

Service
Service
Service



Service Manual

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GB 3141 785 38500

PCB BOARD LOCATION:



VERSION VARIATIONS

Type / Versions Board in used Service Police		BDP2985
MAIN BOARD		M
PF BOARD		M
LOADER		M
* Tips:	C -- Component Lever Repair M -- Module Lever Repair X -- Used	

Specifications



Note

- Specifications are subject to change without notice

Region code

This player can play discs with the following region codes.

DVD	Blu-ray	Countries
 		USA and Canada

Playable media

- BD-Video, BD 3D
- DVD-Video, DVD+R/RW, DVD-R/RW, DVD+R-R DL (Dual Layer)
- VCD/SVCD
- Audio CD, CD-R/CD-RW, MP3 media, WMA media, JPEG files
- DivX (Ultra)/DivX Plus HD media, MKV media
- USB storage device

File format

- Video: .avi, .divx, .mp4, .mkv
- Audio: .mp3, .wma, .wav
- Picture: .jpg, .gif, .png

Video

- Signal system: PAL / NTSC
- HDMI output: 480i/576i, 480p/576p, 720p, 1080i, 1080p, 1080p/24Hz

Audio

- HDMI output
- Digital output: 0.5 Vp-p (75 ohm)
 - Coaxial
- Sampling frequency:
 - MP3: 32 kHz, 44.1 kHz, 48 kHz
 - WMA: 44.1 kHz, 48 kHz
- Constant bit rate:
 - MP3: 112 kbps - 320 kbps
 - WMA: 48 kbps - 192 kbps

USB

- Compatibility: Hi-Speed USB (2.0)
- Class support: USB Mass Storage Class
- File system: FAT16, FAT32
- USB port: 5V \pm , 500mA
- Support HDD (a portable hard disc drive): an external power source may be needed.

Main unit

- Power supply rating: AC 120V~, 60Hz
- Power consumption: 12 W
- Power consumption in standby mode: < 0.5 W
- Dimensions (w x h x d): 310 x 42 x 210 (mm)
- Net Weight: 1.1 kg

Accessories supplied

- Remote control and 2 AAA batteries
- User manual

Laser Specification

- Laser Type (Diode): AlGaInN (BD), AlGaInP (DVD/CD)
- Wave length: 405+7nm/-7nm (BD), 660+4nm/-10nm (DVD), 790+6/-6nm (CD)
- Output power: 1mW (BD), 0.3mW (DVD), 0.28mW (CD)

Safety instruction, Warning & Notes

Safety instruction

1. General safety

Safety regulations require that during a repair:

- . Connect the unit to the mains via an isolation transformer.
- . Replace safety components indicated by the symbol ▲, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that after a repair, you must return the unit in its original condition. Pay, in particular, attention to the following points:

- . Route the wires/cables correctly, and fix them with the mounted cable clamps.
- . Check the insulation of the mains lead for external damage.
- . Check the electrical DC resistance between the mains plug and the secondary side:
 - 1) Unplug the mains cord, and connect a wire between the two pins of the mains plug.
 - 2) Set the mains switch the "on" position (keep the mains cord unplug).
 - 3) Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
 - 4) Repair or correct unit when the resistance measurement is less than 1M Ω .
 - 5) Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
 - 6) Switch the unit "off", and remove the wire between the two pins of the mains plug.

2.Laser safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

Laser device unit

Type	: Semiconductor laser GaAlAs
Wavelength	: 650nm (DVD)
	: 780nm (VCD/CD)
Output power	: 7mW (DVD)
	: 10mW (DVD /CD)

Beam divergence: 60 degree

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

Warning

1. General

. All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are at the same potential as the mass of the set by a wristband with resistance. Keep components and tools at this same potential. Available ESD protection equipment:

- 1) Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
- 2) Wristband tester 4822 344 13999.

. Be careful during measurements in the live voltage section. The primary side of the power supply, including the heat sink, carries live mains voltage when you connect the player to the mains (even when the player is "off!"). It is possible to touch copper tracks and/or components in this unshielded primary area, when you service the player. Service personnel must take precautions to prevent touching this area or components in this area. A "lighting stroke" and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.

. Never replace modules, or components, while the unit is "on".

2. Laser

- . The use of optical instruments with this product, will increase eye hazard.
- . Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.
- . Repair handling should take place as much as possible with a disc loaded inside the player.
- . Text below is placed inside the unit, on the laser cover shield:

CAUTION: VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM.

Notes: Manufactured under licence from Dolby Laboratories. The double-D symbol is trademarks of Dolby Laboratories, Inc. All rights reserved.

Service Hints

CAUTION

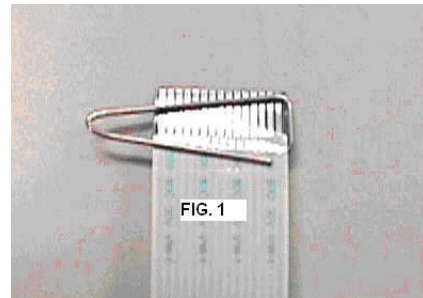
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE DRIVE ELECTRONICS WHEN CONNECTING A NEW DRIVE. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

- SWITCH OFF POWER SUPPLY
- ESD PROTECTION

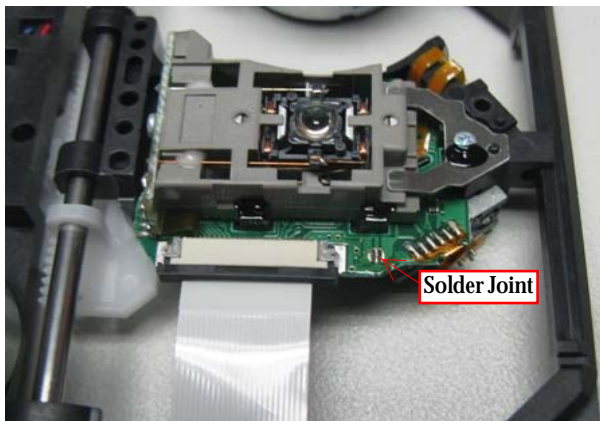
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done when replacing the defective loader :

1. Dismantling of the loader to access the ESD protection point if necessary.
2. **Solder the ESD protection point***.
3. Disconnect flexfoil cable from the defective loader.
4. Put a paper clip on the flexfoil to short-circuit the contacts (fig.1)
5. Replace the defective loader with a new loader.
6. Remove paperclip from the flexfoil and connect it to the new loader.
7. Remove solder joint on the ESD protection point.



ATTENTION: The laser diode of this loader is protected against ESD by a solder joint which shortcircuits the laserdiode to ground. For proper functionality of the loader this solder joint must be remove **after** connection loader to the set.



(ESD protection point is accessible from top of loader)


****Only applicable for defective loader needed to be sent back to supplier for failure analysis and to support backcharging evidence.***

This is also applicable for all partnership workshops.

Notes

Lead-Free requirement for service

IDENTIFICATION:

Regardless of special logo (not always indicated) 

One must treat all sets from 1.1.2005 onwards, according next rules.

Important note: In fact also products a little older can also be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
 - To reach at least a solder-temperature of 400°C,
 - To stabilize the adjusted temperature at the solder-tip
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free). If one cannot avoid, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).

- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
 - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use highest lead-free temperature profile, in case of doubt)
 - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. This will be communicated via AYS-website.
- Do not re-use BGAs at all.
- For sets produced before 1.1.2005, containing leaded soldering-tin and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website:

www.atyourservice.ce.Philips.com

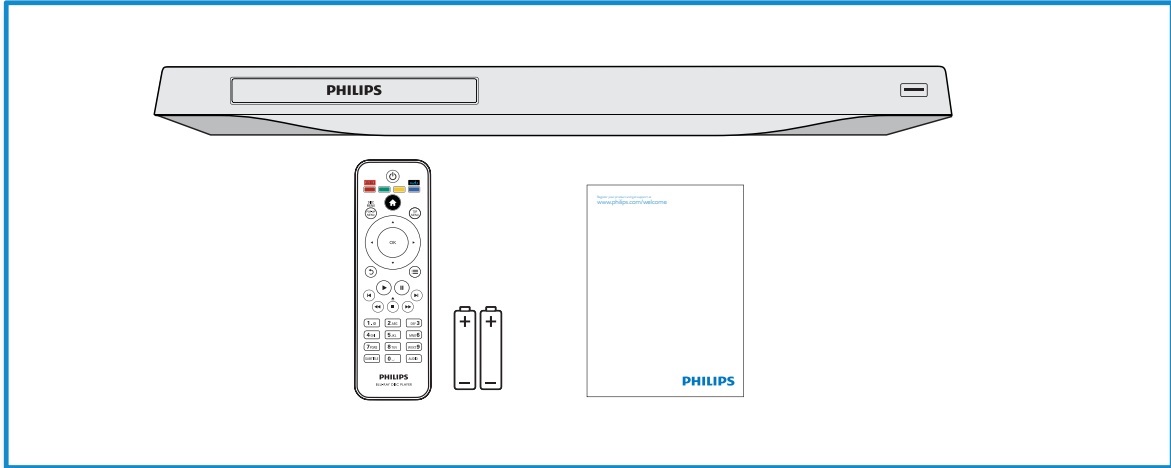
You find more information to:

BGA-de-/soldering (+ baking instructions)
Heating-profiles of BGAs and other ICs used in Philips-sets

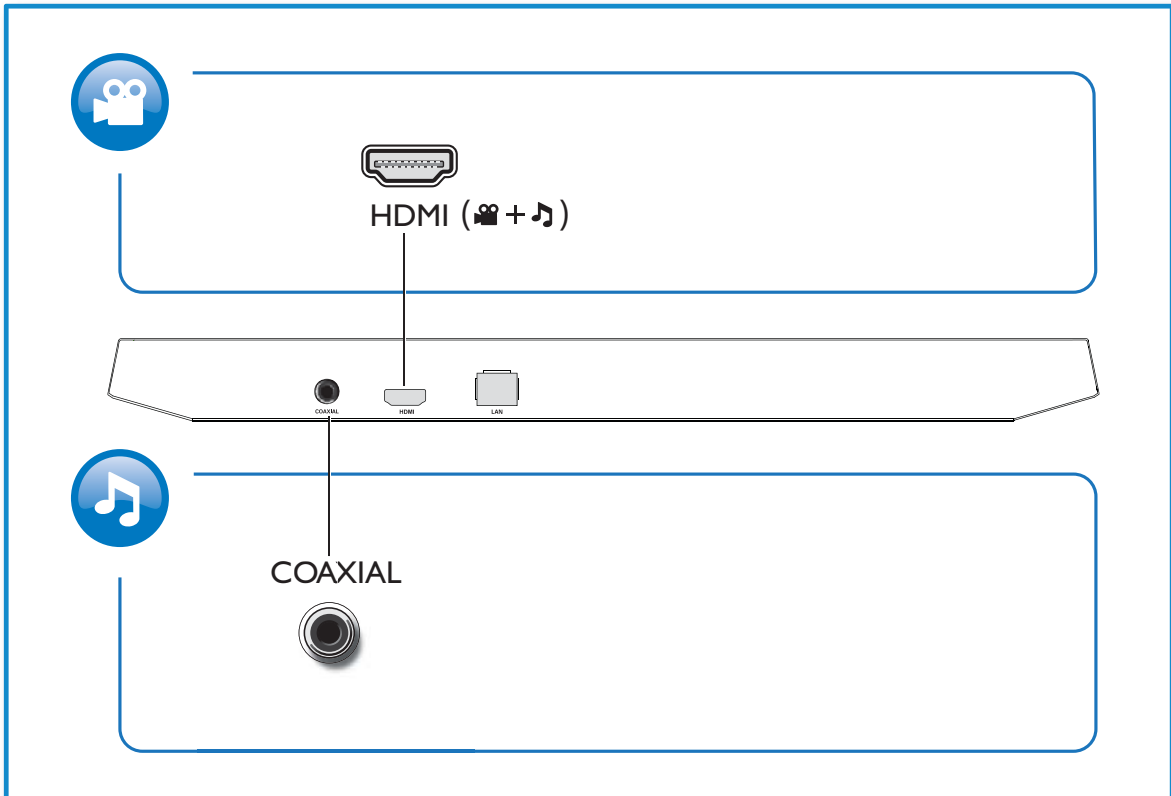
You will find this and more technical information within the "magazine", chapter "workshop news".
For additional questions please contact your local repair-helpdesk.



- EN Before you connect this Blu-ray disc/ DVD player, read and understand all accompanying instructions.
- FR Avant de brancher ce lecteur de disques Blu-ray/DVD, prenez le temps de lire toutes les instructions et assurez-vous que vous les comprenez.
- ES Antes de utilizar este reproductor de Blu-ray / DVD, asegúrese de leer y comprender las instrucciones adjuntas.

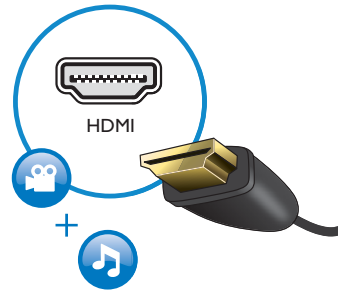


1

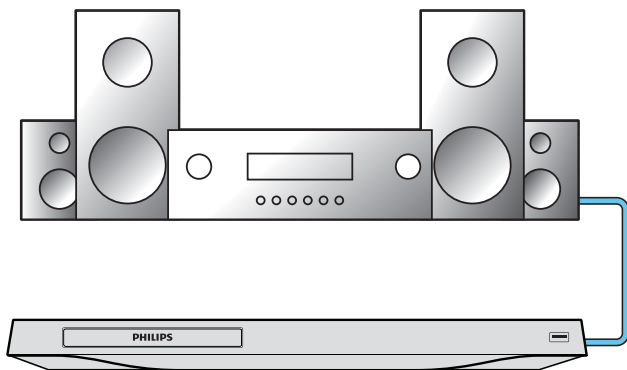


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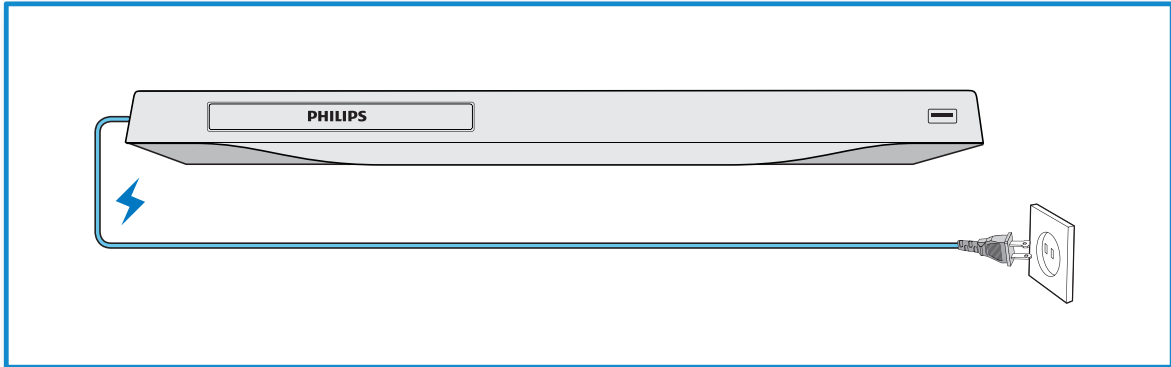
HDMI



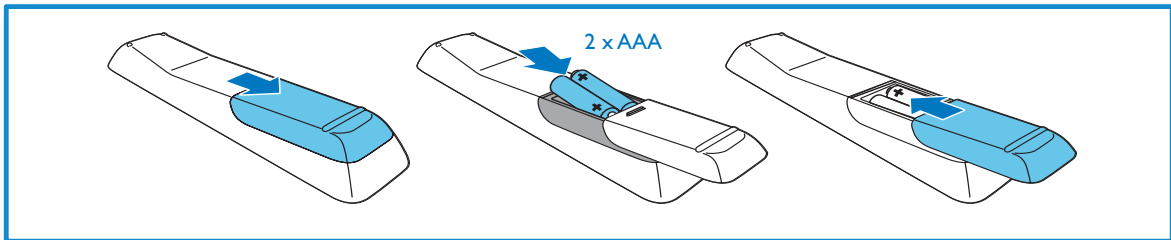
COAXIAL



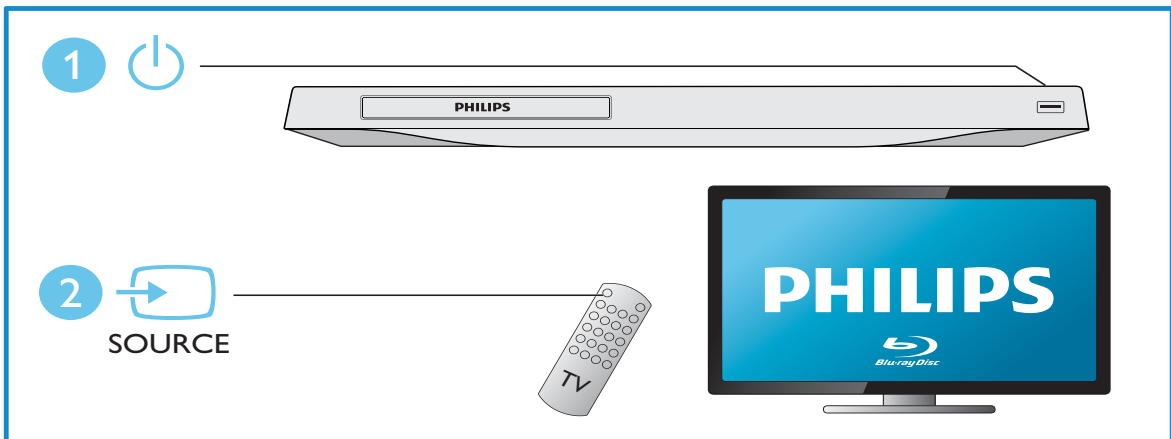
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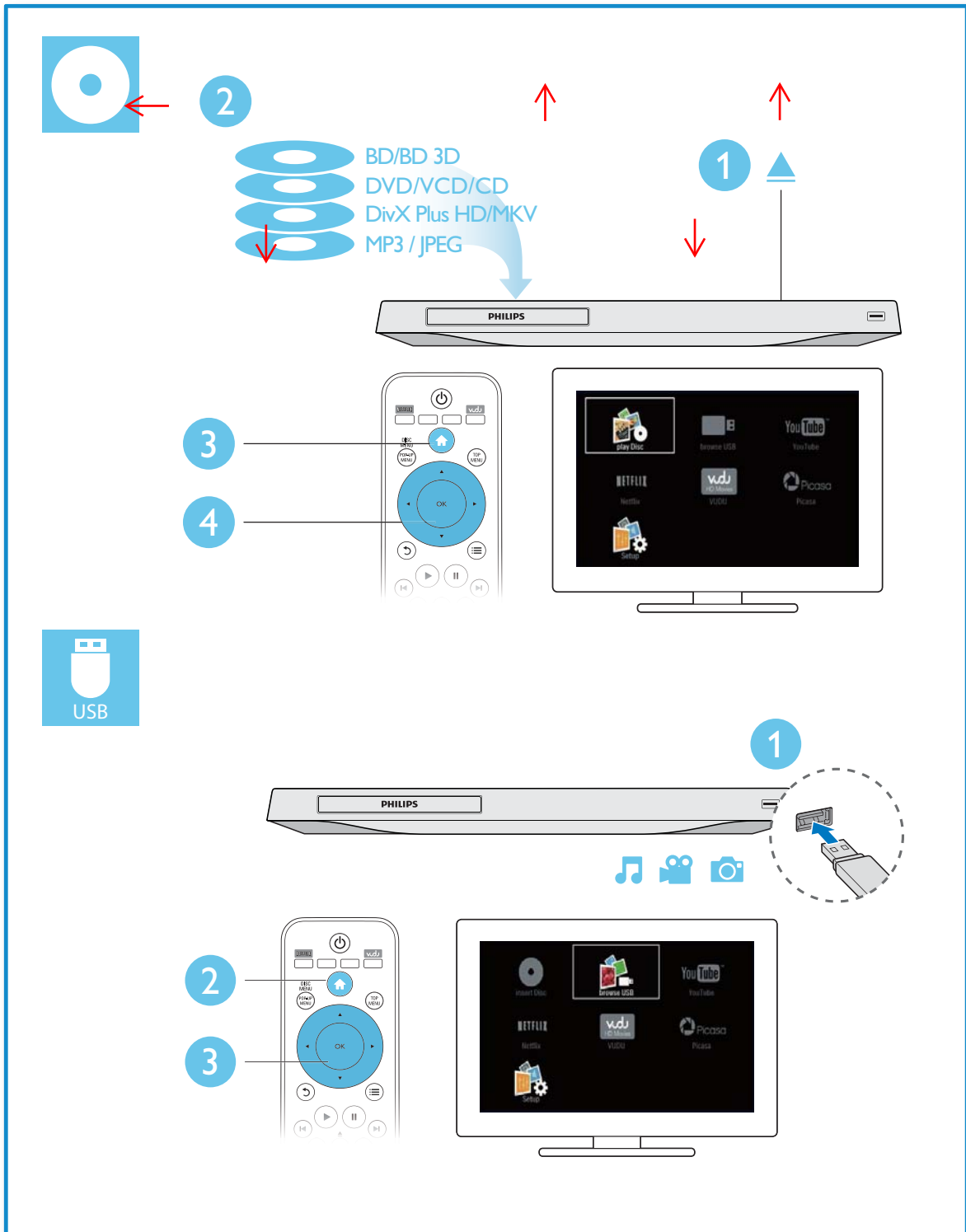
4



5



6



Mechanical and Dismantling Instructions

Dismantling Instruction

Detailed information please refer to the model set.

The following guidelines show how to dismantle the player.

Step1: Remove 2 screws around the Top Cover, and then remove the Top Cover (Figure 1).



Figure 1

Step2: If it is necessary to dismantle Loader or Front Panel, the Front door should be removed first. (Figure 2)

Method A): Turn on the power button, then press open button to dismantle front door. Please kindly note that power off as soon as front door is out of machine.

Method B): If the tray can't open in normal way, you can make it through the instruction as below, an emergency exit at bottom cover of the machine.

Note: Make sure to operate gently otherwise the guider would be damaged.



Method A)



Method B)

Please kindly note that dismantle the front door assembly carefully to avoid damage tray and the front door.

Figure 2

Mechanical and Dismantling Instructions
Dismantling Instruction

Detailed information please refer to the model set.

Step3 :Dismantle Front Panel, disconnect the connector(USB401), release 2 snaps of Front Panel & 2 snaps of bottom cabinet , then gently pull the Panel out from the set. (Figure 3)

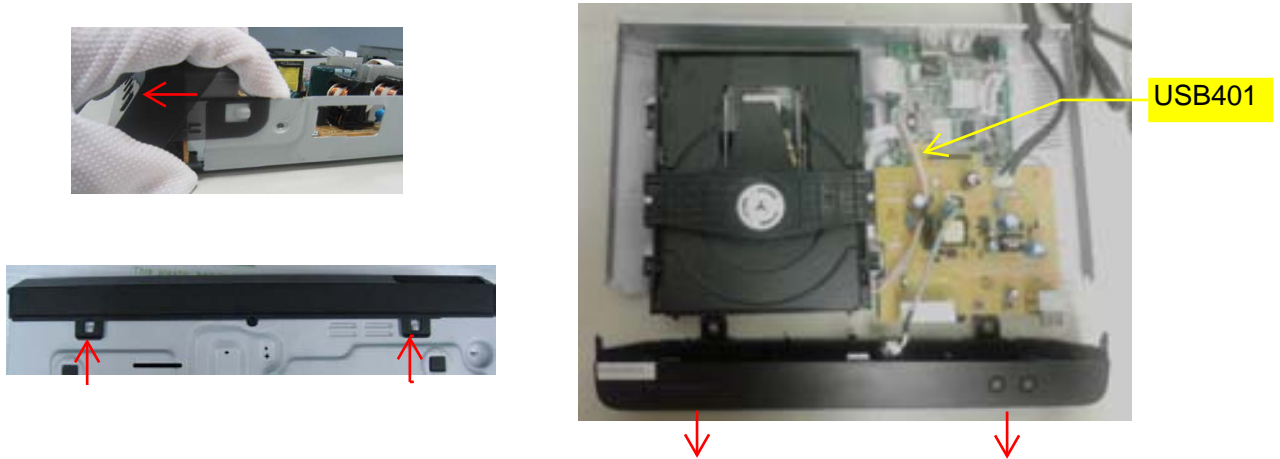


Figure 3

Step4:: Dismantle PF Board,remove 2 screws,then pull up the PF Board.(Figure 4)

Step5 : Dismantle Main Board, first disconnect 3 connectors (XP7, J13,XP10), then remove 2 screws on back panel.(Figure 4)

Step6: Dismantle Loader, remove 2 screws.(Figure 4)



Figure 4

Software Upgrade

1. Upgrade from USB:

Build UPG file in USB, copy the upgrade file BDP2985.bin to USB UPG_ALL files. Then insert USB, start up DUT enter into HOME screen, select Setup >>Advance>> software update >>USB.

When upgrade file detected, select "Yes" to upgrade, select "No" to cancel.

Once you start upgrade, pls don't power off the DUT, after upgrade DUT will restart up later a moment time or you press button "OK" on remote control.

2. Check the version information after upgraded.

Wake up DUT,select Setup >>Advance>>version information .you will see a interface as below:

Model:BDP2985/XX

Version

System SW:2. XX

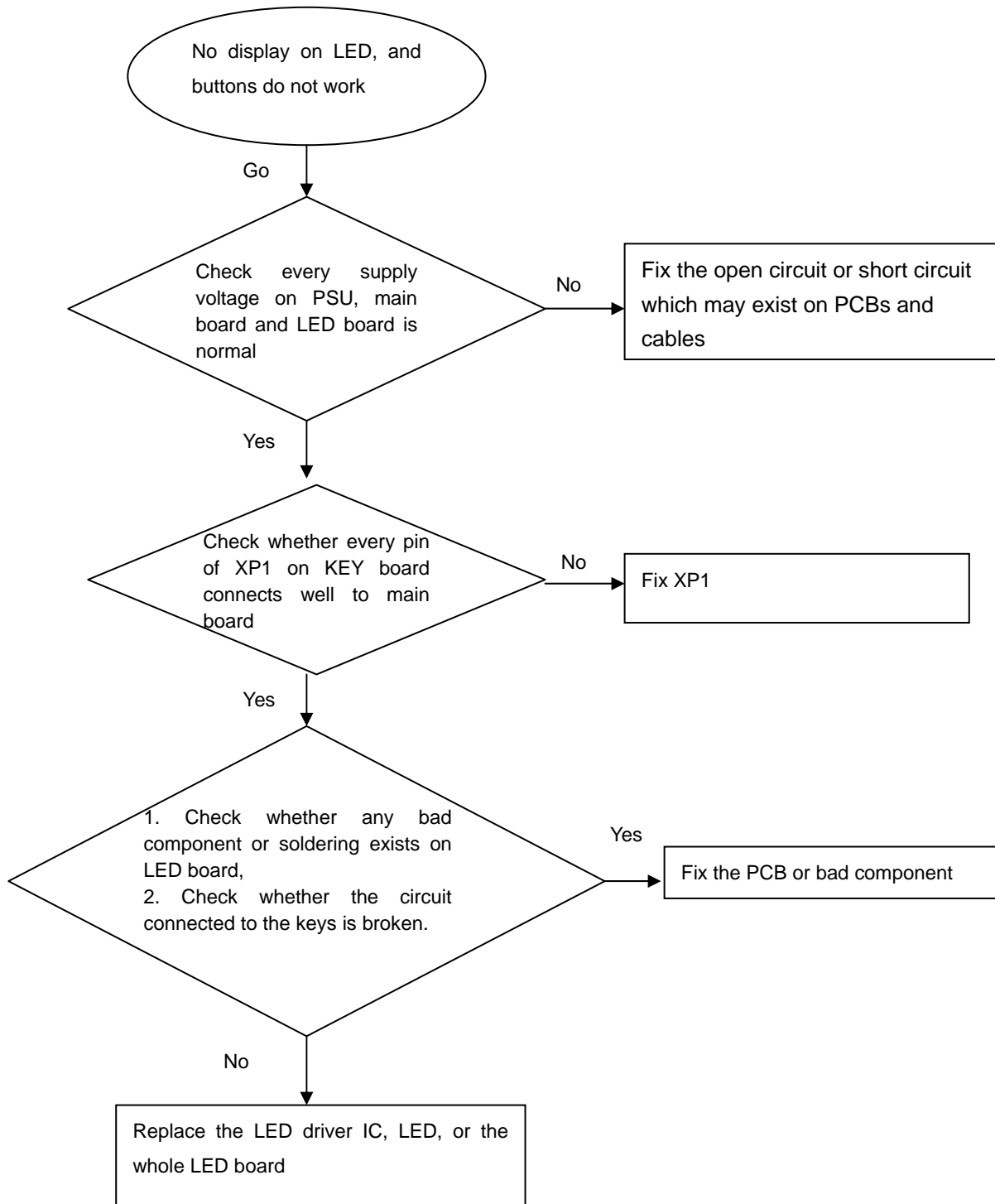
Ethernet MAC:XX: XX: XX: XX: XX: XX

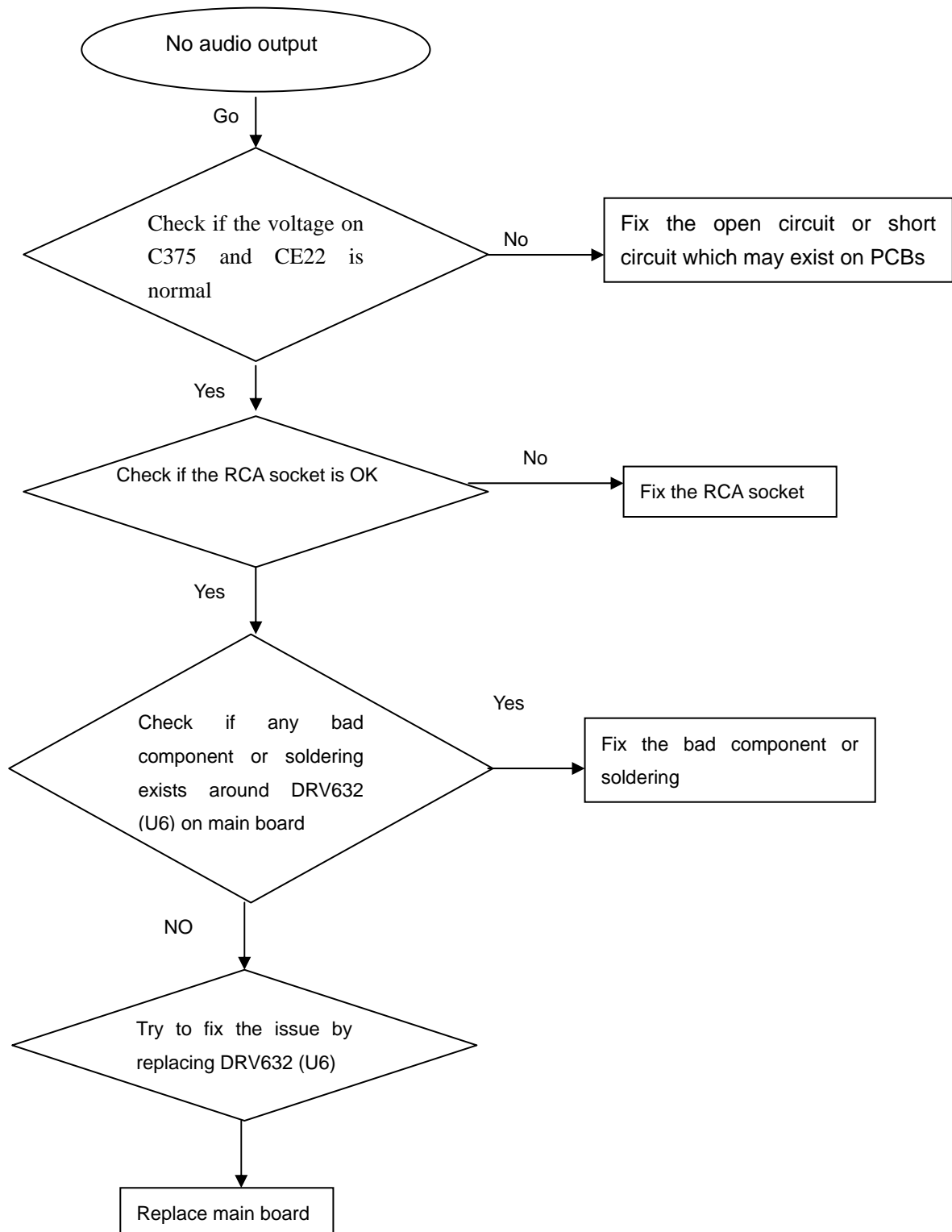
For information, frequently asked questions and software updates, visit www.philips.com/support.

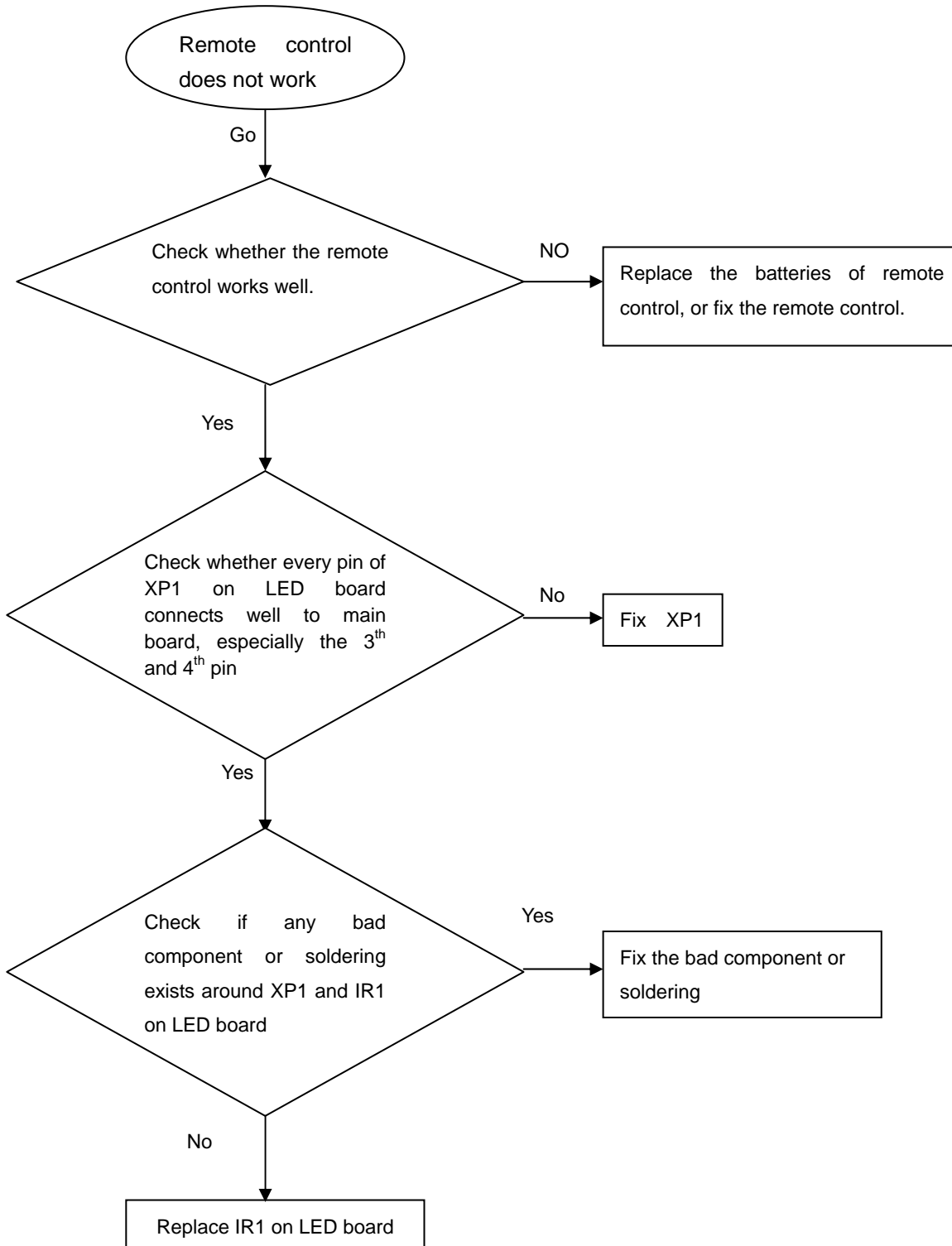
3. Factory Reset Steps

Press "Home" button on remote control--->Press"0""3""5""8"--->

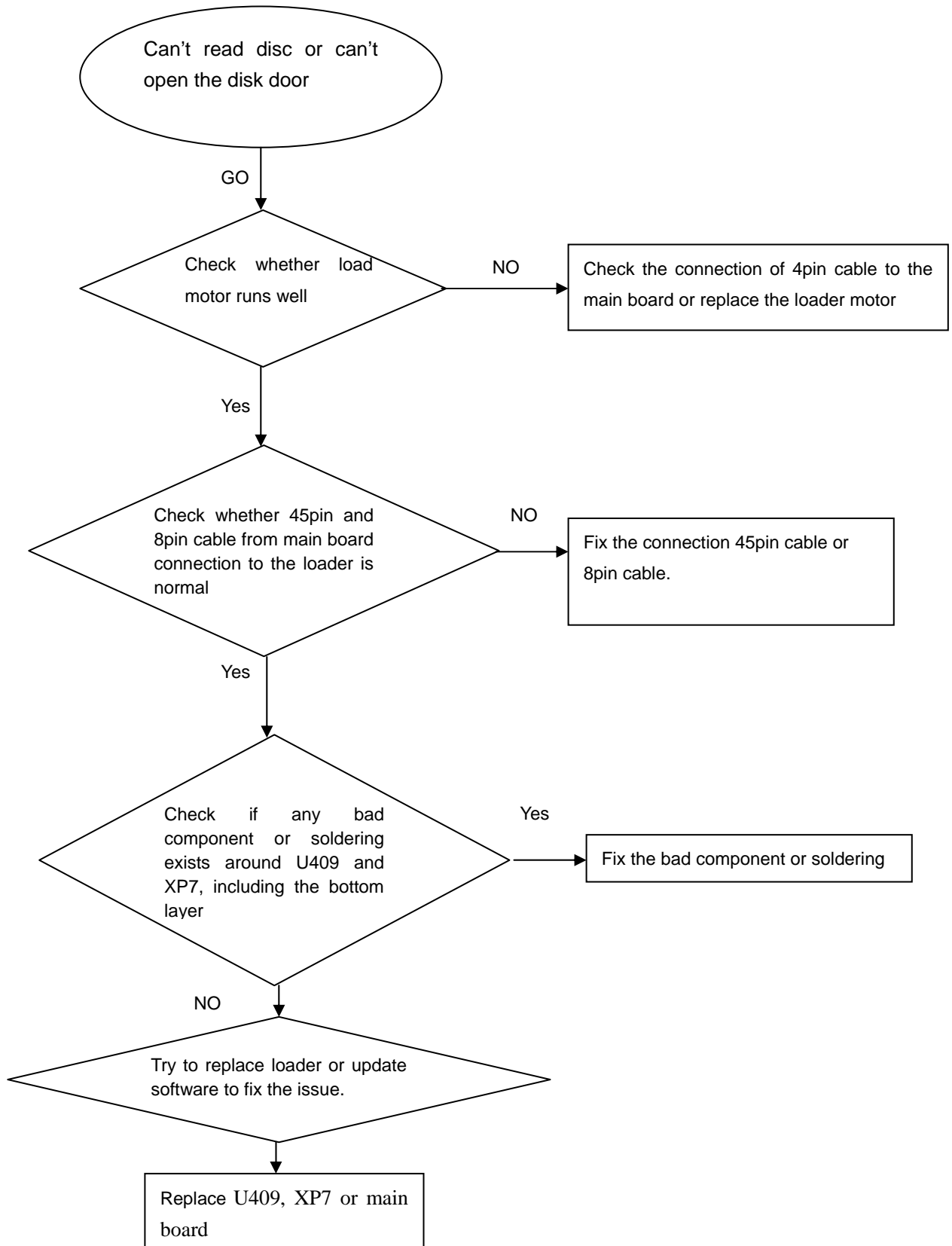
Select Restore--->Press "OK" on remote control

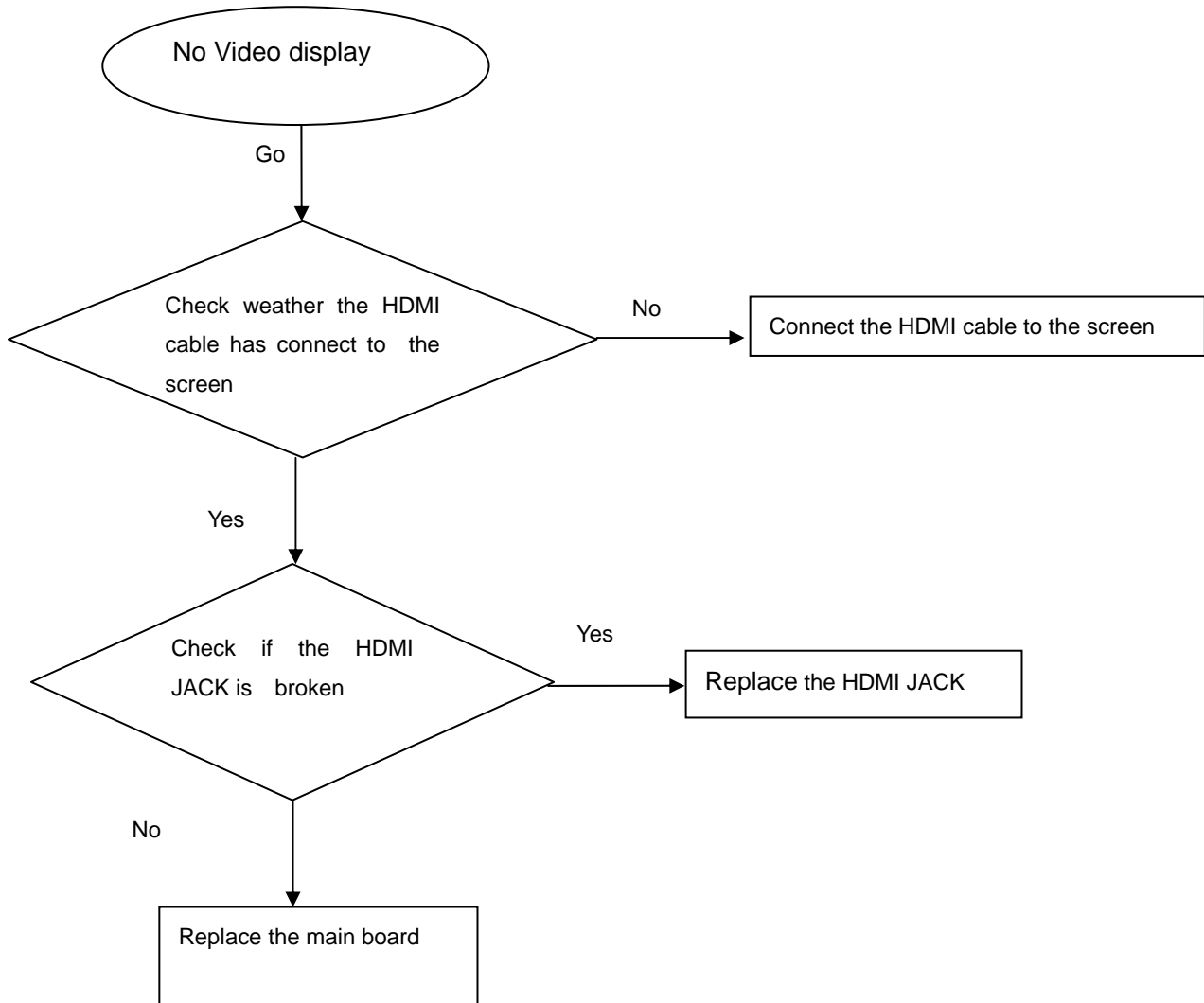
No display on LED, and buttons do not work

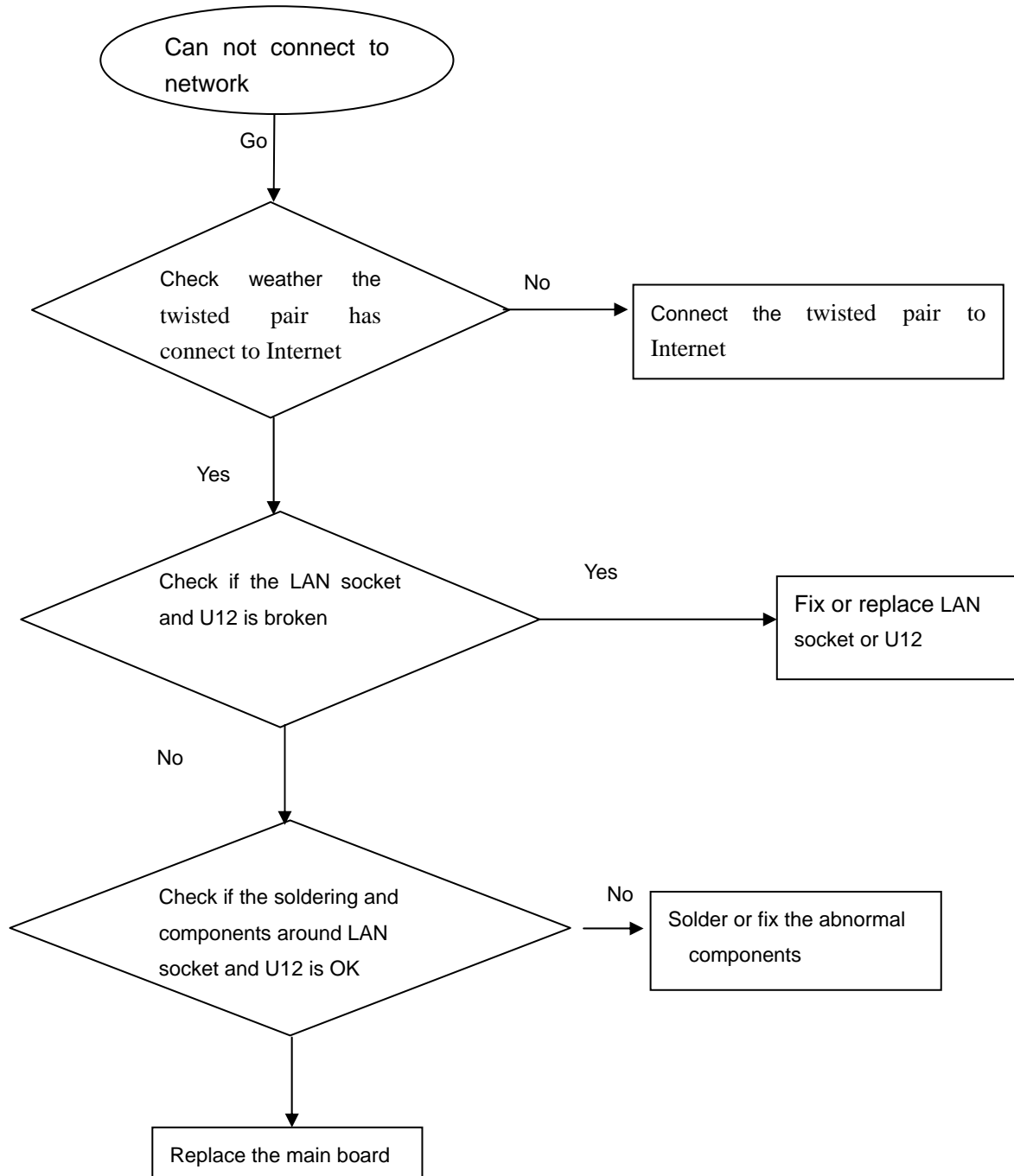
No audio output

Can not control by remote control

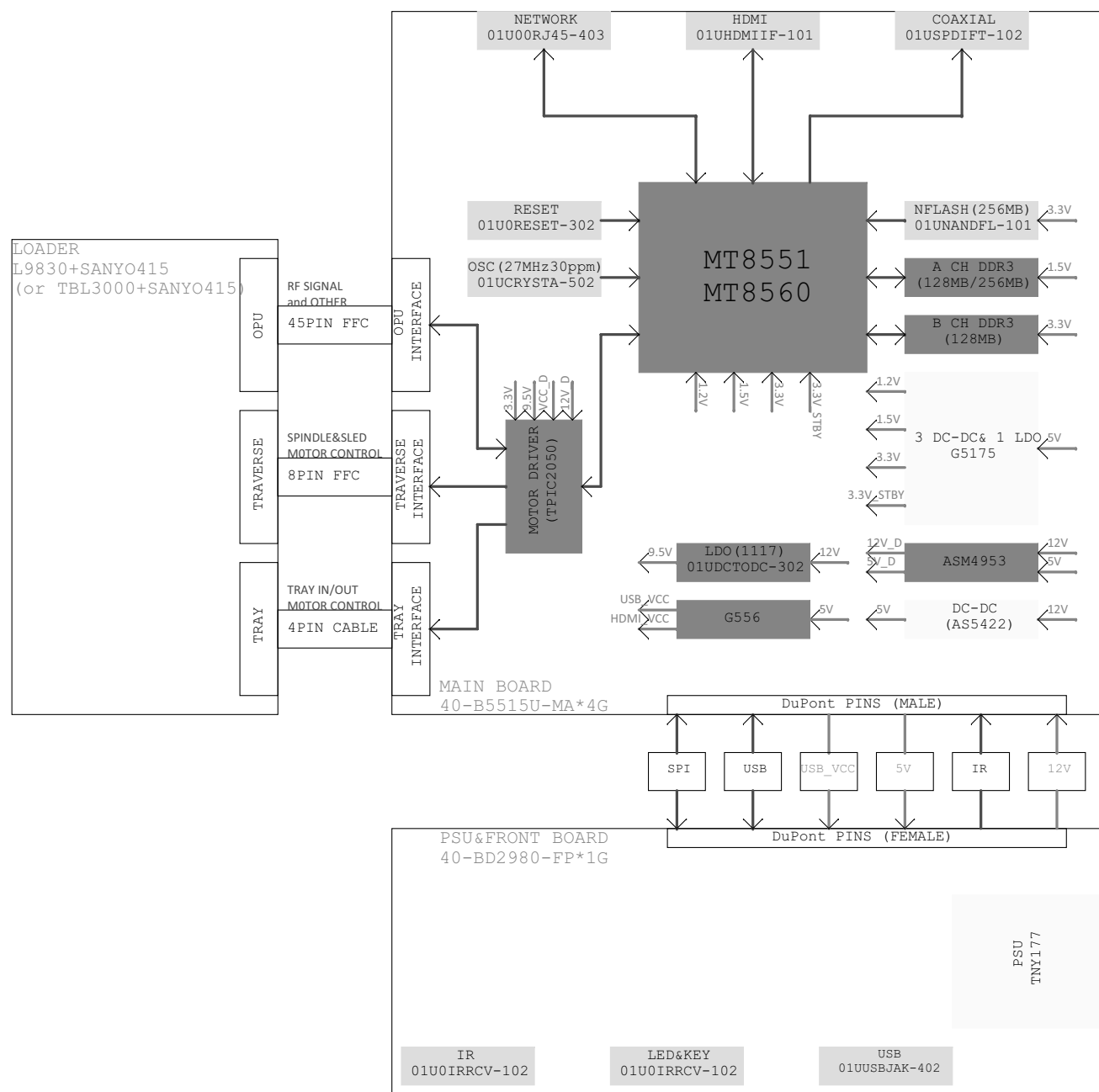
Can't read disc or can't open the disk door



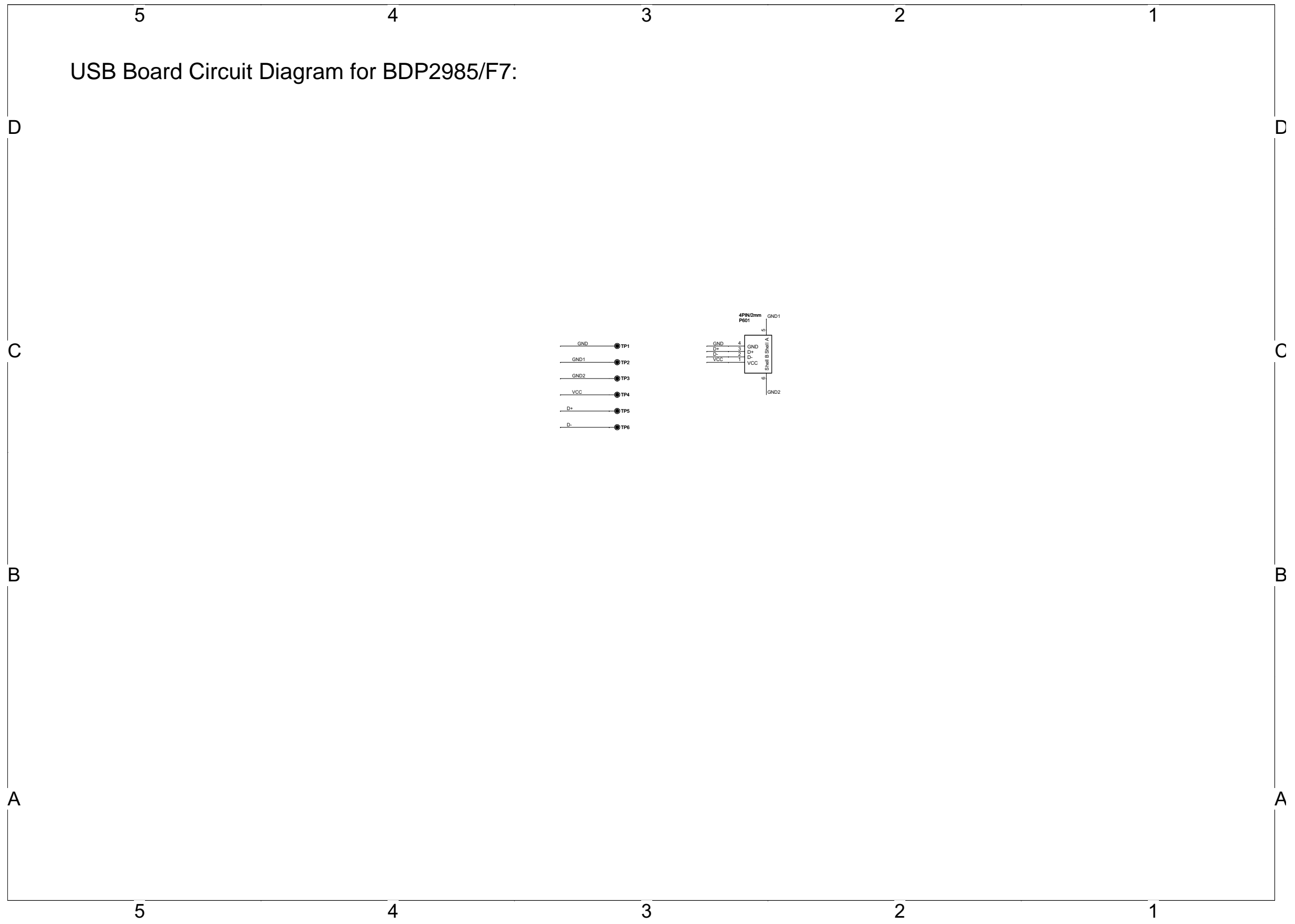
No video display

Can not connect to network

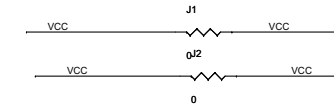
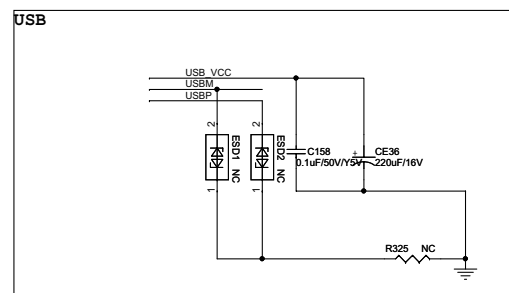
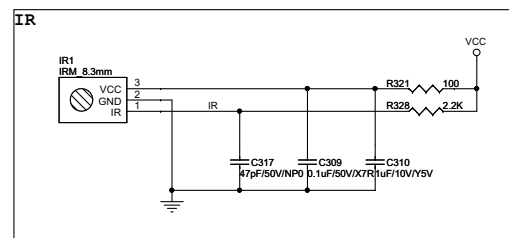
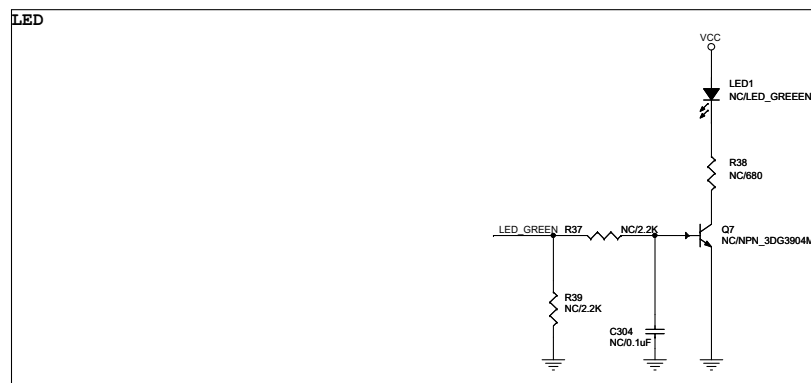
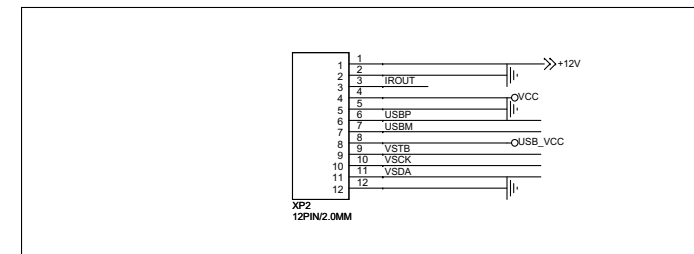
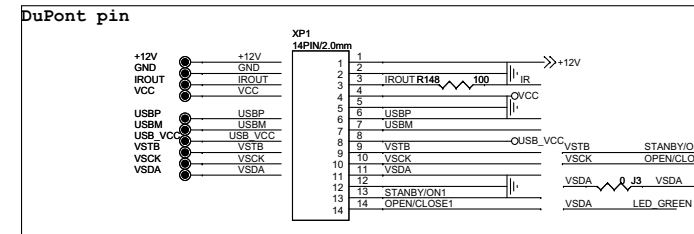
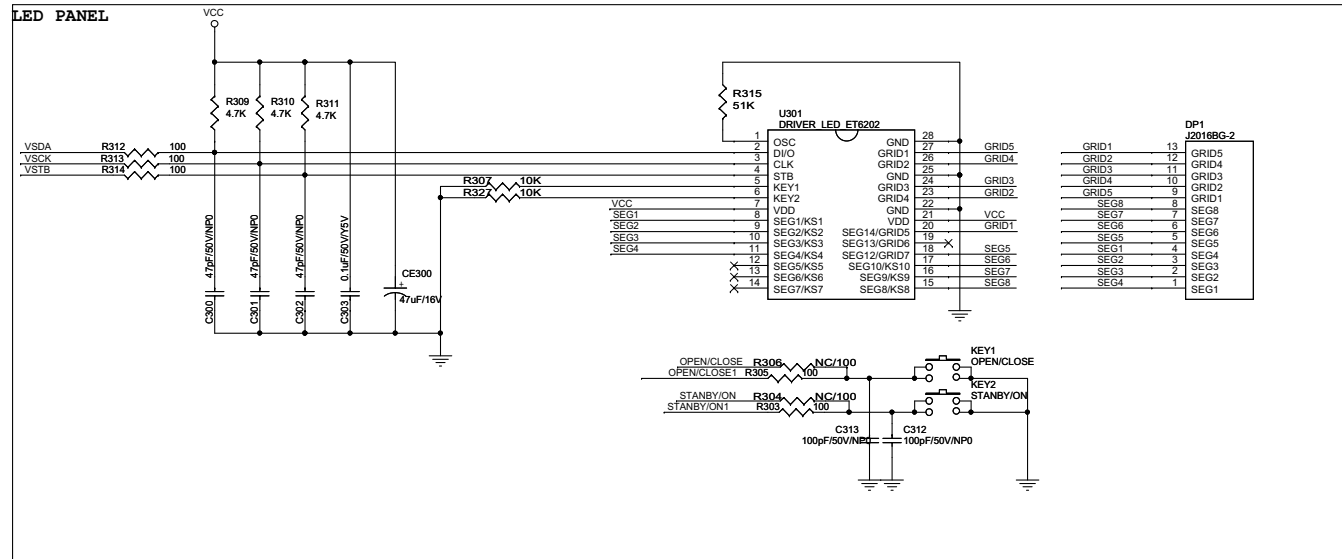
Block Diagram Draft for BDP2985/F7:



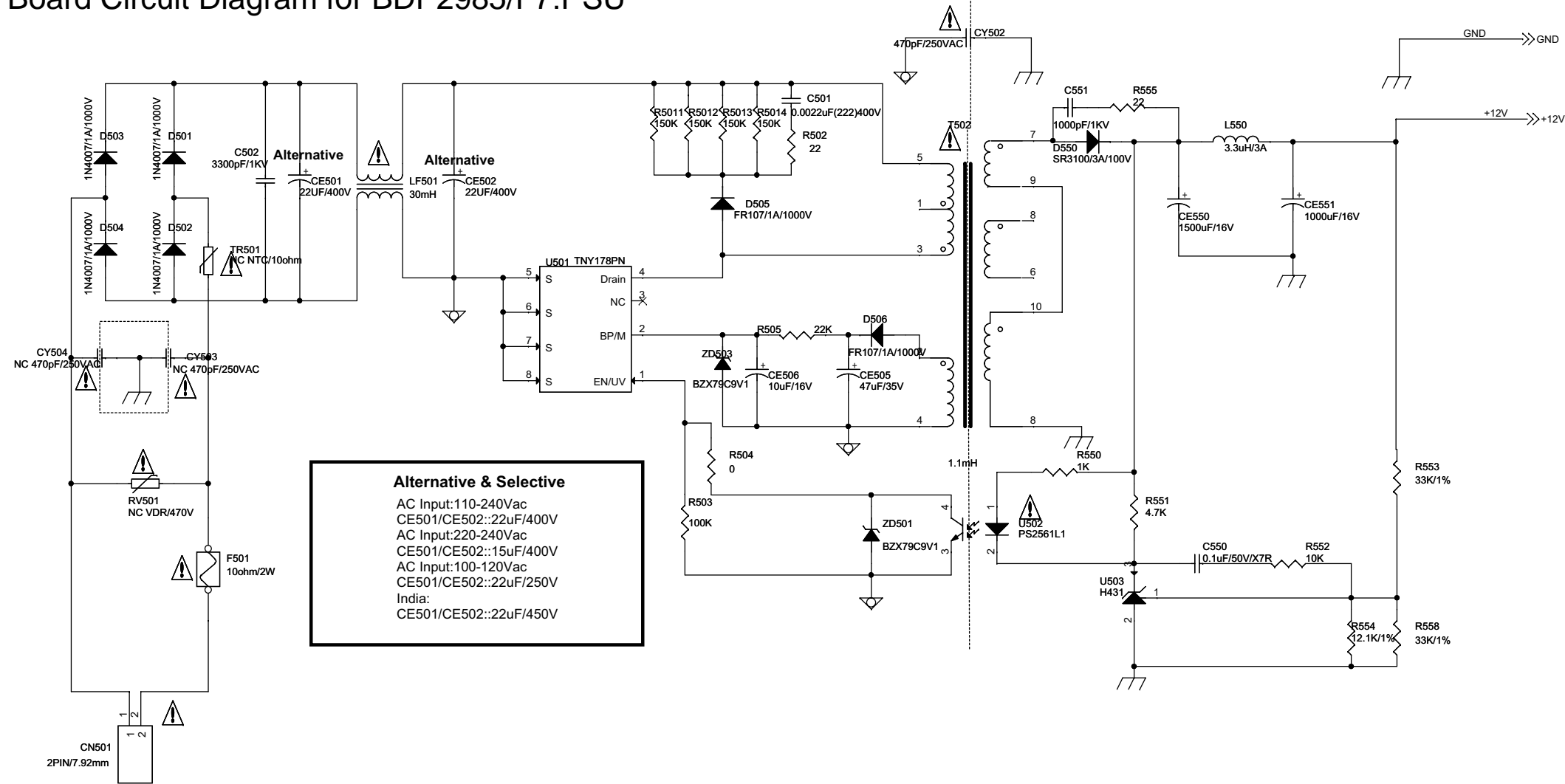
USB Board Circuit Diagram for BDP2985/F7:



PF Board Circuit Diagram for BDP2985/F7:Front




PF Board Circuit Diagram for BDP2985/F7:PSU

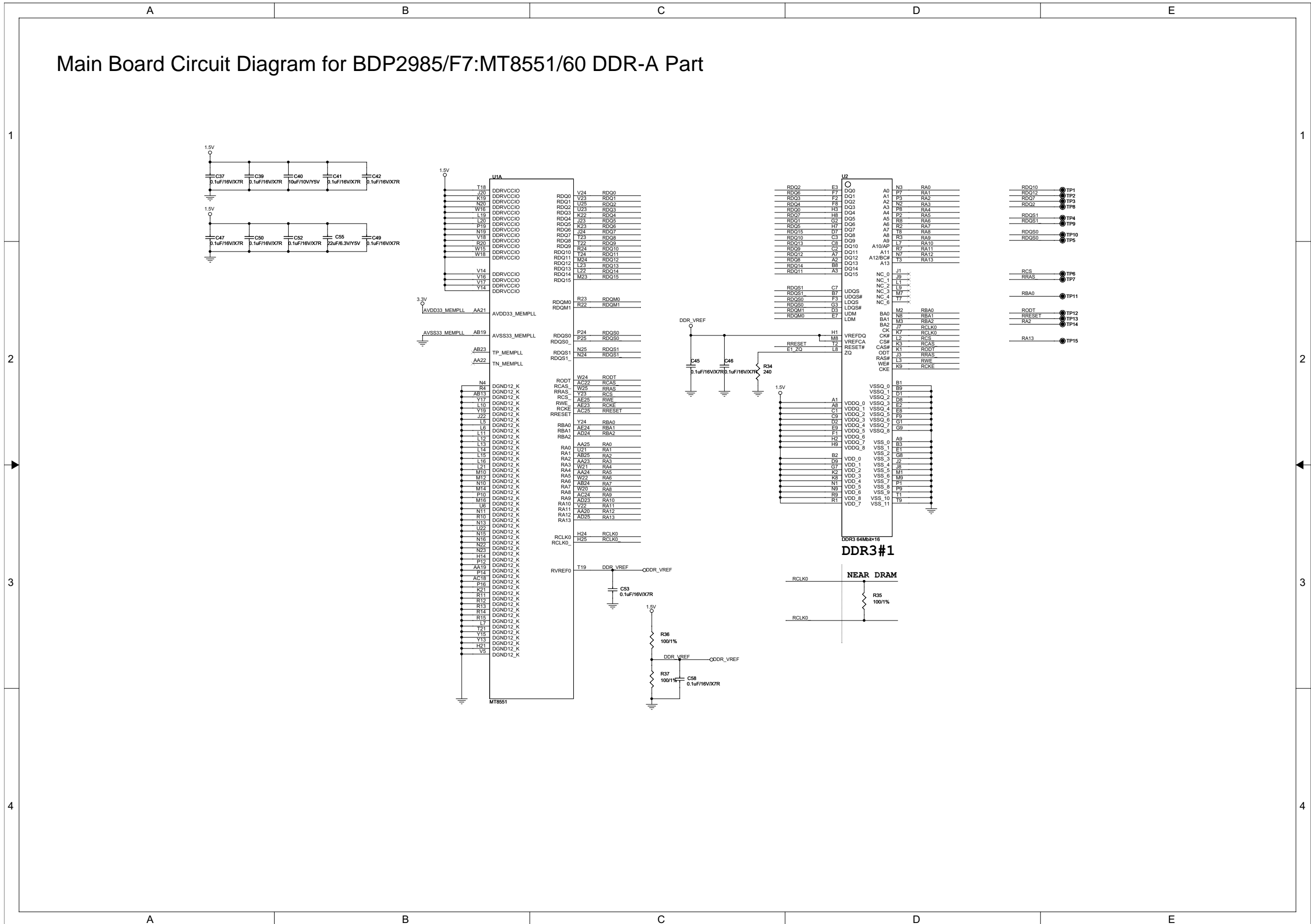


Alternative & Selective
 AC Input:110-240Vac
 CE501/CE502::22uF/400V
 AC Input:220-240Vac
 CE501/CE502::15uF/400V
 AC Input:100-120Vac
 CE501/CE502::22uF/250V
 India:
 CE501/CE502::22uF/450V

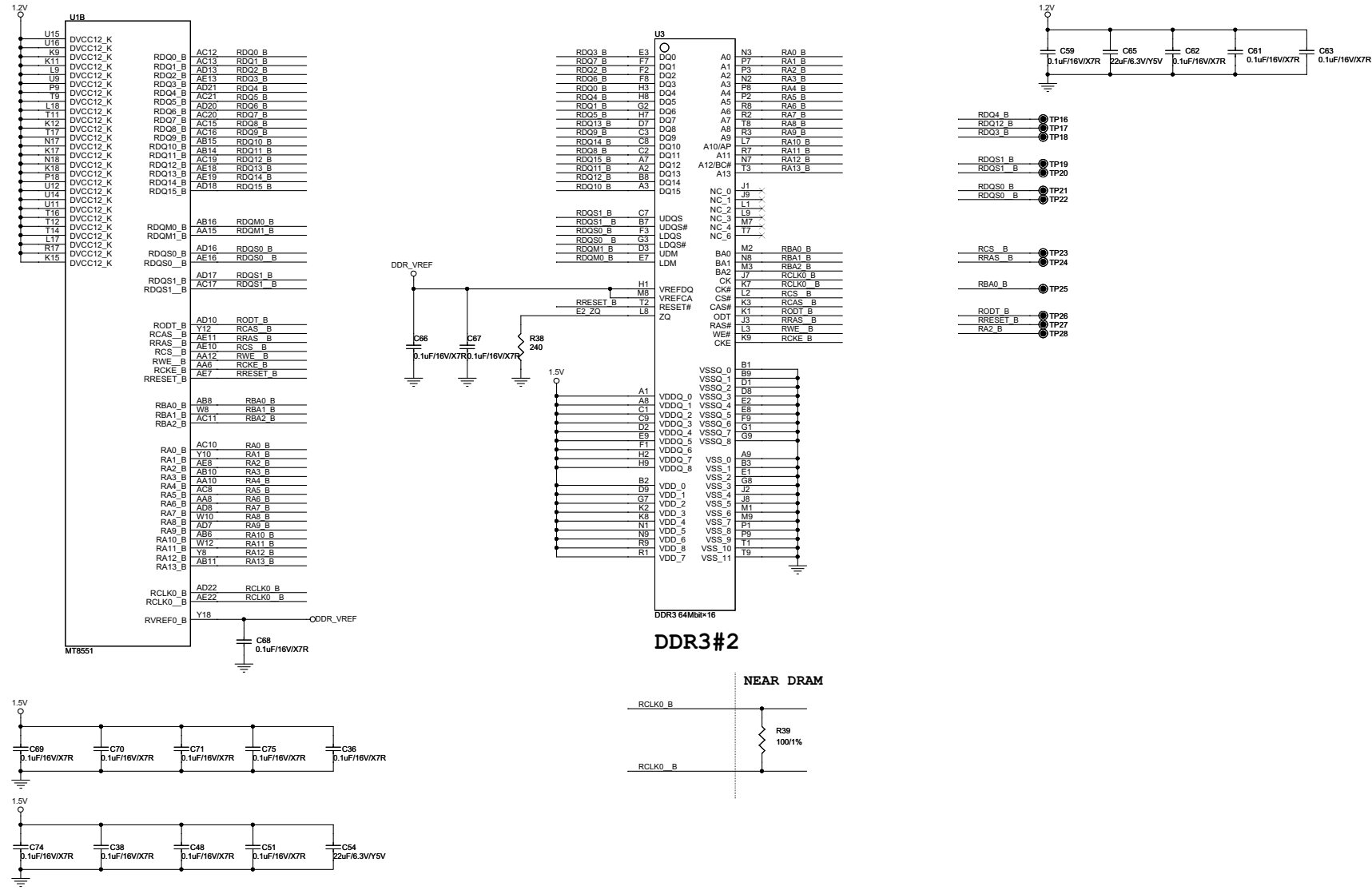
NC:NO USE THE PLACE

*** CAUTION :**
 THE PARTS MARKED WITH  ARE IMPORTANT PARTS ON THE SAFETY.
 PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBER WITHOUT FAIL.

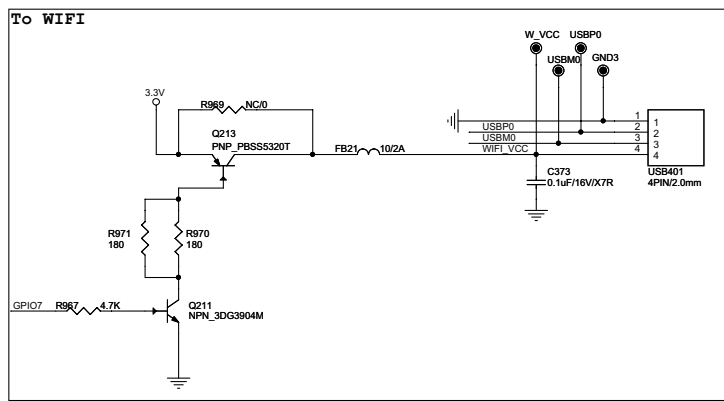
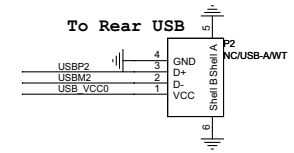
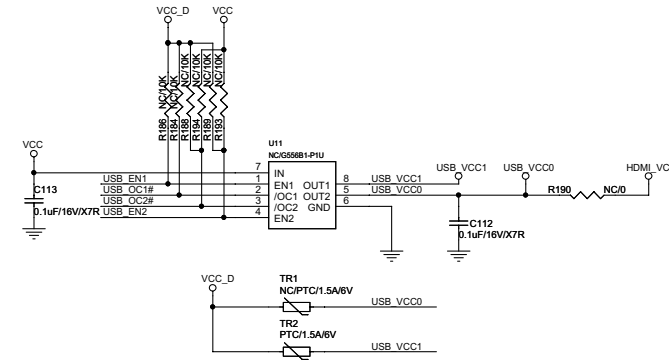
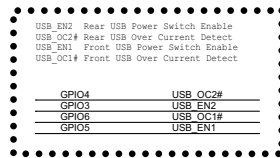
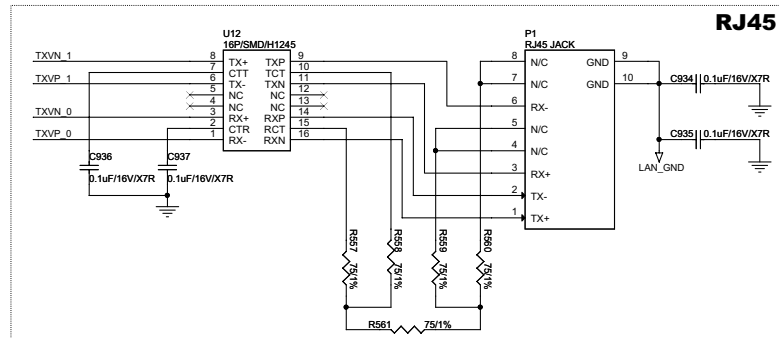
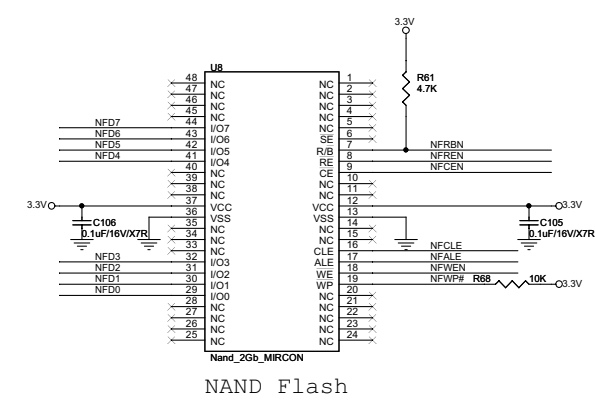
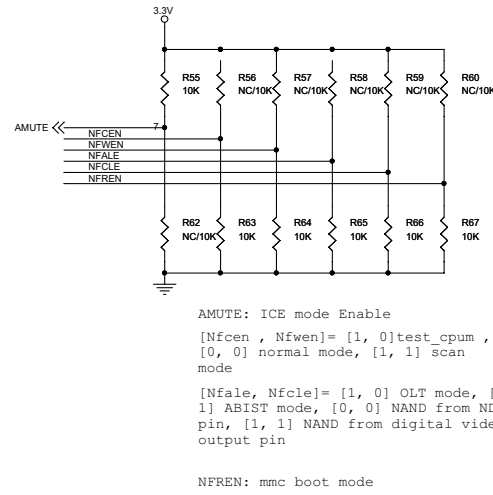
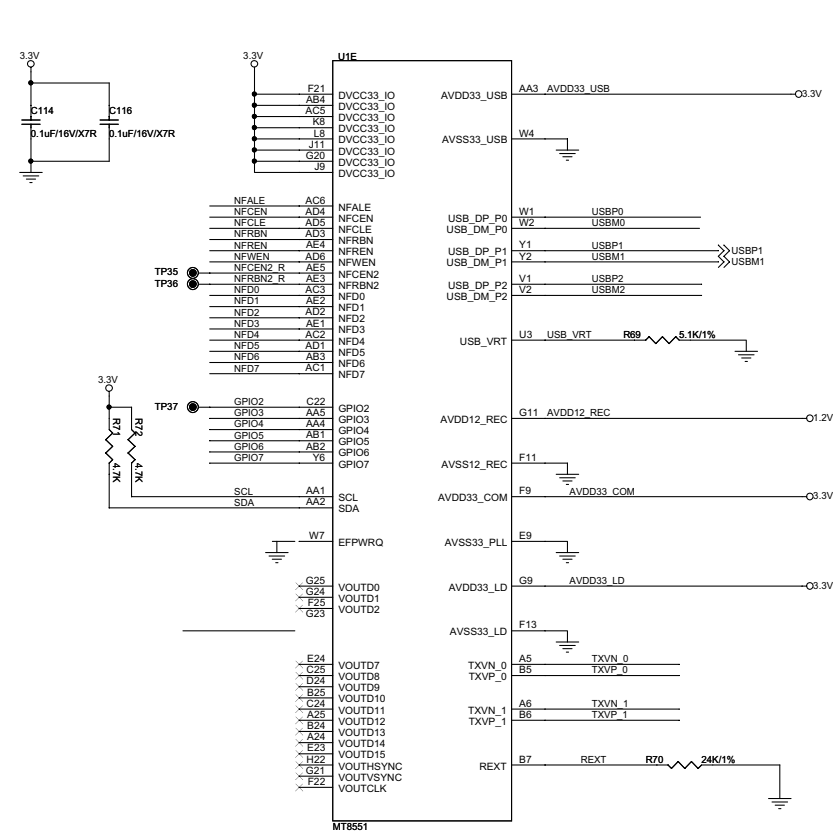
Main Board Circuit Diagram for BDP2985/F7:MT8551/60 DDR-A Part



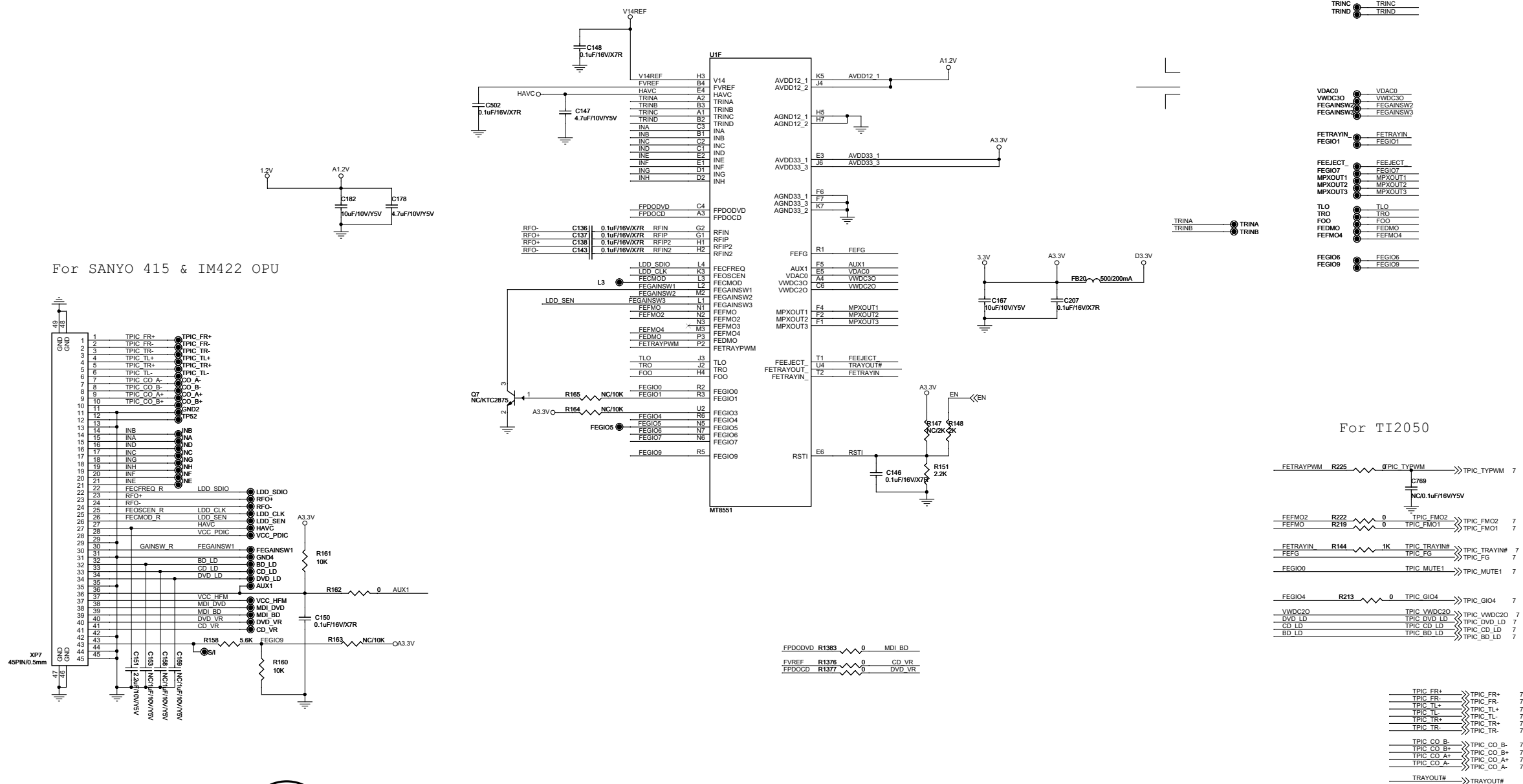
Main Board Circuit Diagram for BDP2985/F7:MT8551/60 DDR-B Part



Main Board Circuit Diagram for BDP2985/F7:MT8551/60-Flash/USB/LAN



Main Board Circuit Diagram for BDP2985/F7:MT8551/60-FE TI2050



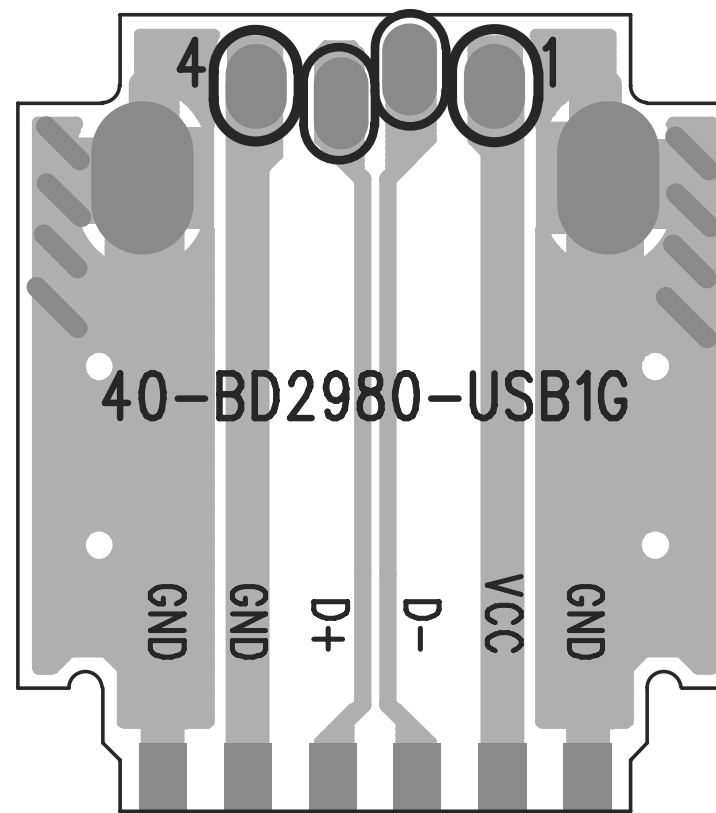
For SANYO 415 & IM422 OPU

For TI2050

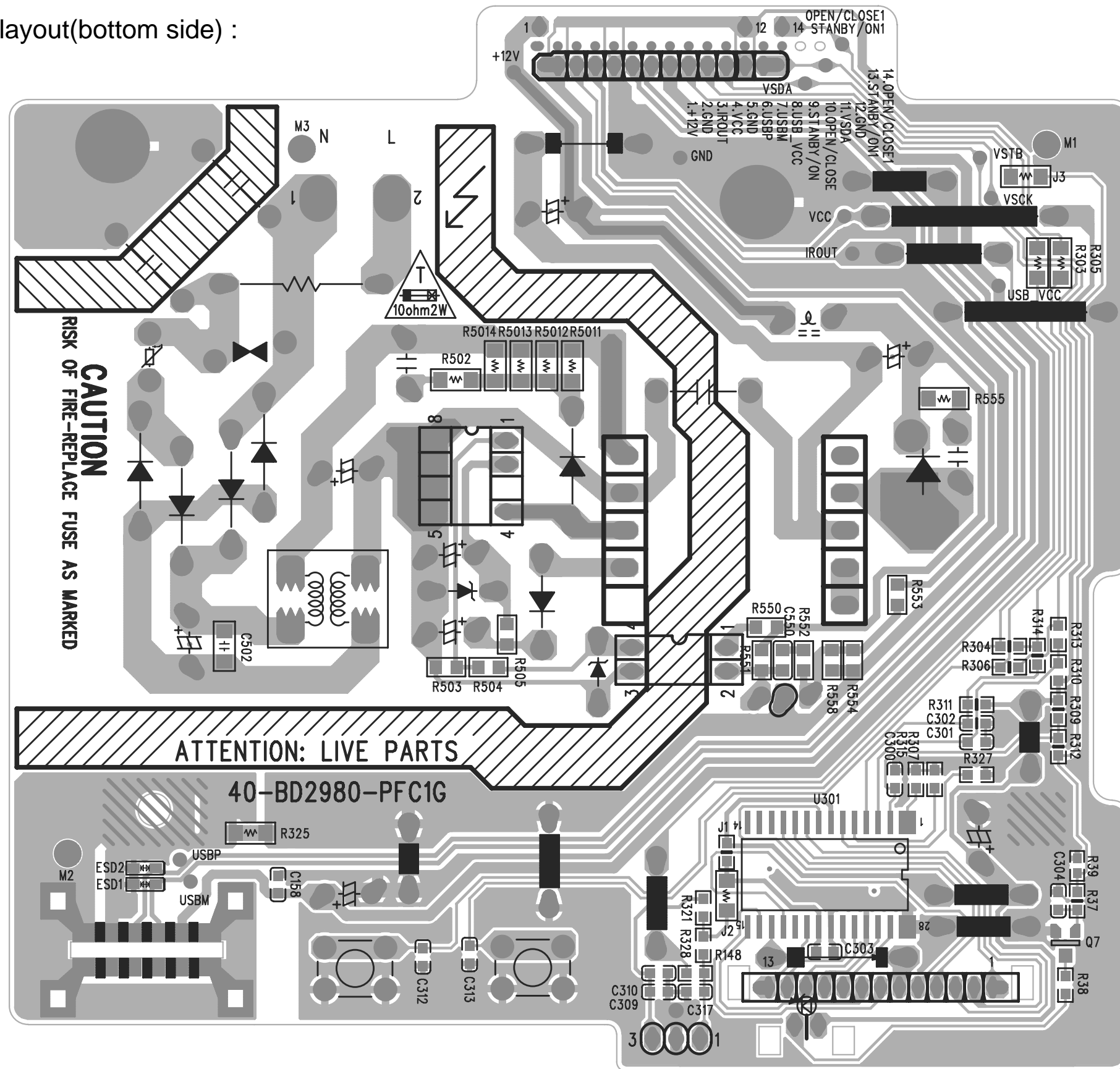
AVCC is important for readability, put FB5 nearby power source connector, and AVCC trace should avoid the motor driver signal areas;

- TPIC_FR+ >>> TPIC_FR+ 7
- TPIC_FR- >>> TPIC_FR- 7
- TPIC_TL+ >>> TPIC_TL+ 7
- TPIC_TL- >>> TPIC_TL- 7
- TPIC_TR+ >>> TPIC_TR+ 7
- TPIC_TR- >>> TPIC_TR- 7
- TPIC_CO_B- >>> TPIC_CO_B- 7
- TPIC_CO_B+ >>> TPIC_CO_B+ 7
- TPIC_CO_A+ >>> TPIC_CO_A+ 7
- TPIC_CO_A- >>> TPIC_CO_A- 7
- TRAYOUT# >>> TRAYOUT# 7

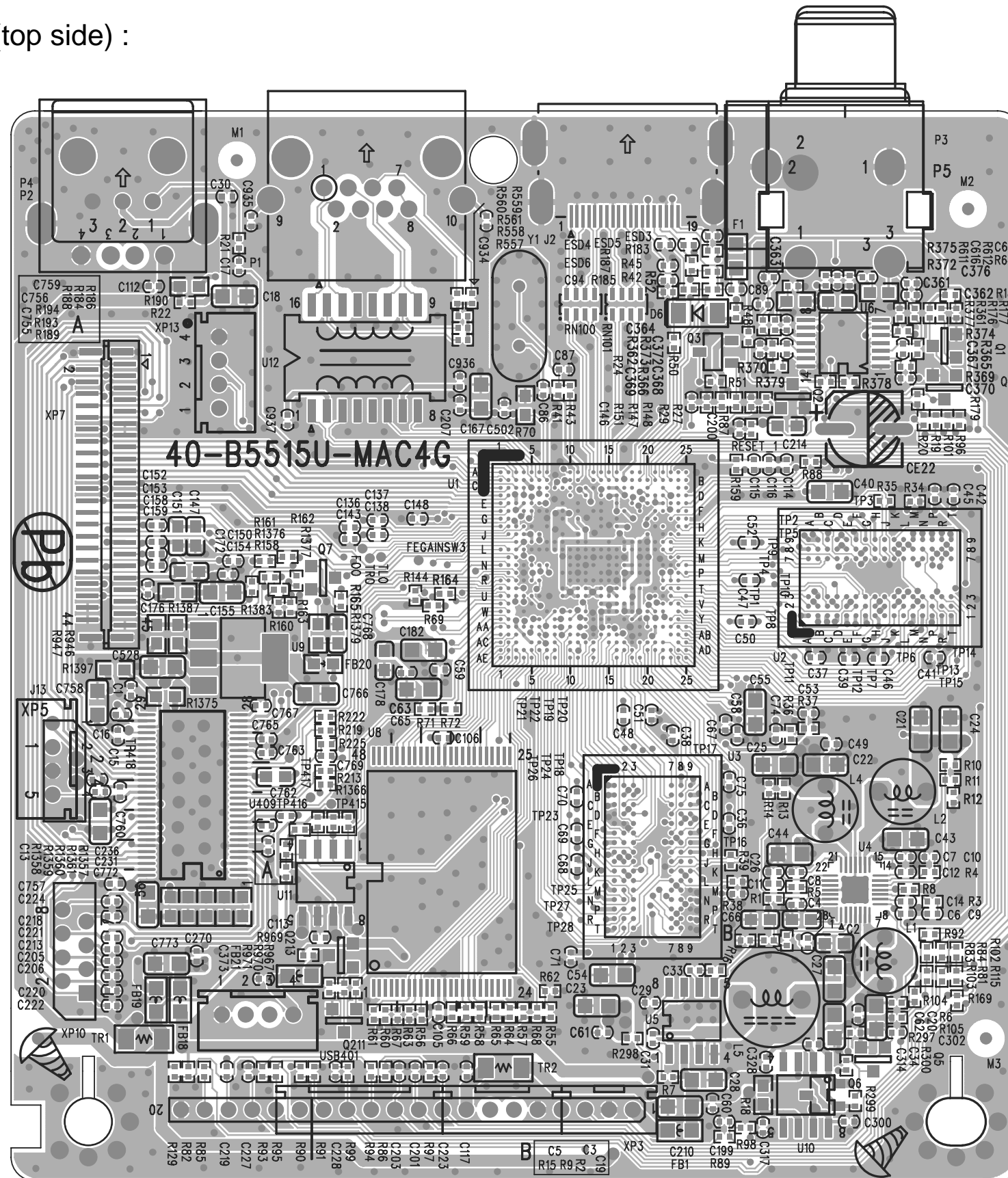
USB Board Print-layout(bottom side) :



PF Board Print-layout(bottom side) :



Main Board Print-layout(top side) :

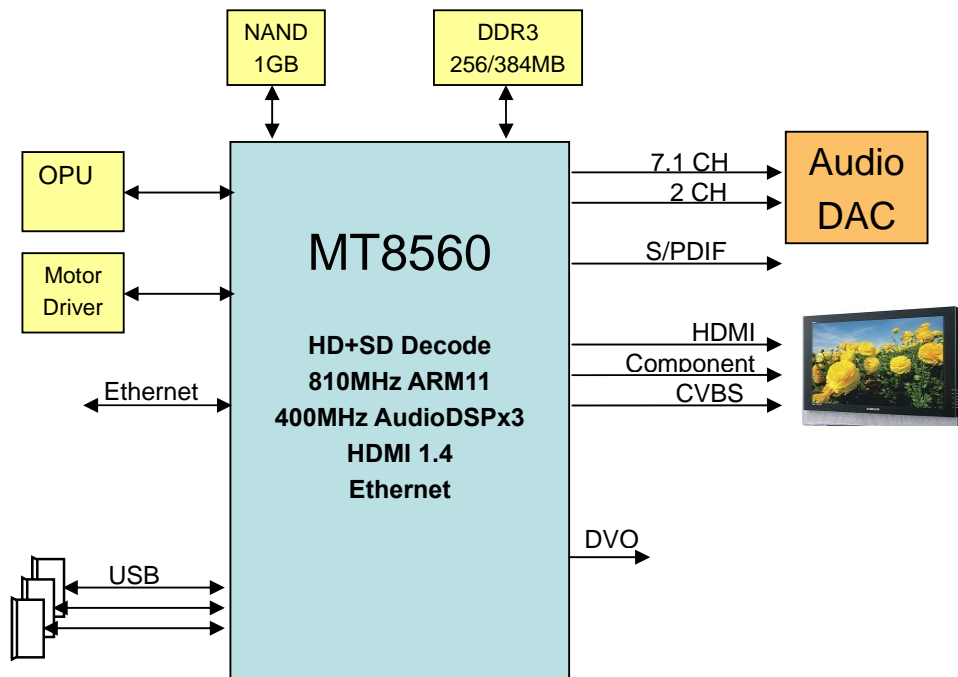


Voltages for per connection pin

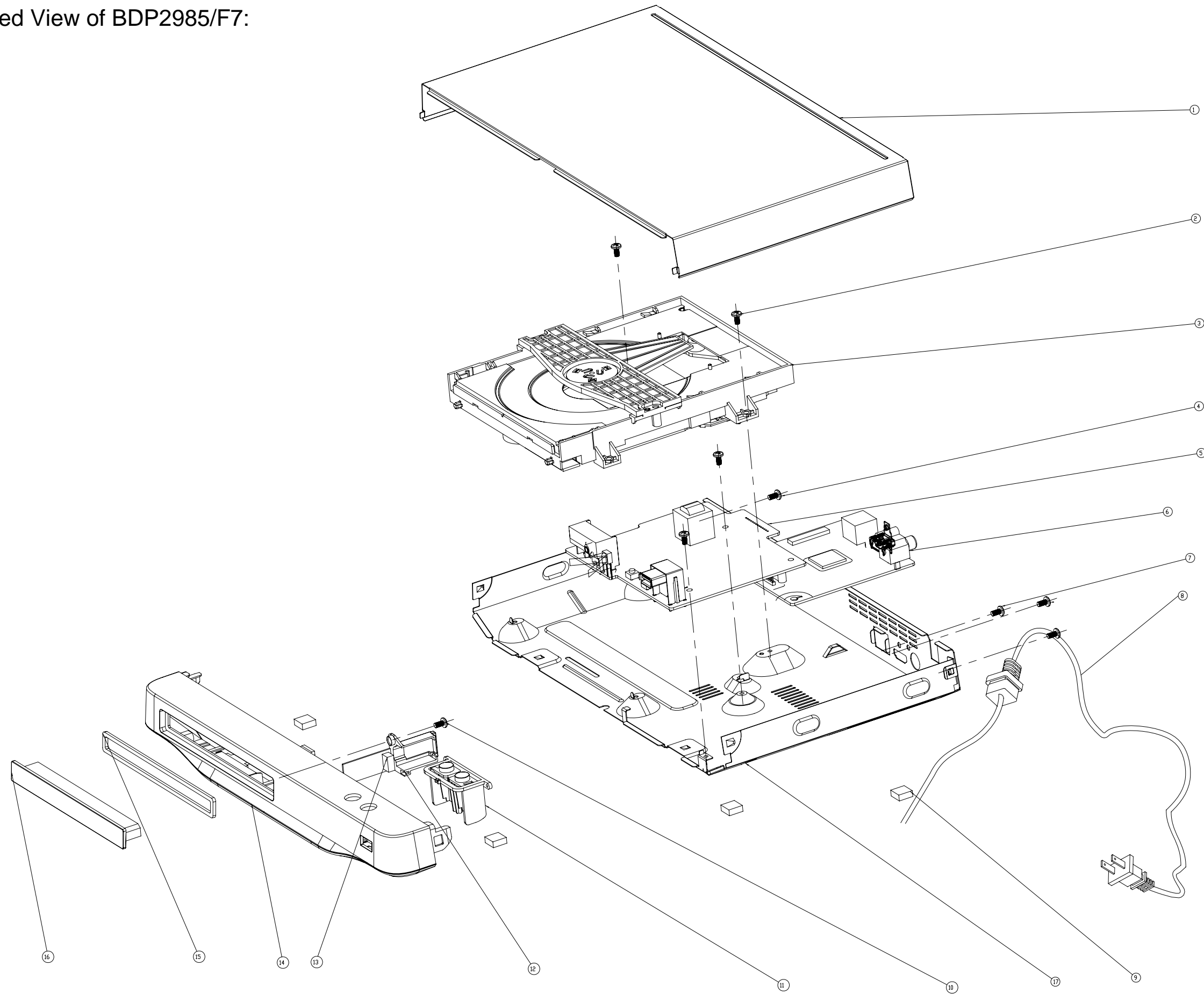
XP3---From Main Board Connect to Front Board

Pin No	Pin Assin	Remarks
1	12V	+12V
2	GND	
3	IR_IN	
4	VCC	+5V
5	GND	
6	USBP1	HIGH SPEED SIGNAL
7	USBM1	
8	USB_VCC1	+5V
9	VSTB1	SPI
10	VCLK1	
11	VDATA1	
12	GND	
13	POWER1	
14	OPEN1	

U1 Main IC-MT8560_ OAAGO Functional Block Diagram



Exploded View of BDP2985/F7:



REVISION LIST

Version 1.0

* Initial release for BDP2985/F7