

AV RECEIVER**TX-SR373**

- ✓ Pre Issue (2016-Nov)
- ✓ Final Issue (2017-Feb)

**Service Manual****CONTENTS**

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SAFETY-RELATED COMPONENT WARNING!! : COMPONENTS IDENTIFIED BY MARK $\triangle$ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL. MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.



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.

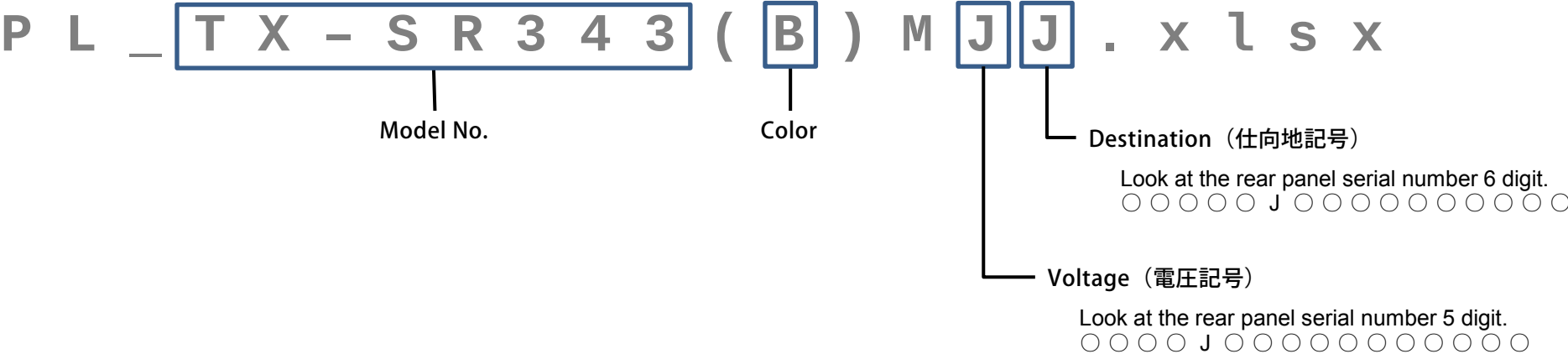
ONKYO®

Published by Onkyo & Pioneer Corporation Global CS Department

File Name of Parts List File (EXCEL File)

Note for Parts List

When parts list is EXCEL file, please refer to the following explanation about file name.

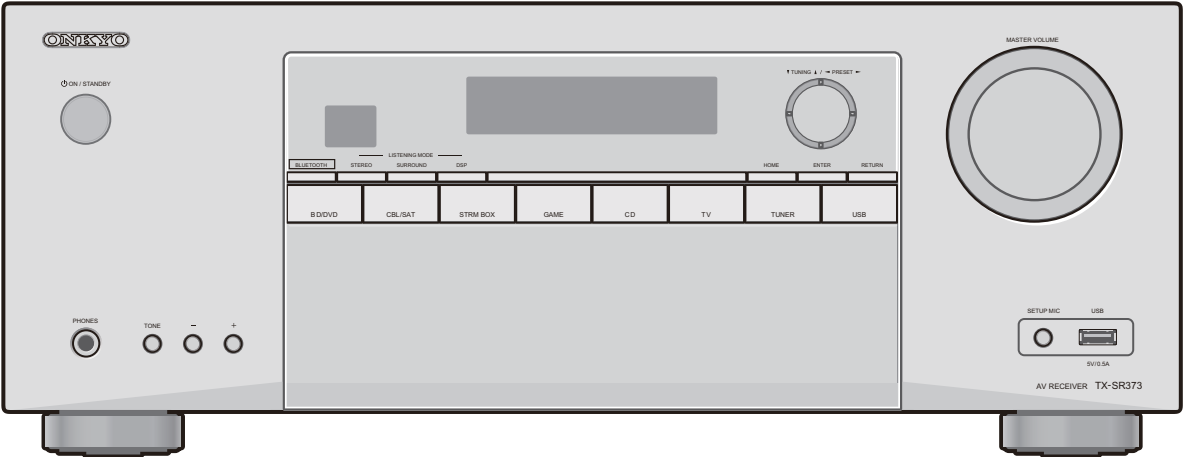


Color (色記号)			
(X)	Not related to color		
(B)	Black	(M)	Wood
(BR)	Brown	(O)	Orange
(C)	Cherry	(P)	Pink
(G)	Gold	(R)	Red
(GR)	Green	(S)	Silver
(H)	Gray	(V)	Violet
(K)	Black	(W)	White
(L)	Blue	(Y)	Yellow
(LB)	Light Blue		

Voltage (電圧記号)	
D	120V AC
G	220~230V
H	220~230／240V
J	100V AC
M	220~240V AC
P	230V AC
U	100~240V AC
V	110~240V
W	120V／220~240V
Speaker System (without AMP.) :	
0	Passive Subwoofer
F	Front Speaker
C	Center Speaker
R	Rear Speaker
B	Back Speaker

Destination (仕向地記号)		
A	Australia	Speaker System (without AMP.) :
B	United Kingdom	
C	North American	
D	USA	
F	Taiwan	
J	Japan	
K	Korea	
L	Russia	
P	Europe	
Q	Hong Kong	
R	China	
S	Brazil	L Left channel
T	Thai	
U	Worldwide	
		R Right channel
		0 Center channel

Front Panel



Panel

Remote Control Unit
RC-928R



Supplied Accessories

- Remote control (RC-928R) --- (1)
- Batteries/ (AAA/R03) --- (2)
- FM wire antenna --- (1)
- AM loop antenna --- (1)
- Setup microphone --- (1)

Dimensions : 435 mm (W) x 168 mm (H) x 326.5 mm (D) (17 1/8 in. (W) 6 5/8 in. (H) 12 13/16 in. (D))
Weight (without package) : 8.0 kg (17.6 lbs)

Resetting the main unit

Use this procedure to reset all the receiver's settings to the factory default. Use the front panel controls to do this.

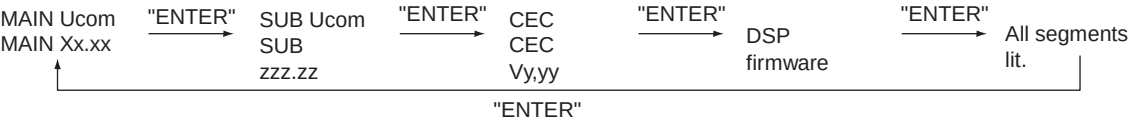
- 1 Switch the receiver into standby.
- 2 While holding down **STEREO**, press and hold **ON/STANDBY** for about two seconds.
- 3 When you see **RESET?** appear in the display, press **SURROUND**.
OK? shows in the display.
- 4 Press **DSP** to confirm.
OK appears in the display to indicate that the receiver has been reset to the factory default settings.

Important

- If the **Standby Through** is not set to **OFF**, you may not be able to initialize the unit.

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 about 3 seconds the both of " ENTER " and " STANDBY/ON " keys as same time,
- Then it is appeared firmware version number.
- At this time, When you press the " ENTER "key to display each UCOM version, Each time the " ENTER "key is pressed, then indications on the FL display change as follows:



2. Turn the unit off.

[Necessary Tools and Connections]

1 MAIN microcomputer

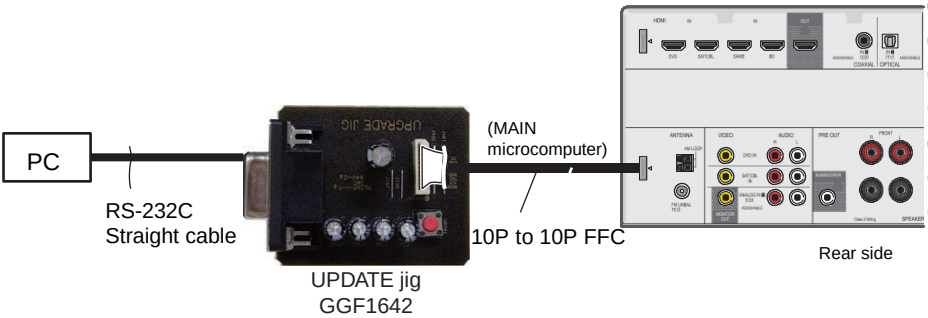
- PC with a serial port
- RS-232C cable (9-pin to 9-pin, straight cable) (Marketing product)
- UPDATE jig: GGF1642 (with 10P to 10P FFC)
- Firmware
- Firmware Writer Application for PC

(Flash Programmer M16C Flash Starter M3A-0806 Software)

http://am.renesas.com/products/tools/flash_prom_programming/flash_programmers/m3a_0806/downloads.jsp

Connect as shown in the below figure and follow the procedure as below

1. Install the software for updating on the PC
2. Unplug the AC Cord of the main unit
3. 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: GGF1642 (with 10P to 10P FFC)
- Firmware
- Firmware Writer Application for PC

(Cypress/Spansion FLASH MCU Programmer for FM0+/FM3/FM4)

<http://www.spansion.com/support/microcontrollers/developmentenvironment/Pages/mcu-download.aspx>

Connect as shown in the below figure and follow the procedure as below

1. Install the software for updating on the PC.
2. Unplug the power cord of the main unit.
Connect the FFC of the updating jig for updating to the main unit.
(Orient the FFC so that the conductive surface of the connector faces the triangular a symbol.)



3. Start the software for updating on the PC.

No Necessary connect Main and HDMI&CEC at the same time
When you update Main, you connect Main only.
When you update HDMI&CEC, you connect HDMI&CEC only.

When you have no "UPDATE jig GGF1642,
Please order ONKYO service parts dept.

How to Update (Main MCU) 1/5

Firmware

Microcomputers update

[Procedures]

■ for MAIN microcomputer

1. Unplug the AC cord.

Connect the FFC cable. (MAIN microcomputer)

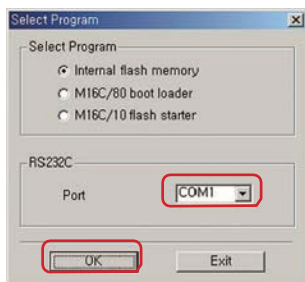
Start up application "FlashSta" on the PC.



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.

Note:

You need COM port number on Windows system

"My computer", "Right Click", "Properties", "Device manager"

Click COM port properties and Make sure COM port number.

[if the following messages are displayed]



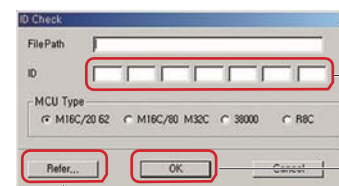
Please push the cancel button and press the JIG's

RESET button.

And confirm a connection of FFC.

Please return to procedure 1.

4. Select the update file and enter ID.

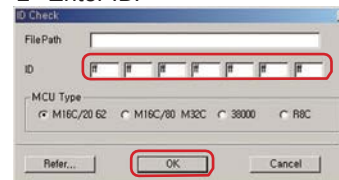


2. Enter ID.
Enter "ff" in all field.

3 Press OK button
to go to next step.

1 Selection of upgrade file

2 Enter ID.



Press the OK button.

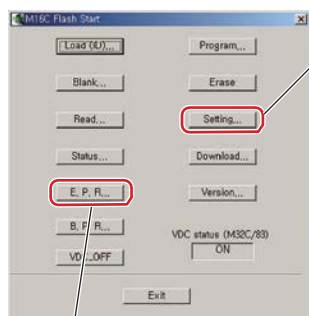


Press the OK

How to Update (Main MCU) 2/5

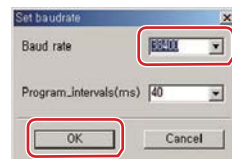
Firmware

5. Set speed update and update the MCU.



1 Set speed of update.

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

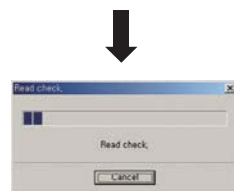
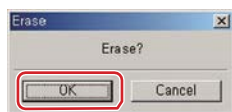


Press the OK button.

- 2 Update the MCU.

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

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



Click on "Open" 3 to open the File Selection window.
Select Intel Hex files (*.hex) in File Type.

6. Update Finished MAIN microcomputer.



Press the OK button.

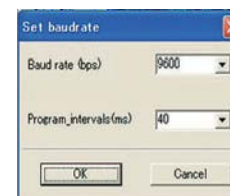


Press the Exit button.
Please wait for until this window disappears.

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.

How to Update (HDMI Sub MCU) 3/5

Firmware

■ for HDMI & CEC (SUB) microcomputer

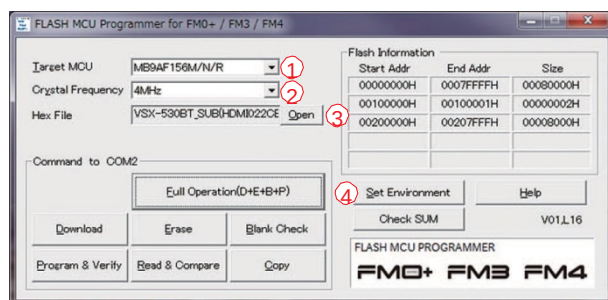
[Procedures]

To perform updating, proceed as follows:

1. Set the values for Target MCU and Crystal Frequency, as follows:

Target MCU: MB9AF156M/N/R 1

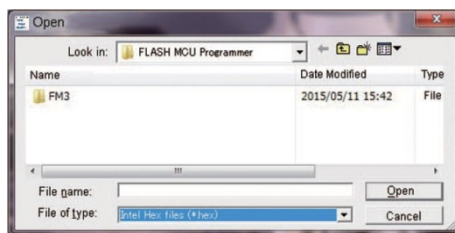
Crystal Frequency: 4MHz 2



2. Specify the software file to be updated.

Click on "Open" 3 to open the File Selection window.

Select Intel Hex files (*.hex) in File Type

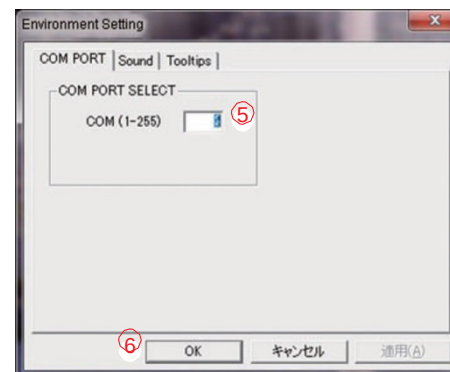


3. Specify the COM PORT.

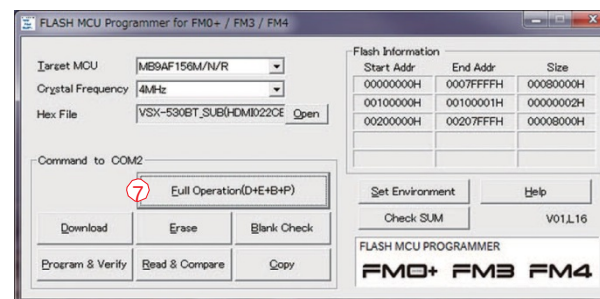
Click on "Set Environment" 4 to open the Environment Setting window.

Assign the COM PORT number 5, according to the environment.

Click on "OK" 6 to close the Environment Setting window.



Click on "Full Operation (D+E+B+P)" 7.

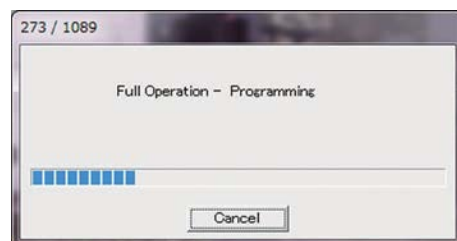
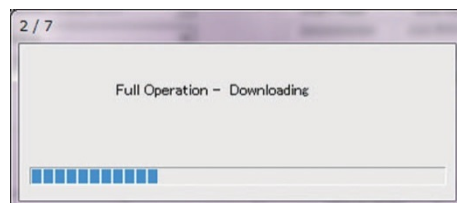
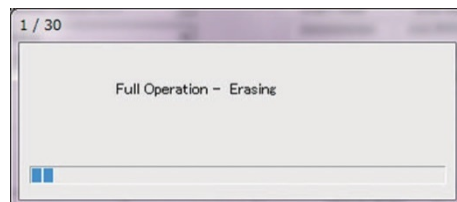


5. After the window shown below is displayed, turn the main unit on.
6. Press the Reset button of the updating jig for updating.
7. When it is appeared below window, Then power turn on unit (ON)

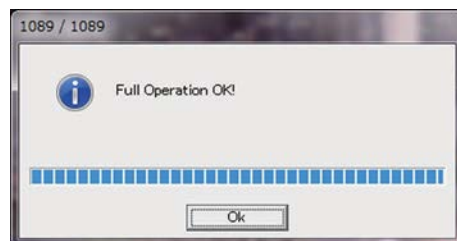


8. Click on "OK" 8.

9. The indications in the window change, as indicated below:

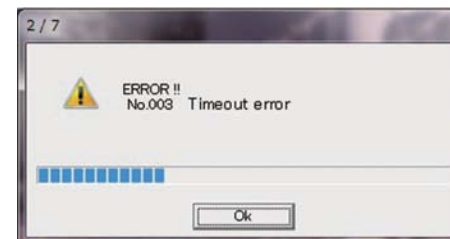


10. Updating has been successfully completed if "Full Operation OK!" is displayed.



Note:

If an error message like the one shown below is displayed, after checking the connection of the updating jig for updating and the COM PORT setting, start updating again from Step 1.



Or You have to make sure that It is necessary to turn on the unit at procedure 7

11. Turn the main unit off then disconnect the updating jig for updating.

12. Perform Factory Reset on the main unit.

DSP firmware update

[Procedures]

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

No Sound

Hookup and Setting

■ No sound from connected player

- ☐ Chose input selector which is assigned to connected input terminal ?
- ☐ Isn't muting on ?

■ No sound from connected TV

- ☐ Chose wrong input selector ?
- ☐ Connect to this model's HDMI OUT terminal from TV by HDMI cable ?
- ☐ When TV supports ARC function, connect to his model's HDMI OUT terminal from TV's HDMI input terminal for ARC function ?
- ☐ When TV doesn't support ARC function, connect TV to this model with optical cable etc. ?
- ☐ Isn't muting on ?

■ No sound from some connected loudspeaker(s)

- ☐ No sound loudspeaker(s) config is enabled ?

■ No sound from all connected TV or Blu-ray player etc.

- ☐ After chose loudspeaker volume level setting, test tone is OK ?

■ No problem about above items

- ☐ Unplug power cord
After 10 seconds, connect power cord again
- ☐ Reset this model

No Picture

Hookup and Setting

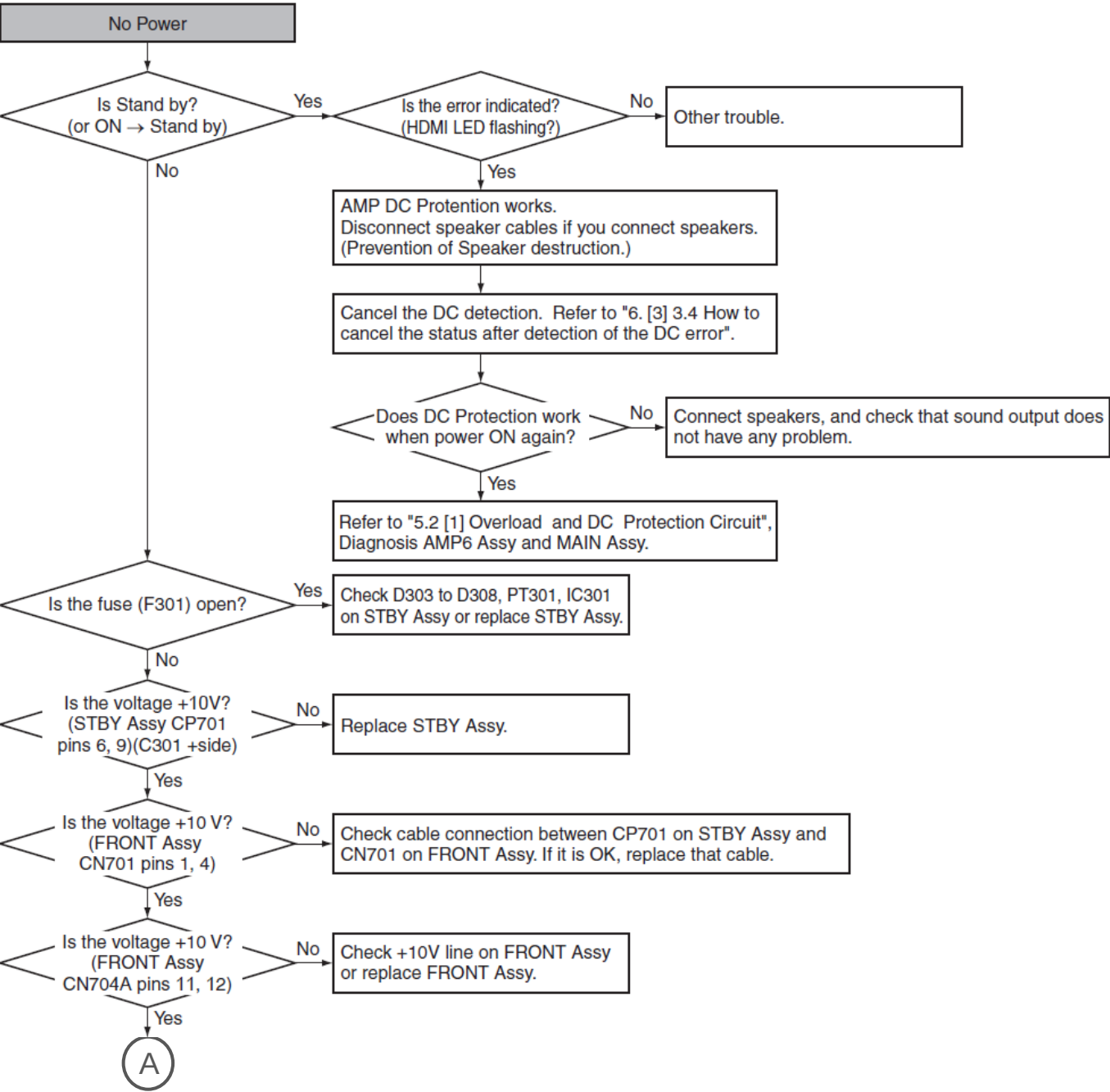
- In general
 - ☐ Connection cable is bent , twisted or damaged ?
 - ☐ Input is switched on TV ?
- No picture from connected player by HDMI input terminal
 - ☐ Chose input selector which is connected to player ?
 - ☐ Listening mode is not Pure Audio ?
 - ☐ Don't use HDMI-DVI adaptor. From personal computer ?
- No picture from connected player by component video terminal
 - ☐ Output to TV connected to component video out terminal from player's picture connected to the composite video input terminals ?
- No problem about above items
 - ☐ Unplug power cord
After 10 seconds, connect power cord again
 - ☐ Reset this model

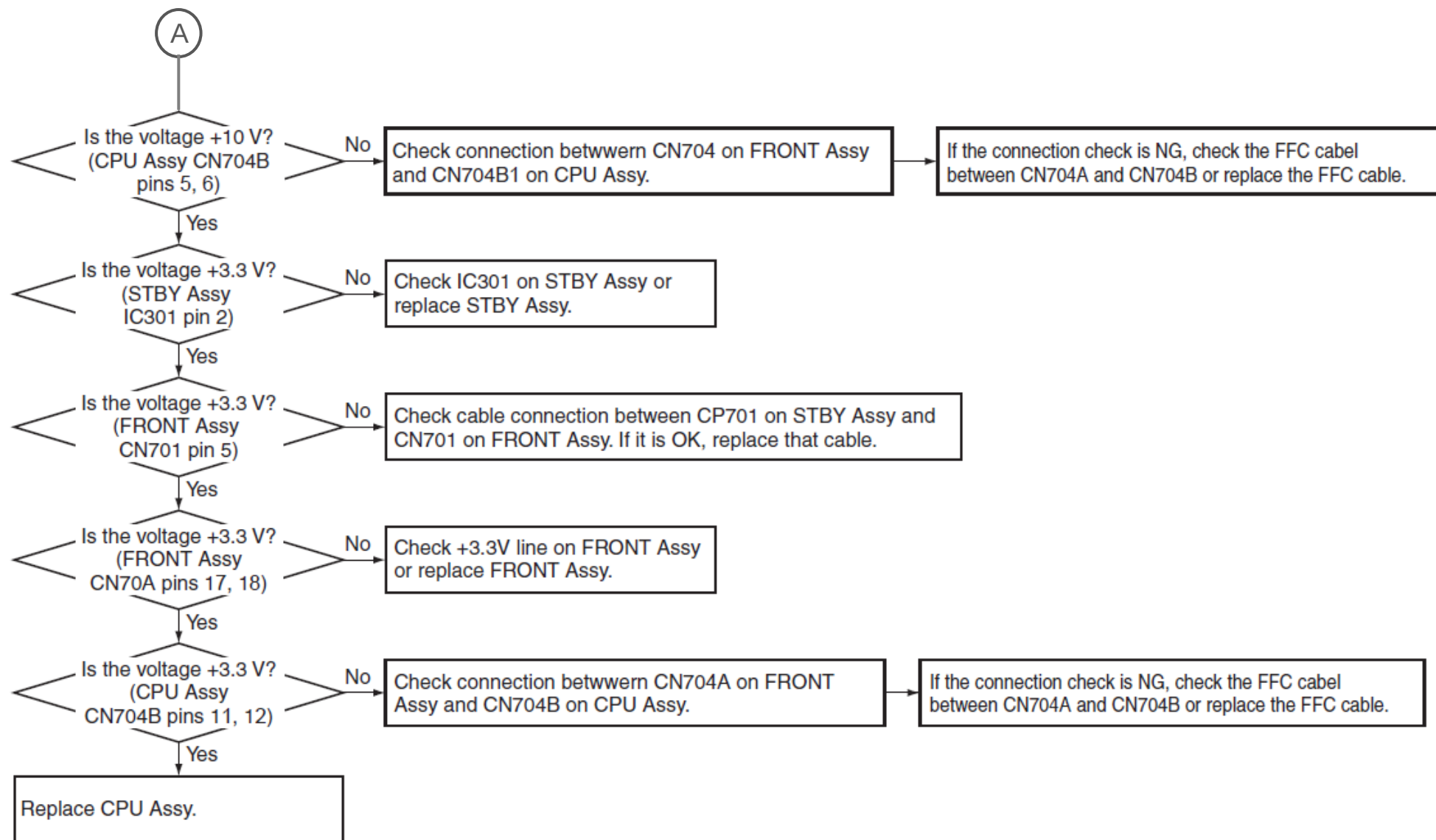
No Power

Hookup and Setting

- In general
 - ☐ Doesn't be connection cable bent, be it twisted and be it damaged?
- There is time when indication on the front panel doesn't just light up.
 - ☐ Please check the connecting cord of a DISPLAY PCB.
- No problem about above items
 - ☐ Unplug power cord
 - After 10 seconds, connect power cord again
 - ☐ Reset this model

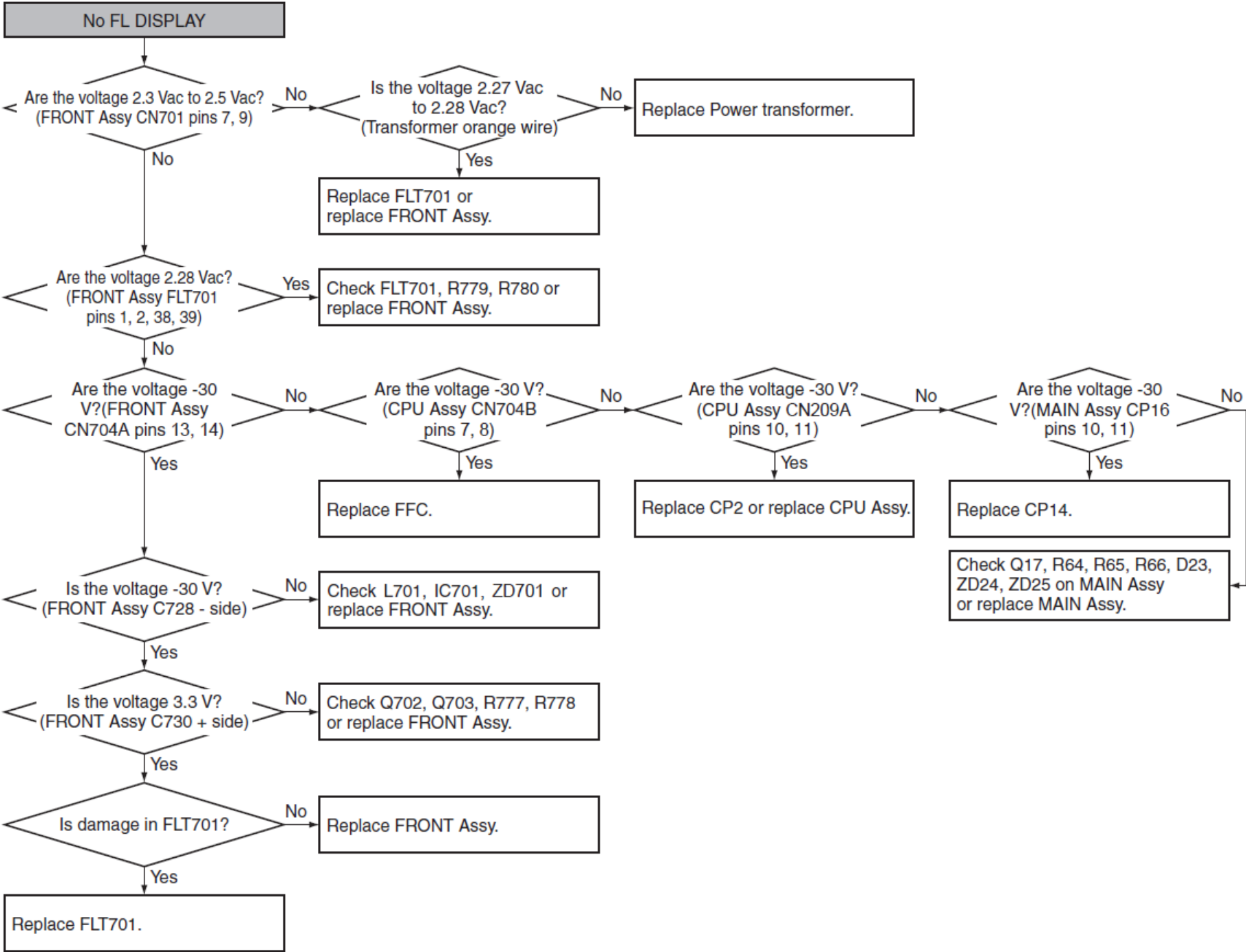
This is just for general reference and does not including every single case.



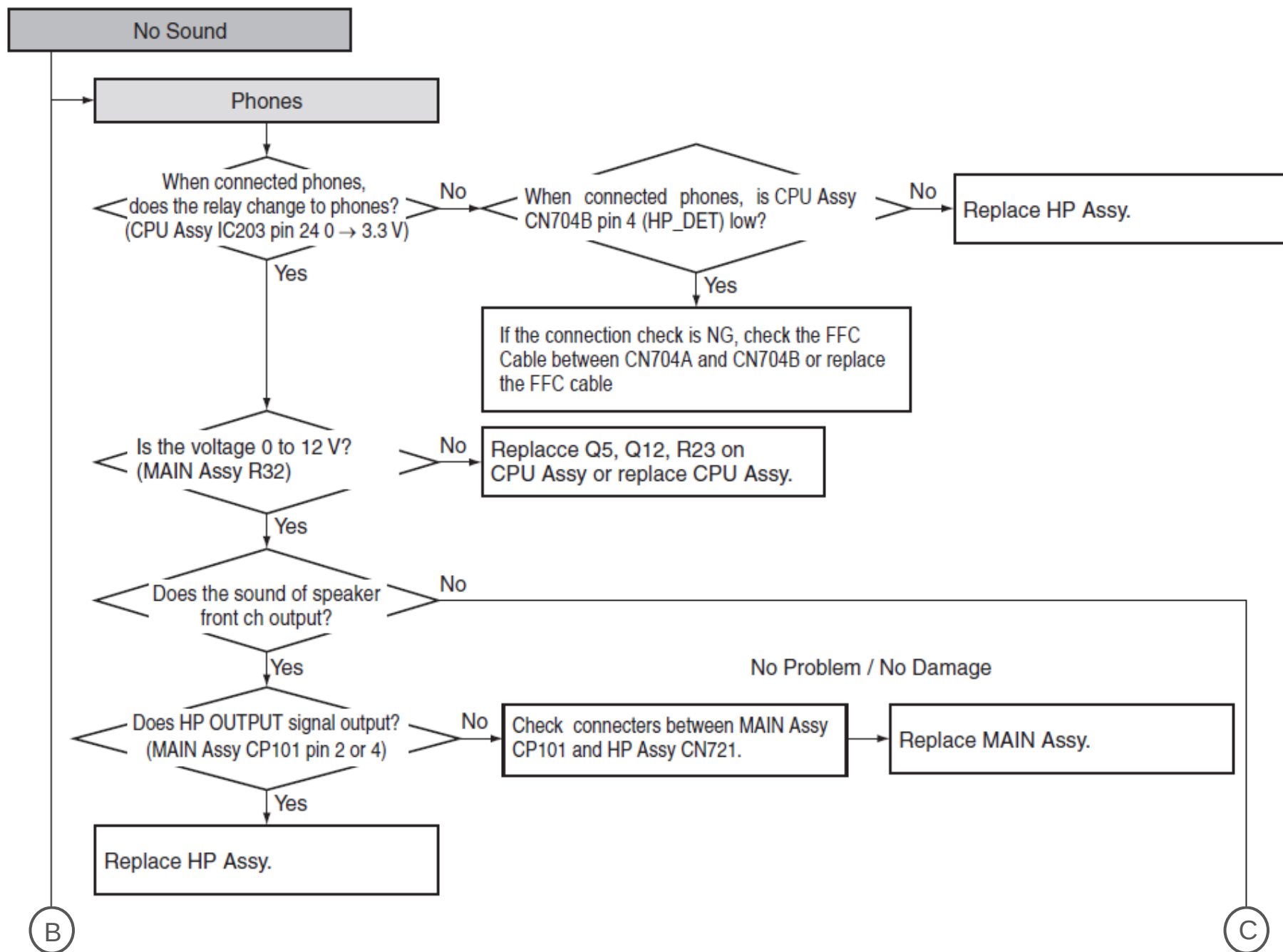


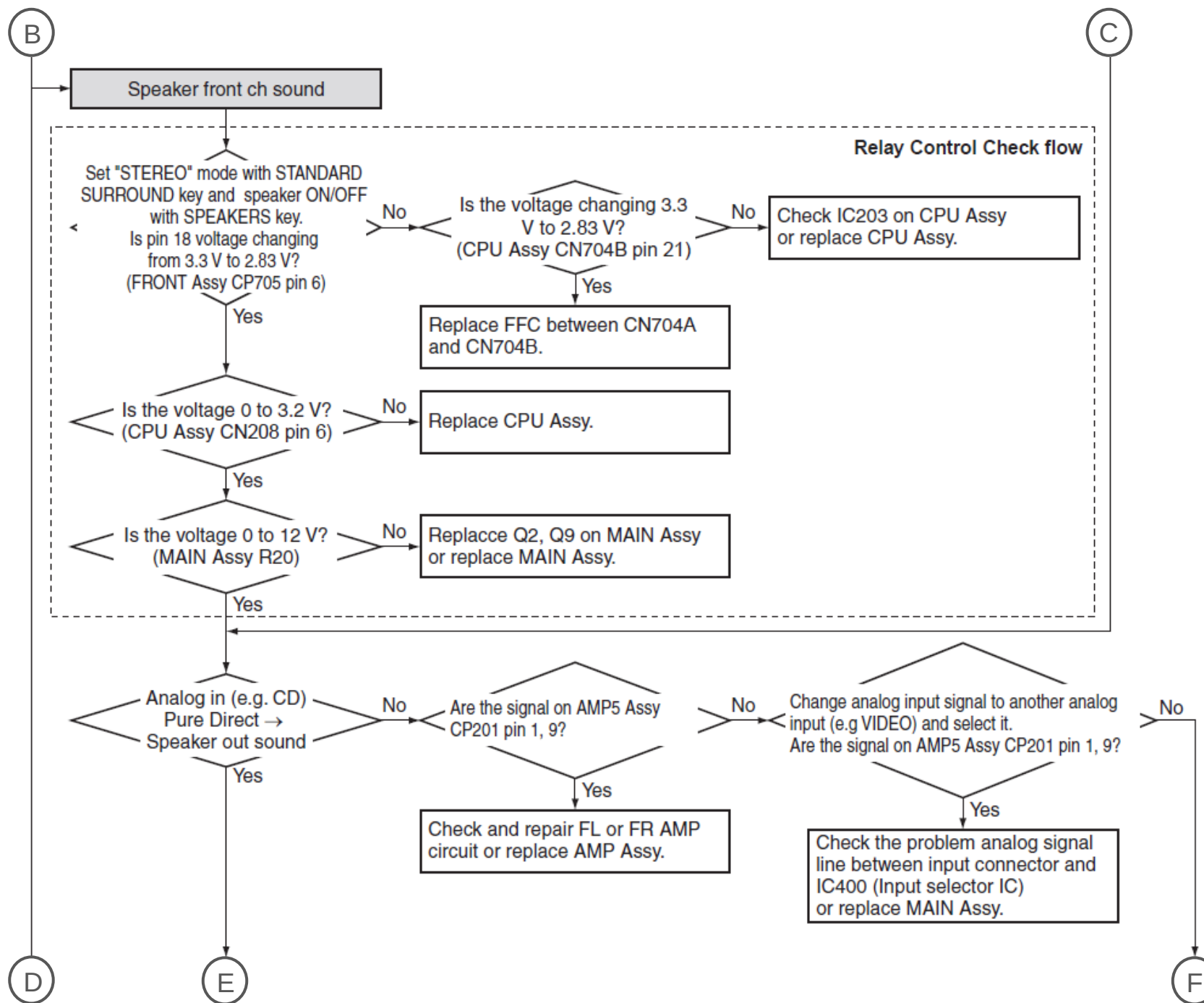
No Display

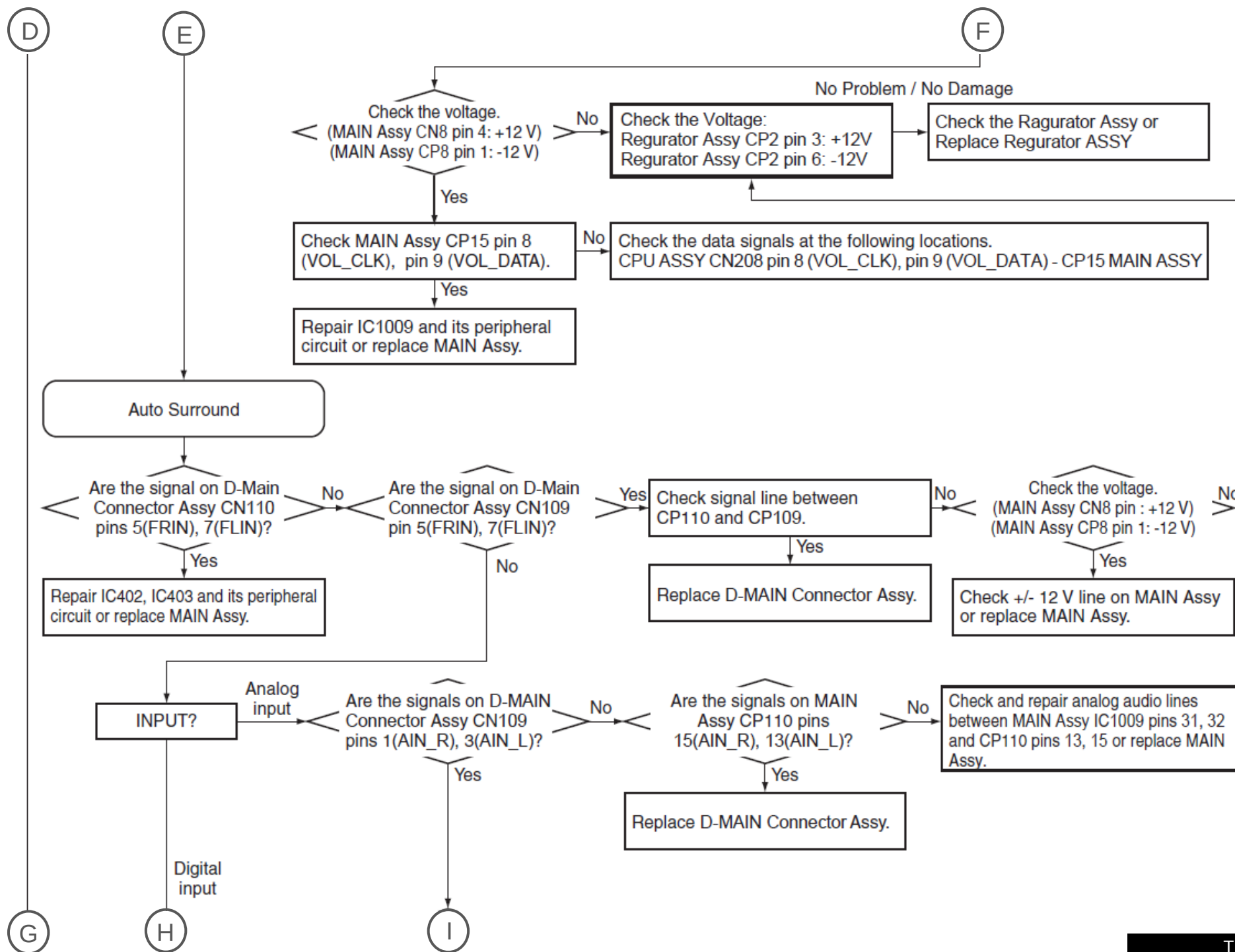
Trouble Shoot

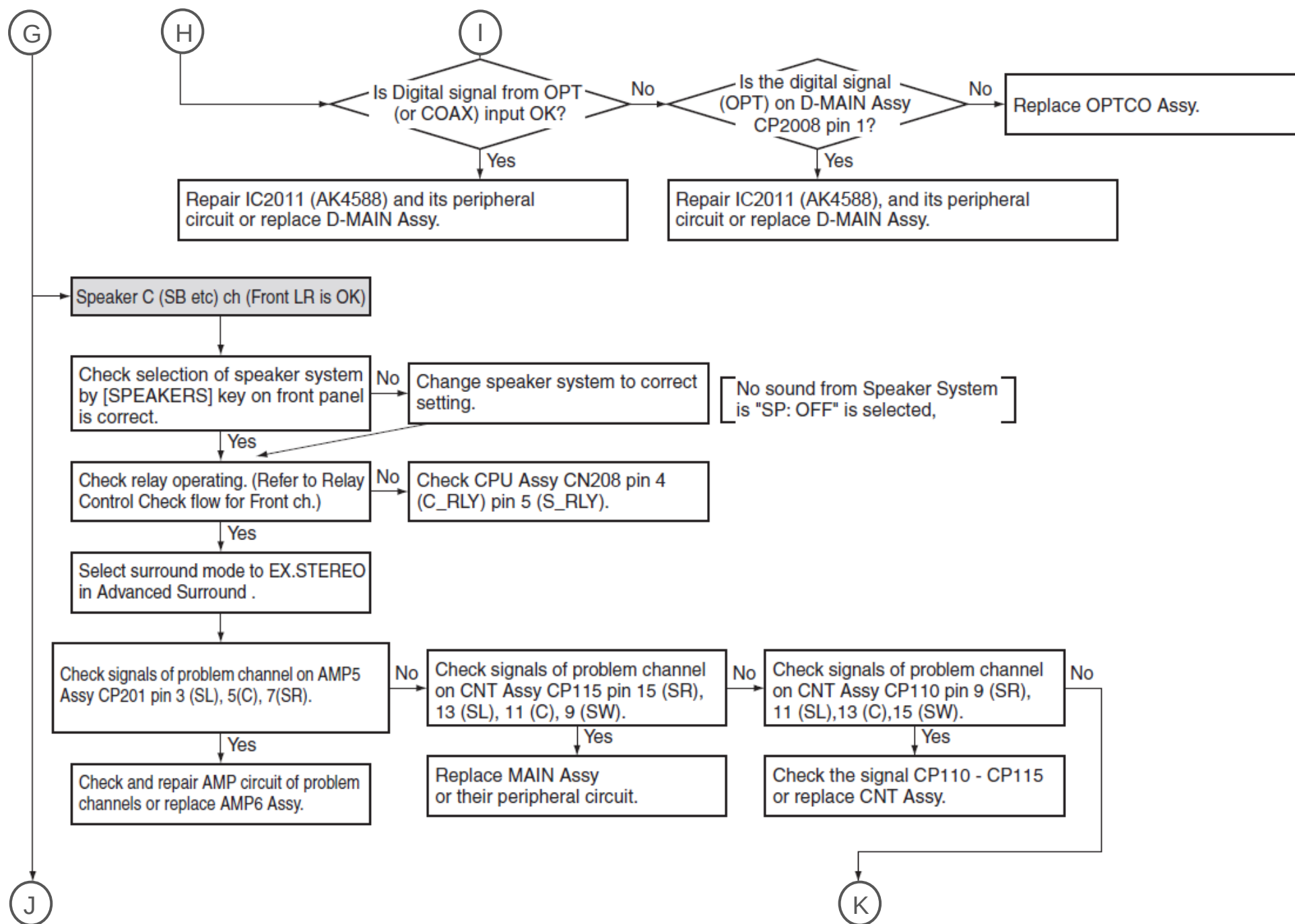


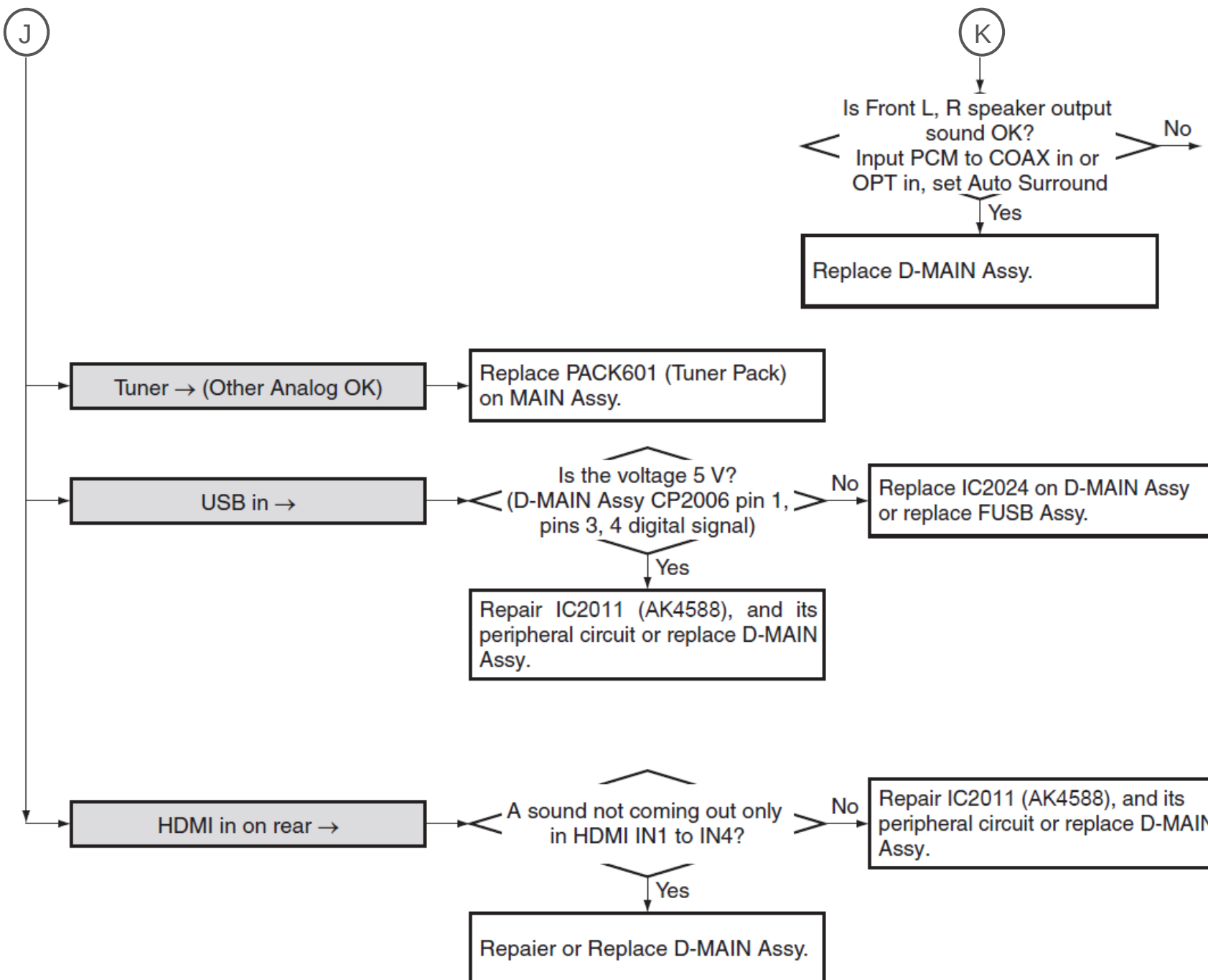
This is just for general reference and does not including every single case.





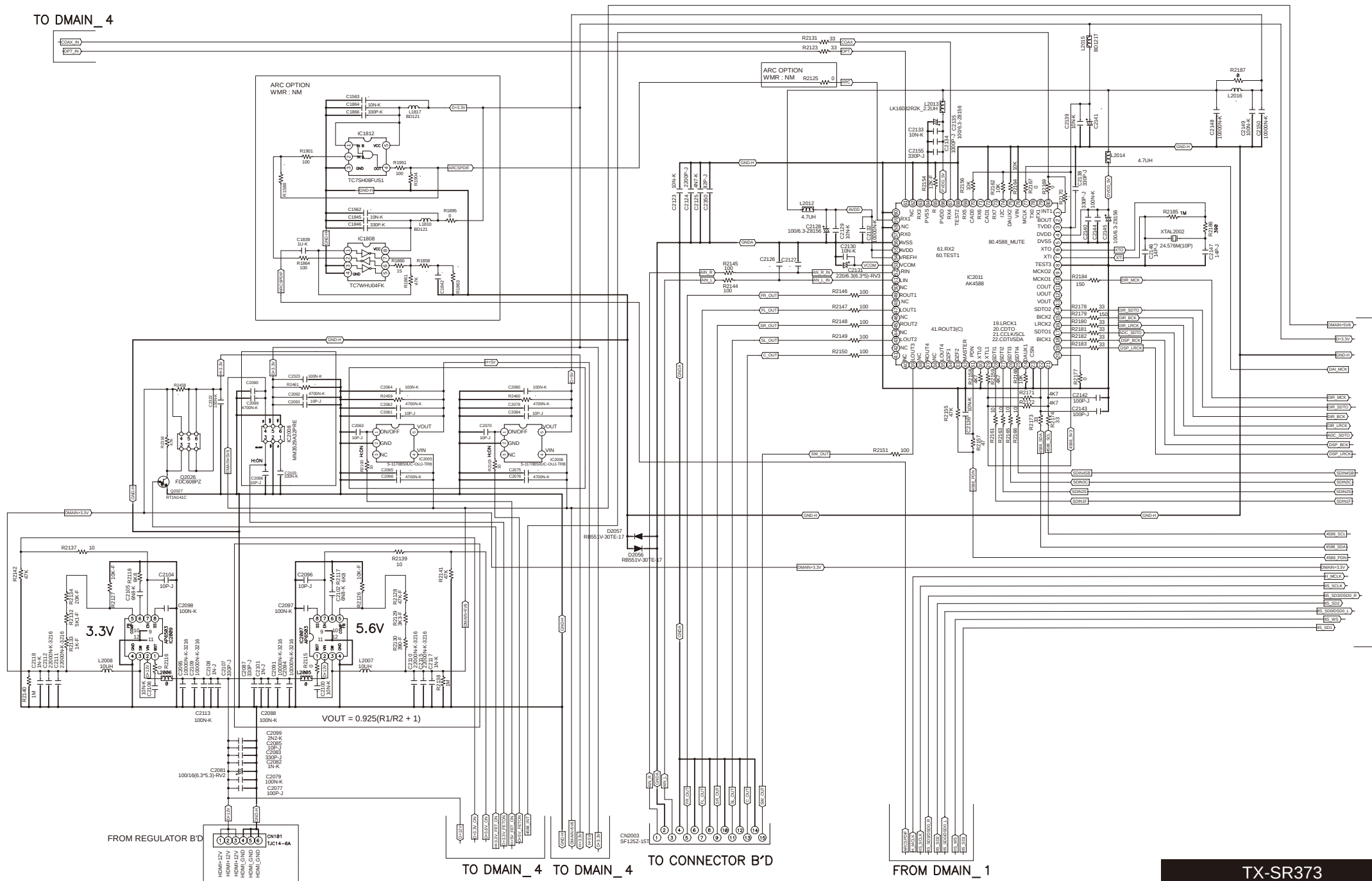
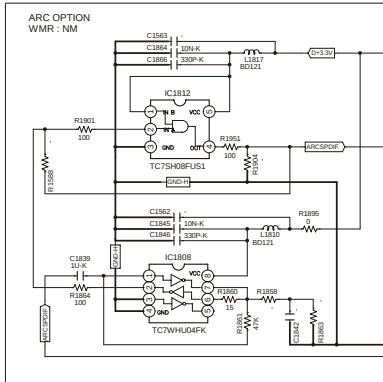






DMAIN2

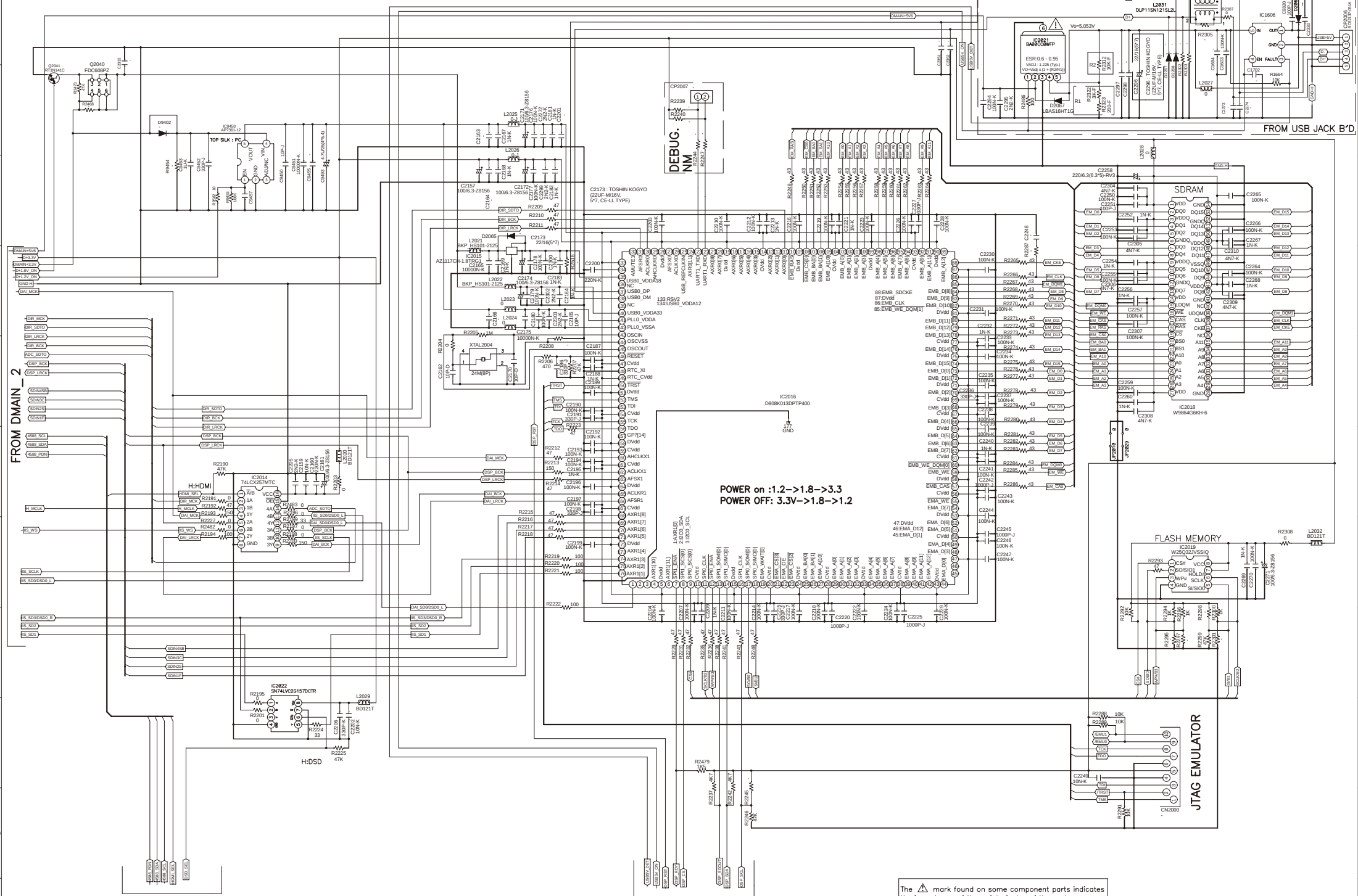
The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore when replacing be sure to use parts of identical designation



TO DOMAIN 3

TX-SR373

DMAIN3



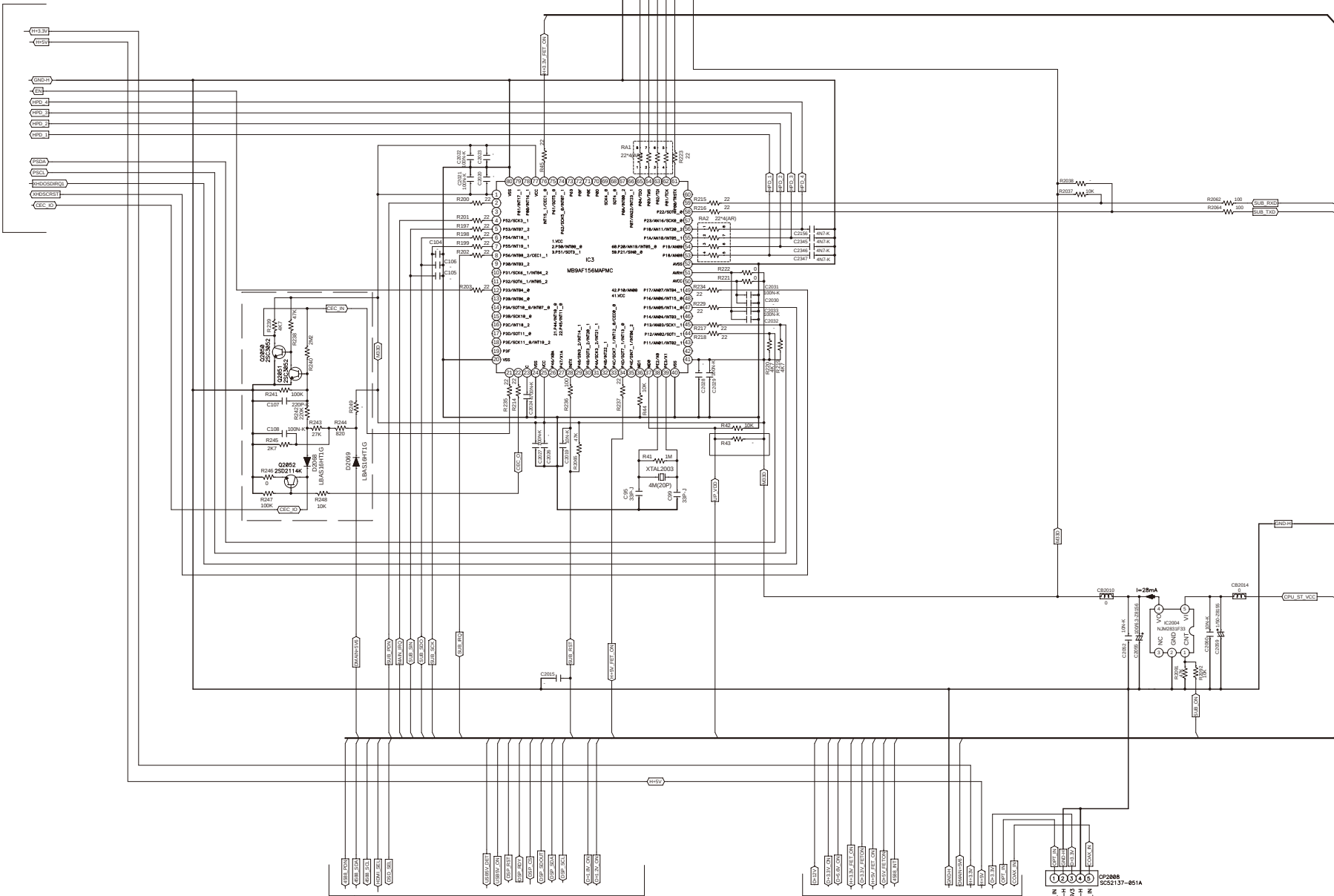
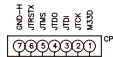
The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore when replacing be sure to use parts of identical designation

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DMAIN4

TO DMAIN_1

JTAG



TO DMAIN_3

TO DMAIN_2

FROM OPT/COAX B'D

TX-SR373

FRONT

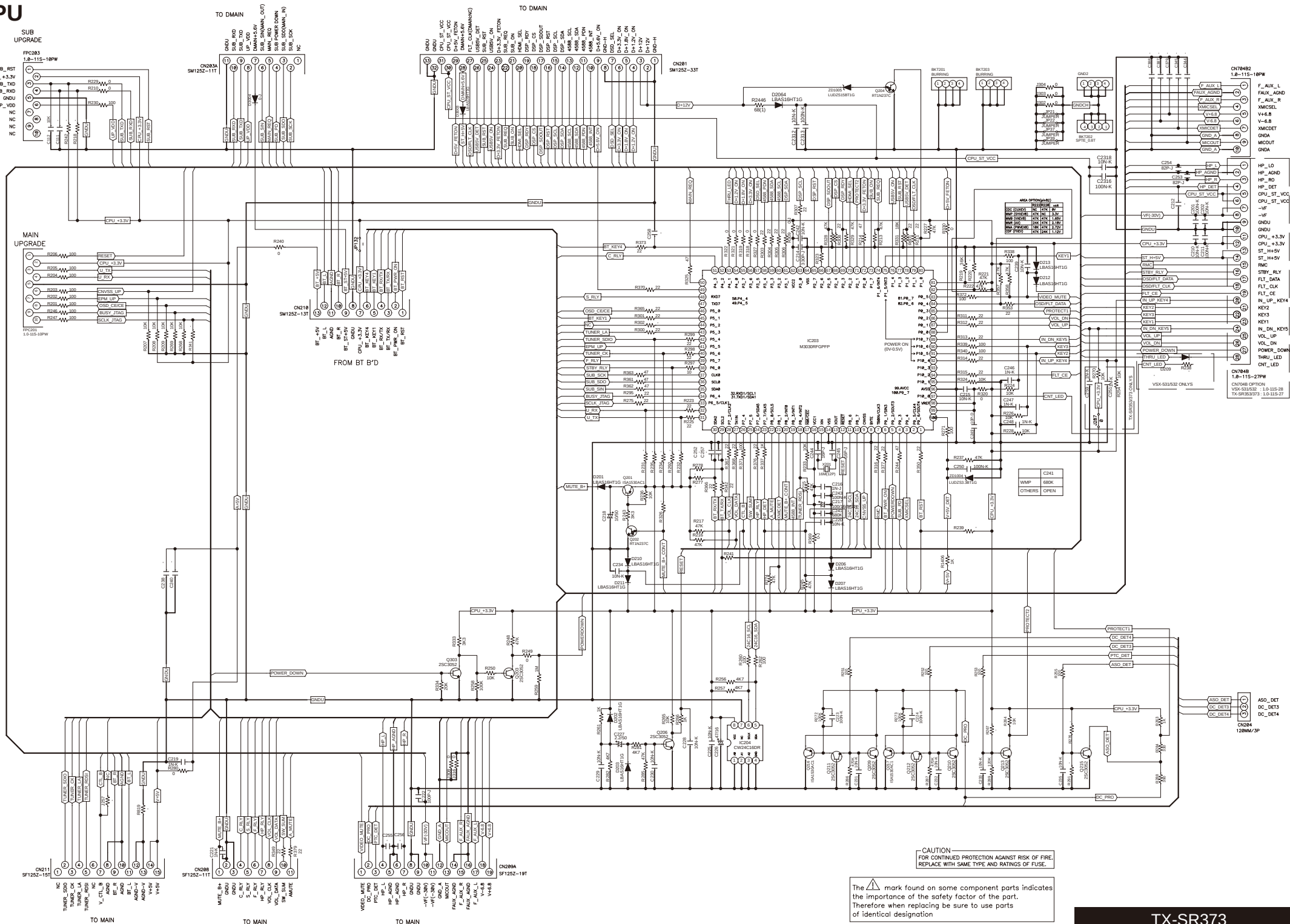
TO CPU B'D

FRONT

TO CPU B'D

REAR

CPU



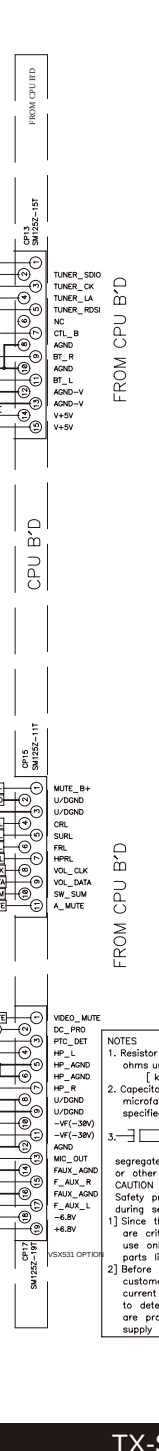
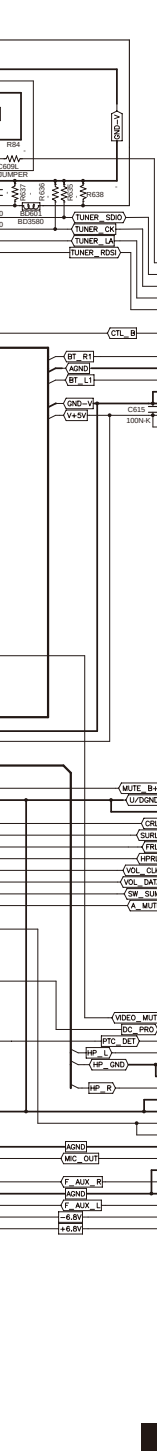
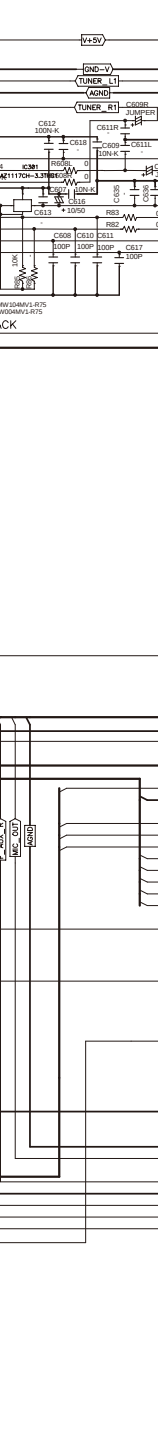
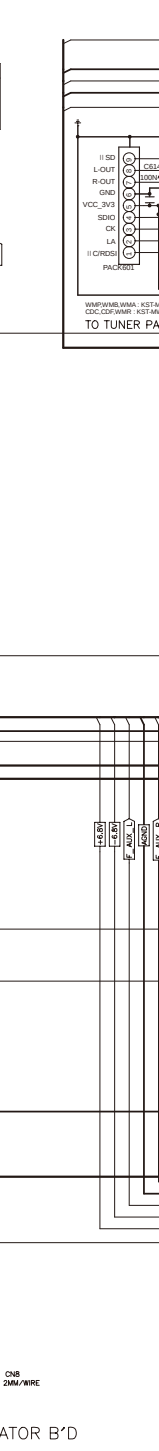
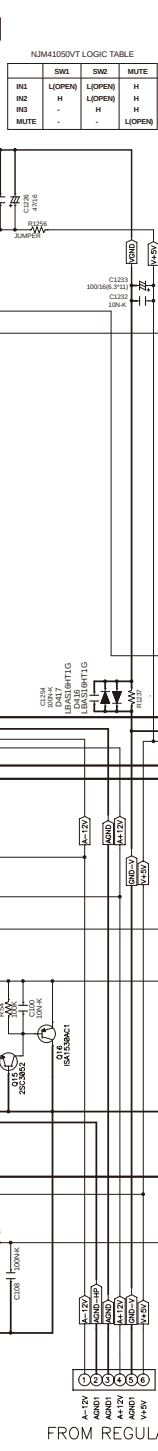
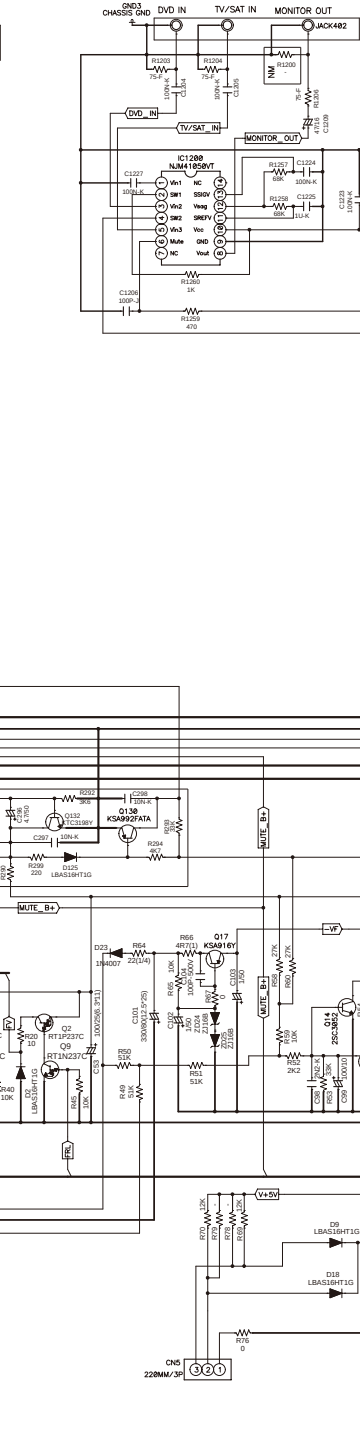
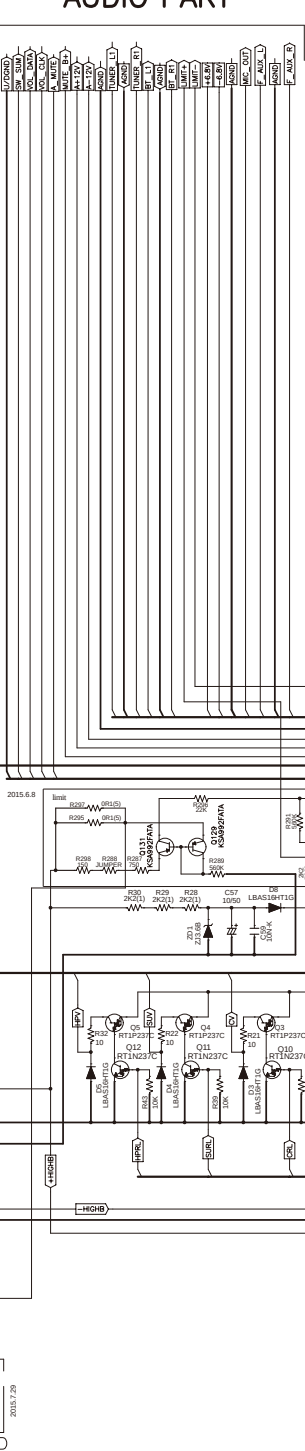
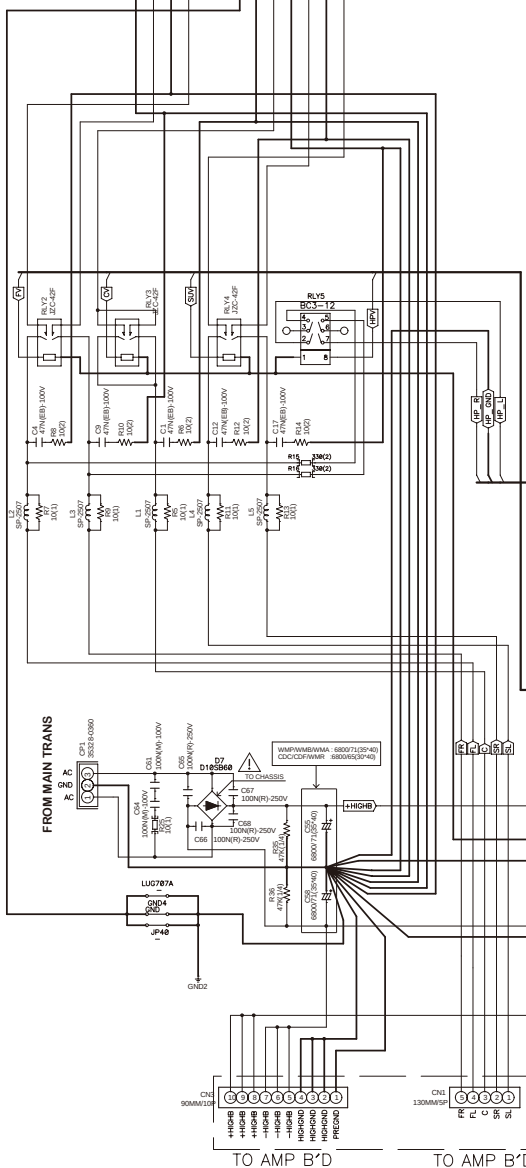
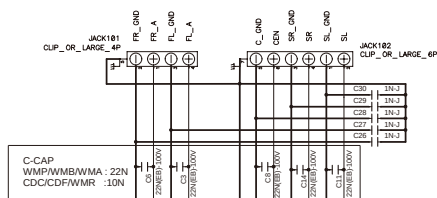
CAUTION
 FOR CONTINUED PROTECTION AGAINST RISK OF FIRE
 REPLACE WITH SAME TYPE AND RATINGS OF FUSE.

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

TX-SR373

SPEAKER TERMINAL

AUDIO PART

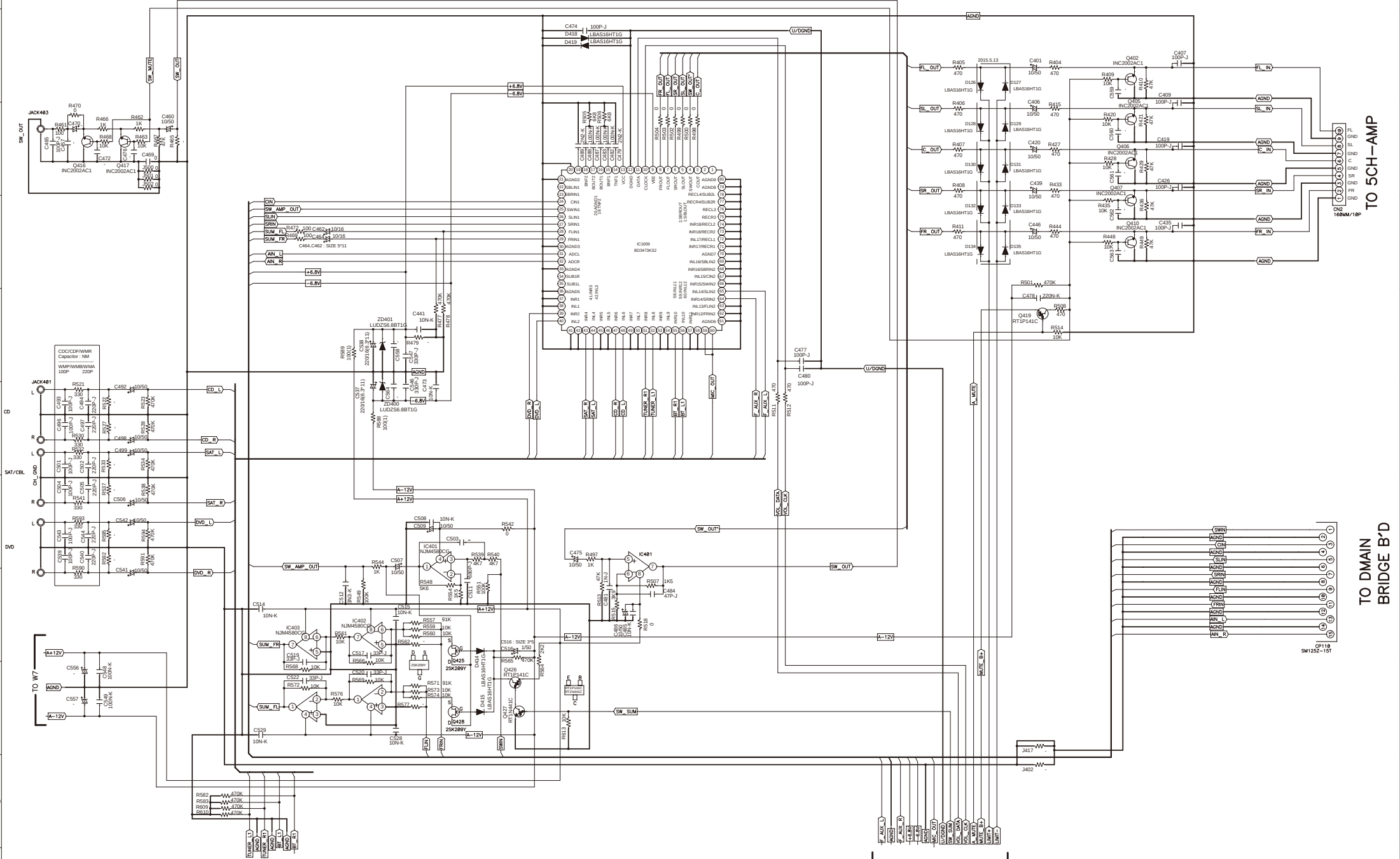


NUM1050V/T LOGIC TABLE

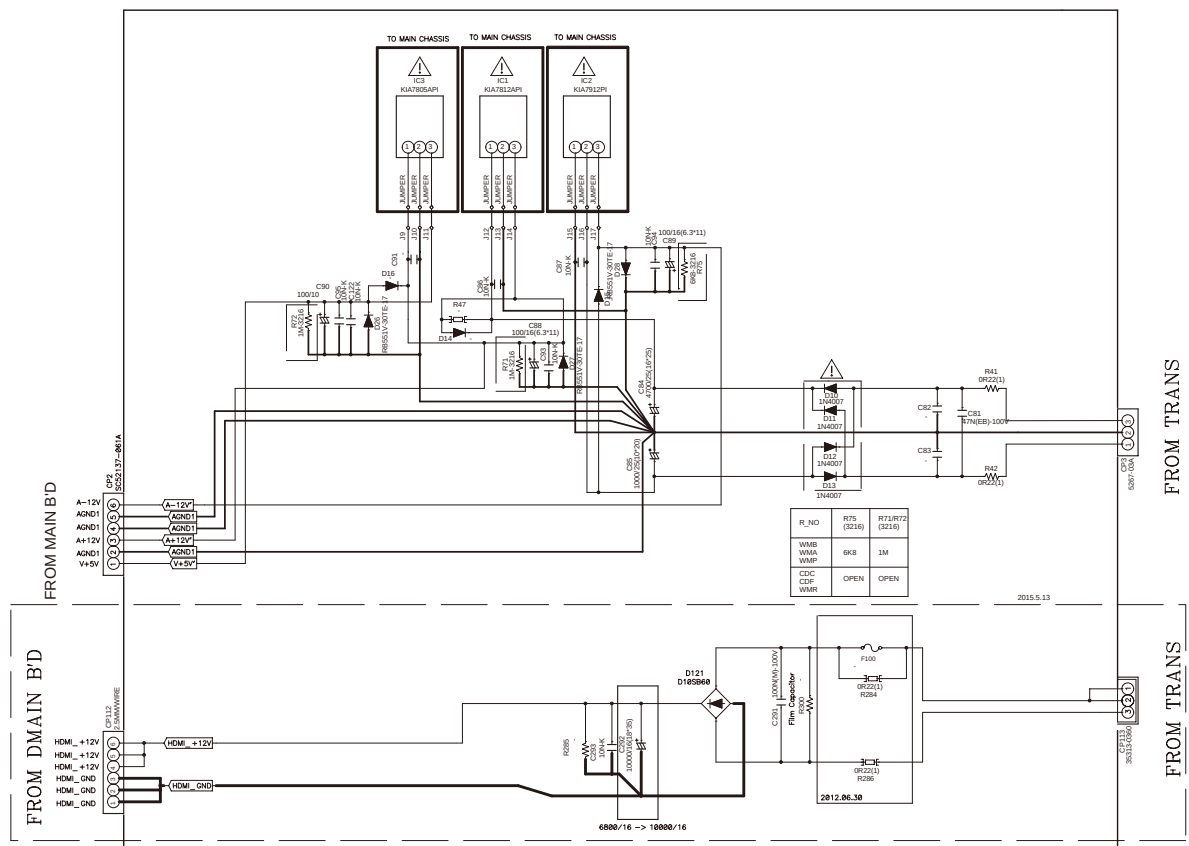
SW2	SW3	MUTE
R1	L1OPEN	L1OPEN
R2	H	H
R3	H	H
MUTE	-	L1OPEN

- NOTES
1. Resistor values are indicated in ohms unless otherwise specified [k = 1.000 m = 1.000.000]
 2. Capacitor values are indicated in microfarads unless otherwise specified. [p = micro-microfarads]
 3. : These resistor are to be segregated from printed wiring board or other accessible parts. CAUTION Safety precaution to be followed during servicing
- 1) Since those parts marked with are critical parts for safety, use only the one described in the parts list
- 2) Before returning the set to the customer make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

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

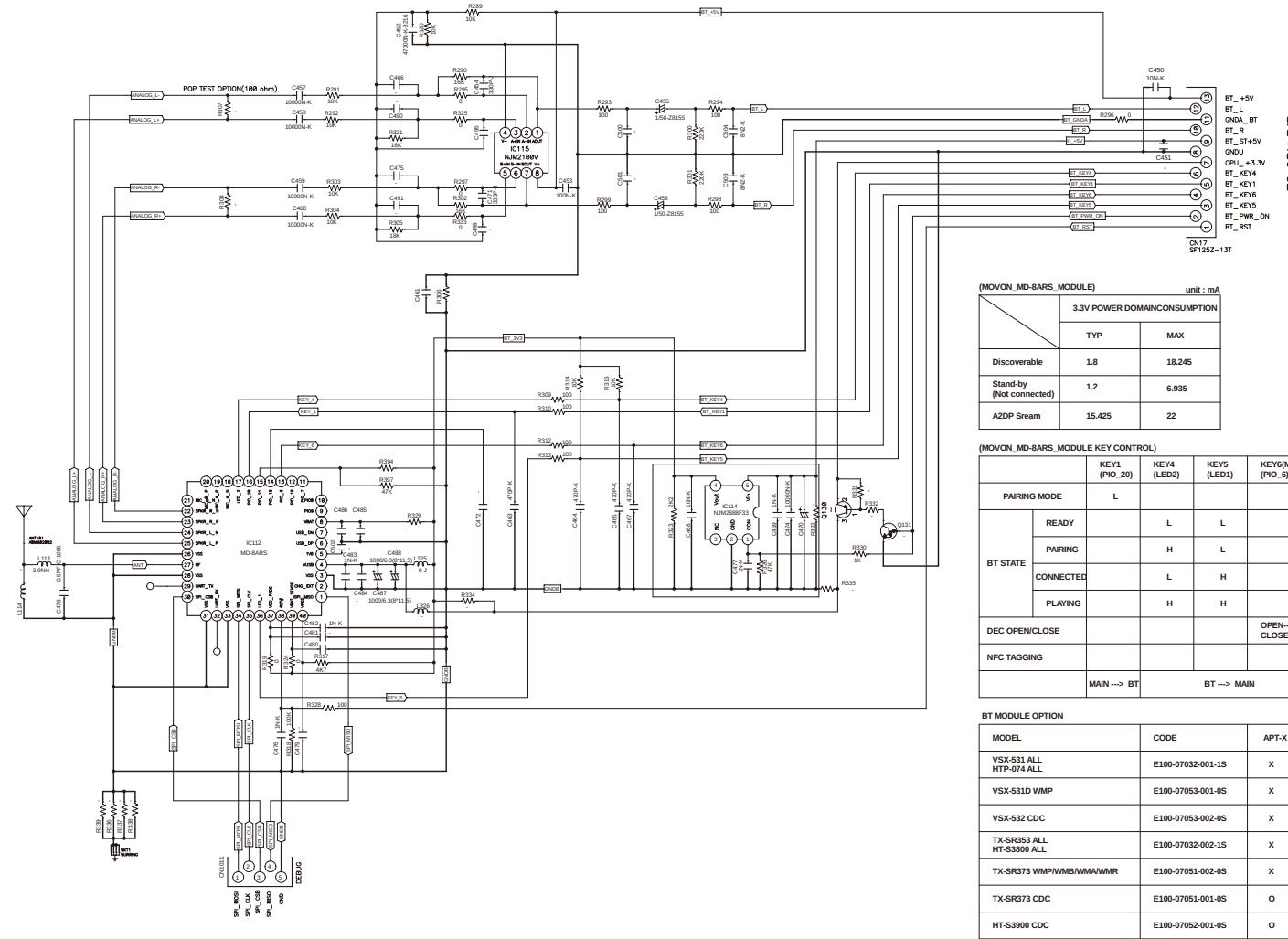


REGULATOR



- NOTES
1. Resistor values are indicated in ohms unless otherwise specified.
[k = 1,000 m = 1,000,000]
 2. Capacitor values are indicated in microfarads unless otherwise specified.
[p = micro-microfarads]
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CAUTION
Safety precaution to be followed during servicing
1) Since those parts marked with are critical parts for safety, use only the one described in the parts list.
2) Before returning the set to the customer make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

BT PART



(MOVON_MD-8ARS_MODULE) unit : mA

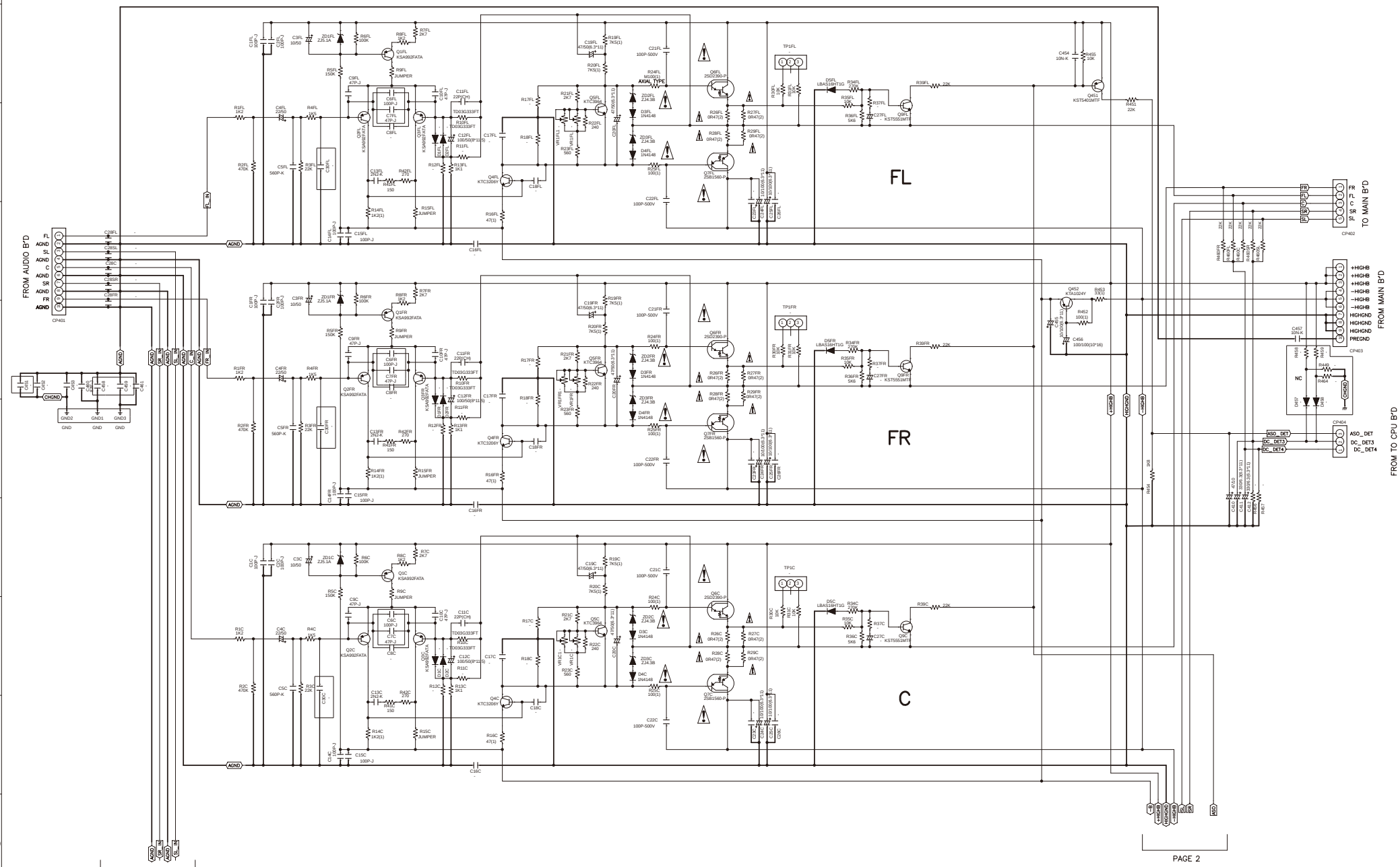
	3.3V POWER DOMAIN CONSUMPTION	
	TYP	MAX
Discoverable	1.8	18.245
Stand-by (Not connected)	1.2	6.935
A2DP Stream	15.425	22

(MOVON_MD-8ARS_MODULE KEY CONTROL)

		KEY1 (PIO_20)	KEY4 (LED2)	KEY5 (LED1)	KEY6(MUTE) (PIO_6)
BT STATE	PAIRING MODE	L			
	READY		L	L	
	PAIRING		H	L	
	CONNECTED		L	H	
	PLAYING		H	H	
DEC OPEN/CLOSE					OPEN→H CLOSE→L
NFC TAGGING					
		MAIN → BT	BT → MAIN		

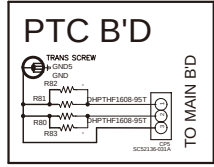
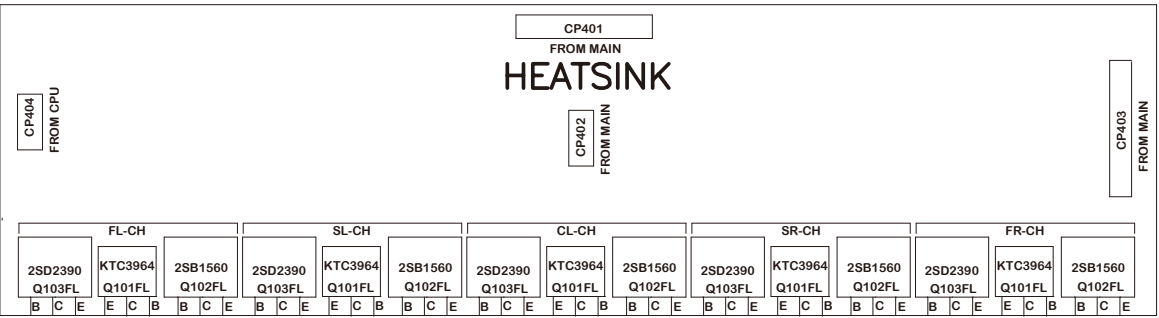
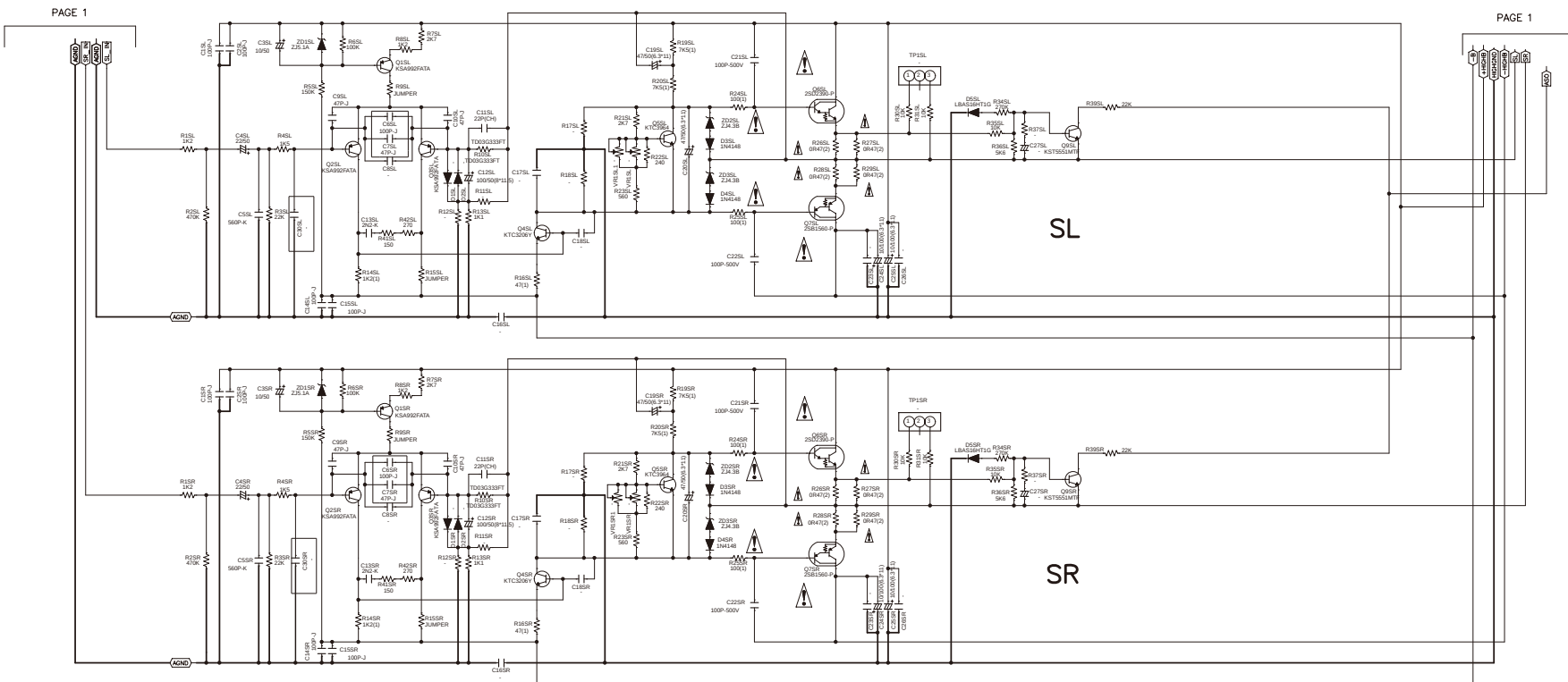
BT MODULE OPTION

MODEL	CODE	APT-X
VSX-S31 ALL HTP-074 ALL	E100-07032-001-1S	X
VSX-S31D WMP	E100-07053-001-0S	X
VSX-S32 CDC	E100-07053-002-0S	X
TX-SR353 ALL HT-S3800 ALL	E100-07032-002-1S	X
TX-SR373 WMP/WMB/WMA/WMR	E100-07051-002-0S	X
TX-SR373 CDC	E100-07051-001-0S	O
HT-S3900 CDC	E100-07052-001-0S	O



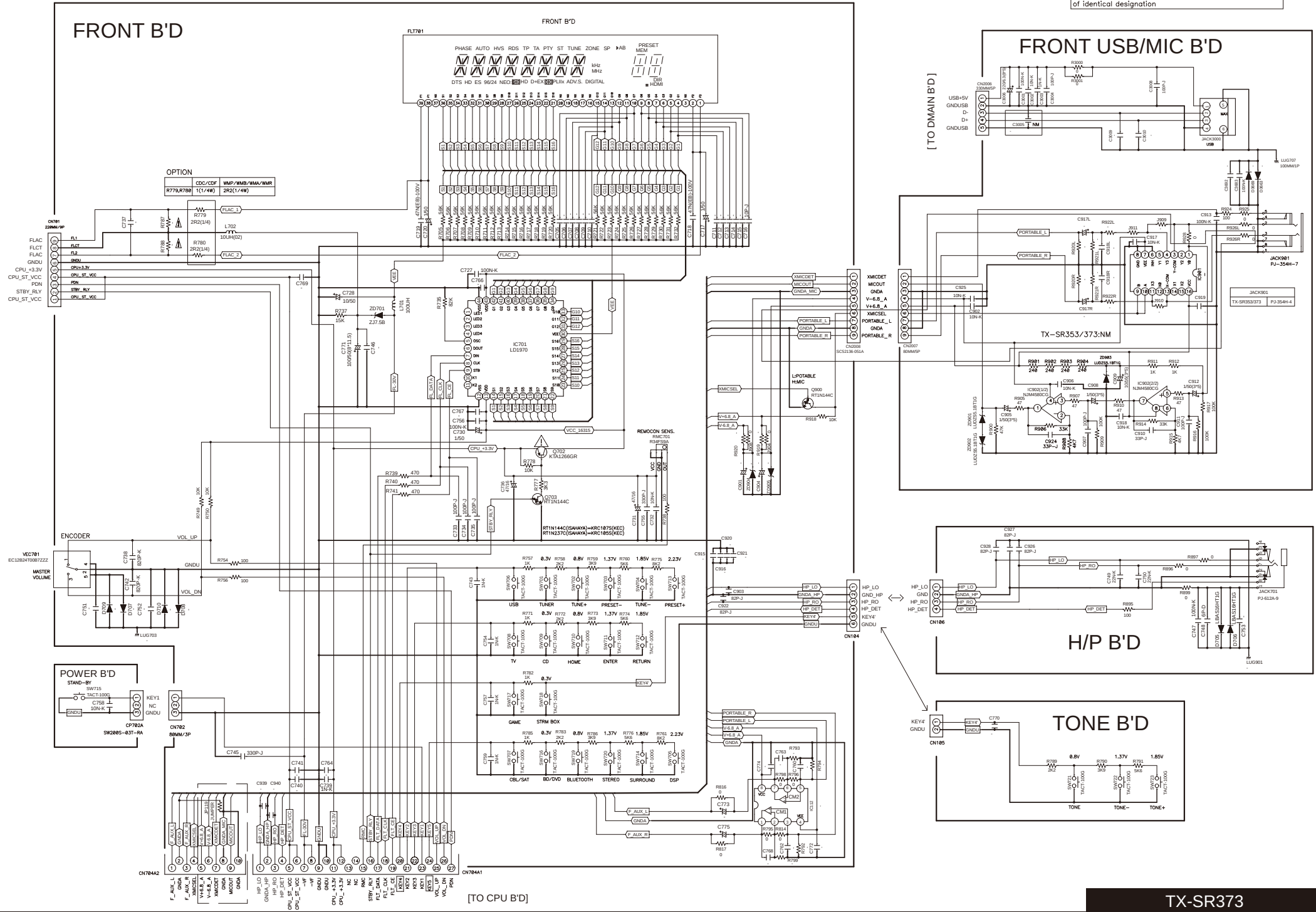
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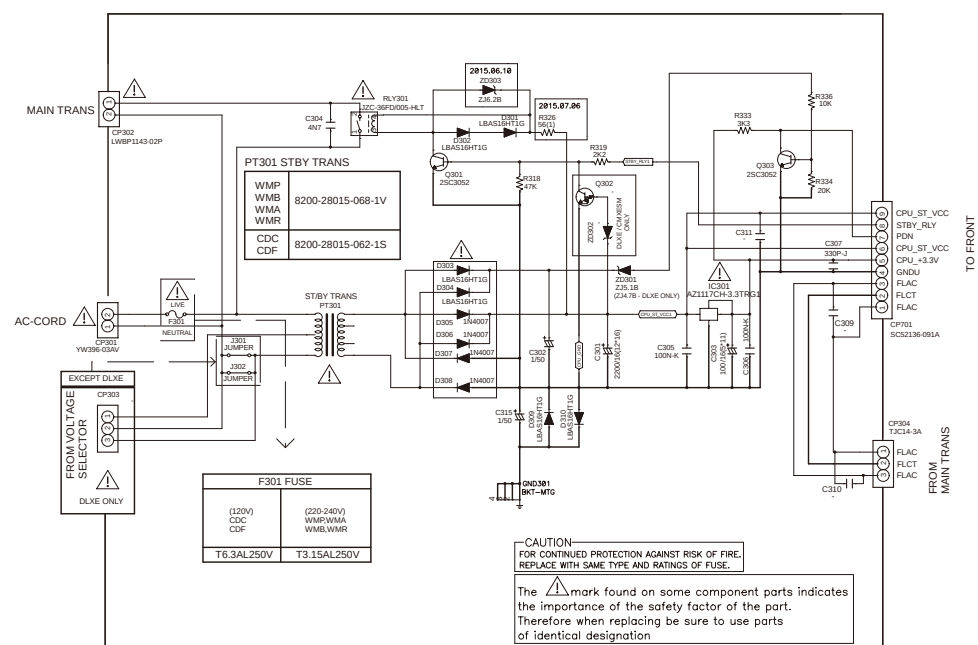


FRONT, FRONT USB/MIC, H/P, TONE, POWER

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







- ### NOTES
1. Resistor values are indicated in ohms unless otherwise specified
[$k = 1,000$ $m = 1,000,000$]
 2. Capacitor values are indicated in microfarads unless otherwise specified.
[$\mu = \text{micro-microfarads}$]
 3.  : These resistor are to be segregated from printed wiring board or other accessible parts.
CAUTION
Safety precaution to be followed during servicing

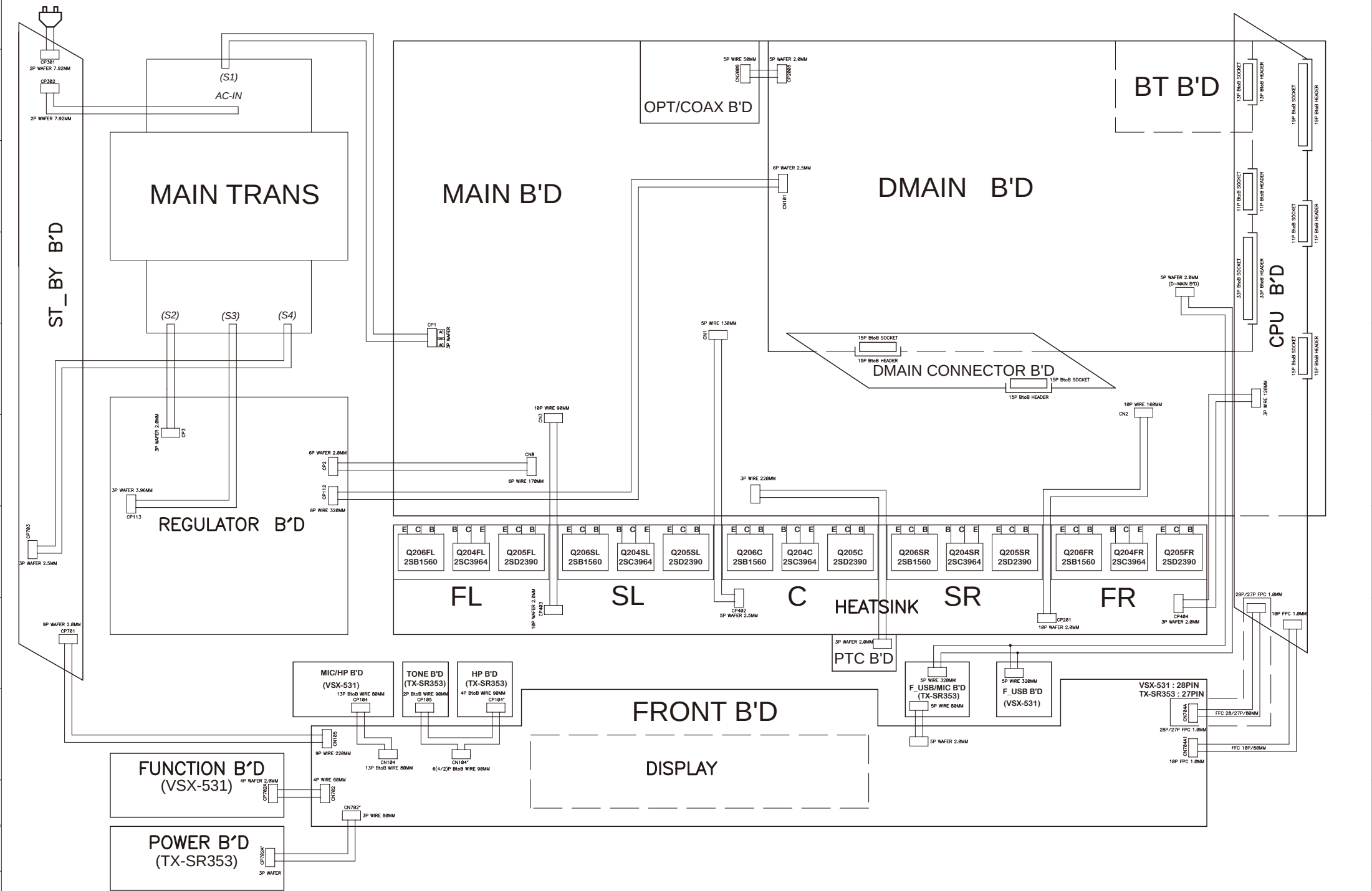
 - 1) Since those parts marked with are critical parts for safety, use only the one described in the parts list
 - 2) Before returning the set to the customer make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

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

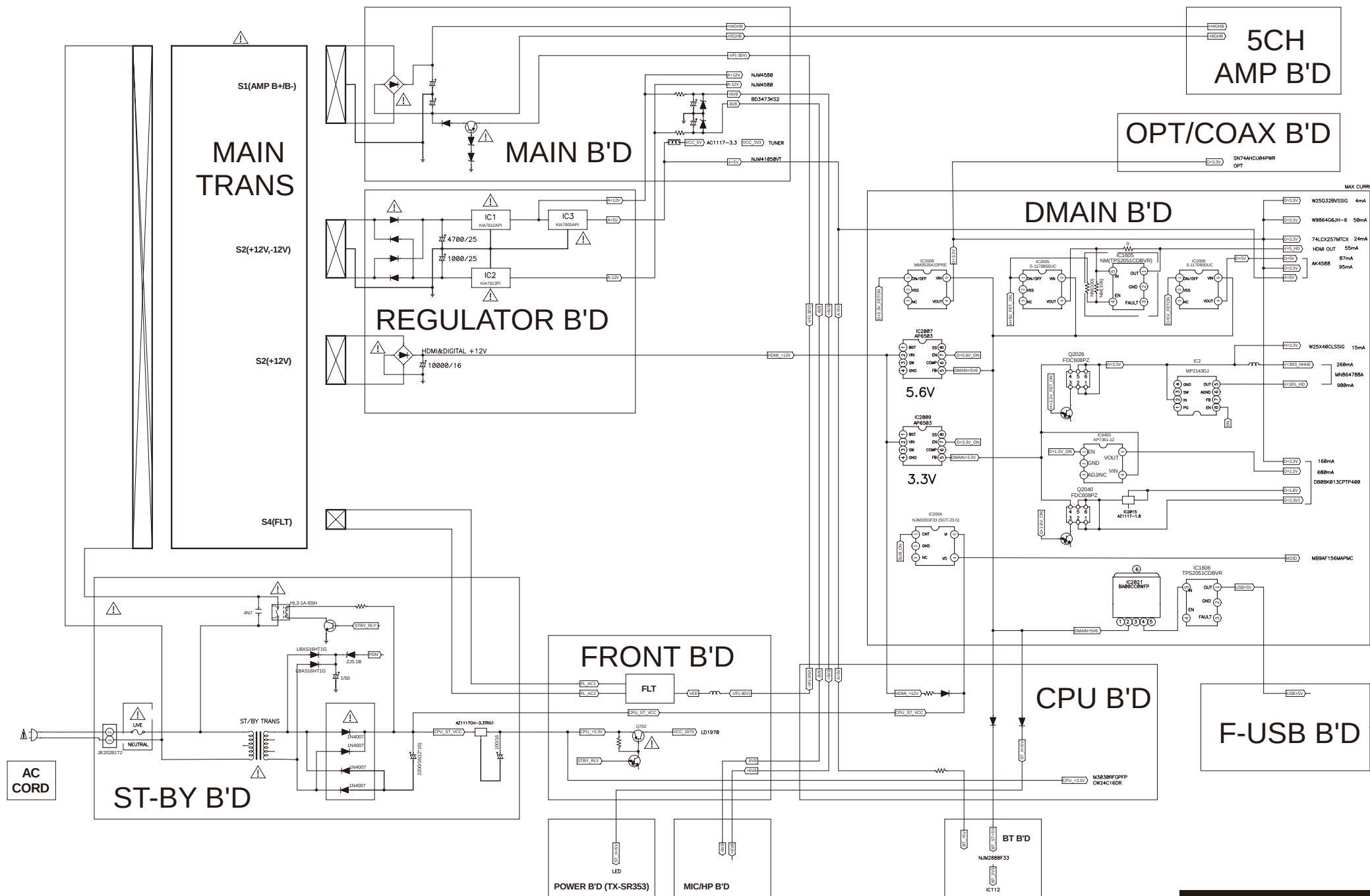
The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore when replacing be sure to use parts of identical designation

WIRING

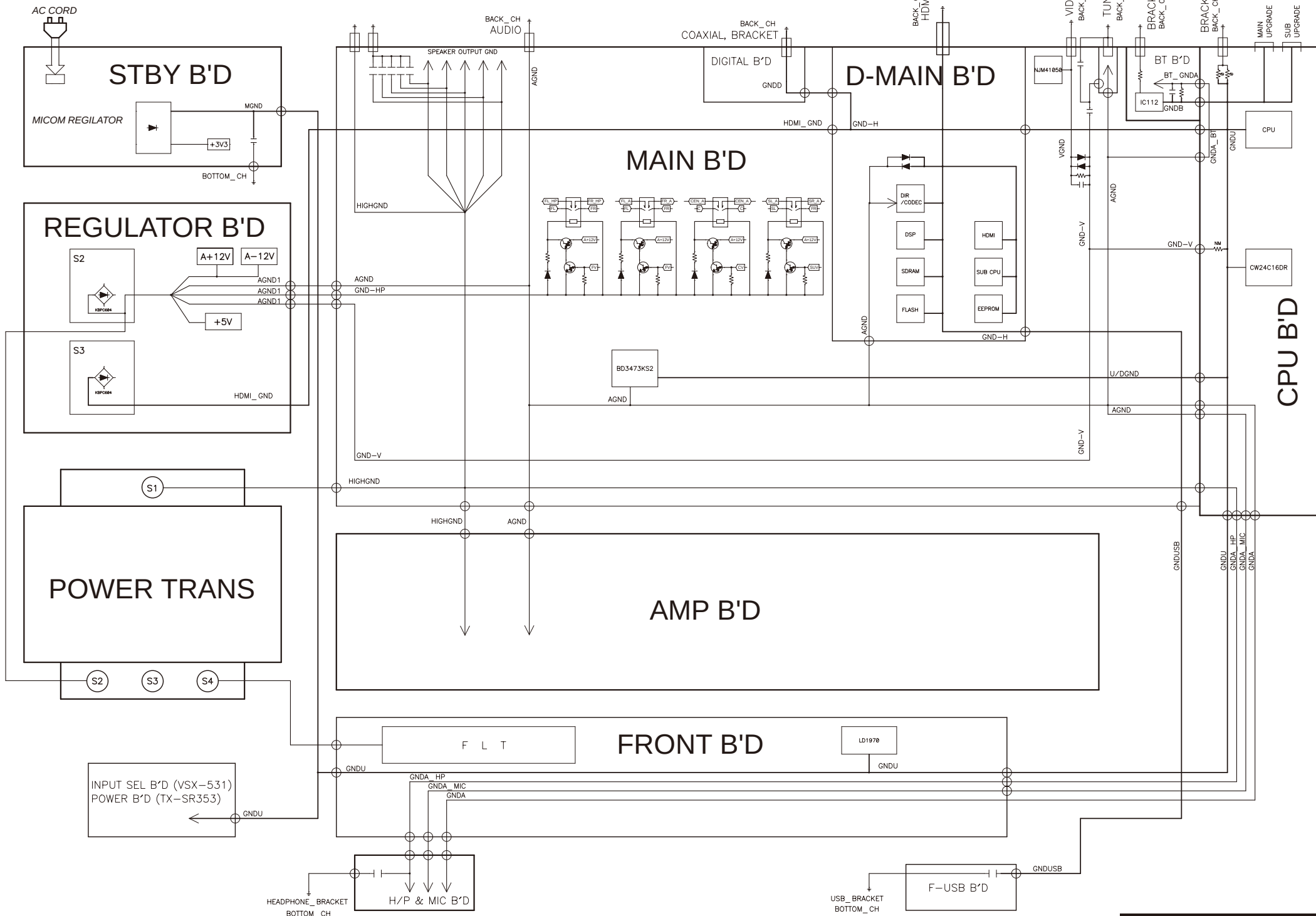
AC CORD or INLET



VCC BLOCK

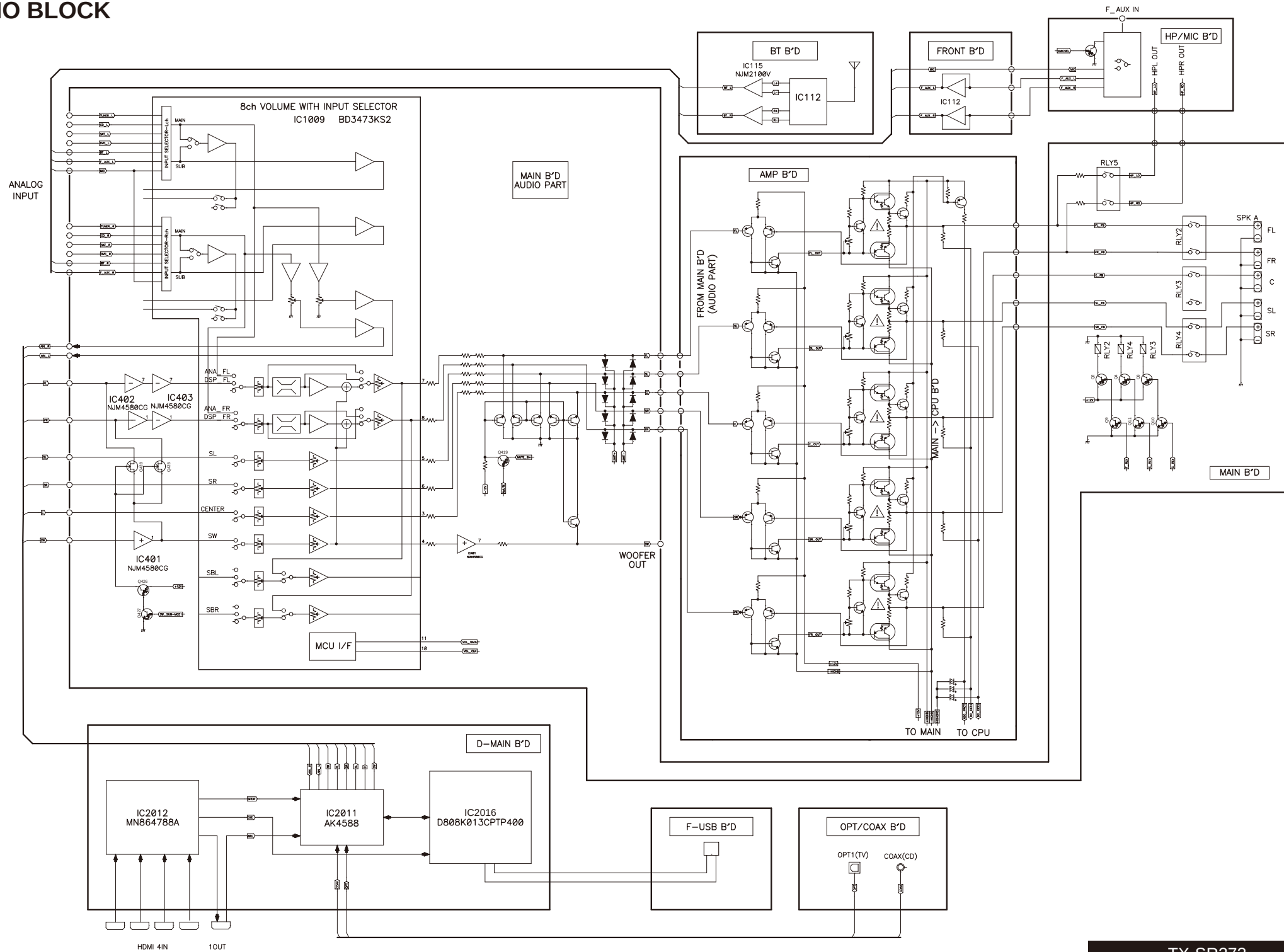


GND BLOCK



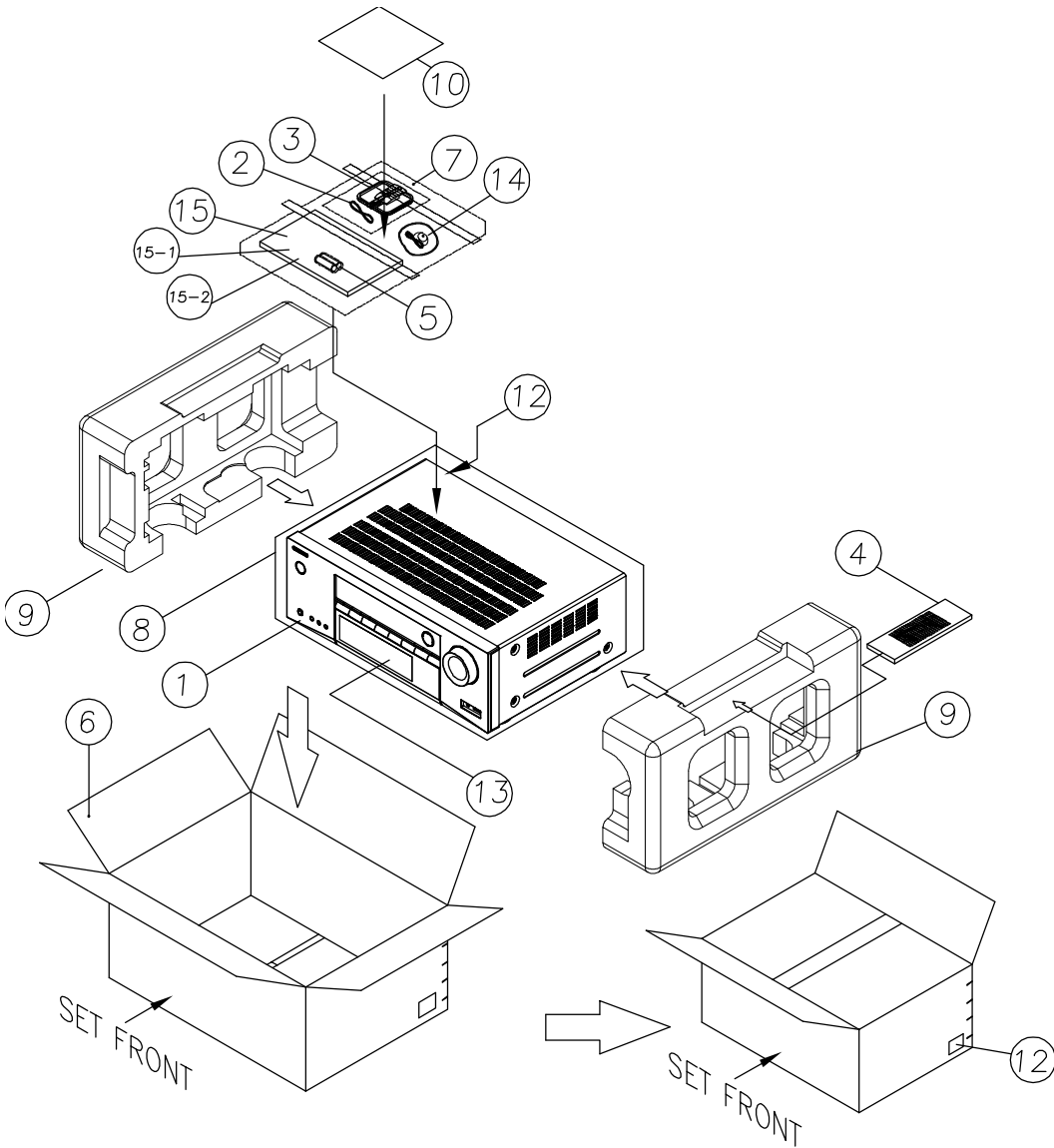
TX-SR373

AUDIO BLOCK



Packing

Exploded View



* POLY BAG PACKING STYLE	* BOX BOTTOM TAPE-(O)	* BOX BOTTOM CLIP-(X)
