

Service Manual

Chassis: MST6E89CL

Product Type: LCD42W57P/58P/59P

Ver 1.0

July, 2008

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Service Manual

1. Precautions and notices

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

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

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

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

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

1.1 WARNING

1.1.1

Critical components having special safety characteristics are identified with a ▲ by the Ref. No. in the parts list. Use of substitute replacement parts, which do not have the same specified safety characteristics, may create shock, fire, or other hazards. Under no circumstances should the original design be modified or altered without written permission from . assumes no liability, express or implied, arising out of any unauthorized modification of design. Serviceman assumes all liability.

DANGERCAUTION CAUTION

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

1.1.2.

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.

1. Never replace modules or other components while the unit is switched on.
2. When making settings, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

1.1.3

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

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

1.1.4

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

1.1.5

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

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

cable clamps.

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

1.1.6

(1) Do not touch Signal and Power Connector while this product operates. Do not touch EMI ground part and Heat Sink of Film Filter.

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

(3) Do not use this product in locations where the humidity is extremely high, where it may be splashed with water, or where flammable materials surround it. Do not install or use the product in a location that does not satisfy the specified environmental conditions. This may damage the product and may cause a fire.

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

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

(6) Do not disconnect or connect the connector while power to the product is on. It takes some time for the voltage to drop to a sufficiently low level after the power has been turned off. Confirm that the voltage has dropped to a safe level before disconnecting or connecting the connector.

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

1.2 NOTES

Notes on Safe Handling of the LCD panel and during service

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

- Before starting the work, secure a sufficient working space.
- At all times other than when adjusting and checking the product, be sure to turn OFF the POWER Button and disconnect the power cable from the power source of the TV during servicing.
- To prevent electric shock and breakage of PC board, start the servicing work at least 30 seconds after the main power has been turned off. Especially when installing and removing the power board, start servicing at least 2 minutes after the main power has

been turned off.

- While the main power is on, do not touch any parts or circuits other than the ones specified. If any connection other than the one specified is made between the measuring equipment and the high voltage power supply block, it can result in electric shock or activation of the leakage-detection circuit breaker.
- When installing the LCD module in, and removing it from the packing carton, be sure to have at least two persons perform the work.
- When the surface of the panel comes into contact with the cushioning materials, be sure to confirm that there is no foreign matter on top of the cushioning materials before the surface of the panel comes into contact with the cushioning materials. Failure to observe this precaution may result in, the surface of the panel being scratched by foreign matter.
- When handling the circuit board, be sure to remove static electricity from your body before handling the circuit board.
- Be sure to handle the circuit board by holding the large parts as the heat sink or transformer. Failure to observe this precaution may result in the occurrence of an abnormality in the soldered areas.
- Do not stack the circuit boards. Failure to observe this precaution may result in problems resulting from scratches on the parts, the deformation of parts, and short-circuits due to residual electric charge.
- Routing of the wires and fixing them in position must be done in accordance with

the original routing and fixing configuration when servicing is completed. All the wires are routed far away from the areas that become hot (such as the heat sink). These wires are fixed in position with the wire clamps so that the wires do not move, thereby ensuring that they are not damaged and their materials do not deteriorate over long periods of time. Therefore, route the cables and fix the cables to the original position and states using the wire clamps.

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



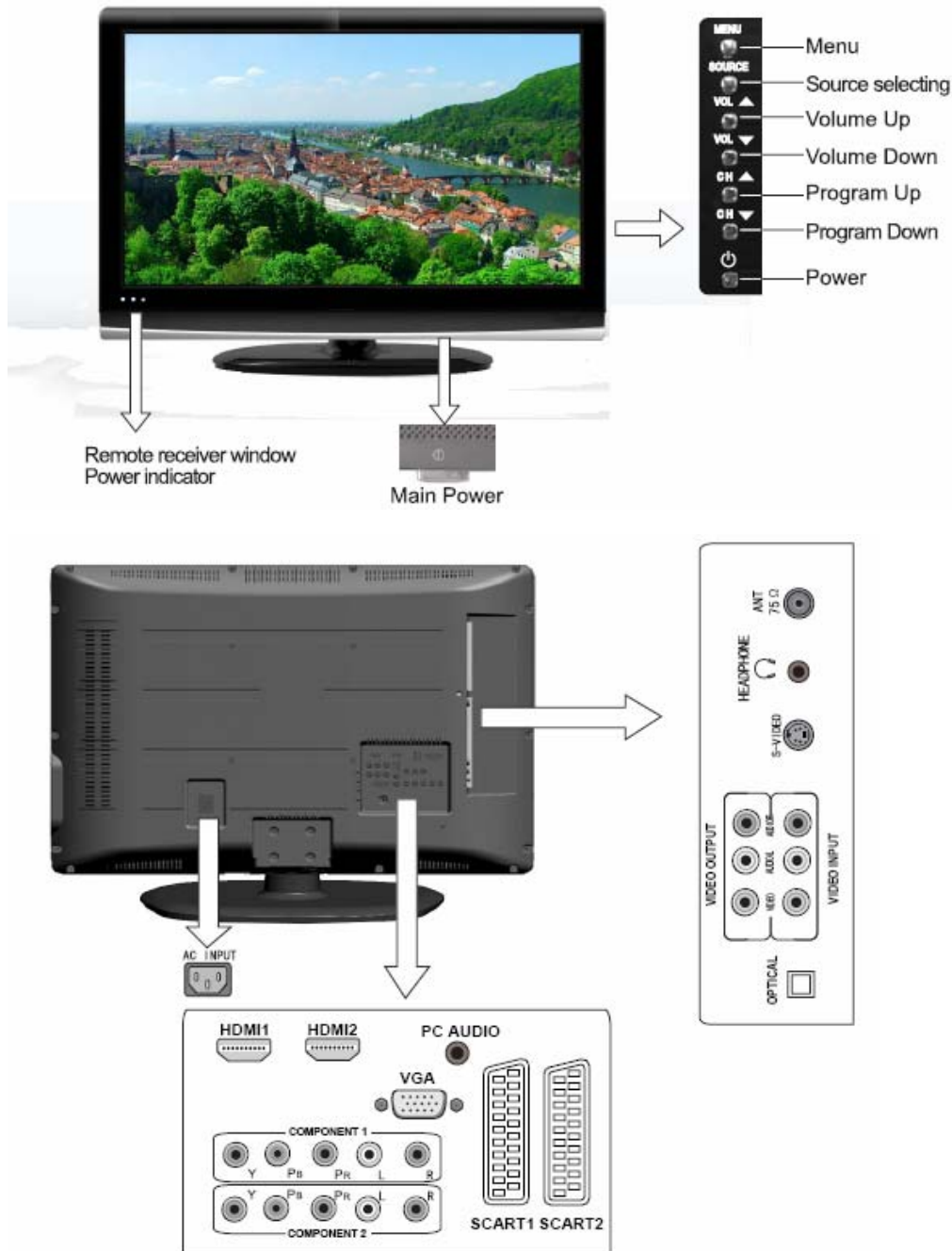
The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



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

2. Product Function Specifications

2.1 Product Function



Note: The above figures are reference only, please refer to the actual units to determine the appearances.

2.2 Specifications

Model		LCD42W57P/LCD42W58P/LCD42W60P
Product dimension (W × H × D)	not including base	1033X681X114
	including base	1033X736X310
Product weight(kg)	not including base	21
	including base	25
Display screen min size of diagonal of visual pictures(cm)		107
Display screen Resolution		1920X1080
Unit power consumption		250W
Sound-matching power		7W+7W
Power (input)		Refer to the rating label
Receiving system	RF	PAL(D/K、I、B/G)、SECAM
	AV	PAL、SECAM、NTSC
Channel range		C1~C57 Z1~Z38
Environmental conditions		Operating temperature 5℃~35℃ Operating humidity : 20%~80%RH Atmospheric pressure: 86kPa-106kPa

Interface storage battery features:

Interface name	Interface type	Terminal(jack)	Storage battery	Impedance
Video input	Compound video	Video	1.0Vp-p	75 Ω
S-VIDEO	Brightness and colour separation video	Y	1.0Vp-p	75 Ω
		C	0.286Vp-p	75 Ω
Component input	Analog component video	Y	1.0Vp-p	75 Ω
		Pb,Pr	0.7Vp-p	75 Ω
VGA	VGA	R,G,B	0.7Vp-p	75 Ω
		HD.VD	TTL	High impedance
Audio input	Analog audio	Left,right	1Vrms	More than 10k Ω

Video signal format with component input:

50HZ 576i,576p,720p,1080i,1080p;
60HZ 480i,480p,720p,1080i,1080p.

PC signal format with VGA interface:

60HZ 640×480,800×600,1024×768,1280x1024.

Video signal format with HDMI input:

RGB 60HZ 640×480,800×600,1024×768,1280x1024;
YUV 50HZ 576p,720p,1080i,1080p;
YUV 60HZ 480p,720p,1080i,1080p.

3. LCD Panel Spec

3.1 General Description

V420H1- L11 is a 42" TFT Liquid Crystal Display module with 16-CCFL

Backlight unit and 2-CH LVDS interface.

This module supports 1920 x 1080 HDTV format and can display 16.2M colors (8-bits+FRC colors). The inverter module for backlight is built in.

3.2 General Features

- High brightness (400 nits)
- High contrast ratio (2000:1)
- Fast response time (Gray to gray average 6.5 ms)
- High color saturation (NTSC 72%)
- Full HDTV (1920 x 1080 pixels) resolution, true HDTV format
- DE (Data Enable) only mode
- LVDS (Low Voltage Differential Signaling) interface
- Optimized response time for 60 Hz frame rate
- Ultra wide viewing angle : Super MVA technology
- 180 degree rotation display option
- RoHS compliance

4. Chassis Layout and Overall Wiring Diagrams

4.1 Chassis Layout



No	Description
(1)	Main board
(2)	Power board
(3)	Keypad
(4)	IR&Led board

4.2 Wires and Cables Overall Wiring Diagrams



5. Factory/Service OSD Menu and Adjustment

5.1 To enter the Factory OSD Menu

a. With factory RC (remote control)

1. Press “M” button and enter factory mode.
2. Press “Menu” button and enter factory OSD menu.
3. Press “CH+”/“CH-” button select the function menu, press “VOL+”/“VOL-” enter the selected function menu. Press “VOL+”/“VOL-” button adjust values in the menu.
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 0->5->3 ->2 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.

5.2 Factory OSD Menu

The Factory OSD Menu comprises Factory Menu and Design Menu .

5.2.1、 Factory Menu

Factory Menu
White Balance
Auto Test
Auto Calibration
LOGO
OSD Language
Country
Option
Factory Init
Test Pattern
Version:

White Balance

R DRV	8
G DRV	10
B DRV	10
R CUT	136
G CUT	130
B CUT	121
BRIGHT_H	80
CONTRAST_H	80
BRIGHT_L	40
CONTRAST_L	40

Auto Calibration

Auto Color

Color Temp.	Standard
RED COLOR	136
GREEN COLOR	130
BLUE COLOR	121

LOGO

NULL

WELCOME

EGYPT OFF

Option

SOURCE	TV
BRIGHT 0	10
BRIGHT 50	100
BRIGHT 100	150
CONTRAST 0	60
CONTRAST 50	100
CONTRAST 100	150
TOFAC	M
HDMI Cable	Standard
DQS PHASE	3

Factory Init

QingDao

HuangDao

Guiyang

shunde

Hungary

France

Australia

CLEAR PROTECTLY

CLEAR UNPROTECTLY

Turkey

Test Pattern

BLUE

Version

Version:
Panel Type:
FLASH :

5.2.2、 Design Menu

Design Menu

Picture Mode
Sound Mode
Sound Settings
Power Save
PIP Option
EMI
MOVESHARPNESS
LipSync

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Picture Mode

Standard	Brightness	50
	Contrast	50
	Colour	50
Bright	Brightness	60
	Contrast	60
	Colour	55
Soft	Brightness	45
	Contrast	45
	Colour	45

Sound Mode

Standard	120Hz	12
	500Hz	10
	1.5KHz	11
	5KHz	8
	10KHz	15
Music	120Hz	19
	500Hz	11
	1.5KHz	12
	5KHz	14
	10KHz	20
Speech	120Hz	4
	500Hz	10
	1.5KHz	12
	5KHz	7
	10KHz	5

Sound Settings

VOLUME 0	128
VOLUME 1	79
VOLUME 20	27
VOLUME 40	23
VOLUME 100	8
TVPRE SCALER	6
VOLUME SCALER	0

6. Software Upgrading

The software is upgraded by a burning tool- ISP_TOOL4.0.9, which can burn the program file “*. bin” to the main board of the unit

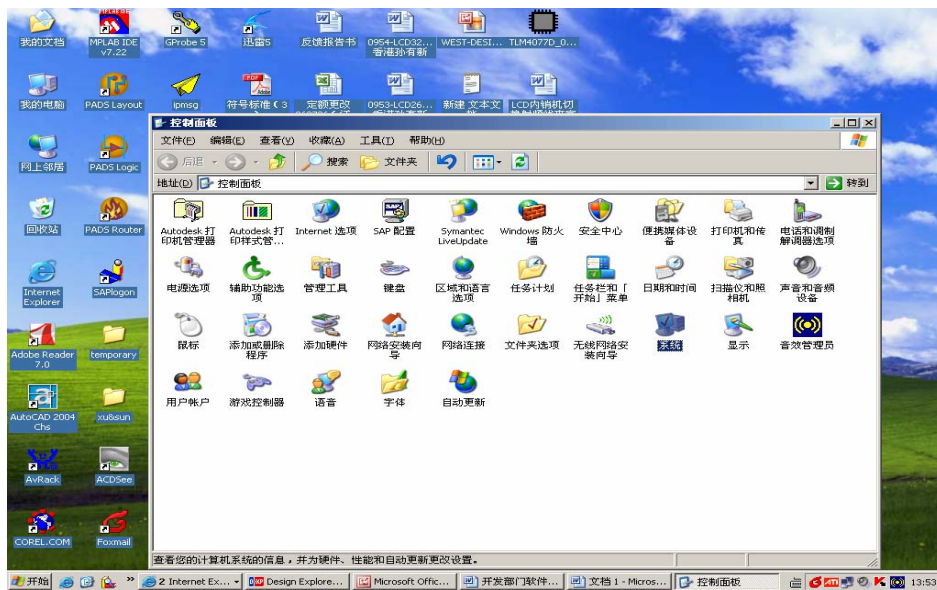
6.1 Get ready for upgrading

6.1.1 Install the ISP_TOOL4.0.9-----only for the first time update.

1、 Port Setting:



Choose “system” option from the “control panel”



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Click the “system” icon as the following

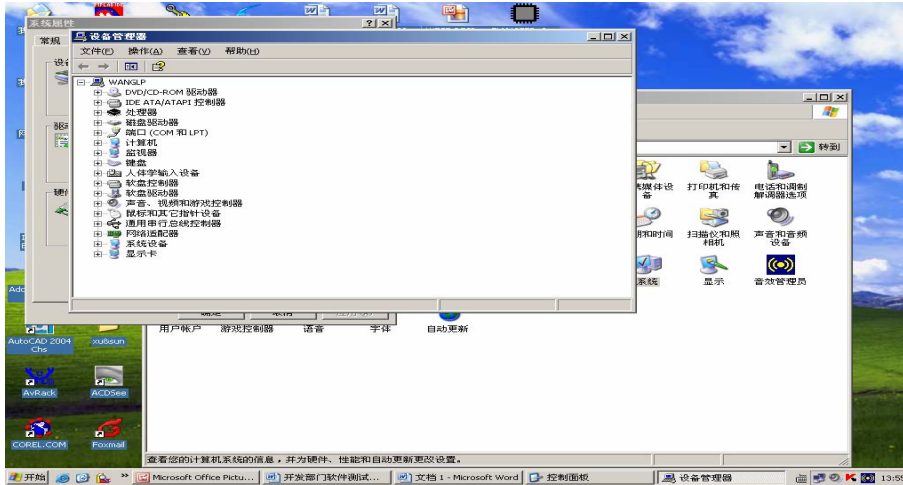


Choose the “hardware” option from the dialog window

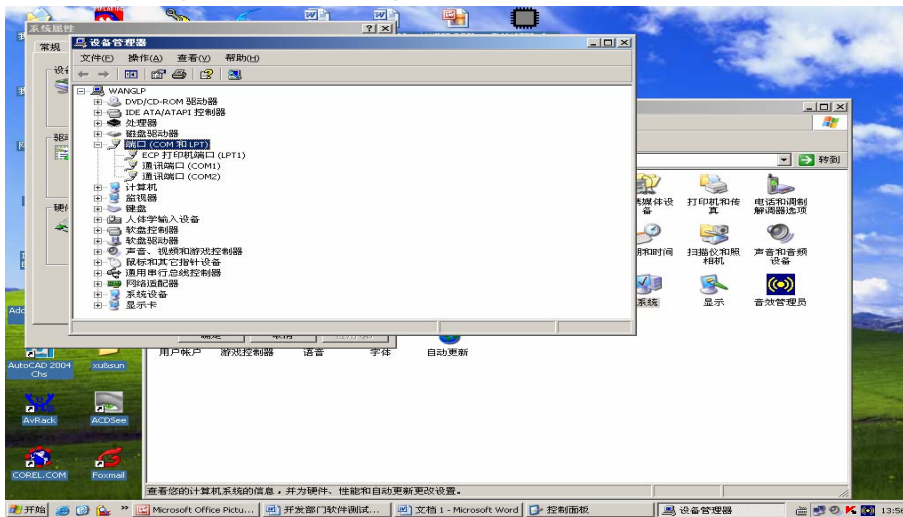


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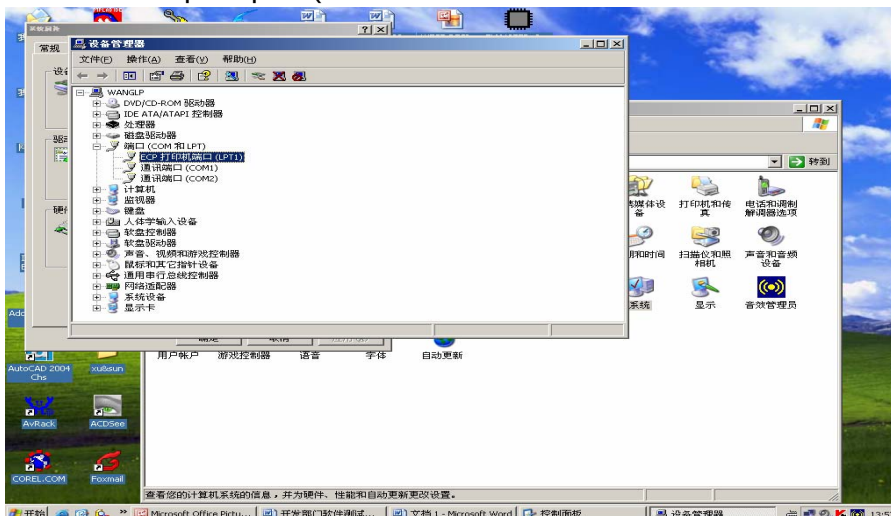
Click“device management” icon as the following



Choose the port (COM and LPT1)

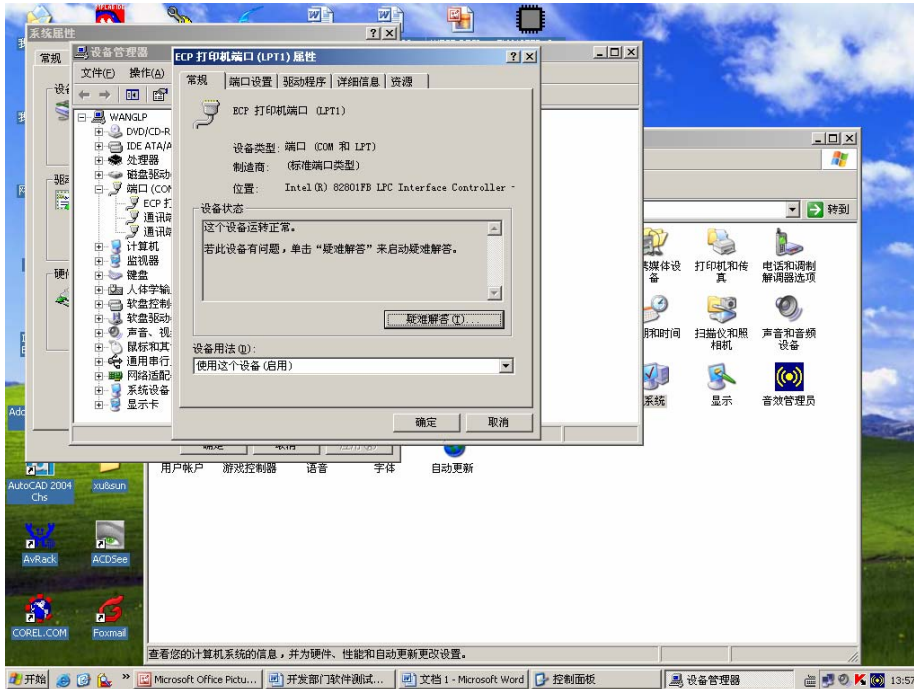


Choose the ECP print port (LPT1)

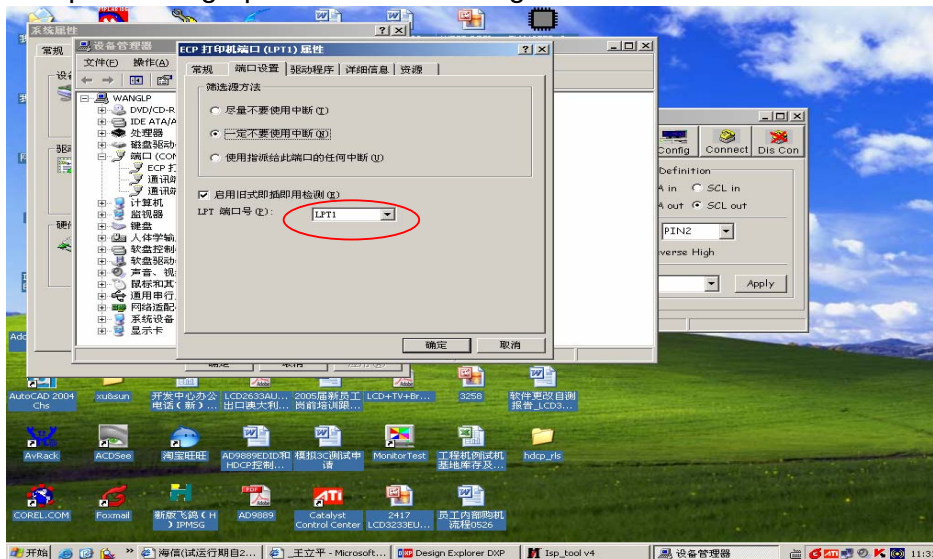


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Click the port of print （LPT1） as the following

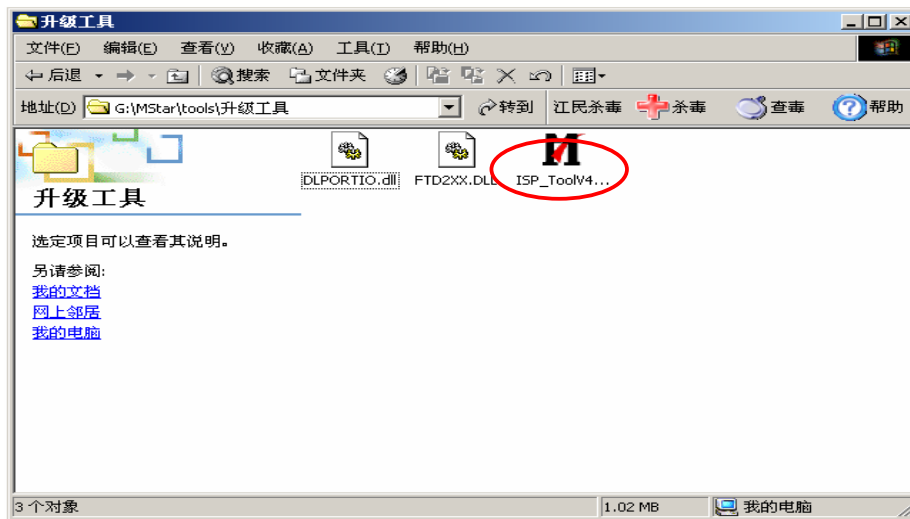


Choose “port setting”option as the following

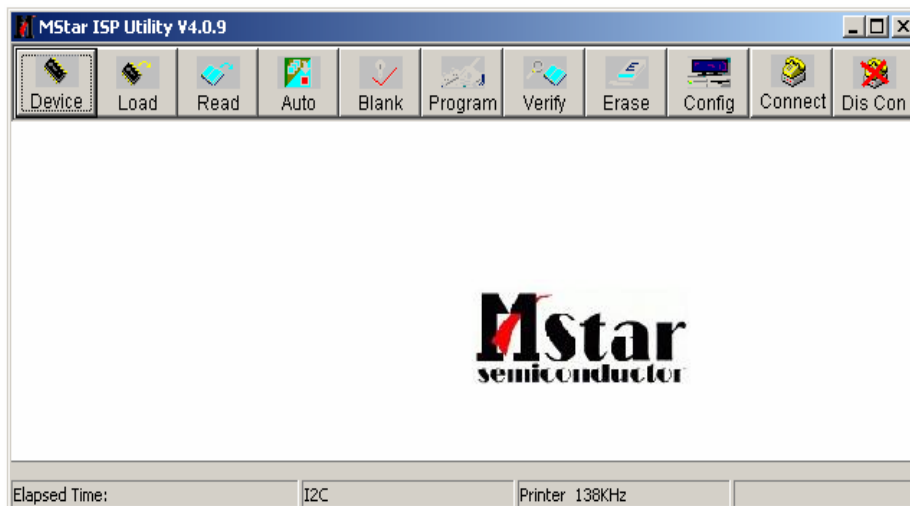


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- 2、 Find the folder where the ISP_TOOL4.0.9 lies in.
There are three folders/files in this folder together.
DLPORTIO.dll and FTD2XX.DLL must be in the same folder



Double click the ISP_TOOL4.0.9 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.

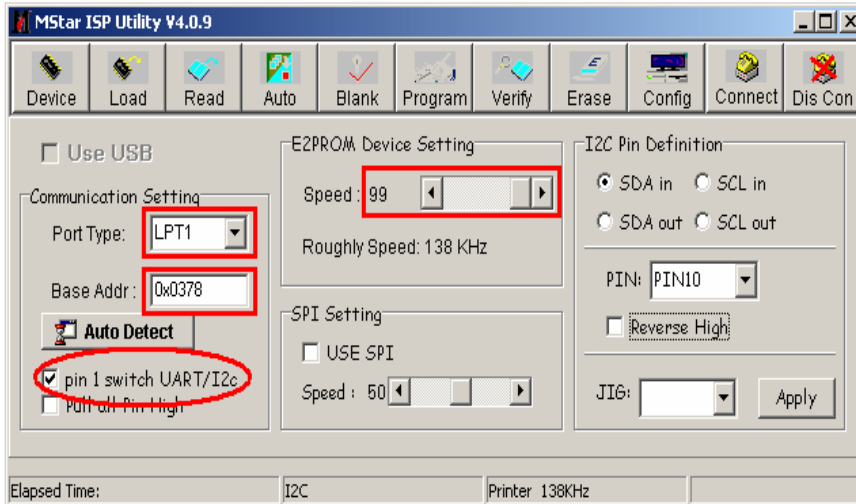
Port Type setting is LPT1

Base Addr setting is 0x378

Draw ☒ on the front of “pin 1 switch UART/I2c”

Speed setting is 99

As following

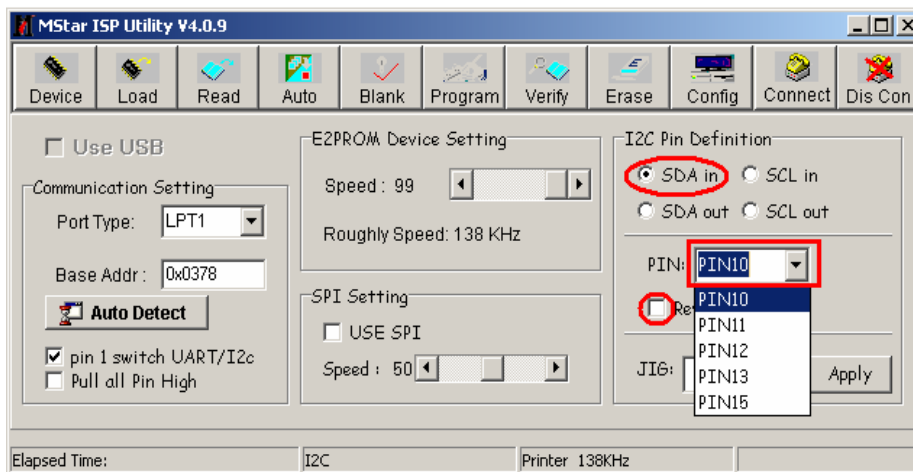


Choose “SDA in” and setting “PIN” is “PIN10”.

Notes:

Do not draw ☒ on the front of “Reverse High”.

As following



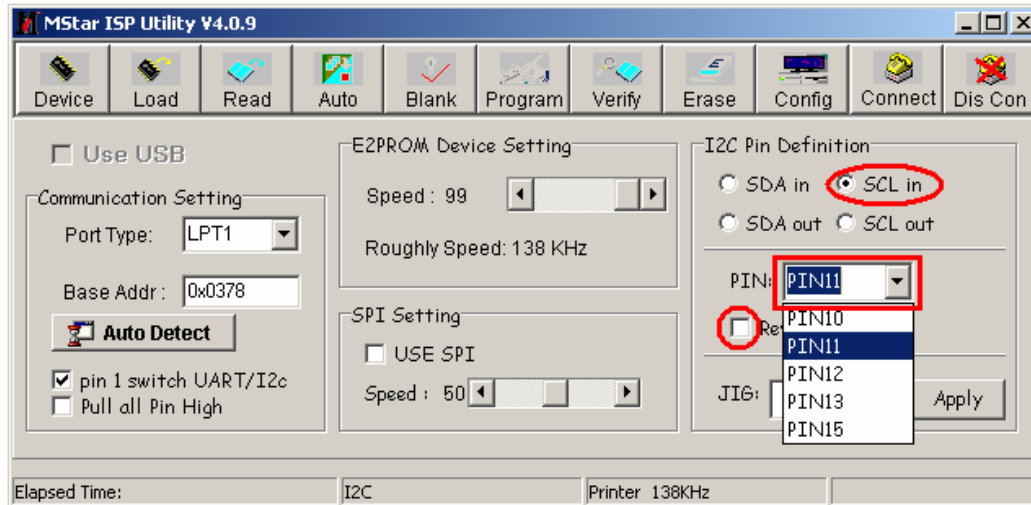
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Choose “SCL in” and setting “PIN” is “PIN11”.

Notes:

Do not draw ☒ on the front of “Reverse High”.

As following

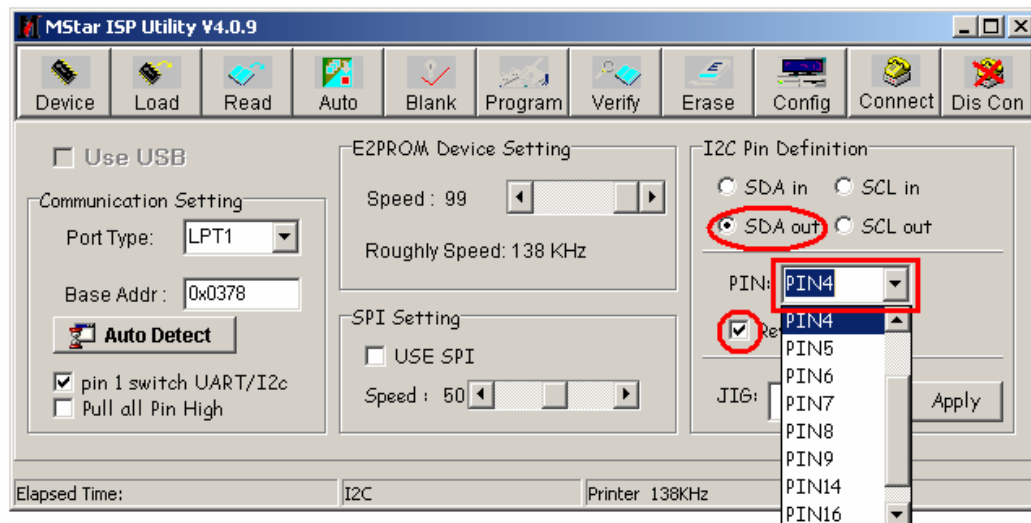


Choose “SDA out” and setting “PIN” is “PIN4”

Notes:

Draw ☒ on the front of “Reverse High”.

As following.



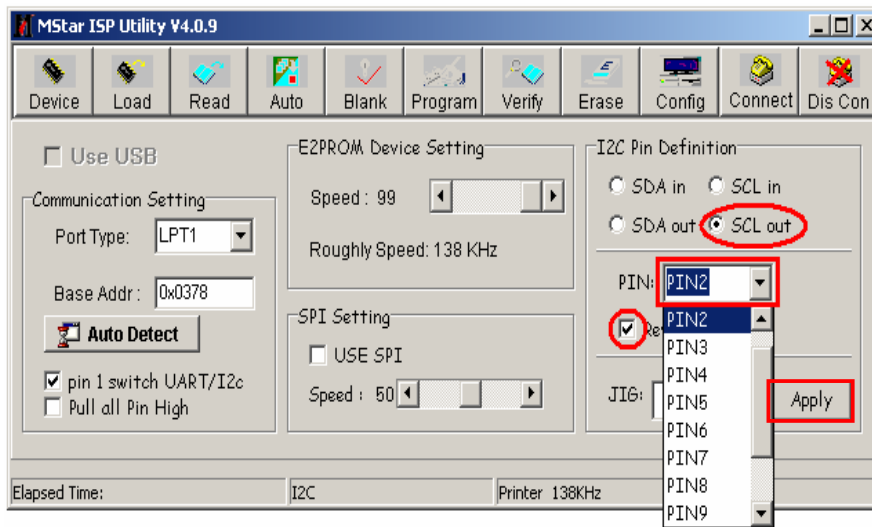
Choose “SCL out” and setting “PIN” is “PIN2”

Notes:

Draw ☒ on the front of “Reverse High”

As following

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After having finished all above, clicking the “Apply ”button to complete the configuration。

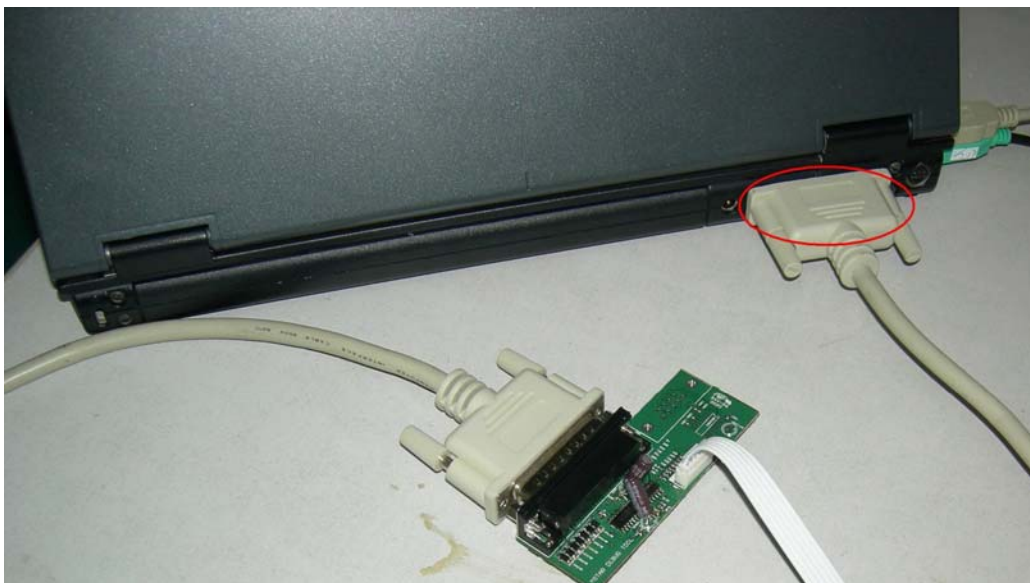
6.1.2 Hardware connecting

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



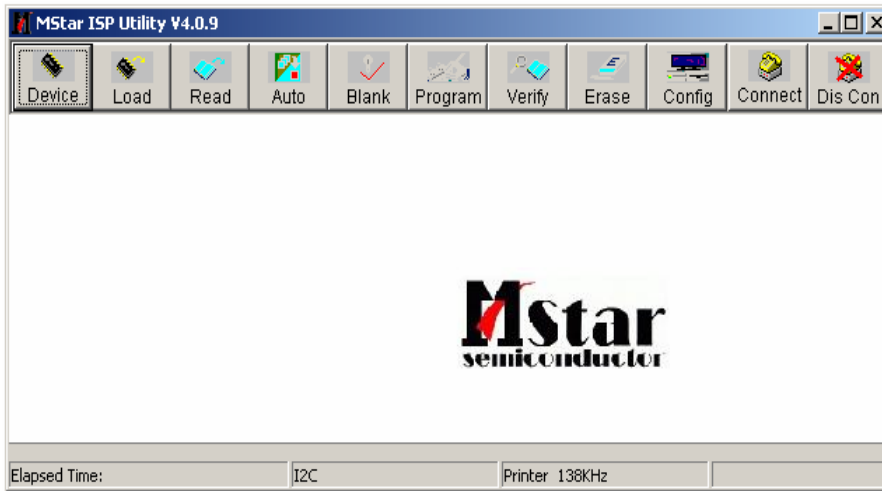
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Connect the Debug board to the TV use VGA interface, the other parallel port to the computer, just as the following.

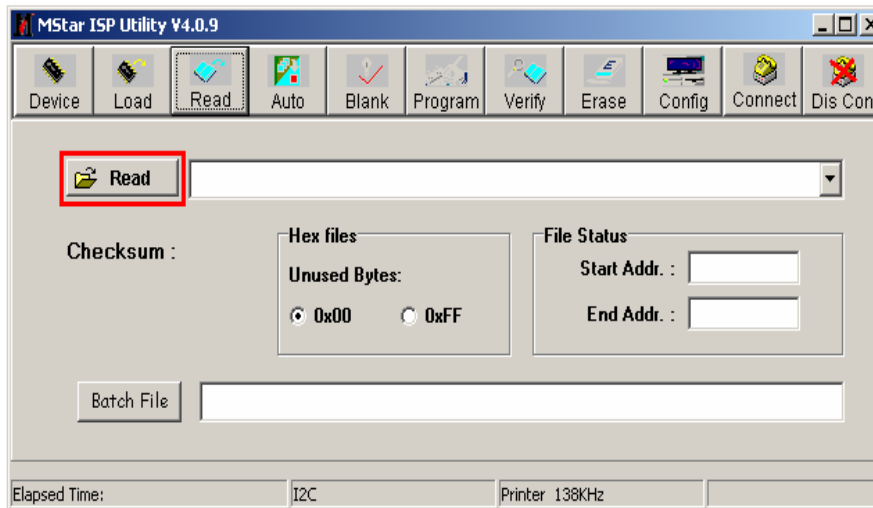


6.2 Upgrading with the ISP_TOOL4.0.9

6.2.1 Double click the ISP_TOOL4.0.9 icon and a dialog window will show as following。

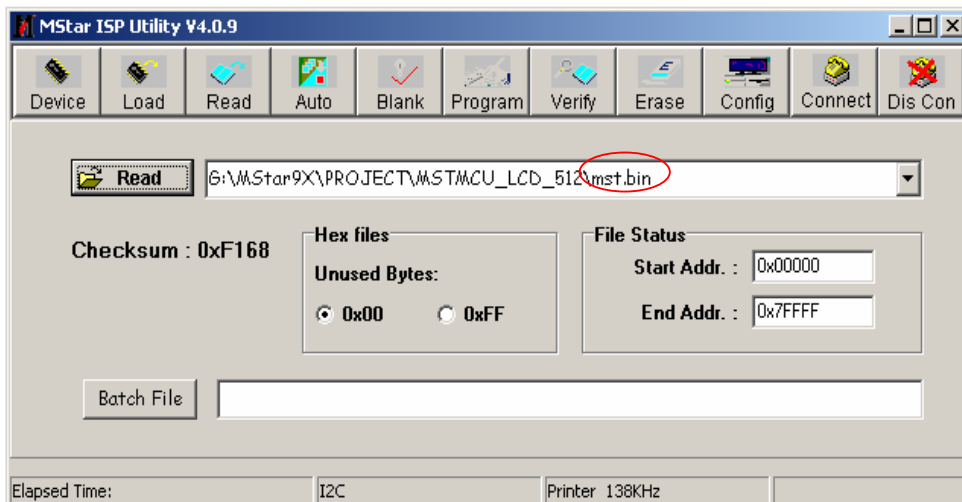
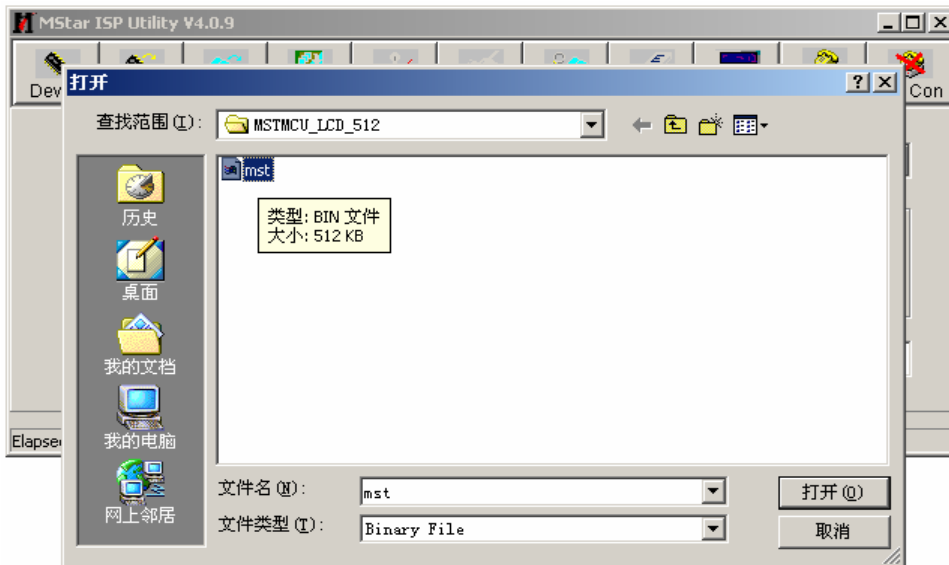
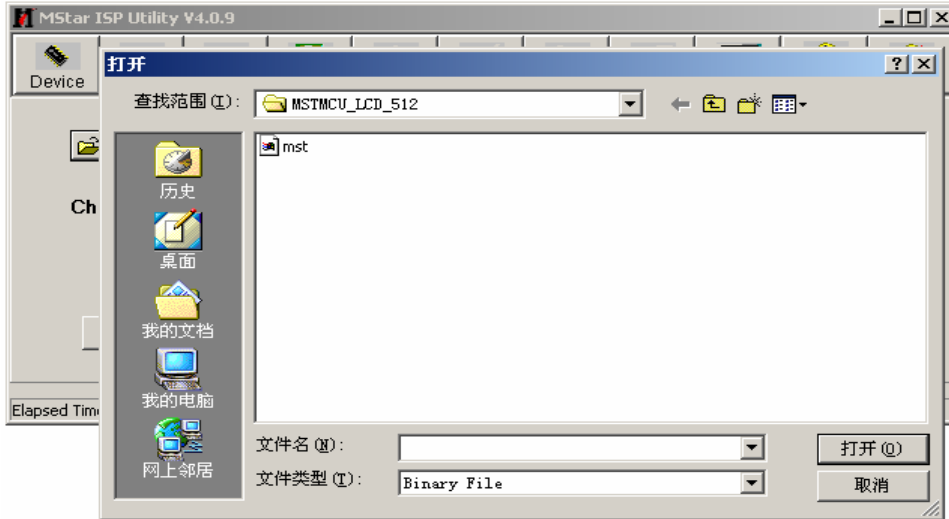


Click the "Read" button.



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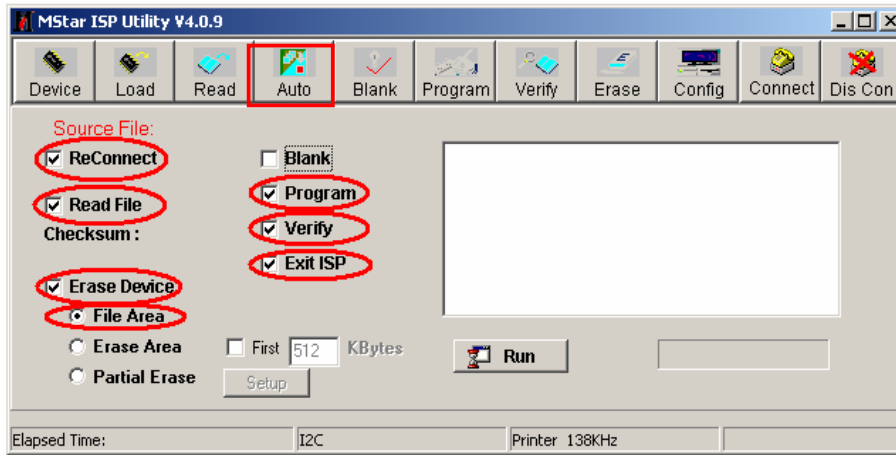
Choose the update file from the folder.



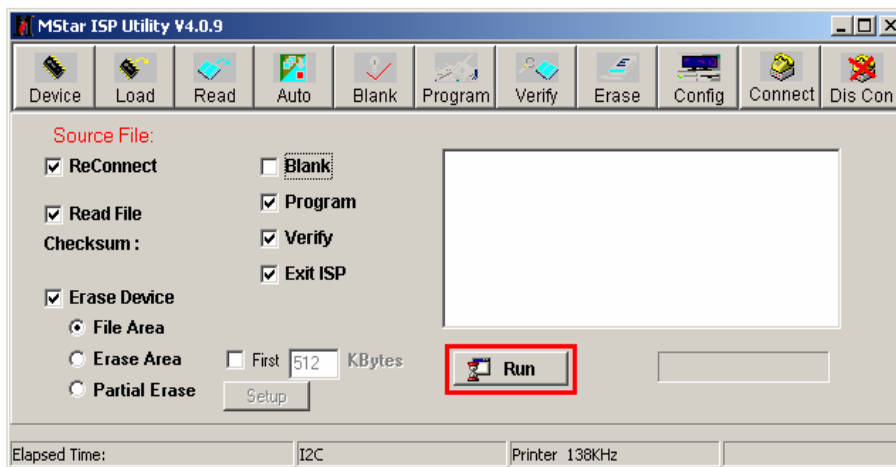
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The update file has been chosen successfully。

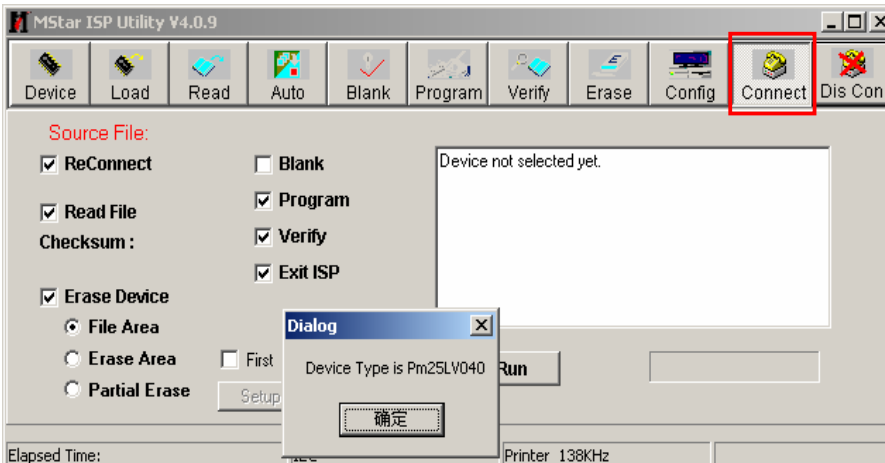
Click the“Auto”button and choose parameters as following。



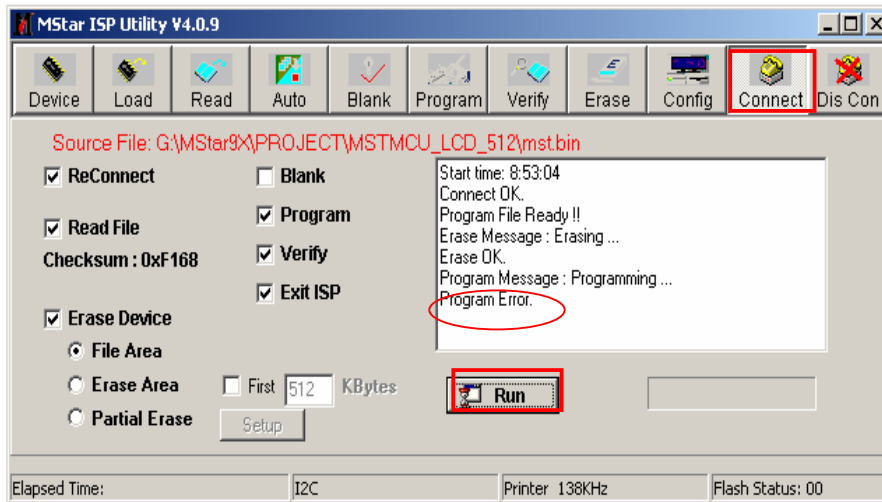
Click the“Run”button



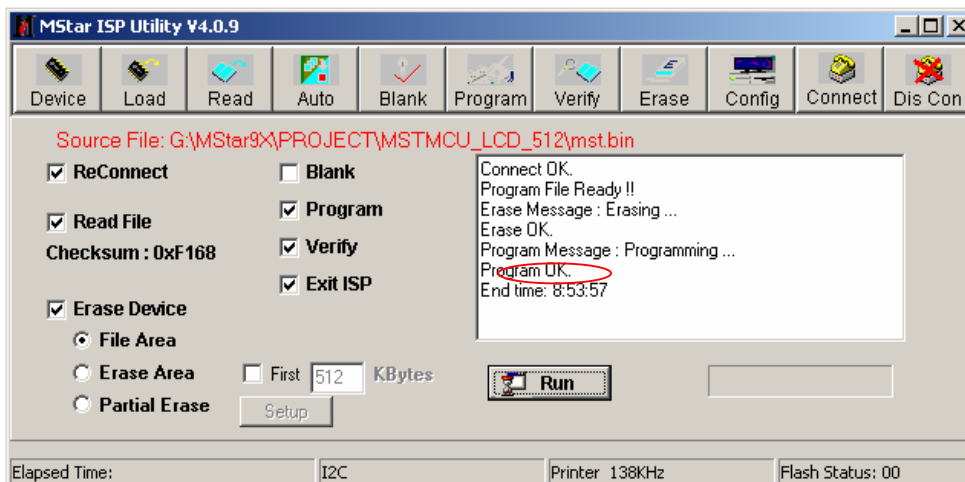
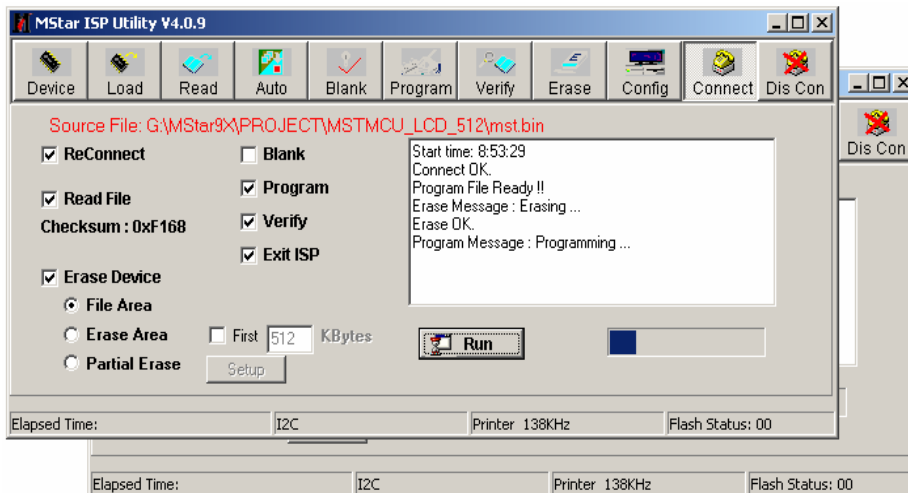
Click the“connect”button,then show a dialog box as following。



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



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

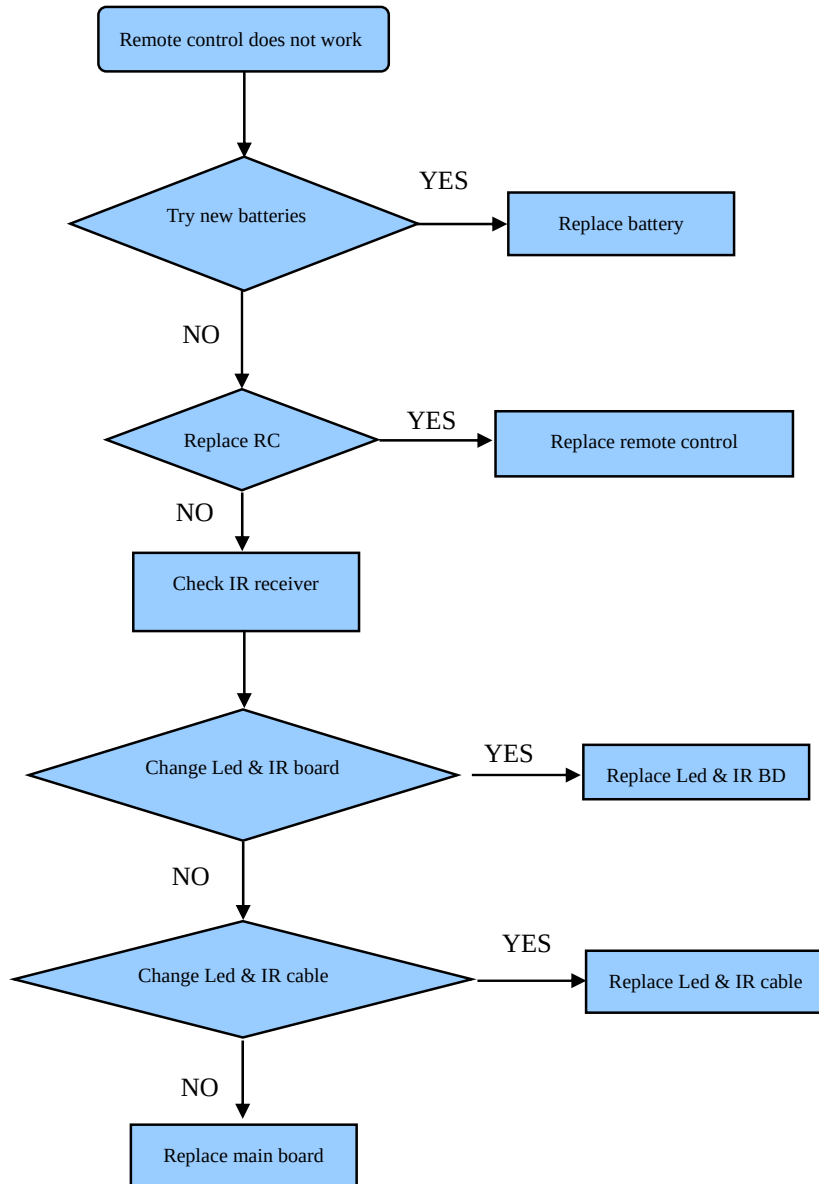
6.2.2 After the update is over. Must Confirm the software Version in the Version Menu.

If the update is successful, enter Factory Init Menu and select “Clear Unprotectly”

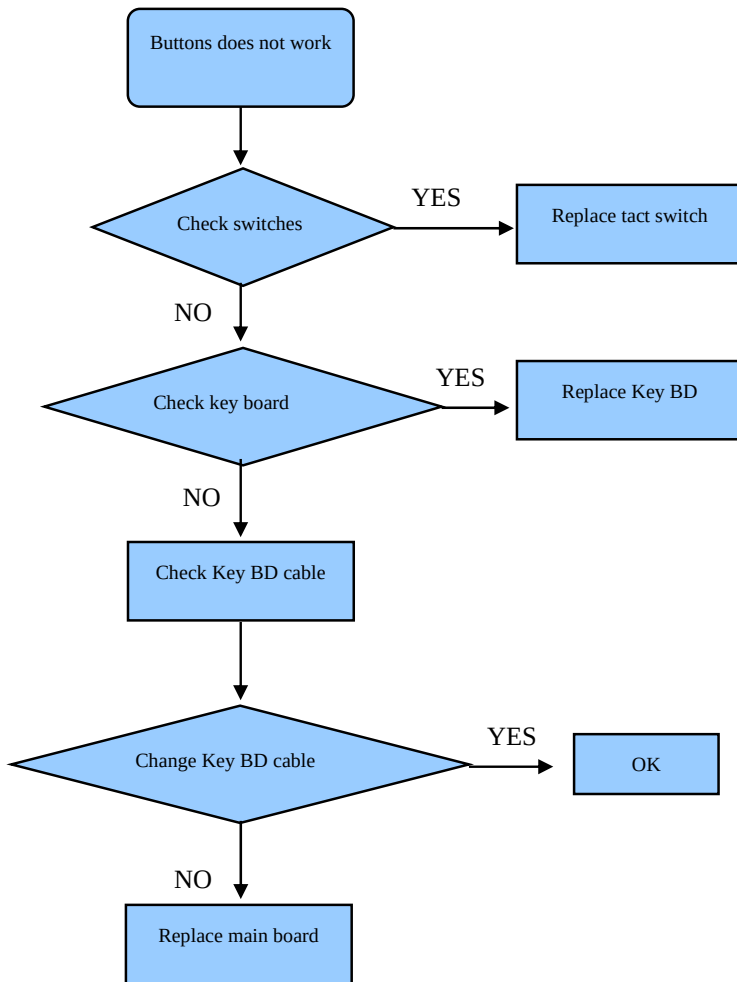
- a. Press VOL+ button to clear the EEPROM data.
- b. When the “Clear Unprotectly ” button becomes white, turn off the power.
- c. Restart the TV.

7. Troubleshooting

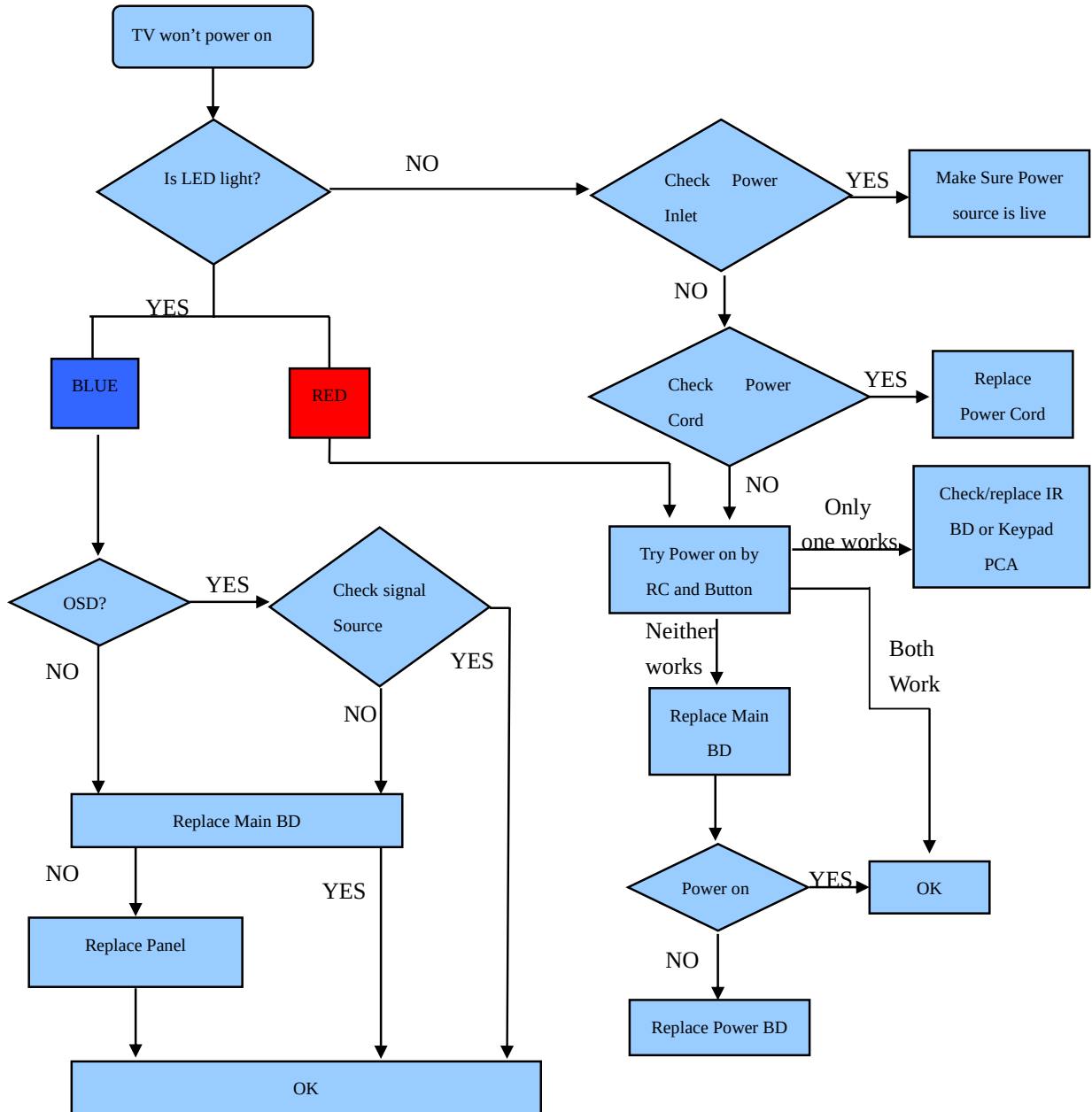
7.1 Troubleshooting for Remote Control



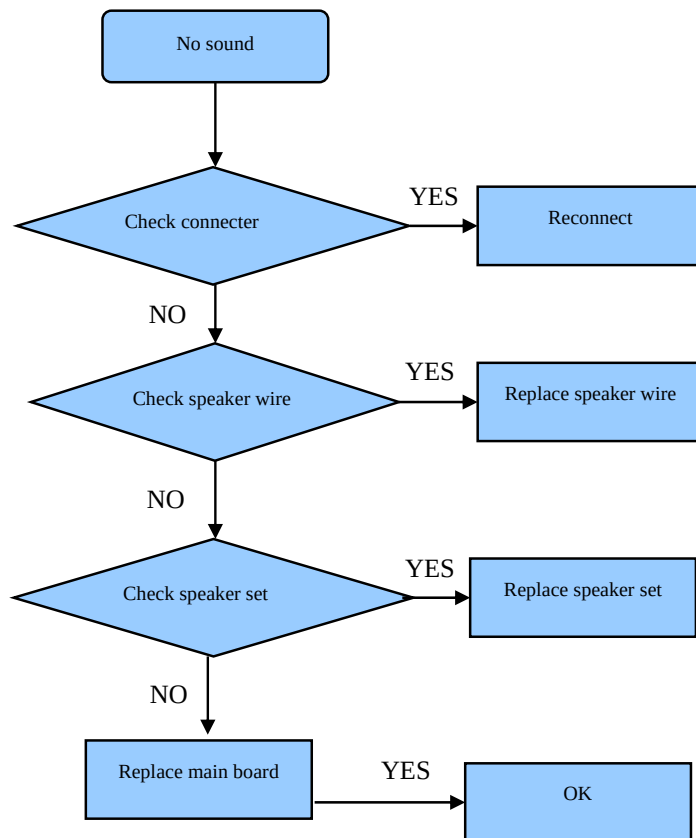
7.2 Troubleshooting for Function Key



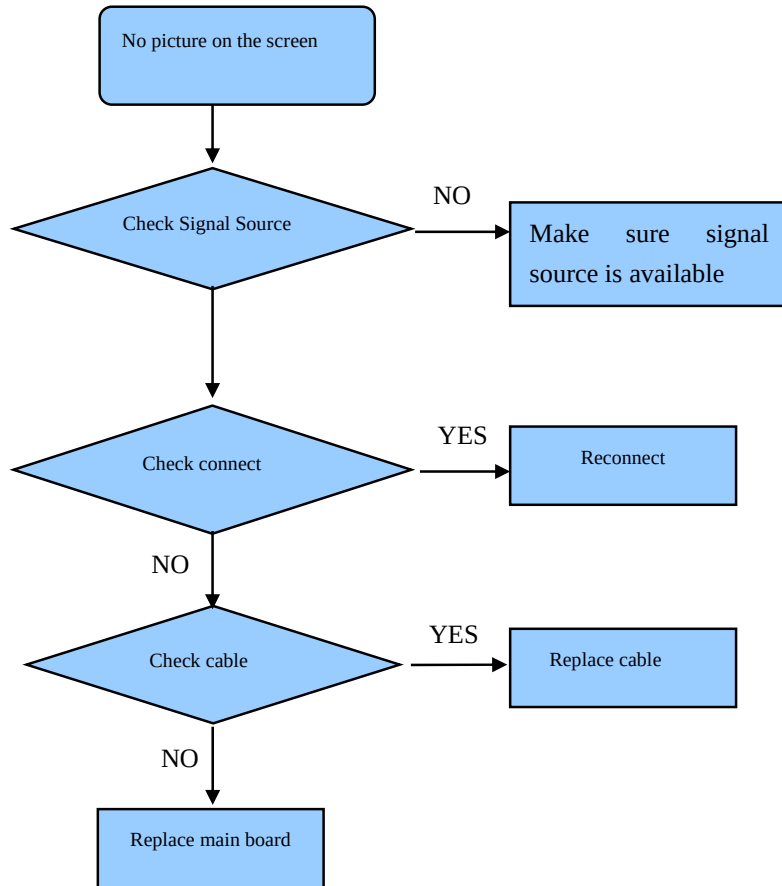
7.3 TV won't Power On



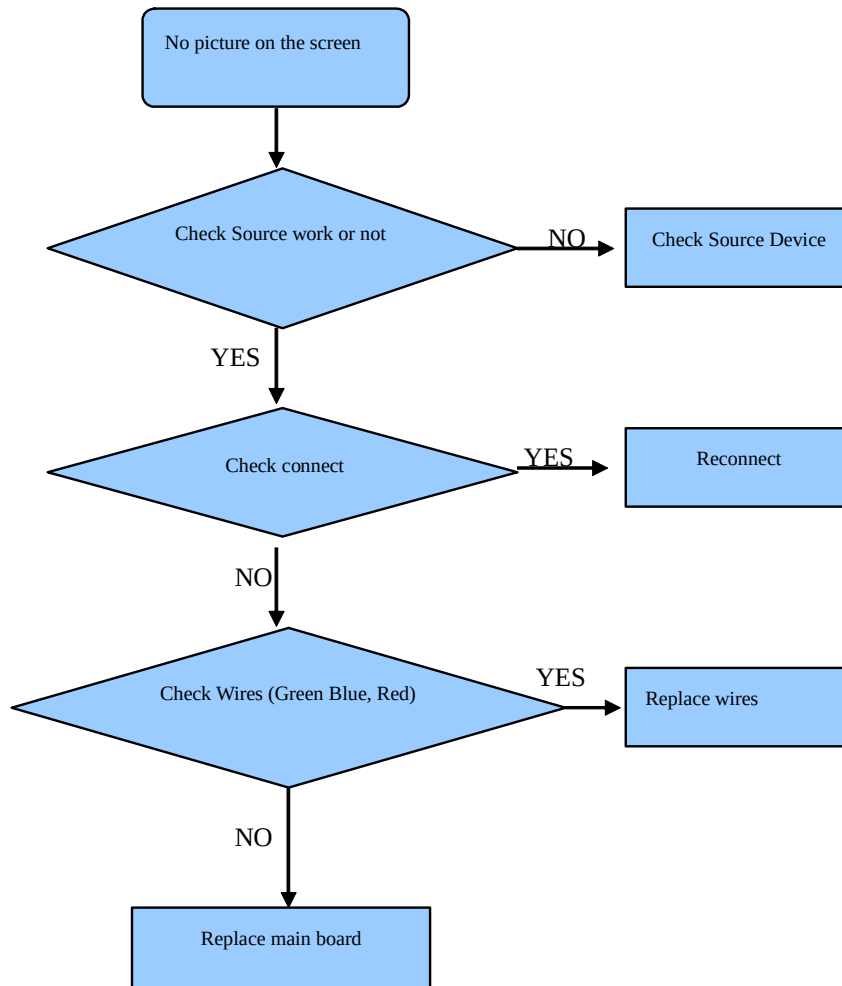
7.4 Troubleshooting for Audio



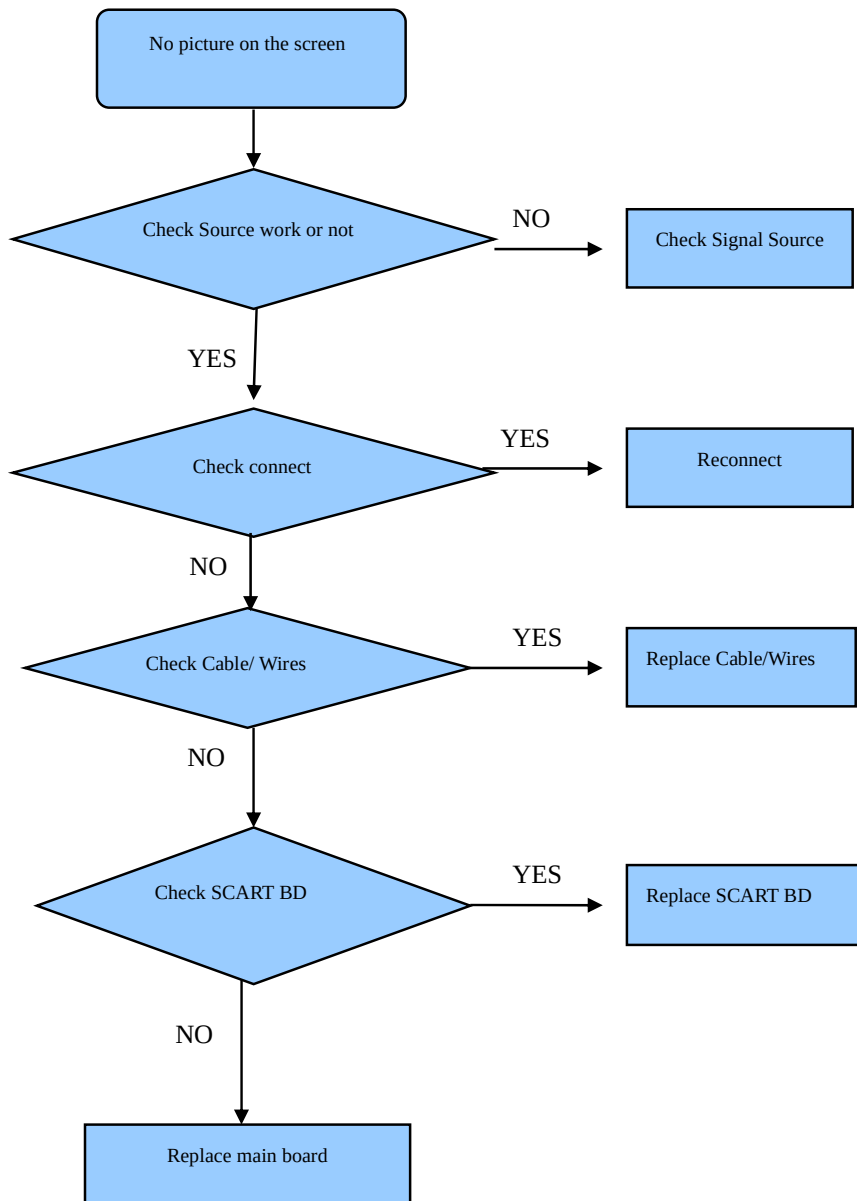
7.5 Troubleshooting for TV/VGA/HDMI input



7.6 Troubleshooting for YPbPr input

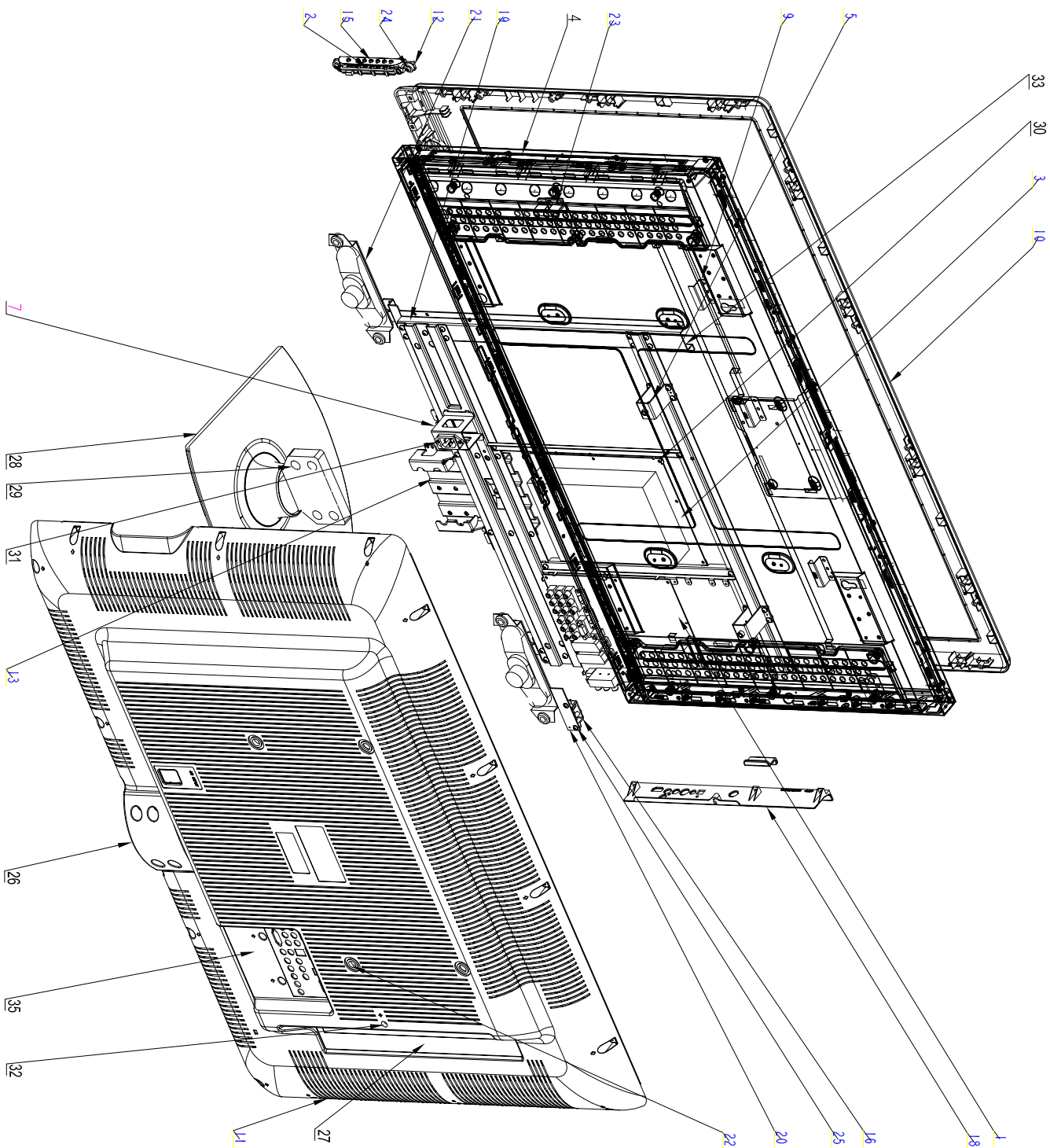


7.7 Troubleshooting for Video/S-Video/ SCART input

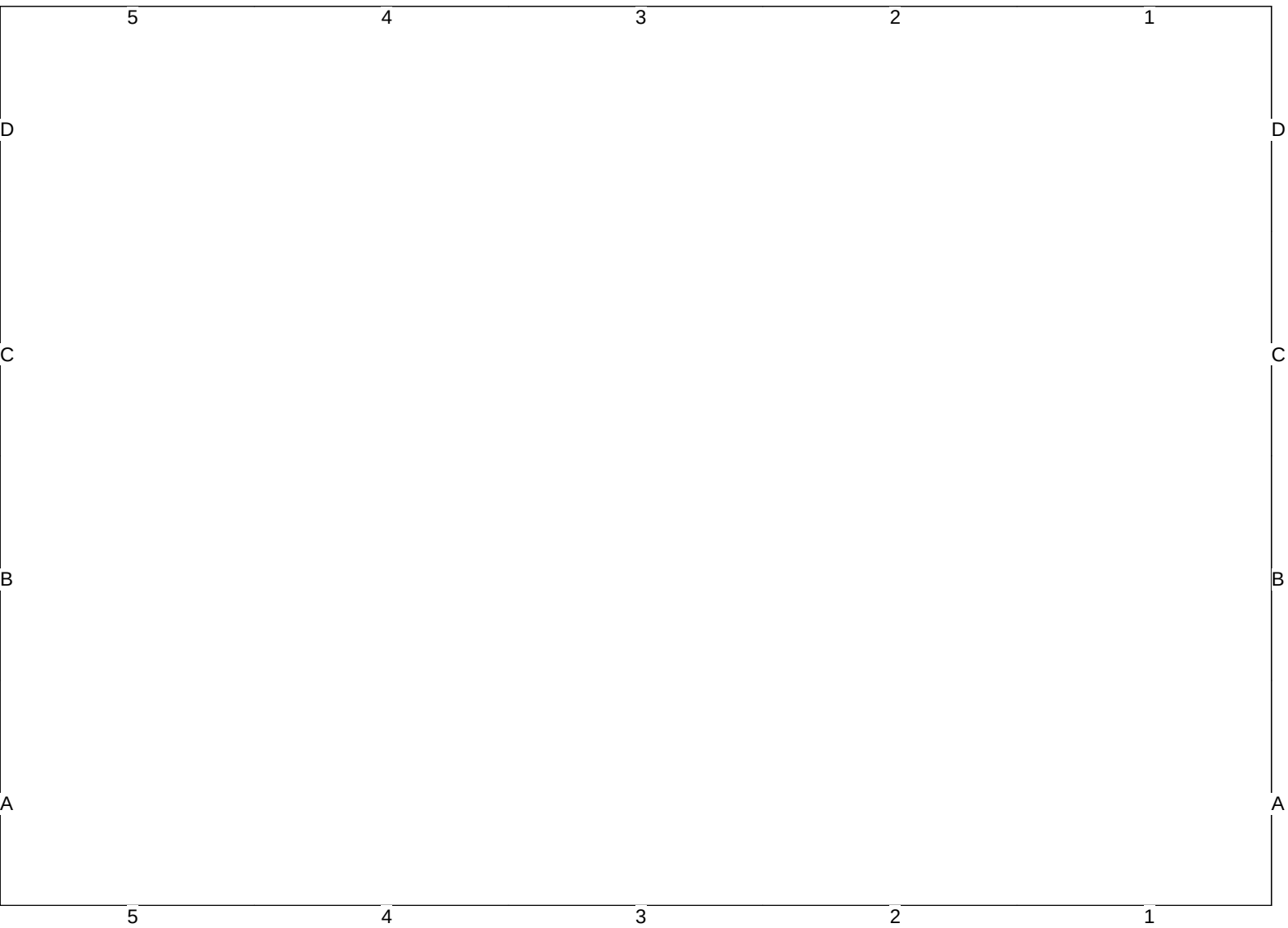


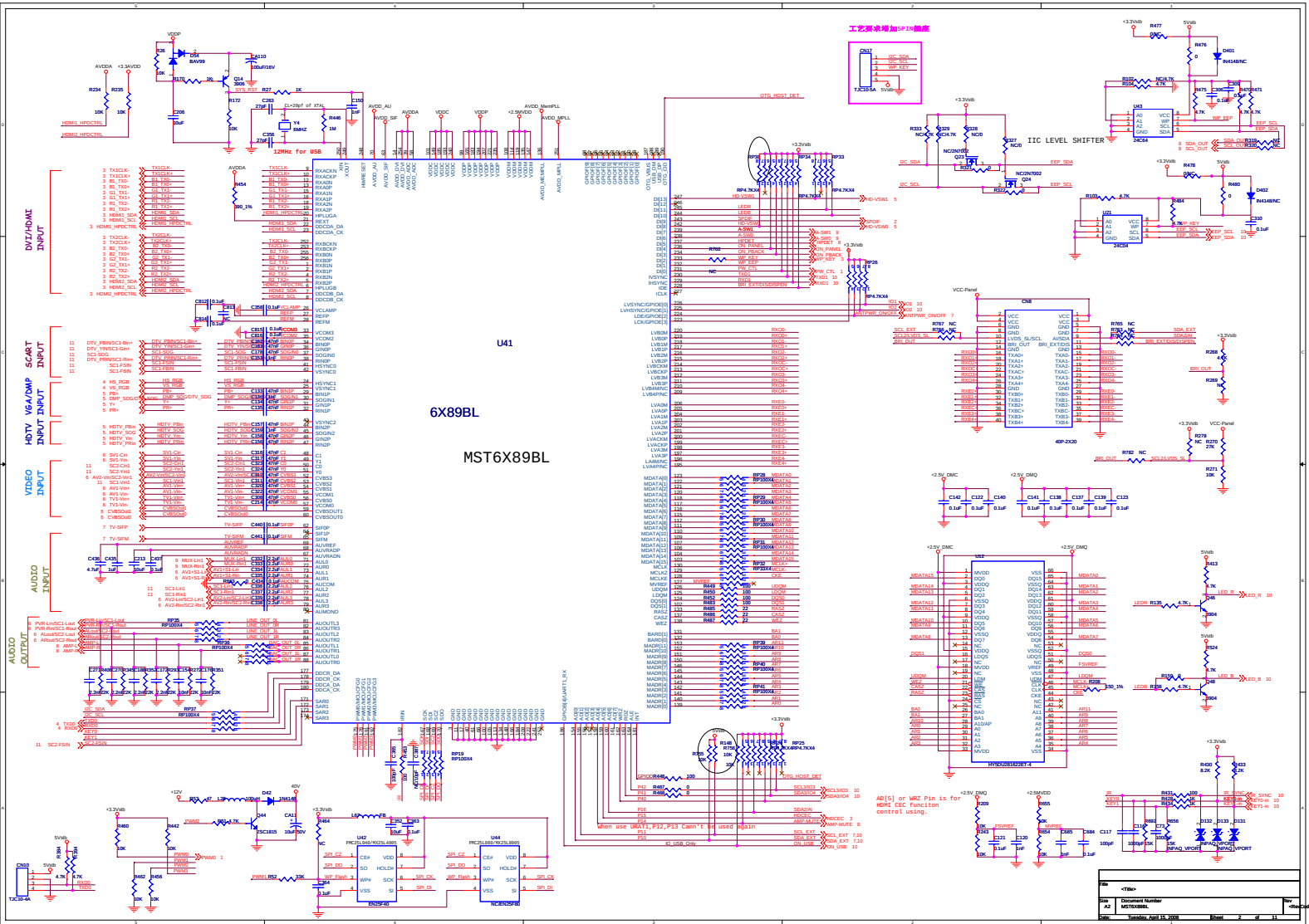
8. Explode View

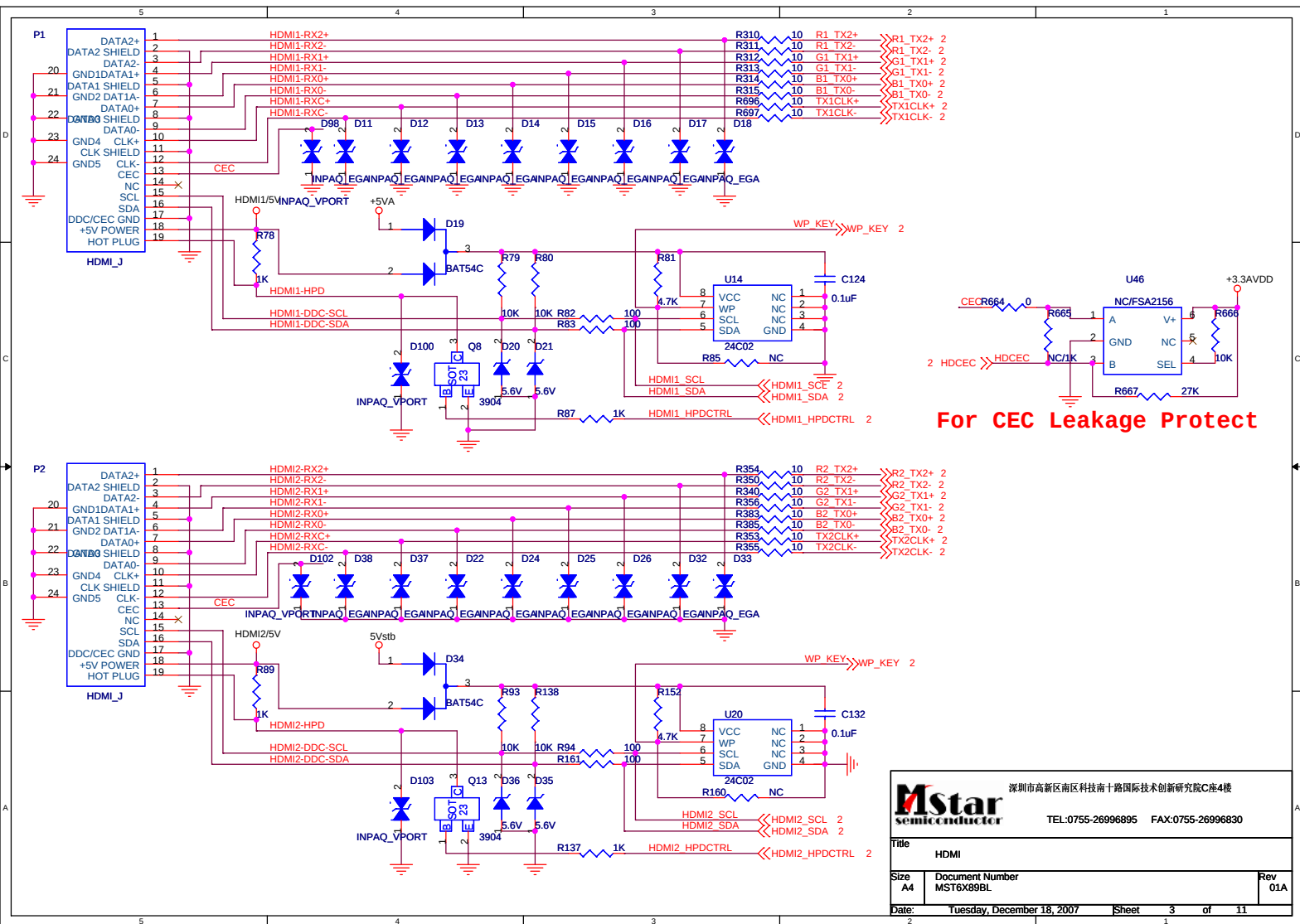
9. Schematic circuit diagram



No.	Part#	Description	Qty.
1	116519	main board unit\RSAG2.908.1317\ROH	1
2	113354	key board unit\RSAG2.908.1088\ROH	1
3	115866	power board unit\RSAG2.908.1192-9\ROH	1
4	1045293	TFT panel\V420H1-L11\JK\ROH	1
5	1049762	bracket unit\RSAG6.150.423\ROH	1
7	1049758	bracket\RSAG8.038.1268\ROH	1
9	1050132	bracket\RSAG8.048.087\ROH	6
10	1050216	front cover\RSAG8.074.521\Z3\ROH	1
11	1050215	back cover\RSAG8.074.522\Z1\ROH	1
12	1052188	bracket\RSAG8.048.481\B2\Z3\ROH	1
13	1050026	bracket\RSAG8.048.990\ROH	1
15	1044829	key\RSAG8.335.067\Z0\ROH	1
16	1048975	lens led\RSAG8.640.059\ROH	1
17	1036391	baffle\RSAG8.634.047\black\ROH	1
18	1050214	terminal bracket\RSAG8.081.393\Z1\ROH	1
20	116136	IR board unit\RSAG2.908.1239\ROH	1
21	1045081	speaker\YTD415E-10W8R-F\ROH	2
22	1044954	bracket unit\RSAG6.150.230\ROH	2
23	1049760	bracket\RSAG8.078.485\Z0\ROH	4
24	1035736	screw\SJ2824-87 ST4X14F\black\ROH\STD	44
25	1026852	screw\SJ2825-87 ST3X12C\black\ROH\STD	9
26	1050027	cover board\RSAG8.634.068\Z1\ROH	1
27	1050209	scutcheon\RSAG8.804.3212\ROH	1
28	1049465	base unit\WG6.121.052\ROH	1
29	1044002	screw\GB/T818-2000 M6X16 black\ROH\STD	4
30	1026915	screw\SJ/T2832-87 ST3X8\silver\ROH\STD	12
31	1010067	screw\SJ/T2822-87 ST3X10F black\ROH	2
32	1031750	screw\GB/T818-2000 M4X8 black\ROH\STD	11
33	1042515	screw\SJ/T2836-87 M4X8 silver\ROH\STD	2
34	1042538	screw\SJ/T2838-87 ST4X16C. II silver\ROH\ST	4
35	1050624	scutcheon\RSAG8.804.3300\ROH	1

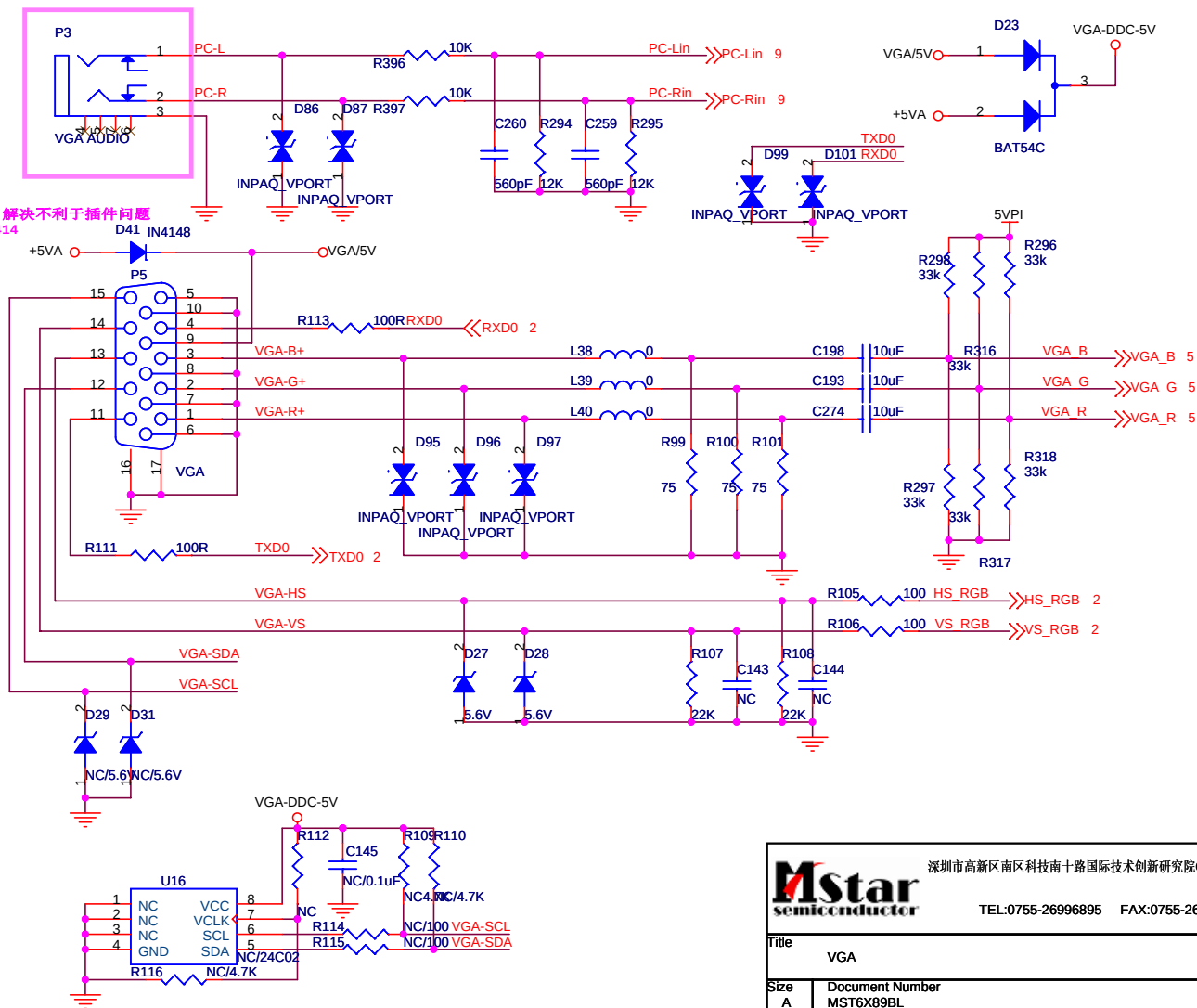




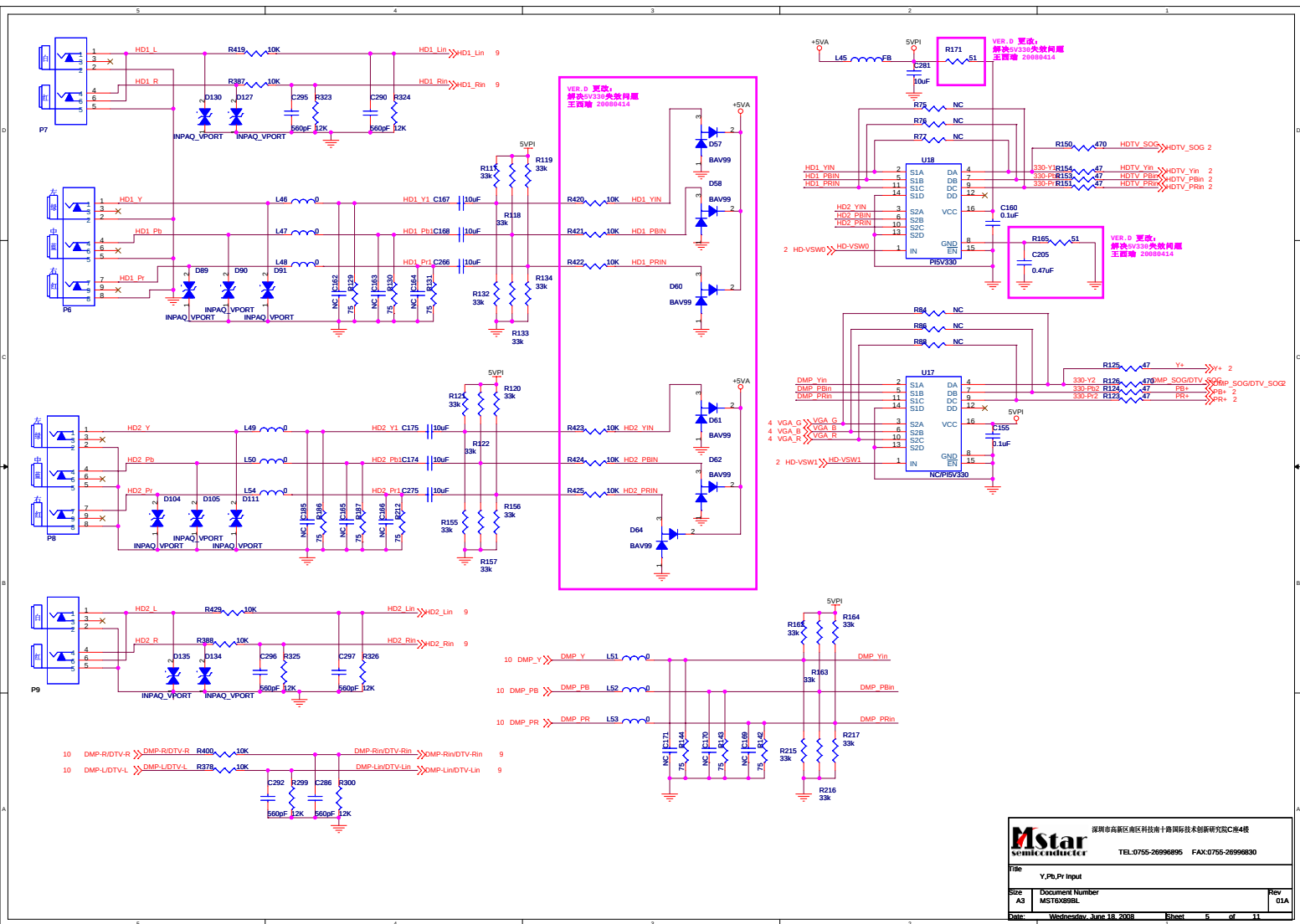


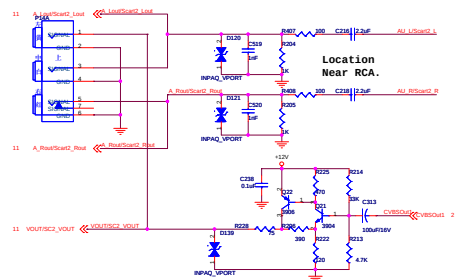
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A4	MST6X89BL		01A
Date:	Tuesday, December 18, 2007	Sheet	3 of 11

VER.D 更改:
P3封装更改, 解决不利于插件问题
王西增20080414



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Date:	Tuesday, April 15, 2008	Sheet	4 of 11



[illegible]

Note: The IC's CVBSOUT level is 0.5Vp-p when input signal is 1Vp-p, so it must multiply signal by four (GAIN X 4) for 2Vp-p output

