



Liquid Crystal Display Television Service Manual

Chassis: MST6E181VS

Product type: LCD32V88K/LEDN32K26K

Ver 1.0

Hisense Electric Co., Ltd.

October, 2011

Contents

Contents	- 2 -
Service Manual	- 3 -
1. Precautions and notices.....	- 3 -
1.1 Warning.....	- 4 -
1.2 Notes.....	- 7 -
2. Product Specifications:	- 9 -
2.1 Specification:	- 9 -
2.2 Main Board:	- 10 -
2.3 Wiring Diagram:	- 11 -
3. Factory/Service OSD Menu and Adjustment.....	- 13 -
3.1 To enter the Factory OSD Menu	- 13 -
3.2 Factory OSD Menu.....	- 13 -
4. Software Upgrading.....	- 17 -
Before upgrading, read the following.	- 17 -
4.1 Get ready for upgrading.....	- 17 -
4.2 Upgrading with the ISP_TOOL4.5.0.4.....	- 21 -
4.3 USB Software upgrading.....	- 26 -
5. Power assign & Signal process.....	- 29 -
5.1 MST6E181 Power assign.....	- 29 -
5.2 MST6E181Signal process.....	- 30 -
5.3. Troubleshooting	- 31 -
5.3.1 Troubleshooting for Remote Control.....	- 31 -
5.3.2 Troubleshooting for Function Key.....	- 32 -
5.3.3 TV won't Power On.....	- 33 -
5.3.4 Troubleshooting for Audio.....	- 34 -
5.3.5 Troubleshooting for TV/VGA/HDMI input.....	- 35 -
5.3.6 Troubleshooting for YPbPr input.....	- 36 -
5.3.7 Troubleshooting for Video/ input.....	- 37 -
6. Schematic circuit diagram	- 38 -
7. Explode view	- 38 -

Service Manual

1. Precautions and notices

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

USE ONLY MANUFACTURER SPECIFIED REPLACEMENT PARTS WHEN SERVICING.

USE OF NON-AUTHORIZED PARTS WILL VOID THE MANUFACTURE'S WARRANTY

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

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility is that improper service methods may damage the equipment and pose risk of personal injury

. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Service should only be performed by an experienced electronics

technician trained in the proper Television safety and service methods and procedures
Hereafter throughout this manual, Hisense will be referred to.

1.1 Warning

1.1.1

Critical components having special safety characteristics are identified with a ▲ by the Ref. No. in the parts list. Use of non-manufacturer's recommended parts may create shock, fire, or other hazards. Under no circumstances should the original design be modified or altered without written permission from Hisense assumes no liability, express or implied, arising out of any unauthorized modification of design. Service tech assumes all liability.

DANGER CAUTION

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

1.1.2.

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, be sure to use antistatic table mats and properly use a grounding wrist strap. Keep components and tools also at this same potential.

IMPORTANT:

Always disconnect the power cord from AC outlet before replacing parts or modules.

1.1.3

To prevent electrical shock, use only a properly grounded 3 prong outlet or extension cord.

1.1.4

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

1.1.5

Safety regulations require that after a repair the set must be returned in its original condition. In addition, prior to closing set, check that:

>All wire harnesses and flex cables are properly routed and secured with factory tape and/or mounted cable clamps.

> All cables and connectors are properly insulated and do not have any bare wires/lead exposed.

1.1.6

(1) Do not supply a voltage higher than that specified to this product. This may damage the product and may cause a fire.

(2) Do not use this product:

> High humidity areas

> In an area where any water could enter or splash into the unit.

High humidity and water could damage the product and cause fire.

(3) If a foreign substance (such as water, metal, or liquid) gets inside the panel module, immediately turn off the power. Continuing to use the product may cause fire or electric shock.

(4) If the product emits smoke, and abnormal smell, or makes an abnormal sound, immediately turn off the power. Continuing to use the product, it may cause fire or electric shock.

(5) Do not pull out or insert the power cable from/to an outlet with wet hands. It may cause electric shock.

(6) Do not damage or modify the power cable. It may cause fire or electric shock.

(7) If the power cable is damaged, or if the connector is loose, do not use the product: otherwise, this can lead to fire or electric shock.

(8) If the power connector or the connector of the power cable becomes dirty or dusty, wipe it with a dry cloth. Otherwise, this can lead to fire.

(9) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

1.2 Notes

Notes on Safe Handling of the LCD panel and during service

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

- Before starting the work, secure a sufficient working space.
- At all times other than when adjusting and checking the product, be sure to turn OFF the POWER Button and disconnect the power cable from the power source of the TV during servicing.
- To prevent electric shock and breakage of PC board, start the servicing work at least 30 seconds after the main power has been turned off. Especially when installing and removing the power board, start servicing at least 2 minutes after the main power has been turned off.
- While the main power is on, do not touch any parts or circuits other than the ones specified. If any connection other than the one specified is made between the measuring equipment and the high voltage power supply block, it can result in electric shock or may trip the main circuit breaker. When installing the LCD module in, and removing it from the packing carton, be sure to have at least two persons perform the work.
- When the surface of the panel comes into contact with the cushioning materials, be sure to confirm that there is no foreign matter on top of the cushioning materials before the surface of the panel comes into contact with the cushioning materials.

Failure to observe this precaution may result in, the surface of the panel being scratched by foreign matter.

- Be sure to handle the circuit board by holding the large parts as the heat sink or transformer. Failure to observe this precaution may result in the occurrence of an abnormality in the soldered areas.
- Do not stack the circuit boards. Failure to observe this precaution may result in problems resulting from scratches on the parts, the deformation of parts, and short-circuits due to residual electric charge.
- Perform a safety check when servicing is completed. Verify that the peripherals of the serviced points have not undergone any deterioration during servicing. Also verify that the screws, parts and cables removed for servicing purposes have all been returned to their proper locations in accordance with the original setup.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of insinuated

dangerous voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance

(servicing) instructions in the literature accompanying the set.

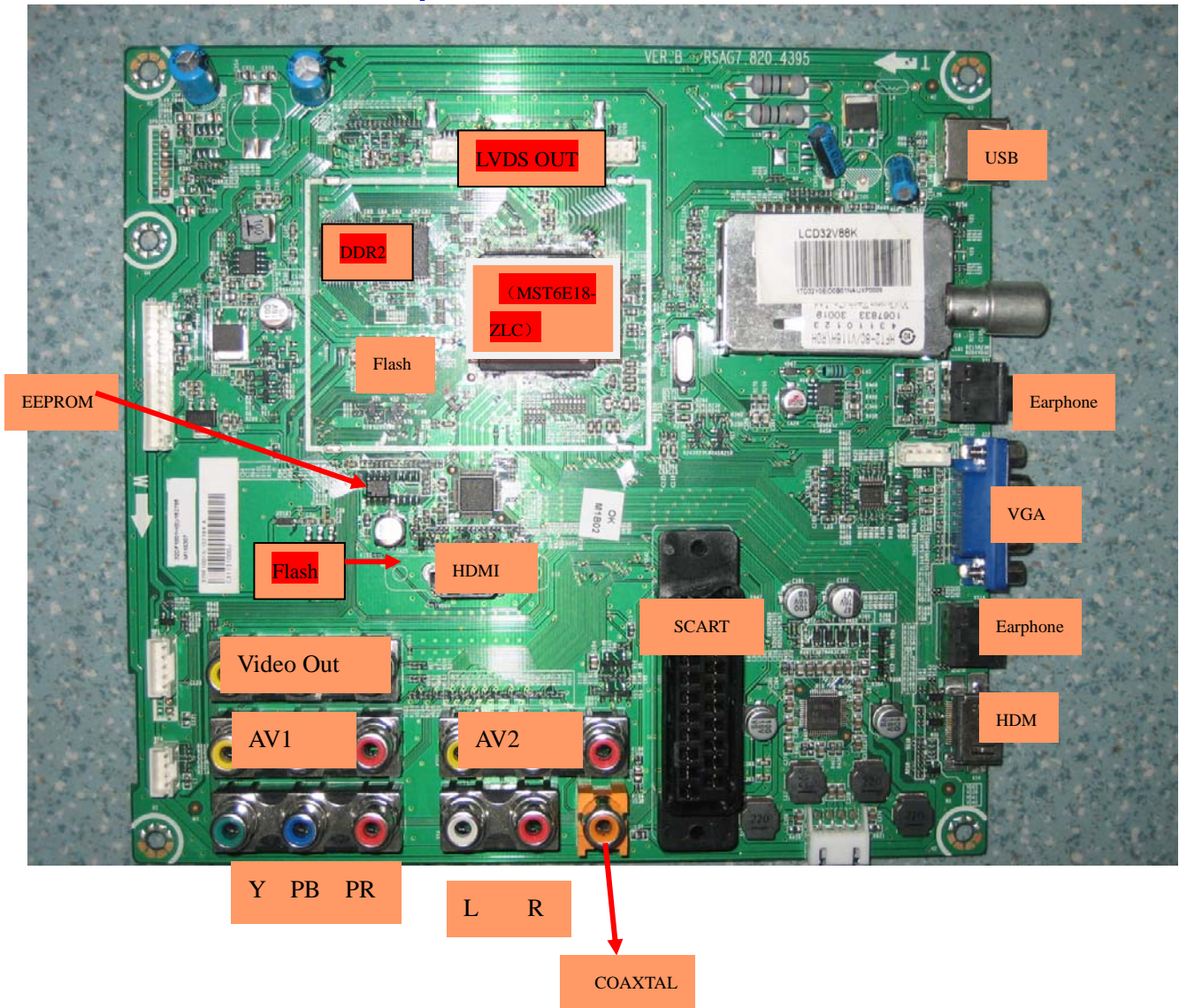
2. Product Specifications:

2.1 Specification:

Model Name		LCD32V88N
Dimension (WXHxD)(mm)	Without stand	788x511x101
	With stand	788x561x230
Weight(kg)	Without stand	10.5
	With stand	11
LCD Panel Minimum size (diagonal)		80cm
Screen resolution		1366x768
Audio power		6W+6W
Power consumption		Refer to the rating label
Power supply		Refer to the rating label
Receiving systems	RF	PAL/SECAM-D/K, I,B/G
	AV	PAL, NTSC
Environmental conditions		Temperature 5°C~ 35°C Humidity 20%-80% RH, Atmospheric pressure 86kPa-106kPa
Component Input		480I、480P、576I、576P、720P/60Hz、1080I/50Hz、 1080I/60Hz、1080P/50Hz、1080P/60Hz
VGA Input		VGA (640×480/60Hz) 、 SVGA (800×600/60Hz) XGA (1024×768/60Hz)
HDMI		RGB/60Hz (640x480,800x600,1024x768) YUV/50Hz (576I,576P,720P,1080I,1080P) YUV/60Hz (480I,480P,720P,1080I,1080P)
Accessory		Power cord Remote Battery User manual

2.2 Main Board:

LCD32V88K Main board Layout :

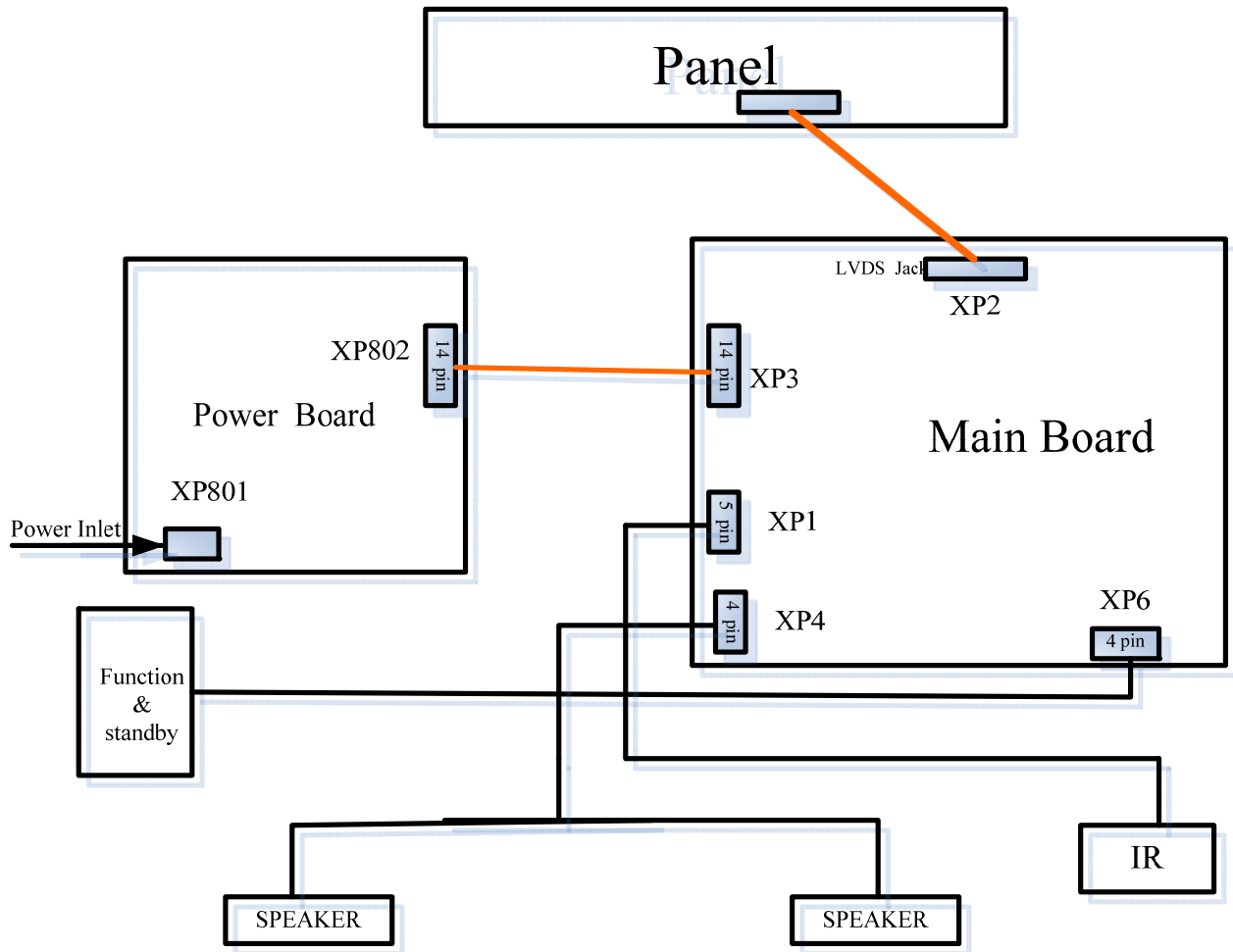


Note:

The above “main board image” is only for reference, other MST6E181 products refer to the actual units to determine the boards, please.

2.3 Wiring Diagram:

LCD32V88K



Note:

The above Wiring Diagram is only for reference, other MST6E181 products refer to the actual units to determine the connectors, please.

Chassis MST6E181VS includes products:

product	Panel Mode	LVDS (Main-Panel)
LCD32V88K	HC315BH-D04\ROH	HX2-2X15KLB400-HS-1\ROH
LEDN32K26K		

3. Factory/Service OSD Menu and Adjustment

3.1 To enter the Factory OSD Menu

a. With factory RC (remote control)

1. Press “M” button and enter factory mode.
2. Press “Menu” button and enter factory OSD menu.
3. Press “CH+”/“CH-” button select the function menu, press “VOL+”/“VOL-” enter the selected function menu. Press “VOL+”/“VOL-” button adjust values in the menu.
4. Press “M” button exit factory mode in the factory OSD menu.

When TV outgoing factory, user can not enter factory OSD menu with Factory Remote

b. With user's RC

1. Power TV On
2. Press Menu button and call up User OSD Menu
3. Select Sound-> Balance
4. When Balance value is “0”, Enter 1->9->6 ->9 in sequence.
Note: If necessary, re-do number keys.
5. Factory OSD appears.
6. Press the standby button then AC turn off and restart the TV, which can exit factory OSD menu.

3.2 Factory OSD Menu

The Factory OSD Menu comprises Factory Menu and Design Menu .

3.2.1、 Factory Menu

FACTORY MENU

WHITE BALANCE
 AUTO CALIBRATE
 LOGO
 FUNCTION
 INIT
 WHITE PATTERN
 INFORMATION

WHITE BALANCE

R DRV 132
 G DRV 128
 B DRV 132
 R CUT 128
 G CUT 128
 B CUT 128

COL TEMP STANDARD
 PANEL SELECT

AUTO CALIBRATE

Only in component and VGA
 SOURCE ,The “ADC Adjust”
 Can be chosen.

LOGO

NULL
 HISENSE
 WELCOME
 LLOYD

FUNCTION

TOFAC	M
POWER MODE	SAVE
software Upgrade	
Panel	0
Save NTSC Channel	0
Channel change	
Panel Life	0
IT6633EQ	7
HDMI Cable Normal	
HDCP out	

FACTORY INIT

QINGDAO
 HUANGDAO
 HUNGARY
 FRANCE
 AUSTRALIA

 CLEAR PROTECTLY
 CLEAR UNPROTECTLY

WHITE PATTERN

(Red; Green ;White)

INFORMATION

BULLD TIME:

PANEL TYPE:

3.2.2、 Design Menu

DESIGN MENU

PICTURE MODE

AUDIO MODE

PICTURE CURVE

AUDIO CURVE

SSC SETTING

SAVING MODE

OVERSCAN

VD NONSTAND

VIF NONSTAND

AUDIO NONSTAND

PICTURE MODE

MODE	STANDARD
BRIGHTNESS	62
CONTRAST	53
COLOUR	53
SHARPNESS	70

AUDIO MODE

MODE	USER
120HZ	50
500HZ	50
1.5KHZ	50
5KHZ	50
10KHZ	50

PICTURE MODE	CURVE	BRIGHTNESS
CURVE 0		40
CURVE 25		88
CURVE 50		135
CURVE 75		145
CURVE 100		10

AUDIO MODE	CURVE	VOLUME
CURVE 0		0
CURVE 25		25
CURVE 50		50
CURVE 75		75
CURVE 100		100
PRESCALE		

SSC SETTING

SSC MIU	ON
MIU SPAN	35
MIU STEP	10
SSC LVDS	ON
LVDS SPAN	
LVDS STEP	

SAVING MODE

USER MIN	100
BRIGHT	2
SOFT	100

Note:

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

4. Software Upgrading

Before upgrading, read the following.

- 1、 Before upgrading, Write down the ADC Calibration values of the channel of VGA and component.
- 2、 Upgrade the software.
- 3、 To clear the EEPROM .
 - A Select the item “Clear Unprotected”.
 - B Press VOL+ button to clear the EEPROM data.
 - C Close the OSD menu after 5 seconds.
 - D Restart the TV.
- 4 Write the ADC Calibration values copied just now into the channels of VGA and component.
- 5、 After the operation above all, necessarily, Renew search the channels for the users.

4.1 Get ready for upgrading

- 1、 The software is upgraded by a burning tool- ISP_TOOL.exe

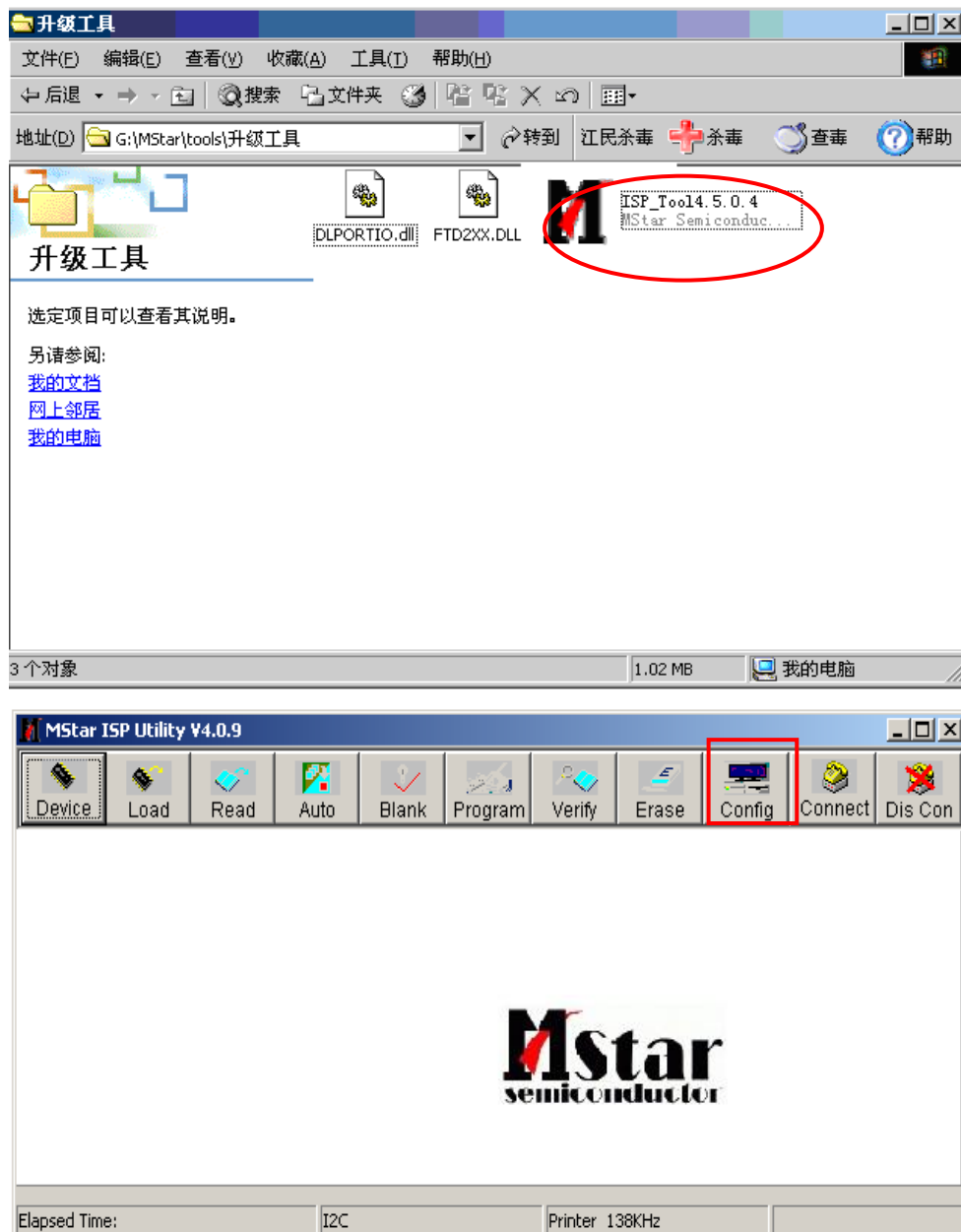
4.1.1 Install the ISP_TOOL4.5.0.4-----only for the first time update.

- 2、 Find the folder where the ISP_TOOL4.5.0.4 lies in.
There are three folders/files in this folder together.
DLPORTIO.dll and FTD2XX.DLL must be in the same folder



Double click the ISP_TOOL4.5.0.4 icon, and then a dialog window will show as below.

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Click the” **Config** “button. And then a dialog window will show as below.

Draw ☒ on the front of “Use USB”

Port Type setting is USB

Base Addr setting is 0x38C

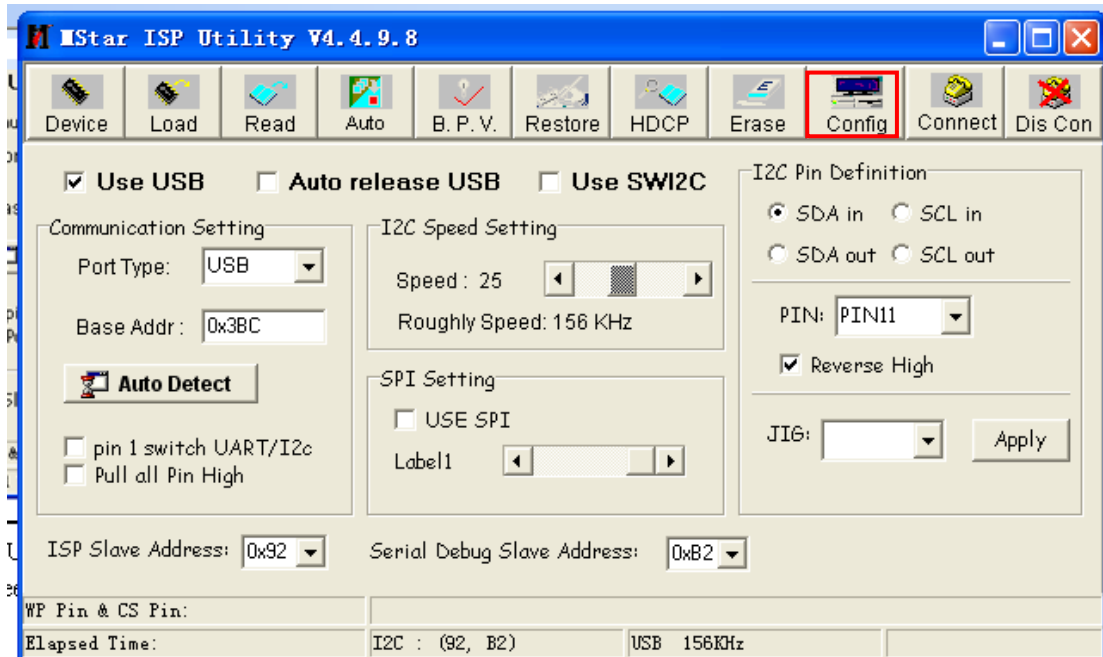
ISP Slave Address choose 0x92

Serial Debug Slave Address choose 0xB2,

As following

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LCD TV Service Manual



Click the “Connect” button, if appear the following figure, It indicates that the ISP_TOOL has connected.

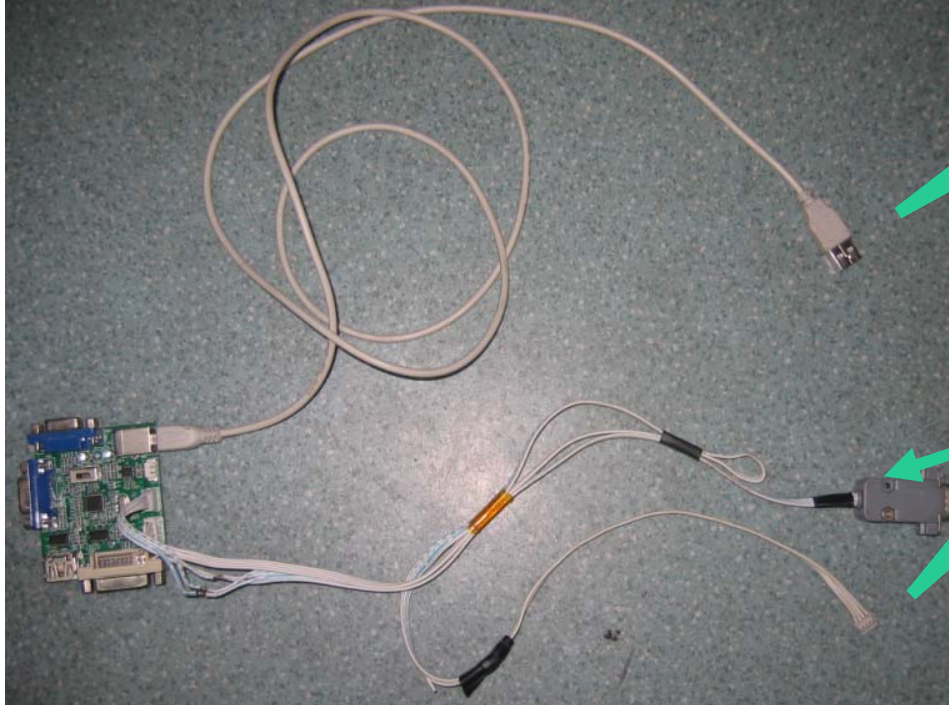


If appear the following figure, It indicates that the ISP_TOOL has not connected. Please click the “Dis Con” button and “Connect” button to connect..



4.1.2 Hardware connecting

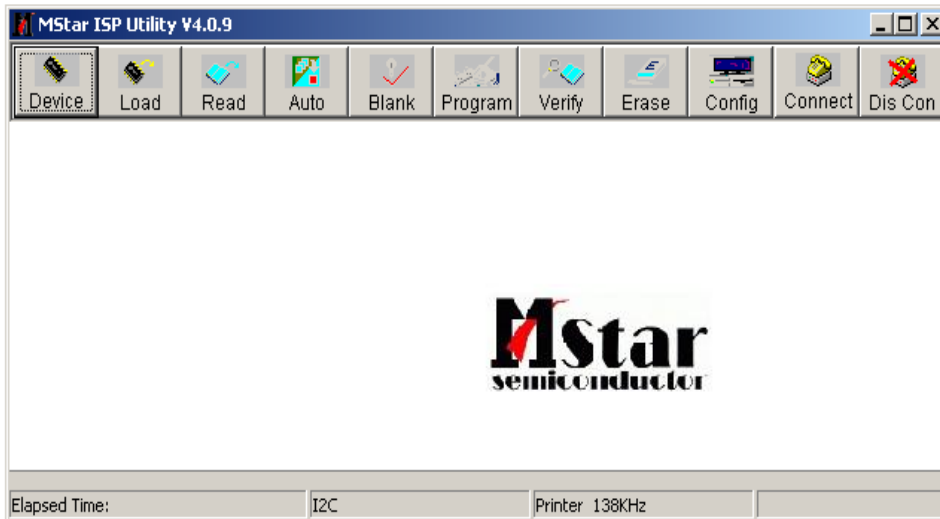
You can update the software through a special tool (as following)



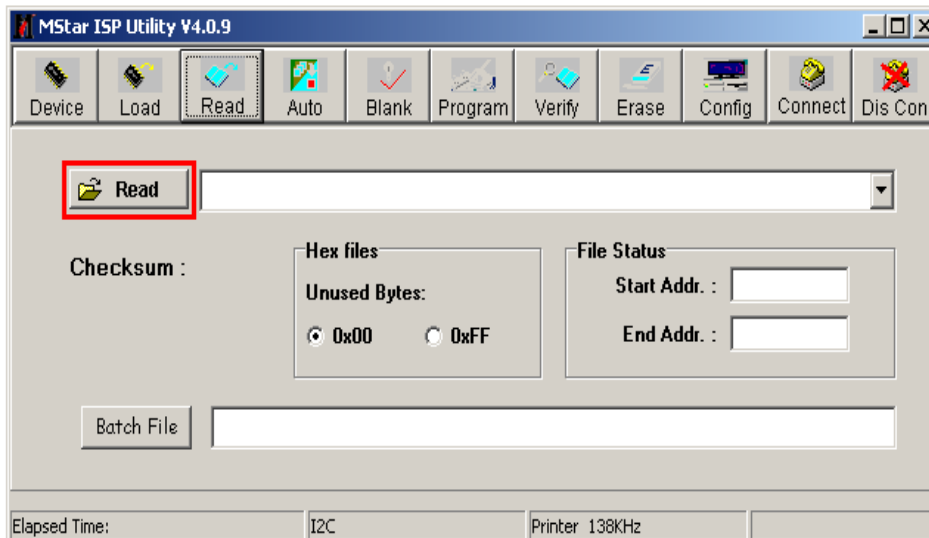
Connect the Debug board to the TV use VGA interface or the RS232 (4 pin), the other USB port to the compute.

4.2 Upgrading with the ISP_TOOL4.5.0.4

4.2.1 Double click the ISP_TOOL4.5.0.4 icon and a dialog window will show as following.

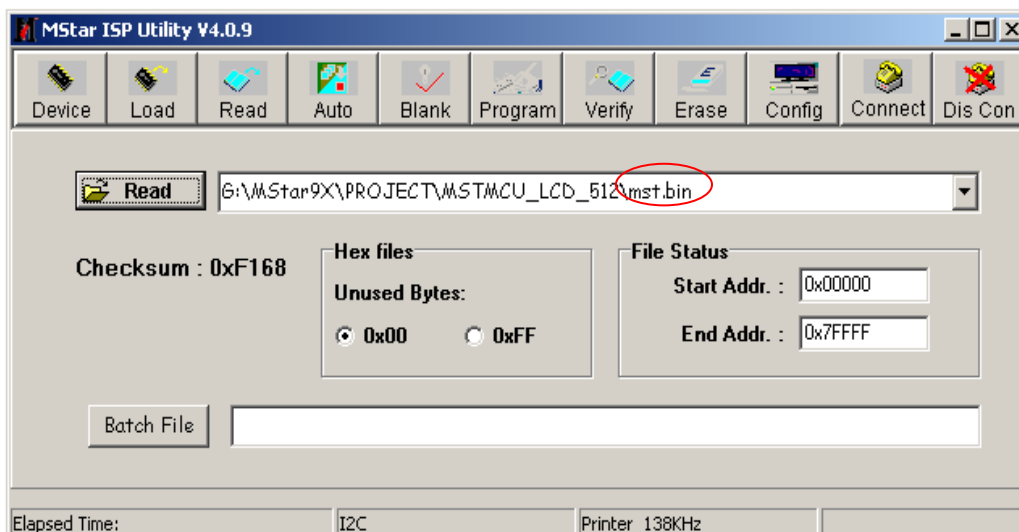
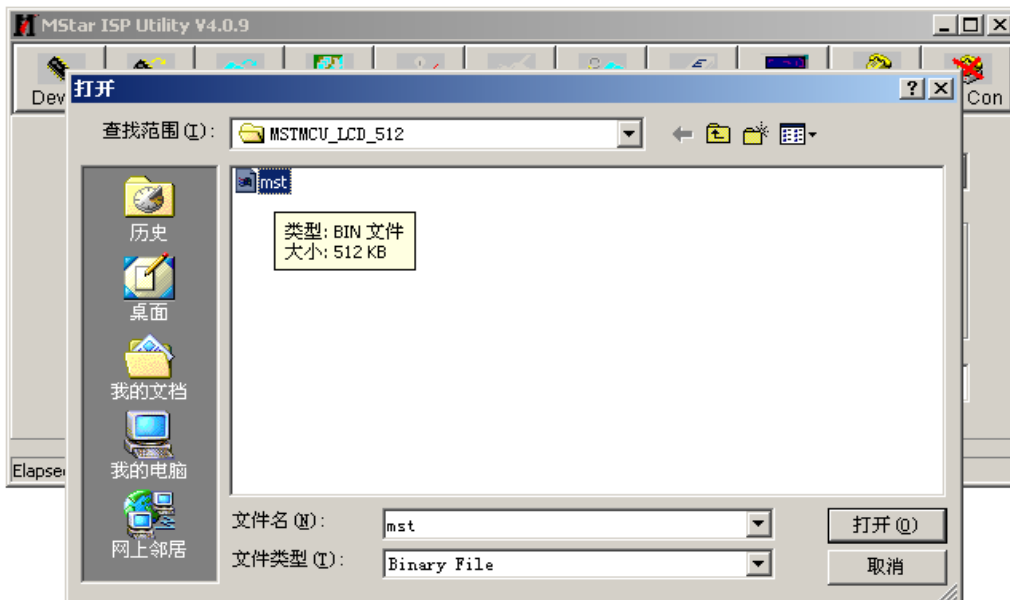
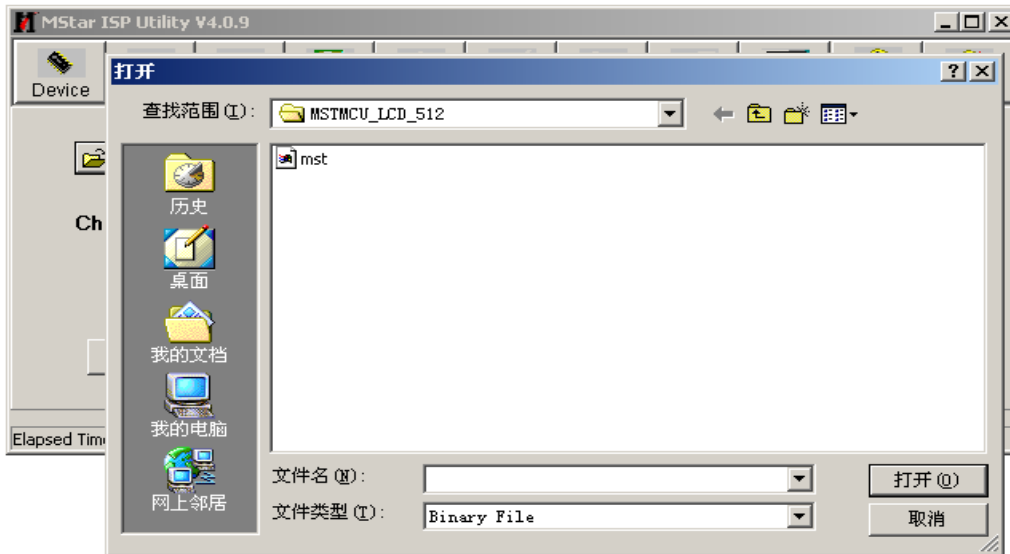


Click the "Read" button.



LCD TV Service Manual

Choose the update file from the folder.

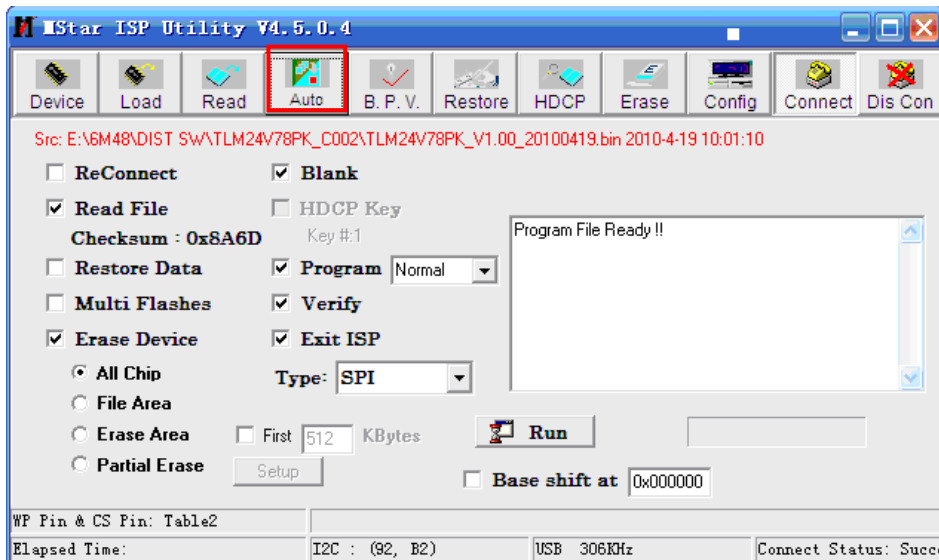


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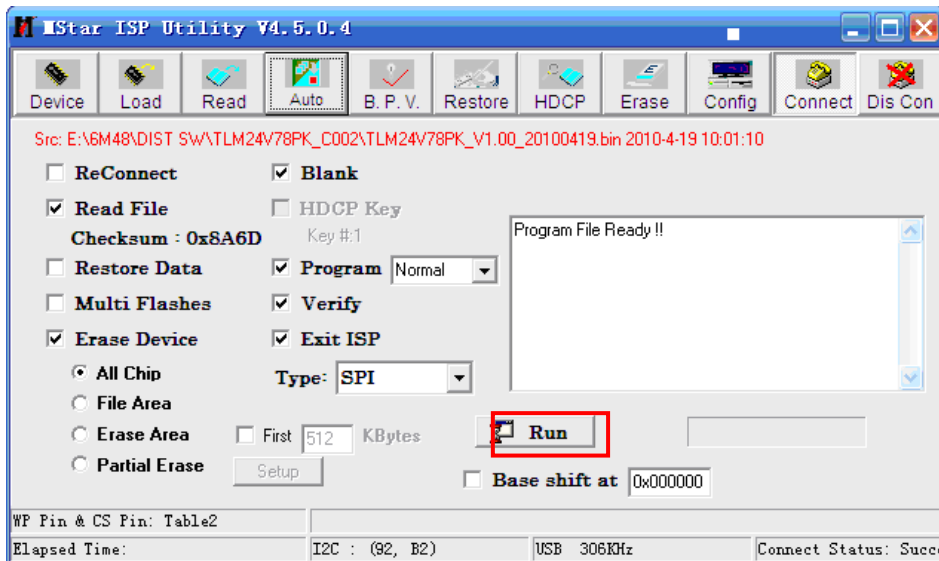
LCD TV Service Manual

The update file has been chosen successfully.

Click the **“Auto”** button and choose parameters as following.



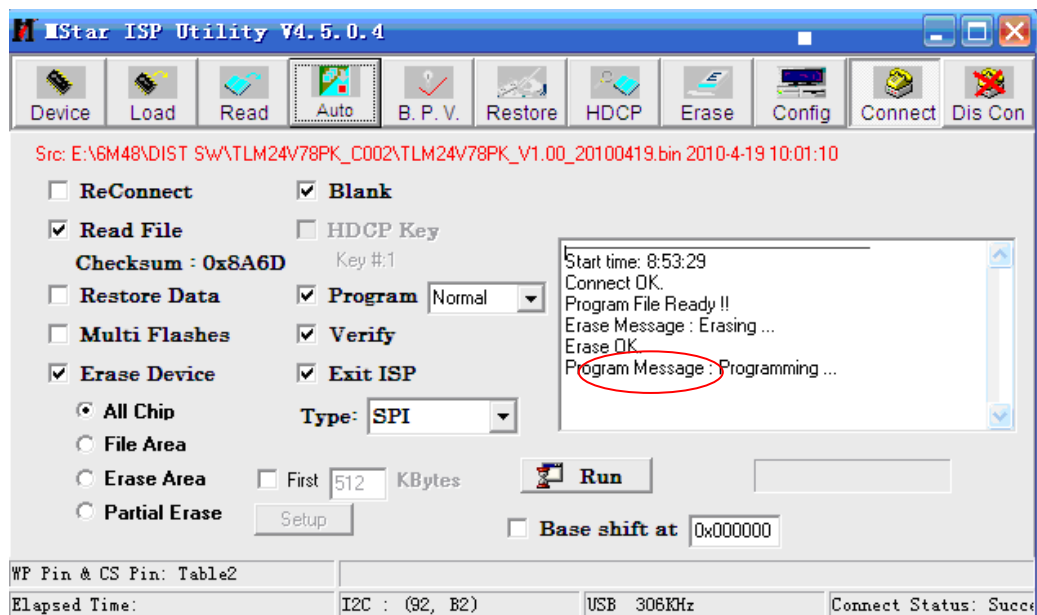
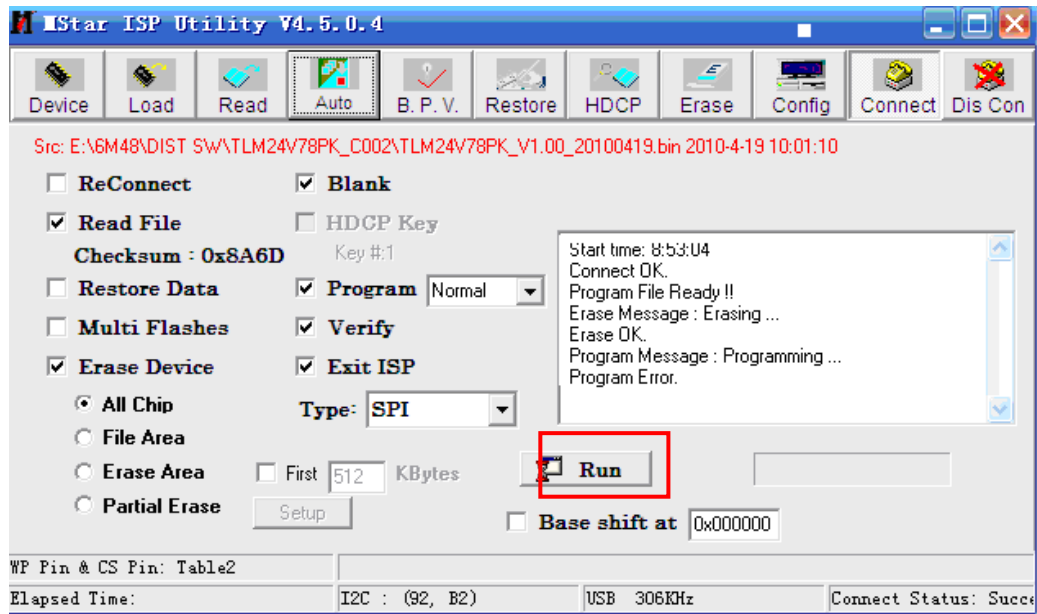
Click the **“Run”** button



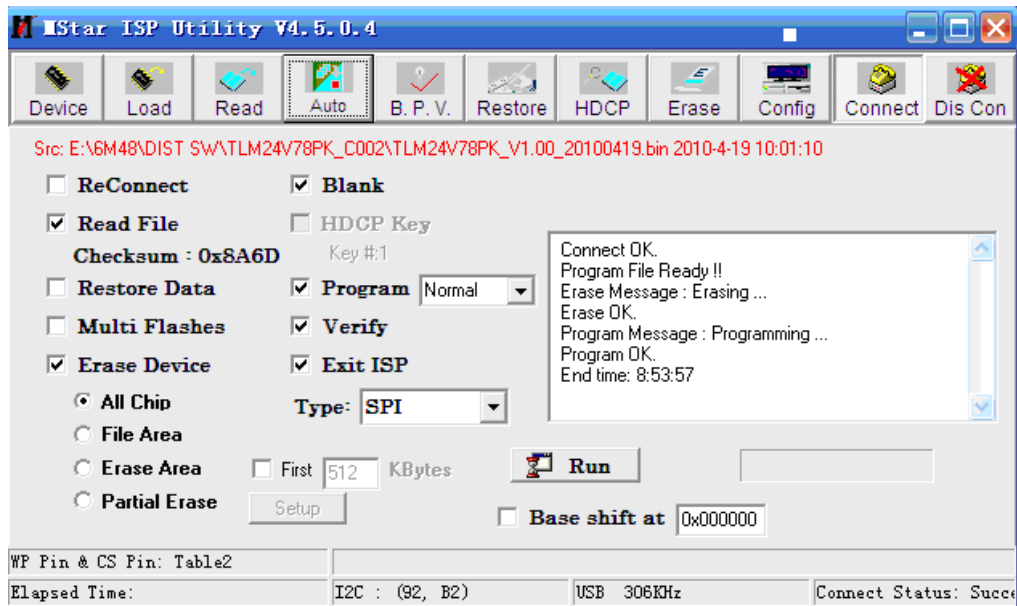
If appear green **“PASS”**, it indicates that the **“software written”** is successful .

If show error message **“then click the “Run” button again and again, till show the following dialog window.**

LCD TV Service Manual



LCD TV Service Manual

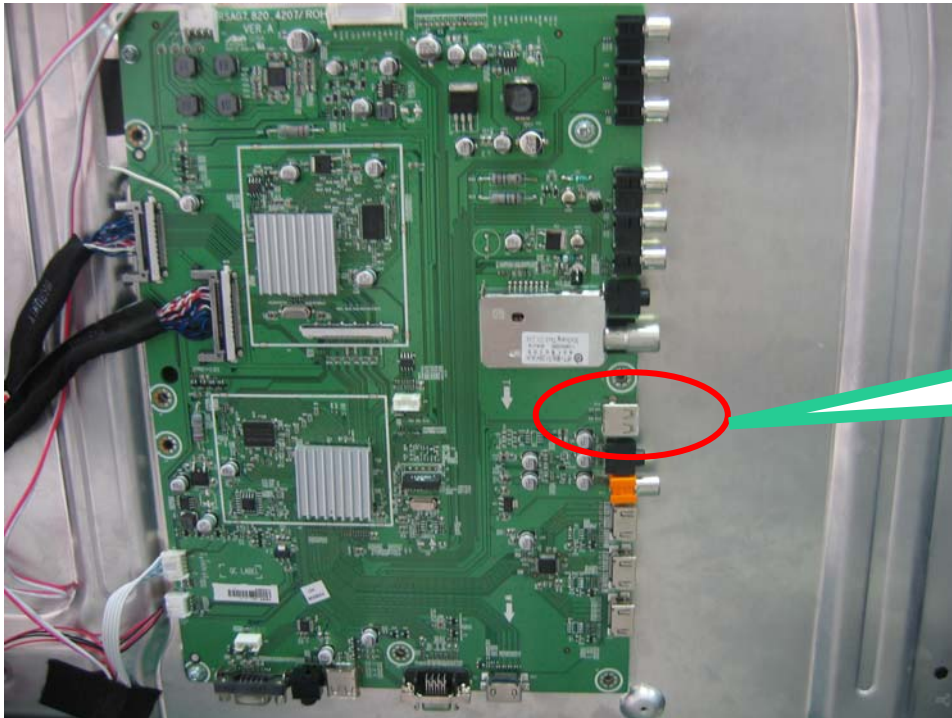


The above appears on the screen-the word “PASS” shows in the information displaying window, indicating upgrading is over.

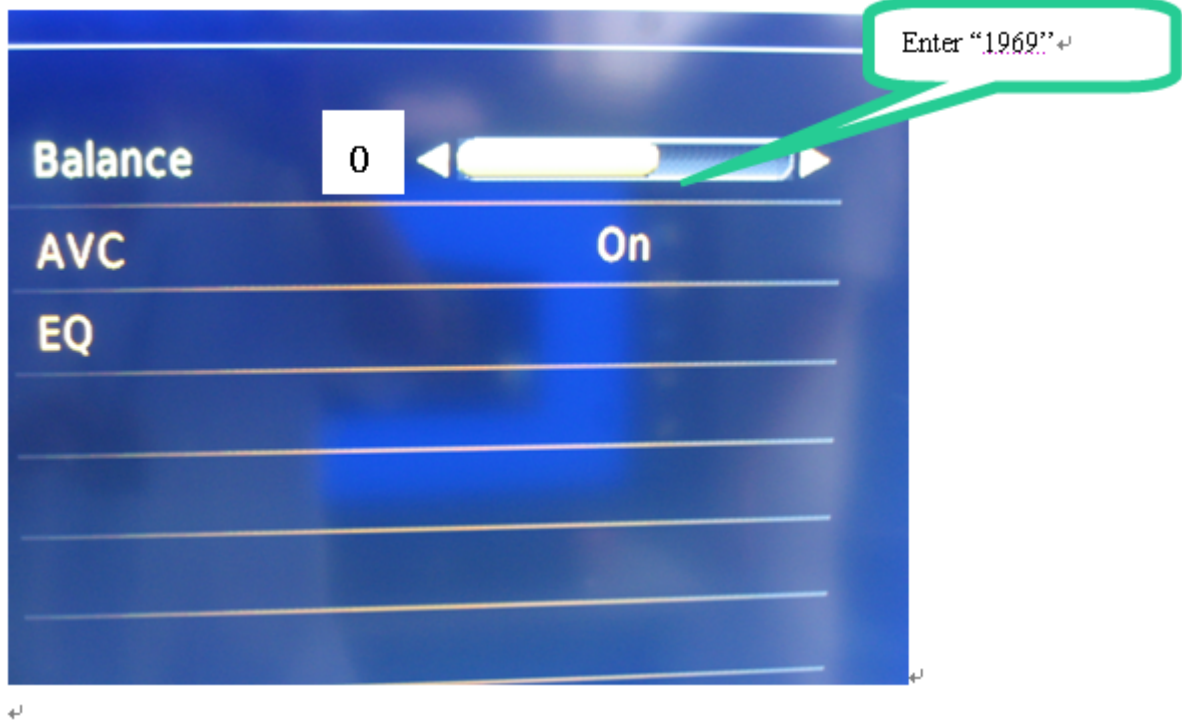
4.3 USB Software upgrading

Upgrade the main software:

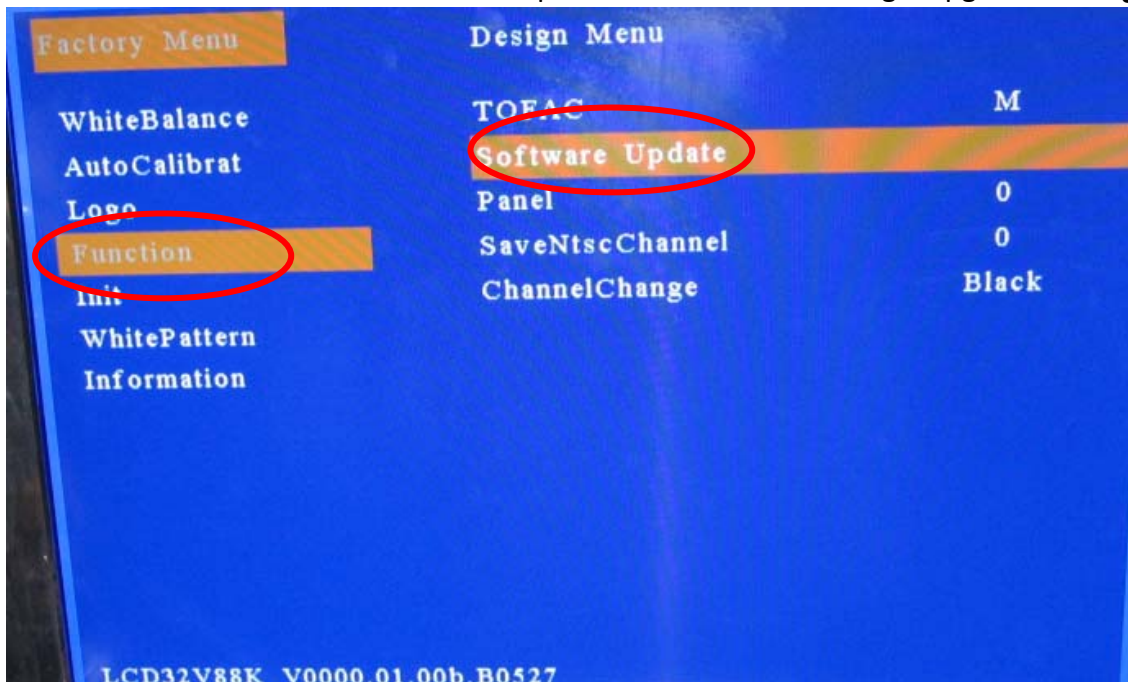
Copy the Updating software to the USB root directory, the software named *.bin. for example the TV LCD32V88K named LCD32V88K.bin. insert the USB disk to the side of the USB interface of the main board. As figure:



Turn on the TV and enter the factory menu, when balance is "0", press the password "1969".
As figure:



Then choose "FUNCTION"----"Software update"--- enter " ok* to begin upgrade. **As figure:**





Software Upgrating Please waiting...

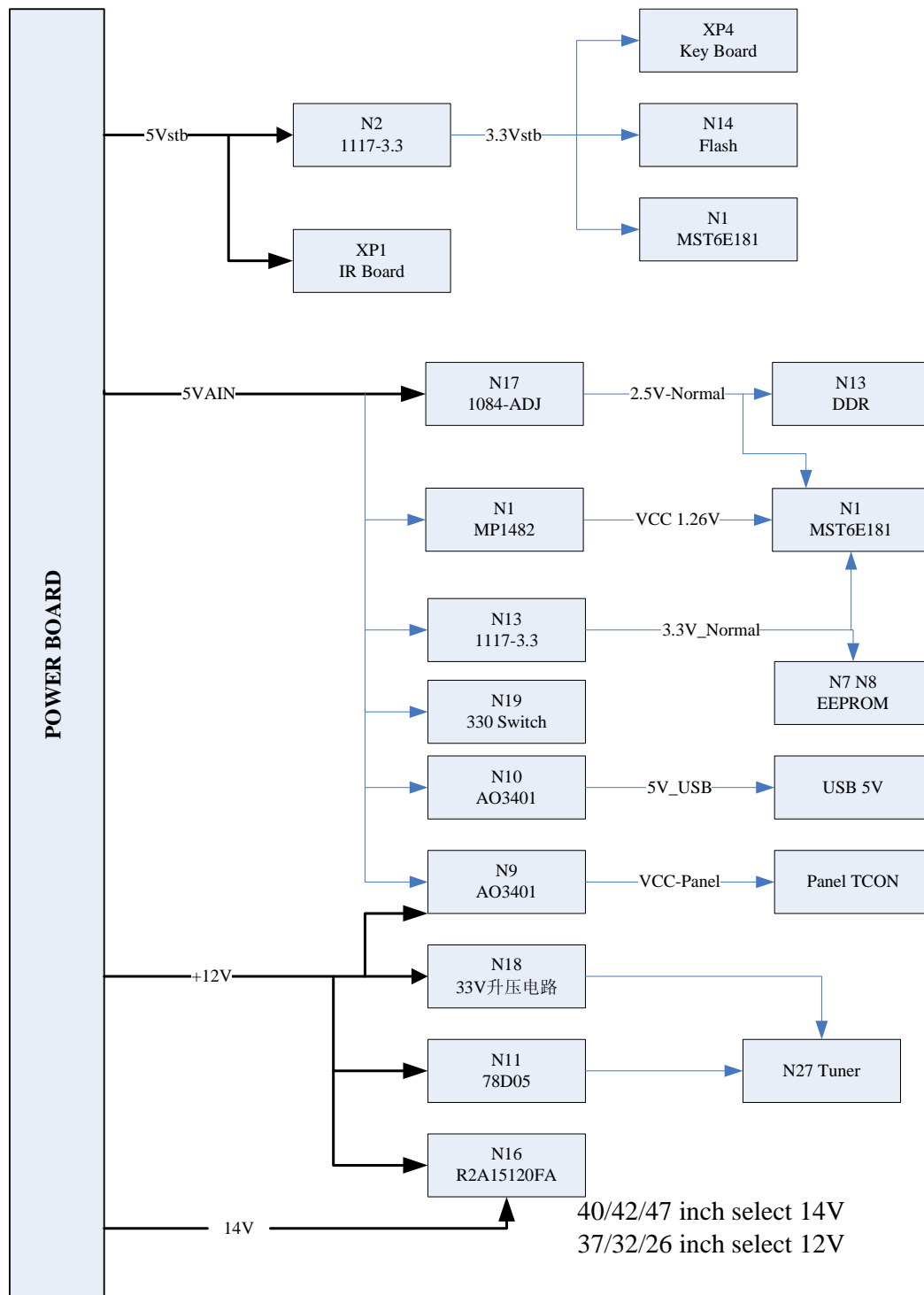
After update success, had better AC power off and restart the TV.

Confirm the software Version in the Version Menu. If the update is successful, enter Factory Init Menu and select “Clear Unprotectly”

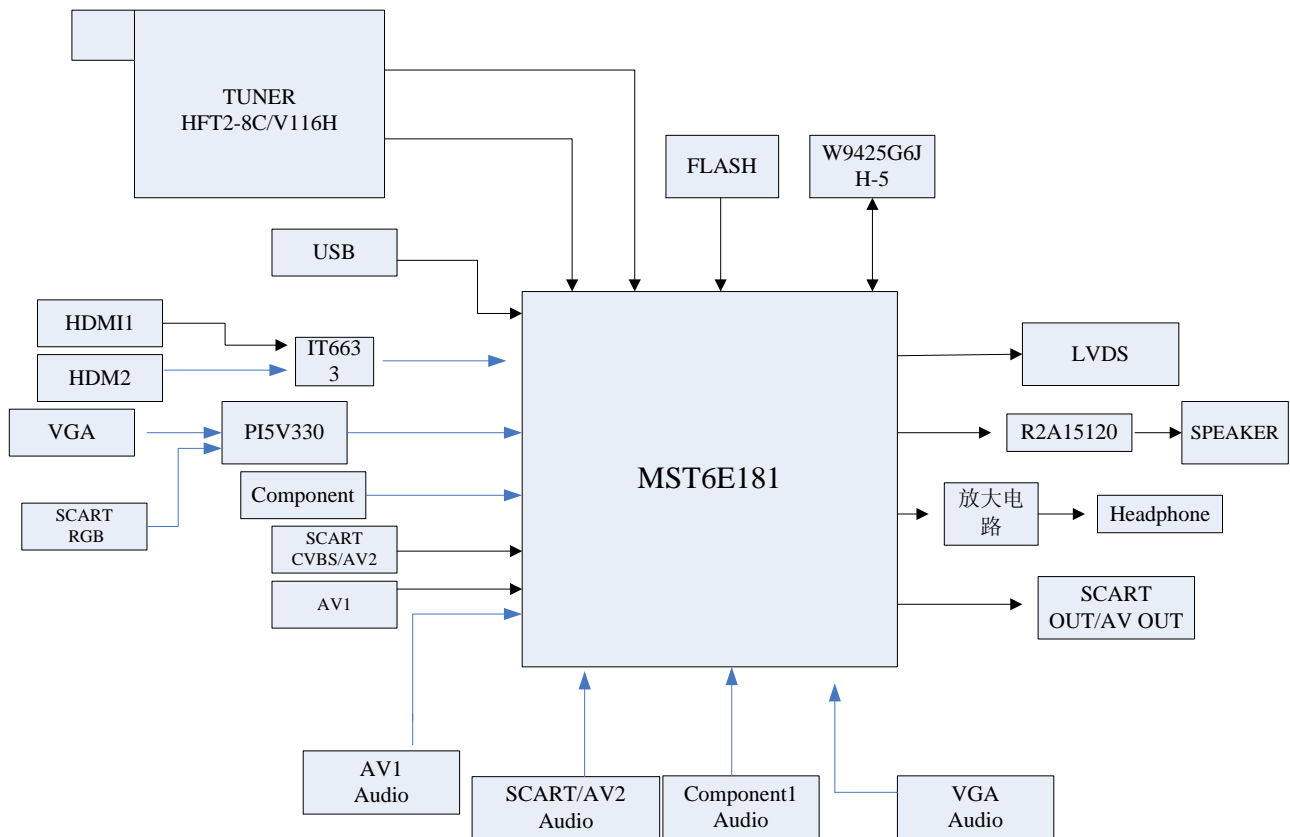
- a. Press VOL+ button to clear the EEPROM data.
- b. When the “Clear Unprotectly ” button becomes white, turn off the power.
- c. Restart the TV.

5. Power assign & Signal process

5.1 MST6E181VS Power assign

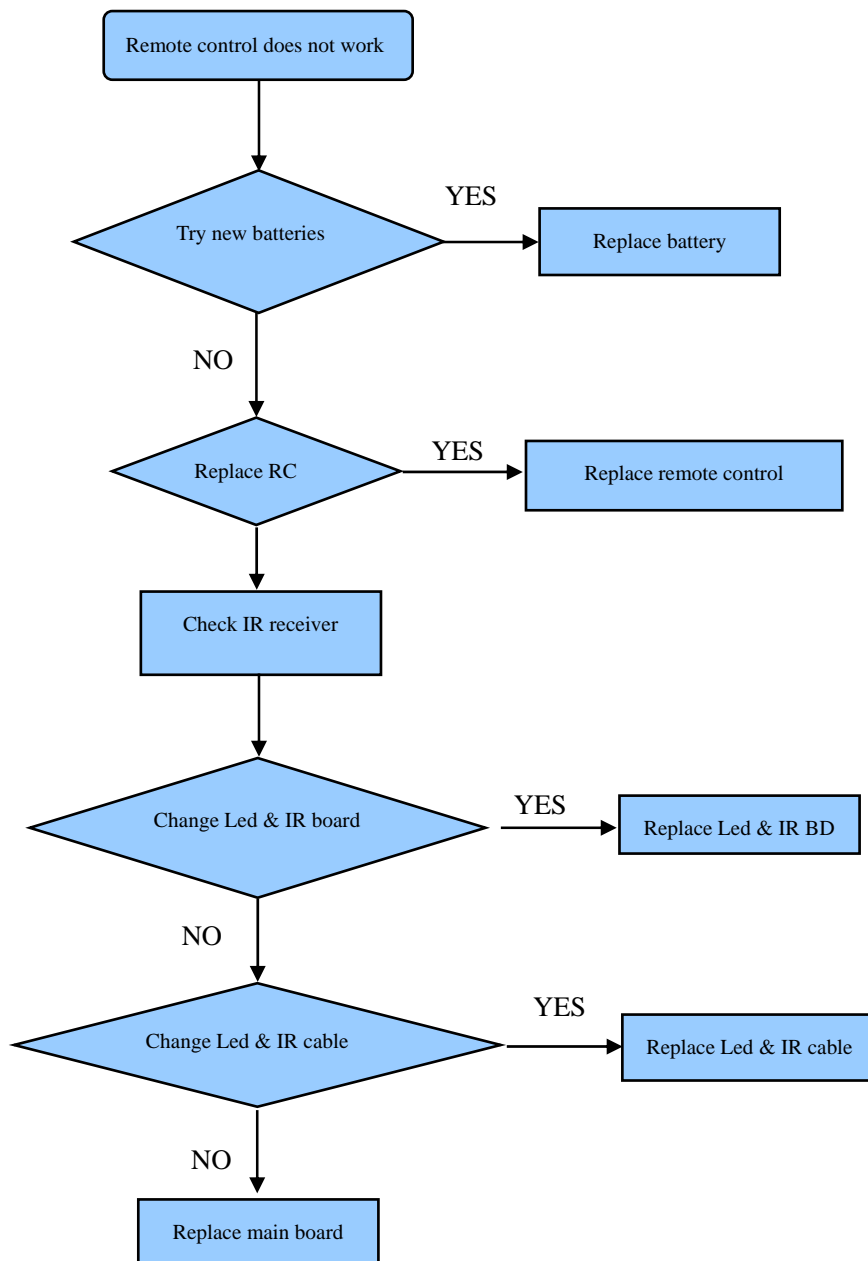


5.2 MST6E181VS Signal process

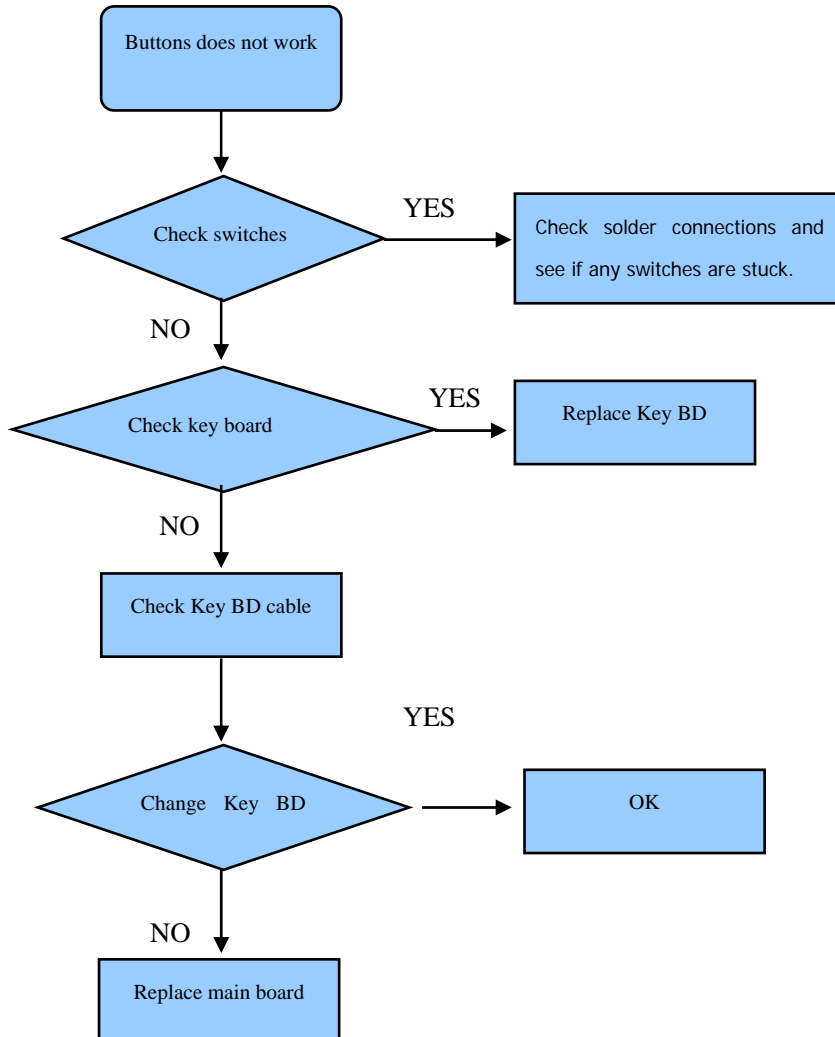


5.3. Troubleshooting

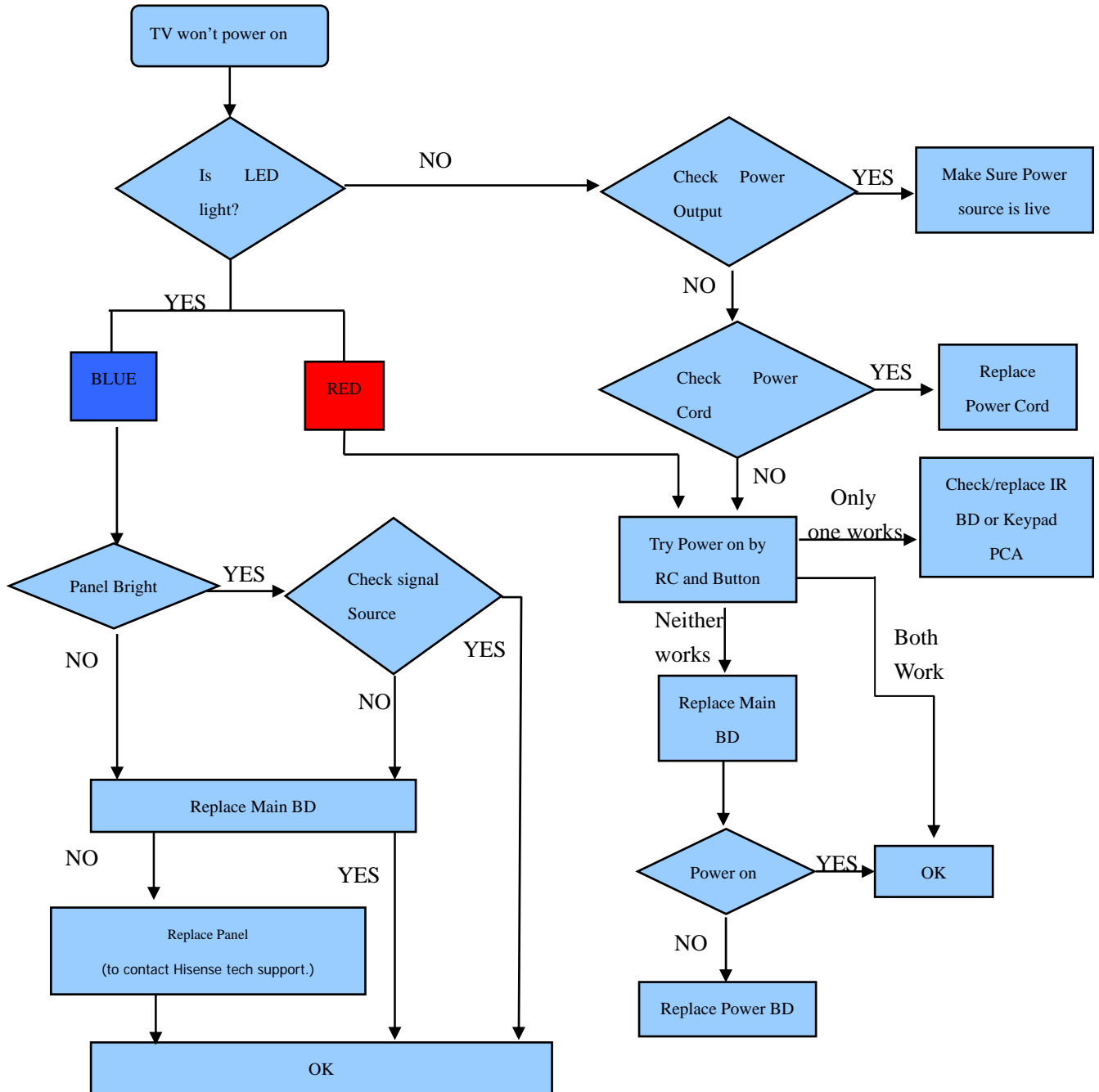
5.3.1 Troubleshooting for Remote Control



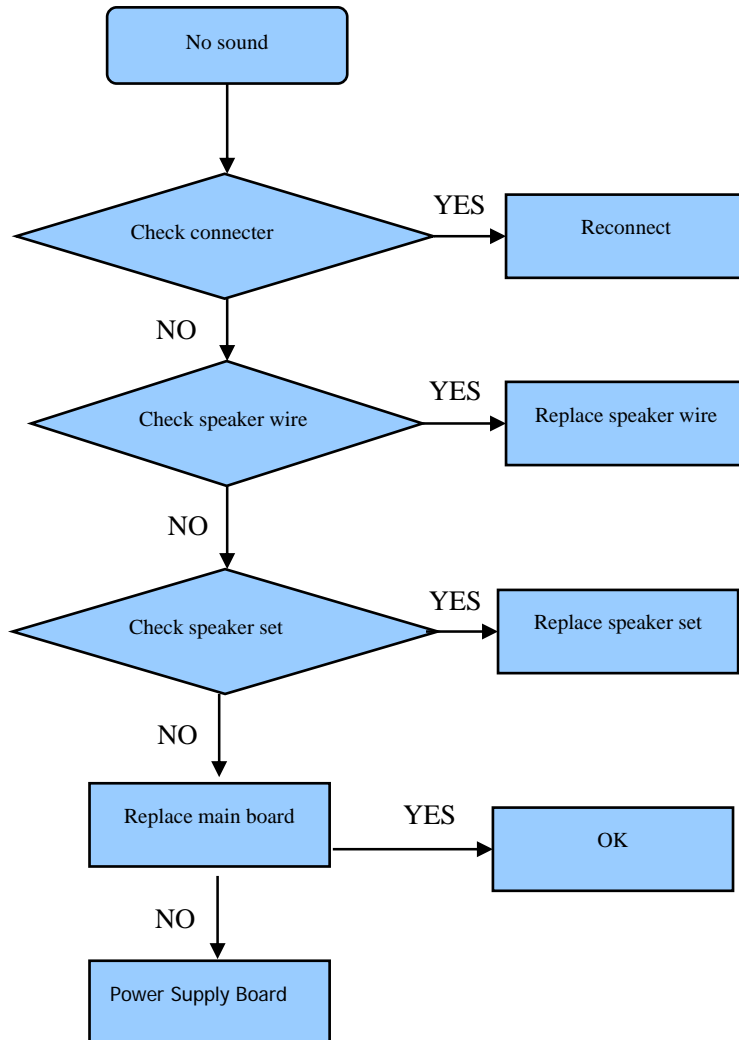
5.3.2 Troubleshooting for Function Key



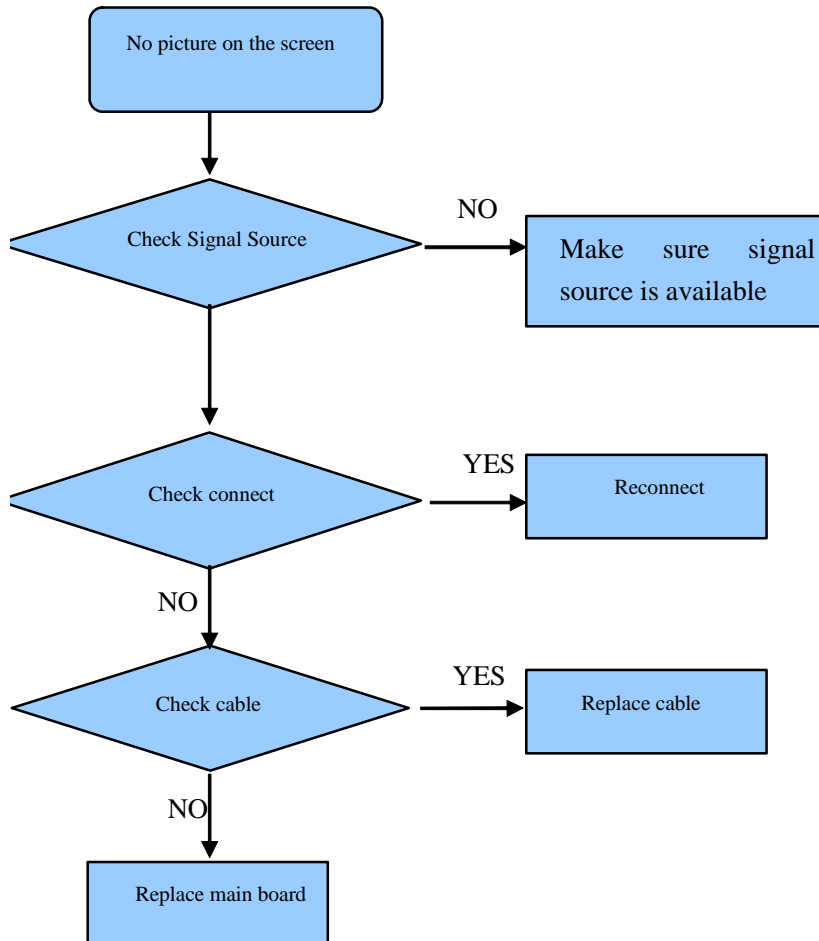
5.3.3 TV won't Power On



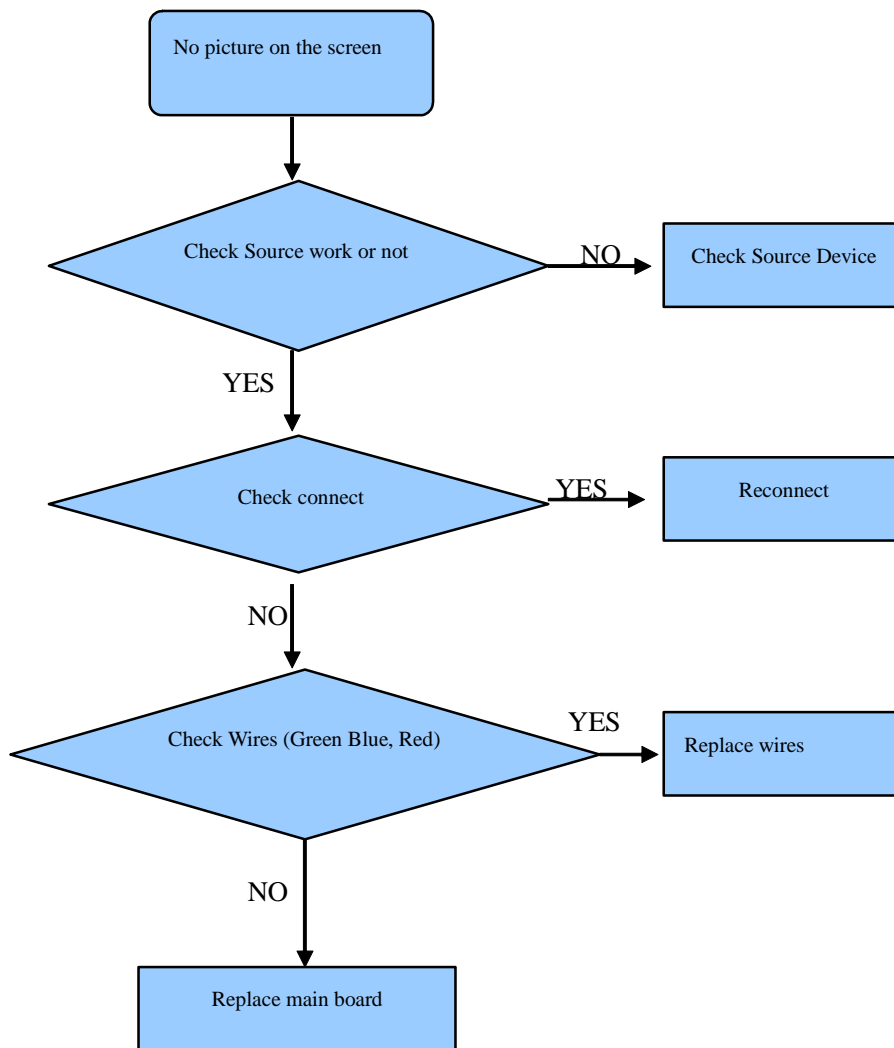
5.3.4 Troubleshooting for Audio



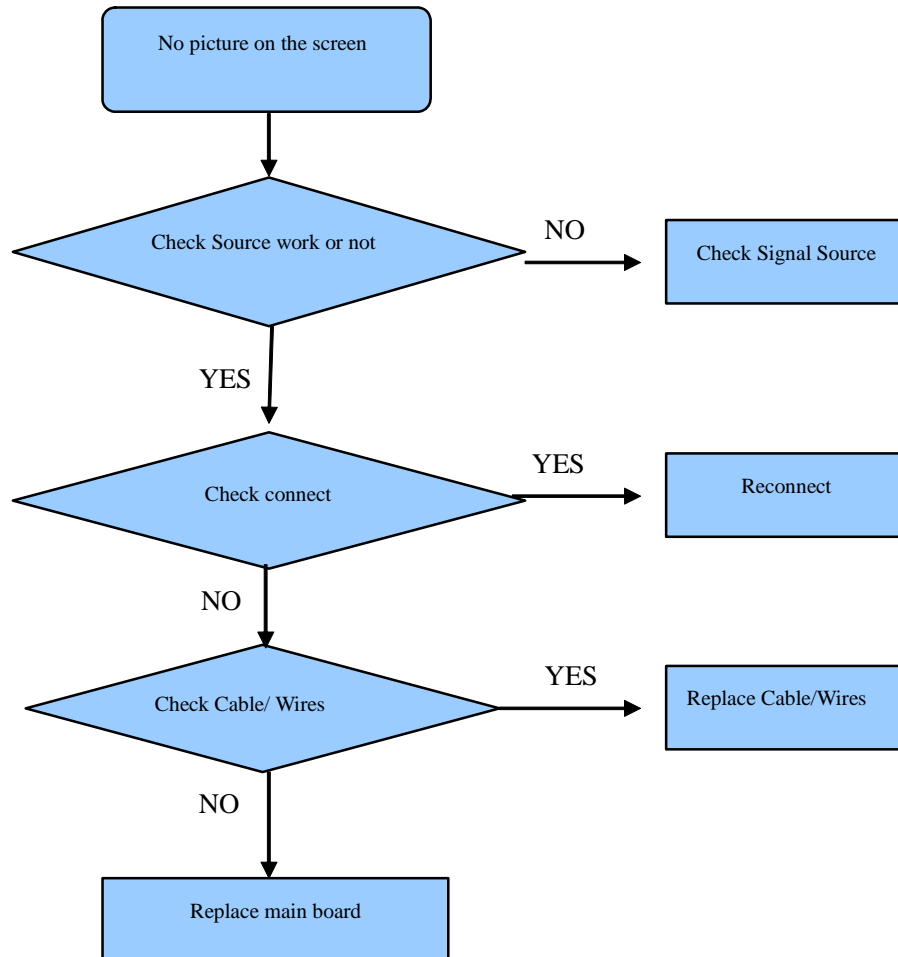
5.3.5 Troubleshooting for TV/VGA/HDMI input



5.3.6 Troubleshooting for YPbPr input

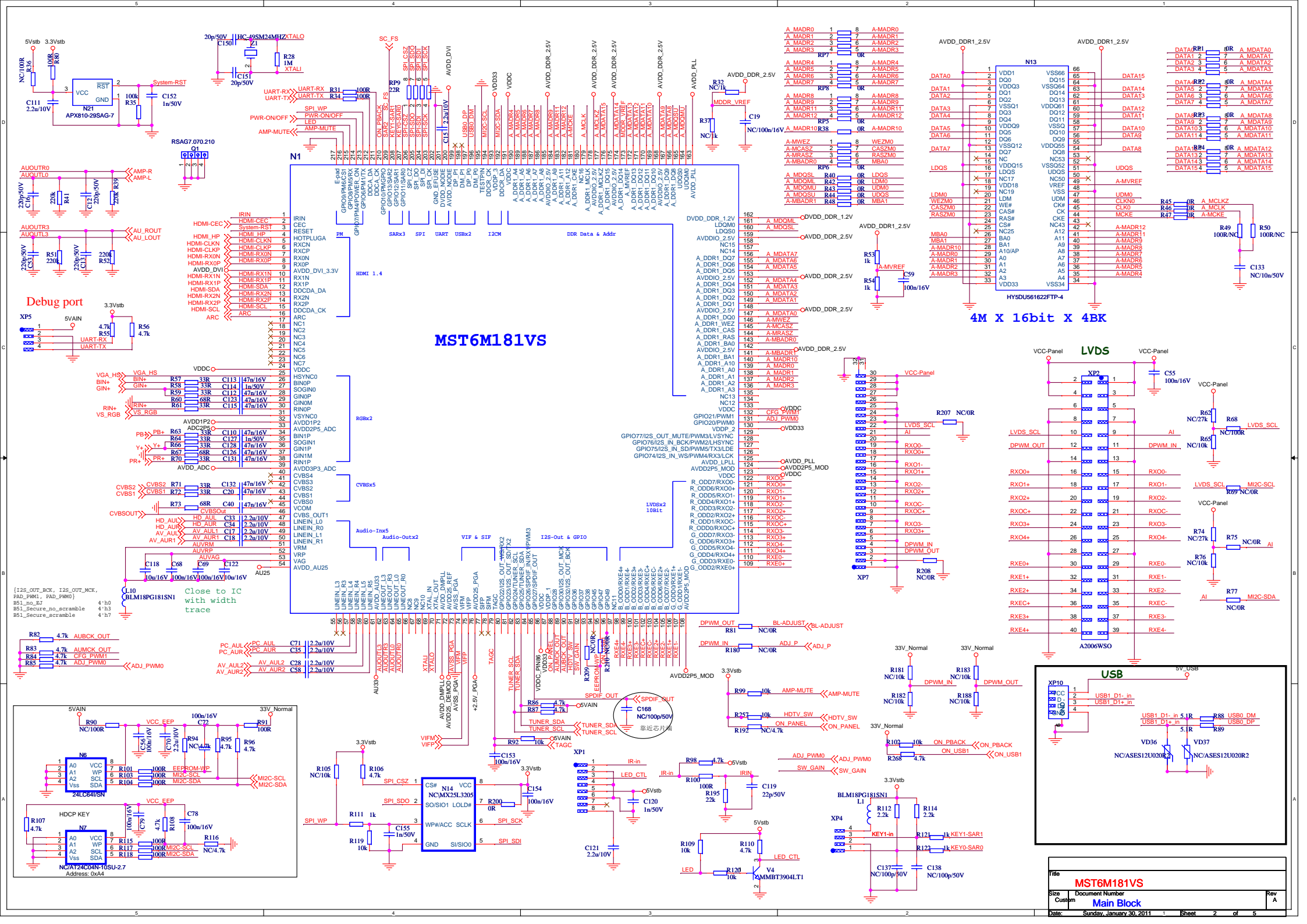


5.3.7 Troubleshooting for Video/ input

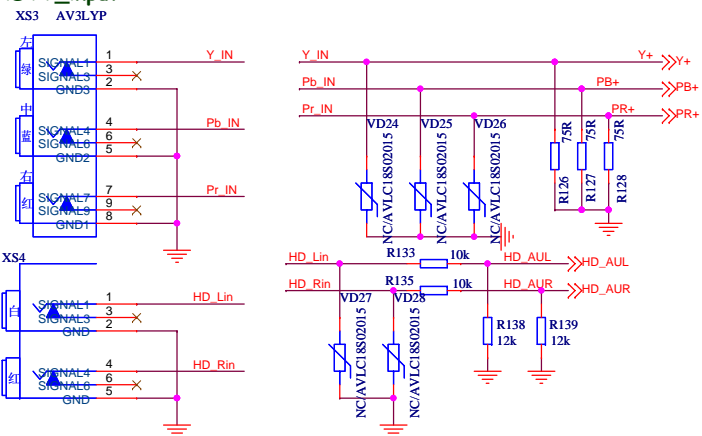


6. Schematic circuit diagram

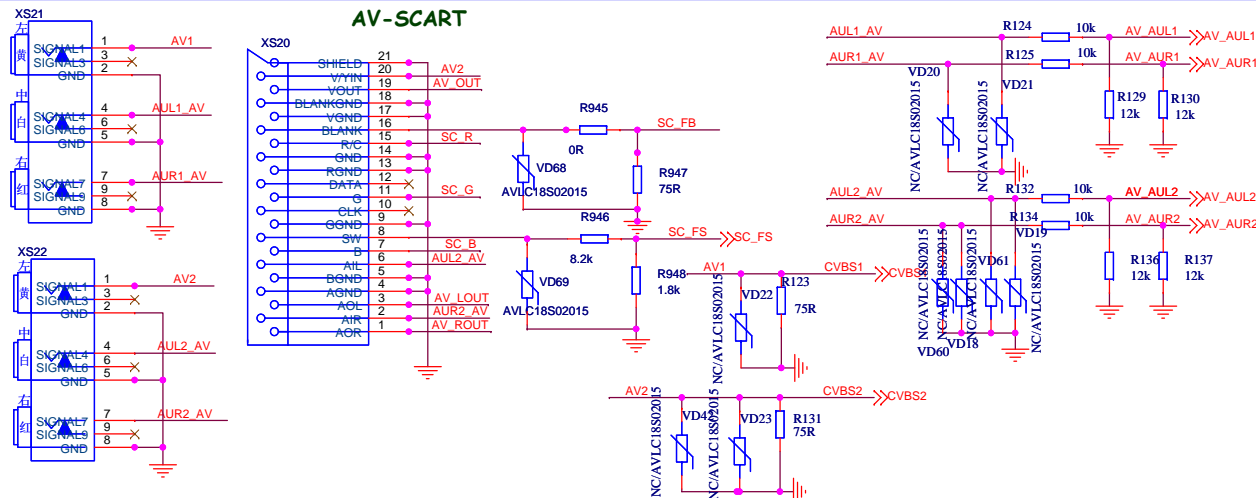
7. Explode view



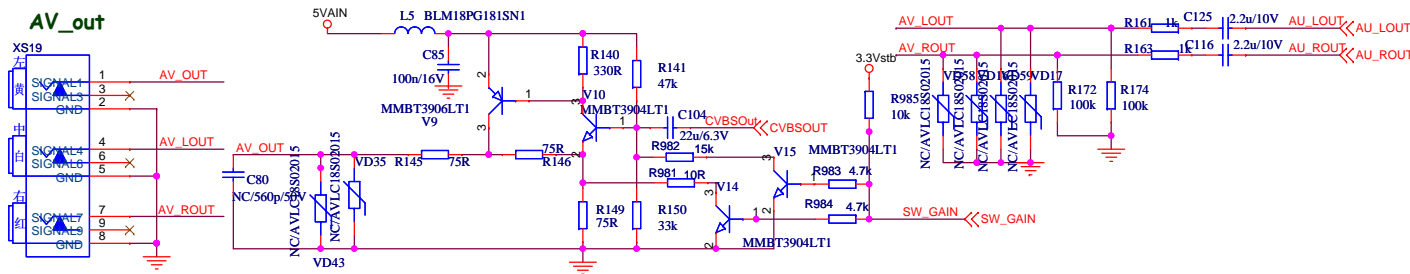
HDTV_input



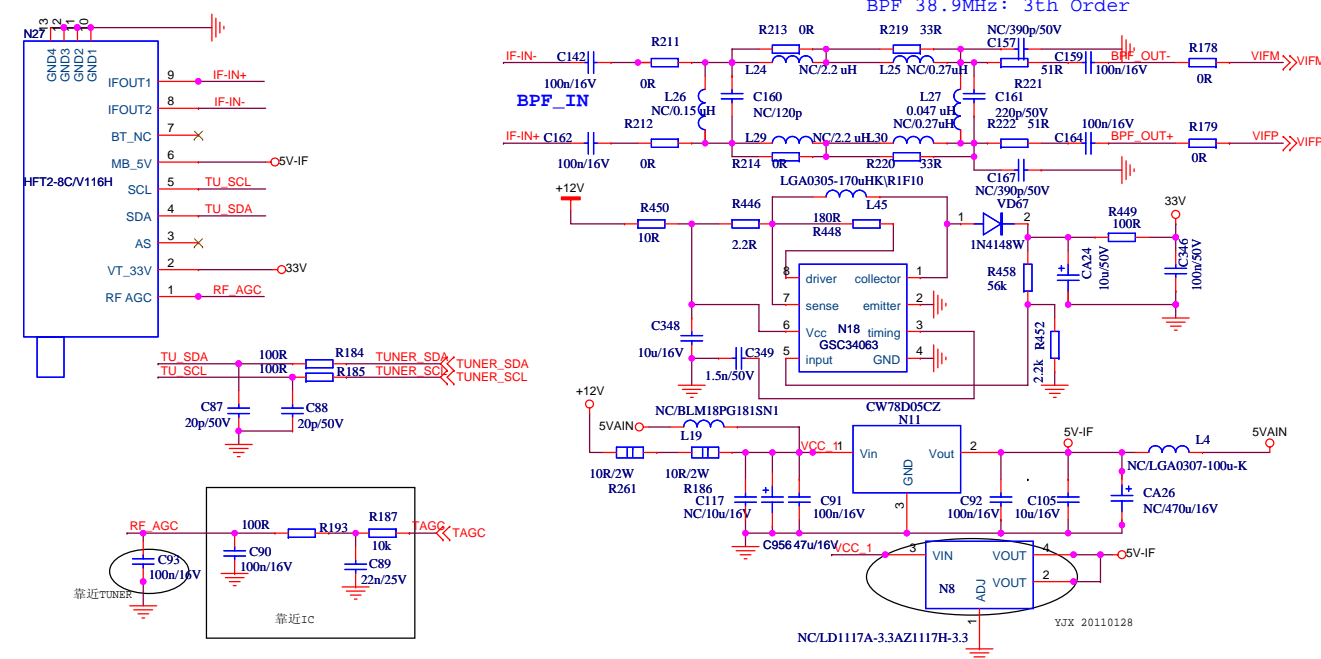
AV-SCART



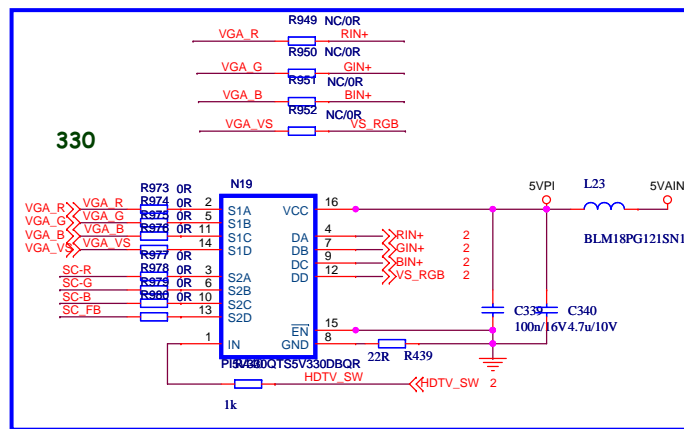
AV_out



Tuner



330



Title
MST6M181VS

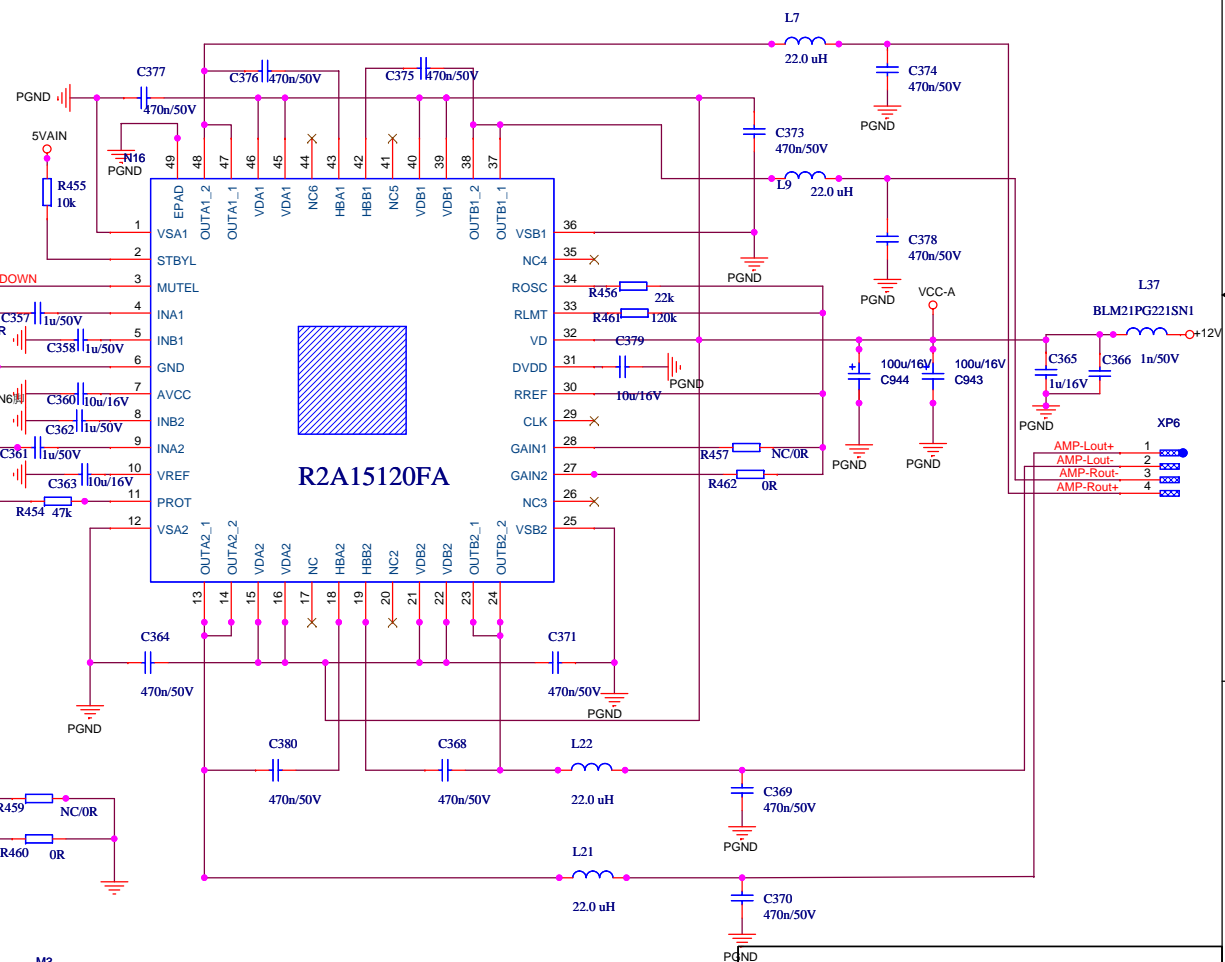
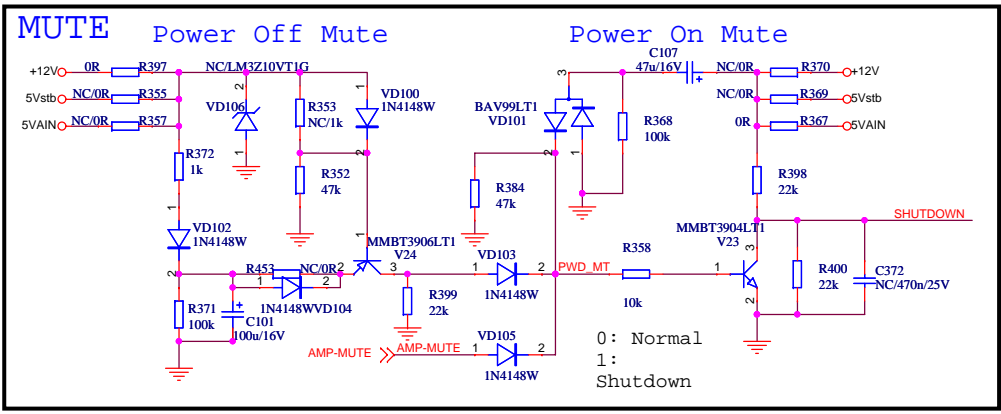
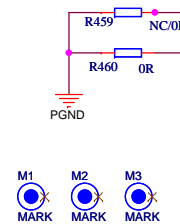
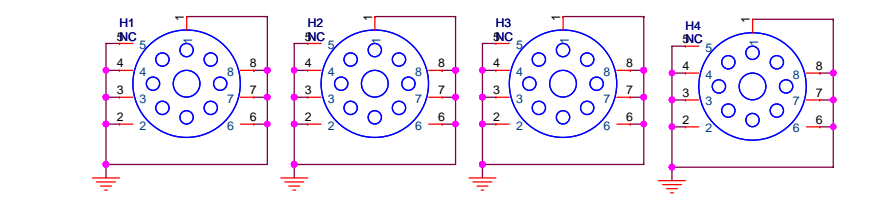
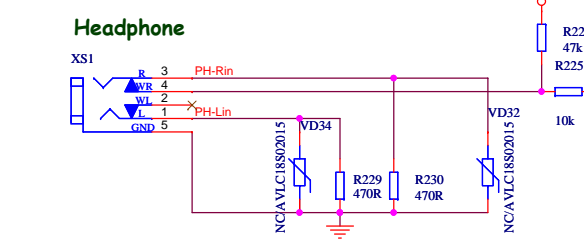
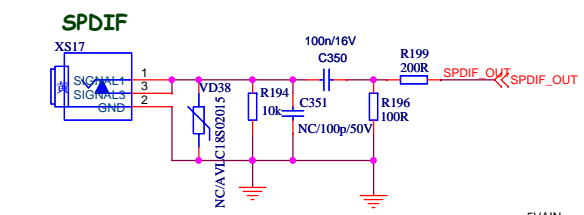
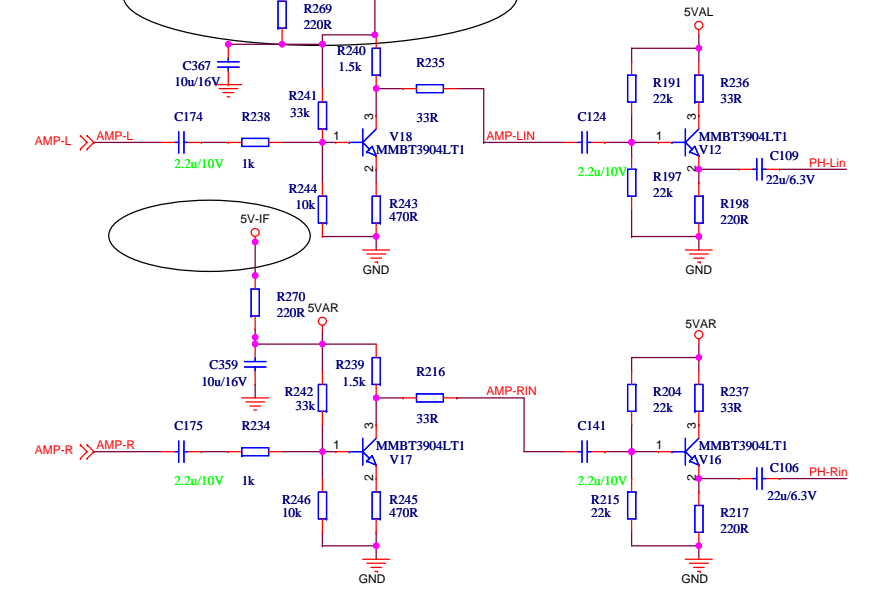
Size A3 Document Number
HDTV & AV & TV

Date: Saturday, January 29, 2011

Sheet 3 of 5

Rev A

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Title		MST6M181VS	
Size		Document Number	
A3		Audio Amplifier	
Date:		Saturday, January 29, 2011	
Sheet		4 of 5	
Rev		A	

1、增加330选择SCART及VGA的RGB信号,330的控制信号HDTV_SW使用GPIO36,SC_FS信号使用GPIO37

Title		
MST6M181VS		
Size	Document Number	Rev
A4	Change List	A
Date:	Saturday, January 29, 2011	Sheet 5 of 5