

Service  
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24PHT4101S/67

# Service Manual


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# Product Specification Sheet

	24" HD ATV (24L81F-H-CN)
Series name	24PHA4101S/67
CR (yyyyww) of leading set	
Platform/Chipset	T4C1-3463 DVB-T2
Processor type (CPU) / GPU	
Picture/Display	
RC	Low end RC (7601-110002-0144FLP2)
Backlight Type (Panel Supplier)	DLED
Diagonal Screen Size	23.6"
Perfect Motion Rate Picture Performance Index	100 PMR
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(LCM)
Panel contrast ratio	3000: 1
Viewing Angle - H (L+R)	176°
Viewing Angle - V	176°
Response Time (ms)	8.5ms
Analog + PWM dimming	YES
2D/3D Logic (2D/3D Active/3D Passive)	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)	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% boost)	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
"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 (Wall colour adaptive, Lounge Light Mode, Ambilight Motion, Gaming Mode)	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 Mount)	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 (Bass control/DBE/Ultra Bass/Ultra Bass II)	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 动态低音增强	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)	Plastic Wing

I/O port to be clearly indicated	TV*1/USB*1/VGA*1 /HDMI*2/YPBPR*1/AV-IN*1/Earphone*1
Local Keyboard 按键板	YES
Philips wordmark 商标logo	PHILIPS
Leading Edge 装饰件	#7 Crystal
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	*2
HDMI 1.4a	HDMI(Side-out/Under-out)
HDMI 2.0	N/A
HDMI/DVI	YES
HDMI ARC	HDMI-2
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 Miracast)	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, fi lm, PC Mode(HDMI )
Dual Screen (TV and TeleText) 图文	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
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 stdby	N/A
UI Languages	English, Malaysia, Indonesian, Thai, Veitnamese,Arabic
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UI)	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
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, Youtube)	N/A
Basic Performance Profile	N/A
Google Play	N/A
Memory size to install apps	N/A
Extendable USB storage for App Downloads	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
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/OR tbc)	N/A

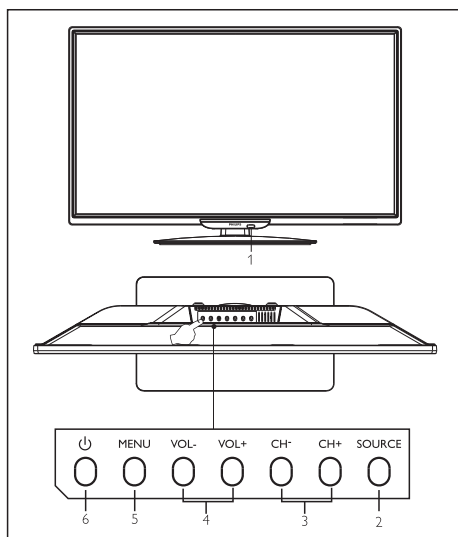
MyRemote App (Old TV Remote App)	N/A
Ambilight Lounge App	N/A
<b>Broadcast/Certification</b>	
DVB-T/C	N/A
DVB-S/S2	N/A
DVB-T/T2	YES
DVB-C2	N/A
SBTVD-T (Brazil)	N/A
SATVD-T (Argentina)	N/A
Analog (LATAM/APMEA)	PAL SECAM NTSC
Nicam (APMEA)	N/A
Enhanced SSU	N/A
Italy HD Book 2.1.1 (GOLD)	N/A
HD-Book Italy 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
TiVoON (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
<b>Sustainability/Power</b>	
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
<b>Accessory</b>	
<b>By-packed accessories</b>	
Active Glasses (509)	N/A
Active Glasses (529)	N/A
Passive Glasses (PTA417)	N/A
Dual Gaming Glasses	N/A

Woofer (e.g. SWB50) with Soundbeam	N/A
Sound Bar	N/A
Detachable speaker base 可拆卸喇叭	N/A
Wireless audio adaptor	N/A
Wi-Fi Adapter (PTA01/00/PTA127/55)	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	N/A
Optional accessories	
Active Glasses (PTA509/529)	N/A
Passive Glasses (PTA419)	N/A
Dual Gaming Glasses (PTA436)	N/A
Wi-Fi Adapter (PTA01/00/PTA127/55)	N/A
Skype Camera (PTA317)	N/A
Table Top Stand	N/A
Speaker stand	N/A
Others	N/A
<b>Certification</b>	
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	
<b>Dimensions (WxHxD)</b>	
Unit with stand	550x360x156mm
Unit without stand	550x327x66mm
Carton	670x392x108mm
Wall-mount	100mm×100mm
<b>Weight</b>	
Product without Stand	2.3 kg
Product with Stand	2.5 kg
Product in Packaging	3.5 kg



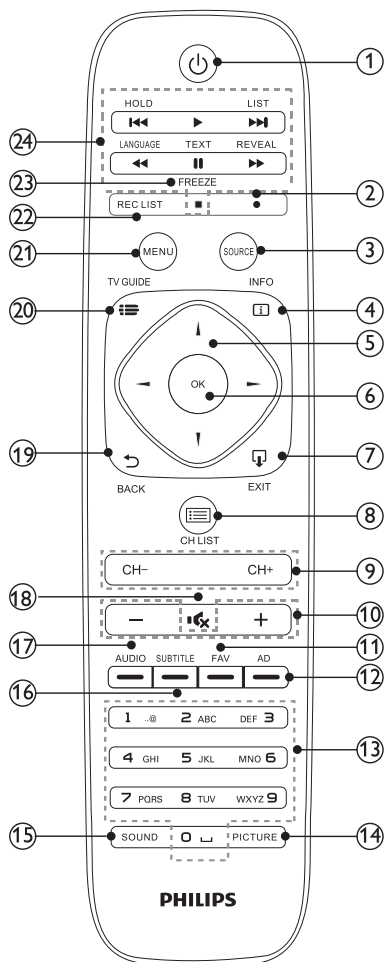
### 3 Your TV

#### 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 • Recording
 

Before recording, you need to prepare the following:

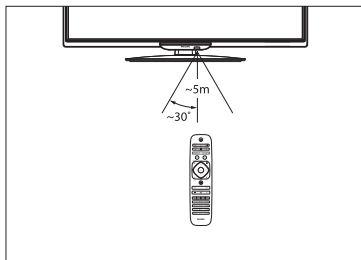
  1. a connected USB Hard Drive formatted on this TV
  2. digital TV channels installed on this TV
  - To record TV program, press the red (Record) on the remote control.

- To schedule a recording of an upcoming TV program, press TV GUIDE then select the TV program you wish to record. Press the red **•** (Record) on remote control to set the recording schedule.
- ③ Source**  
Select an input source for the TV.
  - ④  INFO**  
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  CH LIST**  
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 AD**  
Audio Description shortcut.
  - 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.

- ⑮ SUBTITLE**  
Teletext green key or display subtitle message, when current channel has subtitle option.
- ⑯ AUDIO**  
Audio Languages shortcut.
- ⑰ **   
Mute or unmute the sound.
- ⑱  BACK**  
Return to the previous channel.
- ⑳  TV GUIDE**  
Gives instant access to TV program guide.
  - availability of electronic program guide(EPG) is dependent on broadcasters or operators.
- ㉑ Menu**  
Turn on /off the menu.
- ㉒ REC LIST**  
To view the list of recordings.
- ㉓  FREEZE**  
To freeze a scene in the TV program. Press again to return to the current scene.
- ㉔ **   
Shortcut keys in USB mode:  
previous, Rewind, start, pause, Stop, Fast Forward, next.

## Remote control usage

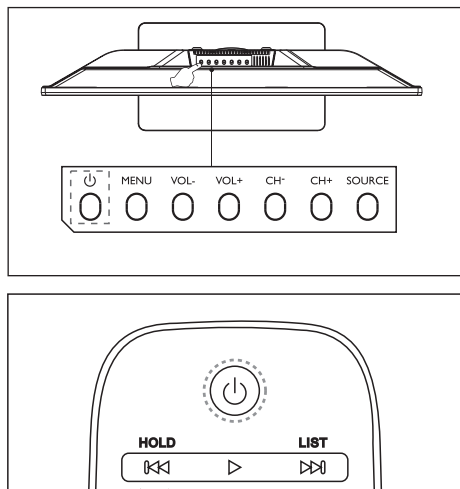
When you use the remote control, hold it close to the TV and point it at the remote control sensor. Make sure that the line-of-sight between the remote control and TV is not blocked by furniture, walls or other objects.




## 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

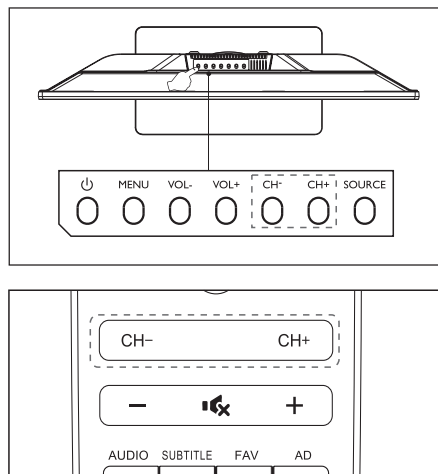
- Press  (Standby-On) on the remote control.
  - » The standby indicator switches to lights up.




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

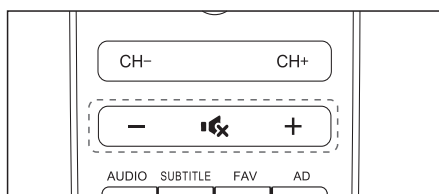
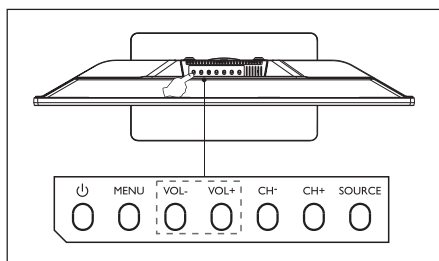
- Switch on the device before selecting it as an external signal source.

### 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**.
- Press **Mute** again to restore the sound.

## Date and time

Connect DTV signal, the system will identify the current DTV signal date and time automatically.

Press **i** key to check current time, current time will be displayed in program information.

Time zone

Set time zone information according to the following steps:

- 1 Press **MENU** key
- 2 choose the following pass :  
Time-->Time Zone
- 3 choose one time zone, press **OK** to confirm
- 4 twice press **Menu** key to close it.

## 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

- 24" : 4W × 2

## Inherent resolution

- 24" : 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.

## 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:
  - 24" : 30W

## 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
24"	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

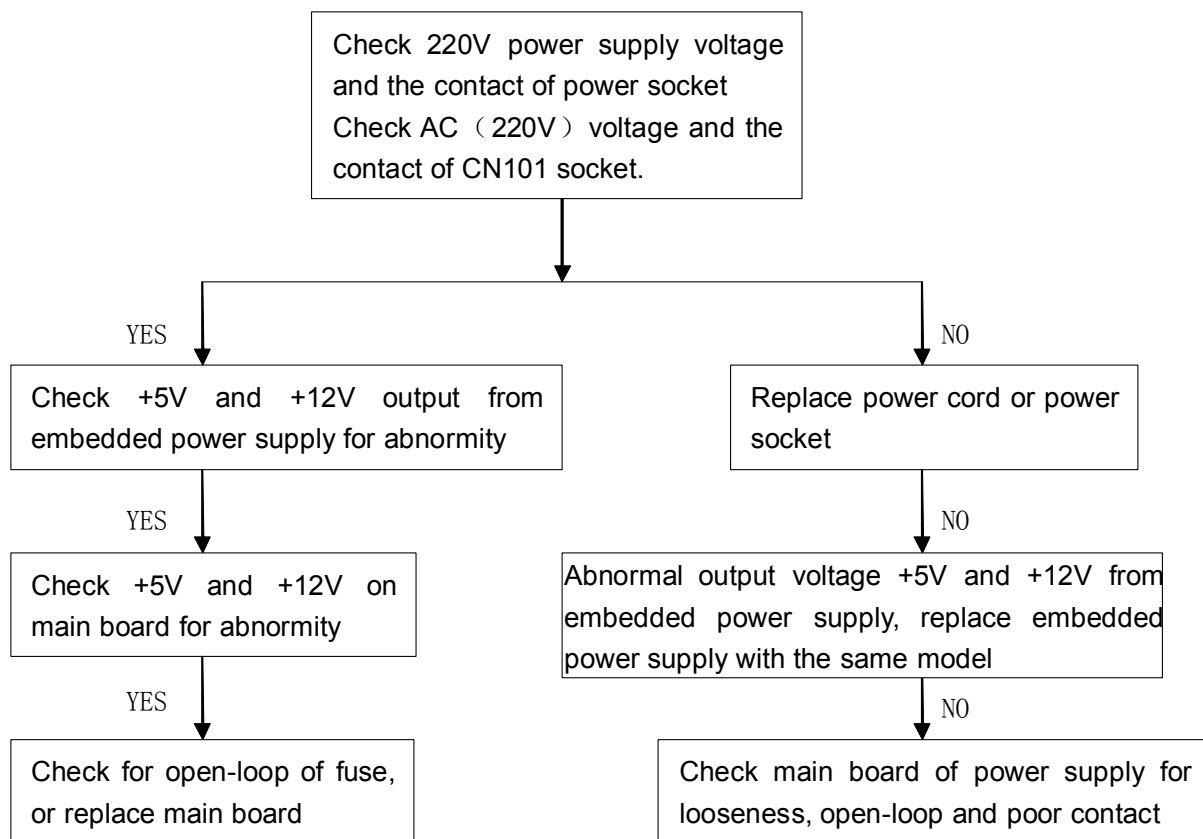
**There are problems with HDMI devices:**

- 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.

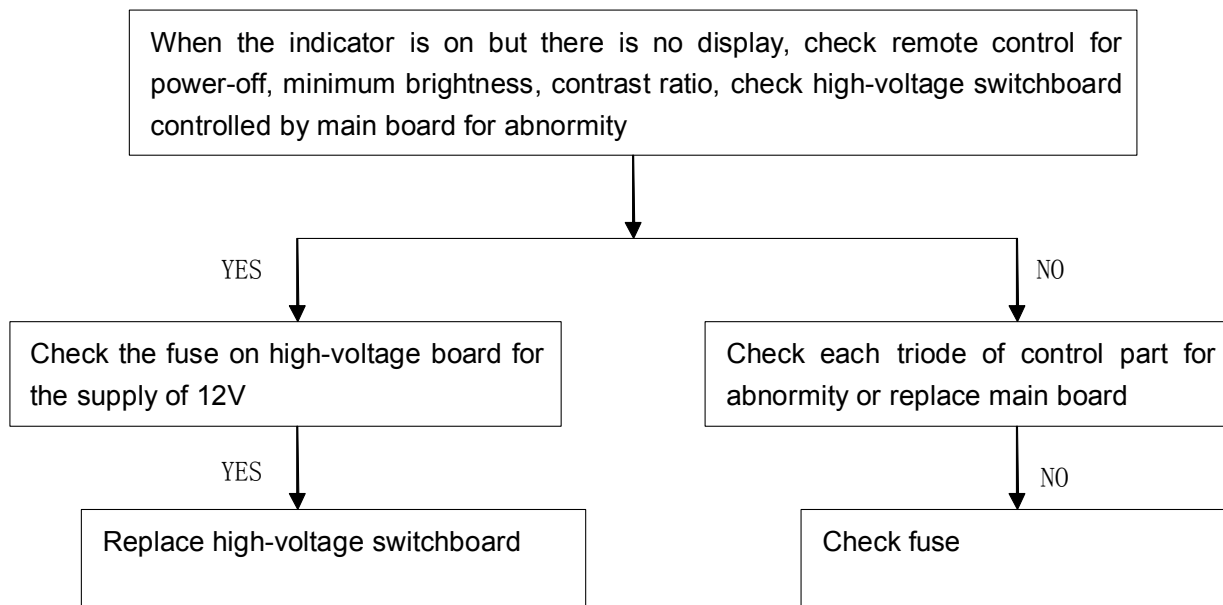
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## 4. Troubleshooting Procedure

### 1. No power



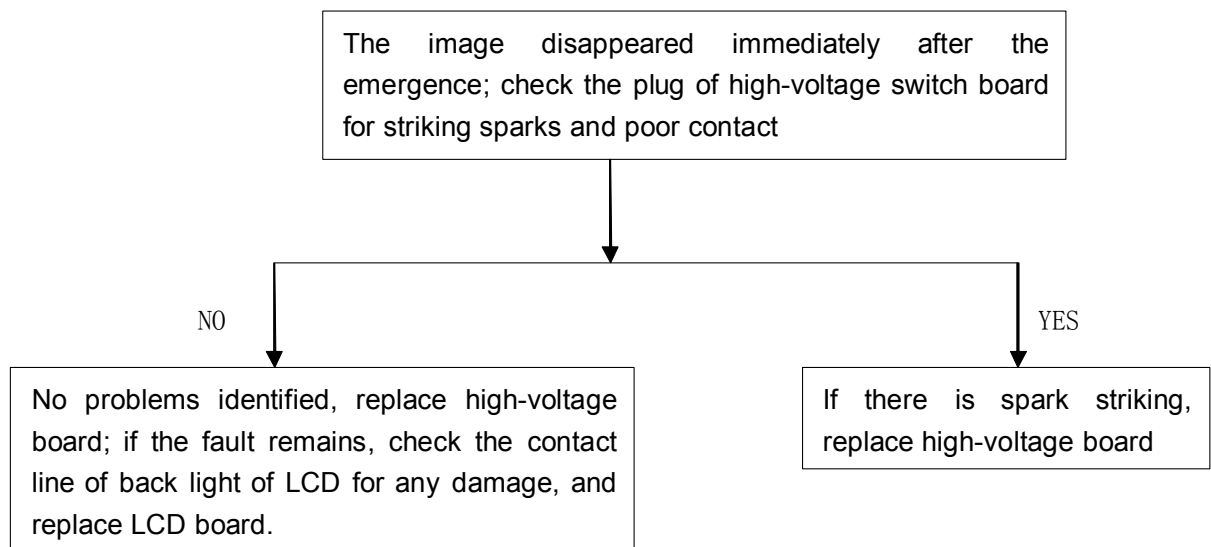
### 2. Without light



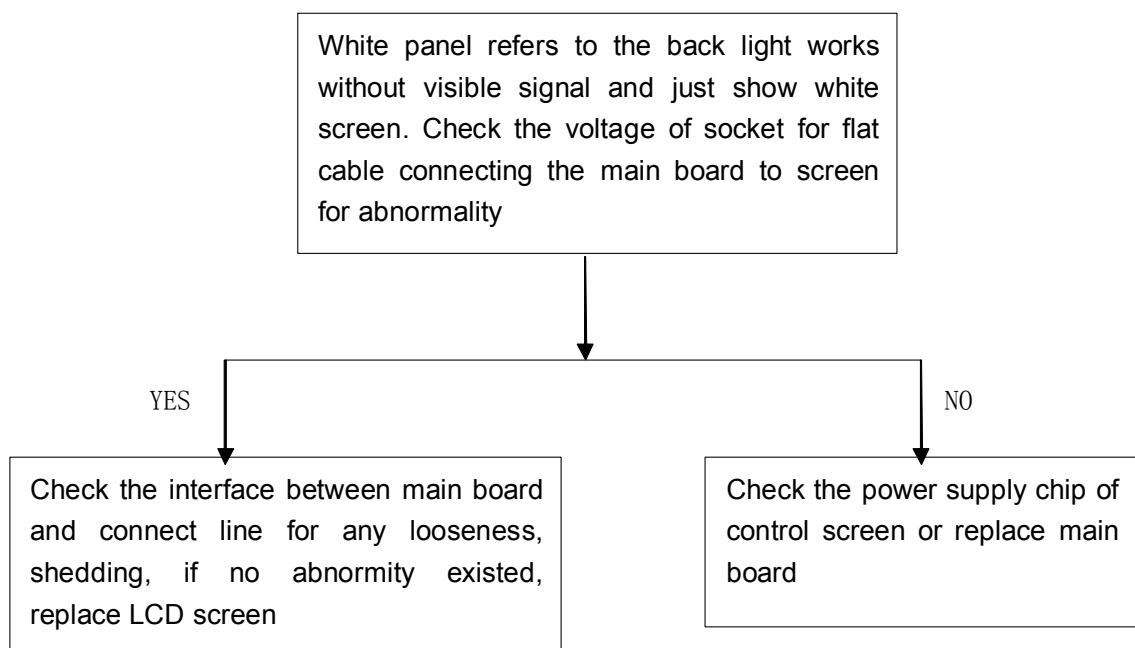


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### 3. Protection or without light (refers to the disappearance of image several seconds after the emergence of image)

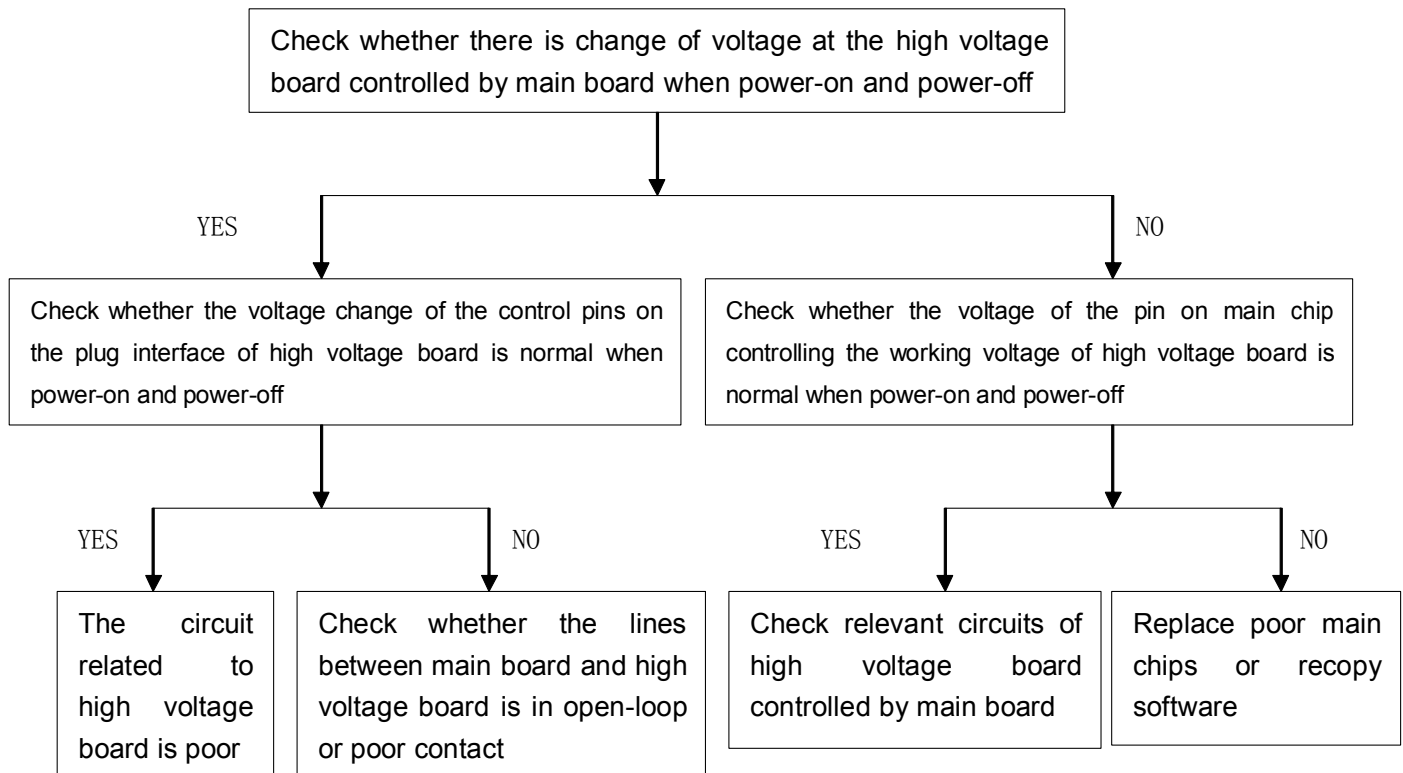


### 4. White panel

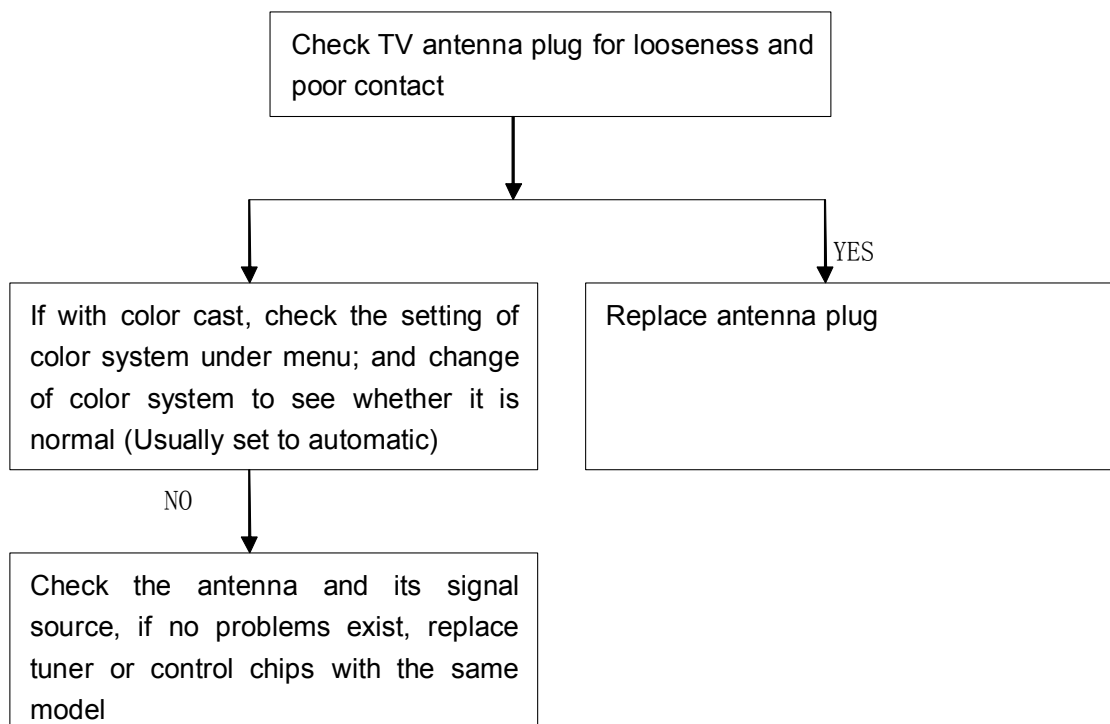


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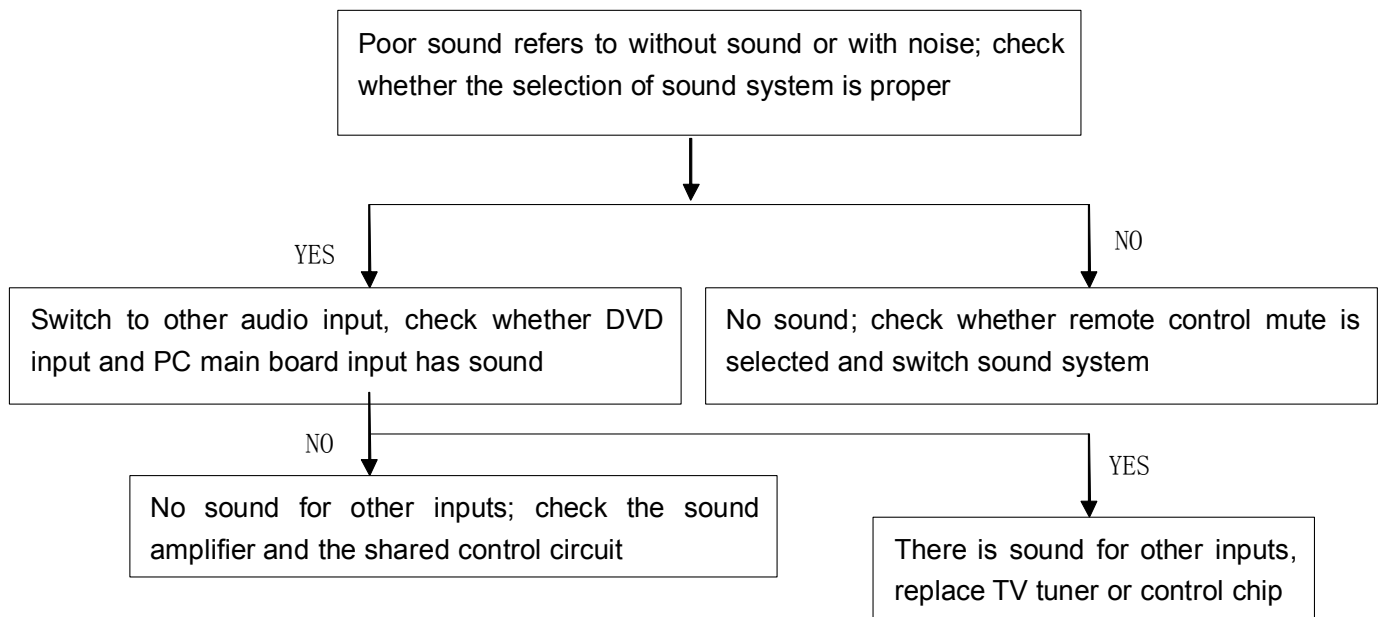
**5. White screen after power-off (work normally when power on, but when power-off or no signal input, the screen shows a white screen)**



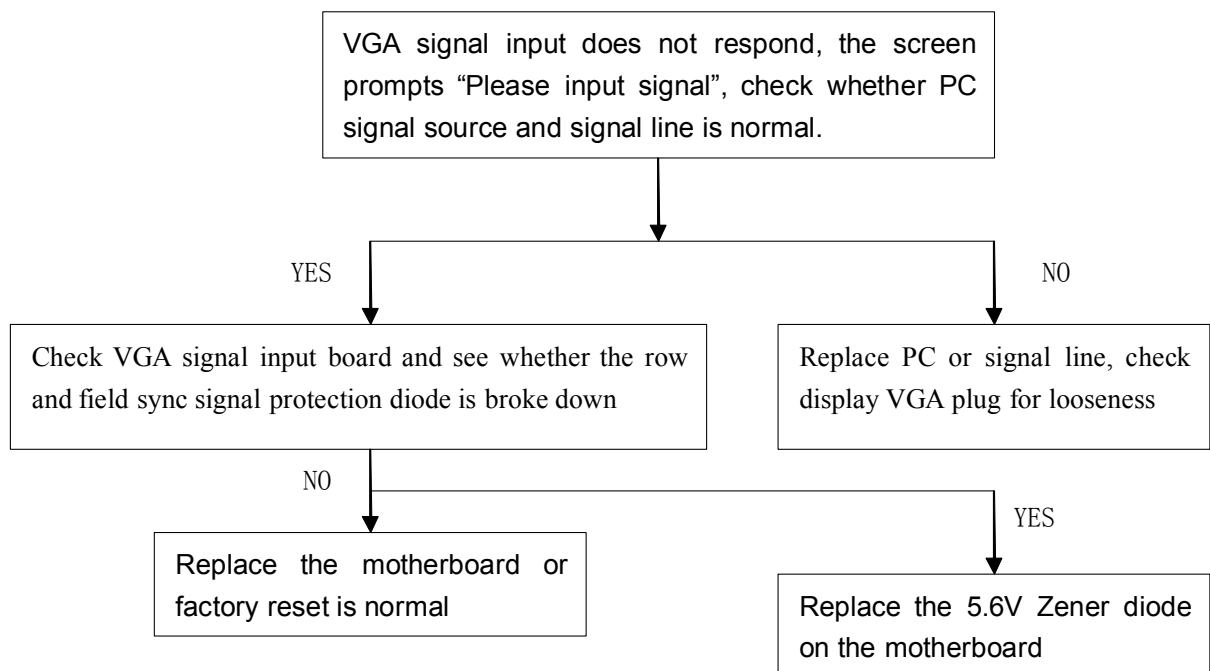
**6. TV without channel or with color cast**



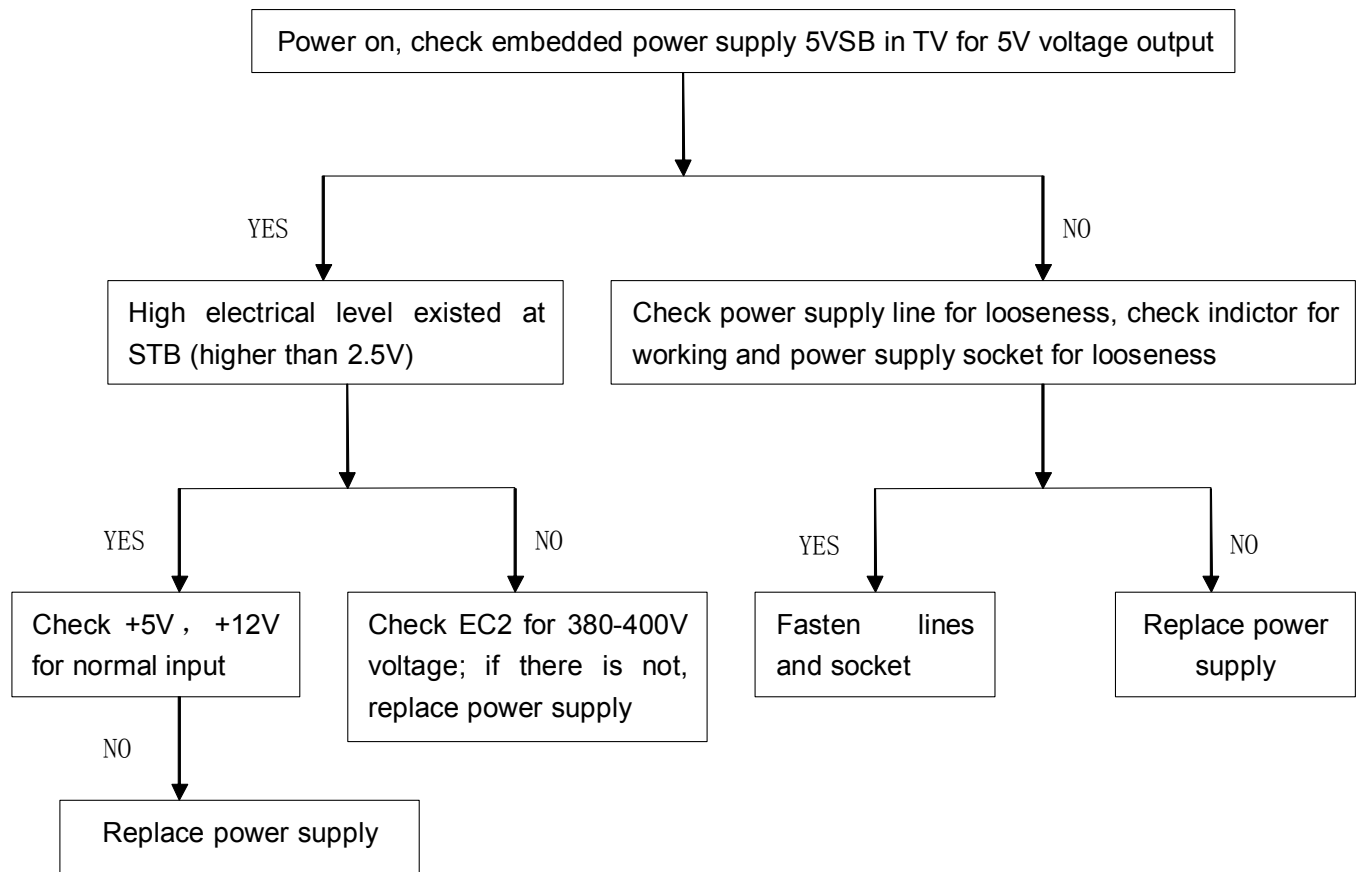
## 7. Poor sound



## 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,

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glass of the pressed portion is not damaged, the liquid crystal body can not display normally, with spot or block black defect.

10.6 Screen mess: irregular color display arising from damage of driving plate in LCD.

## MSD3463 software upgrades (After Service)

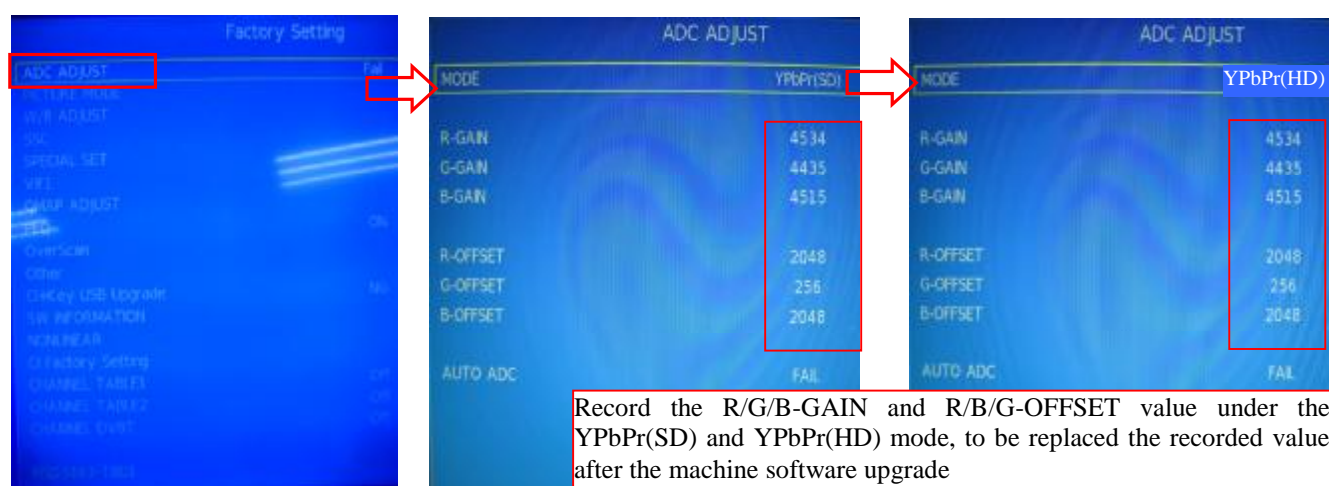
### 1、 Software upgrade tools and materials

- u AC100~240V power supply and power cord
- u USB flash disk (2.0 version, Capacity not more than 4G)

### 2、 Preparatory work before the upgrade

Recorded all the ADC and the white balance data of all the message source in factory menu before upgrade(FLASH initialization may occur after the upgrade, flush color calibration data, then restore the data you have been recorded):

1. In the condition of YPbPr message source, press the MENU button after appear the main menu, then followed by 1999 number keys to enter the factory menu, select ADC ADJUST item, press the OK key to enter the next level menu, move the cursor to the MODE item, press the left / right Moving button and move the cursor selection in YPbPr (SD)item, record the R-GAIN/G-GAIN/B-GAIN value and R-OFFSET/G-OFFSET/B-OFFSET value.
2. In the ADC ADJUST item, press OK key to enter the next level menu, move the cursor to the MODE item, press the left / right cursor keys to select YPbPr (HD) item, record R-GAIN/G-GAIN/B-GAIN value and R-OFFSET/G-OFFSET/B-OFFSET value.

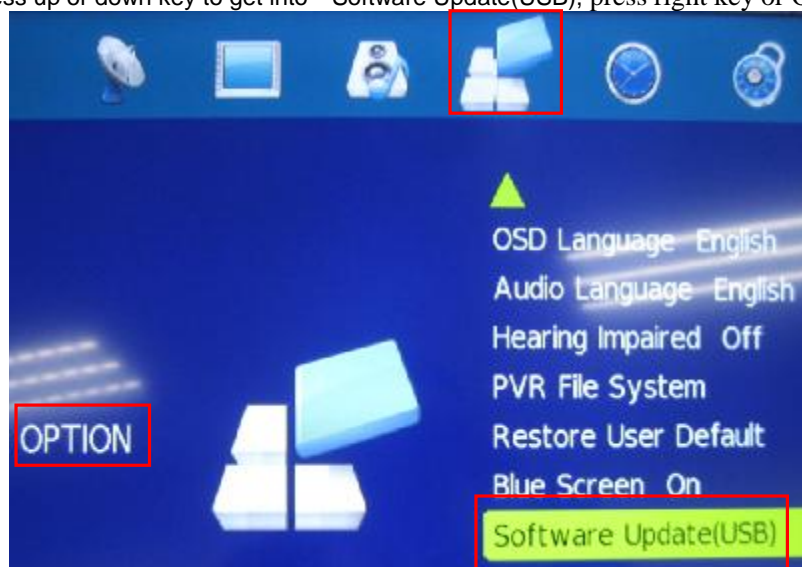


### 3. Operations and procedure of software upgrading:

3.1. Changed the file name to "MERGE.bin", then stored software in the FAT32 format blank U disk.

3.2. Insert USB flash disk into the USB upgrade port, upgrade the software according to the following the operating instructions:

press MENU key on remote controller , press left or right key switching to OPTION after prompting to the next menu, then press up or down key to get into Software Update(USB), press right key or OK key to enter.



Software update menu will pop up when press confirm key, then select “Yes” to confirm:



The process of software updating:



Method 2: Keep pressing VOL+ key on the machine panel, power on the machine, the standby light flashes quickly after about 5 seconds, standby light extinguish and turn into lighting after about a minute, means that the upgrade is completed.

3.3. Notice:

- ①. When the machine Upgrading (U disk light flash), do not remove U disk or switch off the power, otherwise it will destroy the software and lead can not upgrade.
- ②. The machine must be power off when inserted or pulled out U disk, to avoid U disk or damage the machine.

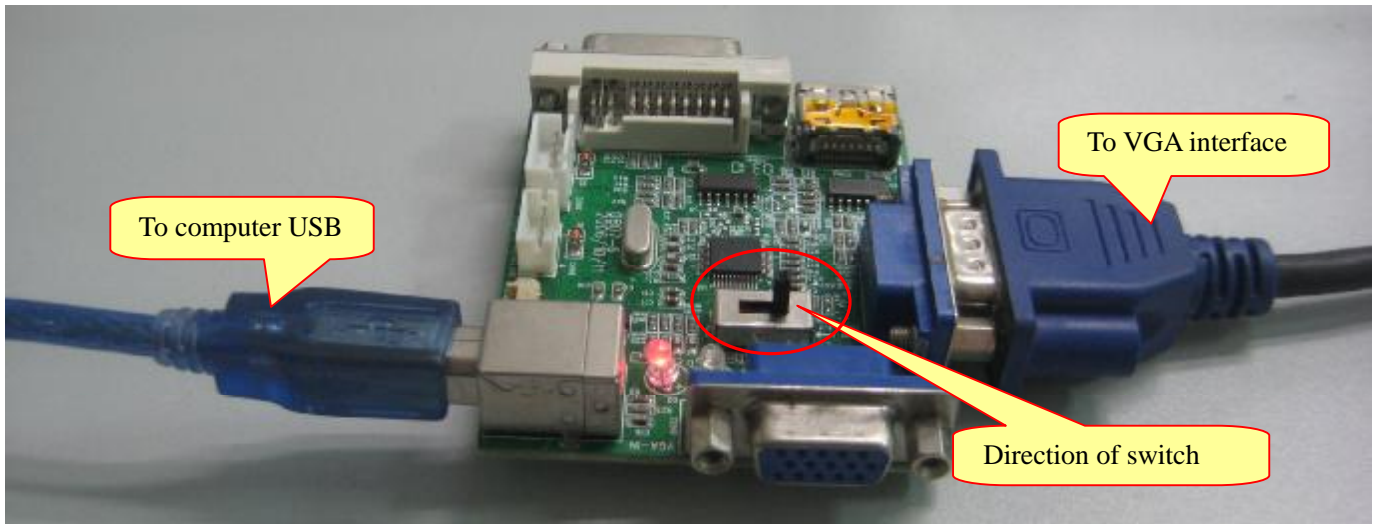
4、 When cannot upgrade in accordance with the step two, or upgrade failed, can only ISP upgrade, please refer to the

following instructions.

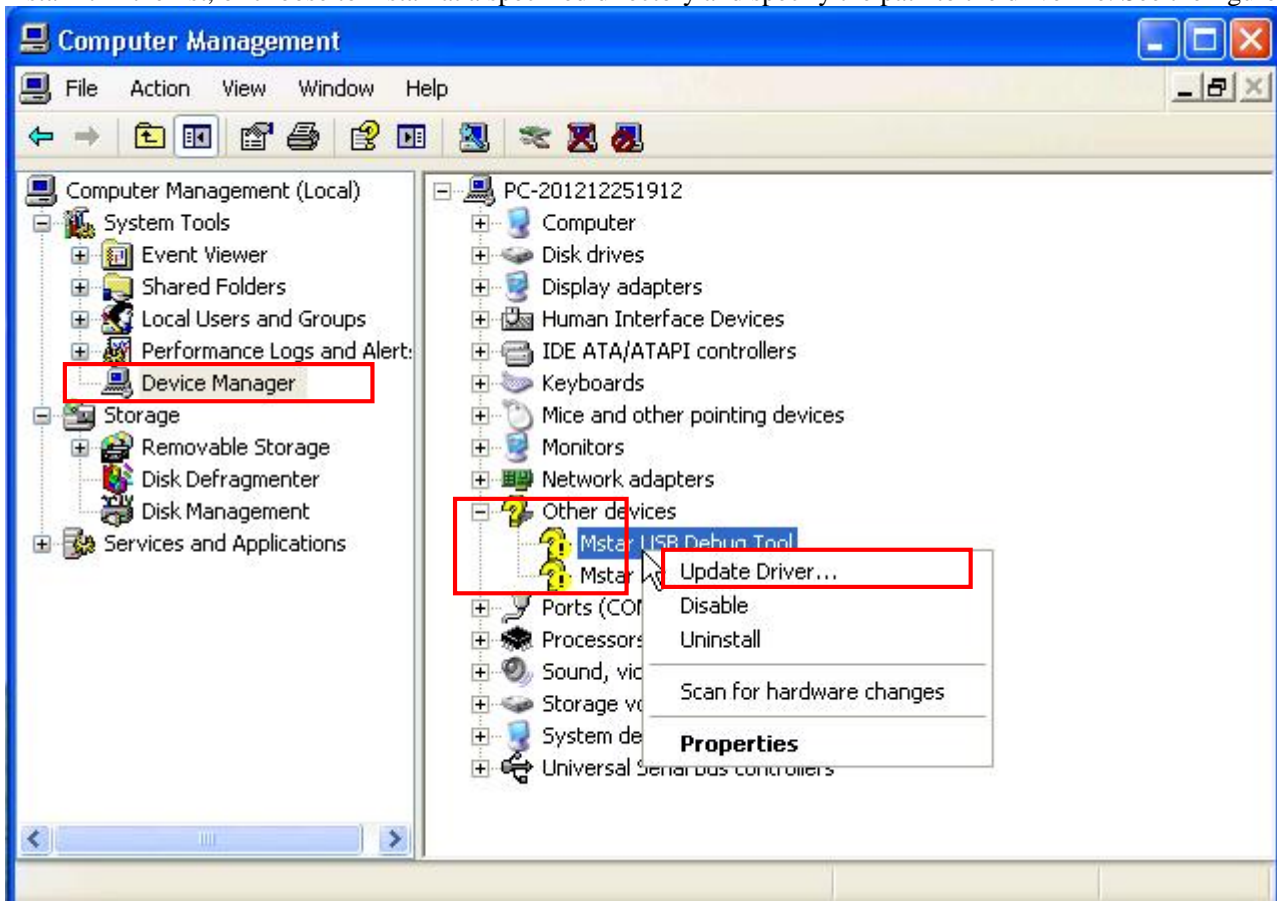
ISP to upgradetools and materials (When mainboard can not use USB interface to upgrade) :

- \* Personal computer (WINDOWS XP system,USB2.0)
- \*AC100~240V power supply and power cord
- \*Drivers for ISP burning board ISP
- \*ISP\_Tool\_474.exe
- \*VGA cable

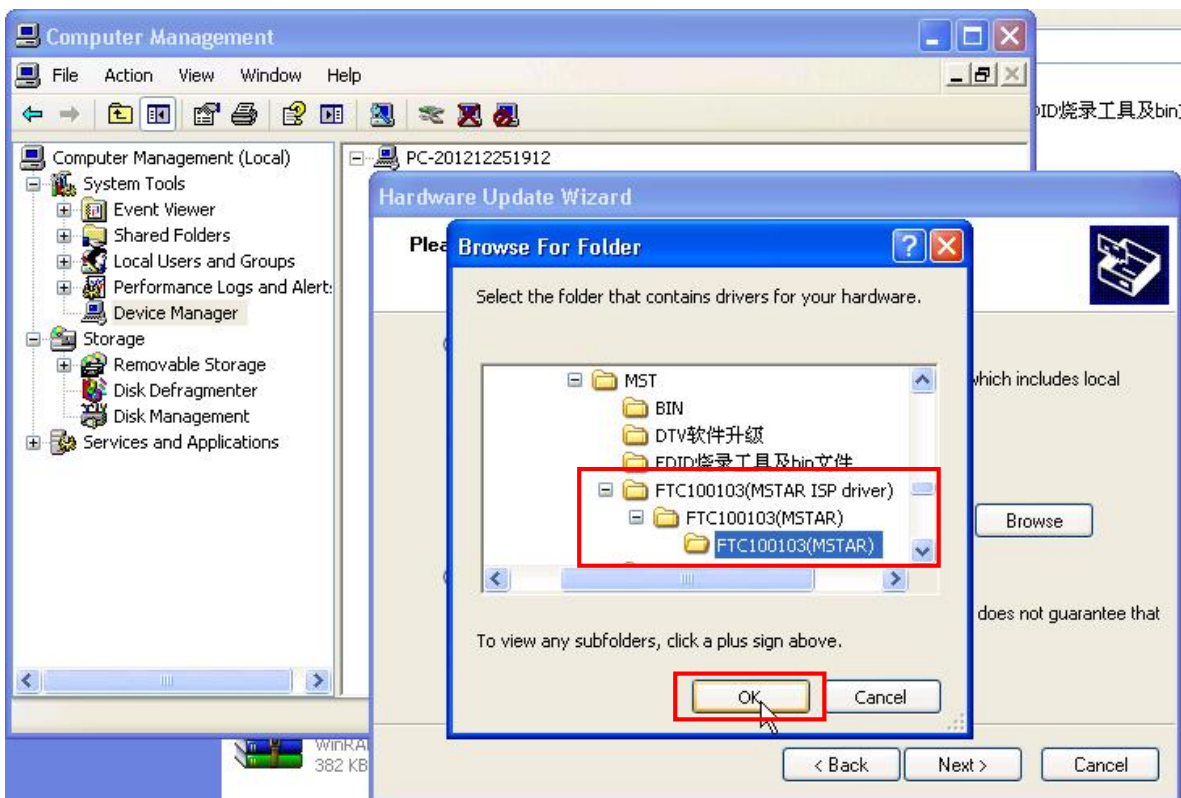
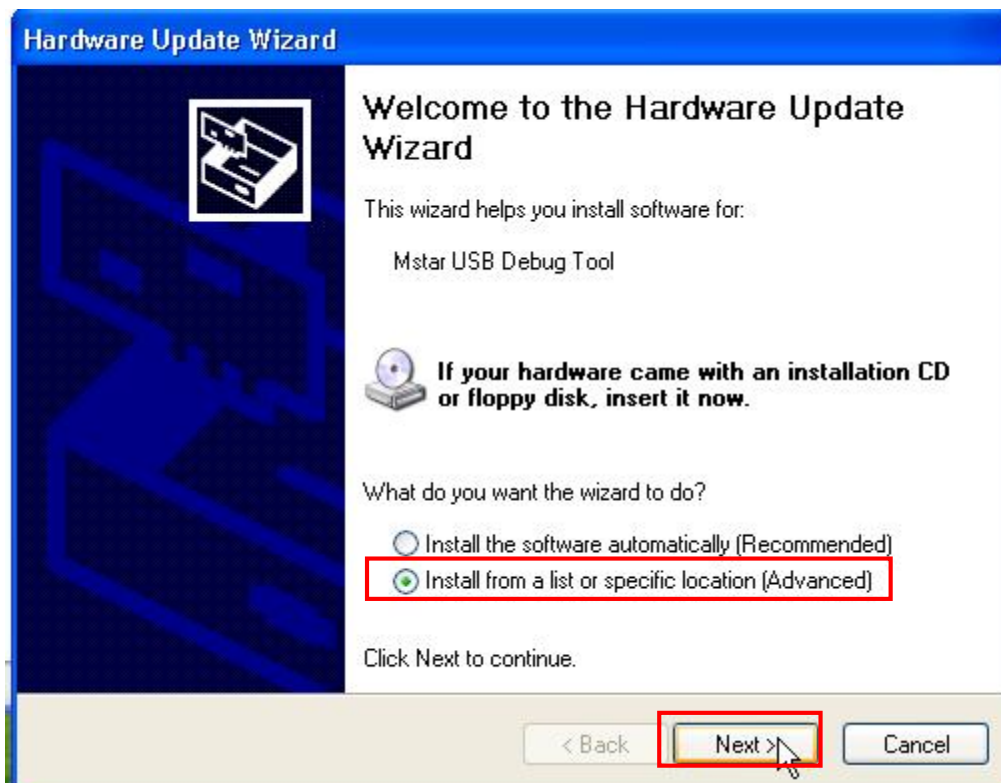
(1). Connect the ISP burning board and TV VGA port with VGA cable.



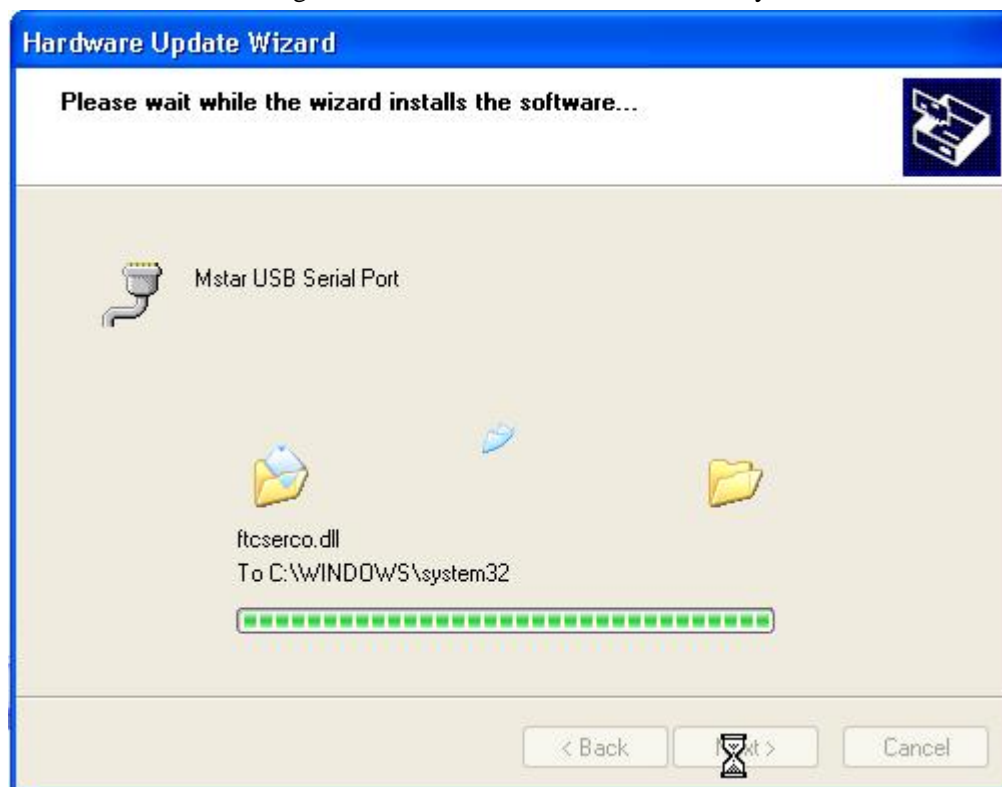
(2). Insert the Mstar USB Tool into the USB port of your PC. The PC can recognize the new device. You can choose to install it in the list, or choose to install at a specified directory and specify the path to the drive file. See the figure below:





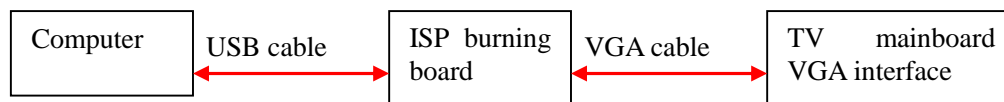


(3) When PC finds the drive file, it will give the prompts as in the figure below during the installation process. Please click “Continue” to go ahead. The system will go through three drive installation processes, including Mstar USB Debug Tool A, Mstar USB Debug Tool B, and Mstar USB SerialPort. They will be installed one by one.

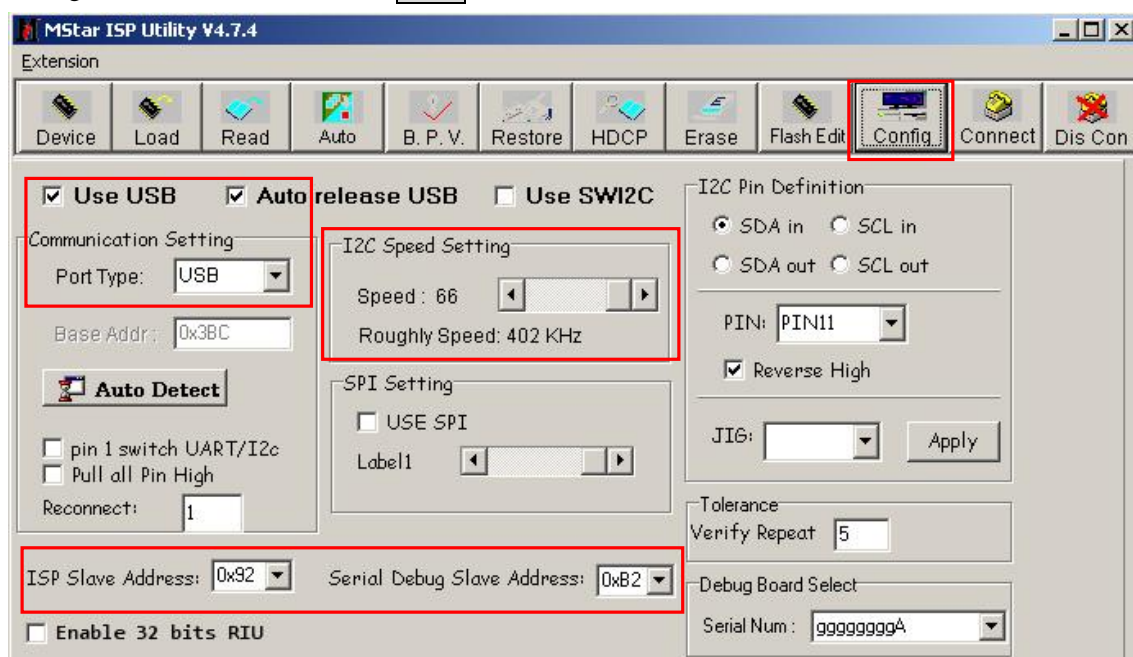


#### Software burning

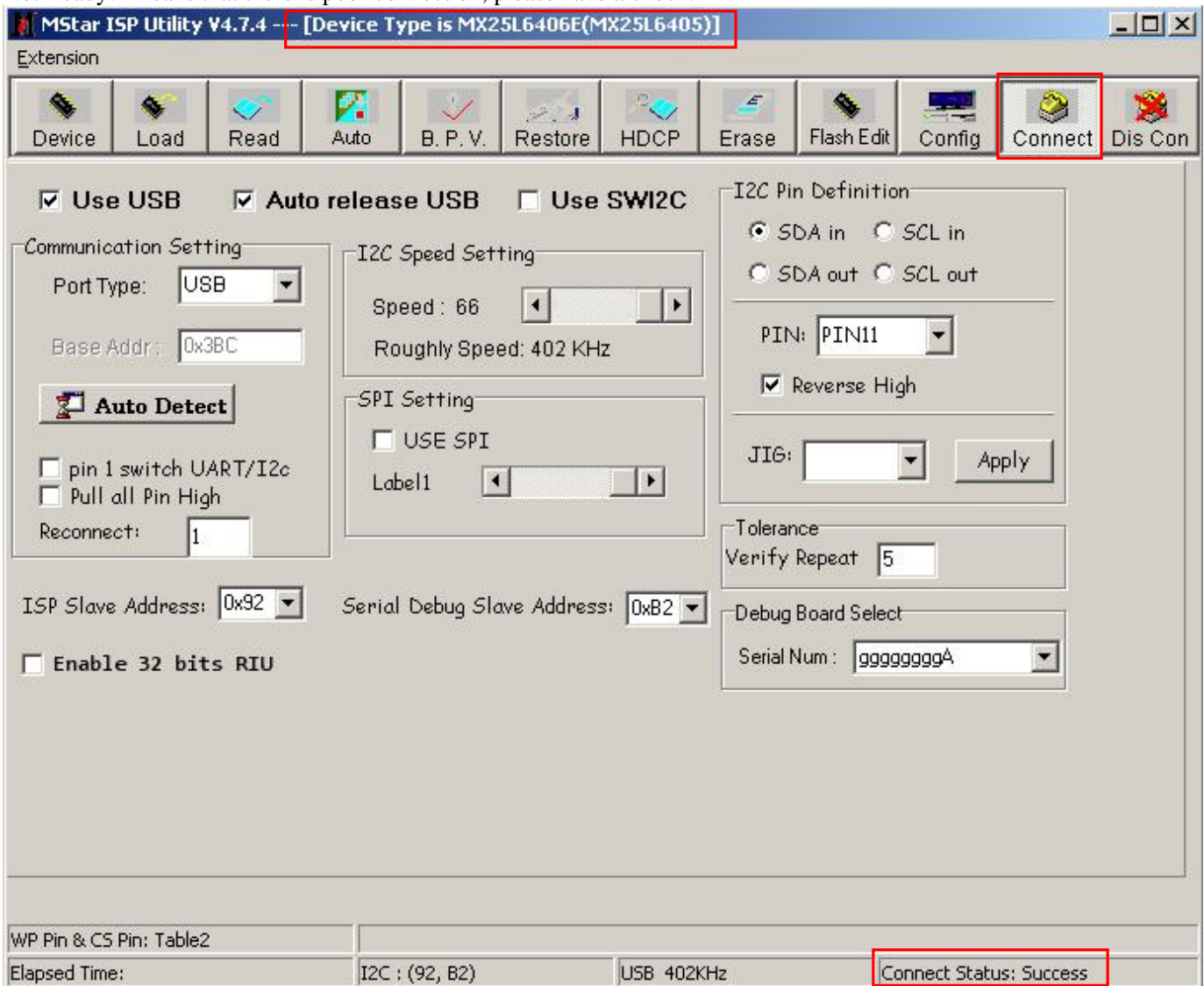
a. When the drives are installed, connect the Mstar USB Tool board to TV main board in the following way. Then connect the power cord and run the software ISP-Tool V4.7.4.exe.



b. In the **config** menu bar, select **Use USB** and **Auto release USB**, Port Type under the Communication Setting items select **USB**. Set the burning speed of **28** in I2C Speed Setting item, ISP Slave Address item menu select **0X92**, Serial Debug Slave Address menu select **0XB2**.



c. Click Connect button, If it prompts "Device Type is \*\*\*\*\*" means that connect normally; If it prompts "Program File Not Ready!" means that there is poor connection, please have a check.

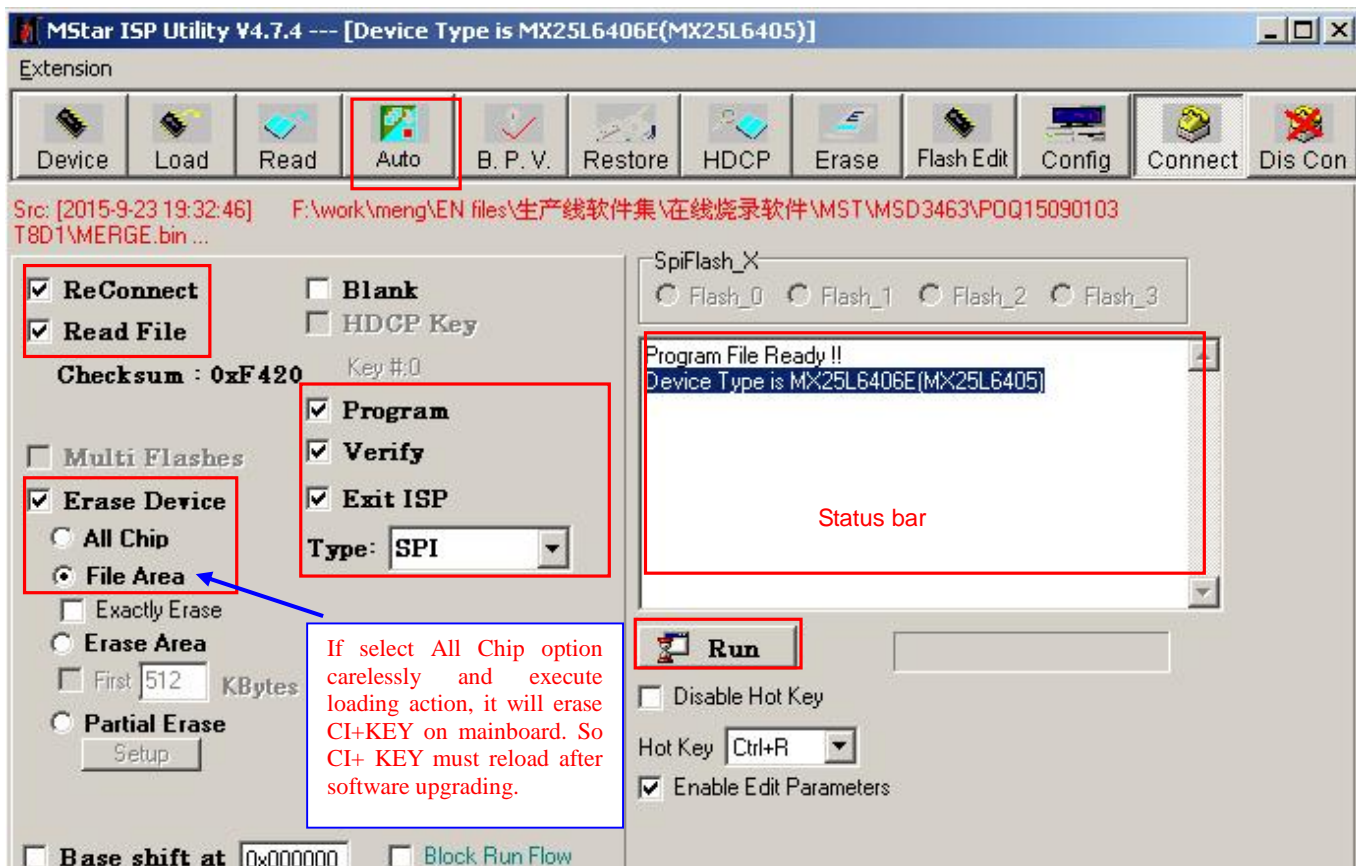


d. Click "Read" button, then click "Read" button again to load the current mainboard software.

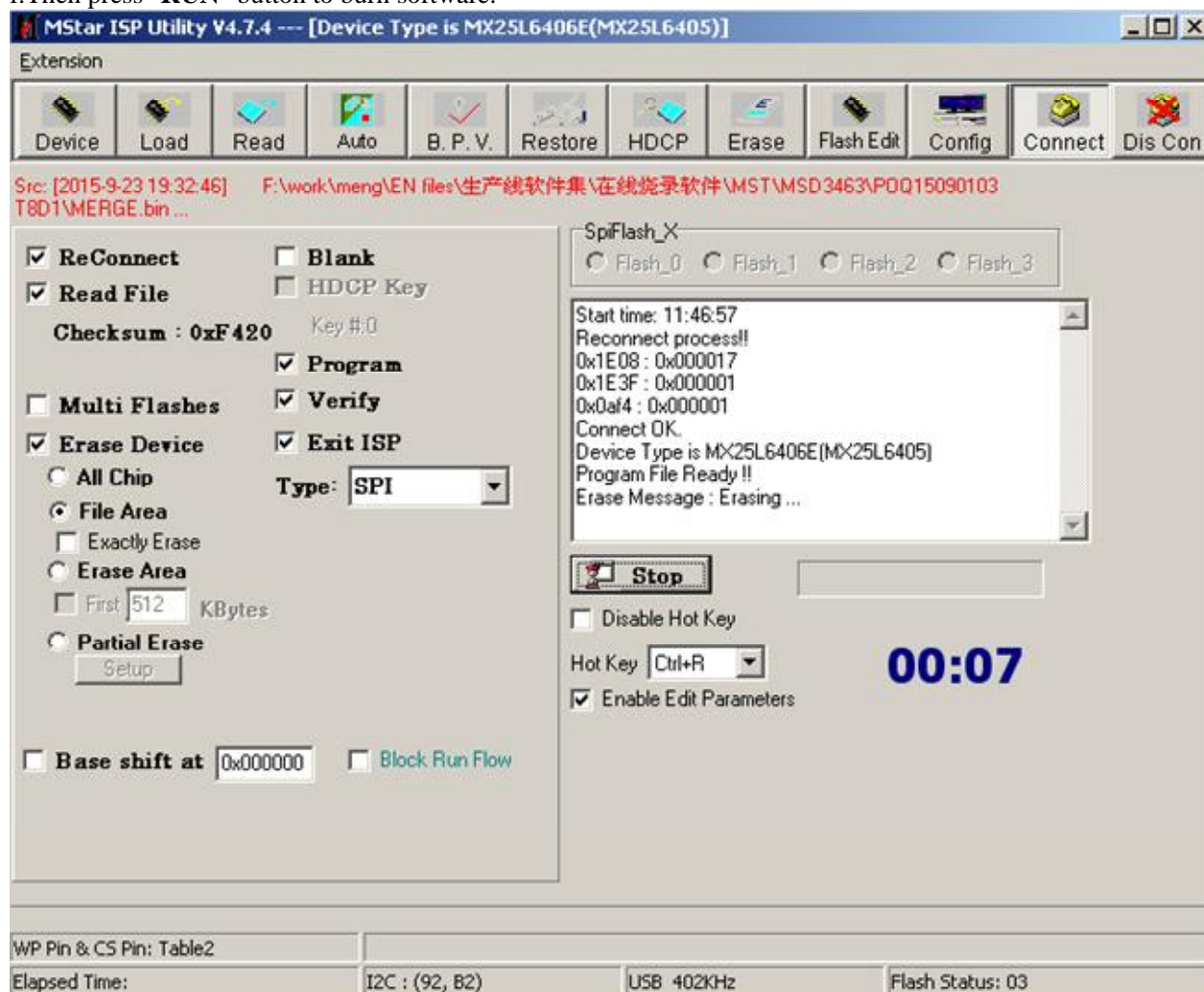


e. Click "Auto" button, then set it according to the following figure.

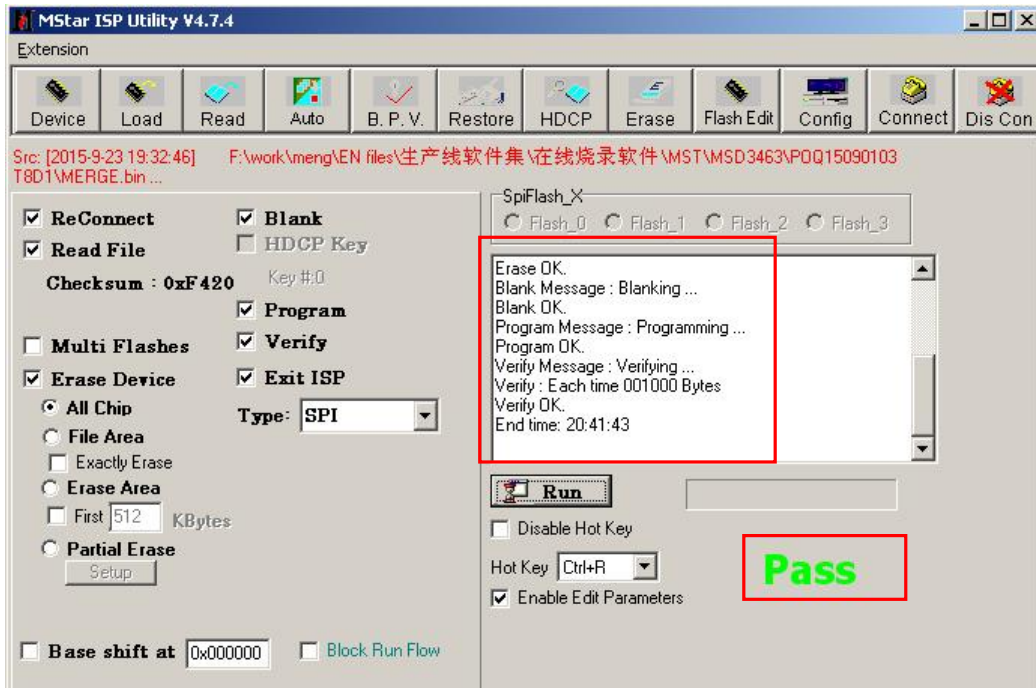




f. Then press "RUN" button to burn software.



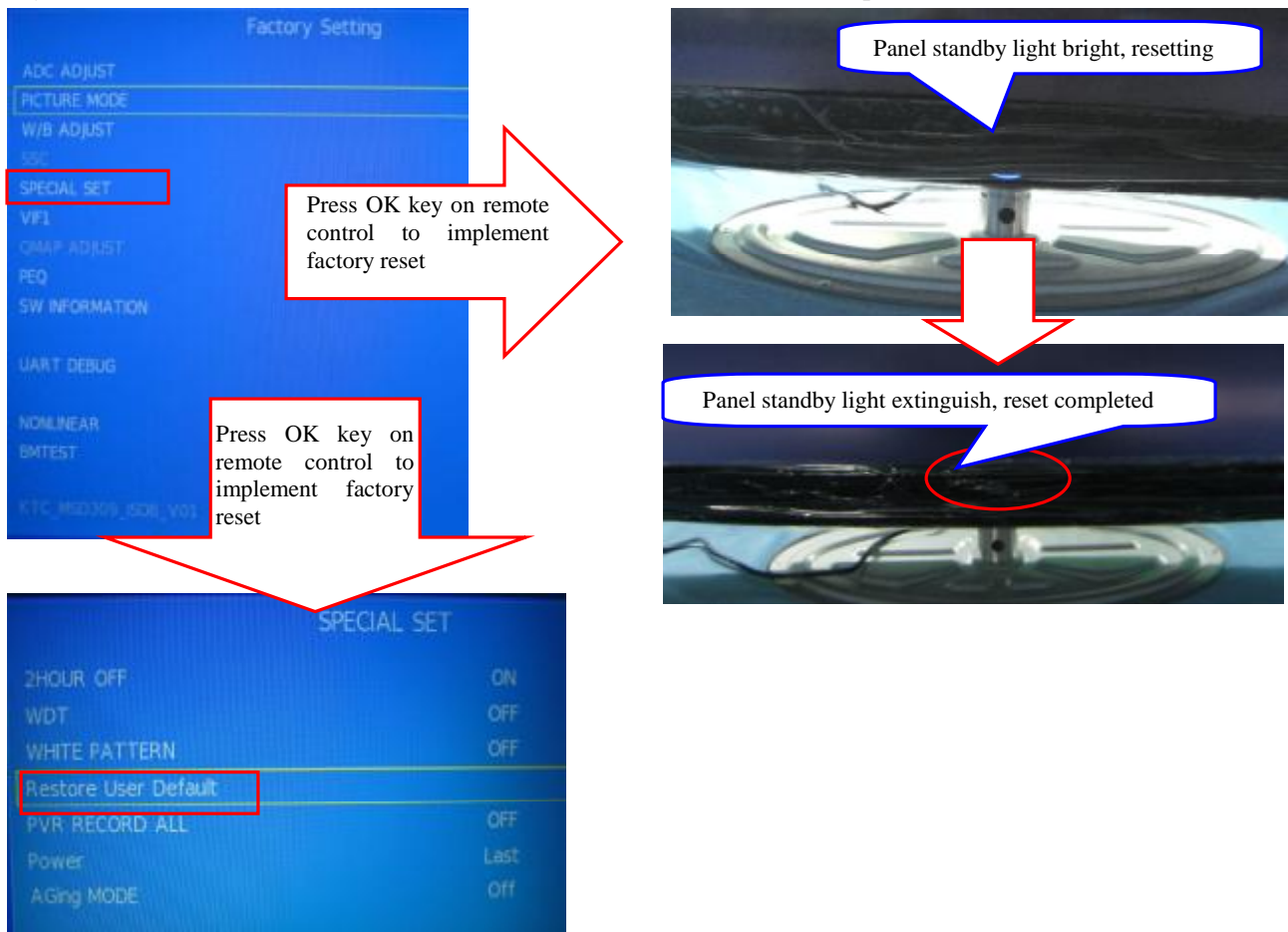
When display "PASS" after burning, means that software has burnt successfully.



Never plug or unplug the connection lines in the burning process. Please turn the power switch to “Off” when installing ISP board. Pull out the power cord from the machine and then pull out the burning adapter from the machine, when burning completed, change the TV and click **Run** button to burn next machine.

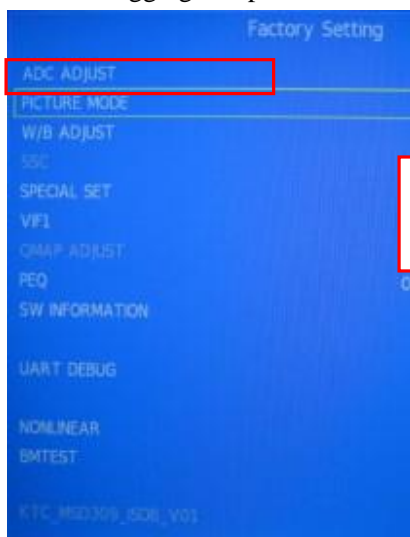
5. When upgrade complete, install the machine back cover, then must be adjusted before leave factory:

(1). Power to the machine, press MENU button on the remote control to popping the main menu, press 8202 number keys and then will popping the factory menu automatically, move the cursor to the "SPECIAL SET" option, press the remote control OK key to enter the next level menu, select "Restore User Default" in SPECIAL SET submeun, press OK key and the machine will black screen and restart after about 8 seconds, complete the reset action.

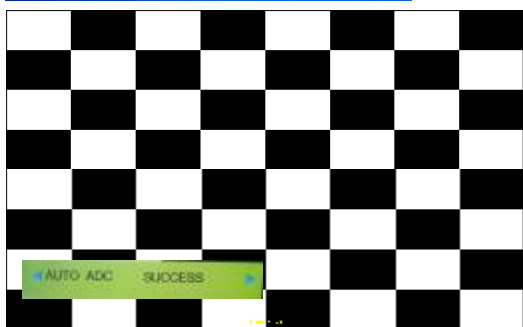


(2). Insert signal cable to the machine, switch to the PC message source.

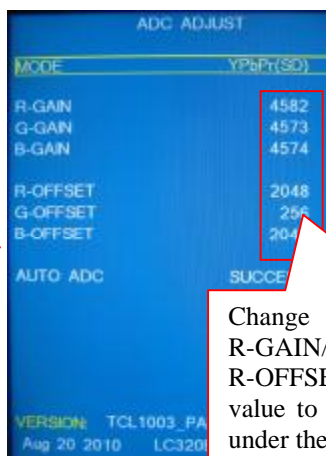
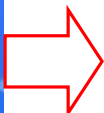
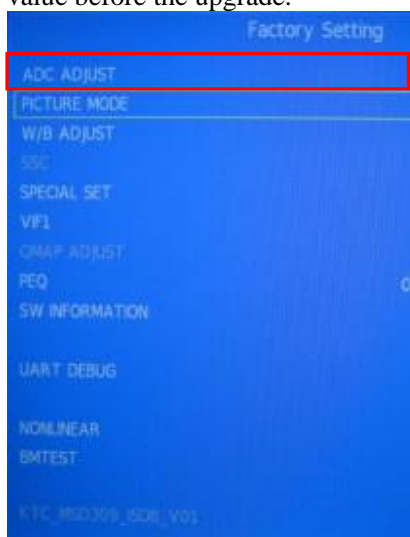
(3). Run the KTC-LCD test software, switch to the mosaic picture and best resolution. Press MENU key to popup the main menu, and then press 8202 number keys to enter the factory menu, press the shift down key to ADC ADJUST option to press OK key to enter the next level menu. In the MODE option press left/right cursor keys to select RGB, and then press shift down key to move the cursor to the Auto ADC option, press OK key to enter the next level menu, press the left/right button to implement ADC action (The screen will flash and Auto ADC function menu prompt SUCCESS means that debug success, prompt FAIL said that debug failed, try again), press the MENU button to exit factory menu when debugging completed.



Press OK key on remote control to implement factory reset

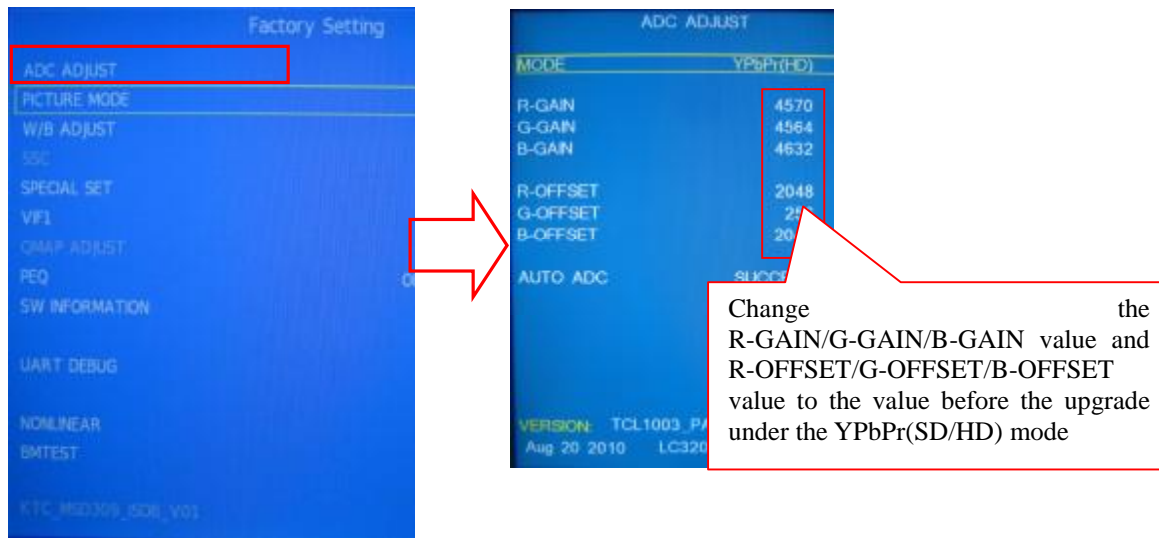


(4). Under the YPbPr message source, press the MENU button after popping the main menu, then press 8202 number keys to enter the factory menu, select ADC ADJUST item, press the OK key to enter the next level menu, move the cursor to the MODE item, press the left/right Moving key mover cursor to select YPbPr(SD)item, change the R-GAIN/G-GAIN/B-GAIN value and R-OFFSET/G-OFFSET/B-OFFSET value of the machine after the upgrade to the value before the upgrade.



Change the R-GAIN/G-GAIN/B-GAIN value and R-OFFSET/G-OFFSET/B-OFFSET value to the value before the upgrade under the YPbPr(SD/HD) mode

(5). In the ADC ADJUST item, press OK key to enter the next level menu, move the cursor to the MODE item, press the left/right keys to move cursor select the YPbPr(HD) item, change the R-GAIN/G-GAIN/B-GAIN value and R-OFFSET/G-OFFSET/B-OFFSET value of the machine after the upgrade to the value before the upgrade.



(6). Complete the ADC ADJUST debugging, press MENU key succession to exit the factory built-in menu to save the adjusted data, and then restore the original packaging.

Factory menu entry: Press MENU, and then press 1999

Primary menu	Secondary menu	Value,remark
ADC ADJUST	MDOE	VGA,YPBPR,Selection
	R-GAIN	Front-end gain adjustment
	G-GAIN	
	B-GAIN	
	R-OFFSET	Clamp level adjustment
	G-OFFSET	
	B-OFFSET	
	AUTO ADC	ADC automatically adjust
PICTURE MODE	Input Source	Source Selection
	MODE	Dynamic/Standard/Soft/User
	BRIGHTNESS	BRIGHTNESS
	CONTRAST	CONTRAST
	COLOR	COLOR
	SHARPNESS	SHARPNESS
	TINT	TINT
	Copy all	No function
W/B ADJUST	inputsource	Source Selection
	TEMPERATURE	Cool, Standard, Warm
	R-GAIN	White level adjustment
	G-GAIN	
	B-GAIN	
	R-OFFSET	Black level adjustment
	G-OFFSET	
	B-OFFSET	
	Copy all	No function
SSC SETTING	MIU Enable	DDR spectrum enable
	MIU0 Span	Exhibition frequently wide
	MIU Step	Spread spectrum step
	LVDS enable	LVDS spectrum enable
	LVDS Span	Exhibition frequently wide
	LVDS Step	Spread spectrum step
	LVDS swing	LVDS swing
Spectral set	2HOUR OFF	2hours power off enable
	WDT	Watch dog on/off
	White pattern	White pattern selection
	Restore user default	Factory reset
	PVR_RECORDALL	PVR Record on/off
	Power	Power mode selection
	Mirror	Mirror function selection
	Ageing mode	Ageing mode enable
VIF	Vif 1	Vif set
	Vif 2	Vif set



	Vif 3	Vif set
Qmap adjsut	PQ setting	
PEQ	PEQsetting	
OverScan	Overscan_resolution	Reselution select
	Overscan_hsize	Adjust overscan H size
	Overscan_hposition	Adjust overscan H position
	Overscan_vsize	Adjust overscan V size
	Overscan_vposition	Adjust overscal V position
other	Test pattern	
	UART DEBUG	DEBUG ON/OFF
	HDMI CEC/ARC	CEC/ARC ON/OFF
	Backlight	Adjust backlight
CI+ key usb upgrade	CI+ key usb upgrade	
SW information	SW information	
Non-linear	MODE	Feature Selection
	OSD 0	Curve adjustment
	OSD 25	
	OSD 50	
	OSD 75	
	OSD 100	
Channel table1	KTC factory Frequecy table set	
CI factory setting	No function	
Channel table2	KTC factory Frequecy table set	
Channel dvbt	KTC factory Frequecy table set	

MSD3463-T4C1 (四合一板) DVB-T/T2/C数模一体电视原理图 VER:A1.0 2015-7-2

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3	Power & LED Driver
4	System Power
5	MSD3463
6	Video&VGA&USB&Amplify &LVDSpage
7	HDMI page
8	Tuner page

History Rev			
DATE	Rev	Description	Author
7/2/2015	Ver:A1.0	First Version Release	ZHQING

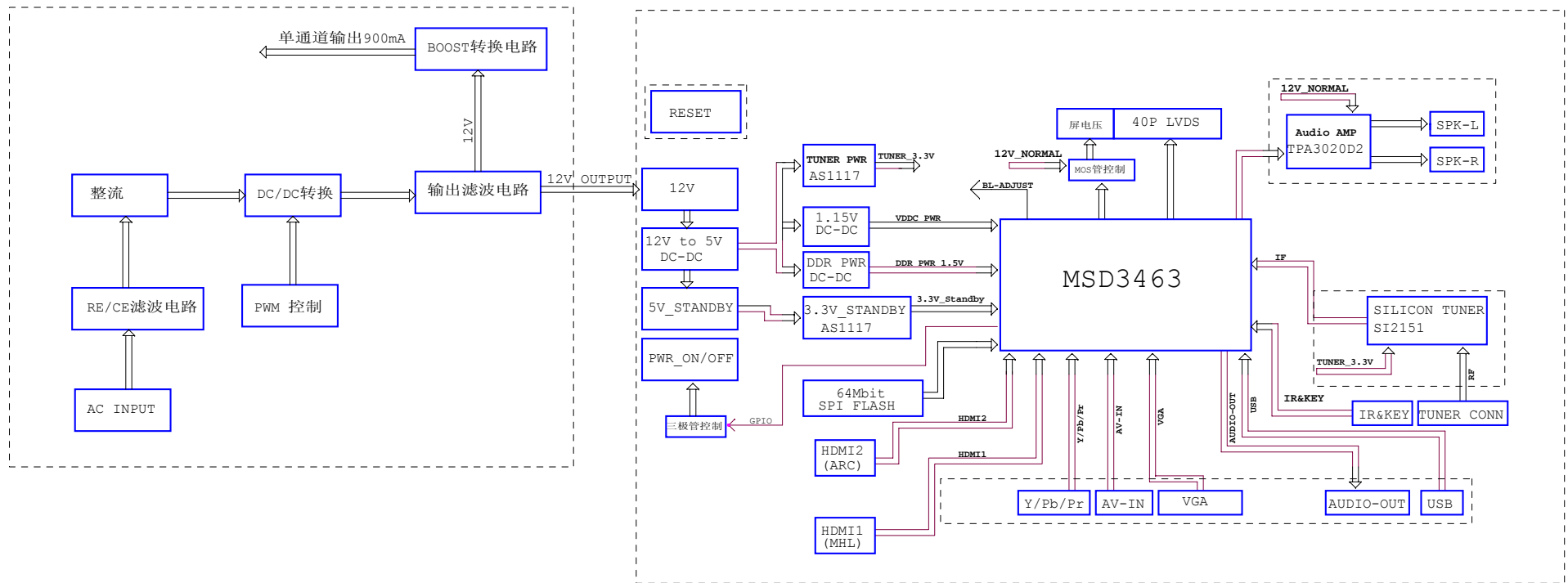
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KTC ISO9001.ISO14001体系文件

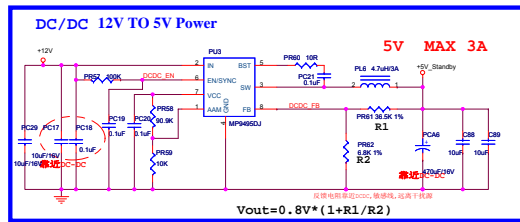
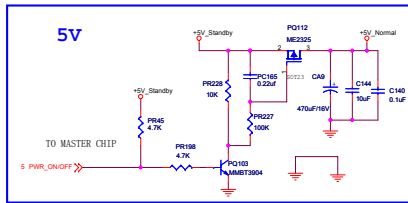
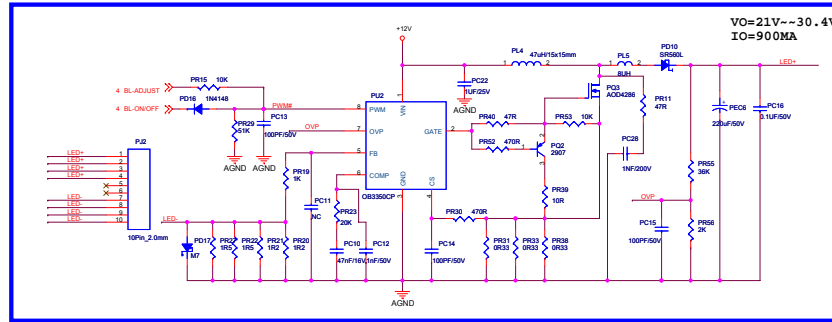
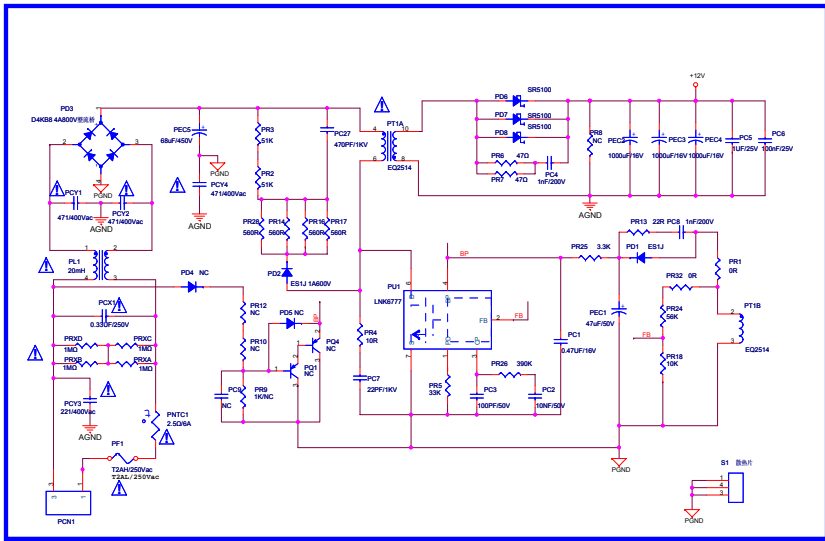
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文件编号:	T4280	版本: 3.0	页数: 1 “ 8
设计:	张志清	审核:	批准:
发行部门:	研发处	生效日期:	Wednesday, July 01, 2015



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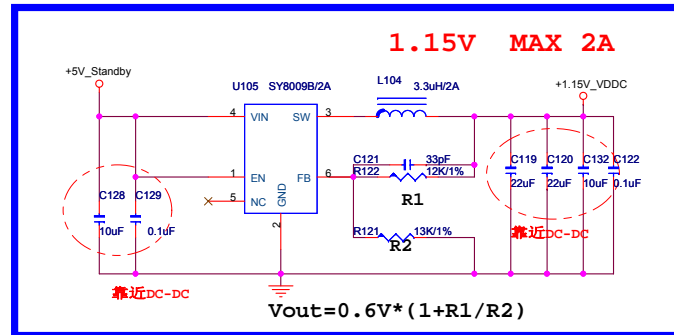
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文件编号:	T4280	版本: 3.0	页数: 2 / 8
设计:	张志清	审核:	批准:
发行部门:	研发处	生效日期:	Thursday, July 02, 2015



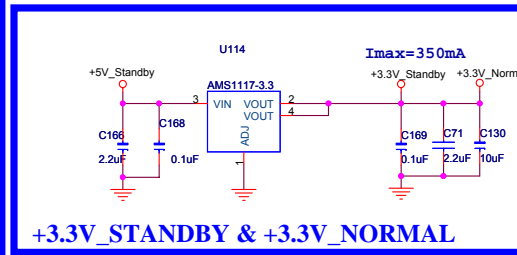
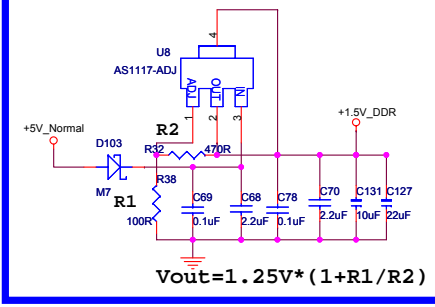
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发行部门:	研发处	生效日期:	Thursday, July 01, 2015

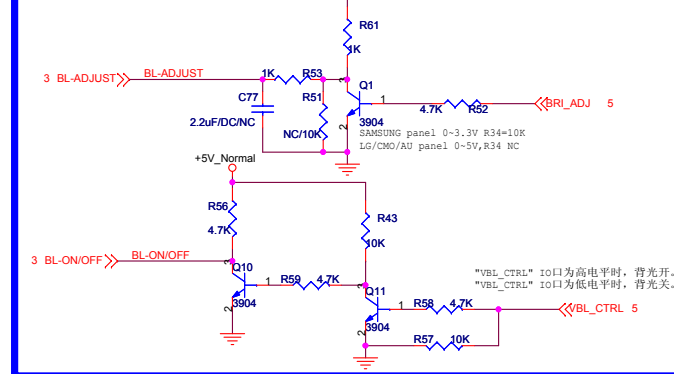
# 1.15V 2A for VDDC



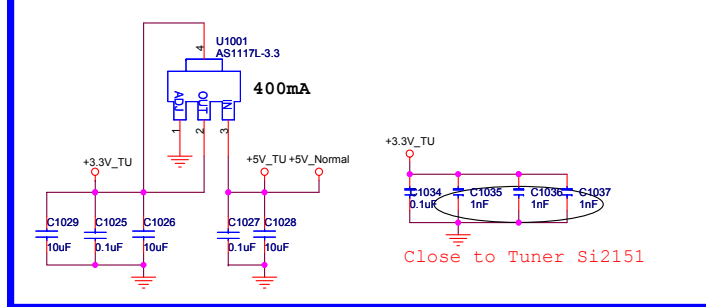
# 1.5V Normal Power for DDR3



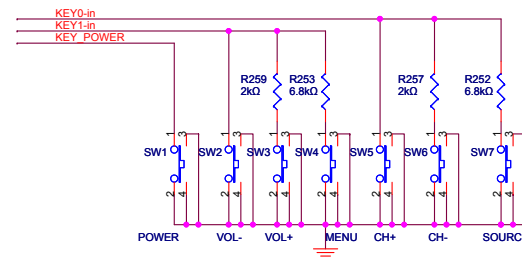
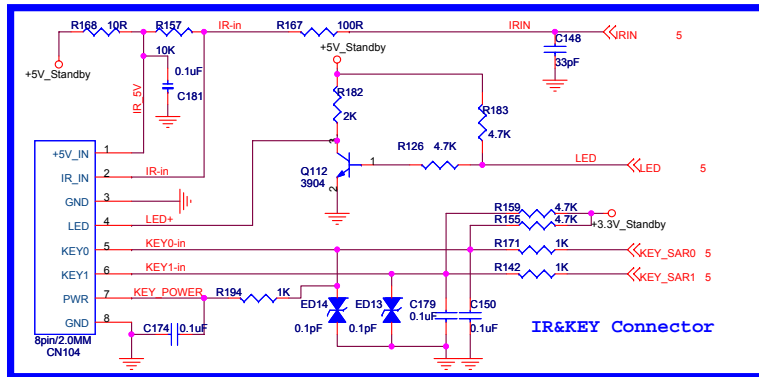
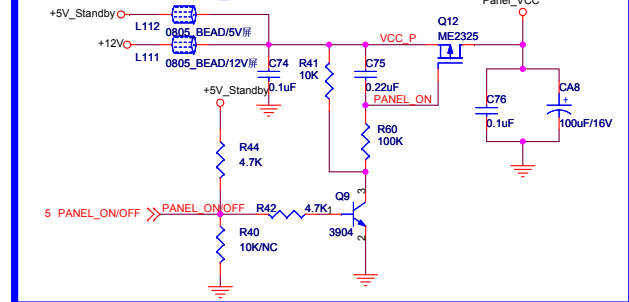
# Inverter controller



# TUNER POWER



# Power for panel



所用IO口	SAR0				SAR1		
按键功能	CH+	CH-	SOURCE	POWER	VOL+	VOL-	MENU
电阻值	0欧	2K	6.8K	1K	0欧	2K	6.8K
电压值	0V	3.98V	1.95V	0.58V	0V	3.98V	1.95V

# Test Point & MARK



# KTC ISO9001.ISO14001体系文件

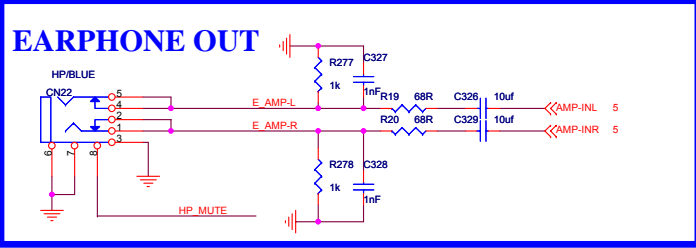
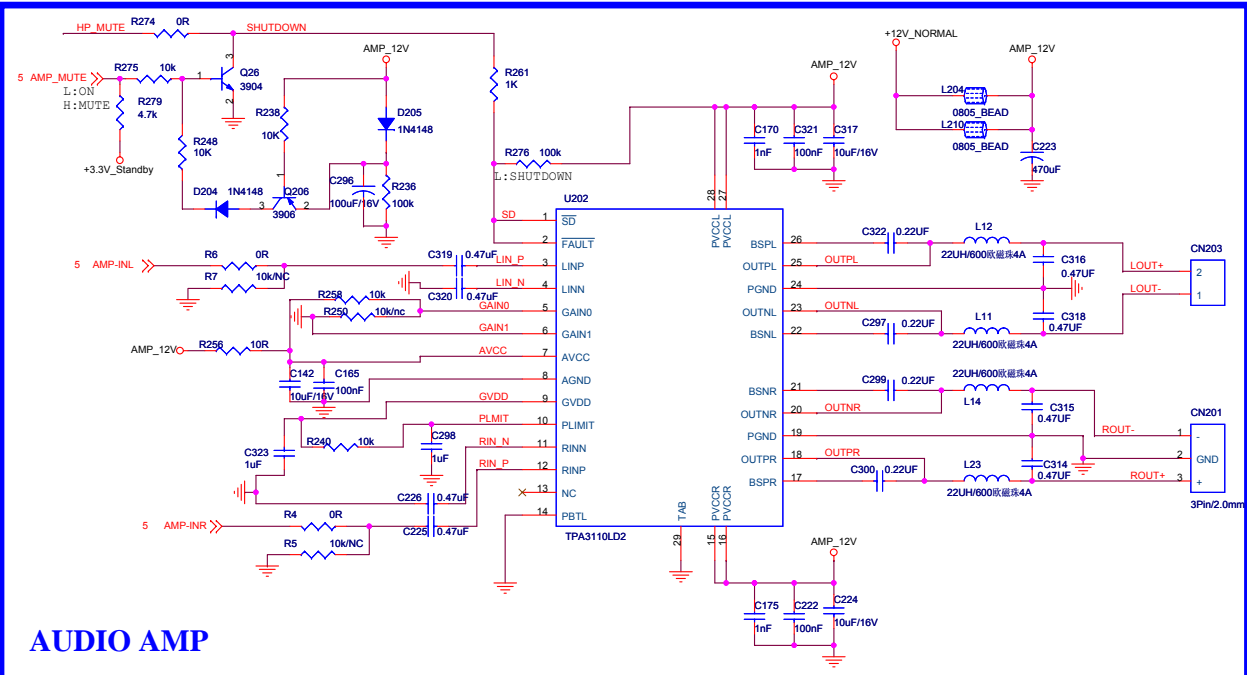
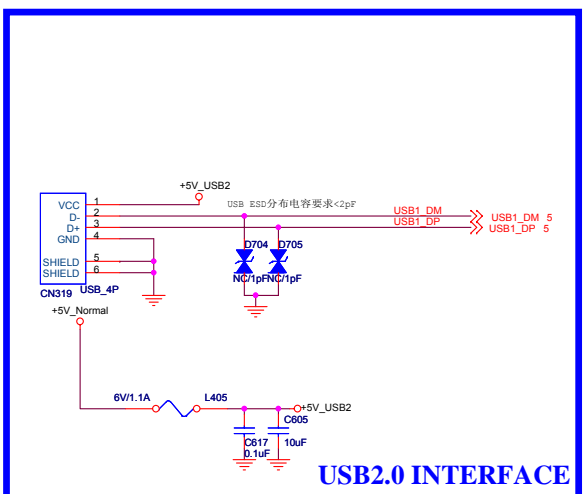
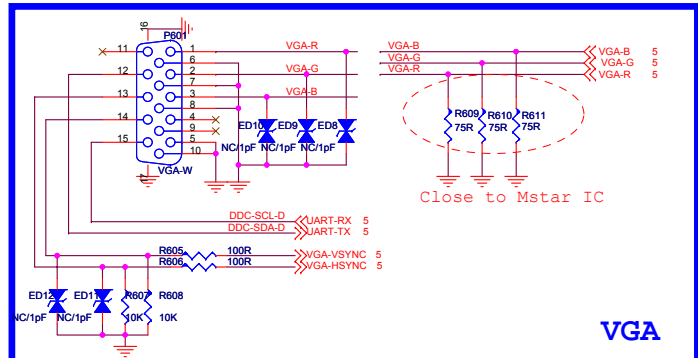
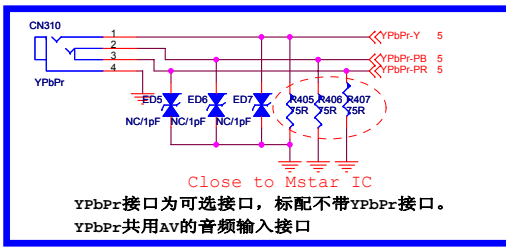
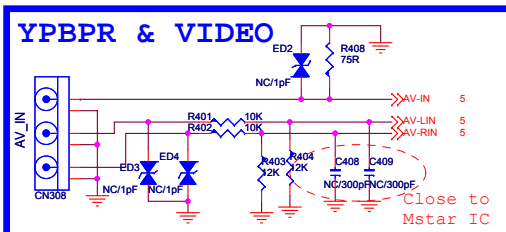
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文件编号: T4280 版本: 3.0 页数: 4 of 8

设计: 张志清 审核: 批准:

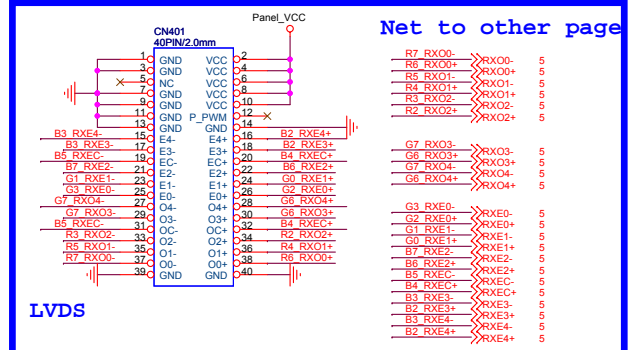
发行部门: 研发处 生效日期: Wednesday, July 01, 2015





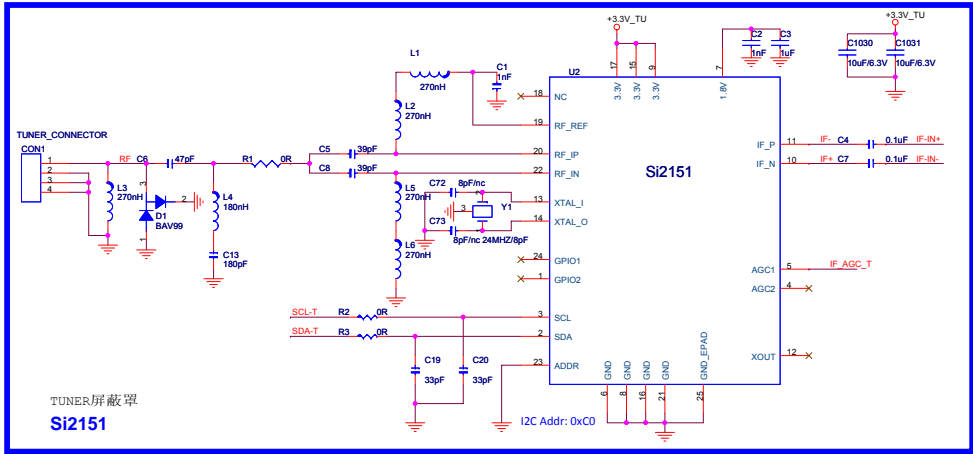
功放大倍数调节

GAIN1 (PIN6)	GAIN0 (PIN5)	AMP GAIN (db)
0	0	20
1	0	32
1	1	36

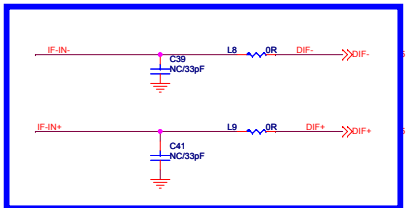




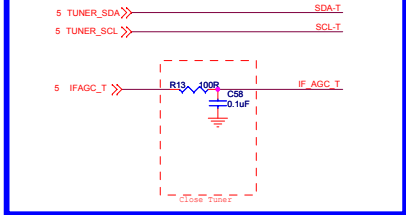




### DVB-C/T/T2 DIF



### AGC RC Filter & I2C



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设计:	张志清	版本:	3.0
发行部门:	研发处	页数:	8 of 8
		审核:	
		批准:	
		生效日期:	Wednesday, July 01, 2015