Liquid Crystal Display Television
Service Manual

Chassis： MST6

Product Type：LCD40V57CA

Ver 1.0

Hisense Electric Co.，Ltd.

May. 2008

Contents

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 Hisense Electric Co., Ltd 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 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 Hisense, must first satisfy himself thoroughly that neither his safety nor the safe of the equipment will be jeopardized by the service method selected.

Hereafter throughout this manual, Hisense Electric Co., Ltd will be referred to as Hisense.

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 Hisense. Hisense 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 no 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.

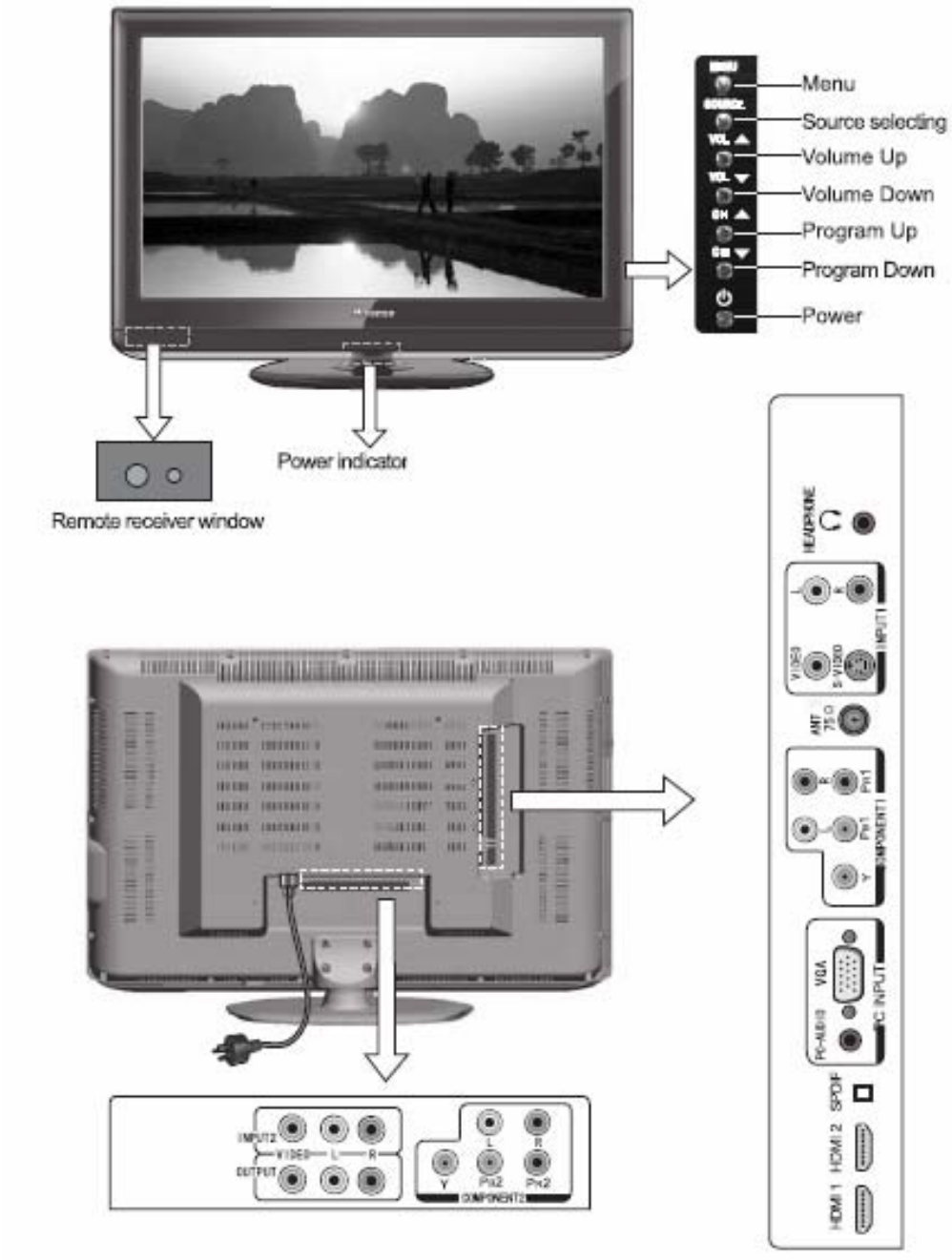
• Perform a safety check when servicing is completed. Verify that the peripherals of the serviced points have not undergone any deterioration during servicing. Also verify that the screws, parts and cables removed for servicing purposes have all been returned to their proper locations in accordance with 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		LCD40V57CA
Product dimension (W×H×D)	not including base	1002X673X112
	including base	1002X724X288
Product weight(lb)	not including base	42
	including base	49
Display screen min size of diagonal of visual pictures (inch)		40
Display screen Resolution		1366X768
Unit power consumption		268W
Sound-matching power		7W+7W
Power (input)		Refer to the rating label
Receiving system	RF	PAL(M/N) NTSC(M)
	AV	PAL、NTSC
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	75Ω
S-VIDEO	Brightness and colour separation video	Y	1.0Vp-p	75Ω
		C	0.286Vp-p	75Ω
Component input	Analog component video	Y	1.0Vp-p	75Ω
		PB.PR	0.7Vp-p	75Ω
VGA	VGA	R.G.B	0.7Vp-p	75Ω
		HD.VD	TTL	High impedance
Audio input	Analog audio	Left.right	1Vrms	More than 10kΩ

Video signal format with component input:

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

PC signal format with VGA interface:

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

Video signal format with HDMI input:

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

3. LCD Panel Spec

3.1 General Description

SN：1050558

LTA400AA04 is a color active matrix liquid crystal display (LCD) that uses amorphous silicon TFT(Thin Film Transistor) as switching components. This model is composed of a TFT LCD panel, a driver circuit and a back light unit. The resolution of a 40.0" is 1366 x 768 and this model can display up to 16.7 million colors with wide viewing angle of 89° or higher in all directions. This panel is intended to support applications to provide a excellent performance for Flat Panel Display such as Home-alone Multimedia TFT-LCD TV, Display terminals for AV application products, and High Definition TV (HDTV).

Features

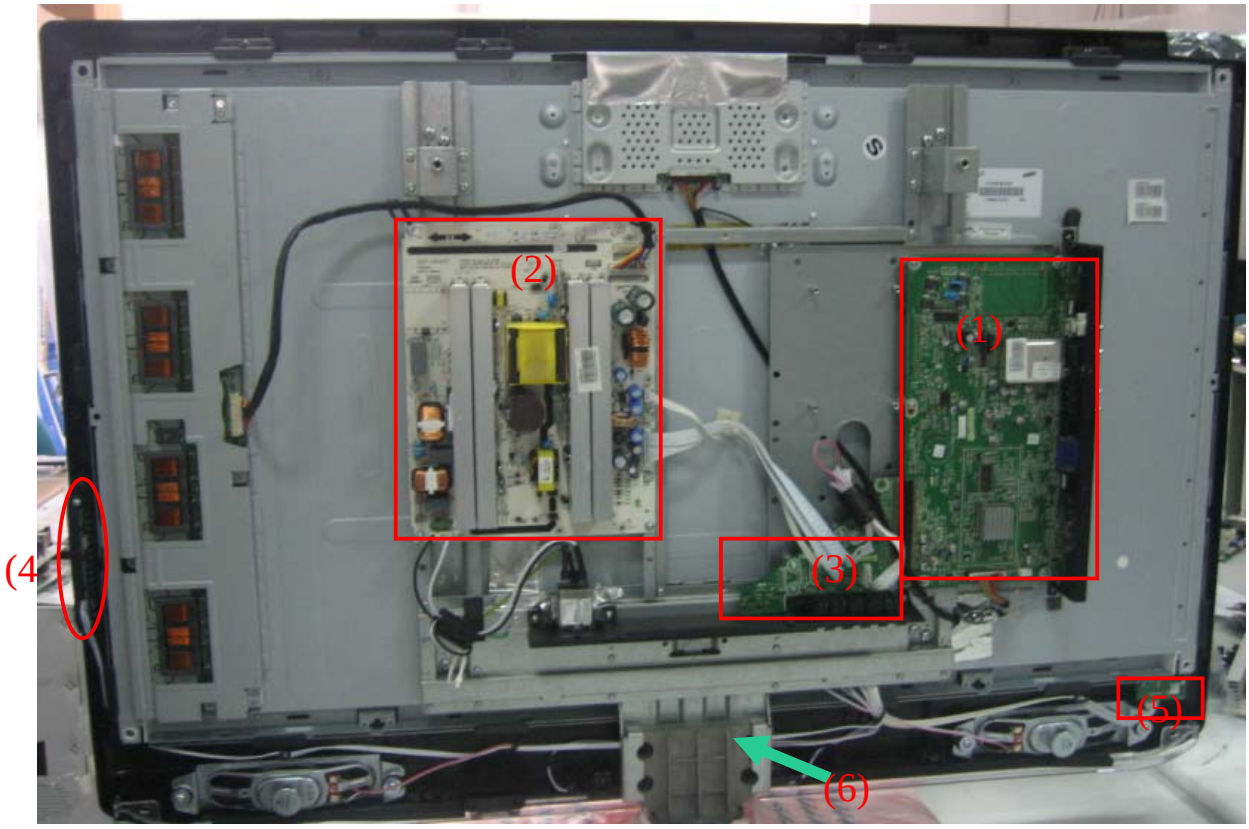
- RoHS compliance (Pb-free)
- High contrast ratio, high aperture ratio, fast response time
- SPVA(Super Patterned Vertical Align) mode
- Wide viewing angle (±178°)
- High speed response
- WXGA (1366 x 768 pixels) resolution (16:9)
- Low Power consumption
- Direct Type 16 CCFTs(Cold Cathode Fluorescent Tube)
- DE(Data Enable) mode
- LVDS (Low Voltage Differential Signaling) interface (1pixel/clock)

3.2 General Features

Items	Specification	Unit	Note
Module Size	952.0(H_{TYP}) x 551.0(V_{TYP})	mm	±1.0mm
	51.8(D_{MAX})		
Weight	11,000(Max.)	g	
Pixel Pitch	0.648(H) x 0.648(W)	mm	
Active Display Area	885.168(H) x 497.664(V)	mm	
Surface Treatment	Haze 14% , Hard-coating (3H)		
Display Colors	8 bit - 16.7M	colors	
Number of Pixels	1366 x 768	pixel	
Pixel Arrangement	RGB vertical stripe		
Display Mode	Normally Black		
Luminance of White	450 (Typ.)	cd/m^2	

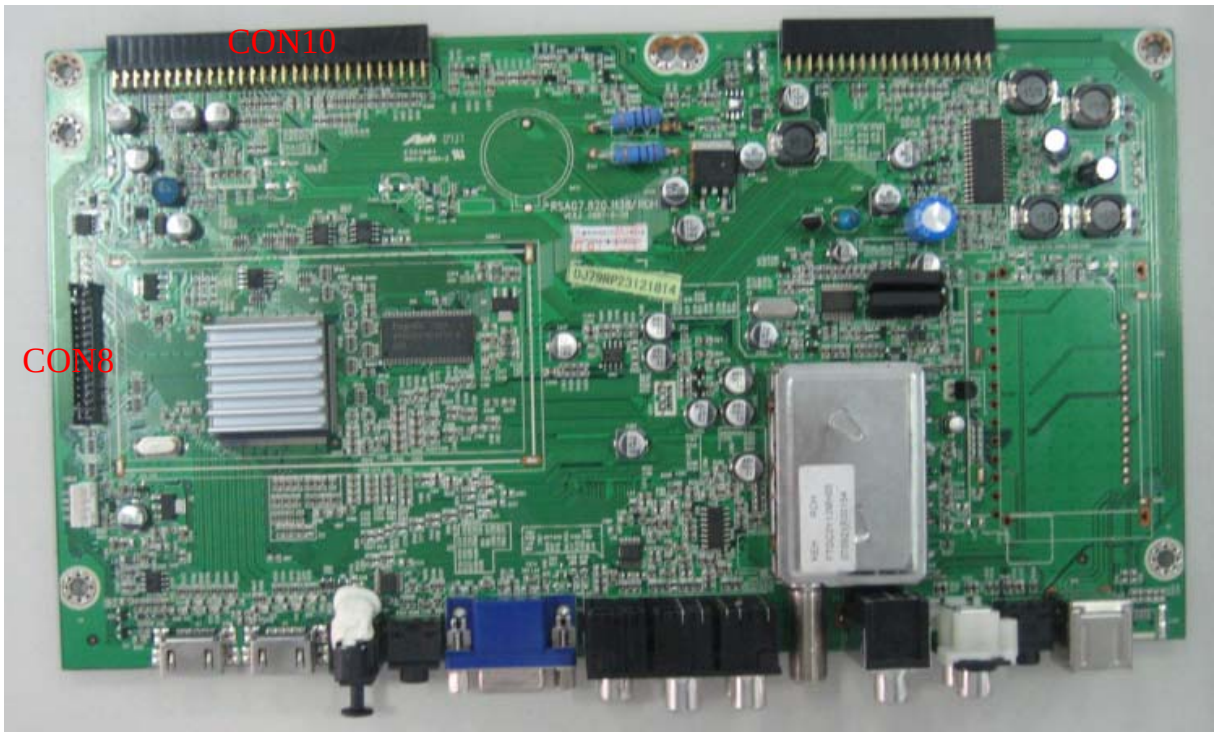
4. Chassis Layout and Overall Wiring Diagrams

4.1 Chassis Layout



No	Description	Part No	Type/Model	PCB/ Model
(1)	Main BD	116622	RSAG2. 908. 1102-15/ROH	RSAG7.820.1138VER.D/ROH
(2)	Power BD	113358	RSAG2. 908. 982-4/ROH	RSAG7.820.968VER.H/ROH
(3)	Terminal BD	116706	RSAG2. 908. 1153-3	RSAG7.820.1126VerB/ROH
(4)	Keypad PCA	113354	RSAG2. 908. 1088/ROH	RSAG7.820.1101VER.B/ROH
(5)	IR Board	112613	RSAG2. 908. 1029/ROH	RSAG7.820.996VER.C/ROH
(6)	luminophor	1046574	B-700-500	Not PCB

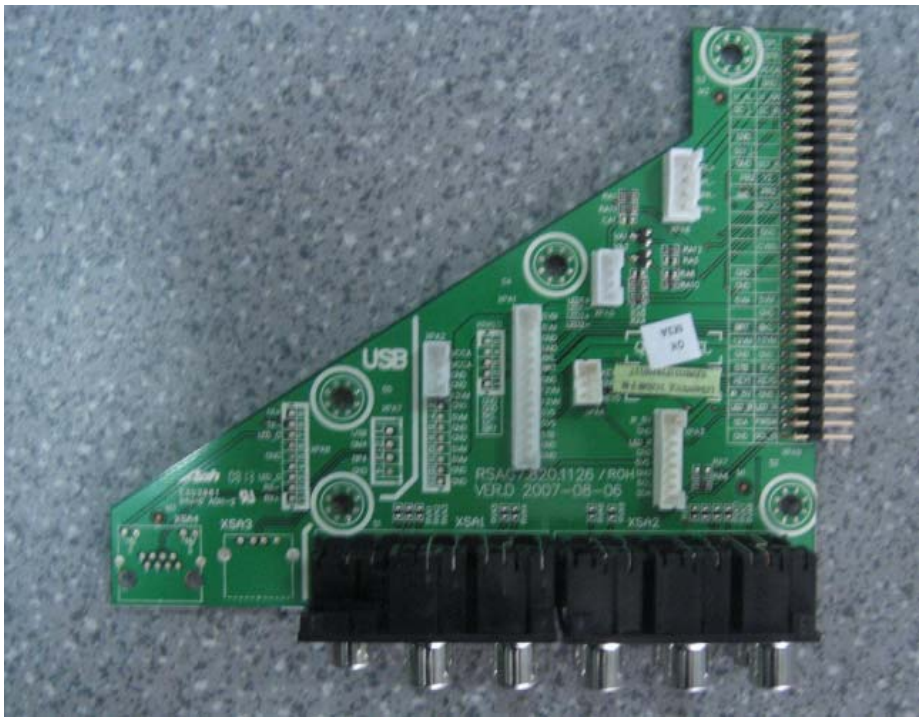
4.2 Main BD



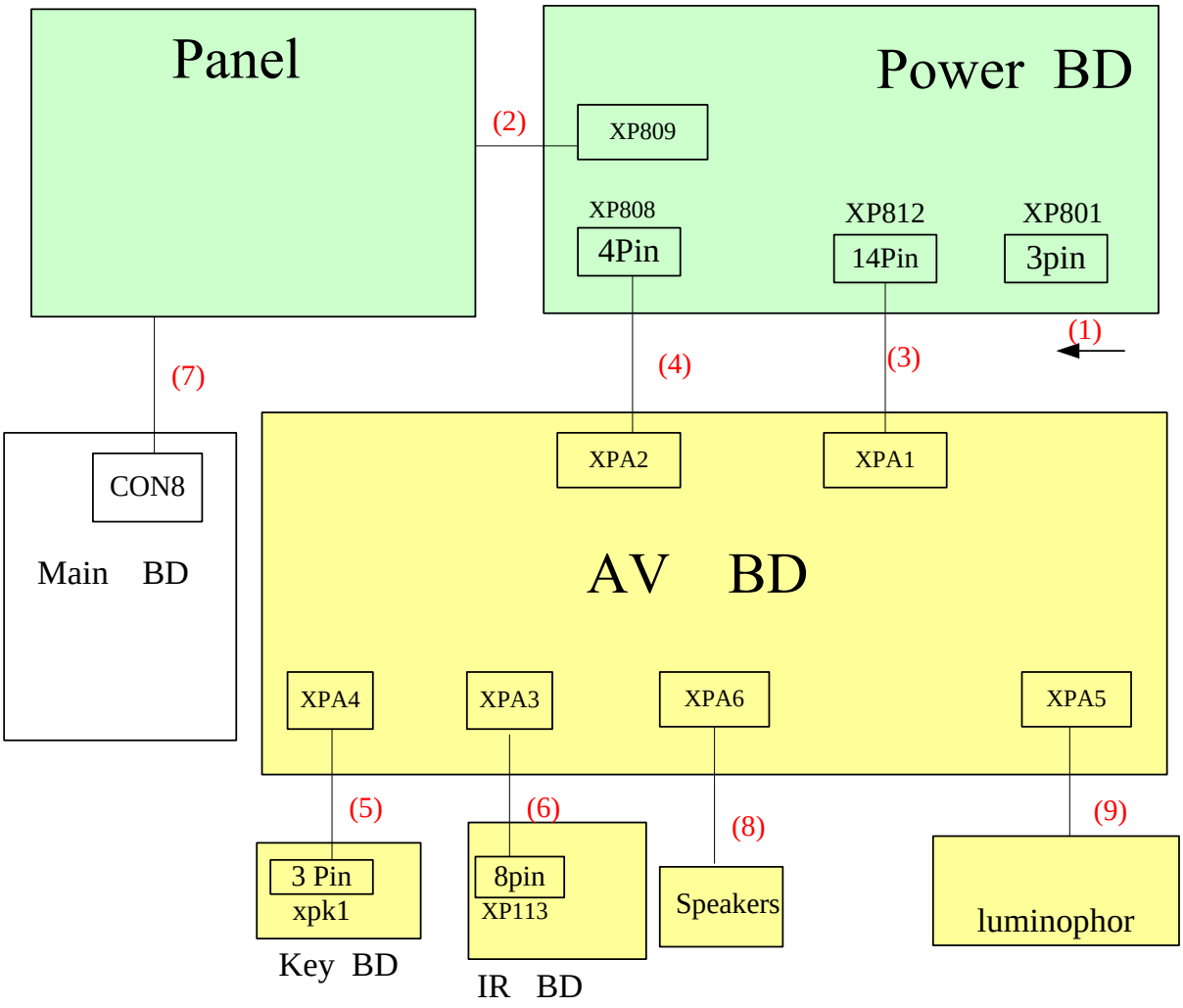
Location No.	SPECIFICATION	Description
CON10	PH2.54X8.5 2X30P 90\ROH	connect Main BD and Terminal BD
CON8	FF-HX19-10\ROH	LVDS

4.3 Power BD

4.4 Terminal Board



4.4 Wires and Cables Overall Wiring Diagrams



No	DESCRIPTION	SPECIFICATION	NOTE
1	Main Power	TJC2-3Y-350-2\ROH	Power Inlet-->Power BD XP801
2	Back light power to panel	HX-3006B550\ROH	Power BD XP809<--> Panel backlight port
3	5V,12V power and communication between Terminal BD and power BD	TJC10T-14Y-250\ROH	Power BD XP812<--> Terminal BD XPA1
4	Audio amplify	TJC10T-4Y-250\ROH	Power BD XP808<--> Terminal BD XPA2
5	Buttons	TJC10T-3Y-1100\ROH	Terminal BD XPA4<--> Key BD XPK1
6	IR	TJC10T-8Y-700\ROH	Terminal BD XPA3<-->IR BD XP113
7	LVDS signal	HX2-2X15KLB600P-SAM\ROH	Main BD CON8<-->Panel
8	Audio(input/output)	TJC3H-4Y-500-900\ROH	Terminal BD XPA6<--> Speaker
9	luminophor	B-700-500	Terminal BD XPA5<-->Luminophor

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
HISENSE
WELCOME

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:
LCD40V57CA_VER1.00.200806X
Panel Type:
SAM 40 (1366*768)
FLASH :
PS25P40

5.2.2、Design Menu

Design Menu

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

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

Note：

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

6. Software Upgrading

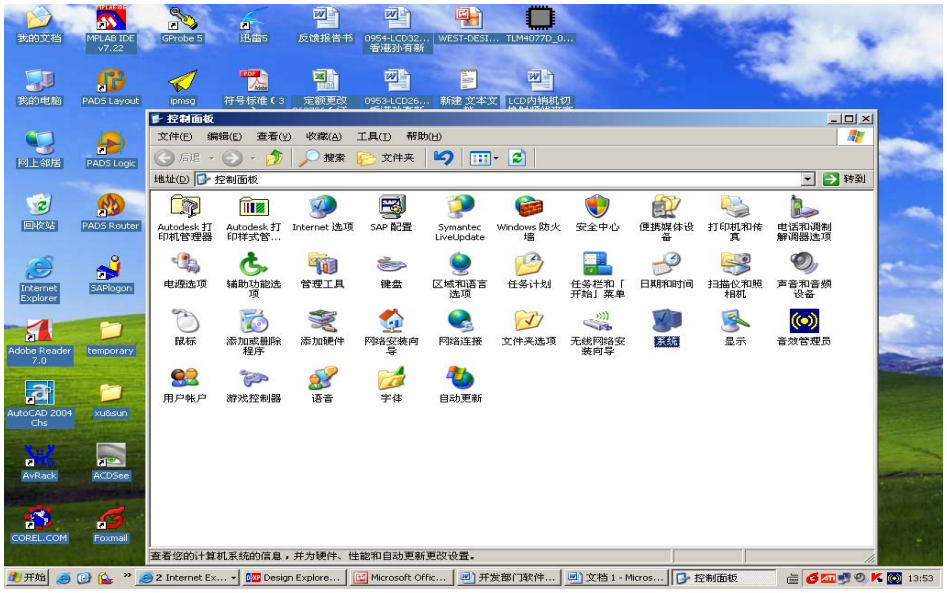
The software is upgraded by a burning tool- ISP_TOOL4.0.9, which can burn the program file “*. bin” to the main board of the unit

6.1 Get ready for upgrading

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

1、 Port Setting：

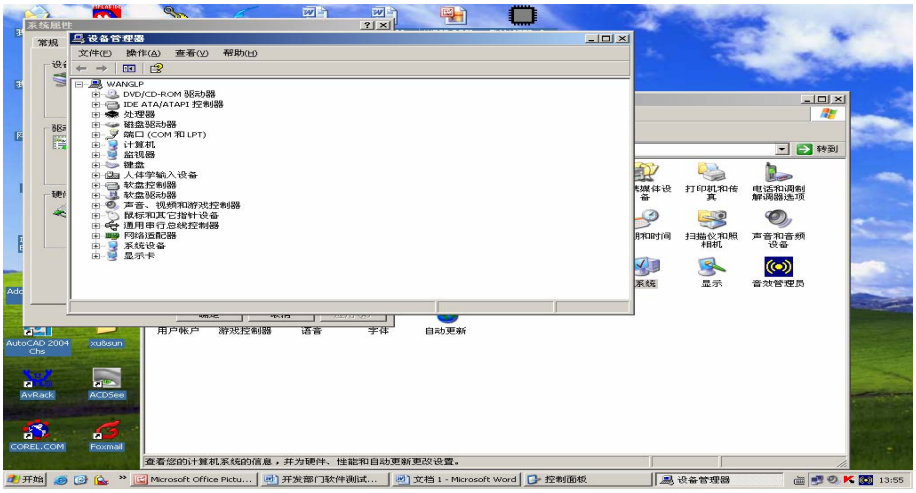
Choose “system”option from the “control panel”



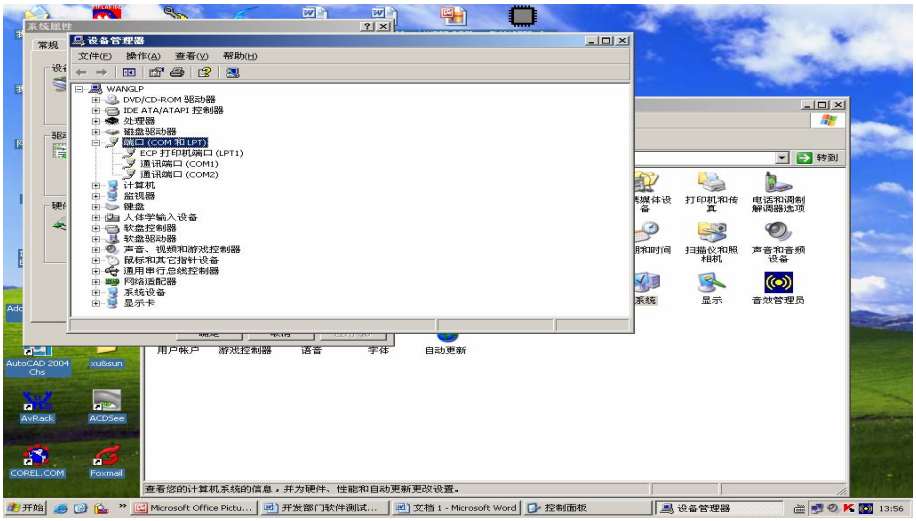
Click the “system” icon as the following

Choose the “hardware” option from the dialog window

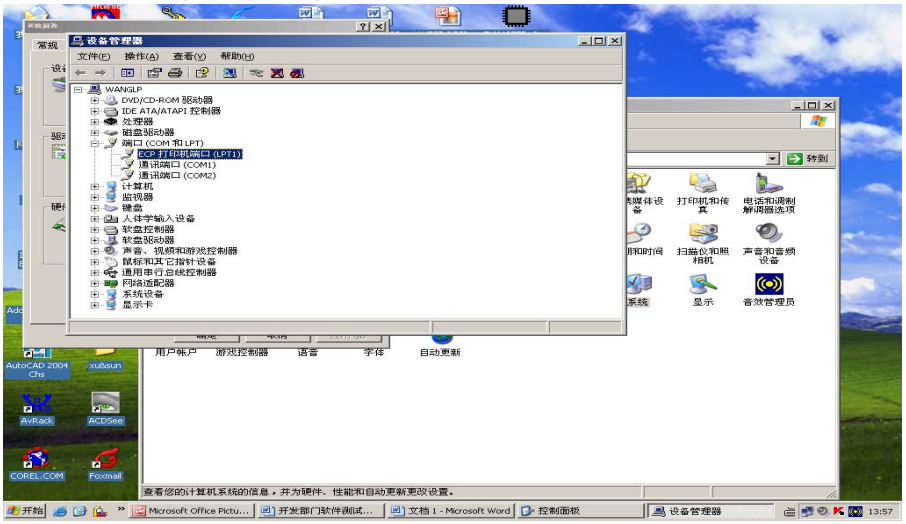
Click“device management” icon as the following



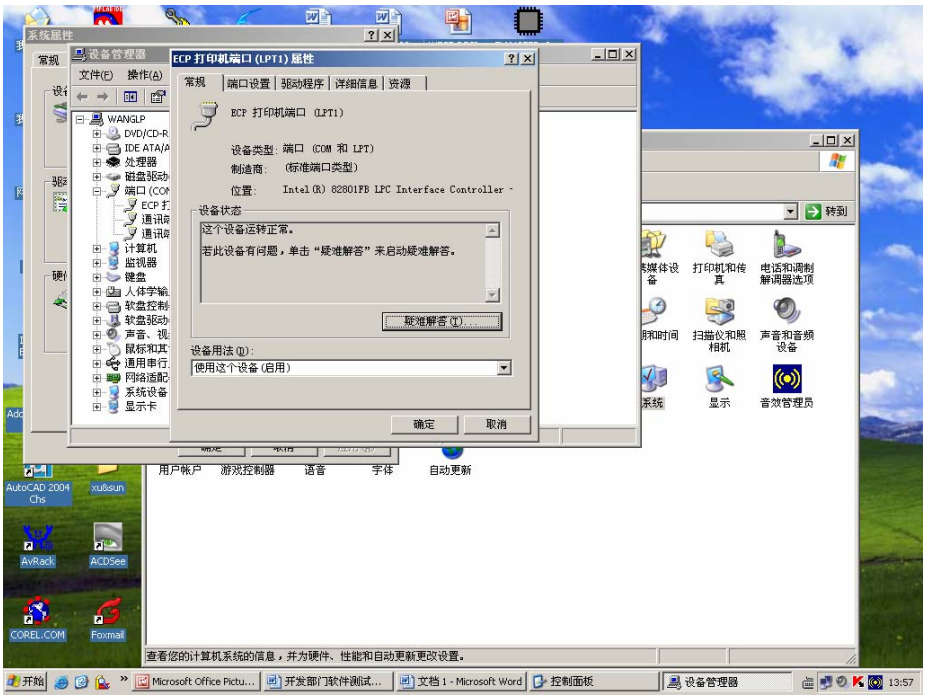
Choose the port (COM and LPT1)



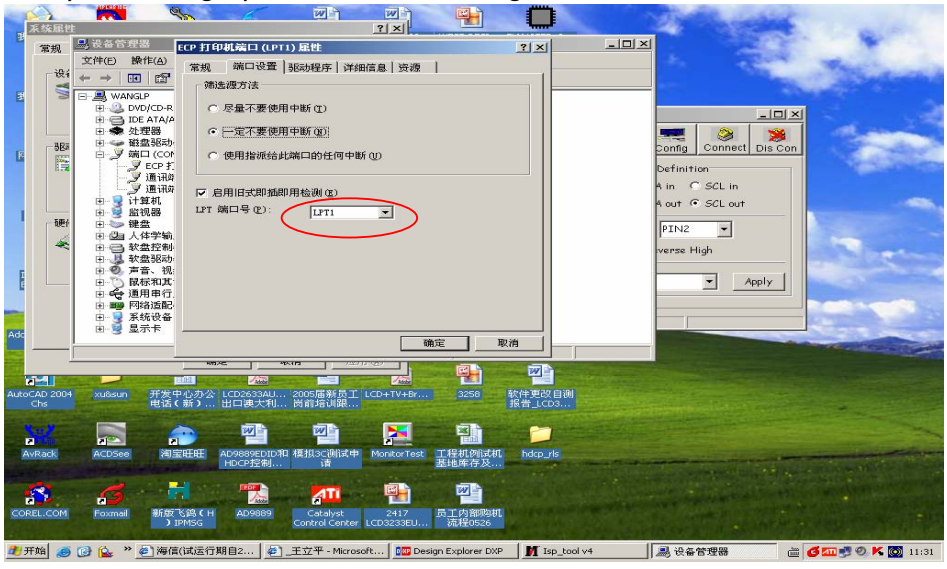
Choose the ECP print port (LPT1）



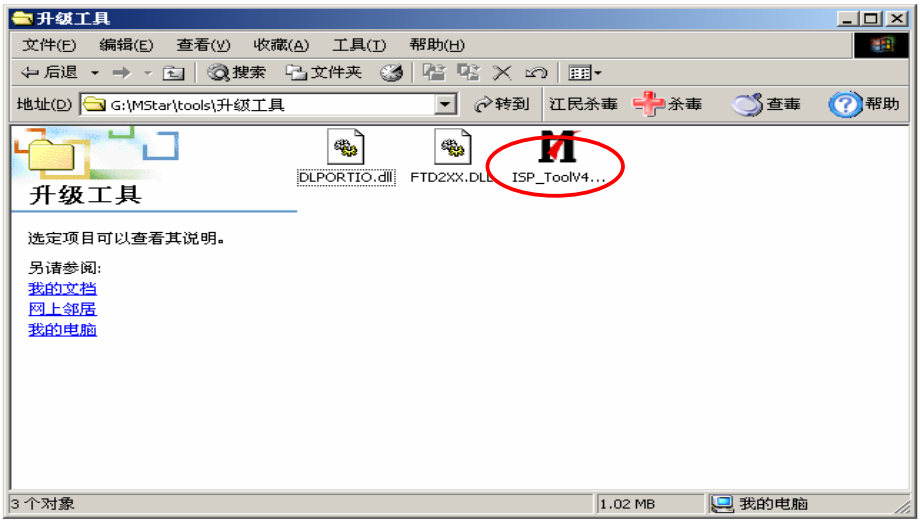
Click the port of print （LPT1）as the following



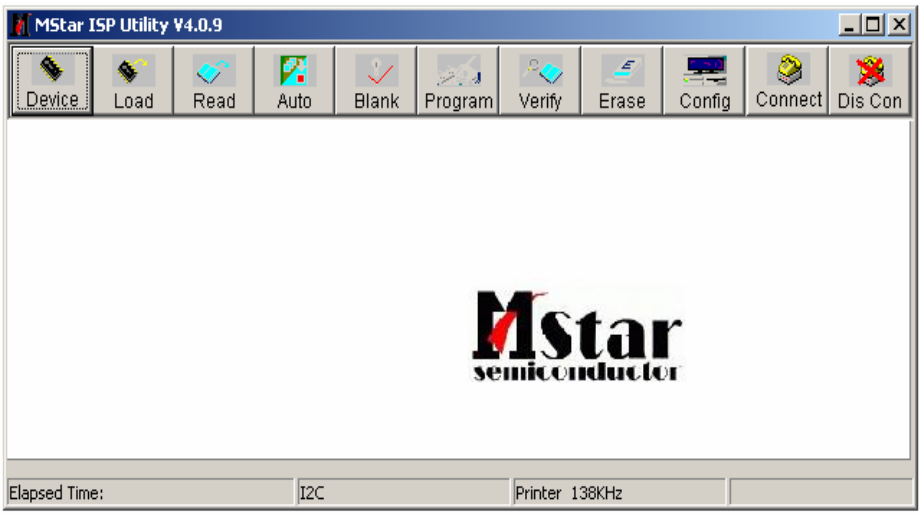
Choose “port setting”option as the following



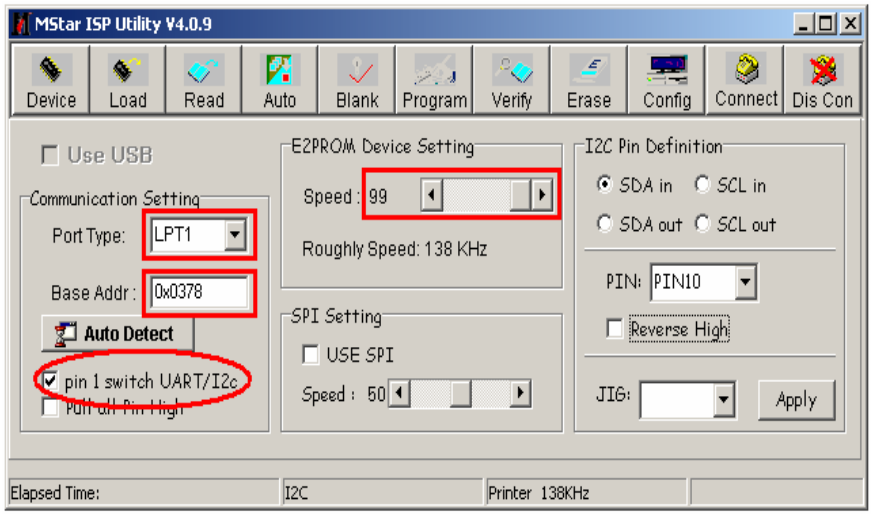
2、 Find the folder where the ISP_TOOL4.0.9 lies in.
There are three folders/files in this folder together.
DLPORTIO.dll and FTD2XX.DLL must be in the same folder



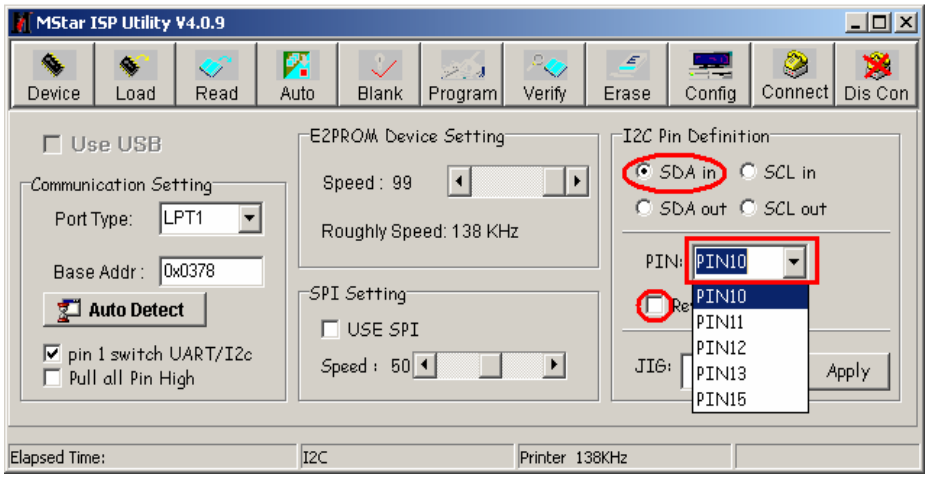
Double click the ISP_TOOL4.0.9 icon, and then a dialog window will show as below.



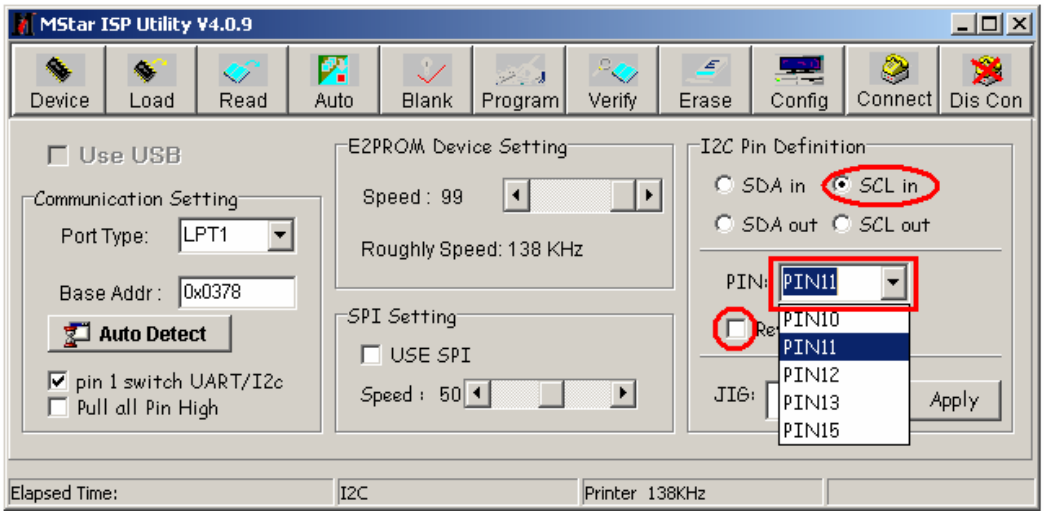
Click the **Config** button. And then a dialog window will show as below.
Port Type setting is LPT1
Base Addr setting is 0x378
Draw ✔ on the front of “pin 1 switch UART/I2c”
Speed setting is 99
As following



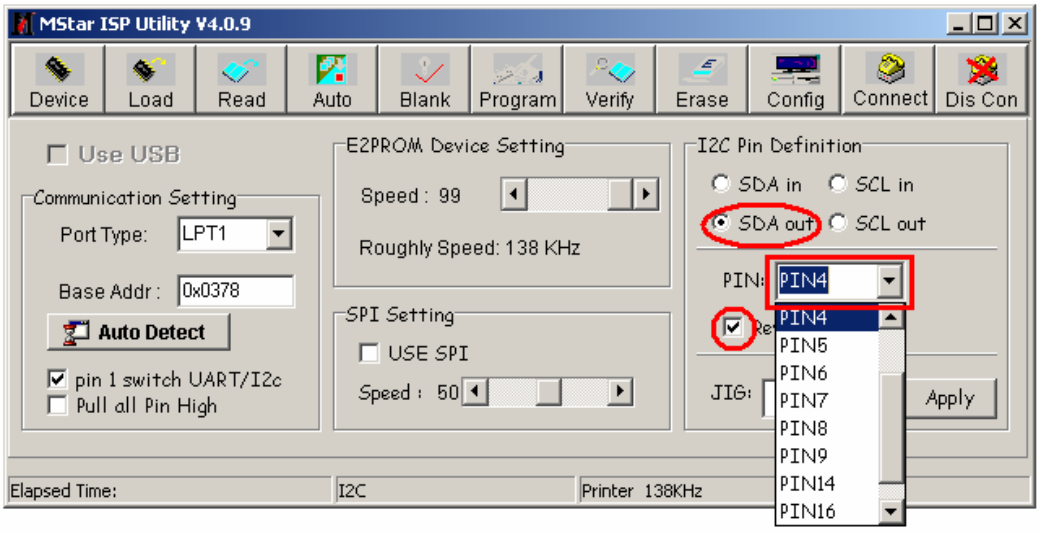
Choose“SDA in”and setting “PIN” is “PIN10”。
Notes:
Do not draw ✔ on the front of “Reverse High”。
As following



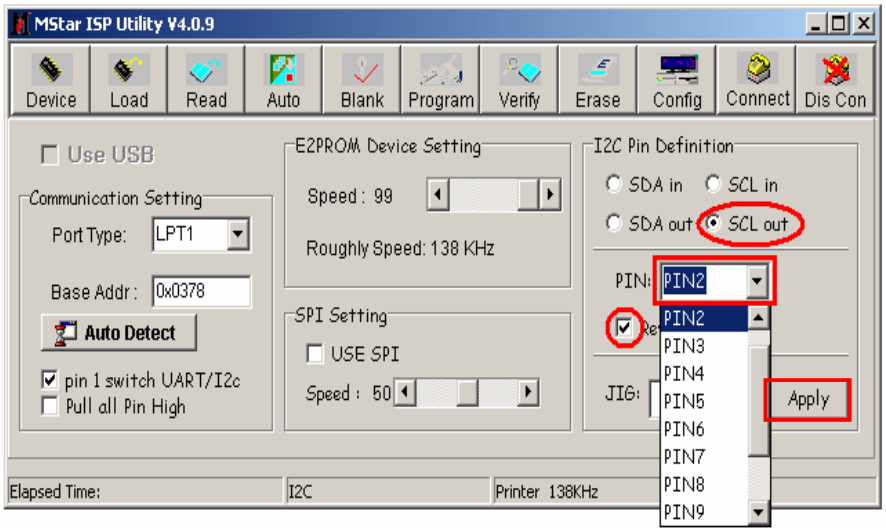
Choose “SCL in”and setting “PIN” is “PIN11”。
Notes:
Do not draw ✔ on the front of “Reverse High”。
As following



Choose “SDA out”and setting “PIN” is “PIN4”
Notes:
Draw ✔ on the front of “Reverse High”。
As following。



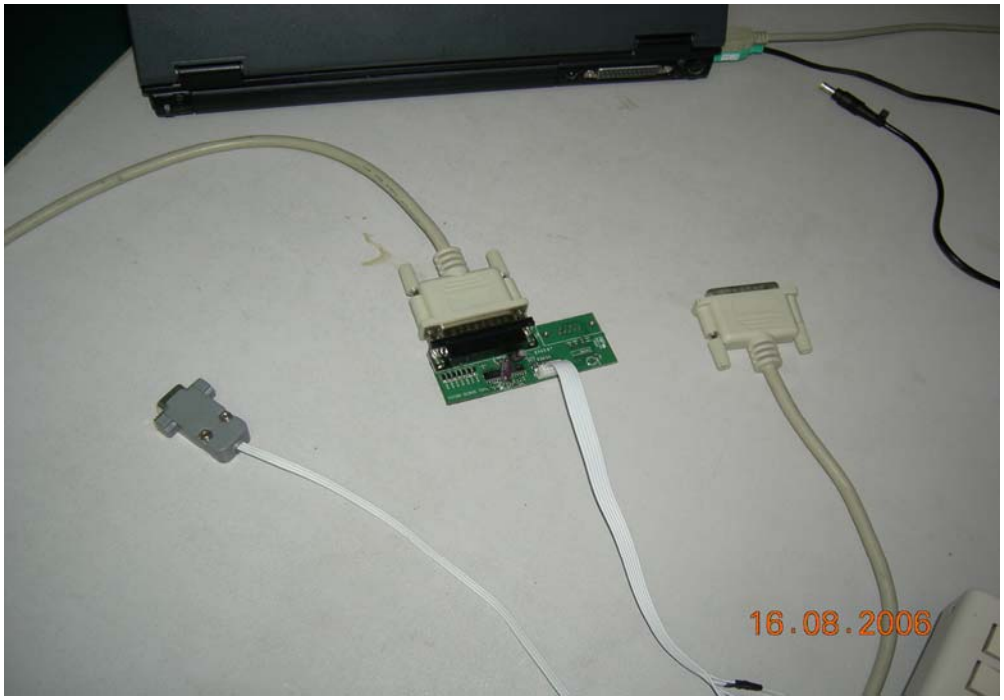
Choose “SCL out”and setting “PIN” is “PIN2”
Notes:
Draw ✔ on the front of “Reverse High”
As following



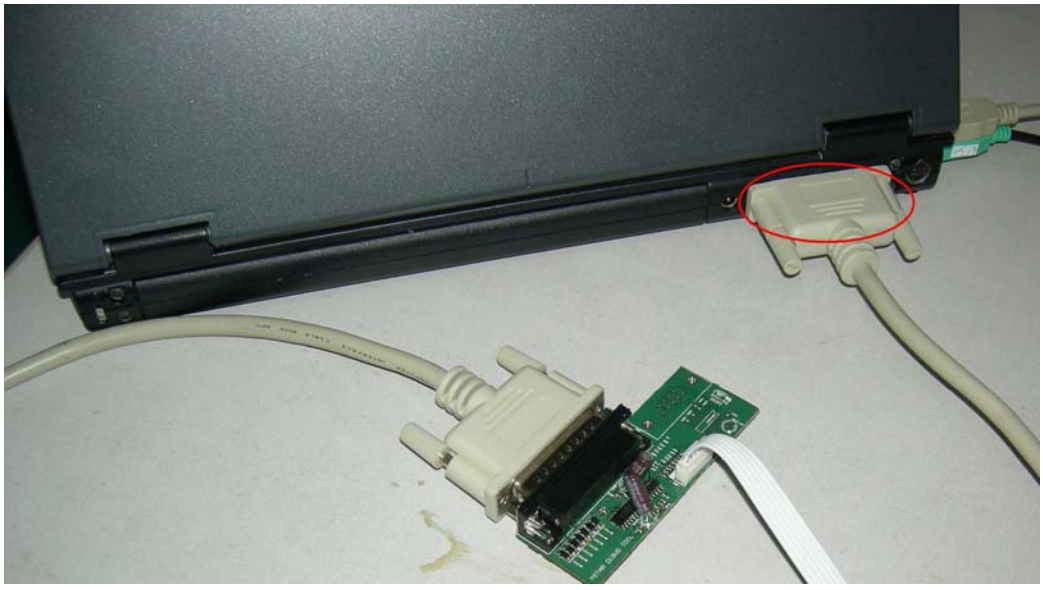
After having finished all above, clicking the “Apply ”button to complete the configuration。

6.1.2 Hardware connecting

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

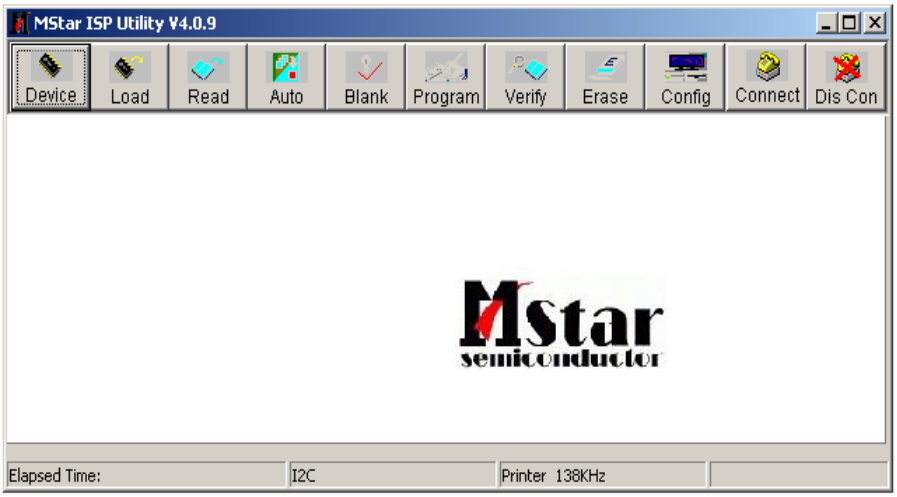


Connect the Debug board to the TV use VGA interface, the other parallel port to the computer, just as the following。

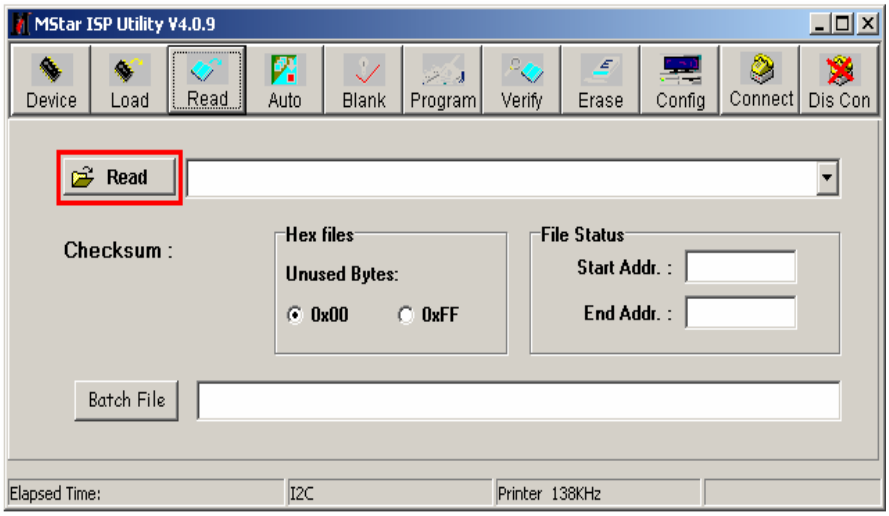


6.2 Upgrading with the ISP_TOOL4.0.9

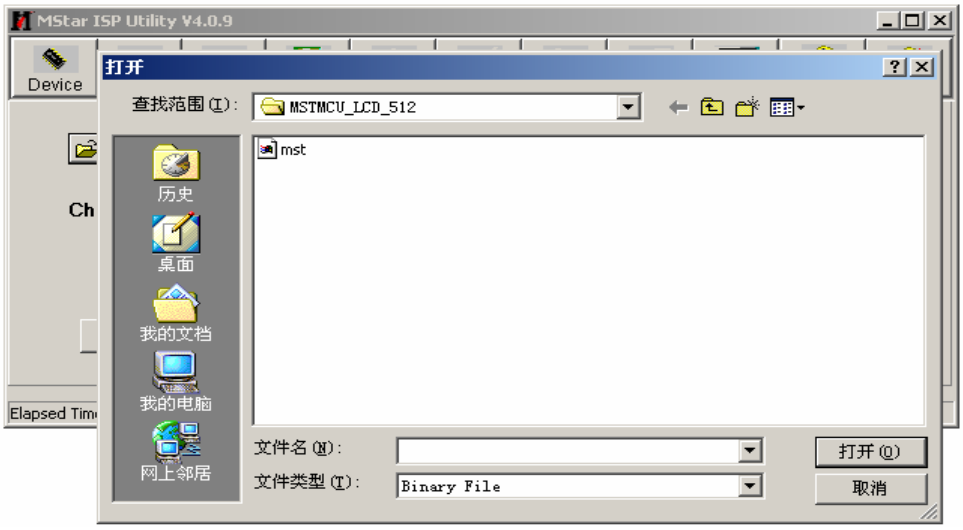
6.2.1 Double click the ISP_TOOL4.0.9 icon and a dialog window will show as following。

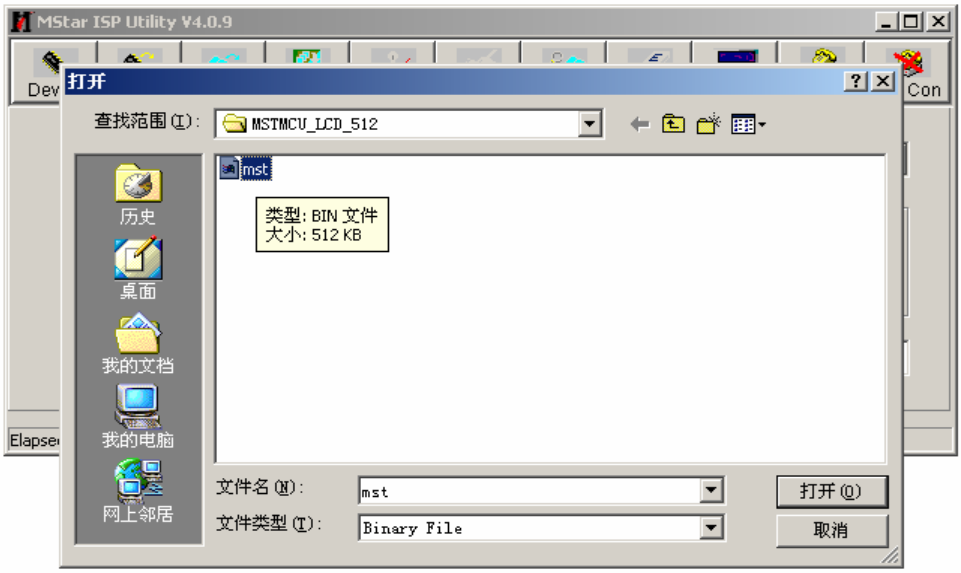


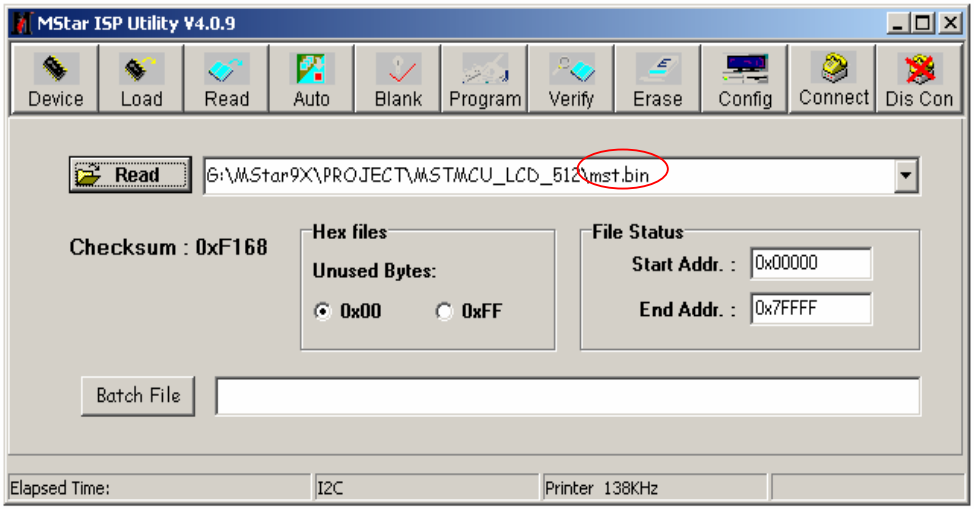
Click the“Read ”button。



Choose the update file from the folder。

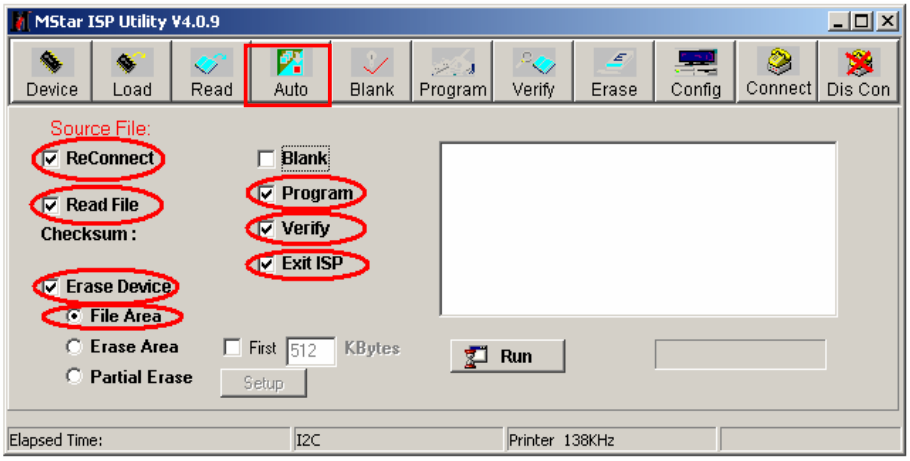




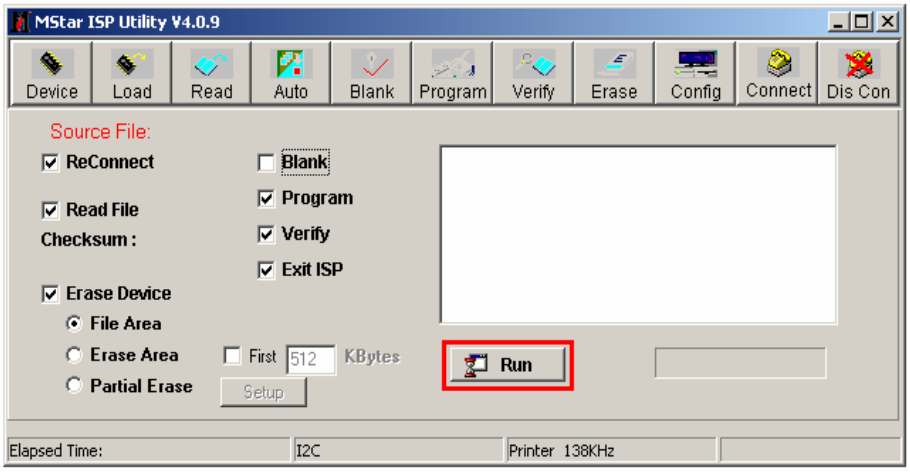


The update file has been chosen successfully。

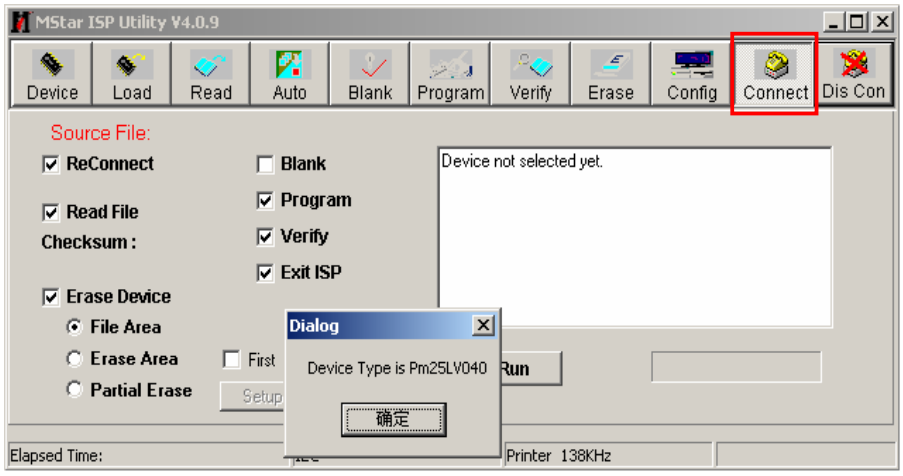
Click the“Auto”button and choose parameters as following。

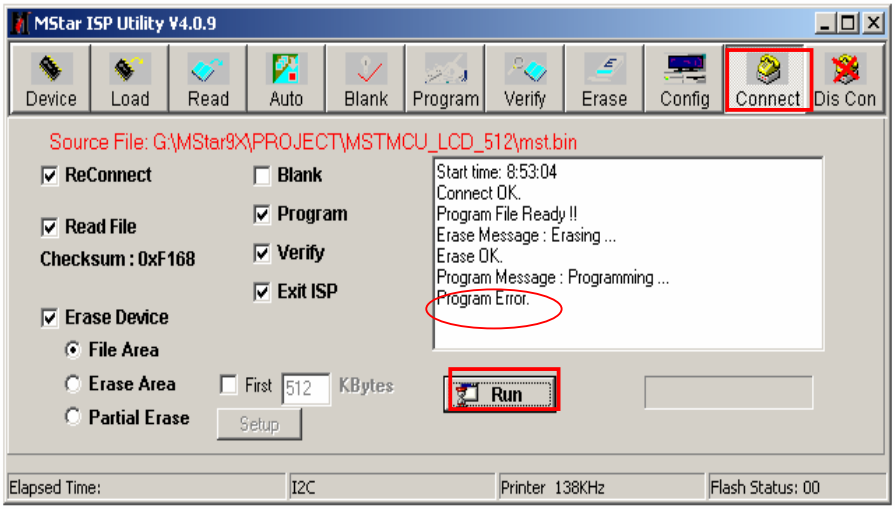


Click the“Run”button

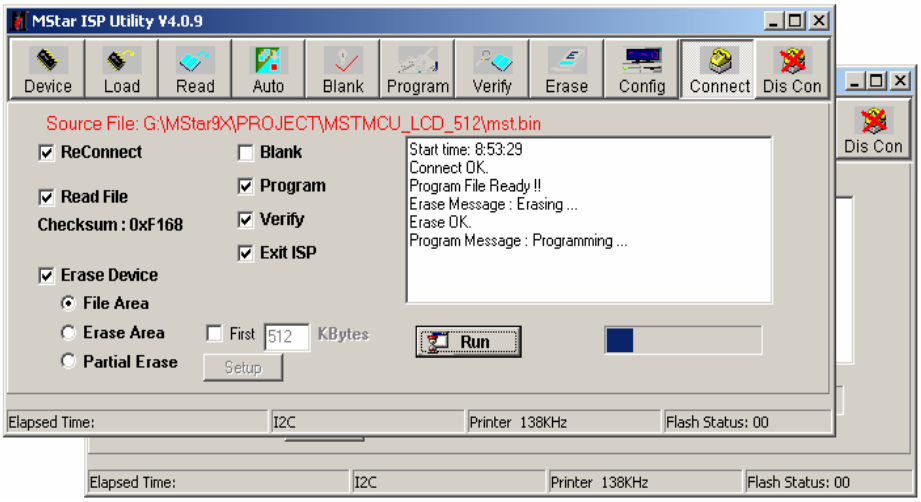


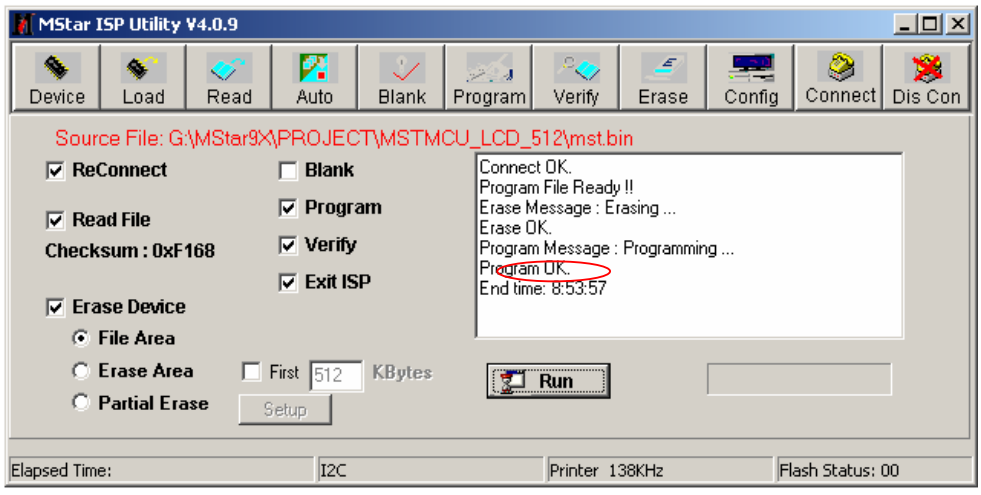
Click the“connect”button,then show a dialog box as following。





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





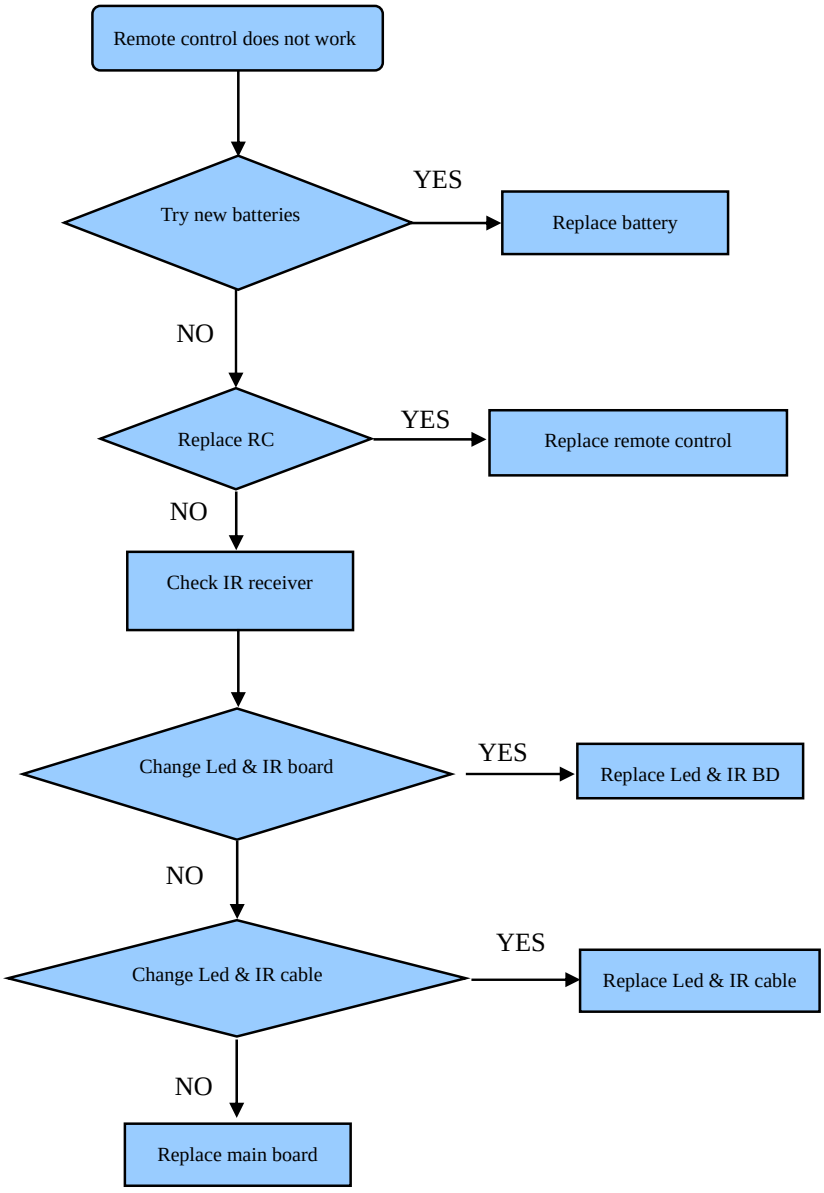
The above appears on the screen-the word “program ok”shows in the information displaying window,indicating upgrading is over。

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”

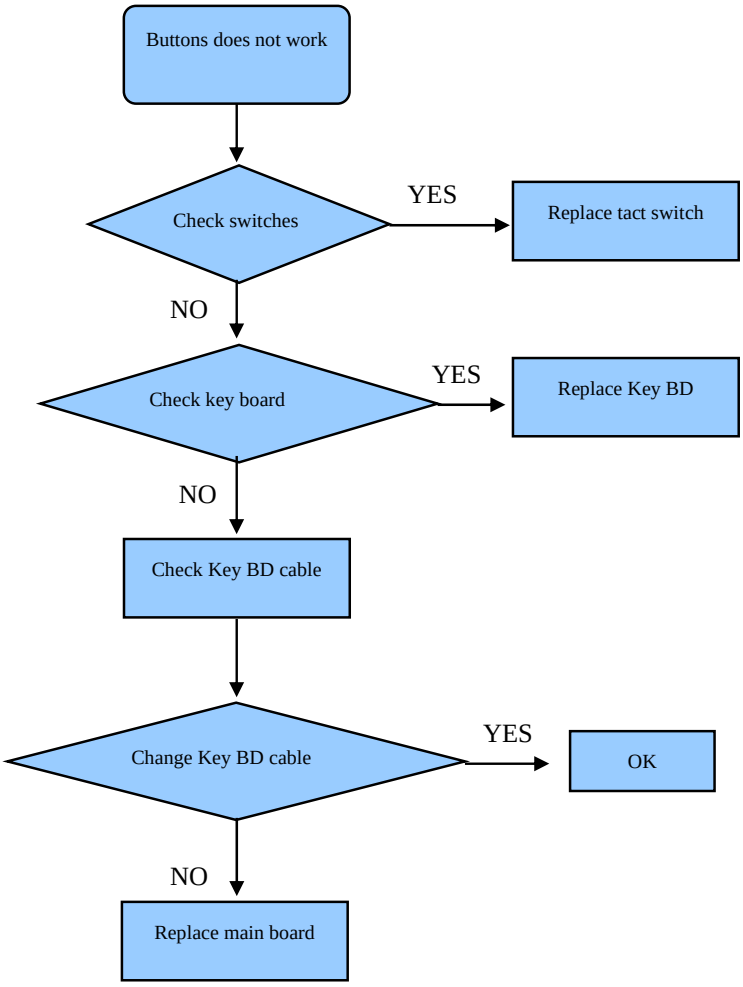
a. Press VOL+ button to clear the EEPROM data.
b. When the “Clear Unprotectly ” button becomes white, turn off the power.
c. Restart the TV.

7. Troubleshooting

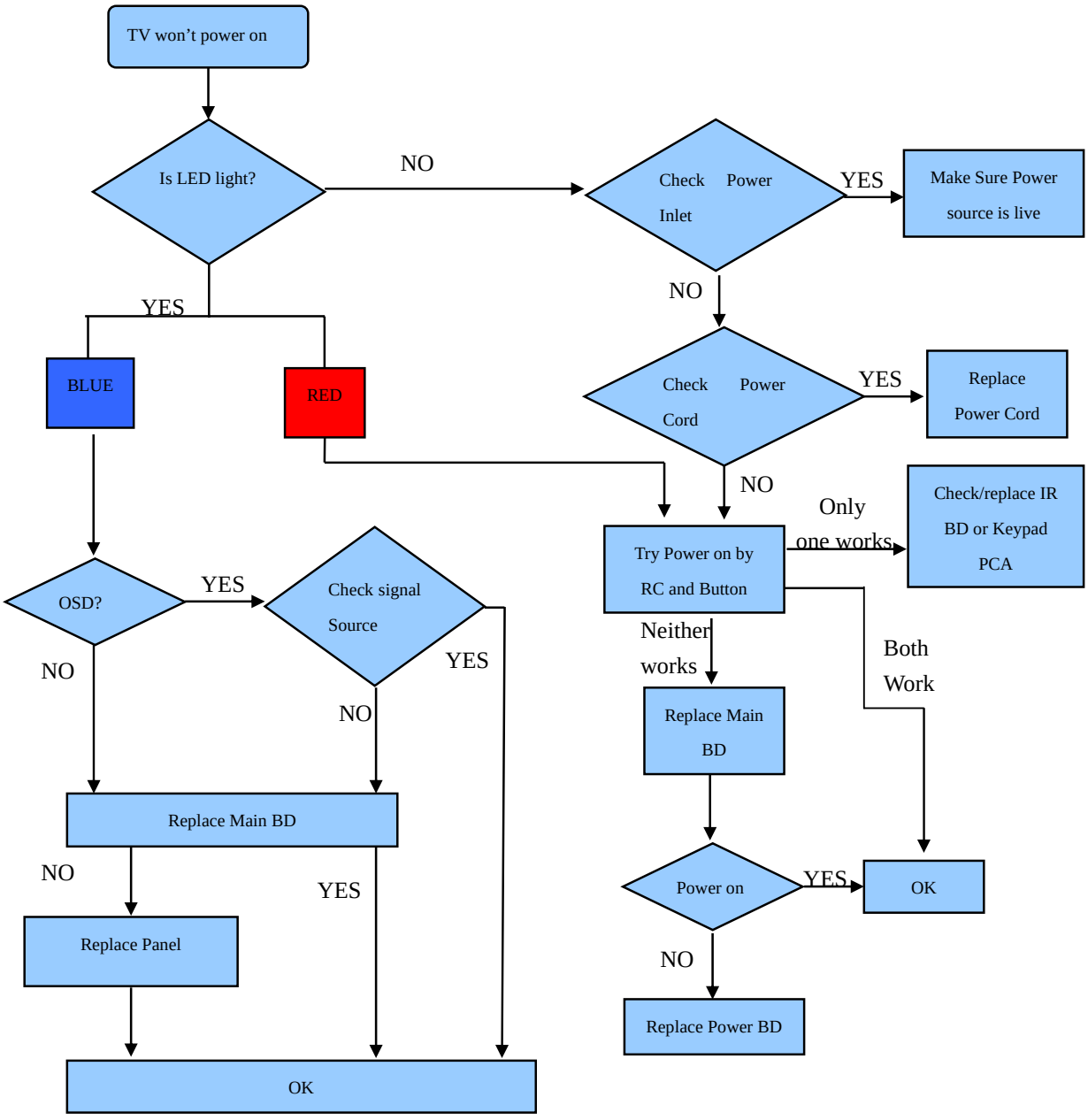
7.1 Troubleshooting for Remote Control



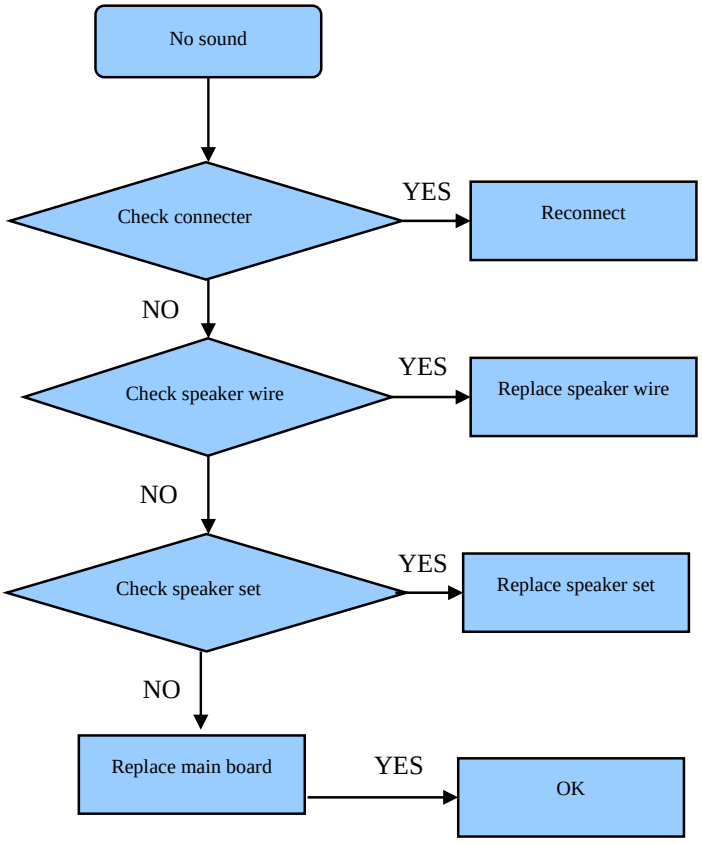
7.2 Troubleshooting for Function Key



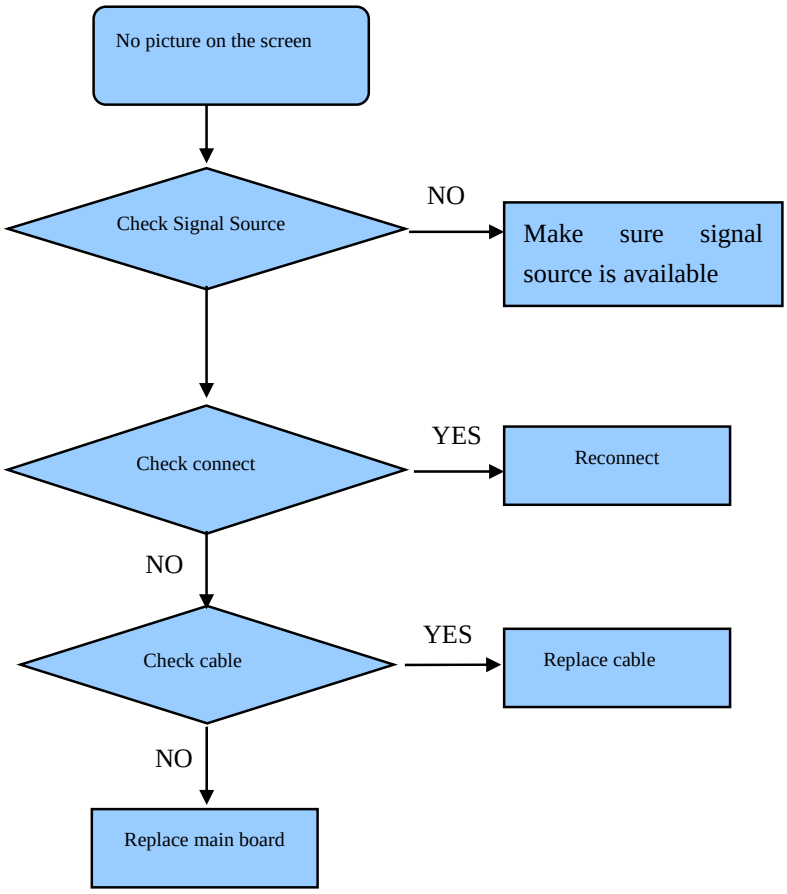
7.3 TV won’t Power On



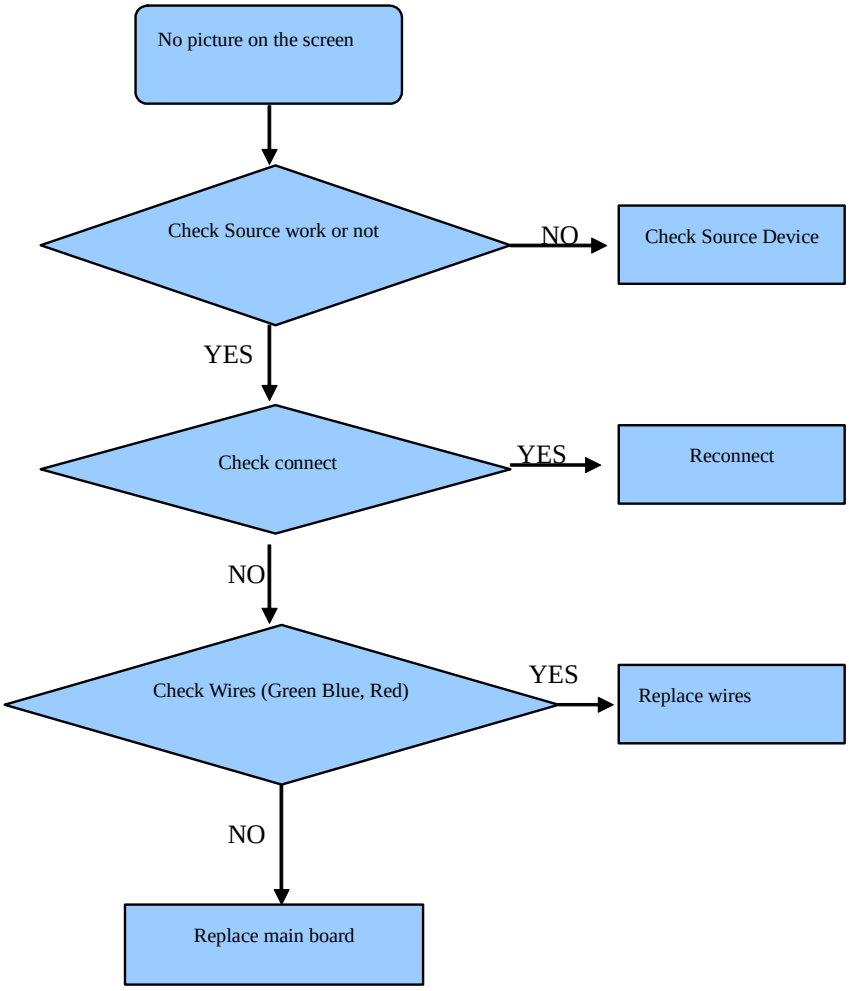
7.4 Troubleshooting for Audio



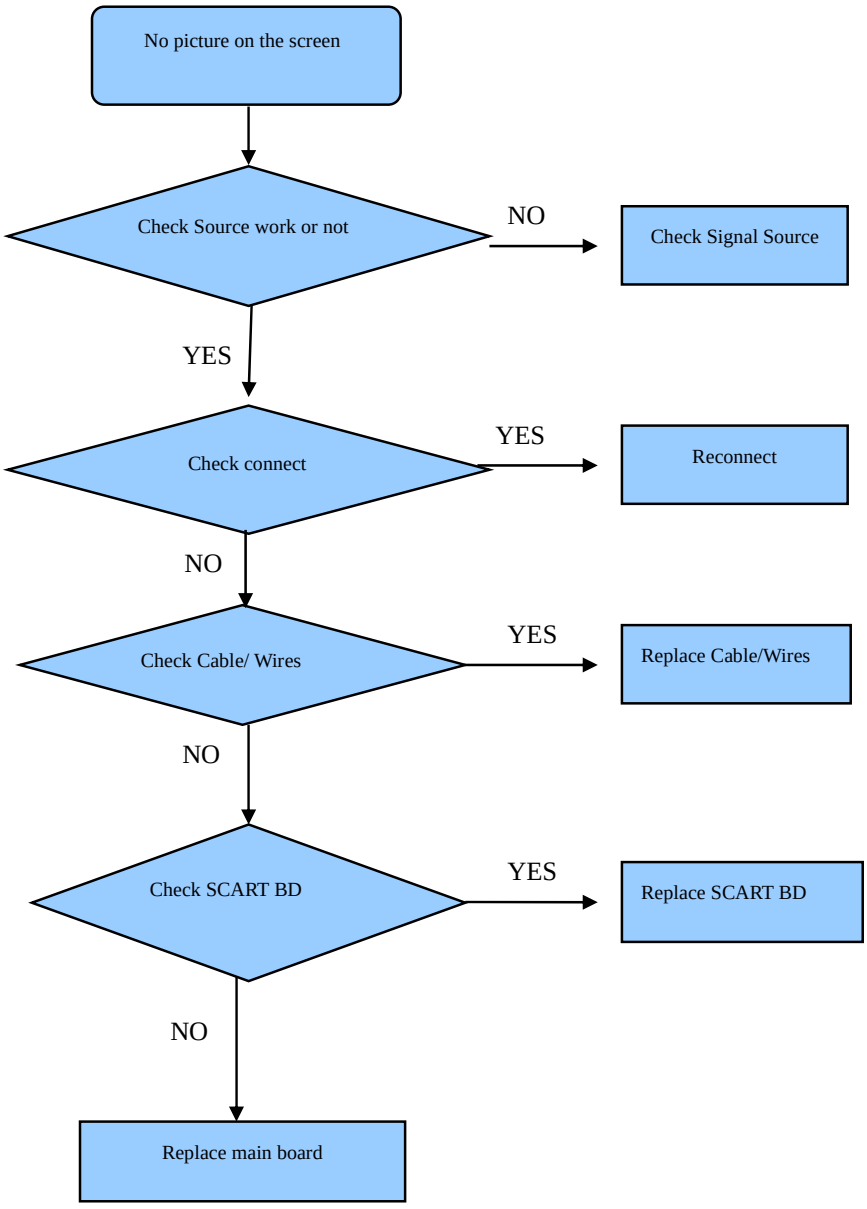
7.5 Troubleshooting for TV/VGA/HDMI input



7.6 Troubleshooting for YPbPr input



7.7 Troubleshooting for Video/S-Video/ SCART input



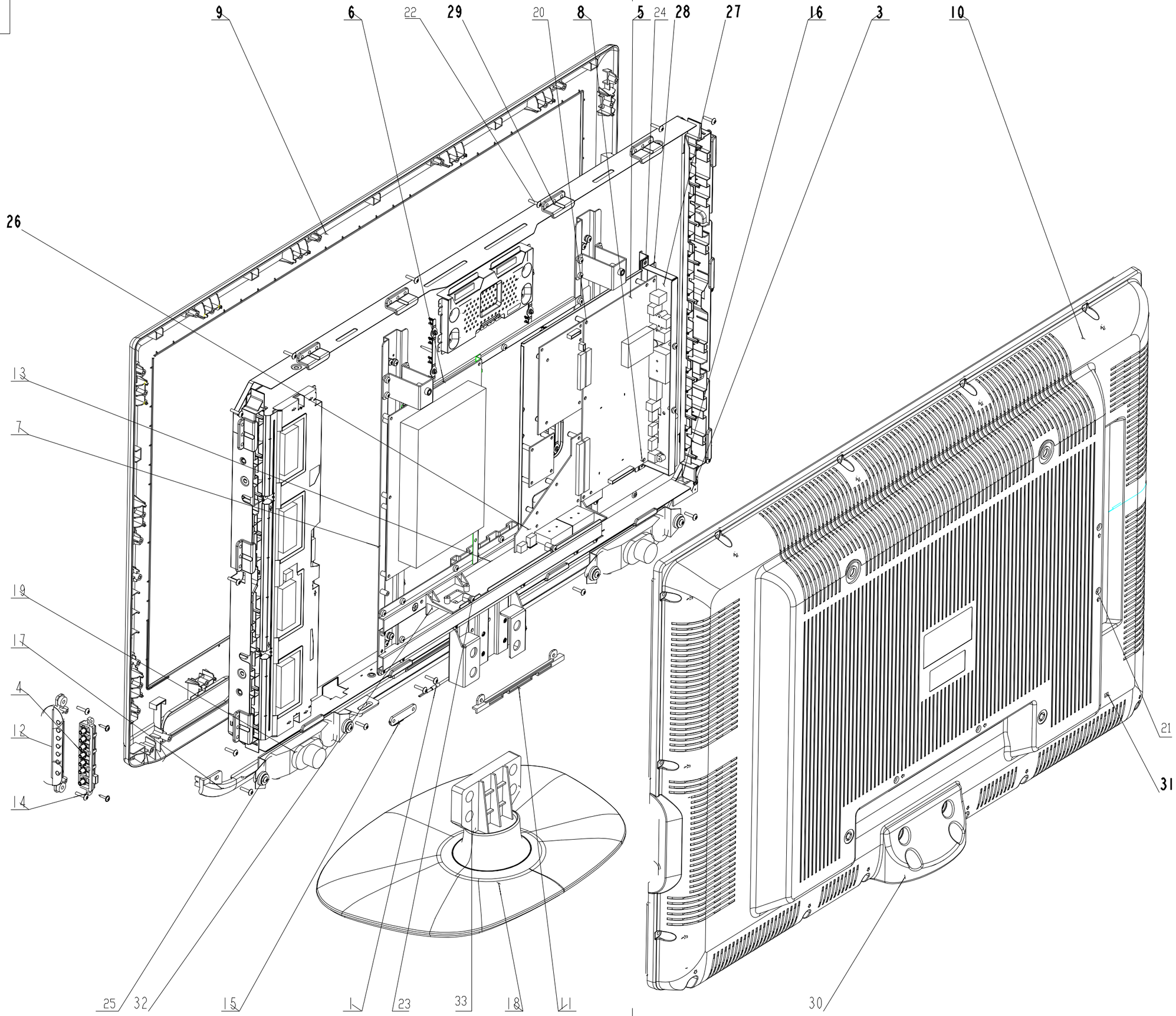
8. Explode View and explode BOM List

Explode BOM List:

LCD40V57CA				
No.	Part Name	Num.	Code No.	Remark
1	lamp bar unit	1	B-700-500	
2	LCD PANEL	1	LTA400AA04	
3	IR Board Unit	1	RSAG2.908.102	
4	Key Board Unit	1	RSAG2.908.108	
5	Main Board Unit	1	RSAG2.908.1101-15	
6	Power Board Unit	1	RSAG2.908.982-4	
7	Bracket Unit	1	RSAG6.150.349	
8	Terminal bracket	1	RSAG8.041.182	
9	front cover	1	RSAG8.074.467	
10	Back cover	1	RSAG8.074.468	
11	bracket	1	RSAG8.078.480	
12	bracket	1	RSAG8.078.481	
13	Terminal bracket	1	RSAG8.081.312	
14	key	1	RSAG8.335.067	
15	baffle	1	RSAG8.634.047	
16	Lens led	1	RSAG8.640.056	
17	ornament	1	RSAG8.647.247	
18	base unit	1	WG6.121.052	
19	speaker	2	YDT415E-10W8R-F	
20	Screw	23	SJ2836-87 M3X8	
21	Screw	2	GB/T 818-2000 M4X8	
22	Screw	37	SJ2824-87 ST4X14F	
23	Screw	4	SJ2825-87 ST3X12C	
24	Screw	7	SJ2832-87 ST3X10	
25	Screw	4	SJ2838-87 ST4X16C.II	
26	terminal board unit	1	RSAG2.908.1153-3	
27	Terminal bracket	1	RSAG8.041.182	
28	scutcheon	1	RSAG8.804.3233	
29	bracket	15	RSAG8.078.485	
30	cover board	1	RSAG8.634.057	
31	power tie	1	RSAG8.667.014	
32	scutcheon	1	RSAG8.804.317	
33	Screw	4	GB/T 818-2000 M6X16	

9. Schematic circuit diagram

LCD40V57CA


9
6
22
29
20
8
5
24
28
27
16
3
10
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14
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31
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32
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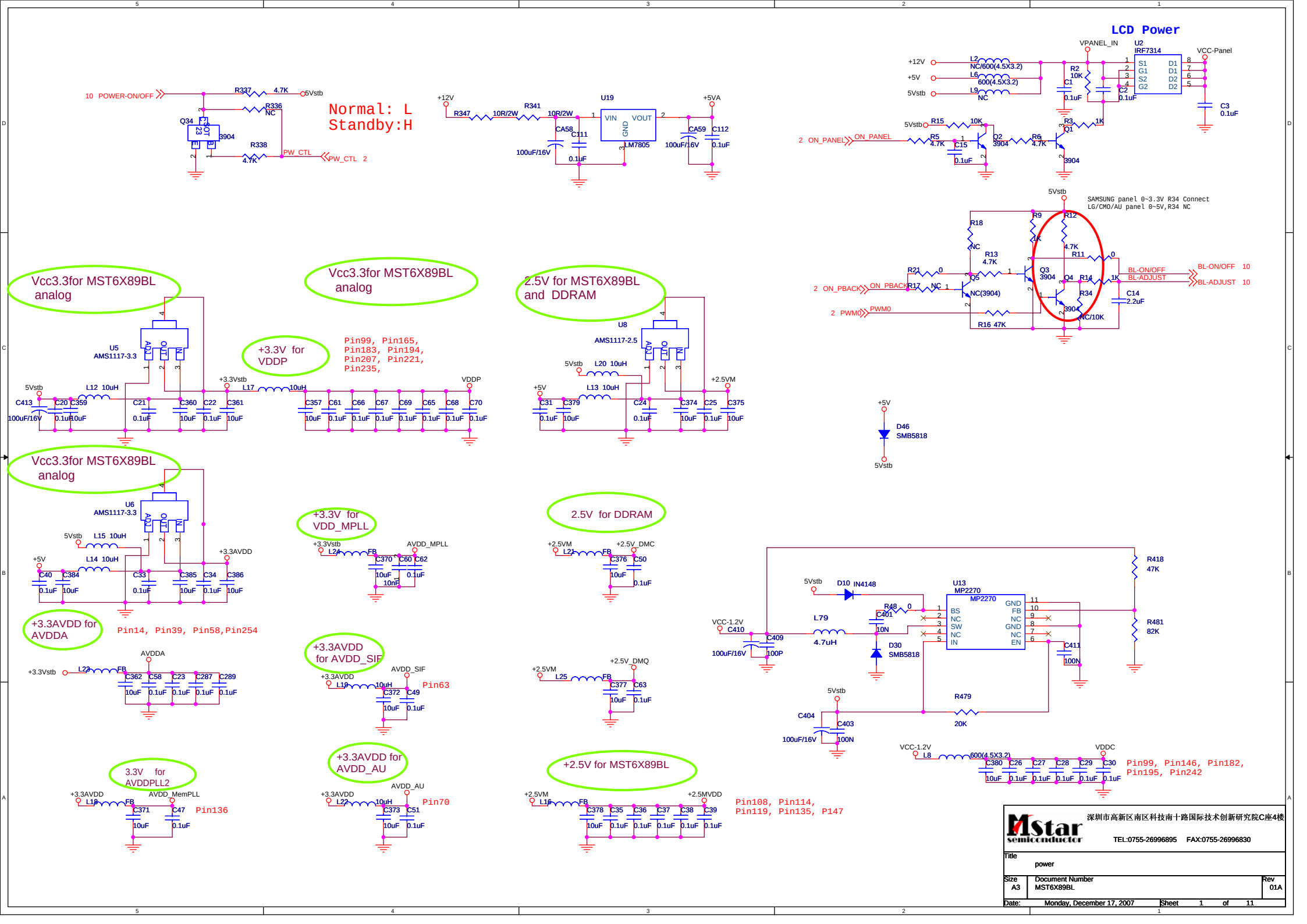
1
23
33
18
11
30


LCD Power
10 POWER-ON/OFF
R337 4.7K
5Vstb
R336 NC
Q34 3904
R338 4.7K
PW_CTL
PW_CTL 2
Normal: L
Standby:H
+12V
R347 10R/2W
R341 10R/2W
U19
VIN VOUT GND
LM7805
+5VA
CA58
C111 0.1uF
100uF/16V
CA59 100uF/16V
C112 0.1uF
VPANEL_IN
U2 IRF7314
VCC-Panel
+12V
+5V
5Vstb
L2 NC/600(4.5X3.2)
L6 600(4.5X3.2)
L9 NC
R2 10K
C1 0.1uF
C2 0.1uF
C3 0.1uF
R15 10K
R3 1K
2 ON_PANEL
ON_PANEL
R5 4.7K
C15 0.1uF
Q2 3904
R6 4.7K
Q1 3904
SAMSUNG panel 0~3.3V R34 Connect
LG/CMO/AU panel 0~5V,R34 NC
R18 NC
R9 4K
R12 4.7K
R13 4.7K
R11 0
R21 0
Q5 NC(3904)
Q3 3904
Q4 R14 1K
2 ON_PBACK
ON_PBACK
R17 NC
R34 NC/10K
C14 2.2uF
2 PWM0
PWM0
R16 47K
BL-ON/OFF
BL-ADJUST
BL-ON/OFF 10
BL-ADJUST 10
Vcc3.3for MST6X89BL analog
U5 AMS1117-3.3
+3.3Vstb
5Vstb
L12 10uH
L17 10uH
VDDP
+3.3V for VDDP
Pin99, Pin165, Pin183, Pin194, Pin207, Pin221, Pin235,
C413 100uF/16V
C20 0.1uF
C359 10uF
C21 0.1uF
C360 10uF
C22 0.1uF
C361 10uF
C357 10uF
C61 0.1uF
C66 0.1uF
C67 0.1uF
C69 0.1uF
C65 0.1uF
C68 0.1uF
C70 0.1uF
Vcc3.3for MST6X89BL analog
2.5V for MST6X89BL and DDRAM
U8 AMS1117-2.5
5Vstb
L20 10uH
+5V
L13 10uH
+2.5VM
C31 0.1uF
C379 10uF
C24 0.1uF
C374 10uF
C25 0.1uF
C375 10uF
+5V
D46 SMB5818
5Vstb
Vcc3.3for MST6X89BL analog
U6 AMS1117-3.3
5Vstb
L15 10uH
+5V
L14 10uH
+3.3AVDD
C40 0.1uF
C384 10uF
C33 0.1uF
C385 10uF
C34 0.1uF
C386 10uF
+3.3V for VDD_MPLL
+3.3Vstb
L24
AVDD_MPLL
C370 10uF
C60 10nF
C62 0.1uF
2.5V for DDRAM
+2.5VM
L21
+2.5V_DMC
C376 10uF
C50 0.1uF
+3.3AVDD for AVDDA
Pin14, Pin39, Pin58,Pin254
AVDDA
+3.3Vstb
L23
C362 10uF
C58 0.1uF
C23 0.1uF
C287 0.1uF
C289 0.1uF
+3.3AVDD for AVDD_SIF
+3.3AVDD
L19 10uH
AVDD_SIF
Pin63
C372 10uF
C49 0.1uF
+2.5VM
L25
+2.5V_DMQ
C377 10uF
C63 0.1uF
5Vstb
D10 IN4148
U13 MP2270
VCC-1.2V
C410 100uF/16V
C409 100P
L79 4.7uH
R48 0
C401 10N
D30 SMB5818
R418 47K
R481 82K
C411 100N
R479 20K
5Vstb
C404 100uF/16V
C403 100N
3.3V for AVDDPLL2
+3.3AVDD
AVDD_MemPLL
L18
C371 10uF
C47 0.1uF
Pin136
+3.3AVDD for AVDD_AU
+3.3AVDD
L22 10uH
AVDD_AU
Pin70
C373 10uF
C51 0.1uF
+2.5V for MST6X89BL
+2.5VM
L16
+2.5MVDD
C378 10uF
C35 0.1uF
C36 0.1uF
C37 0.1uF
C38 0.1uF
C39 0.1uF
Pin108, Pin114, Pin119, Pin135, P147
VCC-1.2V
L8 600(4.5X3.2)
VDDC
C380 10uF
C26 0.1uF
C27 0.1uF
C28 0.1uF
C29 0.1uF
C30 0.1uF
Pin99, Pin146, Pin182, Pin195, Pin242
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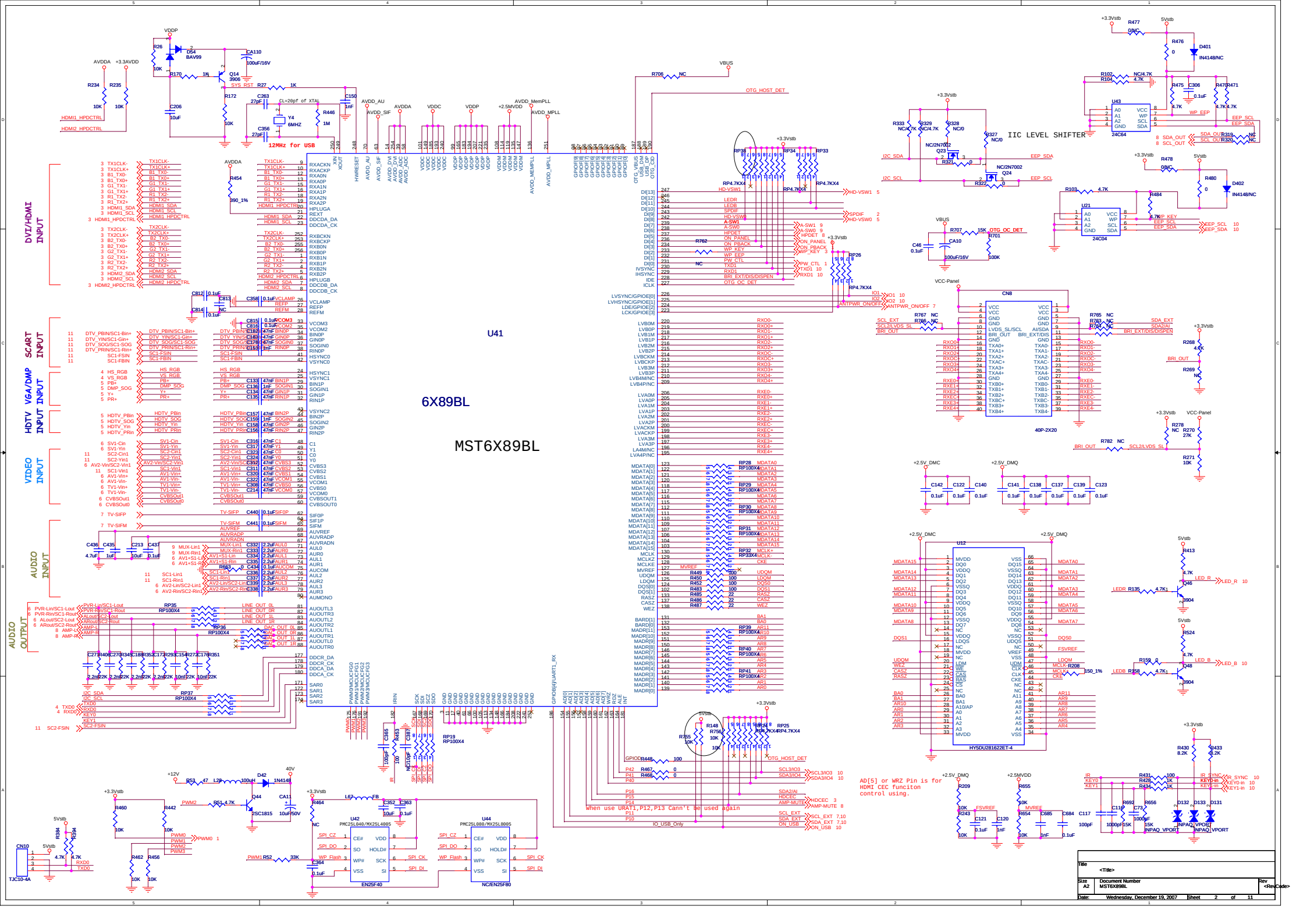
TEL:0755-26996895 FAX:0755-26996830
Title power
Size A3
Document Number MST6X89BL
Rev 01A
Date: Monday, December 17, 2007
Sheet 1 of 11


U41
6X89BL
MST6X89BL
DVI/HDMI INPUT
SCART INPUT
VGA/DMP INPUT
HDTV INPUT
VIDEO INPUT
AUDIO INPUT
AUDIO OUTPUT
IIC LEVEL SHIFTER
12MHz for USB
AD[5] or WRZ Pin is for HDMI CEC funciton control using.
When use URAT1,P12,P13 Cann't be used again
IO_USB_Only
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Size A2
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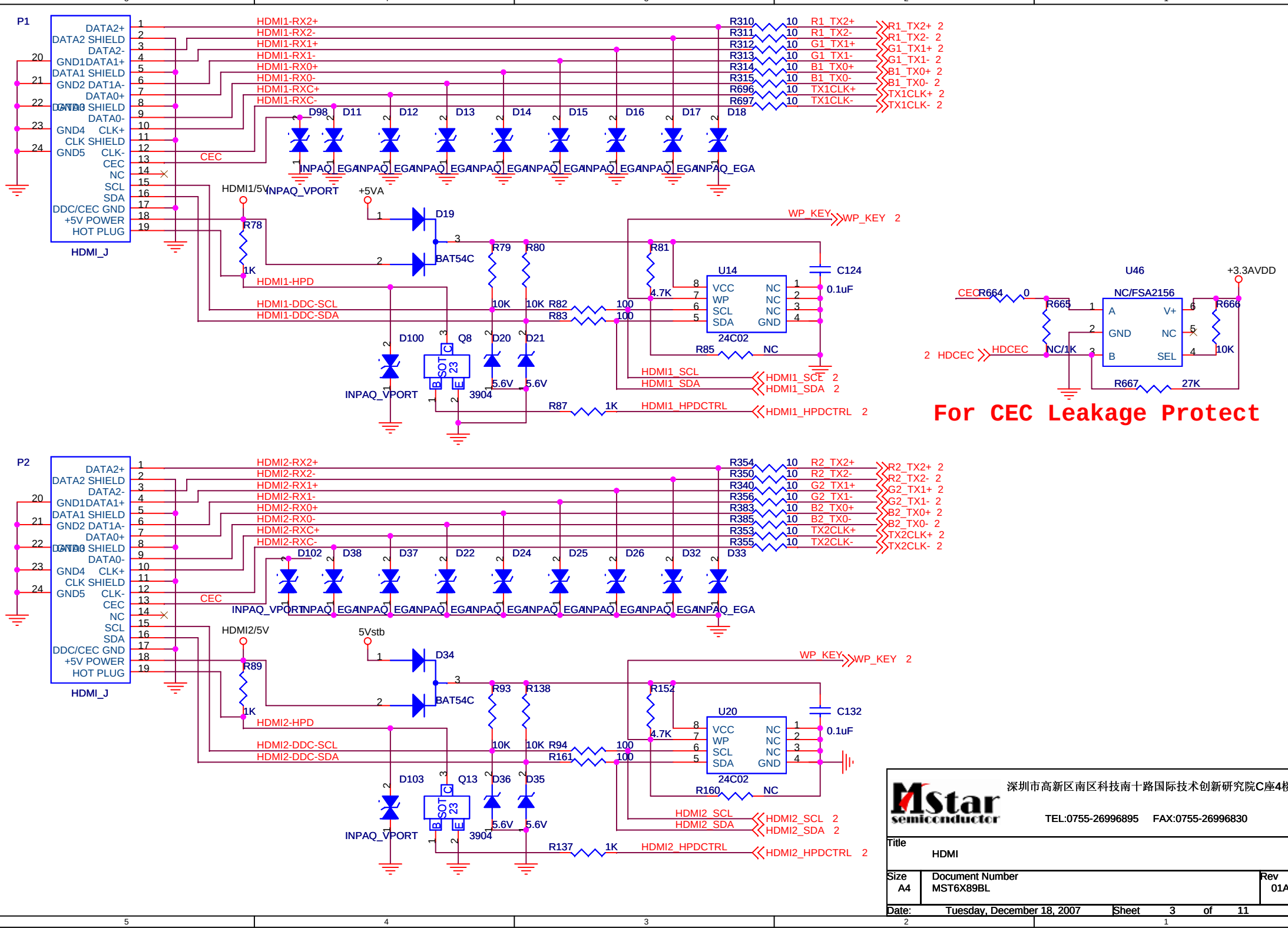
Rev <RevCode>
Date: Wednesday, December 19, 2007
Sheet 2 of 11


P1
HDMI_J
DATA2+
DATA2 SHIELD
DATA2-
GND1 DATA1+
DATA1 SHIELD
GND2 DAT1A-
DATA0+
DATA0 SHIELD
DATA0-
GND4 CLK+
CLK SHIELD
GND5 CLK-
CEC
NC
SCL
SDA
DDC/CEC GND
+5V POWER
HOT PLUG
HDMI1-RX2+
HDMI1-RX2-
HDMI1-RX1+
HDMI1-RX1-
HDMI1-RX0+
HDMI1-RX0-
HDMI1-RXC+
HDMI1-RXC-
CEC
HDMI1/5V
INPAQ_VPORT
+5VA
D98 D11 D12 D13 D14 D15 D16 D17 D18
INPAQ_EGA
R310 R311 R312 R313 R314 R315 R696 R697
10
R1_TX2+ R1_TX2- G1_TX1+ G1_TX1- B1_TX0+ B1_TX0- TX1CLK+ TX1CLK-
R78
1K
HDMI1-HPD
HDMI1-DDC-SCL
HDMI1-DDC-SDA
D19
BAT54C
R79 R80
10K
R81
4.7K
U14
24C02
VCC WP SCL SDA NC NC NC GND
C124
0.1uF
R82 R83
100
WP_KEY
D100
Q8
SOT 23
3904
D20 D21
5.6V
R85
NC
HDMI1_SCL
HDMI1_SDA
R87
1K
HDMI1_HPDCTRL
U46
NC/FSA2156
A GND B V+ NC SEL
+3.3AVDD
CEC
R664
0
R665
HDCEC
NC/1K
R666
10K
R667
27K
For CEC Leakage Protect
P2
HDMI_J
HDMI2-RX2+
HDMI2-RX2-
HDMI2-RX1+
HDMI2-RX1-
HDMI2-RX0+
HDMI2-RX0-
HDMI2-RXC+
HDMI2-RXC-
CEC
HDMI2/5V
5Vstb
D102 D38 D37 D22 D24 D25 D26 D32 D33
INPAQ_EGA
R354 R350 R340 R356 R383 R385 R353 R355
R2_TX2+ R2_TX2- G2_TX1+ G2_TX1- B2_TX0+ B2_TX0- TX2CLK+ TX2CLK-
R89
1K
HDMI2-HPD
HDMI2-DDC-SCL
HDMI2-DDC-SDA
D34
BAT54C
R93 R138
R152
U20
24C02
C132
R94 R161
R160
D103
Q13
D36 D35
R137
HDMI2_SCL
HDMI2_SDA
HDMI2_HPDCTRL
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TEL:0755-26996895 FAX:0755-26996830
Title
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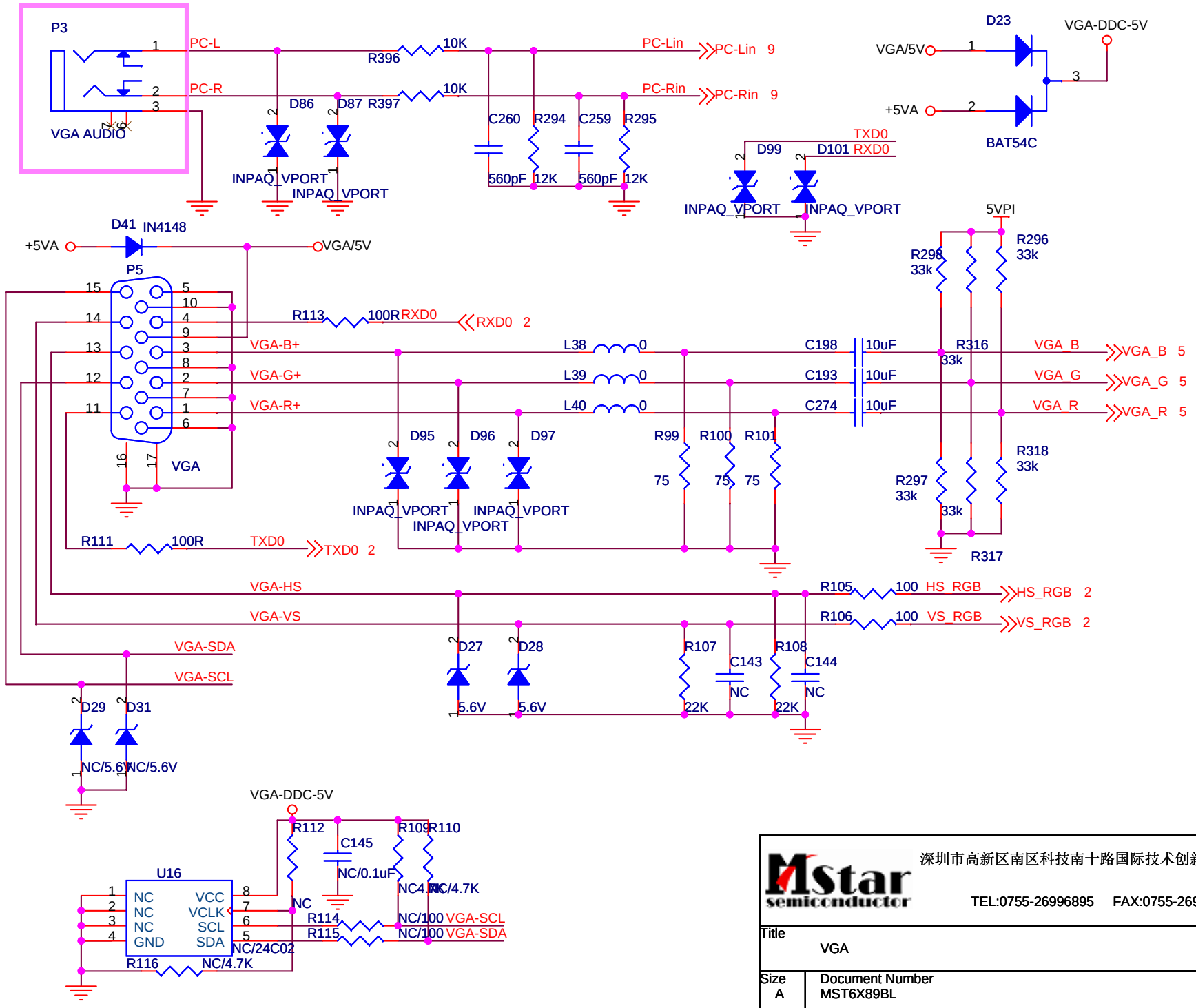
Size A4
Document Number MST6X89BL
Rev 01A
Date: Tuesday, December 18, 2007
Sheet 3 of 11



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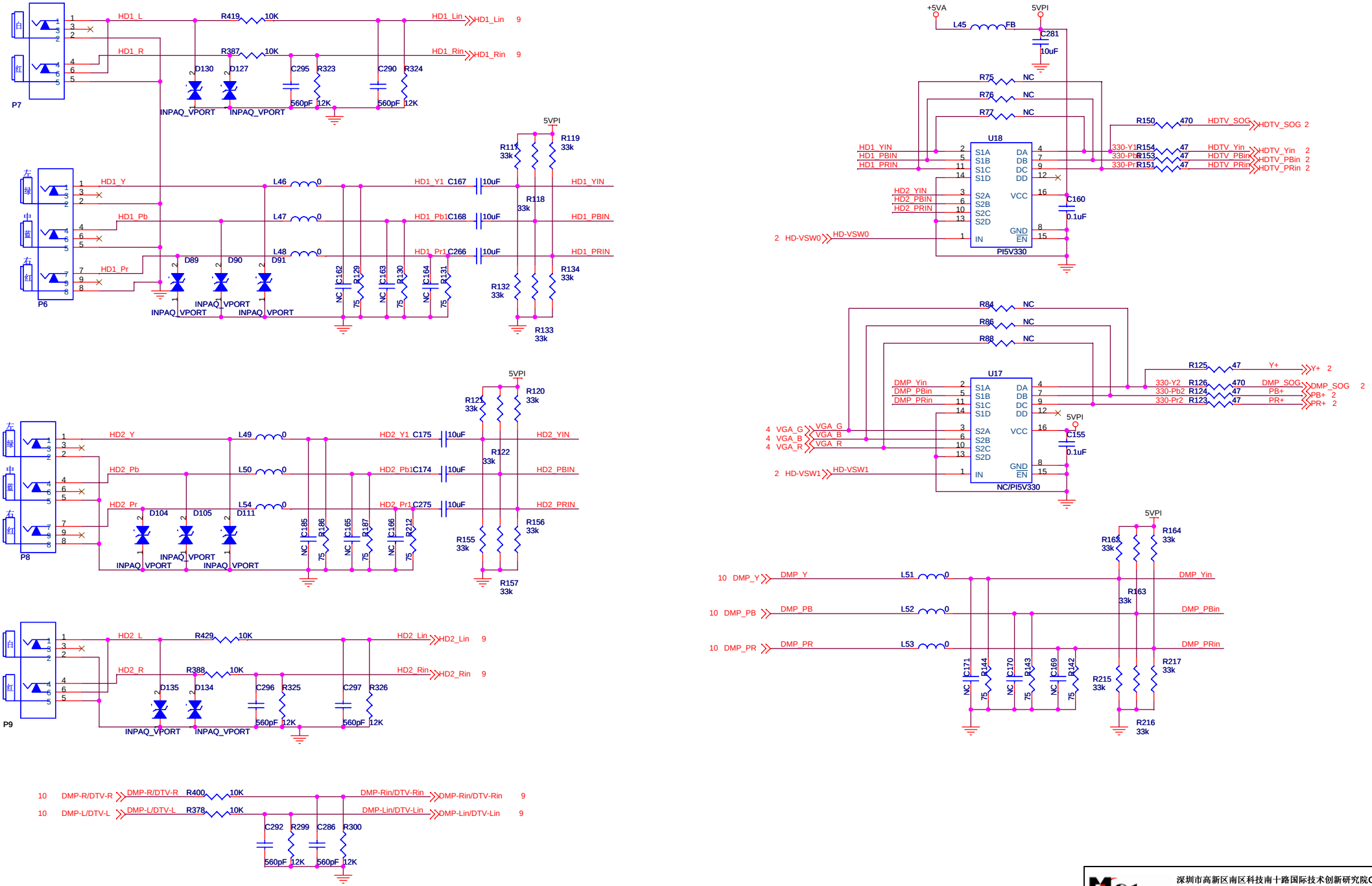
Title: VGA		
Size: A	Document Number: MST6X89BL	Rev: 01A
Date: Wednesday, December 19, 2007	Sheet 4 of 11	



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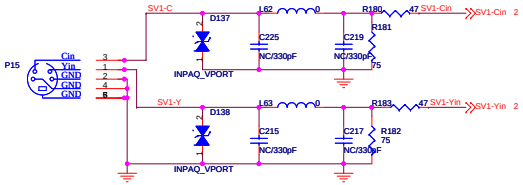
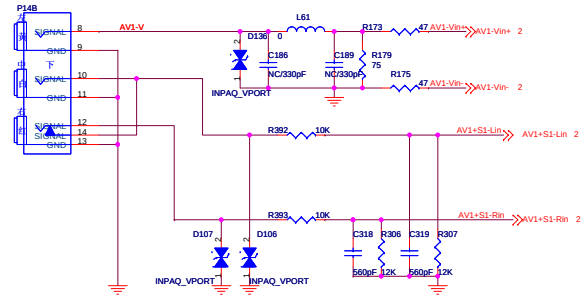
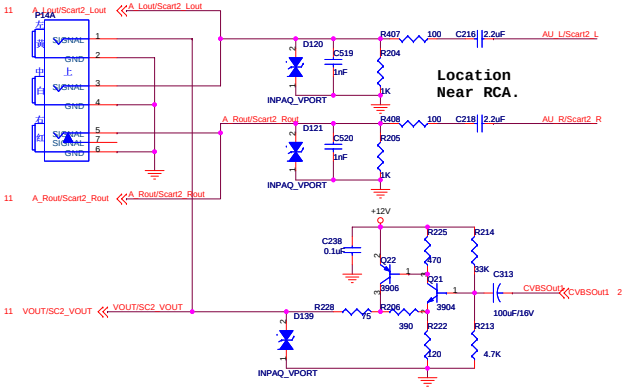
TEL:0755-26996895 FAX:0755-26996830

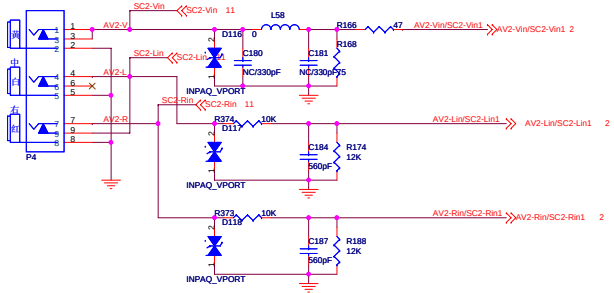
Title	Y,Pb,Pr Input	
Size A3	Document Number MST6X89BL	Rev 01A
Date: Wednesday, December 19, 2007	Sheet 5 of 11	

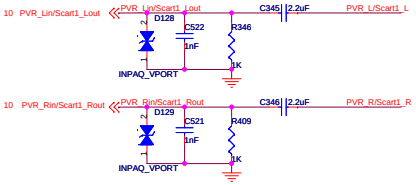
S-Video Input



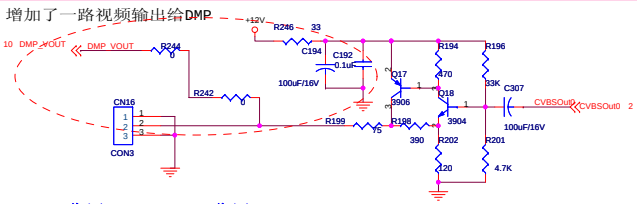






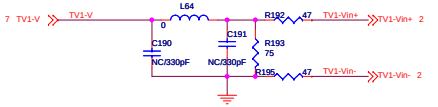


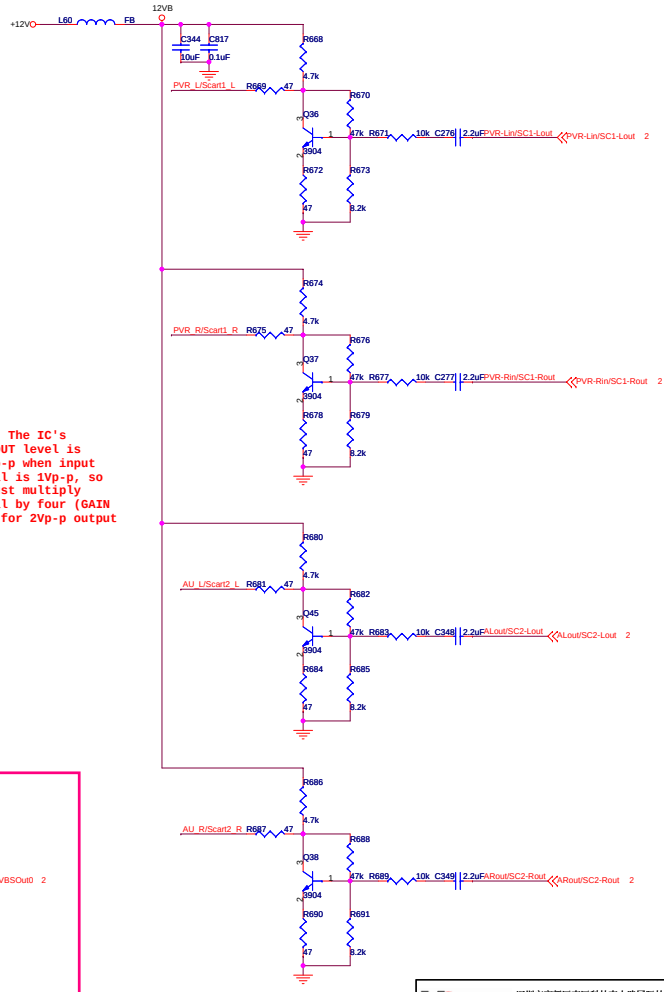
增加了一路视频输出给DMP



R244靠近CN11;R242靠近CN16

TV Input





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

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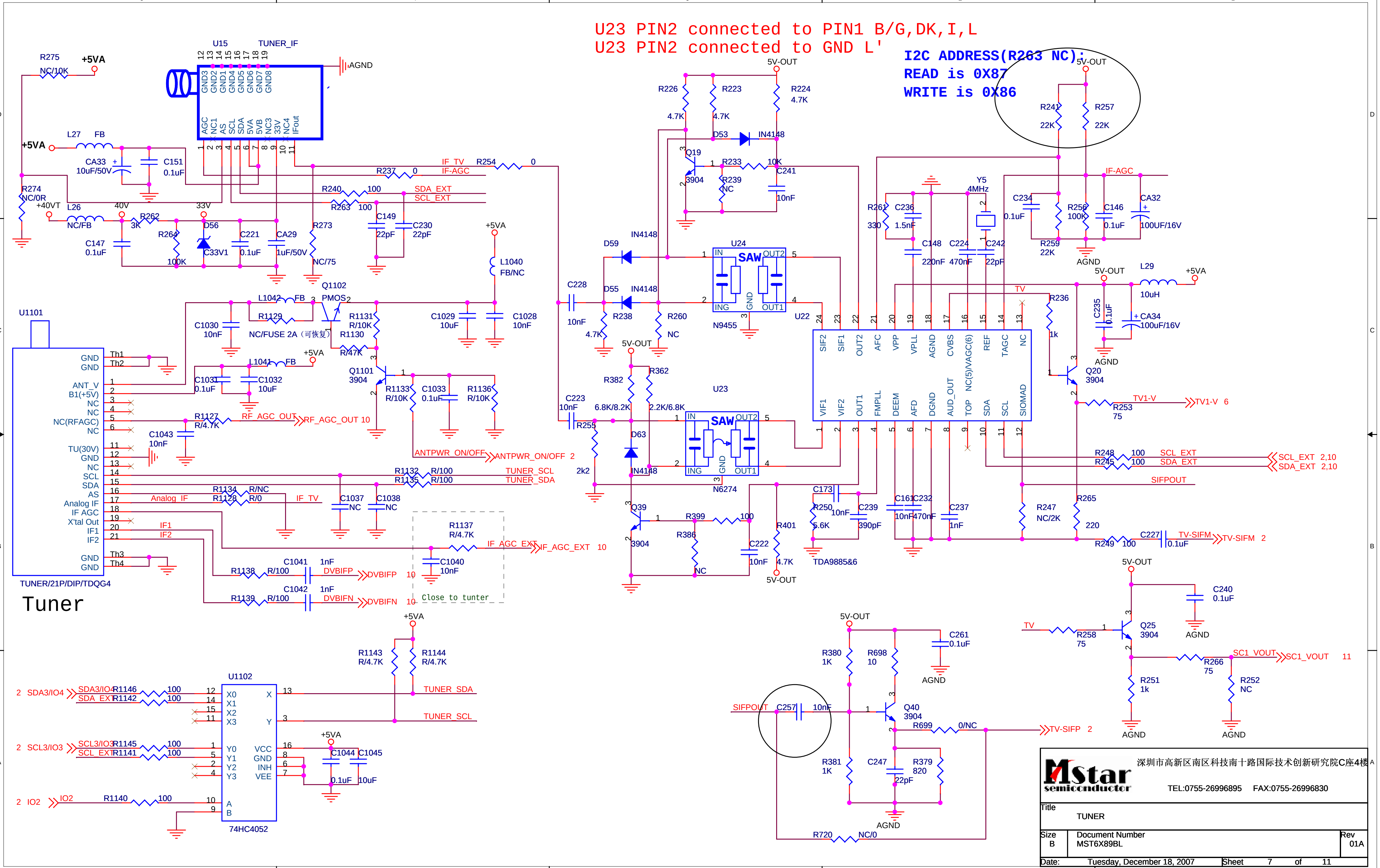
U23 PIN2 connected to PIN1 B/G,DK,I,L
U23 PIN2 connected to GND L'
I2C ADDRESS(R263 NC):
READ is 0X87
WRITE is 0X86
U15
TUNER_IF
U1101
TUNER/21P/DIP/TDQG4
Tuner
U1102
74HC4052
U24
N9455
U23
N6274
U22
TDA9885&6
Close to tunter
SAW
IF_TV
IF-AGC
SDA_EXT
SCL_EXT
RF_AGC_OUT 10
ANTPWR_ON/OFF 2
TUNER_SCL
TUNER_SDA
IF_AGC_EXT 10
DVBIFP 10
DVBIFN 10
TV1-V 6
SCL_EXT 2,10
SDA_EXT 2,10
SIFPOUT
TV-SIFM 2
SC1_VOUT 11
TV-SIFP 2
2 SDA3/IO4
2 SCL3/IO3
2 IO2
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Title
TUNER
Size
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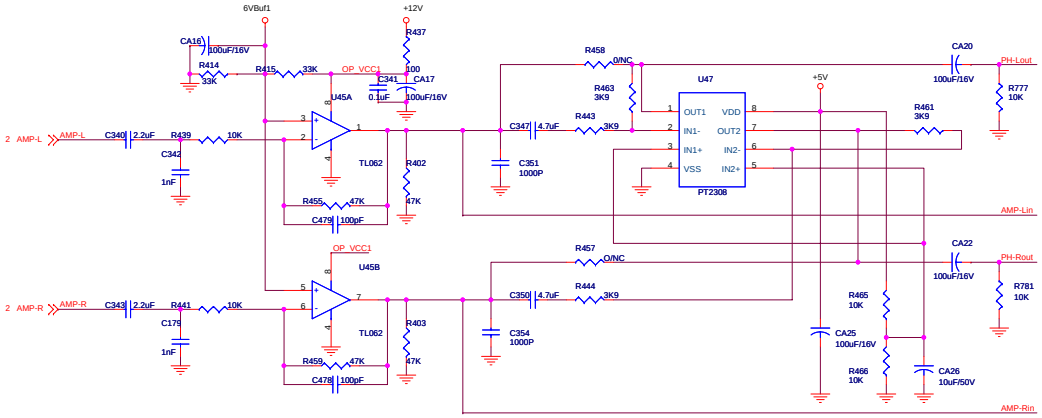

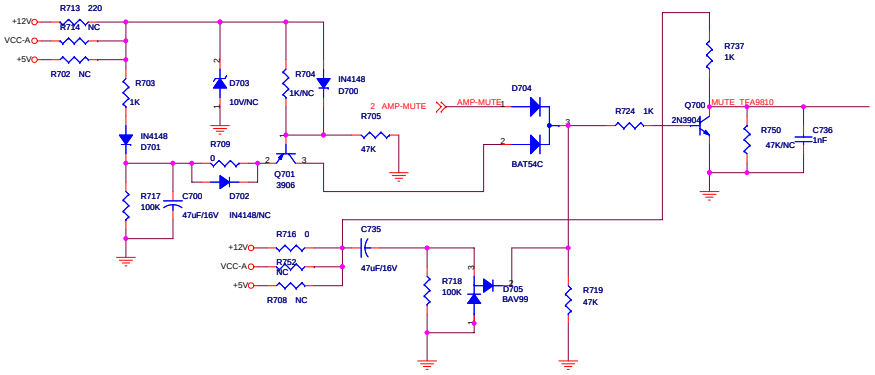

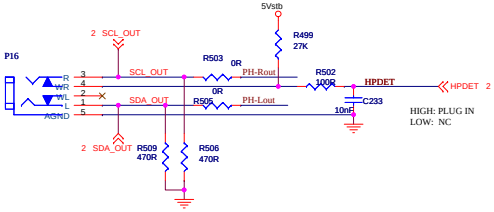

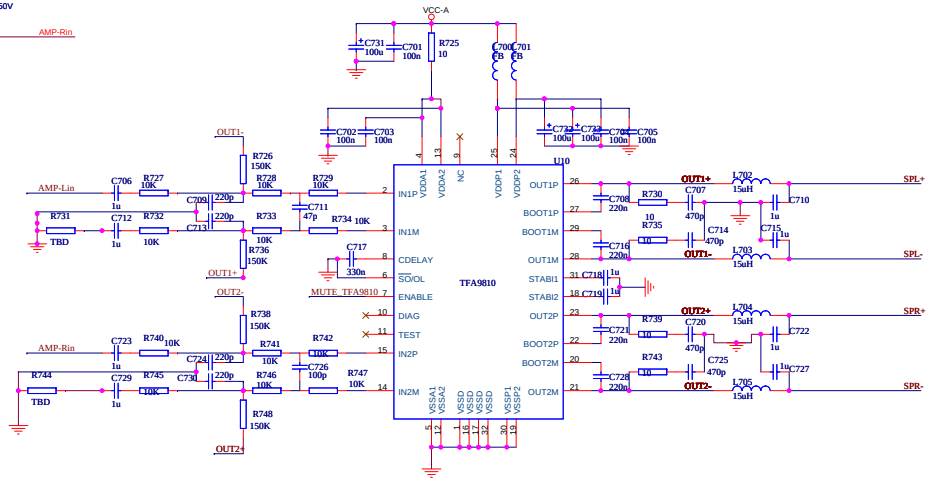

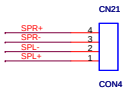

Shield for MST6X89BL AND DDR

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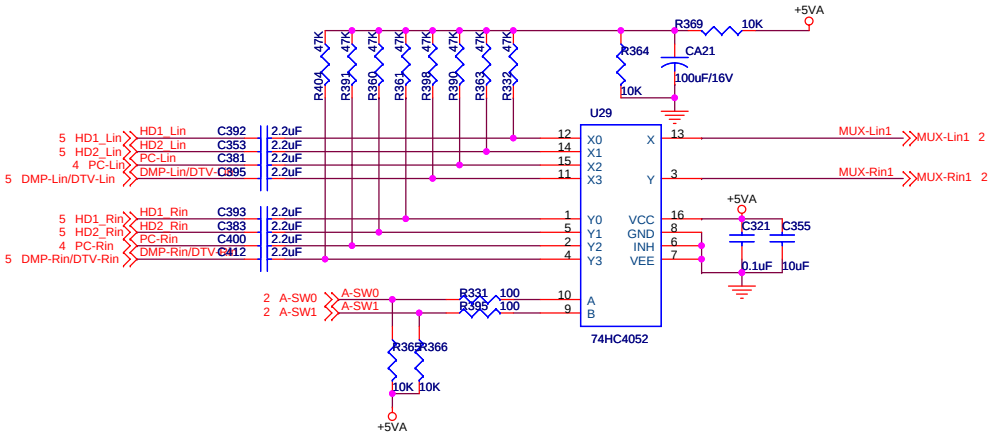
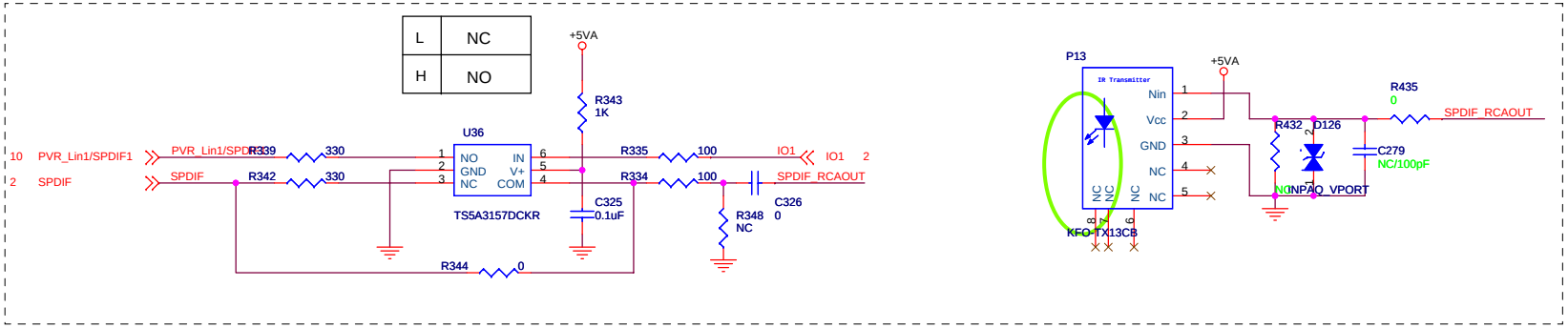


SPIDF Ouput



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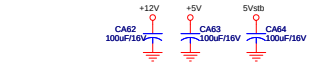

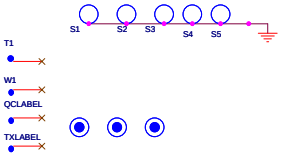

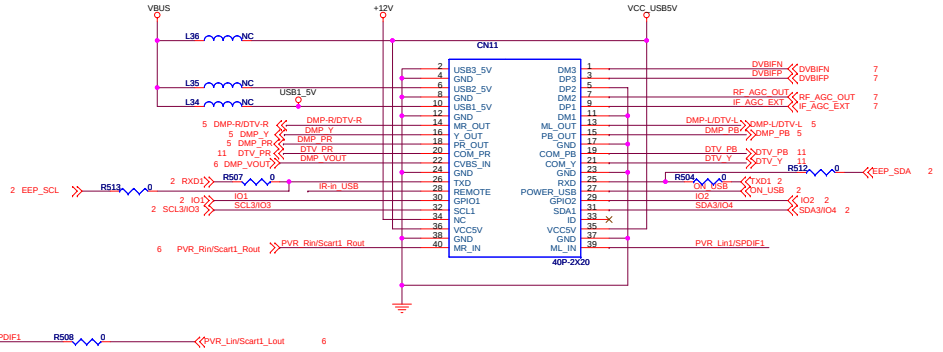

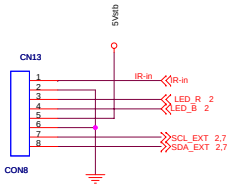

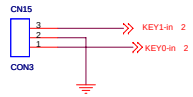

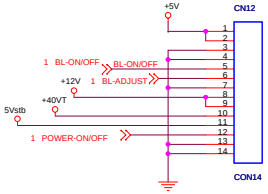

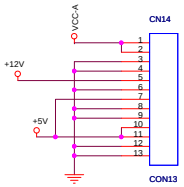

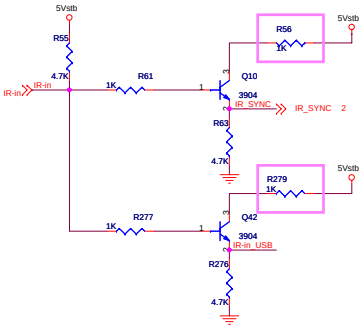

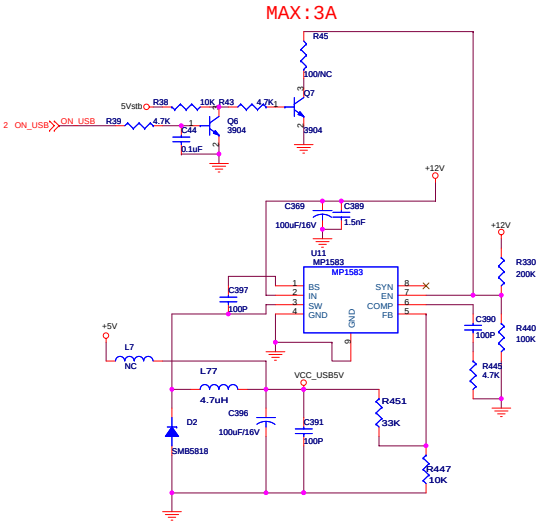

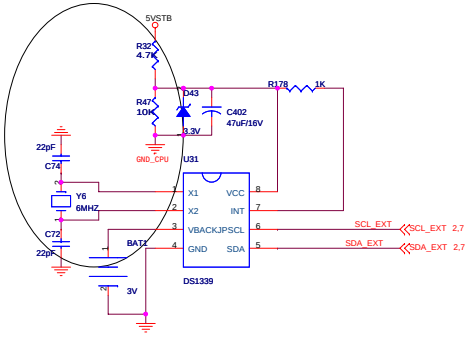

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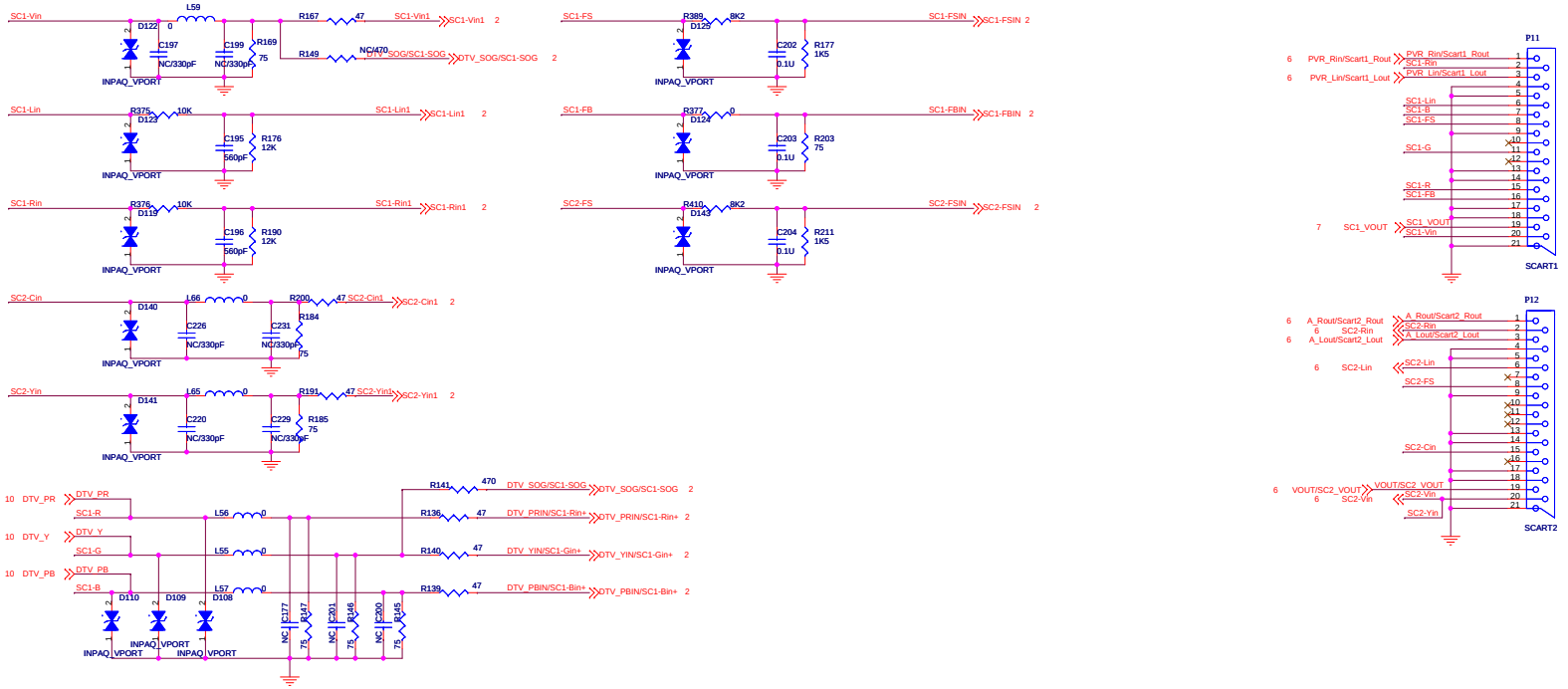
SC1-Vin
L59
D122
0
C197
NC/330pF
C199
NC/330pF
R169
75
R167
47
SC1-Vin1
SC1-Vin1 2
R149
NC/470
DTV_SOG/SC1-SOG
DTV_SOG/SC1-SOG 2
INPAQ_VPORT
SC1-Lin
R375
10K
D123
C195
560pF
R176
12K
SC1-Lin1
SC1-Lin1 2
INPAQ_VPORT
SC1-Rin
R376
10K
D119
C196
560pF
R190
12K
SC1-Rin1
SC1-Rin1 2
INPAQ_VPORT
SC2-Cin
L66
0
D140
C226
NC/330pF
C231
NC/330pF
R184
75
R200
47
SC2-Cin1
SC2-Cin1 2
INPAQ_VPORT
SC2-Yin
L65
0
D141
C220
NC/330pF
C229
NC/330pF
R185
75
R191
47
SC2-Yin1
SC2-Yin1 2
INPAQ_VPORT
10 DTV_PR
DTV_PR
SC1-R
L56
0
10 DTV_Y
DTV_Y
SC1-G
L55
0
10 DTV_PB
DTV_PB
SC1-B
L57
0
D110
D109
D108
INPAQ_VPORT
INPAQ_VPORT
INPAQ_VPORT
C177
NC
R147
75
C201
NC
R146
75
C200
NC
R145
75
R141
470
DTV_SOG/SC1-SOG
DTV_SOG/SC1-SOG 2
R136
47
DTV_PRIN/SC1-Rin+
DTV_PRIN/SC1-Rin+ 2
R140
47
DTV_YIN/SC1-Gin+
DTV_YIN/SC1-Gin+ 2
R139
47
DTV_PBIN/SC1-Bin+
DTV_PBIN/SC1-Bin+ 2
SC1-FS
R388
8K2
D129
C202
0.1U
R177
1K5
SC1-FSIN
SC1-FSIN 2
INPAQ_VPORT
SC1-FB
R377
0
D124
C203
0.1U
R203
75
SC1-FBIN
SC1-FBIN 2
INPAQ_VPORT
SC2-FS
R410
8K2
D143
C204
0.1U
R211
1K5
SC2-FSIN
SC2-FSIN 2
INPAQ_VPORT

P11
6 PVR_Rin/Scart1_Rout
PVR_Rin/Scart1_Rout
SC1-Rin
6 PVR_Lin/Scart1_Lout
PVR_Lin/Scart1_Lout
SC1-Lin
SC1-B
SC1-FS
SC1-G
SC1-R
SC1-FB
7 SC1_VOUT
SC1_VOUT
SC1-Vin
SCART1

P12
6 A_Rout/Scart2_Rout
A_Rout/Scart2_Rout
6 SC2-Rin
SC2-Rin
6 A_Lout/Scart2_Lout
A_Lout/Scart2_Lout
6 SC2-Lin
SC2-Lin
SC2-FS
SC2-Cin
6 VOUT/SC2_VOUT
VOUT/SC2_VOUT
6 SC2-Vin
SC2-Vin
SC2-Yin
SCART2