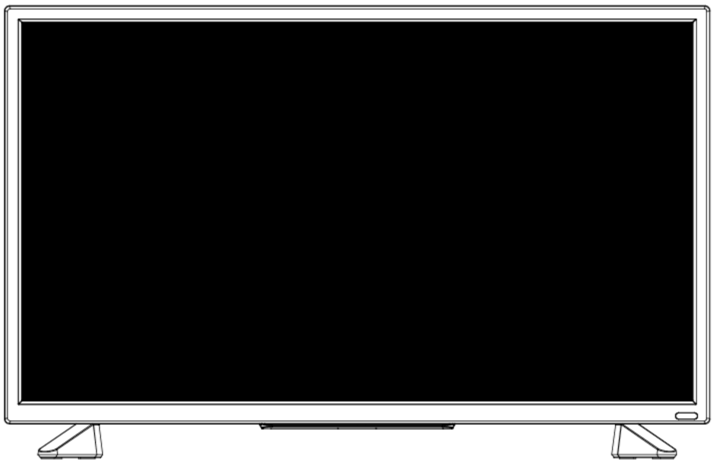
32L310U20 Service manual



Caution

Be sure to read this manual before servicing. To ensure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this LCD Television.
Be sure to read cautionary items described in the manual before servicing.
These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that described in the operating instructions unless you are qualified to do so.

Service Warning

1. Since the Panel Module and the front Filter are made of glass, handling the broken Module and Filter carefully and with caution in order not to receive injury.
2. Replacement work should be started after the Panel Module and the AC/DC Power supply have become sufficiently cool.
3. Special care should be taken when working near the display area in order not to damage its surface.
4. The Panel Module should not be touched with bare hands in order to protect its surface from blemishes and damage.
5. It is recommended that you use clean soft gloves during the replacement work in order to protect not only the display area of the Panel Module but also yourself.

Contents

LCD Television

Revison History:

Rev.	Date	Changed	Content	Name	Note

CAUTION FOR SAFETY

Please read this page before repair the monitor.
The following safety precautions are designed to help you stay safe and prevent accidents during the repair work.

- Please take note of these cautionary flags.

Warning	This means "Potential to sustain injury or even death."
Caution	This means "Potential to sustain breakage or irreparable damage."

- Also note these cautionary icons

	This means "CAUTION"		This means "MUST"
	This means "POTENTIAL ELECTRIC SHOCK"		This means "DO NOT"

WARNING

- **Follow instructions.**
  The cabinet, chassis, and labels are parts that require attention. You must follow the caution notes and safety instructions presented throughout this User Manual to prevent damage to them or injury to yourself.

- **Prevent electric shock.**
  Exercise caution while working on the device as the Monitor contains high voltage parts and power supply.It is possible to sustain severe injury or death if you accidentally touch the wrong parts.You must disconnect the power supply while servicing, reassembling, or change parts. If you touch a live connection it is possible to sustain severe injury or death.

- **Use recommended components.**
  Use only the recommended components or componentst that structurally identical to the originals. This is to ensure safety and reliability. Pay special attention to parts in the parts list and circuit diagrams marked with . If you use non-recommended components, then electric shock or fire may result.

- **Must use same types of wires and components.**
  The Monitor uses special tubes and tapes made from insulated materials. Moreover, some materials are kept from making contact with the PWB for the sake of safety.Internal leads are kept from hot parts or high voltage parts by means of clamps or other measures. As such, you must restored these parts to their original conditions in order to prevent electric shock or fire.

- **Perform safety check when done.**
  Every part (such as removed screws, components, and wiring) must be restored to their prior conditions after servicing.Be sure to check everything that was repaired for damage or mistakes. Also measure the insulated impedance with a meg-ohm meter to confirm that the impedance value is more than 4M ohm.If the impedance value is less than 4M ohm, then electric shock or fire may result.

- **Do not try to check the HDCP code and combination circuit.**
  Never remove the shield case protecting the HDCP code and combination circuit.

PRECAUTIONS

- Cleaning the LCD panel of the television

  Please make sure to unplug the power cord before cleaning the television.
  - Wipe the panel with a lint-free and dry cloth in order to prevent damage to the panel surface.
  - Do not use a chemical cloth or cleaner. Depending on the ingredients, it may cause discoloration and damage the panel surface.
  - Do not wipe with a hard cloth or rub hard. It may hurt the panel surface.
  - In case of the greasy dirt such as fingerprint, wipe with a lint-free cloth moistened by a diluted neutral detergent solution, and then wipe with a soft and dry cloth.
  - Do not use a spray cleaner. It could cause malfunction.

- Cleaning the monitor's cabinet of the television
  - The following may cause crack, deformation, and paint peeling.
  - Do not wipe the cabinet with benzene, thinner, and other chemical products.
  - Do not spray volatile solutions such as insecticide over the cabinet.
  - Do not leave the cabinet in prolonged contact with plastic or rubber materials.
  - Do not use a chemical cloth, cleaner or wax. Depending on the ingredients, it may cause crack and deformation.
  - Use a lint-free cloth to clean the cabinet and control panel of the television. In case of the heavy dirt, wipe with a soft cloth moistened by a diluted neutral detergent solution, and then wipe with a soft and dry cloth.
  - Never use the following detergents. It could cause crack, discoloration, and scratch.
  - Acid/ alkaline detergent, alcoholic detergent, abrasive cleaner, powder soap, OA cleaner, car wax, glass cleaner, etc.

1. Features

- Large-screen and high-definition LCD panel.
- Improved Digital signal processor.
- Accept more digital input devices with HDMI terminals.
- Great diversity of connecting terminals to cover wide range of audio-visual equipments.
- Enjoy the image from PC with large, high-definition LCD screen.
- Easy-to-use On-Screen Display system operating with Remote control.
- Low power consumption.

- Digital Terrestrial Television Broadcasting

  Converting into digital signal enables to provide more channels and various useful features, such as, Digital & Analog Closed caption , V-chip and so on.   Further, digital signal can create high quality picture.

2. Models Specification

			MODEL NAME	32" HD
			TOSHIBA NAME	32L220U20
1	Biz. Term			
-1	Delivery Term			FOB China
-2	Shipping Style			FG
-3	Currency			USA/Canada/Mexico
-4	Category			
	IP requirement			ATSC IP Essential
	MP target			Apr', 2019
2	Shape and stuff			
-1	Dimension(W x H x D)(mm)	with stand		73X48.1X20.2 CM
		without stand		73X43.9X8.5 CM
-2	Weight (without stand)(Kg)	without stand		3.8 KG
	Weight (with stand)(Kg)	Net weight		3.9 KG
		Gross weight		5.3 KG
-3	Container loading	20F		504 SETS
		40F		1032 SETS
		40F HQ		1260 SETS
-4	Bezel	Treatment		Glossy
		Color		BLACK

		Plastic		ABS 94HB
-5	Stand base	Plastic		ABS 94HB
-6	Back cover	Plastic		TOP:HIPS 94V-0 ,Bottom:HIPS 9HB75
-7	Number of control keys			1
-8	LED Indicator	Red/Green		Red
-9	Wall mount (Vesa Dimensions)			100 x 100(mm)
-10	Vesa Screw Size (32"and below:M4; Above 32": M6; If 100lbs or more M8 (no M5))			M4X12 (MM)
3	Panel	candidate should provide completed panel spec.		
-1	Dimension / Power Consumptions	(LCM Spec)		32"
-2	Pixel Format (H x V)			1366 x 768
-3	BM Supplyer			KTC
-4	BM Part number			TBD
-5	Cell Supplier			CSOT
	Cell Part number			ST3151A05-8 V2.8
-6	Backlight Type	CCFL / E-LED /D-LED		D-LED
-7	Feature	60Hz/120Hz		60Hz
		Color Gamut		59%(min.)/62%(typ.)
		8bit / 10bit		8bit
		LED Backlight		yes
		Local Dimming		---
-8	Visible Area (mm) : H x V			697.685x392.256

-9	Diagonal Screen Size (inches)			31.5"
-10	Pixel Pitch (mm)			0.17025x0.51075
-11	Brightness (cd/㎡) (min/typ)Brightness (cd/㎡) (min/typ)Brightness (cd/㎡) (min/typ)Brightness (cd/㎡) (min/typ)	should be measured under color temperature x=280,y=288(natural) and reach brightness spec.		180/220
	Color chromaticity	White x,y		Wx:0.280, Wy:0.290
-12	Contrast Ratio (min/typ)			2400(min.)/3000(typ.)
-13	Viewing angle	Conventional (CR>10) (degrees)		89+89
-14	Response Time (ms) (typ)	.		6.5ms(typ.)/12ms(max.)
-15	Back Light Life (hours)			30000 hrs
-16	Panel quality level	Bright/dark dot		ZBD
		mura level		2% ND filter
4	Terminals			
-1	Input	Terminal direction ("Bottom and side" or "back and side")		side
		Antenna Input		1 (Side)
		VIDEO/AUDIO Input Port	CVBS,L/R	1 (Side)
			HDMI with MHL	---
			HDMI	2 (2 side)
			HDMI(DVI) / analog Audio input(3.5mm)	yes/---
-2	Output	Audio	Line out (Fixed / Variable)	yes / ---
			Headphone out (Fixed / Variable)	--- / yes
			Digital	1 (SPDIF optical)(Side)

		LAN (10/100Mbps)		---
		USB (Total QTY)/USB-IF approve part(should provide TID number)		1(USB ID number is 60001218)
-3	Control	RS-232C		---
-4	Service Port	Program update		USB
5	Receiving Signals			
-1	Built-in Tuners	Composition		Digital & Analog (1)
		ATSC		8VSB
		CABLE		64/256QAM (135ch)
		Analog		NTSC-M
			System / Number of Position	FS/191ch
-2	Antenna Input	Digital		ATSC, Cable(64/256QAM/135ch,8VSB)
			NTSC	yes
		Setting of Factory Release		NTSC
-3	Video Compression (Tuner)Video Compression (Tuner)	MPEG-2	SD (MP@ML)	yes
			HD (MP@HL)	yes
-4	Audio Decoder (Tuner)Audio Decoder (Tuner)	MPEG-1 Layer Ⅰ/Ⅱ		yes /yes
		MPEG-2 Layer Ⅰ/Ⅱ		no /yes
		Dolby Digital		yes

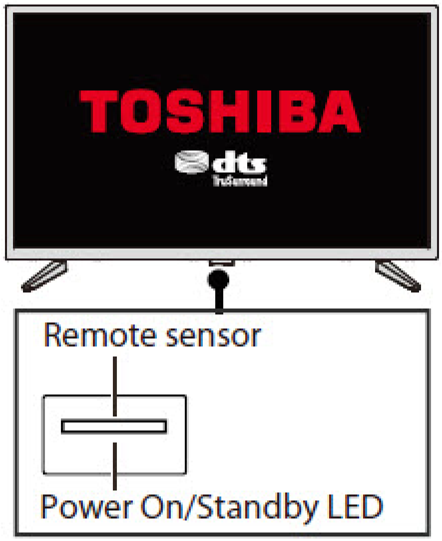
		HE-AAC Layer I Version II/IV		(For Mexico)
		HE-AAC Layer II Version II/IV		(For Mexico)
-5	Audio Encored/Transcorder (output)	Dolby Digital		yes
		NTSC		yes
-6	Composite Video	480i (60Hz)		yes
-7	HDMI	AV format	480i (60Hz) / 576i (50Hz)	yes / ---
			480p (60Hz) / 576p (50Hz)	yes / ---
			720p (24/30/50/60Hz)	--- / --- / --- / yes
			1080i (60Hz) / 1080i (50Hz)	yes / ---
			1080p (24/25/30/50/60Hz)	yes / --- / yes / --- / yes
			3840x2160 4:2:0 60p	---
			3840x2160 4:4:4 30/25/24p	---
			3840x2160 4:2:2 30/25/24p	---
			3840x2160 4:4:4 60p	---
			4096x2160 4:2:0 60p	---
			4096x2160 4:4:4 30/25/24p	---
			4096x2160 4:2:2 30/25/24p	---
		PC format	VGA (640 x 480)	60Hz
			SVGA (800 x 600)	60Hz
			XGA (1024 x 768)	60Hz

			WXGA (1280x768)	60Hz
			WXGA (1360x768)	60Hz
			SXGA (1280 x 1024)	60Hz
		Audio format	L-PCM / AC3	yes / yes
		Ver 1.4	ARC (Audio Return Channel)	Yes (HDMI-1 only)
		CEC	CEC	yes
			CEC unified 0.9	yes
		HDMI CEC Player Control	Root Menu	
			Contents Menu	yes
			Setup Menu	yes
			Top Menu	yes
			Menu	yes
		Information of connected device		yes

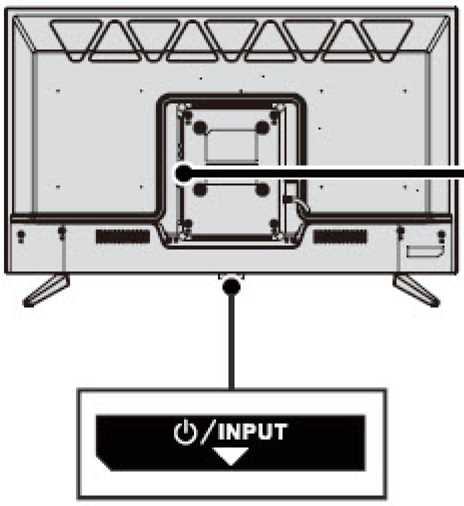
3. Components name

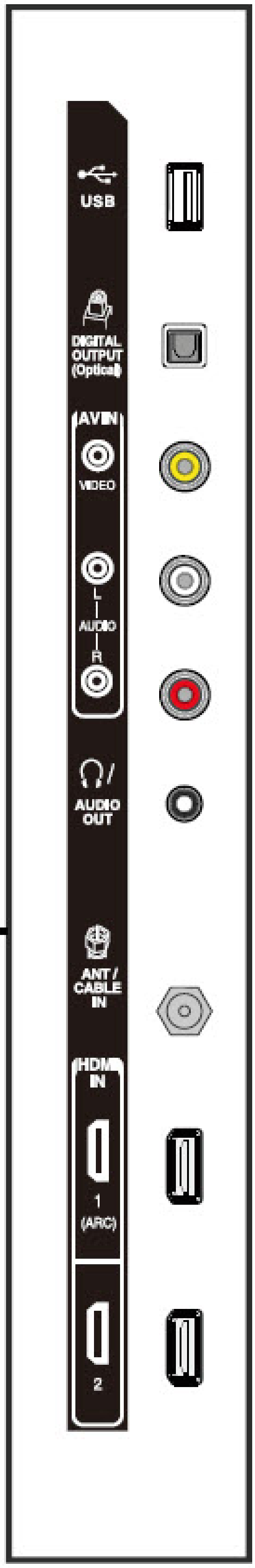
Features

Front

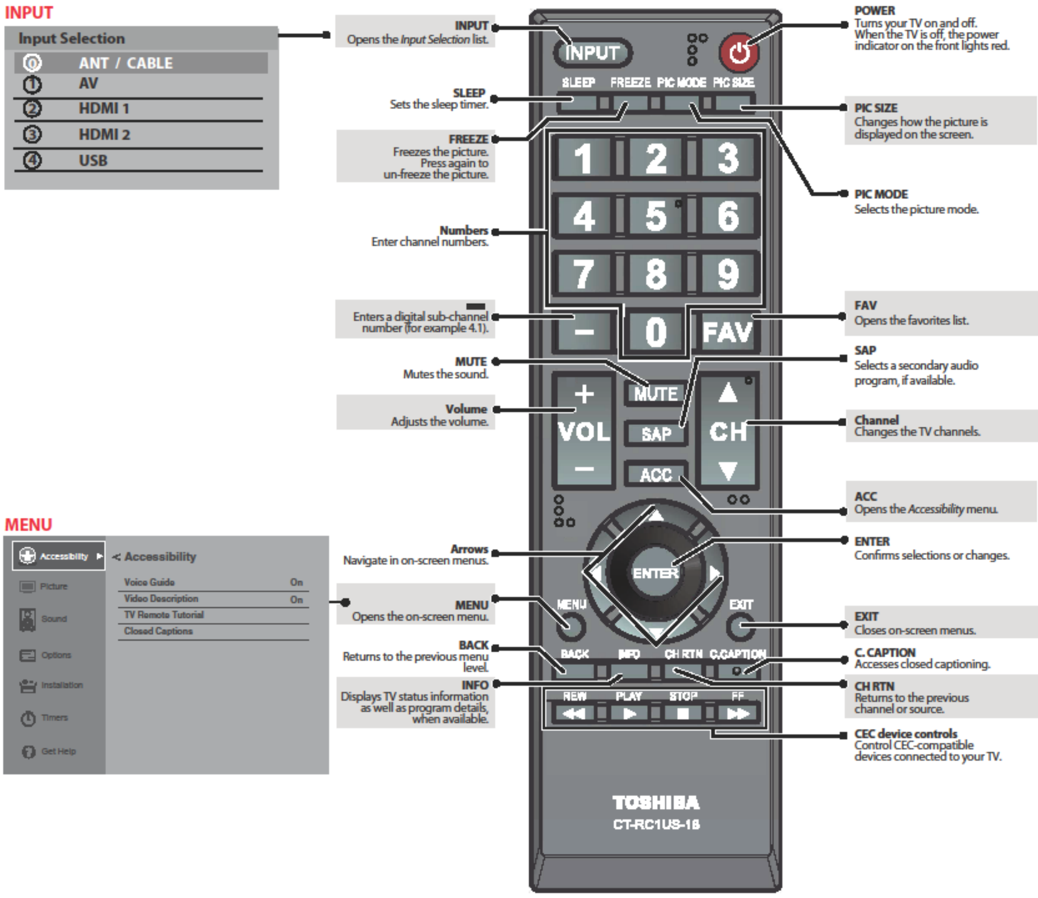


Back





USING YOUR REMOTE CONTROL



I already have a universal remote control.
How do I make it control this TV?

If you already have a universal remote control that you would like to program to work with your TV and don't want to use the included Toshiba remote control, see the table below for common codes. If you do not see a code for your universal remote control or set-top box, see the documentation that came with your device.

UNIVERSAL REMOTE CONTROL CODES	
AT&T	1127, 1179, 1203, 1204, 1222, 1223, 1332, 1340, 1341, 1345, 1353, 1010, 1098, 1104, 1147, 1148, 1149, 1150, 1151, 1173, 1174, 1210, 1215, 1256, 1257, 1263, 1267, 1272, 1302, 1311, 1312, 1322, 1343, 1376, 1585, 1589, 1592, 11524, 12724, 10156, 11935, 11704, 11959, 10650, 11343, 11369, 10060
Cablevision	015, 101, 045, 030, 007, 040, 062, 142, 137, 382, 703
Charter	11524, 10822, 10845, 11656, 12006, 10154, 11256, 10156, 11265, 10060, 10650, 11156, 11356, 11704, 0154, 0156, 0060, 1256, 0832, 1704, 1936, 0650, 1156, 1656, 1935, 0845, 1356, 1918, 1945, 015, 030, 007, 040, 062, 101, 142, 045, 137, 138, 325, 258, 031, 038, 039, 423, 571
Comcast	11656, 11156, 11256, 11704, 10845, 11356, 10060, 10650, 11265, 10154, 10765, 10767, 10178, 11314, 10700, 10702, 11935, 10832, 11959, 10036, 10149, 11343, 11369, 10781, 10003, 10250, 10156, 0060, 003, 0154, 0156
Cox	074, 168, 170, 822, 093, 991, 156, 060, 154, 093, 030, 031, 038, 039, 0170, 0074, 0168, 1270, 0060, 0154, 0156, 1256, 1265, 1945, 1704, 1656, 1635, 1356, 1343, 1325, 1306, 1156, 0845, 0832, 0650, 0149, 0036, 1369, 1042, 1060, 1061, 1062, 1087, 1091, 1097, 1098, 1130, 1131, 1183, 1524, 1935, 2006, 1959, 1936, 1164, 2724
DirecTV	10156, 11656, 11256, 11704, 11356, 10060, 10650, 10154, 10765, 10178, 10700, 10702
Dish Network	617, 631, 590, 618, 635, 680, 688, 750, 847, 800, 526, 851, 852, 595, 908, 757, 850, 802, 785, 743, 849, 622, 789, 771, 744, 243, 117
RCA	11524, 11656, 10156, 11156, 11256, 12006, 11265, 11704, 11945, 10845, 1356, 12724
Rogers	1524
Time Warner	0156, 0060, 0154, 1042, 1060, 1061, 1062, 1087, 1091, 1097, 1098, 1130, 1131, 1172, 1173, 1183, 1286, 1317, 1325, 1327, 1334, 1345, 1346, 1355, 1364, 1365, 0016, 0017, 0090, 0096, 0117, 0118, 0129, 0131, 0180, 0206, 2001, 0011, 0021, 0041, 0051, 0061, 0081, 0101, 0111, 0171, 0191, 0211, 0471, 0701, 0411, 0501, 1301, 1351, 1441, 1781, 1951, 2021, 0341, 2341, 2481, 0861, 2351, 3671, 2801, 3821, 4151, 3921, 3931, 1256, 1265, 1945, 1935, 1704, 1656, 1635, 1356, 1343, 1306, 1156, 0845, 0832, 0650, 0149, 0036, 1190, 1014, 1015, 1127, 1007, 1252, 1246, 1219, 1212, 1168, 1163, 1018, 1114, 1028, 1071, 1300, 1338, 1353, 1369, 030, 007, 040, 062, 101, 142, 137, 045, 015, 062, 142, 137, 703, 138, 230, 258, 325
Verizon	0087, 0181, 0183, 0677, 0859, 0872, 1172, 1183, 1283, 1292, 1383, 1683, 1731, 3015, 3022, 3023, 3051, 3052, 3053, 3055, 3059, 3062, 3066, 3072, 3074, 3078, 3080, 3087, 3089, 3093, 3147, 3167, 3168, 3169, 3171, 3173, 3182, 3187, 3188, 3207, 3214, 3220, 397

4.Service Points

- Lead-free solder

This product uses lead-free solder (unleaded) to help protect the environment. Please read these instructions before attempting any soldering work.

Caution: Always wear safety glasses to prevent fumes or molten solder from getting into the eyes. Lead-free solder can splatter at high temperatures (600℃).

■ Lead-free solder indicator

Printed circuit boards using lead-free solder are engraved with an "F."

■ Properties of lead-free solder

The melting point of lead-free solder is 40-50℃ higher than leaded solder.

■ Servicing solder

Solder with an alloy composition of Sn-3.0Ag-0.5Cu or Sn-0.7Cu is recommended. Although servicing with leaded solder is possible, there are a few precautions that have to be taken. (Not taking these precautions may cause the solder to not harden properly, and lead to consequent malfunctions.)

Precautions when using leaded solder

- Remove all lead-free solder from soldered joints when replacing components.
- If leaded solder should be added to existing lead free joints, mix in the leaded solder thoroughly after the lead-free solder has been completely melted (do not apply the soldering iron without solder).

■ Servicing soldering iron

A soldering iron with a temperature setting capability (temperature control function) is recommended.
The melting point of lead-free solder is higher than leaded solder. Use a soldering iron that maintains a high stable temperature (large heat capacity), and that allows temperature adjustment according to the part being serviced, to avoid poor servicing performance.

Recommended soldering iron:

- Soldering iron with temperature control function (temperature range: 320-450℃)

Recommended temperature range per part:

Part	Soldering iron temperature
Mounting (chips) on mounted PCB	320ºC±30ºC
Mounting (chips) on empty PCB	380ºC±30ºC
Chassis, metallic shield, etc.	420ºC±30ºC

The PWB assembly which has used lead free solder

(1) IR PWB, KEY PWB, SIDE I/O PWB, T PWB
(2) FORMATTER PWB
(3) POWER BOARD

5. Adjustments

5.1 FACTORY MAIN MENU

0）Hotkey enable setting
1）System initialization, for the Machine factory reset
2）Loop the test screen
3）ADC Autocolor (Detail -> 2)
4）Setting about picture（Detail -> 3）
5）Setting about sound（Detail -> 4）
6）General setting（Detail -> 5）
7）For Debugging（Detail -> 6）
8）Setting about Panel（Detail -> 7）
9）EMC Certification parameter（Detail -> 8）
10）System parameter（Detail -> 9）
11）INIT, All parameters return to the initial state
12）software upgrade（Detail -> 10）
13）Initialize the factory channel table

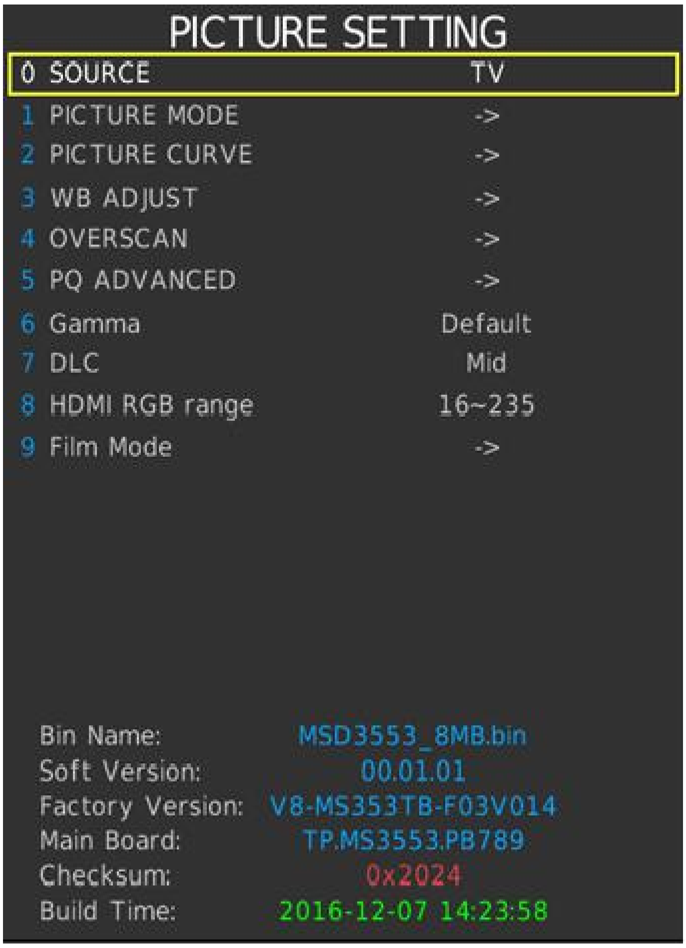
Bin Name:the name of current bin name
Soft Version:the version of the current soft
Factory Version：TCL factory version name
Main board:the type of the main board
Checksum:the checksum
Build Time:the time of building

5.2 ADC ADJUST

ADC Autocolor Adjust

ADC Autocolor Adjust,Corrects the conversion error due to ADC discretisation and board component discretization.Divided into YPbPr VGA SCART-RGB.Adjustments are included R Gain,G Gain,B Gain,R Offset,G Offset,B Offset.

5.3 PICTURE SETTING



0） Source selection

1） The mode of picture（Detail -> 3.1）

2） Picture Curve settings（Detail -> 2.2）

3） WB Adjust settings（Detail -> 2.3）

4） Overscan settings

5） PQ adjust settings

6） Gamma selection

7） DLC selection

8） HDMI RGB Range setting

9） Film mode settings（Film、Film22、Film32、Film Any）

5.3.1 PICTURE MODE

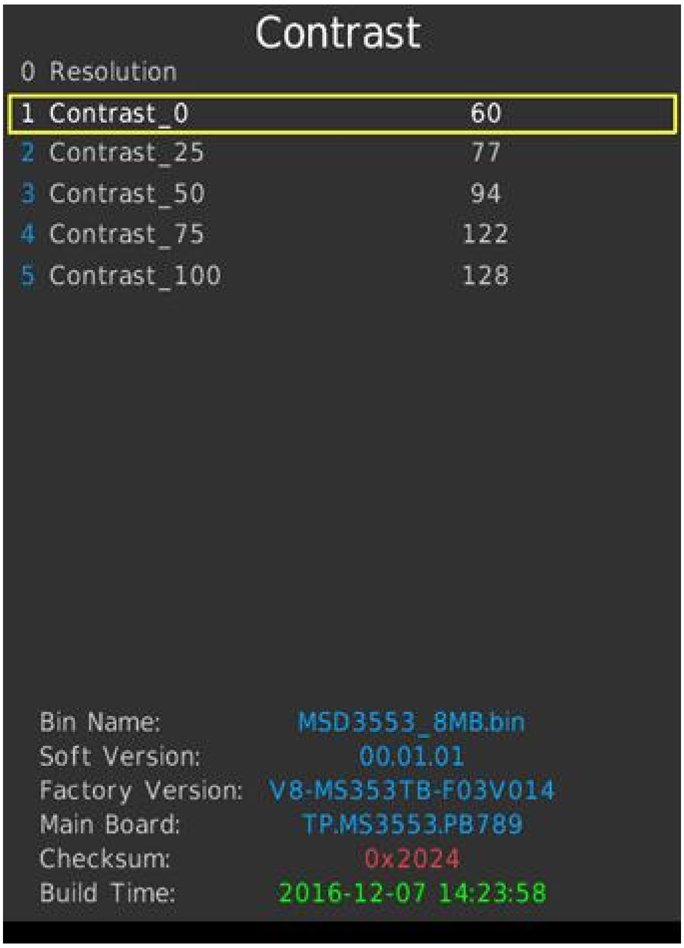
0） Source selection
1） Picture mode selection
2） Contrast adjust
3） Brightnesst adjust
4） Colour adjust
5） Sharpness adjust
6） Tint adjust
7） WB mode selection
8） WB R gain adjust
9） WB G gain adjust
10） WB B gain adjust
11） WB reset item

5.3.2 PICTURE CURVE

0） Source selection
1） Contrast adjust
2） Brightnesst adjust
3） Colour adjust
4） Sharpness adjust
5） Tint adjust

See detail 3.2.1

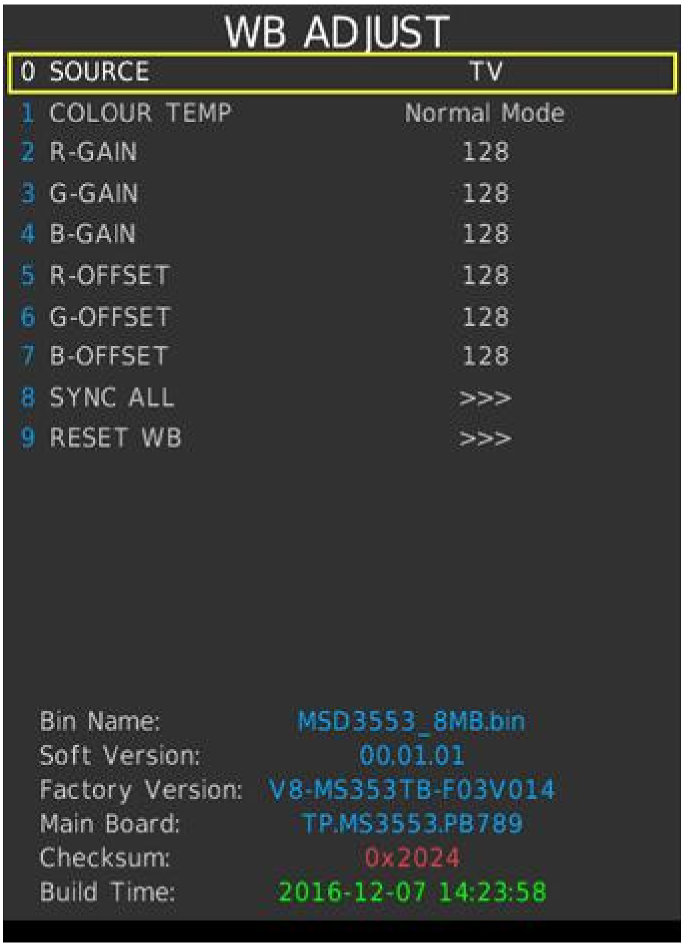
5.3.2.1Contrast



1） the value what contrast is 0
2） the value what contrast is 25
3） the value what contrast is 50
4） the value what contrast is 75
5） the value what contrast is 100

Other Options are the same as it

5.3.3 WB ADJUST



WB ADJUST

Current channel white balance adjustment.Divided into Warm Cool Normal,And the channel is saved.Adjustments are included R Gain G Gain B Gain R Offset G Offset B Offset SYNC ALL RESET WB.

5.3.4 OVERSCAN

OVERSCAN Adjust

0）Current signal resolution

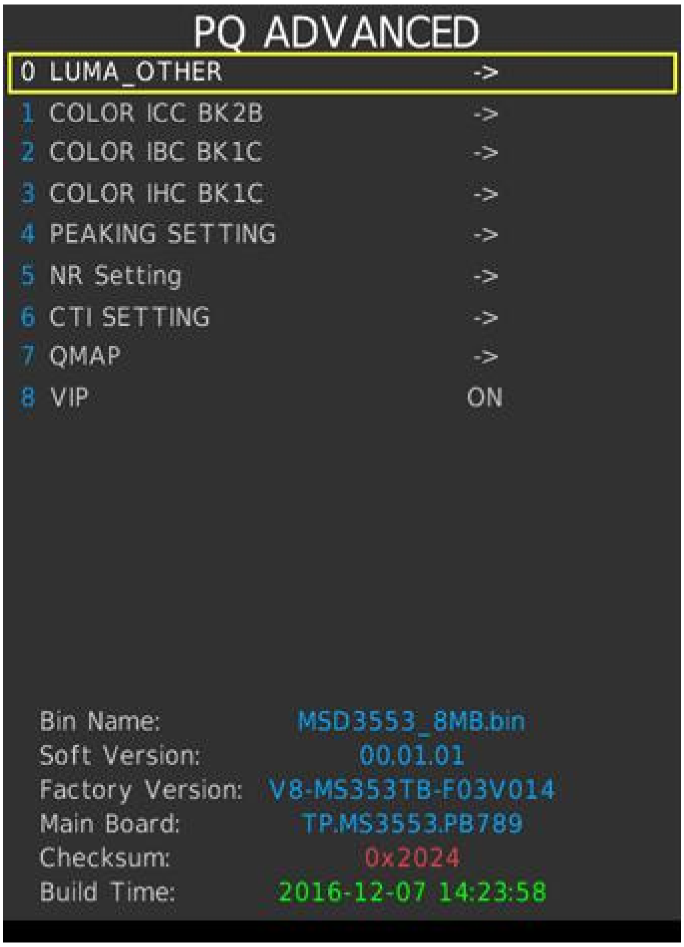
1）Left margin adjustment

2）Right margin adjustment

3）Up margin adjustment

4）Down margin adjustment

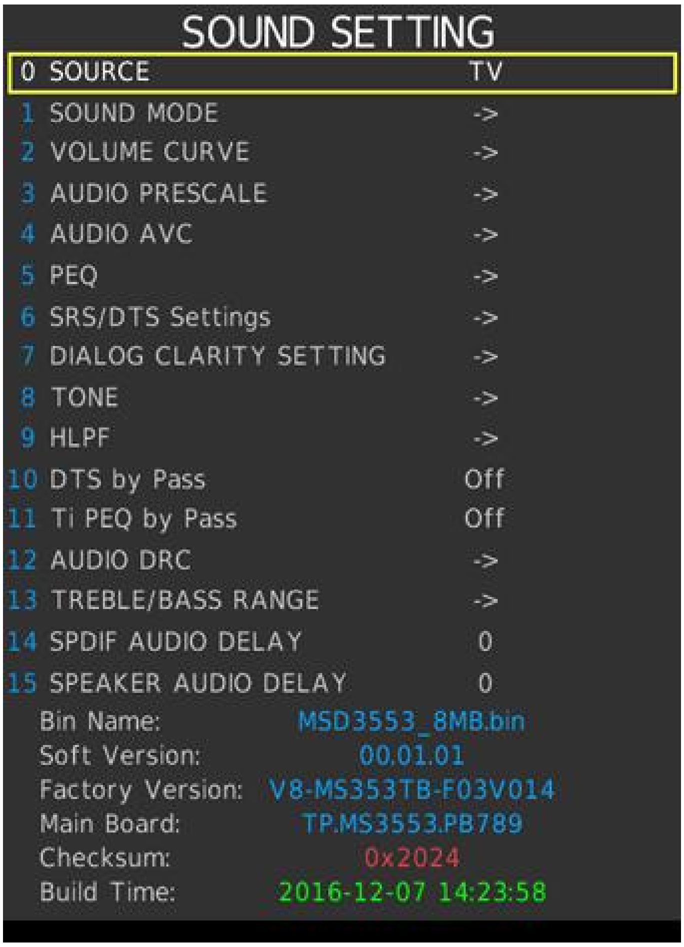
5.3.5 PQ ADVANCED



PQ Adjust

Adjustments are included VIP NR QMAP etc.

5.4 SOUND SETTING



0） Source selection

1） Sound mode parameters settings

2） Volume curve settings

3） Audio prescale setting,match all of source to same speaker output level

4） Auto volume control page

5） Equalizer adjustment

6） SRS/DTS parameters settings

7） Dialog clarity setting

8） Tone adjustment

9） High、low pass filter settings

10) DTS function enable control

11) Ti PEQ function enable control

12) DRC parameters settings

13) Treble、bass range adjustment

14) Spdif Sound delay setting

15) Speaker Sound delay setting

5.4.1 SOUND MODE

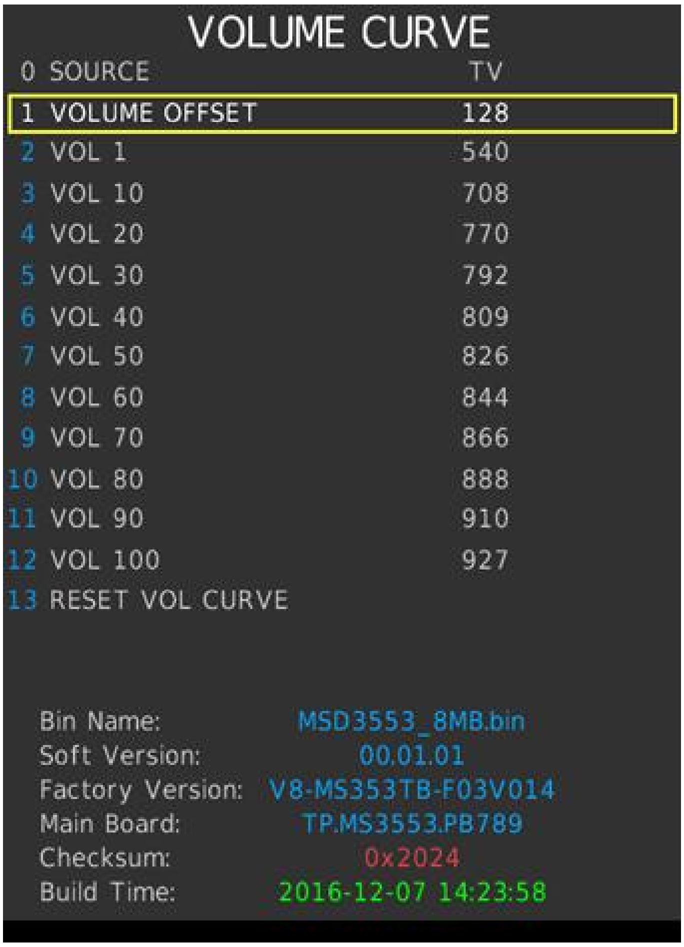
0) Source selection

1) Sound mode selection

2) Treble adjustment

3) Bass adjustment

5.4.2 VOLUME CURVE



Precautions:

0) Source selection

1 ） Volume Offset You can set one for each channel,The user generally controls the volume level

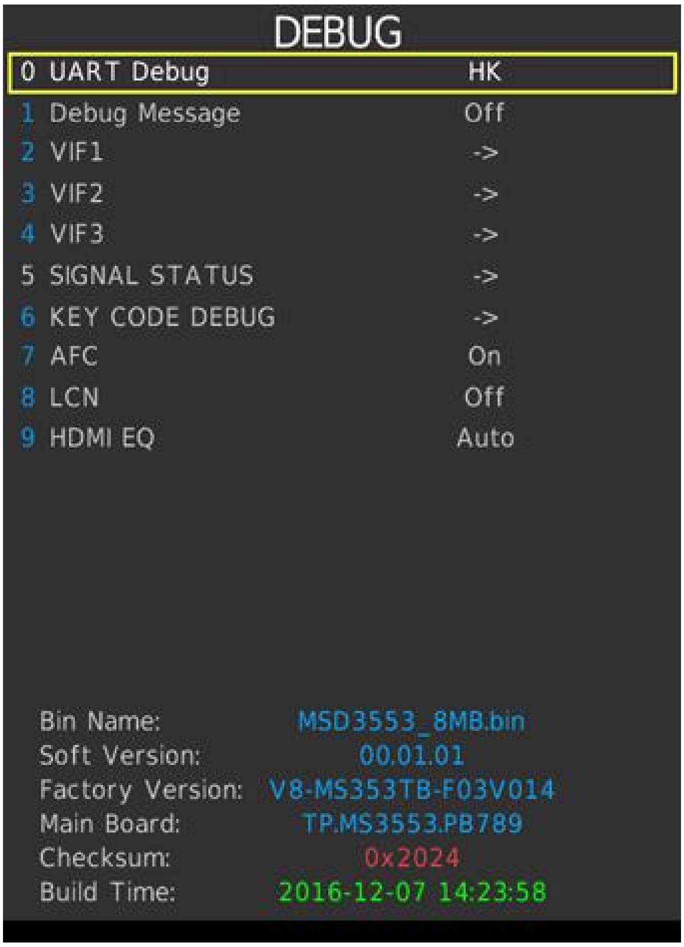
2 ～ 12 ） All channels share a common set of data,When adjusting, be sure to ensure that the value after the front must be larger than the value.Such as:VOL70 must bigger than VOL60.

13）The initialization parameter to the default

5.5 GENERAL SETTING

0）On/Standby/Last Power state.
1）LOGO ON/OFF adjustments
2）Test Screen,Determine the screen problem
3）Channel table import and export
4）Watchdog switch
5）Clear the user data area in the flash
6）Clock acceleration settings for easy testing

5.6 DEBUG



0） UART mode selection

1） Serial Print Switch

2～5）Domestic machine requirements, other areas optional, for non-standard RF signal debugging

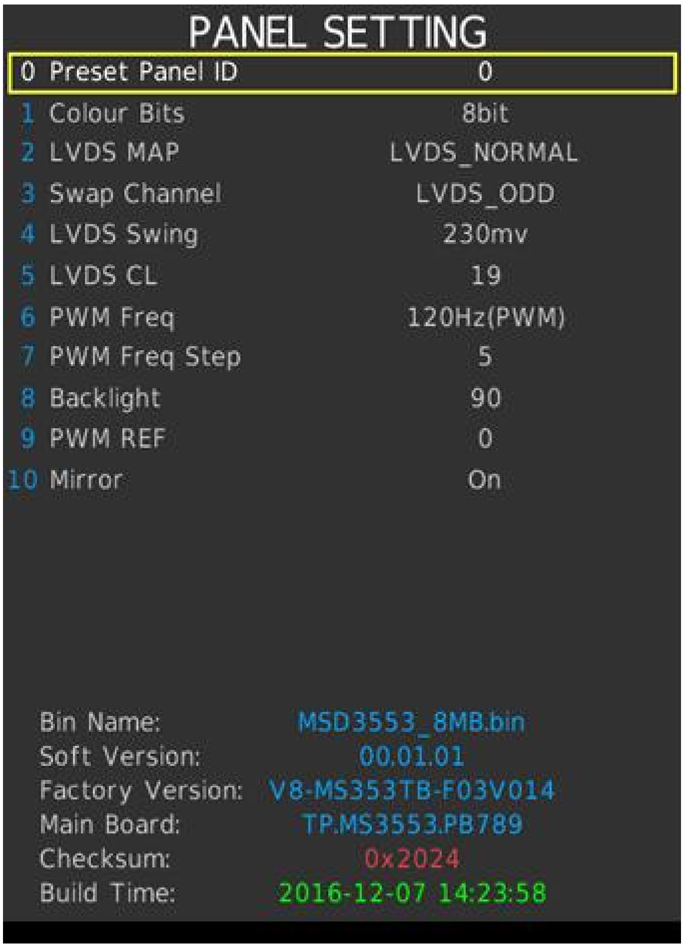
6）Used to debug keypad, remote control to receive problems

7） NFC function switch control for analog TV channels, easy to debug ATV field problems

8）DVB scheme must be added

9）Adjust the HDMI receiver Equalizer parameter

5.7 PANEL SETTING



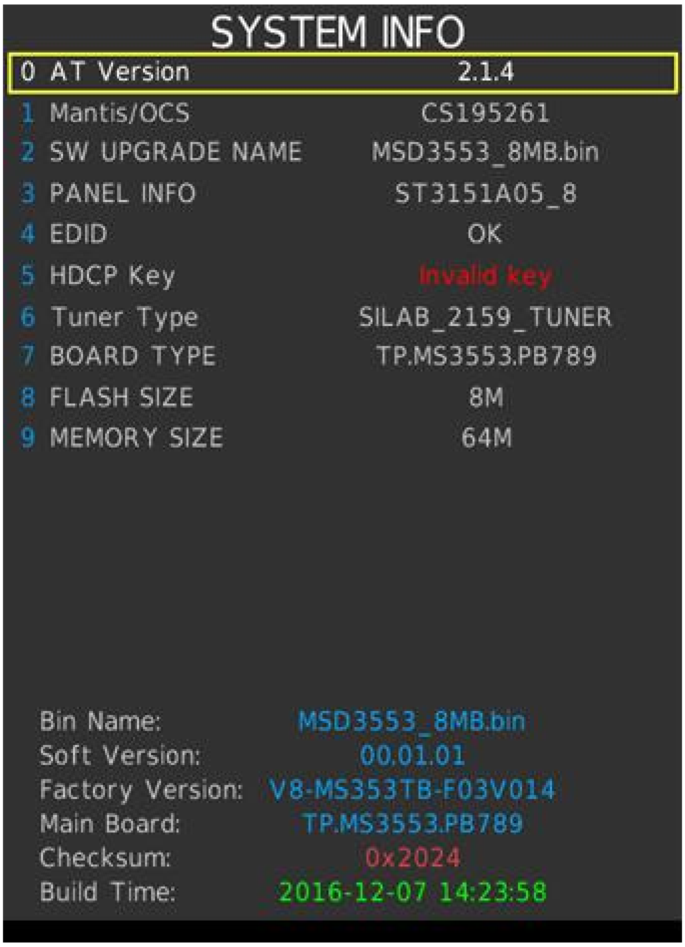
0）Panel preset selection
1）Panel colour bit deep setting
2）LVDS map mode selection
3）LVDS data channel swap control
4）LVDS data level adjustment
5）LVDS clock level adjustment
6）PWM frequency setting
7）The step of pwm frequency adjustment
8）Backlight adjustment
9）PWM REF adjustment
10）Panel normal/mirror control

5.8 EMC SETTING（For Pass Certification）

0～2） DDR spread settings

3～5) LVDS spread settings

5.9 SYSTEM INFO



5.10 SW UPGRADE

0） Upgrade item

1）The required upgrade file name

5.11 Upgrading Instruction

Software upgrades are mainly to update the software features and solve software defects, this article will introduce three upgrade methods.

5.12 USB Automatic Identification Upgrade

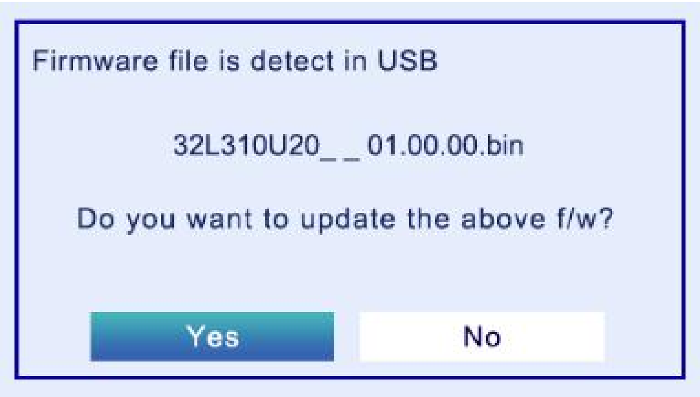
5.12.1 Upgrade Preparation

Please prepare a USB, and put into a correct software upgrade program in the USB root directory， the software name is 32L310U20_01.00.00.bin, as shown below:

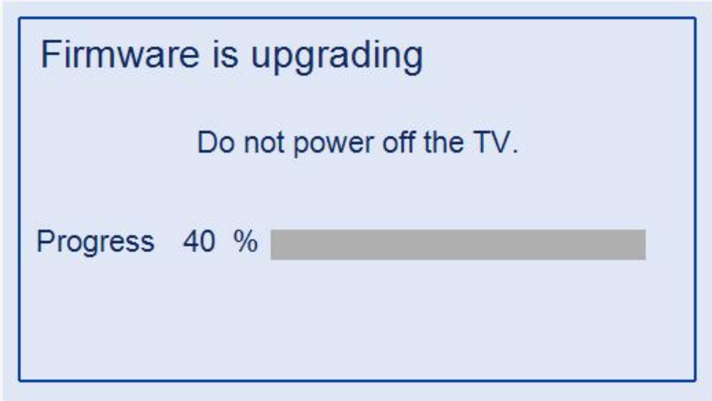
Note:Please ensure that the software is correct, upgrade the wrong software will lead to black screen TV, or even can not restore the TV software, resulting in TV damage.

5.12.2 Start Upgrade

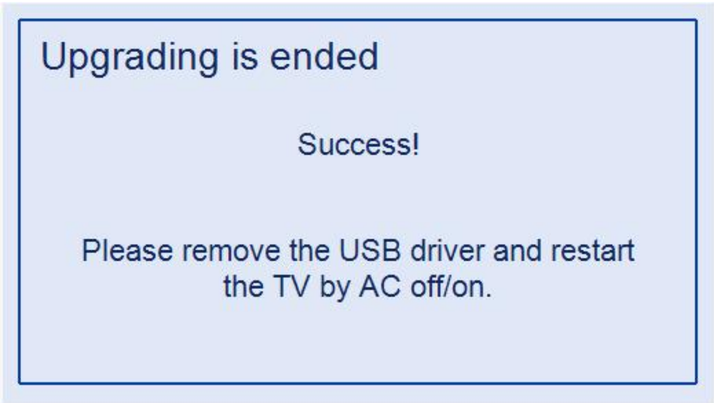
A:Use the prepared USB connect to the TV, then the TV will recognize the USB whether it contains the upgrade program and will pop up the software upgrade menu, as shown below:



B:And select YES, will pop up upgrading menu and display the current progress of the upgrade, LED lights will be 1 second interval for blinking, then do not power off TV, otherwise it will cause damage to the TV;



C:When progress up to 100%, the upgrade successful menu will display, then remove the USB and restart the TV by AC off/on, the upgrade is completed.



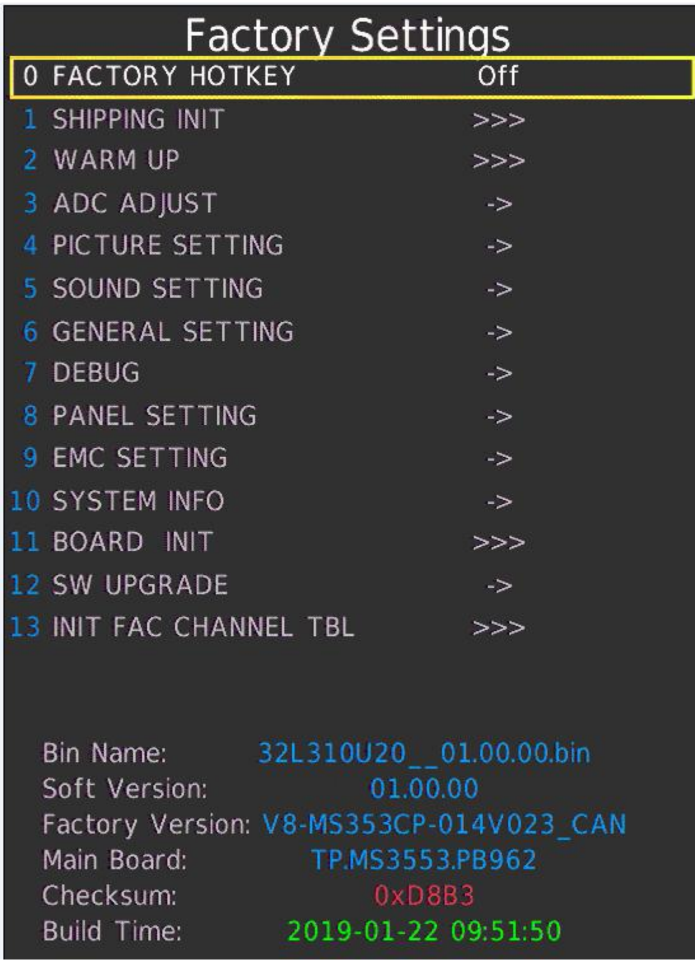
5.13 CVTE Factory Menu Upgrade

5.13.1 Upgrade Preparation

Upgrade preparation same as USB Automatic Identification Upgrade.

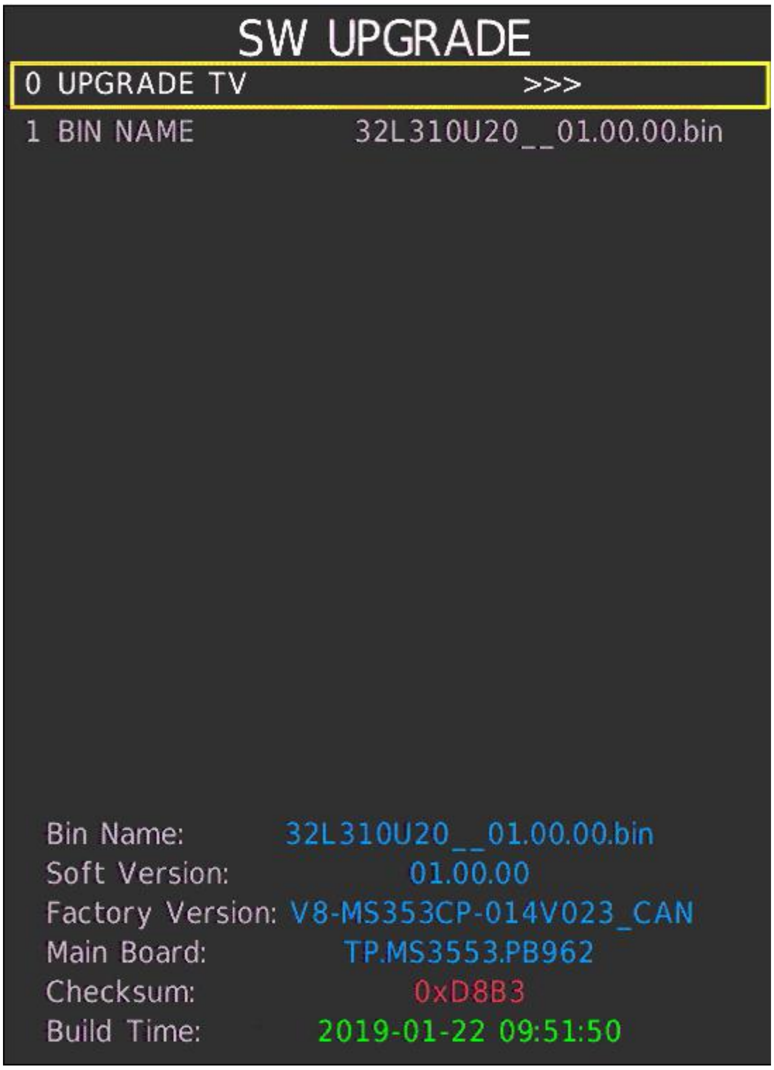
5.13.2 Start Upgrade

A:Use the prepared USB connect to the TV USB port, and then press the remote control MENU key to diplay the main menu, continuous press the number keys 1 + 1 + 4 + 7, then the CVT factory menu will pop up, as shown below:



B:Into the SW UPGRADE page, you can see BIN NAME will identify the upgradesoftware named 32L310U20__01.00.00.bin, select UPGRADE TV will enter the upgrade state, If identified as the same software, will prompt Same Image!

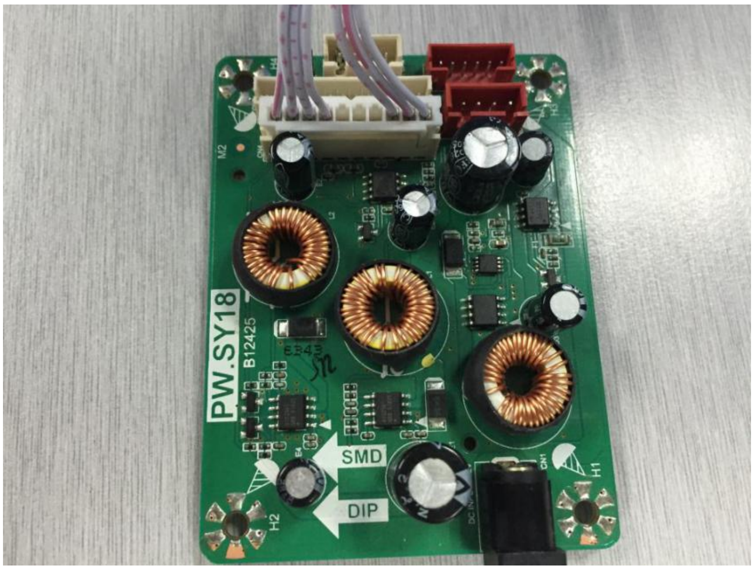
After entry the upgrade state, the menu will show the corresponding progress, and the LED lights will be 1 second interval alternately flashing, after the upgrade success, the LED lights will be into the fast flashing state,then remove the USB and restart the TV by AC off/on, the upgrade is completed.


SW UPGRADE
0 UPGRADE TV >>>
1 BIN NAME 32L310U20__01.00.00.bin
Bin Name: 32L310U20__01.00.00.bin
Soft Version: 01.00.00
Factory Version: V8-MS353CP-014V023_CAN
Main Board: TP.MS3553.PB962
Checksum: 0xD8B3
Build Time: 2019-01-22 09:51:50

5.14 The electricity upgrade

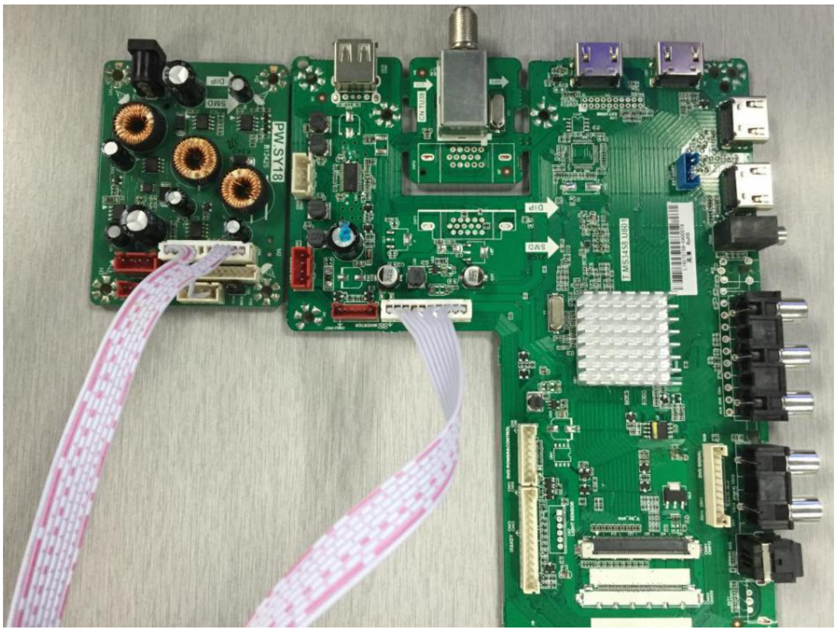
5.14.1 Preparation

A: Prepare mini power board(PW.SY18) for upgrading.

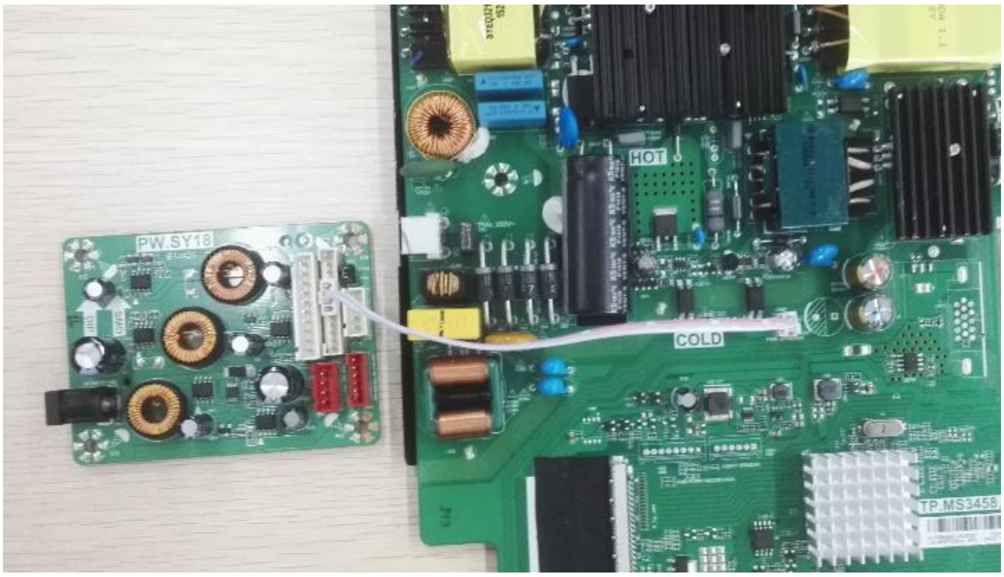


B:Connect the mini board with main board as below:

There is a 10 pin power port on the board(the middle 2 pins of the power port are 12V PVCC pins, but the corresponding pins in the mini board is 5V pins, so it is needed to connect at least one 12V PVCC pin in the TV board to 12V pin in the mini power board).



C: 2PIN upgrading interface (GND, 12V), Connect it as the picture below:



*Warning:Make sure connect the 12V to 12V and GND to GND, or it will cause hardware damage.

Why use the CN.UPGRADE01 board?

- We use this board to protect the safety of personnel and equipment as much as possible during the upgrading. The main board should be connected to mains to work if we do not use the CN.UPGRADE01 board. The power module of main board have more than thousands of volts at working. It is easily leads personal injury or damage to equipment if staffs mistakenly touch the main board or some objects fallen into the main board during the upgrading procedure. So we use the CN.UPGRADE01 board to reduce the risk of upgrading.

5.14.2 Power On Upgrading

A、Upgrade Flashing Status

You can judge the upgrade progress by flashing of the remote control LED light:

Upgrading:

Red 1000ms Green 1000ms alternates,the TV set will turn to Upgrade succeed or Upgrade Failed status after the upgrading process.

Main program upgrade succeed:

Red 250ms Green 250ms alternates, flashing before power off.

Main program upgrade Failed:

Red 1750ms Green 250ms alternates，flashing before power off.

Notes: In the upgrade process, as timer software is used to control flashing, situations such as LED light stuck when creating partition of flash, is normal phenomenon.

B、Power On Upgrading

STEP 1：Copy the Upgrading File (SW) to a USB disk .

STEP 2：Link USB disk to board, out AC then put on AC, the update begin and led start to flash. The upgrade result can be seen from led’s flashing speed.

STEP 3：Plug USB disk and AC out, then put on AC, upgrade finish.

6. Trouble shooting

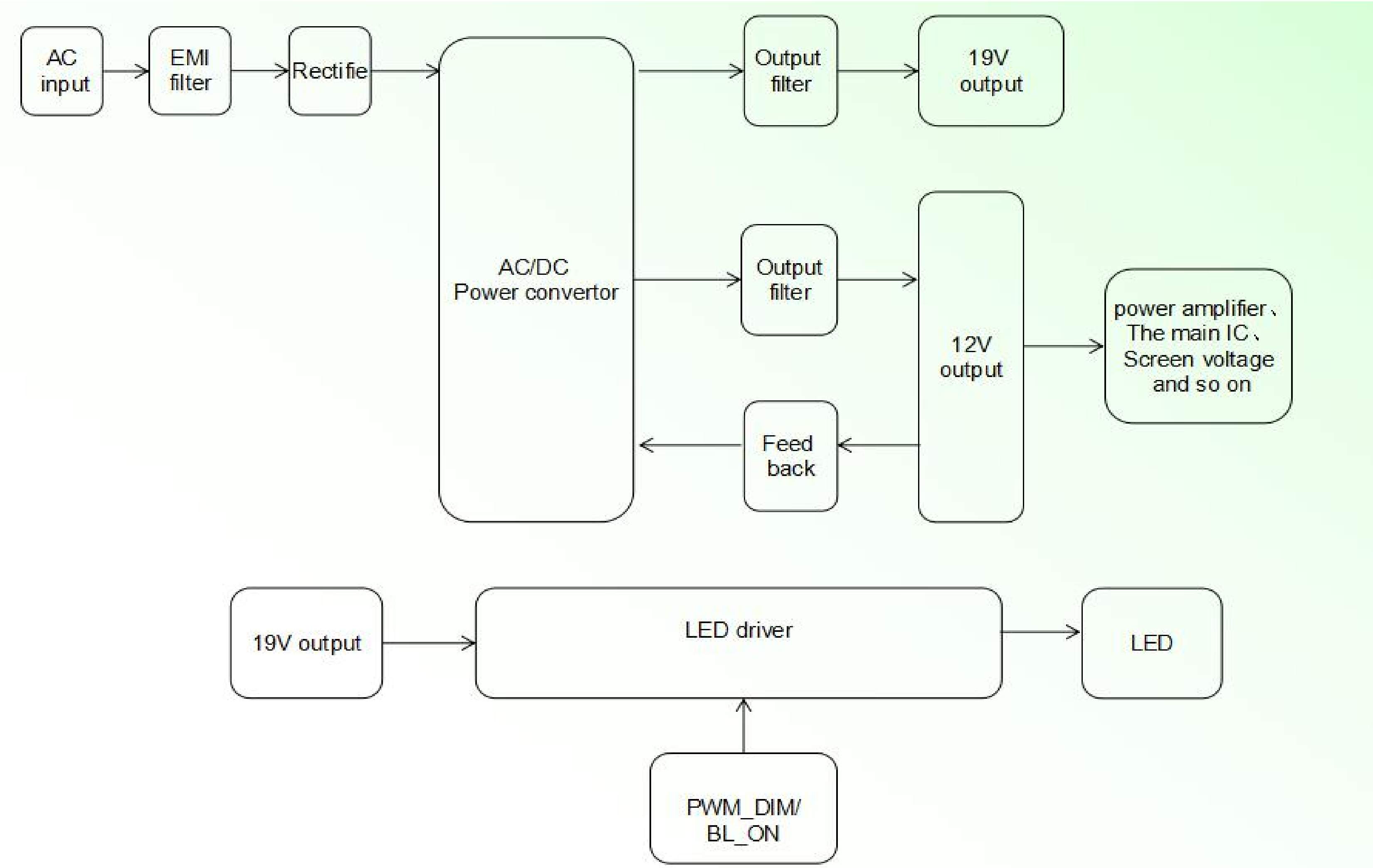
6-1 Terms:

- ***IR**: Infrared Receiver*
- ***RC**: Remote Control*
- ***IR logic**: IR blink with RC action*
- ***LVDS**: Low Voltage Differential Signal, output from processor and input for panel*
- ***O/C**: Open Cell, panel with source board*
- ***BL**: Back Light, light source for panel module*
- ***LB**: LED (Light Emitting Diode) Bar, light source for BL module*
- ***VBL**: Voltage for Back Light (before Boost)*
- ***VLED**: Voltage for LED (after Boost)*
- ***OVP**: Over Voltage Protection*
- ***OSD**: On Screen Display*
- ***AMP**: Amplifier*

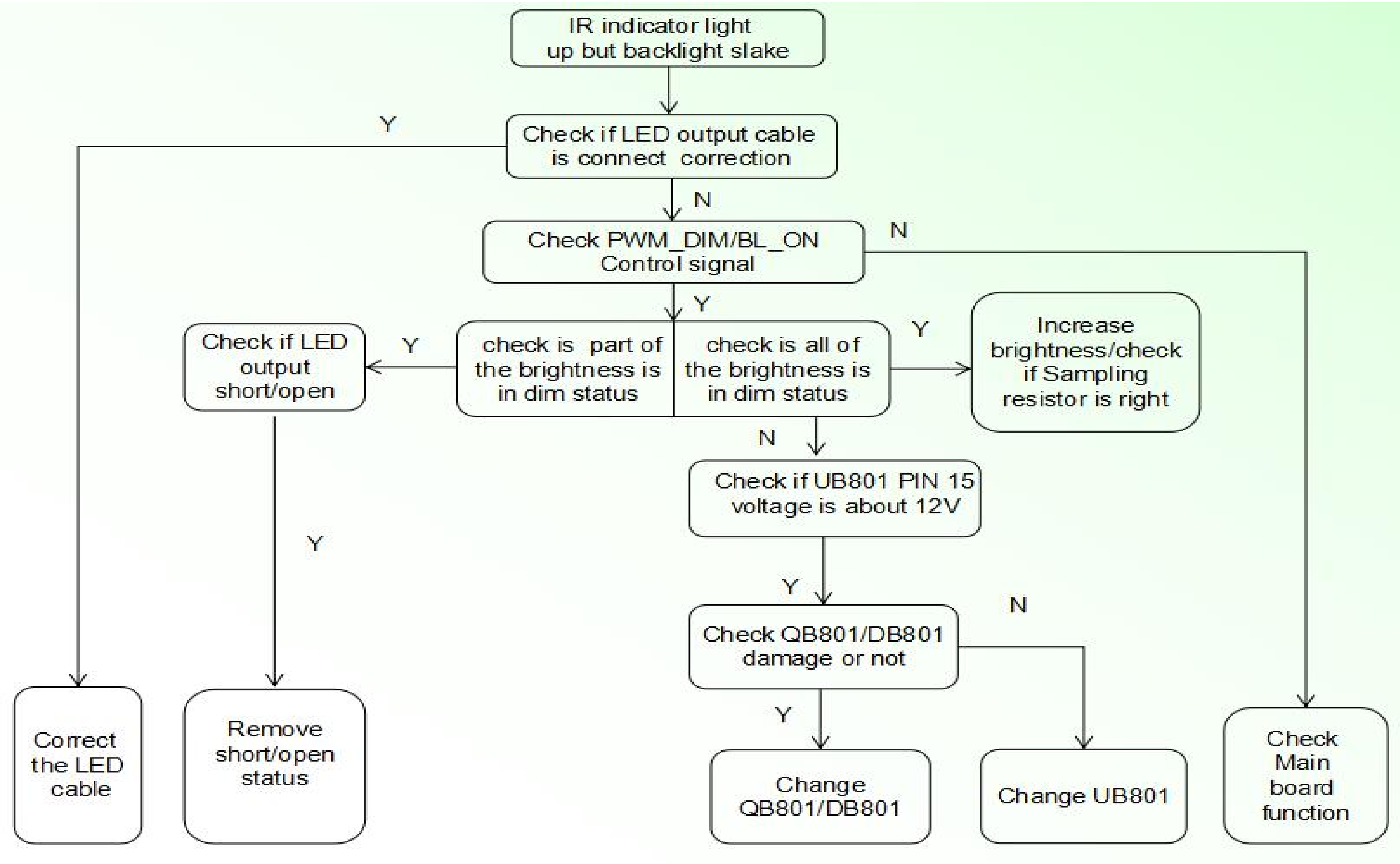
6-2 No power

No power LED, RC or Key can not turn on TV. Power LED no light/no change.

Power Supply Trouble 1



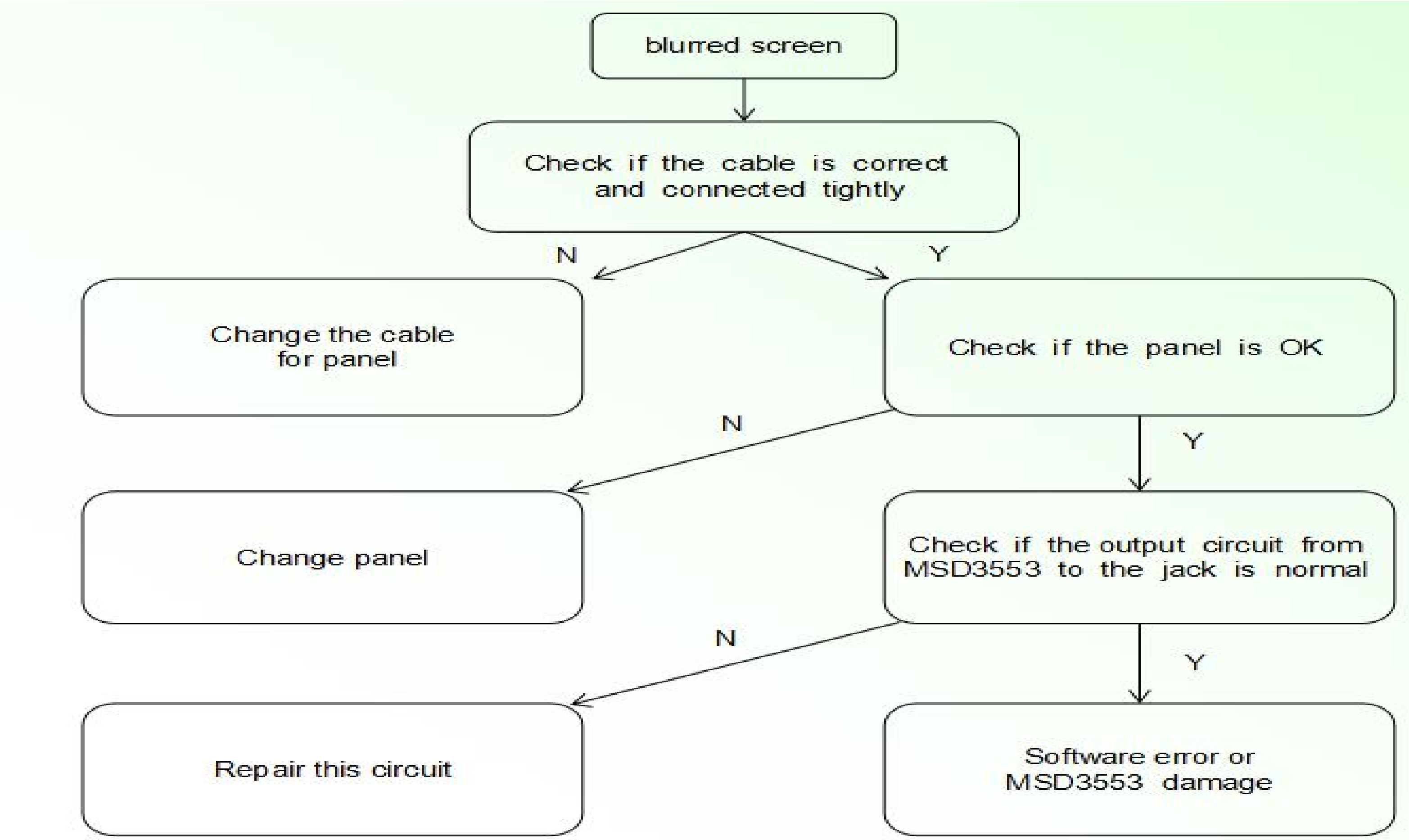
Power supply for LED drive



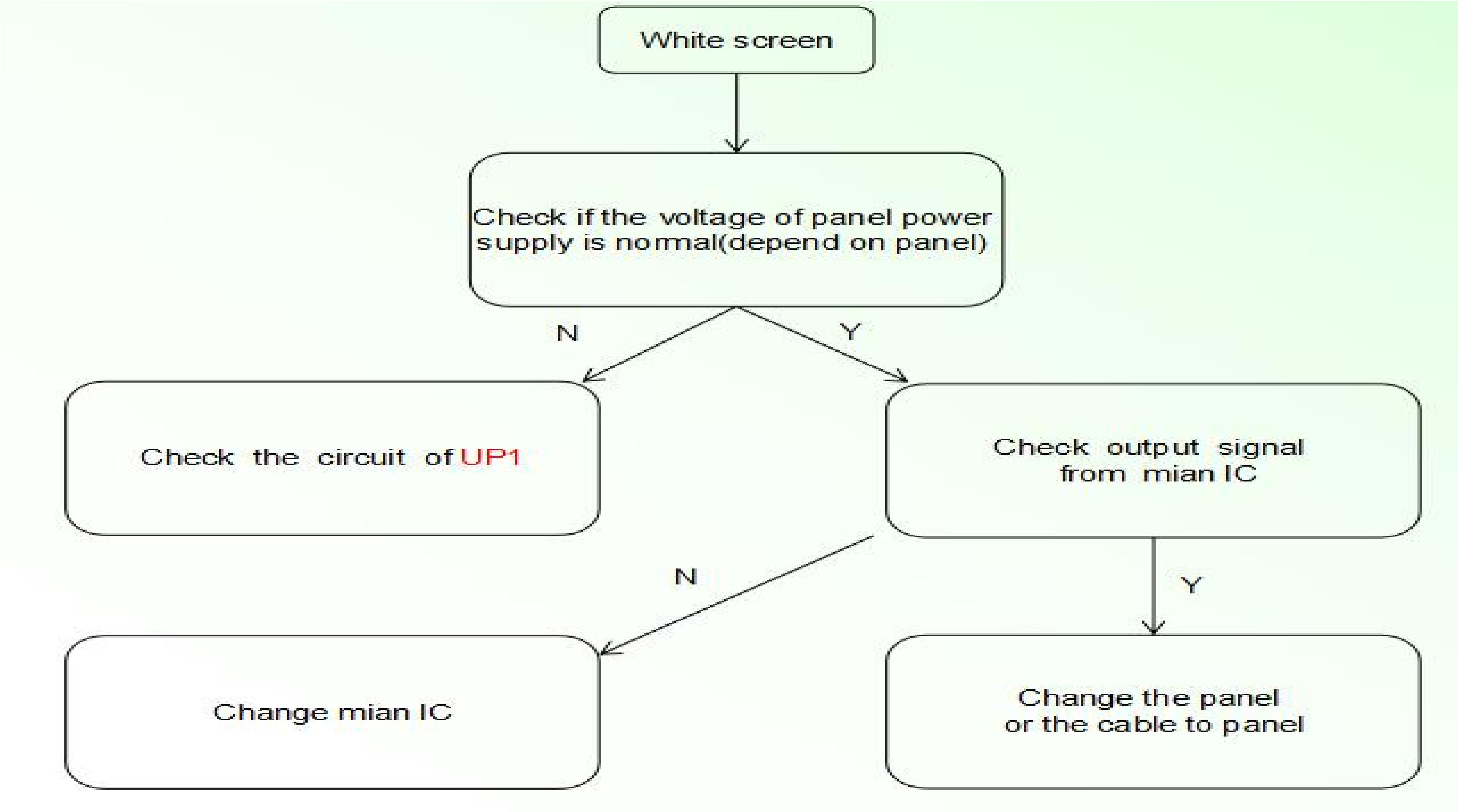
6-3 No Display / Black Panel

Back light is OK, sound is OK, but no picture.

Display Trouble（exceptional screen）

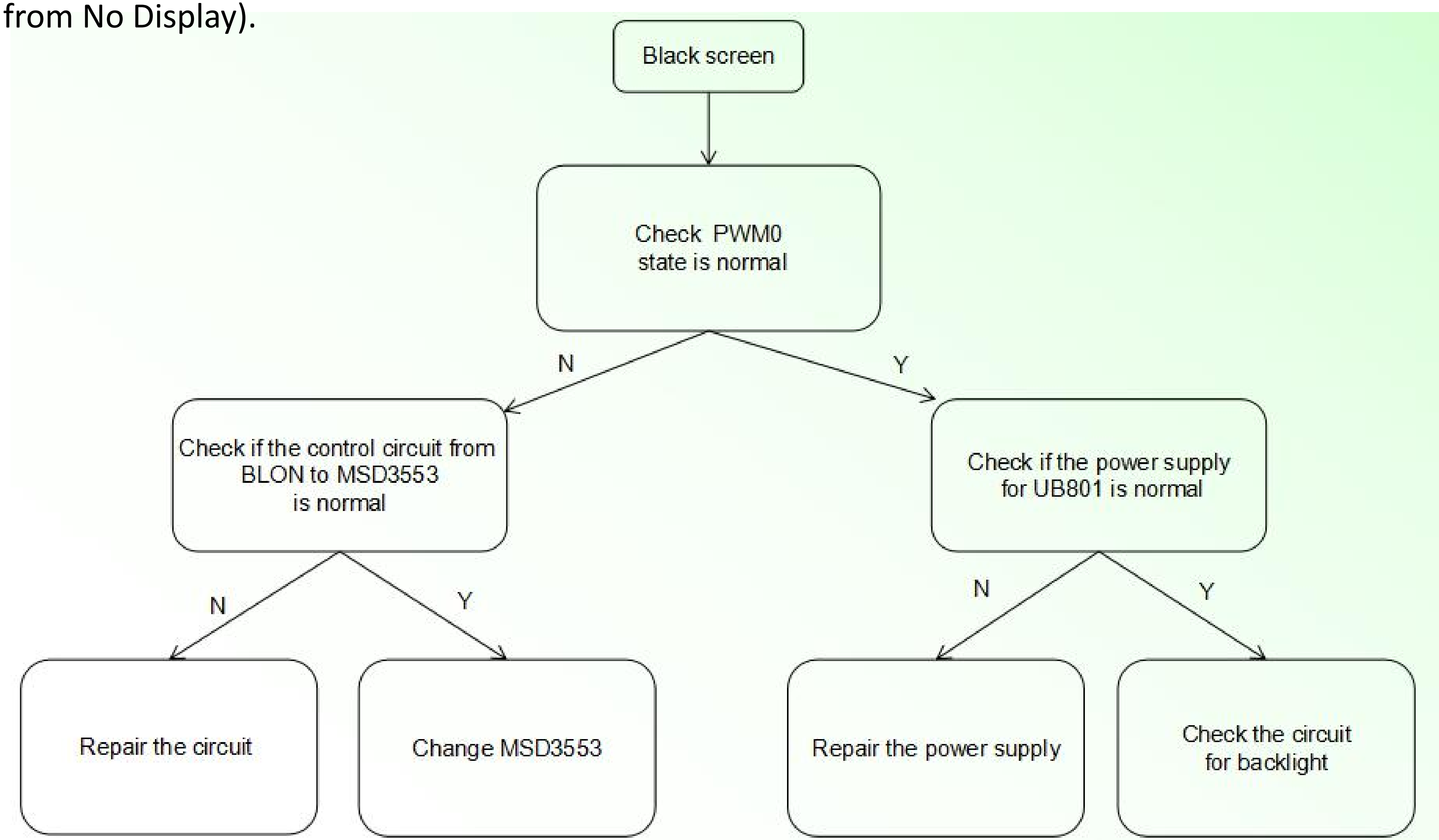


Display Trouble （white screen）



6-4 No back light

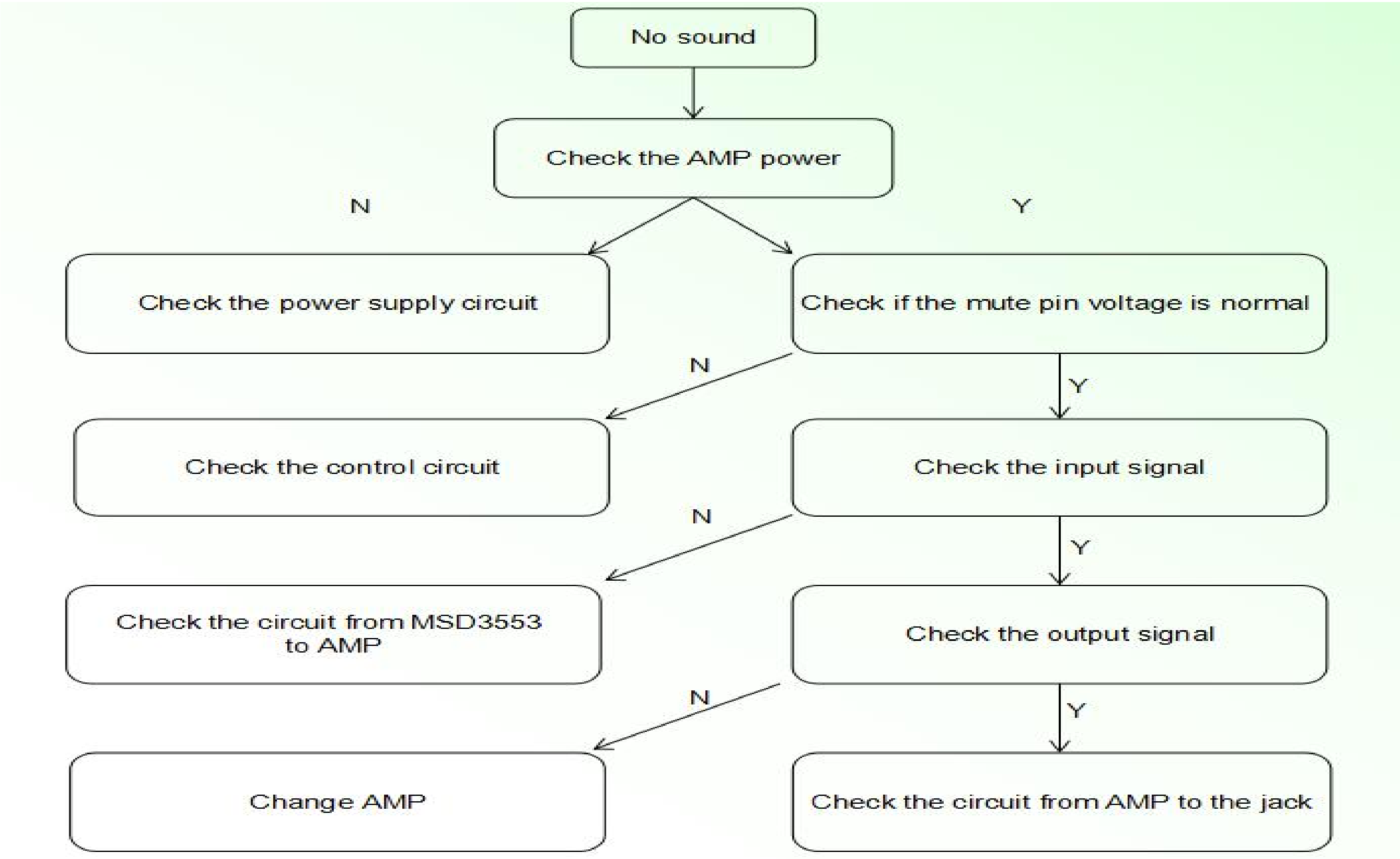
Power LED logic OK, sound OK, but no picture.(Different from No Display).



6-5 No sound

One or all signal source without sound .

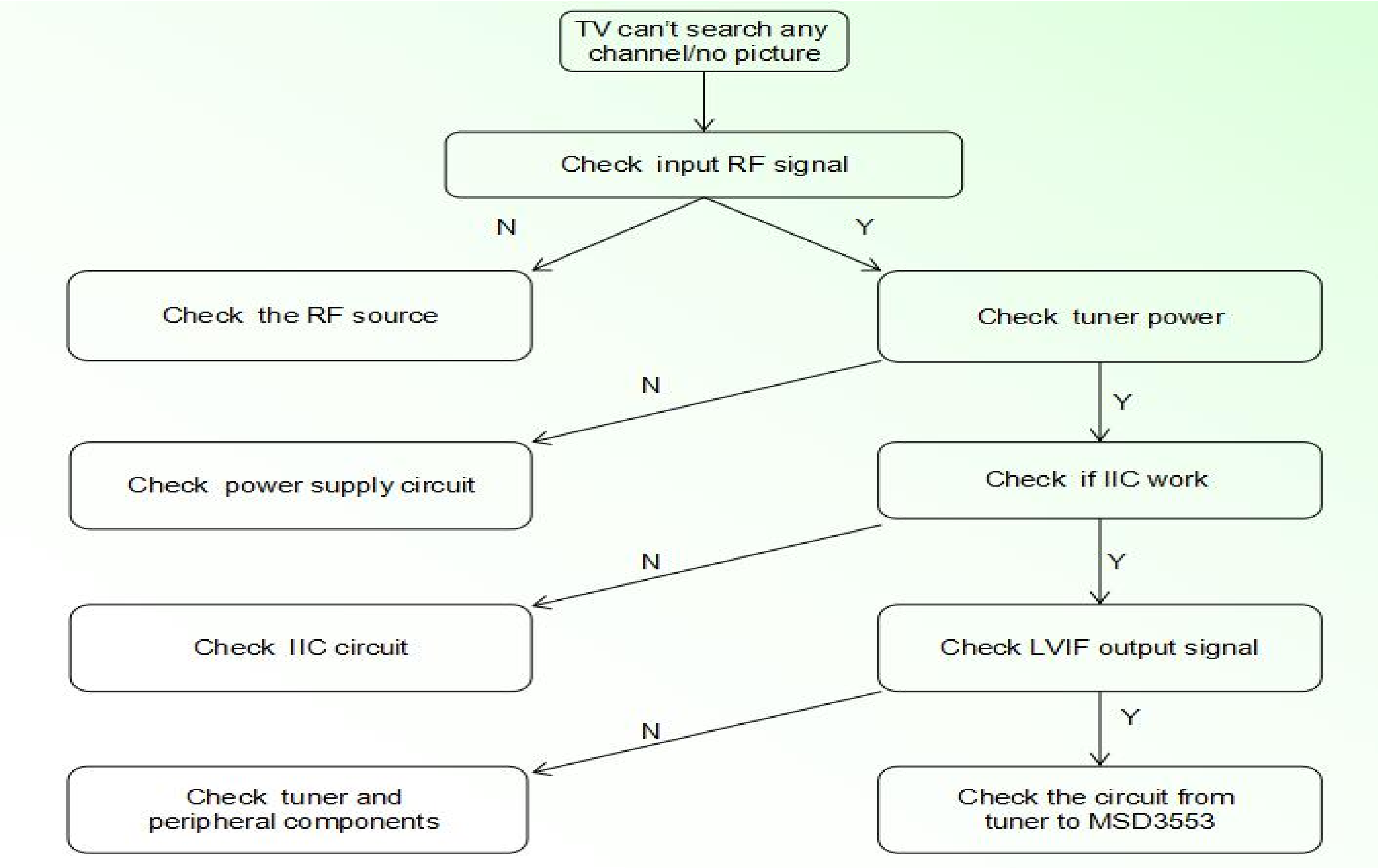
Audio Trouble（No sound)



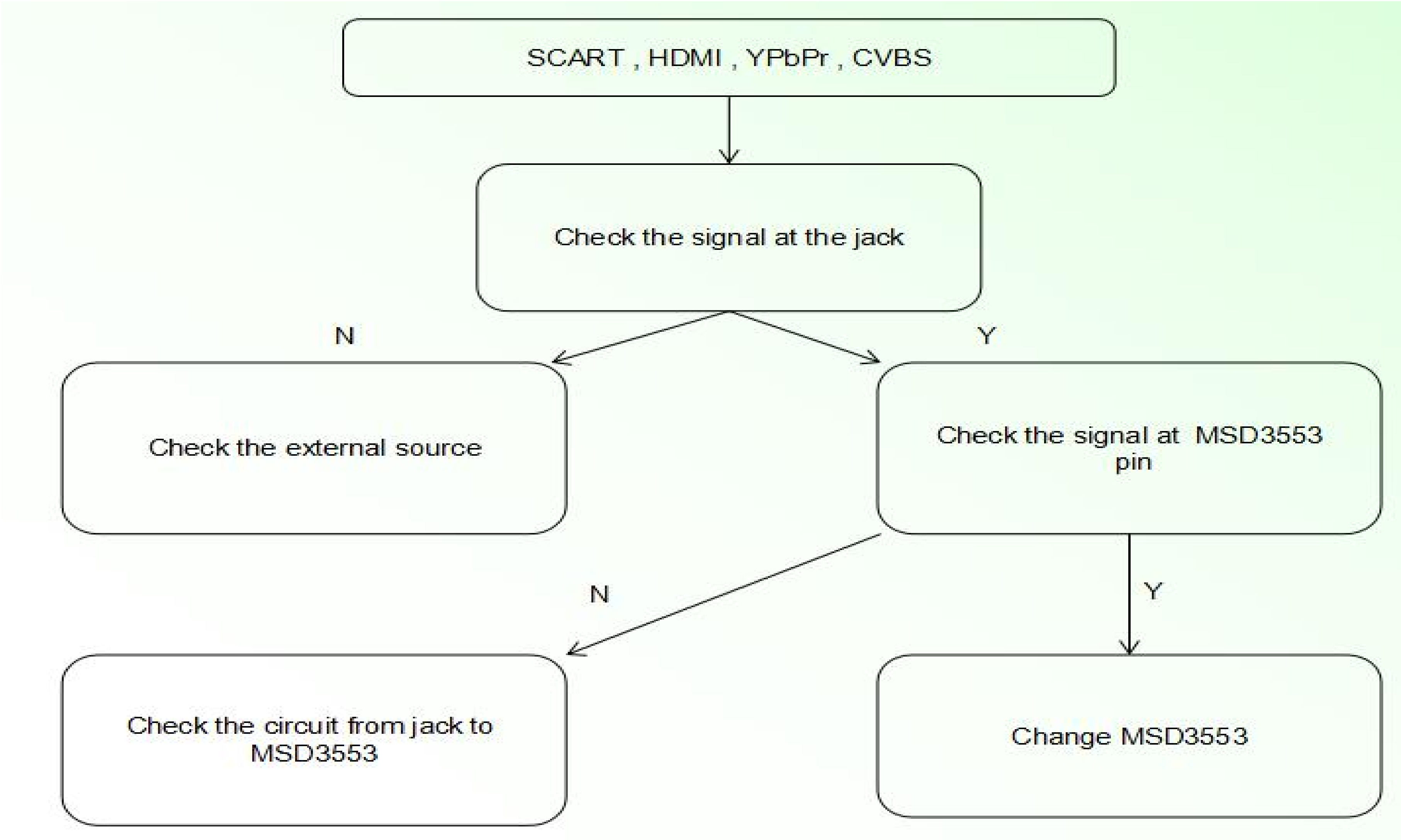
6-6 Signal source no function

One or several source no function.

Function Trouble（TV video）



Function Trouble（SCART、HDMI、YPbPr、CVBS）

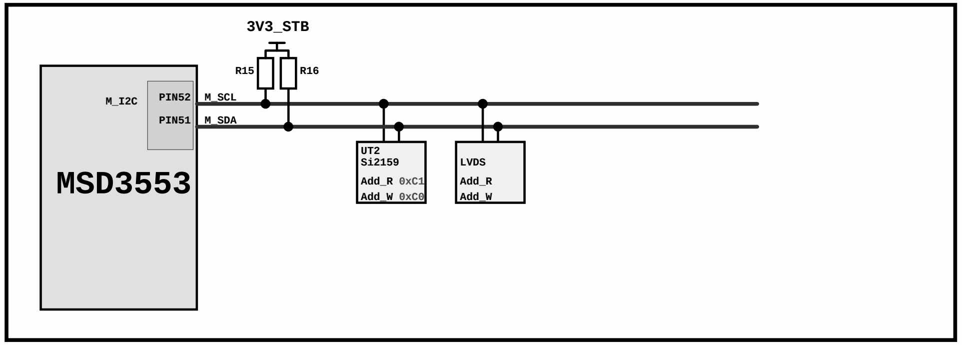


7. Attachments

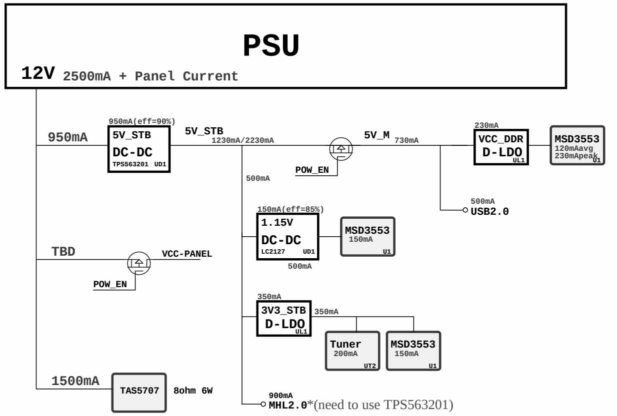
Please refer to the attachments

8.Exploded view

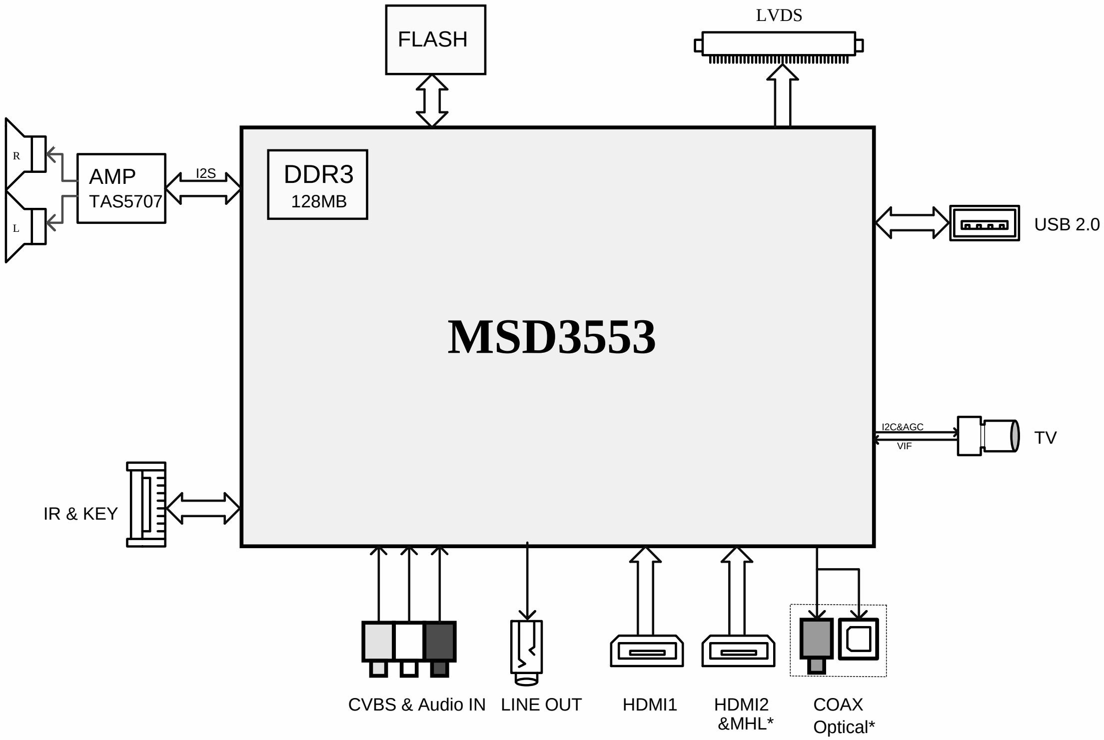
Please refer to the attachments



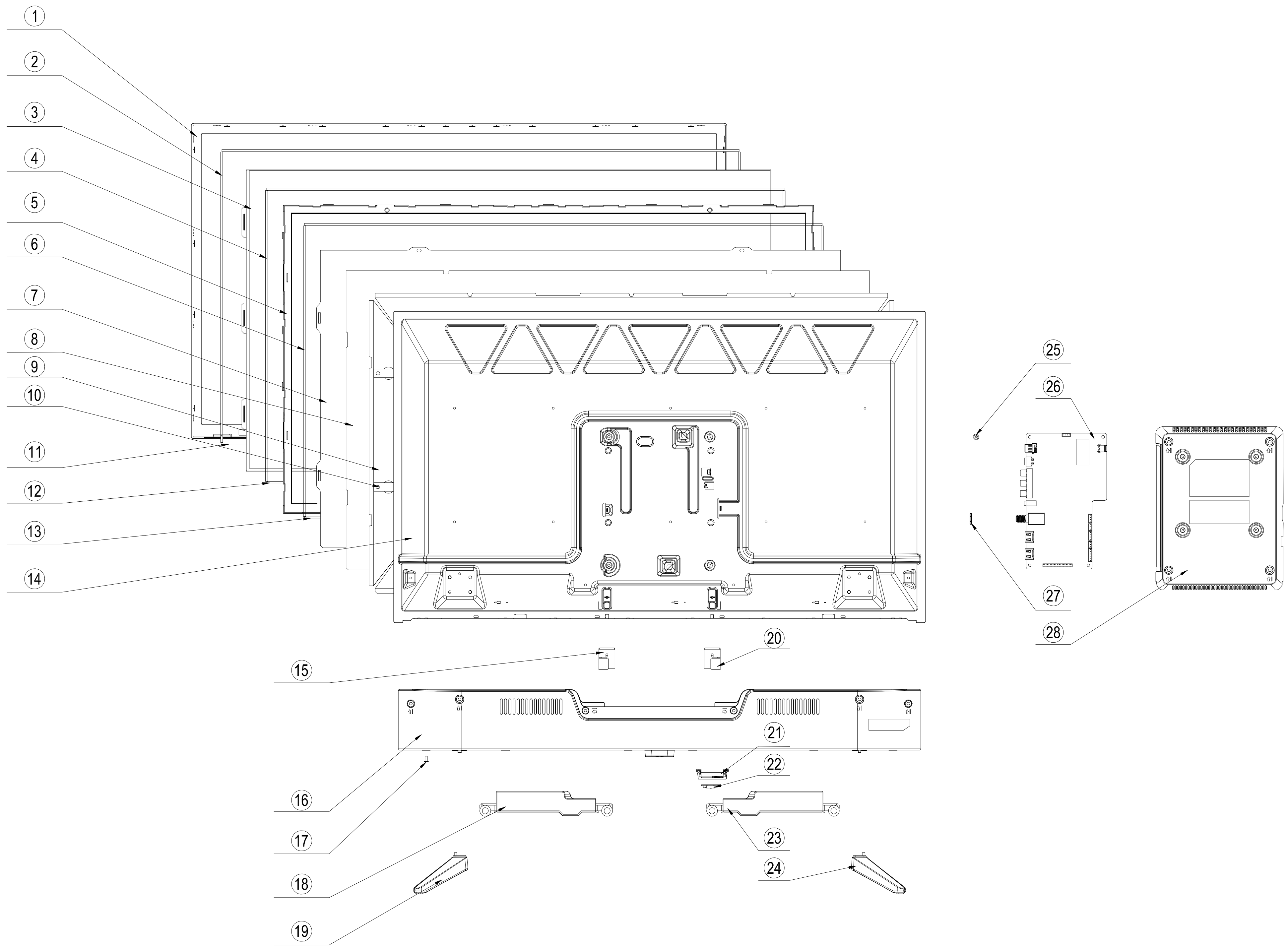
Main Board Power Tree



SYSTEM FUNCTION BLOCK DIAGRAM



REV.	ECN.	NO.	APPD.	DATE



No.	Code No.	Description Specification	Qty
28	7002-32L86F-XU000001	Back Cover-U	1
27	7B12-0902F6-00A04101	Nut	1
26	9011-34003C-P720100C	MB	1
25	7B11-030563-10105114	M3*5.5 Screw	10
24	7003-32L82F-XL000011	Basc-L	1
23	7711-A2788A-61007001	Speaker-L	1
22	9015-11206F-01011021	Key	1
21	7034-32L86F-X0000001	Key BRK	1
20	7907-610112-03002221	T-con Silicon-R	1
19	7003-32L82F-XR000011	Base-R	1
18	7711-A2788A-61007011	Speaker-R	1
17	7B11-0308A6-00105111	M3*8 Screw	6
16	7002-32L86F-XD000001	Back Cover-D	1
15	7907-610112-03002211	T-con silicon-L	1
14	71Z2-32L86F-X0000001	Back Plate	1
13	7912-422705-0031R214	Guide Panel Back Foam U/D	2
12	7912-J11705-0030R901	Guide Panel Front Foam U/D	2
11	7912-322705-2R50R511	Front Cabinet Foam U/D	2
10	7836-568011-02800001	L/B	2
9	7821-K32WD8-00150011	Reflector	1
8	7881-K32WD8-01000011	Diffusion Plate	1
7	7823-K320WD-0210Z033	Diffusion Film	1
6	7912-422396-0031R214	Panel Guide Back Foam L/R	1
5	70Z1-K32WD8-X0000031	Panel Guide	2
4	7912-J11396-0030R901	Panel Guide Front FoamL/R	2
3	7432-320CS6-3330M00C	Panel	1
2	7912-322396-0030R524	Front Cabinet Form L/R	2
1	7001-32L86F-X0000021	FC	1

X.± .200	X.°± 0.050	32L86F（配BCAS-32AC V形塑胶底座） 爆炸图 32L82F(BCAS-32AC) Explosive View		KTC® 深圳市康冠技术有限公司 SHENZHEN KTC TECHNOLOGY CO.,Ltd	
.X± .100	.X°± 0.010				
.XX± .01	.XX°± 0.005	料号		材质	
.XXX± .005	.XXX°± 0.002				
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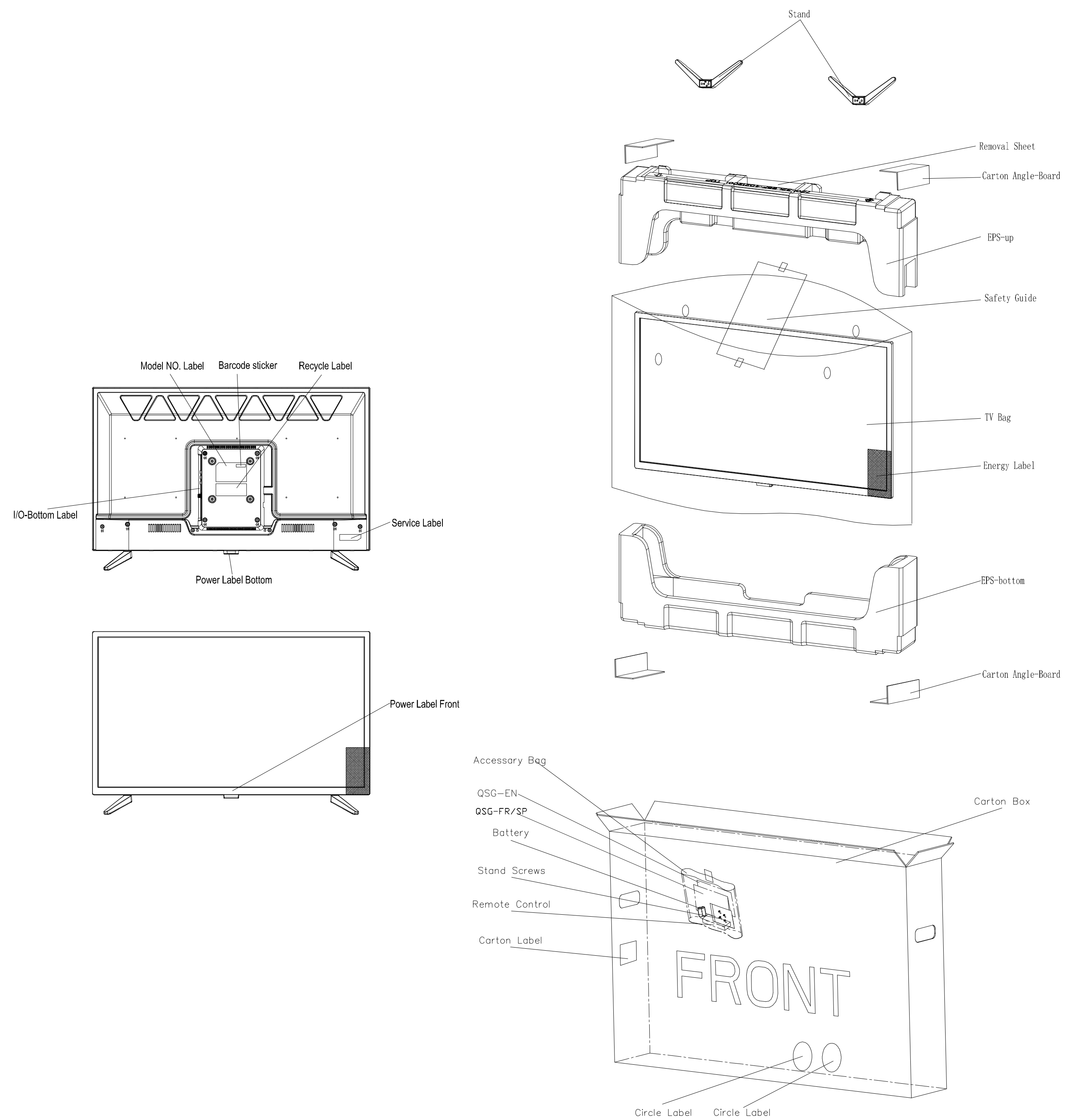
		审核		Q'TY / UNIT / SCALE / SHEET / REV.	
		绘图	司晓飞	MM / 1:1 / 1/1 / A	



REV.	ECN. NO.	APPD.	DATE

.X± .200	.X°± 0.050	32L86F（配BCAS-32AC V形塑胶底座）爆炸图3 32L82F(BCAS-32AC) Explosive View		KTC® 深圳市康冠技术有限公司 SHENZHEN KTC TECHNOLOGY CO.,Ltd				
.X± .100	.X°± 0.010							
.XX± .01	.XX°± 0.005	料号		材质				
.XXX± .005	.XXX°± 0.002	批准		日期	2019-03-16			
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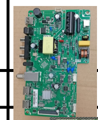
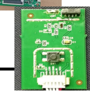
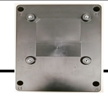
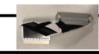
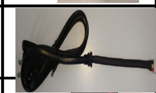
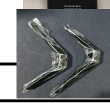
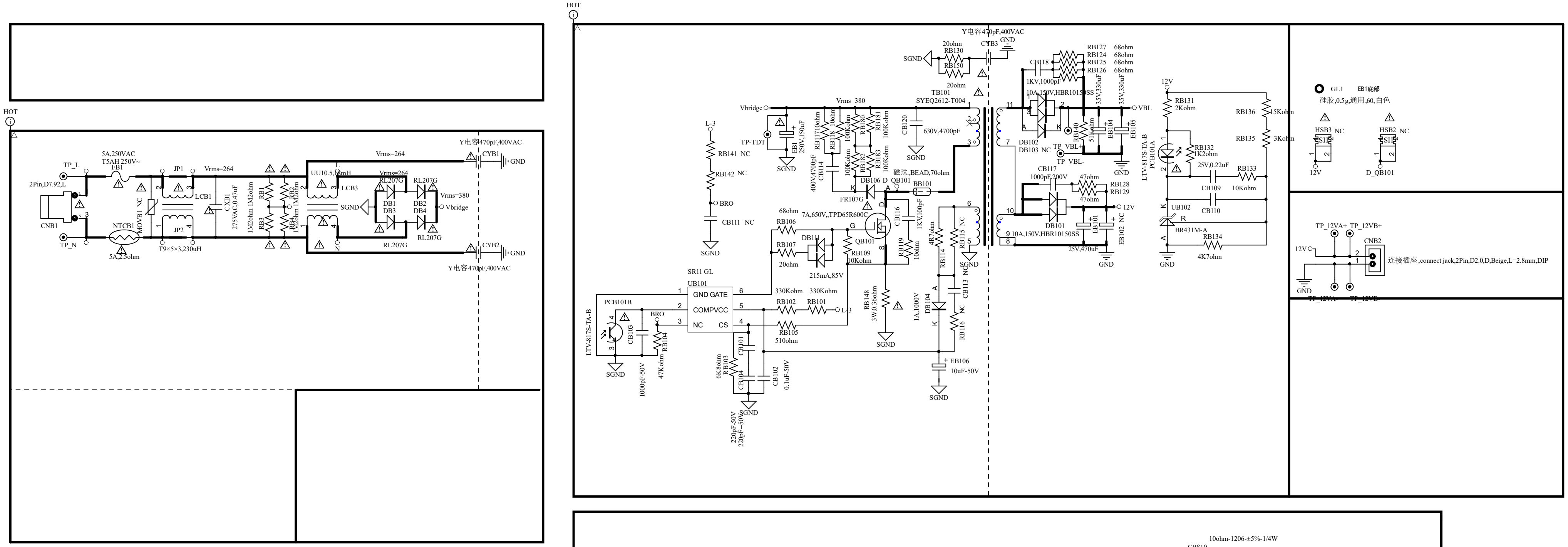
		绘图	司晓飞		MM	1:1	1/1	A

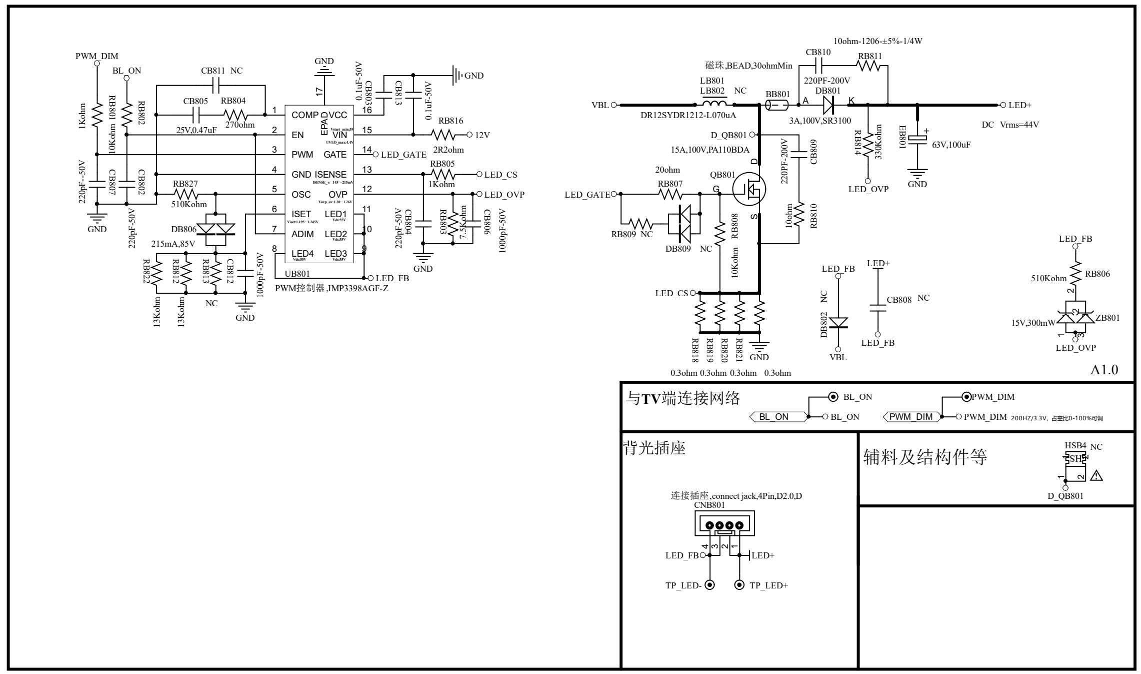
revised 15/03/2016

Best Buy Model Number	Manufacturer Model Number	Serial Number Range	Revision	FPRL Creation Date	Type	Part Description	PART NUMBER	Price (FOB)	MOQ	Core Flag	Core Value	picture	Dimensions	Gross Weight
					Panel	Panel (Mfg Panel PN):								
					Board	T-Con (if available as a separate part)								
					Board	Power Board								
32L310U20	32L86F-FATSC	00001-23940	Rev. A	03/15/2019	Board	Main Board	9011-24003C-P7201011	$14. 8	1				185*110*12mm	158
					Board	IR Board	9015-11206F-01011021	$0. 67	1				37. 5*23. 5*1. 2mm	3
					Board	Key/Button Board								
					Board	WIFI Board								
					WIFI MODULE EXT ANTENNA RFMTA	WIFI MODULE EXT ANTENNA RFMTA401029IM								
					Cabinet Assy	Rear Cabinet/Cover_Up	7002-32L86F-XU000001	$2. 00	1				173. 7*222. 5*42mm	154
						Rear Cabinet/Cover_Down	7002-32L86F-XD000001	$2. 30	1				711. 9*92. 2*67. 3mm	370
					Cabinet Assy	Front Cabinet/Cover	7001-32L86F-X0000021	$2. 8	1				30. 3*430. *16. 6mm	130
					Other	Remote Control Holder								
					Other	Speaker Kit/Set (includes right speaker plus wires)								
					Internal Cable	LVDS Cable	6149-01150B-306D1201	$0. 59	1				80*50*10mm	3. 2
					Accessory	Power Cord Separate (LCD Models)								
					Accessory	Power Cord	6110-151524-01421621	$1. 10	1				320*30*25mm	90. 8
					Accessory	Remote Control	7601-361US2-0044TSA1	$1. 5	100				175*50*24mm	78
					Accessory	Stand Kit (stands and all screws connecting stands to TV)	9002-BCAS32-E4B00041	$3. 7	1				201. 8*72. 8*56mm	100
					DVD	DVD Mechanism/Assembly								
					DVD	DVD Key/Button Board								
					DVD	DVD Board								

Stand Kit Screw Size Information		
Screw Category	**Screw Type and Size** *(example: M4 - 8)*	**Quantity/Pieces**
Base to TV	M4 20mm	4

POWER

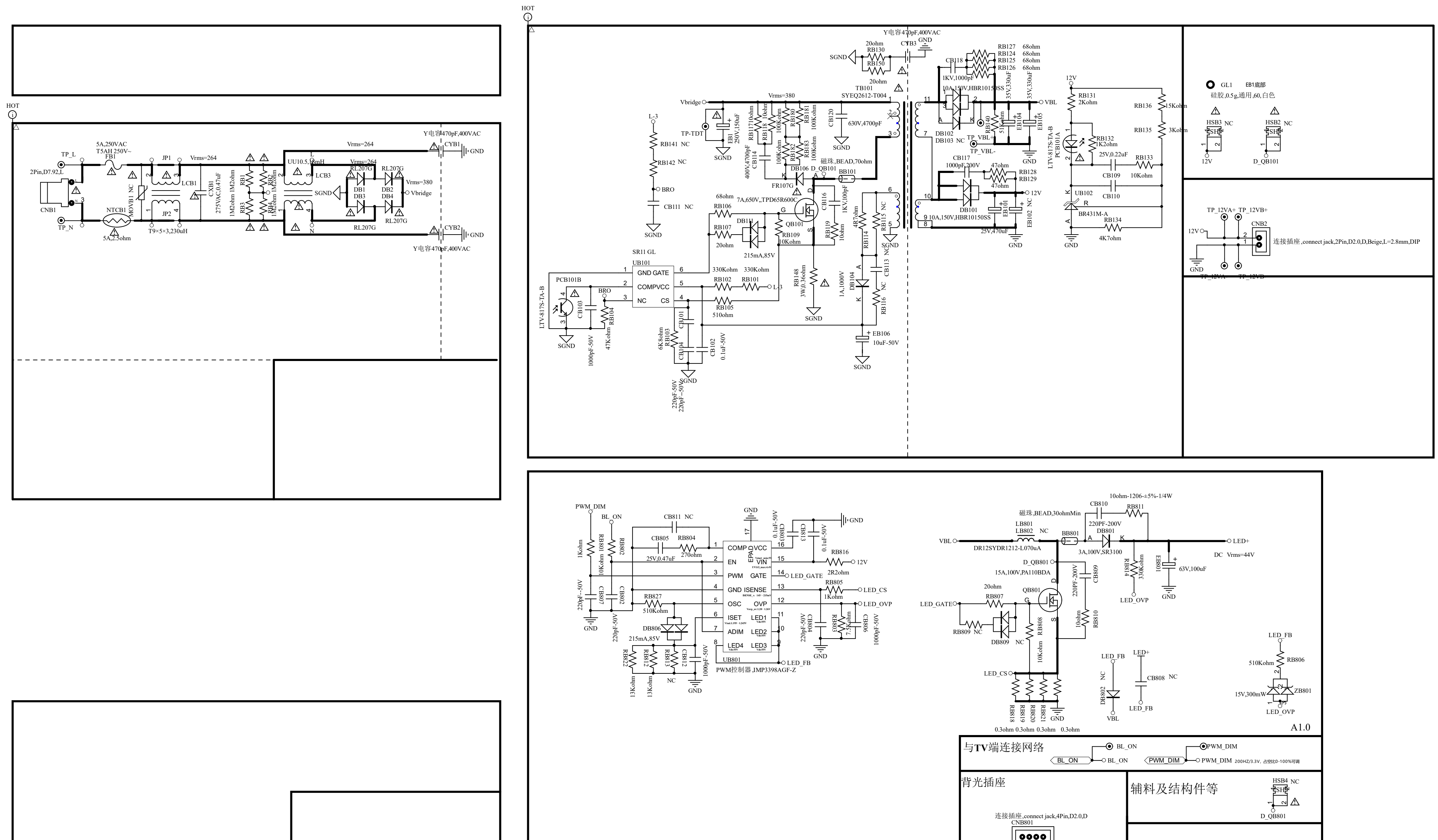




原理图中未体现的辅料及特殊生产工艺

工艺	位号
卧倒	EB1
架高	DB801,DB103
XXX	XXX
XXX	XXX

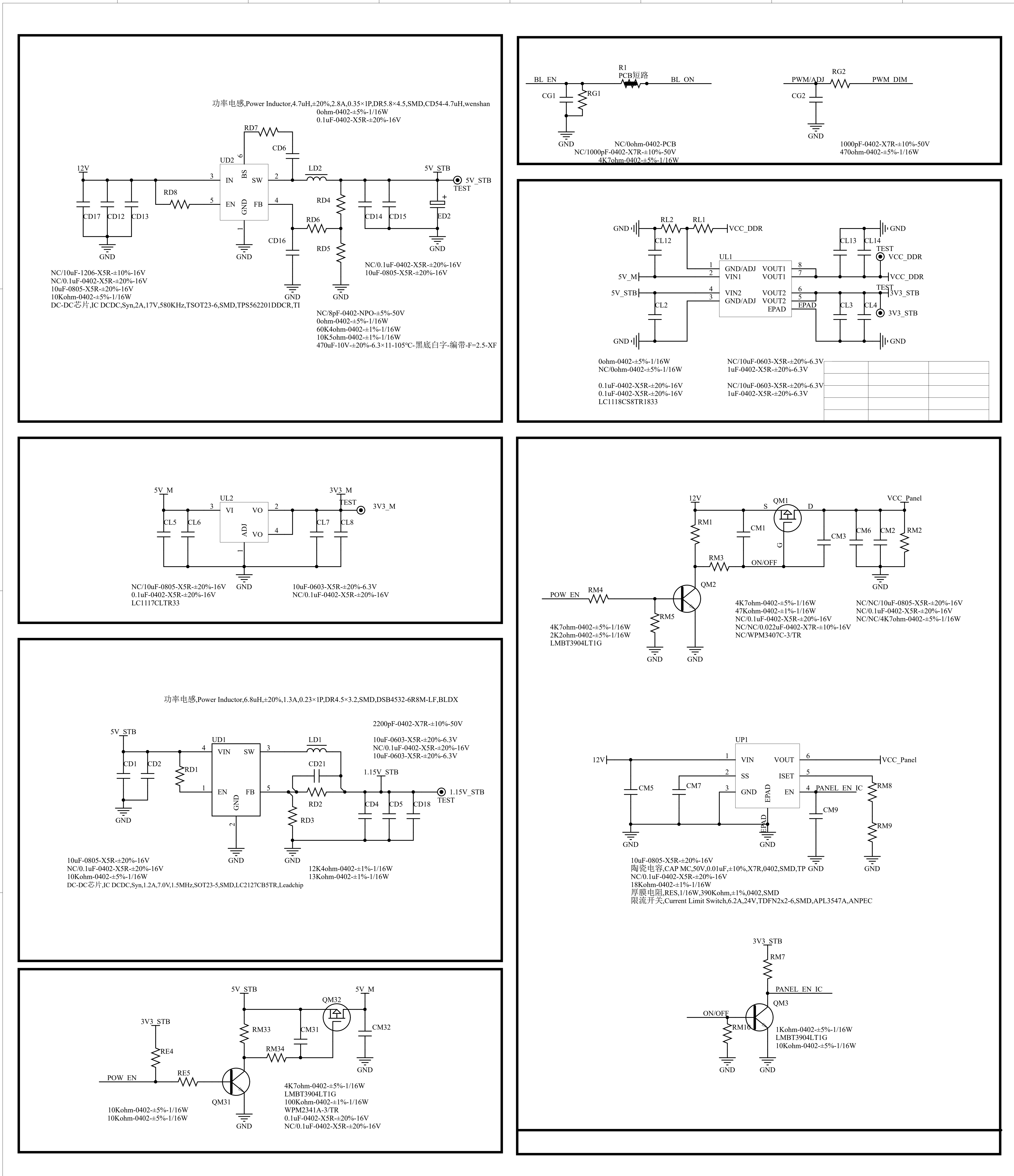
Model Name:	TP.MS3553.PB962A			VERSION:	V1.0
DRAWN:	邓荣杰	DATE:	2018-11-27	CVTE	
CHK'D:	杨兴建	DATE:	2018-11-27	Dream-Future	



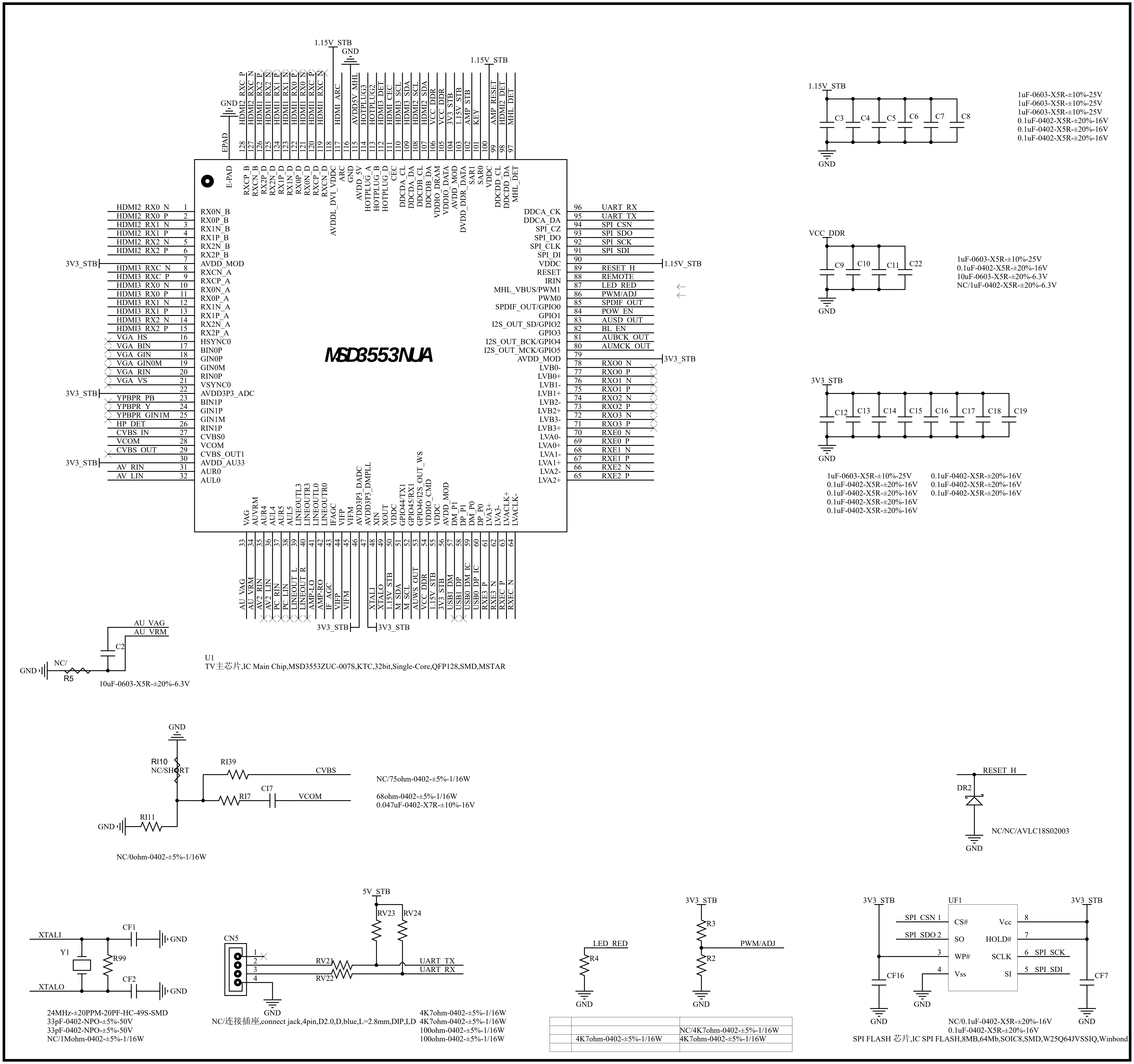
原理图中未体现的辅料及特殊生产工艺

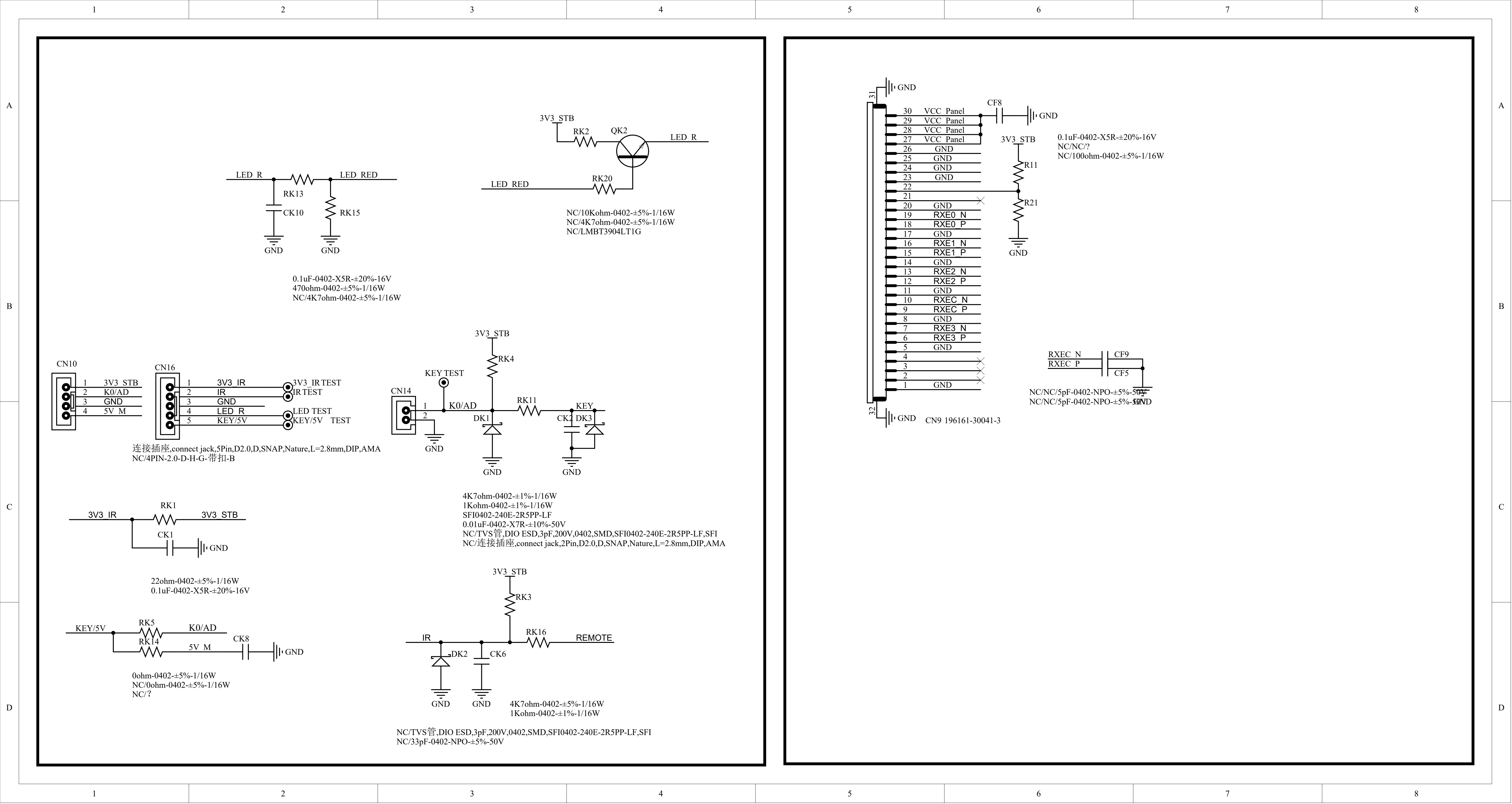
工艺	位号
卧倒	EB1
架高	DB801,DB103
XXX	XXX
XXX	XXX

Model Name:	TP.MS3553.PB962A			VERSION:	V1.0
DRAWN:	邓荣杰	DATE:	2018-11-27	CVTE	
CHK'D:	杨兴建	DATE:	2018-11-27		

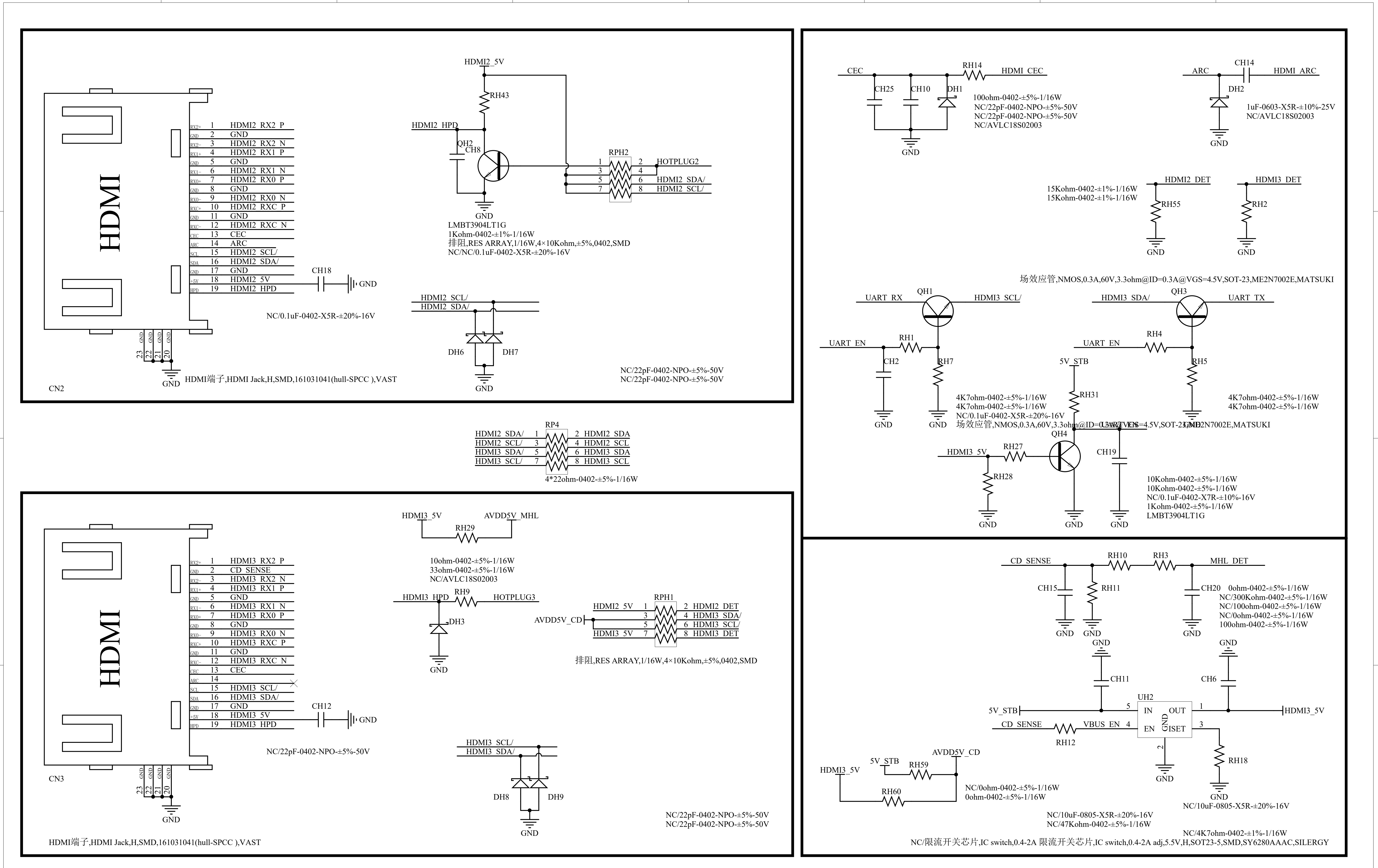


功率电感,Power Inductor,4.7uH,±20%,2.8A,0.35×1P,DR5.8×4.5,SMD,CD54-4.7uH,wenshan
0ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
RD7
CD6
UD2
12V
IN
BS
SW
LD2
5V_STB
5V_STB
TEST
RD8
EN
FB
GND
RD4
CD17
CD12
CD13
CD14
CD15
ED2
RD6
CD16
RD5
GND
NC/10uF-1206-X5R-±10%-16V
NC/0.1uF-0402-X5R-±20%-16V
10uF-0805-X5R-±20%-16V
10Kohm-0402-±5%-1/16W
DC-DC芯片,IC DCDC,Syn,2A,17V,580KHz,TSOT23-6,SMD,TPS562201DDCR,TI
NC/0.1uF-0402-X5R-±20%-16V
10uF-0805-X5R-±20%-16V
NC/8pF-0402-NPO-±5%-50V
0ohm-0402-±5%-1/16W
60K4ohm-0402-±1%-1/16W
10K5ohm-0402-±1%-1/16W
470uF-10V-±20%-6.3×11-105℃-黑底白字-编带-F=2.5-XF
BL_EN
R1
PCB短路
BL_ON
CG1
RG1
NC/0ohm-0402-PCB
NC/1000pF-0402-X7R-±10%-50V
4K7ohm-0402-±5%-1/16W
PWM/ADJ
RG2
PWM_DIM
CG2
1000pF-0402-X7R-±10%-50V
470ohm-0402-±5%-1/16W
RL2
RL1
VCC_DDR
CL12
CL13
CL14
TEST
VCC_DDR
UL1
GND/ADJ
VOUT1
5V_M
VIN1
VOUT1
VCC_DDR
5V_STB
VIN2
VOUT2
3V3_STB
GND/ADJ
VOUT2
EPAD
CL2
CL3
CL4
3V3_STB
0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
LC1118CS8TR1833
NC/10uF-0603-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
NC/10uF-0603-X5R-±20%-6.3V
1uF-0402-X5R-±20%-6.3V
5V_M
UL2
VI
VO
3V3_M
3V3_M
ADJ
CL5
CL6
CL7
CL8
NC/10uF-0805-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
LC1117CLTR33
10uF-0603-X5R-±20%-6.3V
NC/0.1uF-0402-X5R-±20%-16V
12V
QM1
VCC_Panel
RM1
CM1
CM3
CM6
CM2
RM2
RM3
ON/OFF
POW_EN
RM4
QM2
RM5
4K7ohm-0402-±5%-1/16W
2K2ohm-0402-±5%-1/16W
LMBT3904LT1G
4K7ohm-0402-±5%-1/16W
47Kohm-0402-±1%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/NC/0.022uF-0402-X7R-±10%-16V
NC/WPM3407C-3/TR
NC/NC/10uF-0805-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V
NC/NC/4K7ohm-0402-±5%-1/16W
功率电感,Power Inductor,6.8uH,±20%,1.3A,0.23×1P,DR4.5×3.2,SMD,DSB4532-6R8M-LF,BLDX
2200pF-0402-X7R-±10%-50V
10uF-0603-X5R-±20%-6.3V
NC/0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
5V_STB
UD1
VIN
SW
LD1
CD21
1.15V_STB
1.15V_STB
TEST
CD1
CD2
RD1
EN
FB
RD2
RD3
CD4
CD5
CD18
10uF-0805-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V
10Kohm-0402-±5%-1/16W
DC-DC芯片,IC DCDC,Syn,1.2A,7.0V,1.5MHz,SOT23-5,SMD,LC2127CB5TR,Leadchip
12K4ohm-0402-±1%-1/16W
13Kohm-0402-±1%-1/16W
UP1
VIN
VOUT
VCC_Panel
SS
ISET
CM5
CM7
GND
EN
PANEL_EN_IC
RM8
CM9
RM9
EPAD
10uF-0805-X5R-±20%-16V
陶瓷电容,CAP MC,50V,0.01uF,±10%,X7R,0402,SMD,TP
NC/0.1uF-0402-X5R-±20%-16V
18Kohm-0402-±1%-1/16W
厚膜电阻,RES,1/16W,390Kohm,±1%,0402,SMD
限流开关,Current Limit Switch,6.2A,24V,TDFN2x2-6,SMD,APL3547A,ANPEC
5V_STB
QM32
5V_M
3V3_STB
RM33
CM31
CM32
RE4
RM34
POW_EN
RE5
QM31
4K7ohm-0402-±5%-1/16W
LMBT3904LT1G
100Kohm-0402-±1%-1/16W
WPM2341A-3/TR
0.1uF-0402-X5R-±20%-16V
NC/0.1uF-0402-X5R-±20%-16V
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
3V3_STB
RM7
PANEL_EN_IC
QM3
ON/OFF
RM10
1Kohm-0402-±5%-1/16W
LMBT3904LT1G
10Kohm-0402-±5%-1/16W
GND

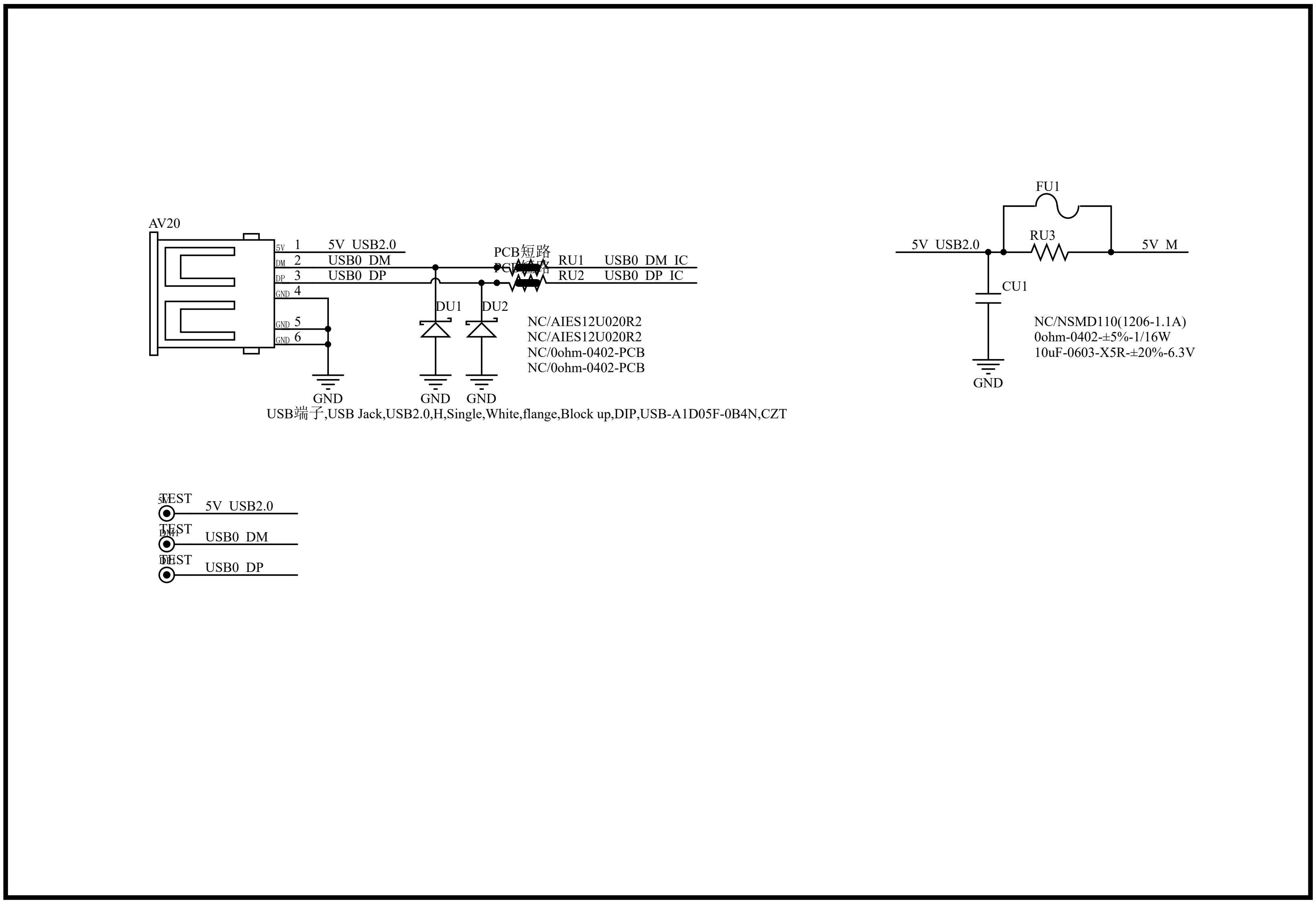

MSD3553NUA
U1
TV主芯片,IC Main Chip,MSD3553ZUC-007S,KTC,32bit,Single-Core,QFP128,SMD,MSTAR
1.15V_STB
GND
3V3_STB
VCC_DDR
5V_STB
EPAD
E-PAD
HDMI2_RXC_P
HDMI2_RXC_N
HDMI1_RX2_P
HDMI1_RX2_N
HDMI1_RX1_P
HDMI1_RX1_N
HDMI1_RX0_P
HDMI1_RX0_N
HDMI1_RXC_P
HDMI1_RXC_N
HDMI_ARC
AVDD5V_MHL
HOTPLUG3
HOTPLUG2
HDMI3_DET
HDMI_CEC
HDMI3_SCL
HDMI3_SDA
HDMI2_SCL
HDMI2_SDA
VCC_DDR
3V3_STB
1.15V_STB
AMP_STB
KEY
AMP_RESET
HDMI2_DET
MHL_DET
RXCP_B
RXCN_B
RX2P_D
RX2N_D
RX1P_D
RX1N_D
RX0P_D
RX0N_D
RXCP_D
RXCN_D
AVDDL_DVI_VDDC
ARC
AVDD_5V
HOTPLUG_A
HOTPLUG_B
HOTPLUG_D
CEC
DDCDA_CL
DDCDA_DA
DDCDB_CL
DDCDB_DA
VDDIO_DRAM
VDDIO_DATA
AVDD_MOD
DVDD_DDR_DATA
SAR1
SAR0
VDDC
DDCDD_CL
DDCDD_DA
MHL_DET
HDMI2_RX0_N
HDMI2_RX0_P
HDMI2_RX1_N
HDMI2_RX1_P
HDMI2_RX2_N
HDMI2_RX2_P
HDMI3_RXC_N
HDMI3_RXC_P
HDMI3_RX0_N
HDMI3_RX0_P
HDMI3_RX1_N
HDMI3_RX1_P
HDMI3_RX2_N
HDMI3_RX2_P
VGA_HS
VGA_BIN
VGA_GIN
VGA_GIN0M
VGA_RIN
VGA_VS
YPBPR_PB
YPBPR_Y
YPBPR_GIN1M
HP_DET
CVBS_IN
VCOM
CVBS_OUT
AV_RIN
AV_LIN
RX0N_B
RX0P_B
RX1N_B
RX1P_B
RX2N_B
RX2P_B
AVDD_MOD
RXCN_A
RXCP_A
RX0N_A
RX0P_A
RX1N_A
RX1P_A
RX2N_A
RX2P_A
HSYNC0
BIN0P
GIN0P
GIN0M
RIN0P
VSYNC0
AVDD3P3_ADC
BIN1P
GIN1P
GIN1M
RIN1P
CVBS0
VCOM
CVBS_OUT1
AVDD_AU33
AUR0
AUL0
DDCA_CK
DDCA_DA
SPI_CZ
SPI_DO
SPI_CLK
SPI_DI
VDDC
RESET
IRIN
MHL_VBUS/PWM1
PWM0
SPDIF_OUT/GPIO0
GPIO1
I2S_OUT_SD/GPIO2
GPIO3
I2S_OUT_BCK/GPIO4
I2S_OUT_MCK/GPIO5
AVDD_MOD
LVB0-
LVB0+
LVB1-
LVB1+
LVB2-
LVB2+
LVB3-
LVB3+
LVA0-
LVA0+
LVA1-
LVA1+
LVA2-
LVA2+
UART_RX
UART_TX
SPI_CSN
SPI_SDO
SPI_SCK
SPI_SDI
RESET_H
REMOTE
LED_RED
PWM/ADJ
SPDIF_OUT
POW_EN
AUSD_OUT
BL_EN
AUBCK_OUT
AUMCK_OUT
RXO0_N
RXO0_P
RXO1_N
RXO1_P
RXO2_N
RXO2_P
RXO3_N
RXO3_P
RXE0_N
RXE0_P
RXE1_N
RXE1_P
RXE2_N
RXE2_P
VAG
AUVRM
AUR4
AUL4
AUR5
AUL5
LINEOUTL3
LINEOUTR3
LINEOUTL0
LINEOUTR0
IFAGC
VIFP
VIFM
AVDD3P3_DADC
AVDD3P3_DMPLL
XIN
XOUT
VDDC
GPIO44/TX1
GPIO45/RX1
GPIO46/I2S_OUT_WS
VDDIO_CMD
VDDC
AVDD_MOD
DM_P1
DP_P1
DM_P0
DP_P0
LVA3+
LVA3-
LVACLK+
LVACLK-
AU_VAG
AU_VRM
AV2_RIN
AV2_LIN
PC_RIN
PC_LIN
LINEOUT_L
LINEOUT_R
AMP-LO
AMP-RO
IF_AGC
VIFP
VIFM
XTALI
XTALO
1.15V_STB
M_SDA
M_SCL
AUWS_OUT
VCC_DDR
1.15V_STB
3V3_STB
USB1_DM
USB1_DP
USB0_DM_IC
USB0_DP_IC
RXE3_P
RXE3_N
RXEC_P
RXEC_N
C3 C4 C5 C6 C7 C8
1uF-0603-X5R-±10%-25V
1uF-0603-X5R-±10%-25V
1uF-0603-X5R-±10%-25V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
C9 C10 C11 C22
1uF-0603-X5R-±10%-25V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
NC/1uF-0402-X5R-±20%-6.3V
C12 C13 C14 C15 C16 C17 C18 C19
1uF-0603-X5R-±10%-25V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
C2
NC/
R5
10uF-0603-X5R-±20%-6.3V
RI10
NC/SHORT
RI39
CVBS
NC/75ohm-0402-±5%-1/16W
RI7
CI7
VCOM
68ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
RI11
NC/0ohm-0402-±5%-1/16W
RESET_H
DR2
NC/NC/AVLC18S02003
XTALI
XTALO
Y1
R99
CF1
CF2
24MHz-±20PPM-20PF-HC-49S-SMD
33pF-0402-NPO-±5%-50V
33pF-0402-NPO-±5%-50V
NC/1Mohm-0402-±5%-1/16W
CN5
RV23
RV24
RV21
RV22
UART_TX
UART_RX
NC/连接插座,connect jack,4pin,D2.0,D,blue,L=2.8mm,DIP,LD
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
LED_RED
R4
R3
R2
PWM/ADJ
NC/4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
UF1
SPI_CSN
SPI_SDO
CS#
SO
WP#
Vss
Vcc
HOLD#
SCLK
SI
SPI_SCK
SPI_SDI
CF16
CF7
NC/0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
SPI FLASH 芯片,IC SPI FLASH,8MB,64Mb,SOIC8,SMD,W25Q64JVSSIQ,Winbond



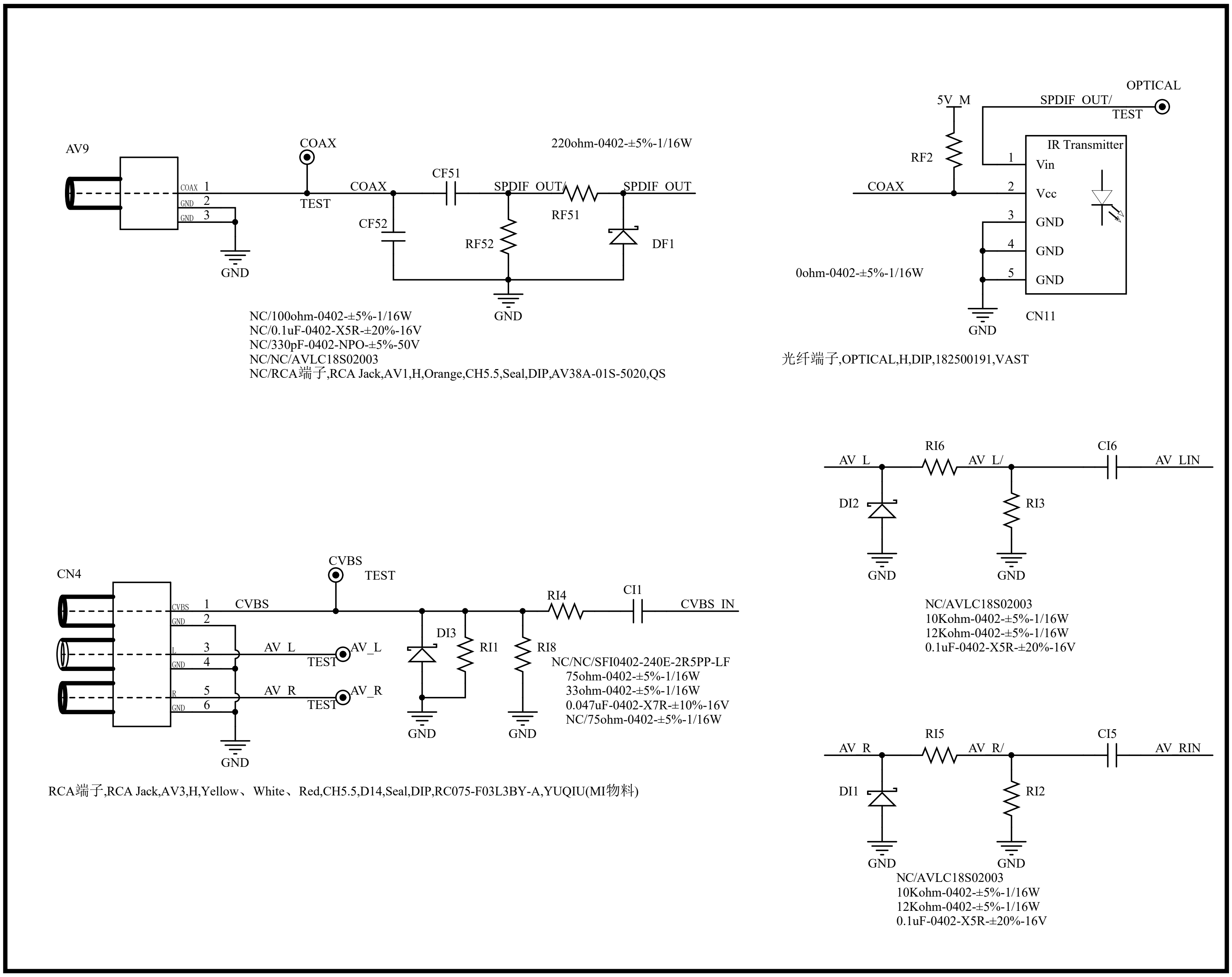
3V3_STB
RK2
QK2
LED_R
LED_RED
RK20
NC/10Kohm-0402-±5%-1/16W
NC/4K7ohm-0402-±5%-1/16W
NC/LMBT3904LT1G
LED_R
RK13
LED_RED
CK10
RK15
GND
GND
0.1uF-0402-X5R-±20%-16V
470ohm-0402-±5%-1/16W
NC/4K7ohm-0402-±5%-1/16W
CN10
1 3V3_STB
2 K0/AD
3 GND
4 5V_M
CN16
1 3V3_IR
2 IR
3 GND
4 LED_R
5 KEY/5V
3V3_IR TEST
IR TEST
LED TEST
KEY/5V TEST
连接插座,connect jack,5Pin,D2.0,D,SNAP,Nature,L=2.8mm,DIP,AMA
NC/4PIN-2.0-D-H-G-带扣-B
3V3_STB
RK4
KEY TEST
CN14
K0/AD
RK11
KEY
DK1
CK2
DK3
GND
GND
GND
4K7ohm-0402-±1%-1/16W
1Kohm-0402-±1%-1/16W
SFI0402-240E-2R5PP-LF
0.01uF-0402-X7R-±10%-50V
NC/TVS管,DIO ESD,3pF,200V,0402,SMD,SFI0402-240E-2R5PP-LF,SFI
NC/连接插座,connect jack,2Pin,D2.0,D,SNAP,Nature,L=2.8mm,DIP,AMA
3V3_IR
RK1
3V3_STB
CK1
GND
22ohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
KEY/5V
RK5
K0/AD
RK14
5V_M
CK8
GND
0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
NC/?
3V3_STB
RK3
IR
RK16
REMOTE
DK2
CK6
GND
GND
4K7ohm-0402-±5%-1/16W
1Kohm-0402-±1%-1/16W
NC/TVS管,DIO ESD,3pF,200V,0402,SMD,SFI0402-240E-2R5PP-LF,SFI
NC/33pF-0402-NPO-±5%-50V
GND
31
CF8
GND
30 VCC_Panel
29 VCC_Panel
28 VCC_Panel
27 VCC_Panel
26 GND
25 GND
24 GND
23 GND
22
21
20 GND
19 RXE0_N
18 RXE0_P
17 GND
16 RXE1_N
15 RXE1_P
14 GND
13 RXE2_N
12 RXE2_P
11 GND
10 RXEC_N
9 RXEC_P
8 GND
7 RXE3_N
6 RXE3_P
5 GND
4
3
2
1 GND
3V3_STB
R11
R21
GND
0.1uF-0402-X5R-±20%-16V
NC/NC/?
NC/100ohm-0402-±5%-1/16W
RXEC_N
RXEC_P
CF9
CF5
NC/NC/5pF-0402-NPO-±5%-50V
NC/NC/5pF-0402-NPO-±5%-50V
GND
32
GND
CN9 196161-30041-3



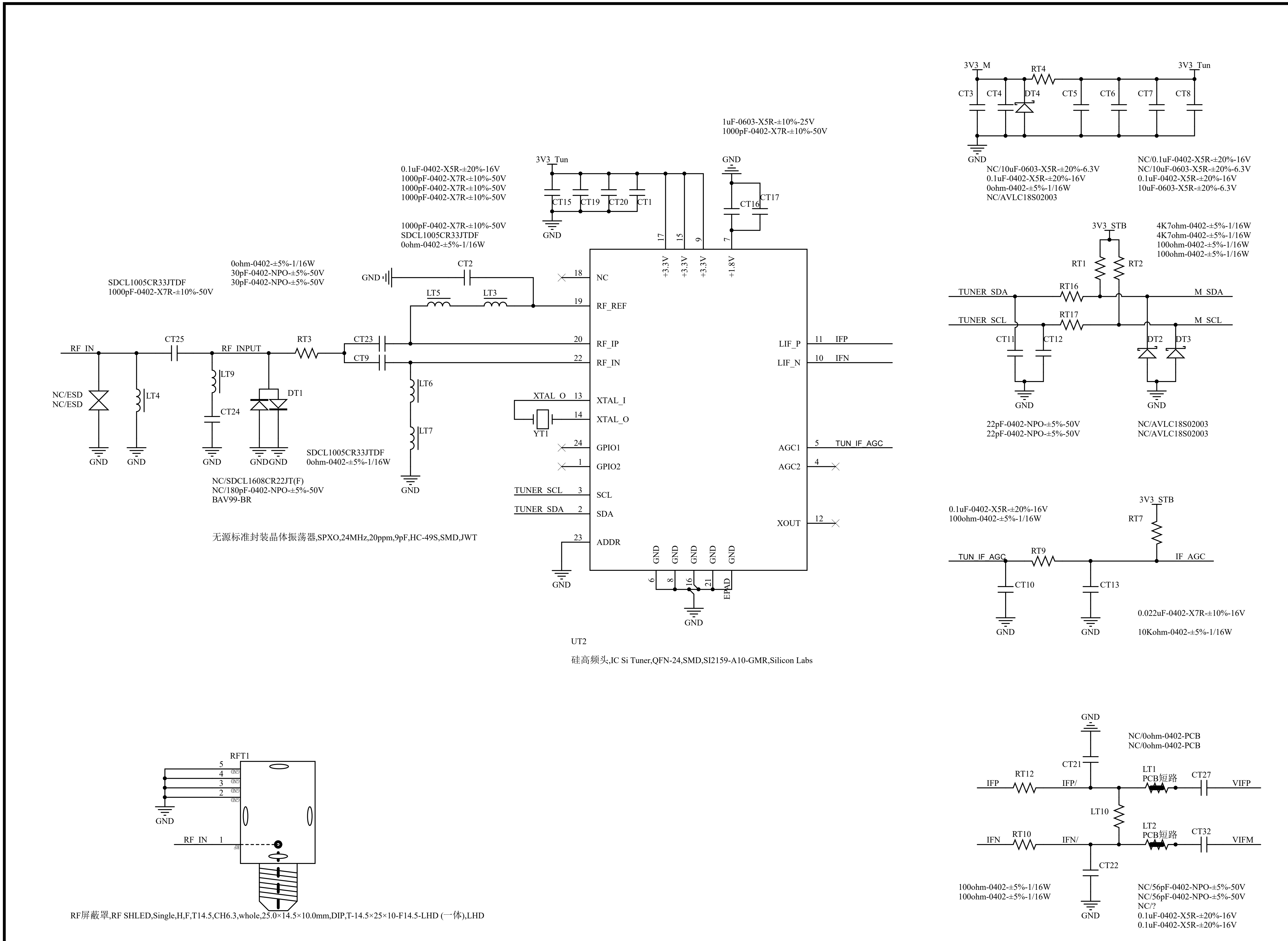
HDMI
CN2
HDMI2_RX2_P
HDMI2_RX2_N
HDMI2_RX1_P
HDMI2_RX1_N
HDMI2_RX0_P
HDMI2_RX0_N
HDMI2_RXC_P
HDMI2_RXC_N
CEC
ARC
HDMI2_SCL/
HDMI2_SDA/
HDMI2_5V
HDMI2_HPD
GND
CH18
NC/0.1uF-0402-X5R-±20%-16V
HDMI端子,HDMI Jack,H,SMD,161031041(hull-SPCC),VAST
HDMI2_5V
RH43
HDMI2_HPD
QH2
CH8
LMBT3904LT1G
1Kohm-0402-±1%-1/16W
排阻,RES ARRAY,1/16W,4×10Kohm,±5%,0402,SMD
NC/NC/0.1uF-0402-X5R-±20%-16V
RPH2
HOTPLUG2
HDMI2_SDA/
HDMI2_SCL/
DH6
DH7
NC/22pF-0402-NPO-±5%-50V
NC/22pF-0402-NPO-±5%-50V
RP4
HDMI2_SDA
HDMI2_SCL
HDMI3_SDA/
HDMI3_SCL/
HDMI3_SDA
HDMI3_SCL
4*22ohm-0402-±5%-1/16W
CN3
HDMI3_RX2_P
CD_SENSE
HDMI3_RX2_N
HDMI3_RX1_P
HDMI3_RX1_N
HDMI3_RX0_P
HDMI3_RX0_N
HDMI3_RXC_P
HDMI3_RXC_N
HDMI3_5V
HDMI3_HPD
CH12
NC/22pF-0402-NPO-±5%-50V
HDMI端子,HDMI Jack,H,SMD,161031041(hull-SPCC),VAST
HDMI3_5V
AVDD5V_MHL
RH29
10ohm-0402-±5%-1/16W
33ohm-0402-±5%-1/16W
NC/AVLC18S02003
RH9
HOTPLUG3
DH3
RPH1
HDMI2_DET
HDMI3_DET
AVDD5V_CD
排阻,RES ARRAY,1/16W,4×10Kohm,±5%,0402,SMD
DH8
DH9
NC/22pF-0402-NPO-±5%-50V
NC/22pF-0402-NPO-±5%-50V
CEC
RH14
HDMI_CEC
CH25
CH10
DH1
100ohm-0402-±5%-1/16W
NC/22pF-0402-NPO-±5%-50V
NC/22pF-0402-NPO-±5%-50V
NC/AVLC18S02003
ARC
CH14
HDMI_ARC
DH2
1uF-0603-X5R-±10%-25V
NC/AVLC18S02003
15Kohm-0402-±1%-1/16W
15Kohm-0402-±1%-1/16W
RH55
RH2
场效应管,NMOS,0.3A,60V,3.3ohm@ID=0.3A@VGS=4.5V,SOT-23,ME2N7002E,MATSUKI
UART_RX
QH1
HDMI3_SCL/
HDMI3_SDA/
QH3
UART_TX
UART_EN
RH1
CH2
RH7
RH4
RH5
5V_STB
RH31
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
场效应管,NMOS,0.3A,60V,3.3ohm@ID=0.3A@VGS=4.5V,SOT-23,ME2N7002E,MATSUKI
QH4
RH27
RH28
CH19
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
NC/0.1uF-0402-X7R-±10%-16V
1Kohm-0402-±5%-1/16W
LMBT3904LT1G
CD_SENSE
RH10
RH3
MHL_DET
CH15
RH11
CH20
0ohm-0402-±5%-1/16W
NC/300Kohm-0402-±5%-1/16W
NC/100ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
CH11
CH6
UH2
IN
OUT
EN
ISET
VBUS_EN
RH12
RH18
RH59
RH60
NC/0ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
NC/10uF-0805-X5R-±20%-16V
NC/47Kohm-0402-±5%-1/16W
NC/10uF-0805-X5R-±20%-16V
NC/4K7ohm-0402-±1%-1/16W
NC/限流开关芯片,IC switch,0.4-2A 限流开关芯片,IC switch,0.4-2A adj,5.5V,H,SOT23-5,SMD,SY6280AAAC,SILERGY



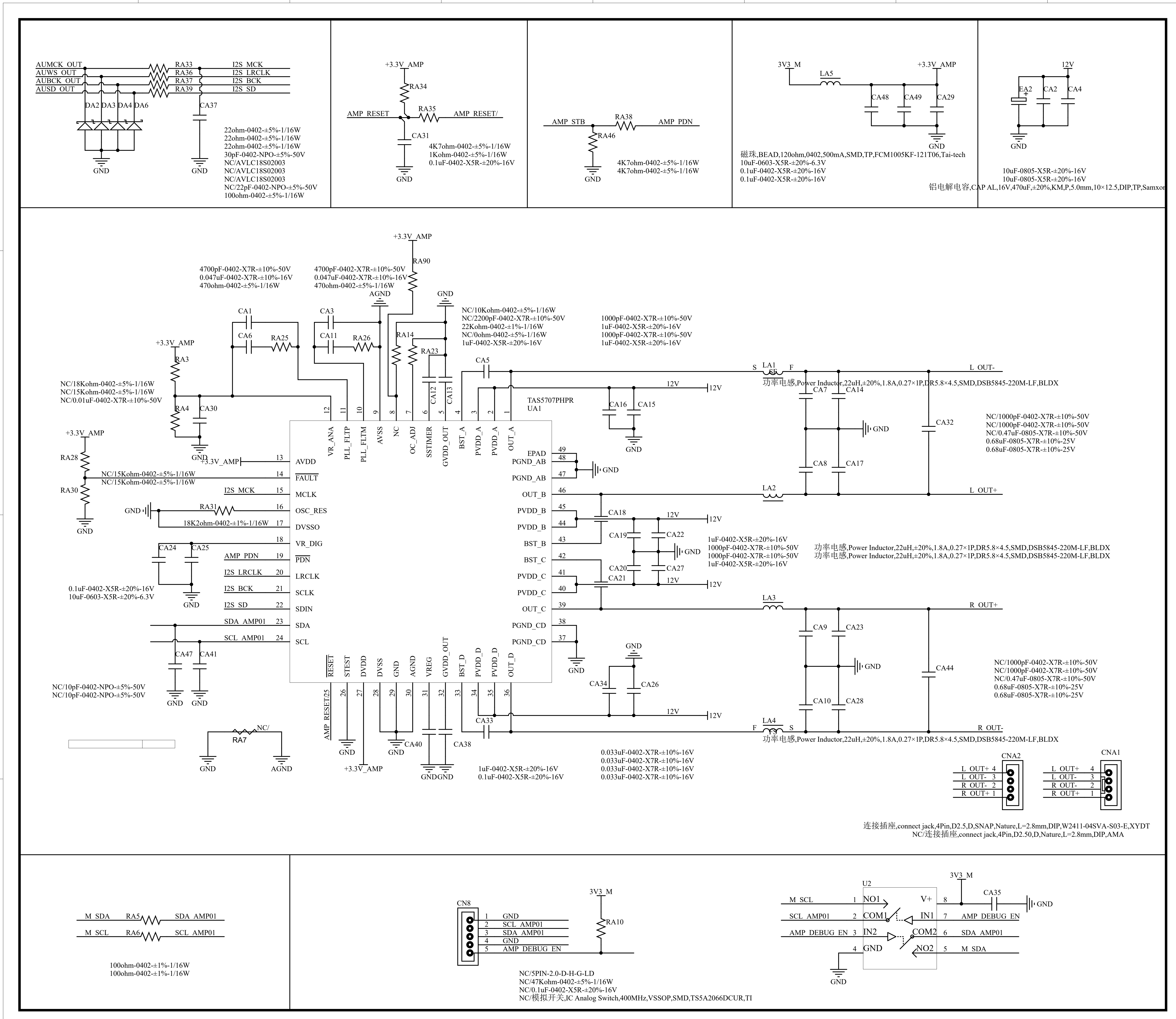
AV20
5V USB2.0
USB0 DM
USB0 DP
GND
PCB短路
RU1
RU2
USB0 DM IC
USB0 DP IC
DU1
DU2
NC/AIES12U020R2
NC/AIES12U020R2
NC/0ohm-0402-PCB
NC/0ohm-0402-PCB
USB端子,USB Jack,USB2.0,H,Single,White,flange,Block up,DIP,USB-A1D05F-0B4N,CZT
FU1
RU3
5V M
CU1
NC/NSMD110(1206-1.1A)
0ohm-0402-±5%-1/16W
10uF-0603-X5R-±20%-6.3V
TEST
5V USB2.0
TEST
USB0 DM
TEST
USB0 DP

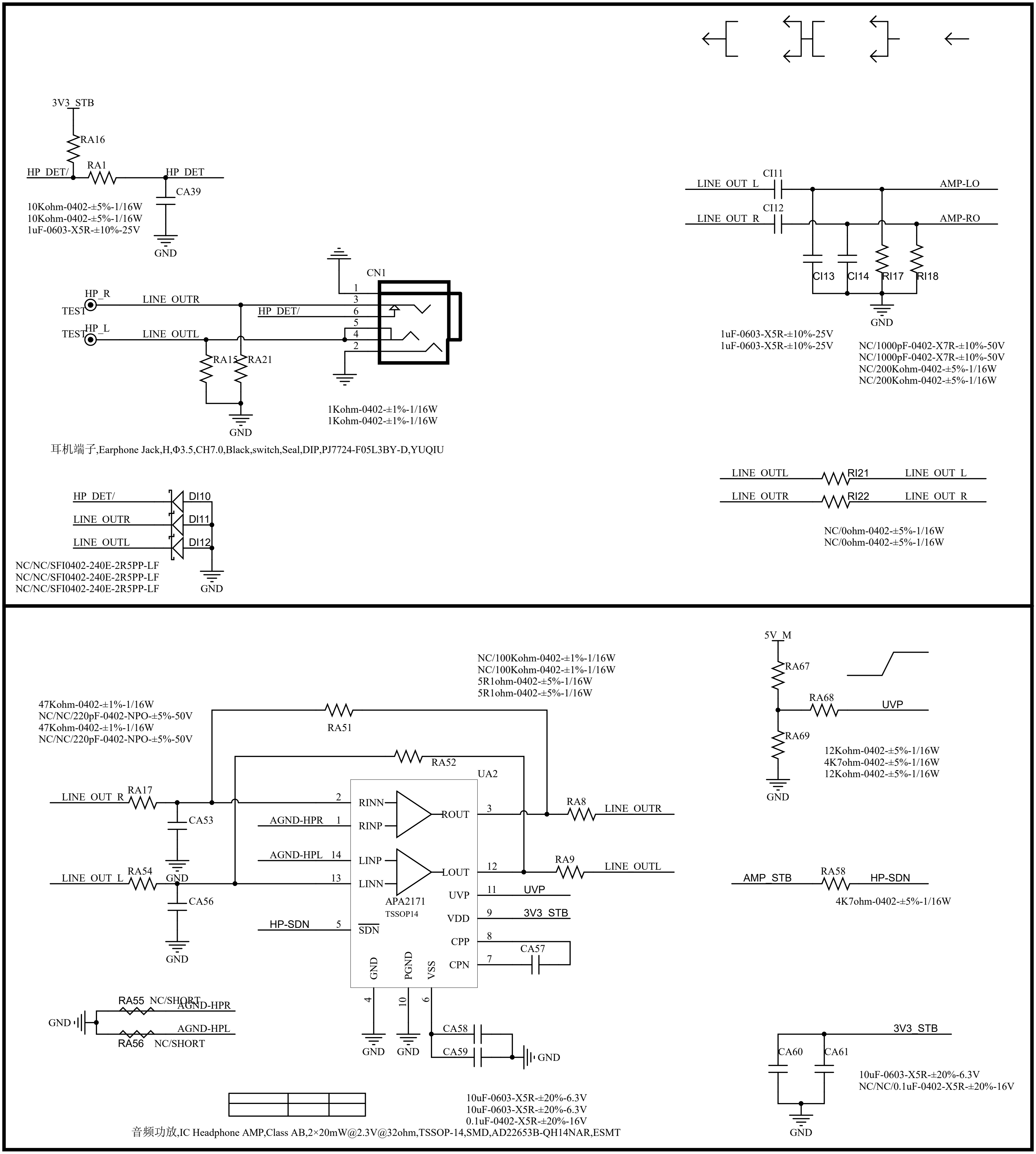


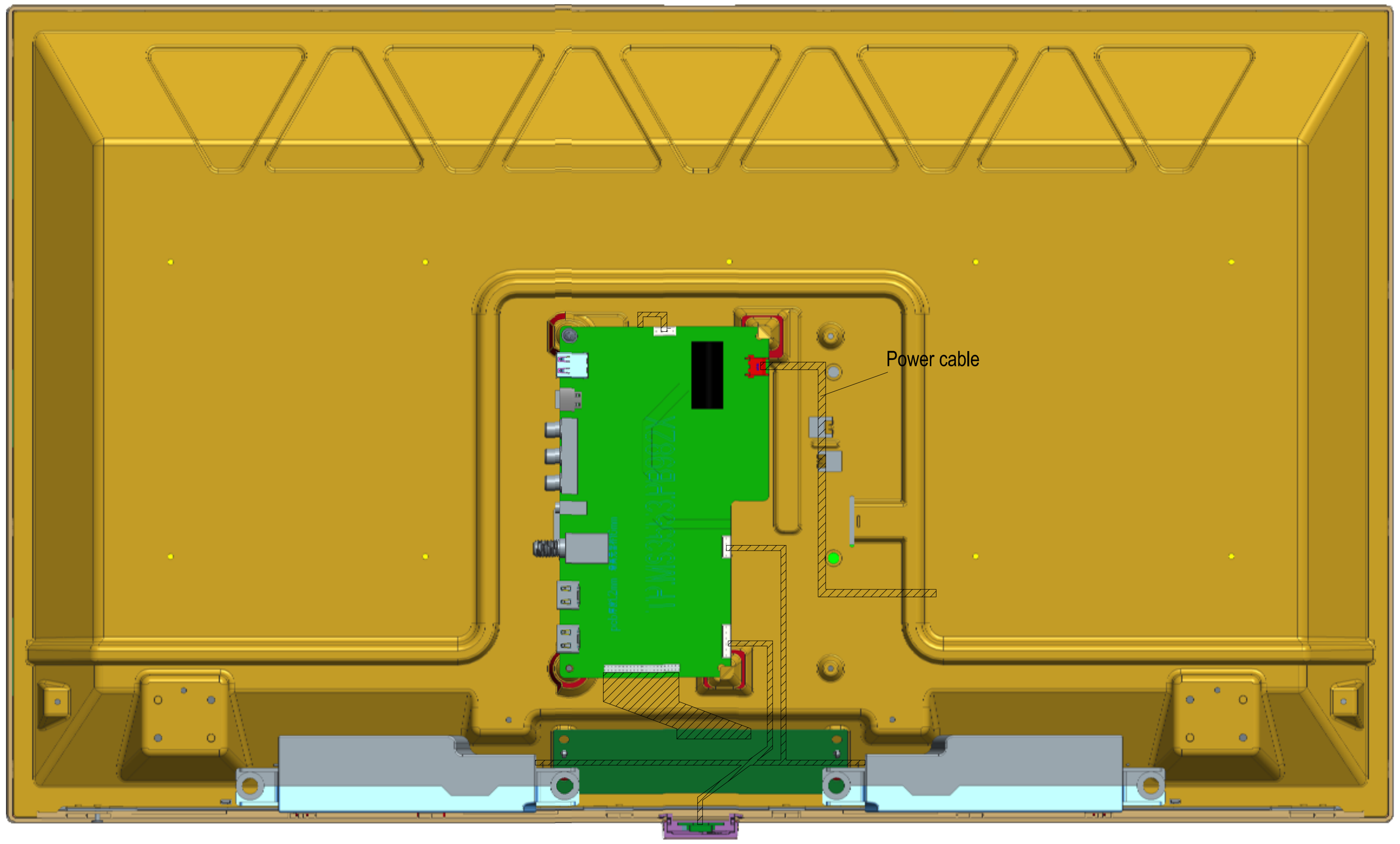
AV9
COAX
TEST
CF51
CF52
SPDIF OUT/
RF51
SPDIF OUT
RF52
DF1
220ohm-0402-±5%-1/16W
GND
NC/100ohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/330pF-0402-NPO-±5%-50V
NC/NC/AVLC18S02003
NC/RCA端子,RCA Jack,AV1,H,Orange,CH5.5,Seal,DIP,AV38A-01S-5020,QS
OPTICAL
5V M
SPDIF OUT/
TEST
RF2
IR Transmitter
Vin
Vcc
GND
GND
GND
CN11
0ohm-0402-±5%-1/16W
光纤端子,OPTICAL,H,DIP,182500191,VAST
AV L
RI6
AV L/
CI6
AV LIN
DI2
RI3
NC/AVLC18S02003
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
CN4
CVBS
TEST
RI4
CI1
CVBS IN
DI3
RI1
RI8
AV_L
AV_R
NC/NC/SFI0402-240E-2R5PP-LF
75ohm-0402-±5%-1/16W
33ohm-0402-±5%-1/16W
0.047uF-0402-X7R-±10%-16V
NC/75ohm-0402-±5%-1/16W
RCA端子,RCA Jack,AV3,H,Yellow、White、Red,CH5.5,D14,Seal,DIP,RC075-F03L3BY-A,YUQIU(MI物料)
AV R
RI5
AV R/
CI5
AV RIN
DI1
RI2
NC/AVLC18S02003
10Kohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V



3V3_M
RT4
3V3_Tun
CT3
CT4
DT4
CT5
CT6
CT7
CT8
GND
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
0ohm-0402-±5%-1/16W
NC/AVLC18S02003
NC/0.1uF-0402-X5R-±20%-16V
NC/10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
1uF-0603-X5R-±10%-25V
1000pF-0402-X7R-±10%-50V
0.1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
SDCL1005CR33JTDF
0ohm-0402-±5%-1/16W
0ohm-0402-±5%-1/16W
30pF-0402-NPO-±5%-50V
30pF-0402-NPO-±5%-50V
SDCL1005CR33JTDF
1000pF-0402-X7R-±10%-50V
CT15
CT19
CT20
CT1
CT16
CT17
+3.3V
+3.3V
+3.3V
+1.8V
NC
RF_REF
RF_IP
RF_IN
XTAL_I
XTAL_O
GPIO1
GPIO2
SCL
SDA
ADDR
LIF_P
LIF_N
AGC1
AGC2
XOUT
IFP
IFN
TUN_IF_AGC
CT2
LT5
LT3
CT23
CT9
RF_IN
CT25
RF_INPUT
RT3
NC/ESD
NC/ESD
LT4
LT9
CT24
DT1
LT6
LT7
XTAL_O
YT1
TUNER_SCL
TUNER_SDA
SDCL1005CR33JTDF
0ohm-0402-±5%-1/16W
NC/SDCL1608CR22JT(F)
NC/180pF-0402-NPO-±5%-50V
BAV99-BR
无源标准封装晶体振荡器,SPXO,24MHz,20ppm,9pF,HC-49S,SMD,JWT
EPAD
UT2
硅高频头,IC Si Tuner,QFN-24,SMD,SI2159-A10-GMR,Silicon Labs
3V3_STB
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
RT1
RT2
TUNER_SDA
RT16
M_SDA
TUNER_SCL
RT17
M_SCL
CT11
CT12
DT2
DT3
22pF-0402-NPO-±5%-50V
22pF-0402-NPO-±5%-50V
NC/AVLC18S02003
NC/AVLC18S02003
0.1uF-0402-X5R-±20%-16V
100ohm-0402-±5%-1/16W
RT7
TUN_IF_AGC
RT9
IF_AGC
CT10
CT13
0.022uF-0402-X7R-±10%-16V
10Kohm-0402-±5%-1/16W
RFT1
RF屏蔽罩,RF SHLED,Single,H,F,T14.5,CH6.3,whole,25.0×14.5×10.0mm,DIP,T-14.5×25×10-F14.5-LHD (一体),LHD
NC/0ohm-0402-PCB
NC/0ohm-0402-PCB
CT21
RT12
IFP/
LT1
PCB短路
CT27
VIFP
LT10
RT10
IFN/
LT2
PCB短路
CT32
VIFM
CT22
100ohm-0402-±5%-1/16W
100ohm-0402-±5%-1/16W
NC/56pF-0402-NPO-±5%-50V
NC/56pF-0402-NPO-±5%-50V
NC/?
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V


AUMCK_OUT
AUWS_OUT
AUBCK_OUT
AUSD_OUT
RA33 RA36 RA37 RA39
I2S_MCK
I2S_LRCLK
I2S_BCK
I2S_SD
DA2 DA3 DA4 DA6
CA37
GND
22ohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
22ohm-0402-±5%-1/16W
30pF-0402-NPO-±5%-50V
NC/AVLC18S02003
NC/AVLC18S02003
NC/AVLC18S02003
NC/22pF-0402-NPO-±5%-50V
100ohm-0402-±5%-1/16W
+3.3V_AMP
RA34
AMP_RESET
RA35
AMP_RESET/
CA31
4K7ohm-0402-±5%-1/16W
1Kohm-0402-±5%-1/16W
0.1uF-0402-X5R-±20%-16V
AMP_STB
RA38
AMP_PDN
RA46
4K7ohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
3V3_M
LA5
CA48 CA49 CA29
磁珠,BEAD,120ohm,0402,500mA,SMD,TP,FCM1005KF-121T06,Tai-tech
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
12V
EA2 CA2 CA4
10uF-0805-X5R-±20%-16V
10uF-0805-X5R-±20%-16V
铝电解电容,CAP AL,16V,470uF,±20%,KM,P,5.0mm,10×12.5,DIP,TP,Samxon
RA90
4700pF-0402-X7R-±10%-50V
0.047uF-0402-X7R-±10%-16V
470ohm-0402-±5%-1/16W
4700pF-0402-X7R-±10%-50V
0.047uF-0402-X7R-±10%-16V
470ohm-0402-±5%-1/16W
AGND
CA1 CA6 RA25 CA3 CA11 RA26 RA14 RA23 CA12 CA13 CA5
NC/10Kohm-0402-±5%-1/16W
NC/2200pF-0402-X7R-±10%-50V
22Kohm-0402-±1%-1/16W
NC/0ohm-0402-±5%-1/16W
1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
1uF-0402-X5R-±20%-16V
RA3 RA4 CA30
NC/18Kohm-0402-±5%-1/16W
NC/15Kohm-0402-±5%-1/16W
NC/0.01uF-0402-X7R-±10%-50V
TAS5707PHPR
UA1
VR_ANA PLL_FLTP PLL_FLTM AVSS NC OC_ADJ SSTIMER GVDD_OUT BST_A PVDD_A PVDD_A OUT_A
AVDD FAULT MCLK OSC_RES DVSSO VR_DIG PDN LRCLK SCLK SDIN SDA SCL
EPAD PGND_AB PGND_AB OUT_B PVDD_B PVDD_B BST_B BST_C PVDD_C PVDD_C OUT_C PGND_CD PGND_CD
RESET STEST DVDD DVSS GND AGND VREG GVDD_OUT BST_D PVDD_D PVDD_D OUT_D
RA28 RA30
NC/15Kohm-0402-±5%-1/16W
NC/15Kohm-0402-±5%-1/16W
RA31
18K2ohm-0402-±1%-1/16W
CA24 CA25
0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
SDA_AMP01
SCL_AMP01
CA47 CA41
NC/10pF-0402-NPO-±5%-50V
NC/10pF-0402-NPO-±5%-50V
RA7
NC/
LA1 LA2 LA3 LA4
L_OUT-
L_OUT+
R_OUT+
R_OUT-
功率电感,Power Inductor,22uH,±20%,1.8A,0.27×1P,DR5.8×4.5,SMD,DSB5845-220M-LF,BLDX
CA7 CA14 CA8 CA17 CA32
CA16 CA15
NC/1000pF-0402-X7R-±10%-50V
NC/1000pF-0402-X7R-±10%-50V
NC/0.47uF-0805-X7R-±10%-50V
0.68uF-0805-X7R-±10%-25V
0.68uF-0805-X7R-±10%-25V
CA18 CA19 CA22 CA20 CA27 CA21
1uF-0402-X5R-±20%-16V
1000pF-0402-X7R-±10%-50V
1000pF-0402-X7R-±10%-50V
1uF-0402-X5R-±20%-16V
功率电感,Power Inductor,22uH,±20%,1.8A,0.27×1P,DR5.8×4.5,SMD,DSB5845-220M-LF,BLDX
功率电感,Power Inductor,22uH,±20%,1.8A,0.27×1P,DR5.8×4.5,SMD,DSB5845-220M-LF,BLDX
CA9 CA23 CA10 CA28 CA44
NC/1000pF-0402-X7R-±10%-50V
NC/1000pF-0402-X7R-±10%-50V
NC/0.47uF-0805-X7R-±10%-50V
0.68uF-0805-X7R-±10%-25V
0.68uF-0805-X7R-±10%-25V
CA34 CA26 CA33 CA40 CA38
AMP_RESET/25
1uF-0402-X5R-±20%-16V
0.1uF-0402-X5R-±20%-16V
0.033uF-0402-X7R-±10%-16V
0.033uF-0402-X7R-±10%-16V
0.033uF-0402-X7R-±10%-16V
0.033uF-0402-X7R-±10%-16V
功率电感,Power Inductor,22uH,±20%,1.8A,0.27×1P,DR5.8×4.5,SMD,DSB5845-220M-LF,BLDX
CNA2 CNA1
连接插座,connect jack,4Pin,D2.5,D,SNAP,Nature,L=2.8mm,DIP,W2411-04SVA-S03-E,XYDT
NC/连接插座,connect jack,4Pin,D2.50,D,Nature,L=2.8mm,DIP,AMA
M_SDA RA5 SDA_AMP01
M_SCL RA6 SCL_AMP01
100ohm-0402-±1%-1/16W
100ohm-0402-±1%-1/16W
CN8
GND
SCL_AMP01
SDA_AMP01
GND
AMP_DEBUG_EN
RA10
NC/5PIN-2.0-D-H-G-LD
NC/47Kohm-0402-±5%-1/16W
NC/0.1uF-0402-X5R-±20%-16V
NC/模拟开关,IC Analog Switch,400MHz,VSSOP,SMD,TS5A2066DCUR,TI
U2
NO1 COM1 IN2 GND V+ IN1 COM2 NO2
M_SCL
SCL_AMP01
AMP_DEBUG_EN
CA35
AMP_DEBUG_EN
SDA_AMP01
M_SDA


3V3_STB
RA16
RA1
HP_DET/
HP_DET
CA39
10Kohm-0402-±5%-1/16W
10Kohm-0402-±5%-1/16W
1uF-0603-X5R-±10%-25V
GND
CN1
HP_R
TEST
HP_L
LINE_OUTR
LINE_OUTL
RA15
RA21
1Kohm-0402-±1%-1/16W
1Kohm-0402-±1%-1/16W
耳机端子,Earphone Jack,H,Φ3.5,CH7.0,Black,switch,Seal,DIP,PJ7724-F05L3BY-D,YUQIU
DI10
DI11
DI12
NC/NC/SFI0402-240E-2R5PP-LF
NC/NC/SFI0402-240E-2R5PP-LF
NC/NC/SFI0402-240E-2R5PP-LF
LINE_OUT_L
LINE_OUT_R
CI11
CI12
AMP-LO
AMP-RO
CI13
CI14
RI17
RI18
1uF-0603-X5R-±10%-25V
1uF-0603-X5R-±10%-25V
NC/1000pF-0402-X7R-±10%-50V
NC/1000pF-0402-X7R-±10%-50V
NC/200Kohm-0402-±5%-1/16W
NC/200Kohm-0402-±5%-1/16W
RI21
RI22
NC/0ohm-0402-±5%-1/16W
NC/0ohm-0402-±5%-1/16W
NC/100Kohm-0402-±1%-1/16W
NC/100Kohm-0402-±1%-1/16W
5R1ohm-0402-±5%-1/16W
5R1ohm-0402-±5%-1/16W
47Kohm-0402-±1%-1/16W
NC/NC/220pF-0402-NPO-±5%-50V
47Kohm-0402-±1%-1/16W
NC/NC/220pF-0402-NPO-±5%-50V
RA51
RA52
UA2
RA17
CA53
RA54
CA56
AGND-HPR
AGND-HPL
HP-SDN
RINN
RINP
LINP
LINN
ROUT
LOUT
UVP
VDD
CPP
CPN
SDN
APA2171
TSSOP14
GND
PGND
VSS
RA8
RA9
CA57
CA58
CA59
RA55 NC/SHORT
RA56 NC/SHORT
5V_M
RA67
RA68
RA69
12Kohm-0402-±5%-1/16W
4K7ohm-0402-±5%-1/16W
12Kohm-0402-±5%-1/16W
AMP_STB
RA58
4K7ohm-0402-±5%-1/16W
CA60
CA61
10uF-0603-X5R-±20%-6.3V
NC/NC/0.1uF-0402-X5R-±20%-16V
10uF-0603-X5R-±20%-6.3V
10uF-0603-X5R-±20%-6.3V
0.1uF-0402-X5R-±20%-16V
音频功放,IC Headphone AMP,Class AB,2×20mW@2.3V@32ohm,TSSOP-14,SMD,AD22653B-QH14NAR,ESMT

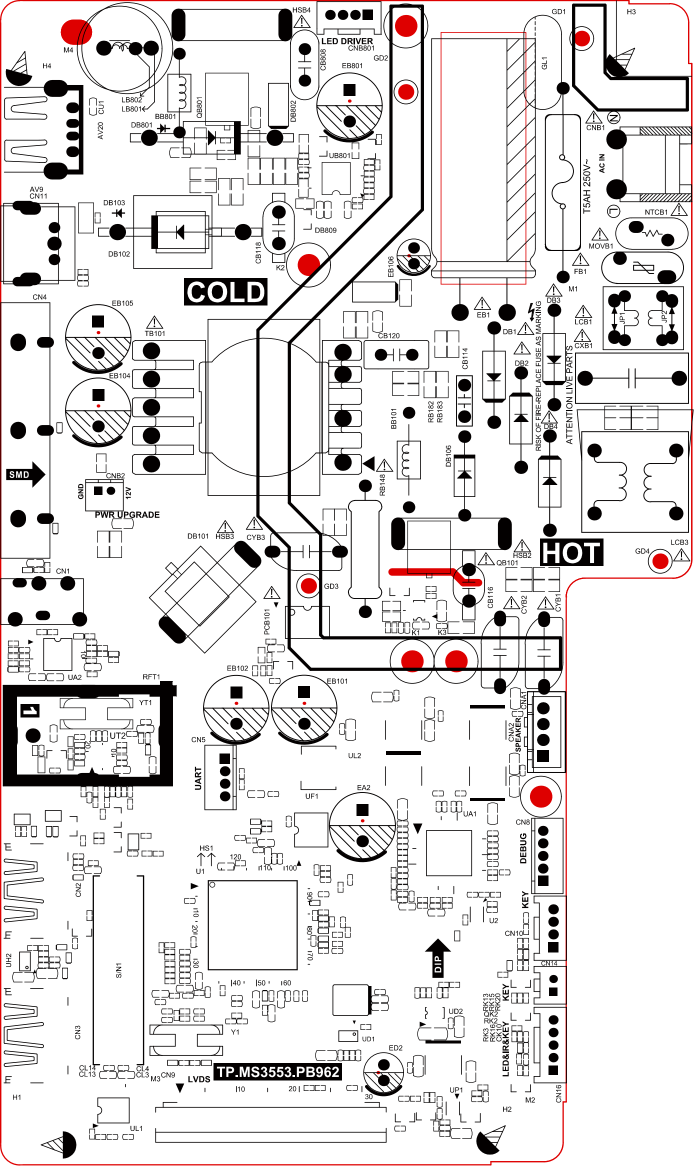


REV.	ECN. NO.	APPD.	DATE

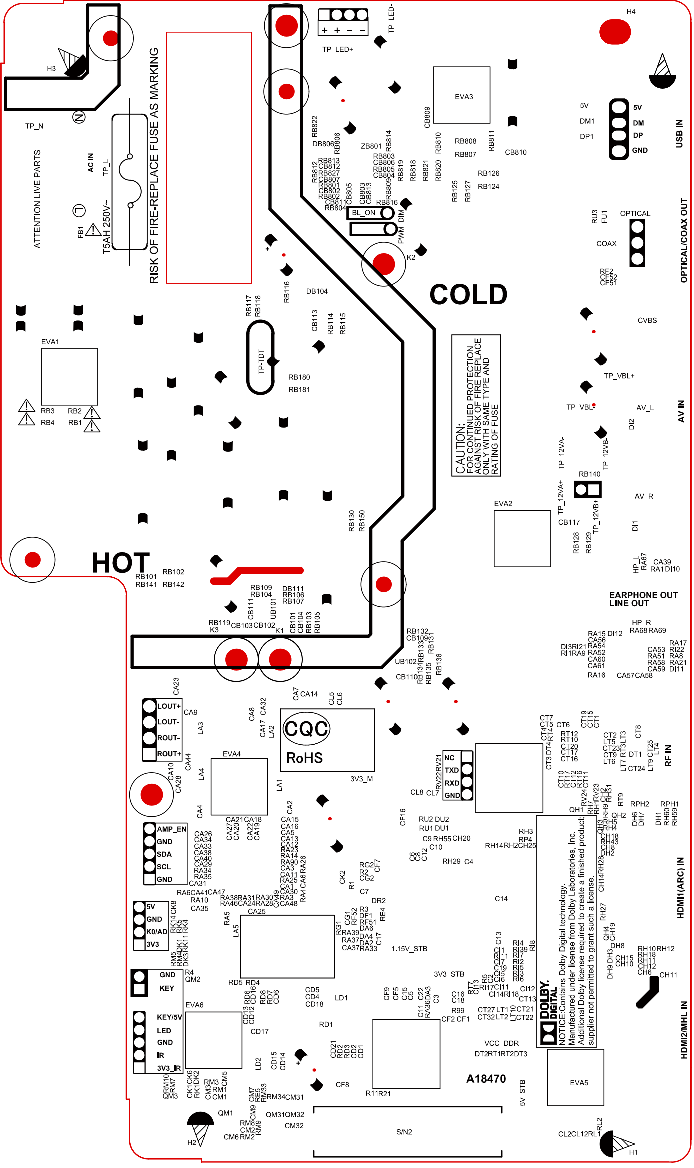
32L310U20 整机走线图

KTC®
深圳市康冠技术有限公司
SHENZHEN KTC TECHNOLOGY CO.,Ltd

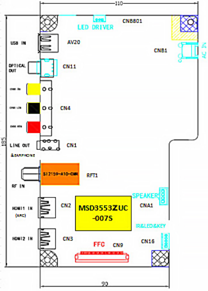
料号		材质			
批准		日期	2019.03.26		
审核		Q'TY	UNIT	SCALE	SHEET	REV.
绘图	司晓飞		MM	1:1	1/1	A



LED DRIVER
COLD
HOT
SMD
PWR UPGRADE
ATTENTION LIVE PARTS
RISK OF FIRE-REPLACE FUSE AS MARKING
T5AH 250V~
AC IN
UART
DEBUG
SPEAKER
KEY
LED&IR&KEY
DIP
LVDS
TP.MS3553.PB962



ATTENTION LIVE PARTS
AC IN
T5AH 250V~
RISK OF FIRE-REPLACE FUSE AS MARKING
COLD
HOT
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE ONLY WITH SAME TYPE AND RATING OF FUSE
USB IN
5V
DM
DP
GND
OPTICAL/COAX OUT
OPTICAL
COAX
AV IN
CVBS
AV_L
AV_R
EARPHONE OUT
LINE OUT
RF IN
HDMI1(ARC) IN
HDMI2/MHL IN
EVA1
EVA2
EVA3
EVA4
EVA5
EVA6
BL_ON
PWM_DIM
TP_LED+
TP_LED-
TP-TDT
CQC
RoHS
LOUT+
LOUT-
ROUT-
ROUT+
AMP_EN
GND
SDA
SCL
5V
GND
K0/AD
3V3
GND
KEY
KEY/5V
LED
GND
IR
3V3_IR
NC
TXD
RXD
GND
3V3_M
1.15V_STB
3V3_STB
VCC_DDR
5V_STB
A18470
S/N2
NOTICE:Contains Dolby Digital technology. Manufactured under license from Dolby Laboratories, Inc. Additional Dolby license required to create a finished product; supplier not permitted to grant such a license.
DOLBY DIGITAL
H1
H2
H3
H4



110
LED DRIVER
CNB801
USB IN
AV20
CNB1
AC IN
OPTICAL
OUT
CN11
CN4
LINE OUT
&EARPHONE
CN1
185
SI2159-A10-GMR
RFT1
RF IN
SPEAKER
HDMI1 IN
(ARC)
CN2
MSD3553ZUC
-007S
CNA1
IR&LED&KEY
HDMI2 IN
CN3
FFC
CN9
CN16
90

32L310U20/3MS553B0 Wiring Diagram

Panel module

LED DRIVER INPUT Connector -4P	
1	LED+
2	LED+
3	LED-
4	LED-

Panel module

LVDS INPUT TERMINAL-30P	
1	Vcc
2	Vcc
3	Vcc
4	Vcc
5	GND
6	GND
7	GND
8	GND
9	LVDS _SEL
10	NC
11	GND
12	LV1N0
13	LV1P0
14	GND
15	LV1N1
16	LV1P1
17	GND
18	LV1N2
19	LV1P2
20	GND
21	LVCK1N
22	LVCK1P
23	GND
24	LV1N3
25	LV1P3
26	GND
27	WP
28	SDA
29	SCL
30	GND

CNB801

LED DRIVER -4P	
1	LED+
2	LED+
3	LED-
4	LED-

CNB1

AC IN-3P	
1	L
3	N

FOR POWER

3MS553B0-
3IN1
BD

MSD3553
ZUC-007S

CNA1

Speaker -4P	
4	SPK_LOUT+
3	SPK_LOUT-
2	SPK_ROUT-
1	SPK_ROUT+

CN16

KEY&IR &LED-5P	
1	3.3V
2	IR
3	GND
4	LED_R
5	KEY

CN9

FFC(LVDS) IN-30P

1	2	3	4	5	6	7	8	9	10
GND	NC	NC	NC	GND	RXE3 P	RXE3 N	GND	RXEC P	RXEC N
11	12	13	14	15	16	17	18	19	20
GND	RXE2 P	RXE2 N	GND	RXE1 P	RXE1 N	GND	RXE0 P	RXE0 N	GND
21	22	23	24	25	26	27	28	29	30
NC	NC	GND	GND	GND	GND	VCC P	VCC P	VCC P	VCC P

Speaker

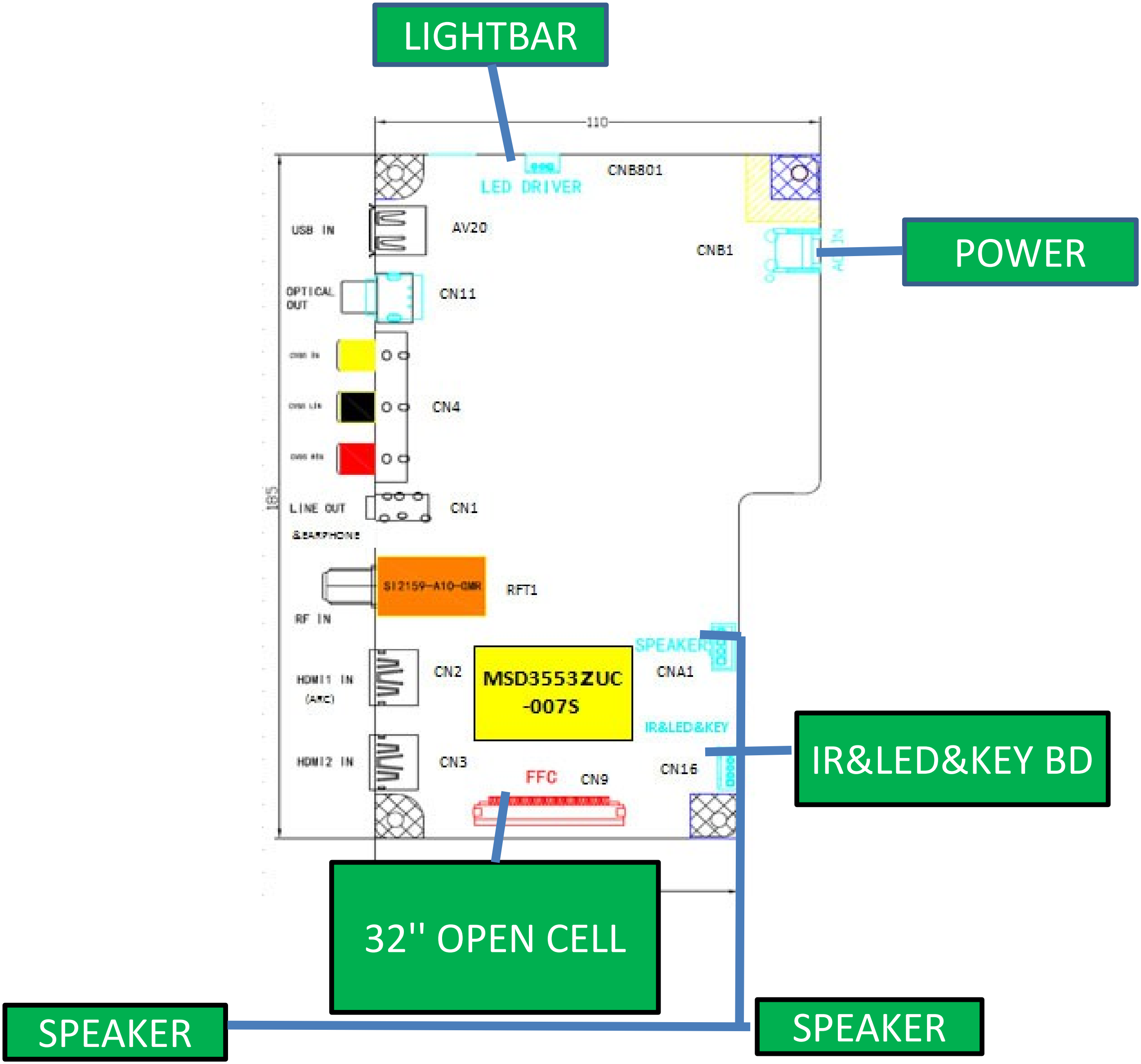
L Speaker	
1	SPK_LOUT+
2	SPK_LOUT-

R Speaker	
1	SPK_ROUT+
2	SPK_ROUT-

KEY&IR&LED Board

P1

KEY&IR &LED board	
1	3.3V
2	IR
3	GND
4	LED_R
5	KEY



LIGHTBAR
110
LED DRIVER
CNB801
USB IN
AV20
CNB1
POWER
OPTICAL OUT
CN11
CN4
LINE OUT
&EARPHONE
CN1
SI2159-A10-GMR
RFT1
RF IN
SPEAKER
HDMI1 IN
(ARC)
CN2
MSD3553ZUC
-007S
CNA1
IR&LED&KEY
IR&LED&KEY BD
HDMI2 IN
CN3
FFC
CN9
CN16
32" OPEN CELL
SPEAKER
SPEAKER