Pioneer

Service Manual

VSX-S510-K

ORDER NO.
RRV4490

AV RECEIVER

VSX-S510-K
VSX-S510-S
VSX-S310-K
VSX-S310-S

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

Model	Type	Power Requirement	Remarks
VSX-S510-K	SYXE8	AC 220 V to 230 V	
VSX-S510-S	SYXE8	AC 220 V to 230 V	
VSX-S310-K	SYXE8	AC 220 V to 230 V	
VSX-S310-S	SYXE8	AC 220 V to 230 V	

PIONEER CORPORATION 1-1, Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa 212-0031, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-FZV OCT. 2013 Printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

CONTENTS

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 ºC.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 ºC 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.

2. SPECIFICATIONS

2.1 ACCESSORIES

- Setup microphone : APM7011
- Remote control unit (AXD7719) : 8300771900010-IL
- AM loop antenna : E601019000010-IL
- FM wire antenna : E605010140010-IL
- Power cord : L068250160020-IL
- Quick start guide : 5707000008480-IL
- Speaker caution sheet : 5227000001050-IL
- Operating instructions (CD-ROM) : 6517000001550-IL
- Warranty card : ARY7158
- AAA size IEC R03 dry cell batteries x2

2.2 SPECIFICATIONS

Audio section

Rated power output
(Front, Center, Surround and Surround back for VSX-S510)
. . . . . 110 W per channel (1 kHz, 4 Ω, 1 %)
65 W per channel (20 Hz to 20 kHz, 8 Ω, 0.5 %)
Total Harmonic Distortion
. . . . . 0.08 % (20 Hz to 20 kHz, 8 Ω, Rated Ouput –3 dB/ch)
Frequency response (Pure Direct mode)
. . . . . 10 Hz to 20 kHz ±3 dB
Guaranteed speaker impedance . . . . . 4 Ω to 16 Ω
Input Sensitivity
CD . . . . . 200 mV
Signal-to-Noise Ratio (IHF, short circuited, A network)
CD . . . . . .95 dB

Video Section (VSX-S310 only)

Signal level
Composite Output . . . . . 1 Vp-p (75 Ω)

Tuner Section

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

Digital In/Out Section

HDMI terminal . . . . . .Type A (19-pin)
HDMI input/MHL terminal (VSX-S510 only). . . . . .5 V, 0.9 A
USB terminal
. . . . . .USB2.0 High Speed (Type A) 5 V, 2.1 A (VSX-S510)
. . . . . USB2.0 Full Speed (Type A) 5 V, 1 A (VSX-S310)
iPod terminal . . . . . .USB
ADAPTER PORT terminal (VSX-S510 only) . . . . . .5 V, 0.1 A

Network Section (VSX-S510 only)

LAN terminal. . . . . .10 BASE-T/100 BASE-TX

Miscellaneous

Power Requirements. . . . . .AC 220 V to 230 V, 50 Hz/60 Hz
Power Consumption . . . . . .96 W (VSX-S510)
70 W (VSX-S310)
In standby . . . . . 0.3 W
Dimensions
. . . . . .435 mm (W) x 85 mm (H) x 317 mm (D)
Weight (without package). . . . . 4.1 kg (VSX-S510)
4.0 kg (VSX-S310)

Note

- The specifications are applicable when the power supply is 230 V.
- Specifications and the design are subject to possible modifications without notice, due to improvements.
- *This product includes FontAvenue® fonts licensed by NEC Corporation. FontAvenue is a registered trademark of NEC Corporation.*
- *Microsoft, Windows, Windows Media and Windows Vista are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.*

VSX-S510

Manufactured under license under U.S. Patent Nos: 5,956,674; 5,974,380; 6,226,616; 6,487,535; 7,212,872; 7,333,929; 7,392,195; 7,272,567 & other U.S. and worldwide patents issued & pending. DTS-HD, the Symbol, & DTS-HD and the Symbol together are registered trademarks & DTS-HD Master Audio is a trademark of DTS, Inc. Product includes software. © DTS, Inc. All Rights Reserved.

VSX-S310

Manufactured under license under U.S. Patent Nos: 5,956,674; 5,974,380; 6,226,616; 6,487,535; 7,212,872; 7,333,929; 7,392,195; 7,272,567 & other U.S. and worldwide patents issued & pending. DTS-HD, the Symbol, & DTS-HD and the Symbol together are registered trademarks of DTS, Inc. Product includes software. © DTS, Inc. All Rights Reserved.

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

Apple, AirPlay, iPad, iPhone, iPod, iPod nano, iPod touch, iTunes, Safari, Bonjour and Mac are trademarks of Apple Inc., registered in the U.S. and other countries. The Airplay logo is a trademark of Apple Inc.

Windows® and the Windows logo are trademarks of the Microsoft group of companies.

MHL, the MHL Logo, and Mobile High-Definition Link are trademarks or registered trademarks of MHL, LLC in the United States and other countries.
This receiver incorporates MHL 2.

HTC, HTC Connect and the HTC Connect logo are trademarks of HTC Corporation.

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.

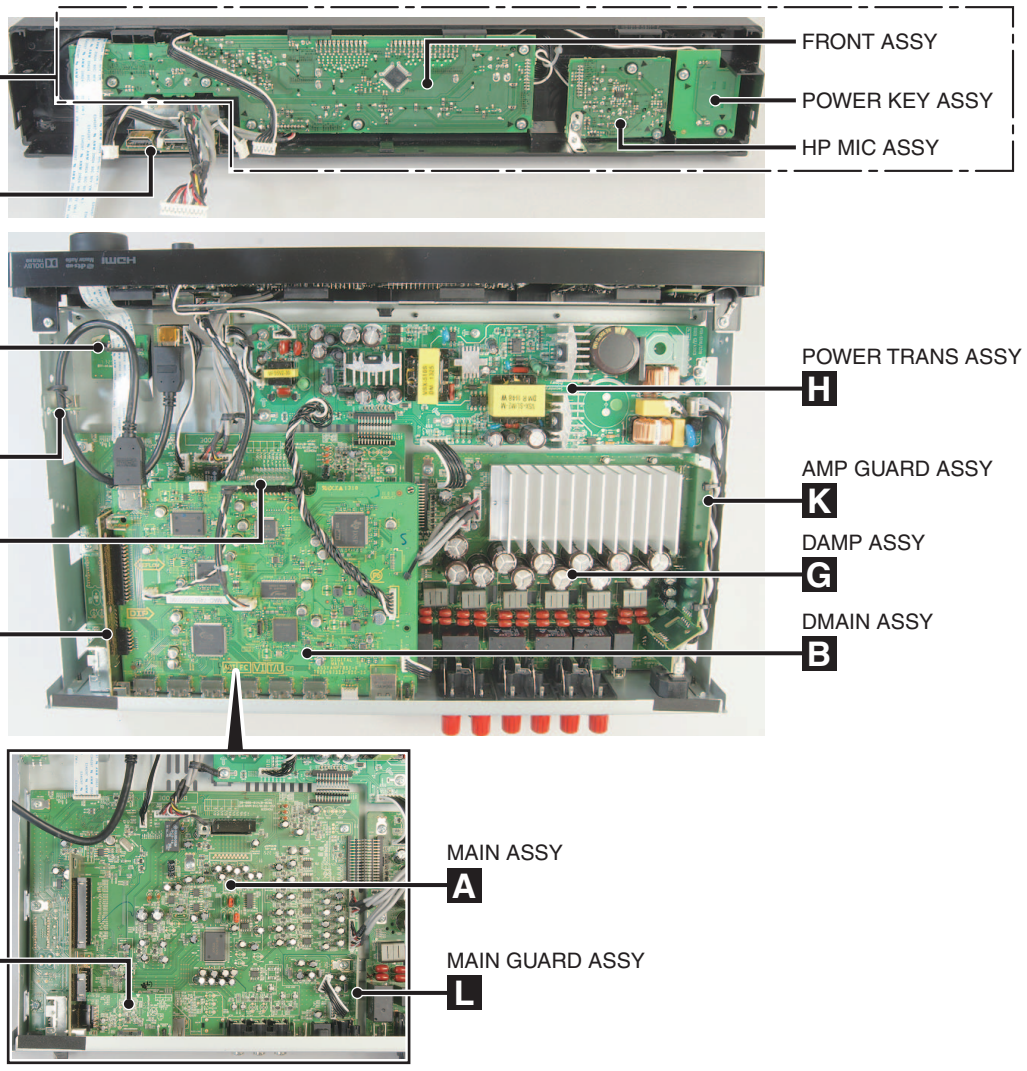
No.	Procedures	Check points
1	Confirm whether the customer complain has been solved. If the customer complain occurs with the particular source, such as Dolby Digital, DTS, AAC, DVD-A and HDMI, input it for the operation check.	The customer complain must not be reappeared. Video, Audio and operations 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.

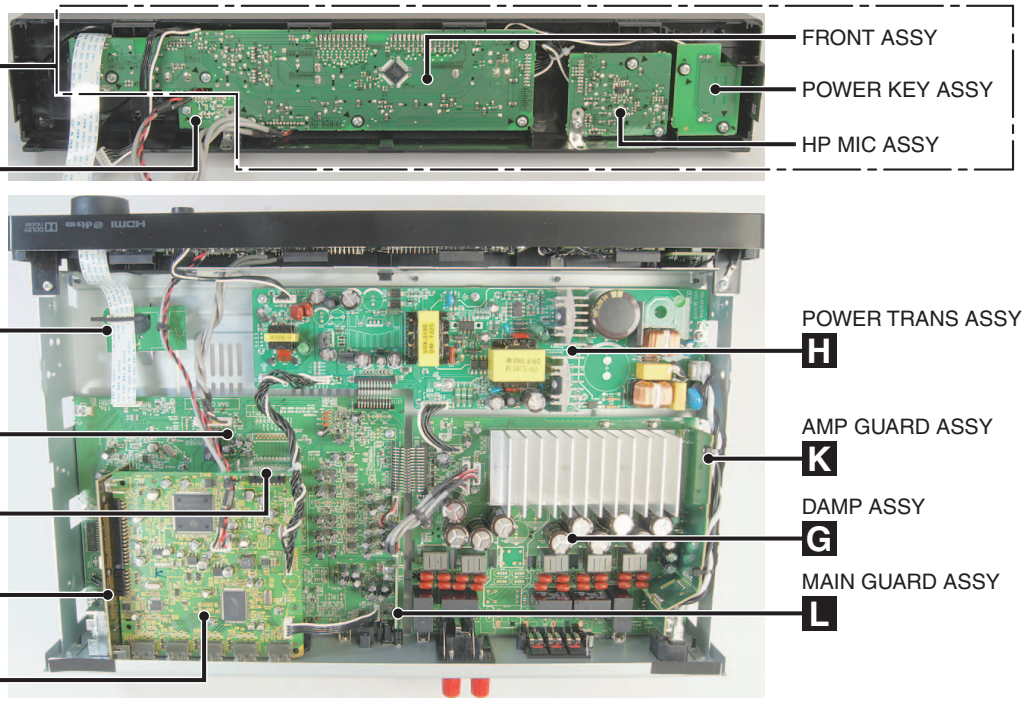
Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Flicker	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

3.2 PCB LOCATIONS

VSX-S510



VSX-S310



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	No.	Description	Part No.
NSP	1.	MAIN ASSY (VSX-S510)	7025HK1301010-IL
	2.	MAIN ASSY	7028074101010-IL
NSP	1.	MAIN ASSY (VSX-S310)	7025HK1302010-IL
	2.	MAIN ASSY	7028074101050-IL
NSP	1.	FRONT ASSY (VSX-S510)	7025HK1301011-IL
	2.	FRONT ASSY	7028074121010-IL
	2.	AMP GUARD ASSY	7028074123010-IL
	2.	SIDE CNT ASSY	7028074124010-IL
NSP	1.	FRONT ASSY (VSX-S310)	7025HK1302011-IL
	2.	FRONT ASSY	7028074121050-IL
	2.	AMP GUARD ASSY	7028074123010-IL
	2.	SIDE CNT ASSY	7028074124050-IL
NSP	1.	DAMP ASSY (VSX-S510)	7025HK1301012-IL
	2.	DAMP ASSY	7028074111010-IL
	2.	BT ASSY	7028074112010-IL
	2.	CABLE ASSY	7028074113010-IL
	2.	BRIDGE ASSY	7028074114010-IL
	2.	MAIN GUARD ASSY	7028074115010-IL
	2.	CLAMP ASSY	7028074117010-IL
NSP	1.	DAMP ASSY (VSX-S310)	7025HK1302012-IL
	2.	DAMP ASSY	7028074111050-IL
	2.	BRIDGE ASSY	7028074114050-IL
	2.	MAIN GUARD ASSY	7028074115010-IL
	2.	USB ASSY	7028074116050-IL
	2.	CLAMP ASSY	7028074117050-IL
NSP	1.	DMAIN ASSY (VSX-S510)	7025HK1301013-IL
	2.	DMAIN ASSY	70280732310C0-IL
NSP	1.	DMAIN ASSY (VSX-S310)	7025HK1302013-IL
	2.	DMAIN ASSY	7028073351090-IL
NSP	1.	FHDMI ASSY (VSX-S510)	7025HK1301014-IL
	2.	FHDMI ASSY	7028074131010-IL
	1.	POWER TRANS ASSY (VSX-S510)	8208001050010-IL
	1.	POWER TRANS ASSY (VSX-S310)	8208001050030-IL

3.3 JIGS LIST

[1] Jigs List

Name	Jig No.	Remarks
RS-232C update jig (Jig + 10P FFC)	GGF1642	MAIN microcomputer firmware update (RS-232C ↔ Back Chassis)
RS-232C cable (9-pin to 9-pin, straight cable)	Marketing product	
RS-232C update jig	GGF1646 (VSX-S310 only)	HDMI & CEC (SUB) microcomputer firmware update (USB ↔ Back Chassis)
USB cable (USB A-Type ↔ USB B-Type)	Marketing product (VSX-S310 only)	
11P board to board extension jig cable	GGD1846	Diagnosis for DMAIN ASSY (side-B), MAIN ASSY (side-A)
33P board to board extension jig cable	GGD1847	
19P board to board extension jig cable	GGD1849	
5P PH Housing ASSY extension jig cable	GGD1594	
11P bridge connector extension jig cable	GGD1758	Diagnosis for MAIN ASSY (side-B), DAMP ASSY (side-B)

A

B

C

D

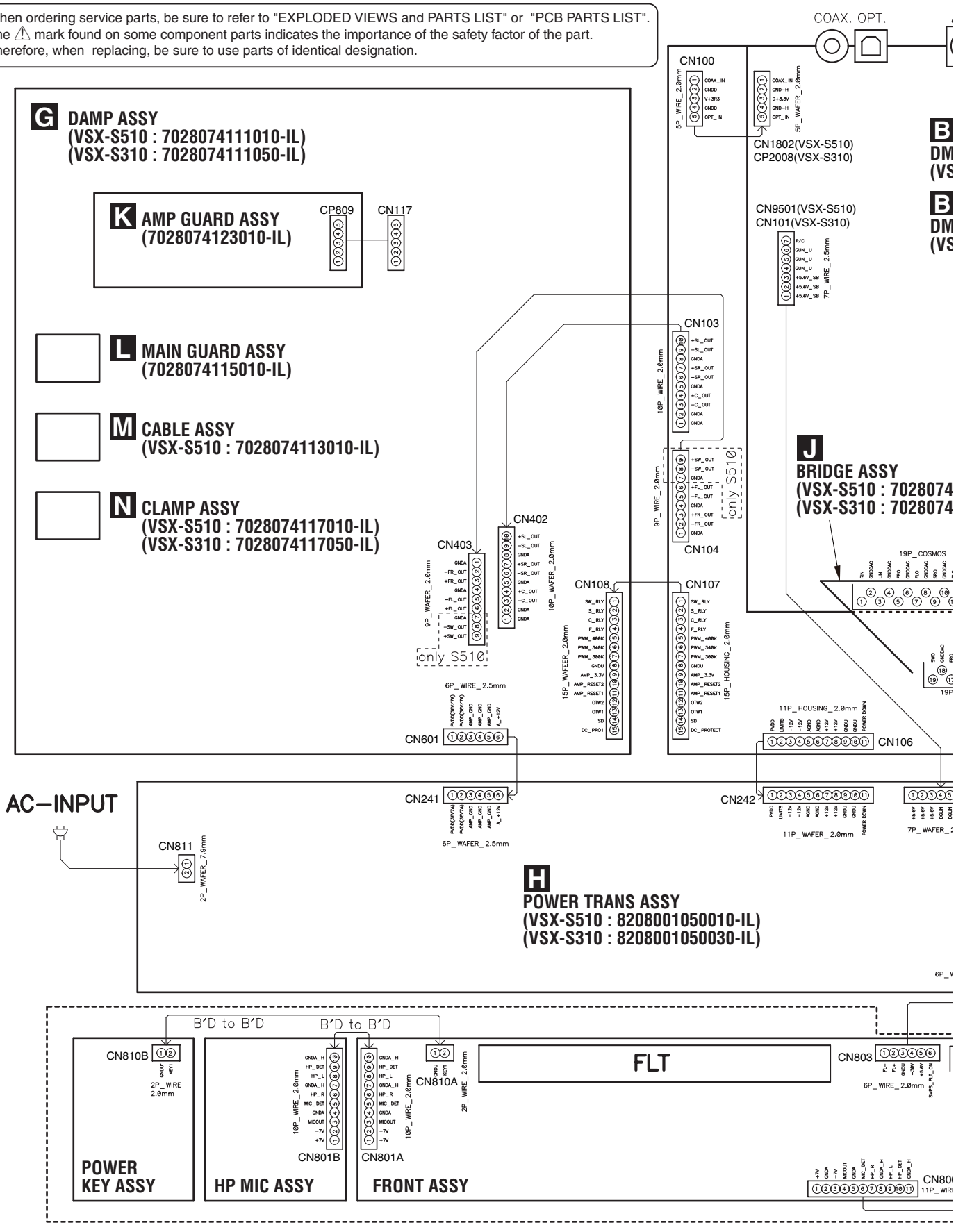
E

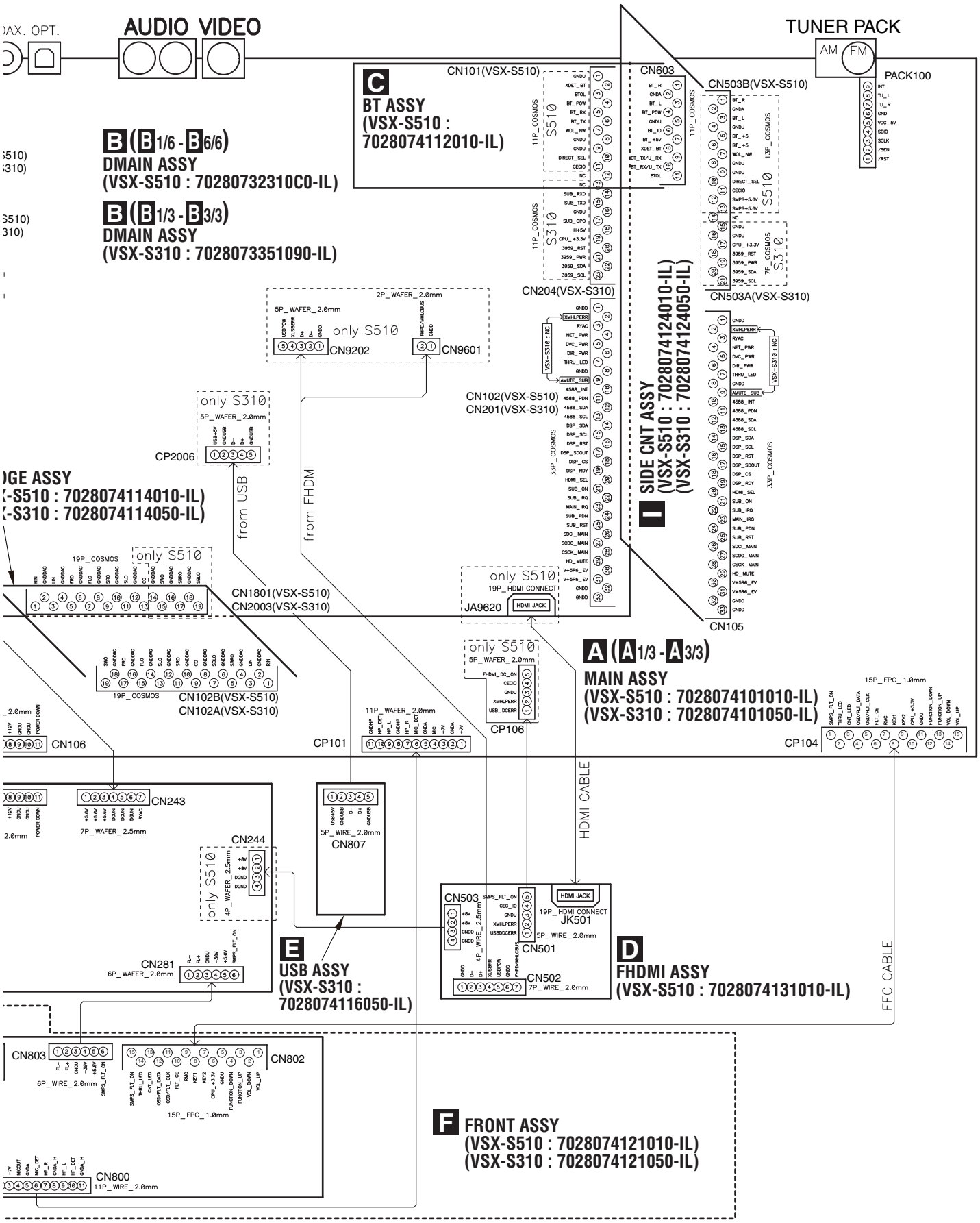
F

4. BLOCK DIAGRAM

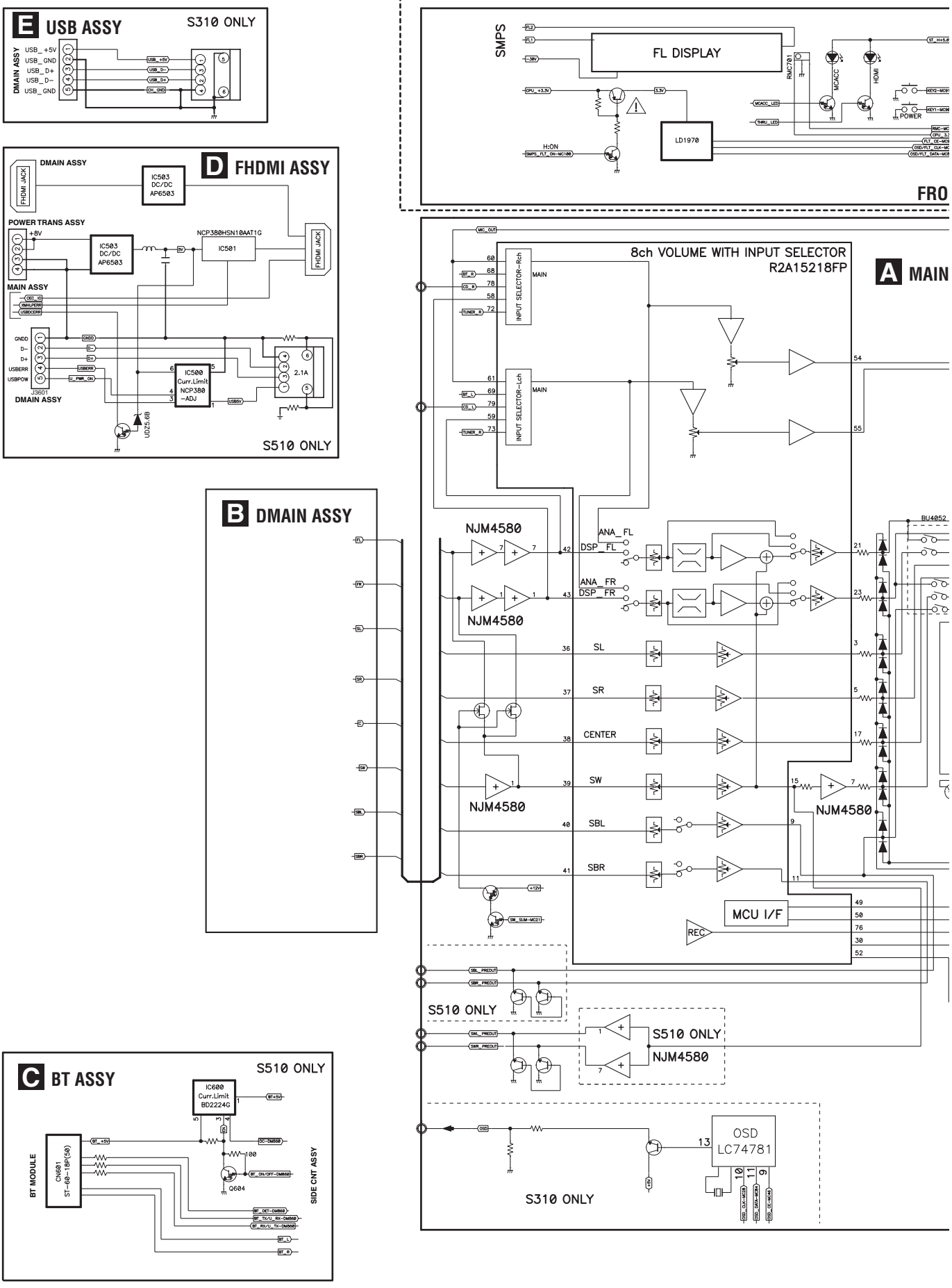
4.1 OVERALL CONNECTION DIAGRAM

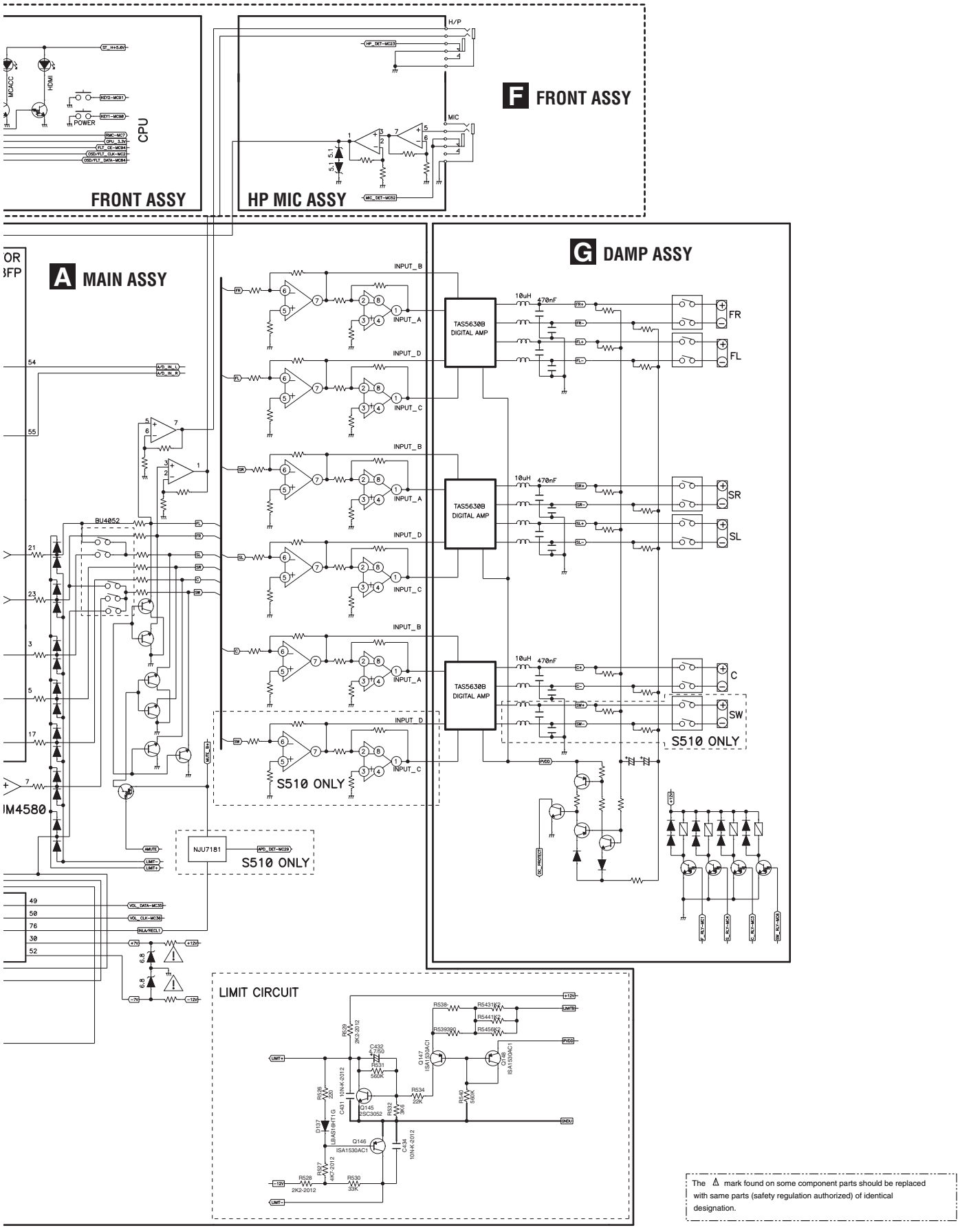
- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.




AUDIO VIDEO
TUNER PACK
AM
FM
PACK100
C
BT ASSY
(VSX-S510 :
7028074112010-IL)
CN101(VSX-S510)
CN603
CN503B(VSX-S510)
B (B1/6 - B6/6)
DMAIN ASSY
(VSX-S510 : 70280732310C0-IL)
B (B1/3 - B3/3)
DMAIN ASSY
(VSX-S310 : 7028073351090-IL)
CN204(VSX-S310)
CN503A(VSX-S310)
I
SIDE CNT ASSY
(VSX-S510 : 7028074124010-IL)
(VSX-S310 : 7028074124050-IL)
CN105
only S510
only S310
CN9202
CN9601
CP2006
CN102(VSX-S510)
CN201(VSX-S310)
from USB
from FHDMI
GE ASSY
-S510 : 7028074114010-IL)
-S310 : 7028074114050-IL)
CN1801(VSX-S510)
CN2003(VSX-S310)
JA9620
HDMI JACK
CN102B(VSX-S510)
CN102A(VSX-S310)
CN106
CP101
CP106
A (A1/3 - A3/3)
MAIN ASSY
(VSX-S510 : 7028074101010-IL)
(VSX-S310 : 7028074101050-IL)
CP104
CN243
CN244
CN807
HDMI CABLE
CN503
CN501
CN502
JK501
E
USB ASSY
(VSX-S310 :
7028074116050-IL)
CN281
D
FHDMI ASSY
(VSX-S510 : 7028074131010-IL)
FFC CABLE
CN803
CN802
CN800
F
FRONT ASSY
(VSX-S510 : 7028074121010-IL)
(VSX-S310 : 7028074121050-IL)

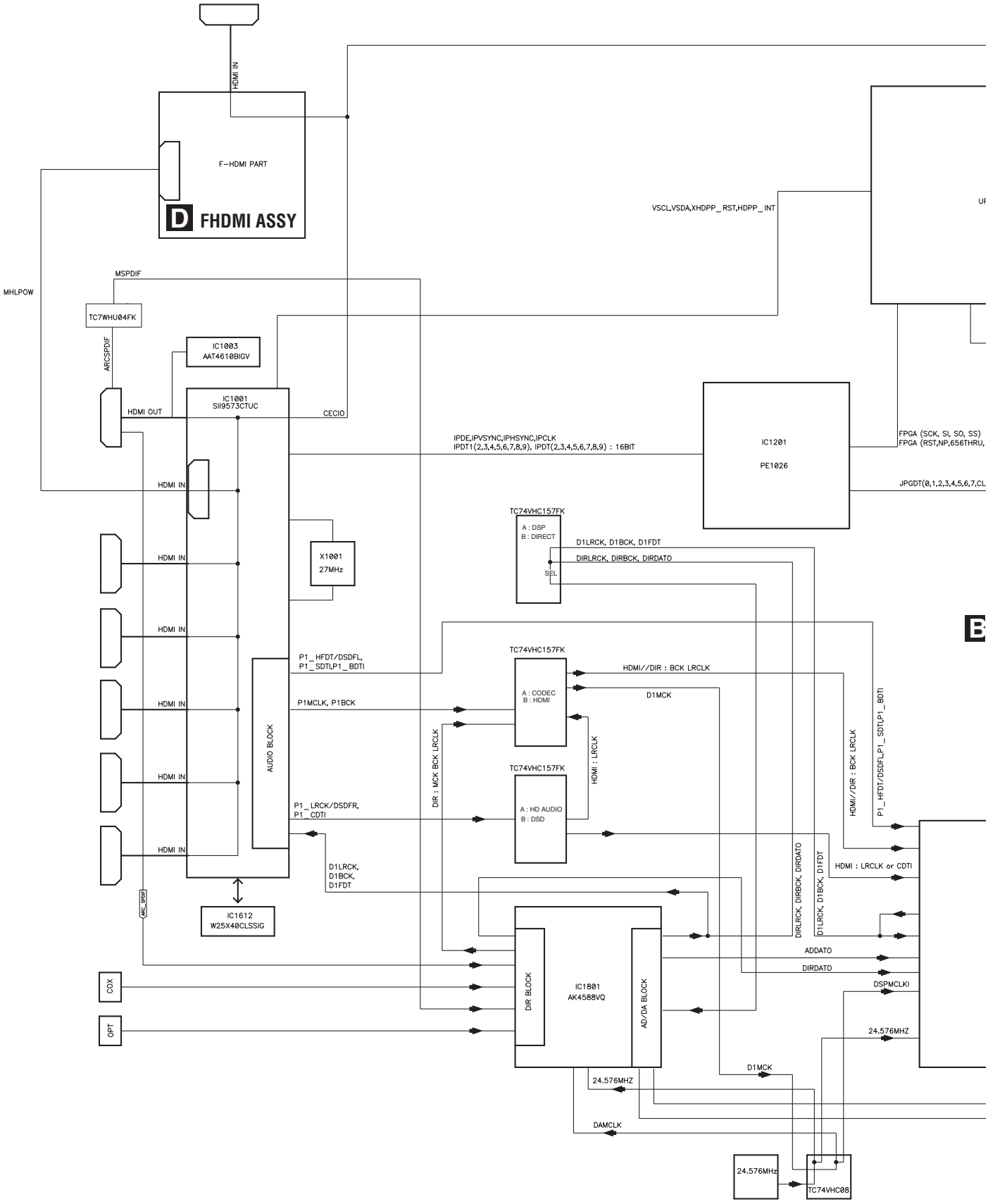
4.2 BLOCK DIAGRAM FOR AUDIO BLOCK

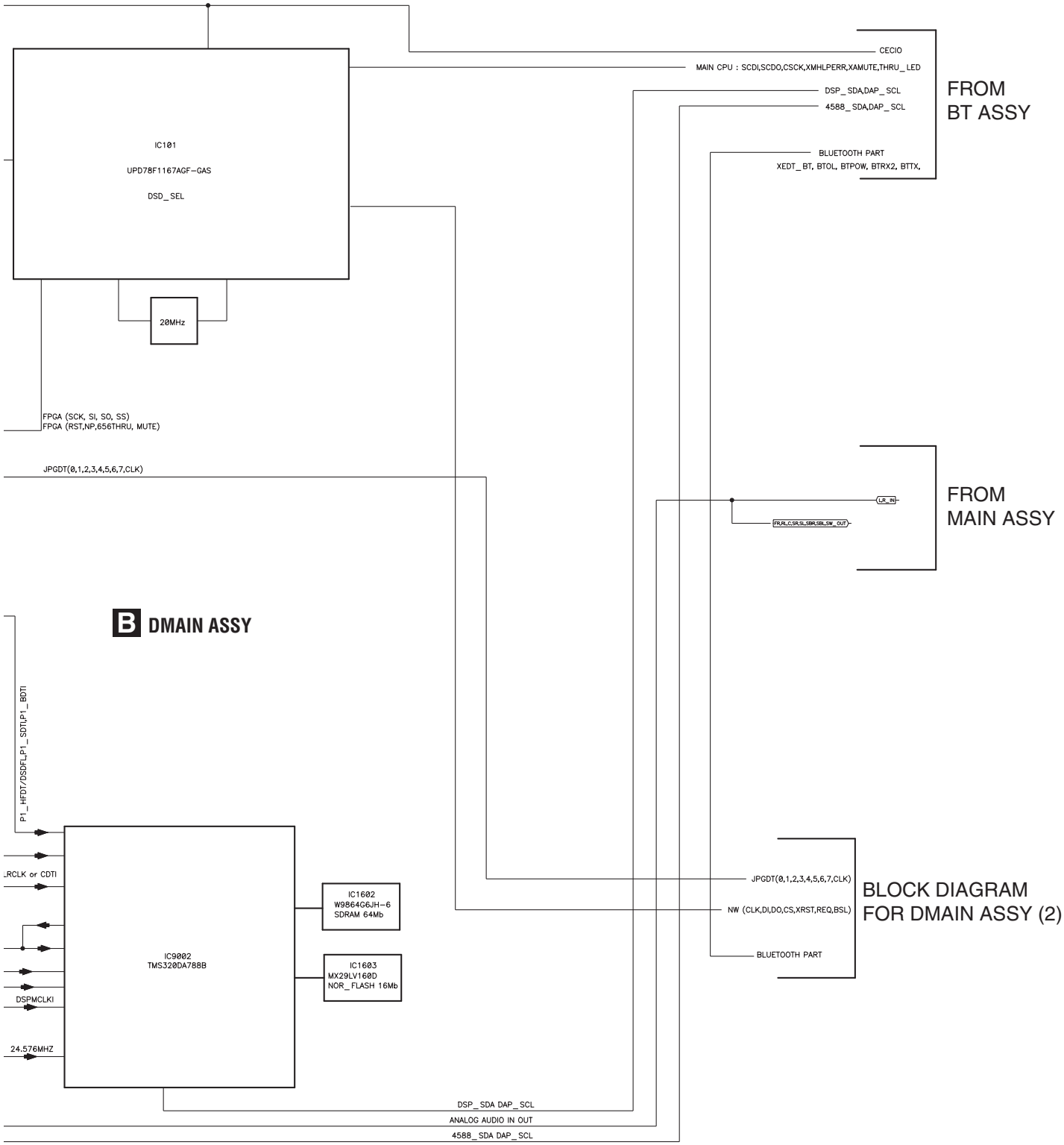




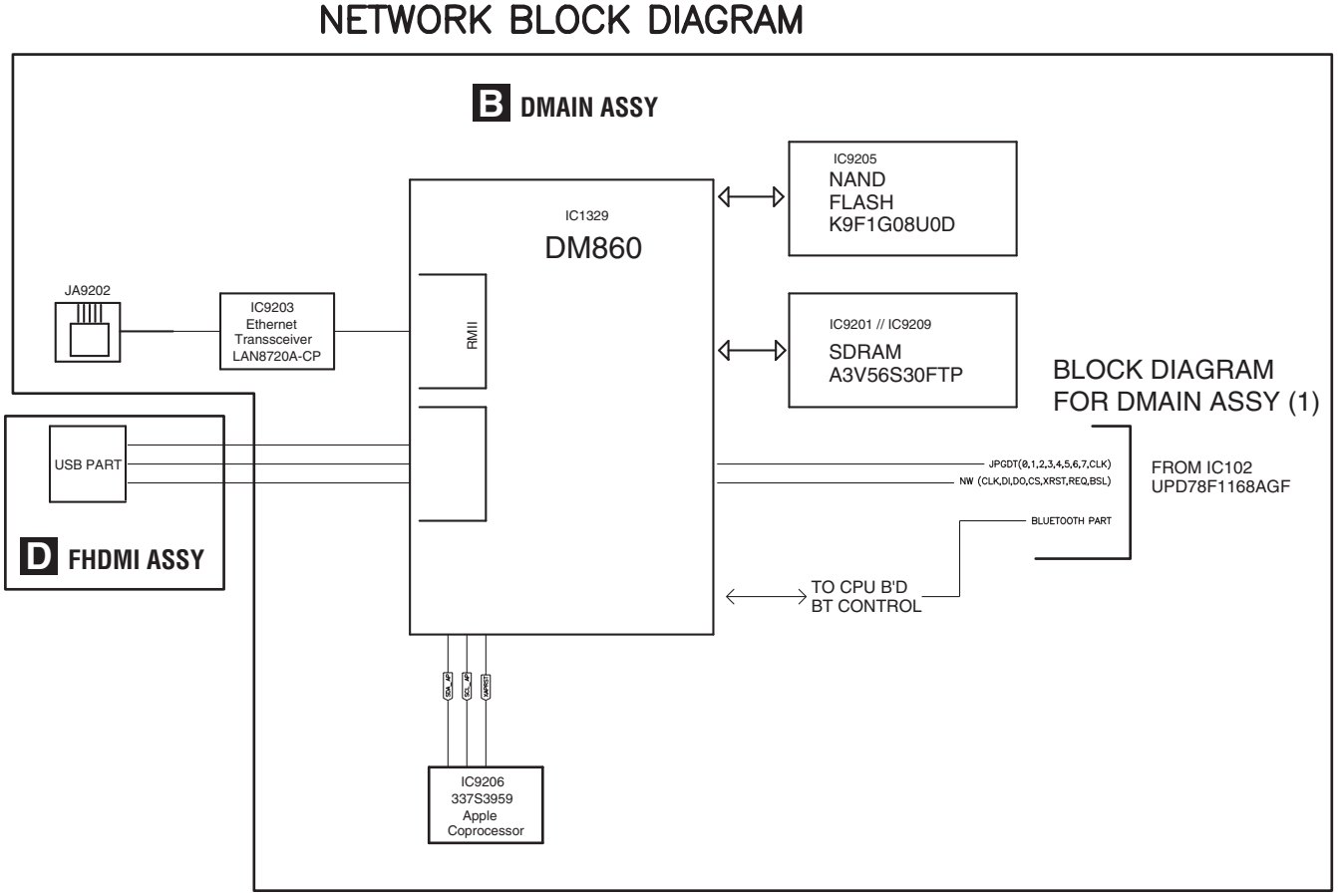
The ⚠ mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical designation.

4.3 BLOCK DIAGRAM FOR DMAIN ASSY (1) (VSX-S510)




IC101
UPD78F1167AGF-GAS
DSD_SEL
20MHz
FPGA (SCK, SI, SO, SS)
FPGA (RST,NP,656THRU, MUTE)
JPGDT(0,1,2,3,4,5,6,7,CLK)
CECIO
MAIN CPU : SCDI,SCDO,CSCK,XMHLPERR,XAMUTE,THRU_LED
DSP_SDA,DAP_SCL
4588_SDA,DAP_SCL
BLUETOOTH PART
XEDT_BT, BTOL, BTPOW, BTRX2, BTTX,
FROM
BT ASSY
LR_IN
FR,RL,C,SR,SL,SBR,SBL,SW_OUT
FROM
MAIN ASSY
B DMAIN ASSY
P1_HFDT/DSDFL,P1_SDTI,P1_BDTI
_RCLK or CDTI
IC9002
TMS320DA788B
IC1602
W9864G6JH-6
SDRAM 64Mb
IC1603
MX29LV160D
NOR_FLASH 16Mb
DSPMCLKI
24.576MHZ
JPGDT(0,1,2,3,4,5,6,7,CLK)
NW (CLK,DI,DO,CS,XRST,REQ,BSL)
BLUETOOTH PART
BLOCK DIAGRAM
FOR DMAIN ASSY (2)
DSP_SDA DAP_SCL
ANALOG AUDIO IN OUT
4588_SDA DAP_SCL

4.4 BLOCK DIAGRAM FOR DMAIN ASSY (2) (VSX-S510)



A

B

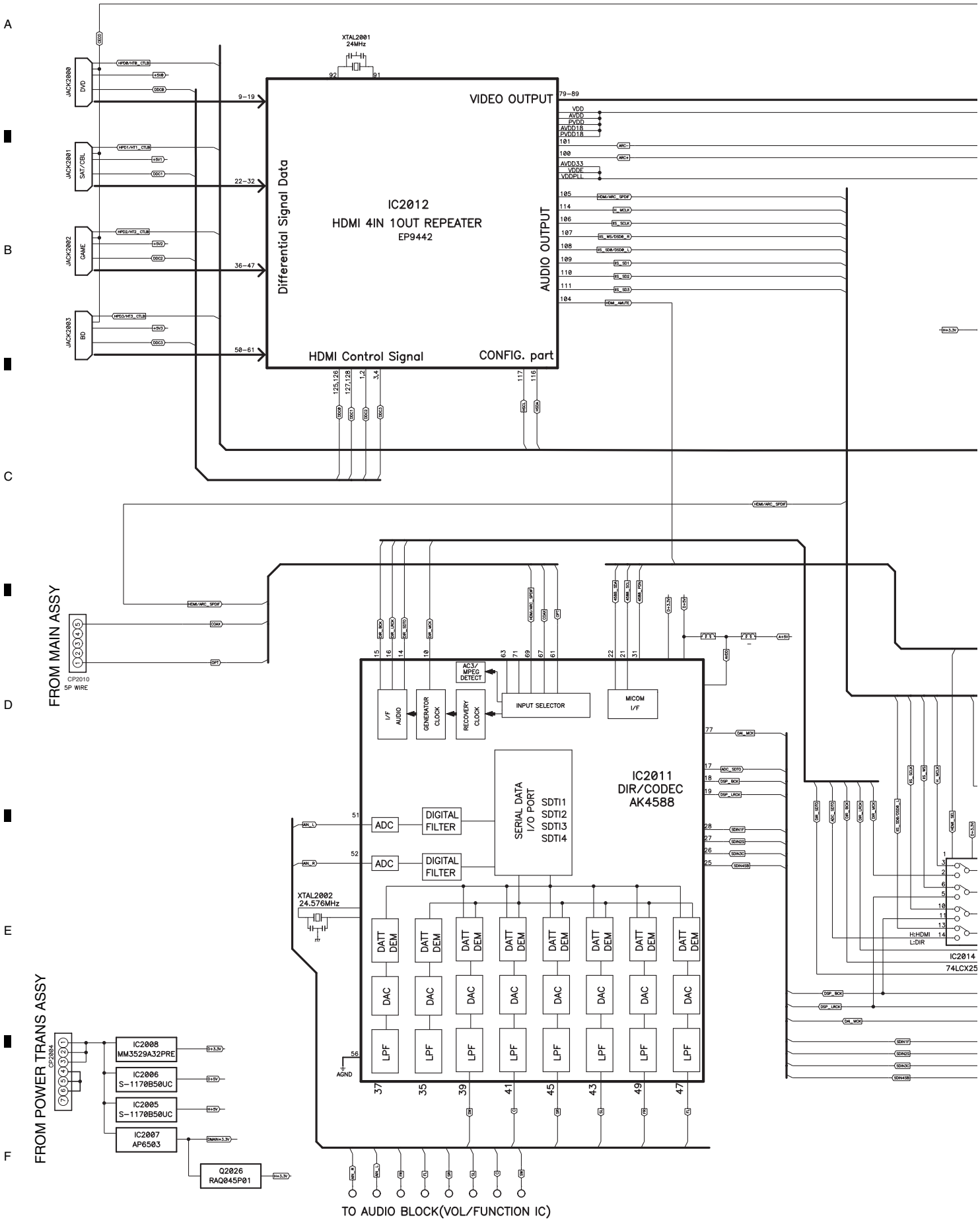
C

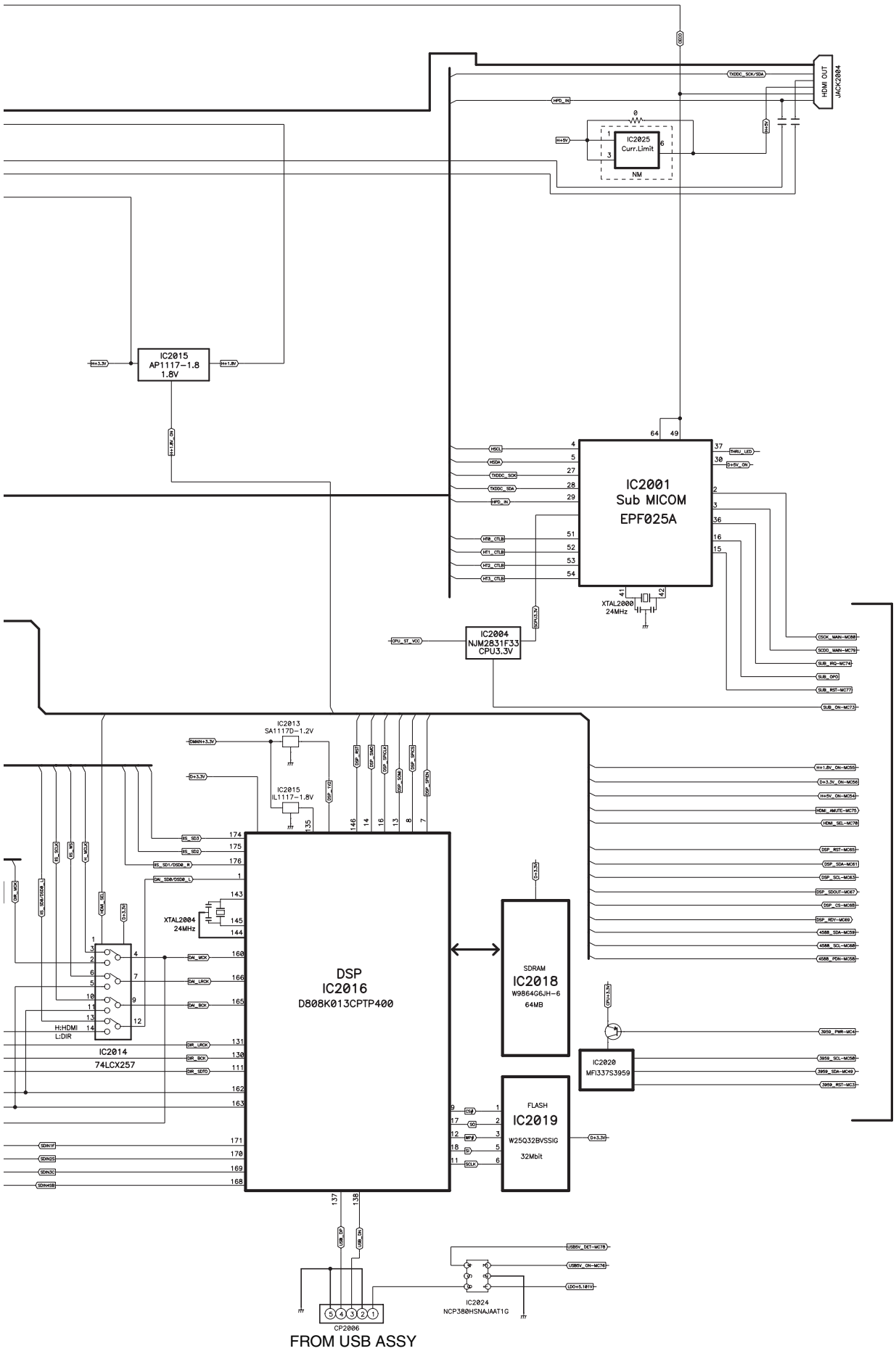
D

E

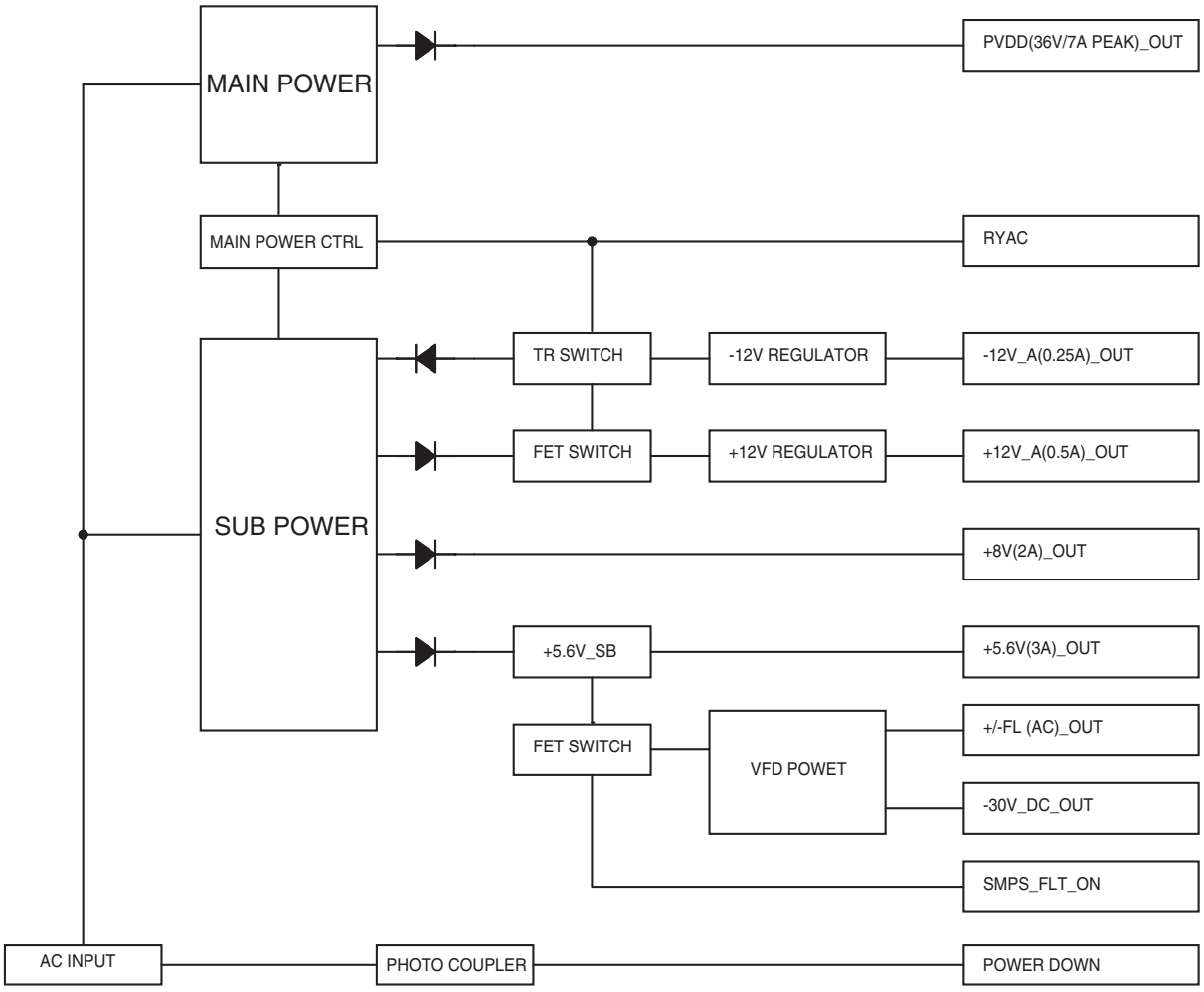
F

4.5 BLOCK DIAGRAM FOR DMAIN ASSY (VSX-S310)




IC2015
AP1117-1.8
1.8V
IC2025
Curr.Limit
NM
HDMI OUT
JACK2004
IC2001
Sub MICOM
EPF025A
XTAL2000
24MHz
IC2004
NJM2831F33
CPU3.3V
IC2013
SA1117D-1.2V
IC2015
IL1117-1.8V
DSP
IC2016
D808K013CPTP400
XTAL2004
24MHz
IC2014
74LCX257
H:HDMI
L:DIR
SDRAM
IC2018
W9864G6JH-6
64MB
IC2020
MFI337S3959
FLASH
IC2019
W25Q32BVSSIG
32Mbit
IC2024
NCP380HSNAJAAT1G
CP2006
FROM USB ASSY
FROM MAIN ASSY

4.6 BLOCK DIAGRAM FOR POWER BLOCK (1)



A

B

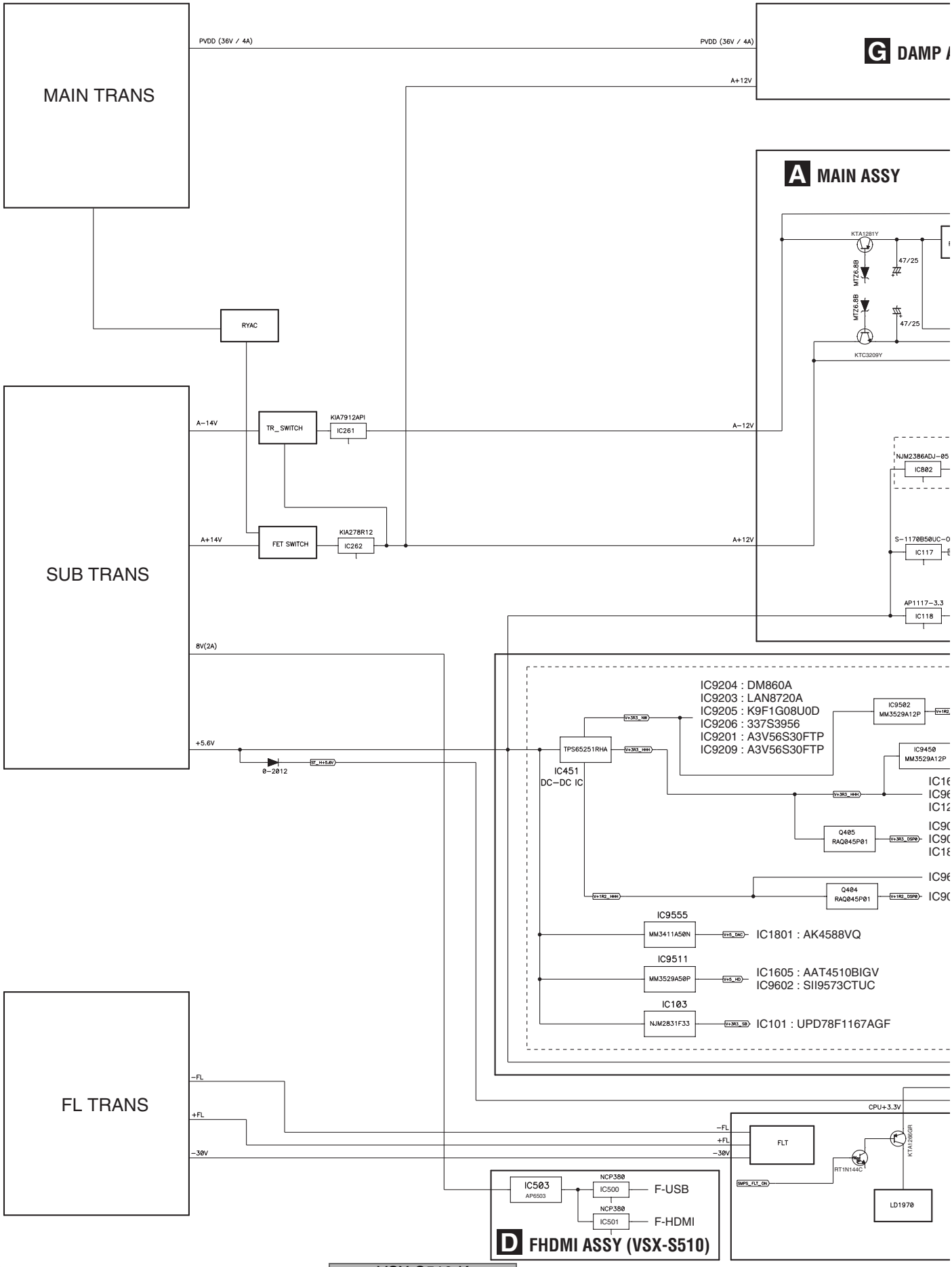
C

D

E

F

4.7 BLOCK DIAGRAM FOR POWER BLOCK (2)



G DAMP ASSY

IN ASSY

BT

TUNER

S510 ONLY

KTA1281Y
47/25
MTZ6.8B
MTZ6.8B
47/25
KTC3209Y
R2A15218FP
BU4052
NJM4580CG

KTA1281Y
MTZ3.9B
47/25
MTZ3.9B
47/25
KTC3209Y
NJM4580CG

S510 ONLY
NJM2386ADJ-05
IC802
NCP380
IC803
DC OUTPUT

S310 ONLY
S-1170B50UC-OUJ
IC117
TUN/BT/VID_+5V
BH76206HFV
LC74781
SN74AHCT08PW

CPU+3.3V
AP1117-3.3
IC118
M3030RFGPFP

IC9502
MM3529A12P
V+1R2_NR
IC9204 : DM860A

IC9450
MM3529A12P
V+1R2_FP
IC1201 : PE1026

IC1612 : W25X40CLSSIG
IC9602 : SII9573CTUC
IC1201 : PE1026

IC9002 : TMS320DA788B
IC9004 : MX29LV160DTTI
IC1801 : AK4588VQ

IC9602 : SII9573CTUC

IC9002 : TMS320DA788B

B DMAIN ASSY (VSX-S510)

IC2007
AP6503
DC-DC IC
DMAN+3.3V

Q2026
RAQ045P01
IC2011 : EP9442
IC2026 : R1EX24016

Q2036
RAQ045P01
AZ1068
IC2017
IC2011 : EP9442

Q2042
RAQ045P01
SA1117D-1.2V
IC2013
IC2016 : D808K013CPTP400

Q2040
RAQ045P01
AP1117-1.8V
IC2015
IC2016 : D808K013CPTP400
IC2016 : D808K013CPTP400

IC2008
MM3529A32PRE
IC2016 : D808K013CPTP400
IC2014 : 74LCX257MTCX
IC2019 : W25Q32BVSSIG

NJM2831F33
IC2004
IC2001 : EPF025A

S-1170B50UC-OUJ
IC2005
HDMI OUT

S-1170B50UC-OUJ
IC2006
IC2011 : AK4588

BA00DD0WHFP
IC2011
NCP380
IC2024
F-USB

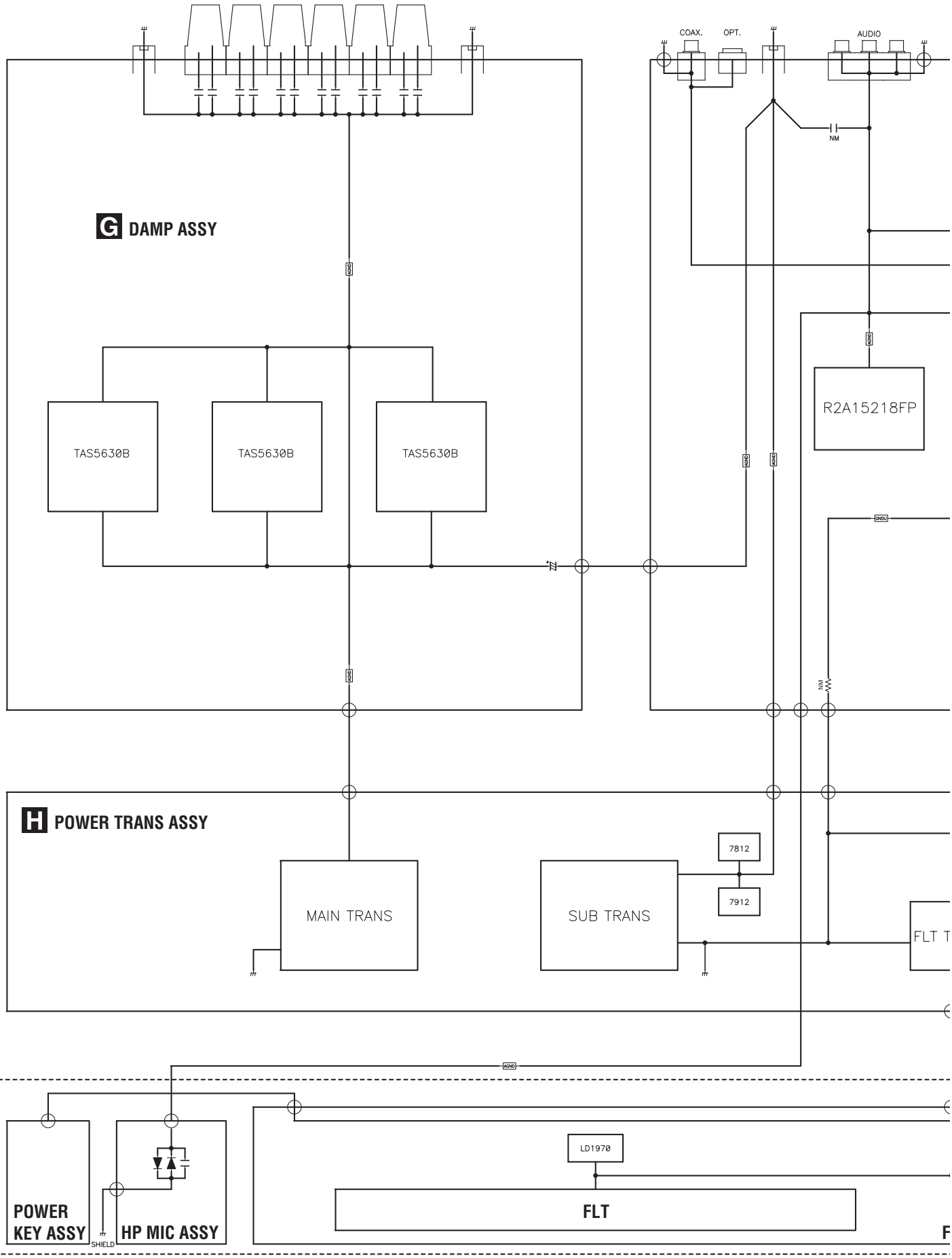
B DMAIN ASSY (VSX-S310)

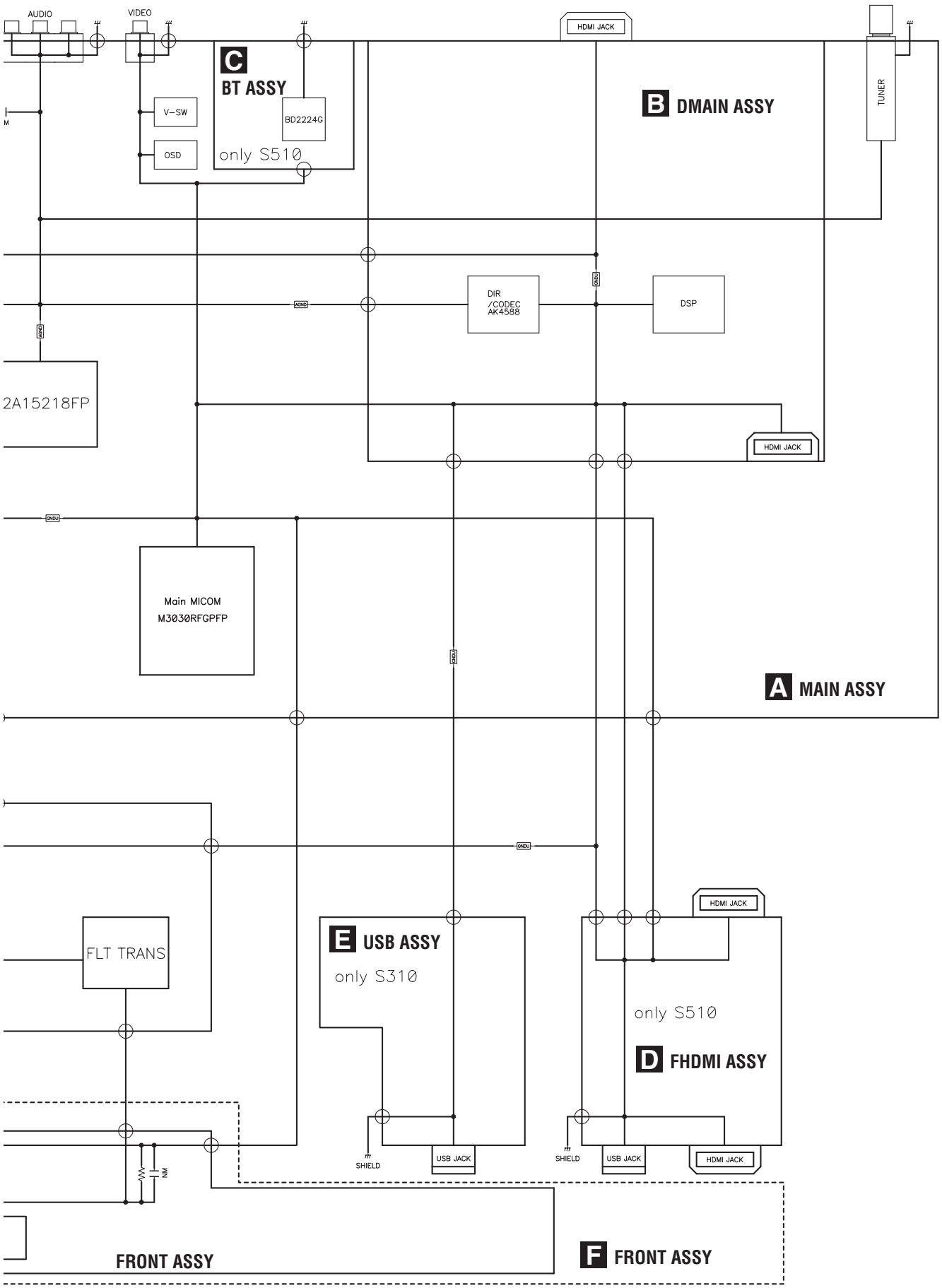
CPU+3.3V
KTA1280GR
LD1970

F FRONT ASSY

NJM4580CG
MIC&H/P

4.8 BLOCK DIAGRAM FOR GND BLOCK



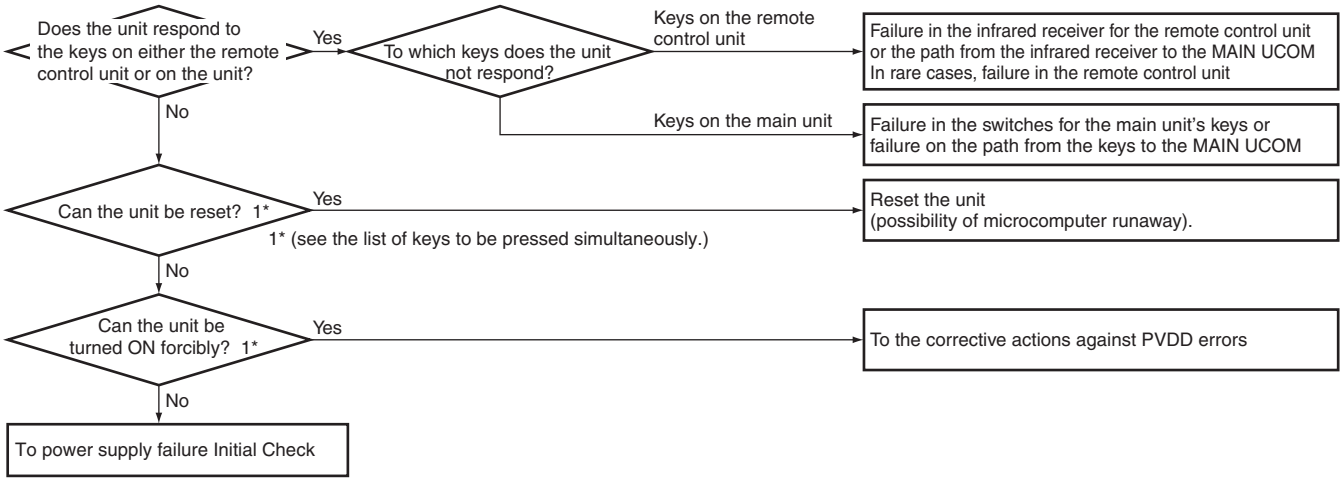

AUDIO
VIDEO
HDMI JACK
C
BT ASSY
BD2224G
only S510
V-SW
OSD
B DMAIN ASSY
TUNER
DIR
/CODEC
AK4588
DSP
2A15218FP
HDMI JACK
Main MICOM
M3030RFGPFP
A MAIN ASSY
FLT TRANS
E USB ASSY
only S310
HDMI JACK
only S510
D FHDMI ASSY
SHIELD
USB JACK
SHIELD
USB JACK
HDMI JACK
NM
FRONT ASSY
F FRONT ASSY

5. DIAGNOSIS

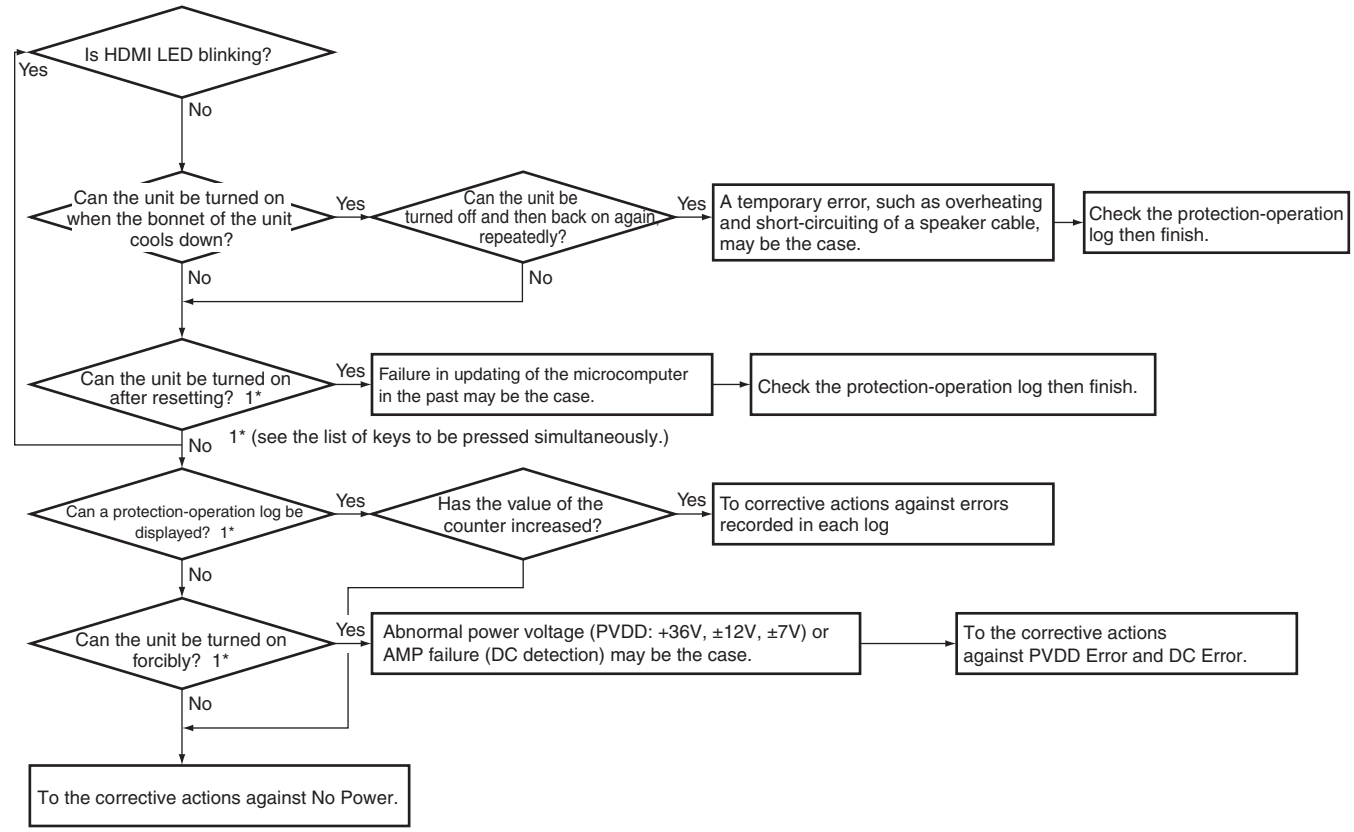
5.1 TROUBLESHOOTING

[1] Initial Check

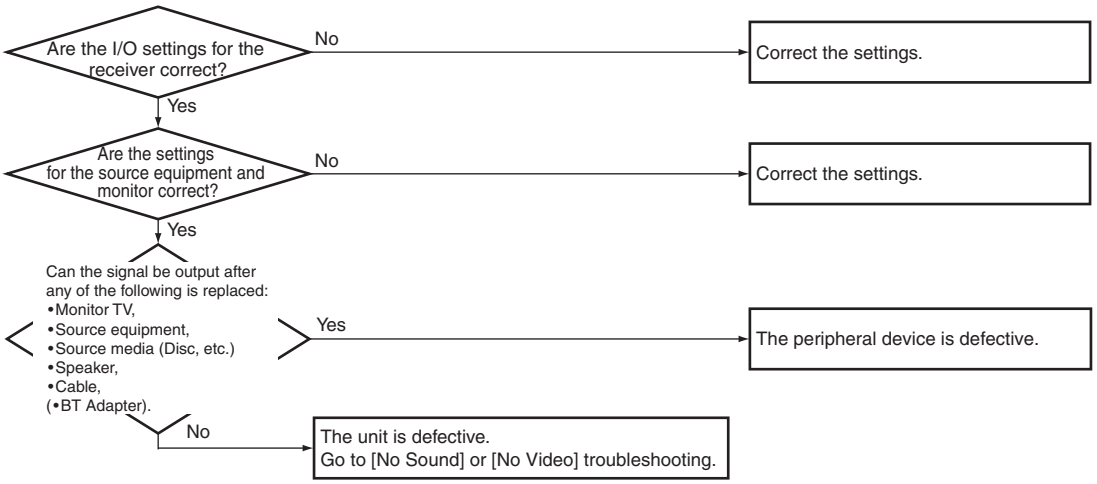
■ The unit does not operate.



■ No power

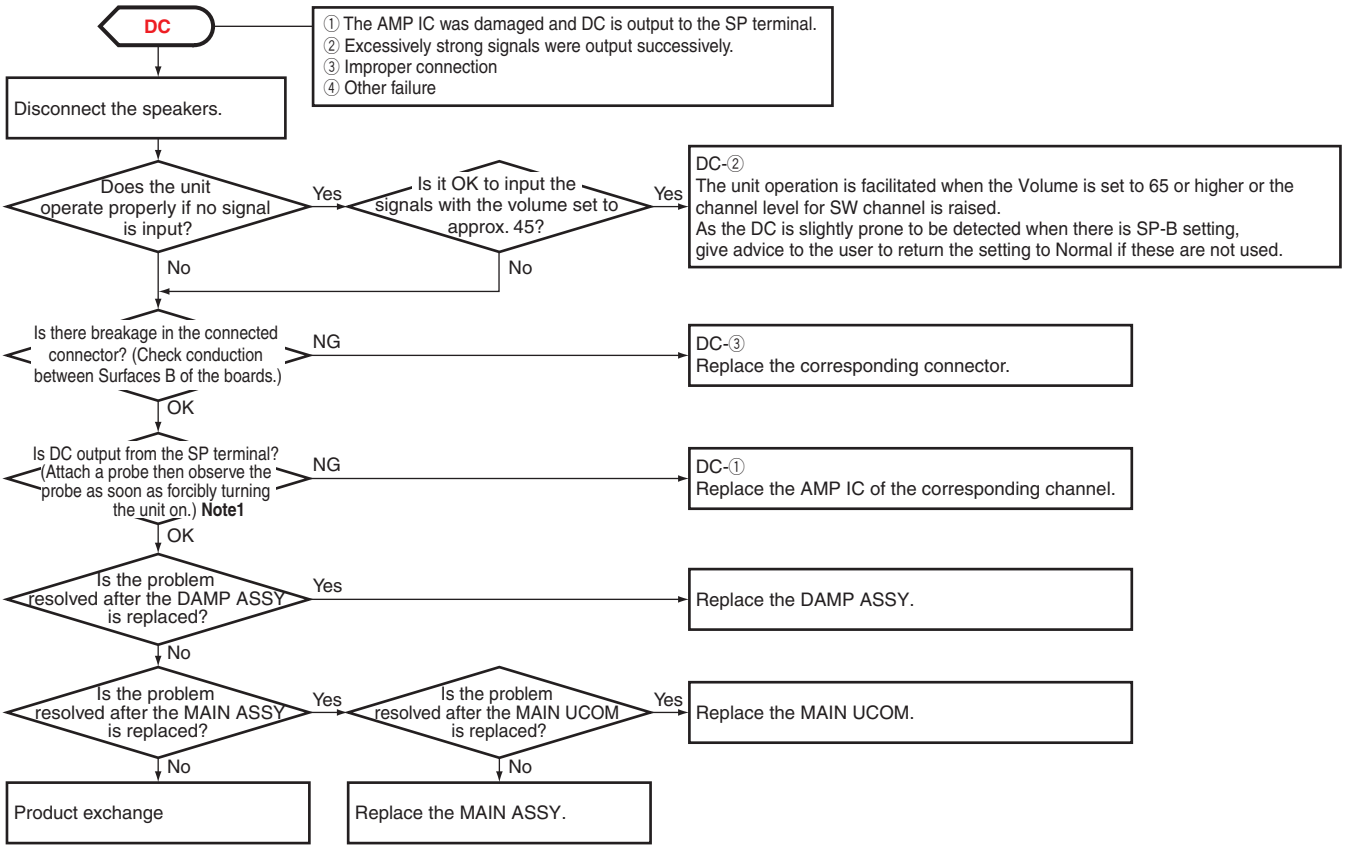


■ No audio/video

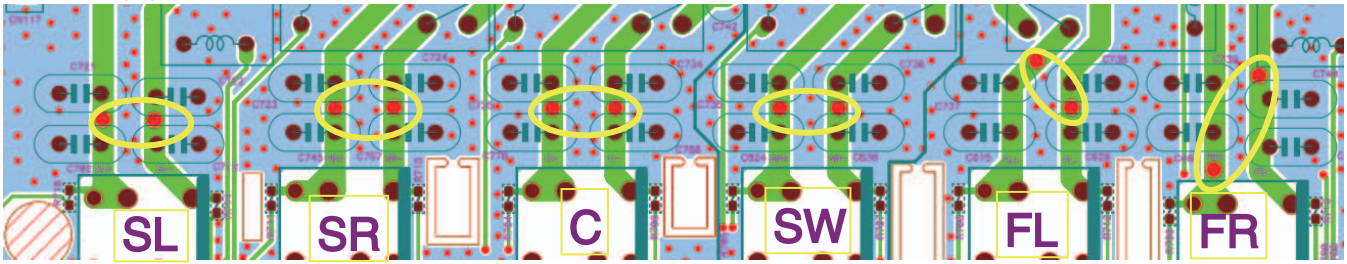


[2] Solution of Error

■ Corrective actions to be taken against each error indication on the protection-operation log



Note1 : DC Check Point



TEMP

① Overheating was detected(increase in the temperature of the IC from 125°C to 155°C).
② Improper connection
Note: With the above abnormalities, the unit can be turned on.

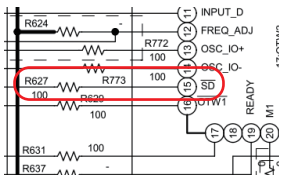
Is there any protection-operation log other than TEMP?
- Yes → TEMP-①
  To corrective actions against items other than TEMP in the protection-operation log
- No → Is there breakage in the connected connector? (Check conduction between Surfaces B of the boards.)
  - NG → TEMP-②
    Replace the corresponding connector.
  - OK → Did the user complain that the volume had automatically decreased to -20 dB while listening?
    - Yes → TEMP-①
      The unit may have been successively used in a high-temperature environment. Give advice to the user about ventilation of the unit at the installation location and normal volume level.
    - No → This error may not be the main cause of the problem, and there may be other abnormality.

SD

① An abnormally high temperature was detected in AMP IC (temperature of the IC is 155°C or higher).
② Excess current was detected in AMP IC.
③ Improper connection
④ Other failure

Is there any TEMP protection-detection log?
- No → Is there breakage in the connected connector? (Check conduction between Surfaces B of the boards.)
  - NG → SD-③
    Replace the corresponding connector.
  - OK → Are the SP terminals or the SP terminal and GND (or the chassis) short-circuited by an SP cable or any foreign object? (Including short-circuiting of core wires of the SP cable)
    - NG → SD-②
      Remove the cause of the error.
    - OK → Is the impedance of the connected speaker less than 4 ohms?
      - Yes → SD-②
        Recommend that the user use a SP with 4 ohms or higher or give advice to the user to use the amp at decreased volume level.
      - No → Is the problem resolved after the DAMP ASSY is replaced?
- Yes → Is the installation location appropriate from the viewpoint of heat dissipation? Is the volume too high during operation? (Is the level too high and will sound be distorted?)
  - NG → SD-①
    Advice on how to use
  - OK → Is there breakage in the connected connector? (Check conduction between Surfaces B of the boards.)
    - NG → SD-③
      Replace the corresponding connector.
    - OK → Are the SP terminals or the SP terminal and GND (or the chassis) short-circuited by an SP cable or any foreign object? (Including short-circuiting of core wires of the SP cable)
      - NG → SD-②
        Remove the cause of the error.
      - OK → Is the impedance of the connected speaker less than 4 ohms?
        - Yes → SD-②
          Recommend that the user use a SP with 4 ohms or higher or give advice to the user to use the amp at decreased volume level.
        - No → Is the problem resolved after the DAMP ASSY is replaced?

Is the problem resolved after the DAMP ASSY is replaced?
- Yes → Remove the series resistors of the SD port of the AMP ICs, one by one, then check if the unit can be turned on (three ICs).
  - Yes → SD-④
    Replace the corresponding AMP IC.
  - No → SD-④
    Replace the DAMP ASSY.
- No → Is the problem resolved after the MAIN ASSY is replaced?
  - Yes → Is the problem resolved after the MAIN UCOM is replaced?
    - Yes → Replace the MAIN UCOM.
    - No → Replace the MAIN ASSY.
  - No → Product exchange



PVDD

① Voltage error of the power PVDD for the AMP (+36V)
② Voltage error of ±12 V or ±7V
③ Failure in connectors
④ Other failure

As the unit may not be turned on in a normal way during analysis, the unit must be forcibly turned on by pressing the corresponding keys simultaneously, after which an instant check is required.

Is PVDD enabled for the MAIN ASSY?
- Yes → Is ±12V enabled on the MAIN ASSY?
  - Yes → Is ±7V enabled for the MAIN ASSY?
    - Yes → PVDD-④ DC_PRO2 detection circuit failure
    - No → PVDD-④ ±7V power supply circuit failure
  - No
- No

Is there breakage in the connector that connects POWER TRANS ASSY and MAIN ASSY or DAMP ASSY? (±12V, PVDD, GND Pin) (Check conduction between Surfaces B of the boards.)
- NG → PVDD-③ Replace the corresponding connector.
- OK

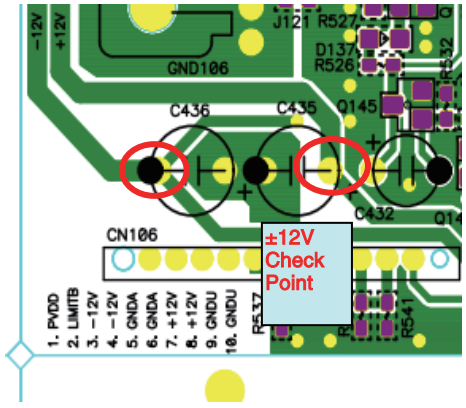
Is the problem resolved after the POWER TRANS ASSY is replaced?
- Yes → PVDD-①② Replace the POWER TRANS ASSY.

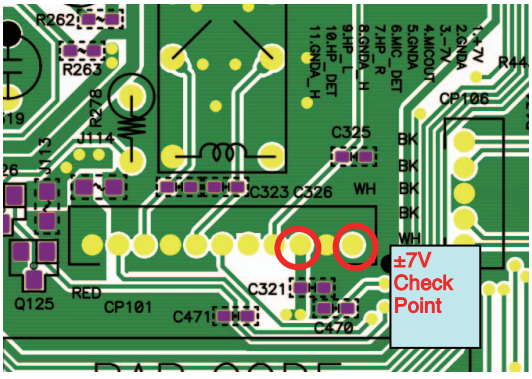
No (when PVDD is not enabled))

Is the problem resolved after the DAMP ASSY is replaced?
- Yes → Is the problem resolved after the AMP IC is replaced?
  - Yes → PVDD-① Replace the three AMP ICs (It is difficult to identify the defective IC).
  - No → PVDD-④ Replace the DAMP ASSY.

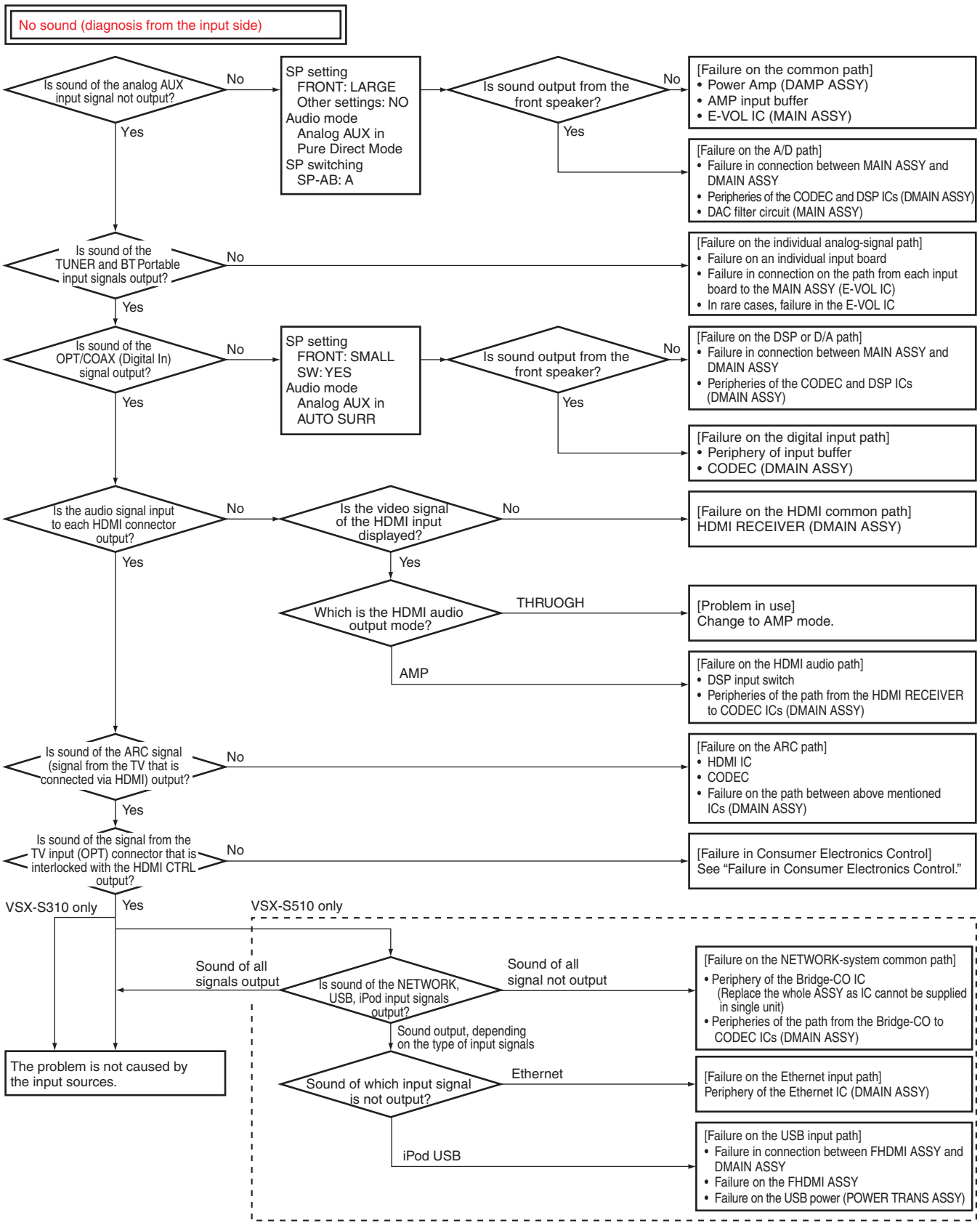
No (when ±12V is not enabled))

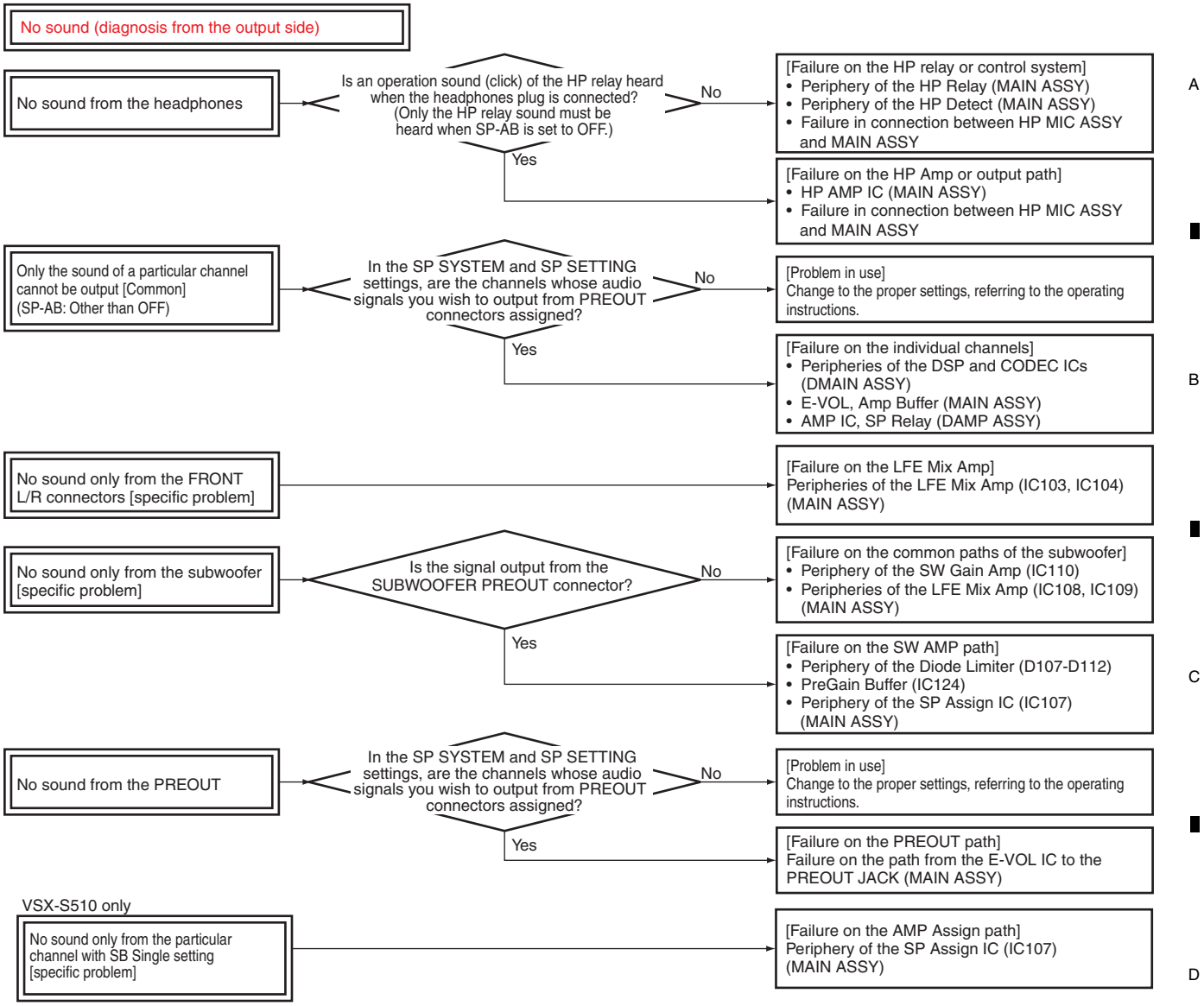
Is the problem resolved after the MAIN ASSY is replaced?
- Yes → Is there any IC whose temperature is abnormally high among the ICs that are connected to ±12V
  - Yes → Is the problem resolved after the MAIN UCOM is replaced?
    - Yes → Replace the MAIN UCOM.
    - No → Replace the MAIN ASSY.
  - No → PVDD-② Replace the corresponding IC.
- No → Product exchange



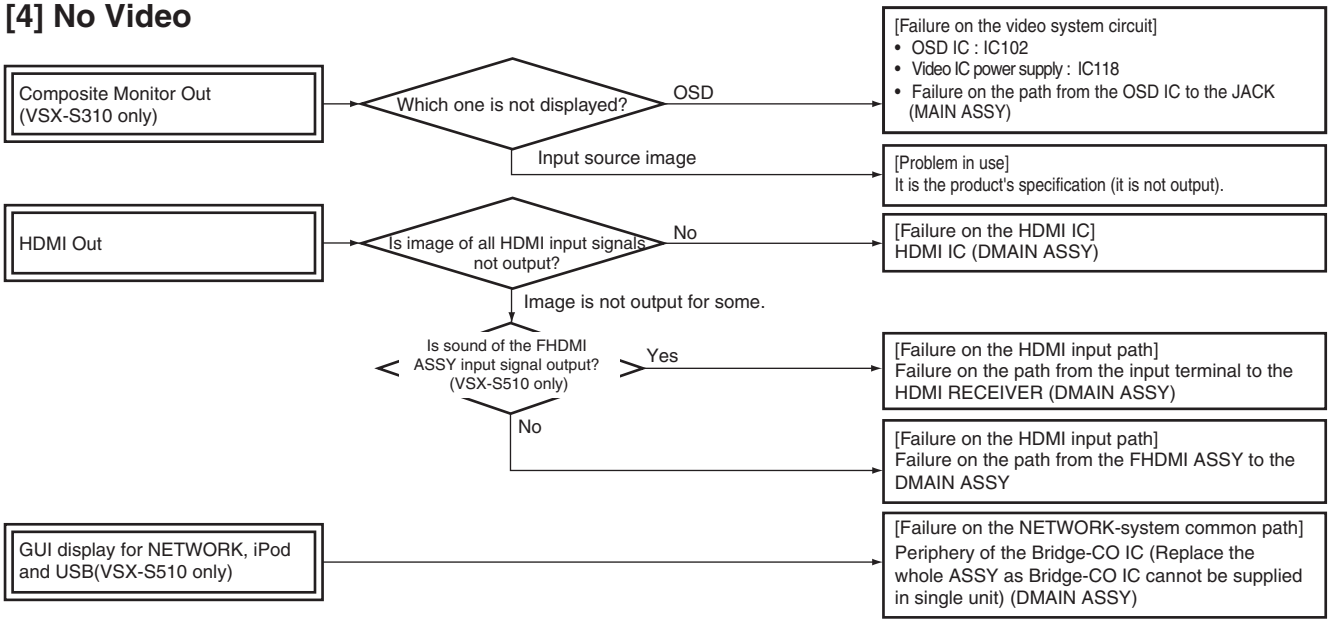


[3] No Sound

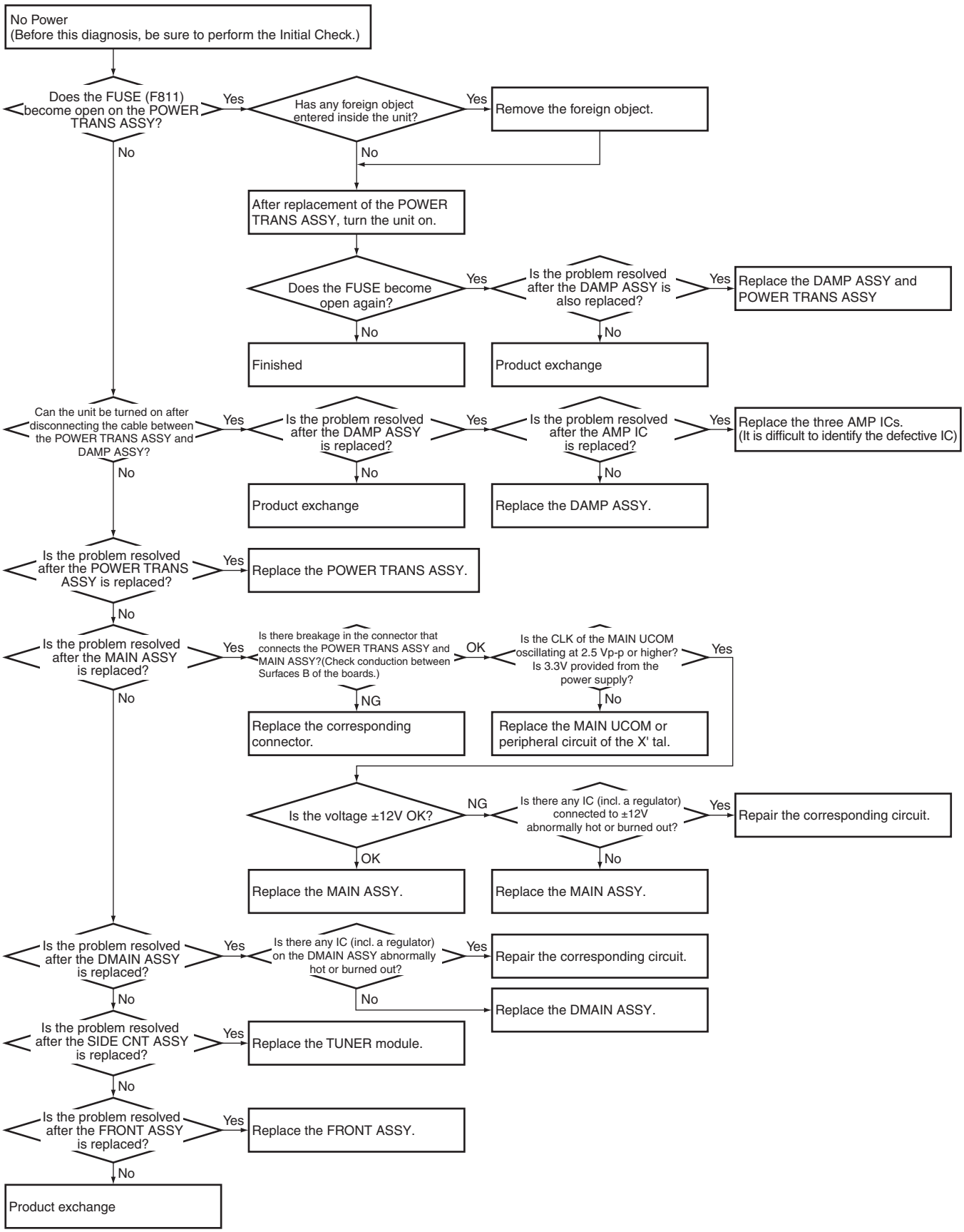

No sound (diagnosis from the input side)
Is sound of the analog AUX input signal not output?
No
Yes
SP setting
FRONT: LARGE
Other settings: NO
Audio mode
Analog AUX in
Pure Direct Mode
SP switching
SP-AB: A
Is sound output from the front speaker?
No
Yes
[Failure on the common path]
• Power Amp (DAMP ASSY)
• AMP input buffer
• E-VOL IC (MAIN ASSY)
[Failure on the A/D path]
• Failure in connection between MAIN ASSY and DMAIN ASSY
• Peripheries of the CODEC and DSP ICs (DMAIN ASSY)
• DAC filter circuit (MAIN ASSY)
Is sound of the TUNER and BT Portable input signals output?
No
Yes
[Failure on the individual analog-signal path]
• Failure on an individual input board
• Failure in connection on the path from each input board to the MAIN ASSY (E-VOL IC)
• In rare cases, failure in the E-VOL IC
Is sound of the OPT/COAX (Digital In) signal output?
No
Yes
SP setting
FRONT: SMALL
SW: YES
Audio mode
Analog AUX in
AUTO SURR
Is sound output from the front speaker?
No
Yes
[Failure on the DSP or D/A path]
• Failure in connection between MAIN ASSY and DMAIN ASSY
• Peripheries of the CODEC and DSP ICs (DMAIN ASSY)
[Failure on the digital input path]
• Periphery of input buffer
• CODEC (DMAIN ASSY)
Is the audio signal input to each HDMI connector output?
No
Yes
Is the video signal of the HDMI input displayed?
No
Yes
[Failure on the HDMI common path]
HDMI RECEIVER (DMAIN ASSY)
Which is the HDMI audio output mode?
THRUOGH
AMP
[Problem in use]
Change to AMP mode.
[Failure on the HDMI audio path]
• DSP input switch
• Peripheries of the path from the HDMI RECEIVER to CODEC ICs (DMAIN ASSY)
Is sound of the ARC signal (signal from the TV that is connected via HDMI) output?
No
Yes
[Failure on the ARC path]
• HDMI IC
• CODEC
• Failure on the path between above mentioned ICs (DMAIN ASSY)
Is sound of the signal from the TV input (OPT) connector that is interlocked with the HDMI CTRL output?
No
Yes
[Failure in Consumer Electronics Control]
See “Failure in Consumer Electronics Control.”
VSX-S310 only
VSX-S510 only
Sound of all signals output
Is sound of the NETWORK, USB, iPod input signals output?
Sound of all signal not output
[Failure on the NETWORK-system common path]
• Periphery of the Bridge-CO IC (Replace the whole ASSY as IC cannot be supplied in single unit)
• Peripheries of the path from the Bridge-CO to CODEC ICs (DMAIN ASSY)
Sound output, depending on the type of input signals
The problem is not caused by the input sources.
Sound of which input signal is not output?
Ethernet
[Failure on the Ethernet input path]
Periphery of the Ethernet IC (DMAIN ASSY)
iPod USB
[Failure on the USB input path]
• Failure in connection between FHDMI ASSY and DMAIN ASSY
• Failure on the FHDMI ASSY
• Failure on the USB power (POWER TRANS ASSY)


No sound (diagnosis from the output side)
No sound from the headphones
Is an operation sound (click) of the HP relay heard when the headphones plug is connected? (Only the HP relay sound must be heard when SP-AB is set to OFF.)
No
[Failure on the HP relay or control system]
• Periphery of the HP Relay (MAIN ASSY)
• Periphery of the HP Detect (MAIN ASSY)
• Failure in connection between HP MIC ASSY and MAIN ASSY
Yes
[Failure on the HP Amp or output path]
• HP AMP IC (MAIN ASSY)
• Failure in connection between HP MIC ASSY and MAIN ASSY
Only the sound of a particular channel cannot be output [Common] (SP-AB: Other than OFF)
In the SP SYSTEM and SP SETTING settings, are the channels whose audio signals you wish to output from PREOUT connectors assigned?
No
[Problem in use]
Change to the proper settings, referring to the operating instructions.
Yes
[Failure on the individual channels]
• Peripheries of the DSP and CODEC ICs (DMAIN ASSY)
• E-VOL, Amp Buffer (MAIN ASSY)
• AMP IC, SP Relay (DAMP ASSY)
No sound only from the FRONT L/R connectors [specific problem]
[Failure on the LFE Mix Amp]
Peripheries of the LFE Mix Amp (IC103, IC104) (MAIN ASSY)
No sound only from the subwoofer [specific problem]
Is the signal output from the SUBWOOFER PREOUT connector?
No
[Failure on the common paths of the subwoofer]
• Periphery of the SW Gain Amp (IC110)
• Peripheries of the LFE Mix Amp (IC108, IC109) (MAIN ASSY)
Yes
[Failure on the SW AMP path]
• Periphery of the Diode Limiter (D107-D112)
• PreGain Buffer (IC124)
• Periphery of the SP Assign IC (IC107) (MAIN ASSY)
No sound from the PREOUT
In the SP SYSTEM and SP SETTING settings, are the channels whose audio signals you wish to output from PREOUT connectors assigned?
No
[Problem in use]
Change to the proper settings, referring to the operating instructions.
Yes
[Failure on the PREOUT path]
Failure on the path from the E-VOL IC to the PREOUT JACK (MAIN ASSY)
VSX-S510 only
No sound only from the particular channel with SB Single setting [specific problem]
[Failure on the AMP Assign path]
Periphery of the SP Assign IC (IC107) (MAIN ASSY)

[4] No Video

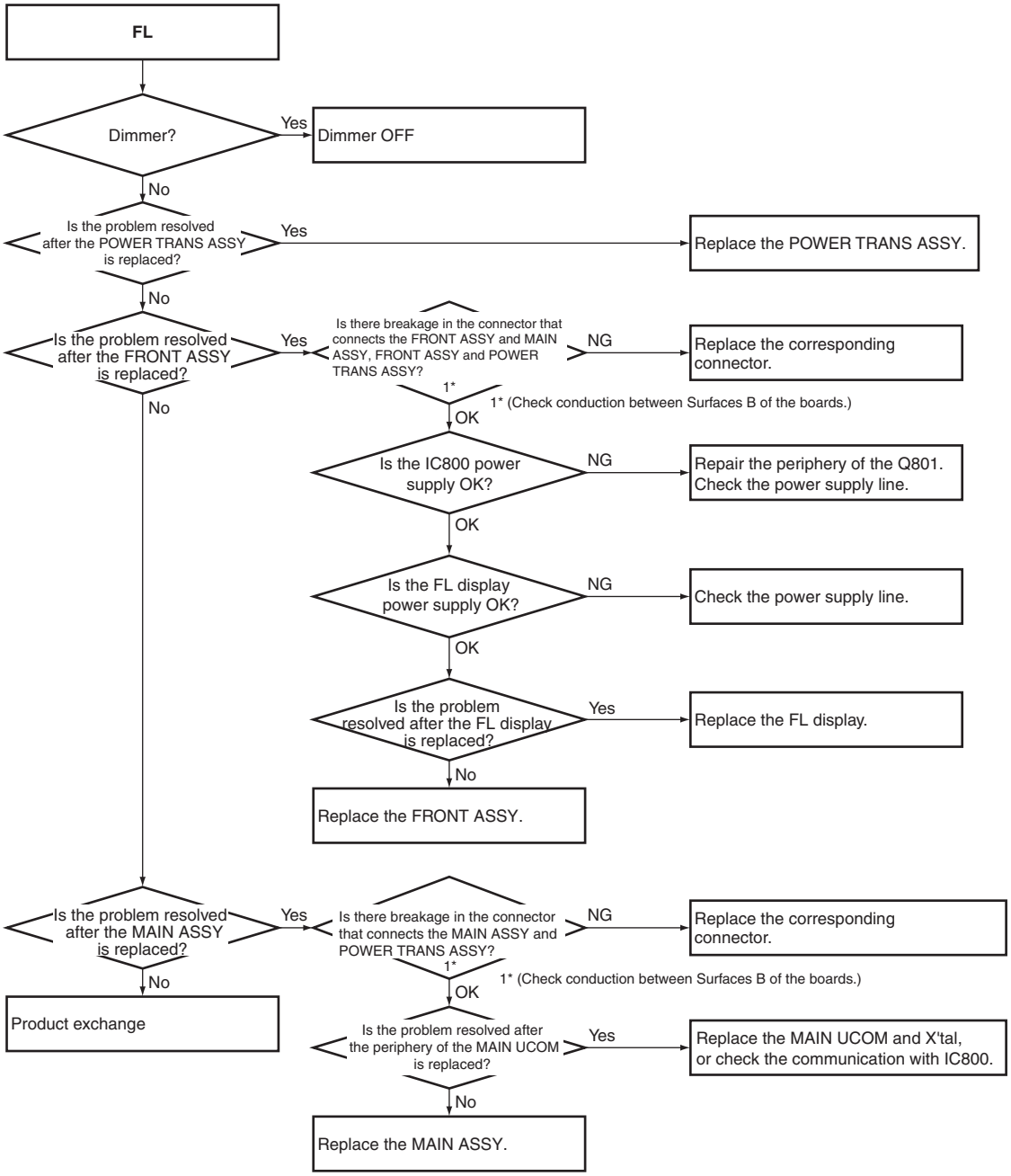

Composite Monitor Out (VSX-S310 only)
Which one is not displayed?
OSD
[Failure on the video system circuit]
• OSD IC : IC102
• Video IC power supply : IC118
• Failure on the path from the OSD IC to the JACK (MAIN ASSY)
Input source image
[Problem in use]
It is the product's specification (it is not output).
HDMI Out
Is image of all HDMI input signals not output?
No
[Failure on the HDMI IC]
HDMI IC (DMAIN ASSY)
Image is not output for some.
Is sound of the FHDMI ASSY input signal output? (VSX-S510 only)
Yes
[Failure on the HDMI input path]
Failure on the path from the input terminal to the HDMI RECEIVER (DMAIN ASSY)
No
[Failure on the HDMI input path]
Failure on the path from the FHDMI ASSY to the DMAIN ASSY
GUI display for NETWORK, iPod and USB(VSX-S510 only)
[Failure on the NETWORK-system common path]
Periphery of the Bridge-CO IC (Replace the whole ASSY as Bridge-CO IC cannot be supplied in single unit) (DMAIN ASSY)

[5] No Power

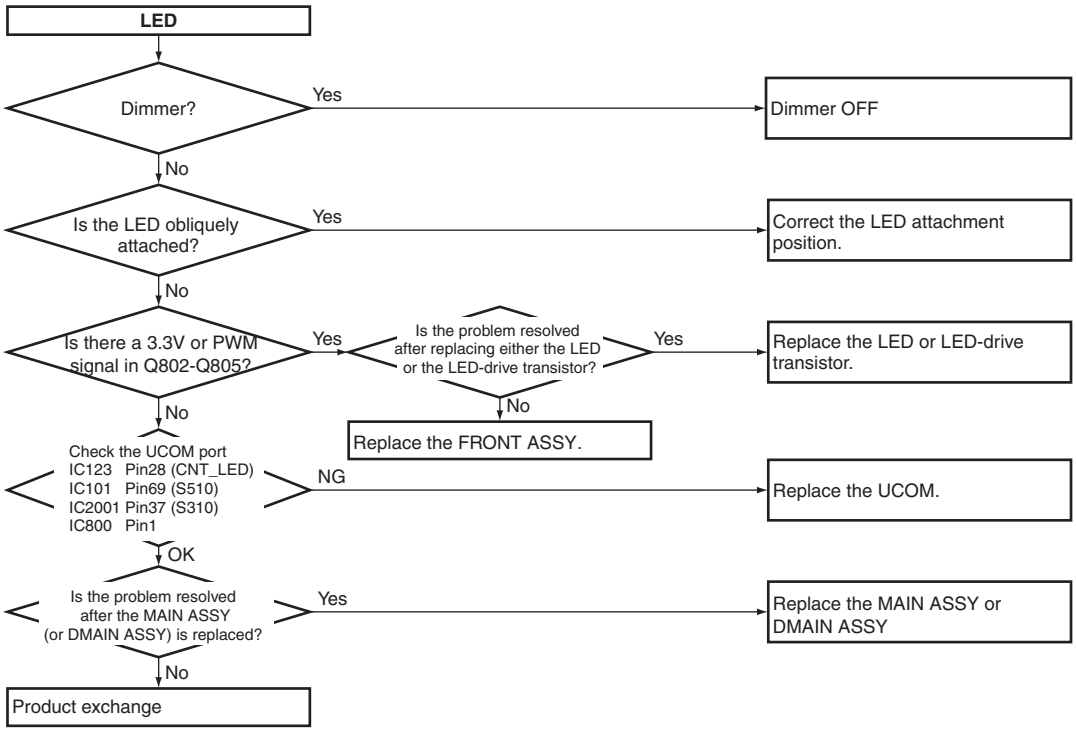

No Power
(Before this diagnosis, be sure to perform the Initial Check.)
Does the FUSE (F811) become open on the POWER TRANS ASSY?
Yes
Has any foreign object entered inside the unit?
Yes
Remove the foreign object.
No
No
After replacement of the POWER TRANS ASSY, turn the unit on.
Does the FUSE become open again?
Yes
Is the problem resolved after the DAMP ASSY is also replaced?
Yes
Replace the DAMP ASSY and POWER TRANS ASSY
No
No
Finished
Product exchange
Can the unit be turned on after disconnecting the cable between the POWER TRANS ASSY and DAMP ASSY?
Yes
Is the problem resolved after the DAMP ASSY is replaced?
Yes
Is the problem resolved after the AMP IC is replaced?
Yes
Replace the three AMP ICs.
(It is difficult to identify the defective IC)
No
No
No
Product exchange
Replace the DAMP ASSY.
Is the problem resolved after the POWER TRANS ASSY is replaced?
Yes
Replace the POWER TRANS ASSY.
No
Is the problem resolved after the MAIN ASSY is replaced?
Yes
Is there breakage in the connector that connects the POWER TRANS ASSY and MAIN ASSY?(Check conduction between Surfaces B of the boards.)
OK
Is the CLK of the MAIN UCOM oscillating at 2.5 Vp-p or higher? Is 3.3V provided from the power supply?
Yes
No
NG
No
Replace the corresponding connector.
Replace the MAIN UCOM or peripheral circuit of the X' tal.
Is the voltage ±12V OK?
NG
Is there any IC (incl. a regulator) connected to ±12V abnormally hot or burned out?
Yes
Repair the corresponding circuit.
OK
No
Replace the MAIN ASSY.
Replace the MAIN ASSY.
Is the problem resolved after the DMAIN ASSY is replaced?
Yes
Is there any IC (incl. a regulator) on the DMAIN ASSY abnormally hot or burned out?
Yes
Repair the corresponding circuit.
No
No
Replace the DMAIN ASSY.
Is the problem resolved after the SIDE CNT ASSY is replaced?
Yes
Replace the TUNER module.
No
Is the problem resolved after the FRONT ASSY is replaced?
Yes
Replace the FRONT ASSY.
No
Product exchange

[6] Others (FL, MCACC etc)

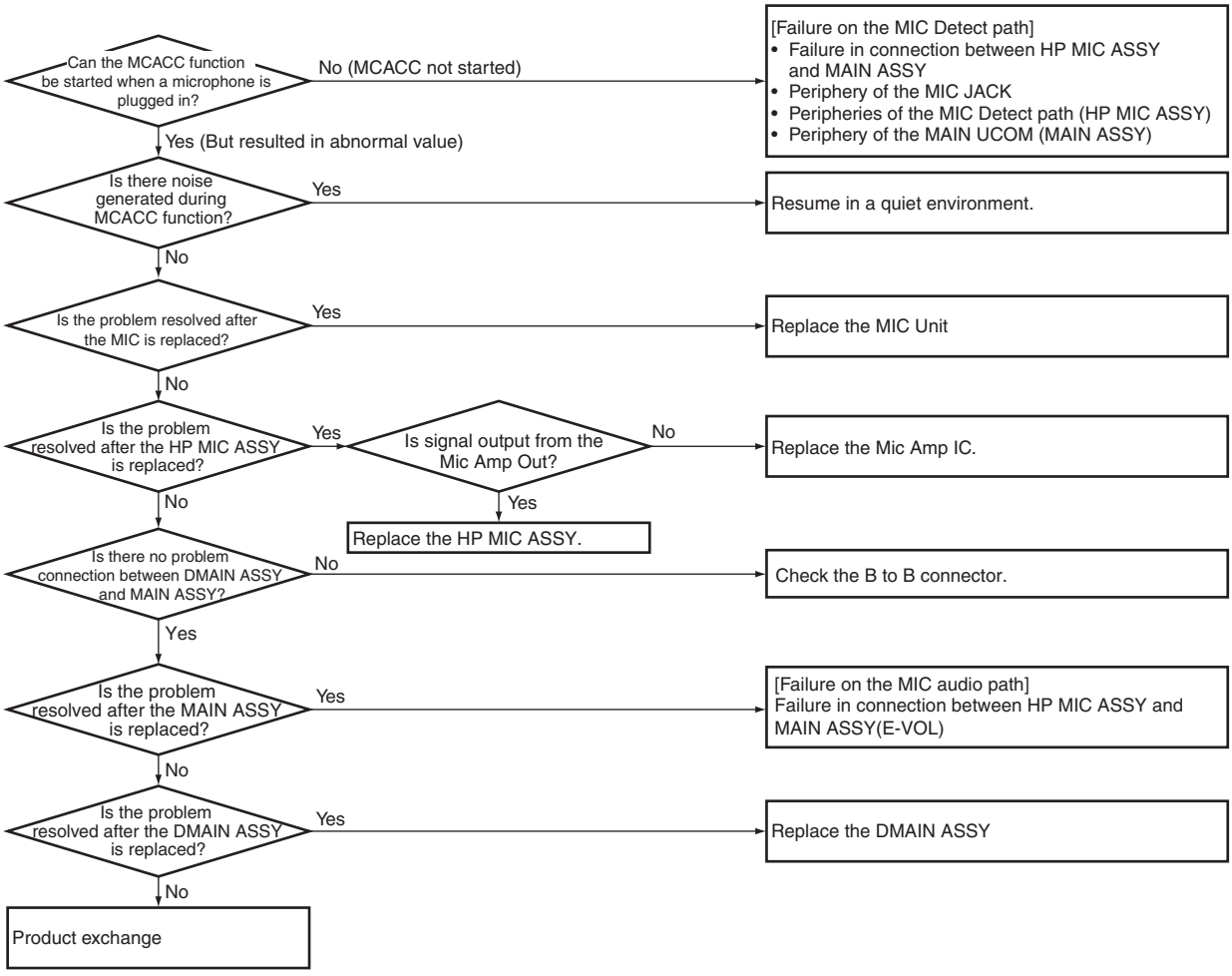
■ FL Display Error



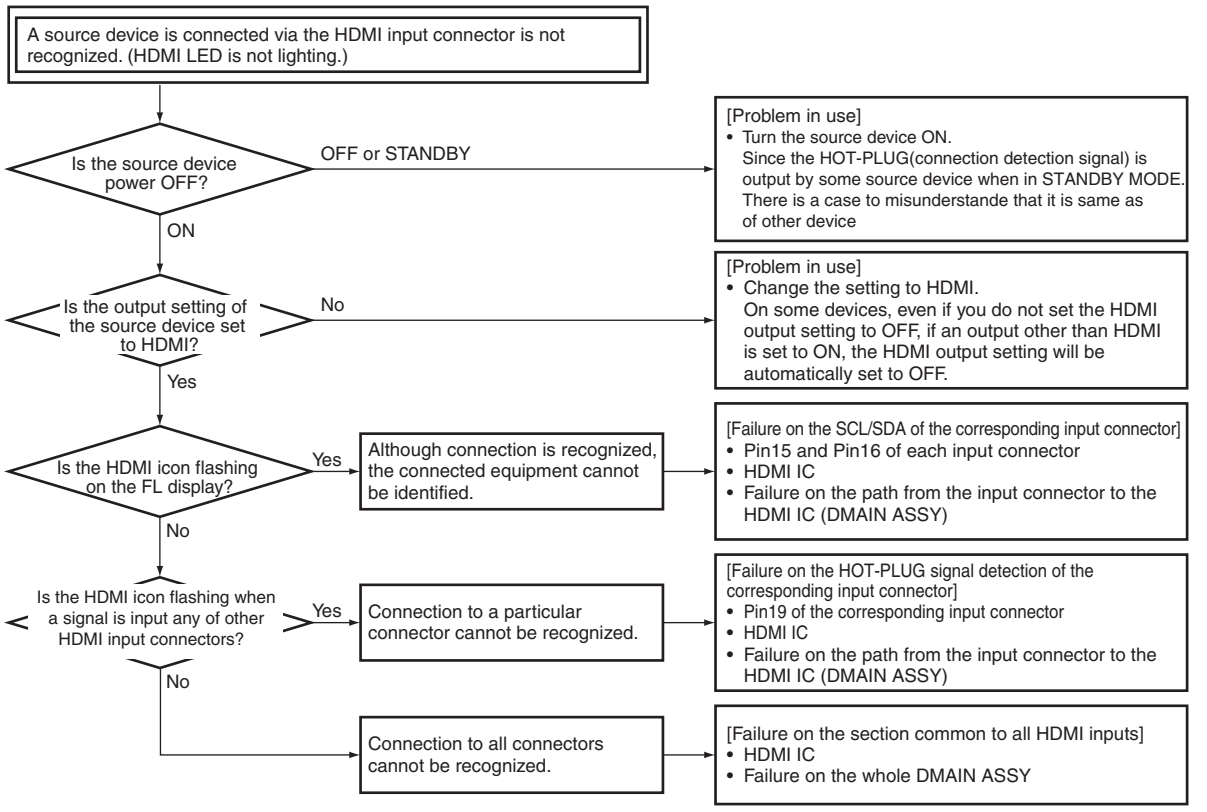
■ LED Error

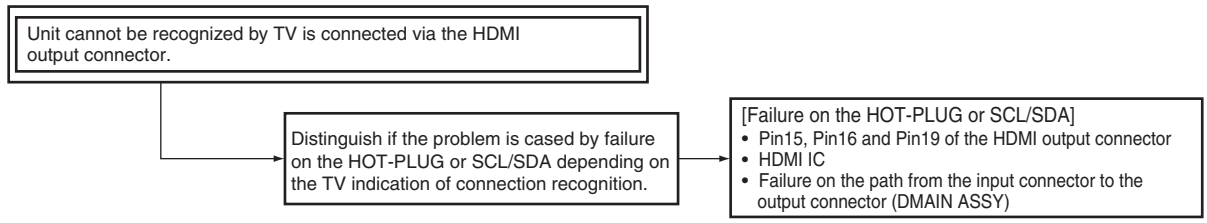


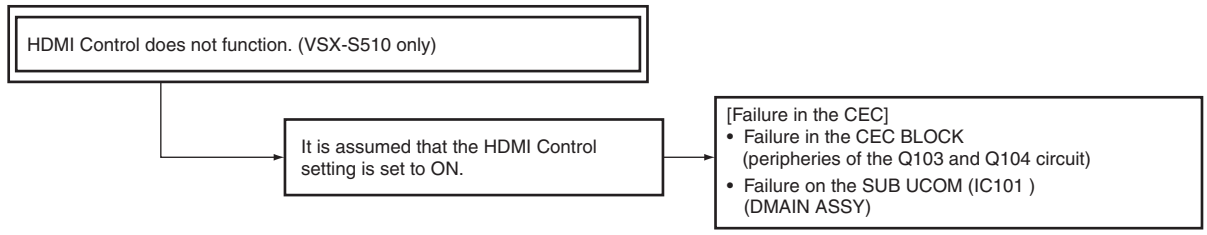
■ Multi-channel acoustic calibration function (MCACC) not performed or results in abnormal values



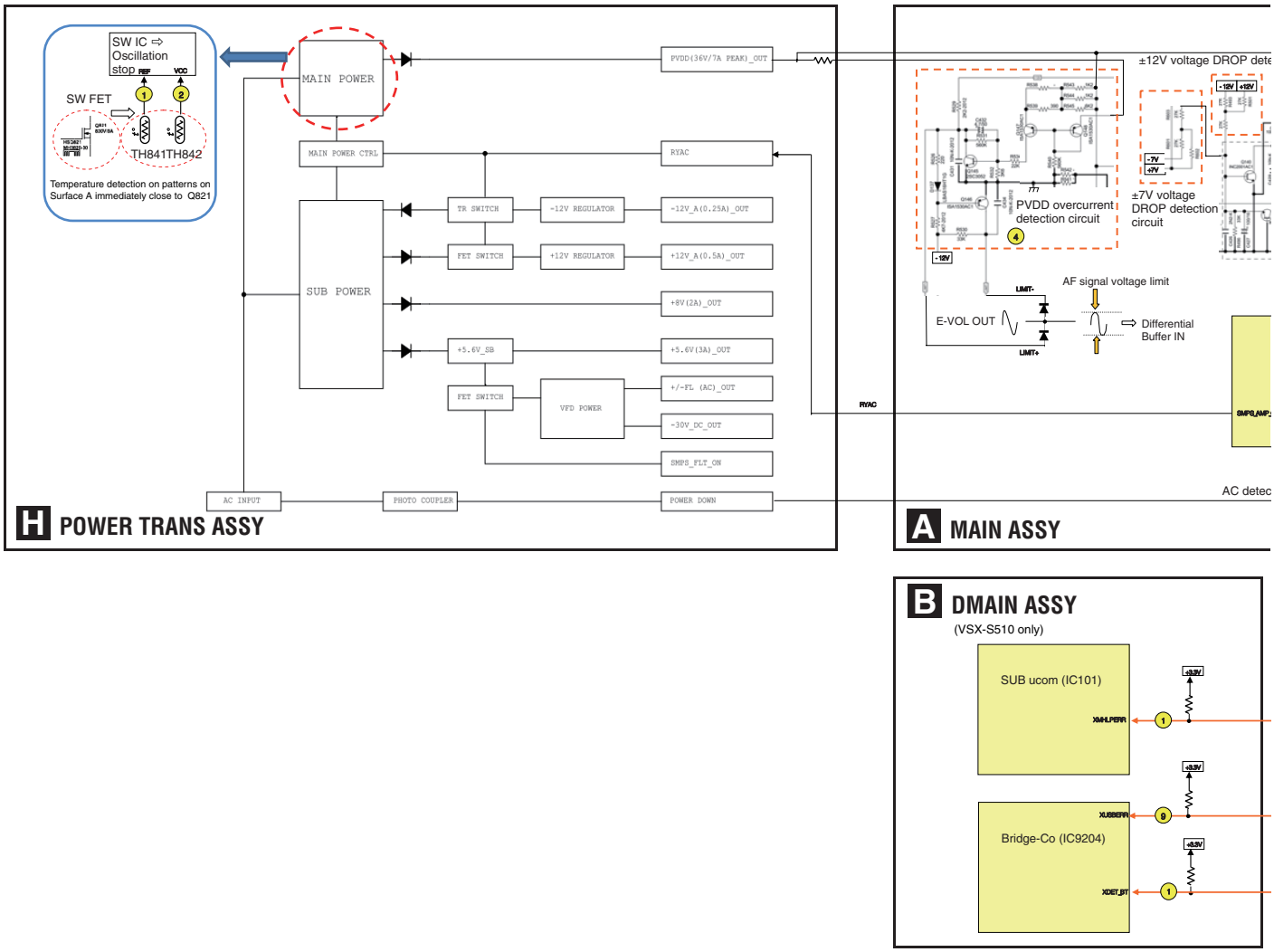
■ How to distinguish causes of failure regarding HDMI connection and HDMI control



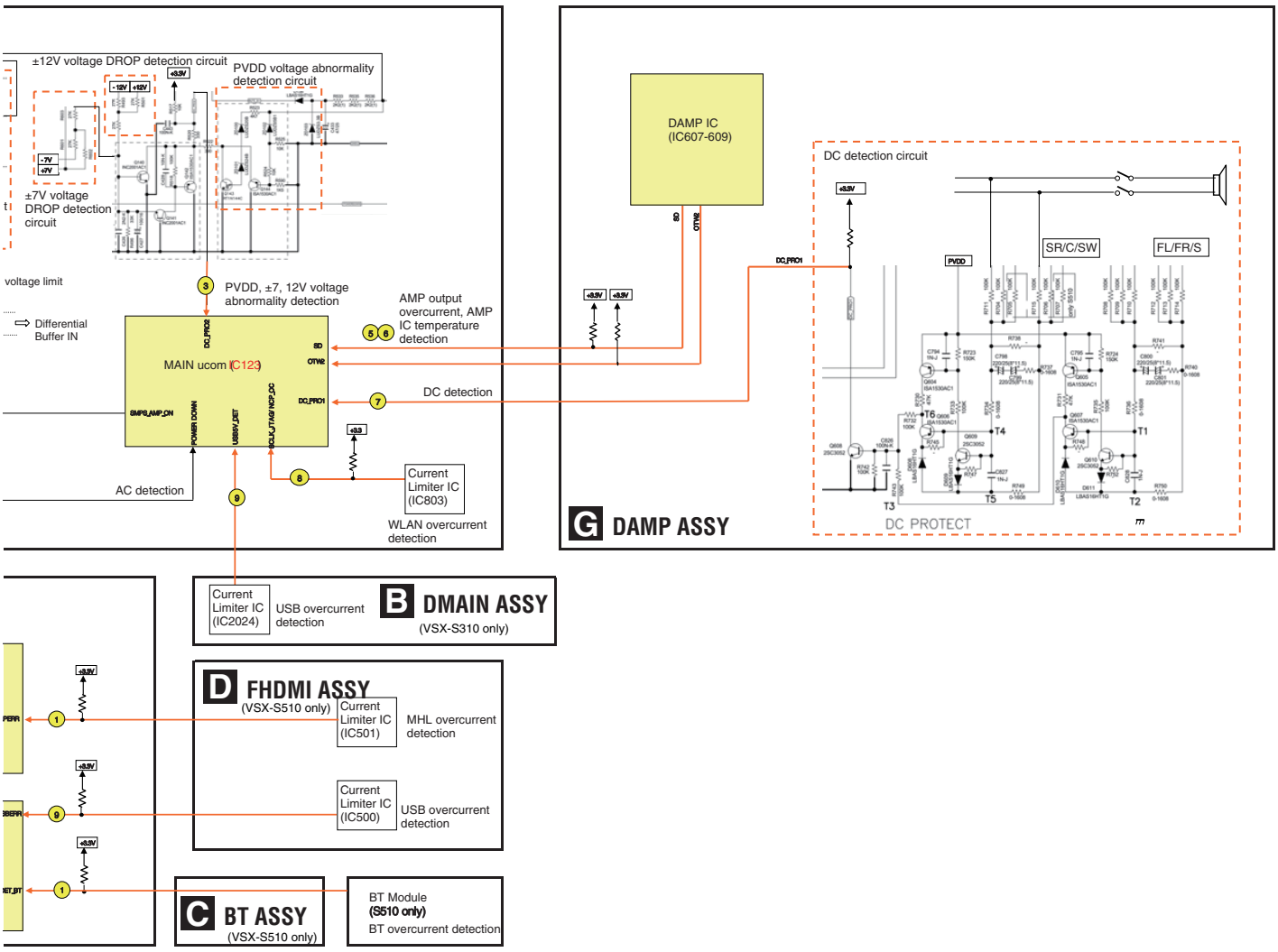




5.2 PROTECTION CIRCUIT DESCRIPTION



No.	Function	Signal name in the circuit diagram	Destination to be controlled (input destination)	Active	Detection specifications (temperature, level, time, etc.)
①	Q821 PCB temperature detection	-	VCC terminal of IC821	-	Detection of 115°C at TH841
②	Q821 PCB temperature detection	-	VEF terminal of IC821	-	Detection of 115°C at TH842
③	PVDD voltage error detection	DC_PRO2	IC123 88pin	L	PVDD power voltage: +44 V or higher or 10 V or lower
	±12V voltage drop detection				Difference in the absolute values of electrical potentials between the positive and negative electrodes of ±12 V: 0.6 V or higher
	±7V voltage drop detection				Difference in the absolute values of electrical potentials between the positive and negative electrodes of ±7 V: 0.6 V or higher
④	PVDD overcurrent detection	LIMIT+ LIMIT-	D118-D129	±12 V	PVDD current: 4.2 A
⑤	AMP overcurrent detection	SD OTW2	IC123 66pin IC123 83pin	L H	Only SD signal is detected.
⑥	AMP temperature detection	SD OTW2	IC123 66pin IC123 83pin	H L	Only OTW2 signal is detected. Detection of 125°C at intervals of 2 min
		SD OTW2	IC123 66pin IC123 83pin	L L	Detection of 155°C
⑦	DC detection	DC_PRO1	IC123 85pin	L	Detection of DC for 3 sec or more will be treated as an error.
⑧	W-LAN USB overcurrent detection (VSX-S510 only)	SCLK_JTAG/NCP_OC	IC123 34pin	L	0.7A
⑨	FRONT USB overcurrent detection (VSX-S510)	XUSBERR	IC9204 K2pin	L	2.4A
	FRONT USB overcurrent detection (VSX-S310)	USB5V_DET	IC123 78pin	L	1.4A
⑩	MHL overcurrent detection (VSX-S510 only)	XMHLPERR	IC101 12pin	L	1.1A
⑪	BT overcurrent detection (VSX-S510 only)	BTOL	IC9204 R14pin	L	0.78 A



.)	Operation of the unit after detection	Indication on the FL display	Microcomputer error log	Recovery method	Remarks
	As a result of oscillation stop of PVDD power, the PVDD voltage is decreased, DC_PROT2 is activated, after POWER OFF and HDMI indicator blinks.	No particular indication	PVDD	(UNIT) AUTO SURROUND/STREAM DIRECT key is pressed for 5 seconds or longer and then (remote controller) DVD key	In the 1st detection, POWER ON is normally possible after POWER OFF. The restoration procedures on the left is necessary when detection occurs again within 5 seconds after restart.
er als between or higher als between r higher	HDMI indicator blinks after POWER OFF.				
	To limit the level of the signal to be input to the AMP IC, power of the operational amp on the differential buffer circuit is controlled.	No particular indication	-	-	The speaker output signals may sound distorted somewhat due to auditory senses.
	POWER OFF	"OVERLOAD"	SD	Normal recovery possible	Check on speaker terminal connection again whether it is short-circuiting.
	The volume will be decreased by 3 steps with "TEMP" indication if it is detected again in 2 minutes after initial detection, and the above will be repeated if it is detected in every 2 minutes thereafter. If the volume reaches 45, it is maintained at the level without reducing the volume.	"TEMP"	TEMP	Unit used to lower the volume or improve the equipment installation conditions.	Check equipment installation environment
	After "OVERHEAT" indication, the unit will immediately POWER OFF.	"OVERHEAT"	SD	Normal recovery possible	
an error.	After detection, protection relay is immediately turned OFF, followed by POWER OFF in 3 seconds and HDMI indicator blinks. Protection relay is turned ON again when detection is canceled within 3 seconds.	No particular indication	DC	(UNIT) AUTO SURROUND/STREAM DIRECT key is pressed for 5 seconds or longer, and then (remote controller) DVD key	AMP failure
	+5V power supply for Wifi module is stopped.	"WLAN ERR"	-	POWER OFF/ON	
	+5V power supply for FRONT USB is stopped.	"I/U ERR"	-	POWER OFF/ON	
	+5V power supply for FRONT USB is stopped.	No particular indication	-	POWER OFF/ON	
	+5V power supply for MHL is stopped.	"MHL ERR"	-	POWER OFF/ON	
	+5V power supply for BT Adaptor is stopped.	"ADP ERR"	-	POWER OFF/ON	

6. SERVICE MODE
6.1 SERVICE MODE

[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 "AUTO SURROUND/STREAM DIRECT" key on the main unit for 5 seconds and press the "NETWORK" key on the remote control simultaneously 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)			
"AUTO SURROUND/ STREAM DIRECT"(main) + "NETWORK" (remote control) (Initial display)	FL lower DC 005 Counter	5 (→ normal) *1	Number of DC error detections
"iPod iPhone iPad DIRECT CONTROL" (main/VSX-S510) "iPod iPhone DIRECT CONTROL" (main/VSX-S310)	FL lower PVDD 005 Counter	5 (→ normal) *1	Number of abnormal PVDD voltage error detection
"iPod iPhone iPad DIRECT CONTROL" (main/VSX-S510) "iPod iPhone DIRECT CONTROL" (main/VSX-S310)	FL lower TEMP 007 Counter	5 (→ normal) *1	Number of abnormal-temperature error detections
"iPod iPhone iPad DIRECT CONTROL" (main/VSX-S510) "iPod iPhone DIRECT CONTROL" (main/VSX-S310)	FL lower SD 000 Counter	5 (→ normal) *1	Number of shut down 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 "3.4 How to cancel the status after detection of the DC error of 6. SERVCE MODE". 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 "AUTO SURROUND/STREAM DIRECT" key on the main unit for 5 seconds and press the "iPod/USB" key on the remote control simultaneously 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)			
"AUTO SURROUND/ STREAM DIRECT"(main) + "iPod/USB" (remote control)	FL lower C L E A R ?	5 (→ normal) *1	
"iPod iPhone iPad DIRECT CONTROL" (main/VSX-S510) "iPod iPhone DIRECT CONTROL" (main/VSX-S310)	FL lower O K	5 (→ normal) *1	
(Normal display)	FL lower B D *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/BDR function is selected

[Detailed explanations]

1. When the procedures for Reset mode for numbers of protection detections are completed, all the counters will be reset to "000."
2. 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]

- Main unit's operations when a DC, voltage, or TEMP error is detected are described in this section.
- Because no key input is accepted after a DC or voltage error is generated, follow the instructions described in "3.4 How to cancel the status after detection of the DC error of 6. SERVICE MODE".

[Basic operations]

3.1 DC (AMP is abnormality) error detection

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

Note: If the unit returns to a normal status within 3 sec after a DC error was detected, it can be turned back on again after the shutdown caused by the detection.
If DC is successively detected for 3 sec or more, the unit cannot be turned on after the shutdown caused by such detection. For turning the unit on, follow the instructions described in "3.4 How to cancel the status after detection of the DC error of 6. SERVICE MODE".

3.2 Detection of Voltage Error

Detection of a PVDD voltage error (PVDD power voltage: +44 V or higher, or +10 V or less)
±12V or ±7V voltage drop detection (Difference in the absolute values of electrical potentials between the positive and negative electrodes of ±12 V or ±7V: 0.6 V or higher)

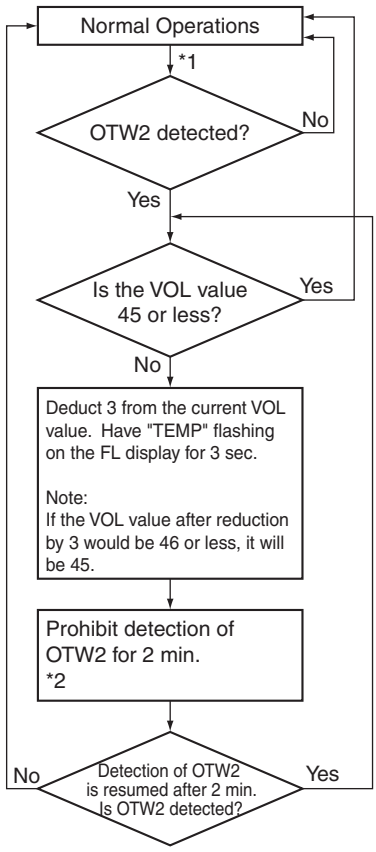
Key Operation	FL Display	Time (sec.)	Description of Indications
(Normal display)	FL lower 	usually	Normal display
↓	↓		
(Voltage abnormality detection)	FL lower 		
↓ (Auto)	↓		
(RECEIVER POWER OFF)	FL lower 		

Note:
The unit cannot be turned on after the shutdown caused by such detection.
For turning the unit on, follow the instructions described in "3.4 How to cancel the status after detection of the DC error of 6. SERVICE MODE".

3.3 TEMP (AMP overheat) error detection

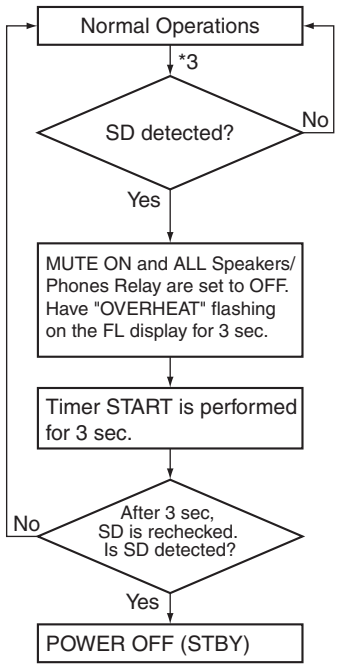
For detection of a TEMP error, the unit monitors both the OTW2 (125°C) and SD (150°C) signals. If a TEMP error is detected, the processes shown below will be performed. The processes shown below are rough operational specifications and are not the actual commands from the mounted components.
After a TEMP error is detected, the count of protection activation detections will be updated.

OTW2 Conuter: TEMP



*1: The detection interval must be 1 sec or less.
*2: If SD is detected while OTW2 detection is prohibited for 2 min, the SD function will be activated.

SD Conuter: SD



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

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

[Detailed explanations]

During Standby mode, simultaneously press and hold the "AUTO SURROUND/STREAM DIRECT" key on the main unit for 5 seconds and press the "DVD" key on the remote control simultaneously will cancel Key Input Inhibition mode after a DC error detection and turn the unit ON.

Key Operation	FL Display	Time (sec.)	Description of Indications
(STANDBY state)			
"AUTO SURROUND/ STREAM DIRECT"(main) + "DVD" (remote control)			
(Normal display)	FL lower B:D	usually	Normal display

7. DISASSEMBLY

Note :

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

(2) For performing the diagnosis shown below, the following jigs for service is required.

- 11P board to board extension jig cable (GGD1846)
- 33P board to board extension jig cable (GGD1847)
- 19P board to board extension jig cable (GGD1849)
- 5P PH Housing ASSY extension jig cable (GGD1594)
- 11P bridge connector extension jig cable (GGD1758)

(3) Discharge the electricity of the unit, before the diagnosis. (Refer to the **"Discharge"**)

Discharge

Unplug the Power Cord.

Remove the Cabinet S510.

(Refer to the **" [1] Cabinet S510"** of **"Disassembly"**.)

---

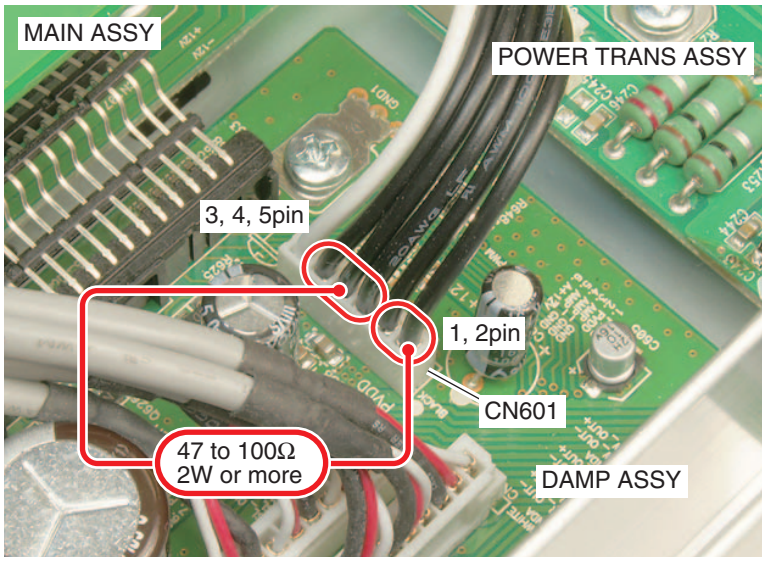
[1] PVDD (CN601)

(1) Connect the CN601-1, 2pin of the DAMP ASSY to CN601-3, 4, 5pin, with a resistor of 47 to 100Ω , 2W or more.

- If the DAMP ASSY is installed in the Chassis, the connection of CN601-1, 2pin to the Chassis is also acceptable.
- Discharge time: 5 to 10 sec. (according to the resistor.)

(2) Check by a tester if the voltage of each terminal is 1V or less.

- Connect the tester's GND terminal to the Chassis.
- If the voltage is higher than 1V, repeat the step (1).



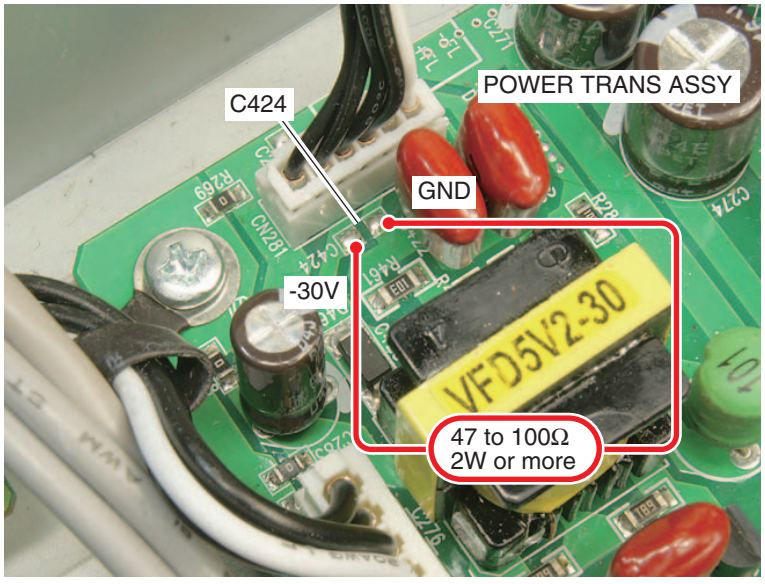
[2] FL-30V (C424)

(1) Connect the C424 each terminal of the POWER TRANS ASSY, with a resistor of 47 to 100Ω , 2W or more.

- If the POWER TRANS ASSY is installed in the Chassis, the connection of -30V terminal to the Chassis is also acceptable.
- Discharge time: 5 to 10 sec. (according to the resistor.)

(2) Check by a tester if the voltage of each terminal is 1V or less.

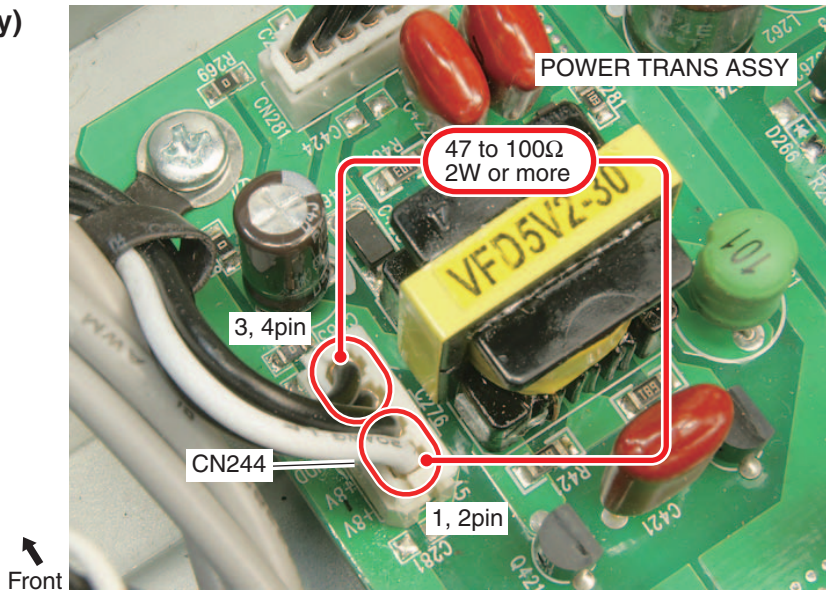
- Connect the tester's GND terminal to the Chassis.
- If the voltage is higher than 1V, repeat the step (1).



[3] FHDMI+8V (CN244: VSX-S510 only)

(1) Connect the CN244-1, 2pin of the POWER TRANS ASSY to CN244-3, 4pin, with a resistor of 47 to 100Ω , 2W or more.
- ∗ If the POWER TRANS ASSY is installed in the Chassis, the connection of CN245-3, 4pin to the Chassis is also acceptable.
- ∗ Discharge time: 5 to 10 sec. (according to the resistor.)

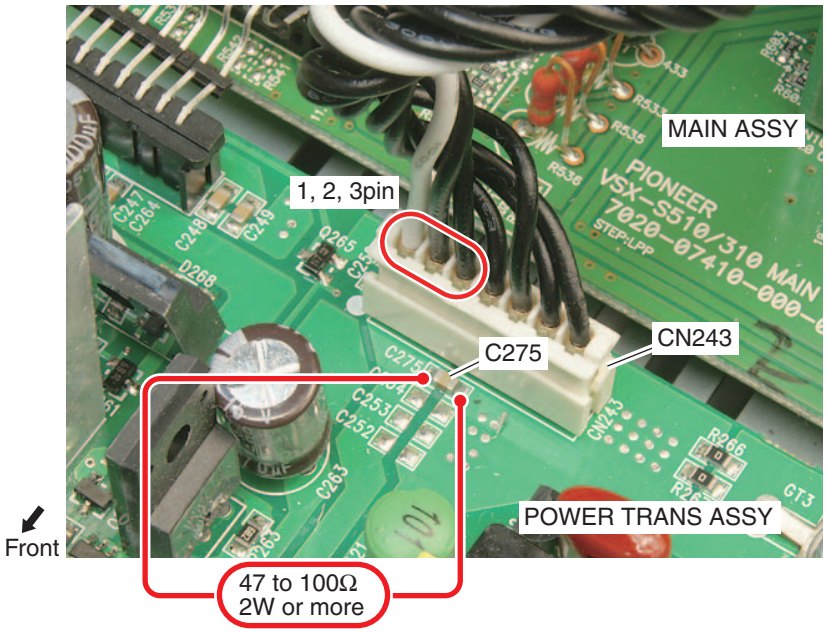
(2) Check by a tester if the voltage of each terminal is 1V or less.
- ∗ Connect the tester's GND terminal to the Chassis.
- ∗ If the voltage is higher than 1V, repeat the step (1).



[4] D-MAIN+5.6V (C275)

(1) Connect the C275 each terminal of the POWER TRANS ASSY, with a resistor of 47 to 100Ω , 2W or more.
- ∗ If the POWER TRANS ASSY is installed in the Chassis, the connection of CN243-1, 2, 3pin to the Chassis is also acceptable.
- ∗ Discharge time: 5 to 10 sec. (according to the resistor.)

(2) Check by a tester if the voltage of each terminal is 1V or less.
- ∗ Connect the tester's GND terminal to the Chassis.
- ∗ If the voltage is higher than 1V, repeat the step (1).



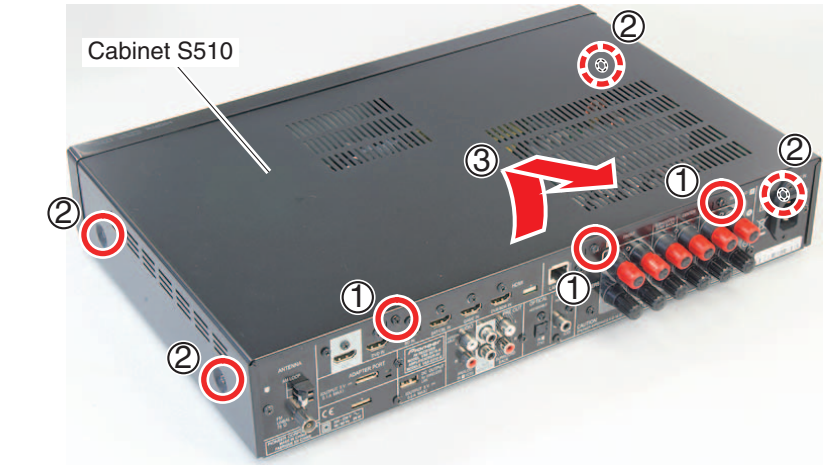
Disassembly

[1] Cabinet S510

(1) Remove the three screws.
(VSX-S510-K : BBT30P100FTB
VSX-S310-K)
(VSX-S510-S : BBZ30P080FTC
VSX-S310-S)

(2) Remove the four screws.
(VSX-S510-K : B020230083B10-IL
VSX-S310-K)
(VSX-S510-S : BBZ30P080FTC
VSX-S310-S)

(3) Remove the Cabinet S510 while lifting the rear side of Cabinet S510.



[2] Front Section

[2-1] Front Section

A

Remove the Cabinet S510.
(Refer to the **"[1] Cabinet S510"**)

---

(1) Remove the five screws.
(VSX-S510-K : B020230083B10-IL
VSX-S310-K
VSX-S510-S : BBZ30P080FTC
VSX-S310-S)

B

(2) Release the cable from the acetate tape (15x30mm).

(3) Release the cables from the three PCB binders.

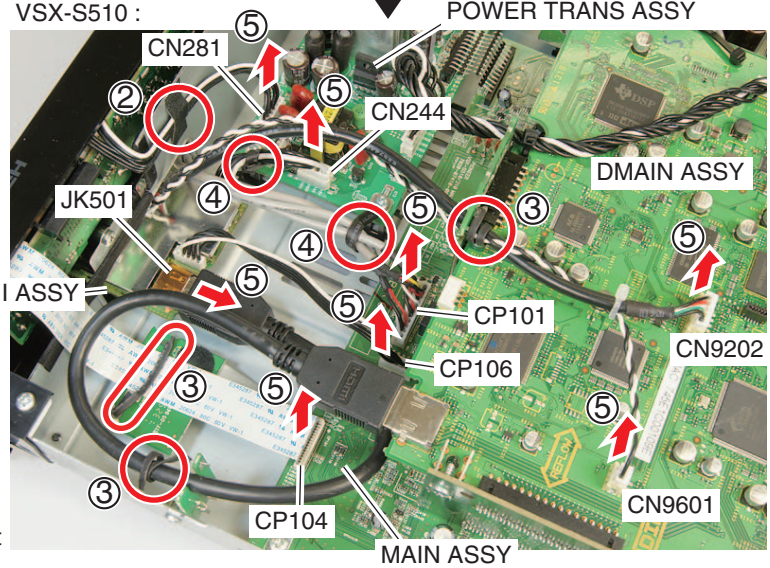
(4) VSX-S510 only :
Release the cables from the two Clamp MTGs.

(5) VSX-S510 :
Disconnect the eight connectors.
VSX-S310 :
Disconnect the four connectors.

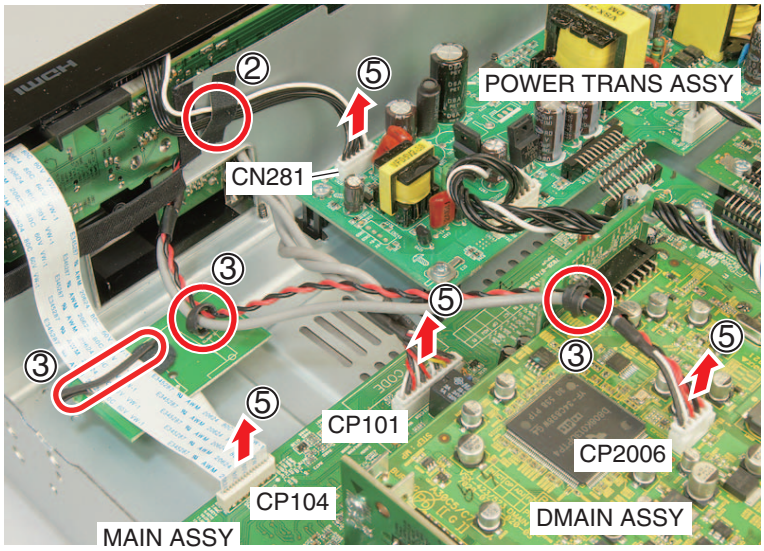
C

• Bottom view

VSX-S510 :



VSX-S310 :



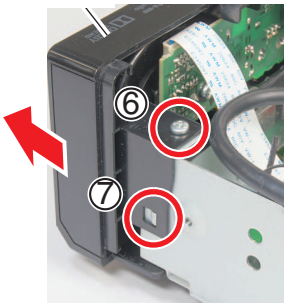
D

(6) Remove the two screws.
(BBZ30P080FTC)

(7) Unhook the two hooks of the Front Panel and then remove the Front Section.

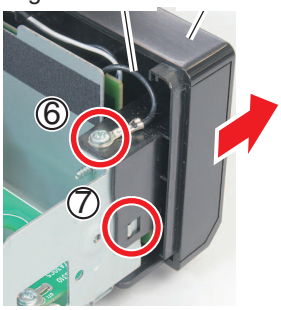
E

Front Section



• right side

Ring TER Wire Front Section

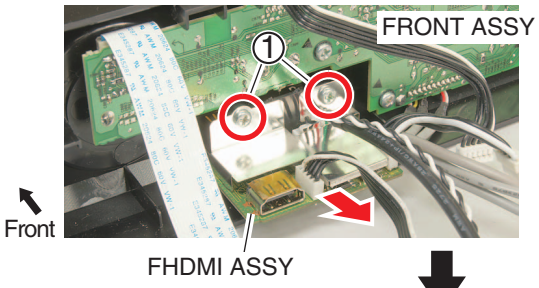


• left side

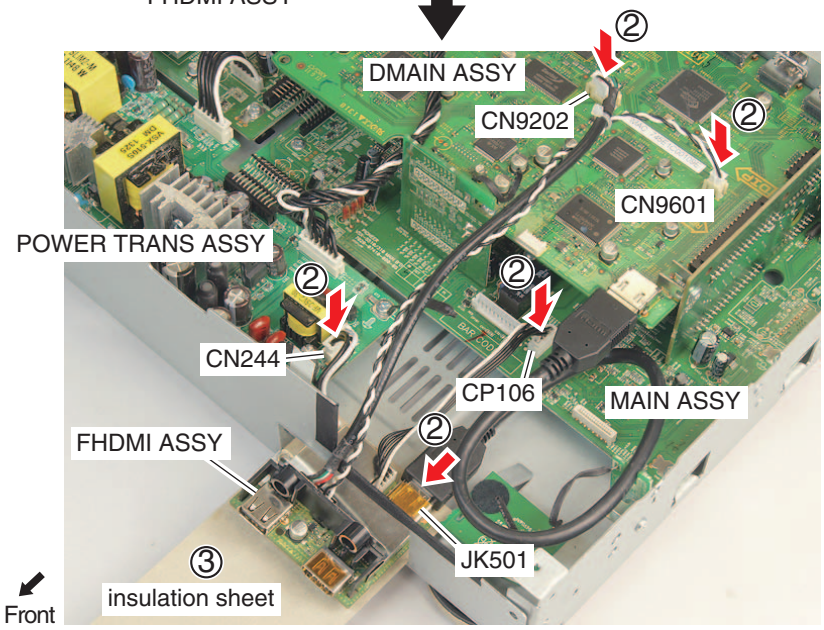
F

[2-2] Diagnosis (VSX-S510)

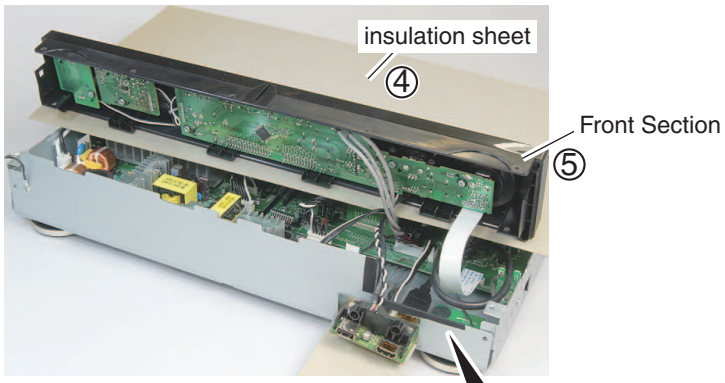
(1) Remove the two screws (BBZ30P080FTC), and then remove the FHDMI ASSY (with other parts).



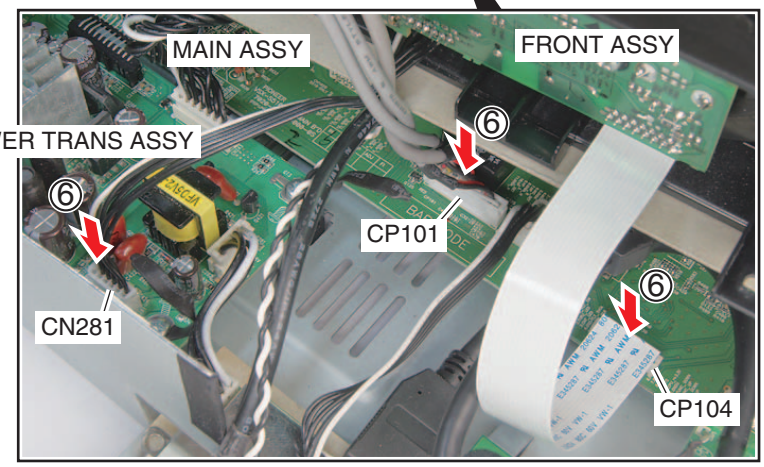
(2) Connect the five connectors.
(3) Insert the insulation sheet.



(4) Set the insulation sheet.
(5) Arrange the unit as shown in the photo.

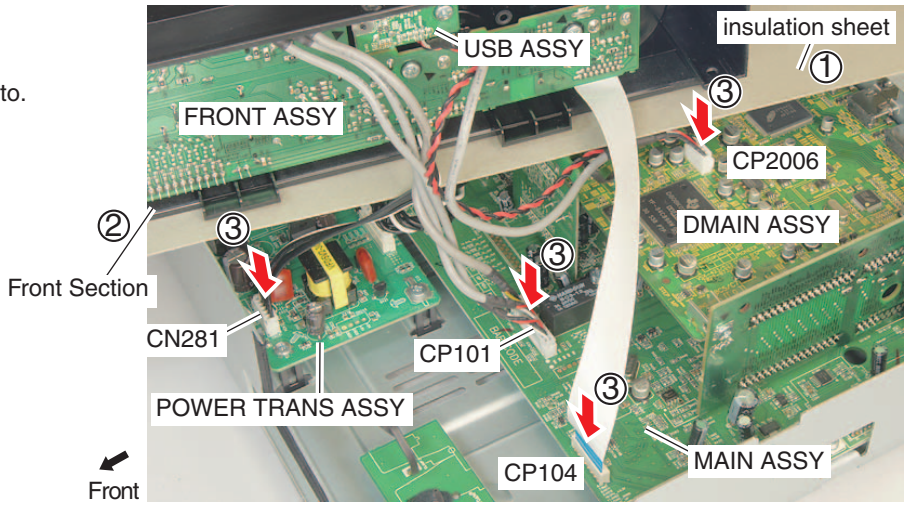


(6) Connect the three connectors.



[2-3] Diagnosis (VSX-S310)

(1) Set the insulation sheet.
(2) Arrange the unit as shown in the photo.
(3) Connect the four connectors.



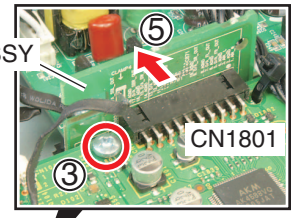
[3] DMAIN ASSY

[3-1] DMAIN ASSY

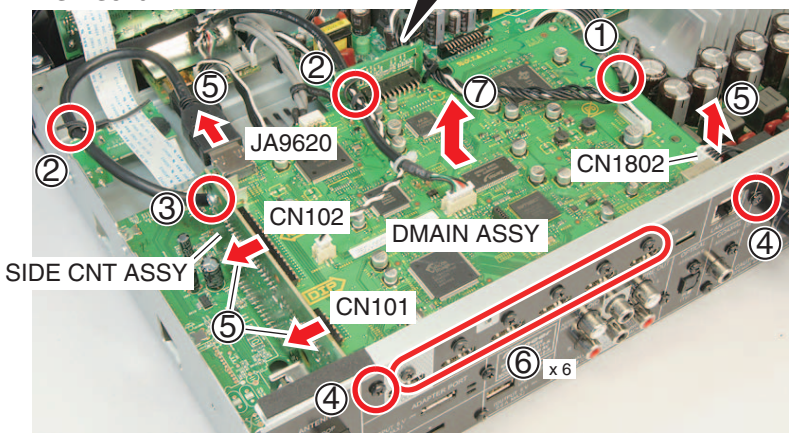
Remove the Cabinet S510.
(Refer to the "**[1] Cabinet S510**")

VSX-S510 :

(1) Cut the Clamp (Binder).
(2) Release the cables from the two PCB binders.
(3) Remove the two screws. (BBZ30P080FTC)
(4) Remove the two screws. (BBT30P100FTB)
(5) Disconnect the five connectors.
(6) Remove the six screws. (BSZ30P040FTB)
(7) Remove the DMAIN ASSY.

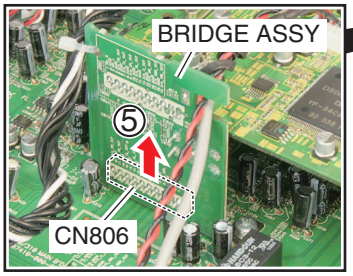


VSX-S510 :

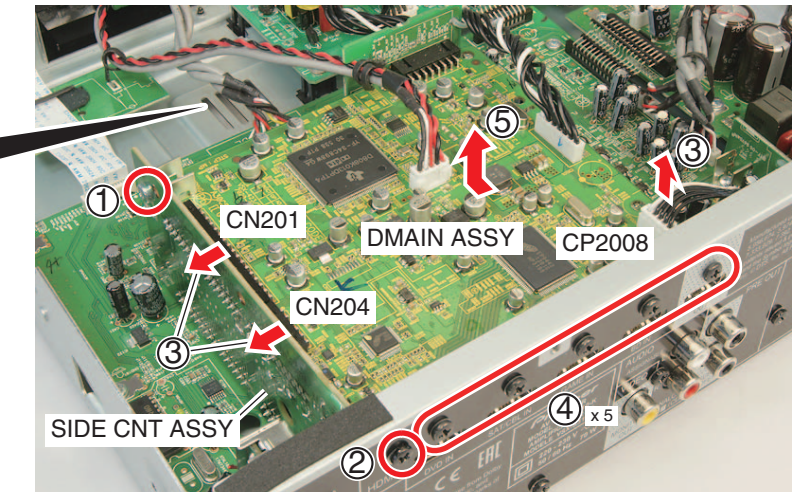


VSX-S310 :

(1) Remove the screws. (BBZ30P080FTC)
(2) Remove the screws. (BBT30P100FTB)
(3) Disconnect the three connectors.
(4) Remove the five screws. (BSZ30P040FTB)
(5) Disconnect the connector and then remove the DMAIN ASSY (with the BRIDGE ASSY).



VSX-S310 :

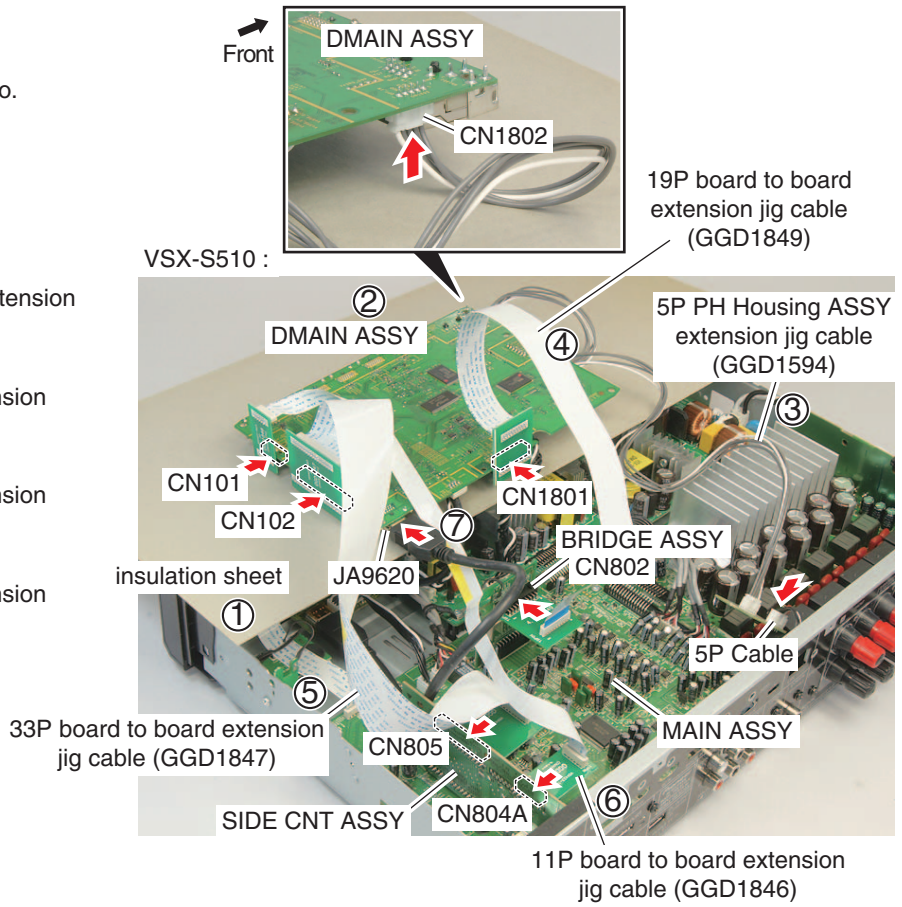


[3-2] Diagnosis

(1) Set the insulation sheet.
(2) Arrange the unit as shown in the photo.

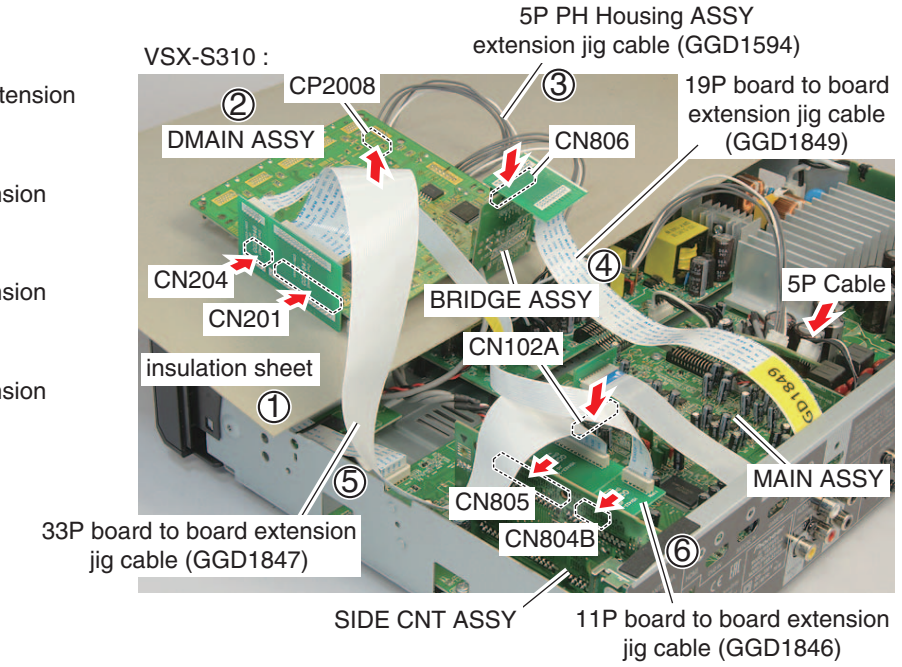
VSX-S510 :

(3) Connect the 5P PH Housing ASSY extension jig cable. (GGD1594)
(MAIN 5P Cable <-> DMAIN CN1802)
(4) Connect the 19P board to board extension jig cable. (GGD1849)
(BRIDGE CN802 <-> DMAIN CN1801)
(5) Connect the 33P board to board extension jig cable. (GGD1847)
(SIDE CNT CN805 <-> DMAIN CN102)
(6) Connect the 11P board to board extension jig cable. (GGD1846)
(SIDE CNT CN804A <-> DMAIN CN101)
(7) Connect the connector.



VSX-S310 :

(3) Connect the 5P PH Housing ASSY extension jig cable. (GGD1594)
(MAIN 5P Cable <-> DMAIN CP2008)
(4) Connect the 19P board to board extension jig cable. (GGD1849)
(MAIN CN102A <-> BRIDGE CN806)
(5) Connect the 33P board to board extension jig cable. (GGD1847)
(SIDE CNT CN805 <-> DMAIN CN201)
(6) Connect the 11P board to board extension jig cable. (GGD1846)
(SIDE CNT CN804B <-> DMAIN CN204)



[4] MAIN ASSY

[4-1] MAIN ASSY

Remove the Cabinet S510.
(Refer to the **"[1] Cabinet S510"**)

Remove the DMAIN ASSY.
(Refer to the **"[3-1] DMAIN ASSY"**)

---

(1) Release the cable from the PCB binder.

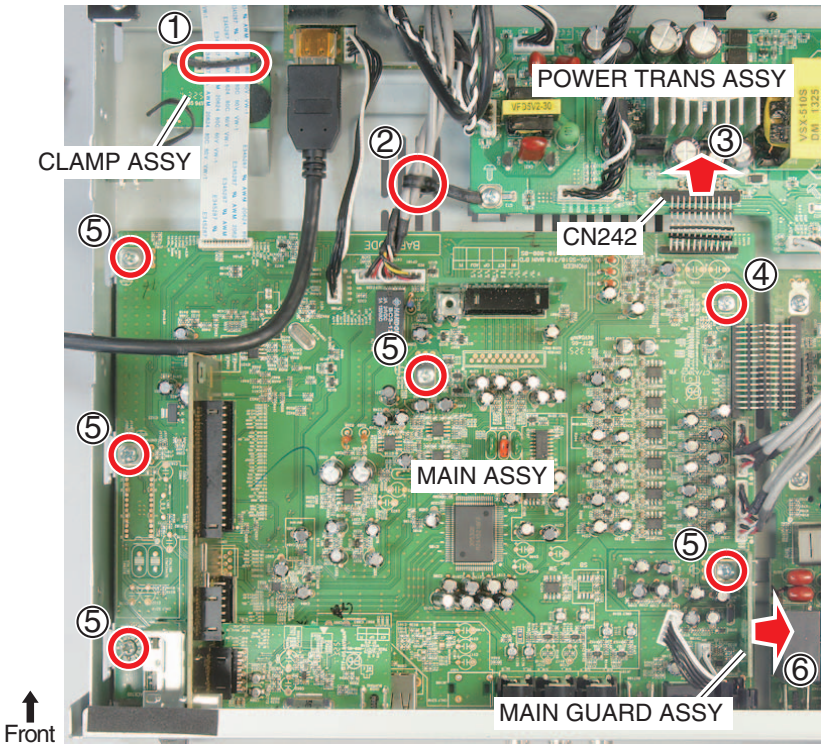
(2) VSX-S510 only :
Release the cable from the Clamp MTG.

(3) Disconnect the connector.

(4) Remove the screw. (BBZ30P180FTC)

(5) Remove the five screws.
(BBZ30P080FTC)

(6) Remove the MAIN GUARD ASSY.



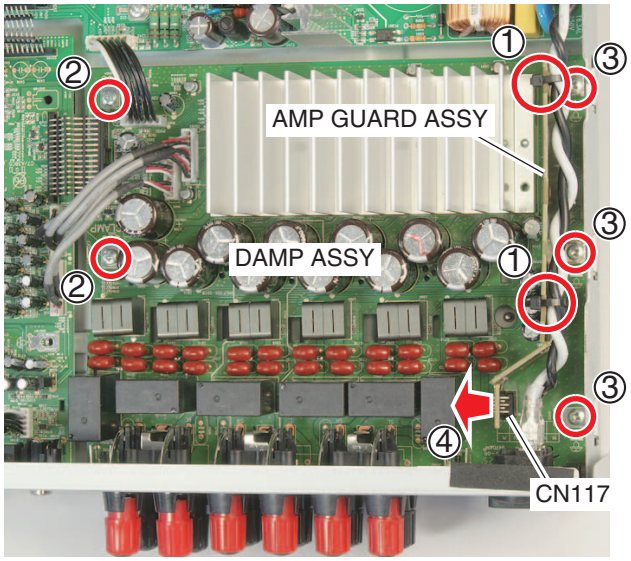
[4-2] Diagnosis

(1) Cut the two Clamp (Binder).

(2) Remove the two screws. (BBZ30P180FTC)

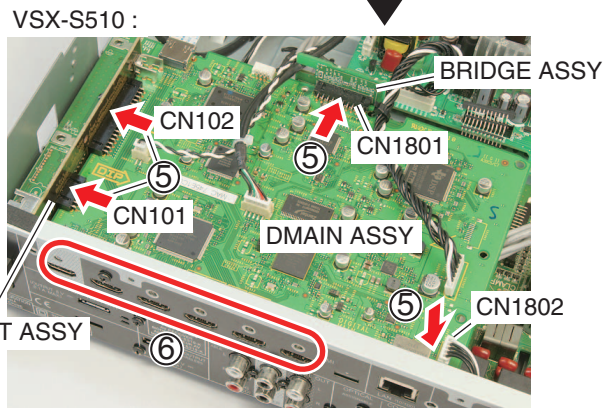
(3) Remove the three screws. (BBZ30P080FTC)

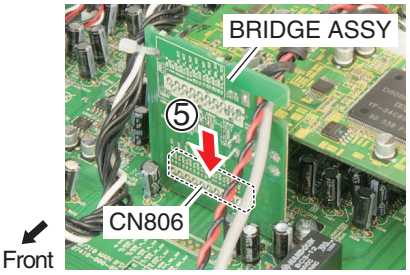
(4) Disconnect the connector and then remove the AMP GUARD ASSY.



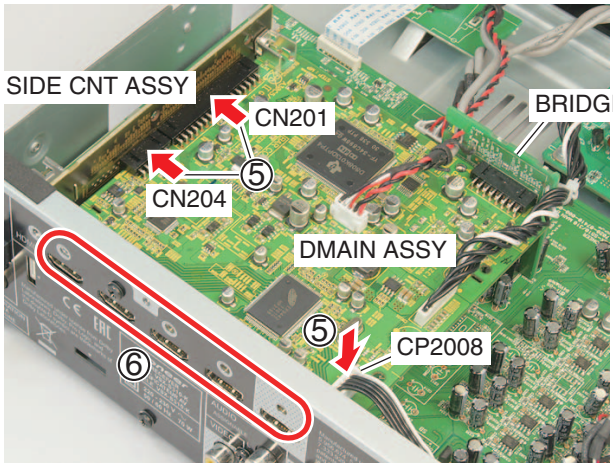
(5) VSX-S510 :
Set the DMAIN ASSY and connect the four connectors.
VSX-S310 :
Set the DMAIN ASSY (with the BRIDGE ASSY) and connect the four connectors.

(6) Attach one piece of screw (BSZ30P040FTB) to any one of the HDMI connectors. (for GND connection)



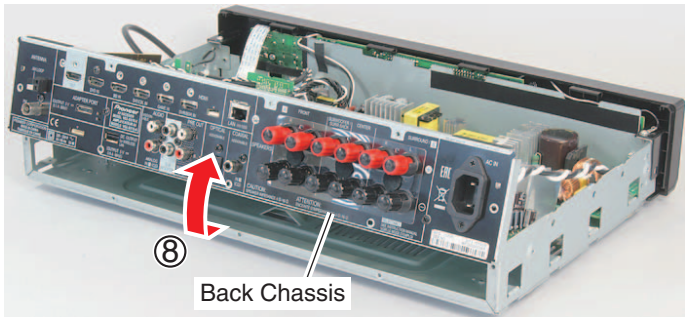


VSX-S310 :

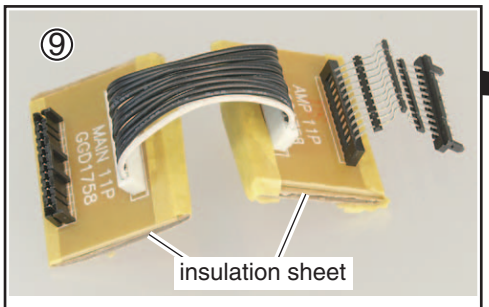


(7) Remove the five screws. (BBT30P100FTB)

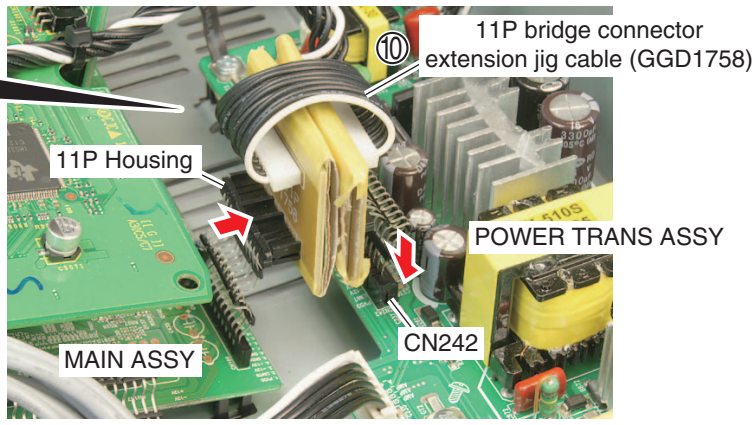
(8) Lift up the Back Chassis (with other ASSY) a little bit after pulling out the Back Chassis to rear side. (Refer to the photo)



(9) Apply insulating process on the B-side of 11P bridge connector extension jig cable (GGD1758).



11P bridge connector extension jig cable (GGD1758)

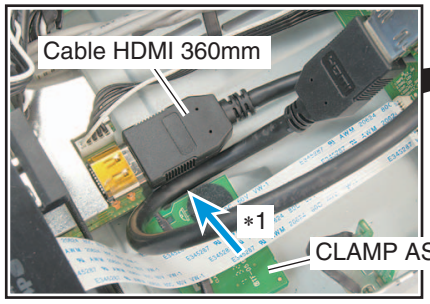


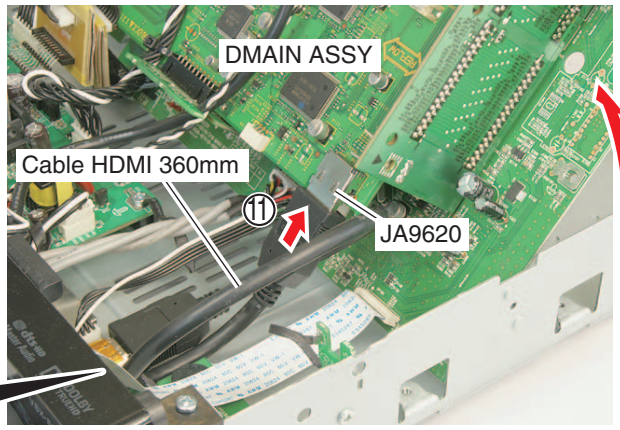
(10) Connect the 11P bridge connector extension jig cable. (GGD1758)
(MAIN 11P Housing <-> POWER TRANS CN242)

(11) VSX-S510 only :
Connect the Cable HDMI 360mm after lifting up the Back Chassis (with other ASSY) to about 45 degrees.

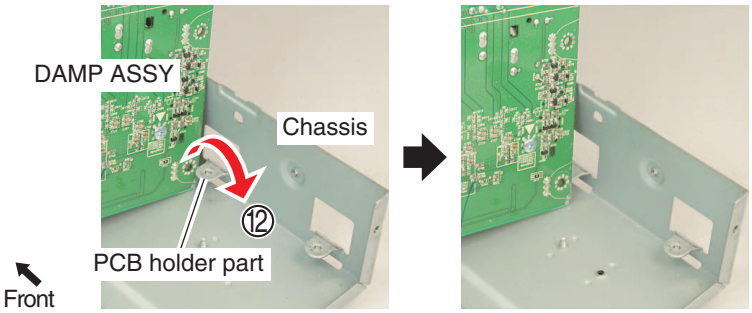
Note

*1: Insert the Cable HDMI 360mm between the CLAMP ASSY and the HDMI plug in order to prevent stress applied to the JA9620 of DMAIN ASSY.





(12) Lift up the DAMP ASSY side a little bit after turning up the Back Chassis (with other ASSY) to vertical position and transpose the DAMP ASSY from the PCB holder part of Chassis to rear side.

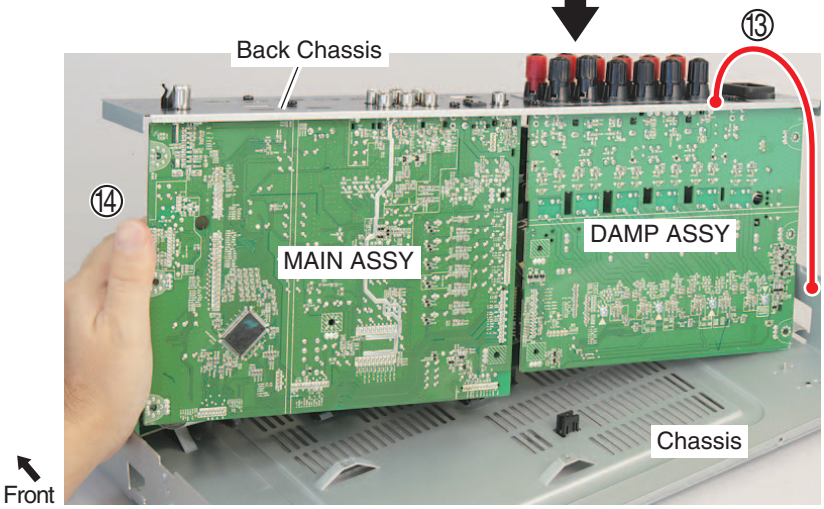


(13) When you remove and diagnose PCB, please make GND connection of the Back Chassis and the Chassis with a clip etc.

(14) Perform diagnosis while holding the left part of MAIN ASSY.

Note (VSX-S510 only)

*2: Pay attention not to apply stress on the JA9620 of DMAIN ASSY.

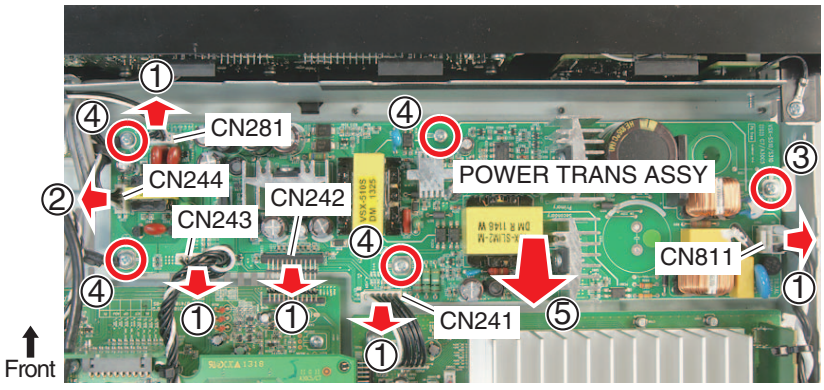


[5] POWER TRANS ASSY

Remove the Cabinet S510.
(Refer to the **"[1] Cabinet S510"**)

---

(1) Disconnect the five connectors.
(2) VSX-S510 only :
Disconnect the connector.
(3) Remove the screw.
(BBZ30P080FTC)
(4) Remove the four screws.
(BBZ30P180FTC)
(5) Remove the POWER TRANS ASSY.

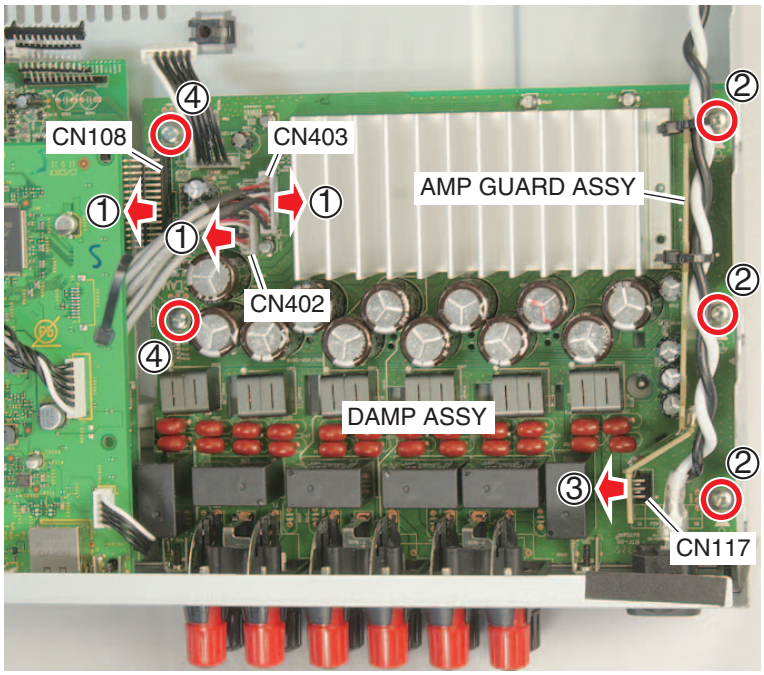


[6] DAMP ASSY

Remove the Cabinet S510.
(Refer to the "**[1] Cabinet S510**")
Remove the POWER TRANS ASSY.
(Refer to the "**[5] POWER TRANS ASSY**")

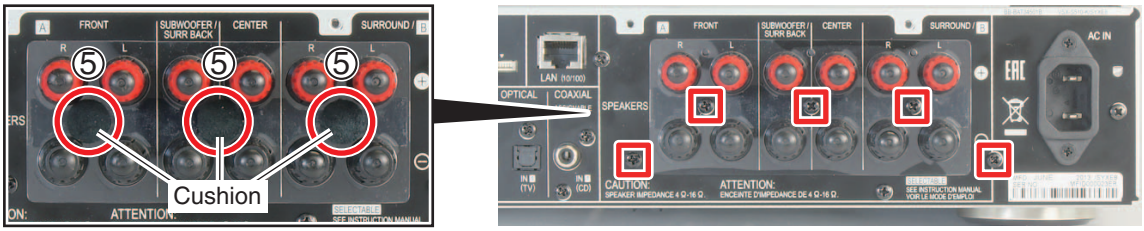
---

(1) Disconnect the three connectors.
(2) Remove the three screws.
(BBZ30P080FTC)
(3) Disconnect the connector and then remove the AMP GUARD ASSY.
(4) Remove the two screws.
(BBZ30P180FTC)

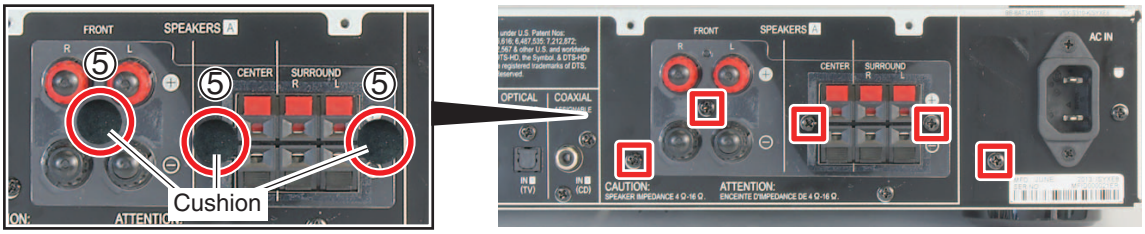


(5) Remove the three Cushions.
(6) Remove the five screws.
(BBT30P100FTB)

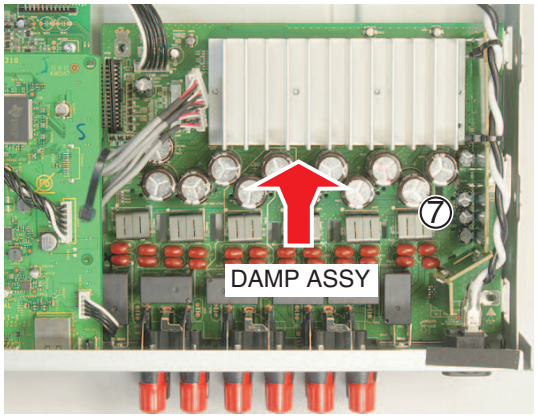
VSX-S510 : □ : ⑥ x 5



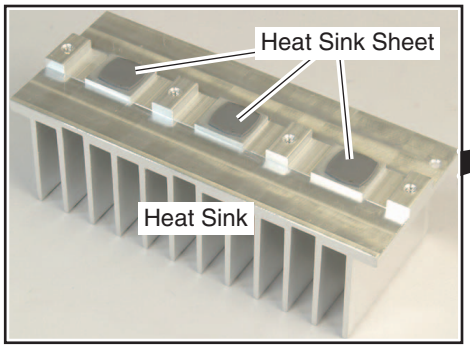
VSX-S310 : □ : ⑥ x 5

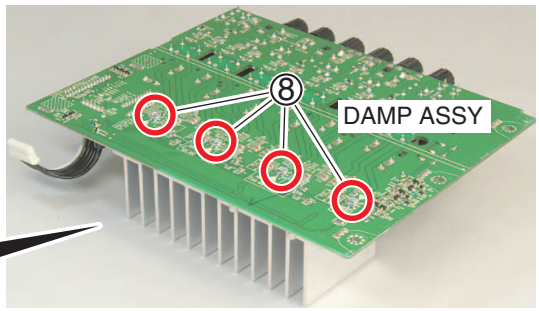


(7) Remove the DAMP ASSY.



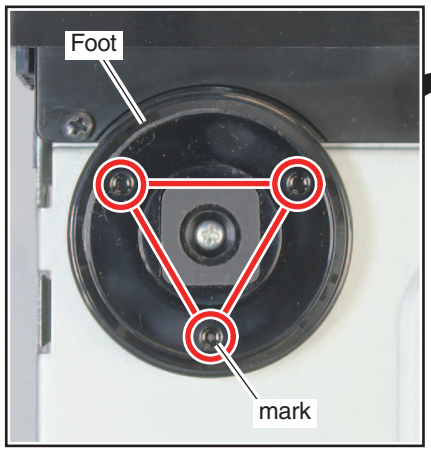
(8) Remove the four screws (BBZ30P080FTC), and then remove the Heat Sink (with three Heat Sink Sheets).



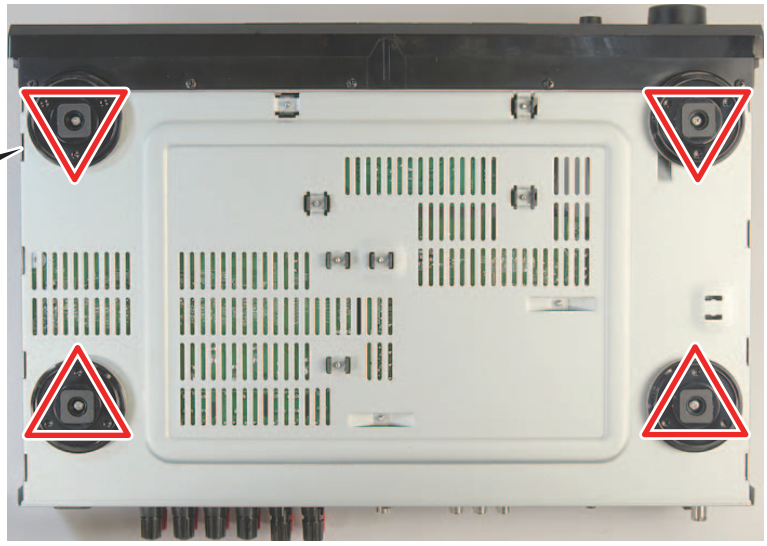


Direction of Foot

Align the mark at under surface of the Foot with the direction of photo.



VSX-S510 :



• Bottom view

VSX-S310 :

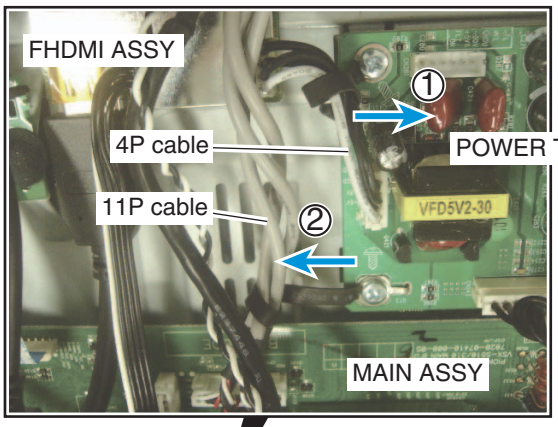
• Bottom view

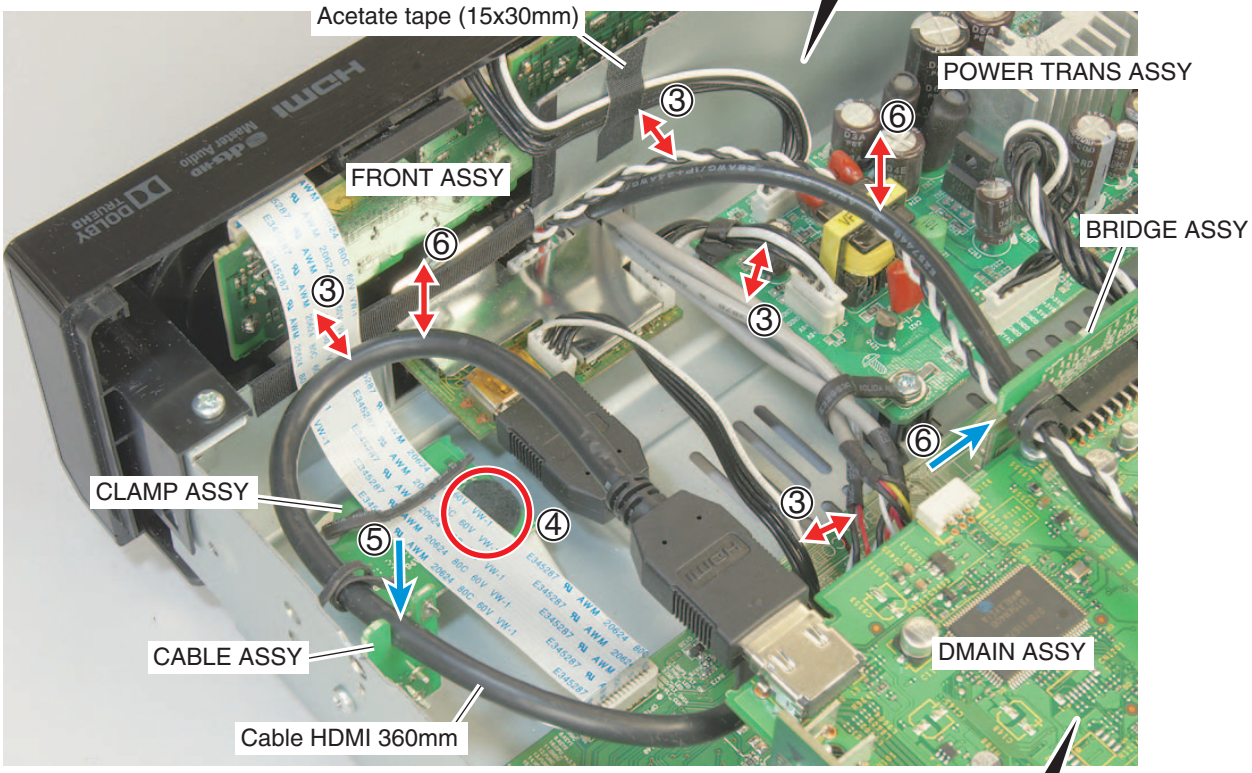
Styling of cables

When you attach each unit, make a styling and connection of cables as shown in the photo.

[1] VSX-S510

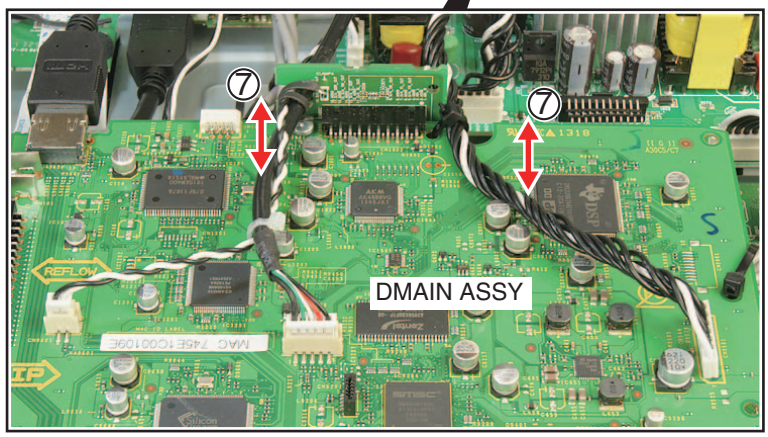
(1) Set the 4P cable (from the FHDMI ASSY) near to the POWER TRANS ASSY.
(2) Set the 11P cable (from the FRONT ASSY) away from the POWER TRANS ASSY.



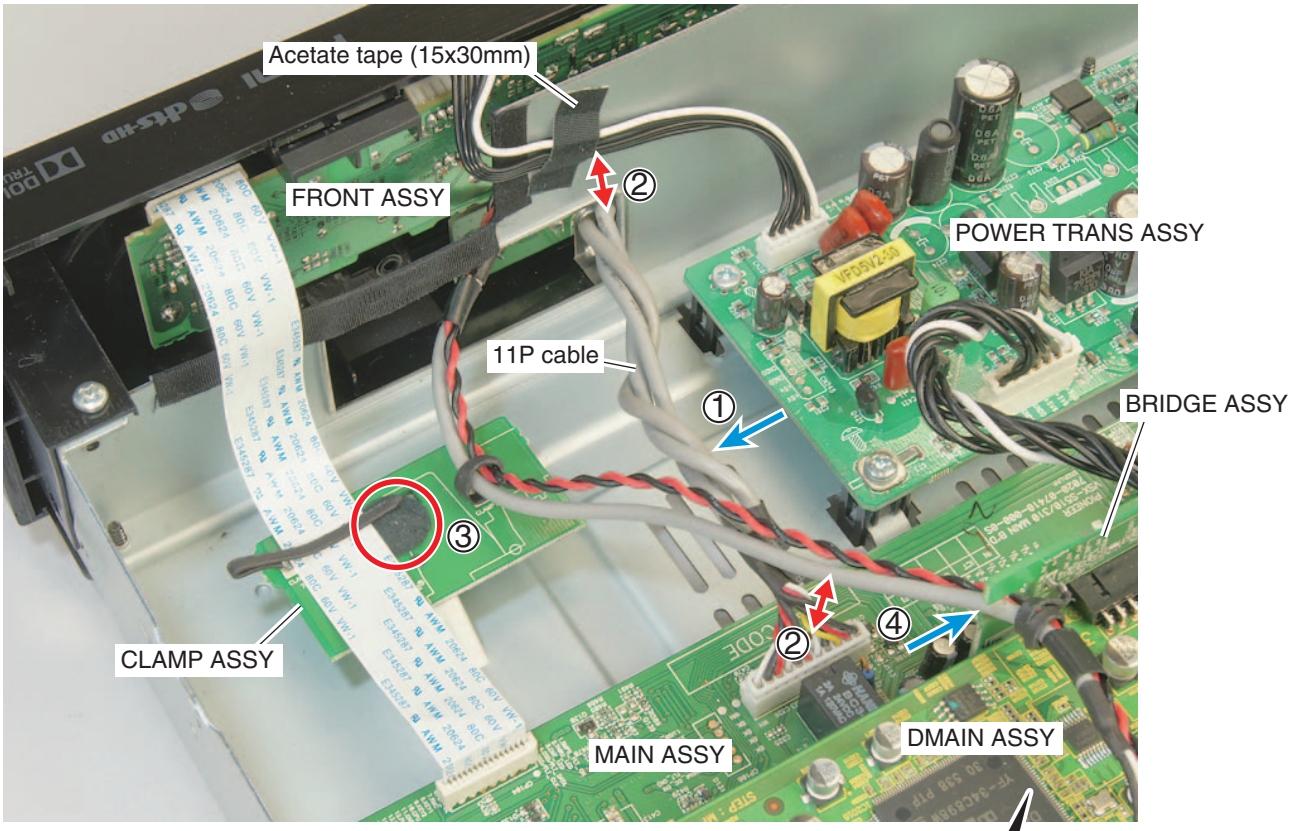


(3) Doesn't touch the other cables.
(4) Paste the Cushion on the head of screw.
(5) Insert the Cable HDMI 360mm into the cutout portion of the CABLE ASSY.
(6) Insert the cable (from the FHDMI ASSY) into the cutout portion of the BRIDGE ASSY.

(7) Doesn't touch the cables to the Cabinet S510.

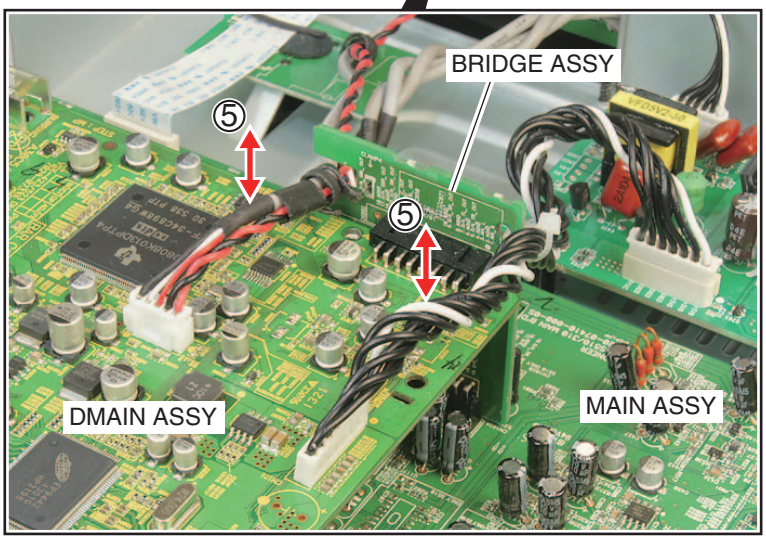


[2] VSX-S310



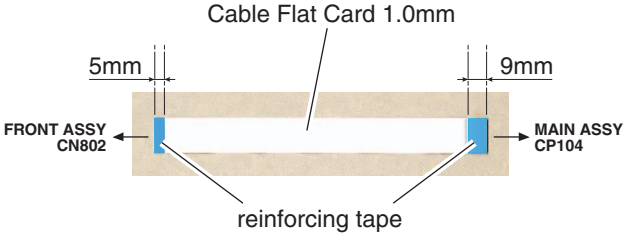
(1) Set the 11P cable (from the FRONT ASSY) away from the POWER TRANS ASSY.
(2) Doesn't touch the other cables.
(3) Paste the Cushion on the head of screw.
(4) Insert the cable (from the USB ASSY) into the cutout portion of the BRIDGE ASSY.

(5) Doesn't touch the cables to the Cabinet S510.

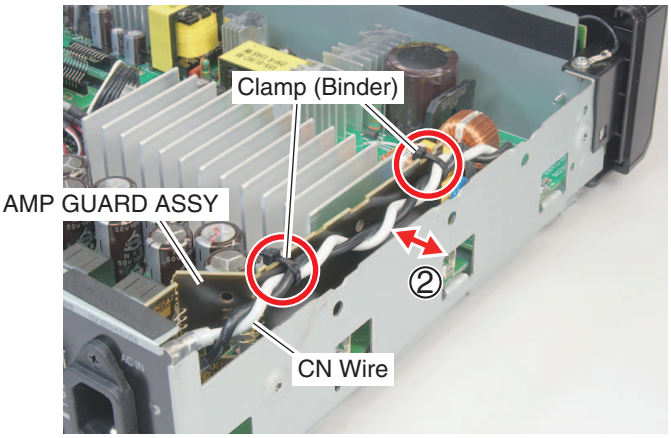


[3] VSX-S510 and VSX-S310

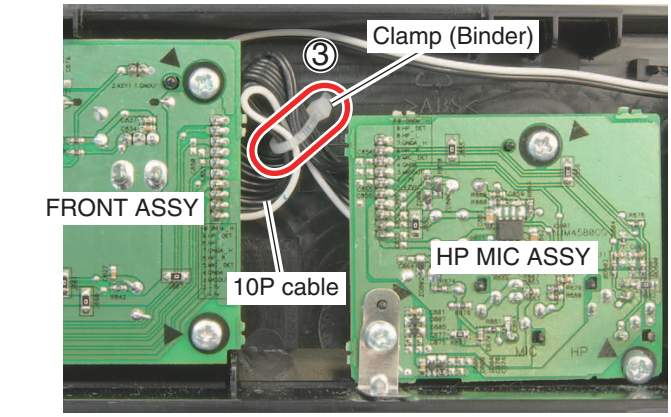
(1) Connect the Cable Flat Card 1.0mm to the MAIN ASSY with the side reinforced by wider tape.



(2) Don't touch the CN Wire to the Cabinet S510.



(3) The 10P cable extra length between the FRONT ASSY and the HP MIC ASSY shall be packed into a bundle using the Clamp (Binder).



8. EACH SETTING AND ADJUSTMENT

8.1 UPDATING OF THE FIRMWARE (VSX-S510)

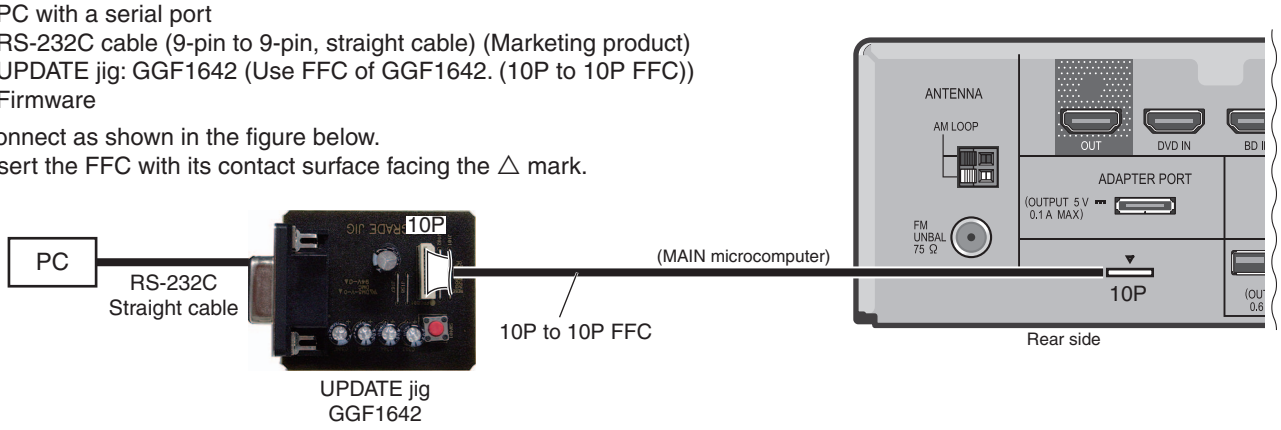
[Purpose]

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

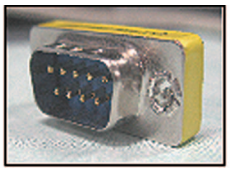
[Necessary Tools and Connections]

- 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.




Straight Cable


Adapter


JIG's side

(1) MAIN microcomputer firmware update

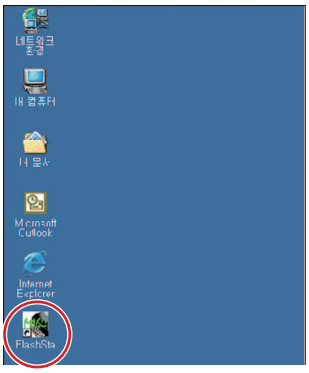
[Preestablishment]

- NetworkStandby: OFF
- HDMI Control: OFF
- HDMI StandbyThrough: OFF

[Procedures]

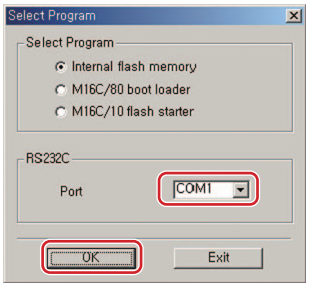
* Store the EPFlash.exe file in the desktop of the PC.

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.

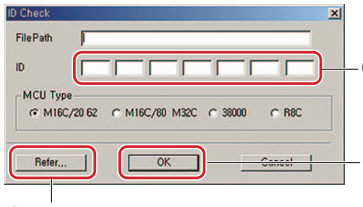


Select for COM port.

[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.

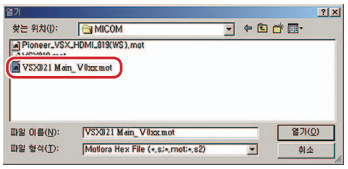


② Enter ID.
Enter "ff" in all field.

③ Press OK button to go to next step.

① Selection of upgrade file

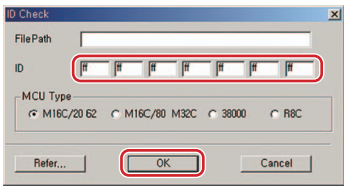
① Select the update file



Select "FY14Slim510_Main Ver***.mot" file to update the MCU.

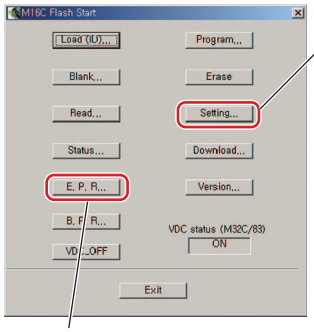
Press the OK button.

② Enter ID.



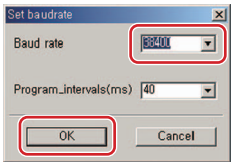
Press the OK button.

5. Set speed update and update the MCU.



① Set speed of update.

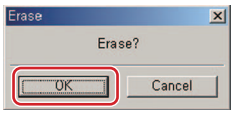
① Set speed of update.
Set Baud rate to 38400.



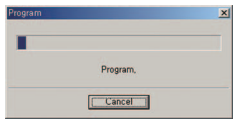
Press the OK button.

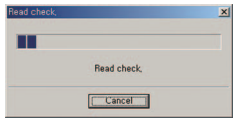
② Update the MCU.
E.P.R=>Erase+Program+Read

② Update the MCU
Press the E.P.R … button



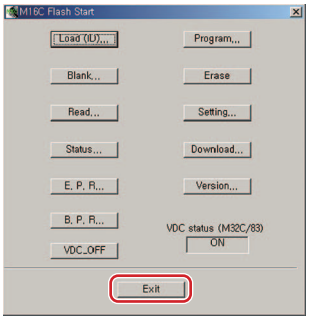
Press OK button.





6. Update Finished MAIN microcomputer.

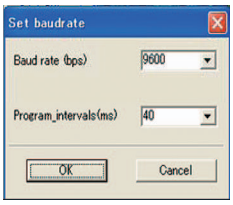
Press the OK button.



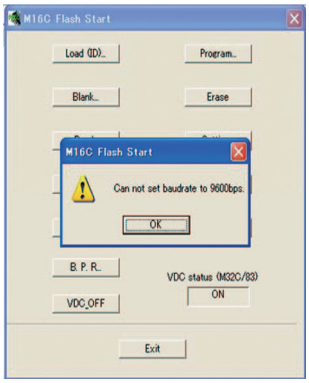
Press the Exit button.
Please wait for until this window disappears.

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.

(2) SUB microcomputer firmware update

[Preparations]

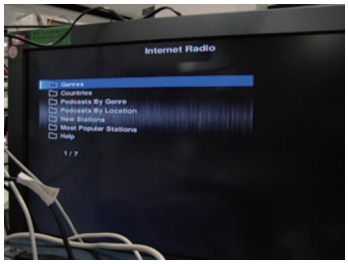
Save the firmware file to the "root" of empty USB memory.
The file name of the firmware file is "Slim14Sub_V***.bcd". Don't save other files.

- NetworkStandby: OFF
- HDMI Control: OFF
- HDMI StandbyThrough: OFF
- Connect a unit to TV and HDMI, and the GUI output of the unit performs in a state to appear.

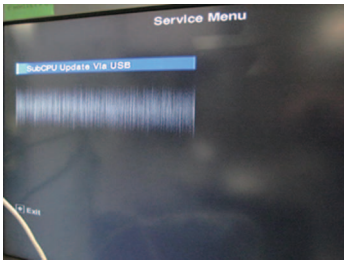
[Procedures]

1. Turn on the unit.
2. Set a function for a "NETRADIO".

Note:
Without a network connection, "Server Error" will be displayed on the TV screen. Under this condition, the Service Menu (menu for updating the SUB microcomputer) is not accessible. Set the remote control unit supplied with the unit to Network Function Operation mode then press the ENTER button so that "Empty" is displayed on the screen. Then proceed to Step 3.

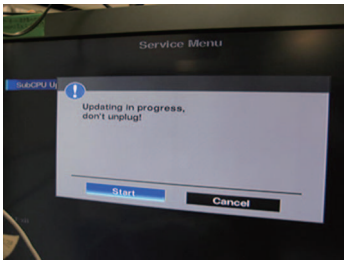


3. Press the "ESC (A85F)" button on the Service remote control unit (GGF1381), then press the "+10 (A81F)" button to enter the service menu (for SUB microcomputer firmware update menu).
   When you press other buttons between "ESC" button and "+10" buttons, be invalid.

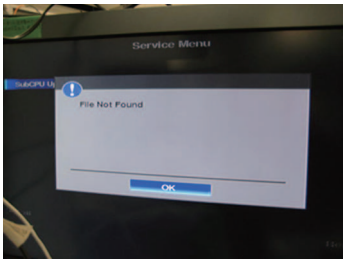


4. Press the "ENTER" button of the remote control unit supplied with Network Function as the state that you can operate.

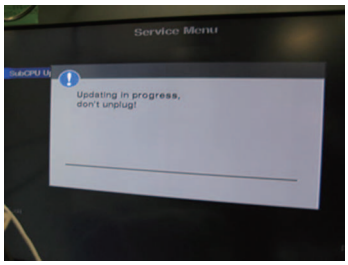
(1) When a product can recognize a file, become the following indication.
Select "Start", and press the "ENTER" button.



(2) When a product cannot recognize a file, become the following indication. Check on USB memory with a file.

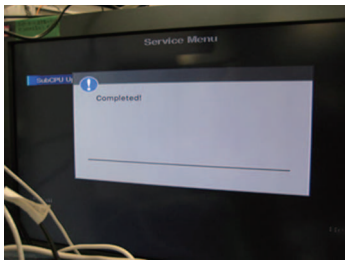


5. Update starts, and "UPDATE" blinks to FL screen and HDMI LED blinks.
   Be approximately 8 minutes for update at time.



6. When update is completed, "Completed" is displayed by TV screen and HDMI LED lights.

* "UPDATE" blinks to FL display and is displayed.
In rare cases, "Completed!" may not be displayed on the TV screen. In such a case, updating is completed if the HDMI LED has become lit. Proceed to Step 7.



7. Disconect the AC power cord. (The POWER button does not respond.) Confirm a version of the firm ware of SUB microcomputer.

Note:
Because update is not possible again, never unplug the power cord until the updating process is completed.

(3) USB (BridgeCo) firmware update

[Procedures]

1. Select 'Firmware Update' from the Network Setup menu. The receiver checks whether the USB memory device inserted into the USB port on the receiver's front panel contains updatable software.
2. To update, select 'Start'.
3. When 'Updating in progress, don't unplug!' is displayed, select 'OK'.

• If 'File Not Found' is displayed, try the following:
- No update file was found on the USB memory device. Store the file in the USB memory device's root directory.
- Try disconnecting then reconnecting the USB device or storing the update file again. If the error still occurs, try using a different USB memory device.

4. The software update will start. Please wait. The OSD display will turn off during update and the words 'UPDATE' will flash on the front panel.
5. If 'COMPLETE' is displayed, updating is completed. The screen will return automatically to the play screen.

• If 'FAIL' is displayed on the front panel display, updating has failed. Try the following:
- Turn the receiver's power off, then turn it back on and try updating the software again.
- Try disconnecting then reconnecting the USB device or storing the update file again. If the error still occurs, try using a different USB memory device.

(4) DSP firmware update

[Preestablishment]

• NetworkStandby: OFF
• HDMI Control: OFF
• HDMI StandbyThrough: OFF

[Procedures]

1. Select an Input Function that allows reception via Optical input 1 then set the unit to STBY_Off mode.
2. Press and hold the AUTO SURROUND/STREAM DIRECT key on the unit for 5 seconds, then press the BD key on the Remote Control 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 iPod iPhone iPad DIRECT CONTROL 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.

(5) Check to the firmware version

[Preestablishment]

• NetworkStandby: OFF
• HDMI Control: OFF
• HDMI StandbyThrough: OFF

[Procedures]

Make sure that the main unit is in STANDBY mode.
Press and hold the AUTO SURROUND/STREAM DIRECT key on the unit for 5 seconds, then press the CD key on the Remote Control simultaneously to display each UCOM version.
Each time the iPod iPhone iPad DIRECT CONTROL key on the unit is pressed, then indications on the FL display change as follows:

Turn the unit off.

* It may take around 1 minute until the version of the USB microcomputer is displayed. When be not displayed, wait in the state that turned on the power of the product for 1 minute, and please do it from the first procedure again.

8.2 UPDATING OF THE FIRMWARE (VSX-S310)

[Purpose]

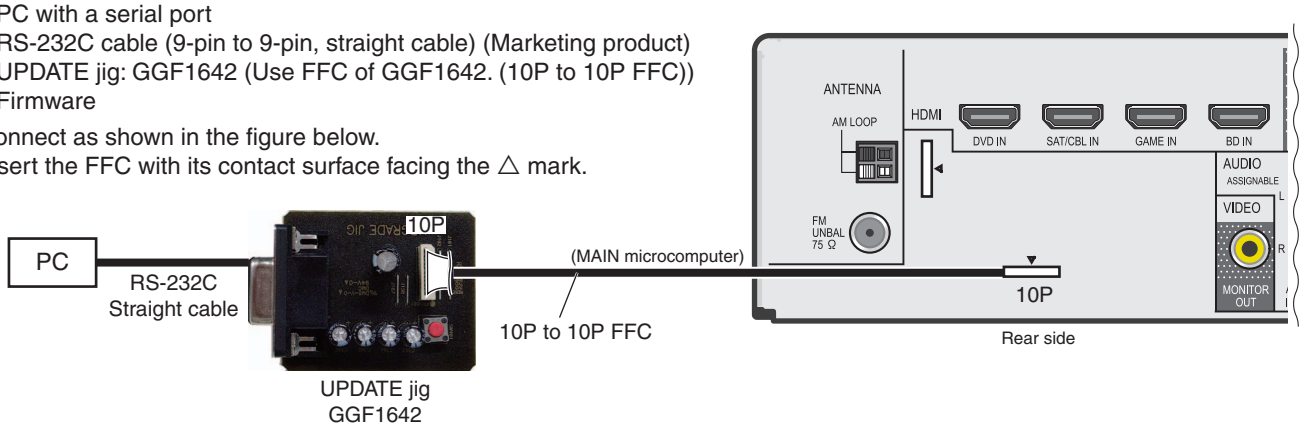
Refer to this section when updating the firmware of each microcomputer is required by the service information, etc.

[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.




Straight Cable


Adapter


JIG's side

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

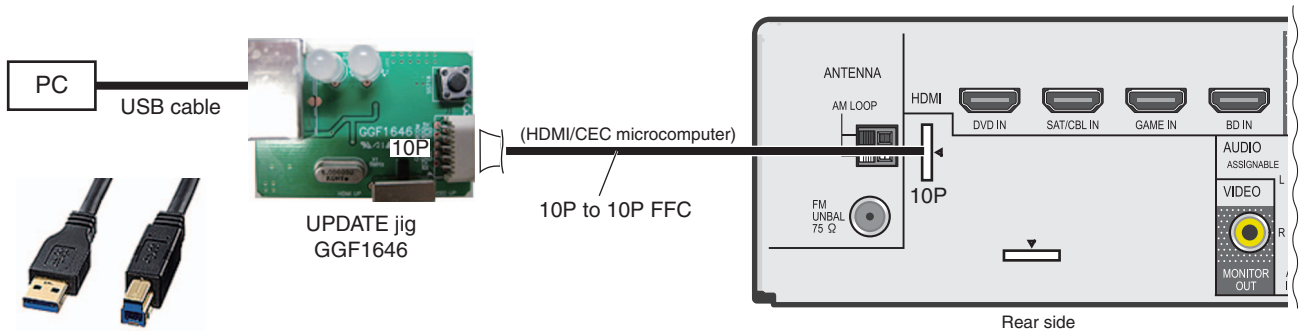
   * Store the EPFlash.exe file in the desktop of the PC.

2. Install the driver.
   Request the driver at the time of the conectting 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.

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

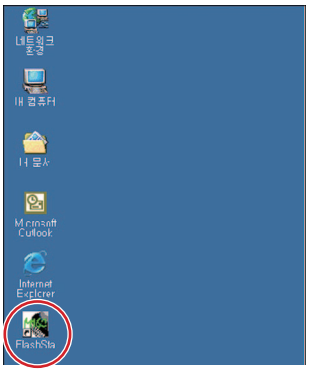


Microcomputers update

[Procedures]

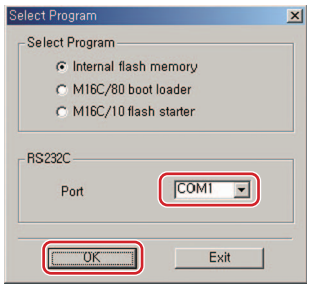
■ for MAIN microcomputer

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.

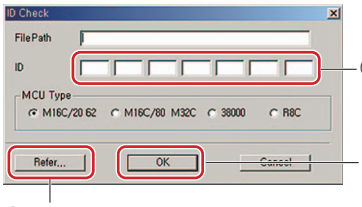


Select for COM port.

[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.

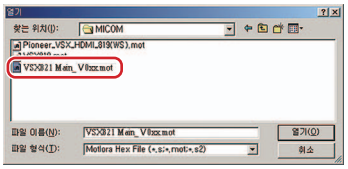


② Enter ID.
Enter "ff" in all field.

③ Press OK button to go to next step.

① Selection of upgrade file

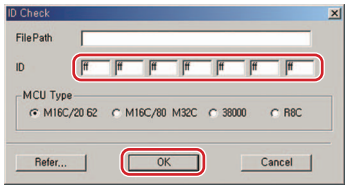
① Select the update file



Select "FY14Slim310_Main Ver***.mot" file to update the MCU.

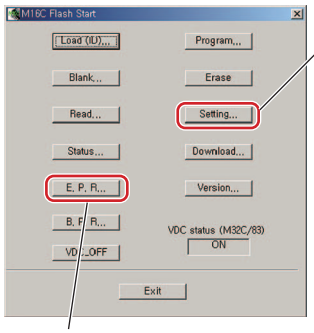
Press the OK button.

② Enter ID.

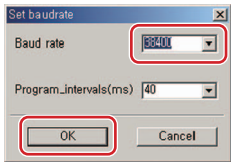


Press the OK button.

5. Set speed update and update the MCU.



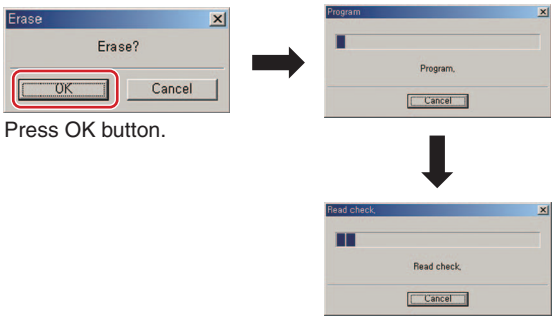
① Set speed of update.



Press the OK button.

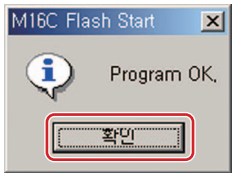
② Update the MCU.
E.P.R=>Erase+Program+Read

② Update the MCU
Press the E.P.R … button

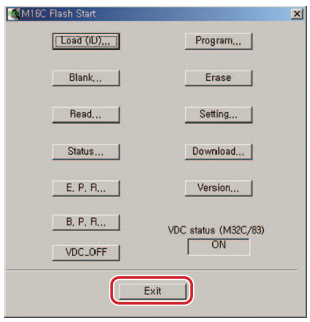


Press OK button.

6. Update Finished MAIN microcomputer.



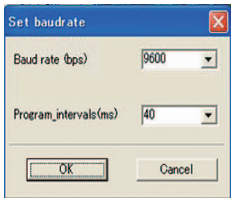
Press the OK button.



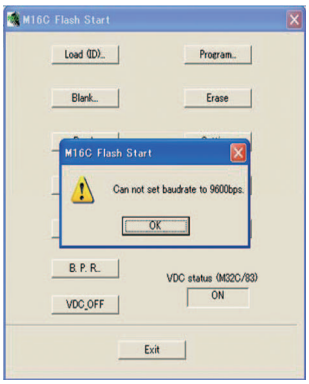
Press the Exit button.
Please wait for until this window disappears.

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

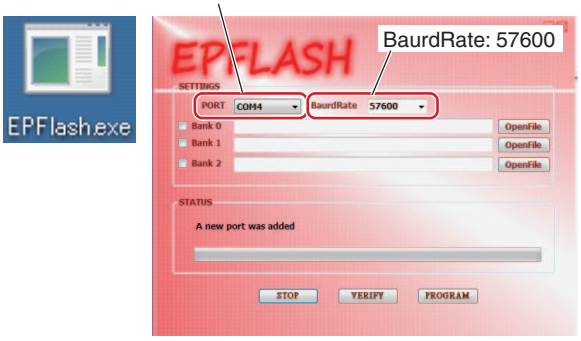


7. Unplug the AC cord.
Disconnect the FFC cable.

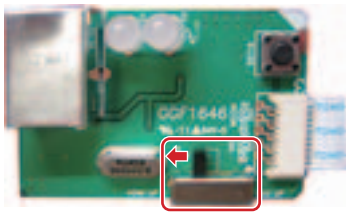
■ for HDMI & CEC (SUB) microcomputer

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.

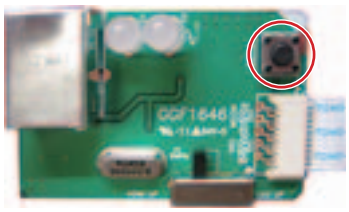


2. Select "HDMI UP" on the Upgrade Jig.

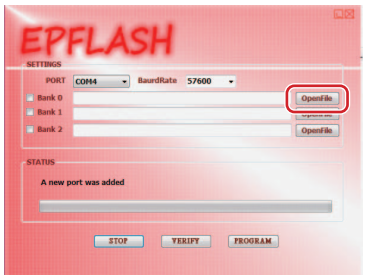


Connect the PC and the Upgrade Jig.
Connect the FFC cable. (HDMI microcomputer)

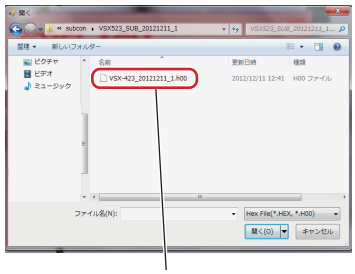
3. Holding down the tact switch (RESET) of the Upgrade Jig in AC OFF state. Release the tact switch after AC ON, power ON (2-3 seconds later).



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

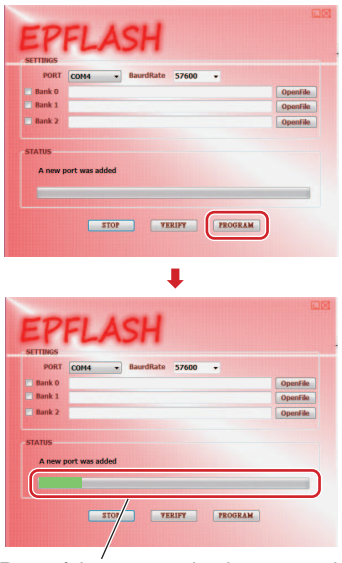


Be chosen automatically to Bank 2 when you choose file of H00 in Bank 0.



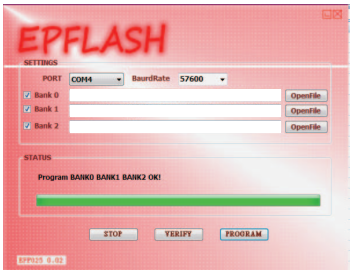
Select "VSX-S310_**********.h00" file to update MCU.

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

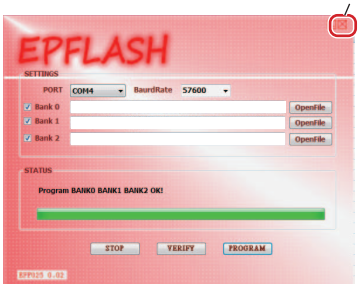


Rate of the progression is appeared.

6. Update Finished HDMI microcomputer.



End the application EPFlash.



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.

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

1. Make sure that the main unit is in STANDBY mode.
Press and hold the AUTO SURROUND/STREAM DIRECT key on the unit for 5 seconds, then press the CD key on the Remote Control simultaneously to display each UCOM version.
Each time the iPod iPhone DIRECT CONTROL key on the unit is pressed, then indications on the FL display change as follows:

MAIN Ucom
MAIN Xx.xx → ■ → SUB Ucom
SUB zzz.zz → ■ → CEC
CEC Vy,yy → ■ → DSP firmware → ■ → All segments lit.

■ = iPod iPhone DIRECT CONTROL

2. Turn the unit off.

■ DSP firmware update

[Procedures]

1. Select TV fucntion, and, with Signal select as OPTICAL1 then set the unit to STBY_Off mode.
2. Press and hold the AUTO SURROUND/STREAM DIRECT key on the unit for 5 seconds, then press the BD key on the Remote Control 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 iPod iPhone DIRECT CONTROL 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.

A

B

C

D

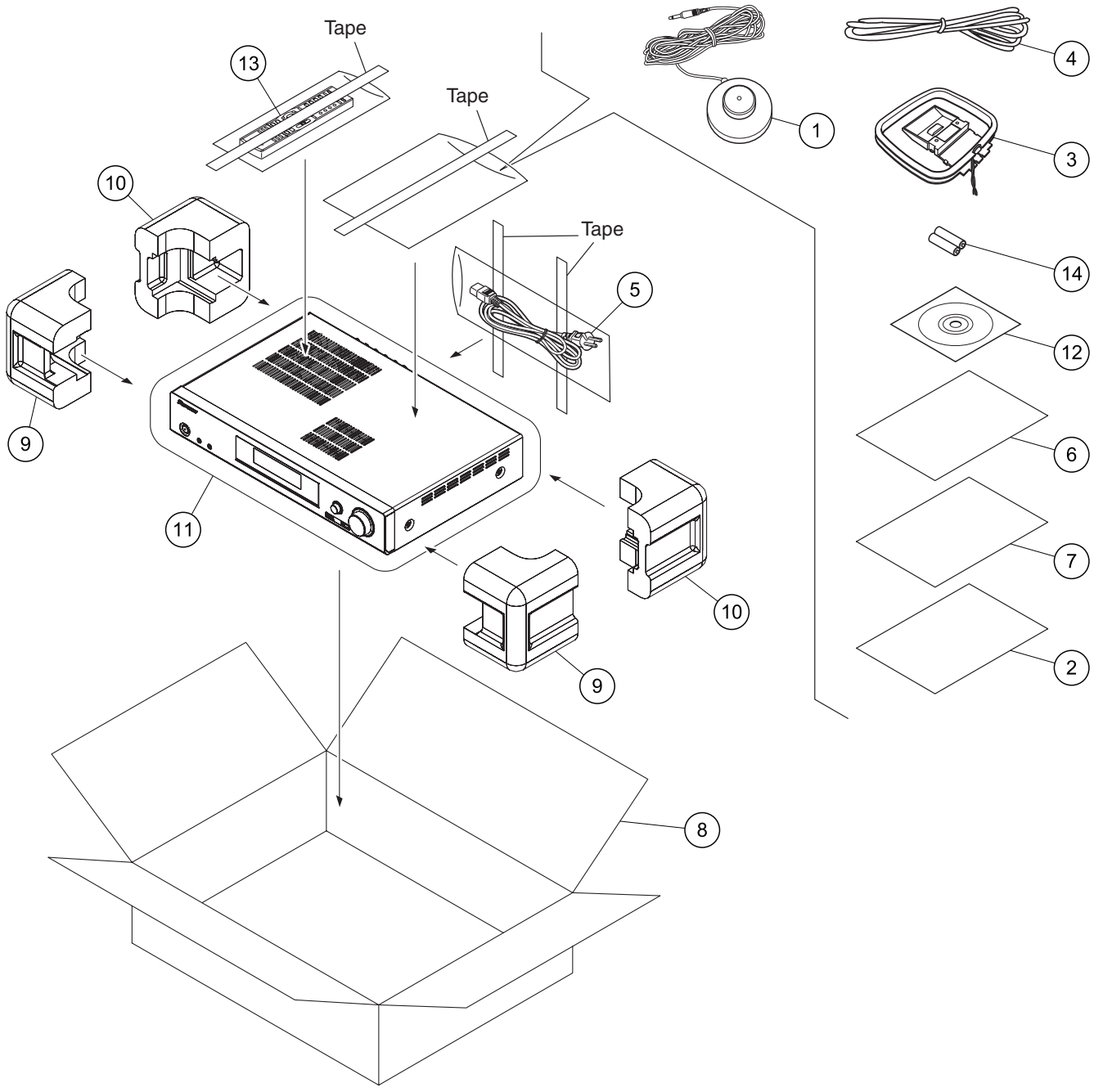
E

F

9. 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.)*

9.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

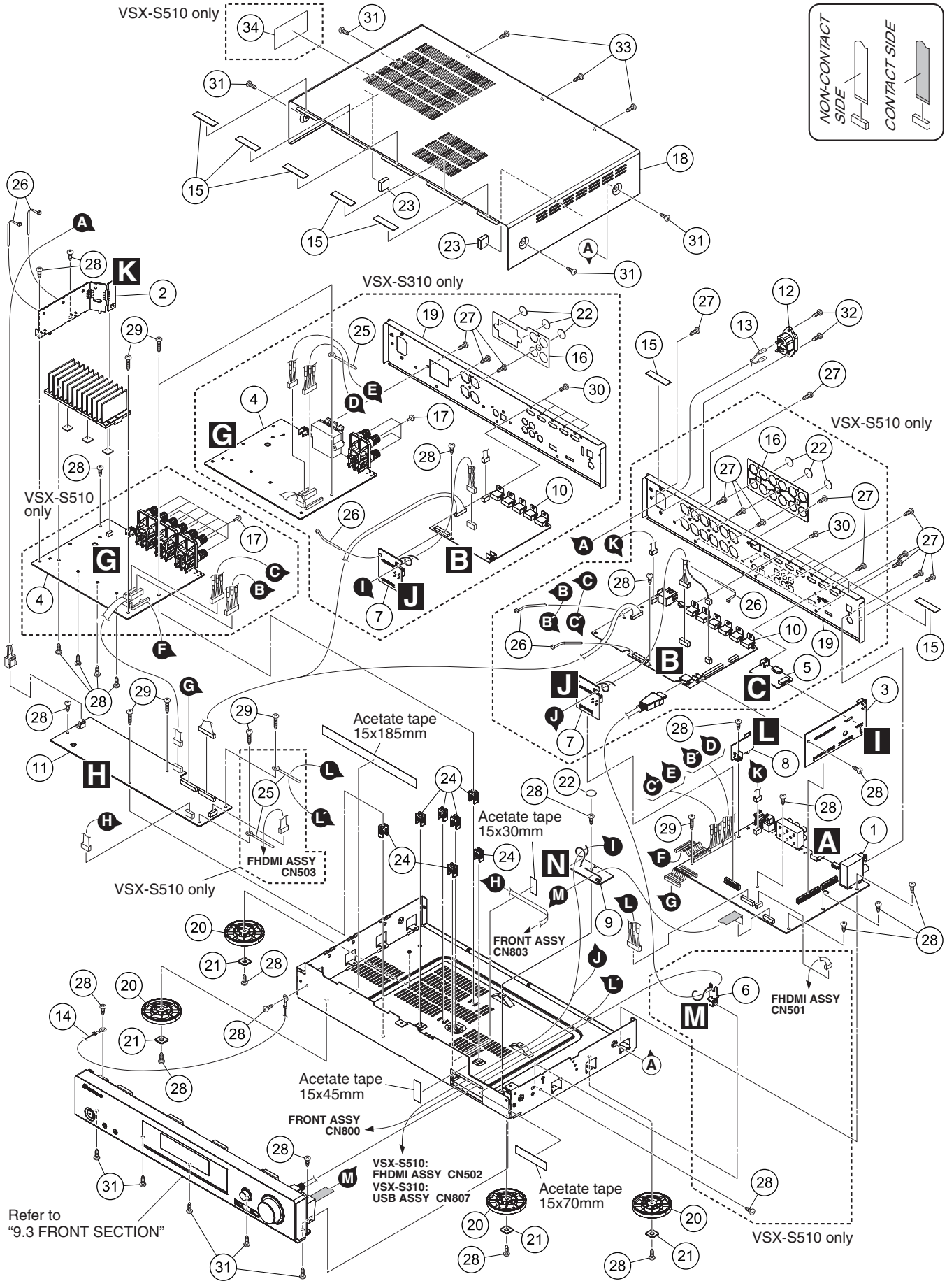
Mark	No.	Description	Part No.
	1	Setup Microphone	APM7011
NSP	2	Warranty Card	ARY7158
	3	AM Loop Antenna	E601019000010-IL
	4	FM Wire Antenna	E605010140010-IL
⚠	5	Power Cord	L068250160020-IL
	6	Speaker Caution Sheet	5227000001050-IL
	7	Quick Start Guide	5707000008480-IL
	8	Gift Box	See Contrast table (2)
	9	Cushion Snow S510 F	6230213544000-IL
	10	Cushion Snow S510 R	6230213554000-IL
	11	PE Sheet	6327040059000-IL
	12	Operating Instructions (CD-ROM)	6517000001550-IL
	13	Remote Control Unit(AXD7719)	8300771900010-IL
NSP	14	AAA Size IEC R03 Dry Cell Batteries x2• • • • •	

(2) CONTRAST TABLE

VSX-S510-K, VSX-S510-S, VSX-S310-K and VSX-S310-S are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-S510-K	VSX-S510-S	VSX-S310-K	VSX-S310-S
	8	Gift Box	6007212530000-IL	6007212530010-IL	6007212530020-IL	6007212530030-IL

9.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

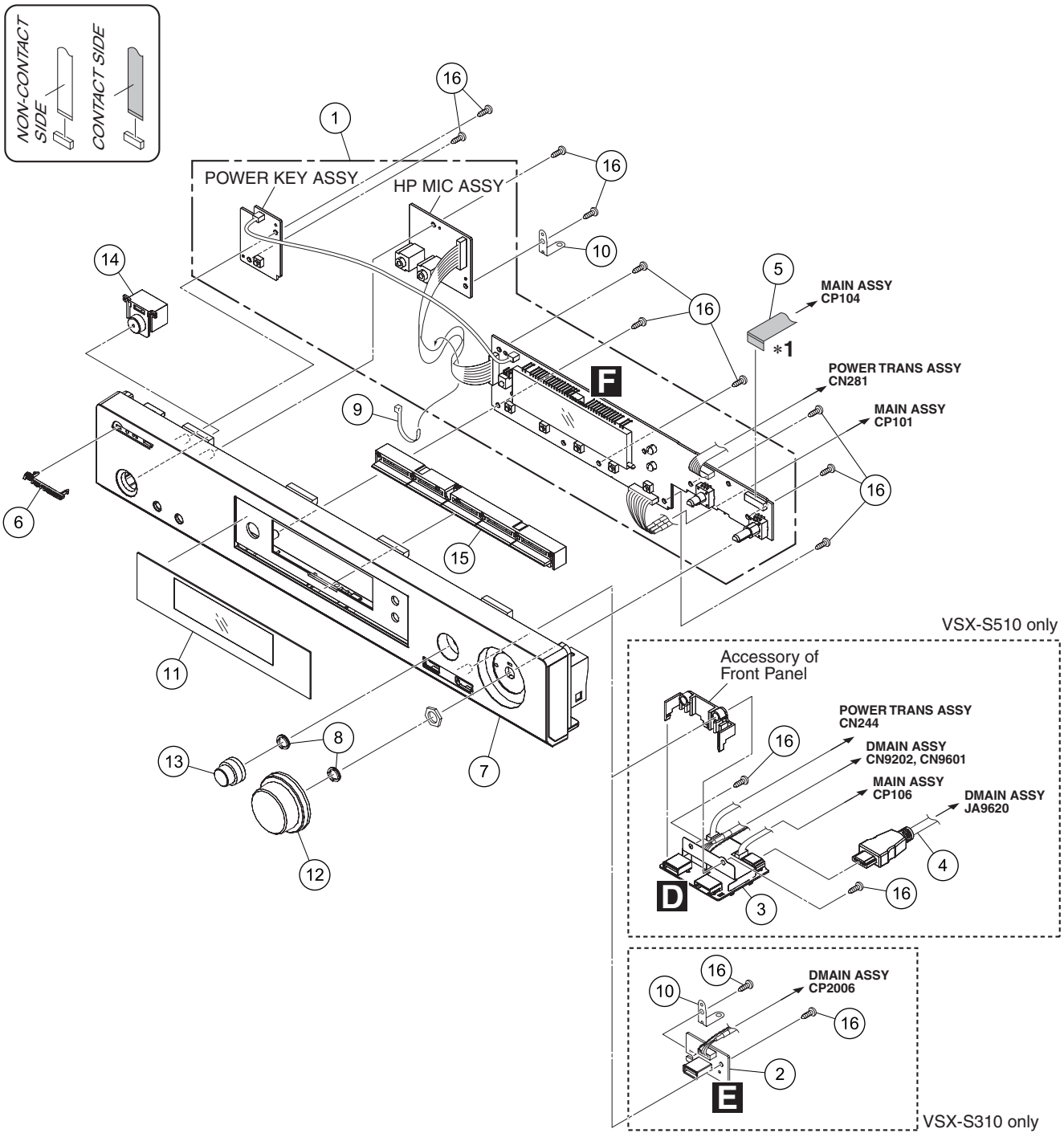
Mark	No.	Description	Part No.
	1	MAIN ASSY	See Contrast table (2)
	2	AMP GUARD ASSY	7028074123010-IL
	3	SIDE CNT ASSY	See Contrast table (2)
	4	DAMP ASSY	See Contrast table (2)
	5	BT ASSY	See Contrast table (2)
	6	CABLE ASSY	See Contrast table (2)
	7	BRIDGE ASSY	See Contrast table (2)
	8	MAIN GUARD ASSY	7028074115010-IL
	9	CLAMP ASSY	See Contrast table (2)
	10	DMAIN ASSY	See Contrast table (2)
⚠	11	POWER TRANS ASSY	See Contrast table (2)
⚠	12	Socket Power AC	G430040560021-IL
⚠	13	CN Wire	L000191020070-IL
	14	Ring TER Wire	8410600010090-IL
	15	Sheet	1210210235000-IL
	16	Speaker Sheet	See Contrast table (2)
	17	Bushing (PLS)	2410040353010-IL
	18	Cabinet S510	See Contrast table (2)
	19	Back Chassis	See Contrast table (2)
	20	Foot	See Contrast table (2)
	21	Cushion	4050211605000-IL
	22	Cushion	4050211745000-IL
	23	Cushion	4050214835000-IL
	24	Supporter	4070001601010-IL
	25	Clamp MTG	4330000310000-IL
	26	Clamp (Binder)	4330040343010-IL
	27	Screw	BBT30P100FTB
	28	Screw	BBZ30P080FTC
	29	Screw	BBZ30P180FTC
	30	Screw	BSZ30P040FTB
	31	Screw	See Contrast table (2)
	32	Screw	CBZ30P080FTB
	33	Screw	See Contrast table (2)
	34	License Label S510	See Contrast table (2)

(2) CONTRAST TABLE

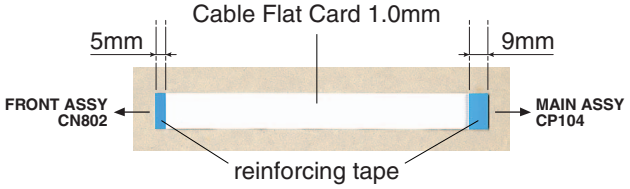
VSX-S510-K, VSX-S510-S, VSX-S310-K and VSX-S310-S are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-S510-K	VSX-S510-S	VSX-S310-K	VSX-S310-S
	1	MAIN ASSY	7028074101010-IL	7028074101010-IL	7028074101050-IL	7028074101050-IL
	3	SIDE CNT ASSY	7028074124010-IL	7028074124010-IL	7028074124050-IL	7028074124050-IL
	4	DAMP ASSY	7028074111010-IL	7028074111010-IL	7028074111050-IL	7028074111050-IL
	5	BT ASSY	7028074112010-IL	7028074112010-IL	Not used	Not used
	6	CABLE ASSY	7028074113010-IL	7028074113010-IL	Not used	Not used
	7	BRIDGE ASSY	7028074114010-IL	7028074114010-IL	7028074114050-IL	7028074114050-IL
	9	CLAMP ASSY	7028074117010-IL	7028074117010-IL	7028074117050-IL	7028074117050-IL
	10	DMAIN ASSY	70280732310C0-IL	70280732310C0-IL	7028073351090-IL	7028073351090-IL
⚠	11	POWER TRANS ASSY	8208001050010-IL	8208001050010-IL	8208001050030-IL	8208001050030-IL
	16	Speaker Sheet	1210211542000-IL	1210211542000-IL	1210212422000-IL	1210212422000-IL
	18	Cabinet S510	3007211926100-IL	3007211926110-IL	3007211926100-IL	3007211926110-IL
	19	Back Chassis	3207214816000-IL	3207214816010-IL	3207214816100-IL	3207214816110-IL
	20	Foot	4007210661000-IL	4007210661000-IL	4000210661000-IL	4000210661000-IL
	31	Screw	B020230083B10-IL	BBZ30P080FTC	B020230083B10-IL	BBZ30P080FTC
	33	Screw	BBT30P100FTB	BBZ30P080FTC	BBT30P100FTB	BBZ30P080FTC
	34	License Label S510	5507000014190-IL	5507000014190-IL	Not used	Not used

9.3 FRONT SECTION



Note *1: Connect the Cable Flat Card 1.0mm to the FRONT ASSY with the side reinforced by narrow tape.



(1) FRONT SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	FRONT ASSY	See Contrast table (2)
	2	USB ASSY	See Contrast table (2)
	3	FHDMI ASSY	See Contrast table (2)
	4	Cable HDMI 360mm	See Contrast table (2)
	5	Cable Flat Card 1.0mm	N711151512180-IL
	6	Pioneer Badge	See Contrast table (2)
	7	Front Panel	See Contrast table (2)
	8	Spring	3720210276000-IL
	9	Clamp (Binder)	4330040343010-IL
	10	Plate	4470212856000-IL
	11	Window	See Contrast table (2)
	12	VOL Knob	See Contrast table (2)
	13	Input Knob	See Contrast table (2)
	14	Button	See Contrast table (2)
	15	5Key Button	5090215311000-IL
	16	Screw	BBZ30P080FTC

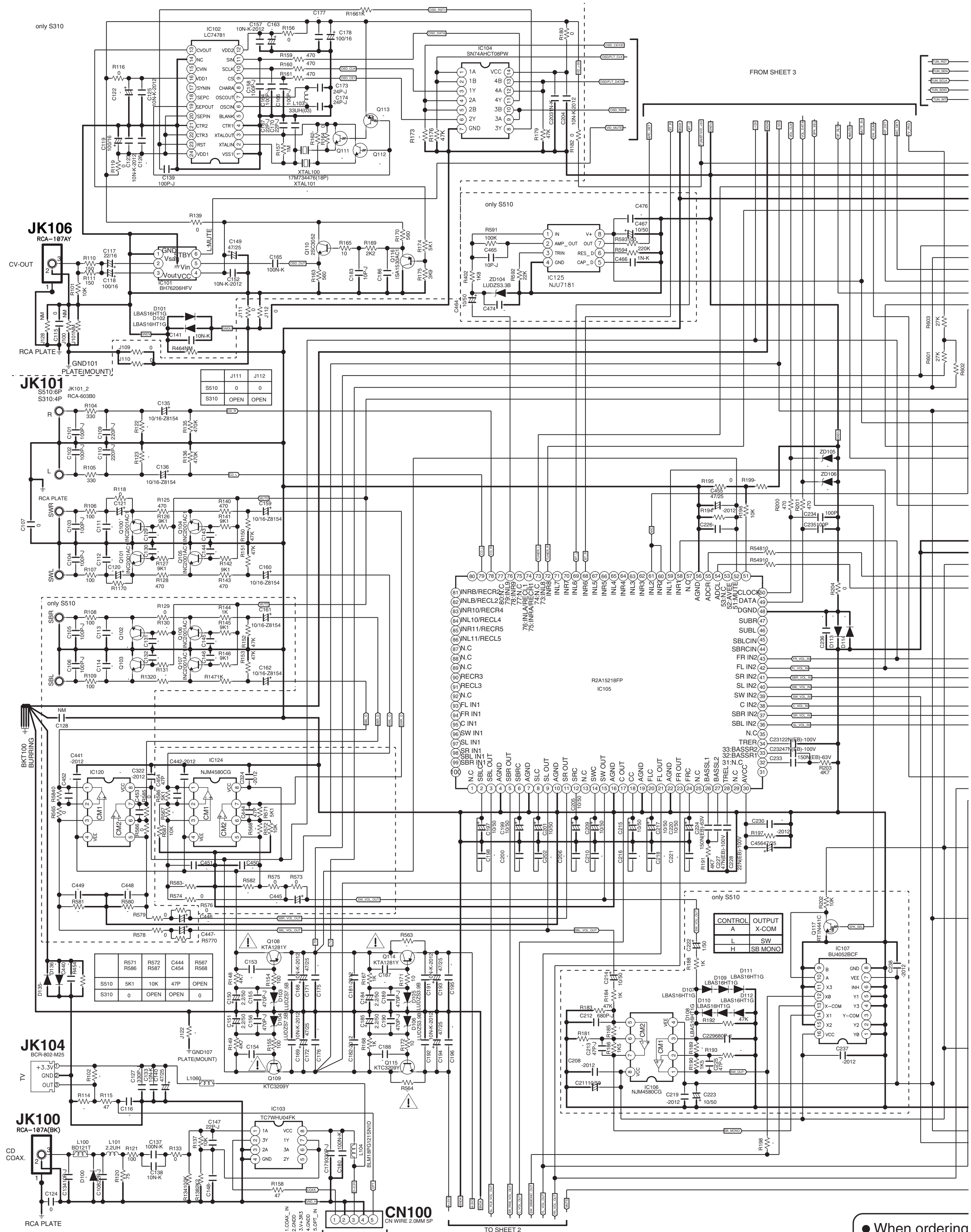
(2) CONTRAST TABLE

VSX-S510-K, VSX-S510-S, VSX-S310-K and VSX-S310-S are constructed the same except for the following:

Mark	No.	Symbol and Description	VSX-S510-K	VSX-S510-S	VSX-S310-K	VSX-S310-S
	1	FRONT ASSY	7028074121010-IL	7028074121010-IL	7028074121050-IL	7028074121050-IL
	2	USB ASSY	Not used	Not used	7028074116050-IL	7028074116050-IL
	3	FHDMI ASSY	7028074131010-IL	7028074131010-IL	Not used	Not used
	4	Cable HDMI 360mm	L304361190050-IL	L304361190050-IL	Not used	Not used
	6	Pioneer Badge	XAM3006	VAM1129	XAM3006	VAM1129
	7	Front Panel	3067216041200-IL	3067216041300-IL	3067216041000-IL	3067216041100-IL
	11	Window	5077213582010-IL	5077213582010-IL	5077213582000-IL	5077213582000-IL
	12	VOL Knob	5080212811000-IL	5088212818000-IL	5080212811000-IL	5087212811100-IL
	13	Input Knob	5080212821000-IL	5088212828000-IL	5080212821000-IL	5087212821100-IL
	14	Button	5090213741100-IL	5097213741000-IL	5090213741100-IL	5097213741000-IL

10. SCHEMATIC DIAGRAM

10.1 MAIN ASSY (1/3)



CONTROL	OUTPUT
A	X-COM
L	SW
H	SB MONO

	J111	J112
S510	0	0
S310	OPEN	OPEN

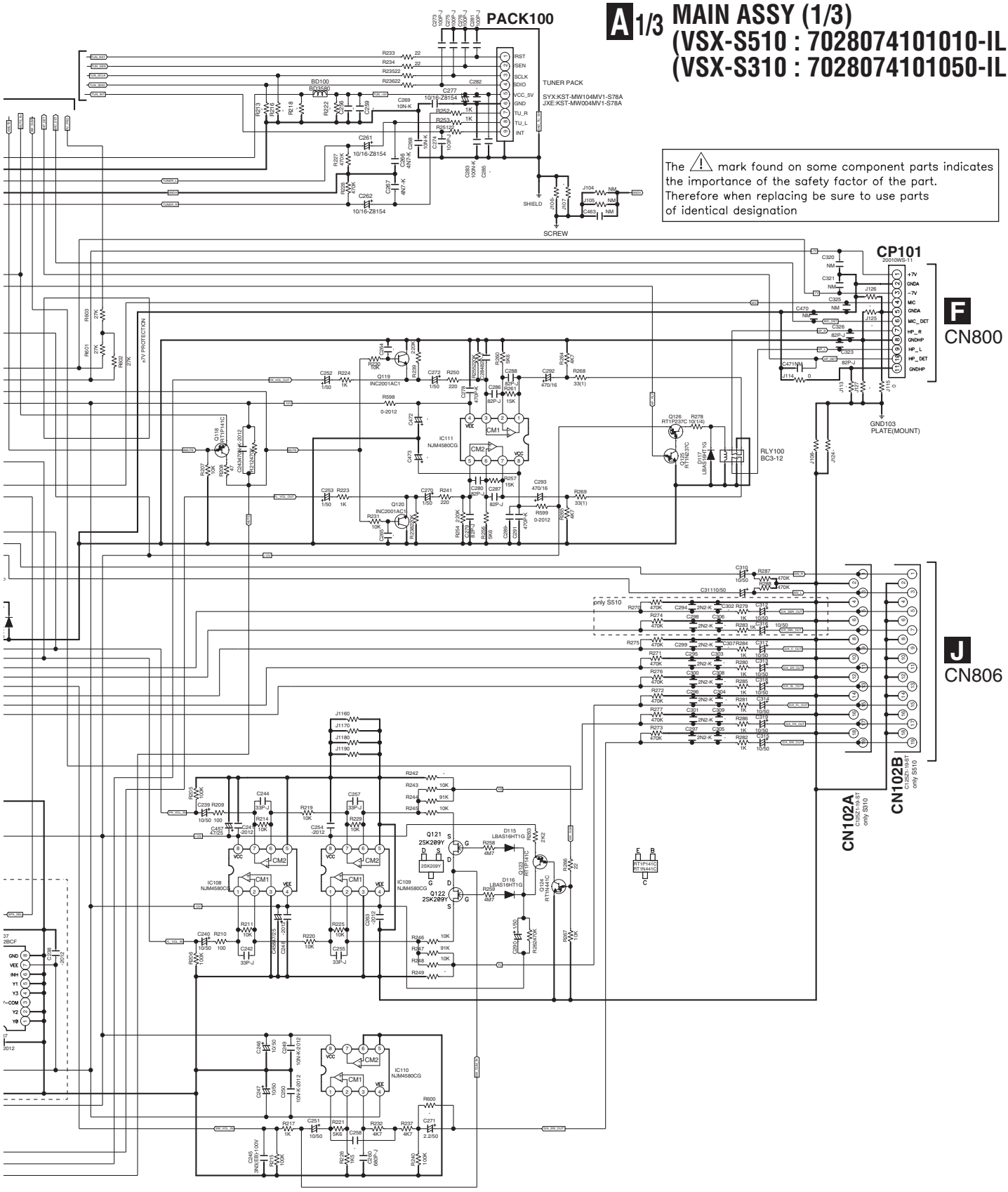
	R571 R586	R572 R587	C444 C454	R567 R568
S510	5K1	10K	47P	OPEN
S310	0	OPEN	OPEN	0

● When ordering
● The ⚠ mark fo
Therefore, whe

B 4/6 CN1802 (VSX-S510)
B 1/3 CP2008 (VSX-S310)

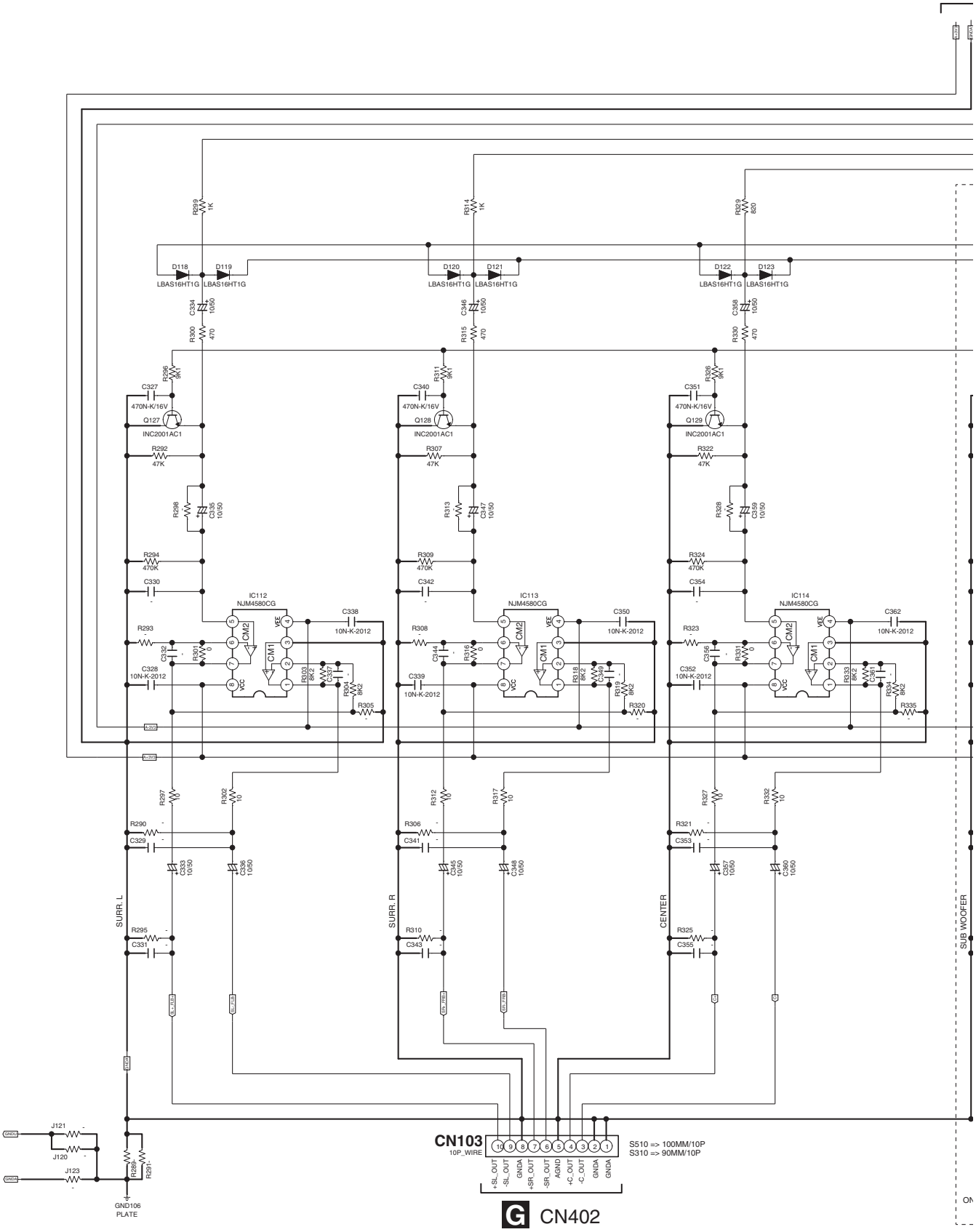
A 1/3

A 1/3 MAIN ASSY (1/3)
(VSX-S510 : 7028074101010-IL)
(VSX-S310 : 7028074101050-IL)



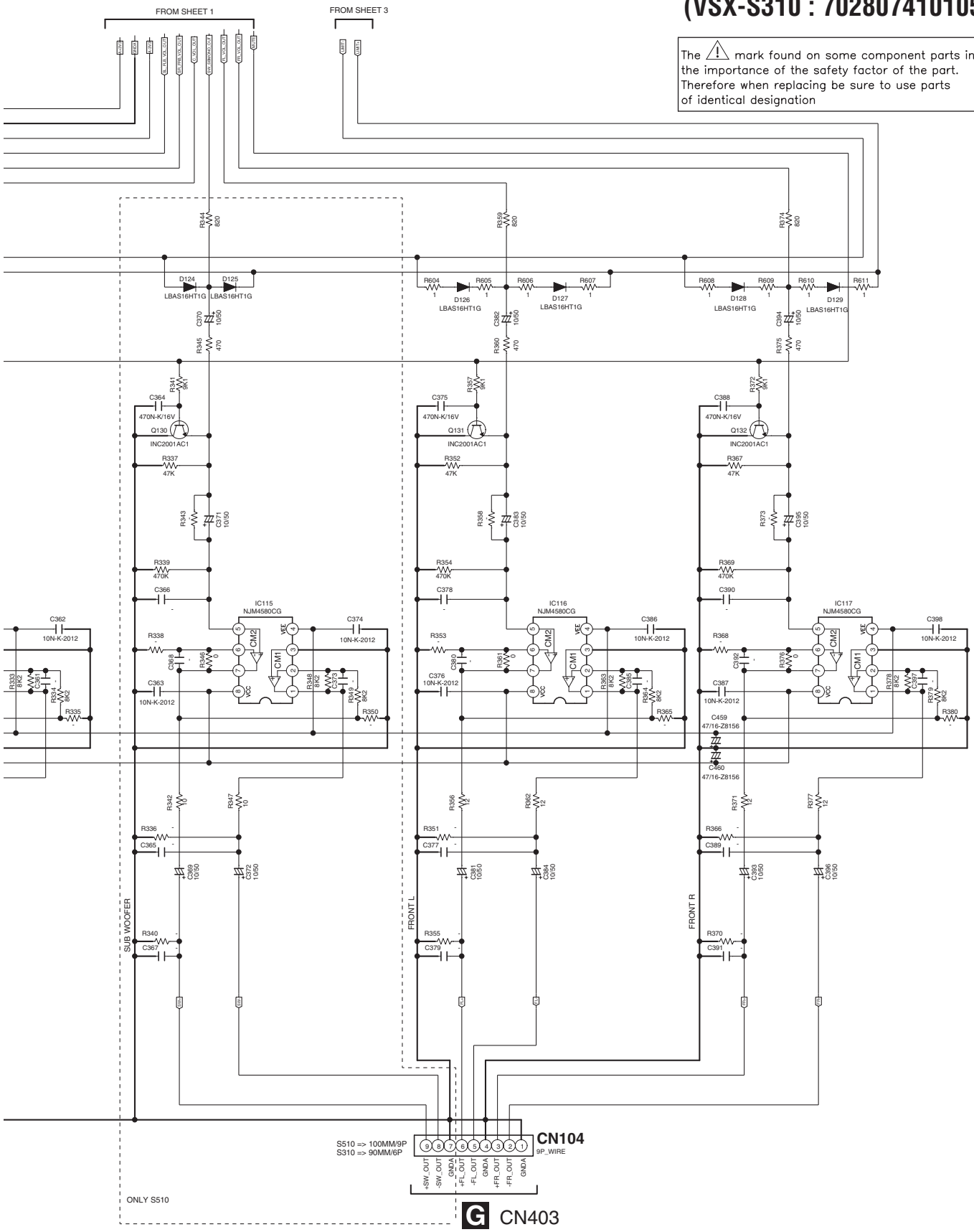
- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

10.2 MAIN ASSY (2/3)

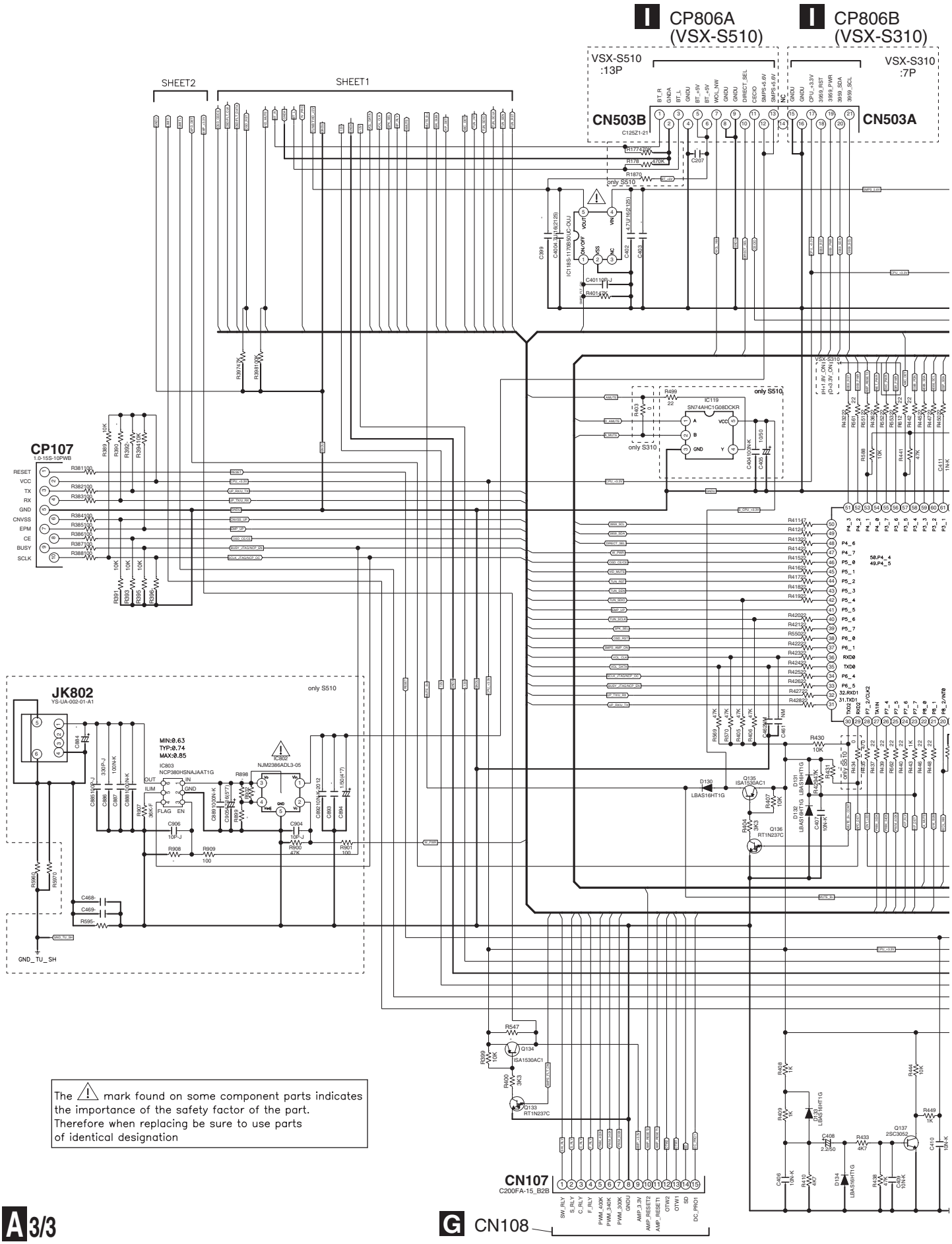


A2/3 MAIN ASSY (2/3)
(VSX-S510 : 7028074101010-IL)
(VSX-S310 : 7028074101050-IL)

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



10.3 MAIN ASSY (3/3)



A3/3 MAIN ASSY (3/3)
(VSX-S510 : 7028074101010-IL)
(VSX-S310 : 7028074101050-IL)

CP806B
(VSX-S310)

I CP807

VSX-S310 :7P

CN503A

CN105
C125Z1-33

CPU PIN NO.	VSX-S510	VSX-S310
PIN 55	DVC_PWR	H+1.8V_ON
PIN 56	DIR_PWR	D+3.3V_ON
PIN 76	SUB_PDN	USB5V_ON
PIN 78	SDCI_MAIN	USB5V_DET
PIN 72	MAIN_IRQ	H+3.3V_FET_ON

AREA OPTION(PIN82)				
AC	AREA	R500	R502	VOLT
230V	SYXE8	47K	NC	3.3V
100V	JXE	NC	47K	0V

SET OPTION(PIN81)			
	R492	R495	VOLT
VSX-S510	47K	NC	3.3V
VSX-S310	NC	47K	0V

D CN501

CP106
20010WS-5
only S510

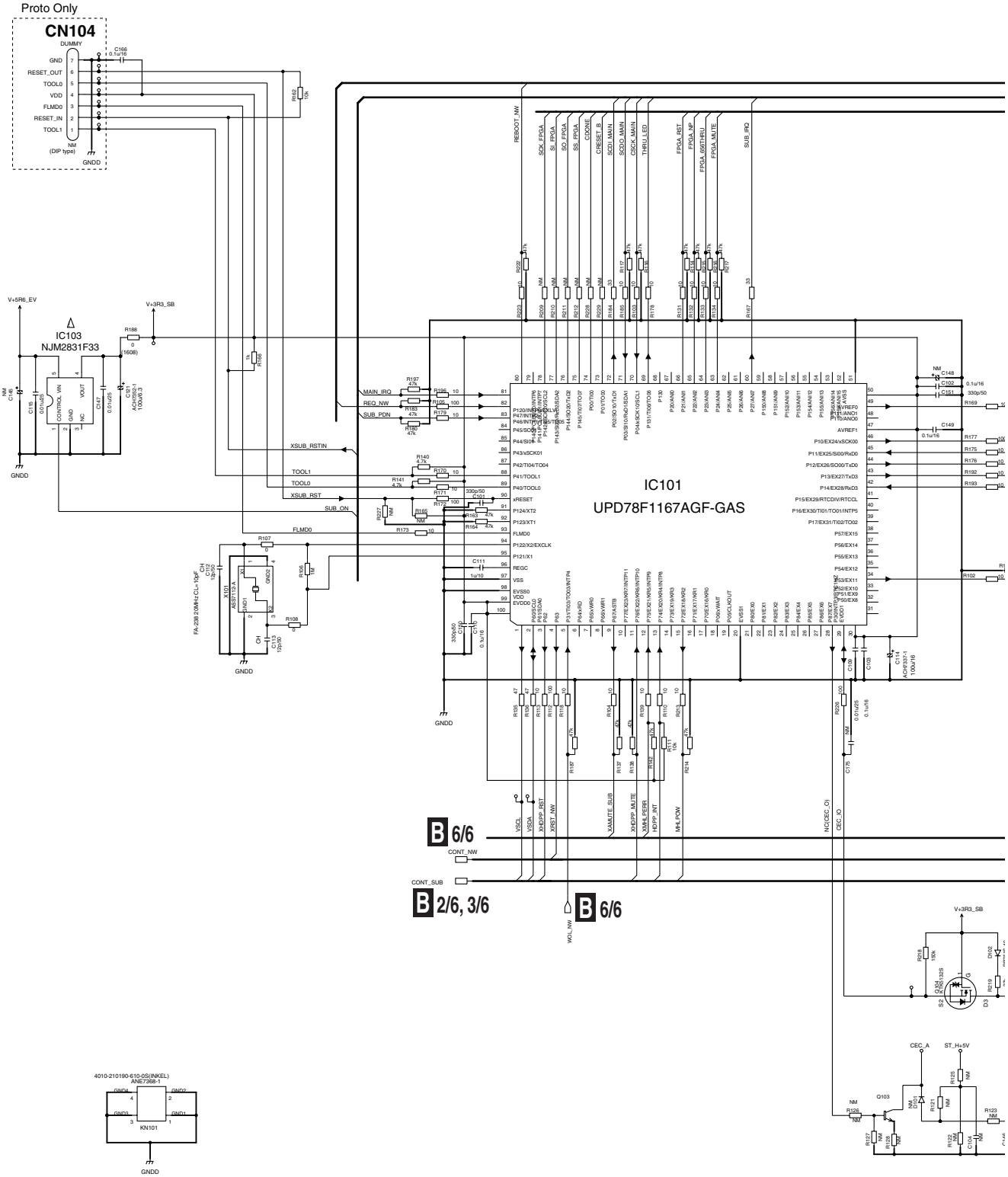
CP104
JSY_1.0-11-15P

F CN802

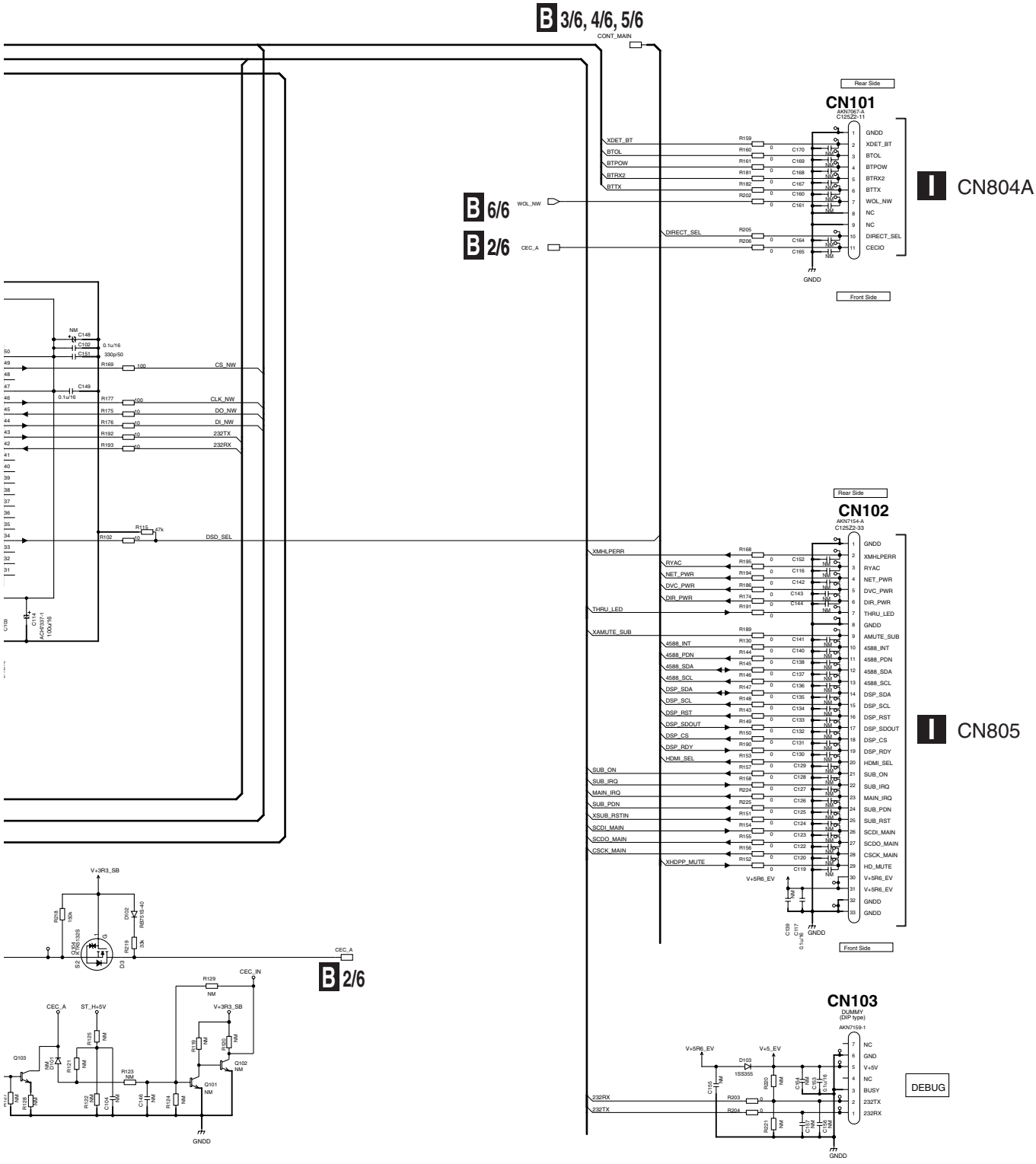
H CN242

CN106
C200FA-11

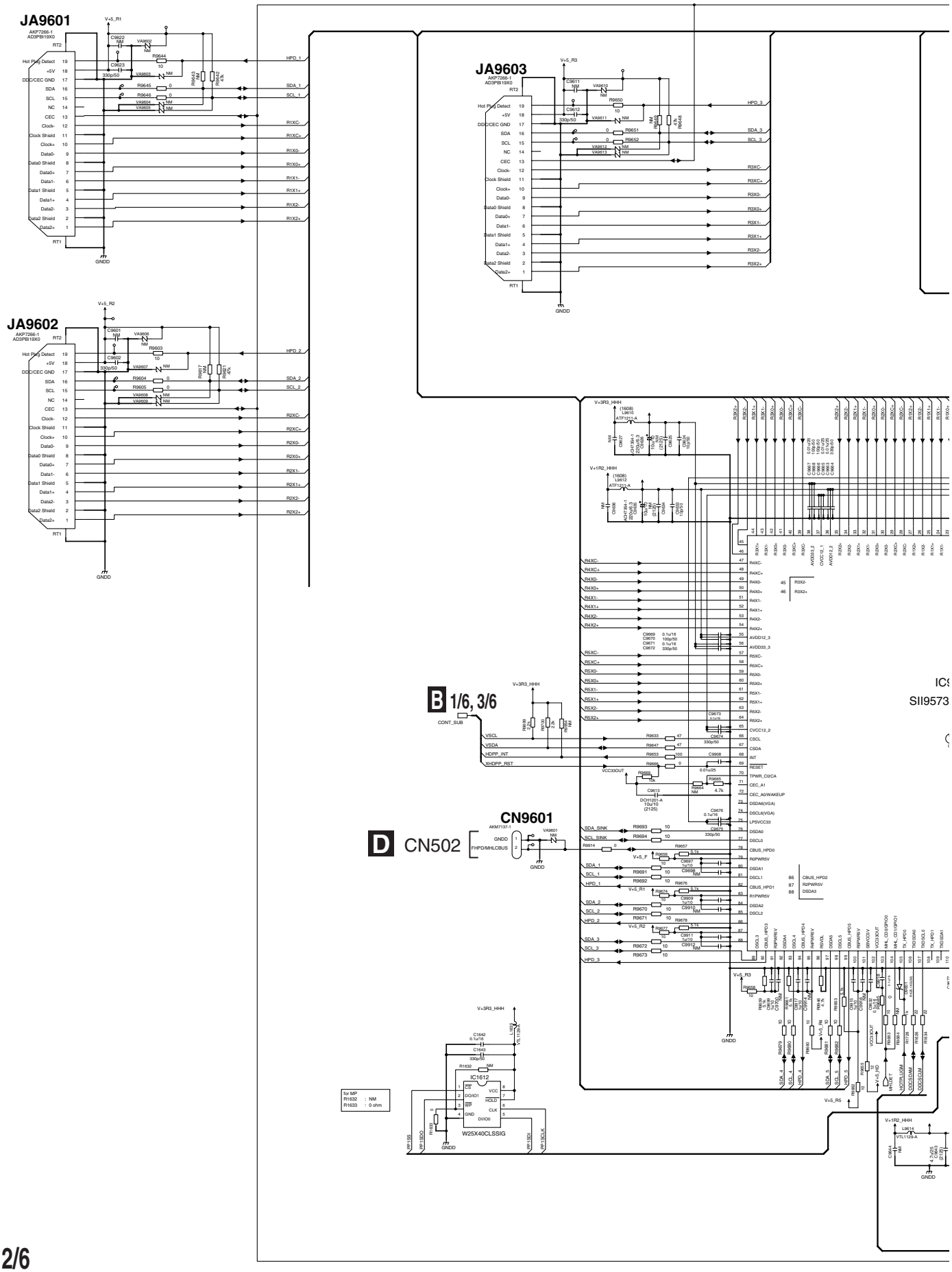
10.4 DMAIN ASSY (1/6) (VSX-S510)



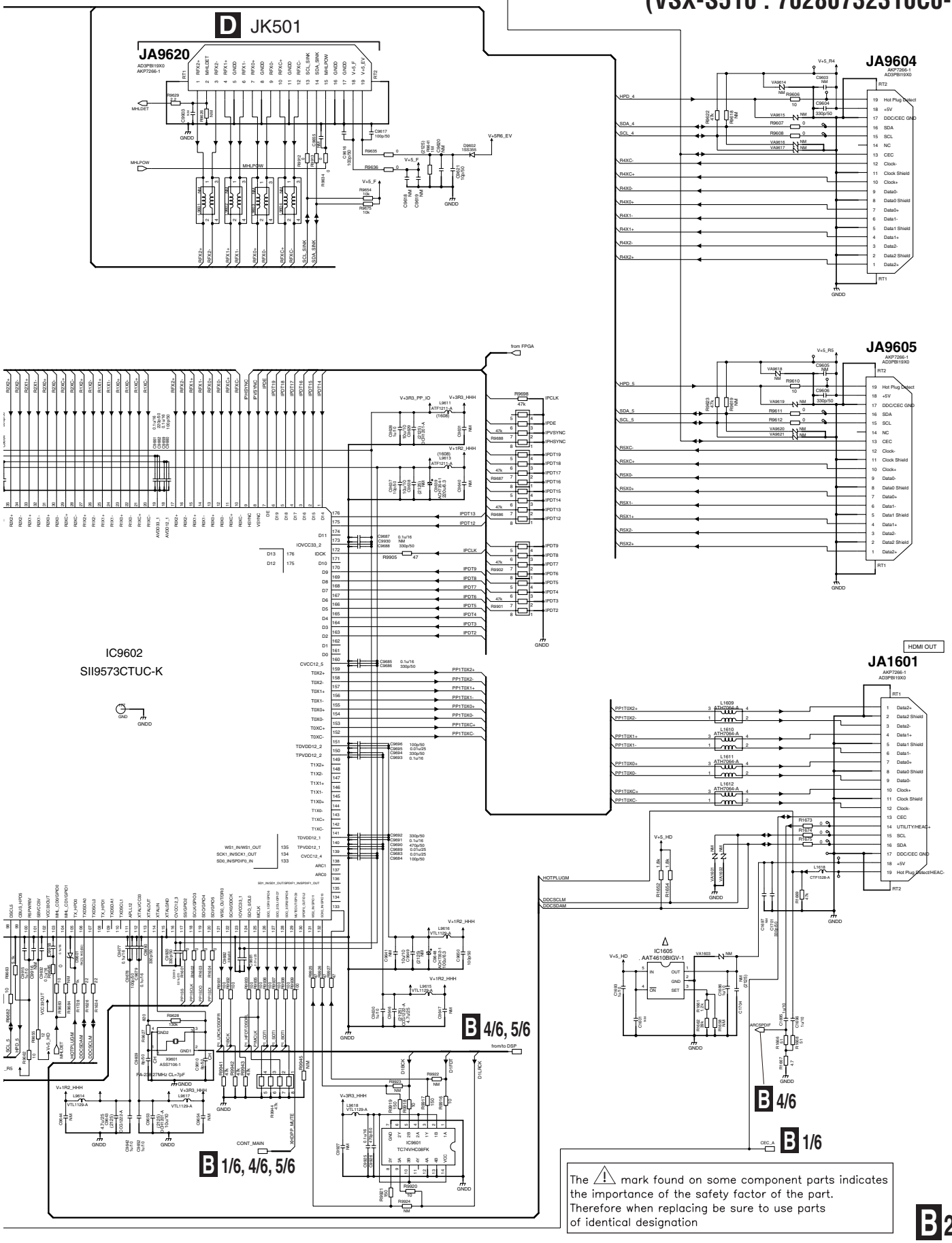
B 1/6 DMAIN ASSY (1/6) (VSX-S510 : 70280732310C0-IL)



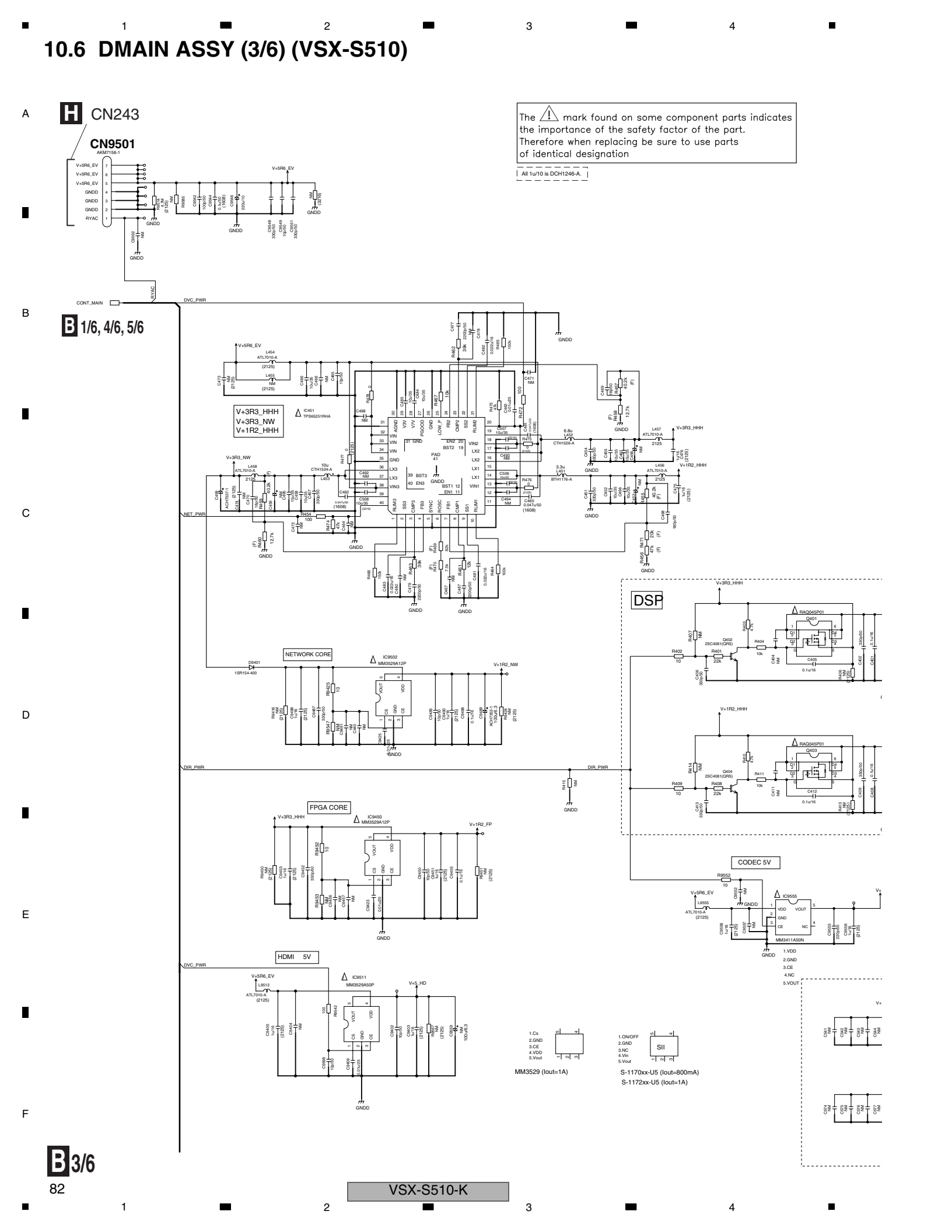
10.5 DMAIN ASSY (2/6) (VSX-S510)



B 2/6 DMAIN ASSY (2/6) (VSX-S510 : 70280732310C0-IL)



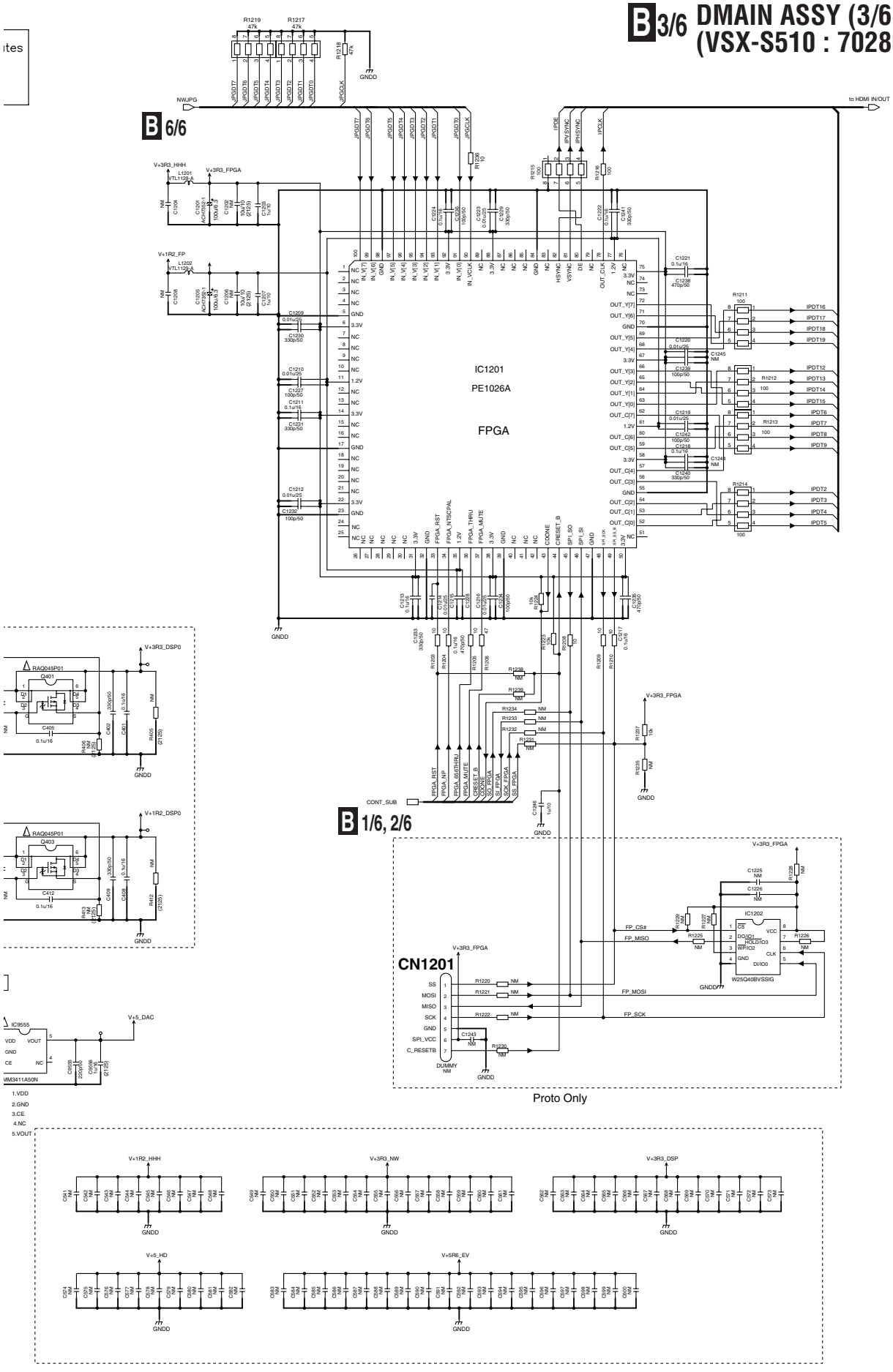
10.6 DMAIN ASSY (3/6) (VSX-S510)



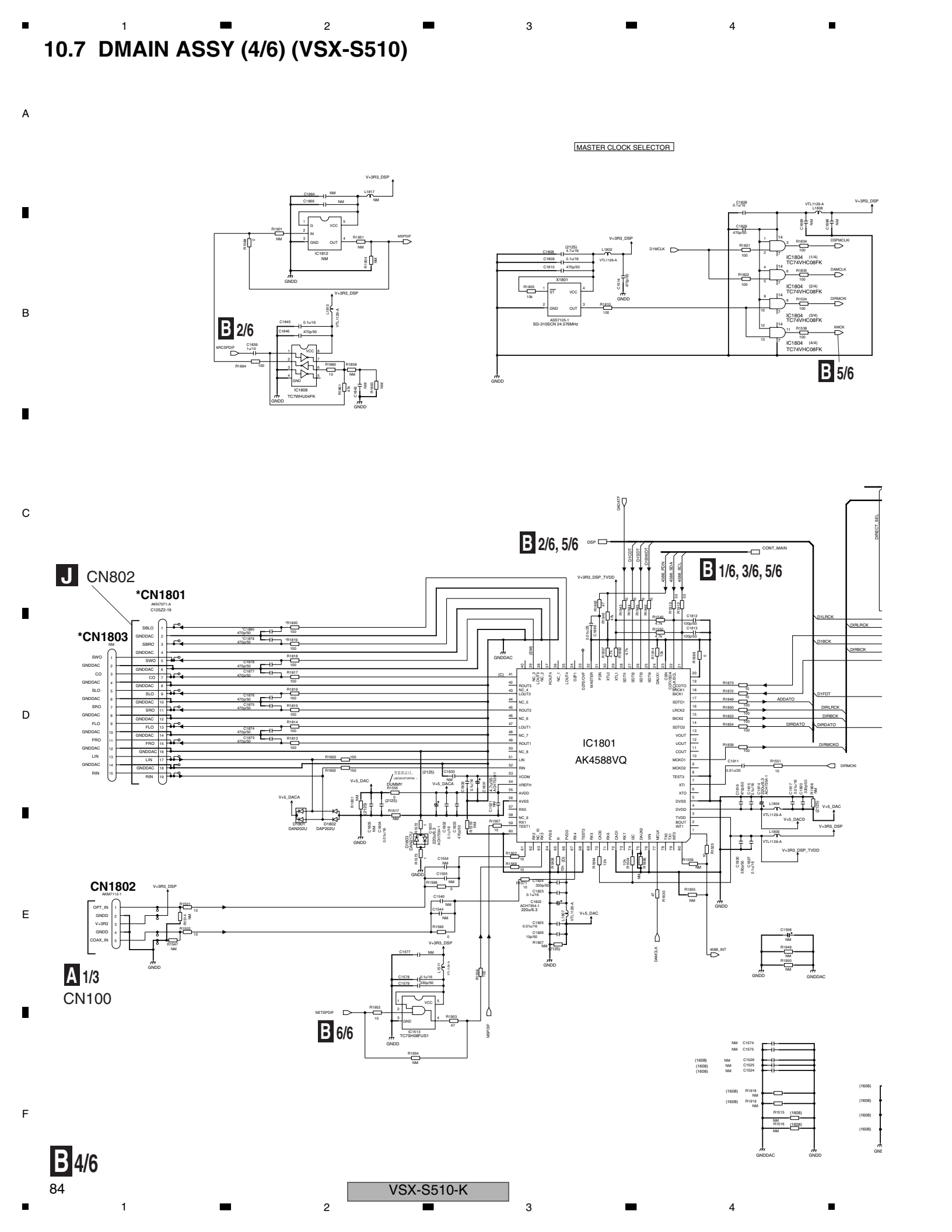
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore when replacing be sure to use parts of identical designation

All 1u/10 is DCH1246-A.

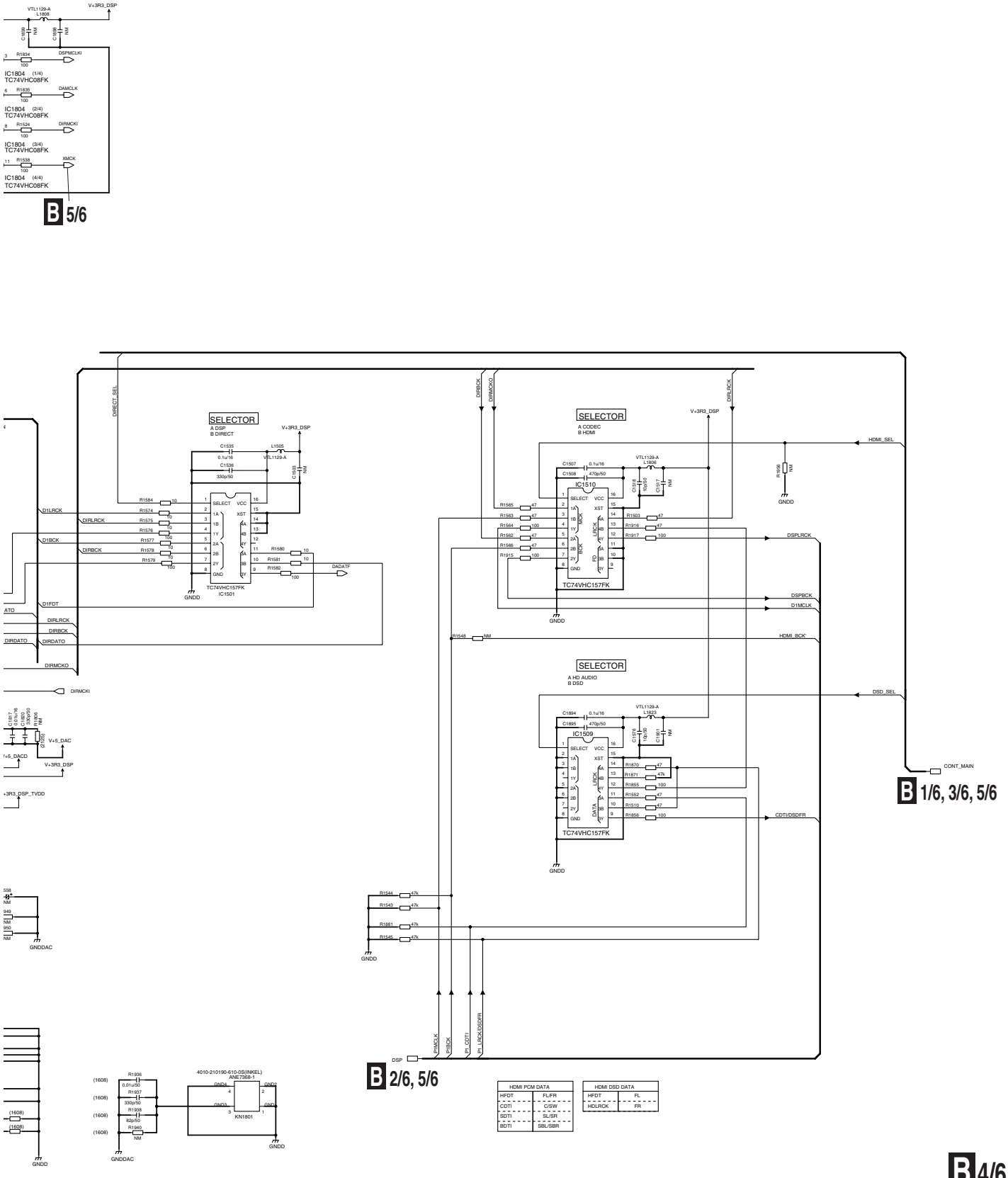
B3/6 DMAIN ASSY (3/6) (VSX-S510 : 70280732310C0-IL)



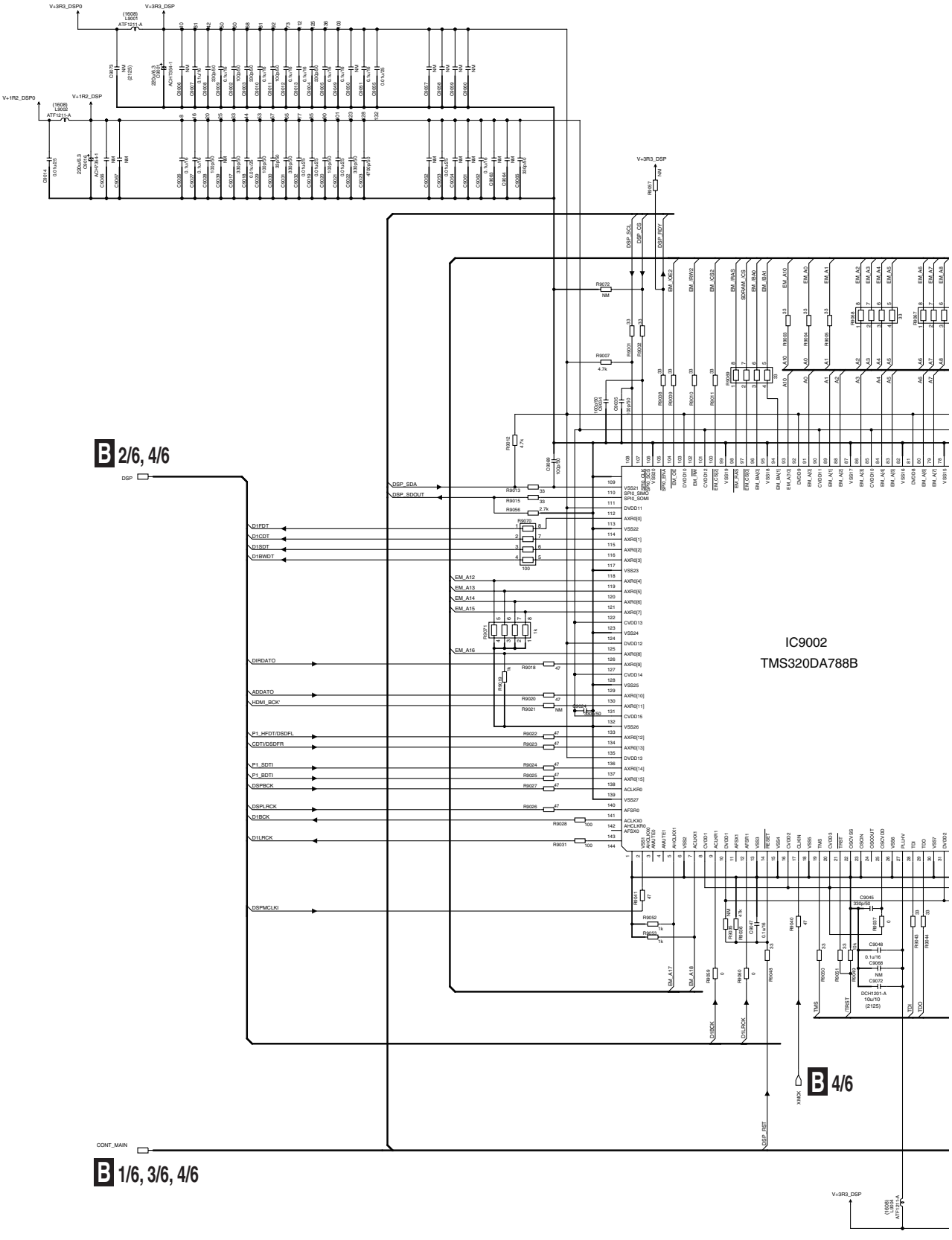
10.7 DMAIN ASSY (4/6) (VSX-S510)



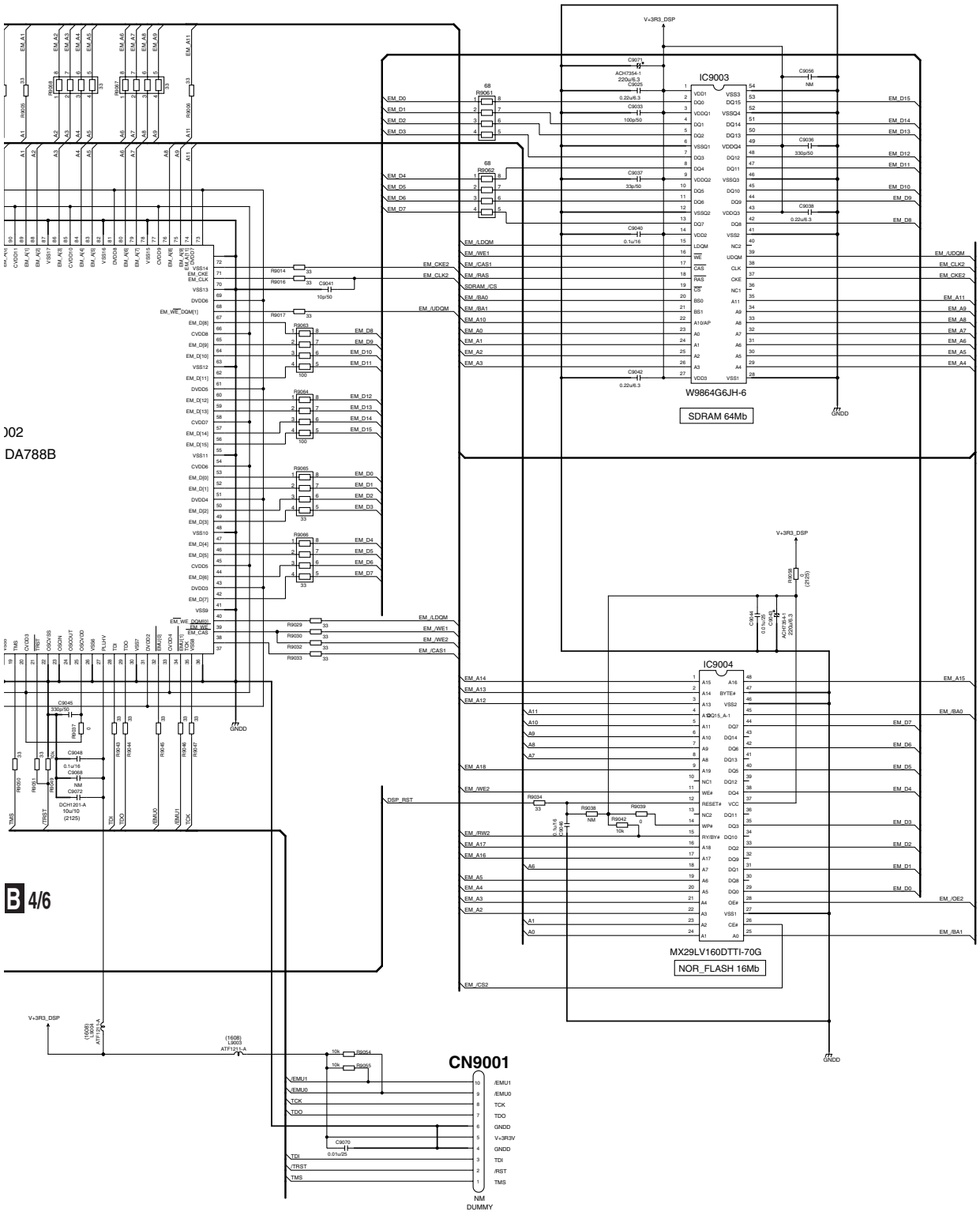
B 4/6 DMAIN ASSY (4/6) (VSX-S510 : 70280732310C0-IL)



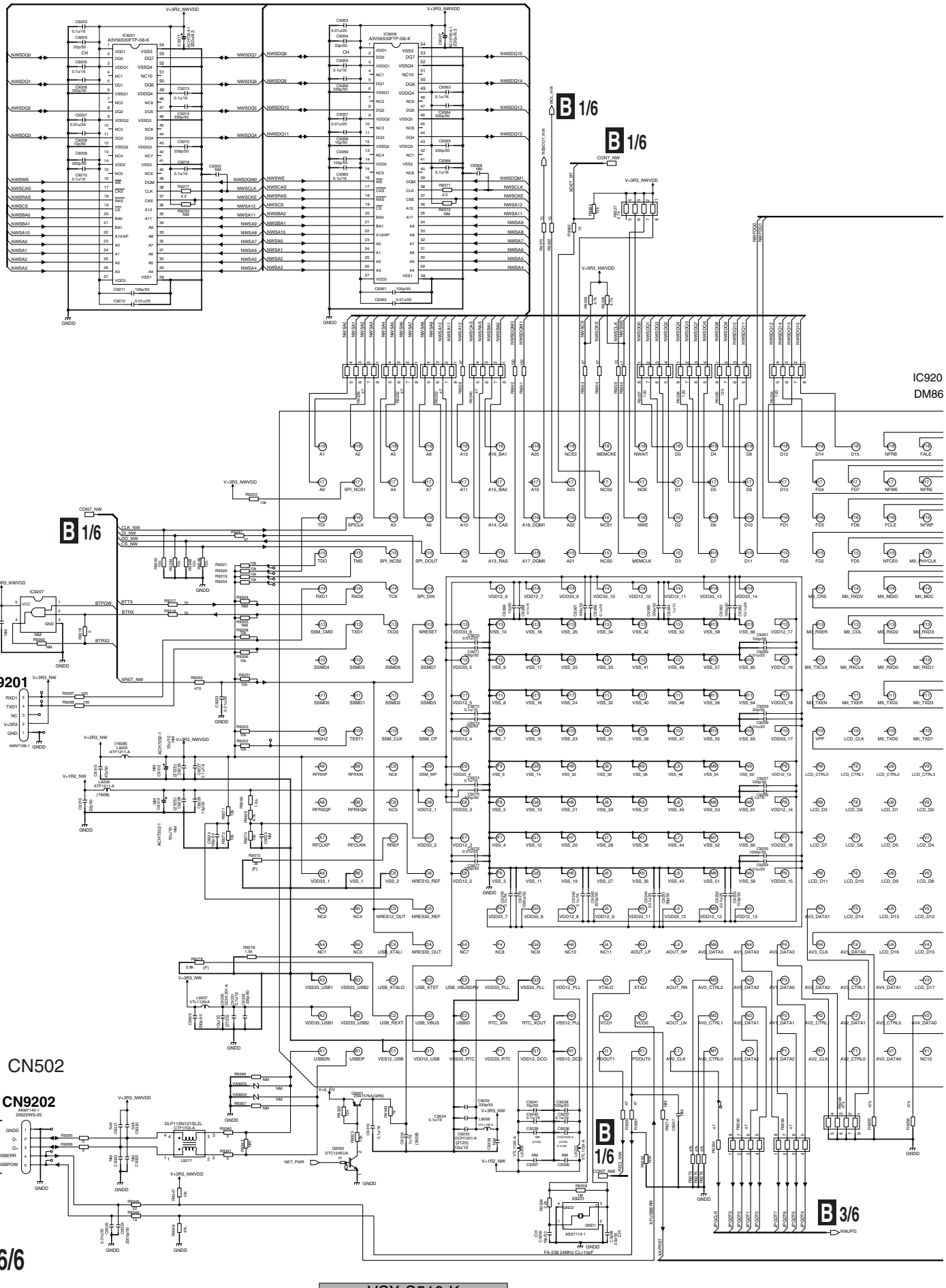
10.8 DMAIN ASSY (5/6) (VSX-S510)



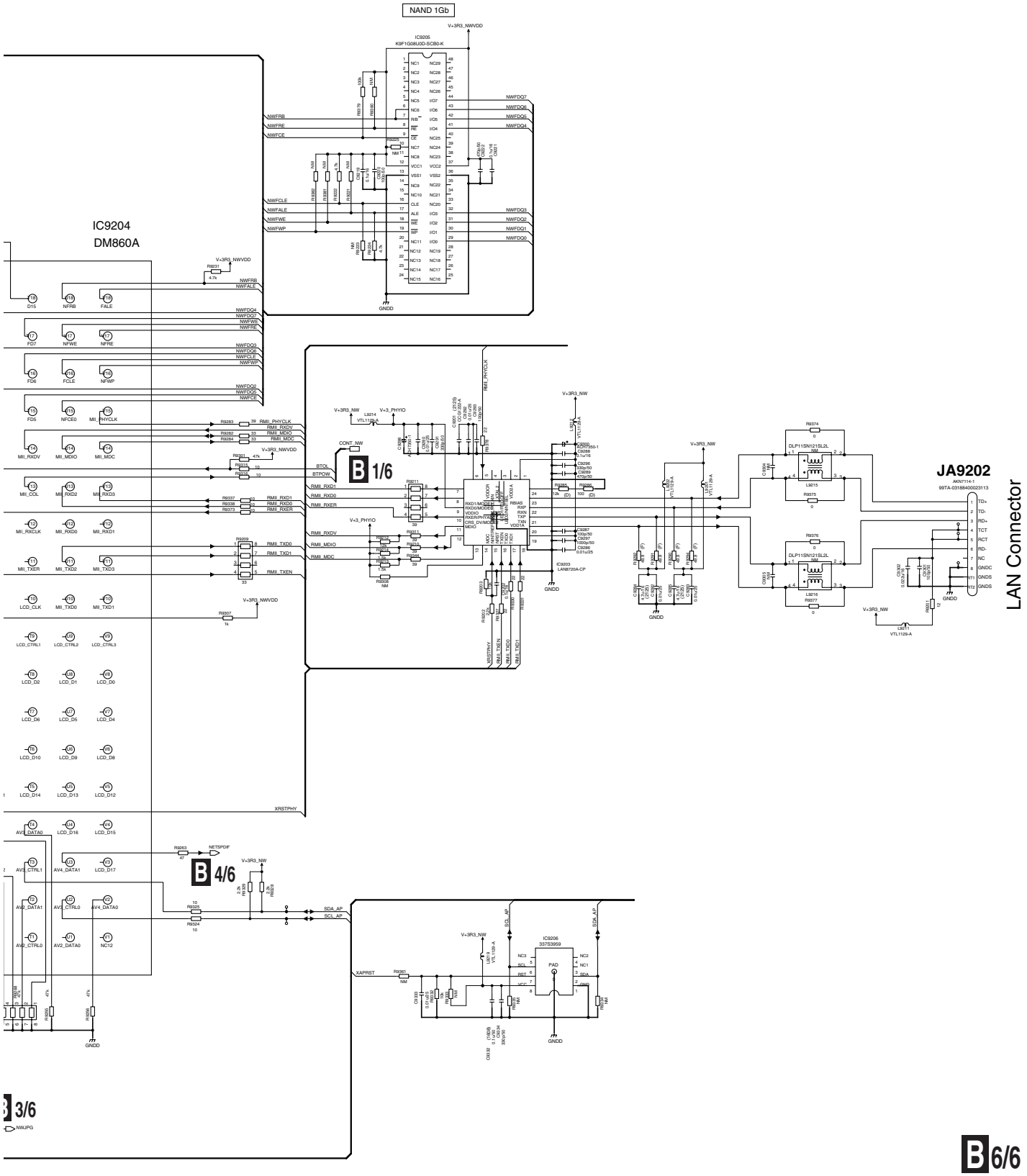
B5/6 DMAIN ASSY (5/6) (VSX-S510 : 70280732310C0-IL)



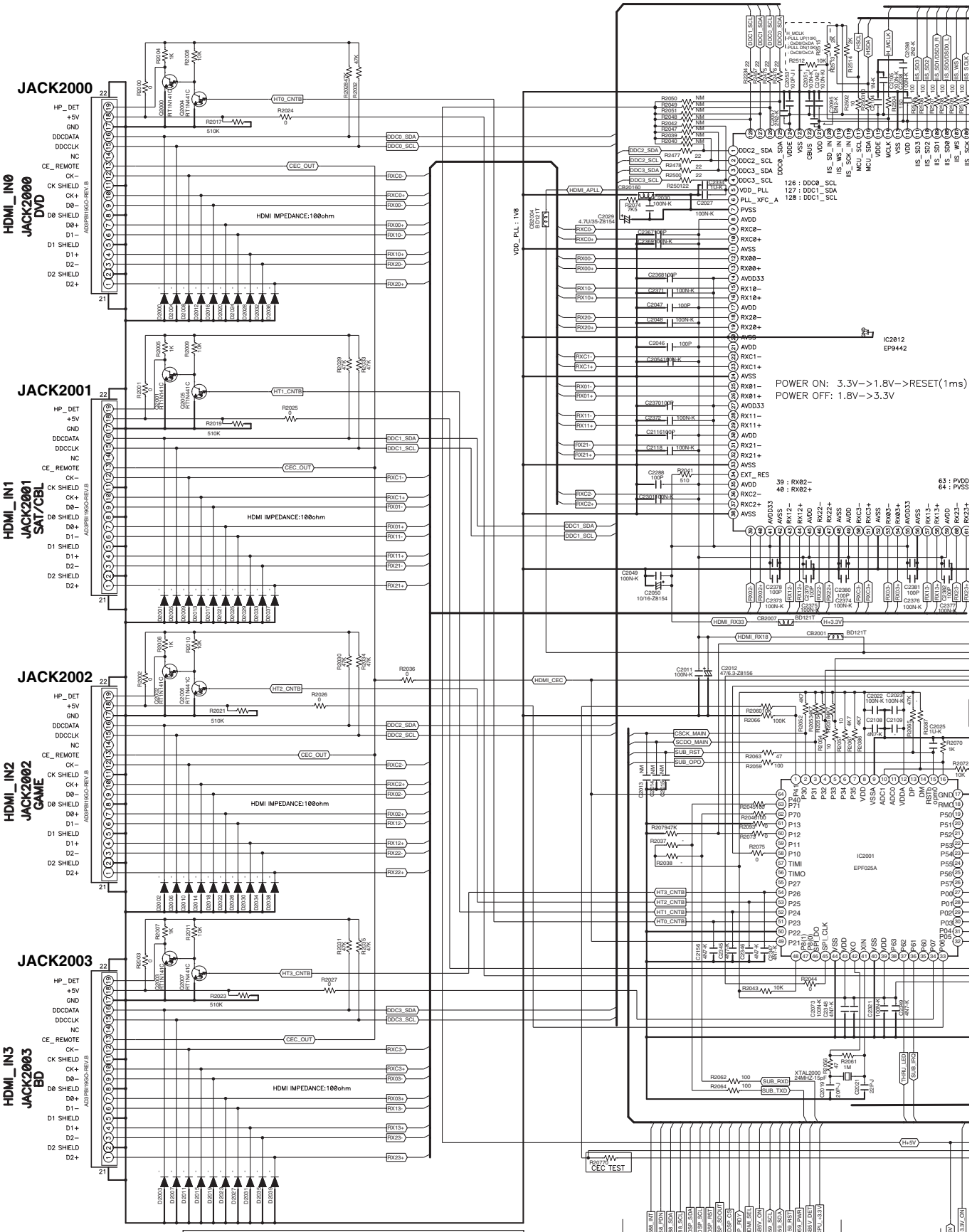
10.9 DMAIN ASSY (6/6) (VSX-S510)



B6/6 DMAIN ASSY (6/6)
(VSX-S510 : 70280732310C0-IL)

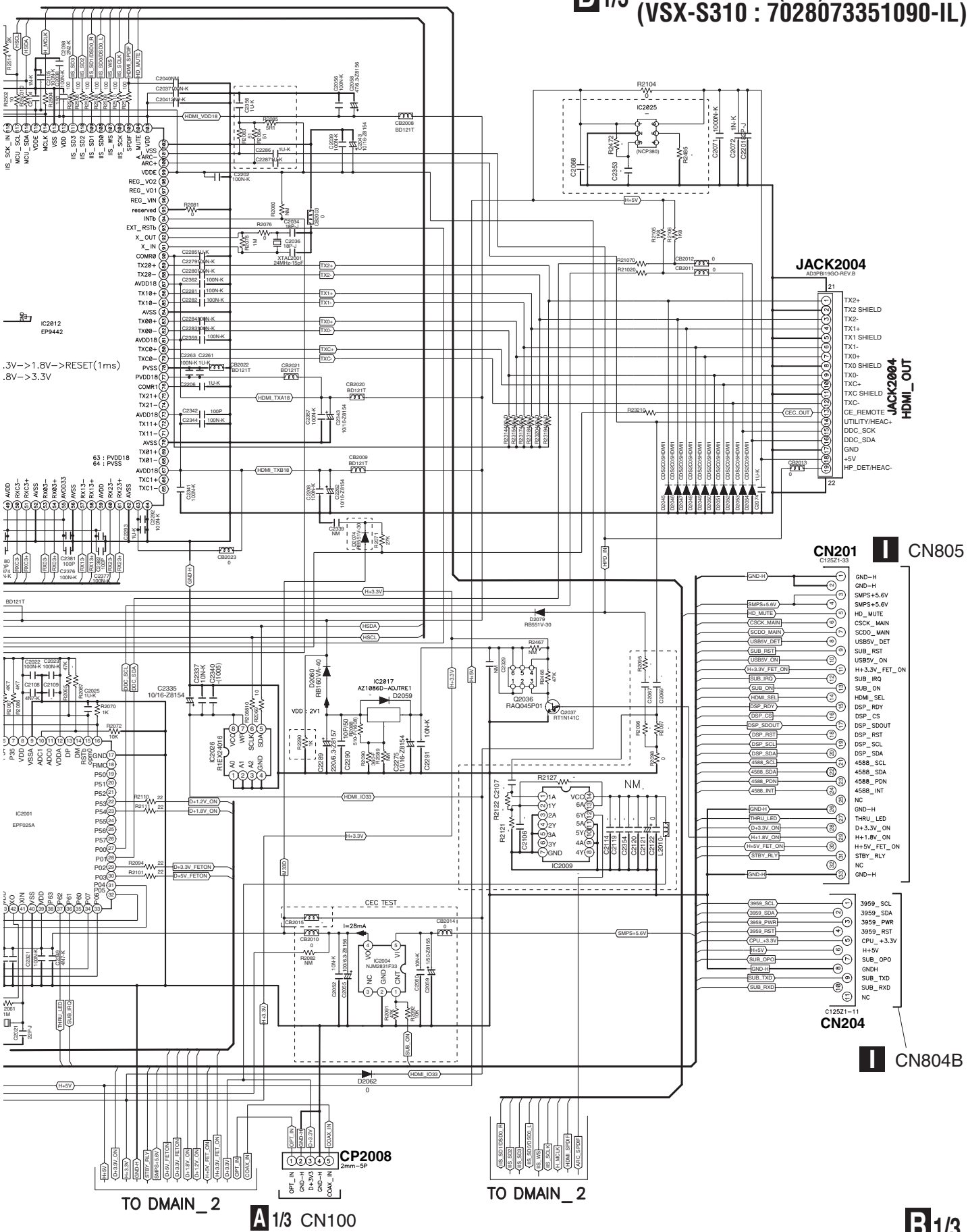


10.10 DMAIN ASSY (1/3) (VSX-S310)

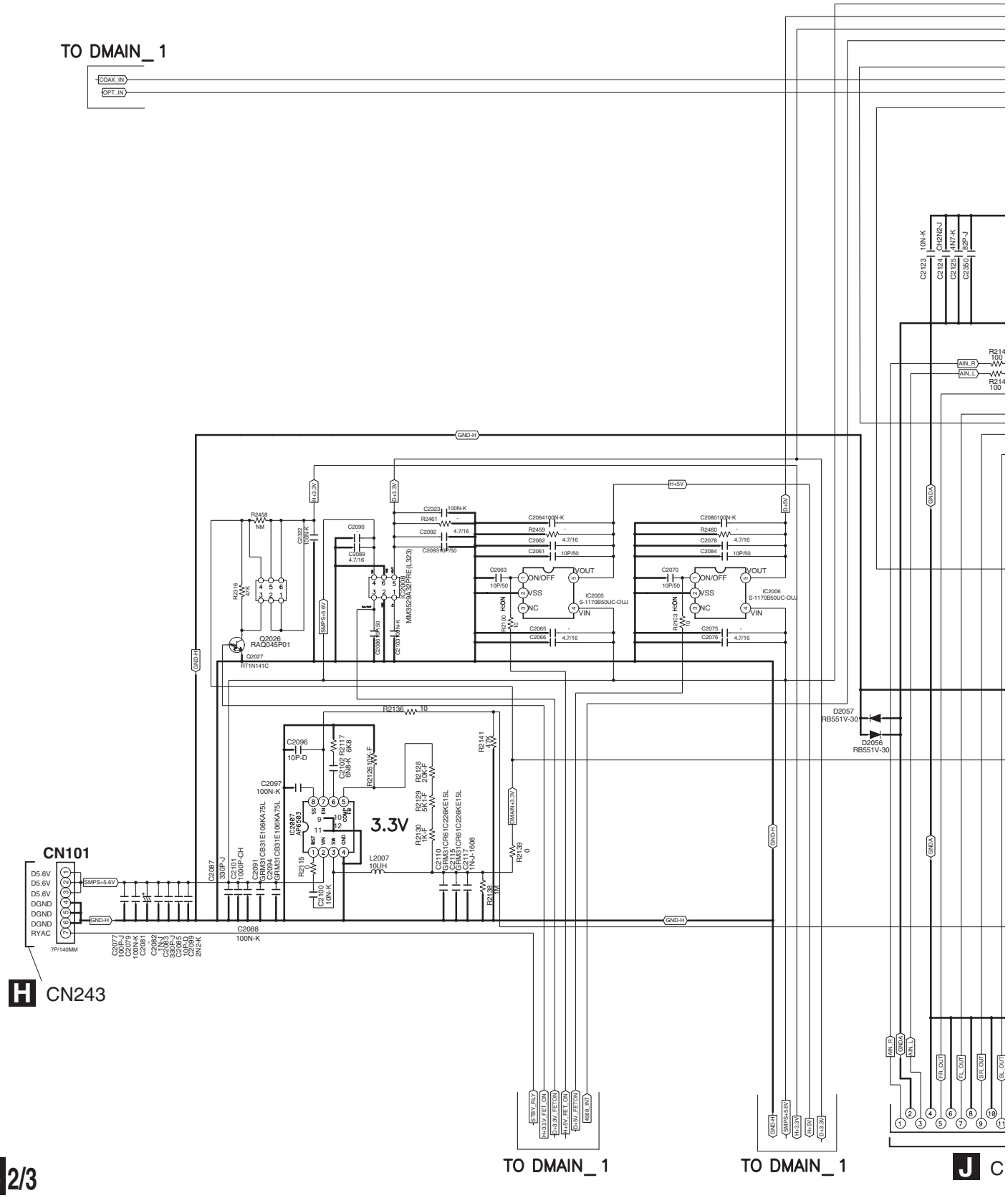


The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore when replacing be sure to use parts of identical designation

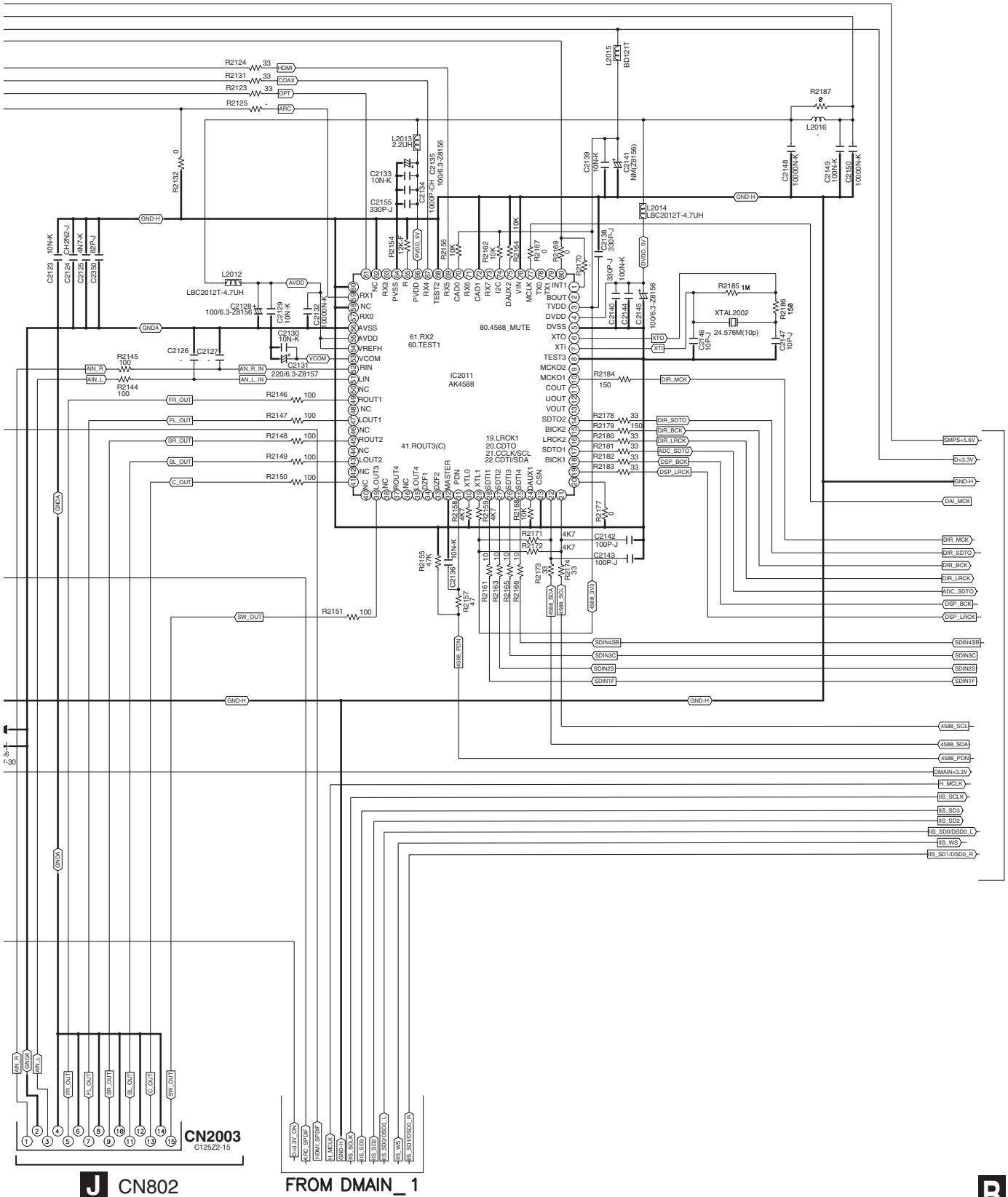
B 1/3 DMAIN ASSY (1/3) (VSX-S310 : 7028073351090-IL)



10.11 DMAIN ASSY (2/3) (VSX-S310)

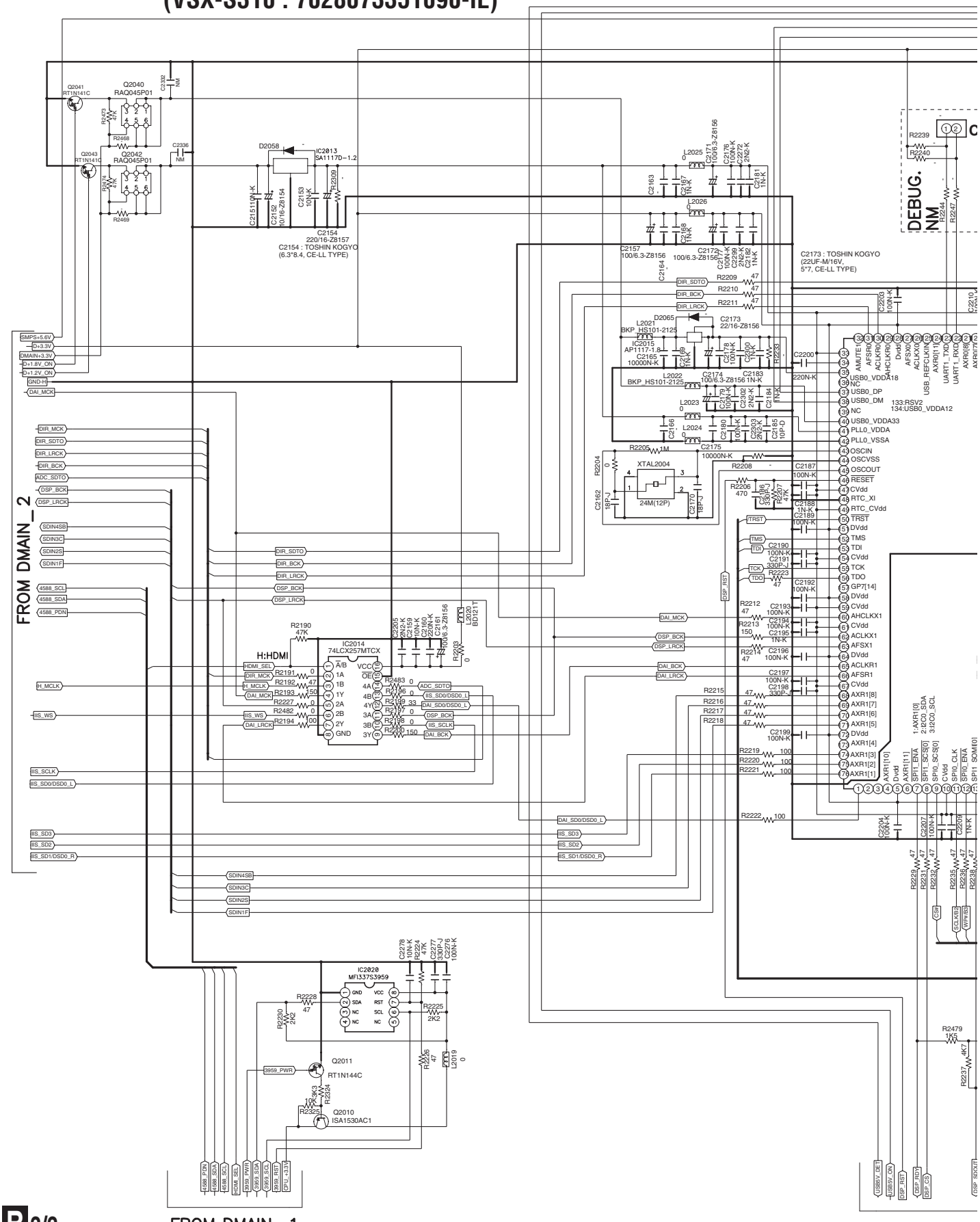


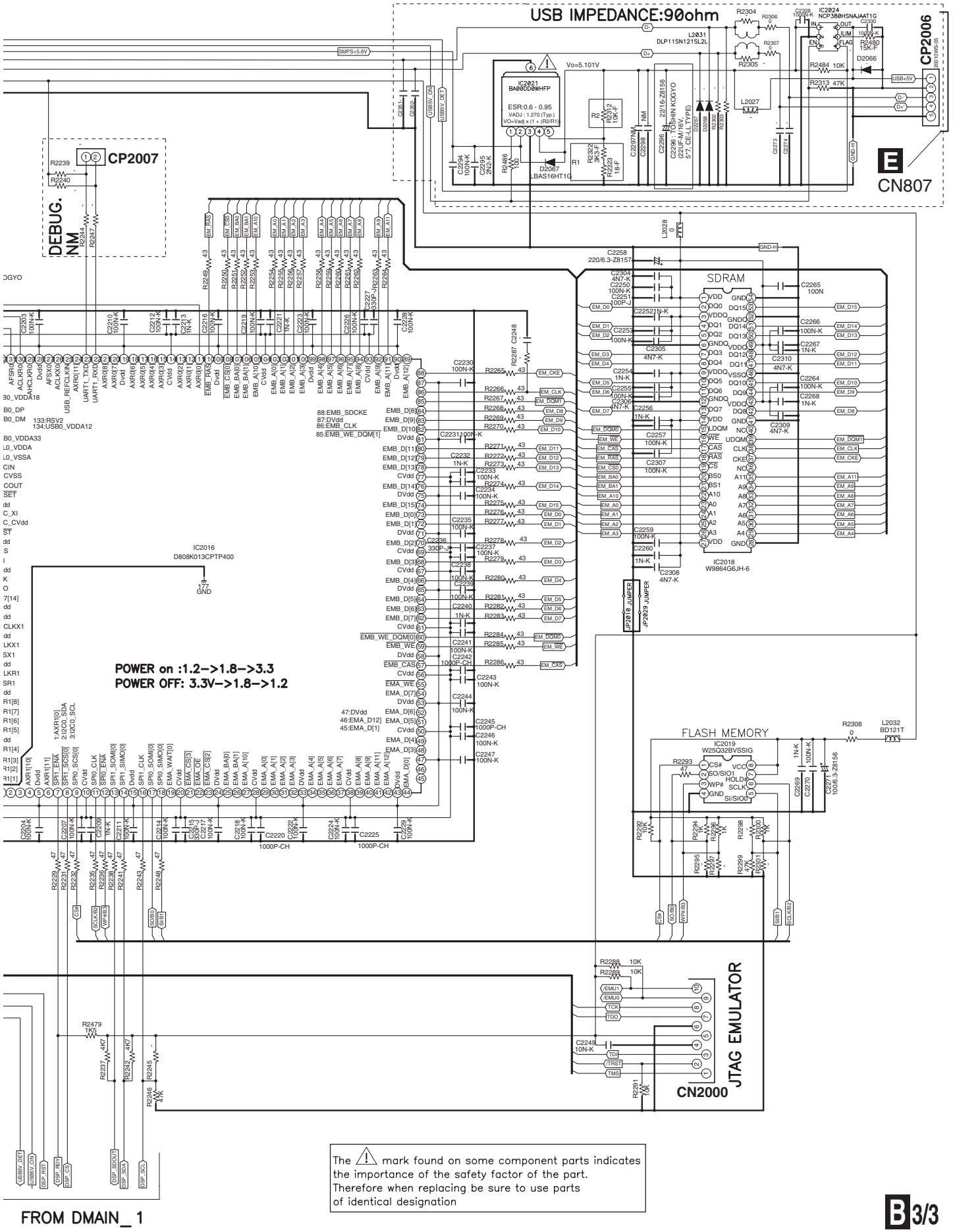
B2/3 DMAIN ASSY (2/3) (VSX-S310 : 7028073351090-IL)



10.12 DMAIN ASSY (3/3) (VSX-S310)

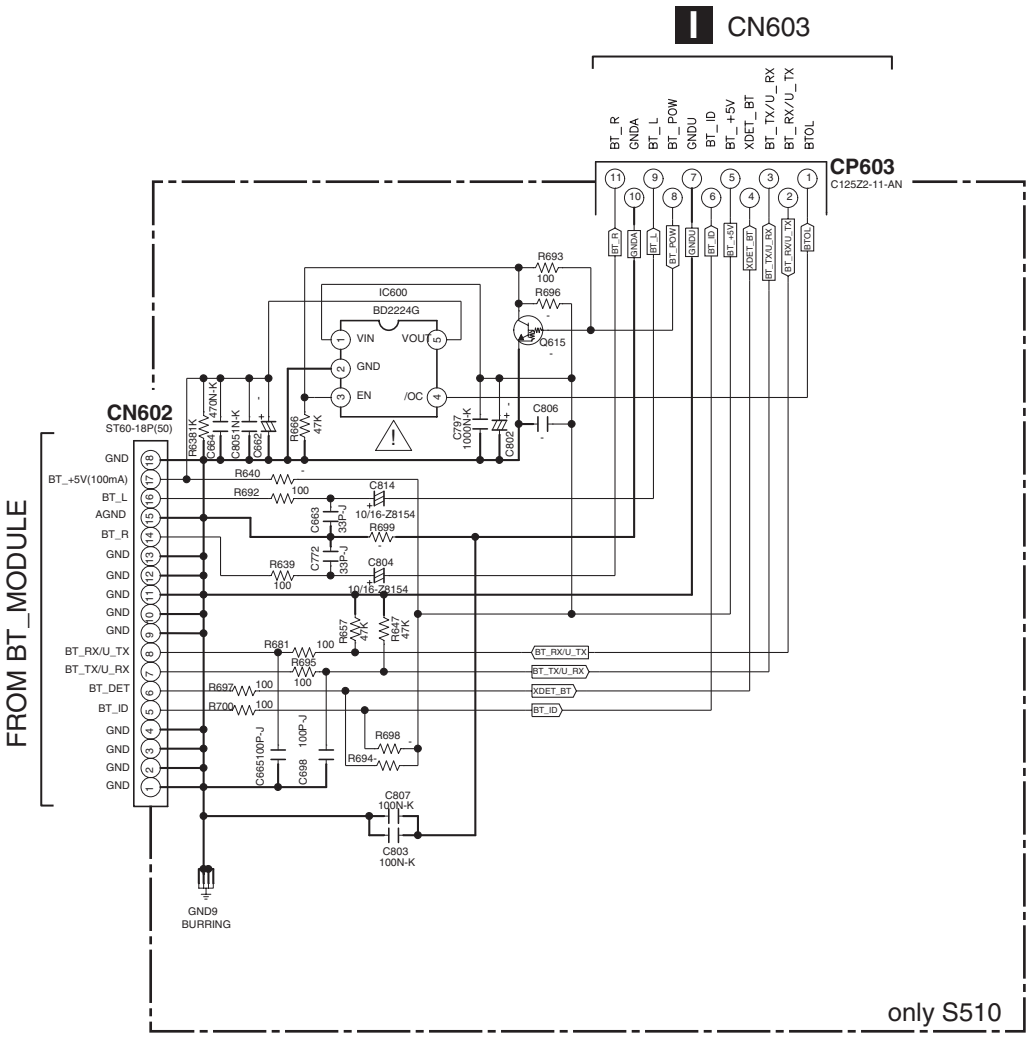
B3/3 DMAIN ASSY (3/3) (VSX-S310 : 7028073351090-IL)




USB IMPEDANCE:90ohm
CN807
CP2006
CP2007
DEBUG.
NM
SDRAM
IC2018
W9864G6JH-6
IC2016
D808K013CPTP400
IC2021
BA00DD0WHFP
IC2024
NCP380HSNAJAAT1G
L2031
DLP11SN121SL2L
FLASH MEMORY
IC2019
W25Q32BVSSIG
JTAG EMULATOR
CN2000
POWER on :1.2->1.8->3.3
POWER OFF: 3.3V->1.8->1.2
FROM DMAIN_ 1
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
B3/3
VSX-S510-K
95

10.13 BT ASSY

C BT ASSY (VSX-S510 : 7028074112010-IL)



A

B

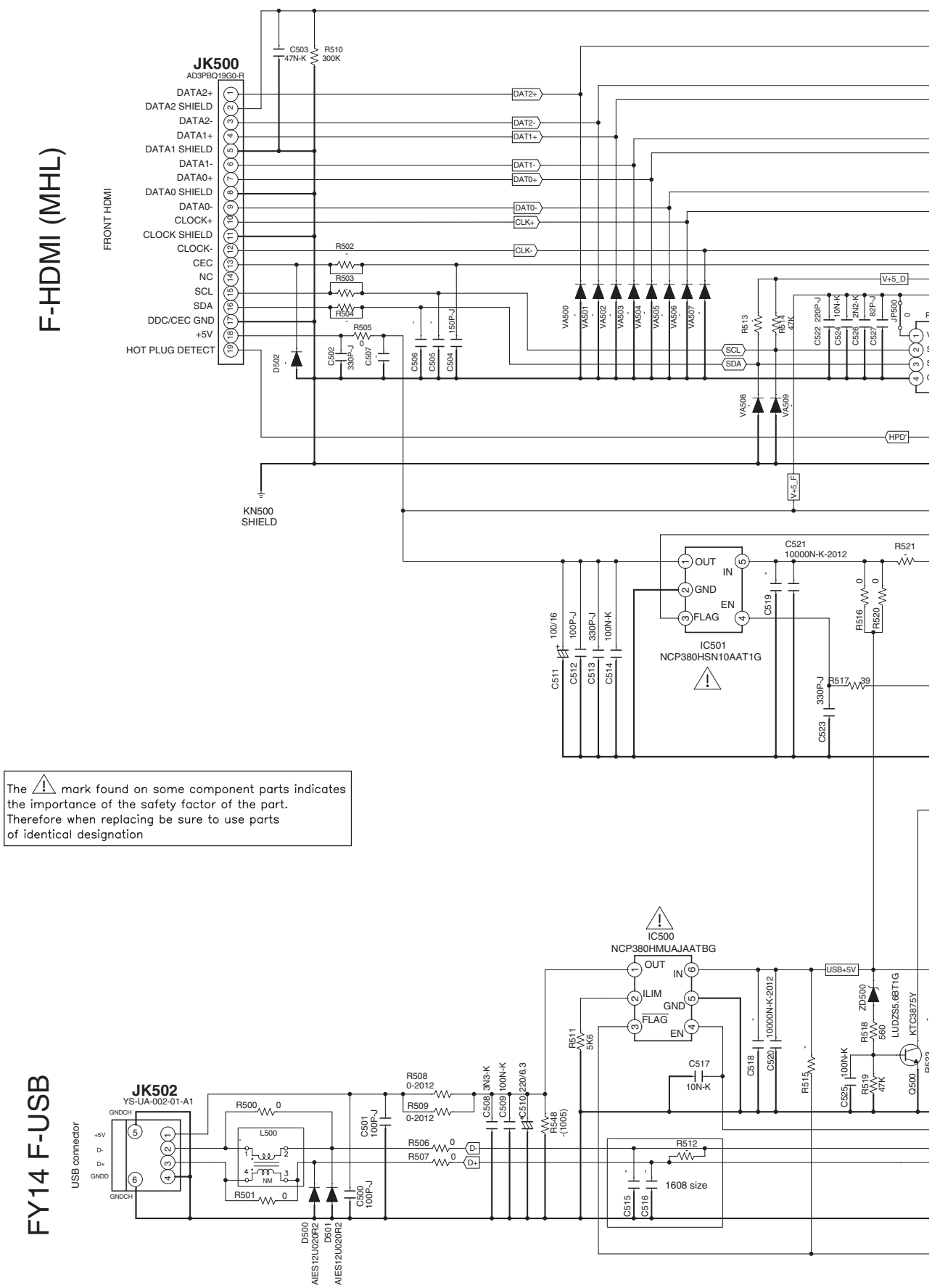
C

D

E

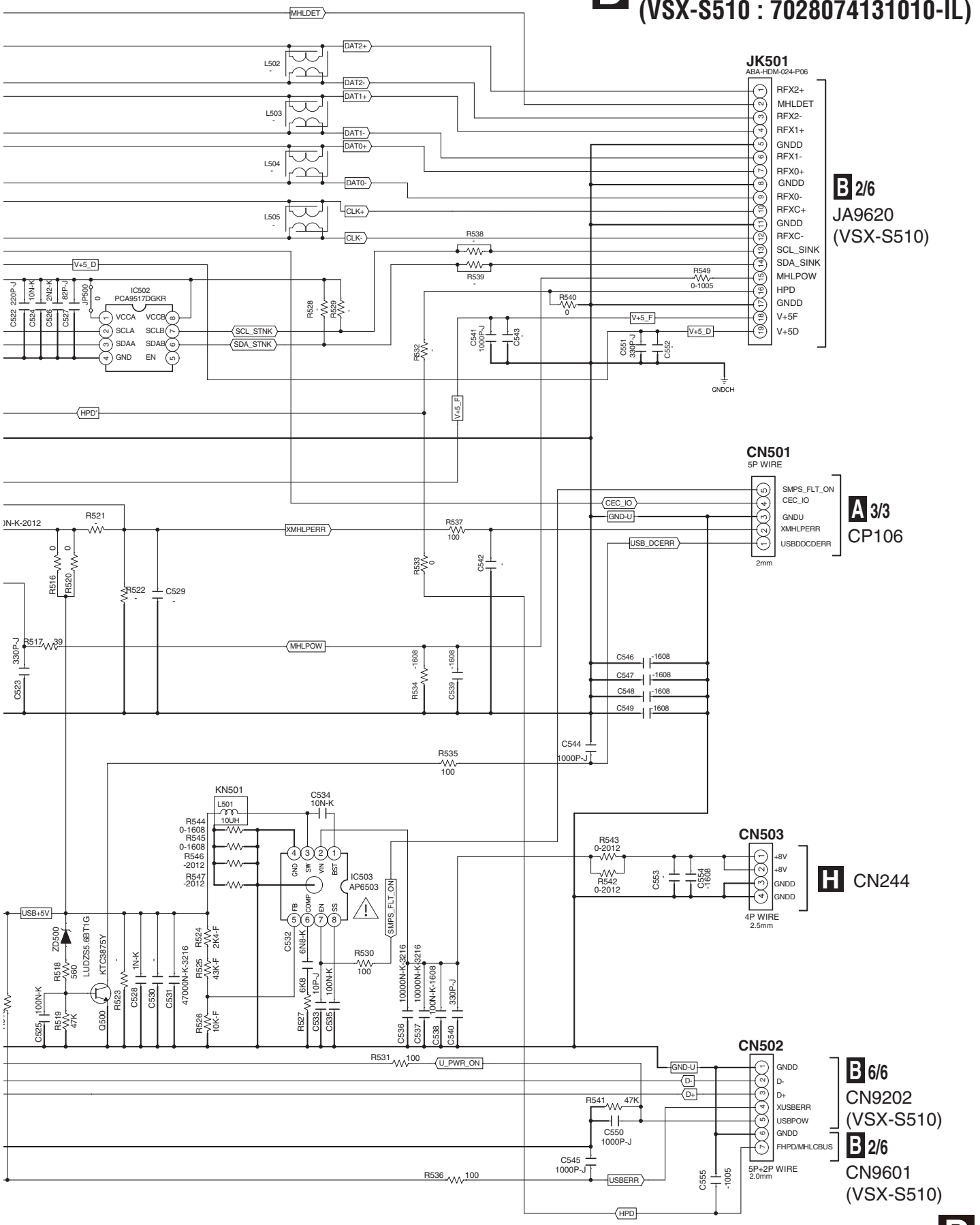
F

10.14 FHDMI ASSY

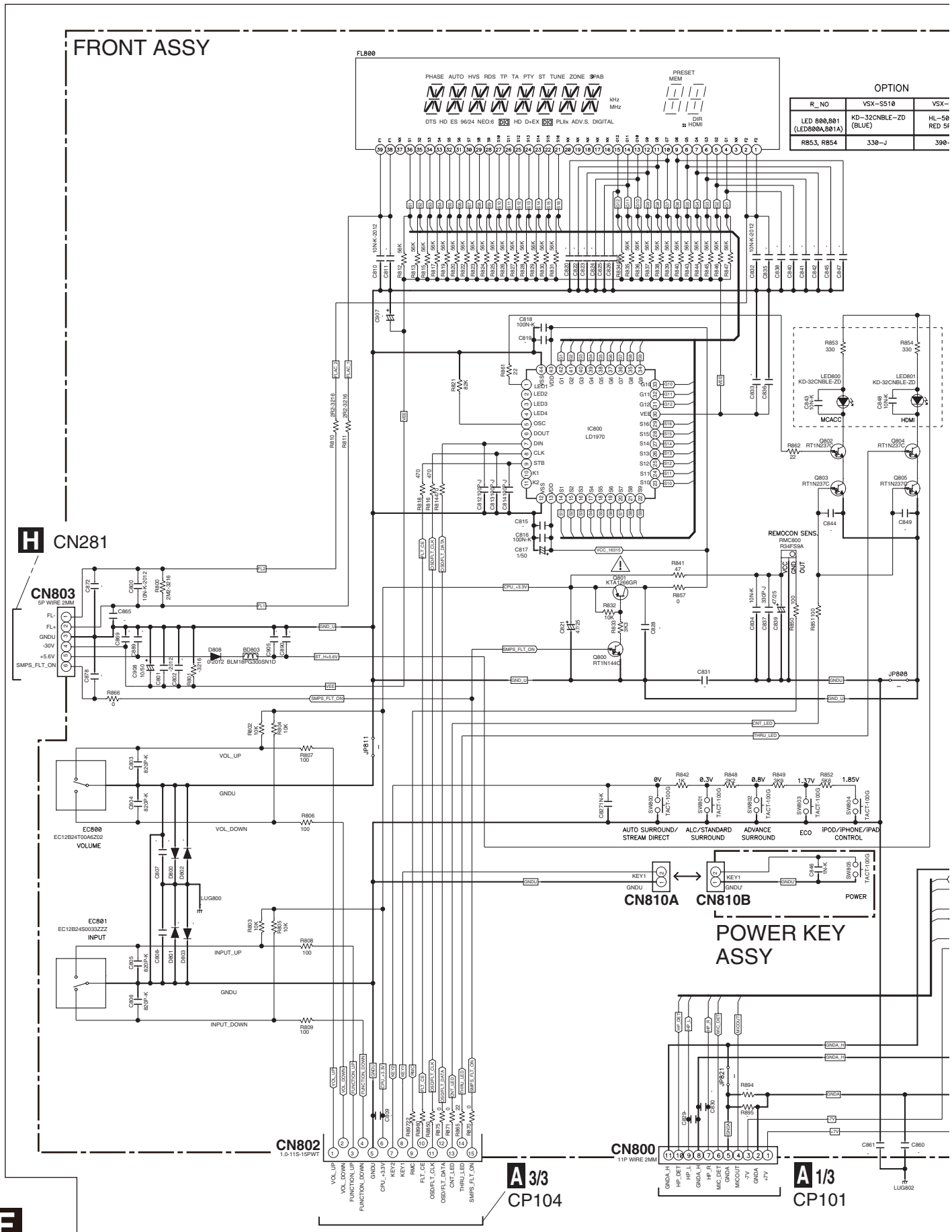


The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore when replacing be sure to use parts of identical designation

D FHDMI ASSY (VSX-S510 : 7028074131010-IL)



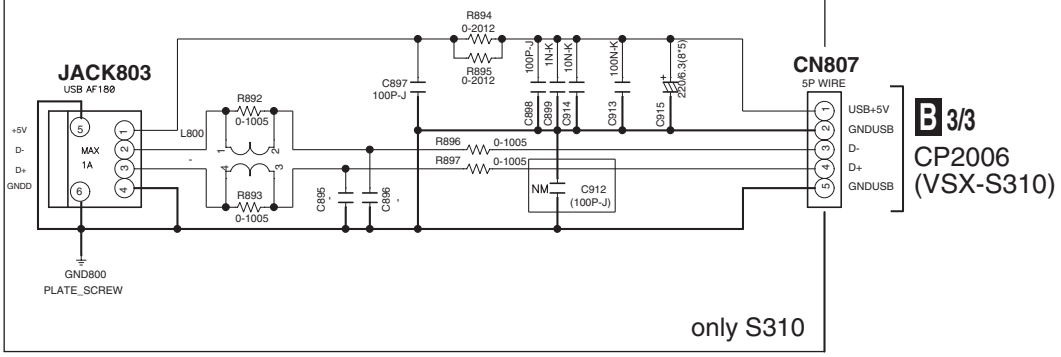
10.15 USB ASSY and FRONT ASSY



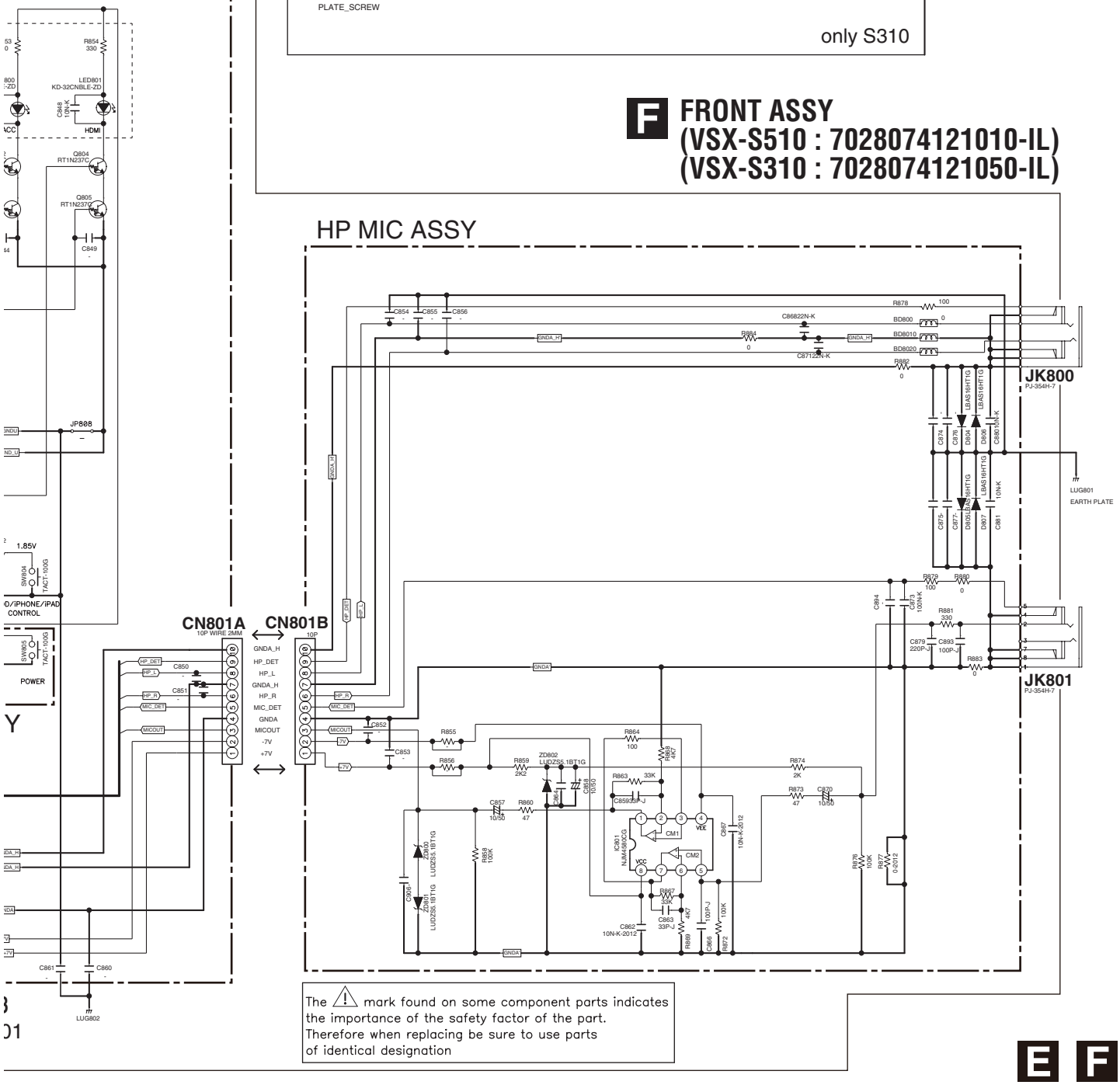
OPTION

	VSX-S510	VSX-S310
J01 (J01A)	KD-32CNBLE-ZD (BLUE)	HL-50CDU RED 5PI
J54	330-J	390-J

E USB ASSY (VSX-S310 : 7028074116050-IL)

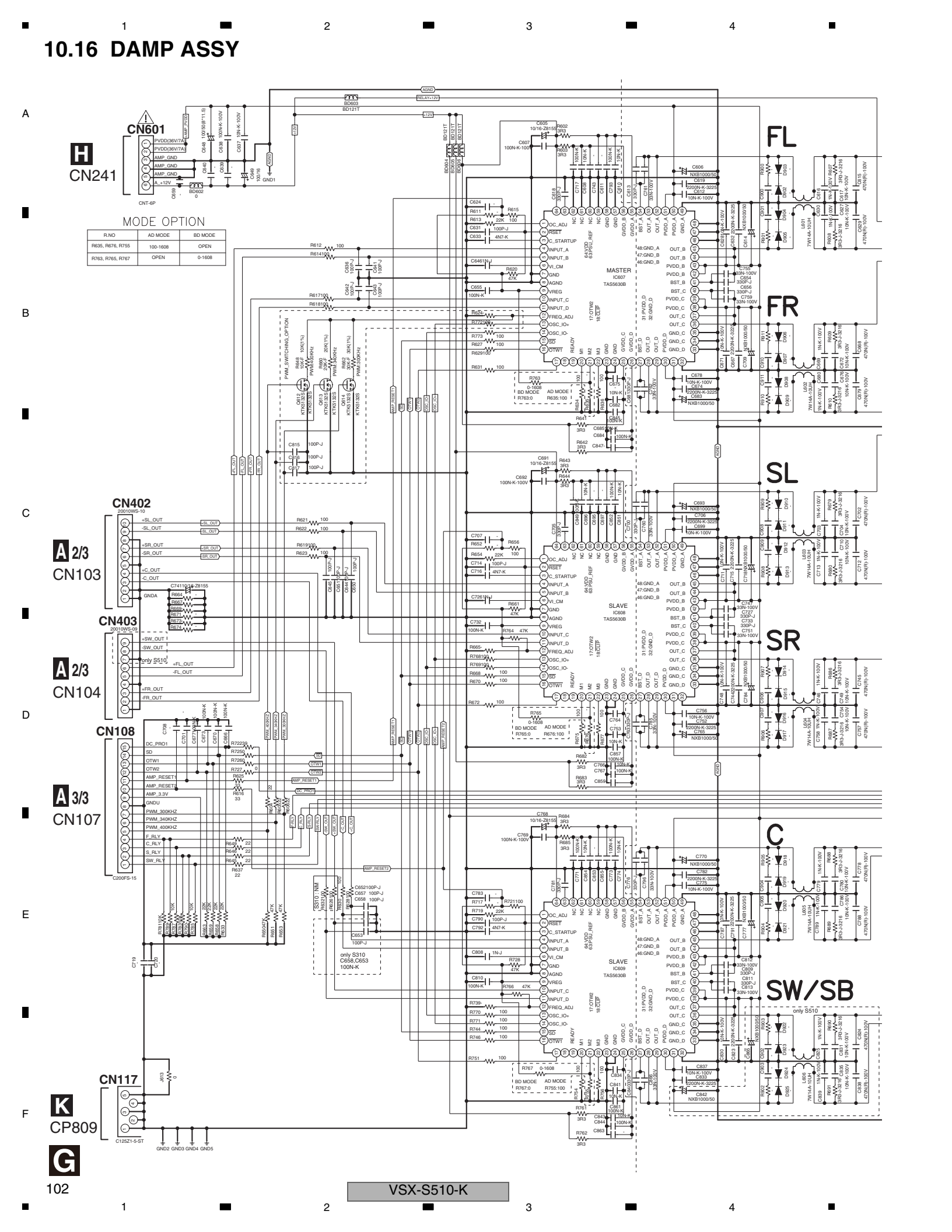


F FRONT ASSY (VSX-S510 : 7028074121010-IL) (VSX-S310 : 7028074121050-IL)

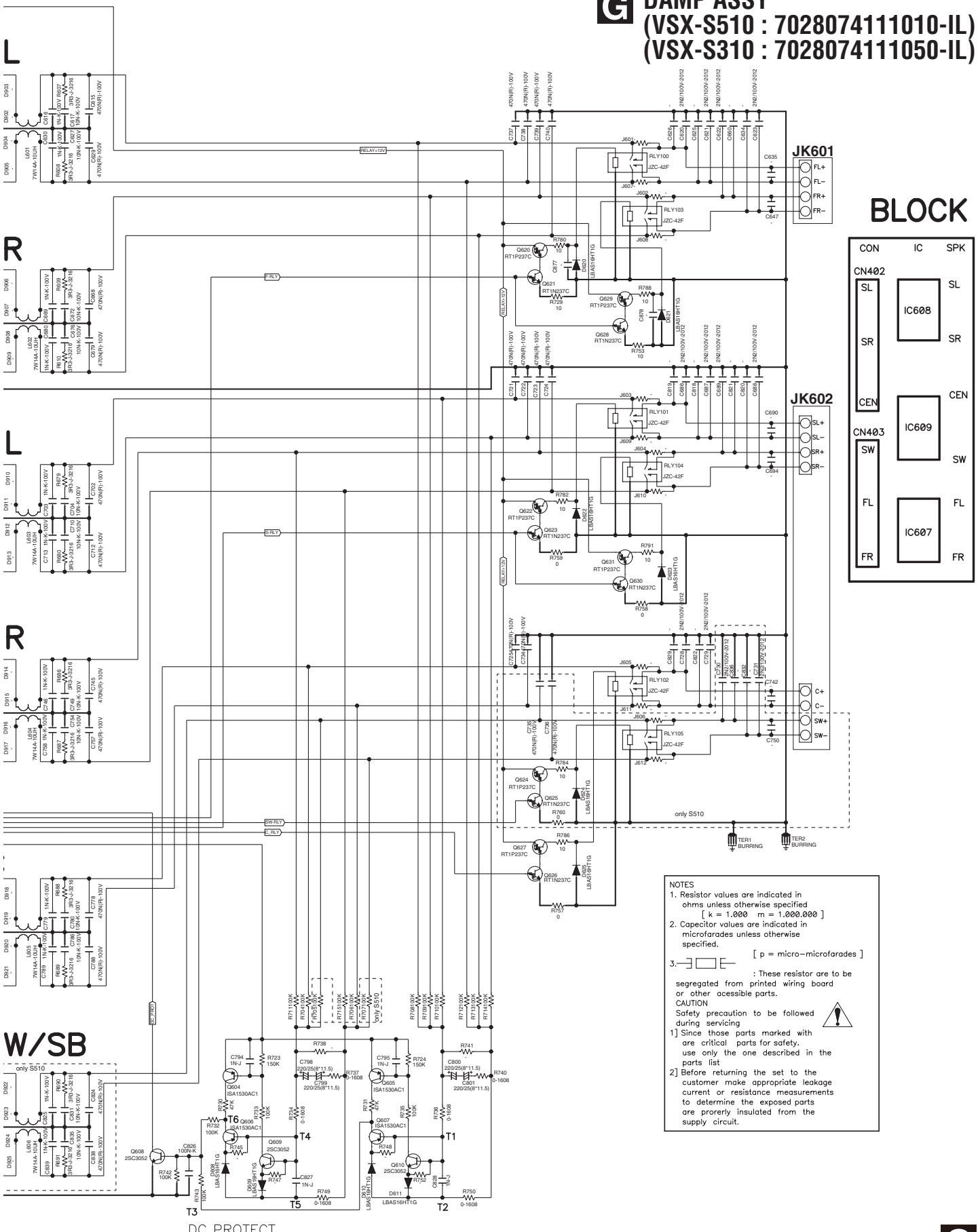


The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore when replacing be sure to use parts of identical designation

10.16 DAMP ASSY



G DAMP ASSY
(VSX-S510 : 7028074111010-IL)
(VSX-S310 : 7028074111050-IL)

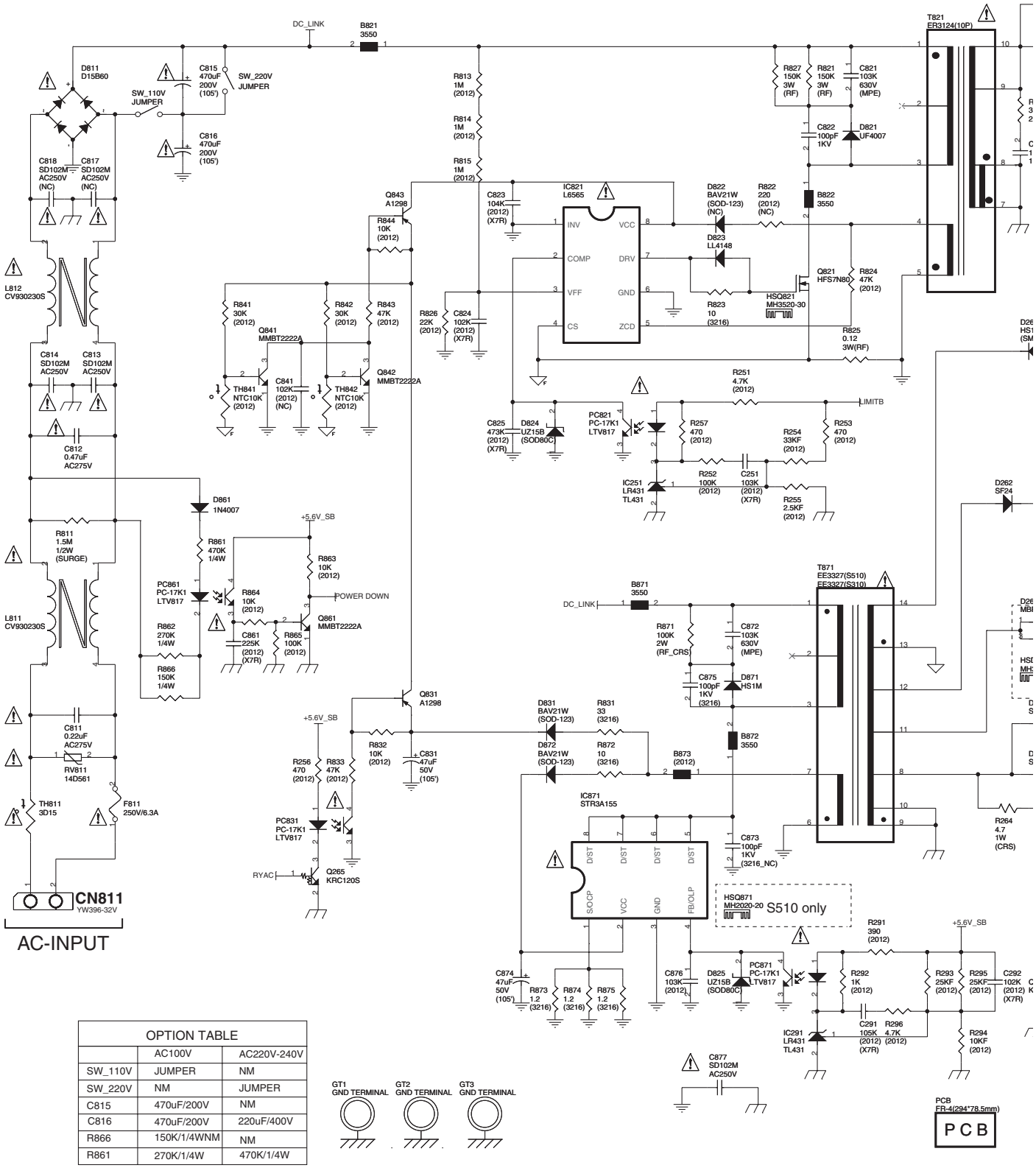


BLOCK

CON	IC	SPK
CN402		
SL	IC608	SL
SR		SR
CEN	IC609	CEN
CN403		
SW		SW
FL	IC607	FL
FR		FR

NOTES
1. Resistor values are indicated in ohms unless otherwise specified
[k = 1.000 m = 1.000.000]
2. Capacitor values are indicated in microfarades unless otherwise specified.
[p = micro–microfarades]
3. : These resistor are to be segregated from printed wiring board or other acessible 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 prorerly insulated from the supply circuit.

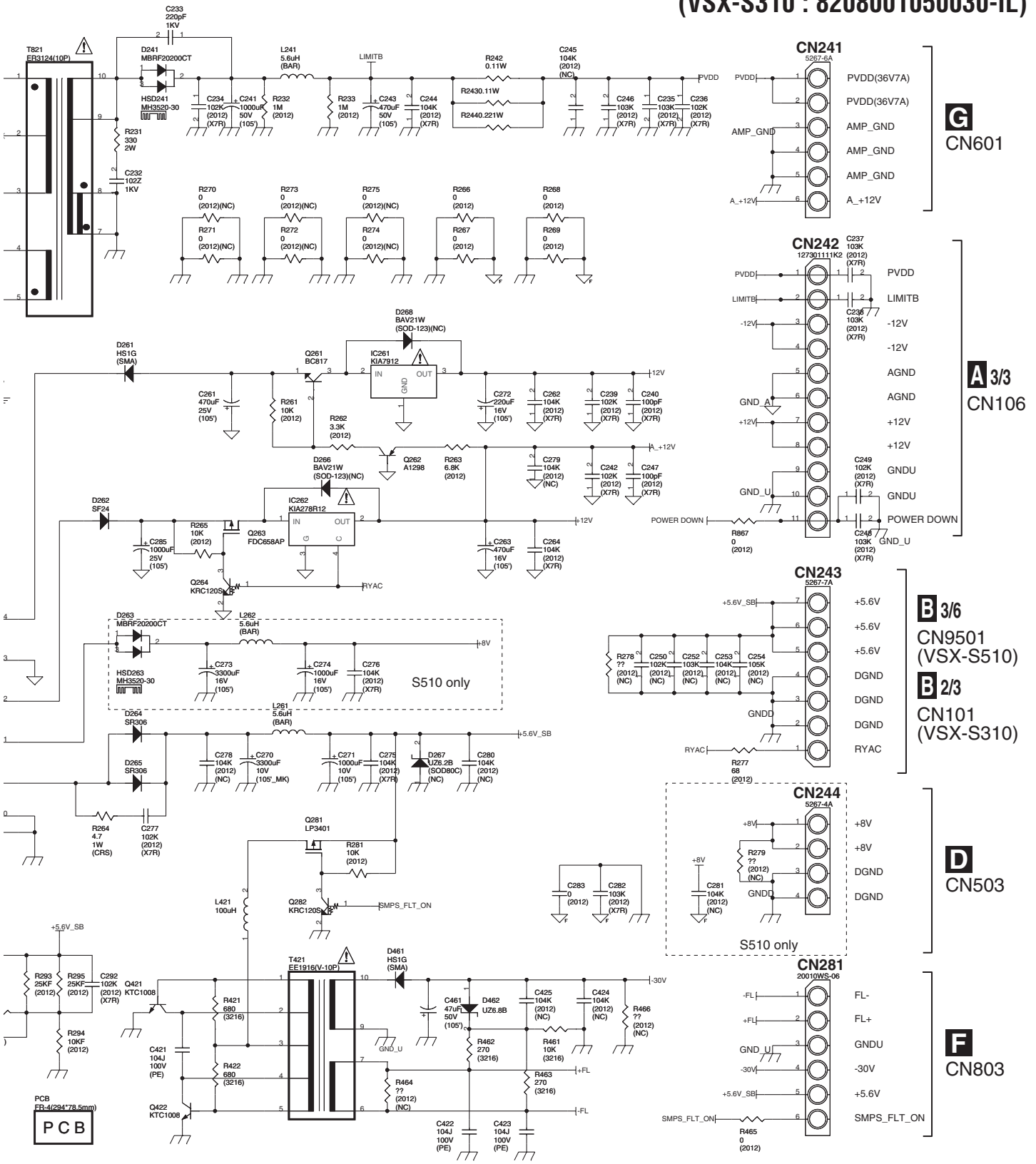
10.17 POWER TRANS ASSY



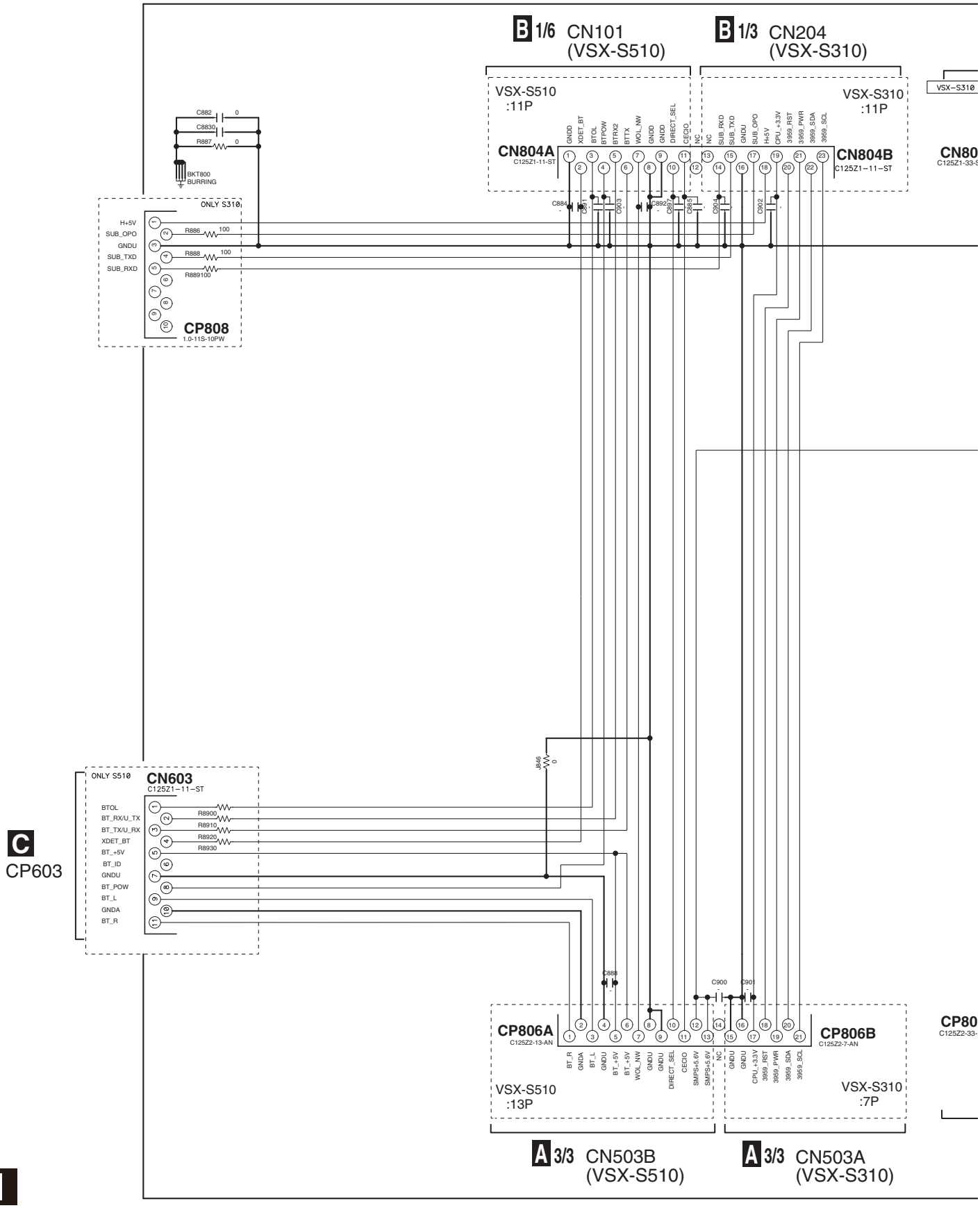
OPTION TABLE		
	AC100V	AC220V-240V
SW_110V	JUMPER	NM
SW_220V	NM	JUMPER
C815	470uF/200V	NM
C816	470uF/200V	220uF/400V
R866	150K/1/4WNM	NM
R861	270K/1/4W	470K/1/4W

⚠ : To reduce the risk of electric shock, leakage current or resistance measurement shall be carried out before the appliance returned to the customer

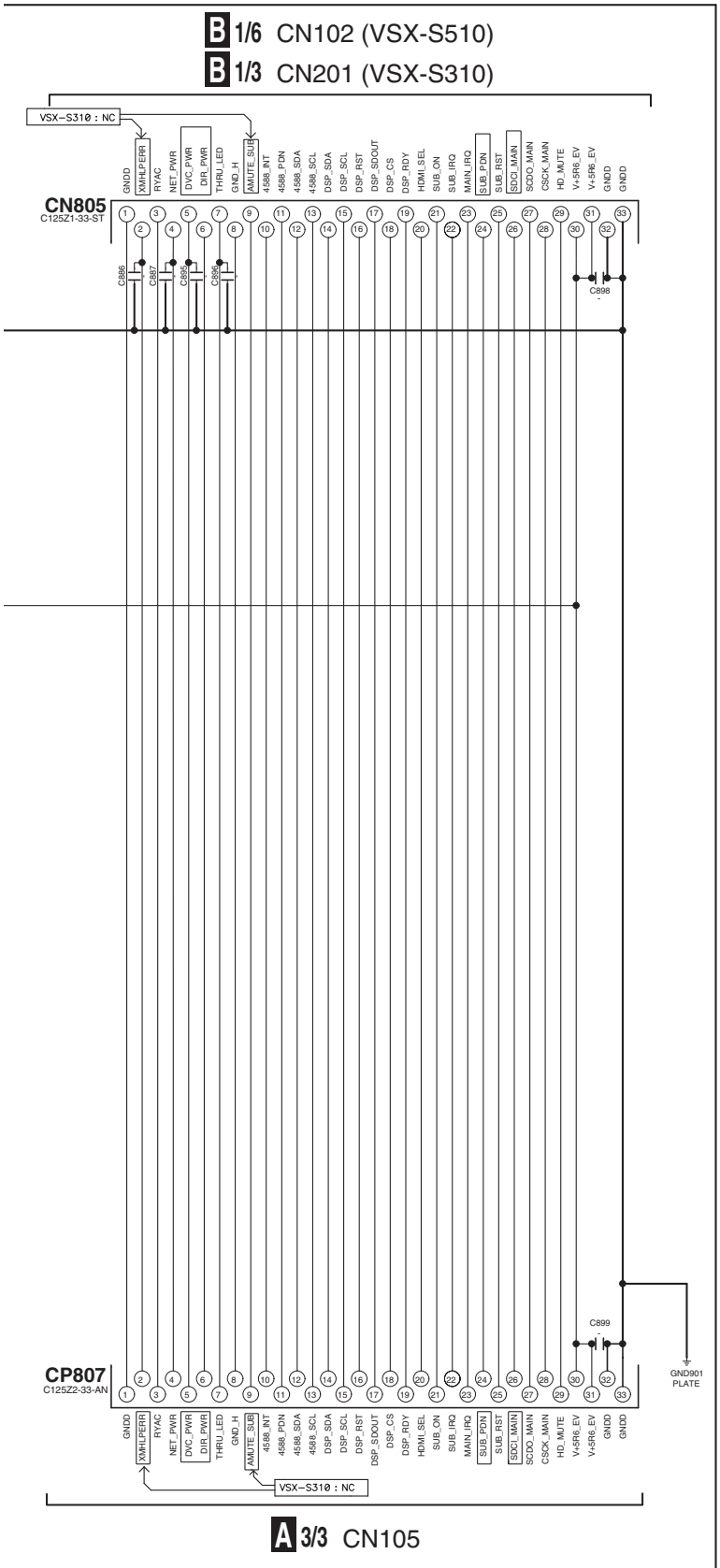
H POWER TRANS ASSY
(VSX-S510 : 8208001050010-IL)
(VSX-S310 : 8208001050030-IL)



10.18 SIDE CNT ASSY



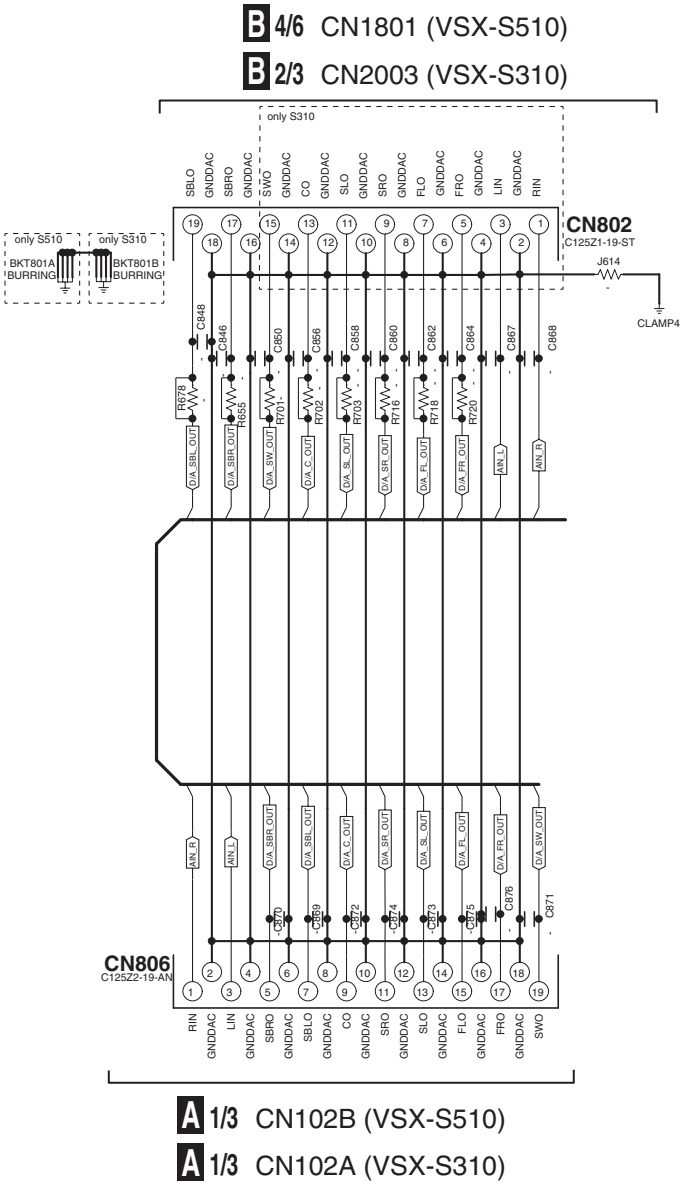
I SIDE CNT ASSY
(VSX-S510 : 7028074124010-IL)
(VSX-S310 : 7028074124050-IL)



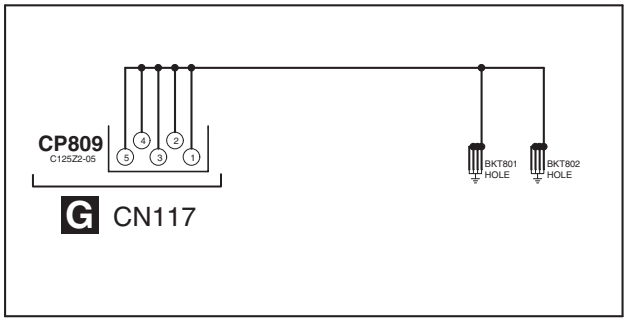
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore when replacing be sure to use parts of identical designation

10.19 BRIDGE, AMP GUARD, MAIN GUARD,CABLE and CLAMP ASSYS

J BRIDGE ASSY (VSX-S510 : 7028074114010-IL) (VSX-S310 : 7028074114050-IL)



K AMP GUARD ASSY (7028074123010-IL)



L MAIN GUARD ASSY (7028074115010-IL)

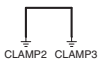
M CABLE ASSY (VSX-S510 : 7028074113010-IL)

only S510

N CLAMP ASSY (VSX-S510 : 7028074117010-IL)

only S510

N CLAMP ASSY (VSX-S310 : 7028074117050-IL)

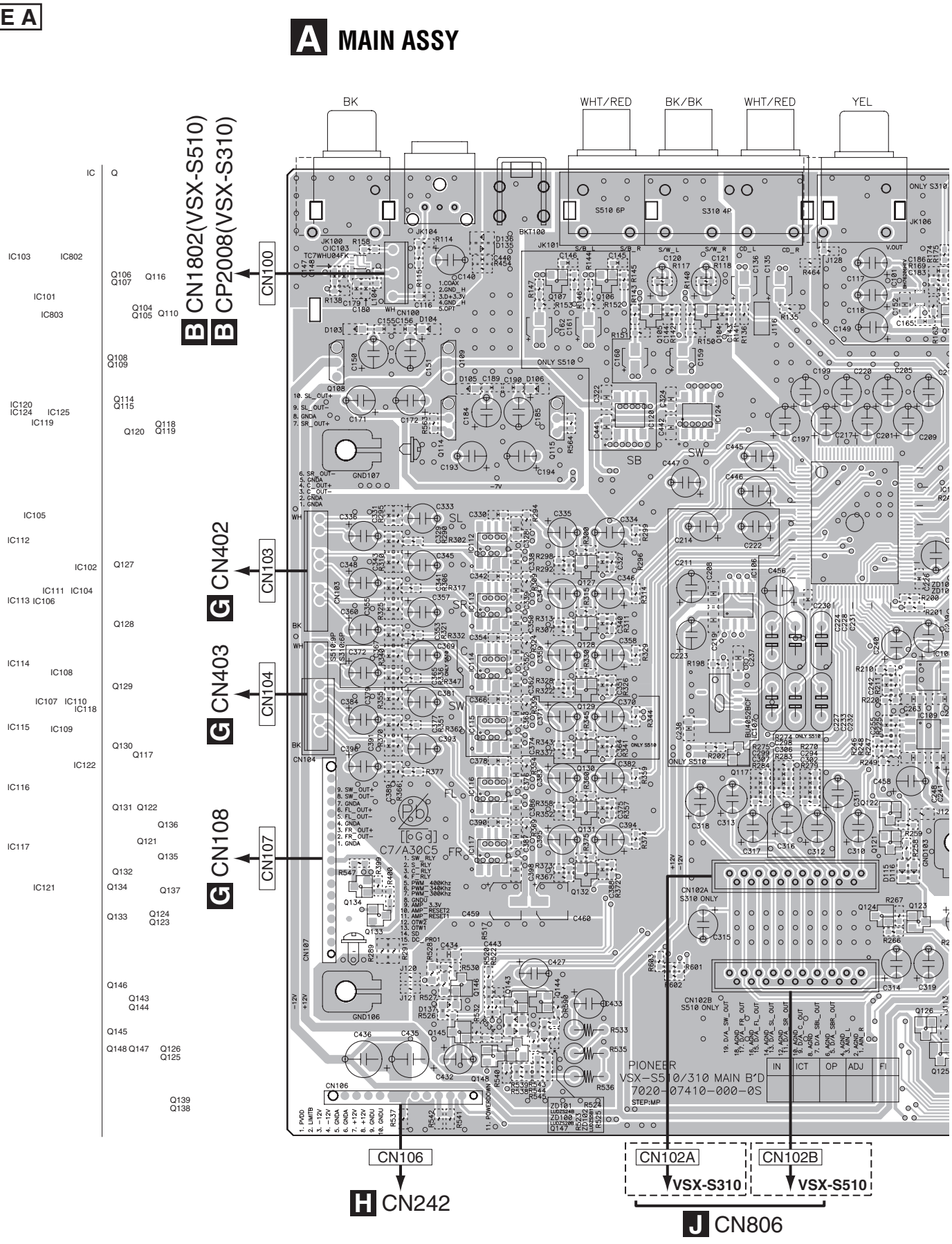


only S310

11. PCB CONNECTION DIAGRAM

11.1 MAIN ASSY

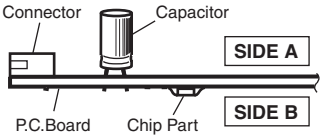
SIDE A

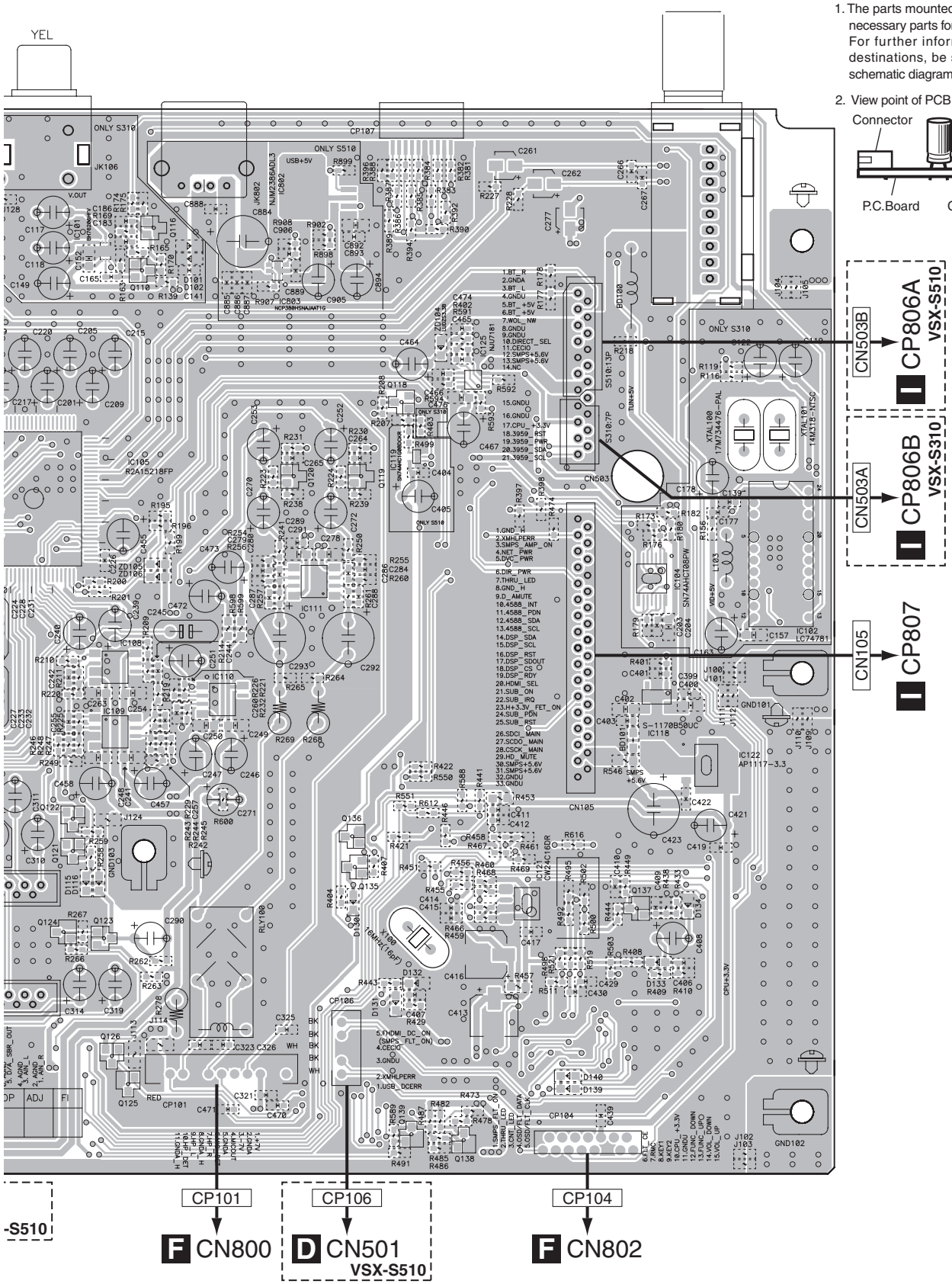


SIDE A

NOTE FOR PCB DIAGRAMS :

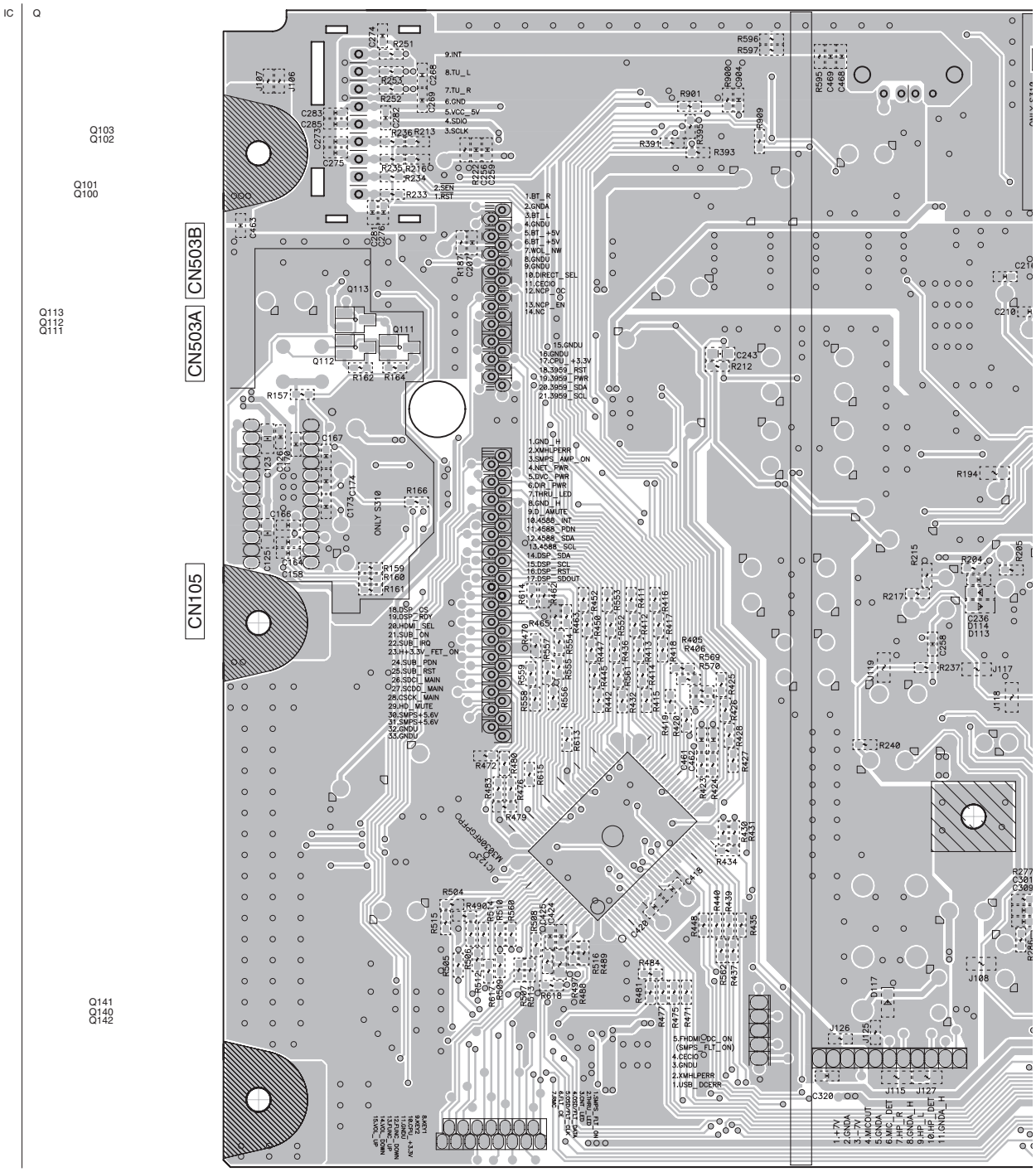
1. The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.
2. View point of PCB diagrams.



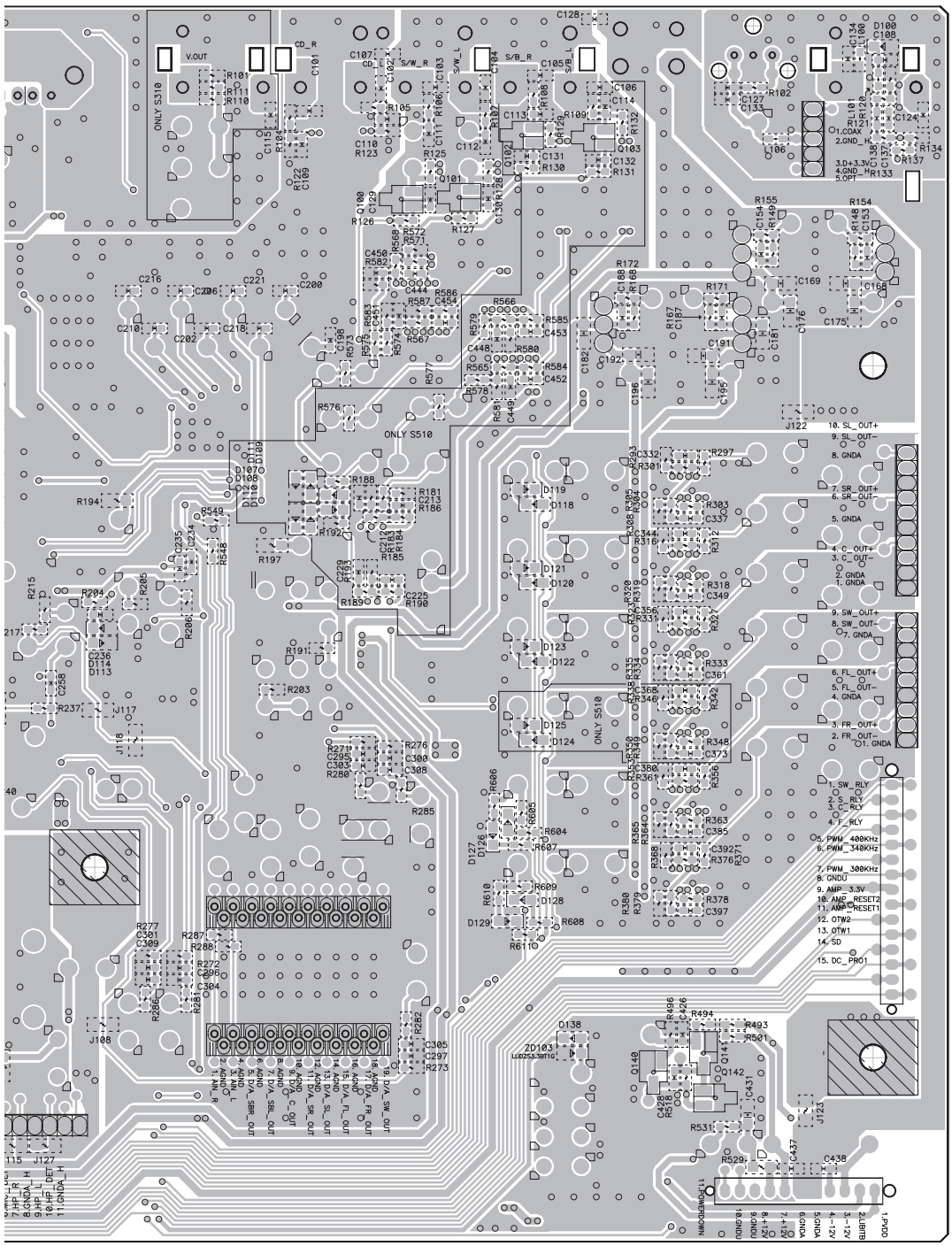


SIDE B

A MAIN ASSY



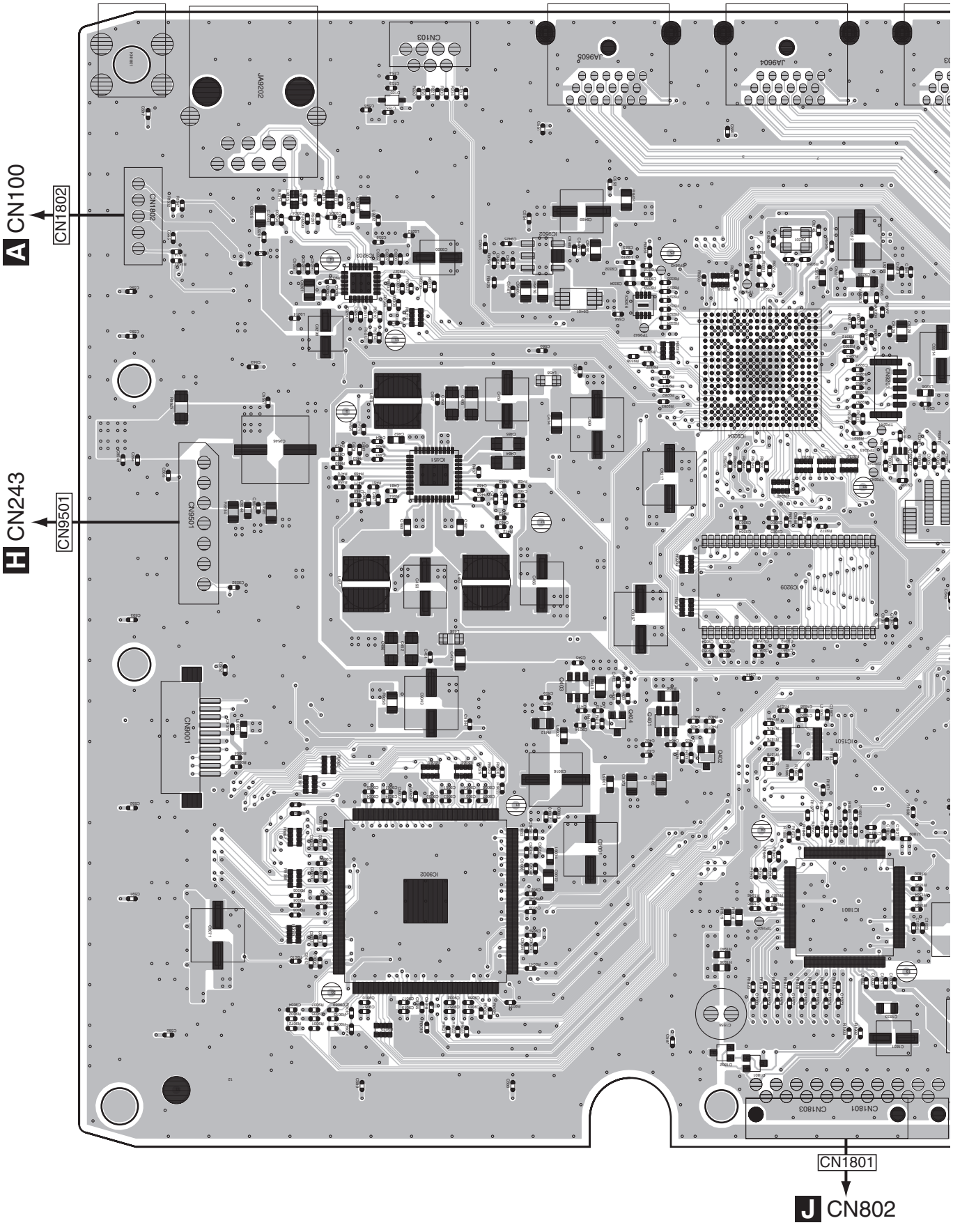
SIDE B


CN100
CN103
CN104
CN107
CN101
CN102A
CN102B
CN106
ONLY S310
ONLY S510
V.OUT
CD_R
S/W_R
S/W_L
S/B_R
S/B_L
1.COAX
2.GND_H
3.D+3.3V
4.GND_H
5.OPT
10. SL_OUT+
9. SL_OUT−
8. GNDA
7. SR_OUT+
6. SR_OUT−
5. GNDA
4. C_OUT+
3. C_OUT−
2. GNDA
1. GNDA
9. SW_OUT+
8. SW_OUT−
7. GNDA
6. FL_OUT+
5. FL_OUT−
4. GNDA
3. FR_OUT+
2. FR_OUT−
1. GNDA
1. SW_RLY
2. C_RLY
3. F_RLY
5. PWM_400KHz
6. PWM_340KHz
7. PWM_300KHz
8. GNDD
9. AMP_3.3V
10. AMP_RESET2
11. AMP_RESET1
12. OTW2
13. OTW1
14. SD
15. DC_PRO1
1. PVDD
2. -12V
3. -12V
4. -12V
5. GNDA
6. GNDA
7. +12V
8. +12V
9. GNDD
10. GNDD
11. POWERDOWN
12. LIBBIT

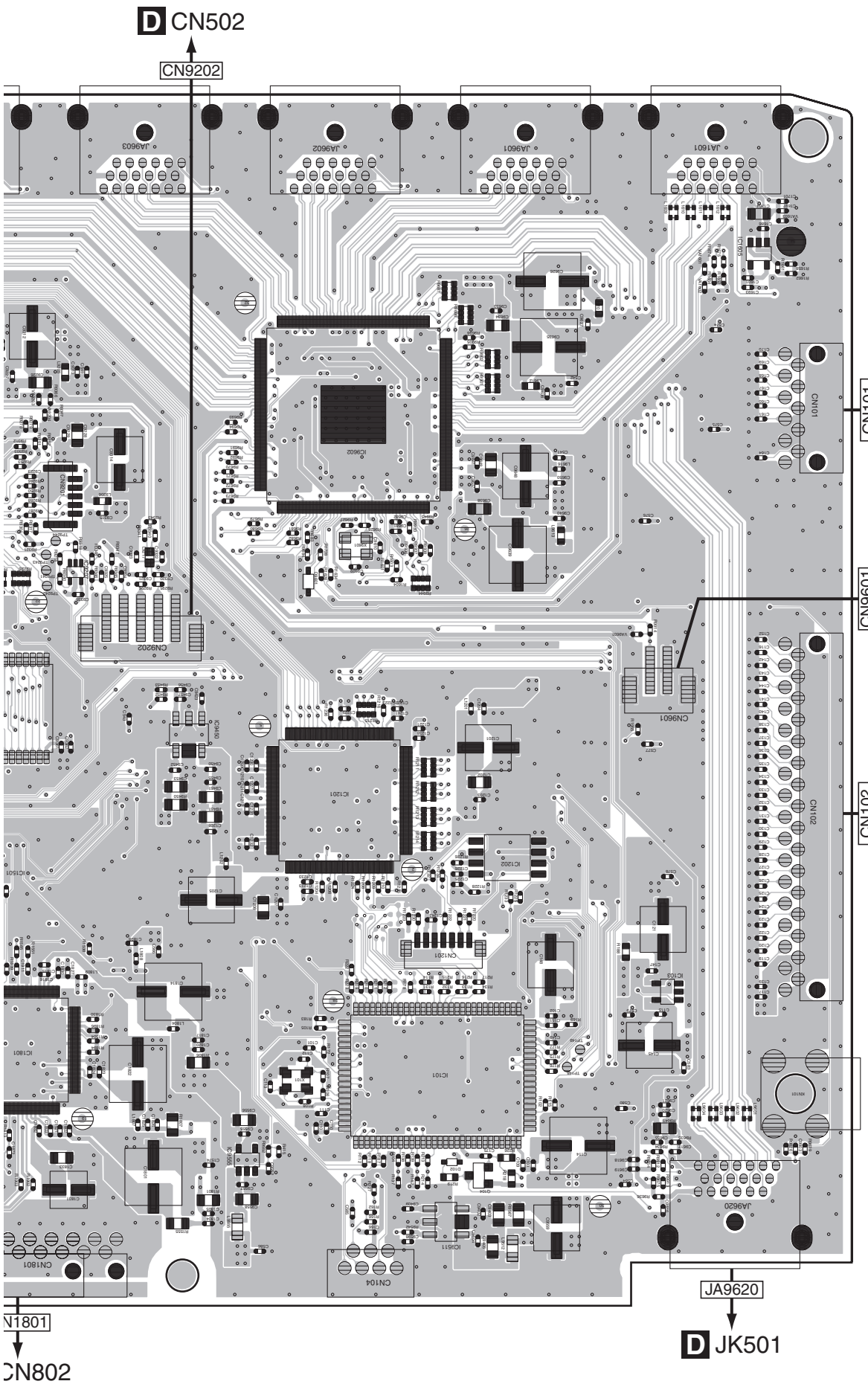
11.2 DMAIN ASSY (VSX-S510)

SIDE A

B DMAIN ASSY



SIDE A



Q IC

IC1605

IC9502
IC9203
IC9206
IC9602

IC9204

IC9207
IC451

IC9209

IC9450

IC1201

Q403
Q404
Q401

IC1202
IC1501

Q402

IC103

IC9002
IC1801
IC101

IC9555

Q104

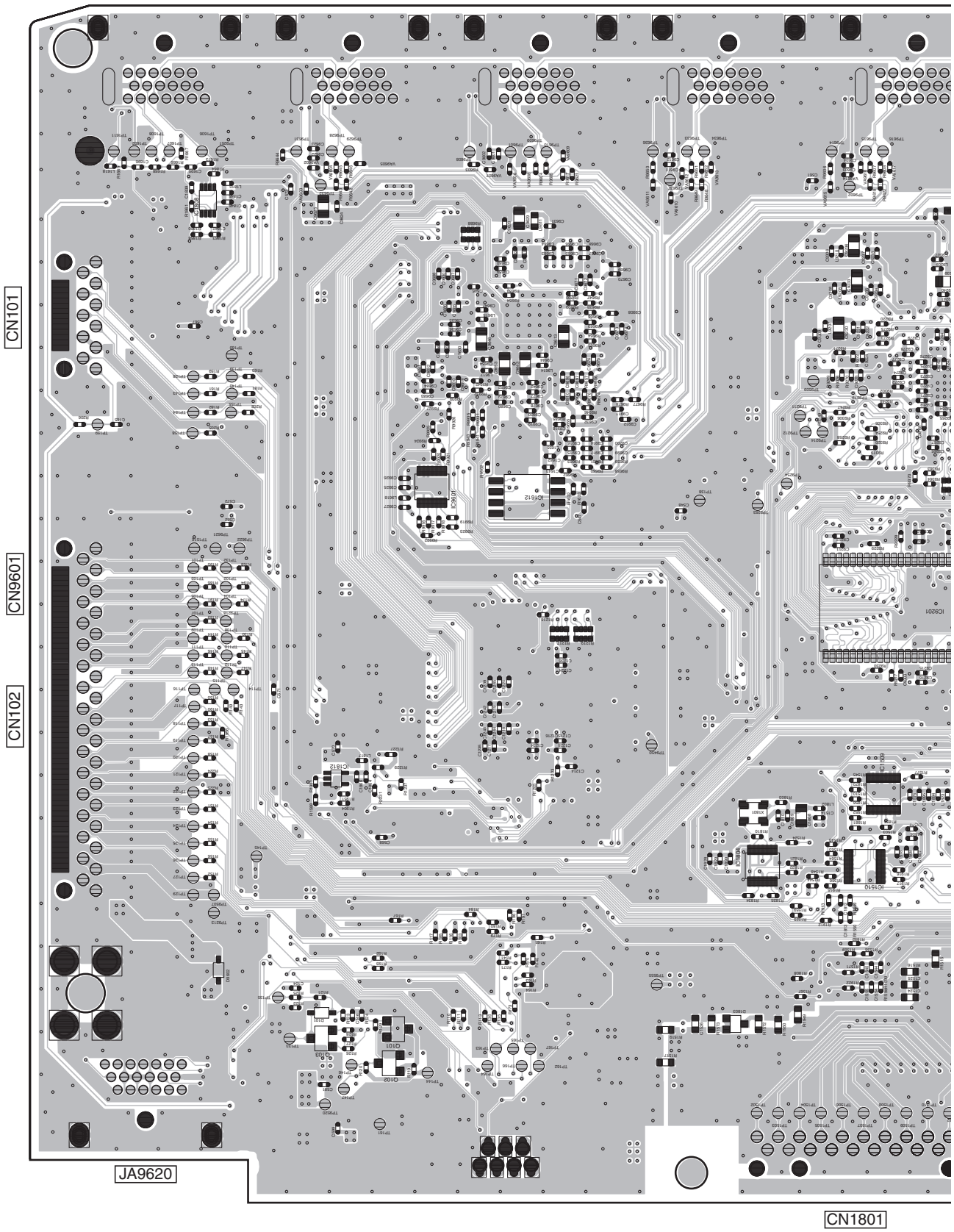
IC9511

A B C D E F

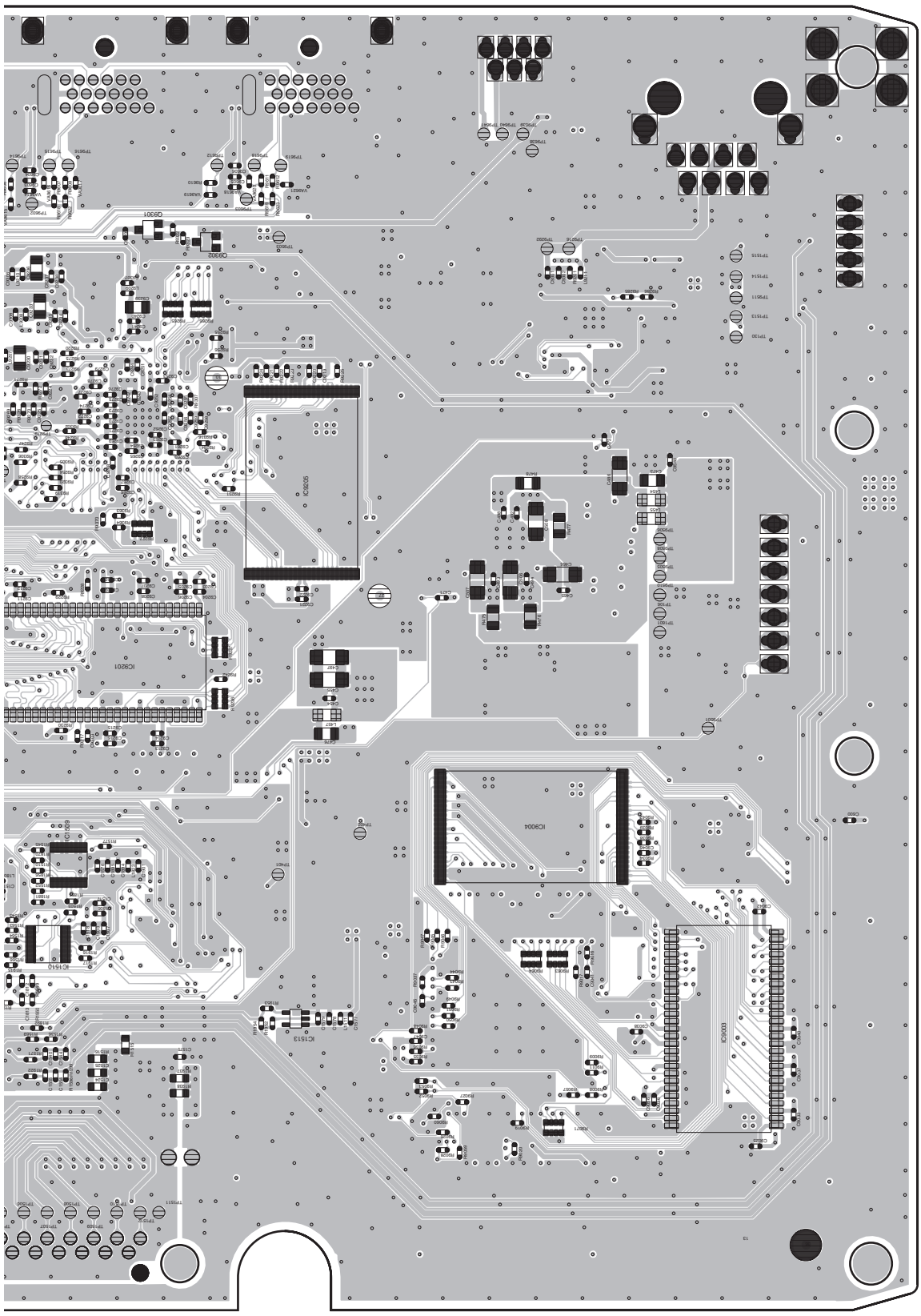
B

SIDE B

B DMAIN ASSY



SIDE B

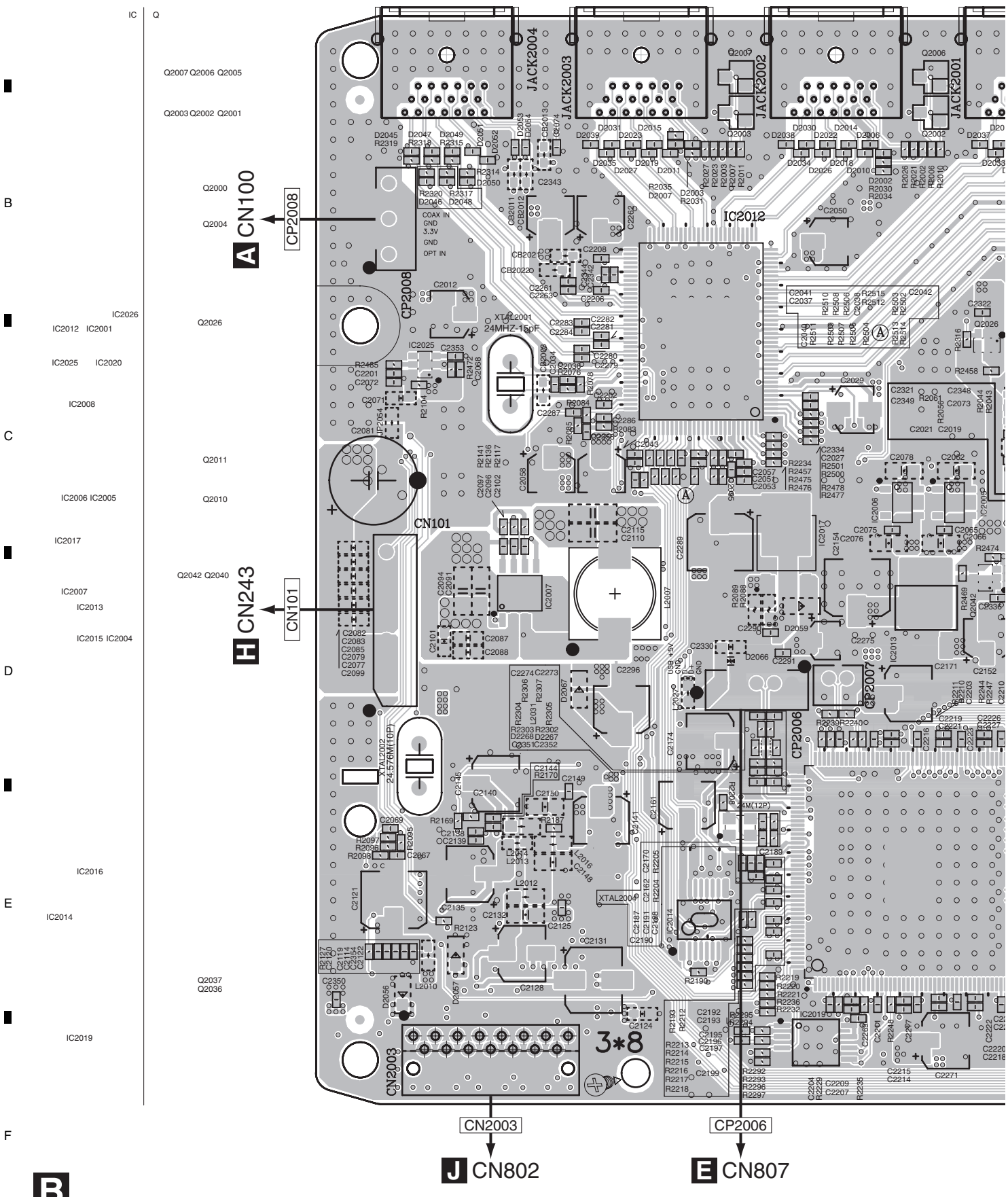


Q	IC
	IC1808
Q9301 Q9302	
	IC9205
	IC9601
	IC1612
	IC9201
	IC9004
	IC1812
	IC1509
	IC1804
	IC1510
	IC1513
	IC9003
Q101 Q103	
Q102	

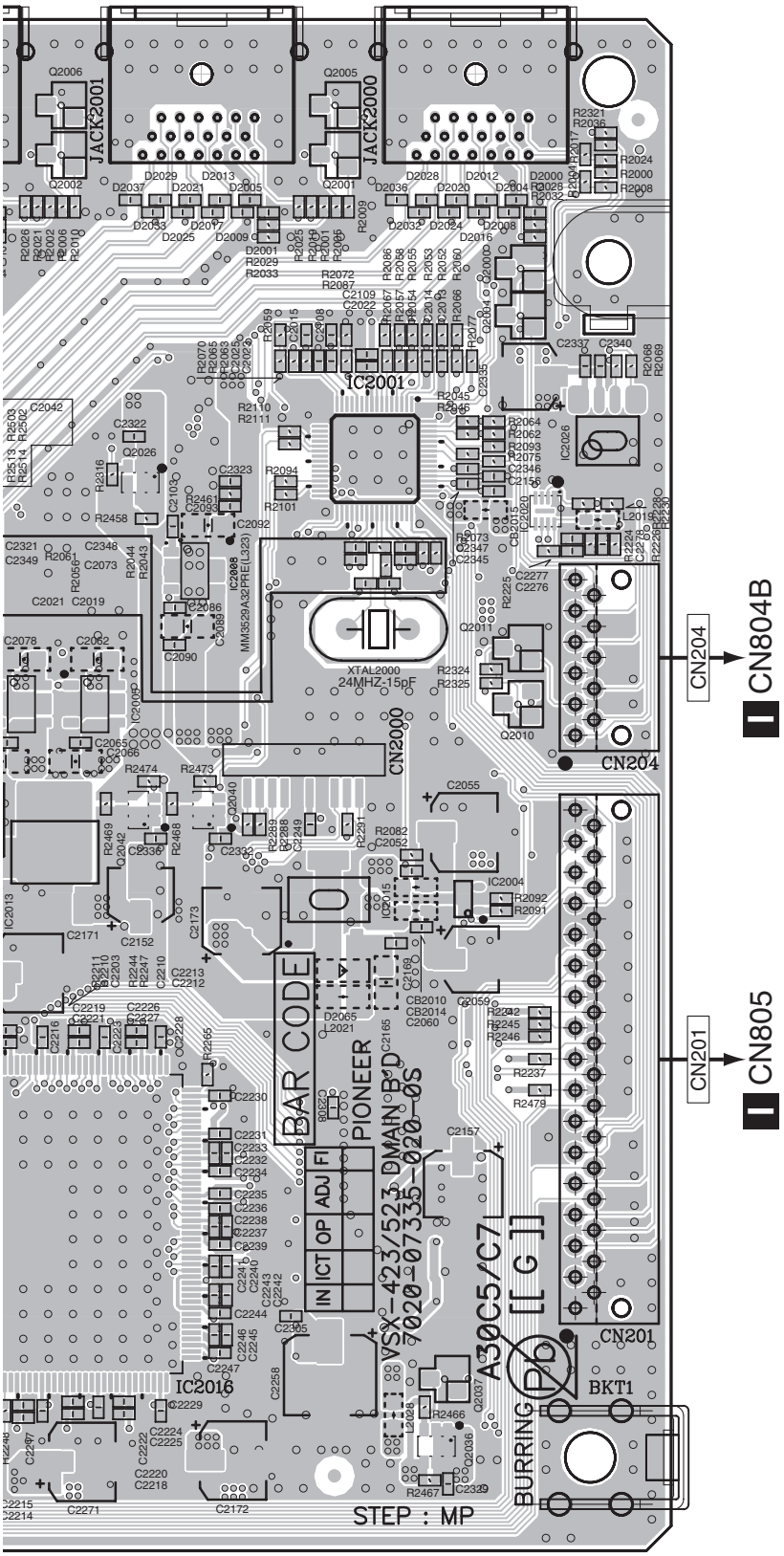
11.3 DMAIN ASSY (VSX-S310) and BT ASSY (VSX-S510)

SIDE A

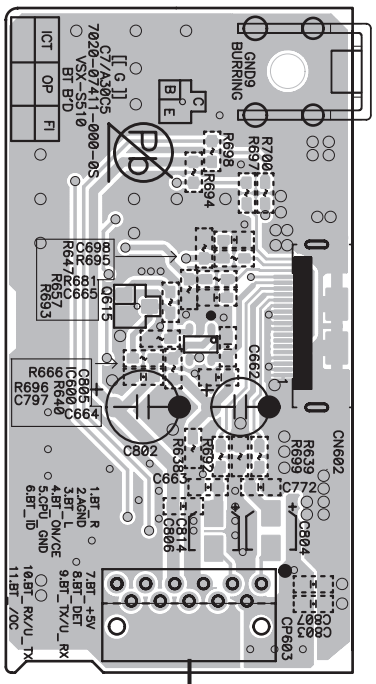
B DMAIN ASSY



SIDE A



C BT ASSY



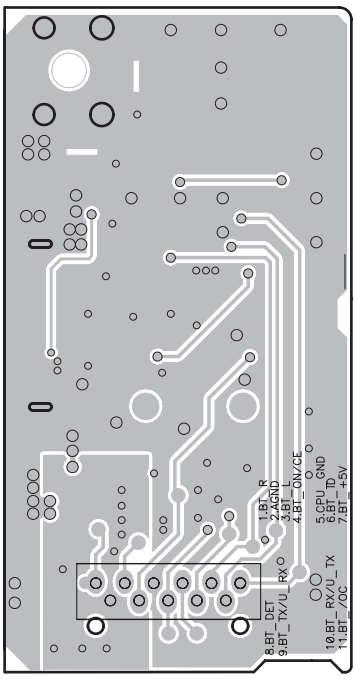
IC Q615 IC600

CP603

I CN603

SIDE B

C BT ASSY



CP603

IC Q

Q2027

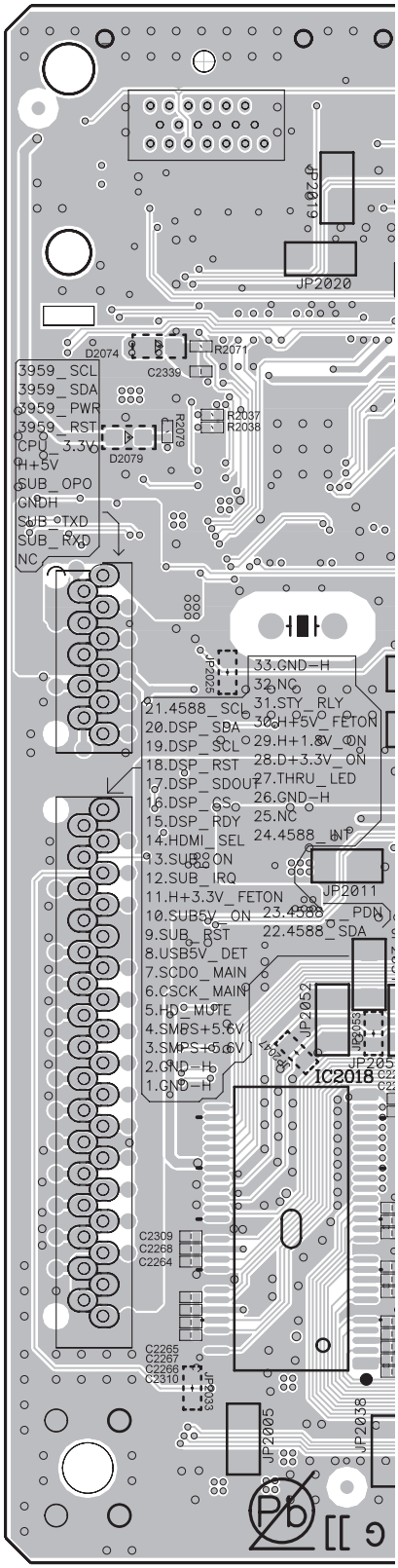
Q2043

Q2041

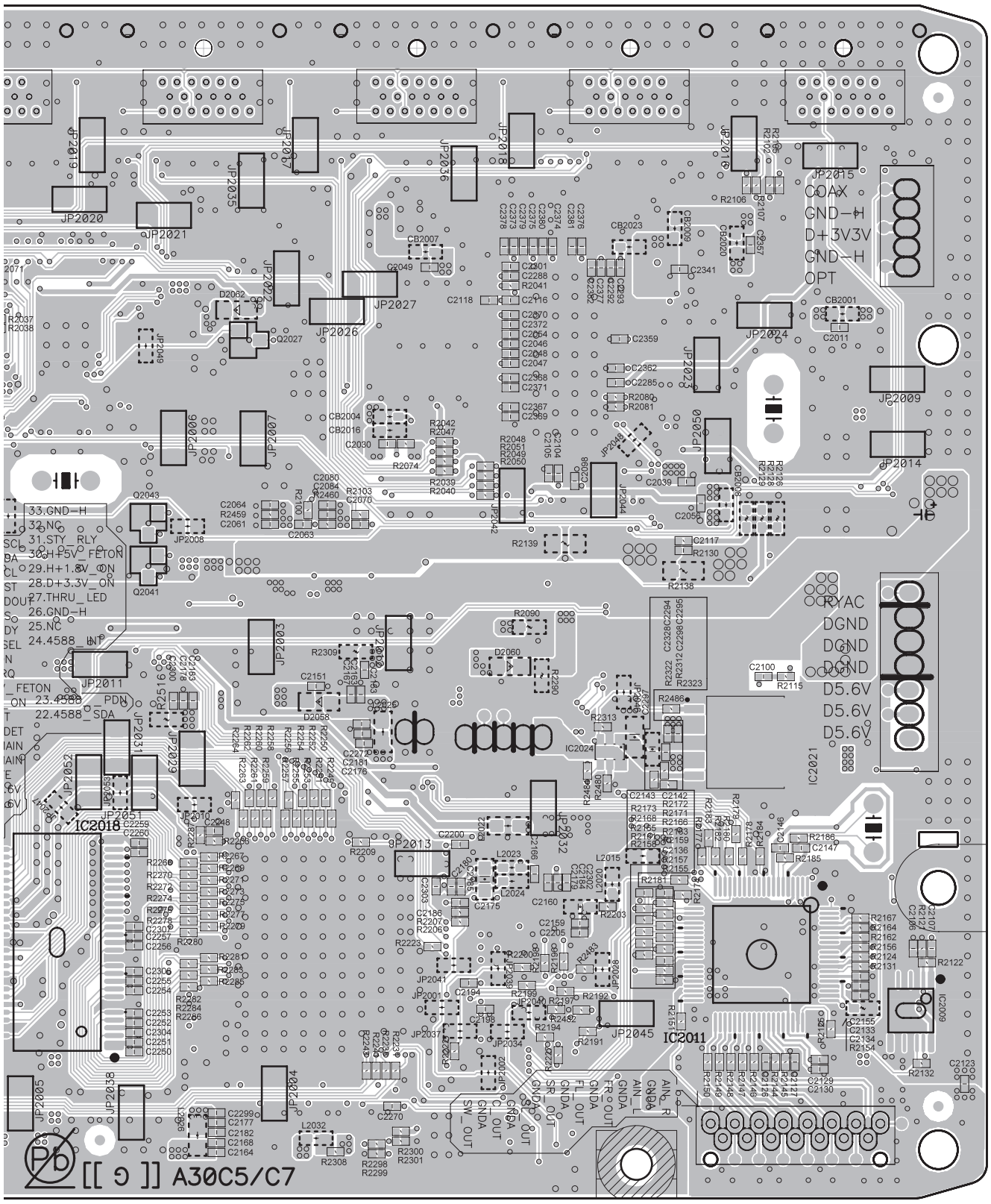
IC2024 IC2021

IC2018 IC2011 IC2009

B DMAIN ASSY



SY

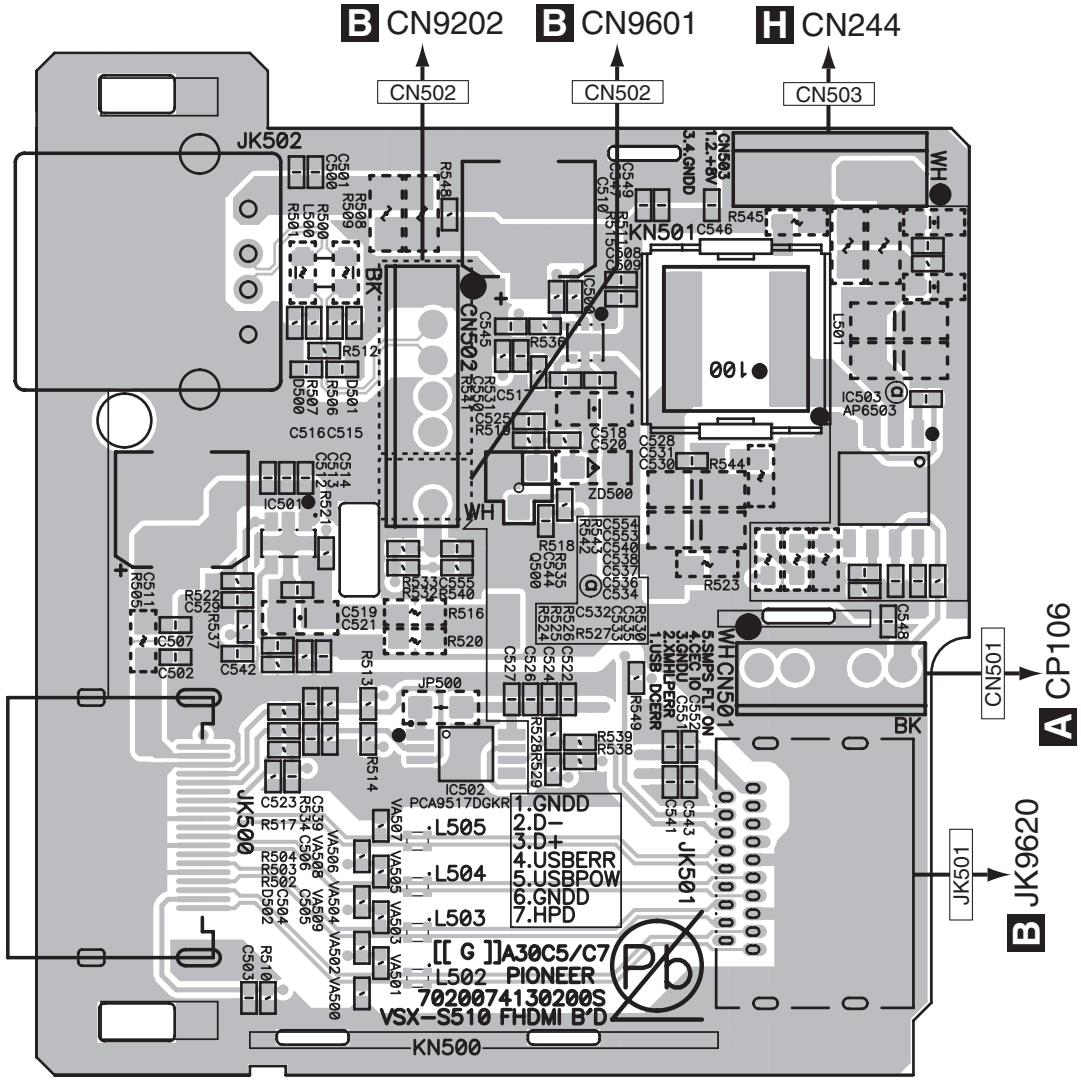

CP2008
CN101
CP2006
CN2003
IC2018
IC2011
IC2021
IC2024
JP2015
COAX
GND−H
D+3V3V
GND−H
OPT
33.GND−H
32.NC
31.STY_RLY
30.H+5V_FETON
29.H+1.8V_ON
28.D+3.3V_ON
27.THRU_LED
26.GND−H
25.NC
24.4588_INT
23.4588_PDN
22.4588_SDA
RYAC
DGND
DGND
DGND
D5.6V
D5.6V
D5.6V
[[ɔ]] A30C5/C7

11.4 FHDMI ASSY (VSX-S510) and USB ASSY (VSX-S310)

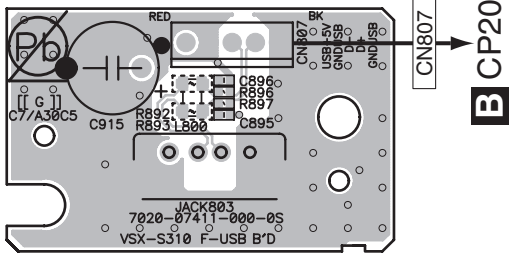
SIDE A

SIDE A

D FHDMI ASSY



E USB ASSY



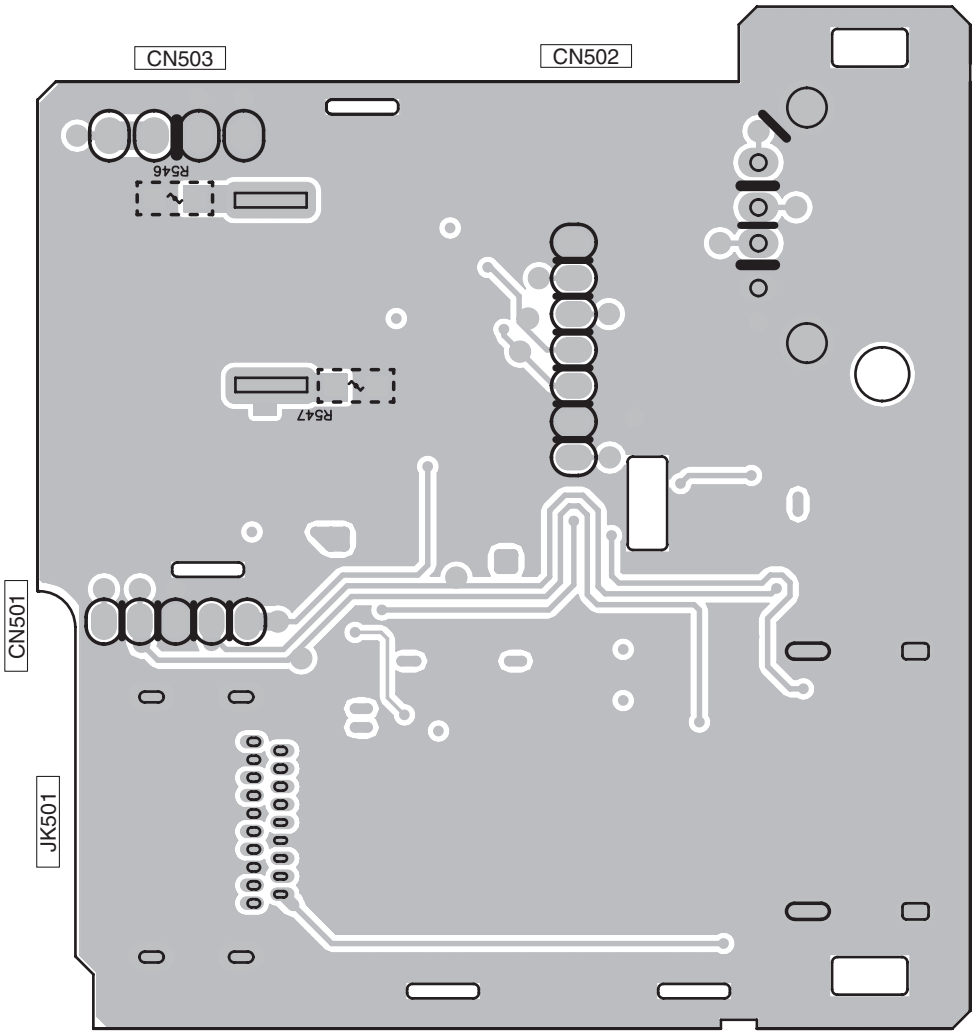
D E

D E

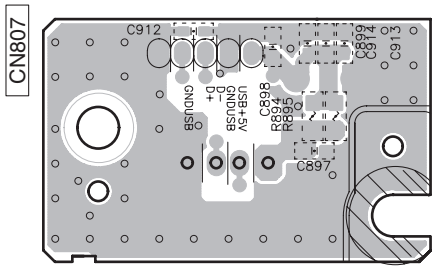
SIDE B

SIDE B

D FHDMI ASSY



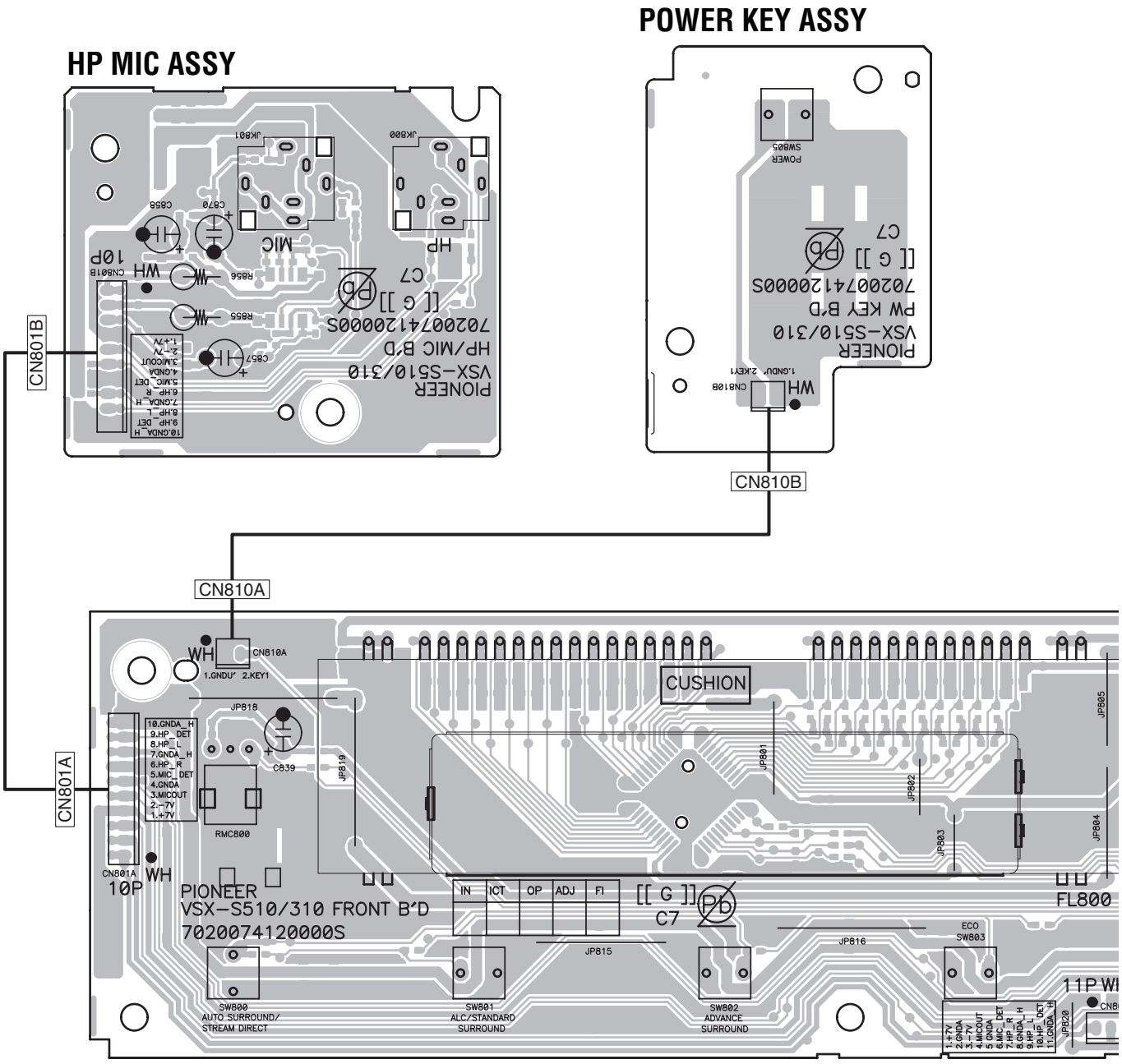
E USB ASSY



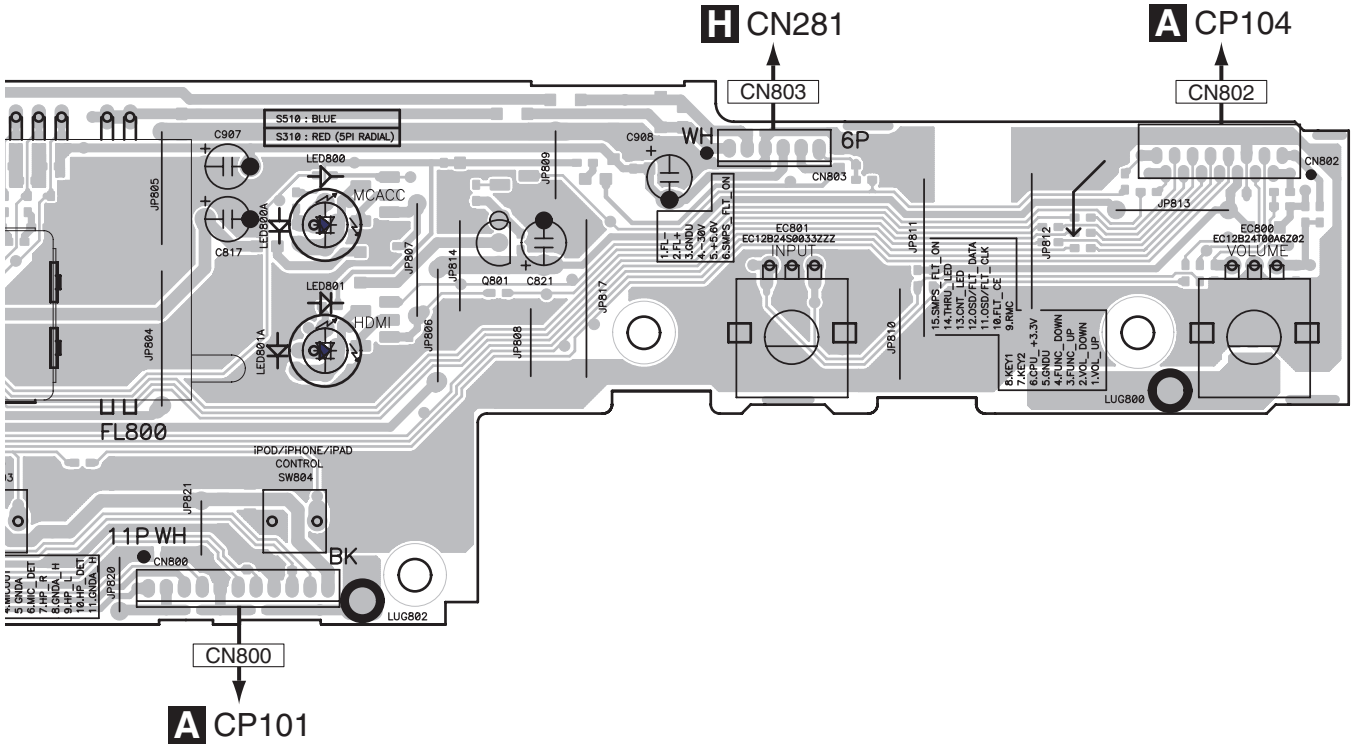
11.5 FRONT ASSY

SIDE A

F FRONT ASSY

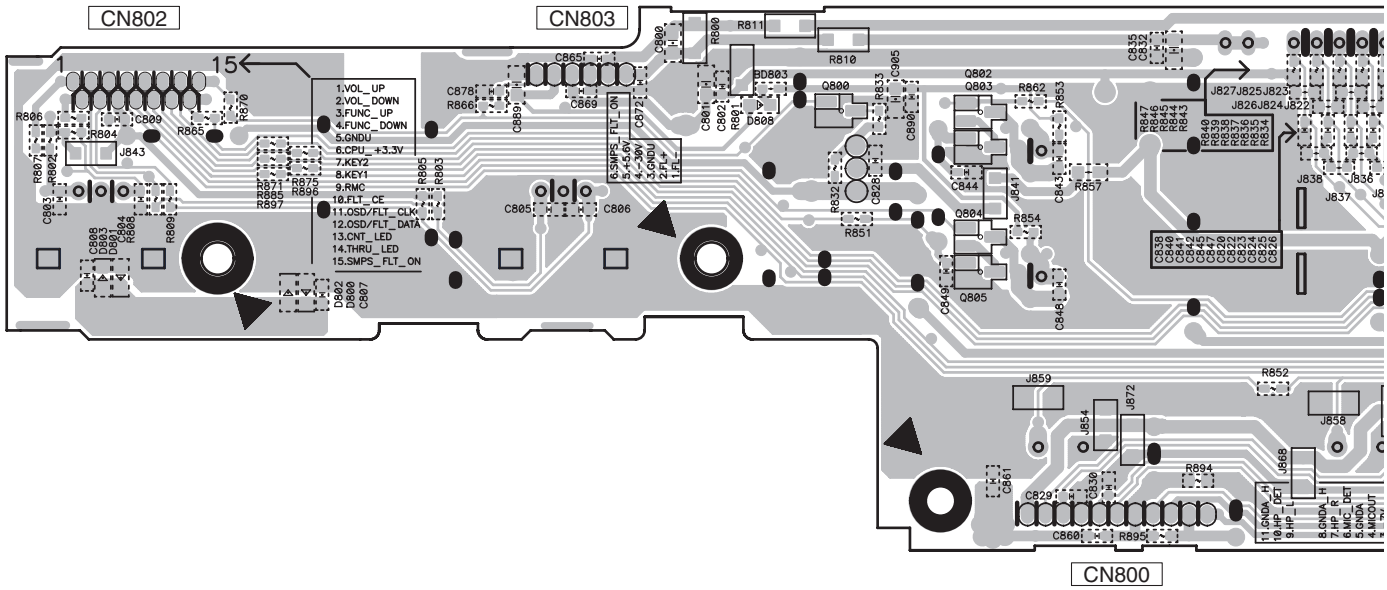


SIDE A


H CN281
CN803
A CP104
CN802
S510 : BLUE
S310 : RED (5PI RADIAL)
C907
C908
WH
6P
CN803
LED800
MCACC
C817
LED801
HDMI
JP805
JP804
JP807
JP806
JP809
JP814
JP808
JP817
Q801
C821
EC801
EC12B24SB033ZZZ
INPUT
JP811
JP812
JP813
CN802
EC800
EC12EC4TB0A6Z02
VOLUME
LUG800
FL800
iPOD/iPHONE/iPAD
CONTROL
SW804
JP821
11P WH
CN800
BK
LUG802
JP820
CN800
A CP101
Q801

SIDE B

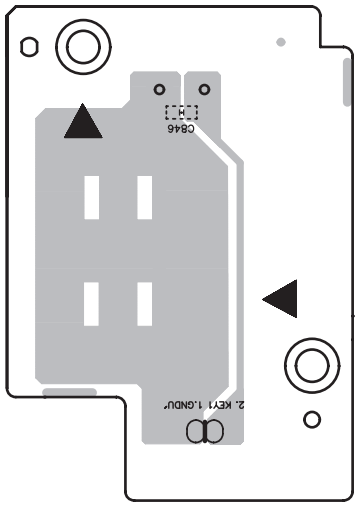
F FRONT ASSY



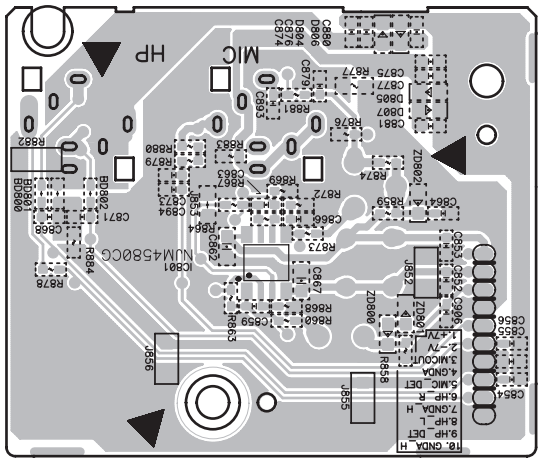
Q	Q800	Q802 Q803 Q804 Q805
IC		

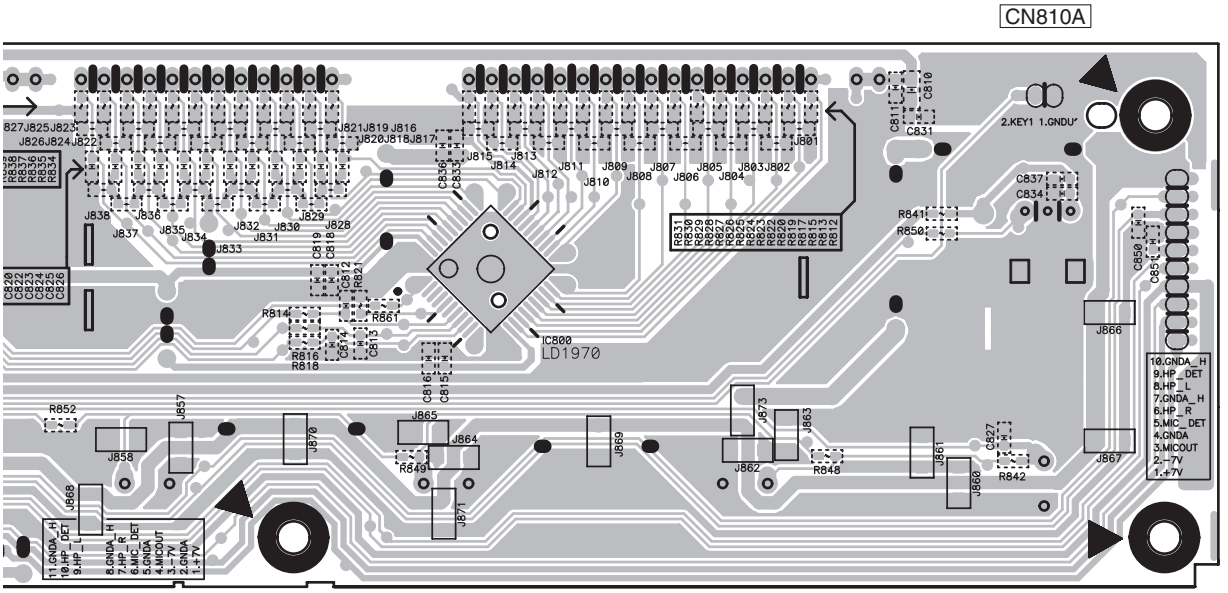
SIDE B

POWER KEY ASSY



HP MIC ASSY

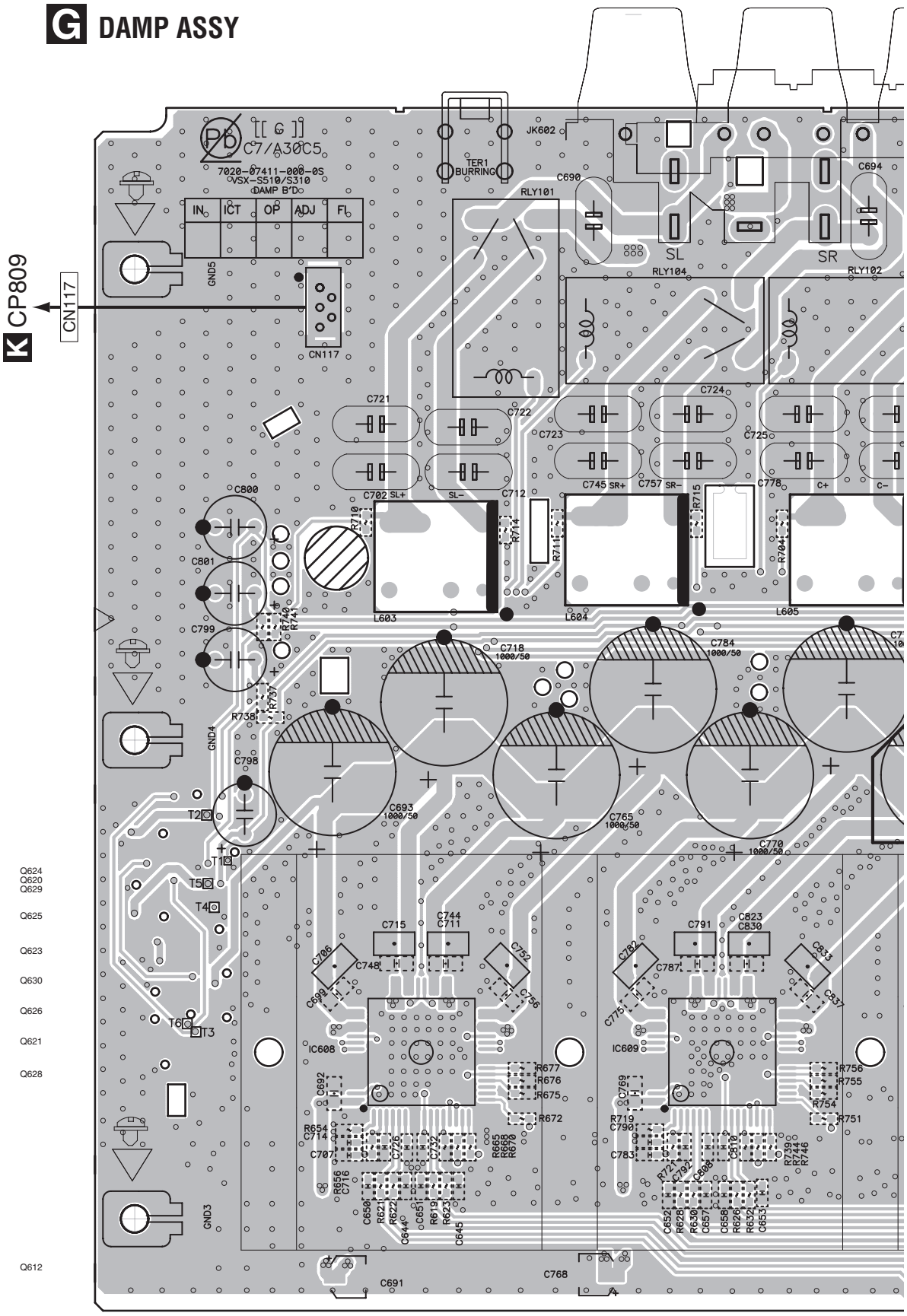




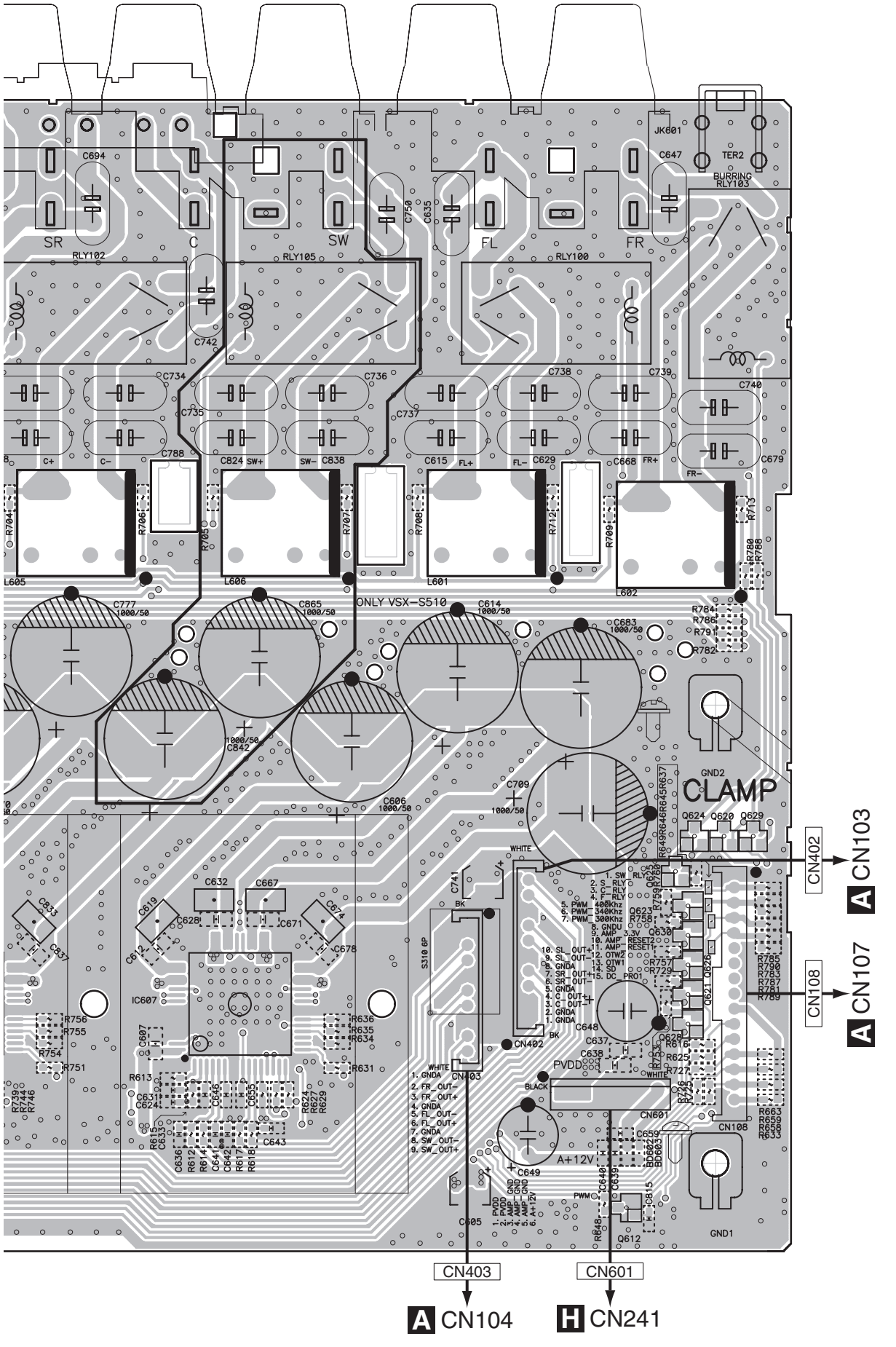
IC800

11.6 DAMP ASSY

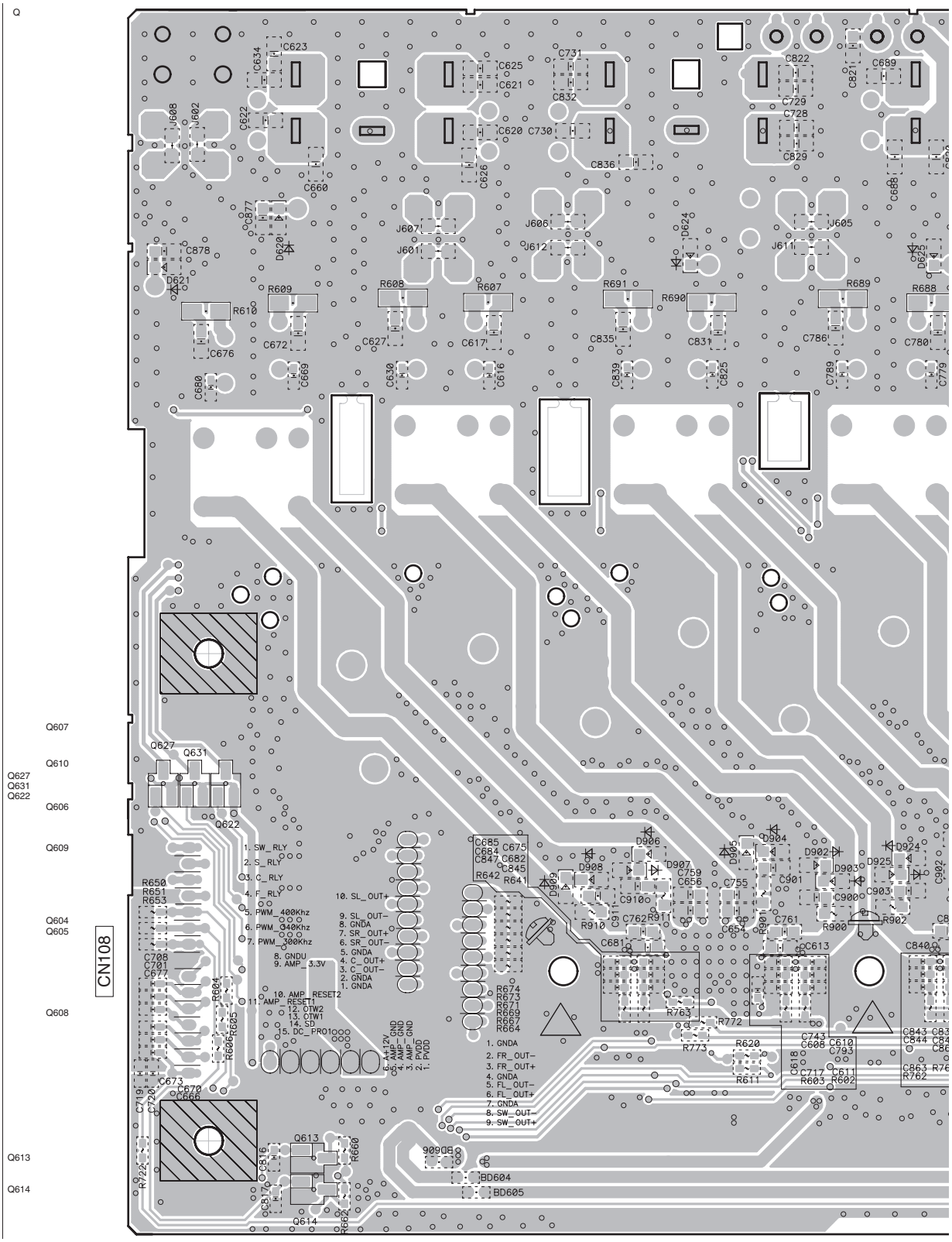
SIDE A



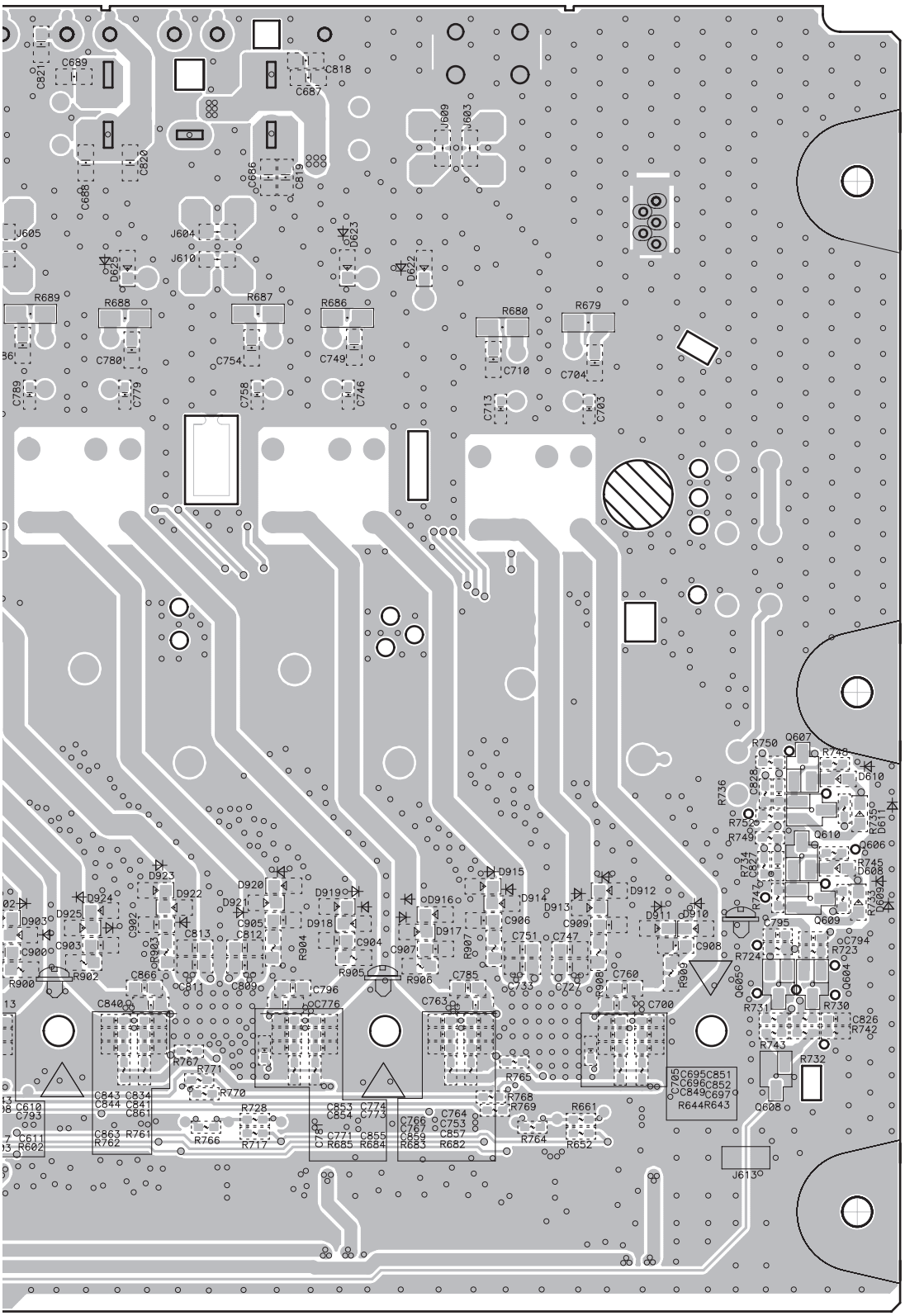
SIDE A


SR
C
SW
FL
FR
RLY102
RLY105
RLY100
JK601
TER2
BURRING RLY103
ONLY VSX-S510
CLAMP
GND2
GND1
PVDD
A+12V
CN402
CN403
CN601
CN108
CN103
CN107
CN104
CN241

G DAMP ASSY


IC
Q
Q607
Q610
Q627
Q631
Q622
Q606
Q609
Q604
Q605
Q608
Q613
Q614
CN108
CN601
CN402
CN403

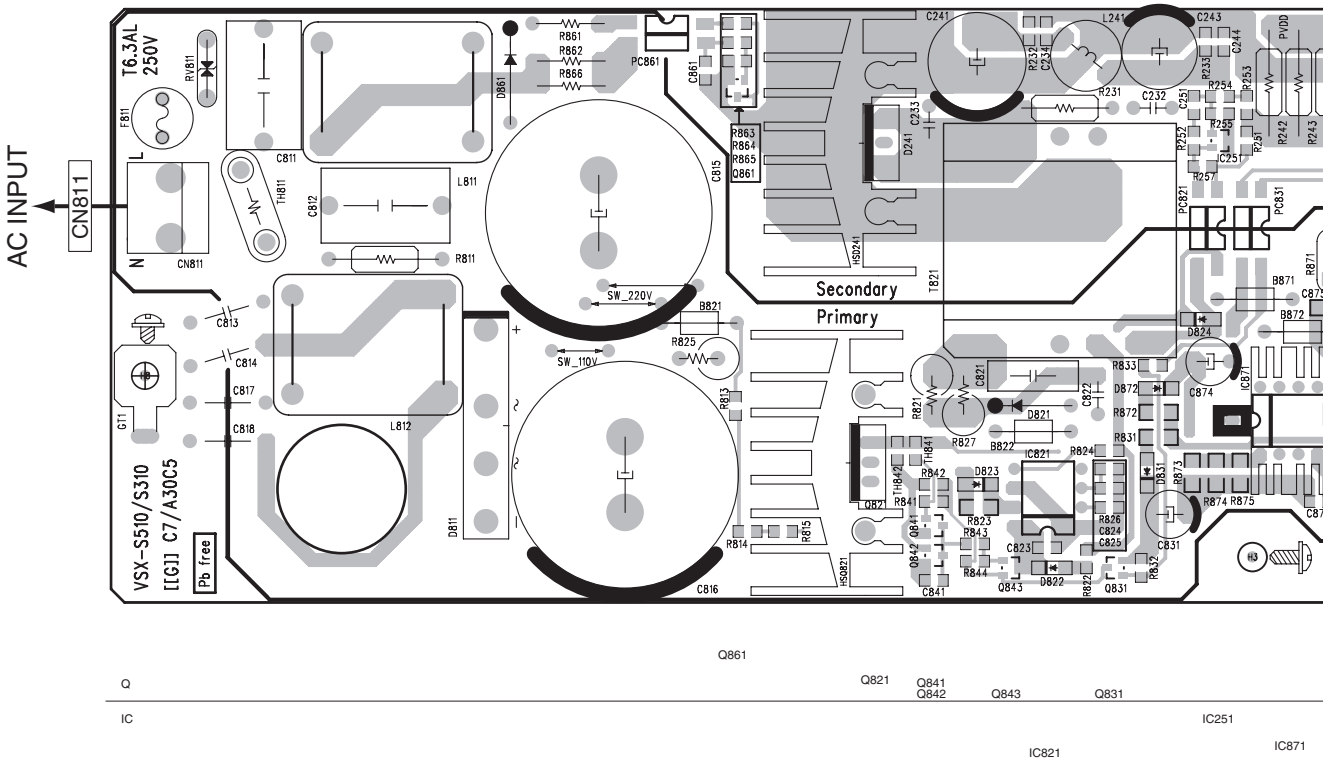
SIDE B


CN117
C689
C687
C818
C821
C822
C688
C686
C819
J609
J603
J605
J604
J610
D623
D625
D622
R689
R688
R687
R686
R680
R679
C780
C754
C749
C710
C704
C789
C779
C758
C746
C713
C703
R750
Q607
R748
D610
R736
R752
R749
Q610
Q606
R745
R734
C827
C828
R747
D608
D609
R733
C795
Q609
C794
R723
R724
Q605
Q604
R731
R730
C826
R742
R743
R732
Q608
J613
D923
D922
D924
D925
D903
D902
C902
C903
C900
R900
R902
C813
C812
C905
D921
D920
D919
D918
R904
C904
C907
R907
D915
D916
D917
D914
C906
C751
C747
D913
C909
D912
D911
D910
C908
R905
R906
R909
C760
C700
C866
C809
C796
C776
C763
C785
C733
C772
C840
R767
R771
R770
R728
R766
R717
R765
R768
R769
R764
R661
R652
C695
C851
C696
C852
C849
C697
R644
R643
C705
C610
C793
C611
R602
C843
C834
C844
C841
C861
C863
R761
R762
C853
C774
C854
C773
C771
C855
R685
R684
C766
C767
C859
C857
R683
R682
C764
C753

11.7 POWER TRANS ASSY

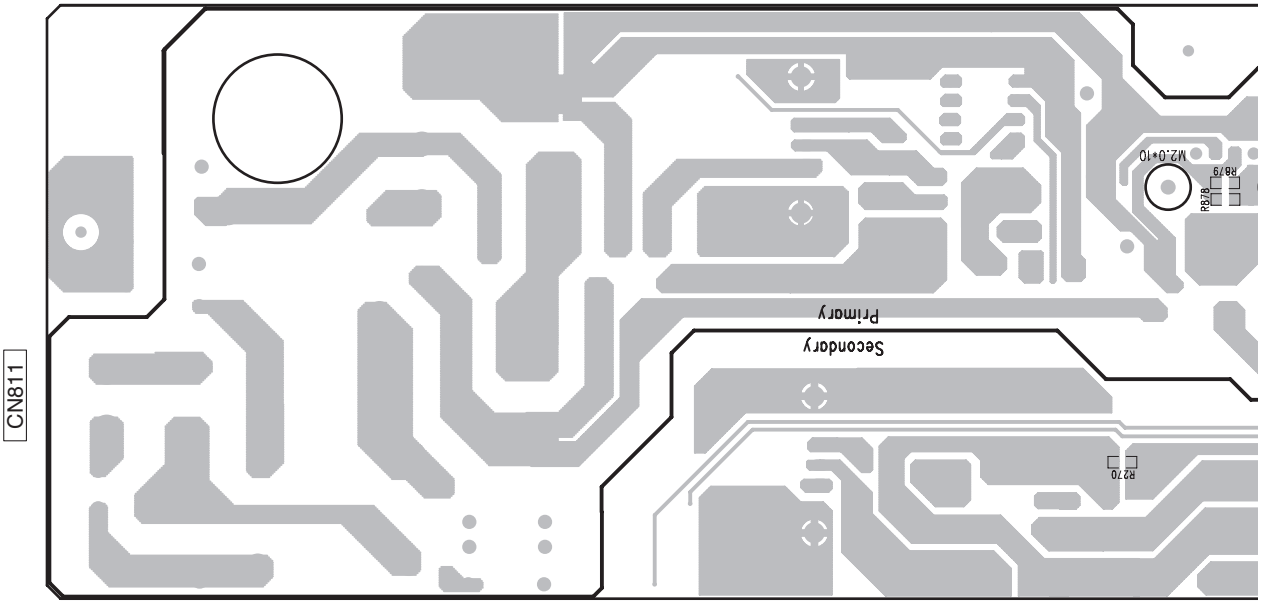
SIDE A

H POWER TRANS ASSY

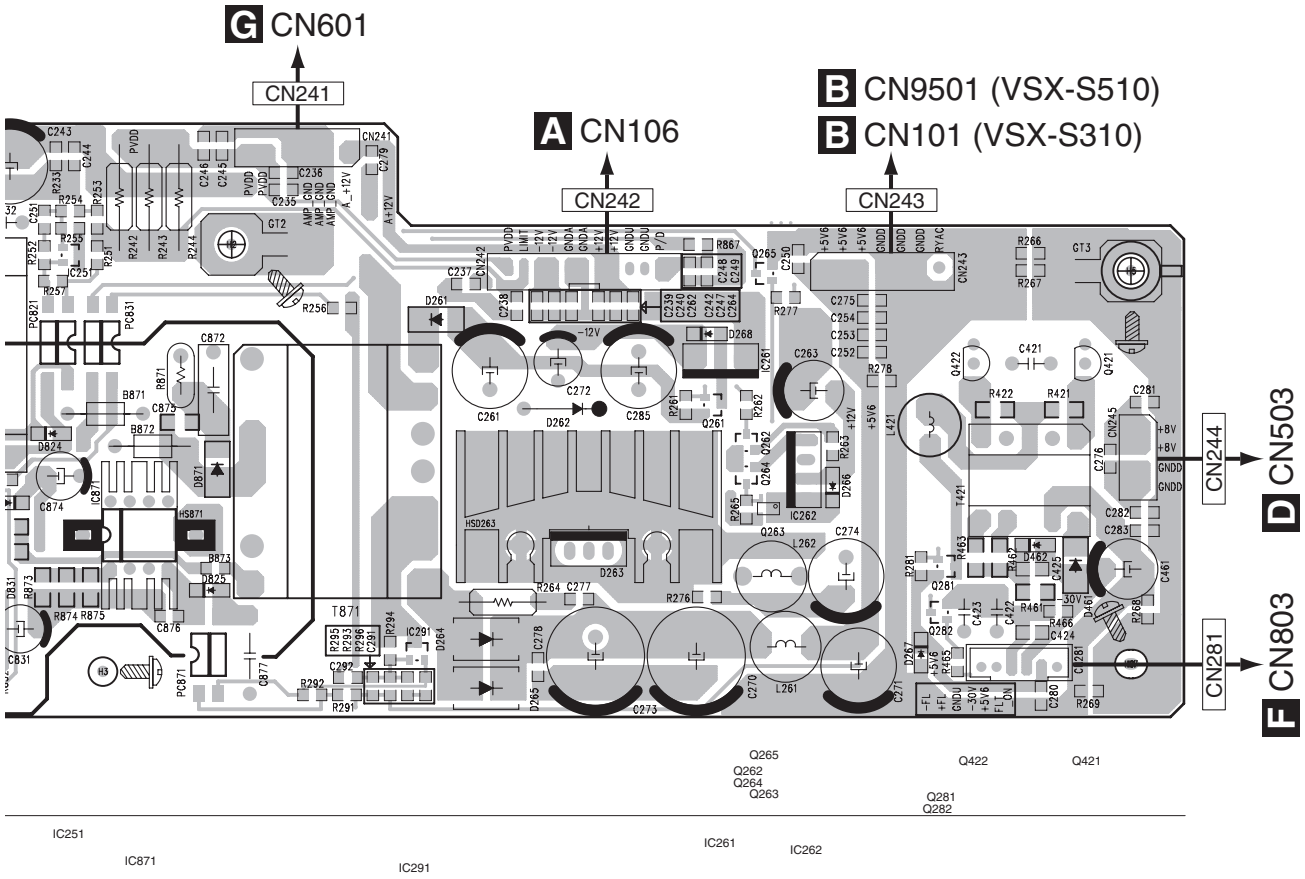


SIDE B

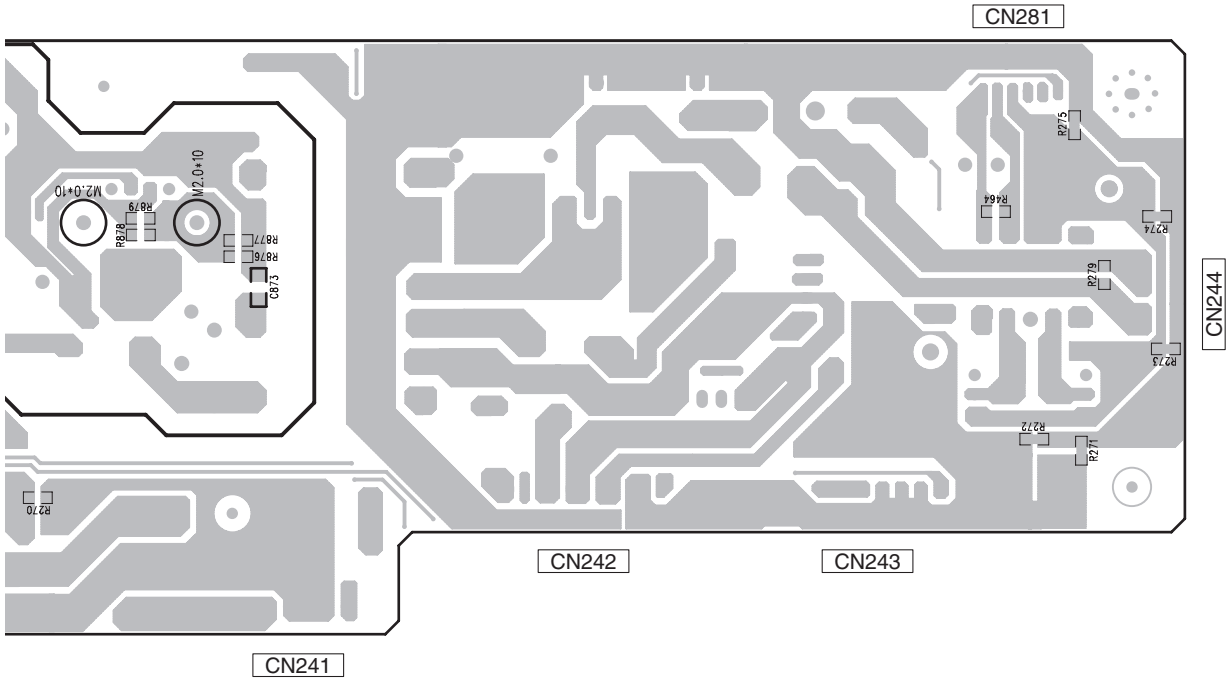
H POWER TRANS ASSY



SIDE A


G CN601
CN241
A CN106
CN242
B CN9501 (VSX-S510)
B CN101 (VSX-S310)
CN243
CN244
D CN503
CN281
F CN803
IC251
IC871
IC291
IC261
IC262

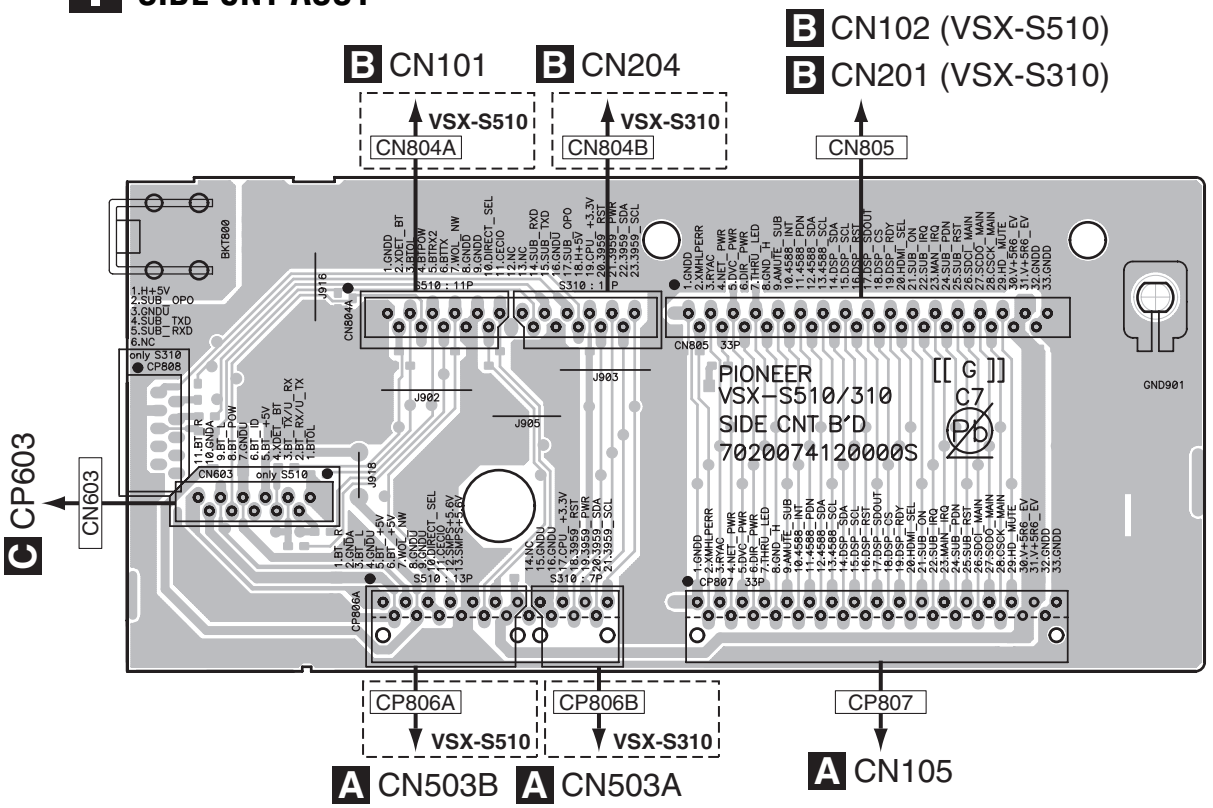
SIDE B


CN281
CN244
CN242
CN243
CN241

11.8 SIDE CNT ASSY and BRIDGE ASSY

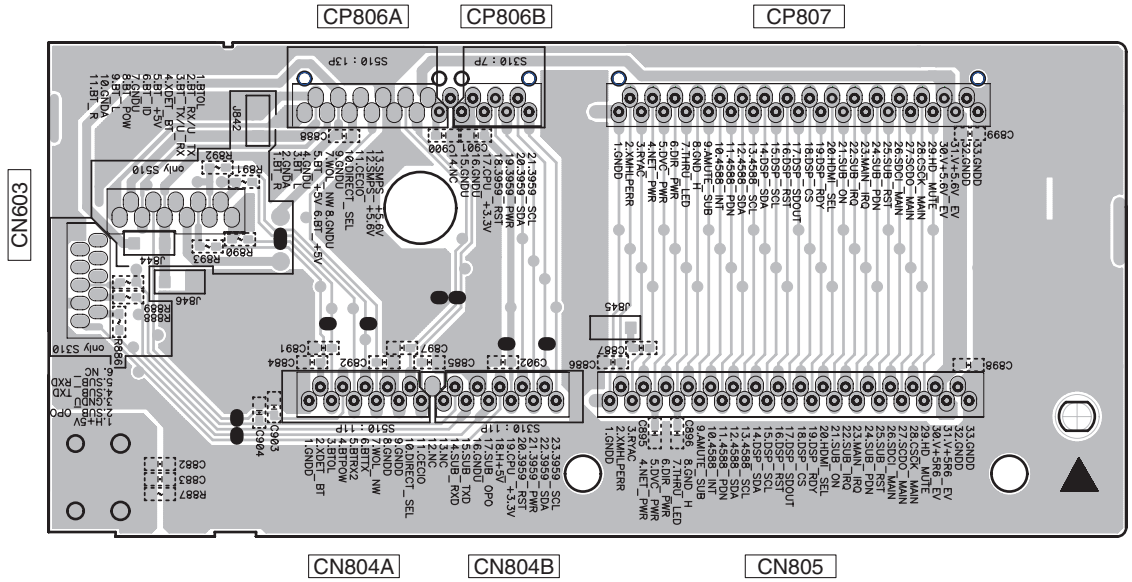
SIDE A

SIDE CNT ASSY



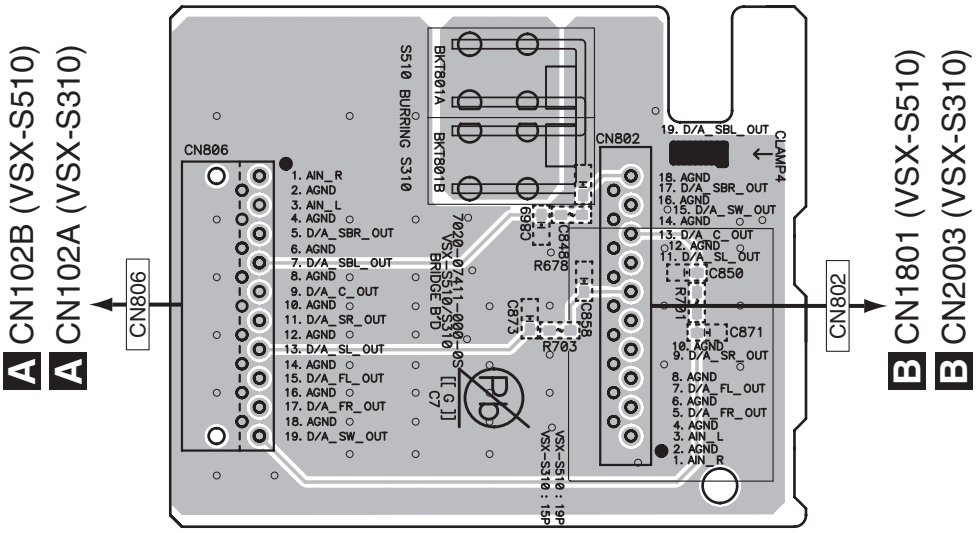
SIDE B

SIDE CNT ASSY



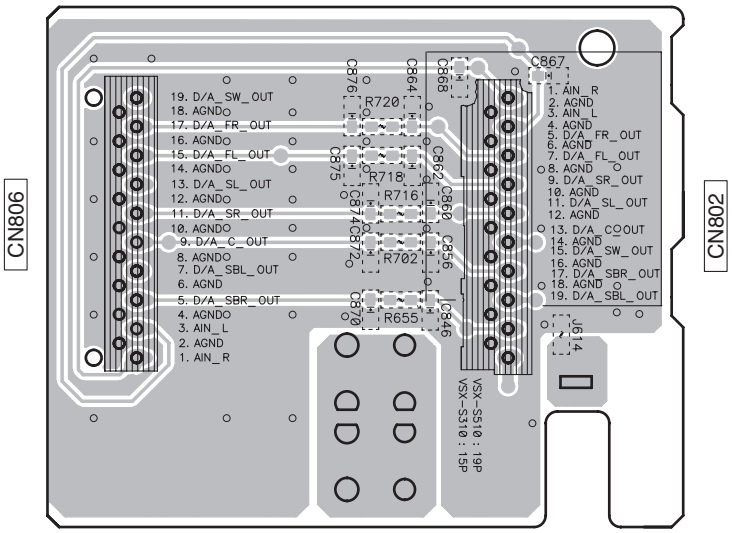
SIDE A

J BRIDGE ASSY



SIDE B

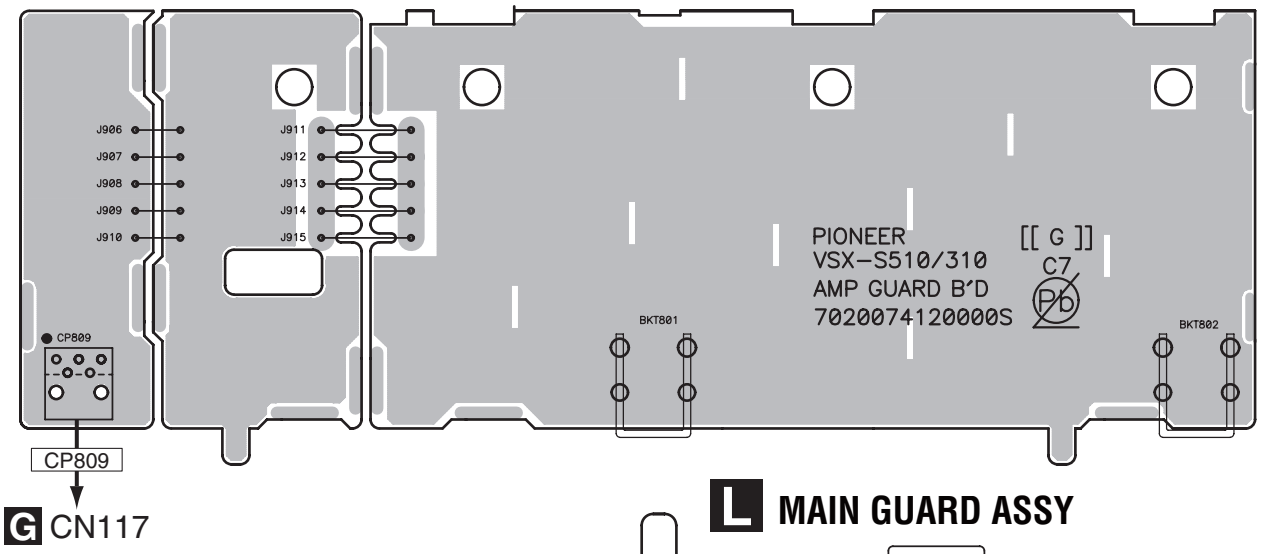
J BRIDGE ASSY



11.9 AMP GUARD, MAIN GUARD, CABLE (VSX-S510) and CLAMP ASSYS

SIDE A

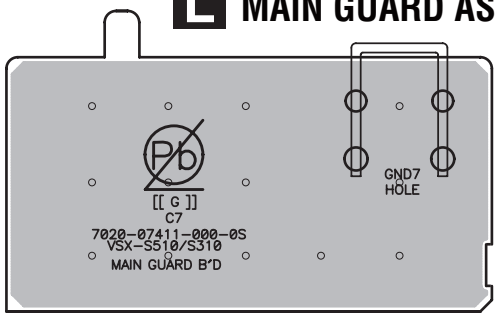
K AMP GUARD ASSY



CP809

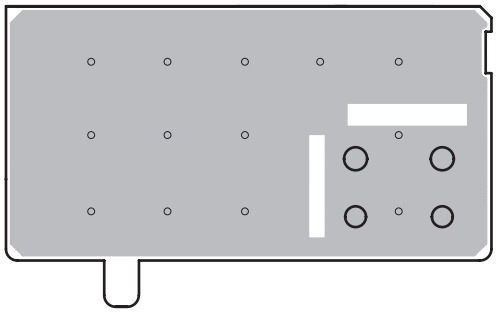
G CN117

L MAIN GUARD ASSY



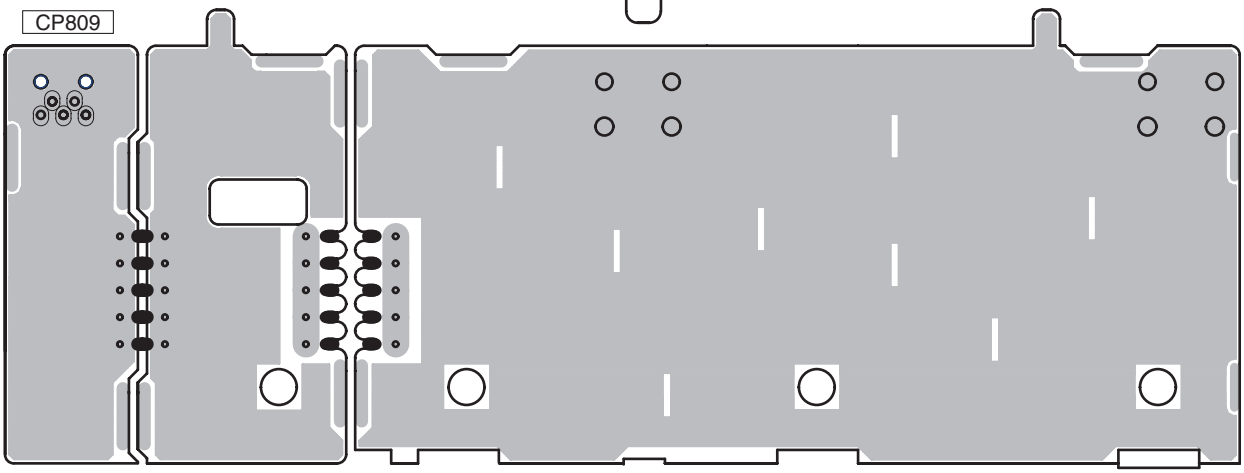
SIDE B

L MAIN GUARD ASSY



K AMP GUARD ASSY

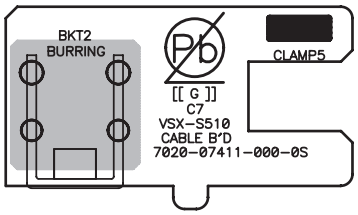
CP809



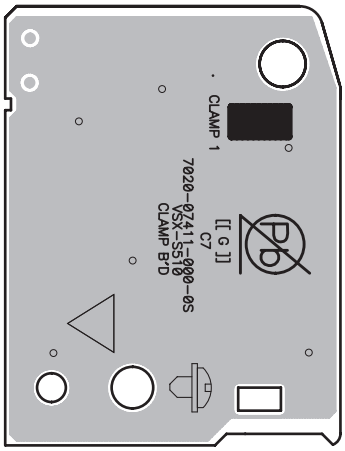
K **L**

SIDE A

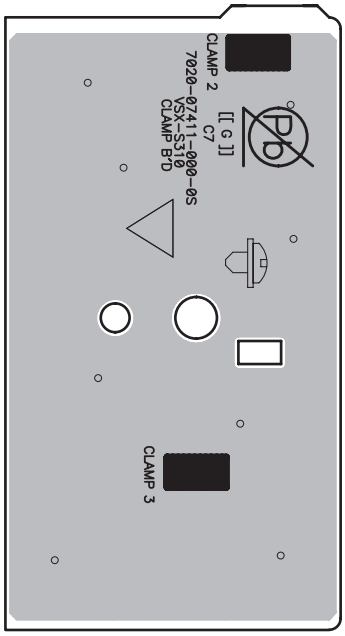
M CABLE ASSY



N CLAMP ASSY (VSX-S510)

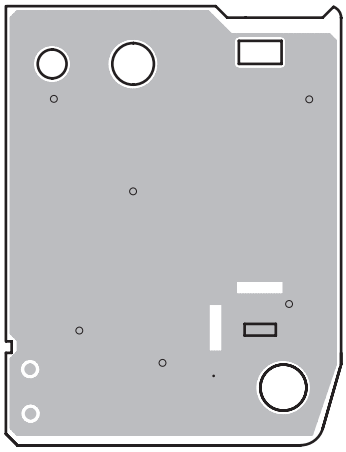


N CLAMP ASSY (VSX-S310)

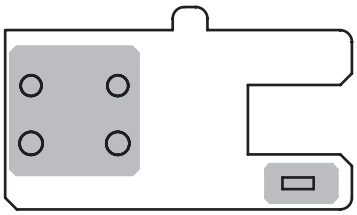


SIDE B

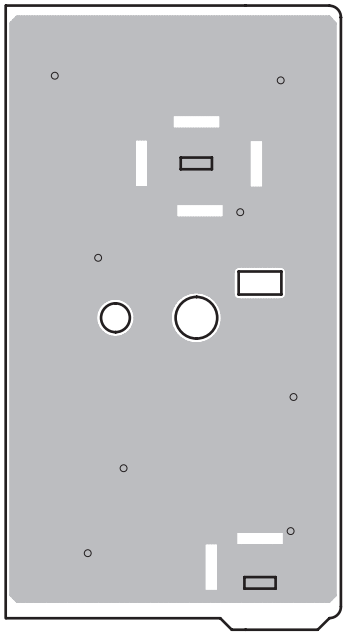
N CLAMP ASSY (VSX-S510)



M CABLE ASSY



N CLAMP ASSY (VSX-S310)



M N

12. PCB PARTS LIST

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

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

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

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

560 Ω	→	*56 × 10^1*	→	*561* ····· *RD1/4PU 5 6 1 J*
47 kΩ	→	*47 × 10^3*	→	*473* ····· *RD1/4PU 4 7 3 J*
0.5 Ω	→	*R50*		····· *RN2H R 5 0 K*
1 Ω	→	*1R0*		····· *RS1P 1 R 0 K*

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

5.62 kΩ	→	*562 × 10^1*	→	*5621* ····· *RN1/4PC 5 6 2 1 F*

LIST OF ASSEMBLIES

Mark	No. Description	Part No.
NSP	1..MAIN ASSY (VSX-S510)	7025HK1301010-IL
	2..MAIN ASSY	7028074101010-IL
NSP	1..MAIN ASSY (VSX-S310)	7025HK1302010-IL
	2..MAIN ASSY	7028074101050-IL
NSP	1..FRONT ASSY (VSX-S510)	7025HK1301011-IL
	2..FRONT ASSY	7028074121010-IL
	2..AMP GUARD ASSY	7028074123010-IL
	2..SIDE CNT ASSY	7028074124010-IL
NSP	1..FRONT ASSY (VSX-S310)	7025HK1302011-IL
	2..FRONT ASSY	7028074121050-IL
	2..AMP GUARD ASSY	7028074123010-IL
	2..SIDE CNT ASSY	7028074124050-IL
NSP	1.. DAMP ASSY (VSX-S510)	7025HK1301012-IL
	2..DAMP ASSY	7028074111010-IL
	2..BT ASSY	7028074112010-IL
	2..CABLE ASSY	7028074113010-IL
	2..BRIDGE ASSY	7028074114010-IL
	2..MAIN GUARD ASSY	7028074115010-IL
	2..CLAMP ASSY	7028074117010-IL
NSP	1.. DAMP ASSY (VSX-S310)	7025HK1302012-IL
	2..DAMP ASSY	7028074111050-IL
	2..BRIDGE ASSY	7028074114050-IL
	2..MAIN GUARD ASSY	7028074115010-IL
	2..USB ASSY	7028074116050-IL
	2..CLAMP ASSY	7028074117050-IL
NSP	1..DMAIN ASSY (VSX-S510)	7025HK1301013-IL
	2..DMAIN ASSY	70280732310C0-IL
NSP	1..DMAIN ASSY (VSX-S310)	7025HK1302013-IL
	2..DMAIN ASSY	7028073351090-IL
NSP	1..FHDMI ASSY (VSX-S510)	7025HK1301014-IL
	2..FHDMI ASSY	7028074131010-IL
	1..POWER TRANS ASSY (VSX-S510)	8208001050010-IL
	1..POWER TRANS ASSY (VSX-S310)	8208001050030-IL

A MAIN ASSY

7028074101010-IL and 7028074101050-IL are constructed the same except for the following:

Mark	Symbol and Description	7028074101010-IL	7028074101050-IL
	IC101	J127380010060-IL	J127762060010-IL
	IC102	Not used	J170747810010-IL
	IC104	J040405200060-IL	J040740800240-IL
	IC106	J121458000050-IL	Not used
	IC115	J121458000050-IL	Not used
	IC119	SN74AHC1G08DCK	Not used
	IC122	J126111733230-IL	Not used
	IC124	J121458000050-IL	Not used
	IC125	J121718100010-IL	Not used
	IC802	J126238600050-IL	J126111733230-IL
	JA106 Ter,rca 1pin	Not used	G600107AY000Y-IL
	JA802 Cn,plug Contact	G480400201010-IL	Not used
	X101 Crystal	Not used	E80017R734410-IL

F FRONT ASSY

7028074121010-IL and 7028074121050-IL are constructed the same except for the following:

Mark	Symbol and Description	7028074121010-IL	7028074121050-IL
	D800	K500036000160-IL	K500052009011-IL
	D801	K500036000160-IL	K500052009011-IL

G DAMP ASSY

7028074111010-IL and 7028074111050-IL are constructed the same except for the following:

Mark	Symbol and Description	7028074111010-IL	7028074111050-IL
	RY105 Relay	G680060103010-IL	Not used
	C842	D041102087010-IL	Not used
	C865	D041102087010-IL	Not used

I SIDE CNT ASSY

7028074124010-IL and 7028074124050-IL are constructed the same except for the following:

Mark	Symbol and Description	7028074124010-IL	7028074124050-IL
	CN603 Cn,wafer	L109012511120-IL	Not used
	CN805 Cn,wafer	L109012511120-IL	L109012513320-IL

Mark	No.	Description	Part No.

A MAIN ASSY

SEMICONDUCTORS

	IC	103	TC7WHU04FK
	IC	105	J084152180010-IL
	IC	106,108-117,124	J121458000050-IL
	IC	107	J040405200060-IL
⚠	IC	118	S-1170B50UC-OUJ
	IC	119	SN74AHC1G08DCK
	IC	121	J000241600170-IL
⚠	IC	122	J126111733230-IL
	IC	123	J020303020040-IL
	IC	125	J121718100010-IL
⚠	IC	802	J126238600050-IL
	IC	803	J127380010060-IL
⚠	Q	108,114	J5001281Y0010-IL
⚠	Q	109,115	J5023209Y0010-IL

MISCELLANEOUS

JA	100	TER,RCA 1PIN	G600107A0000Y-IL
JA	104	MODULE	E100802000250-IL
JA	802	CN,PLUG CONTACT	G480400201010-IL
RY	100	RELAY	G680240202030-IL
X	100	CRYSTAL	E80016R000030-IL

CAPACITORS

C	423		D040102081070-IL

B DMAIN ASSY (VSX-S510)

SEMICONDUCTORS

⚠	IC	103	NJM2831F33
	IC	1201	J003400010230-IL
	IC	1501,1509,1510	TC74VHC157FK
	IC	1513	TC7SH08FUS1
⚠	IC	1605	AAT4610BIGV-1
	IC	1612	J005254001010-IL
	IC	1801	AK4588VQ
	IC	1804,9601	TC74VHC08FK
	IC	1808	TC7WHU04FK
	IC	9002	J080320788010-IL
	IC	9003	J001986466010-IL
	IC	9004	J005291607010-IL
	IC	9201,9209	A3V56S30FTP-G6
	IC	9205	J0059F1008020-IL
	IC	9206	J044337395930-IL
⚠	IC	9450,9502	MM3529A12P
⚠	IC	9511	MM3529A50P
⚠	IC	9555	MM3411A50N
	IC	9602	SII9573CTUC
	Q	401	J543608000010-IL
	Q	403	RAQ045P01

MISCELLANEOUS

JA	1601,9601-9605	CN.WAFER	L109100190160-IL
JA	9202	JACK,MODULAR	G4060RJ450230-IL

Mark	No.	Description	Part No.

B DMAIN ASSY (VSX-S310)

SEMICONDUCTORS

	IC	2001	J020025A00640-IL
⚠	IC	2004	NJM2831F33
⚠	IC	2005,2006	S-1170B50UC-OUJ
	IC	2007	J048650300010-IL
⚠	IC	2008	MM3529A32P
	IC	2011	AK4588VQ
	IC	2012	J046944201280-IL
⚠	IC	2013	J126111712070-IL
	IC	2014	J040742570040-IL
⚠	IC	2015	J126111718230-IL
	IC	2016	D808K013DPTP400
⚠	IC	2017	J126108600080-IL
	IC	2018	J001986466010-IL
	IC	2019	J005253200060-IL
	IC	2020	J044337395930-IL
⚠	IC	2021	BA00DD0WHFP
	IC	2024	J127380010060-IL
	IC	2026	J000240160080-IL
	Q	2026,2036,2040,2042	J543608000010-IL

MISCELLANEOUS

X	2000,2001	CRYSTAL	E80024R000030-IL
X	2002	CRYSTAL	E80024R576040-IL

C BT ASSY (VSX-S510)

SEMICONDUCTORS

	IC	600	BD2224G

D FHDMI ASSY (VSX-S510)

SEMICONDUCTORS

	IC	500	J127380010010-IL
	IC	501	J127380100050-IL
	IC	502	PCA9517DGK
	IC	503	J048650300010-IL

MISCELLANEOUS

JA	502	CN,PLUG CONTACT	G480400201010-IL

E USB ASSY (VSX-S310)

MISCELLANEOUS

JA	803	CN,PLUG CONTACT	G480040000180-IL

Mark	No.	Description	Part No.

F FRONT ASSY

SEMICONDUCTORS

	IC	800	J127197044010-IL
	IC	801	J121458000050-IL
⚠	Q	801	J5001266G0050-IL
	D	800,801	K500036000160-IL

MISCELLANEOUS

	JA	800,801 JACK,D3.5	G401PJ354H71Y-IL
	S	800-805 SWITCH	G180501000010-IL
	S	810 SW,ENCODER	G121122400060-IL
	S	811 SW,ENCODER	G121122400330-IL
		800 CUSHION	4050214865000-IL
		801 TAPE	1220211629000-IL
		802 HOLDER	4320211196000-IL
	U	800 DISPLAY,FLT	K530126600011-IL
	U	801 MODULE,REMOCON	E940348003810-IL

G DAMP ASSY

MISCELLANEOUS

RY	100-105 RELAY	G680060103010-IL
	600-602 SHEET (HEAT)	1210211399000-IL
	604-607 SCREW	B020030081B10-IL

CAPACITORS

C	606,614,683,693	D041102087010-IL
C	709,718,765,770	D041102087010-IL
C	777,784,842,865	D041102087010-IL

H POWER TRANS ASSY

POWER TRANS ASSY has no service parts.

I SIDE CNT ASSY

MISCELLANEOUS

CN	603,804,805 CN,WAFER	L109012511120-IL

J BRIDGE ASSY

BRIDGE ASSY has no service parts.

K AMP GUARD ASSY

AMP GUARD ASSY has no service parts.

L MAIN GUARD ASSY

MAIN GUARD ASSY has no service parts.

Mark	No.	Description	Part No.

M CABLE ASSY (VSX-S510)

CABLE ASSY has no service parts.

N CLAMP ASSY

CLAMP ASSY has no service parts.