



LCD Television Service Manual

Chassis: MT5380

Product Type: 40LE45S、40LC45S

Ver 1.0

Hisense Electric Co., Ltd.

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Service Manual

1. Precautions and notices

BEFORE SERVICING THE LCD TV, READ THE SAFETY PRECAUTIONS IN THIS MANUAL.

WHEN REPLACEMENT PARTS ARE REQUIRED, BE SURE TO USE REPLACEMENT PARTS SPECIFIED BY THE MANUFACTURER.

Proper service and repair is important to the safe, reliable operation of all Hisense Electric Co., Ltd Equipment. The service procedures recommended by Hisense and described in this Service Guide are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Hisense could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Hisense has not undertaken any

such broad evaluation. Accordingly, a serviceman that uses a service procedure or tools, which are not recommended by Hisense, must first satisfy himself thoroughly that neither his safety nor the safe of the equipment will be jeopardized by the service method selected.

Hereafter throughout this manual, Hisense Electric Co., Ltd will be referred to as Hisense.

1.1 Warning

1.1.1

Critical components having special safety characteristics are identified with a ▲ by the Ref. No. in the parts list. Use of substitute replacement parts, which do not have the same specified safety characteristics, may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Hisense. Hisense assumes no liability, express or implied, arising out of any unauthorized modification of design. Serviceman assumes all liability.

DANGERCAUTION CAUTION

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE GUIDE.

1.1.2.

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD).

Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.

1. Never replace modules or other components while the unit is switched on.

2. When making settings, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

1.1.3

To prevent electrical shock, do not use this polarized ac plug with an extension cord, receptacle, or the outlet unless the blades can be fully inserted to prevent blade exposure.

To prevent electrical shock, match wide blade or plug to wide slot, fully insert.

1.1.4

When replacement parts are required, be sure to use replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

1.1.5

Safety regulations require that after a repair the set must be returned in its original condition. In particular attention should be paid to the following points.

- Note: The wire trees should be routed correctly and fixed with the mounted cable clamps.

- The insulation of the mains lead should be checked for external damage.

1.1.6

- (1) Do not touch Signal and Power Connector while this product operates. Do not touch EMI ground part and Heat Sink of Film Filter.
- (2) Do not supply a voltage higher than that specified to this product. This may damage the product and may cause a fire.
- (3) Do not use this product in locations where the humidity is extremely high, where it may be splashed with water, or where flammable materials surround it. Do not install or use the product in a location that does not satisfy the specified environmental conditions. This may damage the product and may cause a fire.
- (4) If a foreign substance (such as water, metal, or liquid) gets inside the panel module, immediately turn off the power. Continuing to use the product may cause fire or electric shock.
- (5) If the product emits smoke, and abnormal smell, or makes an abnormal sound, immediately turn off the power. Continuing to use the product, it may cause fire or electric shock.
- (6) Do not disconnect or connect the connector while power to the product is on. It takes some time for the voltage to drop to a sufficiently low level after the power has been turned off. Confirm that the voltage has dropped to a safe level before disconnecting or connecting the connector.
- (7) Do not pull out or insert the power cable from/to an outlet with wet hands. It may cause electric shock.
- (8) Do not damage or modify the power cable. It may cause fire or electric shock.

- (9) If the power cable is damaged, or if the connector is loose, do not use the product: otherwise, this can lead to fire or electric shock.
- (10) If the power connector or the connector of the power cable becomes dirty or dusty, wipe it with a dry cloth. Otherwise, this can lead to fire.
- (11) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

1.2 Notes

Notes on Safe Handling of the LCD panel and during service

The work procedures shown with the Note indication are important for ensuring the safety of the product and the servicing work. Be sure to follow these instructions.

- Before starting the work, secure a sufficient working space.
- At all times other than when adjusting and checking the product, be sure to turn OFF the POWER Button and disconnect the power cable from the power source of the TV during servicing.
- To prevent electric shock and breakage of PC board, start the servicing work at least 30 seconds after the main power has been turned off. Especially when installing and removing the power board, start servicing at least 2 minutes after the main power has been turned off.
- While the main power is on, do not touch any parts or circuits other than the ones

specified. If any connection other than the one specified is made between the measuring equipment and the high voltage power supply block, it can result in electric shock or activation of the leakage-detection circuit breaker.

- When installing the LCD module in, and removing it from the packing carton, be sure to have at least two persons perform the work.
- When the surface of the panel comes into contact with the cushioning materials, be sure to confirm that there is no foreign matter on top of the cushioning materials before the surface of the panel comes into contact with the cushioning materials. Failure to observe this precaution may result in, the surface of the panel being scratched by foreign matter.
- When handling the circuit board, be sure to remove static electricity from your body before handling the circuit board.
- Be sure to handle the circuit board by holding the large parts as the heat sink or transformer. Failure to observe this precaution may result in the occurrence of an abnormality in the soldered areas.
- Do not stack the circuit boards. Failure to observe this precaution may result in problems resulting from scratches on the parts, the deformation of parts, and short-circuits due to residual electric charge.
- Routing of the wires and fixing them in position must be done in accordance with the original routing and fixing configuration when servicing is completed. All the wires are routed far away from the areas that become hot (such as the heat sink). These wires are

fixed in position with the wire clamps so that the wires do not move, thereby ensuring that they are not damaged and their materials do not deteriorate over long periods of time. Therefore, route the cables and fix the cables to the original position and states using the wire clamps.

- Perform a safety check when servicing is completed. Verify that the peripherals of the serviced points have not undergone any deterioration during servicing. Also verify that the screws, parts and cables removed for servicing purposes have all been returned to their proper locations in accordance with the original setup.



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



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

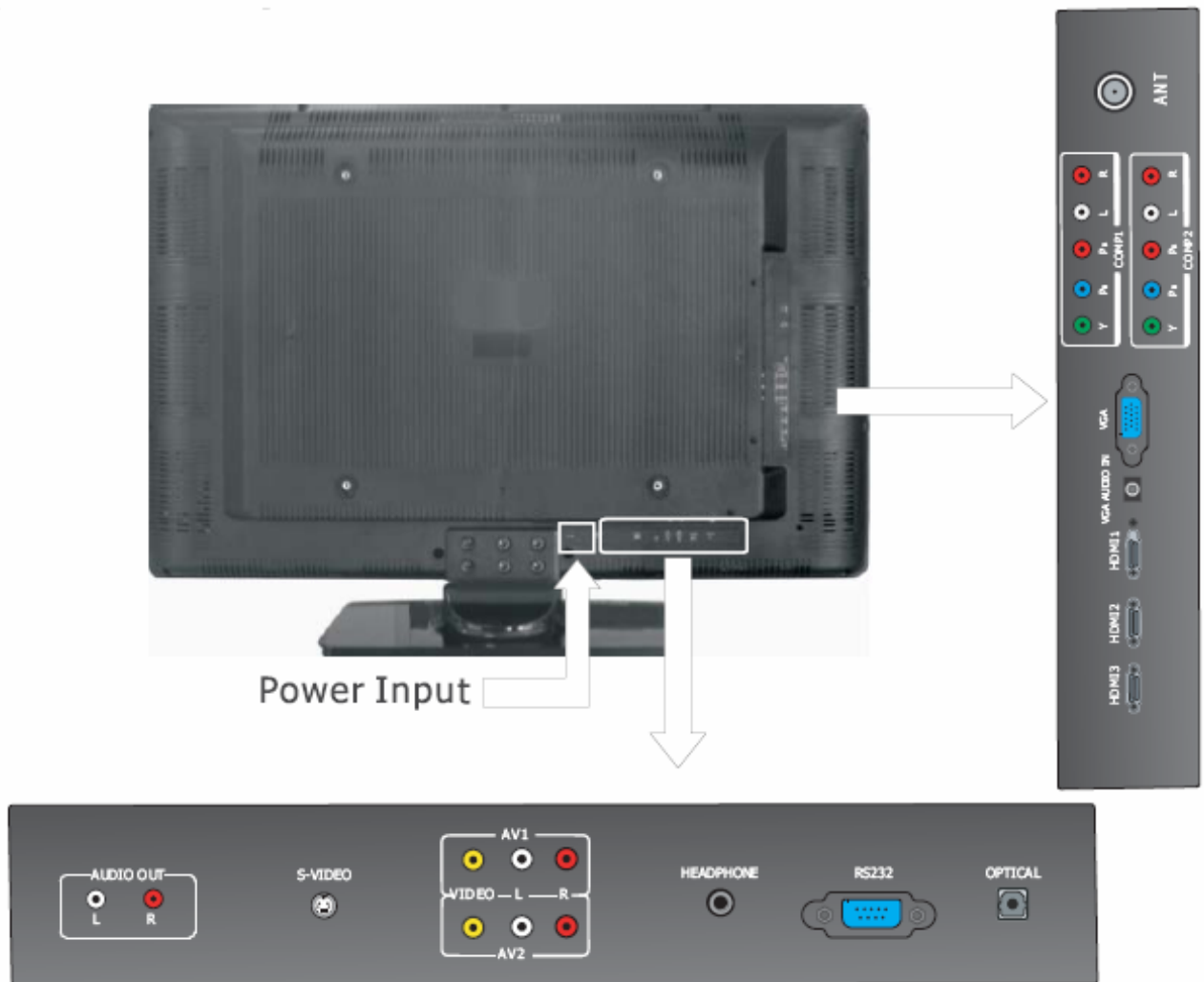
2. Product Function Specifications

2.1 Product Function

Front Cabinet



Back Cabinet



2.2 Specifications

Appendix

Specifications

| | | |
|---------------------------------|----------------------|--|
| Model | | 40LE45S 40LC45S |
| Diagonal display size | | |
| Television system | | American TV standard ATSC /NTSC system |
| Audio multiplex | | BTSC system |
| Channel coverage | | VHF: 2~13 UHF: 14~69 CATV:1~125 Digital Terrestrial Broadcast (8VSB): 2~69 Digital cable (64/256 QAM): 1~135 |
| PC mode | | 640×480/60Hz,800×600/60Hz,1024×768/60Hz |
| YPbPr/YCbCr mode | | 480I/60Hz,480P/60Hz,720P/60Hz,1080I/60Hz |
| Resolution | | 1920 ×1080 |
| Power source | | AC 120 V , 60 Hz |
| Power consumption | | 230W |
| Audio power | | 7W+7W |
| Connection Interface | RF input | Cable/ Antenna ×1 |
| | Video input | VideoX2 S-VideoX1 ComponentX2 HDMIX3 |
| | Graphic input | Analog RGB 15pin ×1 |
| | Audio input | AV Audio X 2 Component Audio X 2 VGA Audio Input X 1 |
| | Audio output | AV Audio X 1 Optical Audio out x 1 |
| Dimensions | | Length: 39.1 inches Width: 12.2 inches Height: 28.3 inches |
| Weight | | 55.1 lbs |
| Environmental conditions | | Temperature 5°C~35°C (41F~95F) Humidity:20%-80%RH, Atmospheric pressure:86kPa-106kPa |
| Supplied accessories | | Remote control, AC cord, Batteries, User Manual, Warranty Card, QSG, Remote Control Guide |

Design and specifications are subject to change without notice.

CUSTOMER NOTICE: Use carefully when operating to prevent damage to the screen.

3. LCD Panel Spec

LTD42W29NUS:

Panel: LTA400HA07\JK\ROH SN: 1051263

3.1 General Description

LTA400HA07 is a color active matrix liquid crystal display (LCD) that uses amorphous silicon TFT (Thin Film Transistor) as switching components. This model is composed of a TFT LCD panel, a driver circuit and a back light unit. The resolution of a 40.0" is 1920 x 1080 and this model can display up to 16.7 Million colors with wide viewing angle of 89° or higher in all directions. This panel is intended to support applications to provide a excellent performance for Flat Panel Display such as Home-alone Multimedia TFT-LCD TV and High Definition TV.

Features

- RoHS compliance (Pb-free)
- High contrast & aperture ratio with wide color gamut
- SPVA (Super Patterned Vertical Align) mode
- Wide viewing angle ($\pm 178^\circ$)
- High speed response
- FHD resolution (16:9)
- Low Power consumption
- Direct Type 16 CCFLs (Cold Cathode Fluorescent Lamp)
- DE (Data Enable) mode
- LVDS (Low Voltage Differential Signaling) interface (2pixel/clock)

3.2 General Features

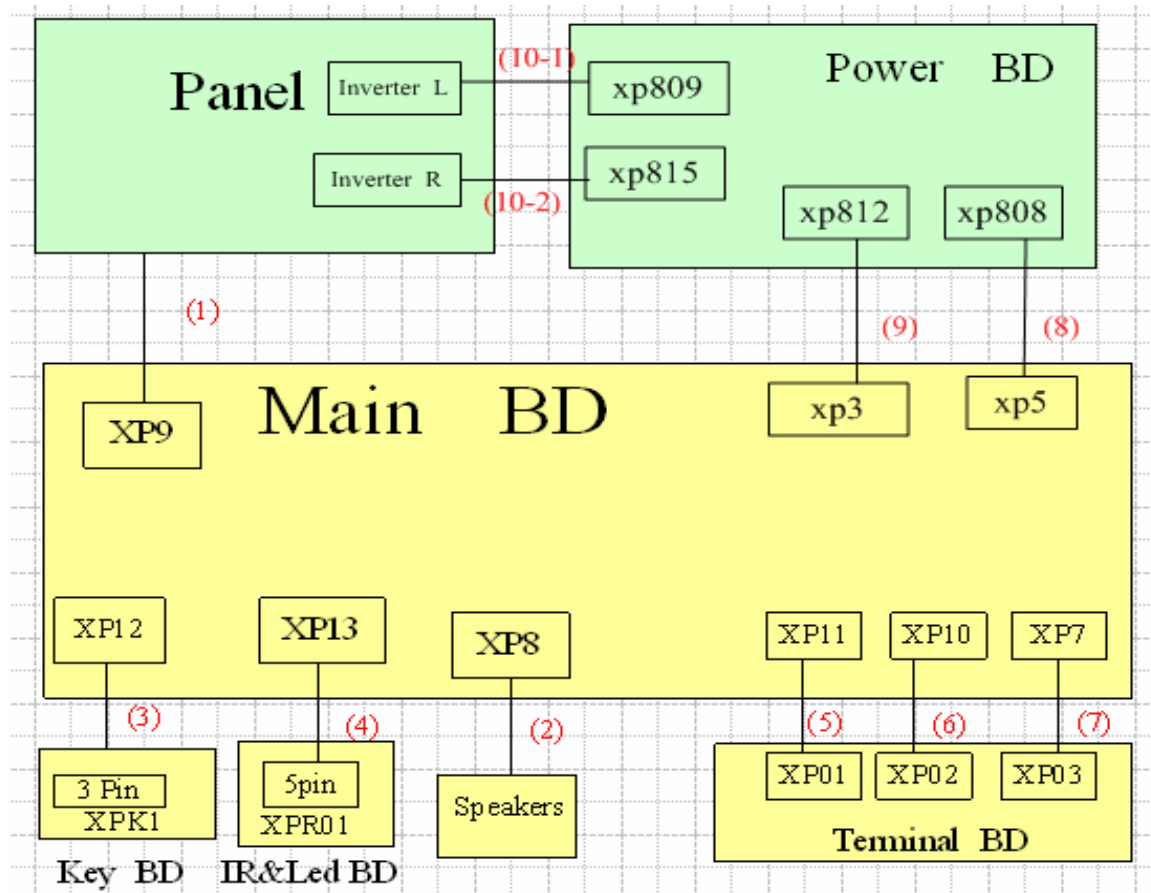
| Items | Specification | Unit | Note |
|---------------------|---|-------------------|--------|
| Module Size | 952.0(H _{TYP}) x 551.0(V _{TYP}) | mm | ±1.0mm |
| | 55.2(D _{MAX}) | | |
| Weight | 10,000 (Max.) | g | |
| Pixel Pitch | 0.46125(H) x 0.46125(W) | mm | |
| Active Display Area | 885.6(H) X 498.15 (V) | mm | |
| Surface Treatment | Haze14% , Hard-coating (3H) | - | |
| Display Colors | 8 bit – 16.7M | Colors | |
| Number of Pixels | 1920 x 1080 | Pixel | |
| Pixel Arrangement | RGB vertical stripe | - | |
| Display Mode | Normally Black | - | |
| Luminance of White | 500 (Typ.) | cd/m ² | |

4. Chassis Layout and Overall Wiring Diagrams

4.1 Boards and Chassis Layout

| No | Description | Part No. | Type/Model | PCB/ Model |
|-----|--------------|----------|-----------------------|--------------------------|
| (1) | Main board | 120639 | RSAG2.908.1375-7\ROH | RSAG7.820.1525\VER.A\ROH |
| (2) | Power board | 117734 | RSAG2.908.1192-11\ROH | RSAG7.820.1185\VER.E\ROH |
| (3) | AV board | 113354 | RSAG2.908.1232\ROH | RSAG7.820.1342\VER.B\ROH |
| (4) | keypad board | 112829 | RSAG2.908.1088\ROH | RSAG7.820.1101\VER.B\ROH |
| (5) | IR board | 115138 | RSAG2.908.1048\ROH | RSAG7.820.1013\VER.A\ROH |

4.2 Wires and Cables Overall Wiring Diagram(s)



| No | DESCRIPTION | SPECIFICATION | NOTE |
|------|-----------------------------|------------------------|---|
| 1 | LVDS signal | HX2-2X20KLB350P-LG\ROH | Main BDXP9<-->Panel |
| 2 | Audio out put (R/L) | TJC3H-4Y-650-900\ROH | Main BD XP8<-->Speakers |
| 3 | Buttons | TJC10T-3Y-900\ROH | Main BDXP12<--> Key BD XPK1 |
| 4 | Led & IR | TJC10T-5Y—900\ROH | Main BD XP13<-->IR & LED BD XPR01 |
| 5 | AV and S-video signal | HX-2026C550\ROH | Main BD XP11<-->AV BD XP01 |
| 6 | Headphone signal | TJC3T-4Y-400\ROH | Main BD XP10<-->AV BD XP02 |
| 7 | Series upgrade | TJC10T-4Y-350\ROH | Main BD XP7<-->AV BD XP03 |
| 8 | Audio Amplify | TJC10T-4Y-250\ROH | Power BD XP808<--> Main BD XP5 |
| 9 | +5V, +12V supply to Main BD | TJC10T-14Y-250\ROH | Main BD XP3<-->Power BD XP812 |
| 10-1 | Backlight Power | HX-3005B450\ROH | Power BD XP809<--> Panel left backlight port |
| 10-2 | Backlight Power | HX-3004B550\ROH | Power BD XP815<--> Panel right backlight port |

5. Factory/Service OSD Menu and Adjustment

5.1 To enter the Factory OSD Menu

- a. With factory RC (remote control)
 1. Press “M” button and enter factory mode.
 2. Press “Menu” button and enter factory OSD menu.
 3. Press “CH+”/“CH-” button select the function menu, press “VOL+”/“VOL-” enter the selected function menu. Press “VOL+”/“VOL-” button adjust values in the menu.
- b. With user’s RC
 1. Power TV On
 2. Press Menu button and call up User OSD Menu
 3. Select Audio-> Balance
 4. Enter 0->5->3 ->2 in sequence.
Note: If necessary, re-do number keys.
 5. Factory OSD appears.
 6. Press Menu again and leave factory OSD.

5.2 Factory OSD Menu

5.2.1 White Balance

Note: Different source has different WB values. Before adjusting, please change to desired source.

1. Auto Color

For VGA and Component Video sources, WB values must be adjusted.

Before adjusting, prepare the signal instruments such as DVD or K-8256 first, and find the video picture with gray and color bars. Then please change to desired source.

| | source | Timing | Pattern | Notes |
|----------|-----------------|-----------------|--------------------|----------------------------|
| 1 | ADC VGA | 1024*768 | gray-3color | For VGA source |
| 2 | ADC HDTV | 720P | gray-3color | For Component Video |

Notes:

- a、Press “M” button and enter factory mode.
- b、Press “Menu” button and enter factory OSD menu.
- c、Select the item “Auto Color”.
- d、Press VOL+ button to auto color.
- e、Close the OSD menu after 5 seconds.

5.2.2 Factory Option

| | Item | Default | Options | Notes |
|----------|-------------|----------|-------------|--|
| 1 | MODE | M | M, U | M-Can enter factory mode with factory RC or user RC. U-Can enter factory mode only with user' s RC. |

Note: MODE “M” is only used for factory production.

5.2.3 Version Info

| | Item | Default | Options | Note |
|----------|----------------|---------|---------|------------------------------------|
| 1 | Version | | | Software version |
| 2 | Date | | | The date of current version |

Note: Software version info of the TV, readable only.

5.2.4 Clear the EEPROM

| Item | Meaning | Note |
|------------------------|-------------------------|---|
| Clean Protected | Clear partly | Clean data except WB data and Auto Color data |
| Clean All | Clear completely | Clean all data |

Note: The factory menu date varies according to different sources. Incase changing the factory data by error, you can choose to “Clean Protected”, by which you can resume the default value.

To clear the EEPROM:

- Select the item “Clean All” .
- Press VOL+ button to clear the EEPROM data.
- Close the OSD menu after 5 seconds.
- Restart the TV.

5.3 Designer Menu

5.3.1 Video Mode

Standard:

| | TV | AV | S-Video | Component | VGA | HDMI |
|---------------|------------|------------|------------|------------|------------|------------|
| R Gain | 119 | 119 | 119 | 141 | 127 | 120 |
| G Gain | 125 | 125 | 125 | 145 | 120 | 122 |
| B Gain | 130 | 130 | 130 | 145 | 130 | 132 |

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Offset:

| | TV | AV | S-Video | Component | VGA | HDMI |
|----------|-----|-----|---------|-----------|-----|------|
| R Offset | 116 | 116 | 116 | 121 | 124 | 120 |
| G Offset | 124 | 124 | 124 | 125 | 126 | 128 |
| B Offset | 124 | 124 | 124 | 125 | 127 | 128 |

Cool:

| | TV | AV | S-Video | Component | VGA | HDMI |
|--------|-----|-----|---------|-----------|-----|------|
| R Gain | 119 | 119 | 119 | 141 | 127 | 120 |
| G Gain | 125 | 125 | 125 | 145 | 120 | 122 |
| B Gain | 145 | 145 | 145 | 160 | 145 | 147 |

Warm:

| | TV | AV | S-Video | Component | VGA | HDMI |
|--------|-----|-----|---------|-----------|-----|------|
| R Gain | 134 | 134 | 134 | 156 | 142 | 135 |
| G Gain | 125 | 125 | 125 | 145 | 120 | 122 |
| B Gain | 130 | 130 | 130 | 145 | 130 | 132 |

5.3.2 Video Curve:

| | TV | AV | S-Video | Component | VGA | HDMI |
|----------------|------|------|---------|-----------|------|------|
| Bright Max | 600 | 650 | 650 | 700 | 700 | 650 |
| Bright Min | 0 | 0 | 0 | 0 | 0 | 0 |
| Bright Mid | 520 | 550 | 550 | 550 | 590 | 530 |
| | | | | | | |
| Contrast Max | 650 | 600 | 600 | 550 | 600 | 600 |
| Contrast Min | 0 | 0 | 0 | 0 | 0 | 0 |
| Contrast Mid | 500 | 480 | 480 | 460 | 440 | 470 |
| | | | | | | |
| Saturation Max | 800 | 800 | 800 | 800 | 800 | 800 |
| Saturation Min | 0 | 0 | 0 | 0 | 0 | 0 |
| Saturation Mid | 570 | 550 | 550 | 500 | 630 | 500 |
| | | | | | | |
| Hue Max | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Hue Min | 0 | 0 | 0 | 0 | 0 | 0 |
| Hue Mid | 471 | 471 | 471 | 471 | 471 | 471 |

5.3.3 Picture Mode

| | TV | AV | S-Video | Component | VGA | HDMI |
|------------------|----|----|---------|-----------|-----|------|
| Vivid Bright | 55 | 55 | 55 | 55 | 55 | 55 |
| Vivid Contrast | 55 | 55 | 55 | 55 | 55 | 55 |
| Vivid Saturation | 55 | 55 | 55 | 55 | 55 | 55 |
| | | | | | | |
| Std Bright | 50 | 50 | 50 | 50 | 50 | 50 |
| Std Contrast | 50 | 50 | 50 | 50 | 50 | 50 |
| Std Saturation | 50 | 50 | 50 | 50 | 50 | 50 |
| | | | | | | |
| Movie Bright | 45 | 45 | 45 | 45 | 45 | 45 |
| Movie Contrast | 45 | 45 | 45 | 45 | 45 | 45 |
| Movie Saturation | 45 | 45 | 45 | 45 | 45 | 45 |

5.3.4 Volume Curve:

| | Min | 20 | Mid | 80 | Max |
|-------------|-----|----|-----|----|-----|
| TV | 0 | 24 | 34 | 49 | 80 |
| AV/ S-Video | 0 | 23 | 30 | 47 | 67 |
| component | 0 | 23 | 30 | 47 | 67 |
| HDMI | 0 | 19 | 24 | 35 | 52 |
| VGA | 0 | 23 | 30 | 47 | 67 |

Note: Set Downmix to “Lt/Rt”.

5.4 To Exit the Aging Mode

If There is a red “M” moving on the screen, it means the TV is in Aging mode. To exit the Aging mode, use your user RC, and enter 8->0->8 ->7 in sequence.

The above “Factory/Service OSD Menu” are reference only, please refer to the actual units to determine the appearances.

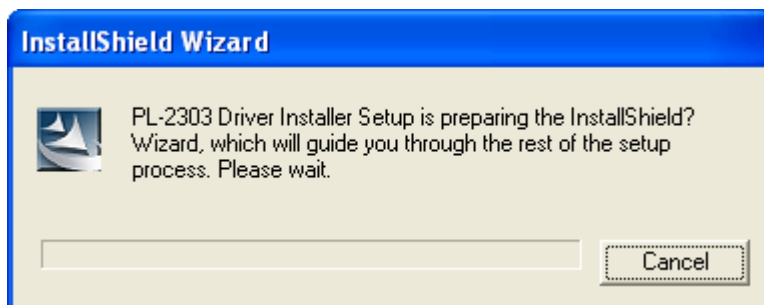
6. Software Upgrading

The software is upgraded by a burning tool-MtkTool, which can burn the program file *.bin to the main board of the unit.

6.1 Get ready for upgrading

6.1.1 Install the driver

Double click the icon  **PL-2303 Driver Installer.exe**, install the driver.



Select the default value, the driver will be installed step by step.

6.1.2 Hardware connecting

Connect the unit to your pc with a USB-to-serial port cable. USB port connects to your pc, and serial port to the TV's RS232 port.

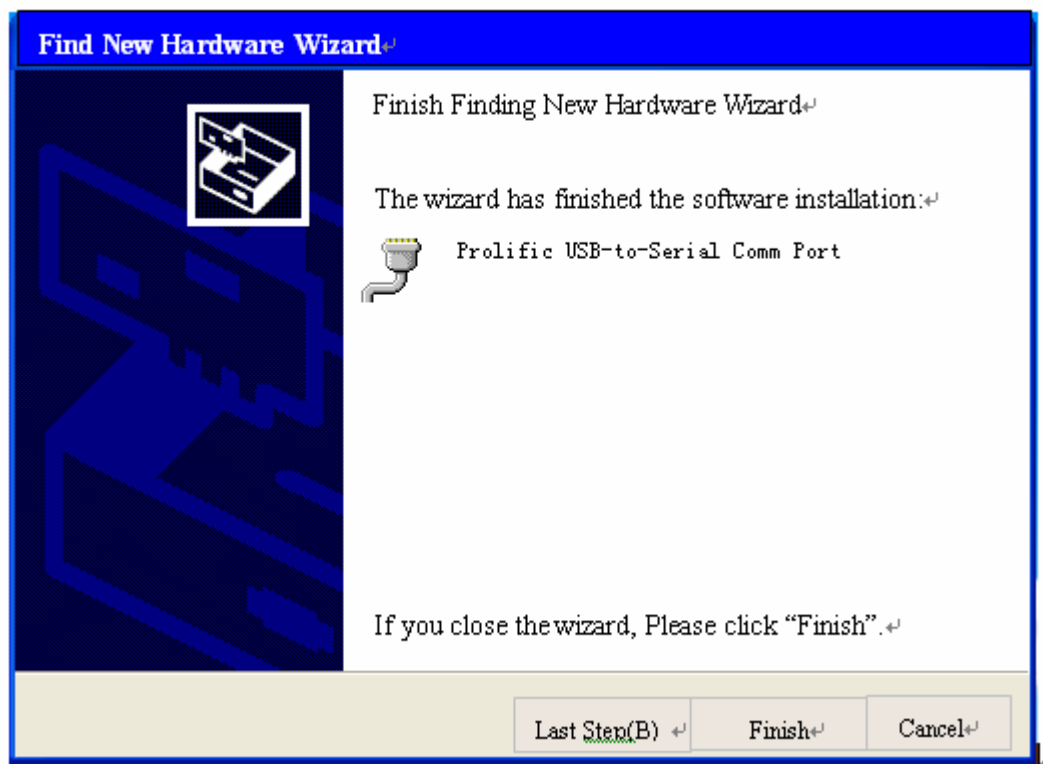
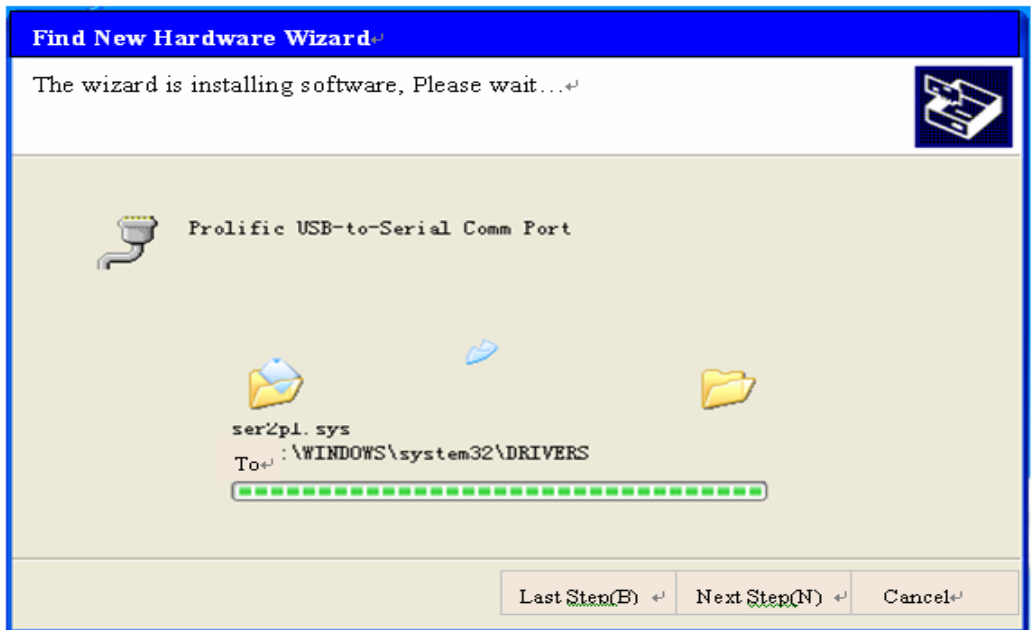


USB connector: to PC.

Serial connector: to TV's RS232 port.

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For the first connecting, the pc will recognize and automatically install the USB device. The process is just like the installation of a mini disk, see the following picture.



6.2 Upgrading with the MtkTool

MTKtool is a green program needing no installation. It is saved in the folder



MTKTOOL_20061027

. There are five folders/files in this folder altogether.



MtkLog



flashinf.ini
配置设置
17 KB



MtkTool.exe

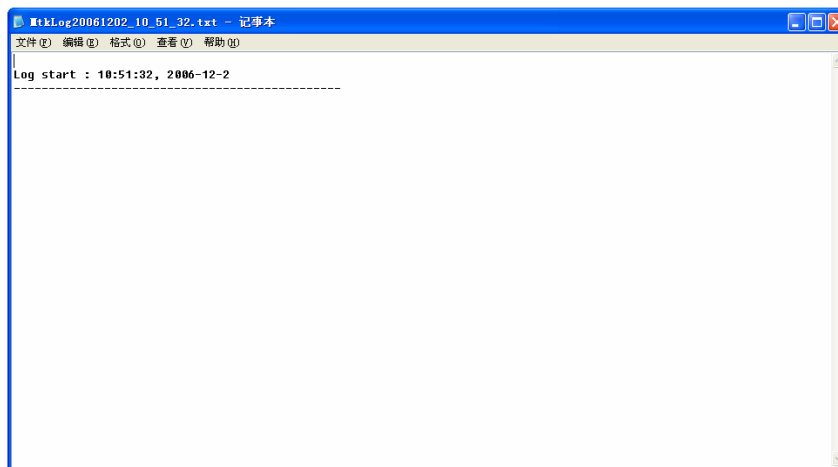


MtkTool.ini
配置设置
1 KB




Shortcut to
MtkTool.exe
快捷方式

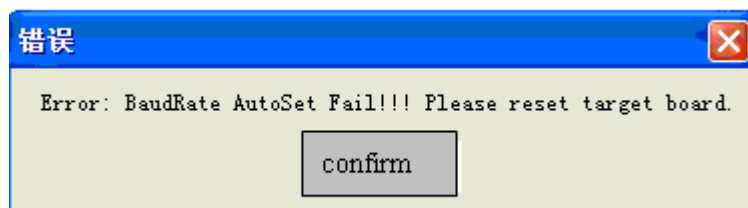
The MtkTool using log is restored in the MtkLog folder. It records the running time and date whenever the tool is used. The log will be a txt file named by the date and time.



MtkTool.exe

After connecting the TV with your PC, double click  icon, open the MtkTool.

If following error appears, it means the related port is not be set properly.



Ignore these errors, click “Confirm” and enter the MtkTool main interface, see the following picture.

Flash chip model

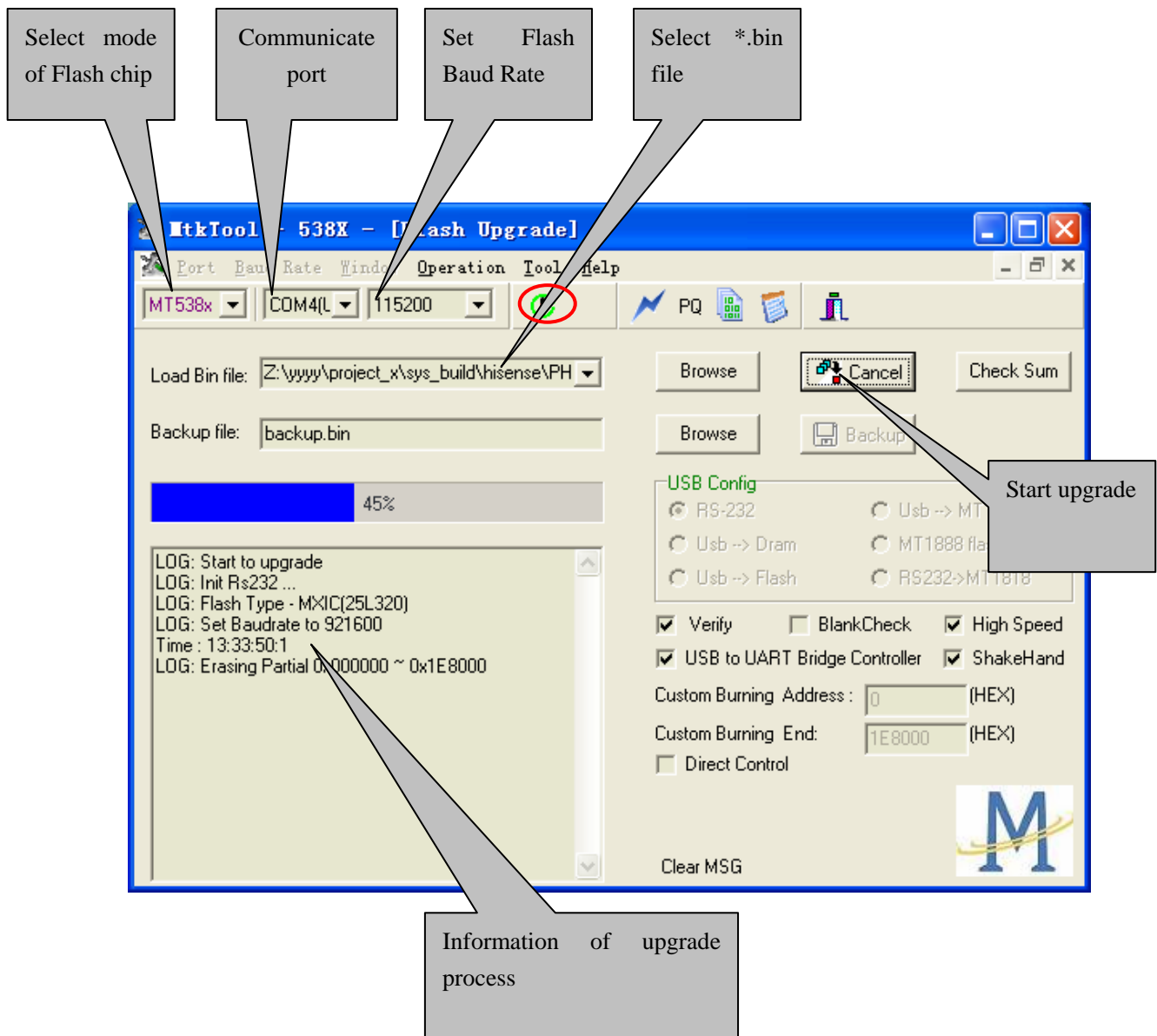
Please refer to follow steps to update the software:

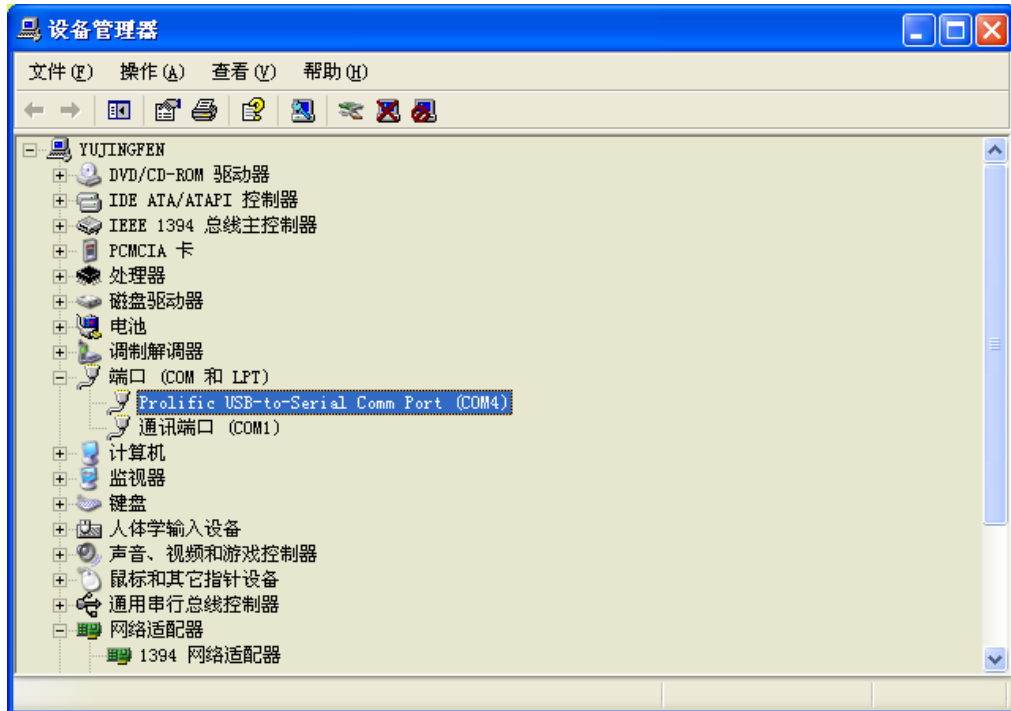
- 1—Select mode of Flash chip to MT538X as the below picture.
- 2—Refer to the next page instruction to select the communicate port.
- 3—Press the icon beside the baud rate and make sure it is green as the below picture.
- 4—Set the flash baud rate to 115200 as the below picture.

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5—Click the browse button to select the *.bin file that will be updated.

6—Click the “start” button to update software.

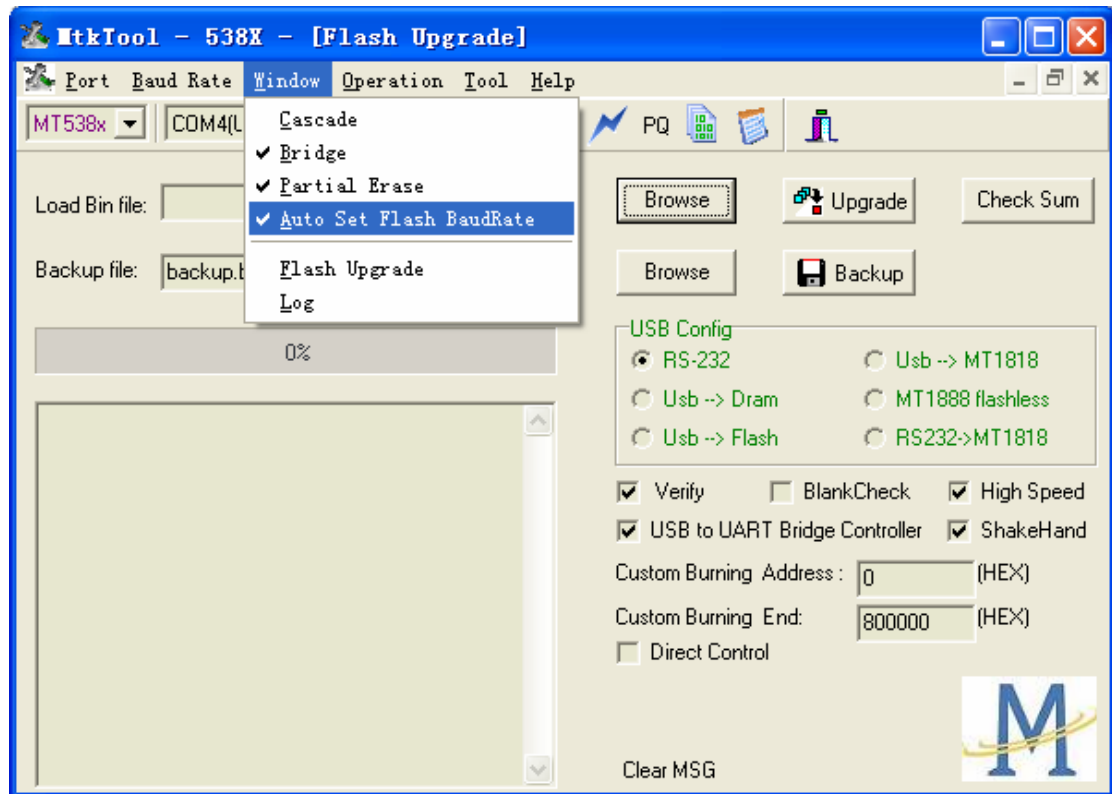




Open “Device Manager” and find which port is connected with the TV. In above picture, COM4 is connected to the TV; so, select “COM4” in the MtkTool main interface. Select the right baud rate according to chip model. For this unit(chip model is MT538X), select 115200.

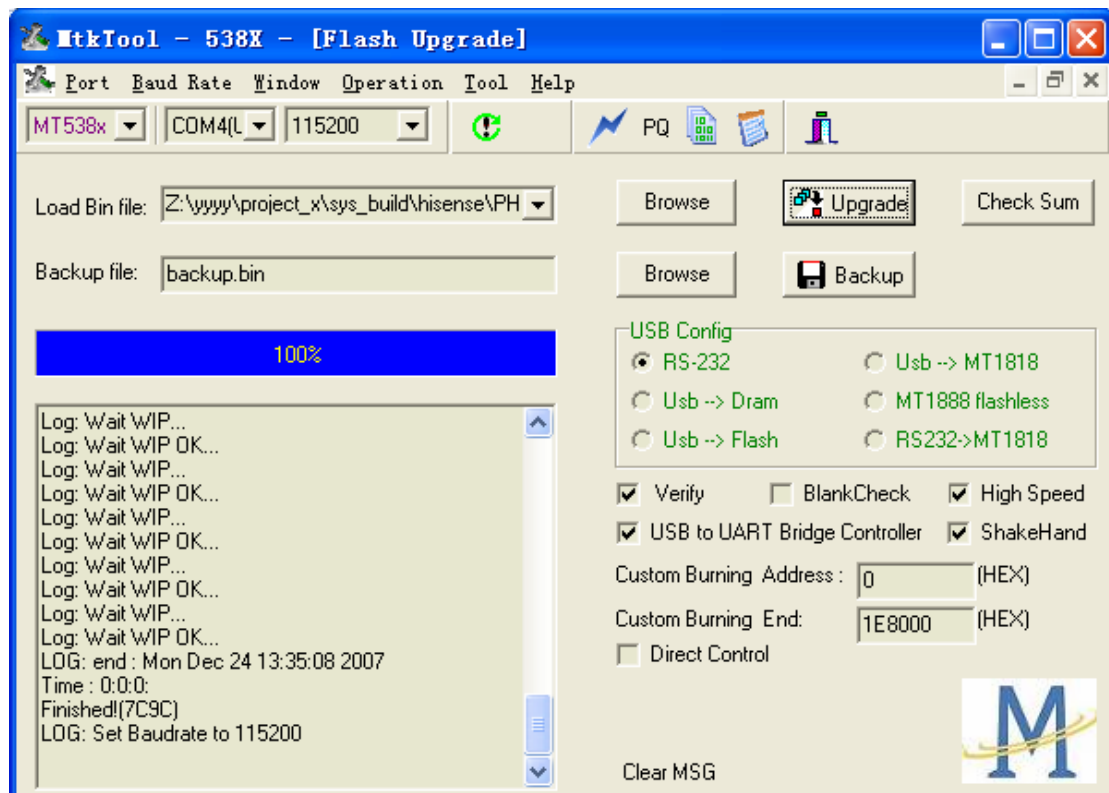
Note: Where or not click the “Auto Set Flash Baud Rate” in the “window” menu depends on the chip type. If the flash chip does not support high speed transport, do not select this option; otherwise, reserve the selected mood.

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Click “Browse” button, find the upgrading program file, and select it. Press “Upgrade” button and start upgrading.

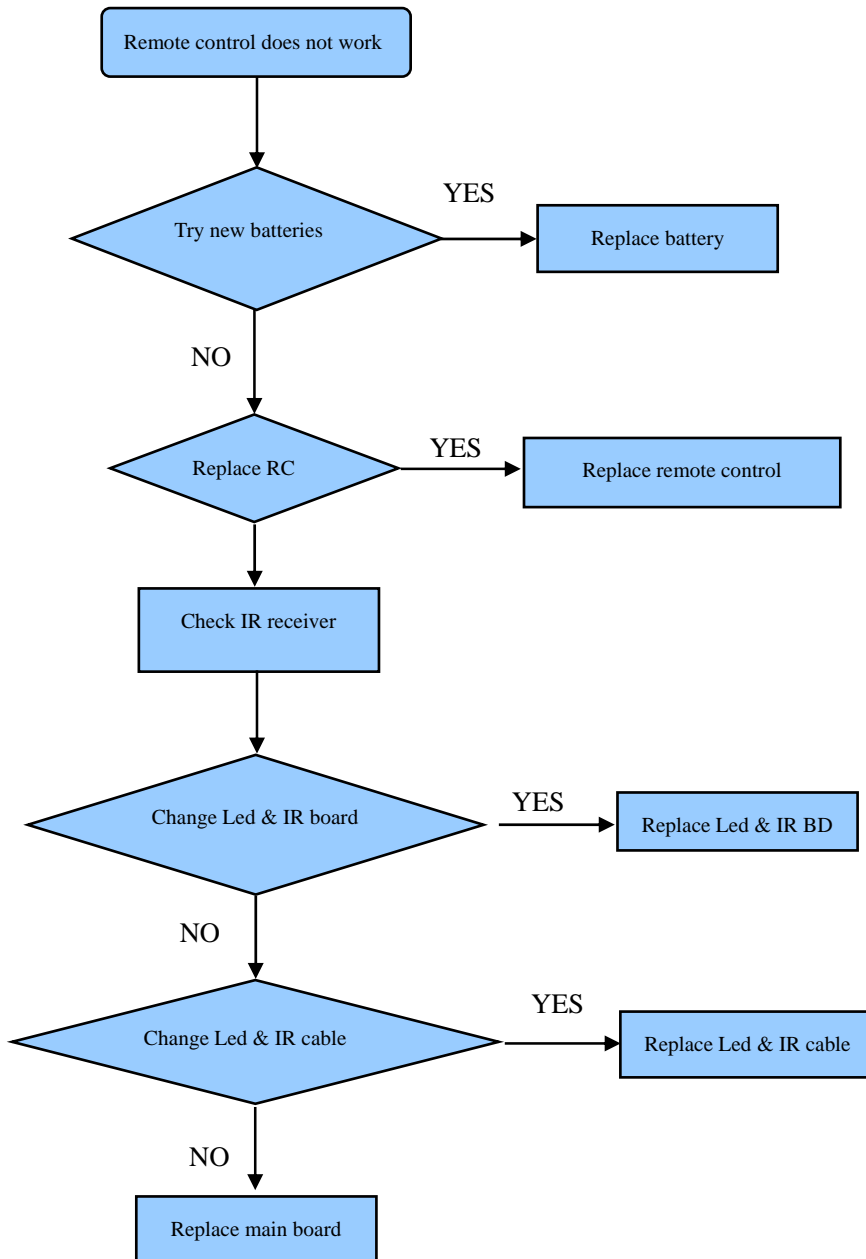
The following interface appears on the screen, indicating upgrading successfully.



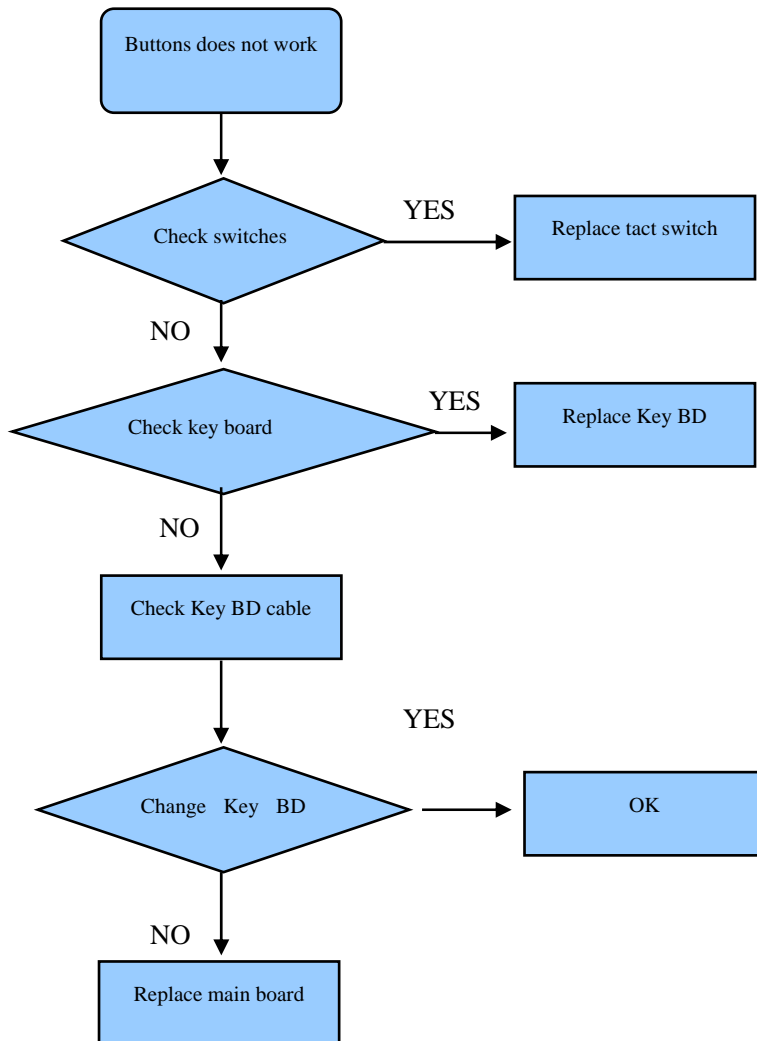
Hisense Confidential

7. Troubleshooting

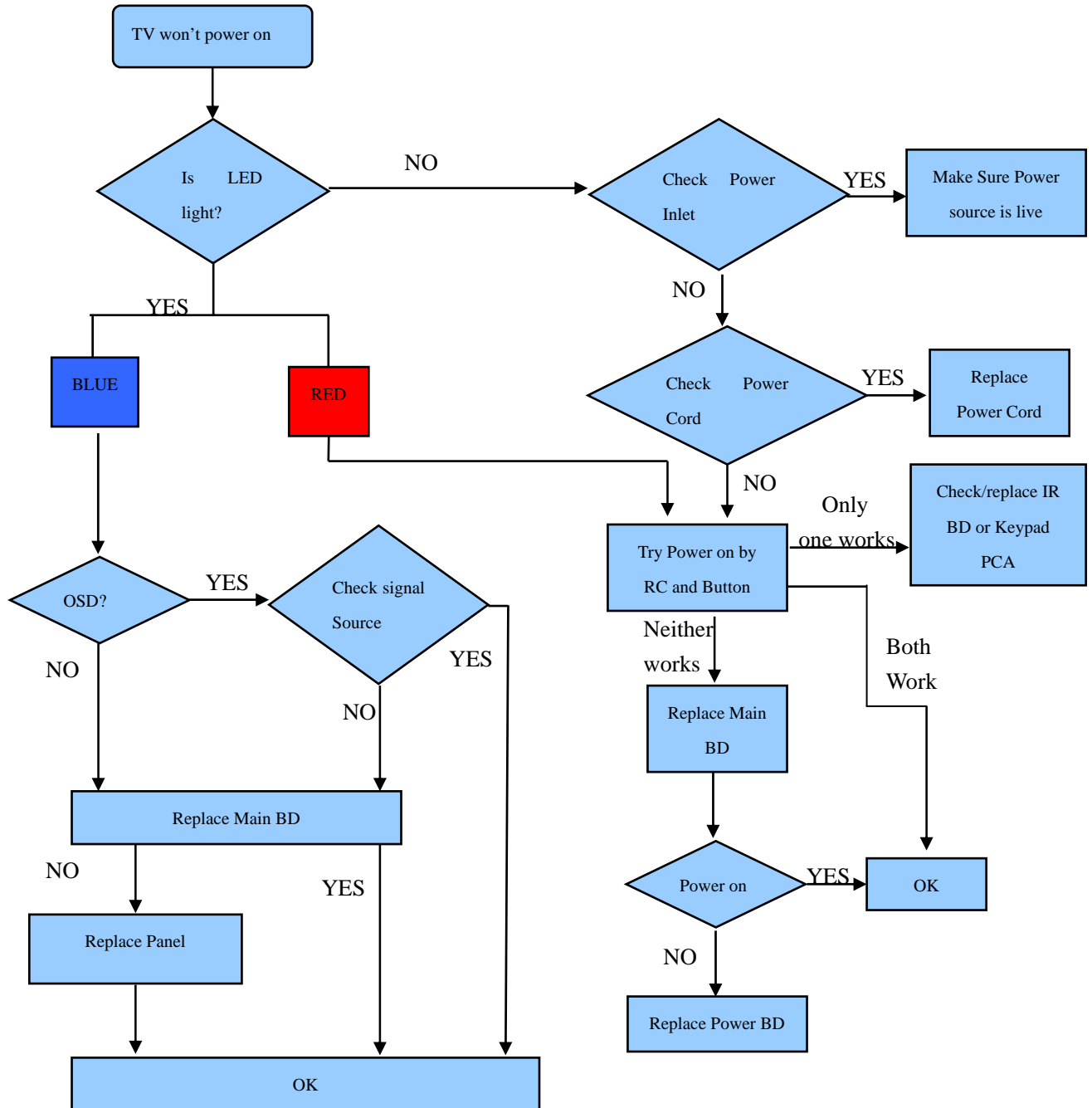
7.1 Troubleshooting for Remote Control



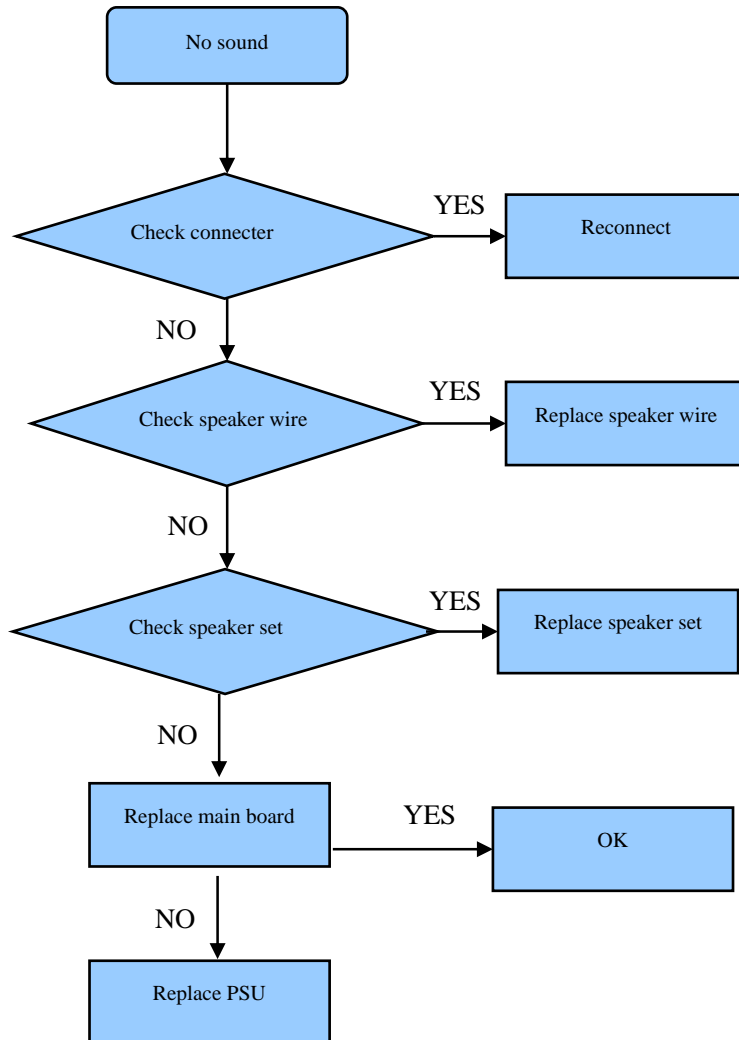
7.2 Troubleshooting for Function Key



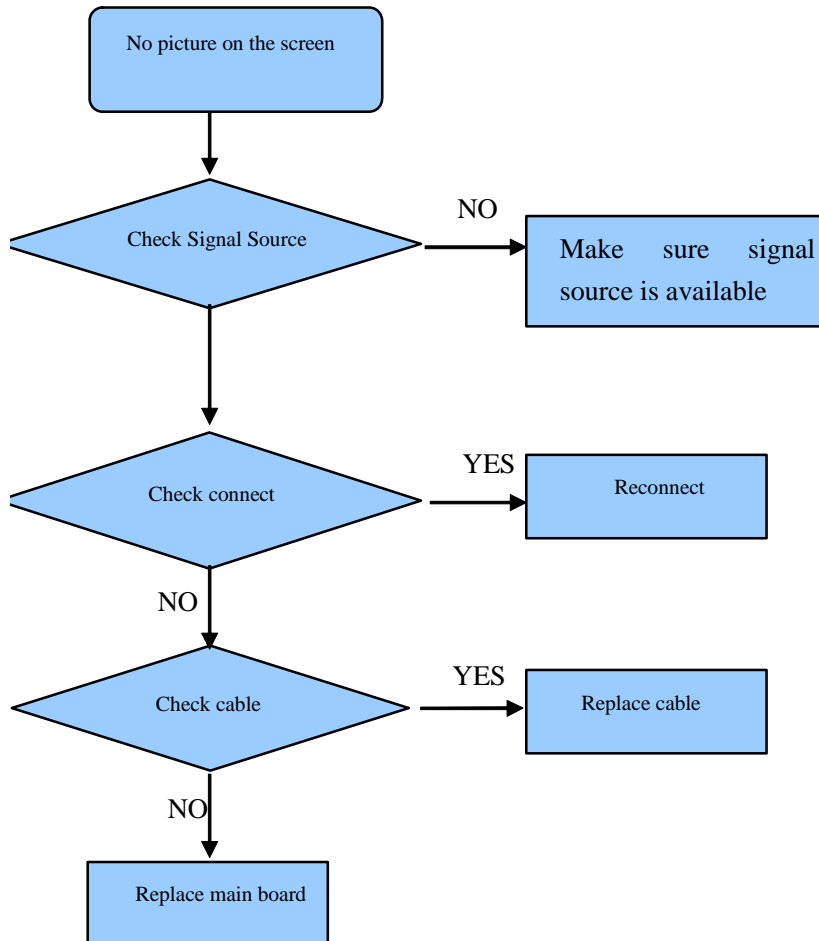
7.3 TV won't Power On



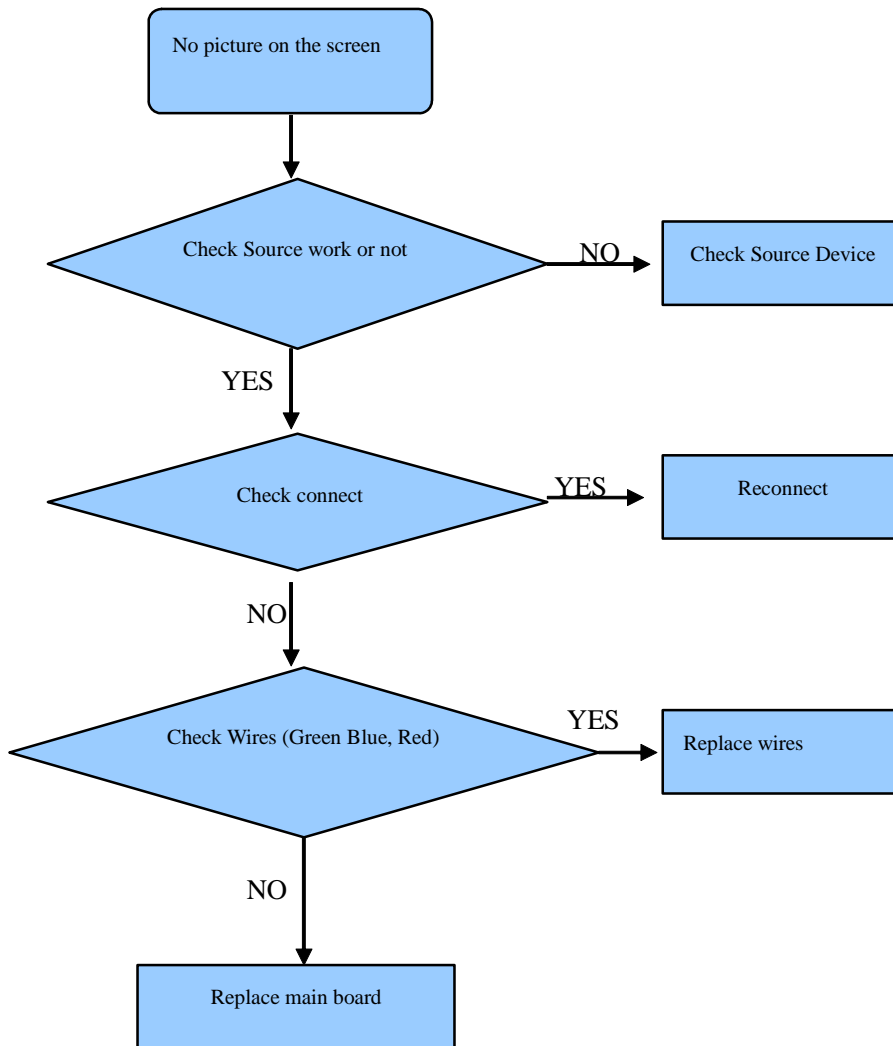
7.4 Troubleshooting for Audio



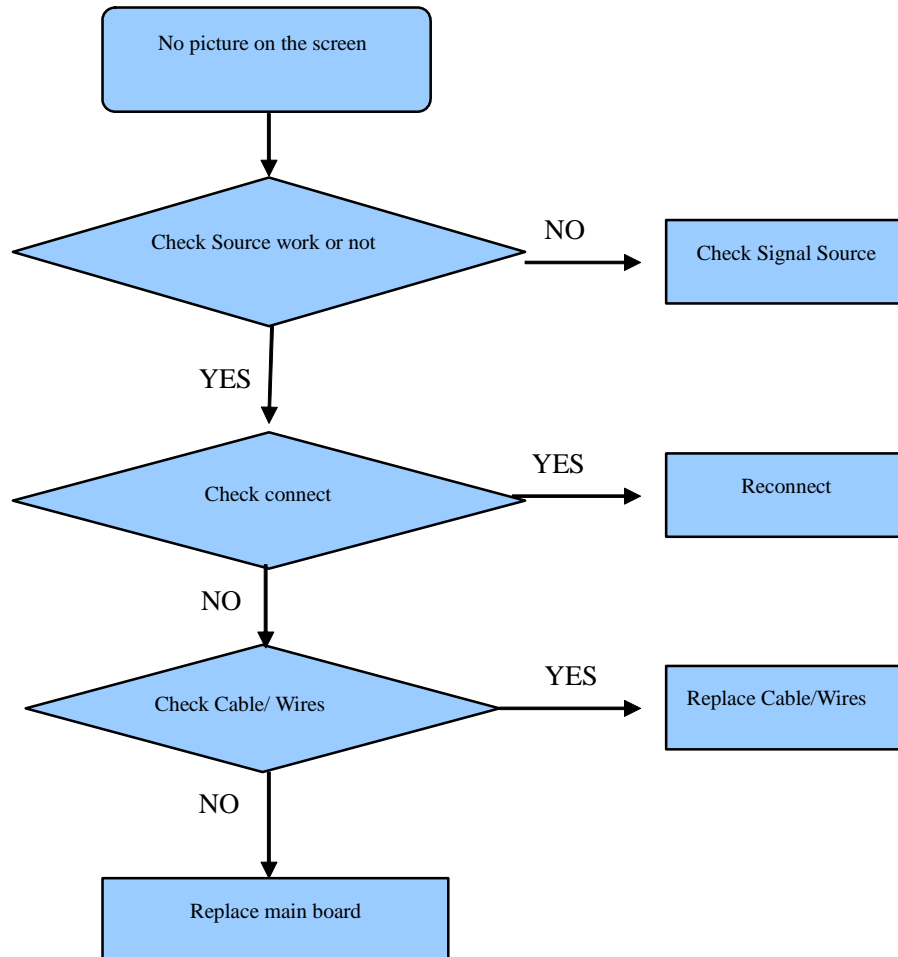
7.5 Troubleshooting for TV/VGA/HDMI input



7.6 Troubleshooting for YPbPr input



7.7 Troubleshooting for Video/S-Video input



8. Explode View and Explode Bom List

9. Schematic circuit diagram

The Explode Bom list as following:

ELEMENT 40LE45S PARTS LIST

| No. | Part No. | Description | Qty. | Code Number | Remark |
|-----|----------|------------------|------|----------------------------|--------|
| 1 | 120635 | Front Cover | 1 | RSAG8.074.410\Z14\ROH | |
| 2 | 1047019 | Button | 1 | RSAG8.335.067\Z1\ROH | * |
| 3 | 113354 | Keypad PCA | 1 | RSAG2.908.1088\ROH | |
| 4 | 1045081 | Speaker | 2 | YDT415E-10W8R-F\ROH | |
| 5 | 1044957 | Decoration | 1 | RSAG6.434.012\ROH | |
| 6 | 112829 | IR Board | 1 | RSAG2.908.1048\ROH | |
| 7 | 1036391 | Block | 1 | RSAG8.634.047\black\ROH | * |
| 8 | 1044979 | Bracket | 13 | RSAG8.048.078\ROH | * |
| 9 | 1053082 | LCD Panel | 1 | LTA400HA07\JK\ROH | * |
| 10 | 1049465 | Stand | 1 | WG6.121.041\High Gloss\ROH | |
| 11 | 1044954 | Bracket Unit | 2 | RSAG6.150.230\ROH | * |
| 12 | 1044607 | Cover | 1 | RSAG8.632.011\Z1\ROH | |
| 13 | 1049070 | LVDS Cord | 1 | HX2-2X20KLB450P-SAM\ROH | |
| 14 | 1046686 | Bracket Unit | 1 | RSAG6.150.381\ROH | * |
| 15 | 1052588 | Terminal Bracket | 1 | RSAG8.081.450\ROH | * |
| 16 | 120639 | Main Board | 1 | RSAG2.908.1375-7\ROH | |
| 17 | 117734 | Power Board | 1 | RSAG2.908.1192-11\ROH | |
| 18 | 120813 | AV Board | 1 | RSAG2.908.1605\ROH | |
| 19 | 1052589 | Terminal Bracket | 1 | RSAG8.081.451\ROH | * |
| 20 | 1058676 | Rating Label | 1 | RSAG8.807.4195\ROH | * |
| 21 | 1052577 | Side Label | 1 | RSAG8.804.3322\ROH | * |
| 22 | 114634 | Rear Cover | 1 | RSAG6.170.190\black\ROH | |
| 23 | 1052576 | Bottom Label | 1 | RSAG8.804.3321\ROH | * |
| | | | | | |

NOTE: * Needn't to be stocked

8. Explode View and Explode Bom List

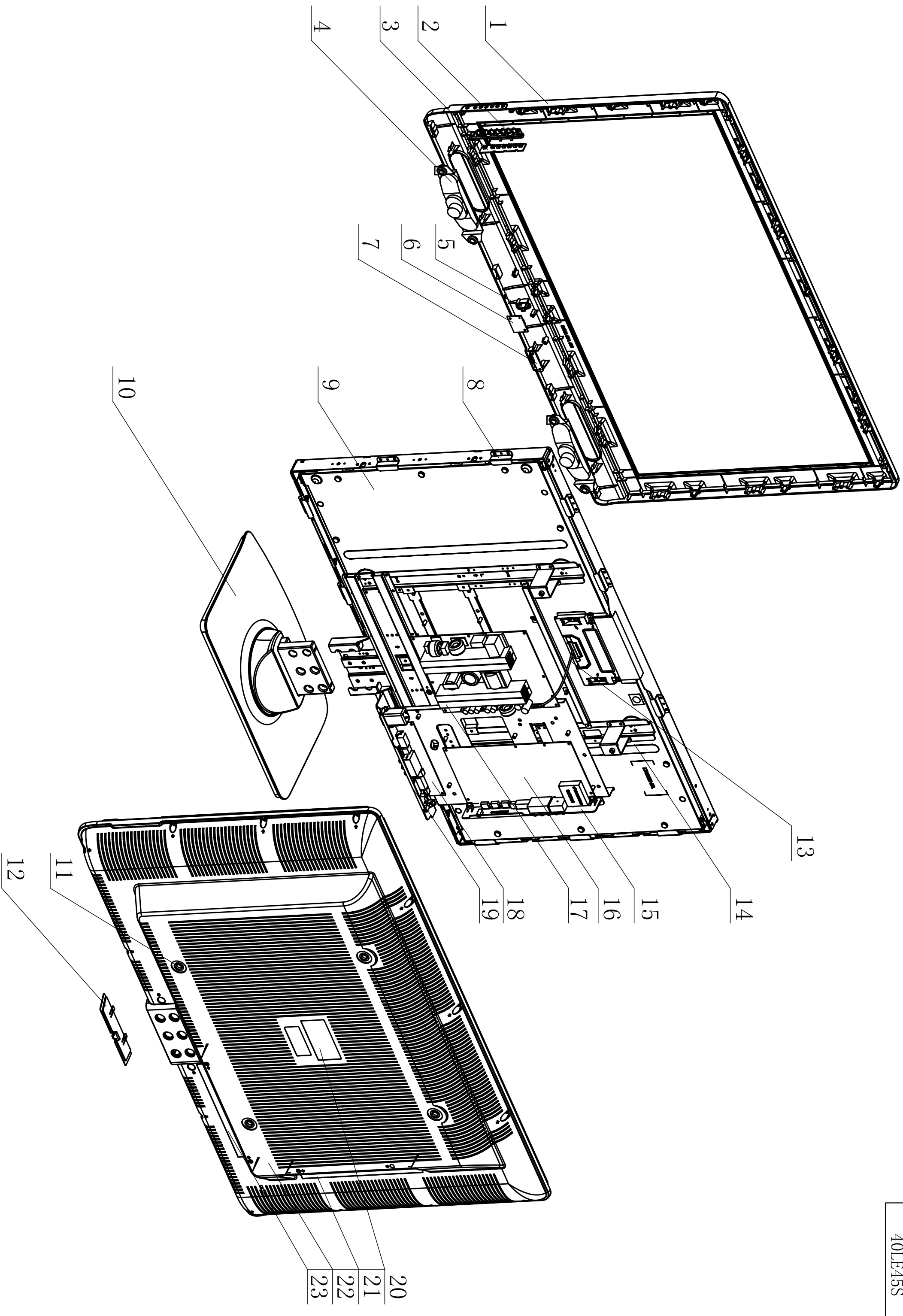
9. Schematic circuit diagram

The Explode Bom list as following:

ELEMENT 40LE45S PARTS LIST

| No. | Part No. | Description | Qty. | Code Number | Remark |
|-----|----------|------------------|------|----------------------------|--------|
| 1 | 120635 | Front Cover | 1 | RSAG8.074.410\Z14\ROH | |
| 2 | 1047019 | Button | 1 | RSAG8.335.067\Z1\ROH | * |
| 3 | 113354 | Keypad PCA | 1 | RSAG2.908.1088\ROH | |
| 4 | 1045081 | Speaker | 2 | YDT415E-10W8R-F\ROH | |
| 5 | 1044957 | Decoration | 1 | RSAG6.434.012\ROH | |
| 6 | 112829 | IR Board | 1 | RSAG2.908.1048\ROH | |
| 7 | 1036391 | Block | 1 | RSAG8.634.047\black\ROH | * |
| 8 | 1044979 | Bracket | 13 | RSAG8.048.078\ROH | * |
| 9 | 1053082 | LCD Panel | 1 | LTA400HA07\JK\ROH | * |
| 10 | 1049465 | Stand | 1 | WG6.121.041\High Gloss\ROH | |
| 11 | 1044954 | Bracket Unit | 2 | RSAG6.150.230\ROH | * |
| 12 | 1044607 | Cover | 1 | RSAG8.632.011\Z1\ROH | |
| 13 | 1049070 | LVDS Cord | 1 | HX2-2X20KLB450P-SAM\ROH | |
| 14 | 1046686 | Bracket Unit | 1 | RSAG6.150.381\ROH | * |
| 15 | 1052588 | Terminal Bracket | 1 | RSAG8.081.450\ROH | * |
| 16 | 120639 | Main Board | 1 | RSAG2.908.1375-7\ROH | |
| 17 | 117734 | Power Board | 1 | RSAG2.908.1192-11\ROH | |
| 18 | 120813 | AV Board | 1 | RSAG2.908.1605\ROH | |
| 19 | 1052589 | Terminal Bracket | 1 | RSAG8.081.451\ROH | * |
| 20 | 1058676 | Rating Label | 1 | RSAG8.807.4195\ROH | * |
| 21 | 1052577 | Side Label | 1 | RSAG8.804.3322\ROH | * |
| 22 | 114634 | Rear Cover | 1 | RSAG6.170.190\black\ROH | |
| 23 | 1052576 | Bottom Label | 1 | RSAG8.804.3321\ROH | * |
| | | | | | |

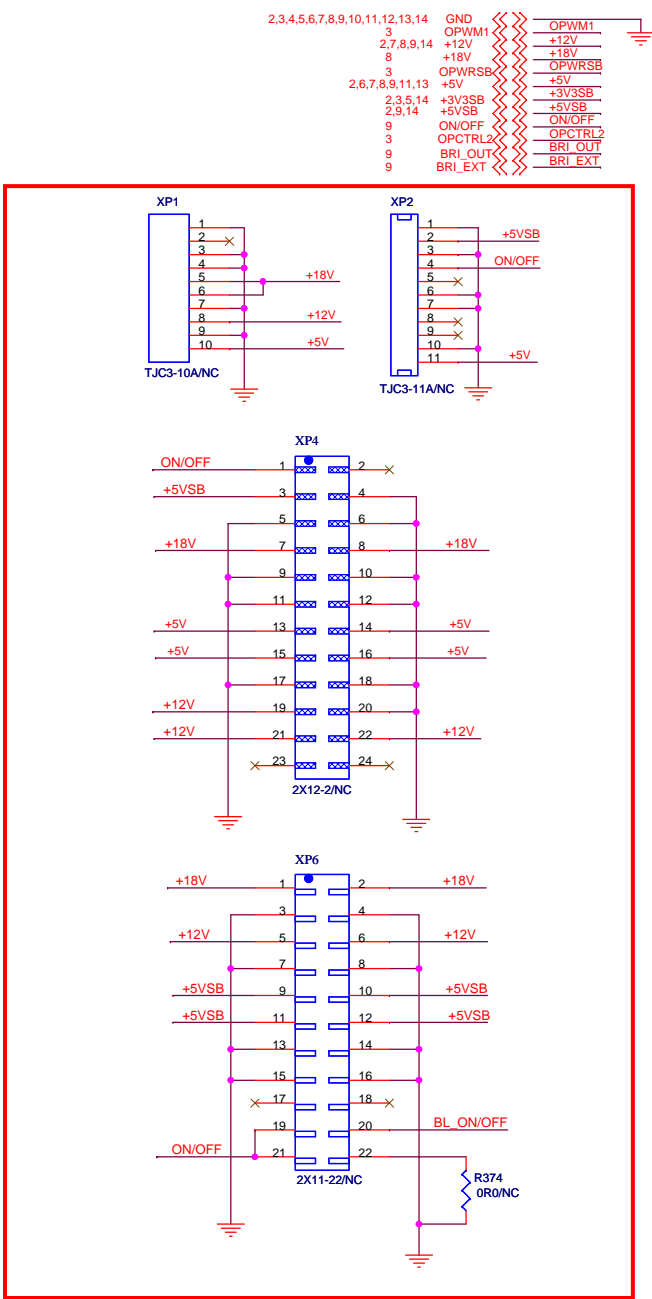
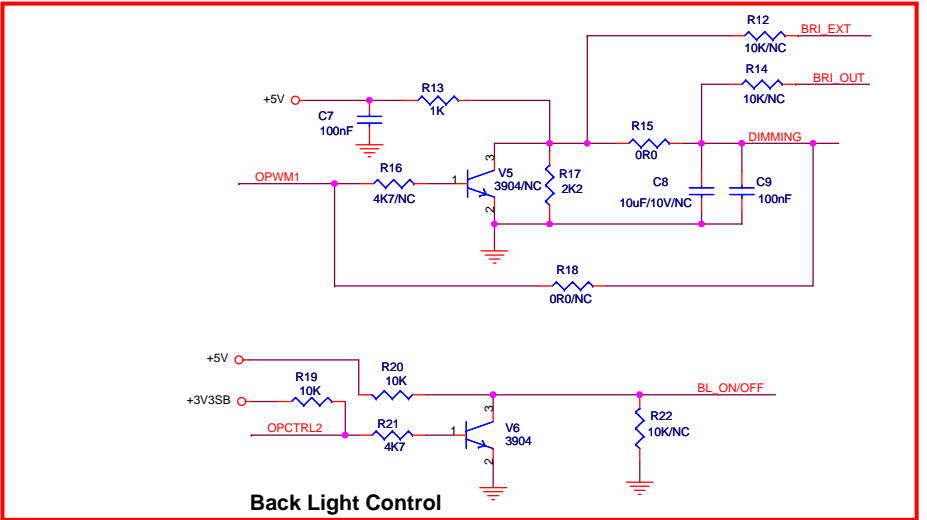
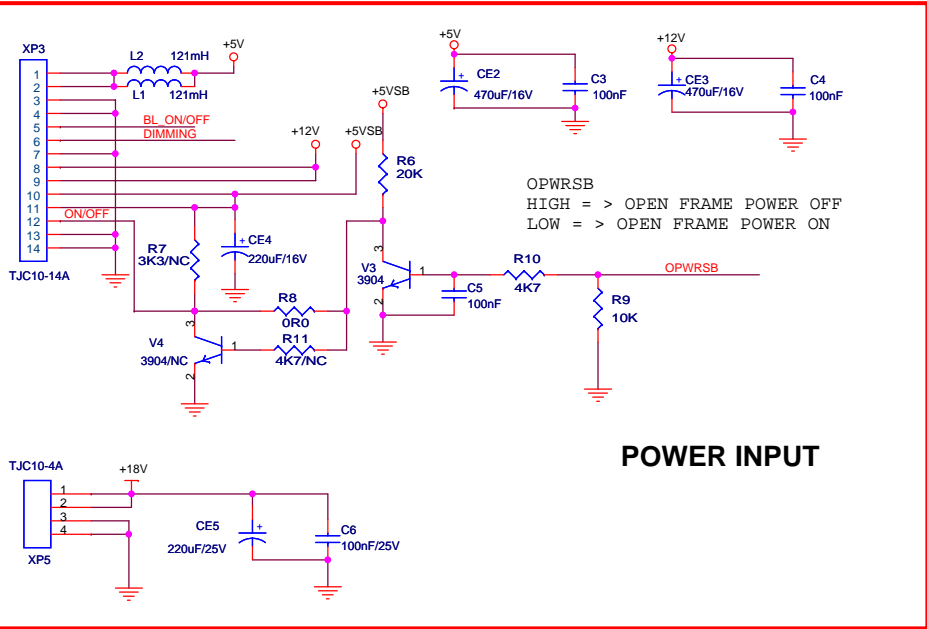
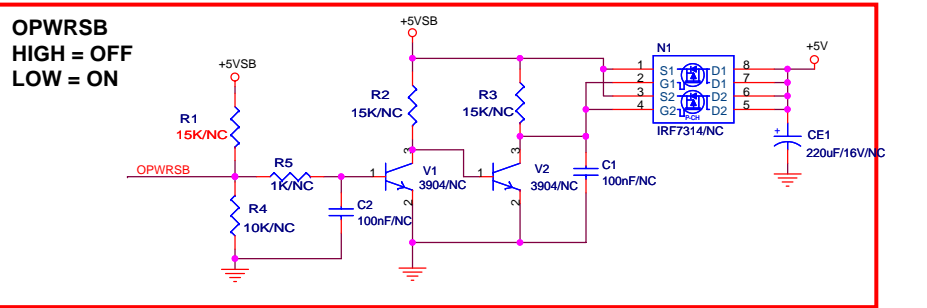
NOTE: * Needn't to be stocked

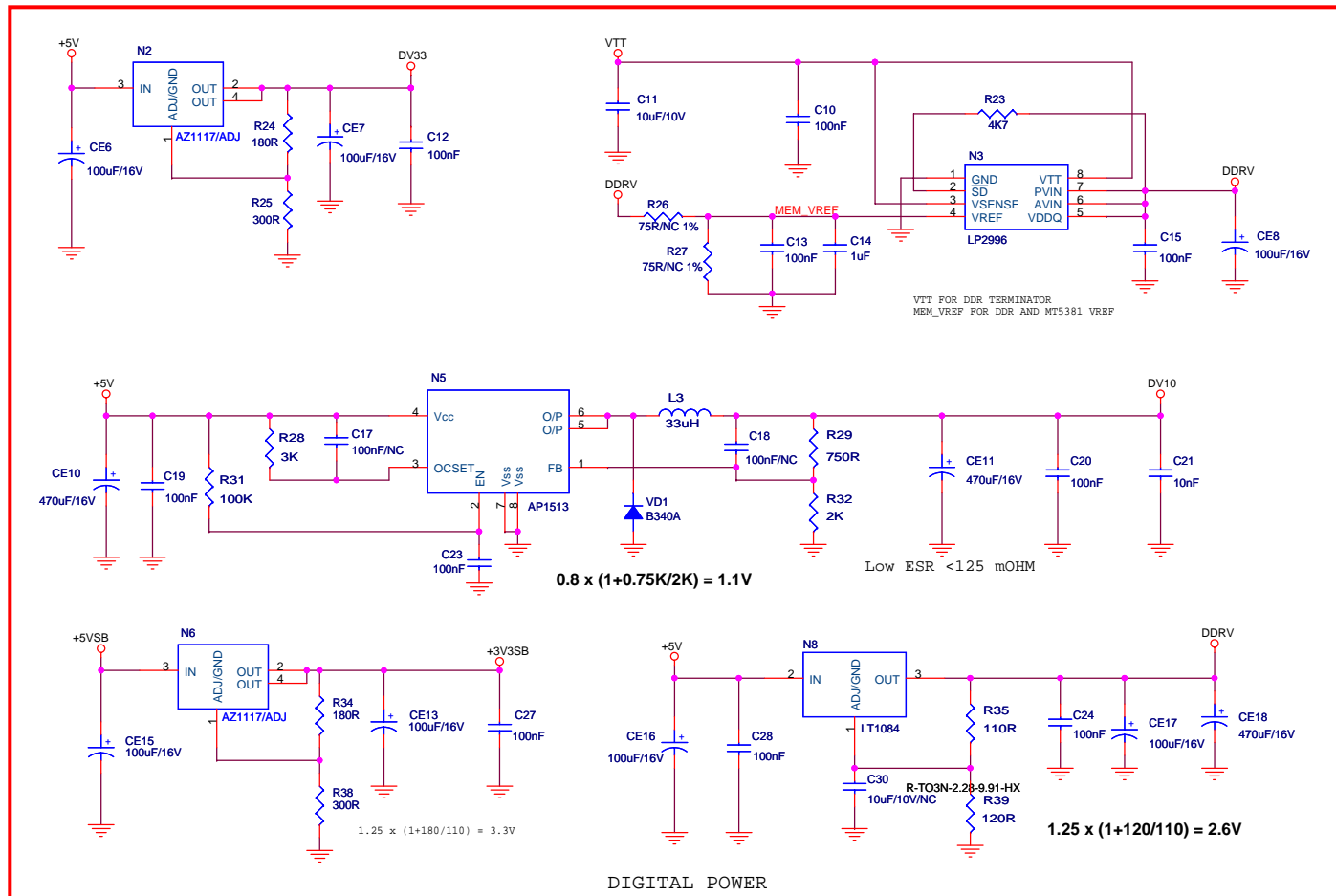


| |
|----------------------------|
| 01:INDEX/POWER IN |
| 02:DIGITAL/ANALOG POWER |
| 03:MT5380PERIPHERAL |
| 04:DDR1 MEMORY |
| 05:FLASH/JTAG/UART |
| 06:ANALOG PLL/USB2.0/TUNER |
| 07:LINE OUT/HP |
| 08:AMP/MUTE |
| 09:LVDS/HEADPHONE |
| 10:YPBPR INPUT |
| 11:VGA IN/LR |
| 12:HDMI INPUT |
| 13:AV/SV IN FROM AV BOARD |
| 14:IR/KEY/BLKON/DIMMING |
| E1:REVISION HISTORY |
| E2:BLOCK DIAGRAM |

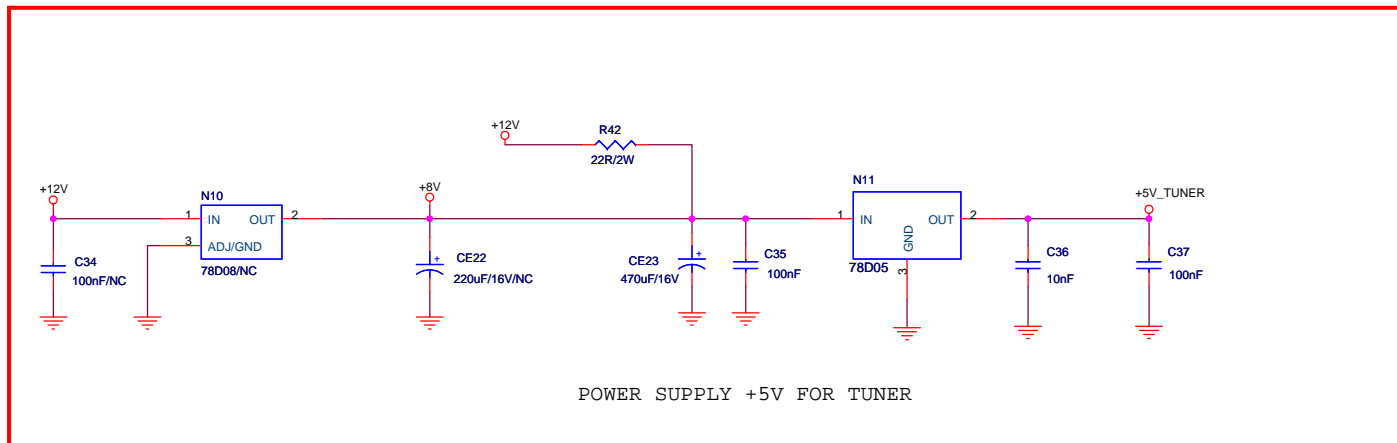
| GPIO Definition | |
|-----------------|--------------------------|
| GPIO_0 | SYSTEM EEPROM WP PROTECT |
| GPIO_1 | HDMI EDID WP |
| GPIO_3 | USB POWER EN |
| GPIO_4 | LG PDPDISPEN |
| GPIO_5 | 4052 AV1/AV2 SW |
| GPIO_6 | VGA DDC WP PROTECT |
| GPIO_7 | HDMI HDP |
| GPIO_8 | HDMI CHIP_POWER |
| GPIO_9 | TCOM POWER CONTROL |
| GPIO_10 | USB POWER EN |
| GPIO_11 | 4052 AV1/AV2 SW |
| GPIO_12 | U2RX /NC |
| GPIO_13 | U2TX /NC |
| OPCTRL0 | CEC FUNCTION |
| OPCTRL1 | power LED |
| OPCTRL2 | BLK ON/OFF |
| OPCTRL3 | soft mute control |
| OPCTRL4 | trap mode |
| OPCTRL5 | trap mode |
| OPWSRB | POWER IN ON/OFF |
| ADIN0 | PWRDET |
| ADIN1,2 | key pad |
| ADIN3 | Tuner AFT |
| ADIN4 | NC |
| OIRI | IR |

| GPIO Definition | |
|-----------------|------------------|
| RF_AGC | NC |
| IF_AGC | IF AGC FOR TUNER |
| | |
| | |

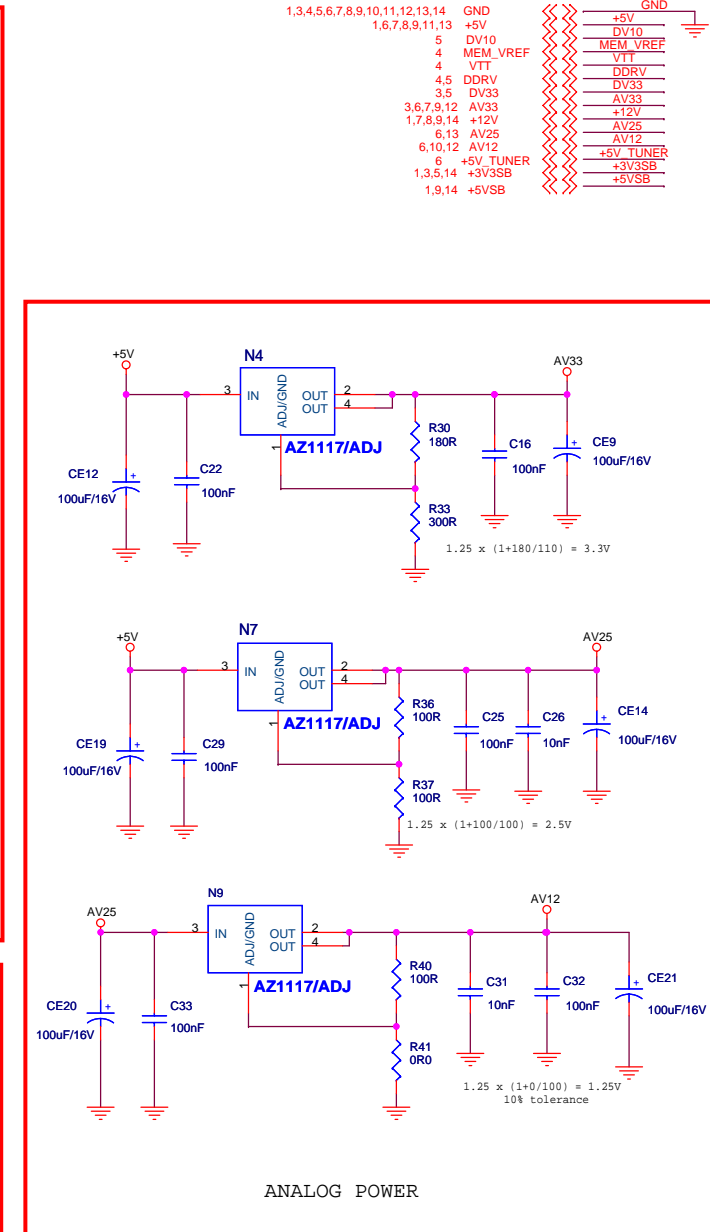




DIGITAL POWER

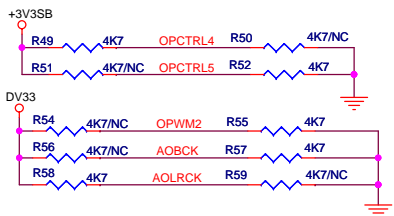
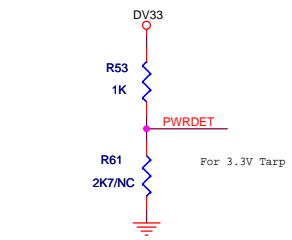
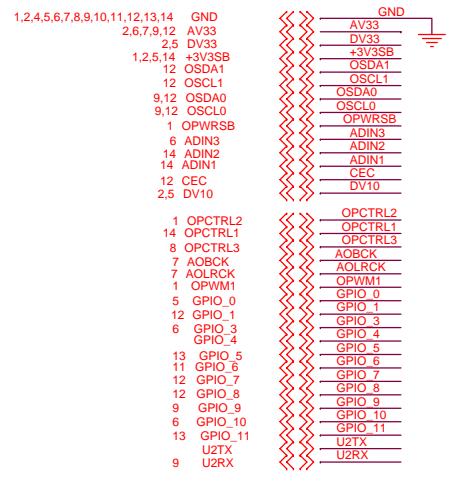
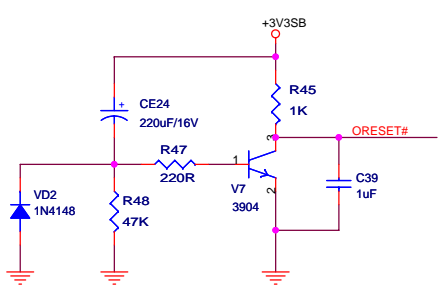
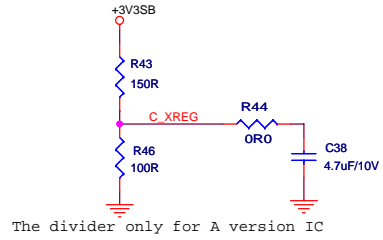
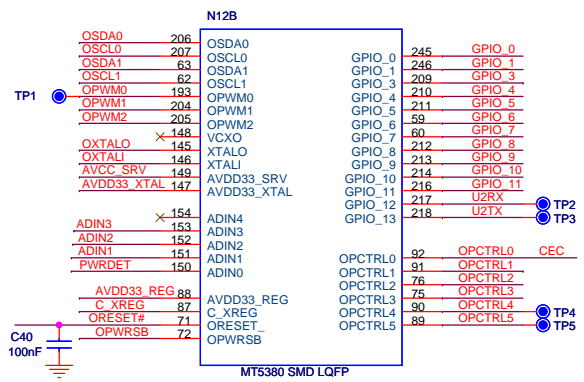


POWER SUPPLY +5V FOR TUNER



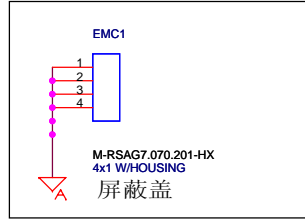
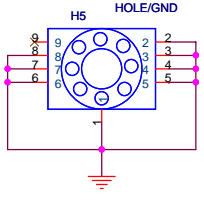
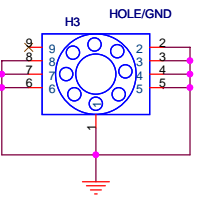
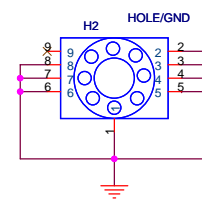
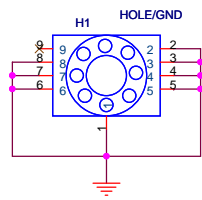
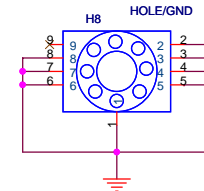
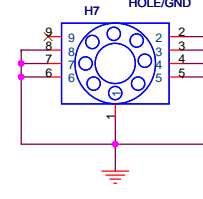
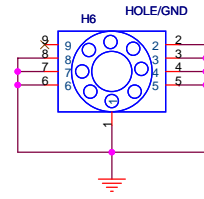
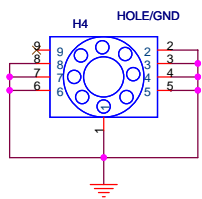
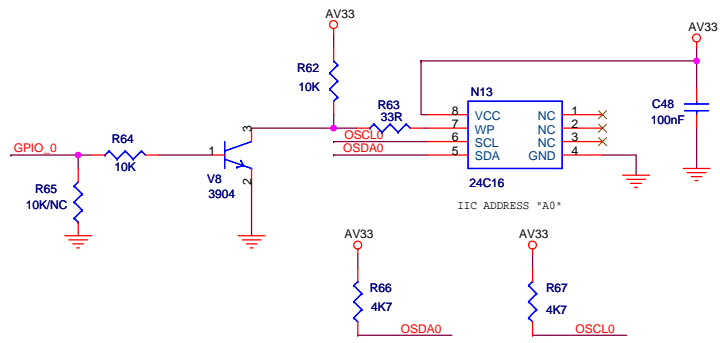
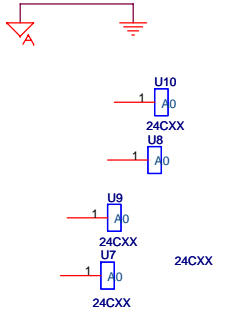
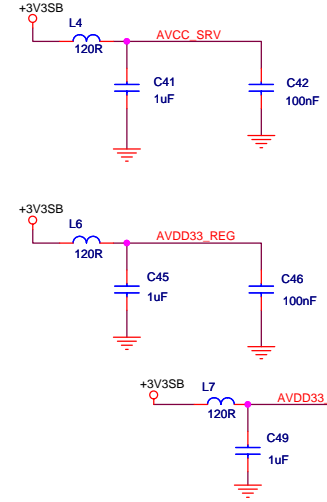
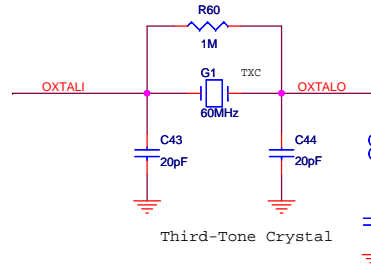
ANALOG POWER

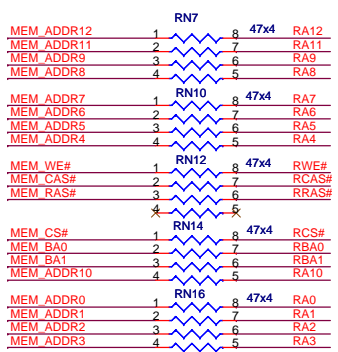
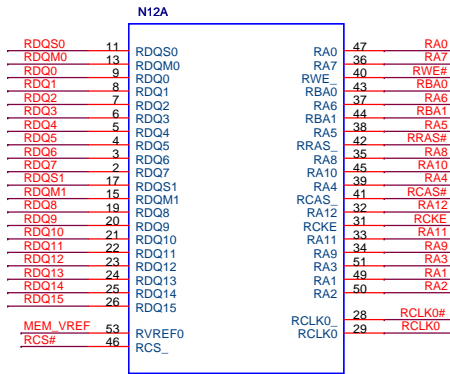
| | | |
|--------------------------------|-----------|-----------|
| 1,3,4,5,6,7,8,9,10,11,12,13,14 | GND | GND |
| 1,6,7,8,9,11,13 | +5V | +5V |
| 5 | DV10 | DV10 |
| 4 | MEM_VREF | MEM_VREF |
| 4 | VTT | VTT |
| 4,5 | DDR_V | DDR_V |
| 3,5 | DV33 | DV33 |
| 3,6,7,9,12 | AV33 | AV33 |
| 1,7,8,9,14 | +12V | +12V |
| 6,13 | AV25 | AV25 |
| 6,10,12 | AV12 | AV12 |
| 6 | +5V_TUNER | +5V_TUNER |
| 1,3,5,14 | +3V3SB | +3V3SB |
| 1,9,14 | +5VSB | +5VSB |



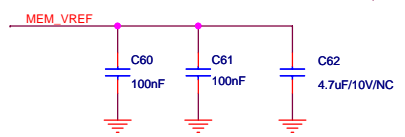
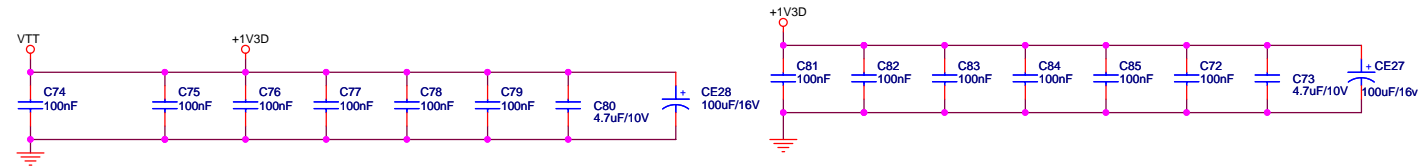
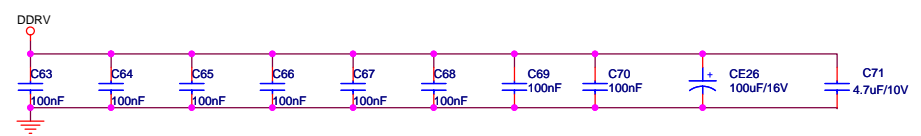
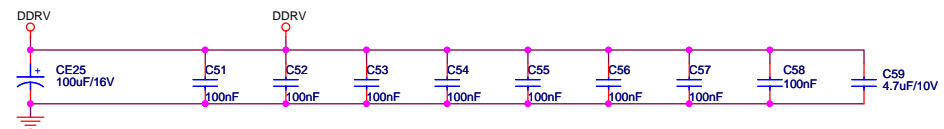
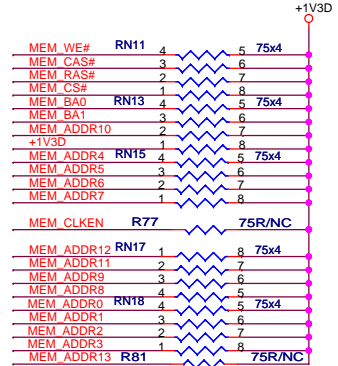
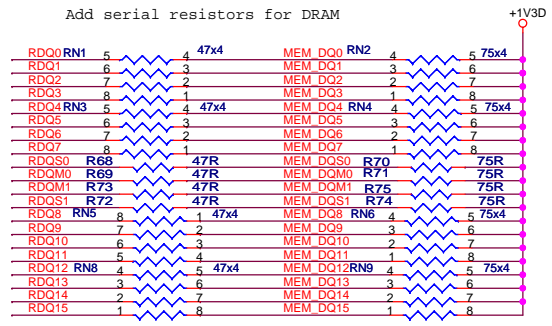
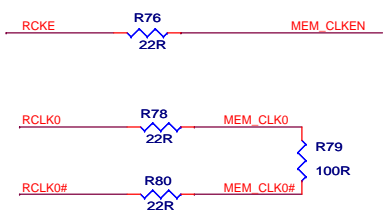
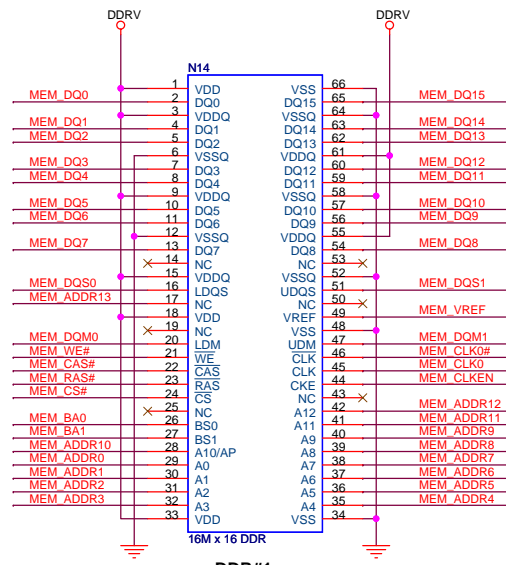
| | | | |
|-------------|-------|-------|--------|
| Trap Mode | OPWM2 | AOBCK | AOLRCK |
| Normal mode | 0 | 0 | 0 |
| ICE mode | 0 | 0 | 1 |

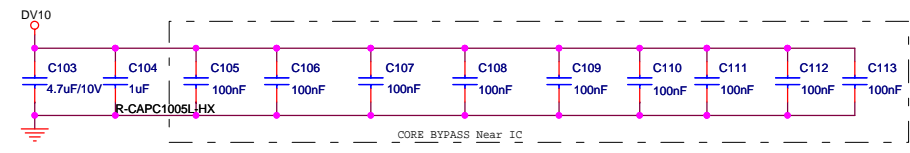
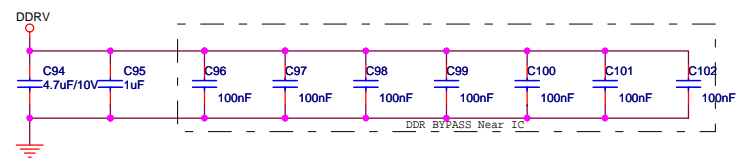
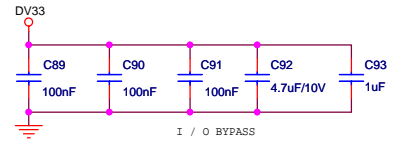
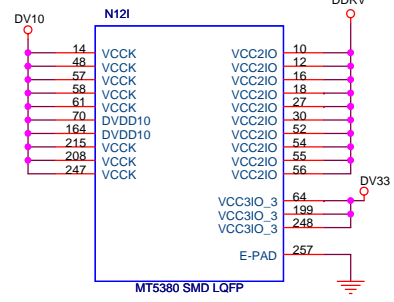
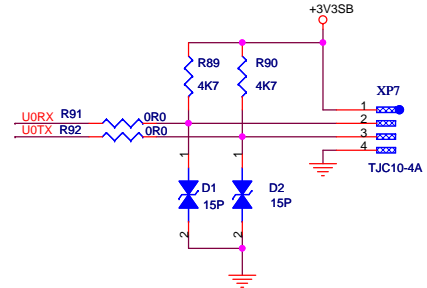
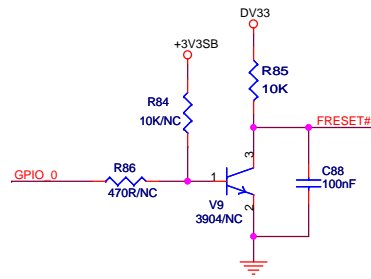
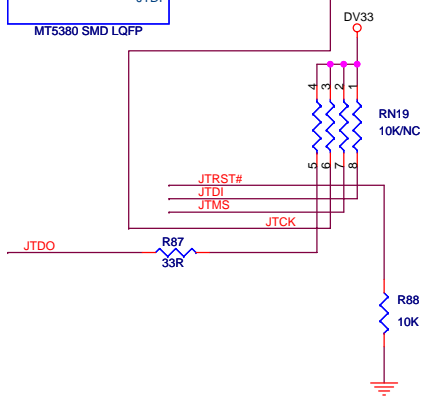
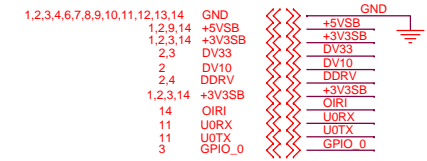
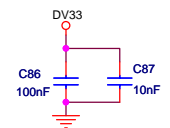
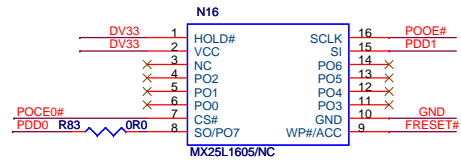
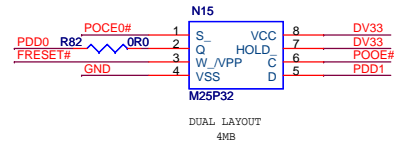
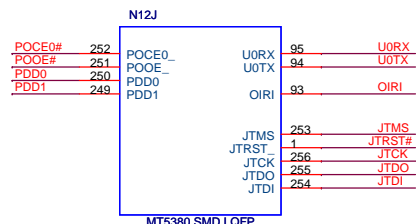
| | | |
|-----------------|---------|---------|
| Trap Mode | OPCTRL5 | OPCTRL4 |
| Core Reset 1 us | 0 | 1 |

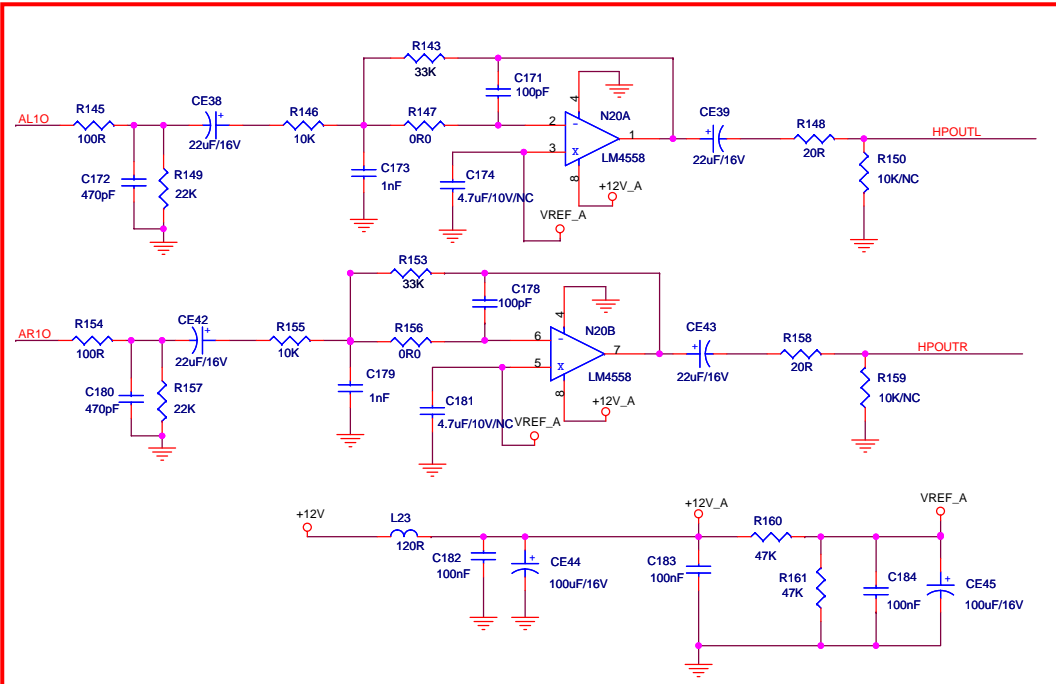
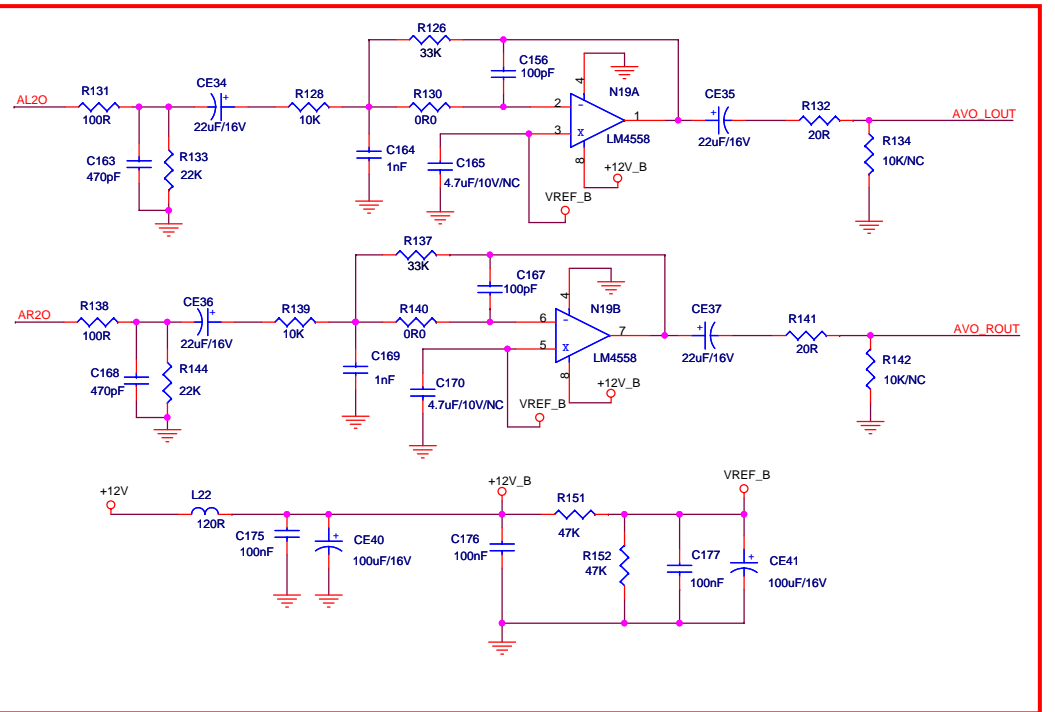
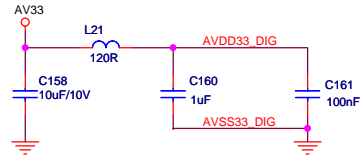
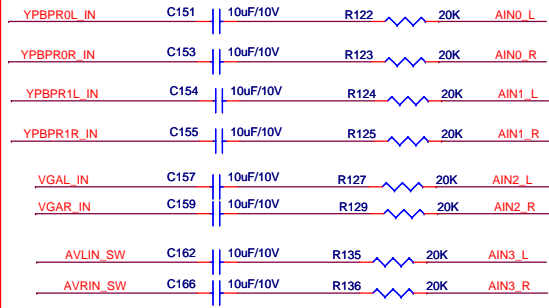
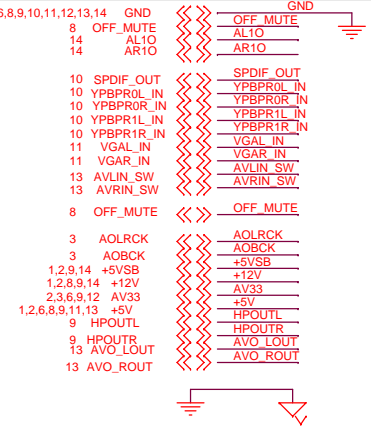
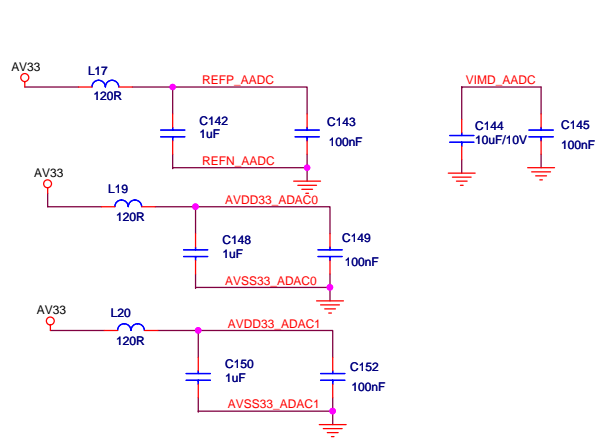
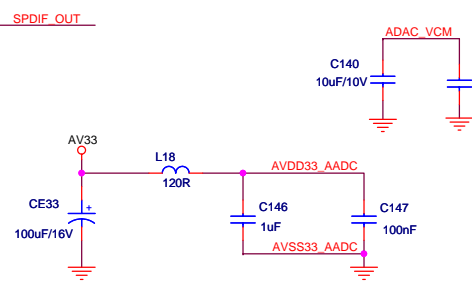
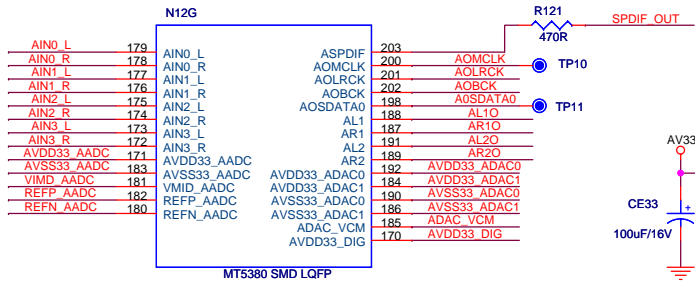




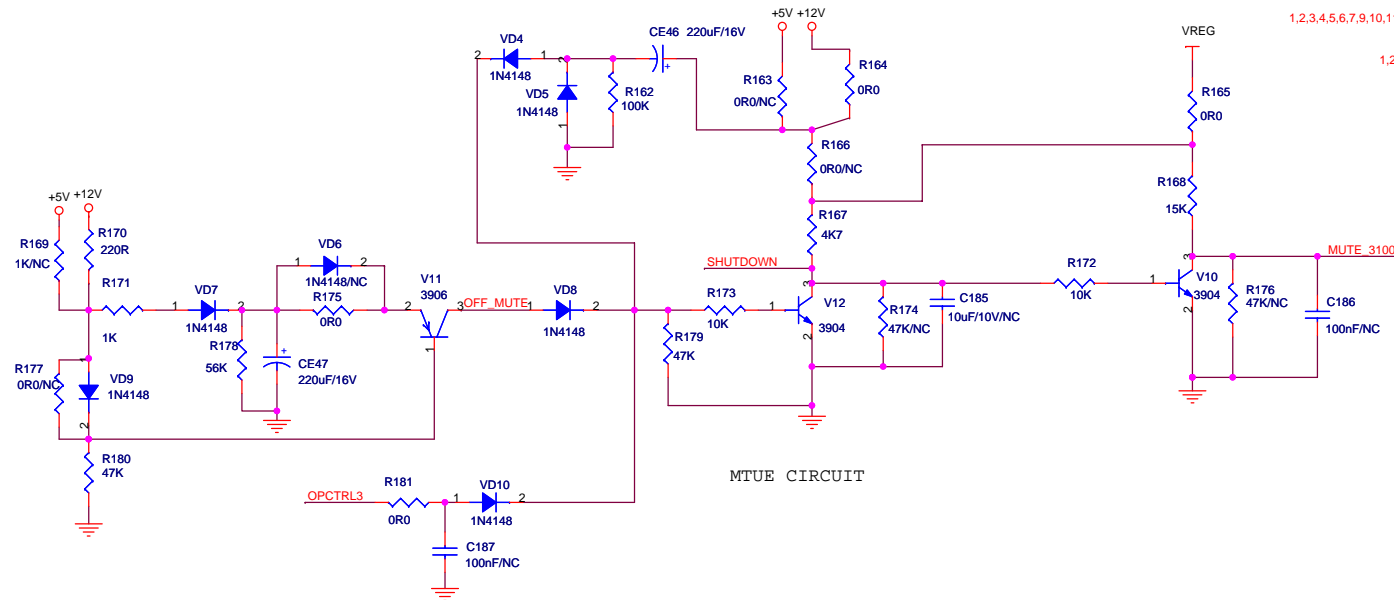
Add serial resistors for DRAM



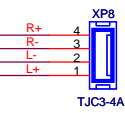
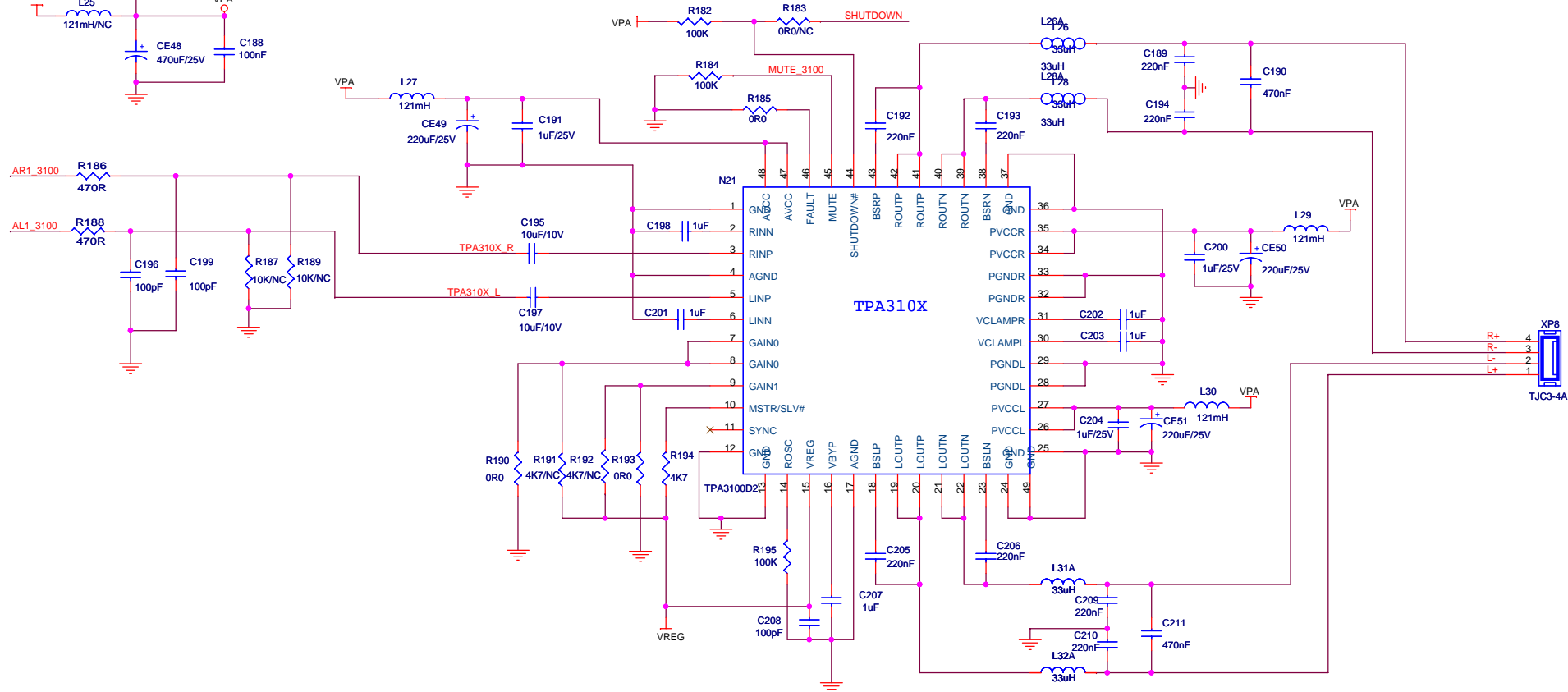
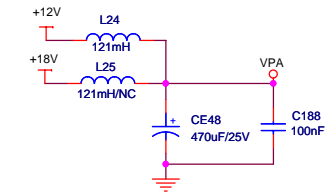




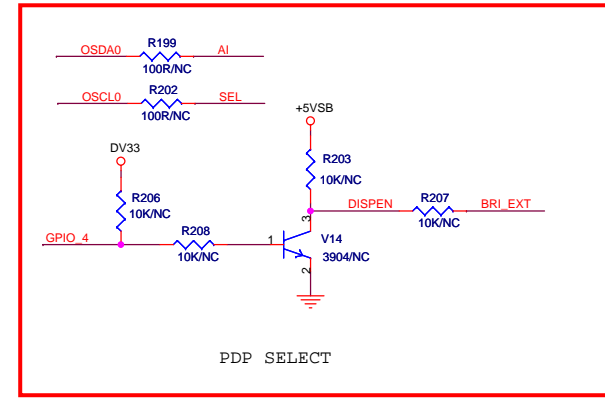
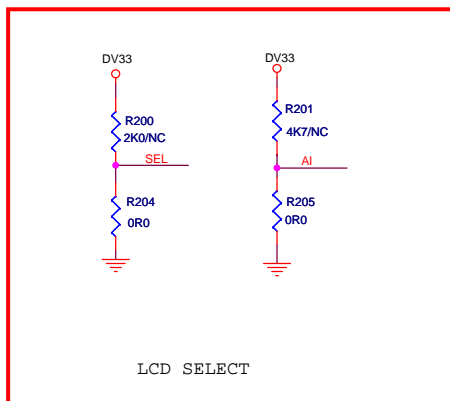
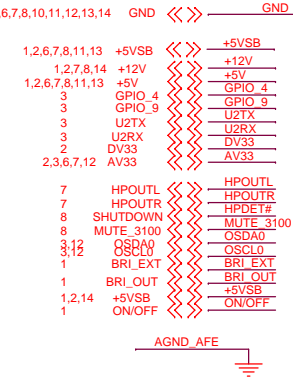
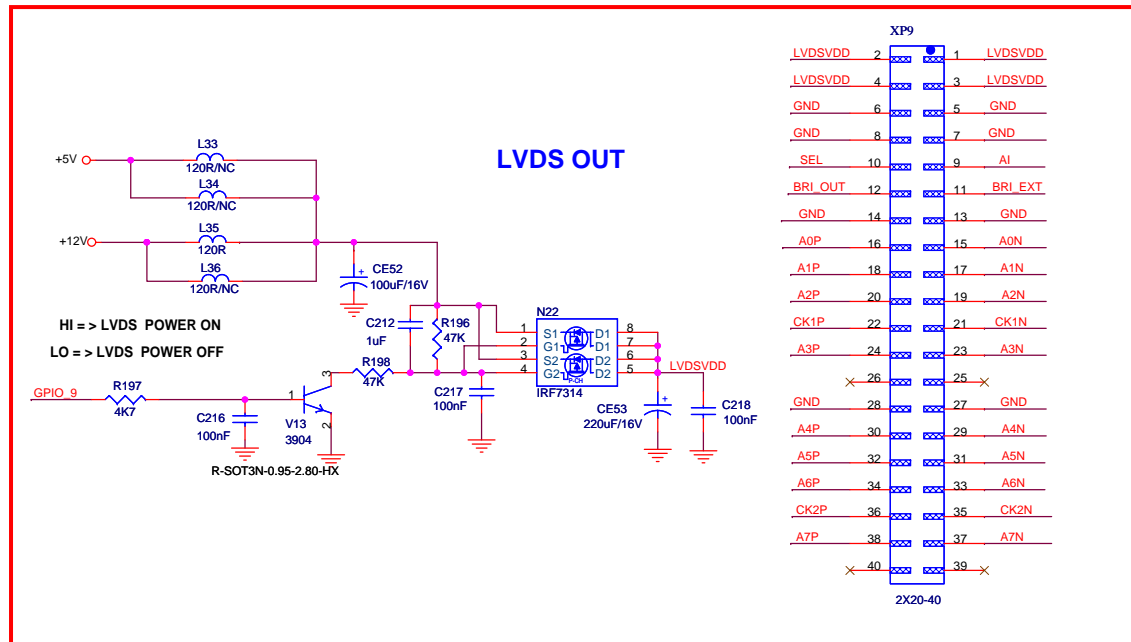
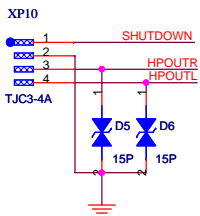
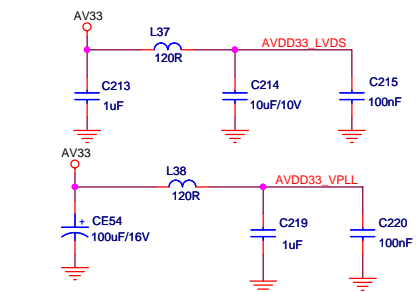
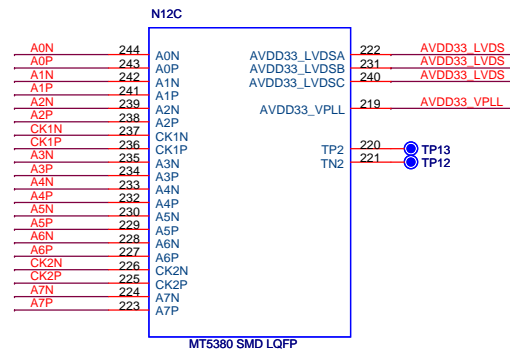
CPU_MUTE: HIGH FOR MUTE
P_MUTE: LOW FOR MUTE
MUTE_3100: HIGH FOR MUTE
SHUTDOWN: LOW FOR MUTE

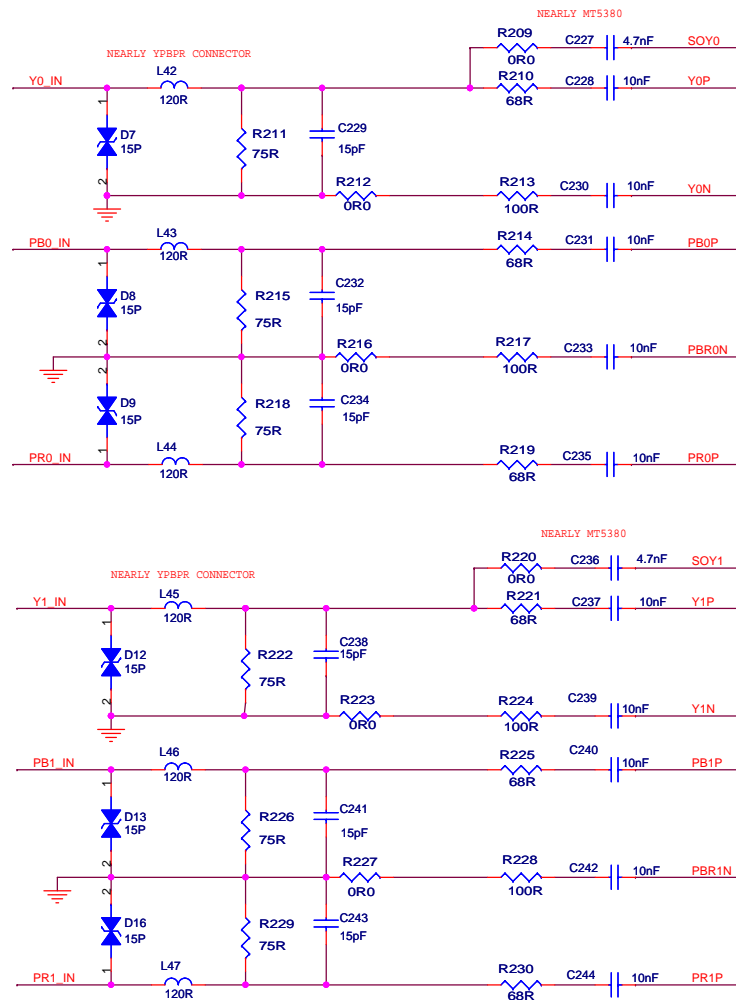
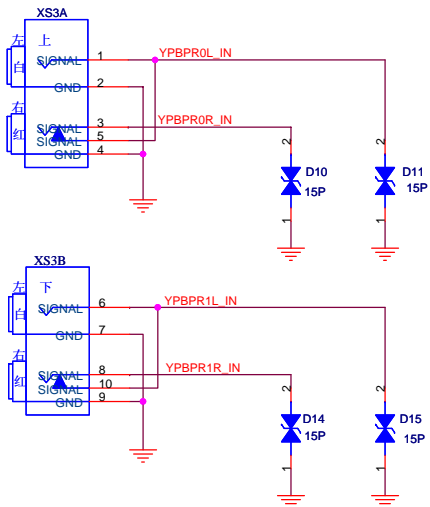
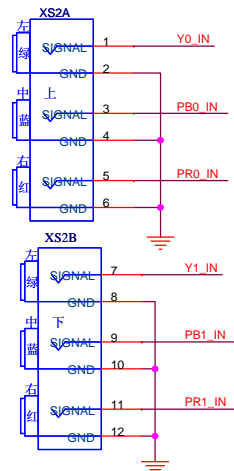
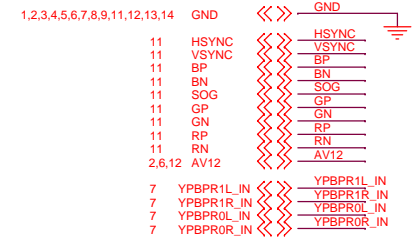
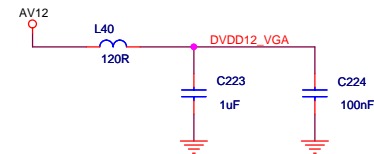
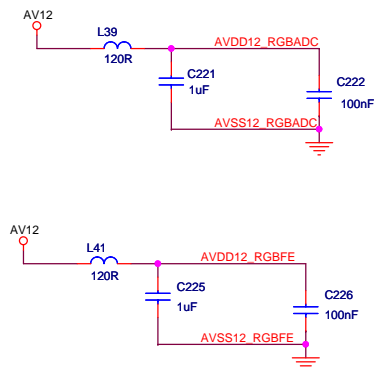
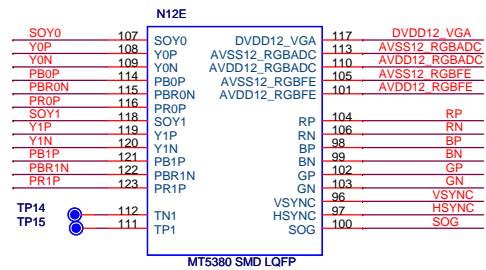


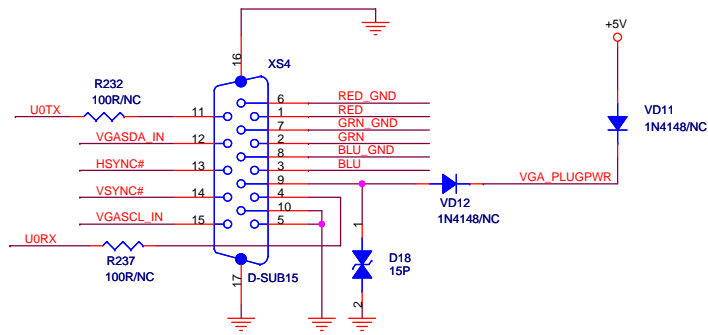
| | | | |
|--------------------------------|-----------|------|-----------|
| 1,2,3,4,5,6,7,9,10,11,12,13,14 | GND | <<>> | GND |
| 1,2,6,7,9,11,13 | +5V | <<>> | +5V |
| 1 | +18V | <<>> | +18V |
| 1,2,7,9,14 | +12V | <<>> | +12V |
| 14 | AL1_3100 | <<>> | AL1_3100 |
| 14 | AR1_3100 | <<>> | AR1_3100 |
| 9 | SHUTDOWN | <<>> | HPDET# |
| 9 | MUTE_3100 | <<>> | MUTE_3100 |
| 3 | OPCTRL3 | <<>> | OPCTRL3 |
| 7 | OFF_MUTE | <<>> | OFF MUTE |



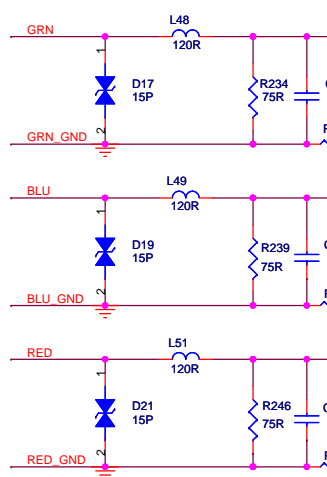
TJC3-4A







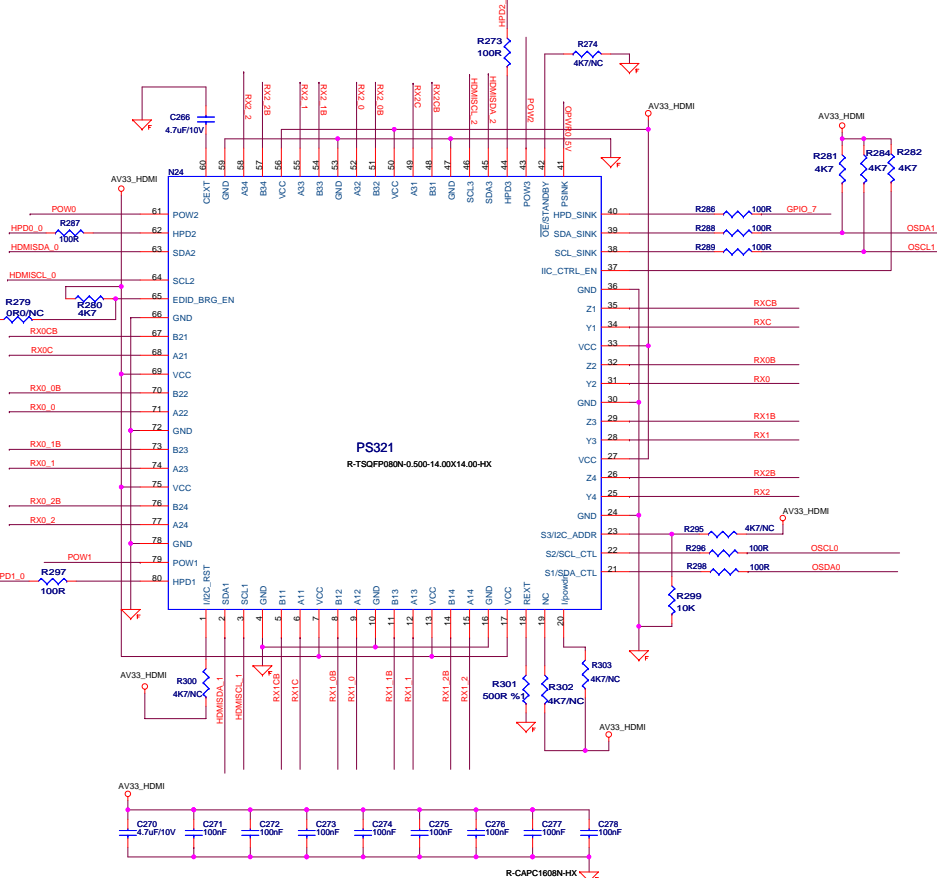
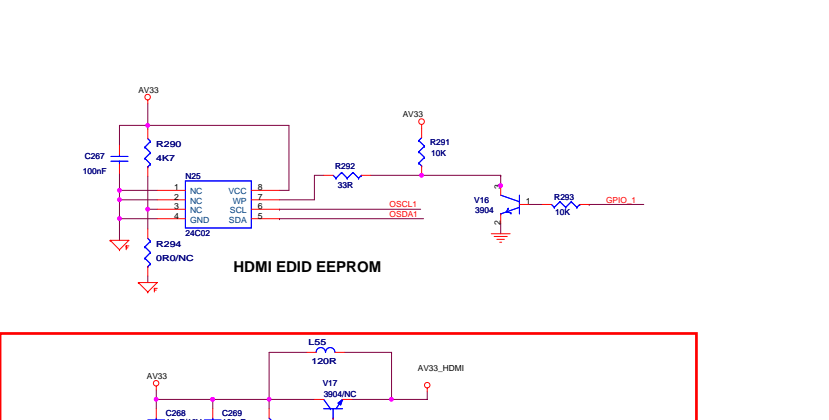
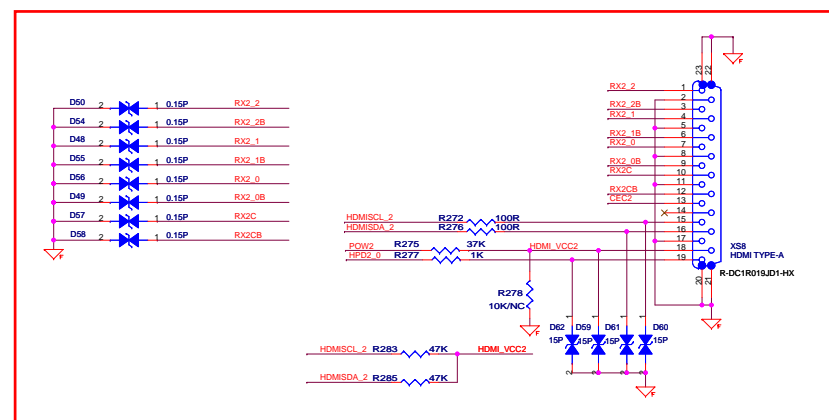
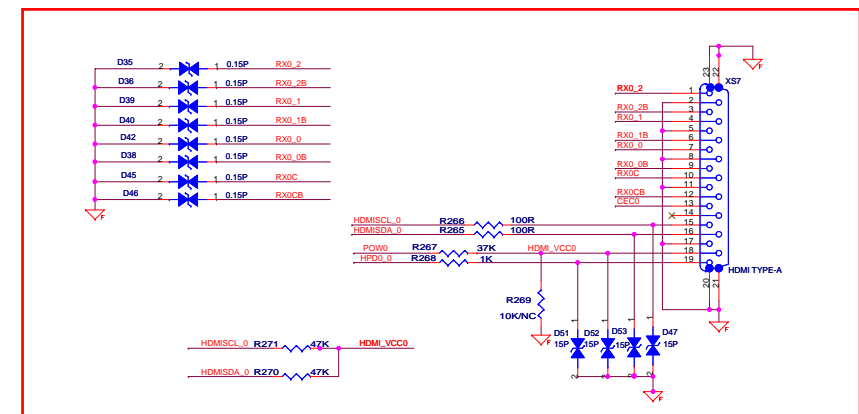
NEARLY VGA CON.

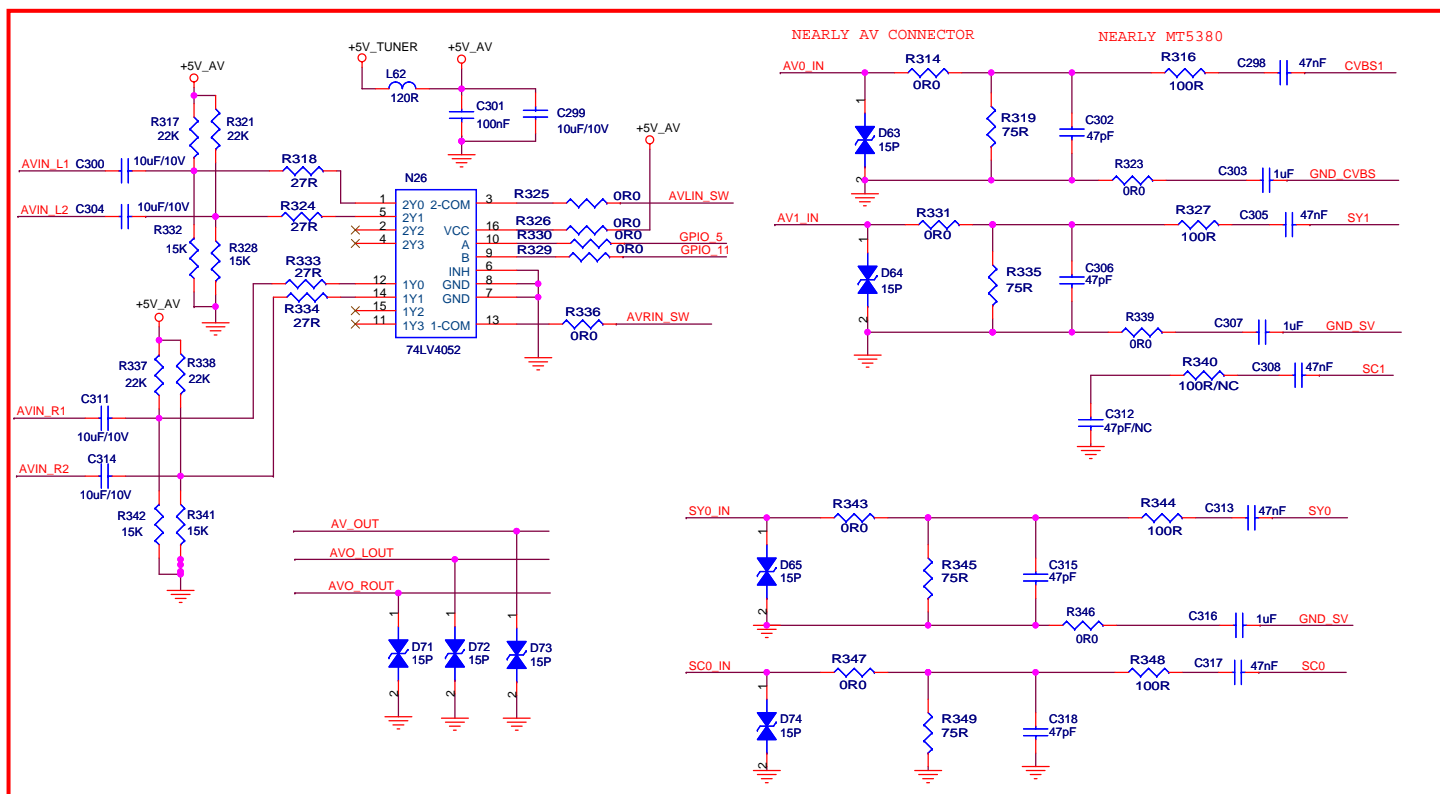
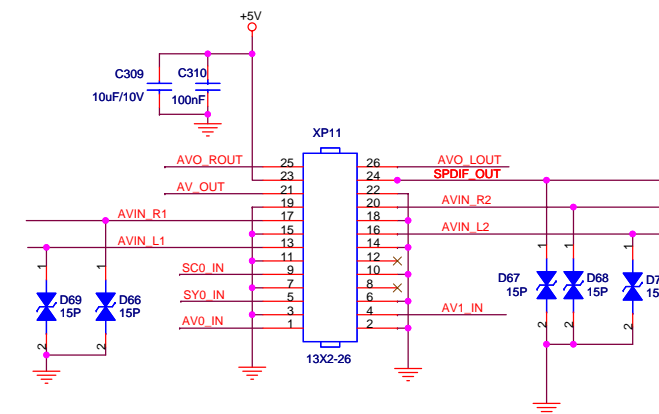
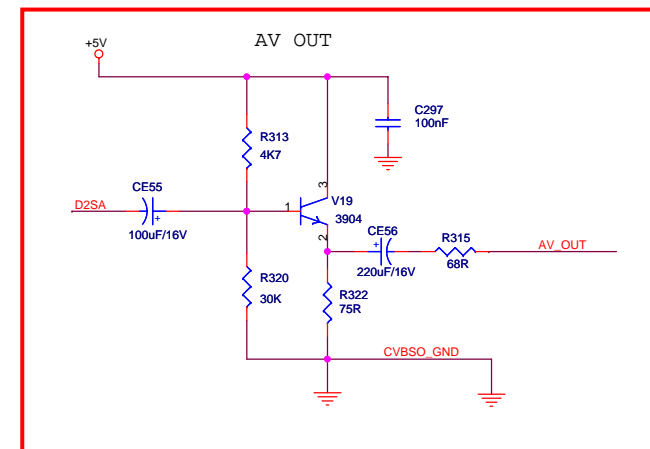
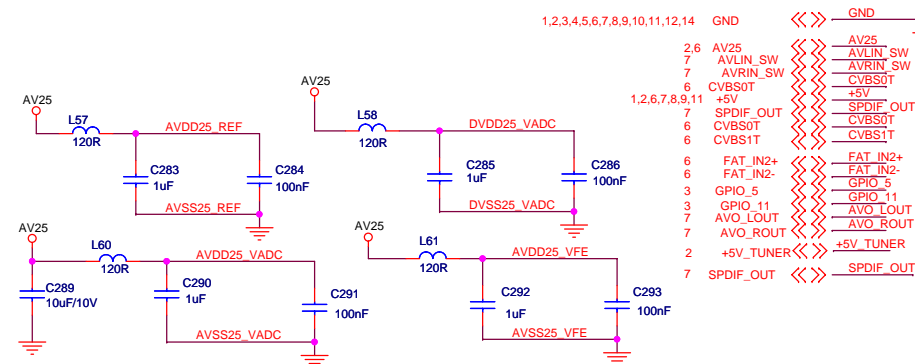
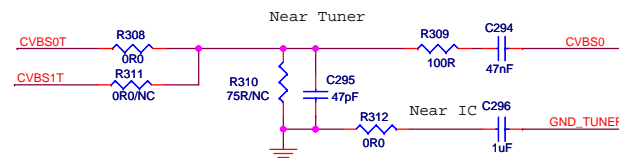
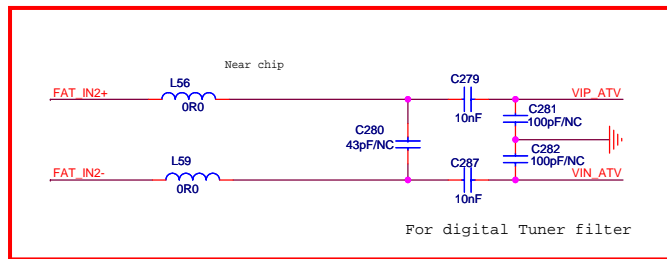


NEARLY IC

| | | | |
|-------------------------------|---------|------|---------|
| 1,2,3,4,5,6,7,8,9,10,12,13,14 | GND | <<>> | GND |
| 10 | +5VSB | <<>> | +5VSB |
| 10 | SOG | <<>> | SOG |
| 10 | VSYNC | <<>> | VSYNC |
| 10 | HSYNC | <<>> | HSYNC |
| 7 | VGAR_IN | <<>> | VGAR_IN |
| 7 | VGAL_IN | <<>> | VGAL_IN |
| 5 | U0RX | <<>> | U0RX |
| 5 | U0TX | <<>> | U0TX |
| 3 | GPIO_6 | <<>> | GPIO_6 |
| 10 | GP | <<>> | GP |
| 10 | GN | <<>> | GN |
| 10 | BP | <<>> | BP |
| 10 | BN | <<>> | BN |
| 10 | RP | <<>> | RP |
| 10 | RN | <<>> | RN |
| 5 | U0TX | <<>> | U0TX |
| 5 | U0RX | <<>> | U0RX |
| 1,2,6,7,8,9,13 | +5V | <<>> | +5V |

H : WP ENABLE
L : WP DISABLE





| | | | |
|-------------------------------|----------|------|----------|
| 1,2,3,4,5,6,7,8,9,10,11,12,13 | GND | <<>> | GND |
| 1,2,3,5 | +3V3SB | <<>> | +3V3SB |
| 1,2,9 | +5VSB | <<>> | +5VSB |
| 1,2,7,8,9 | +12V | <<>> | +12V |
| 1,2,6,7,8,9,11,13 | +5V | <<>> | +5V |
| 2,3,5 | DV33 | <<>> | DV33 |
| 3 | OPCTRL1 | <<>> | OPCTRL1 |
| 3 | OIRI | <<>> | OIRI |
| 5 | OIRI | <<>> | AR10 |
| 7 | AR10 | <<>> | AL10 |
| 7 | AL10 | <<>> | ADIN1 |
| 3 | ADIN1 | <<>> | ADIN2 |
| 3 | ADIN2 | <<>> | +5VSB |
| 1,2,9 | +5VSB | <<>> | AR1_3100 |
| 8 | AR1_3100 | <<>> | AL1_3100 |
| 8 | AL1_3100 | <<>> | AL1_3100 |

