm that the version has been updated.

B


C

D

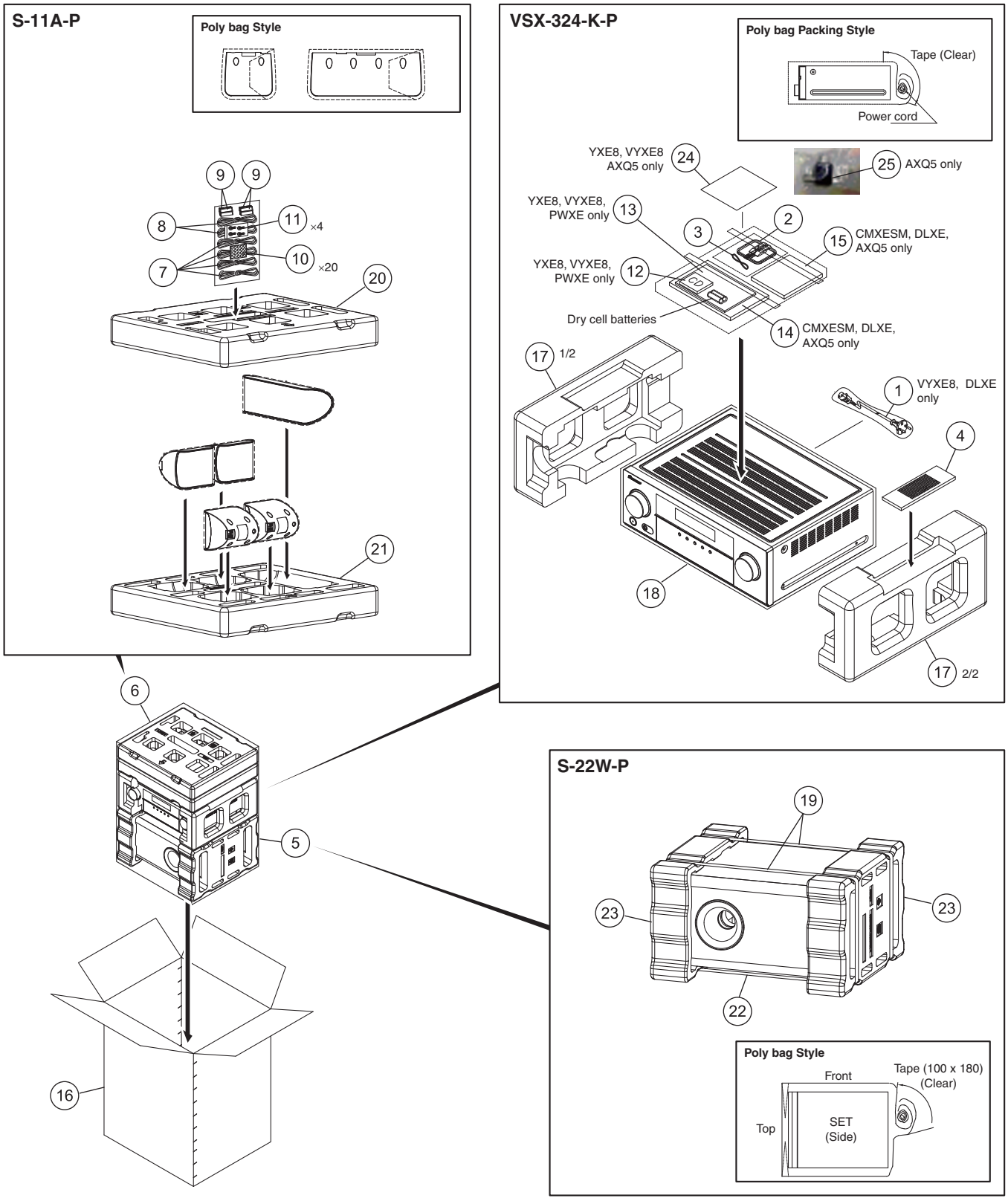
E

F

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.)

9.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.	
⚠	1	Power Cord	See Contrast table (2)		16	Box, Gift HTP-072	See Contrast table (2)	
	2	AM Loop Antenna	E601019000010-IL		17	Cushion, Snow	6230212914000-IL	A
	3	FM Wire Antenna	E605010140010-IL		18	PE, Sheet	6327040059000-IL	
	4	Remote Control (AXD7690)	8300769000010-IL		19	Band Packing	8952SHM700046-IL	
	5	S-22W-P SW Assy	8952S22W00002-IL		20	Packing Top S-11-P	8952S11005541-IL	
	6	S-11A-P Total Assy	F008001180720-IL		21	Packing Top S-11-P	8952S11005542-IL	
	7	Speaker Cord (4 m)	8952S11005480-IL		22	Poly-Bag (Set)	8952S21W05180-IL	
	8	Speaker Cord (10 m)	8952S11005490-IL		23	Packing S-22W-P	8952S22W05191-IL	
	9	Brackets for Wall Mounting	8952S11005500-IL	NSP	24	Warranty Card	See Contrast table (2)	
	10	Non-Skid Pads	8952S11005510-IL		25	Tuner Isolator	See Contrast table (2)	
	11	Screw (M5)	8952S11005520-IL					B
	12	Operating Instructions (CD-ROM)	See Contrast table (2)					
	13	Quick Start Guide	See Contrast table (2)					
	14	Operating Instructions	See Contrast table (2)					
	15	Operating Instructions	See Contrast table (2)					

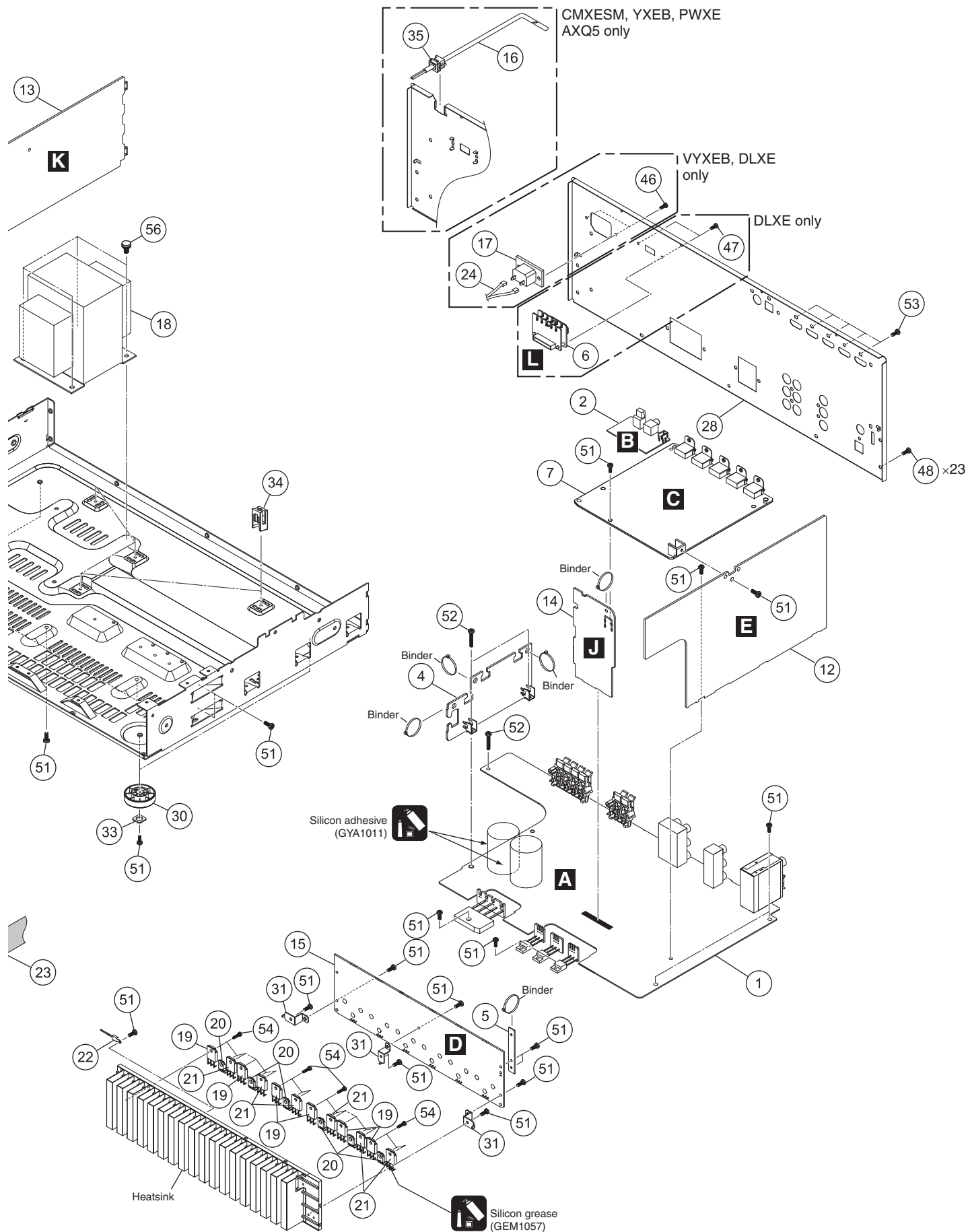
(2) CONTRAST TABLE

HTP-072/CMXESM, YXE8, VYXE8, DLXE, PWXE, AXQ5 and HTP-073/VYXE8 are constructed the same except for the following:

Mark	No.	Symbol and Description	HTP-072 /CMXESM	HTP-072 /YXE8	HTP-072 /VYXE8	HTP-072 /DLXE	HTP-072 /PWXE	HTP-072 /AXQ5	HTP-073 /VYXE8
⚠	1	Power Cord	Not used	Not used	L068250100040-IL	L068250160020-IL	Not used	Not used	L068250160020-IL
	12	Operating Instructions (CD-ROM)	Not used	6517000001380-IL	6517000001380-IL	Not used	6517000001380-IL	Not used	6517000001390-IL
	13	Quick Start Guide	Not used	5707000008050-IL	5707000008050-IL	Not used	5707000008050-IL	Not used	5707000008060-IL
	14	Operating Instructions	5707000008070-IL	Not used	Not used	5707000008090-IL	Not used	5707000008110-IL	Not used
	15	Operating Instructions	5707000008080-IL	Not used	Not used	5707000008100-IL	Not used	5707000008120-IL	Not used
NSP	16	Box, Gift HTP-072	6007211970060-IL	6007211970070-IL	6007211970080-IL	6007211970090-IL	60072119700A0-IL	60072119700B0-IL	60072119700C0-IL
	24	Warranty Card	Not used	ARY7158	ARY7158	Not used	Not used	ARY7137	ARY7158
	25	Tuner Isolator	Not used	Not used	Not used	Not used	Not used	L170200060010-IL	Not used

△





(1) VSX-324-K-P 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>
A	1	MAIN Assy	See Contrast table (2)	31	Bracket	4010056906010-IL
	2	OPTCO Assy	7028073702010-IL	32	Bracket SMPS	401021488600D-IL
	3	G-L Assy	7028073704010-IL	33	Cushion	4050211605000-IL
	4	G-T Assy	7028073705010-IL	34	Support	4070001601010-IL
	5	G-CNT Assy	7028073706010-IL	35	Stopper	See Contrast table (2)
	6	V_SEL Assy	See Contrast table (2)	36	Plate F/USB	4470212736000-IL
	7	D-MAIN Assy	7028073691010-IL	37	Window Display 323SY	50772131130C0-IL
	8	FRONT Assy	7028073671010-IL	38	Knob	5080212431000-IL
	9	HP Assy	7028073672020-IL	39	Button	5090213741100-IL
	10	FUSB Assy	7028073673010-IL	40	5 Key Button	5090214561000-IL
B	11	INSEL Assy	7028073674010-IL	41	10 Key Button	5090214571000-IL
	12	CPU Assy	See Contrast table (2)	42	Safety Cover	See Contrast table (2)
	13	STBY Assy	See Contrast table (2)	43	Holder	See Contrast table (2)
	14	CNT Assy	7028073683010-IL	44	•••••	
	15	AMP6 Assy	7028073711010-IL	45	•••••	
C	⚠ 16	Cord Assy	See Contrast table (2)	46	Screw, tap Tite	See Contrast table (2)
	⚠ 17	Socket, power AC	See Contrast table (2)	47	Screw	See Contrast table (2)
	⚠ 18	Power Trans	See Contrast table (2)	48	Screw	BBT30P100FTB
	⚠ 19	Transistor	J5011560P0000-IL	49	Screw	BBT40P080FTB
	⚠ 20	Semi, TR/GE NPN 2SC	J502396400010-IL	50	Screw	BBZ30P080FTB
	⚠ 21	Transistor	J5032390P0000-IL	51	Screw	BBZ30P080FTC
	22	Posistor	F320301022240-IL	52	Screw	BBZ30P180FTC
	23	Cable, Flat Card 1.0	N711251022480-IL	53	Screw	BSZ30P040FTB
	24	CN, Wire	See Contrast table (2)	54	Screw Tapping Assy	B018230141H11-IL
	25	Pioneer Badge B (PLS)	XAM3006	55	Screw, Tap Tite	B020230063B10-IL
	26	Cabinet Assy	3008211846020-IL	56	Screw	B028940101B11-IL
	27	Front Panel 324	See Contrast table (2)	57	Screw	1500001206010-IL
	28	Chassis Back 324	See Contrast table (2)	58	Screw	1500001456010-IL
D	29	Spring	3720210276000-IL			
	30	Foot (PLS)	4000210391000-IL			

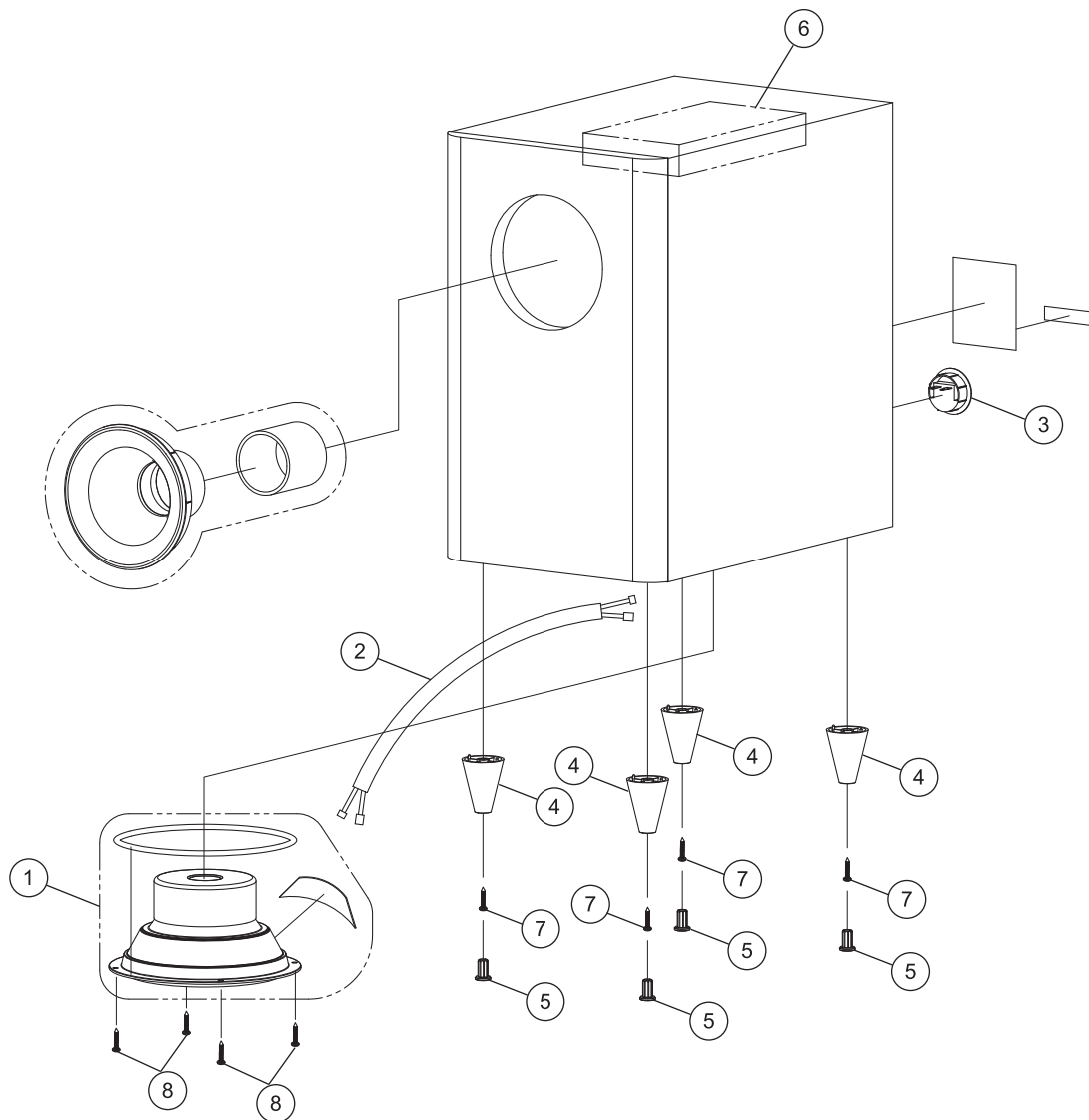
(2) CONTRAST TABLE

VSX-324-K-P/CMXESM, YXEB, VYXEB, DLXE, PWXE and AXQ5 are constructed the same except for the following:

	<u>Mark</u>	<u>No.</u>	<u>Symbol and Description</u>	<u>VSX-324-K-P /CMXESM</u>	<u>VSX-324-K-P /YXEB</u>	<u>VSX-324-K-P /VYXEB</u>	<u>VSX-324-K-P /DLXE</u>	<u>VSX-324-K-P /PWXE</u>	<u>VSX-324-K-P /AXQ5</u>
E		1	MAIN Assy	7028073701040-IL	7028073701010-IL	7028073701010-IL	7028073701030-IL	7028073701020-IL	7028073701020-IL
		6	V_SEL Assy	Not used	Not used	Not used	7028073703020-IL	Not used	Not used
		12	CPU Assy	7028073681070-IL	7028073681010-IL	7028073681050-IL	7028073681040-IL	7028073681030-IL	7028073681020-IL
		13	STBY Assy	7028073682050-IL	7028073682010-IL	7028073682030-IL	7028073682040-IL	7028073682010-IL	7028073682020-IL
	⚠	16	Cord Assy	L068125101710-IL	L068250161710-IL	Not used	Not used	L068250751710-IL	L068250101710-IL
	⚠	17	Socket, power AC	Not used	Not used	G430040560021-IL	G430040560021-IL	Not used	Not used
	⚠	18	Power Trans	8200858500340-IL	8200858500320-IL	8200858500320-IL	8200858500350-IL	8200858500320-IL	8200858500330-IL
		24	CN, Wire	Not used	Not used	Not used	L000800020220-IL	Not used	Not used
		27	Front Panel 324	3067215861000-IL	3067215861100-IL	3067215861100-IL	3067215861100-IL	3067215861100-IL	3067215861100-IL
		28	Chassis Back 324	3207214696000-IL	3207214696030-IL	3207214696100-IL	3207214696200-IL	3207214696010-IL	3207214696020-IL
F		35	Stopper	4380040162010-IL	4380040162010-IL	Not used	Not used	4380040162010-IL	4380040162010-IL
		42	Safety Cover	Not used	Not used	Not used	4310212122020-IL	Not used	Not used
		43	Holder	Not used	Not used	Not used	4310213701000-IL	Not used	Not used
		46	Screw, tap Tite	Not used	Not used	B020030083F10-IL	B020030083F10-IL	Not used	Not used
		47	Screw	Not used	Not used	Not used	B028030043B10-IL	Not used	Not used

5

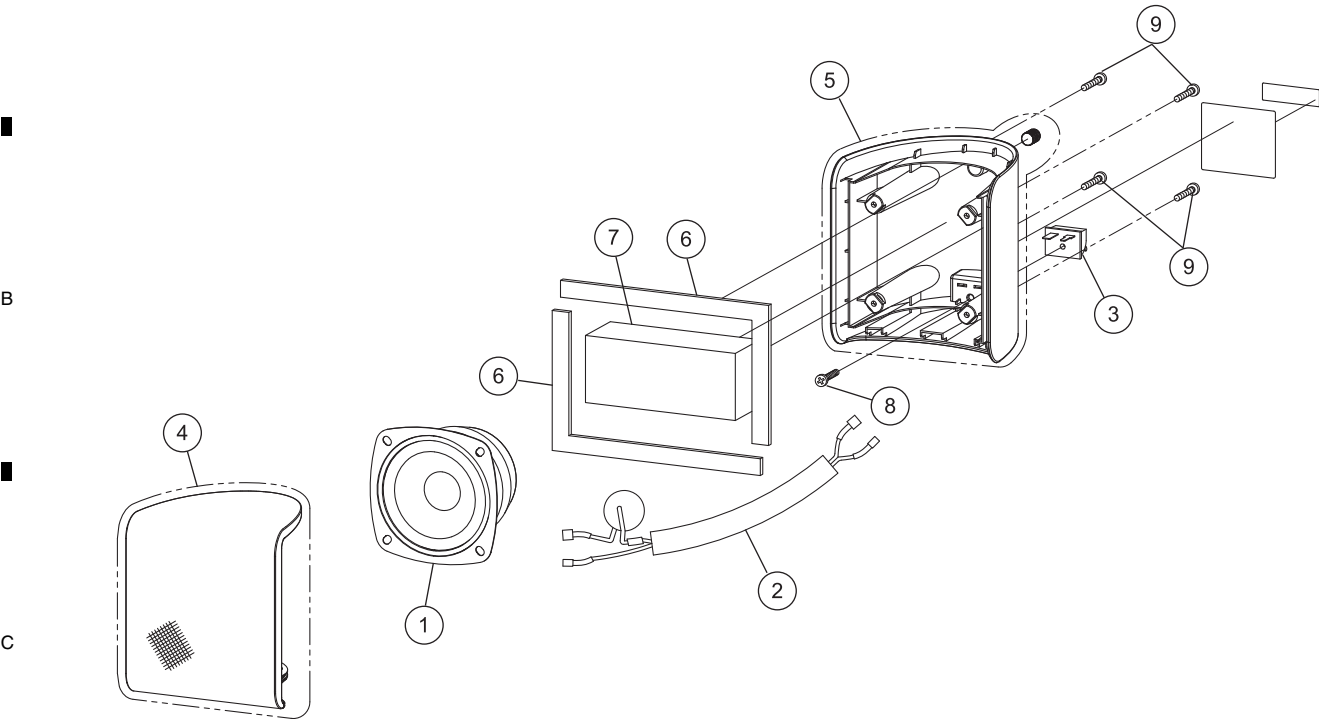
9.3 S-22W-P



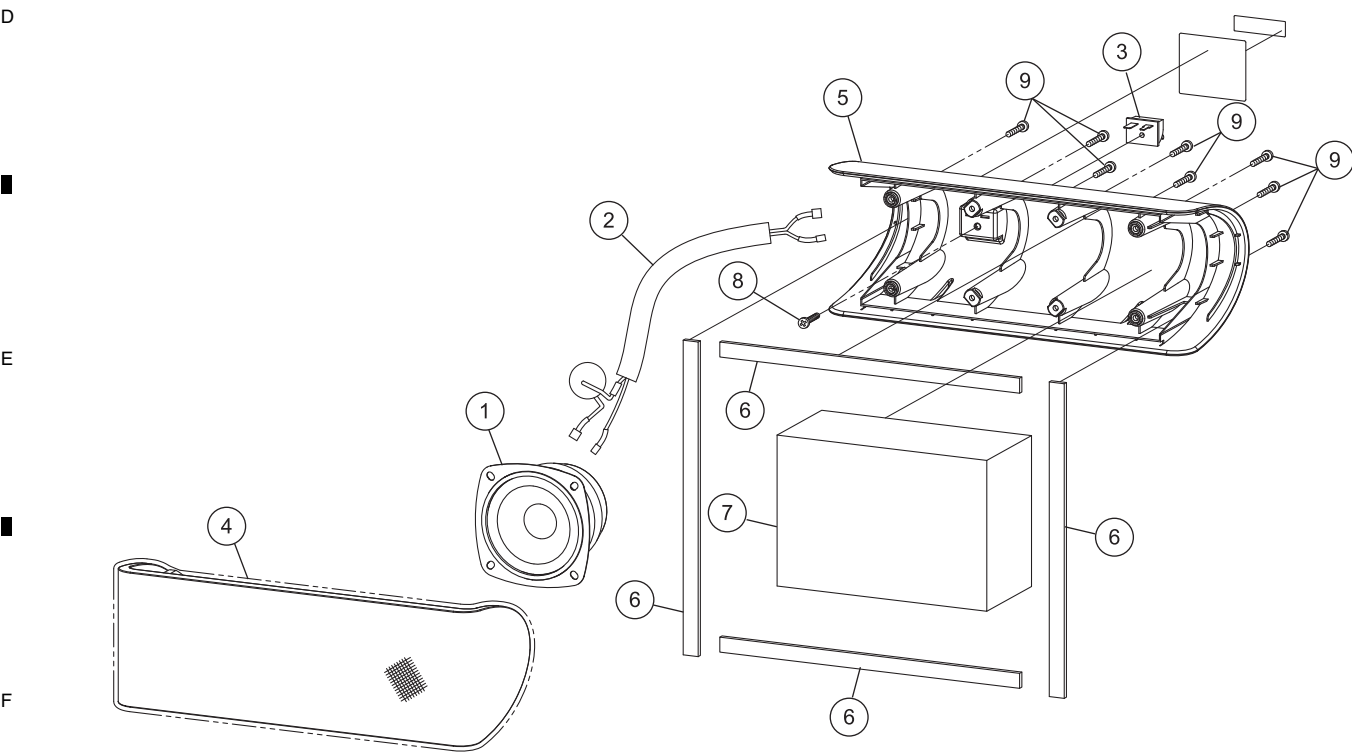
S-22W-P SECTION PARTS LIST

Mark No.	Description	Part No.
1	Unit Assy	8952S22W00009-IL
2	Network Assy	8952S22W00011-IL
3	Speaker Terminal	8952S22W00004-IL
4	Foot Mold	8952S22W00007-IL
5	Foot Cushoin	8952S22W00200-IL
6	Cashmere	8952S22W00210-IL
7	Screw (Bind Head)	8952SHM700039-IL
8	Screw (Bind Head)	8952S21W05381-IL

A Front L, R, Surround L, R speaker



Center speaker



S-11A-P SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
Front L, R, Surround L, R speaker		
1	Unit Speaker (Surround)	8952S11005250-IL
2	Speaker Wire	8952S11005140-IL
3	Speaker Terminal	8952S11005100-IL
4	Frame Net Assy	8952S11005350-IL
5	Case Rear	8952S11005380-IL
6	Felt	8952S11005411-IL
7	Cassimere	8952S11005430-IL
8	Screw	8952SB3001110-IL
9	Screw (Bind Head)	8952S11005150-IL

Center speaker		
1	Unit Speaker (Front)	8952S11005090-IL
2	Speaker Wire	8952S11005140-IL
3	Speaker Terminal	8952S11005100-IL
4	Frame Net Assy	8952S11005030-IL
5	Case Rear Assy	8952S11005060-IL
6	Felt	8952S11005411-IL
7	Cassimere	8952S11005130-IL
8	Screw	8952SB3001110-IL
9	Screw (Bind Head)	8952S11005150-IL

A

B

C

D

E

F

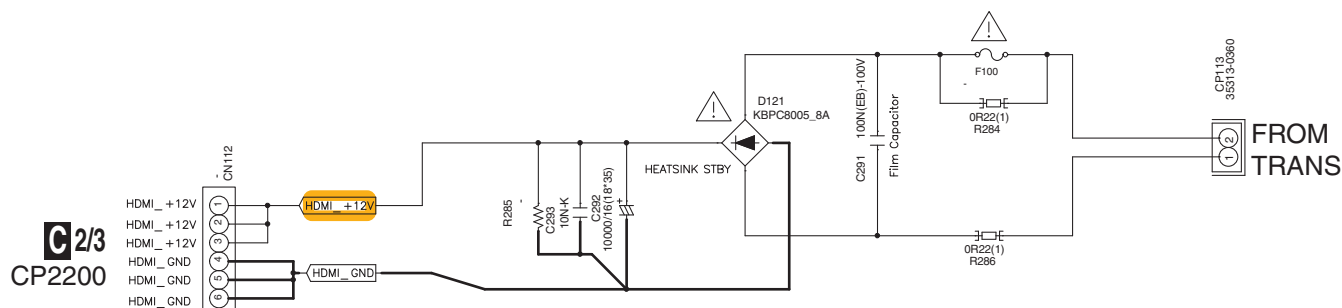
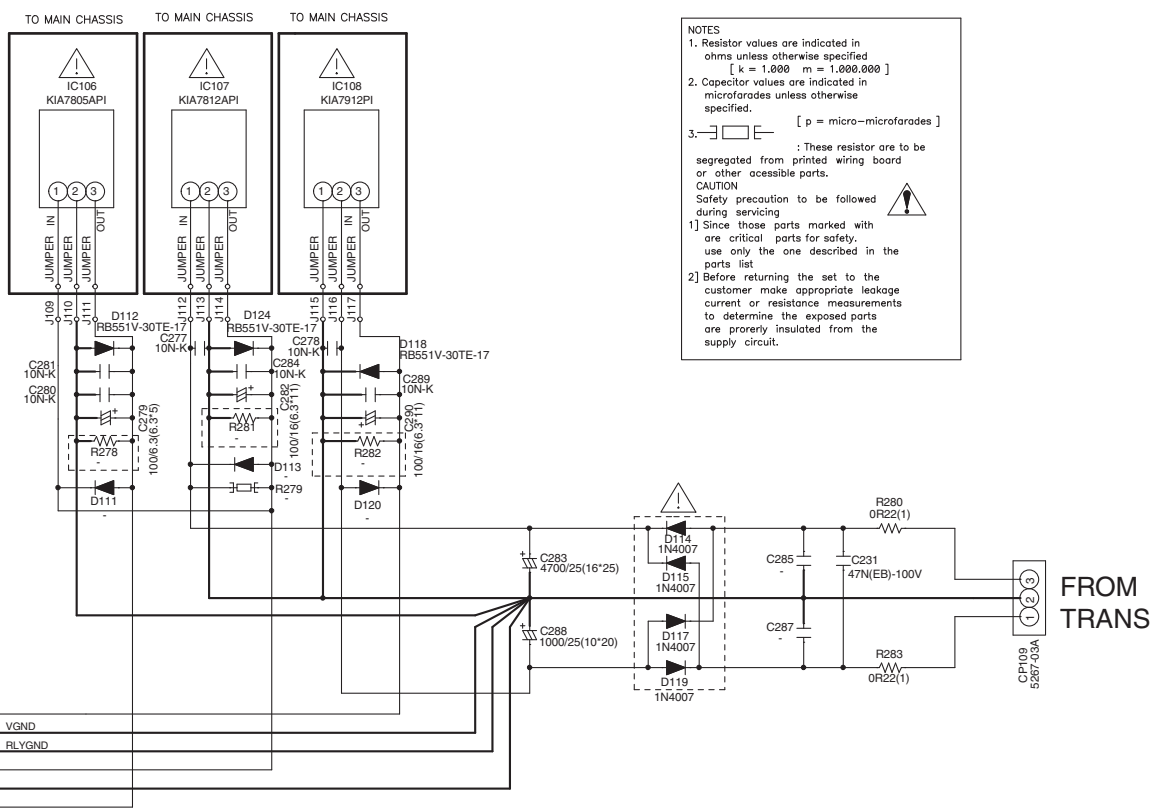


A 1/3 MAIN ASSY
(CMXESM: 7028073701040-IL)
(YXE8, VYXE8: 7028073701010-IL)
(DLXE: 7028073701030-IL)
(PWXE, AXQ5: 7028073701020-IL)

4



A 3/3 MAIN ASSY
 (CMXESM: 7028073701040-IL)
 (YXE8, VYXE8: 7028073701010-IL)
 (DLXE: 7028073701030-IL)
 (PWXE, AXQ5: 7028073701020-IL)



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

55



10.5 D-MAIN ASSY (1/3)

A

B

C

D

E

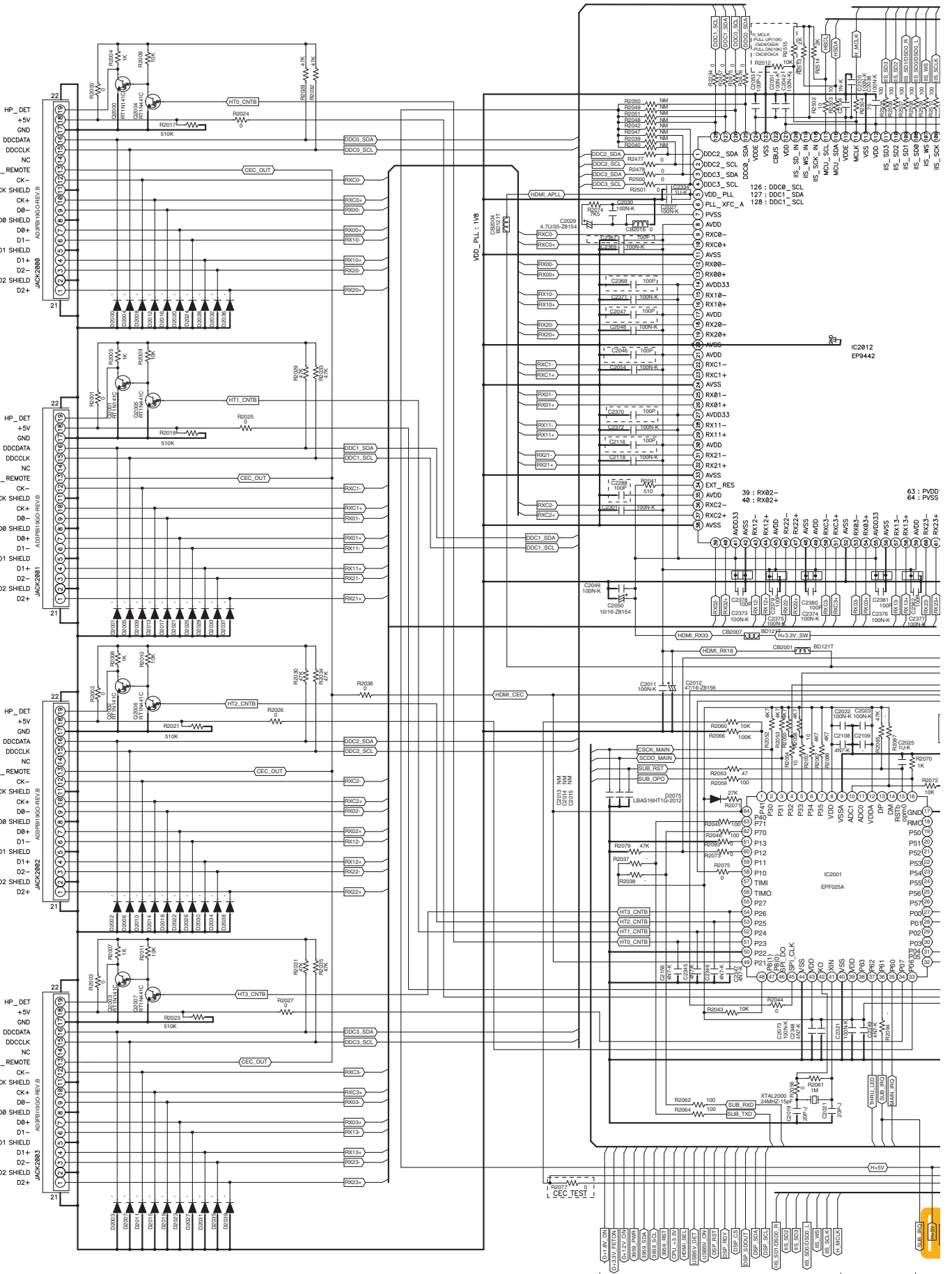
F

HDMI_IN0
JACK2000
DVD

HDMI_IN1
JACK2001
SAT/CBL

HDMI_IN2
JACK2002
GAME

HDMI_IN3
JACK2003
BD



A



C 1/3

4

F



A



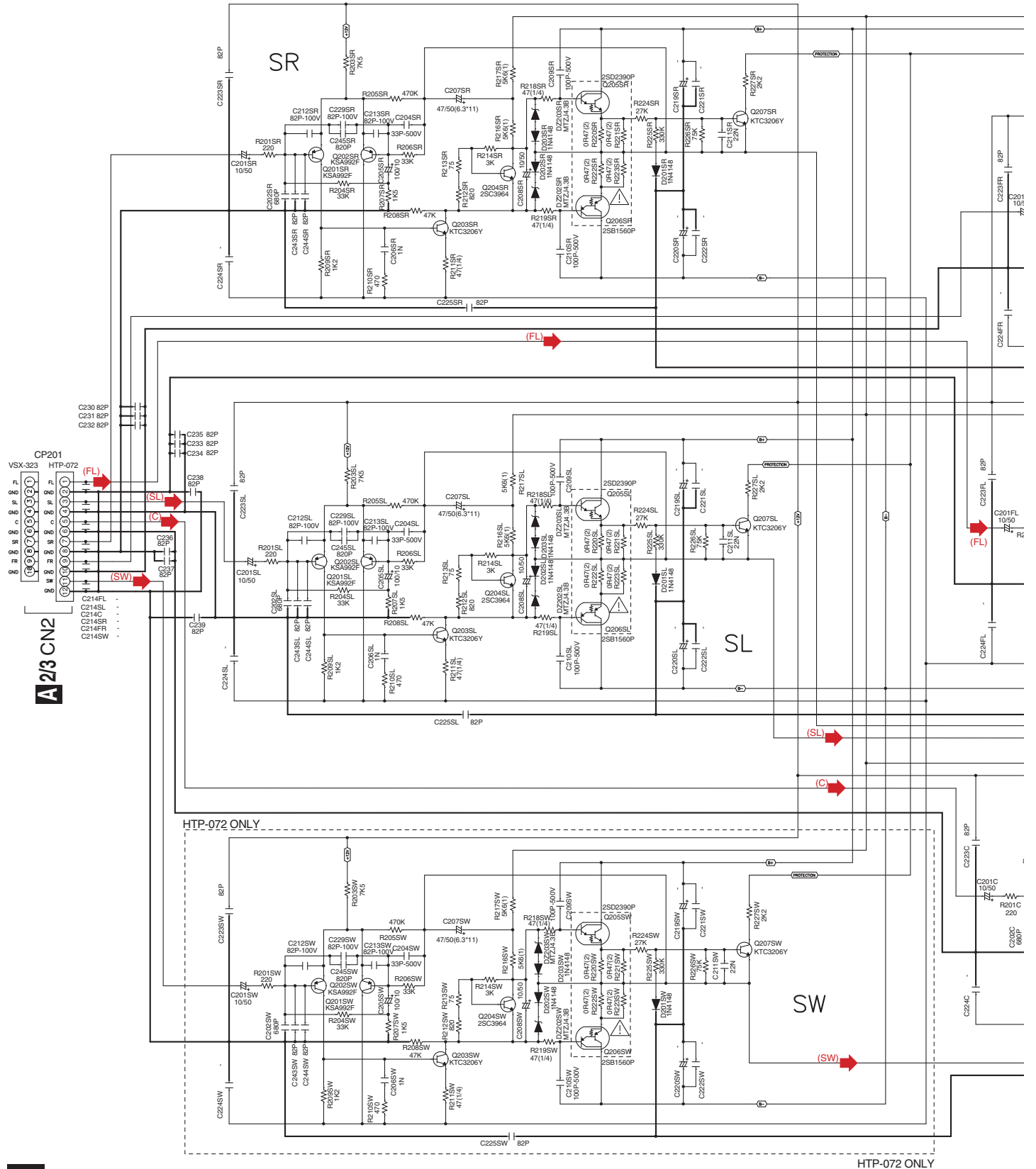
C3/3 D-MAIN ASSY
(7028073691010-IL)



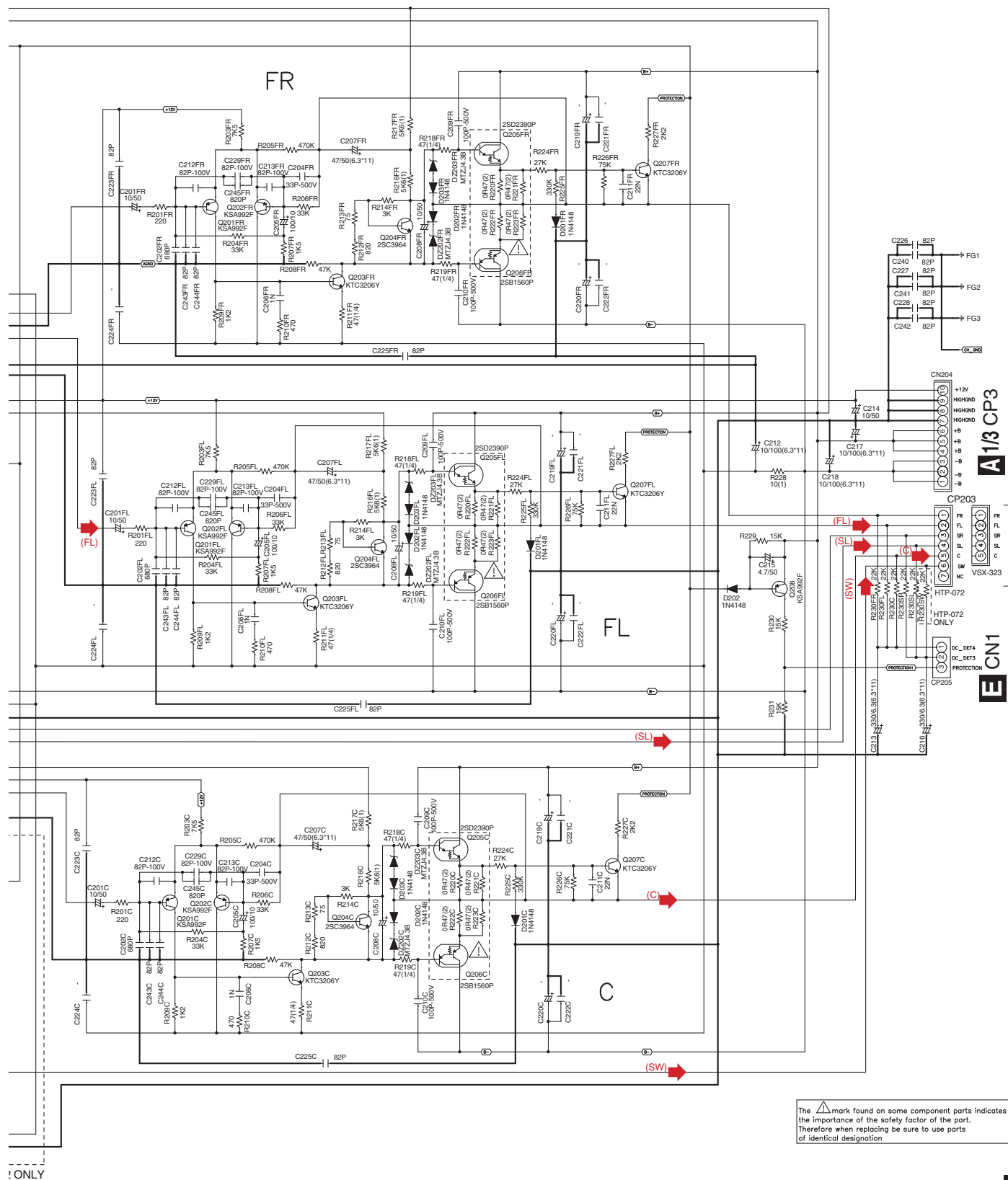


10.8 AMP6 ASSY

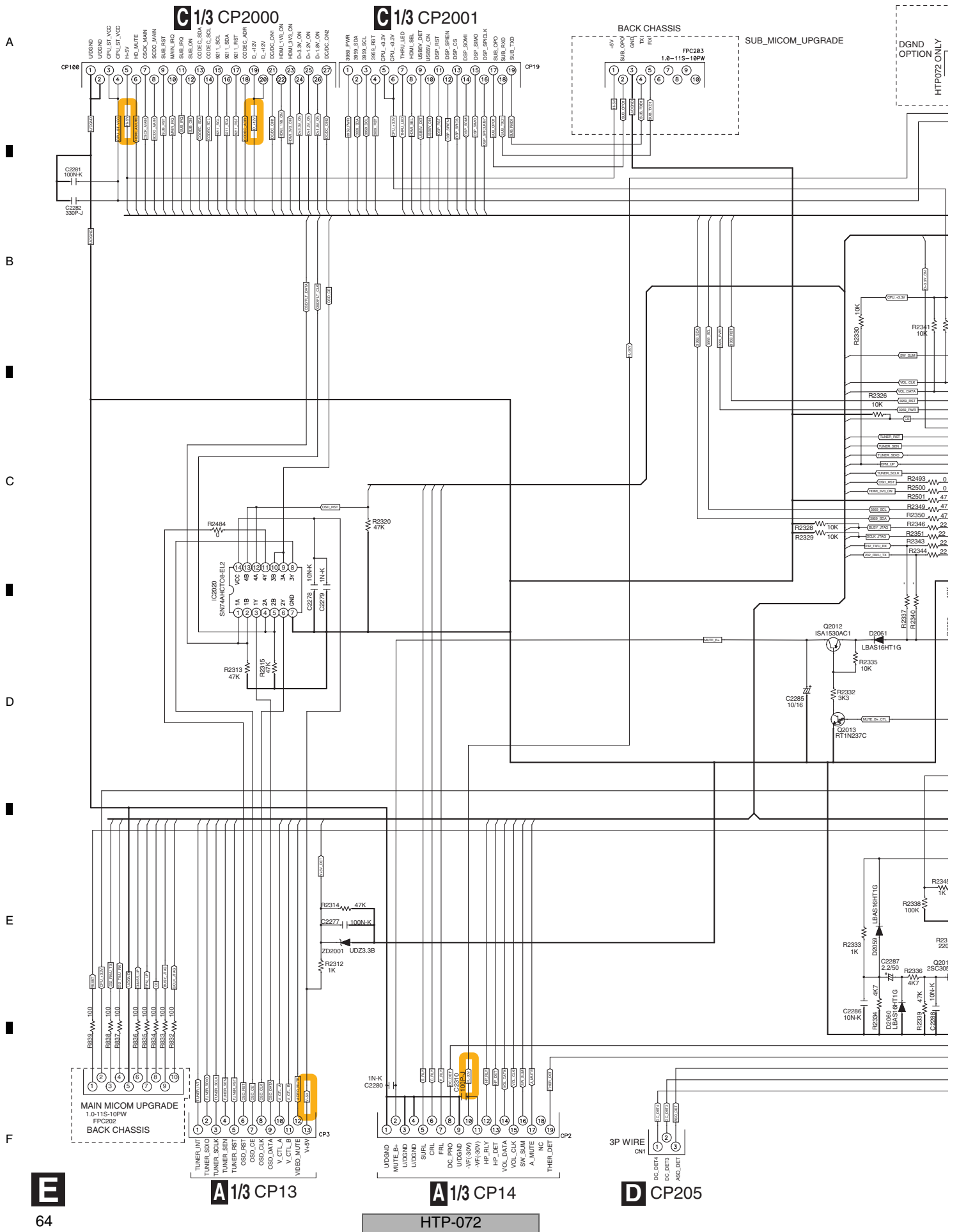
D AMP6 ASSY (7028073711010-IL)




- (FL) : Audio Signal Route (Front L ch)
 (SL) : Audio Signal Route (Surround L ch)
 (C) : Audio Signal Route (Center ch)
 (SW) : Audio Signal Route (SubWoofer ch)



10.9 CPU ASSY





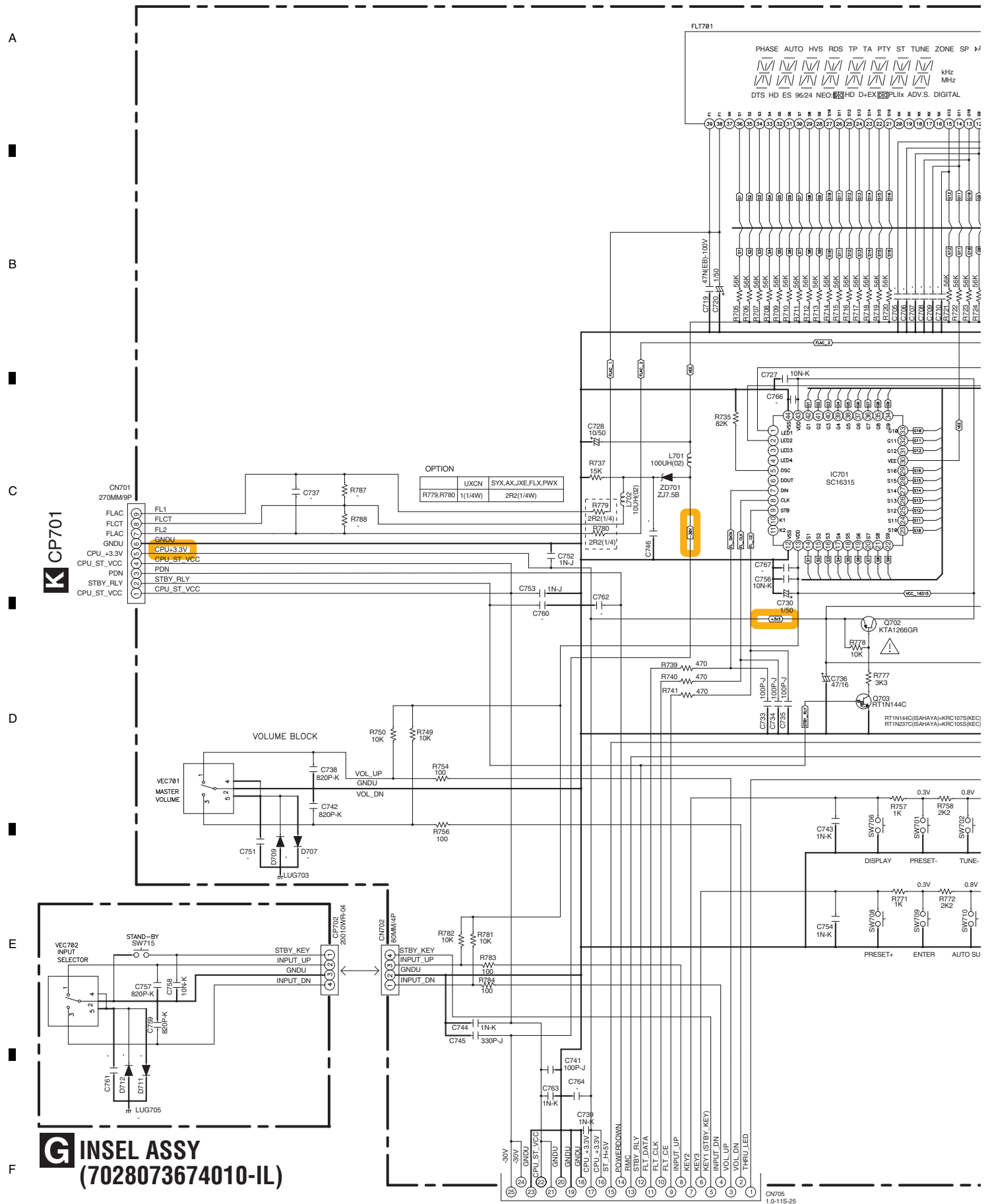
The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore when replacing be sure to use parts of identical designation

-30V
-30V
U/DGND
CPU_ST_VCC
CPU_ST_VCC
U/DGND
U/DGND
U/DGND
CPU_+3.3V
CPU_+3.3V
ST_H+5V
POWERDOWN
RMC
STBY_RLY
FLT_DATA
FLT_CLK
FLT_CE
INPUT_UP
KEY2
KEY3
KEY1 (STBY_KEY)
INPUT_DN
VOL_UP
VOL_DN
THRU_LED

(AXQ5: 7028073681020-IL)

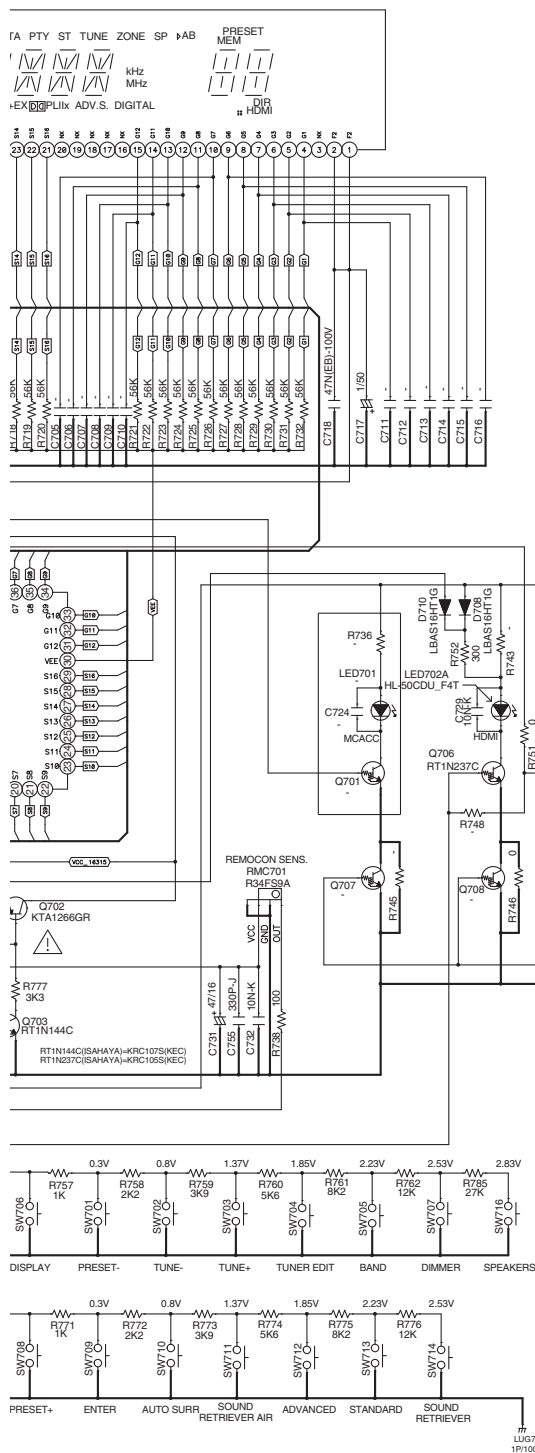
HTP-072

10.10 FRONT, INSEL, HP and FUSB ASSYS



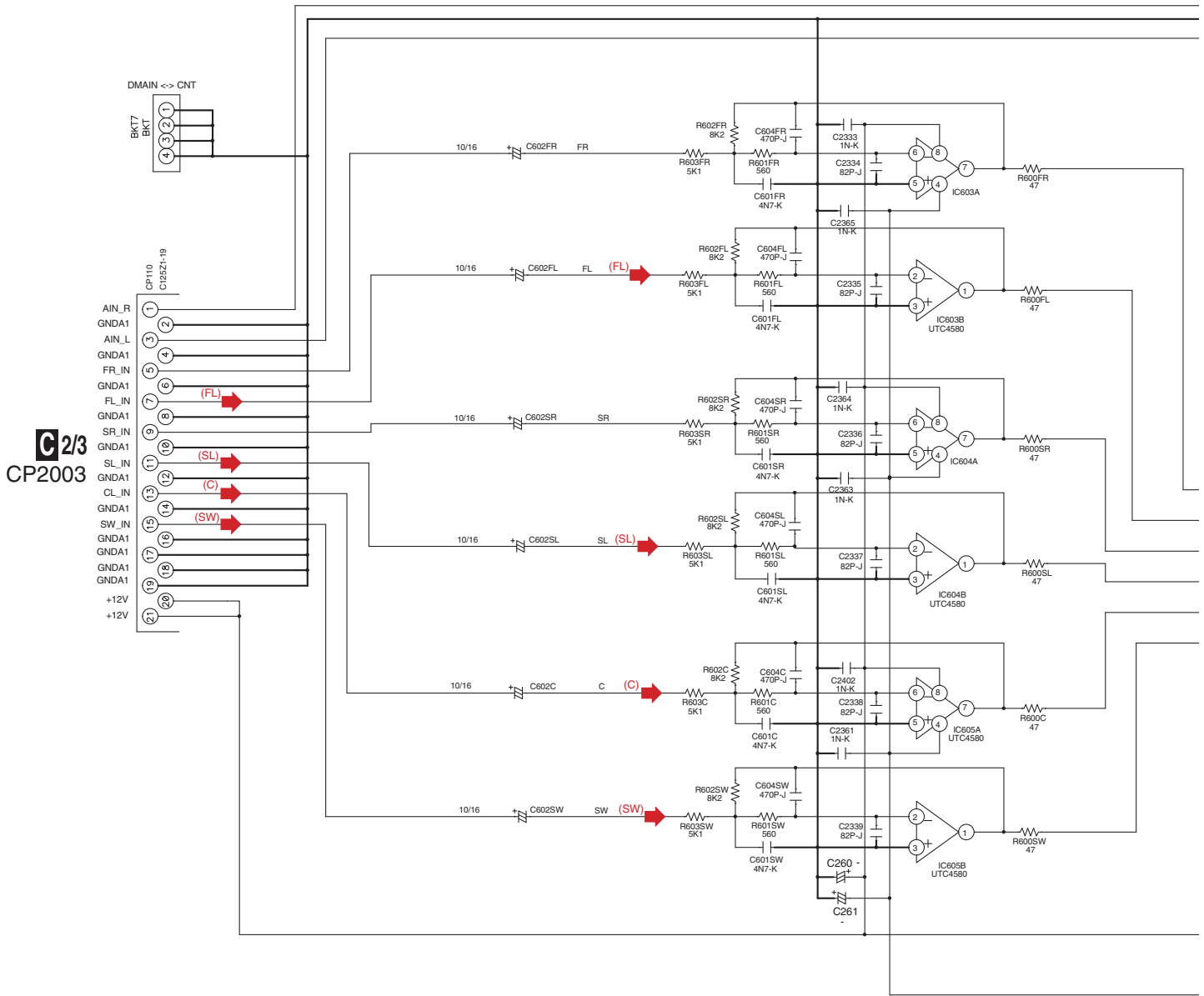
F G

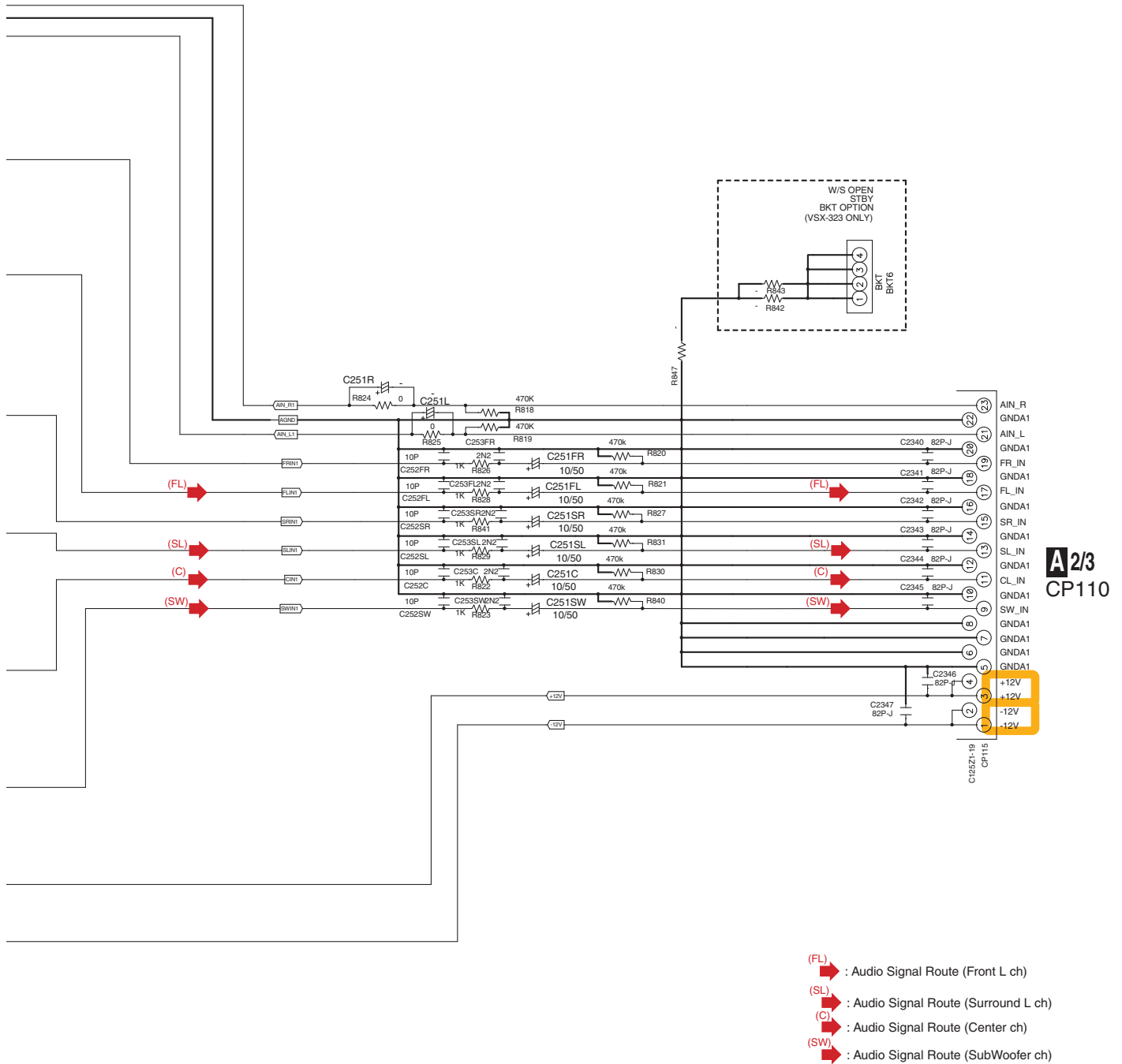
E CN704B



10.11 CNT ASSY

J CNT ASSY
(7028073683010-IL)





10.12 STBY and V_SEL ASSYS

A

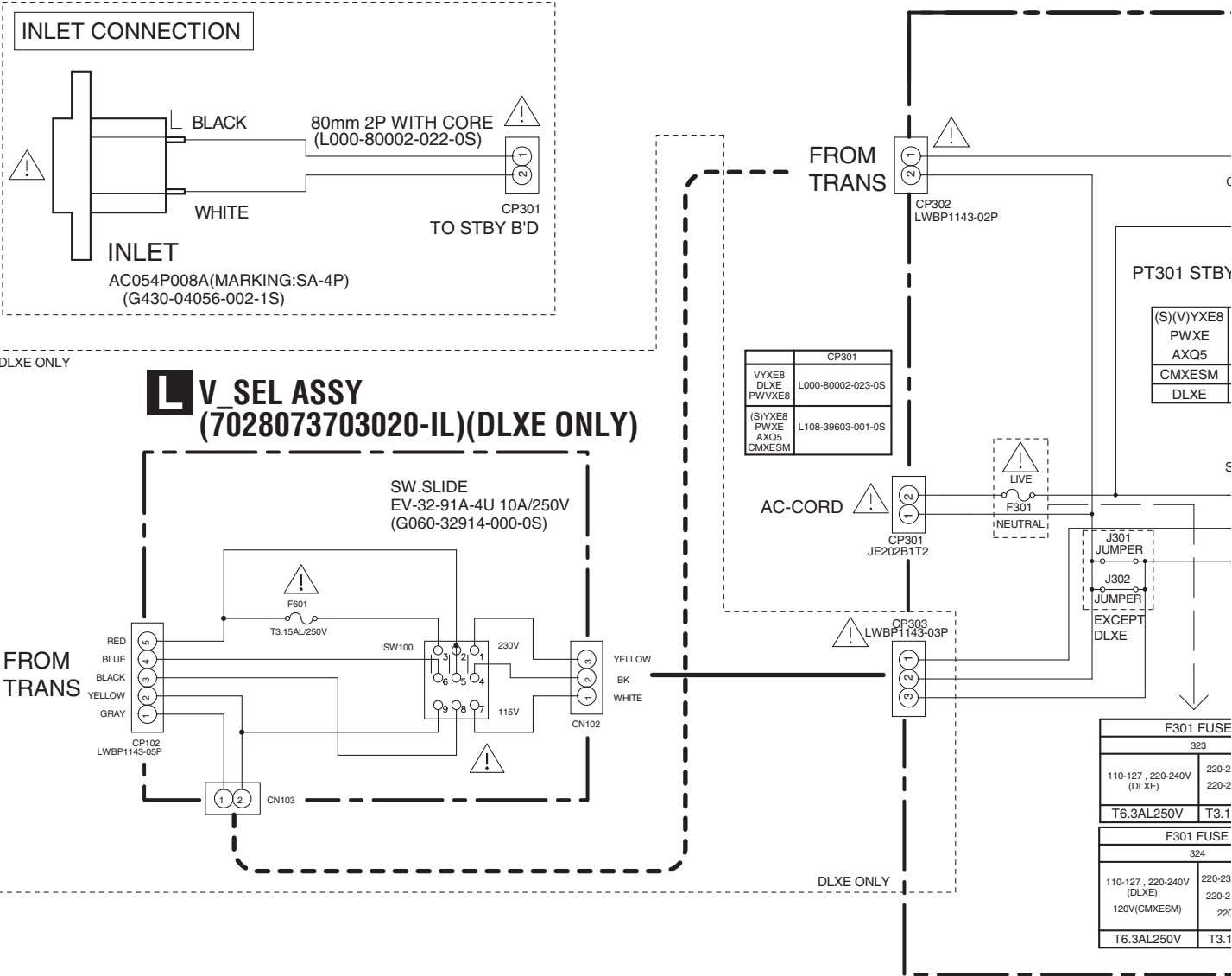
B

C

D

E


F



NOTES

1. Resistor values are indicated in ohms unless otherwise specified [k = 1,000 m = 1,000,000]

2. Capacitor values are indicated in microfarads unless otherwise specified. [p = micro-microfarads]

3.  : These resistor are to be segregated from printed wiring board or other accessible parts.

CAUTION


Safety precaution to be followed during servicing

1] Since those parts marked with are critical parts for safety, use only the one described in the parts list

2] Before returning the set to the customer make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

CAUTION

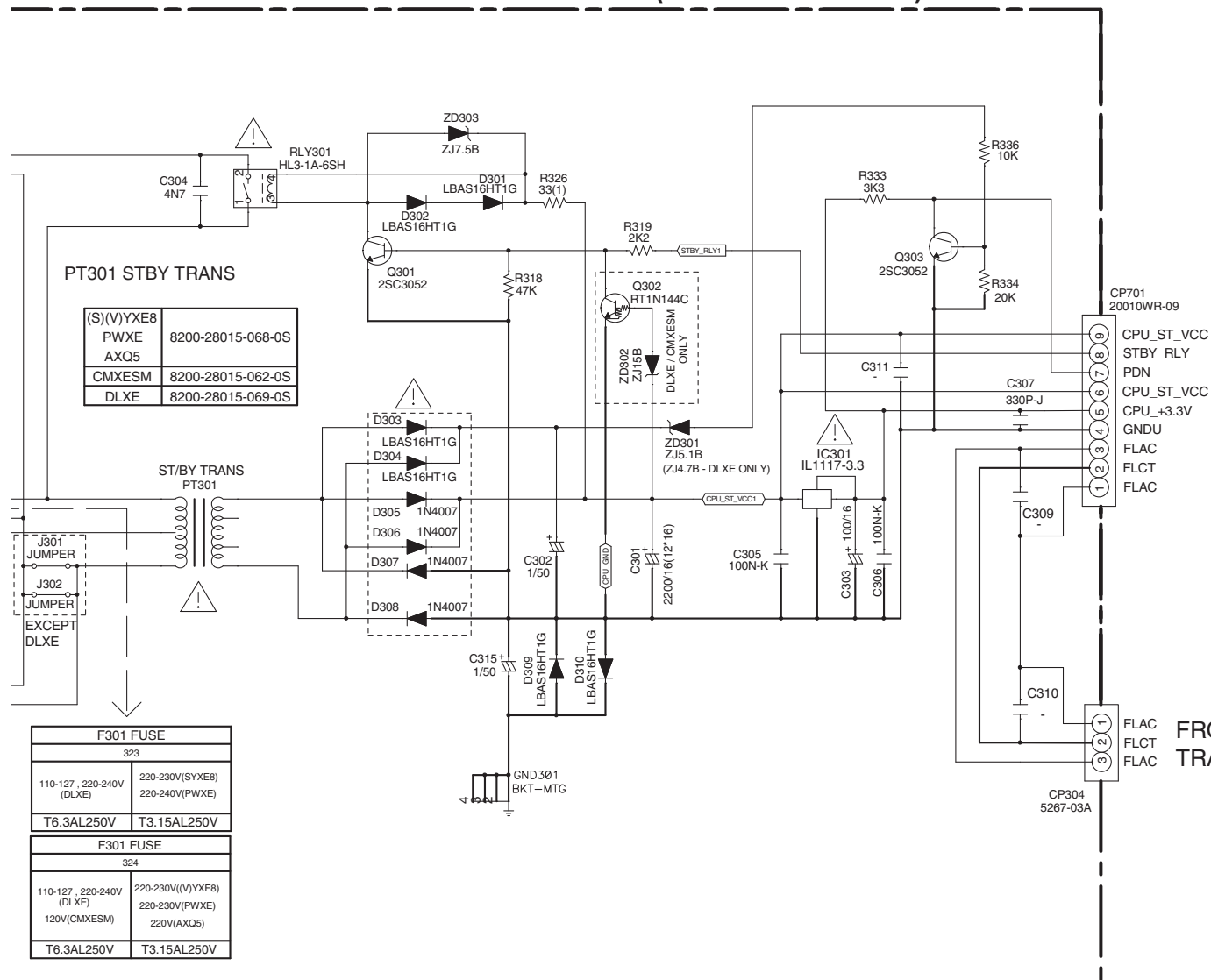
FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE AND RATINGS OF FUSE.

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

• NOTE FOR FUSE REPLACEMENT

CAUTION - FOR CONTINUED PROT REPLACE WITH SAME 1

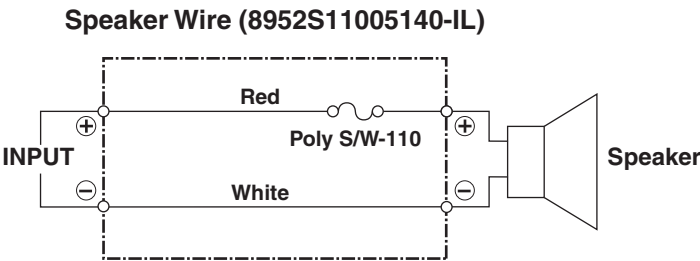
K STBY ASSY
 (CMXESM: 7028073682050-IL)
 (YXE8, PWXE: 7028073682010-IL)
 (VYXE8: 7028073682030-IL)
 (DLXE: 7028073682040-IL)
 (7028073682020-IL)



REPLACEMENT

CONTINUED PROTECTION AGAINST RISK OF FIRE,
 PLACE WITH SAME TYPE AND RATINGS OF FUSE.

A



B

P.SW:
P.SW has extreme positive resistance-temperature characteristics. If an abnormal current flows to P.SW due to an excessive input or unusual signal, P.SW heats up and the resistance rapidly increases. With this function, the speakers are protected from excessive input or unusual signal. The resistance value increases even when using a soldering iron for repairing, so allow it to cool before using.

C

D

E

F

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5

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6

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7

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A

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B

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C

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D

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E

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F

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5

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6

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7

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8

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11.2 D-MAIN ASSY

SIDE A

C D-MAIN ASSY

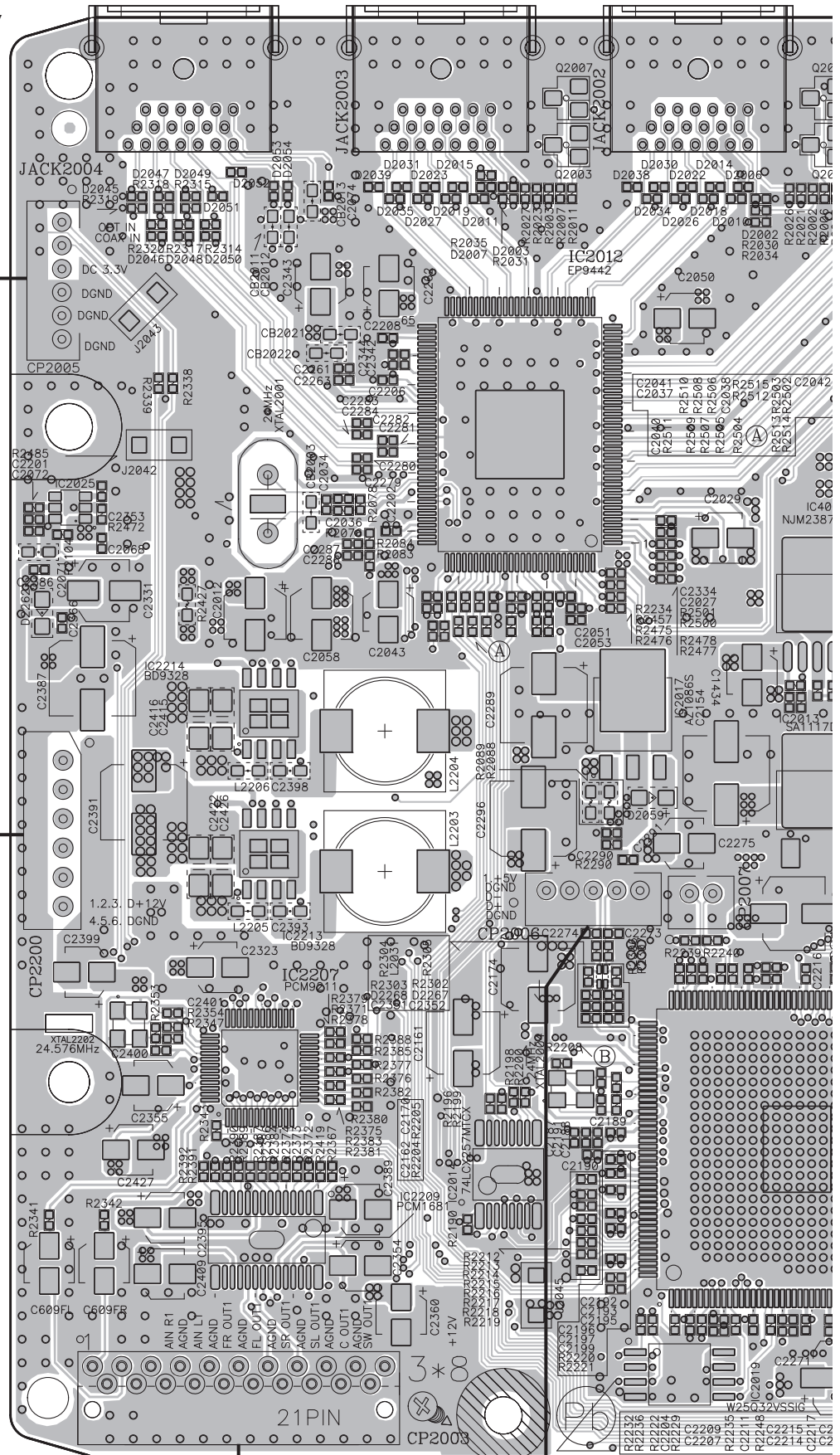
B
CP108

A
CN112

J CP110

I CN2006

HTP-072



SIDE A

A

	Q2007	Q2006	Q2005
--	-------	-------	-------

	Q2003	Q2002	Q2001
--	-------	-------	-------

E

Q2029 IC2026

IC2012	IC2001
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
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82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

Q2028

Q

IC400

IC2214 Q2010

IC2017

Q2011

IC2013

IC2004

IC2015

□

IC2207

IC2019

IC2014

IC2209

Q2037

F

C

79

5

6

7

3

HTP-072

C D-MAIN ASSY **SIDE B**

A

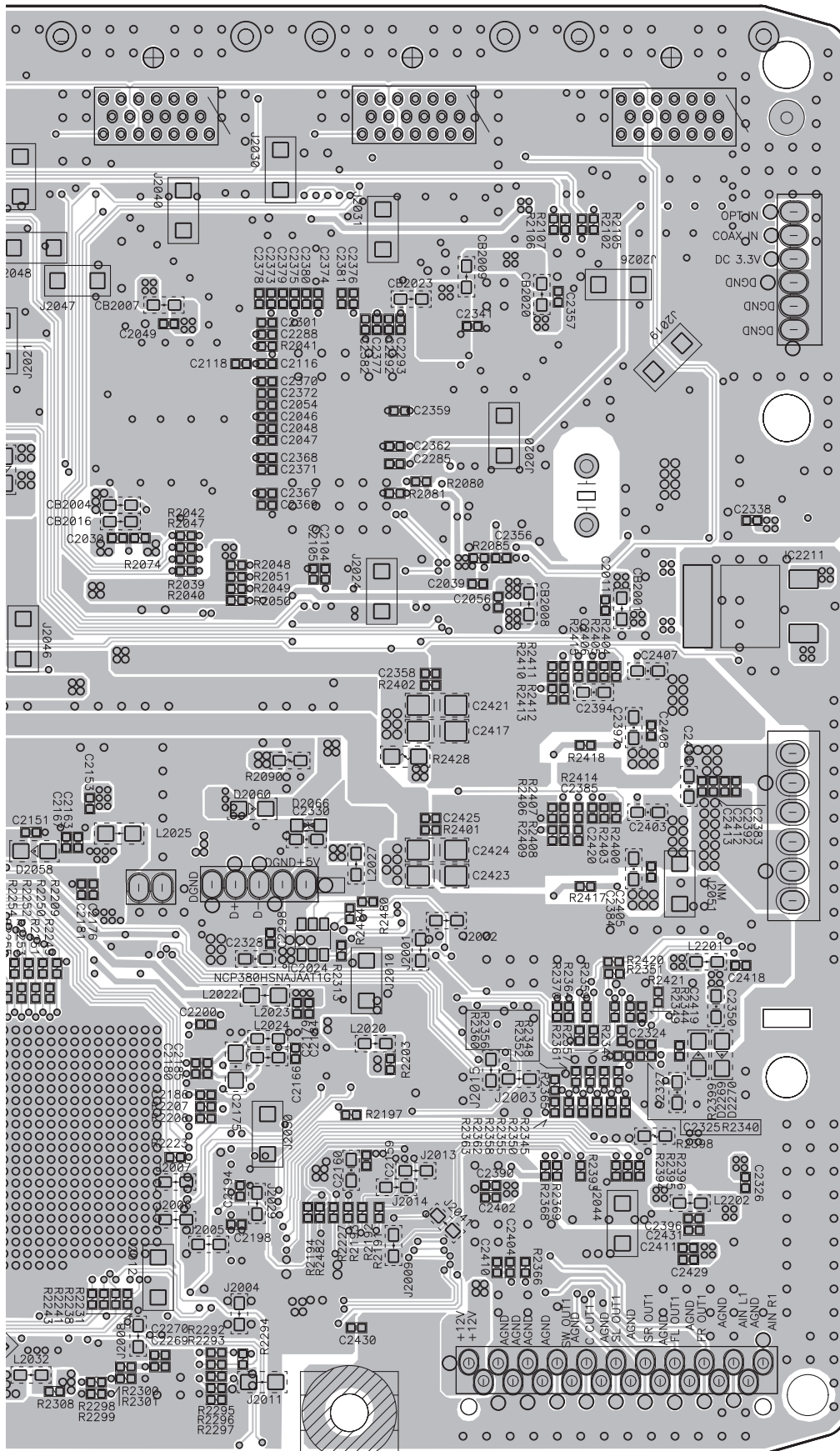
B

C

D

E

F



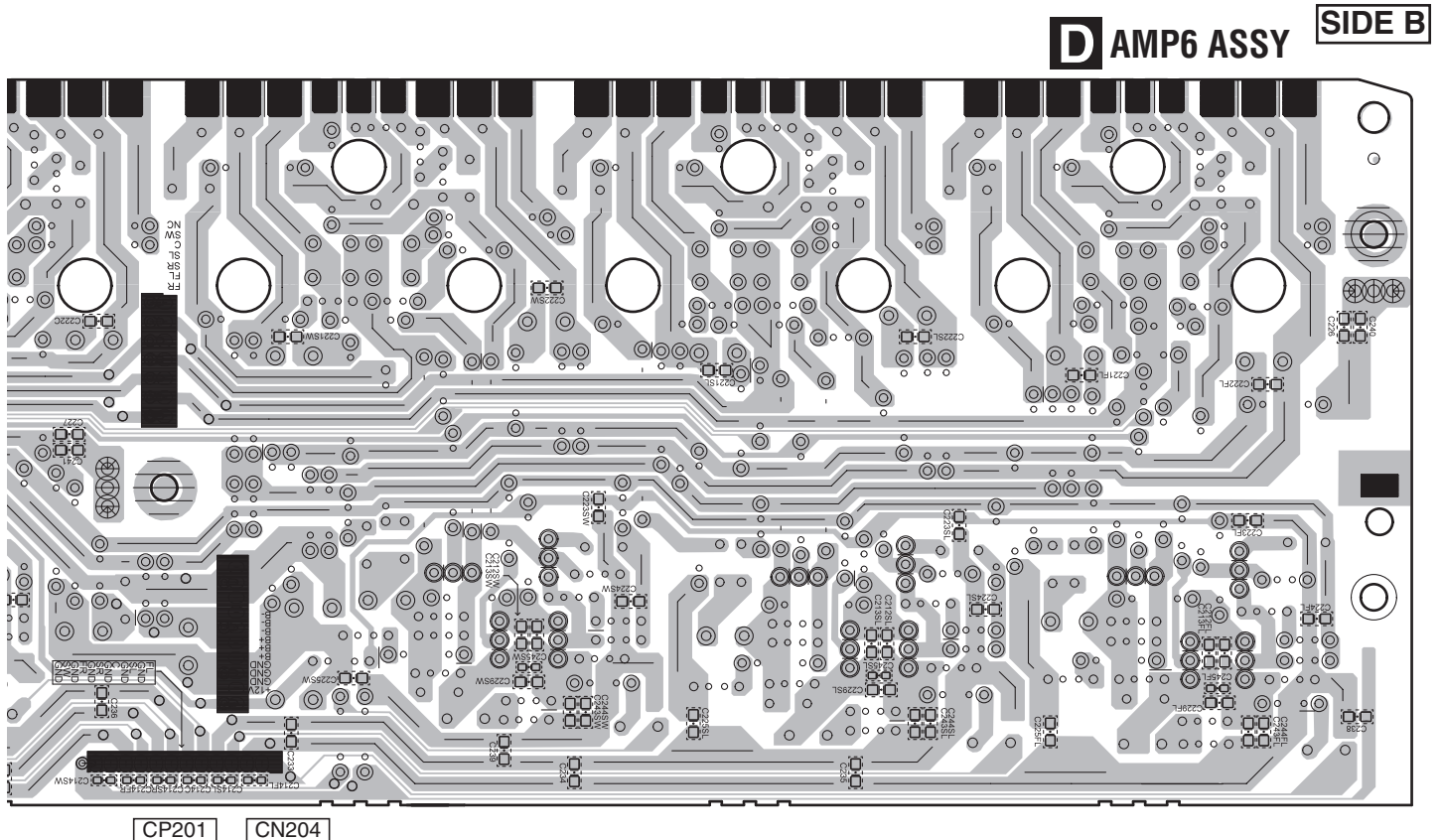
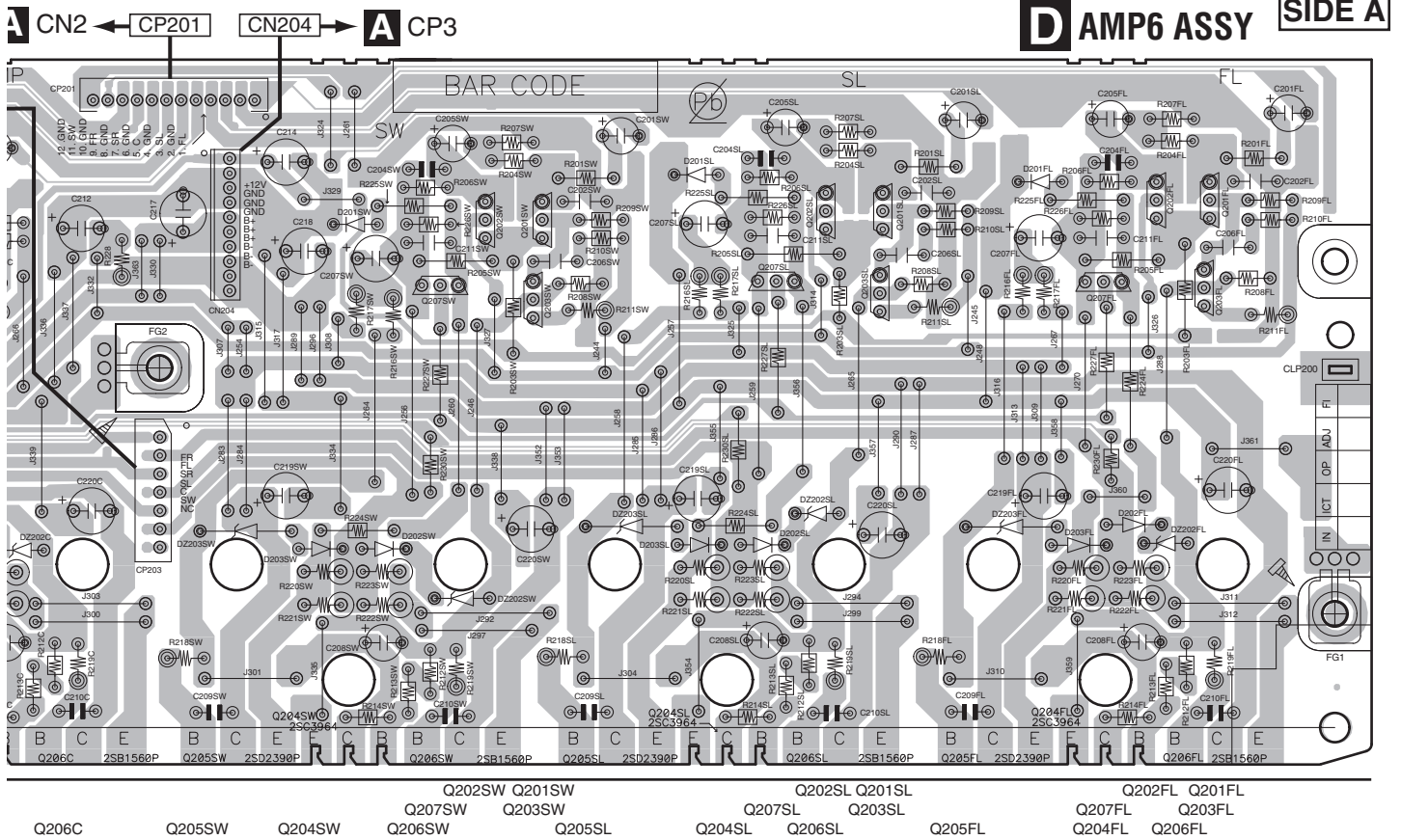
CP2006

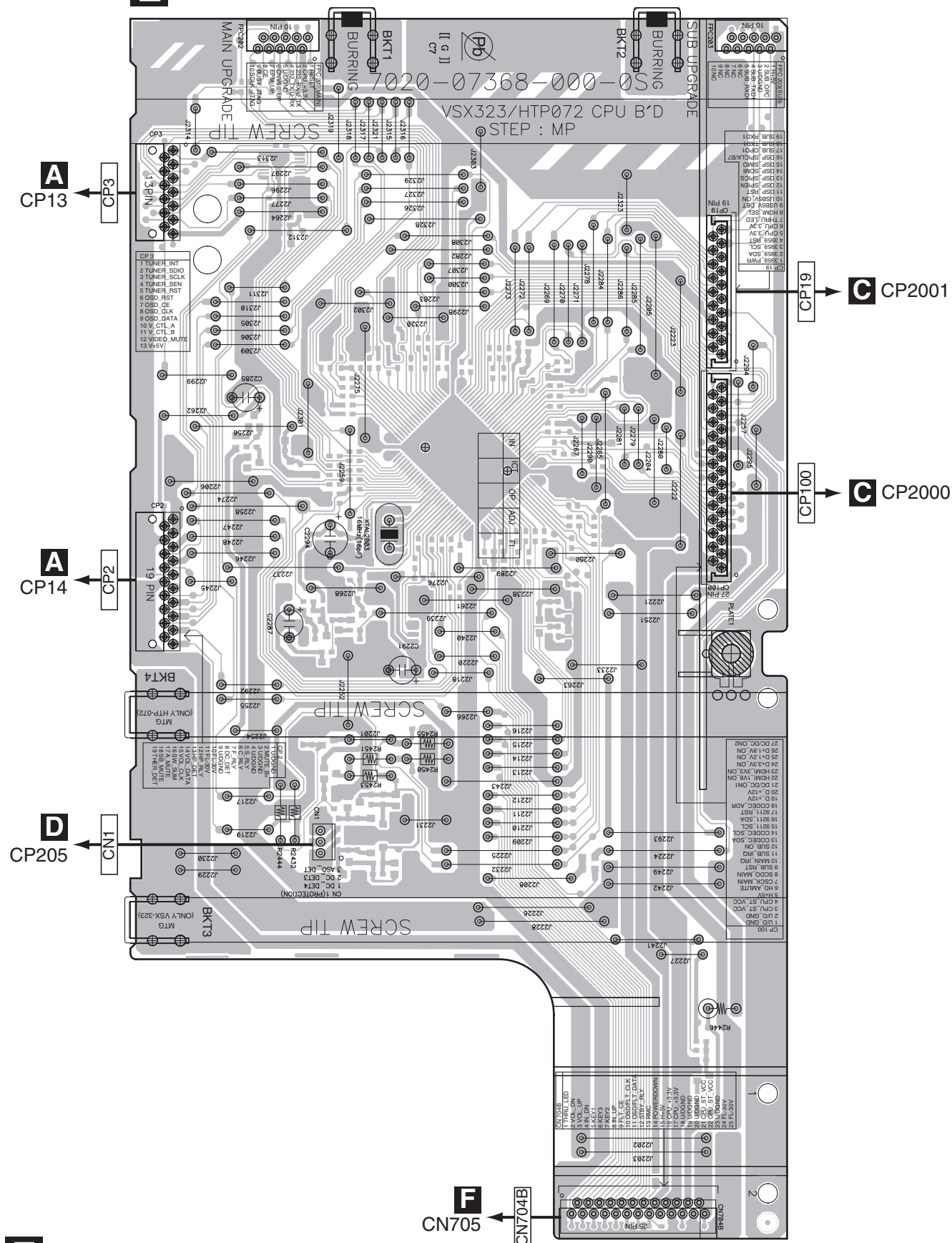
CP2003

HTP-072

C

SIDE A



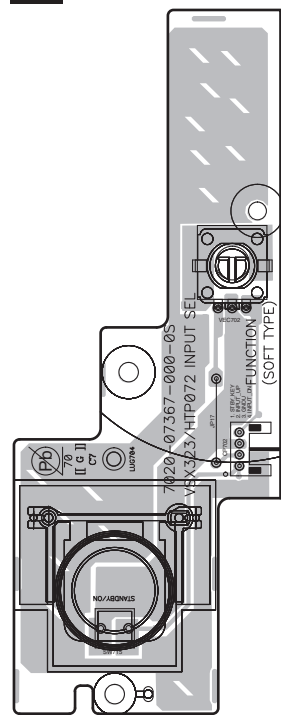
SIDE A**E CPU ASSY****SIDE A**

HTP-072

11.5 FRONT, INSEL, HP and FUSB ASSYS

SIDE A

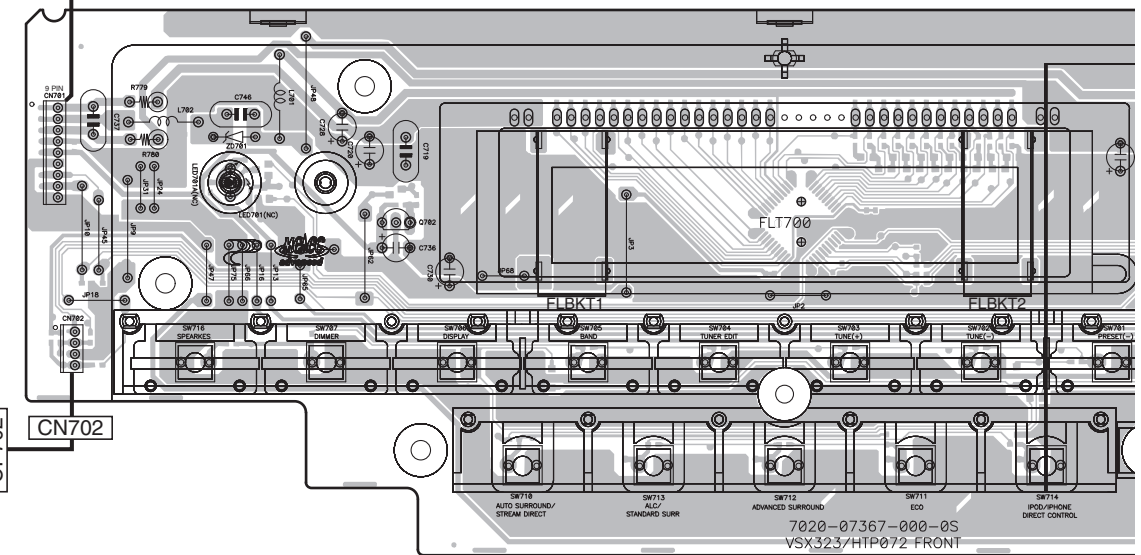
G INSEL ASSY



K CP701

CN701

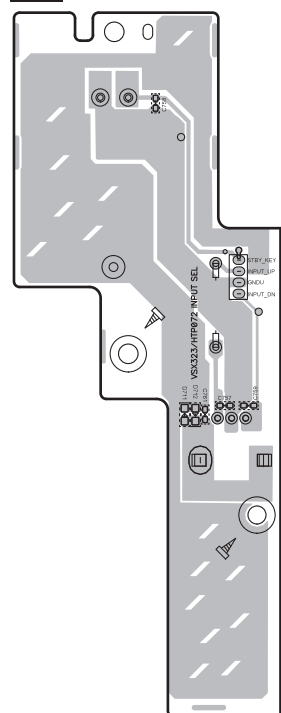
F FRONT ASSY



Q702

SIDE B

G INSEL ASSY



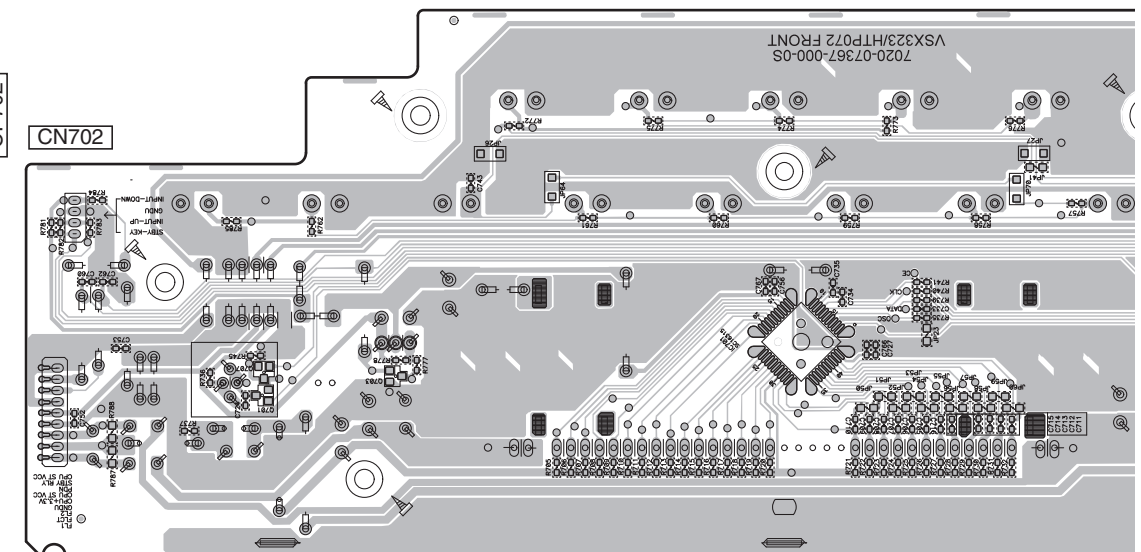
CP702

CN702

Q707 Q701

Q703

IC701

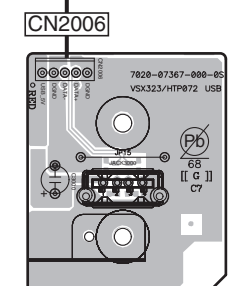
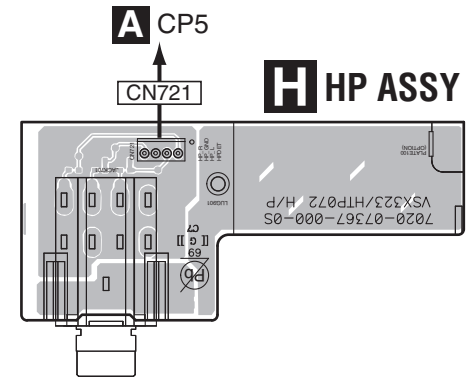
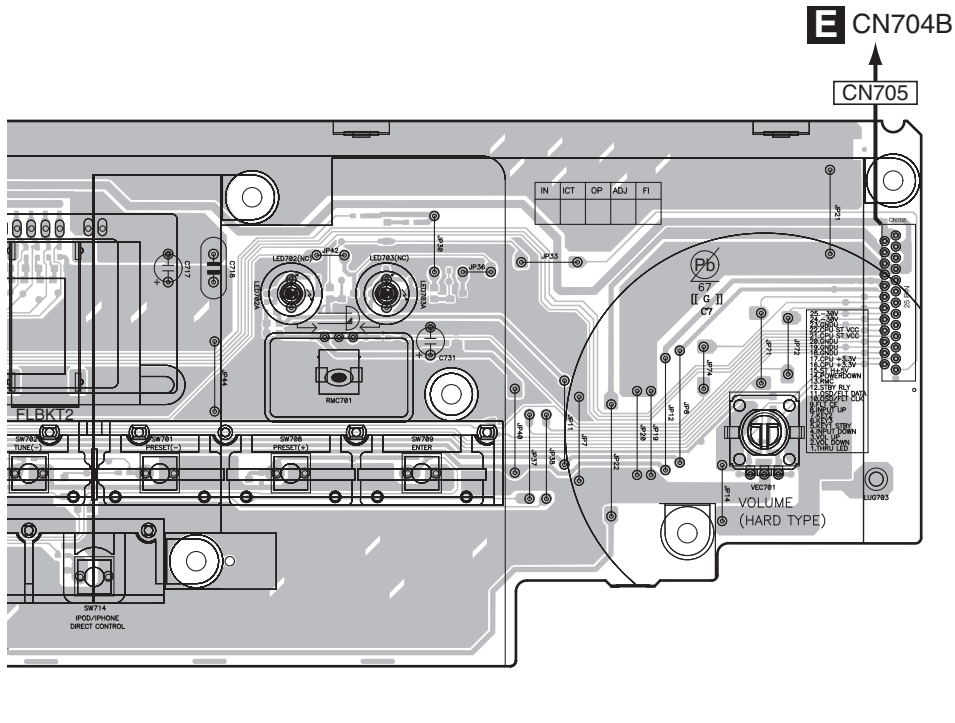


CN701

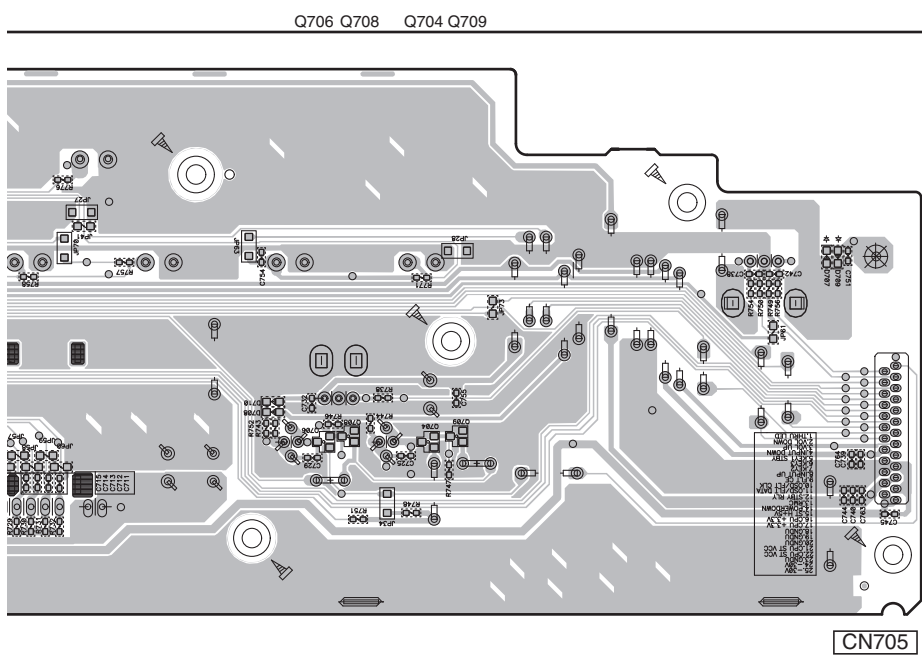
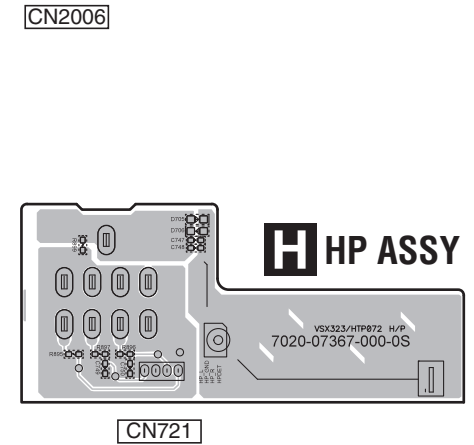
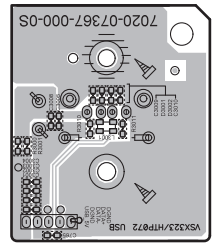
F FRONT ASSY

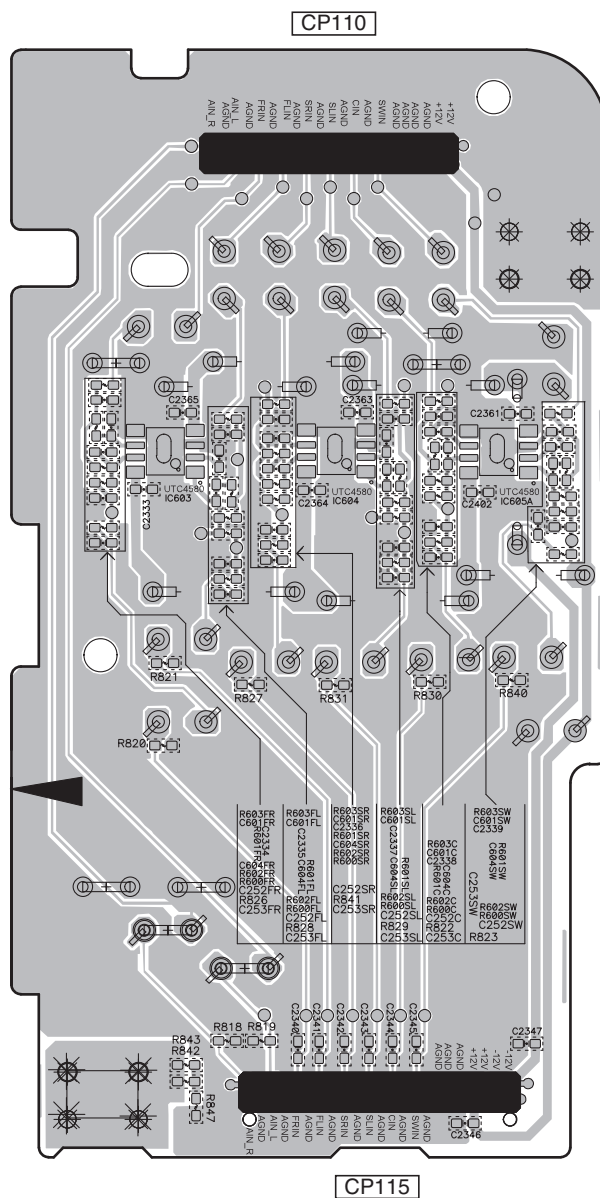
F G

SIDE A



SIDE B



SIDE A**SIDE B****J CNT ASSY****J CNT ASSY**

IC605A

A



D

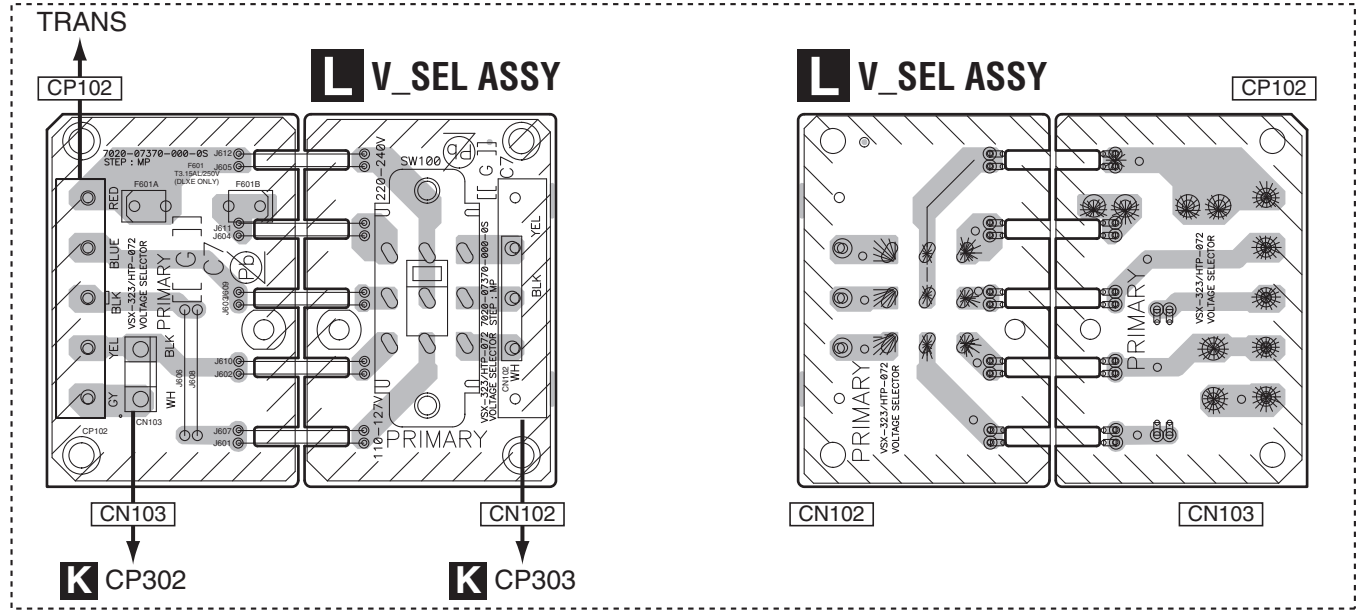


89

11.8 V_SEL, G-L, G-T and G-CNT ASSYS

SIDE A

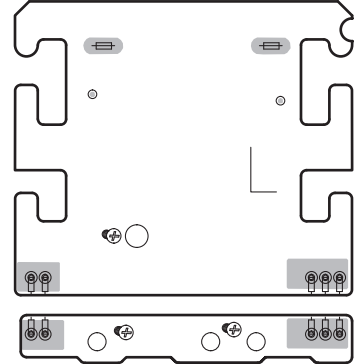
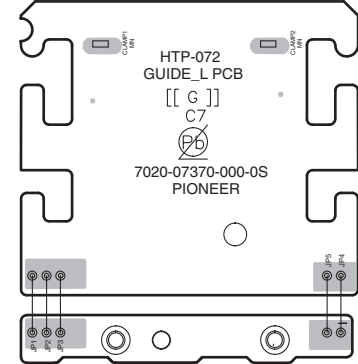
SIDE B



DLXE ONLY

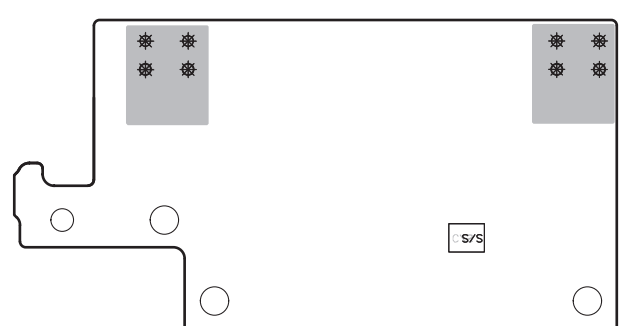
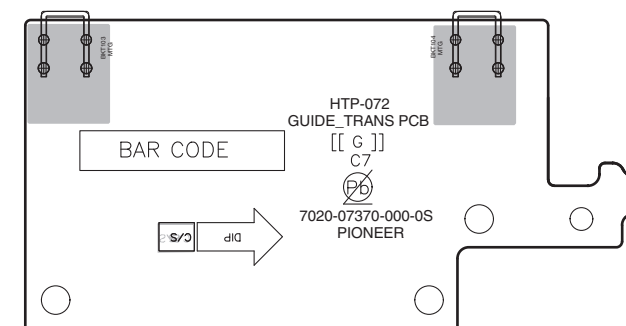
G-L ASSY

G-L ASSY



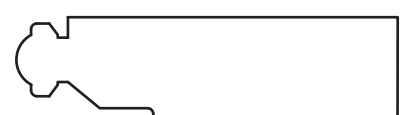
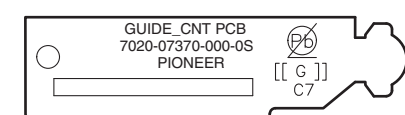
G-T ASSY

G-T ASSY



G-CNT ASSY

G-CNT ASSY



L

12. 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 47 k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω \rightarrow 56×10^1 \rightarrow 561.....RD1/4PU $\begin{bmatrix} 5 \\ 6 \end{bmatrix} \begin{bmatrix} 1 \\ 0 \end{bmatrix} J$
 47 k Ω \rightarrow 47×10^3 \rightarrow 473.....RD1/4PU $\begin{bmatrix} 4 \\ 7 \end{bmatrix} \begin{bmatrix} 3 \\ 0 \end{bmatrix} J$
 0.5 Ω \rightarrow R50.....RN2H $\begin{bmatrix} R \end{bmatrix} \begin{bmatrix} 5 \\ 0 \end{bmatrix} K$
 1 Ω \rightarrow 1R0.....RS1P $\begin{bmatrix} 1 \\ R \end{bmatrix} \begin{bmatrix} 0 \\ 0 \end{bmatrix} K$

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

5.62 k Ω \rightarrow 562×10^1 \rightarrow 5621.....RN1/4PC $\begin{bmatrix} 5 \\ 6 \end{bmatrix} \begin{bmatrix} 2 \\ 1 \end{bmatrix} F$

● SCHEMATIC DIAGRAM and PCB CONNECTION DIAGRAM \rightarrow ● PCB PARTS LIST

BKT \rightarrow none	BEAD \rightarrow L	RLY \rightarrow RY	SW \rightarrow S
CLAMP \rightarrow none	F \rightarrow FU	RMC \rightarrow U	VEC \rightarrow S9***
W \rightarrow none	FLT \rightarrow V	RES \rightarrow X	GND \rightarrow KN
LUG \rightarrow none	JACK \rightarrow JA	XTAL \rightarrow X9***	
P \rightarrow none	JACK \rightarrow JA9***	BD \rightarrow L7***	
PACK \rightarrow 9***	JK \rightarrow JA	LED \rightarrow D8***	
CP \rightarrow CN	PT \rightarrow T	Z \rightarrow D9***	
CP \rightarrow CN9***	REG \rightarrow IC	ZD \rightarrow D9***	
CX \rightarrow CN9***	REG \rightarrow IC9***	DZ \rightarrow D9***	
FPC \rightarrow CN9***			

LIST OF ASSEMBLIES

Mark	Symbol and Description	VSX-324-K-P /CMXESM	VSX-324-K-P /YXE8	VSX-324-K-P /VYXE8	VSX-324-K-P /DLXE	VSX-324-K-P /PWXE	VSX-324-K-P /AXQ5
NSP	1..PCB TTL ASSY MAIN	7025HK1215070-IL	7025HK1215010-IL	7025HK1215050-IL	7025HK1215040-IL	7025HK1215030-IL	7025HK1215020-IL
	2.. MAIN ASSY (PCB SUB ASSY MAIN)	7028073701040-IL	7028073701010-IL	7028073701010-IL	7028073701030-IL	7028073701020-IL	7028073701020-IL
	2.. OPTCO ASSY (PCB SUB ASSY OPTCO)	7028073702010-IL	7028073702010-IL	7028073702010-IL	7028073702010-IL	7028073702010-IL	7028073702010-IL
	2.. G-L ASSY (PCB SUB ASSY G-L)	7028073704010-IL	7028073704010-IL	7028073704010-IL	7028073704010-IL	7028073704010-IL	7028073704010-IL
	2.. G-T ASSY (PCB SUB ASSY G-T)	7028073705010-IL	7028073705010-IL	7028073705010-IL	7028073705010-IL	7028073705010-IL	7028073705010-IL
	2.. G-CNT ASSY (PCB SUB ASSY G-CNT)	7028073706010-IL	7028073706010-IL	7028073706010-IL	7028073706010-IL	7028073706010-IL	7028073706010-IL
	2.. V_SEL ASSY (PCB SUB ASSY V_SEL)	Not used	Not used	Not used	7028073703020-IL	Not used	Not used
NSP	1..PCB TTL ASSY DMAIN	7025HK1215071-IL	7025HK1215011-IL	7025HK1215051-IL	7025HK1215041-IL	7025HK1215031-IL	7025HK1215021-IL
	2.. D-MAIN ASSY (PCB SUB ASSY DMAIN)	7028073691010-IL	7028073691010-IL	7028073691010-IL	7028073691010-IL	7028073691010-IL	7028073691010-IL
NSP	1..PCB TTL ASSY FRONT	7025HK1215072-IL	7025HK1215012-IL	7025HK1215052-IL	7025HK1215042-IL	7025HK1215032-IL	7025HK1215022-IL
	2.. FRONT ASSY (PCB SUB ASSY FRONT)	7028073671010-IL	7028073671010-IL	7028073671010-IL	7028073671010-IL	7028073671010-IL	7028073671010-IL
	2.. HP ASSY (PCB SUB ASSY HP)	7028073672020-IL	7028073672020-IL	7028073672020-IL	7028073672020-IL	7028073672020-IL	7028073672020-IL
	2.. FUSB ASSY (PCB SUB ASSY FUSB)	7028073673010-IL	7028073673010-IL	7028073673010-IL	7028073673010-IL	7028073673010-IL	7028073673010-IL
	2.. INSEL ASSY (PCB SUB ASSY INSEL)	7028073674010-IL	7028073674010-IL	7028073674010-IL	7028073674010-IL	7028073674010-IL	7028073674010-IL
NSP	1..PCB TTL ASSY CPU	7025HK1215073-IL	7025HK1215013-IL	7025HK1215053-IL	7025HK1215043-IL	7025HK1215033-IL	7025HK1215023-IL
	2.. CPU ASSY (PCB SUB ASSY CPU)	7028073681070-IL	7028073681010-IL	7028073681050-IL	7028073681040-IL	7028073681030-IL	7028073681020-IL
	2.. STBY ASSY (PCB SUB ASSY STBY)	7028073682050-IL	7028073682010-IL	7028073682030-IL	7028073682040-IL	7028073682010-IL	7028073682020-IL
	2.. CNT ASSY (PCB SUB ASSY CNT)	7028073683010-IL	7028073683010-IL	7028073683010-IL	7028073683010-IL	7028073683010-IL	7028073683010-IL
NSP	1..PCB TTL ASSY AMP6	7025HK1215074-IL	7025HK1215014-IL	7025HK1215054-IL	7025HK1215044-IL	7025HK1215034-IL	7025HK1215024-IL
	2.. AMP6 ASSY (PCB SUB ASSY AMP6)	7028073711010-IL	7028073711010-IL	7028073711010-IL	7028073711010-IL	7028073711010-IL	7028073711010-IL

CONTRAST OF PCB ASSEMBLIES

A MAIN ASSY

7028073701040-IL, 7028073701010-IL, 7028073701030-IL and 7028073701020-IL are constructed the same with the exception of some components, including the following:

Mark	Symbol and Description	7028073701040-IL	7028073701010-IL	7028073701030-IL	7028073701020-IL
	X1200 Crystal (14M32)	E80014R318080-IL	Not used	E80014R318080-IL	E80014R318080-IL
	X1201 Crystal (17M734)	Not used	E80017R734410-IL	E80017R734410-IL	E80017R734410-IL
	601 Tuner, FM/AM	E903004100780-IL	E903104100780-IL	E903004100780-IL	E903004100780-IL

Note: This list is not complete. Only components that are available as service part are listed!

E CPU ASSY

7028073681070-IL, 7028073681010-IL, 7028073681050-IL, 7028073681040-IL, 7028073681030-IL and 7028073681020-IL are different and are NOT COMPATIBLE! Some components on these assy's are different. Since these different components are not available as service part, they are not listed.

K STBY ASSY

7028073682050-IL, 7028073682010-IL, 7028073682030-IL, 7028073682040-IL and 7028073682020-IL are constructed the same with the exception of some components, including the following:

Mark	Symbol and Description	7028073682050-IL	7028073682010-IL	7028073682030-IL	7028073682040-IL	7028073682020-IL
	Q301, Q303 Semi,chip TR/NPN 2SC	J522305200050-IL	Not used	Not used	Not used	Not used
	Q302 Semi,chip TR/NPN 2SC	J522101441210-IL	Not used	Not used	Not used	Not used
	D9301 D,zener	K06005R144522-IL	K06005R144522-IL	K06005R144522-IL	K06004R744522-IL	K06005R144522-IL
	D9302 D,zener	K06015R044522-IL	Not used	Not used	K06015R044522-IL	Not used
B	⚠ T301 Power Trans	8200280150620-IL	8200280150680-IL	8200280150680-IL	8200280150690-IL	8200280150680-IL
	⚠ FU301 Fuse Glass Tube 20mm	N751506301160-IL	N751503151160-IL	N751503151160-IL	N751506301160-IL	N751503151160-IL
	⚠ CN9301 CN.wafer 7.92mm	L108396030010-IL	L108396030010-IL	Not used	Not used	L108396030010-IL
	⚠ CN9303 CN.wafer 7.92mm	Not used	Not used	Not used	L108011430310-IL	Not used
	303 Bracket	Not used	4010215796000-IL	4010215796000-IL	4010215796000-IL	4010215796000-IL

Note: This list is not complete. Only components that are available as service part are listed!

C PARTS LIST for VSX-324-K-P/CMXESM

Mark No. Description Part No.

A MAIN ASSY

SEMICONDUCTORS

⚠ IC 106	J126780500110-IL
⚠ IC 107	J126781200040-IL
⚠ IC 108	J126791200060-IL
IC 400	J084152180010-IL
IC 401-403	J121458001010-IL

D IC 1200	J127410500010-IL
IC 1203	J170747810010-IL
Q 17	J5000916Y0050-IL
Q 129-131	J5000992F0050-IL
Q 132	J5023198Y0000-IL

⚠ D 7	K047100600220-IL
D 23	K000400700010-IL
⚠ D 114,115,117,119	K000400700220-IL
⚠ D 121	K047800500010-IL
D 125	K000414802520-IL

D 9024,9025	K06016R044522-IL
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MISCELLANEOUS

JA 101	TER,BOARD PUSH 2P	G594408SA030Y-IL
JA 102	TER,BOARD PUSH 8P	G598801SA050Y-IL
JA 401	TER,RCA 6PIN	G603610A0001Y-IL
JA 402	TER,RCA 3PIN	G606305AW140Y-IL
RY 2-4	RELAY	G680060103010-IL

RY 101	RELAY	G680240202030-IL
X 1200	CRYSTAL (14M32)	E80014R318080-IL
CN9001	CONNECTOR	L108353280360-IL
CN9013	CN,WAFFER	L109012511320-IL
CN9014	CN,WAFFER	L109012511920-IL

CN9110	CN,WAFFER	L109012512320-IL
601	TUNER,FM/AM	E903004100780-IL

Mark No. Description Part No.

RESISTORS

R 5,7,9,11	C060010065050-IL
R 6,8,10,12	C060010066050-IL
R 13,25	C060010065050-IL
R 14,19	C060010066050-IL
R 28-30	C060022265050-IL

R 64	C060022063050-IL
R 66	C0604R7065050-IL
R 295,297	C141R10069010-IL
R 588,589	C060010165060-IL

CAPACITORS

C 55,58	D040682088010-IL
C 283	D040472084240-IL
C 288	D040102084060-IL
C 292	D040103083020-IL

B OPTCO ASSY

SEMICONDUCTORS

IC 1201	J040740400290-IL
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MISCELLANEOUS

JA 104	MODULE	E100802000250-IL
JA 105	TER,RCA 1PIN	G600107A0000Y-IL

C D-MAIN ASSY

SEMICONDUCTORS

⚠ IC 400	J126238700010-IL
IC 2001	8952523000020-IL
⚠ IC 2004	J126283133010-IL
IC 2014	J040742570040-IL
IC 2018	J001986466010-IL

IC 2019	8952523000030-IL
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Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
		IC 2024	J127380010060-IL	I	FUSB ASSY		
		IC 2026	J000240160080-IL	MISCELLANEOUS			
		IC 2207	J046921100010-IL		JA 3000 CN,PLUG CONTACT	G480040000180-IL	A
⚠		IC 2211	J126780500450-IL				
		MISCELLANEOUS		J	CNT ASSY		
		JA 2000-2004 CN.WAFER	L109100190160-IL	SEMICONDUCTORS			
		X 2000,2001 CRYSTAL (24 MHz)	E80024R000030-IL		IC 603-605	J121458001010-IL	
D		AMP6 ASSY		MISCELLANEOUS			
SEMICONDUCTORS					CN9110 CN,WAFER	L109012512120-IL	
		Q 201,202,208	J5000992F0050-IL				
		Q 203,207	J5023206Y0050-IL				
		D 201-203	K000414800050-IL				
		D 9202,9203	K06004R344522-IL	K	STBY ASSY		B
		RESISTORS		SEMICONDUCTORS			
		R 211,218,219	C060047063050-IL	⚠	IC 301	J126111700041-IL	
⚠		R 220-223	N113136647820-IL		Q 301,303	J522305200050-IL	
		R 228	C060010065050-IL		Q 302	J522101441210-IL	
				⚠	D 305-308	K000400700010-IL	
					D 9301	K06005R144522-IL	
					D 9302	K06015R044522-IL	
					D 9303	K06007R544522-IL	
E		CPU ASSY		MISCELLANEOUS			
SEMICONDUCTORS				⚠	RY 301 RELAY	G680060103030-IL	C
		IC 2020	J040740800240-IL	⚠	T 301 POWER TRANS	8200280150620-IL	
		IC 2022	J000241600170-IL	⚠	CN9301 CN.WAFER 7.92MM	L108396030010-IL	
		IC 2023	8952323000020-IL	⚠	CN9302 CN.WAFER 7.92MM	L108011430210-IL	
		MISCELLANEOUS			301 BRACKET	4010210196000-IL	
		X 2003 CRYSTAL (16 MHz)	E80016R000030-IL		302 BRACKET	4010215796000-IL	
		CN9019 CN,WAFER	L109012511920-IL	⚠	FU 301 FUSE GLASS TUBE 20MM (T6.3AL250V)	N751506301160-IL	
		CN9100 CN.WAFER	L109012512720-IL				
F		FRONT ASSY		RESISTORS			
SEMICONDUCTORS					R 326	C060033065050-IL	
		IC 701	J127163150020-IL	CAPACITORS			
		Q 702	J5001266G0050-IL		C 301	D040222083010-IL	D
		D 9701	K06007R544522-IL		C 304	D00847208H010-IL	
		D 9702,9703	K500052009011-IL				
		MISCELLANEOUS		L	V_SEL ASSY (DLXE ONLY)		
		V 700 DISPLAY,FLT	K530126600011-IL	MISCELLANEOUS			
		S 9701 SW,ENCODER	G121122400230-IL	⚠	S 100 SW,SLIDE	G060329140000-IL	
		1 HOLDER	4320211306000-IL	⚠	CN9102 CN.WAFER 7.92MM	L108011430510-IL	
		U 701 MODULE,REMOCON	E940349003810-IL		1 SUPPORTER	4070210192000-IL	
		RESISTORS			2 SPACER(PLS)	4300210062000-IL	
		R 779,780	C0602R2063050-IL	⚠	FU 601 FUSE GLASS TUBE 20MM (T3.15AL/250V)	N751503151160-IL	
G		INSEL ASSY					E
MISCELLANEOUS				G-L ASSY			
		S 9702 SW,ENCODER	G121121200230-IL		There is no service parts.		
H		HP ASSY		G-T ASSY			
MISCELLANEOUS					There is no service parts.		
		JA 701 JACK,D6.5	G402PJ612A09Y-IL	G-CNT ASSY			
					There is no service parts.		F