

# After-sales Maintenance Service Manual

## LE32W234D

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## **Forward**

### **To authorized Service Stations:**

As market share of our products continue to increase, after-sales service, especially the timeliness and quality of product repairing plays an important role in the homogeneous competitive environment. In order to maintain the image of our products, enhance the service quality of repair centers, The manufactory prepares this After-Sales Maintenance Service Manual for use and reference by authorized Service Stations. This manual introduces the service precautions, and analysis of common troubles with The products and the corresponding solutions. The measures may vary with various models as different chip schemes are used, but the guideline for troubleshooting is the same. For a specific model, if necessary, a Service Station can apply for more detailed technical information.

There may be errors and omissions in manual preparation, and your valuable comments and opinions will be welcome. The technical parameters, component specifications in this manual are subject to change without prior notice.

## **I. Safety and Precautions in Maintenance Process**

### **For your safety, please read the following safety rules and precautions:**

1. All maintenance work must be operated by professional personnel.
2. Make sure the working table is well grounded before maintenance, and take sound static prevention measures.
3. Make sure the tools such as soldering iron and screwdriver are in good grounding before maintenance.
4. During the maintenance process, please wear the electrostatic ring to prevent damage to the product by personal static.
5. Clean the work table before maintenance to avoid scratching shell or screen by hard articles.
6. Pay close attention to warning information on the products during maintenance process.
7. Please set up the product in accordance with product instructions.
8. Only use a dry cloth to clean the circuit during maintenance process.
9. Please check the component model before replacing it. Using of unauthorized parts may lead to harm such as electric shock, fire or X-ray radiation.
10. When replacing main board or bus, make sure it is inserted at the proper position and in correct direction, otherwise the LCD screen may be burnt out.
11. When connecting to high-voltage board, make sure the plug is inserted in place; otherwise it may lead to spark or protection on the screen, disabling display on the screen.
12. When replacing main board or flat cable, please check whether the main board scheme and software installed are consistent with the screen model.
13. Do not press the wires when installing parts, especially when you install the shielding shell and back cover.
14. Do not block the ventilation hole when installing the product.
15. Please restore the locations of all parts, installing status, component models and all parameter settings to the status before maintenance.

## **II. Service Communication Platform**

1. Tele-service platform: there are several service hotlines in the after-sale service department of the company, providing service supports for various after-sale repair centers all around the world. All problems encountered by authorized maintenance personnel during his/her construction and maintenance process can be serviced and supported through corresponding service interface.
2. CRM service platform: there is a CRM system (Customer Relationship Management

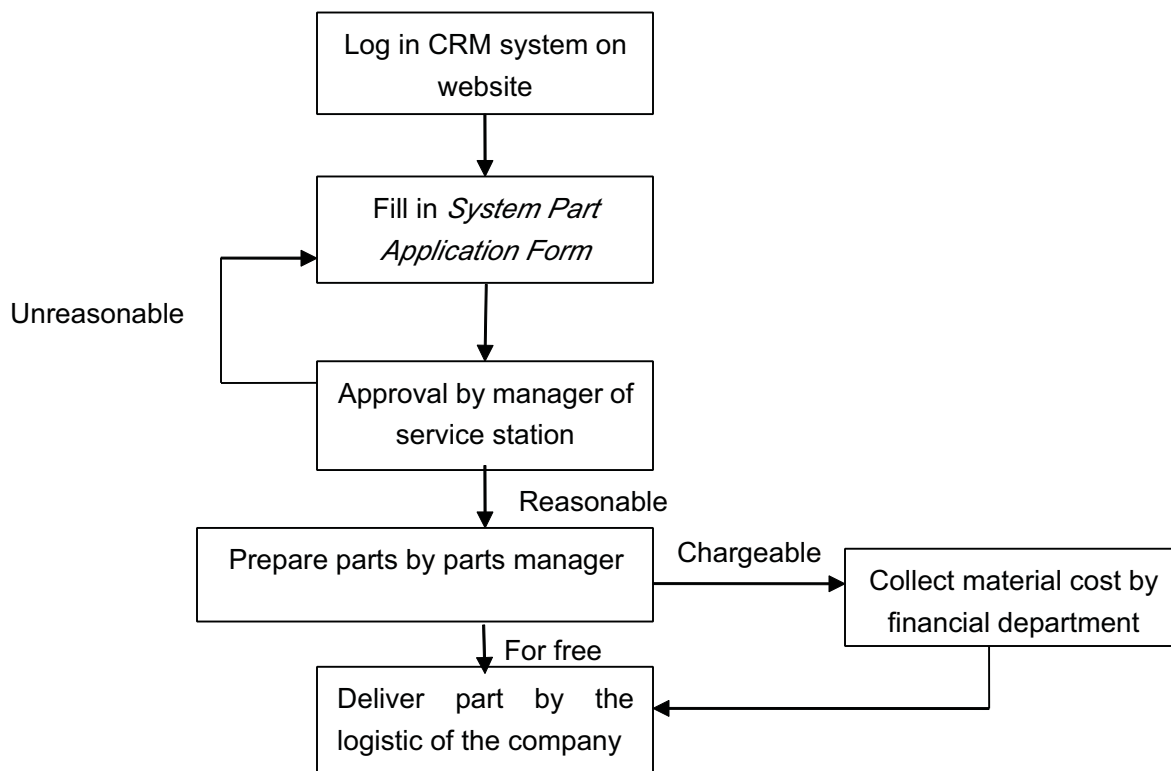
System) in the website of the company, therefore, all authorized Service Station can login in the CRM system in the website of the company with the user name and corresponding password provided by the company. The system can complete the application of accessories, the submission of maintenance report, the communication of breakdown maintenance, and other daily work feedbacks.

3. Network tools service platform: Owing to a relatively wide range of problems involving in maintenance process, the information feedback is very complex, therefore the factory provides several kinds of after-sale service and feedback channels, such as e-mail, web chat tools, video transmitting and so on.
4. Maintenance data service support: For any maintenance data, accessory matching and fault principles analysis, please contact the manager of after-sale service station of the factory to obtain more data, so as to ensure a timely and effective maintenance.
5. Accessory service platform:
  - 5.1 Supply of spare maintenance accessories for circulating: the company will provide a rational quantity of spare maintenance accessories for circulating of each service station depending on local maintenance situation. The type of spare parts and circulating volume shall be adjusted according to the real time market situation, so as to ensure an effective supply of daily maintenance accessories.
  - 5.2 Emergency application of maintenance accessories: for any short of accessories during maintenance process, each service station shall firstly submit an accessory application on the CRM service platform of the company's website; under special circumstances, it can issue an accessory application to the factory directly by fax and e-mail. Then, a manager of the service station will receive and check the application, and deliver it to a staff to handle and deliver corresponding accessories. In principal, the accessories provided by the factory shall be used in all maintenance, if it is necessary to use other alternatives not from the factory under special circumstance, the model of alternatives must be confirmed by the company.
6. Technical support platform: firstly, the factory provides technical consulting hotlines for maintenance support. The technical issues raised by each authorized maintenance personnel shall be settled by senior maintenance engineers. When there are technical

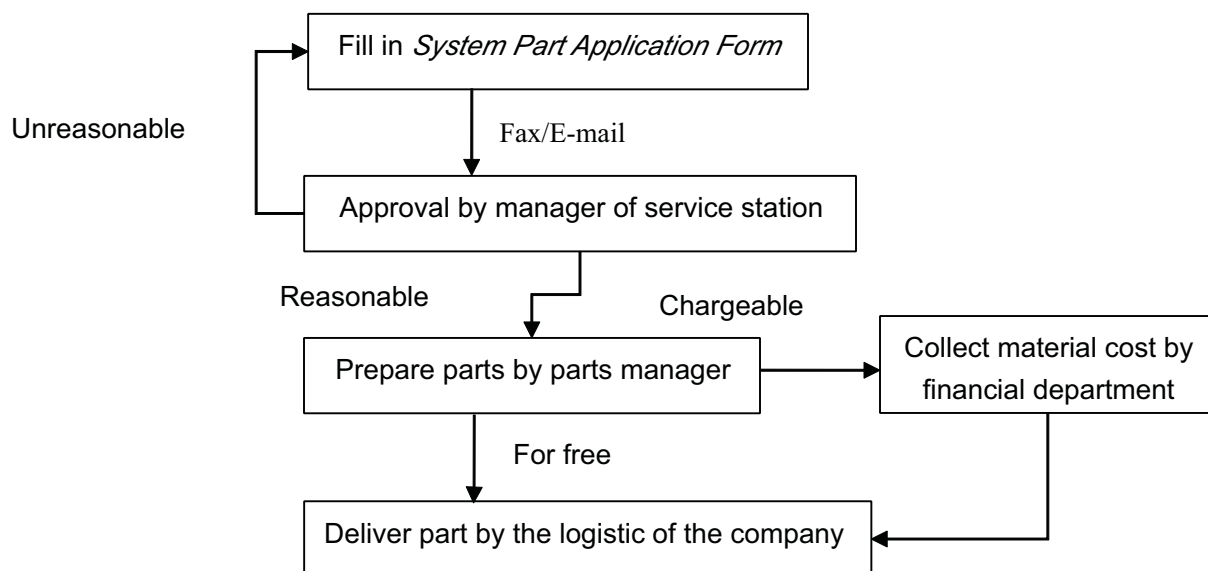
problems encountered by each maintenance personnel, they can call the factory's technical hotlines in working time to get effective maintenance technical support; secondly, the company will assign senior maintenance technician from time to time depending on the situation of market service, and provide maintenance technical communications, training and other door-to-door technical support, to ensure each service station can master the maintenance skills of new products simultaneously.

### III Accessory Application Process

1. Applying accessory for free. For replacement of default maintenance accessories for circulating, or the accessories for the maintenance of products within the life of the quality assurance, a ***Free Part Application Form*** shall be submitted to the factory, to apply for parts for free.
2. Applying chargeable parts. For the parts for the maintenance of products beyond the life of quality assurance, a ***Chargeable Part Application Form*** shall be submitted to the factory to apply for chargeable parts.
3. For some special partners, they shall confirm the free-able/chargeable parts according to the after-sale clauses agreed by the both parties, and then go through the parts application process.
4. For emergency parts application, in addition to filling in *Parts Application Form* according the process, the acceptance of application shall be confirmed by phone or e-mail, to void any service delay.
5. The parts application process is shown below:
  - 5.1 Submit ***Parts Application Form*** through CRM system:

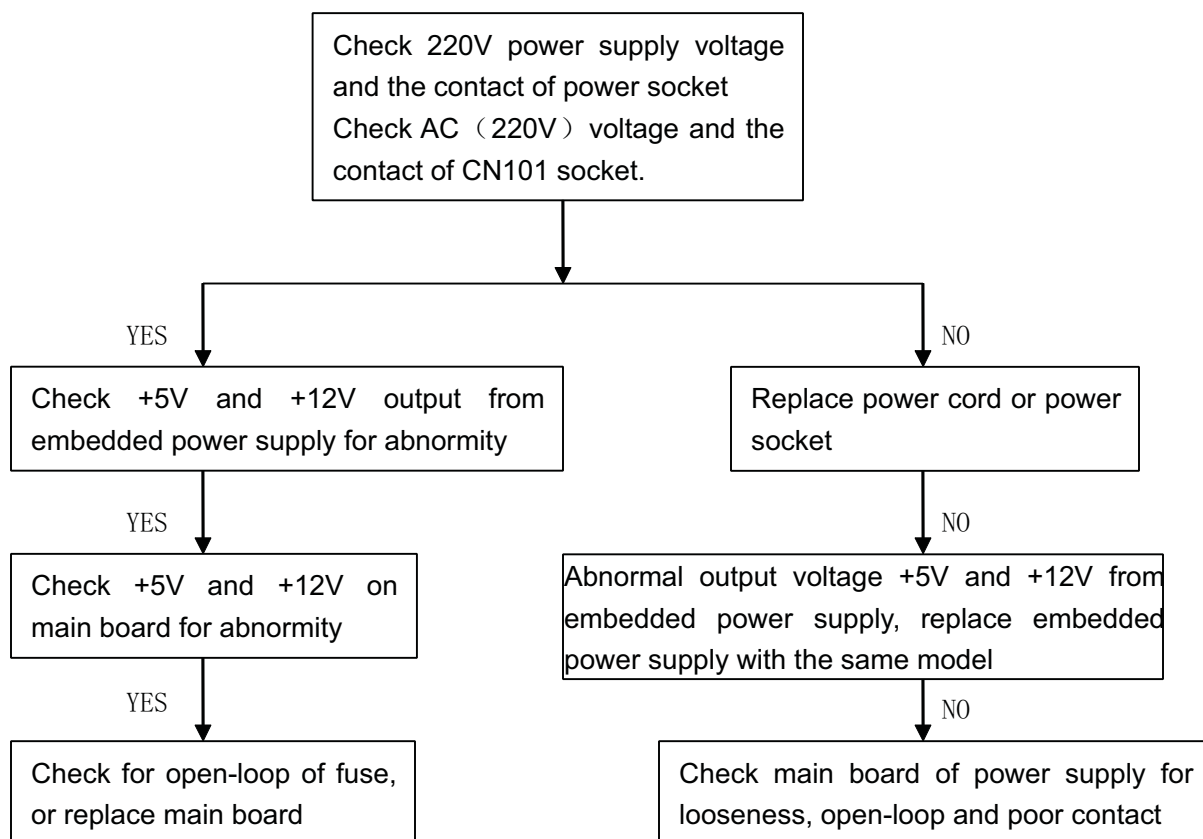


## 5.2 Submit System Part Application Form by fax or e-mail:

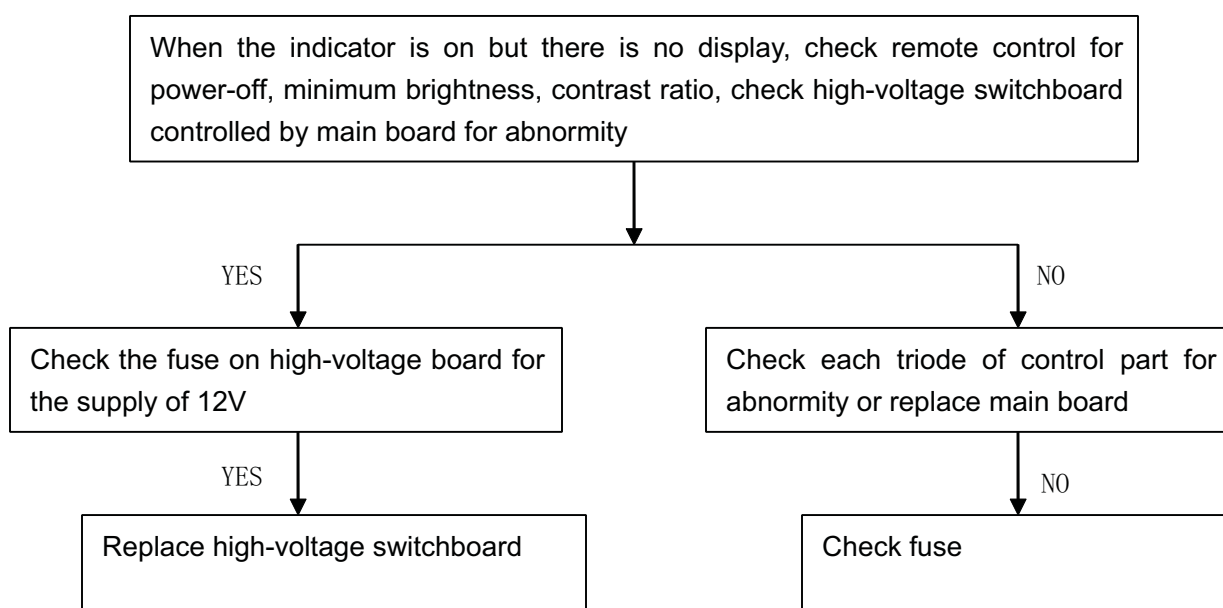


## IV General Electrical Fault Analysis Process

### 1. No power

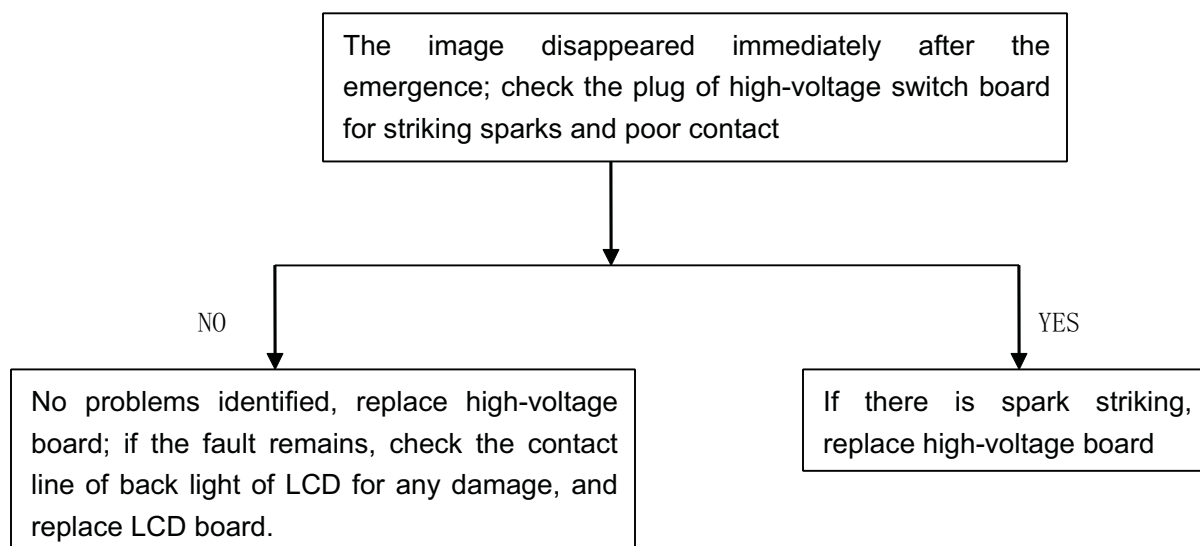


### 2. Without light

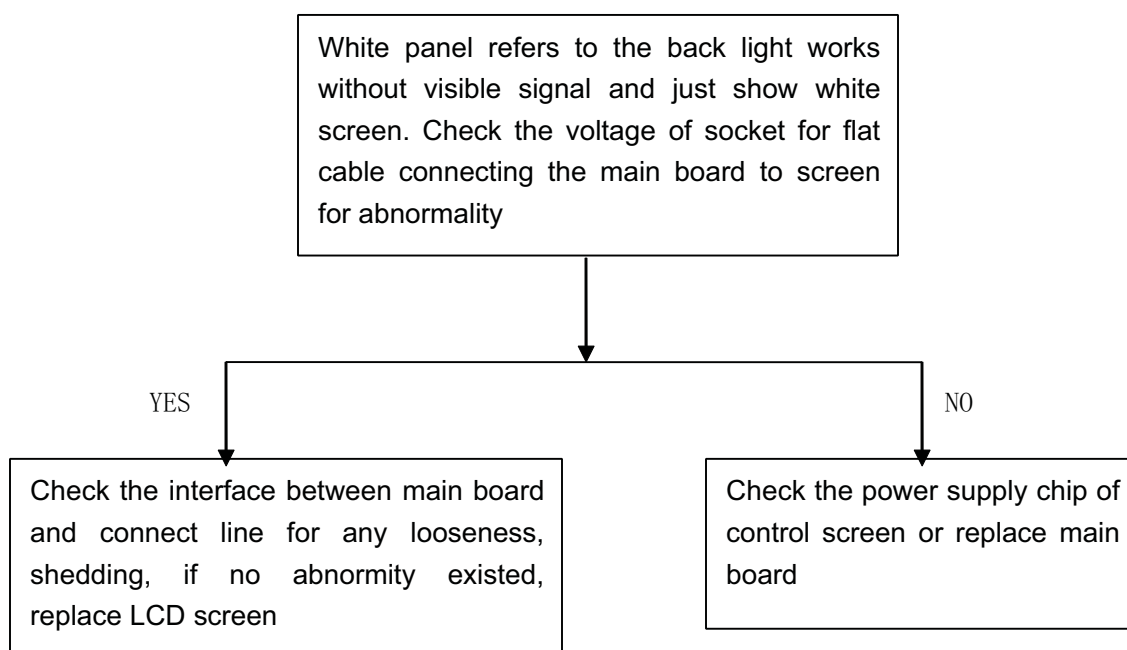




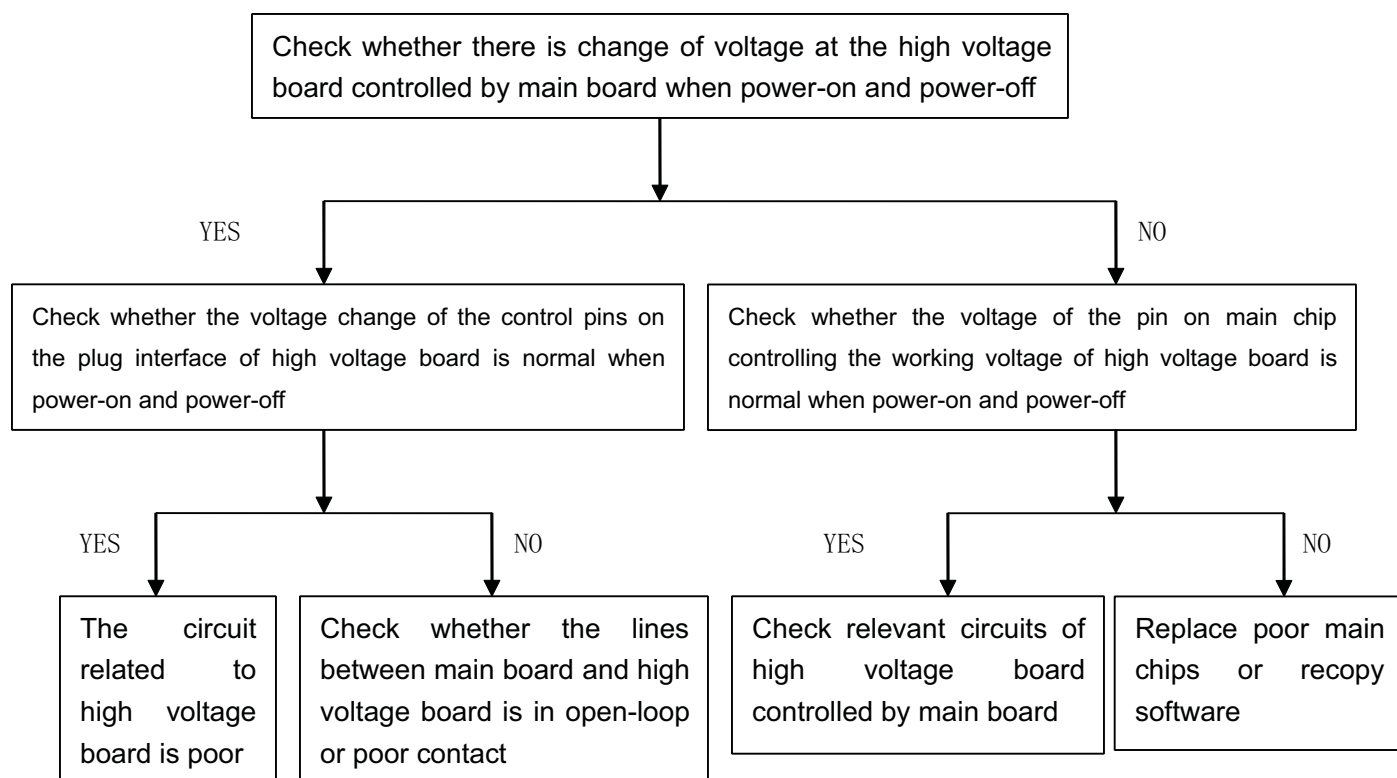
### 3. Protection or without light (refers to the disappearance of image several seconds after the emergence of image)



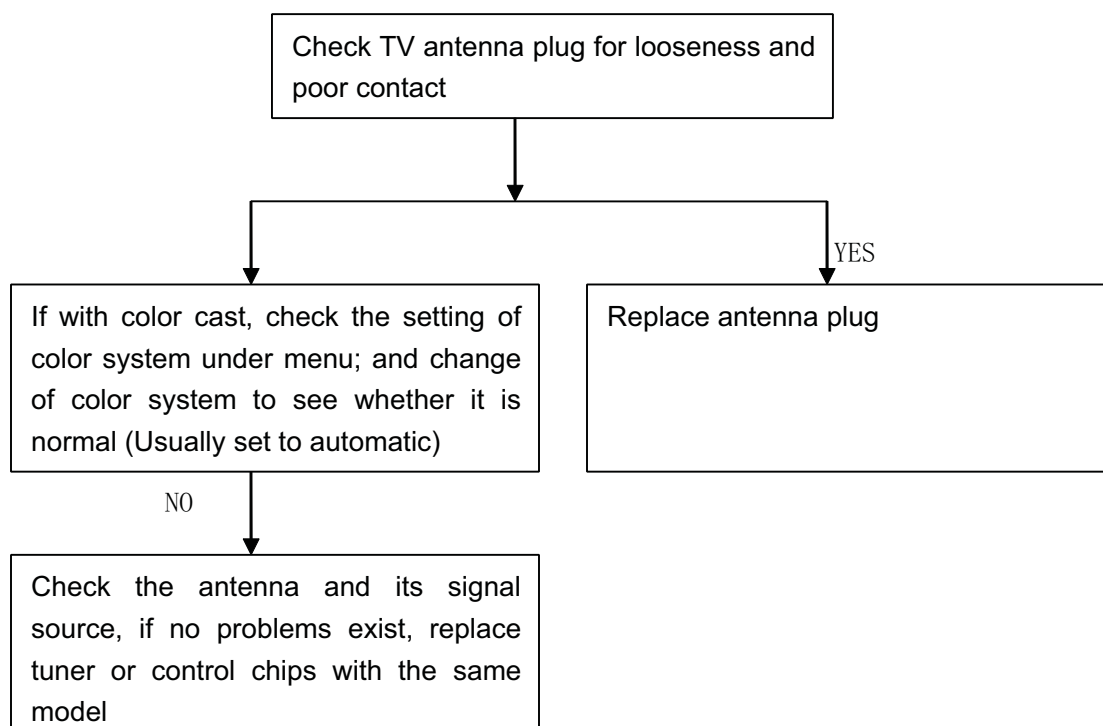
### 4. White panel



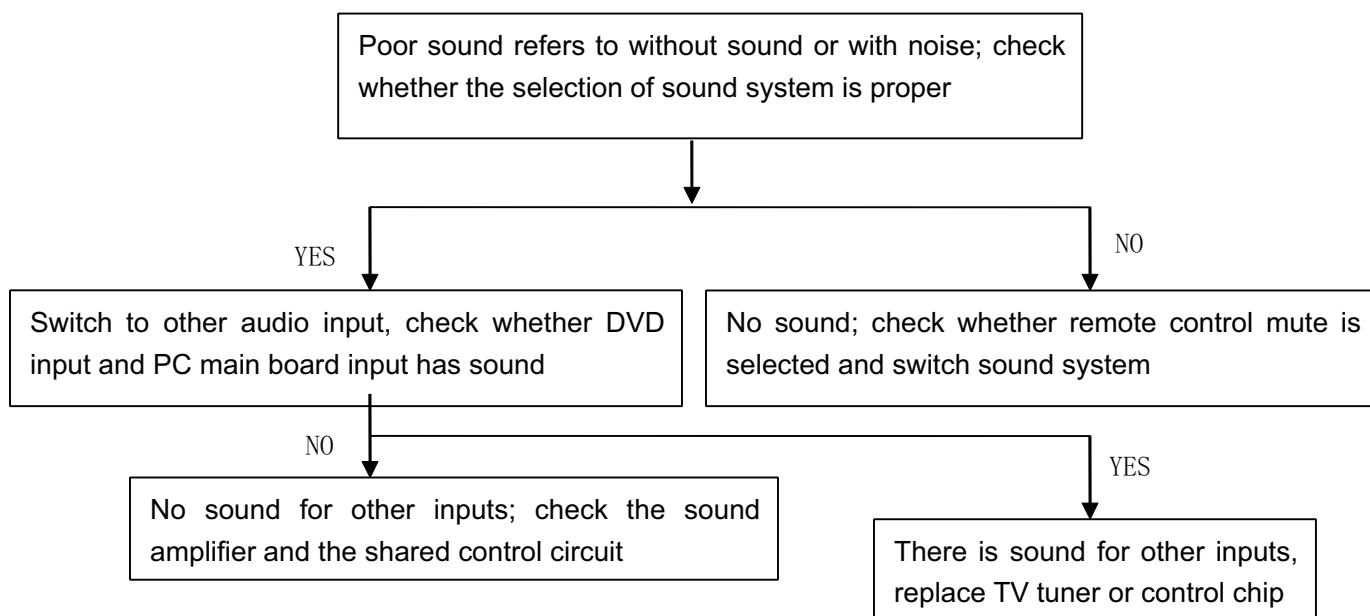
## 5. White screen after power-off (work normally when power on, but when power-off or no signal input, the screen shows a white screen)



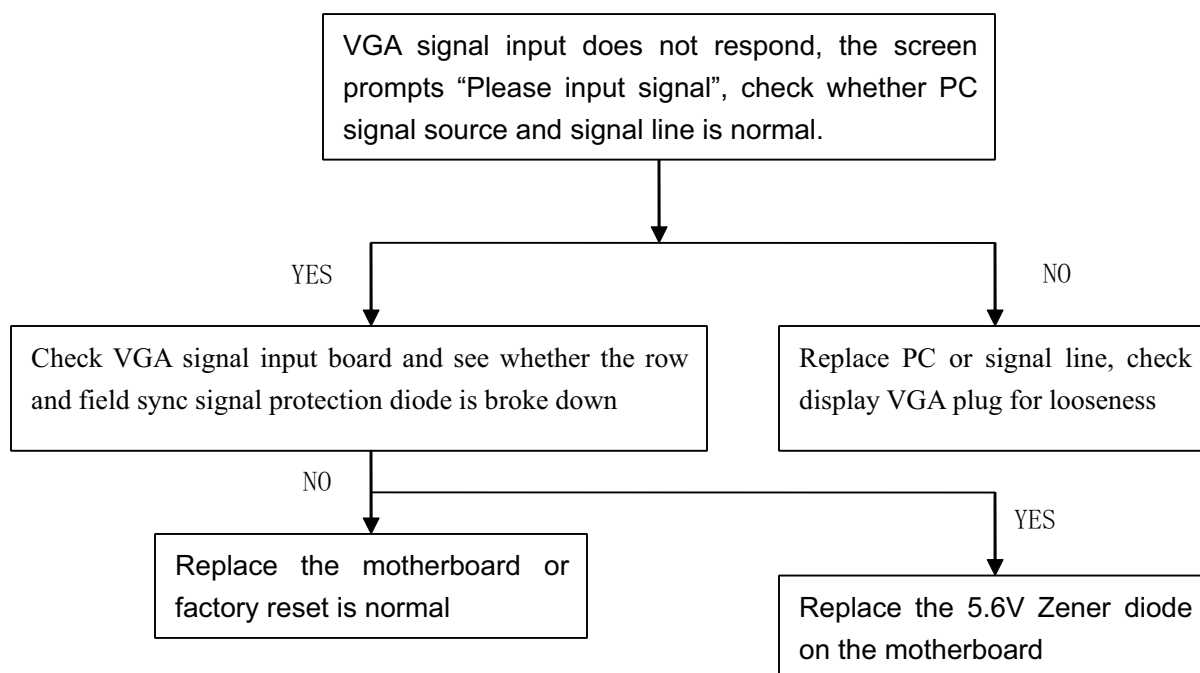
## 6. TV without channel or with color cast



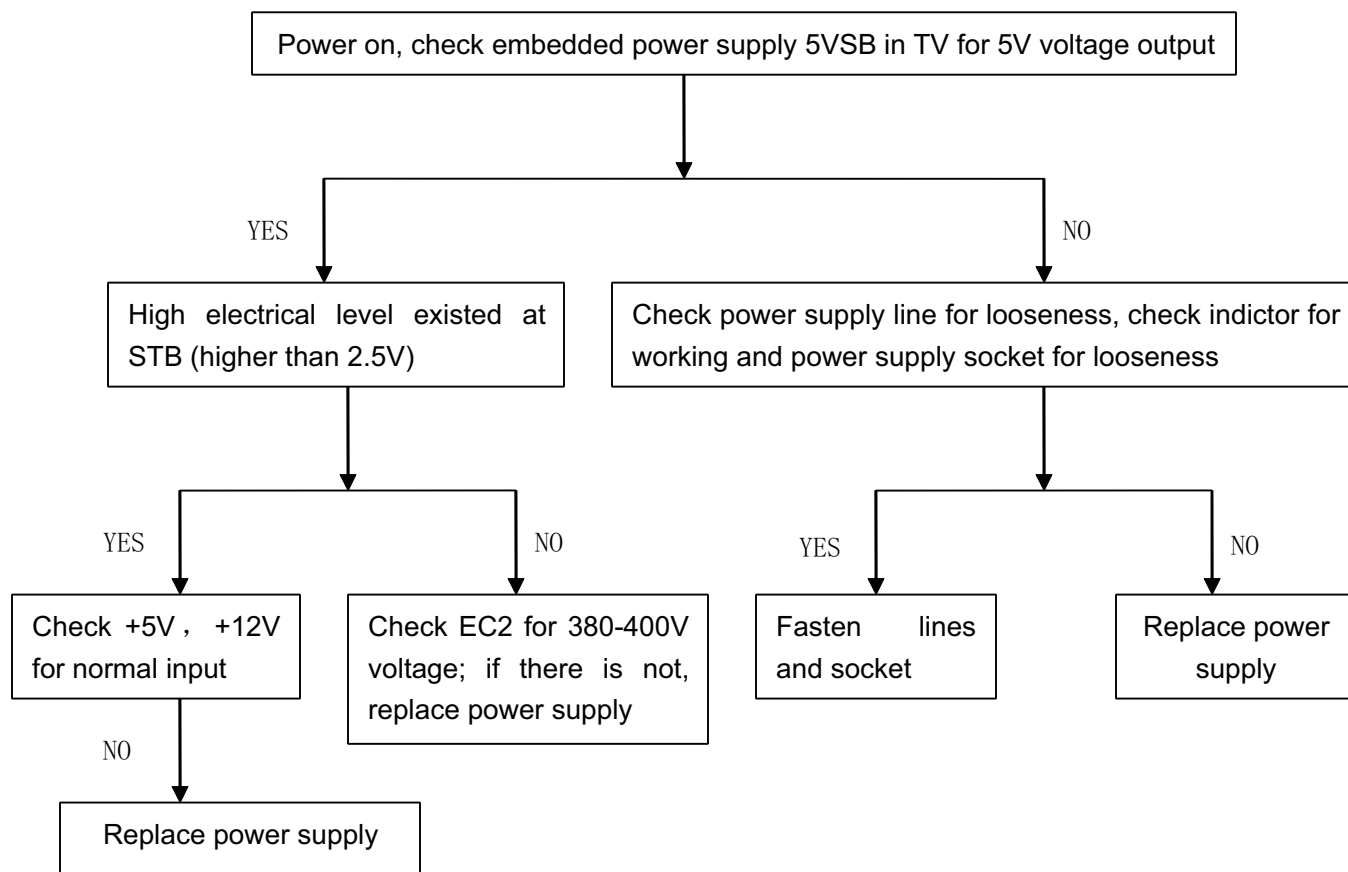
## 7. Poor sound



## 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,

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.

## V Simple Troubleshooting

No.	Nonconformity	Troubleshooting	Remarks	
1	Image with snow, noise in audio	A. Check the antenna plug is loosened or not, and confirm the cable connection is perfect or not.		
		B. Check the channel is set properly or not; or reset.		
		C. Check the antenna type and select VHF/UHF.		
		D. Check the antenna orientation and location, and adjust to the optimum orientation and angle.		
		E. Confirm whether the signal is too weak, and try to use signal intensifier.		
2	Fine image and audio with noise	Enter TV menu, and re-select the audio system		
3	Without display and noise, and the indicator light is not on	Check connection of the power cable is fine or not, and the power socket is electrified or not.		
4	Image with line or strip and other interferences	Check whether the signal is interfered by blower, electric warmer and other equipment.		
5	Double TV image	Check the antenna orientation, avoid reflection caused by high mountains and buildings, and use the function of micro-tuning		
6	No color of the image	Check the color system or adjust the color saturation		
11	No sound of TV	Check whether it is mute, the volume is too low; check and change the audio system		
12	Computer gives no display, prompting no signal input with the indicator light is flashing	Check whether the signal wire is loosened or falling off, and reconnect		

## **6M181/6E181/6M182/6E182 Scheme Adjustment of Factory Mode**

Press Menu to enter into the menu interface, and then press 8202 to enter into Factory menu.

Primary Menu	Secondary Menu	Value, Notes
ADC ADJUST		ADC ADJUST
	MODE	VGA( RGB ) , YPbPr (SD, HD) selection
	R-GAIN	Front-end gain adjustment
	G-GAIN	
	B-GAIN	
	R-OFFSET	Clamp level adjustment
	G-OFFSET	
	B-OFFSET	
	AUTO ADC	Automatic ADC adjustment
PICTURE MODE		Picture mode
	MODE	Signal source selection
	PICTURE MODE	Modes: dynamic, standard, soft,user.
	BRIGHTNESS	Brightness
	CONTRAST	Contrast
	COLOR	Color saturation
	SHARPNESS	Definition
	TINT	Hue
W/B ADJUST		Color temperature adjustment
	MODE	Signal source
	TEMPERATURE	Cool , Standard, Warm
	R-GAIN	White level adjustment
	G-GAIN	
	B-GAIN	
	R-OFFSET	Black level adjustment
	G-OFFSET	
	B-OFFSET	
SSC ADJUST		Spread spectrum adjustment
	MIU Enable	MIU spread spectrum Enable
	MIU Span	spread spectrum span
	MIU Step	spread spectrum step
	LVDS Enable	LVDS spread spectrum Enable
	LVDS Span	LVDS spread spectrum span
	LVDS Step	LVDS spread spectrum step
Other Setting		Other Setting
	NICAM CTRL	NICAM enable or not
	WHITE PATTERN	Panel display pattern(OFF、White、Red、Green、Blue、Black)

Power Mode	Power-up mode (power-on upon powering up, power-off upon powering up, restore to the previous status upon powering up)	
Aging	Burning ON/OFF.	
VIF	VD&VIF-NoStrand1	VD&VIF parameter adjustment
	VD&VIF-NoStrand2	
	VD&VIF-NoStrand3	
CH Table1	set factory TV channels	
CH Table2	set factory TV channels	
UART DEBUG		Debug mode selection
	UART DEBUG	There are four items ,OFF,HK,AEON and VDEC.We usually choose HK to enable serial port debugging.
NONLINEAR		All kinds of adjustment curves
	MODE	Signal source selection
	Brightness Curve	OSD-0、 OSD-25、 OSD-50、 OSD-75、 OSD-100
	Contrast Curve	OSD-0、 OSD-25、 OSD-50、 OSD-75、 OSD-100
	Saturation Curve	OSD-0、 OSD-25、 OSD-50、 OSD-75、 OSD-100
	Hue Curve	OSD-0、 OSD-25、 OSD-50、 OSD-75、 OSD-100
	Sharpness Curve	OSD-0、 OSD-25、 OSD-50、 OSD-75、 OSD-100
	Volume Curve	OSD-0、 OSD-25、 OSD-50、 OSD-75、 OSD-100
Factory Reset	Reset All	
Software Update (USB)	Software update	

# MST6M182/MST6E182 software upgrades (After Service)

## 1、Software upgrade tools and materials

- \* Personal computer (WINDOWS XP system,USB2.0)
- \* AC100~240V power supply and power cord
- \* ISP burning board
- \* ISP burning board driver
- \*ISP Tool V4.5.2.8.SZ.exe
- \*VGA wire
- \* USB flash disk (2.0 version, Capacity not more than 2G)
- \* Mainboard software

## 2、Preparatory work before the upgrade

Recorded the white balance data of VGA/YPbPr signal source in factory menu before upgrading(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 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 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.

The image shows three screenshots of the TV's Factory Setting menu. The first screenshot shows the 'Factory Setting' menu with 'ADC ADJUST' highlighted. The second screenshot shows the 'ADC ADJUST' menu with 'MODE' set to 'YPbPr(SD)' and the following values: R-GAIN: 4582, G-GAIN: 4573, B-GAIN: 4574, R-OFFSET: 2048, G-OFFSET: 256, B-OFFSET: 2048. The third screenshot shows the 'ADC ADJUST' menu with 'MODE' set to 'YPbPr(HD)' and the following values: R-GAIN: 4570, G-GAIN: 4564, B-GAIN: 4632, R-OFFSET: 2048, G-OFFSET: 256, B-OFFSET: 2048. A red box at the bottom of the third screenshot contains the text: 'Record the R/G/B-GAIN and R/B/G-OFFSET value under the YPbPr(SD) and YPbPr(HD) mode, to be replaced the recorded value after the machine software upgrade'.

MODE	YPbPr(SD)	YPbPr(HD)
R-GAIN	4582	4570
G-GAIN	4573	4564
B-GAIN	4574	4632
R-OFFSET	2048	2048
G-OFFSET	256	256
B-OFFSET	2048	2048

AUTO ADC SUCCESS

Record the R/G/B-GAIN and R/B/G-OFFSET value under the YPbPr(SD) and YPbPr(HD) mode, to be replaced the recorded value after the machine software upgrade

## 3、Operations and procedure of software upgrading:

(1). Changed the file name to "MERGE.bin", then store software in the FAT32 format blank U disk.

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

Method 1 (Method 1 will not erase the original EDID and HDCP KEY on mainboard. Easy operation, you only need one U disk to upgrade. So we require customer use this way to upgrade.):

①. Start the machine and wait the normal picture display, press the MENU button on the remote control, will be popping up the main menu, press the 8202 number keys and enter the Factory Setting menu.

②. Press up/down keys to move the cursor to "software update(USB)" function menu, then press right key to select "YES", to implement USB upgrade command:

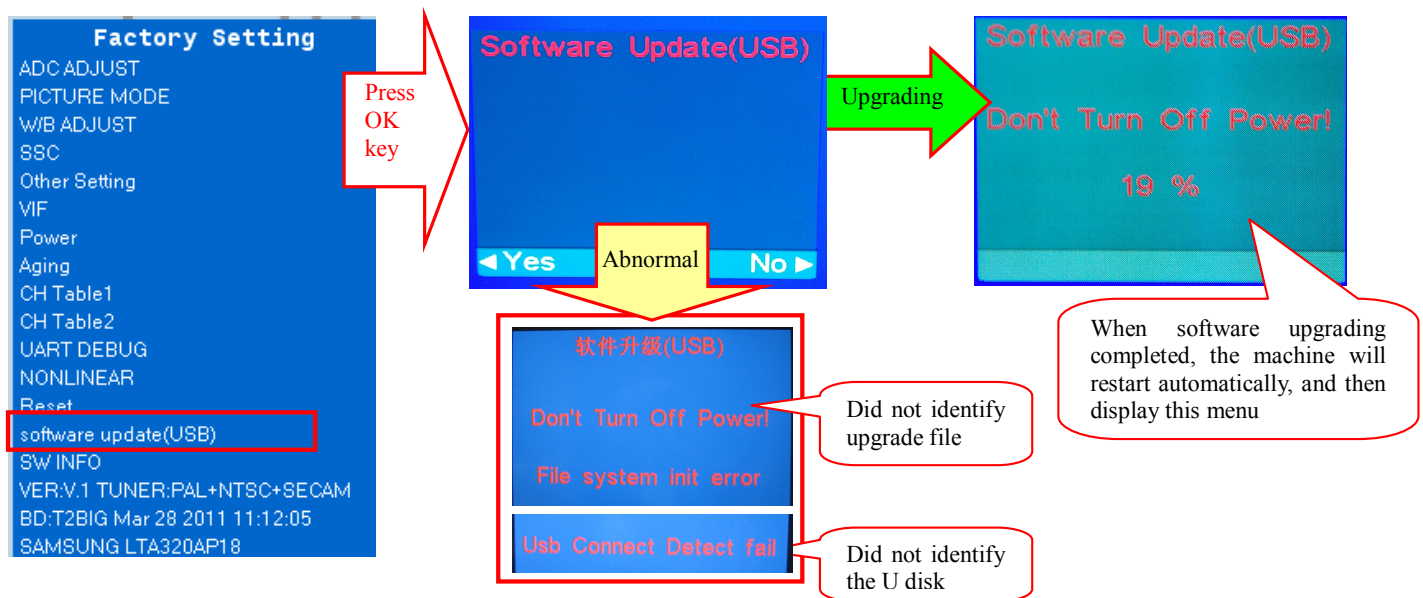
a. After prompt "File system init error", means that the machine have found USB device, but did not find the needing upgrade software, please check the software name is correct or format the U disk again and then copy software.

b. After prompt "USB Connect Detect fail", means that the machine does not find USB device, check if the USB device

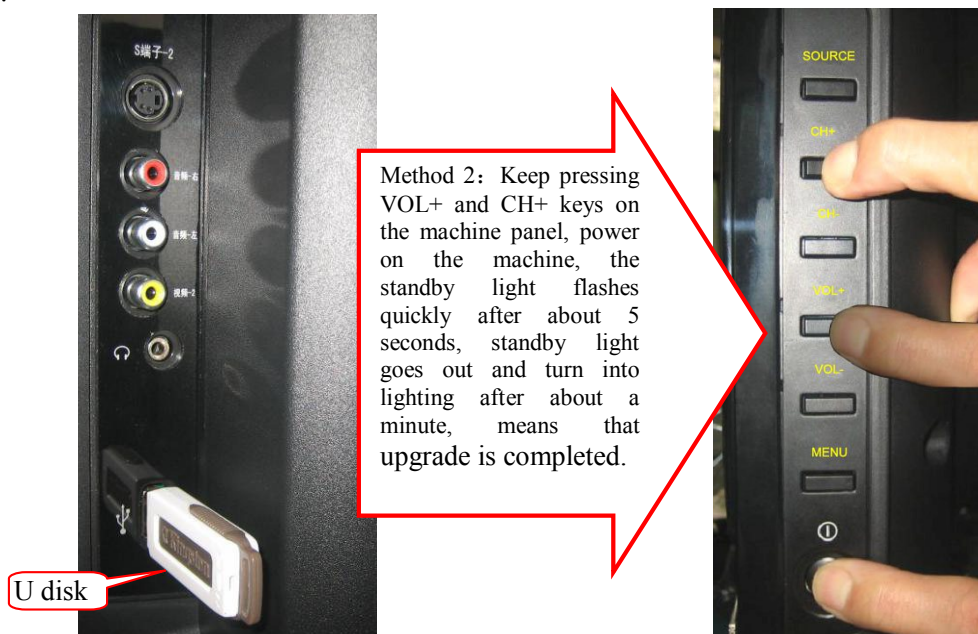


has been inserted into, or change another U disk and try again.

③. Display percentage progress prompts and about 10 seconds later, the machine black screen and restart automatically, means that the machine complete the upgrade process, turn off the machine first, then pull out the U disk.



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



### (3). Notices:

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 damaging U disk or machine.

③. Because of compatibility between machine and U disk, some machines will not flicker during upgrading. Please change U disk (The capacity of U disk is not more than 2G) or use method 1 to upgrade.

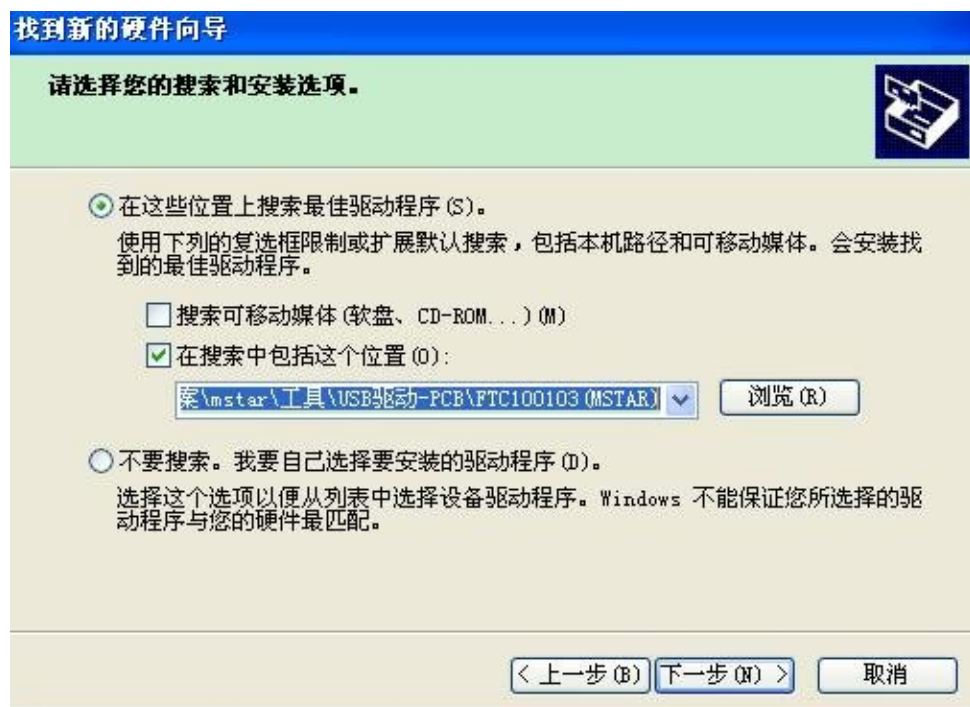
④. If the display screen can't display menu normally, it cannot use "method 1" to upgrade, you can use Mstar ISP Tools to upgrade except method 1 and method 2.

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

following instructions.

(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:

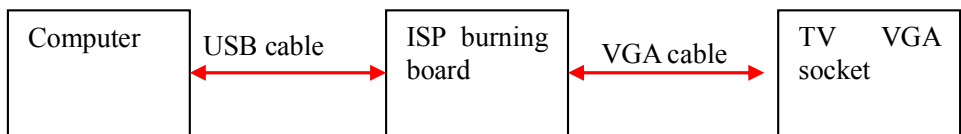


(3) When PC finds the drive file, it will give the prompts as in the figure below during the installation process. Please click “Continue” to go ahead. The system will go through three drive installation processes, including Mstar USB Debug Tool A, Mstar USB Debug Tool B, and Mstar USB SerialPort. They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

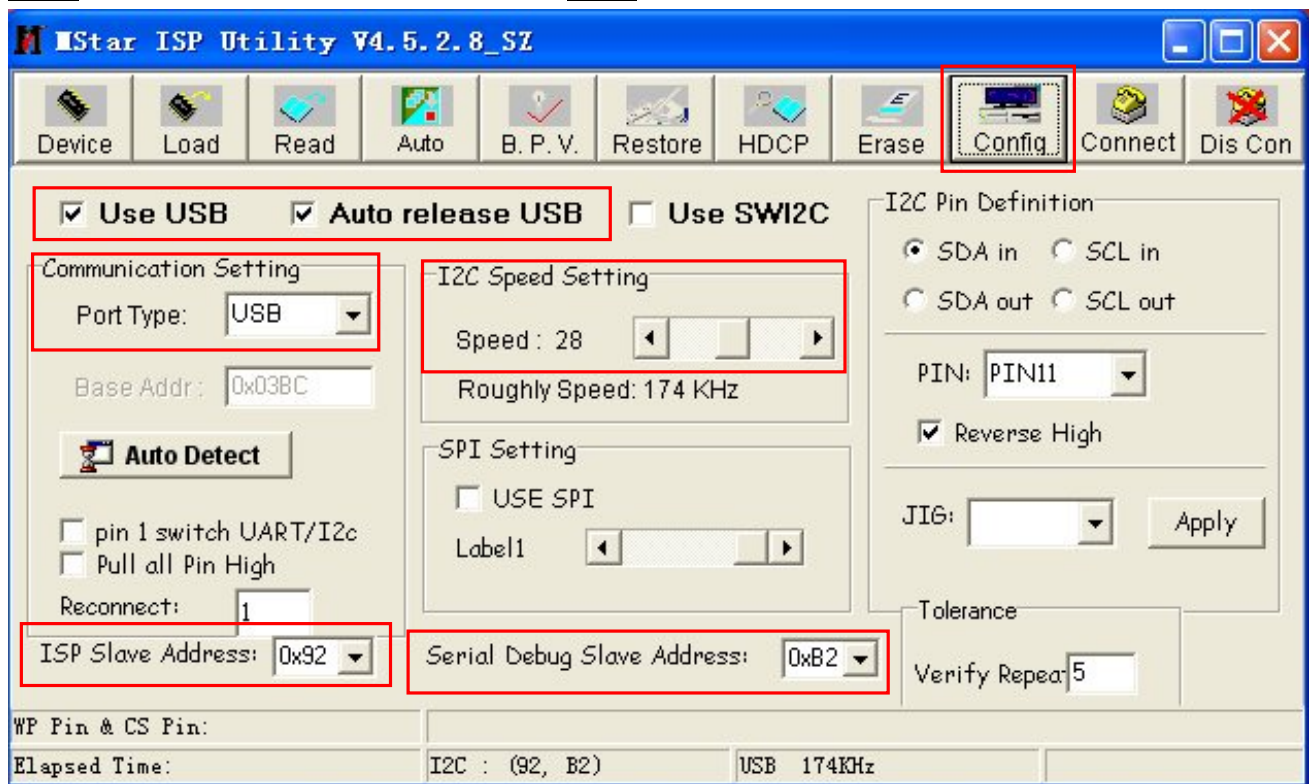


### C. Program burning

1. When the drives are installed, connect the Mstar USB Tool board to TV in such a way as specified below. Then, connect the TV power cord and run the software ISP-Tool V4.5.2.8.SZ.exe to burn the program into the TV drive board..

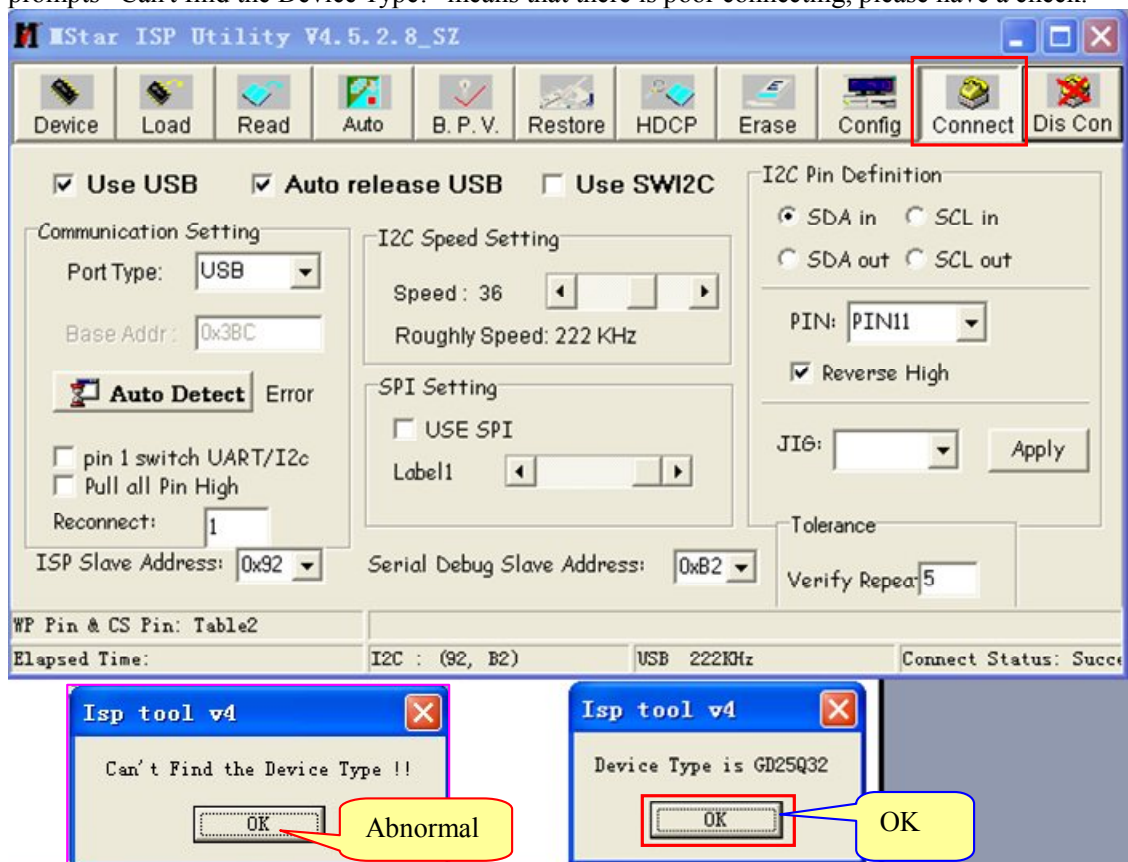


2. In the **config** menu bar to select **Use USB** and **Auto release USB**, Communication Setting items corresponding to the Port Type menu select **USB**. Set the burning speed of **48** in I2C Speed Setting item, ISP Slave Address item menu select **0X92**, Serial Debug Slave Address menu select **0XB2**.

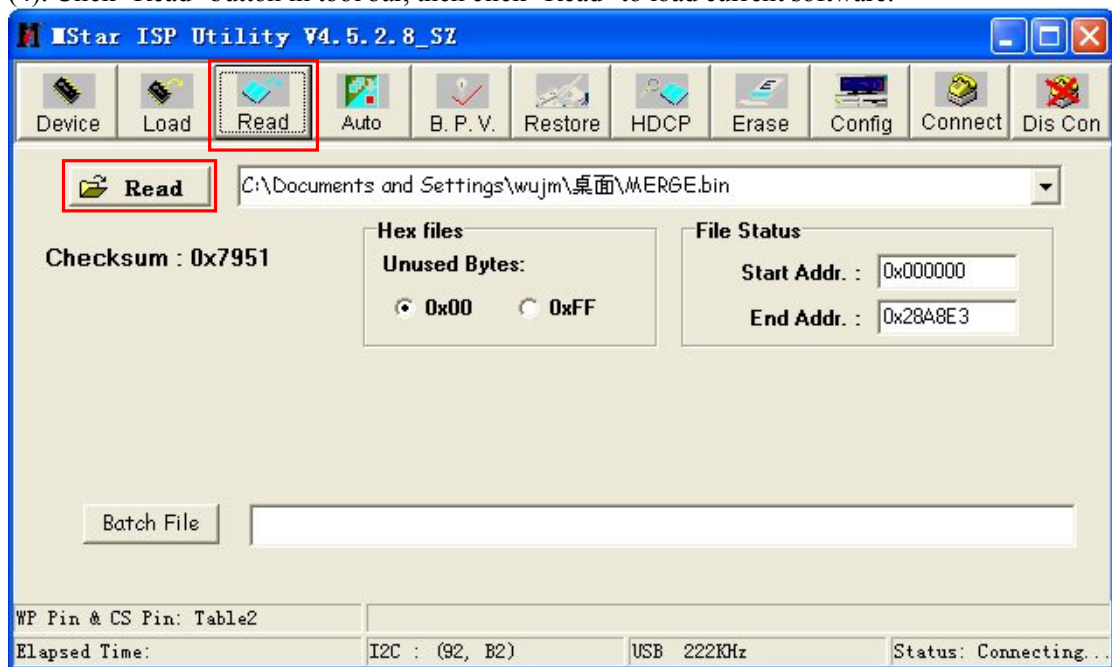




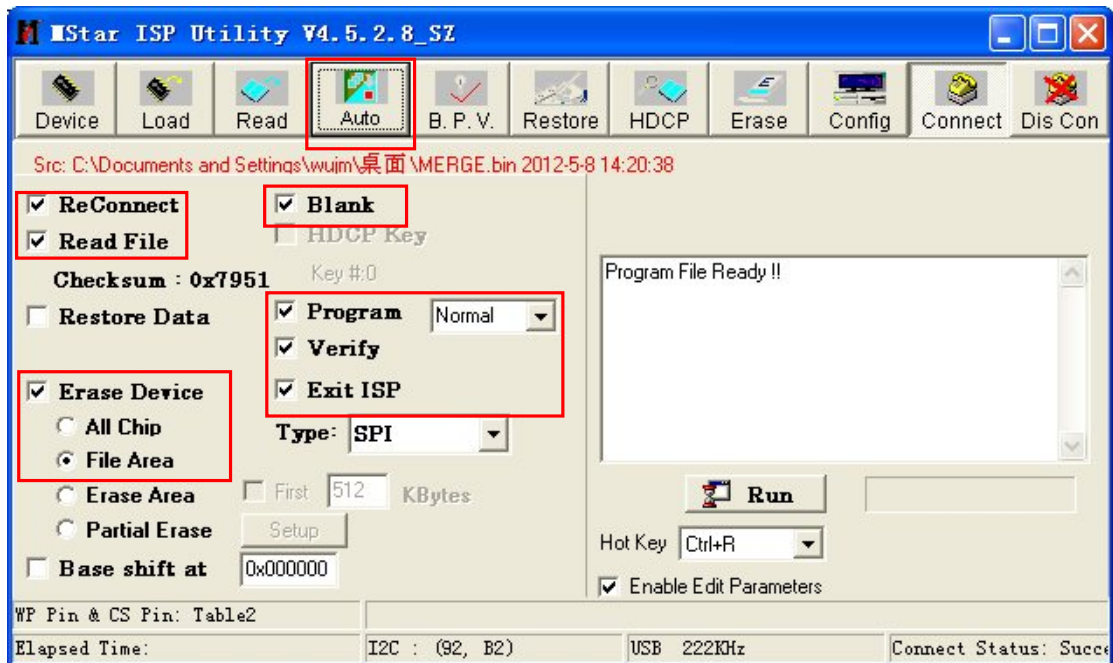
(3). Click Connect button to connect, if it prompts “Device Type is GD25Q32”, means that normal connecting; if it prompts “Can't find the Device Type!” means that there is poor connecting, please have a check.



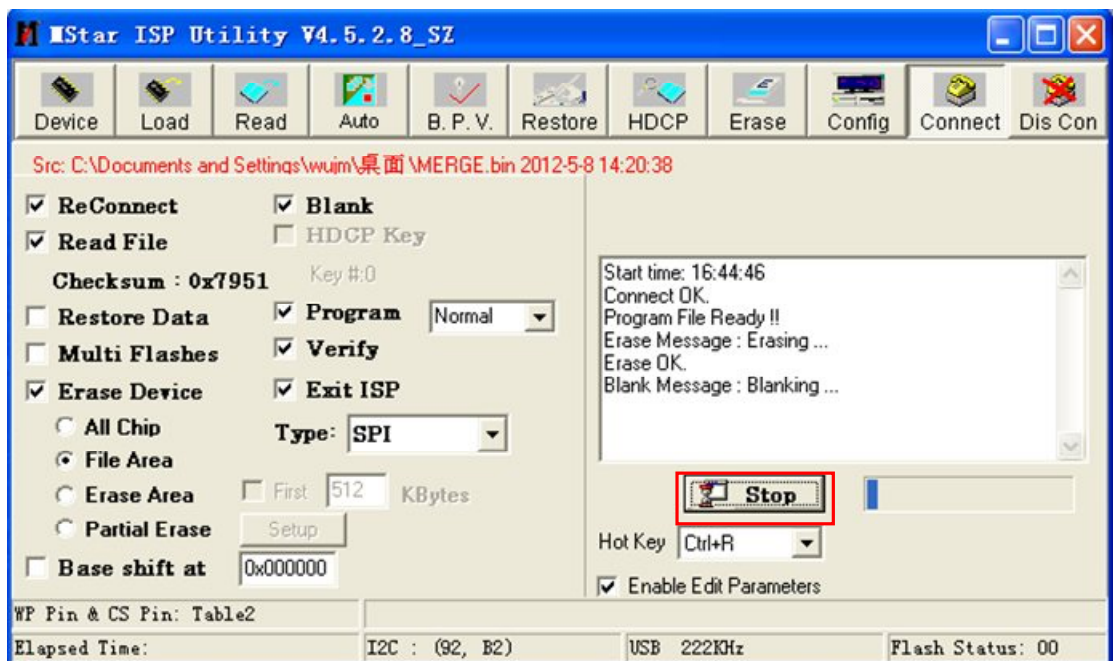
(4). Click "Read" button in tool bar, then click "Read" to load current software.



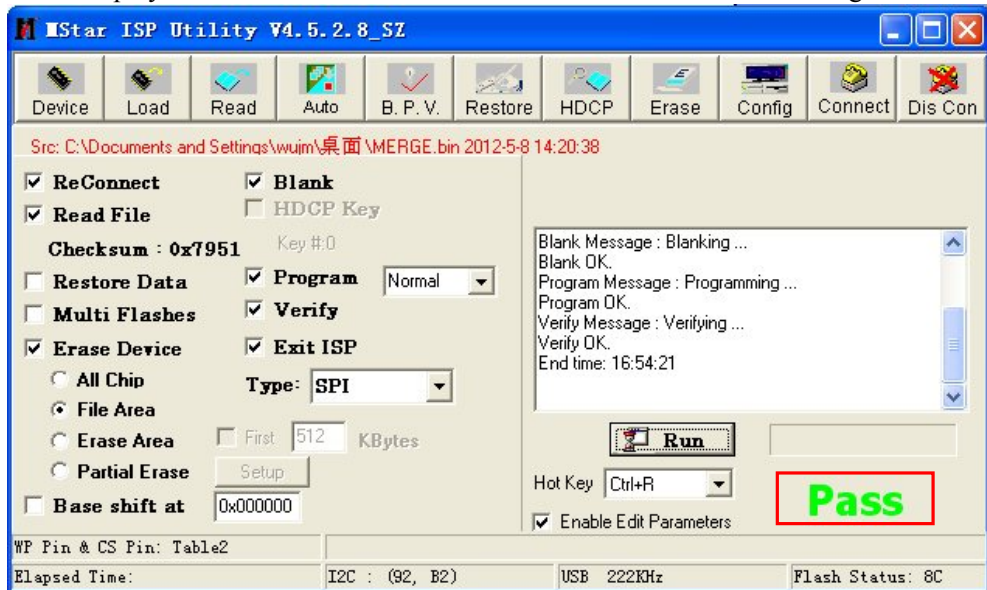
(5). Click "Auto" button in tool bar to set the corresponding settings.



Then click “RUN” button to burn software.



When display “PASS”, means that it succeed, then burn EDID according to the following instructions.

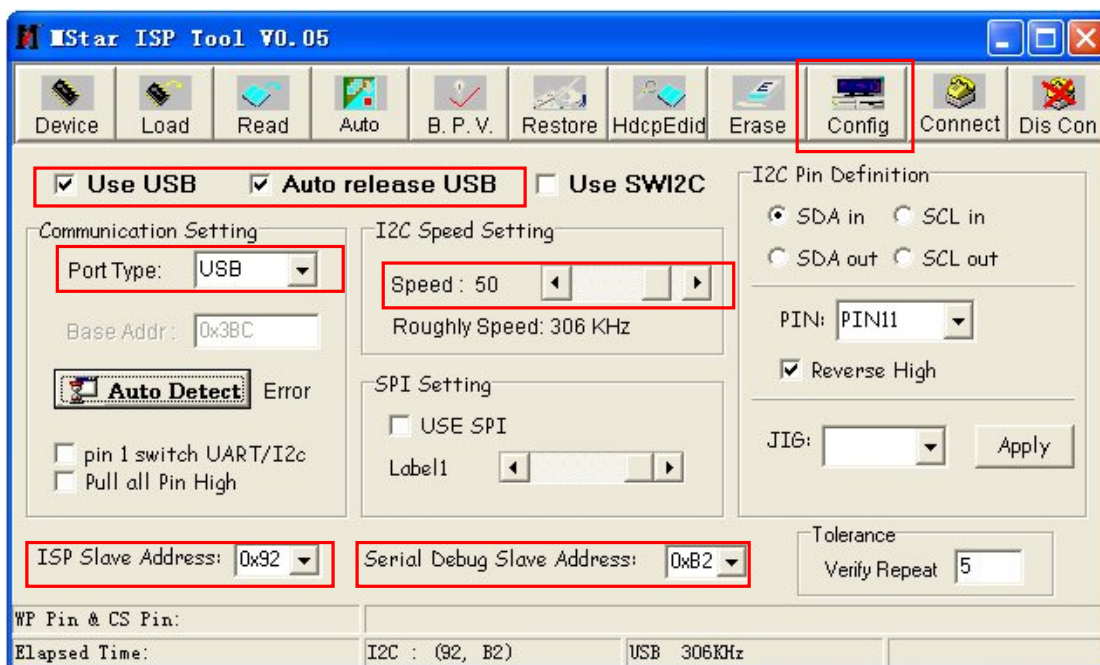
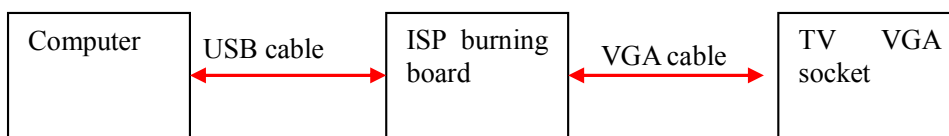


5、 Use ISP way to upgrade(when used USB way to upgrade, it couldn't erase the original EDID and HDCP KEY on mainboard, so we require customer use this way to upgrade first.), when you selected "ALL Chip" under "Erase Device" option during upgrading, the TV mainboard must burn EDID and HDCP KEY. The burning tools and materials for HDCP KEY and EDID:

- \* Personal computer (WINDOWS XP system,USB2.0)
- \* AC100~240V power supply and power cord
- \*ISP burning board
- \*ISP burning board driver
- \*ISP\_Tool\_XC\_V0.05.exe
- \*VGA cable
- \*VGA EDID and HDMI EDID file

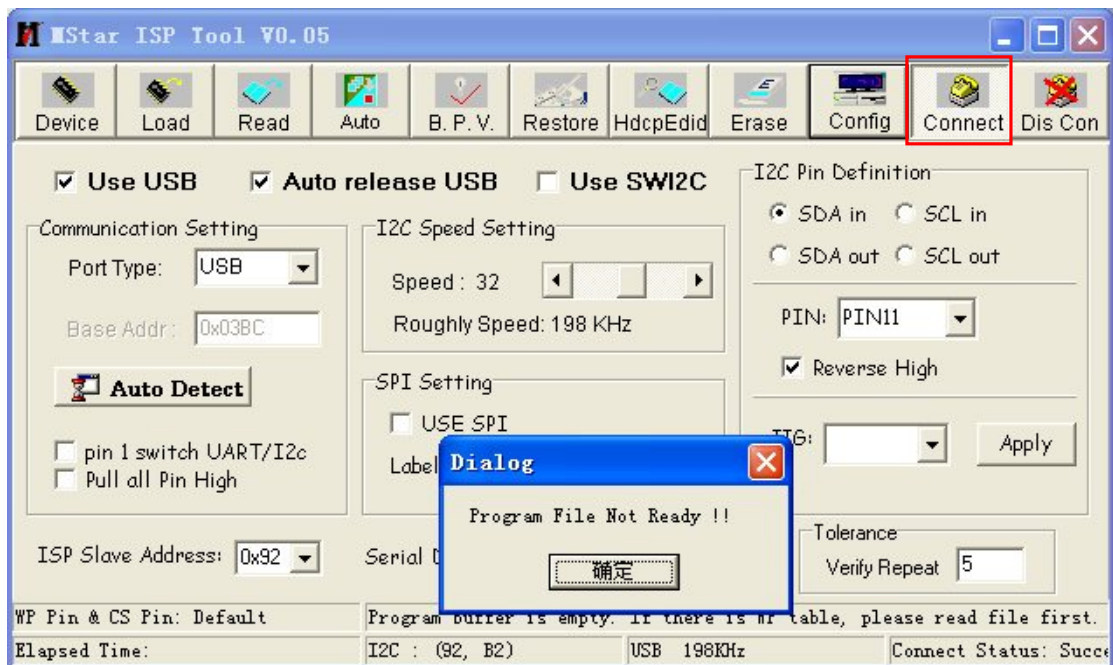
Specific operation according to the following instructions:

(1).Connect ISP burning board and TV and computer, then run ISP\_Tool\_XC\_V0.05.exe to set communication mode.



(2). Click Connect button to connect, if prompts "Program File Not Ready!"

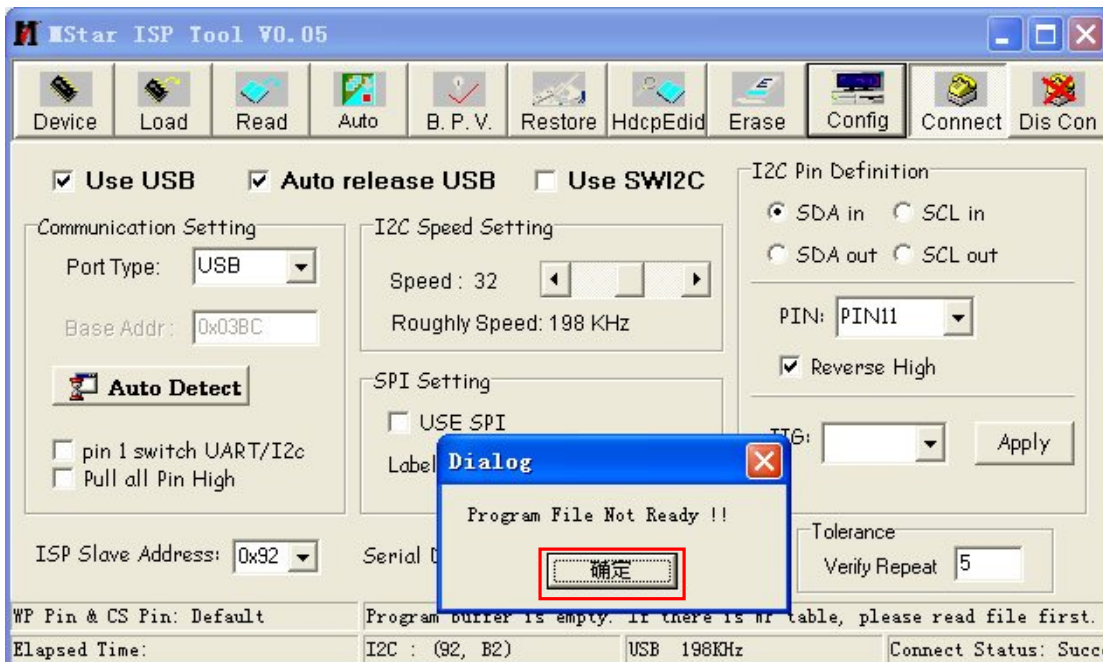
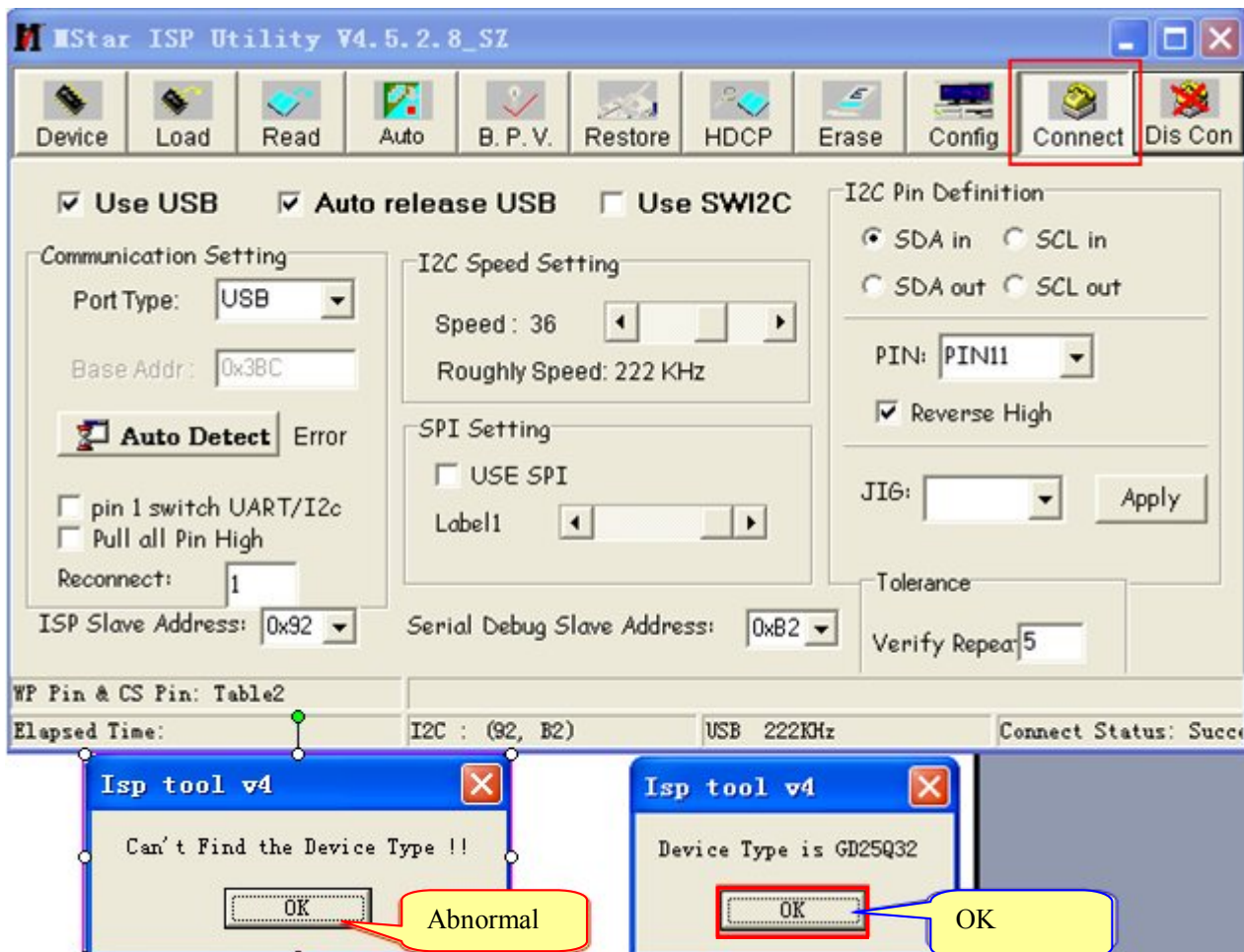




Please click  and  to load current software.



If prompts “Device Type is GD25Q32” means that normal connect; if prompts “Can’t find the Device Type!” means that there is poor connecting, please have a check.



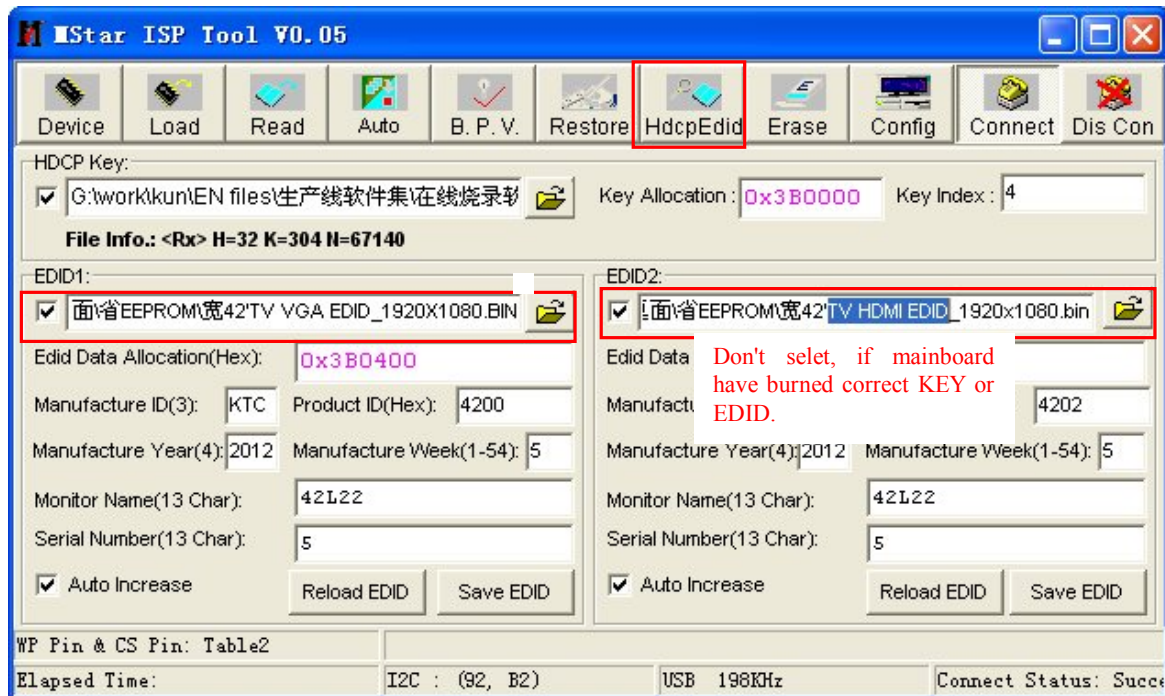
If prompts "Device Type is GD25Q32" means that normal connect; if prompts "Can't find the Device Type!" means that there is poor connecting, please have a check.

(3). Click HdcpEdid button in main menu bar to set corresponding settings according to the following instructions:

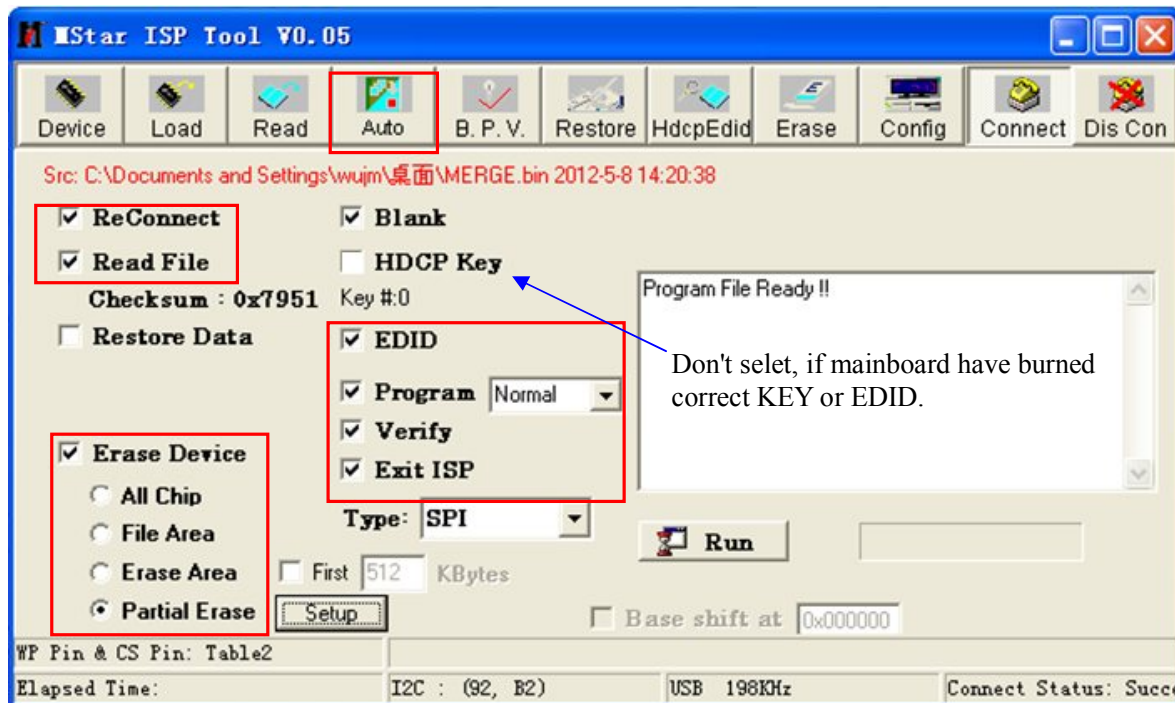
Need to burn HDCP KEY, please select and load current KEY documents, in KEY address bar input "0 X3B0000" and enter; select EDID1 check box and load current work order VGA port EDID. bin file, in EDID1 corresponding files address bar input "0 X3B0400" and enter; select EDID2 check box and load current work order HDMI EDID. bin file, in EDID2 corresponding file address bar input "0 X3B0600" and enter. Modify EDID1 and EDID2 corresponding information according to work order, confirm and click "Auto" button in main menu bar to switch to burning main



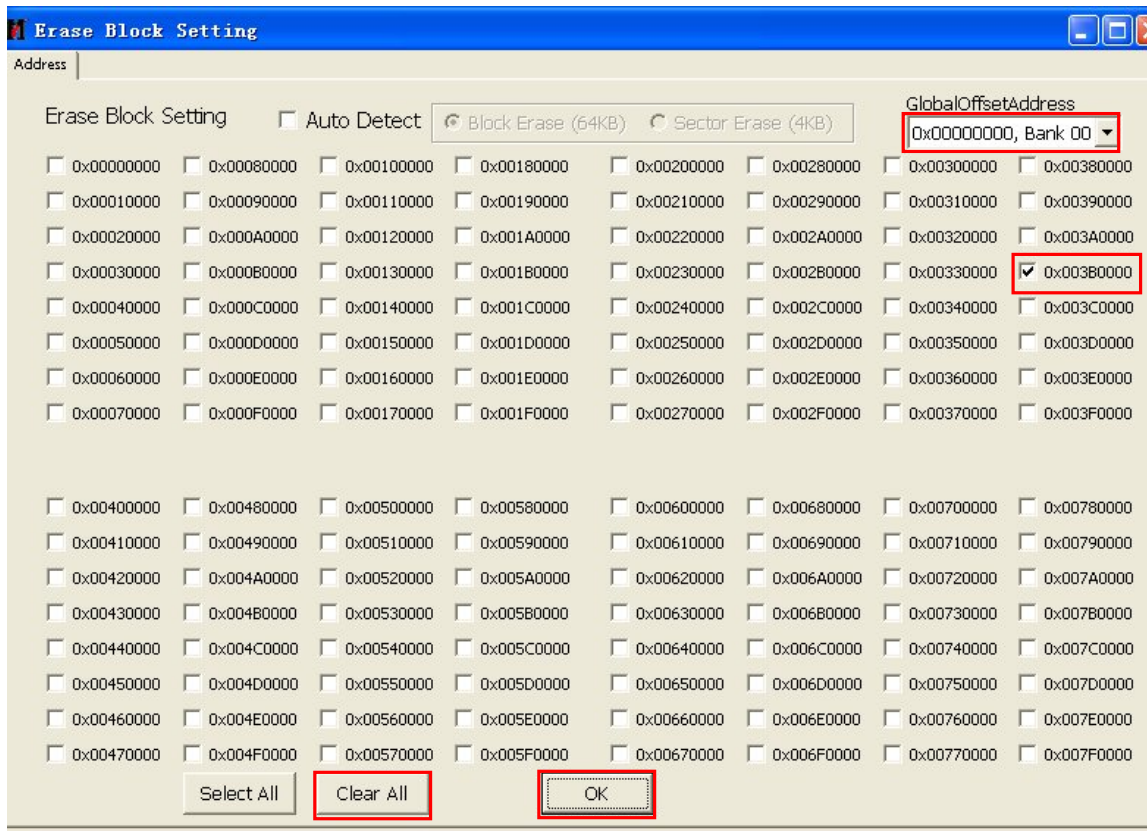
interface.



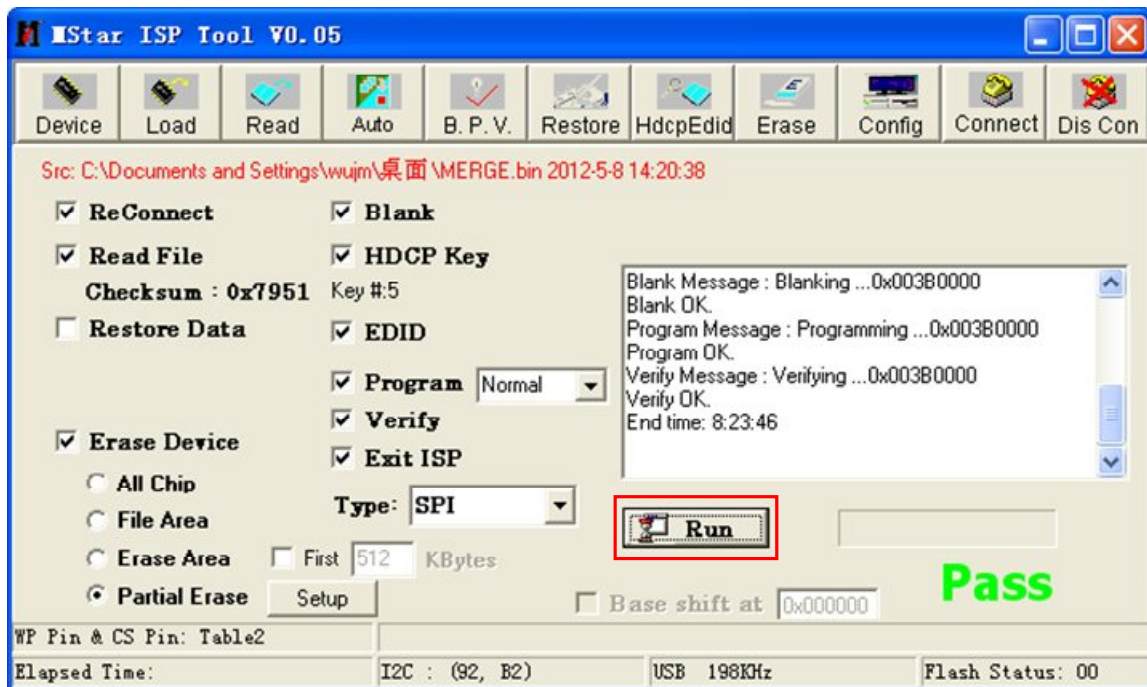
(4).In burning main interface, select corresponding function, click Setup button in Erase Device,



to enter to Erase Block Setting menu, click Clear All to clear, click drop-down list in Global Offset Address, select"OX00000000,Bank 00", in address list select "0X3B0000", check address settings and click "OK" button to exit address settings.



(5).In burning interface, click "Run" to burn. Burning prompt bar will prompt burning process related information, about 12 seconds appear "Pass", and there is no longer any character rolling in prompt bar, means that is burning successfully.

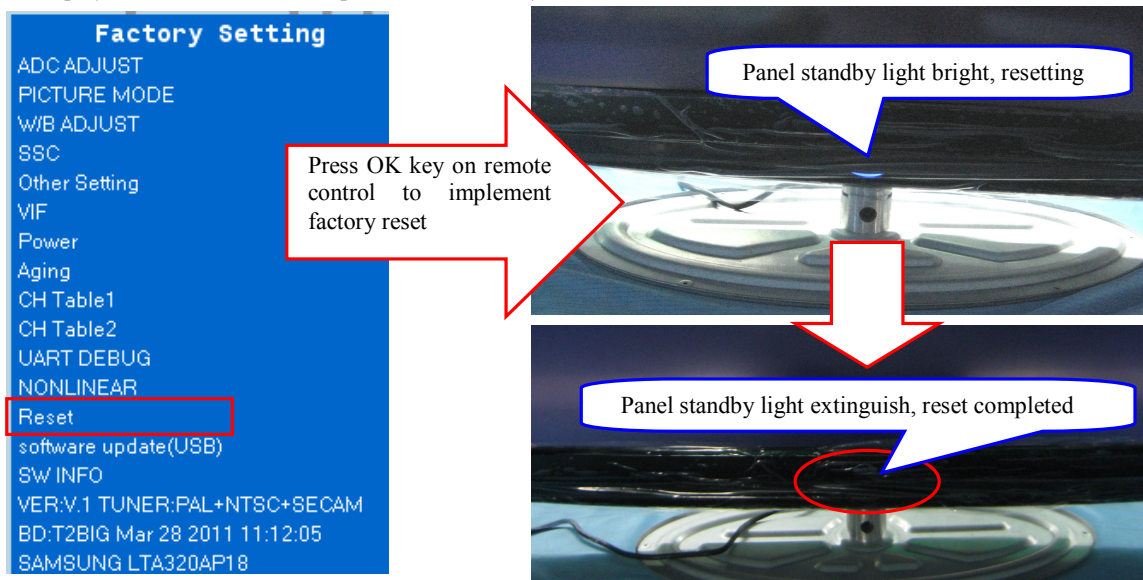


(6). Shut down the power of jig, pull out the burning wire to complete burning operation. It not allow pulling out the wires during burning process. Shut down the power when installing or taking mainboard.

(7). It not allow pulling out the wires during burning process. Shut down the power when installing or taking mainboard. Pull out the power cord of machine first, then pull out burning board. When burning complete, change the TV and click **Run** button to burn next machine.

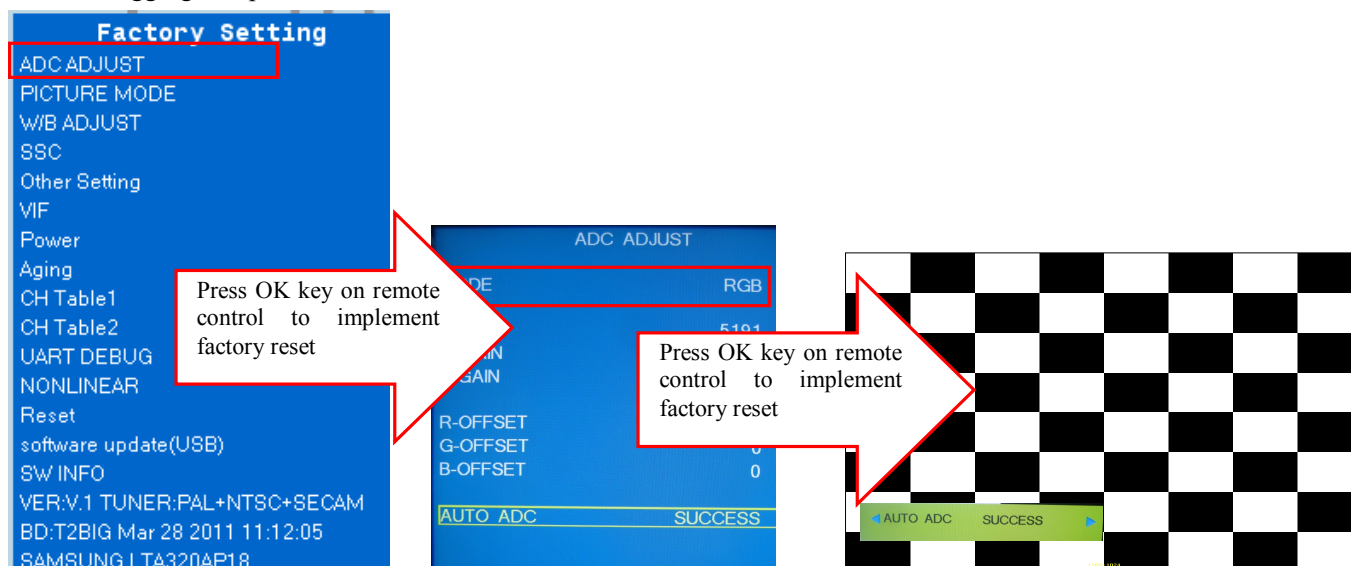
6、When upgrading complete, it must be adjusted before leave factory:

(1). Power to the machine, press MENU button on the remote control then press 8202 number keys and then will popping the factory menu automatically, press the remote control up/down cursor keys to move to the "Reset" option press OK key to implement. After about 5 seconds latter the machine implement clear command automatically. After about 5 seconds latter the screen will be black and it flashes blue lantern panel display, it said that the order implement successfully.



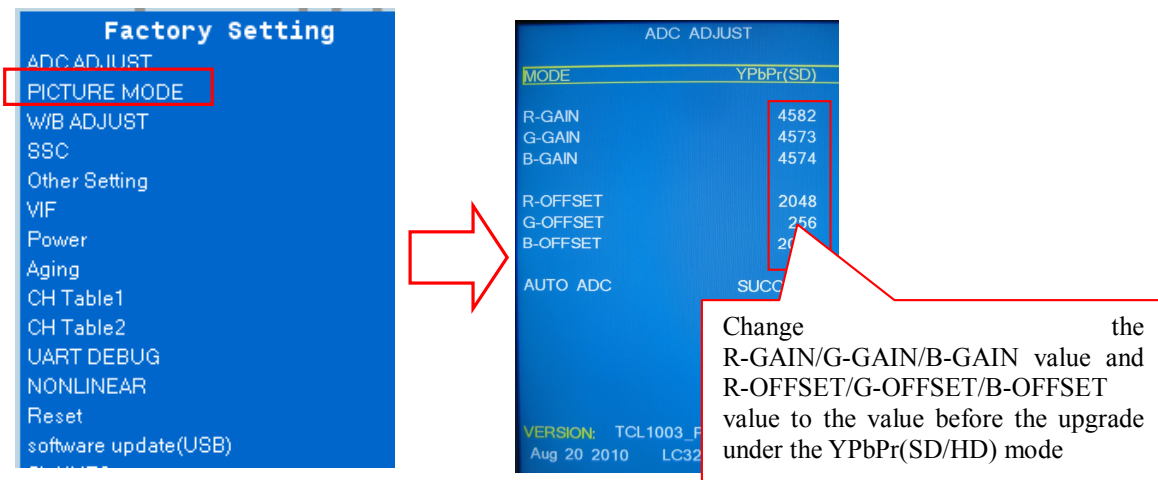
(2). Insert signal cable to the machine, switch to the PC message source.

(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.

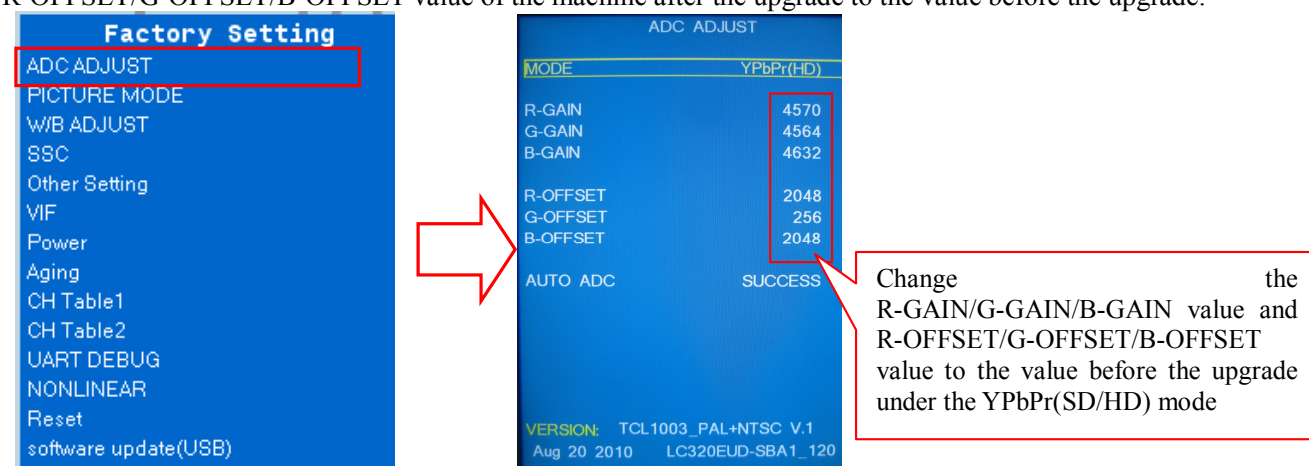


(4). Under the YPbPb message source, press the MENU button after popping the main menu, then press 8202 number keys to enter the factory menu, select ADC ADJUST item, press the OK key to enter the next level menu, move the cursor to the MODE item, press the left/right Moving key mover cursor to select 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.





(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.



7、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.

