


Service  
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32PHT5210S/98



# Service Manual

Product Specification Sheet

	32" HD DTV(32L51F-DVB)
Series name	32PHT5200 32PHT5210
Platform/Chipset	T8C2-MSD6308 DVB-T2
Processor type (CPU) / GPU	
Picture/Display	
RC	High end (7601-31A062-0144FLP3 7601-32E232-0244FLP1
Backlight Type (Panel Supplier)	DLED
Diagonal Screen Size	31.5"
Perfect Motion Rate	1360×768@60Hz
Panel Frequency (Native)	60HZ
Chasis Frequency	60HZ
Backlight Dimming	PWM
Scanning Segments (amount)	48.25--863.25MHZ
Panel Resolution	1366*768
Aspect ratio	16:09
Brightness (Home Vivid Mode) cd/m²	Min:200cd/m2, Typ:240cd/m2
Panel contrast ratio	1200:1
Viewing Angle - H (L+R)	176°
Viewing Angle - V	176°
Response Time (ms)	8ms
Analog + PWM dimming	YES
2D/3D Logic (2D/3D Active/3D	2D
Color Gamut	NTSC 65%
PQ engine	Digital Crystal Clear
PQ Resolution	N/A
Directional Super Resolution (on 2D & 3D)	N/A
Improved 3D Super Resolution	N/A
ISF Color Management	N/A
Digital Natural Motion (2D/3D)	N/A
Perfect Natural Motion (2D/3D)	N/A
2D to 3D Conversion	N/A
3D Depth adjustment (Auto/Offset)	N/A
Auto 3D Detection	N/A
Micro Dimming Demo	N/A
Micro Dimming mode	N/A
Dual View (2 Player Full Screen Gaming/Video) 双屏	N/A
Supported Display Resolution (Computer Inputs)	720*400@70HZ 640*480@60HZ 800*600@60HZ 1024*768@60HZ 1360*768@60HZ
Supported Display Resolution (Video Inputs)	480i, 480p,576i, 576p,720p,1080i,1080p(24/25/30/50 /60Hz)(anything larger than display size will be reduced to HD format)
Brightness (Shop Vivid mode: 10%	YES(1% boost)
Pixel Plus Link (I/II/III)	N/A
Active Control	N/A
Local Contrast	N/A
"UHD Display" - logo (Industry)	N/A

Product Specification Sheet

	32" HD DTV(32L51F-DVB)
"UHD Receiver" - logo (Industry) - pending std	N/A
HDMI 2.0 4:4:4 @ 60p	N/A
10-bit color support	N/A
DAPO	N/A
Ambilight	
Ambilight Version	N/A
Pixels	N/A
Ambilight Performance (nit, no of colors, halo length)	N/A
Ambilight Features ( <i>Wall colour adaptive, Lounge Light Mode, Ambilight Motion, Gaming Mode</i> )	N/A
Ambilight for 3D	N/A
Ambilight for all TV Events	N/A
Ambilight Open Source via JointSpaceApp	N/A
Wall Distance Adaptive (Stand vs	N/A
Motion Adaptive	N/A
Built-in AL + Hue	N/A
TV as Lamp(s) in Hue ecosystem	N/A
In screen demo in mobile shop app	N/A
Ambi Wakeup (ref HTV)	N/A
Ambimusic	N/A
Sound (TV)	
Sound (Internal)	
Output Power (10% THD) RMS	16W
Speaker configuration	8W+8W
Speaker system	2.0
Speaker type	built-in(normal)
Auto Volume Levelier / Auto Volume Levelier +	YES
Sound Claim (Incredible Surround/Cinema Surround/Clear Sound/Ambiwoo/3D Movie/Incredible Surround 3D)	N/A
Bass ( <i>Bass control/DBE/Ultra Bass/Ultra Bass II</i> )	N/A
Wireless Sound Interface	N/A
Dolby Digital DecoderType	YES
DTS Studio Sound	N/A
DTS 2.0+ Digital out	N/A
Acoustic Compensation Filters 主板滤波补偿	N/A
Dynamic Treble Enhancement 动态高音增强	N/A
Programmable Bass And Treble Curve （可编程的低音和高音曲线）用户	N/A
Visible Sound	N/A
Sound (External)	
External Sound device type	N/A
Output Power (10% THD) RMS	N/A
Design Specs	
Stand type (Swivel/non Swivel)	Metal Open
I/O port to be clearly indicated （列接口）	TV*1/USB*1/VGA*1 /HDMI*3/YPBPR*1/AV-IN*1/CI*1/Earphone*1/ Coaxial-OUT*1
Local Keyboard 按键板	YES
Philips wordmark 商标logo	PHILIPS
Leading Edge 装饰件	#5
Vesa Wall Mount Compatible 壁挂孔	YES
Compatible Wall Mount 壁挂孔规格	100mm×100mm
POS label	
Connectivity (I/O)	
HDMI Number	*3
HDMI 1.4a	HDMI(Side-out/Under-out)

Product Specification Sheet

	32" HD DTV(32L51F-DVB)
HDMI 2.0	N/A
HDMI/DVI	YES
HDMI ARC	HDMI-3
EasyLink (HDMI-CEC)	YES
Scart (EU) Connections	N/A
YPbPr/CVI (EU/Latam) Connections	N/A
CVBS (EU/Latam) Connections	*1
Audio L/R in	*1
CI+ slots	*1
Antenna	*1
Satellite (for K&S only)	N/A
USB	USB2.0
USB Harddisk Format (Power)	FAT/NTFS (500mA)
VGA	YES
VGA/DVI Audio Input	share AV audio input
Digital audio out (SPDIF)	N/A
Headphone	*1
Ethernet-LAN RJ-45	N/A
Service Connector	VGA connectable
Wireless connections	N/A
Wi-Fi Band Concurrent	N/A
WoWLAN	N/A
WoLAN	N/A
Bluetooth for subwoofer/RC (do not claim commercially)	N/A
Multichannel over BT	N/A
HDCP v2.2 (on HDMI 2.0 port)	N/A
MHL (HDMI+power+return channel)	YES
Wi-fi Miracast Certified (HDCP 2.2 supported)	N/A
GoogleCast Receiver	N/A
Tablet Screen Mirroring (Wi-Fi	N/A
TAD AppFTA channels (free app)	N/A
TAD Server, FTA channel	N/A
Indep. Watching (TV&PVR), FTA&CI+	N/A
SAT>IP Client, FTA	N/A
HEVC @ FHD 60Hz	N/A
HEVC @ UHD 60Hz	N/A
H264 @ UHD	N/A
VP9 @ UHD	N/A
UI & Interaction	
Ux (Basic: without Dashboard, Advanced: with Dashboard)	Basic
Animations 动画	N/A
Drag and drop 拖动	N/A
Remote Control Version (state if include Keyboard/Pointer)	N/A
Sensor.accelerometer & sensor gyroscope	N/A
Easy access to eDFU (Blue key) 电子说明书	N/A
Text Entry (Basic : Text Entry via HID and/or On-screen Keyboard)	Basic
Multi-view 多屏显示	N/A
Multi-task 多任务	N/A
Screen Format Adjustments 比例列表	4: 3, 16: 9
Dual Screen (TV and TeleText) 图	N/A
Teletext	YES
e-Sticker	N/A
Priority Channel List	N/A
Channel Cloning via USB	N/A
Logo Editor (Channel Editor)	N/A
Channel Matrix with EPG data	N/A
Channel Scanning (Australia/NZ)	N/A
Time Zone (Australia/NZ)	N/A
PC Sorting	N/A
Intelligent Source List	N/A

Product Specification Sheet

	32" HD DTV(32L51F-DVB)
On-screen Remote (via HDMI)	N/A
Cold boot to broadcast	N/A
Cold boot to online dashboard	N/A
Warm boot to broadcast	N/A
Warm boot to online dashboard	N/A
Zapping OSD with EPG data	N/A
Electronic Program Guide (IP & Broadcast)	N/A
8 Days Electronic Program Guide	YES
Live Setting Assistant (include PQ level) 设置助手直播	N/A
Signal Strength Indication 信号强度指示	YES
Pause TV/USB recording (PVR) 刻录	YES
Two simultaneous recordings in	N/A
UI Languages	English, Malaysia, Indonesian, Thai, French, Portuguese
Memory Profile (DRAM)	128M
Menu Layout Update 菜单更新 换UI	N/A
Wizards (Ease of Installation) 安装工具（类似螺丝刀）	N/A
Single Sign On (google a/c only)	N/A
Personalized Dashboard（定制化	N/A
Face recognition 面部识别	N/A
Shopmode 2015	N/A
CloudTV app content in search and Dashboard (on TV)	N/A
Firmware Upgradeable 软件升级	YES
Multimedia Applications	
Video Playback Formats	MPEG-2/MPEG-4 /H.264
Subtitles Formats Support	SRT、ASS
Music Playback Formats	MPEG-1,MPEG-2（Layer I/II），MP3，AAC-LC, HE-AAC
Picture Playback Formats	JPEG、BMP、PNG

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	32" HD DTV(32L51F-DVB)
Smart TV	N/A
Software Platform	N/A
Android Home Page	N/A
Android OS	N/A
UI Resolution	N/A
Google Voice Search	N/A
Google Hangouts	N/A
Remote Control	N/A
Gesture	N/A
Pre-installed Google Apps (Google Search, Google Hangouts, Google Play Movies, Google Play Music,	N/A
Basic Performance Profile	N/A
Google Play	N/A
Memory size to install apps	N/A
Extendable USB storage for App Downl	N/A
Smart TV Experience	N/A
DLNA 1.5 - DMR, DMP	N/A
DLNA 1.5 - DMS	N/A
MultiRoom Client, FTA+Scrambled Non-Copy Protected & CI+	N/A
MultiRoom Server, FTA+Scrambled Non-Copy Protected & CI+	N/A
PVR Auto Recording (IP-EPG)	N/A
API - access control	N/A
xTV Support	N/A
Rich User Interaction	N/A
Smart Home	N/A
4k photo support in Android apps	N/A
4k photo support in Picture apps	N/A
4k photo support in USB/DLNA	N/A
UHD content playback from all sources (USB,DLNA,web)	N/A
NextFlix UHD	N/A
Youtube UHD	N/A
Google Play UHD	N/A
Smart TV with Broadcast PIP; single video	N/A
SMART TV offline content (cached)	N/A
MPEG-DASH (CENC & CFF)	N/A
HLS	N/A
Wake up from APP	N/A
Preinstalled Apps	N/A
Netflix *	N/A
YouTube Leanback (HTML5) *	N/A
Spotify *	N/A
BBC iPlayer *	N/A
Skype	N/A
Skype Cowatch (mix audio)	N/A
Cloud Explorer	N/A
Cloud TV	N/A
Smart TV Services	N/A
Social Apps	N/A
Game Dashboard in Google launcher	N/A
OpenGL Games	N/A
Playstation Now App	N/A
OnLive App	N/A
STA 3.0 & 4.0 Clients	N/A
STA shared App store	N/A
Camera & Mic API	N/A
TV as an app (Verimatrix, etc)	N/A
Companion Apps	N/A
Philips TV Remote App	N/A
Sharing in Remote App	N/A
Ambilight TV App	N/A
Ambilight+Hue App	N/A
User Manual App	N/A

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	32" HD DTV(32L51F-DVB)
Channel Editor - PC Client App	N/A
Mobile app for in-shop (cover MRA/Demo Me/Shop RC functions)	N/A
Proximity based shop app activation (BTLE/NFC/QR tbc)	N/A
MyRemote App (Old TV Remote App)	N/A
Ambilight Lounge App	N/A
Broadcast/Certification	
DVB-T/C	N/A
DVB-S/S2	N/A
DVB-T/T2	YES
DVB-C2	N/A
SBTVD-T (Brazil)	N/A
SATVD-T (Argentina)	N/A
Analog (LATAM/APMEA)	PAL SECAM NTSC
Nicam (APMEA)	N/A
Enhanced SSU	N/A
Italy HD Book 2.1.1 (GOLD)	N/A
HD-Book Italy 3.0 (HEVC@FHD)	N/A
UK D Book 7a	N/A
Freeview SD (UK)	N/A
Freeview HD (UK)	N/A
MHEG 5(只有HbbTV有)	N/A
TiVuON (IT)	N/A
TNT HD (FR)	N/A
Argentina Ginga - NCL	N/A
Brazil Ginga (A/B)	N/A
Video Playback	N/A
Dual Cam (CI+)	N/A
Dual Tuner	N/A
CI+ 1.4 Multistream CAM	N/A
CI+ 1.3 CAM	N/A
HBBTV 1.5	N/A
HBBTV 2.0	N/A
MHP	N/A
Ziggo Interactief	N/A
3D DVB Phase 1	N/A
3D signaling bits in broadcast	N/A
Background update installation	N/A
Marlin/ Play ready	N/A
Sustainability/Power	
PVC / BFR Free 无卤	N/A
Mercury Free 无汞	N/A
Cabinet Resin 面框材质	ABS
Eco-Flower Certified	N/A
ECO Mode	N/A
Mains Power	AC 100-240V 50/60Hz
Standby Power	<0.5W
Quick Startup	NA
Network Standby mode (max 6W)	NA
Off Mode Power	<0.5W
Auto Switch-Off Timer 休眠时间	YES
Green packaging (Non-EPS) 绿色包装	YES
Light Sensor 光感应器	NA
Picture Mute (For Radio) 单独听	N/A
EU Energy Label (A++/A+/A/B) - Requirement	NA
non-EU Energy Label - Standby Label (A/B/C)	NA
Blauer Engel (Germany)	NA
Accessory	
By-packed accessories	
Active Glasses (509)	N/A
Active Glasses (529)	N/A
Passive Glasses (PTA417)	N/A

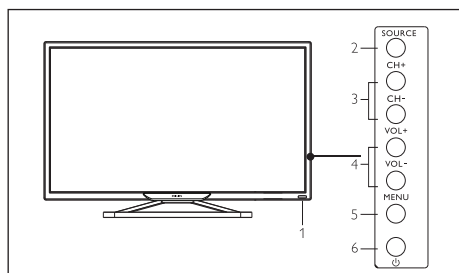
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	32" HD DTV(32L51F-DVB)
Dual Gaming Glasses	N/A
Woofer (e.g. SWB50) with	N/A
Sound Bar	N/A
Detachable speaker base 可拆卸喇	N/A
Wireless audio adaptor	N/A
Wi-Fi Adapter	N/A
Skype Camera (PTA317)	N/A
Table Stand 底座	YES
Accessory Bag	YES
Mains Cord (EU/UK/Brazil/APMEA) 电源线	YES
Remote Control + 2x Philips Batteries	YES
Printed QSG	YES
Printed DFU (APMEA)	YES
Safety Legal Leaflet (EU) - 3D Health Advise and Ukraine requirement（安 规小册子）	N/A
Philips Warranty Leaflet 保修卡	YES
Optional accessories	
Active Glasses (PTA509/529)	N/A
Passive Glasses (PTA419)	N/A
Dual Gaming Glasses (PTA436)	N/A
Wi-Fi Adapter	N/A
Skype Camera (PTA317)	N/A
Table Top Stand	N/A
Speaker stand	N/A
Others	N/A
Certification	
Dolby Digital/Dolby Digital Plus/Dolby Pulse	
DTS 2.0+ Digital out	
DTS Premium Sound	
DivX	
WMA	
Wi-Fi	
DLNA Certified (DMR/DMP/DMS)	
SKYPE	
HDMI	
MHL	
Dimensions (WxHxD)	
Unit with stand	737*483*210mm
Unit without stand	737*437*78mm
Carton	855*542*152mm
Wall-mount	100mm×100mm
Weight	
Product without Stand	5.6 kg
Product with Stand	6.5 kg
Product in Packaging	8.0kg



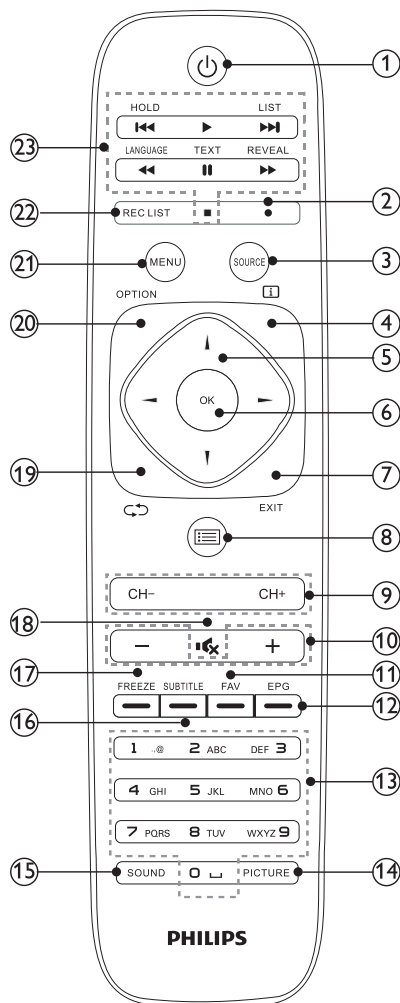
### 3 Your TV

#### Control Panel



1. Indicator/Remote Control Sensor
2. Source : display the list of signal sources.
3. CH+/- : switch to the previous/next channel.
4. Vol +/- : increase/reduce the volume.
5. Menu : turn on/off the main menu.
6. : turn on/off the TV; to cut off power supply, please unplug the power cable.

#### Remote Control



- ① Standby/Power on
  - Switches the TV to standby if it is on.
  - Powers on the TV if it is in standby.
- ② • Red point  
Record programme key.

③ **Source**

Select an input source for the TV.

④ **i**

Display the program information when available.

⑤ **▲▼◀▶** Navigation keys

- In menu mode: navigate the menu.

⑥ **OK**

- In menu mode: confirm the input or selection

⑦ **EXIT**

Press this button to exit menu.

⑧ **≡**

Look through channel list

⑨ **CH+/-**

Switch to the previous/next channel in TV mode.

⑩ **+/-**

Increase/reduce the volume.

⑪ **FAV**

Favorite channels

⑫ **EPG**

Gives instant access to TV program guide

⑬ **Numeric keys (0~9)**

Select a channel or value.

⑭ **PICTURE**

Switch to the preset image mode.

⑮ **SOUND**

Switch to the preset audio mode.

⑯ **SUBTITLE**

Teletext green key or display subtitle message, when current channel has subtitle option.

⑰ **FREEZE**

Picture freeze on/off or special functional key of menu.

⑱ **🔊**

Mute or unmute the sound.

⑲ **↶↷**

Return to the previous channel.

⑳ **OPTION**

Access the options related to the current activity.

㉑ **Menu**

Turn on /off the menu.

㉒ **REC LIST**

Reveal Record programme list

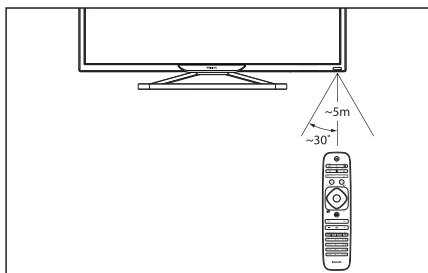
㉓ **⏮ ⏪ ⏩ ⏭ ⏸ ⏹ ⏴ ⏵**

Shortcut keys in USB mode: previous, Rewind, start, pause, Stop, Fast Forward, next.

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## Remote control usage

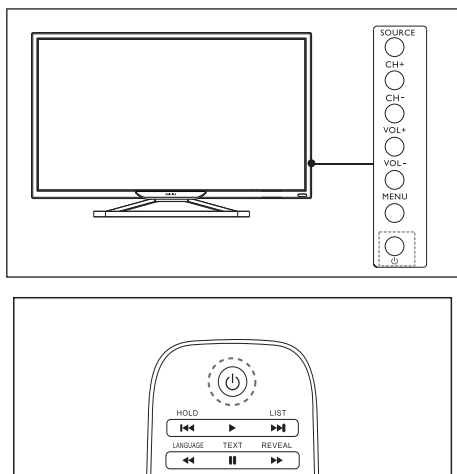
When you use the remote control, hold it close to the TV and point it at the remote control sensor. Make sure that the line-of-sight between the remote control and TV is not blocked by furniture, walls or other objects.




## 4 Use your TV

This section helps you perform basic TV operations.


### Switch TV on or off



#### To switch on

- Plug in the power plug.
  - » If the standby indicator is lights up, press  (Standby-On) on the remote control.

#### To switch to standby

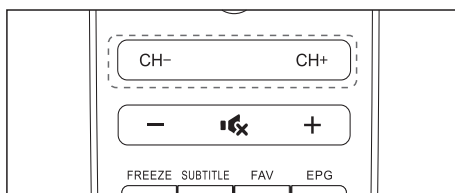
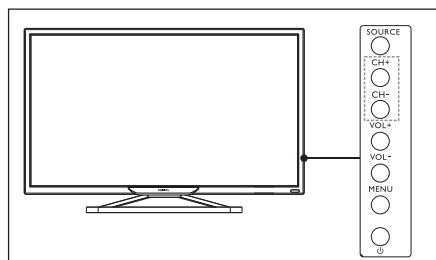
- Press  (Standby-On) on the remote control.
  - » The standby indicator switches to lights up.




#### Tip

- Though your TV consumes very little power when in standby mode, energy continues to be consumed. When not in use for an extended period of time, disconnect the TV power cable from the power outlet.

### Switch channels



- Press **CH +/-** on the remote control or the lower right part of the TV.
- Enter a channel number using the numeric buttons on the remote control.
- Press  on the remote control to switch and return to the previous channel.

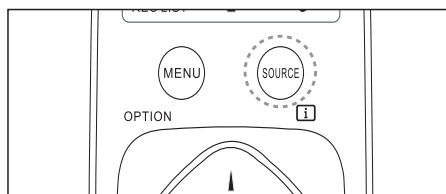
### Watch connected devices



#### Note

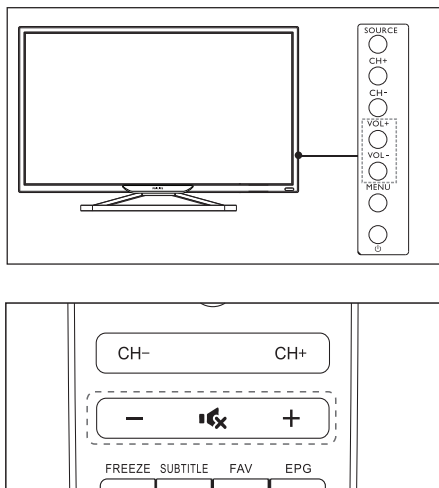
- Switch on the device before selecting it as an external signal source.

### Use the Source button



- 1 Press **SOURCE**.  
» The source list appears.
- 2 Press **▲▼** to select a device.
- 3 Press **OK** to select.  
» The TV switches to the selected device.

## Adjust TV volume



To increase or decrease volume

- Press **VOL +/-** at the lower right part of the TV or the **Volume Control** +/- on the remote control.

To mute or unmute sound

- Press **Mute** (speaker icon with a slash).
- Press **Mute** again to restore the sound.

## 5 Product information

Product information is subject to change without notice. For detailed product information, please visit [www.philips.com/support](http://www.philips.com/support).

## Display resolutions

### Computer Formats

- Resolution - refresh rate:
  - 720×400 70Hz
  - 640×480 60Hz
  - 800×600 60Hz
  - 1024×768 60Hz
  - 1360×768 60Hz

### Video Formats

- Resolution - refresh rate:
  - 480i - 60Hz
  - 480p - 60Hz
  - 576i - 50Hz
  - 576p - 50Hz
  - 720p - 50Hz, 60Hz
  - 1080i - 50Hz, 60Hz
  - 1080p - 50Hz, 60Hz.

## Multimedia

- Supported storage device: USB (only FAT or FAT 32 USB storage devices are supported.)
- Compatible multimedia file formats:
  - Image: JPEG
  - Audio: MP3
  - Video: MPEG 2/MPEG 4, H.264

## Sound power

- 32" : 8W × 2

## Inherent resolution

- 32" : 1366 × 768

## Tuner / Reception / Transmission

- Aerial input: 75ohm coaxial (IEC75)
- Supported Systems:  
ATV: PAL D/K,I,B/G,SECAM D/K, B/G,L  
DTV: DVB-T/T2/C.

## Remote Control

- Batteries: 2 × AAA

## Power Supply

- Main Power Supply:  
100-240V~, 50/60Hz
- Standby Energy Consumption :  
≤0.5W
- Environment Temperature: 5- 40 °C
- Power consumption:
  - 32" : 55W

## Supported TV mounts

To mount the TV, please purchase a Philips TV mount or any TV mount compliant with the VESA standard. To prevent damage to cables and connectors, be sure to leave a clearance gap of at least 2.2 inches or 5.5cm between the back of the TV to the wall.



### Warning

- Please follow all instructions provided with the TV mount. TP Vision Europe B.V. bears no responsibility for improper TV mounting that results in accident, injury or damage.

Model No.	Required Pixel Pitch (mm)	Required Mounting Screws
32"	100 × 100	4 × M4

## 6 Troubleshooting

This section covers common problems and their accompanying solutions.

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### General issues

**The TV cannot be switched on:**

- Disconnect the power cable from the power outlet. Wait for one minute before reconnecting it.
- Check that the power cable is securely connected.

**The remote control is not working properly:**

- Check that the remote control batteries are correctly inserted according to the +/- orientation.
- Replace the remote control batteries if they are flat or weak.
- Clean the remote control and TV sensor lens.

**The TV menu is in the wrong language.**

- Change the TV menu to your preferred language.

**When turning the TV On/Off or to Standby, you hear a creaking sound from the TV chassis:**

- No action is required. The creaking sound comes from the normal expansion and contraction of the TV as it cools down and warms up. This does not impact its performance.

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### Channel issues

**Previously installed channels do not appear in the channel list:**

- Check that the correct channel list is selected.

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### Picture issues

**The TV is on, but there is no picture:**

- Check that the antenna is properly connected to the TV.
- Check that the correct device is selected as the TV source.

**There is sound but no picture:**

- Check that the picture settings are correctly set.

**Poor TV reception from the antenna connection:**

- Check that the antenna is properly connected to the TV.
- Loudspeakers, unearthed audio devices, neon lights, high buildings and other large objects can influence reception quality. If possible, try to improve the reception quality by changing the antenna direction or moving devices away from the TV.
- If the reception on one particular channel is poor, please fine tune this channel.

**There is poor picture quality from connected devices:**

- Check that the devices are connected properly.
- Check that the picture settings are correctly set.

**The picture does not fit the screen; it is too big or too small:**

- Try using a different picture format.

**The picture position is incorrect:**

- Picture signals from some devices may not fit the screen correctly. Please check the signal output of the device.

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### Sound issues

**The pictures are showing but sound quality is poor:**

- Check that all cables are properly connected.
- Check that the volume is not set to 0.
- Check that the sound is not muted.
- Check that the sound settings are correctly set.

**The pictures are showing but sound comes from one speaker only:**

- Verify that sound balance is set to the centre.

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## Computer connection issues

**The computer display on the TV is not stable:**

- Check that your PC uses the supported resolution and refresh rate.
- Set the TV picture format to unscaled.

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## HDMI connection issues

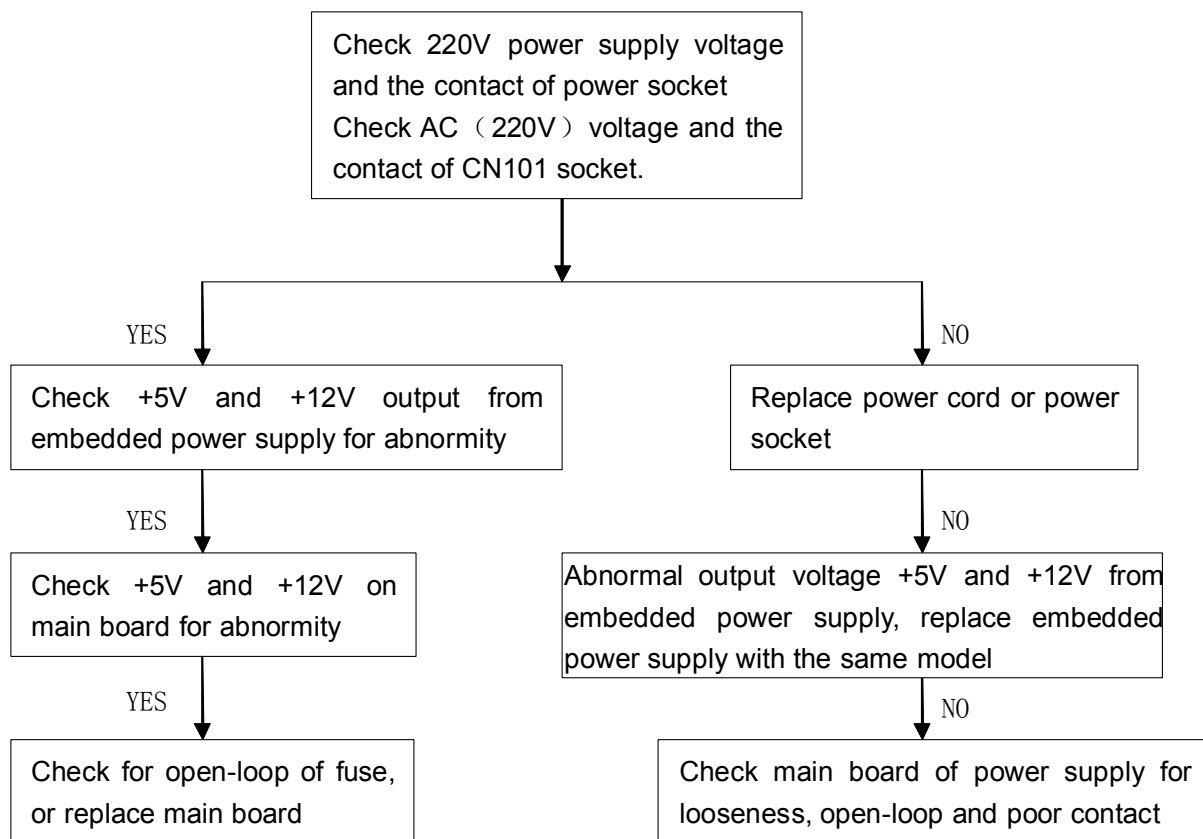
**There are problems with HDMI devices:**

- Please note that HDCP (High-bandwidth Digital Content Protection) support can delay the time taken for a TV to display content from a HDMI device.
- If the TV does not recognise the HDMI device and no picture is displayed, please try switching the signal source to another device before switching it back again.
- If there are intermittent sound disruptions, please check that output settings from the HDMI device are correct.

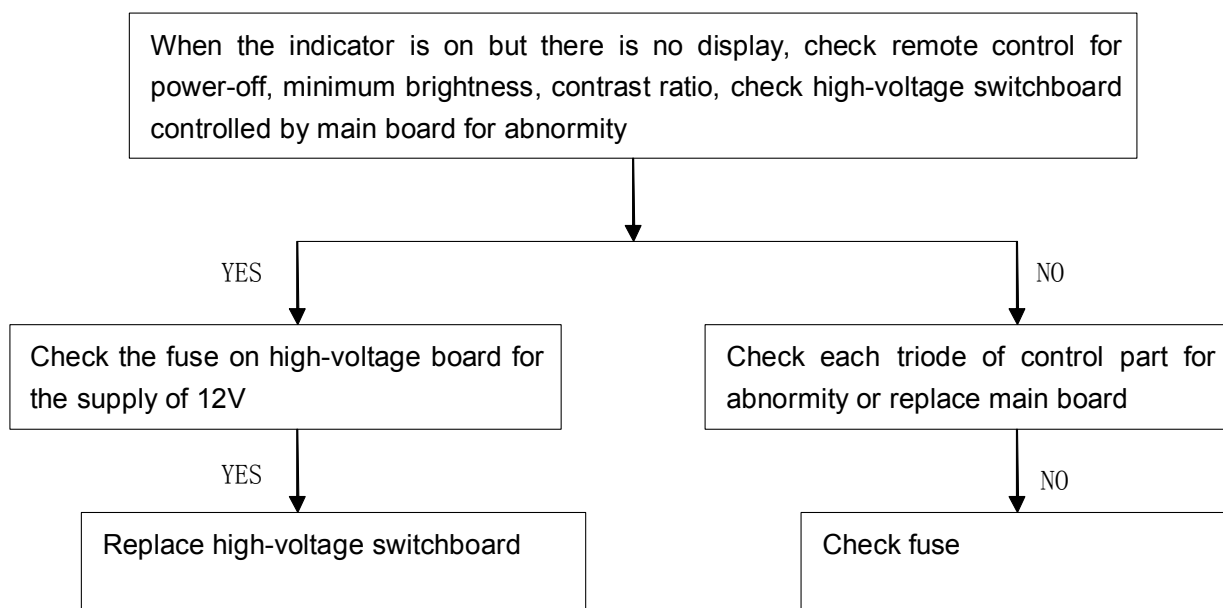
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## 4. Troubleshooting Procedure

### 1. No power



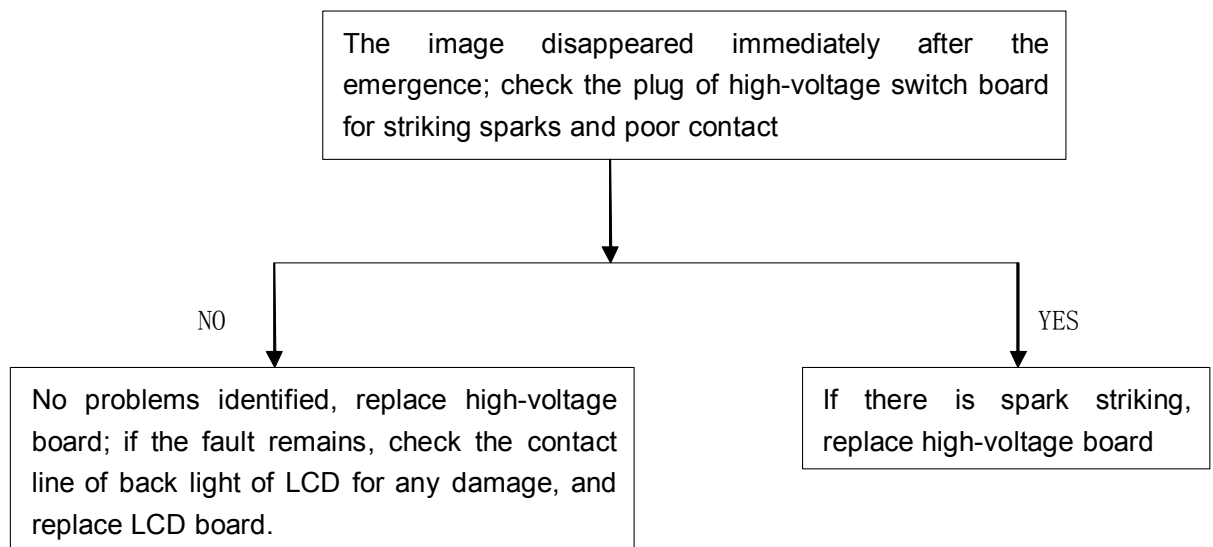
### 2. Without light



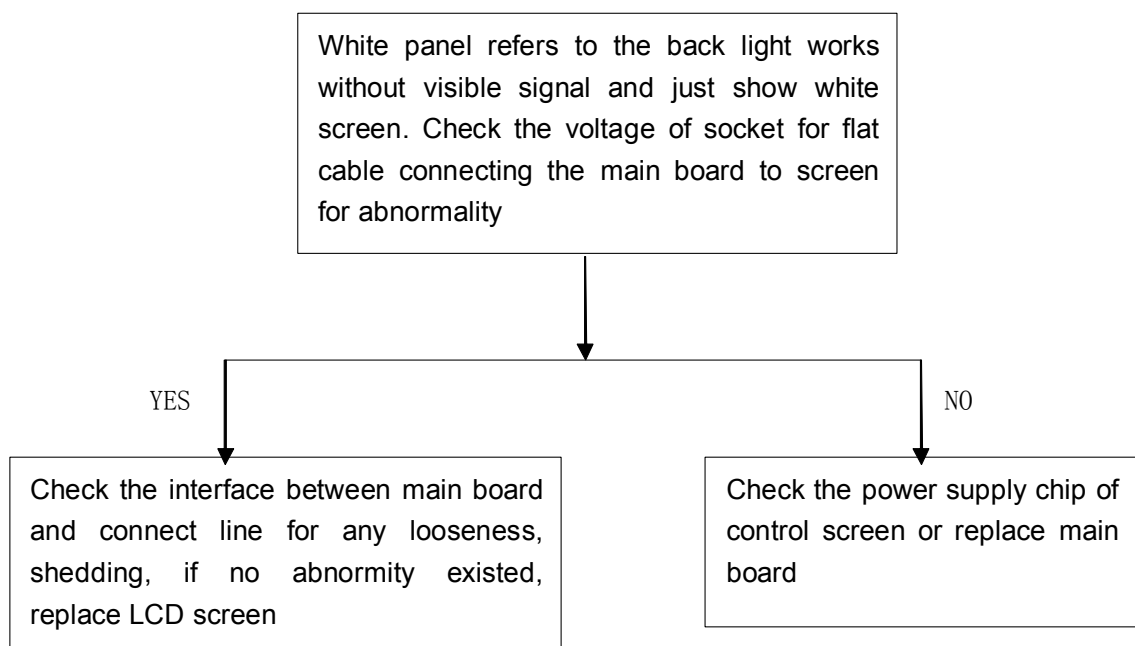


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### 3. Protection or without light (refers to the disappearance of image several seconds after the emergence of image)

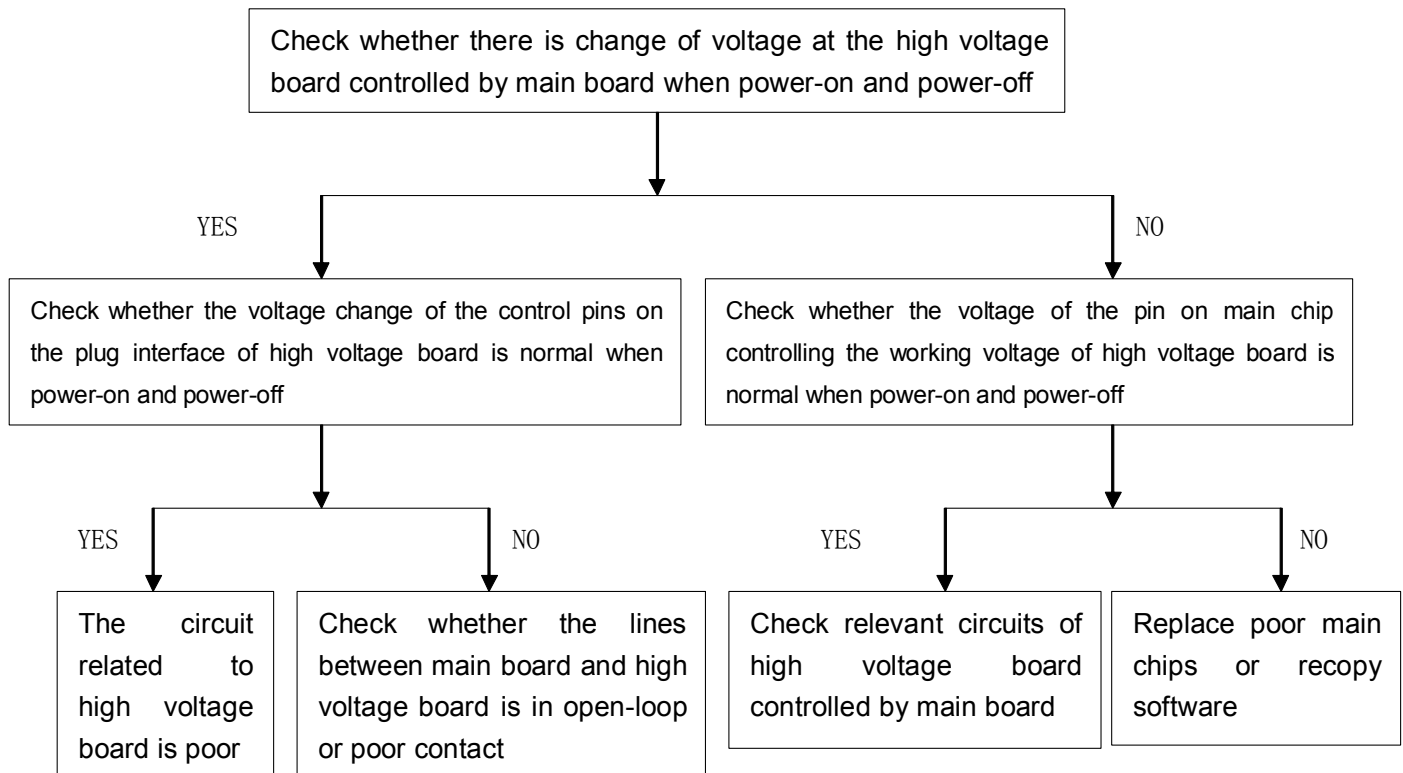


### 4. White panel

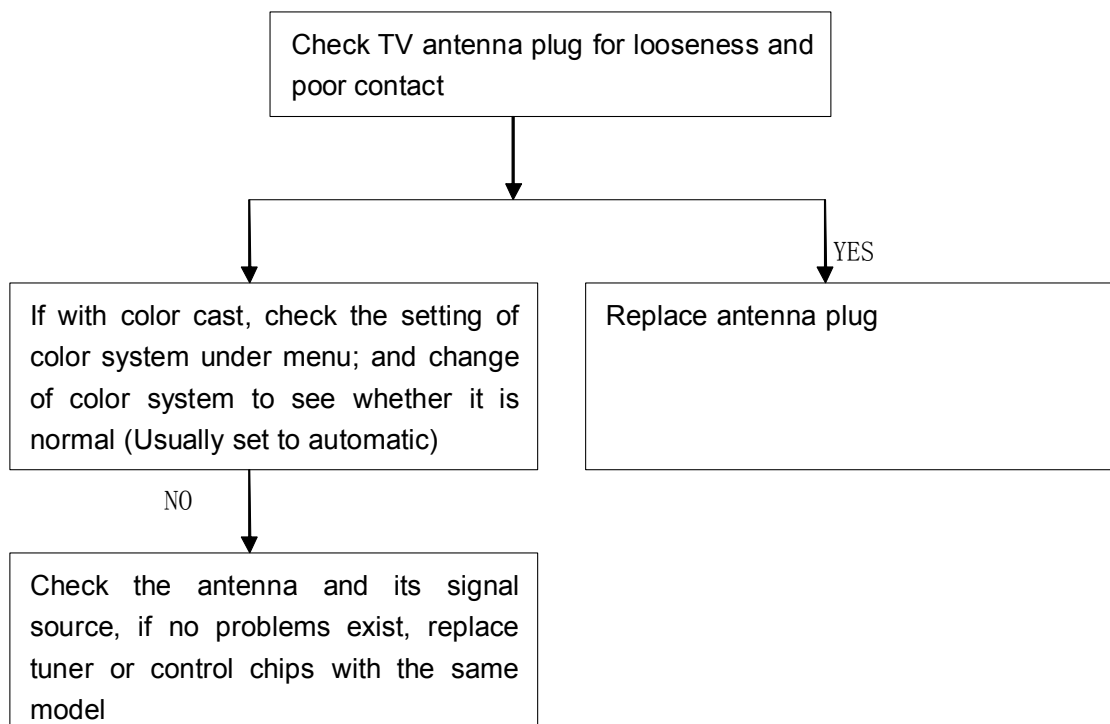


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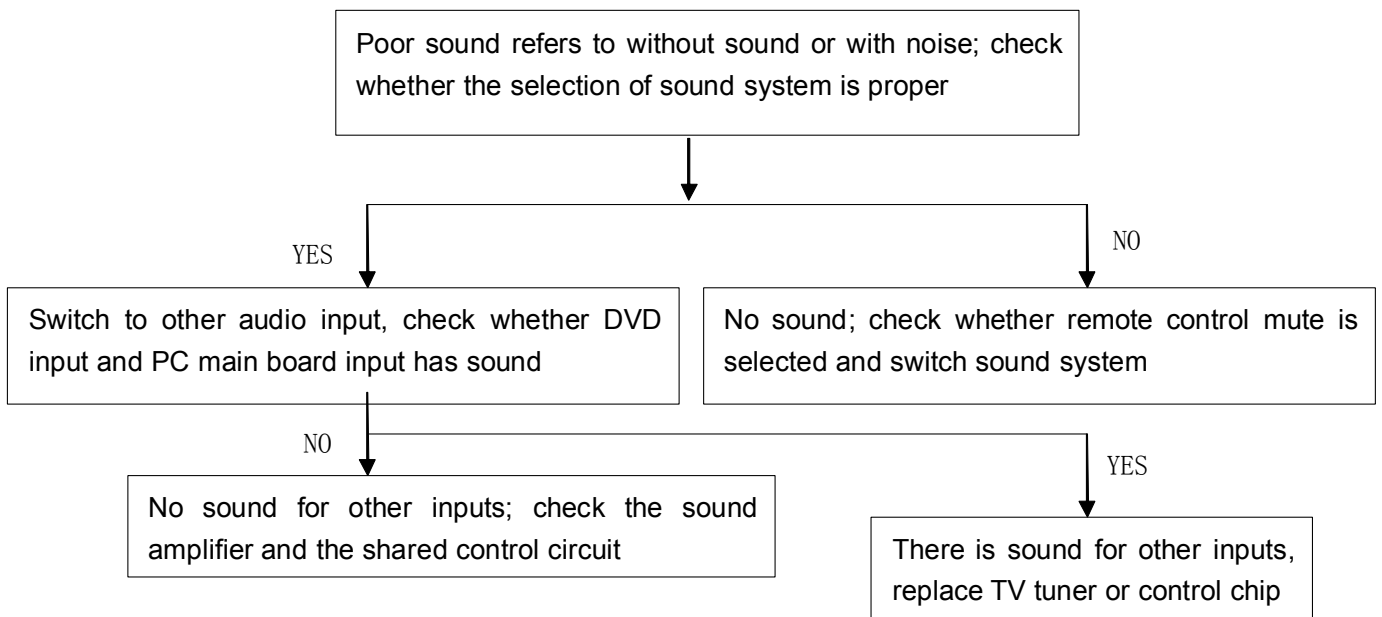
**5. White screen after power-off (work normally when power on, but when power-off or no signal input, the screen shows a white screen)**



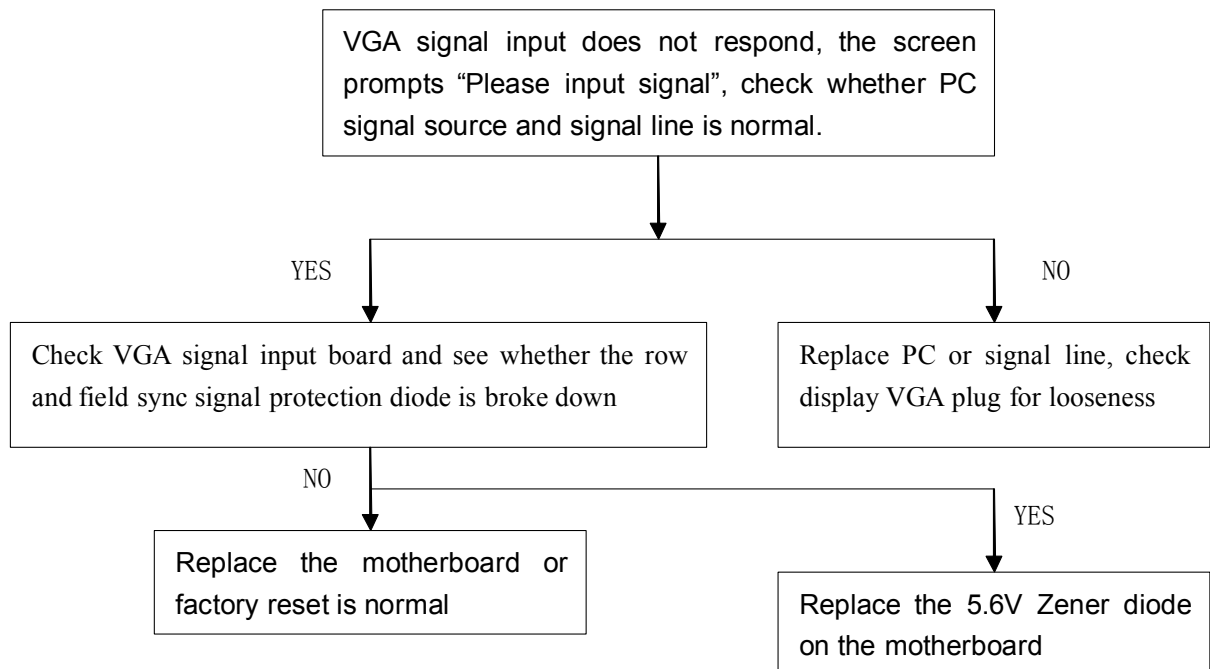
**6. TV without channel or with color cast**



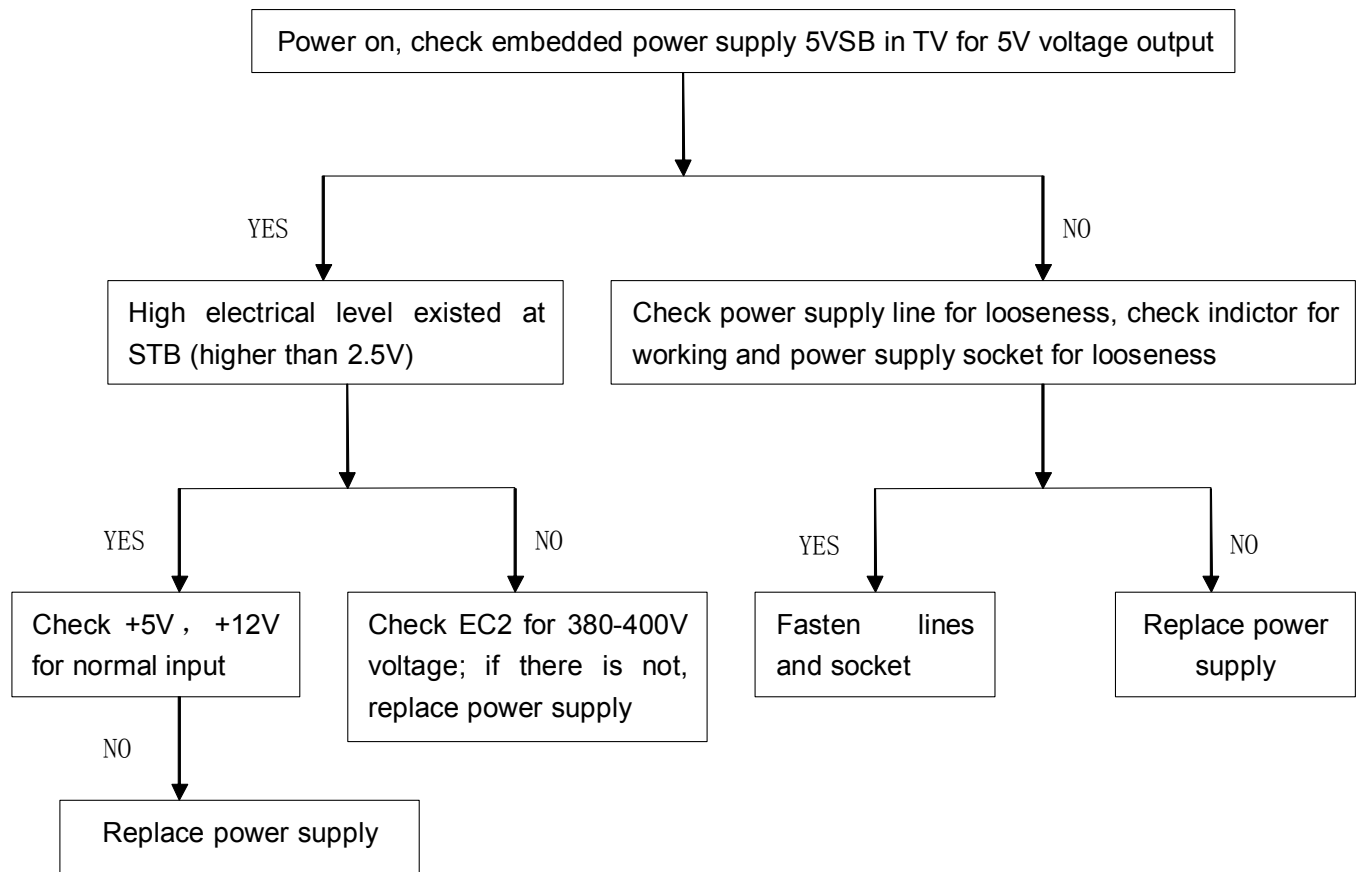
## 7. Poor sound



## 8. No VGA input signal



## 9. Poor embedded power supply of TV



## 10. Common fault of LCD screen

10.1 Bright line or bright belt (BL): constant longitudinal or transverse illuminating line or belt due to non-conformed connection between IC and glass

10.2 Dark line (DL): constant longitudinal or transverse illuminating line due to non-conformed connection between IC and glass.

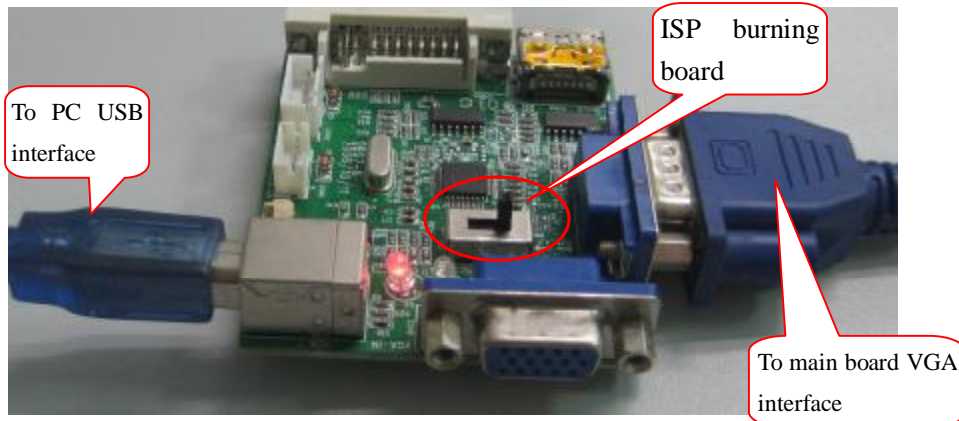
10.3 White panel (WP): only light tube illuminates owing to non-conformed drive plate of the LCD, without any display signal in the display area, and the whole screen is white.



10.4 Screen breaking: (overflow of LCD): with damage or invisible damage of the liquid crystal glass, irregular black defect occurs from liquid crystal body to glass and polarizer, which can not be seen at any image. The overflow portion can not form image and does not display.

10.5 Pressing Scrape (PS): after local display area at the front of LCD is heavily pressed,

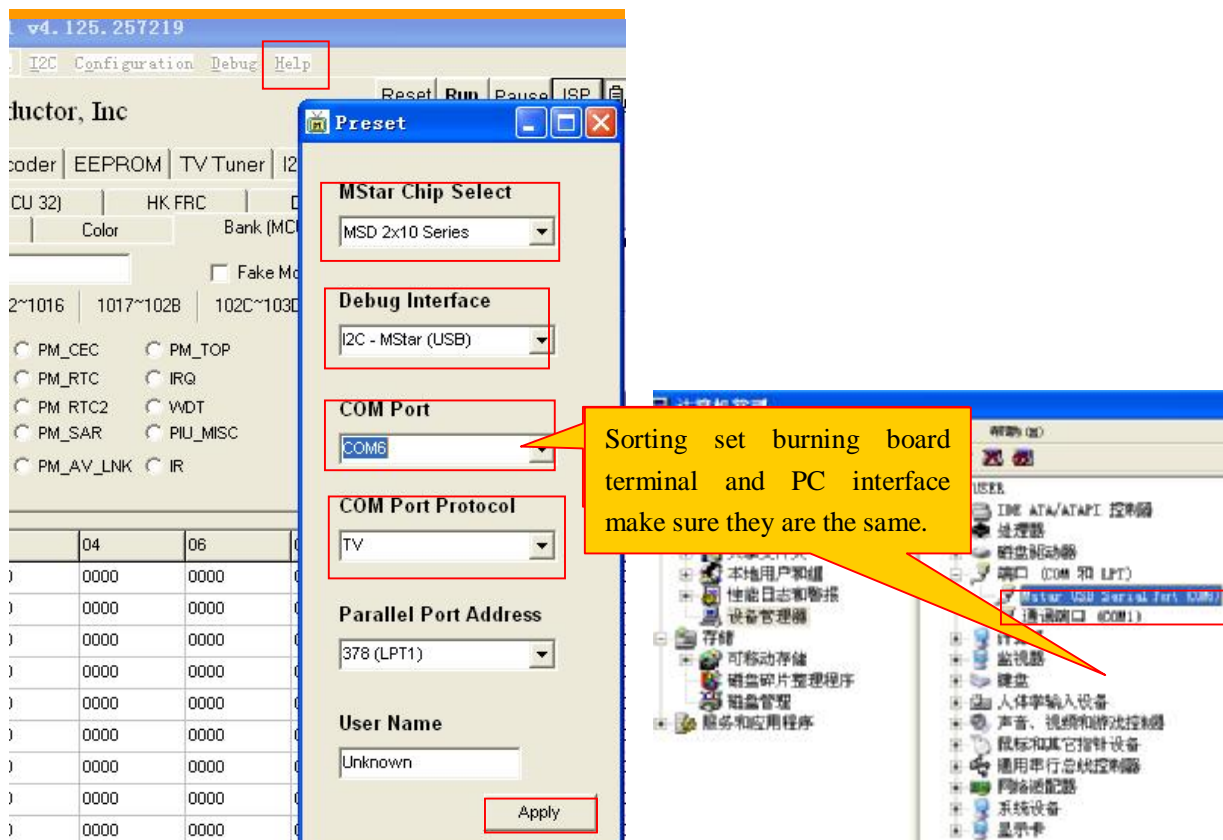
## MSD6308 Program Software Burning Instruction

1. Connect burning board and computer; connect burning board and waiting burning main board VGA socket with VGA connecting wire.

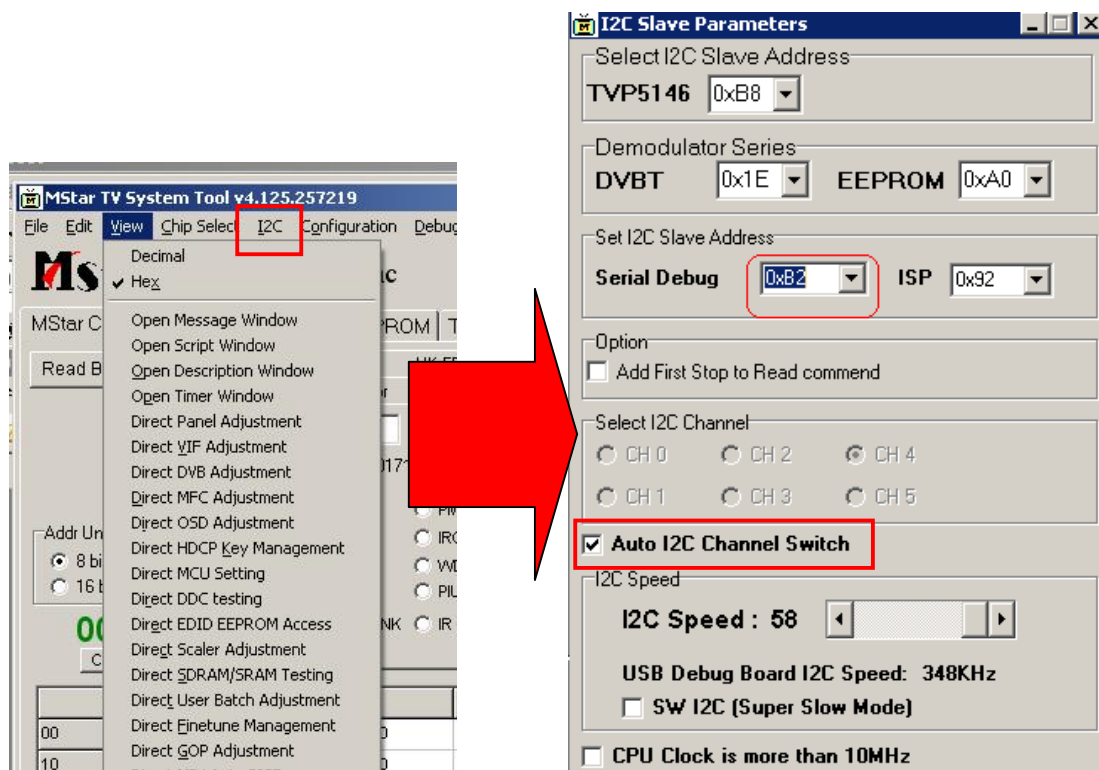


2. Running  MSTV\_Tool  
MStar TV System Tool  
MStar Semiconductor, Inc, if the hint is  driver should be installed for burning board.

3. Click Help in the toolbar, when pop up Present, click the first item.

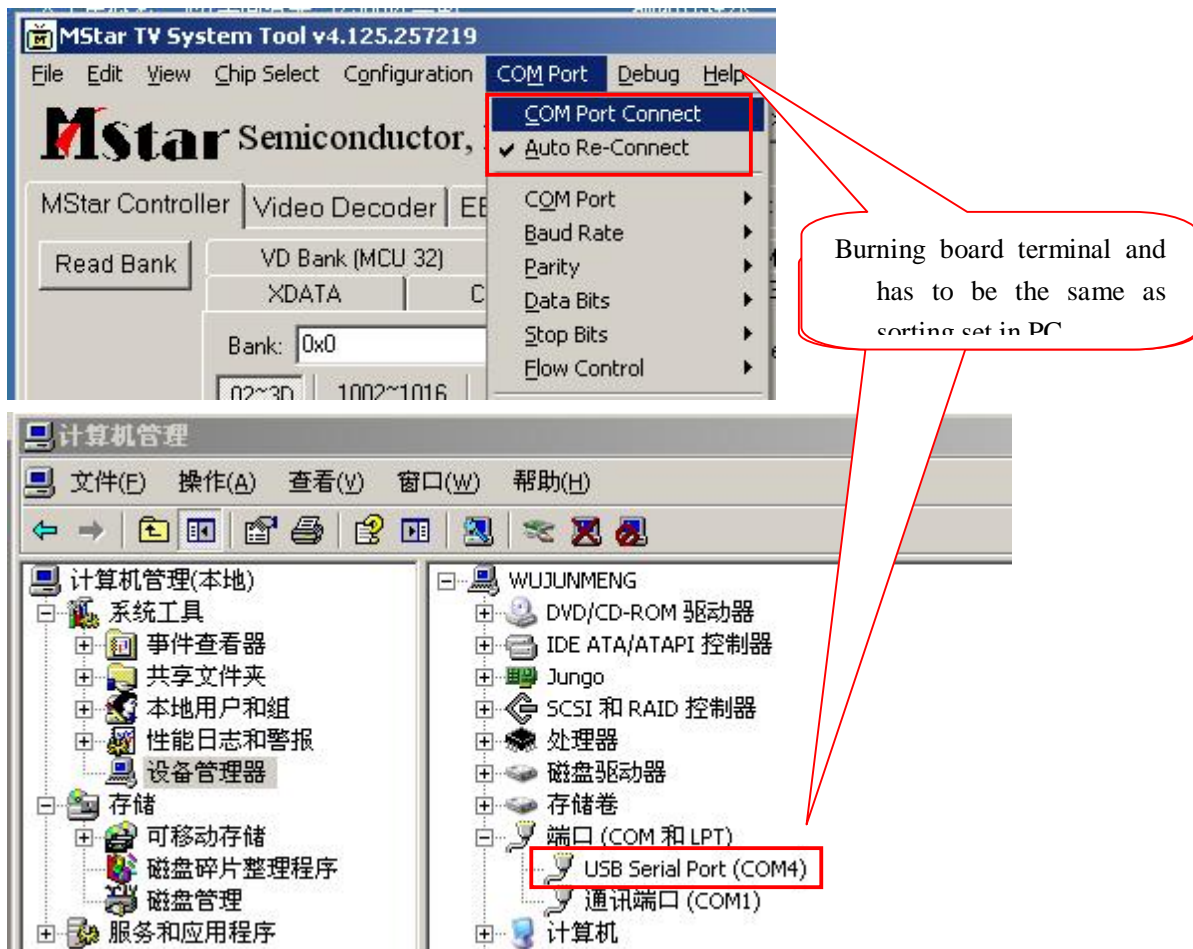


I2C address set as the following red frame 0XB2

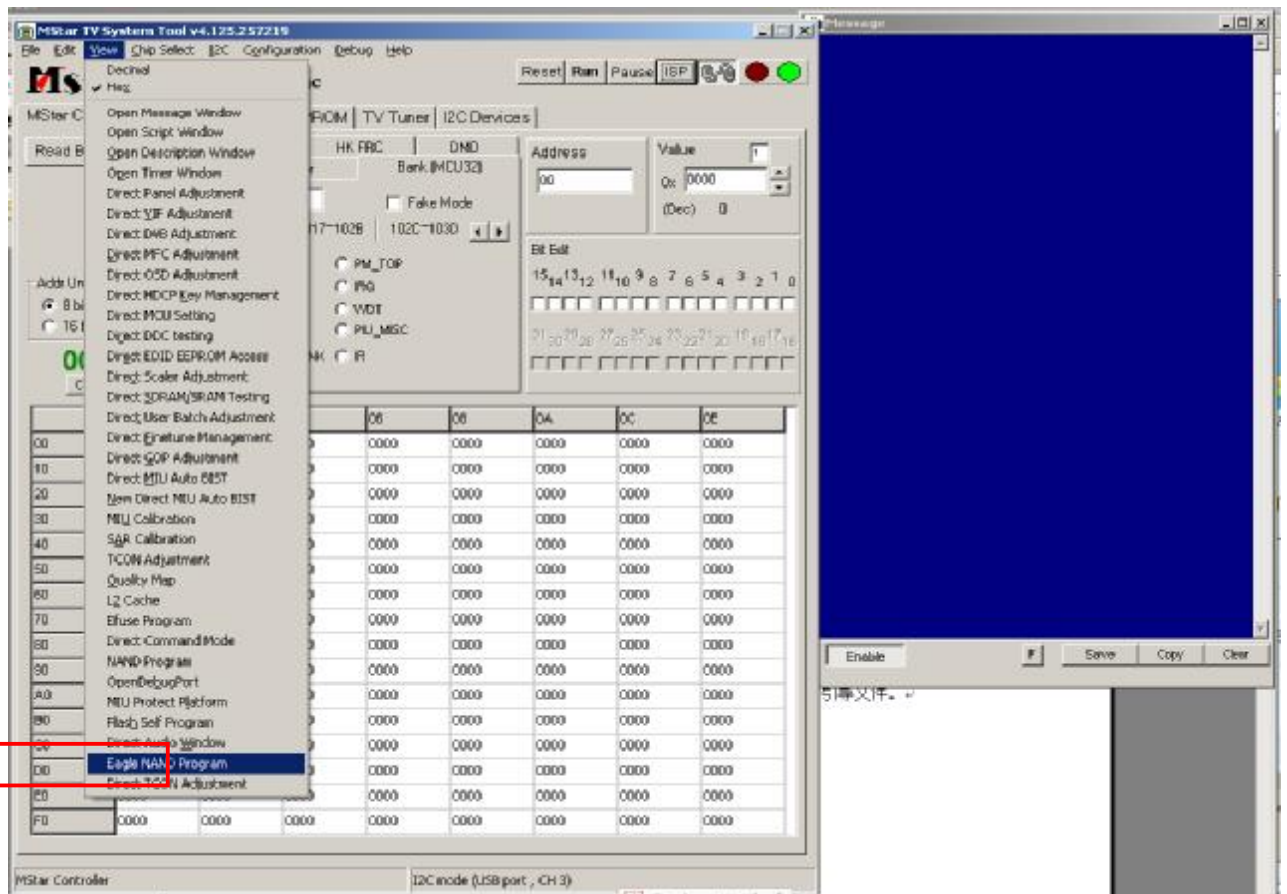


4. Sorting set the burning board terminal and computer interface make sure the two are all set as automatic connecting. ( same as above ) .

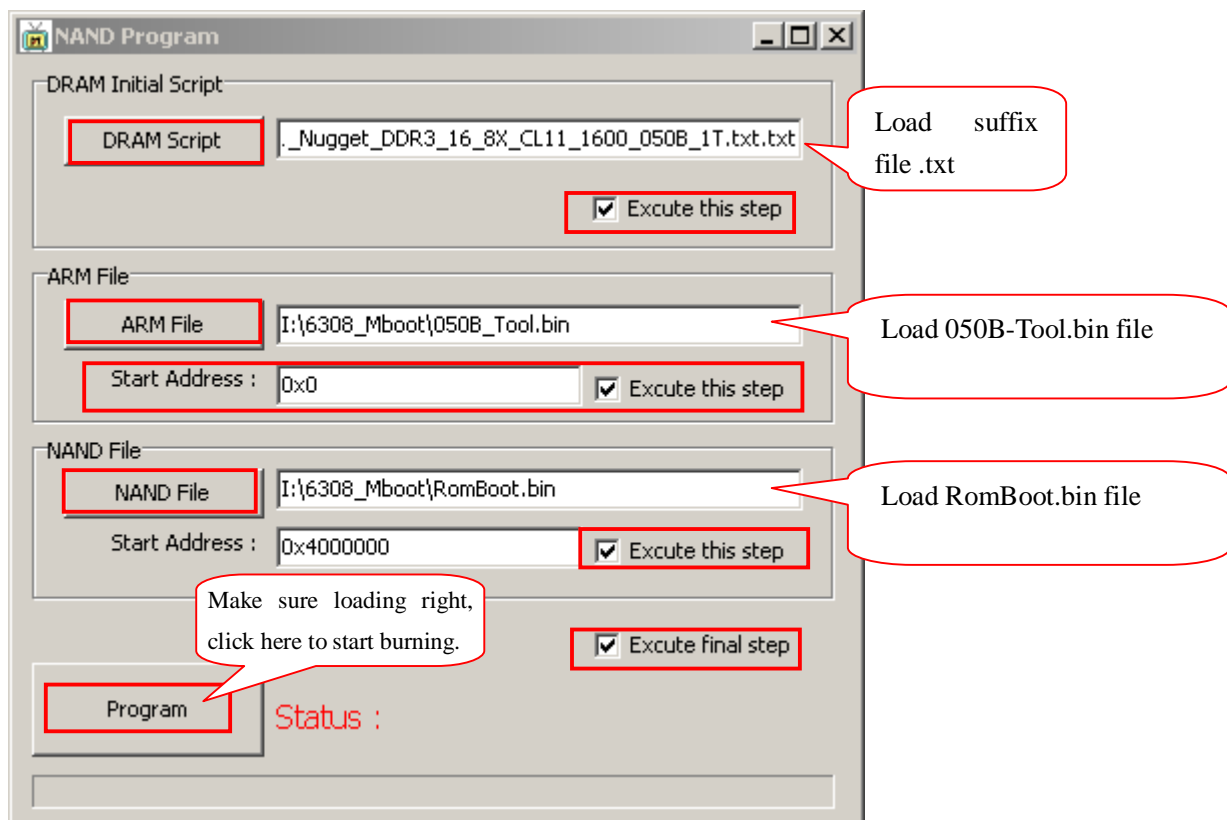
5.



6. Click view in toolbar in the main menu, click the second( count backwards) view in main toolbar and the second(count backwards) “Eagle NAND Program” to get into the next menu.



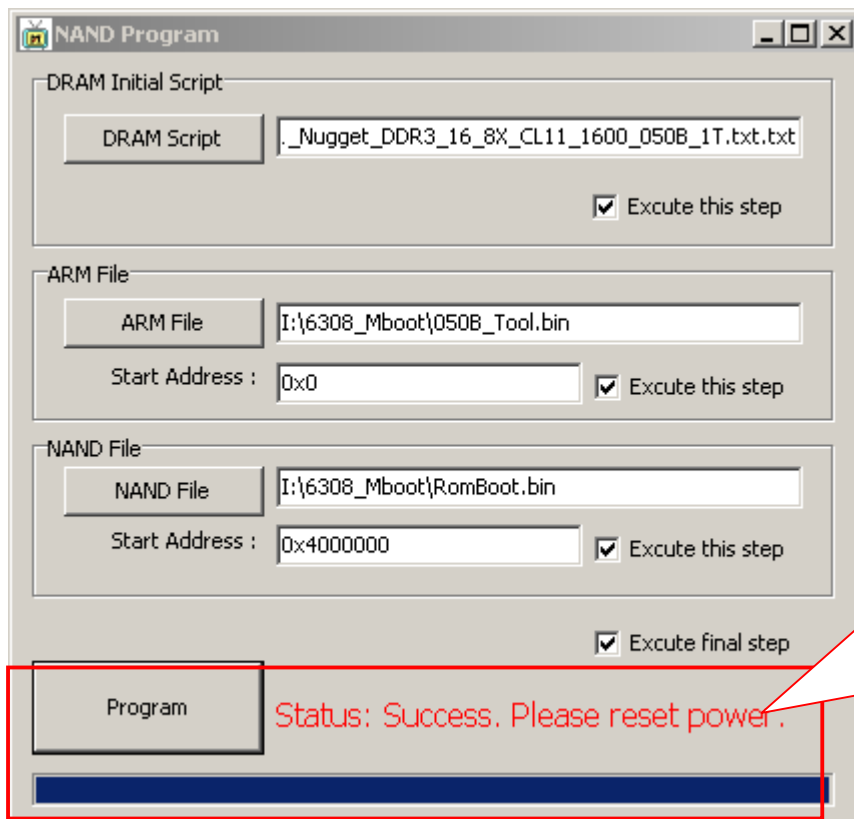
Follow these instructions to load the appropriate file



When toolbar shows: **Success** .Please reset power. That means burning finished (Notice: Although the hint shows



complete but it may not be burning completed, wait for 5 minutes to shut off power. If U disk cannot be used for burning, boot file should be burning again until U disk can be used for upgrading. ) .



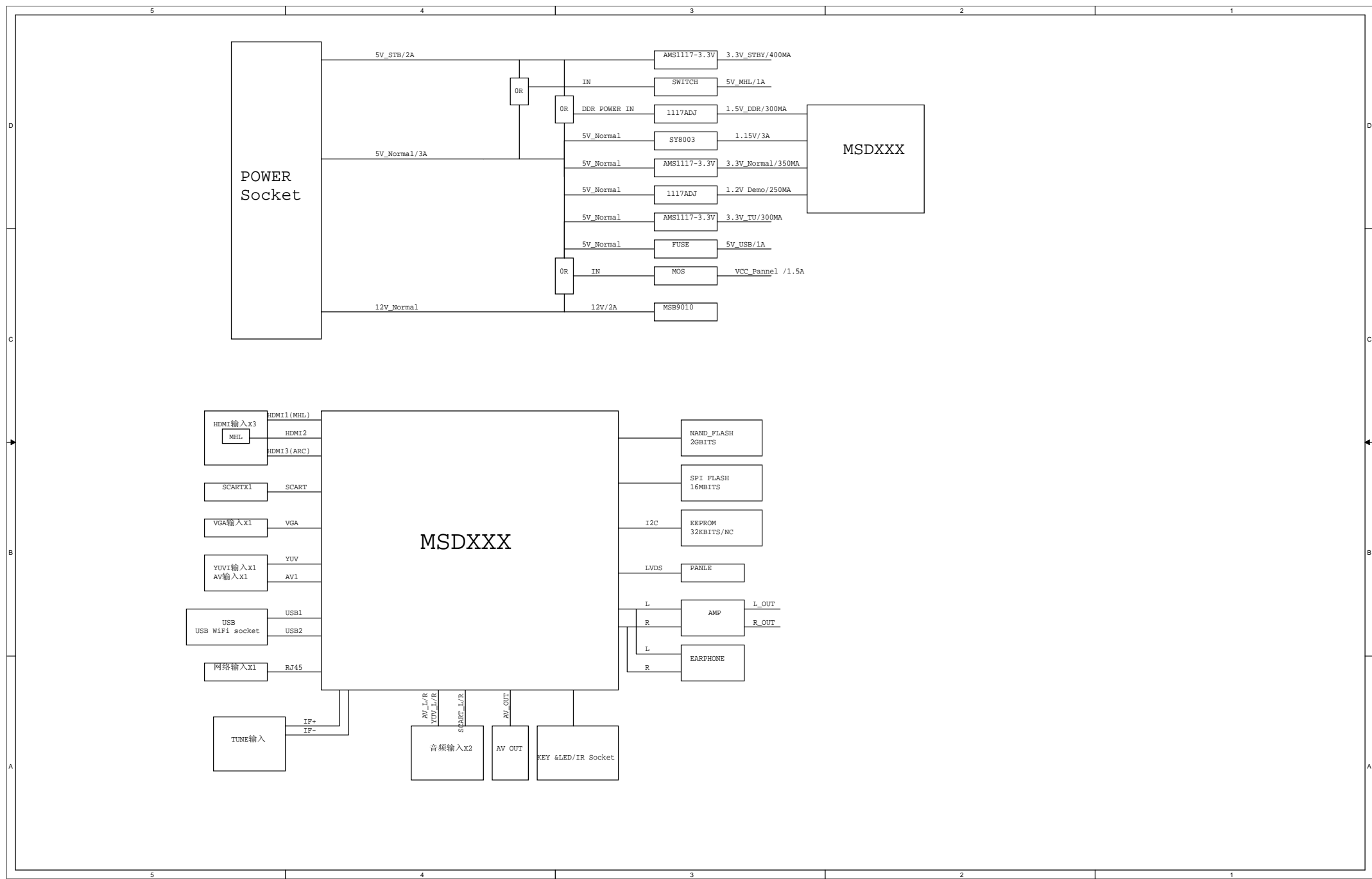
## 2, Main board software upgrades.

1, U disk plugged into main board, put MstarUpgrade.bin software into formatted U disk, press and hold on VOL + key button on TV key board, after about three seconds, LED starts flashing, wait until LED lights no longer flashing and steady mean burning success. If press three seconds, LED lights (no flashing into place) then boot files should be burned.

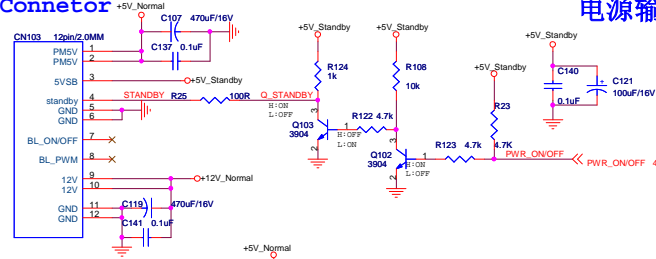
2, after prompting success, then click POWER on button panel to check whether main board can be starting on, if it can be started on means burning success, otherwise as unsuccessful.

## 3, CI+KEY burning

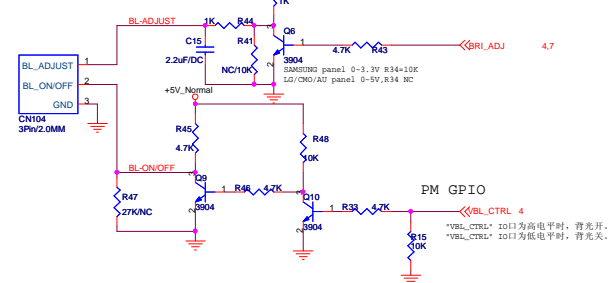
- i. CI + is certain TV operators encrypted to digital TV channels, need to watch the event on TV after decrypting, if TV software upgraded, must re-burn CI + key, otherwise the
- ii. client will not normally watch encrypted program.
- iii. All parts on main board with CI socket must burn CI + key, if any question, please contact the engineer.
- iv. CI + key running reference to "MSD6308 program CI + key count file modification", "MSD6308 CI + key burn".



## Connector 电源输入

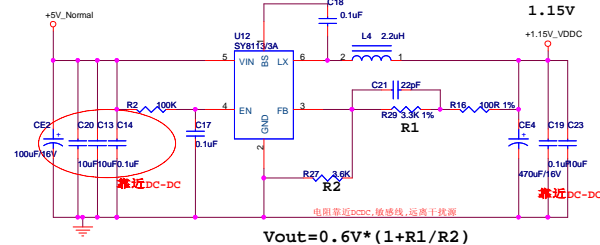


## Inverter controller



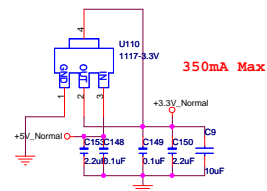
## DC/DC 1.2V Core Power

1.15V MAX 3A

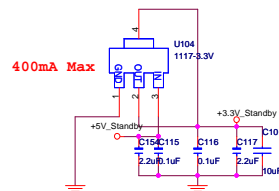


$$V_{out} = 0.6V * (1 + R1/R2)$$

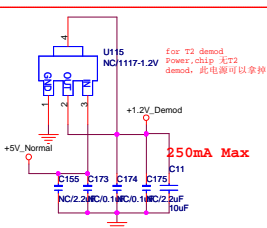
## 3.3V\_Normal



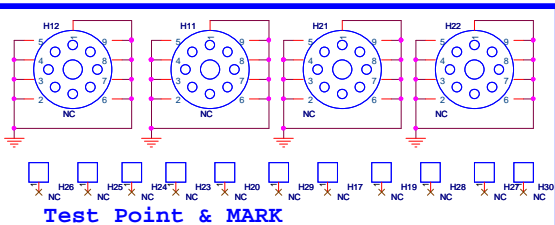
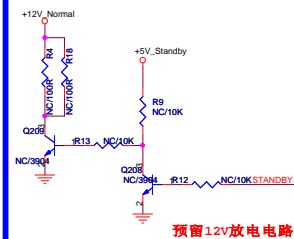
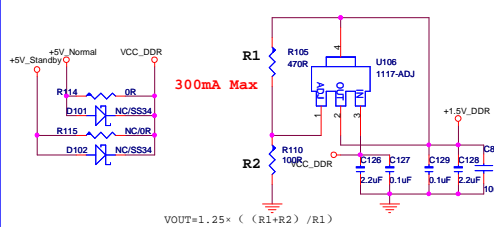
## 3.3V\_STB



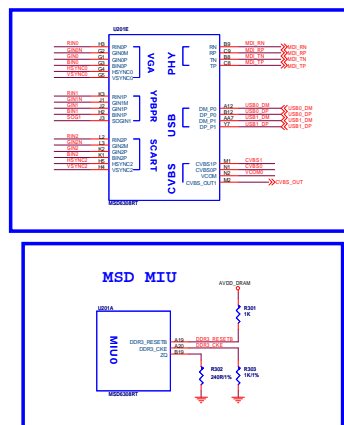
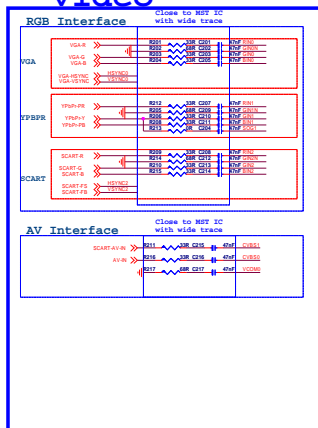
## 1.2V Power for T2 Demo



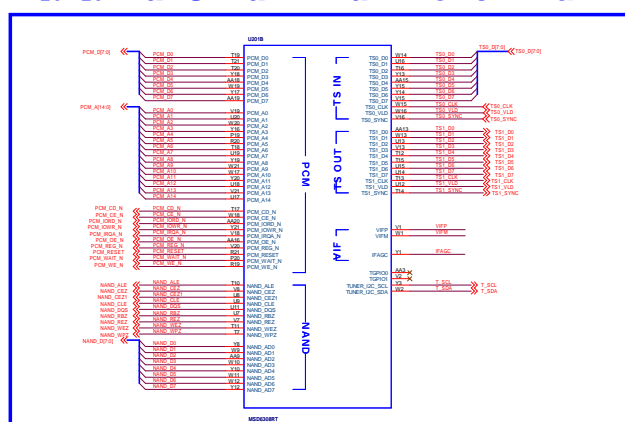
## 1.5V Power for DDR3



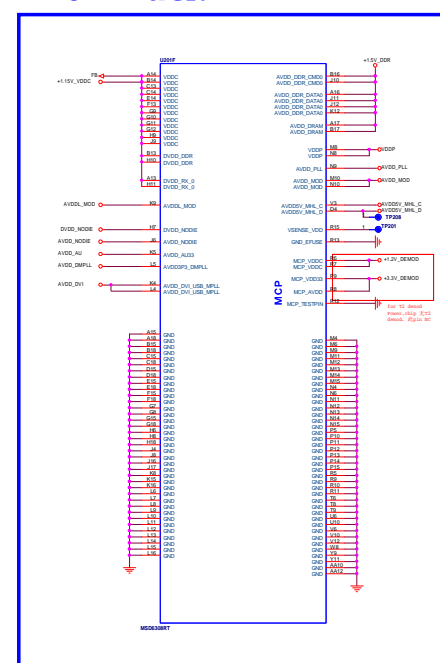
video



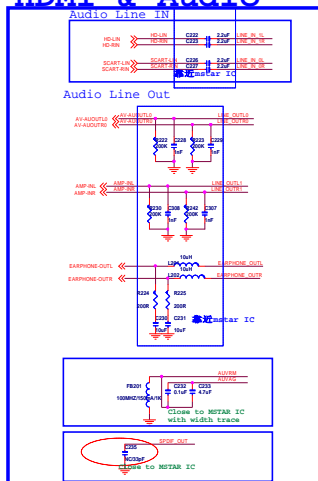
NAND & CI & TS & Front End



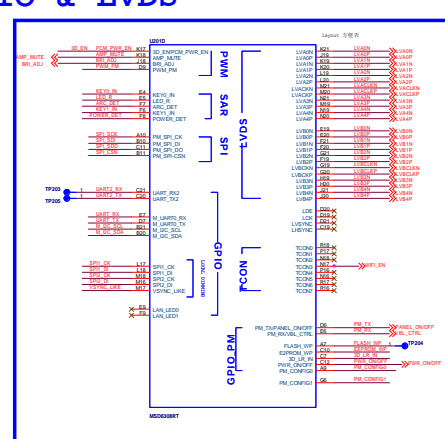
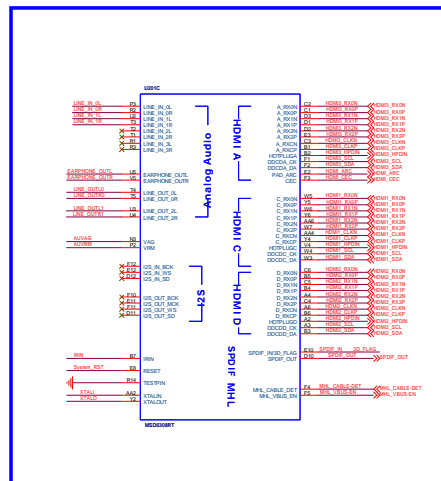
## POWER&GND



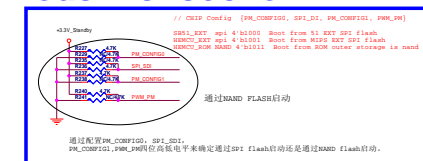
## HDMI & Audio



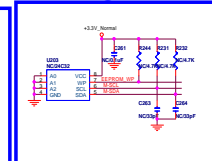
## GPIO & LVDS



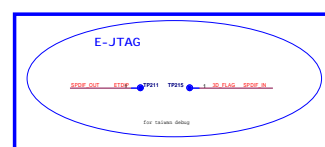
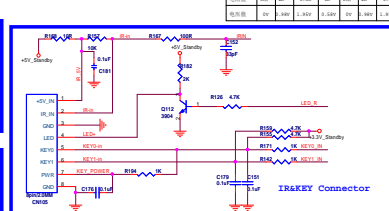
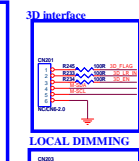
## Mode Selection



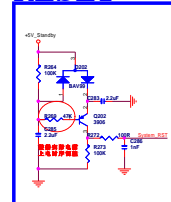
## EEPROM



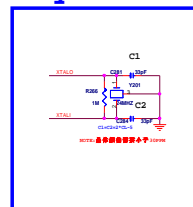
## Connector



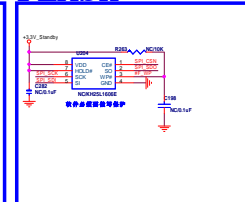
## RESET



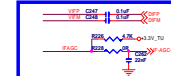
## Crystal



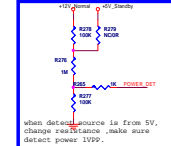
## FLASH



## RF



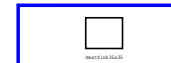
detect NAND Flash Power



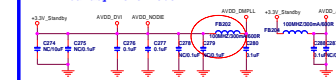
## Other



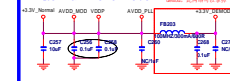
heat s



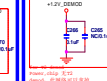
## Standby Power 3.3V



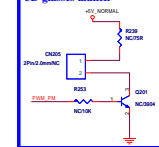
## Normal Power 3.3V



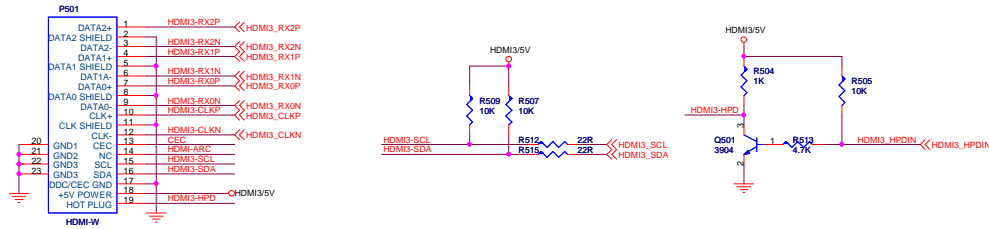
## Demod 1.2



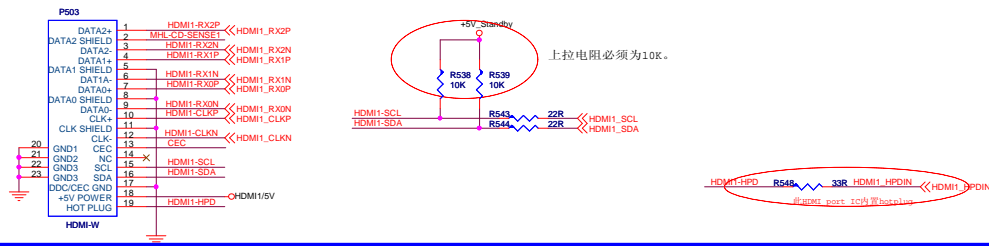
### 3D glasses launch



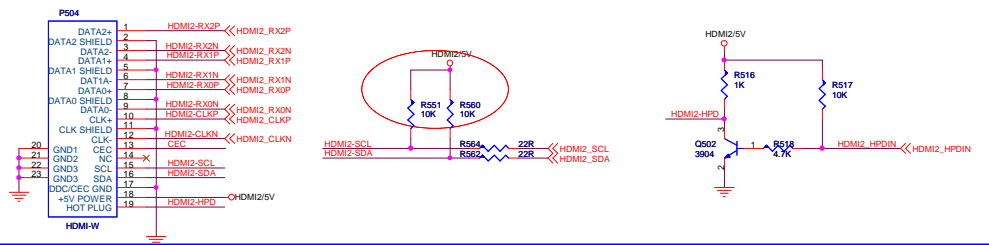
## HDMI 3 (带ARC功能)



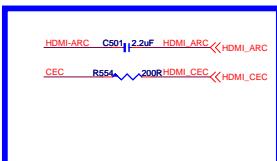
## HDMI 1 (支持MHL功能)



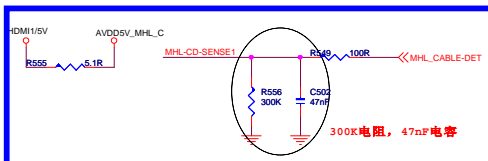
## HDMI 2



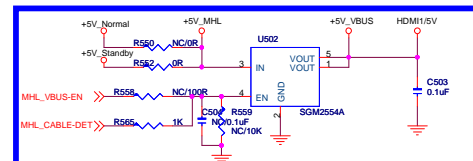
## CEC & ARC



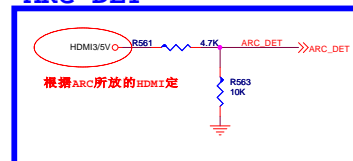
## MHL

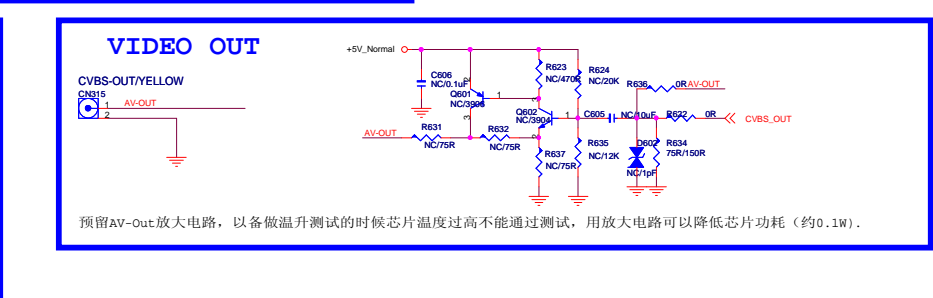
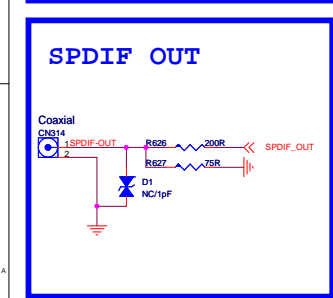
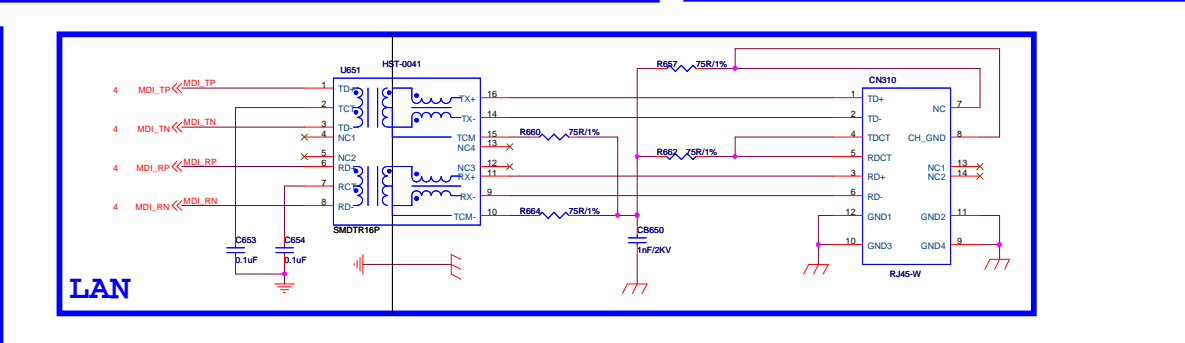
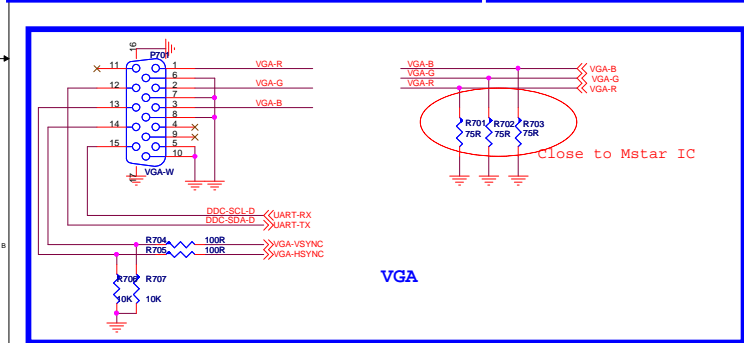
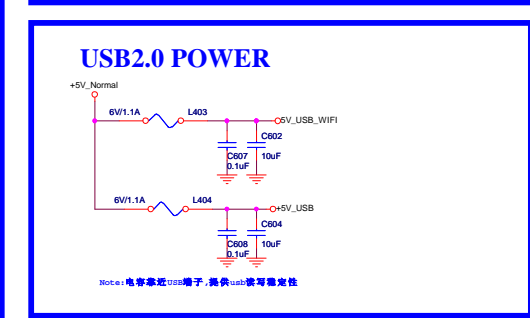
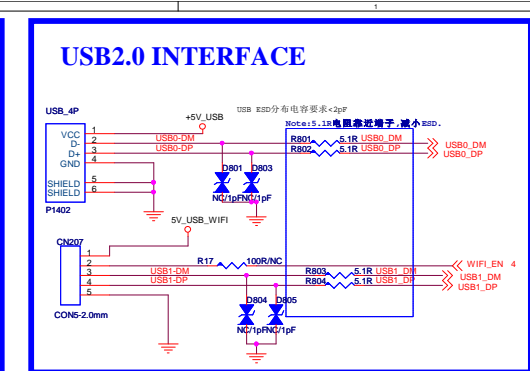
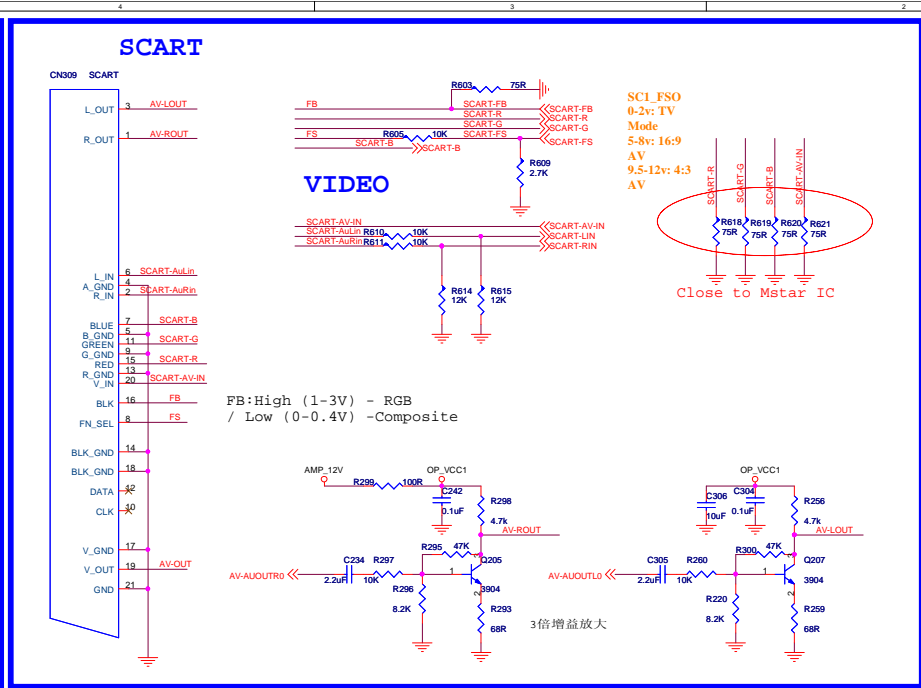
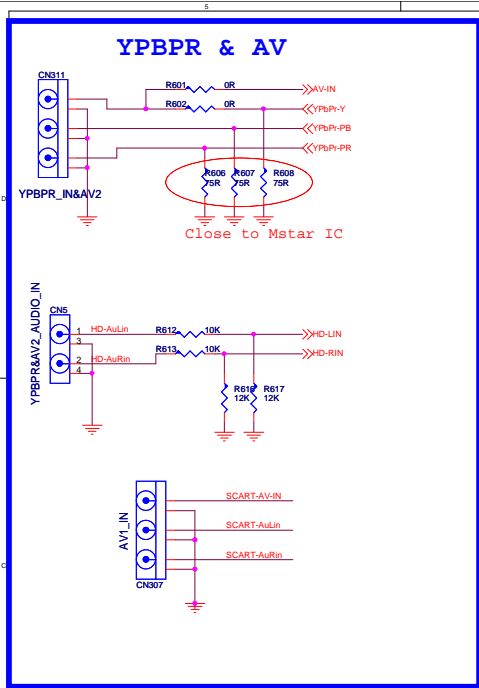


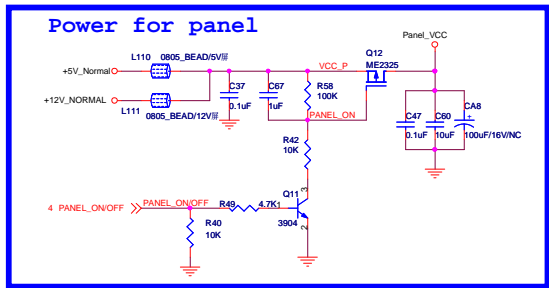
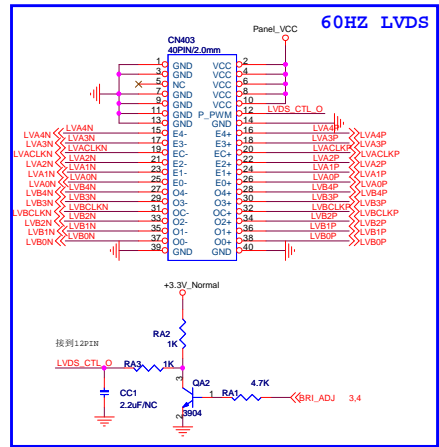
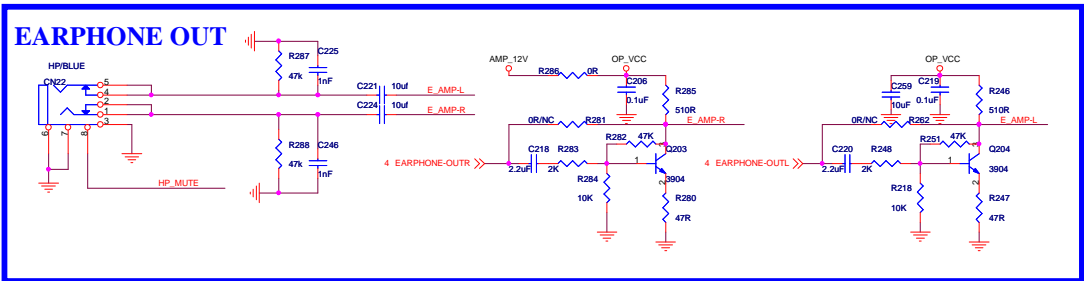
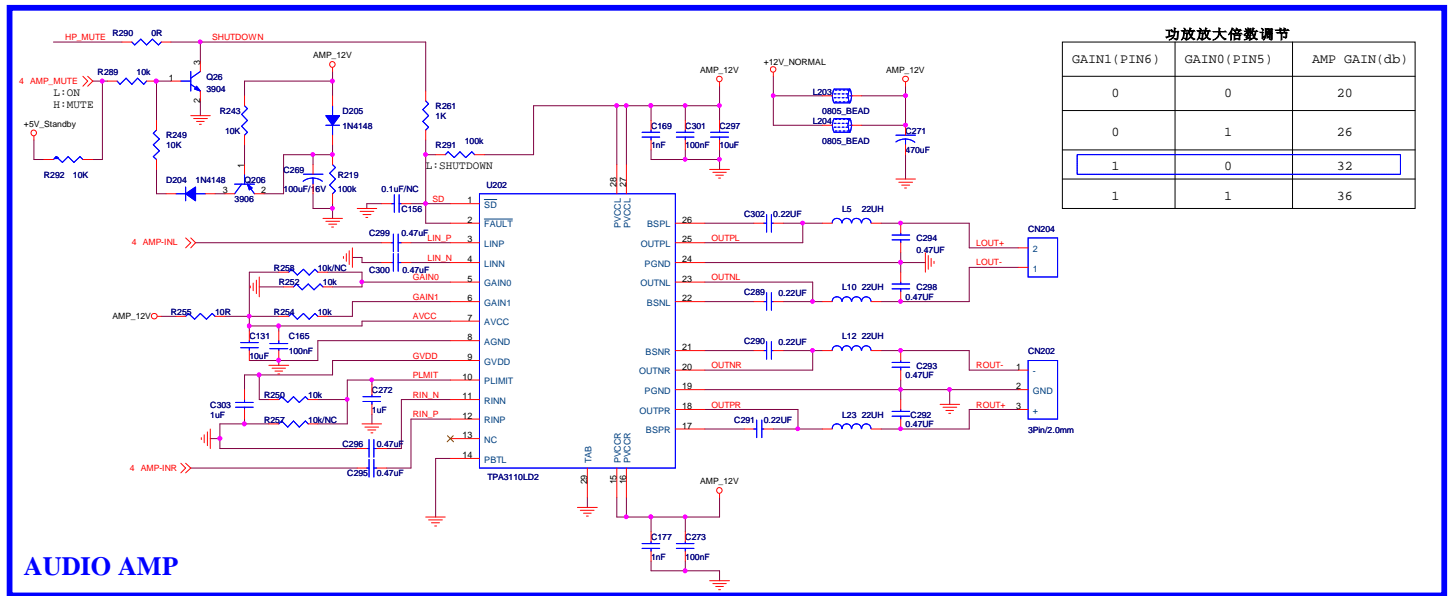
## MHL SWITCH

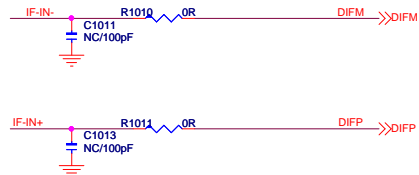
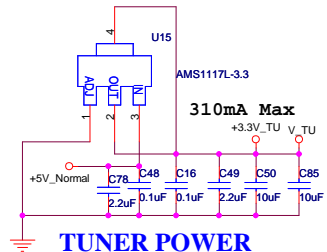
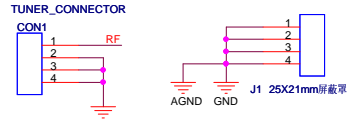


## ARC DET

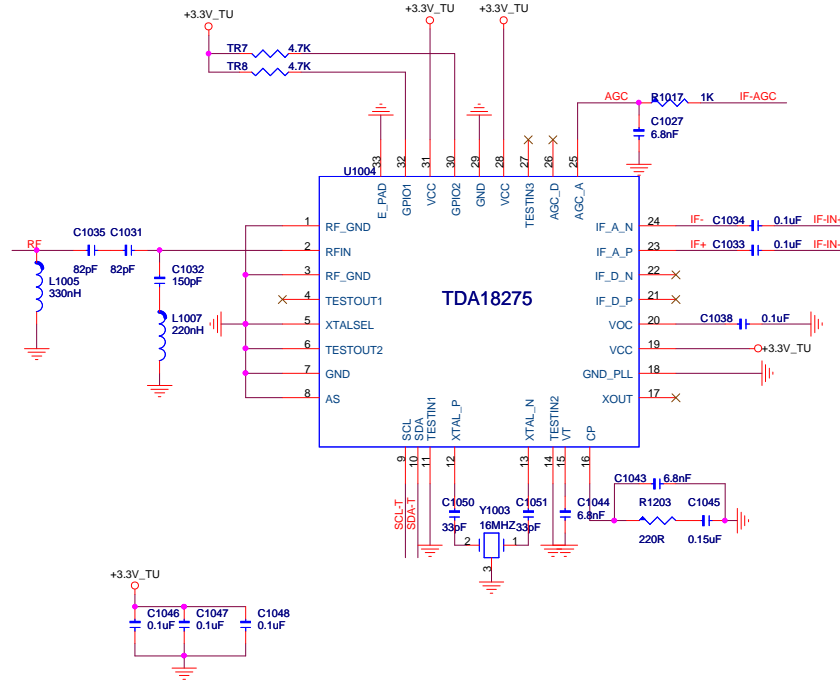
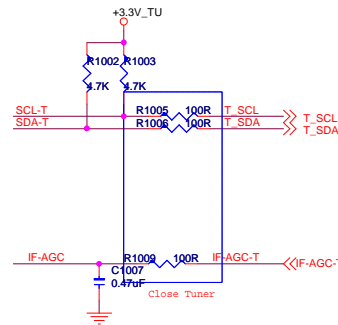








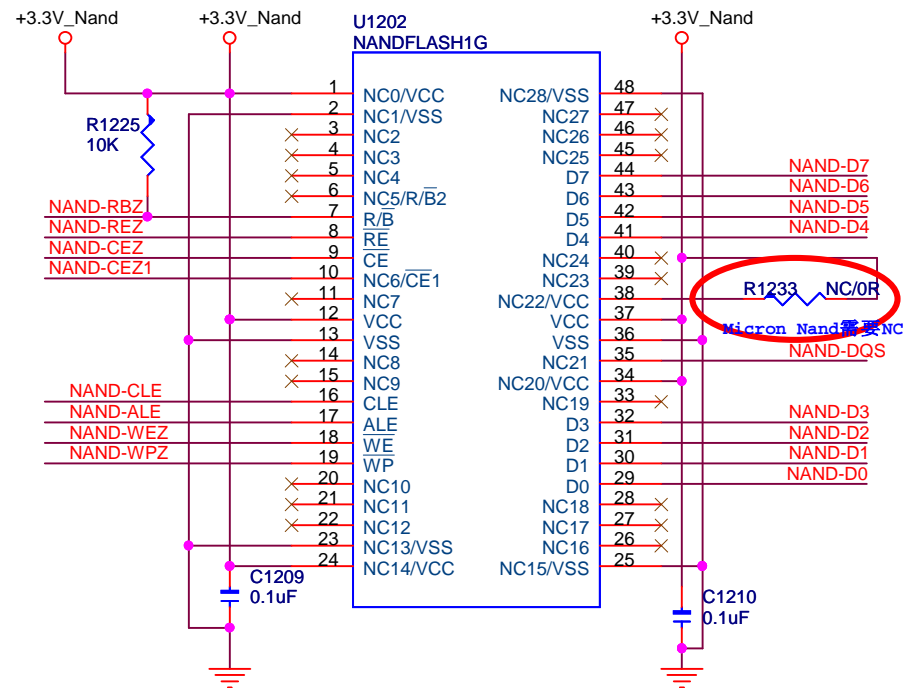
The schematic diagram illustrates the TDA18275 circuit. The central component is the TDA18275 IC, which is connected to various external components. The circuit includes a +3.3V\_TU power supply, a 3.3V\_TU supply, and a 3.3V\_TU supply. The IC is connected to a network of resistors (R107, R108, R109, R1203, R1204, R1205, R1206, R1207, R1208, R1209, R1210, R1211, R1212, R1213, R1214, R1215, R1216, R1217, R1218, R1219, R1220, R1221, R1222, R1223, R1224, R1225, R1226, R1227, R1228, R1229, R1230, R1231, R1232, R1233, R1234, R1235, R1236, R1237, R1238, R1239, R1240, R1241, R1242, R1243, R1244, R1245, R1246, R1247, R1248, R1249, R1250, R1251, R1252, R1253, R1254, R1255, R1256, R1257, R1258, R1259, R1260, R1261, R1262, R1263, R1264, R1265, R1266, R1267, R1268, R1269, R1270, R1271, R1272, R1273, R1274, R1275, R1276, R1277, R1278, R1279, R1280, R1281, R1282, R1283, R1284, R1285, R1286, R1287, R1288, R1289, R1290, R1291, R1292, R1293, R1294, R1295, R1296, R1297, R1298, R1299, R1300, R1301, R1302, R1303, R1304, R1305, R1306, R1307, R1308, R1309, R1310, R1311, R1312, R1313, R1314, R1315, R1316, R1317, R1318, R1319, R1320, R1321, R1322, R1323, R1324, R1325, R1326, R1327, R1328, R1329, R1330, R1331, R1332, R1333, R1334, R1335, R1336, R1337, R1338, R1339, R1340, R1341, R1342, R1343, R1344, R1345, R1346, R1347, R1348, R1349, R1350, R1351, R1352, R1353, R1354, R1355, R1356, R1357, R1358, R1359, R1360, R1361, R1362, R1363, R1364, R1365, R1366, R1367, R1368, R1369, R1370, R1371, R1372, R1373, R1374, R1375, R1376, R1377, R1378, R1379, R1380, R1381, R1382, R1383, R1384, R1385, R1386, R1387, R1388, R1389, R1390, R1391, R1392, R1393, R1394, R1395, R1396, R1397, R1398, R1399, R1400, R1401, R1402, R1403, R1404, R1405, R1406, R1407, R1408, R1409, R1410, R1411, R1412, R1413, R1414, R1415, R1416, R1417, R1418, R1419, R1420, R1421, R1422, R1423, R1424, R1425, R1426, R1427, R1428, R1429, R1430, R1431, R1432, R1433, R1434, R1435, R1436, R1437, R1438, R1439, R1440, R1441, R1442, R1443, R1444, R1445, R1446, R1447, R1448, R1449, R1450, R1451, R1452, R1453, R1454, R1455, R1456, R1457, R1458, R1459, R1460, R1461, R1462, R1463, R1464, R1465, R1466, R1467, R1468, R1469, R1470, R1471, R1472, R1473, R1474, R1475, R1476, R1477, R1478, R1479, R1480, R1481, R1482, R1483, R1484, R1485, R1486, R1487, R1488, R1489, R1490, R1491, R1492, R1493, R1494, R1495, R1496, R1497, R1498, R1499, R1500, R1501, R1502, R1503, R1504, R1505, R1506, R1507, R1508, R1509, R1510, R1511, R1512, R1513, R1514, R1515, R1516, R1517, R1518, R1519, R1520, R1521, R1522, R1523, R1524, R1525, R1526, R1527, R1528, R1529, R1530, R1531, R1532, R1533, R1534, R1535, R1536, R1537, R1538, R1539, R1540, R1541, R1542, R1543, R1544, R1545, R1546, R1547, R1548, R1549, R1550, R1551, R1552, R1553, R1554, R1555, R1556, R1557, R1558, R1559, R1560, R1561, R1562, R1563, R1564, R1565, R1566, R1567, R1568, R1569, R1570, R1571, R1572, R1573, R1574, R1575, R1576, R1577, R1578, R1579, R1580, R1581, R1582, R1583, R1584, R1585, R1586, R1587, R1588, R1589, R1590, R1591, R1592, R1593, R1594, R1595, R1596, R1597, R1598, R1599, R1600, R1601, R1602, R1603, R1604, R1605, R1606, R1607, R1608, R1609, R1610, R1611, R1612, R1613, R1614, R1615, R1616, R1617, R1618, R1619, R1620, R1621, R1622, R1623, R1624, R1625, R1626, R1627, R1628, R1629, R1630, R1631, R1632, R1633, R1634, R1635, R1636, R1637, R1638, R1639, R1640, R1641, R1642, R1643, R1644, R1645, R1646, R1647, R1648, R1649, R1650, R1651, R1652, R1653, R1654, R1655, R1656, R1657, R1658, R1659, R1660, R1661, R1662, R1663, R1664, R1665, R1666, R1667, R1668, R1669, R1670, R1671, R1672, R1673, R1674, R1675, R1676, R1677, R1678, R1679, R1680, R1681, R1682, R1683, R1684, R1685, R1686, R1687, R1688, R1689, R1690, R1691, R1692, R1693, R1694, R1695, R1696, R1697, R1698, R1699, R1700, R1701, R1702, R1703, R1704, R1705, R1706, R1707, R1708, R1709, R1710, R1711, R1712, R1713, R1714, R1715, R1716, R1717, R1718, R1719, R1720, R1721, R1722, R1723, R1724, R1725, R1726, R1727, R1728, R1729, R1730, R1731, R1732, R1733, R1734, R1735, R1736, R1737, R1738, R1739, R1740, R1741, R1742, R1743, R1744, R1745, R1746, R1747, R1748, R1749, R1750, R1751, R1752, R1753, R1754, R1755, R1756, R1757, R1758, R1759, R1760, R1761, R1762, R1763, R1764, R1765, R1766, R1767, R1768, R1769, R1770, R1771, R1772, R1773, R1774, R1775, R1776, R1777, R1778, R1779, R1780, R1781, R1782, R1783, R1784, R1785, R1786, R1787, R1788, R1789, R1790, R1791, R1792, R1793, R1794, R1795, R1796, R1797, R1798, R1799, R1800, R1801, R1802, R1803, R1804, R1805, R1806, R1807, R1808, R1809, R1810, R1811, R1812, R1813, R1814, R1815, R1816, R1817, R1818, R1819, R1820, R1821, R1822, R1823, R1824, R1825, R1826, R1827, R1828, R1829, R1830, R1831, R1832, R1833, R1834, R1835, R1836, R1837, R1838, R1839, R1840, R1841, R1842, R1843, R1844, R1845, R1846, R1847, R1848, R1849, R1850, R1851, R1852, R1853, R1854, R1855, R1856, R1857, R1858, R1859, R1860, R1861, R18

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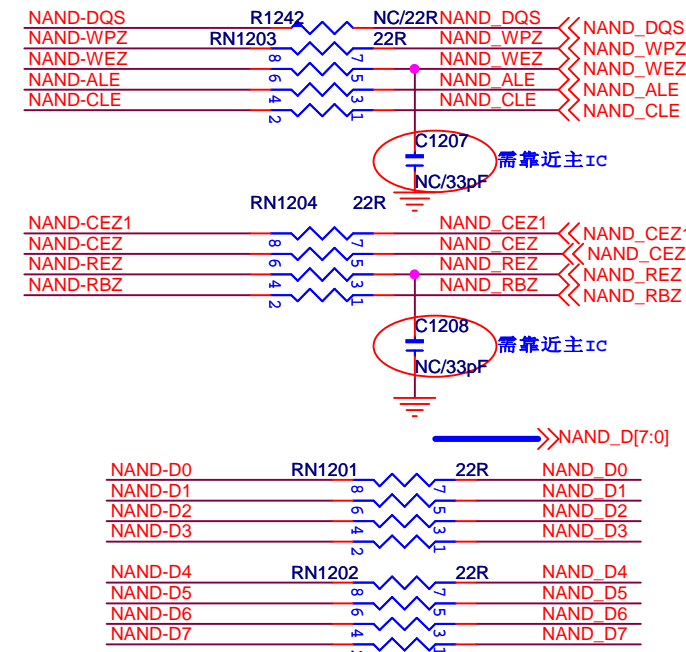
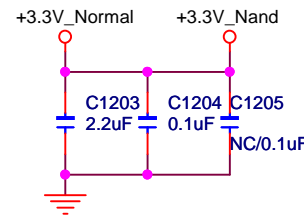
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# NAND FLASH



# NAND Power



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The diagram illustrates a power supply circuit for a PCMCIA card. It features a +5V\_Normal input connected to a series inductor L106 (FB/60R/300mA, L0603). The output of the inductor is connected to a common rail that branches to three capacitors: C1306 (10uF), C1303 (NC/10uF), and C1304 (0.1uF). The other ends of these capacitors are connected to ground. The +5V\_PCMAA output is taken from the common rail after the capacitors.

The circuit diagram shows a +5V\_Normal input connected to a network of resistors (R1306, R1307, R1310, R1311) and a capacitor (C1305) to ground. The output is PCM\_CD\_N. The truth table shows the signal levels for PCM\_CD1\_N, PCM\_CD2\_N, and PCM\_CD\_N.

PCM_CD1_N	PCM_CD2_N	PCM_CD_N
GND	GND	L 0V
GND	NC	H 2.5V
NC	GND	H 2.5V
NC	NC	H 5V