

Service Manual

LED Television



Model No. TH-65FX430M

MS6488

Chassis

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

Panasonic®

1. CAUTION

CAUTION:

Use of controls, adjustments or procedures other than those specified herein may result in hazardous radiation exposure.



CAUTION
RISK OF ELECTRIC
SHOCK DO NOT OPEN.



CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, with an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to the person.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT SAFETY INSTRUCTIONS

CAUTION:

Read all of these instructions. Save these instructions for later use. Follow all Warnings and Instructions marked on the audio equipment.

1. Read Instructions-All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions- The safety and operating instructions should be retained for future reference.
3. Heed Warnings- All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions- All operating and use instructions should be followed.

FOR YOUR PERSONAL SAFETY

1. When the power cord or plug is damaged or frayed, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
2. Do not overload wall outlets and extension cords as this can result in fire or electric shock.
3. Do not allow anything to rest on or roll over the power cord, and do not place the TV where power cord is subject to traffic or abuse. This may result in a shock or fire hazard.
4. Do not attempt to service this television set yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
5. Never push objects of any kind into this television set through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the television set.
6. If the television set has been dropped or the cabinet has been damaged, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
7. If liquid has been spilled into the television set, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
8. Do not subject your television set to impact of any kind. Be particularly careful not to damage the picture tube surface.
9. Unplug this television set from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- 10.1. Do not place this television set on an unstable cart, stand, or table. The television set may fall, causing serious injury to a child or an adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the television set. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.
- 10.2. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



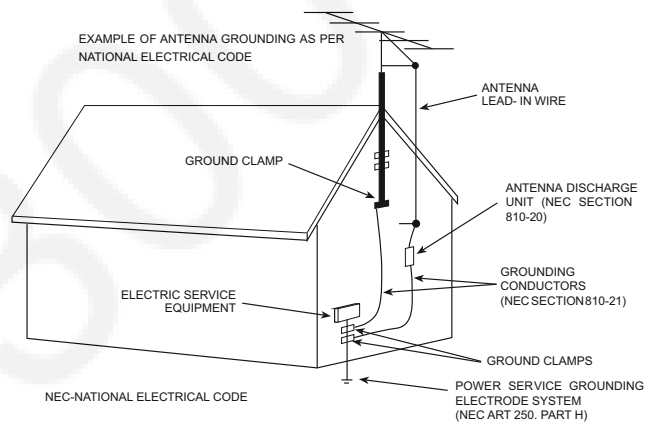
PROTECTION AND LOCATION OF YOUR SET

11. • Do not use this television set near water ... for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.
 - Never expose the set to rain or water. If the set has been exposed to rain or water, unplug the set from the wall outlet and refer servicing to qualified service personnel.
12. Choose a place where light (artificial or sunlight) does not shine directly on the screen.
13. Avoid dusty places, since piling up of dust inside TV chassis may cause failure of the set when high humidity persists.
14. The set has slots, or openings in the cabinet for ventilation purposes, to provide reliable operation of the receiver, to protect it from overheating. These openings must not be blocked or covered.
 - Never cover the slots or openings with cloth or other material.
 - Never block the bottom ventilation slots of the set by placing it on a bed, sofa, rug, etc.
 - Never place the set near or over a radiator or heat register.
 - Never place the set in a "built-in" enclosure, unless proper ventilation is provided.

PROTECTION AND LOCATION OF YOUR SET

- 15.1. If an outside antenna is connected to the television set, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges, Section 810 of the National Electrical Code, NFPA No. 70-1975, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrode, and requirements for the grounding electrode.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS



15.2. Note to CATV system installer : (Only for the television set with CATV reception)

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

16. An outside antenna system should not be located in the vicinity of overhead power lines or other electric lights or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
17. For added protection for this television set during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage due to lightning and power-line surges.

OPERATION OF YOUR SET

18. This television set should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply at your home, consult your television dealer or local power company. For television sets designed to operate from battery power, refer to the operating instructions.
19. If the television set does not operate normally by following the operating instructions, unplug this television set from the wall outlet and refer servicing to qualified service personnel. Adjust only those controls that are covered in the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the television set to normal operation.
20. When going on a holiday : If your television set is to remain unused for a period of time, for instance, when you go on a holiday, turn the television set " off " and unplug the television set from the wall outlet.

IF THE SET DOES NOT OPERATE PROPERLY

21. If you are unable to restore normal operation by following the detailed procedure in your operating instructions, do not attempt any further adjustment. Unplug the set and call your dealer or service technician.
22. Whenever the television set is damaged or fails, or a distinct change in performance indicates a need for service, unplug the set and have it checked by a professional service technician.
23. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off. If the snapping or popping is continuous or frequent, unplug the set and consult your dealer or service technician.

FOR SERVICE AND MODIFICATION

24. Do not use attachments not recommended by the television set manufacturer as they may cause hazards.
25. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
26. Upon completion of any service or repairs to the television set, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.

PRODUCT SPECIFICATIONS LED TV			
ID		CATEGORY:	65" Linux Smart UHD LED TV
		MODEL NO:	TH-65FX430M
		REFERENCE MODEL (PANASONIC/COMPETITION):	TH-65EX430M
ID PHOTO REMOTE: Add Picture		CHASSIS / Main Board:	MS6488
GENERAL ITEMS	PARAMETERS	SPECIFICATIONS	REMARKS (IF ANY)
	OSD LANGUAGES	ME/AF:ENGLISH/FARSI/ FRENCH/ARABIC/PORTUGUESE	
	MANUAL LANGUAGES	ME/AF:ENGLISH/FRENCH/ARABIC/PORTUGUESE	
	SUPPLY TYPE	ME/AF: CBU	
	DESTINATION	ME/AF	
TUNNING	FC COLOUR	DARK GREY with painting process	
	NUMBER OF PROGRAMS	999	
	COLOUR SYSTEM	PAL, DVB-T/T2	
BASIC INFO	SOUND SYSTEM	BG / I / DK	
	CPU	Dual Core A53 1.5GHz	
	GPU	Quad Core MALI450MP2	
	OS	LINUX V3.10	
	MEMORY FLASH	1.5GB DDR3/4GB EMMC	
PICTURE	INTERNET LINK	BUILD IN WIFI,ETHERNET NETWORK	
	RESOLUTION	3840X2160	
	ASPECT RATIO	16:9/4:3/Just Scan/Auto	
	DNR (Noise Reduction)	YES, Off/Low/Middle/High/Auto	
	Picture Mode	Cinema/Standard/Vivid/User/Game	
AUDIO	AUDIO OUTPUT POWER (RMS)	10W x 2	
	SPEAKER TYPE	Box	
FEATURES			
	HOTEL MODE	Yes	
	PANASONIC LOGO	YES	
	CEC	YES	
	SOUND OUT(ARC)	YES	
CONNECTIVITY	DIGITAL DOLBY	Yes	
	ANY OTHER (PLEASE SPECIFY)	Netflix, Youtube, Icflix, wireless display, App store(ZEASN), Browser	
	RF IN	YES	1*SIDE
	DTV IN	Common with RF	
	AV1 IN	YES	1*BOTTOM
MULTIMEDIA SUPPORT	AV2 IN	NO	
	AV OUT	NO	
	DVD COMPATIBILITY (YPbPr/YCbCr)	NO	
	USB INPUT (2.0 SUPPORT)	YES	2 Ports - 1*SIDE(3.0), 1*BOTTOM(2.0)
	HDMI INPUT(2.0 SUPPORT)	YES	3 Ports - 2*SIDE, 1 PORT BOTTOM
PANEL SPECIFICATIONS	HEADPHONE OUT	YES	1*SIDE
	PC AUDIO IN	NO	
	PC(VGA IN)	NO	
	MHL	NO	
	AUDIO OUT	YES	1*SIDE
WEIGHT AND DIMN.	SPDIF OUT	YES	1*BOTTOM (OPTICAL)
	RJ-45	YES	1*BOTTOM
	ANY OTHER (PLEASE SPECIFY)	NO	
	USB DEVICE SUPPORT	USB 2.0 & 3.0	1*SIDE(3.0), 1*BOTTOM(2.0)
	PICTURE FORMAT	Jpeg/Png/BMP	Final consent with IPR
ACCESSORIES	AUDIO FORMAT	MP3/MPEG1/AC3/PCM/AAC/HE-AAC /DD+	Final consent with IPR
	VIDEO FORMAT	Video:MPEG1.2.4/WMV/VC1/H.265/VP8 Audio:MPEG1/AC3/PCM/AAC/HE-AAC /DD+	Final consent with IPR
	PANEL MODEL NO. AND TYPE	LGD(LC650EGY-SKM3)/ IPS	
	SCREEN SIZE & DIAGONAL	65" / 163.9CM	
	ASPECT RATIO	16:09	
RATING	RESOLUTION	3840(H) X 2160 (V)	
	DISPLAY AREA(H x V)	1428.48(H) X 803.52(V)	
	PIXEL PITCH	0.496(H) X 0.372(V)	
	DISPLAY COLOURS	10bit(D), 1.07Billion colors	
	CONTRAST RATIO	1000:1	Typical
REGULATION	MAX BRIGHTNESS	320cd/m2	Typical
	VIEWING ANGLE (HORIZONTAL / VERTICAL)	178°/178°	
	NET WEIGHT WITH PEDESTAL	21.5kg	
	NET WEIGHT W/O PEDESTAL	21.3kg	
	NET DIMENSIONS WITH PEDESTAL	1460x 903x 267.7MM	
ACCESSORIES	NET DIMENSIONS W/O PEDESTAL	1460*842.7*81.4MM	
	GROSS DIMENSIONS (PACKING BOX)	1658x193x1014	
	GROSS WEIGHT (WITH PACKING BOX)	32KG	
	OPERATING VOLTAGE	100V-240V~ at 50/60Hz	
	POWER CONSUMPTION	200 W	
ACCESSORIES	STD BY POWER CONSUMPTION	≤0.5W	
	REMOTE	N2QAYB001008	
	BATTERY	2 "AA" Batteries	
	POWER CORD TYPE	Detachable	
	POWER CORD	ME/AF: VED 2PIN+BS 3PIN	
REGULATION	POWER PLUG2 PIN + 3 PIN		
	ANY OTHER (PLEASE SPECIFY)	--	
	BIS	NO	
	CB	YES	
	ERP	YES	
ACCESSORIES	EMC	YES	
	BEE	NO	
	ANY OTHER (PLEASE SPECIFY)	ESMA(DTV,SIPSI), RED, HDMI, DD+	

These chassis are designed for Latin America (LA) markets ready for IPTV. The main chip is from Mstar and supports below features matrix

Class	Item	MS68A-LA
Inputs & Outputs	ATV (PAL M/PAN N/ NTSC)	Cable Antenna
	DTV (ISDB-T)OR(DVB-T2)	Antenna
	HDMI (480i/p, 576i/p, 720p up to 1080i/p, compliant v2.0 with HDCP)	3
	CMP (YPbPr can support from 480i up to 1080p, audio)	No
	AV (CVBS, audio)Share with CMP	1(mini)
	AV audio out	1
	USB thumb drive	2 - Picture, Video, Audio Playback - Hub, Mouse, Keyboard rd
	Headphone output	1
	SPDIF output	SPDIF
Functions	OAD	No
	WIFI	Yes
	DIVX	No
	DLNA (DMP)	Yes
	Internet	Yes
	3D (auto, top & bottom, side by side, frame sequencing, ...) 1920 2205 24Hz (1920 1080p 2) 1280 1470 50Hz (1280 720p 2) 1280 1470 60Hz (1280 720p 2)	No
	Audio Return Channel (ARC)	Yes
Others	I2C connector of MEMC module	N/A
	Main SW Serial NAND Flash BIN image	U701
IC Details & Position	Main IC	U501

INFO:

↪ All tests and measurements mentioned hereafter have to be carried out at a normal mains voltage (100 ~ 240 VAC)

↪ All voltages have to be measured with respect to ground, unless otherwise stated

↪ All final tests have to be done on a complete set including LCD panel in a room with temperature of 25+/-7°C

↪ The Picture Performance assessment such as White Balance (luminance and colour temperature) has to be performed into subdued lighted room after at least **45min** of warm-up in order to avoid any

temperature drift influence (colorimetry vs time)

1. **PCB/SKD Assembly: Test & Alignment**

1.1. **Pre-Conditions and DC/DC Check**

Before power-on, please check the board according to the relevant block diagram and circuit diagram, and make sure that no serious issue or mistake can destroy the board. For example, the output of DC/DC and LDO should not be shorted to ground.

Supply a suited voltage and power-on, then check the voltage according to the relevant block diagram, circuit diagram and voltage spec. The error should be less than 5%. For example, the voltage for main chip (+3V3, AV3.3, +1V2, CORE1V, etc.), the voltage for DDR (DDRV), the voltage for amplifier (AMP_VCC), etc...

Position	Value	Remark
UDH1	5V $\pm 5\%$	
U101	0.95V $\pm 5\%$	
UD033/UT2	3.3V $\pm 5\%$	
UD015	1.5V $\pm 5\%$	
UDB0	1.2V $\pm 5\%$	
UDM1	12V $\pm 5\%$	
U102	12V $\pm 5\%$	For Panel

1.2. **SW Image download (Developing)**

Download the latest release SW from below PDM system

- Link <http://sw.tcl-cctv.com>
- Username MS88A_Customer
- Password to be requested

See Appendix ② **“How to upgrade FLASH SW using USB”**

1.3. **Project ID Modification**

There are different IDs stored into the NVM depending on different Panels settings and Models features, but there's only one key branching Project ID that includes all. So, it's not recommended to modify Panel ID with Hyper terminal as other ID features may not change.

To modify Project ID, you need to go through **“Design menu→Service menu→Project ID”**, then spin left or right with RCU **“Zoom±”** keys to suitable ID (Project name is dynamically refreshed).

See Appendix ③ **“How to change Project ID with RCU”**

Here below is none exhaustive Project ID table for reference

MODEL	ProjectID	Panel Name

1.4. Functional Test

Once the boards (chassis, KB, IR, PSU...) and the panel are well interconnected, plug all external generator devices to relevant inputs/outputs below according to their respective test patterns format and check picture content and sound quality accordingly

Source	Test Signal	Test Pattern
Analog/Digital Tuner (VHF/UHF CATV)	RF cable generator	2D - Movie 1280 720 2D - Static Picture 1920 1080 1. Frequency Range full band 2. Standard NTSC /PAL M 3. ISDB-T
SPDIF (Coaxial)	Audio Amplifier	PCM or Dolby D+
AV IN (CVBS AUDIO)	Chroma/Fluke generator	PAL Half Color Gray bars
CMP (YPbPr Audio)	Chroma/Quantum Data generator	1920 1080i 60Hz Half Color Gray bars
HDMI (Video Audio)	with beyond HDMI 1.3 and HDCP compliant DVD/BD player	2D - Movie 1280 720i 60Hz 3D - Movie 1920 1080 p24Hz
RJ45 (LAN)	Internet	ICMP packets echo request
Headphone via mini jack adapter	RF signal	Suitable channel
Loud Speakers / Enclosures	RF signal	Suitable channel
AV OUT (Audio)	RF signal	Suitable channel

Audio tones can be defined by the factory (i.e. 1 KHz ~ 3 KHz sweep).

Picture video formats can be changed by the factory according to their own standard.

1.5. AD Calibration Test

As SoC is built-in an A/D self-calibration mechanism, ADC need not to be performed any more.

1.6. DDC & EDID & T-Link Test

The E-EDID data structures are according to VESA Enhanced EDID 1.3 (and EIA/CEA-861B for HDMI). CEA Timing Extension structure has been extended to support all 3D capable timings.

All VGA and HDMI structures have their own BIN profile which are part of main SW and uploaded at power-on into HDMI switch chipset.

For EDID check, it's needed to check whether the correct EDID is downloaded by checking corresponding EDID NVM Checksum or read them out to check bit by bit if it is in line with the released EDID bin file.

1.7. HDCP Test

For HDCP compliancy, it's needed to check whether the HDCP key has been well set.

1.8. LAN/WLAN Test (MAC address)

- **MAC Address Upgrade**

See Appendix ⑥ **“How to upgrade MAC Address”**

2. Product Assembly (PA): Test & Alignment

2.1. Factory Menu

Follow the below steps to pop-up the Factory menu in case of “**Factory Key**” is disabled

- Press RCU “**MENU**” key to display main menu
- Select “Setting” and press “**OK**” key to enter into setting submenu
- Select “Picture” and press “**OK**” key to enter into picture submenu
- Scroll down to “**Contrast**” item
- Press the subsequence RCU keys “**9**”, “**7**”, “**3**” and “**5**”

In case of “**Factory Key**” is enabled, just press RCU “**Return**” key to pop-up again the Factory menu.

The status of “**Factory Key**” can be changed in **Factory Menu- Hotkey**.

Press RCU “**OK**” key or “**RIGHT**” key to enter the submenu.

Press RCU “**Menu**” key to go back to the root menu.

Press RCU “**RIGHT**” or “**LEFT**” key to change the values.

Press RCU “**OK**” key run the function.

Press RCU “**Exit**” key e it the Factory menu.

See Appendix ⑦ **“Factory Menu Description”**

2.2. Warm-up

Following TCL standard and practices, it's required minimum **15min** of **Warm-Up** that can be considered as Burn-In.

Additional Aging for White Balance alignment is no more necessary due to consistent Picture Performance with Cloning usage.

This function is accessible by selecting “**Factory menu → WARM-UP**”, pressing RCU “**Zoom+**” key and then leaving Factory menu. Other faster methods are available on above enclosed SIACP requirements (rev. v3.9).

2.3. White Balance (WB) (Developing)

- for Alignment: ± 0.003
- for Measurement: ± 0.01

2.4. SHOP-END initial

At final process stage, it's necessary to perform “**Reset shop**” before any packing to leave Factory mode and restore User default presets.

This function is accessible by selecting “**Factory menu →SHOP init**”, then pressing RCU “**OK**” key. Other faster methods are available on above enclosed SIACP requirements (rev. v3.9).

Appendix ① “How to upgrade SW FLASH using Mstar tool” (Developing)

Appendix ② “How to upgrade FLASH SW using USB”

- Copy the SW BIN image “V8-S68AT03-LF1VXXX.bin” into USB stick root path.

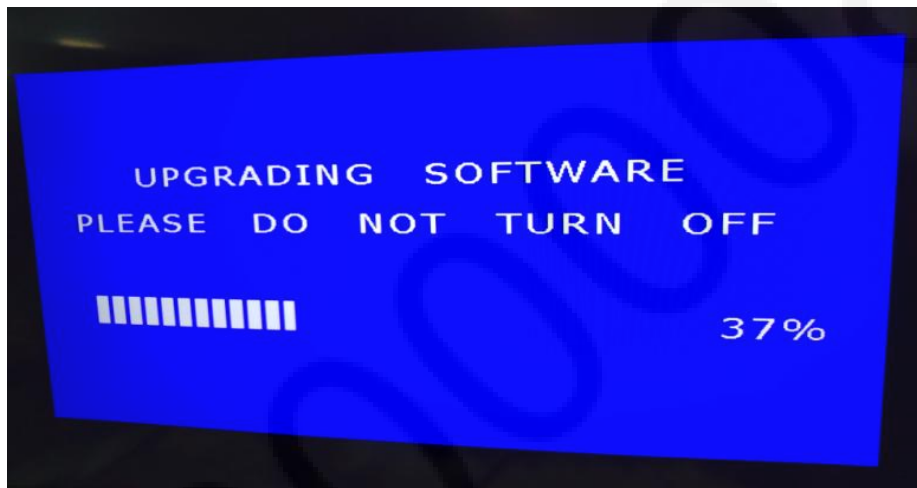
Note: If there’s already other “V8-S68AT03-LF1VXXX.bin” into USB root, it needs to be deleted or renamed.

- Plug USB stick to the TV USB slot.

- Press RCU **MENU→Setting→ Software upgrade→By USB→Confirm**.

Or, turn off the TV press and hold the power key of key board before reconnect AC cord to restart TV for 5-8seconds (Forced Upgrade).

- When the UPGRADING SOFTWARE picture appears as below, it means TV is uploading SW BIN image. Waiting a few minutes.



- When updating is successful, TV should restart automatically.

Appendix ③ “How to change Project ID with RCU”

- Process following subsequence IR codes to change project ID **062598+MENU+xxx** (Project ID, e 057) with TV automatic restart.

Appendix ④ “How to upgrade MAC Address

- Upgrading MAC address need to use the tool in factory and through serial command, the specific methods according to the operation of the factory guidance.

Appendix ⑤ “Factory Menu Description”

1- Factory hotkey submenu

Item	Sub-item	Value	Note
Factory hotkey		Off/On	OFF: hotkey is invalid ON : hotkey(Return key) is availability

2- Warm-Up Mode submenu

Item	Sub-item	Value	Note
Warm-UP Mode		Off/On	Select panel On with left/right key, Press "EXIT" key to enter the burning mode Press "Menu" key on keyboard to exit the burning mode

3-ADC submenu

As SoC is built-in an A/D self-calibration mechanism, ADC need not to be performed any more.

4-White Balance submenu

Item	Sub-item	Value	Note
White Balance	Source	HDMI, etc	Balance source are: HDMI, ATV,DTV, PAL, NTSC, CMP
	Color Temp	Normal /Warm/Cool	Warm and cool value is relative to Normal one. Normal is the default Tone mode
	R Gain	000..255	R White balance (-127..+128 for gain)
	G Gain	000..255	G White balance (-127..+128 for gain)
	B Gain	000..255	B White balance (-127..+128 for gain)
	R Offset	000..255	R Gray balance (-127..+128 for offset)
	G Offset	000..255	G Gray balance (-127..+128 for offset)
	B Offset	000..255	B Gray balance (-127..+128 for offset)
	White Balance Init	DO	Press "OK" key to initial the preset RGB Gain/Offset value
	VGA ADC Status	NG	
	YPbPr ADC Status	NG	

5-Shop init submenu

Item	Sub-item	Value	Note
Shop Init		DO	Clear date of NVM in user menu,include the value related installation,and Clear date of factory menu except the item of Balance and sound ,set to default value

6-NVM Reset submenu

Item	Sub-item	Value	Note
Reset ALL		DO	Clear NVM values , and set to default value

7-Power On Mode submenu

Item	Sub-item	Value	Note
Power On Mode		ON/LAST/STB	ON The set will power on after switching on power STB Force TV to start in standby Last Force TV to start from last power status

8-USB UPDATE submenu

Item	Sub-item	Value	Note
USB UPDATE	Main Upgrade		Upgrade software
	MEMC Upgrade		Upgrade MEMC
	HDCP Upgrade		Upgrade HDCP
	Mboot upgrade		Upgrade Mboot
	NVM Upgrade		Upgrade NVM
	NVM backup		Backup NVM
	CH list Upgrade		Upgrade CH list
	CH list backup		Backup CH list

9-Device ID test submenu

Item	Sub-item	Value	Note
USB Clone	USB Clone Mode	All Channel List EEPROM User Setting	Select to choose the things you want to clone
	TV TO USB	DO	Press "Right" key to copy the data(WB, ADC, picture setting, etc) to USB
	USB TO TV	DO	Press "Right" key to set the data(WB, ADC, picture setting) from USB

Appendix ⑥ "Instructions of Updating SW"**1. The following IC should be pre-copied before SMT process.**

Position	PART TYPE	Part Number	SW
U701	IC-TFBGA169-1216-0.5	13-TH5D1K-4GBG(CPP)	Mboot, Main Software

2. The MAC Address, HDCP KEY, Device ID must be upgrade by debug port into U701.

Two types of upgrades

1、 The USB upgrade manually

- Step1: Please put the upgrade file (V8-MS88ALA-LF1VXXX.bin) in the USB Flash Disk ;
Step2: Cut to the menu settings, select Software Update, select By USB, press OK to confirm;
Step3: After the upgrade options pop-up box, press the left button to select "Confirm" to upgrade;
Step4: Until after the upgrade is complete unplug the U disk, and then restart power.

2、 USB forced to upgrade

- Step1: Please put the upgrade file (V8-MS88ALA-LF1VXXX.bin) in the USB Flash Disk ;
Step2: Hold down the power button, power 3 seconds and then release the power button, observe the standby light, slow flash instructions being upgraded, the upgrade automatically reboot upon completion.

The editor:

The approver:

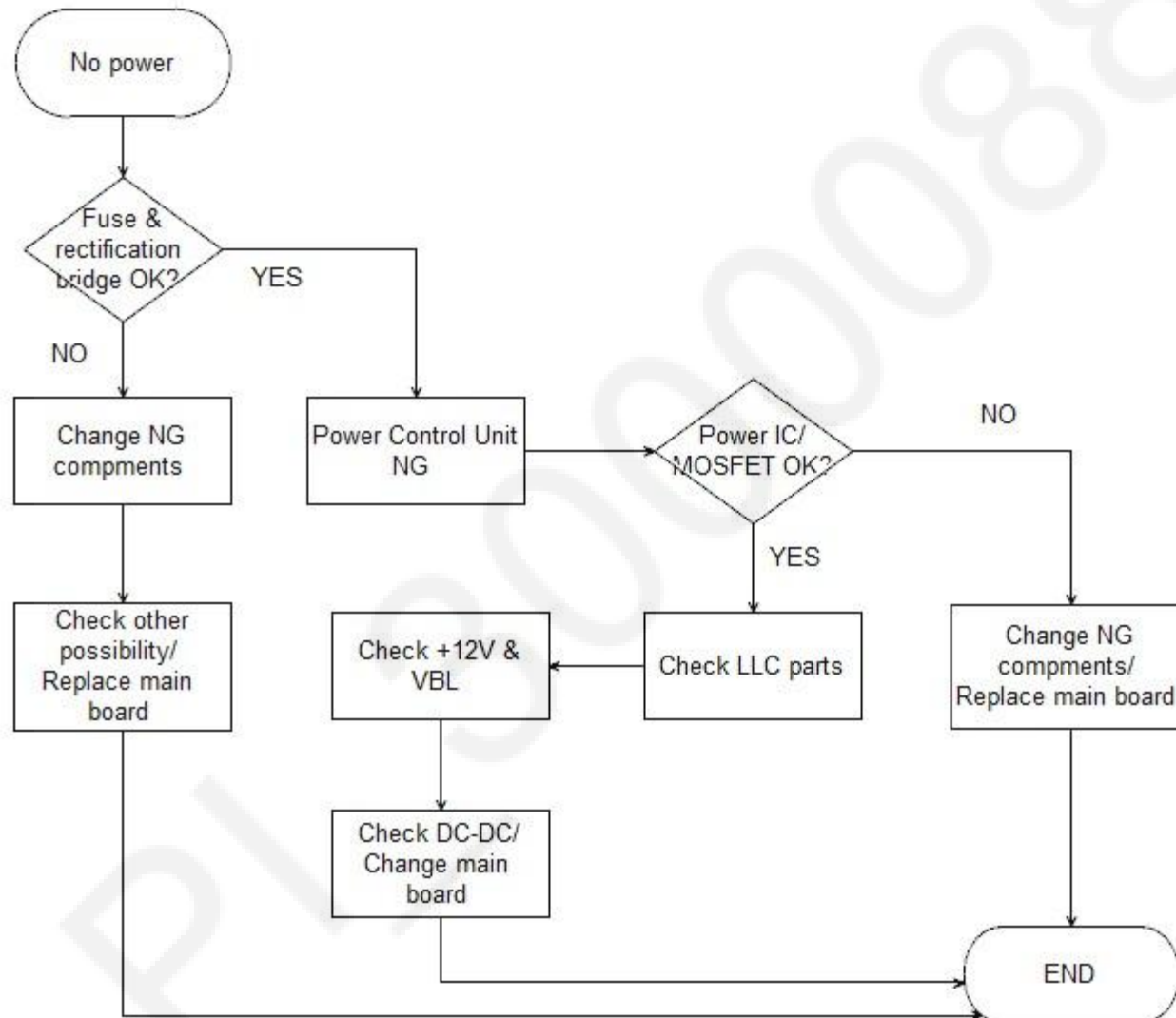
Trouble shooting diagram

Terms

- ✓ **IR:** *Infrared Receiver*
- ✓ **RC:** *Remote Control*
- ✓ **IR logic:** *IR blink with RC action*
- ✓ **LVDS:** *Low Voltage Differential Signal, output from processor and input for panel*
- ✓ **O/C:** *Open Cell, panel with source board*
- ✓ **BL:** *Back Light, light source for panel module*
- ✓ **LB:** *LED (Light Emitting Diode) Bar, light source for BL module*
- ✓ **VBL:** *Voltage for Back Light (before Boost)*
- ✓ **VLED:** *Voltage for LED (after Boost)*
- ✓ **OVP:** *Over Voltage Protection*
- ✓ **OSD:** *On Screen Display*
- ✓ **AMP:** *Amplifier*

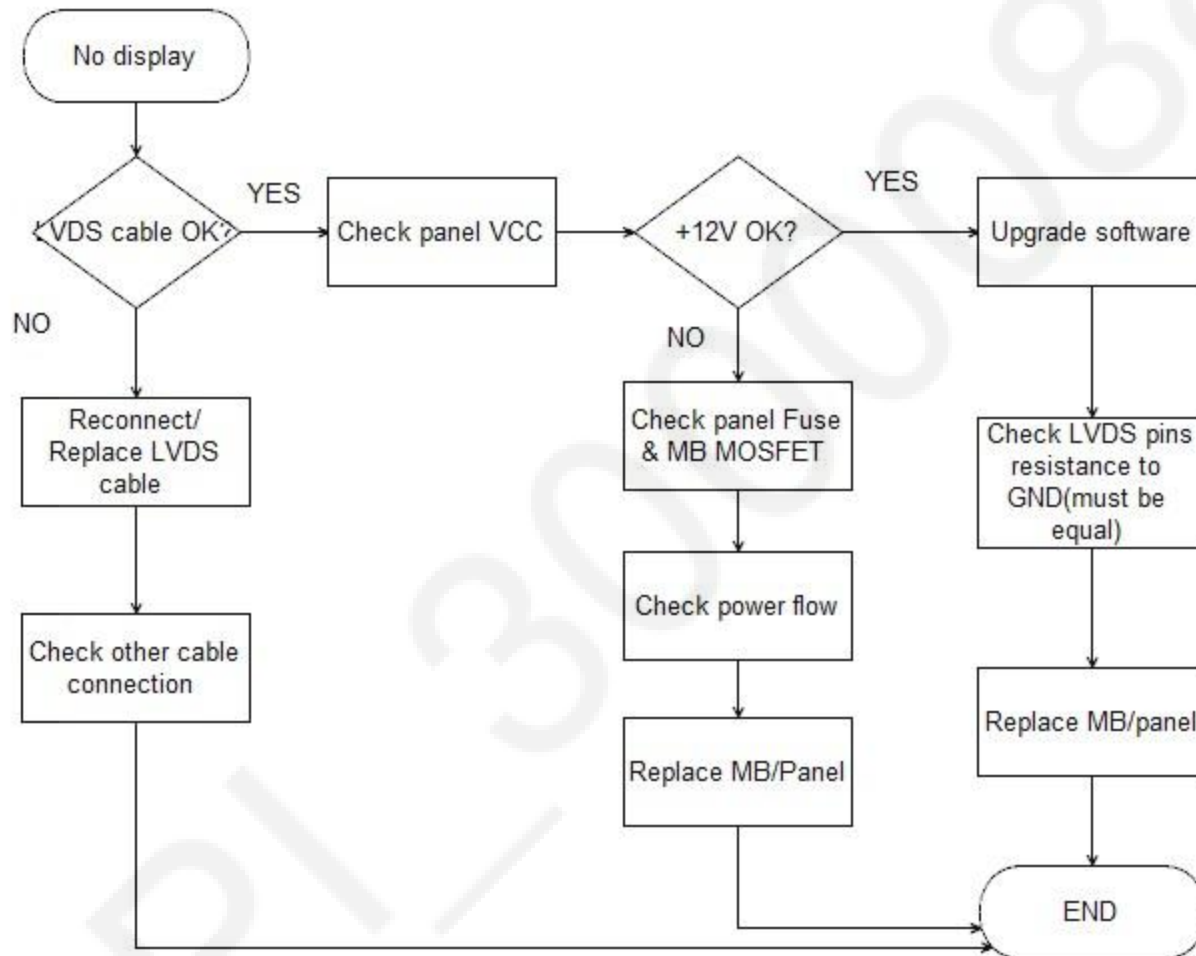
1.No power

No power LED, RC or Key can not turn on TV. Power LED no light/no change.



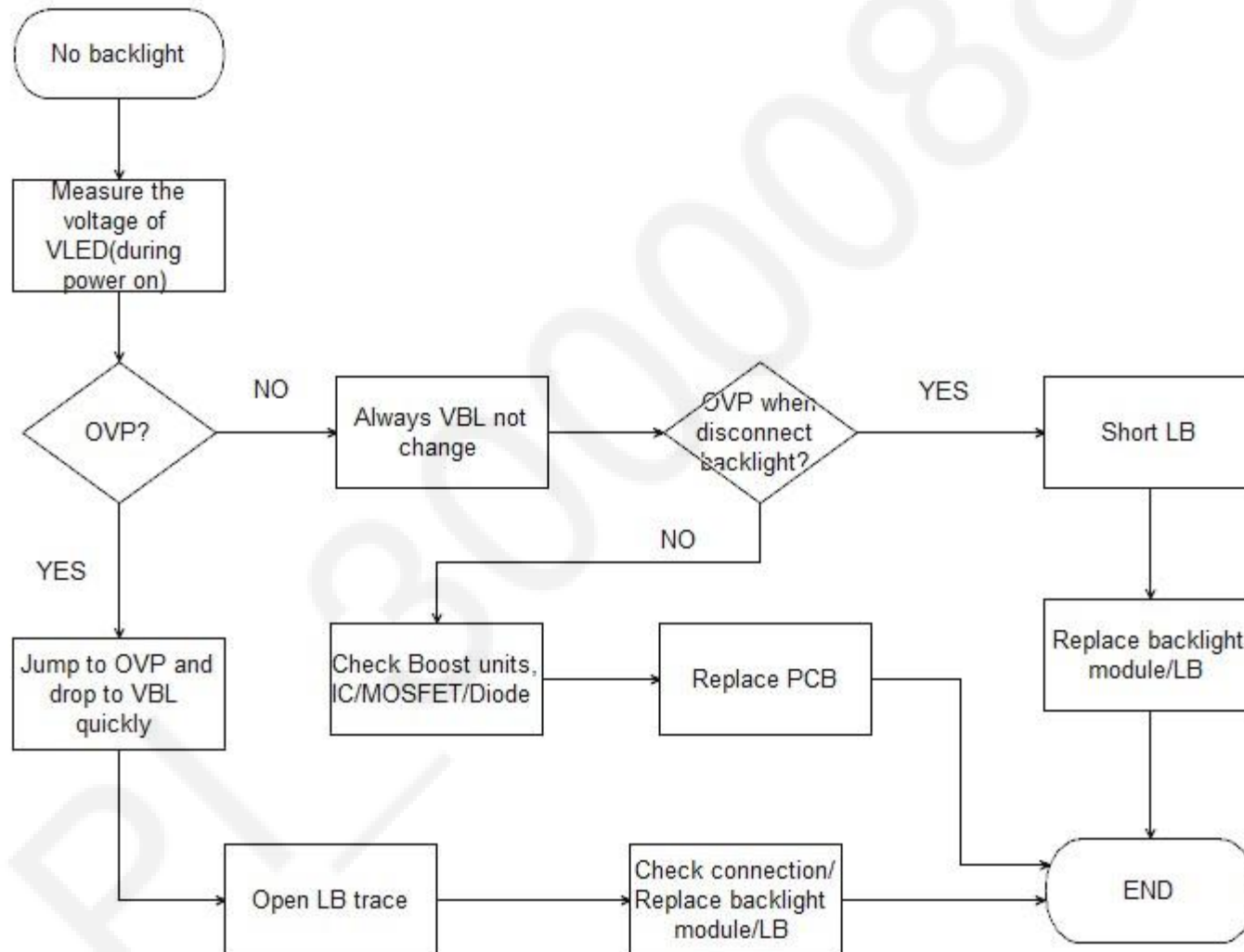
2.No Display / Black Panel

Back light is OK, sound is OK, but no picture.



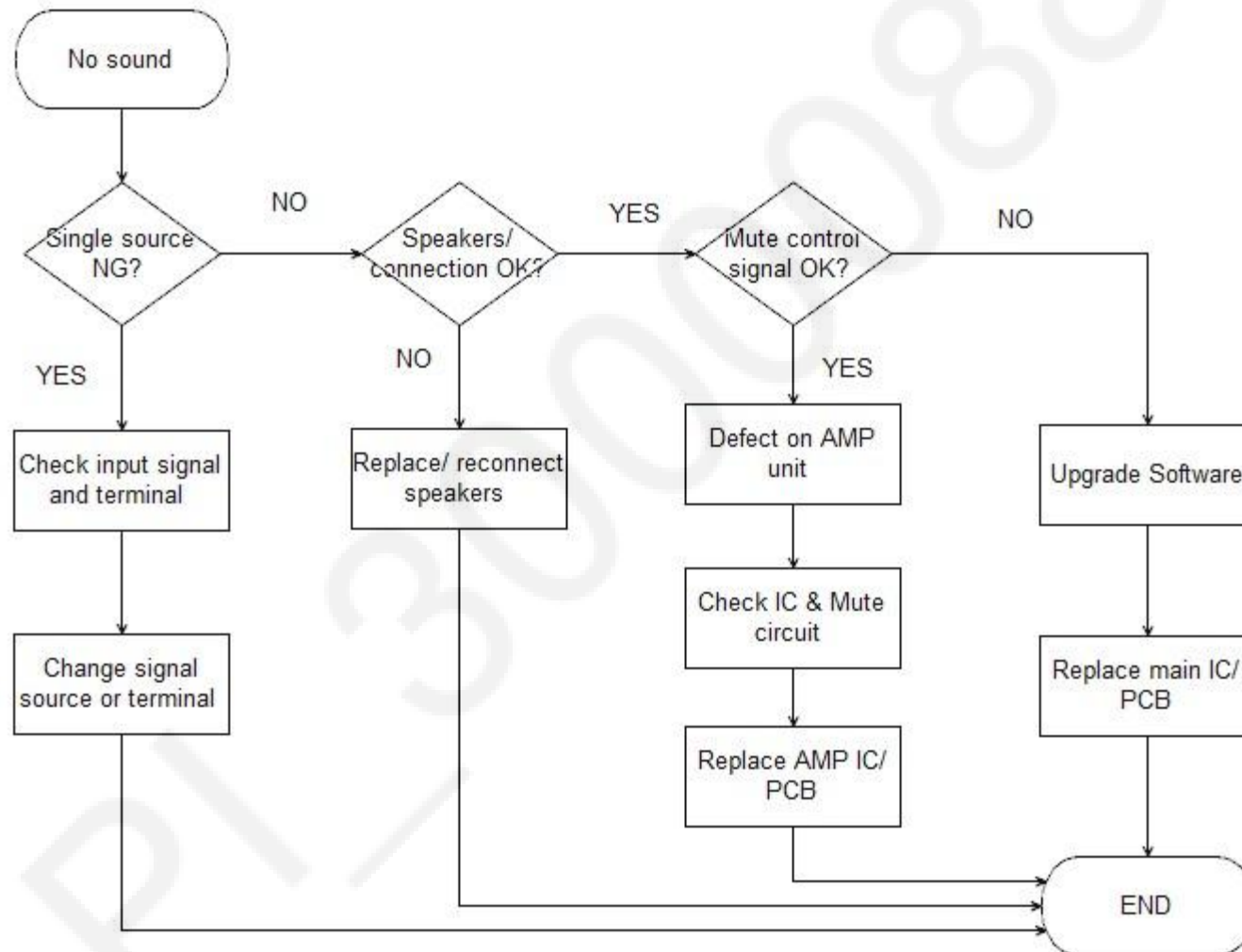
3.No back light

Power LED logic OK, sound OK, but no picture(Different from No Display).



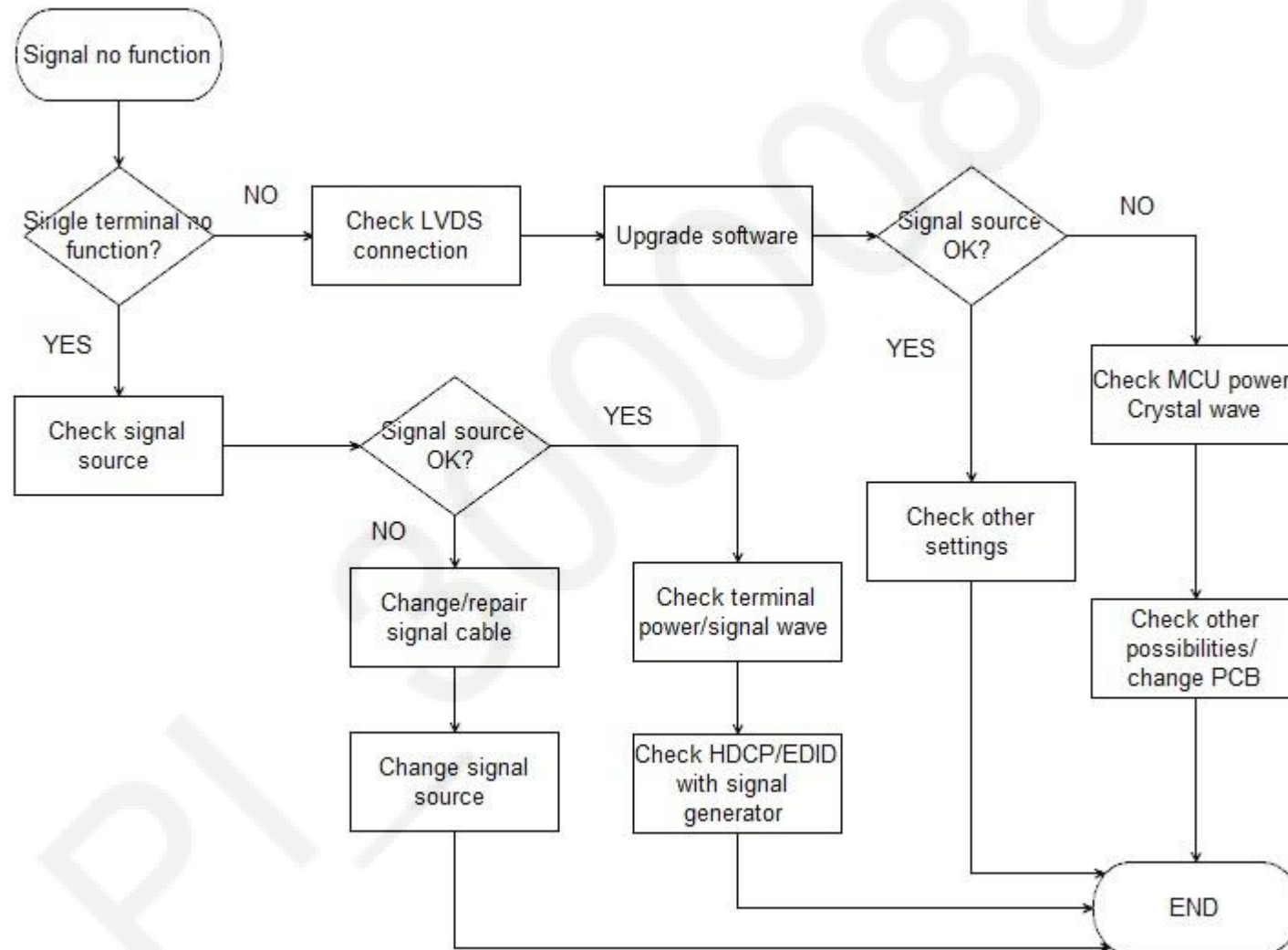
4.No sound

One or all signal source without sound.



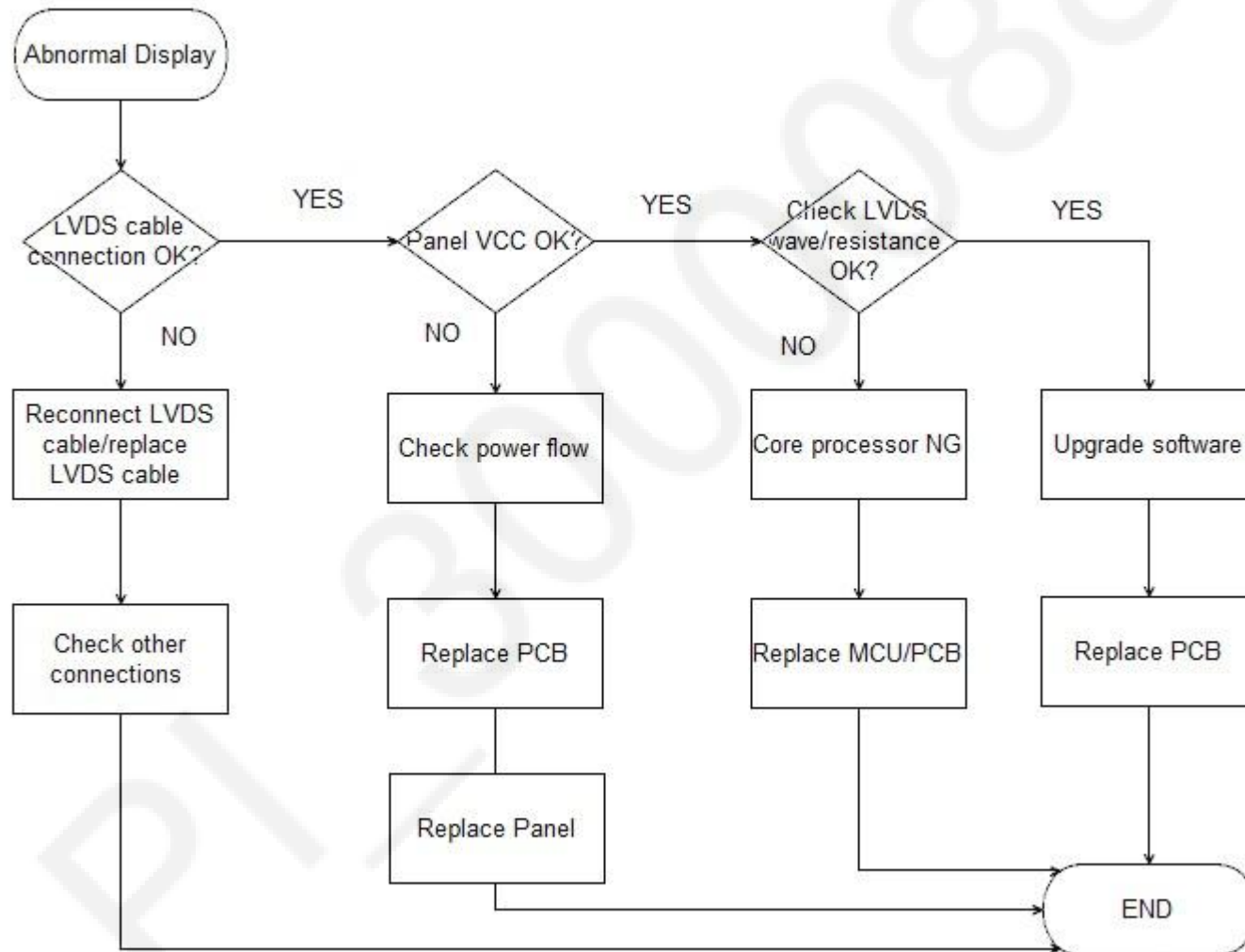
5.Signal source no function

One or several source no function.



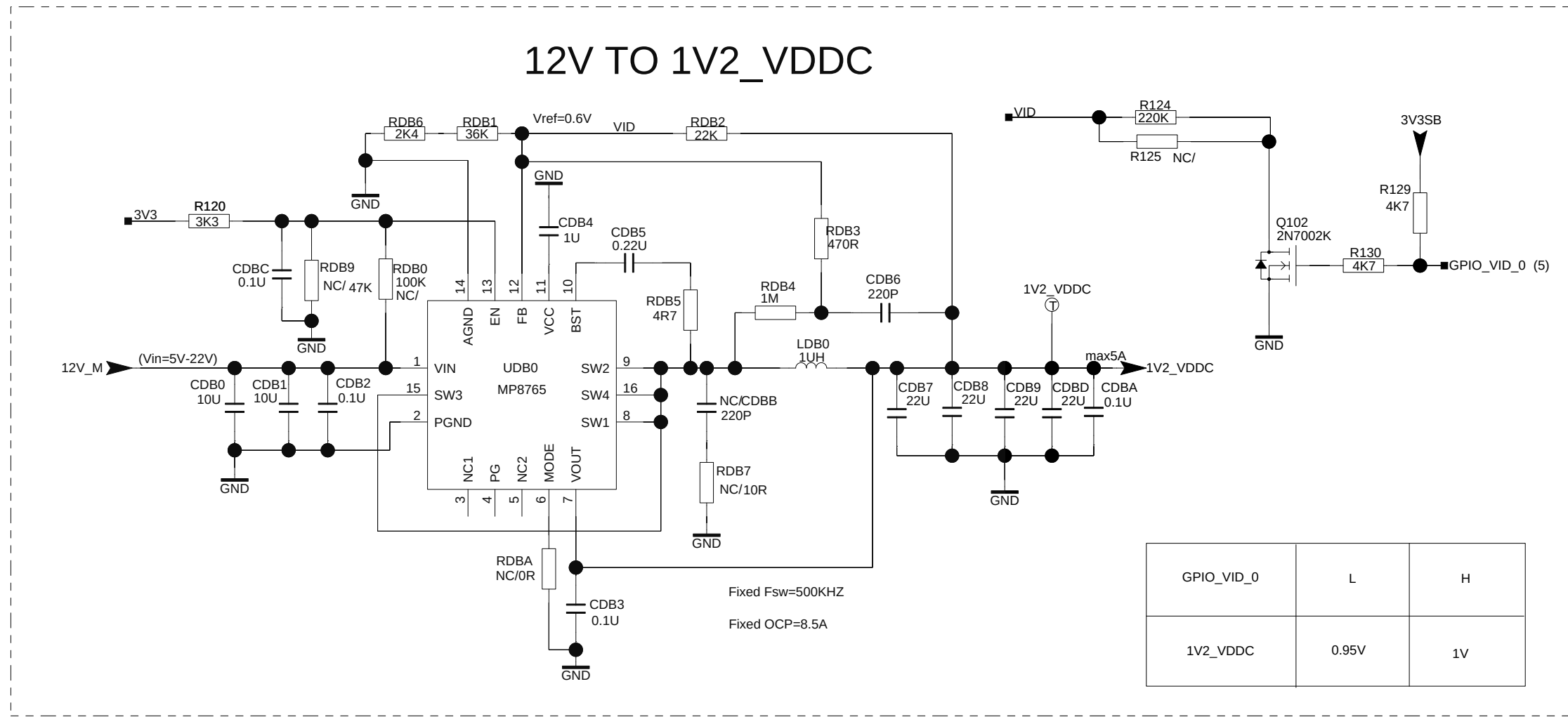
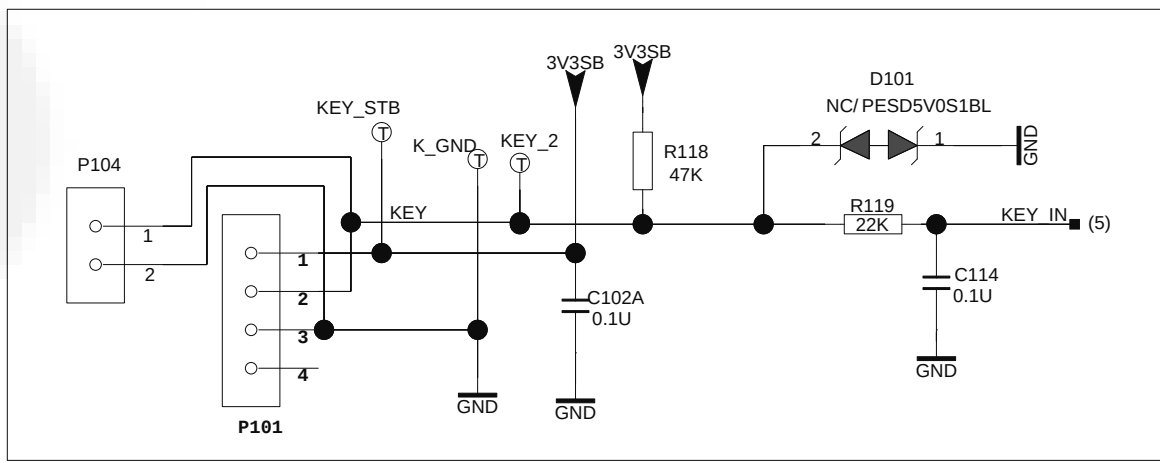
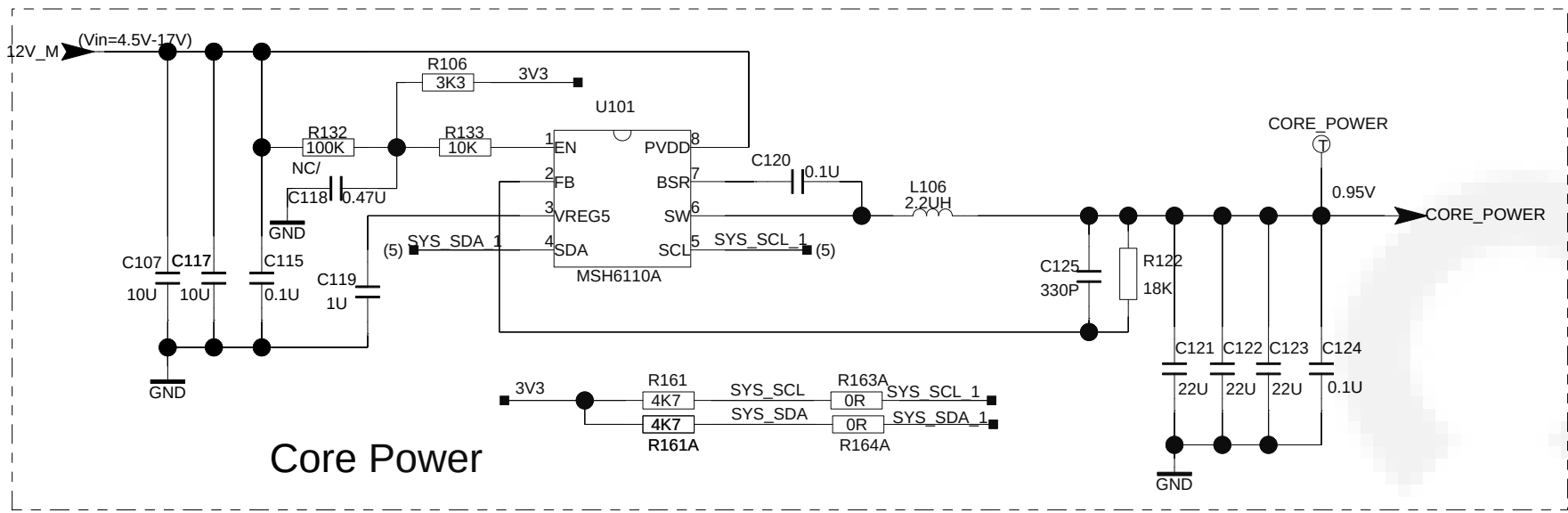
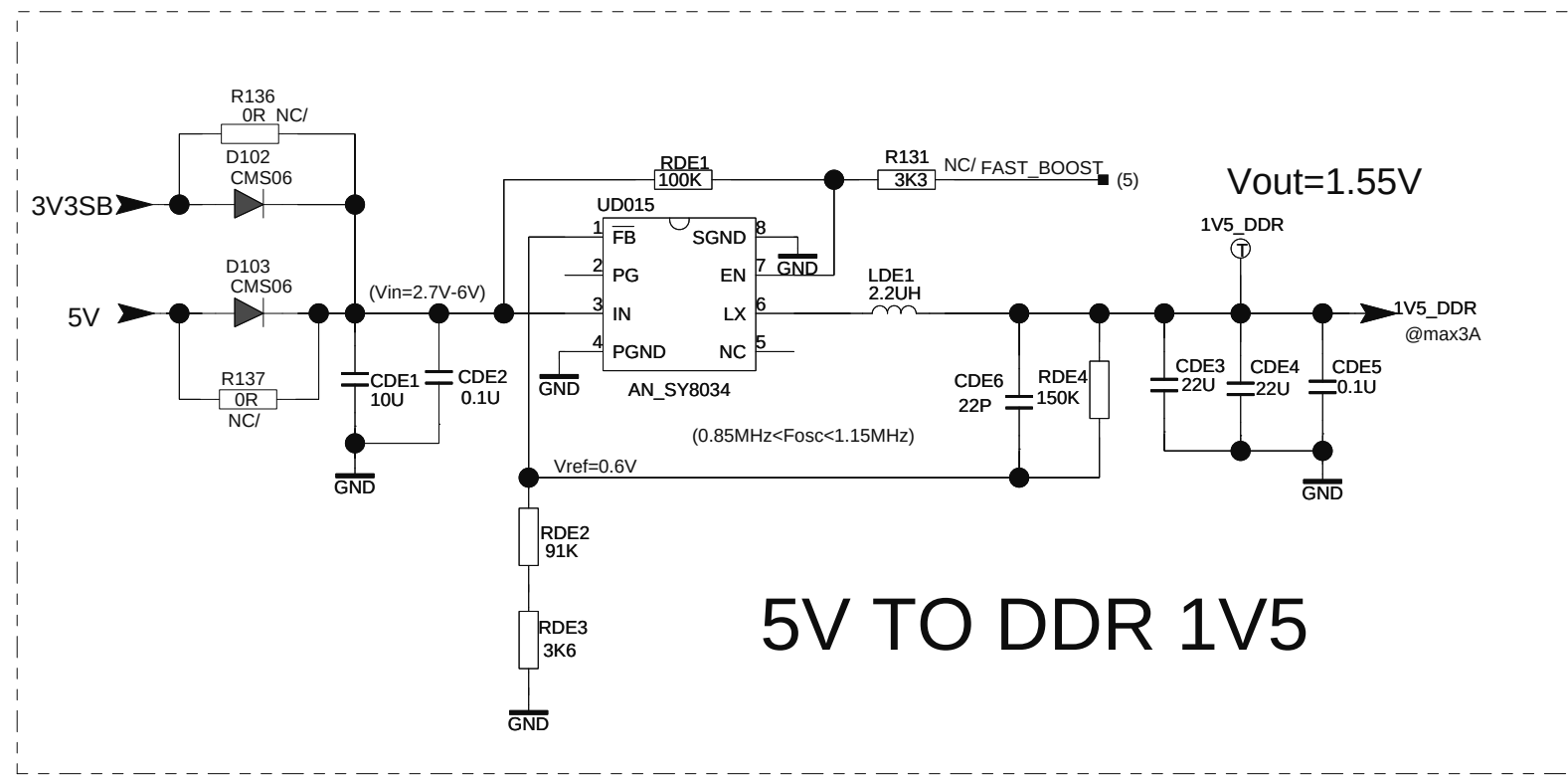
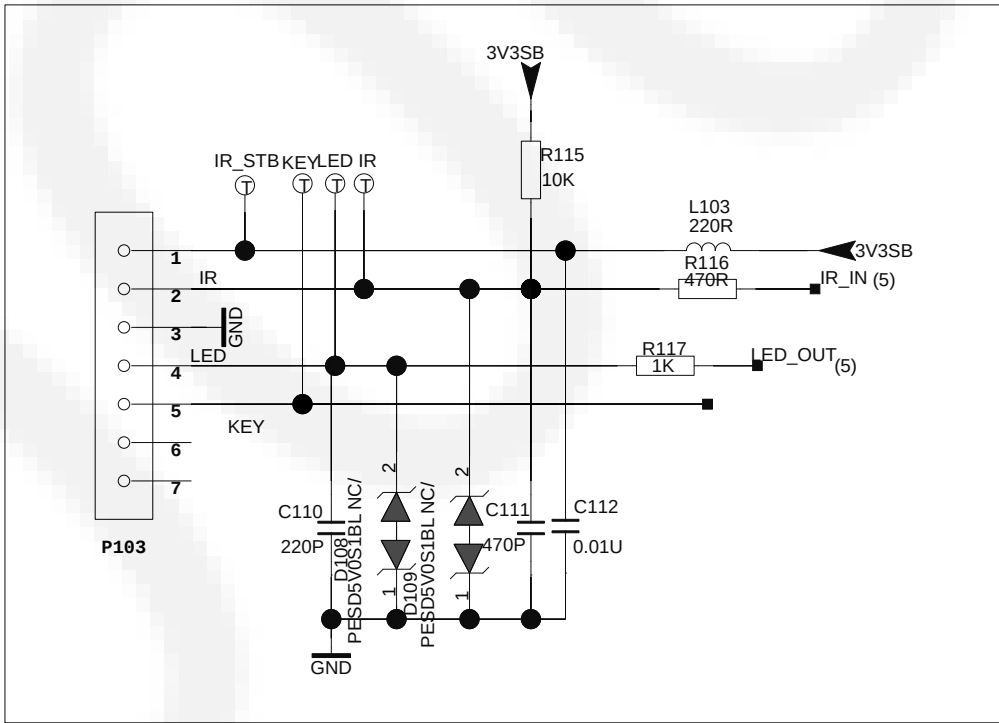
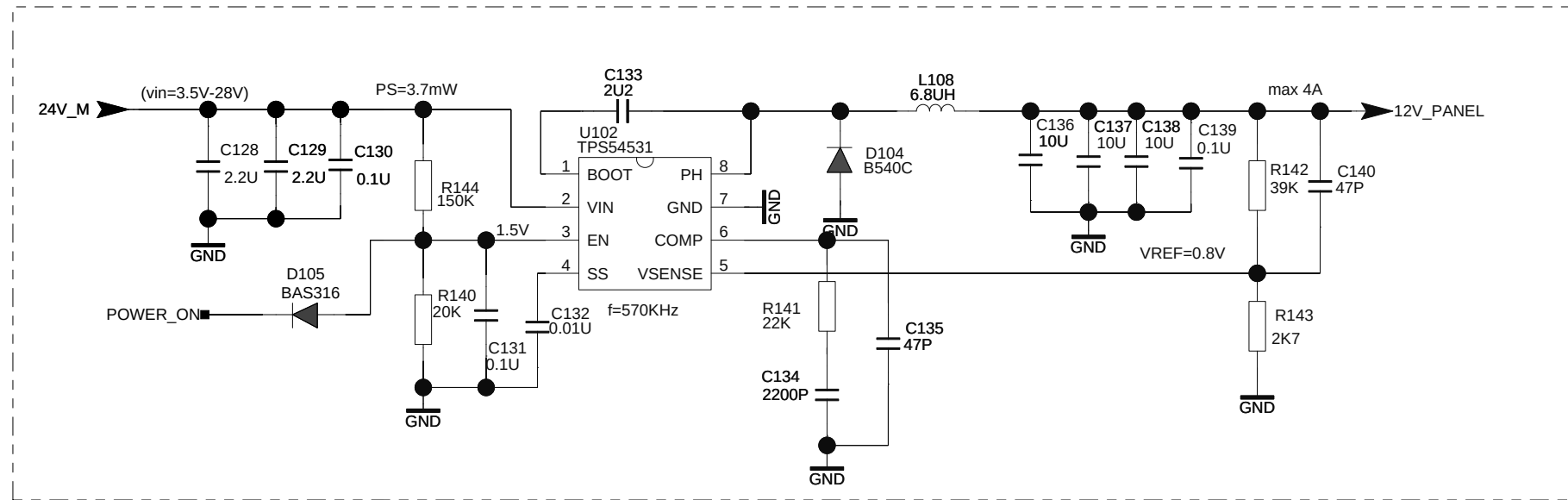
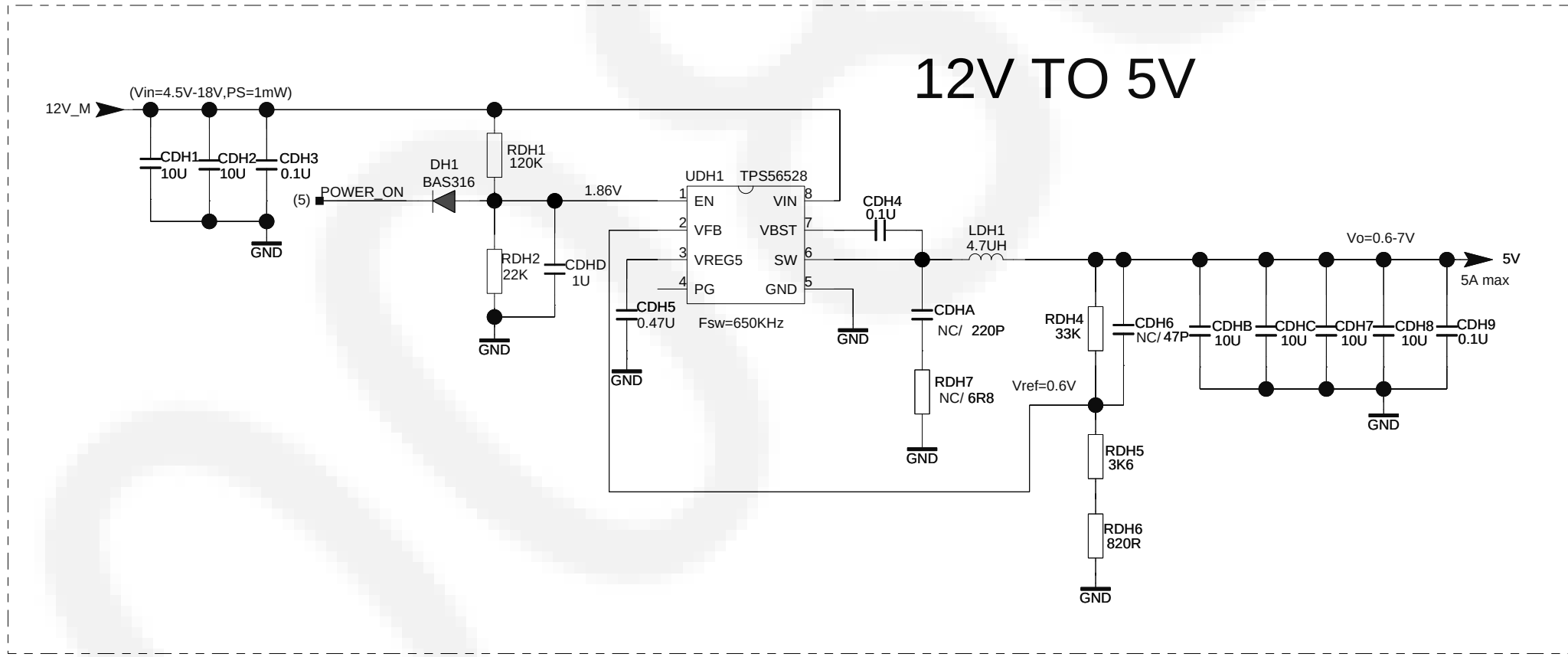
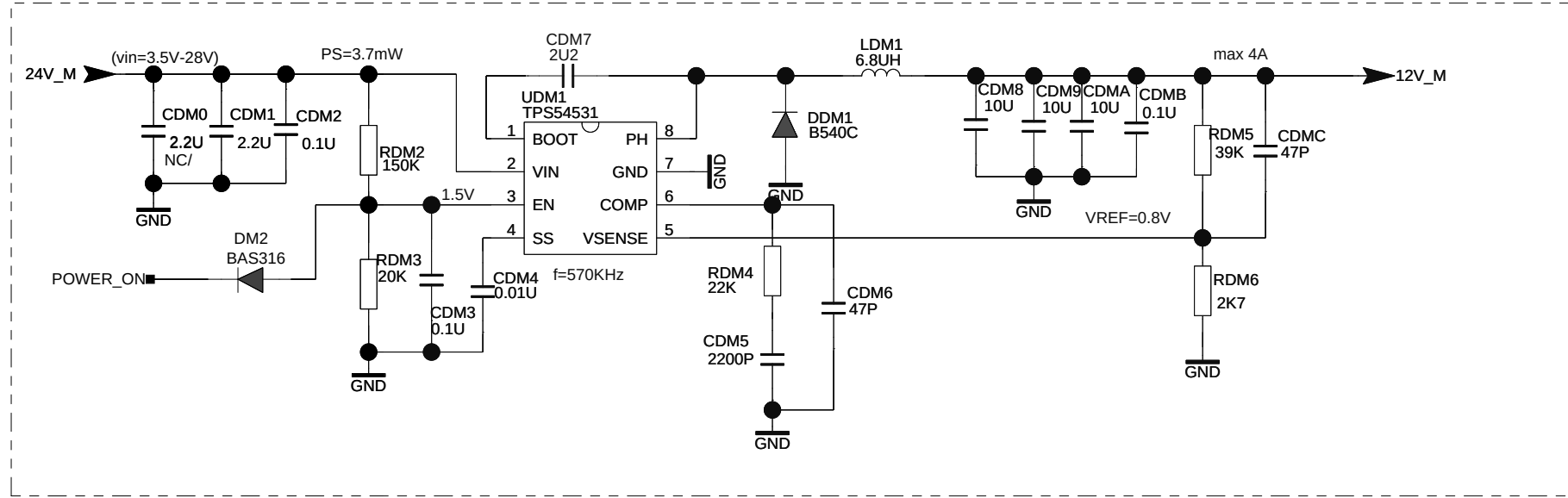
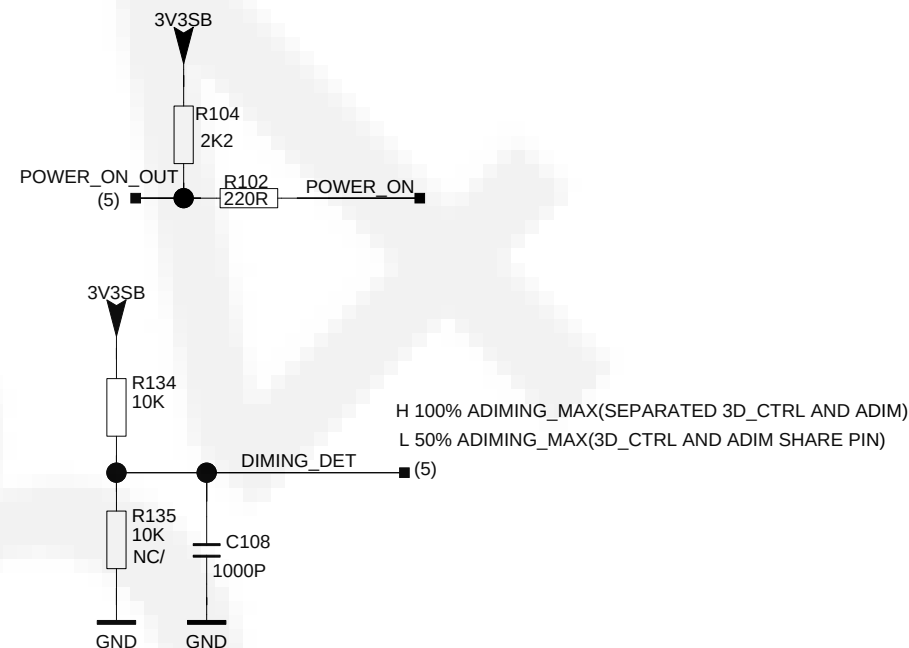
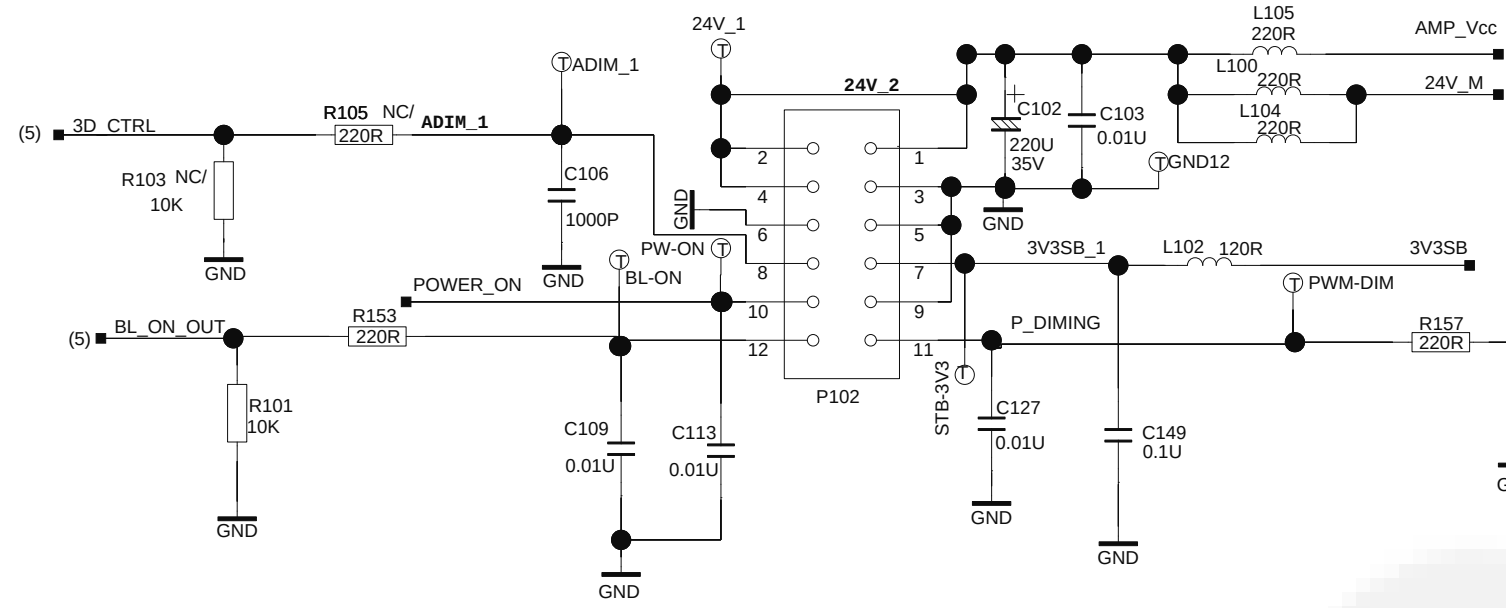
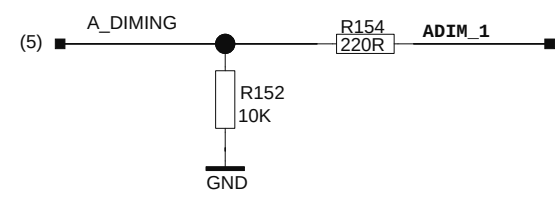
6. Abnormal Display

OSD NG or picture NG.

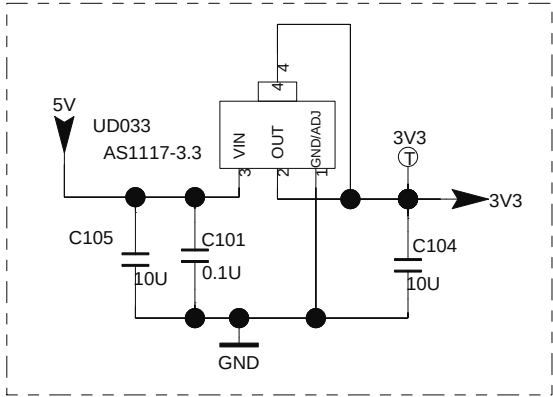
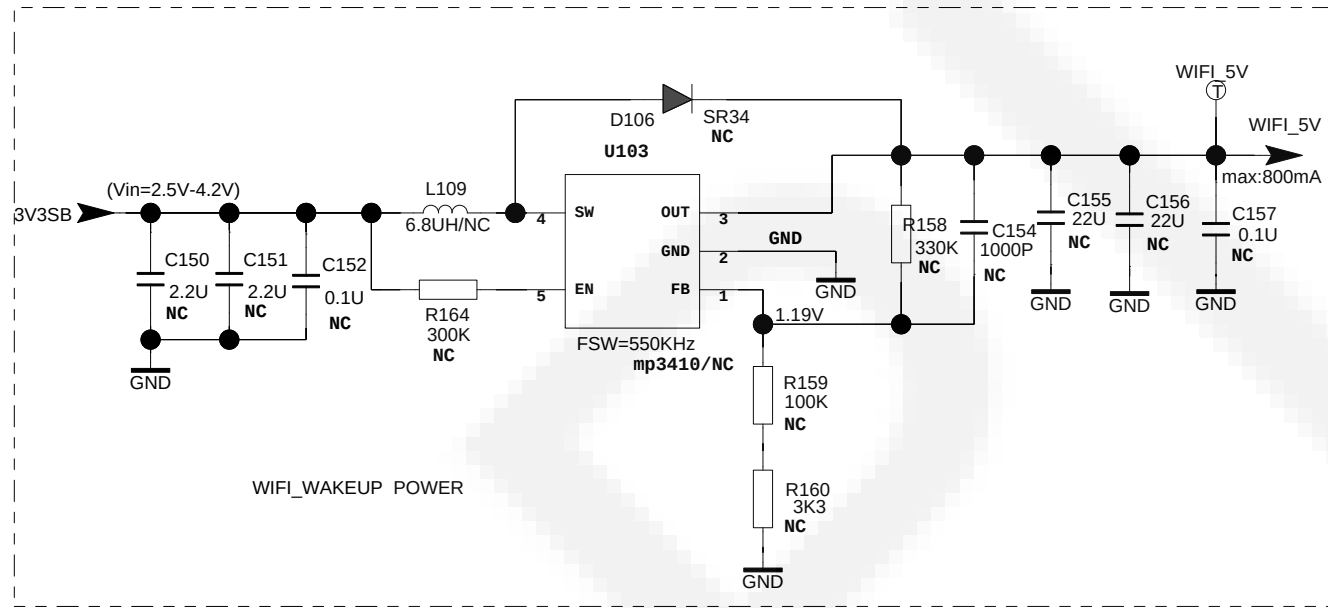


POWER BD CONNECTOR

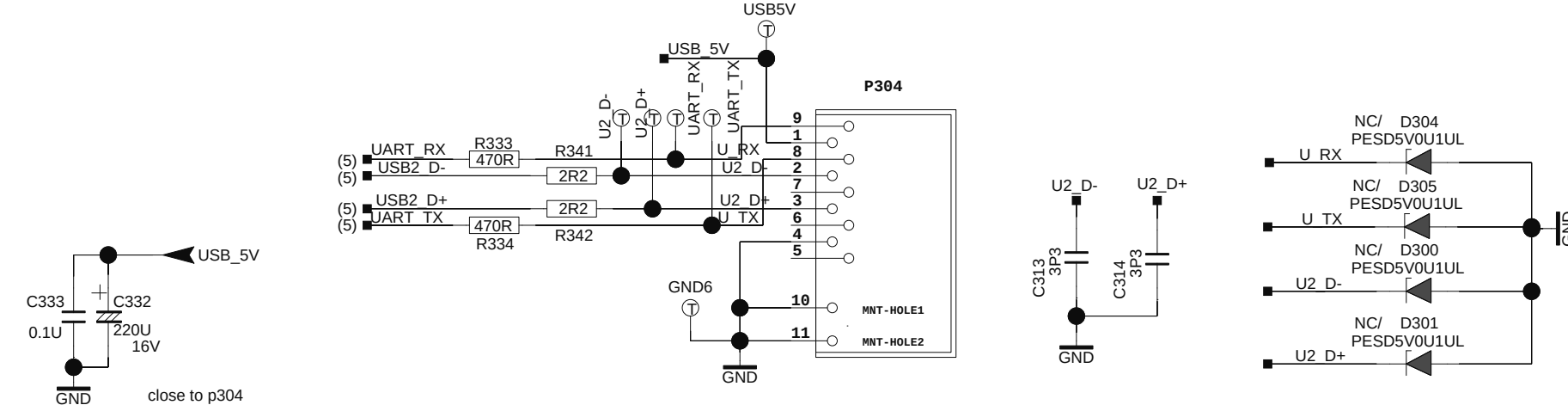
24V	24V
24V	GND
GND	GND
A_DIM	3.3VSB
POWER_ON	GND
BL_ON	DIM_PWM



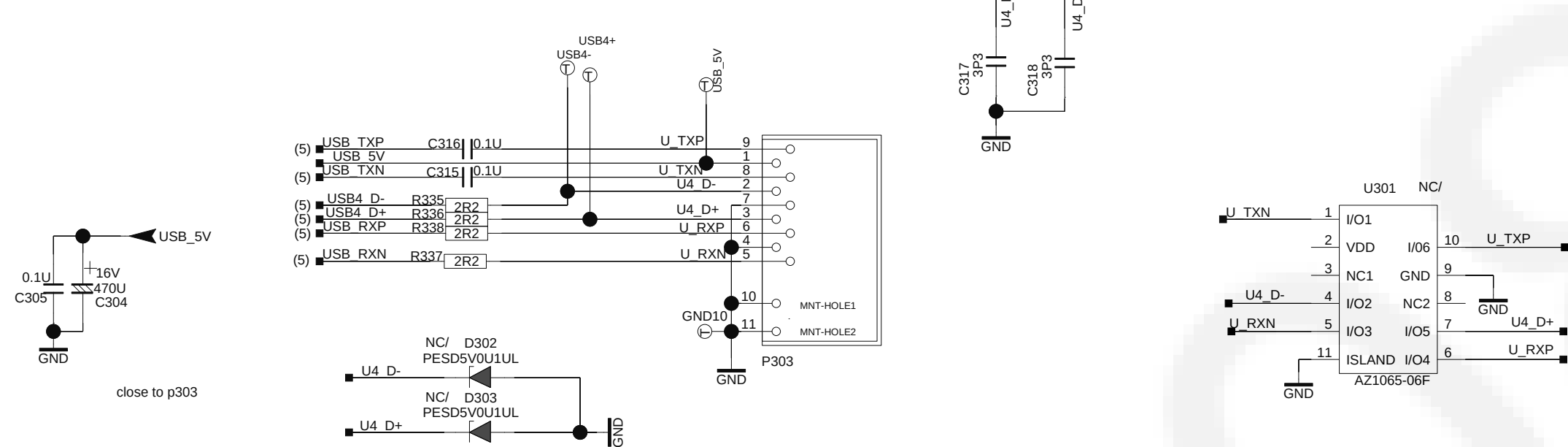
GPIO_VID_0	L	H
1V2_VDDC	0.95V	1V



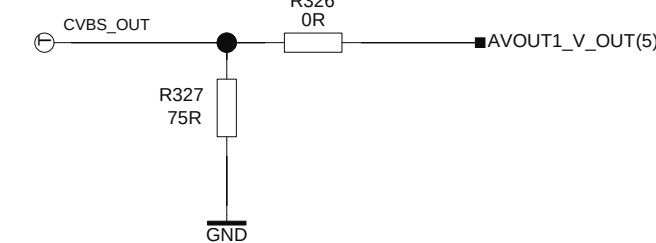
USB2.0+ RS232



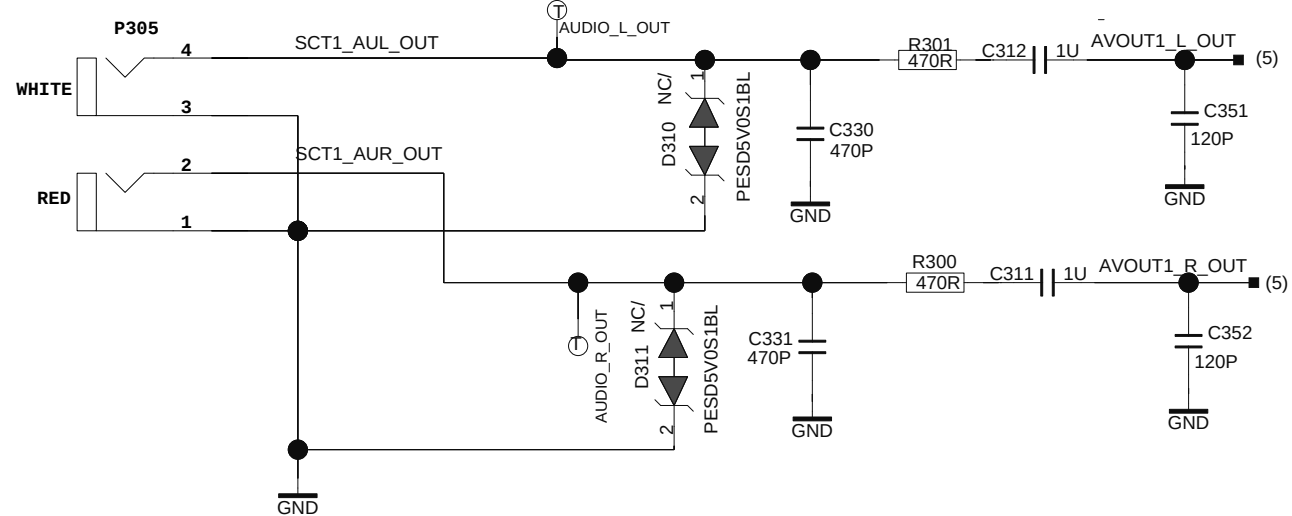
USB3.0



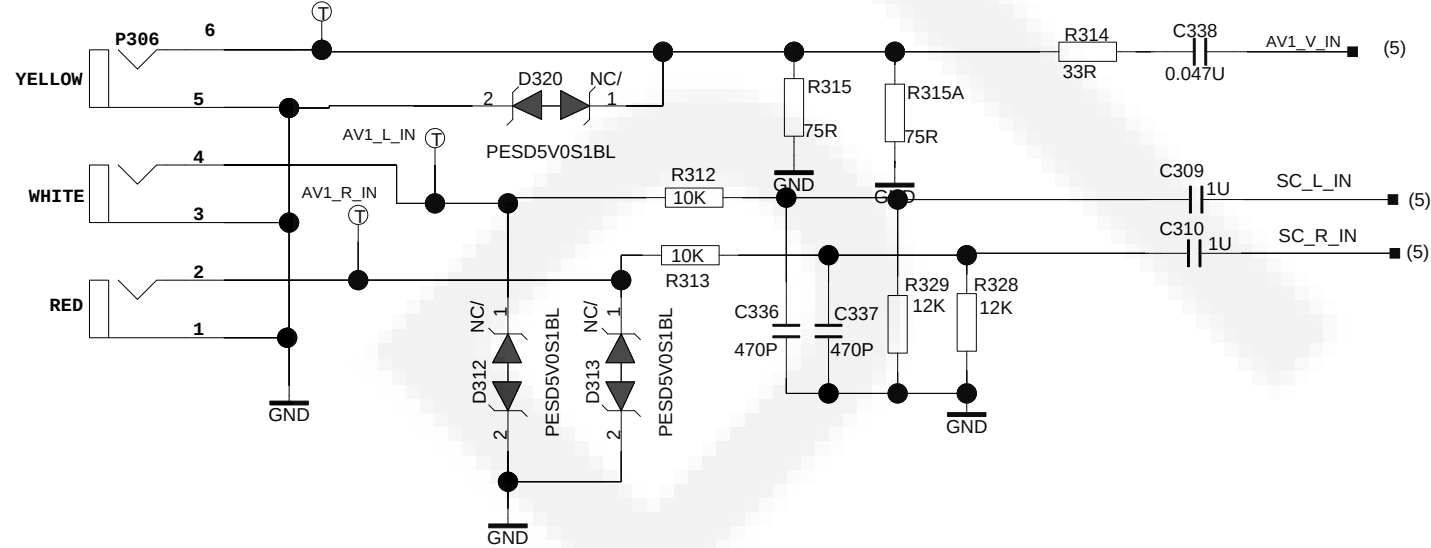
CVBS OUT TEST



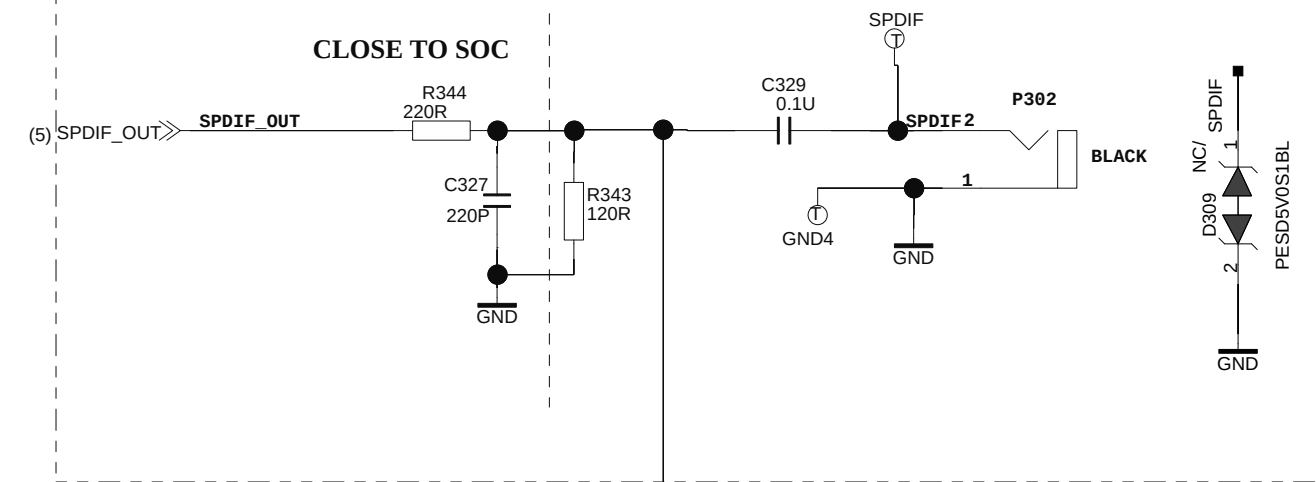
AV OUT



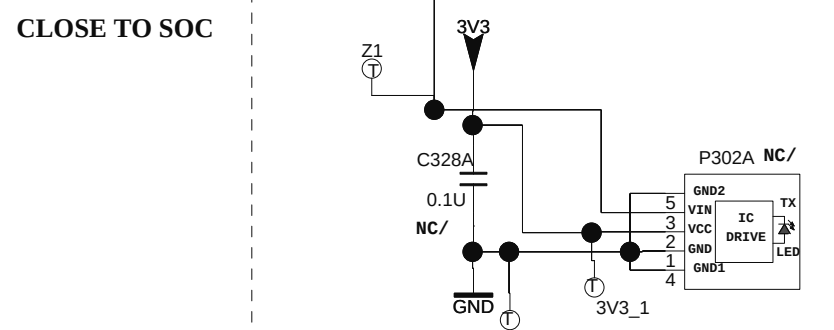
AV IN



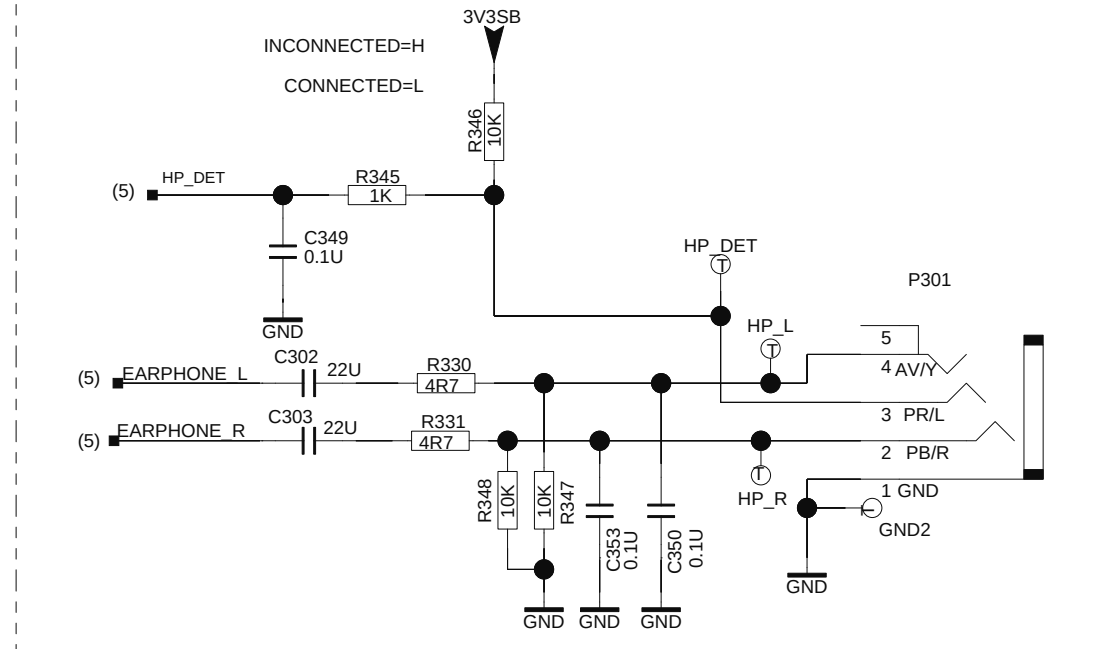
SPDIF



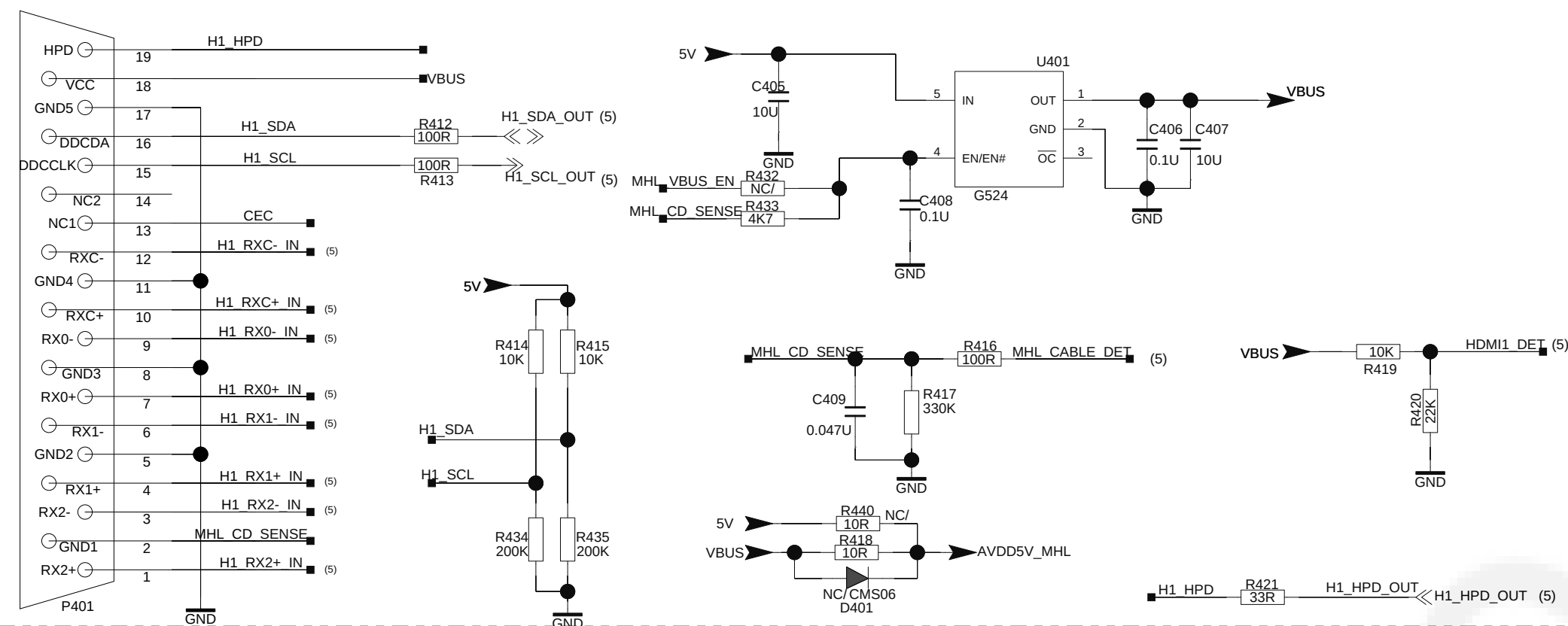
SPDIF



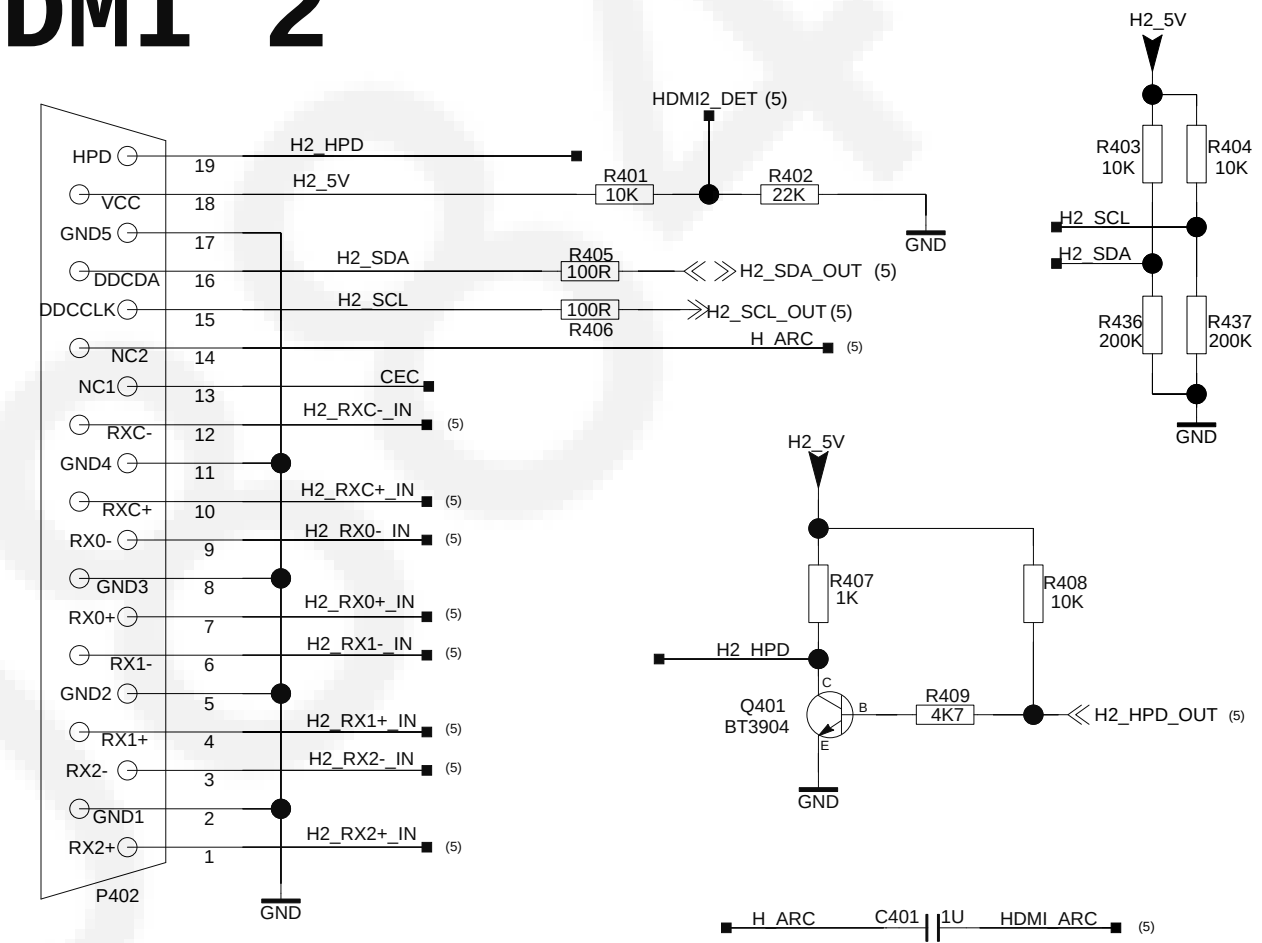
headphone out



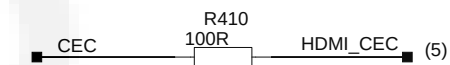
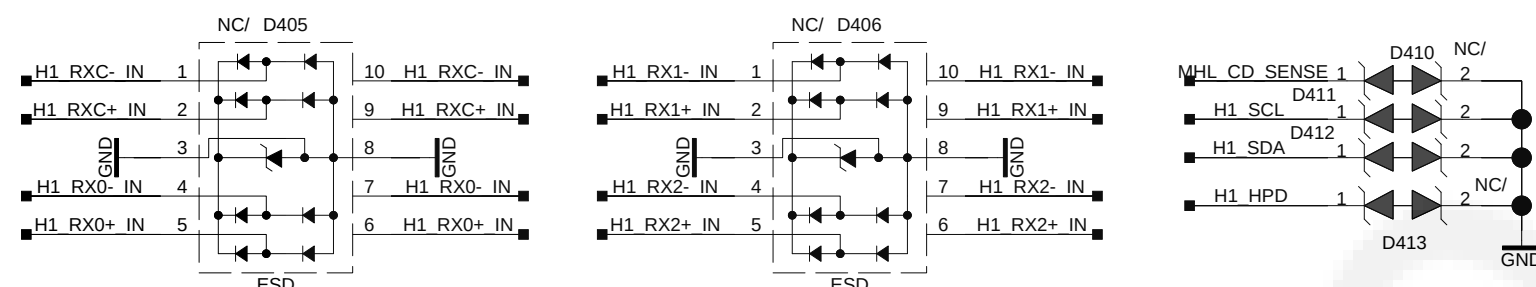
HDMI 1



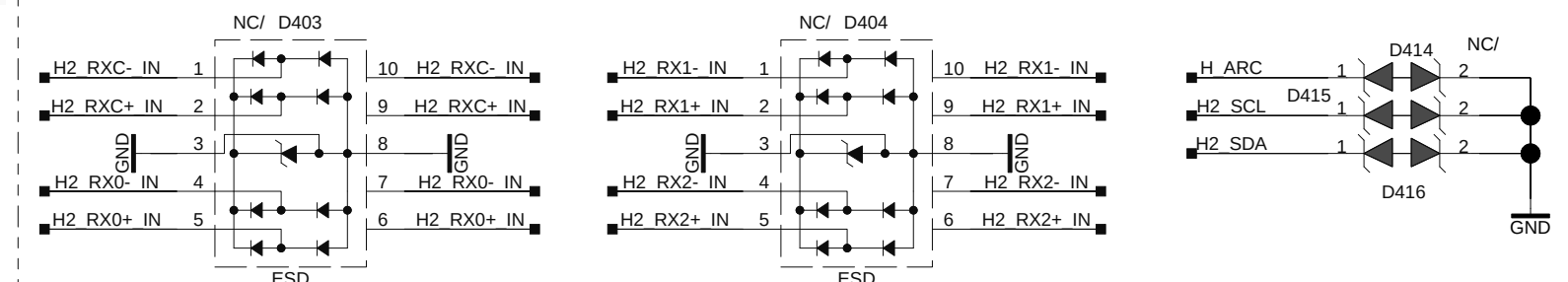
HDMI 2



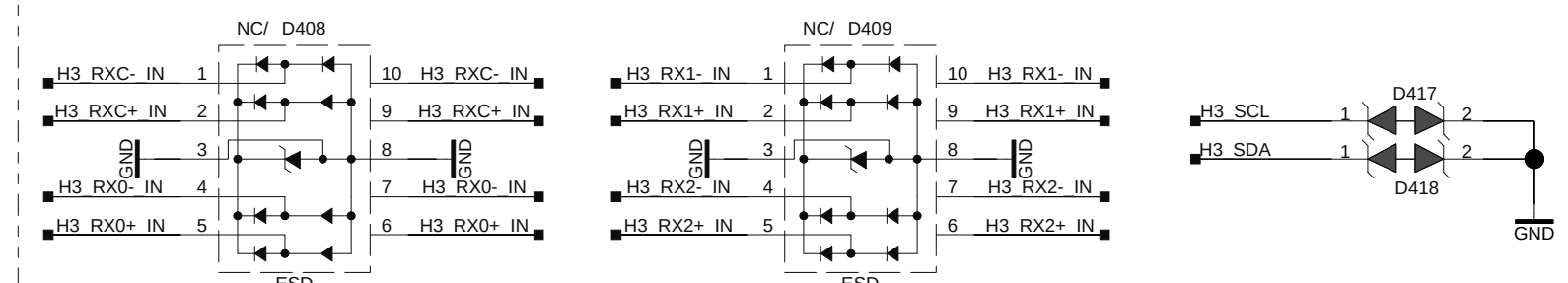
HDMI ESD Protection



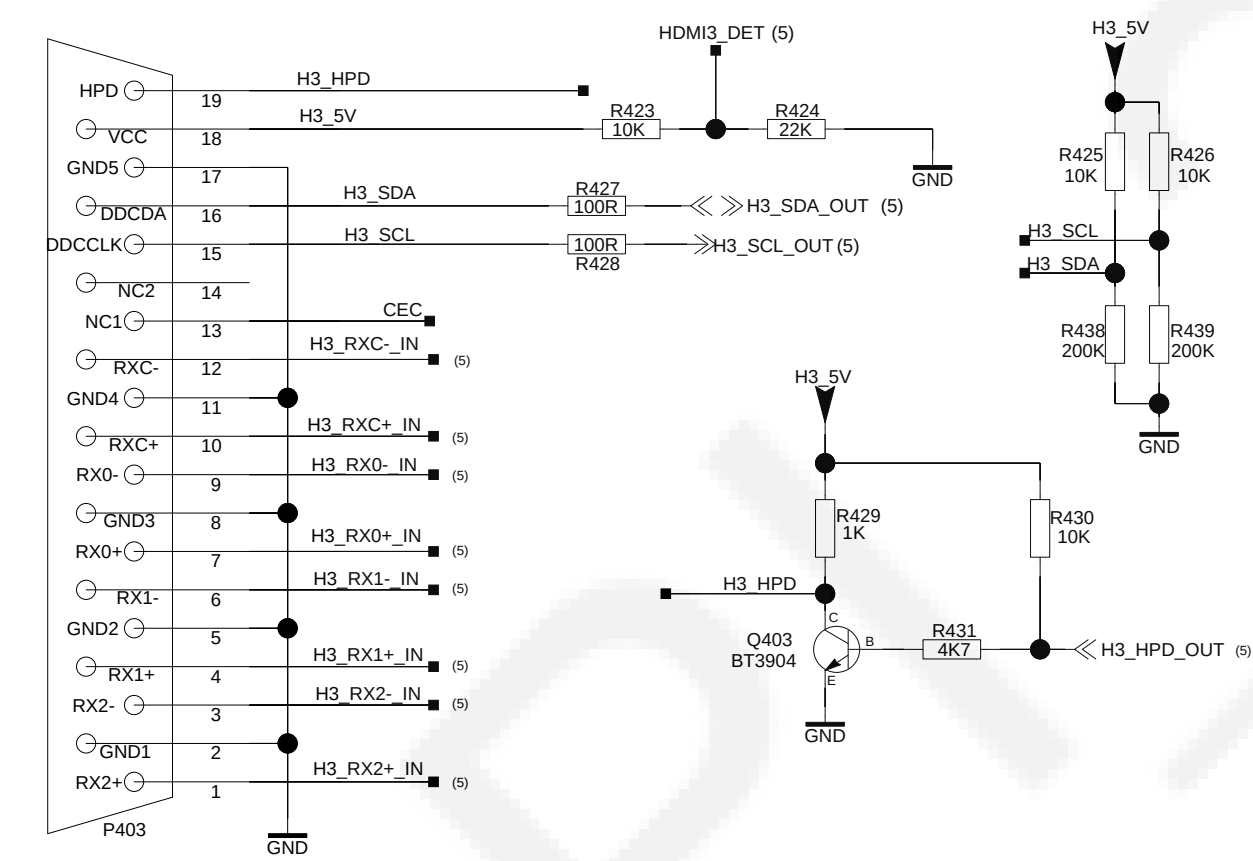
HDMI ESD Protection

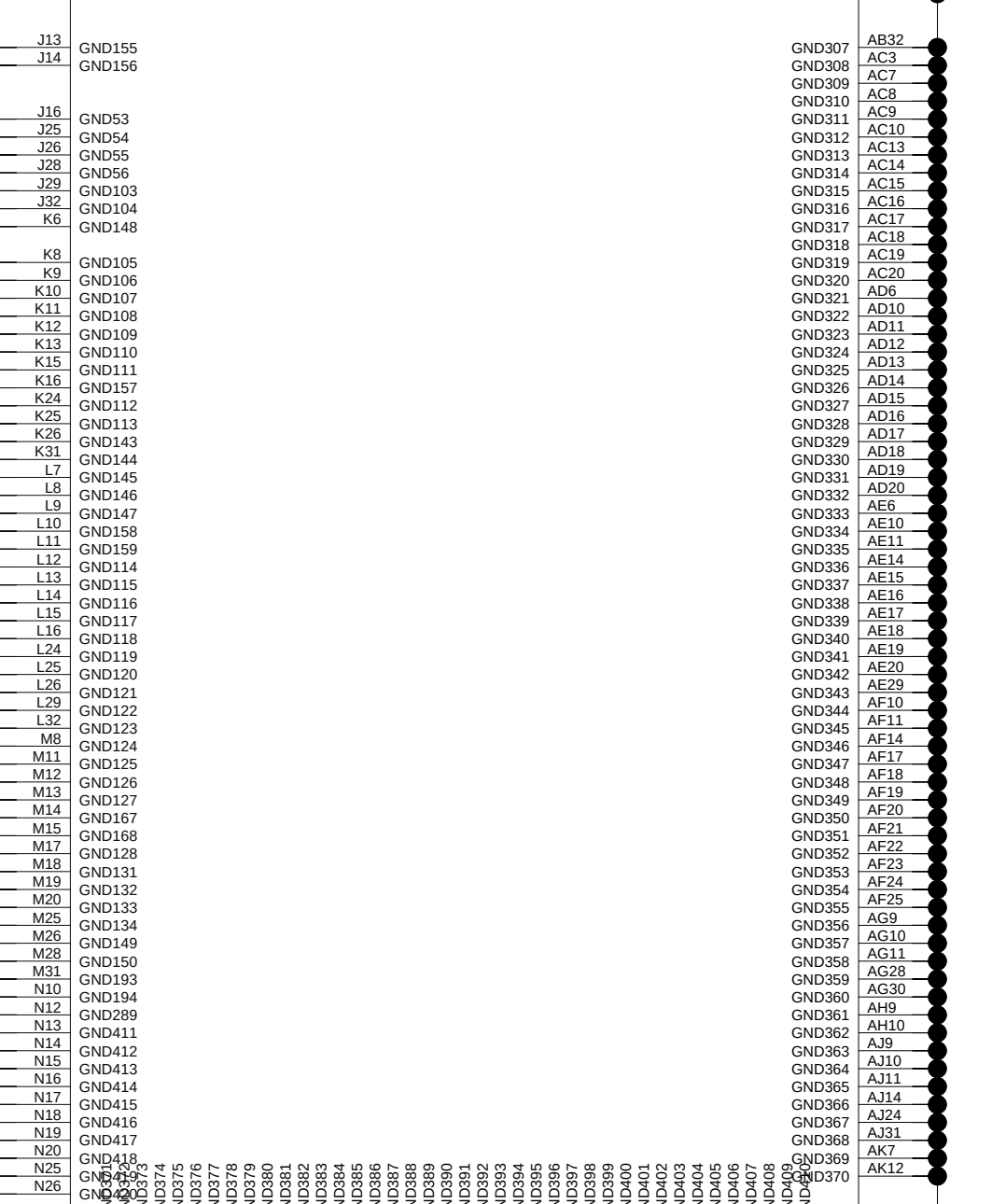
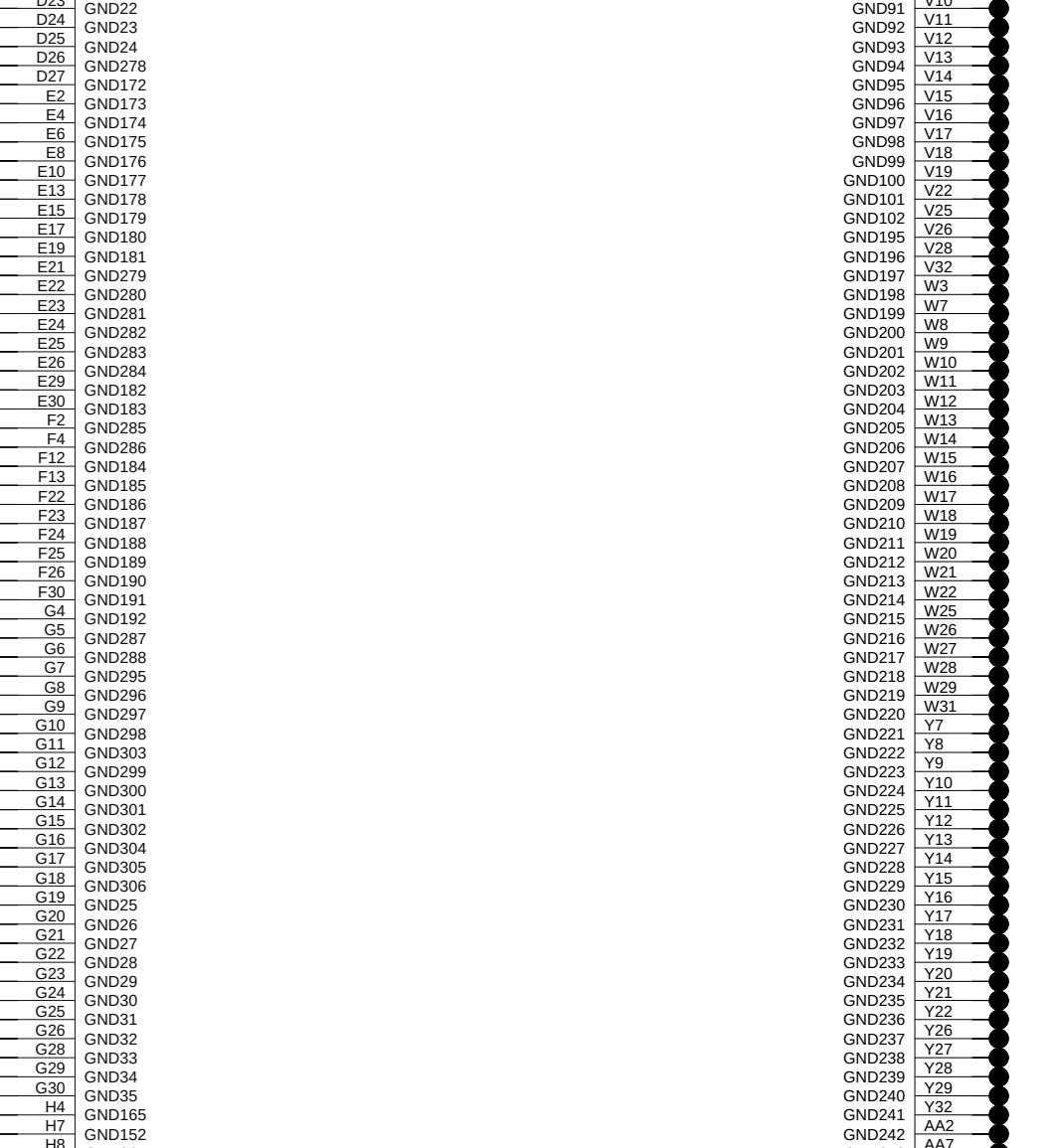
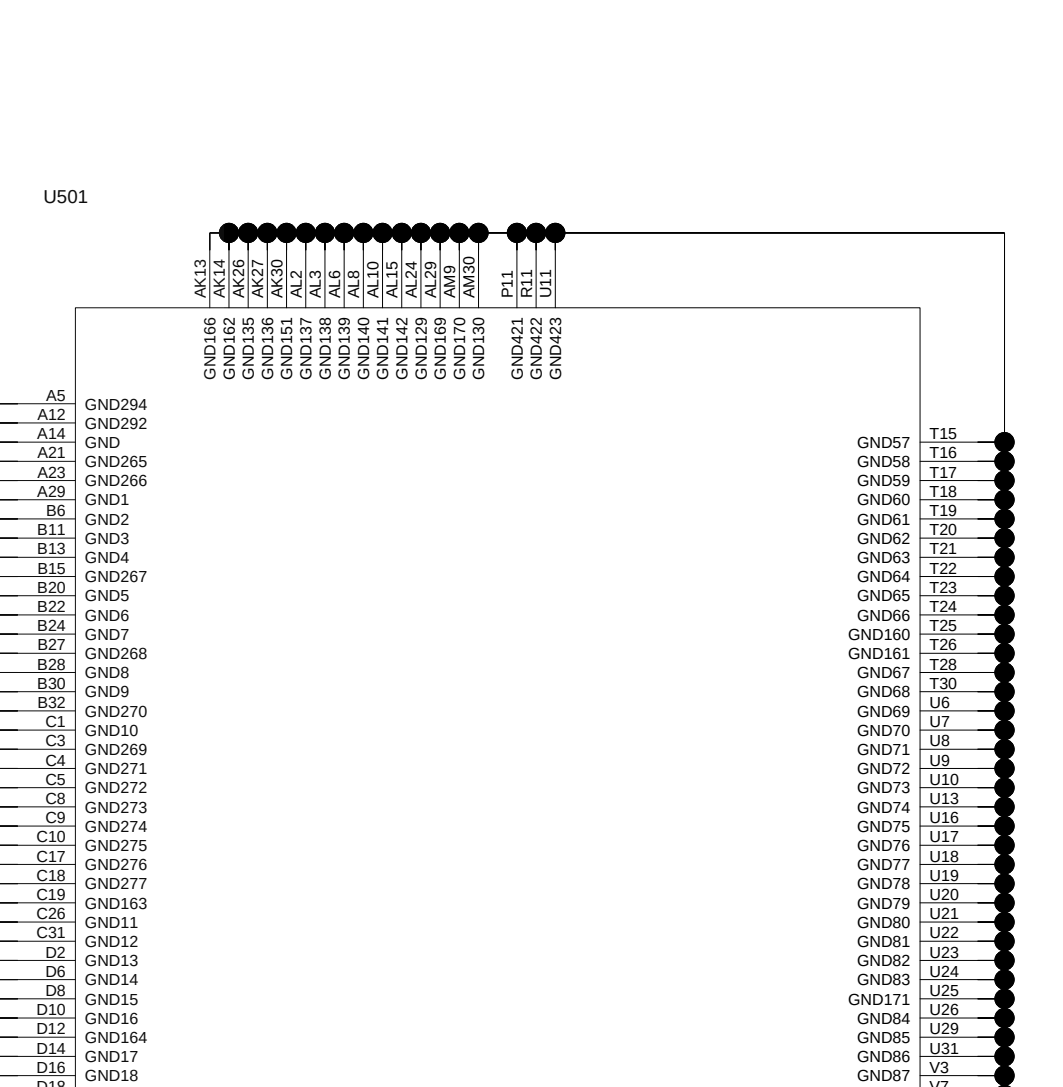
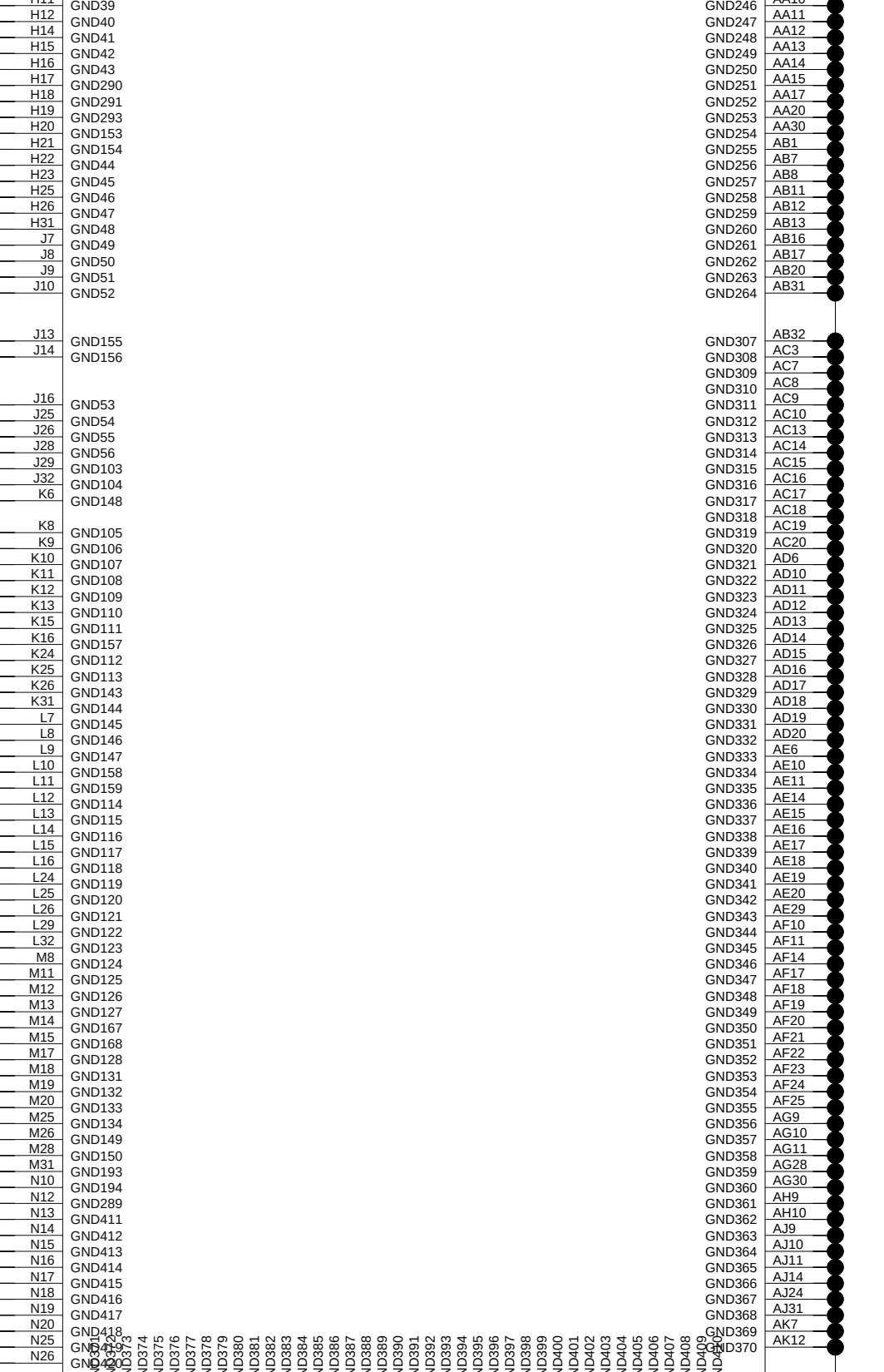
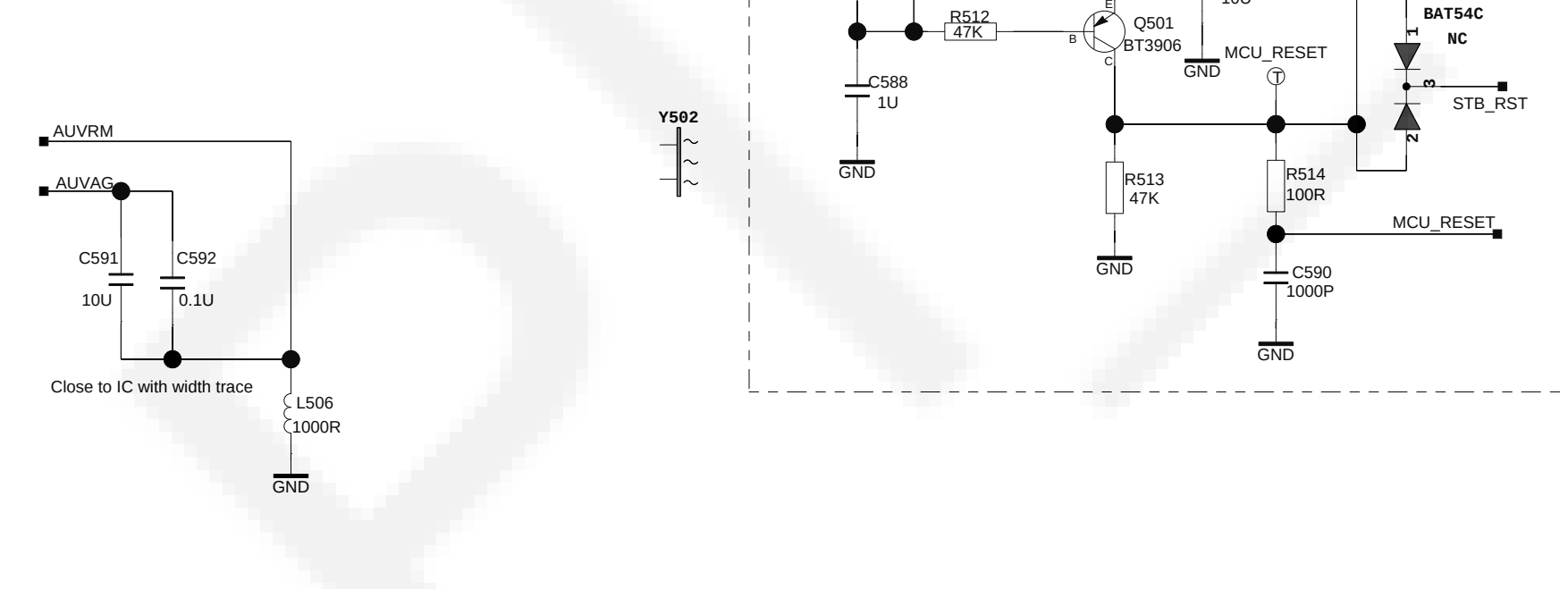
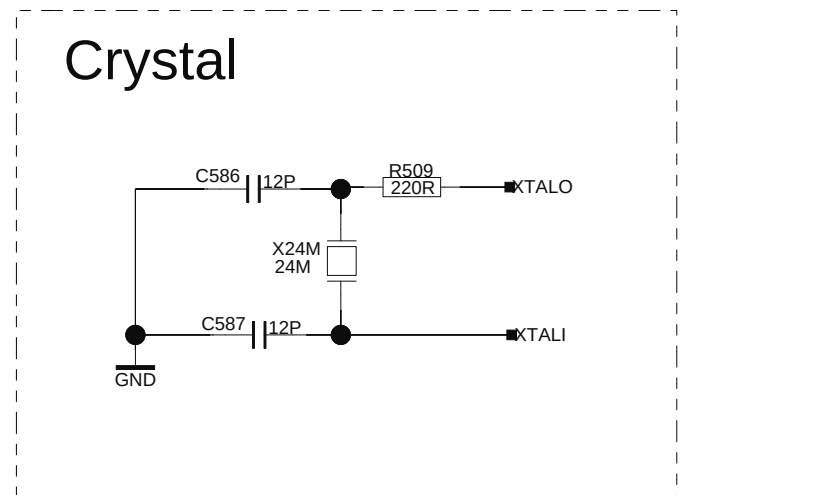
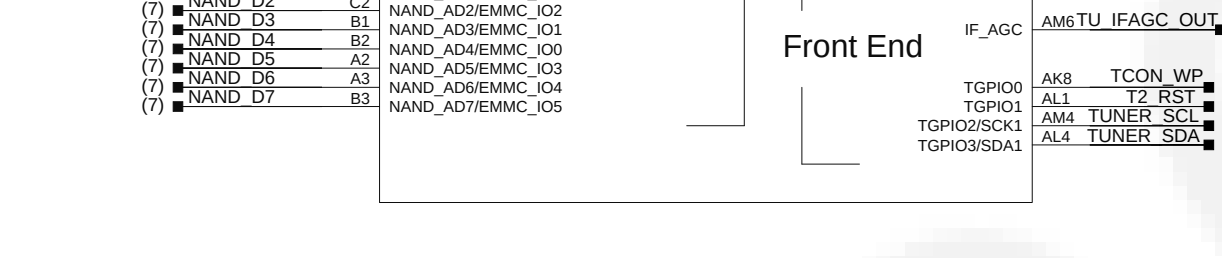
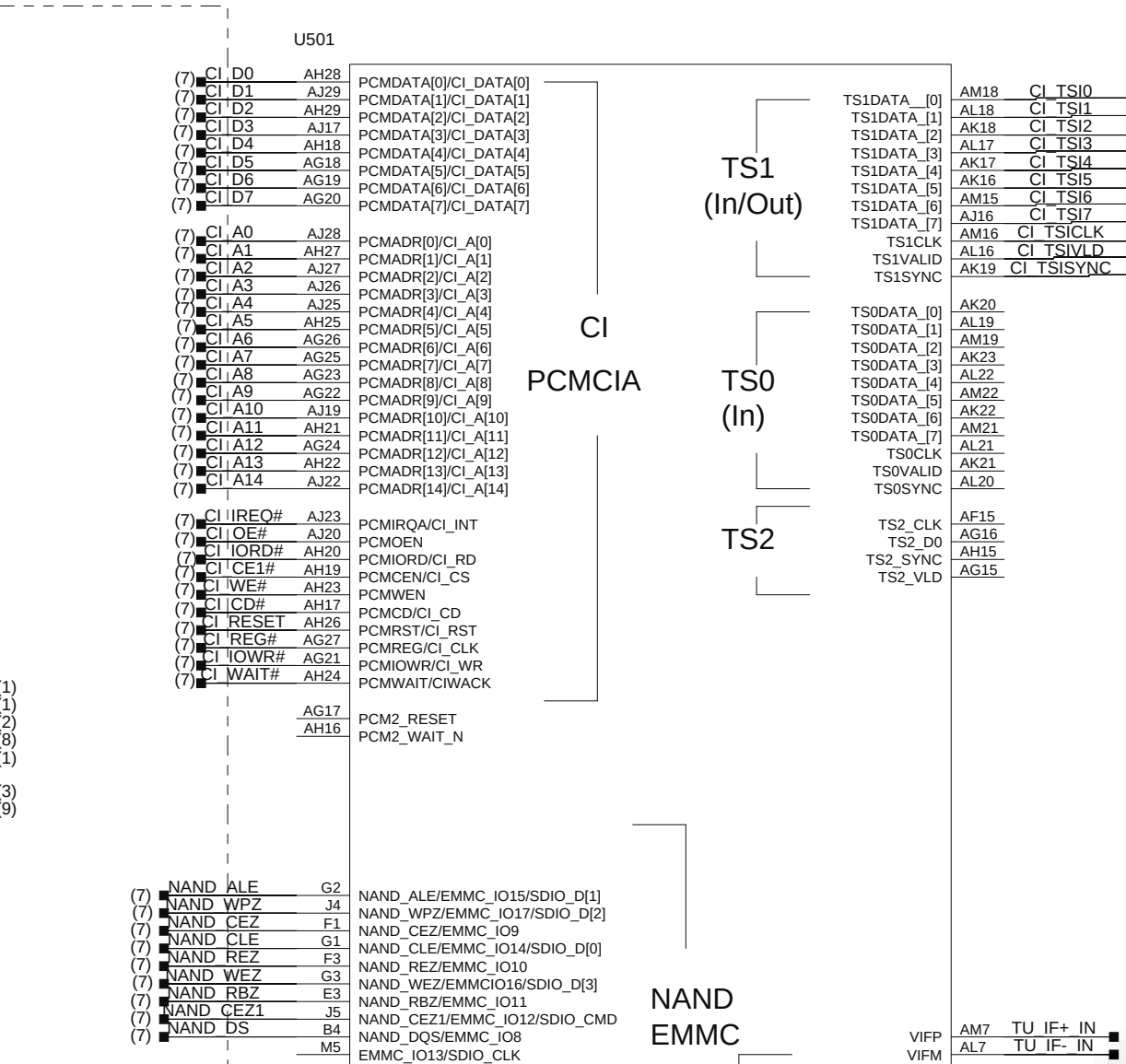
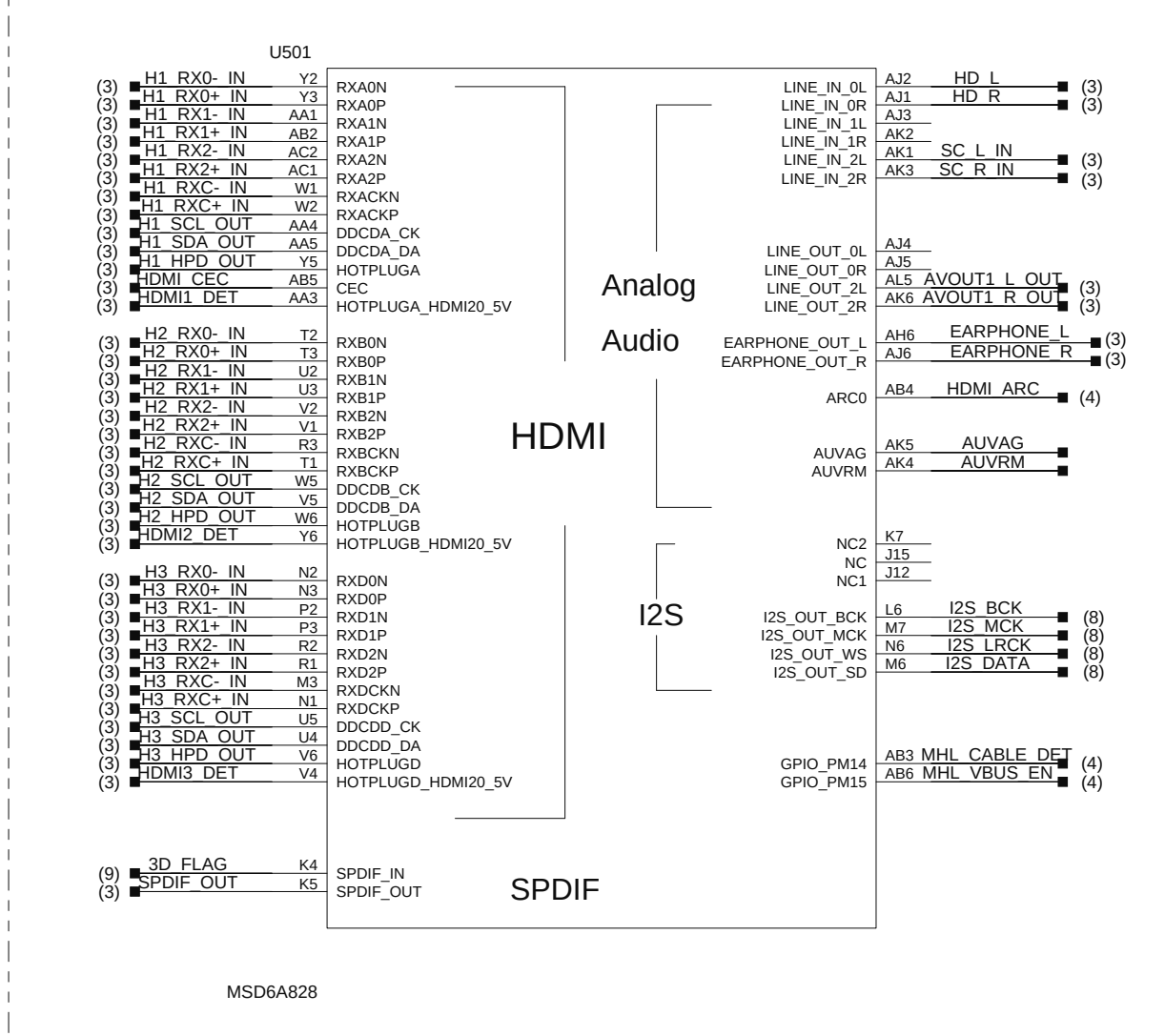


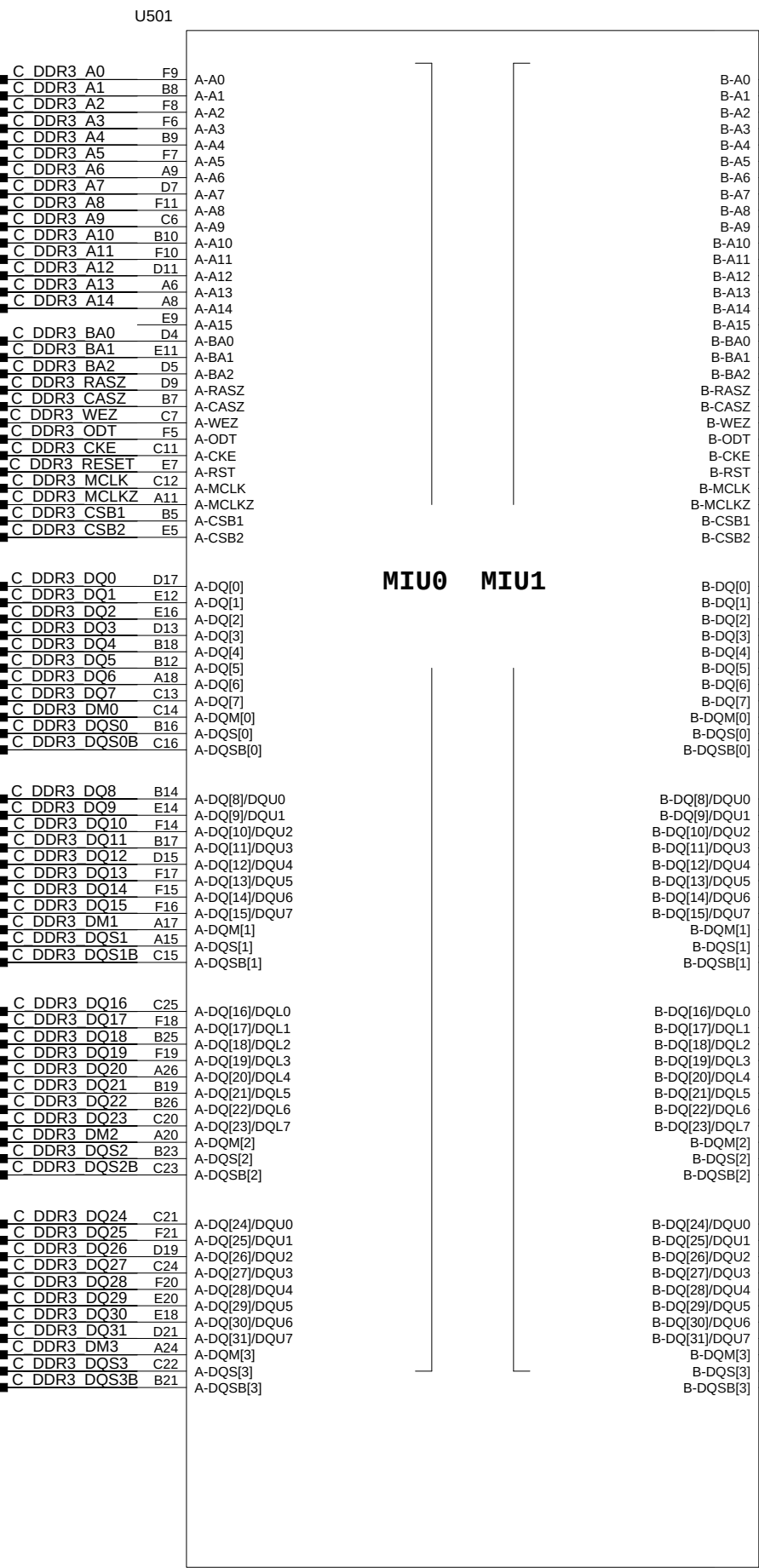
HDMI ESD Protection



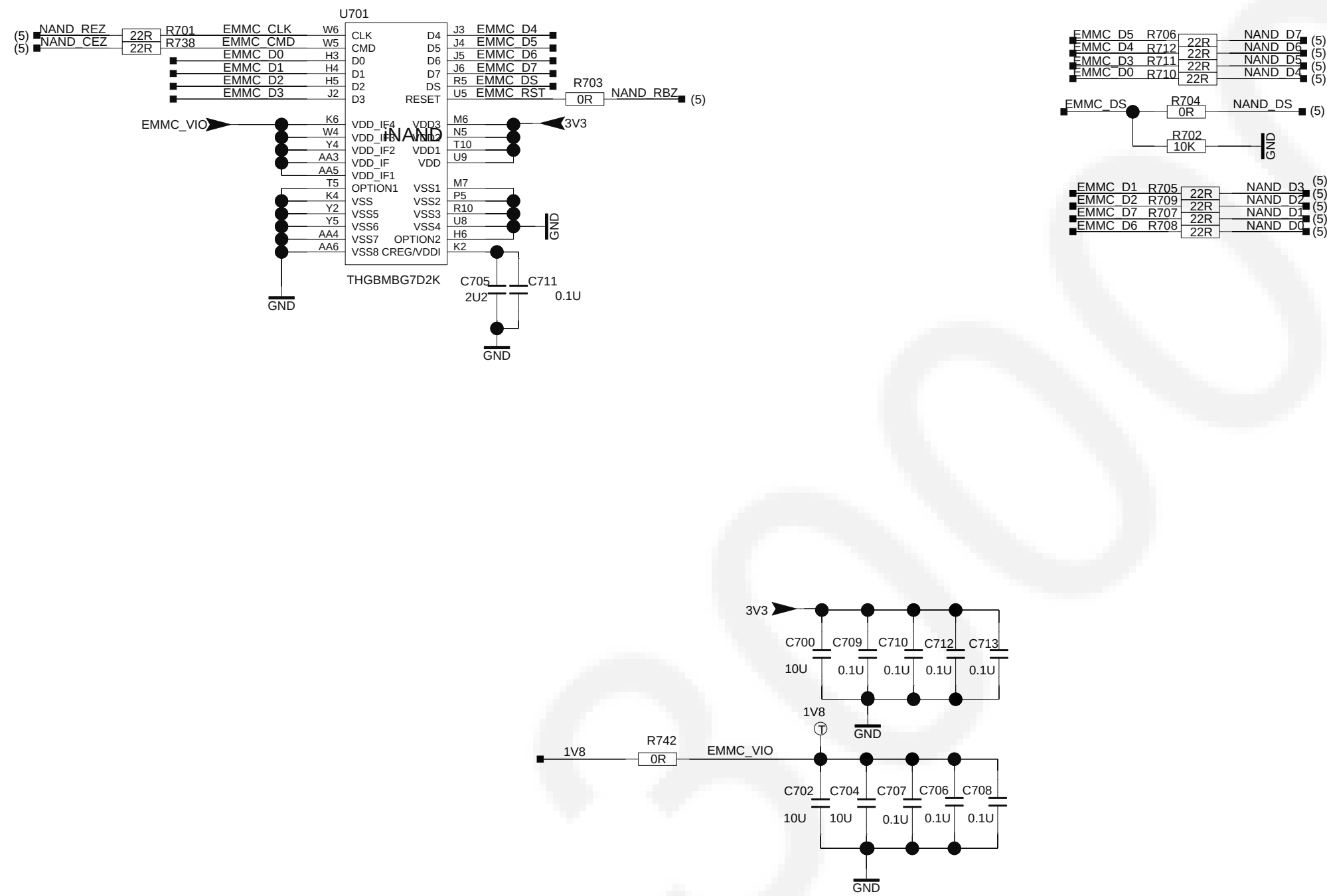
HDMI 3



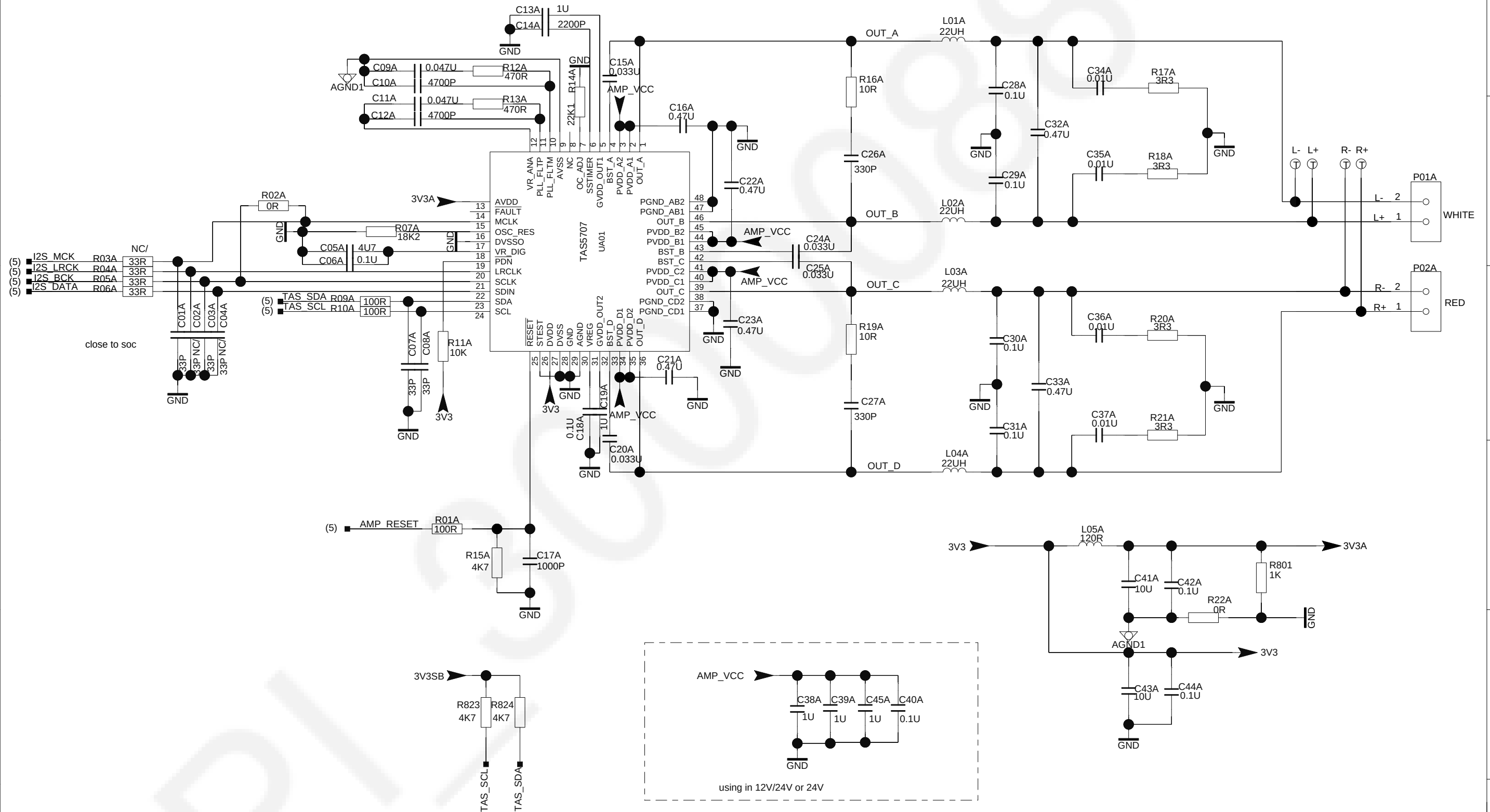


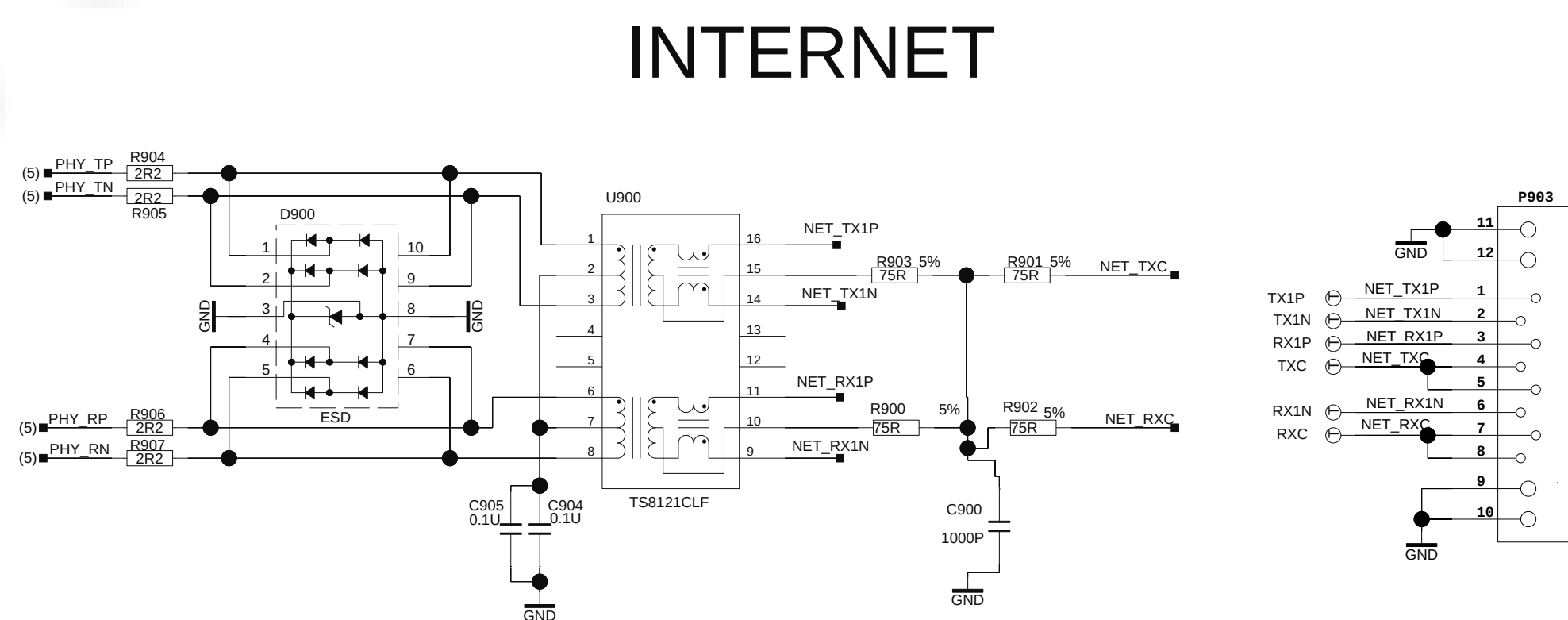
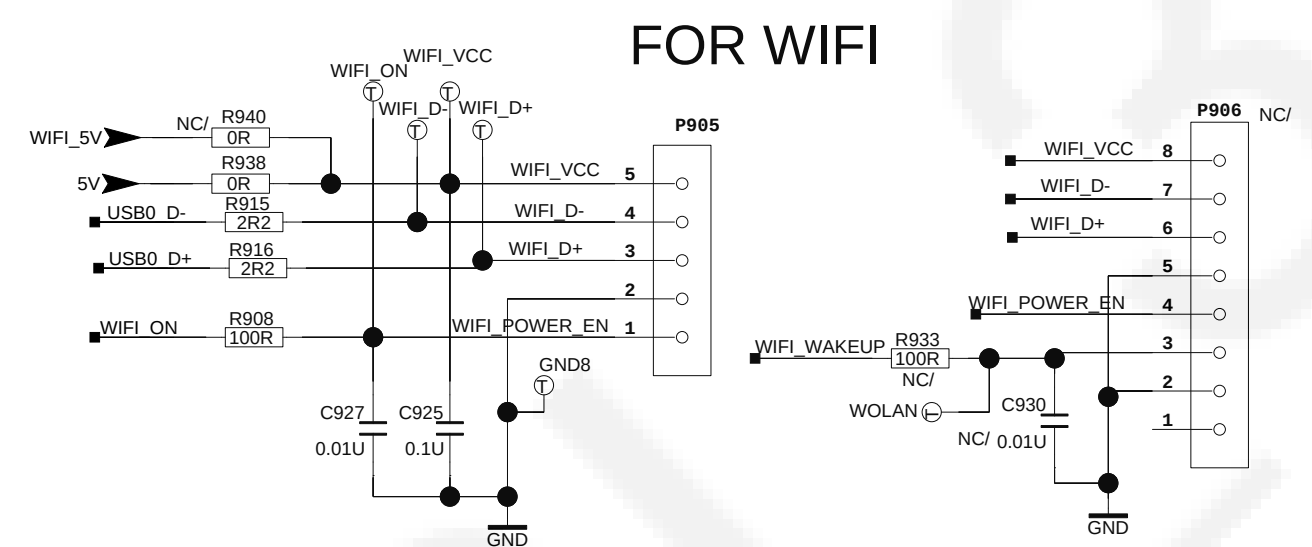
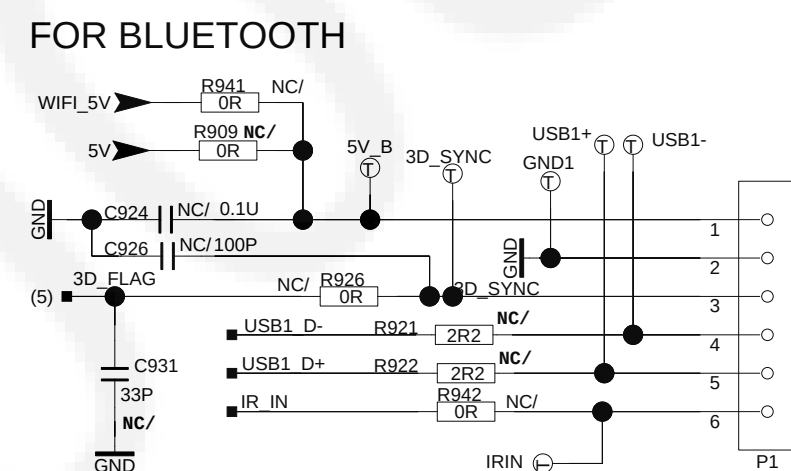
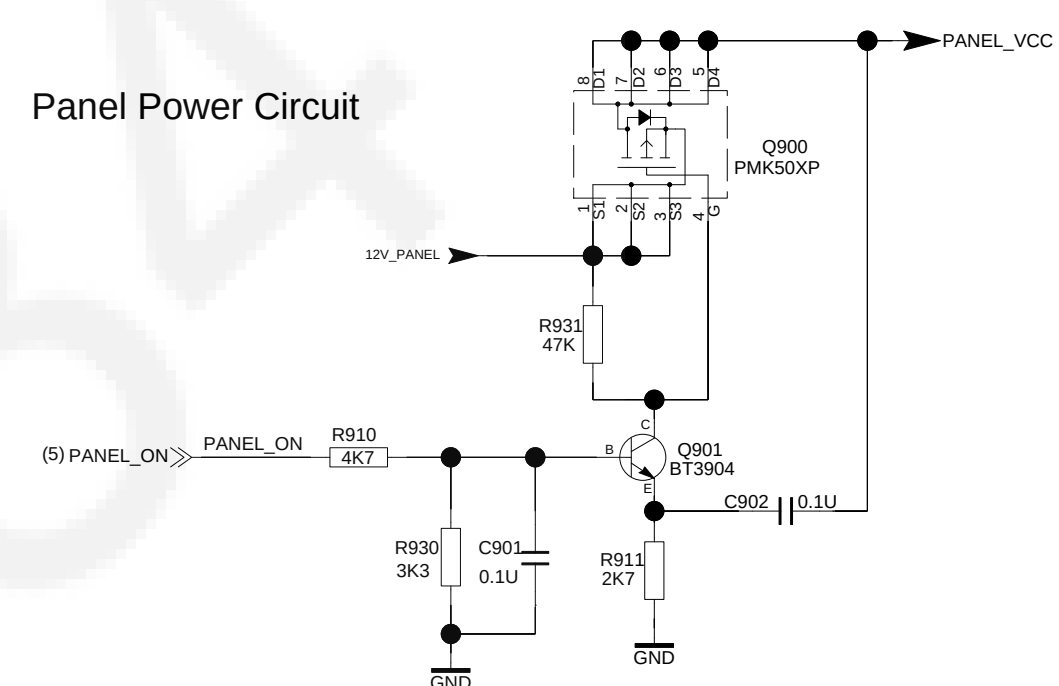
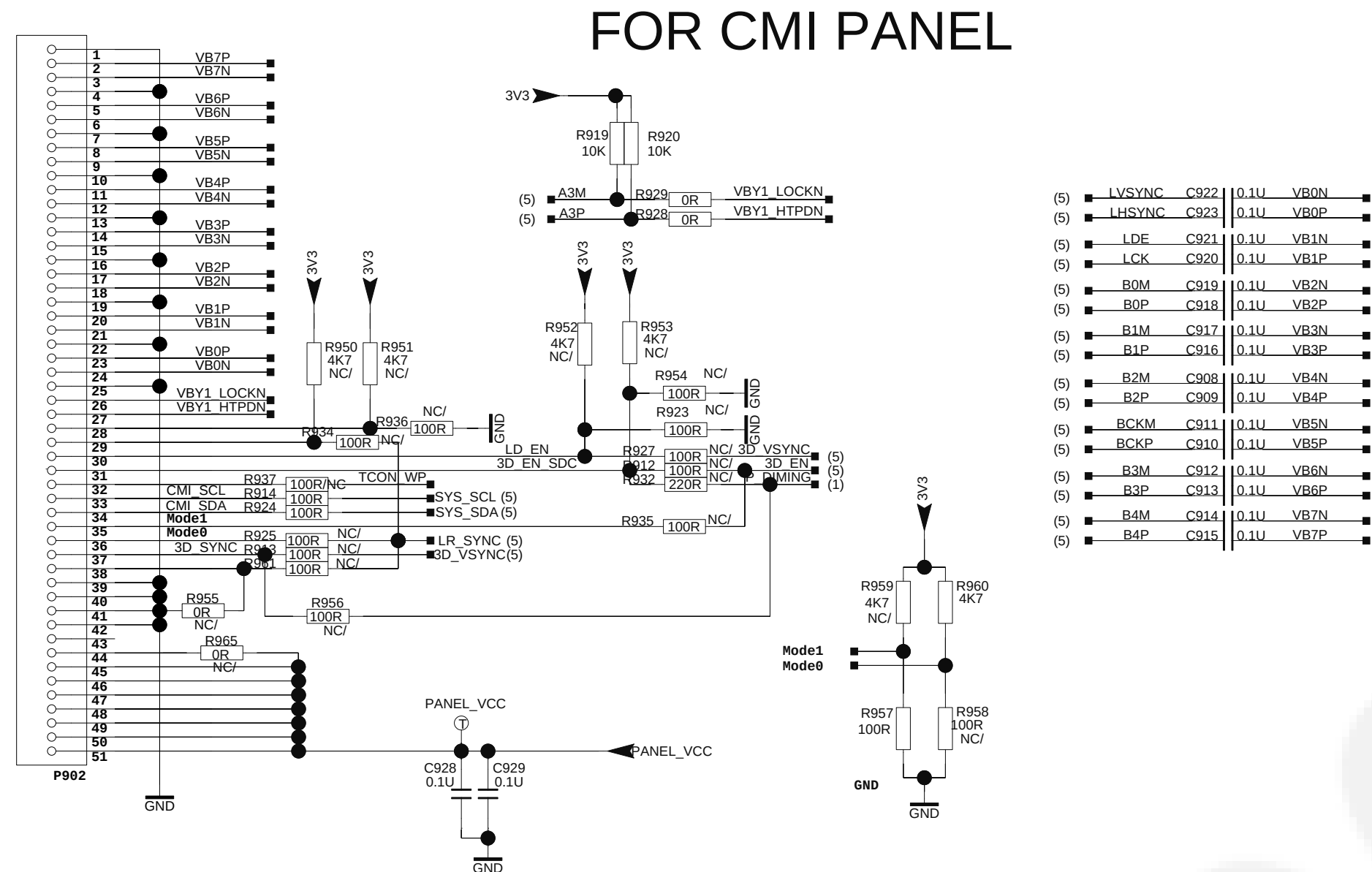


EMMC



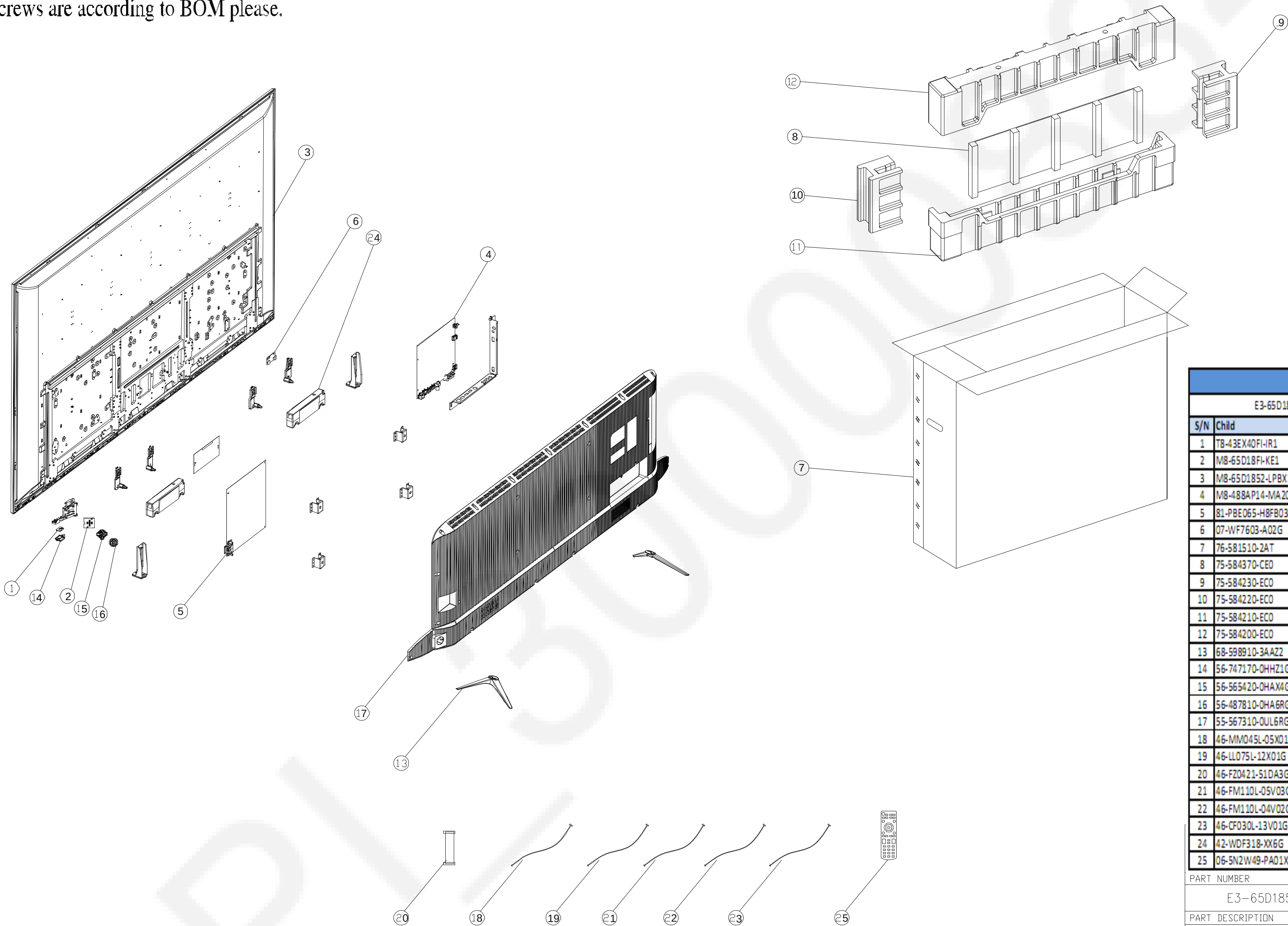
AMP_AUDIO





Exploded Drawing

Notes:
1.The explode drawing is only for reference, correcting parts and screws are according to BOM please.



Optional reserve material list				
E3-65D185FI-AEOW/TH-65FX430M/65D1852/1MS488ZZAAP.02/LG2GT				
S/N	Child	Description	Qty	Unit
1	T8-43EX40FI-IR1	ASSY - IR BD	1	PC
2	M8-65D18FI-KE1	ASSY - KEY BD	1	PC
3	M8-65D1852-LP8X1	LVU650LGDX E0011 LG2GTA/DM	1	PC
4	M8-488AP14-MA200AA	ASSY - MAIN BD	1	PC
5	81-PBE065-H8FB03	PSU 275W SHLD6508FB03-101H	1	PC
6	07-WF7603-A02G	TR 802.11N WIFI MODULE W2CM2510P(F)	1	PC
7	76-581510-2AT	RAW CARTON-BOX 65D1800 1658MM 193MM 1014	1	PC
8	75-584370-CEO	RAW POLYFOAM DAM-BOARD 65D1800 -- 00 00	1	PC
9	75-584230-ECO	RAW POLYFOAM RIGHT 65D1800 -- 00 00 R=Y	1	PC
10	75-584210-ECO	RAW POLYFOAM LEFT 65D1800 -- 00 00 R=Y	1	PC
11	75-584210-ECO	RAW POLYFOAM BOTTOM 65D1800 -- 00 00 R=Y	1	PC
12	75-584200-ECO	RAW POLYFOAM TOP 65D1800 -- 00 00 R=Y	1	PC
13	68-598910-3AAZ2	DEC STAND BASE SILVER 00 00 00 49/55/65D	2	PC
14	56-747170-OHHZ1G	DEC DECOR LENS TAWNY --- R=Y	1	PC
15	56-565420-OHAX4G	RAW DECOR KEY BLACK --- R=N	1	PC
16	56-487810-OHA6RG	RAW DECOR KEY SUPPORT BLACK --- R=N	1	PC
17	55-567310-OUL6RG	RAW BACKCOVER 65D18 -- 00 00 00 R=Y	1	PC
18	46-MM045L-05X01G	WIRE WIFI MODULE WIRE 450MM 5PIN A1257H0	1	PC
19	46-L075L-12X01G	WIRE POWER SULLPY WIRE FOR MAIN BOARD 75	1	PC
20	46-F20421-51DA3G	WIRE MAIN BD TO SOURCE BD FFC 421MM 51PI	1	PC
21	46-FM110L-05V03G	WIRE IR WIRE 1100MM 5PIN PH(LOCK) GH 2.0	1	PC
22	46-FM110L-04V02G	WIRE KEY WIRE 1100MM 4PIN PH(LOCK) GH 2.	1	PC
23	46-CF030L-13V01G	WIRE DRIVER WIRE 300MM 300MM 13PIN PHD	1	PC
24	42-WDF318-XX6G	SPEAKER 16OHM 12W 78 320HZ RECTANGLE 50M	2	PC
25	06-SN2W49-PA01X	RCT PANASONIC BLACK 3.0V 45MA 3.5UA 0	1	PC

PART NUMBER			APPROVED		DATE
E3-65D185FI-AEOW					
PART DESCRIPTION			CHECKED		DATE
EXPLODE_DRAWING					
MODEL NAME			DESIGNED		DATE
TH-65FX430M					
UNIT	SCALE	PROJECT 	SIZE	SHEET NUMBER	REVISION
MM	NTS		A4	1 OF 1	V1.0

Optional reserve material list

E3-65D185FI-AE0W/TH-65FX430M/65D1852/1MS488ZZAAP.02/LG2GT

S/N	Child	Description	Qty	Unit
1	T8-43EX40FI-IR1	ASS'Y - IR BD	1	PC
2	M8-65D18FI-KE1	ASS'Y - KEY BD	1	PC
3	M8-65D1852-LPBX1	LVU650LGDX E0011 LG2GTA/DM	1	PC
4	M8-488AP14-MA200AA	ASS'Y - MAIN BD	1	PC
5	81-PBE065-H8FB03	PSU 275W SHLD6508FB03-101H	1	PC
6	07-WF7603-A02G	TR 802.11N WIFI MODULE W2CM2510P(F)	1	PC
7	76-581510-2AT	RAW CARTON-BOX 65D1800 1658MM 193MM 1014	1	PC
8	75-584370-CE0	RAW POLYFOAM DAM-BOARD 65D1800 -- 00 00	1	PC
9	75-584230-EC0	RAW POLYFOAM RIGHT 65D1800 -- 00 00 R=Y	1	PC
10	75-584220-EC0	RAW POLYFOAM LEFT 65D1800 -- 00 00 R=Y	1	PC
11	75-584210-EC0	RAW POLYFOAM BOTTOM 65D1800 -- 00 00 R=Y	1	PC
12	75-584200-EC0	RAW POLYFOAM TOP 65D1800 -- 00 00 R=Y	1	PC
13	68-598910-3AAZ2	DEC STAND BASE SILVER 00 00 00 49/55/65D	2	PC
14	56-747170-0HHZ1G	DEC DECOR LENS TAWNY - - - R=Y	1	PC
15	56-565420-0HAX4G	RAW DECOR KEY BLACK - - - R=N	1	PC
16	56-487810-0HA6RG	RAW DECOR KEY SUPPORT BLACK - - - R=N	1	PC
17	55-567310-0UL6RG	RAW BACKCOVER 65D18 -- 00 00 00 R=Y	1	PC
18	46-MM045L-05X01G	WIRE WIFI MODULE WIRE 450MM 5PIN A1257H0	1	PC
19	46-LL075L-12X01G	WIRE POWER SULLPY WIRE FOR MAIN BOARD 75	1	PC
20	46-FZ0421-51DA3G	WIRE MAIN BD TO SOURCE BD FFC 421MM 51PI	1	PC
21	46-FM110L-05V03G	WIRE IR WIRE 1100MM 5PIN PH(LOCK) GH 2.0	1	PC
22	46-FM110L-04V02G	WIRE KEY WIRE 1100MM 4PIN PH(LOCK) GH 2.	1	PC
23	46-CF030L-13V01G	WIRE DRIVER WIRE 300MM 300MM 13PIN PHD	1	PC
24	42-WDF318-XX6G	SPEAKER 16OHM 12W 78 320HZ RECTANGLE 50M	2	PC
25	06-5N2W49-PA01X	RCT PANASONIC BLACK 3.0V 45MA 3.5UA 0	1	PC