Hisense

LCD Television

Service Manual

Chassis： MT5651HROI

Product Type：

K610 serial: LTDN39K610XWAU3D、LTDN50K610XWAU3D、

LTDN55K610XWAU3D

XT780 serial: LTDN65XT780XWAU3D

3D type: SG RF

Ver 1.0

March，2013

Contents

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 exists 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

techician 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 RCA. Hisense Eassumes no liability, express or implied, arising out of any unauthorized modification of design. Servicetech 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 anti-static table mats and properly use a grounding wrist stra. 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:

-Note:

>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.

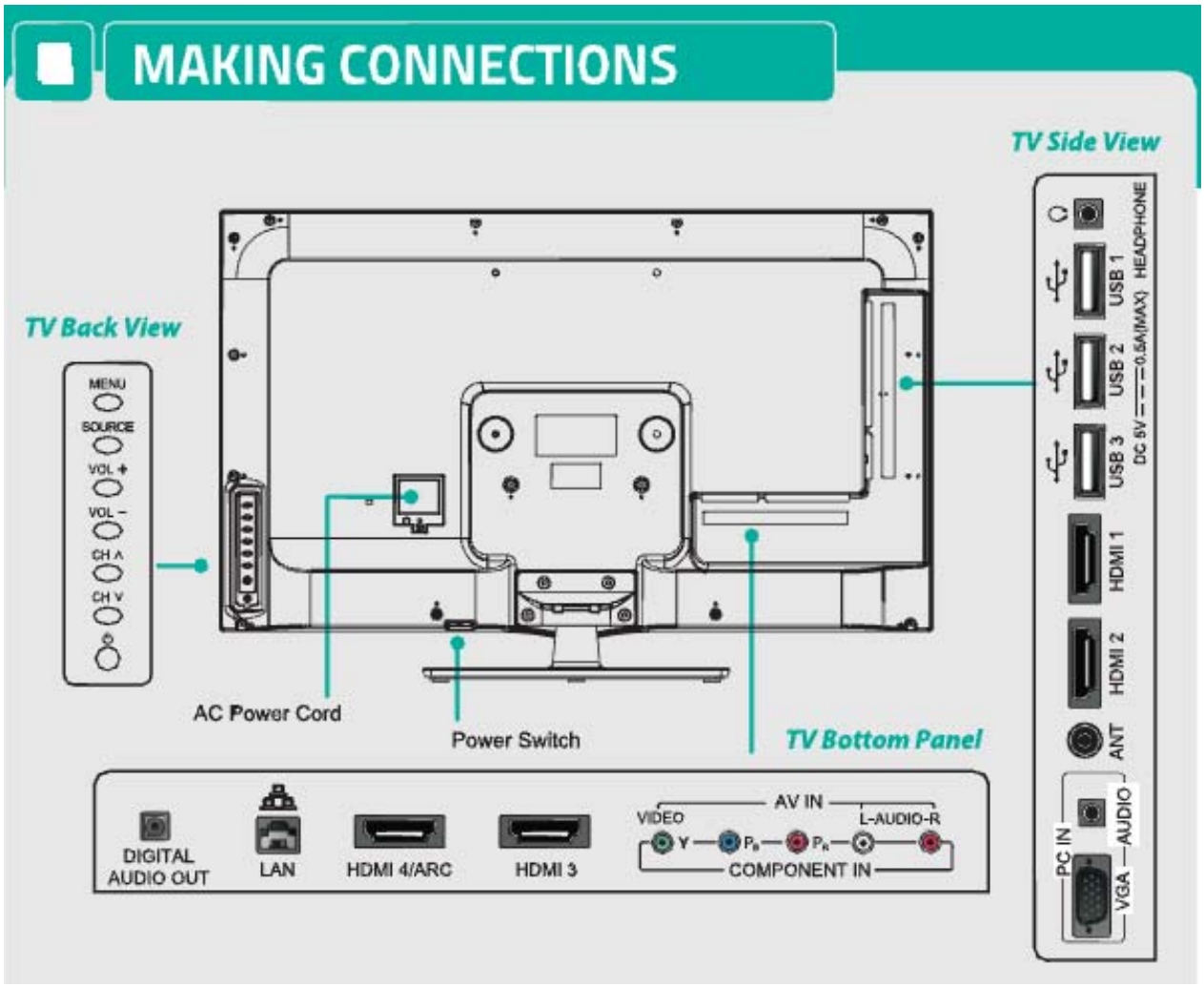
• Perform a safety check when servicing is completed. Verify that the peripherals of the serviced points have not undergone any deterioration during servicing. Also verify that the screws, parts and cables removed for servicing purposes have all been returned to their proper locations in accordance with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

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

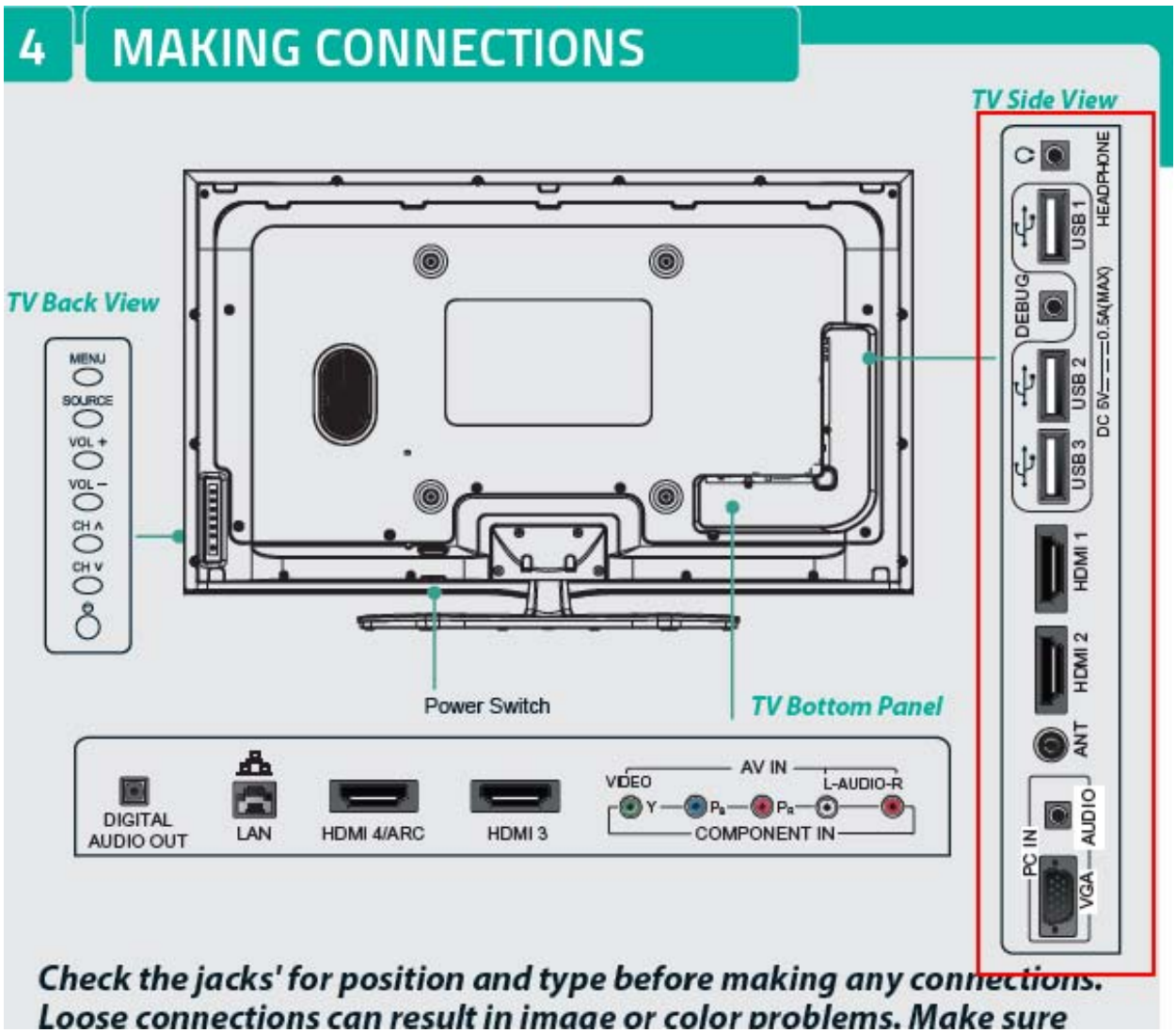
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the set.

2. Product Function Specifications

K610 Series



XT780 Series



Detail description look up the quick setup guide, please.

Spec.

K610 Series

Technical Specifications

Colour System	PAL NTSC
Television System	PAL B DVB-T
Environmental Conditions	Temperature: 5°C - 45°C Humidity: 20% - 80% RH Atmospheric pressure: 86 kPa - 106 kPa
Component Mode	480I/60Hz, 480P/60Hz, 576I/50Hz, 576P/50Hz, 720P/50Hz, 720P/60Hz, 1080I/50Hz, 1080I/60Hz, 1080P/50Hz, 1080P/60Hz
VGA Mode	640×480, 800×600, 1024×768, 1280×1024, 60Hz
HDMI Mode	480I/60Hz, 480P/60Hz, 576I/50Hz, 576P/50Hz, 720P/50Hz, 720P/60Hz, 1080I/50Hz, 1080I/60Hz, 1080P/50Hz, 1080P/60Hz 640×480, 800×600, 1024×768

NOTE

Features, appearance and specifications are subject to change without notice.

Playable format list

File Extension	Container	Video Decoder	Resolution	Frame/Sec	Audio Decoder
*.avi	AVI	Divx3.11 / 4.x / 5.1	1920x1080	30	MP3/AC3/MPEG4 AAC/ MPEG2 AAC
		MPEG2 MP MPEG4 SP/ASP	1920x1080	30	
		H.264 MP/BP/HP	1920x1080	30	
*.wmv *.asf	ASF	Divx 3.11	1920x1080	30	MP3/WMA
		MPEG4 SP/ ASP	1920x1080	30	
*.mp4 *.mov	MP4	MPEG4 SP/ ASP	1920x1080	30	MP3/MPEG2 ACC/MPEG4 AAC
		H.263	1408x1152	30	
		H.264 MP/BP/HP	1920x1080	30	
*.mkv	MKV	H.264 MP/BP/HP	1920x1080	30	MP3/MPEG2 AAC/MPEG4 AAC/AC3
		MPEG4 SP/ ASP	1920x1080	30	
		Divx3.11 / 4.x / 5.1	1920x1080	30	
*.mpg *.mpeg	PS	MPEG1	768x576	30	MP3/AC3
		MPEG2 MP	1920x1080	30	
.ts	TS	H.264 MP/BP/HP	1920x1080	30	MPEG Layer1/MPEG2 AAC/ MPEG4 AAC
		MPEG2 MP	1920x1080	30	
*.FLV	FLV	H.264 MP/BP/HP	1920x1080	30	MP3/MPEG2 AAC/MPEG4 AAC
*.vob	PS	MPEG1	1920x1080	30	MP3/AC3
		MPEG2 MP	1920x1080	31	
*.rm	RM	RV8/RV9 RV10	1920x1080	30	AC3/MPEG4 AAC

XT780 Series

Technical Specifications

Colour System	PAL NTSC SECAM
Television System	PAL B SECAM D/K DVB-T
Environmental Conditions	Temperature: 5°C - 45°C Humidity: 20% - 80% RH Atmospheric pressure: 86 kPa - 106 kPa
Component Mode	480I/60Hz, 480P/60Hz, 576I/50Hz, 576P/50Hz, 720P/50Hz, 720P/60Hz, 1080I/50Hz, 1080I/60Hz, 1080P/50Hz, 1080P/60Hz
VGA Mode	640×480, 800×600, 1024×768, 1280×1024, 60Hz
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		MPEG2 MP MPEG4 SP/ASP	1920x1080	30	
		H.264 MP/BP/HP	1920x1080	30	
*.wmv *.asf	ASF	Divx 3.11	1920x1080	30	MP3/WMA
		MPEG4 SP/ ASP	1920x1080	30	
*.mp4 *.mov	MP4	MPEG4 SP/ ASP	1920x1080	30	MP3/MPEG2 ACC/MPEG4 AAC
		H.263	1408x1152	30	
		H.264 MP/BP/HP	1920x1080	30	
*.mkv	MKV	H.264 MP/BP/HP	1920x1080	30	MP3/MPEG2 AAC/MPEG4 AAC/AC3
		MPEG4 SP/ ASP	1920x1080	30	
		Divx3.11 / 4.x / 5.1	1920x1080	30	
*.mpg *.mpeg	PS	MPEG1	768x576	30	MP3/AC3
		MPEG2 MP	1920x1080	30	
.ts	TS	H.264 MP/BP/HP	1920x1080	30	MPEG Layer1/MPEG2 AAC/ MPEG4 AAC
		MPEG2 MP	1920x1080	30	
*.FLV	FLV	H.264 MP/BP/HP	1920x1080	30	MP3/MPEG2 AAC/MPEG4 AAC
*.vob	PS	MPEG1	1920x1080	30	MP3/AC3
		MPEG2 MP	1920x1080	31	
*.rm	RM	RV8/RV9 RV10	1920x1080	30	AC3/MPEG4 AAC

3. Factory/Service OSD Menu and Adjustment

3.1 To enter the Factory OSD Menu

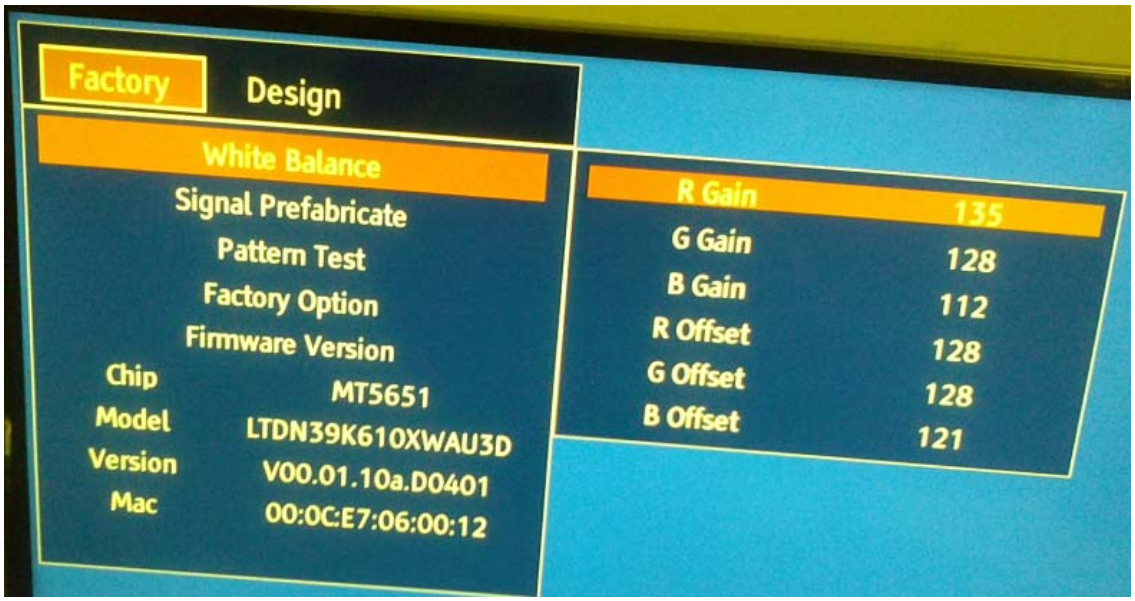
a. With factory RC (remote control)

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.

b. With user’s RC

1. Power TV On
2. Press Menu button and call up User OSD Menu
3. Select Audio-> Balance, when Balance is “0”
4. Enter 1->9->6->9 in sequence.
   Note: If necessary, re-enter number keys.
5. Factory OSD appears.
6. Press Menu again and leave factory OSD.

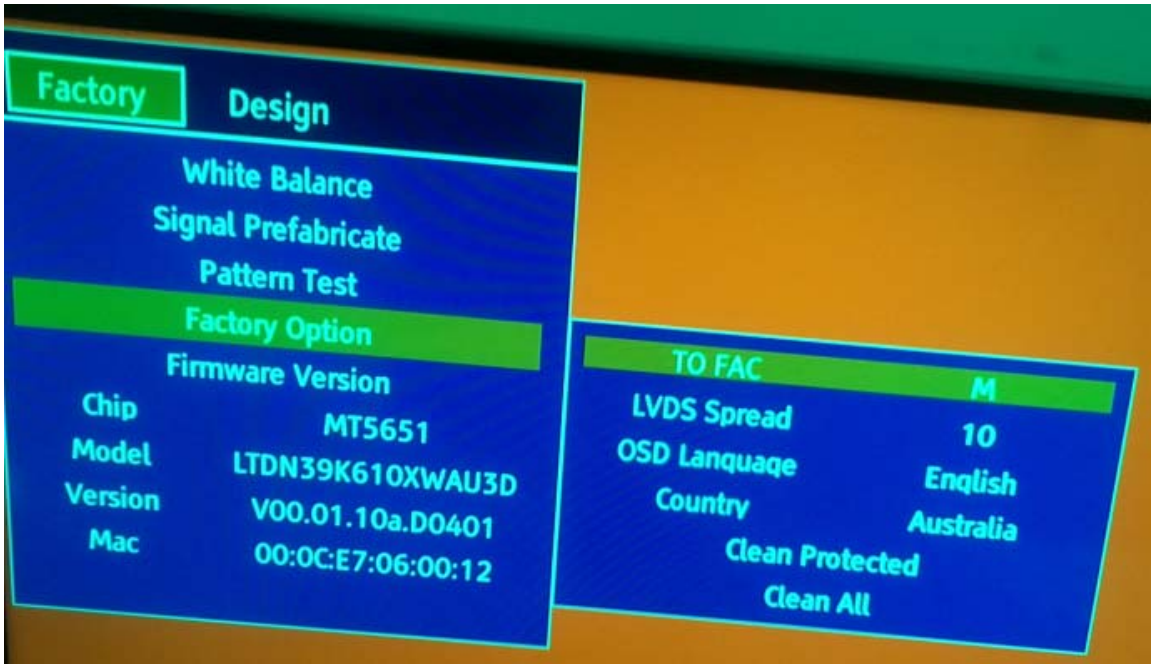
3.2 Factory OSD Menu



3.2.1 White Balance

Note: Different source has different WB values. Before adjusting, please change to desired source.

3.2.2 Factory Option



	Item	Default	Options	Notes
1	**MODE**	**M**	**M, U**	M-Can enter factory mode with factory RC or user RC. U-Can enter factory mode only with user’ s RC.

Note: MODE “M” is only used for factory production.

3.2.3 Version Info

	Item	Default	Options	Note
1	**Version**			**Software version**
2	**Date**			**The date of current version**

Note: Software version info of the TV, readable only.

3.2.4 Clear the EEPROM

Item	Meaning	Note
Clean Protected	**Clear partly**	Clean data except WB data and Auto Color data
Clean All	**Clear completely**	Clean all data

Note: The factory menu date varies according to different sources. Incase changing the factory data by error, you can choose to “Clean Protected”, by which you can resume the default value.

To clear the EEPROM:

a. Select the item “Clean All”.

b. Press VOL+ button to clear the EEPROM data.

c. Close the OSD menu after 5 seconds.

d. Restart the TV.

3.3 Designer Menu

Note:

The above “Factory/Service OSD Menu” is reference for chassis MTK5651 , please refer to the actual units to determine the appearances for different TV.

4. Software Upgrading

Before upgrading, read the following.

First: Upgrade the software.
Second: 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.

Last: After the operation above all, necessarily, Re-search the channels for the users

4.1 USB Software Upgrading directly

The software can be upgraded by USB Disk.

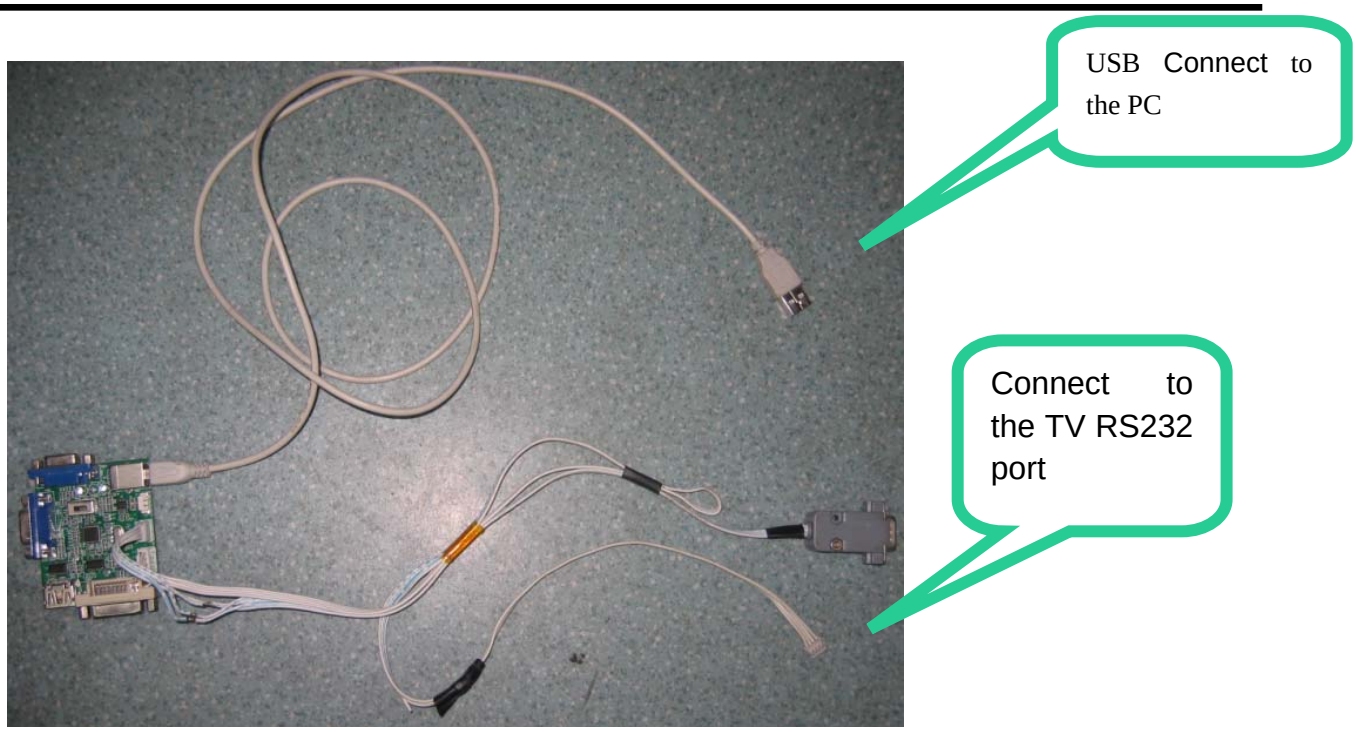
- First, copy the upgrade_loader.pkg file to USB Disk;.
- Second, make sure there is no other .pkg file in the root directory of USB Disk such as upgrade.pkg or upgrade_loader LTDN55XT710XWAU3D.pkg.
- Insert USB Disk to USB port, and then turn on the TV.
- The TV will identify the software and upgrade automatically.
-

4.2 USB upgrading unsuccessfully

If USB upgrading unsuccessfully, then need burning the Nand Flash program file“ *.bin ”to the Nand Flash.

Hardware connecting

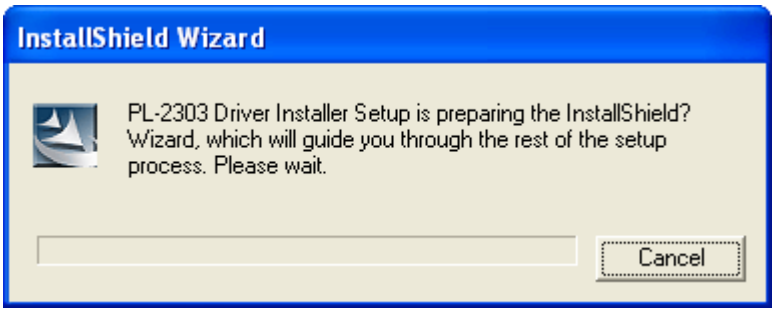
Connect the unit to your pc with a USB-to-serial port cable. USB port connects to your PC and serial port to the TV’s RS232 port. As following



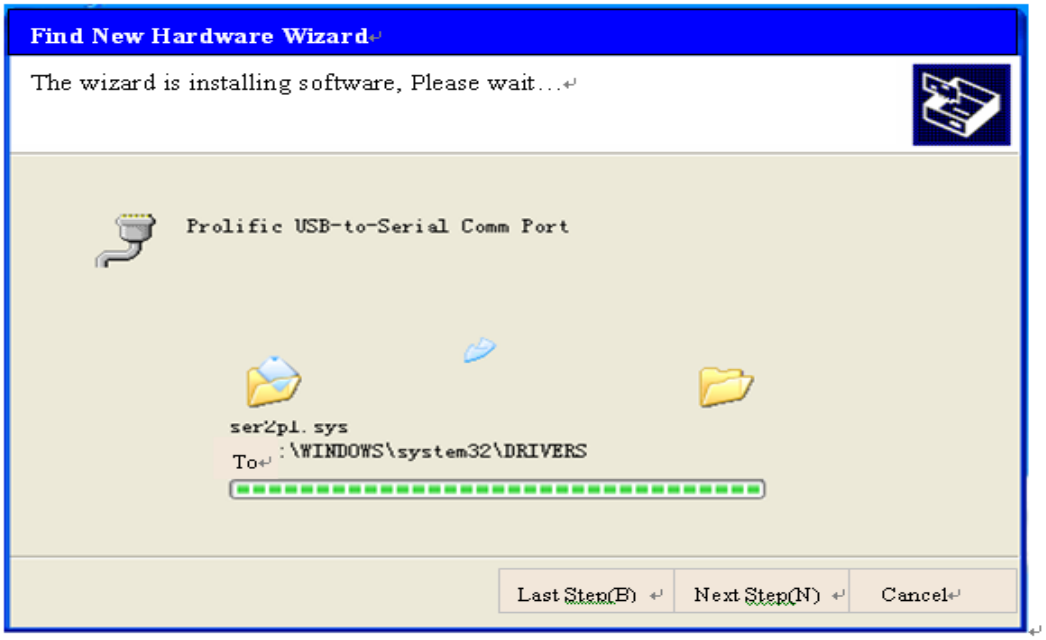
4.2.1 Install the driver

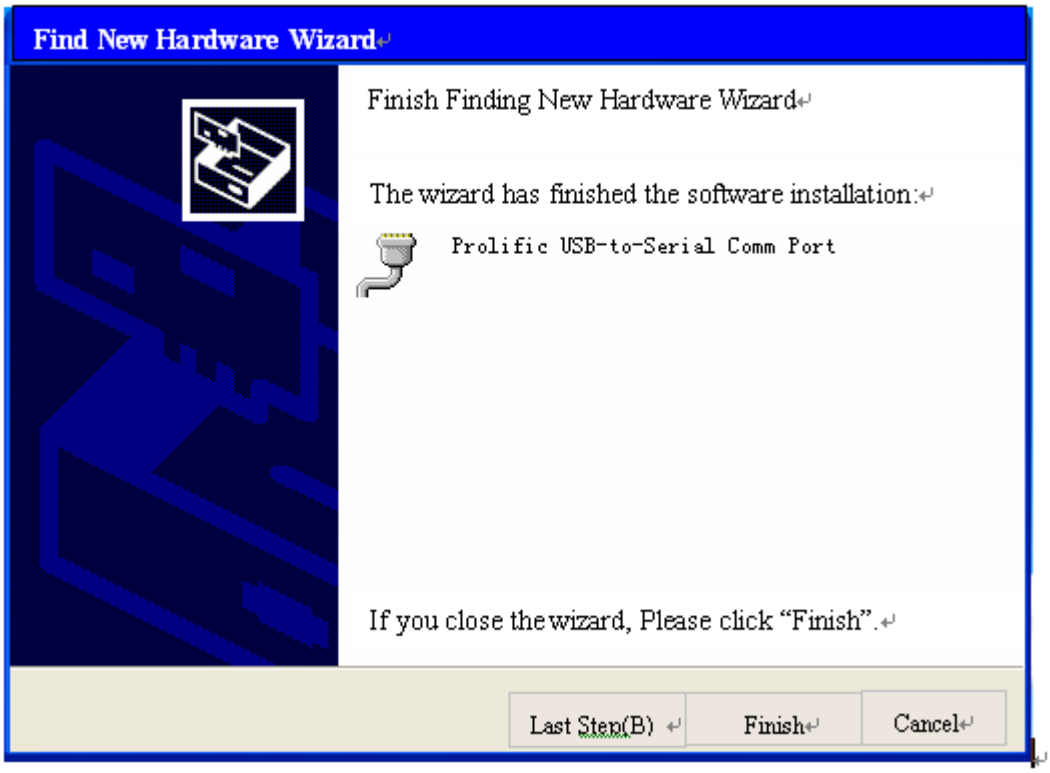
Double click the icon 

, install the driver.



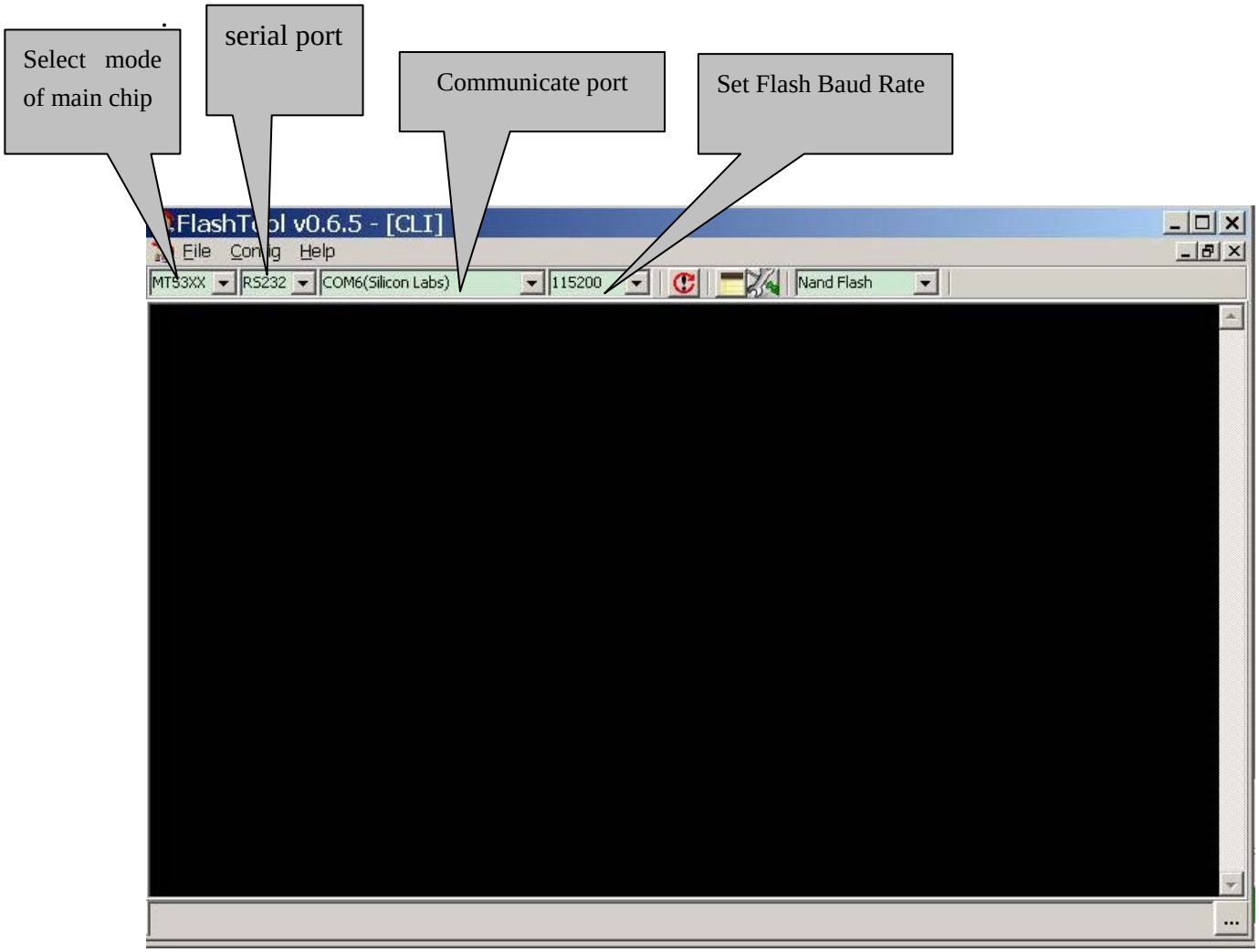
Select the default value, the driver will be installed step by step.


Find New Hardware Wizard
The wizard is installing software, Please wait...
Prolific USB-to-Serial Comm Port
ser2pl.sys
To :\WINDOWS\system32\DRIVERS
Last Step(B)
Next Step(N)
Cancel

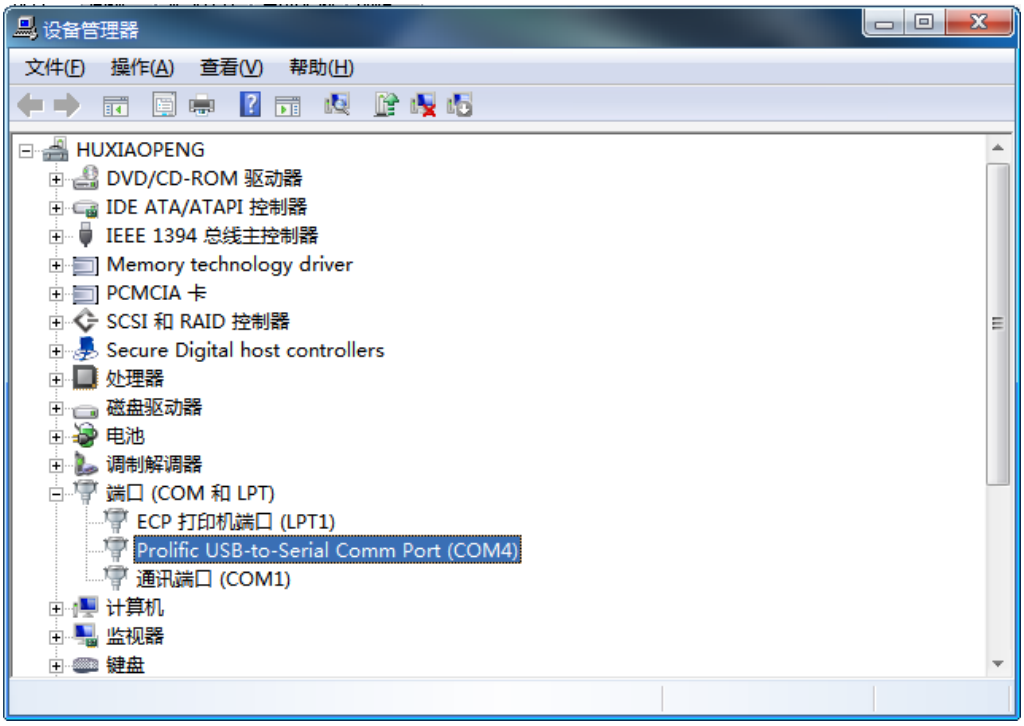

Find New Hardware Wizard
Finish Finding New Hardware Wizard
The wizard has finished the software installation:
Prolific USB-to-Serial Comm Port
If you close the wizard, Please click "Finish".
Last Step(B)
Finish
Cancel

4.3 Upgrading with the FlashTool0.6.0.exe

1、FlashTool is a green program needing no installation. After Connect the unit to your pc with a USB-to-serial port cable， run FlashTool0.6.0.exe. Please refer to the following steps to set.

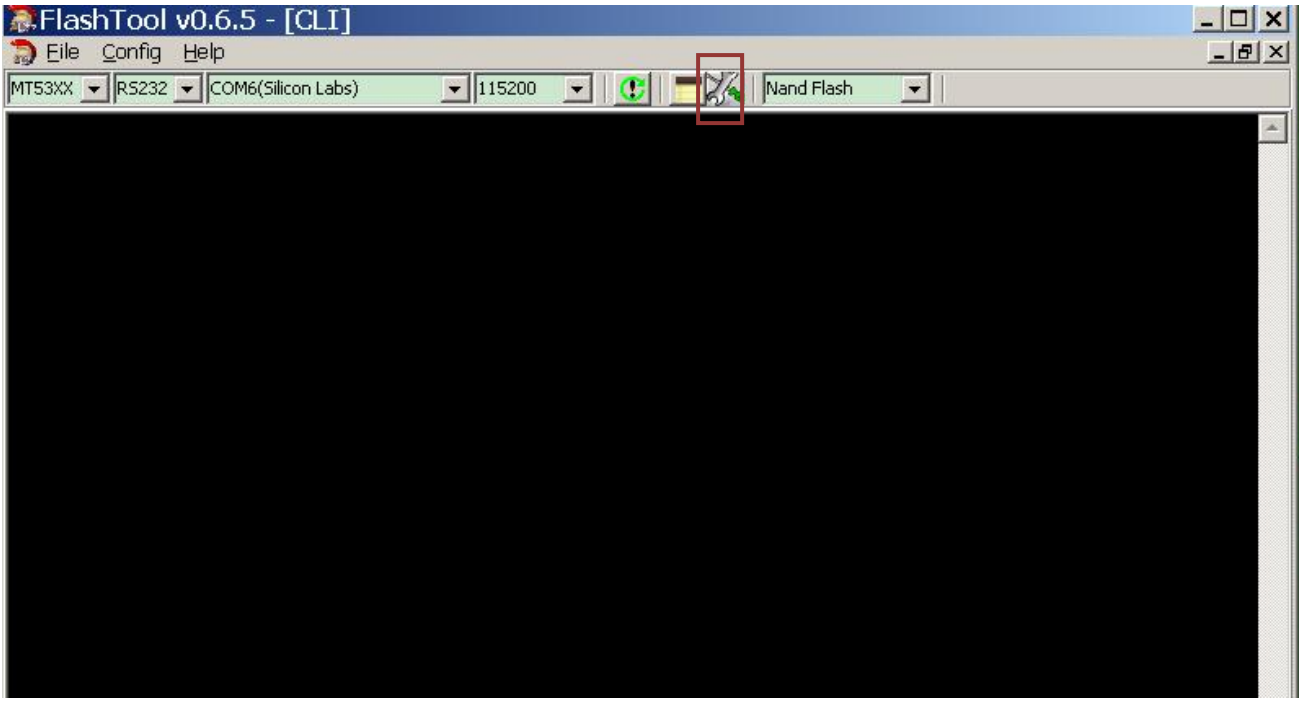


How to choose Communicate port and flash baudrate? See the following instruction..

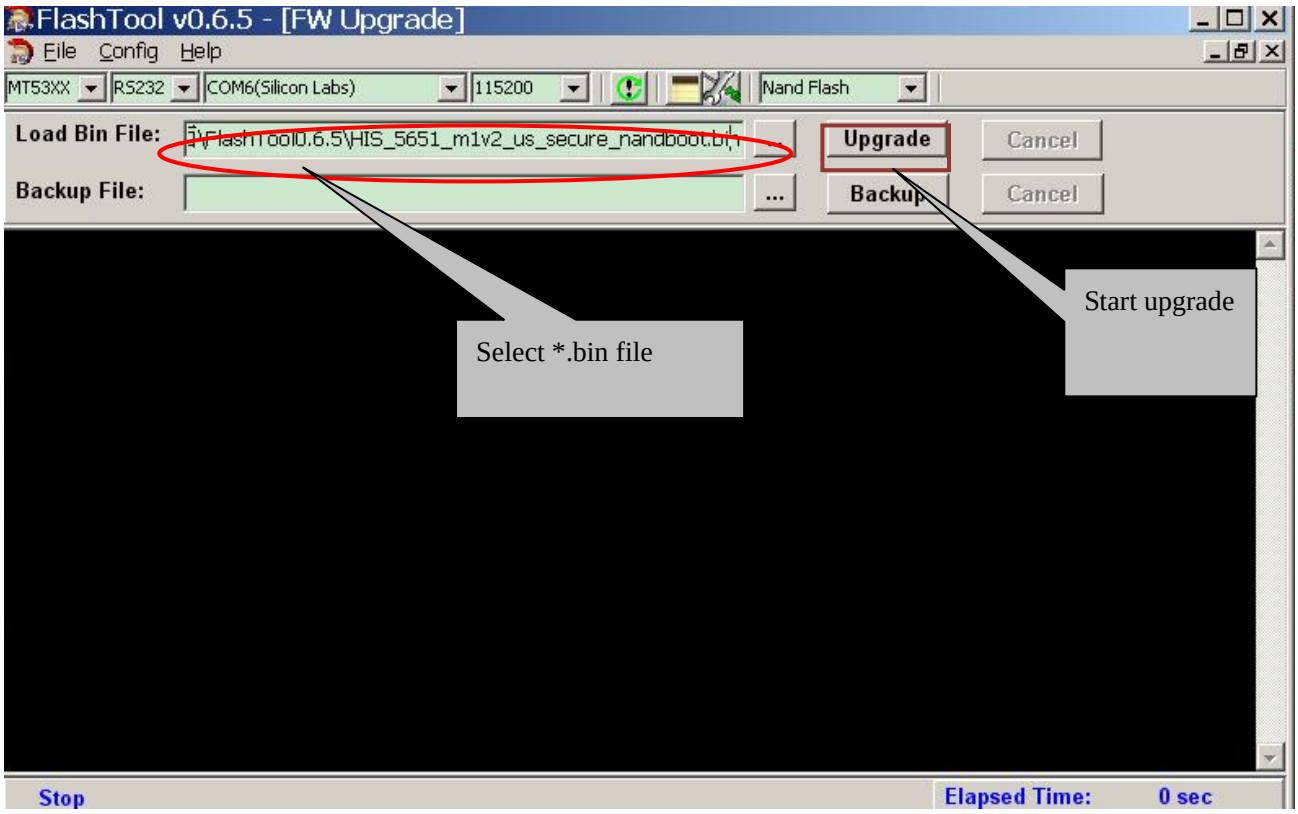


Open “Device Manager” and find which port is connected with the TV. In above picture, COM4 is connected to the TV, so, select “COM4” and if COM6 is connected to the TV, so select “COM6”. Select the right baud rate according to chip model. For this unit(chip model is MT5651), select 115200.

2、 Click  to connect，if connect successfully then button  from red turn green  .



Click  , bounce the following dialog box. Load Bin File：find the upgrading program file, and select it. for example:HIS_5651_m1v2_oceania_secure_nandboot.bin. Press “Upgrade” button and start upgrading.， if update defeat, try again.



4.4 Network online updating

Network online updating includes two ways. one is “Auto Upgrade ”the other is “Network Upgrade”. If Auto Upgrade is ON，then Network Upgrade is invalidated ; if Network Upgrade is on, then Auto Upgrade is invalidated.

Auto Upgrade---- When it is set to “on” , Turn on automatic check whether or not have any new updating file in servers when connects to the network. Customer can download and update according to the guide.

Network Upgrade---- Check the process and it will prompt you to upgrade the software.

1、Auto Upgrade

Power on

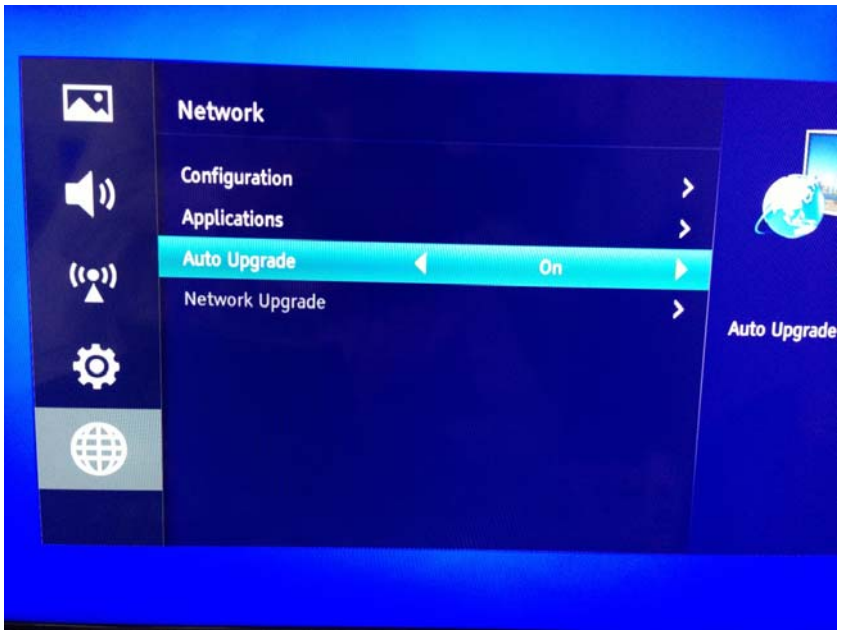


Figure-1

If have checked new version, then bounce the following .

Figure-2

Select updae to download……

Figure-3

When Finish downloading ,system automatic verify updating wizard.

Figure-4

After verify, bounce dialog to select “yes” to sure to update the firmware. Waiting……

Figure-5

Upgrade successfully. power off and restart TV can bounce following prompt message. otherwise upgrade is defeat.

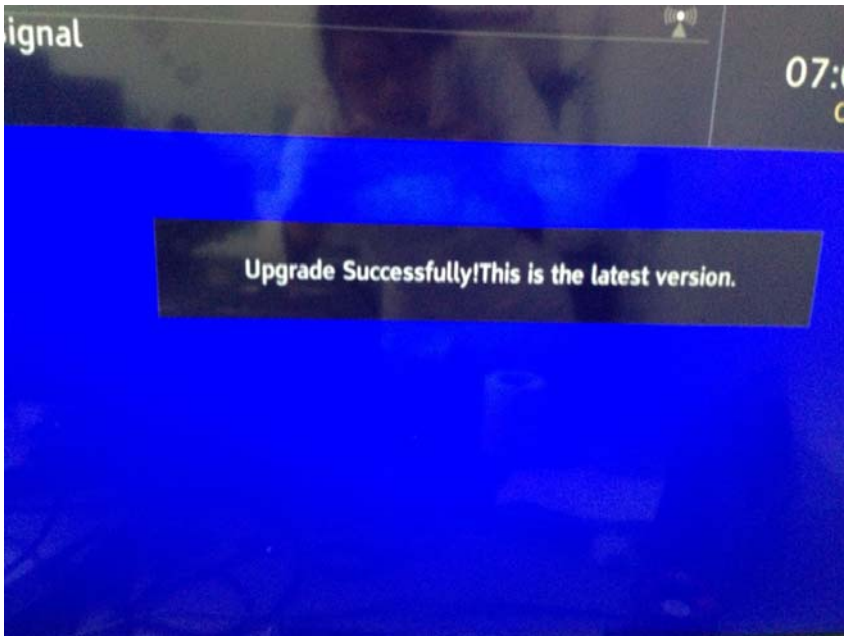


Figure-6

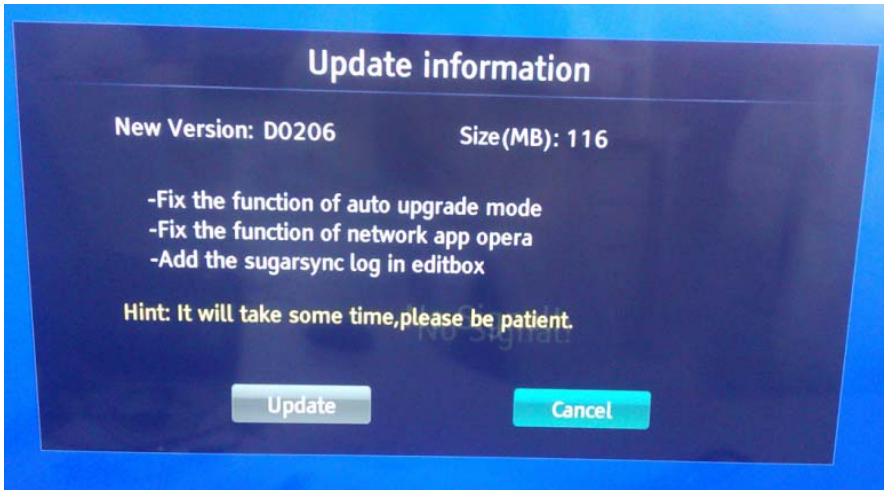
2、Network Upgrade

Network upgrade and auto upgrade have little difference only in figure-2 as following Update can step by step according the prompt..

Auto Upgrade:

figure-2

Network upgrade:

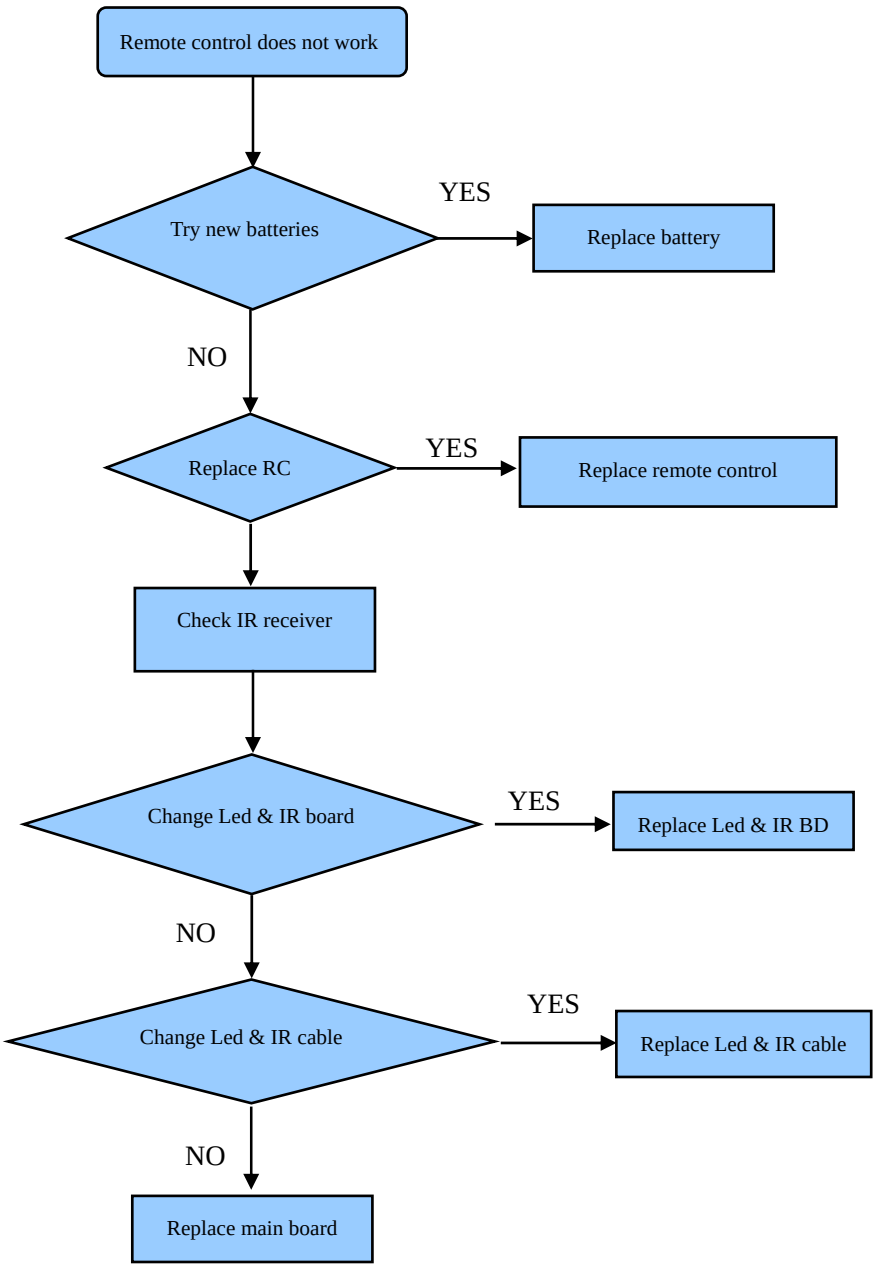


5. Trouble shooting

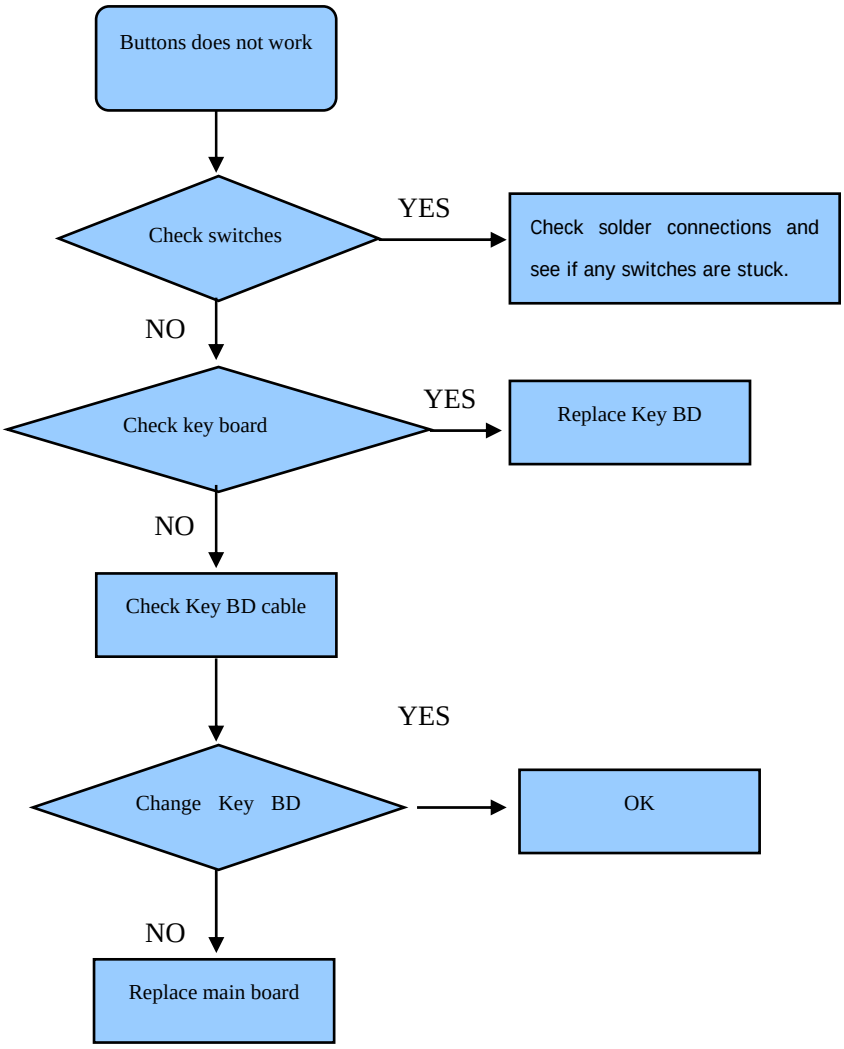
When there is something wrong with your TV, you can try turning off the TV and then restart it. You can also operate according to the follow chart. If the problems still cann't be solved, please contact the profession technician.

No sound or picture	1. Check if the power line is in the outlet and if it has electricity. 2. Check if you have pressed Power button on the TV or Power button on the remote control 3. Check the setting of picture brightness and contrast. 4. Check the volume.
The picture is normal but there is no sound	1. Check the volume. 2. Check if Mute mode is set.
No picture and white or black picture	1. Adjust Picture Setting. 2. Check Color System.
The sound and picture are interfered	1 Try to find the appliance affecting TV set, and move it far away from the TV set. 2. Try to insert the power plug of the TV set into another outlet.
Unclear picture or picture with snow	1. Check the direction, position and connection of your antenna. 2. Adjust the direction of your antenna or reset or fine tune the channel
The remote control does not work	1. Change the batteries in the remote control. 2. Clean the upper side of the remote control (radiating window) 3. Check the contacting points of the batteries. 4. Check if there is obstruction between the remote control and the monitor. 5. Check if the batteries are correctly installed.
H/V strip or the picture shaking	Check if there is an interfering source nearby, such as appliance or electric tools.
The cabinet of the TV makes "Click" sound	makes "Click" sound"Sometimes the room temperature change can cause the television cabinet to inflate or contra, which makes this sound. This does not mean the TV breaks down.

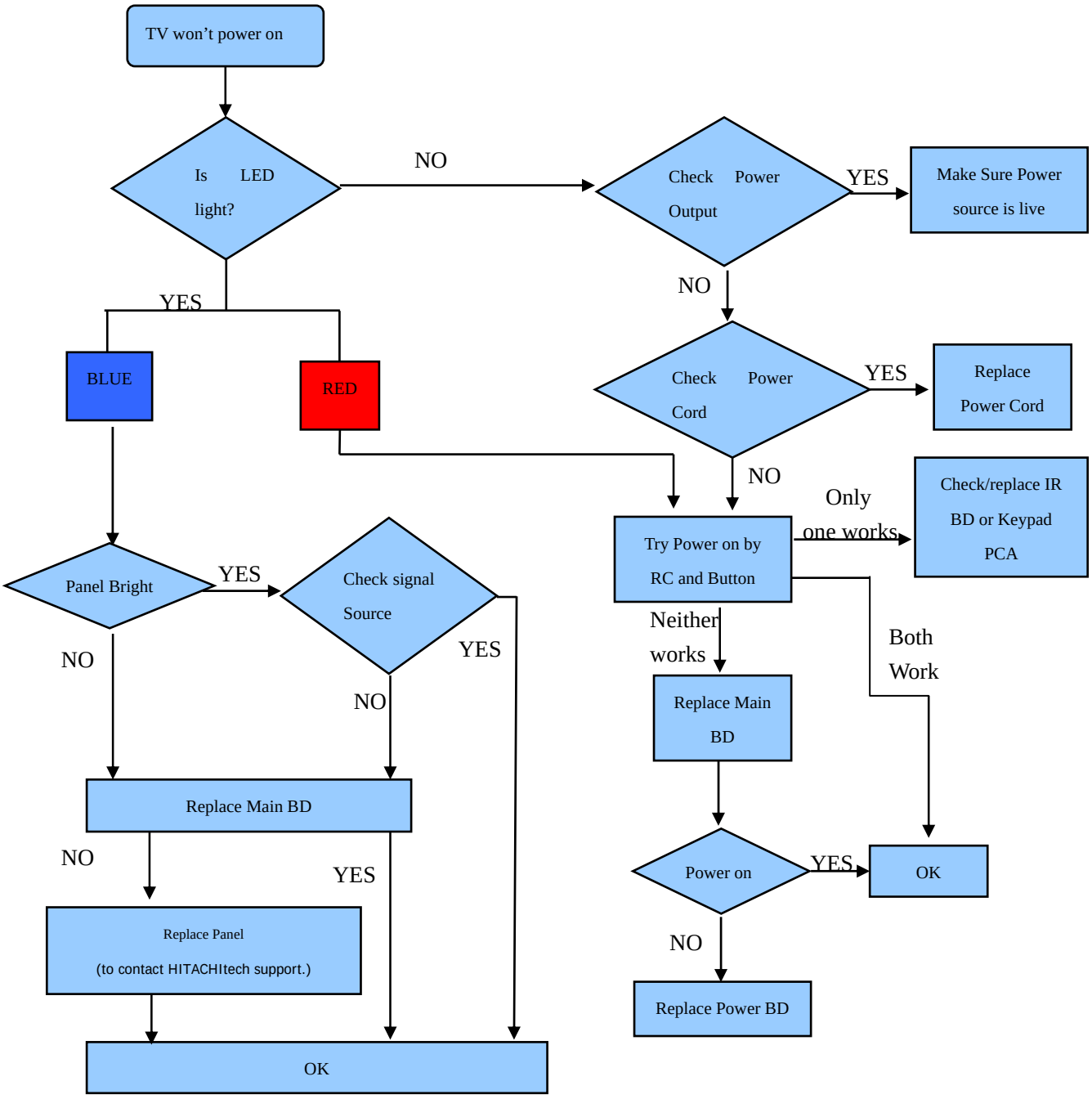
5.1 Troubleshooting for Remote Control



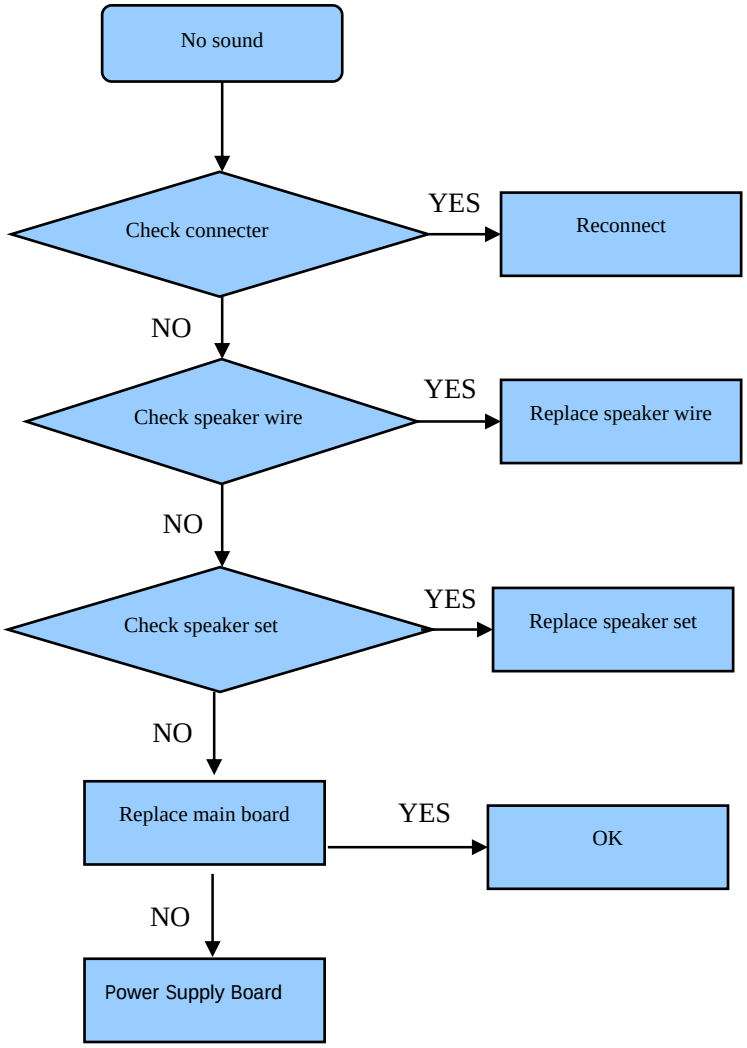
5.2 Troubleshooting for Function Key



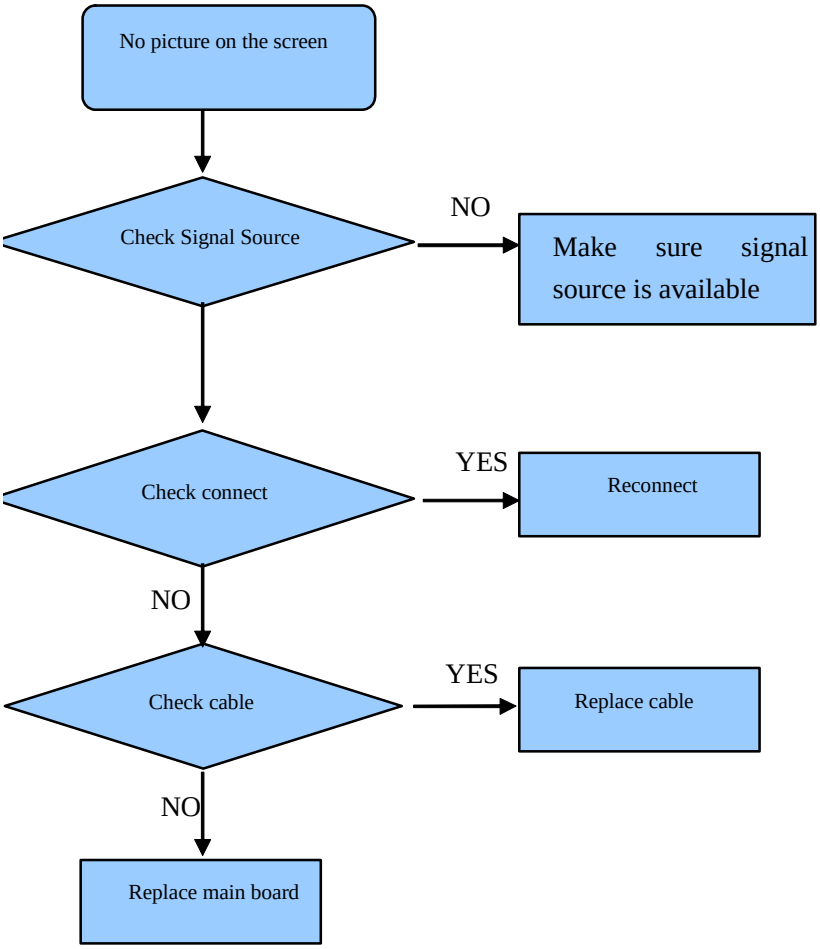
5.3 TV won’t Power On



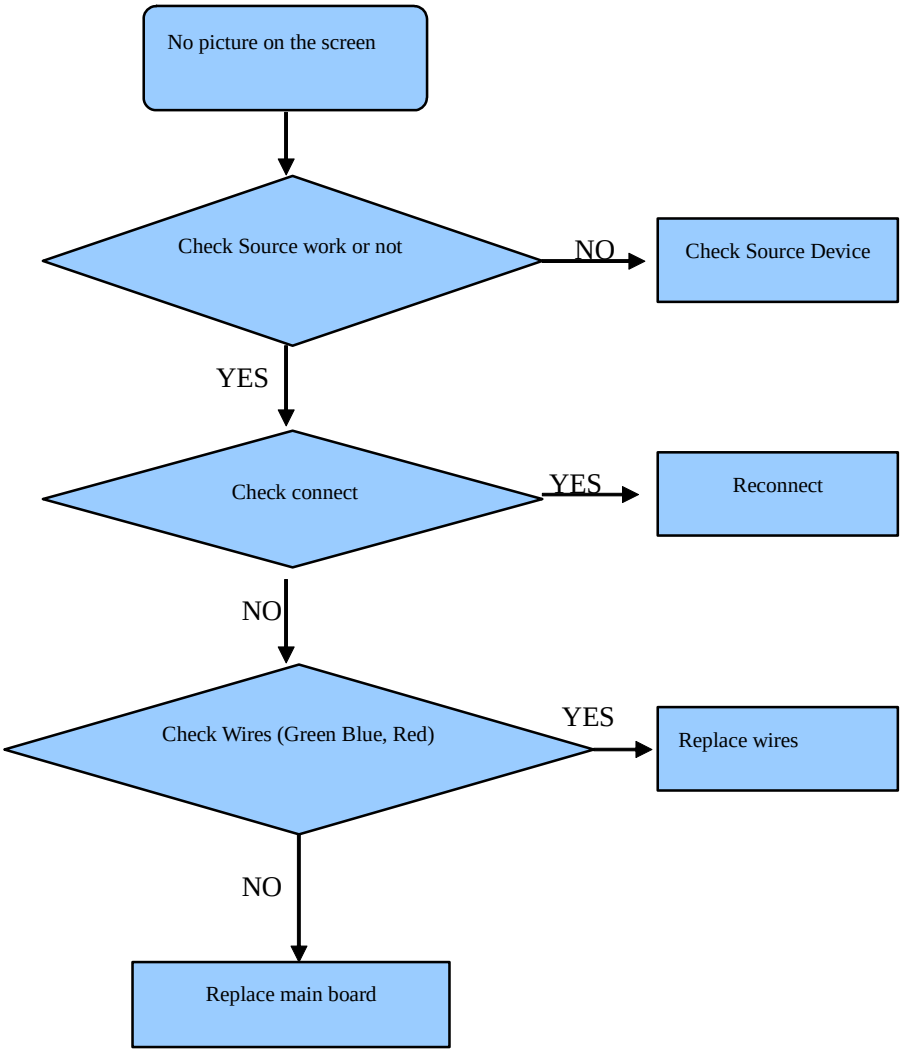
5.4 Troubleshooting for Audio



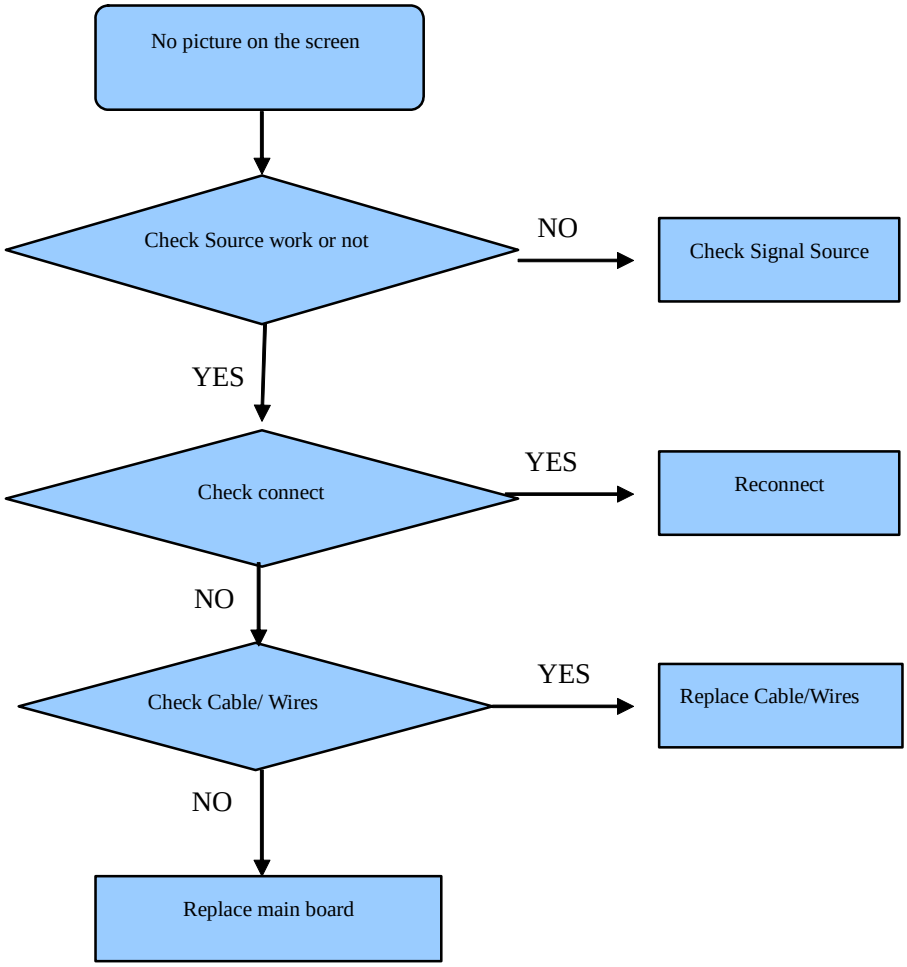
5.5 Troubleshooting for TV/VGA/HDMI input



5.6 Troubleshooting for YPbPr input



5.7 Troubleshooting for Video input



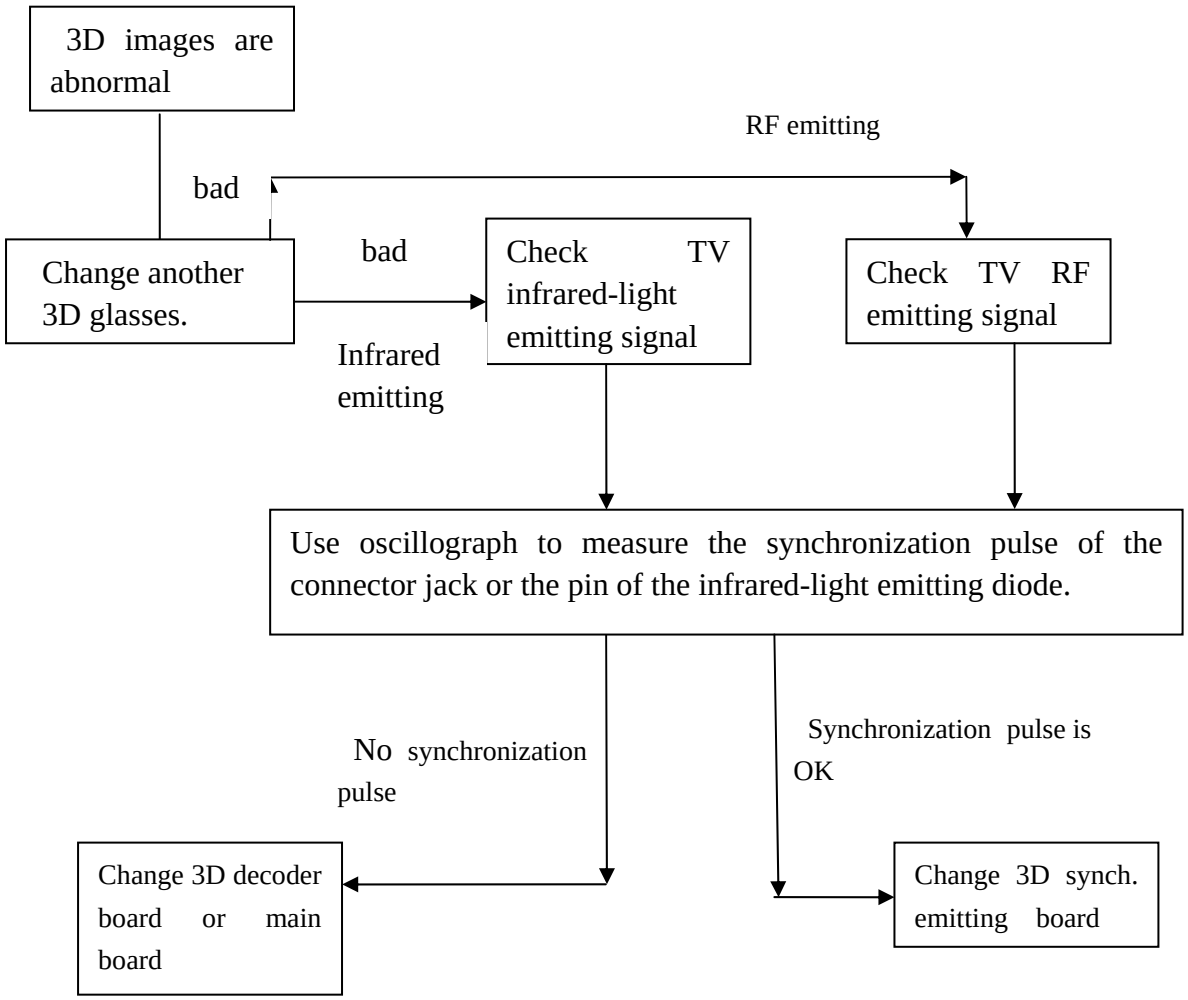
5.8 Troubleshooting for SG RF 3D

SG 3D

1、Turn on 3D function and ensure TV on showing must support 3D format..
The Set can automatically identify common 3D format in HDMI.l.4, other signals(DTV、DMP)need manual adjust part items. Detailed operation can refer to the user's manual.

2、Power on the 3D glasses and check battery electron through feeling shining sunlight or lamp.

3、If don't see any 3D images, follow the instruction to conclude step by step.



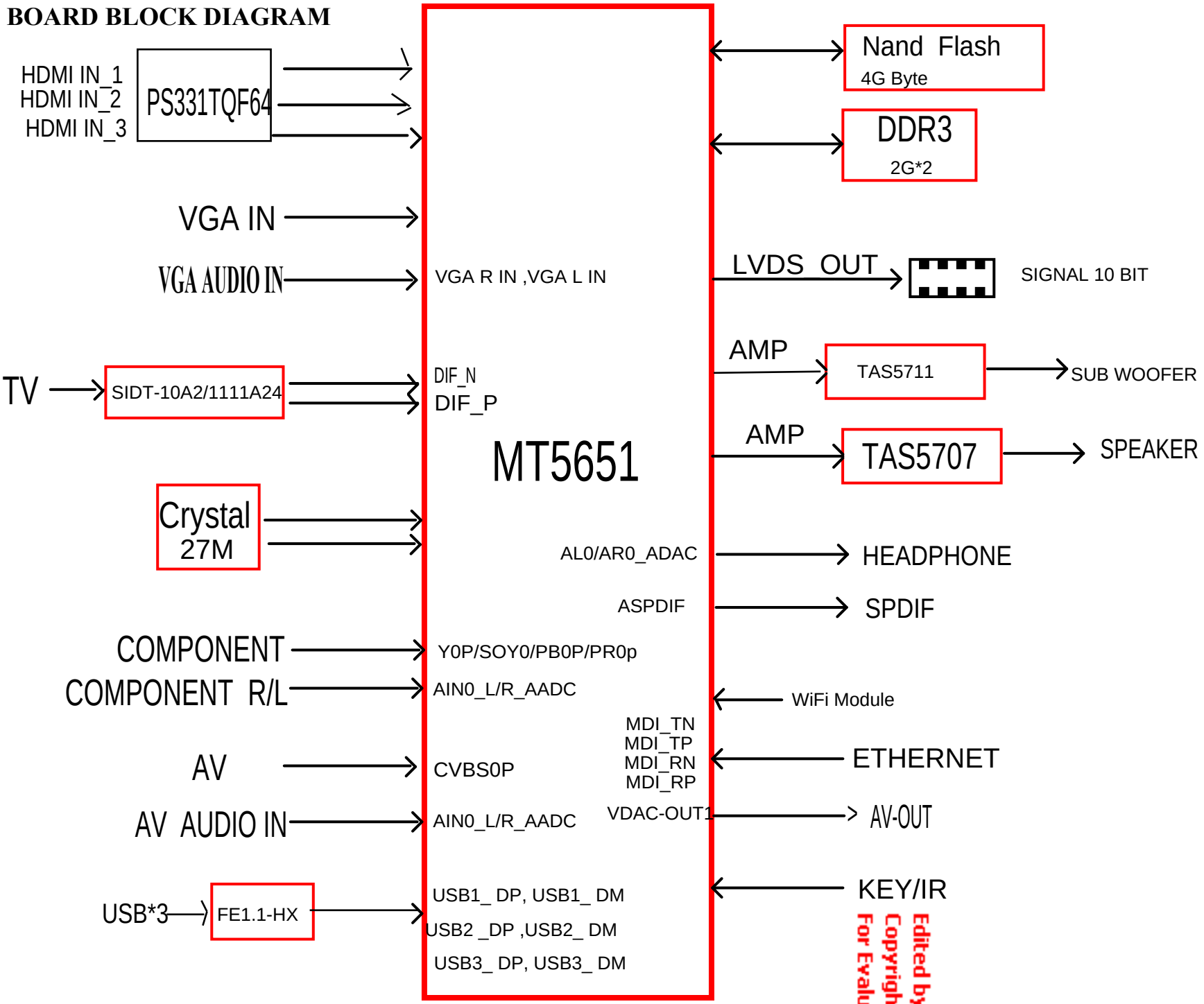
6. Signals Block Diagram and power assign:

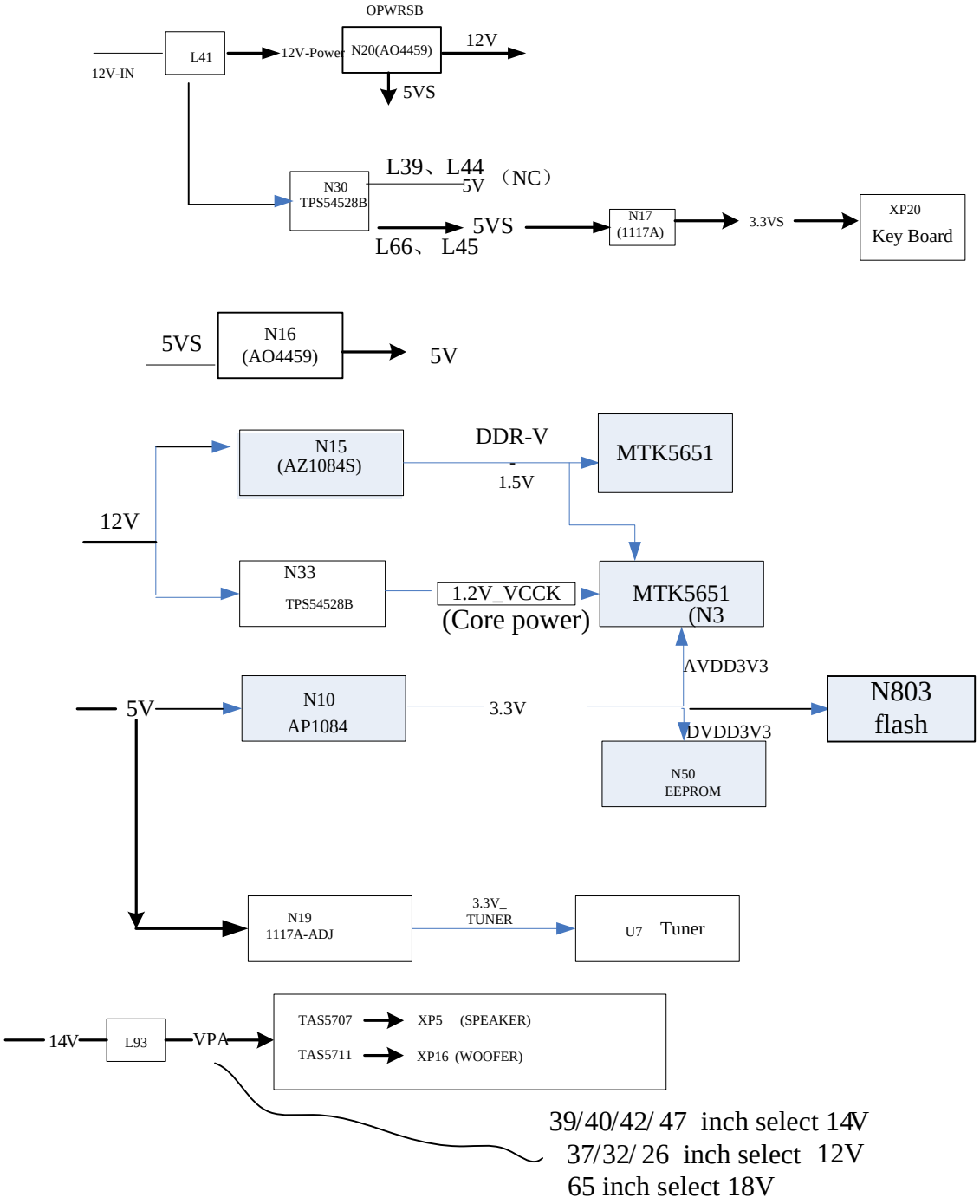
(The next page)

7. Schematic circuit diagram

8. Explode View

BOARD BLOCK DIAGRAM



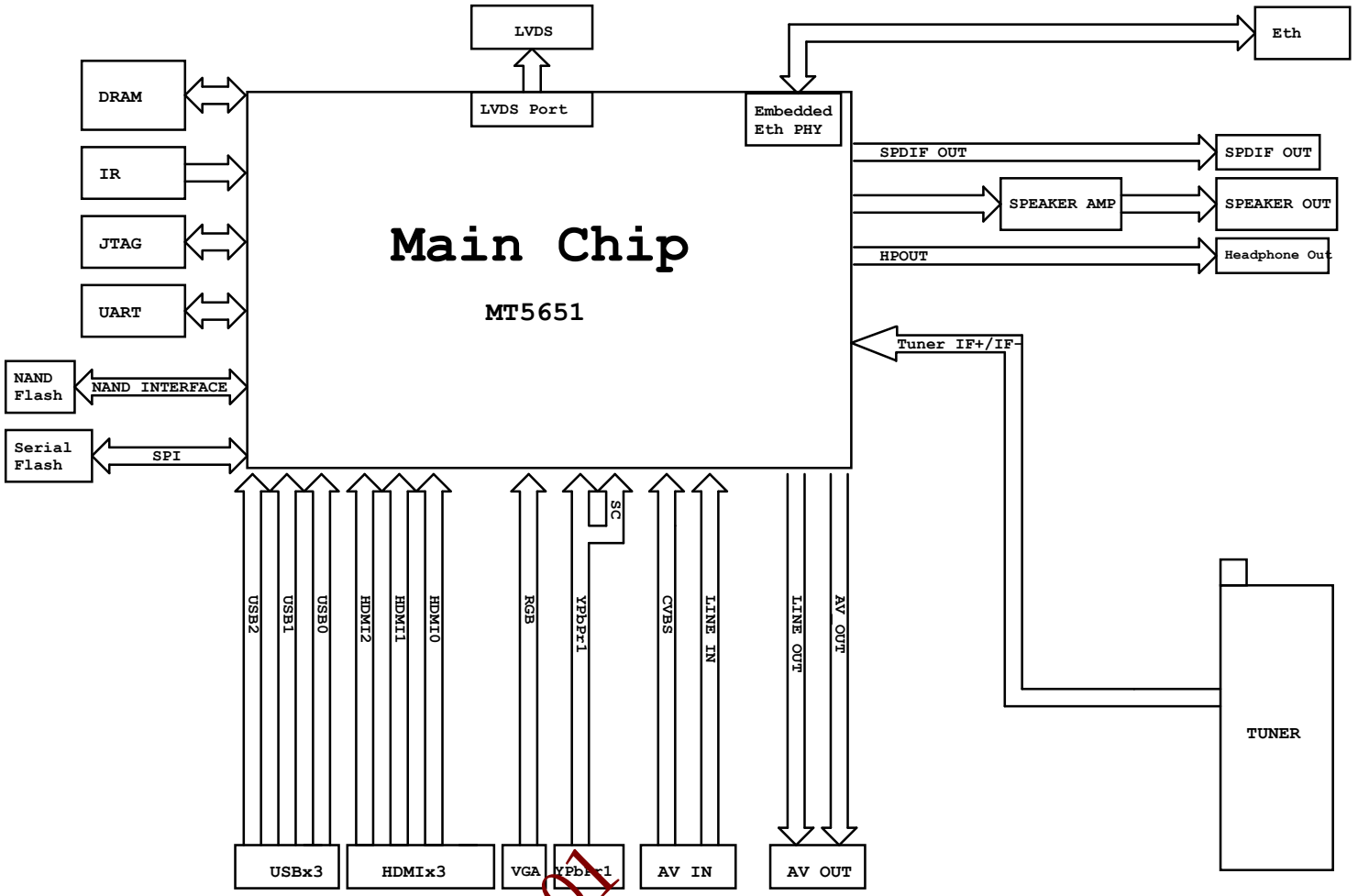

OPWRSB
12V-IN
L41
12V-Power
N20(AO4459)
12V
5VS
L39、L44 （NC）
5V
N30
TPS54528B
5VS
L66、 L45
N17
(1117A)
3.3VS
XP20
Key Board
5VS
N16
(AO4459)
5V
N15
(AZ1084S)
DDR-V
1.5V
MTK5651
12V
N33
TPS54528B
1.2V_VCCK
(Core power)
MTK5651
(N3
AVDD3V3
5V
N10
AP1084
3.3V
N803
flash
DVDD3V3
N50
EEPROM
N19
1117A-ADJ
3.3V_
TUNER
U7 Tuner
14V
L93
VPA
TAS5707
XP5 (SPEAKER)
TAS5711
XP16 (WOOFER)
39/40/42/ 47 inch select 14V
37/32/ 26 inch select 12V
65 inch select 18V

MT5651

GPIO LIST

PIN NAME	GPIO Function	Function define
GPIO_0		LOCAL_DIM_EN
GPIO_1		PWR_FAULT#
GPIO_2		LVDS_PWR_EN
GPIO_3		EMMC_RST
GPIO_4		WIFI_EN
GPIO_5		1292_RESET#
GPIO_6		1292_INT
GPIO_7		1292_WAKEUP
GPIO_8		HPDET#
GPIO_9		SYS_EEPROM_WP
ADIN0		SCART_FS_SEL
ADIN1		
ADIN2		ADIN0
ADIN3		ADIN1
ADIN4		MUTE_HP
ADIN5		MEMC_ON/OFF
OPCTRL0		strap[1] AMP_MUTE
OPCTRL1		BL_ON/OFF
OPCTRL2		3D_EN
OPCTRL3		strap[2]
OPCTRL4		strap[3] RST_AMP
OPWM0		PWM2
OPWM1		POWER_LED
OPWM2		BL_DIMMING
OPWM3		LED_DX
OPWM4		
OPWM5		LED2/PHYAD2
OPWM6		LED3/PHYAD3
PACLE		strap[0]

Block Diagram



Hisense Electric Co.,LTD	
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Size: A2	Document Number: MT5651
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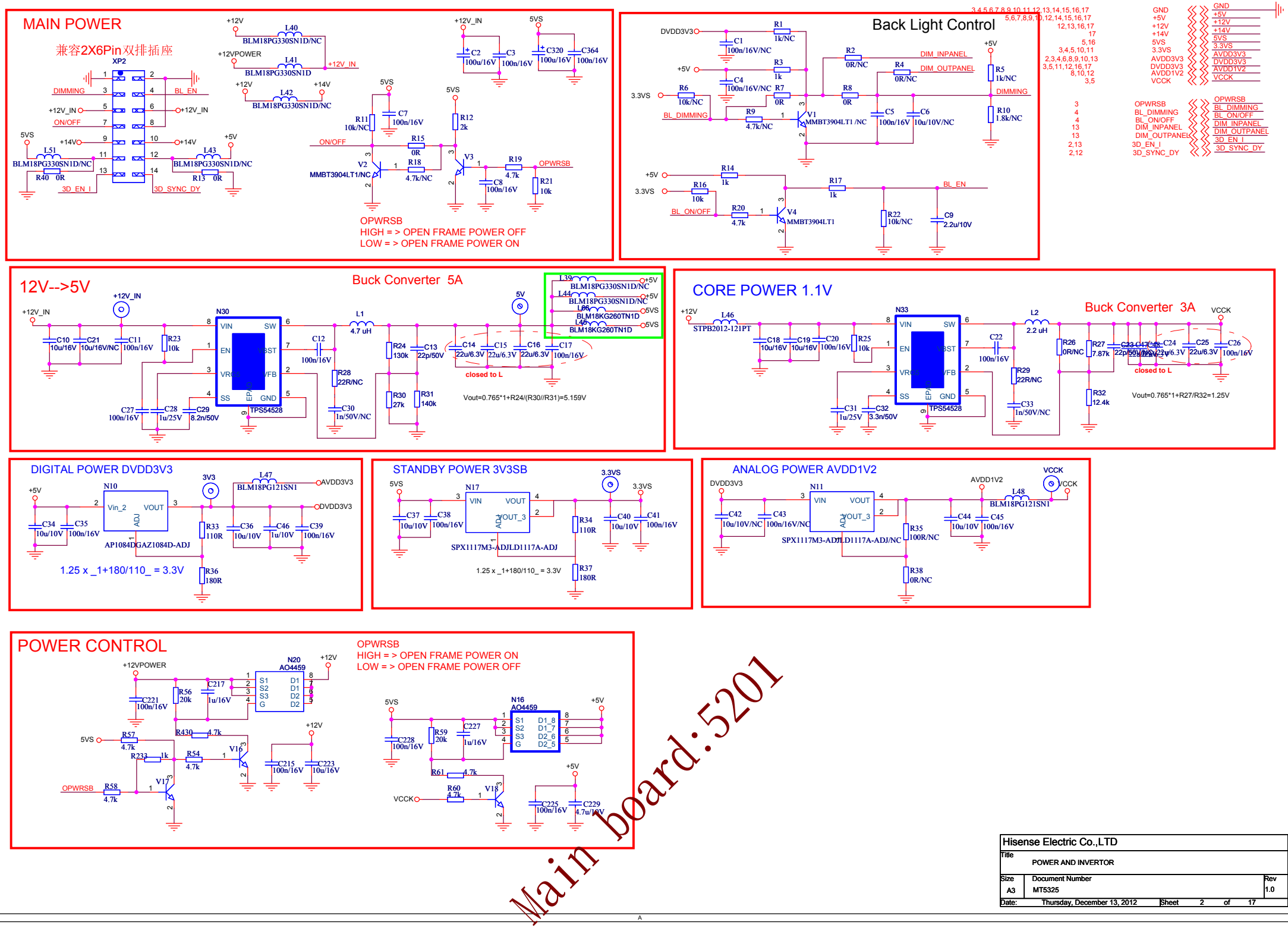
MAIN POWER
兼容2X6Pin双排插座
XP2
DIMMING
BL_EN
+12V_IN
ON/OFF
+14V
+5V
3D_EN_I
3D_SYNC_DY
L40
BLM18PG330SN1D/NC
L41
BLM18PG330SN1D
L42
L51
L43
R40 0R
R13 0R
R11 10k/NC
R12 2k
R15 0R
R18 4.7k/NC
V2 MMBT3904LT1/NC
V3
R19 4.7k
R21 10k
C2 100u/16V
C3 100n/16V
C320 100u/16V
C364 100n/16V
C7 100n/16V
C8 100n/16V
OPWRSB
OPWRSB
HIGH = > OPEN FRAME POWER OFF
LOW = > OPEN FRAME POWER ON
Back Light Control
DVDD3V3
3.3VS
BL_DIMMING
BL_ON/OFF
DIM_INPANEL
DIM_OUTPANEL
DIMMING
BL_EN
R1 1k/NC
R2 0R/NC
R3 1k
R4 0R/NC
R5 1k/NC
R6 10k/NC
R7 0R
R8 0R
R9 4.7k/NC
R10 1.8k/NC
R14 1k
R16 10k
R17 1k
R20 4.7k
R22 10k/NC
C1 100n/16V/NC
C4 100n/16V/NC
C5 100n/16V
C6 10u/10V/NC
C9 2.2u/10V
V1 MMBT3904LT1 /NC
V4 MMBT3904LT1
GND
+5V
+12V
+14V
5VS
3.3VS
AVDD3V3
DVDD3V3
AVDD1V2
VCCK
OPWRSB
BL_DIMMING
BL_ON/OFF
DIM_INPANEL
DIM_OUTPANEL
3D_EN_I
3D_SYNC_DY
12V-->5V
Buck Converter 5A
+12V_IN
N30
TPS54528
VIN
SW
EN
VBST
VRG3
VFB
SS
EPAD
GND
L1 4.7 uH
5V
L39 BLM18PG330SN1D/NC
L44 BLM18PG330SN1D/NC
L66 BLM18KG260TN1D
L45 BLM18KG260TN1D
C10 10u/16V
C21 10u/16V/NC
C11 100n/16V
R23 10k
C12 100n/16V
R28 22R/NC
C30 1n/50V/NC
R24 130k
C13 22p/50V
R30 27k
R31 140k
C14 22u/6.3V
C15 22u/6.3V
C16 22u/6.3V
C17 100n/16V
closed to L
Vout=0.765*1+R24/(R30//R31)=5.159V
C27 100n/16V
C28 1u/25V
C29 8.2n/50V
CORE POWER 1.1V
Buck Converter 3A
N33
STPB2012-121PT
L46
L2 2.2 uH
VCCK
C18 10u/16V
C19 10u/16V
C20 100n/16V
R25 10k
C22 100n/16V
R29 22R/NC
C33 1n/50V/NC
C31 1u/25V
C32 3.3n/50V
R26 0R/NC
R27 7.87k
R32 12.4k
C23 22p/50V/NC
C24 22u/6.3V
C25 22u/6.3V
C26 100n/16V
closed to L
Vout=0.765*1+R27/R32=1.25V
DIGITAL POWER DVDD3V3
N10
AP1084DGAZ1084D-ADJ
Vin_2
VOUT
ADJ
3V3
L47 BLM18PG121SN1
AVDD3V3
DVDD3V3
C34 10u/10V
C35 100n/16V
R33 110R
C36 10u/10V
C46 1u/10V
C39 100n/16V
R36 180R
1.25 x _1+180/110_ = 3.3V
STANDBY POWER 3V3SB
N17
SPX1117M3-ADJLD1117A-ADJ
VOUT_3
3.3VS
C37 10u/10V
C38 100n/16V
R34 110R
C40 10u/10V
C41 100n/16V
R37 180R
1.25 x _1+180/110_ = 3.3V
ANALOG POWER AVDD1V2
N11
SPX1117M3-ADJLD1117A-ADJ/NC
AVDD1V2
VCCK
L48 BLM18PG121SN1
C42 10u/10V/NC
C43 100n/16V/NC
R35 100R/NC
C44 10u/10V
C45 100n/16V
R38 0R/NC
POWER CONTROL
N20
AO4459
+12VPOWER
+12V
S1
S2
S3
G
D1
D2
C221 100n/16V
R56 20k
C217 1u/16V
R57 4.7k
R430 4.7k
R233 1k
R54 4.7k
V16
V17
R58 4.7k
C215 100n/16V
C223 10u/16V
OPWRSB
HIGH = > OPEN FRAME POWER ON
LOW = > OPEN FRAME POWER OFF
N16
AO4459
D1_8
D1_7
D2_6
D2_5
C228 100n/16V
R59 20k
C227 1u/16V
R61 4.7k
R60 4.7k
V18
C225 100n/16V
C229 4.7u/16V
Main board:5201
Hisense Electric Co.,LTD
Title
POWER AND INVERTOR
Size
A3
Document Number
MT5325
Rev
1.0
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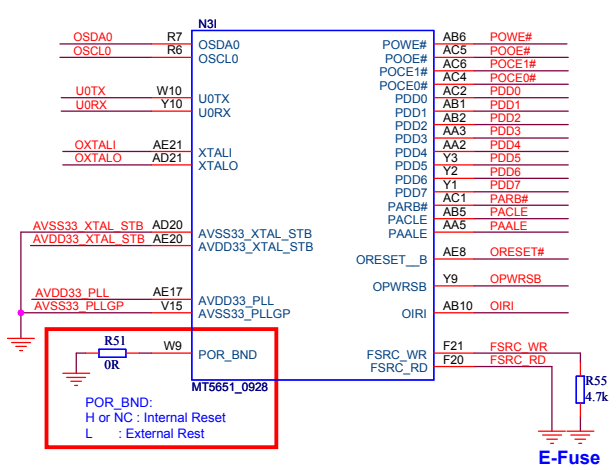

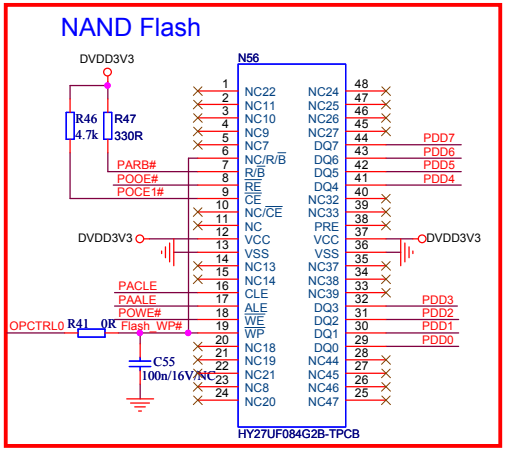

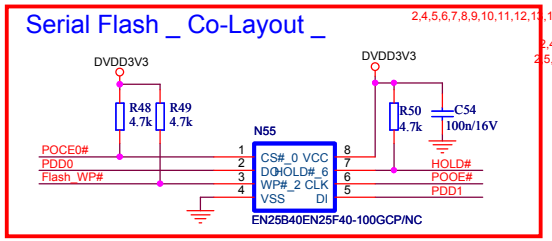

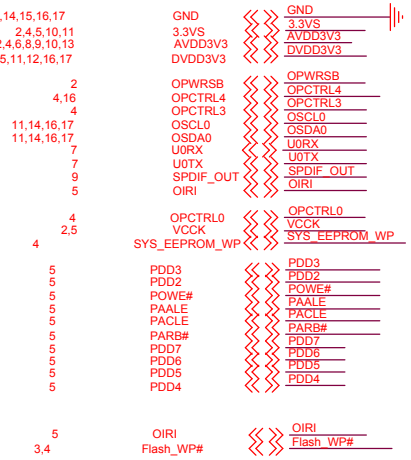

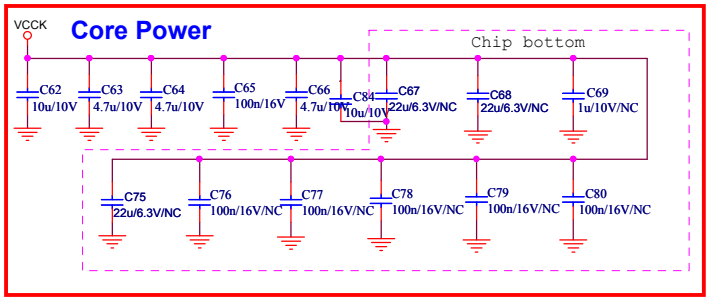

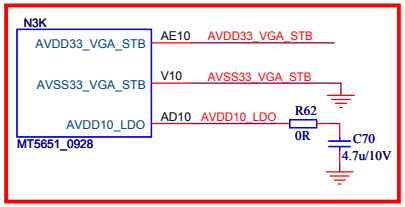

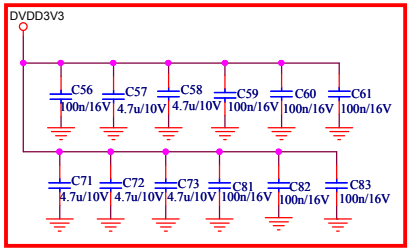

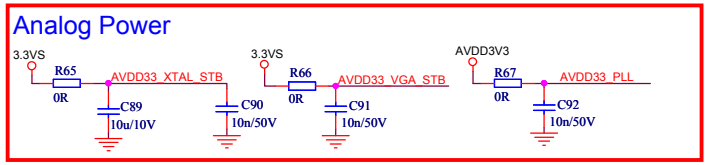

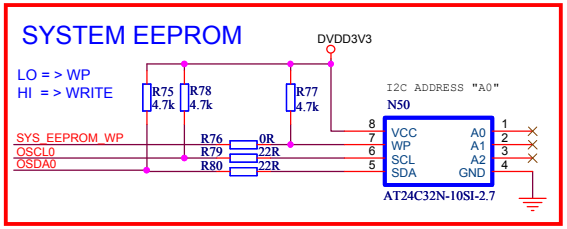

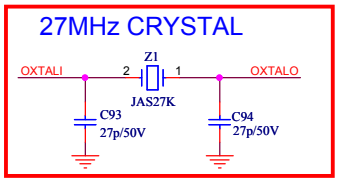

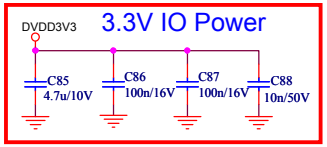

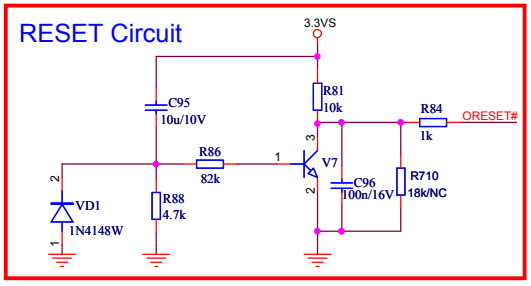

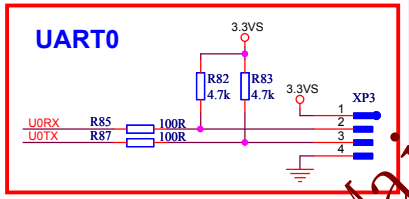

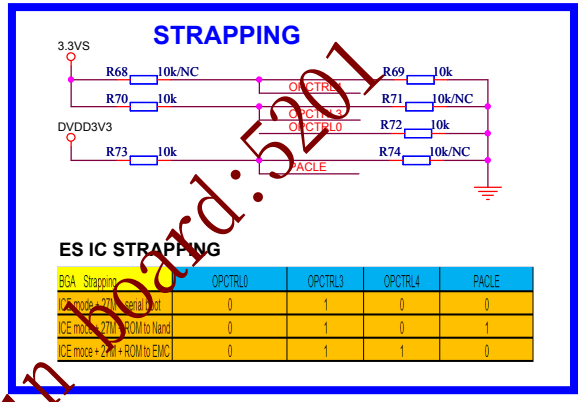

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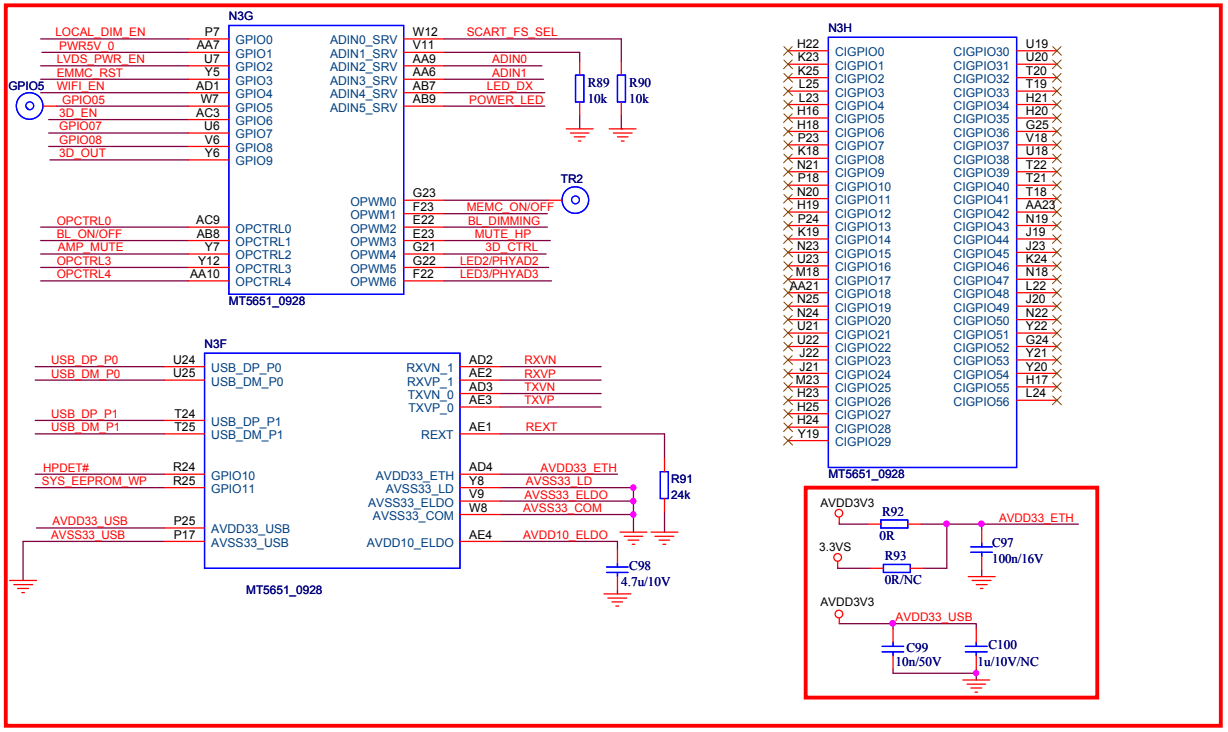


2,3,5,6,7,8,9,10,11,12,13,14,15,16,17 GND — GND
2,3,6,8,9,10,13 AVDD3V3 — AVDD3V3
2,3,5,10,11 3.3VS — 3.3VS
3 OPCTRL3 — OPCTRL3
3,16 OPCTRL4 — OPCTRL4
3 SYS_EEPROM_WP — SYS_EEPROM_WP

11 PWR5V_0 — PWR5V_0
17 HPDET# — HPDET#
17 MUTE_HP — MUTE_HP

12 LVDS_PWR_EN — LVDS_PWR_EN
13 LOCAL_DIM_EN — LOCAL_DIM_EN
15 WIFI_EN — WIFI_EN
5 POWER_LED — POWER_LED
5 ADIN0 — ADIN0
5 ADIN1 — ADIN1

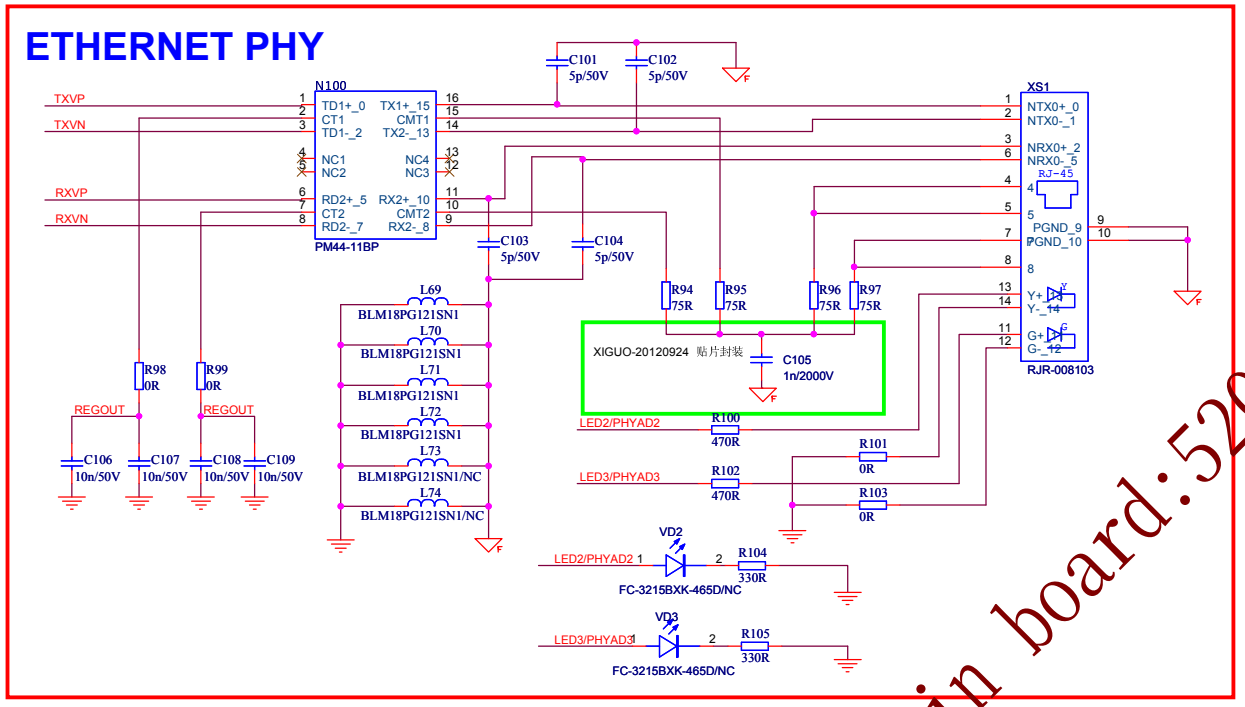
15 USB_DP_P0 — USB_DP_P0
15 USB_DM_P0 — USB_DM_P0
15 USB_DP_P1 — USB_DP_P1
15 USB_DM_P1 — USB_DM_P1

5 EMMC_RST — EMMC_RST

2 BL_DIMMING — BL_DIMMING
2 BL_ON/OFF — BL_ON/OFF
12 3D_OUT — 3D_OUT
12 3D_CTRL — 3D_CTRL

12 3D_EN — 3D_EN
13 MEMC_ON/OFF — MEMC_ON/OFF
3 OPCTRL0 — OPCTRL0
12,13 GPIO07 — GPIO07
12,13 GPIO08 — GPIO08
16 AMP_MUTE — AMP_MUTE
13 GPIO05 — GPIO05

4,5 LED_DX — LED_DX
3,4 Flash_WP# — Flash_WP#



Main board:5201

Hisense Electric Co.,LTD		
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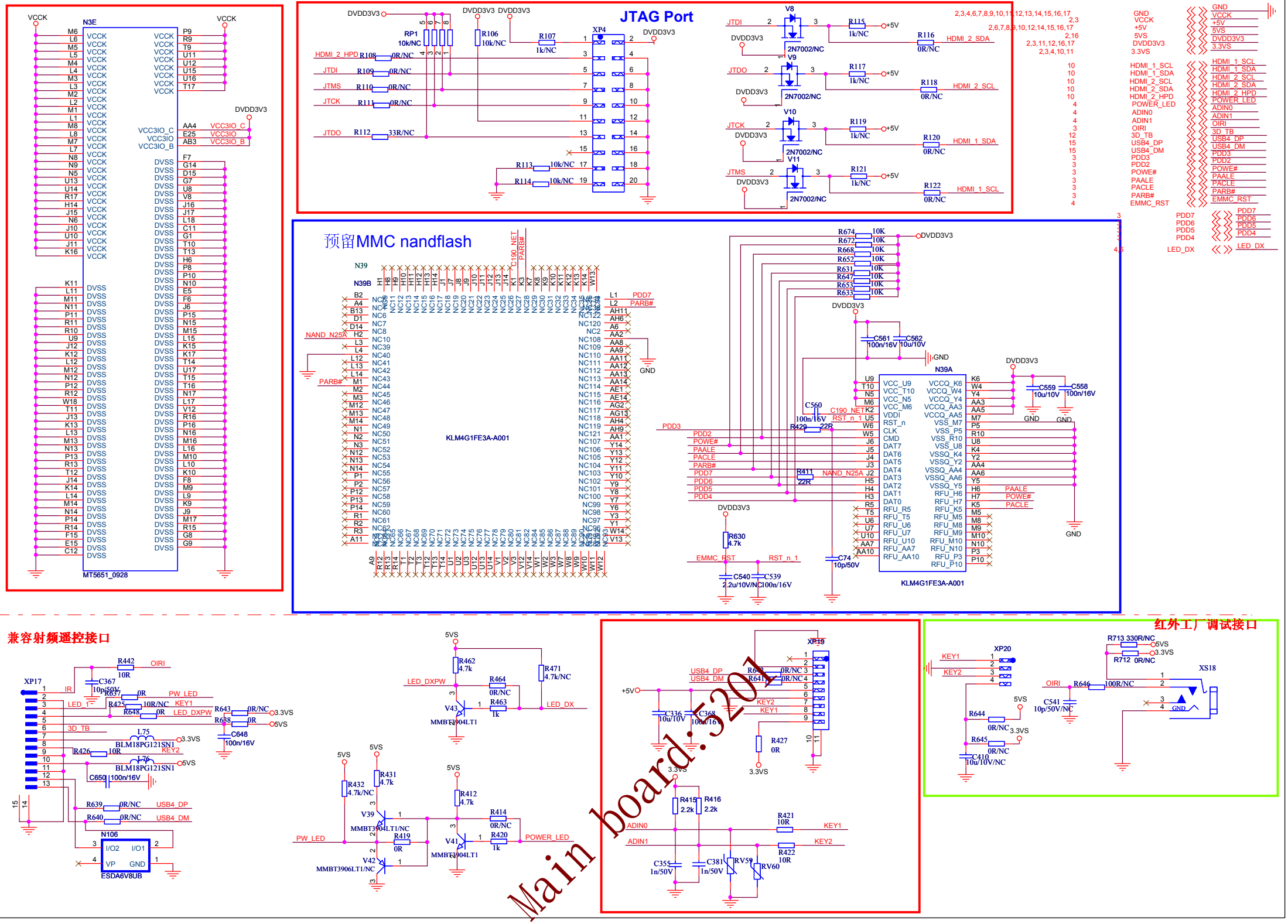
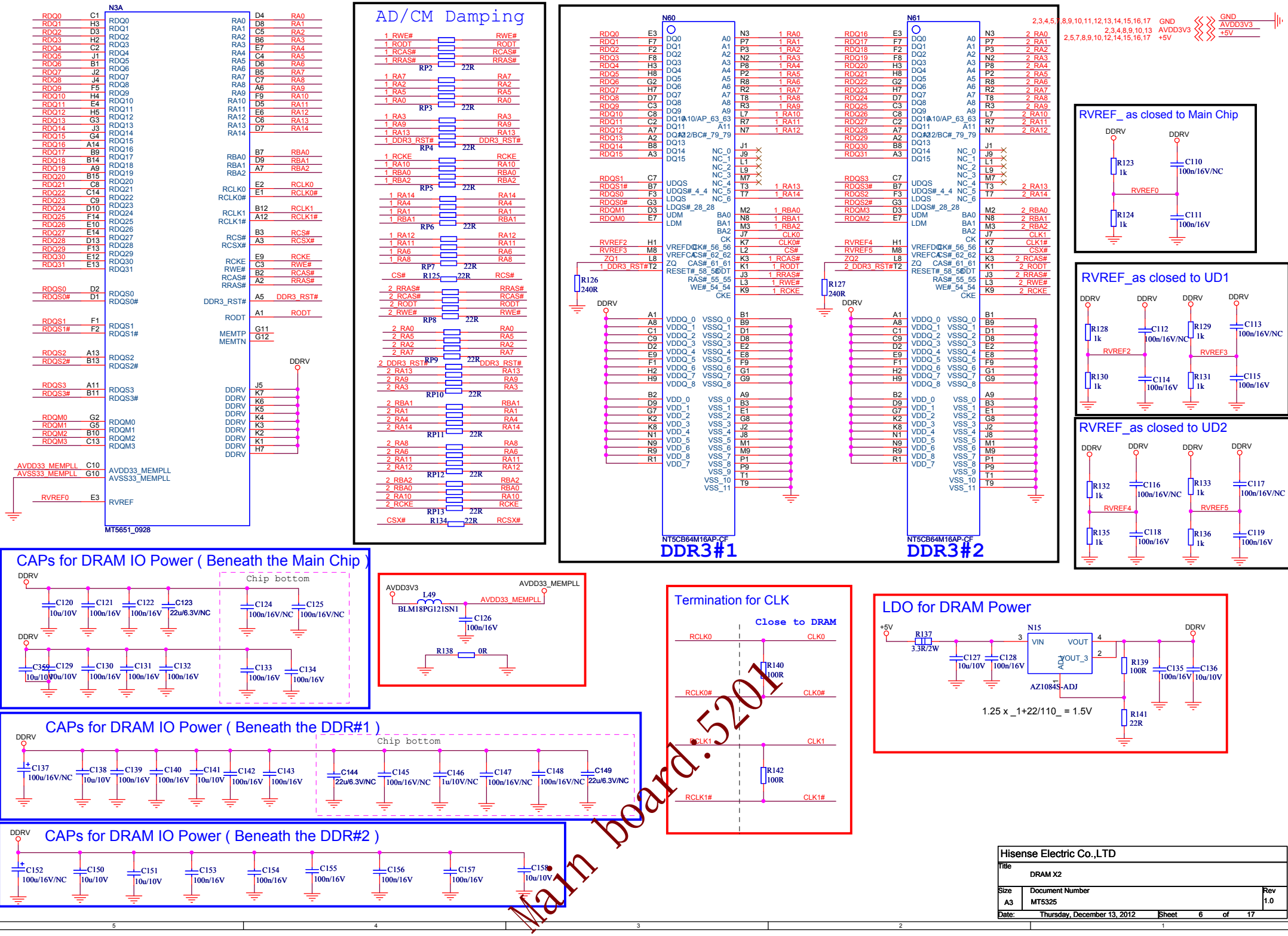
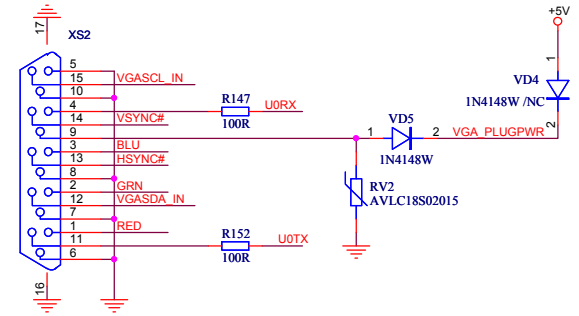
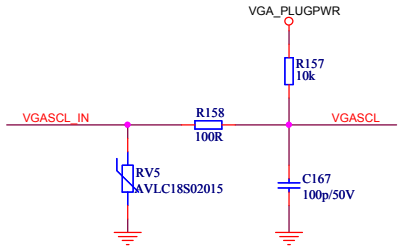
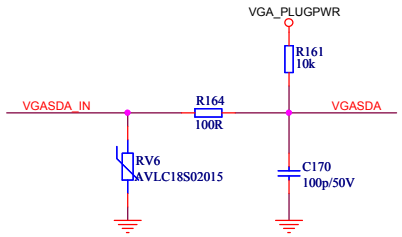

JTAG Port
预留MMC nandflash
兼容射频遥控接口
红外工厂调试接口
Main board:5201

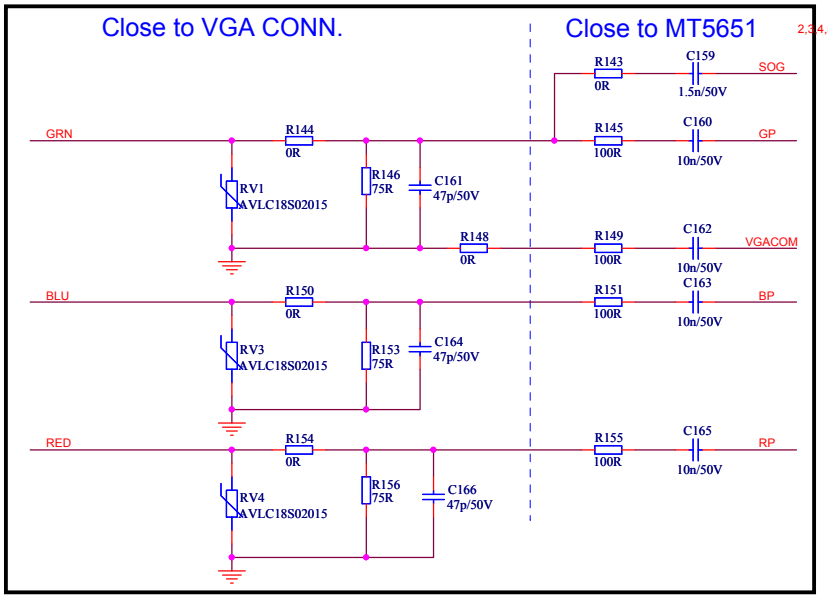

N3A
MT5651_0928
AD/CM Damping
N60
N61
NT5CB64M16AP-CF
DDR3#1
DDR3#2
RVREF_ as closed to Main Chip
RVREF_as closed to UD1
RVREF_as closed to UD2
CAPs for DRAM IO Power (Beneath the Main Chip)
CAPs for DRAM IO Power (Beneath the DDR#1)
CAPs for DRAM IO Power (Beneath the DDR#2)
Chip bottom
Termination for CLK
Close to DRAM
LDO for DRAM Power
AZ1084S-ADJ
1.25 x _1+22/110_ = 1.5V
Main board.5201
Hisense Electric Co.,LTD
DRAM X2
MT5325
Thursday, December 13, 2012

VGA INPUT





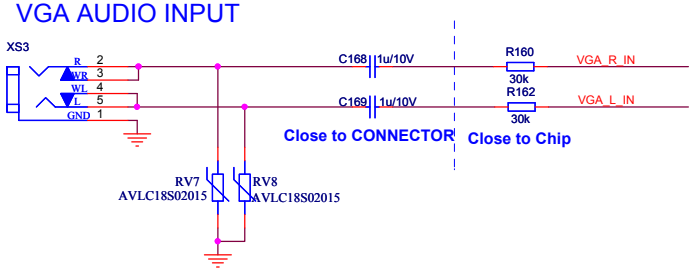




2,3,4,5,6,8,9,10,11,12,13,14,15,16,17
2,5,6,8,9,10,12,14,15,16,17

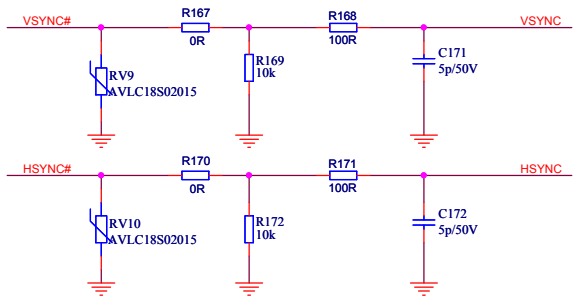
8	HSYNC	HSYNC
8	VSYNC	VSYNC
8	RP	RP
8	GP	GP
8	BP	BP
8	VGACOM	VGACOM
8	SOG	SOG
8	VGASDA	VGASDA
8	VGASCL	VGASCL
9	VGA_L_IN	VGA_L_IN
9	VGA_R_IN	VGA_R_IN
3	U0RX	U0RX
3	U0TX	U0TX
	GND	GND
	+5V	+5V

VGA AUDIO INPUT



XIGUO-20120924 更改小尺寸封装耳机端子

VGA SYNC SLICER



Main board:5201

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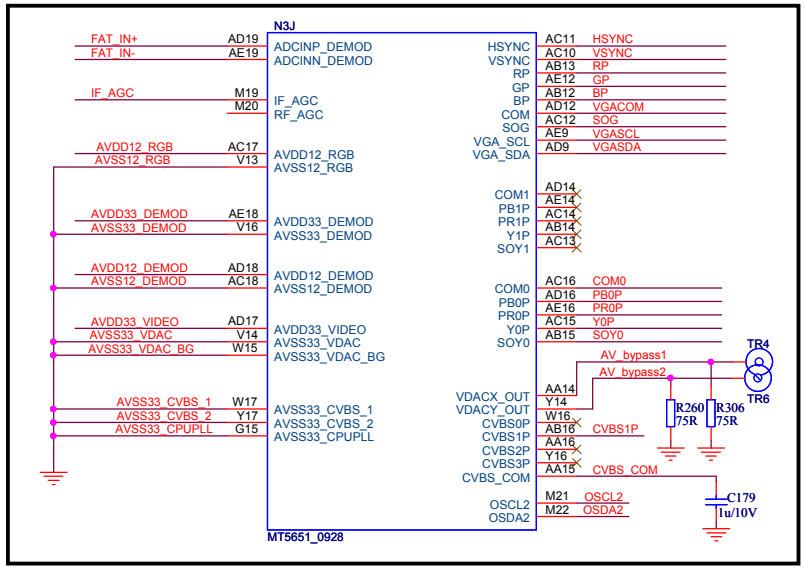
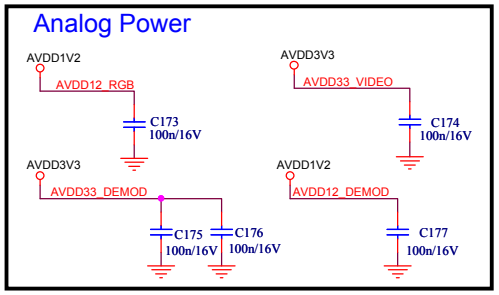
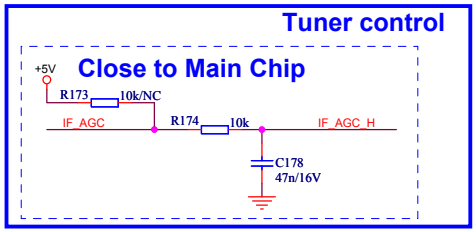
Date: Thursday, December 13, 2012	Sheet 7 of 17	

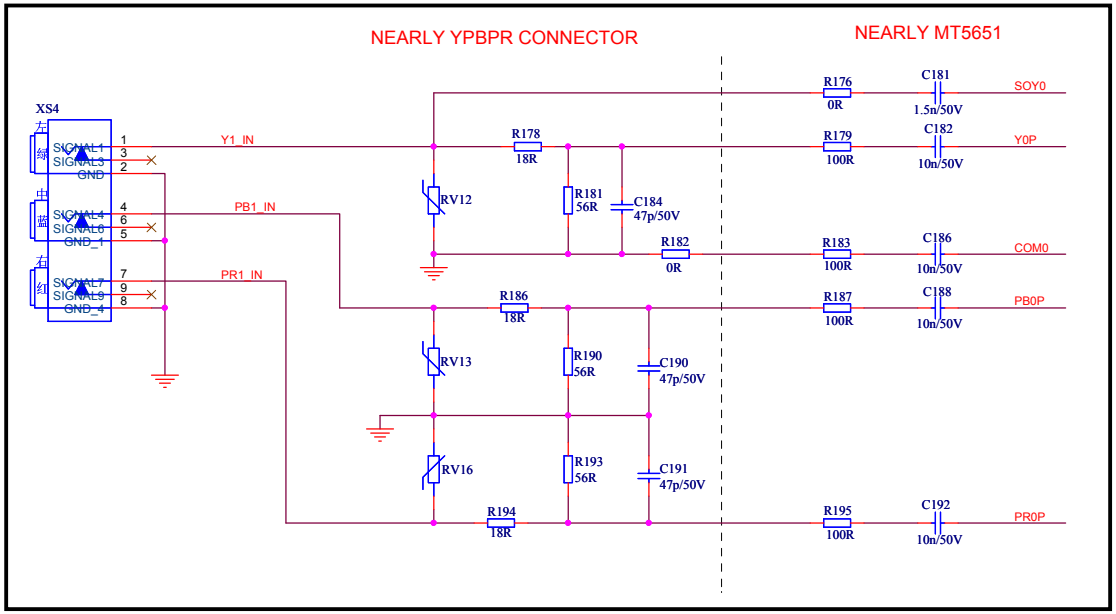


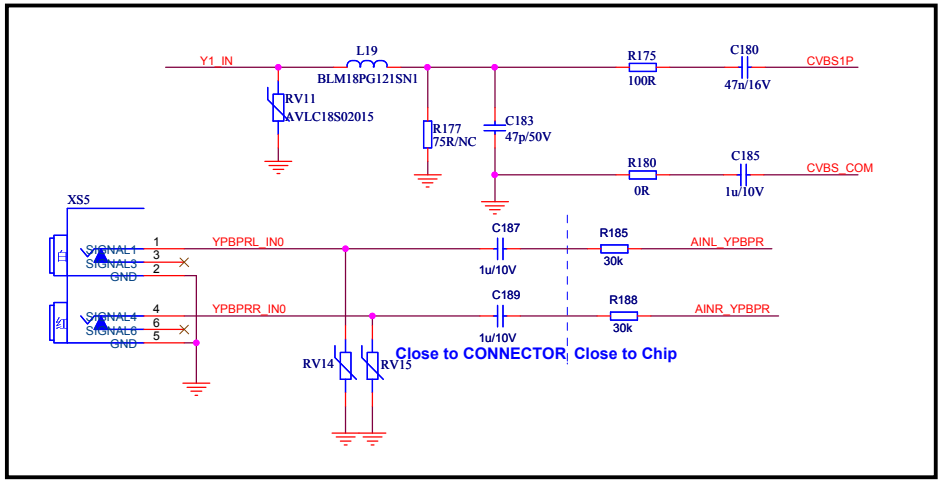


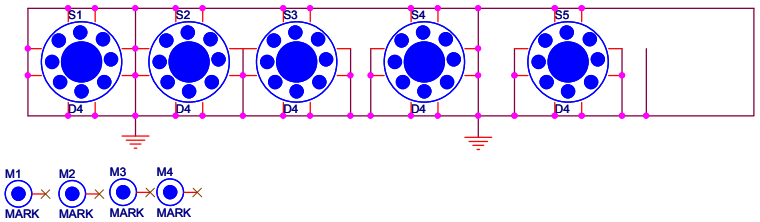


2,3,4,5,6,7,9,10,11,12,13,14,15,16,17 GND
2,5,6,7,9,10,12,14,15,16,17 +5V
2,3,4,6,9,10,13 AVDD3V3
2,10,12 AVDD1V2

7	HSYNC
7	VSYNC
7	RP
7	GP
7	BP
7	VGACOM
7	SOG
7	VGASDA
7	VGASCL
9	AINL_YPBPR
9	AINR_YPBPR
14	IF_AGC_H
14	FAT_IN-
14	FAT_IN+
13	OSCL2
13	OSDA2



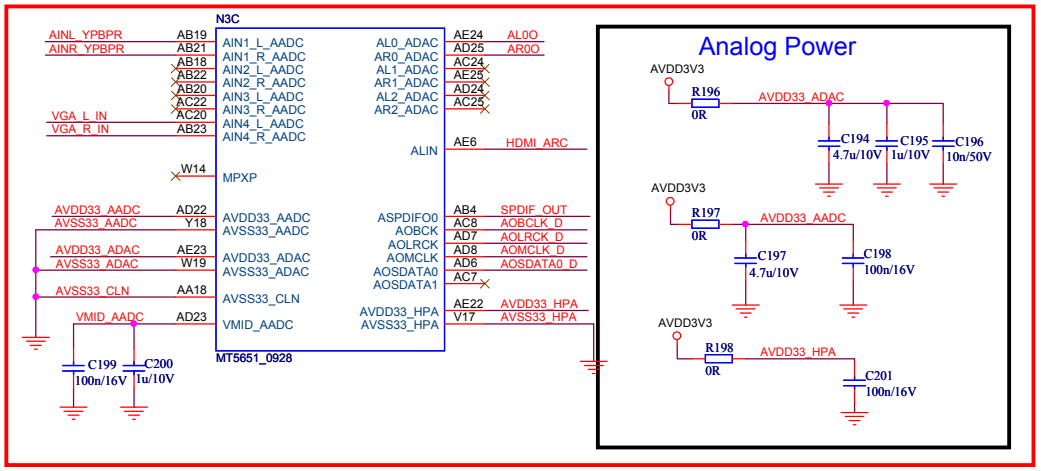


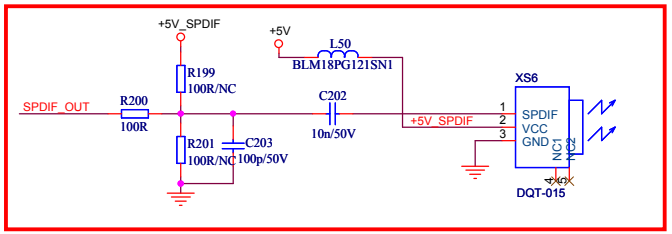


Q1 Q2
RADIATOR-2-FRSAG7.070.0526

Main board:5201

Hisense Electric Co.,LTD		
Title: YPBPR/AV INPUT		
Size: A3	Document Number: MT5325	Rev: 1.0
Date: Thursday, December 13, 2012	Sheet 8 of 17	

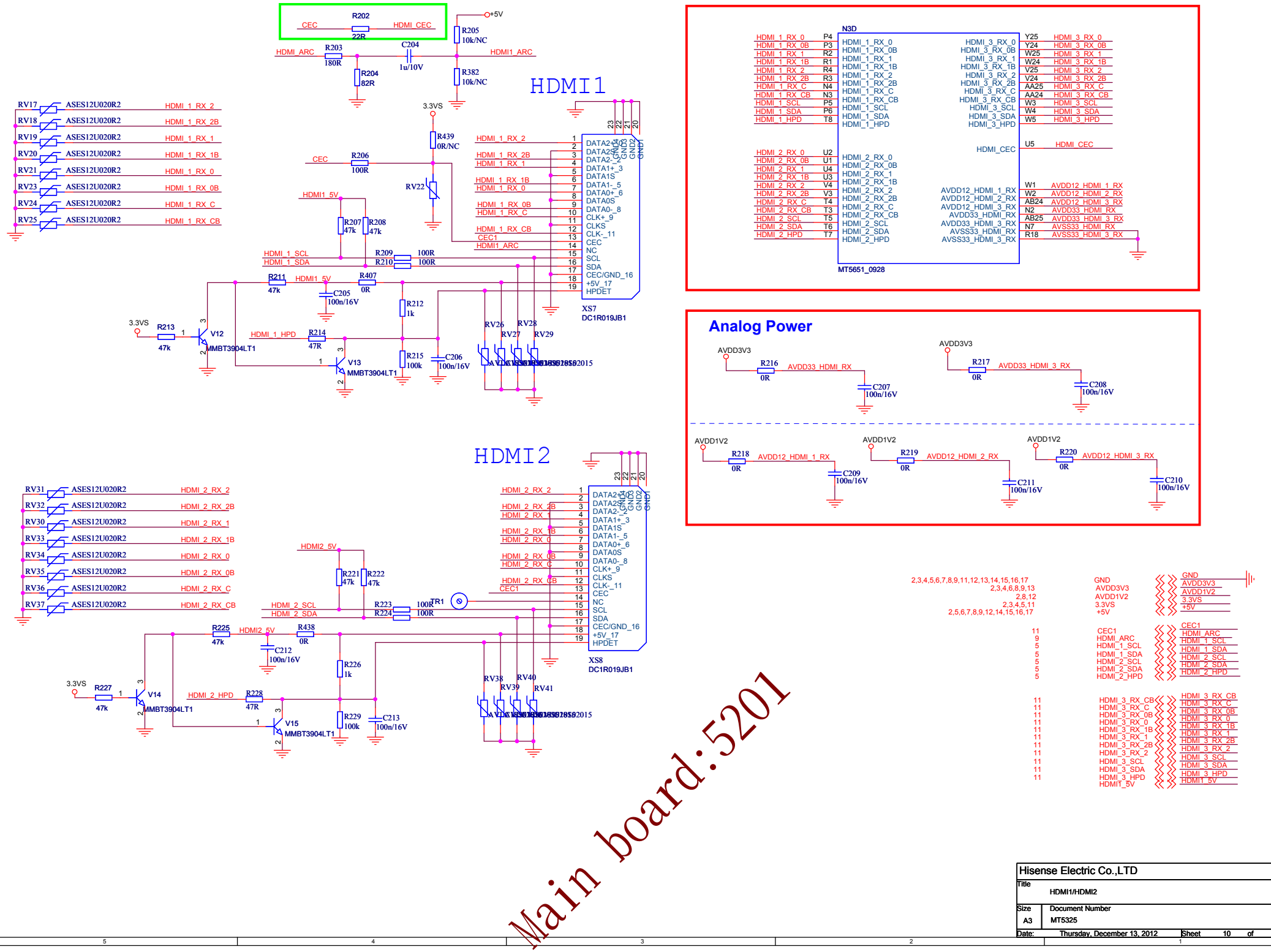




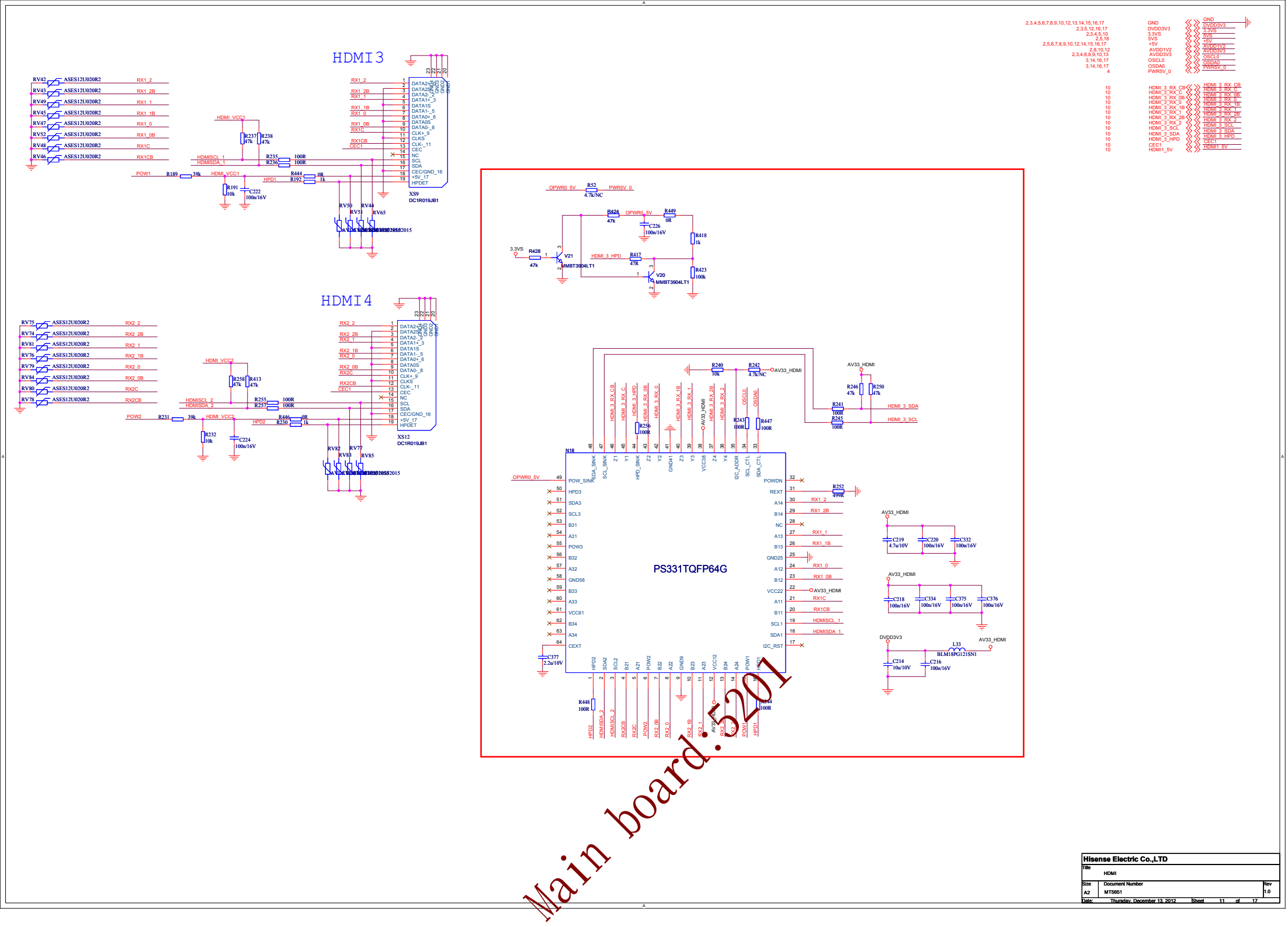
2,3,4,5,6,7,8,10,11,12,13,14,15,16,17	GND	GND
2,12,13,16,17	+12V	+12V
2,5,6,7,8,10,12,14,15,16,17	+5V	+5V
2,3,4,6,8,10,13	AVDD3V3	AVDD3V3
2,3,4,5,10,11	3.3VS	3.3VS
8	AINL_YPBPR	AINL_YPBPR
8	AINR_YPBPR	AINR_YPBPR
7	VGA_L_IN	VGA_L_IN
7	VGA_R_IN	VGA_R_IN
16,17	AOMCLK_D	AOMCLK_D
16,17	AOBCLK_D	AOBCLK_D
16,17	AOLRCK_D	AOLRCK_D
16,17	AOSDATA0_D	AOSDATA0_D
	SPDIF_OUT	SPDIF_OUT
10	HDMI_ARC	HDMI_ARC
17	AL0O	AL0O
17	AR0O	AR0O
3,7	U0RX	U0RX
3,7	U0TX	U0TX
3,7	U0TX	U0TX
3,5	OIRI	OIRI
2,5,16	5VS	5VS

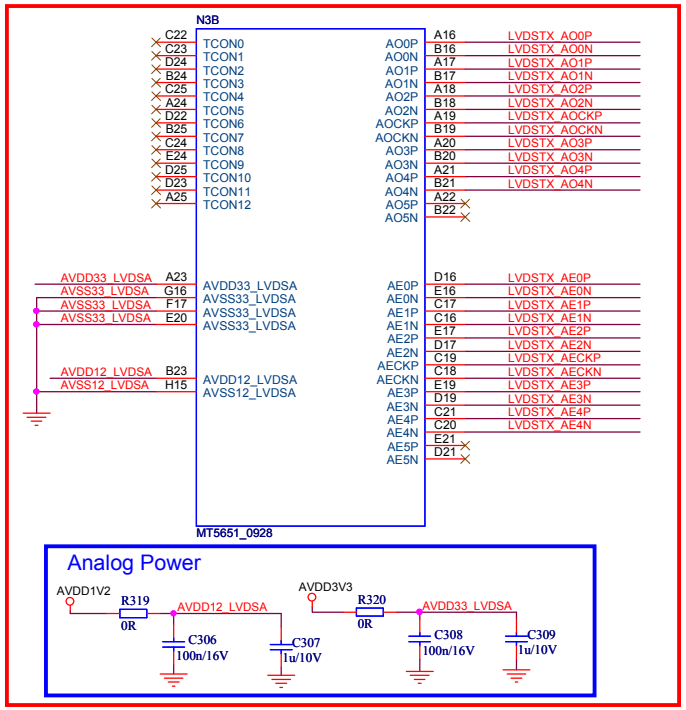
Main board:5201

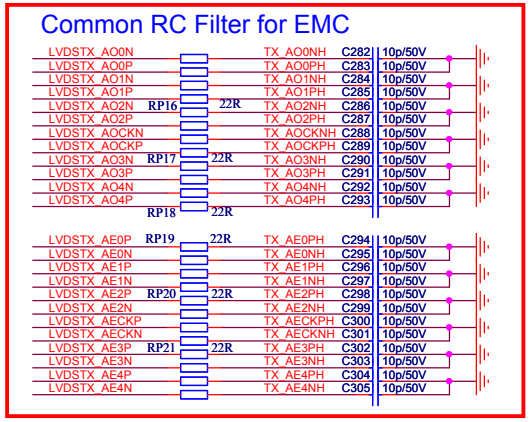
Hisense Electric Co.,LTD		
Title: AUDIO IN/OUT/SPDIF OUT		
Size: A3	Document Number: MT5651	Rev: 1.0
Date: Thursday, December 13, 2012	Sheet 9 of 17	

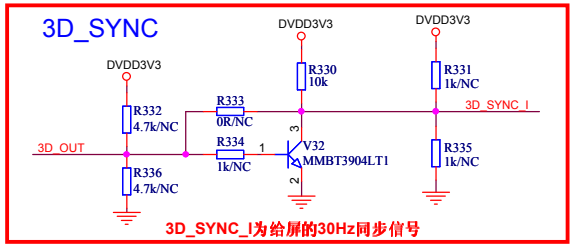


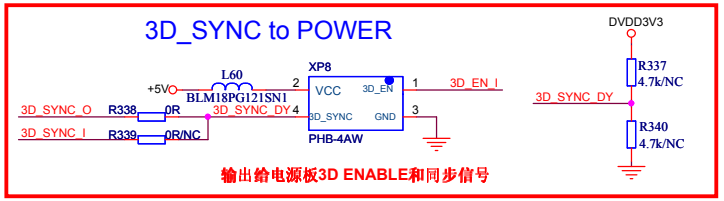
Hisense Electric Co.,LTD	
Title	HDMI1/HDMI2
Size: A3	Document Number: MT5325
Rev	1.0
Date: Thursday, December 13, 2012	Sheet 10 of 17

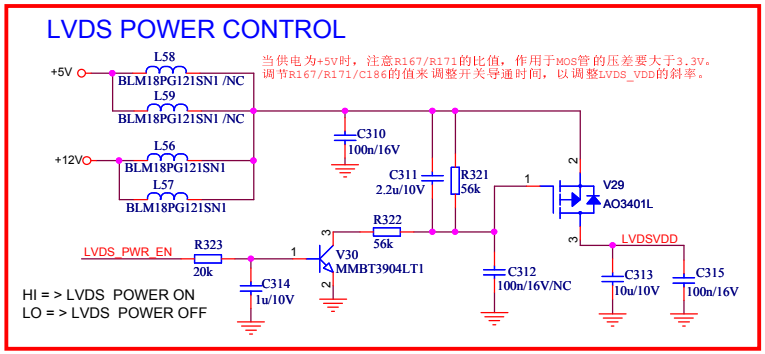

HDMI3
HDMI4
PS331TQFP64G
XS9
DC1R019JB1
XS12
DC1R019JB1
Main board:5201
Hisense Electric Co.,LTD
HDMI
MT5651
Thursday, December 13, 2012

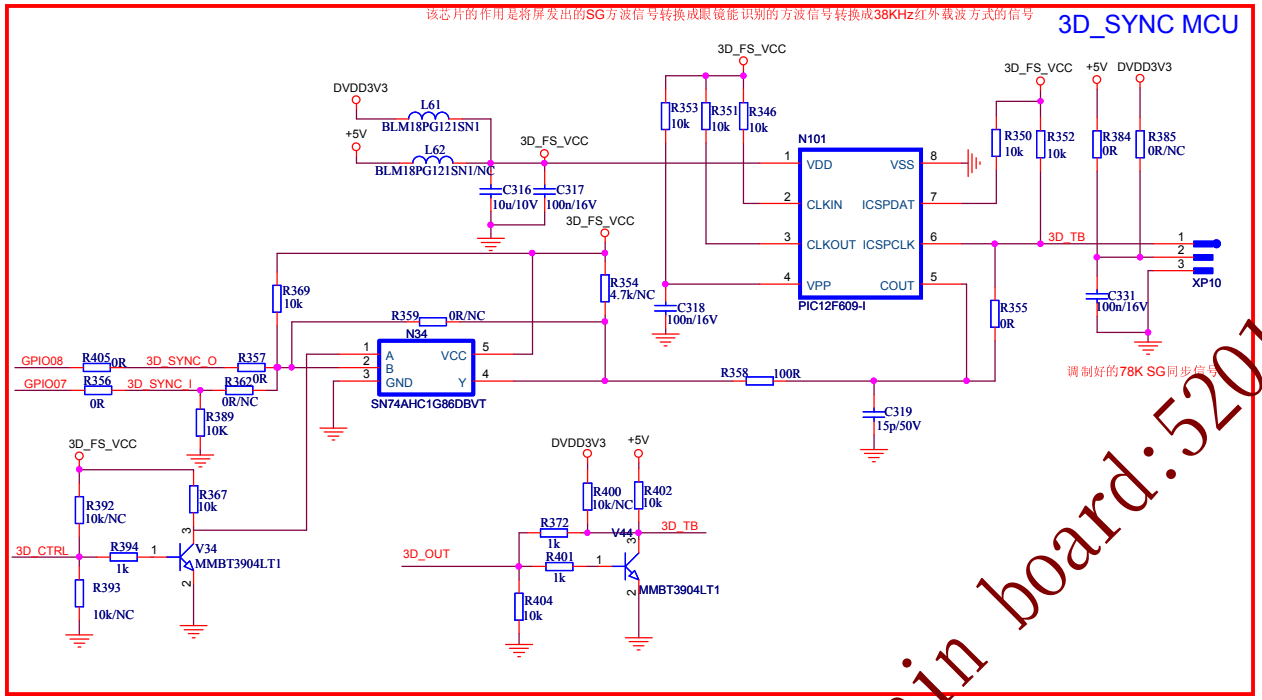


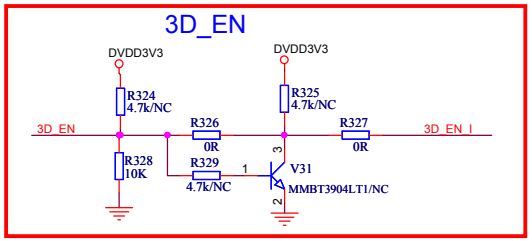




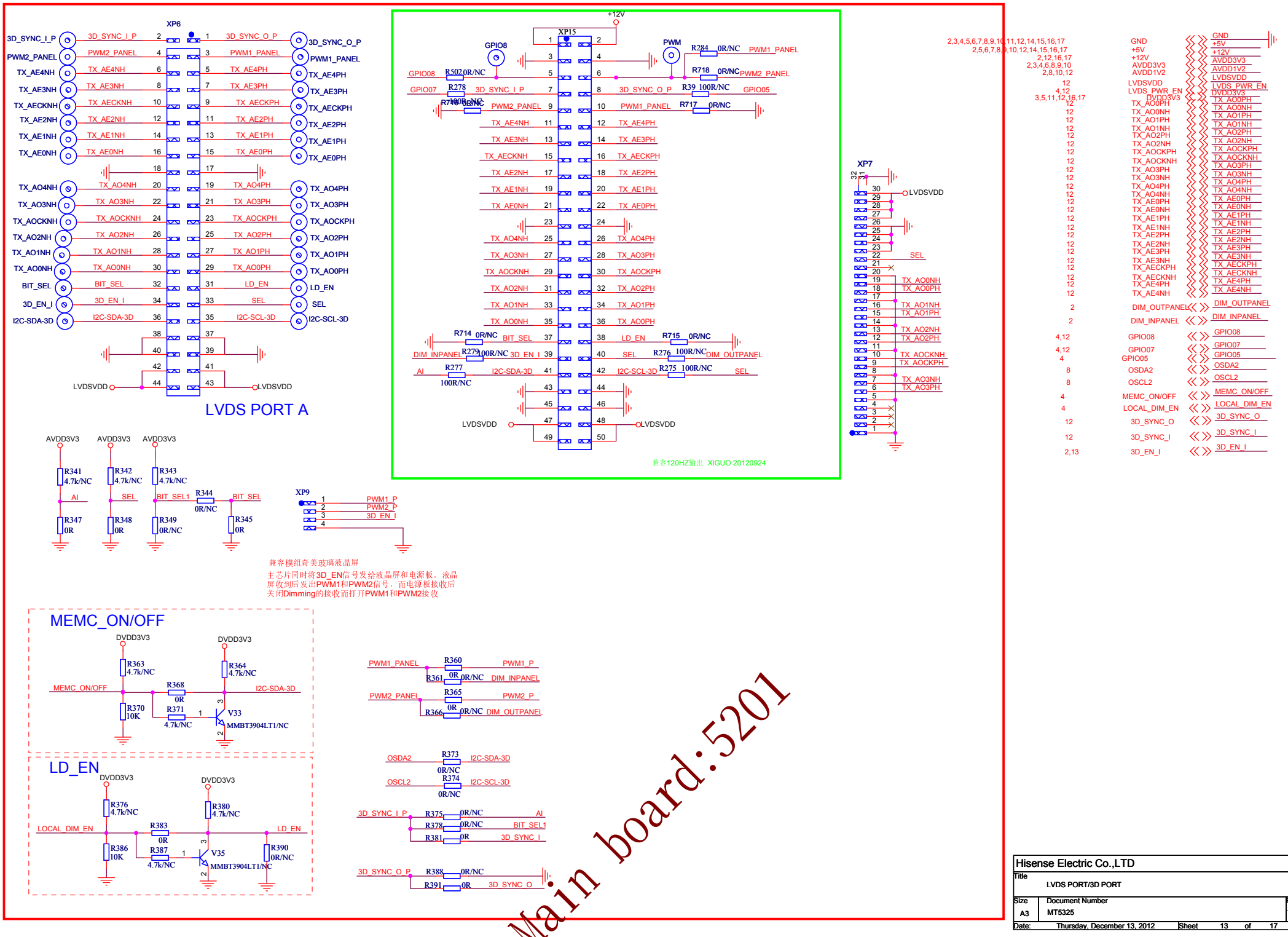








Hisense Electric Co.,LTD			
Title: LVDS POWER CONTROL			
Size: A3	Document Number: MT5651		Rev: 1.0
Date: Thursday, December 13, 2012	Sheet 12 of 17		


XP6
3D_SYNC_I_P
PWM2_PANEL
TX_AE4NH
TX_AE3NH
TX_AECKNH
TX_AE2NH
TX_AE1NH
TX_AE0NH
TX_AO4NH
TX_AO3NH
TX_AOCKNH
TX_AO2NH
TX_AO1NH
TX_AO0NH
BIT_SEL
3D_EN_I
I2C-SDA-3D
3D_SYNC_O_P
PWM1_PANEL
TX_AE4PH
TX_AE3PH
TX_AECKPH
TX_AE2PH
TX_AE1PH
TX_AE0PH
TX_AO4PH
TX_AO3PH
TX_AOCKPH
TX_AO2PH
TX_AO1PH
TX_AO0PH
LD_EN
SEL
I2C-SCL-3D
LVDSVDD
LVDS PORT A
XP15
+12V
GPIO8
PWM
R284 0R/NC PWM1_PANEL
R718 0R/NC PWM2_PANEL
R502 0R/NC GPIO08
R278 GPIO07
R39 100R/NC GPIO05
R717 0R/NC
R714 0R/NC BIT_SEL
R715 0R/NC
R279 100R/NC 3D_EN_I
R276 100R/NC DIM_OUTPANEL
R277 100R/NC AI
R275 100R/NC SEL
DIM_INPANEL
XP7
SEL
TX_AO0NH
TX_AO0PH
TX_AO1NH
TX_AO1PH
TX_AO2NH
TX_AO2PH
TX_AOCKNH
TX_AOCKPH
TX_AO3NH
TX_AO3PH
GND
+5V
+12V
AVDD3V3
AVDD1V2
LVDSVDD
LVDS_PWR_EN
DVDD3V3
DIM_OUTPANEL
DIM_INPANEL
GPIO08
GPIO07
GPIO05
OSDA2
OSCL2
MEMC_ON/OFF
LOCAL_DIM_EN
3D_SYNC_O
3D_SYNC_I
3D_EN_I
兼容120HZ输出 XIGUO 20120924
AVDD3V3
R341 4.7k/NC
R342 4.7k/NC
R343 4.7k/NC
AI
SEL
BIT_SEL1
R344 0R/NC
BIT_SEL
R347 0R
R348 0R
R349 0R/NC
R345 0R
XP9
PWM1_P
PWM2_P
3D_EN_I
兼容模组奇美玻璃液晶屏
主芯片同时将3D_EN信号发给液晶屏和电源板，液晶屏收到后发出PWM1和PWM2信号，而电源板接收后关闭Dimming的接收而打开PWM1和PWM2接收
MEMC_ON/OFF
DVDD3V3
R363 4.7k/NC
R364 4.7k/NC
MEMC_ON/OFF
R368 0R
I2C-SDA-3D
R370 10K
R371 4.7k/NC
V33
MMBT3904LT1/NC
LD_EN
R376 4.7k/NC
R380 4.7k/NC
LOCAL_DIM_EN
R383 0R
LD_EN
R386 10K
R387 4.7k/NC
V35
MMBT3904LT1/NC
R390 0R/NC
PWM1_PANEL
R360 0R/NC
PWM1_P
R361 0R/NC DIM_INPANEL
PWM2_PANEL
R365 0R/NC
PWM2_P
R366 0R/NC DIM_OUTPANEL
OSDA2
R373 0R/NC
I2C-SDA-3D
OSCL2
R374 0R/NC
I2C-SCL-3D
3D_SYNC_I_P
R375 0R/NC AI
R378 0R/NC BIT_SEL1
R381 0R 3D_SYNC_I
3D_SYNC_O_P
R388 0R/NC
R391 0R 3D_SYNC_O
Main board:5201
Hisense Electric Co.,LTD
Title
LVDS PORT/3D PORT
Size
A3
Document Number
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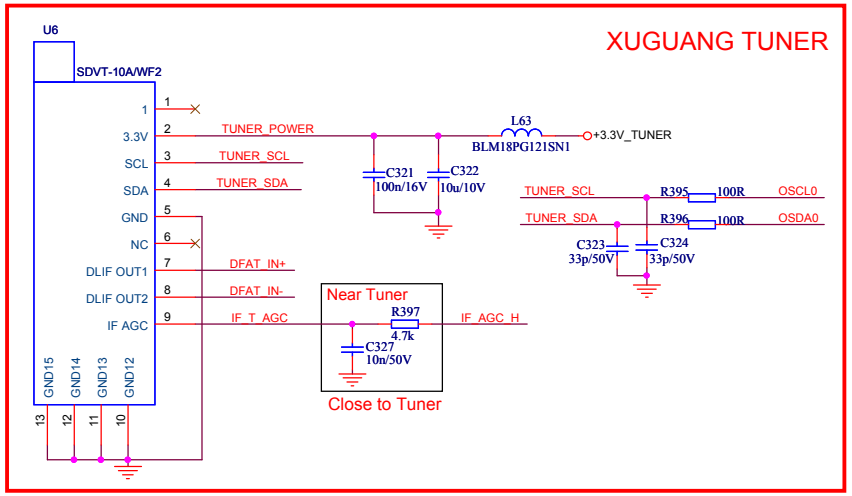

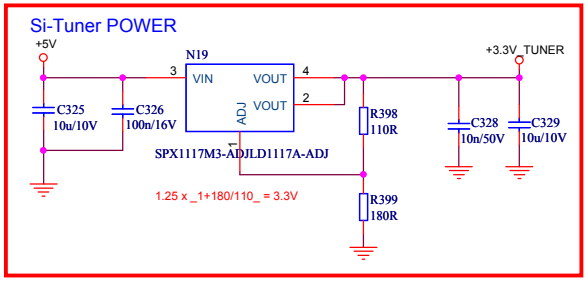

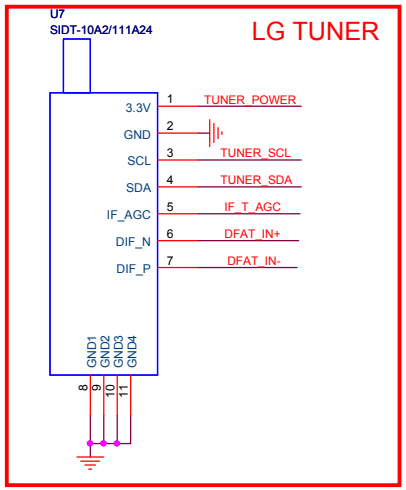

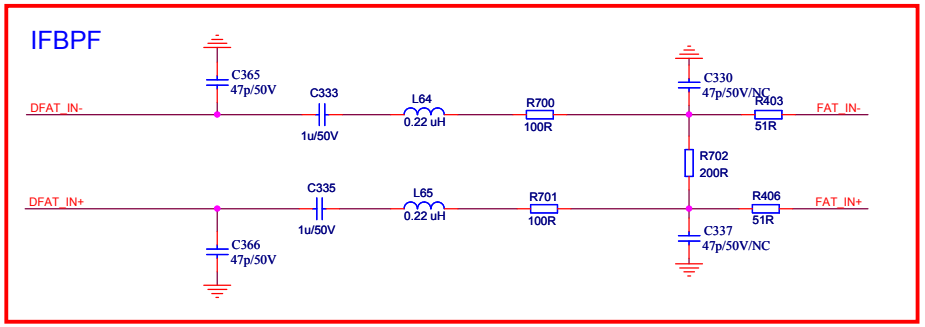

2,3,4,5,6,7,8,9,10,11,12,13,15,16,17 GND
2,5,6,7,8,9,10,12,15,16,17 +5V
2,12,13,16,17 +12V
2,3,5,11,12,16,17 DVDD3V3

3,11,16,17 OSCL0
3,11,16,17 OSDA0
8 IF_AGC_H
8 FAT_IN-
8 FAT_IN+

Hisense Electric Co.,LTD		
Title: SILICON TUNER		
Size: A3	Document Number: MT5651	Rev: 1.0
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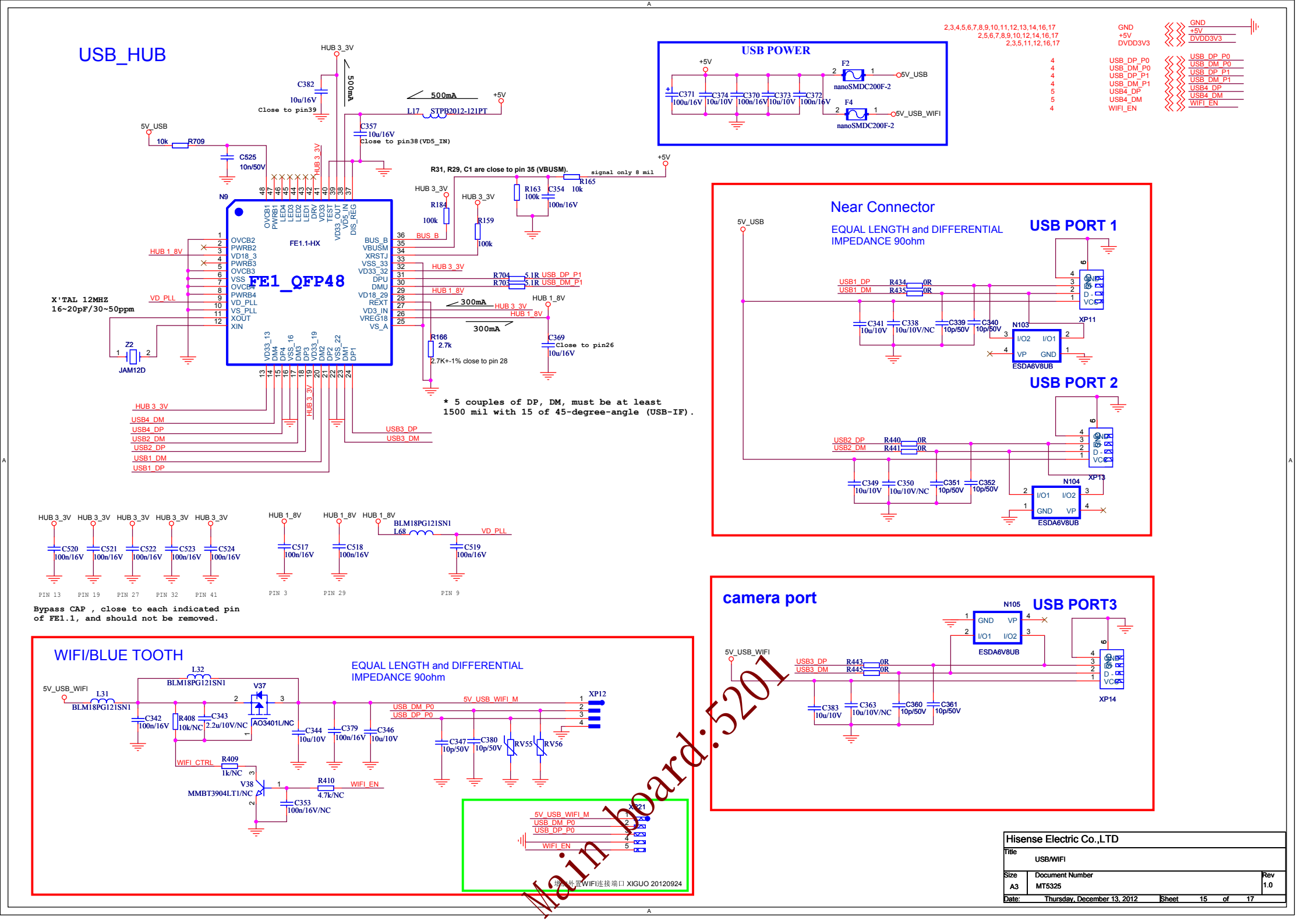
USB_HUB
FE1_QFP48
FE1.1-HX
N9
HUB 3_3V
HUB 1_8V
5V_USB
+5V
500mA
C382
10u/16V
Close to pin39
L17 STPB2012-121PT
C357
10u/16V
Close to pin38(VD5_IN)
R709
10k
C525
10n/50V
R31, R29, C1 are close to pin 35 (VBUSM).
signal only 8 mil
R165
R163
100k
C354
100n/16V
R184
100k
R159
100k
R704
5.1R
USB_DP_P1
R703
5.1R
USB_DM_P1
X'TAL 12MHZ
16~20pF/30~50ppm
Z2
JAM12D
VD_PLL
300mA
R166
2.7k
2.7K+-1% close to pin 28
C369
Close to pin26
10u/16V
* 5 couples of DP, DM, must be at least
1500 mil with 15 of 45-degree-angle (USB-IF).
USB4_DM
USB4_DP
USB2_DM
USB2_DP
USB1_DM
USB1_DP
USB3_DP
USB3_DM
C520
C521
C522
C523
C524
100n/16V
PIN 13
PIN 19
PIN 27
PIN 32
PIN 41
C517
C518
BLM18PG121SN1
L68
C519
PIN 3
PIN 29
PIN 9
Bypass CAP , close to each indicated pin
of FE1.1, and should not be removed.
USB POWER
C371
100u/16V
C374
10u/10V
C370
100n/16V
C373
10u/10V
C372
100n/16V
F2
F4
nanoSMDC200F-2
5V_USB
5V_USB_WIFI
Near Connector
EQUAL LENGTH and DIFFERENTIAL
IMPEDANCE 90ohm
USB PORT 1
USB PORT 2
USB1_DP
USB1_DM
R434
R435
0R
C341
10u/10V
C338
10u/10V/NC
C339
10p/50V
C340
10p/50V
N103
XP11
ESDA6V8UB
USB2_DP
USB2_DM
R440
R441
C349
10u/10V
C350
10u/10V/NC
C351
10p/50V
C352
10p/50V
N104
XP13
camera port
USB PORT3
N105
XP14
5V_USB_WIFI
R443
R445
C383
10u/10V
C363
10u/10V/NC
C360
10p/50V
C361
10p/50V
WIFI/BLUE TOOTH
EQUAL LENGTH and DIFFERENTIAL
IMPEDANCE 90ohm
L32
BLM18PG121SN1
L31
V37
AO3401L/NC
C342
100n/16V
R408
10k/NC
C343
2.2u/10V/NC
C344
10u/10V
C379
100n/16V
C346
10u/10V
C347
10p/50V
C380
10p/50V
RV55
RV56
XP12
WIFI_CTRL
R409
1k/NC
V38
MMBT3904LT1/NC
R410
4.7k/NC
C353
100n/16V/NC
WIFI_EN
XP21
撤销外置WIFI连接端口 XIGUO 20120924
Main board:5201
GND
+5V
DVDD3V3
USB_DP_P0
USB_DM_P0
USB_DP_P1
USB_DM_P1
USB4_DP
USB4_DM
WIFI_EN
Hisense Electric Co.,LTD
Title
USB/WIFI
Size
A3
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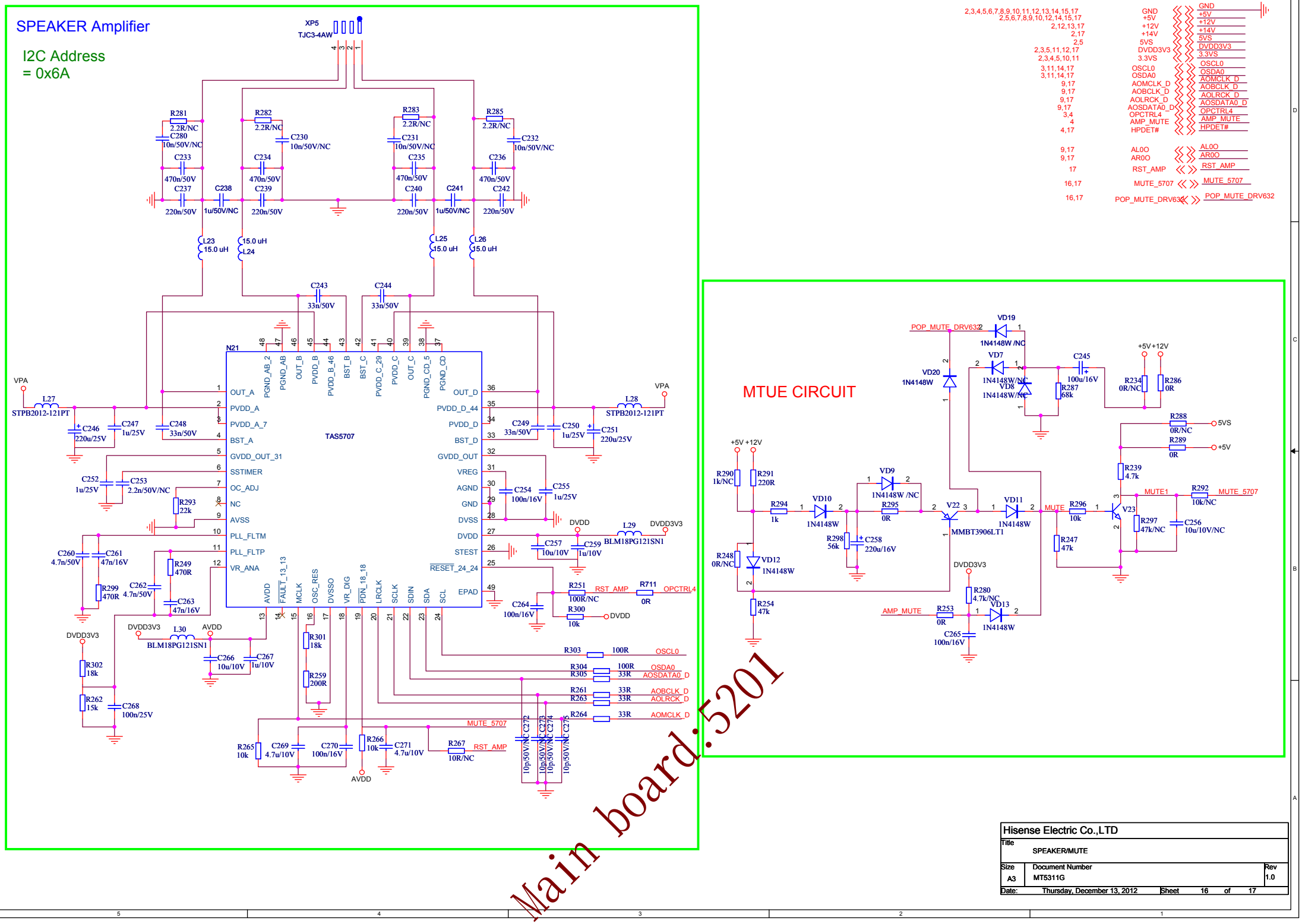
SPEAKER Amplifier
I2C Address
= 0x6A
XP5
TJC3-4AW
N21
TAS5707
MTUE CIRCUIT
Main board:5201
Hisense Electric Co.,LTD
Title
SPEAKER/MUTE
Size
A3
Document Number
MT5311G
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1.0
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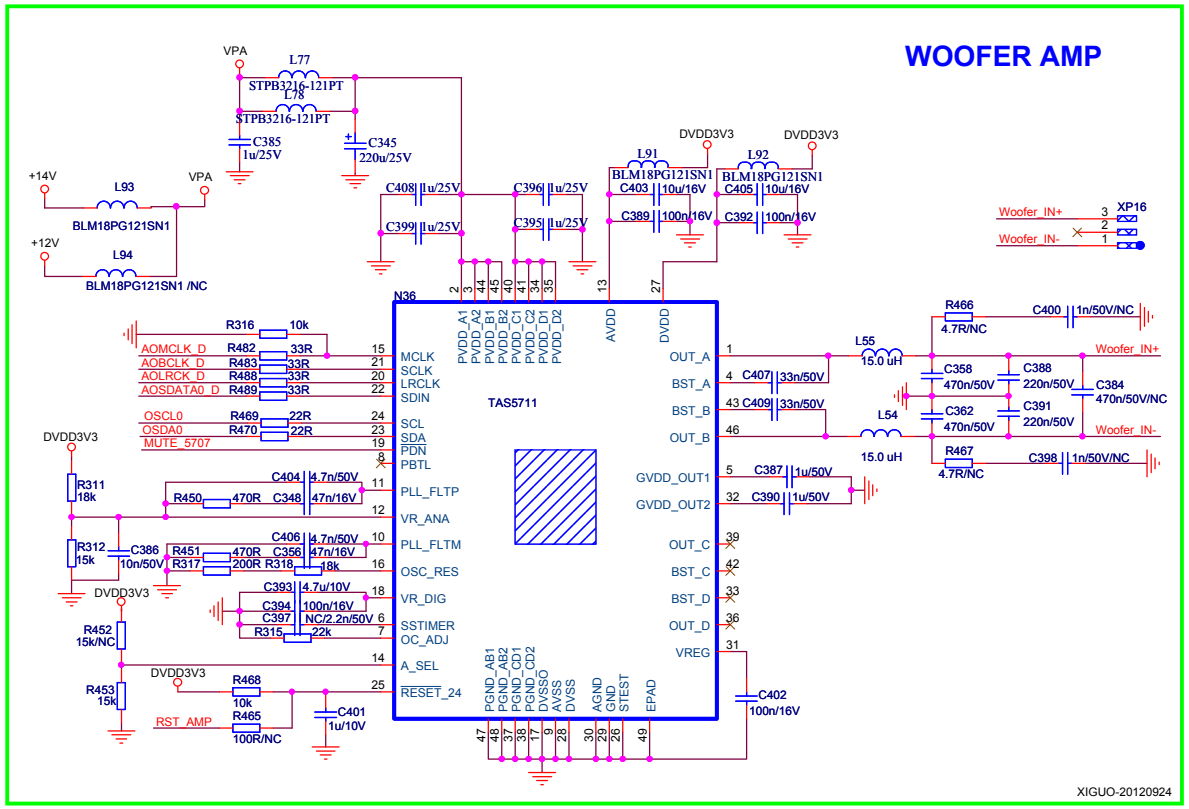

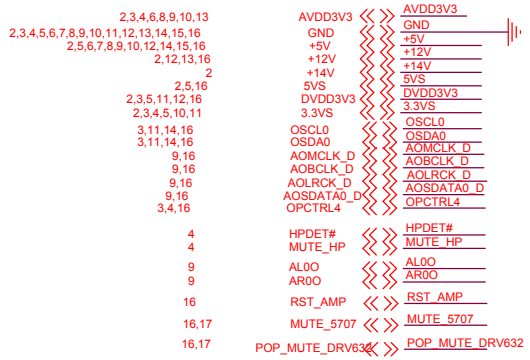

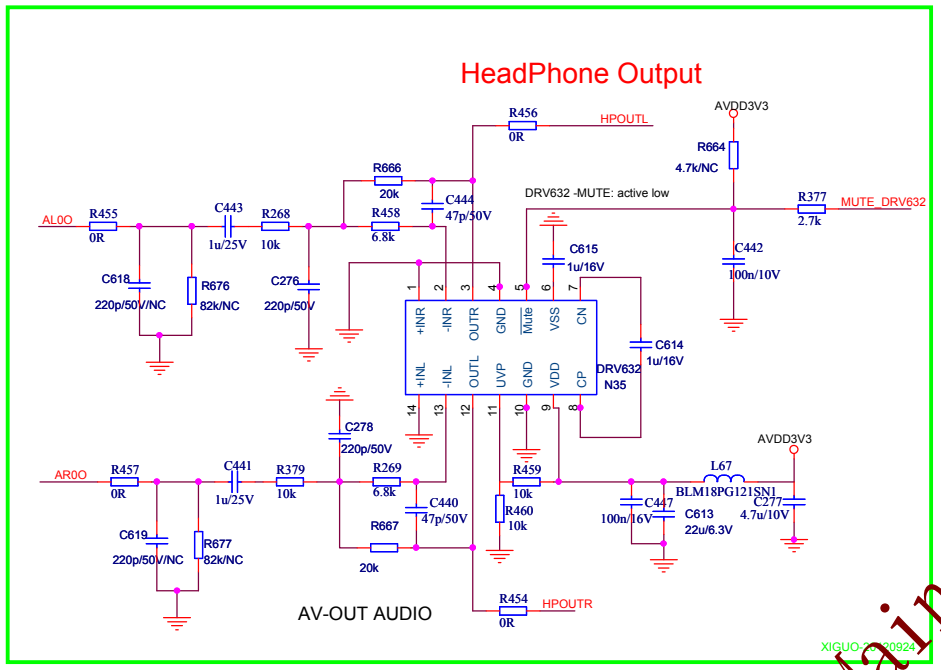

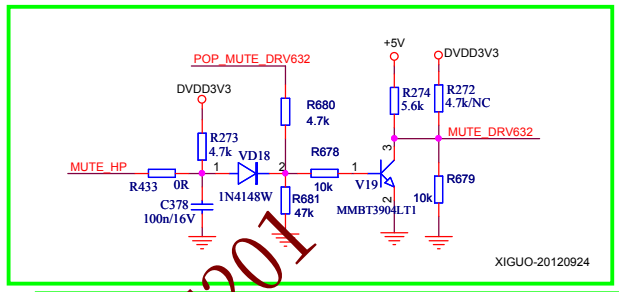

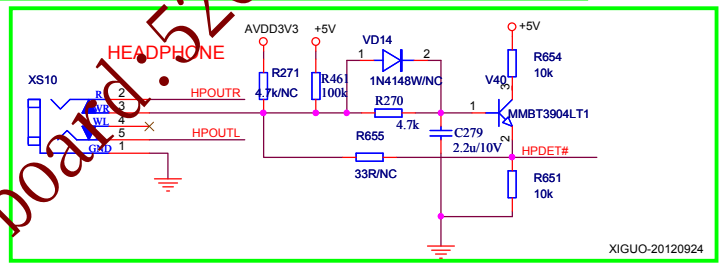

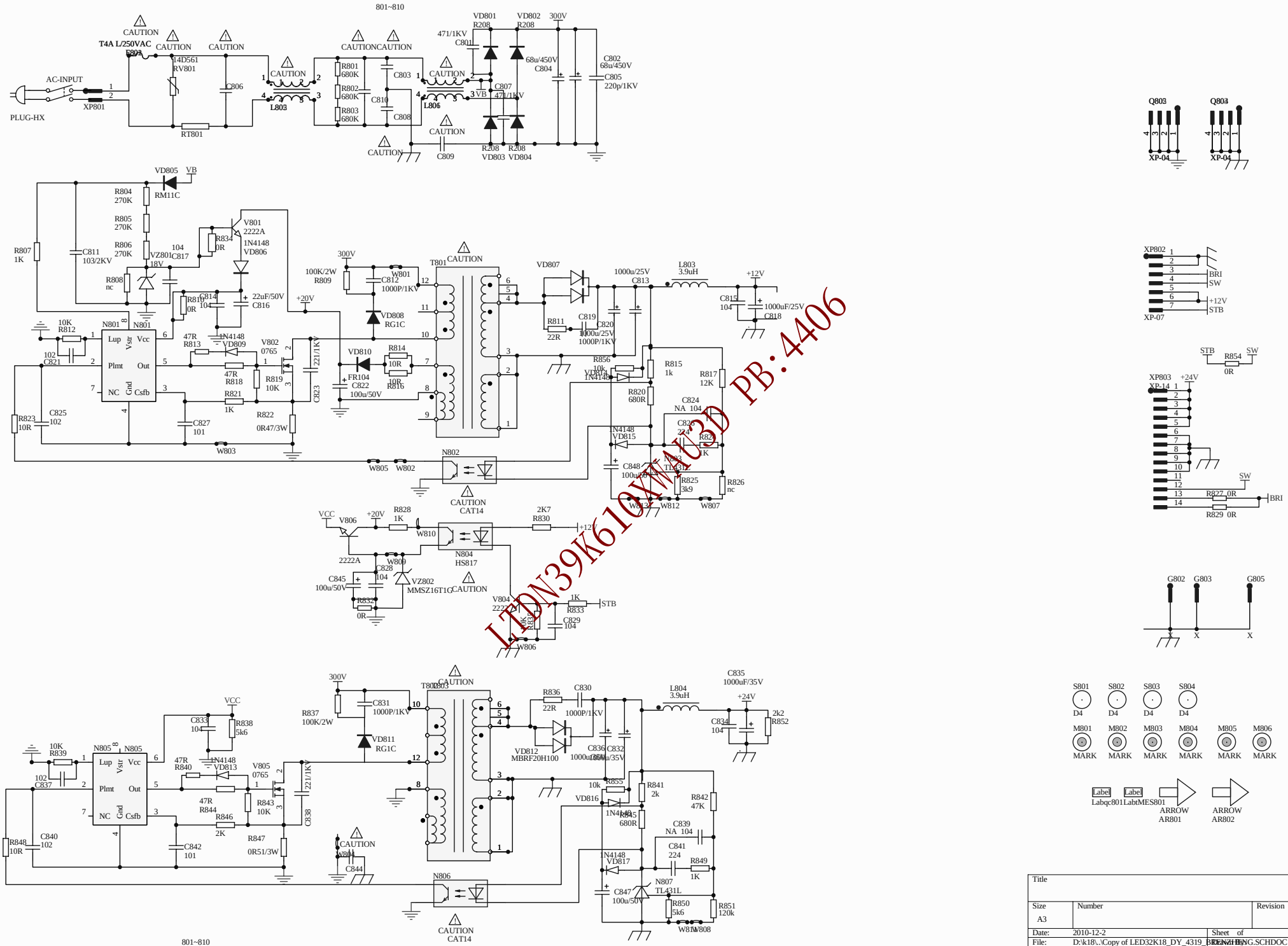

Title		
Size A3	Number	Revision
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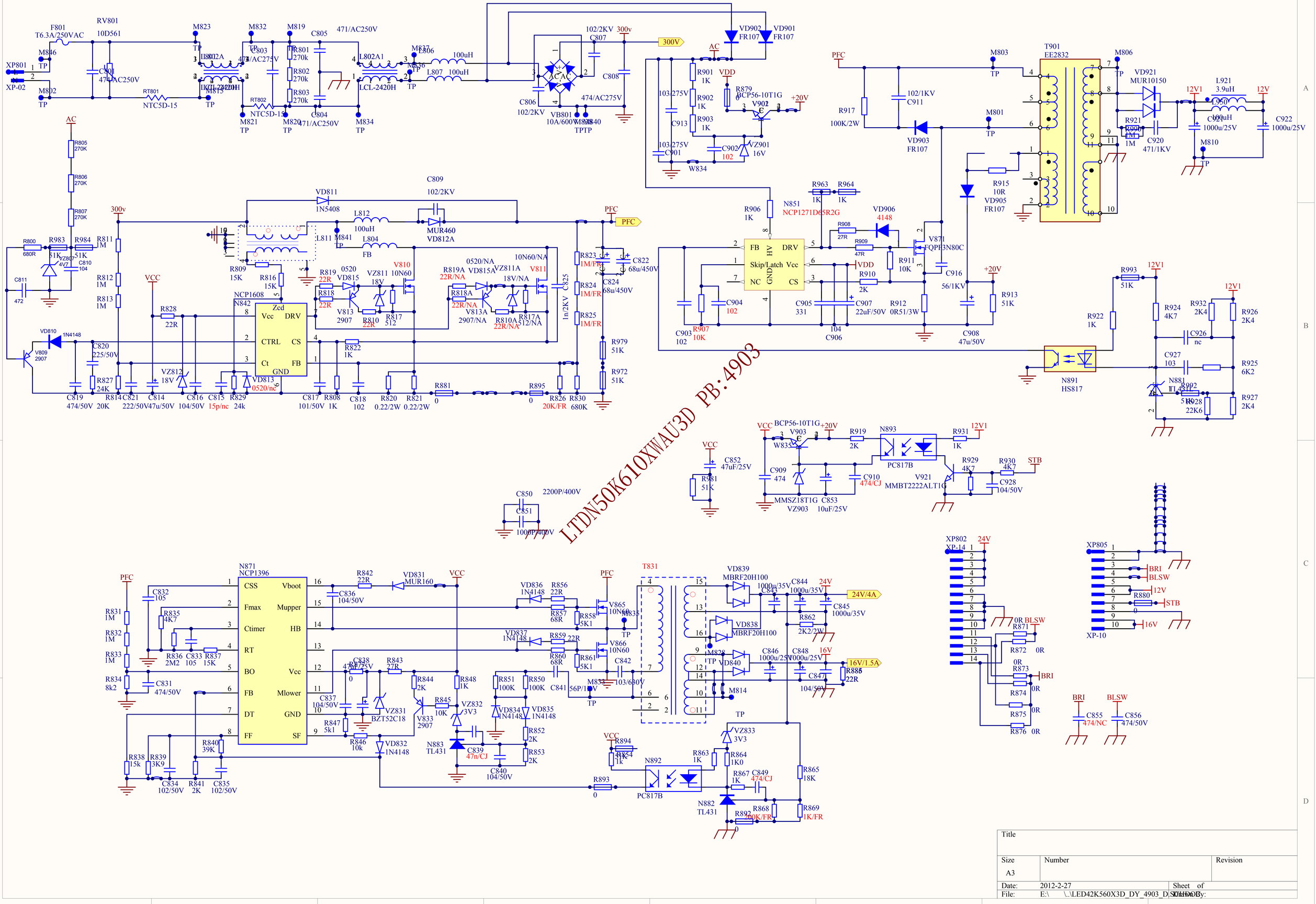
Power board:4903



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Date: 2012-2-27	Sheet of	
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N956
OZ9906GN
N857
TNY175
N871
NCP1396
NCP1608
N810
片式电路\LD1117A-3.3\AZ1117H-3.3\TP\JKR0
T800
T801
BCK-04TC
L803
续流电感\BCK-30-L039AG\R0H
L811
片式磁珠\BLM18PG181SN1\TP\JK\R0H
L810/NA
片式磁珠\STBH2012-151PT\TP\R0H
LCL-3505-FC
LCL-008-F
XP800
XP801
XP802
XP803
XP804
XP805
XP806
XP807
SW801
SWITCH
VH-3AW-2
F800
T 6.3A L 250V
RV800
TVR14561
RT800
NTC5D-15
VB800
15SB60
300V
PFC
VCC
VCC3.3V
VCC5V
12V
5VS
120
AUDIO
STB
STATUS2
SPWM1
SPWM2
SPWM3
SPWM4
SPWM5
SPWM6
PWM1
PWM2
PWM3
PWM4
PWM5
PWM6
VSYNC
Glass_Vsync
GlassVsync
3D_Enable_High
TEST
RST
LED1-
LED2-
LED3-
LED4-
LED5-
LED6-
PC817B
TL431
FQD5N20
2N7002
SR115
SRF1560
MUR240
MUR160
MUR460

Title		
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