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BONUS-B

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*** 90 eMMC BoardView List**

*** Samsung LCD & LED TV FastTrack Training**

*** Over 20 OLED/LED/LCD TV Power Supply Schematic Diagrams**

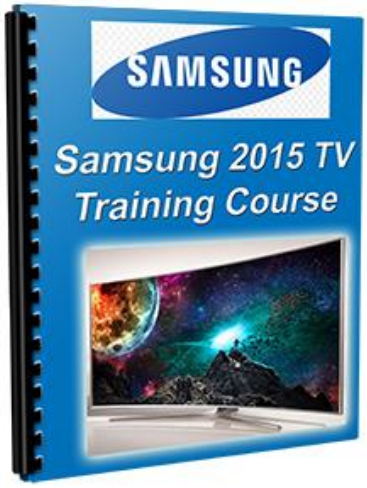
*** Branded LED/LCD TV Training Courses**

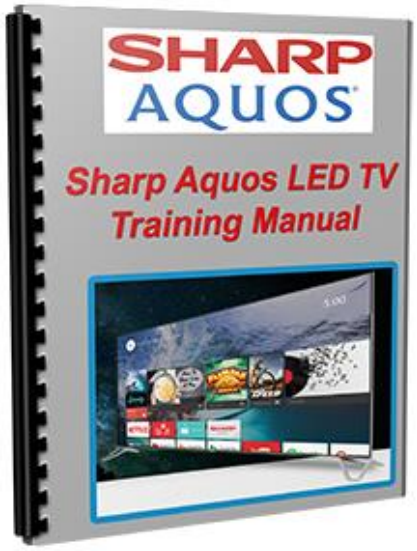
*** Universal TV Mainboard Firmware**

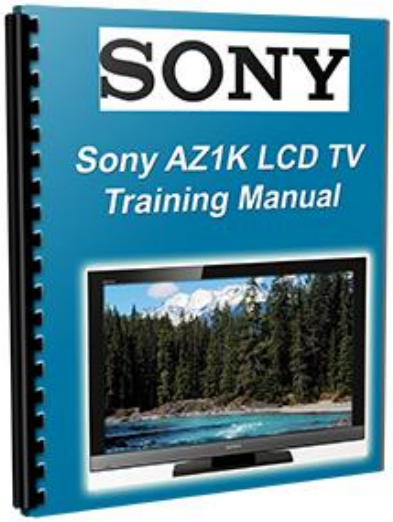
- **CV338H-A42_HD-LSC480HN08**
- **CV338H-A42_JINPIN_NIKAI_LC390TU1A_1366x768**

- MSD338STV5.0 Universal TV Mainboard
- MSV59S.21 Universal Tv Mainboard
- SKR.801 Universal TV Mainboard_(SONY & SAMSUNG)
- T.R83.031 Universal TV Mainboard
- T.V56.A8 Universal TV Mainboard
- T.VST59S.81 Universal TV Mainboard
- T56J11 Universal TV Mainboard-All Resolutions
- T56U11 Universal TV MB-with China-LG-Samsung-SONY remote.
- TP.VST59.PA671 Universal TV Mainboard
- TP.VST59S.PB801 Universal TV Mainboard
- TP_MS338_PB801 Universal TV Mainboard
- TR85_PB816L Universal TV Mainboard
- VST56.03_Universal TV Mainboard-New2017 version
- VST56.03-PAL Universal TV Mainboard
- VST56_PB801_A20-66V-94V 600MA-45W

All these Bonuses are inside the BONUS-B section:



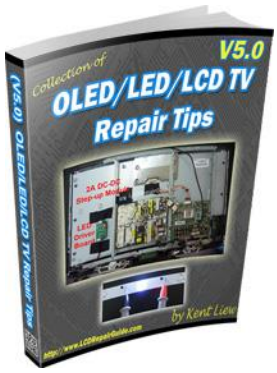


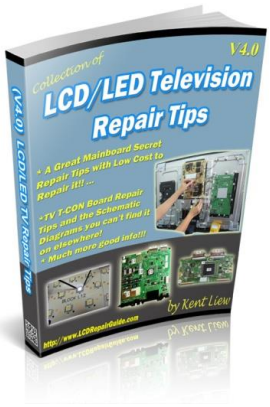


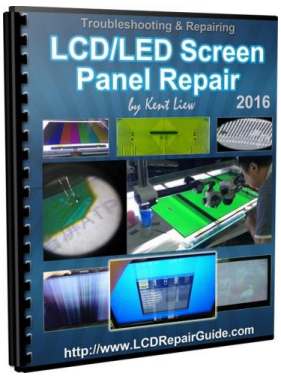
Highly recommended another great related repair information for you:

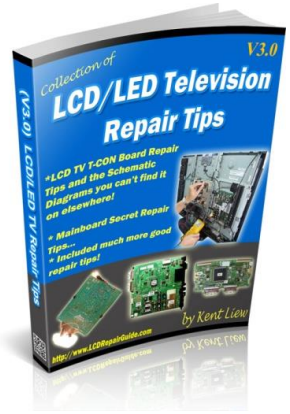
With all these great repair information, it will help you in troubleshooting and repairing electronic and the other display devices: (Please click on the ebook cover to get more details)

1) Flat Screen TV Troubleshooting & Repairing Ebooks:





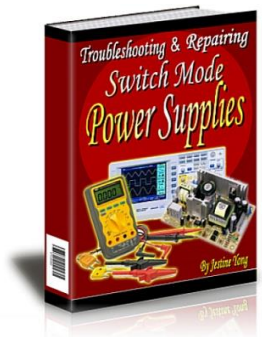


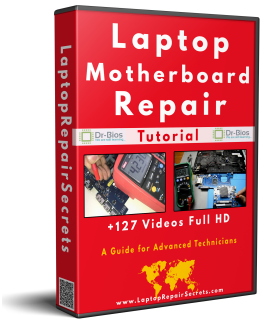


http://www.LCDRepairGuide.com

http://www.LCD-Television-Repair.com

3) Other Great Electronic Repairing:





How to Use This Repair Guide

1) Yes, this repair guide not only can save you time and money, it also can earn more profit from repairing Smart OLED/LED or LCD TV. Because of LCD/LED TV has lots of the market now. And many of them are starting occur the problem now. If we can repair it, so the profit is quite high to earn.

2) Inside this repair guide, I will NOT or I will seldom to provide the repair case about the failure of "Bulged" or "Bad ESR" values of Electrolytic Capacitor/s. As a TV repairer it is a very first step to see and measure the PCB boards inside the TV. Because it is a very basic things as a repairer need to know or know how to measure it. I highly recommend using the Blue ESR tester to testing electrolytic capacitor.

3) You can choose the chapter you're interesting to read. For example, you want to know learn the new 6-pin SMD power IC equivalent, you can directly go to that chapter and reading it.

4) Actually, all the LED/LCD TV their structure is nearly same. So, we can learn the LED/LCD TV repairing information from other brands of TV.

5) I like to use the LED Strip instead of LED Light Bar. Both of these words are the same thing and same meaning. Please do not confuse.

6) All the Programmer mention in this ebook is using the RT809F or RT809H Universal Programmer. For NAND/eMMC Flash it is using the RT809H Universal Programmer.

7) After you finished reading this V6.0 ebook, I believe that you can improve yourself and confident in repairing the Smart TV Mainboard without guessing it. ☺

How to Repair TV Mainboard? Read This Chapter First Before You Make Decision to Replace TV Mainboard!

The TV Mainboard is the second expensive part of a Television, especially it is a Smart TV Mainboard. Compare to the older LCD or LED TV (old version TV), their Mainboard is more durable than the latest Smart TV Mainboard. This is because of new features added in the Mainboard, for example, Network WIFI, Bluetooth, 3D and etc. Not only that, the new design technology for TV Mainboard is more complex, where they need to put all the new features inside a PCB board, some TV Mainboard also built-in the Power Supply (PSU) section, T-CON section and the PCB board (TV Mainboard) size become small when compare to the old TV Mainboard!

So, the latest model TV has lots of the problem in TV Mainboard now. And it is nearly same problem percentage with the TV PSU (Power Supply) and Backlight now. I found that lots of the TV repairer, when facing the TV mainboard problem, normally they just check several components and then give up repairing it. After that, buy a new mainboard or return to the customer (when the Tv mainboard is no stock or not available or too expensive to buy it). So, it will waste your time and money to do the TV repair with this method.

In this chapter, I try to list out most of the TV Mainboard problem and their checking method & solution to let the TV repairer save time and solve TV mainboard.

Before show the TV Mainboard problem and solution, the very first step is needing to isolate the TV problem first. For example:

a) PSU Self-Test Method (I've mentioned a lot of this method in my series V3, V4 & V5 ebooks).
b) Backlight Tester (LCD or LED type)
c) TV Mainboard output video Tester (for example EXV2010)
d) LVDS Panel Tester
e) And more tools/tester can help to isolate the LCD/LED TV problem is acceptable.

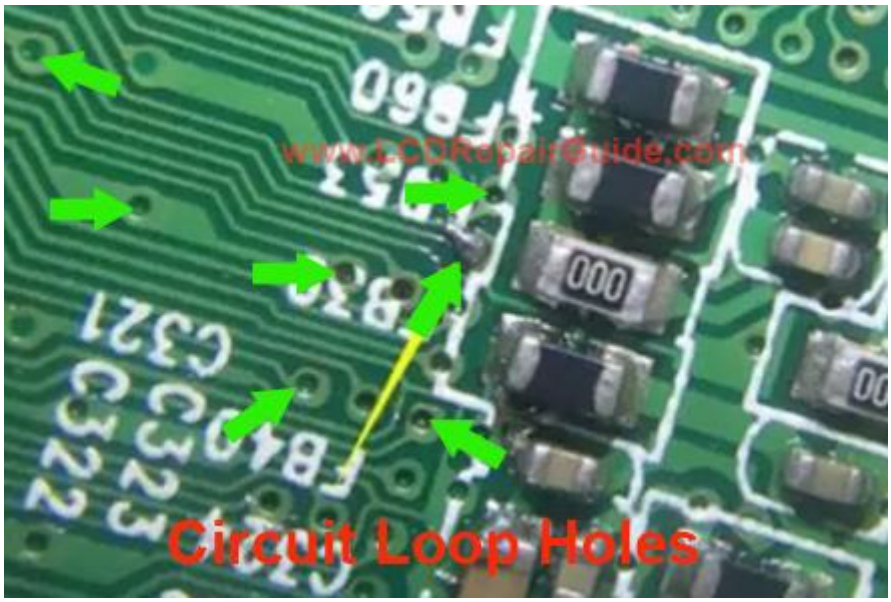
So, with the above tools and method to help repairer to isolate the Tv problem easily without the guess job, the repairer will know the problem is in which part/board is defective and do the components level repair in this board or just replace the defective board when the customer is urgent need the TV.

Below is the common fault of LCD/LED TV Mainboard and their repair ideas:

1) TV No Power:

Front indicator LED light off, no sound and no display. First check their PSU has output voltage or not? If totally no voltage output, try to disconnect the connector from Mainboard and check the PSU standby voltage (3.3V or 5V) output is appear or not. If no standby voltage output, then it is the PSU board problem not Mainboard. If the PSU has standby voltage output (3.3V or 5V) but no PS_ON (Power On signal, sometime is shows PWR_ON, PWR, POWER, POWER ON, ON/OFF & etc.) output signal from TV Mainboard, then it should be the Mainboard problem. But before confirming it is the TV Mainboard, make sure to check the front panel keypad and remote control first. If both also can't power on the TV, then it is confirmed that the TV Mainboard is defective.

a) For this type of TV Mainboard problem, need to check and tracing the corresponding components from the standby voltage line and to their MCU/Main chip (latest model TV is using the MainChip/CPU, MCU built-in). Normally, it is their LDO IC, DC-DC IC, resistor, circuit loop holes problem.



i) If their TV Mainboard LDO & DC-DC circuits can output the normal and steady voltages (5V, 3.3V, 2.5V, 1.8V and 1.26V [or 0.9V core voltage]), then you need to check the CPU reset circuit, crystal circuit.

ii) If the above all normal, please check the data BUS lines of SDA & SCL in Mainboard. Normally it is connected by CPU, flash memory, Tuner, Audio IC & etc. Make sure these two lines are not shorted by the components connected in these two lines.

iii) Follow by checking their DDR RAM & Flash memory. Especially the voltage supply (Vcc) to DDR RAM make sure it is normal and stable. Also reference voltage (VREF) of the DDR RAM. (DDR RRAM => First generation: Vcc=2.5V VREF=1.25V, 2nd generation: Vcc= 1.8V VREF=0.9V, 3rd generation: Vcc=1.5V VREF=0.75V. Most of the 2nd & 3rd generation of DDR RAM is using BGA type package). After that checking their SMD network resistors in between DDR RAM and the CPU is okay. Most of the time, the resistor ohm values out/opened or their loop holes leakage or opened will causing the TV can't power on. Or the DDR RAM can feel very hot on the surface, then it maybe the DDR RAM defective.

iv) Flash memory problem could be their firmware or the memory IC itself defective. In the Smart TV Mainboard, the firmware is divided into two types. One is bootable firmware called it as BootLoader (mBoot or uBoot), this Boot firmware normally store in 25xx Serial Flash memory IC. Another is the main firmware, normally store in the NAND Flash or eMMC Flash memory. If suspect their BootLoader problem, try to upgrade their boot firmware and see how the result. Or use the universal programmer to reprogram their bootloader flash memory with a good firmware. Also make sure to backup the original firmware first before doing any read/write the flash memory IC. Highly recommend replacing the serial flash memory IC (25xxx type memory IC) if found their firmware problem or even reprogramed the firmware still not help, then you need to replace a good serial flash memory IC and write back their firmware (BootLoader firmware). Some of the TV Mainboard

their BootLoader firmware was built-in to their big flash memory for example eMMC Flash memory IC.

v) Finally, if all the above method also not work, that's mean their MainChip/CPU is defective. Normally, the CPU in standby mode, their CPU surface will be feeling a bit warm, after TV start-up, it will feel hotter. If the TV is in standby mode, the CPU surface feeling temperature increase suddenly or quickly, that's mean this CPU could be shorted. If the TV in standby mode, but their CPU no any temperature different on their surface (compare the CPU temperature before and after power on Mainboard), that's mean the CPU could be dry join inside the CPU pins (BGA type). Actually, quite lots of the dry join or cold soldering point/s problem occur in TV Mainboard CPU these days. Also, can try to impact some pressure on the surface of CPU and then power on the TV Mainboard, see any different or not. If yes, then try to re-soldering/re-hot or Reballing the CPU IC (BGA type).

b) Also, don't forget to check the front key pad and IR (InfraRed) circuits to MCU (or MainChip/CPU) corresponding components (or their loop holes) for leakage or opened circuit. Even this problem is seldom occurred, but it can happen too.

2) TV No Display with Front Indicator LED Lit:

a) **TV Cannot Start-up**. If the front indicator LED light is lit Red or Orange colors, no sound and no display.

i) Please check the power supply standby output voltage is it 5V (some are 3.3V). If the PSU standby voltage drop to 4.5V it will cause the TV can't start-up. When found the standby voltage drop to 4.5V or less, power off and disconnect the cable from Mainboard & check again the standby voltage output is still the same or not. If still same to 4.5V, it can confirm the problem was their power supply PSU standby voltage output drop. If check the standby voltage output back to normal 5V, then you need to use a DC 6V or 12V (below 10W) light bulb as a loader

and check again the standby voltage. If the PSU standby output voltage again back to 4.5V, that's mean the PSU board standby voltage line is bad in loading circuit, need to check PSU standby circuit, especially the electrolytic capacitor bad in ESR values. Also, the PSU board PFC voltage if drop from 380V~400V (normal voltage values) to 360V will causing the PSU board output voltage drop when connected to the loader (Mainboard & etc). When the PSU standby voltage connected with a loader, their output voltage still 5V, that's mean the problem was the TV Mainboard input standby voltage line problem, need to check the Mainboard. The common fault components of standby voltage line supply to Mainboard is their capacitor (leakage), LDO IC or DC-DC IC and its circuit, circuit loop holes and etc.

ii) Also try to check the TV Mainboard is it output the PS_ON signal to PSU or not? If not, then it is the TV Mainboard problem, please refer to (1) **No Power** (a) in this chapter. If the PS_ON signal is appear/present, then you need to check the TV power supply (PSU). Especially use the PSU Self-Test Method to confirm it first.

iii) Sometime the backlight problem will cause the TV Mainboard not start-up. Use the PSU Self-Test Method or/and the LED/LCD Backlight Tester to testing and isolate the problem.

iv) If the standby voltage, LDO output voltage, DC-DC output voltage, CPU reset circuit & crystal circuit all normal in Mainboard, we can use the Universal Programmer with SecureCRT software to read their TV Start-up Log file (Init Serial Print in RT809 programmer), to check what's wrong to the TV and know which section is abnormal. So, it will save the time on troubleshooting TV Mainboard.

b) **TV No Display**. If the front indicator LED light is lit Green or Blue colors, please check their backlight is lit or not?

i) If backlight not lit, please check the BK_ON (Backlight On signal, sometime will show as BLK_ON or etc.) is present or not? If not, it should be the TV Mainboard problem. But for

more accurate solution, please also use the PSU Self-Test Method to confirm it first. Also, can use the LED or LCD Backlight Tester to test their LCD or LED light bulbs. If the BK_ON signal appear, but still no backlight, you need to use the PSU Self-Test Method and/or LED/LCD TV Backlight Tester to testing their LED Driver and LED Strip (or light bulbs) or LCD inverter & their CCFL/EEFL lamps. If the BK_ON signal still not appear after testing it without connect to LED driver board/section, then it could be their Mainboard problem. But make sure their connector and cable connection to Mainboard is normal. Check and trace their BK_ON signal line corresponding components till to the CPU there. When the BK_ON signal still no output from the CPU, try to upgrade their latest or working firmware or resoldering/reflow/reballing the BGA type CPU. If the above method still not work, then you need to replace a good/working CPU.

ii) If the Backlight is lit and all the PSU output voltage normal, but no display. It is needing to check the T-Con board Vcc supply is present or not? If not, then you need to check the LVDS cable to TV Mainboard. If the T-con Board Vcc voltage present, then you need to use the Oscilloscope to check their clock & data signals to make sure the Mainboard can output video signals to T-con board. For easy and 100% accurately to check the TV Mainboard video output signals, I highly recommend using the TV Mainboard Video Output Tool like EXV2010 TV Multifunctional Repair Tool (EXV2010 TMRT) same as the photos below:

EXV2010 TV 多功能修机王
EX
修机王全配版

4K双屏线主板
3840*2160
16组 VBY1
10位
120赫兹
4分屏
EXV2010 TV 多功能修机王
深圳市瑞易创科技有限公司
EX
模式 分屏 切换 信号源 复位

c) **TV No Display**. If front indicator LED light blinking non-stop, it will need to use the PSU Self-Test Method and LED/LCD Backlight Tester to isolate & testing whether the problem is causing by PSU + Backlight or Mainboard + T-CON (with Panel). If found the PSU output voltage not stable, it is because of the PSU board defective and need to check. If the PSU + Backlight can work properly after using the PSU Self-Test Method & Backlight Tester, that's mean their Mainboard is the problem. If this type of TV Mainboard problem, make sure to check their LDO circuits, DC-DC circuits, CPU reset circuit and crystal circuit is okay or not. If all these okay, try to use the Universal Programmer to see their TV Start-up Log file and find what's wrong with the TV Mainboard. Also, can use the programmer to reprogram/re-write their BootLoader flash memory firmware (make sure to backup the old one first before doing any upgrade or reprogrammed the flash memory). Or using the Manufacturer firmware with the USB drive to upgrade their firmware and give it a try.

3) Display Distortion Problem/Painting Display Problem or Abnormal Display Problem:

a) For all the Display Abnormal problem, need to use the EXV2010 TMRT to test their video output to confirm the problem is in the Mainboard or their T-CON board. Most of the TV Display Abnormal problem causing by Mainboard is their Video processing chip (latest Mainboard was built-in the CPU) defective, the video processing DDR Ram, SMD resistor or network type resistors and their corresponding circuit line loop holes.

b) For Painting type Display problem, it is because of their LCD/LED Screen is not match with the Mainboard firmware setting. So, it is need to login to their Service Mode/Factory Setting to change their Panel setting to match the screen use on this TV.

c) For Display Upside Down symptom, some of the TV Mainboard service mode has the MIRROR option to solve this problem. So, you need to login to their service mode/factory mode to check whether the Mainboard service mode has this feature built-in. Some TV they not provided this feature inside the service mode, then you need you find

the correct version of firmware to update or use the Universal Programmer to write the firmware into the TV Mainboard. If both also can't help, it will need to modify their T-CON board to correct back their display position.

4) TV Stuck on Start-up Logo:

This type of TV problem has more happens these days. Especially, the Smart TV. This type of TV problem needs to use their TV Mainboard Manufacturer firmware to upgrade to the Mainboard or use the Universal Programmer with the previous good firmware backup with same model & version. If after upgrade from USB drive also not help, then you need to check or replace their NAND or eMMC flash memory and try to re-upgrade again their firmware.

5) TV Shows Start-up Logo then Reboot, Non-Stop to Reboot:

First check the PSU board output voltage normal and stable or not. If PSU output voltage okay, then this type of TV problem needs to use the above solution (4) TV Stuck on Start-up Logo to repair this TV.

6) TV Shutdown Randomly Problem:

This type of TV problem is hard to check and repair. Because it is not easy to wait till the problem occur.

a) Some of the TV has built-in the error counter. So, with this type of TV problem, we can login to the TV service mode or factory mode to check their error counter see what's wrong in TV Mainboard to shutdown the TV.
b) If the TV didn't have this feature, so it needs to use the isolate method to check & troubleshoot this TV. Use the PSU Self-Test Method to burn test the TV. And use the EVX2010 TMRT to test the TV Mainboard. Also use the LVDS Panel Tester to test the TV T-con & Panel. With this method, we can find out what's wrong to this TV and then do the components level repair or just replace the faulty board.

7) TV No Sound Problem:

As usual, first check the Volume setting, Mute setting and the Speakers. Normally, TV no sound problem can divided into two ways. One is all type of audio input (Tuner, AV, HDMI &Y etc) also same no sound problem. Another one is just one input audio like AV (Or Tuner, AV, HDMI & etc) no sound, but other audio input is normal.

a) TV all type of audio inputs also no sound. If the TV with this type of no sound problem, as usual check the TV Volume setting, Mute setting and the TV Speakers. Follow by:
   i) Check the Audio Amplifier IC (and their corresponding components, especially the audio MUTE circuit components).
   ii) Remove the pins (or not connect to Mainboard) of Headphone/Earphone Jack from the TV Mainboard. Test the Tv sound is back to normal or not. If yes, confirm that the Headphone Jack is “leakage” cause the Mainboard to think the Headphone is insert to the Jack and MUTE the sound output to Speaker.
   iii) When the Power Supply (PSU) big electrolytic capacitor (400V) their capacitance decrease, it will cause the PSU output voltage interference pulses increase. Because of this interference pulses increase, it is causing the audio & amplifier circuit change to MUTE status.

b) One of the TV audio input no sound problem. For example, the AV input no sound problem, please check the AV port Left & Right sides audio soldering pins have any dry joins or not or check their LEFT & RIGHT sides of the input Jack has any pin/contact pin broken inside. For the HDMI port input no sound problem, please try to check with the above methods, if still not help, then try to update their main firmware to solve the problem.

c) Also, please check their audio processing section/IC, some of this circuit was built-in the CPU chip. Especially when the TV sound problem like: power on the TV, the sound output from the TV

Speakers change to low and included some noisy sound. If this is the problem, please check to their audio processing CPU chip.

d) TV has noisy sound output from Speaker. First make sure the Speakers is in good condition. Normally, this type of problem is causing by the PSU board or the Backlight. So, need to isolate where is the problem come from. Most of the time, this type of problem is causing the by the electrolytic capacitors (capacitance decrease or bad ESR values), especially the PFC section big electrolytic capacitor (400V) and all the output voltage filter capacitors.

8) HDMI Input Problem :

No display, No sound or both problem on HDMI input. This type of problem first make sure the HDMI cable is okay and the HDMI port (pins inside) is okay and make sure no any pin/s broken inside. After that check the Vcc +5V pins has 5V or not. Also, the TMDS signal pins about 3.3V. Normally, HDMI input problem is causing by the HDMI port pins broken, corresponding circuit line components open, EEPROM HDCP key data loss, HDMI Port Switches IC defective and upgrade their latest main firmware to solve problem.

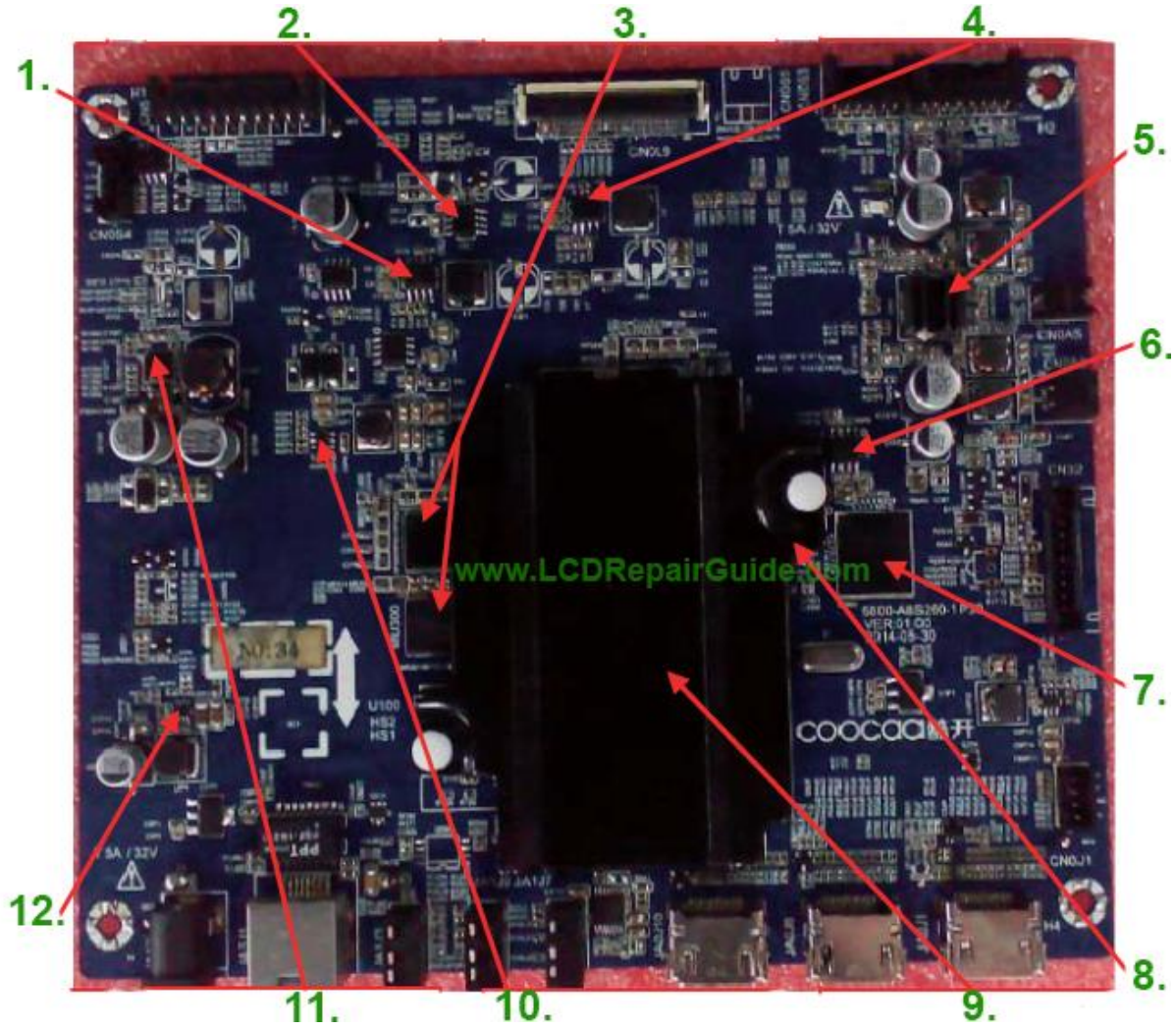
For the EEPROM HDCP data loss, make sure the EEPROM is still good, if not just replace it. After replacing with a new or good EEPROM IC, use the Universal Programmer with good backup data of HDCP (make sure it is same with the Mainboard part number & version) write into a new EEPROM IC. Or login to the TV service mode, go to Feature or Preset to select the “Test HDCP Data” to write the data into new EEPROM of HDMI port HDCP key data. But it will depend on the Mainboard design, not all the same with this method. Need to check the TV service or training manual for more details.

9) And Other TV Mainboard Problem:

If the TV has unknown problem or randomly problem, please use the above tools & methods to confirm the problem is in the TV Mainboard or another section cause the problem. The TV Mainboard common fault

components are: LDO IC, DC-DC IC, SMD resistor (or network type), capacitor, SOT23 type MOS, reset circuit (or reset IC), BGA type CPU chip defective or dry join/cold soldering point & etc.

Learn the Skyworth 49U2 Chassis 8S26 (MSD6A918) Smart 4K LED TV Mainboard Circuits



1) U1005 (RT9026 GSP): 5V to 0.75V converter IC. If this IC abnormal, this TV can't start-up.

2) U0L1 (ME4411): Panel Vcc_On voltage supply control MOS. If this MOS abnormal, the TV will no display problem.

3) MU300/301/302/303 (DDR): If these DDR RAM ICs abnormal, the TV will: can't start-up, no display, display abnormal & etc.

4) U9 (MSH6000A): DC-DC supply voltage for Core voltage. If this IC abnormal, the TV will can't start-up.

5) U0A3 (TSS5711SP) Digital audio amplifier, if this IC abnormal, TV will: no sound, sound abnormal or TV can't start-up.

6) U1P7 (MP1495): DDR voltage supply control IC. If this IC abnormal, TV will: can't start-up, no display or etc.

7) U0M4-eMMC: If this eMMC abnormal, this TV will: can't start-up, no signal or no display problem.

8) U9: DC-DC for core voltage supply. If this IC abnormal, the TV will: can't start-up, no signal or no display.

9) U100 (MSD6A918) CPU/Mainchip. If this CPU abnormal, the TV will: can't start-up, no display, blank screen, no sound and etc.

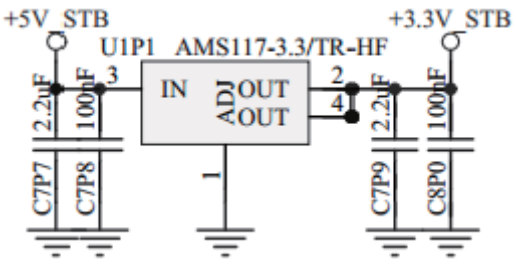
10) U0P8 (MP1470GJ-Z): DC-DC circuit for DDR voltage supply. If this IC abnormal, the TV will can't start-up.

11) U1327 (AOZ1237 QI-01): 12V to 5V converter IC. If this IC abnormal, the USB port not working.

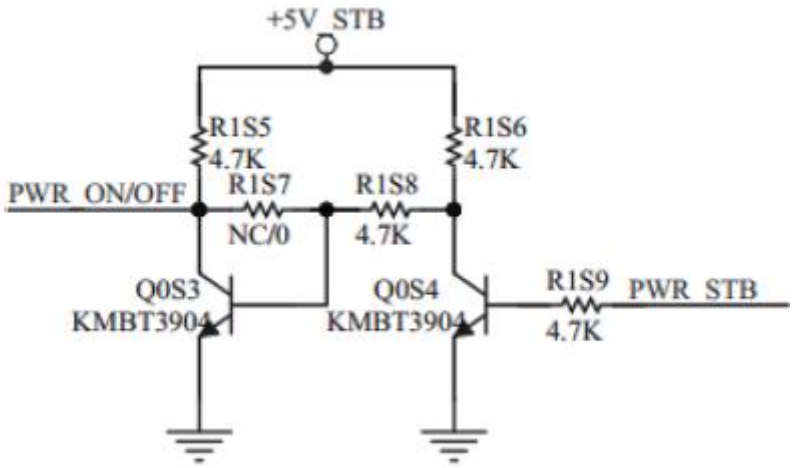
12) U0P3 (MP1494DJ-LF-Z): 12V to 5V converter IC. If this IC abnormal, the TV will abnormally start-up.

The Mainboard Circuit Diagrams of Skyworth 49U2 Chassis 8S26 Smart 4K LED TV:

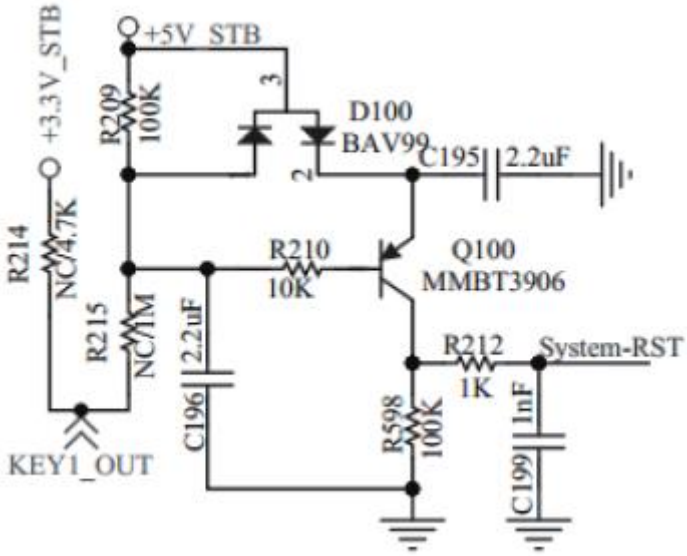
1) **Sample of LDO circuit for +3.3V_Standby voltage in TV Mainboard**



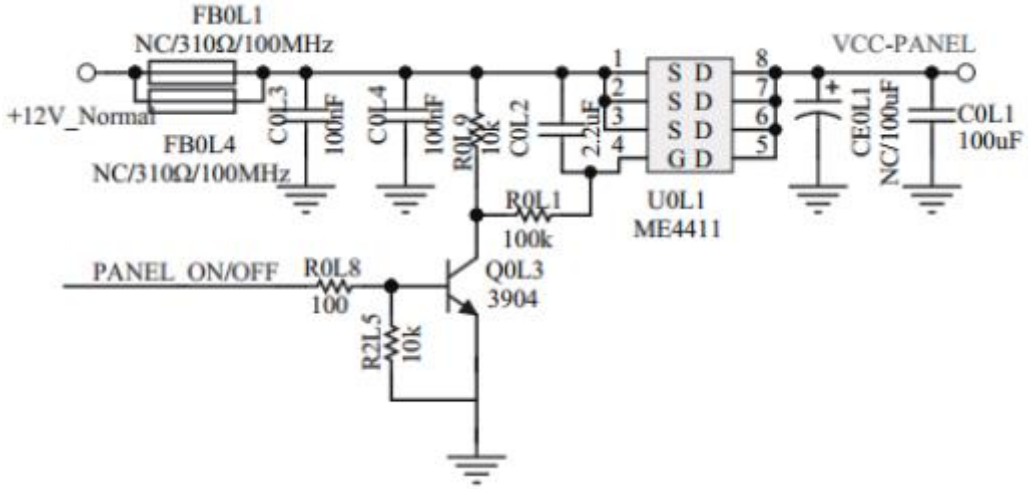
2) **On/Off Control Circuit**



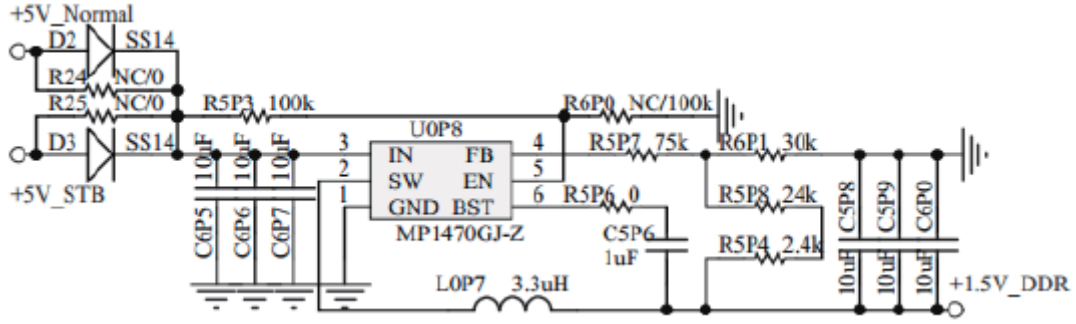
3) Reset Circuit in TV Mainboard



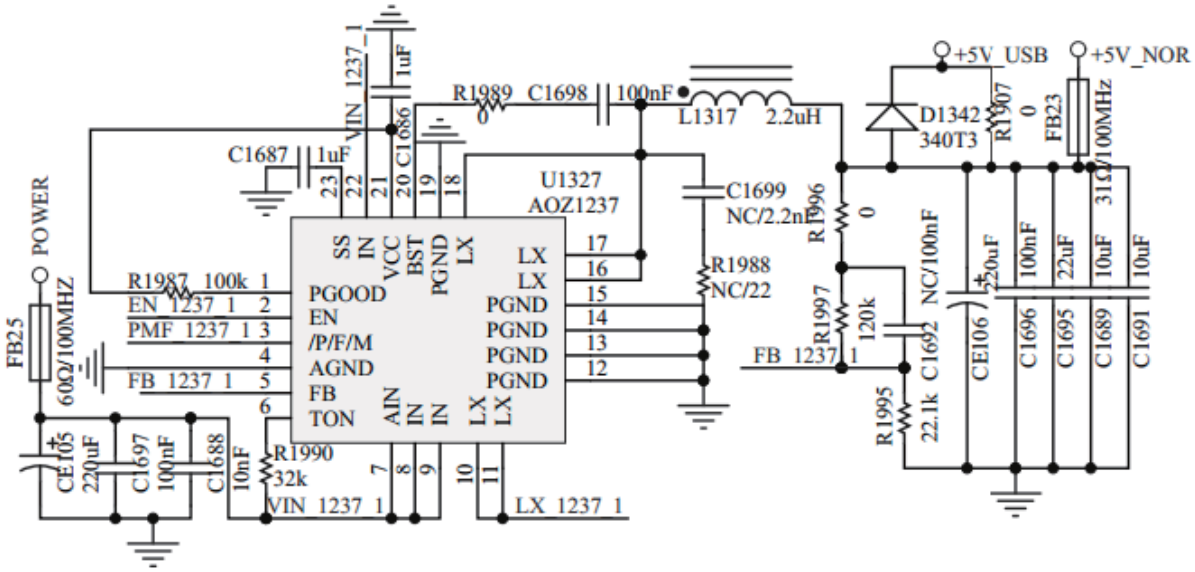
4) Panel Vcc_On Supply Voltage Control Circuit



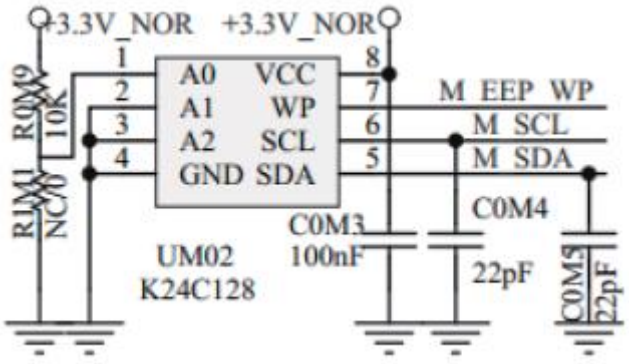
5) Generate VDDC1.2 Voltage Supply Circuit (DC-DC circuit)



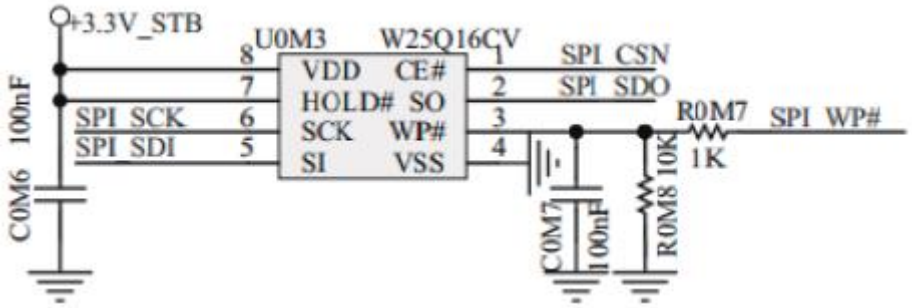
6) USB Voltage Supply Circuit



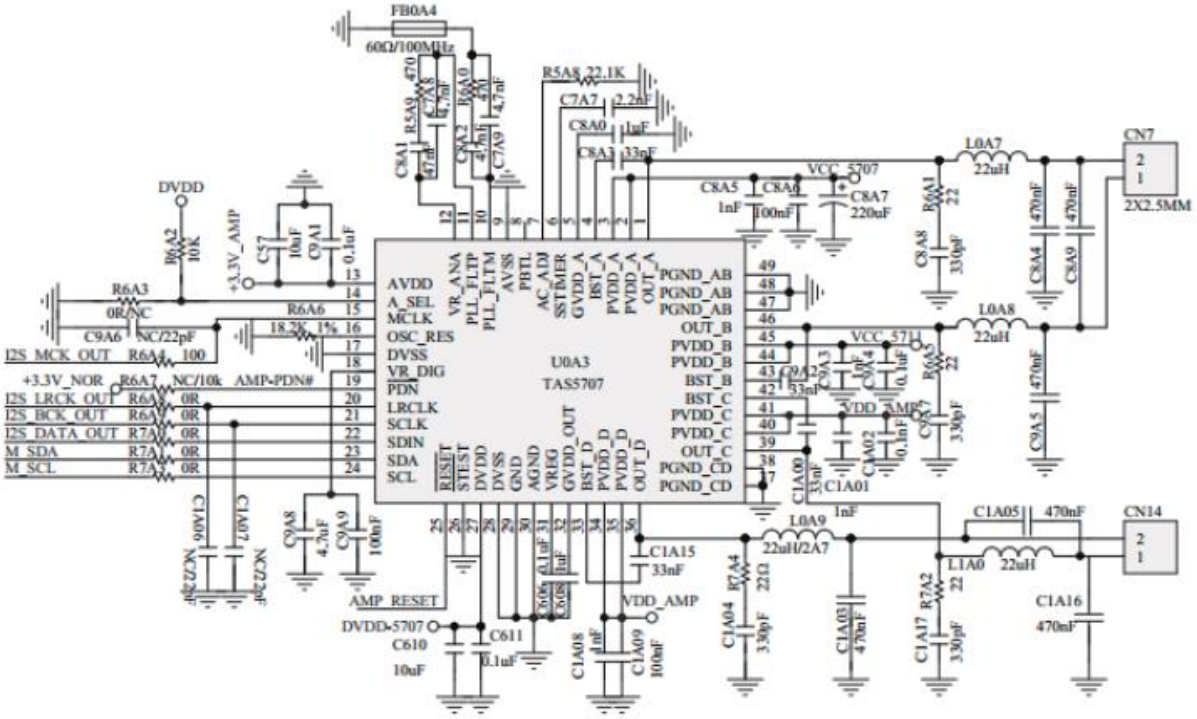
7) EEPROM Circuit



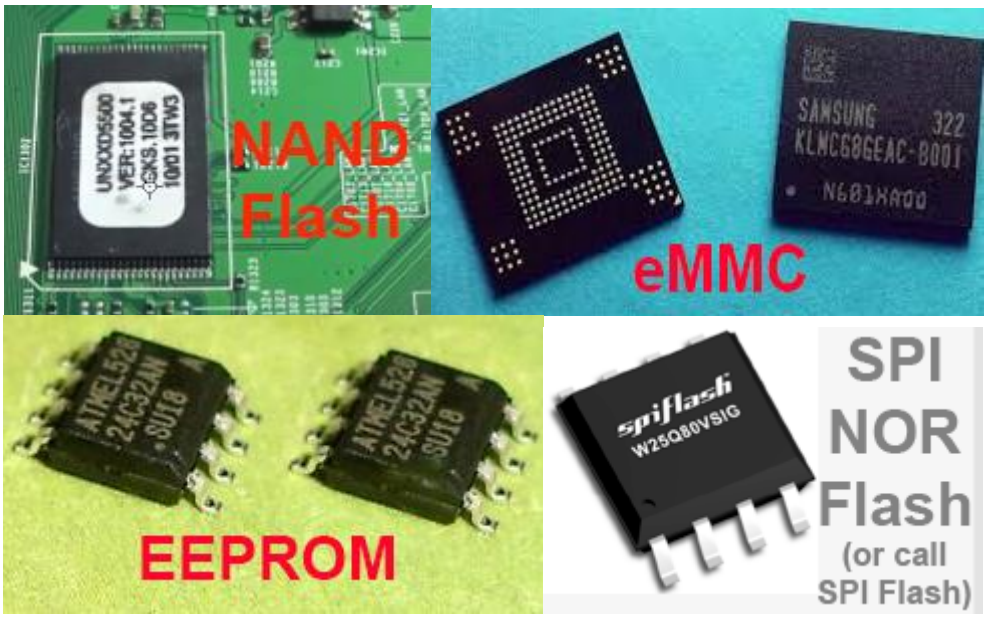
8) SPI NOR Flash Circuit



9) Digital Audio Amplifier Circuit



Do You Know the Functions of These Memory IC in TV Mainboard: EEPROM, SPI Flash, NOR Flash, NAND Flash and eMMC



Nowadays, the TV has several type memory ICs in TV Mainboard. Each of them has different feature and use to store the data into it. From the old LCD TV to latest Smart LED TV, these memory IC has different combination in TV Mainboard, for example as below:

A) For non-Smart TV Mainboard

EEPROM + SPI or Parallel NOR Flash Memory

The **EEPROM** use to store the:

i) User Data for example the values of Volumes, Channels, Brightness/Contrast & etc.
ii) Quality Control Data for example their display color setting & etc.
iii) Store the TV last action: in Power ON or Power ON status (so next time turn on AC supply, TV will check the last status is on or off, if the last action if on, so this time AC turn on will power on the TV).

iv) If this EEPROM IC abnormal, it cannot login to their Service/Factory Mode.

The **Flash memory** for this type of TV, normally is using the NOR flash memory. Either it is **SPI NOR flash** memory (25xxx series memory IC) or **Parallel NOR flash** memory (29 & 39 series IC, for example AM29LV800D & SST39VF1601).

This **SPI Flash memory** is to store the firmware & panel parameter setting of MCU (or their sub-firmware).

B) For Smart TV Mainboard

The Smart TV Mainboard also use the **EEPROM** IC to store their user data same as the above (A). The early models of Smart TV their Mainboard is using the NOR Flash + NAND flash memory, NOR Flash + eMMC or Single NAND flash memory (all mBoot & main firmware was built-in one flash memory IC). The latest models of Smart TV Mainboard using single eMMC Flash memory IC. This is because of the NAND flash own characteristics, high problem rate in TV Mainboard, so the TV Mainboard manufacturer change to use the eMMC for more stable and reliable.

Below is the Smart TV Mainboard memory chips structure:

Software Structures	BootLoader Firmware Location
NOR + NAND	Store mBoot at external SPI NOR Flash. Normally is using the 25xxx series Flash memory.
NOR + eMMC	Store mBoot at external SPI NOR Flash. Normally is using the 25xxx series Flash memory.
NAND	Store at NAND. In front of the block of NAND flash memory.
eMMC	Store at Boot1 or Boot2 or User area. Of the eMMC memory.

The comparison of each Memory IC:

Key Indicator	EEPROM	SPI Flash	NAND Flash	eMMC
Interface	I^2C (SDA/SCL)	SPI (DI/DO/CLK)	8-Bit BUS	MMC interface
ERASE	Operate per Byte	Operate per Sector (64~128KB), 5s	Operate per Block (512K~2M), 1.5ms	Operate per Block (512K~2M), 1.5ms
READ	Operate per Byte	Operate per Byte	Operate per Page (512~2K), 25us	Operate per Page (512~2K), 25us
WRITE	Operate per Byte	Operate per Byte	Operate per Page (512~2K), 200us	Operate per Page (512~2K), 200us
MTBF*	1 Million times	100K times	1 Million times	1 Million times
Bad Block/s	No	No	Yes	Do not consider
Maximum Capacity	512K	32MB	32GB or more	32GB or more

* MTBF: Mean Time Before Failed

How to Programming/Upgrade the TV Mainboard the Right Way? When it has The Different Type of Flash Memory like SPI NOR, NAND and eMMC?

How to upgrade the TV mainboard firmware the right way? Especially in Smart TV Mainboard. When the Smart TV mainboard flash memory or CPU/Mainchip replaced, it is needing to upgrade their firmware to solve the mainboard problem. But the problem is how do I know this Smart TV mainboard upgrading steps?

Normally, the steps on how to upgrade the Smart TV Mainboard we can follow the TV manufacturer firmware upgrade instructions on their website. But for more details in technical issue, it is needing to login to their ASC site or you know how to upgrade the Smart TV Mainboard in different chip solution in the mainboard. Some time, same brands same model of TV also uses different chip solution CPU inside their TV Mainboard. That's why when the TV repairer they just using the TV model number to find their firmware and lots of them failed to upgrade the mainboard firmware.

Below is the world top TV Mainboard chip solution company and some of their CPU firmware upgrade steps information:

1) **MSTAR: Mstar Semiconductor Inc.** chip in terms of market occupancy rate, is one of the top TV mainboard chip solution company. So, understanding the characteristics of MStar chip solution will help us to repair the Smart TV Mainboard is using MSTAR CPU.

Chip P/N	Manufacturer Chip Encrypt	How to Process of the Firmware		
		Replaced CPU	**Replaced Flash**	**Write Method**
MSD6A600/ MSD6A608/ MSD6A800	No	-	Re-write the replaced Flash firmware	Use RT809H Programmer or FT2322 UART Tool
MSD6A801	No	-	Re-write the replaced Flash firmware	Use RT809H Programmer or FT2322 UART Tool
MSD6A818	No	-	Re-write the replaced Flash firmware	Use RT809H Programmer or FT2322 UART Tool
MSD6A828	No	-	Re-write mBoot **&** main firmware	Use RT809H Programmer or FT2322 UART Tool
MSD6A908	No	-	Re-write mBoot **&** main firmware	Use RT809H Programmer or FT2322 UART Tool
MSD6A918	Yes	Re-write mBoot	Re-write mBoot **&** main firmware	Use RT809H Programmer or FT2322 UART Tool
MSD6A928	Yes	Re-write mBoot	Re-write mBoot **&** main firmware	Use RT809H Programmer or FT2322 UART Tool
MSD6A638	Yes	Re-write mBoot **or**	Re-write mBoot **&** main	RT809H enables fast

		main firmware	firmware	write
MSD6A828	Yes	Re-write mBoot **or** main firmware	Re-write mBoot **&** main firmware	RT809H enables fast write
MSD6A938	Yes	Re-write mBoot **or** main firmware	Re-write mBoot **&** main firmware	RT809H enables fast write
MSD6A838	Yes	Re-write mBoot **or** main firmware	Re-write mBoot **&** main firmware	Use RT809H write the MP software from iFix team.

From the above table contents, MStar early models of CPU is not locked & set the password for their device ID. That's why replaced their CPU in TV Mainboard also no need to do anything and the TV mainboard can work properly.

Manufacturer starting from MSD6A918 chip solution, their chip is locked, and the software is bound to their Mainchip/CPU unique ID. That's why after replaced CPU, it's needing to use manufacturer BootLoader/mBoot firmware to re-bound their CPU ID. It is needing to use the RT809H programmer or FT2322 UART Tool to write the mBoot firmware into the flash IC. Lots of the TV Repairer, they complaint the TV Mainboard is the Mainchip damage, but why after replaced it, still cannot solve the mainboard problem!

If use the manufacturer mBoot firmware writing method, need to use a FT2322 UART tool/programmer/jig and MStar software. Connect in between the Mstar software with FT2322 to Smart TV Mainboard, needs to know to how use the software to connected mainboard and write mBoot firmware into the TV Mainboard. If use the RT809H programmer, it is more easy and faster than the FT2322 tool.

The MSD6A638, MSD6A828, MSD6A838 & MSD6A938 chips are using more advanced encryption algorithm. After replaced these CPU, re-write the mBoot firmware & upgrade their main firmware can re-bound the chip. But if replaced the eMMC IC, when write the manufacturer mBoot firmware, it is needing to apply the password to decryption their BUS lines from Mstar manufacturer. The steps as below:

a) Use MSTV software to get their chip Device ID.

b) Use this Device ID and send email to the TV manufacturer, and TV manufacturer in charge person will use this info to apply the password from MStar company.
c) Normally, it will take time about several days until a month to get the Device ID password. After that use the I^2C to decrypt the password locked.
d) After decryption the lock, disconnect MSTV software, and use ISP_Tool to write their mBoot firmware.
e) After writing successful their mBoot firmware, it is the time to upgrade their main firmware.

The easy way is to use RT809H Universal Programmer feature "EMMC_AUTO_ISP_BOOT_MST" to enables fast write their mBoot firmware or clone the whole chip with RT809H and use the manufacturer mBoot writing software to write into the chip without any difficult method to do that.

2) MTK: The MediaTek chip is second top of chip solution in TV Mainboard. To this day, all the MTK chip solution is not password locked their chip solution.

Chip P/N	Manufacturer Chip Encrypt	How to Process of the Firmware		
		Replaced CPU	**Replaced Flash**	**Write Method**
MT5502/ MT5326	No	-	Re-write mBoot & main firmware	Use RT809H Programmer or FT2322 UART Tool
MT5505	No	-	Re-write mBoot & main firmware	Use RT809H Programmer or FT2322 UART Tool
MT5327	No	-	Re-write mBoot & main firmware	Use RT809H Programmer or FT2322 UART Tool
MT5507	No	-	Re-write mBoot & main firmware	Use RT809H Programmer or FT2322 UART Tool
MT5508	No	-	Re-write mBoot	Use RT809H

			& main firmware	Programmer or FT2322 UART Tool
MT5520	No	**-**	Re-write mBoot **&** main firmware	Use RT809H Programmer or FT2322 UART Tool

* "-" : Nothing to do.

From the above table contents, the MTK chip solution part number in TV Mainboard is not much. When deal with the MTK firmware, if use the manufacturer mBoot writing method, use the MTK Flash Tool software + all other type UART Tool to do that or use the RT809F or RT809H programmer also can support. But the manufacturer software have some bugs, for example hard to connect the software with TV Mainboard, after connected, sometimes it cannot detect the device ID, many steps in manufacturer software to complete to writing their flash memory and so on.

The RT809H Universal Programmer can use "EMMC_AUTO_ISP_BOOT_MTK" feature to writing their manufacturer mBoot firmware directly. This is easy to operate than chip manufacturer method. The RT809H programmer can copy/clone whole flash IC from good TV Mainboard and writing it into the problem mainboard without upgrade their main firmware, because the RT809H programmer has been copy/clone all the mBoot & main firmware together. It is easy like programming the 24Cxx EEPROM!

3) **RTD: RealTek** series chip solution normally using in middle & low level TV mainboard market. Their chips part number is not much just: RT2992, RT2995; RT2982, RT2984 only.

   Use the chip manufacturer software RTICE + all other UART Tools, it can write the RTD firmware. But this method of writing their firmware will quite difficult and take long time to finish it. Sometime, the software bugs will cause the writing process failed in last step and waste of the time. Use the RT809H programmer will better than the other UART tool.

4) **Qualcomm:** This TV Mainboard chip solution of market occupancy rate is low. This TV Mainboard is expensive than other mainboard. It high

problem rate on TV Stuck on Logo or TV Cannot Start-up. This chip manufacturer not provide much firmware upgrade to the user. Also, their standby circuit is using a MCU to control it. Their MCU firmware fault rate also high, but no any firmware support for this chip solution TV Mainboard.

The RT809H programmer can support this chip solution TV Mainboard standby circuit MCU firmware programming. Also support the mBoot and main firmware, clone the whole firmware, the method same as MTK.

5) **Hi**: **HiSilicon** – This TV Mainboard chip solution of market occupancy rate is very low. No any chip manufacturer upgrade firmware for the user. But you can use the RT809H to copy/clone their whole firmware from a good TV mainboard and writing to another new chip, method same as MTK.

6) **AML:** This TV Mainboard chip solution has not much part number on the market now, just has the part number AML7366 only. Same as the MTK writing method for their firmware.

Note:

a) The Smart TV Mainboard software is built from 3 types of firmware. i) BootLoader (mBoot), ii) Linux Kernel, iii) System Program (main firmware). Normally, the manufacturer provided the USB upgrade main firmware/system program is combined with Linux Kernel firmware.

b) To find the correct firmware for Smart TV Mainboard you must refer back to their Mainboard Manufacturer instruction. Normally, to get correct version of firmware, you need to know:
   i) The TV rear cover sticker information,

ii) TV Mainboard part number and sticker information,

iii) Their sticker stick on the Mainboard. Some flash memory IC surface has stick a sticker there, please don't remove it! Or you can write down the information before removing it. Because it has an important info help to get the correct firmware & their version.

c) If you want to find the firmware, you need to know what's firmware you need to use, for example: compulsory upgrade firmware, mBoot/BootLoader firmware, main firmware, check the firmware include their Panel Parameter data/setting or not, HDMI data & etc.

d) The early models of TV Mainboard their mBoot and main firmware is separated. But the latest model's TV was built-in together into main firmware or the compulsory upgrade firmware.

How to Upgrading/Programming the Universal TV Mainboard Firmware

When we change a new Universal TV Mainboard to a TV, we need to change the firmware to suitable of the TV Panel model. If not, the TV will no display, funny color and display & etc occur. If this is the Smart TV type Universal mainboard, when replaced their flash memory IC or CPU, the TV mainboard need to upgrade their mBoot & main firmware too.

So, the Universal TV Mainboard has their own firmware list to suitable different Panel. If you buy a new Universal TV Mainboard, make sure to tell the seller your TV panel part number. After the correct version and panel types firmware is ready, just copy that file into the USB Pendrive and follow the instruction to update the firmware to the latest one to suitable the TV Panel.

Some of the Universal Mainboard is built-in the different Panel type firmware. Just follow some instruction to change the Panel type without using Programmer or USB update.

How about the Universal TV Mainboard firmware failure?

If this is the problem in this type of Mainboard, you need to use the programmer to do the offline programming to their flash memory IC. Most of the time, you can solve the problem easily if you've that Mainboard firmware.

How Can I Get or Find the TV Firmware?

Before to programming the firmware, make sure this firmware you get are same as your TV:

1) TV Model

2) Mainboard Part number (Important)

3) Panel Part Number (Important)

4) If that's the Smart TV Mainboard, please don't just see the TV model only. Please check their TV rear cover sticker info and the mainboard sticker info stick on it. These stickers information helps to find the correct version of firmware and help to successful upgrade TV mainboard firmware.

* For example: If the firmware same Mainboard Part number but not same the Panel Part number. If that Panel part number also show the same inches Panel, then you should give it a try. Make sure that you backup the old/original firmware first!

You can get the TV firmware from:

1) Forum Social Group/Website- Ask the member who have that model TV, Mainboard part number and Panel part number firmware.

2) ASC/ASP Site- If you're the Authorized Service Provider, you can get the firmware version from company.

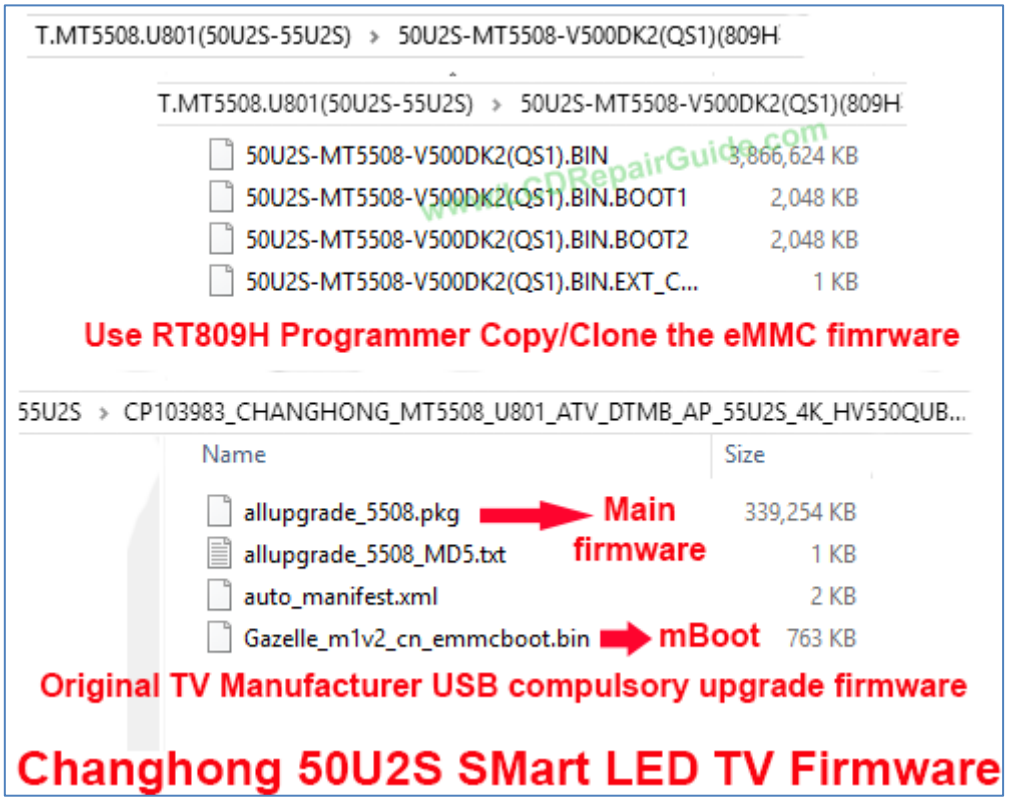
3) Universal Board Seller- If you bought the Mainboard from them, you must ask them to provide such firmware to use.

4) Find Website Selling this Firmware- I found that some of the website they are selling the TV firmware. But the model is not much to choose.

5) Ask Your Local Repairer/Friend- Normally the repairer they will backup some local TV model firmware to prepare future use.

6) Find a Working TV Mainboard and Copy the Firmware from it- You can try to find who/repair friend has this model of TV Mainboard and ask them to borrow the board to copy their working firmware.

What's the Different of Firmware Copy/Backup from Universal Programmer vs Firmware Provided by the TV Manufacturer?



The words of firmware, software, data, program or dump of the memory IC saying by the TV repairer, actually, they are the same thing. Even their "word" actual meaning is different, but use in the TV repairer field, it is meaning the firmware inside the memory IC (I will prefer to use the "firmware").

Most of the TV repairer is confuse that firmware from TV manufacturer and backup from Universal Programmer. How to choose the firmware?

No.	TV Manufacturer Firmware	Universal Programmer Backup Firmware
1.	Provided by the TV Manufacturer support & technical (ASC) website or TV Mainboard Manufacturer (Universal TV Mainboard). Buy online.	Provided by own backup from TV Mainboard. Share by forum members. Buy online.
2.	Get the firmware from support & technical website.	Get the firmware from 2 way, Online or Offline methods. Online method is connecting the universal programmer and TV Mainboard with VGA or HDMI port to AutoISP read their firmware and save as backup firmware. Offline method is removing the memory IC from Mainboard and put the memory IC in the adapter. Follow by put the adapter in universal programmer to read their firmware and save as backup firmware. Online method not all the TV Mainboard can be connected or read their firmware. Because some of the TV Mainboard is locked by password or key. Especially for the Smart TV type Mainboard. For this type of TV Mainboard, the RT809H universal programmer team has created a special thing call “MP software” (Mask Production Software) to solve this problem.
3.	The firmware type: a) TV Mainboard (non-Smart TV) firmware is in many	The Firmware type: a) Most of the firmware is in .BIN format

	formats, like .BIN, .EPK & etc. b) For the Smart TV Mainboard, their firmware is different method to provided to TV repairer. One model of Smart TV Mainboard their firmware has: i) Main firmware (normally download from support website) ii) Compulsory upgrade firmware (normally download from ASC site). This firmware common use in solve the TV stuck logo or reboot non-stop & etc issues. iii) mBoot or BootLoader firmware. This firmware for older model is separated to another firmware. But some latest model TV their Bootloader firmware is combining with main firmware or compulsory upgrade firmware. iv) Be careful some of the firmware not included their screen/panel parameter setting. So after upgrade, you need to manually change their setting or get the correct version firmware with their panel parameter firmware included. v) Some TV manufacturer firmware	b) For the Smart TV type firmware, it will copy by their block per block data, especially in eMMC. So it will separate to several firmware files. c) This firmware not separated by main firmware or bootloader firmware, especially the TV mainboard bootloader is built-in eMMC chip.

	after downloaded is unzip format, like PKG, you need to unzip it first, before you can put it in USB drive to use.	
4.	For Smart TV Mainboard: Firmware not include their MAC address & Key values.	For Smart TV Mainboard: Firmware included the previous TV Mainboard MAC Address & Key values.
5.	The firmware provided by TV Manufacturer is more correct and stable for the TV mainboard . But the weakness is you've the ASC account to download this firmware. If not, you need to buy or ask friend who have the ASC account to help download this firmware. Even you've the account, but you also need to know how to find their TV Mainboard part number, firmware number & etc, especially the Smart TV Mainboard. Also, different TV Manufacturer will use different method to find the correct firmware, too. If you can find the correct firmware to upgrade TV Mainboard, the success rate is very high, besides it has other problem like flash memory, NAND or eMMC is damage.	The firmware provided by the forums or backup by own programmer, it is good to use in non-Smart TV Mainboard. This method has higher success rate in this type of TV. But for Smart TV type Mainboard, it is different. Some of the Smart TV Mainboard they have password locked their device ID on their Bootloader (mBoot) firmware in the memory chip. Not only that, some time the TV repairer will confuse is, when TV mainboard can't upgrade firmware problem occur, is that the firmware incorrect or their Mainboard hardware problem? So lots of them choose to replace whole TV mainboard.

How Do I Know the Memory IC (Flash Memory) is Normal or Abnormal?

Inside the TV Mainboard, it has several type of memory IC. For example: EEPROM (24 series), SPI Flash memory (25 series), NAND flash memory and eMMC flash memory IC. When repair TV Mainboard, how do I know the memory IC is normal or not?

From the previous repair experience, the memory IC problem can divide into two: hardware and software problem!

If Memory IC Hardware Problem:

1) Use the multimeter ohm range & diode range with a good memory IC to compare their ohm & diode values. Yes, you also can also replace it directly to give it a try, too.
2) Use finger to touch the memory IC and feel their temperature, if it is abnormal temperature than before or quite high temperature, better replace it and give it a try.
3) Check their supply Vcc & SDA/SCL line voltages, if found abnormal voltage value, try to remove the memory IC and see the voltage values is back to normal or not. If voltage back to normal, that's mean the memory IC is abnormal. If voltage still same, maybe not the memory IC problem. It could be other components abnormal or the circuit line loop holes leakage or broken.

If Memory IC Software Problem:

1) When try to use USB drive to upgrade the TV Mainboard firmware but it's failed to upgrade with error message (make sure the USB drive and their USB port is normal first). This type of problem, besides the firmware incorrect issue, most of the time, it could be their memory IC abnormal or damage.
2) When try to use the Universal Programmer to read or write (offline method) the firmware in memory IC, if it's failed with message can't detect the IC (make sure the Universal Programmer adapter their contact pins are clean and insert the IC correctly), it is the memory IC abnormal. If show with other error message, it will depend on types of the error message appear. But most of the time, it is the memory IC problem.

3) For the eMMC chip, use the Universal Programmer to read or write this IC, you can use offline method (use an adapter) or flying wires to their DO, DI, CLK, GND & Vcc lines (Refer to their eMMC BoardView). The online method will be using AutoISP from the Universal Programmer to TV Mainboard. If the Universal Programmer show that can't detect IC (make sure to check their adapter contact points and IC contact point clean or not when using the adapter type or flying wires method, eMMC BoardView, make sure the wire connects to the properly points and don't forget to temporary shorted their crystal first), that's mean the eMMC IC is abnormal. Normally, if found bad sectors/block/points inside eMMC IC, the Universal Programmer software will auto hide the bad sectors location and write the firmware in the good location. If found too many bad sectors/blocks inside the eMMC IC, it is recommended to replace it.
4) If the TV with this type of problem, for example: After upgraded firmware TV back to normal, but after several times use, or several days or months the problem come back again. This TV problem is because of the memory IC not stable, or abnormal memory IC of 24, 25 or eMMC (But this type of problem, before confirming is the memory IC, please re-soldering corresponding components or reflow the CPU BGA IC and try again. If still the same problem, so it is confirming the memory IC is unstable problem and need to replace it.

Note:

If the TV problem sometime okay but sometime not (means when turn on TV is normal, power off and turn on again the TV problem appear. This type of problem will not the firmware problem! It must be their hardware (components & circuit line problem, included their loop holes problem) or dry soldering point/join.

How to Soldering & De-soldering the BGA Chip of eMMC, DDR Ram & CPU/MainChip

Nowadays, the latest TV Mainboard has using lots of BGA package IC/chip. For example, the eMMC, DDR RAM, CPU/Mainchip & small amount of BGA package NAND chip. All these IC have higher damage rate in TV Mainboard. So, it is important that for TV repairer know how to soldering & de-soldering the BGA package IC in TV Mainboard. Compare to TSOP 48-pins NAND chip, it is easy to use the T12 type soldering iron to soldering & de-soldering and remove it from TV Mainboard.

If the company has high budget to buy the tools or high volume on repairing the Mainboard with BGA package chip, will highly recommend buying the BGA Machine. Because using this type of BGA Machine can get higher successful rate on soldering or de-soldering the BGA IC.

Normally, when you bought the BGA Machine, the seller/manufacturer will provide training course on how to use this machine. So, with this chapter, it is explaining more information on how to manually to do soldering & de-soldering BGA package chip with low cost method. This method called as "How to Handmade Replace the Small & Medium Size of BGA Chip in TV Mainboard".

How to Handmade Replace the Small & Medium Size of BGA Chip in TV Mainboard

This method is suitable use in TV Mainboard such as BGA package: DDR RAM, eMMC chip, CPU/MainChip. But it is not suitable for the Smart TV CPU with big sizes BGA chip, for example MSD6I981, MSD6A801, MSD6A600 & etc. Recommend this type of CPU BGA chip using the BGA Machine to replace it. Because for this type of big BGA chip, with this method to replace their CPU the success rate is very low!

Below is an example on how to replace a BGA CPU on TV Mainboard MST6M182VG:

A) All Tools to Use:

Pre-Heating Platform

There are many types of the Pre-heating Platform these days. For example, like the photo below:

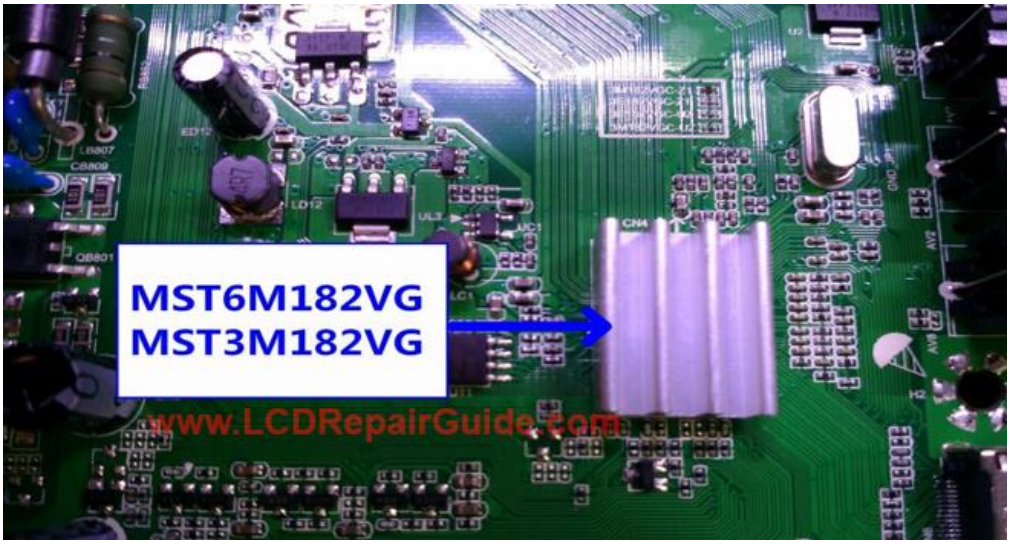
Some of the TV repairer, even use LED Light Bulb pre-heat pad as a pre-heating platform for BGA IC. But their success rate is not sure.

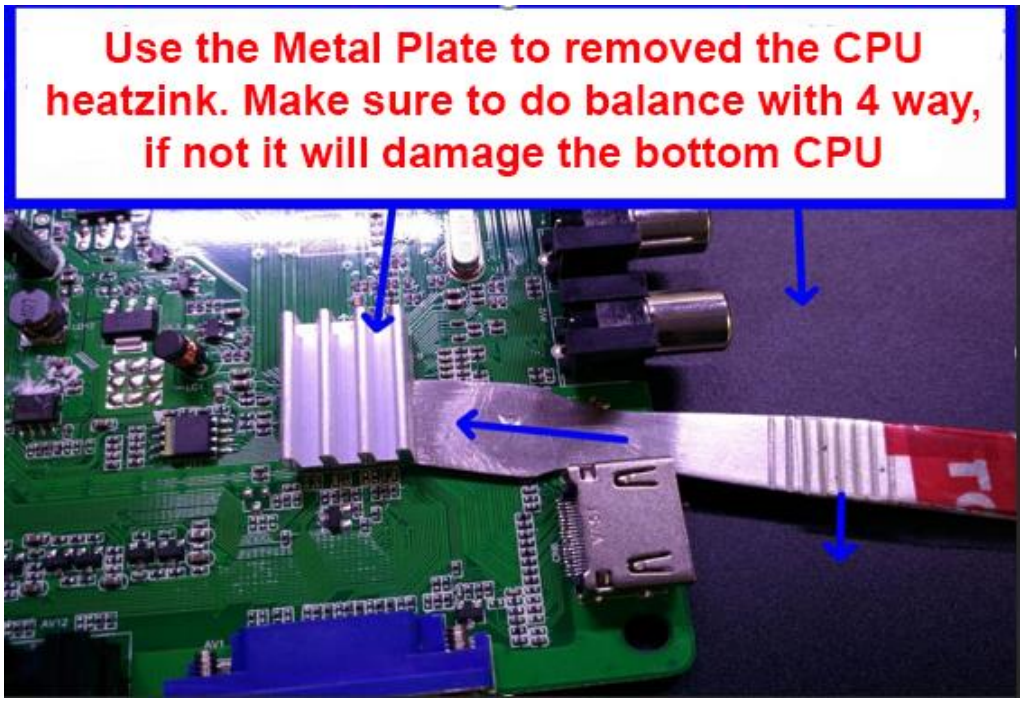
2 in 1-Soldering Iron & Hot Air Gun Rework Station

Accessories

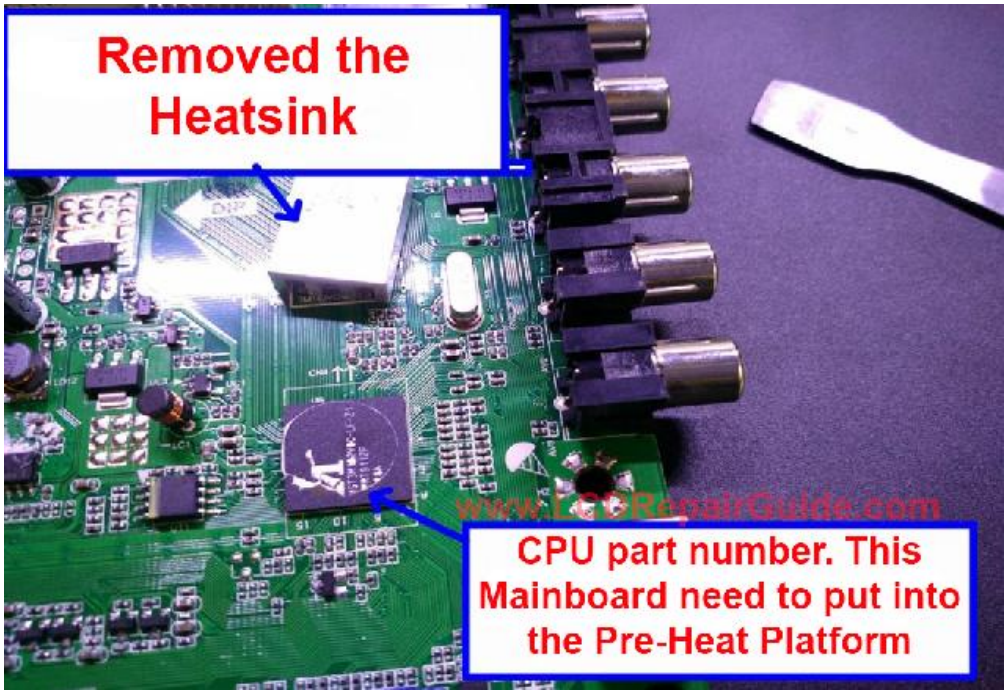
B) Step-by-step on how to replace the TV Mainboard CPU (not Smart TV Mainboard type CPU)

Below is the example on how to replace TV Mainboard CPU MST6M181VG & MST3M182VG (both CPU are compatible to use).

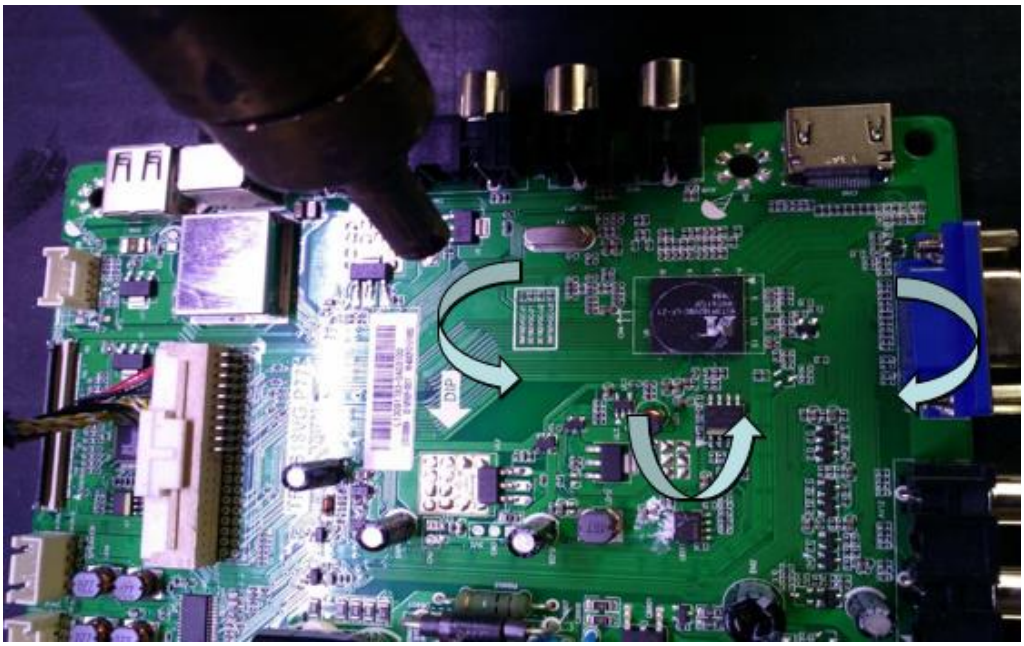




Use the metal plate like the photo above or similar tool to remove the CPU heatsink. Sometimes, also use with the hot air gun to easy remove it.



After removed the heatsink, you can see the CPU/MainChip part number. Next step is to pre-heating the CPU



Method 1:

- Use the hot air gun, temperature 350°C, air speed (maximum, but it will depend on your tool. So, you need to do more practical on your tool to find the good temperature and air speed to successfully soldering or de-

soldering BGA chip). Be careful hot air their air speed do not cause the small SMD component “fly” from the Mainboard!

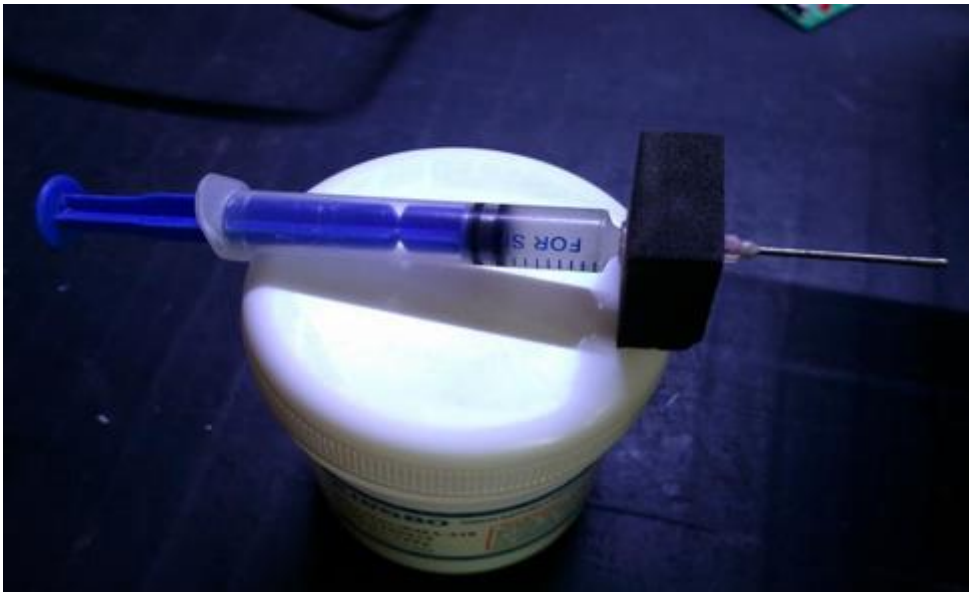
- Do not blow the hot air directly to BGA chip but blow to their corresponding area first. If not, it will burn the BGA IC.
- The distance of hot air gun needle and BGA IC is about 3cm. Must use hot air gun and blow the hot air with turn circle 360° non-stop. Remember, blow hot air to BGA IC outside area first as pre-heating the Mainboard.
- Use the hot air gun blow about 5 minutes as pre-heating the Mainboard, after that use the finger touch VGA metal shield or similar port metal shield, if finger feels very hot, then the hot air gun needle can move to BGA IC and blowing the chip with turn circle 360° too.
- Use the tweezer slight shaking the BGA IC, and at the same time continuous blow the hot air non-stop. Until the tweezer can feels the BGA can moving, then use the tweezer to remove BGA IC from the Mainboard.

Method 2: Highly recommend use this method to do the soldering & de-soldering the BGA IC

- Using the Pre-Heating Platform as pre-heat the BGA IC. This tool is not expensive, and it can use to remove the LED Light bulb from LED Strips

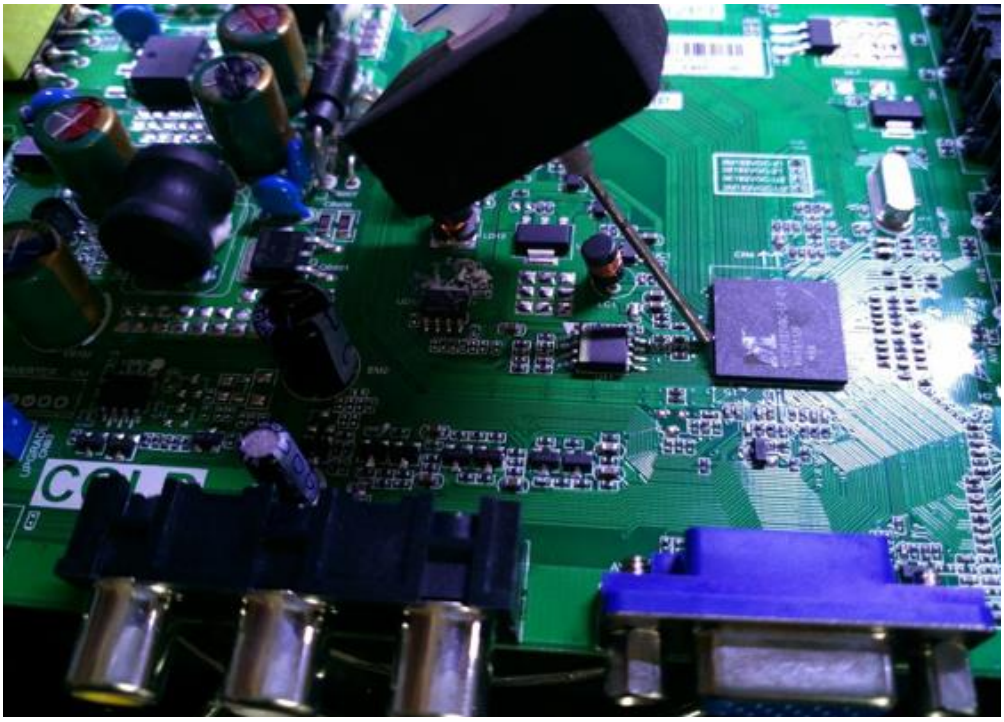
easily. The Pre-Heating Platform also safety & easy to use to pre-heat the BGA IC. The above photo is a modification pre-heating platform tool.

- Adjust the Pre-Heating Platform to about 280°C, waiting until the pre-heat indicator light off. Use finger to touch the VGA metal shield will feels very hot, this mean the pre-heating platform reach their temperature set. After that inject some flux paste into the bottom of BGA IC.

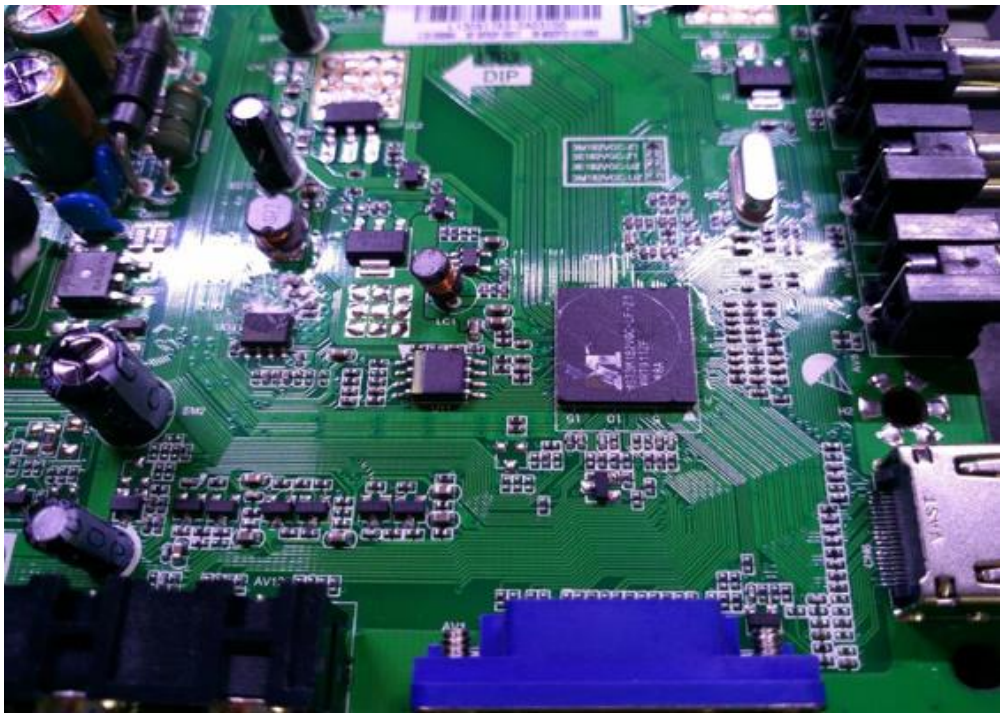


The quality solder/flux paste put into the syringe like photo above. This is a small tip to let use easy control to inject the amount of solder paste into BGA IC.

Because when put too much amount of solder paste on BGA IC & mainboard, after next step while need to clean them it will eat more time to do that. The black sponge is to use to prevent the syringe needle drop the paste into the table when put it on the table.



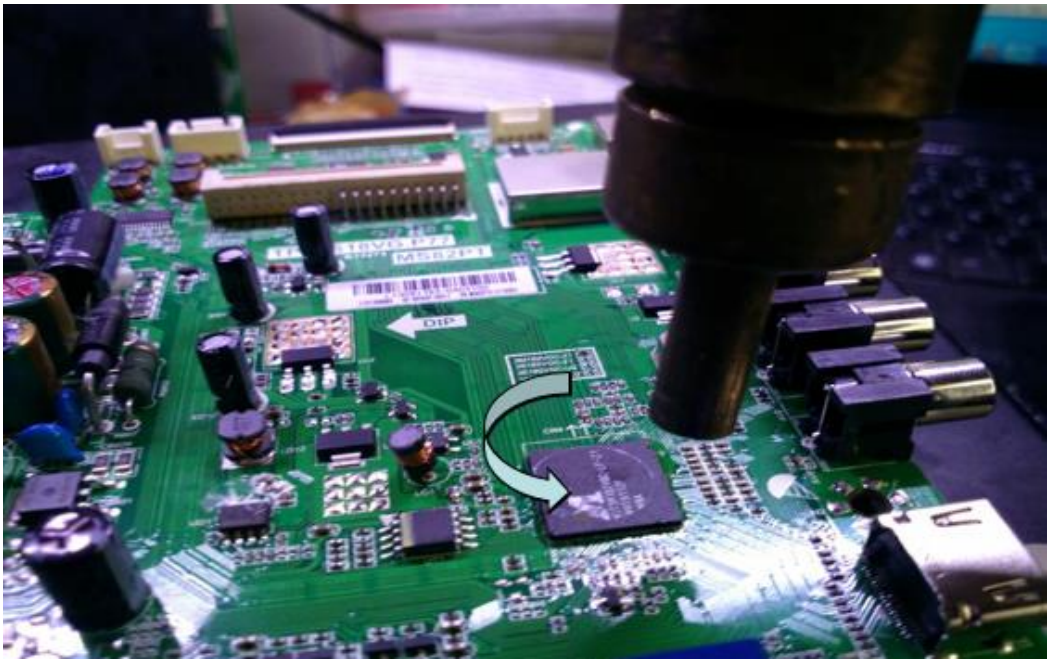
When the Pre-heating Platform reach the temperature set before, the pre-heat indicator light will off. This is the time to inject some solder paste into surrounding BGA IC. Please do not inject too much solder paste around the BGA IC just fine is ok.



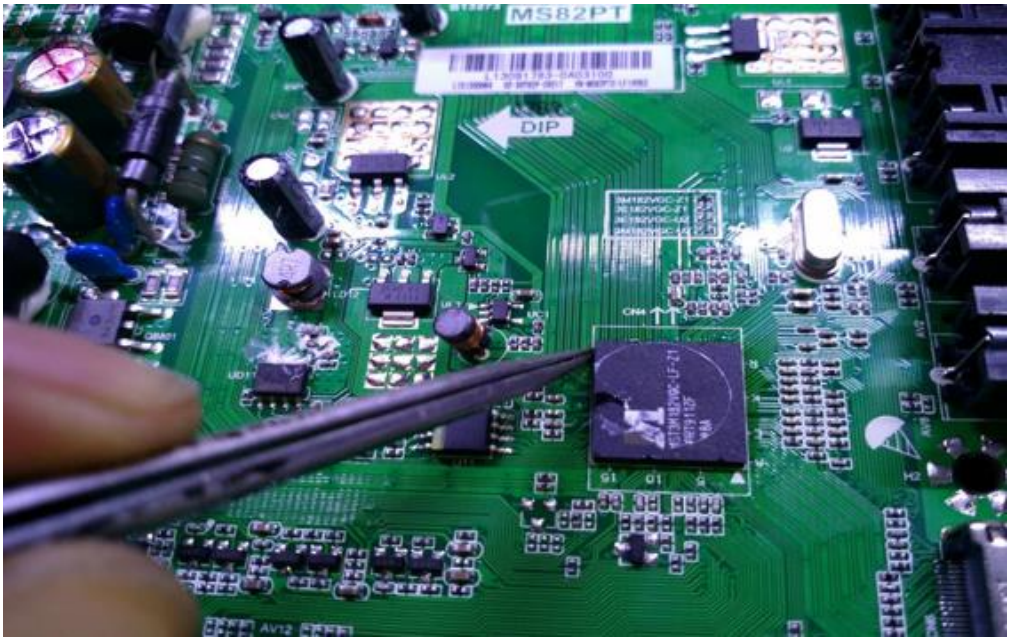
Inject some solder paste into BGA IC when it is in heat. You can see the solder paste will absorption by BGA IC. Use the syringe to control the solder paste

amount by slowly inject the surrounded of BGA IC until it is no more absorption of the solder paste.

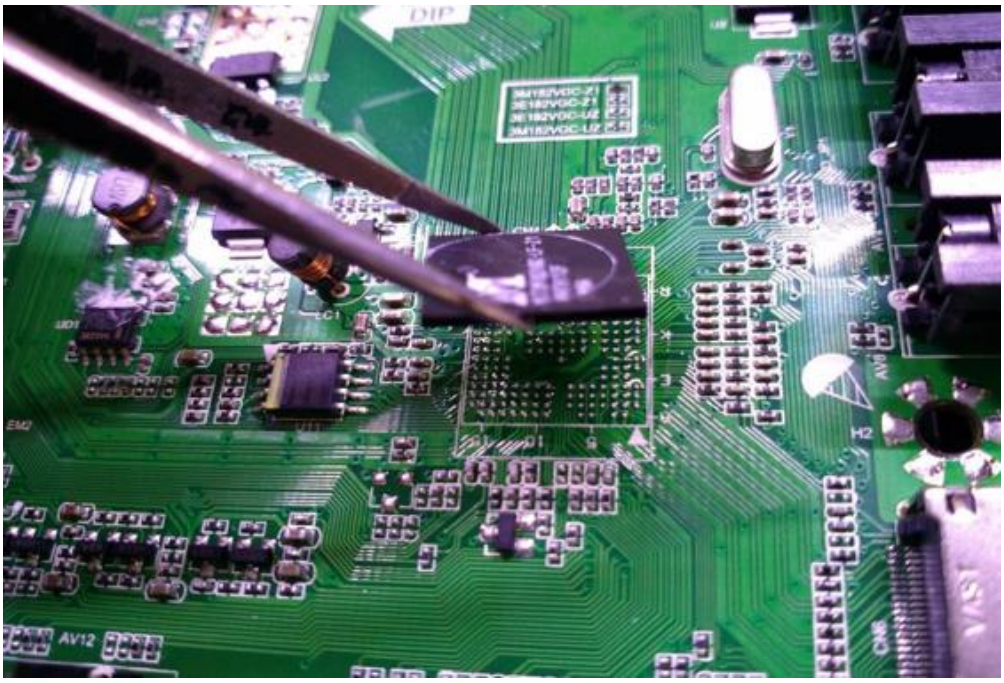
Follow by use the hot air gun and adjust the temperature to 350℃, air speed about middle level and blow to the BGA IC with turning circle 360°, non-stop.



Blow the hot air to BGA IC with turn circle 360°, non-stop until see the solder paste come out from the BGA IC. This time, use the tweezer to slight shaking the BGA IC, see the BGA IC can moving or not with blowing the hot air non-stop.

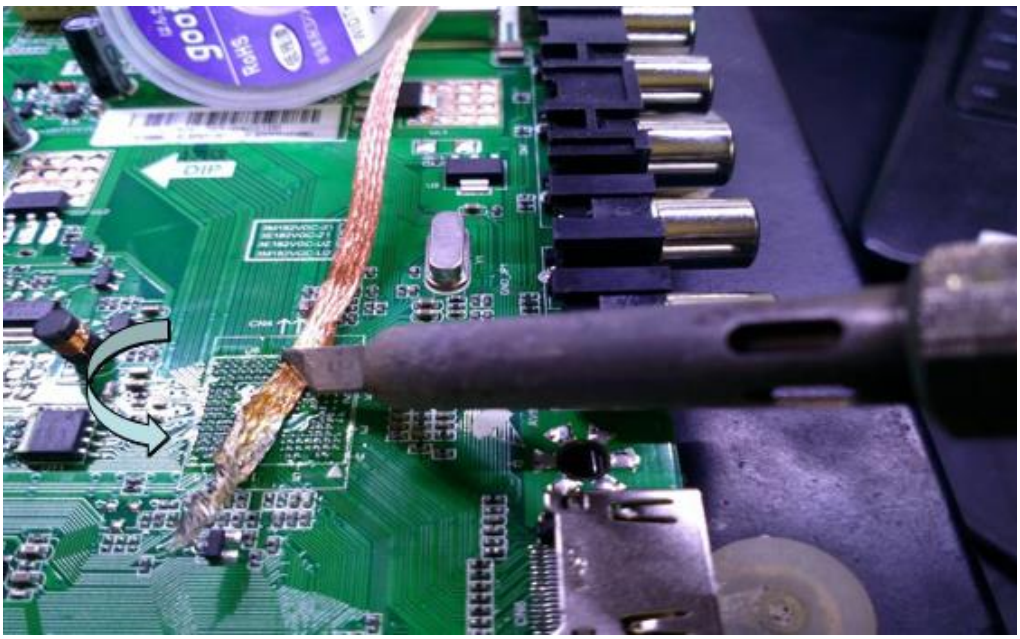


If the tweezer can feel the BGA IC moving, this is the time to use tweezer remove the BGA IC from Mainboard.

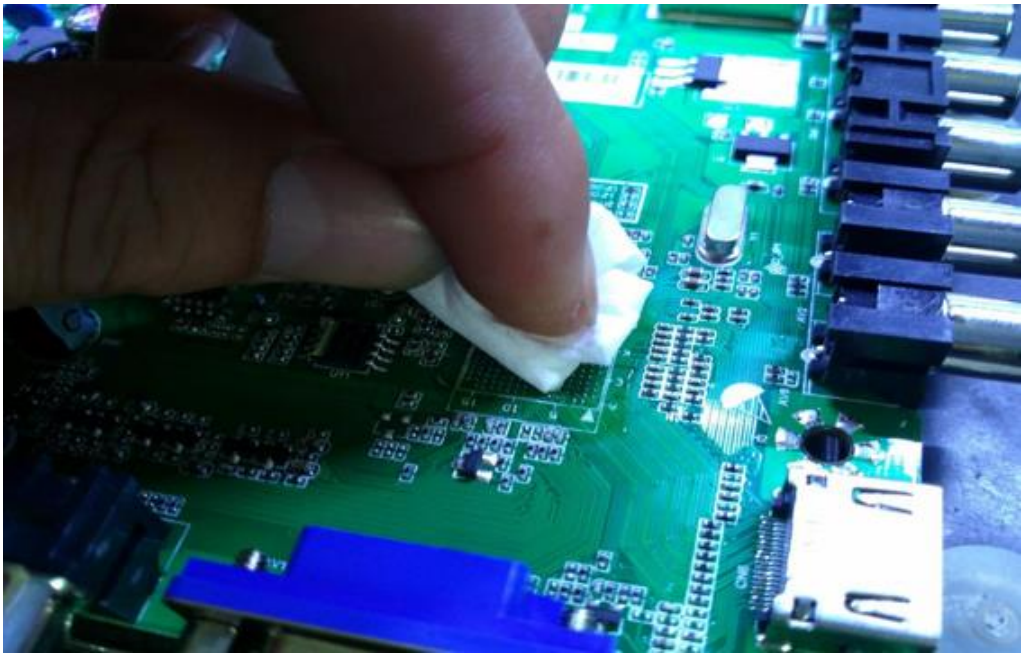


When the tweezer can feel the BGA IC moving, this is time to remove the BGA IC. Be careful to remove the BGA IC with take “UP’ and do not remove from left, right, front or rear side to prevent also remove the surrounding small smd components.

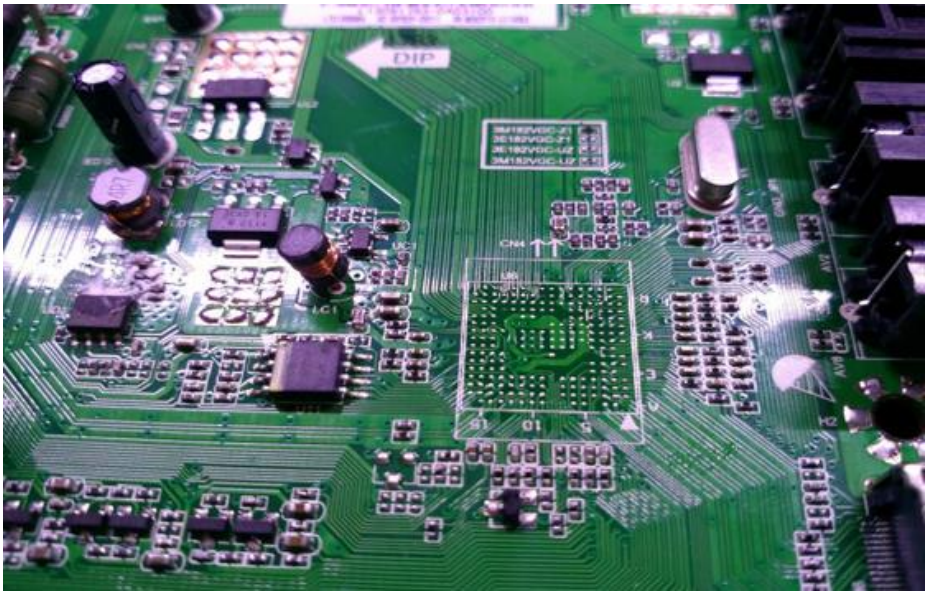
After removed the BGA IC, it is time to clean the Mainboard BGA location their residue solder. Set the temperature to about 400℃ and use the soldering iron to clean residue solder on mainboard.



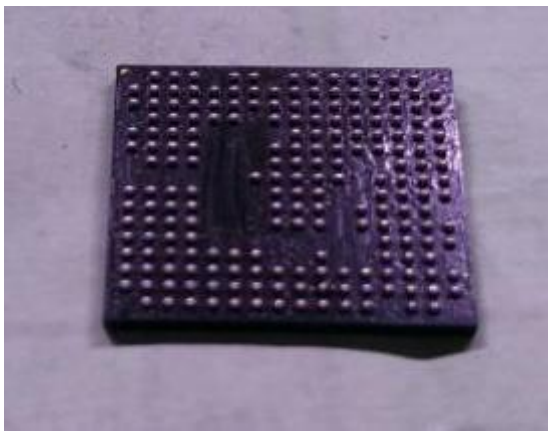
Use the soldering iron with about 400℃ and the Goot Wick to clean the Mainboard BGA location residue solder. Be careful not put too much pressure on the soldering iron on Goot Wick to clean the residue solder, if not it will damage the mainboard BGA contact points.



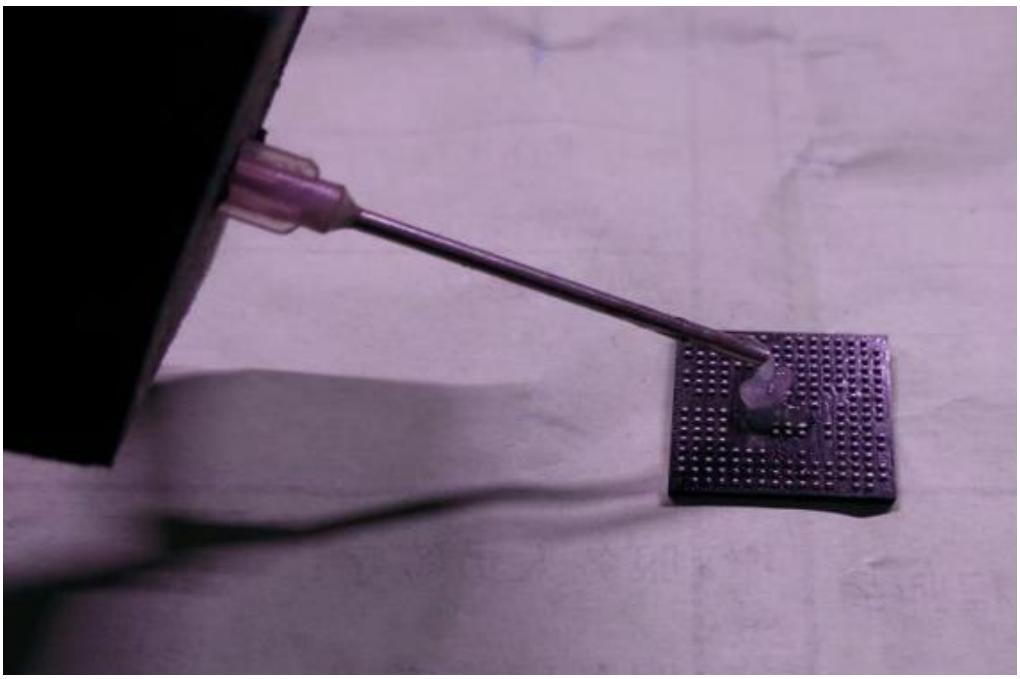
After cleaning all the residue solder on the Mainboard BGA location, use alcohol or PCB cleaner with tissue paper to clean the solder paste until this location totally clean.



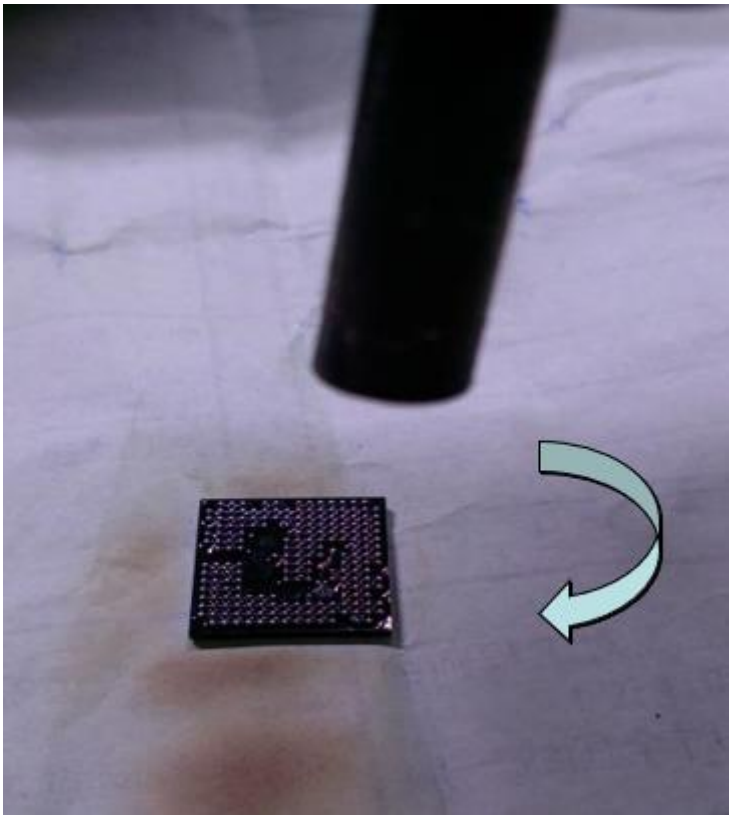
After cleaning all the residue of solder and solder paste, it is ready to put a new or working BGA IC now. Again, use the magnifier to double check all the contact points are clean and no any solder paste.



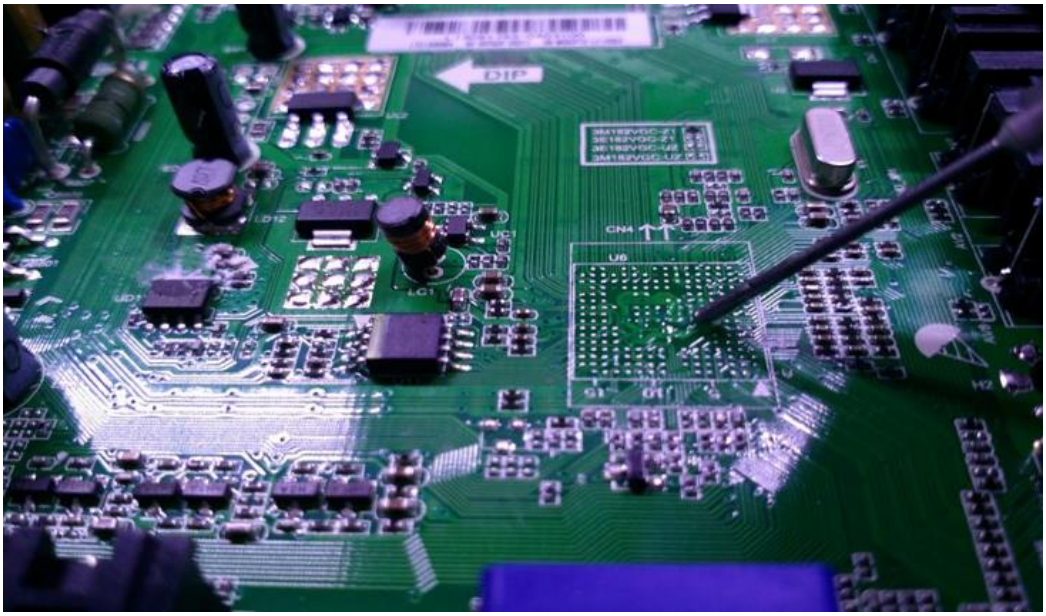
If this is a new BGA IC, normally, their BGA come with the tin ball on BGA IC. If that's the BGA IC remove from another Mainboard or use unit, then it is needing to do the reballing on the BGA IC. This method will show in another article on this ebook.



Before put the BGA IC into Mainboard, inject some solder paste on the BGA IC tin ball area.



After that use the hot air gun (about 200~250℃) to blow the BGA IC tin ball paste, until the solder paste looks melting. The distance of hot air gun needle and BGA IC is about 3cm and turn circle 360 non-stop. After all solder paste melting evenly on the BGA IC, it is time ready to put it into the Mainboard.



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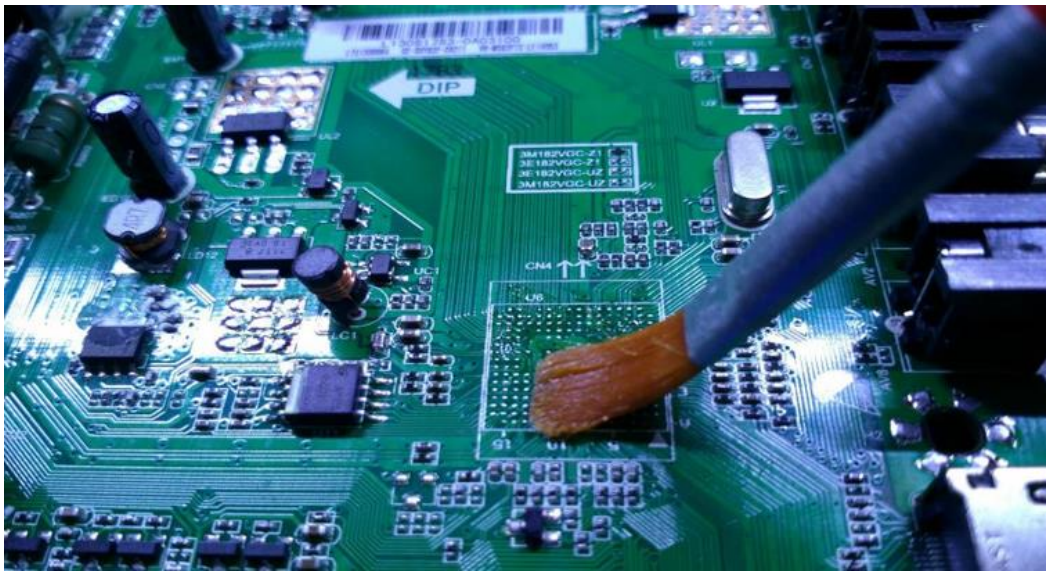
After the new BGA IC ready, put some solder paste onto the Mainboard BGA IC location. Don't inject too much solder paste on the mainboard, because their BGA IC has some solder paste on the tin ball and if put too much solder paste it will cause the BGA IC too easy to move until hard to auto adjust to the right contact points in BGA IC.

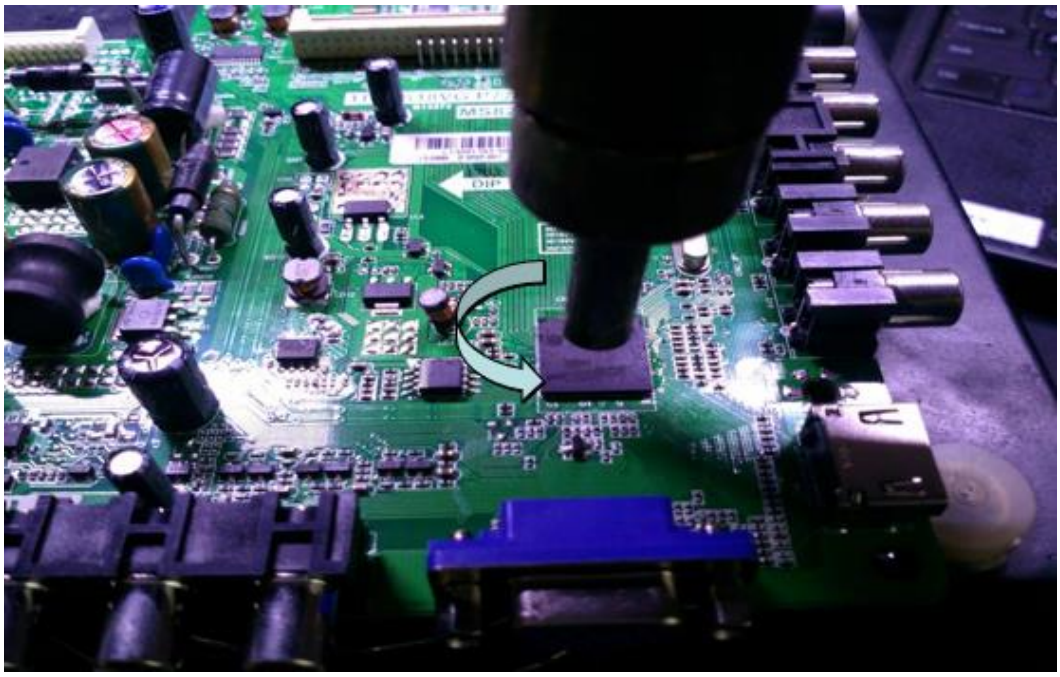


Apply the brushes evenly to those solder paste on the location of BGA IC.

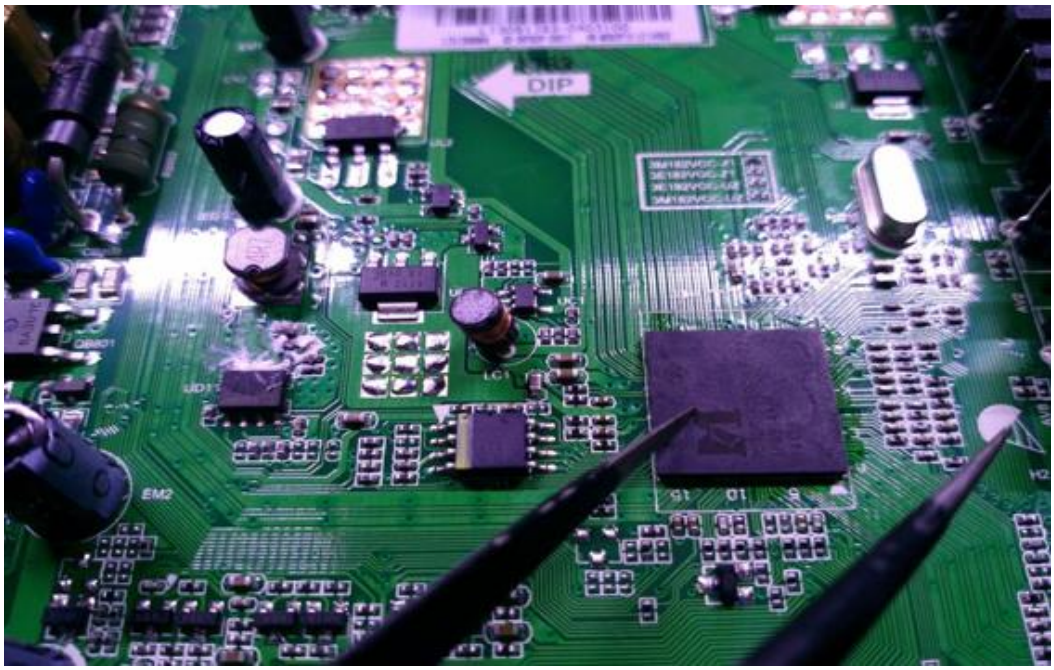
Put the BGA IC on the Mainboard BGA location with the right position of the chip and mainboard. Please make sure the BGA IC white dot is same as the mainboard BGA IC location there has a white dot or triangle symbol. Adjust the BGA IC to put it in the right position.

The soldering of BGA IC method also need to use pre-heating platform to pre-heat the mainboard with same as de-soldering BGA method before.

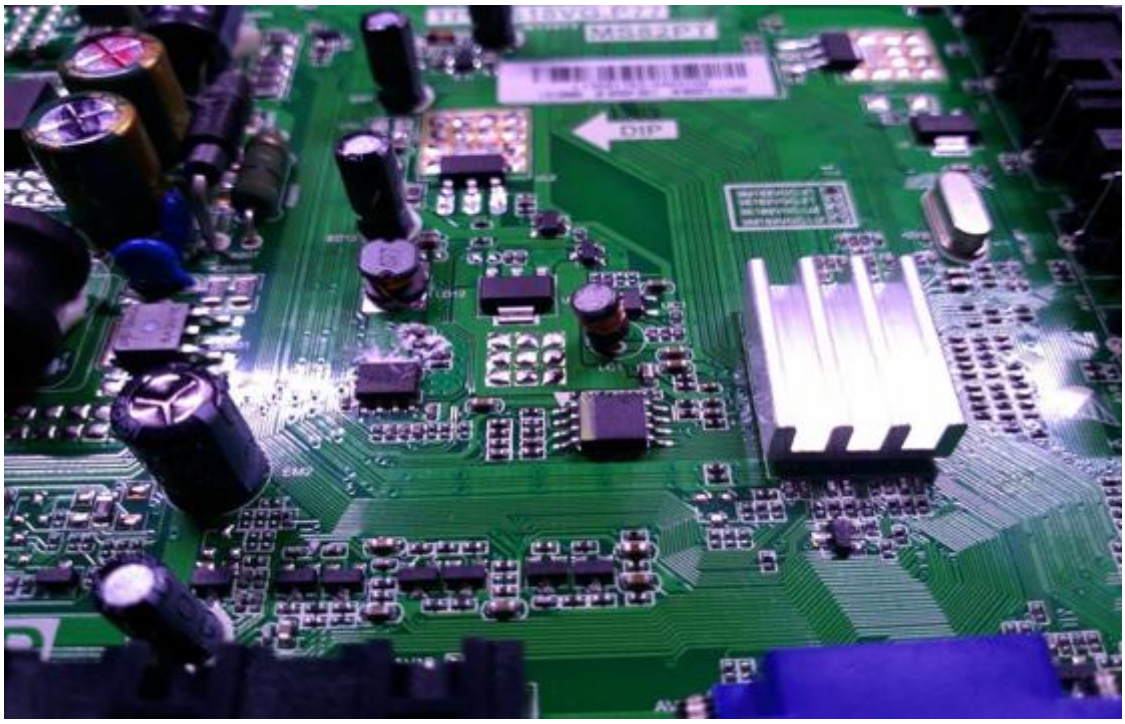
When finger touch the VGA metal shield feels very hot, this is the time to use the hot air gun to blow the BGA IC now.



Use the hot air gun with 350℃, air speed is middle level, blow to BGA IC and turn circle 360° non-stop. The distance of hot air needle and BGA IC is about 2 cm. As usual, after about 2 minutes the bottom BGA IC will come out the solder paste.



When BGA IC come out the solder paste while blowing by the hot air gun, this is the time to use tweezer to test the BGA IC whether it can feel moving or not. If yes, then stop the hot air gun and pre-heating platform. Remember, when use the tweezer to do slightly shaking on BGA IC, make sure do not use tweezer press down BGA IC, just can slightly shaking to left right or front rear only.



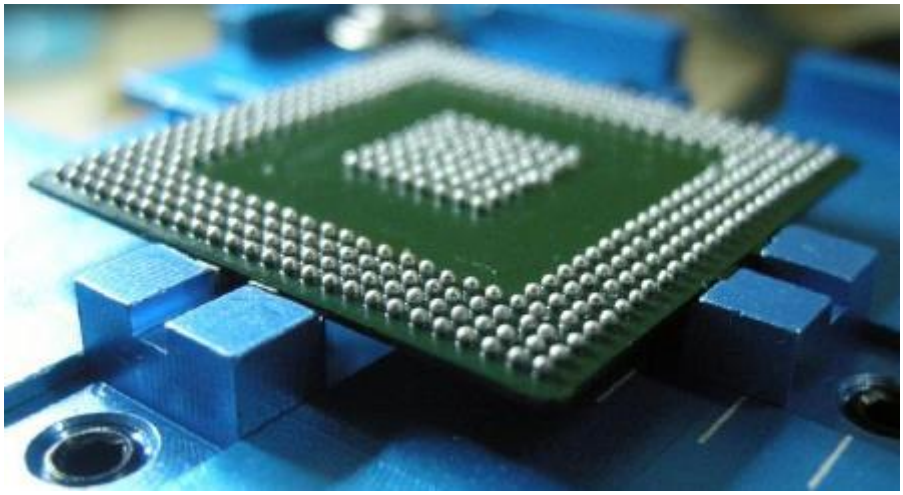
After the BGA IC is cold, turn the TV Mainboard and check the problem solve or not. Please do not test long time of the TV Mainboard, because the heatsink is hasn't put it back yet. If TV Mainboard okay now, then use the 704 glue with thermal grease to put back the heatsink on BGA IC and burn test the TV for several hours or days.

Notes:

1) The small sizes of BGA IC like DDR RAM & eMMC use the above method to de-soldering or soldering chip. But the temperature will reduce to 250~280ºC and the time use will become short compare to CPU BGA IC.
2) Be careful some of the TV Mainboard design their thick size is very thin. So with this type of TV Mainboard, you need to reduce the temperature and the time to pre-heating and blowing hot air. If not, it will cause the TV Mainboard is deformed.

3) Each brands of repair tools their accuracy is different, so you need to do more practical to find out what's the best temperature and air speed to do the BGA soldering and de-soldering job. At the same time, when do more practical it will short the time use to finish the BGA soldering & de-soldering job compare first time to do that. Also, it can improve the high success rate on this BGA job.
4) If want to buy the CPU of TV Mainboard, be careful the source of CPU IC (BGA type), because a lot of fake (or call it bad IC) CPU IC (BGA) in the market now. That's why it will increase the failure rate on replace BGA IC too.
5) Also check with the BGA type is Lead or Lead Free. If that's the Lead Free type BGA, the temperature needs to increase about more 20ºC and use the lead free solder paste type.

How to Reballing the BGA Chip



A) Some of the tools are same as the above article, but the below tools are different:

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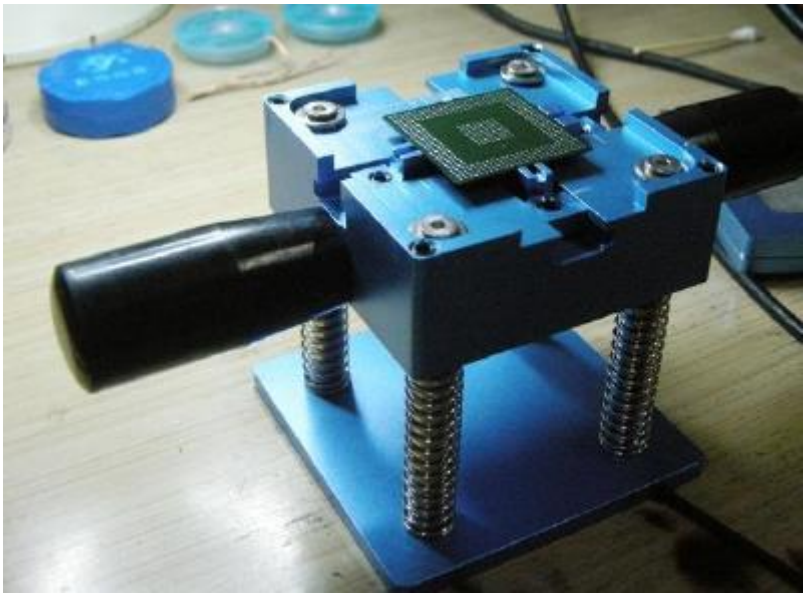


BGA Reballing Fixture

BGA Tin Ball with different sizes and Solder Paste

The tin ball has various type of sizes to choose.

Sparkle Paste

The Sparkle Paste is a special paste with tin material inside. It is no need to use the tin ball to do the reballing on BGA IC. Just put the sparkle paste on the BGA IC with BGA Reballing Stencil is okay.

B) Step-by-step on how to reballing the CPU, DDR & eMMC BGA IC on TV Mainboard

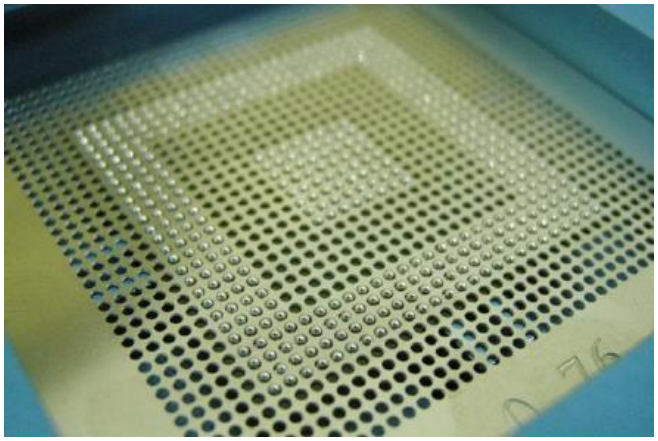
Get a good BGA IC from another TV Mainboard or buy a used BGA IC online

Lock tight BGA IC on the BGA Reballing Fixture for easy to do the reballing process.

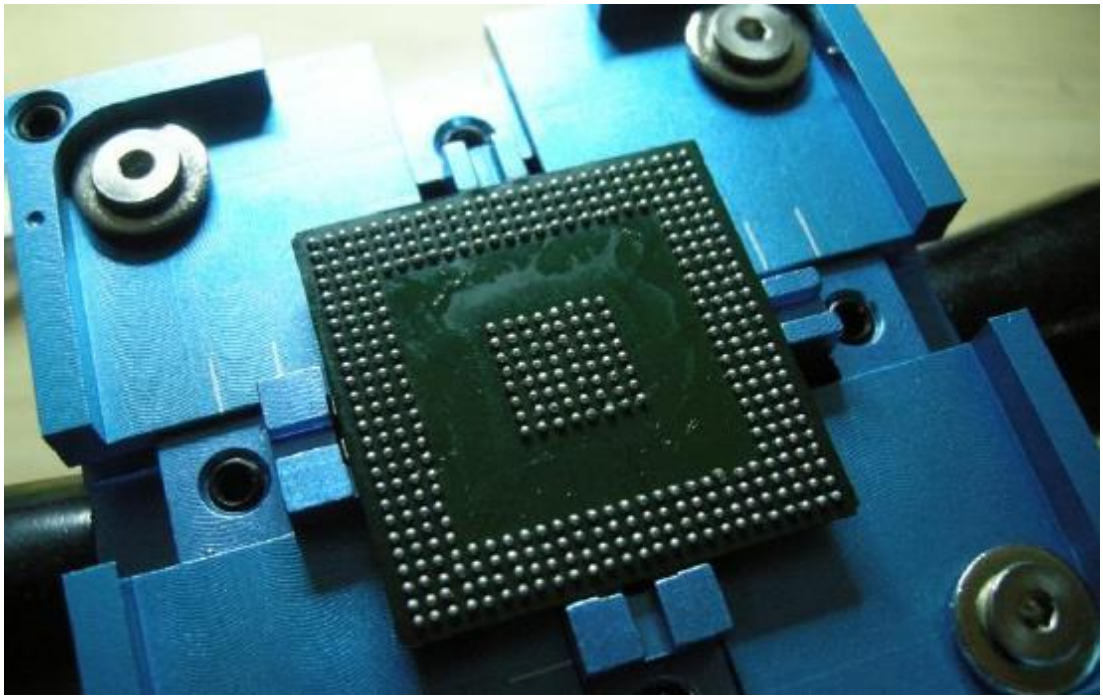
Make sure the BGA IC contact points all clean and no any solder paste. If it has some residue solder there, like previous steps to cleaning it until clean.

Apply the brush evenly to those flux

Prepare the correct size tin ball for BGA IC



Put the Tin Ball on the BGA Reballing Stencil with BGA IC



Remove the BGA Reballing Stencil, use the Hot Air Gun with slowly increase the temperature to 200~250ºC, low or middle air speed. Blow the hot air to BGA IC tin ball until it is looks like melting.

After finish reballing the BGA IC, use magnifier double check their tin balls condition is good, clean and align in the right position. The BGA IC is ready to use now.

The latest technology is to use the Sparkle Paste to put on the BGA IC with BGA Reballing Stencil only, no need to use the tin balls. Other steps are same as above. Please see the next page:

The MSD6A928 CPU is ready to use in BGA Machine now. Use the new tools Pre-Heating Platform and Sparkle Paste to do BGA Reballing will save lots of time and increase the success rate.

Notes:

1) For the BGA IC Soldering & De-soldering, BGA Reballing, all these things need to do more practical to improve your skills. Also know how the tools performance is important too.
2) Again, be careful to the fake TV Mainboard CPU (BGA type). If will cause you suspect your skill in doing the BGA soldering & de-soldering. Because you will didn't think that looks new CPU (BGA type) spare part is the fake one!
3) Always test your tools performance first, because every tools/equipment their temperature & air speed accuracy percentage are different. So you need to do more practical to get your tools in top performance and increase the success rate on BGA soldering.
4) Each TV Mainboard quality are different, if you know that TV Mainboard their thickness is so thin, then reduce the hot air gun & pre-heating temperature to suit that TV Mainboard. If not, the TV Mainboard will be deformed and beyond repair.

Collection of 3D Smart LED/LCD TV Repair Tips

No.	TV Brands	Refer to this Number
1.	CHANGHONG	1,2
2.	HAIER	3, 4, 5
3.	HISENSE	6,7,8,9,10,11,12,13,14
4.	LG	15,16,17,18,19
5.	SAMSUNG	20
6.	SANYO	21,22
7.	SHARP	23
8.	SKYWORTH	24,25
9.	SONY	26
10.	TCL	27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44, 45,46
11.	TOSHIBA	47,48,49,50,51
12.	TP.VST.PB901 (Universal TV Mainboard)	52

No.	TV Symptom/Problems	Refer to this Number
1.	No Power	11
2.	No Display	4, 6, 10, 11, 15, 17, 48, 52
3.	TV Can’t Start-up	1, 8, 24, 28, 33, 36, 50, 51
4.	Abnormal Display Problem	6, 34, 37, 38
5.	TV Stuck on Logo Problem	2, 25, 27, 35, 40, 42, 44
6.	TV Logo Appear and then Reboot, non-stop to Reboot	25
7.	TV Reboot Non-Stop Problem	19
8.	TV Turn On then Shutdown	20, 41, 43
9.	TV Randomly No Display Problem	10, 47
10.	TV Blue Screen Problem	18, 47
11.	TV No Display with Red LED Light Flashing	15
12.	TV Start-up with Logo, after that No Display/	13, 26, 48, 52

	Grey Display	
13.	TV Sometime No Display, Backlight Problem	21, 48, 52
14.	TV Display Partial Area Darkness Problem	3
15.	TV Channels Problem	5, 7, 16, 31
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17.	TV Randomly Hang/Crashes Problem	9
18.	TV No Sound or Sound Abnormal Problem	16, 29, 49
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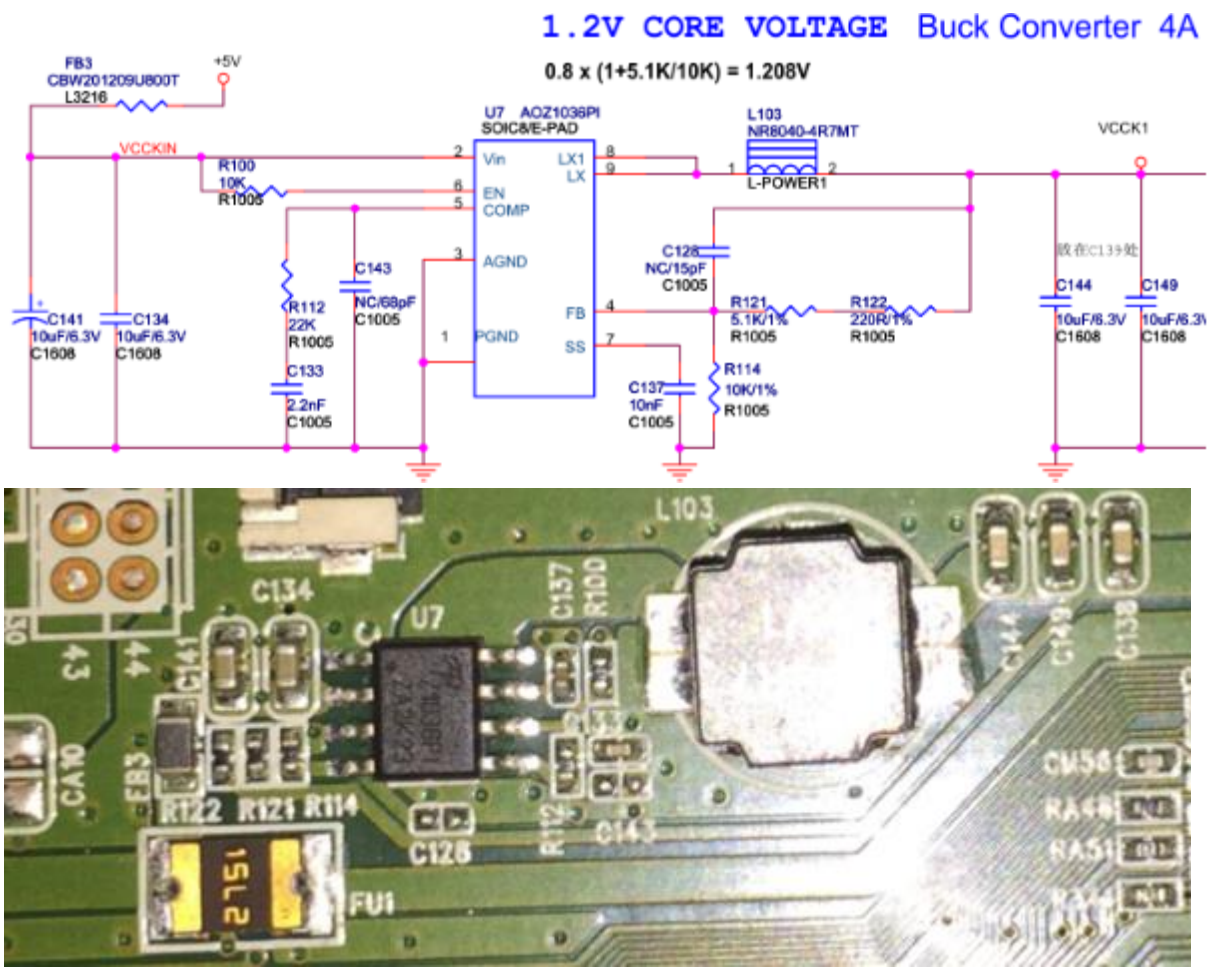
1) **Brand & Model TV:** Changhong 3D42A4000IC Chassis LM38i Smart LED TV

   Symptom: TV Won't Start-up

   Repair Solution:
   Check the TV Mainboard Start-up Log with universal programmer & software (SecureCRT), but no any output from this TV Mainboard. Check the TV Mainboard LDO & DC-DC circuits found VCCK voltage no available. Check the U7 pin-5 has 2.45V (normal is 0.95V), pin-4 has 5.15V (normal is 4.99V), pin-8 has 0V (normal is 1.27V). The ohm value for VCCK to GND is 90 ohm (normal). Replaced the U7 (AOZ1036), VCCK has 1.2V output now. This TV problem solved.



2) **Brand & Model TV:** Changhong LED42B2000I Chassis ZLM38 Smart LED TV

Symptom: TV Stuck on CHANGHONG Logo

Repair Solution:

Power on the TV, the display just shows the CHANGHONG logo and hang there. First, try to upgrade their main firmware but unsuccessful.

This time upgrade their Bootloader firmware first, and it is success upgraded. Now try to upgrade their main firmware, but still unsuccessful. Check the TV Mainboard Start-up Log, it is show something like “No valid boot image”. Suspect use the wrong Bootloader firmware in this TV. Go to the Changhong service website to download another Bootloader firmware for this TV. Again, upgrade their Bootloader firmware successfully. Follow by upgrading their main firmware and this time is successful upgraded their main firmware. Compare both Bootloader

firmware file size, the good one is about 744KB, another bad cannot upgrade bootloader firmware file size is about 735KB. Finally, this TV problem solved!

3) **Brand & Model TV:** Haier LD32Y3100 LED TV

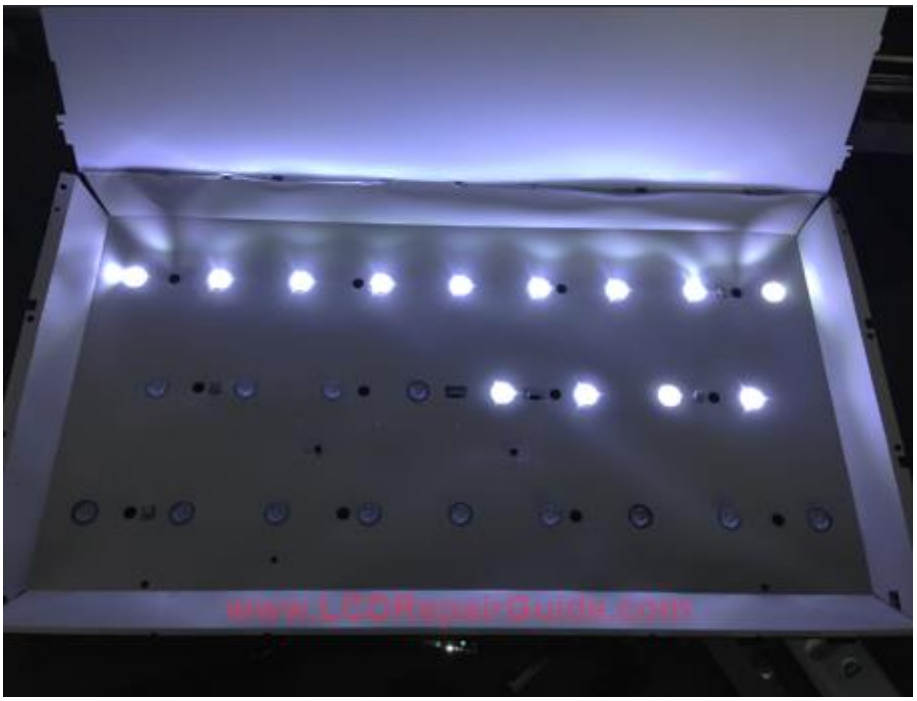
Symptom: Display Partial Area Darkness Problem or Backlight Flashing Problem

This TV screen using the LSC320AN02 panel.

Repair Solution:

Most of this display problem in LED TV is causing by their LED Strips or LED light bulbs open circuit or their cable connector dry soldering pins. This is because due to the TV long time use and causing high temperature in the backlight module. Another important reason is the material quality use in TV Backlight module. Some serious case is the LED light bulbs short circuit and causing their LED driver board burnt too. If the LED light bulbs damage, then replace the LED Strips. If their LED Strip connector dry soldering pins problem, just re-soldering the connector pins and make sure the socket can fit into the connector without loosen. Sometimes, need to use some glue to compaction their socket & connector.

For this Haier LED TV problem, their LED light bulbs is open circuit and need to replace the LED Strips to solve the problem. Can I just replace the LED light bulbs only? Yes, it can just replace the LED light bulbs, but make sure to check the others LED light bulbs condition. If not, the TV cannot use longer, and it come back again in your workbench!



4) **Brand & Model TV:** Haier LE32B90 Chassis 6M181 LED TV

Symptom: No Display
The TV is no display, but the backlight is lit.

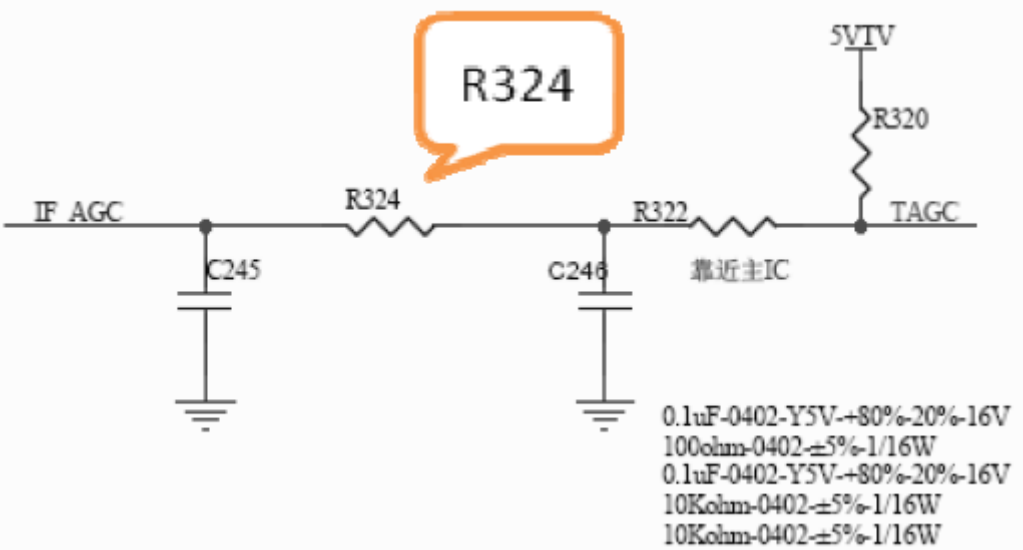
Repair Solution:
Check the TV PSU board output voltages normal. Measure the T-CON Vcc pin is 0V! Trace it back to TV Mainboard LVDS12V still no voltage 0V. Follow by checking the 12V source from PSU through R105 has 12V there. Again, trace this supply line to the MOSFET (X7GA 1H) work as on/off switch for PANEL voltage supply. Check this MOSFET and found it is open circuit. Replaced it with a good one (or use the AO3401 as an equivalent), this TV no display problem solved!

5) **Brand & Model TV:** Haier LE32S3500H Chassis T.MS6N181.6A TV

Symptom: TV No Signal and Cannot Search TV Channel

This TV in TV shows No Signal and cannot search the TV channel. When the TV use different input like AV or HDMI, their display and sound are normal.

Repair Solution:
Check the TV Tuner pin-2 Vcc has normal 5V input. Follow measure their pin-5 & 6 BUS lines also normal. When check the pin-2 of Tuner, AGC voltage has nearly 0V! It is abnormal for AGC voltage. Normally, it has about 5V there. Check the AGC circuit line components, R320, R322 & R324, found the R324 is open circuit. After replaced the R324, the TV Channel No Signal problem solved.

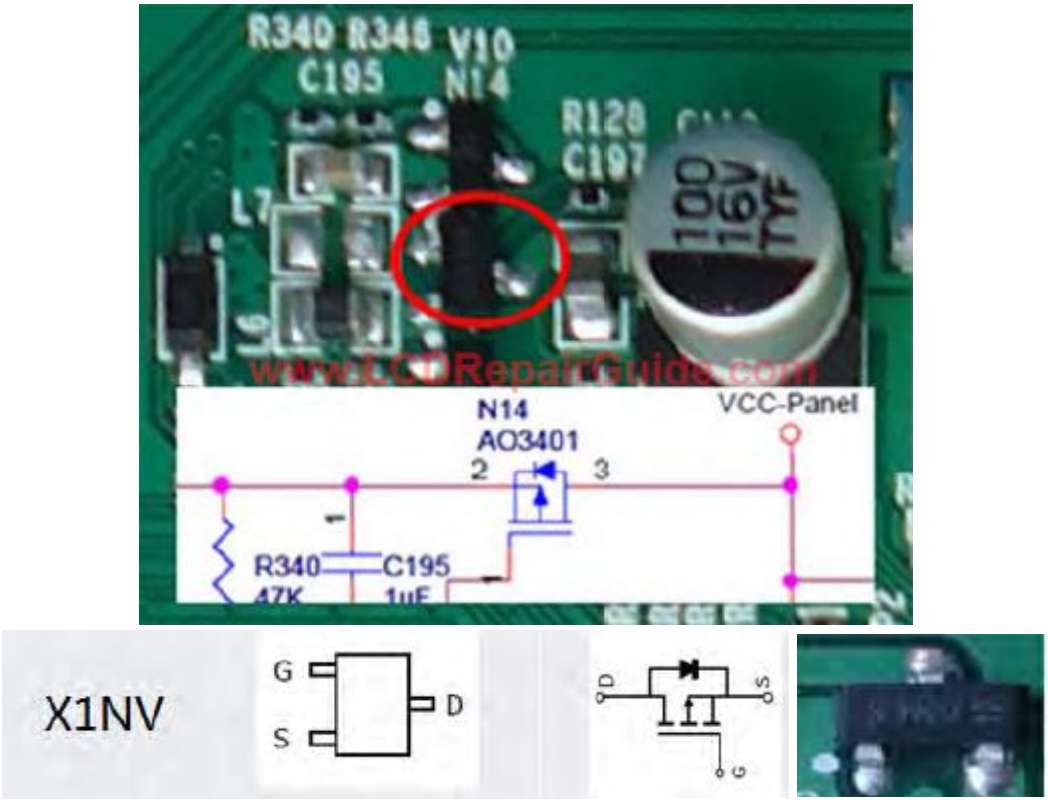


6) **Brand & Model TV:** Hisense LED32K01 LED TV

Symptom: No Display & Abnormal Display
This TV Mainboard part number is: RSAG7.820.2242, now changed to RSAG7.820.4359 with MST6M48 solution.
Most of the time, this TV problem is No Display, but backlight is lit.
When the TV got display, the display show as gloomy or faint.

Repair Solution:
Use the EXV2010 TMRT tool to test the TV Mainboard video output or check the T-con top 5 voltages. When the TV has abnormal display, check the T-con Vcc input, it is just 11.4V only! When the TV is no display, the T-con Vcc input voltage is 0V! Trace the T-con Vcc supply line back to TV Mainboard, check their N14 (AO3401) and it is working as PANEL voltage on/off switches. When TV no display, N14 input has 12V but output is 0V. If the TV got abnormal display, N14 input has 12V, output is just 11.4V.

Replaced the N14 (AO3401), the TV No Display & Display Abnormal problem solved!



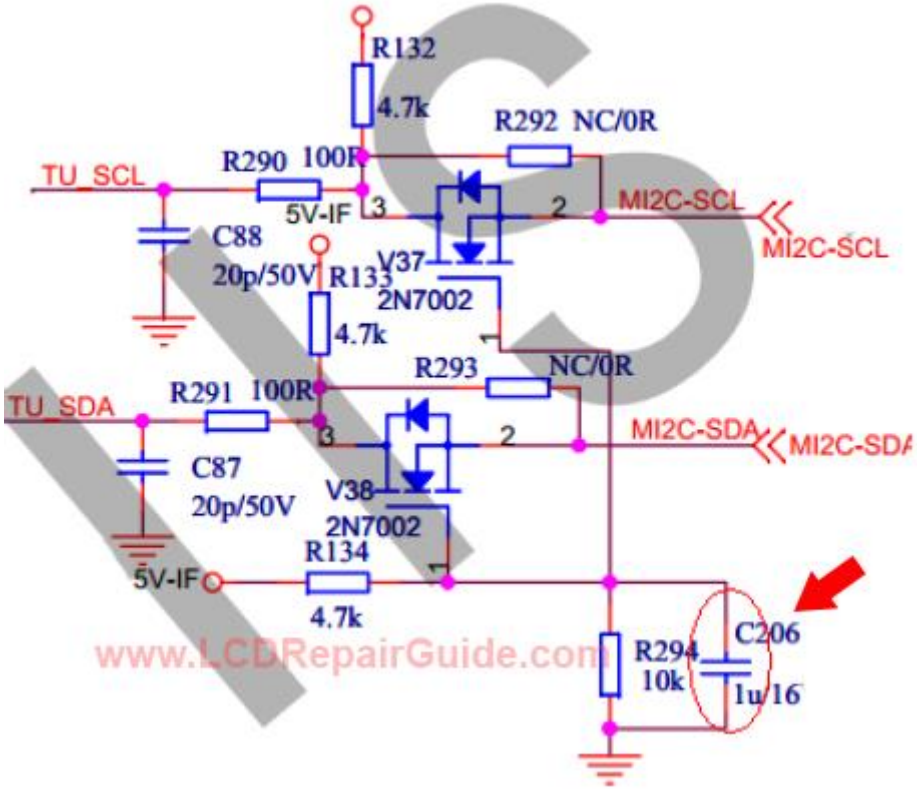
7) **Brand & Model TV:** Hisense LED32H130 Chassis MST6M182VG LED TV

Symptom: TV Searching Channel with No Signal Problem
This TV Mainboard part number is: RSAG7.820.4801. When press to auto search the TV Channels, it's shows No Signal.

Repair Solution:
Check the TV Mainboard Tuner section supply voltages AGC:5V, BUS lines is 4.9V, Tuner tuning: 33V all ok. Replace the Tuner still not help. Suspect the MST6M182VG defective, after replaced also same problem.

Even replaced the Mainchip (MST6M182VG), Tuner still not help, and their voltage supply are normal, then suspect the Tuner BUS lines. Analysis their schematic diagram, Tuner BUS signal lines is going through V37 & V38 MOSFET to deliver the signals. Even checked the BUS lines voltage normal, but after analysis from the schematic diagram, if V37 & V38 both not switch "ON", the Tuner BUS still got the 5V voltage there. This is because the R132 & R133 resistors.

Check the V37 & V38 MOSFET both Gate pin voltage is just 0.3V only. That's mean the V37 & V38 with this low voltage on Gate pin can't switch "ON" them. Check the corresponding components on V37 & V38 found C206 (1uF, 16V) capacitor is leakage and drop the Gate pin voltage. After replaced the C206, this TV problem solved.

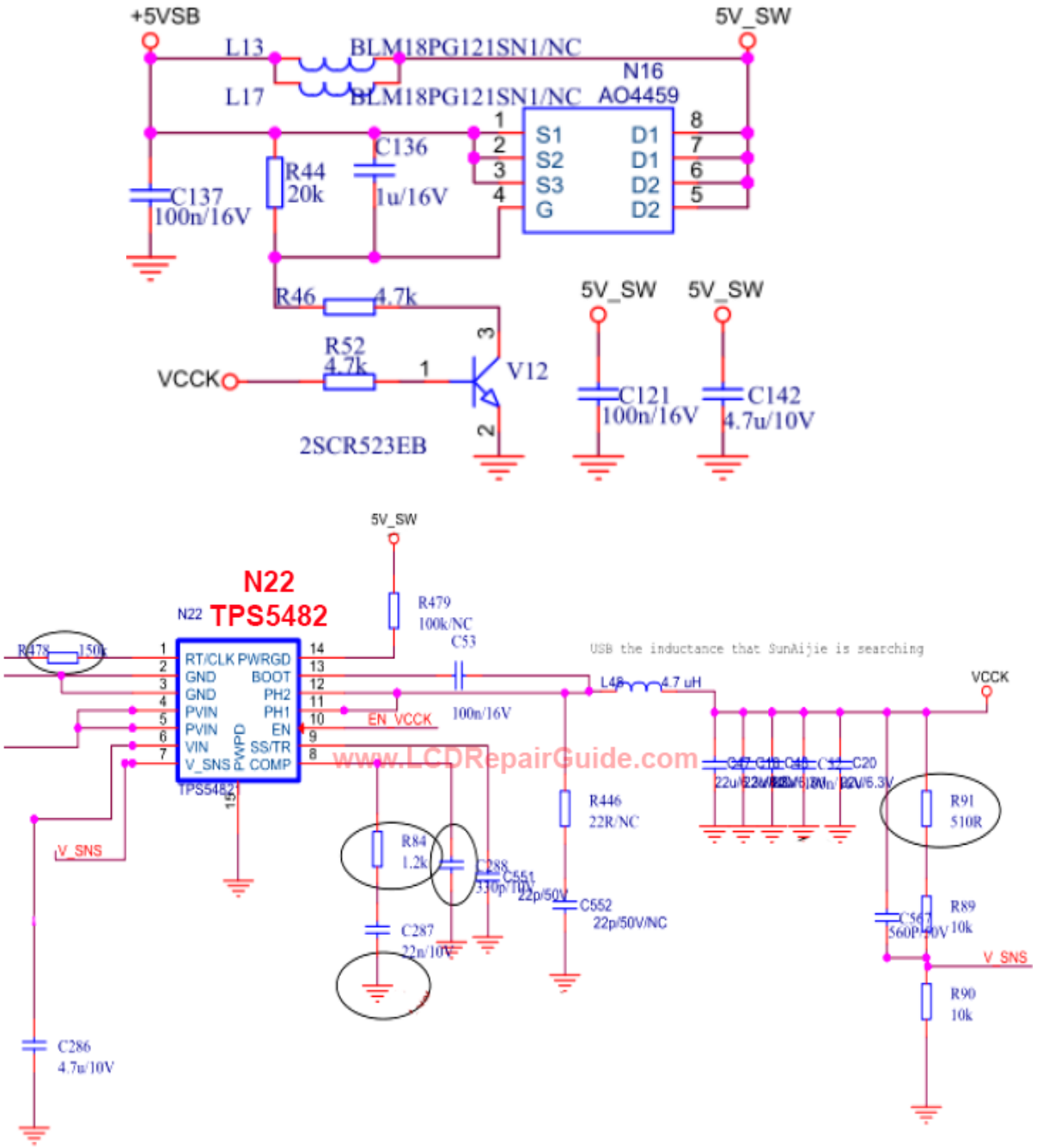


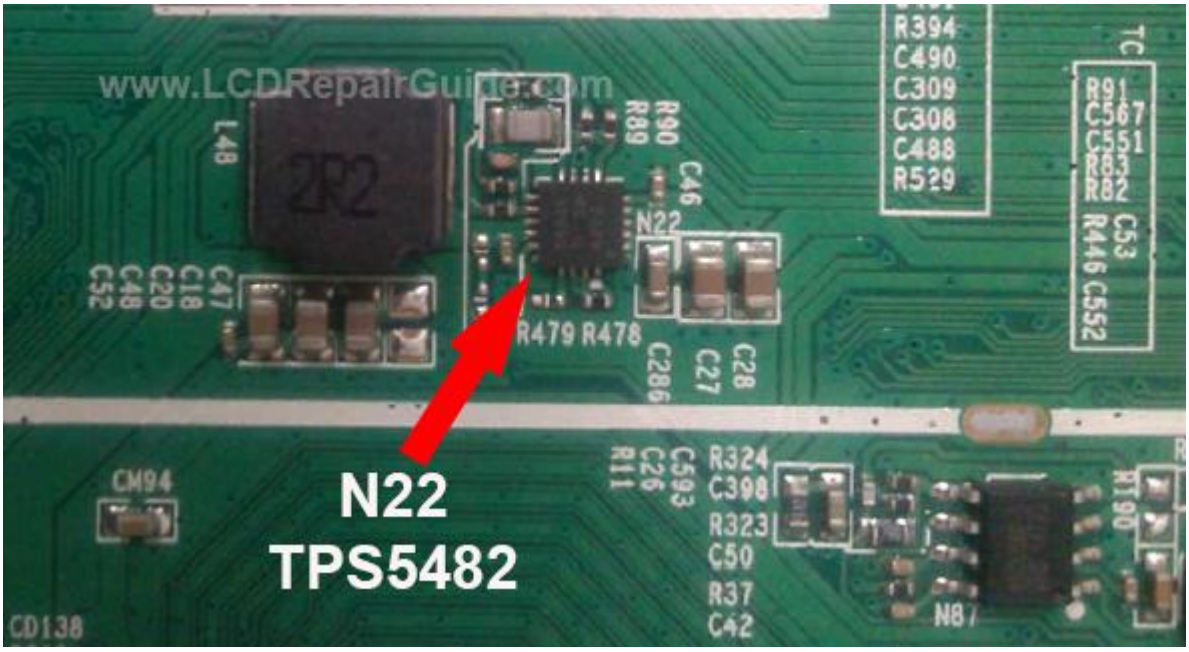
8) **Brand & Model TV:** Hisense LED40K360X3D (0011) Chassis MT5505 LED TV

Symptom: TV Can't Start-up, Front Indicator Light Lit
This TV Mainboard part number is: RSAG7.820.5060.

Repair Solution:
The PSU output voltage all are ok. The TV Mainboard, besides 5VSB & 3VSB voltage normal, others voltage also no output, 0V only. Analysis the TV Mainboard schematic diagram, found the all voltages input is supply from 5V_SW. The 5VSB standby voltage go to N16 IC and generate the 5V_SW voltage. The N16 control by VCCK voltage, and VCCK voltage is generate by 12V through N22 LDO IC.

Check the VCCK voltage is about 0V (normally, it is about 1.5V), measure the N22 pin-4 & pin-5 voltage is 12V, pin-10 & pin-11 voltage is 0V. Suspect the N22 IC damage. After replaced N22 (TPS5482), VCCK voltage is output 1.50V and the 5V_SW can output the 5V now. The TV problem solved and working properly now.



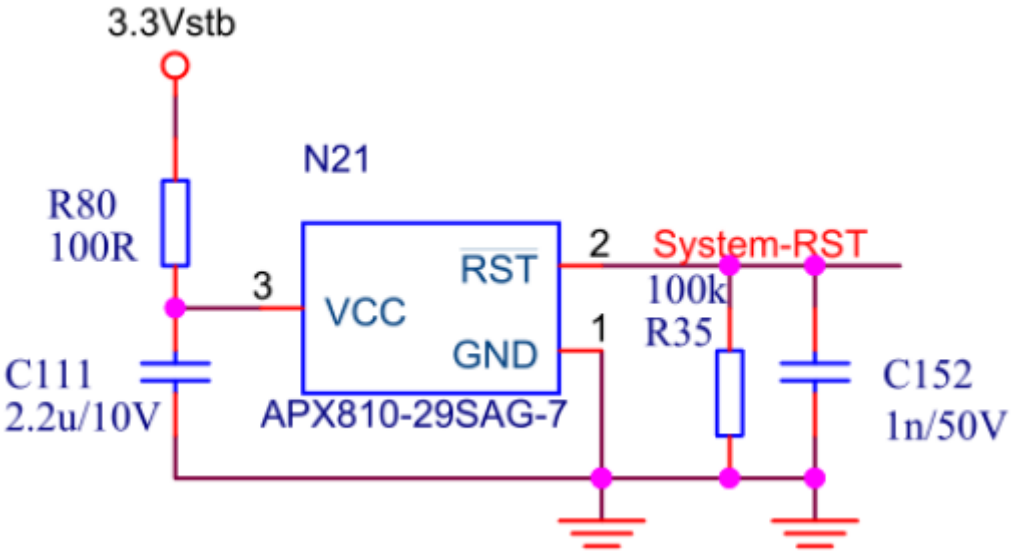


9) **Brand & Model TV:** Hisense LED42K100N LED TV

Symptom: TV Randomly Hang/Crashes Problem
This TV Mainboard part number is: RSAG7.820.4801. This TV problem is randomly display hang there or sometime need to power on/off then can start-up the TV.

Repair Solution:
Because this TV problem is randomly problem occur, so check all their Mainboard LDO & DC-DC output voltages several times. But all voltage output looks like normal and stable. Follow by checking their crystal circuit, reset circuit and BUS data lines (SDA & SCL) voltages all ok.

When power on the TV, check their reset circuit again, the N21 pin-2 has 2.50V voltage (normally, voltage will convert in between 0V/2.50V). Power on again the TV, N21 pin-2 voltage still the same as 2.50V! Suspect the N21 reset IC damage. After replaced N21 reset IC, the reset voltage will convert in between 0V and 2.50V. After test several time to this Tv and confirm the problem is solved.



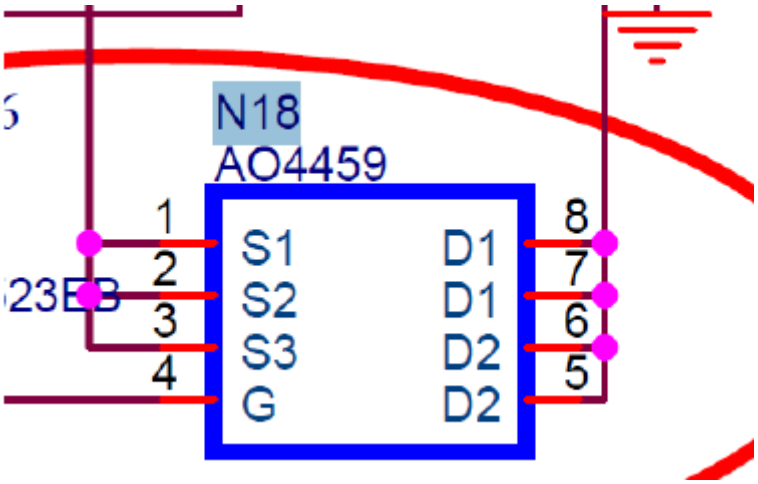
10) **Brand & Model TV:** Hisense LED32K300 Chassis MST6M182VG LED TV

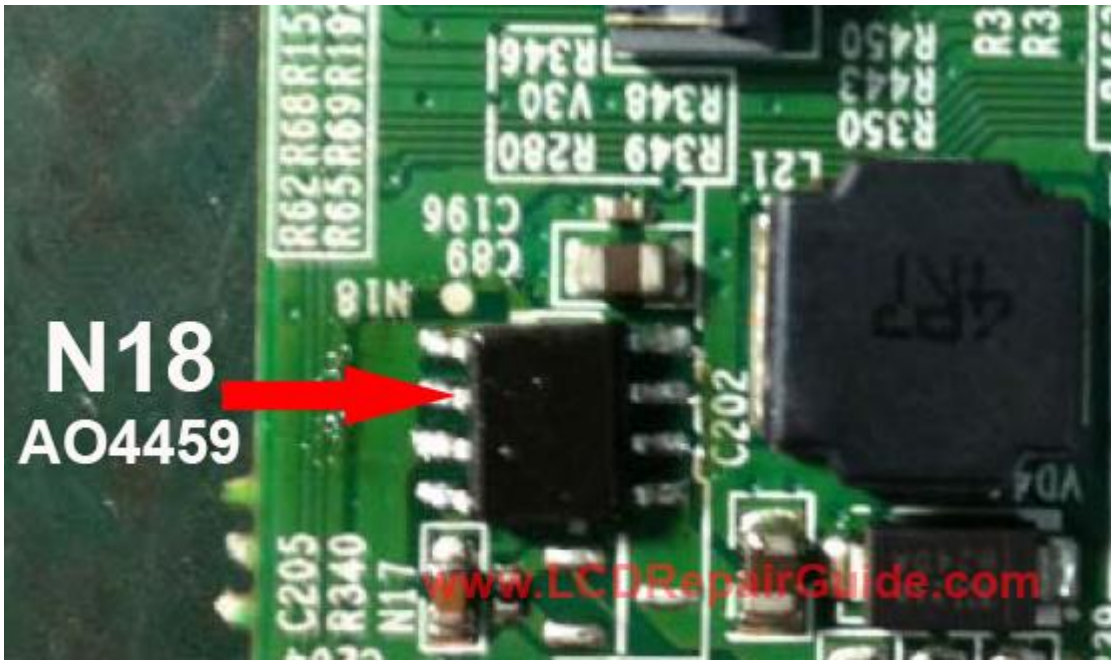
Symptom: Randomly Start-up TV No Display or When Watching TV Randomly No Display

This TV Mainboard part number is: RSAG7.820.4801.

Repair Solution:

First time power on the TV and watching TV about 20 minutes, the TV no display! Check the TV Mainboard all LDO & DC-DC voltage all seems ok, except the voltage output to PANEL Vcc is about +10V and not stable. Normally, this supply voltage is about +12V. This voltage is control and supply by N18 (AO4459). Suspect this IC defective and replaced it with a new one. Finally, this TV randomly no display problem solved!



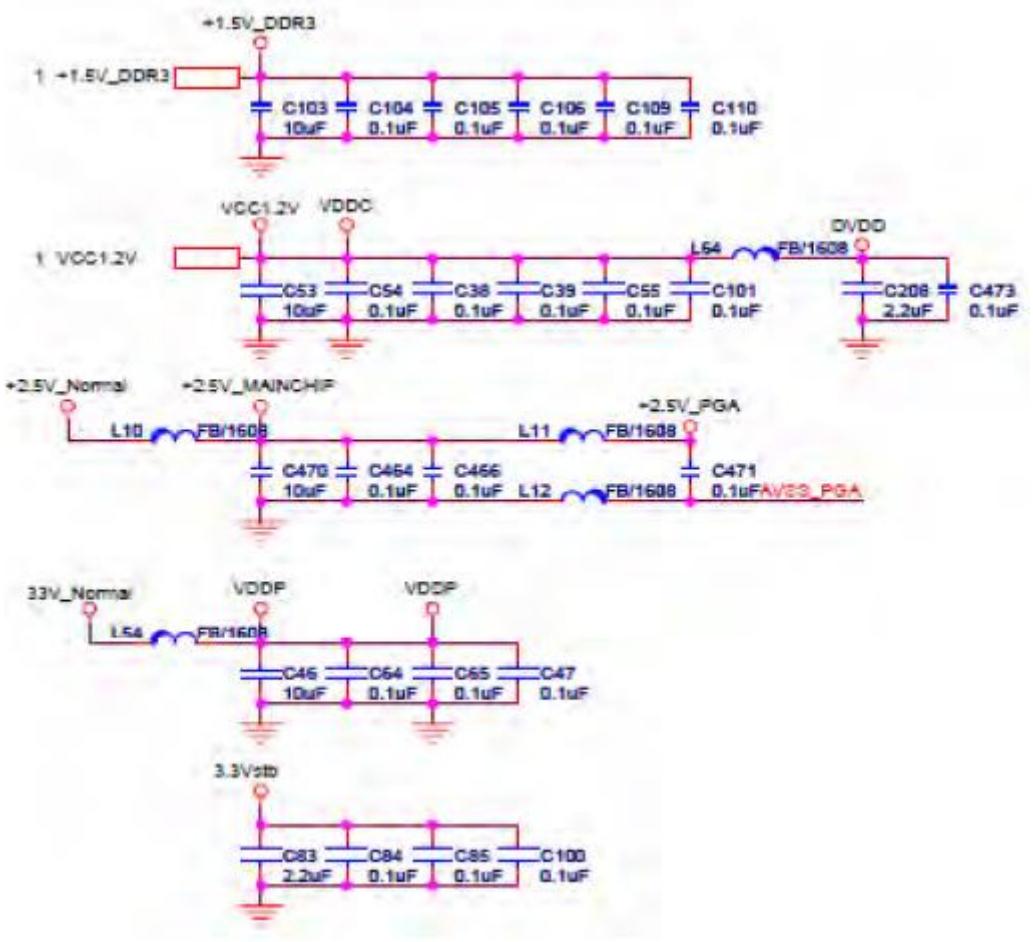


11) Brand & Model TV: Hisense LED42K16P LED TV

Symptom: No Power No Display
This TV Mainboard part number is: RSAG7.820.4158. No any front indicator light lit.

Repair Solution:
Check the PSU board has standby voltage output, but no PS_ON signal from Mainboard. Check the TV Mainboard LDO & DC-DC circuit found the VCC1.2V line at CA13 there no output. The VCC1.2V is the core voltage of CPU MST6I78 and output voltage is generated by DC-DC circuit. Since the CA13 no voltage output, check the DC-DC circuit input voltage through L6. L6 voltage input has 12V, the L6 output is 0V! Found the L6 is open circuit, after replaced it, the CA13 capacitor has 1.2V output voltage and the TV working perfectly.

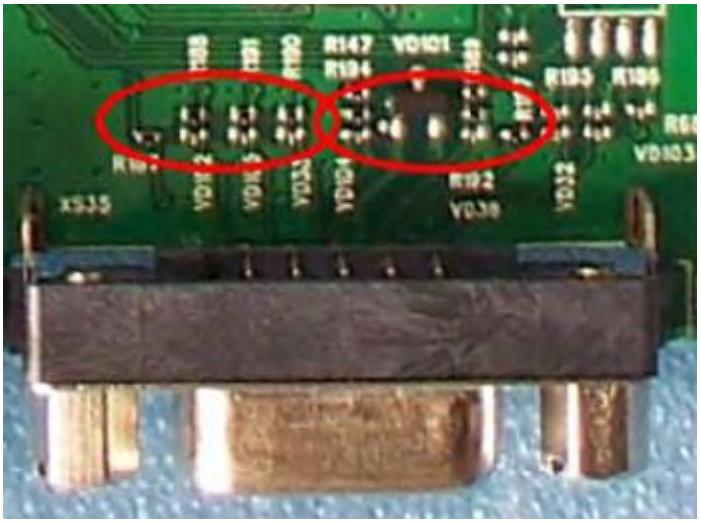
Note: To let the TV Mainboard CPU MST6I78 working, besides the core voltage VCC1.2V, another 4 voltages need to check also: 1.5V, 2.5V, 3.3V_Normal & 3.3Vsb.

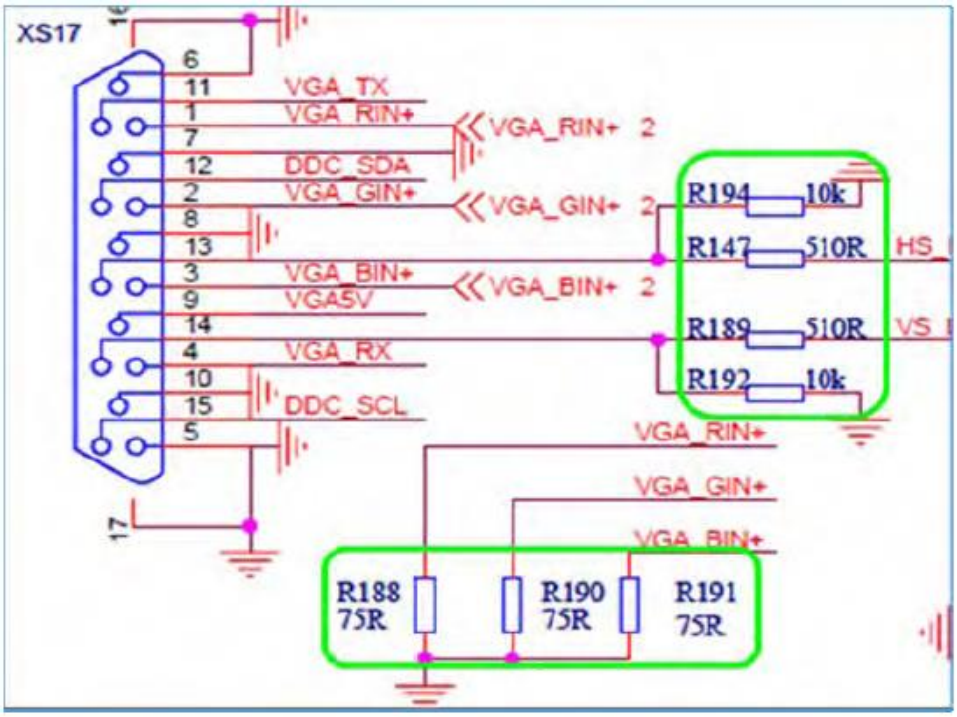


12) **Brand & Model TV:** Hisense LED40T28PKV LED TV

Symptom: No Display in VGA Mode Input
This TV Mainboard part number is: RSAG7.820.2191

Repair Solution:
First check the Mainboard VGA input resistor R188, R190, R191, R147, R189, R194, R192 ohm values. If these resistors ohm values increase or open circuit, then it is needing to replace. Also, some of the corresponding components connected to these VGA line, for example the BAV99 type components, if found shorted, it's needing to remove from the circuit and check the VGA input on TV is back to normal or not. If all these components are normal, then suspect the CPU. For this TV VGA input problem, all the above components are okay. So replaced their CPU MST6I78, the TV VGA input problem solved!





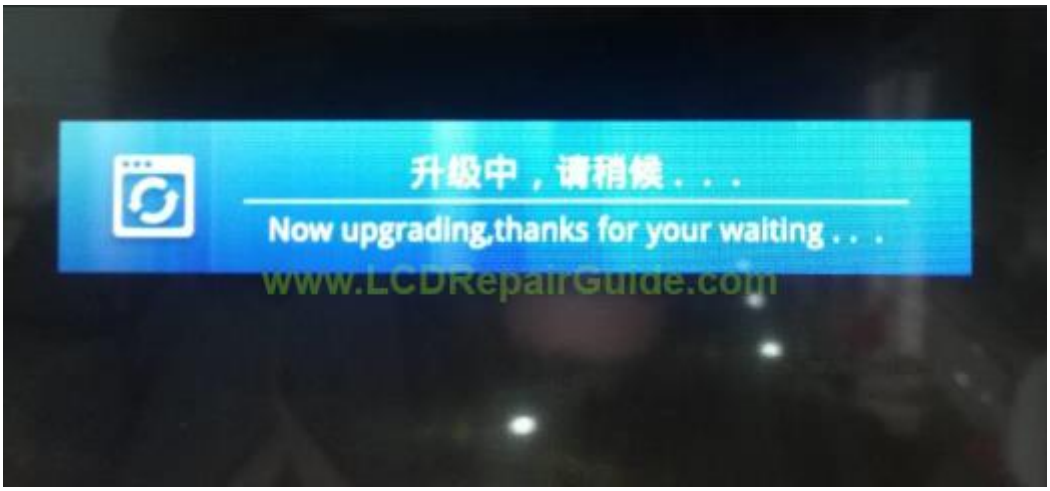
13) **Brand & Model TV:** Hisense LED43EC520UA 4K Smart LED TV

Symptom: TV Start-up with Hisense Logo then Grey Display

This TV can start-up to Hisense logo then change to grey display (no display but backlight lit). All the buttons from TV key pad or remote control are stuck and not working.

Repair Solution:

As usual, this TV problem is causing by the firmware issue. Downloaded their firmware from Hisense technical website and use the USB drive to upgrade. Unfortunately, it is failed to upgrade their firmware with this method.



But it is confirmed that this USB drive is in good condition, it maybe their hardware fault, for example the bootloader memory IC.

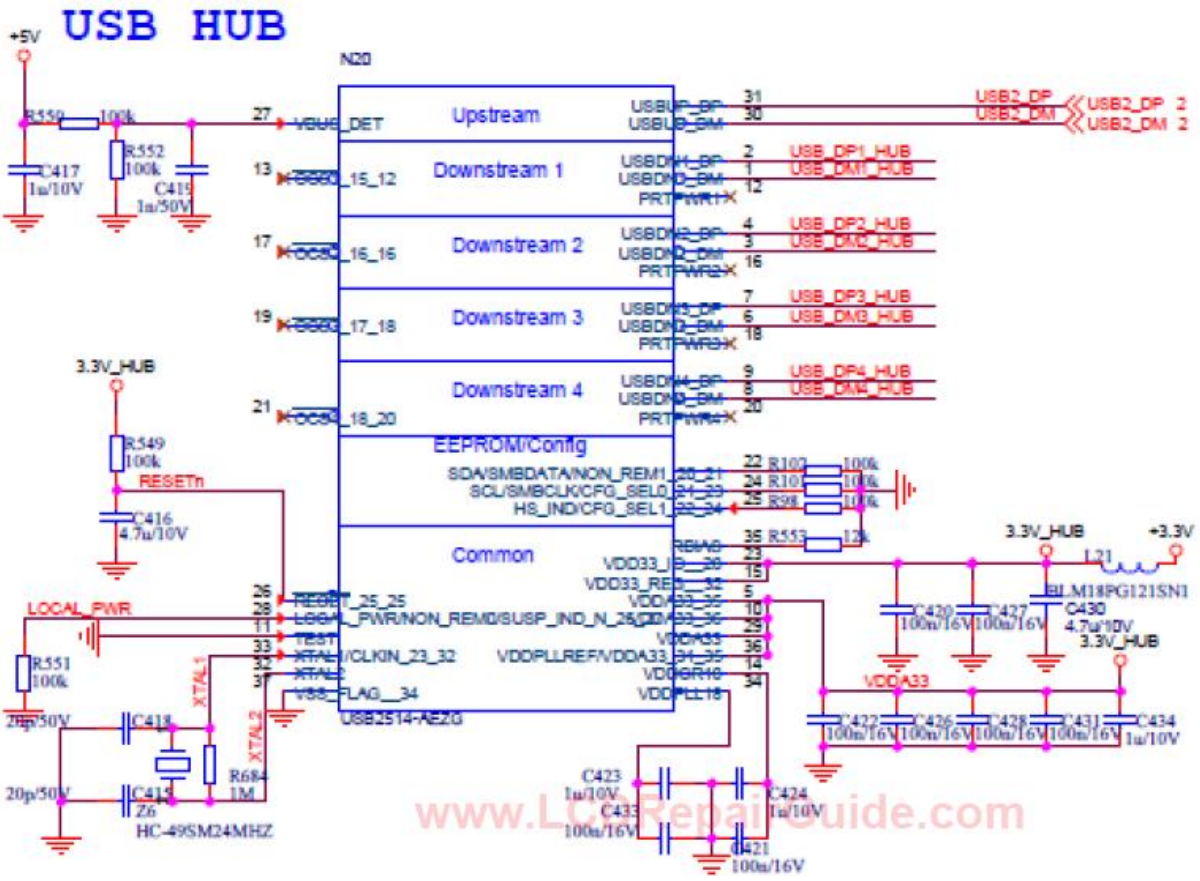
Check the Mainboard user memory IC (24C32 EEPROM), removed it from Mainboard and use the RT809F universal programmer to erase and empty this 24C32 IC. After that, soldering it back to TV Mainboard and

power on TV. Finally, the TV problem solved! By the way, I will prefer to replace it with a new 24C32 EEPROM IC. Because from previous case, if not replace a new 24C32 IC, this type of TV problem will occur again.

14) **Brand & Model TV:** Hisense LED46K660X3D Chassis MSD6A801 Smart LED TV

Symptom: TV WIFI Not Working
This TV Mainboard part number is: RSAG7.820.5079.

Repair Solution:
Power on the TV call the MENU page WIFI Network but cannot get the WIFI Setting on the MENU page. That's mean the TV can't detect the WIFI Network card. Clear the user setting, replace the WIFI Network card also cannot help.
This TV WIFI Network card is going through the N20 (USB Hub) and CPU to communicate and realizes the Wireless Network (WIFI) function. Check the N20 (USB2514-AEZG) voltage supply pin and it is ok. Suspect this IC defective, so replaced it with a good one. After replaced N20 IC, this TV WIFI not working problem solved.



15) **Brand & Model TV:** LG 19LU55-UB, 19LH20-UA, 22LH20-UA, 22LU55-UB, 26LH20-UA, 32LH20-UA, 32LH30-UA, 32LH40-UA, 37LF11-UA, 37LH20, 37LH30-UA, 37LH55-UA, 42LF11-UA, 42LH20-UA, 42LH30-UA, 42LH55-UA, 47LF11-UA, 47LH30-UA, 55LH40-UA LCD TV

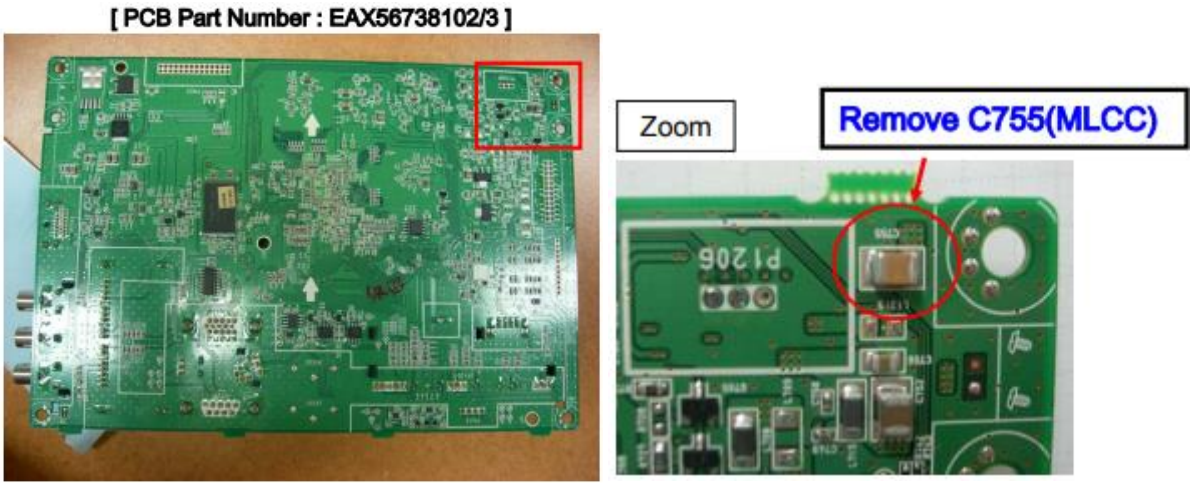
Symptom: Red LED Light is Constantly Flashing, with No Display

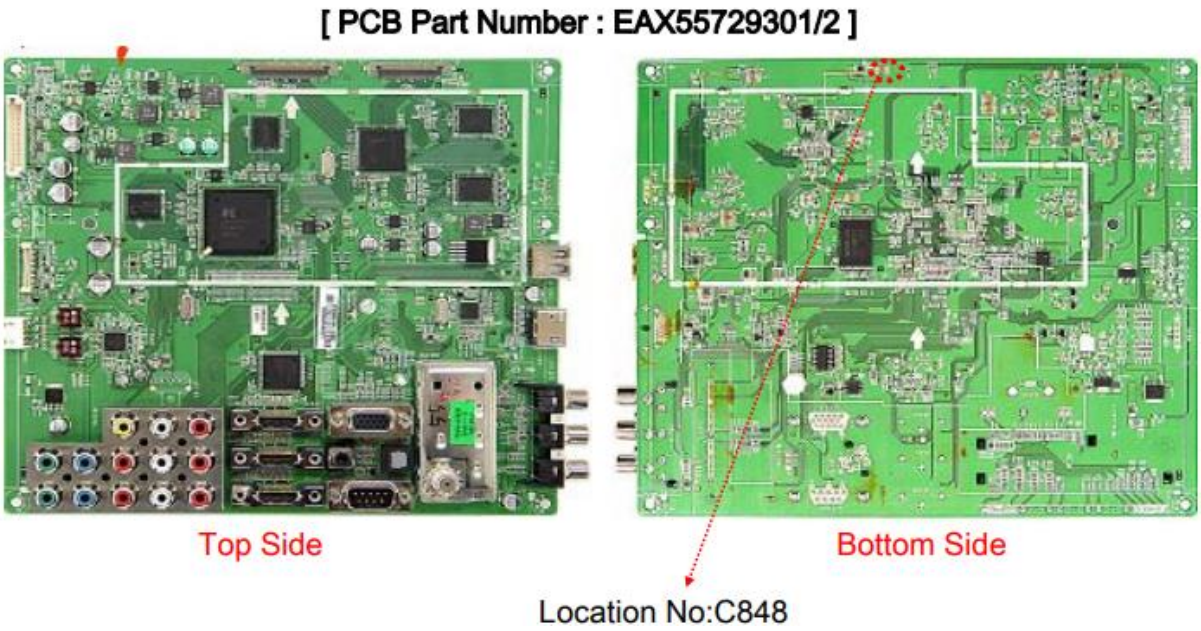
Repair Solution:

This TV problem is cause by crack in the MLCC capacitor. Remove the MLCC capacitor from Mainboard.

a) Mainboard number on PCB is: EAX56738102/3
   - Remove C755 (MLCC) capacitor

b) Mainboard number on PCB is: EAX55729301/2
   - Remove C848 (MLCC) capacitor





16) **Brand & Model TV:** LG 32LH550B-UA, 32LH570B-UC, 43LH5500-UA, 43LH570A-UE, 43LH5700-UD, 49LH570A, 49LH5700-UD, 55LH5750-UB, 55LH575A-UE Smart LED TV

Symptom: a) While watching an Analog TV Channel (RF) and then Power off/on b) While in QSM+ On status, there will be No Sound

Repair Solution:

To solve this TV problem, need to update the software/firmware to latest version V03.00.21 by USB only. Use caution during download to make sure you have the correct file.

1) Download file for All Applied Models

- Simplesmart-atsc-m2-builds-agrafe-m2-16-03.00.21-usb_V2_SECURED.epk (After unzipping the file)

Notice:

a) A few USB devices may not be compatible with the TV. If the USB device isn't compatible, you need to use another USB device.

b) It may not work on the UK channel with MHEG (BBC, …). If it doesn't work on a channel with MHEG, remove the antenna signal or change to ATV channel, and retry the download.

2) File copy:

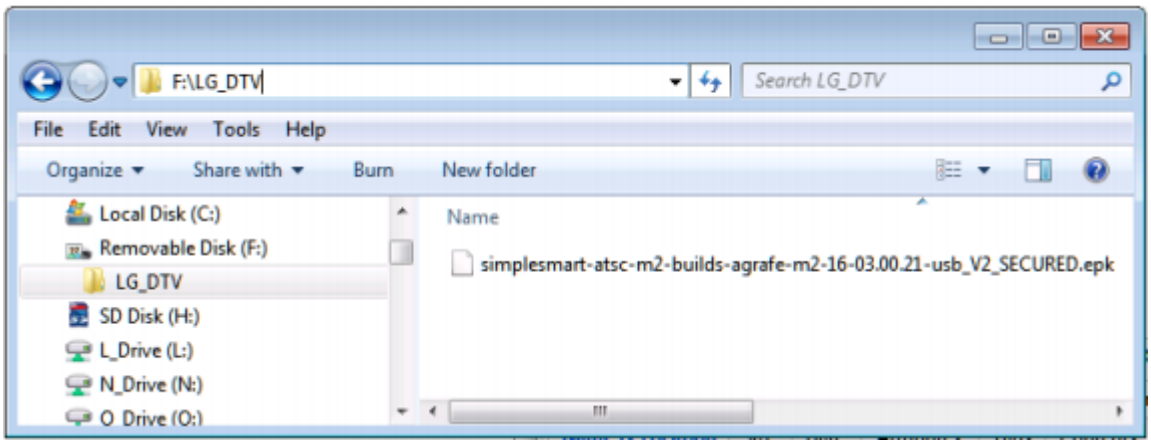
Copy the download file to the "**LG_DTV**" folder of the USB device.

simplesmart-atsc-m2-builds-agrafe-m2-16-03.00.21-usb_V2_SECURED.epk

-The TV system searches only the "LG_DTV" folder to find the download files.

-Please only put one file in the folder.

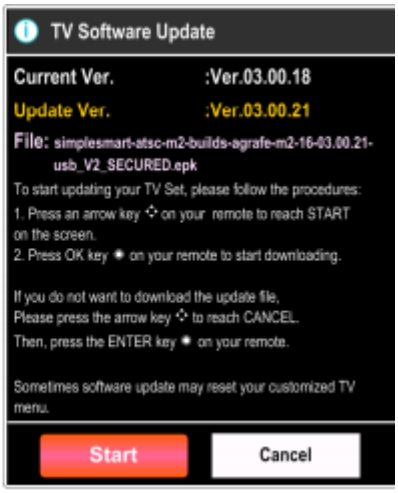
-If there are many other files in the folder, it takes a long time to find the download file.



2) USB Download:

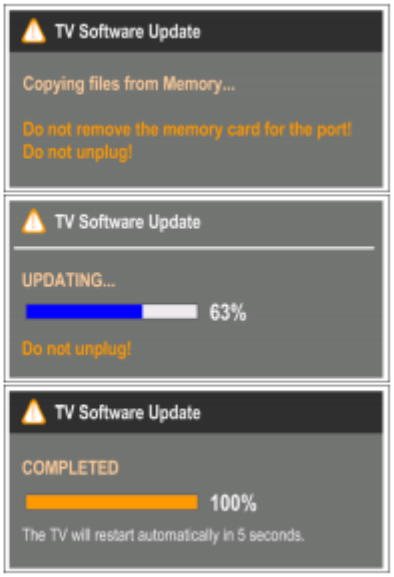
Insert the USB device into the USB port of the TV.

If the TV finds the same model name and new version file, it will display this message and start the upgrade automatically.



✓ Running USB Software Update Select [Start] button in "[Figure] Software Update" and press [Start] button. ("Enter Key")

✓ Then the USB Software Update will be started.
✓ Software update complete message.
✓ And then TV power off/on automatically, this software will be applied.

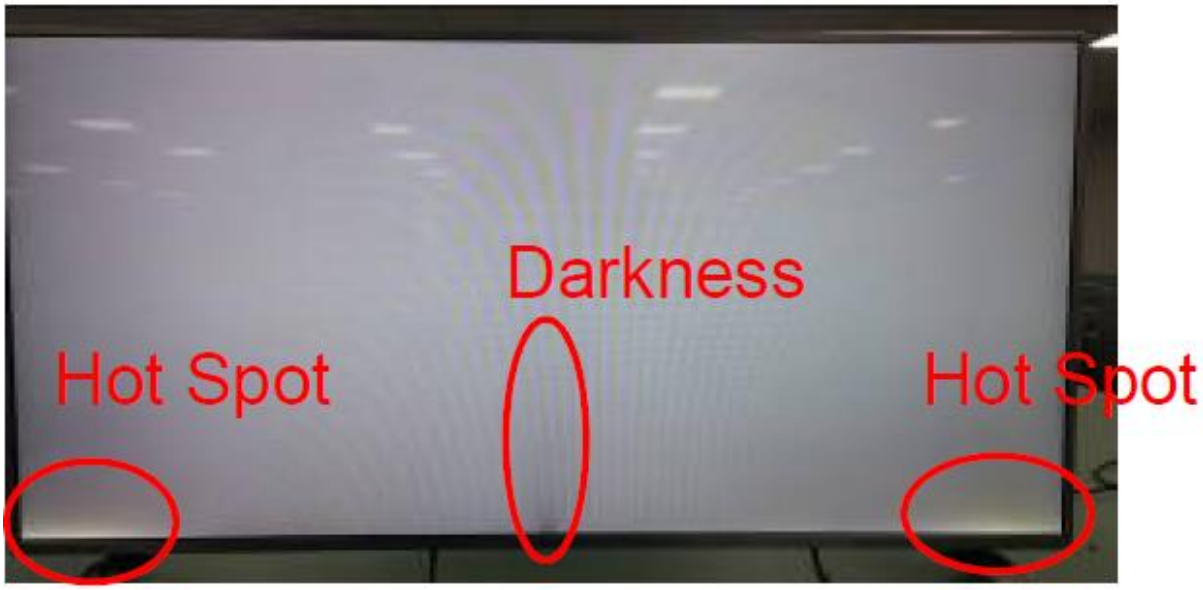


17) **Brand & Model TV:** LG 49UH60xx & 49UH61xx series LED TV

Symptom: Display Problem- Hot Spot, No Backlight, Dark Screen

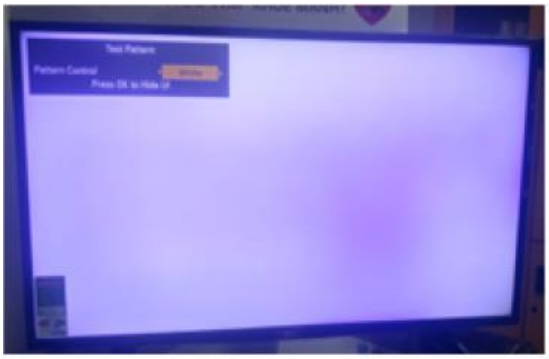
Repair Solution:

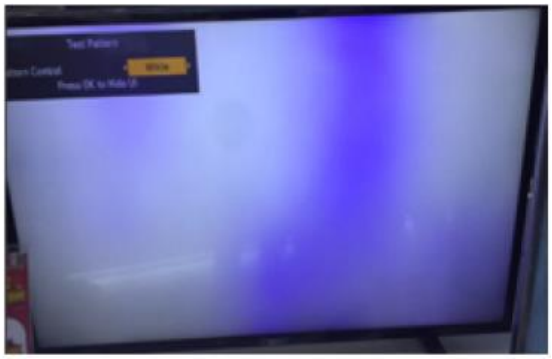
The display problem like the above is causing by the LED Strips or LED Array Defect. So, need to change their LED Strips. So, repairer say can I just replace the faulty LED light bulbs? The answer is yes, but make sure all the bad and leakage LED light bulb has been replaced. If missing to replace the leakage LED light bulbs, this will no longer to use and maybe come back again for the same problem occur.



18) **Brand & Model TV:** LG 32LF57, 49LF51, 49LH57, 49UF64, 49UH60 LED TV

Symptom: Blue Screen, Bluish on TV





Repair Solution:
This problem is causes by Silicone elimination of LED PKG need to replace the LED Strips/LED Array.

19) **Brand & Model TV:** LG 42LP560M, 60LN549E, 55LN549E, 55LN541C, 47LN549E, 47LN541C, 42LN549E, 42LN541C, 39LN549E, 32LP560M, 32LN549E, 32LN541C LED TV

Symptom: TV Reboots (Auto Power On/Off) Repeatedly
This TV worked fine for a while, then problem started occurring more and more frequently.

Repair Solution:
The TV problem causing by weakness of power connector's contact point between the power supply and the Mainboard. Or the TV to prevent AC OFF Reset by detecting 3.5V_ST dip from unstable contact of power connector. So replaced the PSU cable (connector) and socket, and apply some glue to the connector & socket there. After finished the above steps, the TV problem solved.

20) **Brand & Model TV:** Samsung UA55D70000LJ LED TV

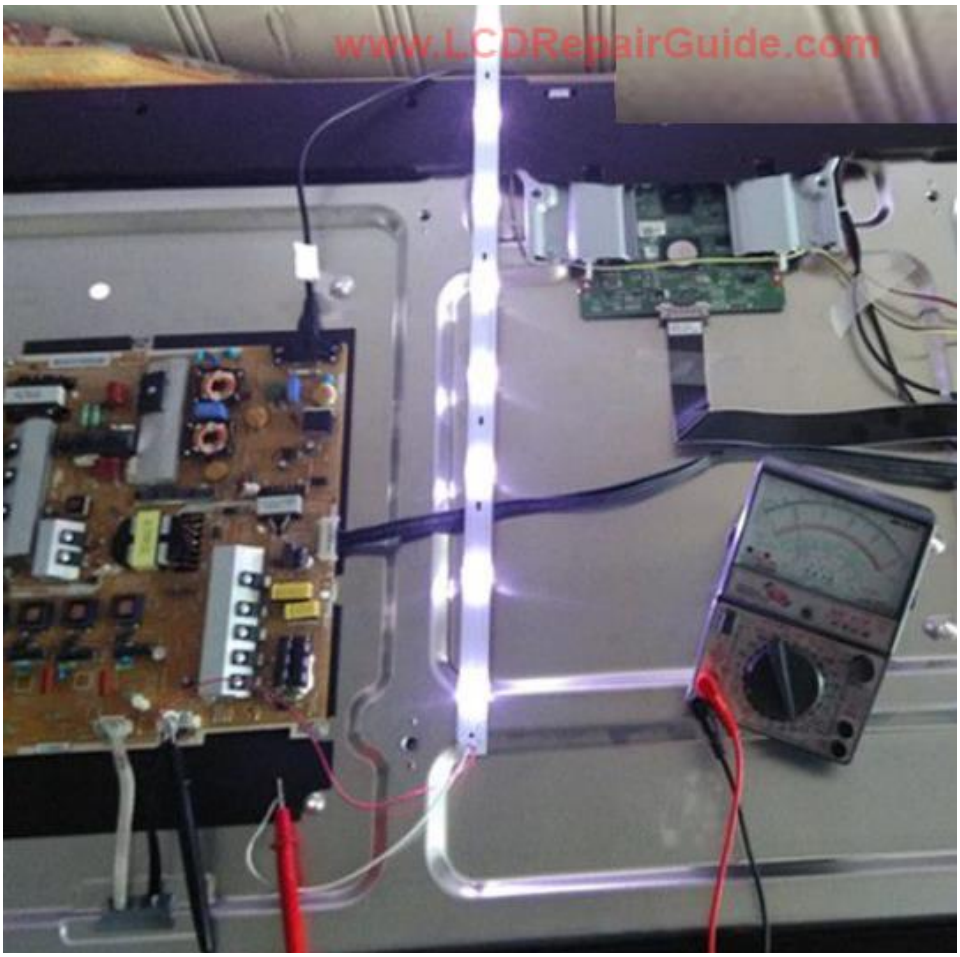
Symptom: TV Auto Shutdown Frequently

The TV owner said this TV was checked by another TV repairer with the TV Mainboard problem and quote him quite expensive to replace the Mainboard. So the TV owner don't want to repair and bring the TV here to repair.

When power on the TV, the TV shows start-up logo then cutoff. The TV backlight also off. Power off and power on again, the same problem occurs. Try to use the PSU Self-Test method to testing TV and found the same problem too. That's mean the problem is not at the TV Mainboard, it is in the PSU or their backlight defective.

Repair Solution:

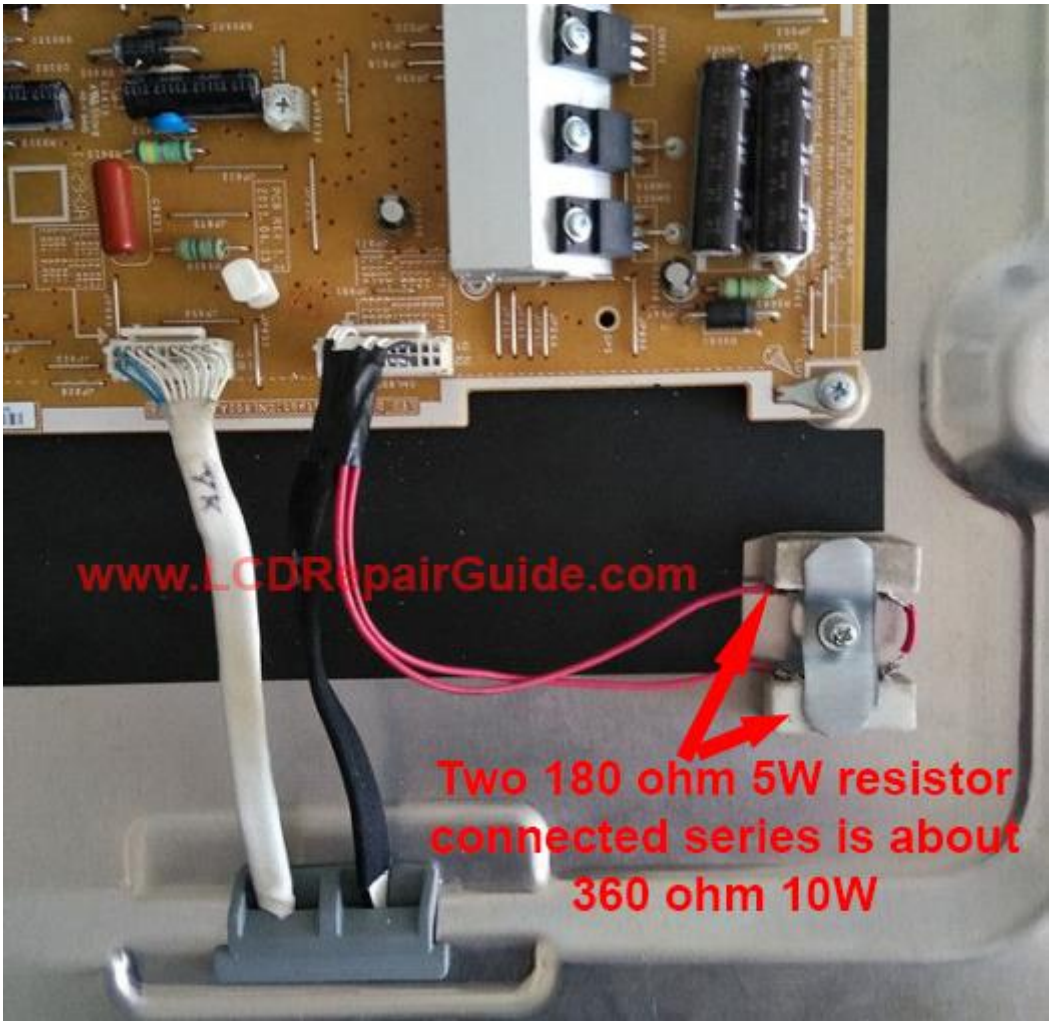
When use the PSU self-test method, found their PSU can output the voltage normally. So, suspect their backlight, especially the LED strips (or LED light bulb/s) defective. Before that, roughly check the LED driver section, it is looks like normal. This TV has two connectors for the LED backlight, CNL802A & CNL802B. Total 4 groups drives LED strips, each group has 4 small groups and each small group is corresponding. Use the multimeter 10K range check each small group their ohm values, it has about 500K ohm. When check CNL802A pin-11 & 13 (L8+, L8-), found this small group was opened! Use an external 8 LED light bulbs LED strips and connect to the CNL802A pin-11 & 13 (L8+ L8-), testing the TV & their backlight. The TV can work perfectly now. Finally confirm this TV problem was causing the backlight LED Strip open circuit and cause the TV Mainboard cutoff the TV.



This TV even has one small group LED light bulbs no working, but their TV screen no any darkness area and can show the display perfectly. This

TV original LED Strips quite expensive to get it and it will take some rick when open the LED screen. So think to modify the TV to reduce the cost of the spare part and the TV owner also not accept the high price to repair this TV.

Check each small group voltage is about 38V, one group to drive 4 small groups is about 152V (38V x 4) and the ampere is about 0.1A (100mA). The wattage of this small group is 0.1A x 38V= 3.8Watt. For the Ohm values, it is R=V/A, R=38V/0.1A= 380 ohm. So, use two 180 ohm 5Watt resistor (cement type) connected series as the photo. And connected to the CNL802A pin-11 & 13 (L8+ L8-). Testing the TV about 2 days, the two resistors temperature quite normal and finally use the small metal shield to fix the two resistors on the TV. Be careful, the screw use to fix metal shield is not use the long type. Need to use the short type screw, it is to prevent the screw damage the screen panel.


www.LCDRepairGuide.com
Two 180 ohm 5W resistor
connected series is about
360 ohm 10W

CCTV 5
PHX 94 GSW 116 4TH 8:33 24

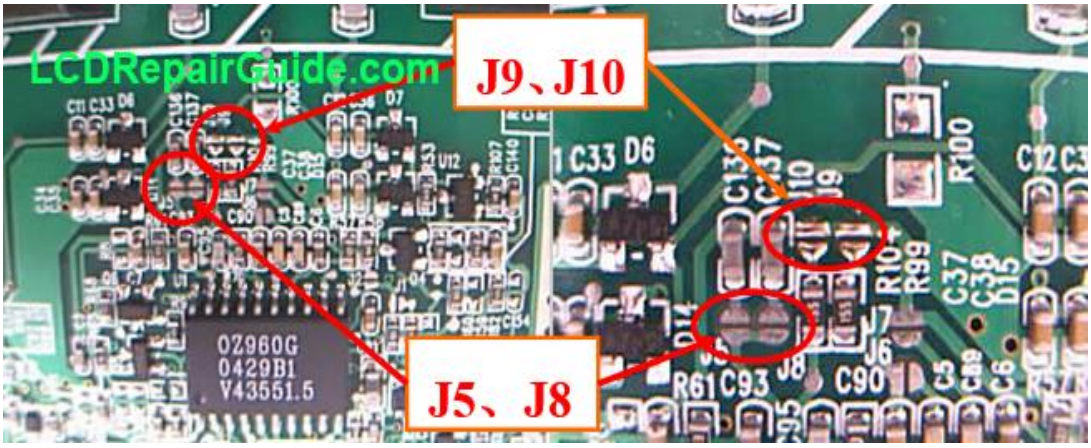
21) **Brand & Model TV:** Sanyo 30CA1 LCD Panel

Symptom: Screen Sometime No Backlight Problem

Repair Solution:

a) Open the TV rear cover. Unscrew the screw on inverter board and remove their Mylar pcs from the screw.

b) Reduce the Inverter working frequency.
The inverter board IC U1 have some jumper point (J5, J8, J9, J10). Normally, the J5 & J8 jumper points is using to connect with two capacitors, if these two jumper point close will decrease the working frequency. The J9 & J10 jumper points is using to connect with two resistors, if these two jumper points close will increase the working frequency. This inverter board working frequency range is about 57~60Khz.

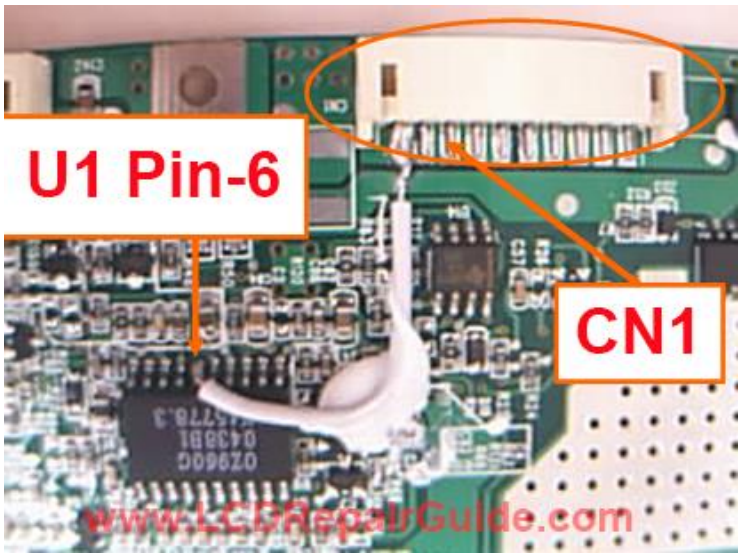


But when this inverter board abnormal, it will increase the working frequency to 60~62KHz. So the modification method is like below:

When Inverter Abnormal their Original Jumper Point Position	Modification Methods
J9-close ; J10-close	J10-open, another one not changes.
J9-close ; J10-open	J9-open, another one not changes.
J9-open ; J10-close	J10-open, another one not changes.
J9-open ; J10-open	J5 **or** J8-close, another not changes.

After modification, please use the oscilloscope to test their working frequency is in between 57~60Khz.

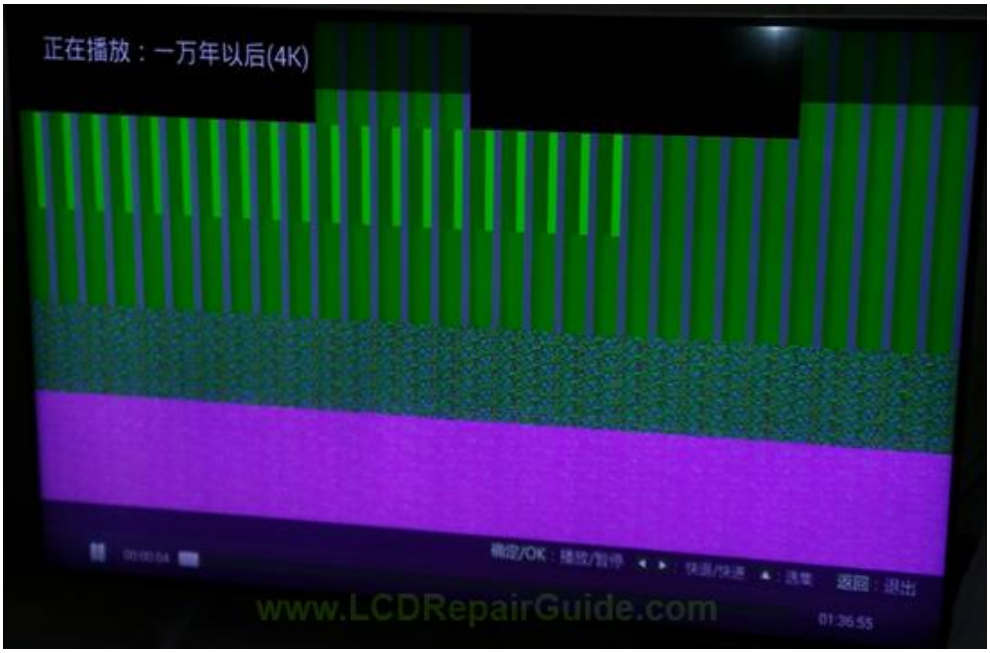
c) Add GND wire to the U1.
Use a 4cm wire connect from IC U1 pin-6 (GND) to inverter CN1 connector ground pin like photo below:



d) Put the Mylar under the screw and screw back to inverter board.

22) **Brand & Model TV:** Sanyo 50CE6139M1 & 55CE6139M1 Chassis UB9Z Smart LED TV

Symptom: When Online Watching 4K Movies the Display Abnormal Besides the 4K online movies/videos, watching other videos all are normal.



Repair Solution:

As usual, this TV problem is a firmware/software issue. Check with TV firmware version, it is shows that this is the latest firmware version (V8-MS918SY-LF1V022) of TV. Go to the technical website and found a new version firmware (V8-MS918SY-LF1V025). Download the file and use the USB drive to upgrade firmware and the TV problem solved!

Details on how to upgrade this TV firmware:

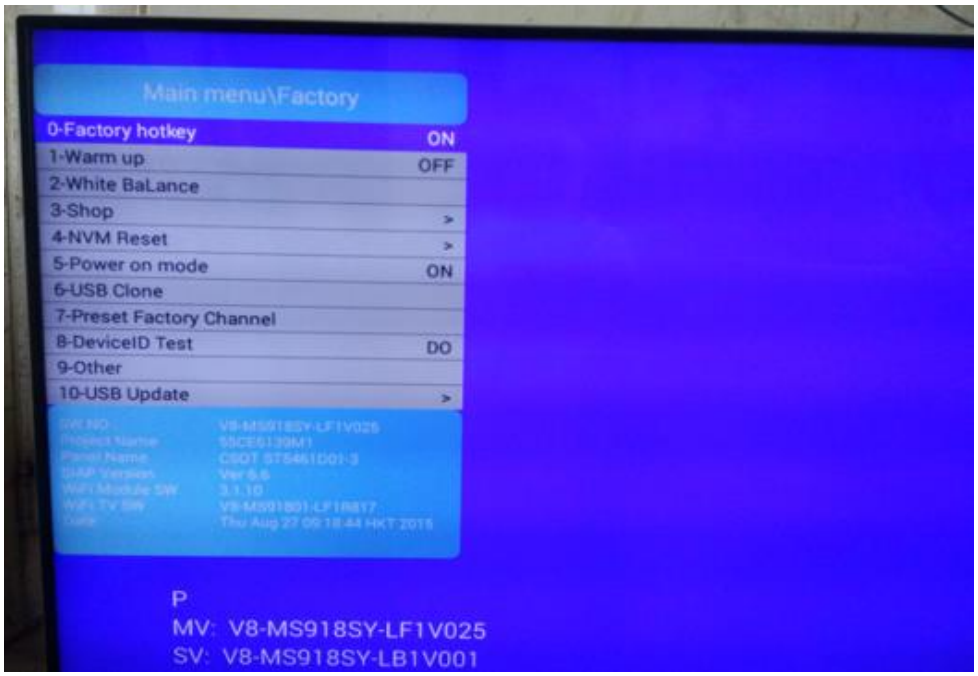
a) Unzip the downloaded file (firmware), and filename as: V8-MS918SY.bin (must in .BIN). Copy this BIN file to an USB drive root file and no any other files inside.

b) Make sure the USB drive is in FAT32 format, same or below 8GB size of USB drive is better for this time. In future maybe different can support big sizes of drive.

c) When TV turn on, insert the USB drive to USB port. Switch off TV, press & hold the power button on TV key pad/button and turn on TV again. The TV display appear upgrade status, then release the power button. Follow the TV screen instruction until the firmware finished upgraded. Attention: Don't turn off the TV on half way, if not the TV Mainboard will not work at all!

d) If this TV replaced the Mainboard, when turn on TV, the screen will show in factory mode. The Left bottom corner side will appear the firmware version information. Same as photo below:

When see this factory mode appear on the screen, we can change the TV to TV Channel input, press the remote control “RETURN” button it will pop-up the Factory Menu. Go to first sentence “**Factory hotkey**” from “ON” change to “OFF”. After that, press the “RETURN” button from remote control to exit the Factory Mode Menu. The TV screen will back to normal.



23) **Brand & Model TV:** Sharp LCD-60LX540A LCD TV

Symptom: How to Clear the Protection Memory After Over 5 Times On/Off Problem TV.

When the Sharp TV can't start-up and front indicator light shows from Red color light then change to Green color light, after 2 seconds it will back to Red color and blinking non-stop. That's mean this Sharp TV is in Protection Memory mode. How this Sharp TV change to Protection Memory mode? When the TV problem like abnormal Backlight, LED Strip, Power Supply & etc with on/off TV more than 5 times, the Sharp TV will change to Protection Memory mode and not working until the protection memory is clear. Even you've replaced the faulty components/PCB board, if their protection memory hasn't clear yet, this TV will not be working.

The Sharp TV has this special feature to protect their TV. But still lost of TV repairer don't know how to clear the Sharp TV protection memory mode.

Repair Solution:

Remember, before to clear the protection memory mode, make sure to replace the faulty components or PCB board, then clear their protection memory mode as method below:

A) Method A:

i) Remove the AC plug from wall plug.

ii) TV key pad button (not remote control button): Press & hold the **AV/TV** & **Vol-** buttons, and plugin the AC plug and switch on the AC supply.

iii) Wait the TV display appear then release both AV/TV & Vol- buttons now.

iv) The TV display will appear a character "K" on the screen. That's mean this TV is in Factory mode. Also, their Volume (+) & (-) just has two level only: 15 & 30.

v) Press the both buttons: **Vol-** & **CH-** at the same time, the TV will pop the Menu. The above all buttons are from the TV key pad (TV front panel buttons).

vi) Now, use the Remote Control to press the button "Down" to change to second page of the Menu.

vii) This second page first place is "FACTORY".

viii) Use the remote control Left & Right buttons to change to your country: USA, CHINA or etc and press OK.

ix) Power off the TV and unplug AC cord. Wait until 30 seconds and plugin again the AC cord, then power on TV.

B) Press & hold the AV/TV & Vol- buttons, then Power on TV. The factory mode Menu will appear. Change setting to factory default and power off TV. The protection memory is clear, and the TV can start-up now.

C) If the above methods not help, check the TV Mainboard memory IC 24 series & 25 series and re-write/re-programming or use the universal programmer to copy the good data from other board and write into problem mainboard memory IC.

24) **Brand & Model TV:** Skyworth 42E780U Chassis 8K93 LED TV

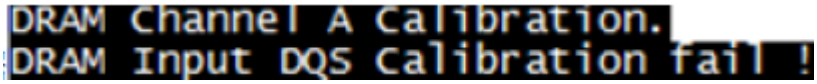
Symptom: TV Won't Start-up

Repair Solution:

Check the PSU board and all output voltage normal. Check the TV Mainboard LDO & DC-DC circuit all okay and stable. Use the Universal Programmer to check the TV Mainboard Start-up Log (SecureCRT) and see what's wrong inside the Mainboard. Below are the contents of Start-Up Log of this Mainboard:

```
Uncompressing Linux... done, booting the kernel.
Boot-
DRAM Channel A Calibration.
DRAM Input DQS Calibration fail !
DRAM Channel B Calibration.
HW Byte 4 : DQS(23 ~ 50), Size 28, Set 33, HW_Set 38.
HW Byte 5 : DQS(21 ~ 44), Size 24, Set 29, HW_Set 38.
HW Byte 6 : DQS(21 ~ 51), Size 31, Set 33, HW_Set 39.
HW Byte 7 : DQS(18 ~ 48), Size 31, Set 30, HW_Set 35.
```

In 8K93 Chassis Mainboard, group-A DDR RAM location is U20 & U21. Group-B DDR RAM is U16 & U17.



With the above contents, it is shows that the Mainchip/CPU and group-A DDR RAM communication in between them is abnormal. Check the DDR RAM U20 & U21 Vcc voltage supply is normal. Check the communication resistors in between the CPU & DDR RAM found RN35 network resistor one of the resistor ohm value is open circuit. Remove the RN35 from Mainboard and check again, it is confirming the RN35 network resistor, one of the resistor ohm value was open circuit. Replaced the RN35 network resistor, the TV won't start-up problem solved!

Note: For example, if with the same problem to this TV, also the group-A DDR RAM and CPU in between abnormal communication problem. Their DDR RAM Vcc voltage supply & VREF normal, and the network resistors ohm values normal, then it is confirming the problem will be the CPU damage or dry soldering point under the CPU chip (BGA type). Try to reflow the CPU, if it is not help, then need to replace the CPU to solve this TV problem.

25) **Brand & Model TV:** Skyworth 47E860A Chassis 8A10 (5800-A8a100-0P00) LED TV

Symptom: TV Stuck on Start-up Logo or TV Shows Logo & Reboot Non-stop

Repair Solution:

Lots of these type TV symptoms is because of their firmware unstable! Re-write, Re-Programming or Upgrade their firmware will solve these TV problems immediately.

For using the TV Manufacturer firmware upgrade by USB drive (Thumb Drive), make sure to use the USB drive memory size not more than 8GB. Also format the USB drive in FAT format. So it will increase the successful rate to upgrade their firmware in TV Mainboard.

One more thing, make sure to get the correct version firmware and know what's firmware it is, for example their main firmware, bootloader firmware or the mainboard firmware include their screen parameter data or not and so on. To find the correct TV manufacturer or TV Mainboard manufacturer firmware, make sure to check the TV mainboard part number and their sticker information stick on the Mainboard. This sticker information is more accurate than the number printing in Mainboard! Also the TV rear cover stick information too. For more details on this issue, please do check the corresponding TV Manufacturer (TV Mainboard Manufacturer) mainboard repair information.

26) **Brand & Model TV:** Sony KDL-48R550C LED TV

Symptom: TV Start-up with SONY Logo then No Display
This TV when power on, it will show the SONY logo about 2 seconds then no display. But their sound and backlight are normal.

Repair Solution:
This model of TV has this common fault before. So the problem is need to upgrade/update their firmware. Below is the firmware download link from TV manufacturer:

http://service.sony.com.cn/TV/Download/67997.htm

With the firmware is not enough to success repair this TV. You need to know how to update their firmware correctly. Here is the steps to update their firmware with original remote control, press the button:

a) "RETURN" button twice,
b) "MENU" button once,
c) "DOWN" button 5 times,
d) "RIGHT" button once,
e) "DOWN" button once,
f) "OK" button once,
g) "DOWN" button 3 times,
h) "OK" button twice, (after press wait about 15 seconds or above)
i) "LEFT" button once, (after press wait about 30 seconds for next step)

j) "OK" button once. (after press wait about 30 seconds or above, if the LED indicator light no response, press several times "OK" button)

After finishing the above steps, the TV indicator LED light will flashing and the firmware is processing to upgrade. After firmware upgrade finish, their LED indicator light will change to blue color. And after finish upgrade, the TV will automatic re-start again.

27) Brand & Model TV: TCL L24S10 Chassis MT23A TV

Symptom: TV Stuck on TCL Logo
After TV stuck on start-up logo, press any button TV key pad or remote control also not help.

Repair Solution:
Check all the Mainboard LDO & DC-DC circuit output voltage and all are normal. As usual, this type of problem most of the time is their firmware issue. Upgraded their main firmware, but the TV still same problem. Suspect their U203 (24C32) user data memory EEPROM IC. Replaced U203 24C32 EEPROM with an empty one, the TV can power on and off now. But the TV no display now. Think it could be the U203 cannot just use the empty one, need to copy the old data from 24C32 to the new 24C32 EEPROM IC. Power on the TV and the problem solved!

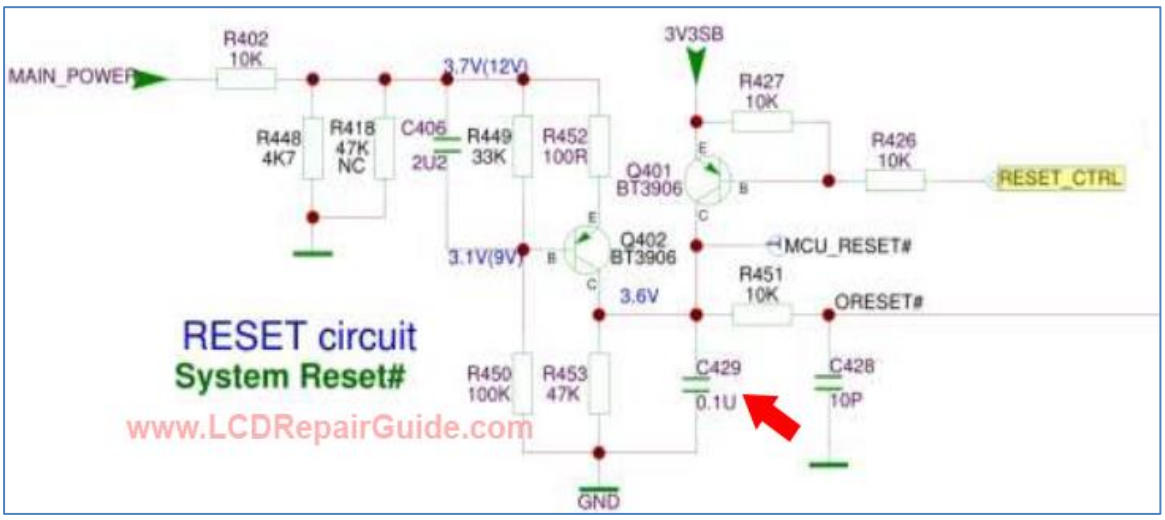
28) Brand & Model TV: TCL C32E330B Chassis MT27 LCD TV

Symptom: TV Can't Start-up, just in Standby Mode only

This is front indicator LED light lit, when press power on button, the TV won't start-up and still standby mode only.

Repair Solution:
As usual, check the PSU board and TV Mainboard. The PSU board all voltages output is normal (use the PSU Self-Test method). Check the TV Mainboard LDO & DC-DC circuits output voltages are normal and stable. Normally, the MT27 chassis TV Mainboard is their CPU/MainChip dry

join cause the TV won't start-up problem. But this TV even reflow their CPU still can't work. Check the crystal circuit and replace the crystal still not help. When check the reset circuit, found the RESET_CTRL signal voltage is missing. Normally, when TV in standby mode this RESET_CTRL signal line has 3.3V, after start-up will change to 3.6V. Check the reset circuit and found their C429 capacitor was shorted. After replace this cap, the TV is working perfectly.



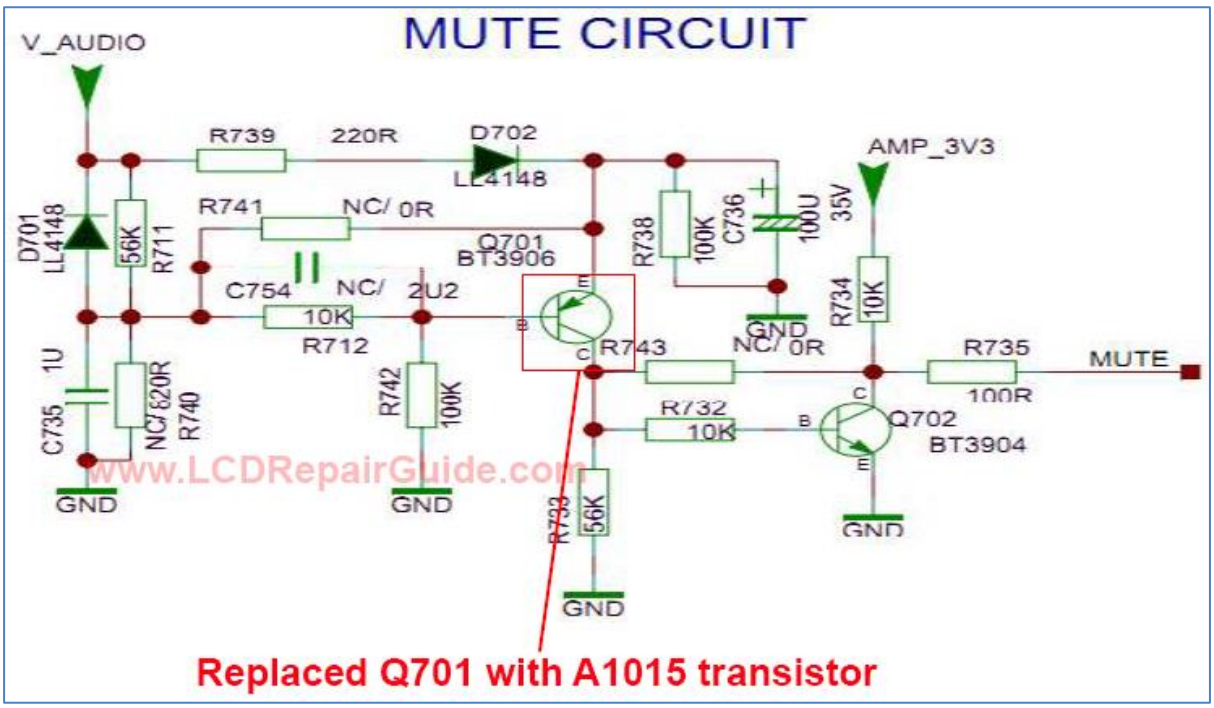
29) **Brand & Model TV:** TCL L32E5300A (MS99004) Chassis MS99 LED TV

Symptom: TV No Sound Randomly
After TV running about 20 minutes, it will no sound about 1~2 seconds then back to normal.

Repair Solution:
Since the TV problem occur when it is after warm up. So use the Hair Dryer to blow the TV Mainboard audio section. When blow to their audio MUTE circuit, the TV no sound problem occurs! This TV design is voltage active-high is in normal mode, when it is in active-low, the TV will in MUTE.

When TV in good condition, check the MUTE circuit Q701 (B= 23.4V, C= 0V, E= 23V) & Q702 (B= 0V, C= 3.3V, E= 0V). When TV is in no sound condition (use the Hair Dryer to blow this area), Q701 (B= 22.3V,

C=1.6V, E= 23V) & Q702 (B= 0.73V, C=0V, E=0V). Replace the Q701 with 2SA1015, the TV no sound randomly problem solved!



30) **Brand & Model TV:** TCL L32F3200B Chassis MT01C LED TV

Symptom: HDMI Input Display Abnormal
This TV in AV & USB input have a good display. But in HDMI input, the display is abnormal.

Repair Solution:
The HDMI display abnormal like painting display problem. Suspect the HDMI port IC defective or their HDMI screen parameter is wrong setting. So try to easy way then to the hard way (hardware). Even replace their HDMI port IC, but still the same problem. Is that the firmware problem? Maybe give it a try. Since this model TV firmware is not available, so buy from the website and this firmware is using: V8-MT01E01LF1V049. Use the USB drive to upgrade their firmware. Finally, after upgraded their firmware, the HDMI port abnormal display problem solved!

31) **Brand & Model TV:** TCL LE32C16 Chassis MS181 TV

Symptom: TV Can't Search the Channel from Tuner

Repair Solution:

Power on the TV and found the Channel searching signal is weak. Check the Tuner voltage supply and found AGC voltage just has 0.5V only. Also check the ohm values of AGC corresponding circuit R115 to U14 (MST6M181VS-LF-Z1) pin-79 is just about 500 ohm only. Normally, this ohm value is about 10K ohm. Try to replace the U14 but not help. The strange thing is they are no any component in this AGC line to the U14 pin-79, how this line ohm values drop to 500 ohm? Maybe it is the circuit line loop holes leakage? So, cut the line after R115 and cut the line before the U14 pin-79. Direct connect a wire after R115 to U14 pin-79 after the cut point to pin-79. Power on the TV, the AGC voltage is 5.2V now and the TV can search the TV Channel easily.

32) **Brand & Model TV:** TCL L39F1590 Chassis RT49 LED TV

Symptom: Front Panel Key Buttons Can't Function

Power on the TV, front panel key buttons can not control the TV. But it can work in the remote control.

Repair Solution:
Check the front panel key pad PCB, their buttons have 3.3V and 5V. After press the button (3.3V), their voltage value change as normal. Trace the line till U500 pin-155, KEY-IN pin and the voltage value is normal. So suspect U500 (BGA) IC defective. Because of the BGA machine not available, so cannot replace this U500 BGA chip. Suddenly, think it may be dry join/points inside the BGA, so just try to use the Hot Air Gun to blow this chip to re-soldering their point/pins. Power on the TV, the front key pad can work properly now.

33) **Brand & Model TV:** TCL L39F3300B Chassis MS82G LED TV

Symptom: TV Can't Start-up
The TV can't start-up, but front indicator LED light is lit.

Repair Solution:
Power on the AC supply, the TV is can't start-up. Check their voltages have 3.3V and 24V. Each LDO & DC-DC circuits, BUS circuit (SDA & SCL lines), Reset & Crystal circuits all okay. So, start from software then hardware method (because this TV firmware is available, so we can try this method first).

Try to connect their ISP and need to upgrade the firmware, but unsuccessful. Because it cannot detect the flash memory IC chip ID. Suspect the flash memory IC defective. After replaced a new flash memory IC 25Q32, the ISP can connect to their memory IC and successful to upgrade the firmware. After successful replace flash memory IC and upgraded their firmware, the TV can start-up now.

But another problem occur after the TV can start-up. The TV new problem is, it's just can show on Standard Density (SD) display only not in High Density (HD) mode. Login to their TV service mode, found the screen parameters just has 7 ID and all these ID is just in SD mode screen only. Suspect the firmware version problem, upgrade to the latest version (044 version), it still has 7 ID only. Check the TV Chassis MS82 information and found this chassis firmware do not mention which version firmware is HD or SD mode. Normally, the HD mode ID is starting from 500. Try to use a special method called as "Blind Adjustment Method" see is it can adjust back their HD mode in this TV. The Blind Adjustment Method for this TV is using the remote control and press 062598 + MENU + 501, TV power off and power on again, the TV display is back to normal now in HD mode. (Note: This TV chassis after upgraded their firmware, it will show in SD mode only. After that need to adjust back to HD mode by the method above).

34) Brand & Model TV: TCL 42P11FBDE TV

Symptom: Pink Color Display Problem

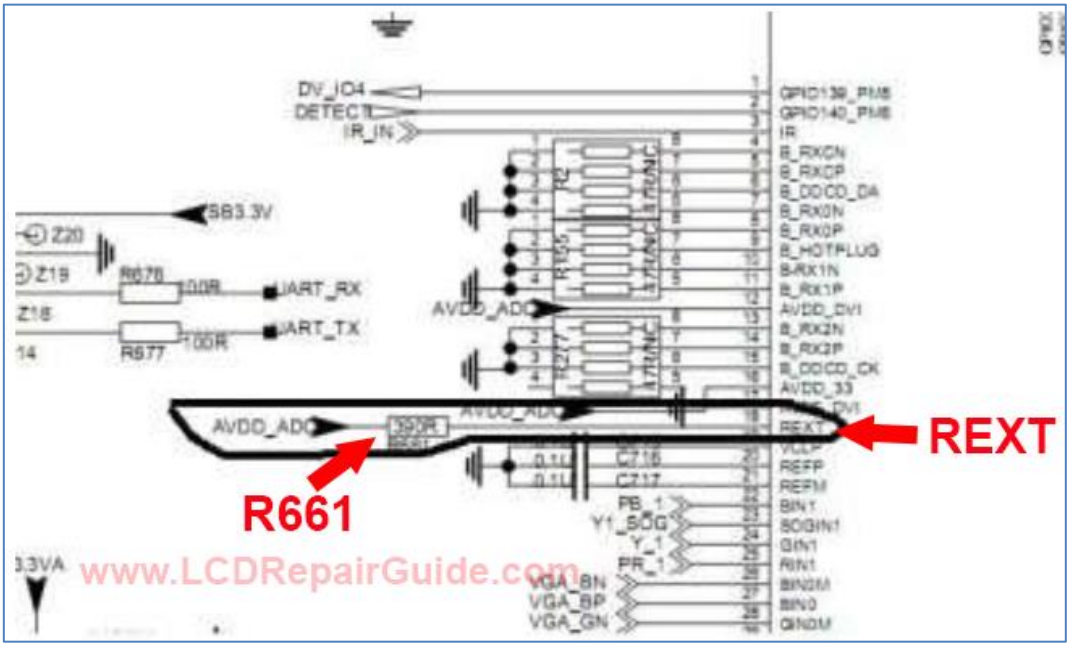
This TV everything is ok, just the display color abnormal, pink color display.

Repair Solution:

Use the LVDS Panel Tester test the screen, the display is back to normal. That's mean the T-con, Panel and Backlight are normal. So it is the TV Mainboard problem. Again, we can use the EXV2010 TMRT check the TV Mainboard video output, it is showing the pink display! This is confirming the problem is in the TV Mainboard.

This TV Mainboard is built-in the MEMC section. Check the LVDS output video signals, all are nearly 0V! Normally, these pins have about 1V~1.2V there. Because of this TV everything is working fine, just the display color abnormal, that's mean their main firmware is okay and the MEMC normal. So the problem will be CPU (MSD206) defective (LVDS section) or the CPU LVDS output corresponding components abnormal.

Try to replace the 24C64 user EEPROM memory IC still not help. So check the CPU (Mainchip: MSD206) LVDS supply voltage pins, all are okay.



When check the CPU pin-18 (REXT) as the photo above. This pin-18 just has 0.2V only! Normally, this pin-18 (REXT) has 3V. This signal pin voltage is supply from AVDD_ADC 3.3V through a resistor 390 ohm (R661). Check this R661 resistor and it has 3.2V there, but it cannot reach to the CPU pin-18 (REXT). It could be their loop holes leakage or open circuit. Use a wire connect from R661 output to the CPU pin-18 (REXT) there, the TV is back to normal.

Note: Please remember this pin REXT! This REXT pin abnormal can cause the display white screen in MS19C chassis TV (CPU is: MST9U19C). The REXT corresponding components, for example the 390 ohm resistor open circuit and causing the TV white screen problem, but other TV function is okay.

35) **Brand & Model TV:** TCL D42A261 Chassis AM6C LED TV

Symptom: TV Stuck on Start-up Logo "TCL"

This TV has been repairing by other TV repairer several times due to the same problem. Every time just upgraded the firmware to solve the problem. But after roughly 2 months, the TV same problem will occur.

Repair Solution:

Check the TV Mainboard each LDO & DC-DC circuits with Hair Dryer blow hot air to it, their output voltage still normal and stable. Suspect their EMMC chip defective, especially this EMMC is using the Toshiba THGBM5G5A1JBAIR has high damage rate. So, decided to replace the EMMC chip. Write the mBoot (Bootloader) first, then use the USB drive to upgrade their main firmware. This TV is back to normal now. After 6 months call back to customer regarding this TV, the customer said the TV is no problem and working perfectly.

36) **Brand & Model TV:** TCL L42F1300-3D Chassis MS28L LED TV

Symptom: Sometimes TV Can't Start-up

Repair Solution:

When TV can start-up, check the PSU output voltage normal and stable. Follow by checking their reset & crystal circuits, BUS circuit all normal. When the TV can't start-up, check their PSU, is has 24V but the Mainboard not send the BL_ON signal to inverter section. Suspect the U502 25F16 flash memory IC abnormal, because when the TV is not start-up, it should be in standby mode! After replaced the U502, the TV back to normal and working perfectly. The TV burn test several days also no problem.

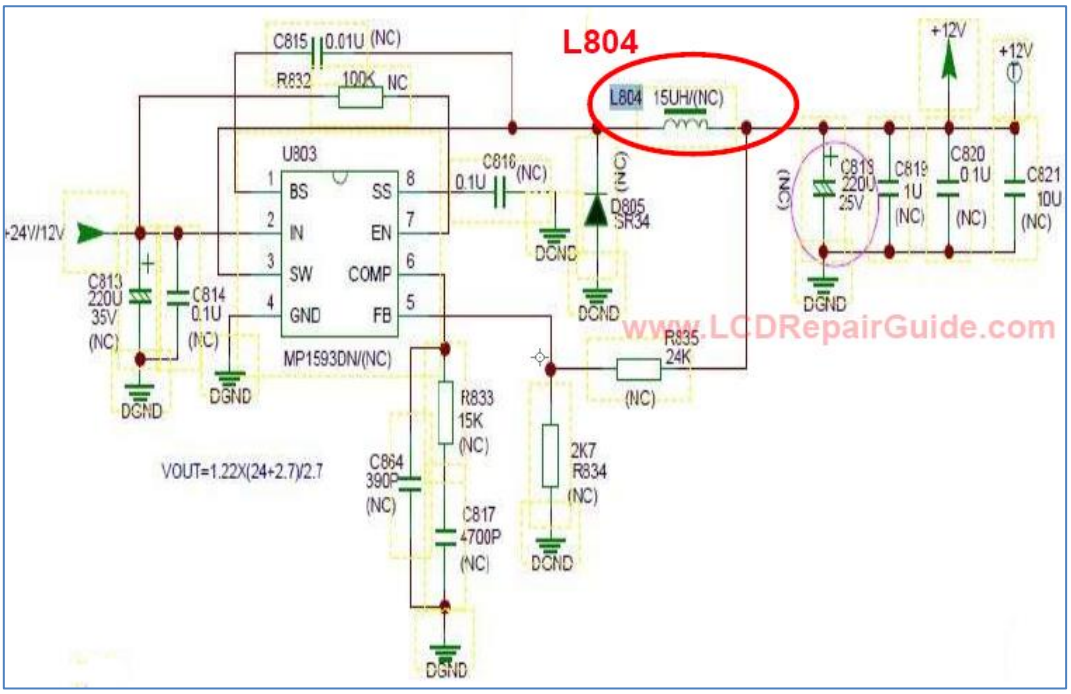
37) Brand & Model TV: TCL L42M90 Chassis MS19C LCD TV

Symptom: TV Display Abnormal Randomly

Customer complain this TV problem is after use about 2~3 hours, the TV display abnormal and sometimes it will hang and not working too.

Repair Solution:

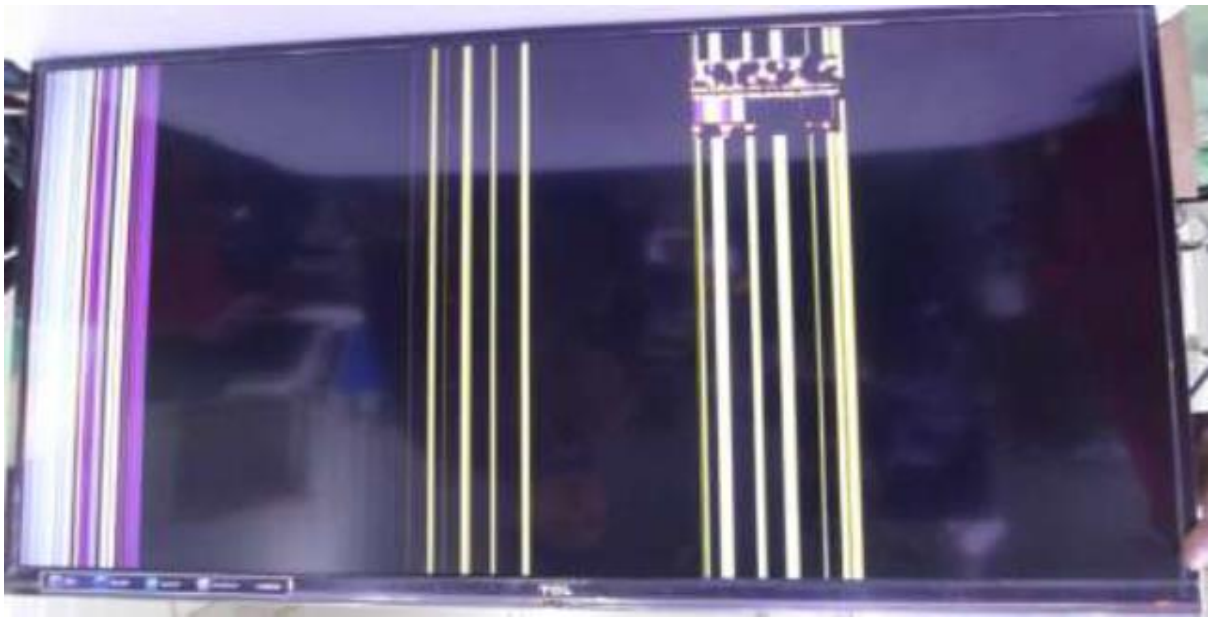
Check the TV PSU and Mainboard LDO & DC-DC circuits, all looks like normal. Use the Hot Air Gun (or Hair Dryer), blow the hot air to DDR & CPU areas but not help. Check PCB board and found their bottom side, 24V convert to 12V circuit area, their PCB location color was changed due to the heat. Especially, their L804 coil looks like abnormal got burnt marking, but this circuit voltage output is normal when TV running. But still replace L804 with a good one and re-soldering this area components for any dry joins or bad soldering points. After replaced this L804, it's broken with a pinch of hand. So, the L804 coil interior has been charred. After replaced L804, burn test the TV several days also no problem and working perfectly.



38) **Brand & Model TV:** TCL L43F3320-3D Smart LED TV

Symptom: Display Abnormal After Replaced T-CON Board
This TV original problem is no display but backlight lit.

Repair Solution:
Check the T-con Vcc voltage and LVDS data voltage both normal. After replaced a good T-CON board to this TV, the TV display is abnormal now. Compare both T-CON board is same exactly and found an EEPROM IC 24C64 on the T-CON board. Exchanged both EEPROM IC on T-CON board and the TV display abnormal problem solved!



39) **Brand & Model TV:** TCL L46E5200BE Chassis MS28 LED TV

Symptom: TV Cannot Connect to Internet

Power on the TV, everything is okay, just cannot connect to internet through network port.

Repair Solution:
Try to check the TV Mainboard with Start-up Log (SecureCRT) everything is ok and no any error message. When connect the broadband network wire (RJ45) to TV network port, the D800 LED light is off!

Normally, this LED light will be blinking after the network wire inserted. Check the Network PCB board U801 IC supply voltage, suddenly feel the IC U801 very hot and suspect this IC is short circuit. After replaced the U801 (1144C16) this TV can connect to internet now.

40) **Brand & Model TV:** TCL L48F3390A-3D Chassis MS99 Smart LED TV

Symptom: TV Stuck on Start-up Logo "TCL"
When the TV is stuck in start-up logo, try to use the front key pad button and remote control also not help.

Repair Solution:

This type of TV problem is because of their firmware unstable. Downloaded their MS99 chassis with 089 version compulsory upgrade firmware V8-OMS9904-LVFV0 89 and unzip it first. After unzip the file, the filename should be MS99_UPDATE, copy this file to the root of USB drive and insert the USB drive to the USB port (number 3rd USB port). Power on the TV or press and hold the power button on TV and apply the AC power to TV wait about 15 seconds and release the Power button from TV. The TV will show the firmware upgrade processing status bar. Please wait until the firmware install successful and DON'T power off the TV when the firmware is in process. After finish upgrading the firmware, the TV will restart again. Finally, this TV Stuck on TCL logo problem solved!

41) **Brand & Model TV:** TCL L48E5390A-3D Chassis MT32 LED TV

Symptom: TV Auto Shutdown After Warm-Up
This TV has lots of problem before and repair by several TV repairer. But still can't solve the TV problem.

Repair Solution:

At first though it was the backlight causing this problem, so modify their Q601 and think it is ok. But after test several times, it will change the problem to from indicator LED Light blinking. Use remote control to start-up the TV, sometimes it can start-up the TV. Even start-up the TV, it will pop-up their MENU. Try to adjust to AV mode and power off the TV, then power on TV, the TV cannot show in AV mode still back to TV mode, that's mean it cannot store the memory in their EEPROM memory.

Try to use the MS801, 052 version firmware upgrade the Mainboard, the TV looks like ok and working fine. But after burn test the TV about 2 hours, still the same problem. Use the PSU Self-Test method to isolate the TV problem. But it seems like PSU can output all the voltages. Because of this TV most of the time is occur when it is heat, so using the Hair Dryer to blow the hot air to each IC of PSU board plus with PSU Self-Test method. When the Hair Dryer blow to IC301 (FAN79300), their PFC voltage drop to 330V! But in normal temperature, the PFC back to normal 400V. So replaced the U301 (FAN7930) IC, their PFC voltage is 400V, even using the Hair Dryer blow it several minutes. Finally, the TV burnt test about several days still no problem and it was successful to solved this strange problem TV.

42) **Brand & Model TV:** TCL L50E5500A-3D Chassis MS801 Smart LED TV

Symptom: TV Stuck on "LAUNCHER STOP WORKING"

Repair Solution:

As usual with this type of TV problem, it will be their firmware issue. This TV chassis is MS801, try to use the firmware upgrade for 5300D, 701 version and upgraded to this TV. Unfortunately, after upgraded this firmware, the TV front indicator light all off. TV cannot start-up, the 24V and 3.3V voltage are normal. But the LVDS, T-CON Vcc supply and backlight all no voltage. Check with the TCL service website, MS801 chassis for this TV need to use the 874 version compulsory upgrade

firmware. Try use the 874 version firmware to upgrade and the bootloader firmware, still not successful. Is that the flash memory IC abnormal? Try to replace their 25Q16 flash memory IC and upgrade their bootloader firmware. After the bootloader firmware successfully upgraded, again, use the 874 version main firmware (compulsory upgrade firmware) to upgrade. Finally, both bootloader & main firmware is upgraded successfully. The TV problem solved!

43) **Brand & Model TV:** TCL LE5050A-3D Chassis MS801 LED TV

Symptom: TV Auto Shutdown
This TV when power on the TV, it will automatically shutdown the TV.

Repair Solution:

Use the PSU Self-Test method to isolate the problem and it is okay. So, suspect the TV Mainboard problem. Check the Mainboard LDO & DC-DC circuit output voltages (5V, 3.3V, 2.5V, 1.5V and 1.25 V) all normal. Check the reset circuit and crystal circuits all seems okay. Suspect is it their firmware abnormal causing this problem? So try to easy way first since this TV firmware is available. After upgraded their firmware, this TV is back to normal now.

44) **Brand & Model TV:** TCL D55A710 Chassis MT55CD Smart LED TV

Symptom: TV Stuck on TCL Logo

Repair Solution:

As usual, first try to upgrade their firmware, but unsuccessful. Replaced their U9 (THGBM4G5D) EMMC chip and upgrade again their Bootloader & main firmware successfully. The TV stuck on TCL logo problem solved.

45) **Brand & Model TV:** TCL L55E5500A-3D Chassis MS801 Smart LED TV

Symptom: Cannot Use the Built-In WIFI

Go to the MENU WIFI setting found the selection of Built-In WIFI changed to grey and cannot to select it.

Repair Solution:

This type of problem could be the built-in WIFI defective or the main firmware problem. Check this TV current firmware is using the MS801, 08-MS801040LF1V038 version firmware. Go to the TCL website there and found this version firmware is fully NOT match with this L55E5500A-3D TV! This version of firmware is not included the WIFI feature, that's why WIFI cannot use. Call the TV owner and he told that this TV last time was repair by another TV repairer before.

Check with the TCL website and found that L55E5500A-3D TV latest version is 08-MS80104-LF1V864. After downloaded this firmware, use the USB drive to upgrade their firmware. Finally, this TV WIFI function is back to normal now.

46) **Brand & Model TV:** TCL D55P6100D Chassis MS28C Smart LED TV

Symptom: TV Network Port Problem

Repair Solution:

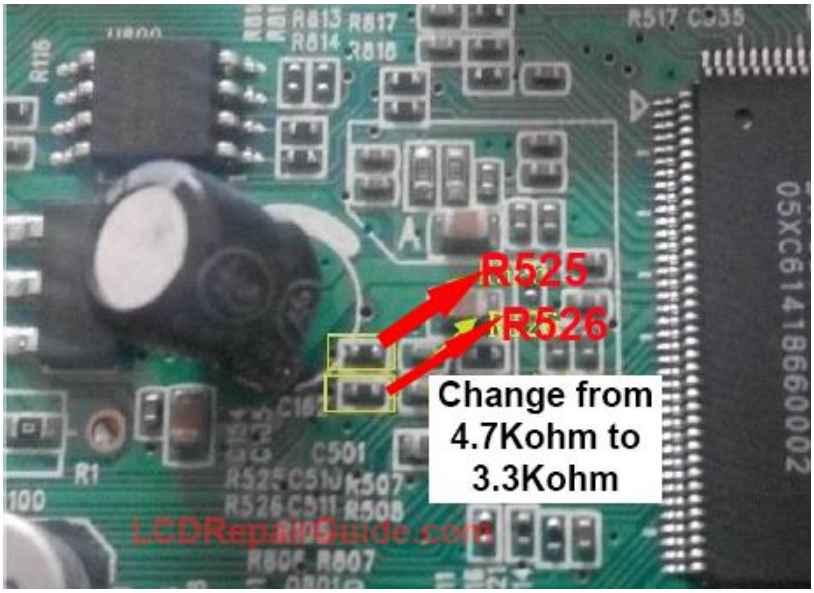
Connect network cable (RJ45) to TV, go to the MENU and open the Network Setting, found the MAC, DNS & HOST all is 000.000.000. This problem occurs maybe their firmware issue. Try to write the mBoot firmware and MAC address but still same problem. Open the TV rear cover found their network indicator light is off! Tracing the Network port circuit and found their L903 coil open circuit. After replaced the L903, network port can connect the internet successfully.

47) **Brand & Model TV:** TOSHIBA Chassis MT27- 42AL300C、32CL300C、42CL300C、39L2300C、42EL300C、32L2300C、32L2305C、32AL300C、 32EL305C、50EL300C LED TV

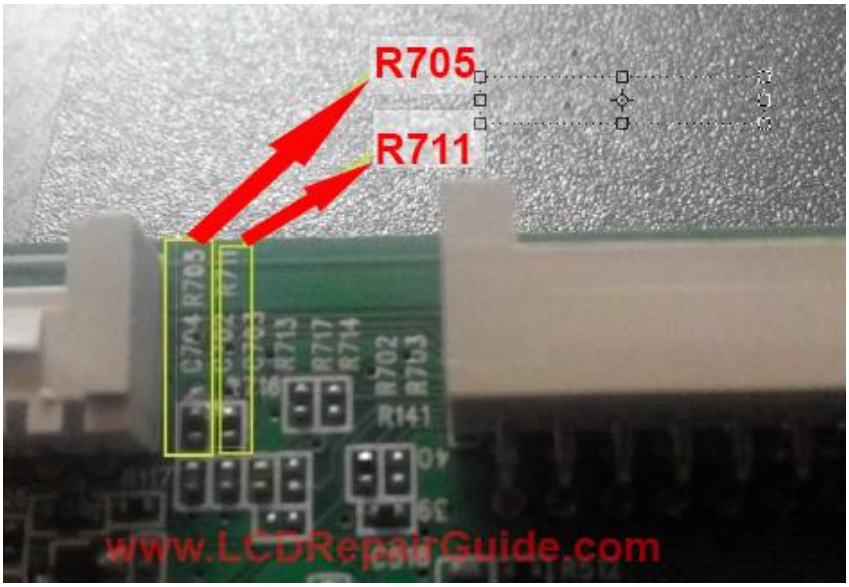
Symptom: Randomly No Display or Flashing Blue Screen on HDMI Input.

Repair Solution:

a) Change R525 & R526 from 4.7K ohm to 3.3K ohm.



b) Remove the R705 & R711 resistors from the Mainboard.



48) **Brand & Model TV:** Toshiba 42L13xx series LED TV

Symptom: No Display but it is the Backlight Light Problem

The TV is in no display problem, see the backlight is lit or not. If backlight lit but no display, it could be their Mainboard, T-con Board or the Panel defective. If the backlight off, it is needing to use the PSU self-test method is isolate the problem. For this Toshiba LED TV, use multimeter to check their P801 connector pin-12 (BL-ON) should have about or more than 3V, pin-14 (DIM) should same or more than 1V, pin-5 is 24V and pin-1 about 55V. If these voltages abnormal, unplug the P801 cable and recheck their voltage output. If the output voltage is back to normal now, that's mean the problem is in their LED driver board/section or backlight module (LED Strips inside the screen). If the voltage output same problem also abnormal, that's mean the problem will be their PSU or Mainboard defective.

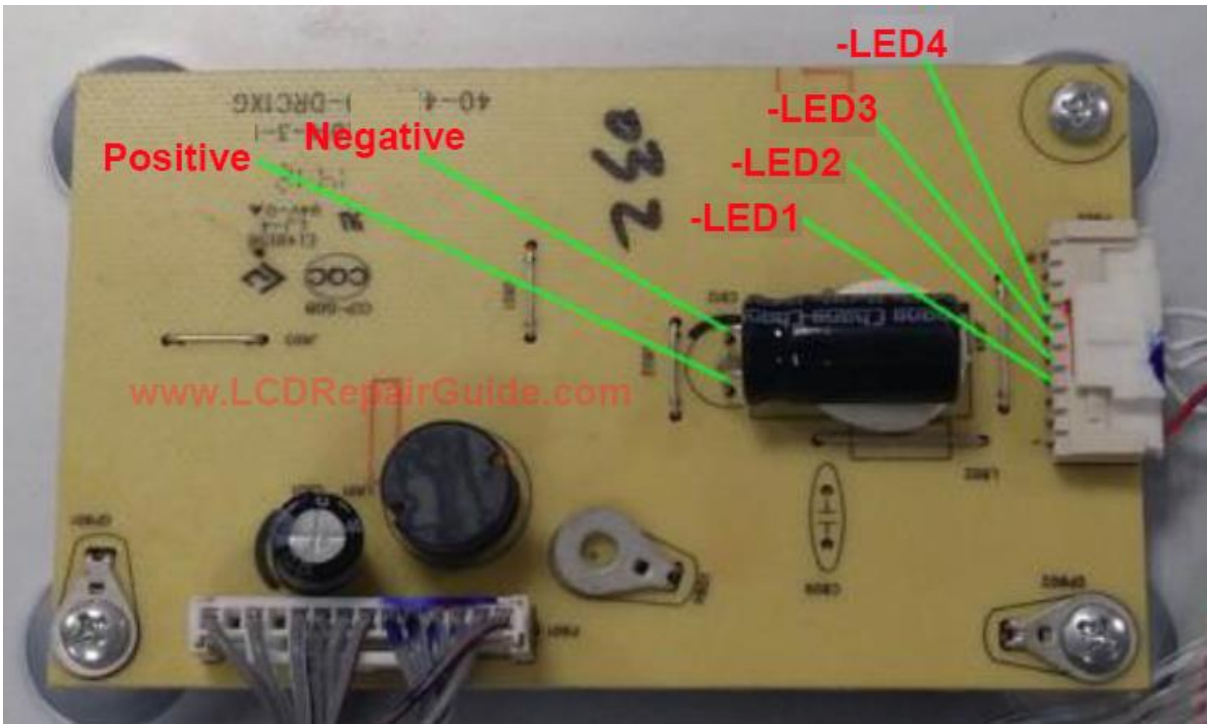
Repair Solution:
If the LED TV using the third party (part bought from outside not original produce by TV Manufacturer), their part number is 4D-LE4201-DS6B0Z like the photo below:

If that's the above module part number, please check their LED driver board, especially these common fault components like: Q801, D801, C810, C811, R805, R806, R814 and R815. If these components also look like normal, then need to check the backlight module (inside the screen).

If the module part number is 08-AU42DML-LC43, it is SCBC produce by the TV Manufacturer. For this module, check their LED driver IC (U801) and corresponding components has any burnt marking or not. If yes, that's the LED driver board defective and causing by the backlight module. Use the multimeter to check the P802 connector LED1-, LED2-, LED3- & LED4- to the GND ohm values. The testing method is, if use Analogue multimeter, Red probe (+ve) to GND, Black probe (-ve) to check the LEDxx pins. If that's the Digital multimeter, Red probe (+ve) to check the LEDxx pins and Black probe (-ve) to GND. The normal ohm values is about 1M ohm ±5%. If their ohm values below the 1M ohm, it is causing the LED driver board burnt and need to replace, also need to check their backlight module (LED Strips).

If the IC (U801) and corresponding components no any burn marking and the P802 LEDxx pins to GND ohm values normal, then just need to replace the LED driver board to give it a test.

Check LED Driver for Backlight LED Strips:



A) Check the voltage of C812 electrolytic capacitor:

i) If the capacitor C812 voltage is steady 54V, LED driver board no boots up voltage, no backlight. LED driver board MOSFET not

working because of the LED Strips short circuit and cause the LED driver board IC burnt.

ii) If the capacitor C812 no voltage: MOSFET, rectifier diode damage causes the resistor R805 & R806 burnt and open circuit.

iii) If the capacitor C812 both positive & negative pins voltage suddenly increase to 90V then quickly drop to 54V: This is because of the LED Strips open circuit, -LED1 ~ -LED4 no feedback circuit, cause the LED driver board control IC is in protection mode.

B) Check the LED connector ohm values:

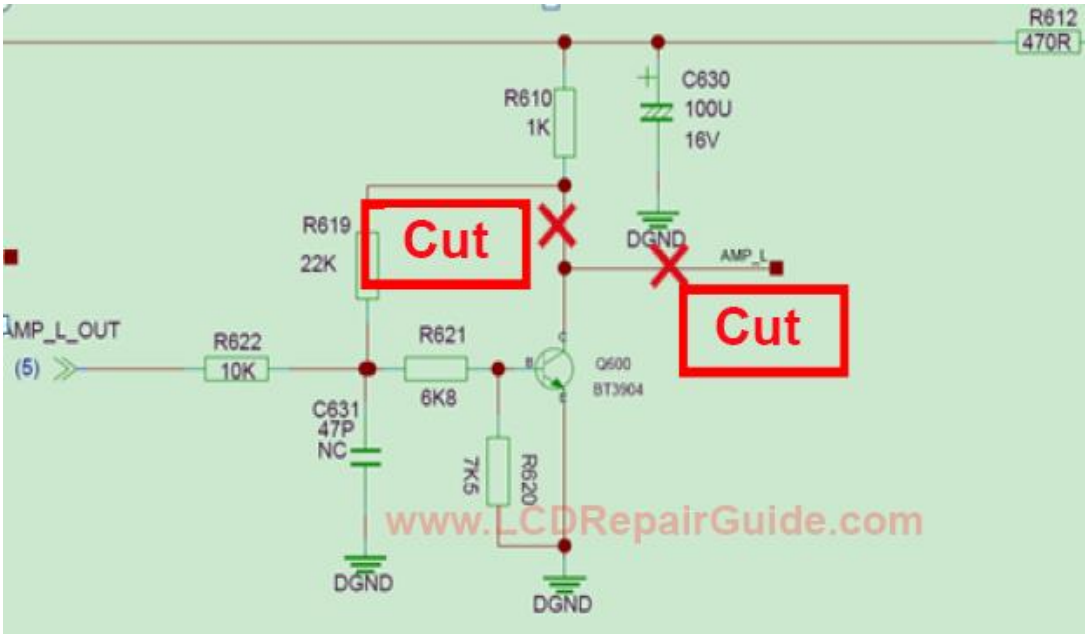
i) LED connector pins -LED1~-LED4 (pins-4, 5, 6, 7) each pin to GND ohm values is about 1M ohm (±5%). If one of the pin ohm values is abnormal, that's mean their LED Strip is abnormal/open circuit or LED backlight board IC defective.

49) **Brand & Model TV:** Toshiba 32FL150C, 46FL150C Chassis MS81L LED TV

Symptom: TV Audio Output from Left Speaker Sometime has "KA..DA.." Sound and the Sound output is Low included some noise too.

Repair Solution:

This TV sound problem is because of their Mainboard PCB quality no so good. The solution for this TV Mainboard is too cut the pre-amp Q600C output AMP_L line and cut the amplifier audio input AMP-L line. After that, use a wire connect both cut points together to solve this problem. Same as the photo below:



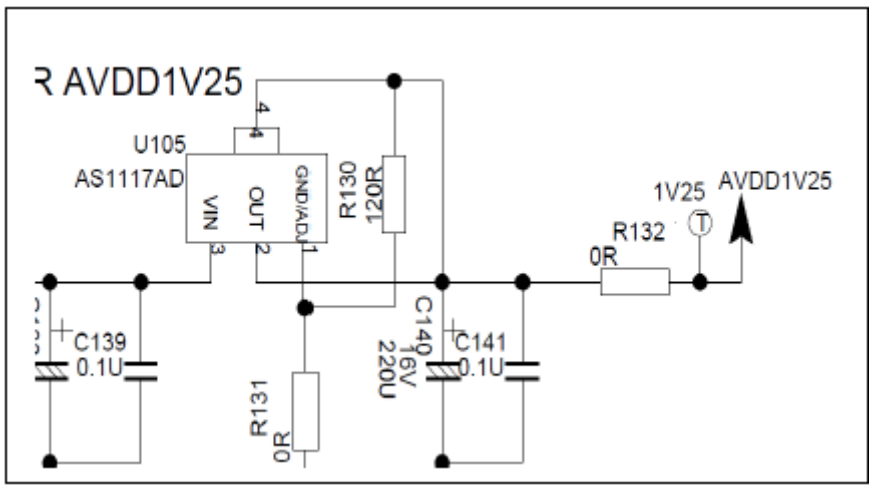
50) **Brand & Model TV:** Toshiba 32A100C Chassis MT23L LED TV

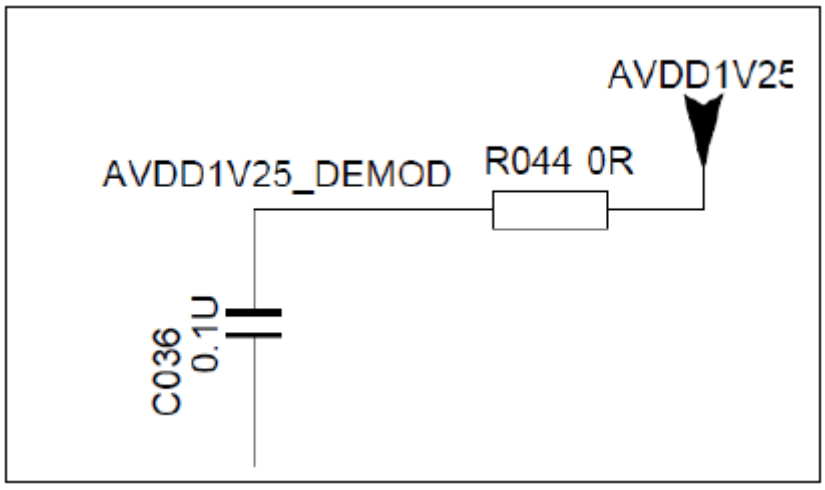
Symptom: TV Can't Start-up
Front Indicator LED Lit Red Color Light only.

Repair Solution:
This TV problem is cannot start-up even press the POWER ON button on remote control or TV. The front indicator LED is lit red color light only.

After checking the PSU board, all the output voltages are okay. But no BL-ON signal and LVDS signal from TV Mainboard. Check all the CPU MT8223 voltage and it is normal, replace their EEPROM, crystal and its smd capacitor all same problem. Re-programmed the firmware also not help.

Replace the CPU MT8223 chip also same problem. When check on the R044, the 1.25V is missing! Normally, this R044 has about 1.25V to the CPU. Use a wire connect from the U105 to R044 pin and problem solved! Finally, found lots of this model or similar model TV has this problem occur, all using this method to solved the problem.





51) **Brand & Model TV:** Toshiba 46L5350C Chassis MS28L LED TV

Symptom: TV Can't Start-up
The TV cannot start-up with front indicator red LED light.

Repair Solution:

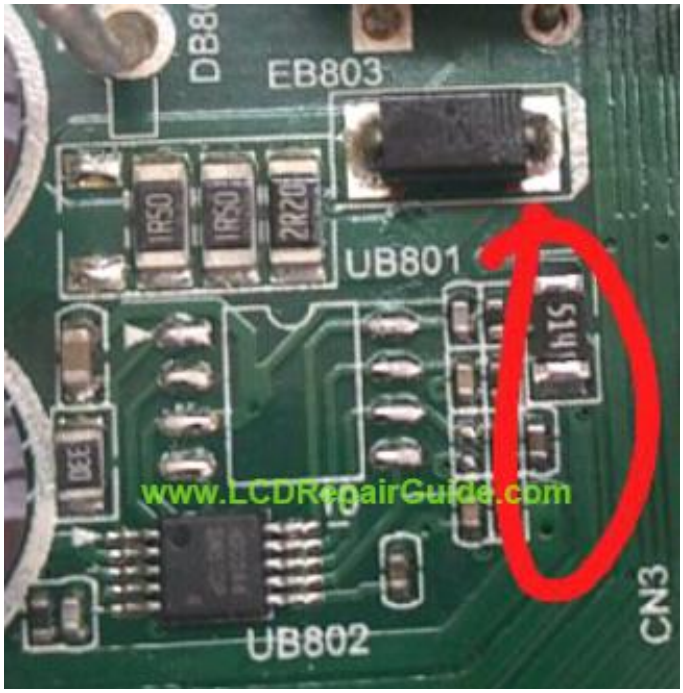
Check the PSU normal and the TV mainboard all LDO & DC-DC circuits voltage output normal. Also check the reset circuit & crystal circuit in Mainboard also no problem. Try to update/upgrade the flash firmware but no help. Follow by checking the communication lines in between the DDR to CPU, found one of the resistor in SMD network resistor RP704 ohm values a bit high about 500 ohm (other circuit lines is about 360 ohm). Remove the RP704, found the problem was in the DDR RAM dry join or bad soldering point. Reflow the DDR RAM and the TV is back to normal now.

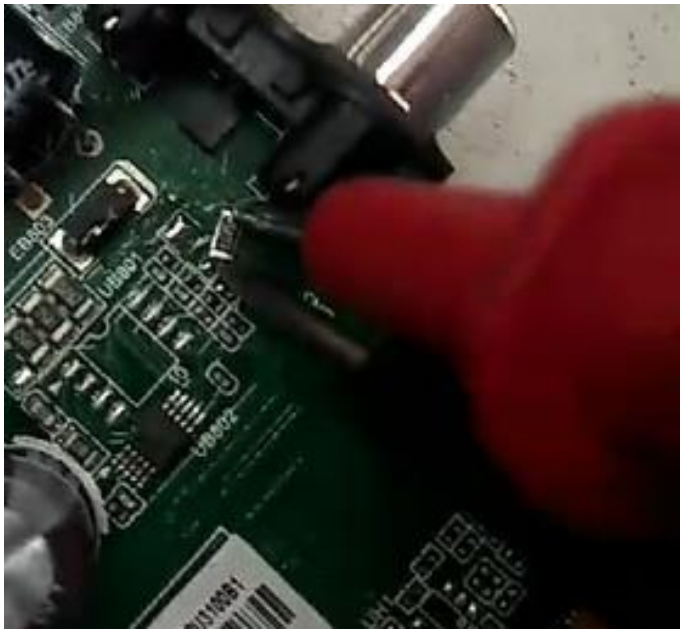
52) **Brand & Model TV:** Universal TV MB-TP.VST69T.PB901

Symptom: TV Backlight On then Shutdown within 2 Seconds

Repair Solution:

This TV Universal Mainboard has this common fault. When turned on the TV, their backlight lit then shutdown within 2 seconds. This TV Mainboard was built-in the LED driver control section. It is because LED driver control circuit component value abnormal. One of the SMD resistor value is changed from 510K ohm to 469K ohm! After removed this resistor and clean the bottom resistor location & replaced the 510K ohm resistor. The universal tv mainboard is working perfectly.


EB803
UB801
UB802
CN3
www.LCDRepairGuide.com



0469

Which LED TV Backlight Tester is "Best" to Use

Nowadays, lots of LED TV send to the repair shop and need to repair now. From all these LED TV faults record, show that the top symptom of LED TV is their TV backlight problem! Especially, their LED light bulbs, follow by the LED strips connector/connection and then their LED Driver board/section.

So, the LED strips & LED light bulbs tester is a must have tool for TV repairer now. But the LED TV Backlight Tester has lots of the brands and feature in the marker now. So, how do we know, which tester is best to use in LED TV repair? After doing some research for the LED TV Backlight Tester with other TV repairer and some of my own experience, found that just one or two of them is capable to accurate testing LED light bulb. LED strips and user friendly to use.

Actually, a good LED TV Backlight Tester, it can:

1) Tester can auto range to detect and check the LED Strips & LED Light Bulb voltages.
2) Tester has enough ampere to supply and accurate check the LED light bulb on the LED strips.

After the researches of several LED TV Backlight Testers, found some of the tester even they label it has how many high voltage & amperes of the tester, but the fact is most of them are not enough ampere to test LED Strips or the LED light bulb and causing wrong judgement to it.

When the LED TV Backlight Tester is a not enough amperes type tester, when the LED light bulb is not good or in bad condition (but haven't fully damage yet), this tester supply the small current to testing this LED light bulb, it can lit. But when connect back to TV backlight with fully loading, it will be causing the backlight or TV shutdown, especially with sensitive protection backlight circuit.

Not only that, some auto range LED TV Backlight Tester also can "burn" or shorted the LED light bulb due to the amperes supply too high. Or call it as inaccurately supply the ampere by the tester itself. Yes, the "Tester" sometime can damage the LED Light bulb on the LED strips, even the LED light bulb is in good condition.

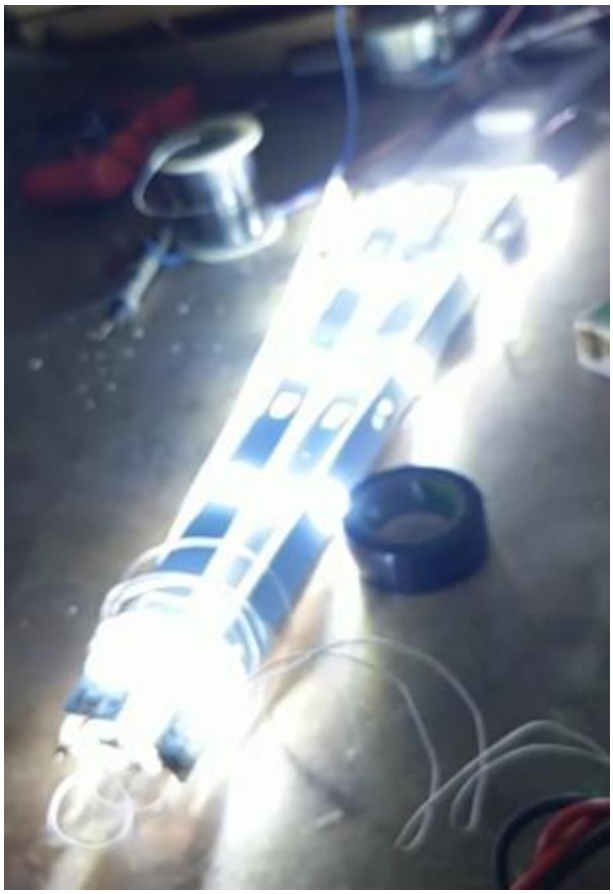
So, with the above problem of LED TV Backlight Tester, it can cause you do wrong judgement to the LED TV problem! With the above type of LED TV Backlight Testers, it will waste your time and money.

From the research result, until this ebook launch, me and others TV repairer found this LED TV Backlight Tester is good to use:

The above LED TV Backlight Tester quite good to use and highly recommend buying. But the above both testers, when using in more than 40 inches LED panel, it is hard to accurately check their backlight without open the screen. Because of these tester output amperes is not enough to use same as the output of TV LED Driver. So, if you want to test the big screen of LED TV backlight without dismantle their screen, then you need to use the "handmade" or DIY type power supply with the LED TV Backlight Tester built-in as photo below:

This hand made or DIY Power Supply + LED Backlight Tester can output up to 700mA (but normally use the 400mA or below) for testing he LED TV Backlight. This LED TV Backlight test will like the photo below and this DIY

tool can use to running the burn test for LED TV Backlight for whole day or 24 hours!



Conclusion:

Even you have a good tester to use, but this will not mean you can fix all the LED TV without a knowledge of how to repair TV. A good TV repairer, you need a good tester, after that, know how to use the tester and need to know how to repair TV with the help of tester.

Another New Tool to Easily to do the PSU Self Test with Monitoring Feature

This LCD/LED TV power supply testing tool can let you troubleshooting & repair the tv power supply (PSU) easily. This PSU Tool has built-in 3 x 5Watt heavy loading resistor, so it can fully test the LCD/LED TV power supply in full loading. Not only that, this PSU Tool also come in with different types of connectors and the voltage & signal lines. So it can convenient to troubleshoot & repair LCD/LED TV PSU. Compare to just using the DC volt lamp/s as loading to test the PSU, this PSU tool can fully load the power supply easily and accurately.

The main purpose to using this LCD/LED TV PSU Tool is:

1) When repair the LCD/LED TV, we cannot judge whether it is power supply or the TV mainboard problem, so using this tool to test the power supply.

2) If just have the LCD/LED power supply in hand, but without the mainboard and backlight, in this situation, we can use this tool to test the TV power supply without any problem. Especially this tool suitable for the TV spare part seller and the repairer they just bring back the PSU from customer to repair. Nowadays, some of the TV repairer they don't want to bring back whole TV to the office, because it can reduce the risk of TV screen/panel broken due to any

accident occurs. It also can help to save the workbench space for huge volume TV repair shop.

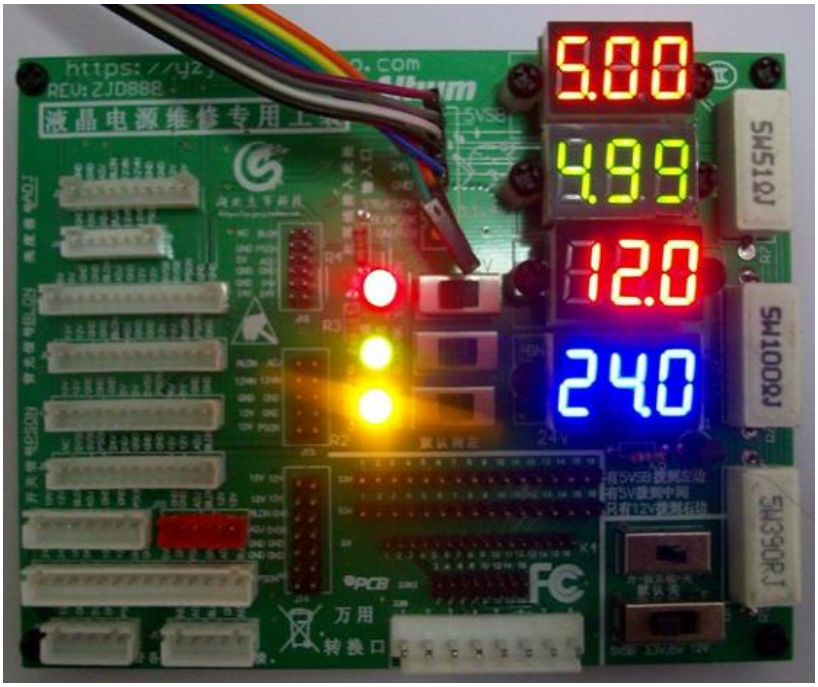
3) When the TV Power Supply output voltage is higher or lower than the original voltage values, then you can use this tool to check and see their actual voltage values from display unit directly.

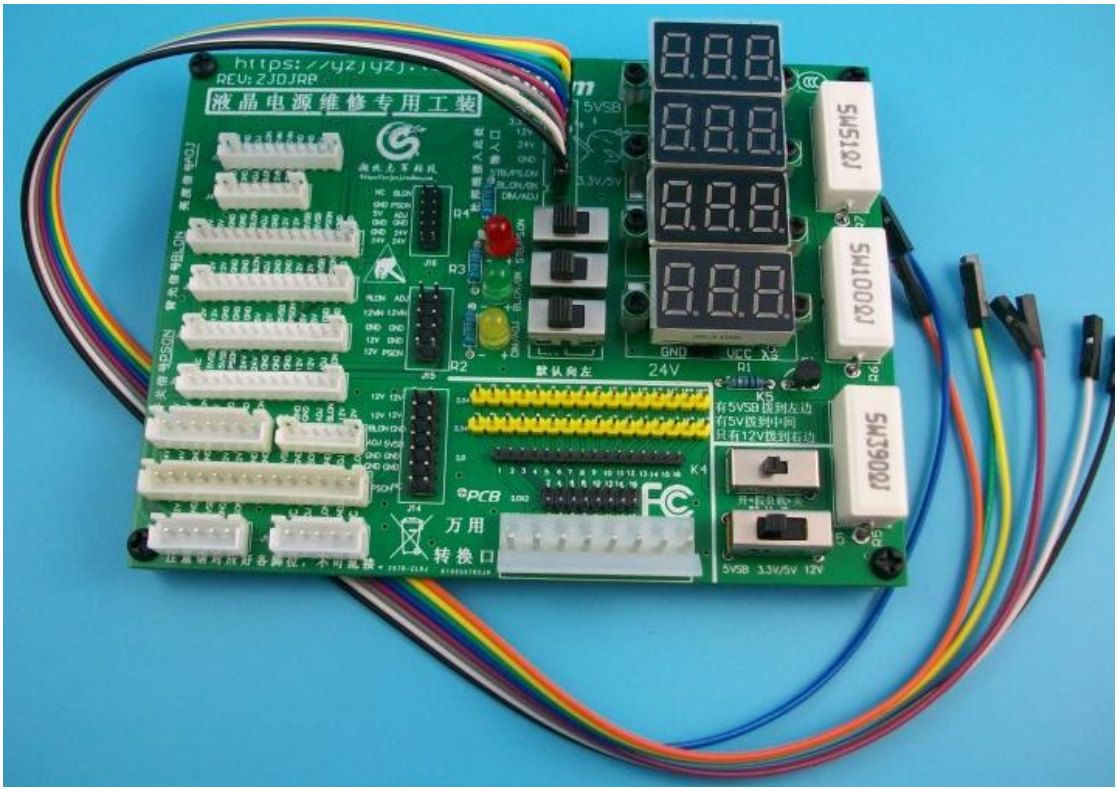
4) When the LCD/LED TV power supply has randomly problem, this power supply tool can help to monitoring all their output voltages at the same time. (You can use the video camera, CCTV type or similar camera to take video for this PSU tool and record their output voltages values. When one of the voltage lines abnormal and causing the PSU cutoff, we can check back the video and know which voltage line is the culprit).

5) When check the TV power supply offboard it is okay to use but connect to the TV mainboard it cannot work. With this type of problem, use this power supply tool can help us easy to do the troubleshooting.

6) If you're repairer often onsite service, this power supply tool is small and useful to help for troubleshooting & repair LCD/LED TV power supply.

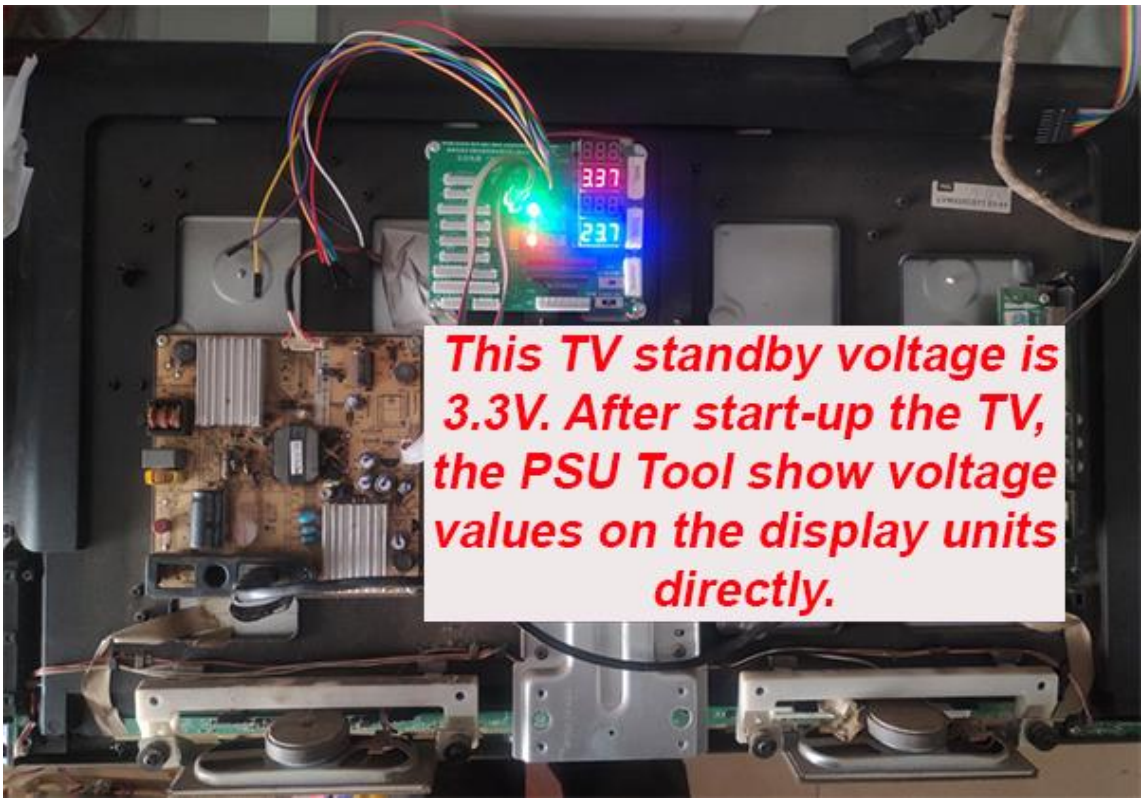
* The limitation of this LCD/LED TV Power Supply tool is, it only can test the voltage not exceed 30V!




液晶电源维修专用工装
万用
转换口
24V

www.LCDRepairGuide.com
This PSU Tool comes with 4 x magnet screw legs. So it can stick on the TV metal shield

Testing LED TV Power Supply
with LED Strips
www.LCDRepairGuide.com


This TV standby voltage is 3.3V. After start-up the TV, the PSU Tool show voltage values on the display units directly.

SMD 6-Pins IC in LED/LCD TV-Marking Code & Equivalent List

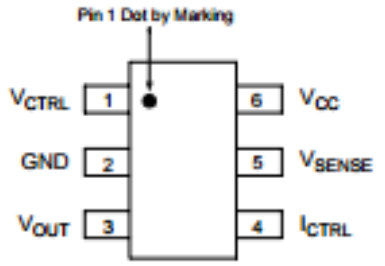
A lot of the SMD components inside the LED & LCD TV/Monitor become smaller. Especially the 6 pins type SMD components. Because of their body size is same as other three pins type SMD components, so we will think it was a diode, transistor, or etc. Actually, it is a power IC or similar IC! I will let you know the 6 pins type SMD IC in LED/LCD TV.

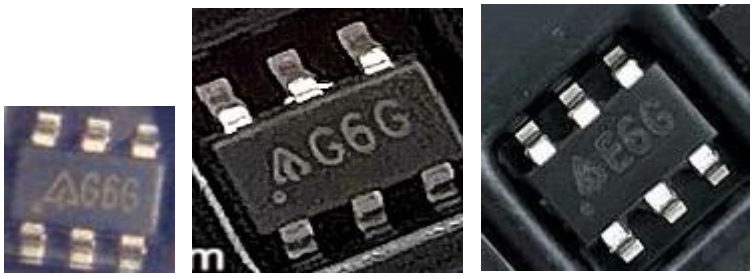
Here is the list of 6 pins SMD components:

1) AP4313/AP4313KTR-G1 (Constant Voltage and Constant Current Controller IC)

Marking Code: **G6G**

Example Equivalent: **G6G, E6G** & etc.



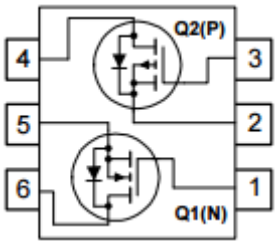


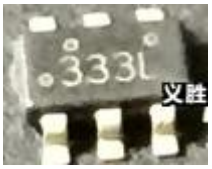
Package	Temperature Range	Part Number	Marking ID	Packing Type
SOT-23-6	-40 to 105°C	AP4313KTR-G1	G6G	Tape & Reel

2) FDC6333C (30V N & P-Channel PowerTrench MOSFETs)

Marking Code: 333x

Example Equivalent: **333, 3333, 333A, 333J, 333K, 333L** & etc

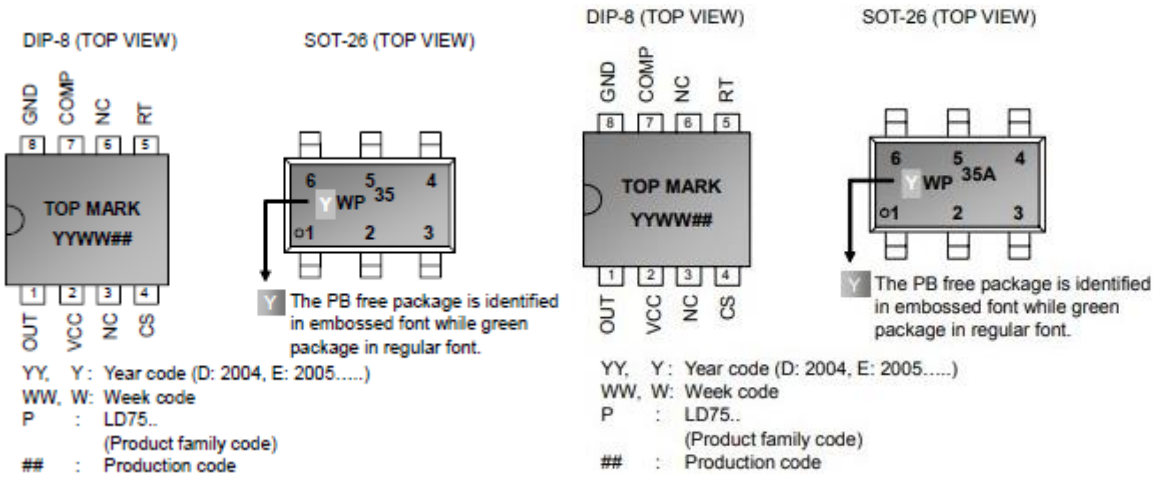




3) LD7535 (Green-Mode PWM Controller with Integrated Protections)

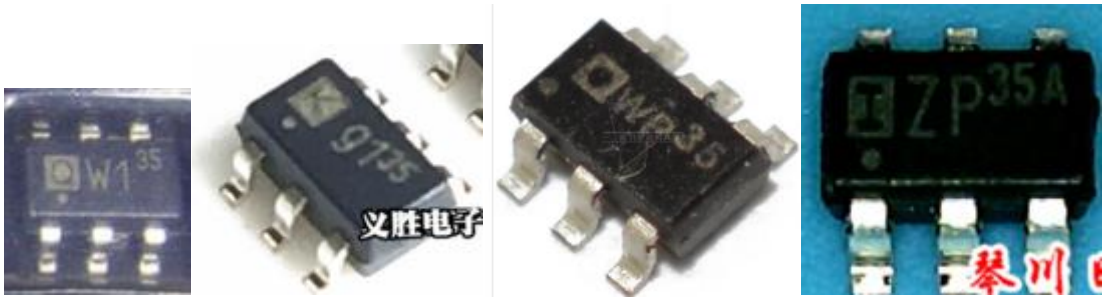
Marking Code: 35 or 35A (for LD7535A)

Example Equivalent: **g135, W135, WP35, ZP35A** & etc.



Pin Descriptions

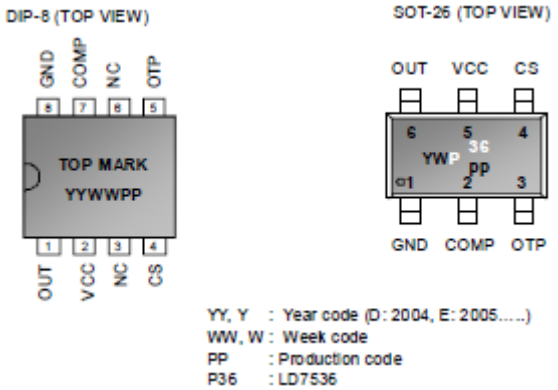
PIN	NAME	FUNCTION
1	GND	Ground
2	COMP	Voltage feedback pin (same as the COMP pin in UC384X), By connecting a photo-coupler to close the control loop and achieve the regulation.
3	RT	This pin is to program the switching frequency. By connecting a resistor to ground to set the switching frequency.
4	CS	Current sense pin, connect to sense the MOSFET current
5	VCC	Supply voltage pin
6	OUT	Gate drive output to drive the external MOSFET



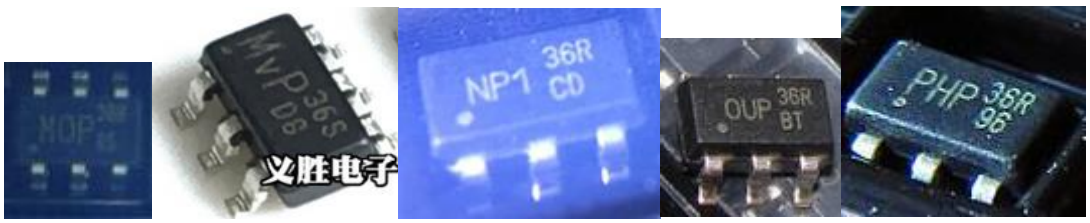
4) LD7536/LD7536RGL (Green-Mode PWM Controller with Frequency Swapping and Integrated Protections)

Marking Code: 36, 36R, 36S

Example Equivalent: **MOP36R, MvP36S, NP136R, OUP36R, PHP36R & etc.**



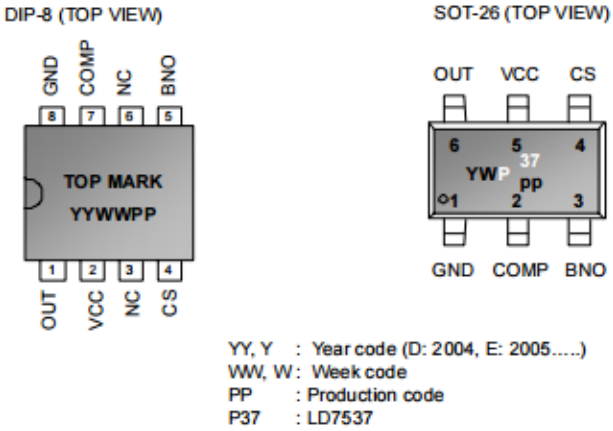
YY, Y : Year code (D: 2004, E: 2005.....)
WW, W : Week code
PP : Production code
P36 : LD7536



5) LD7537 (PWM Controller Power IC)

Marking Code: 37x

Example Equivalent: **JtP 37R, KGP 37R, LIP 37R, LWP 37R** & etc

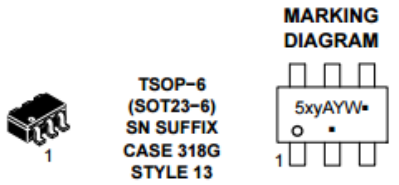


YY, Y : Year code (D: 2004, E: 2005.....)
WW, W : Week code
PP : Production code
P37 : LD7537

6) NCP1251A (PWM Controller Power IC)

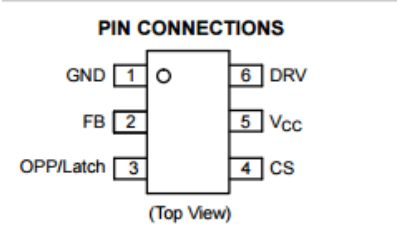
Marking Code: 5AAxxx

Example Equivalent: **5AARBQ, 5AARCH, 5AARXN, 5AARYM, 5AARZF, 5AARZG, 5AARZH**, & etc



5xy	= Specific Device Code
x	= A or U
y	= A, 2, C, D, or F
A	= Assembly Location
Y	= Year
W	= Work Week
▪	= Pb−Free Package

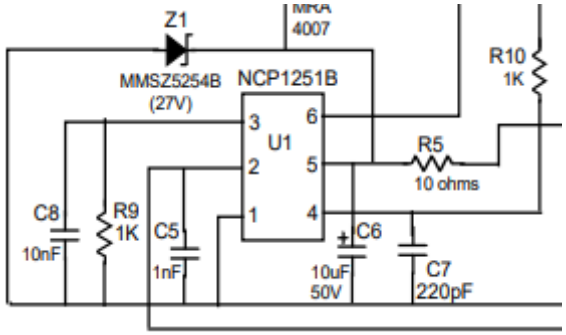
(Note: Microdot may be in either location)



7) NCP1251B (PWM Controller Power IC)

Marking Code: 5A2xxx

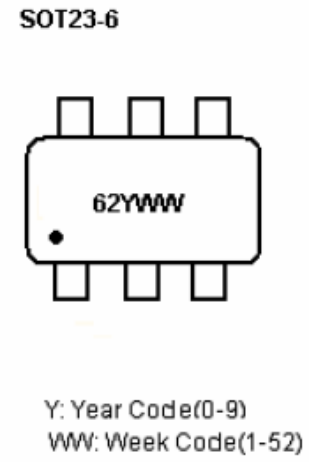
Example Equivalent: **5A2RAW, 5A2RXG, 5A2RYM, 5A2RYU, 5A2RZV, 5A2RZY** & etc.

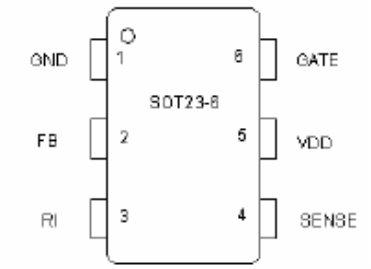


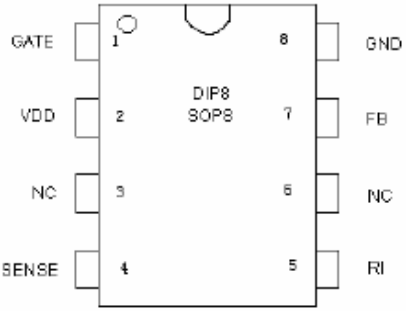
8) OB2262/OB2262MP (Current Mode PWM Controller)

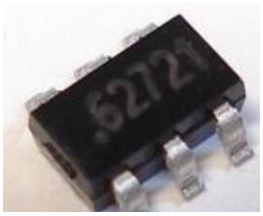
Marking Code: 62

Example Equivalent: **62721, 62842, 62934, 62A21, 62B21** & etc.





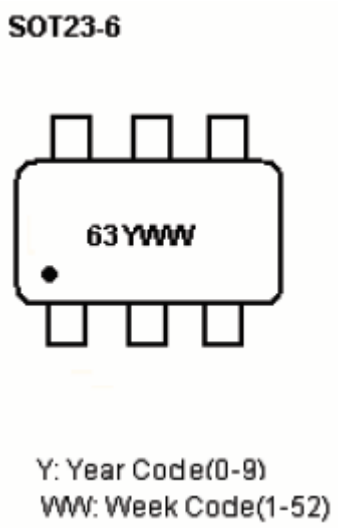


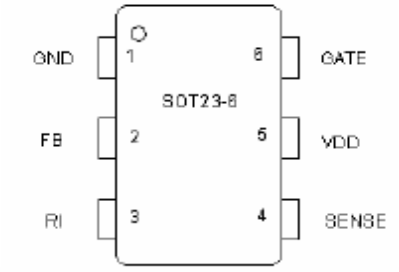


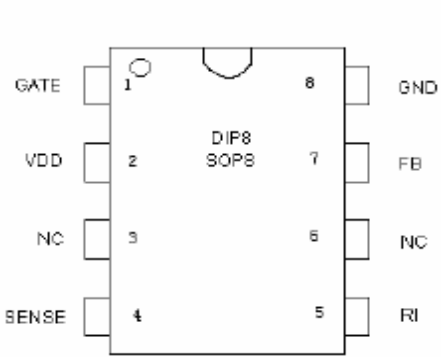
9) OB2263/OB2263MP (Current Mode PWM Controller)

Marking Code: 63

Example Equivalent: **63513, 63C24, 63D40, 63H50, 63K16, 63M09, 63T28, 63T32** & etc.



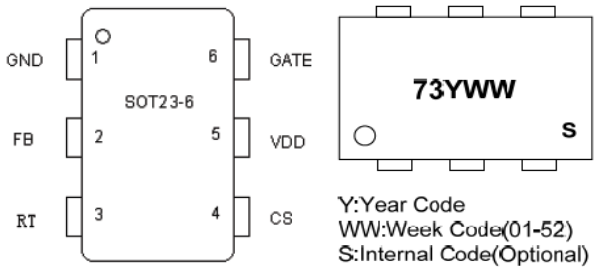


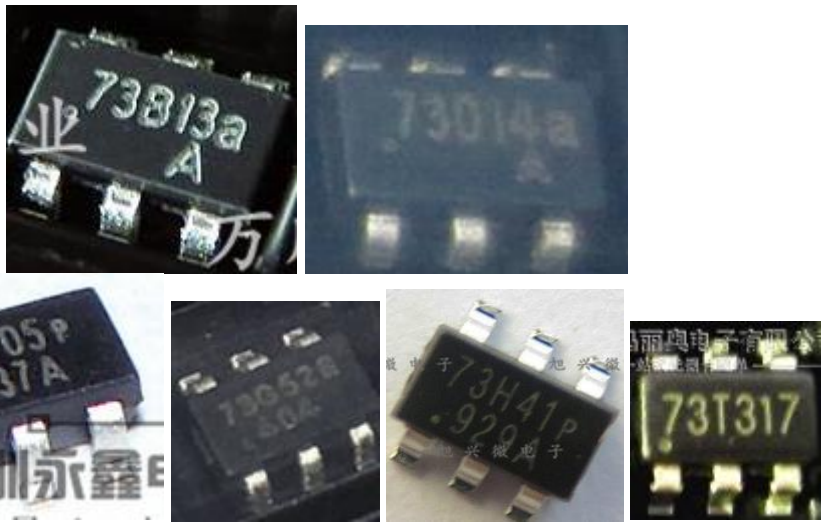


10) OB2273/OB2273MP (High Performance Current Mode PWM Controller)

Marking Code: 73, another special code is: **QBPA** (OB2273MP)

Example Equivalent: **73A49, 73B13, 73D14, 73D31, 73F05, 73G62, 73H41, 73T317, QBPA** & etc.

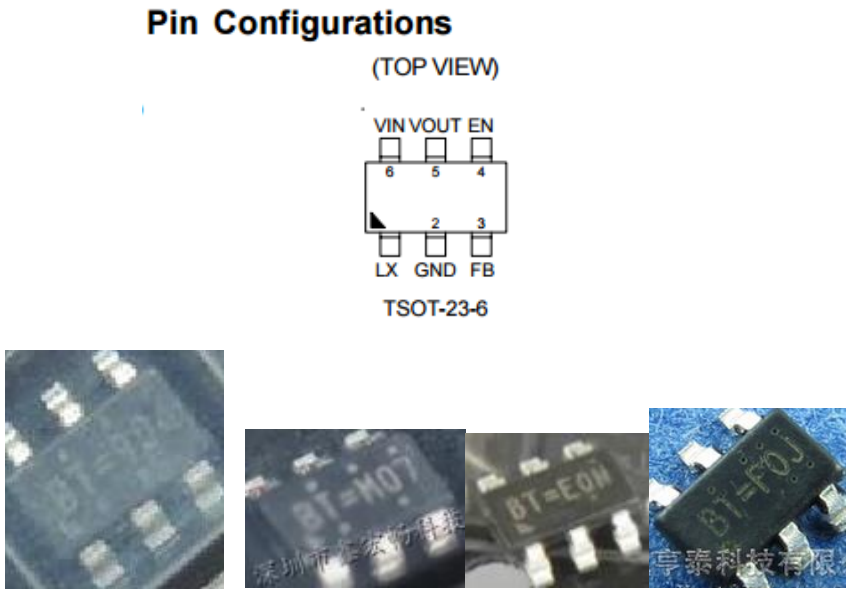




11) RT9293BGJ6 (High Performance Asynchronies Boots for 10 WLED Driver)

Marking Code: BT=xxx

Example Equivalent: **BT=904, BT=K45, BT=MO7, BT=EON, BT=FOJ** & etc

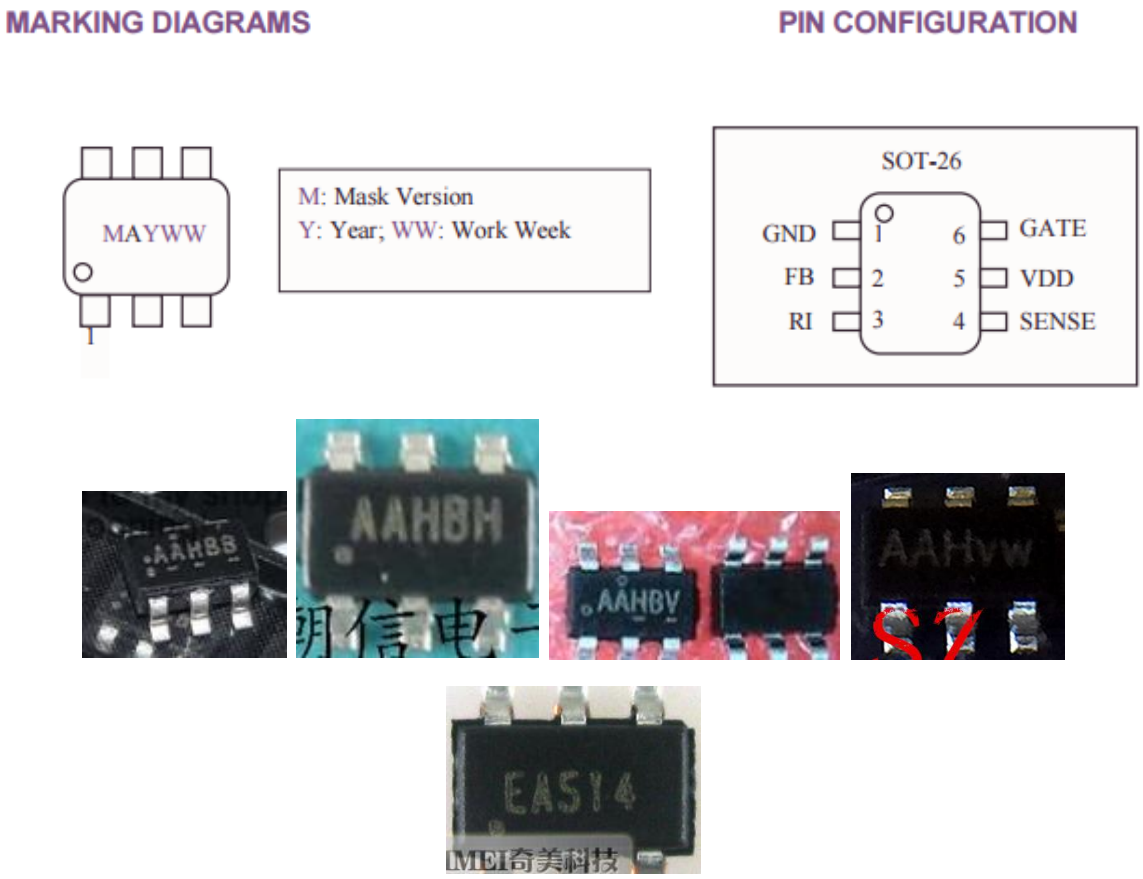


12) SG6848TZ1 (Green-Mode PWM Controller Power IC)

Marking Code: AAHxx

Example Equivalent: **AAHBB, AAHBH, AAHBV, AAHvw** & etc

*Can use the **EA514** marking code IC as an equivalent.



Conclusion:

With the above information, you will get some points there. For example, when you see the 6 pins component marking code as: BT=xxx , it was a RichTek RT9293 Asynchronies Boots Driver IC. So that you can search their IC datasheet with this part number and find out their valuable info to repair the TV. Or find the equivalent 6 pins SMD components in the junk board with similar marking code and replace it.

Some repairer they can't find these types of components datasheet is because, if you're just type in their marking code in internet search engine, it can't find any related information for you. After that it will disturb or stop your repair jobs and even give up repairing the TV!

Special Tips:

All these 6 pins IC can be equivalent by **OB2263**:

CR6848, CR6850, CR6853, LD7535, GR8836, NE1102, OB2262, SG6848

Most of the 6-pins SMD power IC with same pins description, when use the OB2263 IC as an equivalent IC, please check the original circuit board of pin-3 (original SMD 6-pins IC), is it connected to the circuit? If not, then you need to add a 100K ohm resistor to pin-3 or OB2263 to ground.

If you forget to put this 100K resistor in OB2263 pin-3, and the original pin-3 is not use in circuit, then this IC or PSU board will be exploded! So be careful of it, if you're not sure, then please don't use this tip.

LED/LCD TV Backlight Inverter IC-How to Bypass IC Protection List

After the V4.0-LED/LCD TV Repair Tips ebook & my newsletter page revealed this method on how to Bypass Inverter IC protection, I've received lots of email to said thank you. Because this method hasn't revealed by anyone before and helps them to isolate the problem fast & easily.

These days, I found many repairers continue to be found other part number of backlight/inverter IC on how to bypass their protection. So, I will extend the IC list from previous V4.0 to the latest part number IC to let all the repairer to troubleshoot and repair their inverter or LED driver board easily.

SAFETY FIRST!

- If you're not understand about how to test the electronic components, please DON'T read this chapter.
- Please make sure that the Inverter/LED driver board are no any components is shorted or leakage, if not it will burn Inverter board again.
- Again, this bypass protection method is just for **troubleshoot the Inverter Board for components level repair** and it is **NOT to** repair the Inverter Board. If you're bypassing the Inverter Board protection in this way, it may occur the fire in Inverter Board and the TV. Because when happen heavy shorted in the Inverter Board, it will not start-up the protection and causing the Inverter Board burn and TV maybe explode too!
- When need to soldering component/s, all steps are doing in **Power Off!**

Most of the time, we will feel headache when we repair LED/LCD TV with symptom display shutdown after few seconds, but they have normal sound. And sometime, you can use the strong flash light to see some content in the screen there. So it will confirm that the problem was in the backlight system (inverter board/section and their CCFL lamps).

But for the latest LED backlight Tv, when their LED Driver board has something wrong, it will totally shutdown, no display and no sound.

So, before starting to troubleshoot the TV, usually the first step to do is Power Supply Self-Test (PSU Self-Test, like my previous ebooks V3, V4 & V5 shown). With this method we can isolate the problem is in PSU + Backlight or Mainboard + T-con(also Panel). After that, we can concentrate to do the components level repair in the suspected PCB board.

If confirm the TV problem is in Power Supply or Backlight section, then check their PSU output voltages have 5V, 12V & 24V or not (Attention: some of LED backlight not use 24V, it is using the PFC 390~400Vdc to their LED driver section). If these voltages all present but still no backlight, then you can check their inverter board or LED driver board/section for more details. If can't find any shorted or culprit components, then you can use this Bypass Protection method to confirm the problem is in LED/inverter board feedback circuit or their CCFL Lamp or LED backlight (you could see which location strips [one of the strips] is darkness or another means is the LED strips not working).

For the inverter board/section, after checking all the suspicion components in it and still can't find any damage components then you will not sure what's the next step to check.

So this chapter is to let you learn the method on different inverter IC for how to bypass their OVP Protection, so that we can see and check their inverter board and the lamps.

Again, before using this method to test the LED Driver/Inverter board, please make sure the LED/Inverter board no any shorted or leakage components in it. Also, for CCFL lamps, if you've the lamp tester, you also can test it first. This is a very important step to prevent any burn or explode in the board.

After bypass the LED/inverter IC protection, these symptoms will happen in the TV:

a) The backlight is lit now but we can see one of these CCFL lamp is off or weakness.

* That's meant this CCFL lamp is damage and need to replace. Before replacing, first check their both side of wire terminal connection is soldering ok

or not. If not then re-soldering it and try to power on the backlight to see the problem solved or not, if not then just replace it with a working one. We can use the CCFL Lamp Tester to test this lamp to confirm it is ok or not.

* If the lamp is ok (use ccfl lamp tester) but this lamp still not lit, that's mean this CCFL lamp connection or their circuit is abnormal, so that we can concentrate and quickly checking on this CCFL lamp connection and circuit to find out what's wrong in it.

b) If the TV backlight still shutdown after bypassing their inverter protection.

* This problem is because of the Inverter board has shorted or leakage component/s in the board. So that you need to confirm the components in Inverter board is not shorted or leakage.

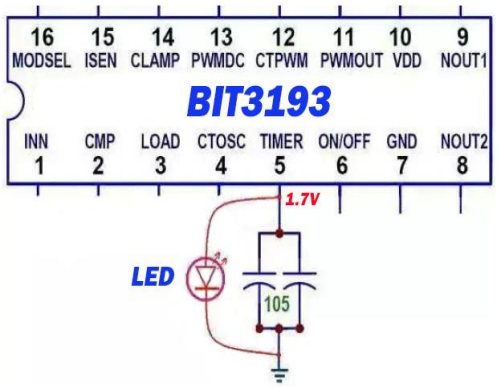
* Or the inverter IC pin is wrong to do the bypass protection and make sure to put the correct pin number of the inverter IC. Or this method of bypass protection is not suitable for this IC or inverter board.

This LED Driver and Inverter IC list is using to bypass the protection of inverter board/section to prevent shutdown their backlight system. For your information, before using it, make sure they are no any shorted or leakage components in the Inverter board or section there.

LED/LCD TV & Monitor LED Driver or Inverter IC List

Inverter IC	**Bypass Protection Pin/s**	**Action To Do**
AAT1100	8	StG (Short to Ground)
AAT1101A/B/C	8	StG
AAT1107	15	StG
AAT1343	15	StG
AT1380	2	StG
AT1741	15	StG Or LED to Ground
BA9741	15	StG Or LED to Ground
BA9743	15	StG

BD9211F	14	4K7 ohm to Ground
BD9215AFV	15	10K to Ground
BD9222FV	13	LED to Ground
BD9240	15	10K to Ground
BD9247F	11	10K to Ground
BD9270F	13	10K to Ground
BD9275F	11	1K to Ground
BD9276EFV	35	LED to Ground
BD9397EFV	31	10K to Ground (A Sony KLV-32R402A with problem 6 times blinks error, bypass protection is okay).
BD9766CVF	20	LED to Ground
BD9766FV	20	LED to Ground
BD9777	14	10K to Ground
BD9882F	14	LED to Ground
BD9893F	10	82K to Ground
BD9896	3	LED to Ground
BD9897F	22	LED to Ground
BD9897FS	17	LED to Ground
BD9276EFV	35	LED to Ground
BD9766CVF	20	LED to Ground

BIT3101	2 & 15	OD or StG
BIT3101A	16	470 ohm to Ground
BIT3102/BIT3012A	5	OD
BIT3102B	14	47K to Ground
BIT3105	4	OD Or pin-19 => LED to Ground
BIT3106	4 & 27	OD
BIT3107	4	OD
BIT3193	15	OD Or pin-5 => LED to Ground  When protection is activated the voltage at pin-5 is about 3.5V. If the voltage at pin-5, range from 0.4V to 2.4V, the IC will "start" PWM operates autonomously, the lamp is not switched off.
BIT3251	5	StG
BIT3252	5	StG
BIT3713	15	OD Or pin-5 => LED to Ground
DF6106	14	StG
DF6109	13	StG
DT8211	9	47K to Ground
FA3629	15 & 16	StG (Remove both pins capacitor and then short to ground)
FA3630	7 & 10	StG
FAN7314	1	StG
FAN7316	17	LED to Ground
FAN7547	7	StG
FP5451	15	StG
ILN816GN	8	10k to Ground
KA7500	1 & 16	StG
KA7500B	15 & 16	StG

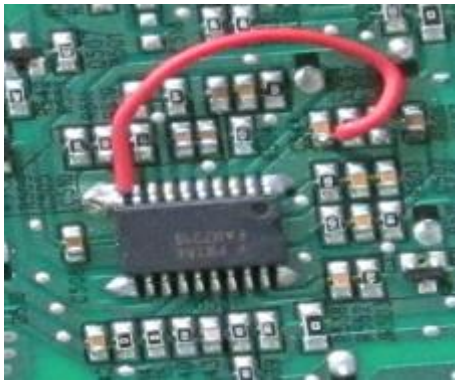
KH0803A	5	LED or 390K~820K to Ground
LM2901	6	82K to Ground
MAX8722	4	StG
MB3775	15	StG
MP1006	6	10K to Ground
MP1007ES	4	StG
MP1008	4	10K to Ground
MP1009	5	StG
MP1038EY	2 & 11	StG
MP1060EF	3	LED to Ground
MP3810	6	82K to Ground
MSC1692	4	220K to Ground
OB3302CP	2	LED to Ground (3Volts)
OB3309	15	LED to Ground
OB3316QP	5	StG
OB3328UQP	3	LED to Ground Or 10K to Ground
OB3362RP	16	22K to Ground
OZ9RR	8	StG
OZ5508G_GN_N	3	LED to Ground
OZ960	2	StG
OZ962	2	StG
OZ964	4	LED to Ground
OZ964GN (SSOP, 20 pins)	3 & 6	StG Also pin-7 resistor to ground removed.
OZ9643	1	20K to Ground
OZ965	4 & 5	StG
OZ971SN	20	100K to Ground
OZ972GN	8	LED to Ground
OZ9910	5	82K to Ground
OZ9919GN	8	10k to Ground
OZ9930	7	OD (or remove their capacitor connected to this pin)
OZ9936	7	OD (or remove their capacitor connected to this pin)
OZ9937	14	47K to Ground
OZ9938	3(StG), 6 (OD)	a) If pin-3 StG still can't bypass the OVP, then open the pin 6 (remove the component to this pin, so that this pin is not connect to the circuit like

		opened) b) Or pin-3 => 10K to Ground c) Or pins-3,6,7 => StG
OZ9938GN	3	StG
OZ9938Q	3	10K to Ground
OZ9939	3(StG), 6 (OD)	Same as above
OZ9939GN	3	100K to Ground
OZ9966SN	15	10K to Ground
OZ9972 (24-pins)	20	1K to Ground
OZ9976	11	10K to Ground
OZL68GN	4	LED to Ground Or pins-4 & 7 => StG
OZT1060GN	1	LED to Ground
SEM2005	2 & 3	OD Or pin-1 => LED to Ground Or pin-1 => 82K to Ground
SEM2006	5	StG
SEM2107	21	LED to Ground
SS1091ASN	19	LED to Ground
SP5001	4	OD
SP5001Q	19	LED to Ground
SP5005	10	LED to Ground
TA9687GN	12	47K to Ground
TL494	1 & 16	StG
TL1451	15	StG
TL1454	15	StG
TL5001	5	StG
TL5451	15	StG
UBA2070	1	StG
UBA2074	6	20K~24K to Ground

Remark:

1) StG = The Inverter IC pin/s Short to Ground.

* Soldering a wire to this pin/s and another side to the Ground (Cold Ground).



2) OD = Open or Disconnect the Pin/s from the circuit.

* De-soldering this IC pin/s and the pin/s is not connecting to the Inverter circuit/PCB board. Or remove the component connected to this pin, so that it is same like this pin is open circuit or disconnect from the inverter circuit.

3) LED to Ground = Connect the pin/s with LED to Ground

* Remember to use the 3 Volts LED light bulb, Anode (+) pin connect to pin IC, the Cathode (-) pin connect to Ground.

4) Resistor to Ground = Connect a resistor to this pin and another side connect to Ground.

Collection of COF BoardView List

In my previous ebook: V1 & V2 of LCD/LED Screen Panel Repair Guide, I called it as: **TAB/COF Bypass List**. In this ebook, I've extended some new part numbers of COF I haven't post on my previous ebooks yet.

This repair information is quite important to the TV Panel repairer. Even they have the TAB Bonding Machine in their workbench. If that panel Gate signals & voltage lines opened circuit in the half way of it, the TAB Bonding Machine also cannot help. Especially some panel broken cases, like the panel glass crack their edge side of the Gate lines (minor crack not serious one). Causing some Gate signals & voltage lines broken. So we can use this COF BoardView info with the thin wire/s to connect back their signals and voltage lines from T-con board to their Gate COF.

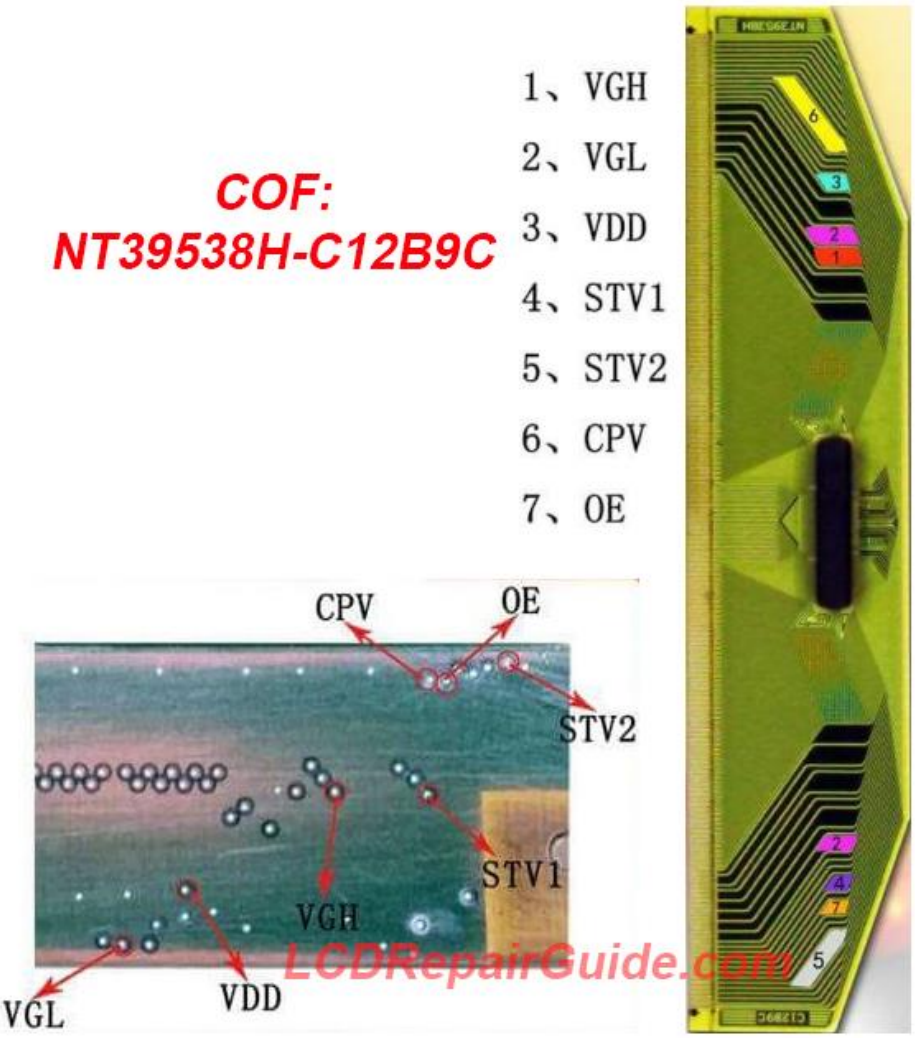
If you need to increase the success rate to repair the panel through this method, you need to have these tools before start to repair the panel:

1) A good and sharp/fine needle tip of Soldering Iron and quality flux.
2) Magnifier- No matter what brands or type of this magnifier, at least it can help you to see the Gate signals & voltage lines clearly.
3) Thin copper wire (0.1mm): Normally use it in Laptop mainboard repair.

1) COF P/N: 5276-ACBR6

2) COF P/N: 8697B-C562

3) COF P/N: NT39538H-C12B9C



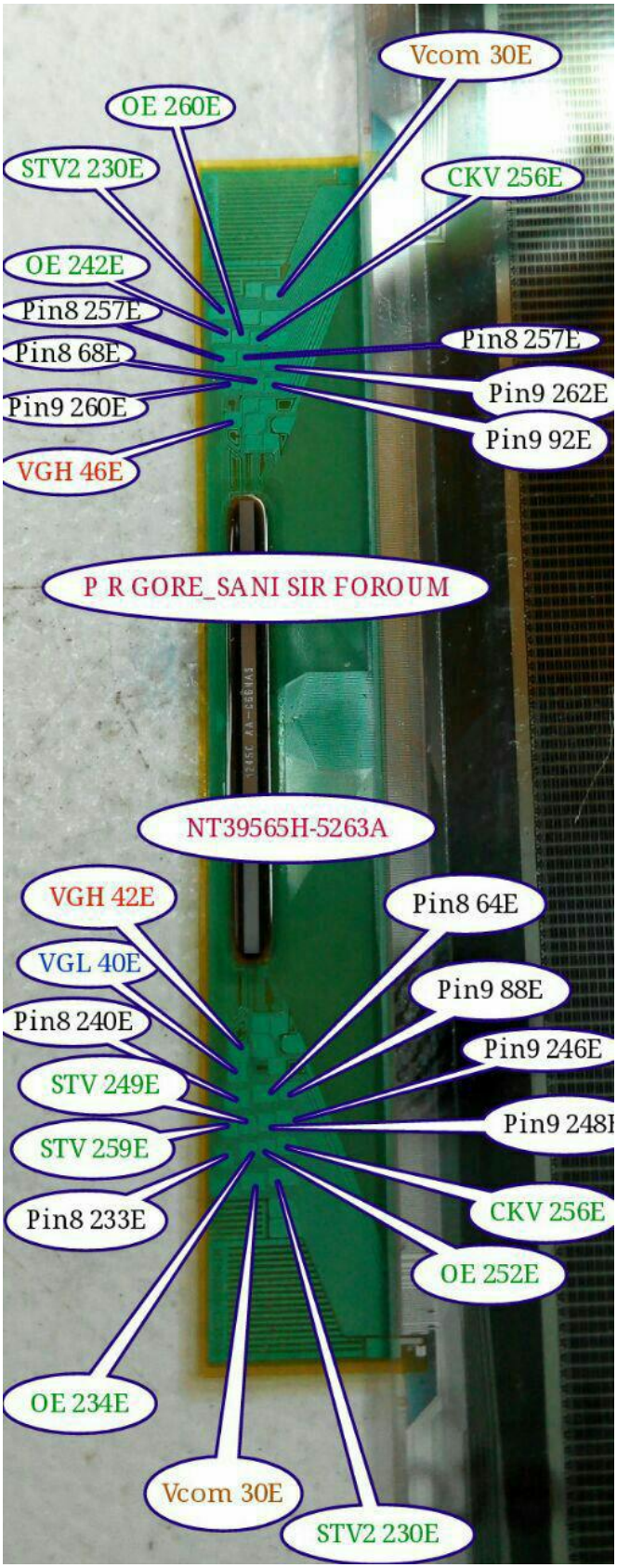
4) COF P/N: NT39538H-C1272A

5) COF P/N: NT39538H-C1295A

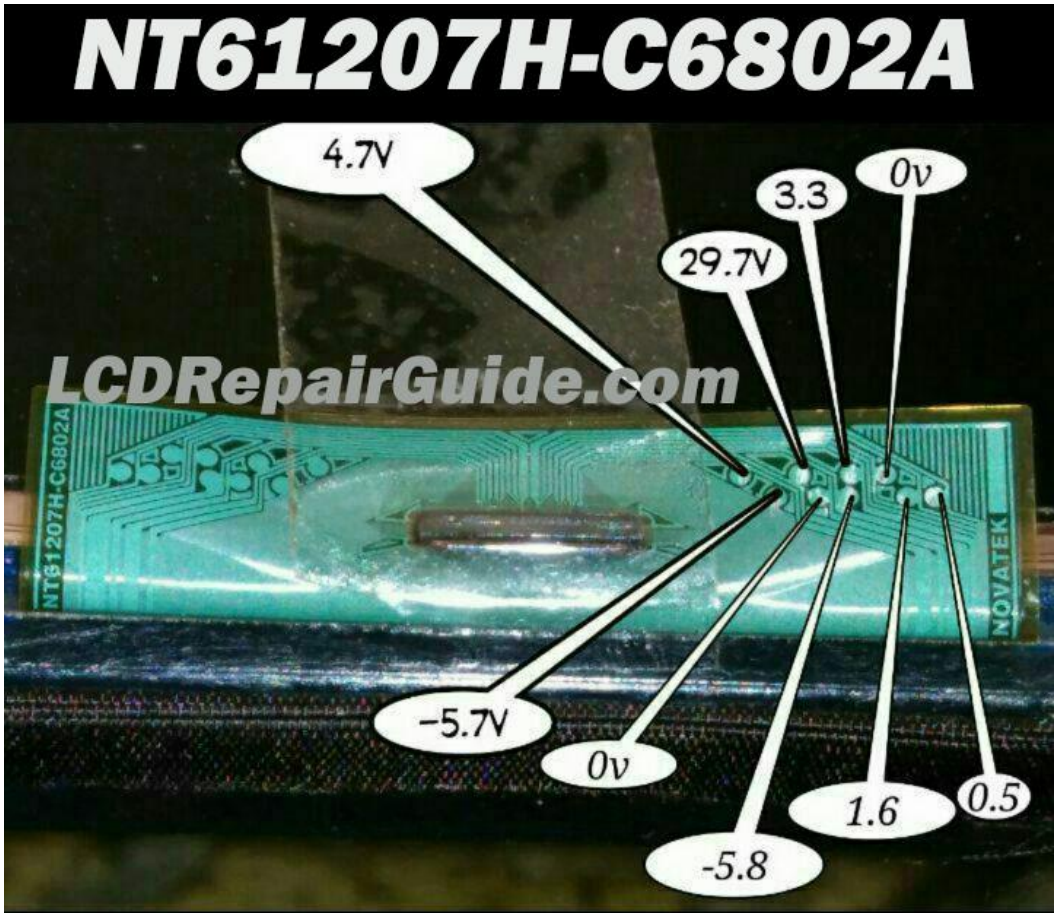
6) COF P/N: NT39563H-C650ZA

7) COF P/N: NT39567H-C5251A

8) COF P/N: NT39565H-5263A



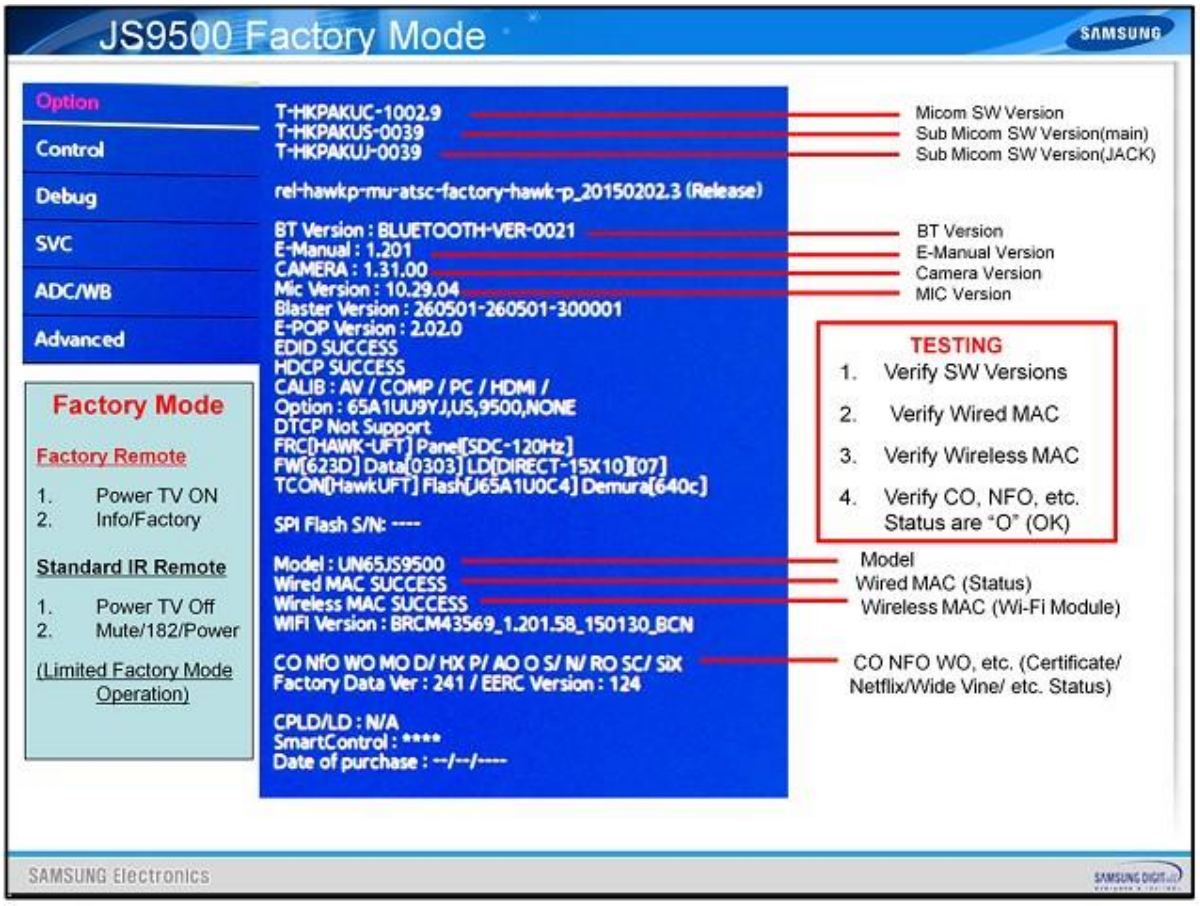
9) COF P/N: NT61207H-C6802A



10) COF P/N: RM76190FA-0A0

For more model/part numbers of COF information, please do refer to my V1 & V2-LED/LCD Screen Panel Repair Guide ebook at:
http://www.LCDRepairGuide.com/screen-repair/

Collection of Service Menu/Factory Mode Login Methods



What's the purpose to login into the Service Menu/Mode, Factory Mode, Adjustment Mode & etc? Actually, some of the TV problems, you can login to the Service/Factory Mode to fix them. For example:

- Display Distortion (Display Oily Painting problem) (especially the Universal TV Mainboard)
- Display Upside Down (especially the Universal TV Mainboard)
- Clear Protection Counter (especially for the Sharp TV Mainboard. Even you've replaced the damage parts, but it still in the same error mode. So, you need to login to their Service Menu to clear this error, then the TV can be back to normal).

- Login to Factory Mode to enable their system console. (Some of the TV Mainboard, their original setting is to disable their port console to not allow to read/write their system firmware. So, some of this TV mainboard need to login to Factory Mode to enable it first, then you can use the programmer to read/write the firmware).
- Check their details system information.
- And you can get more features inside the Service/Factory Mode.

In this chapter, I will be divided it into two section, one is branded TV Mainboard login methods and Universal TV Mainboard login methods.

ATTENTION!

When inside the Service/Factory Mode, please don't change anything you don't know about it. Because, if their important information changed, will cause the TV not to function at all and that time you need to update their latest firmware to recover it or use the Programmer with working and same version firmware to recover it. If you don't have the tool as mention above, then you need to replace a new or working TV Mainboard!

Steps to login to Branded TV Mainboard Service Menu/Factory Setting:

- Make sure what's the Branded TV Mainboard number (Chassis number) or Model number and find their correct login method.

- Using their original TV Mainboard remote control and follow the instruction below to press:

Example on How to Press to Login Service Mode Method:

a) Press: **MENU + 2580**

b) Press: **[MENU] + [2] + [5] + [8] + [0]**

- Using their original TV mainboard remote control and press the MENU button, the OSD Menu will present. After that press 2, 5, 8 & 0 buttons without stop or waiting not over 2 seconds. Or do this step within 3 seconds. Their Factory Setting display will pop up. (But not all the same, you need to refer to their brands & Tv model login method).
- Most of the process when need to press the keys was **TV in Standby Mode**.
- Most of the TV when need to **exit the Service /Factory Mode** will press the remote key of "EXIT", "MENU" or just power off the TV.
- Normally, the below information like 1) , 2) & so on is mean Method 1), Method 2) & etc.

ACER

1) Acer AT2621 LCD TV

Press: **[VOLUME-] + [CHANNEL+] + [POWER]**

2) Acer AT2055_2056 LCD TV

Turn on the TV, press **MENU** key with remote control, then press number key: **1999** . It will achieve the factory mdode.

Press: **MENU + 1999**

AKAI

Login to Factory Mode Method:

1) Press: **MENU + 1979**

2) Press: **MENU + 8202**

CHANGHONG

1) Changhong **Chassis-DLS04**: LDTV26810U, LDTV32810U, LDTV42810U, LDTV32876, LDTV40876F, LDTV42876F & etc.

Press: **TV/AV + 2580**

2) Changhong **Chassis-LM24**: LT26810U, LT32810U, LT37810U, LT42876FHD, LT40720F, LT32720, LT42720F & etc.

Minimize the sound volume to "**0**", press & hold **MUTE** about 5 seconds and then press **MENU** at the same time. The TV will login to the service mode with a character "M" on OSD. If go to the page-12 of service mode, it will show a character "D", this is a Design Mode of TV.

3) Changhong **Chassis-LM32**: **MENU + 08166180 + OK**

4) Changhong **Chassis-LS23**: Press **MUTE + MENU + 7217**

5) Changhong **Chassis-LS26**: LT26729, LT32729, LT40729F, LT46729F, LT42710F & etc.

Press: **MUTE + 6115**

6) Changhong **Chassis-LS29**: LT32710, LT24720F & etc.

In TV mode, press **MUTE + MENU + 7217**

7) Changhong **Chassis-LS30**: Minimize the sound volume to "**0**", press **MUTE + MENU + 0912** (or press & hold **MUTE** key about 5 seconds then press **MENU**)

8) Changhong **Chassis-LS30IS** (3DTV32860 & etc): **MENU + 2580**

9) Changhong **Chassis-LS30IS** (LED43A9000I & etc):

Minimize the sound volume to "**0**", press **MUTE + MENU + 0912**

If after the above steps, TV no display (grey display, backlight lit), it could be their panel setting incorrect. Use remote control set in TV mode, press **MUTE + MENU + 0912672**.

10) Changhong **Chassis-LS34I** (3DTV42790): Press **MENU + 0816180**

11) Changhong **Chassis-LS35** (LT32730EX, LT31): Minimize sound volume to "**0**", press **MUTE + MENU + 0912**.

12) Changhong LT3269: a) AC power off. Press & hold "**VOL+**" & "**VOL-**" on TV and power on the TV. b) When in normal dislay mode, press & hold "**P-**" & "**POWER**", release both keys, after that press & hold "**P+**" & "**POWER**" login to the service mode.

13) Changhong LT3769, LT4269: Press & hold "**P+**" & "**VOL+**" on TV

14) Changhong LT42510, LT42520: Press **MENU + 062596 + DISPLAY**

15) Changhong **PM36I** (3DTV42858): **AV/TV + 0816**

16) Changhong **Chassis-PS27I**: ITV42738NHDX, ITV42738NHD, ITV50738 & etc.

Minimize the sound volume to "**0**", press & hold the **MUTE** about 5~10 seconds, after that press the **MENU** and the TV is login to service mode.

17) Changhong **Chassis-PS30I** (3DTV42738B & etc): **MENU + 0816**

DELL

1) W2606C LCD TV

Mainboard: 715T1620-D

Login Factory Mode:

Power on tv, after there are no OSD picture on screen, use the remote control press number **[0], [0], [0], [0]** will login to the Factory Mode.

2) Other Methods:

a) Press: **MENU + 3355** (Or same like the above process, but the pin code is 3355).

DYNEX

Method 1) Press: **MENU + 1999 + ENTER**

Method 2) Press the **INPUT** or **Source** key, after that press **2580**. The Volume Bar will go up and then the TV auto shutdown. The TV will auto power on and shows the Service Menu.

ELEMENT

1) Press: **MENU + 0000**

2) Press: **MENU + 1147**

FUNAI

1) Press: **STANDBY-ON + 271 + MUTE**

2) Press the **Channel Down** & **VOL Down** keys at the same time. After that press **MENU** key.

HAIER

1) Press: **MENU + 8893**

2) Press the **MENU**, inside the MENU go to highlight "**AUDIO**" and then press **8893**.

HISENSE

1) Press **MENU** go to select "**SOUND**", then "**BALANCE**". When BALANCE value is in "**0**" then press **0532** in sequences.

INSIGNIA

1) TV **Volume** adjust to zero "**0**", then press **INPUT + 9876 + OK** within 5 seconds.

2) Press: **INPUT + 2580**

LG

1) Press and hold **OK** key on remote control as well as **OK** key on TV front keypad for 5~10 seconds.

2) Press and hold **MENU** key on remote control as well as **MENU** key on TV front keypad for 5~10 seconds.

Note: If the above service/factory mode pop-up and require to input the password PIN code, try to key in these numbers:

0000

0413

3195

7777

8741

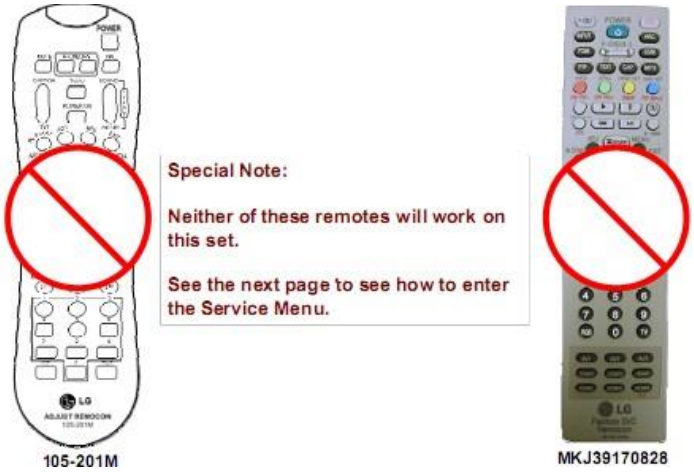
8743

8878

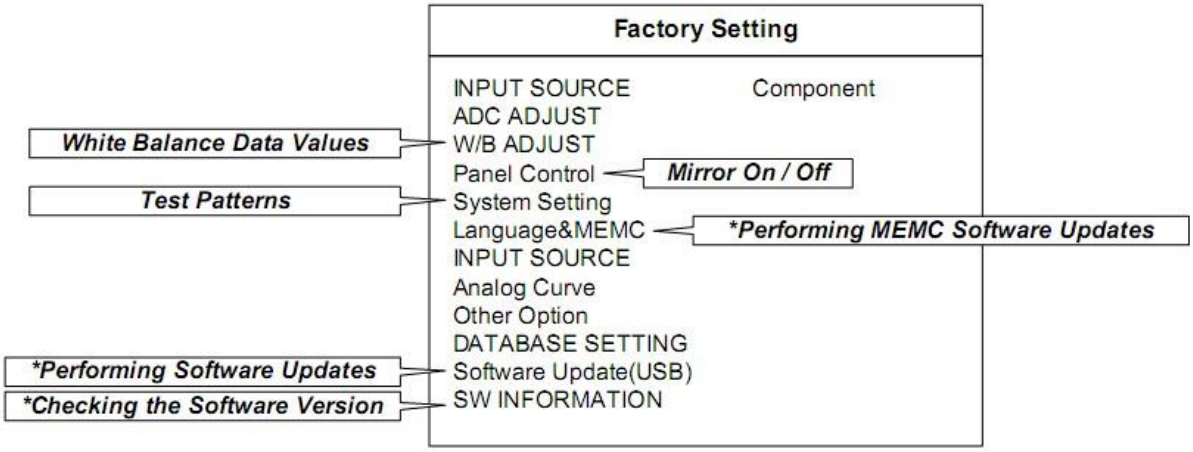
3) LG 65LB5200 FHD LED TV Login Factory Mode Method:

Use customer remote control to login Factory Menu:

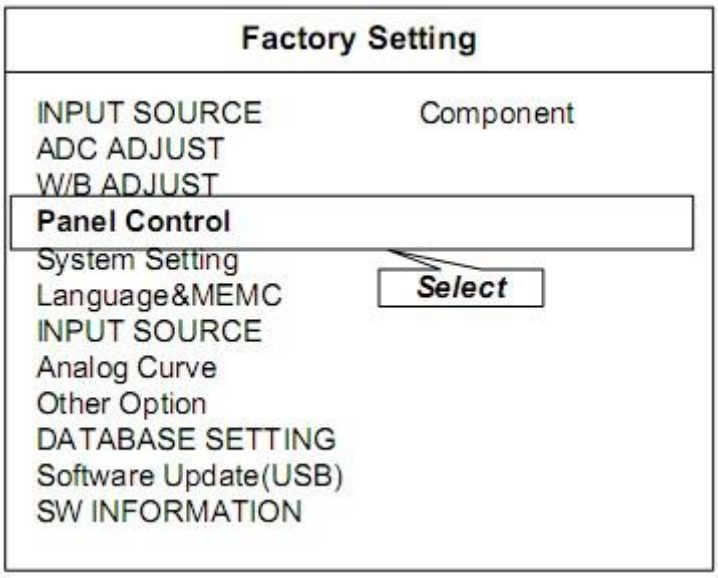
a) To bring up the "**Factory Setting**" Menu, this time using the customer's remote control not the LG REMOCON as below. With the user remote control and press "**INPUT**", the input menu appears.

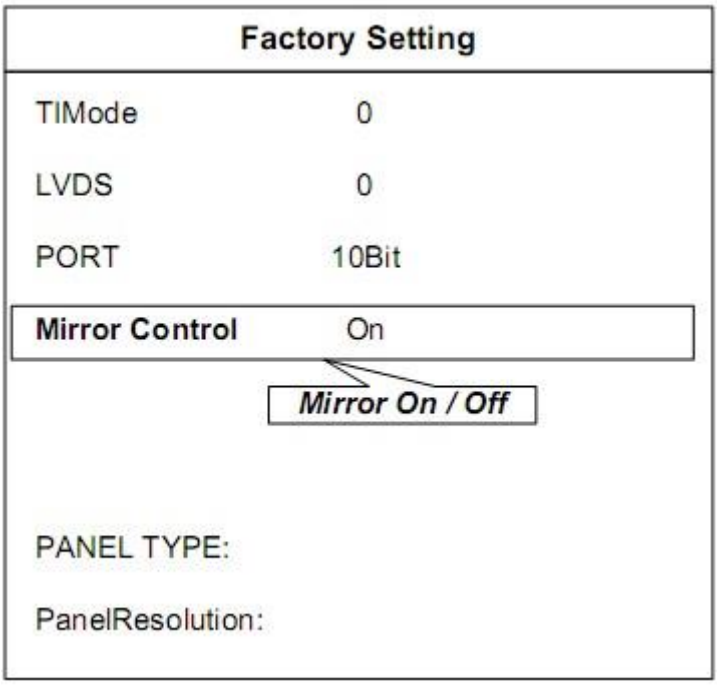


b) Enter password **[3]**, **[1]**, **[9]**, **[5]** and the Factory Setting Menu appears.



c) If the having upside down problem on the screen, you can login to the **Factory Mode** => **Panel Control** => **Mirror Control** there to change the setting. The Mirror Control will flip the image on the screen 180 degrees or upside down.





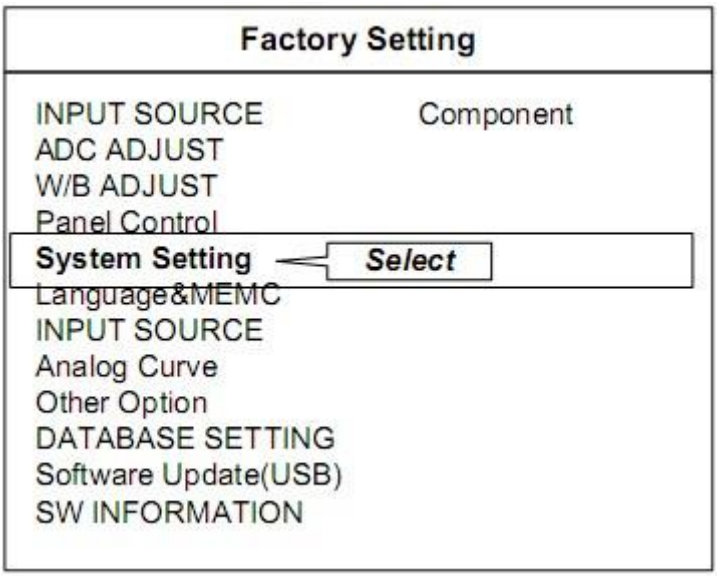
i) Scroll down to highlight "**Mirror Control**".

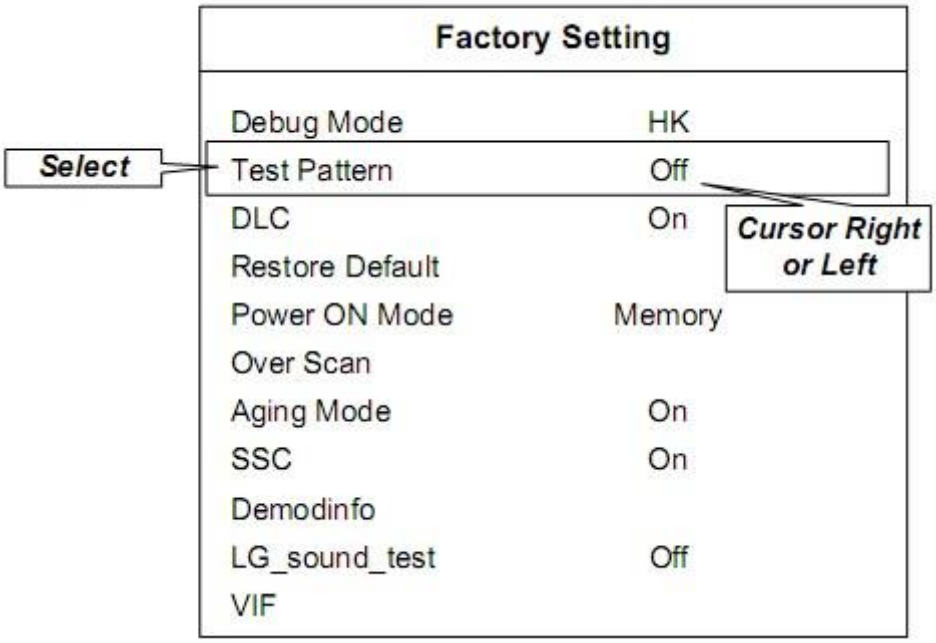
ii) Use the Cursor Right or Cursor Left button to toggle between On and Off.

To return to the Factory Setting Menu, press "**Settings**".

d) Test Patterns (Factory Setting) Testing Screen

Select "System Settings" on the Factory Setting Menu. Use Test Patterns to help with the examination of the screen's condition. Example: When looking for pixel issues, white balance issues, white uniformity and/or light bleed, the procedure can be facilitated using these patterns. The patterns of White, Red, Green and Black can be selected using the Cursor Right or Left buttons when "Test Pattern" is highlighted.





i) Scroll down to highlight “Test Patterns”.

ii) Use the Cursor Right or Cursor Left buttons to toggle between the different patterns.

To return to the Factory Setting Menu, press “Settings”.

And many more functions inside the Factory Menu.

OLEVIA

1) Press **MENU** key on remote control, and then select the "**Setting**" after that press enter key. Move the highlight bar to highlight the "**Factory Default**" and press enter. Here is the OLEVIA common unlock code:

0000

0123

1111

1234

9999

PANASONIC

1) Press and hold the "**VOL Down**" key on the TV front keypad, after that press the "**0**" key **3** times on the remote control.

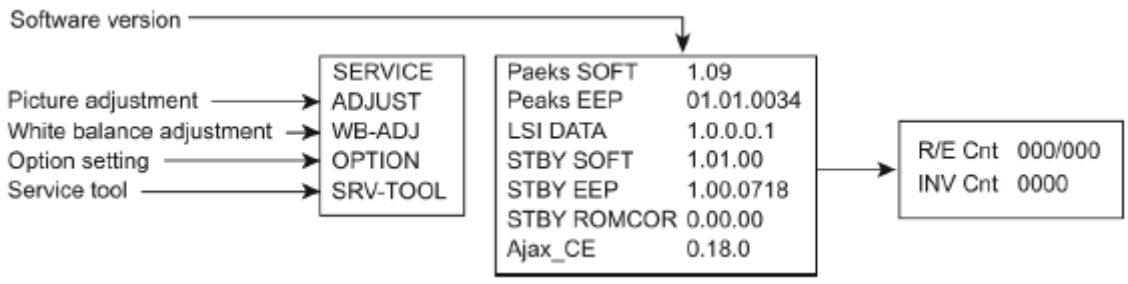
2) Press and hold the "**VOL Down**" key on the TV front keypad, after that press the **RECALL** or **INFO** key **3** times on the remote control.

3) Panasonic TX26~32LE60 LCD TV

Set the Bass to maximum position, set the Treble to minimum position then keep pressing the **INDEX** button on the
remote control and press the down button (**-/v**) on the TV set, this will place the TV set into the Service Mode.

4) Panasonic TC-L47E50 TV

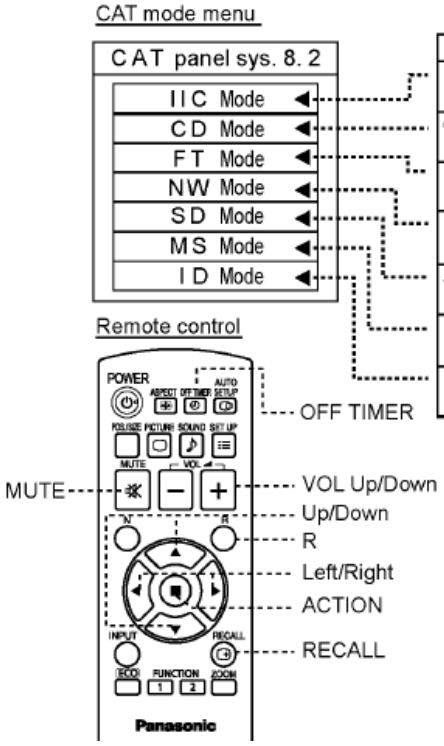
While pressing [VOLUME (-)] button of the main unit, press [INFO] button of the remote control three times within 2 seconds.



5) Panasonic TH-42LFE6W TV Login CAT Mode

How to access the CAT mode:
a) Method A Main unit + remote control operation
Press and hold the ▼button on the right side of the unit and press the **RECALL** button on the remote control 3 times quickly
within 2 second, this will place the unit into the CAT mode.

Method B Remote control operation only
1. Set the OFF timer except for [0] minute by **OFF TIMER** button. (30 minutes, 60minutes, 90 minutes)
2. Set the volume level of sound to 0 by **VOL Down** button / **-button**.
3. Press the **RECALL** button more than 3 seconds before a volume display disappears.
To exit the **CAT mode**, turn the power off by the main unit or a remote control.



Mode	Function	Access button
IIC	Service Alignment	Action
CD (Complete Diagnostics)	Software version information EEPROM edit	Mute more than 3 seconds
FT Mode	Fan and fan filter check	Not available for this model
NW Mode	LAN terminal check	Action
SD (Status Display)	MTBF parameter	Action
MS Mode	Market Select	Mute more than 3 seconds
ID Mode	LSI Check	Mute more than 3 seconds

6) Panasonic Viera TC-65DX900U UHD LED TV

a) Login to CS Maintenance Menu method:

While pressing **[VOLUME (-)]** button of the main unit, press **[RED]** button of the remote control three times within 2 seconds.

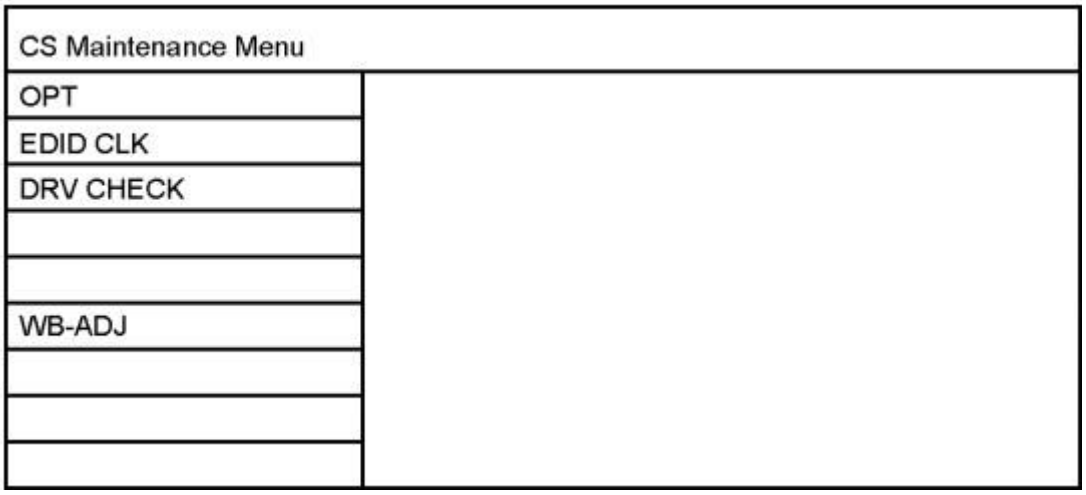
Note:

CS Maintenance Menu cannot be entered when 3D signal input. Input 2D signal to enter CS Maintenance Menu.

Press the cursor key **[Up/Down]** on the remote to control to select the functions.

How to exit:

Press the **[EXIT]** button on the remote control.

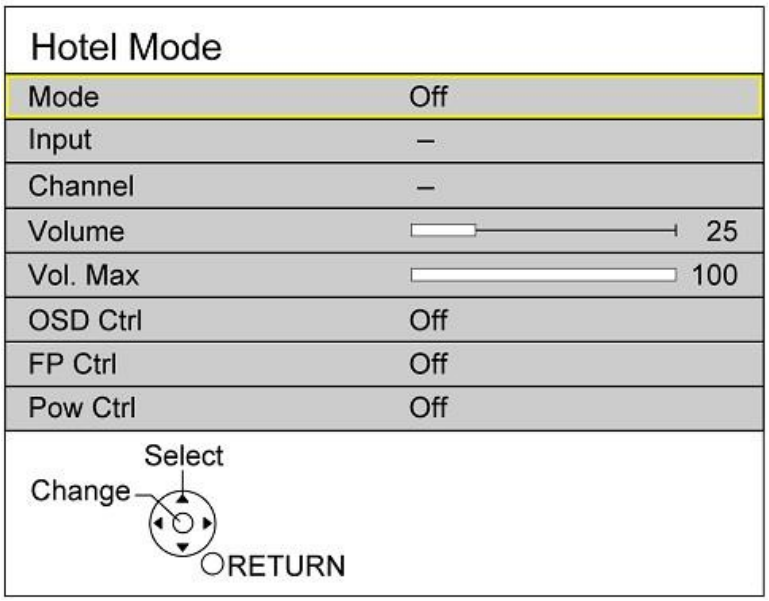


b) How to Access Hotel Mode

In order to display the Hotel Mode setup menu, please enter the following command (within 2 seconds):

[TV]: Vol [Down] + [REMOTE]: AV (3 times)

Then the Hotel Mode setup menu is displayed.



To exit the Hotel Mode setup menu:

Switch off the power with the [POWER] button on the main unit or the [POWER] button on the remote control.

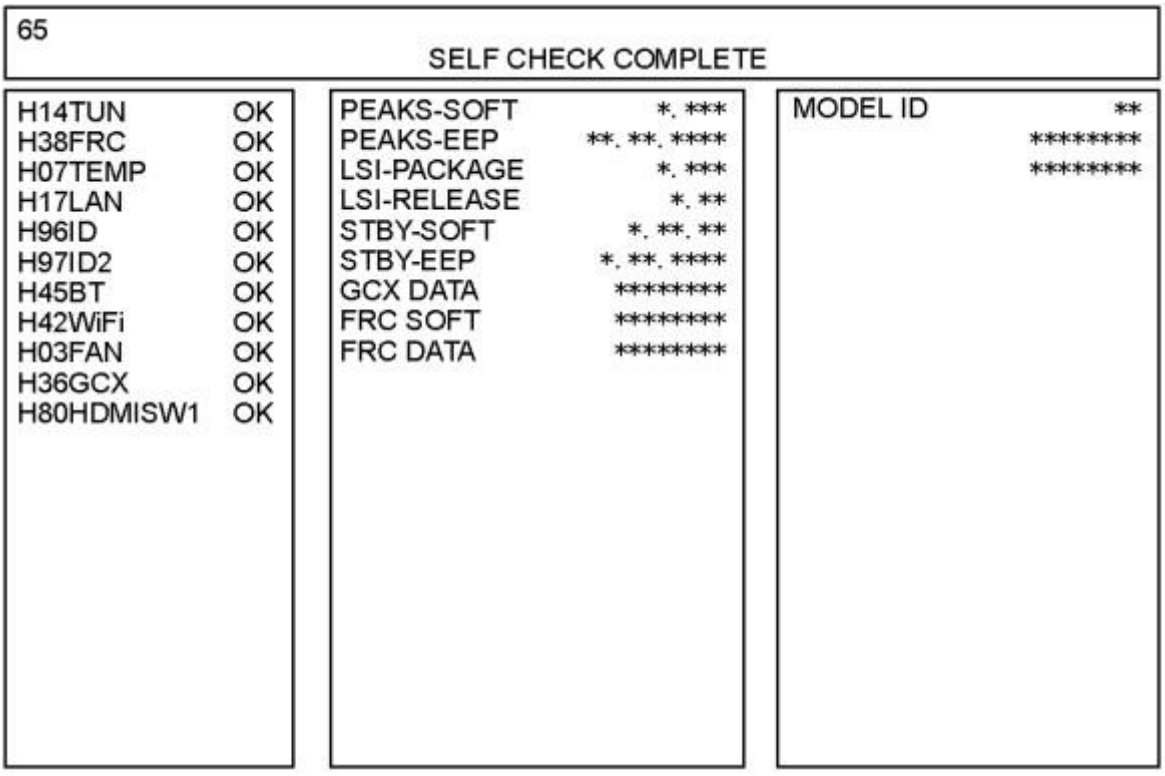
c) How to Access the IIC Bus Lines- Self-Check Indication and Force to Factory Shipment Setting:

Self-check indication only:

Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [BLUE] button on the remote control for more than 3 seconds.

Self-check indication and forced to factory shipment setting:

Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [MENU] button on the remote control for more than 3 seconds.



Check Point:

Confirm the following parts if NG was displayed.

DISPLAY	Check Ref. No.	Description	Check Point
H14TUN	TU6703	TUNER	A-BOARD
H38FRC	IC9000	FRC	A-BOARD
H07TEMP	IC2250	TEMP SENSOR	A-BOARD
H17LAN		ETHERNET	A-BOARD / LAN
H96ID		ID	A-BOARD
H97ID2		ID2	A-BOARD
H45BT		Bluetooth	A-BOARD / BT
H42WiFi		WiFi	A-BOARD / WiFi
H03FAN	FAN	FAN	FAN
H36GCX	IC4300	GCEX2	A-BOARD
H80HDMISW1	IC4500	HDMI-SWITCH	A-BOARD

How to exit:

Disconnect the AC cord from the wall outlet or press the [POWER] button on the main unit for 3 seconds to turn off and then turn on automatically.

d) LCD Panel Test Mode:

Purpose:

To find the possible failure point where in LCD Panel or Printer Circuit Board when the abnormal picture is displayed.

How to enter:

While pressing [VOLUME(-)] button of the main unit, press [YELLOW] button of the remote control three times within 2 seconds.

How to exit:

Switch off the power with the [POWER] button on the main unit or the [POWER] button on the remote control.

How to confirm:

If the abnormal pictured is displayed, go into LCD Panel Test mode to display the several test patterns. And then, judge by the following method.

i) Still abnormal picture is displayed: The cause must be in LCD Panel.

ii) Normal picture is displayed: The cause must be in A board.

Remark:

The test pattern is created by the circuit in LCD Panel. In LCD Panel test mode, this test pattern is displayed unaffected by signal processing for RF or input signal. If the normal picture is displayed, LCD Panel must be okay and the cause of failure must be in A board.

PHILIPS

1) Press and hold the **MENU** key for about 10~20 seconds. The service menu OSD will pop-up.

2) Press **MENU** and select "**Features**" after that select "**Current Software Info**", then press **062596 + INFO + INITIALIZE**.

Below is the other common PIN codes for Philips TV:

061596 + MENU

061597 + MENU

MENU + 062596

062597 + MENU + INFO + STATUS

123654 + MENU

162596 + MENU +STATUS

3) Press: **062596 + MENU** (or HOME) for Analogue Service Default Mode.

4) Press: **062593 + MENU** (or HOME) for Digital Service Default Mode (SDM)

PIONEER

1) Press: **INPUT + 0917**

POLAROID

1) Power on the TV after that simultaneously press and hold **VOL Down** and **Channel Down** keys.

2) Power on the TV after that simultaneously press and hold **VOL Up** and **Channel Up** keys.

3) Press: **VOL Up + MUTE + VIDEO** repeatedly to enter factory menu.

PRIMA

1) Press: **INPUT + 2580**

PROSCAN

1) Press **MENU** and then go to the "**Setup**", after that select "**Parental Control**" menu and enter **0000**. After that select "**Clear Channel List**" and the TV is now reset in service menu.

RCA

1) Press: **MENU + 1147**

Samsung

1) Power off the TV with their remote control (**in standby mode**), after that press the following keys on the remote control:

a) Press: **MUTE + 182 + POWER** (The TV will power on now)

b) Press: **MUTE + 119 + POWER**

c) TV in standby mode and press:

- **DISPLAY/INFO + MENU + MUTE + POWER**
- **DISPLAY/INFO + P.STD + MUTE + POWER**
- **SLEEP + P.STD + MUTE + POWER**
- **P.STD + HELP + SLEEP + POWER**
- **P.STD + MENU + SLEEP + POWER**

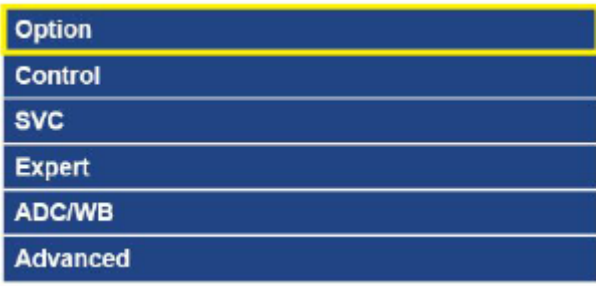
EU/Asia → INFO → MENU → Mute → Power On

S-America → Mute → 1 → 8 → 2 → Power On

Power OFF → MENU → 1 → 8 → 2 → Power On

* If the above methods you still can't see their factory mode OSD, then you can go to the "**OPTIONS**" sub-menu there, you should see the Factory Mode.

* How to enter the hidden factory mode in Samsung:



a) Into the factory mode.

b) Move the tap to Advanced or highlight the "**Advanced**"

c) Key in: **0000**

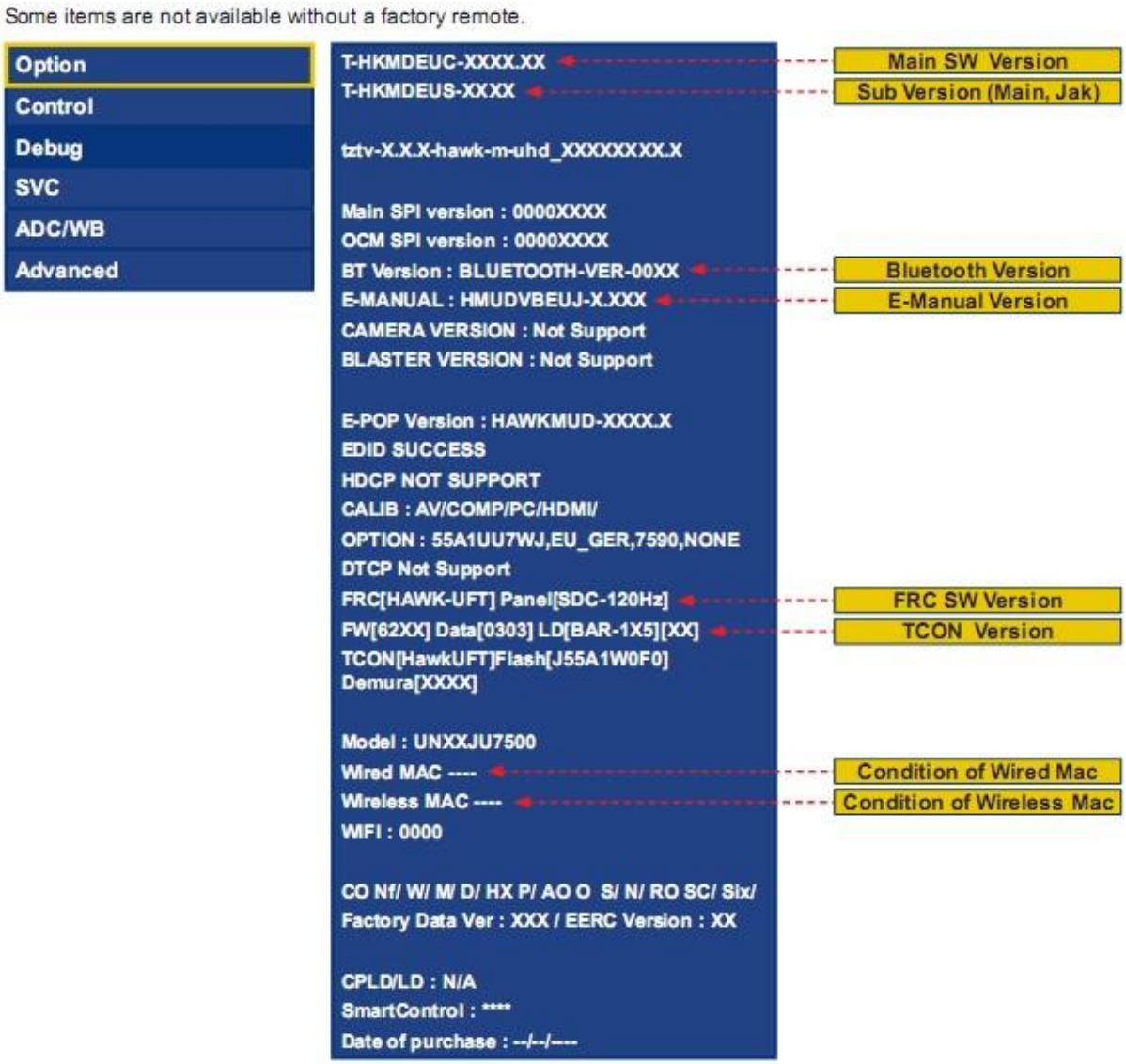
Login to the hidden menu now.

2) Samsung UE48JU7500T, UE55JU7500, UE65JU7500, UE78JU7500 Chassis UWJ50 7-Series Curved UHD 4K Smart 3D LED TV

Entering Factory Mode:

User remote control and pressing the key below;

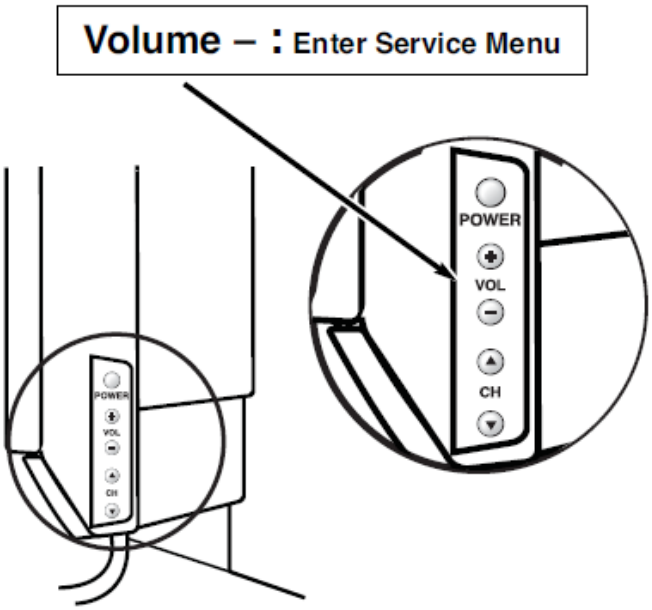
[POWER OFF] (in standby mode) => **[MENU]** => **[MUTE]** => **[POWER ON]**



SANYO

1) Press and hold **VOL Down** on TV front keypad, after that press and hold the number "**1**" key in remote control, and then the volumes status bar will go up and then TV shutdown automatically. After that power on TV, the screen will show the first time setup screen menu.

2) AC power off. Press and hold the **VOL Down** on TV front keypad and power on the TV. The TV is login to the service menu now.



3) Press: **"←" (Left) + EXIT + OK** in remote control.

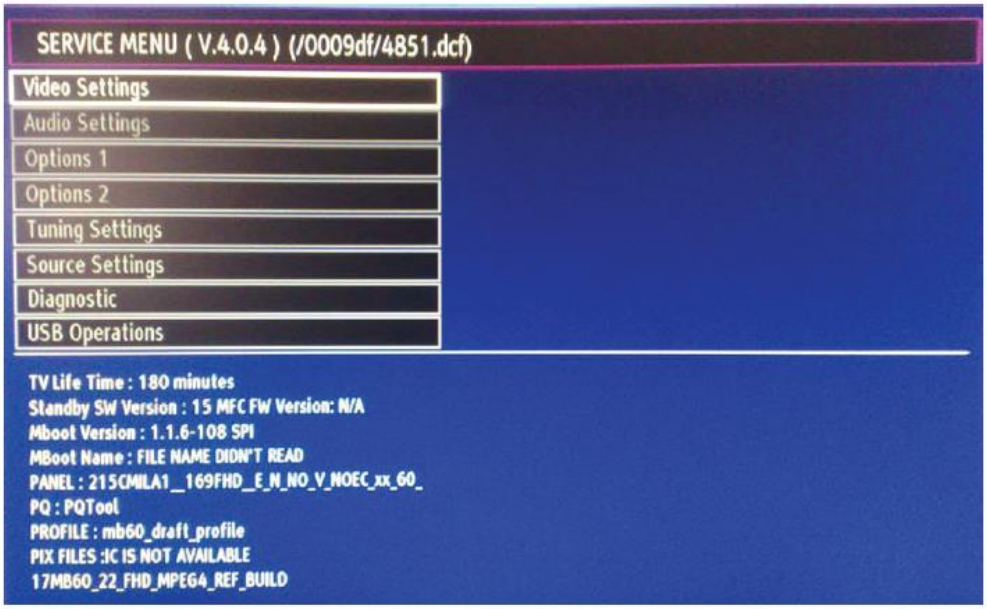
4) Sanyo 39CE890LED TV CSM mode

Press: **MENU + 456987 +ENTER**

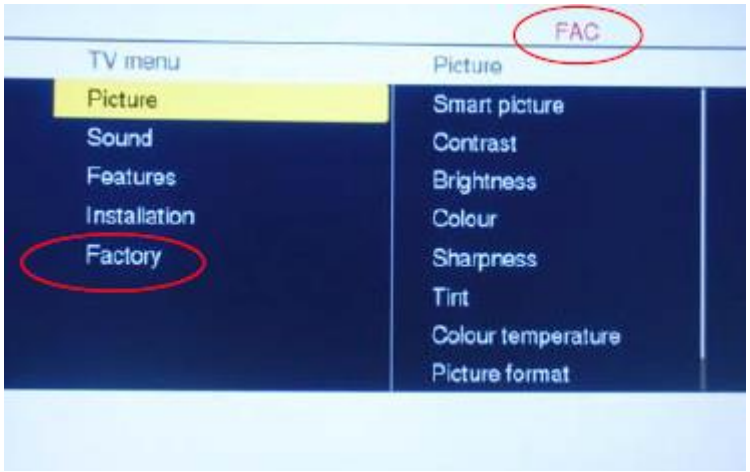
SHARP

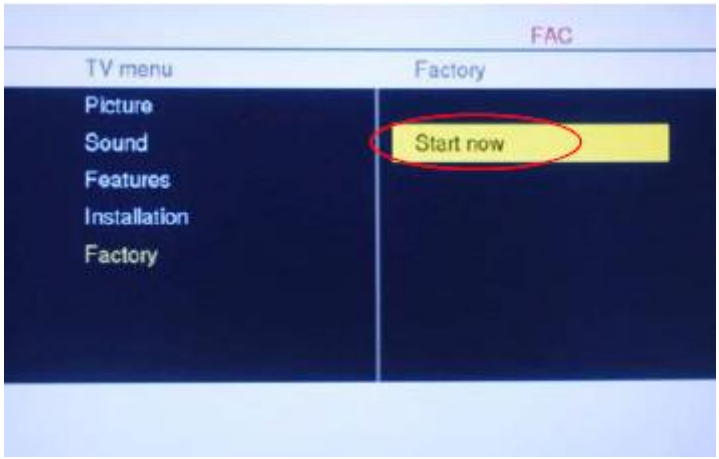
1) TV in power off (AC plug switches off), press and hold the **INPUT + VOL Down** keys on the remote control. Power on TV, you will see a character "**K**" appears on the screen. Release the **INPUT + VOL Down** keys when the "**K**" character is appeared, then press the **Channel Down + VOL Up** keys at the same time, the service mode OSD will appear on the screen. If not appear the service mode OSD, then you need to press & hold the **Channel Down + VOL Up** until their service mode OSD appear.

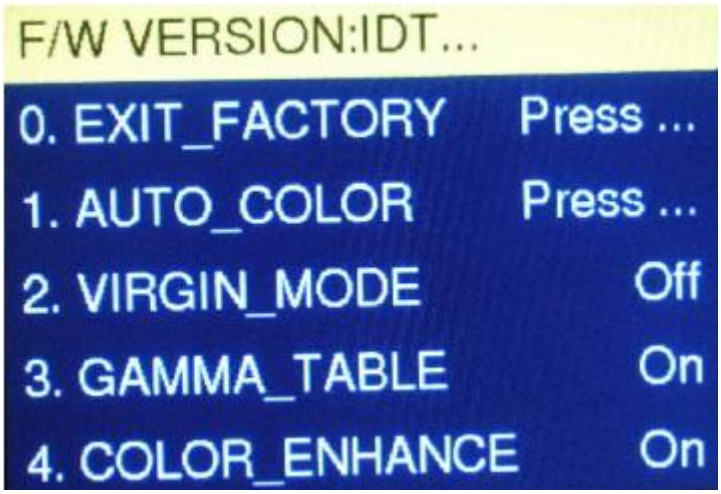
2) Press **MENU** and then press the remote control code two times, which is **4725**



3) Enter Factory Mode: Press **MENU** + **062596** + **MENU** key (FAC mode menu). Then select "**Factory**" item.







4) Entering and Exiting the Adjustment process mode, standard mode:

a) By key-unit:

i) Unplug the AC power cord, plug the AC power cord and wait until pyramid led blue is illuminated and then press & hold “V-“ and “CH-“ keys, simultaneously. Sharp FACTORY MENU appears. Unplug the AC power cord to exit of adjustments process.

b) By own remote control:

i) Turn on the TV set, Press MENU + 999222 (to enter these code the time is limited to 5 seconds approximately). SERVICE MENU appears.

Press ◄/► cursor to select the desired function.

Press "OK on boxes to go to submenu.

Press "⮌" to return to "SHARP FACTORY" Main Menu.

Press"END" or "MENU" to exit of adjustments mode.

5) Sharp LC-32~37GA3E LCD TV

a) Entering and exiting the adjustment process mode:

(1) Before entering the adjustment process mode, press the "RESET" button or execute the AV position RESET in the video adjustment menu.
(2) Pull out the AC cord to turn off the TV.
(3) While holding down the "VOL (–)" and "INPUT" keys at a time, press the POWER switch of the main unit to turn on the power.
The letter "K" appears on the screen.
(4) Next, hold down the "VOL (–)" and "CH (∨)" keys at a time.
When multiple lines of blue letters are displayed on the screen, the unit has entered the process adjustment mode.
If the unit does not enter the process adjustment mode (if the same display as the normal start appears), try again.
(5) To exit the adjustment process mode after the adjustment is done, unplug the AC cord from the outlet to make a forced shutdown. (When the power was turned off with the remote controller, once unplug the AC cord and plug it again. In this case, wait 10 seconds or so before plugging.)

Caution: Use due care in handling the information described here lest your users should know how to enter the adjustment process mode. If the settings are tampered in this mode, unrecoverable system damage may result.

i) Special features: - **STANDY CAUSE**= Display of a cause (code) of the last standby. The cause of the last standby is recorded in EEPROM whenever possible. Checking this code will be useful in finding a problem when you repair the TV.

- **EEP SAVE**= Storage of EEP adjustment value.

- **EEP RECOVER**= Retrieval of EEP adjustment value from storage area.

b) Display Adjustment Login Method:

1. Adjustment procedure
   Enter the display process mode and then adjust COM BIAS.
2. Entering and exiting the adjustment process mode
   (1) Before entering the adjustment process mode, press the "RESET" button or execute the AV position RESET in the menu video adjustment.
   (2) Pull out the AC cord to turn off the TV.
   (3) While holding down the "VOL (+)" and "CH (∨)" keys at a time, press the "POWER" key of the main unit to turn on the power.
   The letter " <K> " appears on the screen.
   (4) Press the VOL "+/-" key or CH " ∧/∨" key on the remote control.
   Multiple lines of red characters appearing on the display indicate that the unit is now in the adjustment process mode.
   When you fail to enter the adjustment process mode (the display is the same as normal startup), retry the procedure.
   (5) To exit the adjustment process mode after the adjustment is done, unplug the AC cord from the outlet to make a forced shutdown. (When the power was turned off with the remote controller, once unplug the AC cord and plug it again. In this case, wait 10 seconds or so before plugging.)

Caution: Use due care in handling the information described here lest your users should know how to enter the adjustment process mode. If the settings are tampered in this mode, unrecoverable system damage may result.

c) Lamp Error Detection:

5. Lamp error detection
5-1. Feature description
This liquid-crystal colour TV incorporates a lamp error detection feature (lamp error detection) that automatically turns OFF the power for safety under abnormal lamp or lamp circuit conditions.
If anything is wrong with the lamp or lamp circuit or when the lamp error detection feature is activated for some reason, the following will result.
① The power of TV main body is turned OFF about six seconds after it is turned ON. (The power LED on the front of the TV turns red from green and keeps blinking in red (ON for 250ms and OFF for 1sec)).
② If occurs five times consecutively, it becomes impossible to turn ON the power. (The power LED keeps blinking in red (ON for 250ms and OFF for 1sec)).
5-2. Measures
1) Checking with lamp error detection OFF
Refer to "Entering and exiting the adjustment process mode" in the section 10-2 to enter the display process mode.
If there is a problem with a lamp or a lamp circuit, the lamp will go out. (The power LED is green.)
Then, you can check the operation to see if the lamp and lamp circuit are abnormal.
2) Resetting the lamp error count
After you have finished checking whether the lamp and lamp circuit are abnormal, reset the lamp error count. If a lamp error is detected five consecutive times, the power cannot be turned on.
Therefore, move to the [L ERR RESET] line, the 5th line on the first page of the "Display process mode", using the Cursor UP/DOWN key. Then, reset the [L ERR RESET] value using the Cursor RIGHT/LEFT key. In this case, press the Cursor UP/DOWN key to reset it to "0".

Table of contents of adjustment process mode Page 0

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	S	E	R	V	I	C	E		I		3	2	G	A	3	E
1	→	G	R	A	Y	L	E	V	E	L		1	0	0		
2		C	O	M	B	I	A	S				1	9	0		
3		V	L	S	B	I	A	S				0	4	1		
4		L		E	R	R		R	E	S	E	T		0		
5		L	C	D												
6		P	A	T	T	E	R	N								
7		M	O	T	O	R		A	N	D		F	A	N		
8		O	T	H	E	R										
9			V	E	R		M	3	0	1						

Values specific to each display

Reset to "0 "

After resetting to "0", perform an operational check to ensure that the lamp error detection feature is not activated.

SONY

1) Sony Chassis RB1G_32-40-42_ KDL-32W600A, 32W603A, 32W605A, 32w650a, 40_42W655A, 42W674A Smart 3D LED TV

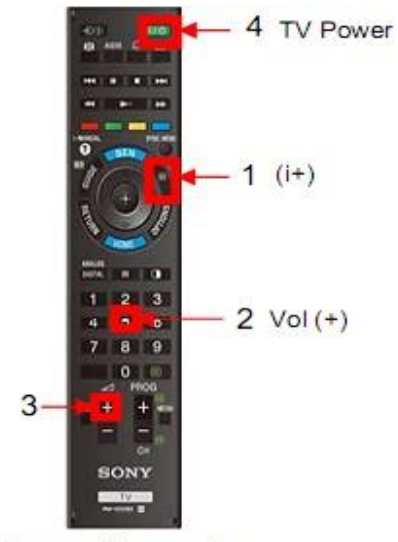
Accessing Sony RB1G Chassis Service Mode:

a) Go to TV standby condition by remote commander (remote control).

b) Press **[i+ (info)]** + **[5]** + **[Volume+]** then **[TV Power]** on remote.

c) You can see Service Mode on display.

* The above operation should be finished within 15 seconds after the set go to STBY mode (standby mode).



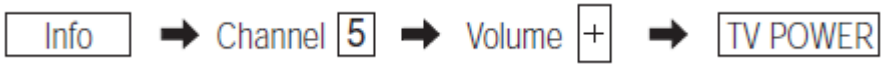
Remote Commander

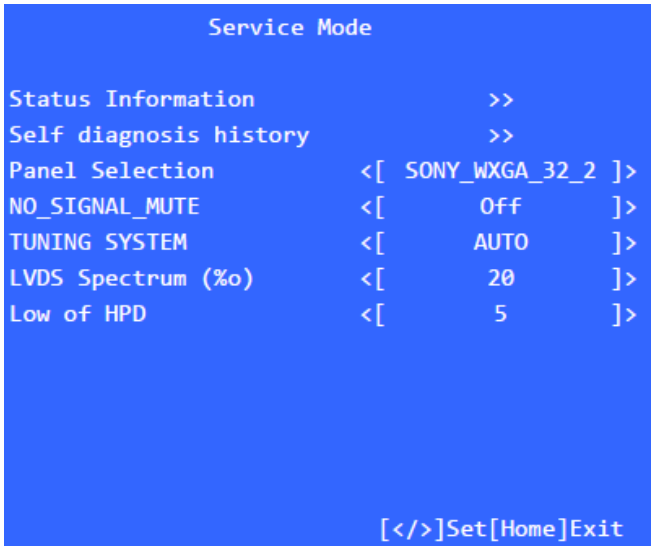
2) Use remote control to press & hold the **UP Arrow**, and at the same time press the **POWER** key, after release the **UP Arrow** key too. The TV will automatically shutdown and then start-up again with its memory cleared.

3) In standby mode, press the following keys quickly on the remote control:

Press & hold the **UP Arrow** on remote control and press the **POWER** key on the TV keypad.

4) Press **INFO + 5 VOL Up + POWER**





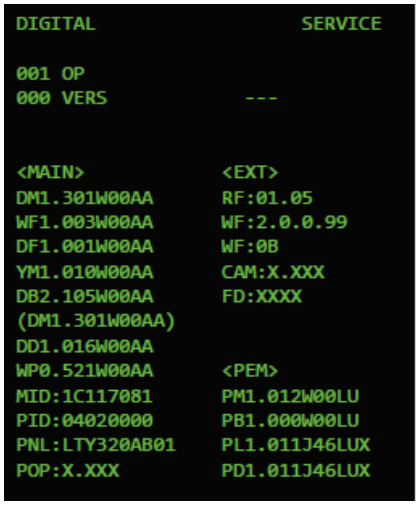
5) How to enter service mode of SONY KDL-xxHX75x series TV

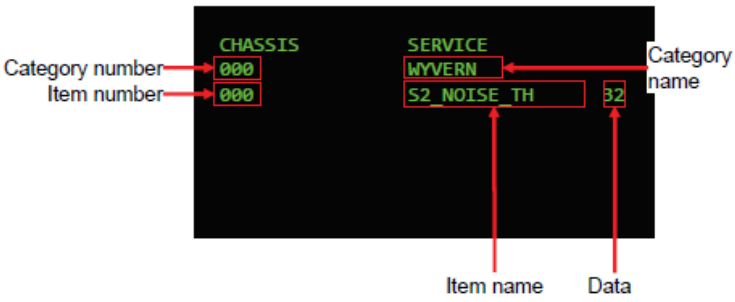
1) Turn on the main power switch to place this set in standby mode.

2) Press the buttons on the remote commander as follows, and entering service mode.

3) Service mode display.

Note: First of all, when you enter Service Mode, you can see "Digital" service mode.
Whenever you press "OPTIONS" or "JUMP" on remote, each service mode is changed.
"Digital" -> "Chassis" -> "VPC"





SYMPHONY

1) Press: **MUTE + 2580**

TCL

1) TCL **Chassis-GENESIS 8125, GENESIS 8532, PW118 & etc.**

Press: **MENU + 9443**. To exist service menu, press **OK** key.

2) TCL **Chassis-GENESIS 8541, MSTAR718 & etc.**

Press: **MENU + 8893**

TOSHIBA

1) Press **MENU** key and go to highlight the "**PICTURE**" and then press **9301**. You're in the service mode and it will show the **OK** key through various modes.

2) **Toshiba 32L4363 Smart FHD LED TV**

Entering Service Mode:

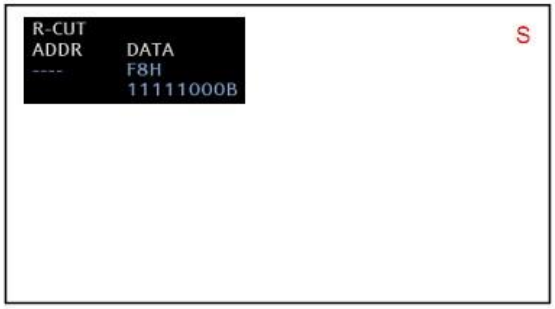
1. **Press button once on Remote Control.**

TV mode changes as follows. Un-Mute => Mute

2. **Press button again and keep pressing.**

(Sound Mute is canceled)

3. **While pressing the button, press P / button on TV control panel.**



(Enter Service Mode)

Key Function in the Service Mode:

The following key entry during display of adjustment menu provides special functions.

Button	Function
button (on Remote)	Test signal selection
P (on Remote)	Selection of the adjustment items
Volume +/– (on Remote)	Change of the data value
[7] button	Automatic A/D Adjustment (PC, Component, Composite(PAL, NTSC))
[9] button	Self Check display ON
[Exit] button	Exit from Service mode Self Check display Off

CAUTION: Never try to perform initialization unless you have changed the memory IC.

Test Signal Selection:

Entering Hotel Mode Menu:

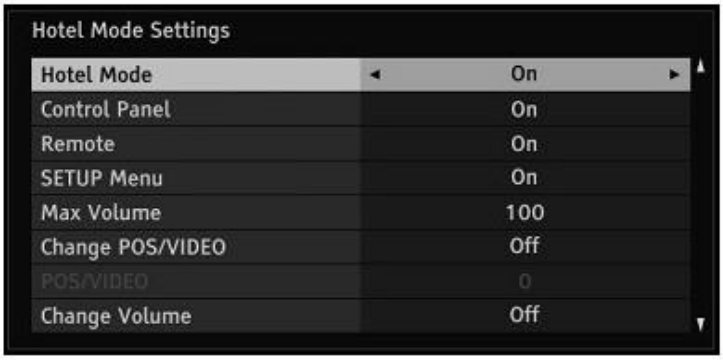
Hotel Mode Menu should be shown by the following operation:

1) Press any button on TV to activate Touch Sensor. White LED will light up.
2) Press button once on the Remote Control. 3) Press button again and keep pressing. 4) While pressing the button, press "+" button on TV.

(Hotel Mode Settings Menu)

DISPLAY OF HOTEL MODE MENU

- The Graphic Design and color of Hotel Mode Menu is the same as the User menu.
  (Small differences which do not affect to operation will be acceptable)
- The language will follow the "Menu Language" setting in the menu



(Example of Menu Image)

Press **[EXIT]** when finished to adjusting the settings.

VIZIO

1) For VAxxx & VTxxx series VIZIO TV:

Press: **MENU + 1991**

2) Press **MENU** and go to "**HELP**" option under is factory default and press **0000**.

3) When TV in standby mode, press and hold **Channel Up** & **Channel Down** keys on the TV. And then press the **POWER** key on the TV, too. After that release the **Channel Up** & **Channel Down** keys. Follow by pressing the **MENU** key on remote control. You can see a character "**F**" is in the bottom

right hand corner of the menu OSD there. Or press and hold the **MENU** key for few seconds, the service menu OSD will appear on the screen.

4) Press and hold the **EXIT** key on the remote control for 3~5 seconds then release it. After that press **123** keys on the remote control and it will login to the Vizio service menu.

5) VIZIO Netflix account remove method:

- Open the Netflix apps, press these keys on the remote control: **UP, UP, DOWN, DOWN, LEFT, RIGHT, LEFT, RIGHT, UP, UP, UP**
- After that it will pop-up the Netflix basic account information and their software version.
- If you want to remove this apps, just use the remote control to **DISABLE** the account. This selection will remove the account from Netflix apps. So, with this method will help TV owner to reset their problem Netflix app or add a new account to this TV.

VIORE

1) Press and hold the **MENU** key on the TV keypad and **MENU** on the remote control at the same time for about 10~20 seconds. The Service Menu OSD will be appear on the screen.

WESTINGHOUSE

1) Press and hold the **POWER** key on the TV for about 10~20 seconds, the WESTINGHOUSE logo will appear on the screen. After that go to "**MENU**" and then "**SETTINGS**" scroll down to "**FACTORY RESET**" and click "**YES**", it will login to the factory mode successfully.

Steps to login to Universal LCD/LED Mainboard Factory Setting:

- Make sure what's the Universal TV Mainboard number (as the photo below) and find their correct login method.

- Using their original Universal Mainboard remote control and follow the instruction below to press:

Example:

a) Press: **MENU + 2580**

b) Press: **[MENU] + [2] + [5] + [8] + [0]**

- Using their original universal mainboard remote control and press the MENU button, the OSD Menu will present. After that press 2, 5, 8 & 0 buttons without stop or waiting not over 2 seconds. Or do this step within 3 seconds. Their Factory Setting display will pop up.

1) 6M48 series Universal Mainboard

Press: **MENU + 8202**

2) 5800-A8M260-0020 Universal TV Mainboard

SUPRA STV-LC1985WL (V1M01)

MAIN BOARD - 5800-A8M260-0020,

SYSCON - MST6E181VS-LF-Z1,

FLASH - MX25L3206,

TUNER - HFT2-8F / 115CW,

LED DISPLAY - E185SG01.

Login to the service mode with remote: **[SOURCE] + [3] + [1] + [9] + [5]**

3) 350016386 Universal TV Mainboard

SUPRA STV-LC42590F (V2L09)

MAIN BOARD-350016386,

Flash 25fl032,

LCD panel LC420WUE (SC) (V1)

Login to the service mode with remote: **[MENU] + [2] + [0] + [0] + [8]**

Exit service mode press remote: **[EXIT]**

4) 35016445 REV-02 Universal TV Mainboard

SUPRA STV-LC42740FL (V1L11)

MAIN: 35016445 REV-02

SYSCON: MT8227AAKU (BMSL),

SPI FLASH: W25Q32.

Login to the service mode with remote: **[MENU] + [2] + [0] + [0] + [8]**

5) 35017414 REV-01 Universal TV Mainboard

SUPRA STV-LC39950FL (V1M01)

MAIN BOARD 35017414 REV-01

SYSCON MT8227AAKU (BMSL),

SPI FLASH W25Q32,

LED DISPLAY CMI-V390HJ1-P02.

Login to the service mode with remote: **[MENU] + [2] + [0] + [0] + [8]**

6) CTV 6M48 - 6M182 - 6M30 series Universal Mainboard

Press: **MENU + 1147**

7) CV181L-Y Universal TV Mainboard

SUPRA STV-LC2477FLD (V5L09)

SECTION TV:

MAIN BOARD-CV181L-Y,

SPI FLASH-W25Q32,

TUNER-CDT-3SP512-37,

LED DISPLAY-V236H1-P01.

SECTION DVD:

MPEG BOARD-GM-CH1089J-V1.2,

MPEG-MT1389DE (JDAL),

SPI FLASH-KH25L1606,

Driver-CD5888CB,

Optics-SF-HD850

Login to the service mode with remote: **[INPUT] + [2] + [5] + [8] + [0]**

8) CV182L-B Universal TV Mainboard

SUPRA STV-LC2437AFL (V2L07)

MAIN BOARD-CV182L_B,

SPI FLASH-W25Q32,

TUNER-CDT-3SP512-37,

LED DISPLAY-M240HW02

Login to the service mode with remote: **[INPUT] + [2] + [5] + [8] + [0]**

9) CVMV26L-A-20 Universal TV Mainboard

Supra LCD model STV-LC1522W

Main CVMV26L-A-20

Serial Flash F40-100CGP

eeprom K24C32

Tuner F21Wt-3BAR-E

audio TDA1517P

SYSCON TSUMV26KE-LF

LK-IN150205A

Panel M156MWR1

Login to the service mode with remote:

[MENU] + [Red] + [Green] + [Yellow] + [Cyan]

10) HX6M181X V8 Universal Mainboard

Press: MENU + 9527

11) HX or HOXI series Universal Mainboard

Press: MENU + 9527

Press: MENU + 1147

12) JUG7.820.531-3 Universal TV Mainboard

Addition to this topic:

- Firmware version of V2M04 and V2L10

- Interchangeable

- Changes the OSD.

Supra STV- LC2204W

CPU MST719DU-LF

MAIN: JUG7.820.531-3, 24LC32, TEA2025B,

Tuner: TAF6-C2I21V

Login to the service mode with remote: **[INPUT] + [3] + [1] + [3] + [8]**

13) JVI series Universal Mainboard

Press: **MENU + 2580**

14) KR2660TVN Universal Mainboard

Press: Change to AV mode with blue screen, after that press **2,0,0,8**.

15) MST6E18-V3.0 Universal Mainboard

Press: **MENU + 1234**

16) QT553M V0.3 Universal Mainboard

Press: **SOURCE + 2580**

17) ROWA series Universal Mainboard

Press: **MENU + 1147**

Press: **MENU + 1234**

Press: **MENU + 2508**

Press: **MENU + 2580**

18) SP208ESA HK-7050A-V2.08-E Universal TV Mainboard

SUPRA STV-LC2222WD (V1I12)

Section TV:

MAIN BOARD-SP208ESA HK-7050A-V2.08-E,

SPI FLASH-EN25T80 (U7),

EEPROM-24C32 (U9),

TUNER-TNF931D-BFR1,

LCD MATRIX-CLAA215FA.

Section DVD: MPEG BOARD-B.SPDM7B,

MPEG-SPHE8202TQ (U25),

SPI FLASH-EN25T80 (U5),

Driver-D5888S,

Optics-HOP-120X.

Login to the service mode with remote: **[MENU] + [7] + [0] + [5] + [0]**

19) T482_V1 (MST6M48RHS-LF-Z1-SJ) series Universal Mainboard

Press: **MENU + 2580**

20) TOPTECH V59 series Universal Mainboard

Press: **MENU + 2580**

21) TOPTECH series Universal Mainboard

Press: **SOURCE + 1973**

Press: **SOURCE + 2580**

Press: Adjust the **VOLUME** to "**0**", after that press **1,9,6,9** (Refer to MST6M48RVS chipset)

Press: **MENU + 1234**

22) TSU59V2-LCD Universal Mainboard

Press: **MENU + 9527**

23) T.MS18VG.72 and T.VST59.A5 Universal TV Mainboard

SUPRA STV-LC32K800WL (V1M02)

MAIN BOARD T.MS18VG.72 T.VST59.A5,

SYSCON TSUMV59XE,

SPI FLASH W25Q32,

TUNER CDT-3NP5 / 1-10,

LED DISPLAY LM315TA-T01.

Login to the service mode with remote: **[MENU] + [1] + [1] + [4] + [7]**

24) T.VST29.03 series Universal Mainboard

Press: **MENU + 1147**

25) T.VST29.61C Universal Mainboard

SUPRA STV-LC2277FL V6L10

MAIN: T.VST29.61C 12296

CPU: TSUMV59XU-Z1

TUNER: CDT-3SP5I2-36

SPI FLASH: W25Q32FVSIG

PSU: HKC-PL01 REV: 3.0

LED PANEL: LM215DA-T01

Login to the service mode with remote: **[MENU] + [1] + [1] + [4] + [7]**

Exit service mode press remote: **[EXIT]**

26) T.VST59S.73 Universal TV Mainboard

SUPRA STV-LC2725AFL (V5L11)

MAIN: T.VST59S.73,

SYSCON: TSUMV56XES-Z1,

SPI FLASH: GD25Q32,

TUNER: CDT-3NP5 / 1-10,

LED PANEL: M270HGE-L21.

Login to the service mode with remote: **[MENU] + [1] + [1] + [4] + [7]**

27) V29- 6M16-TSUX6V2.0-G (Chipset) series Universal Mainboard

Press: **MENU + 1234**

28) V59 series Universal Mainboard

Press: **MENU + 1147**

29) VS.T811_V2.1 Universal Mainboard

Press: **SOURCE + 2008**

30) Y.VST59.62 Universal TV Mainboard

SUPRA STV-LC19810WL (V4L12)

MAIN BOARD-Y.VST59.62,

SYSCON-TSUMV59XU,

SPI FLASH-GD25Q32,

TUNER-CDT-3NP5 / 1-10,

LED DISPLAY-LS185AWTNM

Login to the service mode with remote: **[MENU] + [1] + [1] + [4] + [7]**

Collection of China Made Universal TV Mainboard Login Service Menu Methods

- Press: MENU + 123
- Press: MENU + 0000
- Press: MENU + 0101
- Press: MENU + 1147
- Press: MENU + 1167
- Press: MENU + 1183
- Press: MENU + 1185
- Press: MENU + 1187
- Press: MENU + 1199
- Press: MENU + 1999
- Press: MENU + 1234
- Press: MENU + 2008
- Press: MENU + 2383
- Press: MENU + 2387
- Press: MENU + 2580
- Press: MENU + 2611
- Press: MENU + 3867
- Press: MENU + 4725
- Press: MENU + 5451
- Press: MENU + 6087
- Press: MENU + 6480
- Press: MENU + 6483
- Press: MENU + 7050
- Press: MENU + 7343
- Press: MENU + 8202
- Press: MENU + 8893
- Press: MENU + 8896
- Press: SOURCE + 0000
- Press: SOURCE + 2283
- Press: SOURCE + 2285
- Press: SOURCE + 2580
- Press: SOURCE + 2583

- Press: SOURCE + 2585
- Press: SOURCE + 3137
- Press: SOURCE + 3138
- Press: SOURCE + 3195
- Press: SOURCE + 6483
- Press: SOURCE + 7343
- Press: SOURCE + MENU + 0000
- Press: MENU + VOL+ + CH- + 8532
- Press: MENU + CH- + 8532
- Press: MENU + AUDIO + BALANCE + 0532 (or 8532)
- Press: MENU + AUDIO + BALANCE + 1969

The above steps must finish within 3 seconds.

Notes:

If you're facing the problem on how to login to China Made Universal LCD/LED TV Mainboard, but their model or part number is not listed above, you can try all the above password number. Because these password looks like similar and most of them will using the same password, even they are different brands and mainboard model part number.

If you want to buy the Test Equipment, Tools and Spare Parts please visit to the page here:

http://www.LCDRepairGuide.com/tools

All these tools and equipment will help you in troubleshooting and repairing the electronics devices.

Completer Flat Screen TV Troubleshooting & Repairing Ebooks:

*For searching the training manuals, service manuals or schematic diagram, please join the LED/LCD Television repair membership, highly recommended:

Http://www.LCD-Television-Repair.com

Please visit the Resources Page to get more useful repairing information at:

http://www.lcd-television-repair.com/newsletter/Recommend.html

Bonus-A

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OLED55E8PUA INTERCONNECT DIAGRAM

NOTE: Boards are in Different Locations for Layout Synergy

OLED55E8PUA (2018) Interconnect Diagram

PANEL p/n: EAJ64350901	REAR GLASS p/n: ACQ90095402

Panel Note: This TVs Panel (Module) comes in 2 pieces. The Module and the Back Glass. See Article 6919 for details. The Panel (Module) comes with a matching T-CON Board separately. Be sure the Serial numbers Match.

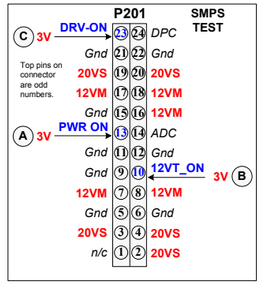
P201 "SMPS Board" to P7603 "MAIN Board"

PIN	LABEL	STBY	RUN	Diode Check
24	(4)DPC	0V	0V/3.28V	OL
23	(3)DRV_ON	0V	*3.12V	OL
21-22	Gnd	Gnd	Gnd	Gnd
19-20	20VS	0V	20.14V	OL
16-18	12VM	7.78V	11.99V	OL
15	Gnd	Gnd	Gnd	Gnd
14	(5)ACD	0V	3.58V	OL
13	(1)PWR_ON	0V	3.30V	0.79V
11-12	Gnd	Gnd	Gnd	Gnd
10	(2)12VT_ON	0V	3.46V	OL
9	Gnd	Gnd	Gnd	Gnd
7-8	12VM	7.78V	11.99V	OL
5-6	Gnd	Gnd	Gnd	Gnd
2-4	20VS	0V	20.14V	OL
1	N/C	n/c	n/c	n/c

Note1: Pin 13 (PWR_ON) Power On: Turns on 12VM and 20VS to Main. It does not turn on T-CON 12VT or 23VD. If the 12VM is missing, the set will click on and then click back off. (Shows up as 5VMNT in the Power Off History Screen).
Note2: Pin 10 12VT_ON): is **(Panel_CTL "Panel Control")** from Main. This turns on the Panel 12V, (which is T-CON 12VT P251).
Note3: Pin 23 (DRV_ON) Drive On: is **(INV_ON "Inverter On")** from Main. This turns on the Panel 23V, (which is labeled T-CON 23VD P251).
Note4: Pin 24 (DPC) Dynamic Picture Control: Used to control Panel 23VD. Activates when APS (Auto Power Savings in Picture Settings) is turned on. DCP line goes high (3.28V). Used to conserve Power Consumption.
P251: 23VD: (20.85V "APS On / DPC Hi") / (23.90V "APS Off / DPC Lo")
Note5: Pin 14 (ACD) AC_DET: Is (out from SMPS).
Not Monitored by the Main, (Not Used).

You can use the Multi-Gender Board / Smart Jig for SMPS Test.
Use P13 on Multi-Gender Board. (Do Not Use P11)
(Must use jumper from PWR_ON to 12VT_ON. Unless Jig Mod. Is done.
You can use OLED Diagnostic Cable to run the Panel during SMPS Test.

SMPS TEST: Using 3V Simple Jig: See Article 8979 (No Power Applied during needle insertion).
Disconnect connector to the Main board. Use P7603 side for needle insertion.
TEST 1: A Jump 3V to pin 13 P201 (Turns on 12VM and 20VS to Main) Note: 23VD/12VT are not on.
TEST 2: B Jump 3V to pin 10 P201 (Turns on 12VT to T-CON) Leave A jumper in place
TEST 3: C Jump 3V to pin 23 P201 (Turns on 23VD to T-CON) Leave A and B jumpers in place

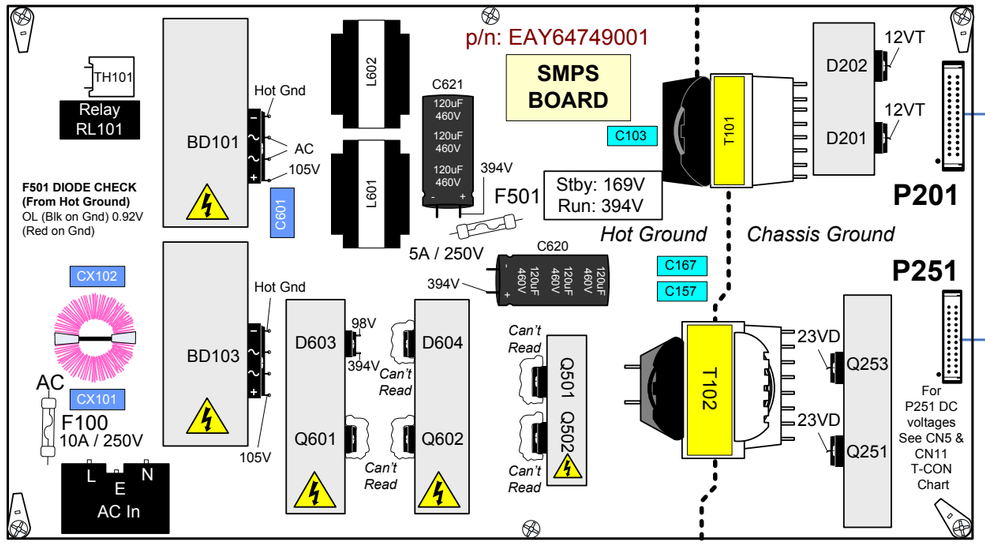


CN11 Note: 23VD voltage varies by the selection in the Customer's Menu "APC". Turned on "DPC goes high. When DCP is high, 23VD is 20.85V. When DCP is off (Low) 23VD is 23.90V.

T-CON ODD NOTE:
The TV will run with Connector CN5 unplugged. This is because 23VD is also sent (one wire) to CN11 pin 13.
Do not run set this way an extended amount of time as the wire may overheat.

T-CON Board Warning:
Warning: When Shield is removed, make sure screws are in place, damage to the board may occur if they are left out. FL8491 ~ 94 are ground protect EMI Filters.
Warning: Make sure before reassembling the Shield that the Heat Transfer materials "Chocolate" is put back in place. It can be on back of shield or front of board.

T-CON TROUBLESHOOTING, (CHECK THE FOLLOWING):
All Connections and Cables are good going to the T-CON.
CN6, CN10 (Vx1 Video and Data) CN5, CN11 (Power)
CN19, CN20, CN21 and CN22 (To the Panel) Not Damaged and Seated Correctly.
12VT (F3) and 23V (F6) via CN5 and CN11 Voltages are present.
At the 6 listed voltages are going to the panel on CN19 and CN20
If TV won't come on, Power LED is Blinking for 30 sec.: Use P-ONLY button on service remote to bypass Burn_Det. and unlock the Main board. If TV now comes on, check Power Off History Screen for Off_By_INV_ERROR. If Yes suspect Panel Defect, (Burn Detection) ERROR_DETECTION Test Point near **CN6**. Three consecutive INV_ERROR entries "Lock" the Main Board and can only be Reset by P-Only. Note: ERROR TEST POINT: Normal Lo (0V), Burn Detected Hi (3.3V).



All 6 screws: M3x6 (Silver)

VOLTAGE LABEL

MODEL	LGP55C8-18OP
INPUT	AC100V-240V 50/60Hz. 5.0A
OUTPUT	12V = 2.5A (12VM) To Main 12V = 2.4A (12VT) To T-CON 20V = 1.5A (20VS) To Main 23V = 10.2A (23VD) To T-CON

DIODE CHECK CONNECTORS CONNECTED.
12VM P201: OL (Blk on Gnd) 0.14V (Red on Gnd)
20VS P201: OL (Blk on Gnd) OL (Red on Gnd)
12VT P251: 0.96V (Blk on Gnd) 0.59V (Red on Gnd)
23VD P251: 1.18V (Blk on Gnd) 0.48V (Red on Gnd)

P251 Note: 23VD voltage varies by the selection in the Customer's Menu "APC". Turned on "DPC goes high. When DCP is high, 23VD is 20.85V. When DCP is off (Low) 23VD is 23.90V.

Indicates Hot Ground

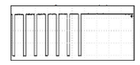
P7603 "MAIN Board"

PIN	Diode ✓
1	1.35V
2	OL
3-4	Gnd
5-6	OL
7-8	OL
9	Gnd
10	OL
11	OL
12	OL
13-15	Gnd
16	1.81V
17-18	OL
19-20	Gnd
21-24	OL

SMPS PINS: 23 / 24 / 21-22 / 19-20 / 17-18 / 15 / 16 / 13 / 14 / 9 / 10 / 7-8 / 5-6 / 1-4

For DC voltages See P201 Chart

All Connectors Connected
Diode Check
3.5V_ST: "1.04V"
12VM: "OL"
20VS: "OL"
+3.5V_WIFI: "1.96V"



Pin 3 IR: 3.48V p/p

IR Voltage: Drops to 3.01V when IR Received.

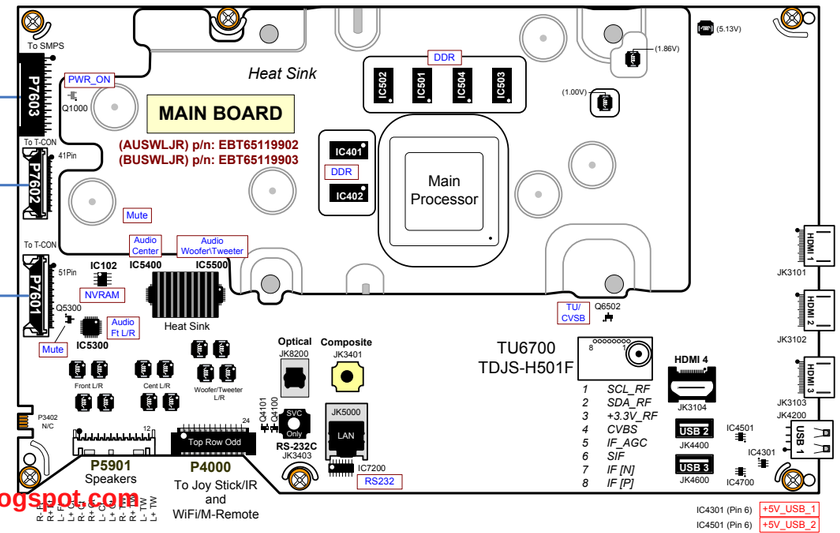
P4000 "Main" To "M-Remote/WiFi Module" / "Joystick" J1

PIN	LABEL	STBY	RUN	Diode ✓	Pin
1	LED_R	2.72V	0.00V	OL	IR (4)
3	IR	3.43V	3.43V	1.80V	IR (5)
5	GND	Gnd	Gnd	Gnd	IR (6)
7	Eye_SCL	3.46V	3.46V	1.81V	IR (7)
9	Eye_SDA	3.46V	3.46V	1.80V	IR (8)
11	N/C	n/c	n/c	n/c	n/c
13	GND	Gnd	Gnd	Gnd	WiFi (12)
15	BT_WAKEUP	0V	0.01V	1.80V	WiFi (9)
17	WOL/WIFI_PWR_ON	*0V/3.45V	0.22V	2.16V	WiFi (5)
19	+3.5V_WIFI	*0V/3.45V	3.45V	1.66V	WiFi (6)
21	COMBO_RESET	*0V/3.46V	3.46V	1.80V	WiFi (7)
23	GND	Gnd	Gnd	Gnd	WiFi (8)

P4000 "Main" To "M-Remote/WiFi Module" / "Joystick" J1

PIN	LABEL	STBY	RUN	Diode ✓	Pin
2	GND	Gnd	Gnd	Gnd	IR (3)
4	3.5V_ST	3.46V	3.46V	1.05V	IR (2)
6	GND	Gnd	Gnd	Gnd	Joy (4)
8	KEY2	3.45V	3.45V	1.81V	Joy (3)
10	KEY1	3.45V	3.45V	1.81V	Joy (2)
12	GND	Gnd	Gnd	Gnd	Joy (1)
14	GND	Gnd	Gnd	Gnd	WiFi (11)
16	BT_WAKEUP	*0V/3.44V	3.43V	1.81V	WiFi (10)
18	GND	Gnd	Gnd	Gnd	WiFi (4)
20	WIFI_DP	0V	0.20V	1.33V	WiFi (3)
22	WIFI_DM	0V	0.20V	1.34V	WiFi (2)
24	+3.5V_WIFI	*0V/3.44V	3.44V	1.66V	WiFi (1)

* When General --> Mobile TV On (Turn on via WiFi) is turned on, these voltages stay On in Stand-By.



All Speaker Pins: 2.33V
(No matter Volume Level)

T-CON 12VT DIODE CHECK

Blk on Gnd	Red on Gnd	
0.96V	0.97V	All Connected
2.18V	0.43V	No SMPS

T-CON 23VD DIODE CHECK

Blk on Gnd	Red on Gnd	
1.18V	0.48V	All Connected
OL	0.37V	No SMPS with Panel
OL	OL	No SMPS or Panel

Note 23VD: APS On: 20.85V/ APS Off: 23.90V

(A): EVDD_RESET
23VD Loss Detection
POWER_OFF: (20V_DET)
Normal: 3.14V

(B): ERROR_DETECTION
Burn Detection
POWER_OFF: (INV_ERROR)
Normal: 0V

CN11 "T-CON" to "SMPS Board" P251

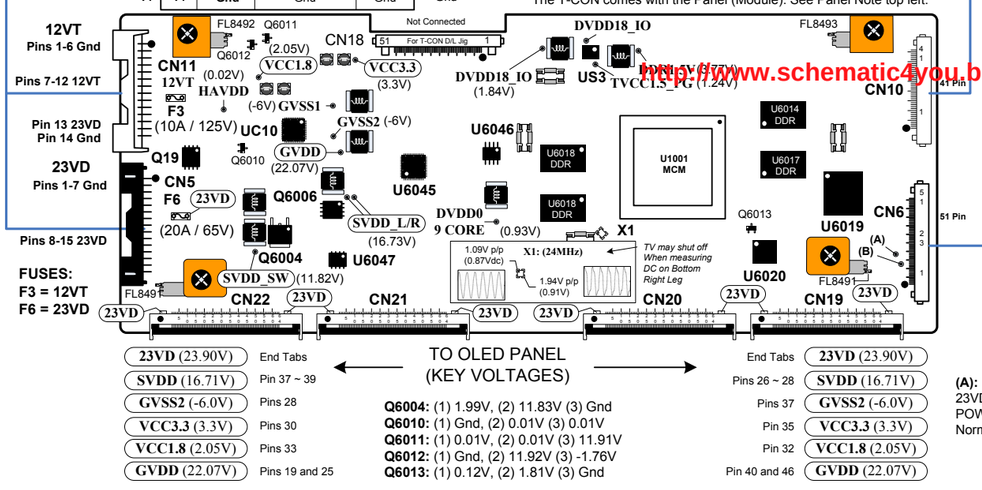
P251 Pin	PIN	LABEL	RUN	Diode ✓	P251 Diode ✓
2,4,6,8,10,12	1-6	Gnd	Gnd	Gnd	Gnd
14,16,18,20,22,24	7-12	12VT	11.94V	OL	0.98V
26	13	23VD	20.85V/23.90V	Gnd	1.37V
14	14	Gnd	Gnd	Gnd	Gnd

CN5 "T-CON" to "SMPS Board" P251

P251 Pin	PIN	LABEL	RUN	Diode ✓	P251 Diode ✓
1.3.5.7.9.11	1-7	Gnd	Gnd	Gnd	Gnd
13,15,17,19, 21,23,25,27	8-15	23VD	20.85V/23.90V	0.53V	1.37V

DCP On / Off

The T-CON comes with the Panel (Module). See Panel Note top left.

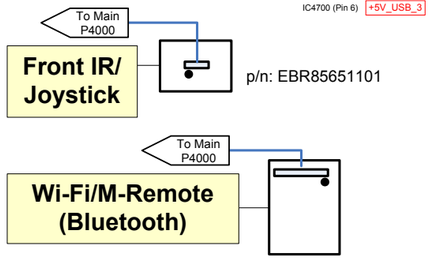


TO OLED PANEL (KEY VOLTAGES)

Q6004: (1) 1.99V, (2) 11.83V (3) Gnd
Q6010: (1) Gnd, (2) 0.01V (3) 0.01V
Q6011: (1) 0.01V, (2) 0.01V (3) 11.91V
Q6012: (1) Gnd, (2) 11.92V (3) -1.76V
Q6013: (1) 0.12V, (2) 1.81V (3) Gnd

http://www.schematic4you.blogspot.com

TO RUN PANEL TEST (AGP): (Patterns on Screen without Main Board).
Connect TV Smart Test Jig / Multi-Gender Board, (See Articles 9267) and the OLED diagnostic Cable per instructions, (See Articles 9268).
When Power is applied, Patterns appear on screen.
Note: Disconnect both Vx1 (LVDS) Cables (CN6 and CN10).
Power (12VT and 23VD) must be available to T-CON Fuses, F3 and F6.

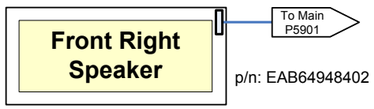


Vx1 Cable 41 pin
p/n: EAD63285608
Vx1 Cable 51 pin
p/n: EAD63285709

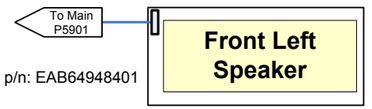
SMPS Harness 28pin
(SMPS P251/T-CON CN5 / CN11)
p/n: EAD63991004

SMPS Harness 24pin
(SMPS P201/MAIN P7603)
p/n: EAD63810301

SPEAKER Harness 12pin
(Main P5901 to Speakers)
p/n: EAD64065404



p/n: EAB64948402



p/n: EAB64948401

Magic Remote MR18 p/n: AGF79298801

OLED65G6P Interconnect Diagram

LG SIGNATURE
OLED TV

Picture on Glass
4K HDR Smart TV
65" Class (64.5" diagonal)
3840h x 2160v

ULTRA HD™
PREMIUM

Published: July 16th, 2016

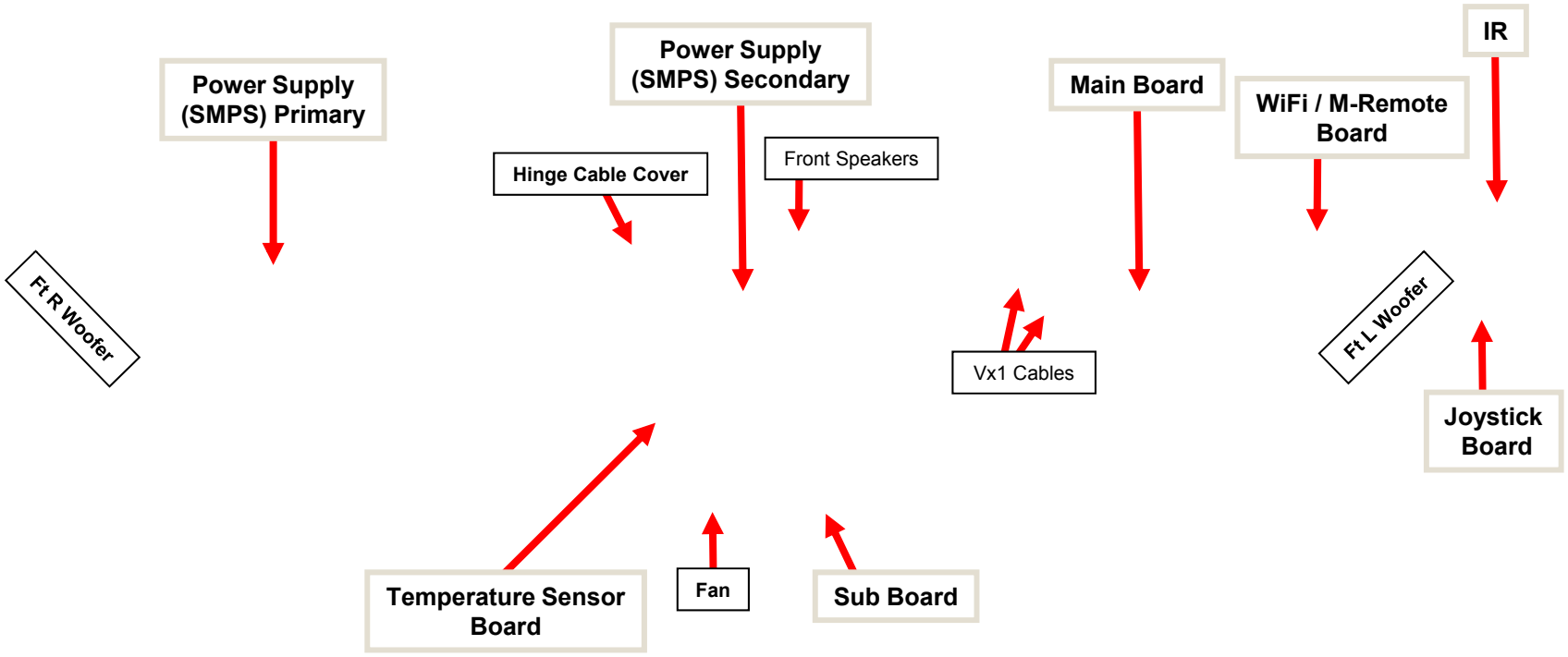
Updated: August 31st, 2017

LG
Life's Good

Circuit Board Layout

Warning: The OLED Panel is very Fragile, use caution when handling.

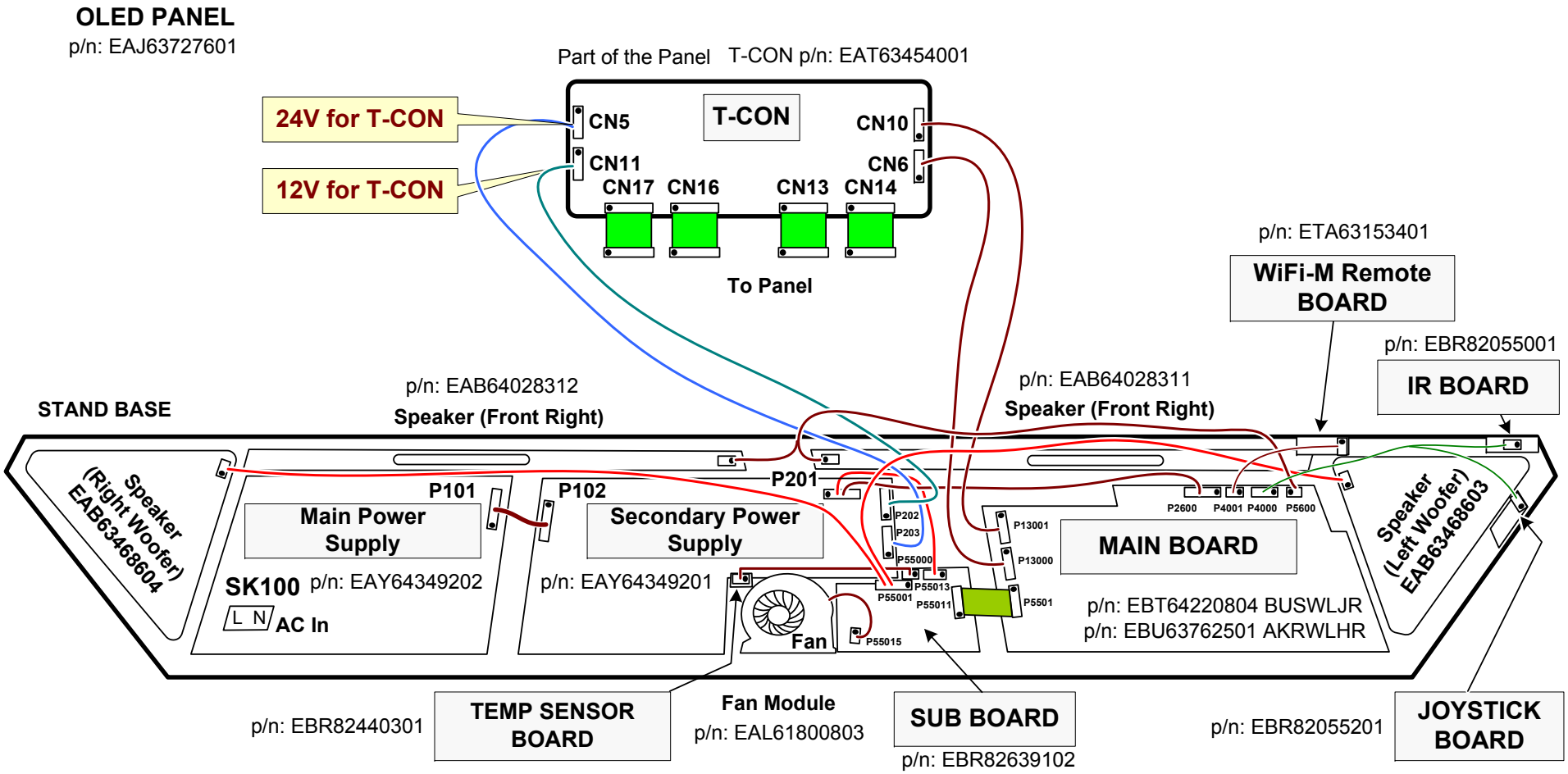
T-CON Board is Part of the Panel

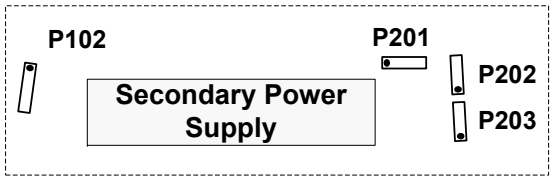


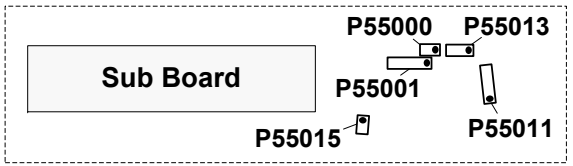
For Disassembly / Reassembly procedures please see the document;
OLED65G6_Set_Disassembly_Assembly_Guide

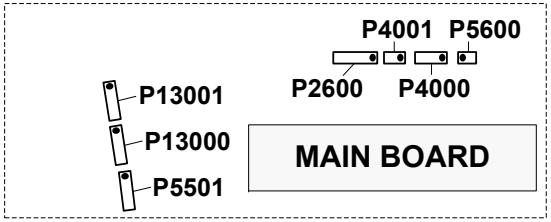
OLED65G6P Connector Identification

If the Panel is replaced, reset the UTT, Unit's Total Time.
Press "In-Stop" using Service Remote.









OLED65G6P INTERCONNECT DIAGRAM

T-CON IS PART OF THE PANEL ITSELF, ALL OTHER BOARDS ARE IN THE STAND

PANEL p/n: EAJ63727601 Panel comes with the T-CON

Warning: Make sure screws are in place, you WILL NEED Washers. Damage to the board will occur if they are left out.
FL244 ~ FL247 are ground protect EMI Filters.
Warning: Make sure before reassembling the Shield that the Heat Transfer materials "Chocolate" can be on back or front.

T-CON TROUBLESHOOTING:
Run the Panel Test first. If patterns appear on-screen, SMPS, Panel and T-CON are good.
If the Patterns do not appear;
Confirm all connections are good going to the T-CON.
CN6, CN10 (Vx1) CN5, CN11 (Power)
CN13, 14, 16, 17 (To the Panel)
Confirm 12V and 24V are arriving at CN5 and CN11
Confirm at least these 5 voltages are going to the panel on CN17 and/or CN14

Note: To run the "Panel Test"
1) Disconnect CN10 and CN6 Vx1 (LVDS) Cables
2) Jump 3.3V to bottom left leg of D8020. (Pin 23 CN6).
(Use VCC3.3V or you can use the 3V Simple Jig).
3) Turn on the Power Supply. 12V / 24V must be OK.

P201 "SMPS" to "Main"

Pin	Diode Check
22,23	Gnd
19 - 22	1.39V
18	OL
16,17	Gnd
11 - 15	1.48V
6,9,10	Gnd
5,7,8	OL
4	2.96V
3	OL
2	OL
1	1.20V

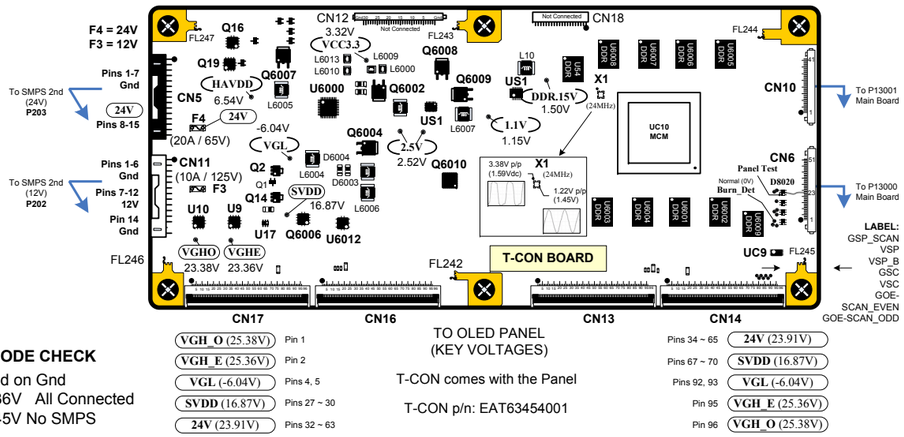
T-CON Component Voltages
Q6002: (1) 4.56V, (2) 12V (3) 3.35V
Q6004: (1) 1.88V, (2) 12V (3) Gnd
Q6007: (1) 6.89V, (2) 12V (3) 0V
Q6008: (1) 1.65V, (2) 12V (3) 1.19V
Q6009: (1) 4.34V, (2) 1.19V (3) Gnd

T-CON 24V DIODE CHECK

Blk on Gnd	Red on Gnd
0.31V	0.26V All Connected
OL	0.35V No SMPS with Panel
OL	0.65V No SMPS or Panel

T-CON 12V DIODE CHECK

Blk on Gnd	Red on Gnd
0.40V	0.36V All Connected
1.15	0.45V No SMPS

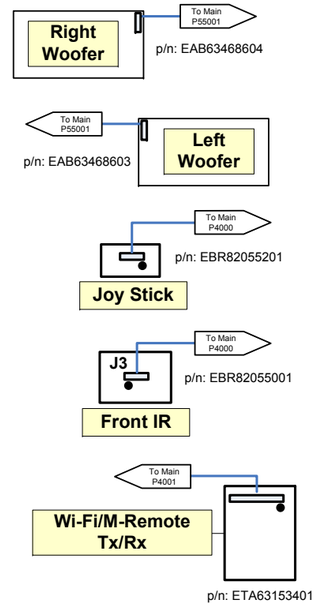


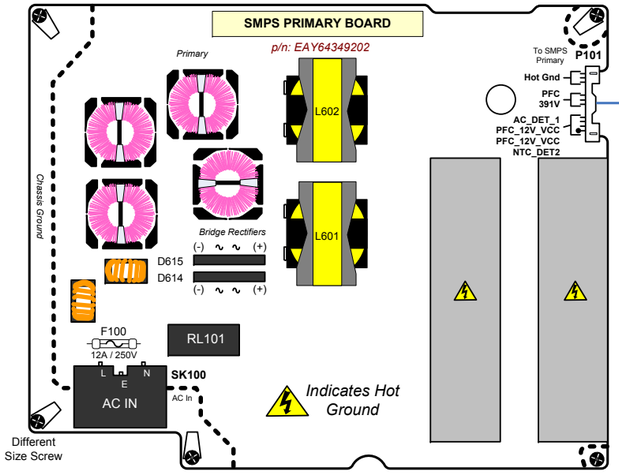
P4001 "Main" To "M-Remote/WiFi Module"

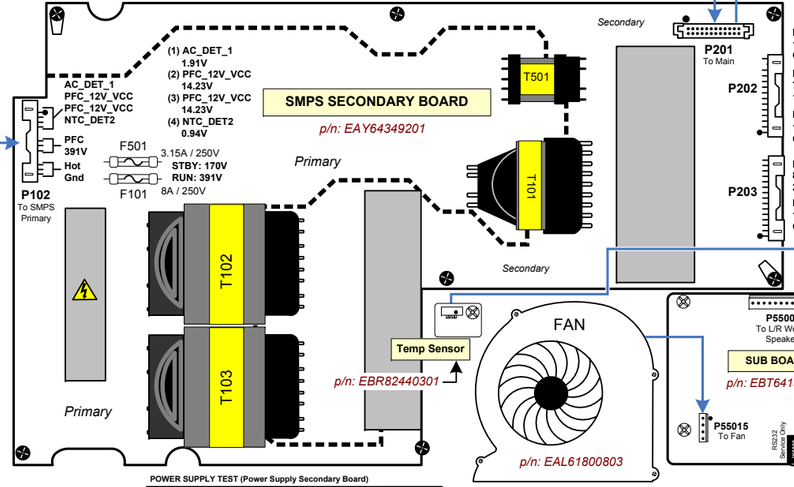
Pin	Label	Run	Diode
1	Gnd	Gnd	Gnd
2	BT-RESET	3.39V	OL
3	3D_SYNC_RF	3.46V	OL
4	WOL/WiFi_Power__On	3.47V	OL
5	Gnd	Gnd	Gnd
6	WiFi_BT_DP	0.03V	1.70V
7	WiFi_BT_DM	0.03V	1.70V
8	+3.5V_WiFi	3.49V	OL

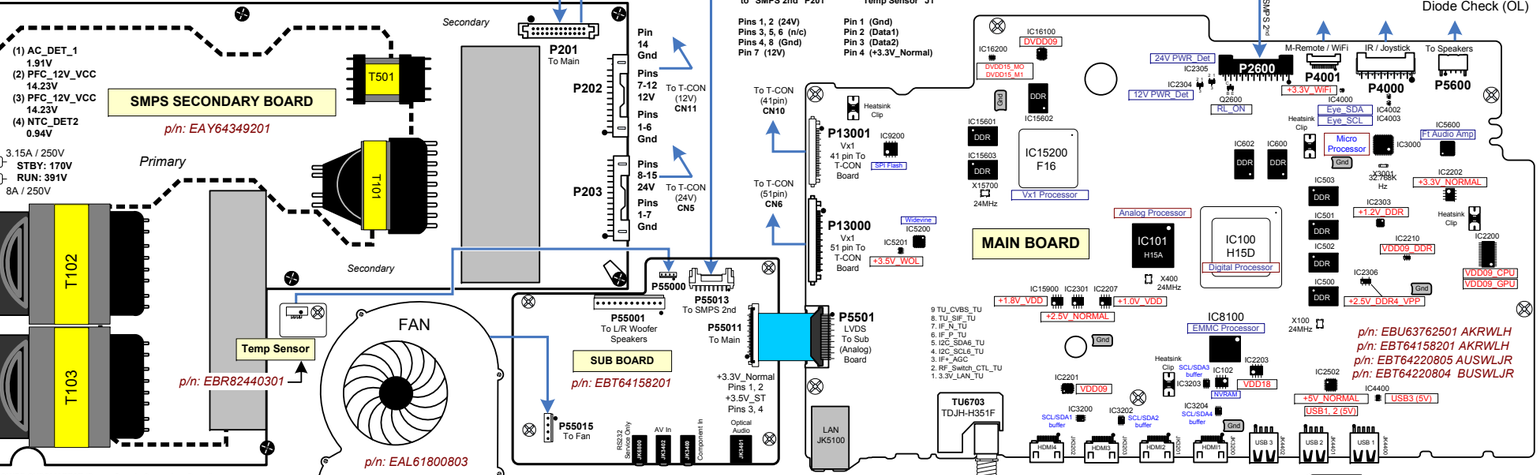
P4000 "MAIN Board" To "IR, Joy Stick" Board

PIN	LABEL	STBY	RUN	Diode	To	Pin
1	Gnd	Gnd	Gnd	Gnd	Joy Stick	8
2	+3.5V_Normal	0V	3.32V	OL	Joy Stick	7
3	+3.5V_Normal	0V	3.32V	OL	Ft IR	10
4	3.5V_ST	3.51V	3.49V	1.30V	Joy Stick	6
5	Eye_SDA_Wall	Gnd	Gnd	Gnd	Ft IR	9
6	Accel	0V	0.32V	1.30V	Joy Stick	5
7	Eye_SCL_Wall	0V	3.47V	1.90V	Ft IR	8
8	Gnd	Gnd	Gnd	Gnd	Joy Stick	4
9	Eye_SDA_Stand	3.56V	3.52V	1.99V	Ft IR	7
10	Gnd	Gnd	Gnd	Gnd	Joy Stick	3
11	Eye_SDA_Stand	3.56V	3.52V	1.99V	Ft IR	6
12	Key 1	3.51V	3.49V	1.98V	Joy Stick	2
13	Gnd	Gnd	Gnd	Gnd	Ft IR	5
14	Key 2	3.51V	3.49V	1.98V	Joy Stick	1
15	IR	3.54V	3.50V	1.89V	Ft IR	4
16	+3.5V_ST	3.51V	3.49V	1.24V	Ft IR	3
17	Logo_Light	2.78V	0V	OL	Ft IR	2
18	Gnd	Gnd	Gnd	Gnd	Ft IR	1



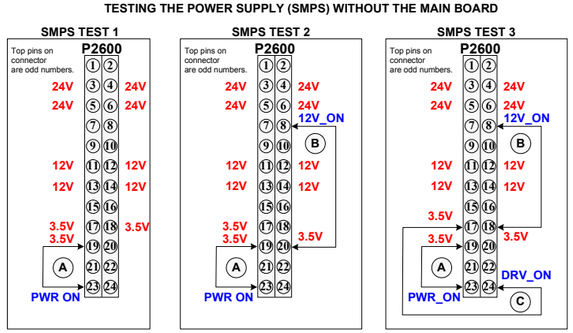






TESTING THE POWER SUPPLY (SMPS) WITHOUT THE MAIN BOARD

TESTING SET-UP: Unplug P2600 from the Main board. Use P2600 side to insert Jumpers and take readings.



SMPS TEST:

TEST 1: Short PWR_ON to 3.5V_ST. Turns on 12V and 24V to the Main

TEST 2: Leave Test 1 short in place. Short 12V_ON to 3.5V_ST. Turns on 12V to T-CON.

TEST 3: Leave Test 1 and Test 2 shorts in place. Short DRV_ON to 3.5V_ST. Turns on 24V to T-CON.

Unplug AC Power when adding or removing a Jumper.
All readings from Chassis Ground.

POWER SUPPLY TEST (Power Supply Secondary Board)

MAIN	P201 "POWER 2ND"		12V and 24V to Main	12V to T-CON	12V and 24V to T-CON
Pin	Pin	Label	Test 1	Test 2	Test 3
2	24	Gnd	Gnd	Gnd	Gnd
4 P55013	23	(R) (Gnd)	Gnd	Gnd	Gnd
4	22	24V	23.98V	23.65V	24.66V
2 P55013	21	(R) (24V)	23.98V	23.65V	24.66V
6	20	24V	23.98V	23.65V	24.66V
1 P55013	19	(R) (24V)	23.98V	23.65V	24.66V
8	18	(R) 12V_ON	0V	3.51V	3.51V
8 P55013	17	(R) (Gnd)	Gnd	Gnd	Gnd
10	16	Gnd	Gnd	Gnd	Gnd
7 P55013	15	(R) (12V)	12.01V	11.97V	11.97V
12	14	12V	12.01V	11.97V	11.97V
11	13	12V	12.01V	11.97V	11.97V
14	12	12V	12.01V	11.97V	11.97V
13	11	12V	12.01V	11.97V	11.97V
16	10	Gnd	Gnd	Gnd	Gnd
15	9	Gnd	Gnd	Gnd	Gnd
18	8	3.5V_ST	3.51V	3.51V	3.51V
17	7	3.5V_ST	3.51V	3.51V	3.51V
20	6	Gnd	Gnd	Gnd	Gnd
19	5	3.5V_ST	3.51V	3.51V	3.51V
22	4	(R) AC_DET	3.77V	3.76V	3.75V
21	3	(R) DPC	0V	0V	0V
24	2	(R) DRV_ON	0V	0V	3.51V
23	1	(R) RL_ON	3.51V	3.51V	3.51V

P201 "SMPS Board" to P2600 "MAIN Board"

	PIN	LABEL	RUN	PIN	LABEL	RUN	
P55013 Sub Board 4	23	24V	Gnd	24	Gnd	Gnd	2
2	21	24V	24.31V	22	24V	24.31V	4
1	19	24V	24.31V	20	24V	24.31V	6
8	17	Gnd	Gnd	18	12V_ON	3.49V	8
7	15	12V	11.98V	16	Gnd	Gnd	10
11	13	12V	11.98V	14	12V	11.98V	12
13	11	12V	11.98V	12	12V	11.98V	14
15	9	Gnd	Gnd	10	Gnd	Gnd	16
17	7	3.5V	3.50V	8	3.5V	3.50V	18
19	5	3.5V	3.50V	6	Gnd	Gnd	20
21	3	DPC	0.0V	4	ACD	3.64V	22
23	1	P_ON	3.04V	2	DRV_ON	3.03V	24

P2600 "MAIN Board" Pins are Inverted (Outside pin numbers) But by rows only. (12 pins per row Odd/Even). Odd pins are on Top Row on Main, Back Row on SMPS.

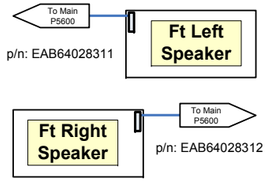
(1) PWR_ON: turns on the 12V and 24V lines. to the Main. (Not the 24V to the T-CON)
(2) 12V_ON: turns on the 12V to the T-CON.
(3) INV_ON: (DRV_ON on the SMPS) turns on the 24V to the T-CON.
(4) AC_DET: If missing will prevent the TV from coming on. Power Light blinks 3 times, the relay clicks off.
(5) DPC : Places the Power Supply in Power Saving Mode.
(6) Pins 15, 17, 19, 21, 23 of P201 goes to P55013 on the Sub (Analog) board.

Connected	Diode Checks	Disconnected
3.5V_ST to Main		
1.12V (Blk on Gnd)		OL (Blk on Gnd)
0.18V (Red on Gnd)		0.18V (Red on Gnd)
24V to Main		
1.23V (Blk on Gnd)		1.40V (Blk on Gnd)
0.35V (Red on Gnd)		0.36V (Red on Gnd)
12V to Main		
1.13V (Blk on Gnd)		1.17V (Blk on Gnd)
0.14V (Red on Gnd)		0.14V (Red on Gnd)

P2600 to SMPS

Pin	Diode Check
1,3,5,7	n/c
2	Gnd
4,6	24V
8	12V_ON
9,11,12,13,14	12V
10, 15, 16	Gnd
17,18,19	3.5V_ST
20	Gnd
21	DPC
22	AC_DET
23	RL_ON
24	INV_ON

For DC voltages See P201 Chart

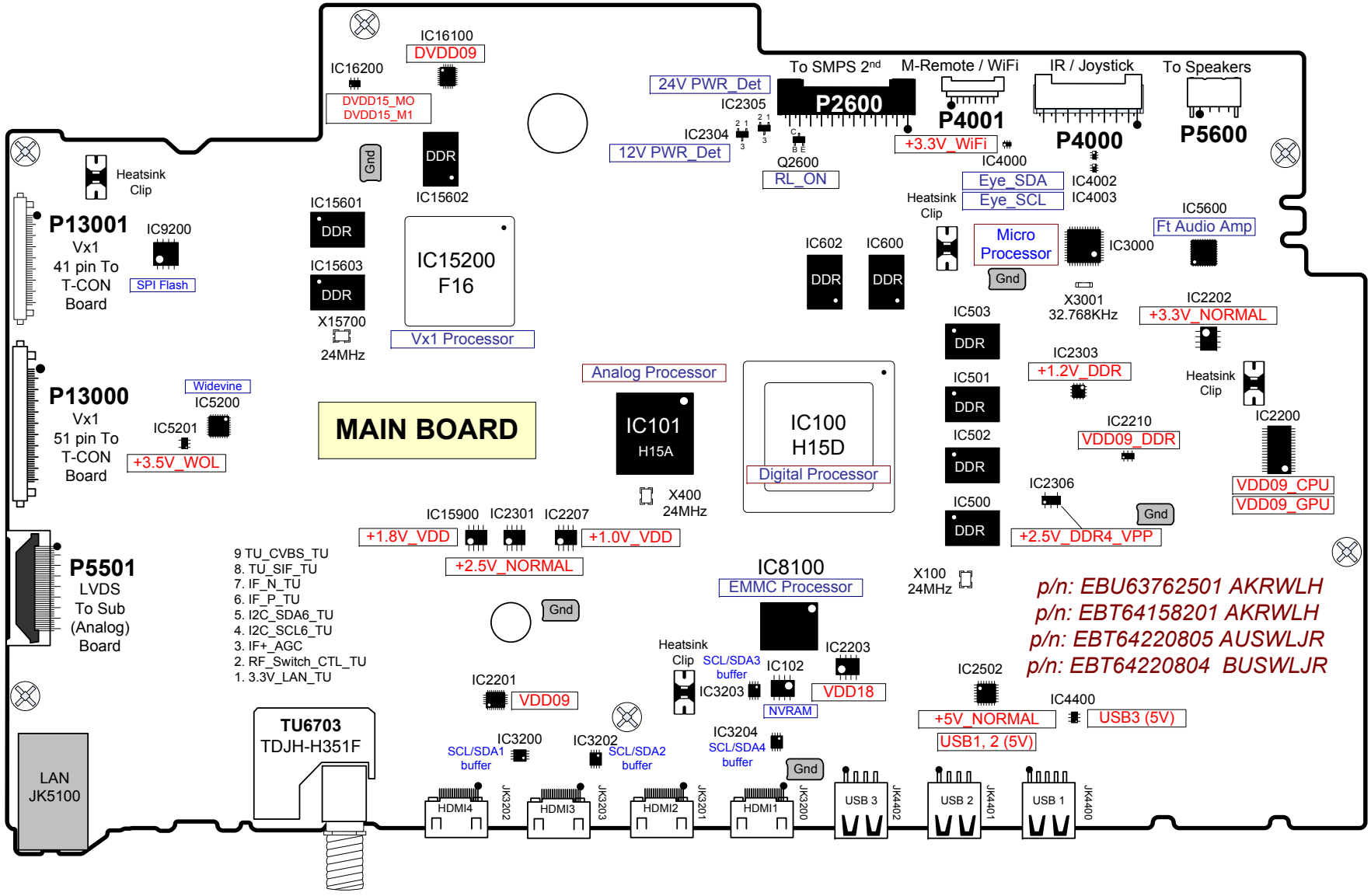


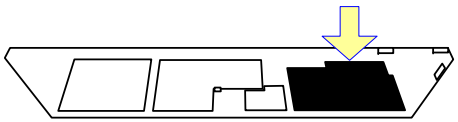
P55015 "SUB Board" to "FAN"

Pin 1	12V	OL
Pin 2	Gnd	Gnd
Pin 3	Fan_FG_Sig	OL
Pin 4	PWM_FAN	OL

FG_Sig (3.40V peak/peak)
PWM_Sig (3.36V peak/peak)

OLED65G6P Main Board Component Layout





Main Board Connector Voltages (Pg 1 of 2)

P4000 "Main" To "IR" and "Joy Stick" P1

Pin	Label	STBY	Run	Diode Check	Pins
1	GND	Gnd	Gnd	Gnd	Joy Stick pin 8
2	3.3V_Normal	0V	3.32V	OL	Joy Stick pin 7
3	3.3V_Normal	0V	3.32V	OL	IR pin 10
4	3.5V_ST	3.51V	3.49V	1.30V	Joy Stick pin 6
5	Eye_SDA_Wall	Gnd	Gnd	Gnd	IR pin 9
6	Accel	0V	3.32V	1.30V	Joy Stick pin 5
7	Eye_SCL_Wall	0V	3.47V	1.90V	IR pin 8
8	GND	Gnd	Gnd	Gnd	Joy Stick pin 4
9	Eye_SDA_Stand	3.56V	3.52V	1.99V	IR pin 7
10	GND	Gnd	Gnd	Gnd	Joy Stick pin 3
11	Eye_SCL_Stand	3.56V	3.52V	1.99V	IR pin 6
12	KEY1	3.51V	3.49V	1.98V	Joy Stick pin 2
13	GND	Gnd	Gnd	Gnd	IR pin 5
14	KEY2	3.51V	3.49V	1.98V	Joy Stick pin 1
15	IR	3.54V	3.50V	1.89V	IR pin 4
16	3.5V_ST	3.51V	3.49V	1.24V	IR pin 3
17	Light	2.78V	0V	OL	IR pin 2
18	GND	Gnd	Gnd	Gnd	IR pin 1

IR 3.84V p/p

TUNER

Pin	Label	Run	Diode
9	TU_CVBS_TU	1.54V	1.55V
8	TU_SIF_TU	0.42V	1.55V
7	IF_N_TU	0V	OL
6	IF_P_TU	0V	OL
5	I2C_SDA6_TU	3.28V	1.25V
4	I2C_SCL6_TU	3.28V	1.36V
3	IF+_AGC	0.60V	2.11V
2	RF_Switch_CTL_TU	0V	OL
1	3.3V_LAN_TU	3.28V	0.47V

P2600 "MAIN Board" To P201 "SMPS Secondary Board" **P201**

Pin	Label	STBY	Run	Diode Check	Pin
1	N/C	n/c	n/c	Gnd	23
2	Gnd	Gnd	Gnd	Gnd	24
3	N/C	n/c	n/c	OL	21
4	24V	0V	24.31V	OL	22
5	N/C	n/c	n/c	OL	19
6	24V	0V	24.31V	OL	20
7	N/C	n/c	n/c	OL	17
8	(2) 12V_ON	0V	3.49V	OL	18
9	12V	0V	11.98V	OL	15
10	Gnd	Gnd	Gnd	Gnd	16
11	12V	0V	11.98V	OL	13
12	12V	0V	11.98V	OL	14
13	12V	0V	11.98V	OL	11
14	12V	0V	11.98V	OL	12
15	Gnd	Gnd	Gnd	Gnd	9
16	Gnd	Gnd	Gnd	Gnd	10
17	3.5V_ST	3.51V	3.50V	2.86V	7
18	3.5V_ST	3.51V	3.50V	2.86V	8
19	3.5V_ST	3.51V	3.50V	2.86V	5
20	Gnd	Gnd	Gnd	Gnd	6
21	(5) DPC	0V	0.0V	OL	3
22	(4) AC_DET	0V	3.64V	OL	4
23	(1) RL-ON	0V	3.04V	OL	1
24	(3) INV-ON	0V	3.03V	OL	2

(1) PWR_ON turns on the 12V and 24V lines to the Main. (Not the 24V to the T-CON)

(2) 12V_ON turns on the 12V to the T-CON.

(3) INV_ON (DRV_ON SMPS) turns on the 24V to the T-CON.

(4) AC_DET: If missing will prevent the TV from coming on. Power Light blinks 3 times, the relay clicks off.

(5) DPC : Places the Power Supply in Power Saving Mode.

Main Board Connector Voltages (Pg 2 of 2)

P5501 "Main" to "SUB Board" P55011

Pin	Label	STBY	Run	Diode Check	Sub Board Pin
1	COMP1/AV1/DVI_R_IN	0V	0V	OL	41
2	Gnd	Gnd	Gnd	Gnd	40
3	COMP1/AV1/DVI_L_IN	0V	0V	OL	39
4	Gnd	Gnd	Gnd	Gnd	38
5	COMP1_Pb	0V	0V	OL	37
6	Gnd	Gnd	Gnd	Gnd	36
7	COMP1_Y	0V	0V	OL	35
8	Gnd	Gnd	Gnd	Gnd	34
9	COMP1_Pr	0V	0V	OL	33
10	Gnd	Gnd	Gnd	Gnd	32
11	AV1_CVBS_IN	0V	0V	OL	31
12	Gnd	Gnd	Gnd	Gnd	30
13	SOC_TX	0V	3.01V	OL	29
14	SOC_RX	0V	3.01V	OL	28
15	AV1_CVBS_DET	0V	0.48V	OL	27
16	COMP1_DET	0V	0.03V	OL	26
17	AUD_LRCK	0V	1.61V	2.38V	25
18	AUD_LRCH	0V	1.61V	2.07V	24
19	AUD_SCK	0V	1.59V	1.89V	23
20	AUD_LRCH_TW	0V	0V	1.89V	22

P5501 "Main" to "SUB Board" P55011

Pin	Label	STBY	Run	Diode Check	Sub Board Pin
21	Gnd	Gnd	Gnd	Gnd	21
22	AUD-OUTR	0V	0V	1.14V	20
23	AUD-OUTL	0V	0V	1.14V	19
24	Gnd	Gnd	Gnd	Gnd	18
25	HP_DET	0V	1.94V	OL	17
26	SPDIF_OUT	0V	1.64V	2.33V	16
27	SIDE_HP_MUTE	0V	0V	OL	15
28	N/C	0V	0V	OL	14
29	I2S_WOOF_OUT	0V	0V	OL	13
30	AMP_RESET_N	0V	3.02V	1.54V	12
31	WOOFER_MUTE	0V	3.23V	1.67V	11
32	PWM_FAN	0V	0.70V	1.81V	10
33	I2C_SDA1	0V	3.27V	OL	9
34	I2C_SCL1	0V	3.27V	OL	8
35	I2C_SDA5	0V	3.27V	2.20V	7
36	I2C_SCL5	0V	3.27V	2.20V	6
37	FAN_FG_SIGNAL	0V	1.63V	OL	5
38	3.3V_ST	3.51V	3.50V	OL	4
39	3.3V_ST	3.51V	3.50V	OL	3
40	3.3V_Normal	0V	3.29V	0.55V	2
41	3.3V_Normal	0V	3.29V	0.55V	1

P5600 "Main" To "Main Speakers"

Pin	Label	SBY	Run	Diode Check
1	SPK_R-	0V	0.10V	OL
2	SPK_R+	0V	0.10V	OL
3	SPK_L-	0V	0.10V	OL
4	SPK_L+	0V	0.10V	OL

Min to Max

P4001 "Main" To "M-Remote/WiFi Module"

Pin	Label	SBY	Run	Diode Check
1	Gnd	Gnd	Gnd	Gnd
2	BT_RESET	0V	3.39V	OL
3	3D_SYNC_RF	0V	3.46V	OL
4	WOL/WIFI_POWER_ON	0V	3.47V	OL
5	Gnd	Gnd	Gnd	Gnd
6	WIFI_BT_DP	0V	0.03V	1.70V
7	WIFI_BT_DM	0V	0.03V	1.70V
8	+3.5V_WIFI	0V	3.49V	OL

Crystal Voltages on the Main Board

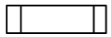
For IC100 for (LG1210-C0(H15+))

X100	Top Left Leg	P/P	
	0.91VDC	2.06V	UnReg Sine Wave
	Bottom Right Leg	P/P	
24Mhz	0.91VDC	992mV	Reg Sine Wave

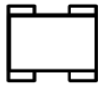
For IC101 for (LG1210A-AT(H15A-AT))

X400	Top Right Leg	P/P	
	1.41VDC	1.47V	Reg Sine Wave
	Bottom Left Leg	P/P	
24Mhz	1.55VDC	3.10V	Reg Sine Wave

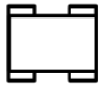
For IC3000 Microprocessor

X3001	Right Leg	P/P	
	0.13VDC	568mV	Reg Sine Wave
	Left Leg	P/P	
32.768KHz	0.72VDC	544V	Reg Sine Wave

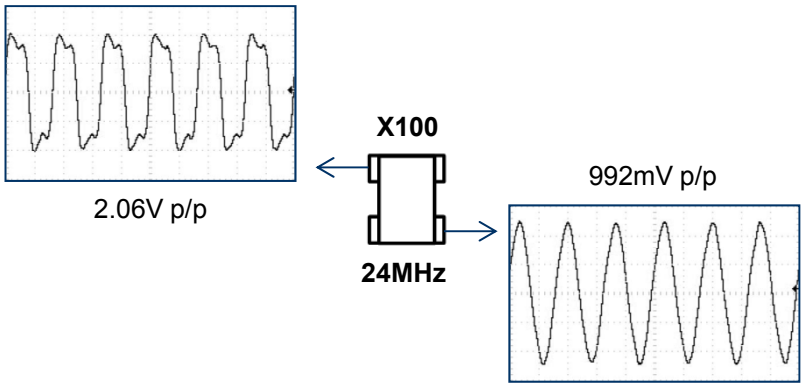
For IC5200 HDMI Processor (RTL8201F-VB-CG)

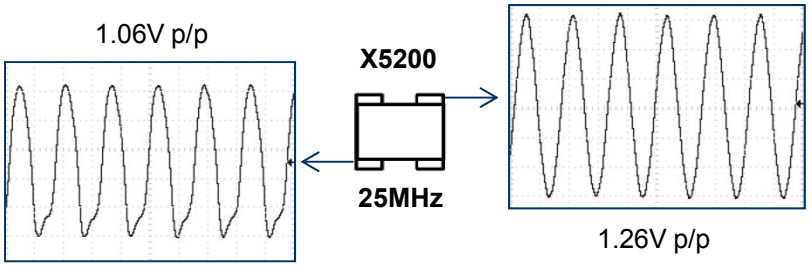
X5200	Top Right Leg	P/P	
	0.75VDC	1.26V	Reg Sine Wave
	Bottom Left Leg	P/P	
25Mhz	0.66VDC	1.06V	Reg Sine Wave

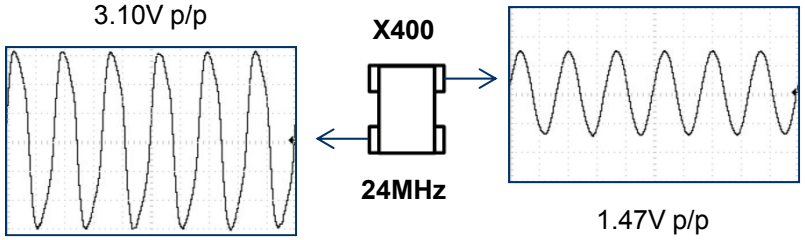
For IC15200 LGE1124(F16)

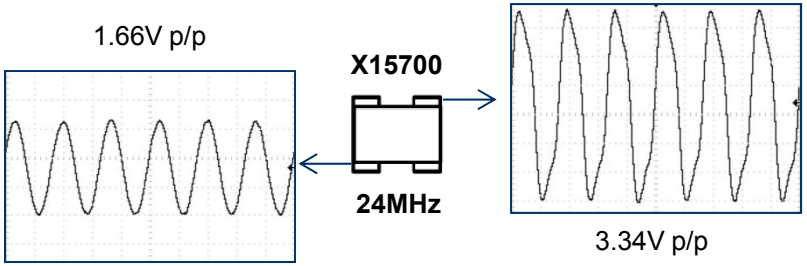
X15700	Top Right Leg	P/P	
	1.55VDC	3.34V	Reg Sine Wave
	Bottom Left Leg	P/P	
24Mhz	1.60VDC	1.66V	Reg Sine Wave

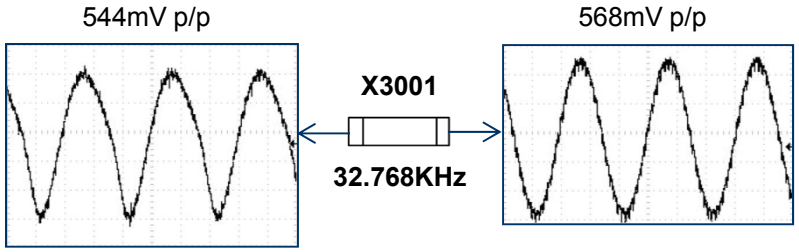
Crystal Waveforms on the Main Board







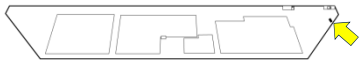




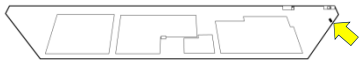
Joy Stick Board Layout

To Main
P4000

Not
Used



Joy Stick Board (Front) Component Layout

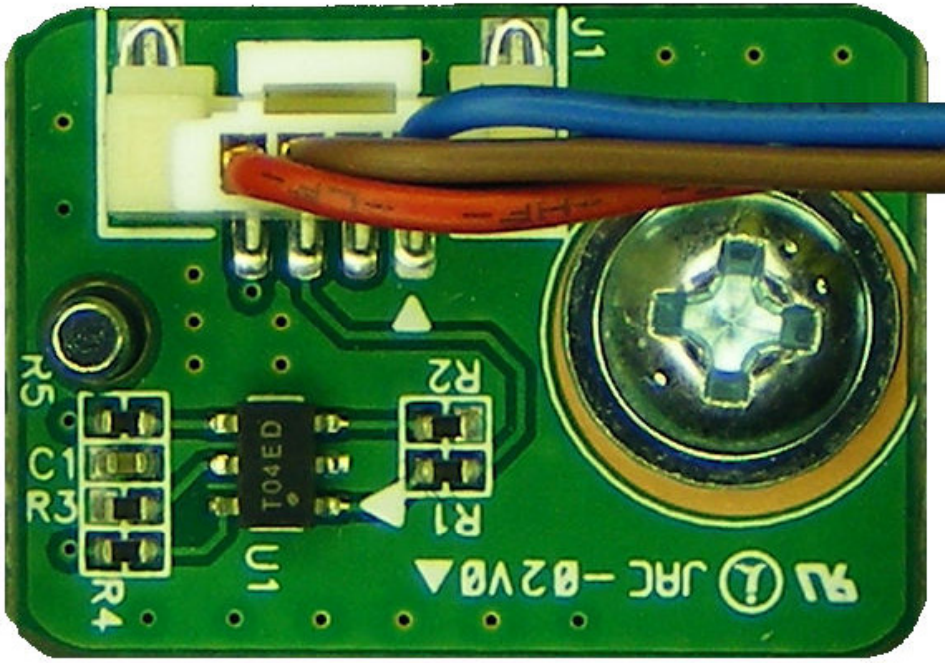


Joy Stick Board Connector Voltages

J1 "Joy Stick Board" To P4000 "Main Board"

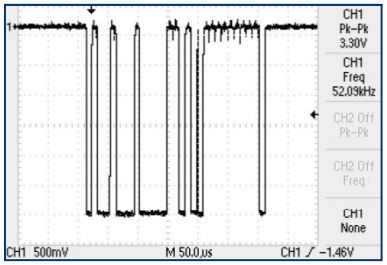
Pin	Label	STBY	Run	Diode Check	P4000
1	KEY2	3.51V	3.49V	OL	14
2	KEY1	3.51V	3.49V	OL	12
3	GND	Gnd	Gnd	Gnd	10
4	GND	Gnd	Gnd	Gnd	8
5	Accel	0V	3.32V	OL	6
6	3.5V_ST	3.51V	3.49V	OL	4
7	3.3V_Normal	0V	3.32V	OL	2
8	Gnd	Gnd	Gnd	OL	1

Temperature Sensor Board Component Layout

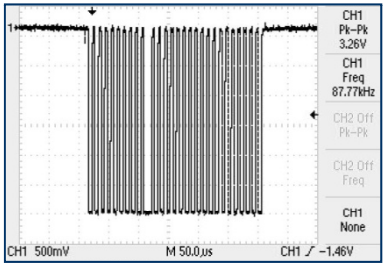


P55000 "SUB Board" to "Temp Sensor" J1

Pin	Label	STBY	Run	Diode Check
1	**Gnd**	Gnd	Gnd	Gnd
2	**Data1**	0V	3.28V	OL
3	**Data2**	0V	3.28V	OL
4	**3.3V_Normal**	0V	3.29V	OL



P5500 Main pin 2
3.30V p/p

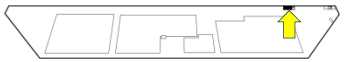


P5500 Main pin 3
3.26V p/p

WiFi/M-Remote Board Layout

To Main
P4001

To Main
P4001



http://www.schematic4you.blogspot.com

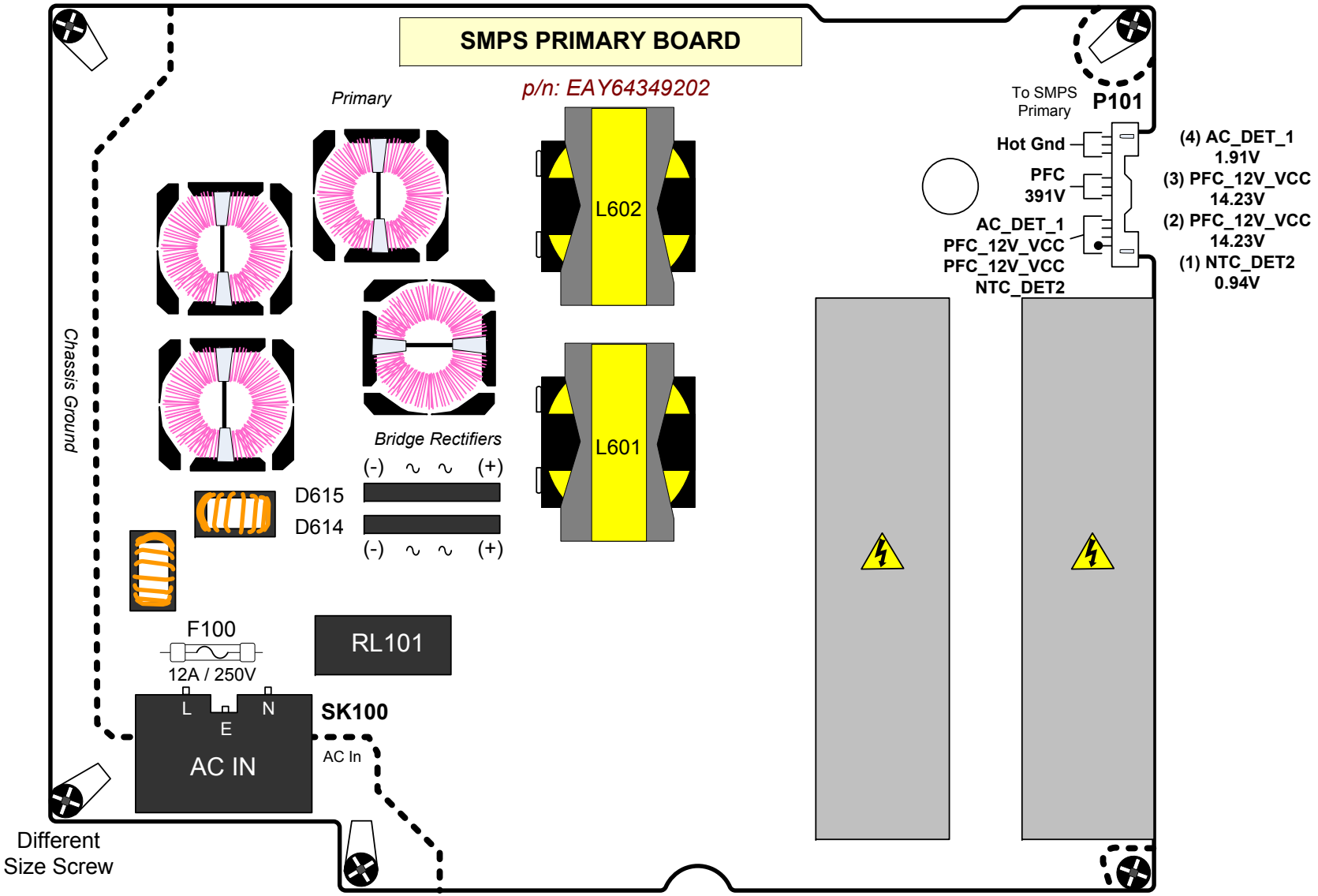
WiFi/M-Remote Board Connector Voltages

Part Number: EAT63153401

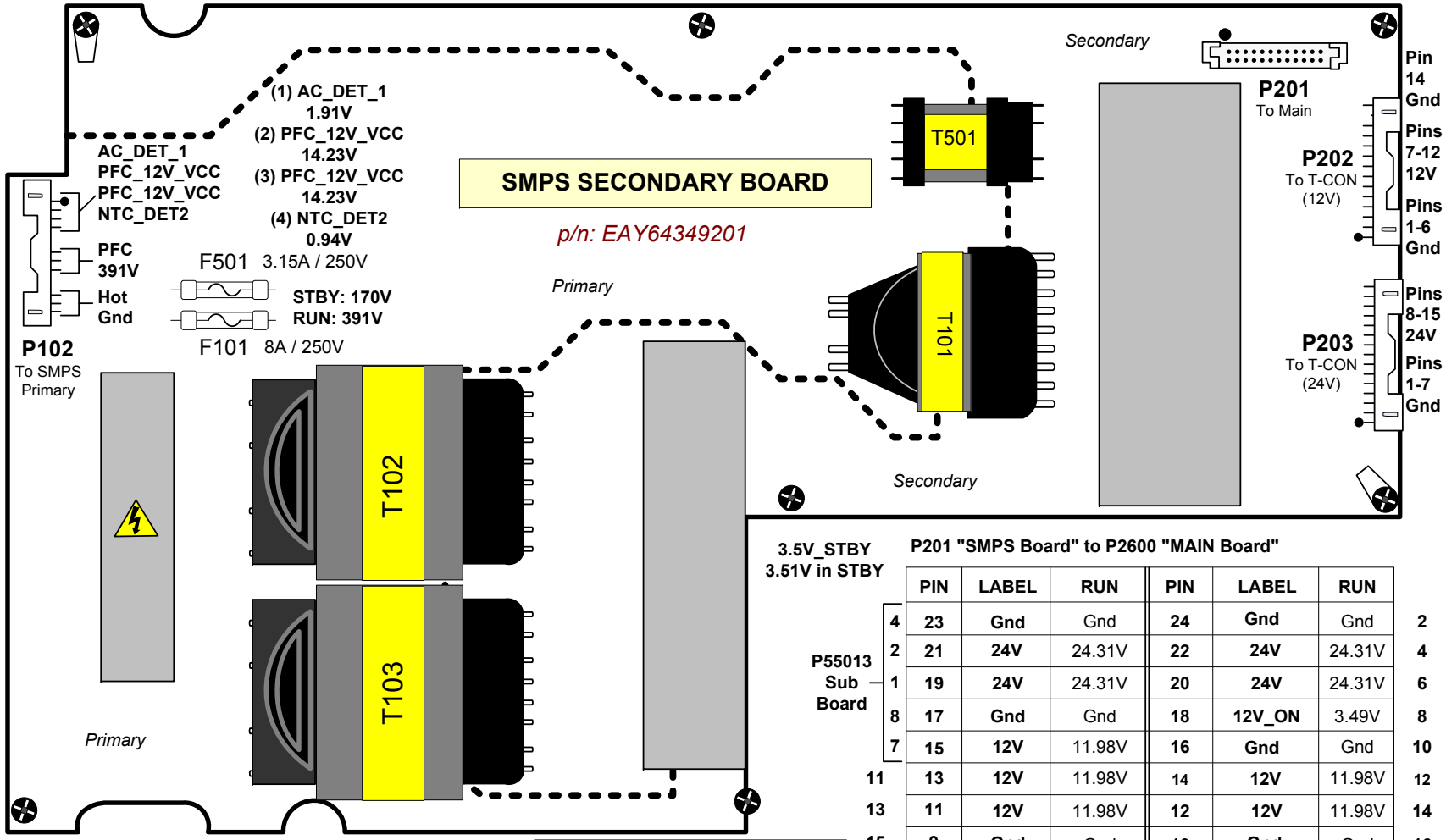
"Wi-Fi & M-Remote Transmitter" to P4001 "MAIN Board"

Pin	Label	STBY	Run	Diode Check
1	**Gnd**	Gnd	Gnd	Gnd
2	**BT_RESET**	0V	3.39V	OL
3	**Gnd**	Gnd	Gnd	Gnd
4	**WOL (WiFi On)**	0V	3.47V	OL
5	**Gnd**	Gnd	Gnd	Gnd
6	**WiFi_DP**	0V	0V	OL
7	**WiFi_DM**	0V	0V	OL
8	**3.5V_WOL**	0V	3.49V	1.63V

OLED65G6P SMPS PRIMARY BOARD COMPONENT LAYOUT



OLED65G6P SMPS Secondary Board Component Layout



3.5V_STBY
3.51V in STBY

P201 "SMPS Board" to P2600 "MAIN Board"

	PIN	LABEL	RUN	PIN	LABEL	RUN	
4	23	Gnd	Gnd	24	Gnd	Gnd	2
2	21	24V	24.31V	22	24V	24.31V	4
1	19	24V	24.31V	20	24V	24.31V	6
8	17	Gnd	Gnd	18	12V_ON	3.49V	8
7	15	12V	11.98V	16	Gnd	Gnd	10
11	13	12V	11.98V	14	12V	11.98V	12
13	11	12V	11.98V	12	12V	11.98V	14
15	9	Gnd	Gnd	10	Gnd	Gnd	16
17	7	3.5V	3.50V	8	3.5V	3.50V	18
19	5	3.5V	3.50V	6	Gnd	Gnd	20
21	3	DPC	0.0V	4	ACD	3.64V	22
23	1	P_ON	3.04V	2	DRV_ON	3.03V	24

P55013 Sub Board

P2600 "MAIN Board" Pins are Inverted (Outside pin numbers)
But by rows only. (12 pins per row Odd/Even).
Odd pins are on Top Row on Main, Back Row on SMPS.

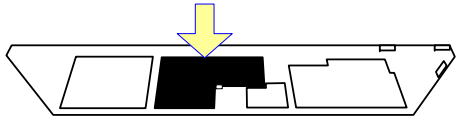
Shock Hazard

Hot Ground

Connected Diode Checks	Disconnected
3.5V_ST to Main	
1.12V (Blk on Gnd)	OL (Blk on Gnd)
0.18V (Red on Gnd)	0.18V (Red on Gnd)
24V to Main	
1.23V (Blk on Gnd)	1.40V (Blk on Gnd)
0.35V (Red on Gnd)	0.36V (Red on Gnd)
12V to Main	
1.13V (Blk on Gnd)	1.17V (Blk on Gnd)
0.14V (Red on Gnd)	0.14V (Red on Gnd)

COLOR	PIN	PIN	RUN
Brown	23	4	Gnd
Black	21	2	24V
Blue	19	1	24V
Orange	17	8	Gnd
Red	15	7	12V

P201 SMPS 2nd — P55013 Sub Board



Power Supply Voltages (Pg 1 of 2)

P201 "SMPS Board" to "MAIN Board" P2600

Pin	Label	STBY	Run	Diode Check	Main (Sub)
24	Gnd	Gnd	Gnd	Gnd	2
23	(6) (Gnd)	Gnd	Gnd	Gnd	(4 P55013)
22	24V	0V	24.31V	1.39V	4
21	(6) (24V)	0V	24.31V	1.39V	(2 P55013)
20	24V	0V	24.31V	1.39V	6
19	(6) (24V)	0V	24.31V	1.39V	(1 P55013)
18	(2) 12V_ON	0V	3.49V	OL	8
17	(6) (Gnd)	Gnd	Gnd	Gnd	(8 P55013)
16	Gnd	Gnd	Gnd	Gnd	10
15	(6) (12V)	0V	11.98V	1.48V	(7 P55013)
14	12V	0V	11.98V	1.48V	12
13	12V	0V	11.98V	1.48V	11
12	12V	0V	11.98V	1.48V	14
11	12V	0V	11.98V	1.48V	13
10	Gnd	Gnd	Gnd	Gnd	16
9	Gnd	Gnd	Gnd	Gnd	15
8	3.5V_ST	3.51V	3.50V	OL	18
7	3.5V_ST	3.51V	3.50V	OL	17
6	Gnd	Gnd	Gnd	Gnd	20
5	3.5V_ST	3.51V	3.50V	OL	19
4	(4) AC_DET	0V	3.64V	2.96V	22
3	(5) DPC	0V	0.0V	OL	21
2	(3) DRV-ON	0V	3.03V	OL	24
1	(1) RL-ON	0V	3.04V	1.20V	23

(1) PWR_ON turns on the 12V and 24V lines to the Main. (Not the 24V to the T-CON)

(2) 12V_ON turns on the 12V to the T-CON.

(3) INV_ON (DRV_ON SMPS) turns on the 24V to the T-CON.

(4) AC_DET: If missing will prevent the TV from coming on. Power Light blinks 3 times, the relay clicks off.

(5) DPC : Places the Power Supply in Power Saving Mode.

(6) 12V and 24V: These voltages (and Ground) are routed to the Analog (Sub) board. Used for Speakers, Fan, Audio Amp and Temperature Sensor.

P202 "SMPS Board" to "T-CON Board" CN11

Pin	Label	STBY	Run	Diode Check
14	Gnd	Gnd	Gnd	Gnd
13	N/C	n/c	n/c	n/c
12	12V	0V	11.98V	1.48V
11	12V	0V	11.98V	1.48V
10	12V	0V	11.98V	1.48V
9	12V	0V	11.98V	1.48V
8	12V	0V	11.98V	1.48V
7	12V	0V	11.98V	1.48V
6	Gnd	Gnd	Gnd	Gnd
5	Gnd	Gnd	Gnd	Gnd
4	Gnd	Gnd	Gnd	Gnd
3	Gnd	Gnd	Gnd	Gnd
2	Gnd	Gnd	Gnd	Gnd
1	Gnd	Gnd	Gnd	Gnd

P203 "SMPS Board" to "T-CON Board" CN5

Pin	Label	STBY	Run	Diode Check
15	24V	0V	24.31V	1.39V
14	24V	0V	24.31V	1.39V
13	24V	0V	24.31V	1.39V
12	24V	0V	24.31V	1.39V
11	24V	0V	24.31V	1.39V
10	24V	0V	24.31V	1.39V
9	24V	0V	24.31V	1.39V
8	24V	0V	24.31V	1.39V
7	Gnd	Gnd	Gnd	Gnd
6	Gnd	Gnd	Gnd	Gnd
5	Gnd	Gnd	Gnd	Gnd
4	Gnd	Gnd	Gnd	Gnd
3	Gnd	Gnd	Gnd	Gnd
2	Gnd	Gnd	Gnd	Gnd
1	Gnd	Gnd	Gnd	Gnd

SK100 "SMPS Board" To "LINE FILTER"

Pin	Label	A/C ON	Diode
1	L	120V	OL
2	N	0V	OL

Special Note on P201 Connector Labeling:
The label on the far right column indicates Main (Sub). This means the pins without parentheses are related to P2600 on the Main board. The pins with parentheses are for P55013 on the Sub board.

Power Supply Voltages (Pg 2 of 2)

P102 "SMPS Board 2nd" to "SMPS Primary" P101

Pin	Label	STBY	Run	Diode Check
1	**AC_DET-1**	0V	1.91V	OL
2	**PFC-12V_VCC**	0V	14.23V	OL
3	**PFC-12V_VCC**	0V	14.23V	OL
4	**NTC_DET2**	0V	0.94V	OL
5	--	--	--	--
6	--	--	--	--
7	**PFC (398V)**	170V	391V	OL
8	**PFC (398V)**	170V	391V	OL
9	**PFC (398V)**	170V	391V	OL
10	--	--	--	--
11	--	--	--	--
12	**PFC (Hot Gnd)**	HGnd	HGnd	HGnd
13	**PFC (Hot Gnd)**	HGnd	HGnd	HGnd
14	**PFC (Hot Gnd)**	HGnd	HGnd	HGnd

All pins referenced to Hot Ground

Additional Checks

F101 and F501

STBY 170V

RUN 391V

Diode Check Both Fuses

OL (Blk on HGnd)

0.56V (Red on HGnd)

Key Voltages Diode Checks

Connected	Disconnected
3.5V_ST to Main	
1.12V (Blk on Gnd)	OL (Blk on Gnd)
0.18V (Red on Gnd)	0.18V (Red on Gnd)
24V to Main	
1.23V (Blk on Gnd)	1.40V (Blk on Gnd)
0.35V (Red on Gnd)	0.36V (Red on Gnd)
12V to Main	
1.13V (Blk on Gnd)	1.17V (Blk on Gnd)
0.14V (Red on Gnd)	0.14V (Red on Gnd)

date	change list
2015/03/17	1. HDMI detect 部分电路更改（R443/R449/R451改为100R,R445/R446/R447 NC) 2. CEC部分，R822改为100R 3. HDMI3(MHL)，HDMI3-HPD部分，R855/D805电路形式要更改，选择值也要更改，请参见对应电路图 4. DDR 供电部分，C174/C172要改成10uF/0603封装 并靠近IC PIN ;C116/C117要上件
2015/04/14	1. C240改成2.2uF 、C1216改成330pF 2. NC掉1.8 LDO供电电路，但是layout一定要预留位置
2015/05/15	1，背光调光部分电路，NC R19/R50,BL ON/OFF由主IC直连；NC R58/R56，BL ADJUST与主IC直连； 2，主IC更改：Pin 94,95 to GND,Pin 96,97 to VDDC_CPU;TS_CLK、SYNC、VLD、D7 shift to 98~101 pin;
2016/01/26	1.删除1路usb ，SD卡 ，MIC接口 ， 删除USB HUB 2.增加VGA端子，VGA兼容串口 3.删除HDMI的串口兼容，删除MHL功能。 4.删除3D六拼接口，增加工程专用接口
2016.03.11	WIFI端子的D+,D_位置反了，更改 主IC的第七脚MHL的检测脚，需要接地，为HDMI输出/接高电平为MHL

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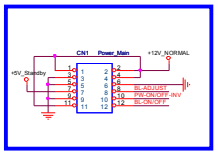
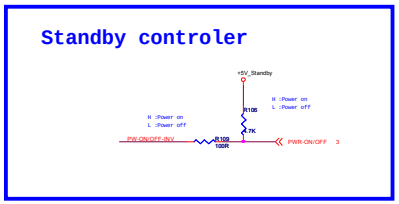
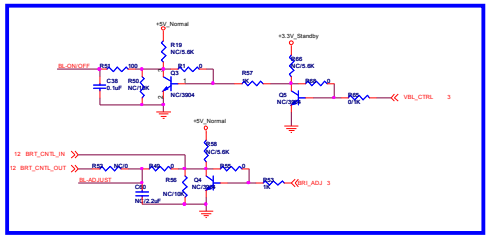
POWER Connector



Standby controler



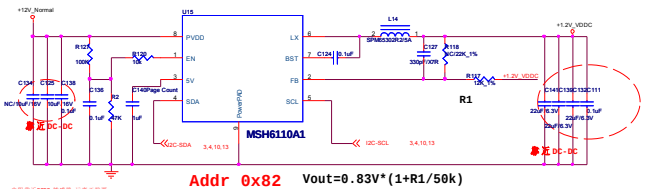
Inverter controler



Core power

VDDC DC/DC

VDDC 最大平均电流为 3A ,保证DCDC 温升电流5A

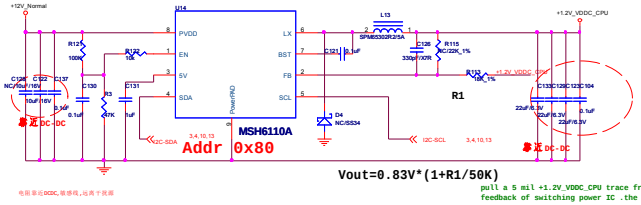


Addr 0x82 Vout=0.83V*(1+R1/50k)

pull a 5 mil +1.2V_VDDC trace from IC of bottrom to voltage feedback of switching power IC .the trace shall shield gnd

此DCDC不能改，并且参数设置尽量follow 公板

VDDC_CPU DC/DC

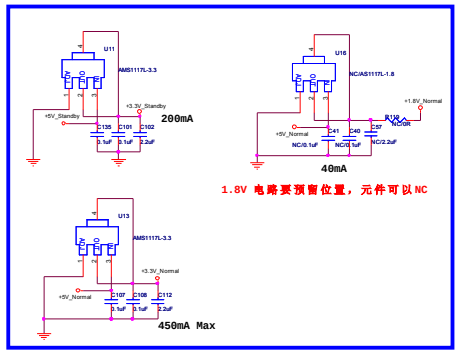


Addr 0x80

Vout=0.83V*(1+R1/50K)

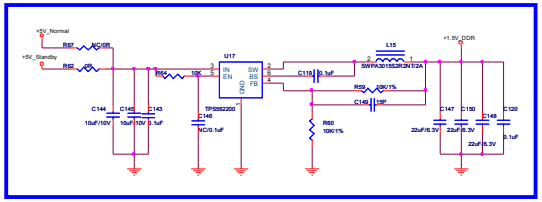
pull a 5 mil +1.2V_VDDC_CPU trace from IC of bottrom to voltage feedback of switching power IC .the trace shall shield gnd

LDO

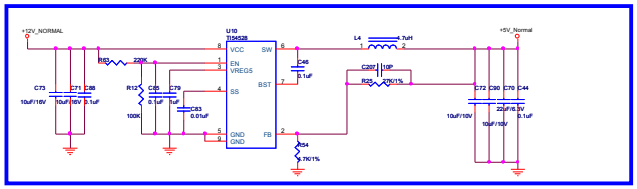


1.8V 电路要预留位置，元件可以NC

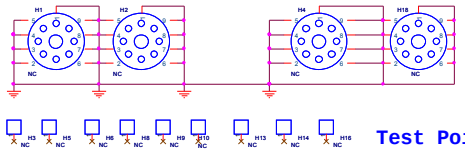
1.5V DC/DC



+5V DC/DC



Test Point & MARK



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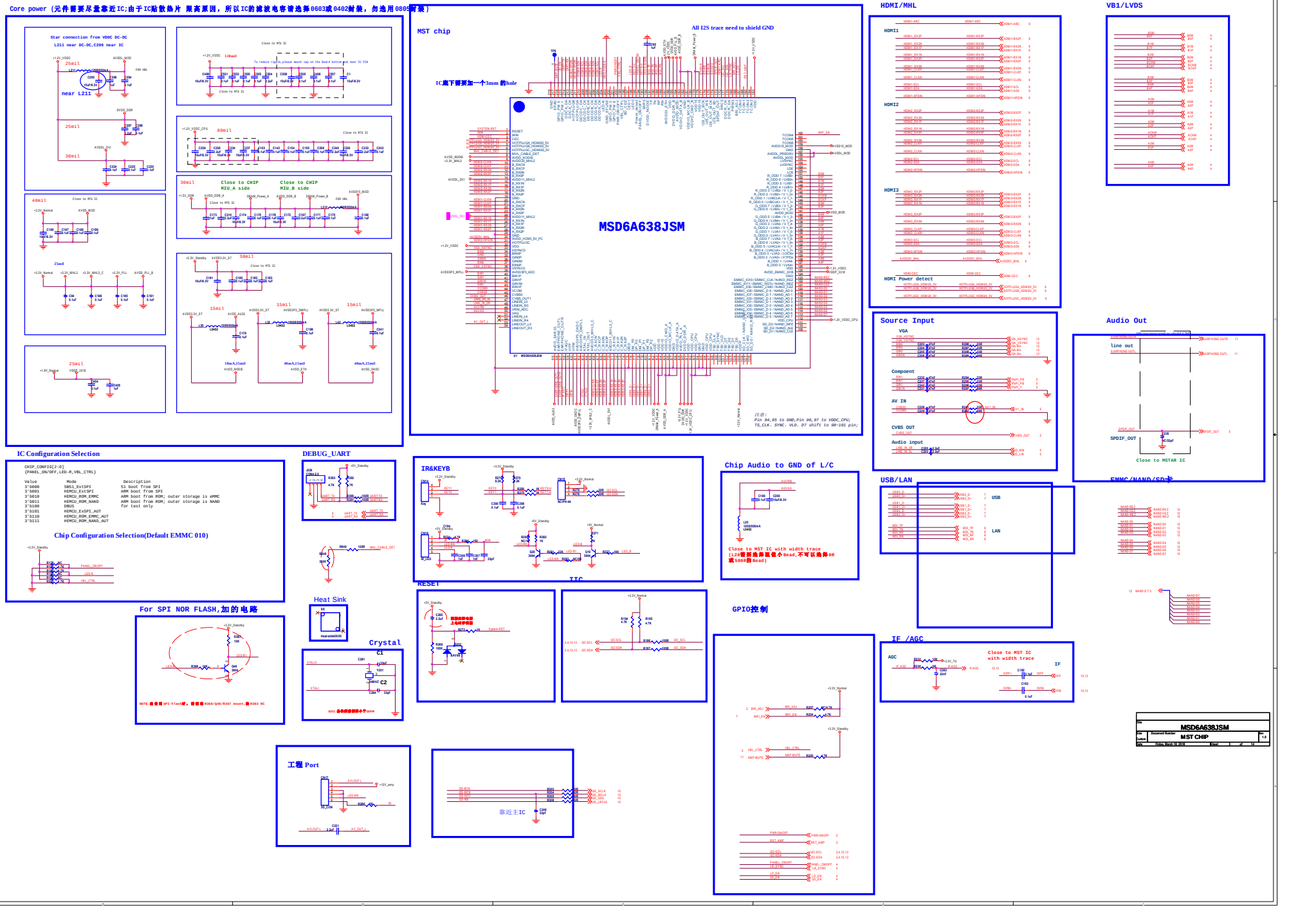

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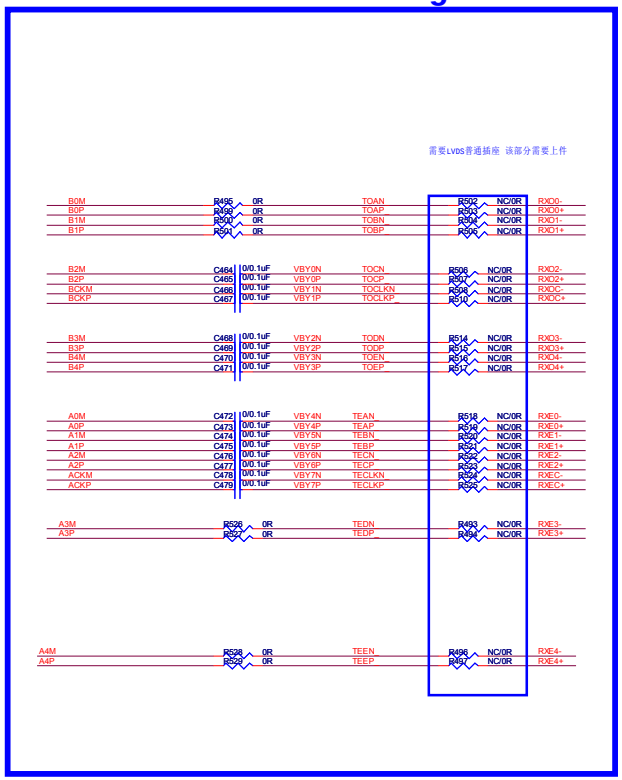
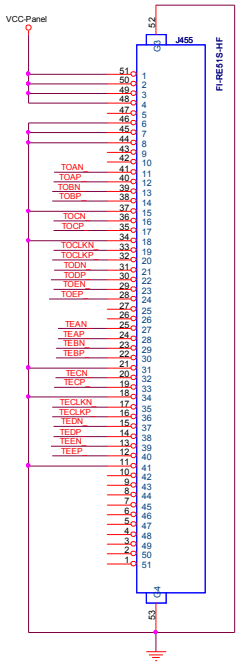
VB1 For CMI LG Sansung &LVDS





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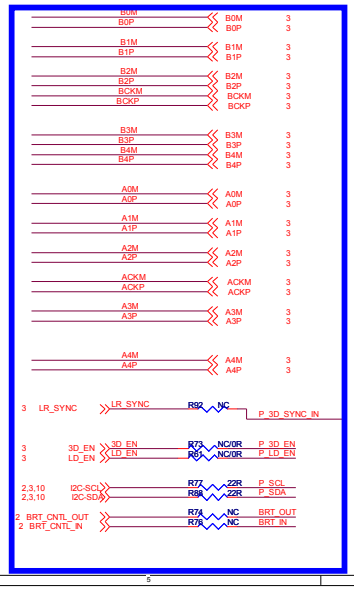

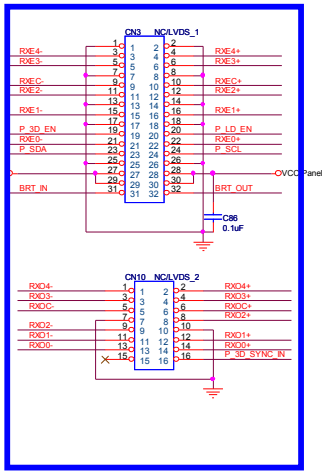

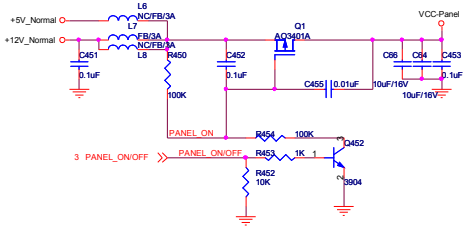

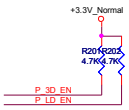

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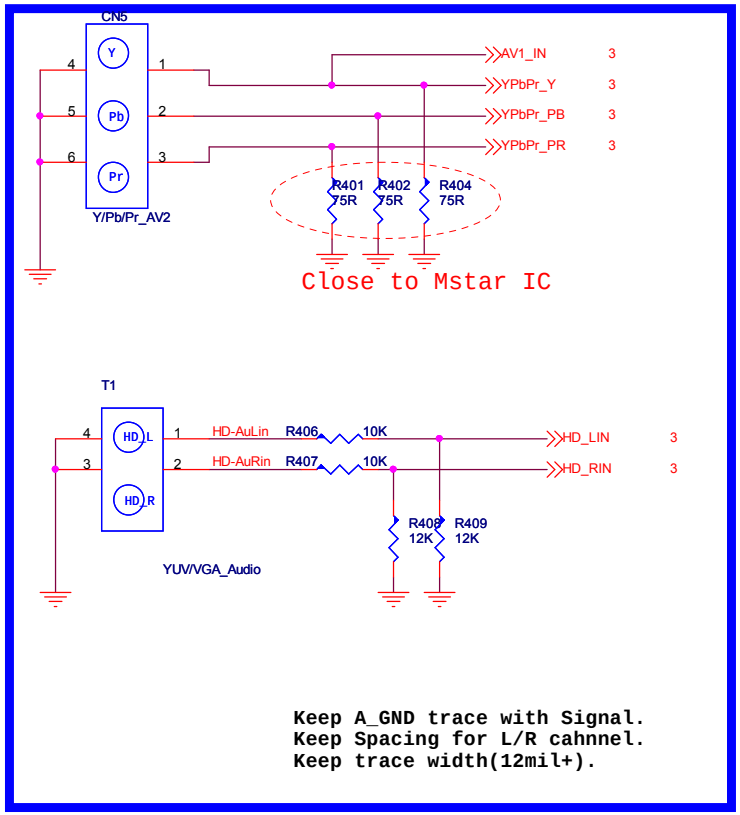

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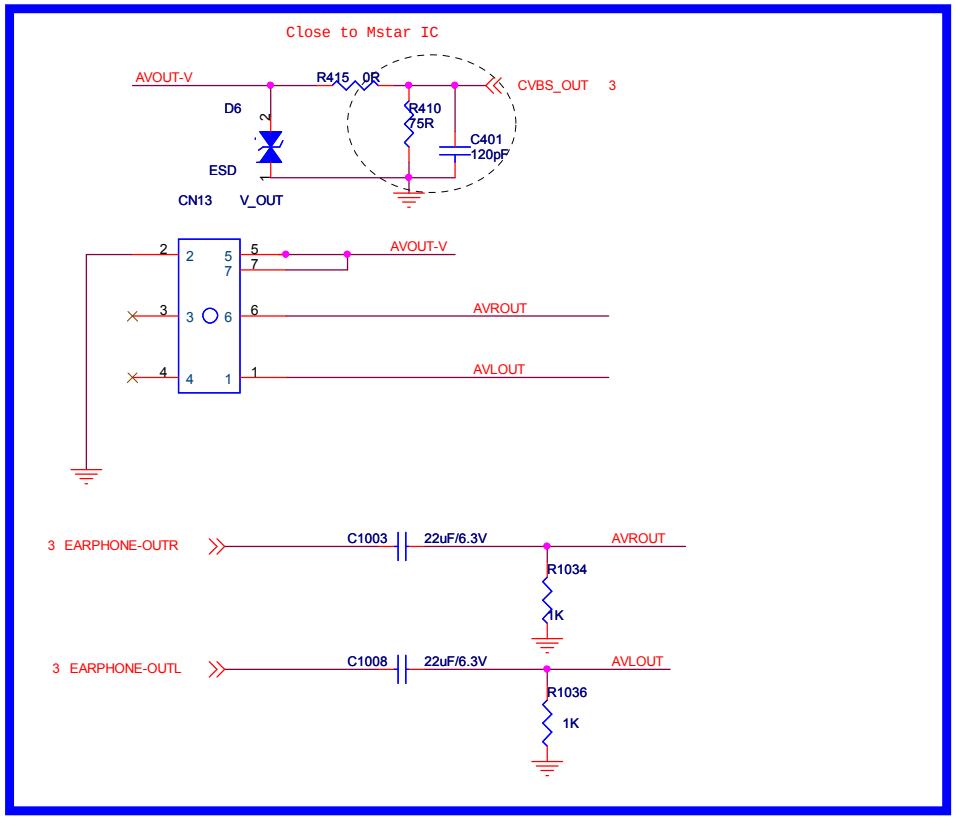

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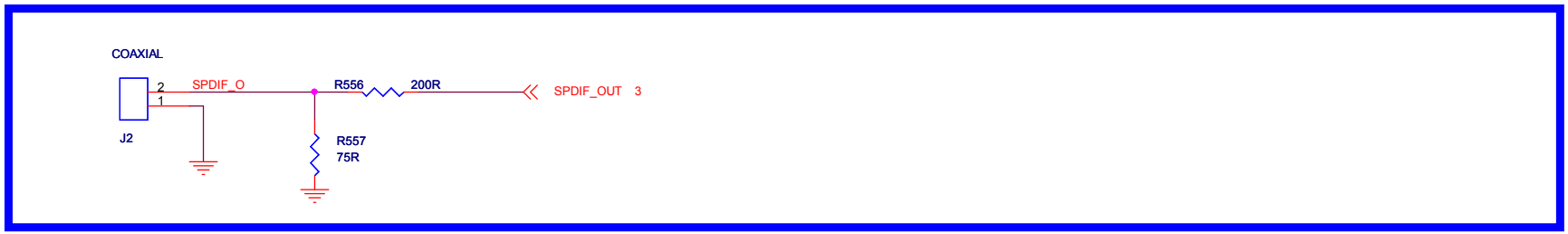

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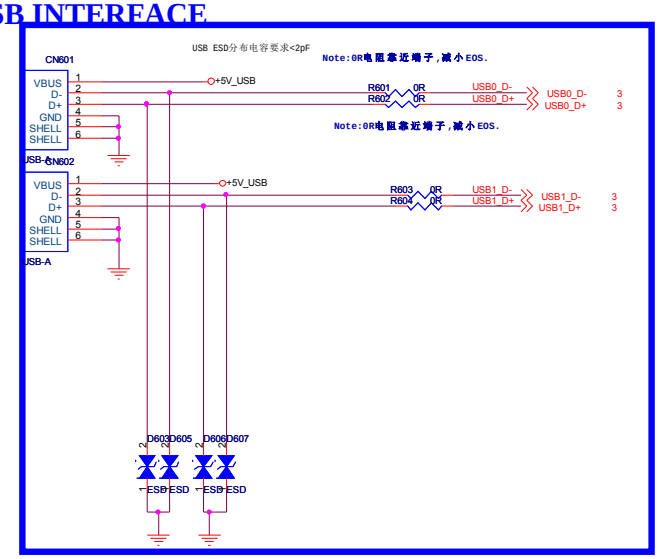

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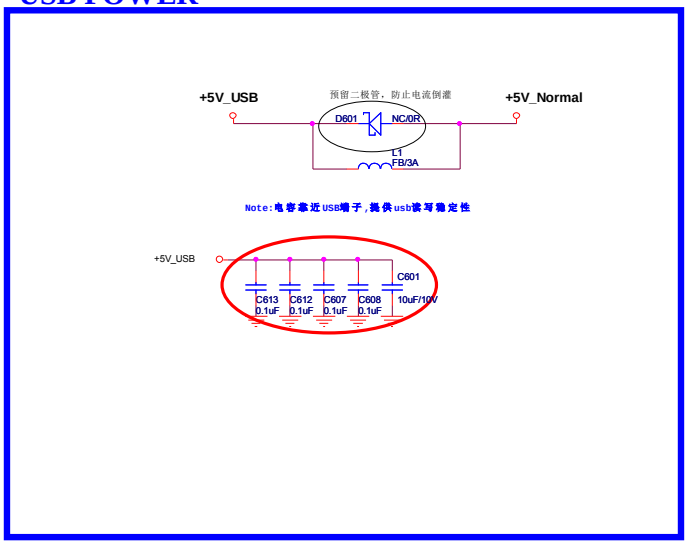

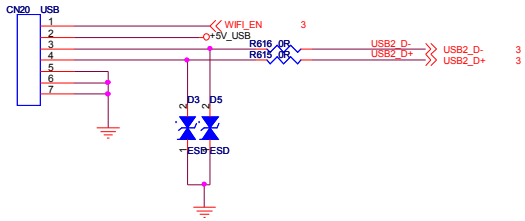

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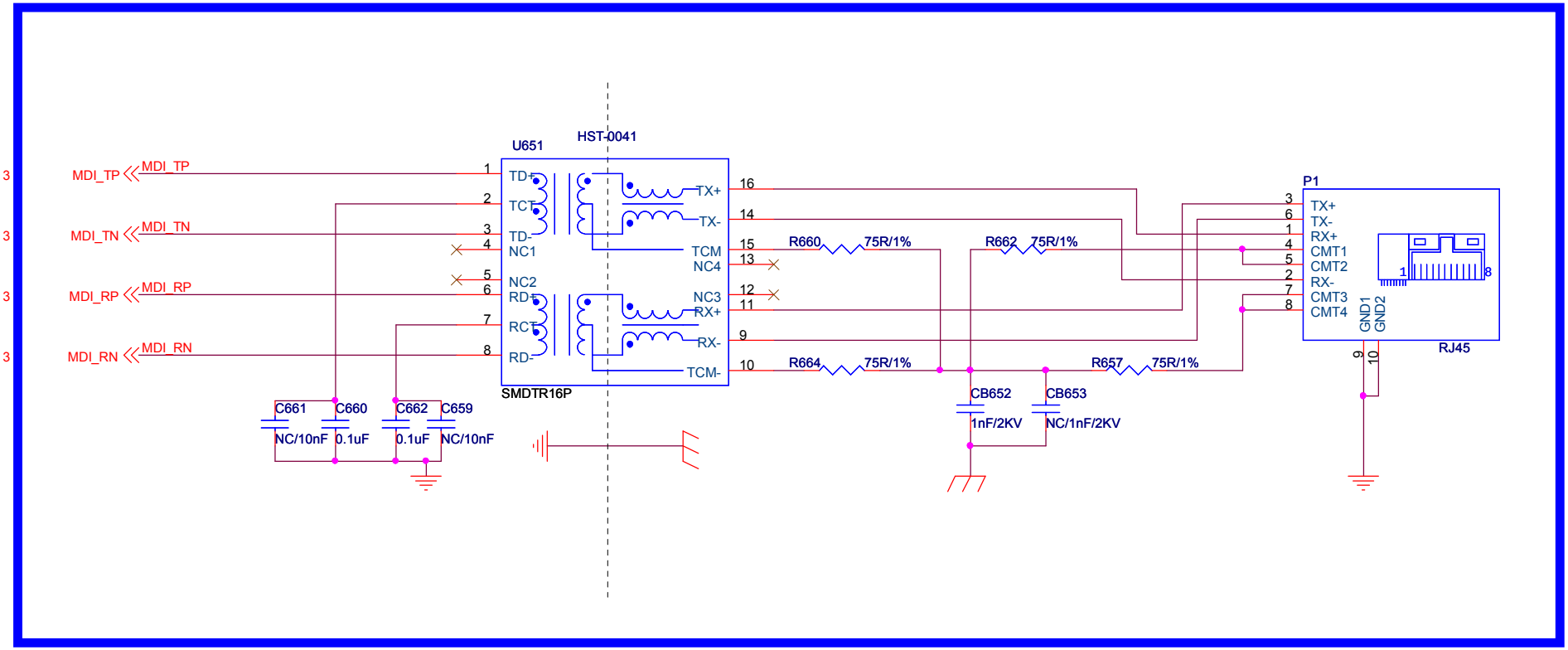
Connector



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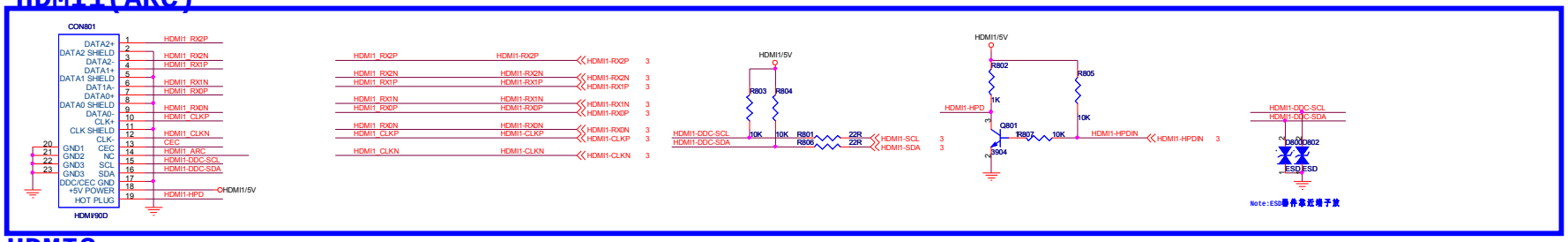
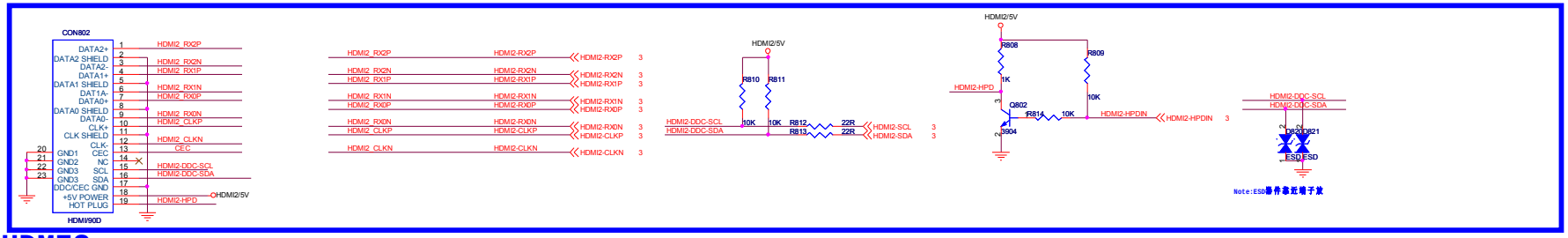
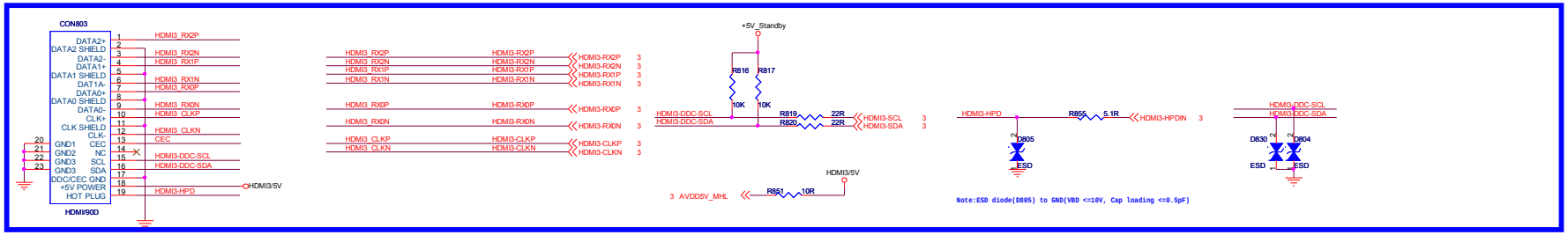
HDMI1(ARC)



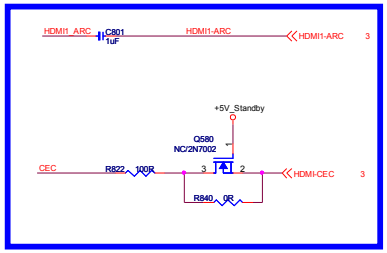
HDMI2



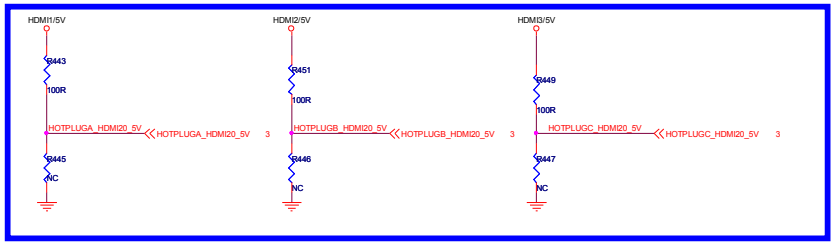
HDMI3



CEC & ARC



HDMI DETECT



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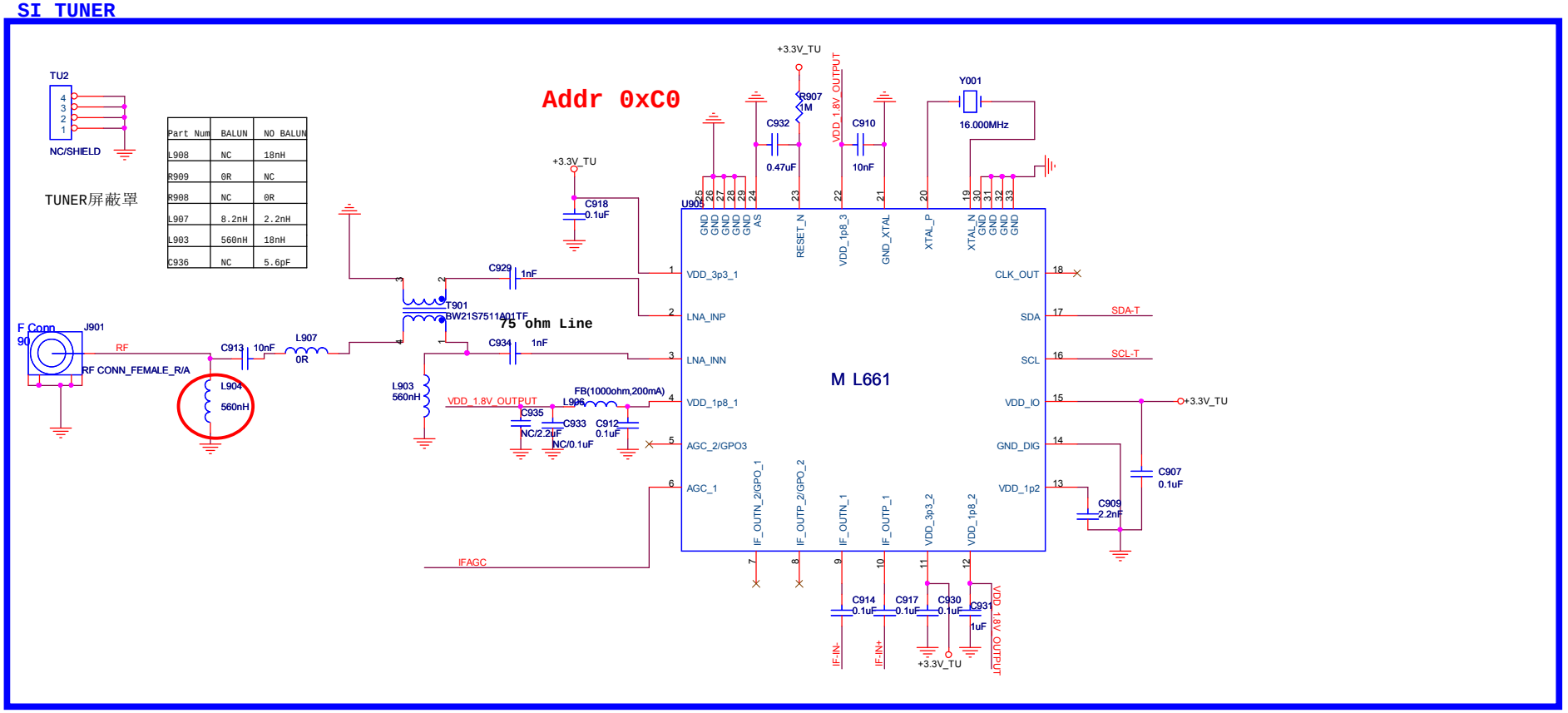
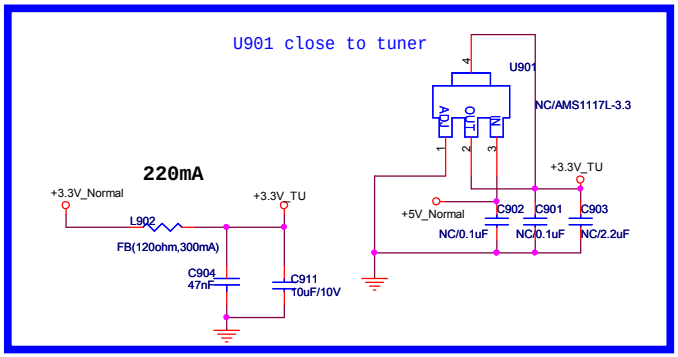
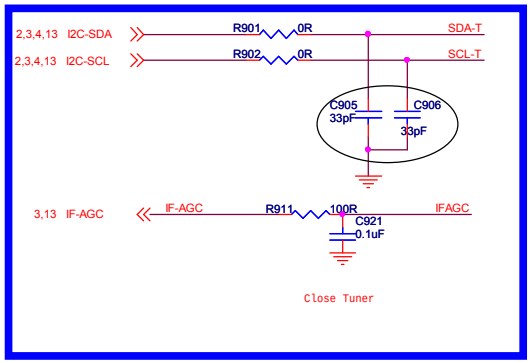
SI TUNER



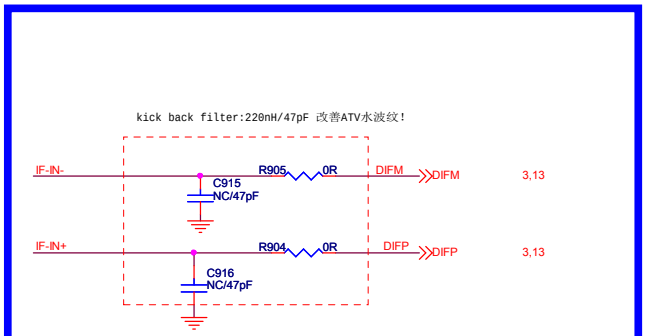
Tuner Power



AGC RC Filter &I2C(IIC串的电阻在IC端已经有）



DIF IN&OUT



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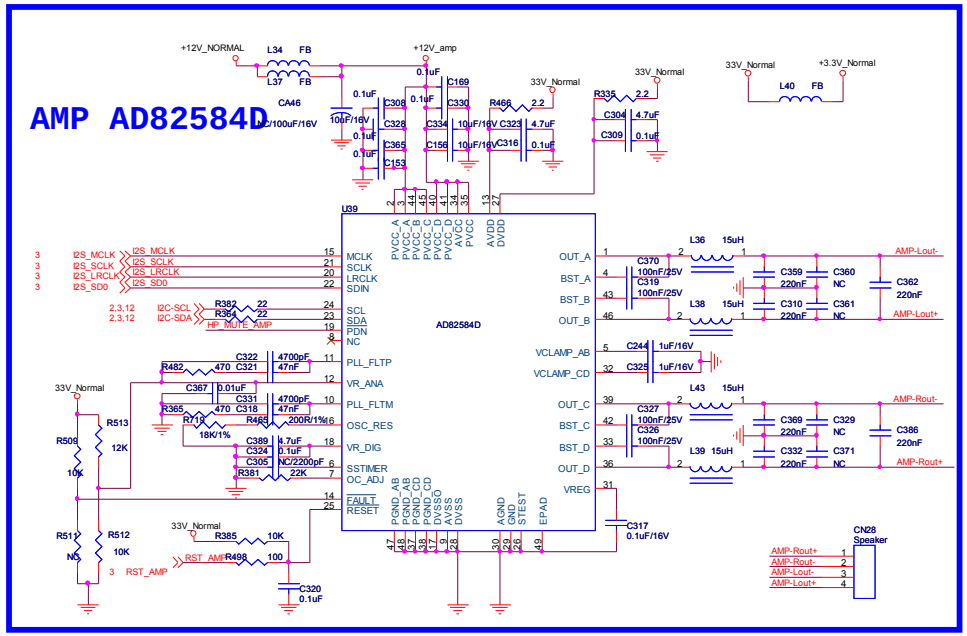
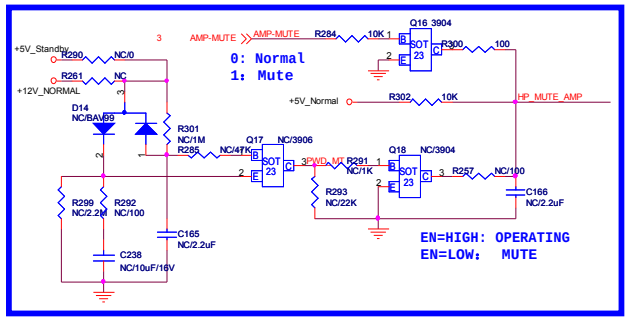
AMP AD82584D



MUTE Circuit



差异	5707	82584D
R509	NC	10K
C362/C386	NC	0.22uF
C360/C361/ C329/C371	0.22uF	NC

Title	MSD6A638JSM		
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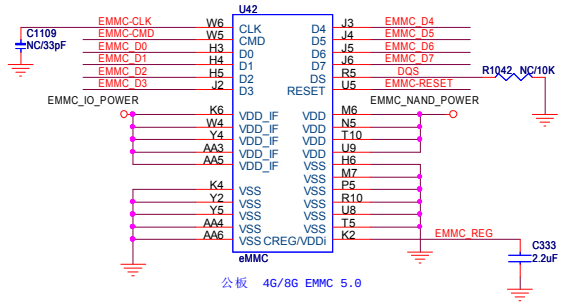
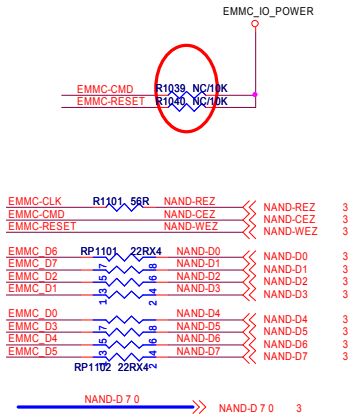
PDF 文件使用 F+ r Pr 试用版本创建 ÿÿ r

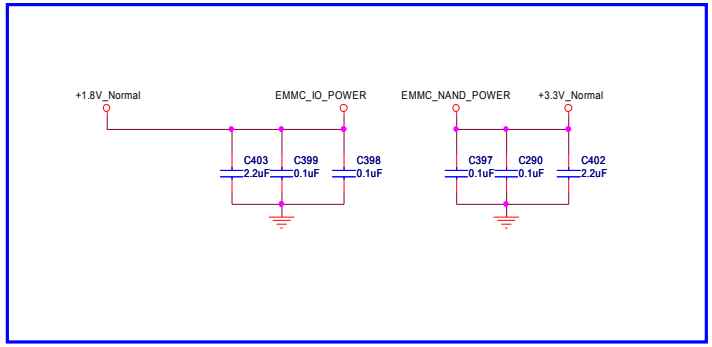
iNAND FLASH(EMMC)

Note:DS PIN(R5 pin) Need to NC

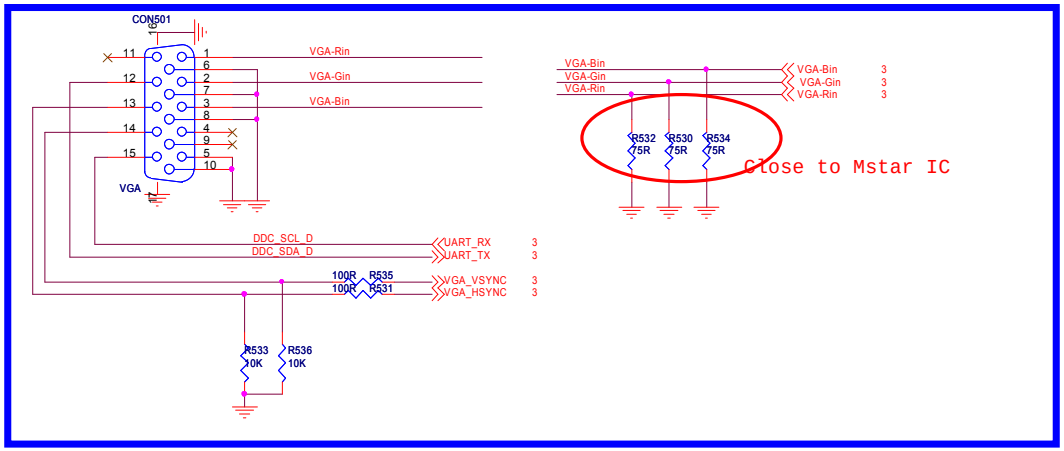




NAND and EMMC power



Video

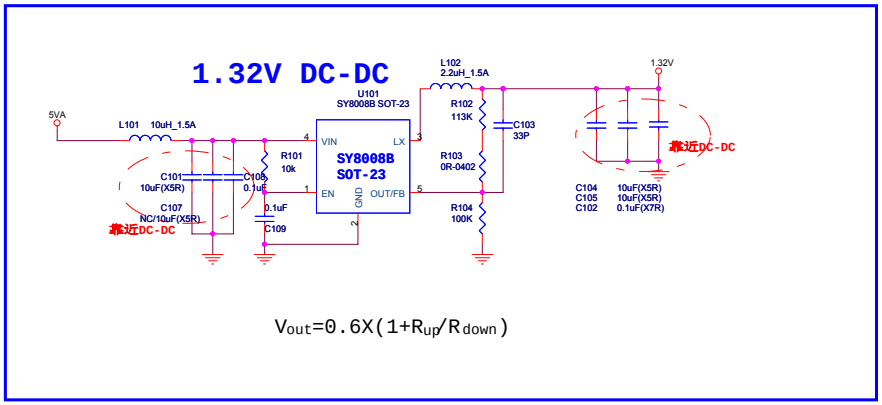


MSD6A638JSM		
Size: Custom	Document Number: NAND FLASH	Rev: 1.0
Date: Friday, March 18, 2016	Sheet: 12 of 14	

PDF 文件使用 F+ r Pr 试用版本创建 ÿÿ r

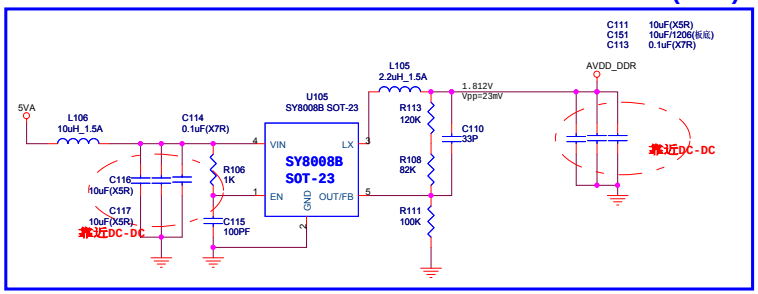
Main Chip POWER

ATV:569mA(max);
AV:486mA;



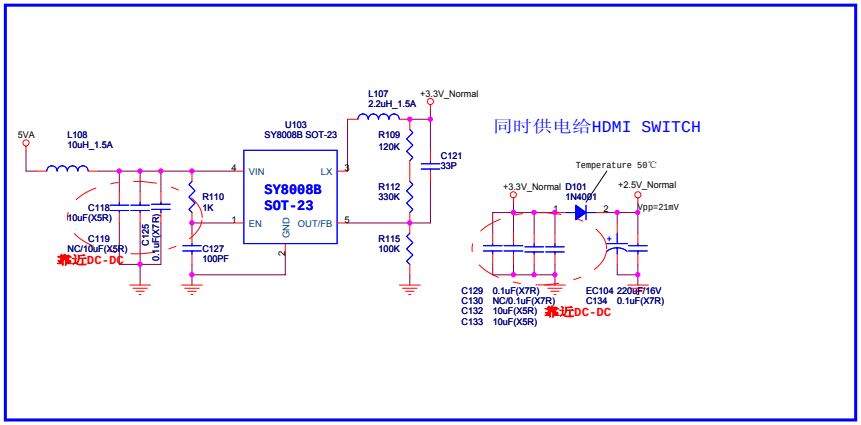
DDR_POWER

ATV:117mA(max)



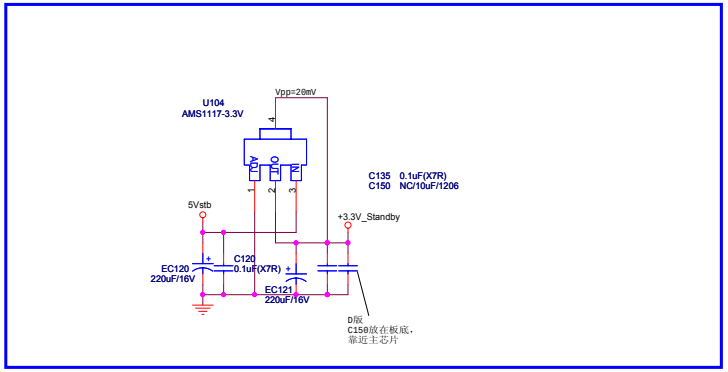
+3.3V_Normal

ATV:315mA(max)
ATV:190mA(HDMI不工作时);



+3.3V_Standby

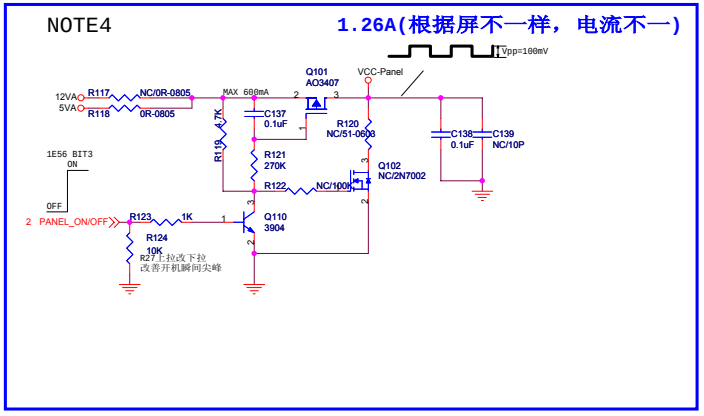
Standby:6.54mA;
刚开机：ATV:44.21mA
切到AV:18.56mA;
再切到HDMI:53.82mA;
再切回ATV:81.7mA(MAX);



PANEL POWER

NOTE4

1.26A(根据屏不一样，电流不一)



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主IC为MST6M181VG、MST6M182VG时，
BALL D5到BALL B4为NC PIN;
只有MST6M161LG这些PIN 才为HDMI INPUT

主IC为MST6M181VG、MST6M182VG时，
R201、R202、C203要焊接；
主IC为MST6M161LG时，
R201、R202、C203不焊接。

MST6M181VG
MST6M182VG
MST6M161LG

GPIO define
MST6M161LG/MST6M181VG
MST6M182VG

主IC为MST6M181VG、MST6M182VG时，
GPIO4(BALL N8)和GPIO7(BALL N9)为NC PIN。

DDR2 VREF

RESET CIRCUIT

增加RESET时间:110ms

SERIAL FLASH

工装升级（必需）

Chip Config

```
{I2S_OUT_BCK, I2S_OUT_MCK, PAD_PWM1, PAD_PWM0}
B51_no_EJ                    4'h0
B51_Secure_no_scramble       4'h3
B51_Secure_scramble          4'h7
```

Normal Power 1.2V

Normal Power 2.5V

250mA

DDR power

Normal Power 3.3V

C1,C3放板底；

Standby Power 3.3V

System XTAL

Audio

Close to IC
with width trace

LED

Debug port

Tuner

Close IC

LVDS & T-CON CONNECTOR

靠近MST6M182放置

LVDS CONNECTOR

32PB Bit3 LVDS输出

KEYBOARD

KEY PAD

IR

Title	MST6M182VG
Size: D	Document Number: 02.MST6M182VG
Rev: 1.0	
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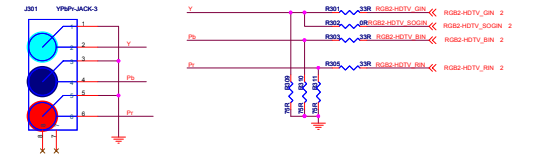
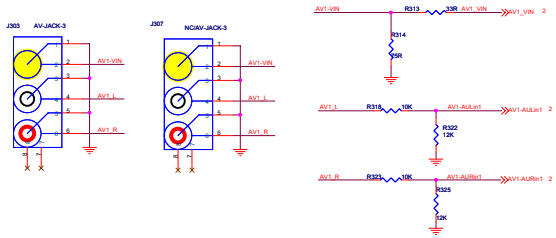
AV & YPBPR INPUT

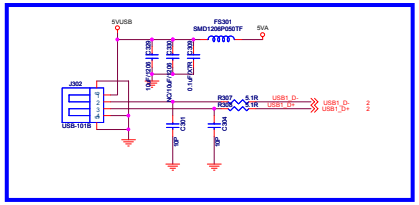
J301为卧式；



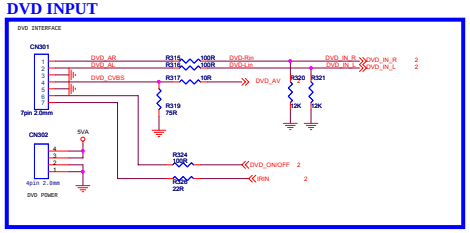
J303为立式，J307为卧式；



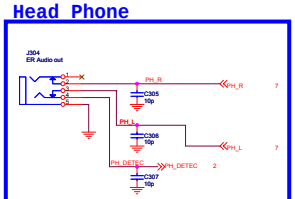
USB Interface



DVD INPUT



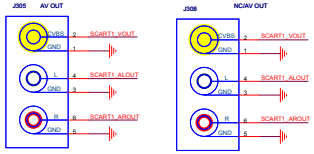
Head Phone



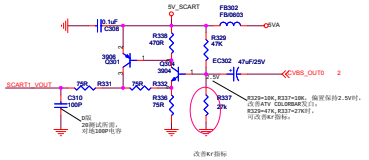
AV OUT & SCART

VIDEO_OUT

J305为立式，J308为卧式；



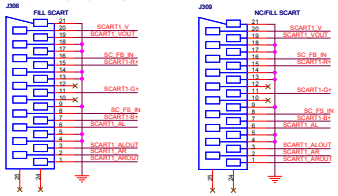
2倍放大



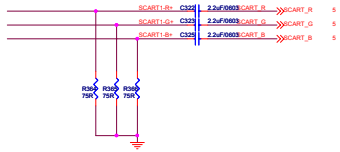
J306为立式，J309为卧式；

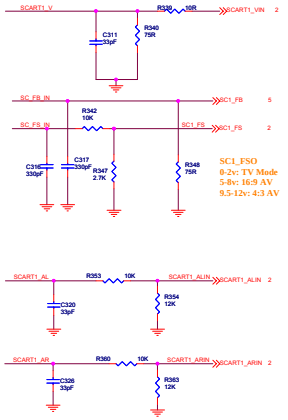
FULL SCART

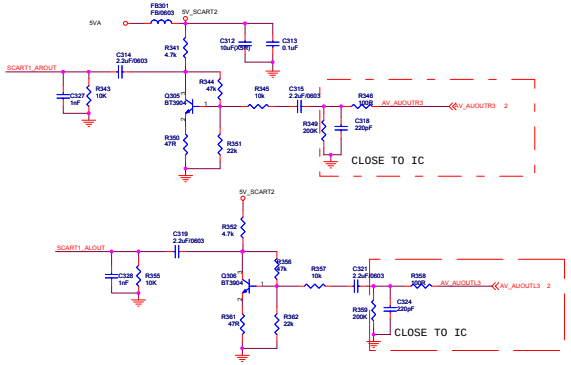
Keep AGND trace with signal
Keep spacing for L/R



SCART中的RGB的V-SYNC将采用SCART1_V上的同步信号；







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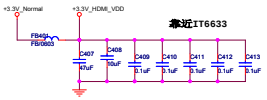
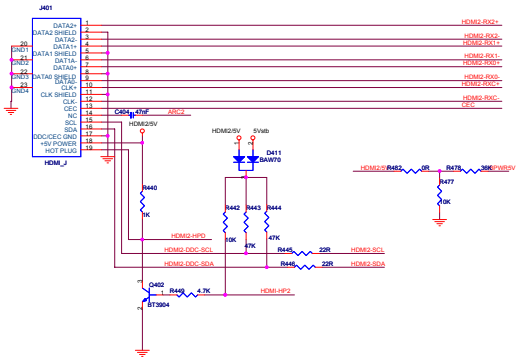
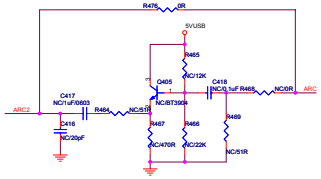
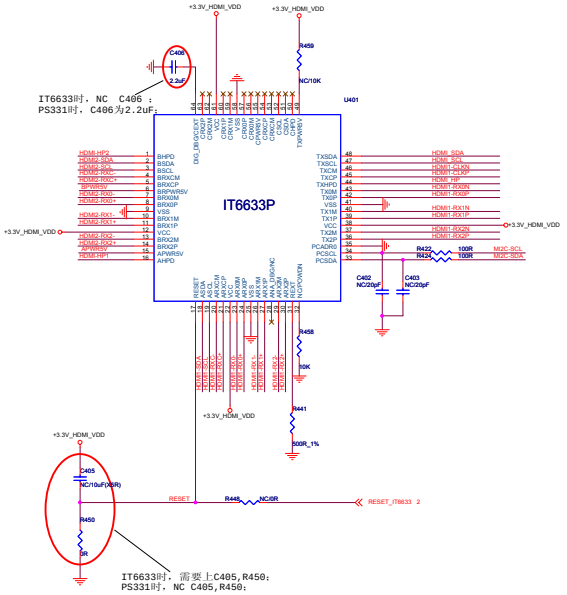
3.37V/160mA

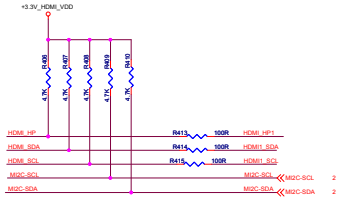


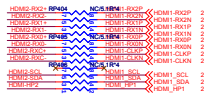
HDMI 端子输出线宽8MIL，差分线距5MIL,两对差分线之间的线距是12MIL，每对线之间可以不用包地，但最外两边的走线要包地，请参考DEMO 的LAYOUT.

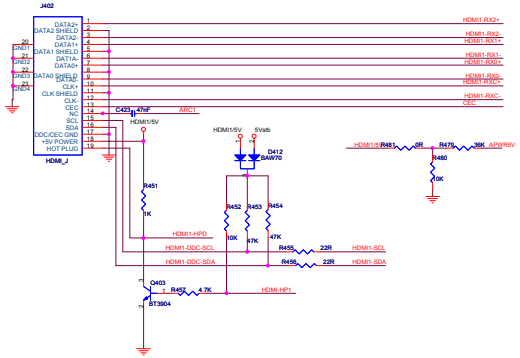


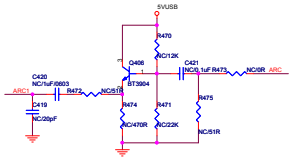












ESD protection:Human Body Mode ESD protection up to +/__8KV for all TMDS differential input pins.

File	MST6M182VG	
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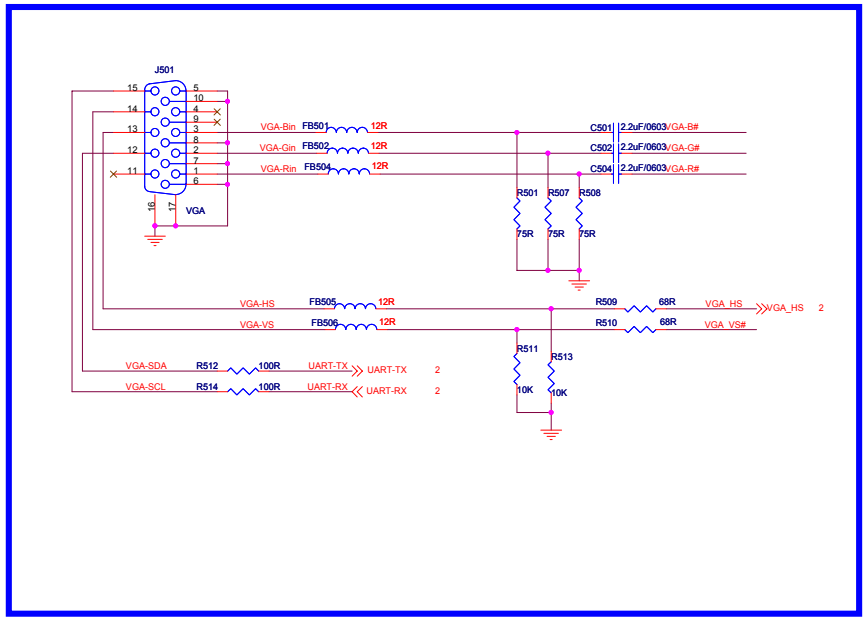
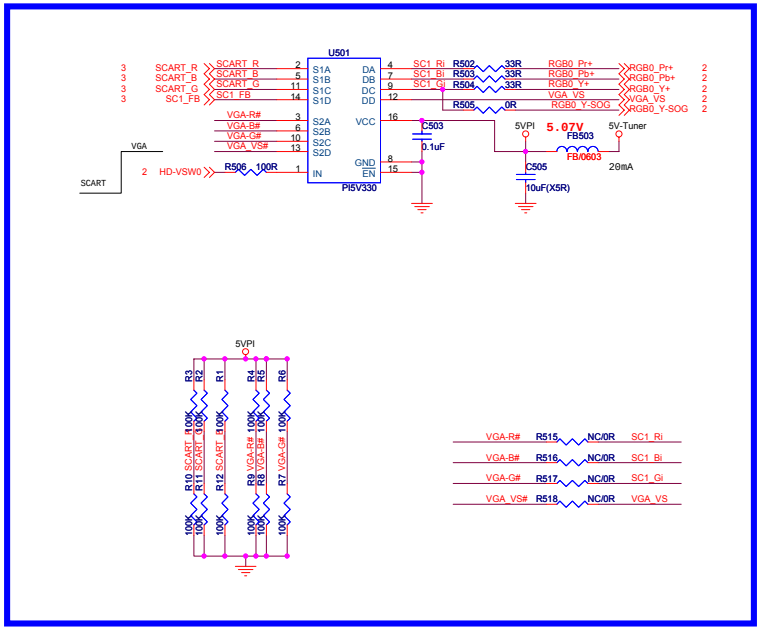
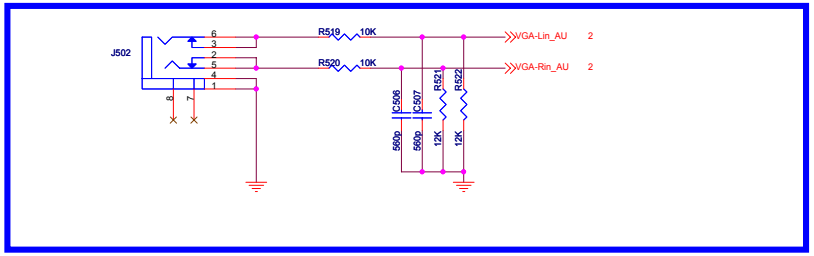
VGA IN



RGB SWITCH



VGA Audio IN



Title	MST6M182VG		
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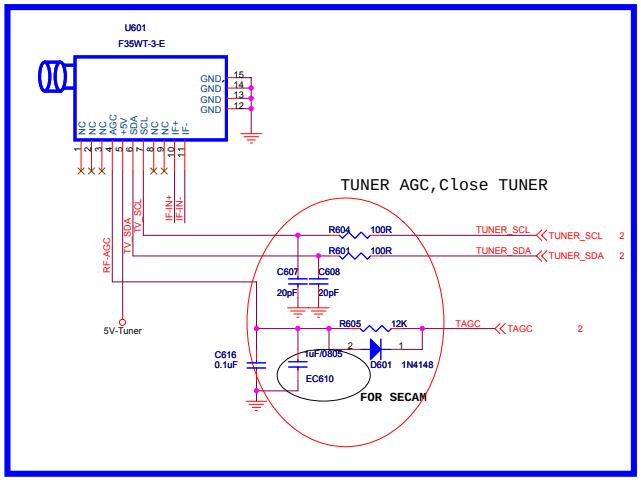
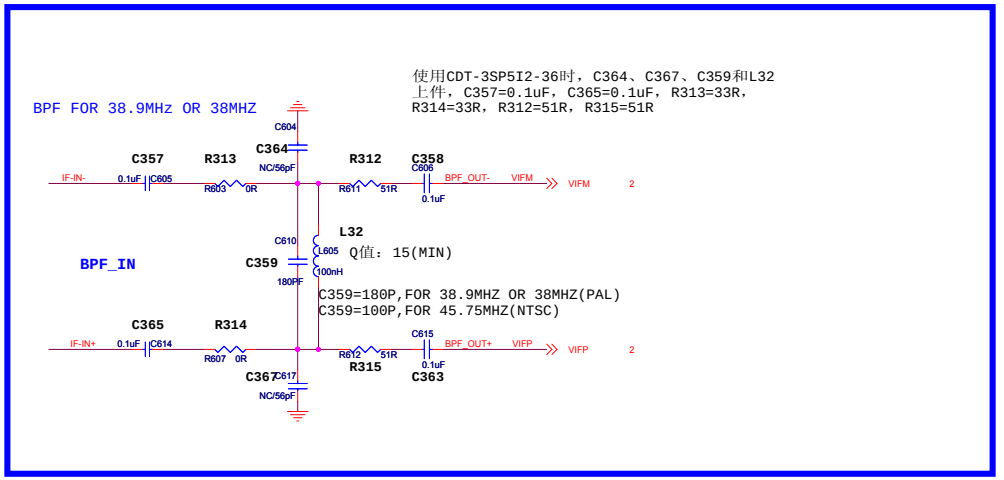
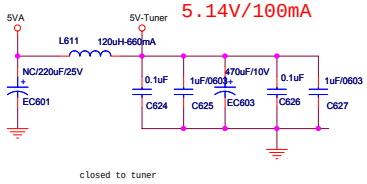
Tuner



Tuner Connector





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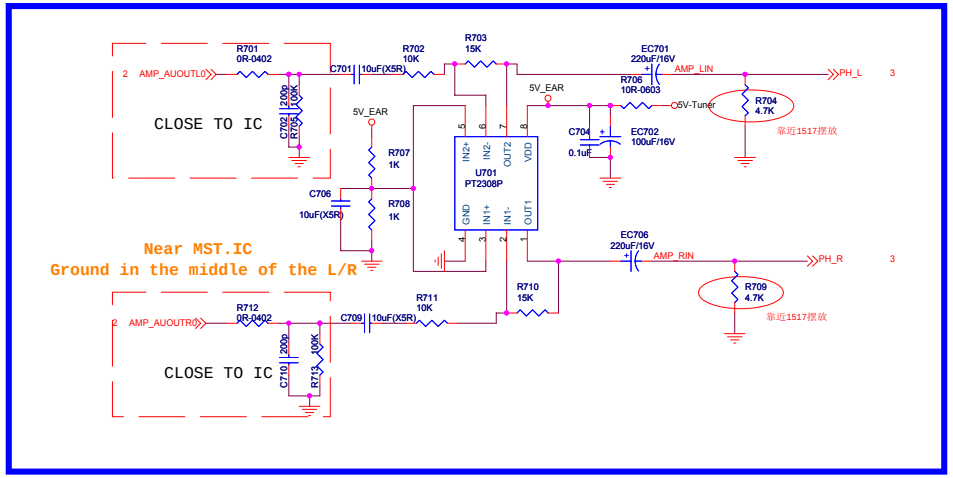
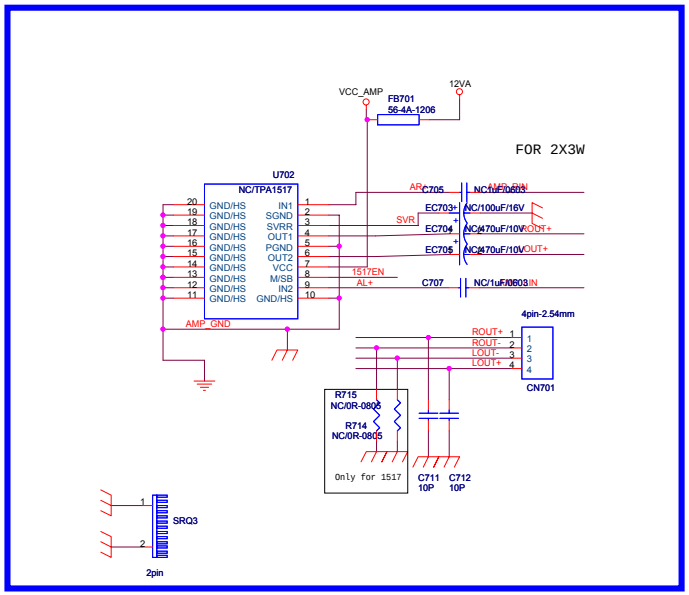
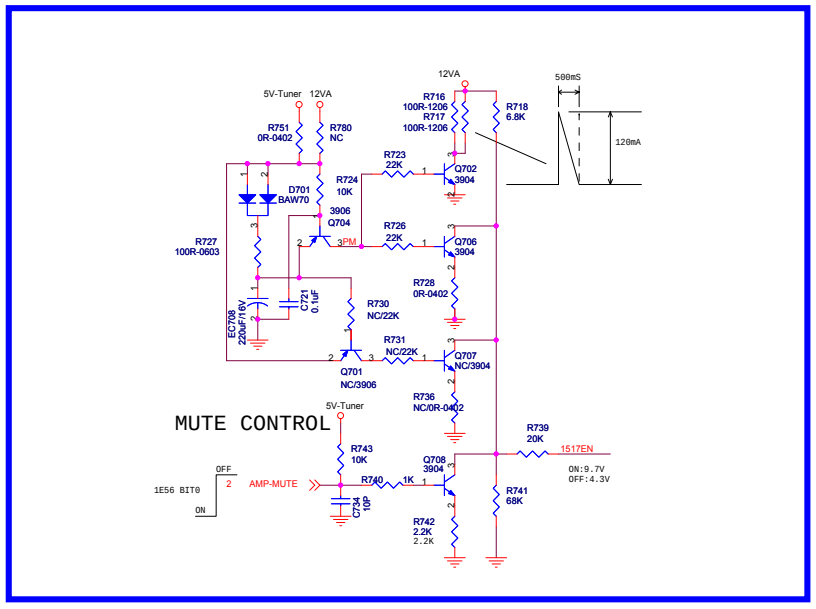
PRE-AMP:PT2308



TDA1517

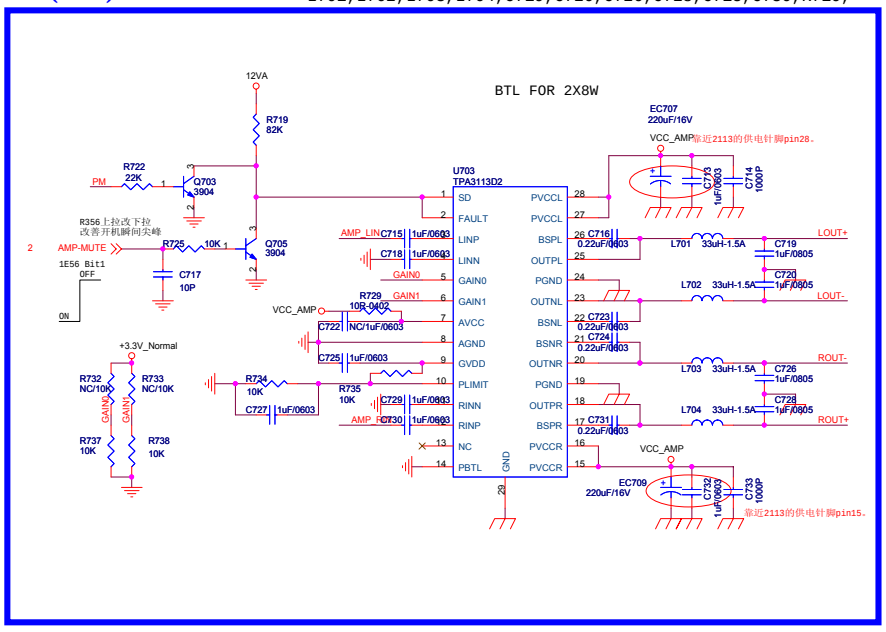


MUTE CONTROL



3113(3110)/2113/9108

使用TDA1517时，删除了以下物料：
L701,L702,L703,L704,C719,C720,C726,C728,C715,C730,R719,



Title	MST6M182VG		
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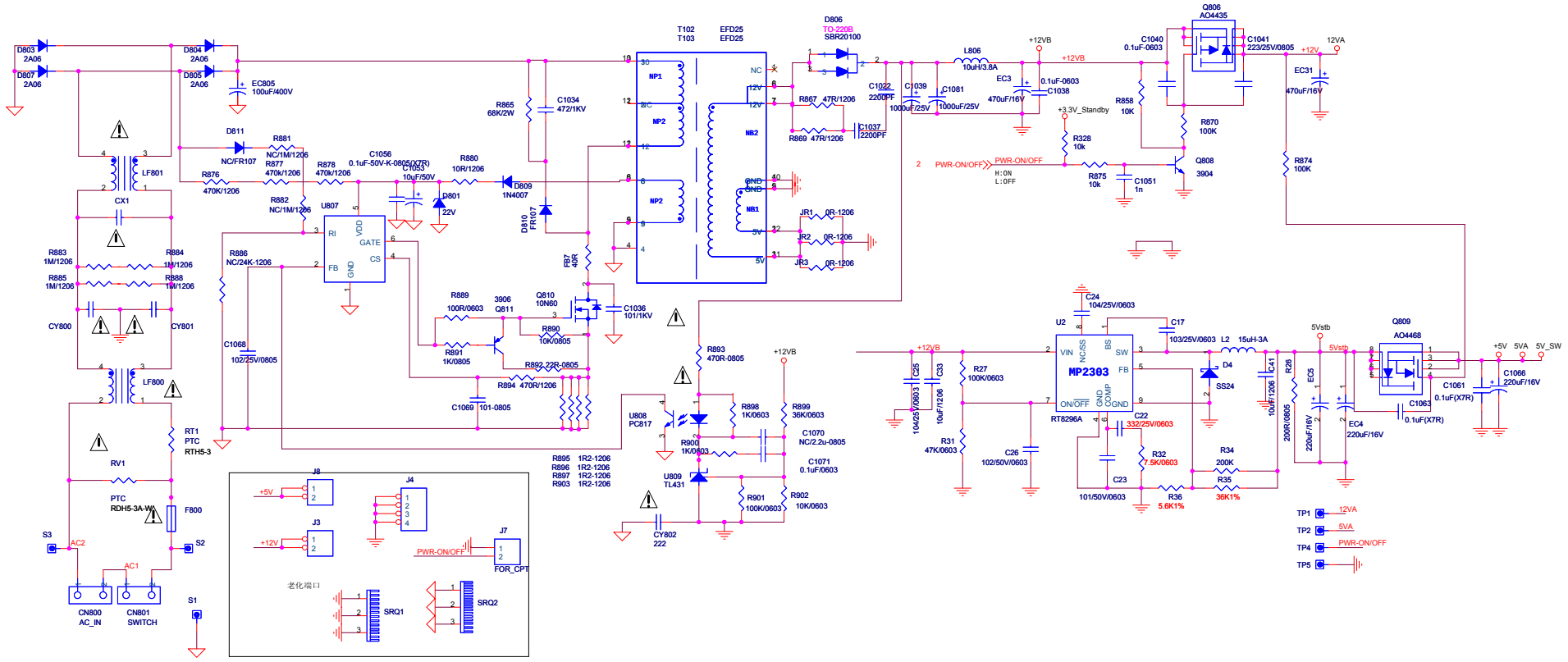

Title	MST6M182VG	
Size: C	Document Number: 08.POWER	Rev: 1.0
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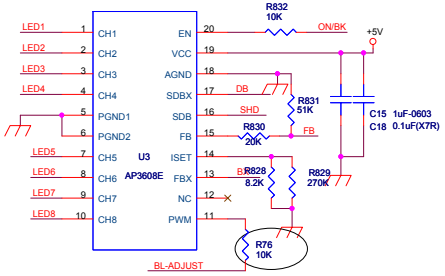
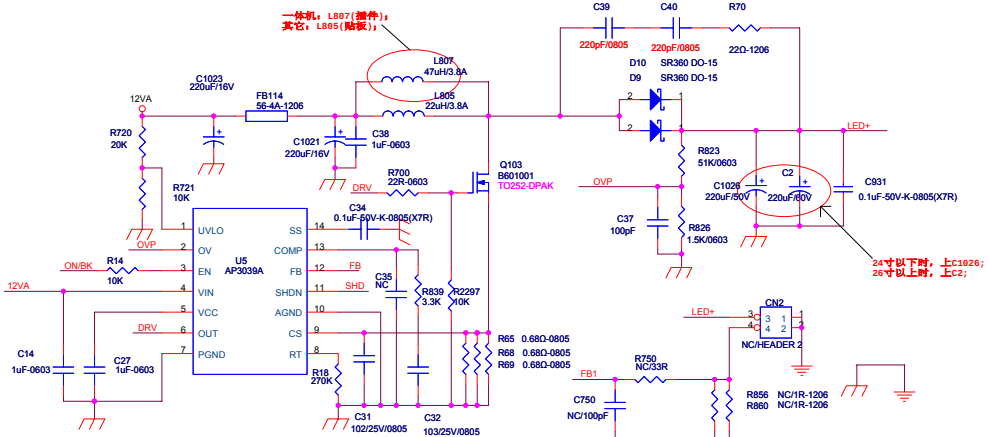
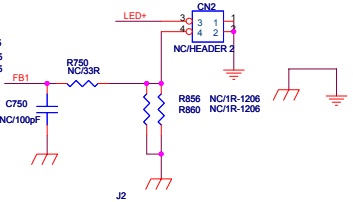
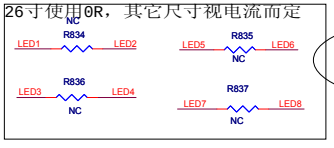
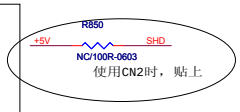
18.5寸至24寸二插使用U5，软排线的使用U5+U3
26寸使用三颗驱动
R850，使用二插时，贴上，其它状态时不需要贴

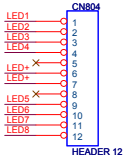


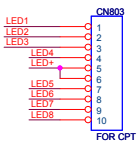


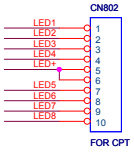


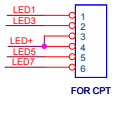




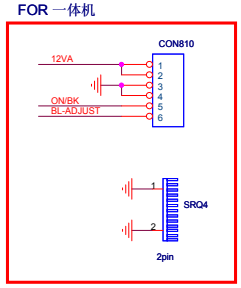


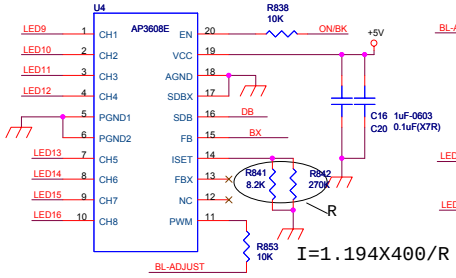


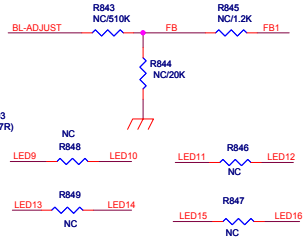


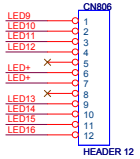


LED

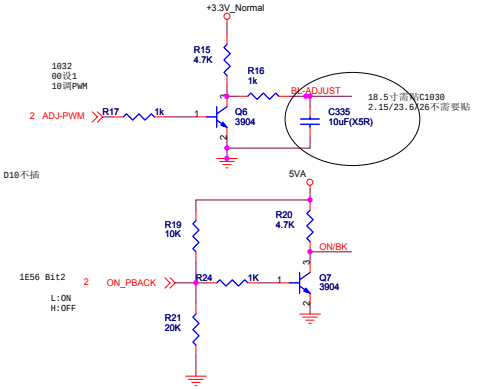








1 CN2 用于18.5和21.6 U3 U4不贴。D10不插
2 CN805 CN806 用于26",CN2不插。
3 CN804 用于23.6, U4不贴。



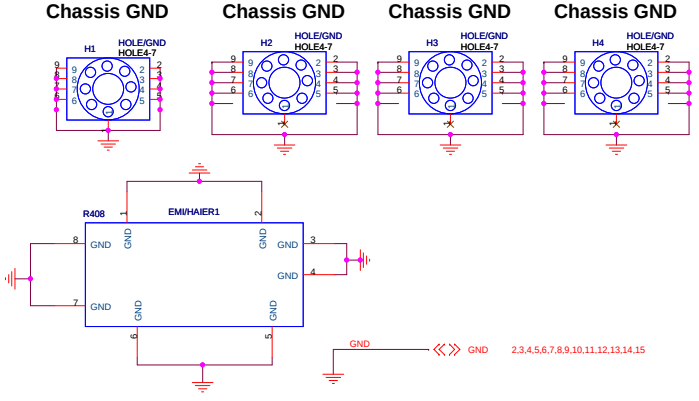
Title	MST6M182VG	
Size: C	Document Number: 09.LED DRIVER	Rev: 1.0
Date: Friday, February 17, 2012	Sheet 9 of 9	

MT8222_P1V1 (DDR1) VERSION V1.0

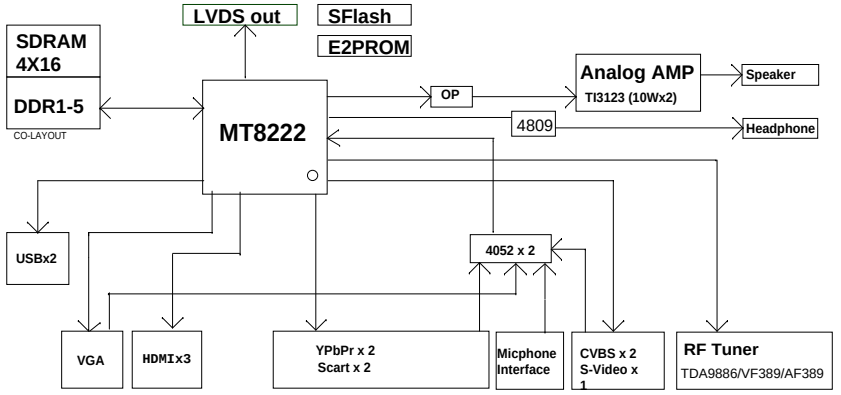
(DDR1 WITH TERMINATION)

GPIO usage

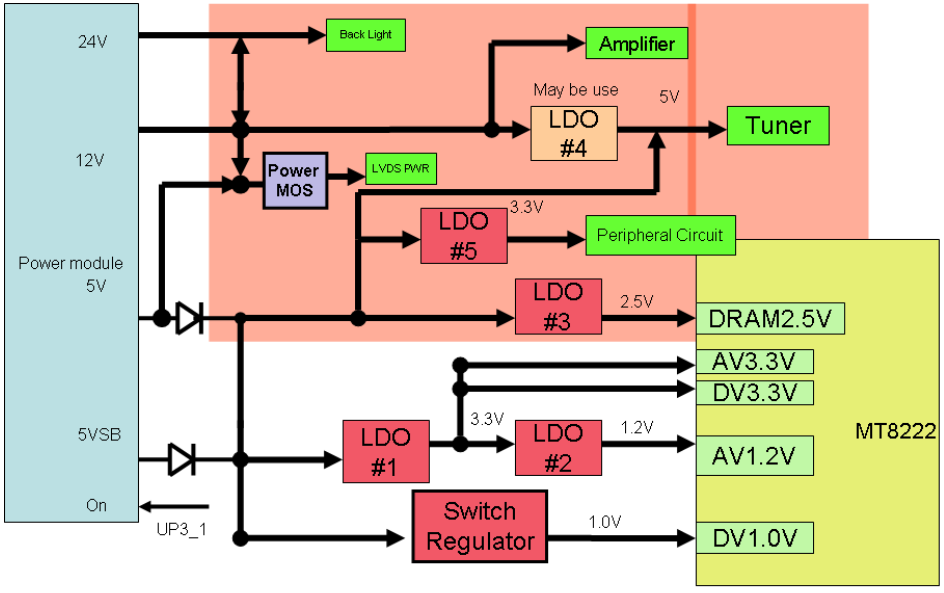
GPIO Definition		Function define
ADIN2	Audio MUX	
ADIN3	KEYPAD RESERVED	
ADIN4	KEYPAD RESERVED	
ADIN5	HDMI/VGA EDID E2PROM WP	High = WP disable
GPIO_20	Audio MUX	
GPIO_21	AMP_MUTE CONTROL	High = Mute on
GPIO_22	GAME RESERVED	
GPIO_23	GAME RESERVED	
GPIO_24	GAME RESERVED	
GPIO_25	GAME RESERVED	
PWM0	DIMMING CONTROL	
PWM2	SYSTEM E2PROM WP	High = WP disable
UP30	HMDI 1 HPLUG DETECT	Low = Backlight on
UP31	NORMAL POWER ON/OFF	Low = Normal power on
UP33	HMDI 0 HPLUG DETECT	
UP34	BL ON/OFF CONTROL	
GPIO_2	FCI RESERVED	
GPIO_4	LVDS POWER ON/OFF	Hi = LVDS power on
GPIO_6	LVDS RESERVED/FCI	
GPIO_7	USB0 PWR ENABLE / FCI	
GPIO_8	USB0 OC TAG / FCI	
GPIO_9	USB1 PWR ENABLE / FCI	
GPIO_10	USB1 OC TAG / FCI	
GPIO_11	HEADPHONE DET.	Low = HP insert
INT	Audio MUX	
SPDIFIN	LVDS RESERVED/I2S	
AOSDATA0	EXT.I2S FOR HEADPHONE	
AOLRCK	EXT.I2S FOR HEADPHONE	
AOBCLK	EXT.I2S FOR HEADPHONE	
AOMCLK	EXT.I2S FOR HEADPHONE	



BLOCK DIAGRAM



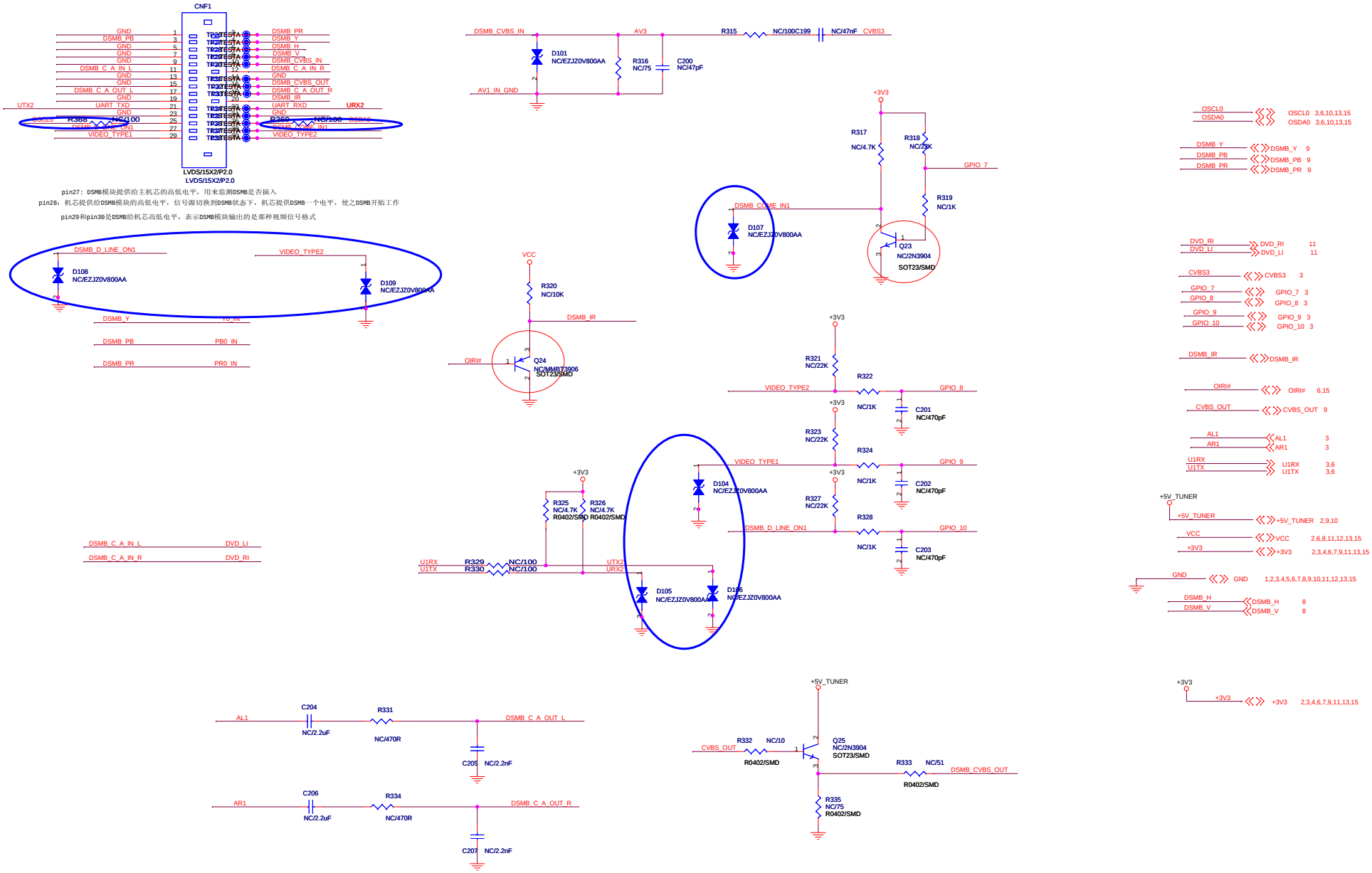
Power Distribution



新奇普仕电子有限公司

MediaTek Inc. No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300 TEL:(03)567-0766 FAX:(03)578-7610

Title			
POWER			
Size: C	Document Number: MT8222	Drawn	Rev: 1
Date: Tuesday, October 27, 2009		Sheet 1 of 15	


CNF1
LVDS/15X2/P2.0
LVDS/15X2/P2.0
pin27: DSMB模块提供给主机芯的高低电平，用来监测DSMB是否插入
pin28: 机芯提供给DSMB模块的高低电平，信号源切换到DSMB状态下，机芯提供DSMB一个电平，使之DSMB开始工作
pin29和pin30是DSMB给机芯高低电平，表示DSMB模块输出的是那种视频信号格式
D108 NC/EZJZ0V800AA
D109 NC/EZJZ0V800AA
D101 NC/EZJZ0V800AA
D107 NC/EZJZ0V800AA
D104 NC/EZJZ0V800AA
D105 NC/EZJZ0V800AA
D106 NC/EZJZ0V800AA
Q23 NC/2N3904 SOT23/SMD
Q24 NC/MMBT3906 SOT23/SMD
Q25 NC/2N3904 SOT23/SMD
R315 NC/100C199
R316 NC/75
C200 NC/47pF
NC/47nF CVBS3
R317 NC/4.7K
R318 NC/22K
R319 NC/1K
R320 NC/10K
R321 NC/22K
R322 NC/1K
R323 NC/22K
R324 NC/1K
R325 NC/4.7K R0402/SMD
R326 NC/4.7K R0402/SMD
R327 NC/22K
R328 NC/1K
R329 NC/100
R330 NC/100
R331 NC/470R
R332 NC/10 R0402/SMD
R333 NC/51 R0402/SMD
R334 NC/470R
R335 NC/75 R0402/SMD
C201 NC/470pF
C202 NC/470pF
C203 NC/470pF
C204 NC/2.2uF
C205 NC/2.2nF
C206 NC/2.2uF
C207 NC/2.2nF
C208 NC/2.2nF
C209 NC/2.2nF
R368 NC/100
R369 NC/100
GND
DSMB_PB
DSMB_PR
DSMB_Y
DSMB_H
DSMB_V
DSMB_CVBS_IN
DSMB_C_A_IN_L
DSMB_C_A_IN_R
DSMB_CVBS_OUT
DSMB_C_A_OUT_L
DSMB_C_A_OUT_R
DSMB_IR
UTX2
UART_TXD
UART_RXD
URX2
OSCL0
OSDA0
DSMB_D_LINE_ON1
DSMB_CLOSE_IN1
VIDEO_TYPE1
VIDEO_TYPE2
DSMB_Y
Y0_IN
DSMB_PB
PB0_IN
DSMB_PR
PR0_IN
DSMB_C_A_IN_L
DVD_LI
DSMB_C_A_IN_R
DVD_RI
DSMB_CVBS_IN
AV3
AV1_IN_GND
VCC
+3V3
+5V_TUNER
OIRI#
U1RX
U1TX
AL1
AR1
CVBS_OUT
GPIO_7
GPIO_8
GPIO_9
GPIO_10
DSMB_IR
OSCL0 3,6,10,13,15
OSDA0 3,6,10,13,15
DSMB_Y 9
DSMB_PB 9
DSMB_PR 9
DVD_RI 11
DVD_LI 11
CVBS3 3
GPIO_7 3
GPIO_8 3
GPIO_9 3
GPIO_10 3
OIRI# 6,15
CVBS_OUT 9
AL1 3
AR1 3
U1RX 3,6
U1TX 3,6
+5V_TUNER 2,9,10
VCC 2,6,8,11,12,13,15
+3V3 2,3,4,6,7,9,11,13,15
GND 1,2,3,4,5,6,7,8,9,10,11,12,13,15
DSMB_H 8
DSMB_V 8
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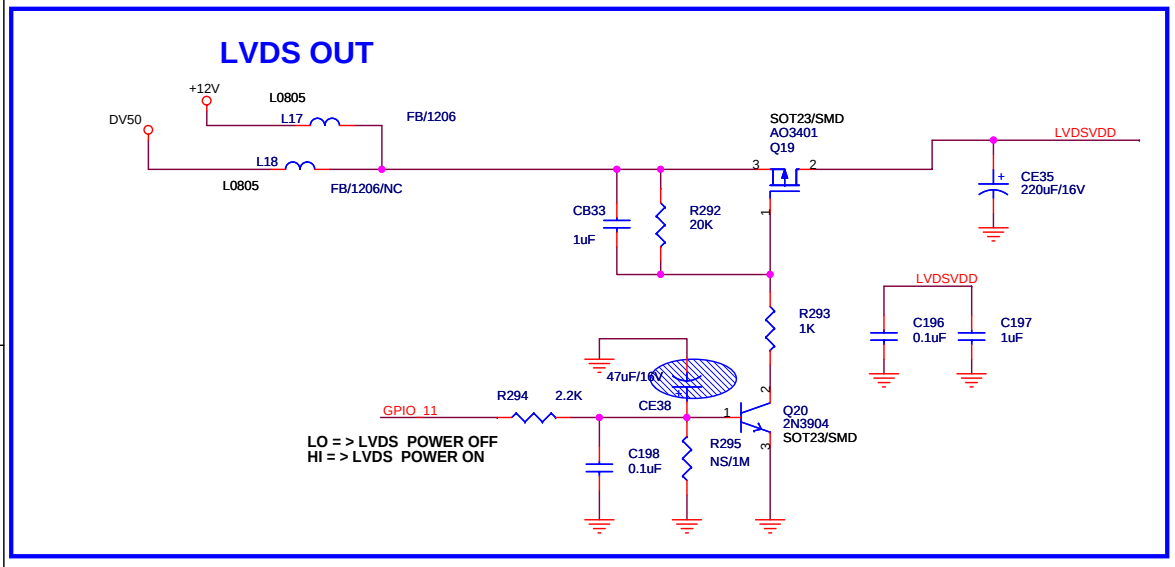
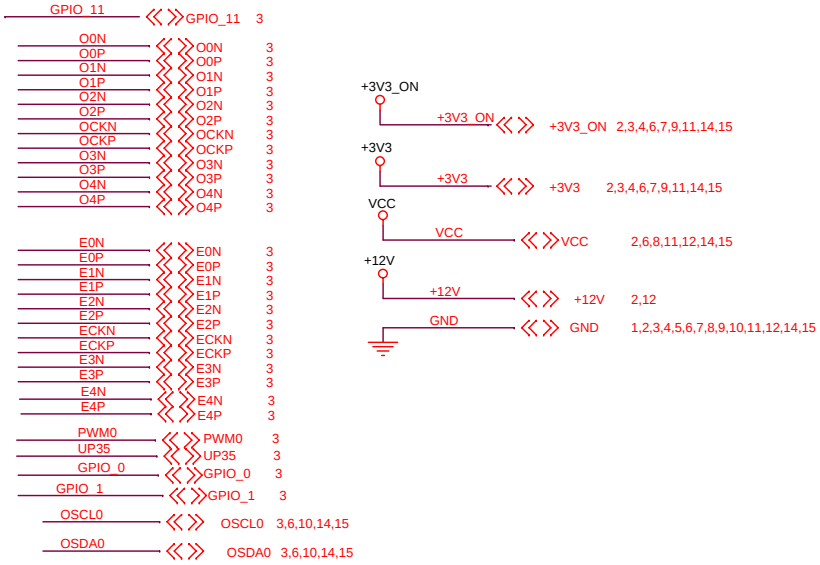
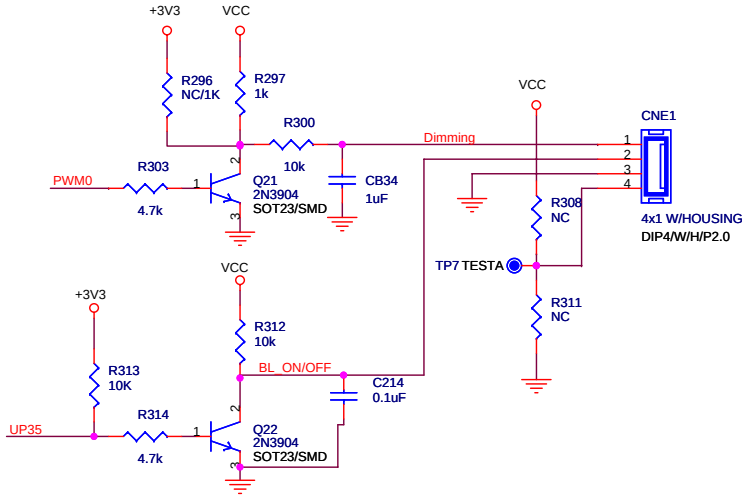
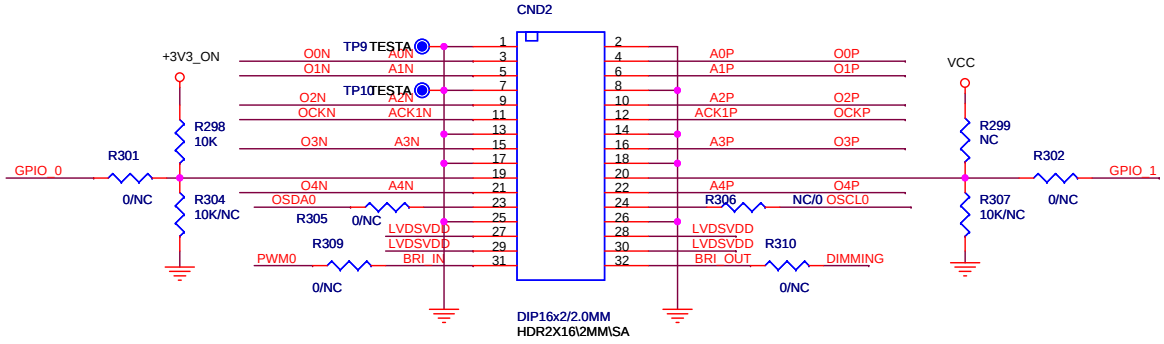
Size C
Document Number
<Doc>
Rev
<RevCode>
Date: Thursday, November 12, 2009
Sheet 14 of 15

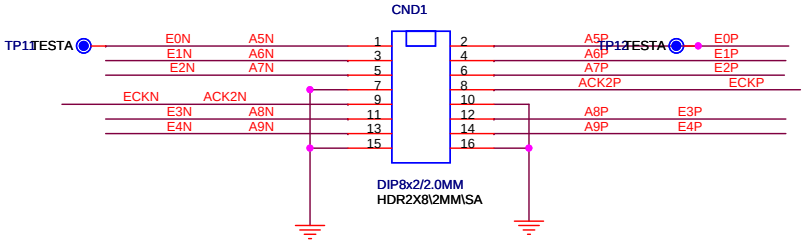




Inverter Power Connector to Panel

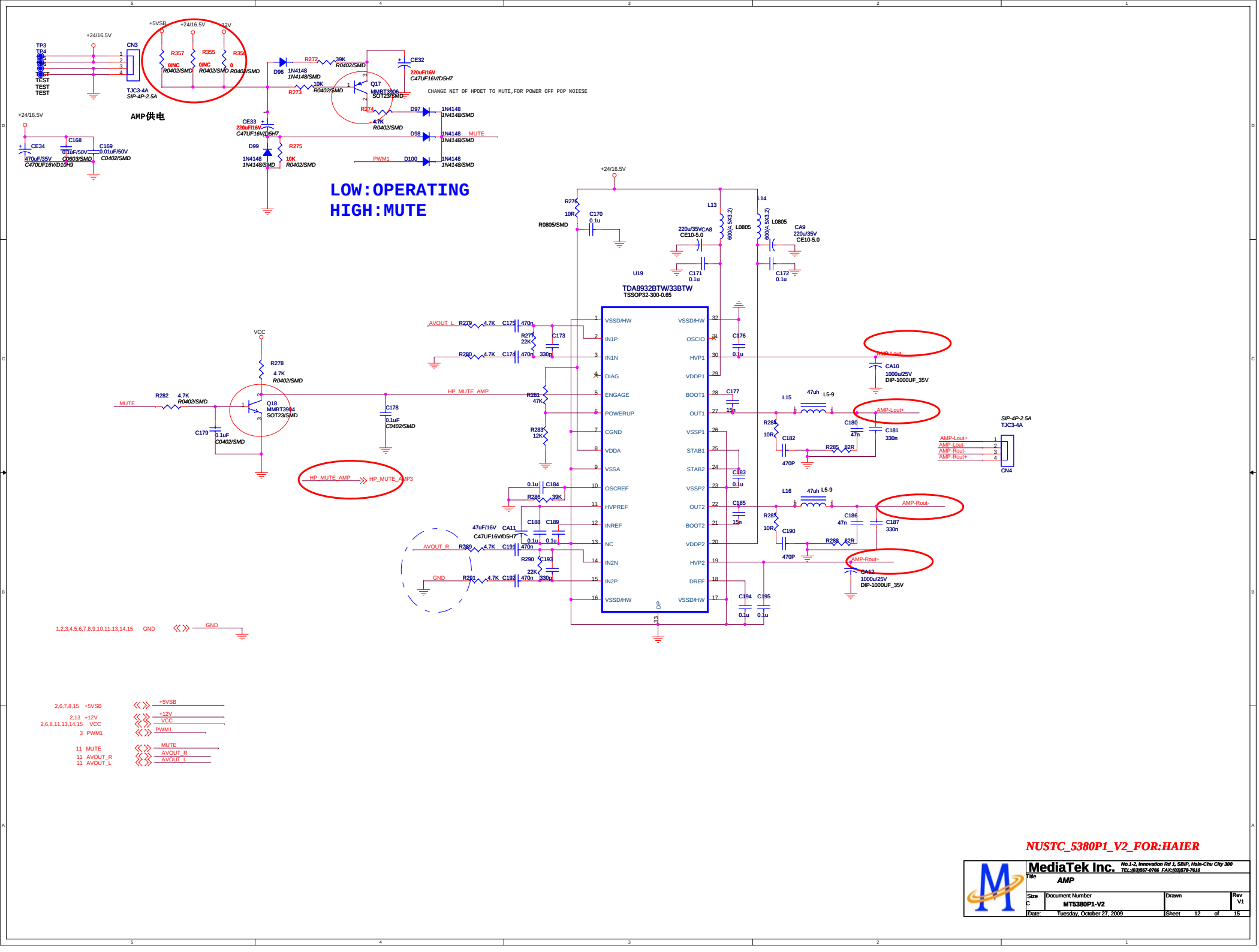


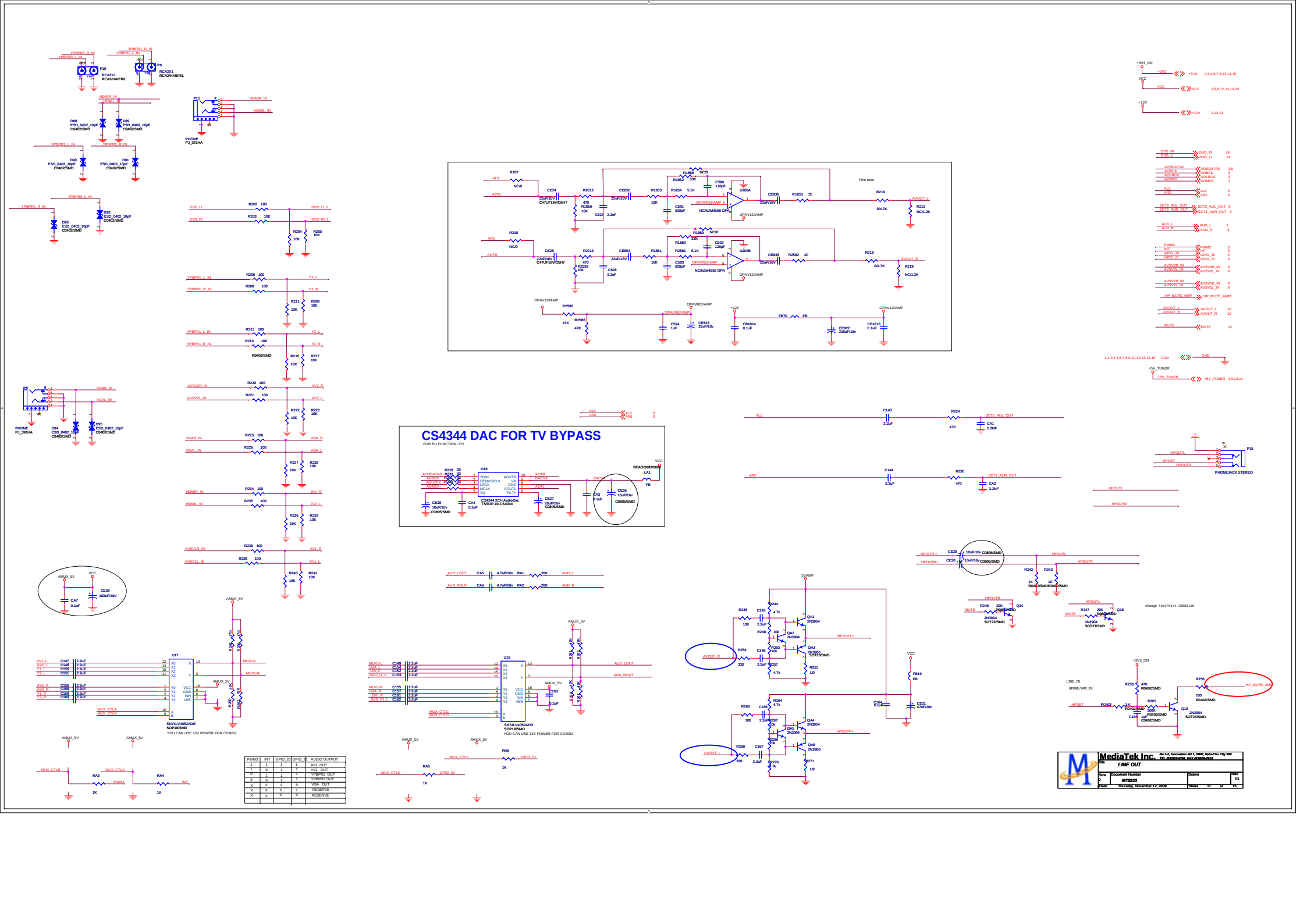




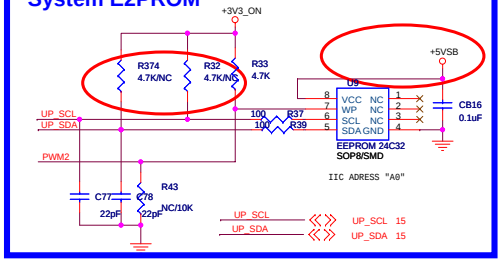
新奇普仕电子有限公司

MediaTek Inc.	No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300 TEL:(03)567-0766 FAX:(03)578-7610		
Title: LVDS OUT			
Size: B	Document Number: MT8222	Drawn:	Rev: 1
Date: Thursday, November 12, 2009		Sheet 13 of 15	

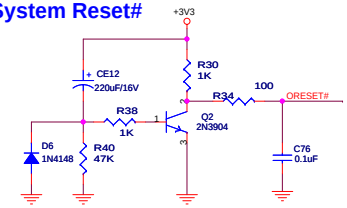

AMP供电
LOW:OPERATING
HIGH:MUTE
CHANGE NET OF HPDET TO MUTE,FOR POWER OFF POP NOISE
TDA8932BTW/33BTW
TSSOP32-300-0.65
U19
HP_MUTE_AMP
HP_MUTE_AMP3
MUTE
AVOUT_L
AVOUT_R
PWM1
GND
VCC
+5VSB
+12V
+24/16.5V
AMP-Lout+
AMP-Lout-
AMP-Rout+
AMP-Rout-
SIP-4P-2.5A
TJC3-4A
CN4
NUSTC_5380P1_V2_FOR:HAIER
MediaTek Inc.
No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300
TEL:(03)567-0766 FAX:(03)578-7610
Title
AMP
Size
C
Document Number
MT5380P1-V2
Drawn
Rev
V1
Date:
Tuesday, October 27, 2009
Sheet
12
of
15


CS4344 DAC FOR TV BYPASS
FOR EU FUNCTION- FYI
CS4344 2CH AudioDac
TSSOP-10-CS4344
SN74LV4052ADR
SOP16/SMD
YOU CAN USE 12V POWER FOR CD4052
LINE OUT
MediaTek Inc.
IMT8222
Thursday, November 12, 2009

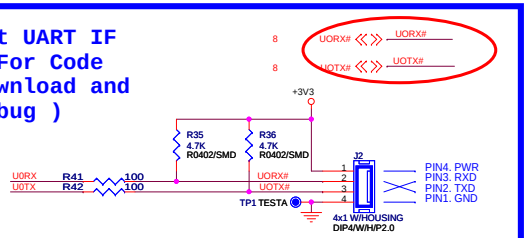
System E2PROM



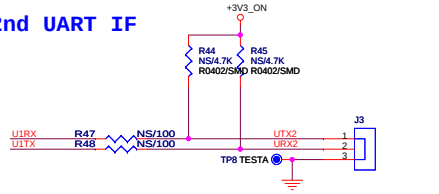
System Reset#



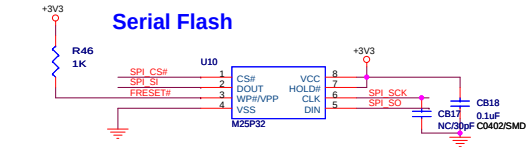
1st UART IF (For Code download and Debug)

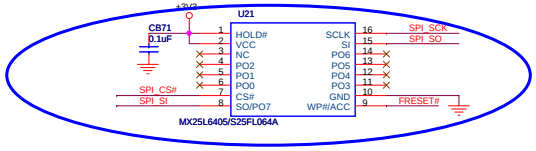


2nd UART IF

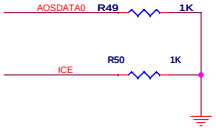


Serial Flash





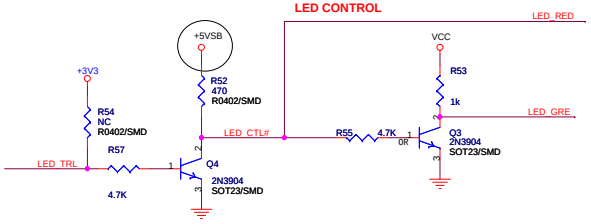
MT8222 Trapping



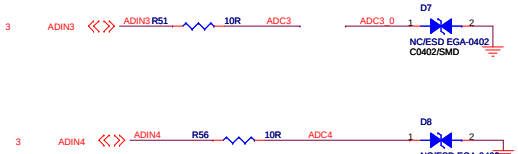
Status	ICE	AOBCLK	AOLRCK	Description
Normal	0	---	0	Normal operation ST/SST flash
TEST_ICE	1	0	0	ICE mode
TEST_CPUM	1	0	1	Used in simulation and pattern generation
TEST_SCAN	1	1	0	Used to generate ATPG test patterns
OLT_MODE	1	1	1	OLT mode

AOSDATA0	Description
0	ST/SST flash
1	ATMEL flash

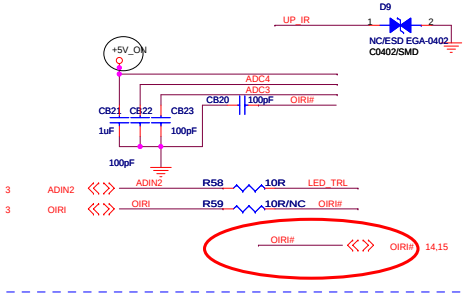
LED CONTROL

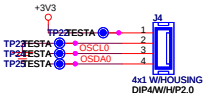


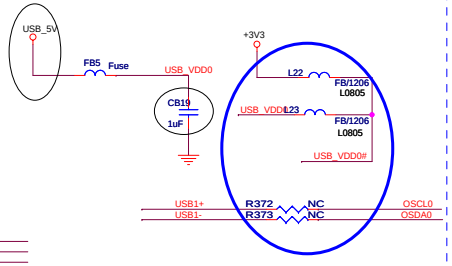
ADC KEYPAD 8 KEY

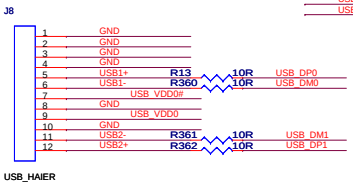


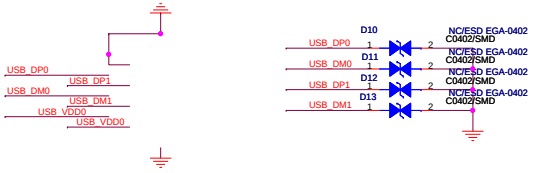
KEYPADS IF

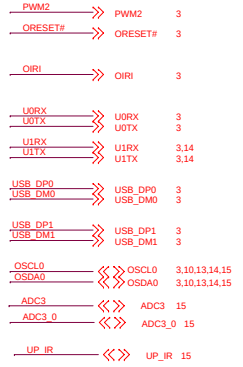


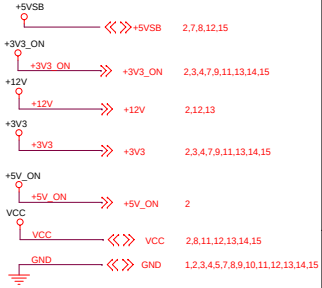


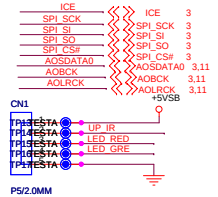


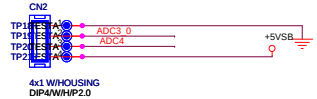






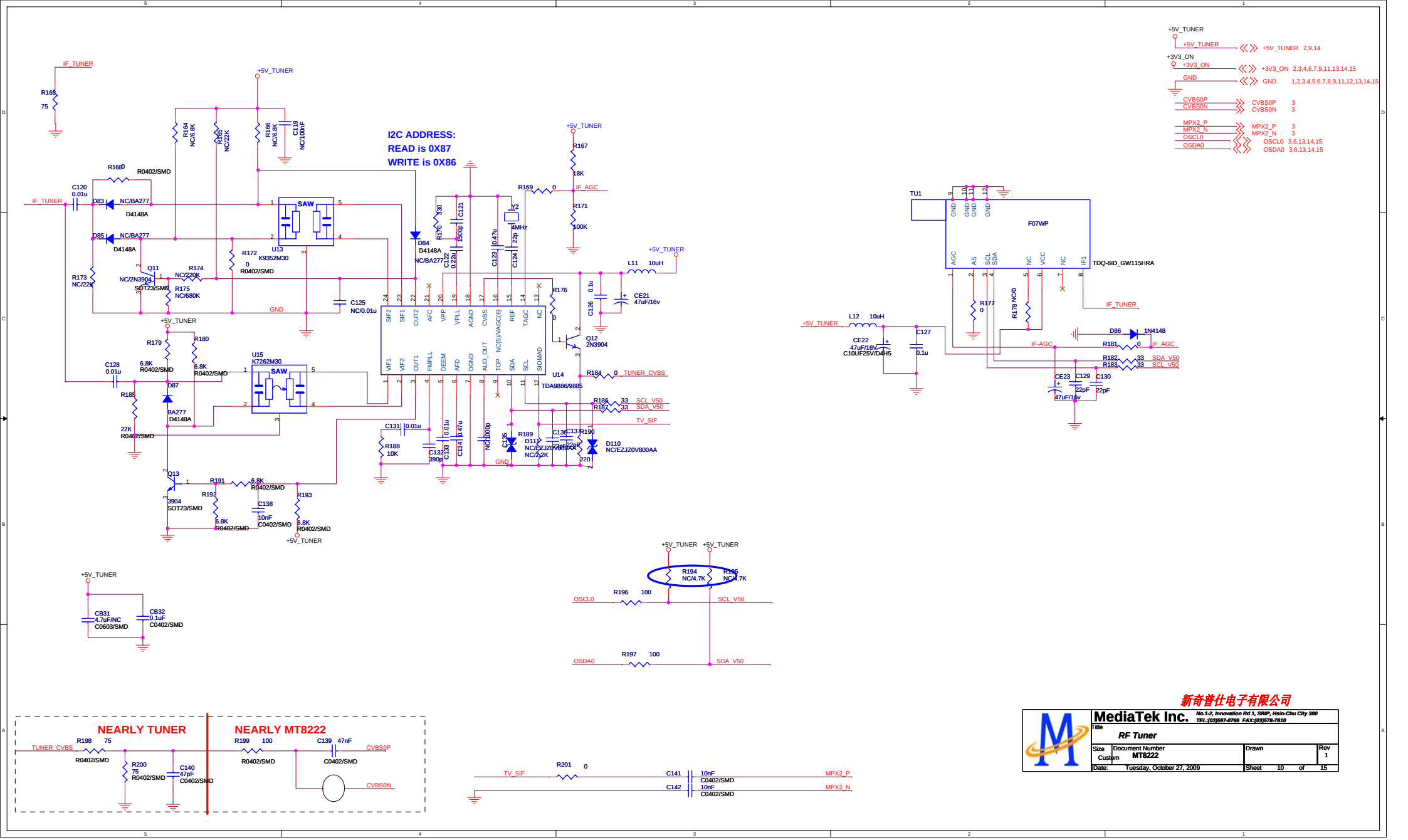


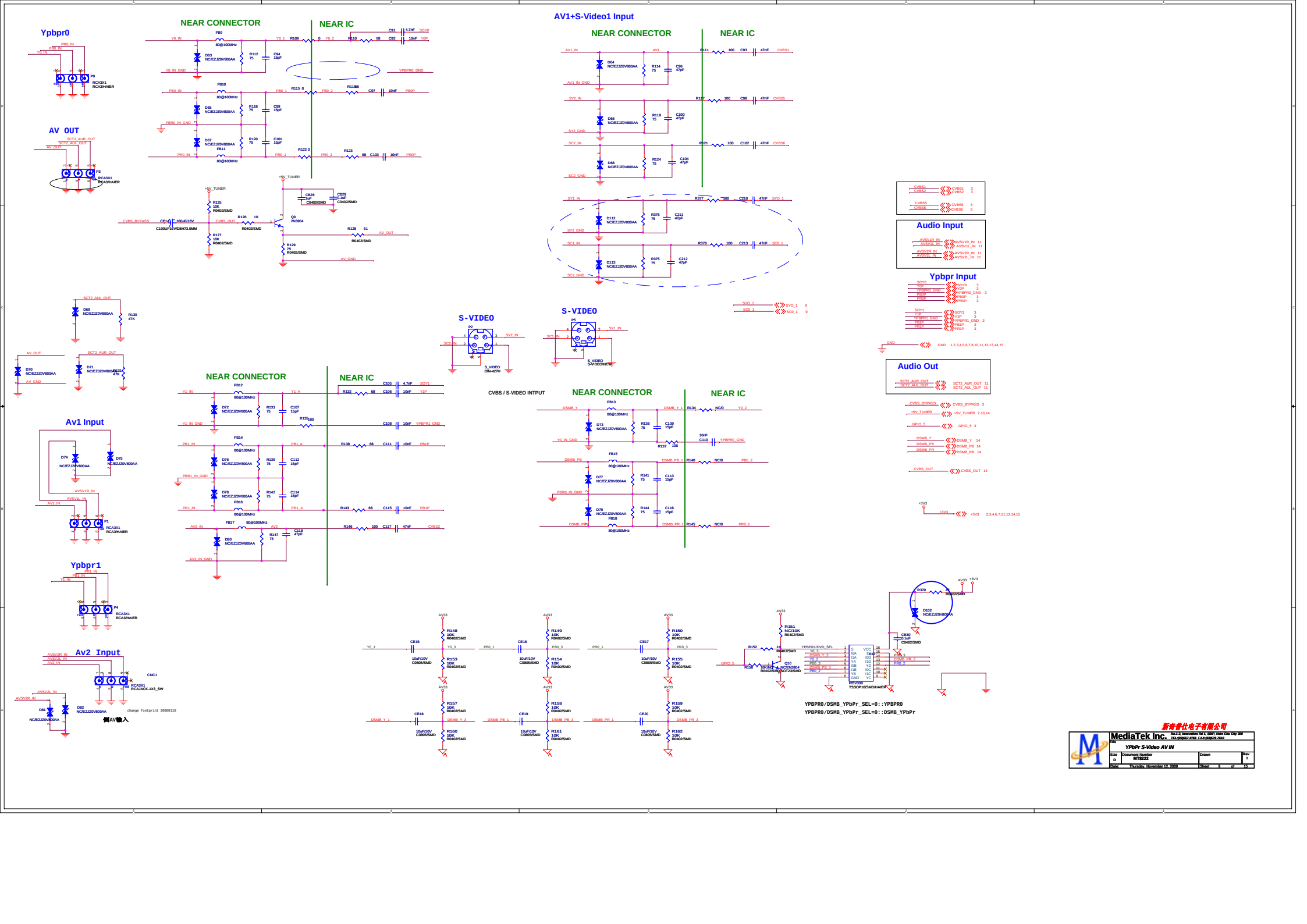




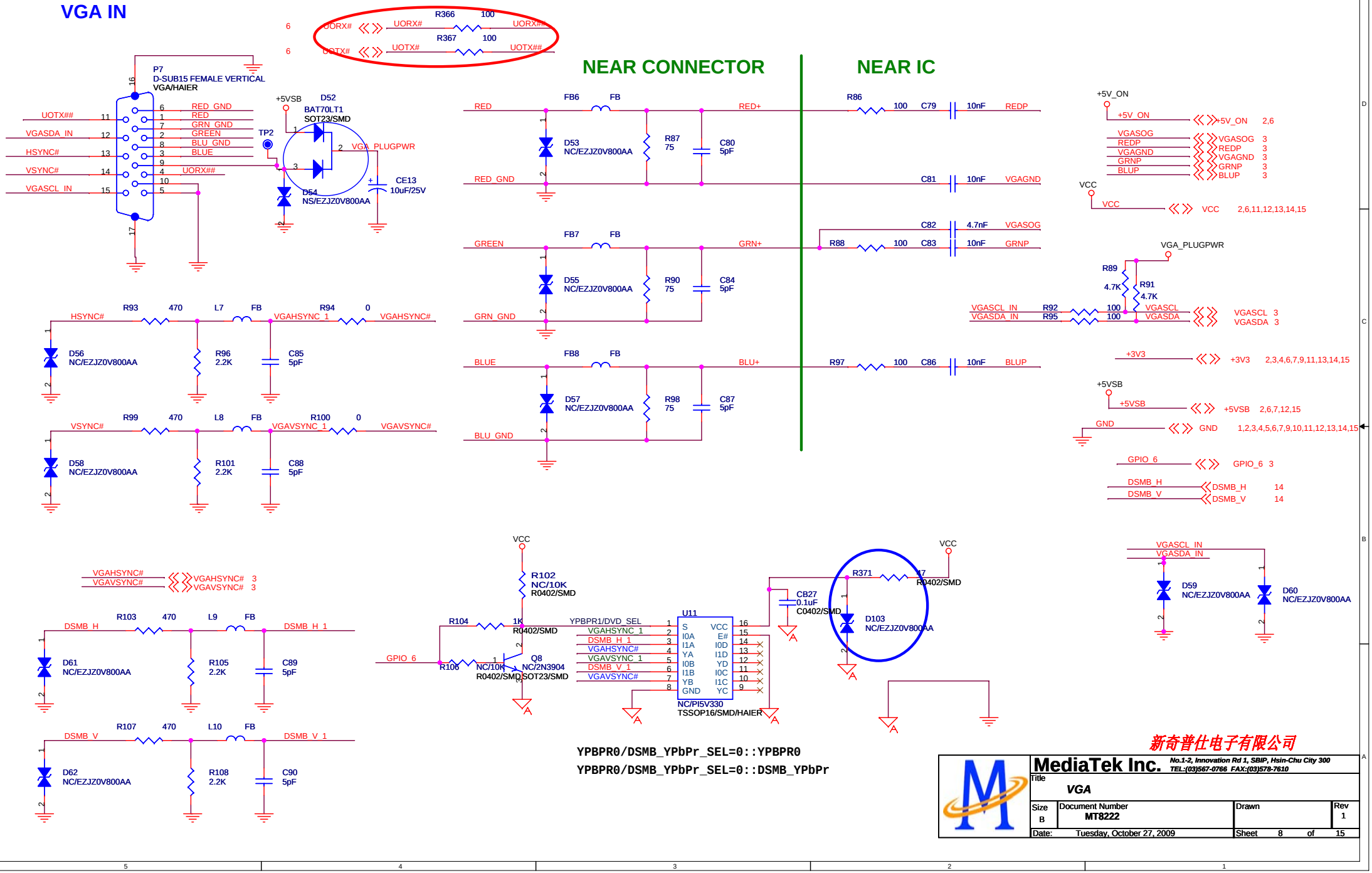
新奇普仕电子有限公司

MediaTek Inc. No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300 TEL:(03)567-0766 FAX:(03)578-7610			
Title: FCI/USB/Flash/Peripheral			
Size: C	Document Number: MT8222	Drawn	Rev: 1
Date: Tuesday, October 27, 2009		Sheet 6 of 15	


I2C ADDRESS:
READ is 0X87
WRITE is 0X86
NEARLY TUNER
NEARLY MT8222
新奇普仕电子有限公司
MediaTek Inc.
No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300
TEL:(03)567-0766 FAX:(03)578-7610
RF Tuner
MT8222
Tuesday, October 27, 2009


Ypbpr0
NEAR CONNECTOR
NEAR IC
AV1+S-Video1 Input
AV OUT
S-VIDEO
S-VIDEO
Audio Input
Ypbpr Input
Audio Out
Av1 Input
Ypbpr1
Av2 Input
CVBS / S-VIDEO INTPUT
YPBPR0/DSMB_YPbPr_SEL=0::YPBPR0
YPBPR0/DSMB_YPbPr_SEL=0::DSMB_YPbPr
新有前仕电子有限公司
MediaTek Inc.
YPbPr S-Video AV IN
MT8222

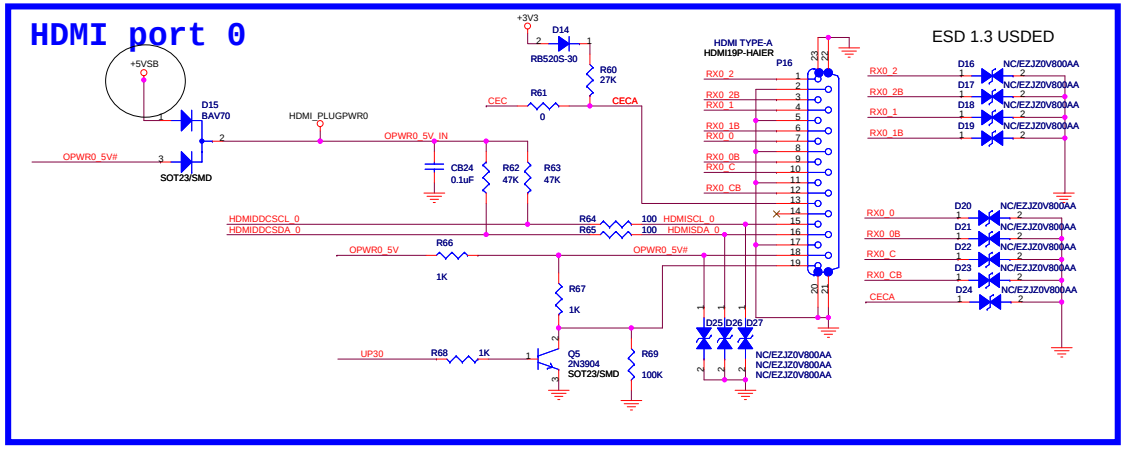
VGA IN

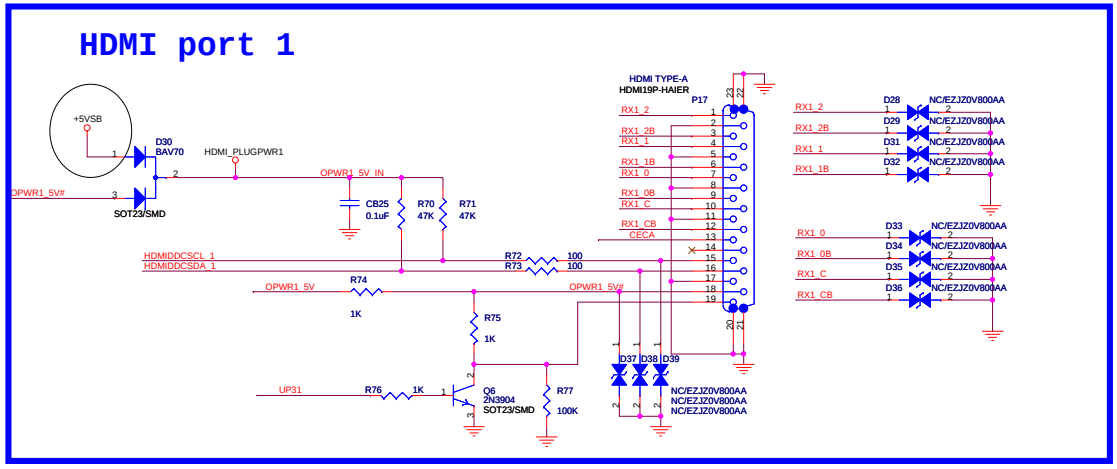


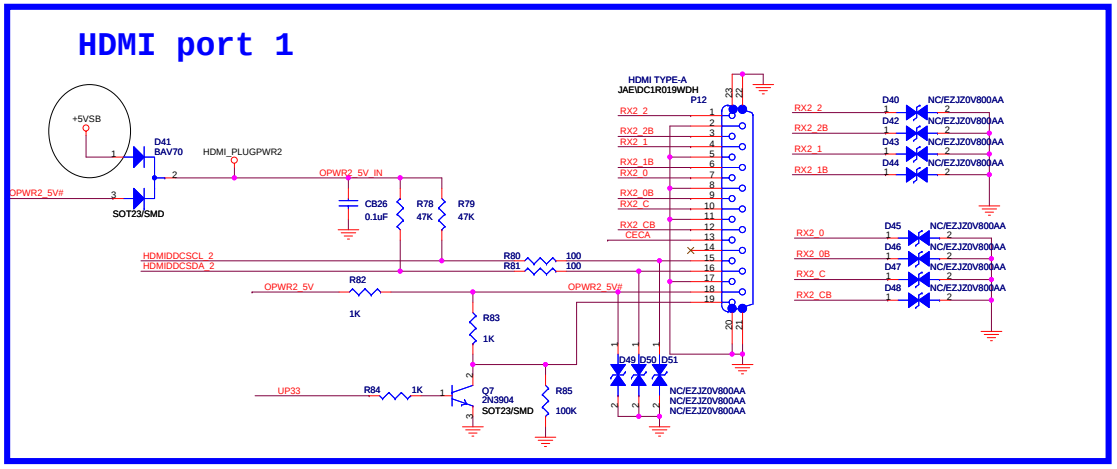
新奇普仕电子有限公司

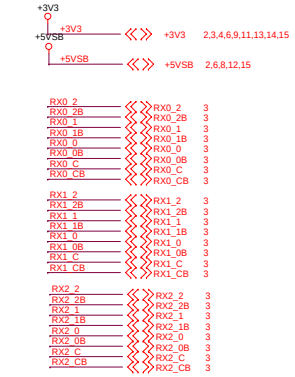
MediaTek Inc.
No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300
TEL:(03)567-0766 FAX:(03)578-7610

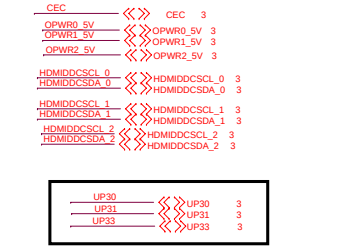
Title: VGA			
Size: B	Document Number: MT8222	Drawn:	Rev: 1
Date: Tuesday, October 27, 2009		Sheet 8 of 15	



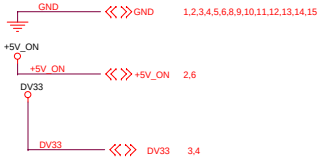








(HDMI Hot Plug Detect)



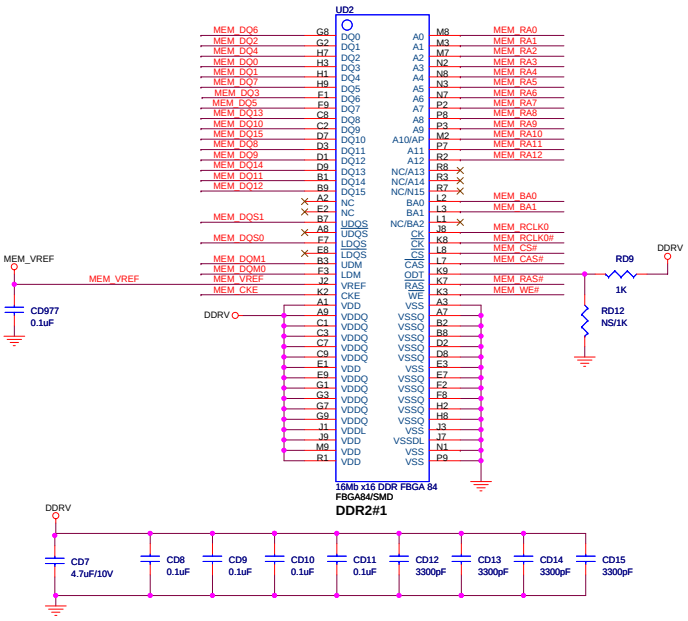
新奇普仕电子有限公司

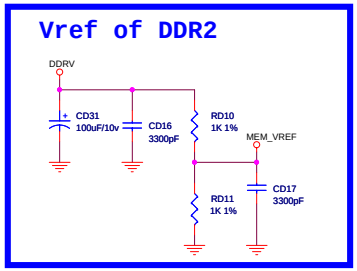
MediaTek Inc.
No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300
TEL:(03)567-0766 FAX:(03)578-7610

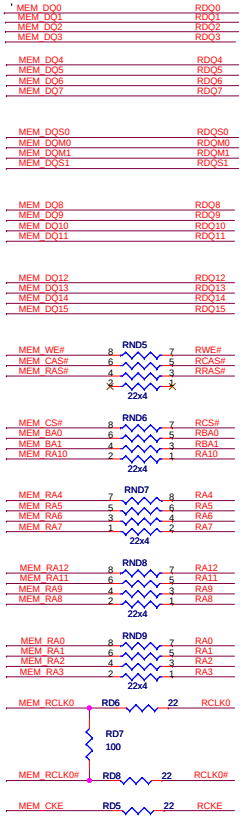
Title: HDMIX2

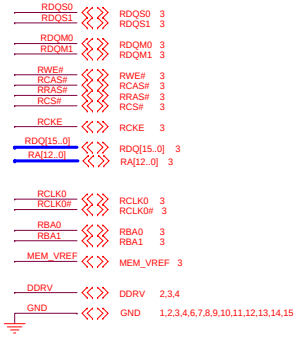
Size	Document Number	Drawn	Rev
C	MT8222		1

Date: Tuesday, October 27, 2009 Sheet 7 of 15





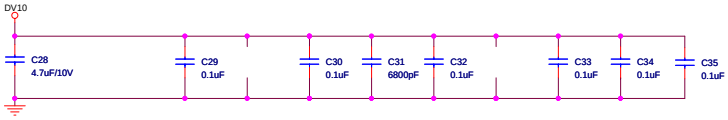


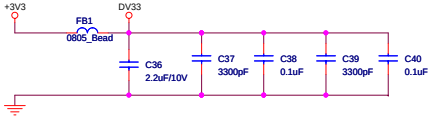


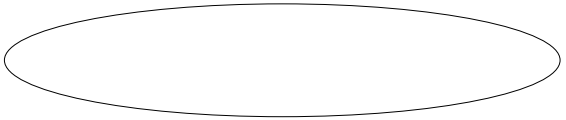
新奇普仕电子有限公司

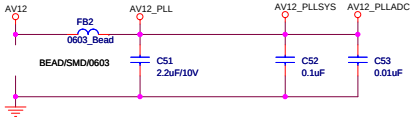
MediaTek Inc.	No.1-2, Innovation Rd 1, SBP, Hsin-Chu City 300 TEL:(03)567-0766 FAX:(03)578-7610		
Title: DDR1 DRAM			
Size: C	Document Number: MT8222	Drawn:	Rev: 1
Date: Tuesday, October 27, 2009		Sheet 5 of 15	

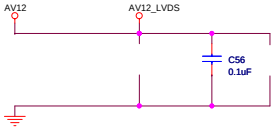
(Bypass CAPs arround MT8222)

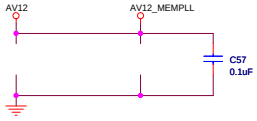


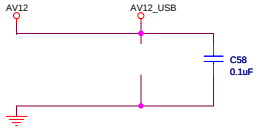




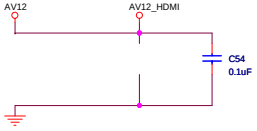


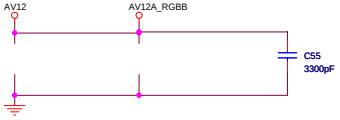


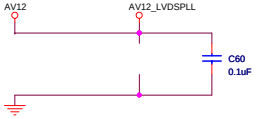


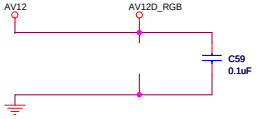


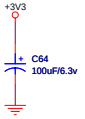
2007/12/26

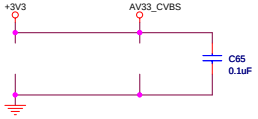


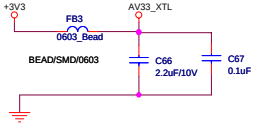


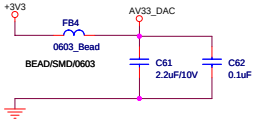


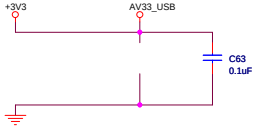


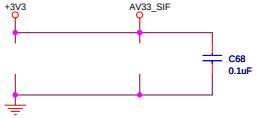


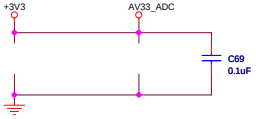


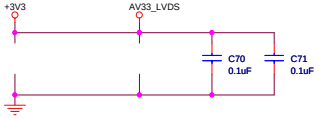


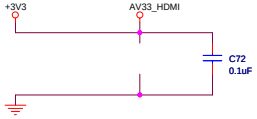


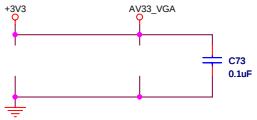


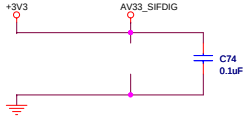


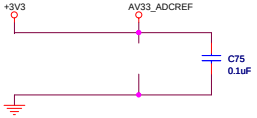


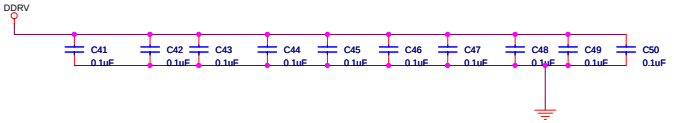


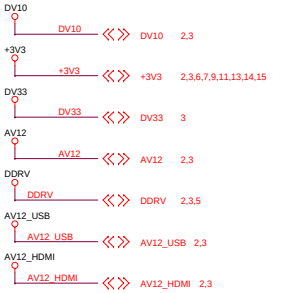


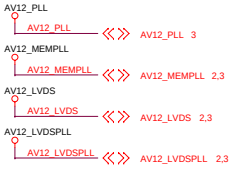








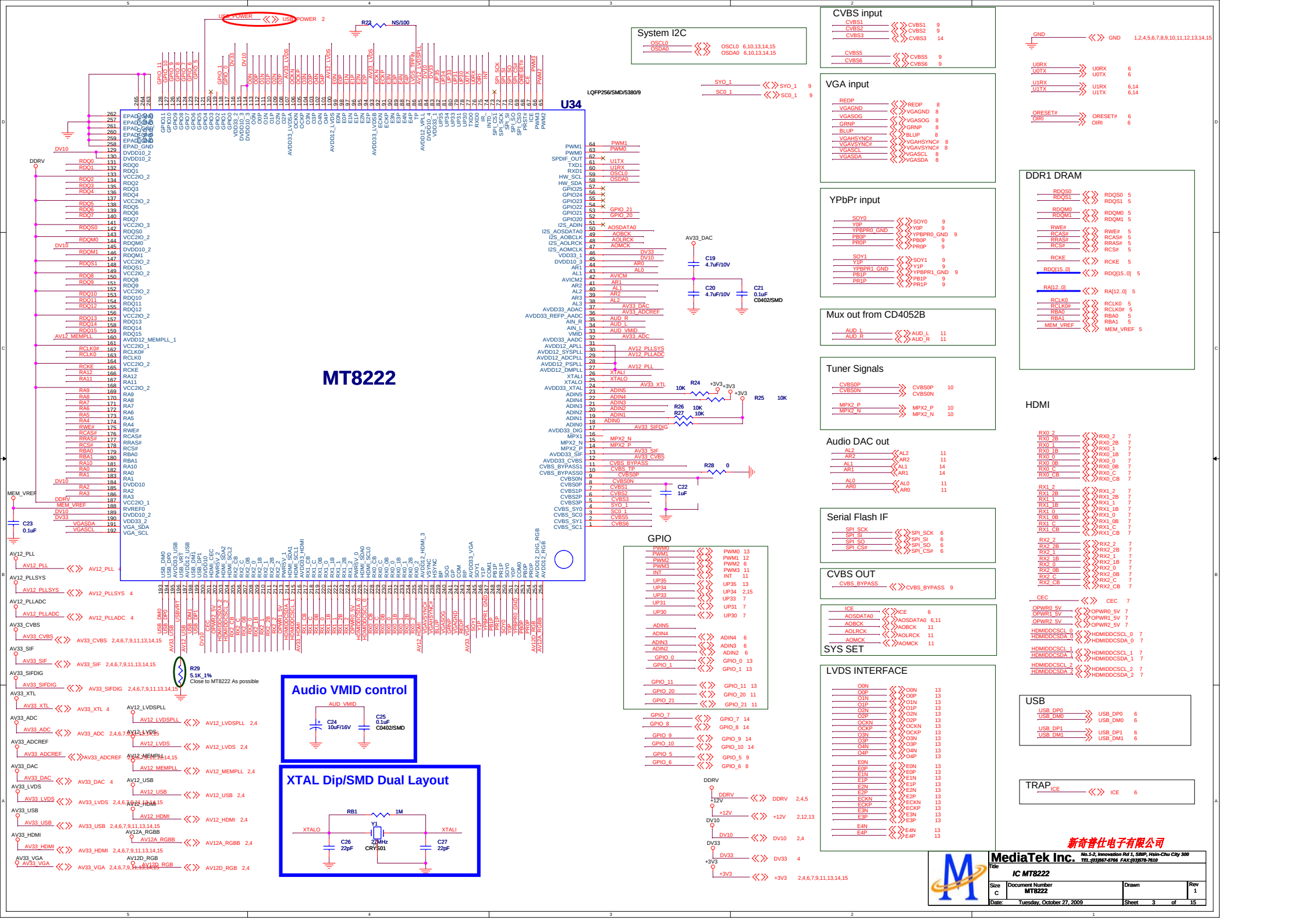


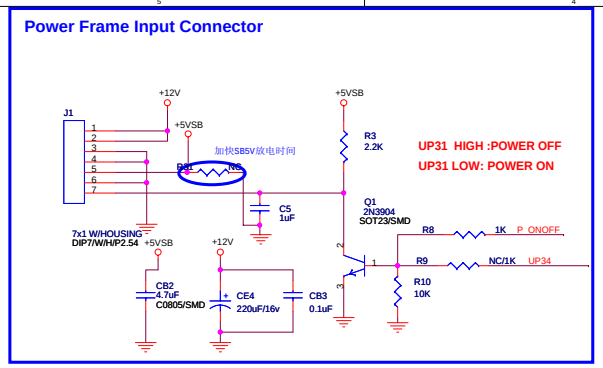


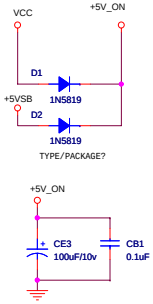
新奇普仕电子有限公司

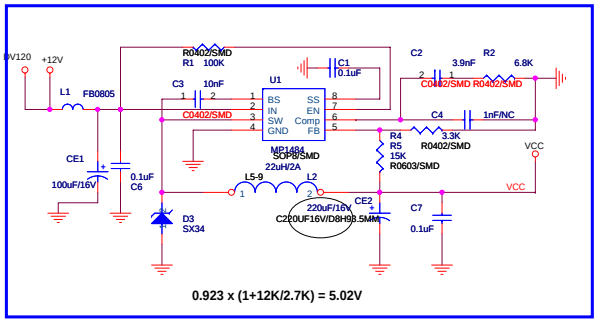
MediaTek Inc.
No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300
TEL:(03)567-0766 FAX:(03)578-7610

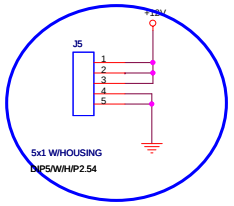
Title: MT8222 Bypass CAPs			
Size: C	Document Number: MT8222	Drawn	Rev: 1
Date: Thursday, November 12, 2009		Sheet 4 of 15	


MT8222
U34
LQFP256/SMD/5380/9
System I2C
CVBS input
VGA input
YPbPr input
Mux out from CD4052B
Tuner Signals
Audio DAC out
Serial Flash IF
CVBS OUT
SYS SET
LVDS INTERFACE
GPIO
DDR1 DRAM
HDMI
USB
TRAP
Audio VMID control
XTAL Dip/SMD Dual Layout
R23 NS/100
R29 5.1K_1%
Close to MT8222 As possible
C19 4.7uF/10V
C20 4.7uF/10V
C21 0.1uF
C22 1uF
C23 0.1uF
R24 10K
R25 10K
R26 10K
R27 10K
R28 0
C24 10uF/16V
C25 0.1uF
C26 22pF
C27 22pF
RB1 1M
Y1 27MHz
CRYS01
MediaTek Inc.
IC MT8222
Document Number MT8222
Date: Tuesday, October 27, 2009
Sheet 3 of 15
新奇普仕电子有限公司

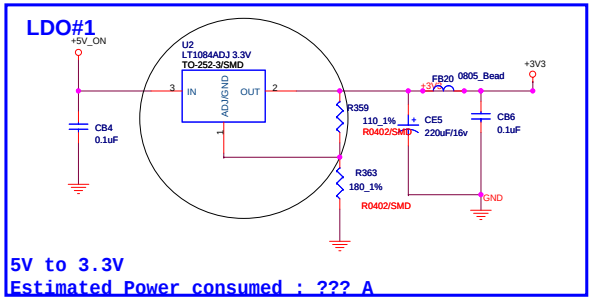


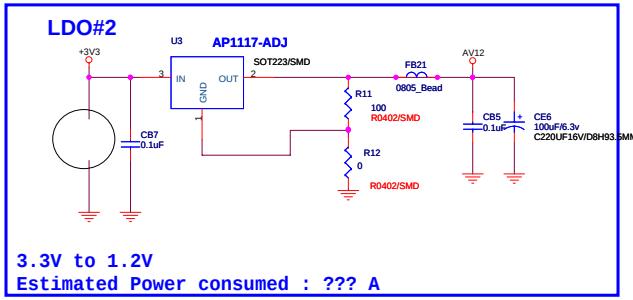


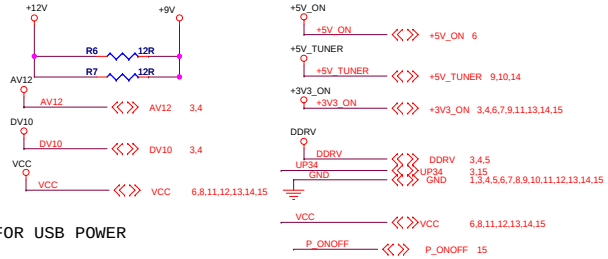


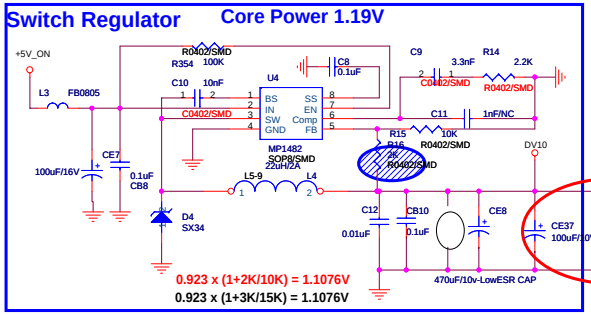


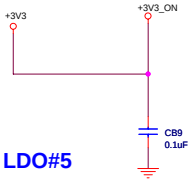
Power for MT8222 only (Always on)

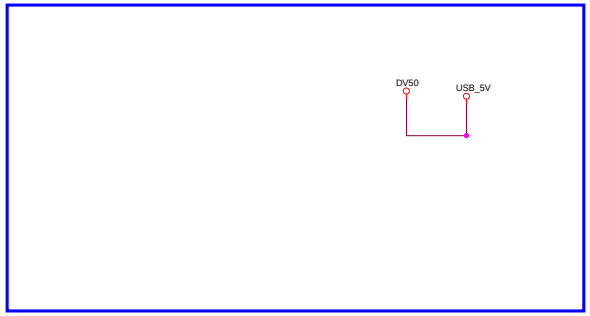




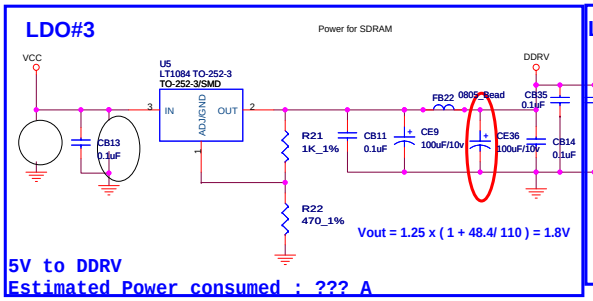


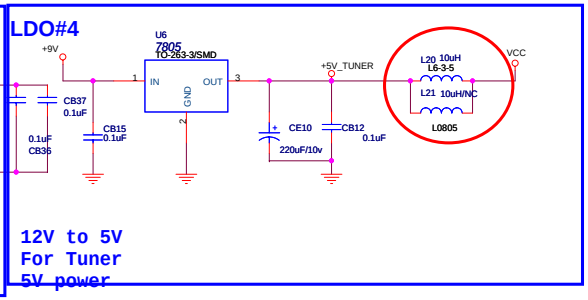


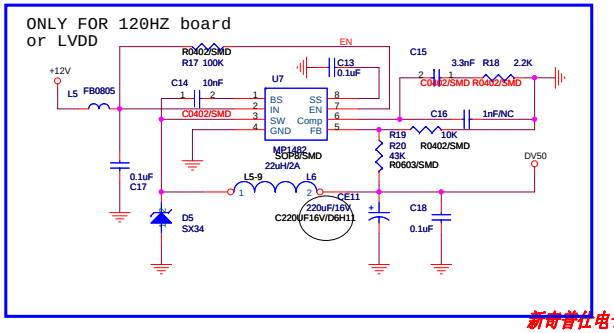




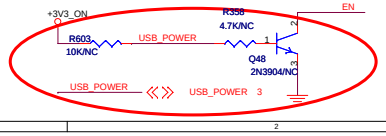
Works at normal mode







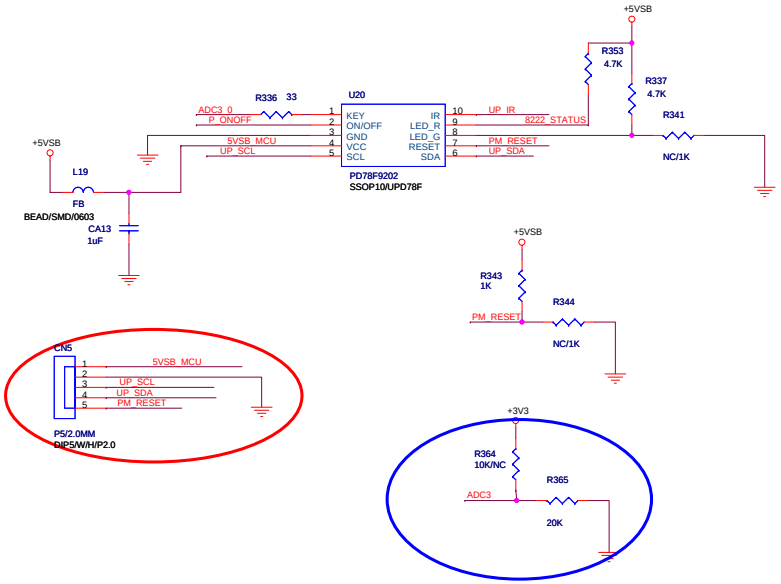
If use sdram ,NC FB14 CE9 CB574 U11 R956 R958 CB573 CE5
If use DDR ,NC FB14

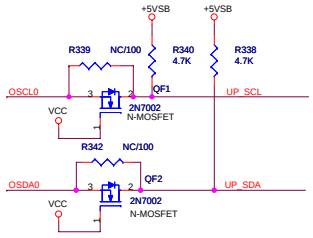


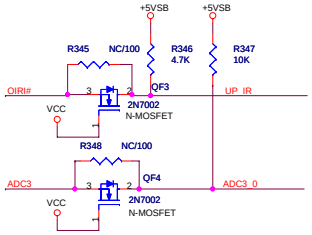
新奇普仁电子有限公司

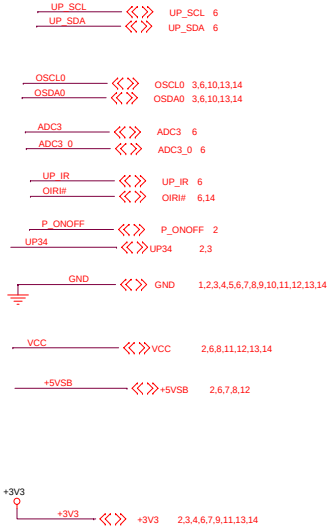
MediaTek Inc.
No.1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300
TEL:(03)567-0766 FAX:(03)578-7610

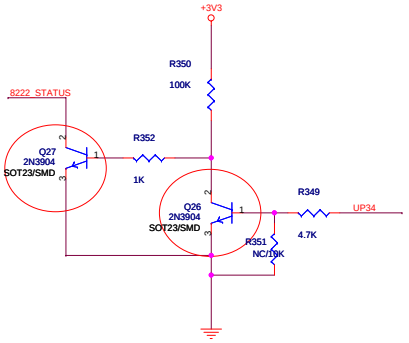
Title: Power LDO			
Size: C	Document Number: MT8222	Drawn	Rev: 1
Date: Thursday, November 12, 2009		Sheet 2 of 15	











Title	<Title>	
Size C	Document Number <Doc>	Rev <RevCode>
Date: Tuesday, October 27, 2009	Sheet 15 of 15	

项目名称：P60-X9 V6.0	开案日期：2012.8.14

开案规格：

全功能版本： 名称 料号

规格

公板版本： 名称 料号

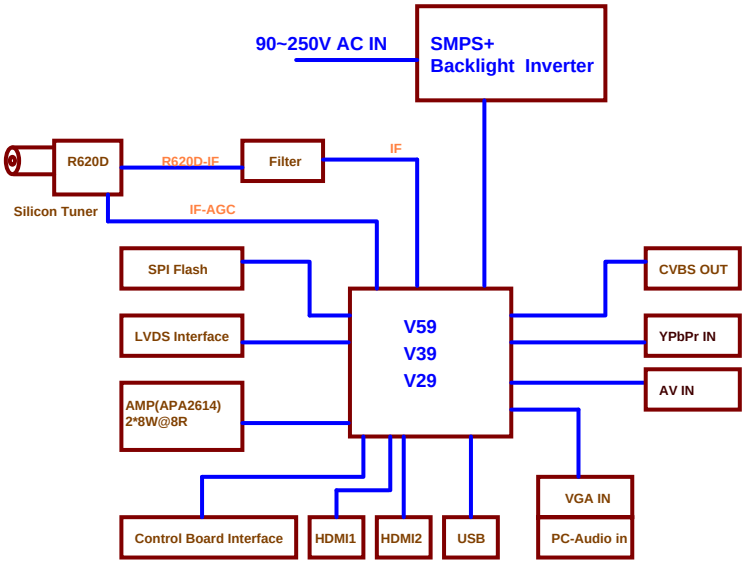
规格

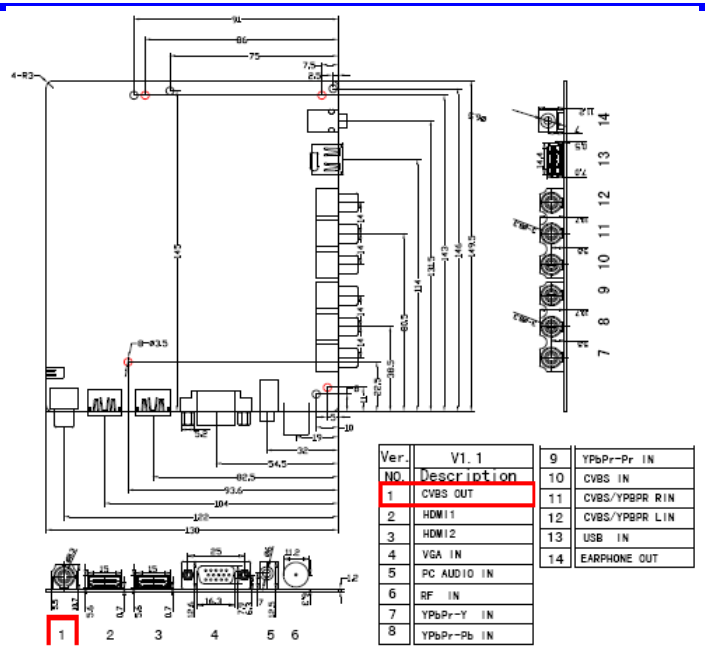
版本更新记录

版本	更新记录	修订	审核	日期
P60-X9 V6.1 20130117	在P60-x9 v6.0-B 基础上修改电源部分为48V+12V,板卡 这边删除19V to12 DC/DC 并增加12V switch及修改功放 供电及Mute电路，将之功放供电电容由一个改为两个。	suncheng		2013.01.17

Power Config:

Block diagram





Ver.	V1.1
NO.	Description
1	CVBS OUT
2	HDMI1
3	HDMI2
4	VGA IN
5	PC AUDIO IN
6	RF IN
7	YPbPr-Y IN
8	YPbPr-Pb IN
9	YPbPr-Pr IN
10	CVBS IN
11	CVBS/YPBPR RIN
12	CVBS/YPBPR LIN
13	USB IN
14	EARPHONE OUT

Date	Modify Number	Modify By

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SheetName: 01.Page Cover

Size: A3 | Document Number: P6-59S V6.0 | Rev: A

Modify Date: Monday, August 19, 2013 | Designed By: suncheng | Sheet 1 of 10

GPIO CONFIG

Pin Number	Pin Name	Net Name	Functional Description	Control State	Remarks
70	INT	PWR-ON/OFF	电源待机控制	H:Power ON L:Standby	同公板一样
44	GPIO2	PANEL_ON/OFF	屏供电控制	H: ON L:OFF	同公板一样
71	TCON0	VBL_CTRL	屏背光开关控制	H:OFF L:ON	同公板一样
79	PWM0	BRI_ADJ-PWM0	屏背光调节控制脚	有两个方式：1.PWM 调光 2.DC调光	同公板一样
86	IRIN	IRIN	遥控信号输入		同公板一样
84	SAR0	KEY0-SAR0	AD按键输入	一线7键式AD按键	同公板一样
85	URP_TEST/SAR1	SAR1	LED控制口	H:LED RED L:LED Green	这个口同时还控制功放MUTE H:LED RED 同时功放MUTE
30/31	AUOUTL/R0	AMP-AUOUTR0	功放Audio 输入		
32/33	AUOUTL/R1	ADUO_OUT_L	AV out Audio 输出		
19	CVBS0	AV1-Vin	AV1 CVBS 输入		
18	CVBS1	AV2-Vin	AV2 CVBS 输入		
21	CVBSOUT	CVBS_OUT	AV OUT CVBS 输出		
26/27	AUL/R4	AV1-L/Rin	AV1 Audio R/L 输入		
28/29	AUL/R5	AV2-L/Rin	AV2 Audio R/L 输入		
23/24	AUL/R0	VGA_L/R	VGA Audio R/L 输入		
6	GIN0P	RGB0_Y+	VGA Y信号输入		
5	SOGIN0	RGB0_Y-SOG	VGA 同步信号输入（兼容老式机器）		
4	BIN0P	RGB0_Pb+	VGA Pb信号输入		
8	RIN0P	RGB0_Pr+	VGA Pr信号输入		
9	VSYNC0	VGA_VS	VGA 场同步信号输入		
3	HSYNC0	VGA_HS	VGA 行同步信号信号输入		
11	BIN1P	RGB2-HDTV_BIN	YPbPr接口 Pb信号输入		
12	SOGIN1	RGB2-HDTV_SOGIN	YPbPr接口 同步信号输入		
13	GIN1P	RGB2-HDTV_GIN	YPbPr接口 Y信号输入		
15	RIN1P	RGB2-HDTV_RIN	YPbPr接口 Pr信号输入		
16	AVDD_33	Scart_FB	选TSUMV59芯片时，SCART FB信号输入	1-3V RGB 0-0.4V:CVBS	
85	URP_TEST/SAR1	Scart_FS	选TSUMV59芯片时，SCART FS信号输入	2.02-2.55V: 4:3 1.06-1.70V :16:9 0-0.43:无信号 （这是指scart信号经过10K和2.7K电阻分压后CPU检测的电压值）	
49	VLACKP	RXEC+/LED_CTR	选TSUMV59芯片时，LVDS CLK 采用1推二的方式， 因此这个空出来作LED控制脚	H:LED RED L:LED Green	这个口同时还控制功放MUTE H:LED RED 同时功放MUTE
50	VLACKM	RXEC-/5V330_CTR	选TSUMV59芯片时，LVDS CLK 采用1推二的方式， 当有scart功能时这个作5V330控制脚，	L:SCART H:YPbPr_IN	

Date	Modify Number	Modify By

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SheetName: 02.GPIO CONFIG

Size: A3 | Document Number: P65-59S V6.0 | Rev: A

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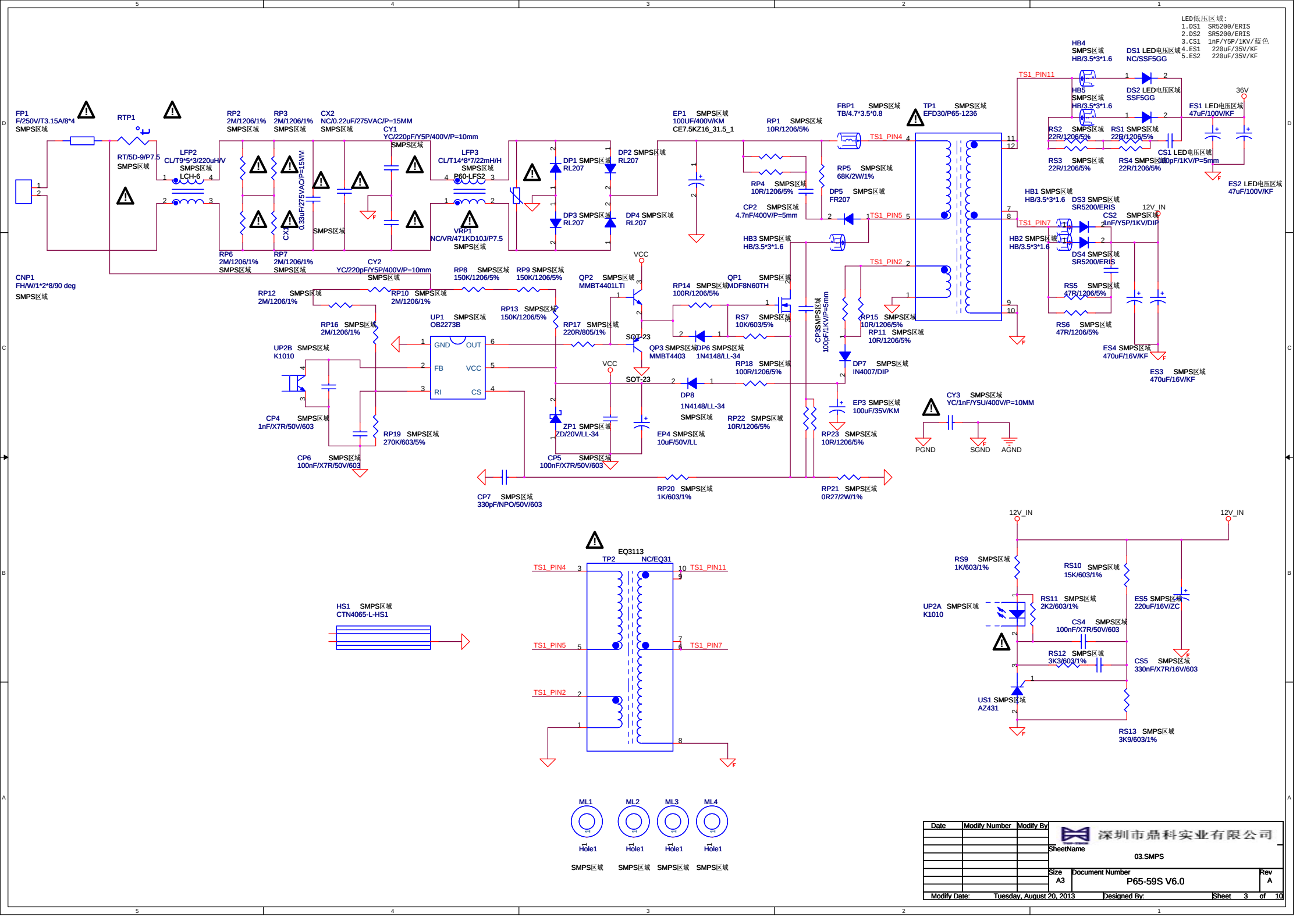

LED低压区域:
1.DS1 SR5200/ERIS
2.DS2 SR5200/ERIS
3.CS1 1nF/Y5P/1KV/蓝色
4.ES1 220uF/35V/KF
5.ES2 220uF/35V/KF
FP1 F/250V/T3.15A/8*4 SMPS区域
RTP1
RT/5D-9/P7.5 SMPS区域
LFP2 CL/T9*5*3/220uH/V SMPS区域 LCH-6
RP2 2M/1206/1% SMPS区域
RP3 2M/1206/1% SMPS区域
CX2 NC/0.22uF/275VAC/P=15MM SMPS区域
CY1 YC/220pF/Y5P/400V/P=10mm SMPS区域
CX1 0.33uF/275VAC/P=15MM SMPS区域
LFP3 CL/T14*8*7/22mH/H SMPS区域 P60-LFS2
VRP1 NC/VR/471KD10J/P7.5 SMPS区域
DP1 SMPS区域 RL207
DP2 SMPS区域 RL207
DP3 SMPS区域 RL207
DP4 SMPS区域 RL207
EP1 SMPS区域 100UF/400V/KM CE7.5KZ16_31.5_1
RP1 SMPS区域 10R/1206/5%
FBP1 SMPS区域 TB/4.7*3.5*0.8
TP1 SMPS区域 EFD30/P65-1236
RP4 SMPS区域 10R/1206/5%
RP5 SMPS区域 68K/2W/1%
DP5 SMPS区域 FR207
CP2 SMPS区域 4.7nF/400V/P=5mm
HB3 SMPS区域 HB/3.5*3*1.6
RP6 2M/1206/1% SMPS区域
RP7 2M/1206/1% SMPS区域
CY2 YC/220pF/Y5P/400V/P=10mm SMPS区域
RP8 SMPS区域 150K/1206/5%
RP9 SMPS区域 150K/1206/5%
CNP1 FH/W/1*2*8/90 deg SMPS区域
RP12 SMPS区域 2M/1206/1%
RP10 SMPS区域 2M/1206/1%
RP13 SMPS区域 150K/1206/5%
RP16 SMPS区域 2M/1206/1%
UP1 SMPS区域 OB2273B
RP17 SMPS区域 220R/805/1%
UP2B SMPS区域 K1010
CP4 SMPS区域 1nF/X7R/50V/603
RP19 SMPS区域 270K/603/5%
CP6 SMPS区域 100nF/X7R/50V/603
QP2 SMPS区域 MMBT4401LTI
QP1 SMPS区域 MDF8N60TH
RP14 SMPS区域 100R/1206/5%
RS7 SMPS区域 10K/603/5%
QP3 SMPS区域 MMBT4403
DP6 SMPS区域 1N4148/LL-34
RP18 SMPS区域 100R/1206/5%
DP8 1N4148/LL-34 SMPS区域
ZP1 SMPS区域 ZD/20V/LL-34
CP5 SMPS区域 100nF/X7R/50V/603
EP4 SMPS区域 10uF/50V/LL
RP22 SMPS区域 10R/1206/5%
CP7 SMPS区域 330pF/NPO/50V/603
RP20 SMPS区域 1K/603/1%
RP21 SMPS区域 0R27/2W/1%
CP3SMPS区域 100pF/1KV/P=5mm
RP15 SMPS区域 10R/1206/5%
RP11 SMPS区域 10R/1206/5%
DP7 SMPS区域 IN4007/DIP
EP3 SMPS区域 100uF/35V/KM
RP23 SMPS区域 10R/1206/5%
CY3 SMPS区域 YC/1nF/Y5U/400V/P=10MM
PGND
SGND
AGND
HB4 SMPS区域 HB/3.5*3*1.6
DS1 LED电压区域 NC/SSF5GG
HB5 SMPS区域 HB/3.5*3*1.6
DS2 LED电压区域 SSF5GG
36V
ES1 LED电压区域 47uF/100V/KF
RS2 SMPS区域 22R/1206/5%
RS1 SMPS区域 22R/1206/5%
RS3 SMPS区域 22R/1206/5%
RS4 SMPS区域 22R/1206/5%
CS1 LED电压区域 100pF/1KV/P=5mm
ES2 LED电压区域 47uF/100V/KF
HB1 SMPS区域 HB/3.5*3*1.6
DS3 SMPS区域 SR5200/ERIS
12V_IN
CS2 SMPS区域 1nF/Y5P/1KV/DIP
HB2 SMPS区域 HB/3.5*3*1.6
DS4 SMPS区域 SR5200/ERIS
RS5 SMPS区域 47R/1206/5%
RS6 SMPS区域 47R/1206/5%
ES4 SMPS区域 470uF/16V/KF
ES3 SMPS区域 470uF/16V/KF
HS1 SMPS区域 CTN4065-L-HS1
EQ3113
TP2 NC/EQ31
ML1 Hole1 SMPS区域
ML2 Hole1 SMPS区域
ML3 Hole1 SMPS区域
ML4 Hole1 SMPS区域
RS9 SMPS区域 1K/603/1%
RS10 SMPS区域 15K/603/1%
UP2A SMPS区域 K1010
RS11 SMPS区域 2K2/603/1%
ES5 SMPS区域 220uF/16V/ZC
CS4 SMPS区域 100nF/X7R/50V/603
RS12 SMPS区域 3K3/603/1%
CS5 SMPS区域 330nF/X7R/16V/603
US1 SMPS区域 AZ431
RS13 SMPS区域 3K9/603/1%
深圳市鼎科实业有限公司
SheetName 03.SMPS
Size A3
Document Number P65-59S V6.0
Rev A
Modify Date: Tuesday, August 20, 2013
Designed By:
Sheet 3 of 10

LED电压区域:分为高压和低压:
默认值为：高压
低压时选择以下值:
1.LS3 LCH114-68UH
2.QS1 ME15N10
3.ES8 NC
4.ES6 47uF/100V/KF
5.ES7 47uF/100V/KF
6.RS21 100K/603/1%
7.RS24 120K/603/1%
8.DS5 SR5100/ERIS

36V
LS3 LED电压区域
LCH114-150UH/P5.0
RS15 SMPS区域 10R/1206/5%
RS16 SMPS区域 10R/1206/5%
DS5 LED电压区域 SR3200/ERIS
CS6 SMPS区域 470pF/Y5P/1KV/P=5mm
LB1 FB R1/1W5
LED+
RS21 LED电压区域 200K/402/1%
RS24 LED电压区域 200K/402/1%
CS8 SMPS区域 10nF/1KV/P=5mm
ES6 LED电压区域 NC/15uF/200V/KM
ES7 LED电压区域 NC/15uF/200V/KM
ES8 LED电压区域 10uF/200V/KL
OVP
RS32 SMPS区域 5K6/402/1%
CS13 SMPS区域 10nF/X7R/50V/402
RS23 SMPS区域 10K/402/5%
RS19 SMPS区域 NC/10R/1206/1%
RS20 SMPS区域 NC/10R/1206/1%
QS1 LED电压区域 ME08N20/252
CS11 SMPS区域 NC/470pF/Y5P/1KV/P=5mm
FB120R/0.6A/805 RL1 RL3 FB120R/0.6A/805
FB120R/0.6A/805 RL2 RL4 FB120R/0.6A/805
VDD
A
GATE
CS9 SMPS区域 1uF/X7R/25V/805
US2 SMPS区域 OB3350
VDD DIM GATE OVP GND CMP CS FB
RS17 DC调光区域 100K/402/5%
CS10 SMPS区域 100pF/NPO/50V/402
RS18 SMPS区域 10R/805/5%
RS22 SMPS区域 470R/603/5%
QS2 SMPS区域 MMBT4403
RS26 SMPS区域 10R/603/5%
CS12 SMPS区域 220nF/X7R/16V/603
RS27 SMPS区域 1K/402/5%
RS33 SMPS区域 1K/402/5%
CS14 SMPS区域 100pF/NPO/50V/402
RS28 SMPS区域 0R15/1206/5%
RS29 SMPS区域 0R15/1206/5%

36V
12V_IN
RS37 SMPS区域 2K/402/5%
PB-ON/OFF
PB_ADJUST
TEST_LED
RS38 SMPS区域 10K/402/5%
CN1 SMPS区域 FH/Y/1*7*2.0/180 deg
5 PB-ON/OFF
6 PB-ADJUST
RS34 SMPS区域 10R/603/5%
VDD
RS35 SMPS区域 100K/402/5%
QS3 SMPS区域 MMBT4403
RS42 SMPS区域 47K/402/5%
RS41 SMPS区域 10K/402/5%
QS4 SMPS区域 MMBT4401LTI
RS44 SMPS区域 10K/402/5%
RS45 SMPS区域 300R/402/5%
RS47 SMPS区域 1K/402/5%
QS5
Power_Down
RK7002
A
RS36 PWM调光区域 NC/0R/402/5%
RS39 SMPS区域 10K/402/5%
RS40 SMPS区域 NC/5K1/402/5%
CS16 1uF/X5R/10V/402 DC 调光区域
DS6 1N4148/LL-34 DC 调光区域
FB
LED+
RS25 470R/1206/5% SMPS区域
RS46 1K/402/1% SMPS区域
QS6
10 Power_Down
RK7002
LED-
RS43 1K/402/1% SMPS区域
RA1 2R49/1206/1%
RA2 2R49/1206/1%
RA3 2R49/1206/1%
RA4 2R49/1206/1%
DS7 M7/SMA LED电流调整区域
LED电流调整区域

LED+
JS1 SMPS区域 NC/NC/FH/Y/1*3*2.0/180 deg
JS2 SMPS区域 NC/FH/Y/1*3*2.0/180 deg
JS3 SMPS区域 FH/Y/1*2*2.0/180 deg
RJ1 SMPS区域 NC/805/1%
RJ2 SMPS区域 NC/805/1%
RJ3 SMPS区域 0R/805/5%
RJ4 SMPS区域 NC/805/1%
JS7 SMPS区域 NC/FH/Y/1*3*2.0/180 deg
LED-
JS9 SMPS区域 FH/Y/1*2*2.0/180 deg
RJ5 SMPS区域 0R/805/5%
JS8 SMPS区域 NC/FH/Y/1*3*2.0/180 deg

LED-
LED+
LED-
JS6 SMPS区域 NC/FH/Y/1*6*2.0/180 deg

LED-
LED+
JS5 SMPS区域 NC/FH/Y/1*12*2.0/180 deg

LED+
LED-
JS10 NC/FH/Y/1*8*2.0/180 deg

Date	Modify Number	Modify By

深圳市鼎科实业有限公司

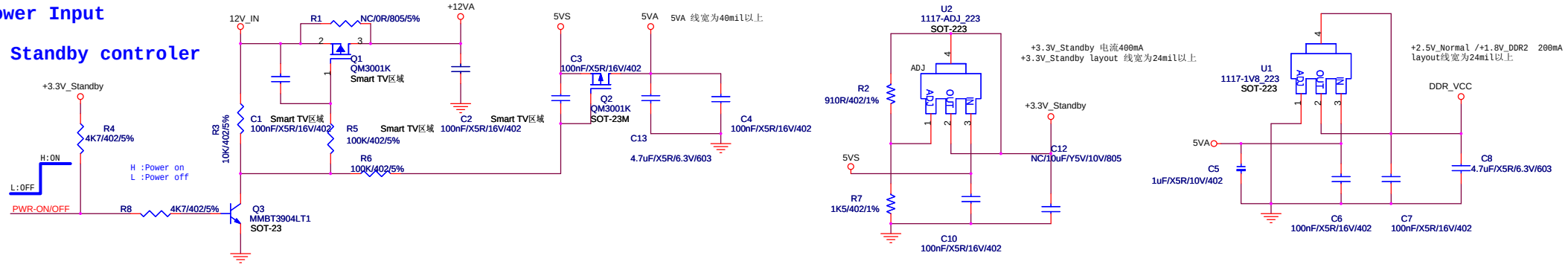
SheetName: 04.LED Power

Size	Document Number	Rev
A3	P65-59S V6.0	A

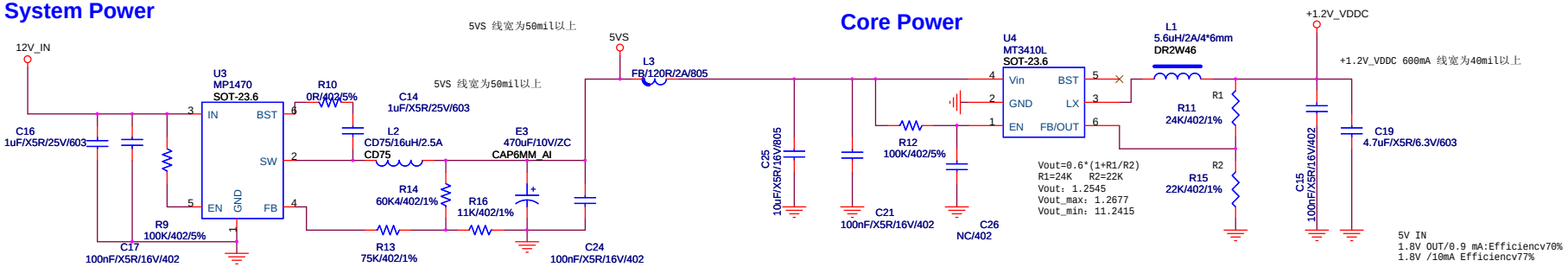
Modify Date: Monday, January 20, 2014 Designed By: Sheet 4 of 10

Power Input

Standby controler

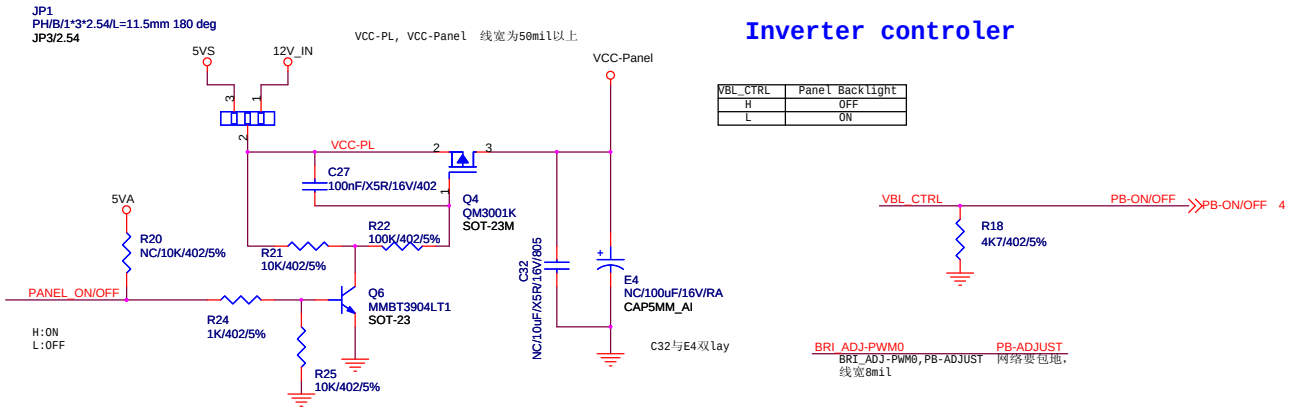


System Power



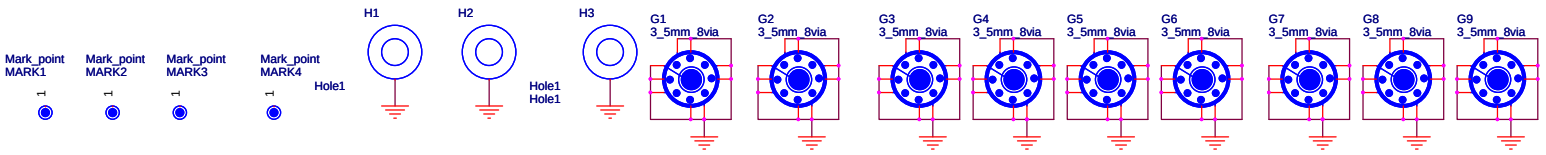
Core Power

PANEL POWER



Inverter controler

VBL_CTRL	Panel Backlight
H	OFF
L	ON



VBL_CTRL 6
BRI_ADJ-PWM0 4,6
PANEL_ON/OFF 6
PWR-ON/OFF 6
PB-ADJUST 4,6

Date	Modify Number	Modify By

深圳市鼎科实业有限公司

SheetName: 05.System Power

Size: A3 | Document Number: P65-59S V6.0 | Rev: A

Modify Date: Monday, August 19, 2013 | Designed By: suncheng | Sheet 5 of 10

HDMI Interface

HDMI0_RX2P, HDMI0_RX2N, HDMI0_RX1P, HDMI0_RX1N, HDMI0_RX0P, HDMI0_RX0N, HDMI0_CLKP, HDMI0_CLKN, HDMI0_SDA (DDCDD_DA), HDMI0_SCL (DDCDD_CK), HDMI0_HP

HDMI_CEC

HDMI1_RX2P, HDMI1_RX2N, HDMI1_RX1P, HDMI1_RX1N, HDMI1_RX0P, HDMI1_RX0N, HDMI1_CLKP, HDMI1_CLKN, HDMI1_SDA (DDCDA_DA), HDMI1_SCL (DDCDA_CK), HDMI1_HP

R33 0R/402/5% HDMI1_ARC

USB Interface

USB0_D+ → USB0_DP, USB0_D- → USB0_DM

V59XUS 0R/402/5%

V59XES 0R/402/5%

CHIP_CONFIG

{IPAD_PWM1, PAD_PWM0}

B51_NO_EJ 4'h00

PWM1 R34 4K7/402/5%

BRI_ADJ-PWM0 R32 4K7/402/5%

VGA

VGA_HS, RGB0_Pb+ C33 47nF/X5R/16V/402 BIN0, RGB0_Y-SOG C34 1nF/X7R/50V/402 SOGIN0, RGB0_Y+ C35 47nF/X5R/16V/402 GIN0P, R39 68R/402/5% C36 47nF/X5R/16V/402 GIN0M, RGB0_Pr+ C37 47nF/X5R/16V/402 RIN0, VGA_VS

PC-Lin C39 1uF/X5R/10V/402 AUL0

PC-Rin C41 1uF/X5R/10V/402 AUR0

YPbPr Input

RGB2-HDTV_BIN C42 47nF/X5R/16V/402 BIN2

RGB2-HDTV_SOGIN C43 1nF/X7R/50V/402 SOGIN2

RGB2-HDTV_GIN C44 47nF/X5R/16V/402 GIN2P

R42 68R/402/5% C45 47nF/X5R/16V/402 GIN2M

RGB2-HDTV_RIN C46 47nF/X5R/16V/402 RIN2

CVBS VCOM

R43 68R/402/5% C47 47nF/X5R/16V/402 VCOM0

AV1 Input

AV1-CVBSIN C48 47nF/X5R/16V/402 CVBS0P

AV1-Lin C49 1uF/X5R/10V/402 AUL3

AV1-Rin C50 1uF/X5R/10V/402 AUR3

AV2 Input

AV2-CVBSIN C88 47nF/X5R/16V/402 CVBS1P

AV2公共区域

AV2-Lin C86 1uF/X5R/10V/402 AUL4

AV2-Rin C87 1uF/X5R/10V/402 AUR4

AV2公共区域

CVBS OUT

CVBS_OUT CVBSOUT

EXT_IR EXT_IR

Debug port

5VS

R57 4K7/402/5%, R56 4K7/402/5%

UART_RX R59 68R/402/5% DDCA_CK

UART_TX R60 68R/402/5% DDCA_DA

AMP-MUTE

AMP_AUOUTR0 R65 200K/402/5% C55 180pF/NPO/50V/402

AMP_AUOUTL0 R70 200K/402/5% C58 180pF/NPO/50V/402

Tuner Interface

+VDD3V

10K/402/5% R71 Tuner区域

TAGC 0R/402/5% R72 AGC

IFM Tuner区域 IFM

IFP IFP

靠近主芯片放置

C69 Tuner区域 22nF/X7R/25V/402

SYS_SCL, SYS_SDA

Audio REF

AUVRM, AUVAG

C51 47nF/X5R/16V/402, C52 4.7uF/X5R/6.3V/603

L4 FB/120R/0.2A/402

靠近主芯片放置，并且走线尽量宽

TSUMV59XUS

BRI_ADJ-PWM0, PWR-ON/OFF, VBL_CTRL, PANEL_ON/OFF

HDMI1_CLKN, HDMI1_CLKP, HDMI1_RX0N, HDMI1_RX0P, HDMI1_RX1N, HDMI1_RX1P, DDCDA_DA, HDMI1_RX2N, HDMI1_RX2P, DDCDA_CK, HDMI1_ARC

VGA_HS, BIN0, SOGIN0, GIN0P, GIN0M, RIN0, VGA_VS

CVBS1P, CVBS0P, VCOM0, CVBSOUT

AUVRM, AUVAG, AUL0, AUR0

USB1_DP, USB1_DM, AVDD_MOD, USB0_DP, USB0_DM, SCZ, SDO, SDI, SCK, PWM2/GPIO24, GPIO0, GPIO1, GPIO2, GPIO3, INT/GPIO65, VDDC, LVB0M, LVB0P, LVB1M, LVB1P, AVDD_MOD, LVB2M, LVB2P, LVBCKM, LVBCKP, LVB3M, LVB3P, LVB4M, LVB4P, LVA0M, LVA0P, LVA1M, LVA1P, LVA2M, LVA2P, AVDD_MOD, LVACKM, LVACKP

USB0_DP, USB0_DM, SPI_CS0N, SPI_Flash-SDO, SPI_Flash-SDI, SPI_Flash-SCK, SPI_WP0N, SYS_SCL, SYS_SDA, PANEL_ON/OFF, AMP-MUTE

RXO0-, RXO0+, RXO1-, RXO1+, RXO2-, RXO2+, RXOC-, RXOC+, RXO3-, RXO3+, RXE0-, RXE0+, RXE1-, RXE1+, RXE2-, RXE2+, RXEC-, RXEC+

AUL3, AUR3, AUL4, AUR4, AUL5, AUOUTL0, AUOUTR0, AUOUTL1, AUOUTR1, XOUT, XIN, AVDD_DMPLL, AVDD3P3_DADC, VIFP, VIFM, AVDD_DDR, RXEC-, GPIO55, GPIO56, VDDP, VDDC, LVA4P, LVA4M, LVA3P, LVA3M

AMP-AUOUTL0, AMP-AUOUTR0, XTALO, XTALI, IFP, IFM, AGC, VBL_CTRL, EXT_IR, RXE4+, RXE4-, RXE3+, RXE3-

VDD33_DMPLL, VDD33_DEMOD, AVDD_DDR, VDD33, VDDC

SERIAL FLASH

+3.3V_Standby

R26 4K7/402/5%

U5 GD25Q32 (CE#, SO, WP#, VSS, VDD, HOLD#, SCK, SI)

SPI_CS0N FLASH_CS0N

SPI_Flash-SDO

SPI_WP0N FLASH_WP0N R29 1K/402/5% C31 100nF/X5R/16V/402 R31 10K/402/5%

R30 0R/402/5% SPI_Flash-SCK

SPI_Flash-SDI C30 NC/X5R/16V/402

System RESET

+3.3V_Standby

U7 810 SOT-23 (VCC, RESET, GND)

R38 1K/402/5% System-RST

R37 47K/402/5%

System CLK

C28 33pF/NPO/50V/402 XTALI

Y1 24MHz/CL=20pF/20PPM

R27 1M/402/5%

R28 0R/402/5% XTALO

C29 33pF/NPO/50V/402

LVDS CONNECTOR

VCC-Panel

R35 47K/402/5% GND

TF1 TF2

CN16

RXO0-, RXO1-, RXO2-, RXOC-, RXO3-, RXE0-, RXE1-, RXE2-, RXEC-, RXE3-, RXE4-, RXO4-, SYS_SCL

RXO0+, RXO1+, RXO2+, RXOC+, RXO3+, RXE0+, RXE1+, RXE2+, RXEC+, RXE3+, RXE4+, RXO4+, SYS_SDA

PH/B/2*17*2.0/180 deg

CON36A/2.0

GND

IR&KEYB

CN17 FH/Y/1*13*2.0/180 deg

CH-, CH+, MENU, SOURCE, VOL-, VOL+, LED_G, LED_R, ON/OFF, IR_IN, IR_VCC, N.C

R58 4K7/402/5%

R61 68R/402/5% IRIN

R62 33R/402/5%

R64 NC/0R/402/5%

5VS

GND C56 1uF/X5R/10V/402

ESD3 NC/ESD

GND C57 33pF/NPO/50V/402

KEY0-SAR1

+3.3V_Standby

R44 10K/402/1%

R52 330R/402/5%

R45 30K/402/1% SOURCE

R48 10K/402/1% CH+

R50 3K3/402/1% MENU

R53 100R/402/1% ON/OFF

C53 10nF/X7R/50V/402

ESD1 NC/ESD

GND

KEY1-SAR2

+3.3V_Standby

R46 10K/402/1%

R54 330R/402/5%

R47 30K/402/1% N.C

R49 10K/402/1% VOL-

R51 3K3/402/1% VOL+

R55 100R/402/1% CH-

C54 10nF/X7R/50V/402

ESD2 NC/ESD

GND

LED

5VS

R83 4K7/402/5%

LED_R

R67 100R/402/5%

R73 10K/402/5%

PWM1 LED_G

Q5 MMBT3904LT1 SOT-23

1.26V :500mA (HDMI 1080P 时Core Power消耗电流最大)

1.8V : 130mA (USB H.264 时，消耗电流最大)

3.3V :320mA (ATV时，没有将PWS打开，消耗电流最大)

DDR power

DDR_VCC C60 100nF/X5R/16V/402 AVDD_DDR

Pin189

C59 100nF/X5R/16V/402 C61 4.7uF/X5R/6.3V/603

Normal Power 1.2V

+1.2V_VDDC VDDC

C68 4.7uF/X5R/6.3V/603

C71 100nF/X5R/16V/402

C70 100nF/X5R/16V/402 C72 100nF/X5R/16V/402

Normal Power 3.3V

+3.3V_Standby AVDD_33 VDD33

C64 100nF/X5R/16V/402 C66 100nF/X5R/16V/402

C63 100nF/X5R/16V/402 C65 100nF/X5R/16V/402 C67 100nF/X5R/16V/402

+3.3V_Standby AVDD33_DEMOD

L5 FB/120R/0.2A/402

C73 100nF/X5R/16V/402

+3.3V_Standby AVDD_ADC

250mA

L6 FB/120R/1A/603

C74 100nF/X5R/16V/402

+3.3V_Standby AU33

L7 FB/120R/0.2A/402

C75 100nF/X5R/16V/402

Pin34

+3.3V_Standby VDD33_DMPLL

L8 FB/120R/0.2A/402

Pin51

C76 100nF/X5R/16V/402

Date	Modify Number	Modify By

深圳市鼎科实业有限公司

SheetName: 06.TSUMV59S System

Size: Custom | Document Number: P65-59S V6.0 | Rev: A

Modify Date: Monday, August 19, 2013 | Designed By: suncheng | Sheet 6 of 10

VGA Interface

CN18
D-Sub/B/Female/90 deg
VGA

VGA-Bin — R74 33R/402/5% — RGB0_Pb+ — RGB0_Pb+ 6
VGA-Gin — R75 33R/402/5% — RGB0_Y+ — RGB0_Y+ 6
VGA-Rin — R77 33R/402/5% — RGB0_Y-SOG — RGB0_Y-SOG 6
R78 33R/402/5% — RGB0_Pr+ — RGB0_Pr+ 6

这部分信号 网络都要包地

ESD4 NC, ESD6 NC, ESD5 NC
R81 75R/402/1%
R82 75R/402/1%
R80 75R/402/1%

VGA-HS — R86 100R/402/5% — VGA_HS — VGA_HS 6
VGA-VS — R87 100R/402/5% — VGA_VS — VGA_VS 6
VGA-SDA — UART-TX — UART-TX 6
VGA-SCL — UART-RX — UART-RX 6

ESD9 NC, ESD10 NC
R89 10K/402/5%
R88 10K/402/5%
C77 33pF/NPO/50V/402
C78 33pF/NPO/50V/402
ESD11 NC, ESD12 NC

AGND
GND_POWER
GND

PC Audio In

CN19
ST-325C/PC Audio
PHONE/35

PC_Lin — R76 10K/402/5% — PC-Lin — PC-Lin 6
ESD7 NC
R79 12K/402/5%
R84 10K/402/5%
PC_Rin — PC-Rin — PC-Rin 6
ESD8 NC
R85 12K/402/5%

AV Interface

CN20
AV3-8.4-07H/YWR/H6.5
公共区域

AV1_RIN — R91 10K/402/5% — R90 12K/402/5% — AV1-Rin
AV1_LIN — R93 10K/402/5% — R95 12K/402/5% — AV1-Lin
AV1_VIN — R97 33R/402/5% — AV1-CVBSI N

这部分信号 网络都要包地

ESD13 NC
R99 75R/402/1%
ESD14 NC, ESD15 NC

AVB-3

AV1-Lin — AV1-Lin 6
AV1-Rin — AV1-Rin 6
AV1-CVBSI N — AV1-CVBSIN 6

YPBPR_IN Interface

CN21: 如果是AV IN 该座子要改换

这部分信号 网络都要包地

CN21
AV3-8.4-07H/GBR/H6.5
AV2 &YPbPr 区域

AV2 &YPbPr 区域 R220 10K/402/5% or 0R/402/5%
AV2 &YPbPr 区域 R224 10K/402/5% or 0R/402/5%

R129 AV2区域 0R/402/5% — AV2-Rin
R92 YPbPr区域 33R/402/5% — RGB2-HDTV_RIN
R130 AV2区域 0R/402/5% — AV2-Lin
R94 YPbPr 区域 33R/402/5% — RGB2-HDTV_BIN
R96 YPbPr 区域 33R/402/5% — RGB2-HDTV_SOGIN
R98 33R/402/5% YPbPr 区域 — RGB2-HDTV_GIN
R131 AV2区域 33R/402/5% — AV2-CVBSIN

ESD16 NC
ESD17 NC, ESD18 NC
C89 NC/100pF/NPO/50V/402
AV2 &YPbPr 区域 R100 12K/402/5%or75R/402/1%
R101 12K/402/5%or75R/402/1% AV2 &YPbPr 区域
R102 75R/402/1%

AVB-3

CVBS OUT

CVBS输出区域
AVB-1
AV1-8.4-17H/O/H6.5
CON1

5VA
R103 330R/402/5%
C79 1uF/X5R/10V/402
Q10 MMBT3906LT1 SOT-23 CVBS输出区域
R104 20K/402/5%
C80 10uF/X5R/16V/805
CVBS_OUT
AVOUT-V
R106 75R/402/1%
R105 75R/402/1%
NC ESD19 CVBS输出区域
R108 75R/402/1%
Q11 MMBT3904LT1 SOT-23
R107 12K/402/5%

CVBS_OUT网络都要包地

CVBS_OUT — CVBS_OUT 6

CN26 Mini AV2区域
CKX-3.5-25/black
ST-322A

AV2_Vin — Mini AV2区域 R128 33R/402/5% AV2-CVBSIN — AV2-CVBSIN 6
AV2_Lin — Mini AV2区域 R218 10K/402/5% — AV2-Lin — AV2-Lin 6
AV2_Rin — Mini AV2区域 R219 10K/402/5% — AV2-Rin — AV2-Rin 6

CN27 拼板AV2区域
FH/2*2/2.0
PH2.0/4M

ESD38 NC
ESD39 NC, ESD40 NC
R221 12K/402/5% Mini AV2区域
R222 12K/402/5% Mini AV2区域
R223 Mini AV2区域 75R/402/1%

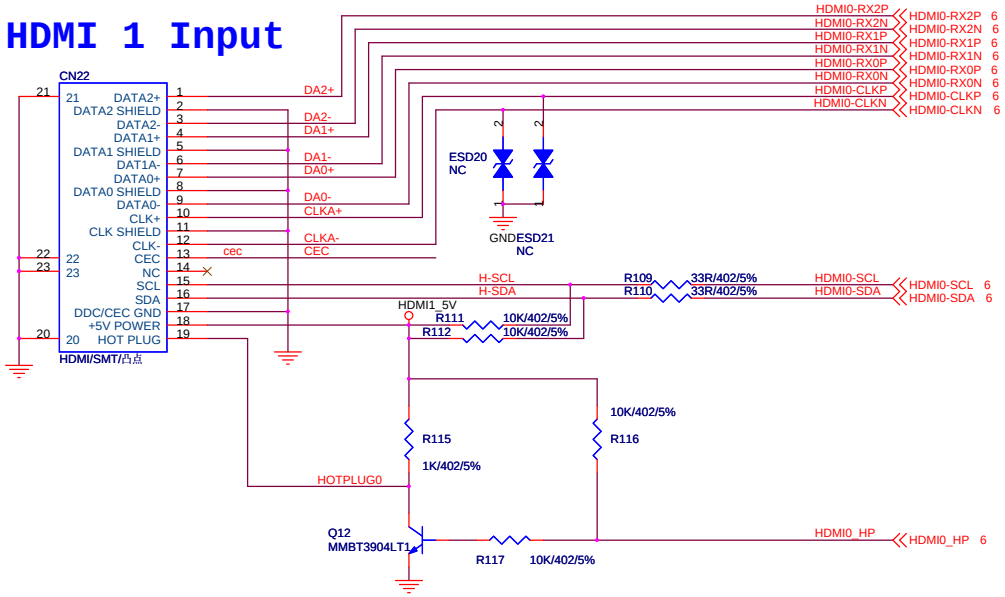
RGB2-HDTV_RIN — RGB2-HDTV_RIN 6
RGB2-HDTV_BIN — RGB2-HDTV_BIN 6
RGB2-HDTV_SOGIN — RGB2-HDTV_SOGIN 6
RGB2-HDTV_GIN — RGB2-HDTV_GIN 6

Date	Modify Number	Modify By

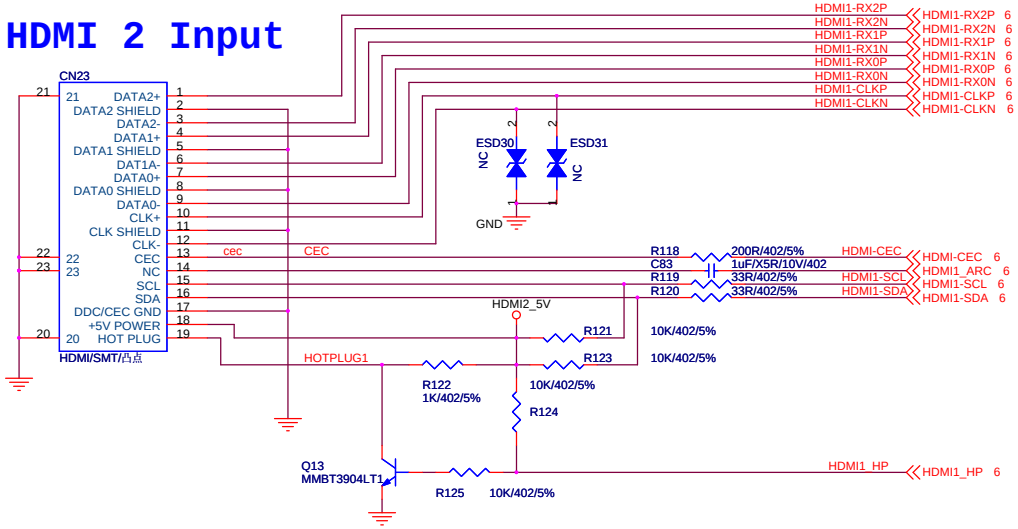
深圳市鼎科实业有限公司

SheetName: 07.AV & VGA
Size: A3
Document Number: P65-59S V6.0
Rev: A
Modify Date: Monday, August 19, 2013
Designed By: suncheng
Sheet 7 of 10

HDMI 1 Input

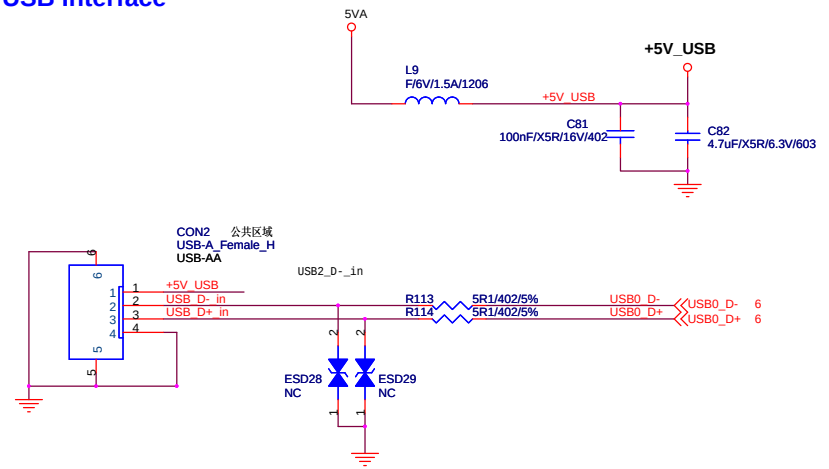


HDMI 2 Input



外甩座子和HDMI1座子双lay

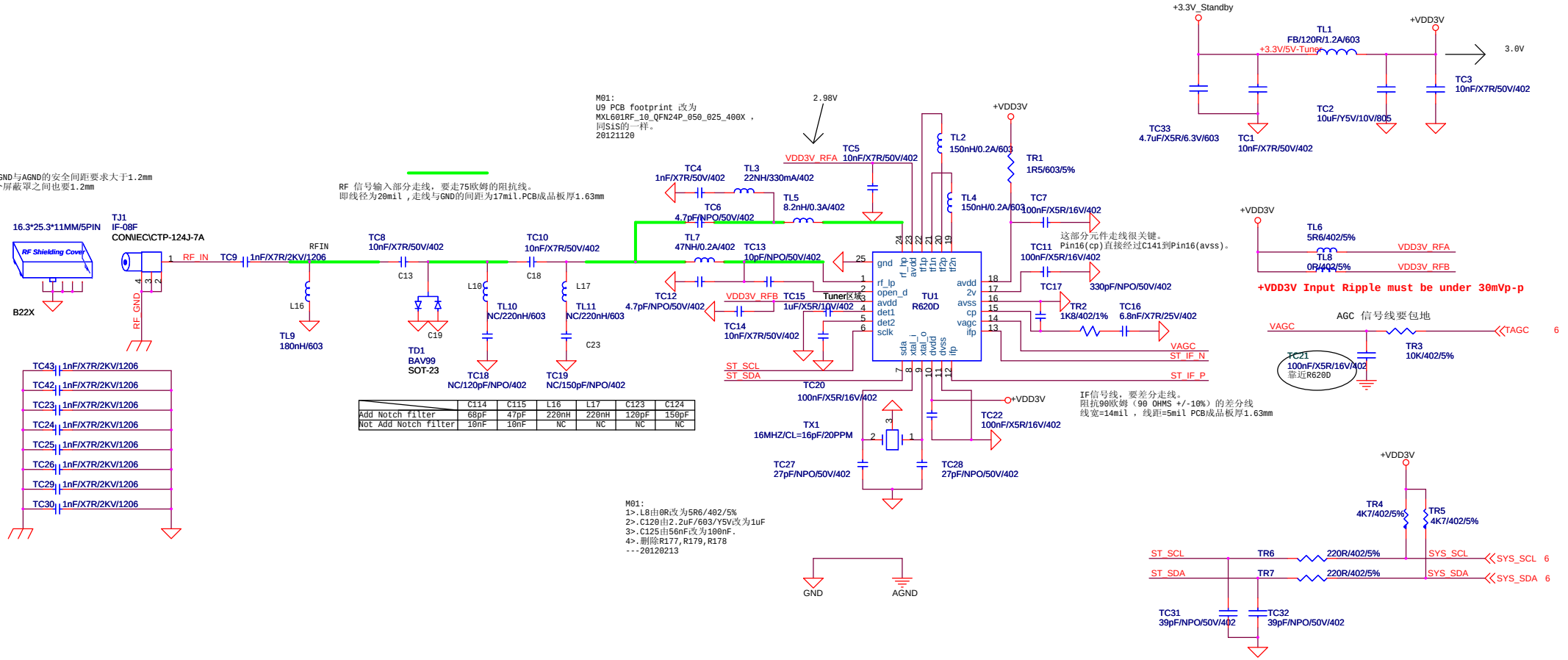
USB Interface



http://www.schematic4you.blogspot.com

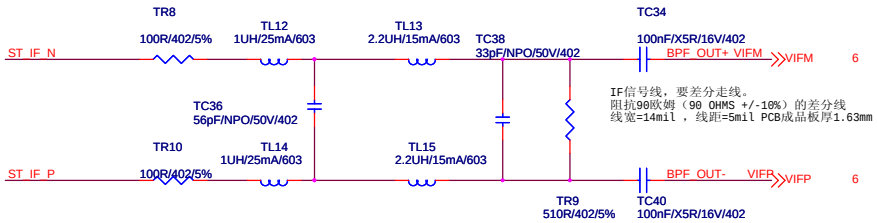
Date	Modify Number	Modify By	深圳市鼎科实业有限公司
			SheetName: 08.HDMI & USB
			Size: A3 / Document Number: P65-59S V6.0 / Rev: A
Modify Date: Monday, January 20, 2014			Designed By: suncheng / Sheet 8 of 10

Silicon Tuner:R620D



	C114	C115	L16	L17	C123	C124
Add Notch filter	68pF	47pF	220nH	220nH	120pF	150pF
Not Add Notch filter	10nF	10nF	NC	NC	NC	NC

C137=180P,FOR 38.9MHZ OR 38MHZ(PAL)
C137=100P,FOR 45.75MHZ(NTSC)



Date	Modify Number	Modify By

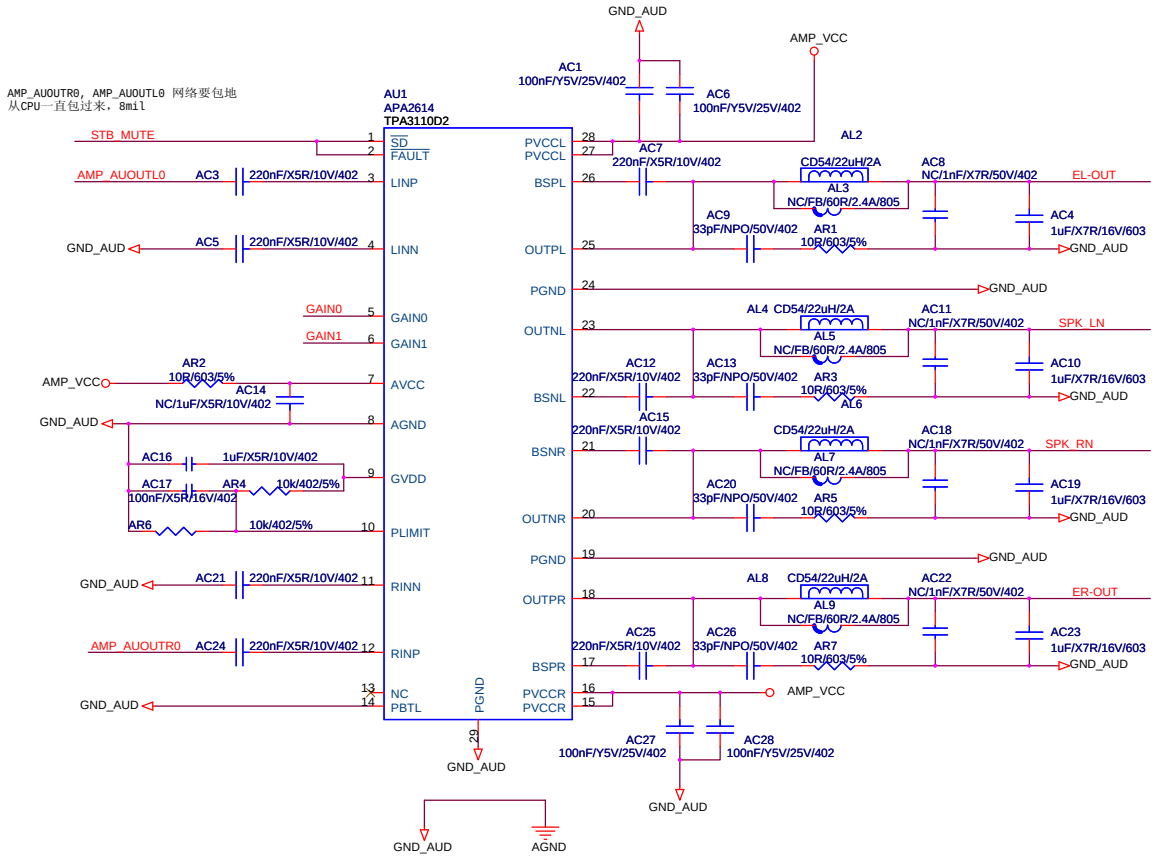
深圳市鼎科实业有限公司

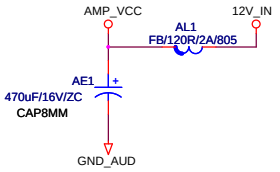
SheetName: 9.Front End

Size	Document Number	Rev
A3	P65-59S V6.0	A

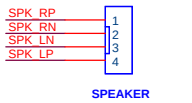
Modify Date: Monday, August 19, 2013 | Designed By: suncheng | Sheet 9 of 10

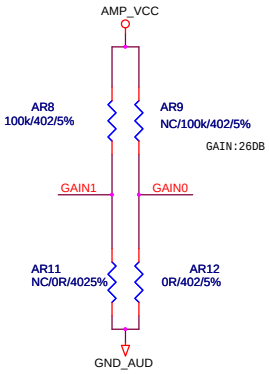
EARPHONE OUT

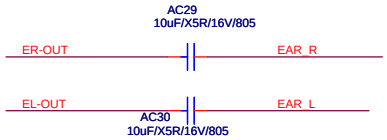


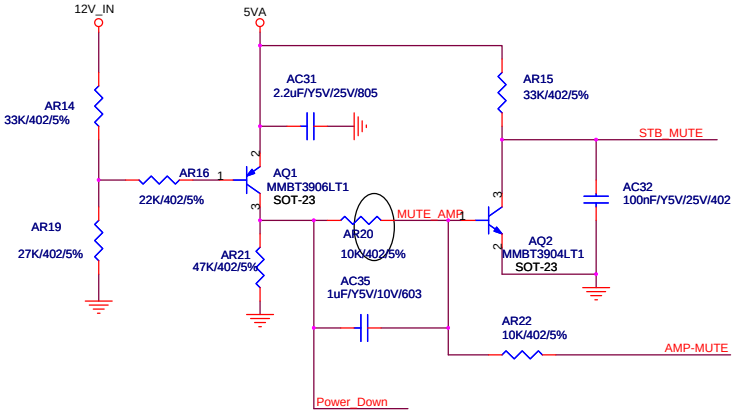


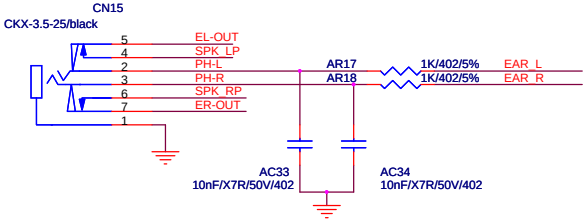
功效输出走线要求在40mil 以上











GAIN1	GAIN0	AMPLIFIER GAIN (dB)	INPUT IMPEDANCE (kΩ)
		TYP	TYP
0	0	20	60
0	1	26	30
1	0	32	15
1	1	36	9

PIN NAME	Pin #	I/O/P	DESCRIPTION
SD	1	I	Shutdown logic input for audio amp (LOW = outputs Hi-Z, HIGH = outputs enabled). TTL logic levels with compliance to AVCC.
FAULT	2	O	Open drain output used to display short circuit or dc detect fault status. Voltage compliant to AVCC. Short circuit faults can be set to auto-recovery by connecting FAULT pin to SD pin. Otherwise, both short circuit faults and dc detect faults must be reset by cycling PVCC.
GAIN0	5	I	Gain select least significant bit. TTL logic levels with compliance to AVCC.
GAIN1	6	I	Gain select most significant bit. TTL logic levels with compliance to AVCC.

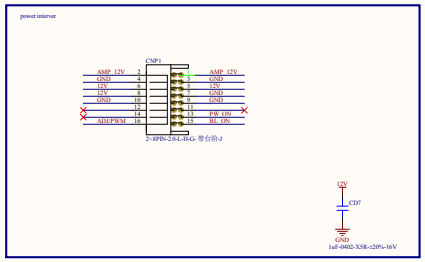
Date	Modify Number	Modify By

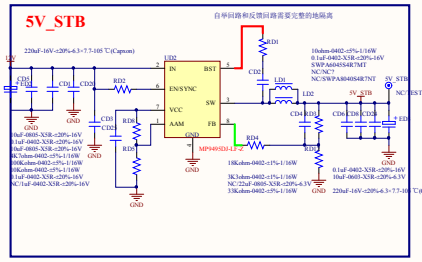
深圳市鼎科实业有限公司

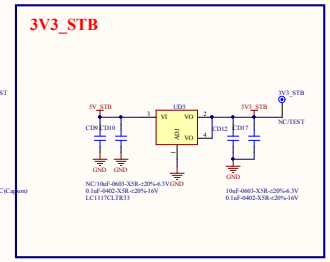
SheetName: 10..Amplify

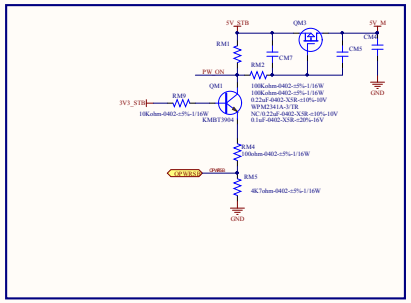
Size: A3 | Document Number: P65-59S V6.0 | Rev: A

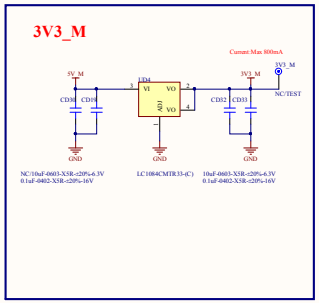
Modify Date: Tuesday, August 20, 2013 | Designed By: suncheng | Sheet 10 of 10

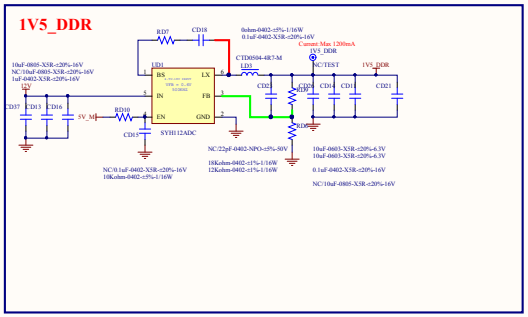


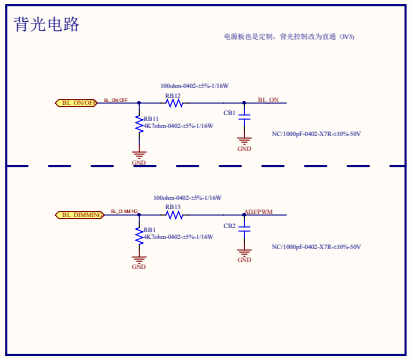


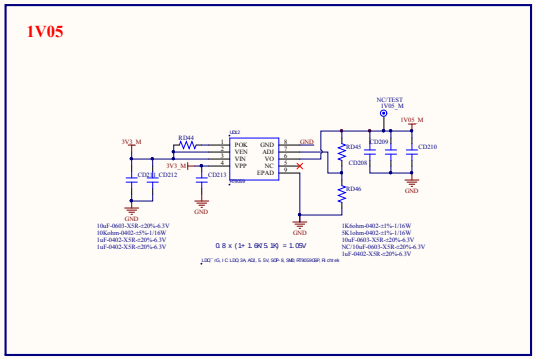


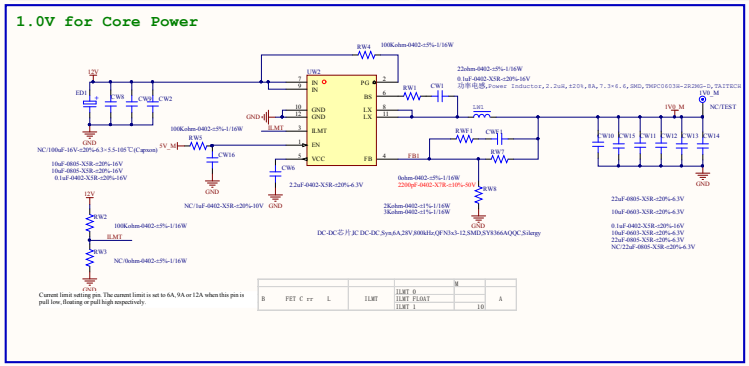












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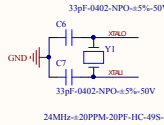

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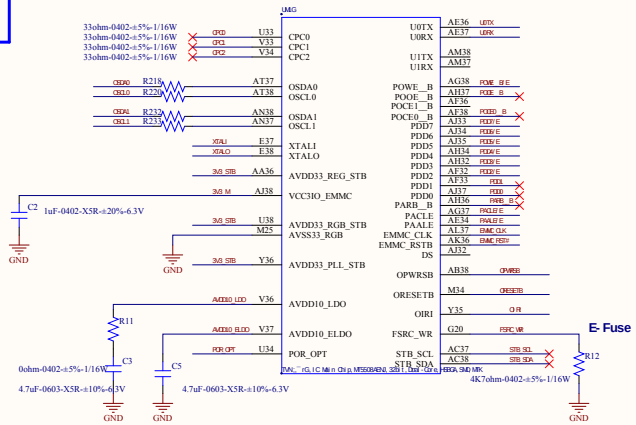
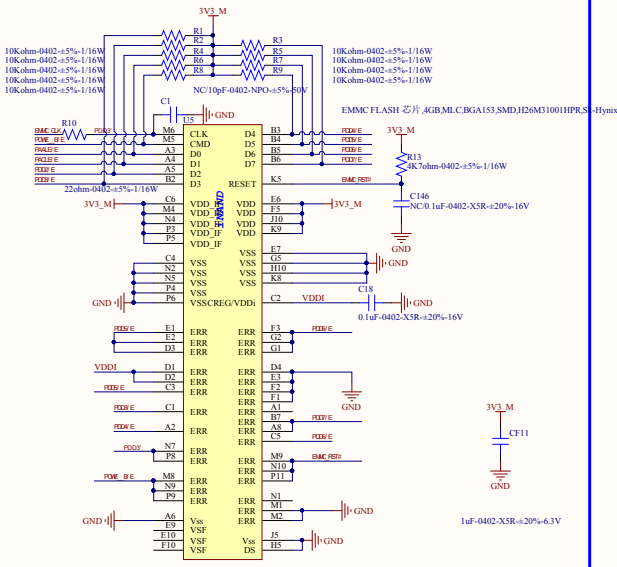
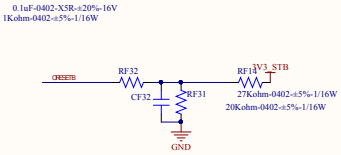




RESET Circuit



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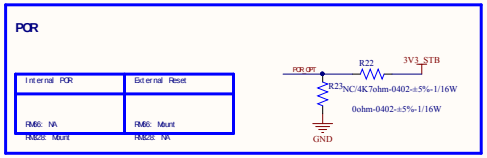

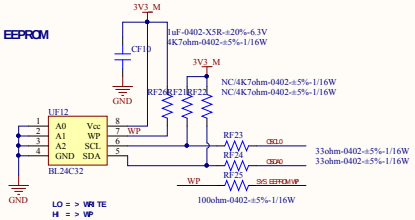

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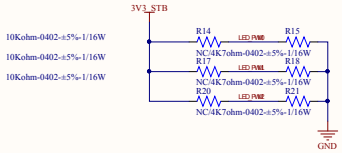

MediaTek Confidential

MediaTek Inc.	No. 1-2, Innovation Rd. I, Sci P., Hsin-Chu City 300 TEL: (03)567-0766 FAX: (03)578-7610		
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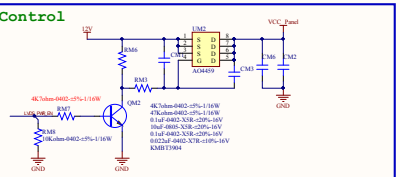
Panel Power Control



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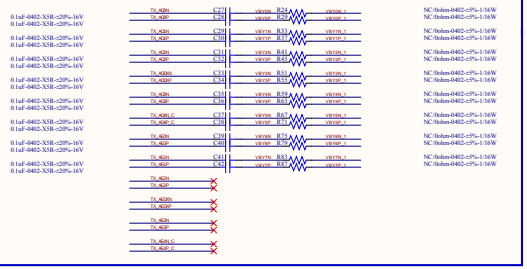
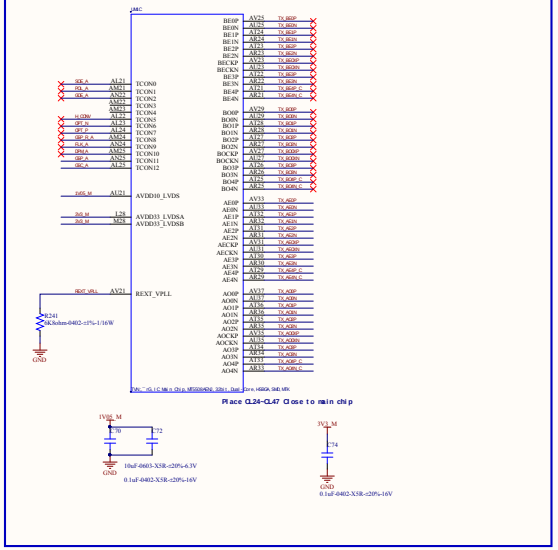
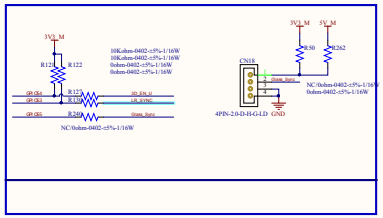
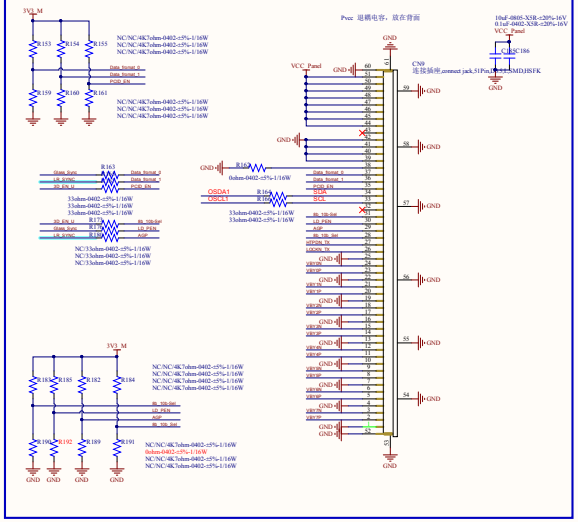
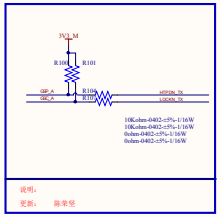






V-by-one HS for LG / BOE/CMI Connector





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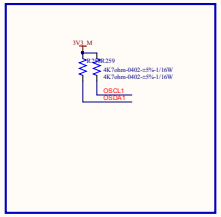
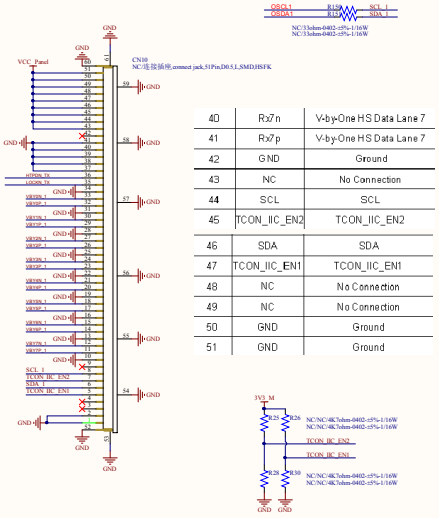


V-by-one HS for AUO Connector



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41	Rx7 p	V-by-One HS Data Lane 7
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43	NC	No Connection
44	SCL	SCL
45	TCON_IIC_EN2	TCON_IIC_EN2
46	SDA	SDA
47	TCON_IIC_EN1	TCON_IIC_EN1
48	NC	No Connection
49	NC	No Connection
50	GND	Ground
51	GND	Ground

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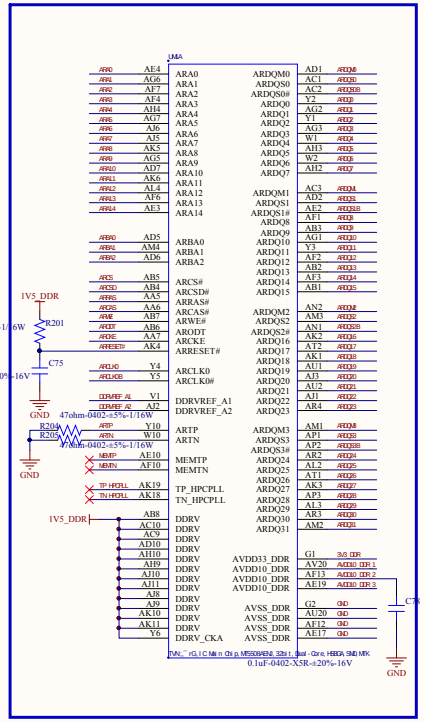

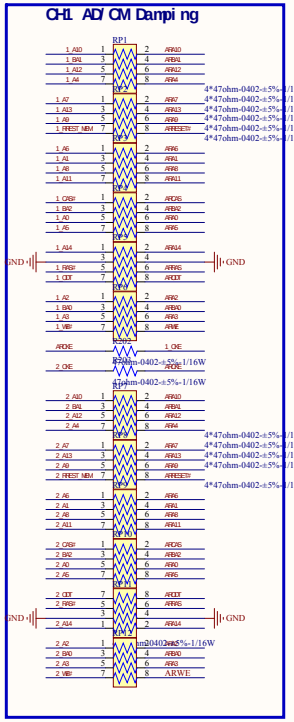

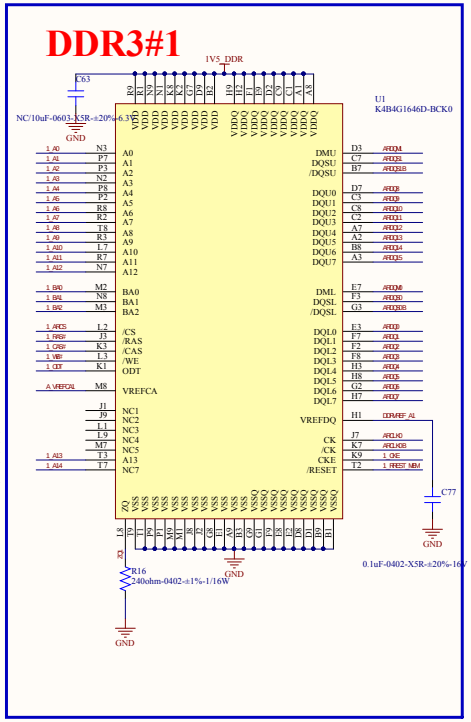

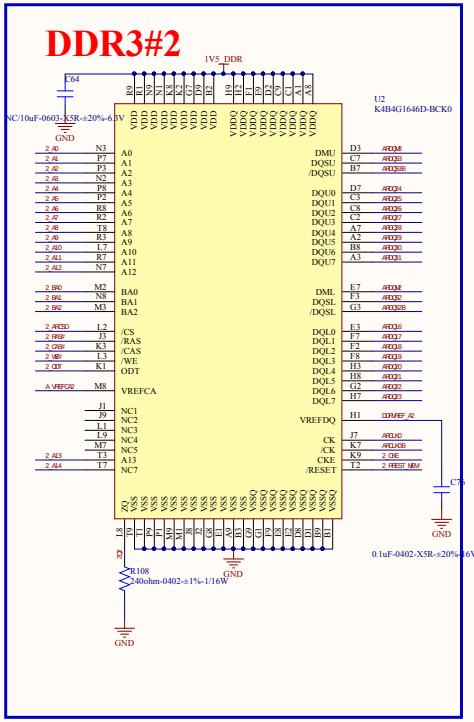

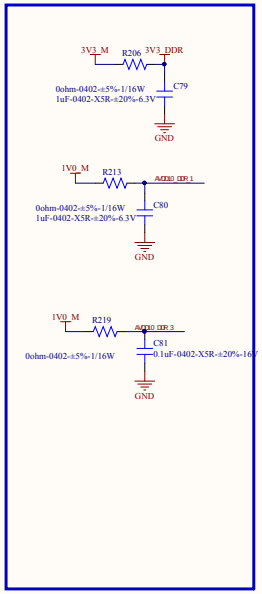

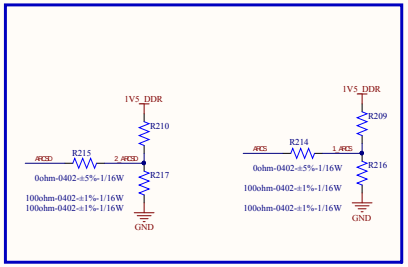

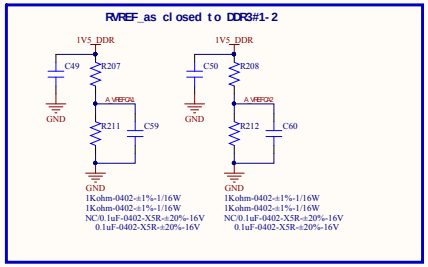

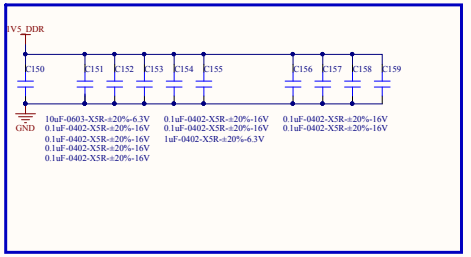

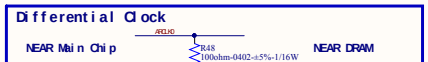

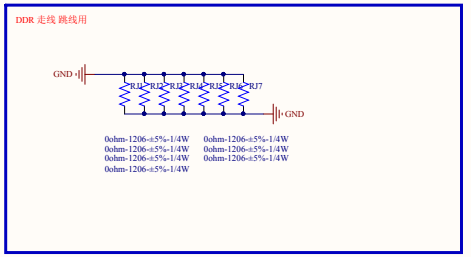

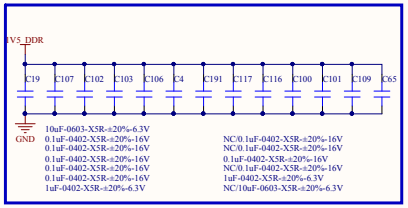

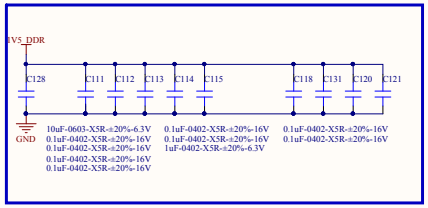

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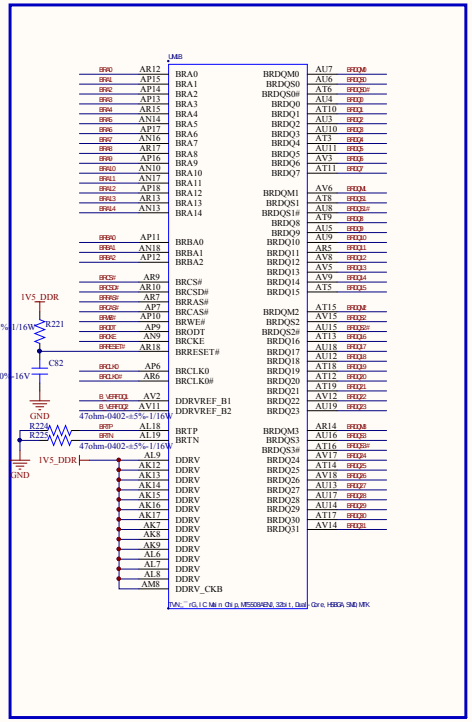

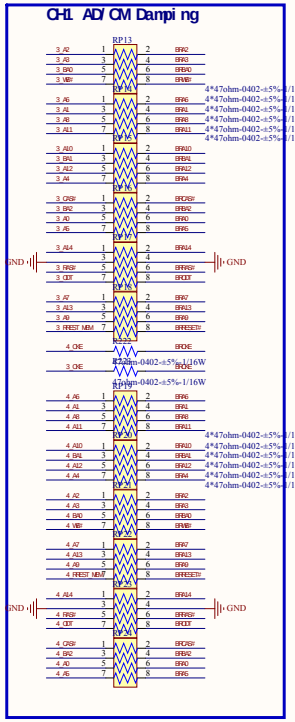

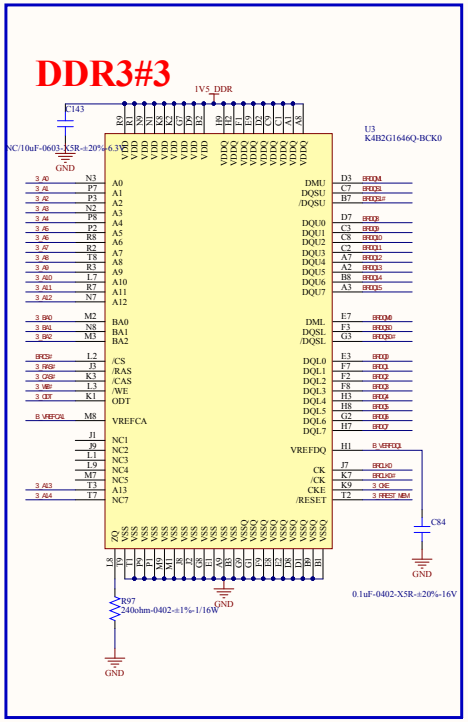

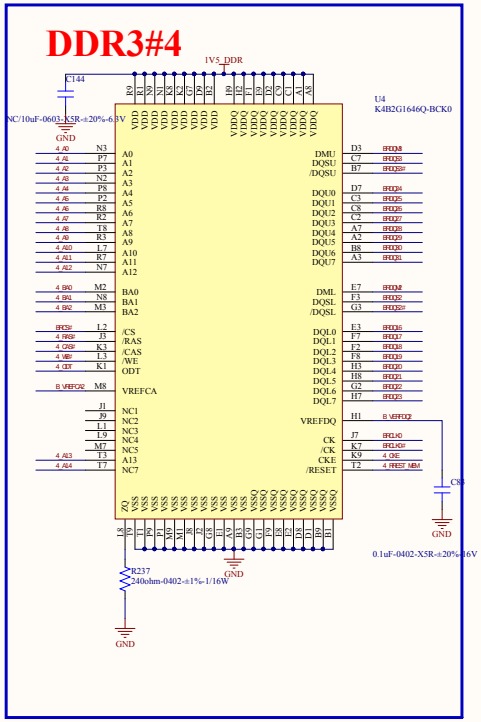

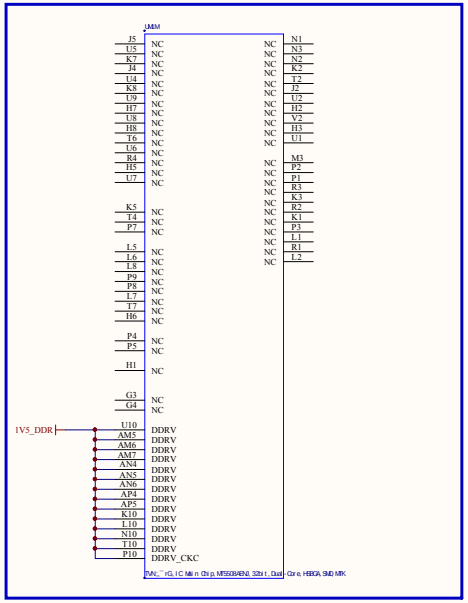

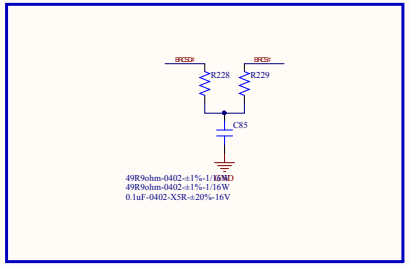

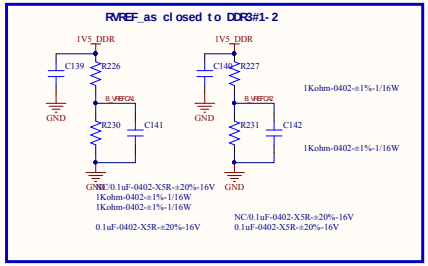

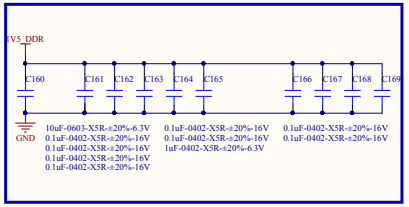

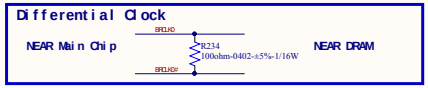

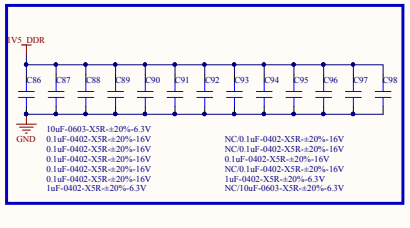

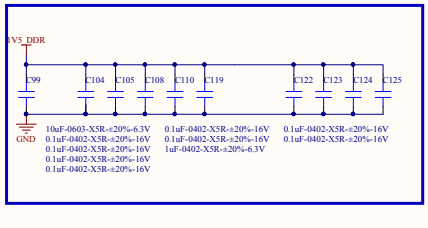

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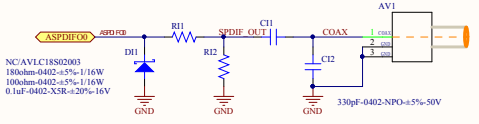
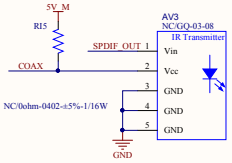


RCA 端子,RCA Jack,AV1,H,Orange,CH5.5,Seal,DIP,AV38A-01S-5020,QS

OPTICAL



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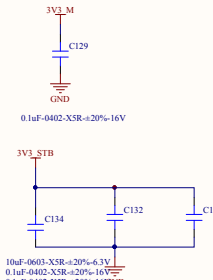
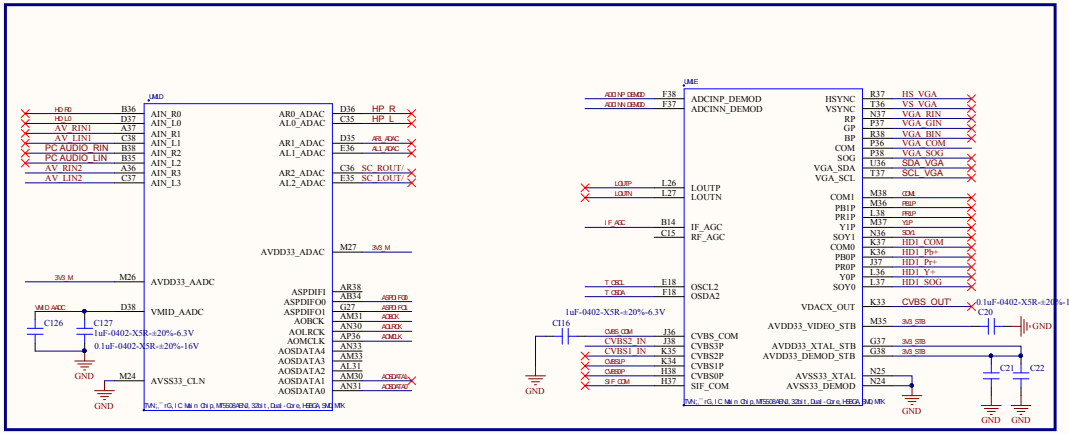
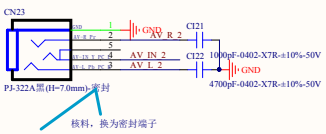
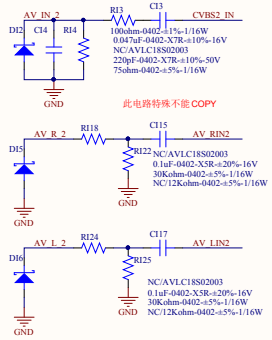


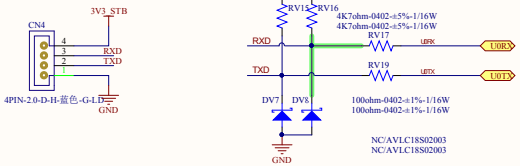


AV部分





UART 升级接口



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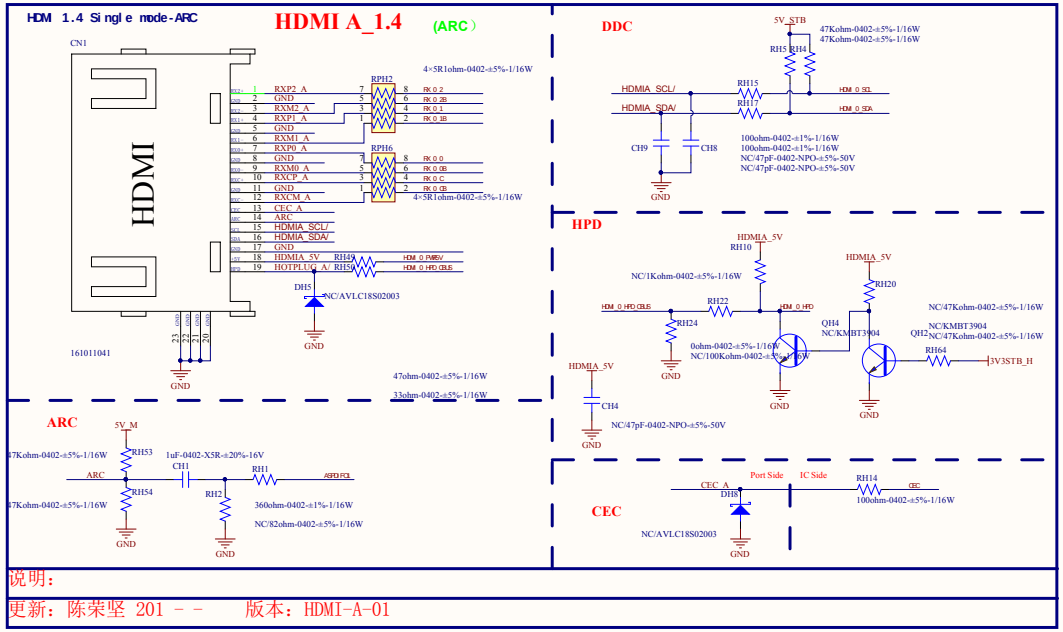
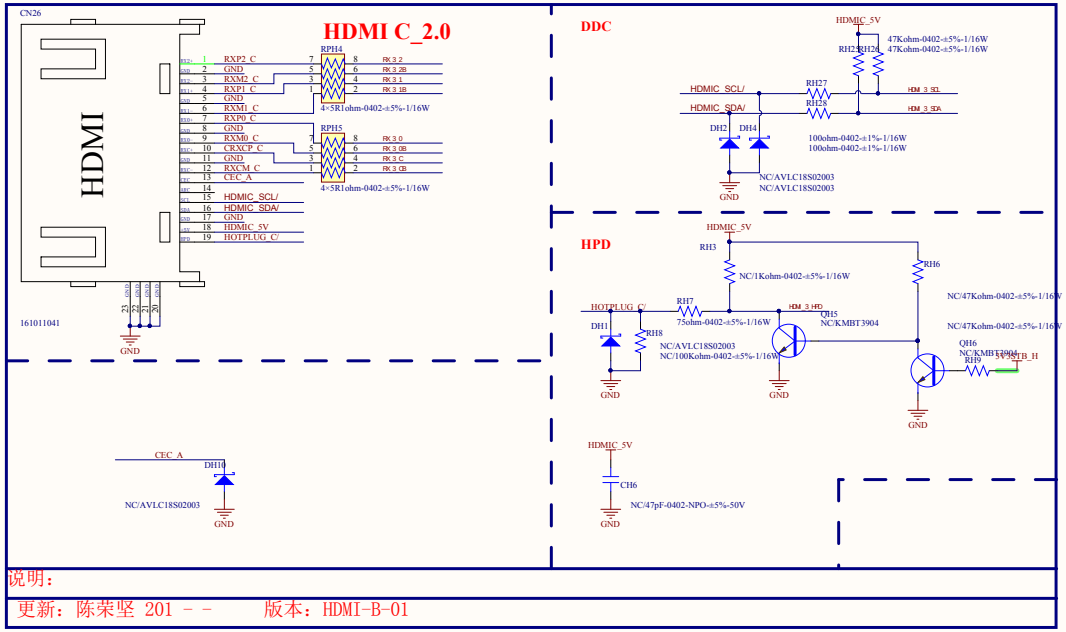


说明：

更新：陈荣坚 201 - -　　版本：HDMI-A-01



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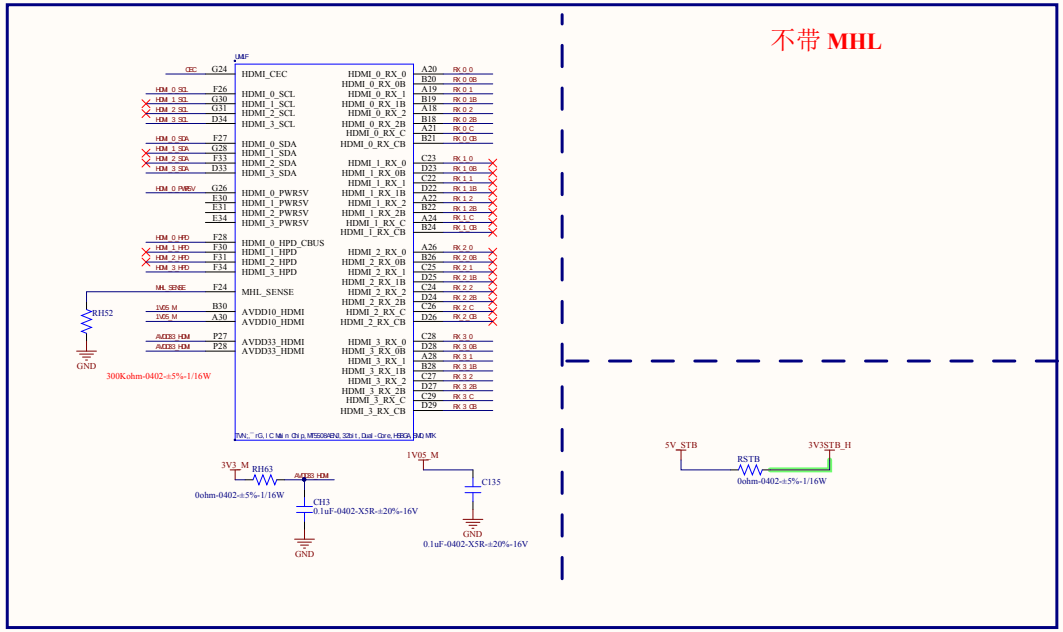

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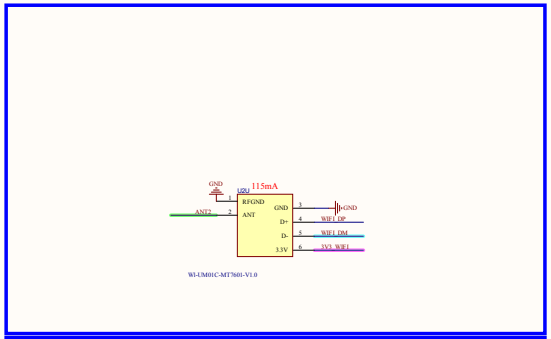

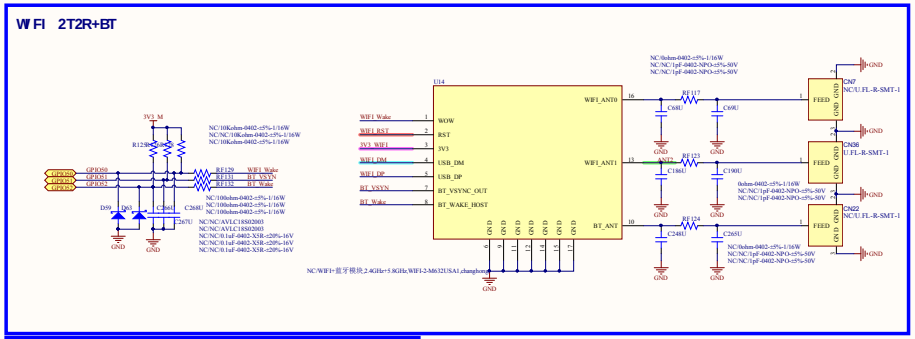

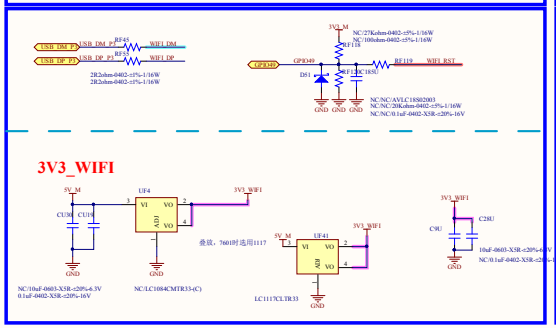

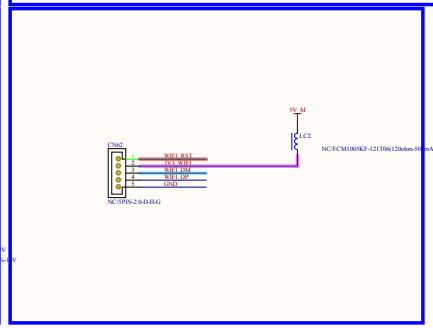

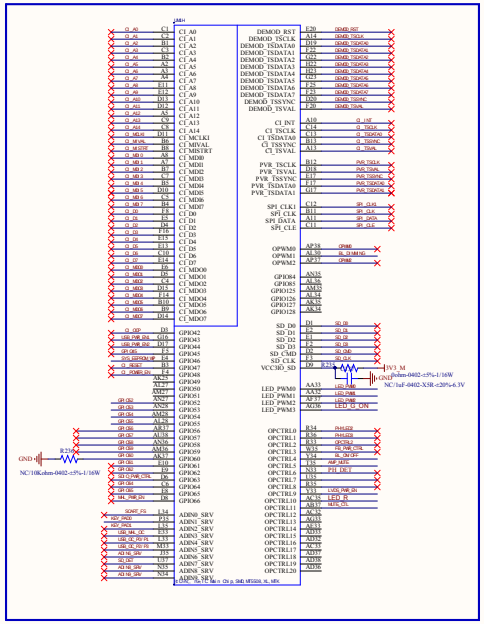

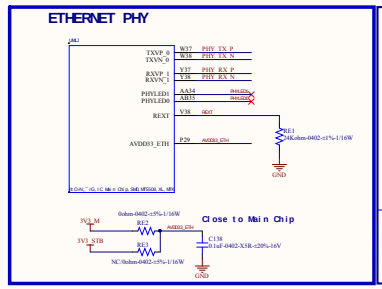

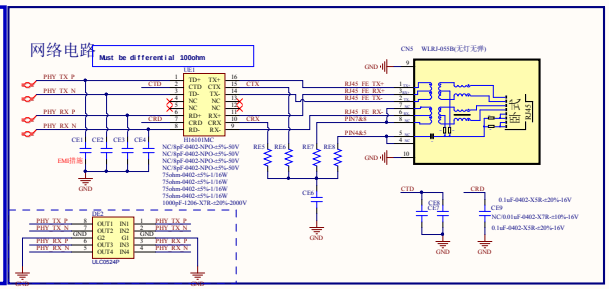

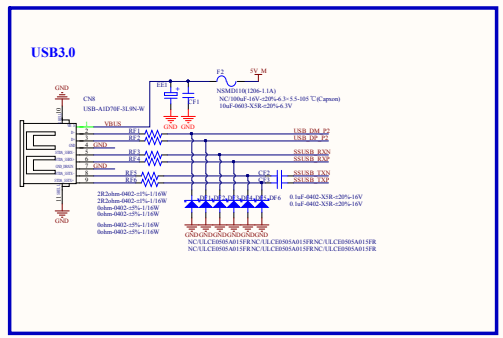

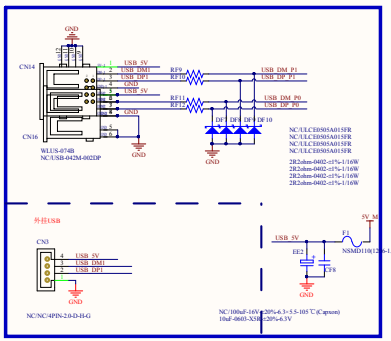

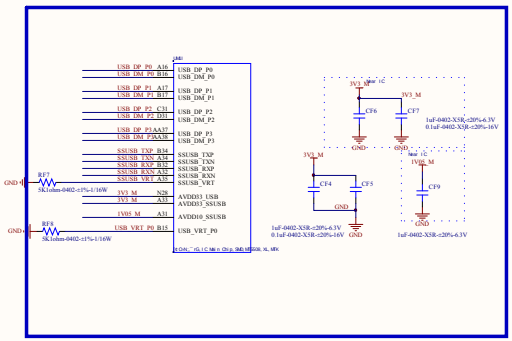

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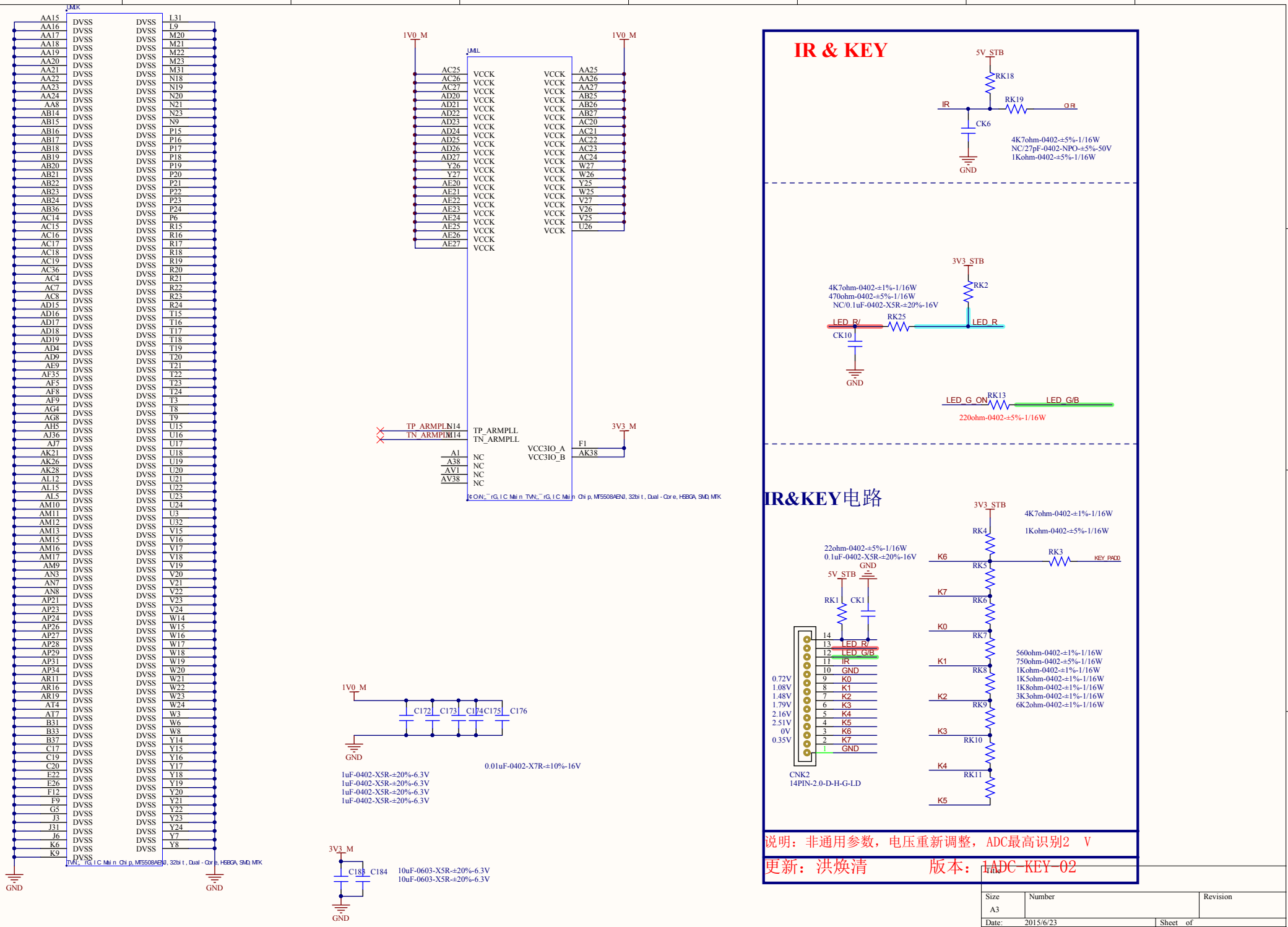
IR & KEY
5V_STB
RK18
IR
RK19
CK6
GND
4K7ohm-0402-±5%-1/16W
NC/27pF-0402-NPO-±5%-50V
1Kohm-0402-±5%-1/16W
3V3_STB
RK2
4K7ohm-0402-±1%-1/16W
470ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
LED_R/
RK25
LED_R
CK10
LED_G_ON
RK13
LED_G/B
220ohm-0402-±5%-1/16W
IR&KEY电路
4K7ohm-0402-±1%-1/16W
1Kohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
RK1
CK1
RK4
RK3
KEY_PADD
RK5
RK6
RK7
RK8
RK9
RK10
RK11
K6
K7
K0
K1
K2
K3
K4
K5
0.72V
1.08V
1.48V
1.79V
2.16V
2.51V
0V
0.35V
CNK2
14PIN-2.0-D-H-G-LD
560ohm-0402-±1%-1/16W
750ohm-0402-±5%-1/16W
1Kohm-0402-±1%-1/16W
1K5ohm-0402-±1%-1/16W
1K8ohm-0402-±1%-1/16W
3K3ohm-0402-±1%-1/16W
6K2ohm-0402-±1%-1/16W
说明：非通用参数，电压重新调整，ADC最高识别2 V
更新：洪焕清 版本：1ADC-KEY-02
1V0_M
3V3_M
C172 C173 C174 C175 C176
0.01uF-0402-X7R-±10%-16V
1uF-0402-X5R-±20%-6.3V
C183 C184
10uF-0603-X5R-±20%-6.3V
TP_ARMPLL
TN_ARMPLL
VCC3IO_A
VCC3IO_B
NC
VCCK
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Size A3
Number
Revision
Date: 2015/6/23
Sheet of
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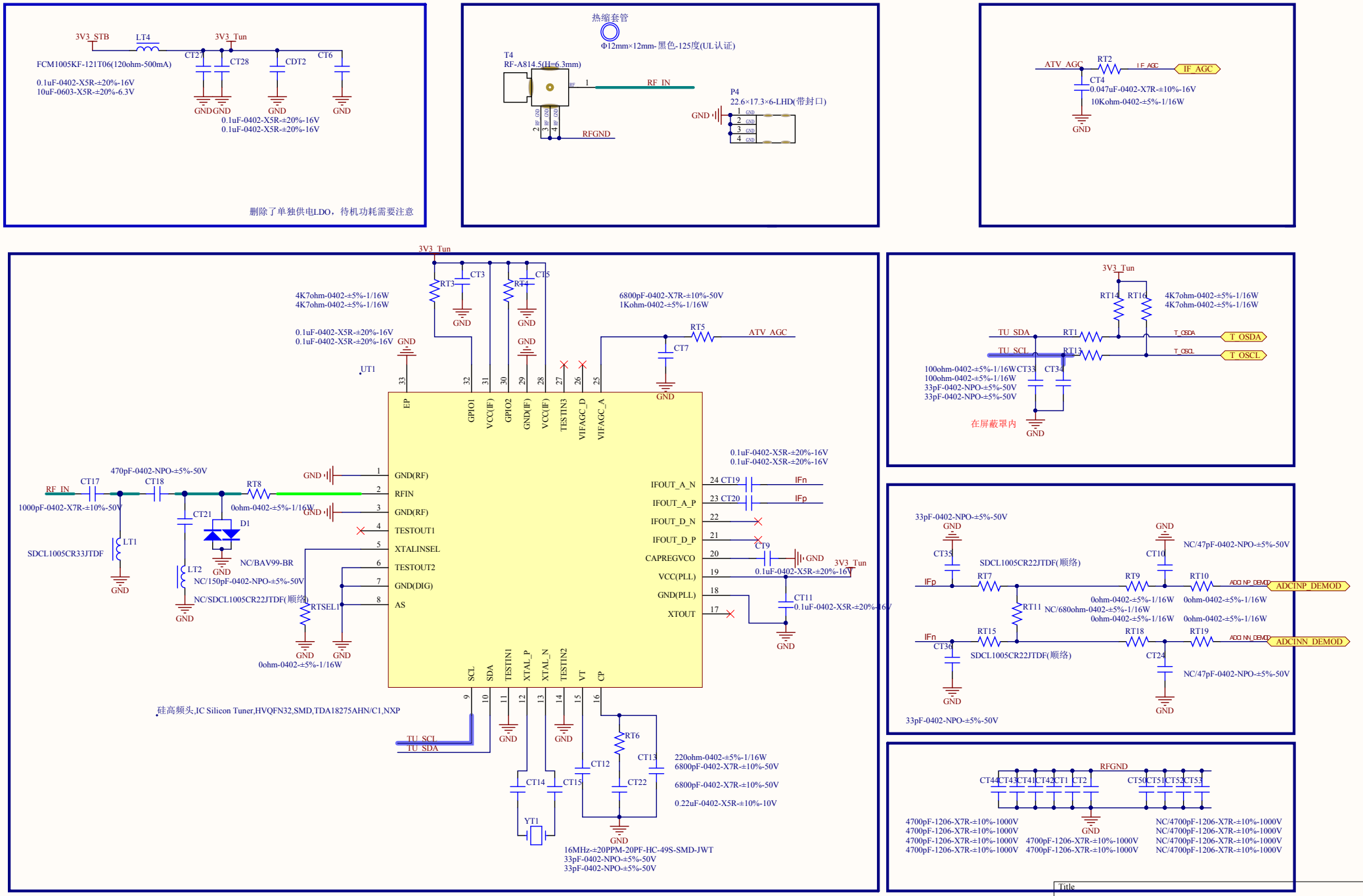

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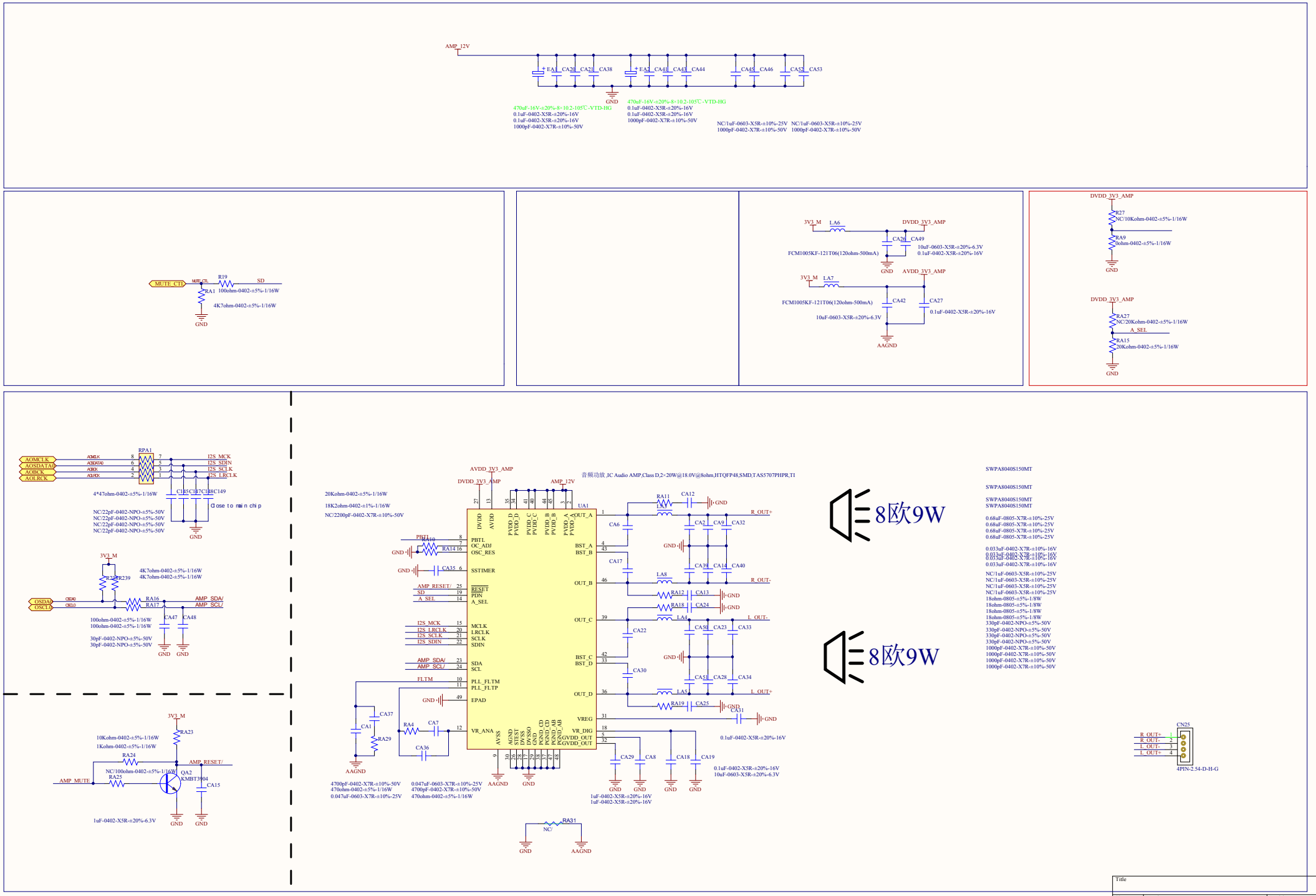
AMP_12V
EA1 CA20 CA21 CA38
EA2 CA41 CA43 CA44
CA45 CA46 CA52 CA53
GND
470uF-16V-±20%-8×10.2-105℃-VTD-HG
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
470uF-16V-±20%-8×10.2-105℃-VTD-HG
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
NC/1uF-0603-X5R-±10%-25V
1000pF-0402-X7R-±10%-50V
NC/1uF-0603-X5R-±10%-25V
1000pF-0402-X7R-±10%-50V
MUTE_CTL
MUTE_CTL
R19
SD
RA1 100ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
GND
3V3_M
LA6
DVDD_3V3_AMP
CA26 CA49
FCM1005KF-121T06(120ohm-500mA)
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
GND
AVDD_3V3_AMP
3V3_M
LA7
FCM1005KF-121T06(120ohm-500mA)
CA42
CA27
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
AAGND
DVDD_3V3_AMP
R27
NC/10Kohm-0402-±5%-1/16W
RA9
0ohm-0402-±5%-1/16W
GND
DVDD_3V3_AMP
RA27
NC/20Kohm-0402-±5%-1/16W
A_SEL
RA15
20Kohm-0402-±5%-1/16W
GND
AOMCLK
AOSDATA0
AOBCK
AOLRCK
RPA1
I2S_MCK
I2S_SDIN
I2S_SCLK
I2S_LRCLK
4*47ohm-0402-±5%-1/16W
C185 C187 C188 C149
Close to main chip
NC/22pF-0402-NPO-±5%-50V
NC/22pF-0402-NPO-±5%-50V
NC/22pF-0402-NPO-±5%-50V
NC/22pF-0402-NPO-±5%-50V
GND
3V3_M
R238 R239
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
OSDA0
OSCL0
RA16
RA17
AMP_SDA/
AMP_SCL/
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
CA47 CA48
30pF-0402-NPO-±5%-50V
30pF-0402-NPO-±5%-50V
GND GND
3V3_M
RA23
10Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
RA24
AMP_RESET/
AMP_MUTE
NC/100ohm-0402-±5%-1/16W
RA25
QA2
KMBT3904
CA15
1uF-0402-X5R-±20%-6.3V
GND GND
AVDD_3V3_AMP
DVDD_3V3_AMP
AMP_12V
音频功放,IC Audio AMP,Class D,2×20W@18.0V@8ohm,HTQFP48,SMD,TAS5707PHPR,T1
20Kohm-0402-±5%-1/16W
18K2ohm-0402-±1%-1/16W
NC/2200pF-0402-X7R-±10%-50V
UA1
DVDD
AVDD
PVDD_D
PVDD_C
PVDD_B
PVDD_A
PBTL
OC_ADJ
OSC_RES
SSTIMER
RESET
PDN
A_SEL
MCLK
LRCLK
SCLK
SDIN
SDA
SCL
PLL_FLTM
PLL_FLTP
EPAD
VR_ANA
AVSS
AGND
VSTBY
DVSS
DVSSO
GND
PGND_CD
PGND_AB
OUT_A
BST_A
BST_B
OUT_B
OUT_C
BST_C
BST_D
OUT_D
VREG
VR_DIG
PGVDD_OUT
PGVDD_OUT
PBTL
RA10
RA14
CA35
AMP_RESET/
SD
A_SEL
I2S_MCK
I2S_LRCLK
I2S_SCLK
I2S_SDIN
AMP_SDA/
AMP_SCL/
FLTM
GND
CA37
CA1
RA29
RA4
CA7
CA36
AAGND
4700pF-0402-X7R-±10%-50V
470ohm-0402-±5%-1/16W
0.047uF-0603-X7R-±10%-25V
0.047uF-0603-X7R-±10%-25V
4700pF-0402-X7R-±10%-50V
470ohm-0402-±5%-1/16W
AAGND
GND
RA31
NC/
GND
AAGND
RA11
CA12
R_OUT+
CA6
CA2
CA9
CA32
GND
CA17
CA39
CA14
CA40
LA8
R_OUT-
RA12
CA13
RA18
CA24
GND
GND
LA4
L_OUT-
CA22
CA50
CA23
CA33
GND
CA30
CA51
CA28
CA34
LA5
L_OUT+
RA19
CA25
GND
CA31
GND
0.1uF-0402-X5R-±20%-16V
CA29
CA8
CA18
CA19
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
GND
GND
GND
GND
1uF-0402-X5R-±20%-16V
1uF-0402-X5R-±20%-16V
8欧9W
8欧9W
SWPA8040S150MT
SWPA8040S150MT
SWPA8040S150MT
SWPA8040S150MT
0.68uF-0805-X7R-±10%-25V
0.68uF-0805-X7R-±10%-25V
0.68uF-0805-X7R-±10%-25V
0.68uF-0805-X7R-±10%-25V
0.033uF-0402-X7R-±10%-16V
0.033uF-0402-X7R-±10%-16V
0.033uF-0402-X7R-±10%-16V
0.033uF-0402-X7R-±10%-16V
NC/1uF-0603-X5R-±10%-25V
NC/1uF-0603-X5R-±10%-25V
NC/1uF-0603-X5R-±10%-25V
NC/1uF-0603-X5R-±10%-25V
18ohm-0805-±5%-1/8W
18ohm-0805-±5%-1/8W
18ohm-0805-±5%-1/8W
18ohm-0805-±5%-1/8W
330pF-0402-NPO-±5%-50V
330pF-0402-NPO-±5%-50V
330pF-0402-NPO-±5%-50V
330pF-0402-NPO-±5%-50V
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
CN25
R_OUT+ 1
R_OUT- 2
L_OUT- 3
L_OUT+ 4
4PIN-2.54-D-H-G
Title
Size
A2
Number
Revision
Date: 2015/6/23
Sheet of
File: G:\CVT_Work\...\TV#1-AMP\TAS5711\2D\Sch.Doc
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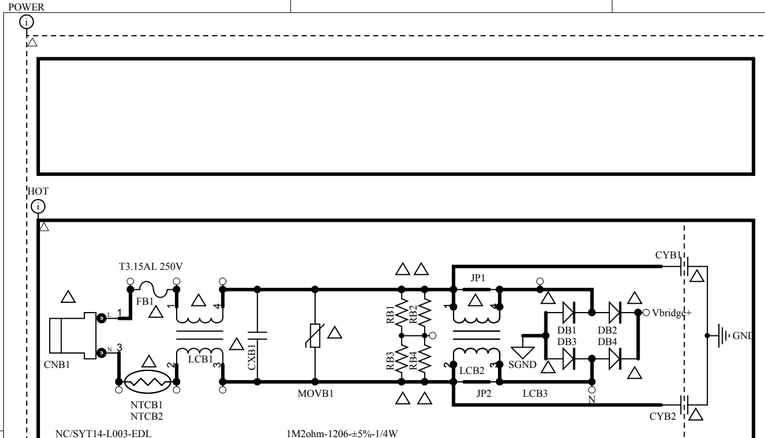


NC/SYT14-L003-EDL

1N5408G(编带/GOOD-ARK)
1N5408G(编带/GOOD-ARK)
1N5408G(编带/GOOD-ARK)
1N5408G(编带/GOOD-ARK)

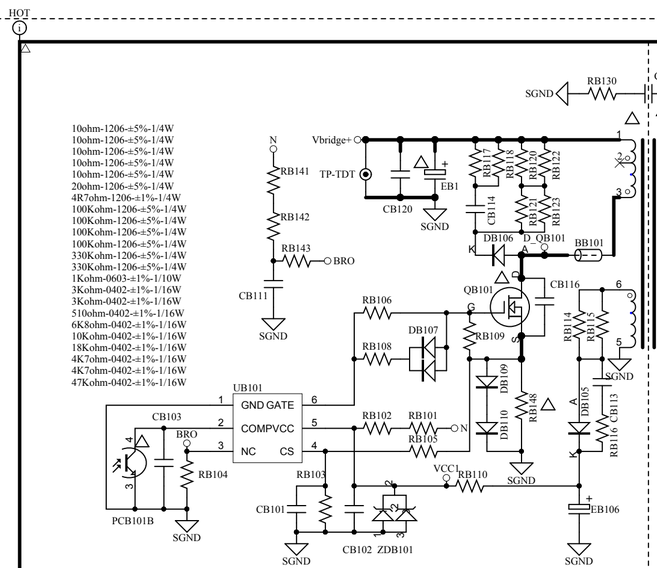
NC/L:6.0mm-φ:0.6mm-G
NC/L:6.0mm-φ:0.6mm-G

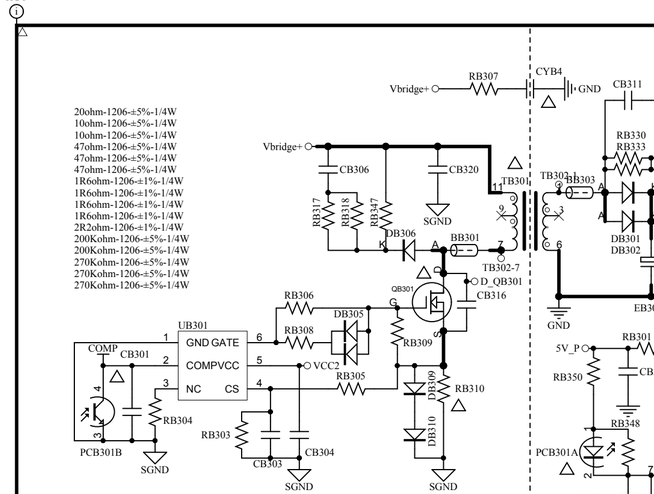
1M2ohm-1206-±5%-1/4W
1M2ohm-1206-±5%-1/4W
1M2ohm-1206-±5%-1/4W
1M2ohm-1206-±5%-1/4W

慢断保险丝,FUSE T,P,3.15A,250VAC,8.5×4.0×8mm,DIP,TP,Walter
X电容,CAP X2,MP,275VAC,0.47uF,±10%,S,15mm-Mini,PC,DIP,BM
Y电容,CAP Y1,CD,220pF,400VAC,±10%,KS,10mm,Y5P,DIP,Walsin
Y电容,CAP Y1,CD,220pF,400VAC,±10%,KS,10mm,Y5P,DIP,Walsin
连接插座,connect jack,2Pin,D7.92,L,SNAP,Fool-proofing,nature,L=2.8mm,DIP,AMA

NC/压敏电阻,VARISTOR,128J,680V,4000A,S,7.5mm,10mm,DIP,Thinking
共模电感,Common Choke,UC19,17mH,0.15×1.0mm,60Ts,H13.5MAX,SYUC19-L017mA,DIP,UENO
共模电感,Common Choke,[illegible],H15.0MAX,SYT10-L002,DIP,EDL

SCK132R56MBY502(短脚/为勤)





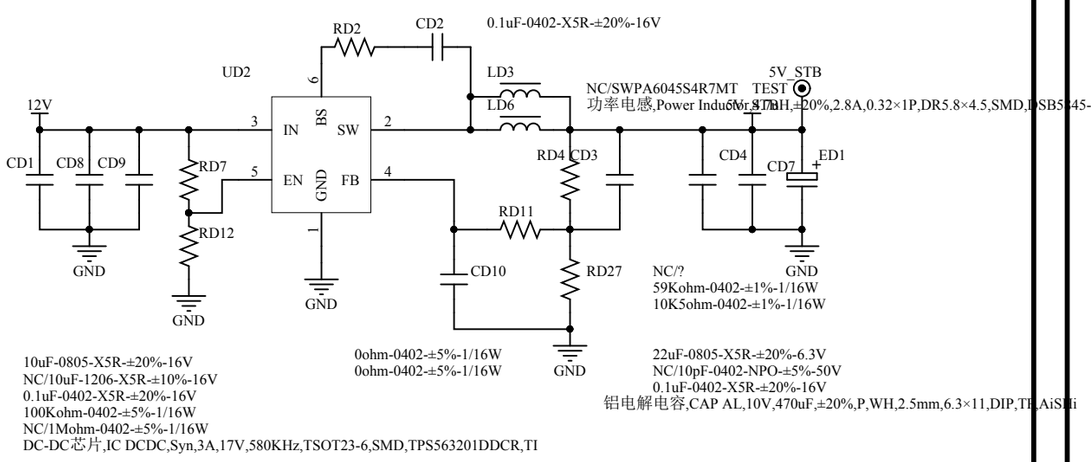
20ohm-1206-±5%-1/4W
10ohm-1206-±5%-1/4W
10ohm-1206-±5%-1/4W
47ohm-1206-±5%-1/4W
47ohm-1206-±5%-1/4W
47ohm-1206-±5%-1/4W
1R6ohm-1206-±1%-1/4W
1R6ohm-1206-±1%-1/4W
1R6ohm-1206-±1%-1/4W
1R6ohm-1206-±1%-1/4W
2R2ohm-1206-±1%-1/4W
200Kohm-1206-±5%-1/4W
200Kohm-1206-±5%-1/4W
270Kohm-1206-±5%-1/4W
270Kohm-1206-±5%-1/4W
270Kohm-1206-±5%-1/4W

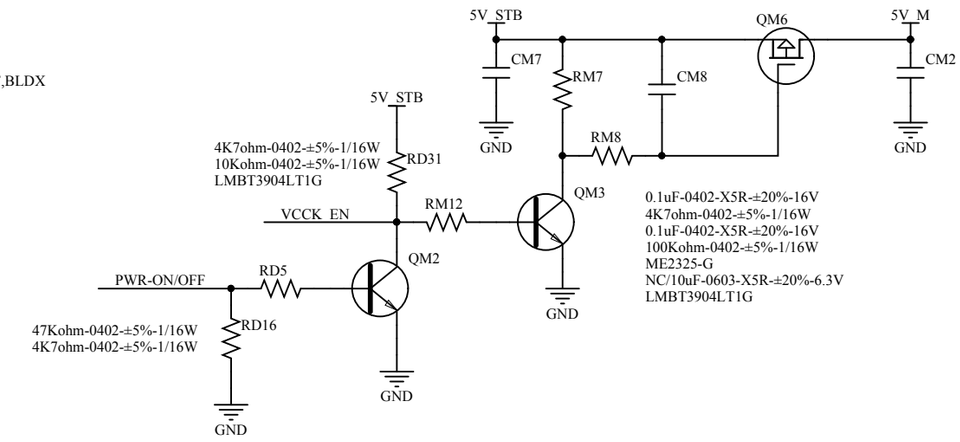
AS358MTR-E1(BCD)
AS358MTR-E1(BCD)
LTV-817S-TA-B(光宝)
LTV-817S-TA-B(光宝)
C242G472J20A201(编带/法拉)
φ3.5×6.0×0.65mm-CP(编带/秀益达)
φ3.5×6.0×0.65mm-CP(编带/秀益达)
MOF-100Kohm-±5%-2WS(编带/Futaba)
DCH102K30YRN6FL5AW(编带/SHM)
MOF-0R22ohm-±5%-2WS(编带/Futaba)
厚膜电阻,RES,1/4W,300Kohm,±1%,1206-Auto,SMD
陶瓷电容,CAP MC,25V,1uF,±10%,X7R,0603,SMD,TP
陶瓷电容,CAP MC,25V,0.47uF,±10%,X7R,0603,SMD,TP
陶瓷电容,CAP CD,1KV,100pF,±10%,SL,P.5.0mm,DIP,TP,SHM
陶瓷电容,CAP CD,1KV,100pF,±10%,SL,P.5.0mm,DIP,TP,SHM
整流二极管,DIO FRD S,1.2A,800V,eSGA,SMD,R12K,GOOD-ARK
整流二极管,DIO FRD S,1.2A,800V,eSGA,SMD,R12K,GOOD-ARK
Y电容,CAP Y1,CD,470pF,400VAC,±20%,KS,10mm,Y5U,DIP,Walsin
PWM控制器,IC PWM Controller,65KHZ,SOT23-6,SMD,OB2273C,ON-Bright
场效应管 3 00 0 m 1 10
整流二极管,DIO FRD S,4A,800V,DO-201AD,DIP,MUR480,GULF
M7(WEJ)
3CG3906M
BAW56(NXP)
FR207(编带/LRC)
FR207(编带/LRC)
LBAV70LT1G(LRC)
LBAV70LT1G(LRC)
10ohm-0805-±5%-1/8W
20ohm-0805-±5%-1/8W
47ohm-0805-±5%-1/8W
68ohm-0805-±5%-1/8W
30Kohm-0805-±1%-1/8W
1Kohm-0603-±1%-1/10W
5K6ohm-0402-±1%-1/16W
4K7ohm-0402-±1%-1/16W
100pF-0402-NPO-±5%-50V
0 00

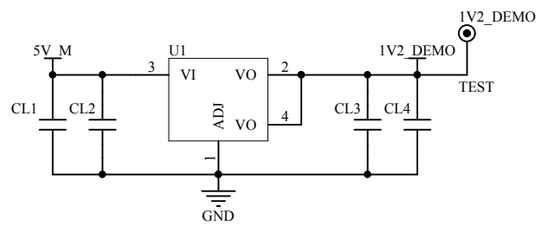
NC/MUR460RLG(ON)
NC/10Kohm-0402-±1%-1/16W
NC/20Kohm-0402-±1%-1/16W
NC/270Kohm-1206-±5%-1/4W
NC/270Kohm-1206-±5%-1/4W
NC/270Kohm-1206-±5%-1/4W
NC/470pF-0402-X7R-±10%-50V
NC/1000pF-0402-X7R-±10%-50V
NC/CK45-B3AD102KYPNX(TDK)
NC/33uF-200V-±20%-10×16-105℃-PW-编带-F=5.0(Elite)
NC/陶瓷电容,CAP CD,1KV,4700pF,±20%,Y5U,P,5.0mm,DIP,TP,TongHao
3Kohm-0402-±1%-1/16W
铝电解电容,CAP AL,250V,22uF,±20%,HR,PW,S,5.0mm,12.5×12,DIP,Elite
铝电解电容,CAP AL,250V,22uF,±20%,HR,PW,S,5.0mm,12.5×12,DIP,Elite
NC/变压器,Transformer,EQ2612,290uH,0.45×1P,26Ts,H14.5MAX,SYEQ2612-T160A,DIP,SQ
变压器,Transformer,EQ3012,290uH,0.32×2P,26Ts,H15.0MAX,SYEQ3012-T180A（BLACK）,DIP,SQ
1Kohm-0402-±5%-1/16W
3Kohm-0402-±1%-1/16W
470ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
510ohm-0402-±1%-1/16W
10Kohm-0402-±1%-1/16W
10Kohm-0402-±5%-1/16W
47Kohm-0402-±1%-1/16W
10Kohm-0402-±1%-1/16W
47Kohm-0402-±1%-1/16W
2M2ohm-0402-±5%-1/16W
100pF-0402-NPO-±5%-50V
0.1uF-0603-X7R-±10%-50V
0.33uF-0805-X7R-±10%-50V
1500pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
0.047uF-0805-X7R-±10%-50V
0.022uF-0603-X7R-±10%-25V

ML1
Mylar
GD1 GD2 GD3 GD4
EVA1 EVA2 EVA3 EVA4 EVA5 EVA6

（121+6）X（110+6）
7.00×8.35mm-尼龙-白色-WQM
7.00×8.35mm-尼龙-白色-WQM
7.00×8.35mm-尼龙-白色-WQM
7.00×8.35mm-尼龙-白色-WQM
NC/7×7×3mm-C-4305防火泡棉-黑色
NC/7×7×3mm-C-4305防火泡棉-黑色
NC/7×7×3mm-C-4305防火泡棉-黑色
NC/7×7×3mm-C-4305防火泡棉-黑色
NC/7×7×3mm-C-4305防火泡棉-黑色







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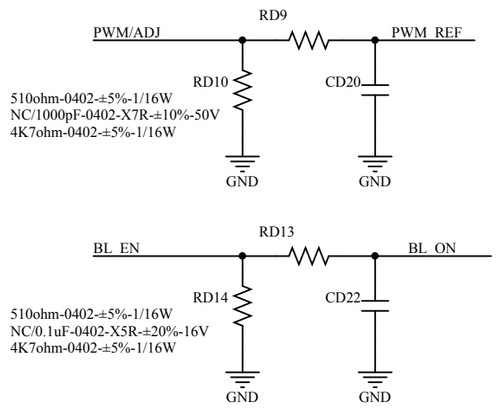
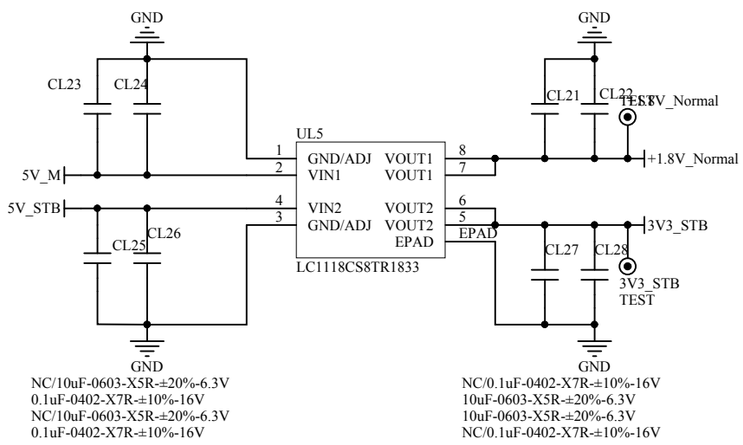
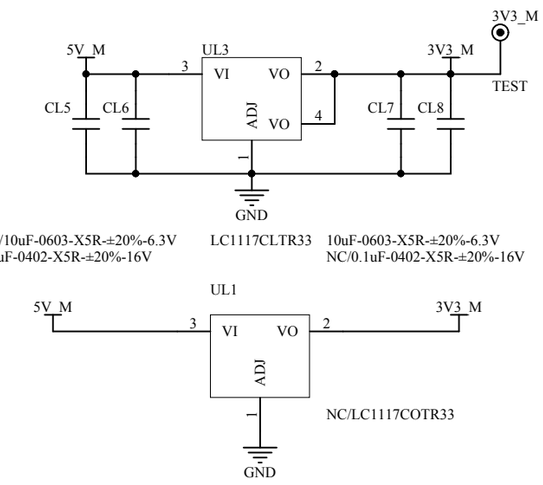
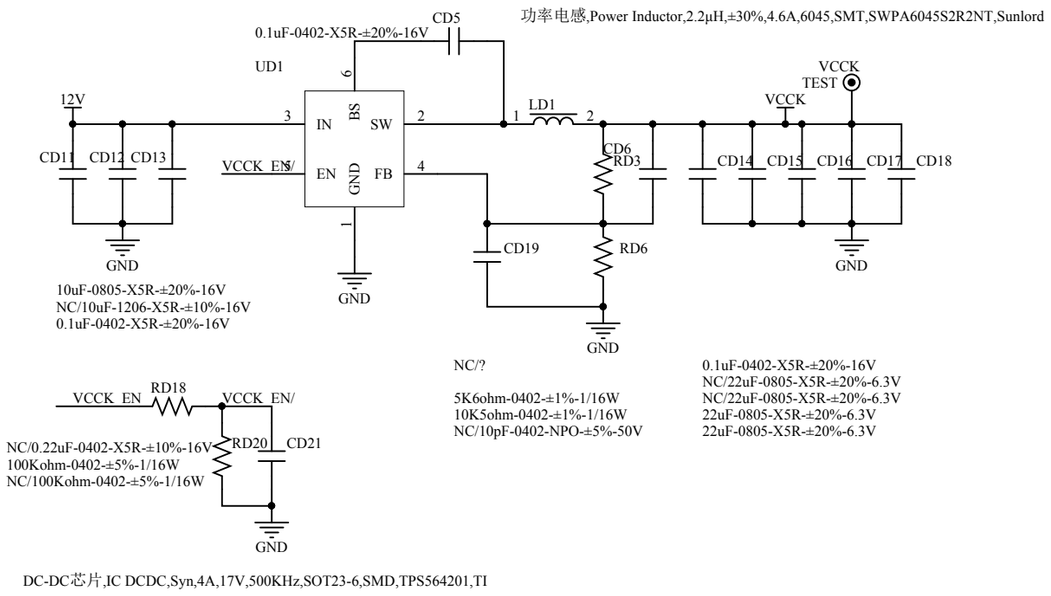
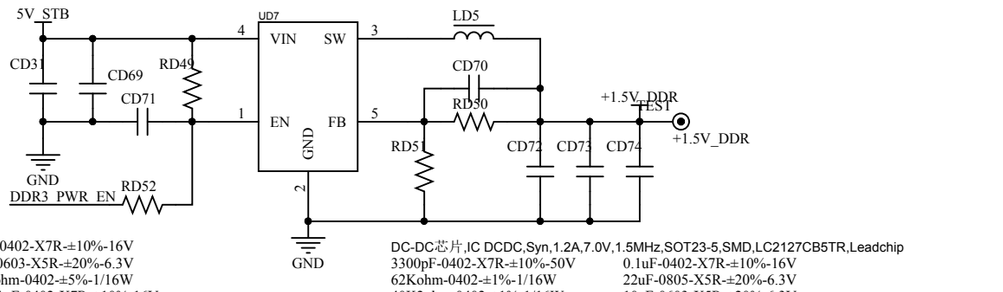
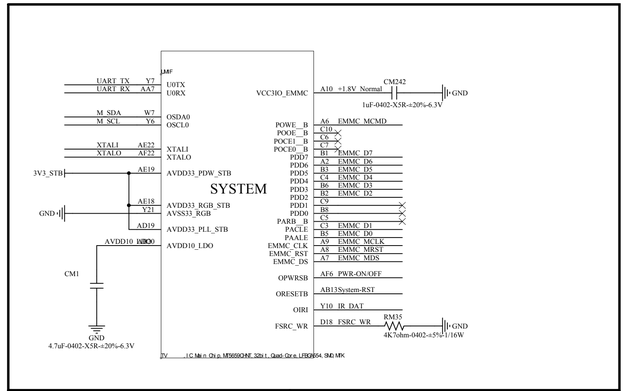


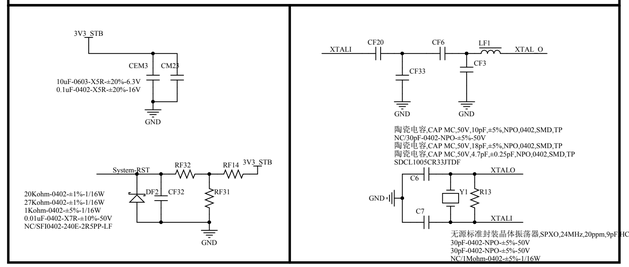


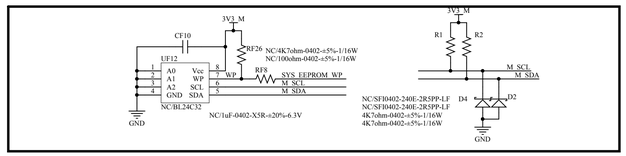


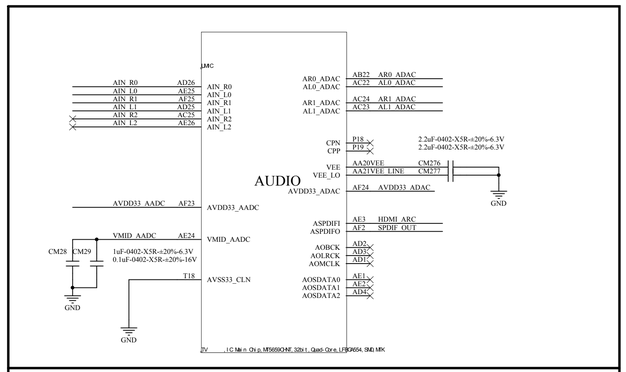


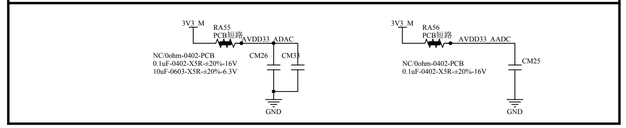


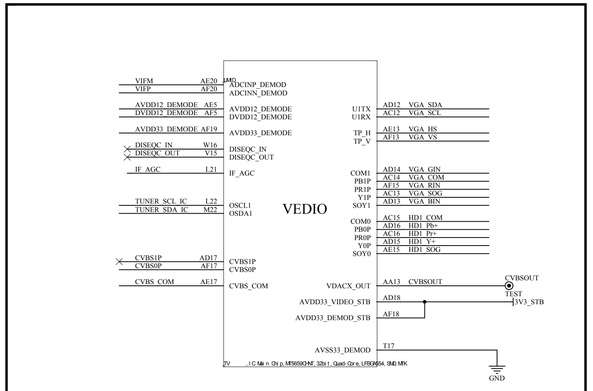

SYSTEM
UART_TX Y7 U0TX
UART_RX AA7 U0RX
M_SDA W7 OSDA0
M_SCL Y6 OSCL0
XTAL1 AE22 XTALI
XTAL0 AF22 XTALO
AE19 AVDDD33_PDW_STB
AE18 AVDDD33_RGB_STB
Y21 AVSS33_RGB
AD19 AVDDD33_PLL_STB
AVDD10_LDO
VCC3IO_EMMC
A10 +1.8V_Normal
CM242
1uF-0402-X5R=20%-6.3V
POWE_B A6 EMMC_MCMD
POOE_B C10
POCE1_B C6
POCE0_B C7
B1 EMMC_D7
PDD7 A2 EMMC_D6
PDD6 B3 EMMC_D5
PDD5 C4 EMMC_D4
PDD4 B6 EMMC_D3
PDD3 B2 EMMC_D2
PDD2 C9
PDD1 B8
PDD0 C5
PARB_B C3 EMMC_D1
PACLE B5 EMMC_D0
PAALE A9 EMMC_MCLK
EMMC_CLK A8 EMMC_MRST
EMMC_RST A7 EMMC_MDS
EMMC_DS
OPWRSB AF6 PWR-ON/OFF
ORESETB AB13 System-RST
OIRI Y10 IR_DAT
FSRC_WR D18 FSRC_WR
RM35
4K7ohm-0402-±5%/1/16W
3V3_STB
GND
4.7uF-0402-X5R=±20%-6.3V
CM1
3V
I C Mai n Ch p, MS6690HNF, 32b t , Quad-Cor e, LFBGA564, SMD MK

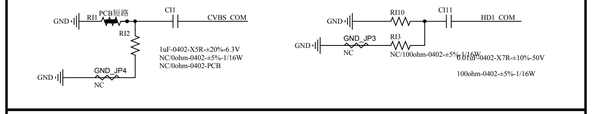

3V3_STB
CEM3
CM2
10uF-0603-X5R=±20%-6.3V
0.1uF-0402-X5R=±20%-16V
GND
XTAL1
CF20
CF6
LF1
XTAL_O
CF33
CF3
GND
陶瓷电容,CAP MC,50V,10pF,±5%,NPO,0402,SMD,TP
NC/30pF-0402-NPO=±5%-50V
陶瓷电容,CAP MC,50V,18pF,±5%,NPO,0402,SMD,TP
陶瓷电容,CAP MC,50V,4.7pF,±0.25pF,NPO,0402,SMD,TP
SDCL1005CR33JTDF
System-RST
RF32
RF14
3V3_STB
DF2
CF32
RF31
20K±ohm-0402-±1%-1/16W
27Kohm-0402-±1%-1/16W
1Kohm-0402-±5%-1/16W
0.01uF-0402-X7R=±10%-50V
NC/SFI0402-240E-2R5PP-LF
XTALO
C6
V1
R13
C7
XTALI
无源标准封装晶体振荡器,SPXO,24MHz,20ppm,9pF,HC-49S,SMD,JWT
30pF-0402-NPO=±5%-50V
30pF-0402-NPO=±5%-50V
NC/1Mohm-0402=±5%-1/16W

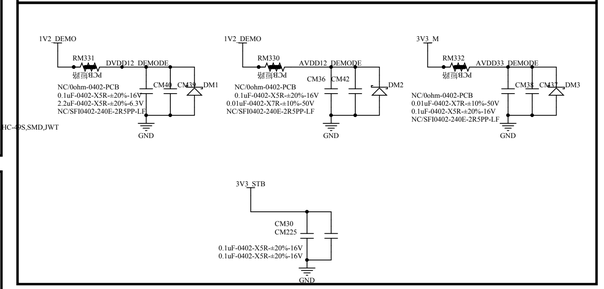

3V3_M
CF10
UF12
RF26
NC/4K7ohm-0402-±5%-1/16W
NC/100ohm-0402-±5%-1/16W
RF8
SYS_EEPROM_WP
M_SCL
M_SDA
NC/BL24C32
NC/1uF-0402-X5R=±20%-6.3V
GND
R1
R2
M_SCL
M_SDA
NC/SFI0402-240E-2R5PP-LF
NC/SFI0402-240E-2R5PP-LF
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
D4
D2

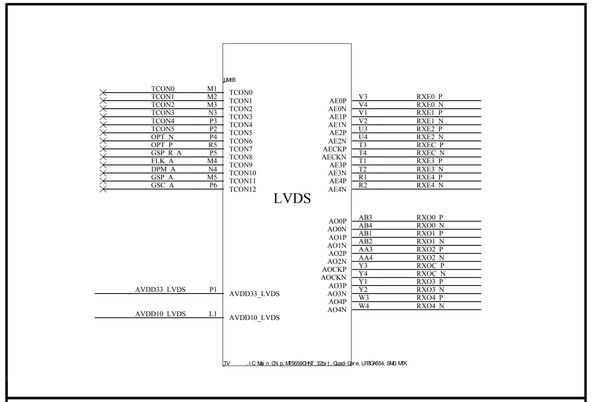

AUDIO
AIN_R0 AD26 AIN_R0
AIN_L0 AE25 AIN_L0
AIN_R1 AF25 AIN_R1
AIN_L1 AD25 AIN_L1
AIN_R2 AC25 AIN_R2
AIN_L2 AE26 AIN_L2
AR0_ADAC AB22 AR0_ADAC
AL0_ADAC AC22 AL0_ADAC
AR1_ADAC AC24 AR1_ADAC
AL1_ADAC AC23 AL1_ADAC
CPN P18
CPP P19
2.2uF-0402-X5R=±20%-6.3V
2.2uF-0402-X5R=±20%-6.3V
VEE AA20VEE CM276
VEE_LO AA21VEE_LINE CM277
AVDDD33_ADAC AF24 AVDDD33_ADAC
AVDDD33_AADC AF23 AVDDD33_AADC
VMID_AADC AE24 VMID_AADC
ASPDIF1 AE3 HDMI_ARC
ASPDIF0 AF2 SPDIF_OUT
AOBCK AD2
AOLRCK AD3
AOMCLK AD1
AOSDATA0 AE1
AOSDATA1 AE2
AOSDATA2 AD4
CM28 CM29
1uF-0402-X5R=±20%-6.3V
0.1uF-0402-X5R=±20%-16V
T18 AVSS33_CLN
GND
3V
I C Mai n Ch p, MS6690HNF, 32b t , Quad-Cor e, LFBGA564, SMD MK

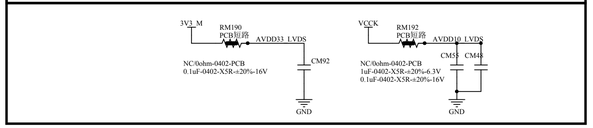

3V3_M
RA55
PCB短路
AVDDD33_ADAC
NC/0ohm-0402-PCB
0.1uF-0402-X5R=±20%-16V
10uF-0603-X5R=±20%-6.3V
CM26
CM33
GND
3V3_M
RA56
PCB短路
AVDDD33_AADC
NC/0ohm-0402-PCB
0.1uF-0402-X5R=±20%-16V
CM25
GND

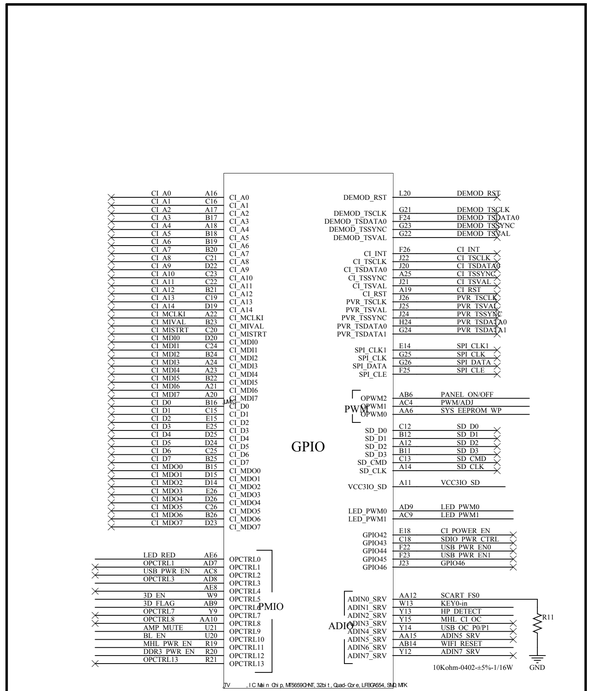

VEDIO
VIFM AE20 ADCINP_DEMOD
VIFP AF20 ADCINN_DEMOD
AVDD12_DEMODE AE5
DVDD12_DEMODE AF5
AVDD12_DEMODE
DVDD12_DEMODE
AVDD33_DEMODE AE19
AVDD33_DEMODE
DISEQC_IN W16
DISEQC_OUT V15
DISEQC_IN
DISEQC_OUT
IF_AGC L21
IF_AGC
TUNER_SCL_IC L22
TUNER_SDA_IC M22
OSCL1
OSDA1
CVBS1P AD17
CVBS0P AF17
CVBS1P
CVBS0P
CVBS_COM AE17
CVBS_COM
U1TX AD12 VGA_SDA
U1RX AC12 VGA_SCL
TP_H AE13 VGA_HS
TP_V AF13 VGA_VS
COM1 AD14 VGA_GIN
PB1P AC14 VGA_COM
PR1P AF15 VGA_RIN
Y1P AC13 VGA_SOG
SOY1 AD13 VGA_BIN
COM0 AC15 HD1_COM
PB0P AD16 HD1_Pb+
PR0P AC16 HD1_Pr+
Y0P AD15 HD1_Y+
SOY0 AE15 HD1_SOG
VDACX_OUT AA13 CVBSOUT
CVBSOUT
TEST
3V3_STB
AVDD33_VIDEO_STB AD18
AVDD33_DEMOD_STB AF18
AVSS33_DEMOD T17
GND
3V
I C Mai n Ch p, MS6690HNF, 32b t , Quad-Cor e, LFBGA564, SMD MK

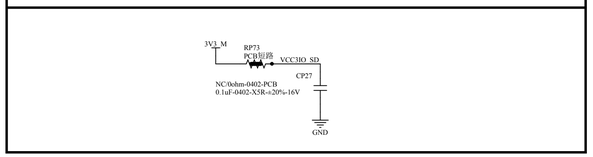

GND
R11
PCB短路
CI1
CVBS_COM
R12
1uF-0402-X5R=±20%-6.3V
NC/0ohm-0402=±5%-1/16W
NC/0ohm-0402-PCB
GND_JP4
NC
RI10
CI11
HD1_COM
GND_JP3
NC
RI1
NC/100ohm-0402=±5%-1/16W
0402-X7R=±10%-50V
100ohm-0402-±5%-1/16W

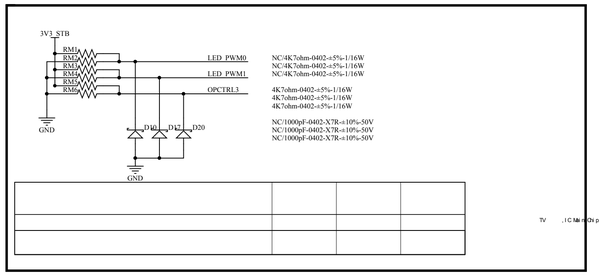

1V2_DEMO
RM331
DVDD12_DEMODE
驱动HLM
NC/0ohm-0402-PCB
0.1uF-0402-X5R=±20%-16V
2.2uF-0402-X5R=±20%-6.3V
NC/SFI0402-240E-2R5PP-LF
CM48
CM49
DM1
1V2_DEMO
RM330
AVDD12_DEMODE
NC/0ohm-0402-PCB
0.1uF-0402-X5R=±20%-16V
0.01uF-0402-X7R=±10%-50V
NC/SFI0402-240E-2R5PP-LF
CM36
CM42
DM2
3V3_M
RM332
AVDD33_DEMODE
NC/0ohm-0402-PCB
0.01uF-0402-X7R=±10%-50V
0.1uF-0402-X5R=±20%-16V
NC/SFI0402-240E-2R5PP-LF
CM34
CM35
DM3
3V1_STB
CM30
CM225
0.1uF-0402-X5R=±20%-16V
0.1uF-0402-X5R=±20%-16V
GND

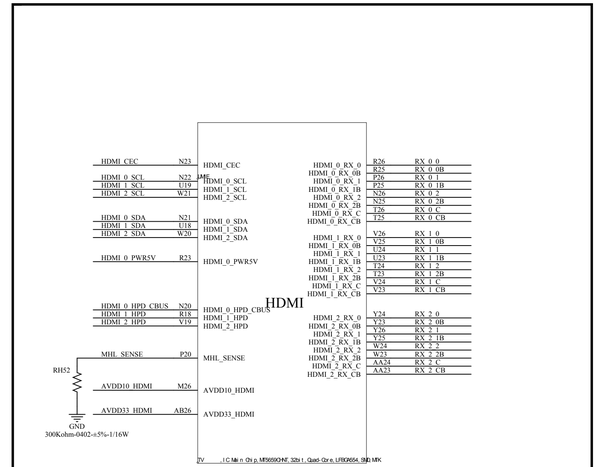

LVDS
TCON0 M1 TCON0
TCON1 M2 TCON1
TCON2 M3 TCON2
TCON3 N3 TCON3
TCON4 P3 TCON4
TCON5 P2 TCON5
OPT_N P4 TCON6
OPT_P R5 TCON7
GSP_R_A P5 TCON8
FLK_A M4 TCON9
DPM_A N4 TCON10
GSP_A M5 TCON11
GSC_A P6 TCON12
AVDD33_LVDS P1
AVDD10_LVDS L1
AVDD33_LVDS
AVDD10_LVDS
AE0P V3 RXE0_P
AE0N V4 RXE0_N
AE1P V1 RXE1_P
AE1N U3 RXE1_N
AE2P U4 RXE2_P
AE2N T3 RXE2_N
AECKP T4 RXEC_P
AECKN T1 RXEC_N
AE3P T2 RXE3_N
AE3N R1 RXE3_P
AE4P R2 RXE4_N
AE4N
AO0P AB3 RXO0_P
AO0N AB4 RXO0_N
AO1P AB2 RXO1_P
AO1N AB1 RXO1_N
AO2P AA3 RXO2_P
AO2N AA4 RXO2_N
AOCKP Y3 RXOC_P
AOCKN Y4 RXOC_N
AO3P Y1 RXO3_P
AO3N Y2 RXO3_N
AO4P W3 RXO4_P
AO4N W4 RXO4_N
3V
I C Mai n Ch p, MS6690HNF, 32b t , Quad-Cor e, LFBGA564, SMD MK

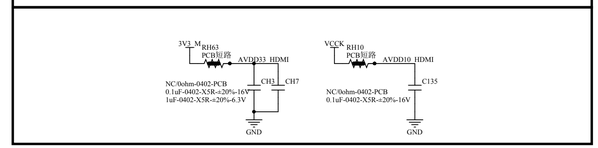

3V3_M
RM190
PCB短路
AVDD33_LVDS
NC/0ohm-0402-PCB
0.1uF-0402-X5R=±20%-16V
CM92
VCCK
RM192
PCB短路
AVDD10_LVDS
CM53
CM44
NC/0ohm-0402-PCB
1uF-0402-X5R=±20%-6.3V
0.1uF-0402-X5R=±20%-16V
GND

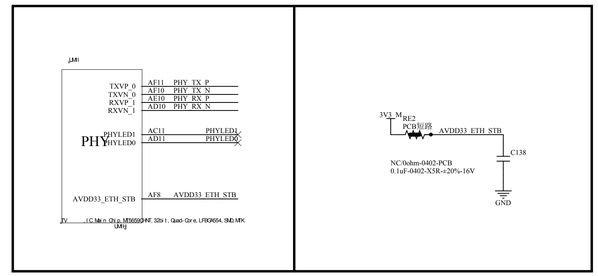

GPIO
PMIO
ADIN
CI_A0 A16
CI_A1 C16
CI_A2 A17
CI_A3 B17
CI_A4 A18
CI_A5 B18
CI_A6 B19
CI_A7 B20
CI_A8 C21
CI_A9 D22
CI_A10 C23
CI_A11 C22
CI_A12 B21
CI_A13 C19
CI_A14 D19
CI_MCLKI A22
CI_MIVAL B23
CI_MISTRT C20
CI_MDI0 D20
CI_MDI1 C24
CI_MDI2 B24
CI_MDI3 A24
CI_MDI4 A23
CI_MDI5 B22
CI_MDI6 A21
CI_MDI7 A20
CI_D0 B16
CI_D1 C15
CI_D2 E15
CI_D3 E25
CI_D4 D25
CI_D5 D24
CI_D6 C25
CI_D7 B25
CI_MDO0 B15
CI_MDO1 D15
CI_MDO2 D14
CI_MDO3 E26
CI_MDO4 D26
CI_MDO5 C26
CI_MDO6 B26
CI_MDO7 D23
LED_RED AF6
OPCTRL0 AD7
OPCTRL1 AC8
OPCTRL2 AD8
OPCTRL3 A19
OPCTRL4 A18
OPCTRL5 AA10
OPCTRL6 U21
OPCTRL7 U20
OPCTRL8 R20
OPCTRL9 R21
OPCTRL10
OPCTRL11
OPCTRL12
OPCTRL13
3D_EN W9
3D_FLAG AB9
OPCTRL7 Y9
OPCTRL8 AA10
AMP_MUTE U21
BL_EN U20
MHL_PWR_EN R19
DDR3_PWR_EN R20
OPCTRL13 R21
DEMOD_RST L20 DEMOD_RST
DEMOD_TSCLK G21 DEMOD_TSCLK
DEMOD_TSDATA0 F24 DEMOD_TSDATA0
DEMOD_TSSYNC G23 DEMOD_TSSYNC
DEMOD_TSVAL G22 DEMOD_TSVAL
CI_INT F26 CI_INT
CI_TSCLK J22 CI_TSCLK
CI_TSDATA0 J20 CI_TSDATA0
CI_TSSYNC A25 CI_TSSYNC
CI_TSVAL J21 CI_TSVAL
CI_RST A19 CI_RST
PVR_TSCLK J26 PVR_TSCLK
PVR_TSVAL J25 PVR_TSVAL
PVR_TSSYNC J24 PVR_TSSYNC
PVR_TSDATA0 H24 PVR_TSDATA0
PVR_TSDATA1 G24 PVR_TSDATA1
SPI_CLK1 E14 SPI_CLK1
SPI_CLK G25 SPI_CLK
SPI_DATA G26 SPI_DATA
SPI_CLE F25 SPI_CLE
OPWM2 AB6 PANEL_ON/OFF
OPWM1 AC4 PWEADJ
OPWM0 AA6 SYS_EEPROM_WP
SD_D0 C12 SD_D0
SD_D1 B12 SD_D1
SD_D2 A12 SD_D2
SD_D3 B11 SD_D3
SD_CMD C13 SD_CMD
SD_CLK A14 SD_CLK
VCC3IO_SD A11 VCC3IO_SD
LED_PWM0 AD9 LED_PWM0
LED_PWM1 AC9 LED_PWM1
GPIO42 E18 CI_POWER_EN
GPIO43 C18 SDIO_PWR_CTRL
GPIO44 F22 USB_PWR_EN0
GPIO45 F23 USB_PWR_EN1
GPIO46 J23 GPIO46
ADIN0_SRV AA12 SCART_FS0
ADIN1_SRV W13 KEY0-in
ADIN2_SRV Y13 HP_DETECT
ADIN3_SRV Y15 MHL_CI_OC
ADIN4_SRV Y14 USB_OC_PVP1
ADIN5_SRV AA15 ADIN5_SRV
ADIN6_SRV AB14 WIFI_RESET
ADIN7_SRV Y12 ADIN7_SRV
RI11
10Kohm-0402-±5%-1/16W
GND
3V
I C Mai n Ch p, MS6690HNF, 32b t , Quad-Cor e, LFBGA564, SMD MK

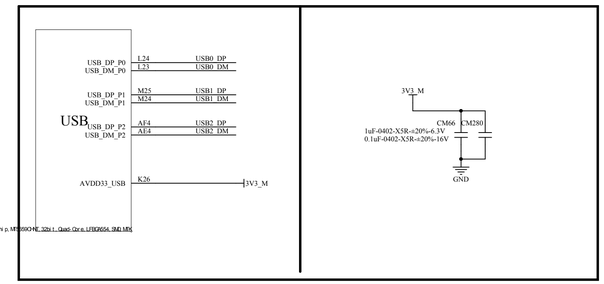

3V3_M
RP73
PCB短路
VCC3IO_SD
CP27
NC/0ohm-0402-PCB
0.1uF-0402-X5R=±20%-16V
GND

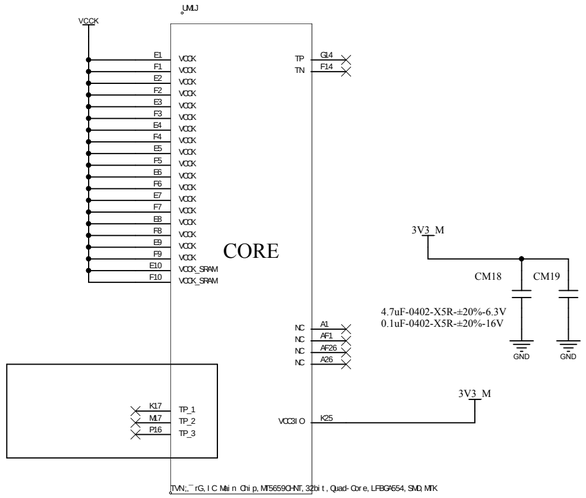

3V3_STB
RM1
RM2
RM3
RM4
RM5
RM6
LED_PWM0
LED_PWM1
OPCTRL3
NC/4K7ohm-0402-±5%-1/16W
NC/4K7ohm-0402-±5%-1/16W
NC/4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
D16
D17
D20
NC/1000pF-0402-X7R=±10%-50V
NC/1000pF-0402-X7R=±10%-50V
NC/1000pF-0402-X7R=±10%-50V
GND
3V
I C Mai n Ch p, MS6690HNF, 32b t , Quad-Cor e, LFBGA564, SMD MK

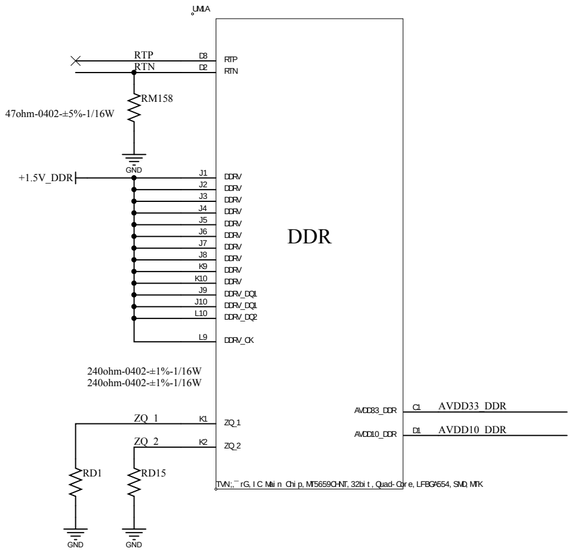

HDMI
HDMI_CEC N23 HDMI_CEC
HDMI_0_SCL N22 HDMI_0_SCL
HDMI_1_SCL U19 HDMI_1_SCL
HDMI_2_SCL W21 HDMI_2_SCL
HDMI_0_SDA N21 HDMI_0_SDA
HDMI_1_SDA U18 HDMI_1_SDA
HDMI_2_SDA W20 HDMI_2_SDA
HDMI_0_PWR5V R23 HDMI_0_PWR5V
HDMI_0_HPD_CBUS N20 HDMI_0_HPD_CBUS
HDMI_1_HPD R18 HDMI_1_HPD
HDMI_2_HPD V19 HDMI_2_HPD
MHL_SENSE P20 MHL_SENSE
AVDD10_HDMI M26 AVDD10_HDMI
AVDD33_HDMI AB26 AVDD33_HDMI
RH52
300K±ohm-0402-±5%-1/16W
GND
HDMI_0_RX_0 R26 RX_0_0
HDMI_0_RX_0B R25 RX_0_0B
HDMI_0_RX_1 P26 RX_0_1
HDMI_0_RX_1B P25 RX_0_1B
HDMI_0_RX_2 N26 RX_0_2
HDMI_0_RX_2B N25 RX_0_2B
HDMI_0_RX_C R26 RX_0_C
HDMI_0_RX_CB T25 RX_0_CB
HDMI_1_RX_0 V26 RX_1_0
HDMI_1_RX_0B V25 RX_1_0B
HDMI_1_RX_1 U24 RX_1_1
HDMI_1_RX_1B U23 RX_1_1B
HDMI_1_RX_2 T24 RX_1_2
HDMI_1_RX_2B T23 RX_1_2B
HDMI_1_RX_C V24 RX_1_C
HDMI_1_RX_CB V23 RX_1_CB
HDMI_2_RX_0 Y24 RX_2_0
HDMI_2_RX_0B V31 RX_2_0B
HDMI_2_RX_1 Y26 RX_2_1
HDMI_2_RX_1B Y25 RX_2_1B
HDMI_2_RX_2 W24 RX_2_2
HDMI_2_RX_2B W23 RX_2_2B
HDMI_2_RX_C AA24 RX_2_C
HDMI_2_RX_CB AA23 RX_2_CB
3V
I C Mai n Ch p, MS6690HNF, 32b t , Quad-Cor e, LFBGA564, SMD MK

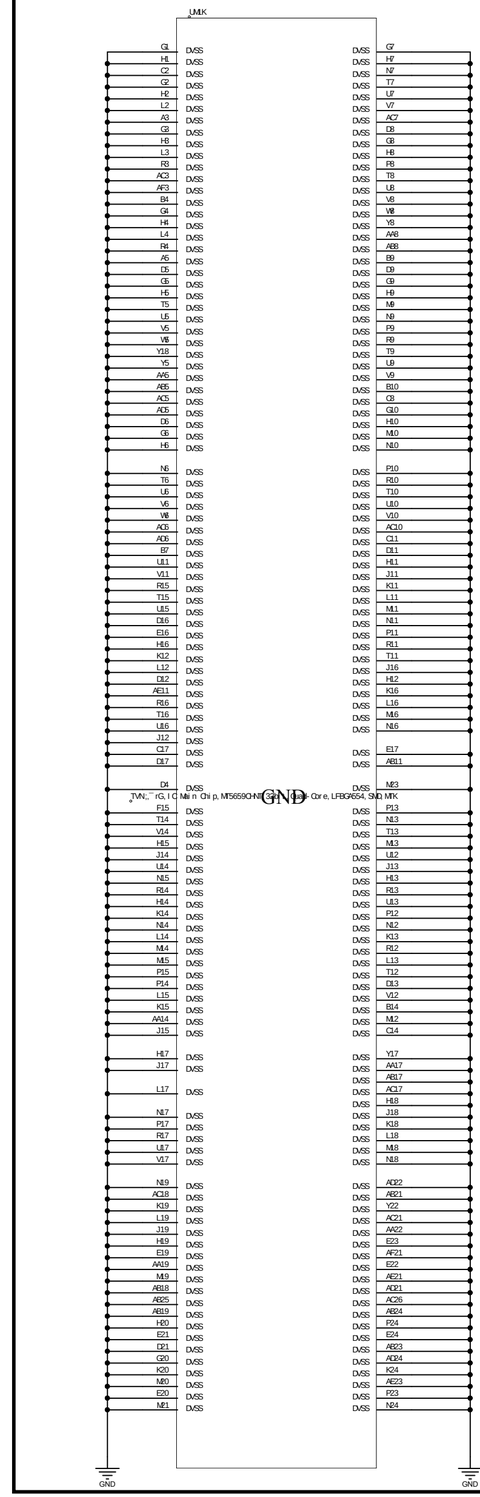

3V3_M
RH163
PCB短路
AVDD33_HDMI
NC/0ohm-0402-PCB
0.1uF-0402-X5R=±20%-16V
1uF-0402-X5R=±20%-6.3V
CH13
CH7
GND
VCCK
RH10
PCB短路
AVDD10_HDMI
C135
NC/0ohm-0402-PCB
0.1uF-0402-X5R=±20%-16V
GND


PHY
TXVP_0 AF11 PHY_TX_P
TXVN_0 AF10 PHY_TX_N
RXVP_1 AE10 PHY_RX_P
RXVN_1 AD10 PHY_RX_N
PHYLED1 AC11 PHYLED1
PHYLED0 AD11 PHYLED0
AVDD33_ETH_STB AF8 AVDD33_ETH_STB
3V
I C Mai n Ch p, MS6690HNF, 32b t , Quad-Cor e, LFBGA564, SMD MK
3V3_M
RE2
PCB短路
AVDD33_ETH_STB
C138
NC/0ohm-0402-PCB
0.1uF-0402-X5R=±20%-16V
GND


USB
USB_DP_P0 L24 USB0_DP
USB_DM_P0 L23 USB0_DM
USB_DP_P1 M25 USB1_DP
USB_DM_P1 M24 USB1_DM
USB_DP_P2 AF4 USB2_DP
USB_DM_P2 AF4 USB2_DM
AVDD33_USB K26
3V3_M
3V3_M
CM66
CM280
1uF-0402-X5R=±20%-6.3V
0.1uF-0402-X5R=±20%-16V
GND
TV
I C Mai n Ch p, MS6690HNF, 32b t , Quad-Cor e, LFBGA564, SMD MK


UMJ
VCCK
E1 VCCK
F1 VCCK
E2 VCCK
F2 VCCK
E3 VCCK
F3 VCCK
E4 VCCK
F4 VCCK
E5 VCCK
F5 VCCK
E6 VCCK
F6 VCCK
E7 VCCK
F7 VCCK
E8 VCCK
F8 VCCK
E9 VCCK
F9 VCCK
E10 VCCK_SRAM
F10 VCCK_SRAM
TP GL4
TN F14
CORE
NC A1
NC AF1
NC AF26
NC A26
VCC3I O K25
K17 TP_1
M17 TP_2
P16 TP_3
3V3_M
CM18
CM19
4.7uF-0402-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
GND
GND
3V3_M
TVN:"' rG, I C Nai n Chi p, MT5659CHNF, 32bi t , Quad- Cor e, LFBGR654, SMD MTK


UMA
RTP D8 RTP
RTN D2 RTN
RM158
47ohm-0402-±5%-1/16W
GND
+1.5V_DDR
J1 DDRV
J2 DDRV
J3 DDRV
J4 DDRV
J5 DDRV
J6 DDRV
J7 DDRV
J8 DDRV
K9 DDRV
K10 DDRV
J9 DDRV_DQ1
J10 DDRV_DQ1
L10 DDRV_DQ2
L9 DDRV_CK
DDR
240ohm-0402-±1%-1/16W
240ohm-0402-±1%-1/16W
ZQ_1 K1 ZQ_1
ZQ_2 K2 ZQ_2
RD1
RD15
GND
GND
AVDD33_DDR C1 AVDD33_DDR
AVDD10_DDR D1 AVDD10_DDR
TVN:"' rG, I C Nai n Chi p, MT5659CHNF, 32bi t , Quad- Cor e, LFBGR654, SMD MTK


UMK
GL DVSS
H1 DVSS
C2 DVSS
G2 DVSS
H2 DVSS
L2 DVSS
A3 DVSS
G3 DVSS
H3 DVSS
L3 DVSS
R3 DVSS
AC3 DVSS
AF3 DVSS
B4 DVSS
G4 DVSS
H4 DVSS
L4 DVSS
R4 DVSS
A5 DVSS
D5 DVSS
G5 DVSS
H5 DVSS
T5 DVSS
U5 DVSS
V5 DVSS
W5 DVSS
Y18 DVSS
Y5 DVSS
AA5 DVSS
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AC5 DVSS
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U6 DVSS
V6 DVSS
W6 DVSS
AD6 DVSS
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V11 DVSS
R15 DVSS
T15 DVSS
U15 DVSS
D16 DVSS
E16 DVSS
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K12 DVSS
L12 DVSS
D12 DVSS
AE11 DVSS
R16 DVSS
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U16 DVSS
J12 DVSS
C17 DVSS
D17 DVSS
D1 DVSS
F15 DVSS
T14 DVSS
V14 DVSS
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J14 DVSS
U14 DVSS
N15 DVSS
R14 DVSS
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K14 DVSS
N14 DVSS
L14 DVSS
M14 DVSS
M15 DVSS
P15 DVSS
P14 DVSS
L15 DVSS
K15 DVSS
AA14 DVSS
J15 DVSS
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J17 DVSS
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M19 DVSS
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AB25 DVSS
AB19 DVSS
H20 DVSS
E21 DVSS
D21 DVSS
G20 DVSS
K20 DVSS
M20 DVSS
E20 DVSS
N21 DVSS
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AB8 DVSS
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D9 DVSS
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M9 DVSS
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R9 DVSS
T9 DVSS
U9 DVSS
V9 DVSS
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M10 DVSS
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P10 DVSS
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E23 DVSS
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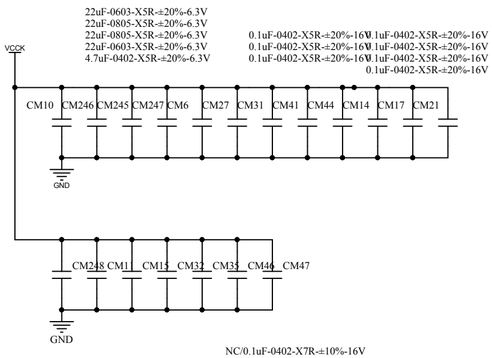
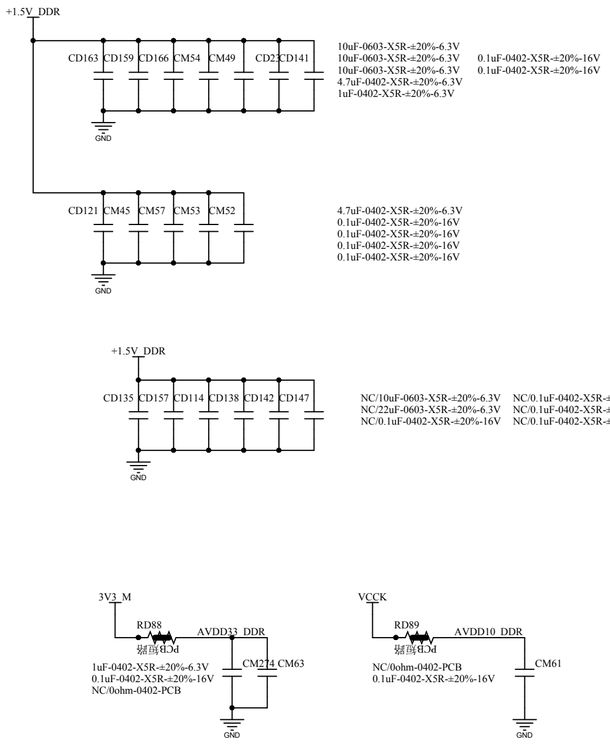
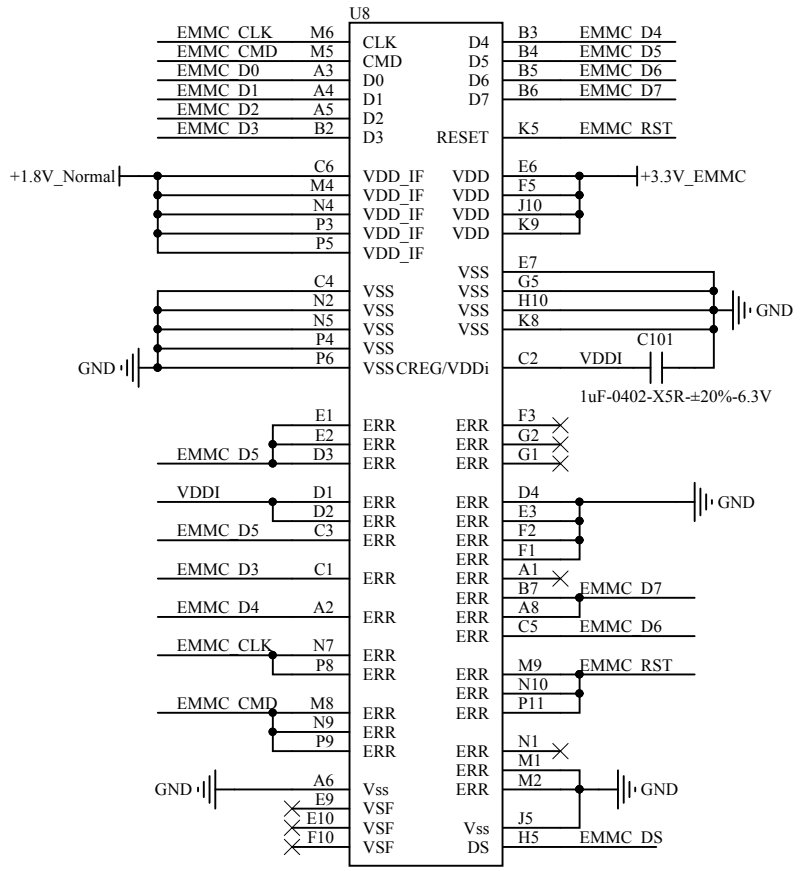
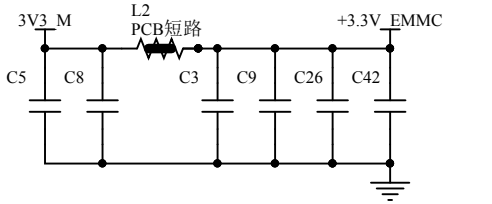
E22 DVSS
AE21 DVSS
AD21 DVSS
AC26 DVSS
AB24 DVSS
P24 DVSS
E24 DVSS
AB23 DVSS
AD24 DVSS
K24 DVSS
AE23 DVSS
P23 DVSS
N24 DVSS
GND
GND
TVN:"' rG, I C Nai n Chi p, MT5659CHNF, 32bi t , Quad- Cor e, LFBGR654, SMD MTK


22uF-0603-X5R-±20%-6.3V
22uF-0805-X5R-±20%-6.3V
22uF-0805-X5R-±20%-6.3V
22uF-0603-X5R-±20%-6.3V
4.7uF-0402-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
VCCK
CM10 CM246 CM245 CM247 CM6 CM27 CM31 CM41 CM44 CM14 CM17 CM21
GND
CM248 CM11 CM15 CM32 CM35 CM46 CM47
GND
NC/22uF-0805-X5R-±20%-6.3V
NC/0.1uF-0402-X7R-±10%-16V
NC/0.1uF-0402-X7R-±10%-16V
NC/0.1uF-0402-X7R-±10%-16V
NC/0.1uF-0402-X7R-±10%-16V
NC/0.1uF-0402-X7R-±10%-16V
NC/0.1uF-0402-X7R-±10%-16V
NC/0.1uF-0402-X7R-±10%-16V

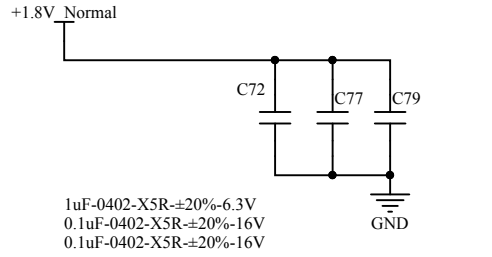

+1.5V_DDR
CD163 CD159 CD166 CD54 CM49 CD23 CD141
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
4.7uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
GND
CD121 CM45 CM57 CM53 CM52
4.7uF-0402-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
GND
+1.5V_DDR
CD135 CD157 CD114 CD138 CD142 CD147
NC/10uF-0603-X5R-±20%-6.3V
NC/22uF-0603-X5R-±20%-6.3V
NC/0.1uF-0402-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V
GND
3V3_M
RD88
0R-0402-PCB
AVDD33_DDR
1uF-0402-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
NC/0ohm-0402-PCB
CM274 CM63
GND
VCCK
RD89
0R-0402-PCB
AVDD10_DDR
NC/0ohm-0402-PCB
0.1uF-0402-X5R-±20%-16V
CM61
GND



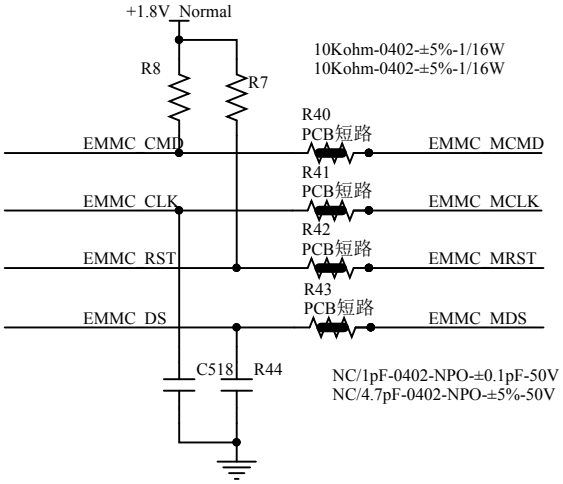
EMMC FLASH芯片,IC EMMC FLASH,4GB,MLC,BGA153,SMD,THGBMDG5D1LBAIL,Toshiba



NC/1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
NC/0ohm-0402-PCB
NC/22uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V

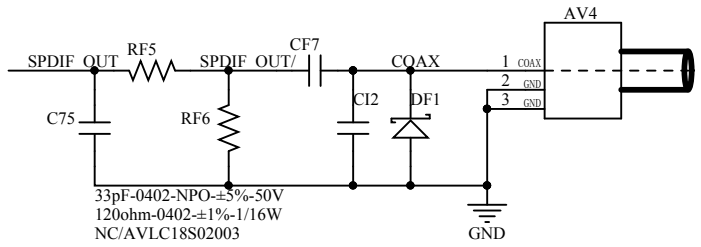


1uF-0402-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V

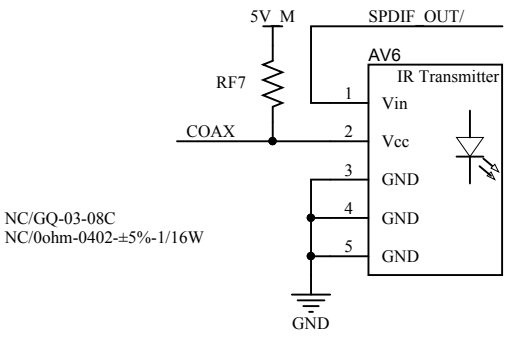


NC/0ohm-0402-PCB
NC/0ohm-0402-PCB
NC/0ohm-0402-PCB
NC/0ohm-0402-PCB

NC/1pF-0402-NPO-±0.1pF-50V
NC/4.7pF-0402-NPO-±5%-50V

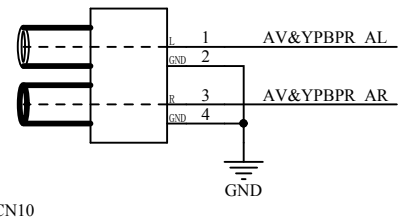


33pF-0402-NPO-±5%-50V
120ohm-0402-±1%-1/16W
NC/AVLC18S02003



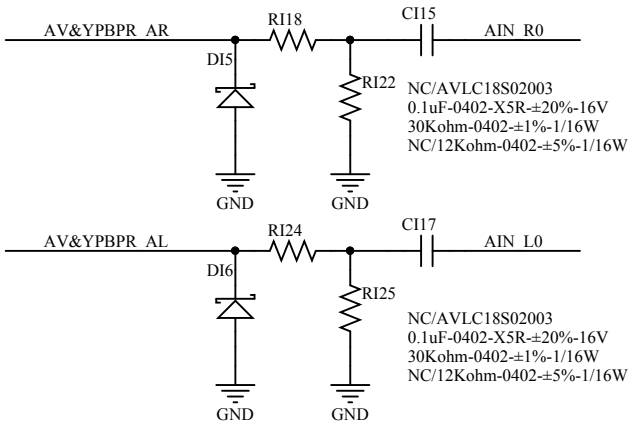
NC/GQ-03-08C
NC/0ohm-0402-±5%-1/16W

120ohm-0402-±1%-1/16W
0.1uF-0402-X5R-±20%-16V
330pF-0402-NPO-±5%-50V
RCA端子,RCA Jack,AV1,H,Orange,CH5.5,Seal,DIP,AV38A-01S-5020,QS



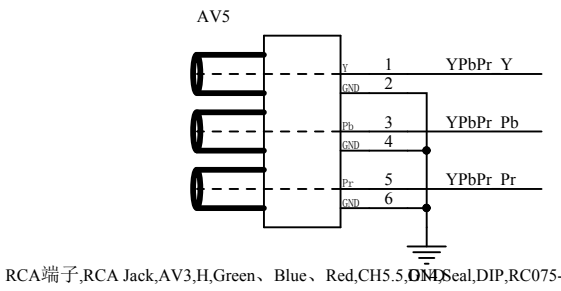
CN10

RCA端子,RCA Jack,AV2,H,White、Red,5.5,14,Seal,DIP,RC086-F02L3BY-X,YUQIU

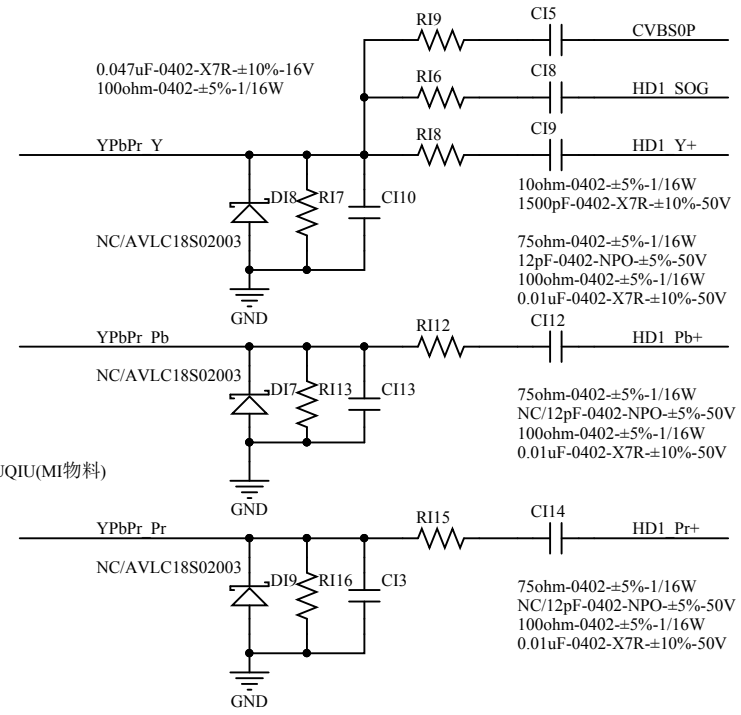


NC/AVLC18S02003
0.1uF-0402-X5R-±20%-16V
30Kohm-0402-±1%-1/16W
NC/12Kohm-0402-±5%-1/16W

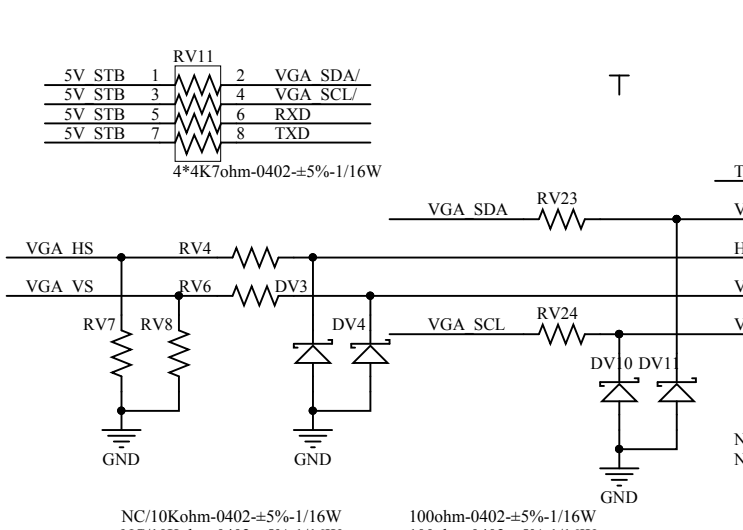
NC/AVLC18S02003
0.1uF-0402-X5R-±20%-16V
30Kohm-0402-±1%-1/16W
NC/12Kohm-0402-±5%-1/16W



RCA端子,RCA Jack,AV3,H,Green、Blue、Red,CH5.5,Seal,DIP,RC075-F03L3BY-B,YUQIU(MI物料)



10ohm-0402-±5%-1/16W
1500pF-0402-X7R-±10%-50V
75ohm-0402-±5%-1/16W
NC/12pF-0402-NPO-±5%-50V
100ohm-0402-±5%-1/16W
0.01uF-0402-X7R-±10%-50V



NC/10Kohm-0402-±5%-1/16W
NC/10Kohm-0402-±5%-1/16W
NC/AVLC18S02003
NC/AVLC18S02003

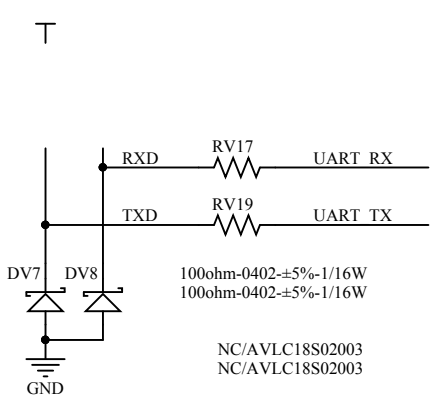
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
2Kohm-0402-±1%-1/16W
2Kohm-0402-±1%-1/16W

100ohm-0402-±5%-1/16W
0.01uF-0402-X7R-±10%-50V
NC/AVLC18S02003
NC/10pF-0402-NPO-±5%-50V
75ohm-0402-±5%-1/16W

10ohm-0402-±5%-1/16W
1500pF-0402-X7R-±10%-50V

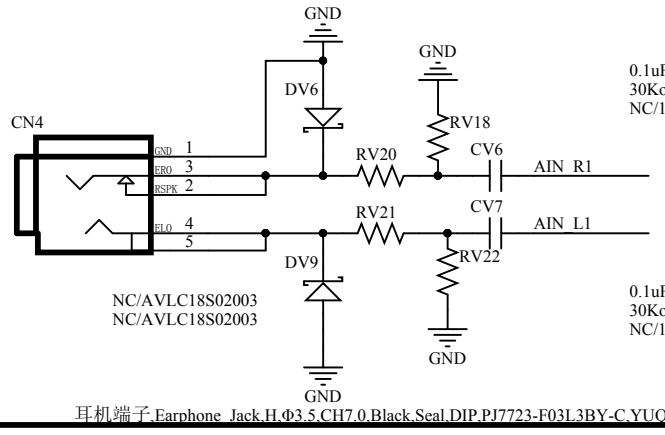
100ohm-0402-±5%-1/16W
0.01uF-0402-X7R-±10%-50V
NC/AVLC18S02003
NC/10pF-0402-NPO-±5%-50V
75ohm-0402-±5%-1/16W

100ohm-0402-±5%-1/16W
0.01uF-0402-X7R-±10%-50V
NC/AVLC18S02003
NC/10pF-0402-NPO-±5%-50V
75ohm-0402-±5%-1/16W



100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W

NC/AVLC18S02003
NC/AVLC18S02003

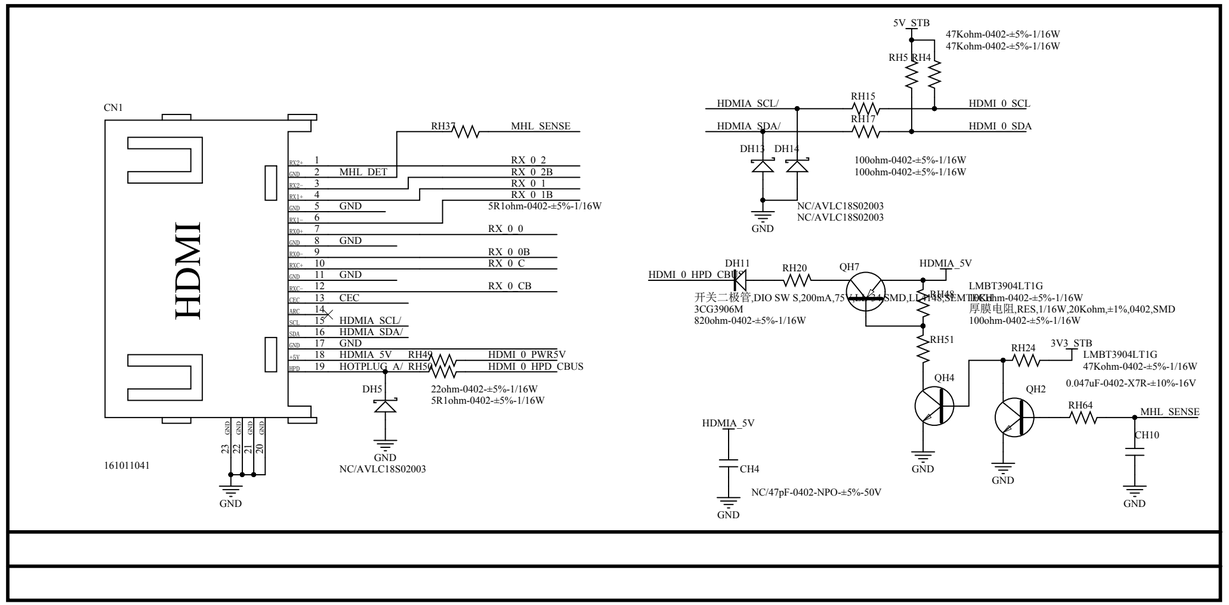


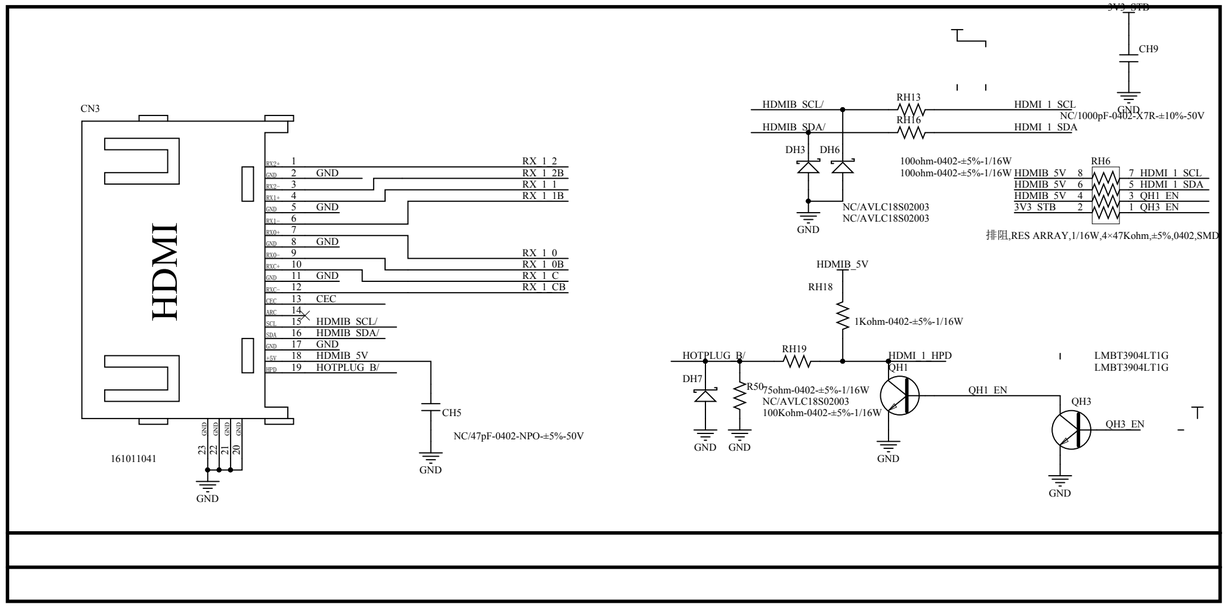
NC/AVLC18S02003
NC/AVLC18S02003

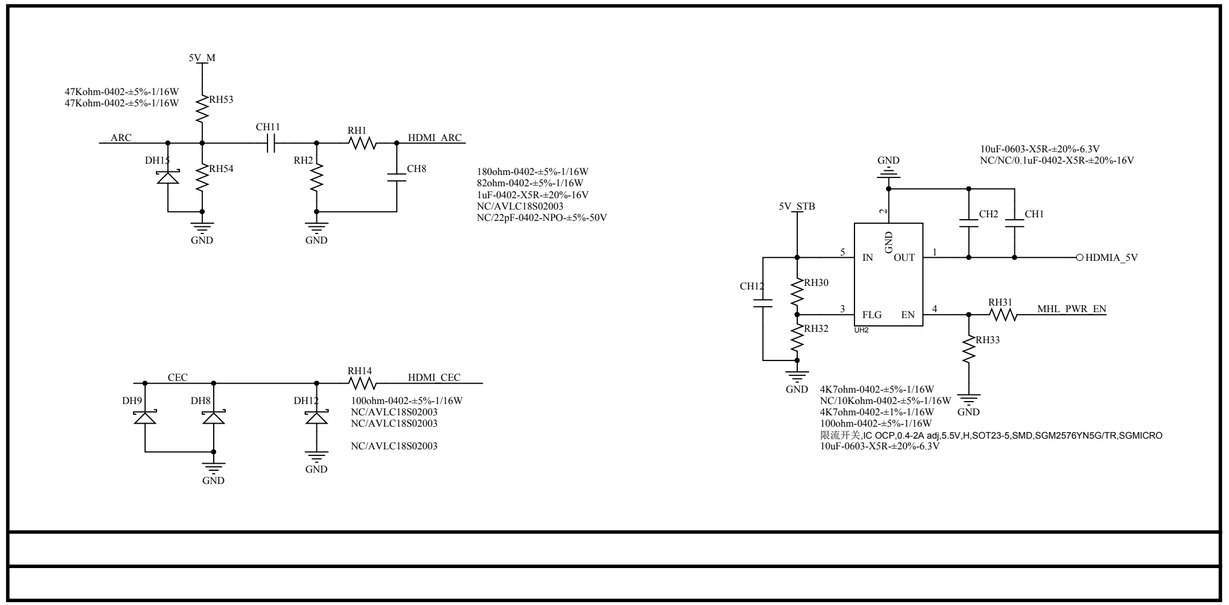
0.1uF-0402-X5R-±20%-16V
30Kohm-0402-±1%-1/16W
NC/12Kohm-0402-±5%-1/16W

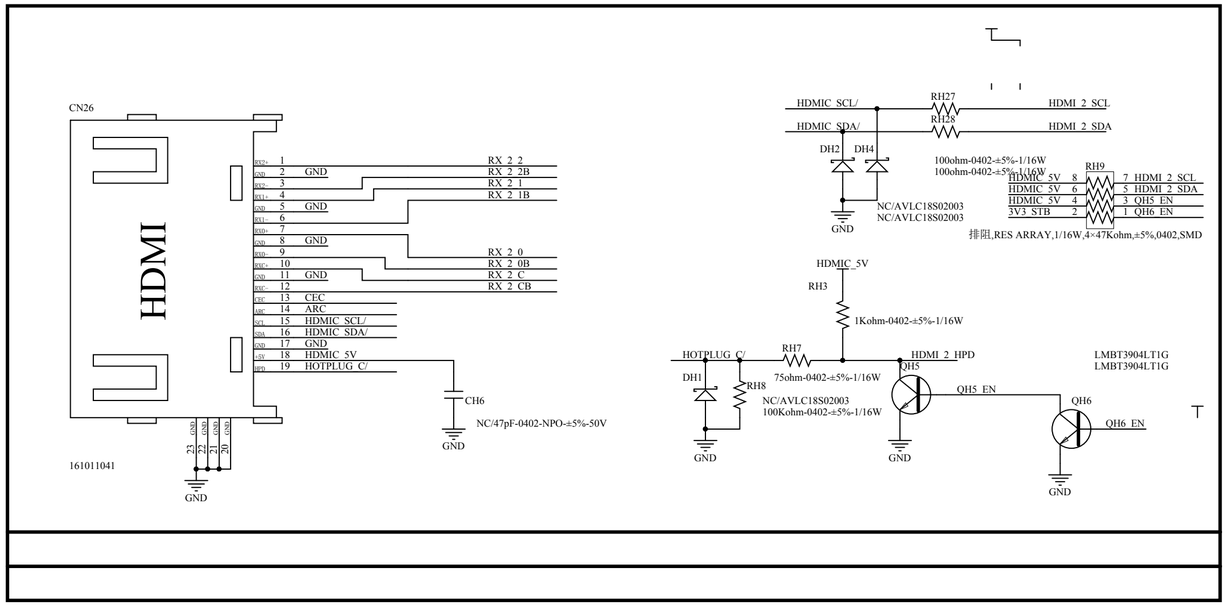
0.1uF-0402-X5R-±20%-16V
30Kohm-0402-±1%-1/16W
NC/12Kohm-0402-±5%-1/16W

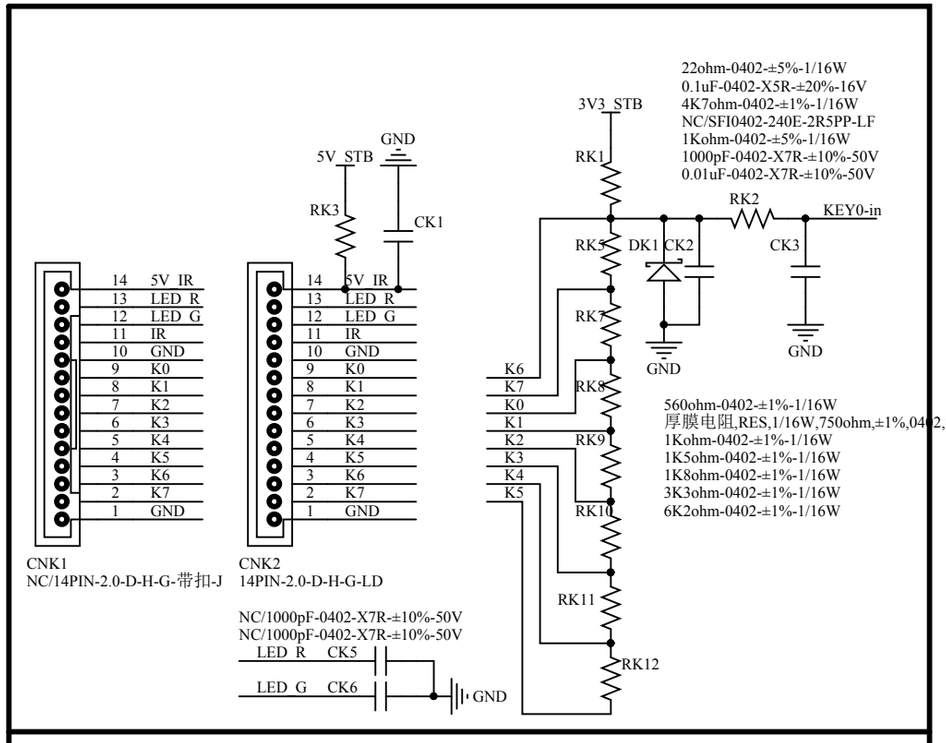
耳机端子,Earphone_Jack,H,Φ3.5,CH7.0,Black,Seal,DIP,PJ7723-F03L3BY-C,YUQIU

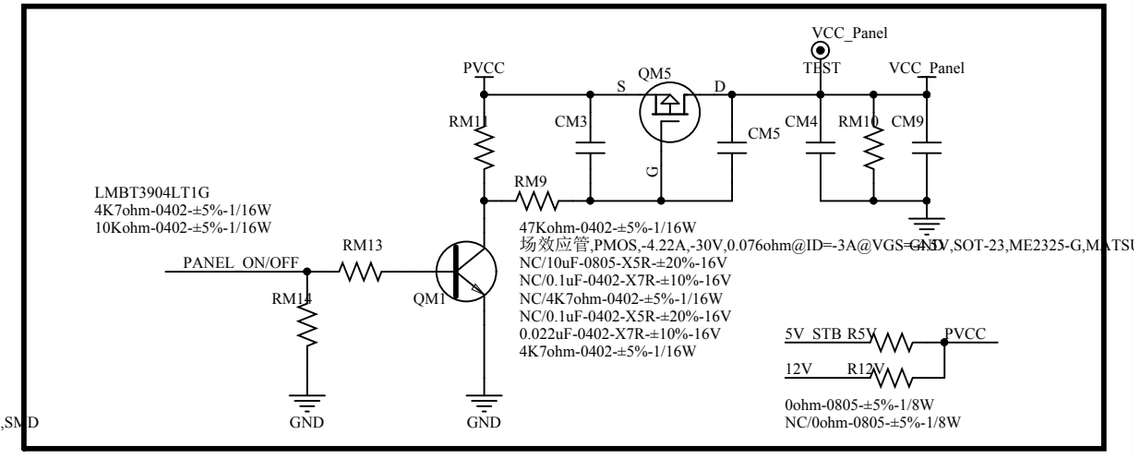

CN1
HDMI
RH37
MHL_SENSE
1 RX_0_2
2 MHL_DET RX_0_2B
3 RX_0_1
4 RX_0_1B
5 GND 5R1ohm-0402-±5%-1/16W
6
7 RX_0_0
8 GND
9 RX_0_0B
10 RX_0_C
11 GND
12 RX_0_CB
13 CEC
14
15 HDMIA_SCL/
16 HDMIA_SDA/
17 GND
18 HDMIA_5V RH49 HDMI_0_PWR5V
19 HOTPLUG_A/ RH50 HDMI_0_HPD_CBUS
DH5
22ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
GND
NC/AVLC18S02003
161011041
GND
5V_STB
47Kohm-0402-±5%-1/16W
47Kohm-0402-±5%-1/16W
RH5 RH4
HDMIA_SCL/
HDMIA_SDA/
RH15
RH17
HDMI_0_SCL
HDMI_0_SDA
DH13 DH14
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/AVLC18S02003
NC/AVLC18S02003
GND
DH11
HDMI_0_HPD_CBUS
RH20
QH7
HDMIA_5V
开关二极管,DIO SW S,200mA,75
SMD,LL4148,SEMTECH
LMBT3904LT1G
RH48
10Kohm-0402-±5%-1/16W
厚膜电阻,RES,1/16W,20Kohm,±1%,0402,SMD
3CG3906M
820ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
RH51
RH24
3V3_STB
LMBT3904LT1G
47Kohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
QH4
QH2
RH64
MHL_SENSE
CH10
HDMIA_5V
CH4
NC/47pF-0402-NPO-±5%-50V
GND

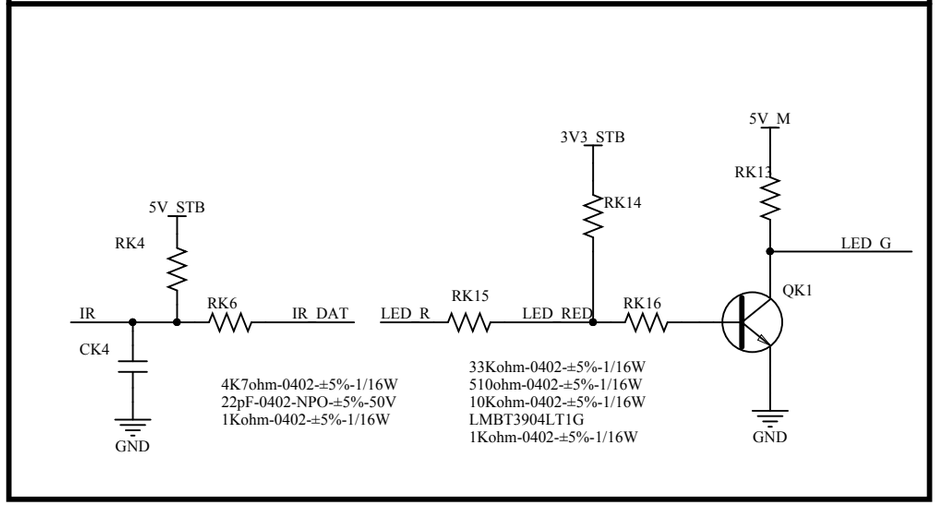

CN3
HDMI
RX_1_2
RX_1_2B
RX_1_1
RX_1_1B
RX_1_0
RX_1_0B
RX_1_C
RX_1_CB
CEC
HDMIB_SCL/
HDMIB_SDA/
HDMIB_5V
HOTPLUG_B/
CH5
NC/47pF-0402-NPO-±5%-50V
161011041
GND
3V3_STB
CH9
HDMIB_SCL/
HDMIB_SDA/
RH13
RH16
HDMI_1_SCL
HDMI_1_SDA
NC/1000pF-0402-X7R-±10%-50V
DH3 DH6
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/AVLC18S02003
NC/AVLC18S02003
RH6
HDMIB_5V
HDMIB_5V
HDMIB_5V
3V3_STB
7 HDMI_1_SCL
5 HDMI_1_SDA
3 QH1_EN
1 QH3_EN
排阻,RES ARRAY,1/16W,4×47Kohm,±5%,0402,SMD
RH18
1Kohm-0402-±5%-1/16W
HOTPLUG_B/
RH19
HDMI_1_HPD
DH7
R50
75ohm-0402-±5%-1/16W
NC/AVLC18S02003
100Kohm-0402-±5%-1/16W
QH1
QH1_EN
QH3
QH3_EN
LMBT3904LT1G
LMBT3904LT1G
GND

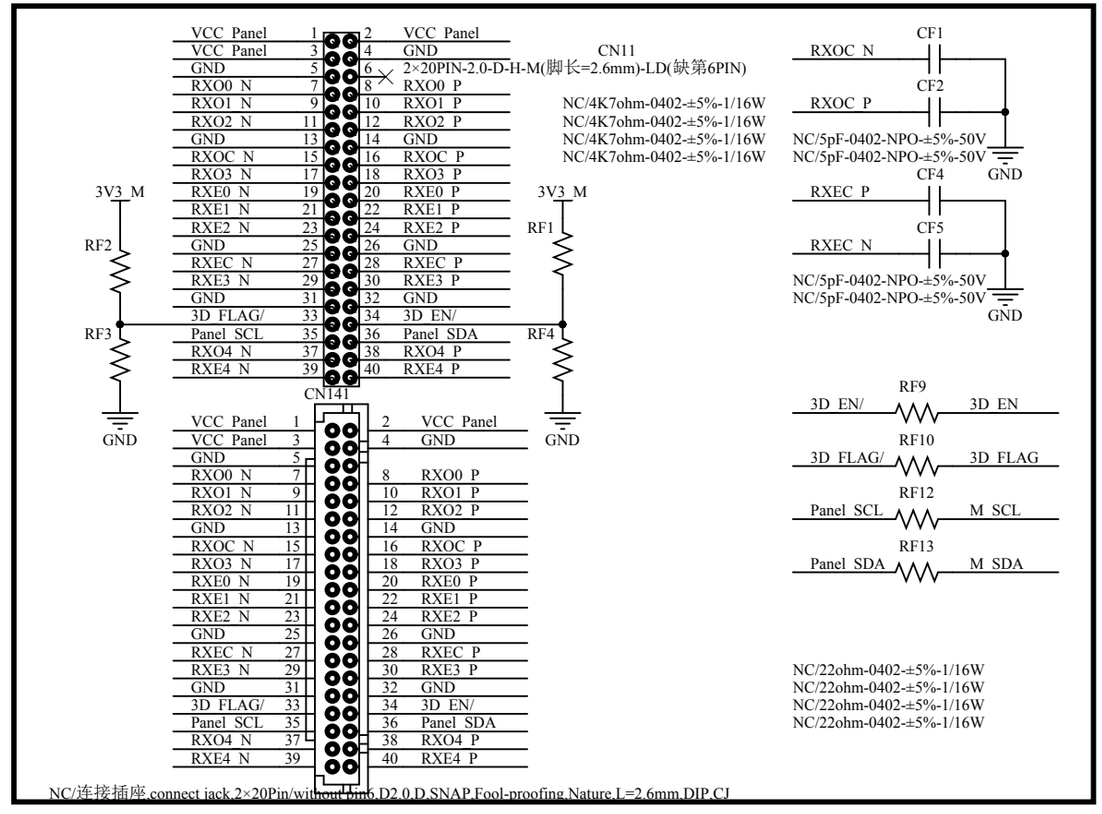

5V_M
47Kohm-0402-±5%-1/16W
47Kohm-0402-±5%-1/16W
RH53
ARC
CH11
RH1
HDMI_ARC
DH15
RH54
RH2
CH8
180ohm-0402-±5%-1/16W
82ohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-16V
NC/AVLC18S02003
NC/22pF-0402-NPO-±5%-50V
GND
CEC
RH14
HDMI_CEC
DH9
DH8
DH12
100ohm-0402-±5%-1/16W
NC/AVLC18S02003
NC/AVLC18S02003
NC/AVLC18S02003
GND
GND
10uF-0603-X5R-±20%-6.3V
NC/NC/0.1uF-0402-X5R-±20%-16V
5V_STB
CH2
CH1
HDMIA_5V
CH12
RH30
RH31
MHL_PWR_EN
RH32
RH33
UH2
IN
OUT
FLG
EN
GND
4K7ohm-0402-±5%-1/16W
NC/10Kohm-0402-±5%-1/16W
4K7ohm-0402-±1%-1/16W
100ohm-0402-±5%-1/16W
限流开关,IC OCP,0.4-2A adj,5.5V,H,SOT23-5,SMD,SGM2576YN5G/TR,SGMICRO
10uF-0603-X5R-±20%-6.3V

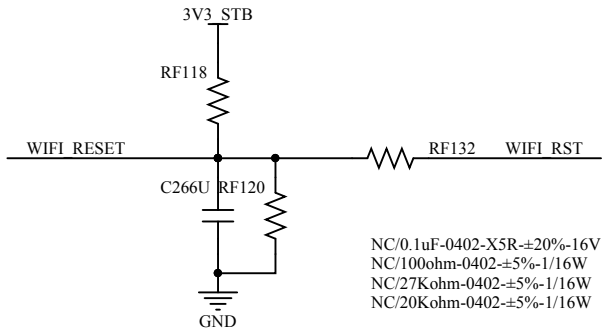

CN26
HDMI
RX_2_2
RX_2_2B
RX_2_1
RX_2_1B
RX_2_0
RX_2_0B
RX_2_C
RX_2_CB
CEC
ARC
HDMIC_SCL/
HDMIC_SDA/
HDMIC_5V
HOTPLUG_C/
CH6
NC/47pF-0402-NPO-±5%-50V
161011041
GND
HDMIC_SCL/
HDMIC_SDA/
RH27
RH28
HDMI_2_SCL
HDMI_2_SDA
DH2 DH4
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/AVLC18S02003
NC/AVLC18S02003
RH9
HDMIC_5V
HDMIC_5V
HDMIC_5V
3V3_STB
7 HDMI_2_SCL
5 HDMI_2_SDA
3 QH5_EN
1 QH6_EN
排阻,RES ARRAY,1/16W,4×47Kohm,±5%,0402,SMD
RH3
1Kohm-0402-±5%-1/16W
HOTPLUG_C/
RH7
HDMI_2_HPD
DH1
RH8
75ohm-0402-±5%-1/16W
NC/AVLC18S02003
100Kohm-0402-±5%-1/16W
QH5
QH5_EN
QH6
QH6_EN
LMBT3904LT1G
LMBT3904LT1G
GND


22ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
4K7ohm-0402-±1%-1/16W
NC/SFI0402-240E-2R5PP-LF
1Kohm-0402-±5%-1/16W
1000pF-0402-X7R-±10%-50V
0.01uF-0402-X7R-±10%-50V
3V3_STB
GND
5V_STB
RK1
RK2
RK3
CK1
KEY0-in
RK5
DK1
CK2
CK3
RK7
RK8
RK9
RK10
RK11
RK12
K6
K7
K0
K1
K2
K3
K4
K5
560ohm-0402-±1%-1/16W
厚膜电阻,RES,1/16W,750ohm,±1%,0402,SMD
1Kohm-0402-±1%-1/16W
1K5ohm-0402-±1%-1/16W
1K8ohm-0402-±1%-1/16W
3K3ohm-0402-±1%-1/16W
6K2ohm-0402-±1%-1/16W
14 5V_IR
13 LED_R
12 LED_G
11 IR
10 GND
9 K0
8 K1
7 K2
6 K3
5 K4
4 K5
3 K6
2 K7
1 GND
CNK1
NC/14PIN-2.0-D-H-G-带扣-J
CNK2
14PIN-2.0-D-H-G-LD
NC/1000pF-0402-X7R-±10%-50V
NC/1000pF-0402-X7R-±10%-50V
LED_R CK5
LED_G CK6

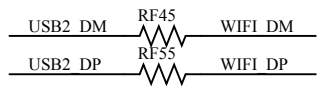

VCC_Panel
PVCC
QM5
S
D
G
TEST
VCC_Panel
RM11
CM3
CM5
CM4
RM10
CM9
RM9
LMBT3904LT1G
4K7ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
47Kohm-0402-±5%-1/16W
场效应管,PMOS,-4.22A,-30V,0.076ohm@ID=-3A@VGS=-10V,SOT-23,ME2325-G,MATSUKI
NC/10uF-0805-X5R-±20%-16V
NC/0.1uF-0402-X7R-±10%-16V
NC/4K7ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
0.022uF-0402-X7R-±10%-16V
4K7ohm-0402-±5%-1/16W
PANEL_ON/OFF
RM13
RM14
QM1
GND
5V_STB R5V
PVCC
12V
R12V
0ohm-0805-±5%-1/8W
NC/0ohm-0805-±5%-1/8W


3V3_STB
5V_M
RK13
RK14
LED_G
5V_STB
RK4
IR
RK6
IR_DAT
RK15
LED_R
LED_RED
RK16
QK1
CK4
GND
4K7ohm-0402-±5%-1/16W
22pF-0402-NPO-±5%-50V
1Kohm-0402-±5%-1/16W
33Kohm-0402-±5%-1/16W
510ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
LMBT3904LT1G
1Kohm-0402-±5%-1/16W

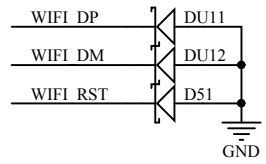

VCC_Panel 1 2 VCC_Panel
VCC_Panel 3 4 GND
GND 5 6
RXO0_N 7 8 RXO0_P
RXO1_N 9 10 RXO1_P
RXO2_N 11 12 RXO2_P
GND 13 14 GND
RXOC_N 15 16 RXOC_P
RXO3_N 17 18 RXO3_P
RXE0_N 19 20 RXE0_P
RXE1_N 21 22 RXE1_P
RXE2_N 23 24 RXE2_P
GND 25 26 GND
RXEC_N 27 28 RXEC_P
RXE3_N 29 30 RXE3_P
GND 31 32 GND
3D_FLAG/ 33 34 3D_EN/
Panel_SCL 35 36 Panel_SDA
RXO4_N 37 38 RXO4_P
RXE4_N 39 40 RXE4_P
CN11
2×20PIN-2.0-D-H-M(脚长=2.6mm)-LD(缺第6PIN)
NC/4K7ohm-0402-±5%-1/16W
NC/4K7ohm-0402-±5%-1/16W
NC/4K7ohm-0402-±5%-1/16W
NC/4K7ohm-0402-±5%-1/16W
3V3_M
RF2
RF3
GND
RF1
RF4
CN141
RXOC_N
RXOC_P
CF1
CF2
NC/5pF-0402-NPO-±5%-50V
NC/5pF-0402-NPO-±5%-50V
GND
RXEC_P
RXEC_N
CF4
CF5
NC/5pF-0402-NPO-±5%-50V
NC/5pF-0402-NPO-±5%-50V
RF9
3D_EN/
3D_EN
RF10
3D_FLAG/
3D_FLAG
RF12
Panel_SCL
M_SCL
RF13
Panel_SDA
M_SDA
NC/22ohm-0402-±5%-1/16W
NC/22ohm-0402-±5%-1/16W
NC/22ohm-0402-±5%-1/16W
NC/22ohm-0402-±5%-1/16W
NC/连接插座,connect jack,2×20Pin/without bm6,D2.0,D,SNAP,Fool-proofing,Nature,L=2.6mm,DIP,CJ



NC/0.1uF-0402-X5R-±20%-16V
NC/100ohm-0402-±5%-1/16W
NC/27Kohm-0402-±5%-1/16W
NC/20Kohm-0402-±5%-1/16W

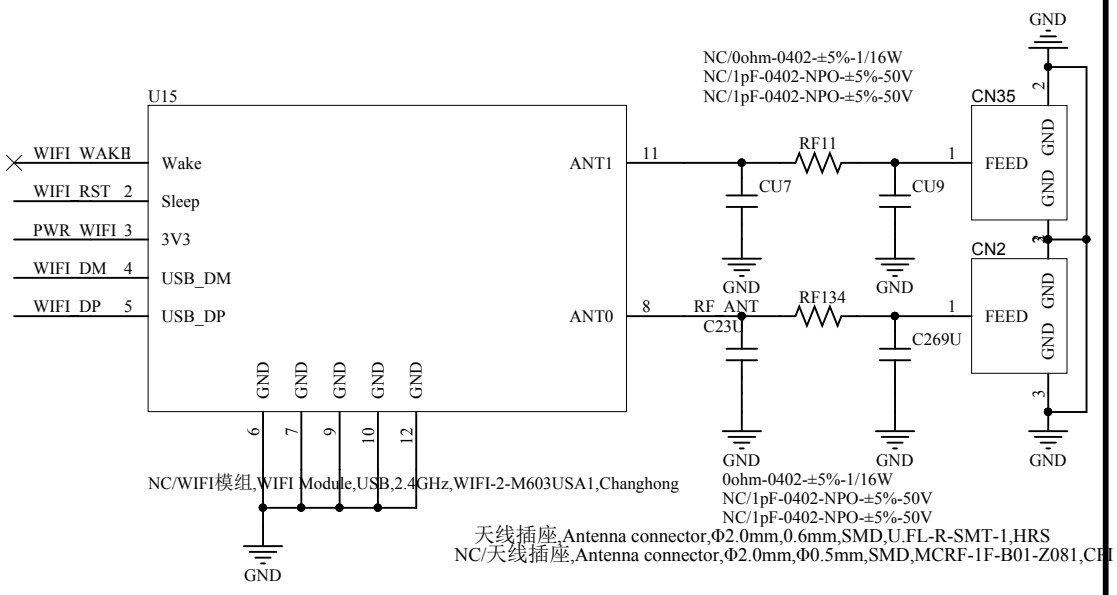


5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W



NC/SFI0402-240E-2R5PP-LF

NC/SFI0402-240E-2R5PP-LF
NC/SFI0402-240E-2R5PP-LF

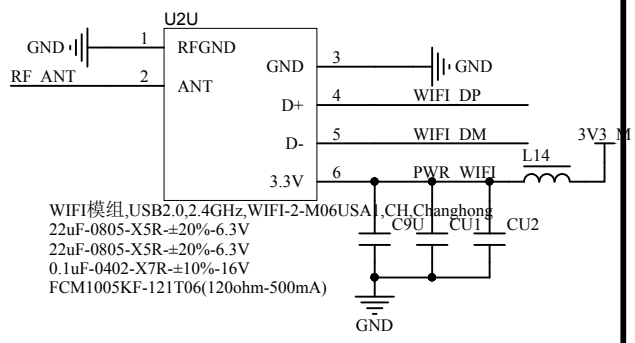


NC/0ohm-0402-±5%-1/16W
NC/1pF-0402-NPO-±5%-50V
NC/1pF-0402-NPO-±5%-50V

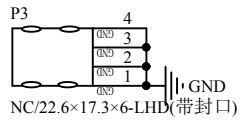
NC/WIFI模组,WIFI Module,USB,2.4GHz,WIFI-2-M603USA1,Changhong

0ohm-0402-±5%-1/16W
NC/1pF-0402-NPO-±5%-50V
NC/1pF-0402-NPO-±5%-50V

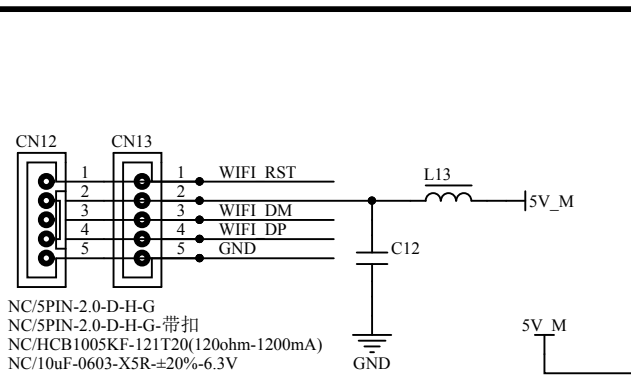
天线插座,Antenna connector,Φ2.0mm,0.6mm,SMD,U.FL-R-SMT-1,HRS
NC/天线插座,Antenna connector,Φ2.0mm,Φ0.5mm,SMD,MCRF-1F-B01-Z081,CHI



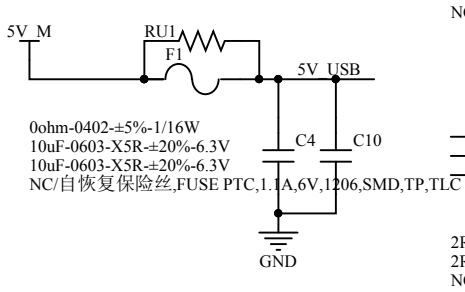
WIFI模组,USB2.0,2.4GHz,WIFI-2-M06USA1,CH,Changhong
22uF-0805-X5R-±20%-6.3V
22uF-0805-X5R-±20%-6.3V
0.1uF-0402-X7R-±10%-16V
FCM1005KF-121T06(120ohm-500mA)



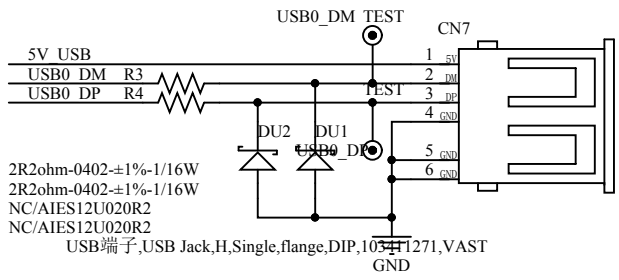
NC/22.6×17.3×6-LHD(带封口)



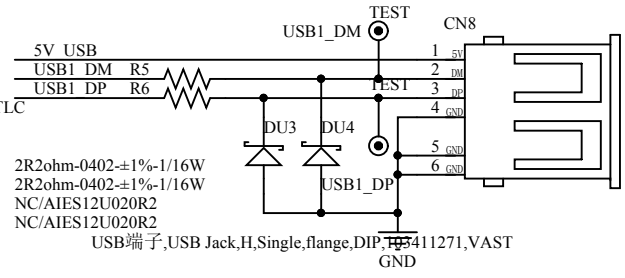
NC/5PIN-2.0-D-H-G
NC/5PIN-2.0-D-H-G-带扣
NC/HCB1005KF-121T20(120ohm-1200mA)
NC/10uF-0603-X5R-±20%-6.3V



0ohm-0402-±5%-1/16W
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
NC/自恢复保险丝,FUSE PTC,1.1A,6V,1206,SMD,TP,TLC

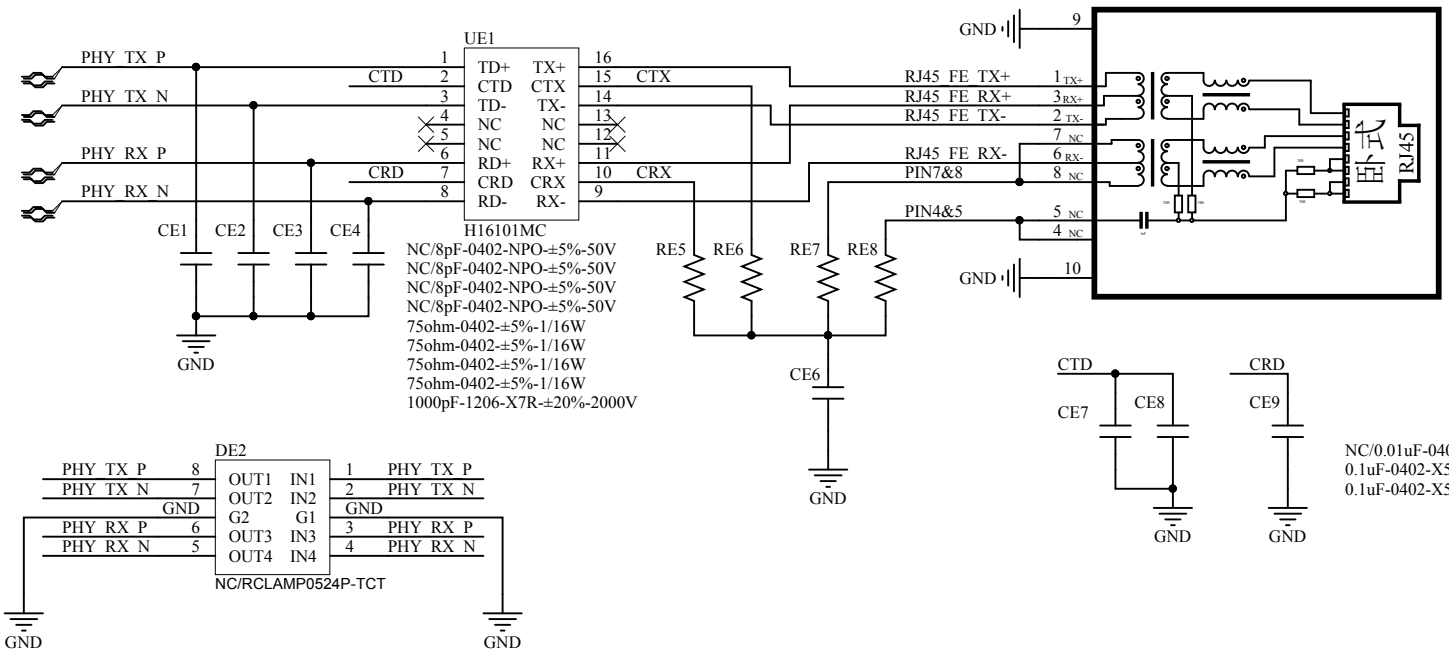


2R2ohm-0402-±1%-1/16W
2R2ohm-0402-±1%-1/16W
NC/AIES12U020R2
NC/AIES12U020R2
USB端子,USB Jack,H,Single,flange,DIP,10341271,VAST



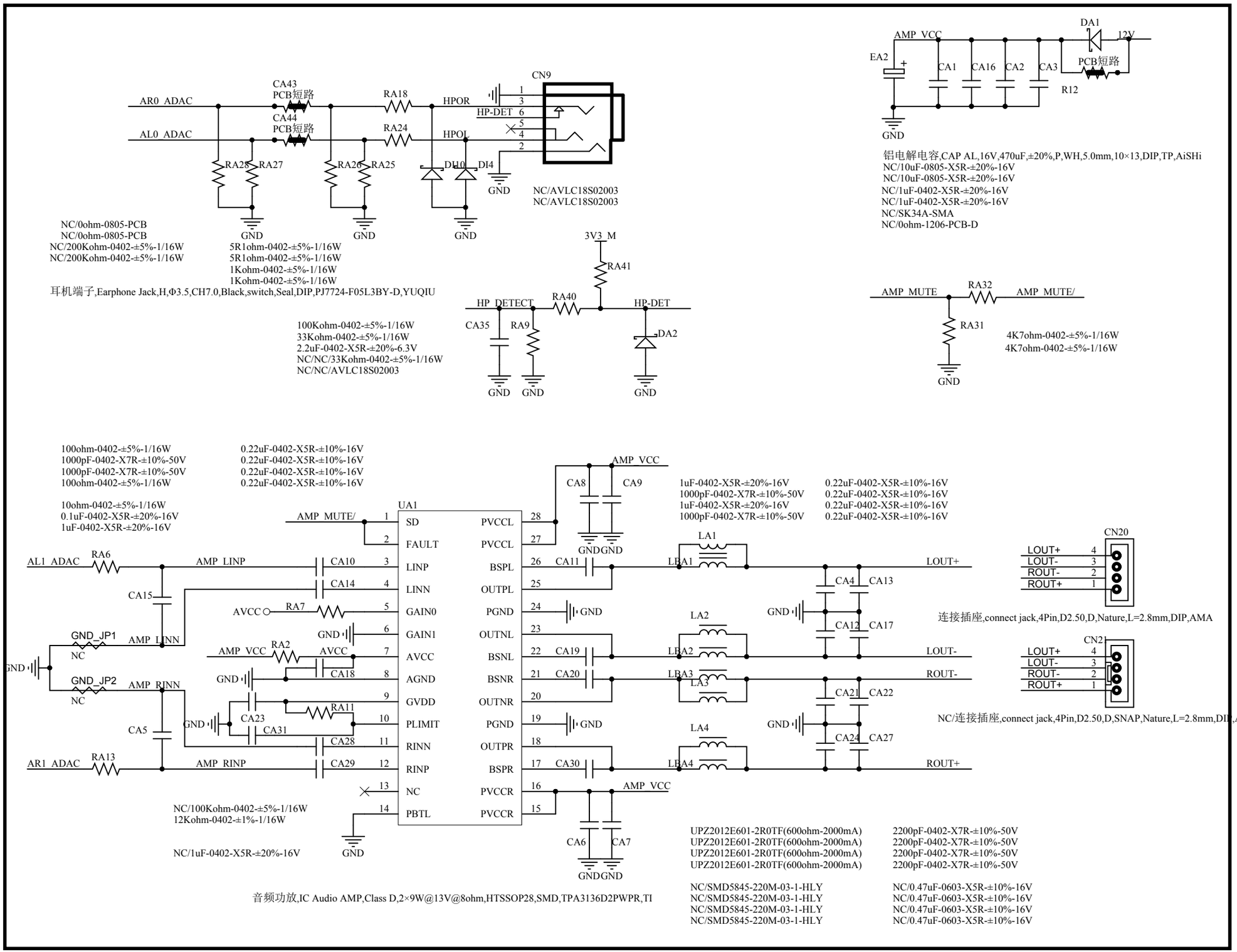
2R2ohm-0402-±1%-1/16W
2R2ohm-0402-±1%-1/16W
NC/AIES12U020R2
NC/AIES12U020R2
USB端子,USB Jack,H,Single,flange,DIP,10341271,VAST

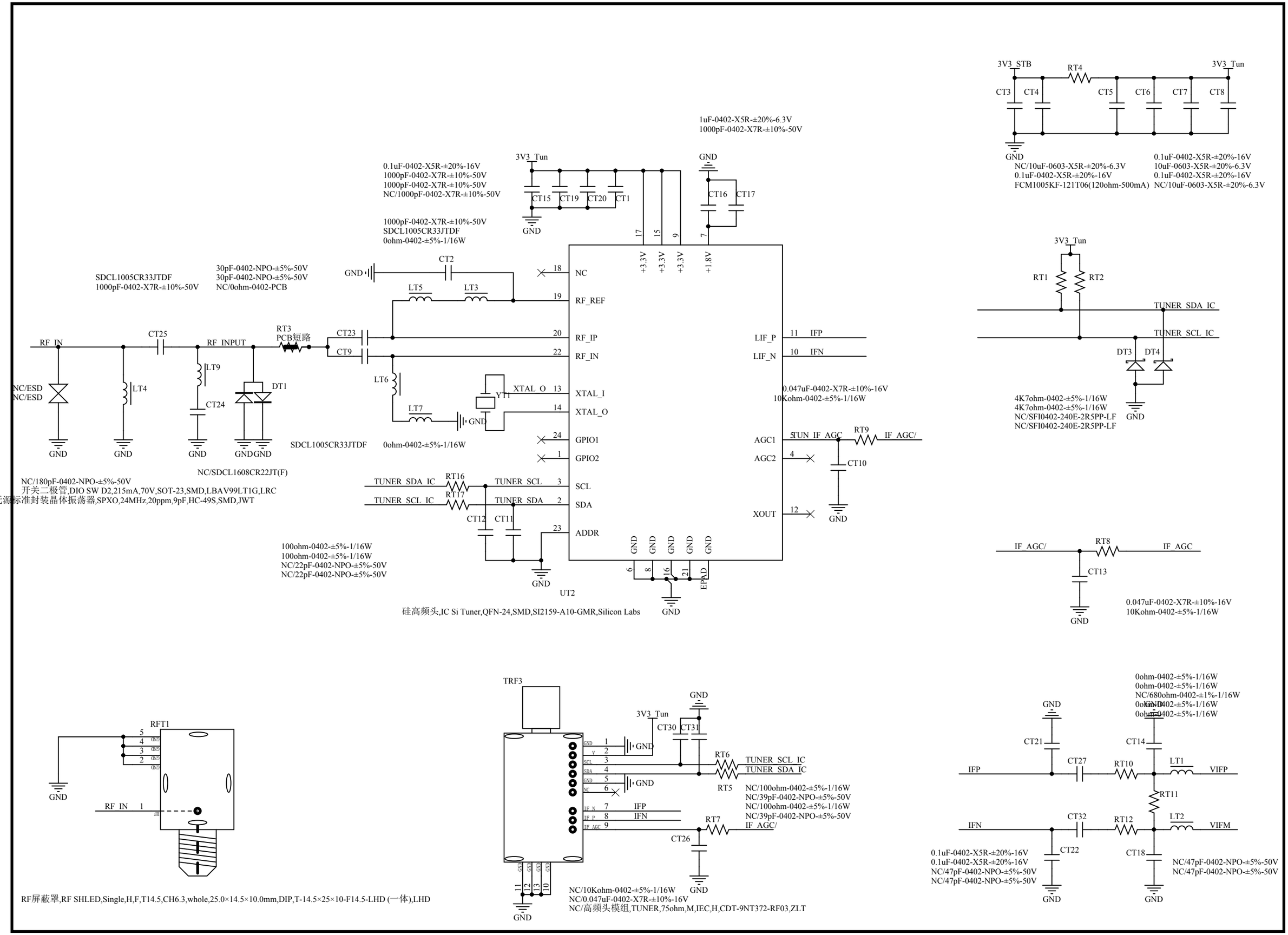
CN5 网络端子,Network Terminal,DIP,41238-01G051,GLGNET

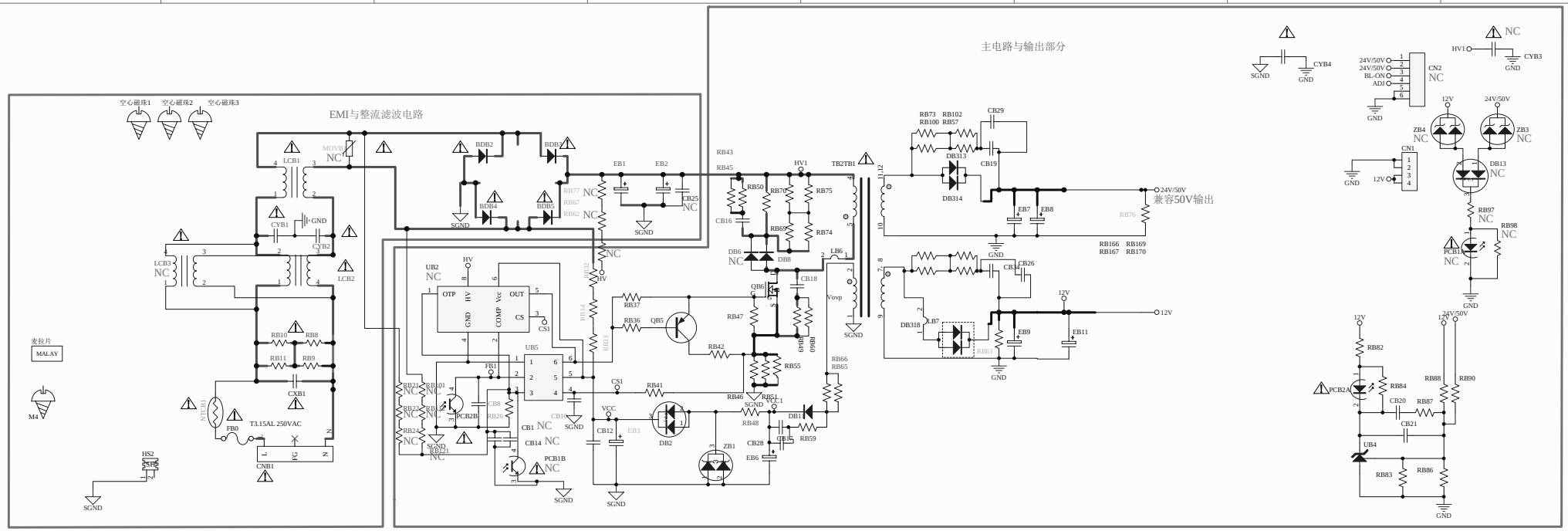


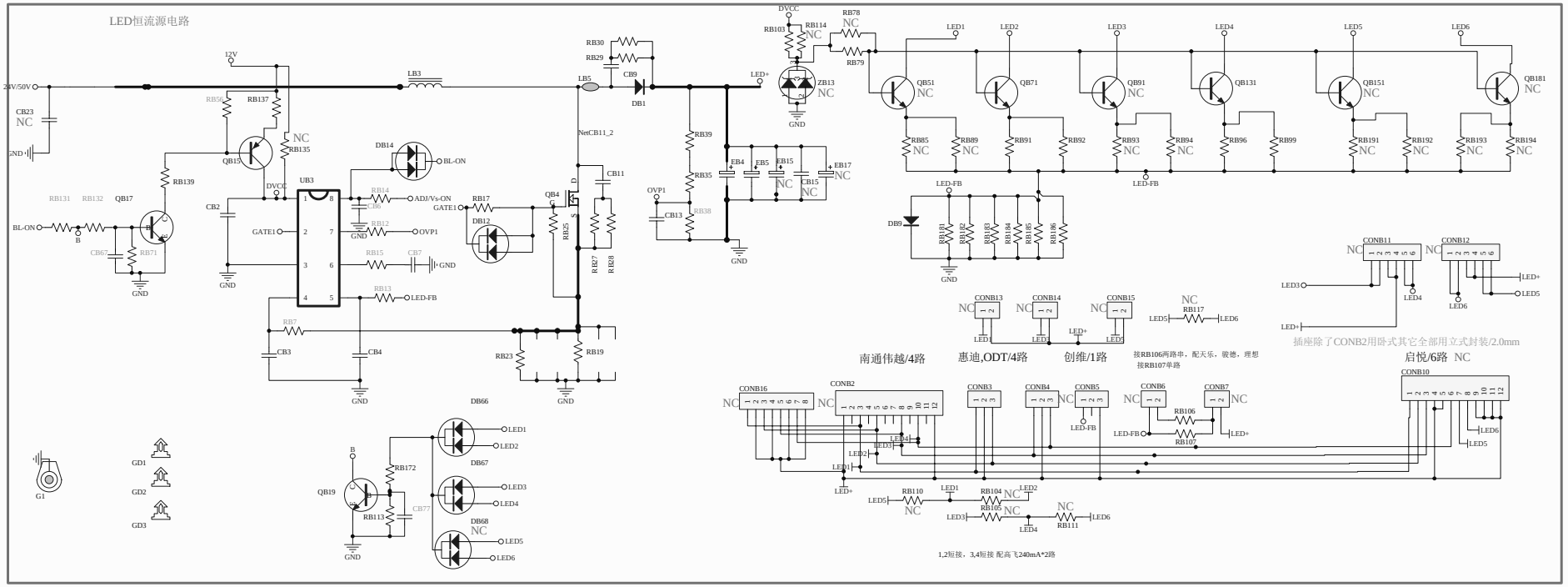
NC/8pF-0402-NPO-±5%-50V
NC/8pF-0402-NPO-±5%-50V
NC/8pF-0402-NPO-±5%-50V
NC/8pF-0402-NPO-±5%-50V
75ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
1000pF-1206-X7R-±20%-2000V

NC/0.01uF-0402-X7R-±10%-50V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V

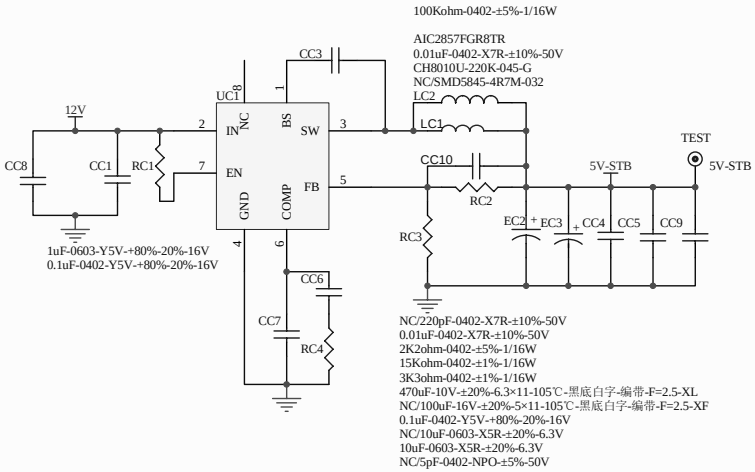

AR0_ADAC
AL0_ADAC
CA43 PCB短路
CA44 PCB短路
RA18
RA24
HPOR
HPOL
HP-DET
CN9
RA28 RA27 RA26 RA25
DI10 DI4
GND
NC/AVLC18S02003
NC/AVLC18S02003
NC/0ohm-0805-PCB
NC/0ohm-0805-PCB
NC/200Kohm-0402-±5%-1/16W
NC/200Kohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
耳机端子,Earphone Jack,H,Φ3.5,CH7.0,Black,switch,Seal,DIP,PJ7724-F05L3BY-D,YUQIU
3V3_M
RA41
HP_DETECT
RA40
HP-DET
CA35
RA9
DA2
100Kohm-0402-±5%-1/16W
33Kohm-0402-±5%-1/16W
2.2uF-0402-X5R-±20%-6.3V
NC/NC/33Kohm-0402-±5%-1/16W
NC/NC/AVLC18S02003
DA1
AMP_VCC
12V
EA2
CA1 CA16 CA2 CA3
PCB短路
R12
铝电解电容,CAP AL,16V,470uF,±20%,P,WH,5.0mm,10×13,DIP,TP,AiSHi
NC/10uF-0805-X5R-±20%-16V
NC/10uF-0805-X5R-±20%-16V
NC/1uF-0402-X5R-±20%-16V
NC/1uF-0402-X5R-±20%-16V
NC/SK34A-SMA
NC/0ohm-1206-PCB-D
AMP_MUTE
RA32
AMP_MUTE/
RA31
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
100ohm-0402-±5%-1/16W
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
10ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
1uF-0402-X5R-±20%-16V
UA1
AMP_MUTE/
SD
FAULT
LINP
LINN
GAIN0
GAIN1
AVCC
AGND
GVDD
PLIMIT
RINN
RINP
NC
PBTL
PVCCL
PVCCL
BSPL
OUTPL
PGND
OUTNL
BSNL
BSNR
OUTNR
PGND
OUTPR
BSPR
PVCCR
PVCCR
AMP_VCC
CA8 CA9
GND GND
1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
AL1_ADAC
RA6
AMP_LINP
CA10
CA14
CA15
AVCC
RA7
GND_JP1
AMP_LINN
NC
GND
GND_JP2
AMP_RINN
NC
AR1_ADAC
RA13
AMP_RINP
CA5
CA23
CA31
CA28
CA29
RA2
CA18
RA11
CA11
CA19
CA20
CA30
LA1
LA2
LA3
LA4
LBA1
LBA2
LBA3
LBA4
LOUT+
LOUT-
ROUT-
ROUT+
CA4 CA13
CA12 CA17
CA21 CA22
CA24 CA27
CN20
CN2
连接插座,connect jack,4Pin,D2.50,D,Nature,L=2.8mm,DIP,AMA
NC/连接插座,connect jack,4Pin,D2.50,D,SNAP,Nature,L=2.8mm,DIP,AMA
NC/100Kohm-0402-±5%-1/16W
12Kohm-0402-±1%-1/16W
NC/1uF-0402-X5R-±20%-16V
CA6 CA7
UPZ2012E601-2R0TF(600ohm-2000mA)
UPZ2012E601-2R0TF(600ohm-2000mA)
UPZ2012E601-2R0TF(600ohm-2000mA)
UPZ2012E601-2R0TF(600ohm-2000mA)
2200pF-0402-X7R-±10%-50V
2200pF-0402-X7R-±10%-50V
2200pF-0402-X7R-±10%-50V
2200pF-0402-X7R-±10%-50V
NC/SMD5845-220M-03-1-HLY
NC/SMD5845-220M-03-1-HLY
NC/SMD5845-220M-03-1-HLY
NC/SMD5845-220M-03-1-HLY
NC/0.47uF-0603-X5R-±10%-16V
NC/0.47uF-0603-X5R-±10%-16V
NC/0.47uF-0603-X5R-±10%-16V
NC/0.47uF-0603-X5R-±10%-16V
音频功放,IC Audio AMP,Class D,2×9W@13V@8ohm,HTSSOP28,SMD,TPA3136D2PWPR,TI

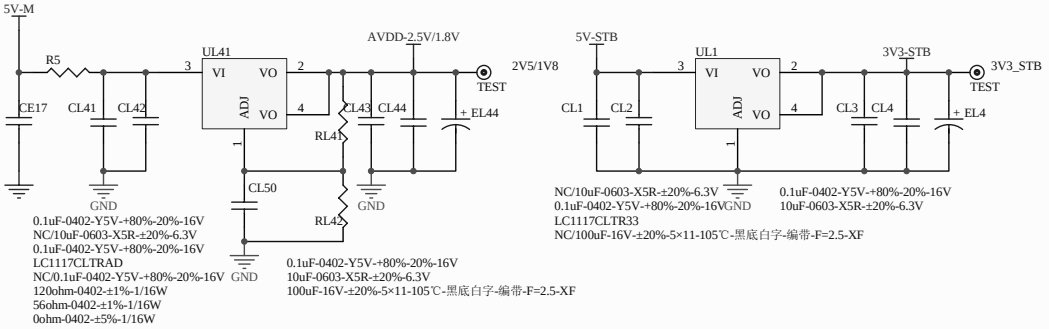

3V3_STB
RT4
3V3_Tun
CT3 CT4 CT5 CT6 CT7 CT8
GND
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
FCM1005KF-121T06(120ohm-500mA)
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
NC/10uF-0603-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1000pF-0402-X7R-±10%-50V
0.1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
NC/1000pF-0402-X7R-±10%-50V
3V3_Tun
GND
CT15 CT19 CT20 CT1
CT16 CT17
1000pF-0402-X7R-±10%-50V
SDCL1005CR33JTDF
0ohm-0402-±5%-1/16W
17 15 9 7
+3.3V +3.3V +3.3V +1.8V
SDCL1005CR33JTDF
1000pF-0402-X7R-±10%-50V
30pF-0402-NPO-±5%-50V
30pF-0402-NPO-±5%-50V
NC/0ohm-0402-PCB
GND
CT2
LT5 LT3
18 NC
19 RF_REF
RF_IN
CT25
RF_INPUT
RT3
PCB短路
CT23
CT9
20 RF_IP
22 RF_IN
LT6
LT7
YT1
XTAL_O 13
XTAL_I
14 XTAL_O
GND
NC/ESD
NC/ESD
LT4
LT9
CT24
DT1
GND GND GND GND GND
SDCL1005CR33JTDF
0ohm-0402-±5%-1/16W
24 GPIO1
1 GPIO2
NC/SDCL1608CR22JT(F)
TUNER_SDA_IC
RT16
TUNER_SCL
3 SCL
TUNER_SCL_IC
RT17
TUNER_SDA
2 SDA
CT12 CT11
23 ADDR
GND
NC/180pF-0402-NPO-±5%-50V
开关二极管,DIO SW D2,215mA,70V,SOT-23,SMD,LBAV99LT1G,LRC
无源标准封装晶体振荡器,SPXO,24MHz,20ppm,9pF,HC-49S,SMD,JWT
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/22pF-0402-NPO-±5%-50V
NC/22pF-0402-NPO-±5%-50V
GND GND GND GND GND
6 8 16 21 EPAD
GND
UT2
硅高频头,IC Si Tuner,QFN-24,SMD,SI2159-A10-GMR,Silicon Labs
LIF_P 11 IFP
LIF_N 10 IFN
0.047uF-0402-X7R-±10%-16V
10Kohm-0402-±5%-1/16W
AGC1
5 TUN_IF_AGC
RT9
IF_AGC/
AGC2 4
CT10
GND
XOUT 12
3V3_Tun
RT1 RT2
TUNER_SDA_IC
TUNER_SCL_IC
DT3 DT4
GND
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
NC/SFI0402-240E-2R5PP-LF
NC/SFI0402-240E-2R5PP-LF
IF_AGC/
RT8
IF_AGC
CT13
GND
0.047uF-0402-X7R-±10%-16V
10Kohm-0402-±5%-1/16W
RFT1
5 GND
4 GND
3 GND
2 GND
GND
RF_IN 1
RF
RF屏蔽罩,RF SHLED,Single,H,F,T14.5,CH6.3,whole,25.0×14.5×10.0mm,DIP,T-14.5×25×10-F14.5-LHD (一体),LHD
TRF3
GND
3V3_Tun
CT30 CT31
GND 1
V 2
SCL 3
SDA 4
GND 5
NC 6
GND
GND
RT6
TUNER_SCL_IC
TUNER_SDA_IC
RT5
NC/100ohm-0402-±5%-1/16W
NC/39pF-0402-NPO-±5%-50V
NC/100ohm-0402-±5%-1/16W
NC/39pF-0402-NPO-±5%-50V
IF_N 7 IFP
IF_P 8 IFN
IF_AGC 9 IF_AGC/
RT7
CT26
GND GND GND GND
11 12 13 10
GND
NC/10Kohm-0402-±5%-1/16W
NC/0.047uF-0402-X7R-±10%-16V
NC/高频头模组,TUNER,75ohm,M,IEC,H,CDT-9NT372-RF03,ZLT
0ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
NC/680ohm-0402-±1%-1/16W
0ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
GND
GND
CT21
CT14
IFP
CT27
RT10
LT1
VIFP
RT11
IFN
CT32
RT12
LT2
VIFM
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
NC/47pF-0402-NPO-±5%-50V
NC/47pF-0402-NPO-±5%-50V
CT22
CT18
NC/47pF-0402-NPO-±5%-50V
NC/47pF-0402-NPO-±5%-50V
GND
GND

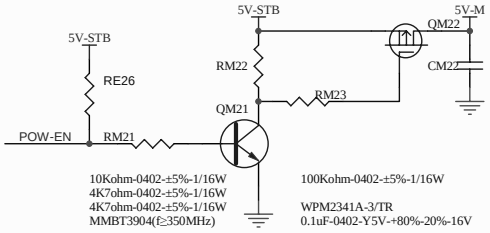


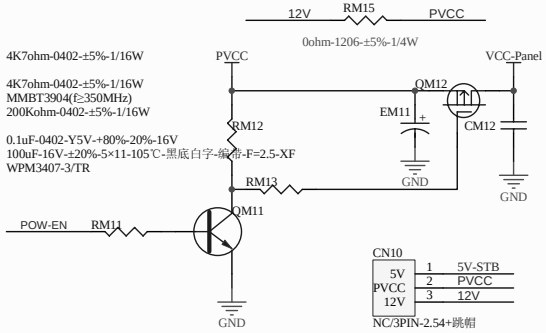


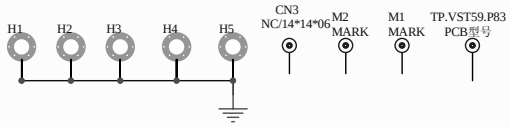
Title			
Size A2	Number		Revision
Date: 2012/9/26		Sheet of	
File: C:\Users\...\72V-160mA 两路安规原理图.DSN		Drawn By:	

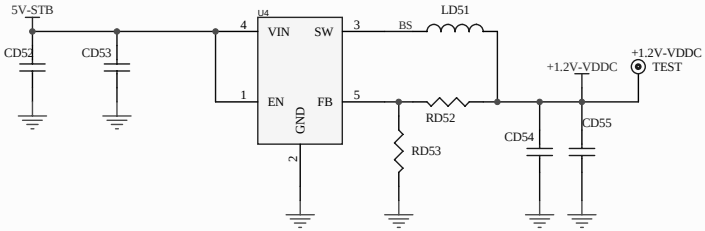

100Kohm-0402-±5%-1/16W
AIC2857FGR8TR
0.01uF-0402-X7R-±10%-50V
CH8010U-220K-045-G
NC/SMD5845-4R7M-032
LC2
LC1
CC3
UC1
12V
CC8
CC1
RC1
IN
NC
BS
SW
EN
GND
COMP
FB
CC10
RC2
5V-STB
TEST
5V-STB
EC2
EC3
CC4
CC5
CC9
RC3
CC6
CC7
RC4
1uF-0603-Y5V-+80%-20%-16V
0.1uF-0402-Y5V-+80%-20%-16V
NC/220pF-0402-X7R-±10%-50V
0.01uF-0402-X7R-±10%-50V
2K2ohm-0402-±5%-1/16W
15Kohm-0402-±1%-1/16W
3K3ohm-0402-±1%-1/16W
470uF-10V-±20%-6.3×11-105℃-黑底白字-编带-F=2.5-XL
NC/100uF-16V-±20%-5×11-105℃-黑底白字-编带-F=2.5-XF
0.1uF-0402-Y5V-+80%-20%-16V
NC/10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
NC/5pF-0402-NPO-±5%-50V

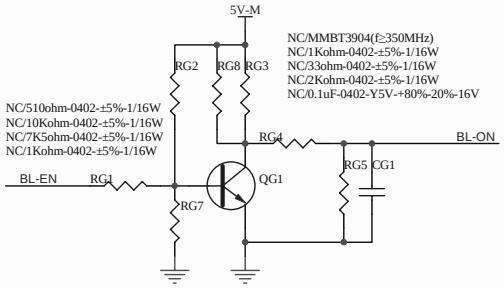

5V-M
R5
CE17
CL41
CL42
UL41
VI
VO
ADJ
AVDD-2.5V/1.8V
TEST
CL43
CL44
EL44
RL41
CL50
RL42
GND
0.1uF-0402-Y5V-+80%-20%-16V
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-Y5V-+80%-20%-16V
LC1117CLTRAD
NC/0.1uF-0402-Y5V-+80%-20%-16V
120ohm-0402-±1%-1/16W
56ohm-0402-±1%-1/16W
0ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
10uF-0603-X5R-±20%-6.3V
100uF-16V-±20%-5×11-105℃-黑底白字-编带-F=2.5-XF
5V-STB
2V5/1V8
3V3_STB
CL1
CL2
CL3
CL4
EL4
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-Y5V-+80%-20%-16V
LC1117CLTR33
NC/100uF-16V-±20%-5×11-105℃-黑底白字-编带-F=2.5-XF

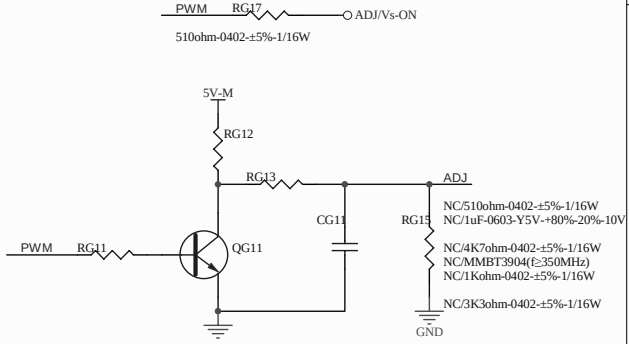

5V-STB
5V-M
QM22
CM22
RE26
RM22
RM23
QM21
POW-EN
RM21
10Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
MMBT3904(f≥350MHz)
100Kohm-0402-±5%-1/16W
WPM2341A-3/TR
0.1uF-0402-Y5V-+80%-20%-16V

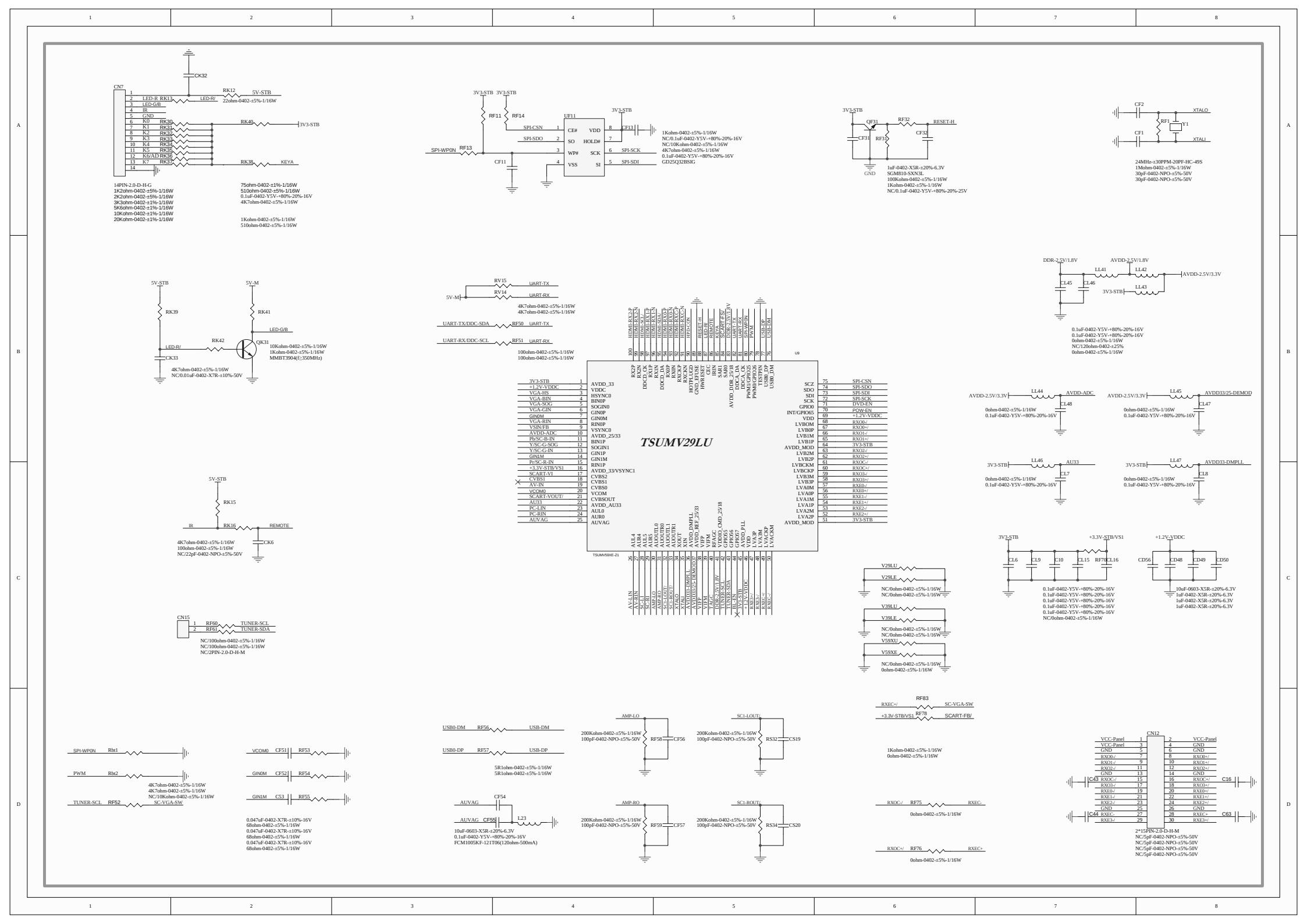

12V
RM15
PVCC
0ohm-1206-±5%-1/4W
4K7ohm-0402-±5%-1/16W
PVCC
VCC-Panel
4K7ohm-0402-±5%-1/16W
MMBT3904(f≥350MHz)
200Kohm-0402-±5%-1/16W
QM12
EM11
CM12
RM12
0.1uF-0402-Y5V-+80%-20%-16V
100uF-16V-±20%-5×11-105℃-黑底白字-编带-F=2.5-XF
WPM3407-3/TR
RM13
GND
POW-EN
RM11
QM11
CN10
5V
PVCC
12V
1
2
3
5V-STB
PVCC
12V
NC/3PIN-2.54+跳帽

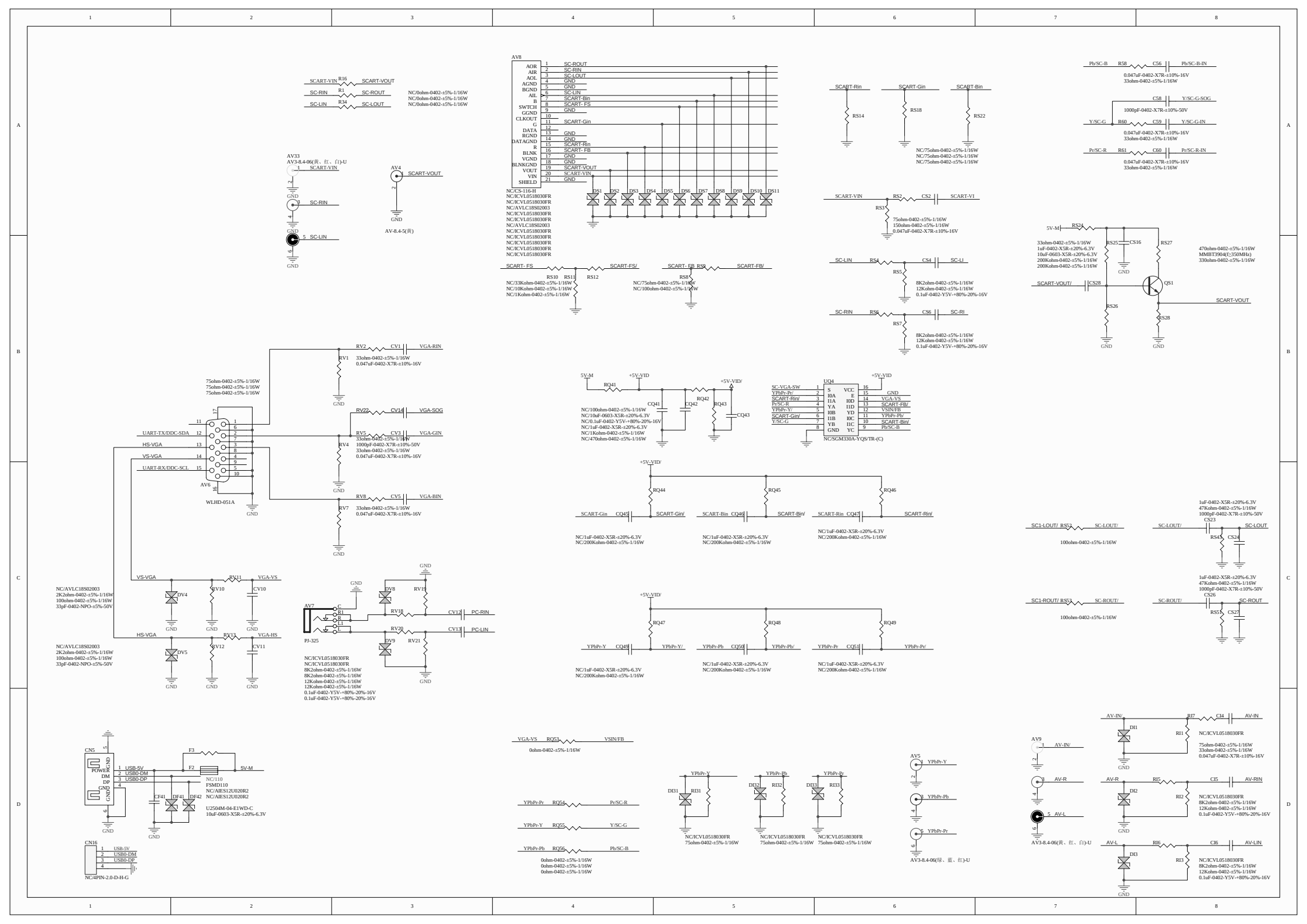

H1
H2
H3
H4
H5
CN3
NC/14*14*06
M2
MARK
M1
MARK
TP.VST59.P83
PCB型号

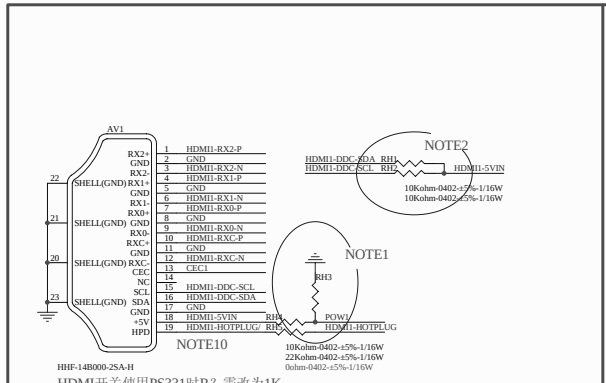

5V-STB
U4
VIN
SW
LD51
BS
CD52
CD53
EN
FB
GND
+1.2V-VDDC
TEST
RD52
RD53
CD54
CD55
NC/0.1uF-0402-Y5V-+80%-20%-16V
10uF-0603-X5R-±20%-6.3V
APC04A32M6R8
M3406-ADJ
12Kohm-0402-±1%-1/16W
10K5ohm-0402-±1%-1/16W
10uF-0603-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V


5V-M
NC/MMBT3904(f≥350MHz)
NC/1Kohm-0402-±5%-1/16W
NC/33ohm-0402-±5%-1/16W
NC/2Kohm-0402-±5%-1/16W
NC/0.1uF-0402-Y5V-+80%-20%-16V
RG2
RG8
RG3
NC/510ohm-0402-±5%-1/16W
NC/10Kohm-0402-±5%-1/16W
NC/7K5ohm-0402-±5%-1/16W
NC/1Kohm-0402-±5%-1/16W
RG4
BL-ON
BL-EN
RG1
QG1
RG5
CG1
RG7

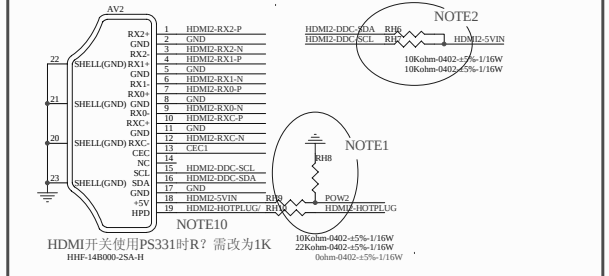

PWM
RG17
ADJ/Vs-ON
510ohm-0402-±5%-1/16W
5V-M
RG12
RG13
ADJ
CG11
RG15
NC/510ohm-0402-±5%-1/16W
NC/1uF-0603-Y5V-+80%-20%-10V
PWM
RG11
QG11
NC/4K7ohm-0402-±5%-1/16W
NC/MMBT3904(f≥350MHz)
NC/1Kohm-0402-±5%-1/16W
NC/3K3ohm-0402-±5%-1/16W
GND


CK32
CN7
RK12
5V-STB
22ohm-0402-±5%-1/16W
LED-R/
LED-G/B
IR
GND
K0
K1
K2
K3
K4
K5
K6/AD
K7
RK30
RK31
RK32
RK33
RK34
RK35
RK36
RK37
RK40
3V3-STB
RK38
KEYA
14
14PIN-2.0-D-H-G
1K2ohm-0402-±5%-1/16W
2K2ohm-0402-±5%-1/16W
3K3ohm-0402-±1%-1/16W
5K6ohm-0402-±1%-1/16W
10Kohm-0402-±1%-1/16W
20Kohm-0402-±1%-1/16W
75ohm-0402-±1%-1/16W
510ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
4K7ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
510ohm-0402-±5%-1/16W
3V3-STB
RF11
RF14
SPI-CSN
SPI-SDO
SPI-WP0N
RF13
CF11
UF11
CE#
SO
WP#
VSS
VDD
HOLD#
SCK
SI
CF13
SPI-SCK
SPI-SDI
1Kohm-0402-±5%-1/16W
NC/0.1uF-0402-Y5V-+80%-20%-16V
NC/10Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
GD25Q32BSIG
QF31
RF32
RESET-H
CF31
RF33
CF32
GND
1uF-0402-X5R-±20%-6.3V
SGM810-SXN3L
100Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
NC/0.1uF-0402-Y5V-+80%-20%-25V
CF2
XTALO
RF1
Y1
CF1
XTALI
24MHz-±30PPM-20PF-HC-49S
1Mohm-0402-±5%-1/16W
30pF-0402-NPO-±5%-50V
30pF-0402-NPO-±5%-50V
5V-STB
5V-M
RK39
RK41
LED-G/B
LED-R/
RK42
QK31
CK33
10Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
MMBT3904(hFE350MHz)
4K7ohm-0402-±5%-1/16W
NC/0.01uF-0402-X7R-±10%-50V
RV15
UART-TX
RV14
UART-RX
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
UART-TX/DDC-SDA
RF50
UART-TX
UART-RX/DDC-SCL
RF51
UART-RX
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
HDMI-RX2-P
HDMI-RX2-N
HDMI-RX1-P
HDMI-RX1-N
HDMI-RX0-P
HDMI-RX0-N
HDMI-RXC-P
HDMI-RXC-N
HDI+/-ON
RESET-H
LED-B/
REMOTE
SCART-FB/
SCART-FS/
DDC-2.5V/3.3V
UART-TX
UART-RX
SPI-WP/IN
PWM
USB-DP
USB-DM
U9
TSUMV29LU
3V3-STB
+1.2V-VDDC
VGA-HS
VGA-VS
VGA-SOG
VGA-GIN
GIN0M
VGA-RIN
VSIN/FB
AVDD_ADC
Pb/SC-B-IN
Y/SC-G-SOG
Y/SC-G-IN
GIN1M
Pr/SC-R-IN
+3.3V-STB/VS1
SCART-V1
CVBS1
AV-IN
VCOM0
SCART-VOUT/
AU33
PC-LIN
PC-RIN
AUVAG
AVDD_33
VDDC
HSYNC0
BIN0P
SOGIN0
GIN0P
GIN0M
RIN0P
VSYNC0
AVDD_25/33
BIN1P
SOGIN1
GIN1P
GIN1M
RIN1P
AVDD_33/VSYNC1
CVBS2
CVBS1
CVBS0
VCOM
CVBSOUT
AVDD_AU33
AUL0
AUR0
AUVAG
SCZ
SDO
SDI
SCK
GPIO0
INT/GPIO65
VDD
LVBOM
LVB0P
LVB1M
LVB1P
AVDD_MOD
LVB2M
LVB2P
LVBCKM
LVBCKP
LVB3M
LVB3P
LVA0M
LVA0P
LVA1M
LVA1P
LVA2M
LVA2P
AVDD_MOD
SPI-CSN
SPI-SDO
SPI-SDI
SPI-SCK
DVD-EN
POW-EN
+1.2V-VDDC
RXO0-/
RXO0+/
RXO1-/
RXO1+/
3V3-STB
RXO2-/
RXO2+/
RXOC-/
RXOC+/
RXO3-/
RXO3+/
RXE0-/
RXE0+/
RXE1-/
RXE1+/
RXE2-/
RXE2+/
3V3-STB
AUL4
AUR4
AUL5
AUR5
AMP-LO
AMP-RO
SCL-RI
SCL-LOUT/
SCL-ROUT/
XTALO
XTALI
AVDD33/25-DEMOD
AVDD_DMPLL
AVDD_REF_25/33
VFIP
VFIM
RFAGC
IFAGC
TUNER-SCL
TUNER-SDA
AVDD_5V_IF/
VDDIO_CMD_25/18
GPIO55
GPIO56
GPIO57
AVDD_PLL
AUDIO_CLK
+1.2V-VDDC
RXE3+/
RXE3-/
RXEC+/
RXEC-/
AV-LIN
SC-FB/IN
SC-RI
AMP-LO
AMP-RO
SCL-LOUT/
SCL-ROUT/
XTALO
XTALI
AVDD33/25-DEMOD
AVDD_DMPLL
AVDD_REF_25/33
VFIP
VFIM
RFAGC
IFAGC
TUNER-SCL
TUNER-SDA
RI-LIN
RI-RIN
+1.2V-VDDC
RXE3+/
RXE3-/
RXEC+/
RXEC-/
5V-STB
RK15
IR
RK16
REMOTE
CK6
4K7ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/22pF-0402-NPO-±5%-50V
CN15
RF60
TUNER-SCL
RF61
TUNER-SDA
NC/100ohm-0402-±5%-1/16W
NC/100ohm-0402-±5%-1/16W
NC/2PIN-2.0-D-H-M
DDR-2.5V/1.8V
AVDD-2.5V/1.8V
LL41
LL42
AVDD-2.5V/3.3V
CL45
CL46
3V3-STB
LL43
0.1uF-0402-Y5V-+80%-20%-16V
0.1uF-0402-Y5V-+80%-20%-16V
0ohm-0402-±5%-1/16W
NC/120ohm-0402-±25%
0ohm-0402-±5%-1/16W
AVDD-2.5V/3.3V
LL44
AVDD-ADC
CL48
0ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
AVDD-2.5V/3.3V
LL45
AVDD33/25-DEMOD
CL47
0ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
3V3-STB
LL46
AU33
CL7
0ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
3V3-STB
LL47
AVDD33-DMPLL
CL8
0ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
3V3-STB
+3.3V-STB/VS1
CL6
CL9
C10
CL15
RF70
CL16
0.1uF-0402-Y5V-+80%-20%-16W
0.1uF-0402-Y5V-+80%-20%-16W
0.1uF-0402-Y5V-+80%-20%-16W
0.1uF-0402-Y5V-+80%-20%-16W
0.1uF-0402-Y5V-+80%-20%-16W
NC/0ohm-0402-±5%-1/16W
+1.2V-VDDC
CD56
CD48
CD49
CD50
10uF-0603-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
V29LU
V29LE
NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
V39LU
V39LE
NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
V59XU
V59XE
NC/0ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
RF83
RXEC+/
SC-VGA-SW
+3.3V-STB/VS1
RF78
SCART-FB/
1Kohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
RXOC-/
RF75
RXEC-
0ohm-0402-±5%-1/16W
RXOC+/
RF76
RXEC+
0ohm-0402-±5%-1/16W
CN12
VCC-Panel
VCC-Panel
GND
RXO0-/
RXO1-/
RXO2-/
GND
RXOC-/
RXO3-/
RXE0-/
RXE1-/
RXE2-/
GND
RXEC-/
RXE3-/
GND
GND
RXO0+/
RXO1+/
RXO2+/
GND
RXOC+/
RXO3+/
RXE0+/
RXE1+/
RXE2+/
GND
RXEC+/
RXE3+/
C43
C44
C16
C63
2*15PIN-2.0-D-H-M
NC/5pF-0402-NPO-±5%-50V
NC/5pF-0402-NPO-±5%-50V
NC/5pF-0402-NPO-±5%-50V
NC/5pF-0402-NPO-±5%-50V
SPI-WP0N
Rbt1
PWM
Rbt2
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
NC/10Kohm-0402-±5%-1/16W
TUNER-SCL
RF52
SC-VGA-SW
VCOM0
CF51
RF53
GIN0M
CF52
RF54
GIN1M
C53
RF55
0.047uF-0402-X7R-±10%-16V
68ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
68ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
68ohm-0402-±5%-1/16W
USB0-DM
RF56
USB-DM
USB0-DP
RF57
USB-DP
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
AUVAG
CF54
AUVAG
CF55
L23
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-Y5V-+80%-20%-16V
FCM1005KF-121T06(120ohm-500mA)
AMP-LO
200Kohm-0402-±5%-1/16W
100pF-0402-NPO-±5%-50V
RF58
CF56
AMP-RO
200Kohm-0402-±5%-1/16W
100pF-0402-NPO-±5%-50V
RF59
CF57
SC1-LOUT/
200Kohm-0402-±5%-1/16W
100pF-0402-NPO-±5%-50V
RS32
CS19
SC1-ROUT/
200Kohm-0402-±5%-1/16W
100pF-0402-NPO-±5%-50V
RS34
CS20

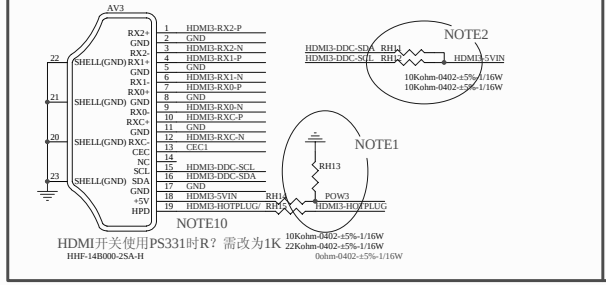

SCART-VIN R16 SCART-VOUT
SC-RIN R1 SC-ROUT
SC-LIN R34 SC-LOUT
NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
AV33
AV3-8.4-06(黄、红、白)-U
SCART-VIN
SC-RIN
SC-LIN
GND
AV4
SCART-VOUT
AV-8.4-5(黄)
AV8
AOR AIR AOL AGND BGND AIL B SWTICH GGND CLKOUT G DATA RGND DATAGND R BLNK VGND BLNKGND VOUT VIN SHIELD
SC-ROUT SC-RIN SC-LOUT GND GND SC-LIN GND GND SCART-Bin SCART- FS GND GND SCART-Gin GND GND SCART-Rin SCART- FB GND GND SCART-VOUT SCART-VIN GND
NC/CS-116-H
NC/ICVL0518030FR
NC/ICVL0518030FR
NC/AVLC18S02003
NC/ICVL0518030FR
NC/ICVL0518030FR
NC/AVLC18S02003
NC/ICVL0518030FR
NC/ICVL0518030FR
NC/ICVL0518030FR
NC/ICVL0518030FR
NC/ICVL0518030FR
DS1 DS2 DS3 DS4 DS5 DS6 DS7 DS8 DS9 DS10 DS11
SCART- FS SCART-FS/ SCART- FB RS9 SCART-FB/
RS10 RS11 RS12 RS8
NC/33Kohm-0402-±5%-1/16W
NC/10Kohm-0402-±5%-1/16W
NC/1Kohm-0402-±5%-1/16W
NC/75ohm-0402-±5%-1/16W
NC/100ohm-0402-±5%-1/16W
SCART-Rin SCART-Gin SCART-Bin
RS14 RS18 RS22
NC/75ohm-0402-±5%-1/16W
NC/75ohm-0402-±5%-1/16W
NC/75ohm-0402-±5%-1/16W
SCART-VIN RS2 CS2 SCART-VI
RS3
75ohm-0402-±5%-1/16W
150ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
SC-LIN RS4 CS4 SC-LI
RS5
8K2ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
SC-RIN RS6 CS6 SC-RI
RS7
8K2ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
Pb/SC-B R58 C56 Pb/SC-B-IN
0.047uF-0402-X7R-±10%-16V
33ohm-0402-±5%-1/16W
C58 Y/SC-G-SOG
1000pF-0402-X7R-±10%-50V
Y/SC-G R60 C59 Y/SC-G-IN
0.047uF-0402-X7R-±10%-16V
33ohm-0402-±5%-1/16W
Pr/SC-R R61 C60 Pr/SC-R-IN
0.047uF-0402-X7R-±10%-16V
33ohm-0402-±5%-1/16W
5V-M RS24
33ohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
200Kohm-0402-±5%-1/16W
200Kohm-0402-±5%-1/16W
RS25 CS16 RS27
470ohm-0402-±5%-1/16W
MMBT3904(f≥350MHz)
330ohm-0402-±5%-1/16W
SCART-VOUT/ CS28 QS1 SCART-VOUT
RS26 RS28
GND GND GND
RV2 CV1 VGA-RIN
RV1 33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
75ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
RV22 CV14 VGA-SOG
UART-TX/DDC-SDA 12
HS-VGA 13
VS-VGA 14
UART-RX/DDC-SCL 15
RV5 CV3 VGA-GIN
RV4
33ohm-0402-±5%-1/16W
1000pF-0402-X7R-±10%-50V
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
AV6
WLHD-051A
RV8 CV5 VGA-BIN
RV7
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
5V-M +5V-VID RQ41 +5V-VID/
CQ41 RQ42 CQ42 RQ43 CQ43
NC/100ohm-0402-±5%-1/16W
NC/10uF-0603-X5R-±20%-6.3V
NC/0.1uF-0402-Y5V-+80%-20%-16V
NC/1uF-0402-X5R-±20%-6.3V
NC/1Kohm-0402-±5%-1/16W
NC/470ohm-0402-±5%-1/16W
UQ4 +5V-VID
SC-VGA-SW YPbPr-Pr/ SCART-Rin/ Pr/SC-R YPbPr-Y/ SCART-Gin/ Y/SC-G
S I0A I1A YA I0B I1B YB GND VCC E I0D I1D YD I0C I1C YC
GND VGA-VS SCART-FB/ VSIN/FB YPbPr-Pb/ SCART-Bin/ Pb/SC-B
NC/SGM330A-YQS/TR-(C)
+5V-VID/ RQ44 RQ45 RQ46
SCART-Gin CQ45 SCART-Gin/ SCART-Bin CQ46 SCART-Bin/ SCART-Rin CQ47 SCART-Rin/
NC/1uF-0402-X5R-±20%-6.3V
NC/200Kohm-0402-±5%-1/16W
NC/1uF-0402-X5R-±20%-6.3V
NC/200Kohm-0402-±5%-1/16W
NC/1uF-0402-X5R-±20%-6.3V
NC/200Kohm-0402-±5%-1/16W
SC1-LOUT/ RS52 SC-LOUT/
100ohm-0402-±5%-1/16W
SC-LOUT/ RS45 CS24 SC-LOUT
1uF-0402-X5R-±20%-6.3V
47Kohm-0402-±5%-1/16W
1000pF-0402-X7R-±10%-50V
CS23
SC1-ROUT/ RS53 SC-ROUT/
100ohm-0402-±5%-1/16W
SC-ROUT/ RS55 CS27 SC-ROUT
1uF-0402-X5R-±20%-6.3V
47Kohm-0402-±5%-1/16W
1000pF-0402-X7R-±10%-50V
CS26
VS-VGA RV11 VGA-VS
RV10 CV10
HS-VGA RV13 VGA-HS
RV12 CV11
NC/AVLC18S02003
2K2ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
33pF-0402-NPO-±5%-50V
NC/AVLC18S02003
2K2ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
33pF-0402-NPO-±5%-50V
DV4 DV5
AV7
PJ-325
DV8 RV15 RV18 CV12 PC-RIN
DV9 RV20 RV21 CV13 PC-LIN
NC/ICVL0518030FR
NC/ICVL0518030FR
8K2ohm-0402-±5%-1/16W
8K2ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
0.1uF-0402-Y5V-+80%-20%-16V
+5V-VID/ RQ47 RQ48 RQ49
YPbPr-Y CQ48 YPbPr-Y/ YPbPr-Pb CQ50 YPbPr-Pb/ YPbPr-Pr CQ51 YPbPr-Pr/
NC/1uF-0402-X5R-±20%-6.3V
NC/200Kohm-0402-±5%-1/16W
NC/1uF-0402-X5R-±20%-6.3V
NC/200Kohm-0402-±5%-1/16W
NC/1uF-0402-X5R-±20%-6.3V
NC/200Kohm-0402-±5%-1/16W
CN5 POWER GND DM DP GND GND
F3 F2 5V-M
1 USB-5V 2 USB0-DM 3 USB0-DP 4
NC/110
FSMD110
NC/AIES12U020R2
NC/AIES12U020R2
CF41 DF41 DF42
U2504M-04-E1WD-C
10uF-0603-X5R-±20%-6.3V
CN16
1 USB-5V 2 USB0-DM 3 USB0-DP 4
NC4PIN-2.0-D-H-G
VGA-VS RQ53 VSIN/FB
0ohm-0402-±5%-1/16W
YPbPr-Pr RQ54 Pr/SC-R
YPbPr-Y RQ55 Y/SC-G
YPbPr-Pb RQ56 Pb/SC-B
0ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
YPbPr-Y DI31 RI31 NC/ICVL0518030FR 75ohm-0402-±5%-1/16W
YPbPr-Pb DI32 RI32 NC/ICVL0518030FR 75ohm-0402-±5%-1/16W
YPbPr-Pr DI33 RI33 NC/ICVL0518030FR 75ohm-0402-±5%-1/16W
AV5 YPbPr-Y YPbPr-Pb YPbPr-Pr
AV3-8.4-06(绿、蓝、红)-U
AV9 AV-IN/ AV-R AV-L
AV3-8.4-06(黄、红、白)-U
AV-IN/ RI7 CI4 AV-IN
DI1 RI1 NC/ICVL0518030FR
75ohm-0402-±5%-1/16W
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
AV-R RI5 CI5 AV-RIN
DI2 RI2 NC/ICVL0518030FR
8K2ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
AV-L RI6 CI6 AV-LIN
DI3 RI3 NC/ICVL0518030FR
8K2ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V



HDMI开关使用PS331时R？需改为1K

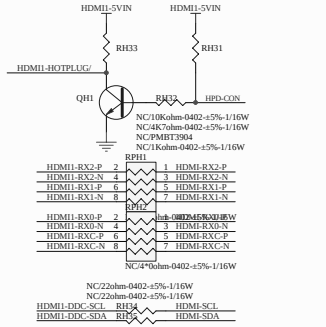


HDMI开关使用PS331时R？需改为1K

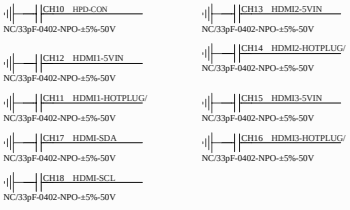


HDMI开关使用PS331时R？需改为1K

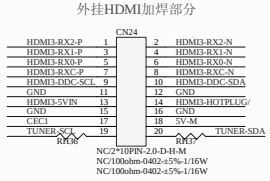
不带IT6633E-P时HDMI3直通的电路



EMC措施

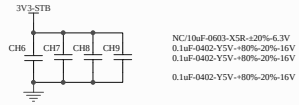


外挂HDMI加焊部分

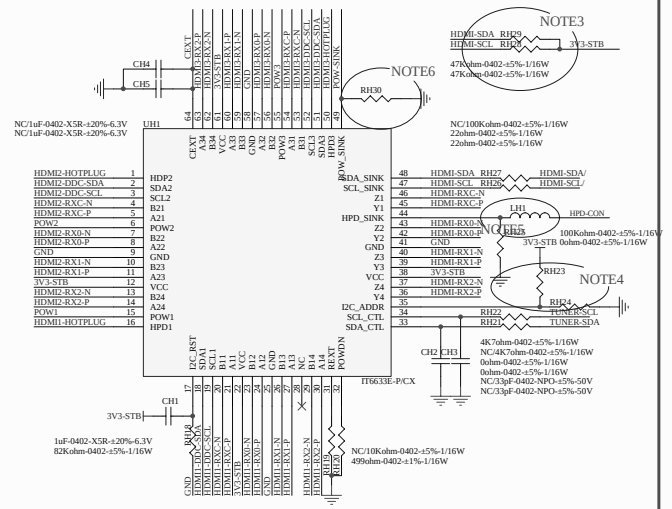


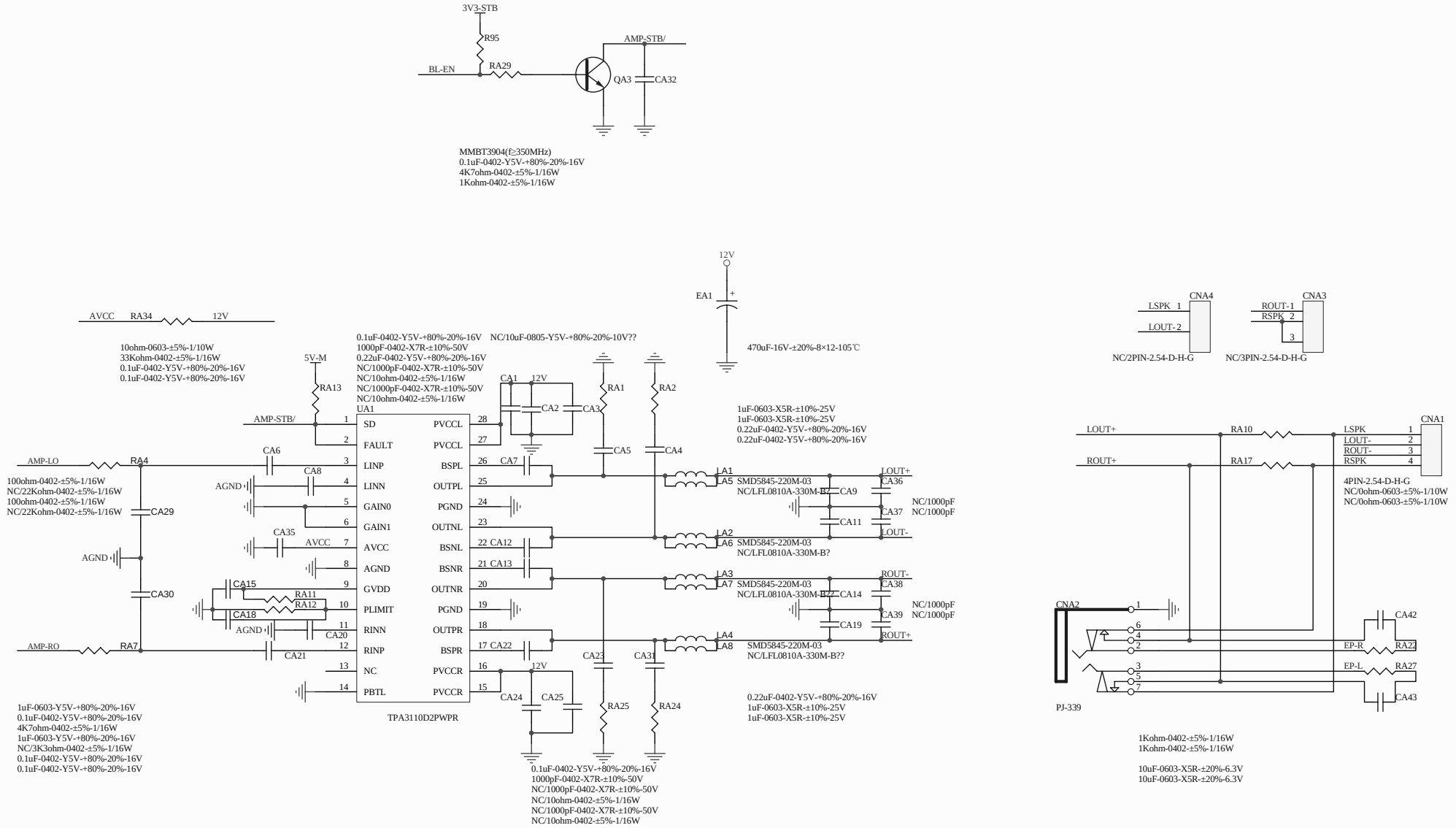
HDMI输入电路

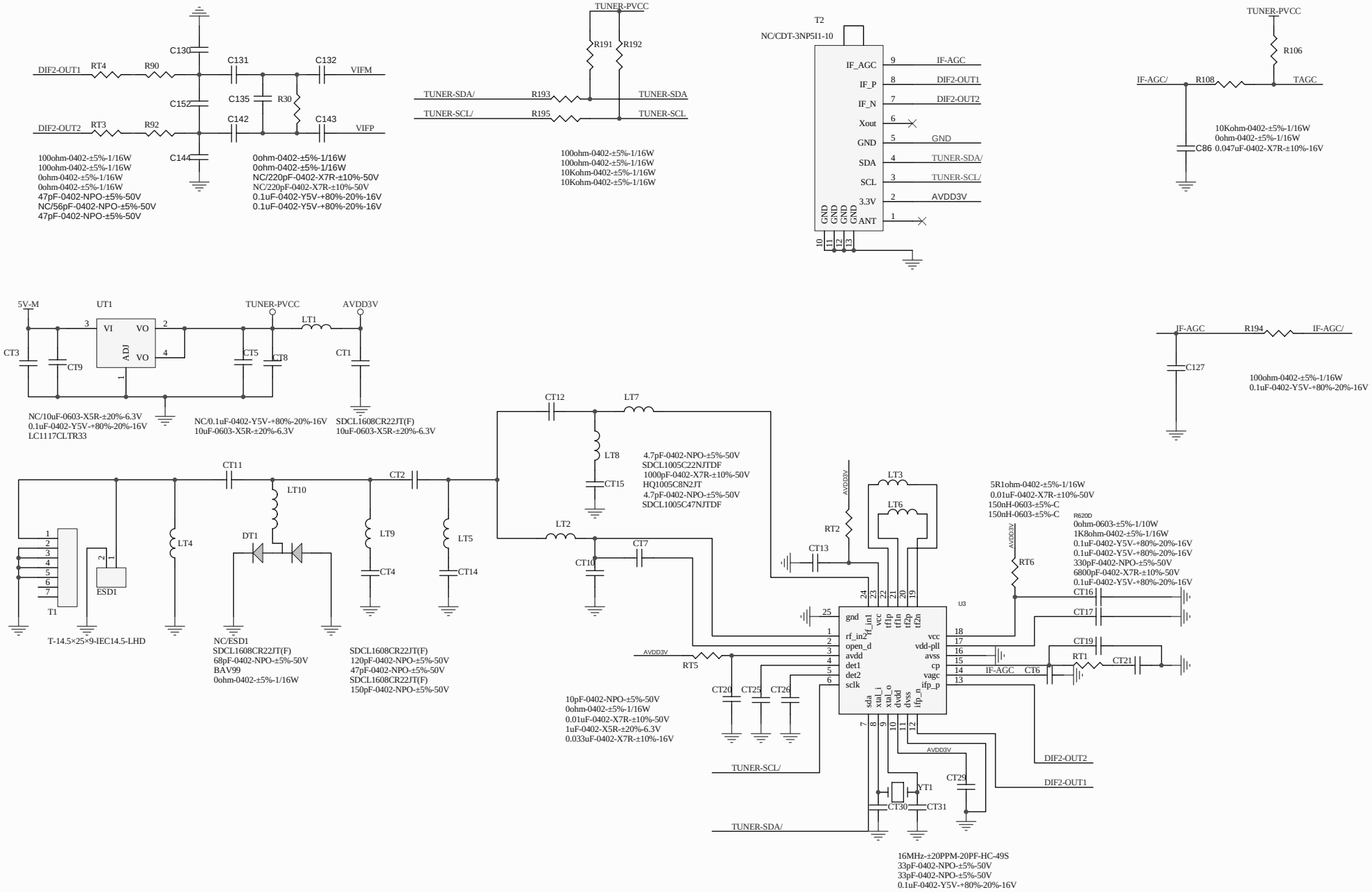
160mA

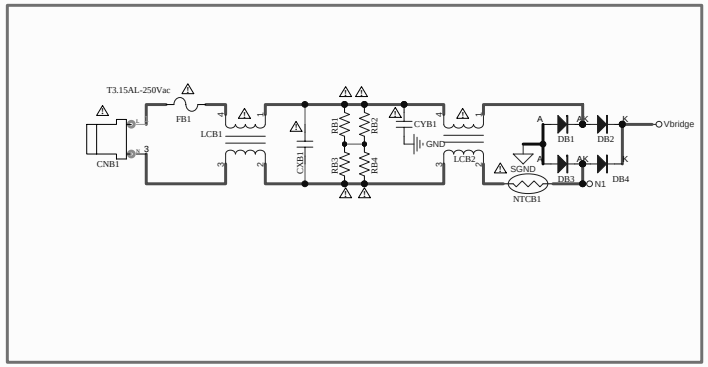


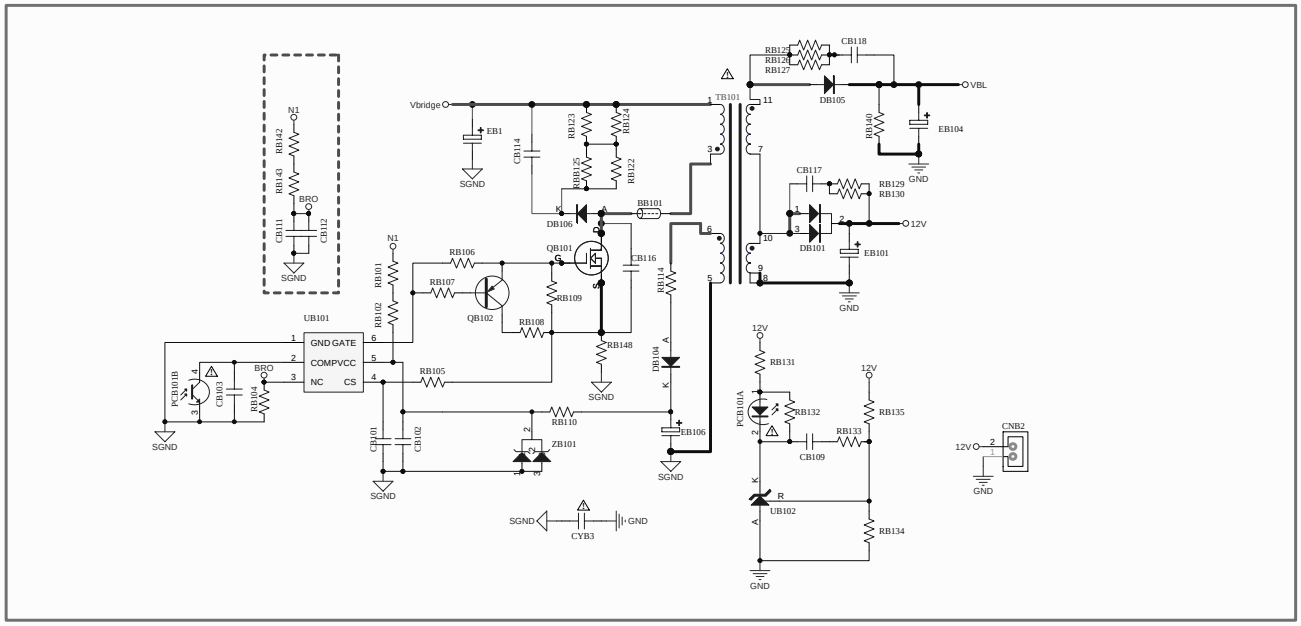
改PS331时需加焊CH4,CH5,CH20

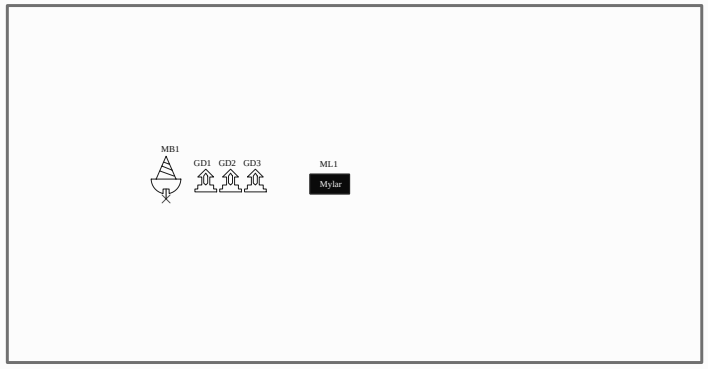


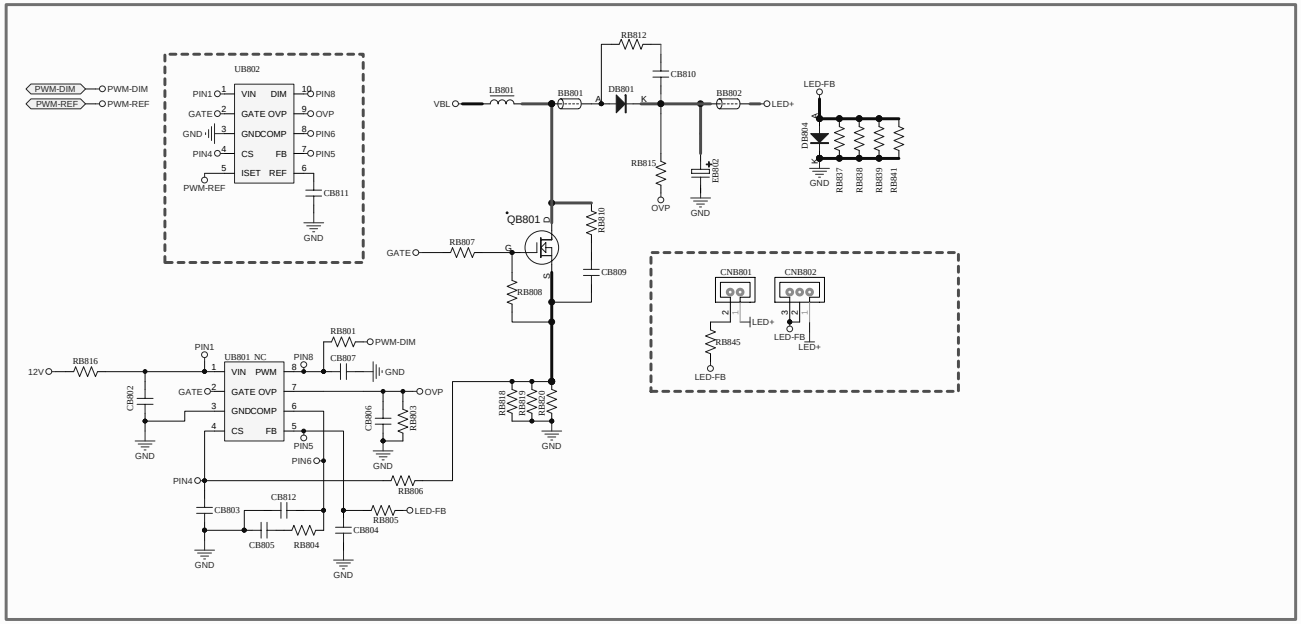

3V3-STB
R95
BL-EN
RA29
AMP-STB/
QA3
CA32
MMBT3904(f≥350MHz)
0.1uF-0402-Y5V-+80%-20%-16V
4K7ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
12V
EA1
470uF-16V-±20%-8×12-105℃
AVCC
RA34
12V
10ohm-0603-±5%-1/10W
33Kohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
0.1uF-0402-Y5V-+80%-20%-16V
5V-M
RA13
AMP-STB/
0.1uF-0402-Y5V-+80%-20%-16V
1000pF-0402-X7R-±10%-50V
0.22uF-0402-Y5V-+80%-20%-16V
NC/1000pF-0402-X7R-±10%-50V
NC/10ohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
NC/10ohm-0402-±5%-1/16W
UA1
NC/10uF-0805-Y5V-+80%-20%-10V??
SD
FAULT
LINP
LINN
GAIN0
GAIN1
AVCC
AGND
GVDD
PLIMIT
RINN
RINP
NC
PBTL
PVCCL
PVCCL
BSPL
OUTPL
PGND
OUTNL
BSNL
BSNR
OUTNR
PGND
OUTPR
BSPR
PVCCR
PVCCR
TPA3110D2PWPR
AMP-LO
RA4
100ohm-0402-±5%-1/16W
NC/22Kohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/22Kohm-0402-±5%-1/16W
AMP-RO
RA7
1uF-0603-Y5V-+80%-20%-16V
0.1uF-0402-Y5V-+80%-20%-16V
4K7ohm-0402-±5%-1/16W
1uF-0603-Y5V-+80%-20%-16V
NC/3K3ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
0.1uF-0402-Y5V-+80%-20%-16V
CA1
CA2
CA3
CA4
CA5
CA6
CA7
CA8
CA9
CA11
CA12
CA13
CA14
CA15
CA18
CA19
CA20
CA21
CA22
CA23
CA24
CA25
CA29
CA30
CA31
CA32
CA35
CA36
CA37
CA38
CA39
CA42
CA43
RA1
RA2
RA10
RA11
RA12
RA17
RA22
RA24
RA25
RA27
1uF-0603-X5R-±10%-25V
1uF-0603-X5R-±10%-25V
0.22uF-0402-Y5V-+80%-20%-16V
0.22uF-0402-Y5V-+80%-20%-16V
LA1
LA5
SMD5845-220M-03
NC/LFL0810A-330M-B?
LA2
LA6
SMD5845-220M-03
NC/LFL0810A-330M-B?
LA3
LA7
SMD5845-220M-03
NC/LFL0810A-330M-B??
LA4
LA8
SMD5845-220M-03
NC/LFL0810A-330M-B??
NC/1000pF
NC/1000pF
NC/1000pF
NC/1000pF
LOUT+
LOUT-
ROUT-
ROUT+
0.22uF-0402-Y5V-+80%-20%-16V
1uF-0603-X5R-±10%-25V
1uF-0603-X5R-±10%-25V
0.1uF-0402-Y5V-+80%-20%-16V
1000pF-0402-X7R-±10%-50V
NC/1000pF-0402-X7R-±10%-50V
NC/10ohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
NC/10ohm-0402-±5%-1/16W
CNA4
LSPK 1
LOUT- 2
NC/2PIN-2.54-D-H-G
CNA3
ROUT- 1
RSPK 2
3
NC/3PIN-2.54-D-H-G
CNA1
LSPK 1
LOUT- 2
ROUT- 3
RSPK 4
4PIN-2.54-D-H-G
NC/0ohm-0603-±5%-1/10W
NC/0ohm-0603-±5%-1/10W
CNA2
PJ-339
EP-R
EP-L
1Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V


C130
C131
C132
VIFM
DIF2-OUT1
RT4
R90
C152
C135
R30
C142
C143
VIFP
DIF2-OUT2
RT3
R92
C144
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
47pF-0402-NPO-±5%-50V
NC/56pF-0402-NPO-±5%-50V
47pF-0402-NPO-±5%-50V
0ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
NC/220pF-0402-X7R-±10%-50V
NC/220pF-0402-X7R-±10%-50V
0.1uF-0402-Y5V-+80%-20%-16V
0.1uF-0402-Y5V-+80%-20%-16V
TUNER-PVCC
R191
R192
TUNER-SDA/
R193
TUNER-SDA
TUNER-SCL/
R195
TUNER-SCL
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
T2
NC/CDT-3NP5I1-10
IF_AGC
IF_P
IF_N
Xout
GND
SDA
SCL
3.3V
ANT
GND
GND
GND
GND
9
8
7
6
5
4
3
2
1
10
11
12
13
IF-AGC
DIF2-OUT1
DIF2-OUT2
GND
TUNER-SDA/
TUNER-SCL/
AVDD3V
TUNER-PVCC
R106
IF-AGC/
R108
TAGC
C86
10Kohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
5V-M
UT1
VI
VO
VO
ADJ
3
2
4
1
CT3
CT9
CT5
CT8
LT1
CT1
TUNER-PVCC
AVDD3V
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-Y5V-+80%-20%-16V
LC1117CLTR33
NC/0.1uF-0402-Y5V-+80%-20%-16V
10uF-0603-X5R-±20%-6.3V
SDCL1608CR22JT(F)
10uF-0603-X5R-±20%-6.3V
IF-AGC
R194
IF-AGC/
C127
100ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
CT12
LT7
LT8
CT15
4.7pF-0402-NPO-±5%-50V
SDCL1005C22NJTDF
1000pF-0402-X7R-±10%-50V
HQ1005C8N2JT
4.7pF-0402-NPO-±5%-50V
SDCL1005C47NJTDF
CT11
CT2
LT10
LT2
CT7
CT10
LT3
LT6
RT2
CT13
AVDD3V
5R1ohm-0402-±5%-1/16W
0.01uF-0402-X7R-±10%-50V
150nH-0603-±5%-C
150nH-0603-±5%-C
R620D
0ohm-0603-±5%-1/10W
1K8ohm-0402-±5%-1/16W
0.1uF-0402-Y5V-+80%-20%-16V
0.1uF-0402-Y5V-+80%-20%-16V
330pF-0402-NPO-±5%-50V
6800pF-0402-X7R-±10%-50V
0.1uF-0402-Y5V-+80%-20%-16V
RT6
CT16
CT17
CT19
RT1
CT21
IF-AGC
CT6
U3
gnd
rf_in1
rf_in2
open_d
avdd
det1
det2
sclk
vcc
tf1p
tf1n
tf2p
tf2n
vcc
vdd-pll
avss
cp
vagc
ifp_p
sda
xtal_i
xtal_o
dvdd
dvss
ifp_n
25
1
2
3
4
5
6
24
23
22
21
20
19
18
17
16
15
14
13
7
8
9
10
11
12
T1
ESD1
LT4
DT1
LT9
CT4
LT5
CT14
T-14.5×25×9-IEC14.5-LHD
NC/ESD1
SDCL1608CR22JT(F)
68pF-0402-NPO-±5%-50V
BAV99
0ohm-0402-±5%-1/16W
SDCL1608CR22JT(F)
120pF-0402-NPO-±5%-50V
47pF-0402-NPO-±5%-50V
SDCL1608CR22JT(F)
150pF-0402-NPO-±5%-50V
AVDD3V
RT5
CT20
CT25
CT26
10pF-0402-NPO-±5%-50V
0ohm-0402-±5%-1/16W
0.01uF-0402-X7R-±10%-50V
1uF-0402-X5R-±20%-6.3V
0.033uF-0402-X7R-±10%-16V
TUNER-SCL/
TUNER-SDA/
AVDD3V
CT29
YT1
CT30
CT31
DIF2-OUT2
DIF2-OUT1
16MHz-±20PPM-20PF-HC-49S
33pF-0402-NPO-±5%-50V
33pF-0402-NPO-±5%-50V
0.1uF-0402-Y5V-+80%-20%-16V

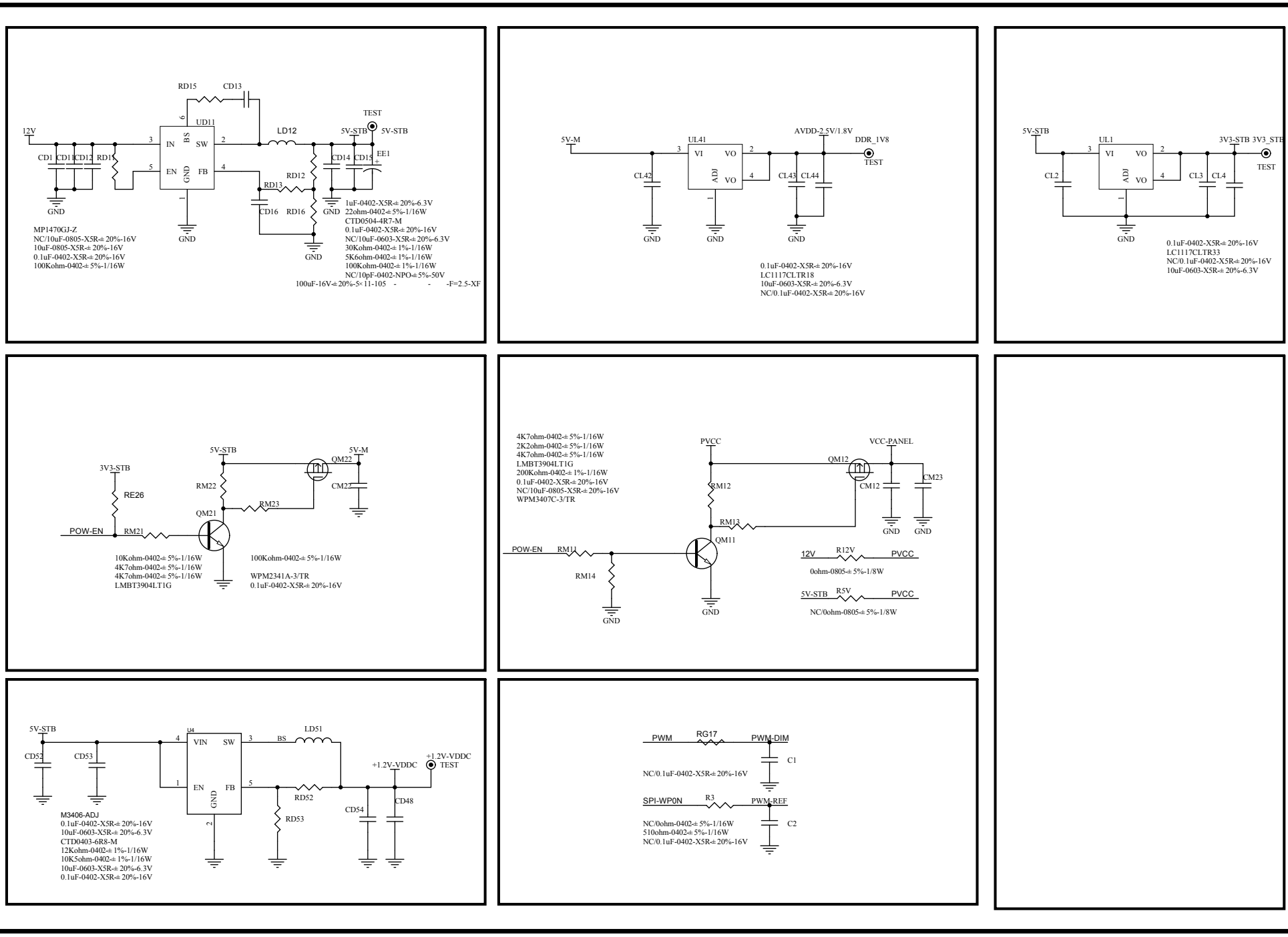


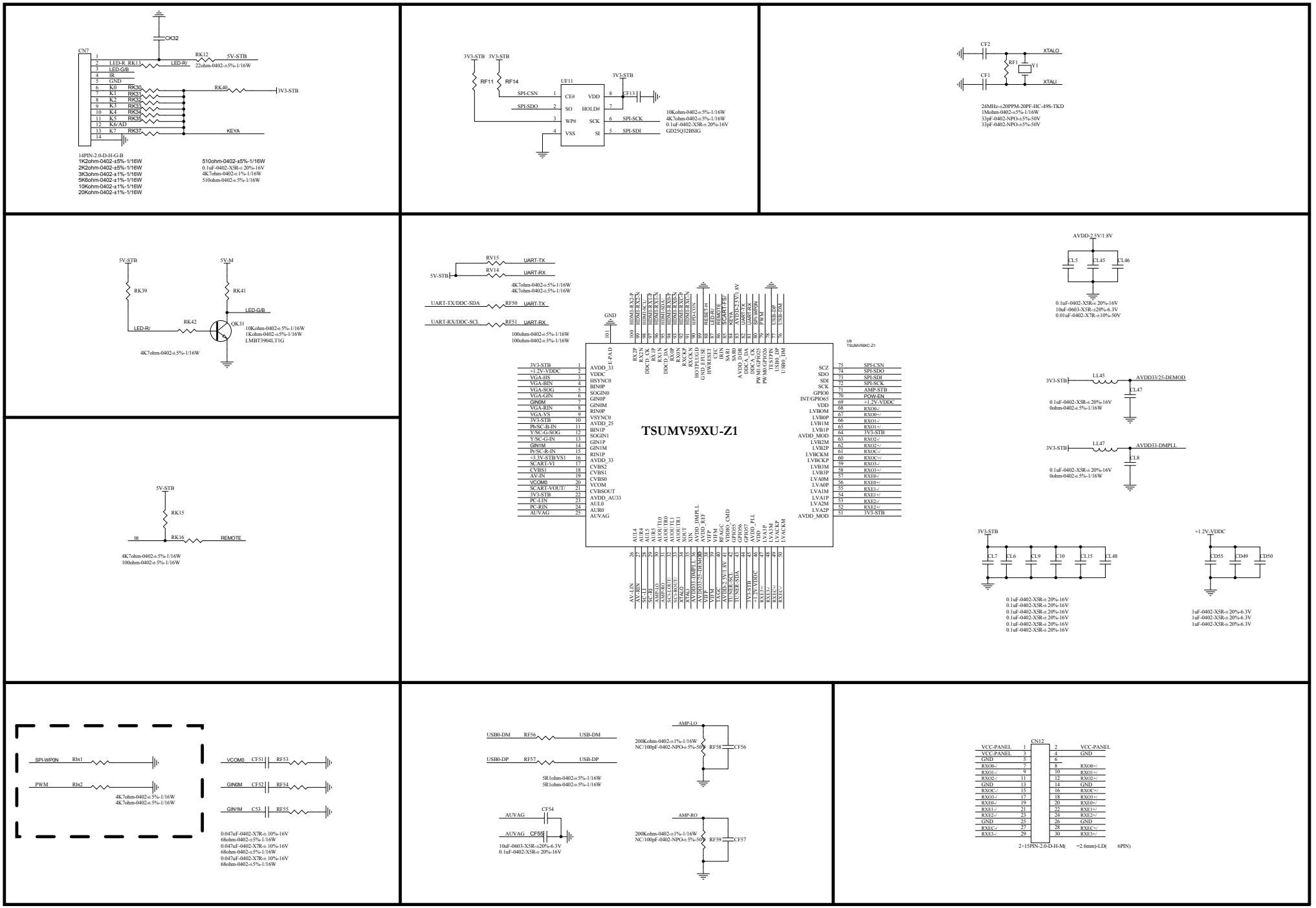


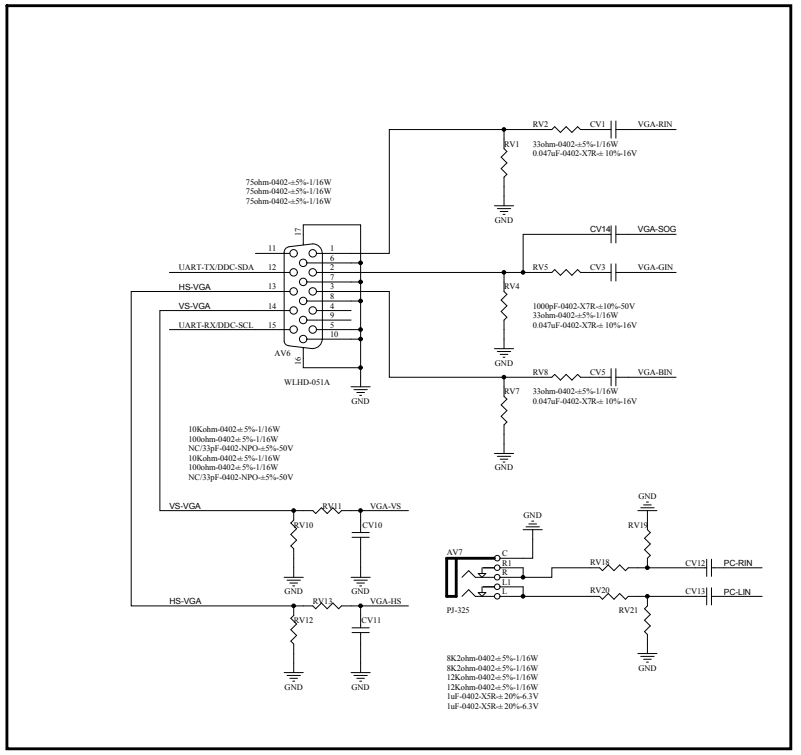


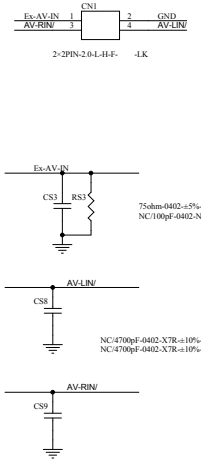


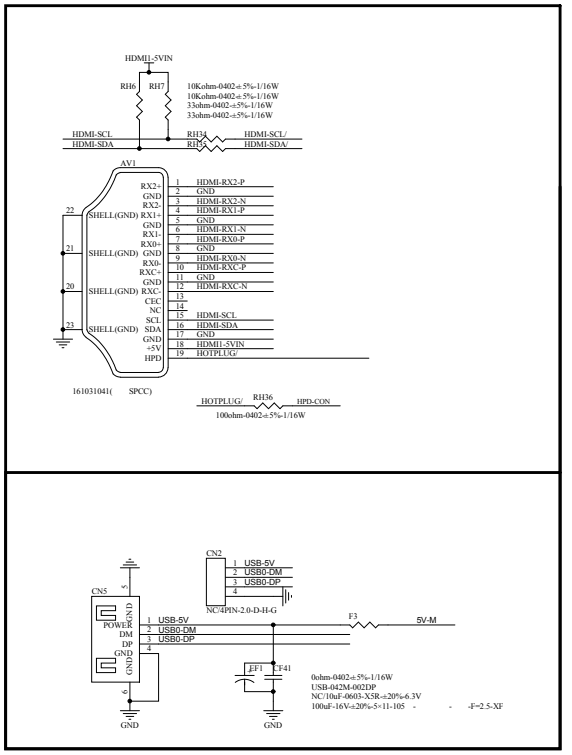
Model Name:	TP.VST59.PB818 D14016			VERSION:	V1.0
DRAWN:	WANG.JIAN	DATE:	2014-04-23	CVTE Dream-Future	
CHK'D:		DATE:			


RD15
CD13
TEST
12V
UD11
6
IN
BS
SW
3
2
LD12
5V-STB
5V-STB
CD1
CD11
CD12
RD11
EE1
CD14
CD15
5
EN
GND
FB
4
RD12
RD13
1
GND
CD16
RD16
GND
GND
GND
MP1470GJ-Z
NC/10uF-0805-X5R-± 20%-16V
10uF-0805-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
100Kohm-0402-± 5%-1/16W
1uF-0402-X5R-± 20%-6.3V
22ohm-0402-± 5%-1/16W
CTD0504-4R7-M
0.1uF-0402-X5R-± 20%-16V
NC/10uF-0603-X5R-± 20%-6.3V
30Kohm-0402-± 1%-1/16W
5K6ohm-0402-± 1%-1/16W
100Kohm-0402-± 1%-1/16W
NC/10pF-0402-NPO-± 5%-50V
100uF-16V-± 20%-5× 11-105 - - -F=2.5-XF
5V-M
UL41
AVDD-2.5V/1.8V
3
VI
VO
2
DDR_1V8
TEST
CL42
ADJ
VO
4
CL43
CL44
1
GND
GND
GND
0.1uF-0402-X5R-± 20%-16V
LC1117CLTR18
10uF-0603-X5R-± 20%-6.3V
NC/0.1uF-0402-X5R-± 20%-16V
5V-STB
UL1
3V3-STB
3V3_STB
3
VI
VO
2
TEST
CL2
ADJ
VO
4
CL3
CL4
1
GND
0.1uF-0402-X5R-± 20%-16V
LC1117CLTR33
NC/0.1uF-0402-X5R-± 20%-16V
10uF-0603-X5R-± 20%-6.3V
3V3-STB
5V-STB
5V-M
QM22
RE26
RM22
CM22
RM23
QM21
POW-EN
RM21
10Kohm-0402-± 5%-1/16W
4K7ohm-0402-± 5%-1/16W
4K7ohm-0402-± 5%-1/16W
LMBT3904LT1G
100Kohm-0402-± 5%-1/16W
WPM2341A-3/TR
0.1uF-0402-X5R-± 20%-16V
4K7ohm-0402-± 5%-1/16W
2K2ohm-0402-± 5%-1/16W
4K7ohm-0402-± 5%-1/16W
LMBT3904LT1G
200Kohm-0402-± 1%-1/16W
0.1uF-0402-X5R-± 20%-16V
NC/10uF-0805-X5R-± 20%-16V
WPM3407C-3/TR
PVCC
VCC-PANEL
QM12
RM12
CM12
CM23
RM13
GND
GND
QM11
POW-EN
RM11
RM14
GND
GND
12V
R12V
PVCC
0ohm-0805-± 5%-1/8W
5V-STB
R5V
PVCC
NC/0ohm-0805-± 5%-1/8W
5V-STB
U4
4
VIN
SW
3
BS
LD51
+1.2V-VDDC
+1.2V-VDDC
TEST
CD52
CD53
1
EN
FB
5
RD52
CD48
GND
2
RD53
CD54
M3406-ADJ
0.1uF-0402-X5R-± 20%-16V
10uF-0603-X5R-± 20%-6.3V
CTD0403-6R8-M
12Kohm-0402-± 1%-1/16W
10K5ohm-0402-± 1%-1/16W
10uF-0603-X5R-± 20%-6.3V
0.1uF-0402-X5R-± 20%-16V
PWM
RG17
PWM-DIM
C1
NC/0.1uF-0402-X5R-± 20%-16V
SPI-WP0N
R3
PWM-REF
C2
NC/0ohm-0402-± 5%-1/16W
510ohm-0402-± 5%-1/16W
NC/0.1uF-0402-X5R-± 20%-16V

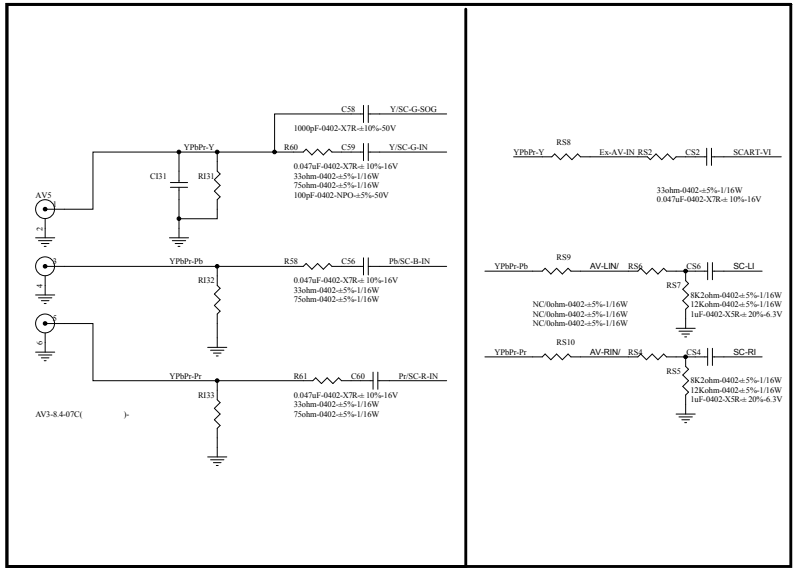

CK32
CN7
RK12
5V-STB
22ohm-0402-±5%-1/16W
LED-R
LED-G/B
IR
GND
K0
K1
K2
K3
K4
K5
K6/AD
K7
RK30
RK31
RK32
RK33
RK34
RK35
RK37
RK40
3V3-STB
KEYA
14PIN-2.0-D-H-G-B
1K2ohm-0402-±5%-1/16W
2K2ohm-0402-±5%-1/16W
3K3ohm-0402-±1%-1/16W
5K6ohm-0402-±1%-1/16W
10Kohm-0402-±1%-1/16W
20Kohm-0402-±1%-1/16W
510ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
4K7ohm-0402-±1%-1/16W
510ohm-0402-±5%-1/16W
3V3-STB
RF11
RF14
UF11
SPI-CSN
SPI-SDO
CE#
SO
WP#
VSS
VDD
HOLD#
SCK
SI
CF13
SPI-SCK
SPI-SDI
10Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
GD25Q32BSIG
CF2
CF1
RF1
Y1
XTALO
XTALI
24MHz-±20PPM-20PF-HC-49S-TKD
1Mohm-0402-±5%-1/16W
33pF-0402-NPO-±5%-50V
33pF-0402-NPO-±5%-50V
5V-STB
5V-M
RK39
RK41
LED-G/B
LED-R/
RK42
QK31
10Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
LMBT3904LT1G
4K7ohm-0402-±5%-1/16W
RV15
RV14
UART-TX
UART-RX
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
UART-TX/DDC-SDA
UART-RX/DDC-SCL
RF50
RF51
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
GND
TSUMV59XU-Z1
3V3-STB
+1.2V-VDDC
SPI-CSN
SPI-SDO
SPI-SCK
SPI-SDI
AMP-STB
POW-EN
RX0O-/
RX0O+/
RX01-/
RX01+/
RX02-/
RX02+/
RX0C-/
RX0C+/
RX03-/
RX03+/
RX0D-/
RX0D+/
RX1E-/
RX1E+/
RX2E-/
RX2E+/
RX3E-/
RX3E+/
AVDD-2.5V/1.8V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
0.01uF-0402-X7R-±10%-50V
LL45
AVDD33/25-DEMOD
0.1uF-0402-X5R-±20%-16V
0ohm-0402-±5%-1/16W
LL47
AVDD33-DMPLL
0.1uF-0402-X5R-±20%-16V
0ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
5V-STB
RK15
RK16
IR
REMOTE
4K7ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
SPI-WPON
PWM
Rht1
Rht2
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
VCOM0
GIN0M
GIN1M
CF51
CF52
CF53
CF54
CF55
RF53
RF54
RF55
CS3
0.047uF-0402-X7R-± 10%-16V
68ohm-0402-±5%-1/16W
0.047uF-0402-X7R-± 10%-16V
68ohm-0402-±5%-1/16W
0.047uF-0402-X7R-± 10%-16V
68ohm-0402-±5%-1/16W
USB0-DM
USB0-DP
RF56
RF57
USB-DM
USB-DP
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
AUVAG
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-± 20%-16V
AMP-LO
AMP-RO
200Kohm-0402-±1%-1/16W
NC/100pF-0402-NPO-±5%-50V
RF58
RF59
CF56
CF57
CN12
VCC-PANEL
GND
RX0O-/
RX0O+/
RX01-/
RX01+/
RX02-/
RX02+/
RX0C-/
RX0C+/
RX03-/
RX03+/
RX0D-/
RX0D+/
RX1E-/
RX1E+/
RX2E-/
RX2E+/
RX3E-/
RX3E+/
2×15PIN-2.0-D-H-M(=2.6mm)-LD(6PIN)

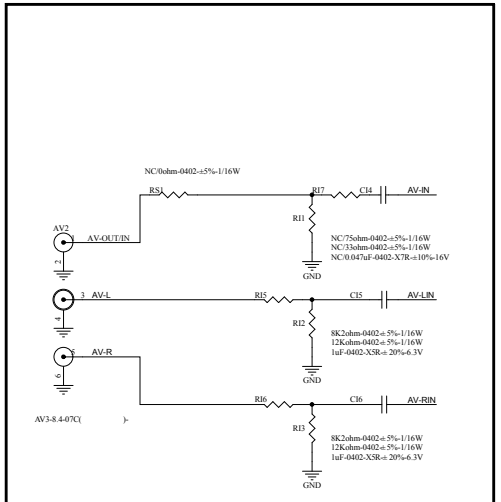

RV2
CV1
VGA-RIN
RV1
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-± 10%-16V
GND
75ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
CV14
VGA-SOG
UART-TX/DDC-SDA
RV5
CV3
VGA-GIN
HS-VGA
RV4
1000pF-0402-X7R-±10%-50V
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-± 10%-16V
VS-VGA
UART-RX/DDC-SCL
AV6
WLHD-051A
RV8
CV5
VGA-BIN
RV7
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-± 10%-16V
10Kohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/33pF-0402-NPO-±5%-50V
10Kohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/33pF-0402-NPO-±5%-50V
VS-VGA
RV11
VGA-VS
RV10
CV10
HS-VGA
RV13
VGA-HS
RV12
CV11
AV7
PJ-325
RV19
RV18
CV12
PC-RIN
RV20
CV13
PC-LIN
RV21
8K2ohm-0402-±5%-1/16W
8K2ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
1uF-0402-X5R-± 20%-6.3V
1uF-0402-X5R-± 20%-6.3V

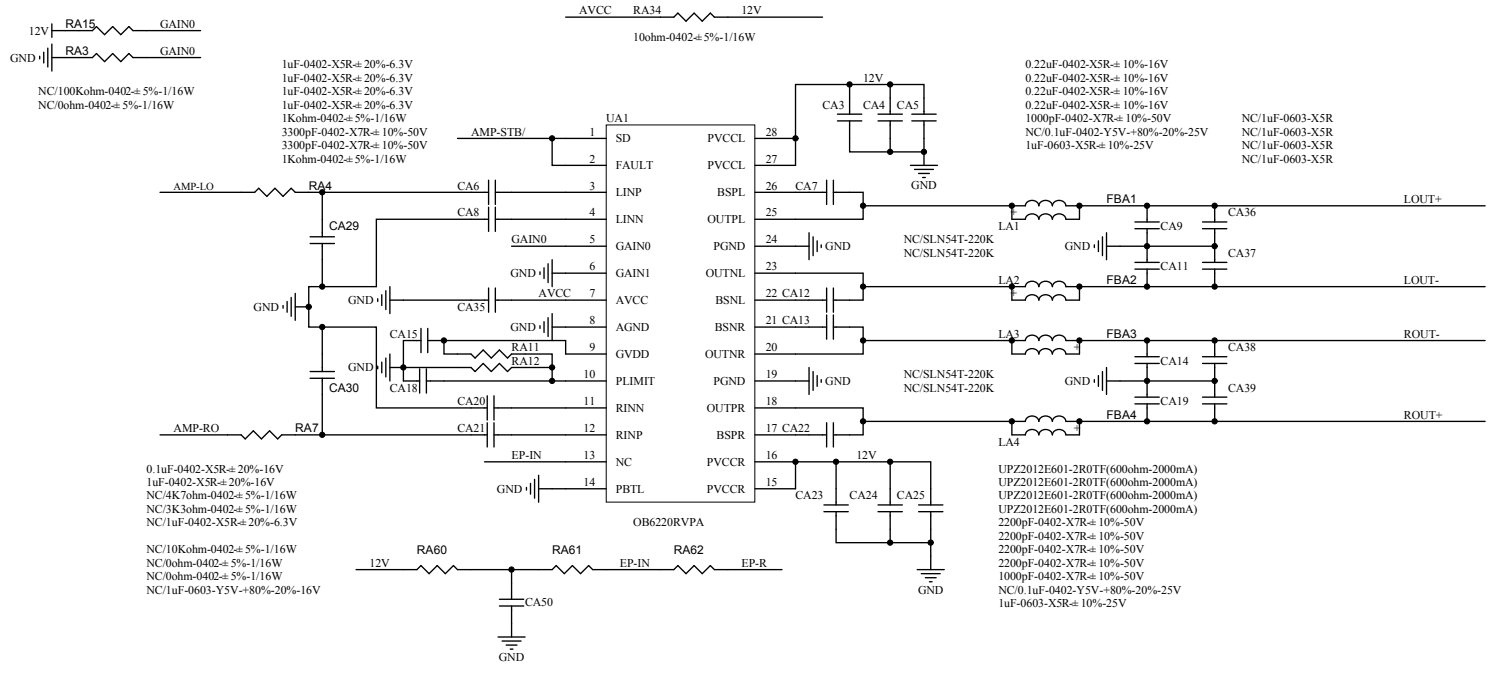

Ex-AV-IN
AV-RIN/
CN1
GND
AV-LIN/
2*2PIN-2.0-L-H-F-
-LK
CS3
RS3
75ohm-0402-±5%-1/16W
NC/100pF-0402-NPO-± 5%-50V
CS8
NC/4700pF-0402-X7R-±10%-16V
NC/4700pF-0402-X7R-±10%-16V
CS9

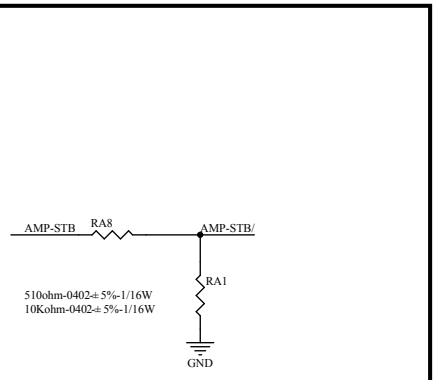

HDMI_5VIN
RH6
RH7
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
33ohm-0402-±5%-1/16W
33ohm-0402-±5%-1/16W
HDMI-SCL
HDMI-SDA
RH34
RH35
HDMI-SCL/
HDMI-SDA/
AV1
RX2+
GND
RX2-
SHELL(GND)
RX1+
GND
RX1-
SHELL(GND)
RX0+
GND
RX0-
SHELL(GND)
RXC+
GND
RXC-
SHELL(GND)
CEC
NC
SCL
SDA
GND
+5V
HPD
HDMI-RX2-P
GND
HDMI-RX2-N
HDMI-RX1-P
GND
HDMI-RX1-N
HDMI-RX0-P
GND
HDMI-RX0-N
HDMI-RXC-P
GND
HDMI-RXC-N
HDMI-SCL
HDMI-SDA
GND
HDMI_5VIN
HOTPLUG/
161031041(SPCC)
HOTPLUG/
RH36
HPD-CON
100ohm-0402-±5%-1/16W

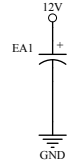
CN5
POWER
DM
DP
GND
CN2
USB-5V
USB0-DM
USB0-DP
NC/4PIN-2.0-D-H-G
F3
5V-M
EF1
CF41
0ohm-0402-±5%-1/16W
USB-002M-002DP
NC/10uF-0603-X5R-±20%-6.3V
100uF-16V-±20%-5×11-105 - - -F=2.5-XF
GND


CS8
Y/SC-G-SOG
1000pF-0402-X7R-±10%-50V
YPbPr-Y
R60
CS9
Y/SC-G-IN
CI31
RI31
0.047uF-0402-X7R-± 10%-16V
33ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
100pF-0402-NPO-±5%-50V
AV5
YPbPr-Pb
R58
CS6
Pb/SC-B-IN
RI32
0.047uF-0402-X7R-± 10%-16V
33ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
YPbPr-Pr
R61
CS4
Pr/SC-R-IN
RI33
0.047uF-0402-X7R-± 10%-16V
33ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
AV3-8.4-07C( )-
RS8
YPbPr-Y
Ex-AV-IN
RS2
CS2
SCART-VI
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-± 10%-16V
RS9
YPbPr-Pb
AV-LIN/
RS6
CS6
SC-LI
RS7
8K2ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
1uF-0402-X5R-± 20%-6.3V
NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
RS10
YPbPr-Pr
AV-RIN/
RS4
CS4
SC-RI
RS5
8K2ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
1uF-0402-X5R-± 20%-6.3V

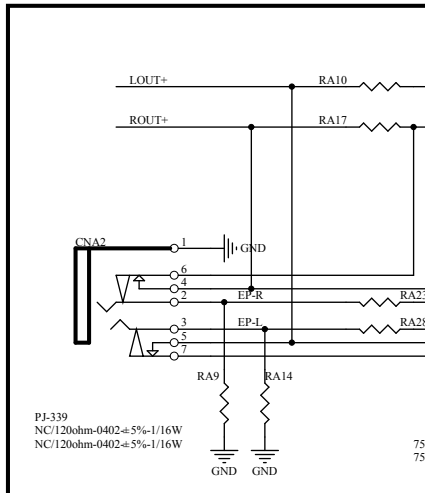

NC/0ohm-0402-±5%-1/16W
RS1
RI7
CI4
AV-IN
AV2
AV-OUT/IN
RI1
NC/75ohm-0402-±5%-1/16W
NC/33ohm-0402-±5%-1/16W
NC/0.047uF-0402-X7R-±10%-16V
GND
AV-L
RS5
CI5
AV-LIN
RI2
8K2ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
1uF-0402-X5R-± 20%-6.3V
AV-R
RI6
CI6
AV-RIN
RI3
AV3-8.4-07C( )-

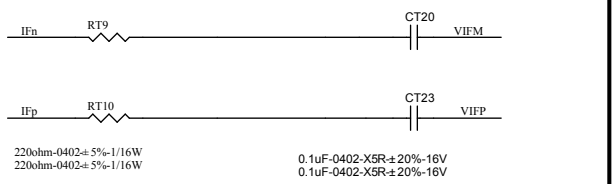


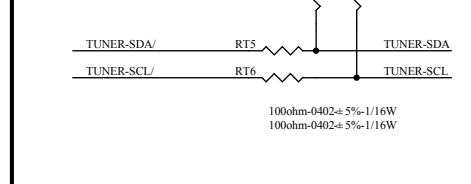


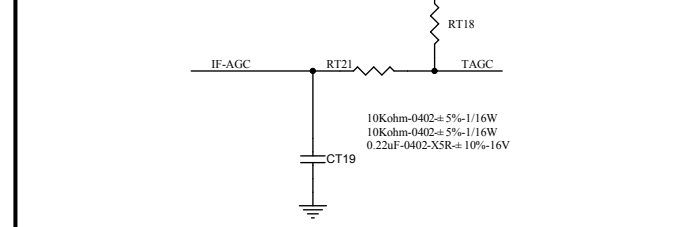


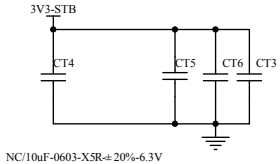
470uF-16V-± 20%-8× 9-105 -XL

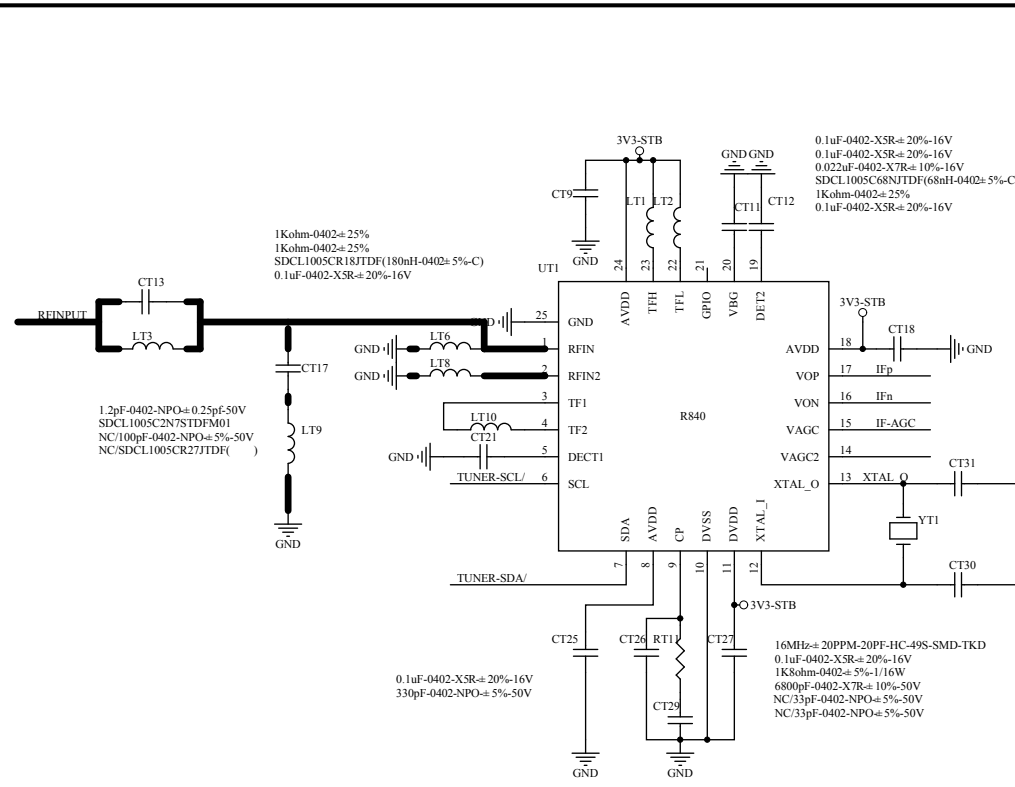


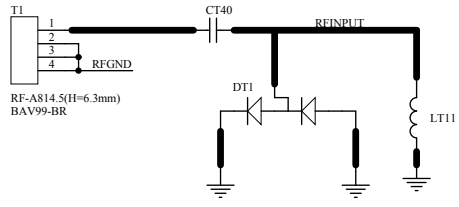


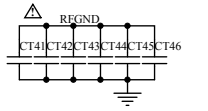




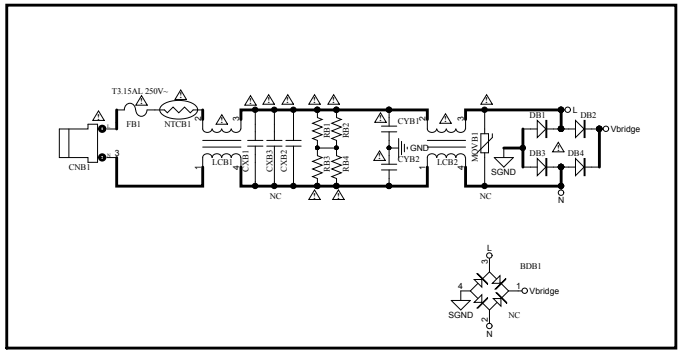


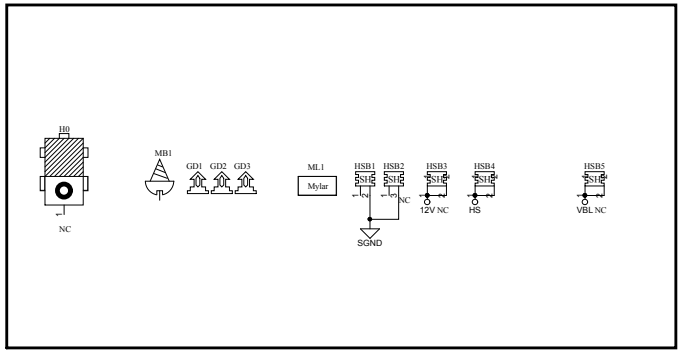


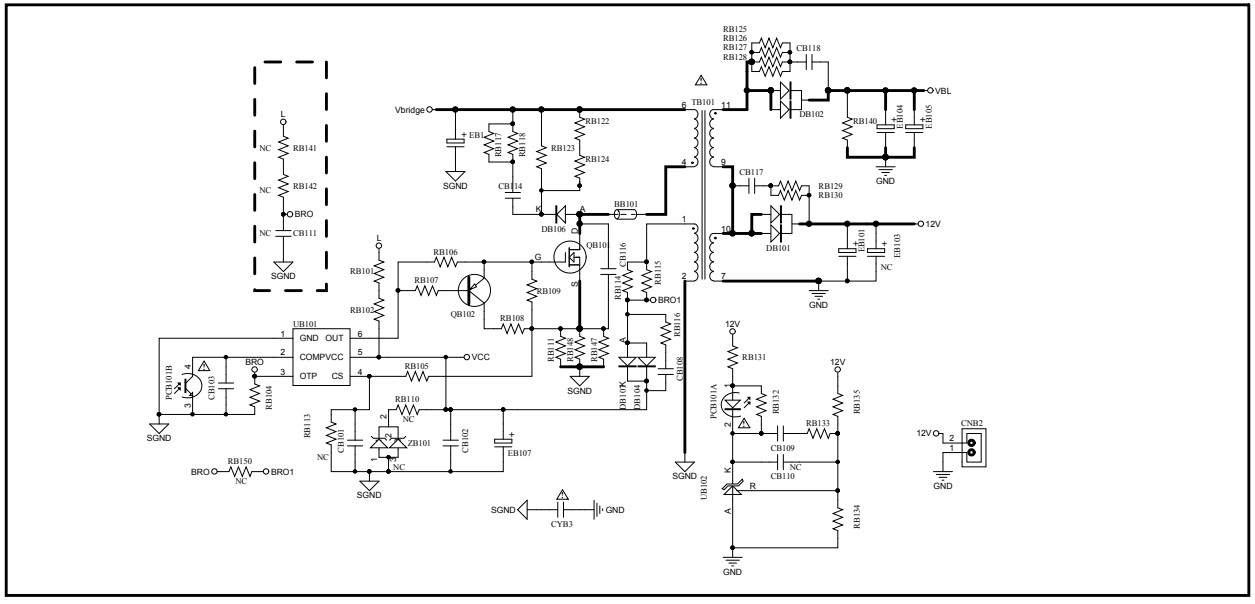


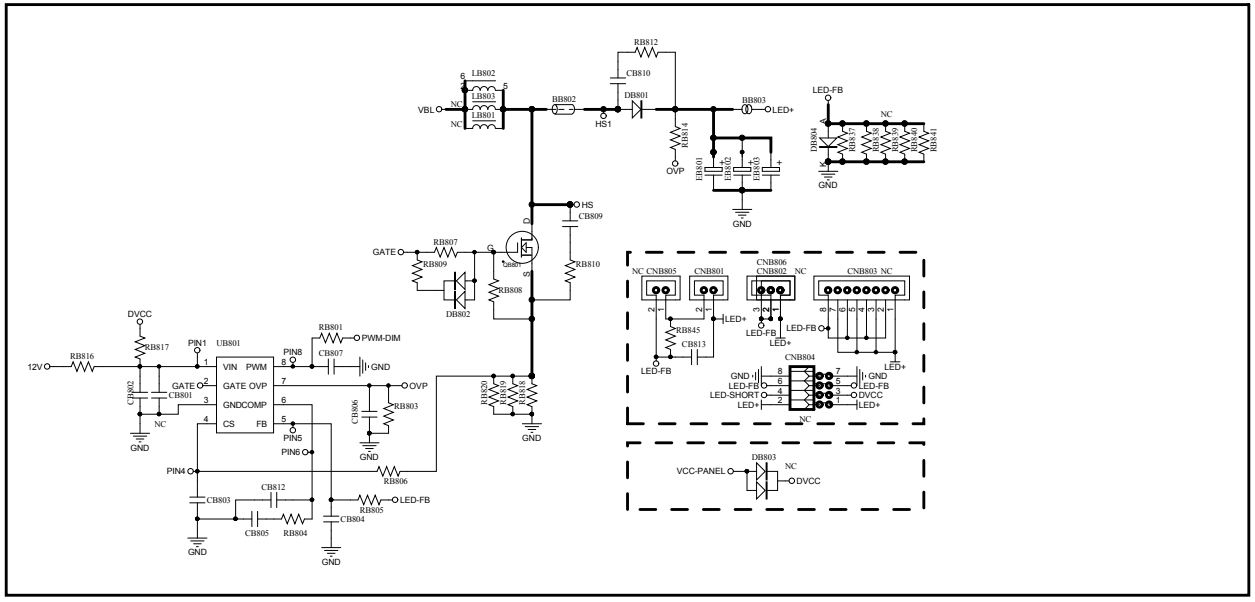


470pF-0402-X7R-±10%-50V
4700pF-1206-X7R-±10%-1000V
1000pF-1206-X7R-±20%-2000V
4700pF-1206-X7R-±10%-1000V
1000pF-1206-X7R-±20%-2000V
NC/1000pF-1206-X7R-±20%-2000V
NC/1000pF-1206-X7R-±20%-2000V
NC/SDCL1005CR27JTDF( )







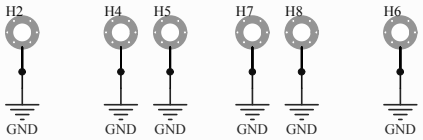


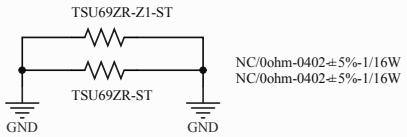
Model Name	TP.VST69D.PB83 B14156			VERSION	V1.0
DRAWN	林文添	DATE	2014-07-10	Cannot open file ClipboardPicture2013/10/14 18:24:51	
CHK'D		DATE			

TP.VST69D.PB83
PCB_NAME

B14156
PCB_TIME

M1 MARK
M2 MARK

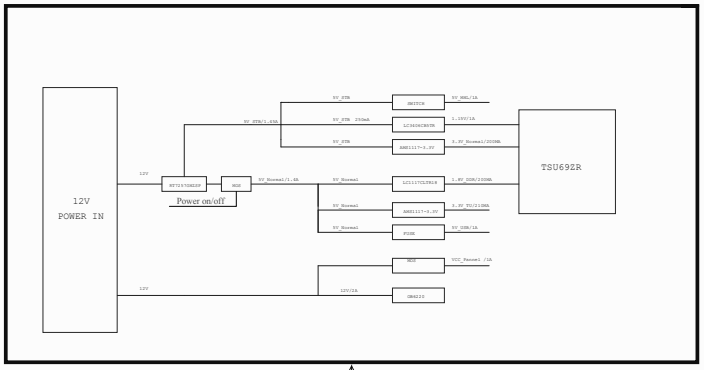




NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W

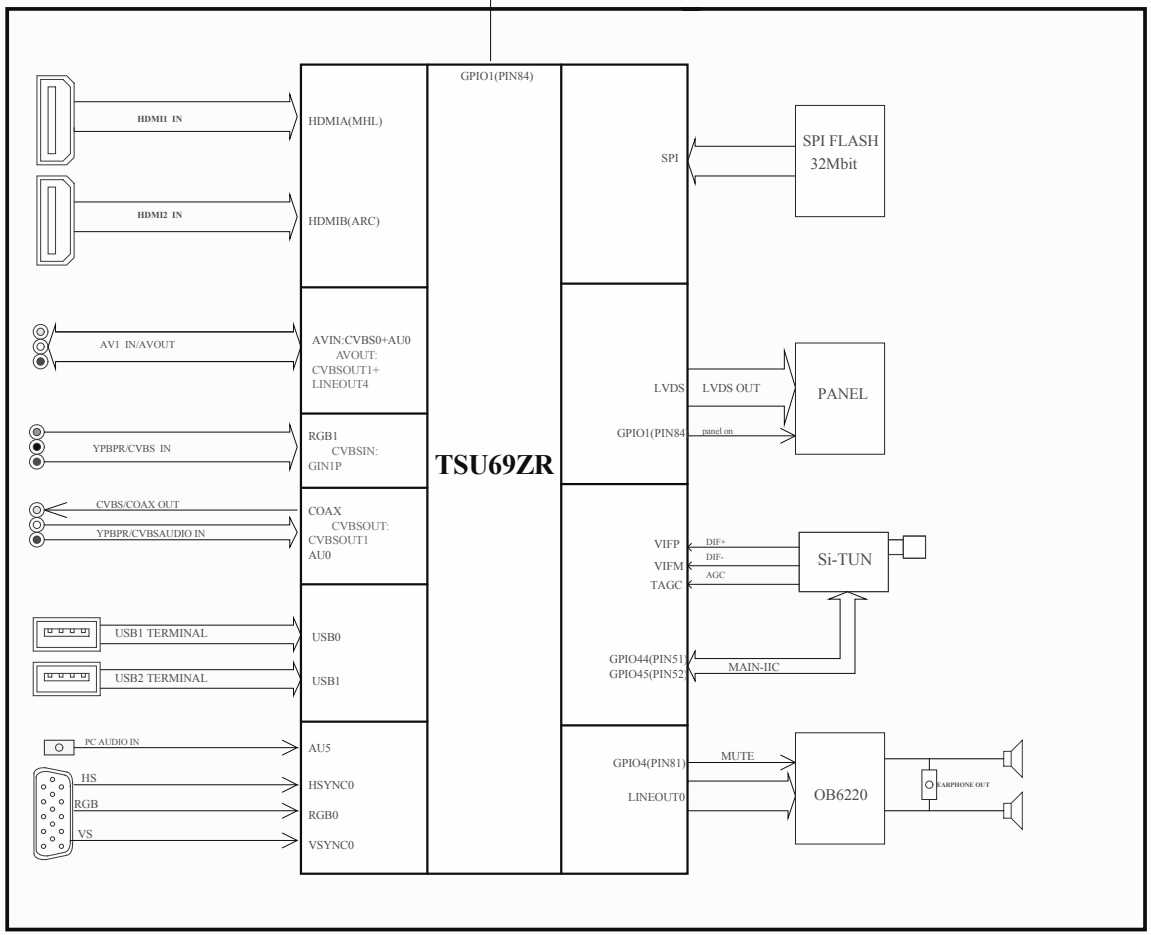
NC/14×14×06-THD

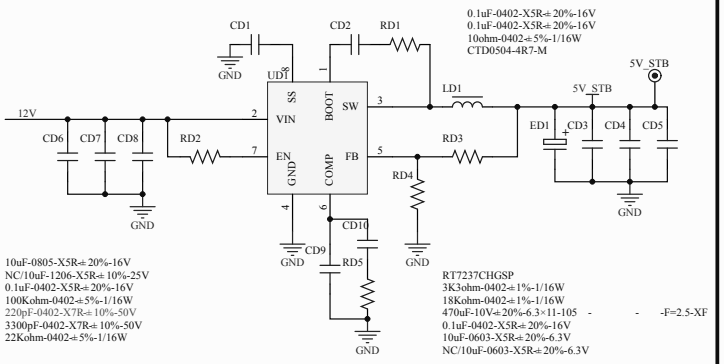
Power Tree

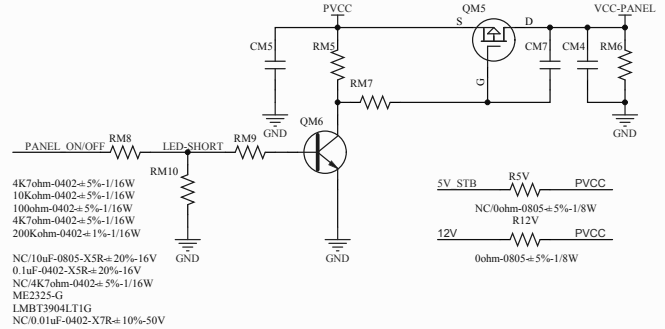


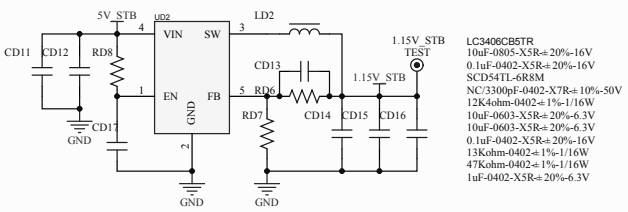
Power on/off

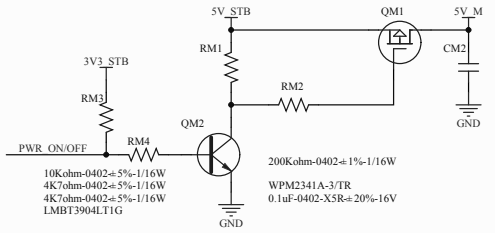
Block Diagram

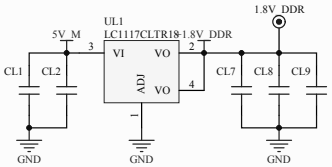


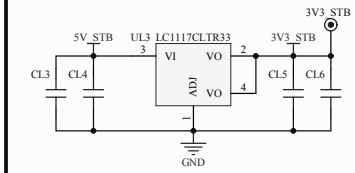

CD1
CD2
RD1
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
10ohm-0402-±5%-1/16W
CTD0504-4R7-M
5V_STB
LD1
12V
CD6
CD7
CD8
RD2
UD1
SS
BOOT
VIN
SW
EN
FB
GND
COMP
RD3
RD4
ED1
CD3
CD4
CD5
CD9
CD10
RD5
GND
10uF-0805-X5R-±20%-16V
NC/10uF-1206-X5R-±10%-25V
0.1uF-0402-X5R-±20%-16V
100Kohm-0402-±5%-1/16W
220pF-0402-X7R-±10%-50V
3300pF-0402-X7R-±10%-50V
22Kohm-0402-±5%-1/16W
RT7237CHGSP
3K3ohm-0402-±1%-1/16W
18Kohm-0402-±1%-1/16W
470uF-10V-±20%-6.3×11-105 - - -F=2.5-XF
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
NC/10uF-0603-X5R-±20%-6.3V

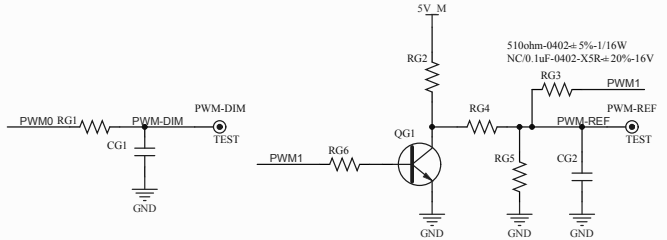

PVCC
QM5
S
D
G
VCC-PANEL
CM5
RM5
RM7
CM7
CM4
RM6
GND
QM6
PANEL_ON/OFF
RM8
LED_SHORT
RM9
RM10
4K7ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
200Kohm-0402-±1%-1/16W
NC/10uF-0805-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
NC/4K7ohm-0402-±5%-1/16W
ME2325-G
LMBT3904LT1G
NC/0.01uF-0402-X7R-±10%-50V
5V_STB
R5V
PVCC
NC/0ohm-0805-±5%-1/8W
12V
R12V
PVCC
0ohm-0805-±5%-1/8W

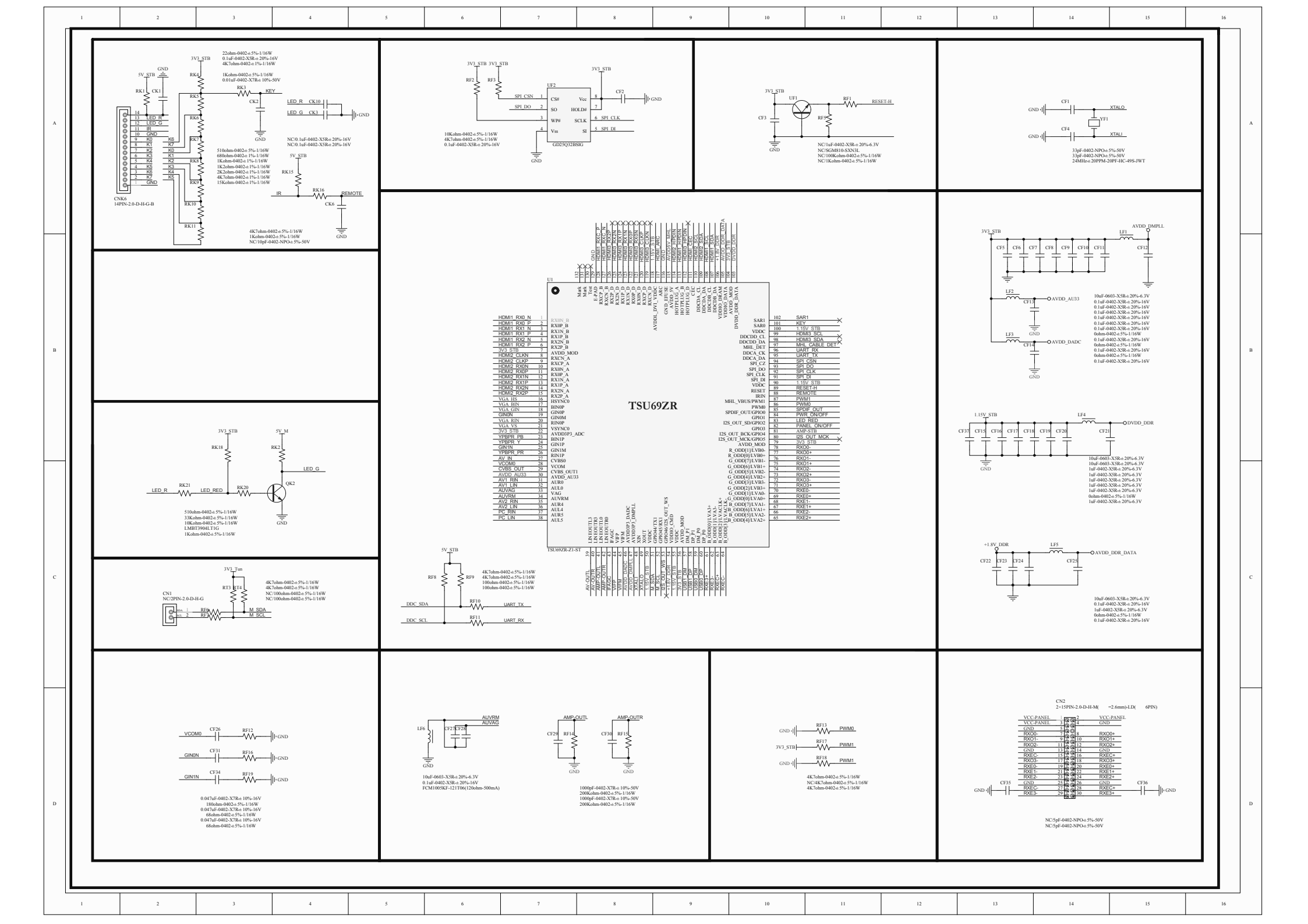

5V_STB
UD2
LD2
CD11
CD12
RD8
VIN
SW
1.15V_STB
TEST
CD13
EN
FB
GND
RD6
RD7
CD14
CD15
CD16
CD17
LC3406CB5TR
10uF-0805-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
SCD54TL-6R8M
NC/3300pF-0402-X7R-±10%-50V
12K4ohm-0402-±1%-1/16W
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
13Kohm-0402-±1%-1/16W
47Kohm-0402-±1%-1/16W
1uF-0402-X5R-±20%-6.3V

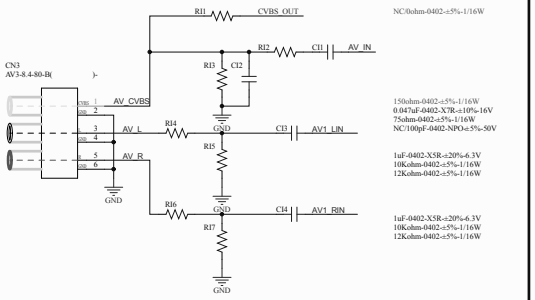

5V_STB
QM1
5V_M
RM1
CM2
3V3_STB
RM3
RM2
QM2
PWR_ON/OFF
RM4
GND
10Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
LMBT3904LT1G
200Kohm-0402-±1%-1/16W
WPM2341A-3/TR
0.1uF-0402-X5R-±20%-16V

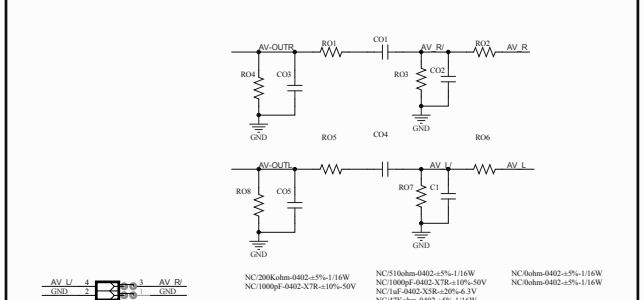

UL1
LC1117CLTR18
5V_M
1.8V_DDR
VI
VO
ADJ
CL1
CL2
CL7
CL8
CL9
GND
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V

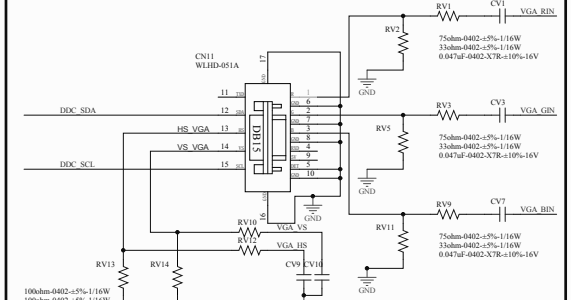

UL3
LC1117CLTR33
5V_STB
3V3_STB
VI
VO
ADJ
CL3
CL4
CL5
CL6
GND
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V

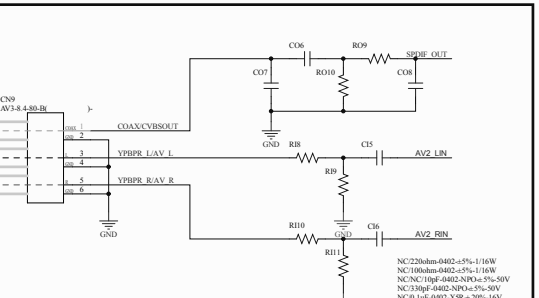

5V_M
RG2
510ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
RG3
PWM1
PWM0_RG1
PWM-DIM
PWM-DIM
TEST
CG1
RG4
PWM-REF
PWM-REF
TEST
QG1
PWM1
RG6
RG5
CG2
GND
510ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/10Kohm-0402-±5%-1/16W
NC/LMBT3904LT1G
NC/1Kohm-0402-±5%-1/16W
NC/33ohm-0402-±5%-1/16W
NC/1K8ohm-0402-±5%-1/16W

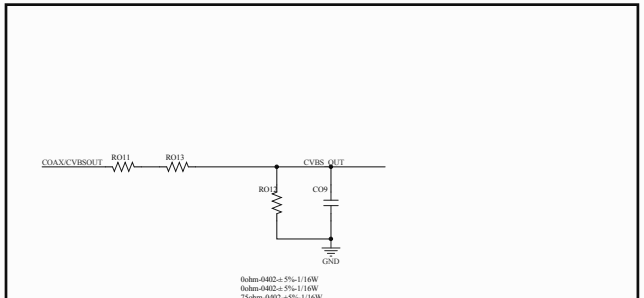

CNK6
14PIN-2.0-D-H-G-B
22ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
4K7ohm-0402-±1%-1/16W
1Kohm-0402-±5%-1/16W
0.01uF-0402-X7R-± 10%-50V
510ohm-0402-±5%-1/16W
680ohm-0402-±1%-1/16W
1Kohm-0402-±1%-1/16W
1K2ohm-0402-±1%-1/16W
2K2ohm-0402-±1%-1/16W
4K7ohm-0402-±1%-1/16W
15Kohm-0402-±1%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V
4K7ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
NC/10pF-0402-NPO-±5%-50V
10Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
GD25Q32BSIG
NC/1uF-0402-X5R-±20%-6.3V
NC/SGM810-SXN3L
NC/100Kohm-0402-±5%-1/16W
NC/1Kohm-0402-±5%-1/16W
33pF-0402-NPO-±5%-50V
33pF-0402-NPO-±5%-50V
24MHz-±20PPM-20PF-HC-49S-JWT
TSU69ZR
TSU69ZR-Z1-ST
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
0ohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
510ohm-0402-±5%-1/16W
33Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
LMBT3904LT1G
1Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
NC/100ohm-0402-±5%-1/16W
NC/100ohm-0402-±5%-1/16W
CN1
NC/2PIN-2.0-D-H-G
0.047uF-0402-X7R-± 10%-16V
180ohm-0402-±5%-1/16W
0.047uF-0402-X7R-± 10%-16V
68ohm-0402-±5%-1/16W
0.047uF-0402-X7R-± 10%-16V
68ohm-0402-±5%-1/16W
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
FCM1005KF-121T06(120ohm-500mA)
1000pF-0402-X7R-± 10%-50V
200Kohm-0402-±5%-1/16W
1000pF-0402-X7R-± 10%-50V
200Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
NC/4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
CN2
2×15PIN-2.0-D-H-M(+2.6mm)-LD(6PIN)
NC/5pF-0402-NPO-±5%-50V
NC/5pF-0402-NPO-±5%-50V

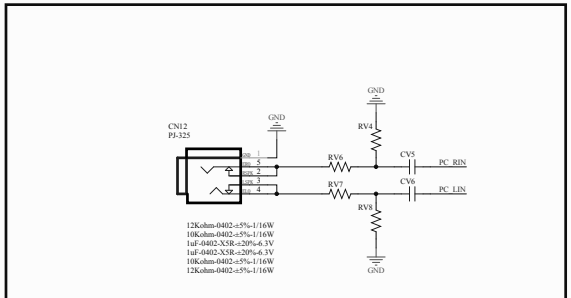

CN3
AV3-8.4-80-B(
AV_CVBS
AV_L
AV_R
GND
R11
CVBS_OUT
R12
C11
AV_IN
R13
CI2
R14
CI3
AV1_LIN
R15
R16
CI4
AV1_RIN
R17
NC/0ohm-0402-±5%-1/16W
150ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
75ohm-0402-±5%-1/16W
NC/100pF-0402-NPO-±5%-50V
1uF-0402-X5R-±20%-6.3V
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W

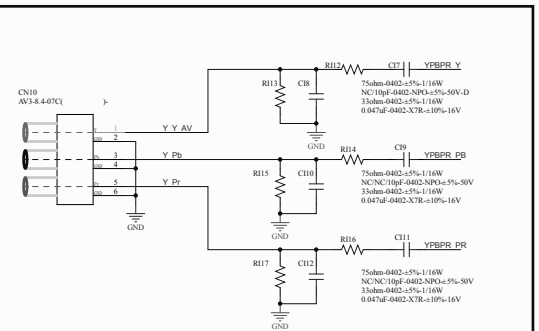

AV-OUTR
RO1
CO1
AV_R/
RO2
AV_R
RO4
CO3
RO3
CO2
GND
RO5
CO4
RO6
AV-OUTL
AV_L/
AV_L
RO8
CO5
RO7
C1
AV_L/
GND
AV_R
CN4
NC/2- 2PIN-2.0-H-F-
-J
NC/200Kohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
NC/510ohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
NC/1uF-0402-X5R-±20%-6.3V
NC/47Kohm-0402-±5%-1/16W
NC/510ohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
NC/1uF-0402-X5R-±20%-6.3V
NC/47Kohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W

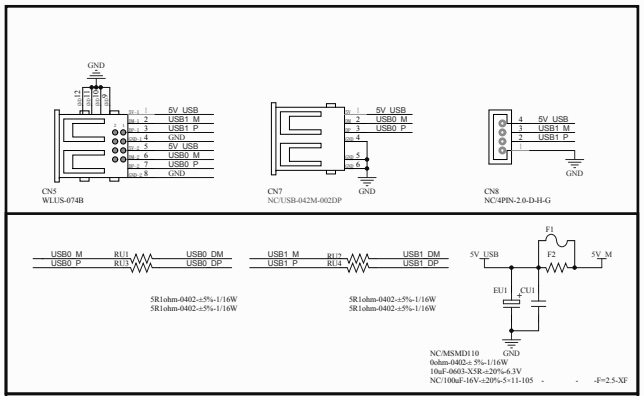

CN11
WLHD-051A
DDC_SDA
HS_VGA
VS_VGA
DDC_SCL
DB15
RV1
CV1
VGA_RIN
RV2
RV3
CV3
VGA_GIN
RV5
RV9
CV7
VGA_BIN
RV11
RV10
VGA_VS
VGA_HS
RV13
RV14
CV9
CV10
GND
75ohm-0402-±5%-1/16W
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
100ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
NC/30pF-0402-NPO-±5%-50V
NC/30pF-0402-NPO-±5%-50V

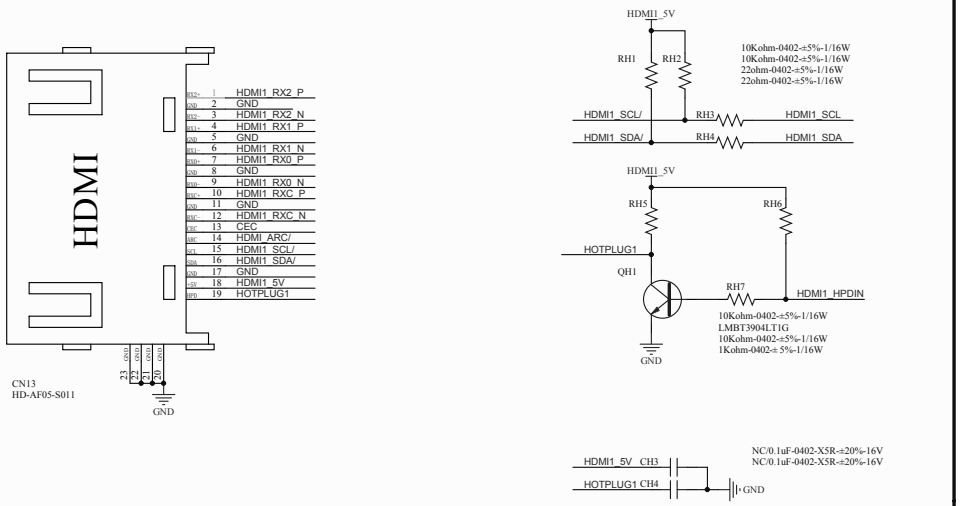

CN9
AV3-8.4-80-B(
COAX/CVBSOUT
YPBPR_L/AV_L
YPBPR_R/AV_R
GND
CO6
RO9
SPDIF_OUT
CO7
RO10
CO8
RI8
CI5
AV2_LIN
RI9
RI10
CI6
AV2_RIN
RI11
NC/220ohm-0402-±5%-1/16W
NC/100ohm-0402-±5%-1/16W
NC/NC/10pF-0402-NPO-±5%-50V
NC/330pF-0402-NPO-±5%-50V
NC/0.1uF-0402-X5R-±20%-16V
10Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
12Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
12Kohm-0402-±5%-1/16W


COAX/CVBSOUT
RO11
RO13
CVBS_OUT
RO12
CO9
GND
0ohm-0402-± 5%-1/16W
0ohm-0402-± 5%-1/16W
75ohm-0402-±5%-1/16W
100pF-0402-NPO-±5%-50V


CN12
PJ-325
GND
RV4
RV6
CV5
PC_RIN
RV7
CV6
PC_LIN
RV8
12Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W


CN10
AV3-8.4-07C(
Y Y AV
Y Pb
Y Pr
GND
RI12
CI7
YPBPR_Y
RI13
CI8
RI14
CI9
YPBPR_PB
RI15
CI10
RI16
CI11
YPBPR_PR
RI17
CI12
75ohm-0402-±5%-1/16W
NC/10pF-0402-NPO-±5%-50V-D
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
75ohm-0402-±5%-1/16W
NC/NC/10pF-0402-NPO-±5%-50V
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
75ohm-0402-±5%-1/16W
NC/NC/10pF-0402-NPO-±5%-50V
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V

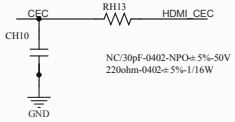

GND
CN5
WL(S-074B
5V_USB
USB1_M
USB1_P
GND
5V_USB
USB0_M
USB0_P
GND
CN7
NC/USB-042M-002DP
5V_USB
USB0_M
USB0_P
GND
CN8
NC/4PIN-2.0-D-H-G
4 5V_USB
3 USB1_M
2 USB1_P
1
GND
USB0_M
USB0_P
RU1
RU3
USB0_DM
USB0_DP
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
USB1_M
USB1_P
RU2
RU4
USB1_DM
USB1_DP
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
5V_USB
F1
F2
5V_M
EU1
CU1
GND
NC/MSMD110
0ohm-0402-± 5%-1/16W
10uF-0603-X5R-±20%-6.3V
NC/100uF-16V-±20%-5×11-105
-F=2.5-XF


HDMI
HDMI1_RX2_P
GND
HDMI1_RX2_N
HDMI1_RX1_P
GND
HDMI1_RX1_N
HDMI1_RX0_P
GND
HDMI1_RX0_N
HDMI1_RXC_P
GND
HDMI1_RXC_N
CEC
HDMI_ARC/
HDMI1_SCL/
HDMI1_SDA/
GND
HDMI1_5V
HOTPLUG1
CN13
HD-AF05-S011
GND

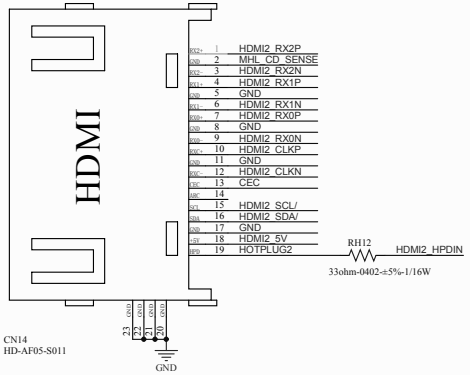
HDMI1_5V
RH1
RH2
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
HDMI1_SCL/
RH3
HDMI1_SCL
HDMI1_SDA/
RH4
HDMI1_SDA

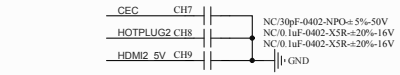
HDMI1_5V
RH5
RH6
HOTPLUG1
QH1
RH7
HDMI1_HPDIN
10Kohm-0402-±5%-1/16W
LMBT3904LT1G
10Kohm-0402-±5%-1/16W
1Kohm-0402-± 5%-1/16W
GND

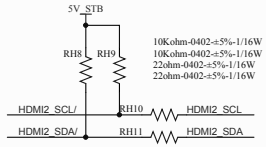
HDMI1_5V CH3
HOTPLUG1 CH4
GND
NC/0.1uF-0402-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V


CEC
RH13
HDMI_CEC
CH10
NC/30pF-0402-NPO-± 5%-50V
220ohm-0402-± 5%-1/16W
GND

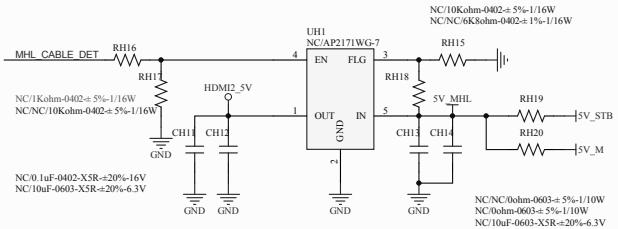
CH15
HDMI_ARC/
HDMI_ARC
1uF-0402-X5R-±20%-6.3V

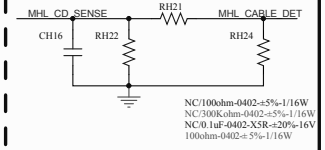

HDMI
HDMI2_RX2P
MHL_CD_SENSE
HDMI2_RX2N
HDMI2_RX1P
GND
HDMI2_RX1N
HDMI2_RX0P
GND
HDMI2_RX0N
HDMI2_CLKP
GND
HDMI2_CLKN
CEC
SCL
SDA
GND
HDMI2_5V
HOTPLUG2
CN14
HD-AF05-S011
GND

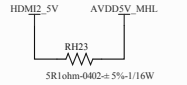

CEC
CH7
HOTPLUG2 CH8
HDMI2_5V
CH9
GND
NC/30pF-0402-NPO-± 5%-50V
NC/0.1uF-0402-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V

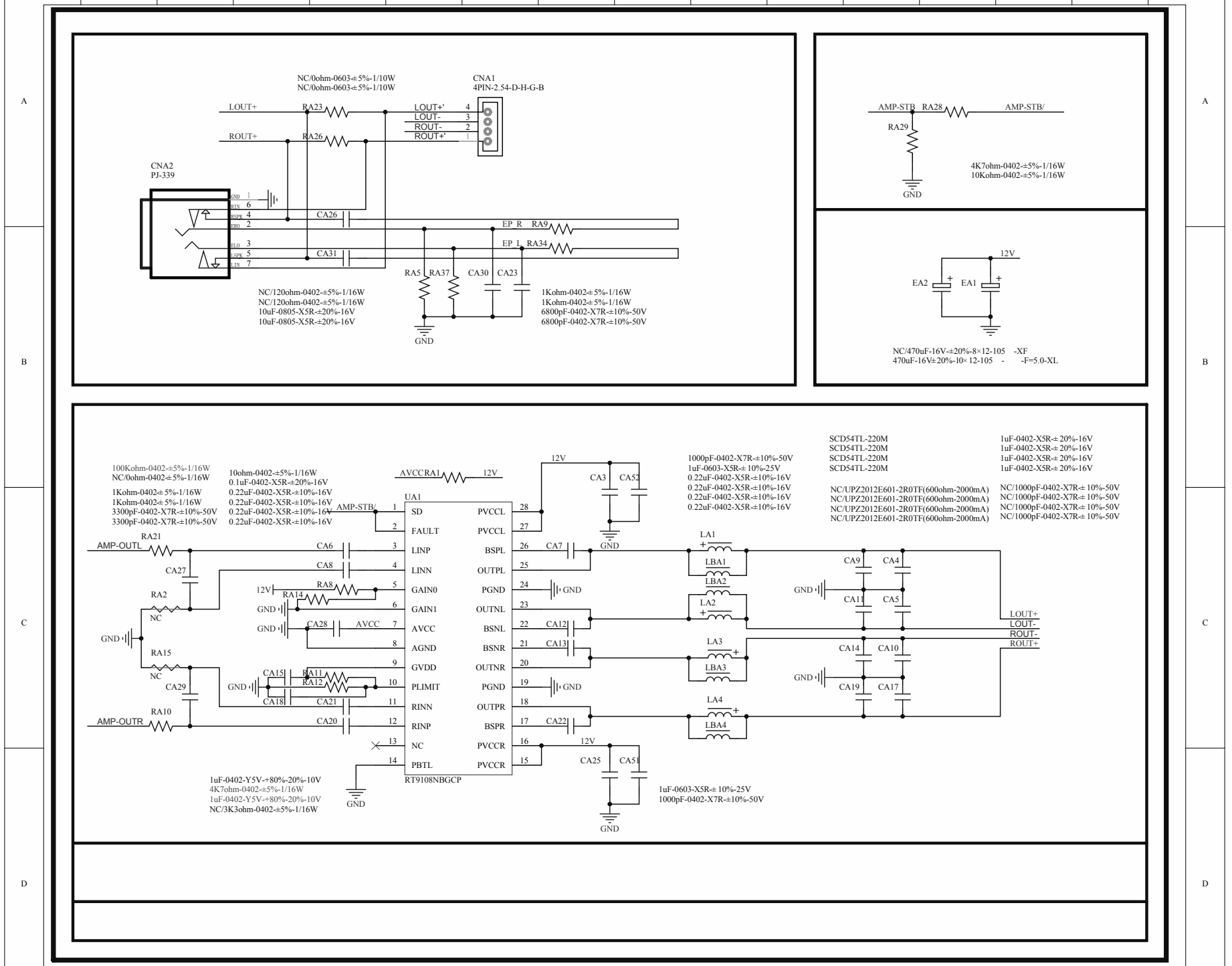

5V_STB
RH8
RH9
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
HDMI2_SCL/
RH10
HDMI2_SCL
HDMI2_SDA/
RH11
HDMI2_SDA

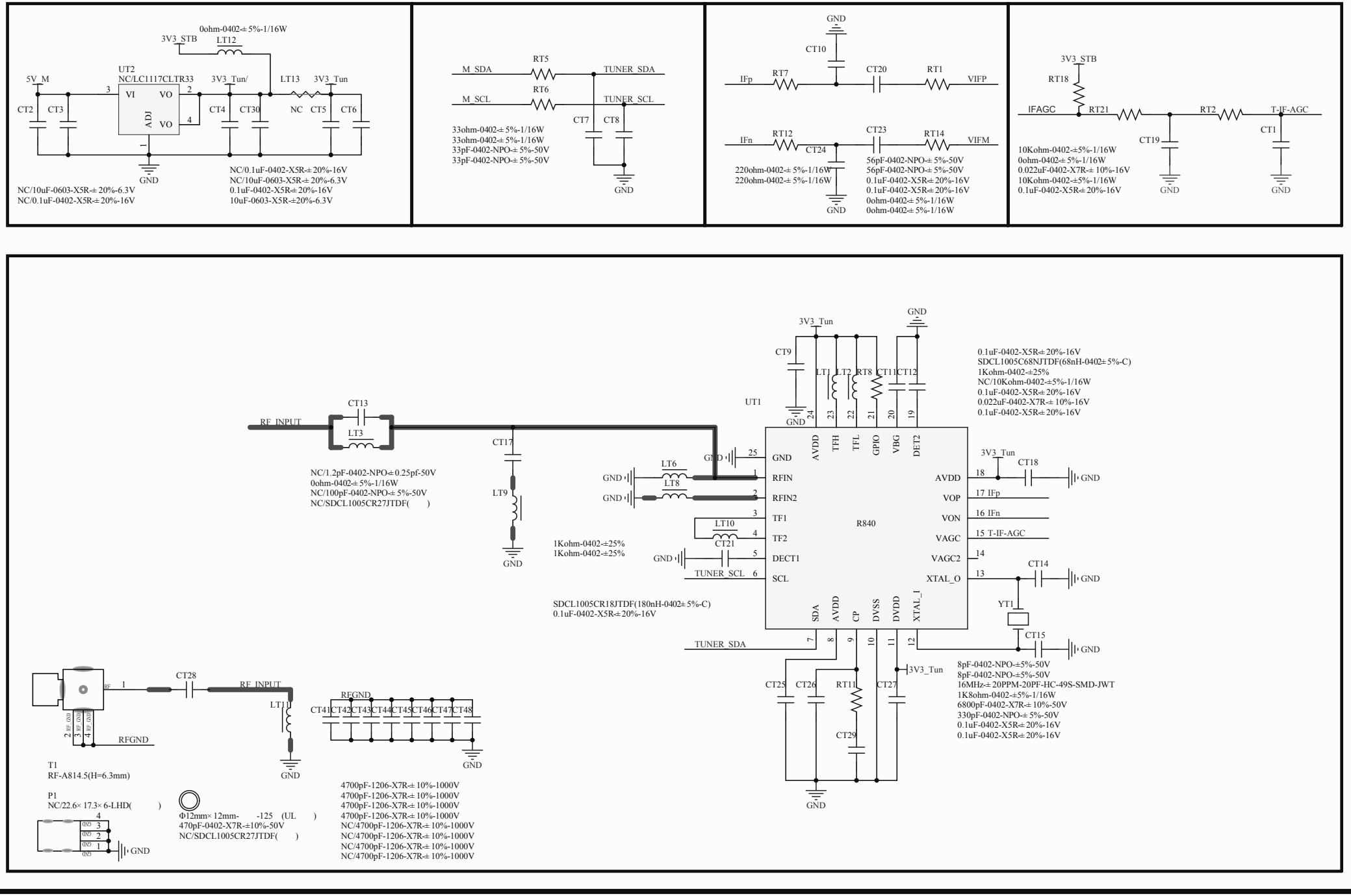
RH12
HDMI2_HPDIN
33ohm-0402-±5%-1/16W

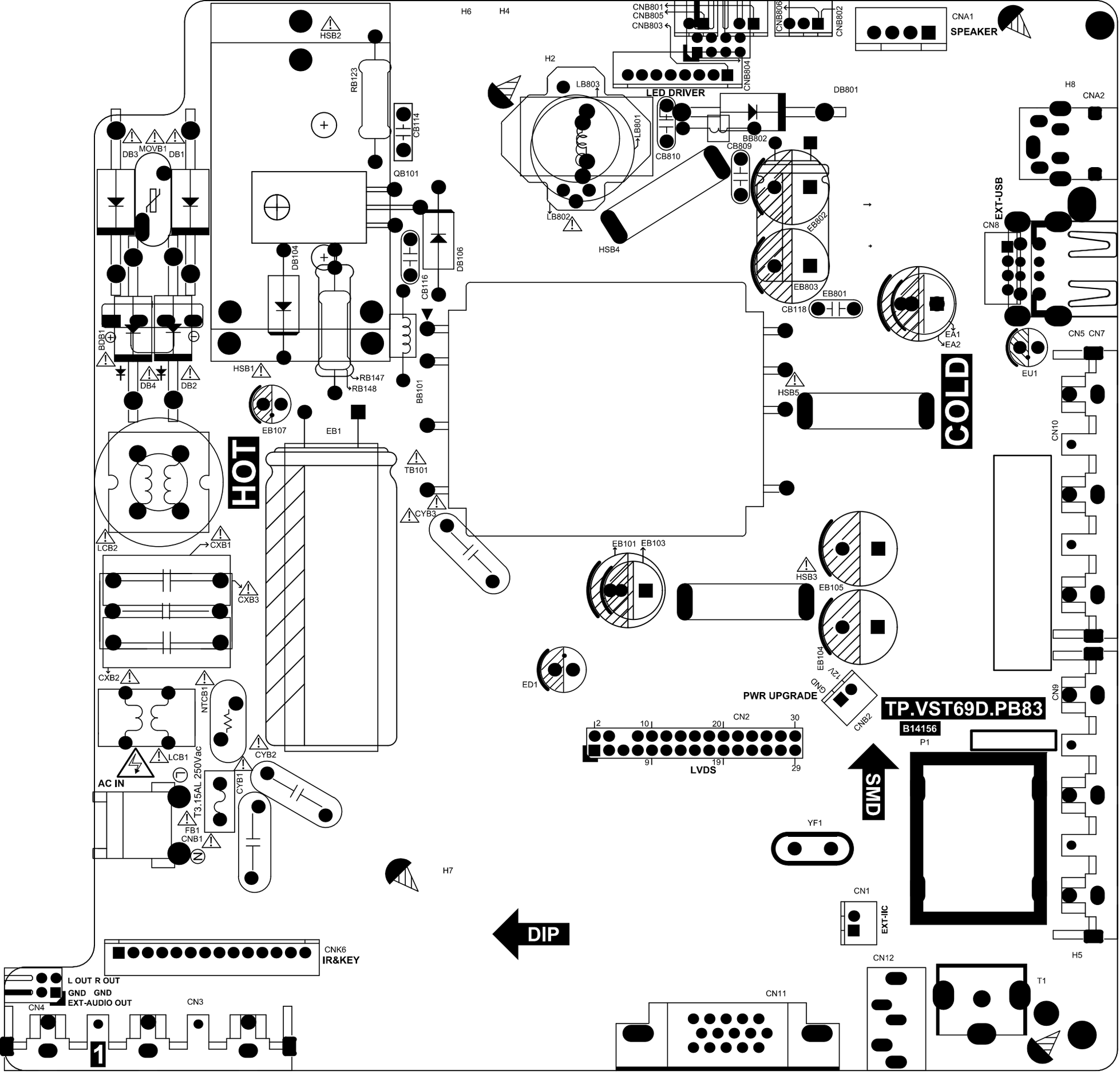

MHL_CABLE_DET
RH16
RH17
NC/1Kohm-0402-± 5%-1/16W
NC/NC/10Kohm-0402-± 5%-1/16W
GND
HDMI2_5V
CH11
CH12
GND
GND
UH1
NC/AP2171WG-7
EN
FLG
OUT
IN
GND
NC/10Kohm-0402-± 5%-1/16W
NC/NC/6K8ohm-0402-± 1%-1/16W
RH15
RH18
5V_MHL
CH13
CH14
GND
GND
RH19
RH20
5V_STB
5V_M
NC/0.1uF-0402-X5R-±20%-16V
NC/10uF-0603-X5R-±20%-6.3V
NC/NC/0ohm-0603-± 5%-1/10W
NC/0ohm-0603-± 5%-1/10W
NC/10uF-0603-X5R-±20%-6.3V
NC/0.1uF-0402-X5R-±20%-16V


MHL_CD_SENSE
RH21
MHL_CABLE_DET
CH16
RH22
RH24
NC/100ohm-0402-±5%-1/16W
NC/300Kohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
100ohm-0402-±5%-1/16W


HDMI2_5V
AVDD5V_MHL
RH23
5R1ohm-0402-± 5%-1/16W


NC/0ohm-0603-±5%-1/10W
NC/0ohm-0603-±5%-1/10W
CNA1
4PIN-2.54-D-H-G-B
LOUT+
RA23
LOUT+'
LOUT-
ROUT-
ROUT+'
ROUT+
RA26
CNA2
PJ-339
GND
RIN
BSPK
ERO
ELO
LSPK
LIN
CA26
CA31
EP_R
RA9
EP_L
RA34
RA5
RA37
CA30
CA23
GND
NC/120ohm-0402-±5%-1/16W
NC/120ohm-0402-±5%-1/16W
10uF-0805-X5R-±20%-16V
10uF-0805-X5R-±20%-16V
1Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
6800pF-0402-X7R-±10%-50V
6800pF-0402-X7R-±10%-50V
AMP-STB
RA28
AMP-STB/
RA29
GND
4K7ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
12V
EA2
EA1
NC/470uF-16V-±20%-8×12-105 -XF
470uF-16V±20%-10× 12-105 - -F=5.0-XL
100Kohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
3300pF-0402-X7R-±10%-50V
3300pF-0402-X7R-±10%-50V
10ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
AVCC
RA1
12V
UA1
AMP-STB/
SD
FAULT
LINP
LINN
GAIN0
GAIN1
AVCC
AGND
GVDD
PLIMIT
RINN
RINP
NC
PBTL
PVCCL
PVCCL
BSPL
OUTPL
PGND
OUTNL
BSNL
BSNR
OUTNR
PGND
OUTPR
BSPR
PVCCR
PVCCR
RT9108NBGCP
CA3
CA52
CA7
CA12
CA13
CA22
CA25
CA51
1000pF-0402-X7R-±10%-50V
1uF-0603-X5R-± 10%-25V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
1uF-0603-X5R-± 10%-25V
1000pF-0402-X7R-±10%-50V
SCD54TL-220M
SCD54TL-220M
SCD54TL-220M
SCD54TL-220M
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
1uF-0402-X5R-± 20%-16V
1uF-0402-X5R-± 20%-16V
1uF-0402-X5R-± 20%-16V
1uF-0402-X5R-± 20%-16V
NC/1000pF-0402-X7R-± 10%-50V
NC/1000pF-0402-X7R-± 10%-50V
NC/1000pF-0402-X7R-± 10%-50V
NC/1000pF-0402-X7R-± 10%-50V
RA21
AMP-OUTL
CA6
CA8
RA8
RA14
CA28
AVCC
CA27
RA2
NC
RA15
NC
CA29
RA10
AMP-OUTR
CA15
RA11
RA12
CA18
CA21
CA20
LA1
LBA1
LBA2
LA2
LA3
LBA3
LA4
LBA4
CA9
CA4
CA11
CA5
CA14
CA10
CA19
CA17
LOUT+
LOUT-
ROUT-
ROUT+
1uF-0402-Y5V-+80%-20%-10V
4K7ohm-0402-±5%-1/16W
1uF-0402-Y5V-+80%-20%-10V
NC/3K3ohm-0402-±5%-1/16W


0ohm-0402-± 5%-1/16W
3V3_STB
LT12
5V_M
UT2
NC/LC1117CLTR33
3V3_Tun/
LT13
3V3_Tun
VI
VO
ADJ
CT2
CT3
CT4
CT30
NC
CT5
CT6
GND
NC/10uF-0603-X5R-± 20%-6.3V
NC/0.1uF-0402-X5R-± 20%-16V
NC/0.1uF-0402-X5R-± 20%-16V
NC/10uF-0603-X5R-± 20%-6.3V
0.1uF-0402-X5R-± 20%-16V
10uF-0603-X5R-±20%-6.3V
M_SDA
M_SCL
RT5
RT6
TUNER_SDA
TUNER_SCL
CT7
CT8
33ohm-0402-± 5%-1/16W
33ohm-0402-± 5%-1/16W
33pF-0402-NPO-± 5%-50V
33pF-0402-NPO-± 5%-50V
CT10
IFp
RT7
CT20
RT1
VIFP
IFn
RT12
CT24
CT23
RT14
VIFM
220ohm-0402-± 5%-1/16W
220ohm-0402-± 5%-1/16W
56pF-0402-NPO-± 5%-50V
56pF-0402-NPO-± 5%-50V
0.1uF-0402-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
0ohm-0402-± 5%-1/16W
0ohm-0402-± 5%-1/16W
IFAGC
RT18
RT21
RT2
T-IF-AGC
CT19
CT1
10Kohm-0402-±5%-1/16W
0ohm-0402-± 5%-1/16W
0.022uF-0402-X7R-± 10%-16V
10Kohm-0402-±5%-1/16W
0.1uF-0402-X5R-± 20%-16V
RF_INPUT
CT13
LT3
NC/1.2pF-0402-NPO-± 0.25pf-50V
0ohm-0402-± 5%-1/16W
NC/100pF-0402-NPO-± 5%-50V
NC/SDCL1005CR27JTDF( )
CT17
LT9
UT1
R840
GND
RFIN
RFIN2
TF1
TF2
DECT1
SCL
SDA
AVDD
TFH
TFL
GPIO
VBG
DET2
VOP
VON
VAGC
VAGC2
XTAL_O
XTAL_I
CP
DVSS
DVDD
LT6
LT8
LT10
CT21
1Kohm-0402-±25%
1Kohm-0402-±25%
TUNER_SCL
TUNER_SDA
CT9
LT1
LT2
RT8
CT11
CT12
0.1uF-0402-X5R-± 20%-16V
SDCL1005C68NJTDF(68nH-0402± 5%-C)
1Kohm-0402-±25%
NC/10Kohm-0402-±5%-1/16W
0.1uF-0402-X5R-± 20%-16V
0.022uF-0402-X7R-± 10%-16V
0.1uF-0402-X5R-± 20%-16V
CT18
IFp
IFn
T-IF-AGC
CT14
YT1
CT15
SDCL1005CR18JTDF(180nH-0402± 5%-C)
0.1uF-0402-X5R-± 20%-16V
8pF-0402-NPO-±5%-50V
8pF-0402-NPO-±5%-50V
16MHz-± 20PPM-20PF-HC-49S-SMD-JWT
1K8ohm-0402-±5%-1/16W
6800pF-0402-X7R-± 10%-50V
330pF-0402-NPO-± 5%-50V
0.1uF-0402-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
CT25
CT26
RT11
CT27
CT29
CT28
RF_INPUT
LT11
RFGND
T1
RF-A814.5(H=6.3mm)
CT41
CT42
CT43
CT44
CT45
CT46
CT47
CT48
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
P1
NC/22.6× 17.3× 6-LHD( )
Φ12mm× 12mm- -125 (UL)
470pF-0402-X7R-±10%-50V
NC/SDCL1005CR27JTDF( )


TP.VST69D.PB83
B14156
P1
HOT
COLD
SMD
DIP
AC IN
T3.15AL 250Vac
LED DRIVER
PWR UPGRADE
LVDS
SPEAKER
EXT-USB
EXT-IIC
IR&KEY
L OUT R OUT
GND GND
EXT-AUDIO OUT
CNB801
CNB805
CNB803
CNB806
CNB802
CNB804
CNA1
CNA2
CN1
CN2
CN3
CN4
CN5 CN7
CN8
CN9
CN10
CN11
CN12
CNB2
CNK6
CNB1
H1
H2
H4
H5
H6
H7
H8
HSB1
HSB2
HSB3
HSB4
HSB5
DB1
DB2
DB3
DB4
DB104
DB106
DB801
MOVB1
BDB1
QB101
RB123
RB147
RB148
CB114
CB116
CB118
CB809
CB810
BB101
BB802
LB801
LB802
LB803
EB1
EB101
EB103
EB104
EB105
EB107
EB801
EB802
EB803
EA1
EA2
EU1
TB101
CYB1
CYB2
CYB3
CXB1
CXB2
CXB3
LCB1
LCB2
NTCB1
ED1
YF1
FB1
12V
GND

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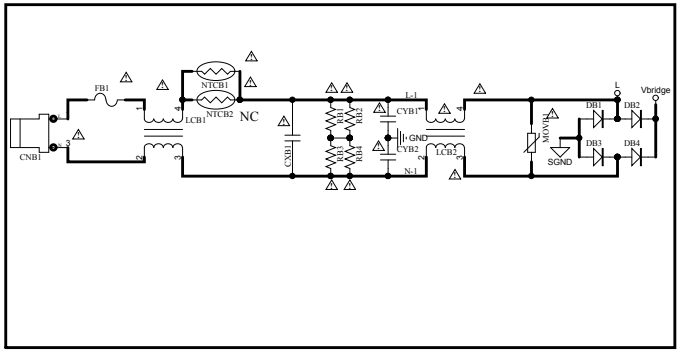
TP.VST69D.PB83

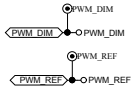
B14156

TSU692ZR-Z1-ST
TSU692ZR-ST

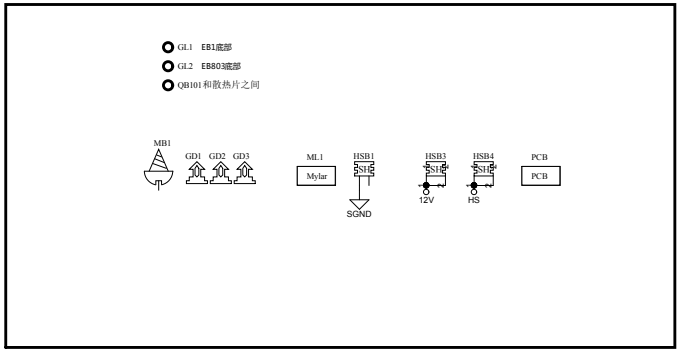
EMI电路



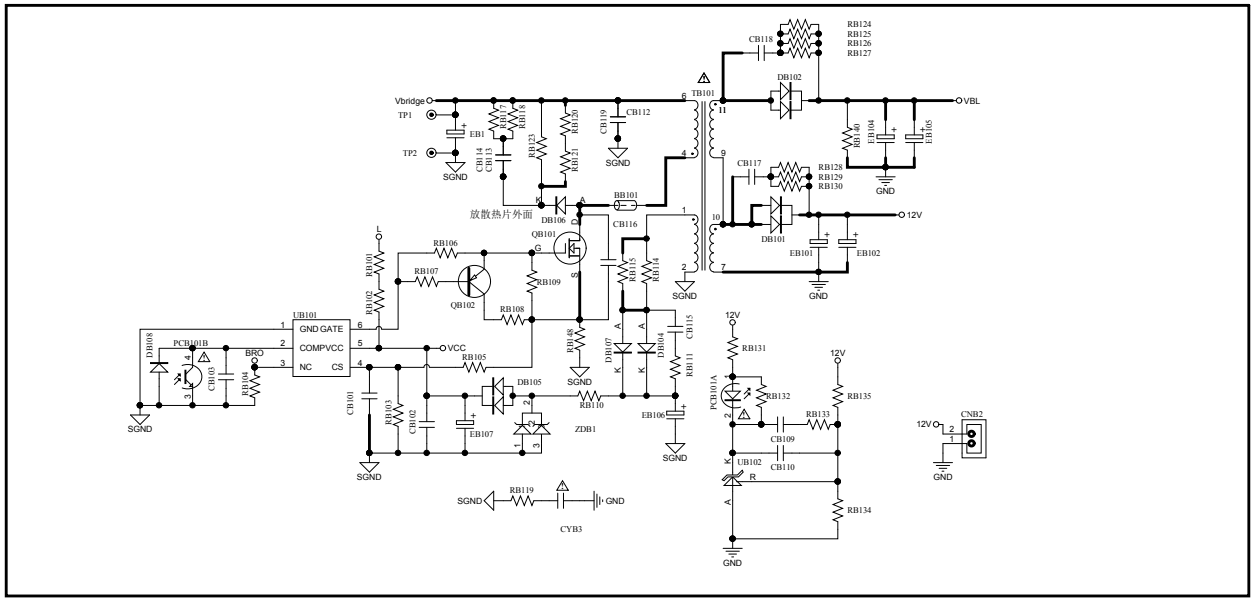
与TV端连接网络



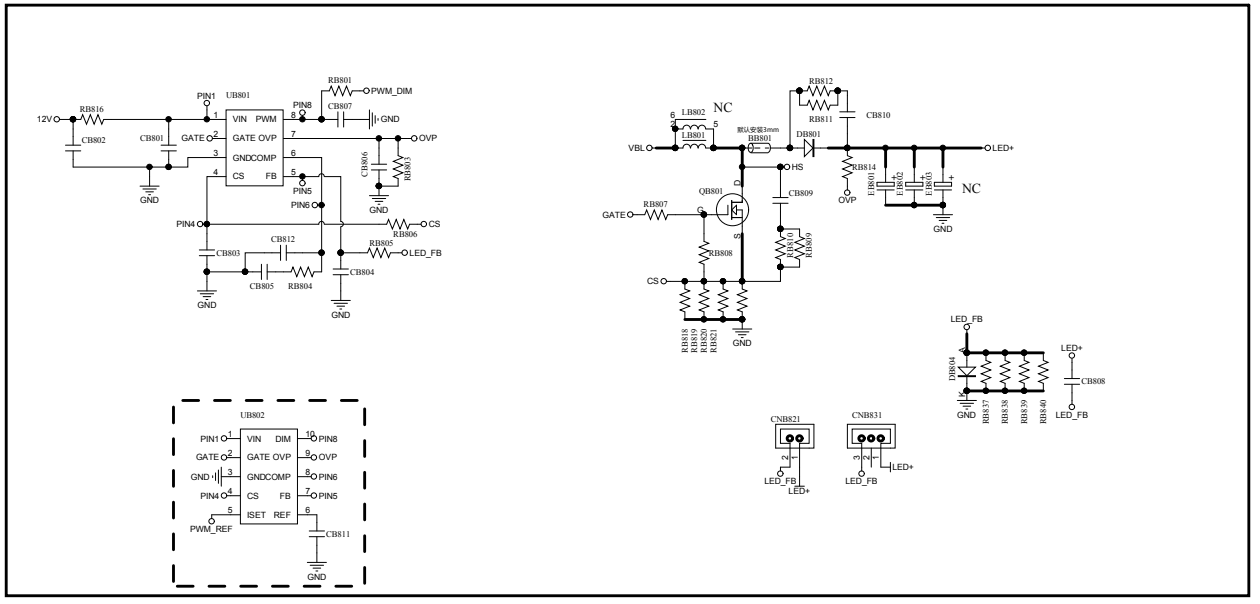
辅助材料



反激电路



恒流电路

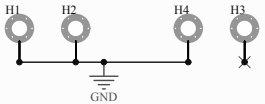


Model Name	TP.VST69D.PB751 A15233			VERSION	V1.0
DRAWN	杨运横	DATE	2015-06-06	CVTE Dream.Future	
CHK'D	蒙德荣	DATE	2015-06-06		

TP.VST69T.PB751
PCB_NAME

A15233
PCB_TIME

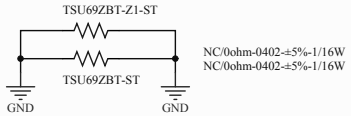
M1 MARK
M2 MARK
M3 MARK
M4 MARK
M5 MARK
M6 MARK



NC/ 0.1g,

HS1

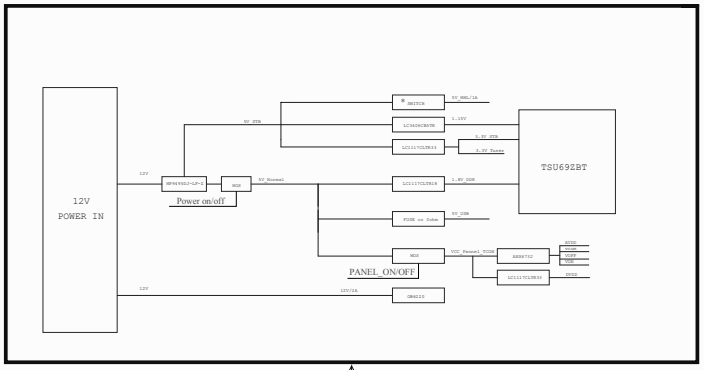
NC/14× 14× 06-THD



NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W

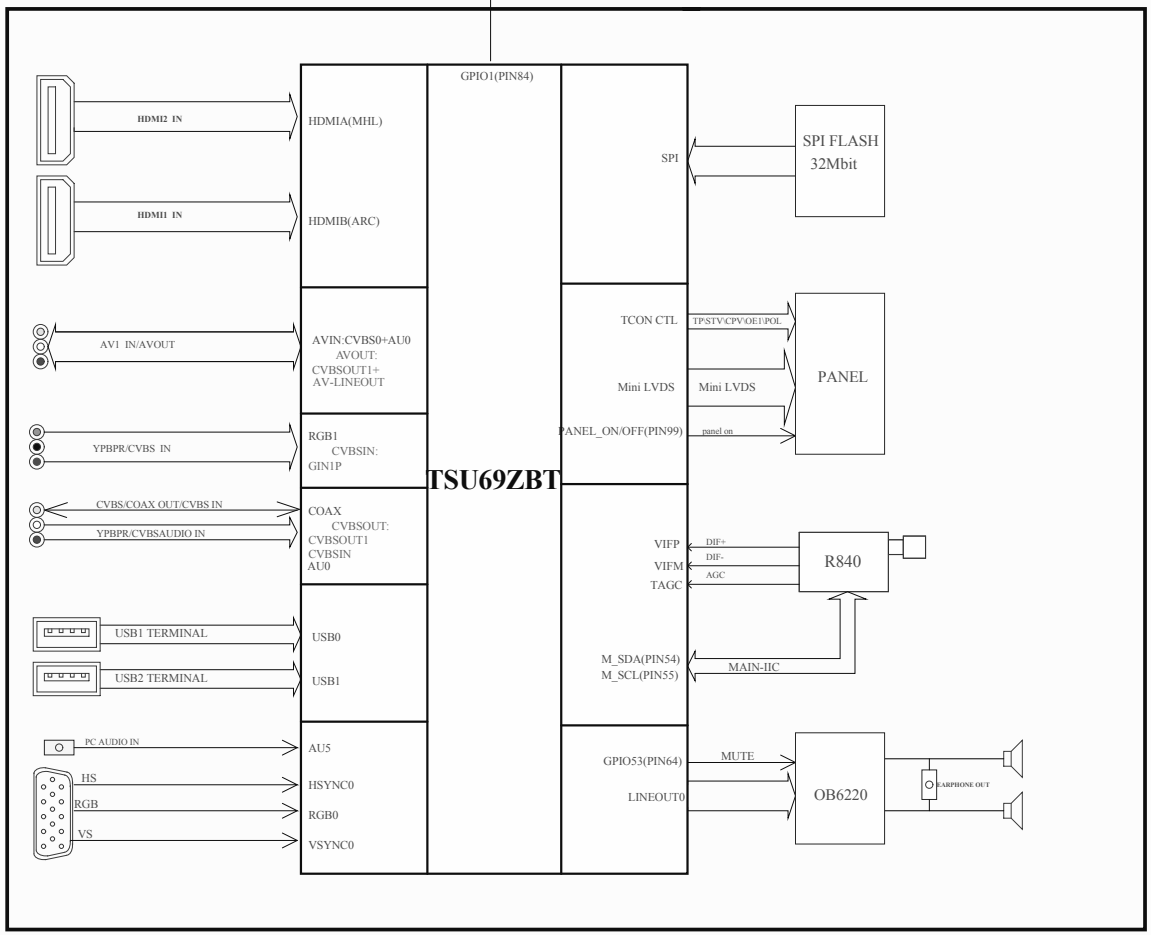
DOLBY
HOT
CAUTION
COLD
High Voltage
CQC
Manufacture_Info
S/N1
Barcode
S/N2
Barcode

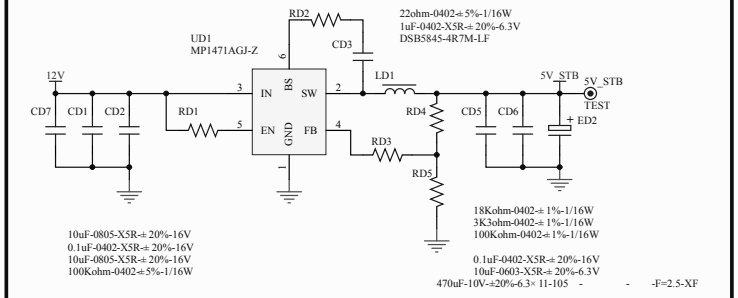
Power Tree

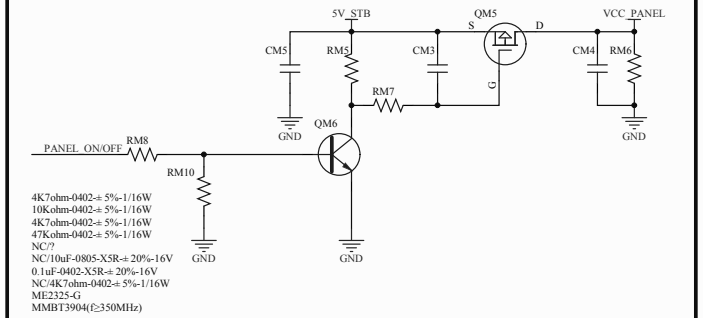


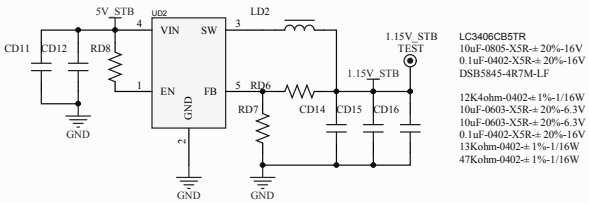
Power on/off

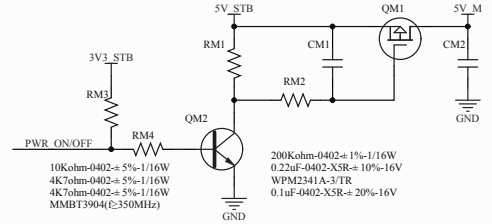
Block Diagram

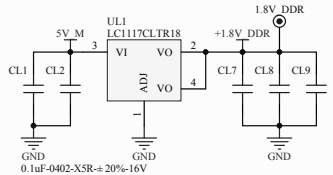


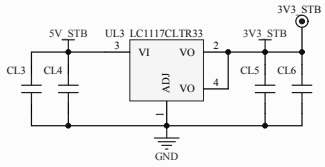

RD2
22ohm-0402-± 5%-1/16W
1uF-0402-X5R-± 20%-6.3V
DSB5845-4R7M-LF
CD3
UD1
MP1471AGJ-Z
12V
CD7
CD1
CD2
RD1
IN
BS
SW
EN
GND
FB
LD1
5V_STB
5V_STB
TEST
ED2
RD4
CD5
CD6
RD3
RD5
18Kohm-0402-± 1%-1/16W
3K3ohm-0402-± 1%-1/16W
100Kohm-0402-± 1%-1/16W
0.1uF-0402-X5R-± 20%-16V
10uF-0603-X5R-± 20%-6.3V
470uF-10V-±20%-6.3× 11-105 - - -F=2.5-XF
10uF-0805-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
10uF-0805-X5R-± 20%-16V
100Kohm-0402-± 5%-1/16W

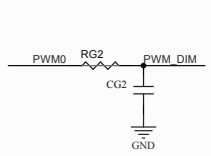

5V_STB
QM5
S
D
G
VCC_PANEL
CM5
RM5
CM3
CM4
RM6
RM7
GND
QM6
PANEL_ON/OFF
RM8
RM10
4K7ohm-0402-± 5%-1/16W
10Kohm-0402-± 5%-1/16W
4K7ohm-0402-± 5%-1/16W
47Kohm-0402-± 5%-1/16W
NC/?
NC/10uF-0805-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
NC/4K7ohm-0402-± 5%-1/16W
ME2325-G
MMBT3904(f≥350MHz)

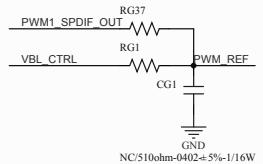

5V_STB
UD2
VIN
SW
LD2
CD11
CD12
RD8
EN
FB
GND
RD6
RD7
CD14
CD15
CD16
1.15V_STB
TEST
1.15V_STB
GND
LC3406CB5TR
10uF-0805-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
DSB5845-4R7M-LF
12K4ohm-0402-± 1%-1/16W
10uF-0603-X5R-± 20%-6.3V
10uF-0603-X5R-± 20%-6.3V
0.1uF-0402-X5R-± 20%-16V
13Kohm-0402-± 1%-1/16W
47Kohm-0402-± 1%-1/16W

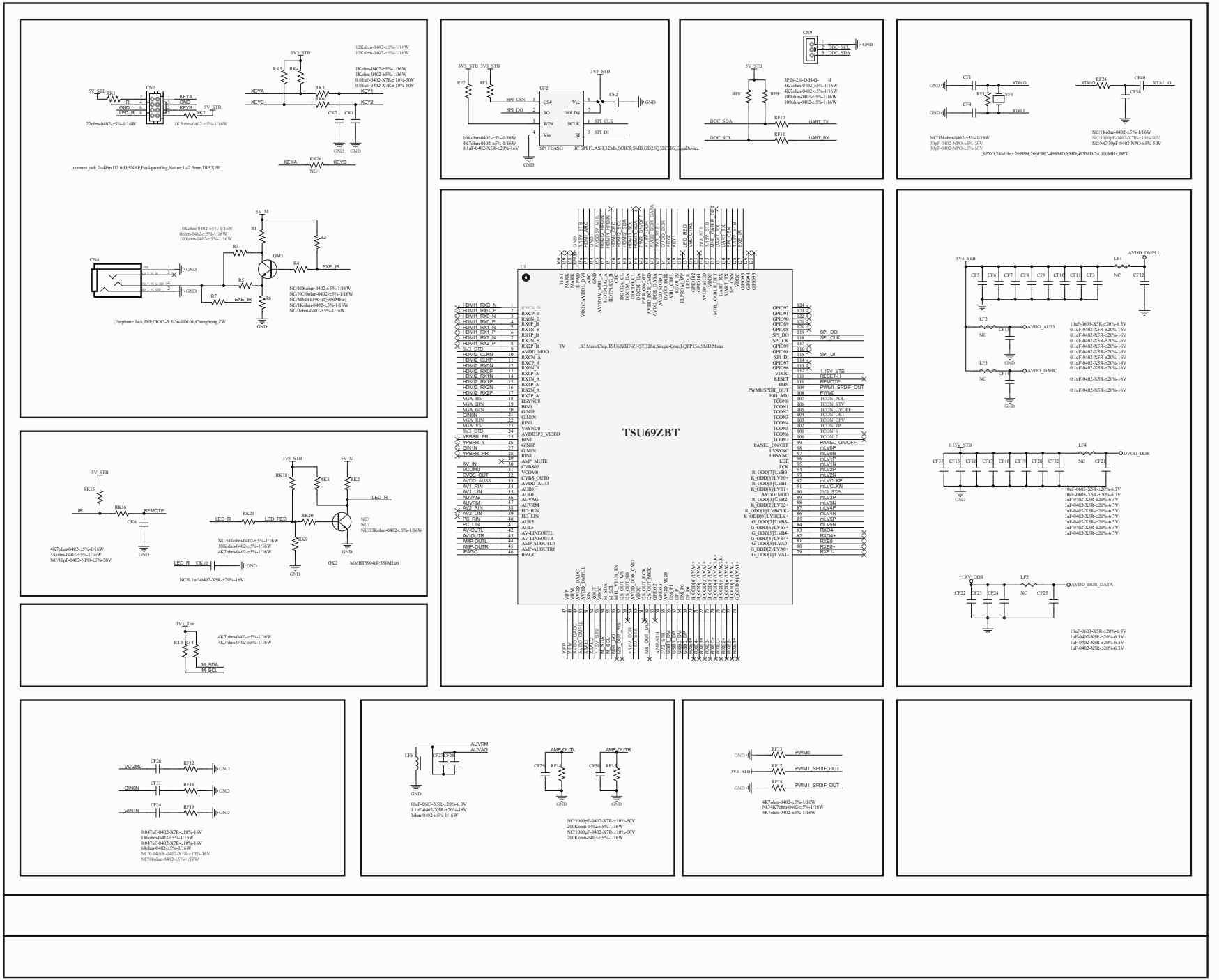

5V_STB
QM1
5V_M
RM1
CM1
CM2
3V3_STB
RM2
RM3
QM2
PWR_ON/OFF
RM4
GND
10Kohm-0402-± 5%-1/16W
4K7ohm-0402-± 5%-1/16W
4K7ohm-0402-± 5%-1/16W
MMBT3904(f≥350MHz)
200Kohm-0402-± 1%-1/16W
0.22uF-0402-X5R-± 10%-16V
WPM2341A-3/TR
0.1uF-0402-X5R-± 20%-16V

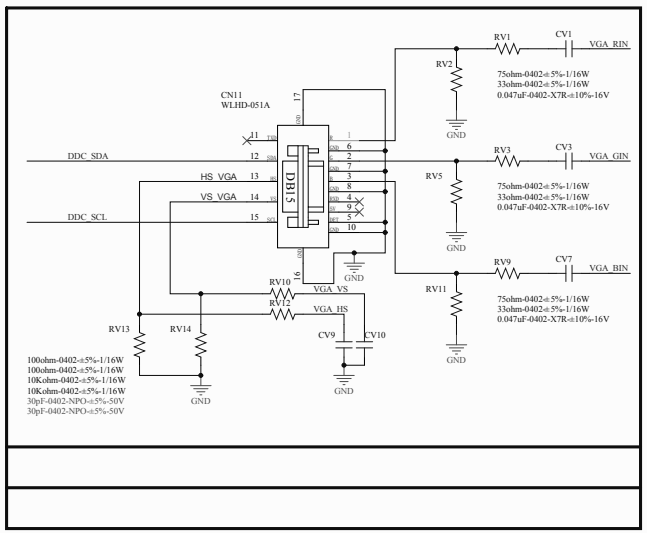

1.8V_DDR
UL1
LC1117CLTR18
5V_M
+1.8V_DDR
VI
VO
ADJ
CL1
CL2
CL7
CL8
CL9
GND
0.1uF-0402-X5R-± 20%-16V
NC/10uF-0603-X5R-± 20%-6.3V
0.1uF-0402-X5R-± 20%-16V
10uF-0603-X5R-± 20%-6.3V
10uF-0603-X5R-± 20%-6.3V

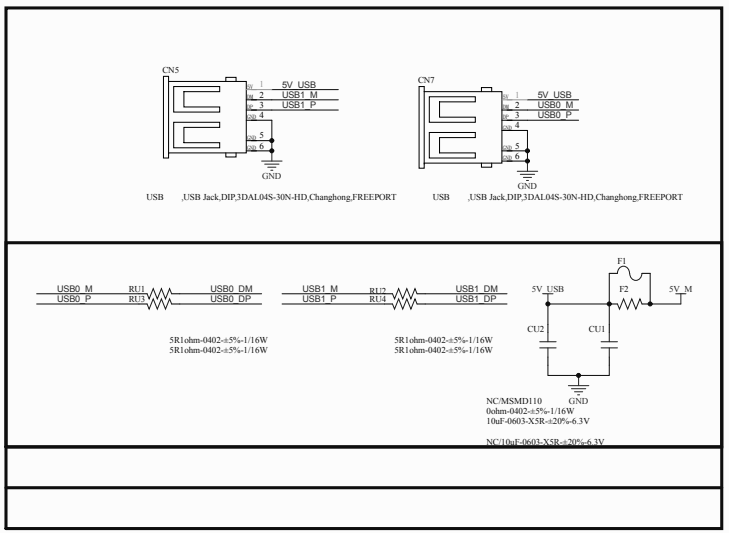

3V3_STB
UL3
LC1117CLTR33
5V_STB
VI
VO
ADJ
CL3
CL4
CL5
CL6
GND
NC/10uF-0603-X5R-± 20%-6.3V
0.1uF-0402-X5R-± 20%-16V
NC/10uF-0603-X5R-± 20%-6.3V
0.1uF-0402-X5R-± 20%-16V

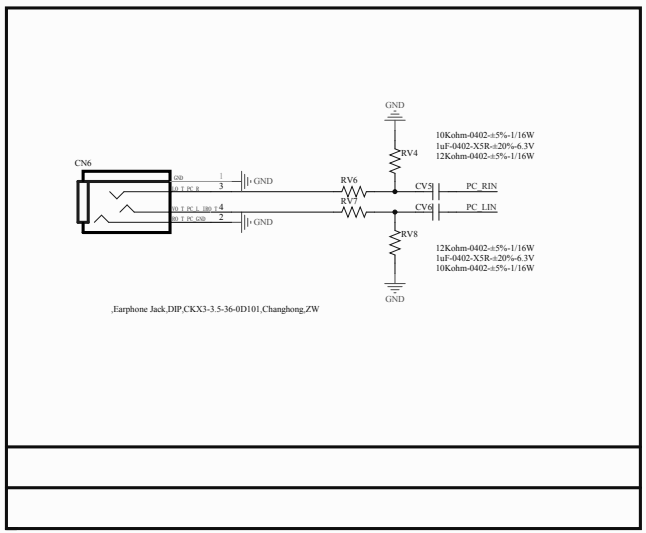

PWM0
RG2
PWM_DIM
CG2
GND
NC/0ohm-0402-± 5%-1/16W
NC/0.1uF-0402-X5R-± 20%-16V

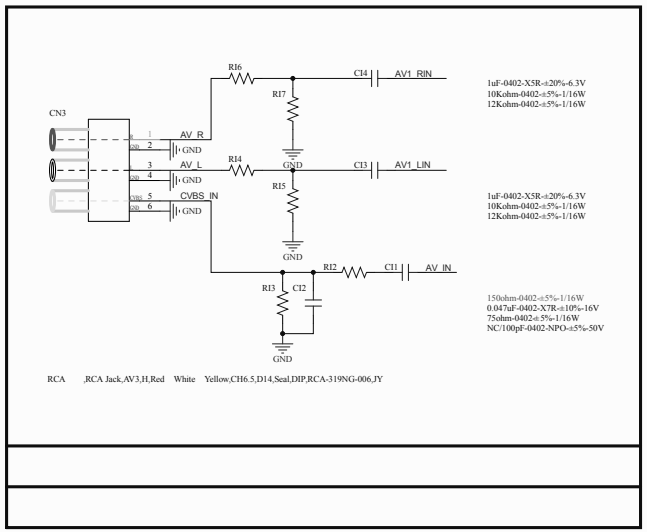

RG37
PWM1_SPDIF_OUT
RG1
VBL_CTRL
PWM_REF
CG1
GND
NC/510ohm-0402-± 5%-1/16W
510ohm-0402-± 5%-1/16W
NC/0.1uF-0402-X5R-± 20%-16V

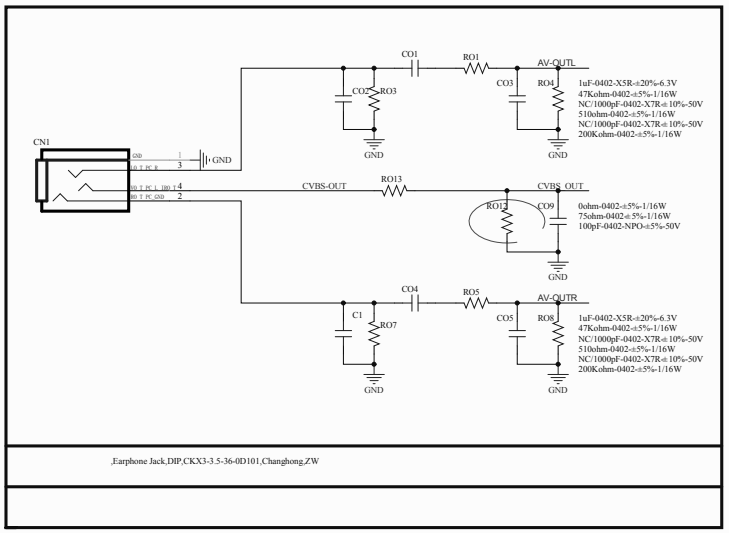

TSU69ZBT
TV
JC Main Chip,TSU69ZBT-Z1-ST,32bit,Single-Core,LQFP156,SMD,Mstar
,connect jack,2~4Pin,D2.0,D,SNAP,Foo6-proofing,Nature,L=2.5mm,DIP,XFE
,Earphone Jack,DIP,CKX3-3.5-36-0D101,Changhong,ZW
,SPXO,24MHz,± 20PPM,20pF,HC-49SMD,SMD,49SMD 24.000MHz,JWT
SPI_FLASH
,IC SPI FLASH,32Mb,SOIC8,SMD,GD25Q32CSIG,GigaDevice

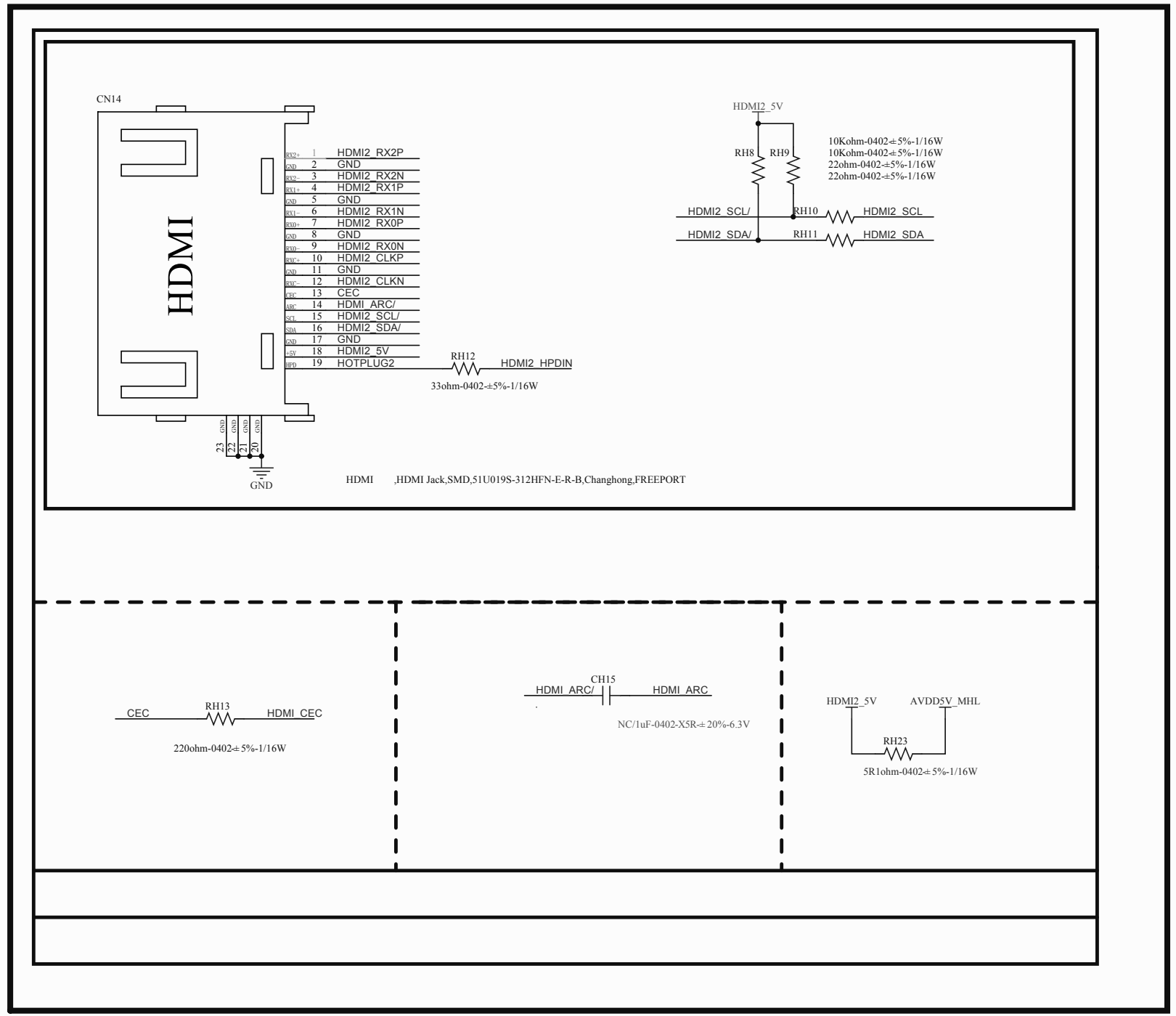

CN11
WLHD-051A
DB15
DDC_SDA
DDC_SCL
HS_VGA
VS_VGA
RV1
CV1
VGA_RIN
RV2
75ohm-0402-±5%-1/16W
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
RV3
CV3
VGA_GIN
RV5
RV9
CV7
VGA_BIN
RV11
RV10
RV12
VGA_VS
VGA_HS
RV13
RV14
CV9
CV10
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
30pF-0402-NPO-±5%-50V
30pF-0402-NPO-±5%-50V
GND

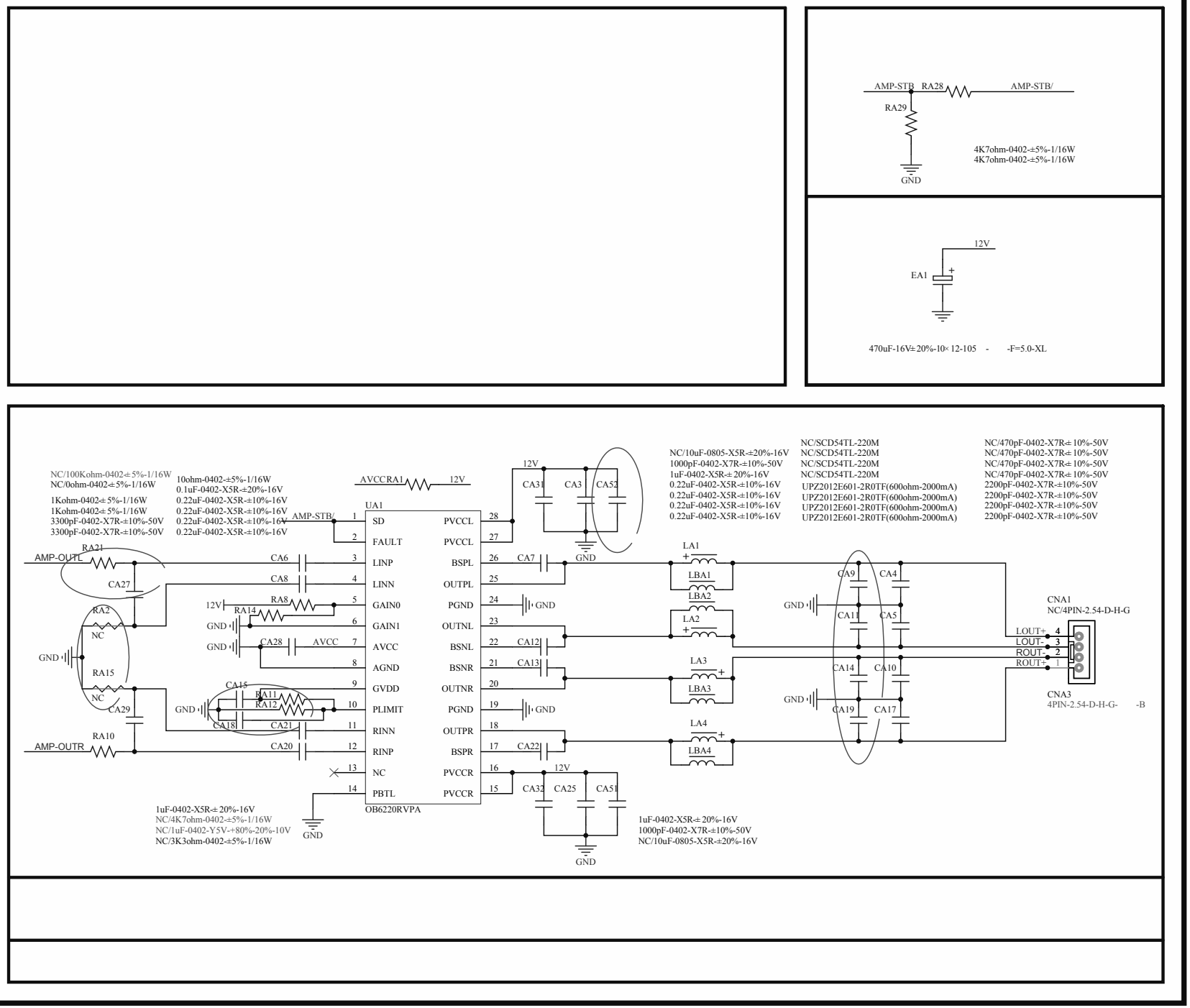

CN5
5V_USB
USB1_M
USB1_P
CN7
5V_USB
USB0_M
USB0_P
GND
USB ,USB Jack,DIP,3DAL04S-30N-HD,Changhong,FREEPORT
USB ,USB Jack,DIP,3DAL04S-30N-HD,Changhong,FREEPORT
USB0_M
USB0_P
RU1
RU3
USB0_DM
USB0_DP
USB1_M
USB1_P
RU2
RU4
USB1_DM
USB1_DP
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
5V_USB
F1
F2
5V_M
CU2
CU1
NC/MSMD110
0ohm-0402-±5%-1/16W
10uF-0603-X5R-±20%-6.3V
NC/10uF-0603-X5R-±20%-6.3V

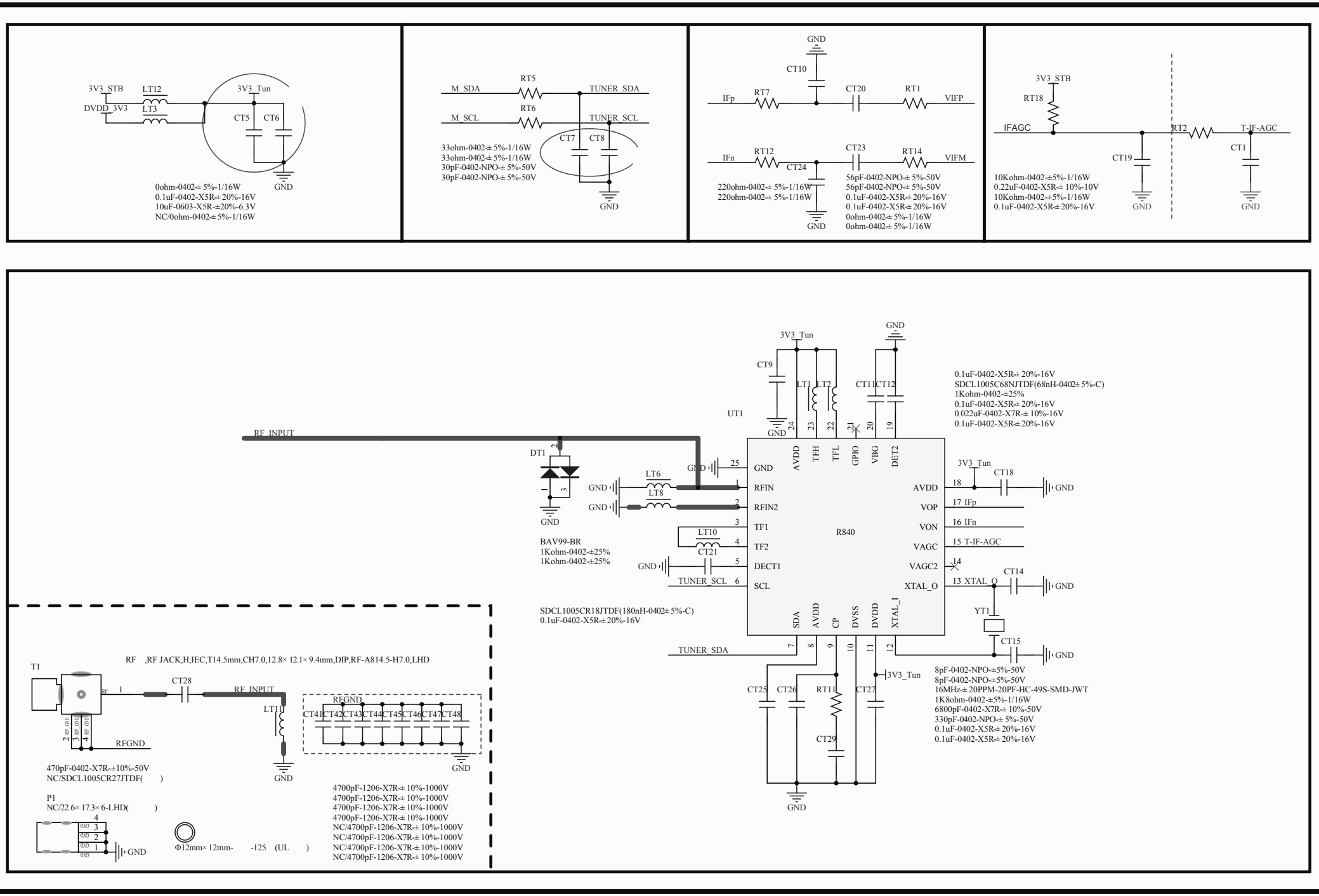

CN6
GND
RV4
RV6
RV7
RV8
CV5
CV6
PC_RIN
PC_LIN
10Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
12Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
10Kohm-0402-±5%-1/16W
,Earphone Jack,DIP,CKX3-3.5-36-0D101,Changhong,ZW

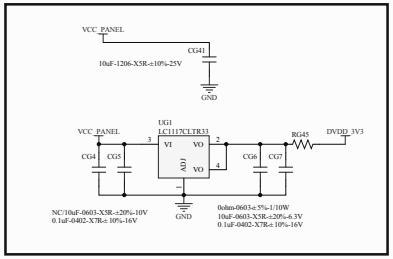

CN3
AV_R
AV_L
CVBS_IN
GND
RI6
RI7
RI4
RI5
RI2
RI3
CI4
CI3
CI1
CI2
AV1_RIN
AV1_LIN
AV_IN
1uF-0402-X5R-±20%-6.3V
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
150ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
75ohm-0402-±5%-1/16W
NC/100pF-0402-NPO-±5%-50V
RCA ,RCA Jack,AV3,H,Red White Yellow,CH6.5,D14,Seal,DIP,RCA-319NG-006,JY

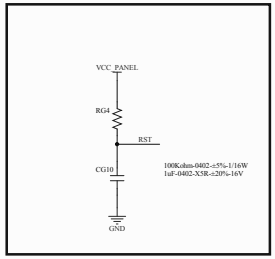

CN1
GND
CVBS-OUT
CO1
RO1
AV-OUTL
CO3
RO4
CO2
RO3
CVBS_OUT
RO13
RO12
CO9
CO4
RO5
AV-OUTR
CO5
RO8
C1
RO7
1uF-0402-X5R-±20%-6.3V
47Kohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
510ohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
200Kohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
75ohm-0402-±5%-1/16W
100pF-0402-NPO-±5%-50V
1uF-0402-X5R-±20%-6.3V
47Kohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
510ohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
200Kohm-0402-±5%-1/16W
,Earphone Jack,DIP,CKX3-3.5-36-0D101,Changhong,ZW

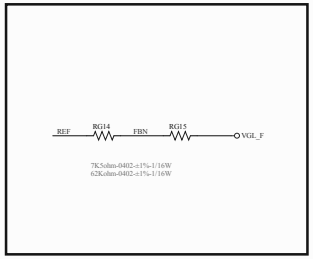

CN14
HDMI
RX2+ 1 HDMI2_RX2P
GND 2 GND
RX2- 3 HDMI2_RX2N
RX1+ 4 HDMI2_RX1P
GND 5 GND
RX1- 6 HDMI2_RX1N
RX0+ 7 HDMI2_RX0P
GND 8 GND
RX0- 9 HDMI2_RX0N
RXC+ 10 HDMI2_CLKP
GND 11 GND
RXC- 12 HDMI2_CLKN
CEC 13 CEC
ARC 14 HDMI_ARC/
SCL 15 HDMI2_SCL/
SDA 16 HDMI2_SDA/
GND 17 GND
+5V 18 HDMI2_5V
HPD 19 HOTPLUG2
RH12
HDMI2_HPDIN
33ohm-0402-±5%-1/16W
23 GND
22 GND
21 GND
20 GND
GND
HDMI ,HDMI Jack,SMD,51U019S-312HFN-E-R-B,Changhong,FREEPORT
HDMI2_5V
RH8
RH9
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
HDMI2_SCL/
RH10
HDMI2_SCL
HDMI2_SDA/
RH11
HDMI2_SDA
CEC
RH13
HDMI_CEC
220ohm-0402-±5%-1/16W
CH15
HDMI_ARC/
HDMI_ARC
NC/1uF-0402-X5R-±20%-6.3V
HDMI2_5V
AVDD5V_MHL
RH23
5R1ohm-0402-±5%-1/16W

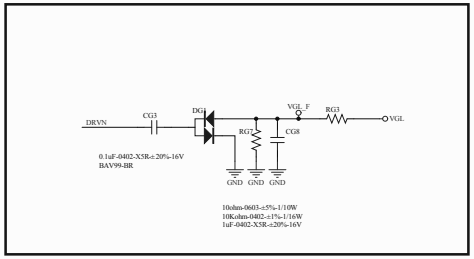

AMP-STB
RA28
AMP-STB/
RA29
GND
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
12V
EA1
+
470uF-16V±20%-10×12-105 - -F=5.0-XL
NC/100Kohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
3300pF-0402-X7R-±10%-50V
3300pF-0402-X7R-±10%-50V
10ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
AVCC
RA1
12V
UA1
AMP-STB/
SD
FAULT
LINP
LINN
GAIN0
GAIN1
AVCC
AGND
GVDD
PLIMIT
RINN
RINP
NC
PBTL
PVCCL
PVCCL
BSPL
OUTPL
PGND
OUTNL
BSNL
BSNR
OUTNR
PGND
OUTPR
BSPR
PVCCR
PVCCR
OB6220RVPA
CA31
CA3
CA52
CA7
CA12
CA13
CA22
CA32
CA25
CA51
GND
NC/10uF-0805-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
1uF-0402-X5R-±20%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
NC/SCD54TL-220M
NC/SCD54TL-220M
NC/SCD54TL-220M
NC/SCD54TL-220M
UPZ2012E601-2R0TF(600ohm-2000mA)
UPZ2012E601-2R0TF(600ohm-2000mA)
UPZ2012E601-2R0TF(600ohm-2000mA)
UPZ2012E601-2R0TF(600ohm-2000mA)
NC/470pF-0402-X7R-±10%-50V
NC/470pF-0402-X7R-±10%-50V
NC/470pF-0402-X7R-±10%-50V
NC/470pF-0402-X7R-±10%-50V
2200pF-0402-X7R-±10%-50V
2200pF-0402-X7R-±10%-50V
2200pF-0402-X7R-±10%-50V
2200pF-0402-X7R-±10%-50V
LA1
LBA1
LA2
LBA2
LA3
LBA3
LA4
LBA4
CA9
CA4
CA11
CA5
CA14
CA10
CA19
CA17
CNA1
NC/4PIN-2.54-D-H-G
LOUT+
LOUT-
ROUT-
ROUT+
CNA3
4PIN-2.54-D-H-G- -B
RA21
AMP-OUTL
CA27
RA2
NC
RA15
NC
CA29
RA10
AMP-OUTR
CA6
CA8
RA8
RA14
CA28
AVCC
CA15
RA11
RA12
CA18
CA21
CA20
1uF-0402-X5R-±20%-16V
NC/4K7ohm-0402-±5%-1/16W
NC/1uF-0402-Y5V-+80%-20%-10V
NC/3K3ohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
NC/10uF-0805-X5R-±20%-16V

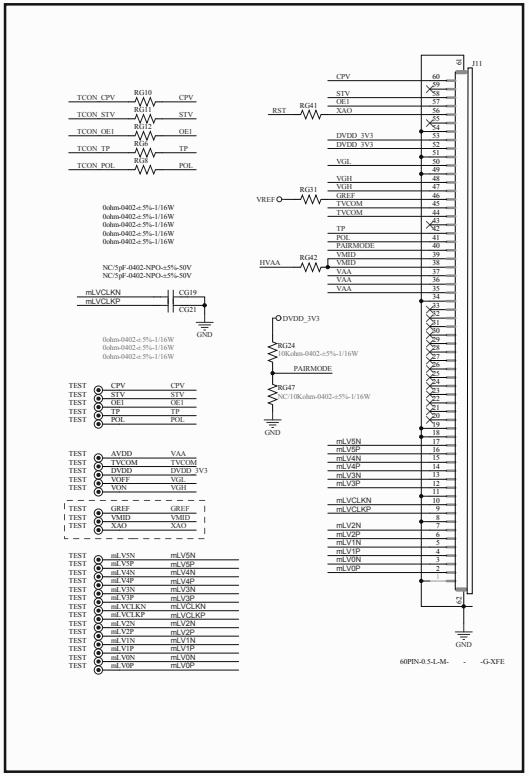

3V3_STB
LT12
3V3_Tun
DVDD_3V3
LT3
CT5
CT6
GND
0ohm-0402-± 5%-1/16W
0.1uF-0402-X5R-± 20%-16V
10uF-0603-X5R-±20%-6.3V
NC/0ohm-0402-± 5%-1/16W
M_SDA
RT5
TUNER_SDA
M_SCL
RT6
TUNER_SCL
CT7
CT8
33ohm-0402-± 5%-1/16W
33ohm-0402-± 5%-1/16W
30pF-0402-NPO-± 5%-50V
30pF-0402-NPO-± 5%-50V
GND
CT10
IFp
RT7
CT20
RT1
VIFP
IFn
RT12
CT24
CT23
RT14
VIFM
220ohm-0402-± 5%-1/16W
220ohm-0402-± 5%-1/16W
56pF-0402-NPO-± 5%-50V
56pF-0402-NPO-± 5%-50V
0.1uF-0402-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
0ohm-0402-± 5%-1/16W
0ohm-0402-± 5%-1/16W
3V3_STB
RT18
IFAGC
RT2
T-IF-AGC
CT19
CT1
10Kohm-0402-±5%-1/16W
0.22uF-0402-X5R-± 10%-10V
10Kohm-0402-±5%-1/16W
0.1uF-0402-X5R-± 20%-16V
RF_INPUT
DT1
BAV99-BR
1Kohm-0402-±25%
1Kohm-0402-±25%
UT1
R840
GND
RFIN
RFIN2
TF1
TF2
DECT1
SCL
SDA
AVDD
CP
DVSS
DVDD
XTAL_I
VBG
DET2
VOP
VON
VAGC
VAGC2
XTAL_O
IFp
IFn
T-IF-AGC
LT6
LT8
LT10
CT21
TUNER_SCL
TUNER_SDA
CT9
LT1
LT2
CT11
CT12
CT18
CT14
YT1
CT15
CT25
CT26
RT11
CT27
CT29
3V3_Tun
0.1uF-0402-X5R-± 20%-16V
SDCL1005C68NJTDF(68nH-0402± 5%-C)
1Kohm-0402-±25%
0.1uF-0402-X5R-± 20%-16V
0.022uF-0402-X7R-± 10%-16V
0.1uF-0402-X5R-± 20%-16V
SDCL1005CR18JTDF(180nH-0402± 5%-C)
0.1uF-0402-X5R-± 20%-16V
8pF-0402-NPO-±5%-50V
8pF-0402-NPO-±5%-50V
16MHz-± 20PPM-20PF-HC-49S-SMD-JWT
1K8ohm-0402-±5%-1/16W
6800pF-0402-X7R-± 10%-50V
330pF-0402-NPO-± 5%-50V
0.1uF-0402-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
RF ,RF JACK,H,IEC,T14.5mm,CH7.0,12.8× 12.1× 9.4mm,DIP,RF-A814.5-H7.0,LHD
T1
CT28
RF_INPUT
LT11
RFGND
CT41
CT42
CT43
CT44
CT45
CT46
CT47
CT48
470pF-0402-X7R-±10%-50V
NC/SDCL1005CR27JTDF( )
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
P1
NC/22.6× 17.3× 6-LHD( )
Φ12mm× 12mm- -125 (UL)

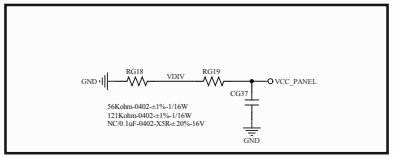

VCC_PANEL
CG41
10uF-1206-X5R-±10%-25V
GND
UG1
LC1117CLTR33
VCC_PANEL
VI
VO
ADJ
RG45
DVDD_3V3
CG4
CG5
CG6
CG7
GND
NC/10uF-0603-X5R-±20%-10V
0.1uF-0402-X7R-± 10%-16V
0ohm-0603-±5%-1/10W
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X7R-±10%-16V

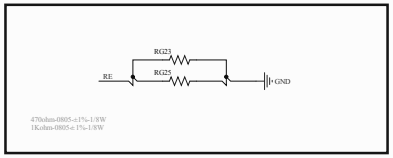

VCC_PANEL
RG4
RST
CG10
GND
100Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-16V

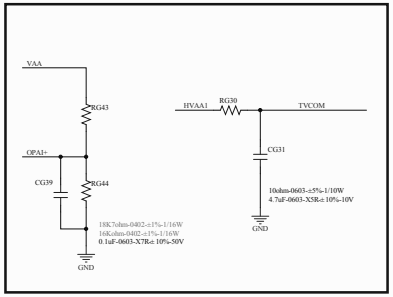

REF
RG14
FBN
RG15
VGL_F
7K5ohm-0402-±1%-1/16W
62Kohm-0402-±1%-1/16W

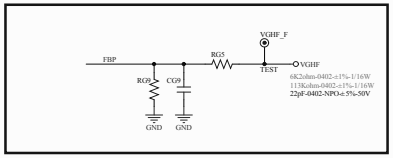

DRVN
CG3
DG1
VGL_F
RG3
VGL
RG2
CG8
GND GND GND
0.1uF-0402-X5R-±20%-16V
BAV99-BR
10ohm-0603-±5%-1/10W
10Kohm-0402-±1%-1/16W
1uF-0402-X5R-±20%-16V

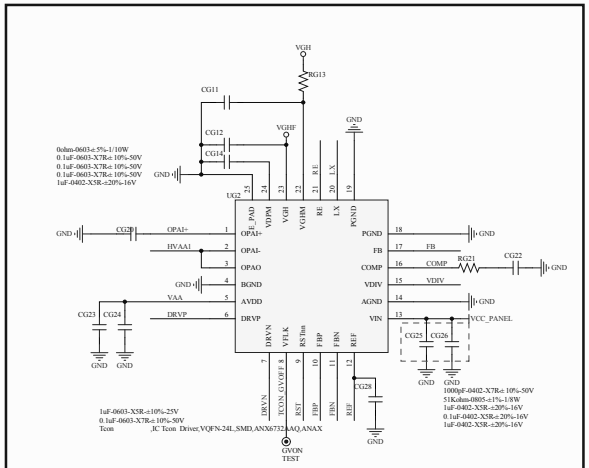

TCON_CPV
TCON_STV
TCON_OE1
TCON_TP
TCON_POL
RG10
RG11
RG16
RG17
RG18
CPV
STV
OE1
TP
POL
0ohm-0402-±5%-1/16W
NC/5pF-0402-NPO-±5%-50V
mLVCLKN
mLVCLKP
CG19
CG21
TEST
AVDD
TVCOM
DVDD
VOFF
VON
VGL
VGH
GREF
VMID
XAO
mLV5N
mLV5P
mLV4N
mLV4P
mLV3N
mLV3P
mLV2N
mLV2P
mLV1N
mLV1P
mLV0N
mLV0P
RST
RG41
VREF
RG31
HVAA
RG42
RG24
RG47
PAIRMODE
DVDD_3V3
VGL
VGH
GREF
TVCOM
VMID
VAA
J11
60PIN-0.5-1-M-
-G-XFE
GND

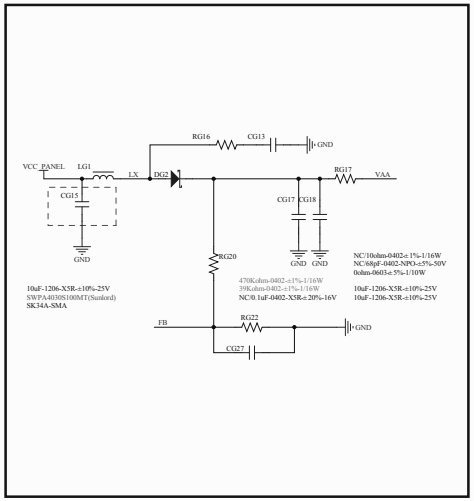

GND
RG18
VDIV
RG19
VCC_PANEL
CG37
56Kohm-0402-±1%-1/16W
121Kohm-0402-±1%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
GND

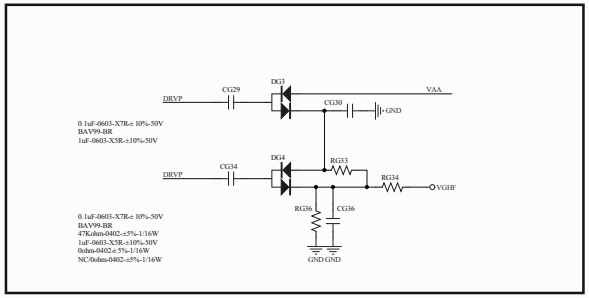

RE
RG23
RG25
GND
470ohm-0805-±1%-1/8W
1Kohm-0805-±1%-1/8W

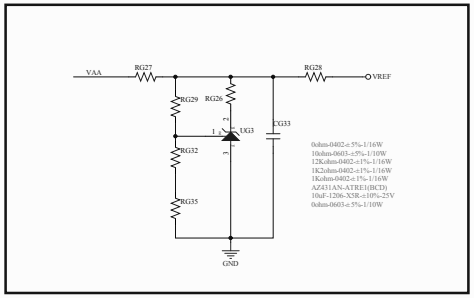

VAA
RG43
OPA1+
CG39
RG44
GND
18K7ohm-0402-±1%-1/16W
16Kohm-0402-±1%-1/16W
0.1uF-0603-X7R-± 10%-50V
HVAA1
RG30
TVCOM
CG31
10ohm-0603-±5%-1/10W
4.7uF-0603-X5R-±10%-10V
GND

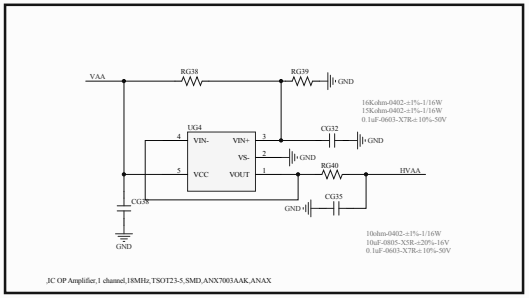

VGHF_F
FBP
RG5
TEST
VGHF
RG6
CG9
GND GND
68Kohm-0402-±1%-1/16W
113Kohm-0402-±1%-1/16W
22pF-0402-NPO-±5%-50V

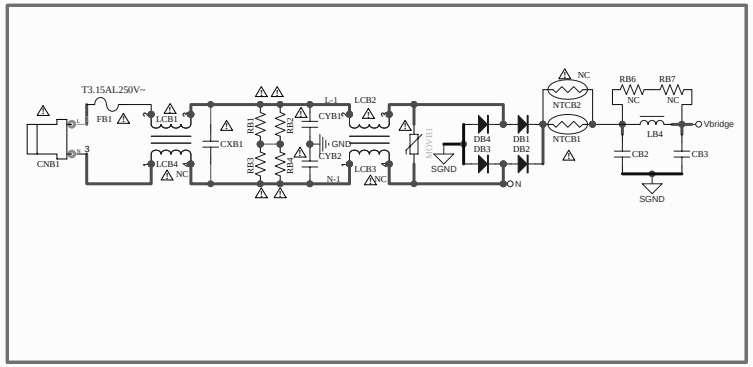

VGH
RG13
CG11
CG12
CG14
VGHF
GND
0ohm-0603-±5%-1/10W
0.1uF-0603-X7R-± 10%-50V
0.1uF-0603-X7R-± 10%-50V
0.1uF-0603-X7R-± 10%-50V
1uF-0402-X5R-±20%-16V
UG2
EP_PAD
VDPM
VGH
VGHM
RE
LX
PGND
OPA1+
OPA1-
OPAO
BGND
AVDD
DRVP
PGND
FB
COMP
VDIV
AGND
VIN
DRVN
VCLK
RSTbs
FBP
FBN
REF
TCON_GVOFF
RST
CG23
CG24
CG25
CG26
RG21
CG22
VCC_PANEL
CG28
1uF-0603-X5R-±10%-25V
0.1uF-0603-X7R-± 10%-50V
Tcon JC Tcon Driver,VQFN-24L,SMD,ANX6732AAQ,ANAX
GVON
TEST
1000pF-0402-X7R-± 10%-50V
51Kohm-0805-±1%-1/8W
1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
1uF-0402-X5R-±20%-16V

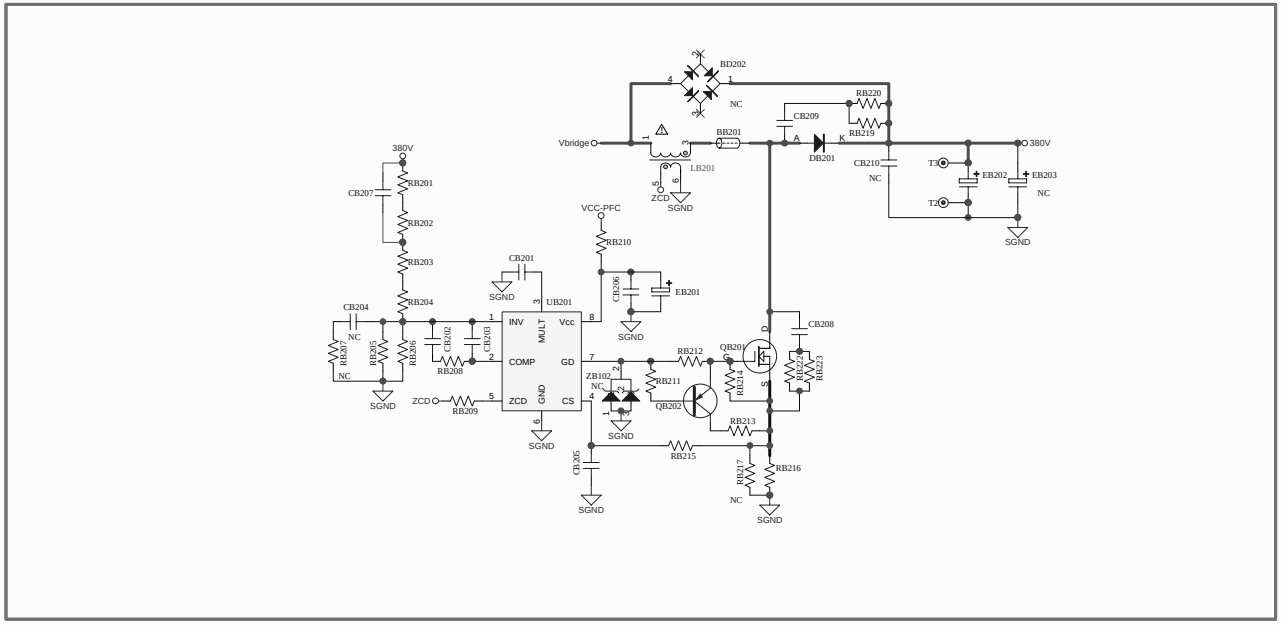

VCC_PANEL
LG1
LX
DG2
RG16
CG13
RG17
VAA
CG15
CG17
CG18
RG20
RG22
CG27
FB
GND
10uF-1206-X5R-±10%-25V
SWPA4030S100MT(Sunlord)
SK34A-SMA
470Kohm-0402-±1%-1/16W
39Kohm-0402-±1%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/10ohm-0402-±1%-1/16W
NC/68pF-0402-NPO-±5%-50V
0ohm-0603-±5%-1/10W
10uF-1206-X5R-±10%-25V
10uF-1206-X5R-±10%-25V

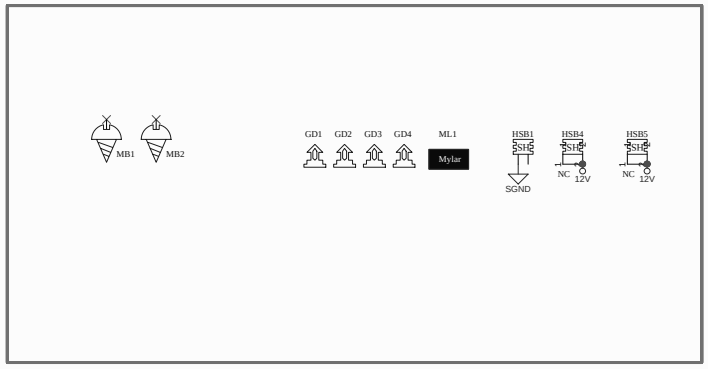

DRVP
CG29
DG3
VAA
CG30
GND
0.1uF-0603-X7R-± 10%-50V
BAV99-BR
1uF-0603-X5R-±10%-50V
DRVP
CG34
DG4
RG33
RG34
VGHF
RG36
CG36
GND GND
0.1uF-0603-X7R-± 10%-50V
BAV99-BR
47Kohm-0402-±5%-1/16W
1uF-0603-X5R-±10%-50V
0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W

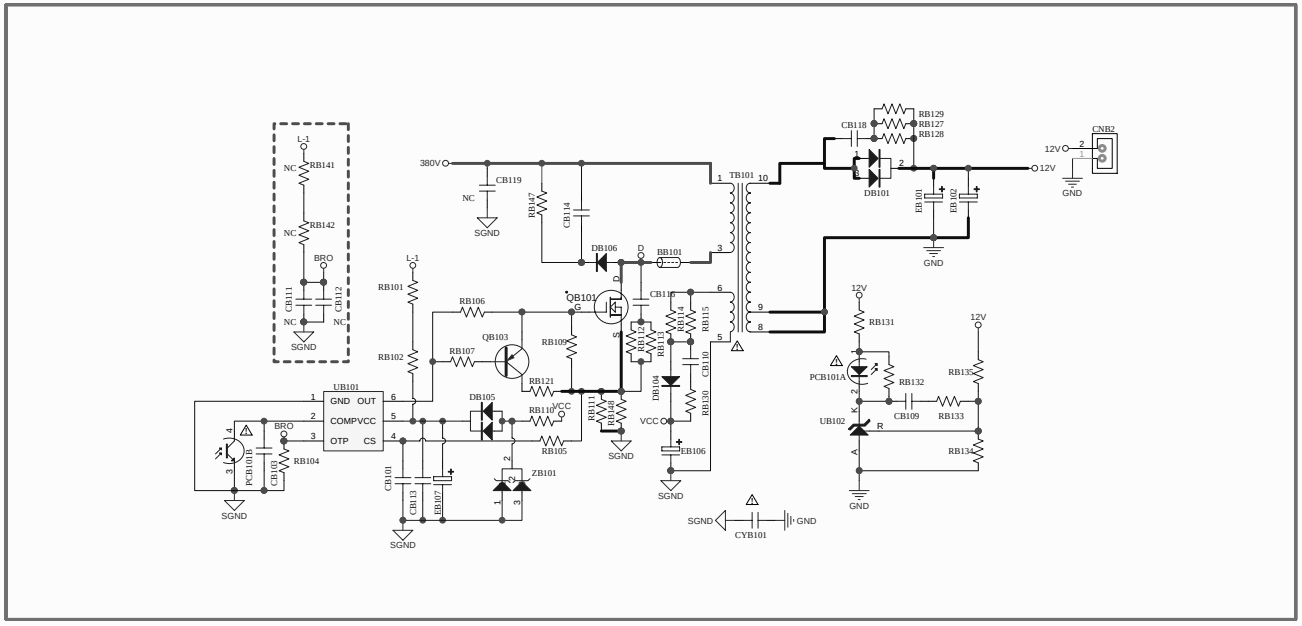

VAA
RG27
RG28
VREF
RG29
RG26
UG3
RG32
RG35
CG33
GND
0ohm-0402-±5%-1/16W
10ohm-0603-±5%-1/10W
12Kohm-0402-±1%-1/16W
1Kohm-0402-±1%-1/16W
AZ431AN-ATRE1(BCD)
10uF-1206-X5R-±10%-25V
0ohm-0603-±5%-1/10W


VAA
RG38
RG39
GND
UG4
VIN-
VIN+
VS-
VCC
VOUT
CG32
CG35
CG34
HVAA
16Kohm-0402-±1%-1/16W
15Kohm-0402-±1%-1/16W
0.1uF-0603-X7R-±10%-50V
10ohm-0402-±1%-1/16W
10uF-0805-X5R-±20%-16V
0.1uF-0603-X7R-±10%-50V
JC OP Amplifier, 1 channel,18MHz,TSOT23-5,SMD,ANX7003AAK,ANAX



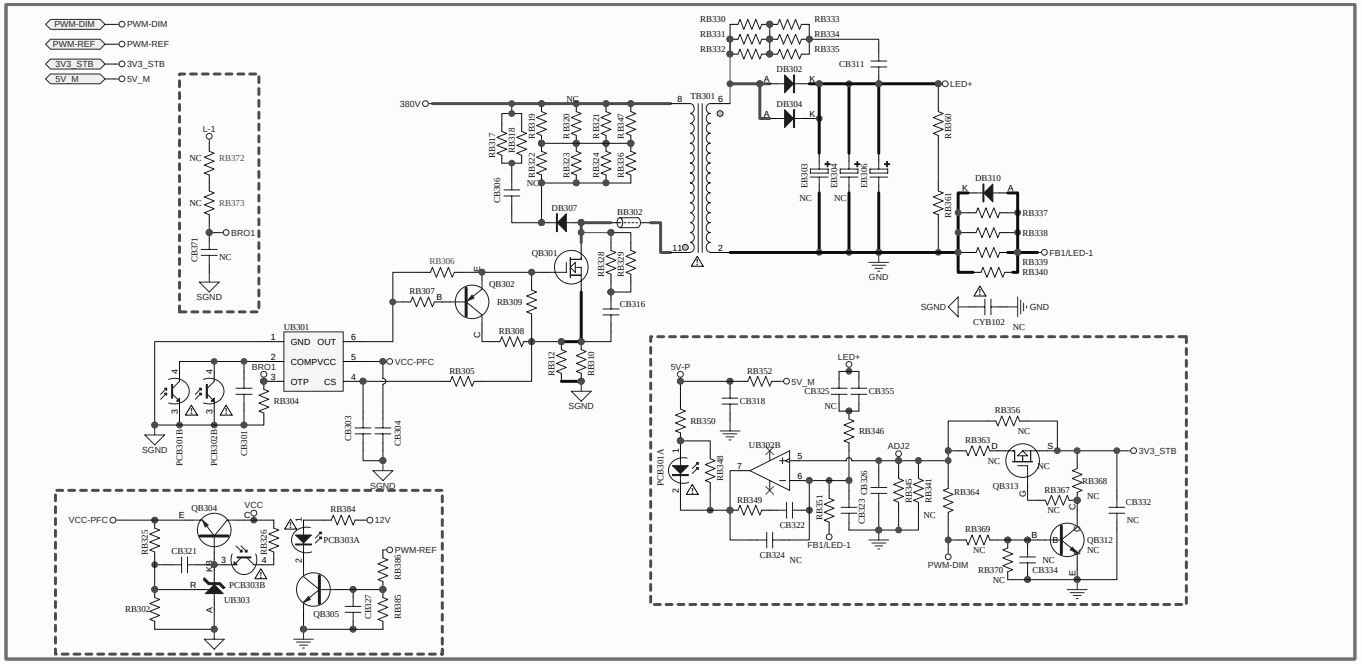


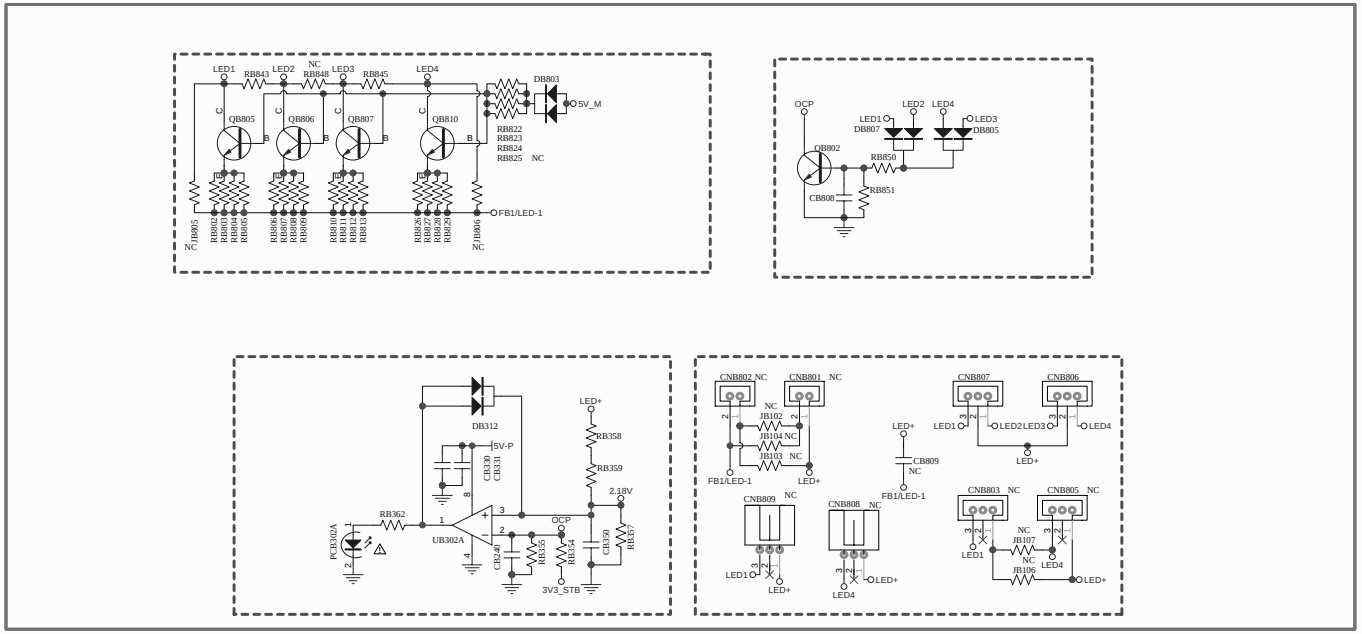




Model Name:	TP.VST63D.PC801 A14192				
DRAWN:	王则	DATE:	2014-08-25	VERSION:	V1.0
CHK'D:		DATE:			
APP'D:		DATE:			

CVTE Dream-Future





Model Name:	TP.VST69D.PC801 A14192				
DRAWN:	王剑	DATE:	2014-08-25	VERSION:	V1.0
CHK'D:		DATE:			
APP'D:		DATE:			

CVTE Dream-Future

TP.VST69D.PC801
PCB_NAME

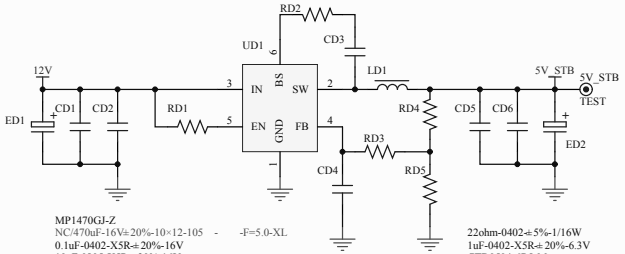
A14192
PCB_TIME

M1 MARK
M2 MARK

H1 GND
H2 GND
H3 GND
H4 GND

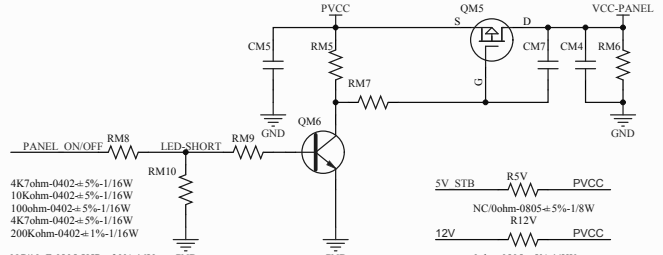
TSU69ZR-Z1-ST
TSU69ZR-ST
GND
GND
NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W

HS
NC/14×14×06-THD



MP1470GJ-Z
NC/470uF-16V±20%-10×12-105 - -F=5.0-XL
0.1uF-0402-X5R-±20%-16V
10uF-0805-X5R-±20%-16V
100Kohm-0402-±5%-1/16W

22ohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
CTD0504-6R8-M
18Kohm-0402-±1%-1/16W
3K3ohm-0402-±1%-1/16W
100Kohm-0402-±1%-1/16W
8pF-0402-NPO-±5%-50V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
470uF-10V-±20%-6.3×11-105 - - -F=2.5-XF

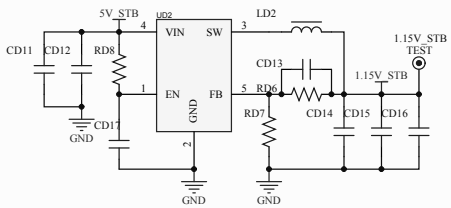


4K7ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
200Kohm-0402-±1%-1/16W

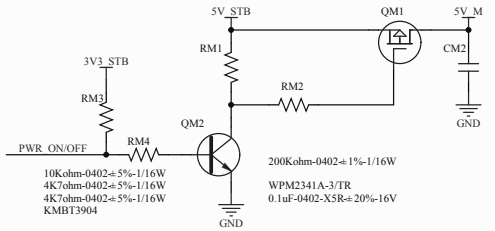
NC/10uF-0805-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
NC/4K7ohm-0402-±5%-1/16W
ME2325-G
KMBT3904
NC/0.01uF-0402-X7R-±10%-50V

NC/0ohm-0805-±5%-1/8W

0ohm-0805-±5%-1/8W



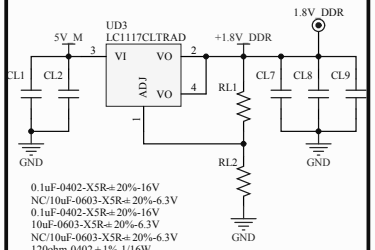
LC3406CB5TR
10uF-0805-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
CTD0504-6R8-M
NC/3300pF-0402-X7R-±10%-50V
12K4ohm-0402-±1%-1/16W
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
13Kohm-0402-±1%-1/16W
56Kohm-0402-±1%-1/16W
1uF-0402-X5R-±20%-6.3V



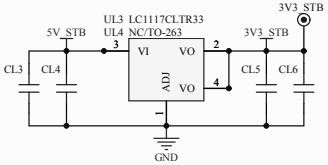
10Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
KMBT3904

200Kohm-0402-±1%-1/16W

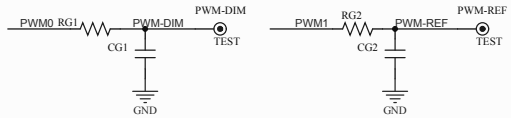
WPM2341A-3/TR
0.1uF-0402-X5R-±20%-16V



0.1uF-0402-X5R-±20%-16V
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
NC/10uF-0603-X5R-±20%-6.3V
120ohm-0402-±1%-1/16W
56ohm-0402-±1%-1/16W

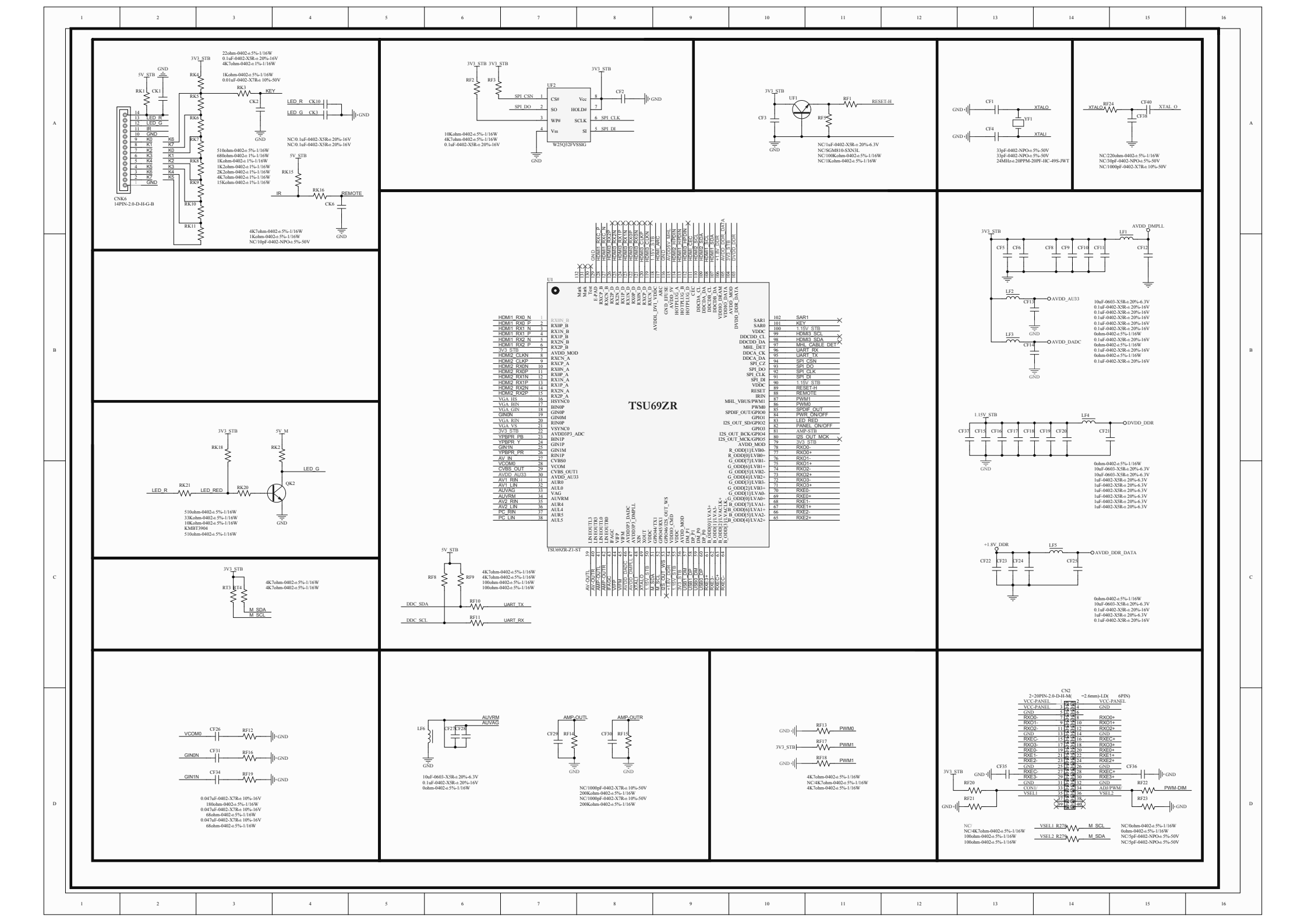


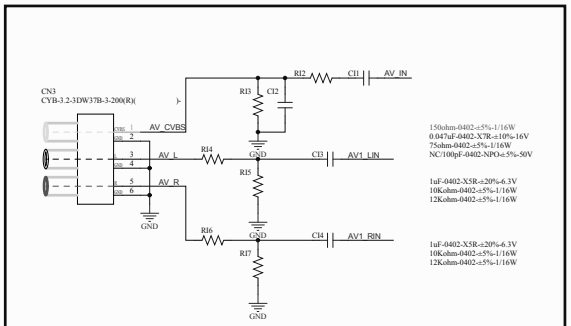
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V

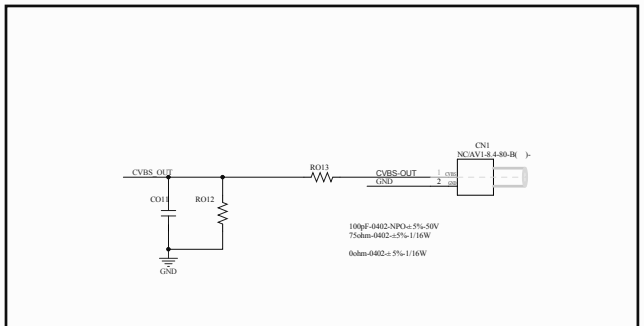


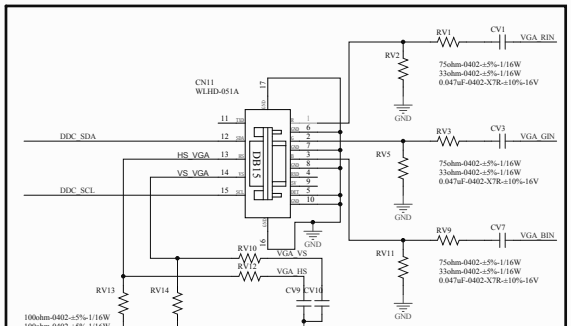
510ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V

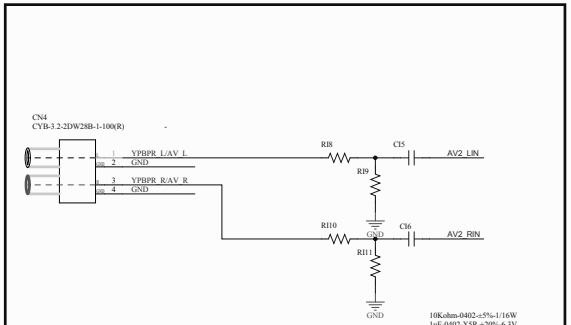
510ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V

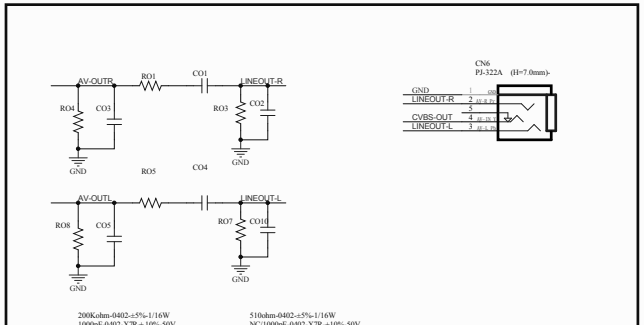

TSU69ZR
TSU69ZR-Z1-ST
U1
CNK6
14PIN-2.0-D-H-G-B
CN2
2*20PIN-2.0-D-H-M(=2.6mm)-LD(6PIN)
UF2
W25Q32FVSSIG
UF1
3V3_STB
5V_STB
GND
KEY
IR
REMOTE
LED_R
LED_G
RESET-H
PWM0
PWM1
PWM-DIM
M_SCL
M_SDA
UART_TX
UART_RX
DDC_SDA
DDC_SCL
AVDD_DMPLL
AVDD_AU33
AVDD_DADC
AVDD_DDR_DATA
DVDD_DDR
1.15V_STB
+1.8V_DDR
AUVRM
AUVAG
AMP_OUTL
AMP_OUTR
VCOM0
GIN0N
GIN1N

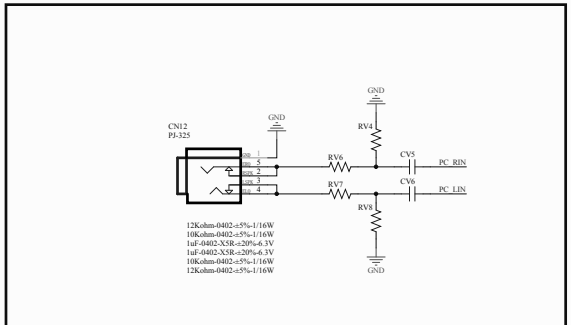

CN3
CYB-3.2-3DW37B-3-200(R)(
AV_CVBS
AV_L
AV_R
GND
R12
C11
AV_IN
R13
CI2
R14
CI3
AV1_LIN
R15
R16
CI4
AV1_RIN
R17
150ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
75ohm-0402-±5%-1/16W
NC/100pF-0402-NPO-±5%-50V
1uF-0402-X5R-±20%-6.3V
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W

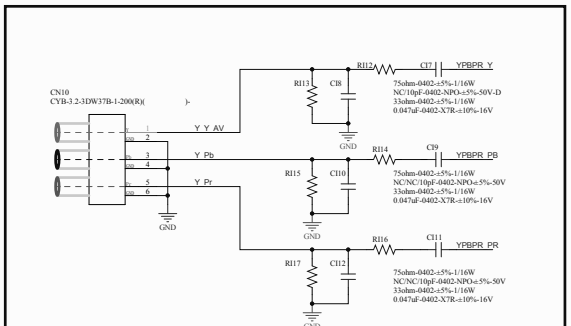

CVBS_OUT
CO11
RO12
RO13
CVBS-OUT
GND
CN1
NC/AV1-8.4-80-B(
100pF-0402-NPO-±5%-50V
75ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W

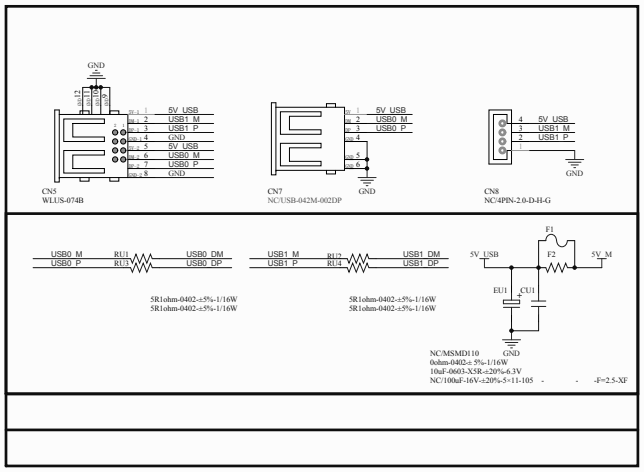

CN11
WLHD-051A
DDC_SDA
DDC_SCL
HS_VGA
VS_VGA
DB15
RV1
CV1
VGA_RIN
RV2
RV3
CV3
VGA_GIN
RV5
RV9
CV7
VGA_BIN
RV11
RV10
VGA_VS
VGA_HS
RV13
RV14
CV9
CV10
GND
75ohm-0402-±5%-1/16W
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
100ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
NC/30pF-0402-NPO-±5%-50V

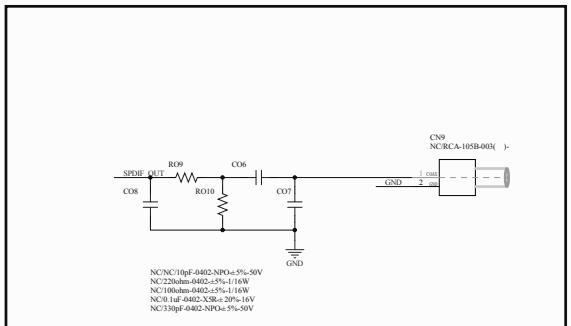

CN4
CYB-3 2-2DW28B-1-100(R)
YPBPR_L/AV_L
YPBPR_R/AV_R
GND
RI8
CI5
AV2_LIN
RI9
RI10
CI6
AV2_RIN
RI11
10Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
12Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
12Kohm-0402-±5%-1/16W

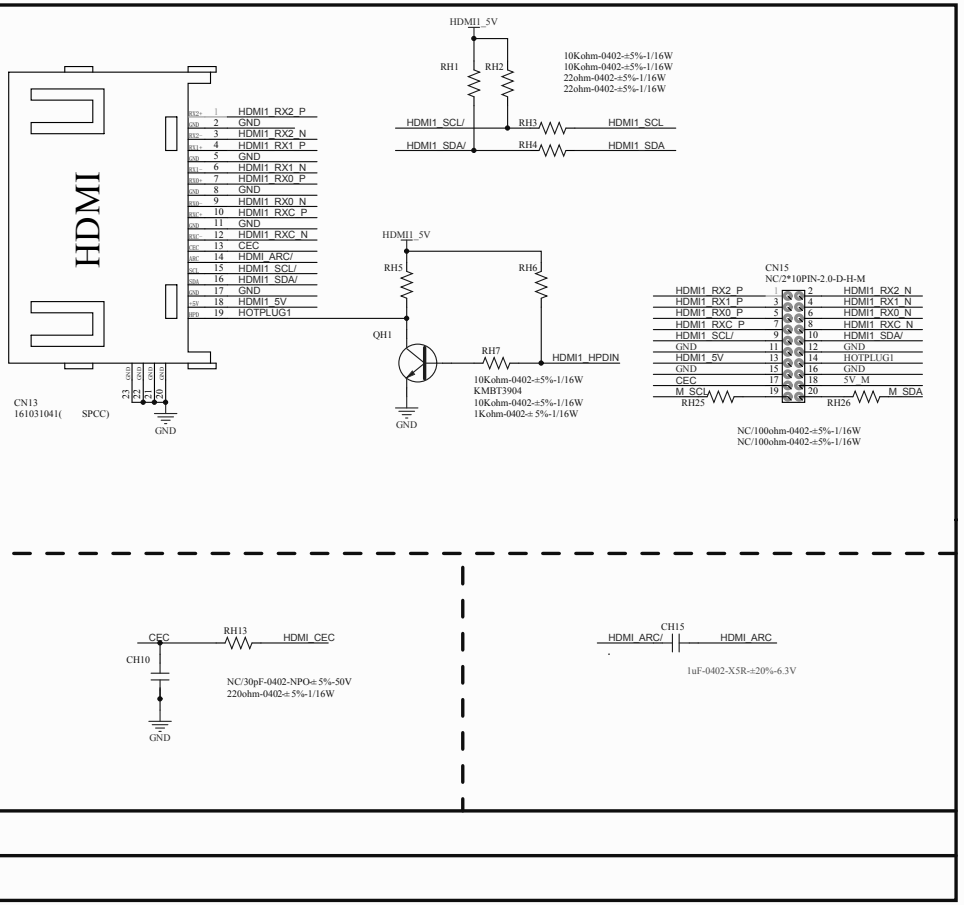

AV-OUTR
RO3
CO1
LINEOUT-R
RO4
CO3
RO5
CO4
CO2
RO6
AV-OUTL
LINEOUT-L
RO8
CO5
RO7
CO10
GND
CN6
PJ-322A (H=7.0mm)
CVBS_OUT
200Kohm-0402-±5%-1/16W
1000pF-0402-X7R-± 10%-50V
510ohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
47Kohm-0402-±5%-1/16W

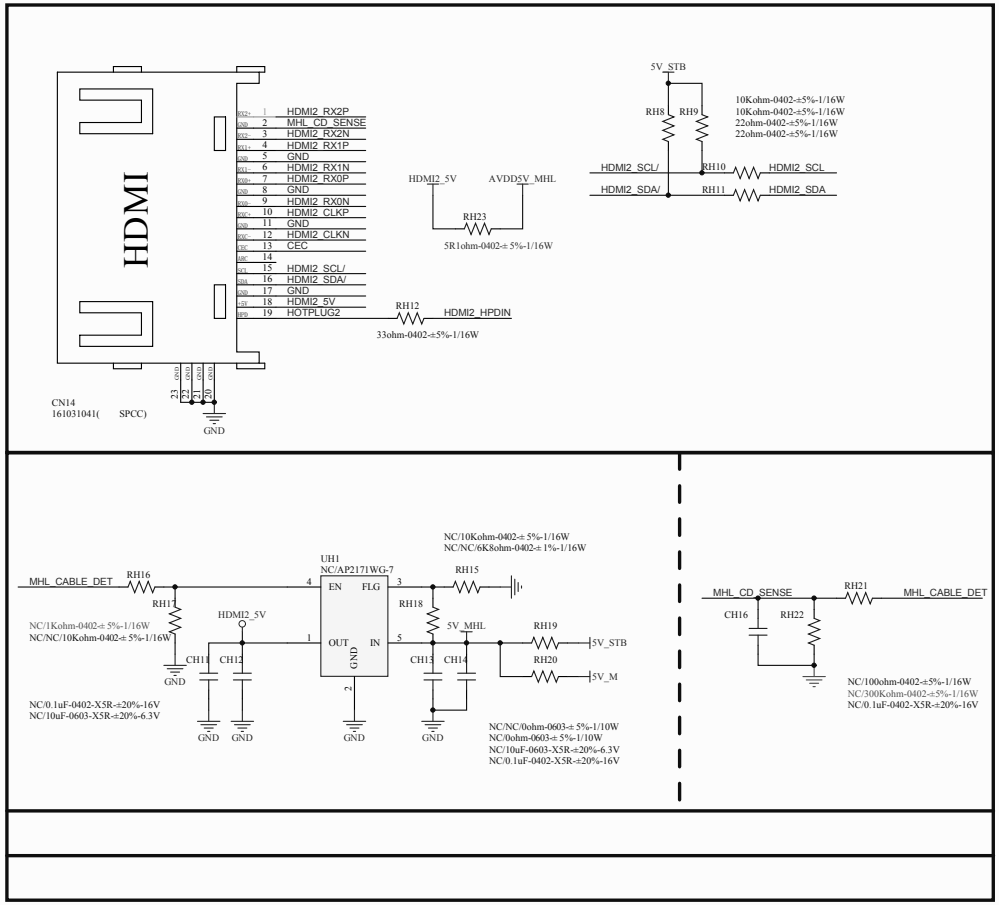

CN12
PJ-325
GND
RV4
CV5
PC_RIN
RV6
RV7
CV6
PC_LIN
RV8
12Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W

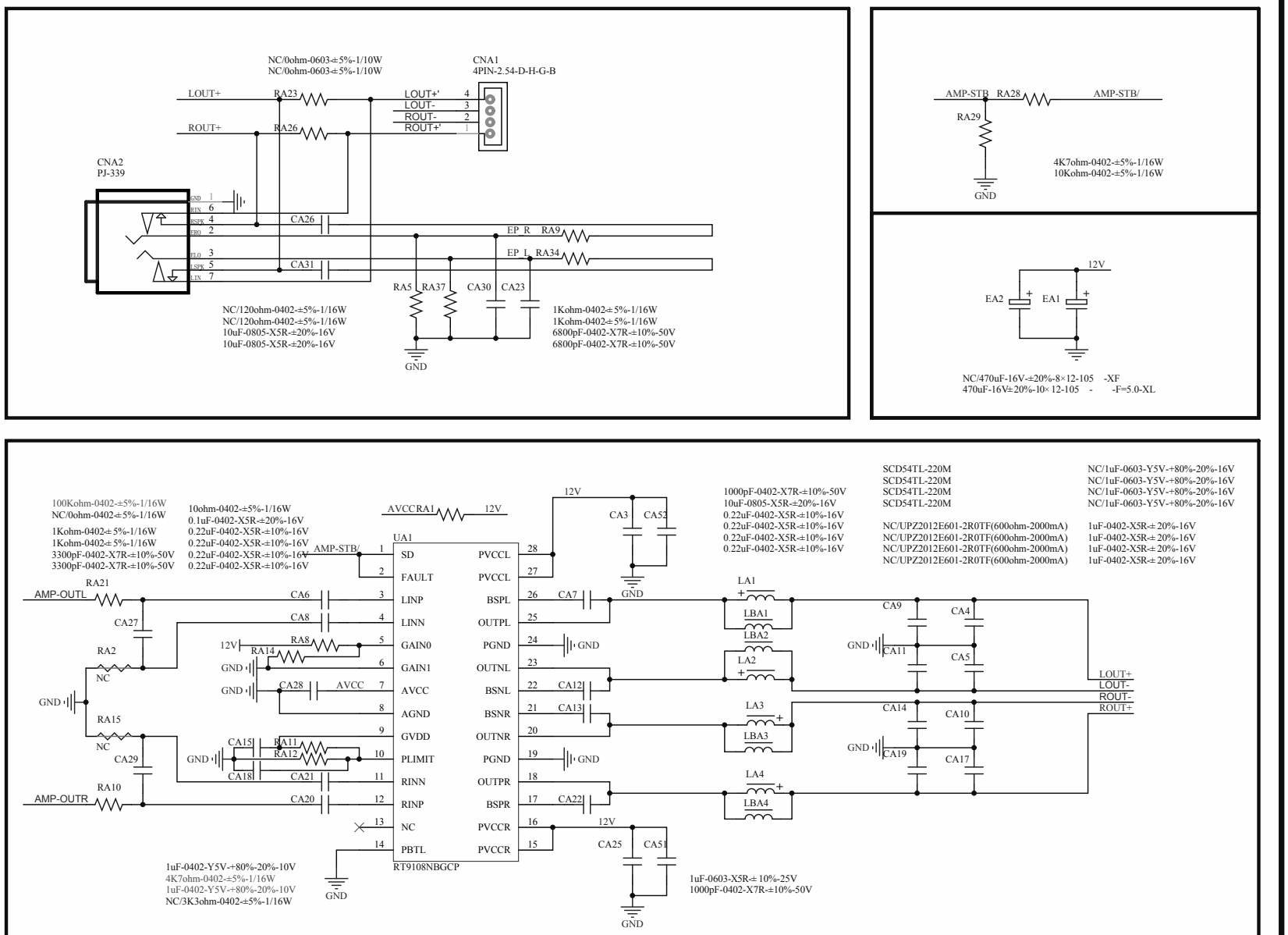

CN10
CYB-3.2-3DW37B-1-200(R)(
Y Y AV
Y Pb
Y Pr
GND
RI12
CI7
YPBPR_Y
RI13
CI8
75ohm-0402-±5%-1/16W
NC/10pF-0402-NPO-±5%-50V-D
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
RI14
CI9
YPBPR_PB
RI15
CI10
NC/NC/10pF-0402-NPO-±5%-50V
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
RI16
CI11
YPBPR_PR
RI17
CI12
75ohm-0402-±5%-1/16W
NC/NC/10pF-0402-NPO-±5%-50V
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V

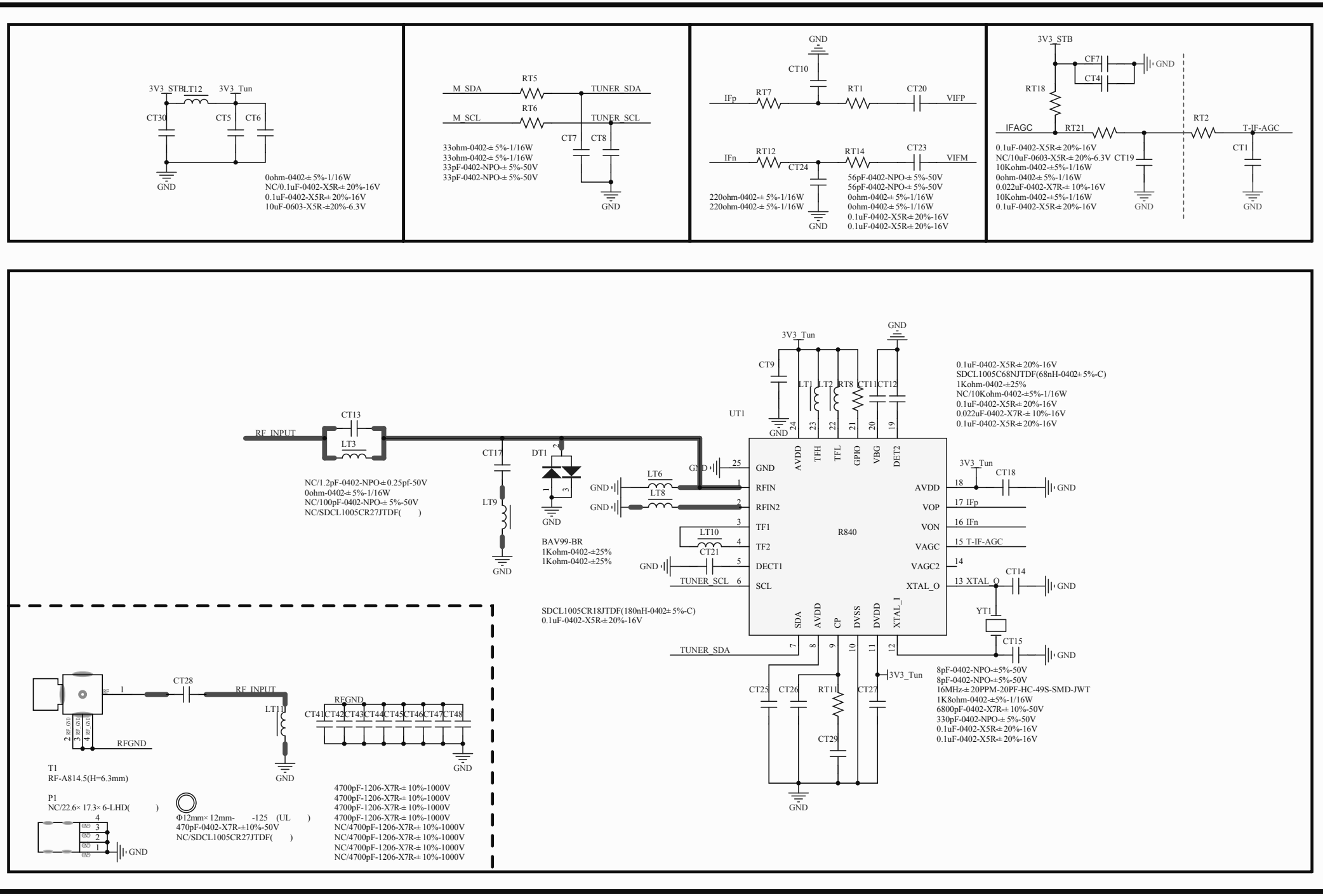

GND
5V_USB
USB1_M
USB1_P
USB0_M
USB0_P
CN5
WLUS-074B
CN7
NC/USB-042M-002DP
CN8
NC/4PIN-2.0-D-H-G
USB0_M
USB0_P
RU1
USB0_DM
USB0_DP
USB1_M
USB1_P
RU4
USB1_DM
USB1_DP
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
F1
F2
EU1
CU1
NC/MSMD110
0ohm-0402-± 5%-1/16W
10uF-0603-X5R-±20%-6.3V
NC/100uF-16V-±20%-5*11-105
-F=2.5-XF

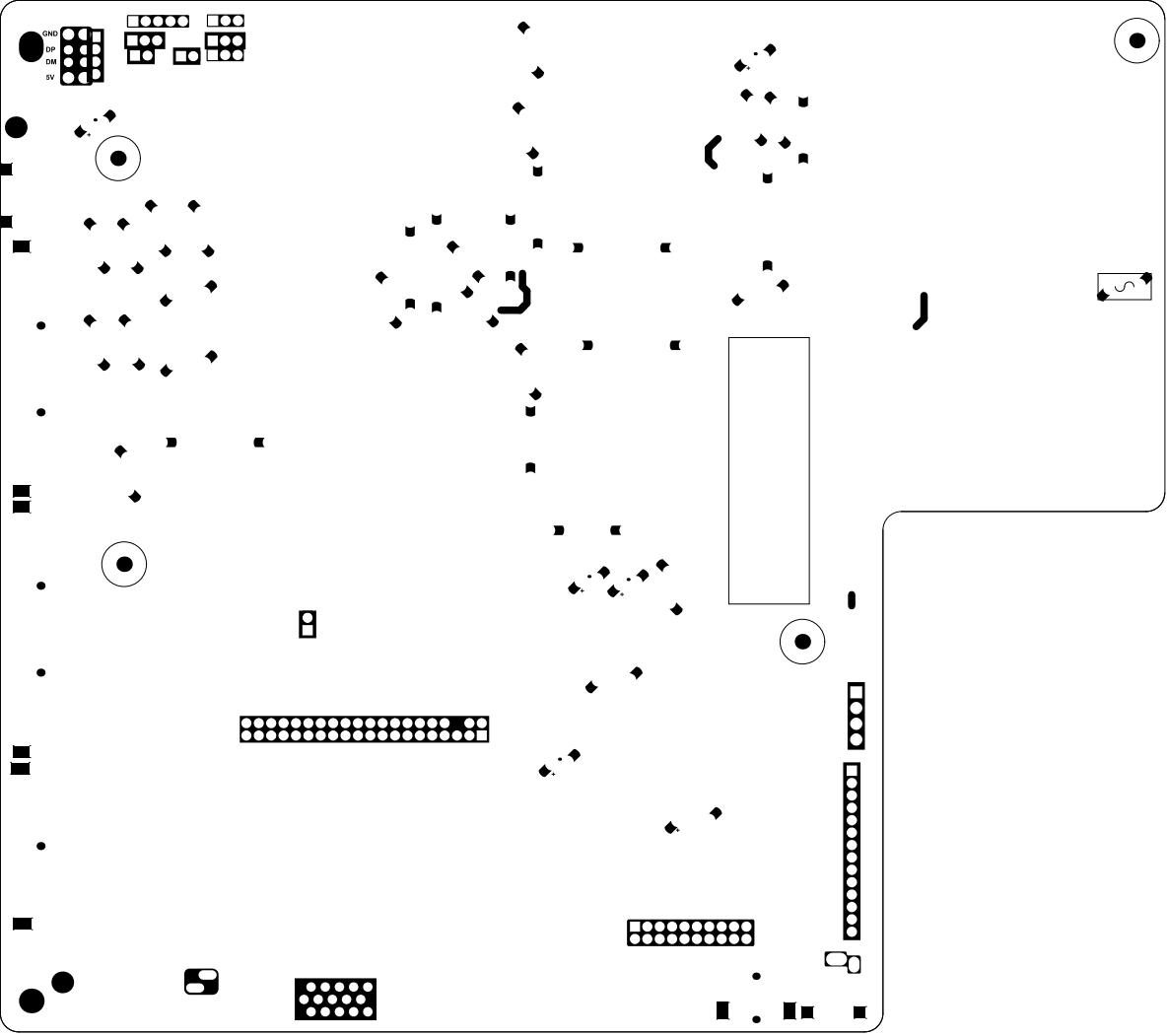

SPDIF_OUT
RO9
CO6
CO8
RO10
CO7
GND
CN9
NC/RCA-105B-003(
NC/NC/10pF-0402-NPO-±5%-50V
NC/220ohm-0402-±5%-1/16W
NC/100ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/330pF-0402-NPO-± 5%-50V

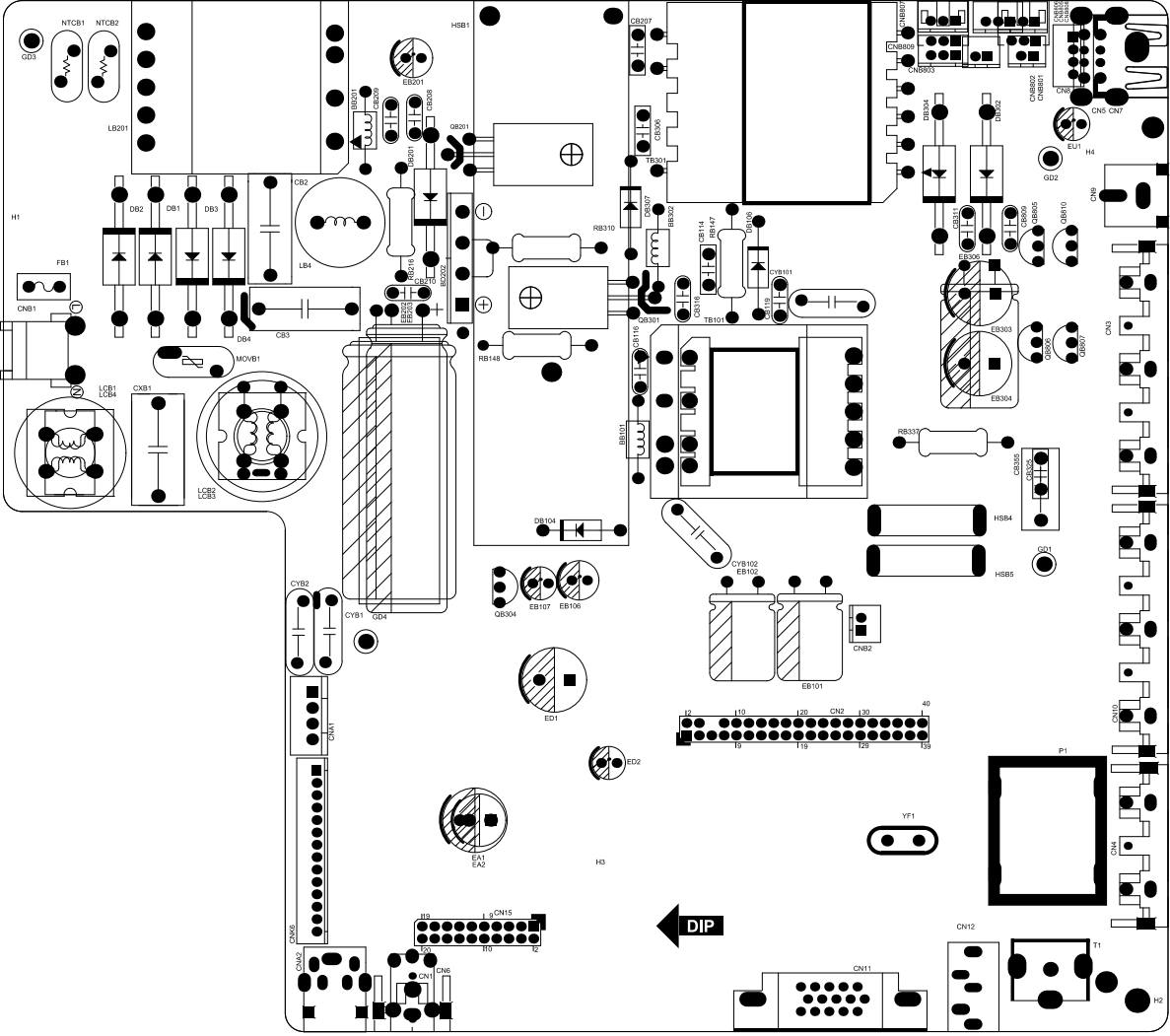

HDMI
HDMI1_RX2_P
GND
HDMI1_RX2_N
HDMI1_RX1_P
GND
HDMI1_RX1_N
HDMI1_RX0_P
GND
HDMI1_RX0_N
HDMI1_RXC_P
GND
HDMI1_RXC_N
CEC
HDMI_ARC/
HDMI1_SCL/
HDMI1_SDA/
GND
HDMI1_5V
HOTPLUG1
CN13
161031041(SPCC)
GND
HDMI1_5V
RH1
RH2
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
HDMI1_SCL/
HDMI1_SDA/
RH3
RH4
HDMI1_SCL
HDMI1_SDA
HDMI1_5V
RH5
RH6
QH1
RH7
HDMI1_HPDIN
10Kohm-0402-±5%-1/16W
KMBT3904
10Kohm-0402-±5%-1/16W
1Kohm-0402-± 5%-1/16W
GND
CN15
NC/2*10PIN-2.0-D-H-M
HDMI1_RX2_P
HDMI1_RX2_N
HDMI1_RX1_P
HDMI1_RX1_N
HDMI1_RX0_P
HDMI1_RX0_N
HDMI1_RXC_P
HDMI1_RXC_N
HDMI1_SCL/
HDMI1_SDA/
HDMI1_5V
HOTPLUG1
GND
GND
CEC
5V_M
M_SCL
M_SDA
RH25
RH26
NC/100ohm-0402-±5%-1/16W
NC/100ohm-0402-±5%-1/16W
CEC
RH13
HDMI_CEC
CH10
NC/30pF-0402-NPO±.5%-50V
220ohm-0402-± 5%-1/16W
GND
CH15
HDMI_ARC/
HDMI_ARC
1uF-0402-X5R-±20%-6.3V

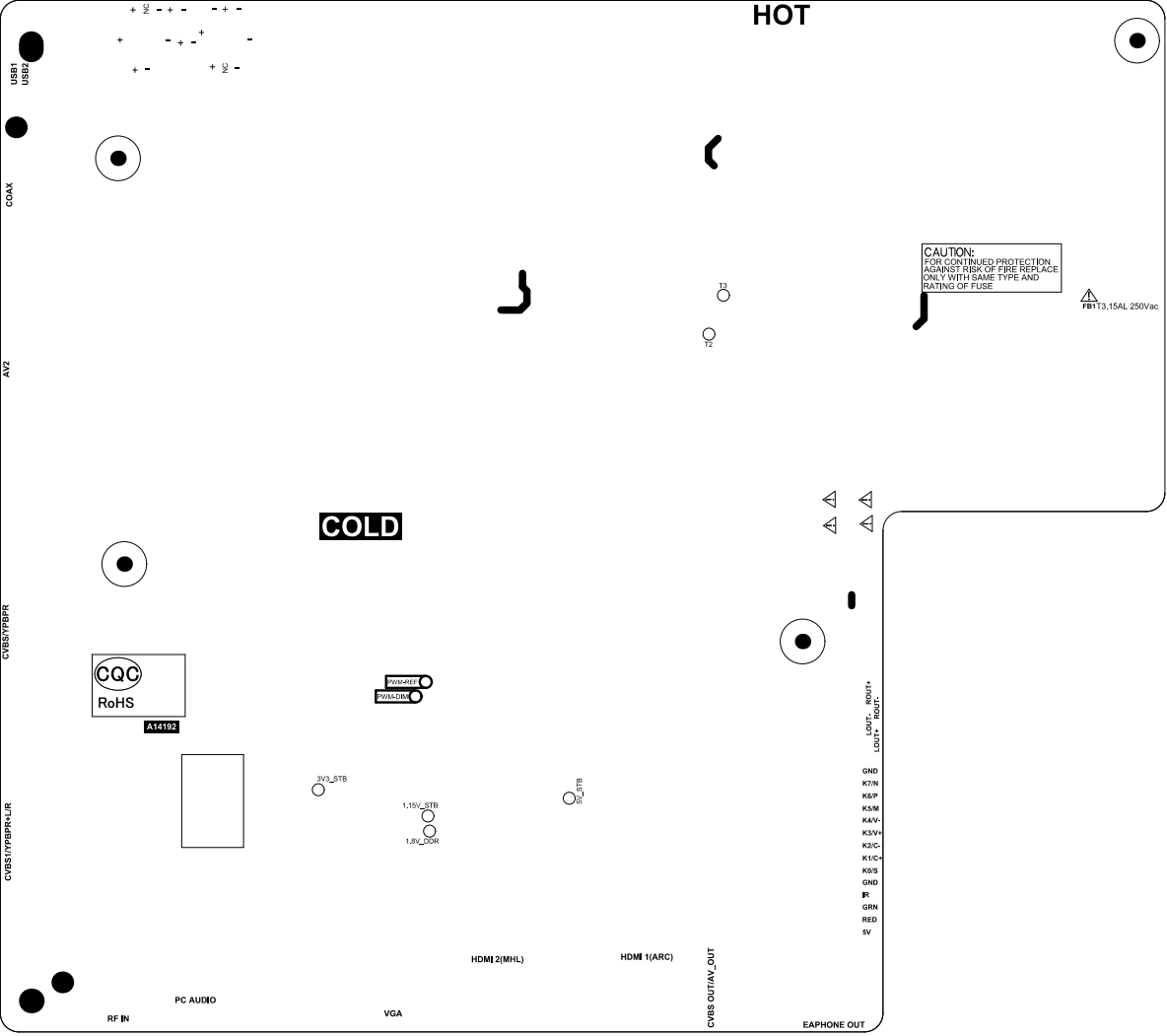

HDMI
HDMI2_RX2P
MHL_CD_SENSE
HDMI2_RX2N
HDMI2_RX1P
GND
HDMI2_RX1N
HDMI2_RX0P
GND
HDMI2_RX0N
HDMI2_CLKP
GND
HDMI2_CLKN
CEC
HDMI2_SCL/
HDMI2_SDA/
GND
HDMI2_5V
HOTPLUG2
CN14
161031041(SPCC)
GND
HDMI2_5V
AVDD5V_MHL
RH23
5R1ohm-0402-± 5%-1/16W
RH12
33ohm-0402-±5%-1/16W
HDMI2_HPDIN
5V_STB
RH8
RH9
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
HDMI2_SCL/
HDMI2_SDA/
RH10
RH11
HDMI2_SCL
HDMI2_SDA
NC/10Kohm-0402-± 5%-1/16W
NC/NC/6K8ohm-0402-± 1%-1/16W
UH1
NC/AP2171WG-7
EN
FLG
OUT
IN
GND
MHL_CABLE_DET
RH16
RH17
NC/1Kohm-0402-± 5%-1/16W
NC/NC/10Kohm-0402-± 5%-1/16W
HDMI2_5V
RH15
RH18
5V_MHL
RH19
RH20
5V_STB
5V_M
CH11
CH12
CH13
CH14
GND
NC/0.1uF-0402-X5R-±20%-16V
NC/10uF-0603-X5R-±20%-6.3V
NC/NC/0ohm-0603-± 5%-1/10W
NC/0ohm-0603-± 5%-1/10W
NC/10uF-0603-X5R-±20%-6.3V
NC/0.1uF-0402-X5R-±20%-16V
MHL_CD_SENSE
RH21
MHL_CABLE_DET
CH16
RH22
NC/100ohm-0402-±5%-1/16W
NC/300Kohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V

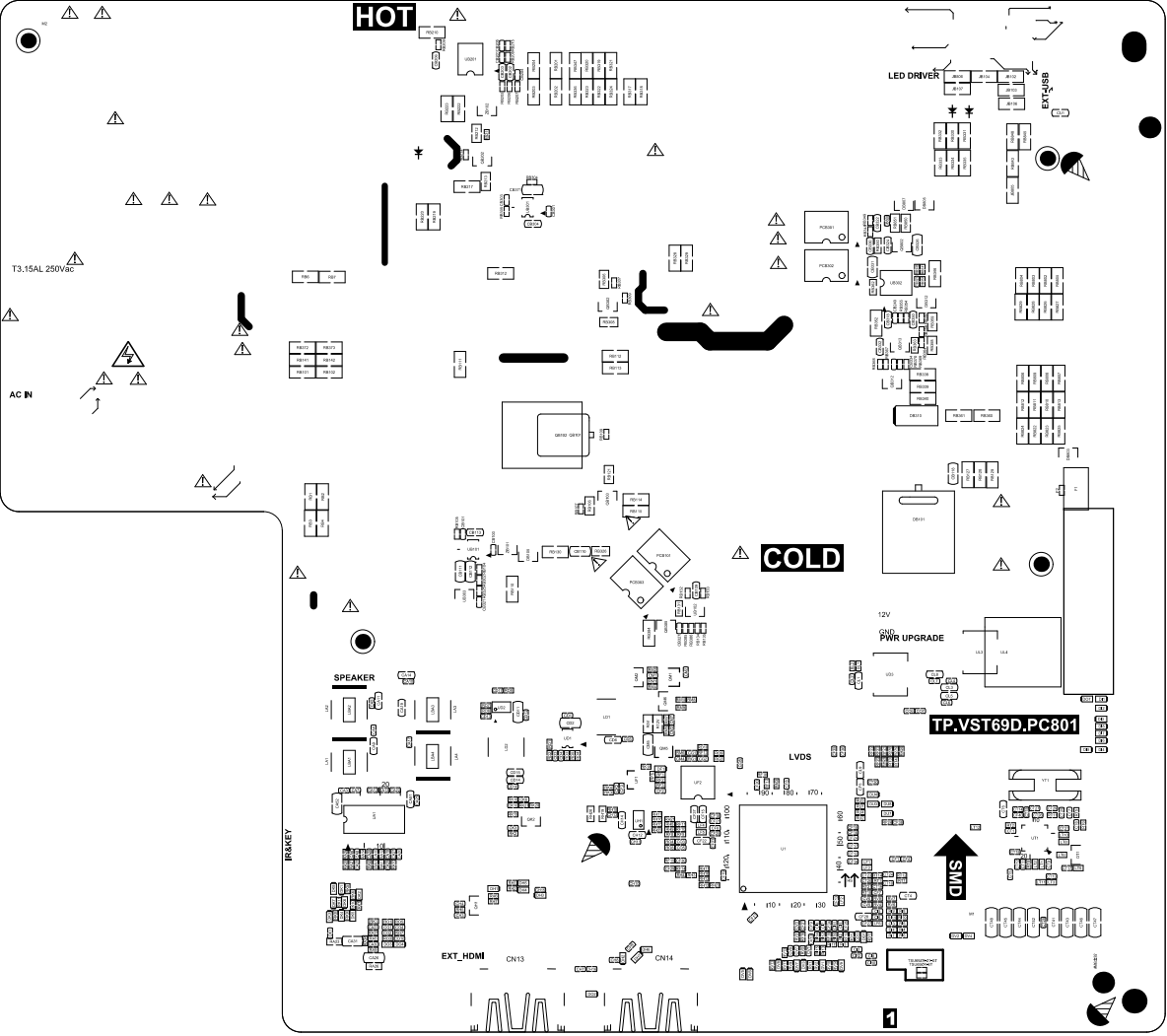

NC/0ohm-0603-±5%-1/10W
NC/0ohm-0603-±5%-1/10W
CNA1
4PIN-2.54-D-H-G-B
LOUT+
RA23
LOUT+'
LOUT-
ROUT-
ROUT+
ROUT+'
RA26
CNA2
PJ-339
GND
RIN
BSPK
ERO
ELO
LSPK
LIN
CA26
CA31
EP_R
RA9
EP_L
RA34
RA5
RA37
CA30
CA23
NC/120ohm-0402-±5%-1/16W
NC/120ohm-0402-±5%-1/16W
10uF-0805-X5R-±20%-16V
10uF-0805-X5R-±20%-16V
1Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
6800pF-0402-X7R-±10%-50V
6800pF-0402-X7R-±10%-50V
AMP-STB
RA28
AMP-STB/
RA29
4K7ohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
12V
EA2
EA1
NC/470uF-16V-±20%-8×12-105 -XF
470uF-16V±20%-10× 12-105 - -F=5.0-XL
100Kohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
3300pF-0402-X7R-±10%-50V
3300pF-0402-X7R-±10%-50V
10ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
AVCC
RA1
12V
CA3
CA52
1000pF-0402-X7R-±10%-50V
10uF-0805-X5R-±20%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
SCD54TL-220M
SCD54TL-220M
SCD54TL-220M
SCD54TL-220M
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/1uF-0603-Y5V-+80%-20%-16V
NC/1uF-0603-Y5V-+80%-20%-16V
NC/1uF-0603-Y5V-+80%-20%-16V
NC/1uF-0603-Y5V-+80%-20%-16V
1uF-0402-X5R-± 20%-16V
1uF-0402-X5R-± 20%-16V
1uF-0402-X5R-± 20%-16V
1uF-0402-X5R-± 20%-16V
UA1
AMP-STB/
SD
FAULT
LINP
LINN
GAIN0
GAIN1
AVCC
AGND
GVDD
PLIMIT
RINN
RINP
NC
PBTL
PVCCL
PVCCL
BSPL
OUTPL
PGND
OUTNL
BSNL
BSNR
OUTNR
PGND
OUTPR
BSPR
PVCCR
PVCCR
RT9108NBGCP
CA6
CA8
RA8
RA14
CA28
CA15
RA11
RA12
CA18
CA21
CA20
CA7
CA12
CA13
CA22
CA25
CA51
RA21
AMP-OUTL
CA27
RA2
NC
RA15
NC
CA29
RA10
AMP-OUTR
LA1
LBA1
LBA2
LA2
LA3
LBA3
LA4
LBA4
CA9
CA4
CA11
CA5
CA14
CA10
CA19
CA17
LOUT+
LOUT-
ROUT-
ROUT+
1uF-0402-Y5V-+80%-20%-10V
4K7ohm-0402-±5%-1/16W
1uF-0402-Y5V-+80%-20%-10V
NC/3K3ohm-0402-±5%-1/16W
1uF-0603-X5R-± 10%-25V
1000pF-0402-X7R-±10%-50V

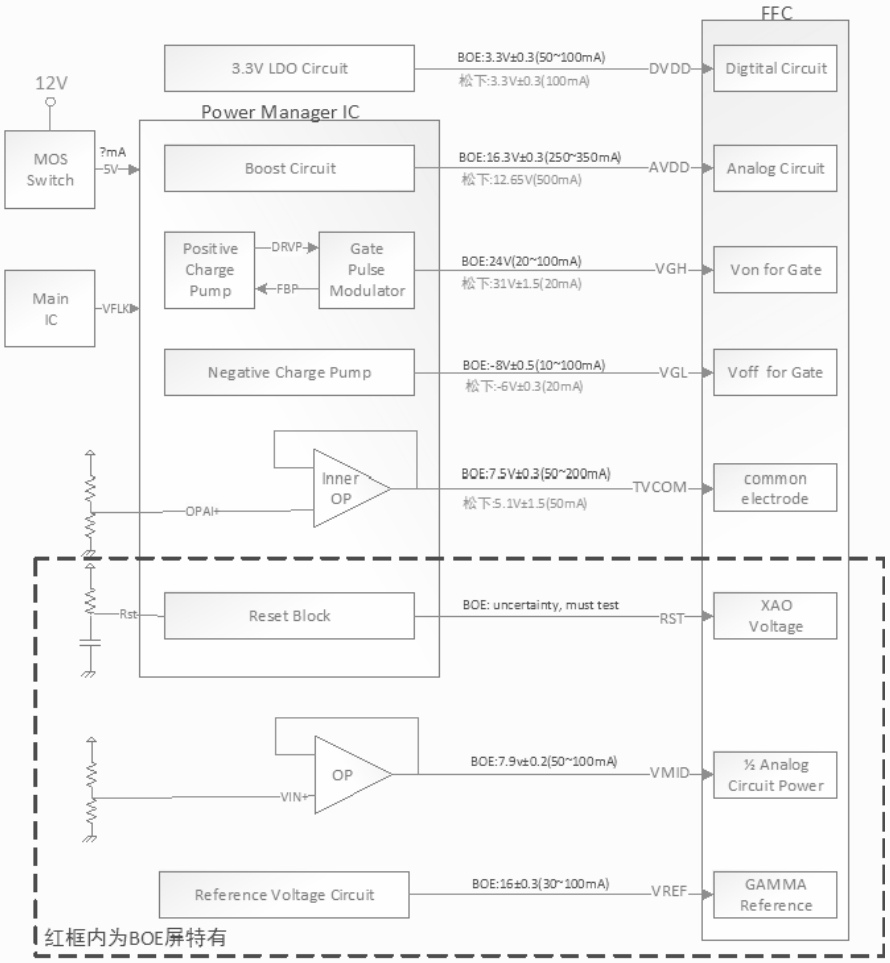

3V3_STB
LT12
3V3_Tun
CT30
CT5
CT6
GND
0ohm-0402-± 5%-1/16W
NC/0.1uF-0402-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
10uF-0603-X5R-±20%-6.3V
M_SDA
RT5
TUNER_SDA
M_SCL
RT6
TUNER_SCL
CT7
CT8
33ohm-0402-± 5%-1/16W
33ohm-0402-± 5%-1/16W
33pF-0402-NPO-± 5%-50V
33pF-0402-NPO-± 5%-50V
GND
CT10
IFp
RT7
RT1
CT20
VIFP
IFn
RT12
CT24
RT14
CT23
VIFM
220ohm-0402-± 5%-1/16W
220ohm-0402-± 5%-1/16W
56pF-0402-NPO-± 5%-50V
56pF-0402-NPO-± 5%-50V
0ohm-0402-± 5%-1/16W
0ohm-0402-± 5%-1/16W
0.1uF-0402-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
3V3_STB
CF7
CT4
RT18
IFAGC
RT21
RT2
T-IF-AGC
CT1
CT19
0.1uF-0402-X5R-± 20%-16V
NC/10uF-0603-X5R-± 20%-6.3V
10Kohm-0402-±5%-1/16W
0ohm-0402-± 5%-1/16W
0.022uF-0402-X7R-± 10%-16V
10Kohm-0402-±5%-1/16W
0.1uF-0402-X5R-± 20%-16V
CT13
RF_INPUT
LT3
NC/1.2pF-0402-NPO-± 0.25pf-50V
0ohm-0402-± 5%-1/16W
NC/100pF-0402-NPO-± 5%-50V
NC/SDCL1005CR27JTDF( )
CT17
LT9
DT1
BAV99-BR
1Kohm-0402-±25%
1Kohm-0402-±25%
LT6
LT8
LT10
CT21
TUNER_SCL
UT1
R840
GND
RFIN
RFIN2
TF1
TF2
DECT1
SCL
AVDD
TFH
TFL
GPIO
VBG
DET2
VOP
VON
VAGC
VAGC2
XTAL_O
XTAL_I
SDA
CP
DVSS
DVDD
3V3_Tun
CT9
LT1
LT2
RT8
CT11
CT12
0.1uF-0402-X5R-± 20%-16V
SDCL1005C68NJTDF(68nH-0402-± 5%-C)
1Kohm-0402-±25%
NC/10Kohm-0402-±5%-1/16W
0.1uF-0402-X5R-± 20%-16V
0.022uF-0402-X7R-± 10%-16V
0.1uF-0402-X5R-± 20%-16V
CT18
17 IFp
16 IFn
15 T-IF-AGC
CT14
YT1
CT15
SDCL1005CR18JTDF(180nH-0402-± 5%-C)
0.1uF-0402-X5R-± 20%-16V
TUNER_SDA
CT25
CT26
RT11
CT27
CT29
8pF-0402-NPO-±5%-50V
8pF-0402-NPO-±5%-50V
16MHz-± 20PPM-20PF-HC-49S-SMD-JWT
1K8ohm-0402-±5%-1/16W
6800pF-0402-X7R-± 10%-50V
330pF-0402-NPO-± 5%-50V
0.1uF-0402-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
CT28
RF_INPUT
LT11
RFGND
CT41
CT42
CT43
CT44
CT45
CT46
CT47
CT48
T1
RF-A814.5(H=6.3mm)
P1
NC/22.6× 17.3× 6-LHD( )
Φ12mm× 12mm- -125 (UL)
470pF-0402-X7R-±10%-50V
NC/SDCL1005CR27JTDF( )
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V


GND
DP
DM
5V


NTCB1
NTCB2
GD3
LB201
HSB1
EB201
QB201
RB301
CB309
CB2
DB2
DB1
DB3
DB4
LB4
H1
FB1
CNB1
CB3
MOVB1
LCB1
LCB4
CXB1
LCB2
LCB3
CB207
CB306
FB301
CB307
RB310
QB302
QB301
RB148
CB316
TB101
CB314
RB147
RB146
CYB101
CB319
CB315
CB210
EB202
EB203
EB204
RB101
DB104
CYB102
EB102
QB304
EB107
EB106
CYB2
CYB1
GD4
CNB2
EB101
ED1
ED2
CN10
CN1
CN6
CN2
CN15
CN11
CN12
EA1
EA2
H3
DIP
YF1
P1
CN4
CNB807
CNB809
CNB803
CNB802
CNB801
CN8
CN5
CN7
EU1
H4
GD2
CN9
EB305
EB306
CB313
CB308
CB305
DB910
EB303
EB304
CB309
CB307
CN3
RB337
CB335
CB325
HSB4
HSB5
GD1
T1
H2


HOT
COLD
USB1
USB2
COAX
AV2
CVBS/YPBPR
CVBS1/YPBPR+L/R
CAUTION:
FOR CONTINUED PROTECTION
AGAINST RISK OF FIRE REPLACE
ONLY WITH SAME TYPE AND
RATING OF FUSE
FB1T3.15AL 250Vac
T3
T2
CQC
RoHS
A14192
PWM-REF
PWM-DIM
3V3_STB
1.15V_STB
1.8V_DDR
5V_STB
LOUT-
ROUT+
ROUT-
LOUT+
GND
K7/N
K6/P
K5/M
K4/V-
K3/V+
K2/C-
K1/C+
K0/S
GND
IR
GRN
RED
5V
HDMI 2(MHL)
HDMI 1(ARC)
CVBS OUT/AV_OUT
PC AUDIO
RF IN
VGA
EAPHONE OUT


HOT
COLD
LED DRIVER
EXT-ISP
T3.15AL 250V
AC IN
SPEAKER
IR&KEY
LVDS
SMD
EXT_HDMI
CN13
CN14
12V
GND
PWR UPGRADE
TP.VST69D.PC801
1

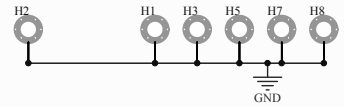


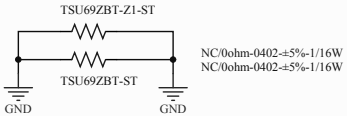
Title		
Size A4	Number	Revision
Date: 2015/6/15		Sheet of
File: E:\ \..\Panel_Block.SchDoc		Drawn By:

TP.VST69T.PB901
PCB_NAME

A15176
PCB_TIME

M1 MARK
M2 MARK
M3 MARK
M4 MARK
M5 MARK
M6 MARK





NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W

NC/14×14×06-THD

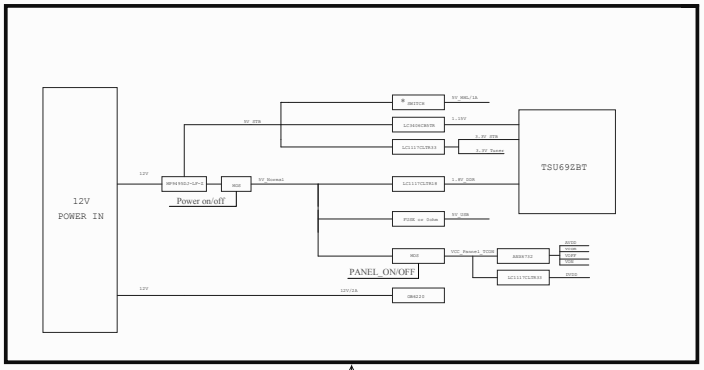
DOLBY PLUS

HOT
COLD

CAUTION
High Voltage

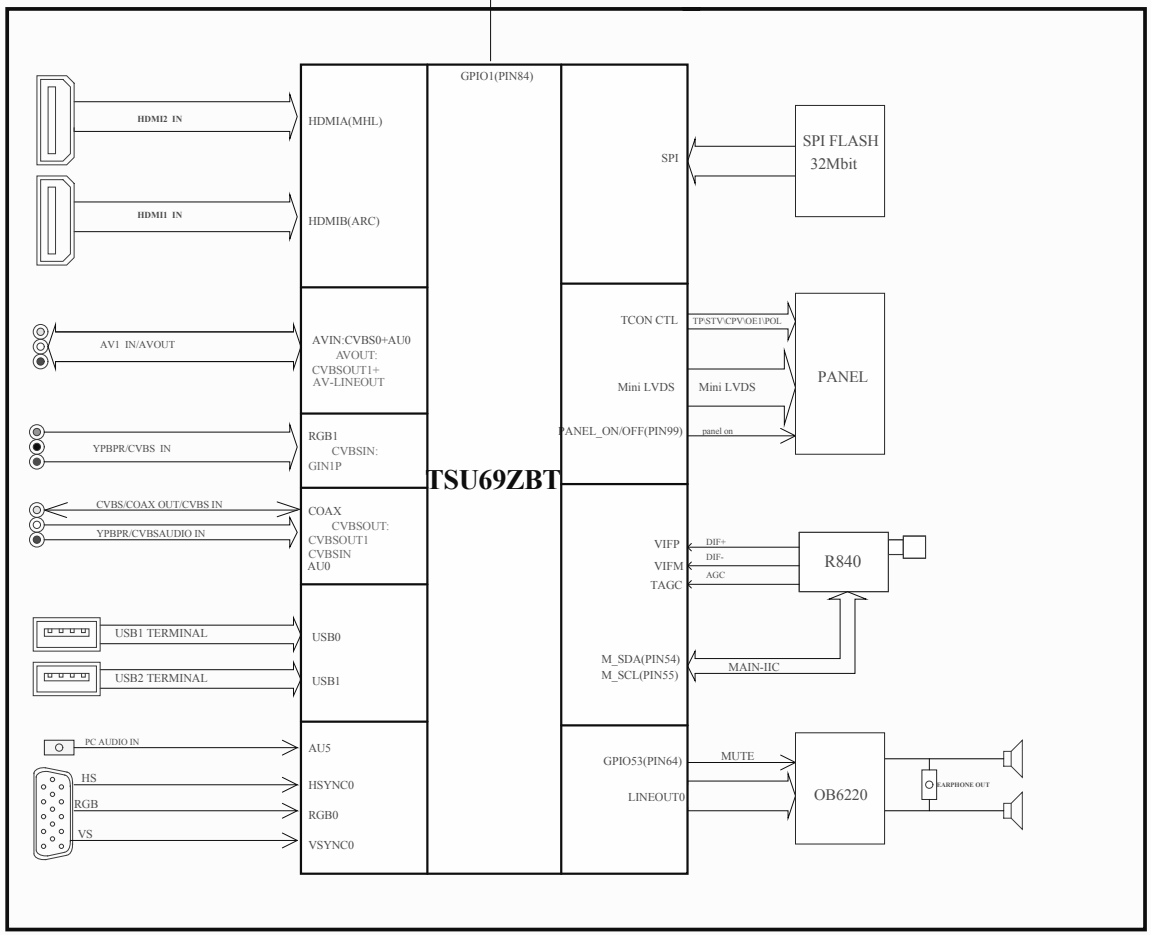
CQC
Barcode
Manufacture_Info

Power Tree

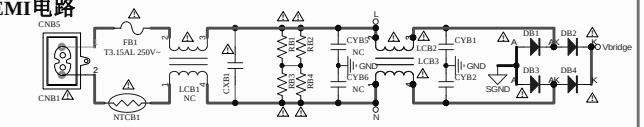


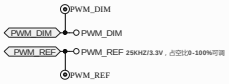
Power on/off

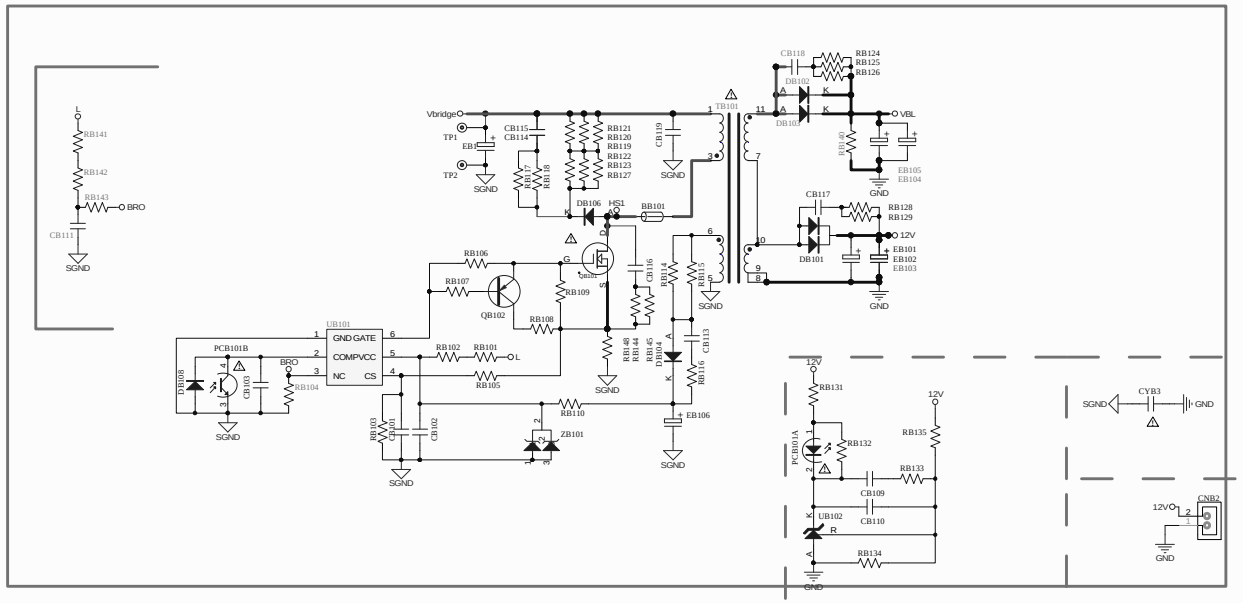
Block Diagram

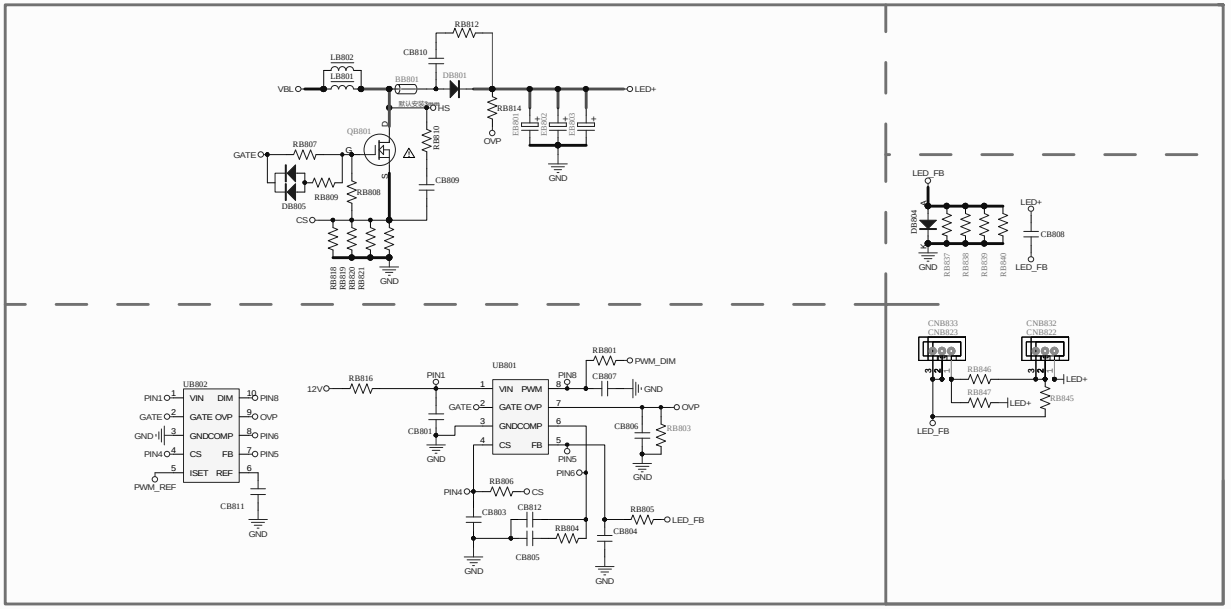


EMI电路

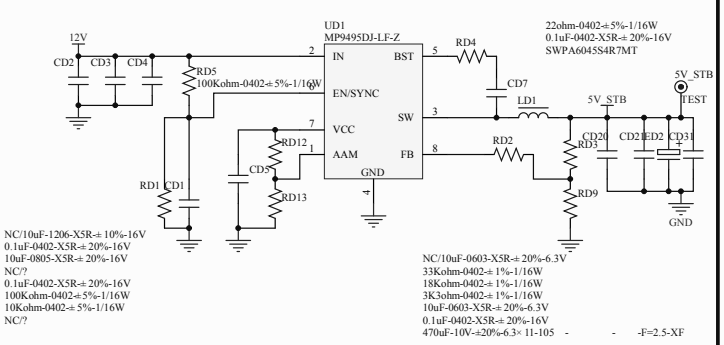


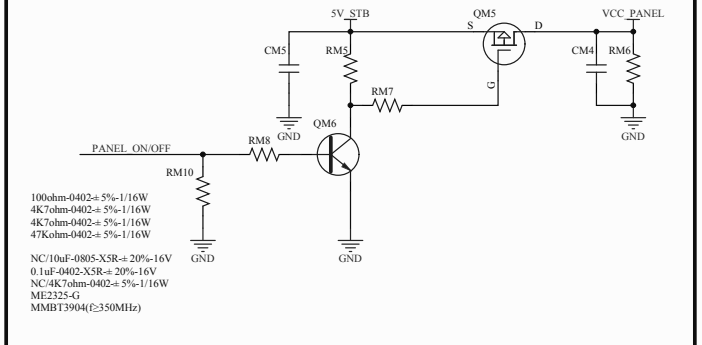


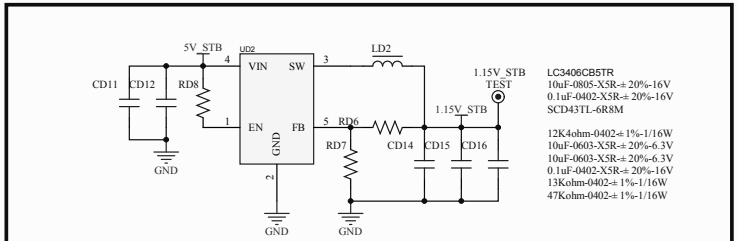


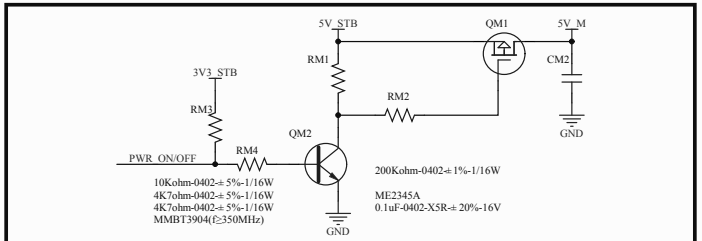


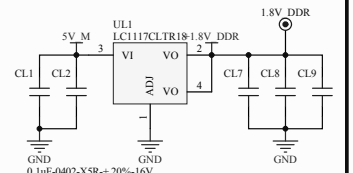
Model Name:	TP.VST69T.PB901			VERSION:	V1.0
DRAWN:	郭泽湖	DATE:	2015-04-24		
CHK'D:		DATE:			

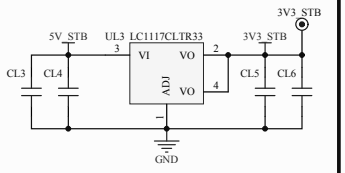

12V
CD2
CD3
CD4
RD5
100Kohm-0402-±5%-1/16W
UD1
MP9495DJ-LF-Z
IN
BST
EN/SYNC
SW
VCC
AAM
FB
GND
RD4
CD7
LD1
5V_STB
TEST
RD12
CD5
RD13
RD1
CD1
RD2
RD3
CD20
CD21
ED2
CD31
RD9
22ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
SWPA6045S4R7MT
NC/10uF-1206-X5R-±10%-16V
0.1uF-0402-X5R-±20%-16V
10uF-0805-X5R-±20%-16V
NC/?
0.1uF-0402-X5R-±20%-16V
100Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
NC/?
NC/10uF-0603-X5R-±20%-6.3V
33Kohm-0402-±1%-1/16W
18Kohm-0402-±1%-1/16W
3K3ohm-0402-±1%-1/16W
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
470uF-10V-±20%-6.3×11-105 - - -F=2.5-XF

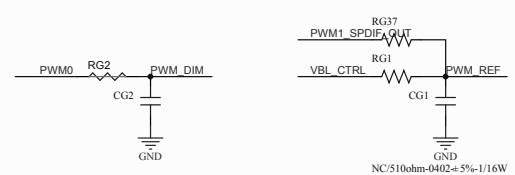

5V_STB
QM5
S
D
G
VCC_PANEL
CM5
RM5
RM7
CM4
RM6
GND
QM6
PANEL_ON/OFF
RM8
RM10
100ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
47Kohm-0402-±5%-1/16W
NC/10uF-0805-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
NC/4K7ohm-0402-±5%-1/16W
ME2325-G
MMBT3904(f≥350MHz)

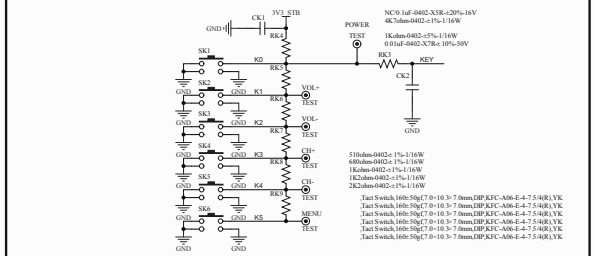

5V_STB
UD2
VIN
SW
EN
FB
GND
LD2
1.15V_STB
TEST
CD11
CD12
RD8
RD6
RD7
CD14
CD15
CD16
LC3406CB5TR
10uF-0805-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
SCD43TL-6R8M
12K4ohm-0402-±1%-1/16W
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
13Kohm-0402-±1%-1/16W
47Kohm-0402-±1%-1/16W

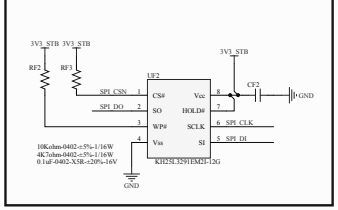

5V_STB
QM1
5V_M
RM1
CM2
3V3_STB
RM2
RM3
QM2
PWR_ON/OFF
RM4
GND
10Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
MMBT3904(f≥350MHz)
200Kohm-0402-±1%-1/16W
ME2345A
0.1uF-0402-X5R-±20%-16V

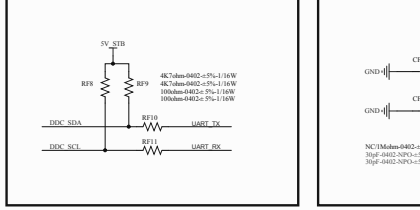

5V_M
UL1
LC1117CLTR18
VI
VO
ADJ
1.8V_DDR
CL1
CL2
CL7
CL8
CL9
GND
0.1uF-0402-X5R-±20%-16V
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V

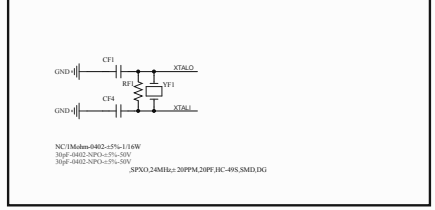

5V_STB
UL3
LC1117CLTR33
3V3_STB
VI
VO
ADJ
CL3
CL4
CL5
CL6
GND
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V

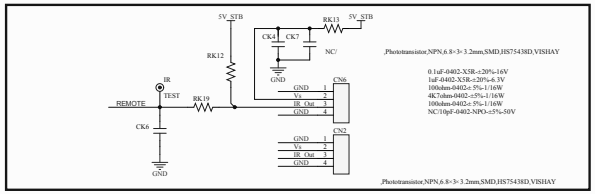

PWM0
RG2
PWM_DIM
CG2
GND
NC/0ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
RG37
PWM1_SPDIF_OUT
RG1
VBL_CTRL
PWM_REF
CG1
NC/510ohm-0402-±5%-1/16W
510ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V

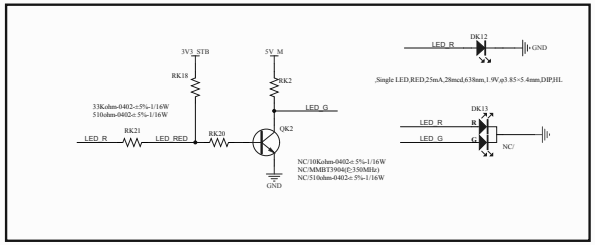

CK1
3V1_STB
GND
RK4
POWER
TEST
NC/0.1uF-0402-X5R-±20%-16V
4K7ohm-0402-±1%-1/16W
1Kohm-0402-±5%-1/16W
0.01uF-0402-X7R-±10%-50V
SK1
K0
RK5
RK3
KEY
CK2
SK2
K1
RK6
VOL+
SK3
K2
RK7
VOL-
SK4
K3
RK8
CH+
SK5
K4
RK9
CH-
SK6
K5
MENU
510ohm-0402-±1%-1/16W
680ohm-0402-±1%-1/16W
1Kohm-0402-±1%-1/16W
1K2ohm-0402-±1%-1/16W
2K2ohm-0402-±1%-1/16W
,Tact Switch,160±50gf,7.0×10.3×7.0mm,DIP,KFC-A06-E-4-7.5(4R),YK
,Tact Switch,160±50gf,7.0×10.3×7.0mm,DIP,KFC-A06-E-4-7.5(4R),YK
,Tact Switch,160±50gf,7.0×10.3×7.0mm,DIP,KFC-A06-E-4-7.5(4R),YK
,Tact Switch,160±50gf,7.0×10.3×7.0mm,DIP,KFC-A06-E-4-7.5(4R),YK
,Tact Switch,160±50gf,7.0×10.3×7.0mm,DIP,KFC-A06-E-4-7.5(4R),YK

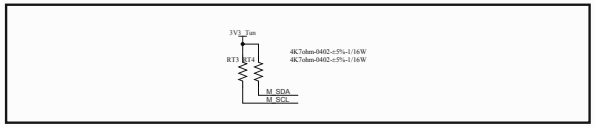

3V1_STB
3V3_STB
RF2
RF3
U2
SPI_CSN
SPI_DO
CS#
SO
WP#
Vss
Vcc
HOLD#
SCLK
SI
CF2
GND
6 SPI_CLK
5 SPI_DI
10Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
KH25L3239EM2I-12G

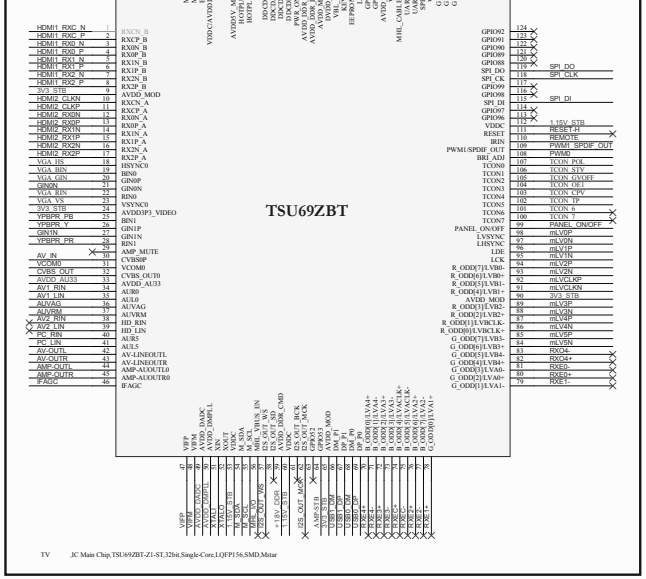

5V_STB
RF8
RF9
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
DDC_SDA
DDC_SCL
RF10
RF11
UART_TX
UART_RX

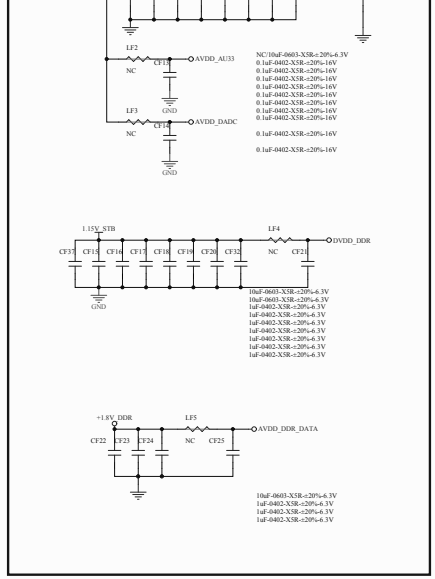

CF1
GND
XTALO
RF1
VF1
CF4
XTALI
NC/1Mohm-0402-±5%-1/16W
30pF-0402-NPO-±5%-50V
30pF-0402-NPO-±5%-50V
,SPXO,24MHz,±20PPM,20PF,HC-49S,SMD,DG

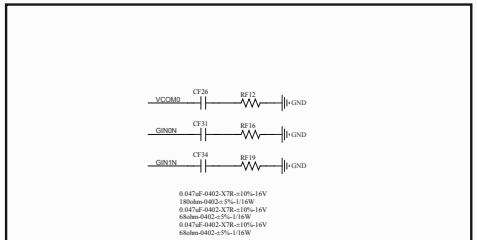

5V_STB
RK13
5V_STB
CK4
CK7
NC/
RK12
GND
CN6
GND 1
Vo 2
IR_Out 3
GND 4
IR
TEST
REMOTE
RK19
CK6
CN2
,Phototransistor,NPN,6.8×3×3.2mm,SMD,HS75438D,VISHAY
0.1uF-0402-X5R-±20%-16V
1uF-0402-X5R-±20%-6.3V
100ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/10pF-0402-NPO-±5%-50V

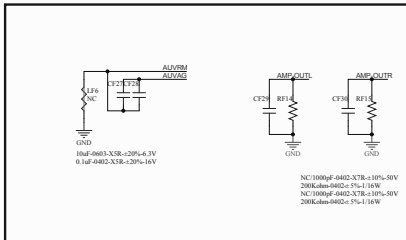

3V1_STB
5V_M
RK18
RK2
LED_G
33Kohm-0402-±5%-1/16W
510ohm-0402-±5%-1/16W
RK21
LED_RED
RK20
QK2
GND
NC/10Kohm-0402-±5%-1/16W
NC/MMBT3904(E350MHz)
NC/510ohm-0402-±5%-1/16W
LED_R
DK12
GND
,Single LED,RED,25mA,28mcd,638nm,1.9V,φ3.85×5.44mm,DIP,HL
DK13
R
G
NC/

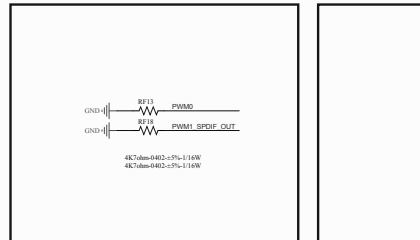

3V1_Tun
RT3
RT4
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
M_SDA
M_SCL

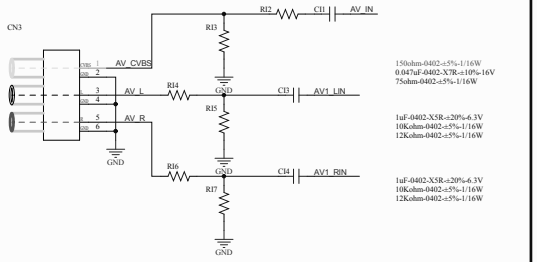

U1
TSU69ZBT
HDMI1_RXC_N
HDMI1_RXC_P
HDMI1_RX0_N
HDMI1_RX0_P
HDMI1_RX1_N
HDMI1_RX1_P
HDMI1_RX2_N
HDMI1_RX2_P
3V3_STB
HDMI2_CLKN
HDMI2_CLKP
HDMI2_RX0N
HDMI2_RX0P
HDMI2_RX1N
HDMI2_RX1P
HDMI2_RX2N
HDMI2_RX2P
VGA_HS
VGA_BIN
VGA_GIN
GINXN
VGA_RIN
VGA_VS
3V3_STB
YPBPR_PB
YPBPR_Y
GIN1N
YPBPR_PR
AV_IN
VCOM0
CVBS_OUT
AVDD_AU33
AV1_RIN
AV1_LIN
AUVAG
AUVRM
AV2_RIN
AV2_LIN
PC_RIN
PC_LIN
AV-OUTL
AV-OUTR
AMP-OUTL
AMP-OUTR
IFAGC
GPIO92
GPIO91
GPIO90
GPIO89
GPIO88
SPI_DO
SPI_CK
GPIO99
GPIO98
SPI_DI
GPIO97
GPIO96
VDDC
RESET
IRIN
PWM1/SPDIF_OUT
BRI_ADJ
TCON0
TCON1
TCON2
TCON3
TCON4
TCON5
TCON6
TCON7
PANEL_ON/OFF
LVSYNC
LHSYNC
LDE
LCK
R_ODD[7]/LVB0-
R_ODD[6]/LVB0+
R_ODD[5]/LVB1-
R_ODD[4]/LVB1+
AVDD_MOD
R_ODD[3]/LVB2-
R_ODD[2]/LVB2+
R_ODD[1]/LVBCLK-
R_ODD[0]/LVBCLK+
G_ODD[7]/LVB3-
G_ODD[6]/LVB3+
G_ODD[5]/LVB4-
G_ODD[4]/LVB4+
G_ODD[3]/LVA0-
G_ODD[2]/LVA0+
G_ODD[1]/LVA1-
TV JC Main Chip,TSU69ZBT-Z1-ST,32bit,Single-Core,LQFP156,SMD,Mstar


3V1_STB
AVDD_DMPLL
LF1
CF5
CF6
CF7
CF8
CF9
CF10
CF11
CF3
NC
CF12
LF2
AVDD_AU33
CF13
LF3
AVDD_DADC
CF14
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
1.15V_STB
LF4
DVDD_DDR
CF37
CF15
CF16
CF17
CF18
CF19
CF20
CF32
CF21
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
+1.8V_DDR
LF5
AVDD_DDR_DATA
CF22
CF23
CF24
CF25
10uF-0603-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V

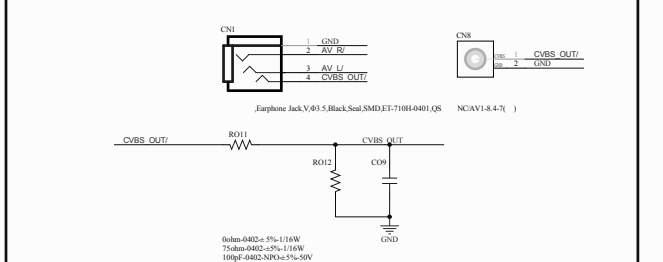

VCOM0
CF26
RF12
GIN0N
CF31
RF16
GIN1N
CF34
RF19
GND
0.047uF-0402-X7R-±10%-16V
180ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
68ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
68ohm-0402-±5%-1/16W


AUVRM
AUVAG
LF6
NC
CF27
CF28
GND
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
AMP_OUTL
AMP_OUTR
CF29
RF14
CF30
RF15
NC/1000pF-0402-X7R-±10%-50V
200Kohm-0402-±5%-1/16W
NC/1000pF-0402-X7R-±10%-50V
200Kohm-0402-±5%-1/16W

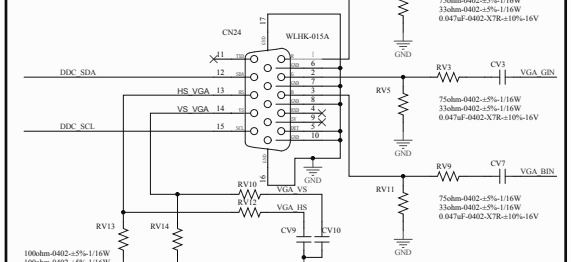

RF13
PWM0
RF18
PWM1_SPDIF_OUT
GND
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W

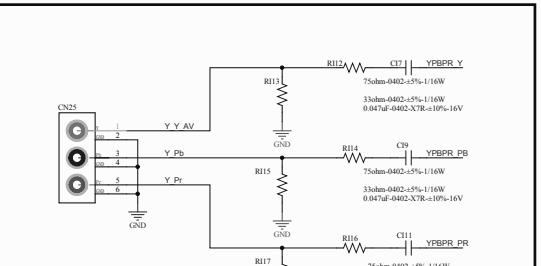


RCA ,RCA Jack,AV3,H,Yellow White Red,CH5.5,D14,Seal,DIP,AV3-8.4-07C-XSH,JSL

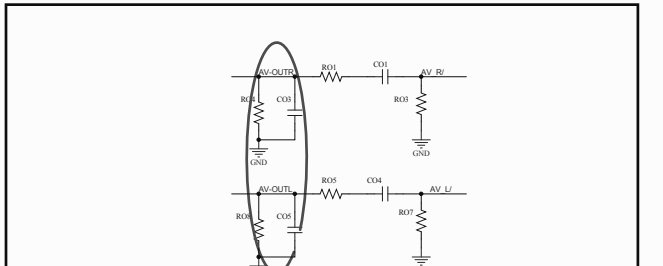


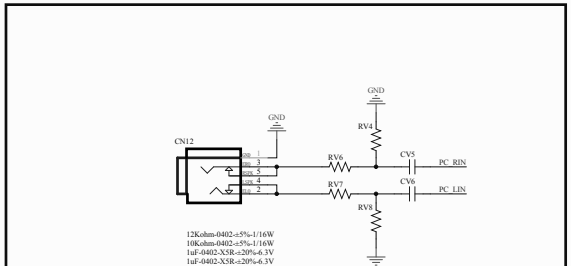
,Earphone Jack,V,Φ3.5,Black,Seal,SMD,ET-710H-0401,QS NC/AV1-8.4-7( )

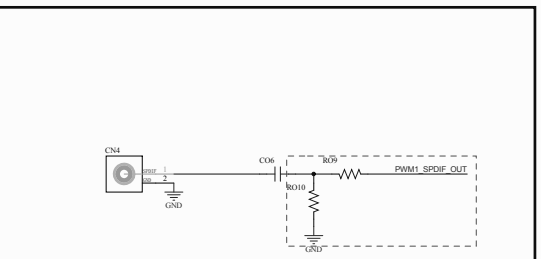




RCA ,RCA Jack,AV3,V,Green Blue Red,D14,DIP,CYB-3.2-3DL11-2-100(R),YK

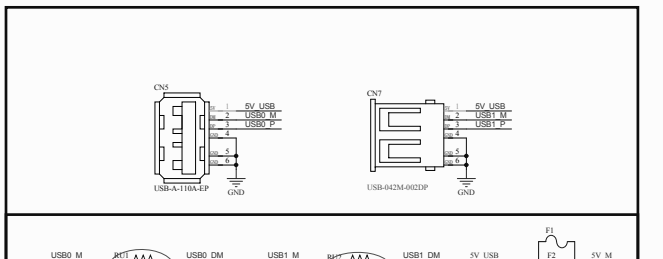


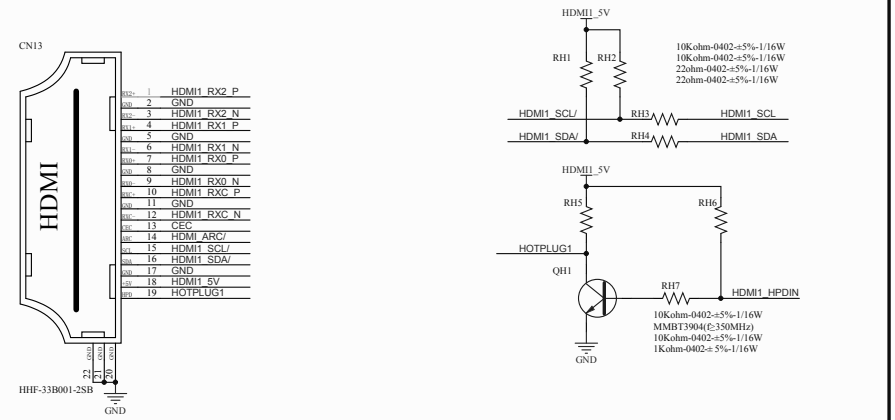




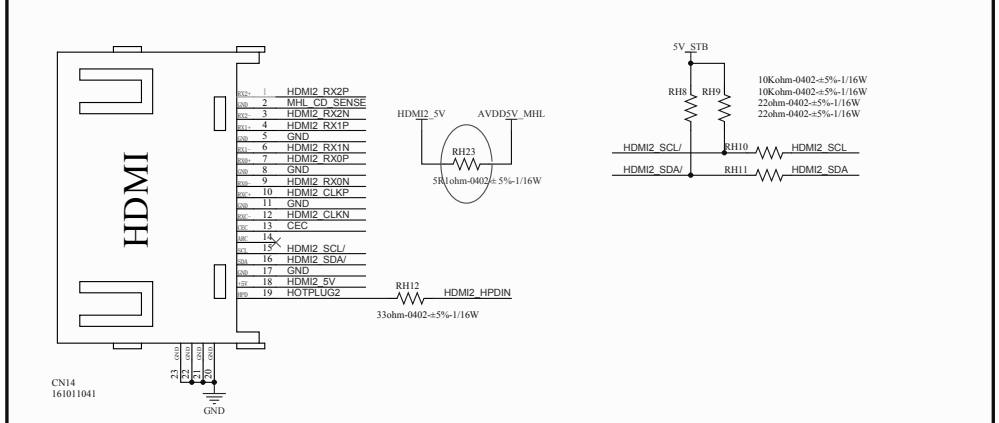
RCA ,RCA Jack,AV1,V,Orange,CH6.5,DIP,RCA-105H-EP-07Z 22ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W

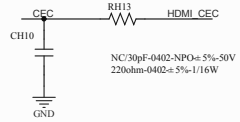
0.1uF-0402-X5R-±20%-16V

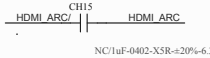


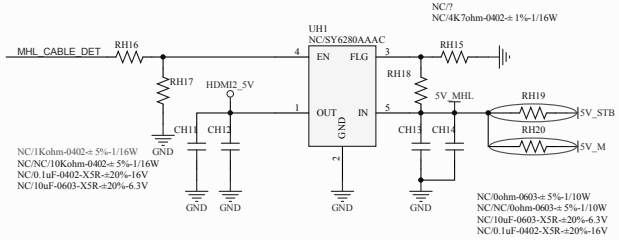

CN13
HDMI
HDMI1_RX2_P
GND
HDMI1_RX2_N
HDMI1_RX1_P
GND
HDMI1_RX1_N
HDMI1_RX0_P
GND
HDMI1_RX0_N
HDMI1_RXC_P
GND
HDMI1_RXC_N
CEC
HDMI_ARC/
HDMI1_SCL/
HDMI1_SDA/
GND
HDMI1_5V
HOTPLUG1
HHF-33B001-2SB
GND

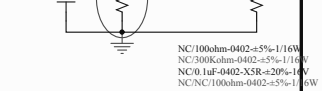
HDMI1_5V
RH1
RH2
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
HDMI1_SCL/
RH3
HDMI1_SCL
HDMI1_SDA/
RH4
HDMI1_SDA
HDMI1_5V
RH5
RH6
HOTPLUG1
QH1
RH7
HDMI1_HPDIN
10Kohm-0402-±5%-1/16W
MMBT3904(≧350MHz)
10Kohm-0402-±5%-1/16W
1Kohm-0402-± 5%-1/16W
GND

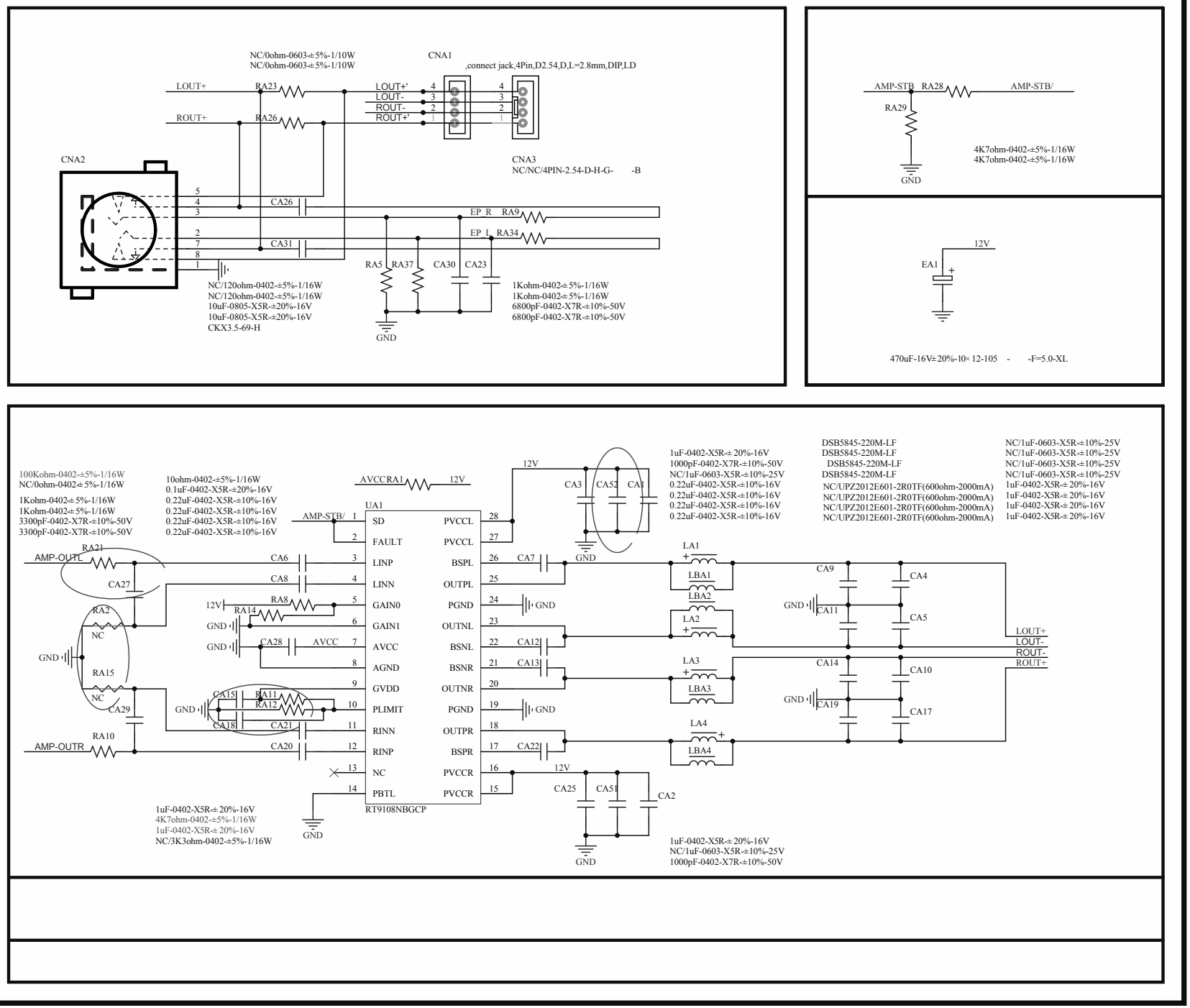

HDMI
HDMI2_RX2P
MHL_CD_SENSE
HDMI2_RX2N
HDMI2_RX1P
GND
HDMI2_RX1N
HDMI2_RX0P
GND
HDMI2_RX0N
HDMI2_CLKP
GND
HDMI2_CLKN
CEC
HDMI2_SCL/
HDMI2_SDA/
GND
HDMI2_5V
HOTPLUG2
CN14
161011041
GND
HDMI2_5V
AVDD5V_MHL
RH23
5R1ohm-0402-± 5%-1/16W
RH12
HDMI2_HPDIN
33ohm-0402-±5%-1/16W
5V_STB
RH8
RH9
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
HDMI2_SCL/
RH10
HDMI2_SCL
HDMI2_SDA/
RH11
HDMI2_SDA

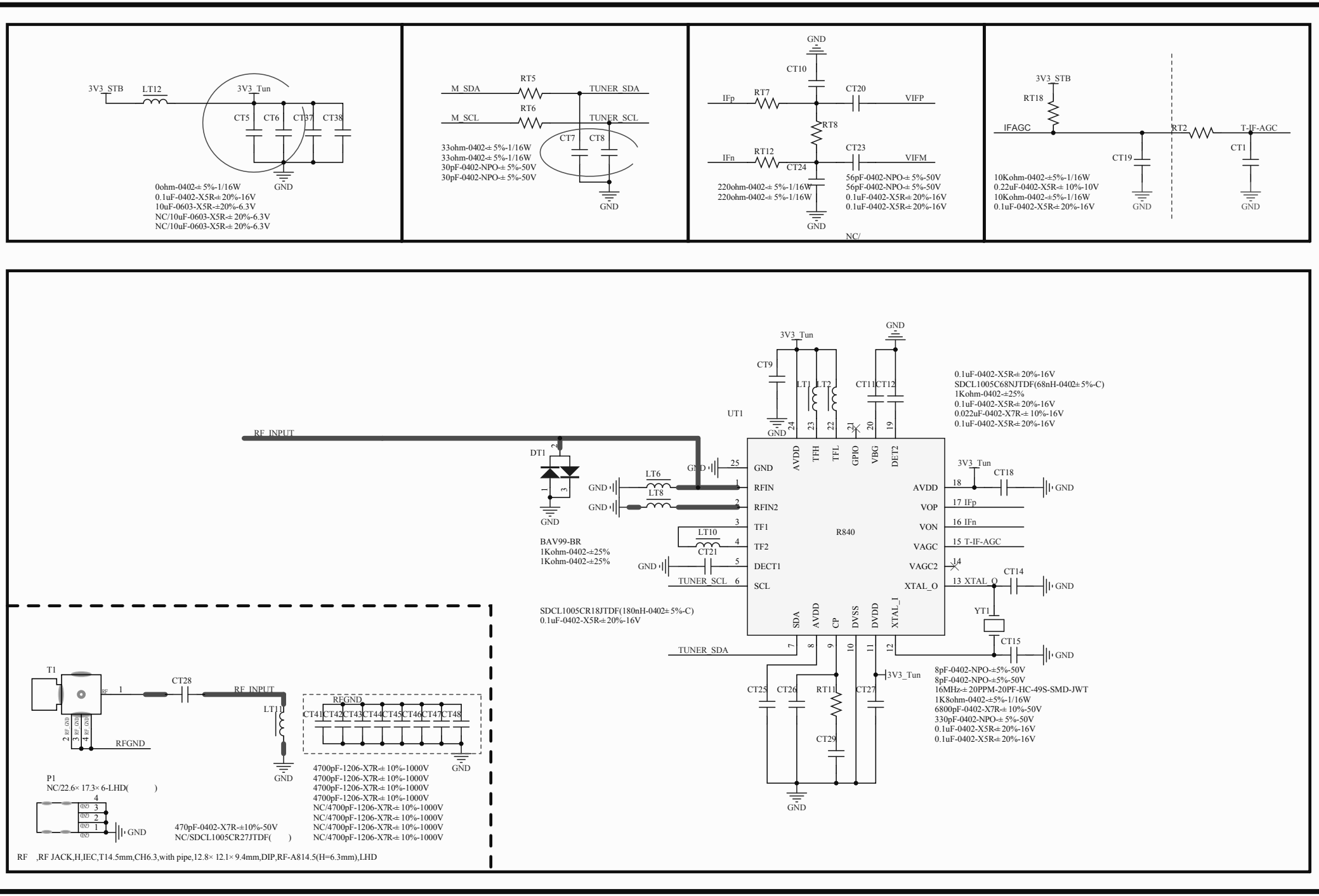

CEC
RH13
HDMI_CEC
CH10
NC/30pF-0402-NPO-± 5%-50V
220ohm-0402-± 5%-1/16W
GND

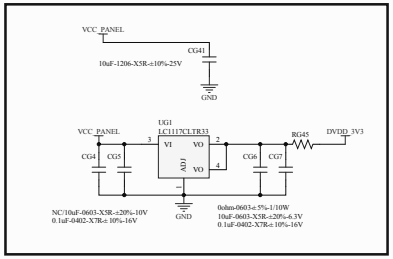

CH15
HDMI_ARC/
HDMI_ARC
NC/1uF-0402-X5R-±20%-6.3V

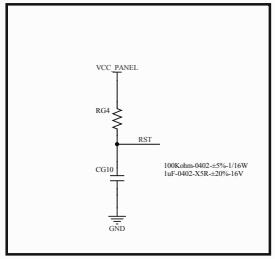

NC/?
NC/4K7ohm-0402-± 1%-1/16W
UH1
NC/SY6280AAAC
MHL_CABLE_DET
RH16
EN
FLG
RH15
RH17
HDMI2_5V
RH18
5V_MHL
RH19
5V_STB
OUT
IN
GND
RH20
5V_M
CH11
CH12
CH13
CH14
NC/1Kohm-0402-± 5%-1/16W
NC/NC/10Kohm-0402-± 5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/10uF-0603-X5R-±20%-6.3V
NC/0ohm-0603-± 5%-1/10W
NC/NC/0ohm-0603-± 5%-1/10W
NC/10uF-0603-X5R-±20%-6.3V
NC/0.1uF-0402-X5R-±20%-16V

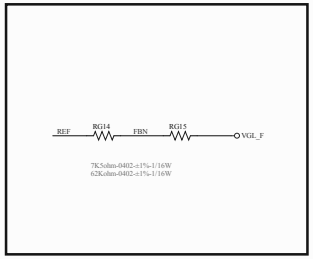

MHL_CD_SENSE
RH21
MHL_CABLE_DET
CH16
RH22
RH24
NC/100ohm-0402-±5%-1/16W
NC/300Kohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/NC/100ohm-0402-±5%-1/16W

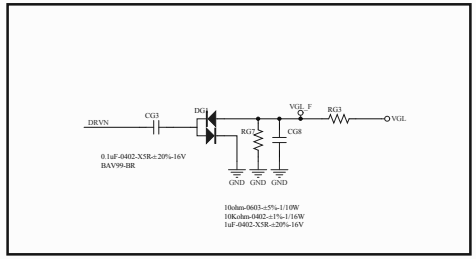

NC/0ohm-0603-±5%-1/10W
NC/0ohm-0603-±5%-1/10W
CNA1
,connect jack,4Pin,D2.54,D,L=2.8mm,DIP,LD
LOUT+
RA23
LOUT+'
LOUT-
ROUT-
ROUT+'
ROUT+
RA26
CNA2
CNA3
NC/NC/4PIN-2.54-D-H-G- -B
CA26
EP_R
RA9
EP_L
RA34
CA31
RA5
RA37
CA30
CA23
GND
NC/120ohm-0402-±5%-1/16W
NC/120ohm-0402-±5%-1/16W
10uF-0805-X5R-±20%-16V
10uF-0805-X5R-±20%-16V
CKX3.5-69-H
1Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
6800pF-0402-X7R-±10%-50V
6800pF-0402-X7R-±10%-50V
AMP-STB
RA28
AMP-STB/
RA29
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
12V
EA1
470uF-16V±20%-10× 12-105 - -F=5.0-XL
100Kohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
3300pF-0402-X7R-±10%-50V
3300pF-0402-X7R-±10%-50V
10ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
AVCC
RA1
12V
UA1
AMP-STB/
SD
FAULT
LINP
LINN
GAIN0
GAIN1
AVCC
AGND
GVDD
PLIMIT
RINN
RINP
NC
PBTL
PVCCL
PVCCL
BSPL
OUTPL
PGND
OUTNL
BSNL
BSNR
OUTNR
PGND
OUTPR
BSPR
PVCCR
PVCCR
RT9108NBGCP
CA3
CA52
CA1
1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
NC/1uF-0603-X5R-±10%-25V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
0.22uF-0402-X5R-±10%-16V
DSB5845-220M-LF
DSB5845-220M-LF
DSB5845-220M-LF
DSB5845-220M-LF
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/UPZ2012E601-2R0TF(600ohm-2000mA)
NC/1uF-0603-X5R-±10%-25V
NC/1uF-0603-X5R-±10%-25V
NC/1uF-0603-X5R-±10%-25V
NC/1uF-0603-X5R-±10%-25V
1uF-0402-X5R-±20%-16V
1uF-0402-X5R-±20%-16V
1uF-0402-X5R-±20%-16V
1uF-0402-X5R-±20%-16V
RA21
AMP-OUTL
CA27
RA2
NC
RA15
NC
CA29
RA10
AMP-OUTR
CA6
CA8
RA8
RA14
CA28
CA15
RA11
RA12
CA18
CA21
CA20
CA7
CA12
CA13
CA22
LA1
LBA1
LA2
LBA2
LA3
LBA3
LA4
LBA4
CA9
CA11
CA4
CA5
CA14
CA19
CA10
CA17
LOUT+
LOUT-
ROUT-
ROUT+
CA25
CA51
CA2
1uF-0402-X5R-±20%-16V
4K7ohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-16V
NC/3K3ohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-16V
NC/1uF-0603-X5R-±10%-25V
1000pF-0402-X7R-±10%-50V

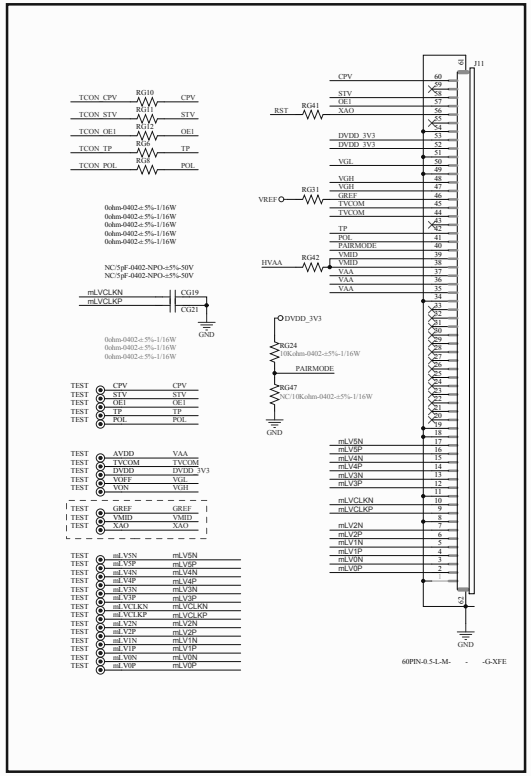

3V3_STB
LT12
3V3_Tun
CT5
CT6
CT37
CT38
0ohm-0402-± 5%-1/16W
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
NC/10uF-0603-X5R-± 20%-6.3V
NC/10uF-0603-X5R-± 20%-6.3V
GND
M_SDA
RT5
TUNER_SDA
M_SCL
RT6
TUNER_SCL
CT7
CT8
33ohm-0402-± 5%-1/16W
33ohm-0402-± 5%-1/16W
30pF-0402-NPO-± 5%-50V
30pF-0402-NPO-± 5%-50V
GND
CT10
IFp
RT7
CT20
VIFP
RT8
IFn
RT12
CT24
CT23
VIFM
220ohm-0402-± 5%-1/16W
220ohm-0402-± 5%-1/16W
56pF-0402-NPO-± 5%-50V
56pF-0402-NPO-± 5%-50V
0.1uF-0402-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
GND
NC/
3V3_STB
RT18
IFAGC
RT2
T-IF-AGC
CT19
CT1
10Kohm-0402-±5%-1/16W
0.22uF-0402-X5R-± 10%-10V
10Kohm-0402-±5%-1/16W
0.1uF-0402-X5R-± 20%-16V
GND
GND
RF_INPUT
DT1
BAV99-BR
1Kohm-0402-±25%
1Kohm-0402-±25%
UT1
3V3_Tun
CT9
LT1
LT2
CT11
CT12
0.1uF-0402-X5R-± 20%-16V
SDCL1005C68NJTDF(68nH-0402± 5%-C)
1Kohm-0402-±25%
0.1uF-0402-X5R-± 20%-16V
0.022uF-0402-X7R-± 10%-16V
0.1uF-0402-X5R-± 20%-16V
LT6
LT8
LT10
CT21
TUNER_SCL
SDCL1005CR18JTDF(180nH-0402± 5%-C)
0.1uF-0402-X5R-± 20%-16V
R840
GND
RFIN
RFIN2
TF1
TF2
DECT1
SCL
AVDD
TFH
TFL
GPIO
VBG
DET2
VOP
VON
VAGC
VAGC2
XTAL_O
XTAL_I
SDA
CP
DVSS
DVDD
CT18
CT14
YT1
CT15
TUNER_SDA
3V3_Tun
CT25
CT26
RT11
CT27
CT29
8pF-0402-NPO-±5%-50V
8pF-0402-NPO-±5%-50V
16MHz-± 20PPM-20PF-HC-49S-SMD-JWT
1K8ohm-0402-±5%-1/16W
6800pF-0402-X7R-± 10%-50V
330pF-0402-NPO-± 5%-50V
0.1uF-0402-X5R-± 20%-16V
0.1uF-0402-X5R-± 20%-16V
T1
CT28
RF_INPUT
LT11
RFGND
CT41
CT42
CT43
CT44
CT45
CT46
CT47
CT48
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
NC/4700pF-1206-X7R-± 10%-1000V
P1
NC/22.6× 17.3× 6-LHD( )
470pF-0402-X7R-±10%-50V
NC/SDCL1005CR27JTDF( )
RF ,RF JACK,H,IEC,T14.5mm,CH6.3,with pipe,12.8× 12.1× 9.4mm,DIP,RF-A814.5(H=6.3mm),LHD

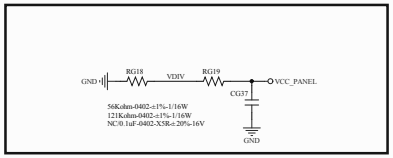

VCC_PANEL
CG41
10uF-1206-X5R-±10%-25V
GND
UG1
LC1117CLTR33
VCC_PANEL
VI
VO
ADJ
RG45
DVDD_3V3
CG4
CG5
CG6
CG7
NC/10uF-0603-X5R-±20%-10V
0.1uF-0402-X7R-±10%-16V
0ohm-0603-±5%-1/10W
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X7R-±10%-16V

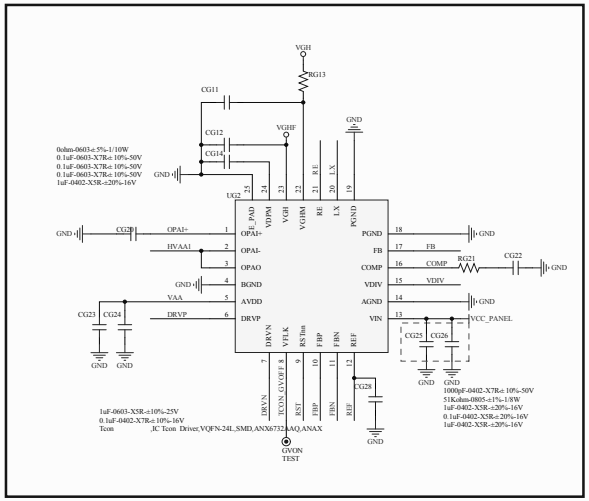

VCC_PANEL
RG4
RST
CG10
100Kohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-16V
GND

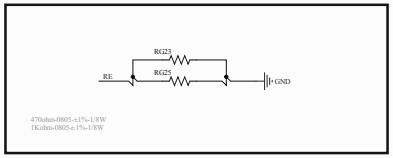

REF
RG14
FBN
RG15
VGL_F
7K5ohm-0402-±1%-1/16W
62Kohm-0402-±1%-1/16W

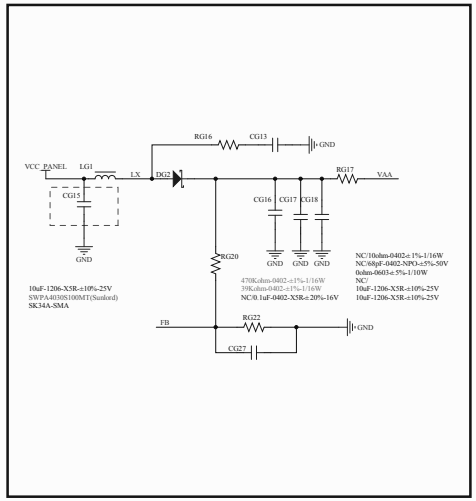

DRVN
CG3
DG1
VGL_F
RG3
VGL
RG2
CG8
0.1uF-0402-X5R-±20%-16V
BAV99-BR
GND
10ohm-0603-±5%-1/10W
10Kohm-0402-±1%-1/16W
1uF-0402-X5R-±20%-16V

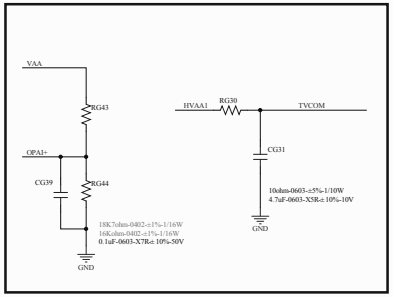

TCON_CPV
TCON_STV
TCON_OE1
TCON_TP
TCON_POL
RG10
RG11
RG16
RG17
RG19
CPV
STV
OE1
TP
POL
0ohm-0402-±5%-1/16W
NC/5pF-0402-NPO/-±5%-50V
mLVCLKN
mLVCLKP
CG19
CG21
TEST
AVDD
TVCOM
DVDD
VOFF
VON
VGL
VGH
GREF
VMID
XAO
mLV5N
mLV5P
mLV4N
mLV4P
mLV3N
mLV3P
mLV2N
mLV2P
mLV1N
mLV1P
mLV0N
mLV0P
J11
RST
RG41
VREF
RG31
HVAA
RG42
DVDD_3V3
RG24
10Kohm-0402-±5%-1/16W
PAIRMODE
RG47
NC/10Kohm-0402-±5%-1/16W
60PIN-0.5-L-M-
-G-XFE

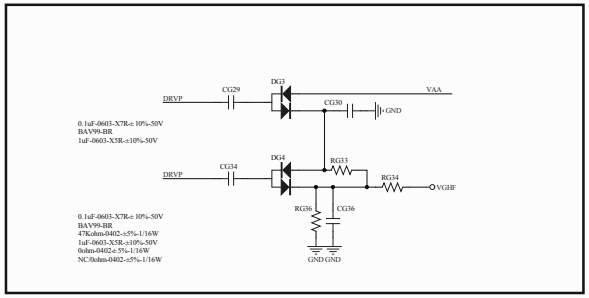

RG18
VDIV
RG19
VCC_PANEL
GND
CG37
56Kohm-0402-±1%-1/16W
121Kohm-0402-±1%-1/16W
NC/0.1uF-0402-X5R-±20%-16V

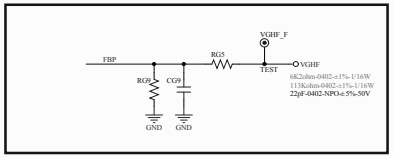

VGH
RG13
CG11
CG12
CG14
VGHF
GND
0ohm-0603-±5%-1/10W
0.1uF-0603-X7R-±10%-50V
0.1uF-0603-X7R-±10%-50V
0.1uF-0603-X7R-±10%-50V
1uF-0402-X5R-±20%-16V
UG2
EP_PAD
VDPM
VGH
VGHM
RE
LX
PGND
OPAI+
OPAI-
OPAO
BGND
AVDD
DRVP
PGND
FB
COMP
VDIV
AGND
VIN
HVAA1
VAA
CG23
CG24
RG21
CG22
CG25
CG26
VCC_PANEL
DRVN
VCLK
RSTbn
FBP
FBN
REF
TCON_GVOFF
RST
CG28
1uF-0603-X5R-±10%-25V
0.1uF-0402-X7R-±10%-16V
Tcon
JC Tcon Driver,VQFN-24L,SMD,ANX6732AAQ,ANAX
CVON
TEST
1000pF-0402-X7R-±10%-50V
51Kohm-0805-±1%-1/8W
1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
1uF-0402-X5R-±20%-16V

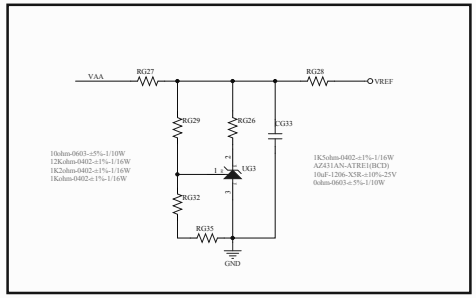

RG23
RE
RG25
GND
470ohm-0805-±1%-1/8W
1Kohm-0805-±1%-1/8W

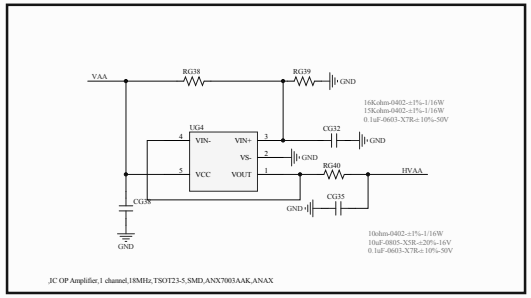

VCC_PANEL
LG1
LX
DG2
RG16
CG13
RG17
VAA
CG15
CG16
CG17
CG18
RG20
RG22
FB
CG27
10uF-1206-X5R-±10%-25V
SWPA4030S100MT(Sunlord)
SK34A-SMA
470Kohm-0402-±1%-1/16W
39Kohm-0402-±1%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/10ohm-0402-±1%-1/16W
NC/68pF-0402-NPO-±5%-50V
0ohm-0603-±5%-1/10W
NC/
10uF-1206-X5R-±10%-25V
10uF-1206-X5R-±10%-25V


VAA
RG43
HVAA1
RG30
TVCOM
OPAI+
CG39
RG44
CG31
18K7ohm-0402-±1%-1/16W
16Kohm-0402-±1%-1/16W
0.1uF-0603-X7R-±10%-50V
10ohm-0603-±5%-1/10W
4.7uF-0603-X5R-±10%-10V
GND


DRVP
CG29
DG3
VAA
CG30
0.1uF-0603-X7R-±10%-50V
BAV99-BR
1uF-0603-X5R-±10%-50V
CG34
DG4
RG33
RG34
VGHF
RG36
CG36
0.1uF-0603-X7R-±10%-50V
BAV99-BR
47Kohm-0402-±5%-1/16W
1uF-0603-X5R-±10%-50V
0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W

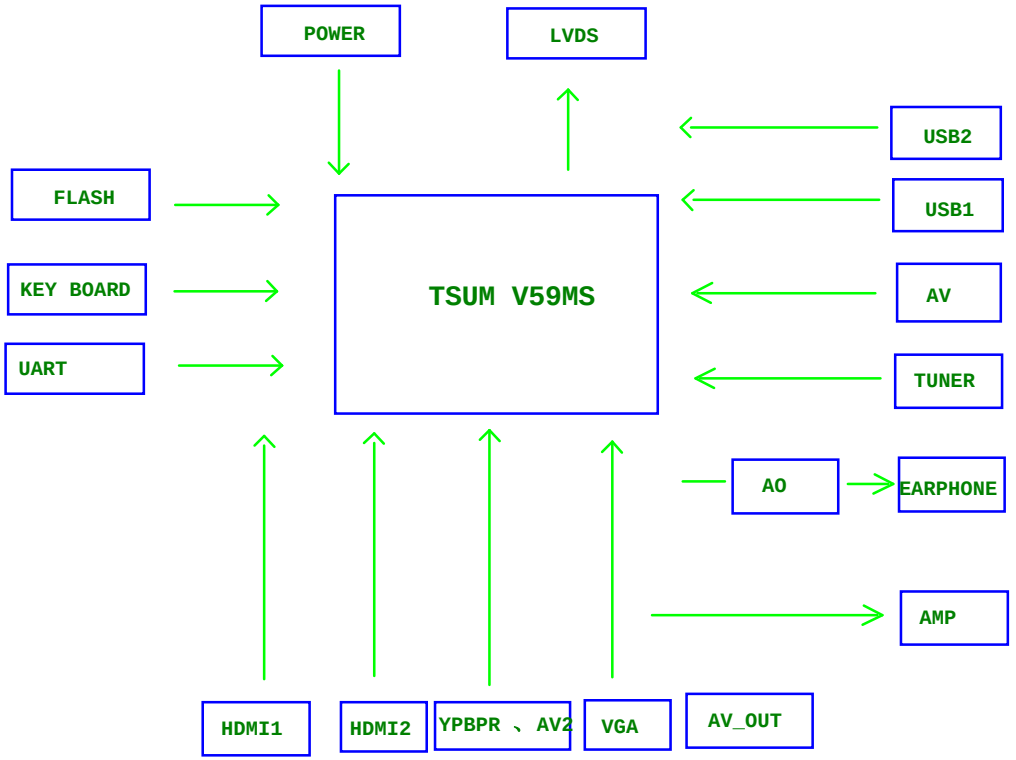

VGHF_F
FBP
RG5
TEST
VGHF
RG8
CG9
68Kohm-0402-±1%-1/16W
113Kohm-0402-±1%-1/16W
22pF-0402-NPO-±5%-50V


VAA
RG27
RG28
VREF
RG29
RG26
CG33
RG32
RG35
UG3
10ohm-0603-±5%-1/10W
12Kohm-0402-±1%-1/16W
1K2ohm-0402-±1%-1/16W
18Kohm-0402-±1%-1/16W
1K5ohm-0402-±1%-1/16W
AZ431AN-ATRE1(BCD)
10uF-1206-X5R-±10%-25V
0ohm-0603-±5%-1/10W

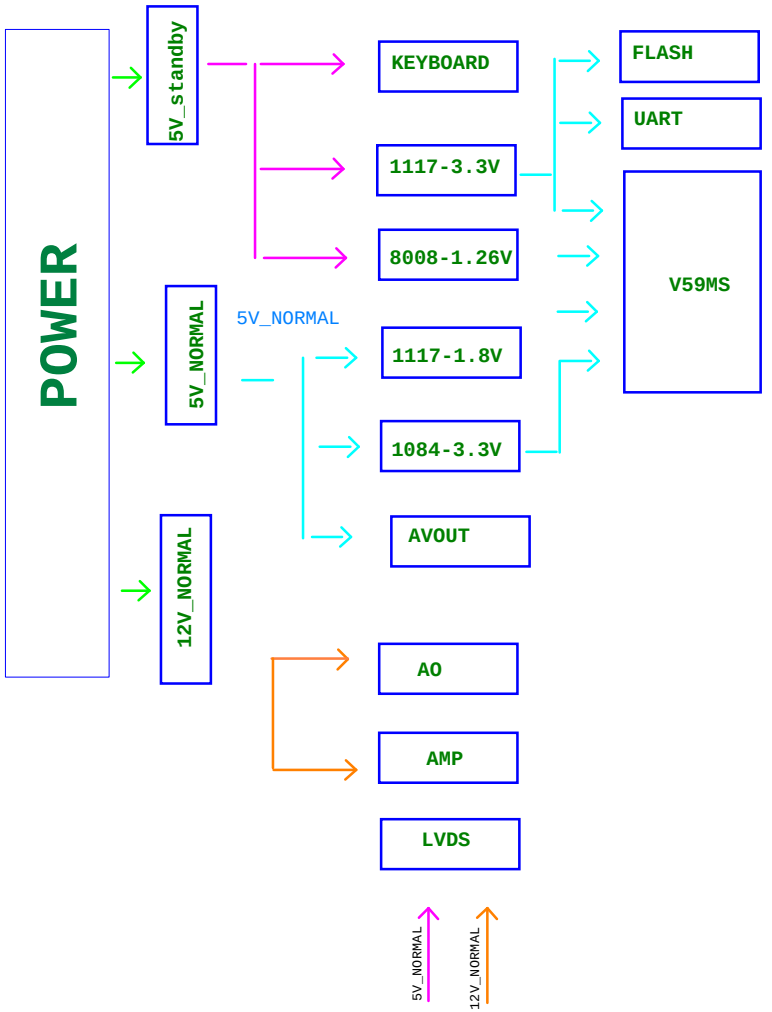

VAA
RG38
RG39
GND
UG4
VIN-
VIN+
VS-
VCC
VOUT
CG32
CG35
CG34
HVAA
16Kohm-0402-±1%-1/16W
15Kohm-0402-±1%-1/16W
0.1uF-0603-X7R-±10%-50V
10ohm-0402-±1%-1/16W
10uF-0805-X5R-±20%-16V
0.1uF-0603-X7R-±10%-50V
JC OP Amplifier, 1 channel,18MHz,TSOT23-5,SMD,ANX7003AAK,ANAX

http://www.schematic4you.blogspot.com

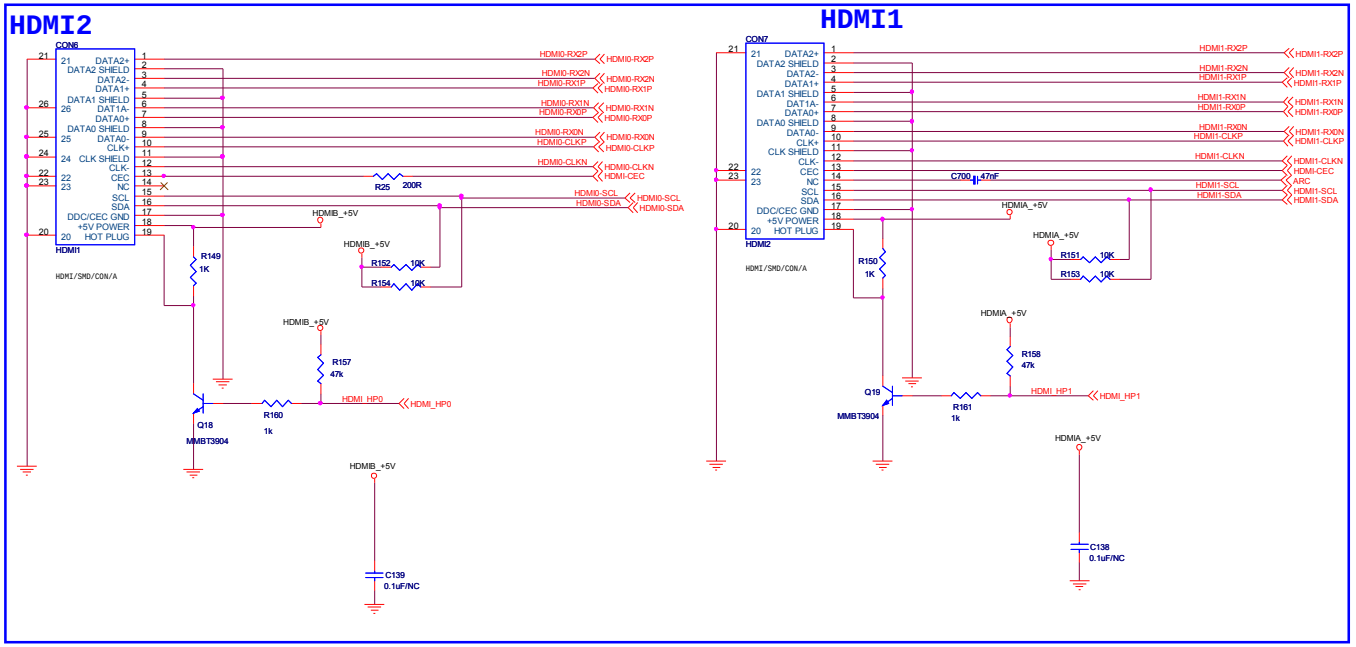
TSUM V59MS T9B 方框图

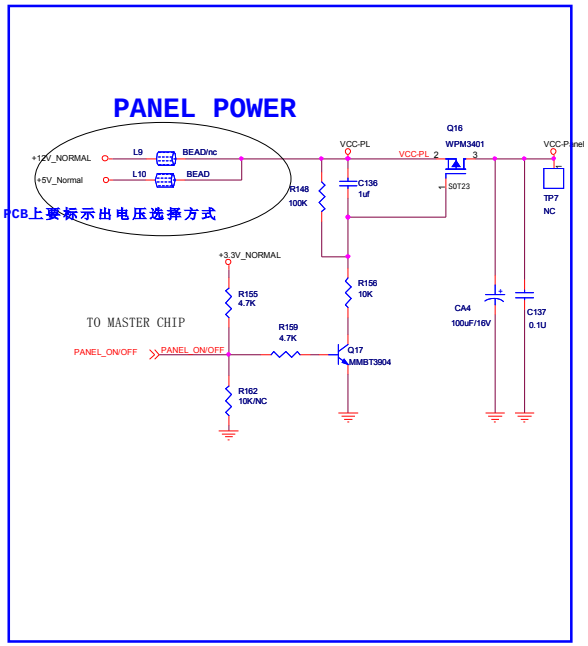


TSUM V59MS T9B 供电图



KTC ISO 001 、ISO1 001体系文件			
文件名称: TS MV5 MS T B			
文件编号: T4182	版号: V1	页数: 0	
设计: 李汉新	审核:	批准:	
文件编号: 研发处 生效日期: 12年 0月 2日			

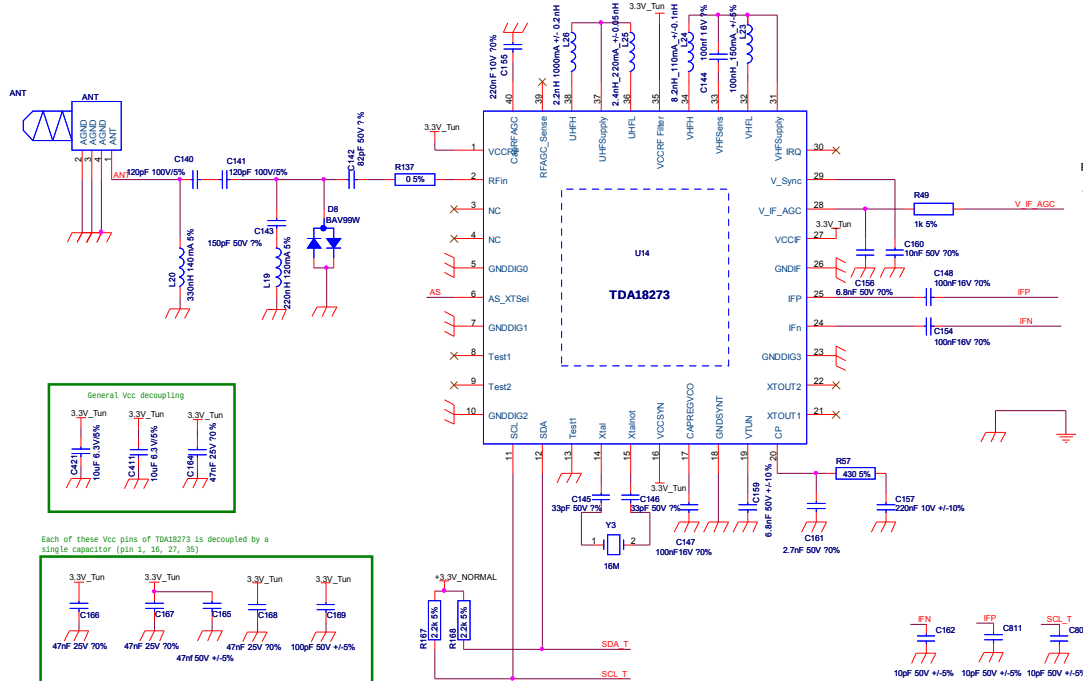


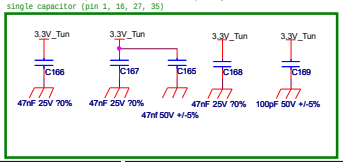


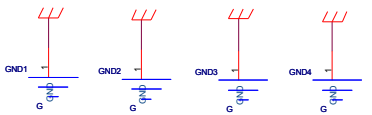
TUNER AGC,Close TUNER

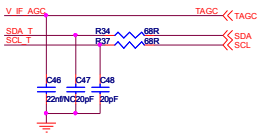
TUNER

高频头差分电路

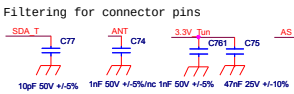






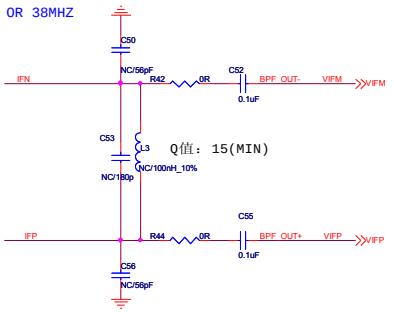


Filtering for connector pins



C359=180P,FOR 38.9MHZ OR 38MHZ(PAL)
C359=100P,FOR 45.75MHZ(NTSC)

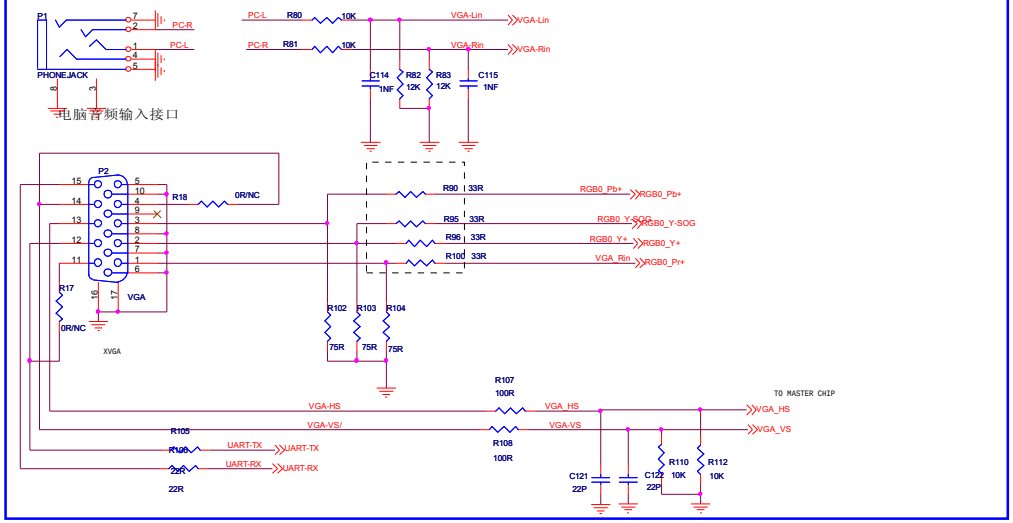
BPF FOR 38.9MHz OR 38MHz



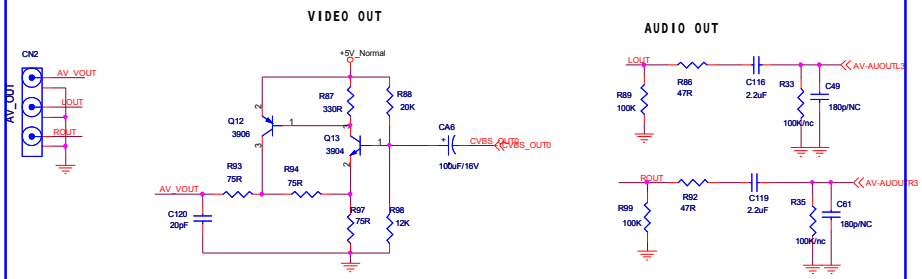
BPF_IN

KTC ISO 001 、ISO1 001体系文件	
文件名称：TS MV5 MS T B	
文件编号：T4182 版号：V1	页数：
设计： 李汉新 审核： 刘文铁 批准：	
文件编号：研发处 生效日期：12年 0 月 2日	

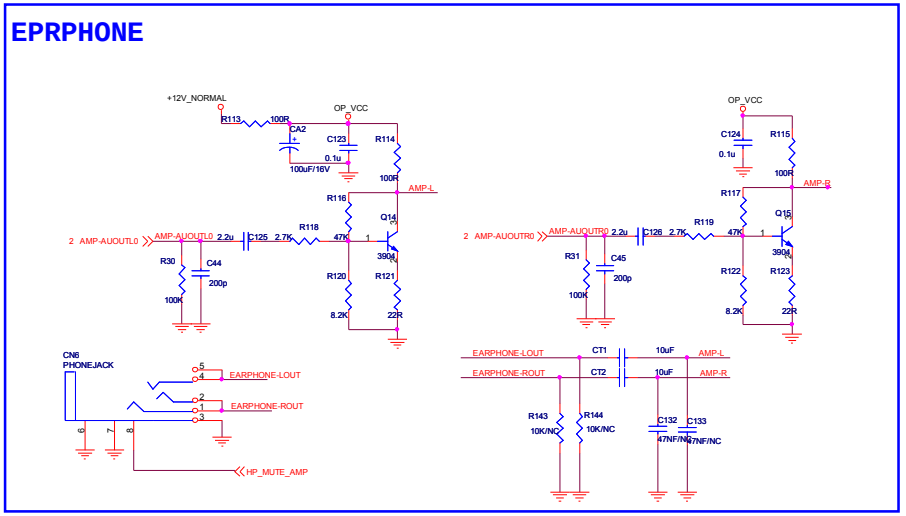
VGA



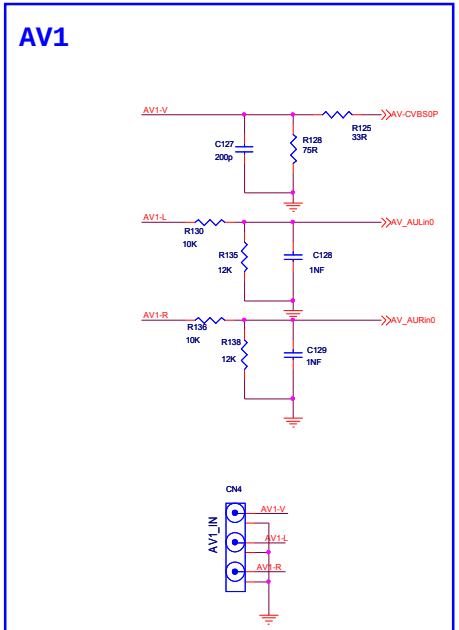
AV_OUT



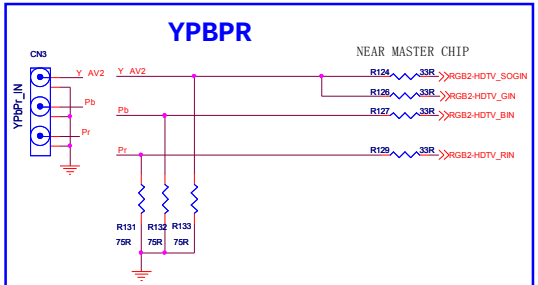
EPRPHONE



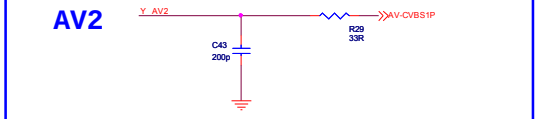
AV1

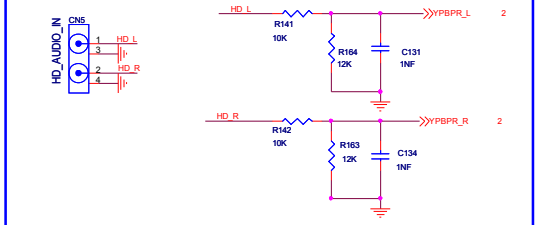


YPBPR

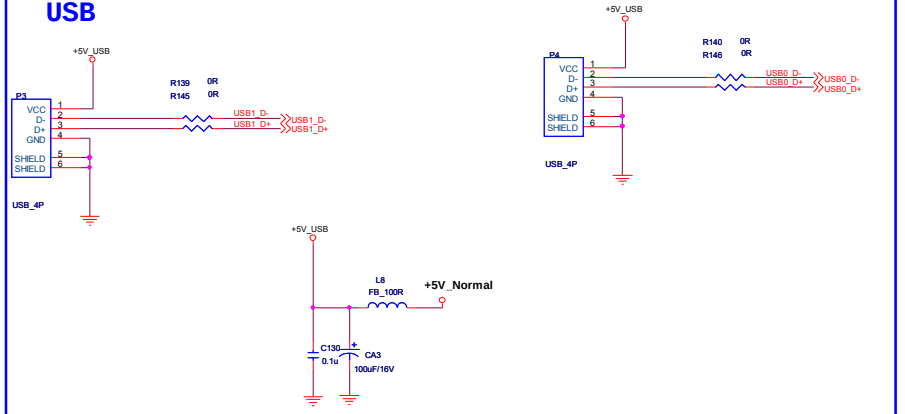


AV2

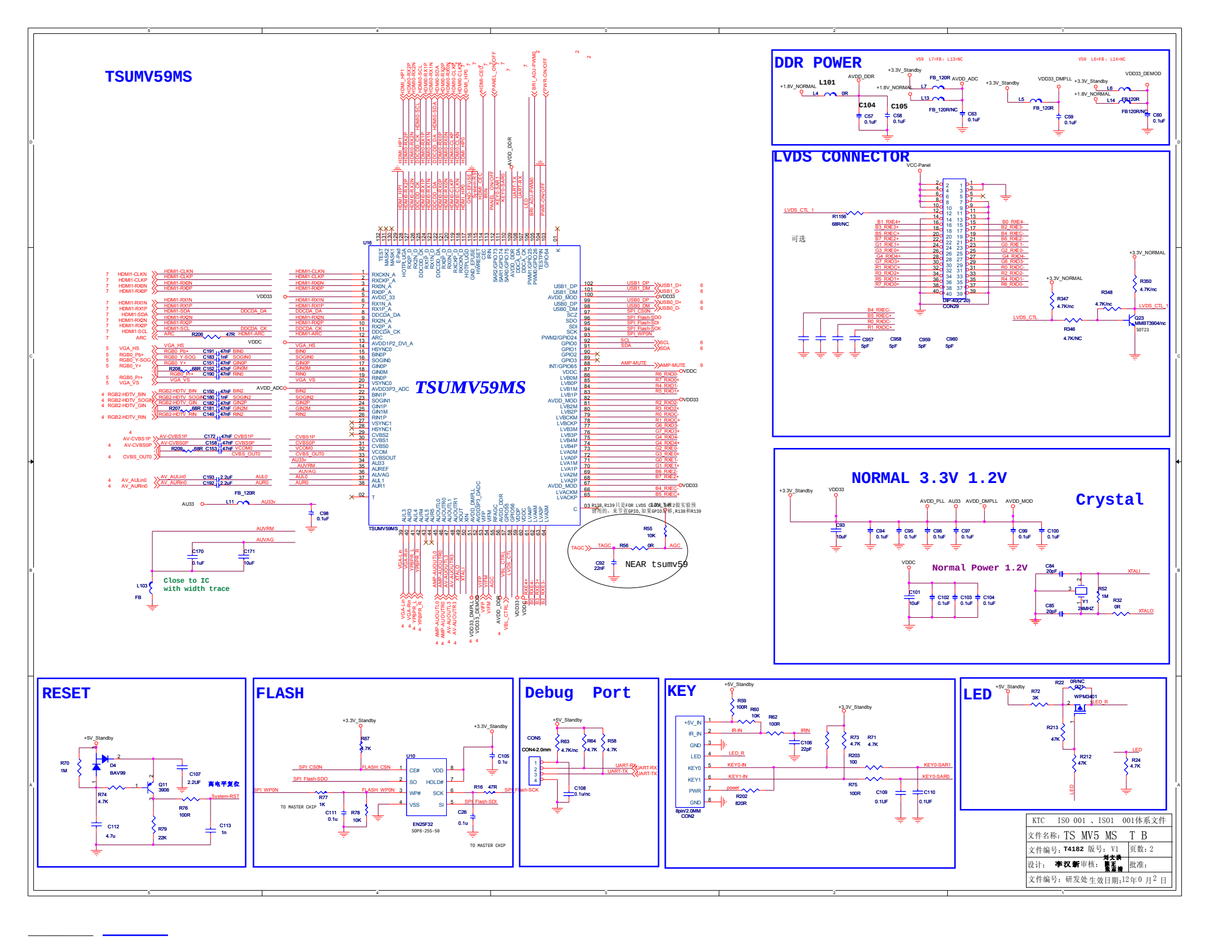


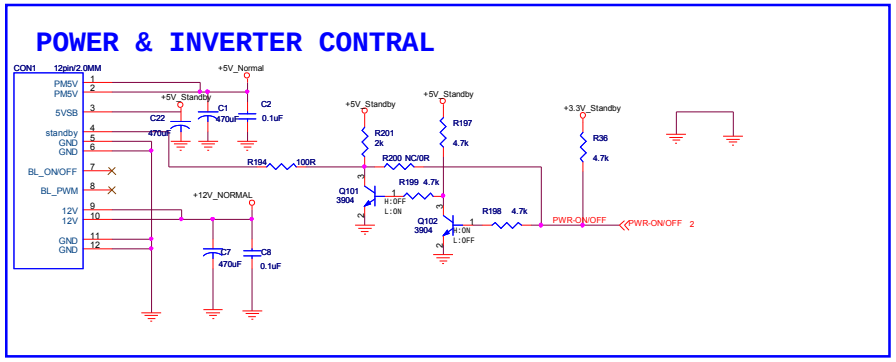


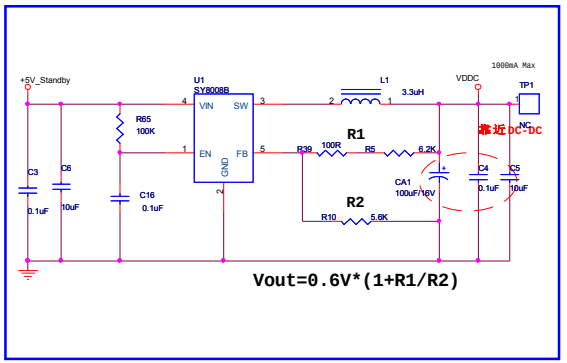
USB

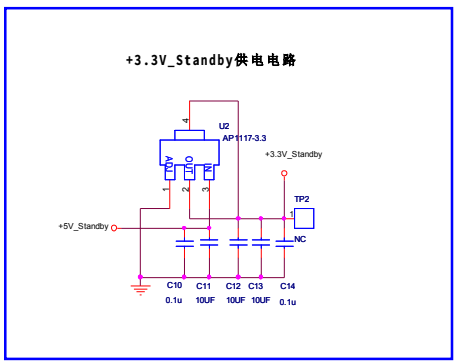


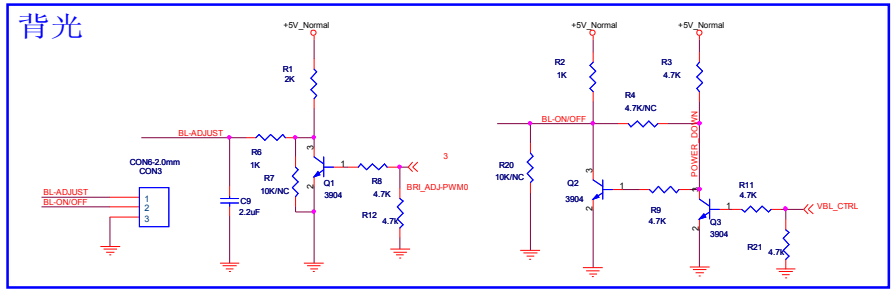
KTC ISO 001 、ISO1 001体系文件		
文件名称: TS MV5 MS T B		
文件编号: T4182 版号: V1	页数:	
设计: 李汉新 审核: 刘文谈	批准:	
文件编号: 研发处生效日期:12年0月2日		

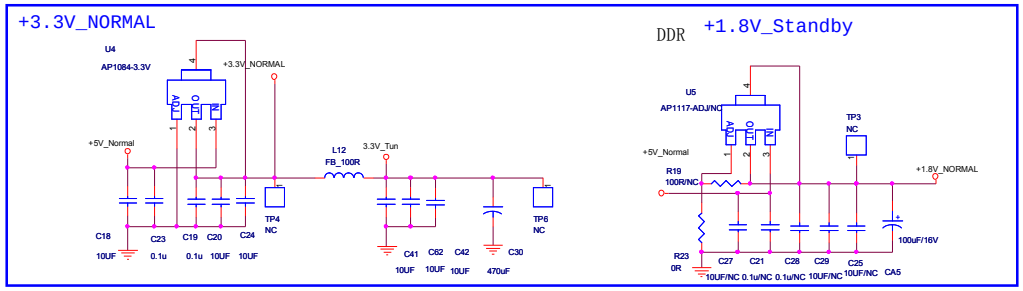

TSUMV59MS
TSUMV59MS
DDR POWER
L101
C104
C105
LVDS CONNECTOR
VCC-Panel
CON29
NORMAL 3.3V 1.2V
Crystal
Normal Power 1.2V
RESET
FLASH
Debug Port
KEY
LED
Close to IC
with width trace
NEAR tsumv59
EN25F32
CON2
KTC ISO 001 、ISO1 001体系文件
文件名称：TS MV5 MS T B
文件编号：T4182 版号：V1 页数：2
设计： 李汉新 审核： 批准：
文件编号：研发处 生效日期：12年0 月2 日

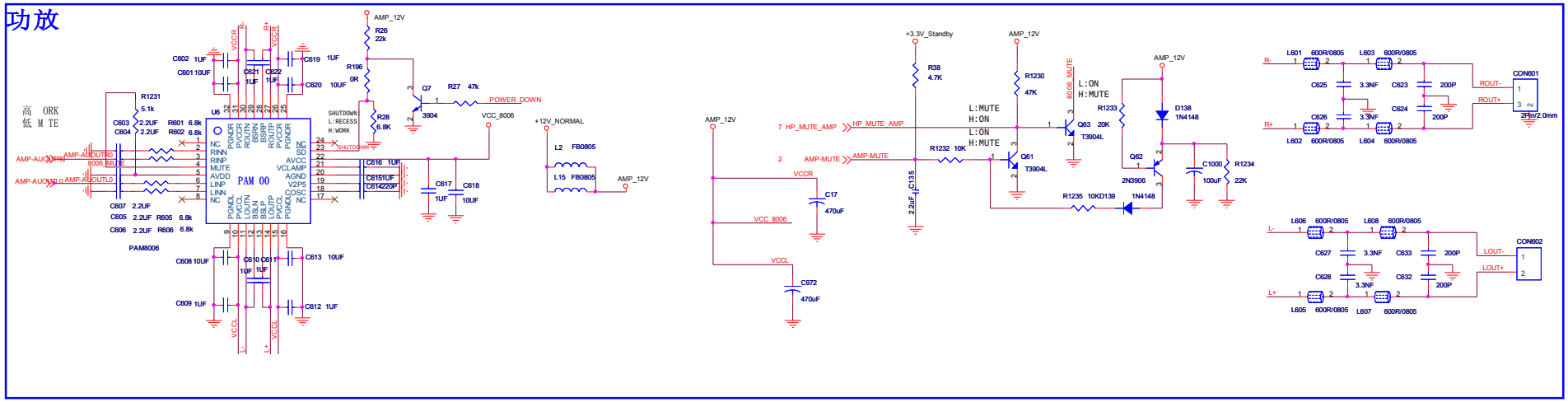


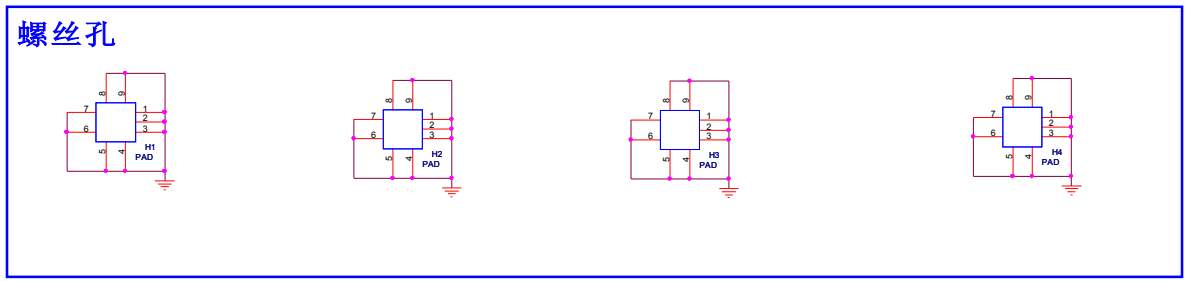


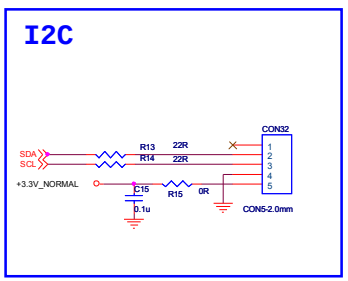












KTC ISO 001 、ISO1 001体系文件		
文件名称: TS MV5 MS T B		
文件编号: T4182 版号: V1	页数: 1	
设计: 李汉新 审核: 刘文换	批准:	
文件编号: 研发处 生效日期:12 年0 月2 日		

V5 MS T B原理图修改记录

序号	修改内容或方法	修改时间	备注	序号	修改内容或方法	修改时间	备注
1							
2							
5							
10							
11							
12							
1							
1							
15							

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HDMI / USB

③

U4

MSD8WB9BX

GPIO

U4

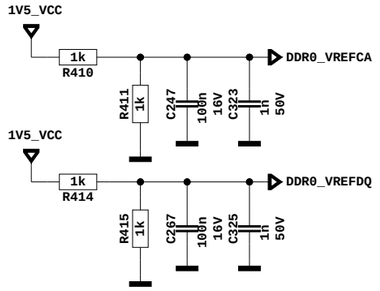
MSD8WB9BX

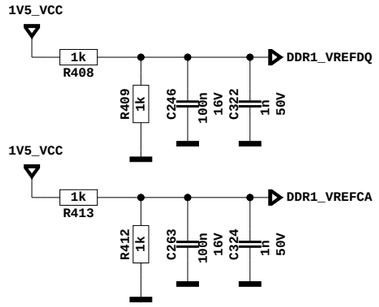
GPIO

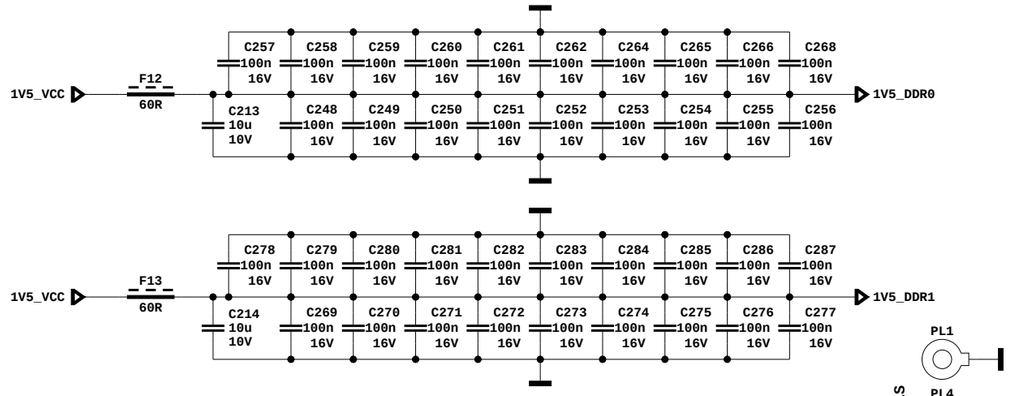
1V2 - 1V25 -1V5 - 2V5 - 3V3 FROM ICs POWER GOOD PINS

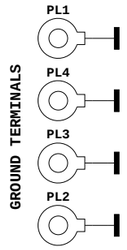
SHORT CCT PROTECTION

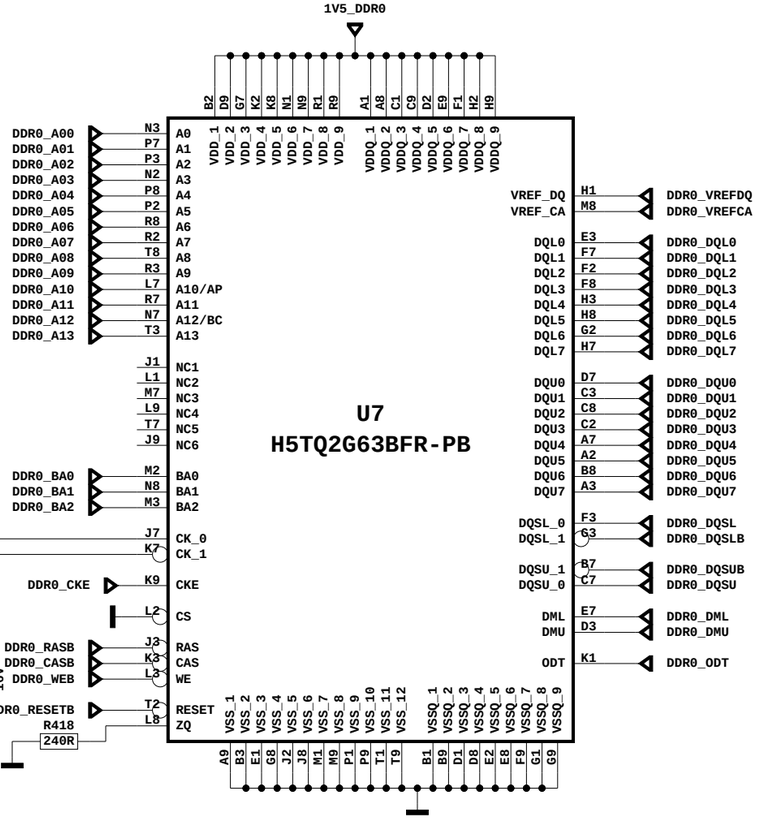
VESTEL	PROJECT NAME : 17mb95-2	A3
SCH NAME :01_HDMI_GPIO_PROT		T. SHT10
DRAWN BY :<YOUR NAME HERE>		20-07-2012_14:33

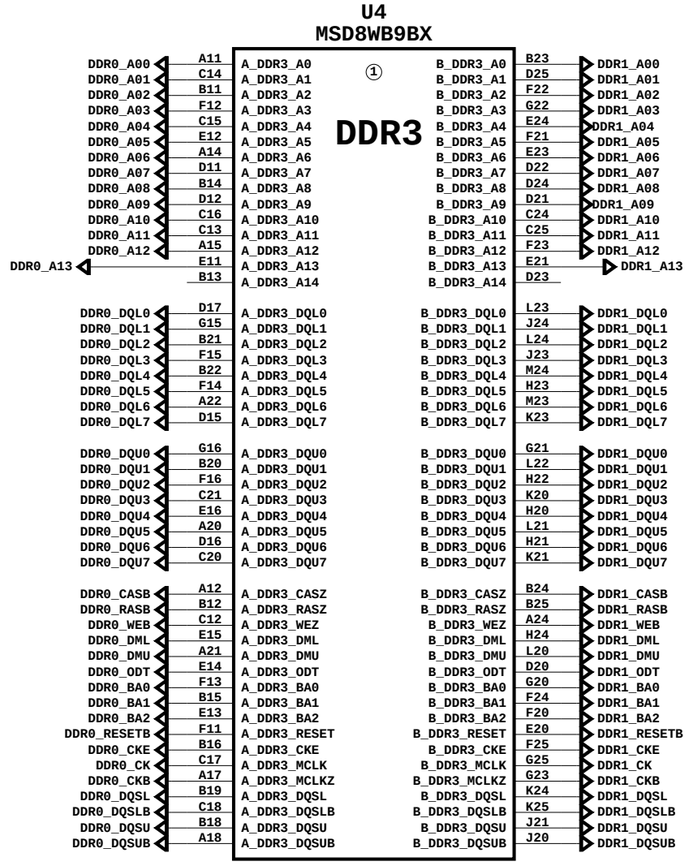


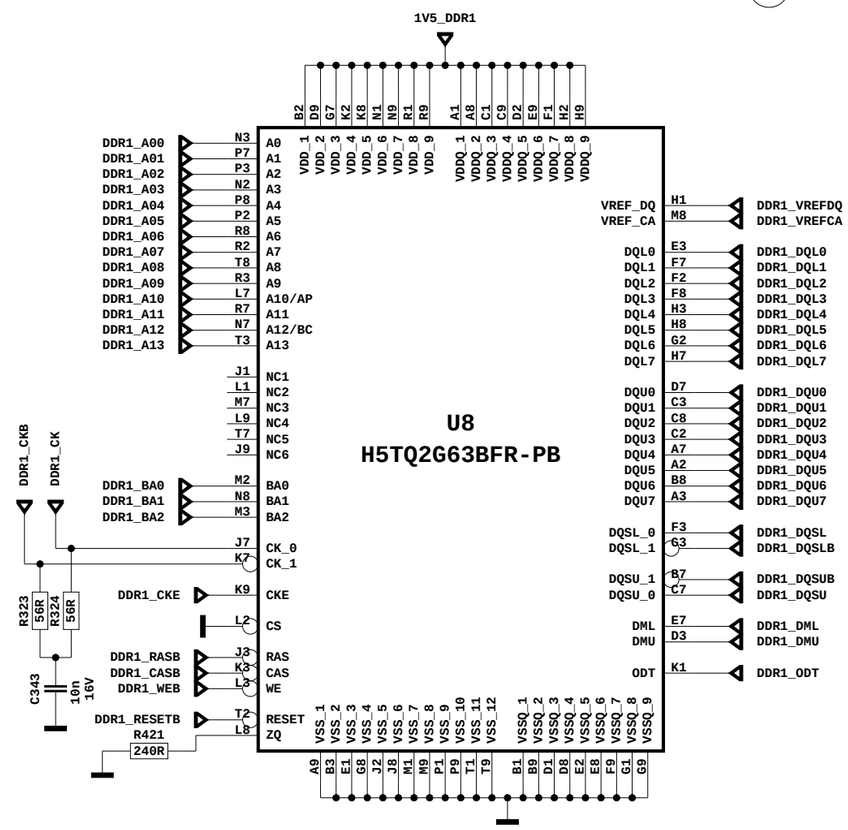




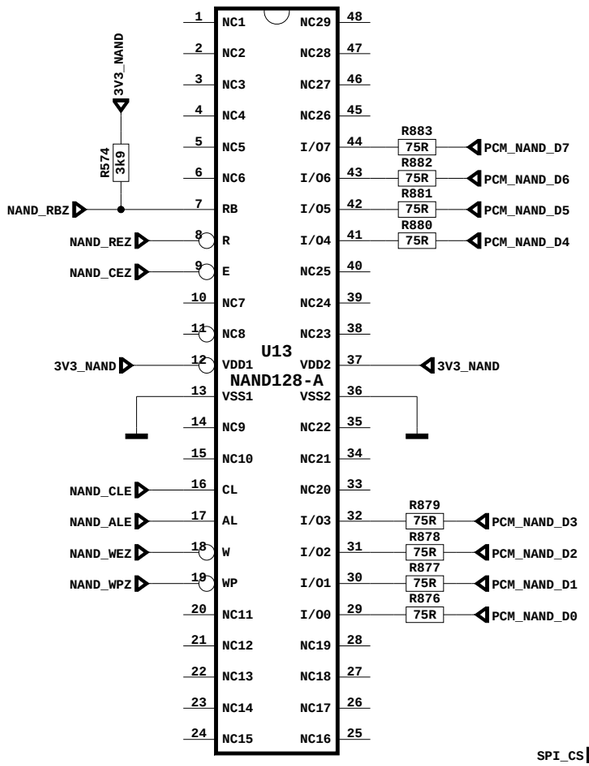


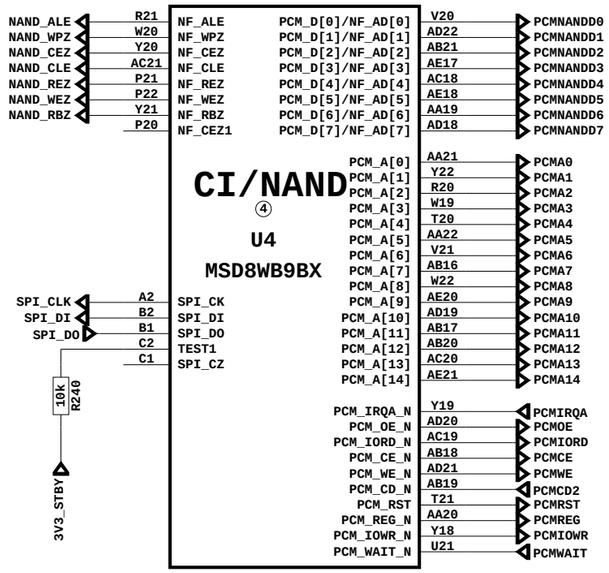




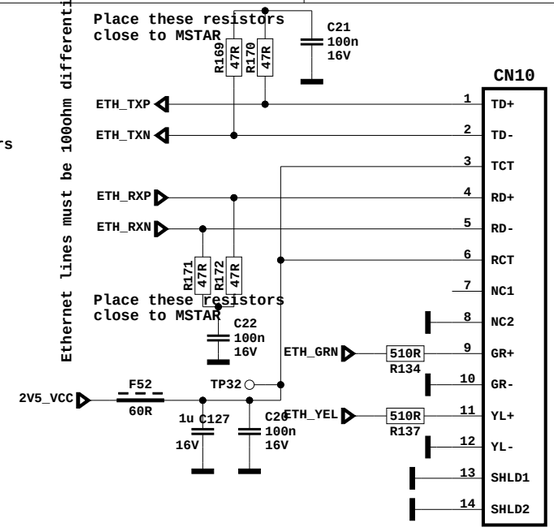


VESTEL	PROJECT NAME : 17mb95	A3
SCH NAME :02_MSTAR_DDR3		T. SHT 10
DRAWN BY :ALP KIRAZ-BARAN ÇUBUKÇU		06-04-2012_10:54

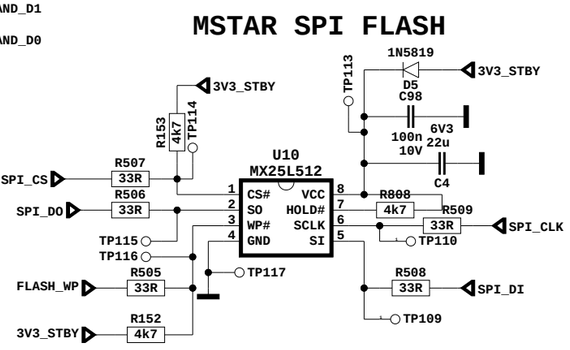


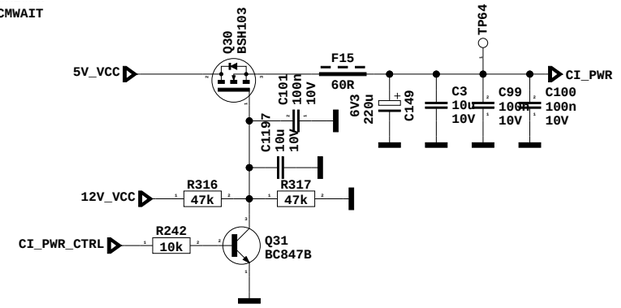


Place these capacitors close to transformer
speed nets, except for the chassis ground.
Also keep traces short and route as matched length differential pairs. Do not place any parts or traces under the transformer.

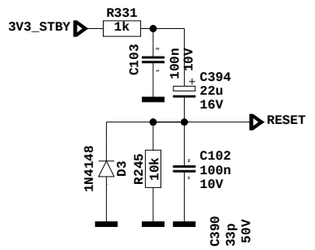


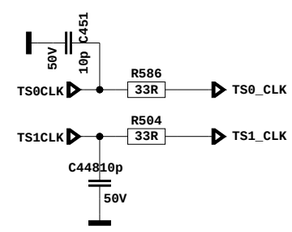
MSTAR SPI FLASH

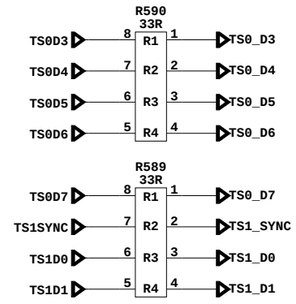


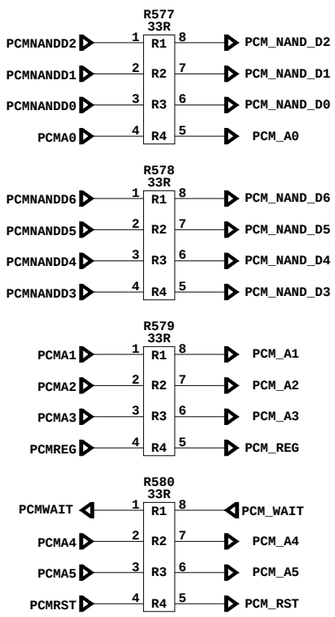


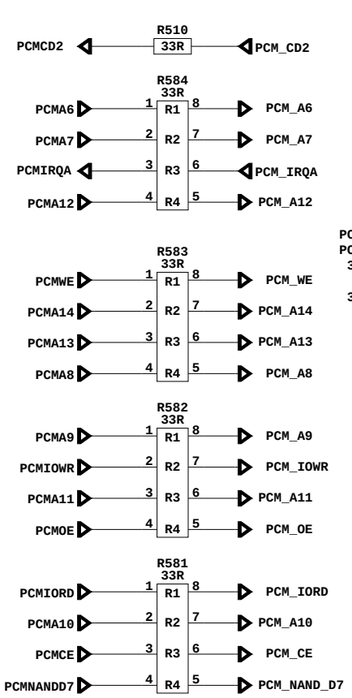
RESET

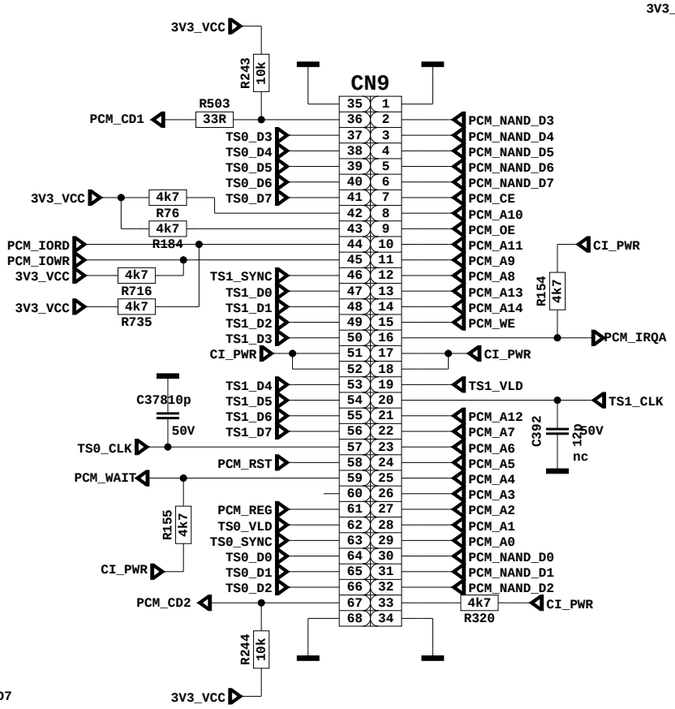


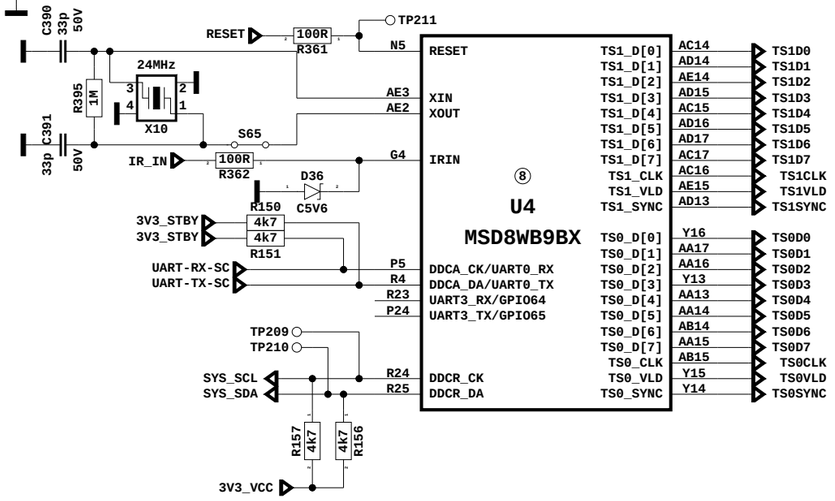












VESTEL	PROJECT NAME : 17mb95	A3
SCH NAME :03_CI_ETH_NAND		T. SHT 10
DRAWN BY :ALP KIRAZ-BARAN ÇUBUKÇU		02-08-2012_15:11

USB & WIFI

24 MHz CRYSTAL

JK11 · D8 ESD0P8RFL · L1 390n · C566 47p 50V · C113 120p 50V · L4 270n · C112 120p 50V · 30067048 · F67 180R · L5 220n · L6 220n · S87 · S84 · RF_IN_P · RF_IN_N

3V3_VCC · F86 60R · C110 100n 10V · R333 1k · R797 9k1 · IF_AGC

IF_AGC · S100 · C162 22n 16V · R307 100R · C159 100n 10V · D_IF_AGC

Close To Concept IC · Close To SI2156

SH1

X1 27MHz

TUNER U18 SI2156

RF_SHLD1 · RF_IP · RF_IN · RF_SHLD · VDD_H2 · VDD_H1 · XTAL_I · XTAL_O

GND1 · GND2 · GND3 · GPIO · INTB · RSTB · GND4 · VDD_IO

XOUT · BCLK · VDD_L · DLIF_P · DLIF_N · ALIF_P · VDD_H · ALIF_N

VDD_S · SCL · SDA · VDD_D · GND · ADDR · ALIF_AGC · DLIF_AGC

1V8_VCC_SI · S99 · S98 · DIGITAL_IF_P · DIGITAL_IF_N · C158 100n 10V · NC · R308 470R · R73 470R · R312 820R · 750R · 3V3_VCC_SI

TUNER_RST · R187 33R · R196 10k · C1 12p 50V · TUNER_SCL · S83 · C6 12p · TUNER_SDA · S89 · C10 12p · S92 · D_IF_AGC · NC:1100000(R:1,W:0) · S69 · S82

F65 60R · 1V8_VCC_TUNER · C156 1n2 50V · C155 1n2 50V · C165 100n 16V · 1V8_VCC_SI

3V3_VCC_TUNER · F68 60R · pin14 · pin4 · 3V3_VCC_SI · C157 1n2 50V · C163 4n7 50V · C164 100n 50V · C144 1n2 50V · C153 1n2 50V · C154 1n2 50V · pin20 · pin19 · pin10 · pin32 · pin1

U14 LM1117 · 3V3_VCC · F164 60R · TP111 · 1V8_VCC_TUNER · C449 10u 6V3 · R603 100R · C435 100u 6V3 · C15 100n 16V · R606 47R · S75

U6 LM1117 · 5V_VCC · F165 60R · TP112 · 3V3_VCC_TUNER · C624 10u 10V · R604 100R · C440 100u 6V3 · C29 100n 16V · R609 68R · R407 100R

TP96 · F6 60R · TP91 · TP92 · CN17 · C143 10u 10V · TP97 · C12 10u 10V · F69 330R · USB1_VCC

U1 AZ099-04S · IO4 · IO1 · VDD · GND · IO3 · IO2 · R74 10R · R311 10R · R309 10R · R310 10R · USB2_DP · USB2_DN · USB1_DN · USB1_DP

TP98 · F5 60R · TP100 · TP101 · CN19 · CN18 · C114 10u 10V · TP99 · C115 10u 10V · F70 330R · F11 330R · F50 330R · USB2_VCC · 5V_VCC · 3V3_VCC

5V_VCC · C161 16V 100n · U22 TPS2553-1 · IN · OUT · GND · ILIM · EN · FAULT · USB_ENABLE1 · USB1_VCC · R267 560R · R259 560R

5V_VCC · C160 16V 100n · U2 TPS2553-1 · USB_ENABLE2 · USB2_VCC · R193 560R · R75 560R

OPTIONAL RESISTORS · R556 75R · R557 75R · R558 75R

VGA_R · VGA_G · VGA_B · VGA_HSNC · VGA_VSNC · C326 1n 50V

SC_R · SC_G · SC_B · SC_CVBS_IN · SC_FB · C329 1n

PR_IN · Y_IN · PB_IN · C327 1n

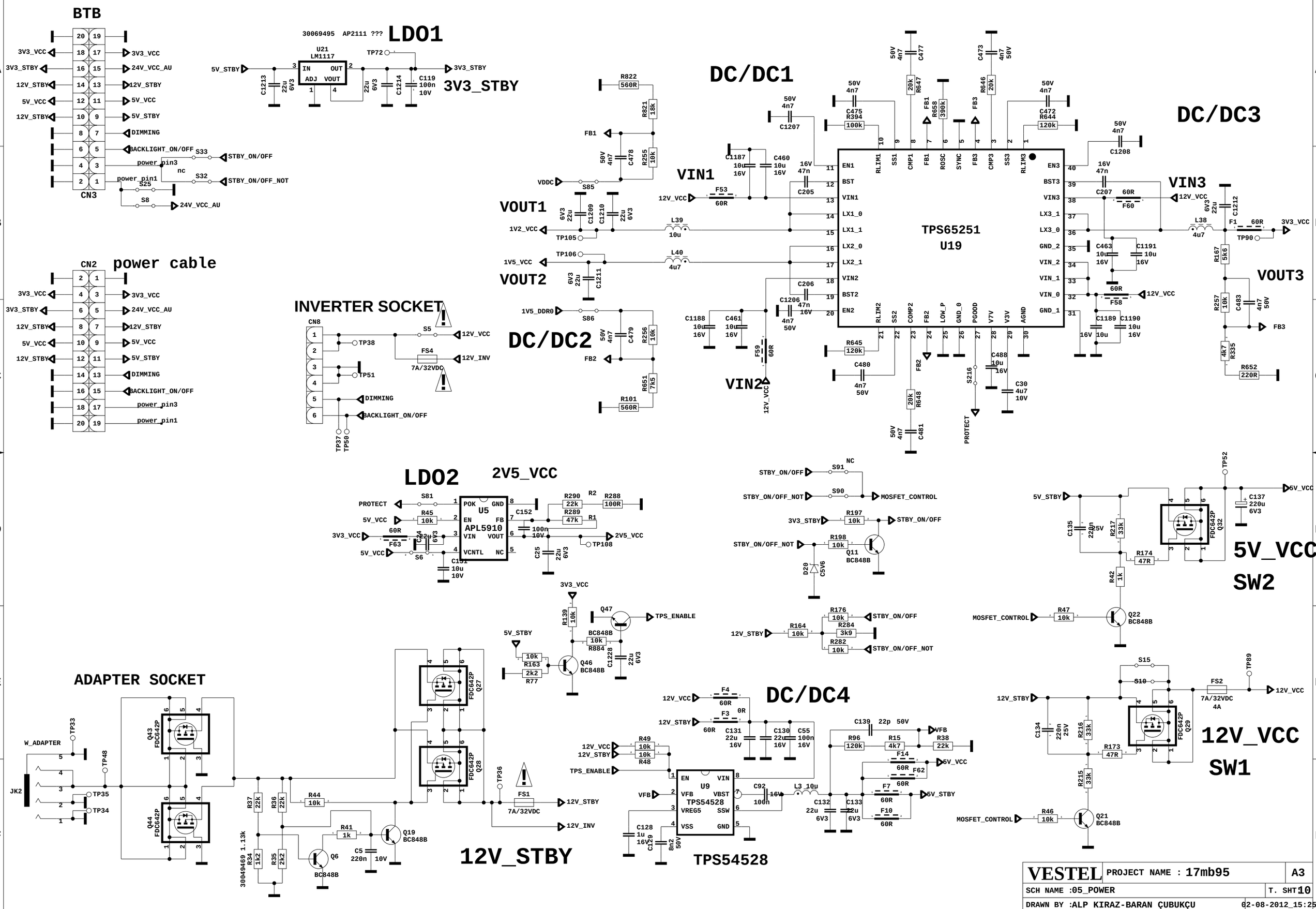
U4 MSD8WB9BX VIDEO

RIN0M · RIN0P · GIN0M · GIN0P · BIN0M · BIN0P · SOGIN0 · HSYNC0 · VSYNC0 · RIN1M · RIN1P · GIN1M · GIN1P · BIN1M · BIN1P · SOGIN1 · HSYNC1 · VSYNC1 · RIN2M · RIN2P · GIN2M · GIN2P · BIN2M · BIN2P · SOGIN2 · HSYNC2

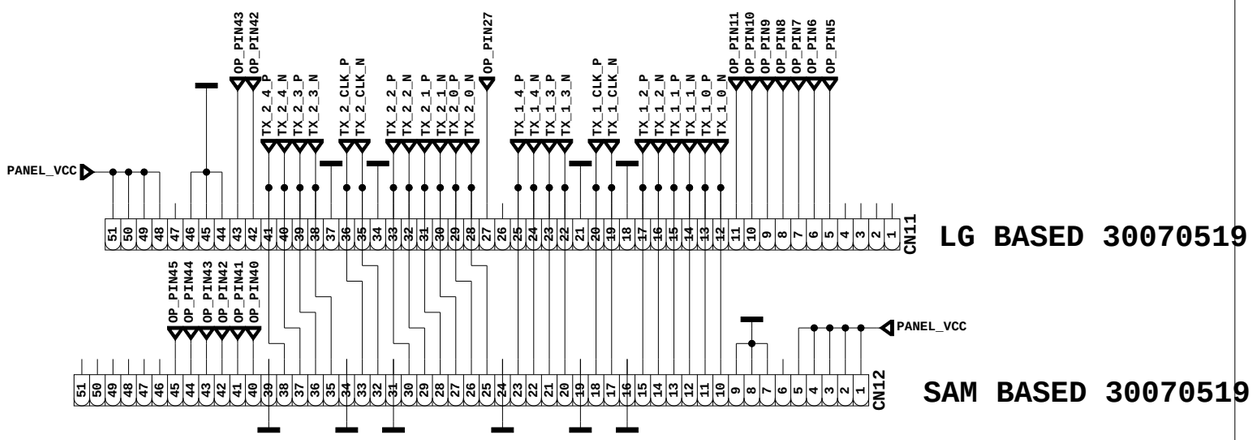
VCOM · CVBS0 · CVBS1 · CVBS2 · CVBS3 · CVBSOUT1 · CVBSOUT2 · IP · IM · VIFP · VIFM · SIFP · SIFM · IFAGC · RFAGC · TGPIO0/GPIO73 · TGPIO1/GPIO74 · TGPIO2/GPIO75 · TGPIO3/GPIO76

OPTIONAL · R560 75R · C188 47n 16V · R596 68R · R513 33R · C187 47n 16V · R517 33R · C189 47n 16V · R520 33R · C186 47n 16V · R518 33R · SC_CVBS_IN · SAV_CVBS · SC_R · DVD_CVBS · CVBS0_OUT · C106 100n 10V · S70 · DIGITAL_IF_P · C107 100n 10V · S71 · DIGITAL_IF_N · R364 100R · nc · IF_AGC · TUNER_SCL · TUNER_SDA · R161 4k7 · R162 4k7 · 3V3_VCC

VESTEL	PROJECT NAME : 17mb95		A3
SCH NAME :04_TUNER_T2_DEMOD		T. SHT	10
DRAWN BY :ALP KIRAZ-BARAN ÇUBUKÇU		02-08-2012_15:14	


BTB
CN3
3V3_VCC
3V3_STBY
12V_STBY
5V_VCC
5V_STBY
24V_VCC_AU
DIMMING
BACKLIGHT_ON/OFF
power_pin3
power_pin1
nc
S33
S32
S25
S8
STBY_ON/OFF
STBY_ON/OFF_NOT
LD01
30069495 AP2111 ???
U21
LM1117
IN
OUT
ADJ
VOUT
TP72
3V3_STBY
DC/DC1
VIN1
VOUT1
1V2_VCC
TP105
VDDC
S85
1V5_VCC
TP106
VOUT2
1V5_DDR0
S86
DC/DC2
TPS65251
U19
VIN3
VOUT3
DC/DC3
power cable
CN2
INVERTER SOCKET
CN8
TP38
TP51
TP37
TP50
S5
FS4
7A/32VDC
12V_INV
DIMMING
BACKLIGHT_ON/OFF
LD02
2V5_VCC
U5
APL5910
POK
GND
EN
FB
VIN
VCNTL
NC
PROTECT
TP108
S6
S81
S91
S90
MOSFET_CONTROL
STBY_ON/OFF
STBY_ON/OFF_NOT
Q11
BC848B
D20
C5V6
R197
R198
R176
R164
R284
R282
TPS_ENABLE
Q47
Q46
Q22
Q21
5V_VCC
SW2
12V_VCC
SW1
ADAPTER SOCKET
W_ADAPTER
JK2
TP33
TP48
TP35
TP34
Q43
Q44
FDC642P
Q27
Q28
Q19
Q6
BC848B
12V_STBY
12V_INV
FS1
7A/32VDC
TPS54528
U9
VIN
VBST
SSW
VFB
VREG5
VSS
GND
FS2
TP89
S15
S10
TP52
PROJECT NAME : 17mb95
A3
SCH NAME :05_POWER
T. SHT10
DRAWN BY :ALP KIRAZ-BARAN ÇUBUKÇU
02-08-2012_15:25

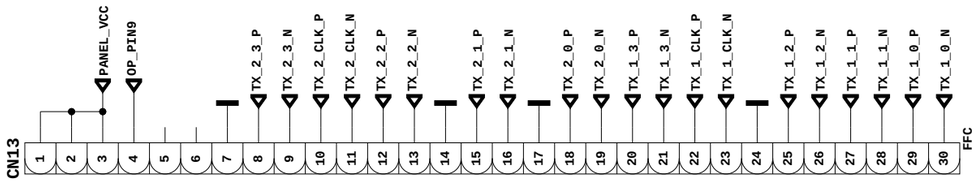
FHD 50Hz 3D FFC



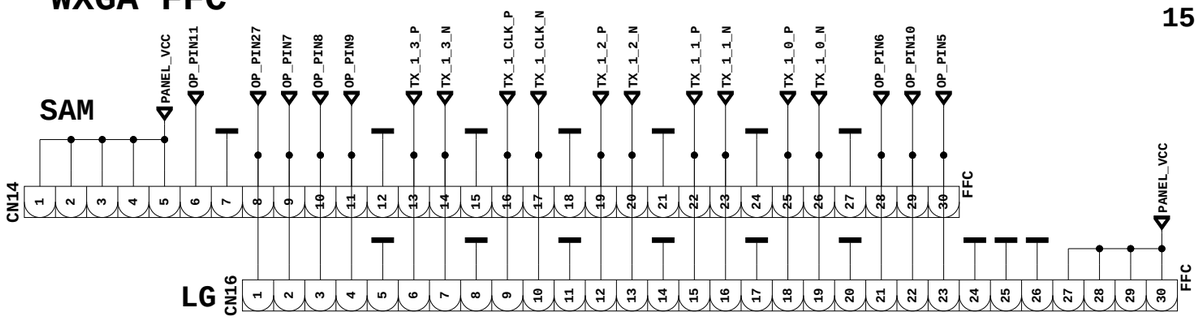
LG BASED 30070519

SAM BASED 30070519

19" TO 22" DOUBLE LVDS FFC OPTIONS

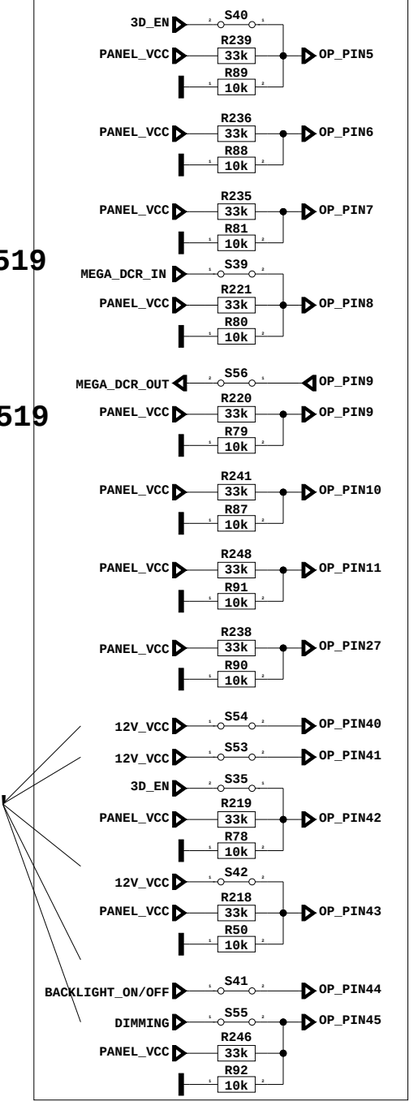


WXGA FFC

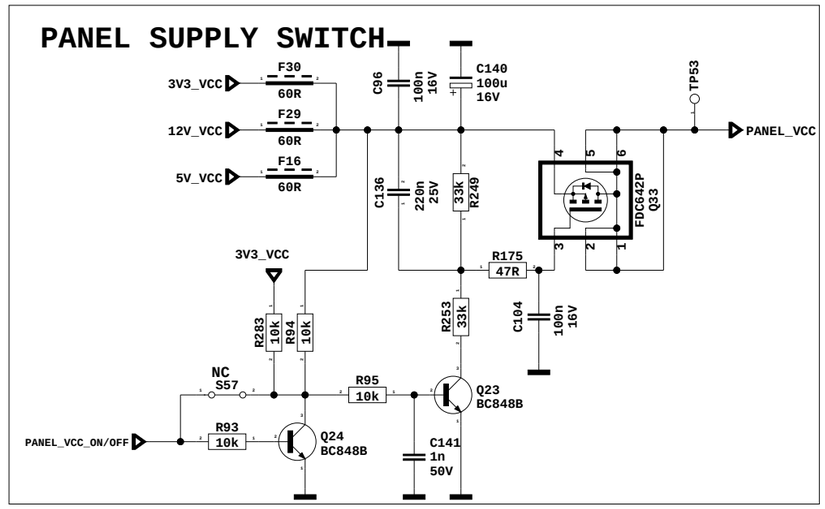


OPTIONS TABLE

15.6"



PANEL SUPPLY SWITCH



LVDS OUT

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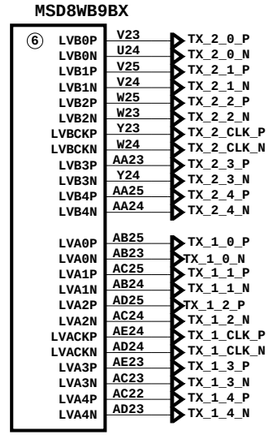
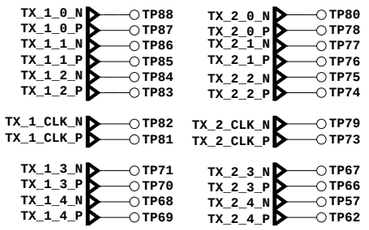
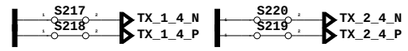
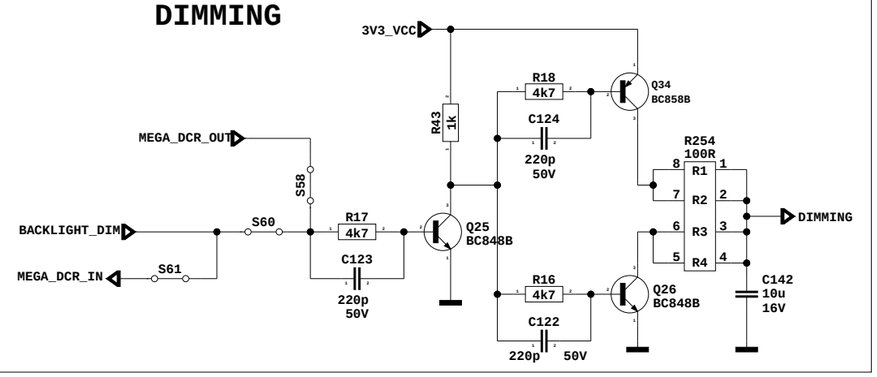




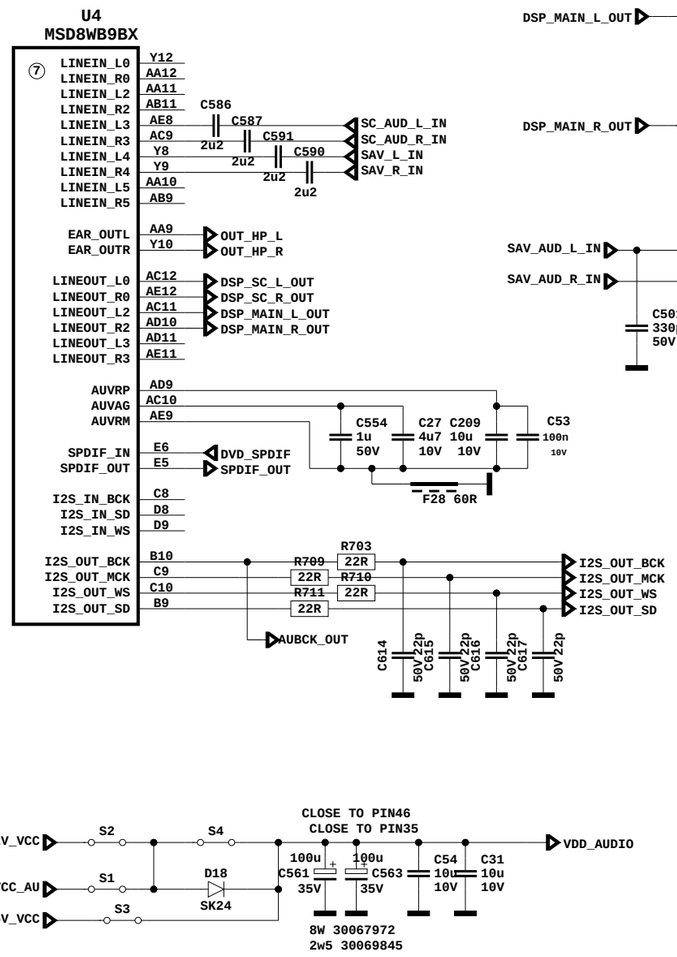
10_BIT PANEL

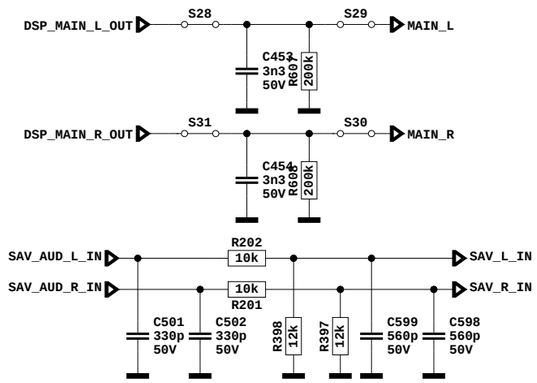


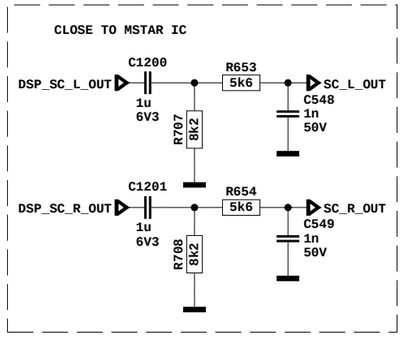
DIMMING

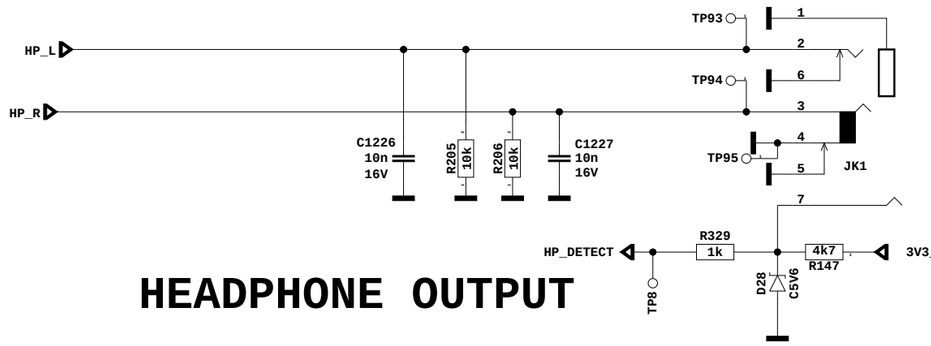


VESTEL	PROJECT NAME : 17mb95	A3
	SCH NAME :06_LVDS	T. SHT 10
	DRAWN BY :ALP KIRAZ-BARAN ÇUBUKÇU	02-08-2012_15:30

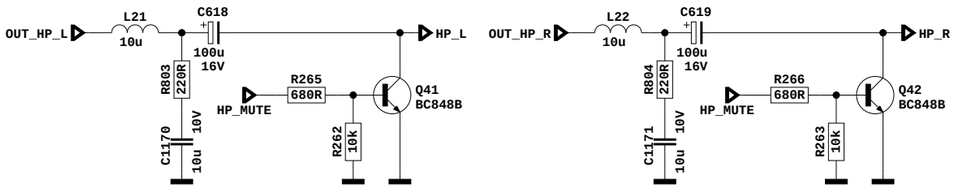


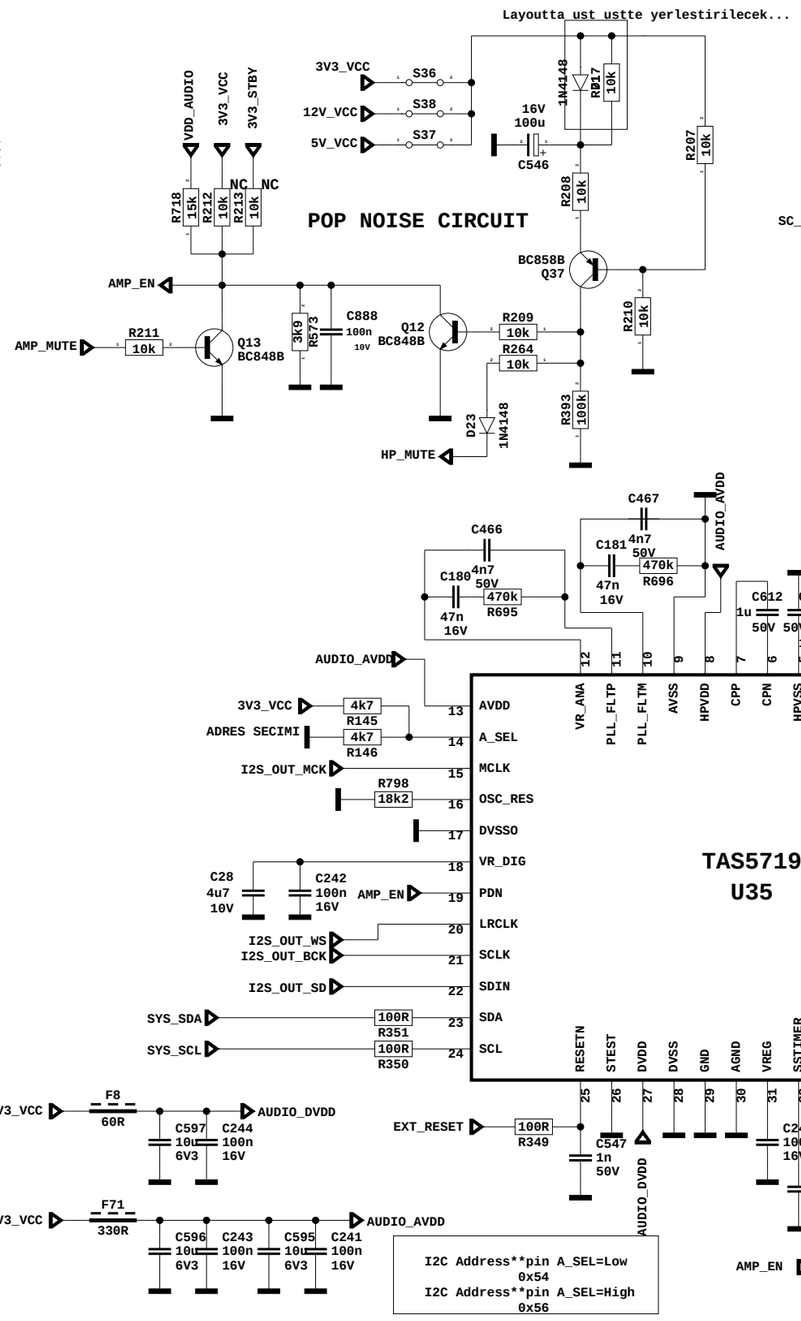


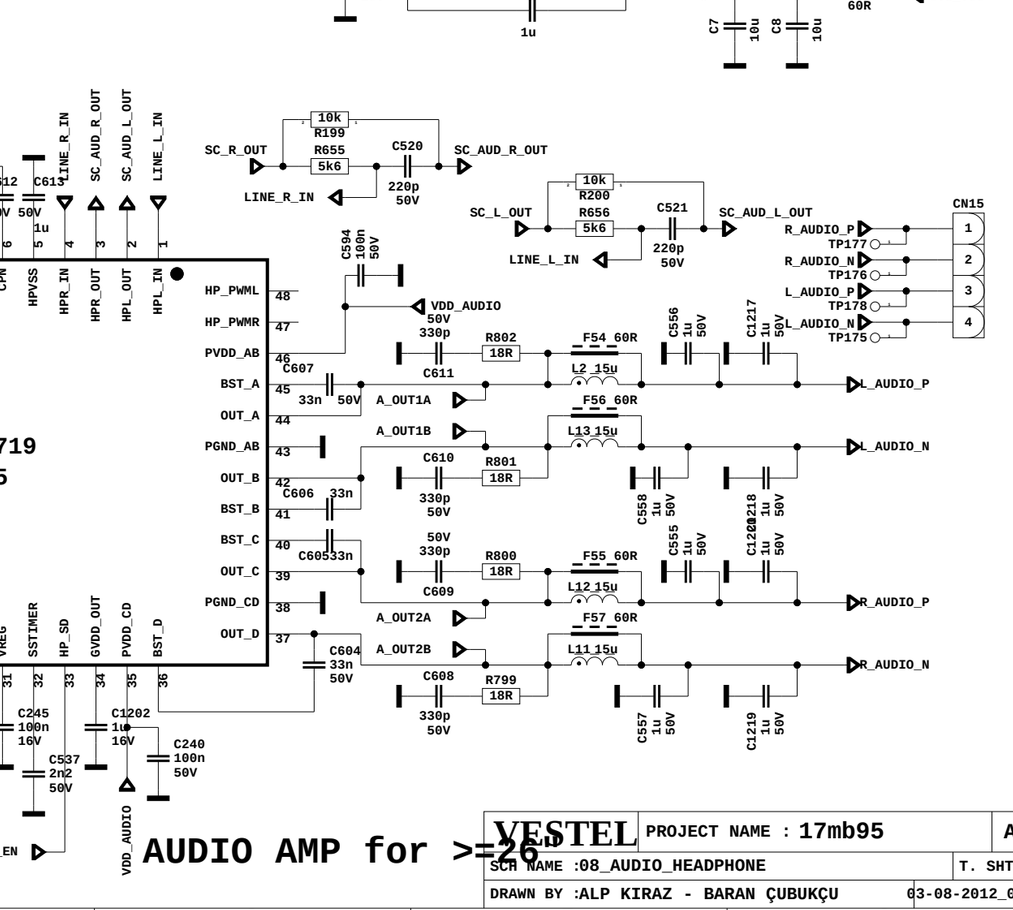


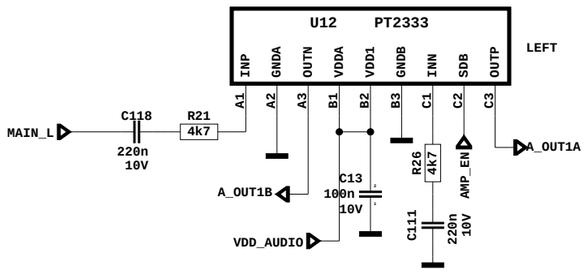


HEADPHONE OUTPUT

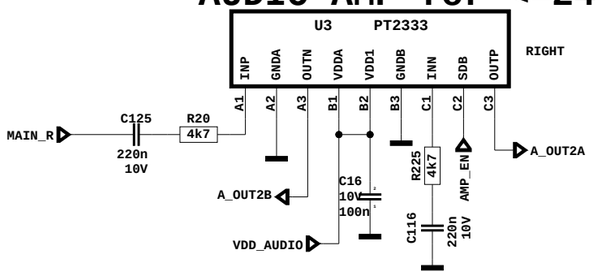






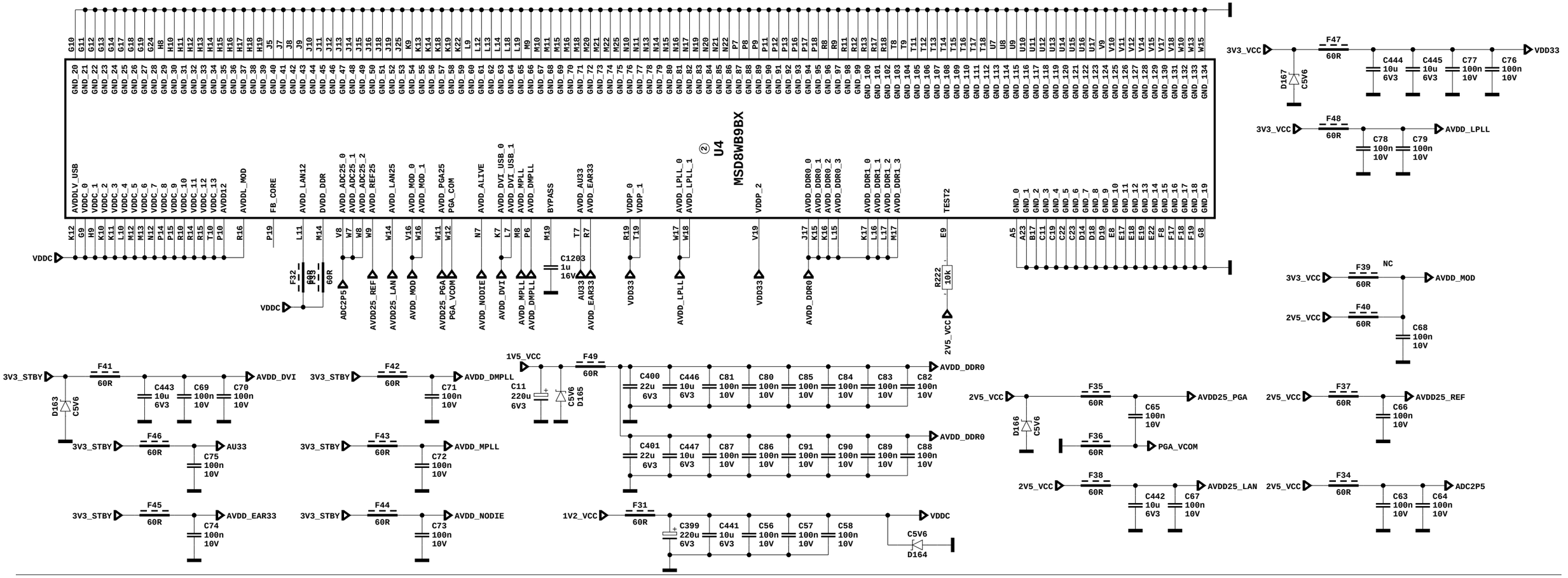


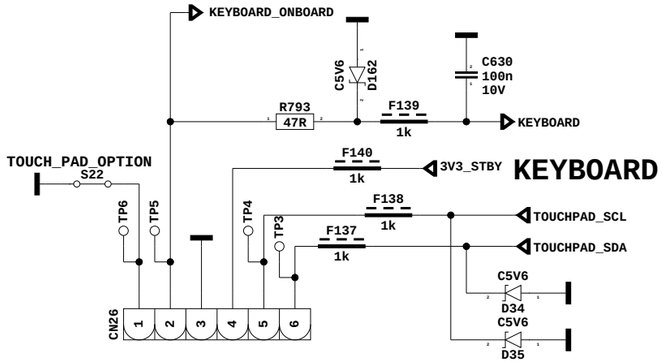
AUDIO AMP for <=24"



AUDIO AMP for >=26"

VESTEL	PROJECT NAME : 17mb95	A3
	SCR NAME :08_AUDIO_HEADPHONE	T. SHT 10
	DRAWN BY :ALP KIRAZ - BARAN ÇUBUKÇU	03-08-2012_09:36





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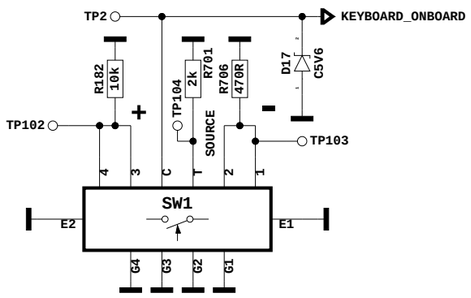
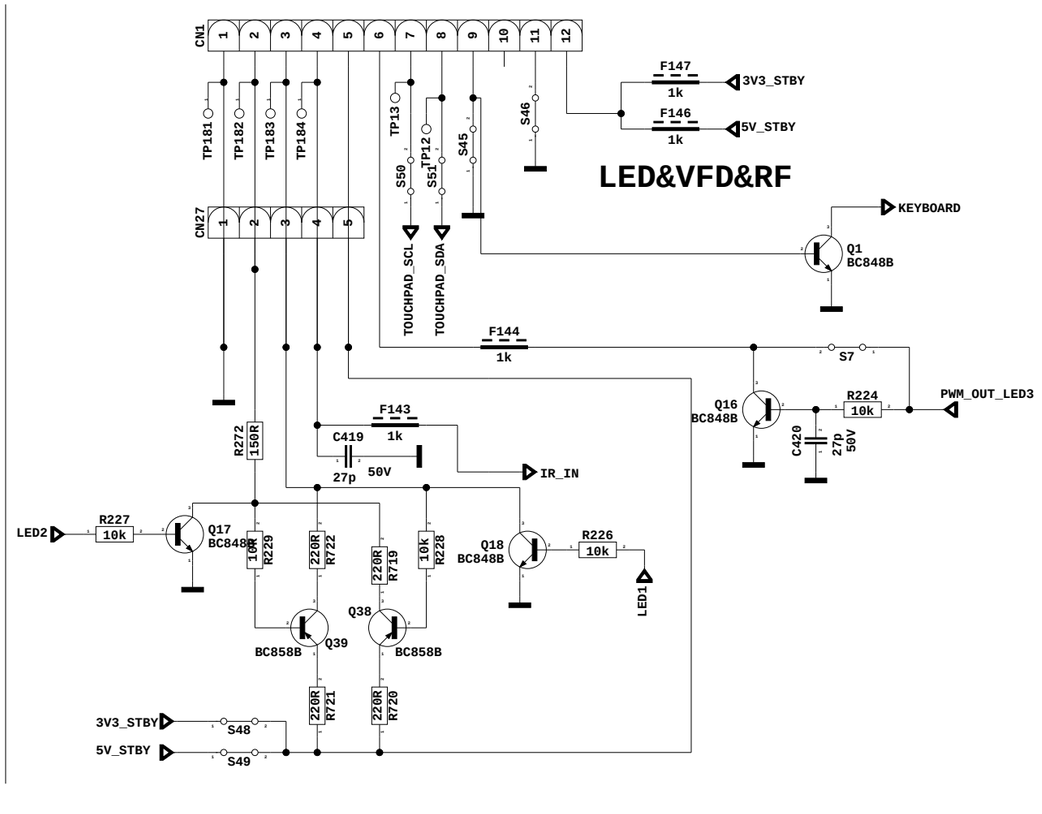
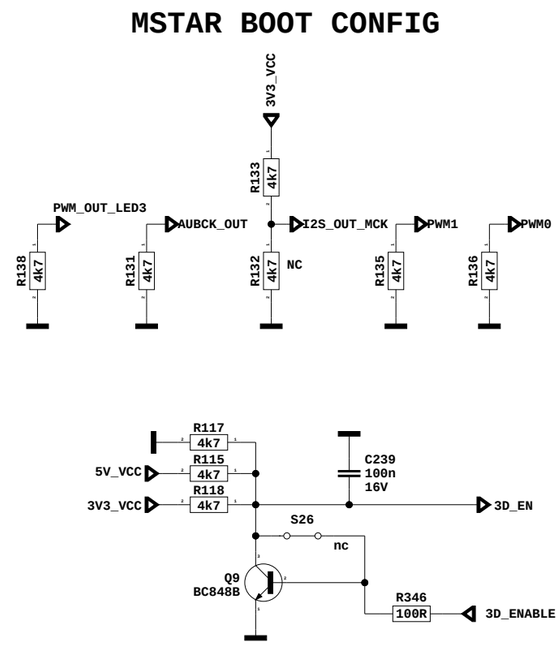


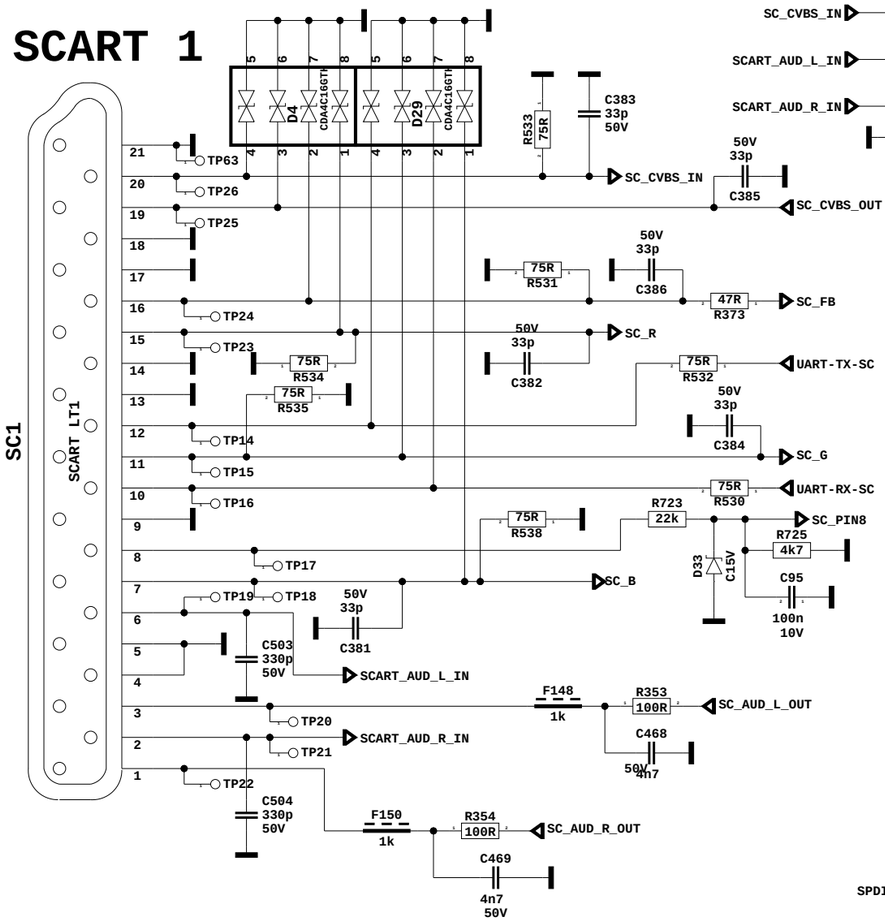


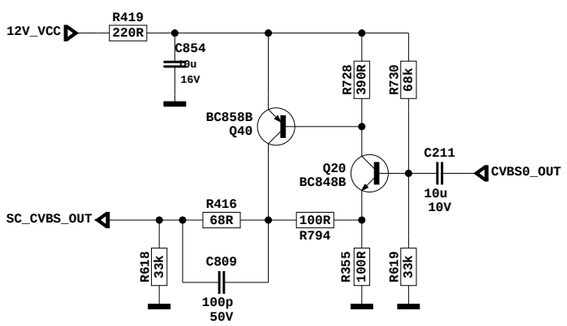


VESTEL	PROJECT NAME : 17mb95	A3
SCH NAME :09_MST_SUPPLY_KEY_TOUCH		T. SHT 10
DRAWN BY :ALP KIRAZ-BARAN ÇUBUKÇU		06-08-2012_09:30

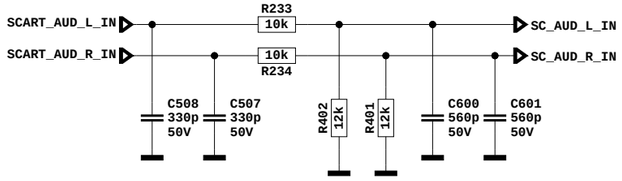
INDIA OPTION

SCART 1

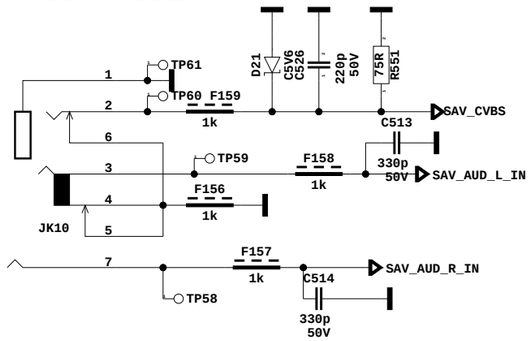




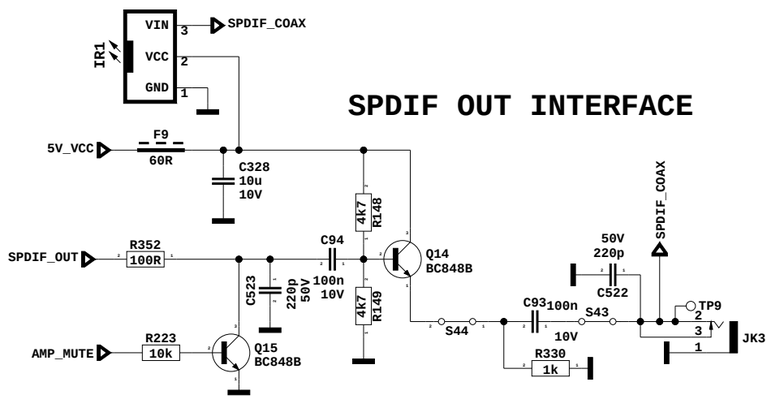
SCART AUDIO FILTER

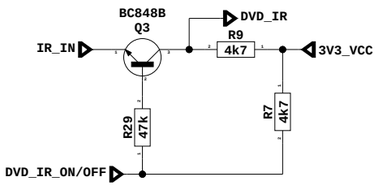


SLIM SIDE AV

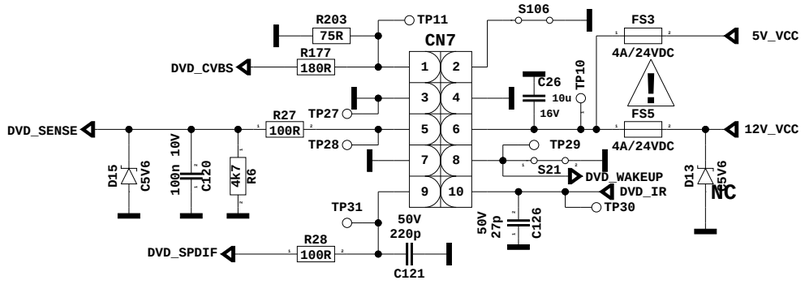


SPDIF OUT INTERFACE

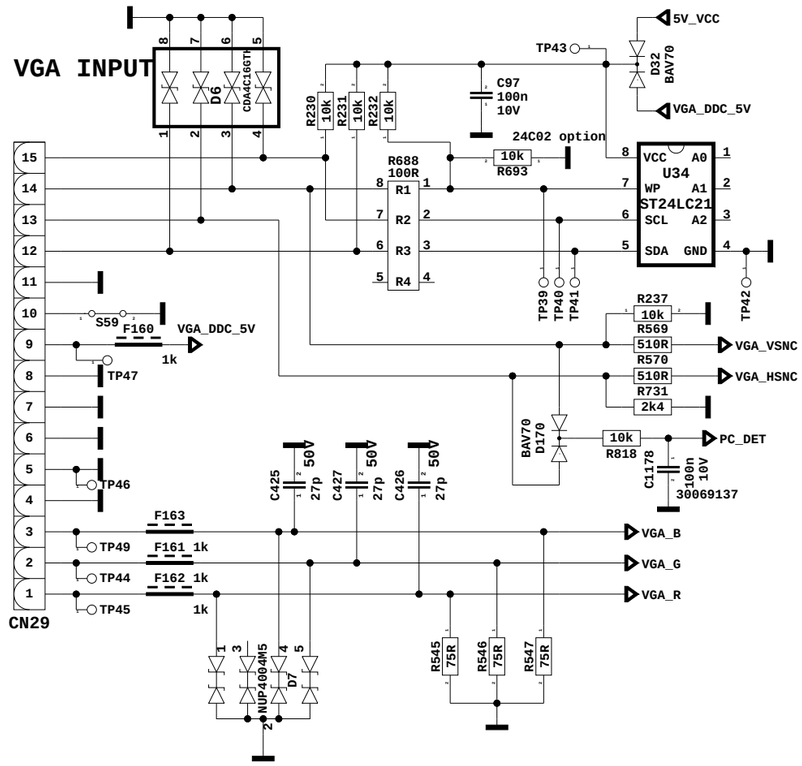




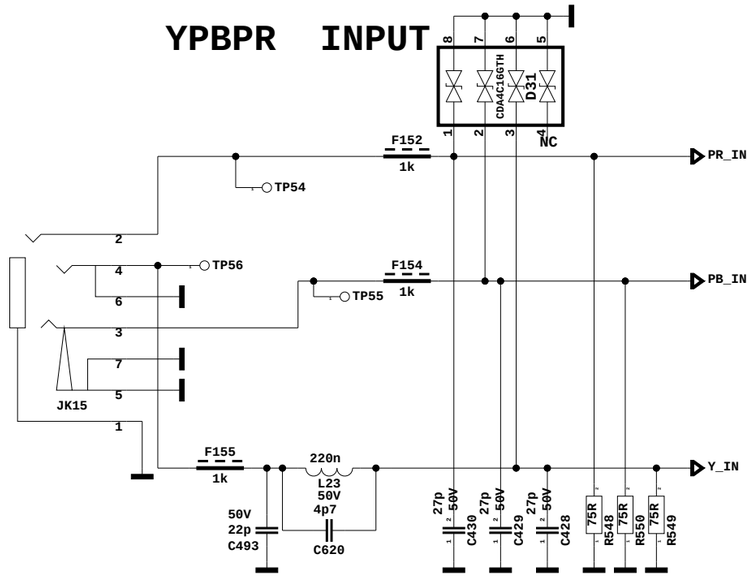
DVD CONNECTION



VGA INPUT



YPBPR INPUT



OPTIONAL GASGET POSITIONS

GS1
GS2
GS3
GS4
GS5

VESTEL	PROJECT NAME : 17mb95	A3
SCH NAME :10_AV_INOUT_DVD		T. SHT 10
DRAWN BY :ALP KIRAZ-BARAN ÇUBUKÇU		02-08-2012_15:33