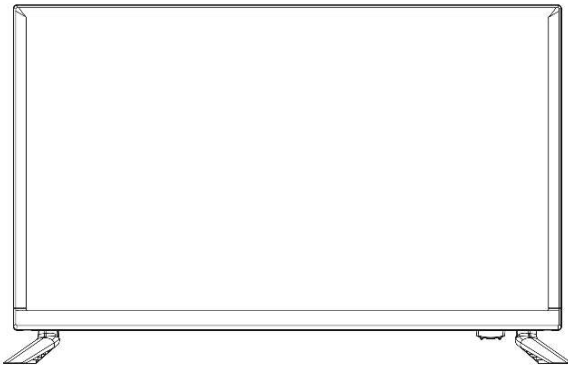


Service Manual

LED Television



Model No. TH-32G300S/K


SE63T Chassis

Destination S: Singapore
K: Malaysia

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

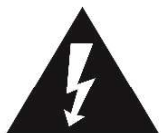
IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

1. CAUTION

CAUTION:

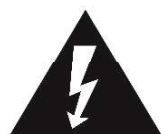
Use of controls, adjustments or procedures other than those specified herein may result in hazardous radiation exposure.



CAUTION
RISK OF ELECTRICAL SHOCK DO NOT OPEN.



CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



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



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 appliance.

WARNING: TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

1. Safety Precautions

1.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After serving, make the following leakage current checks to prevent the customer from being exposed to shock hazards.
4. When conducting repairs and servicing, do not attempt to modify the equipment, its parts or its materials.
5. When wiring units (with cables, flexible cables or lead wires) are supplied as repair parts and only one wire or some of the wires have been broken or disconnected, do not attempt to repair or wire the units. Replace the entire unit instead.
6. When conducting repairs and servicing, do not twist the faston connectors but plug them straight in or unplug them straight out.

1.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part to the chassis, the reading should be 8.5 Mohm. When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

1.1.2. Leakage Current Hot Check (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5 Kohm, 10 watts resistor, in parallel with a 0.15 μ F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Remove the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the equipment should be repaired and rechecked before it is returned to the customer.

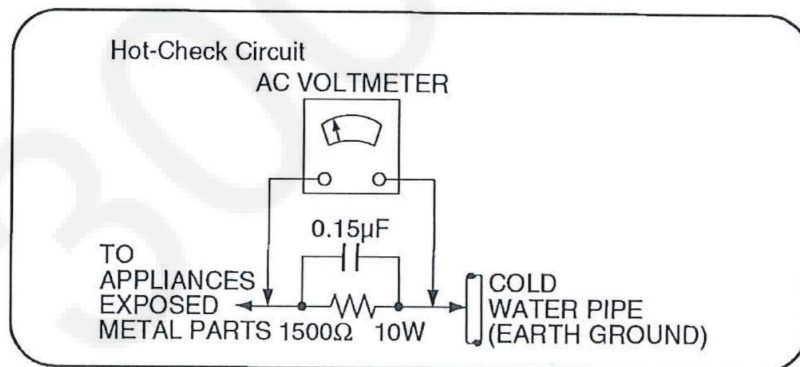


Figure 1

2. Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Device

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

2.2. About lead free solder(PbF)

Note: Lead is listed as (Pb) in the periodic table of elements.

In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.

The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).

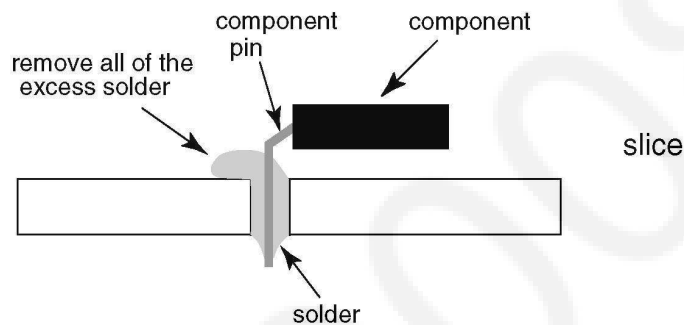
That is Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

PCBs manufactured using lead free solder will have the PbF within a leaf Symbol **PbF** stamped on the back of PCB.

Caution

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30~40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C). If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.
- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



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1. STANDARD CONFIGURATION

FUNCTIONS	【PB729_A4】VGA,PC AUDIO IN,CVBS/AUDIO IN,COAX, NO DVB-S/S2,ATV/DVB-T/C/T2 , (Mini)MIC IN,HDMI#1,HDMI#2,HDMI#3,USB
Notes	--
FRONT VIEW	
SIDE VIEW	

OPTIONAL FUNCTION	--
--------------------------	----

Note: If the configurations above can't meet your demand, please apply to our sales stuff.

TP.MS3663T.PB729 with backlight power under 31W, the main promotion backlight voltage is between 29V-52V, and single backlight output.

Standard configurations above could match any following backlight Spec. Specific backlight current can be selected according to customer's requirement. If the configurations below can't meet your demand, please apply to our sales stuff.

Main Promotion Power and backlight Spec.			
Power	Power Output	Backlight Value	Backlight Connectors
65W	12V&24V	29V-52V/31W	2PIN-2.0 +3PIN-2.0
<p>Note: Due to the requirements of the harmonic current in electromagnetic compatibility (IEC61000-3-2), the rated input power should be less than 75W when the TV set is undering the rated input voltage.</p>			

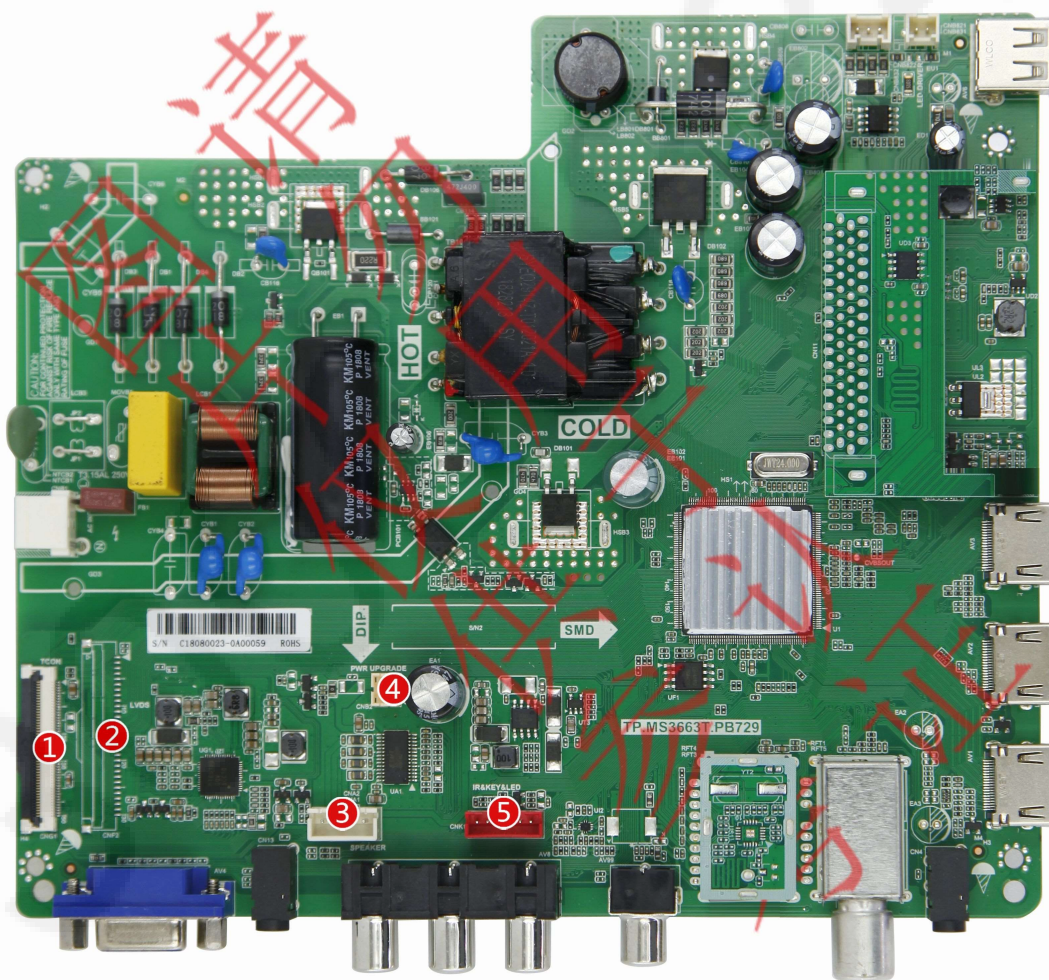
2. BOARD PICTURE

Pictures are for reference only, specific to prevail in kind.

The optional connectors and functions are marked with “*”.

188mm(L)*166.5mm(W)*1.6mm(H)

No.	Position	Description
1	CNG1	TCON
2	*CNF2	LVDS
3	CNA1	SPEAKER
4	CNB2	PWR UPGRADE
5	CNK1	IR&KEY&LED



3. FEATURES

MAIN CHIPSET	MSD3663LSAT-SW		
OSD LANGUAGE	Asia/Australia	English, French, German, Italian, Spanish, Portuguese (optional)	
PANEL	Panel Type	TFT LCD	
	Panel Size	32	
	Interface	Single LVDS(8bit) Mini LVDS(TCON)	
	Max Resolution	1366*768	
VIDEO INPUT	TV(Details in 3.1)	ATV(PAL,SECAM,NTSC)/DTV(DVB-T/C/T2)	
	PC-RGB	Format	Up to 1920×1080@60Hz
	CVBS	Video System	PAL/NTSC
		Video level	1.0 Vp-p±10%
	HDMI	480i, 480p, 720p, 1080i, 1080p	
		*CEC, *ARC(HDMI 1)	
		HDCP Version	1.4
AUDIO INPUT	PC Audio	PC Audio Input	0.2 ~ 2.0 V _{RMS}
	CVBS	L/R RCA input	0.2 ~ 2.0V _{RMS}
AUDIO OUTPUT	COAX	PCM/RAW	
	Frequency response	100Hz-15KHz @±3dB(1KHz 0dB reference signal)	
	Output power	2×8W(6Ω) THD+N<10%@1KHz (Audio Input: 0.5V _{RMS})	
	POWER TO PANEL	12V	
USB FUNCTION	software upgrade, multimedia play		
BUTTON TYPES	ADC Key Interface		
Note: Licenses involved in specifications above are supposed to be obtained by customers themselves.			

3.1 TV SYSTEM

ATV (PAL, SECAM,NTSC)	Reception range	48.25MHz ~ 863.25MHz
	Input impedance	75Ω
	Video System	PAL, SECAM,NTSC
	Sound System	BG, DK, I, L/L',MN NICAM/A2
	TELETEXT	1000Pages
	Max Storage Channels	99CH
DTV (DVB-T/C/T2)	Reception range	VHF (50MHz ~ 230MHz) UHF (474MHz ~ 862MHz)
	Input impedance	75Ω
	Channel Bandwidth	7MHz/8MHz
	Modulation	DVB-T COFDM 2K/8K QPSK,16QAM,64QAM
		*DVB-T2 QPSK,16QAM,64QAM,256QAM
		DVB-C 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
	Video System	MPEG-2 MP@ML, MPEG-2 MP@HL, H.265 Main/Main-10 profile, @L4.1, Support 8-bit/10-bit color depth, 1920x1080@60fps
	Sound System	MPEG-1 layer 1/2
	Basic Functions	EPG, Subtitle, LCN, TELETEXT (Europe), MHEG-5(UK)
	Common Interface	Built-In
	Max Storage Channels	700CH(DVB-T+DVB-C)

3.2 CRITICAL MATERIALS of TV Part

The table is for reference only, specific to prevail in kind.

NAME	TYPE		BRAND	BACKUP	BACKUP
TUNER	Onboard	R842(IEC)	Rafael	--	--
AMPLIFIER	AD52050B-26QG28NRR		ESMT	--	--
FLASH	GD25Q64CSIG		GigaDevice	W25Q64JVSSIQ	Winbond
				KH25L6436FM2I-08G	KH
				KH25L6436FM2I-09G	KH
SPXO	SPXO,24MHz,±20PPM, 20pF,HC-49SMD,SMD, SD2024M00020T2115047		JWT	--	--

3.3 MULTIMEDIA PLAYBACK FORMAT

Media	File Ext	Codec		Remark
		Video	Audio	
MOVIE	.mpg	MPEG-1, MPEG-2	MP3, WMA*, AC3*, EAC3*, PCM	Max Solution: 1920×1080 Max Data Rate: 40 Mbps
	.avi	DivX*, Xvid, MJPEG		Max Solution: 1920×1080 Max Data Rate: 20 Mbps
		MPEG-4 SP/ASP, H.263/H.264		
	.ts	MPEG-2, H.264, AVS*, AVS+*, HEVC		
	.mov .mkv	MPEG-4 SP/ASP, H.263/H.264, HEVC		
	.dat	MPEG-1		Max Solution: 720×576 Max Data Rate: 40 Mbps
	.mp4	MPEG-4 SP/ASP, H.263/H.264, HEVC		
		MPEG-1, MPEG-2		
	.vob	MPEG-2		
	.rm*/.rmvb*	RV30/RV40	COOK, MP2	Max Solution: 1920×1080
MUSIC	.mp3	--	MP3	Sample Rate: 8K~48KHz Bit Rate: 32K~320Kbps
	.wma*	--	WMA*	Channel: Mono/Stereo
PHOTO	.jpg/	Progressive JPEG		Max Resolution: 1024×768
	.jpeg	Baseline JPEG		Max Resolution: 15360×8640
	.bmp	BMP		Max Resolution: 9600×6400 Pixel Depth: 1/4/8/16/24/32 bpp
	.png	Non-Interlaced		Max Resolution: 9600×6400
		Interlaced		Max Resolution: 1280×800
SUBTITLE	.srt	SubRip		
	.ssa/.ass	SubStation Alpha		
	.smi	SAMI		
	.sub	SubViewer MicroDVD DVDSubtitleSystem SubIdx(VobSub)		SubViewer 1.0 & 2.0 Only
	.txt	TMPlayer		

File system: FAT32, FAT16, NTFS.

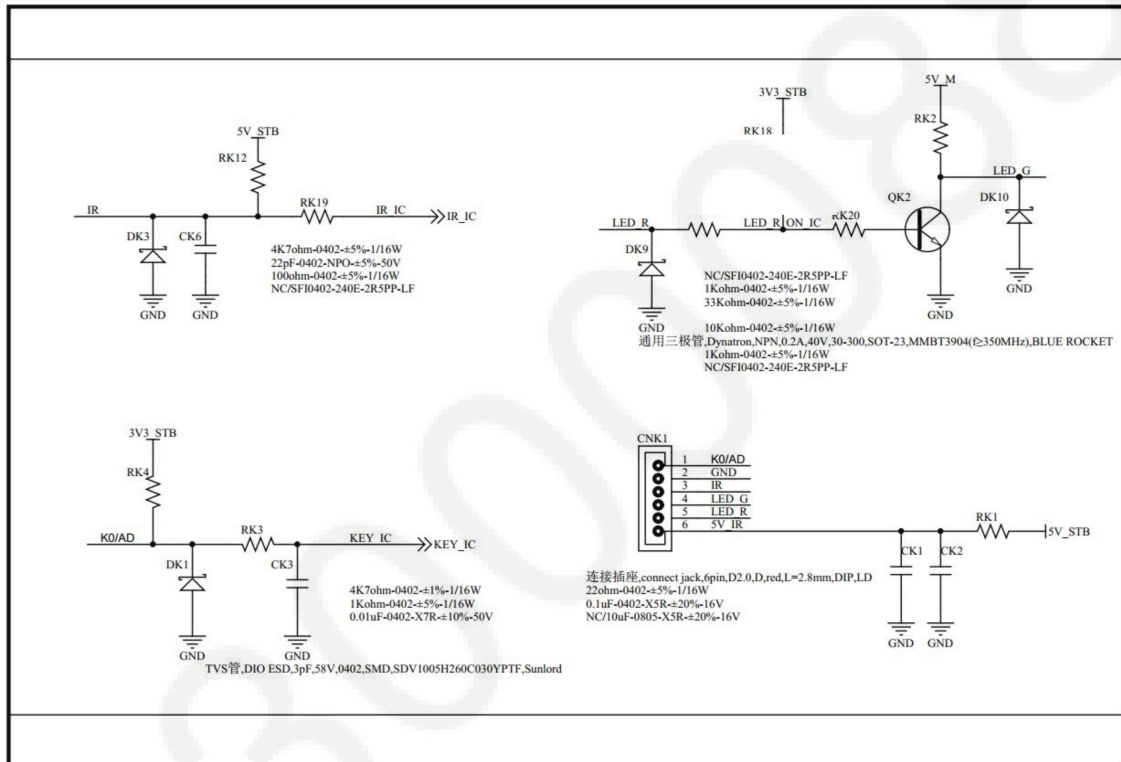
SF63T Chassis don't support DivX, rm/.rmvb/.wma/AVS/AVS+

The different chip suffix will support different codec.

Notes: Licenses involved in specifications above are supposed to be obtained by customers.

***Need the specific chip and Hash Key to support.**

4. SCHEMATICS OF IR & KEY BOARD

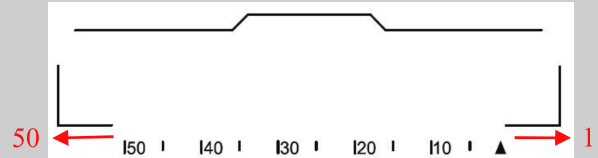


5. INTERFACE DEFINITION

The optional connectors and terminals are marked with

◆ CNG1(50PIN/0.5): TCON CONNECTOR


***Note:FFC**

		
NO.	SYMBOL	DESCRIPTION
1	NC	No Connection
2	GND	Ground

3	VDD	Driver Power Supply Voltage
4	VDD	
5	GND	Ground
6	H_VDD	Half Driver Power Supply Voltage
7	H_VDD	
8	GND	Ground
9	GAM3	GAMMA Voltage 3
10	GAM4	GAMMA Voltage 4
11	GAM5	GAMMA Voltage 5
12	GAM10	GAMMA Voltage 10
13	GAM11	GAMMA Voltage 11
14	GAM12	GAMMA Voltage 12
15	GND	Ground
16	VCOM	VCOM Voltage
17	VCOM_FB	VCOM Feed-Back Output
18	GND	Ground
19	GIP_RESET	GIP Reset
20	VST	Vertical Start Pulse
21	VGL	Gate Low Voltage
22	VGH_EVEN	GIP Panel VDD for EVEN Gate TFT
23	VGH_ODD	GIP Panel VDD for ODD Gate TFT
24	VGH_F	GIP Bi-Scan
25	VGH_R	
26	CLK6	GIP Gate Clock 6
27	CLK5	GIP Gate Clock 5
28	CLK4	GIP Gate Clock 4
29	CLK3	GIP Gate Clock 3
30	CLK2	GIP Gate Clock 2
31	CLK1	GIP Gate Clock 1
32	GND	Ground
33	+3V3 NOR	+3.3V Power Supply
34	+3V3 NOR	
35	GND	Ground
36	GND	
37	RXO3-	LVDS ODD 3- Signal
38	RXO3+	LVDS ODD 3+ Signal
39	GND	Ground
40	RXO4-	LVDS ODD 4- Signal
41	RXO4+	LVDS ODD 4+ Signal
42	GND	Ground
43	RXE0-	LVDS EVEN 0- Signal
44	RXE0+	LVDS EVEN 0+ Signal


45	GND	Ground
46	RXE1-	LVDS EVEN 1- Signal
47	RXE1+	LVDS EVEN 1+ Signal
48	GND	Ground
49	SOE	LVDS EVEN 3 Signal_SOE_A
50	NC	No Connection

◆ ***CNF2(30PIN/1.0): LVDS CONNECTOR**

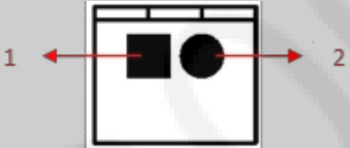
		
NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	MSCL	I2C Clock signal For Panel
3	MSDA	I2C Data signal For Panel
4	P_WP	I2C Write Protection
5	GND	Ground
6	RXO3+	LVDS ODD 3+ Signal
7	RXO3-	LVDS ODD 3- Signal
8	GND	Ground
9	RXOC+	LVDS ODD Clock+ Signal
10	RXOC-	LVDS ODD Clock- Signal
11	GND	Ground
12	RXO2+	LVDS ODD 2+ Signal
13	RXO2-	LVDS ODD 2- Signal
14	GND	Ground
15	RXO1+	LVDS ODD 1+ Signal
16	RXO1-	LVDS ODD 1- Signal
17	GND	Ground
18	RXO0+	LVDS ODD 0+ Signal
19	RXO0-	LVDS ODD 0- Signal
20	GND	Ground
21	NC	No Connection
22	LVDS SEL	JEDIA/VESA format selection(Follow with the main board)
23	GND	Ground
24	GND	
25	GND	
26	GND	
27	VCC_PANEL	Power Supply for Panel
28	VCC_PANEL	
29	VCC_PANEL	

30	VCC_PANEL	Power Supply for Panel
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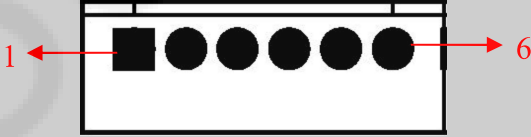
◆ **CNA1(4PIN/2.54): SPEAKER CONNECTOR**

		
NO.	SYMBOL	DESCRIPTION
1	ROUT+	Audio Right Channel Output+
2	ROUT-	Audio Right Channel Output-
3	LOUT-	Audio Left Channel Output-
4	LOUT+	Audio Left Channel Output+

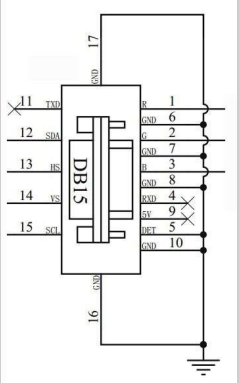
◆ **CNB2(2PIN/2.0):POWER SUPPLY FOR UPGRADE CONNECTOR**

		
NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	12V	+12V DC Power Supply

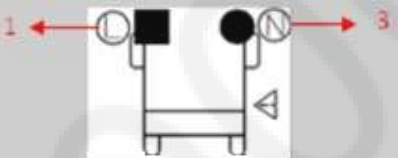
◆ **CNK1(6PIN/2.0): IR & KEY & LED CONNECTOR**

		
NO.	SYMBOL	DESCRIPTION
1	K0/AD	Key0/AD
2	GND	Ground
3	IR	IR Receiver, $V_{IH} \geq 2V$, $V_{IL} \leq 1V$, $I_{Lmin} : 1mA$, $I_{IHmin} : 1mA$
4	GRN	Green Indicator, $V_{OH} \geq 2V$ ($I_{OHMAX} : 2mA$), $V_{OL} \leq 0.8V$ ($I_{OLMAX} : 2mA$)
5	RED	Red Indicator, $V_{OH} \geq 2V$ ($I_{OHMAX} : 1.3mA$), $V_{OL} \leq 0.8V$ ($I_{OLMAX} : 0.5mA$)
6	5V_IR	+5V DC Power Supply

◆ **AV4: UART CONNECTOR**

		
NO.	SYMBOL	DESCRIPTION
12	SDA	UART_TX
15	SCL	UART_RX

◆ **CNB1 (2PIN/7.92): AC INPUT CONNECTOR**

		
NO.	SYMBOL	DESCRIPTION
1	L	LIVE
3	N	NEUTRAL

6. ELECTRICAL CHARACTERISTICS

6.1 INPUT ELECTRICAL SPECIFICATIONS

Input	Minimum	Nominal	Rating	Maximum	Unit
Voltage	90	115/230	100~240	264	Vac
Current	---	---	---	1.5	A
Frequency	47	60/50	---	63	Hz
Efficiency	≥80%min(Full load with input AC voltage of 115Vac @ 60Hz and 230Vac @ 50Hz)				
Standby Power Consumption	≤0.5W At 240Vac input and no load condition@25°C				
Leakage Current	Less Than 0.35mA, 240Vac input				

6.2 DIMMING CHARACTERISTICS

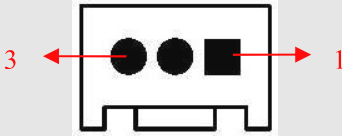
Dimming Characteristic						
Dimming type		Digital dimming				
Parameter		Symbol	Min.	Typ	Max.	Note
PWM_REF Input	$\frac{\text{Duty}}{\text{Duty}_{(\max)}}$	--	15%	70%	100%	$\frac{\text{Duty}}{\text{Duty}_{(\max)}} = \frac{\text{Brightness}}{\text{Brightness}_{(\max)}}$
	Frequency		22kHz	25KHZ	28KHZ	--

6.3 Output Protection

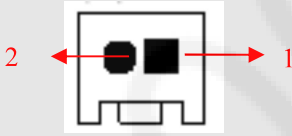
Output Voltage	Short Circuit Protection	Over Current Protection		Over Voltage Protection	
	Specification	Over Current	Specification	Over Voltage	Specification
+12V	Auto recovery or Latch	≥2.5A ≤6A	Auto recovery or Latch	--	Auto recovery or Latch

6.4 LED DRIVER POWER OUTPUT CONNECTOR

*CNB831, CNB832(3PIN/2.0)

	
NO.	Signal Name
1	LED+
2	LED-
3	LED-

CNB821,*CNB822(2PIN/2.0)

	
NO.	Signal Name
1	LED+
2	LED-

OUTPUT PROTECTION SPECIFICATION

Signal Name	LED Short Protection	LED Open Protection
	Specification	Specification
LED output	Auto restart	Shut down or auto restart

7. FUSE PROTECTION

To protect the power module, the Fuse will be disconnected to cut off the power supply when the AC input current exceeds the rated current of fuse.

8. INTERNATIONAL STANDARDS

8.1 SAFETY

Conforming:

UL60950/UL60065;

EN60950-1/EN60065;

GB4943-2011/ GB8898-2011;

IEC 60950/IEC 60065.

8.2 HI-POT AND INSULATION RESISTANCE

HI-POT

Primary to secondary : 3000VAC, 10mA for 60s

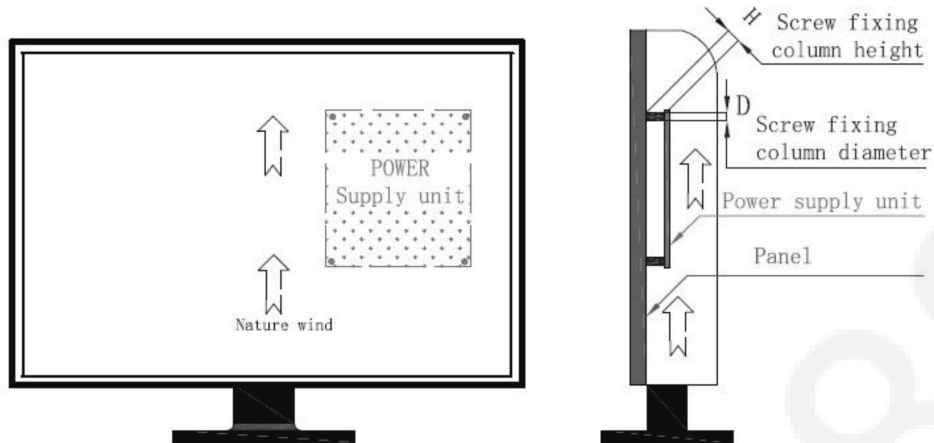
Insulation resistance

between primary and secondary : 500VDC/60s, $\geq 50M\Omega$

9. CONFIGURATION & GENERAL PRECAUTIONS

- Relative humidity: $\leq 80\%$.
- Storage temperature: $-10\sim 60^{\circ}\text{C}$.
- System Operating: $0\sim 40^{\circ}\text{C}$.
- Protect the board from static electricity in case of damage to the IC.
- Keep the board away from conductor when it is working.
- Do not press the PCBA during transportation or placement.
- Do not bend or deform the board during the whole machine assembling, especially when connecting the cable.
- Do not plug or unplug the cable while the board is working..
- Clean the board with soft dry cloth when it' s dirty.
- Don' t power on before panel is correctly connected.
- The whole machine certification performance will be subject to the impact of the whole machine, must use the whole machine to test and confirm.
- When using the I2C interface to communicate with the outside, please confirm the matching of the pull up resistance and the series resistance with CVTE hardware engineer.
- To ensure communicating properly between the mainboard and external expansion modules, it's recommend that test related control and communication signals and power supply voltage waveform after installing prototype to confirm whether to meet the relevant requirements.

10. MOUNT PRECAUTIONS



Note1: If there is mylar under PCB bottom, $H \geq 5$ mm; If there is no mylar under PCB bottom, $H \geq 9$ mm.

Note2: The diameter of D should be less than 8mm. Use M3 screw to mount the power supply unit on the screw fixing column. The maximum torque force is 0.4N-M.

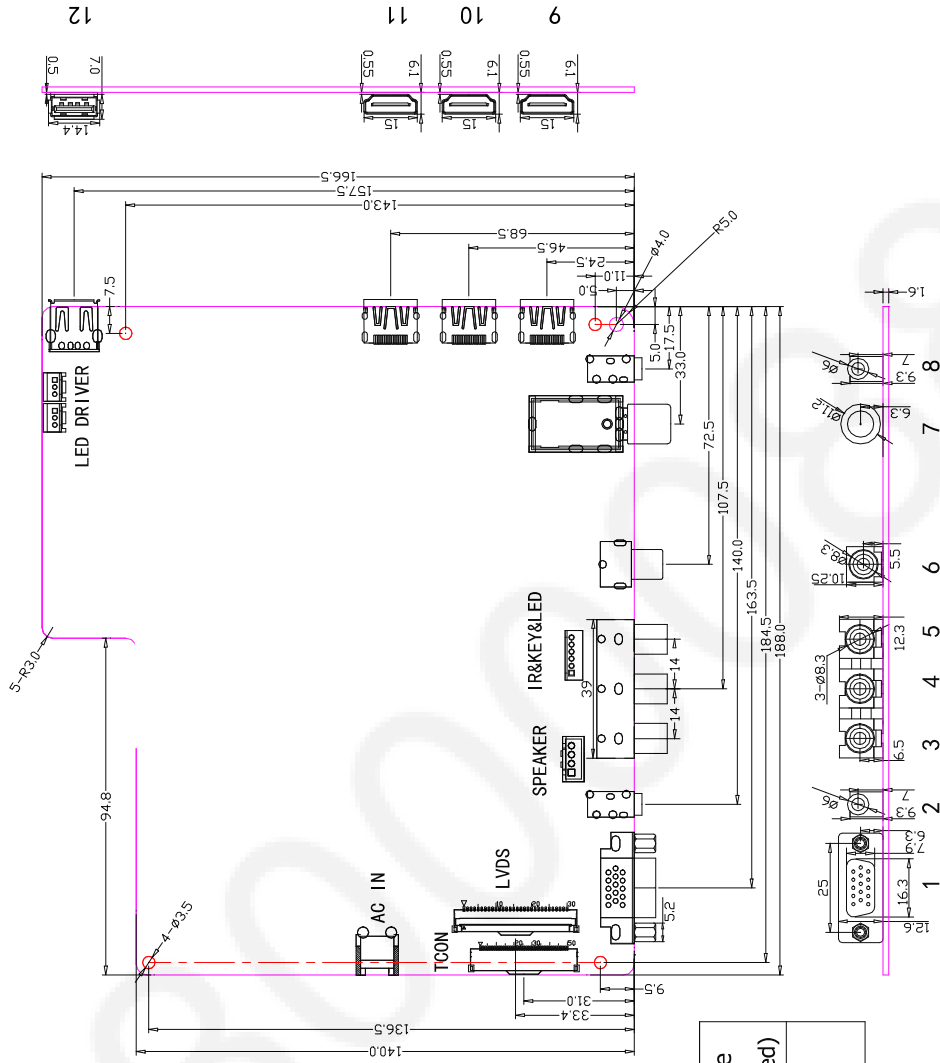
Note3: The Power supply unit is designed without the case. Pay attention to ESD protection at any time.

Note4: Speaker line must be twisted.

Note5: Speaker line cannot be parallel to the AC line, if they are parallel to each other, the distance should not be less than 8cm.

11. MECHANICAL DIMENSION

【PB729_A4】		
Ver.	A0	
N0.	Description	
1	VGA IN	
2	PC AUDIO IN	
3	CVBS IN	
4	CVBS LIN	
5	CVBS RIN	
6	COAX OUT	
7	RF IN(T/C/T2)	
8	MIC IN(Mini)	
9	HDMI1 IN	
10	HDMI2 IN	
11	HDMI3 IN	
12	USB IN	



PCB Tolerance		Connector Tolerance	
PCB size	$\pm 0.15\text{mm}$	(Unless Otherwise Stated)	
PCB thickness	$\leq 1.0\text{mm}$	$\pm 0.1\text{mm}$	$\pm 0.3\text{mm}$
	$> 1.0\text{mm}$	$\pm 10\%$	

12. NOTICE REGARDING TV MEDIA FORMAT AND INTERFACE TECHNOLOGY

Dolby Digital Decoder	MPEG2/MPEG4	HDMI	Hbbtv2.0
Dolby Digital Plus Decoder	AMR-NB	HDCP	Netflix
Dolby MS11	AMR-WB	Wi-Fi	Freeview Play
Dolby MS12	DRA	USB	NTFS
Dolby Atmos	AAC/HEAAC	MHL	Seraphic Open Browser
Dolby Vision	H.264	Bluetooth	Seraphic TV Portal
DTS Sound	H.265	NFC	—
DTS TruSurround	DivX	DVB-T2	—
DTS HD	RMVB	DVB-S2x	—
DTS 2.0+Digital Out	WMA	ATSC	—
DTS Express 5.1	WMA Pro	PlayReady	—
DTS Studio Sound	dbx-tv	MSS	—
DTS Studio Sound II	—	Widevine	—

Introduction

This document is used to specify media formats, interface technologies and others that may be involved in TV products.

Media Format		Interface Technology & Others	
Dolby Digital Decoder	MPEG2 / MPEG4	HDMI	Hbbtv2.0
Dolby Digital Plus Decoder	AMR-NB	HDCP	Netflix
Dolby MS11	AMR-WB	Wi-Fi	Freeview Play
Dolby MS12	DRA	USB	NTFS

Dolby Atmos	AAC/HEAAC	MHL	Seraphic Open Browser
Dolby Vision	H.264	Bluetooth	Seraphic TV Portal
DTS Sound	H.265	NFC	-
DTS TruSurround	DivX	DVB-T2	-
DTS HD	RMVB	DVB-S2x	-
DTS 2.0+Digital Out	WMA	ATSC	-
DTS Express 5.1	WMA Pro	PlayReady	-
DTS Studio Sound	dbx-tv	MSS	-
DTS Studio Sound II	-	Widevine	-

Notice

In the event the LCD TV Driver Boards ("Boards") purchased or customized by your good company include any hardware(e.g. TV master chip, output connector) and/or software that support the above mentioned media formats, interface technologies & others which may involve third party technologies or intellectual properties, your company is hereby kindly reminded as follows:

1. The product price under the sale contracts between us does not include any ralyalties, licensing fees or expenses payable to the IP right holders for acquiring the right to use the third party technologies or the license of the third party's intellectual properties which may be involved due to the Boards' and relating TV sets' supporting of the above mentioned media formats, interface technologies & others. If the IP right holders so request, you shall obtain valid license from the right holders and make payment at your own cost for such license.
2. If your company requests to reduce or cancel the media formats or interface technologies & others supported by the Boards, you shall, upon your confirmation of the Boards' specifications, or upon payment of the contract price, whichever is earlier, notice us such requests in writing.
3. In the event the "Boards" purchased or customized by your good company do not include hardware and/or software that support part or entire of the above mentioned media formats and interface technologies & others, this Notice shall not be applicable to your company with respect to the media formats and interface technologies & others that not supported by the Boards.
4. The hardware, software and technologies related to the media formats and interface technogeis & others that may be involved in the Boards are all provided by thrid parties . We may update this Notice from time to time. If you find any omissions, please do not hesitate to let us know.

Regarding the TV mainboard Products (following referred as "the Mainboard"), the technical requirements of which are wholly listed and defined under this Letter of Confirmation for Product Technical Requirements, due to the fact that it was ultimately confirmed and determined by the buyer regarding the software programmed to the Mainboard, and the Mainboard's features and functions (including patented features and functions, whether the features and functions are realized and practiced through the chips embodied in the Mainboard, the Mainboard itself, or through the TV sets embodying the Mainboard), the buyer shall be responsible for obtaining appropriate licenses from the relating intellectual property right holders and other right holders, acquiring appropriate permissions to use the software programmed to the Mainboard, obtaining appropriate permissions to realize and practice the relating features and functions of the Mainboard, reporting the transaction data, arranging the payment of royalties, and performing other duties and responsibilities which are necessary to use, sell, offer for sale, import or otherwise to dispose of the Mainboard with programmed software without infringing the intellectual property rights of any third party.

As our company is specialized TV mainboard supplier and unable to acquire the performance or specifications requirements of the TV sets embodying the Mainboard, we hereby guarantee that the TV mainboard products supplied by our company are in conformance with the Letter of Confirmation for Product Technical Requirements which was confirmed in writing by both parties, and your company shall be responsible for the testing, debugging, tuning of the TV sets embodying the Mainboard, application for certifying the Mainboard and the TV sets embodying the Mainboard, and performing other duties and responsibilities which are necessary for complying with the law and regulations of the countries and regions, where the Mainboard and the TV sets embodying the Mainboard were imported and sold.

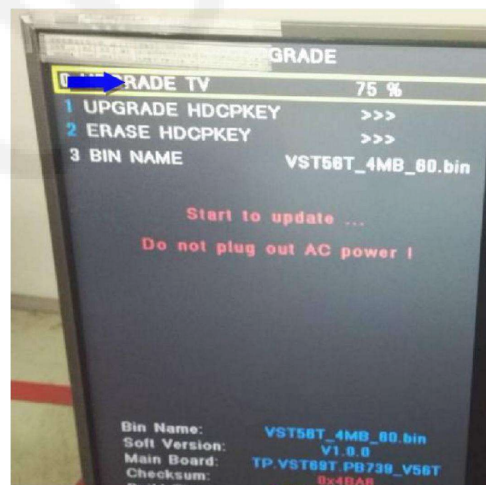
13. Software Update (USB)

Method One:

- 1、Unzip the compressed package and copy the upgrade bin document to the U disk root directory;
- 2、U disk Insert USB port, movement AC power;
- 3、Flashing lights after two or three seconds(slowly flashing), go to the upgrade process;
- 4、LED fast flashing after upgrade completes;
- 5、Pull out u disk, AC power off;

Method Two:

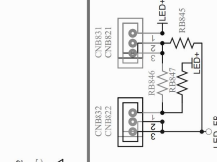
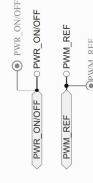
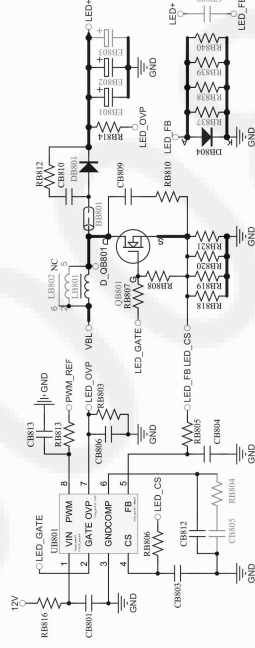
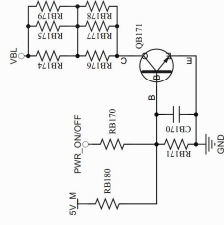
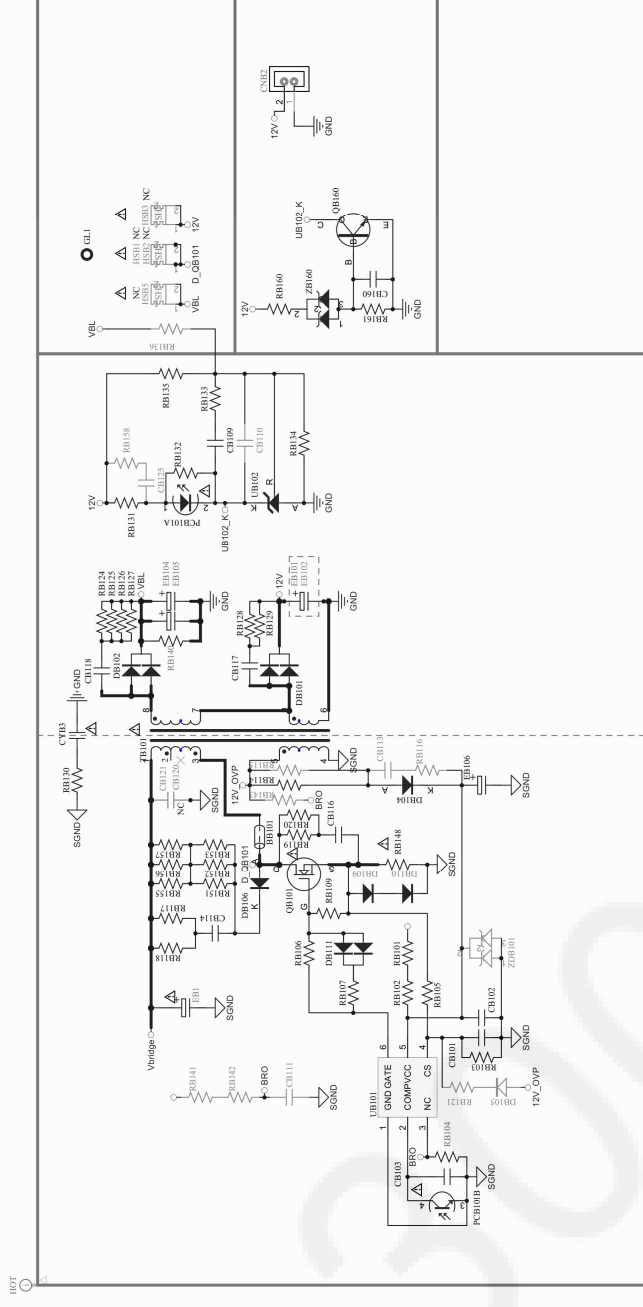
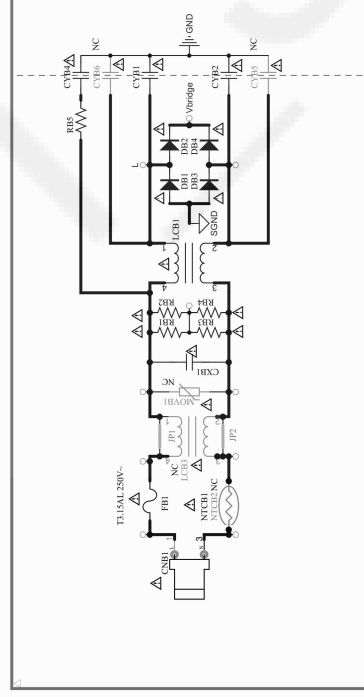
- 1、Unzip the compressed package and copy the upgrade bin document to the U disk root directory;
- 2、TV is turned on, in the Factory menu upgrade by prompt “SW UPGRADE-UPGRADE TV” ;



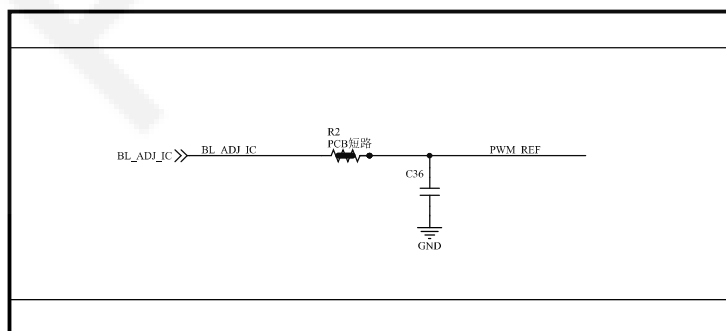
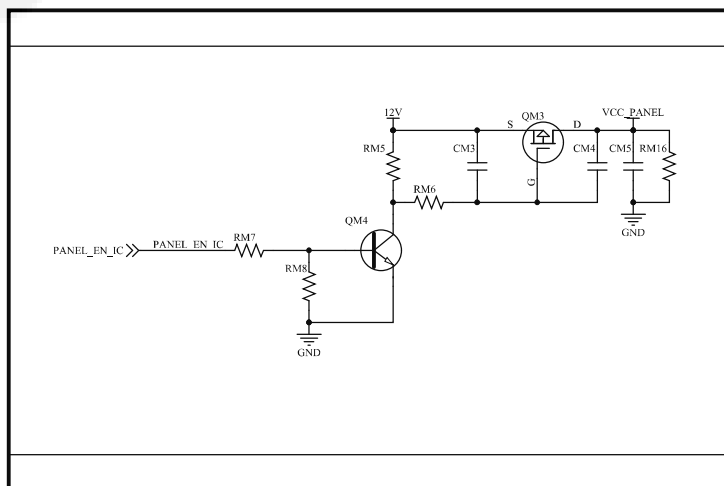
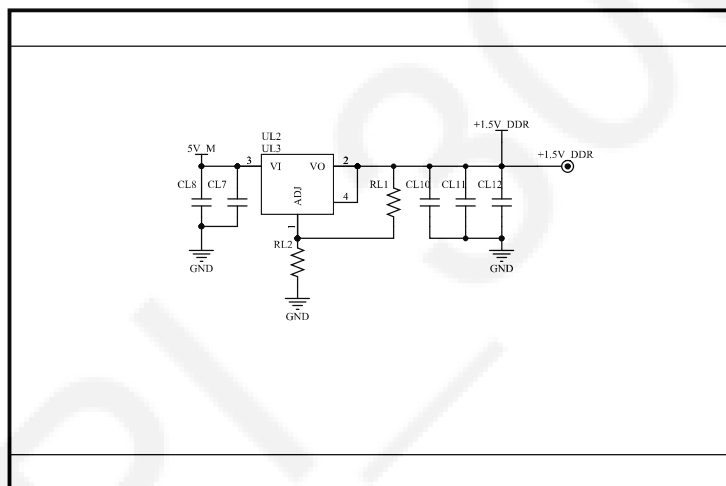
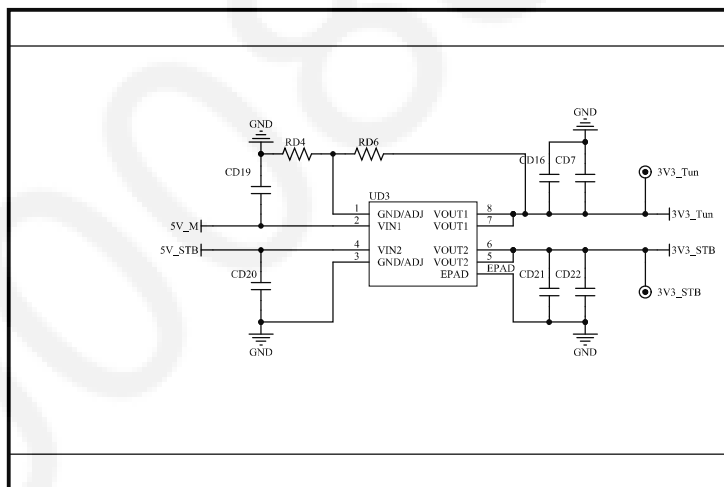
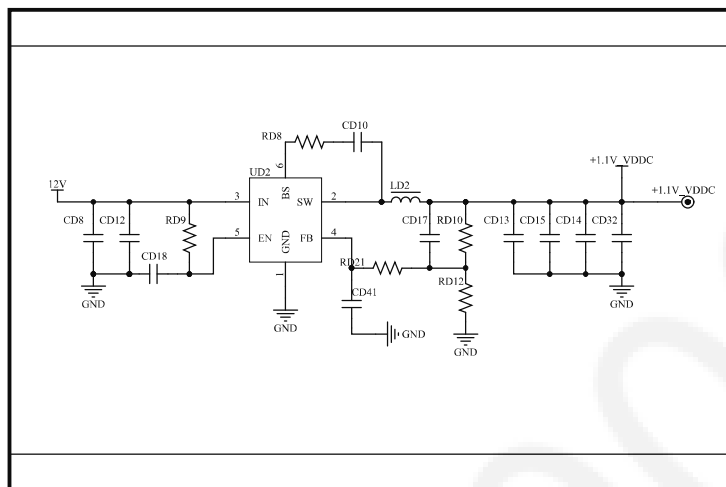
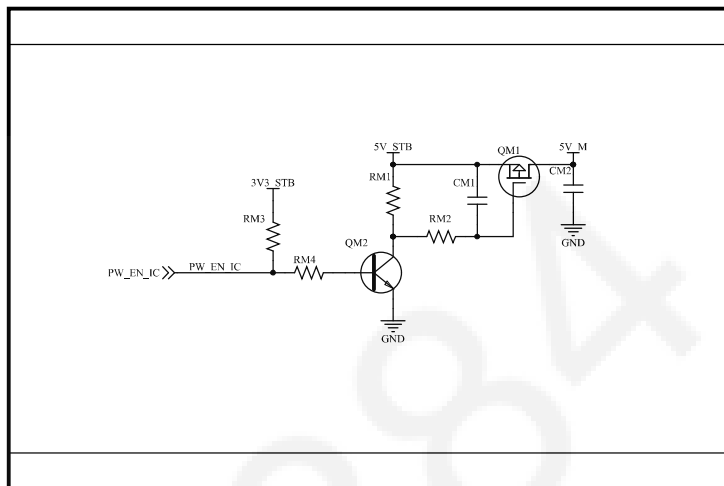
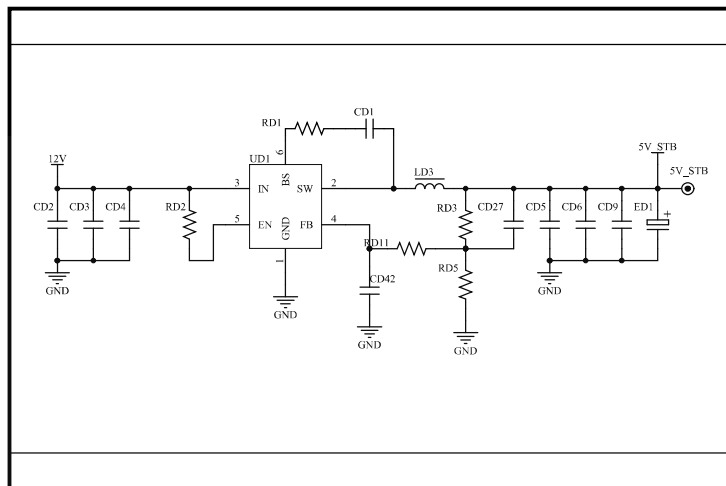
Attention:

- 1、No power off during upgrade.
- 2、If you cannot upgrade, please go to the factory menu to see if the software version name in the TV is the same as the software on the U disk.

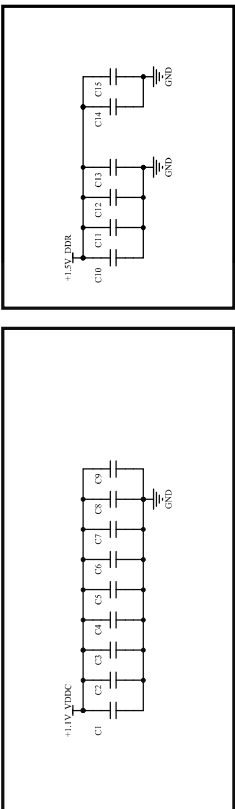
14. Circuit Diagrams



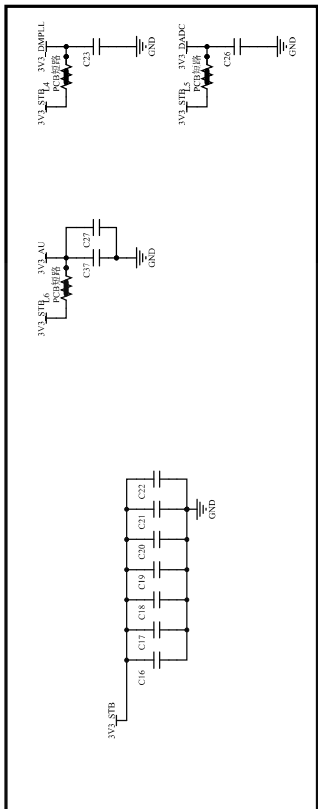
原理图中未标出的辅料及特殊生产工艺		位号
工艺		
包封成型	FB1、FB2(314M)	
架高	D8821、D81、D82、D83、D84 (使用H27时, D81-D84不需要架高)	
	X0X	
	X0X	
	X0X	



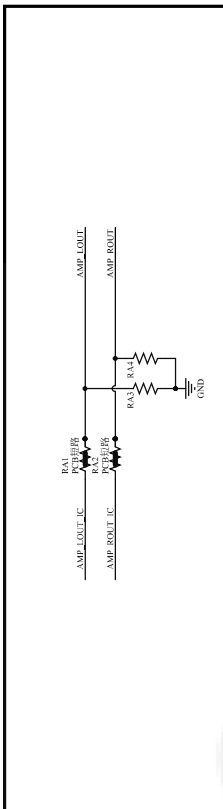
A



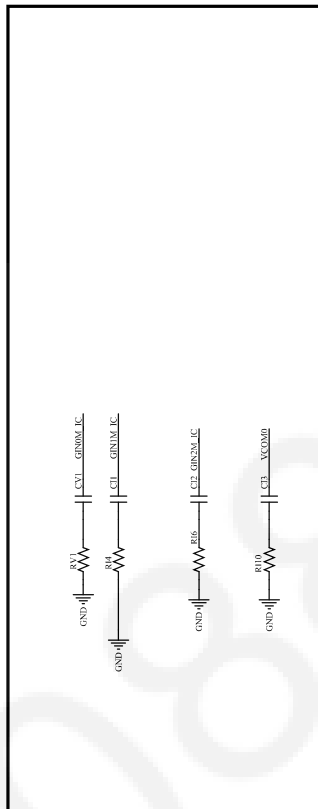
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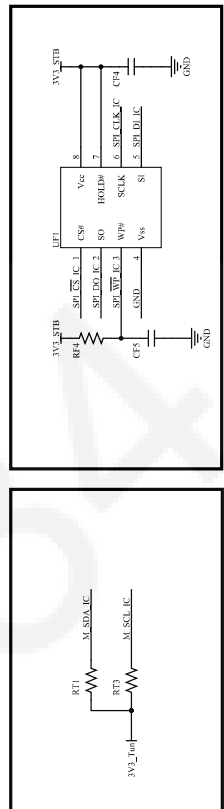
C



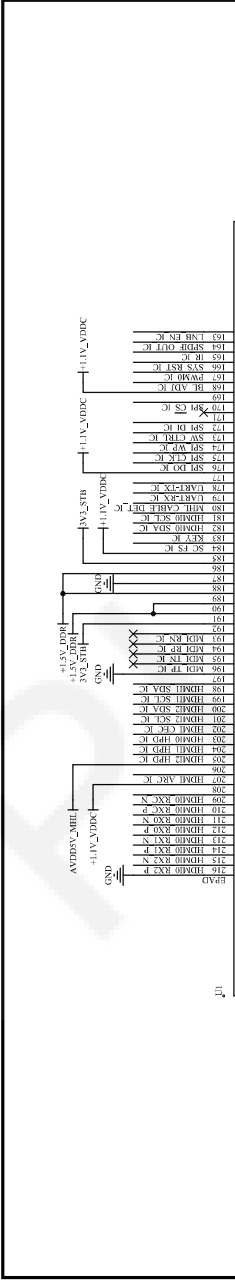
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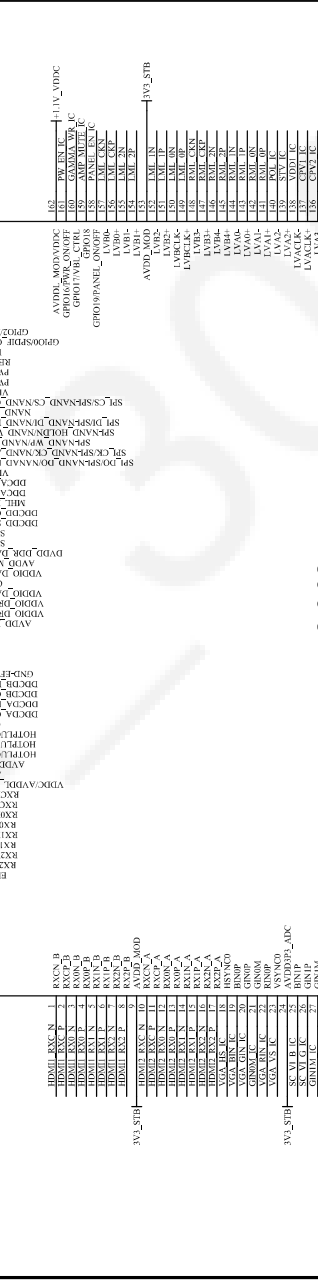
E



A



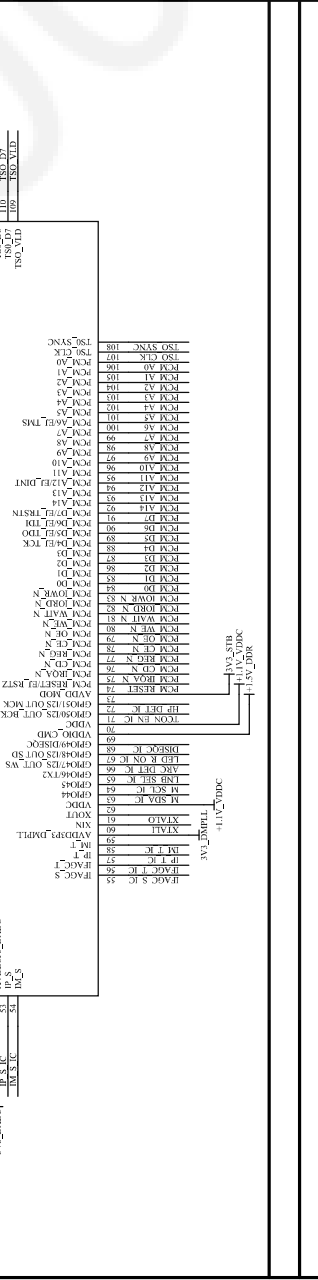
B



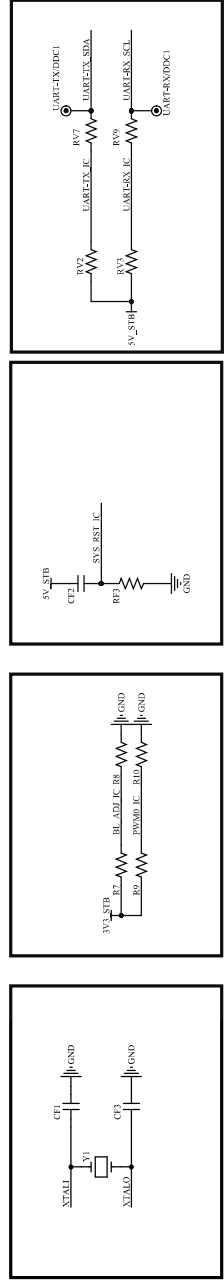
C

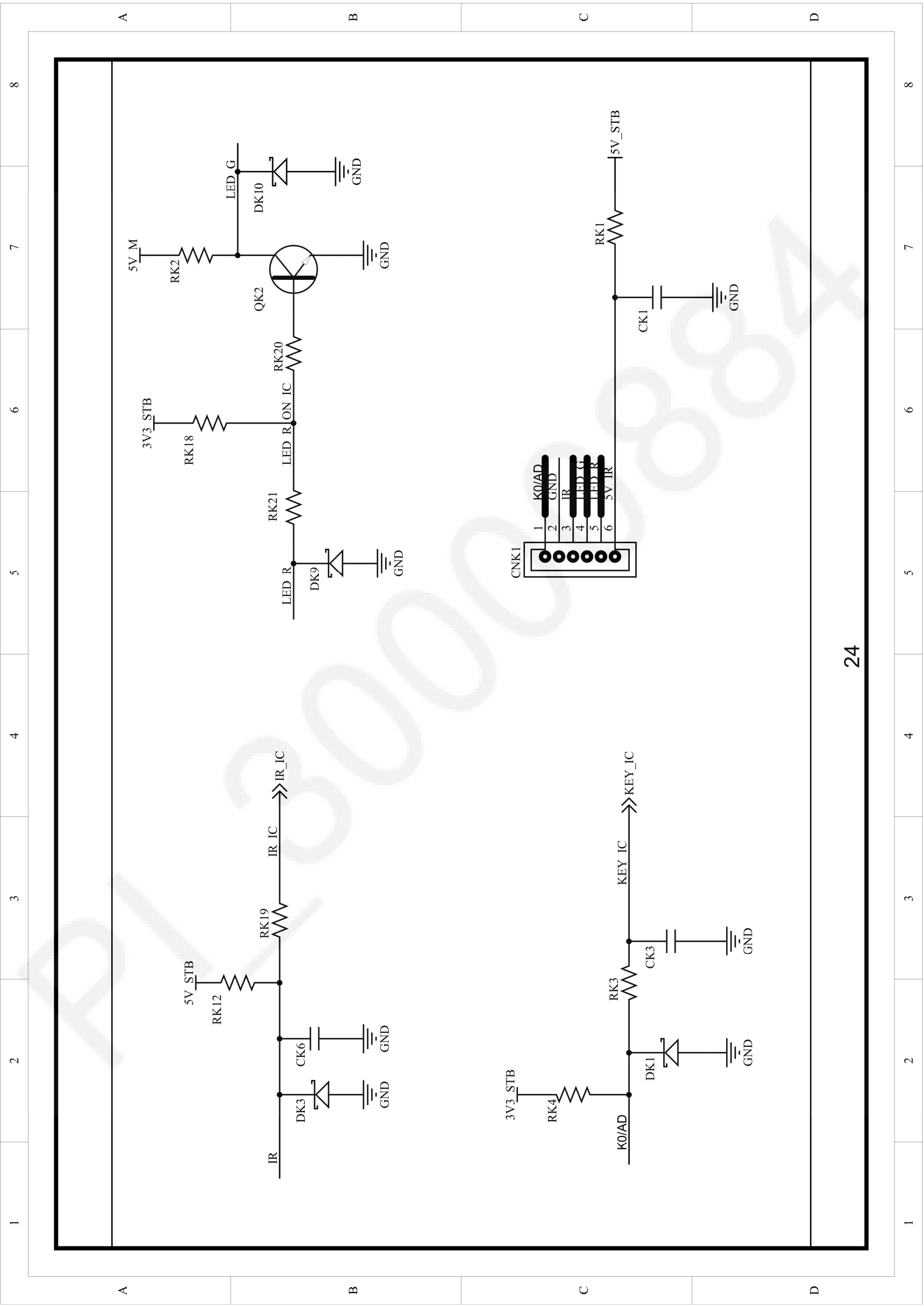


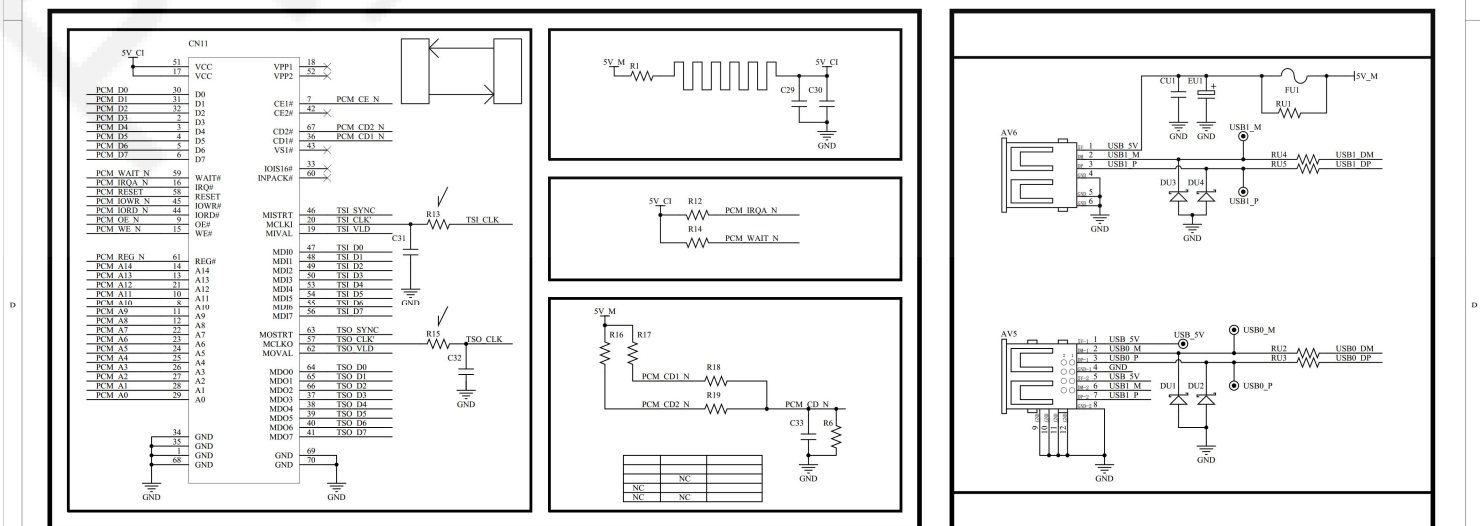
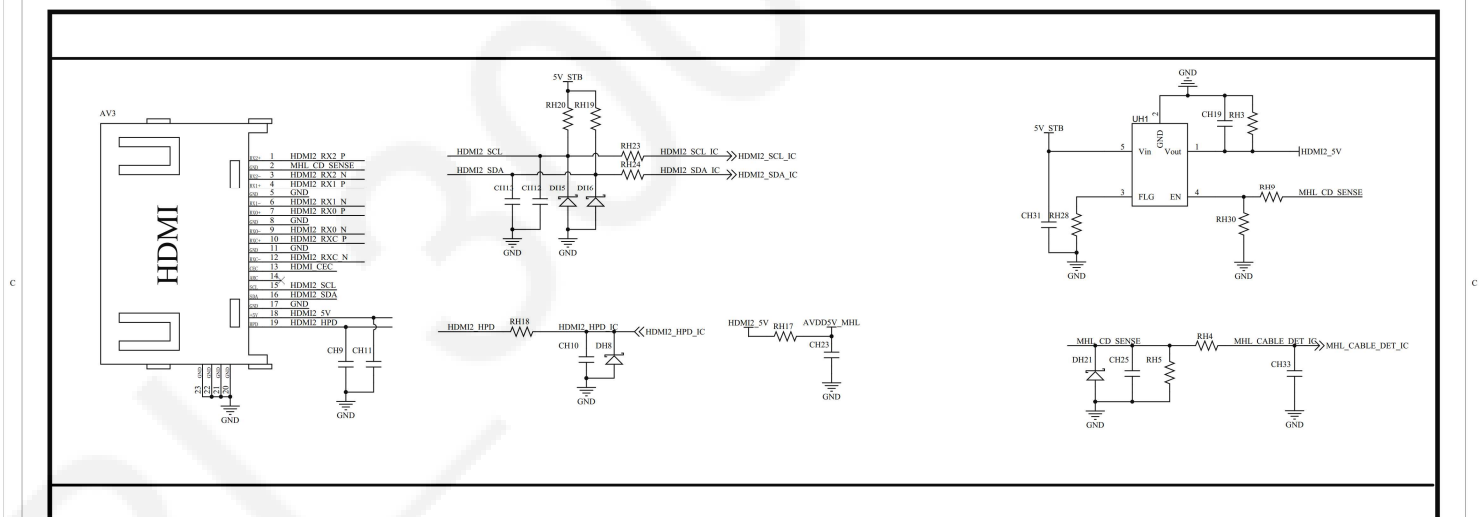
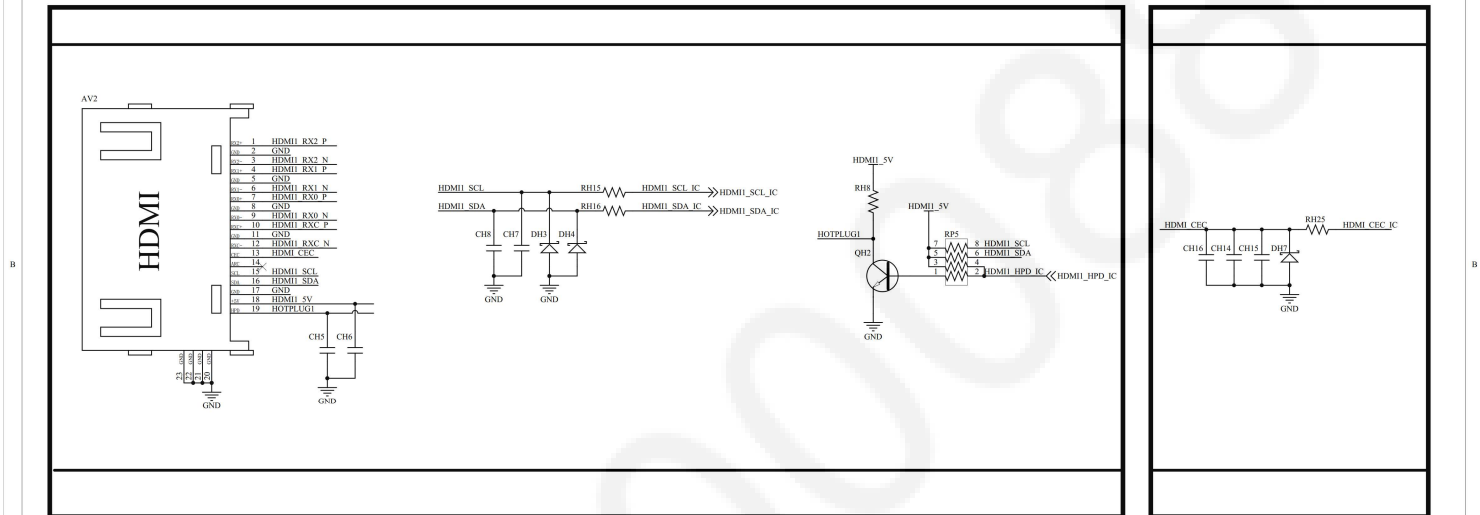
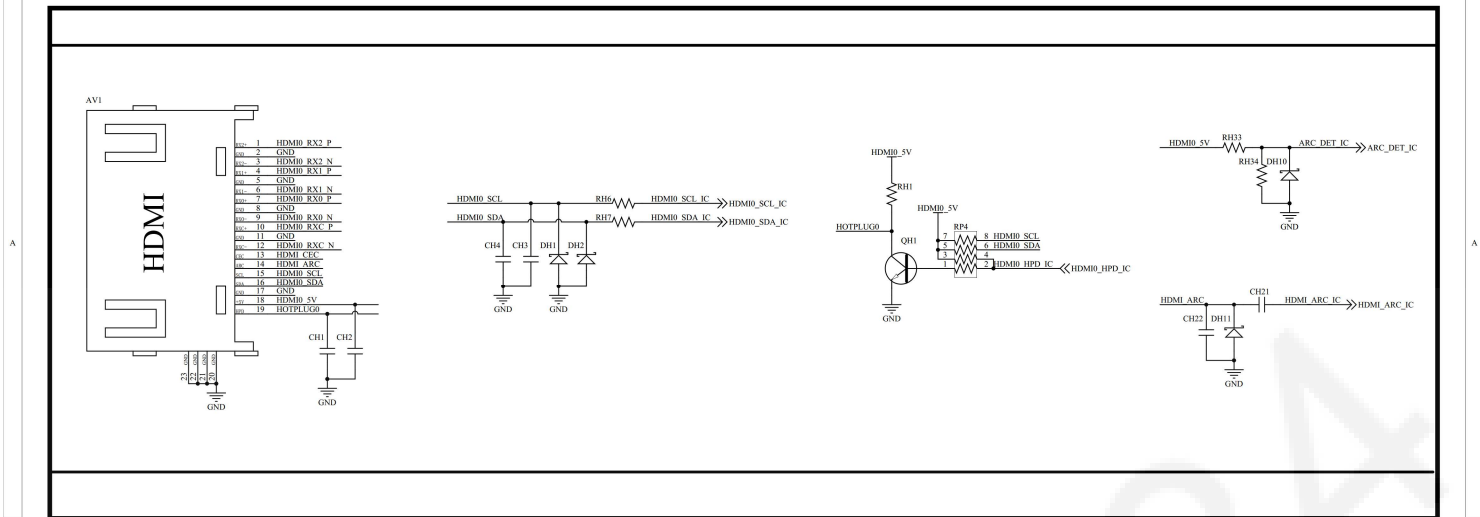
D

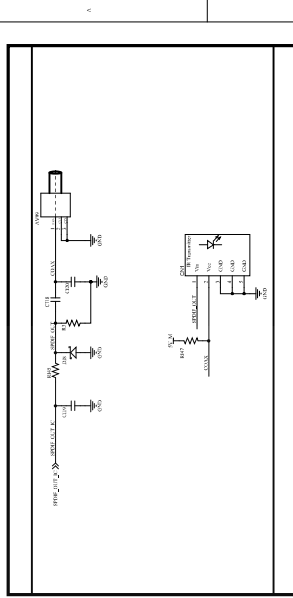
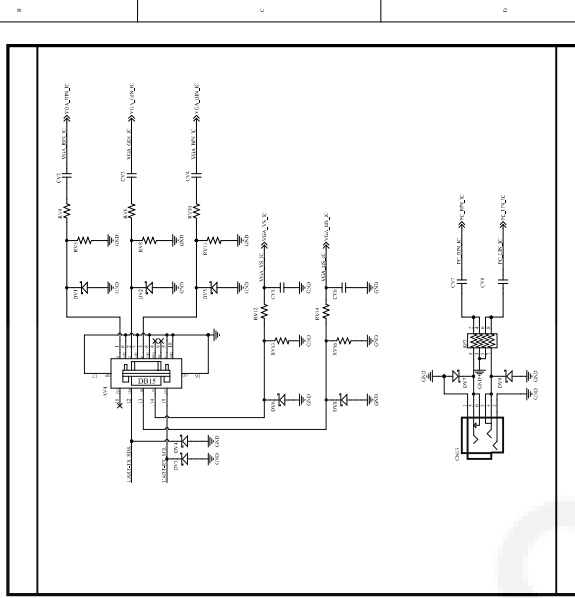
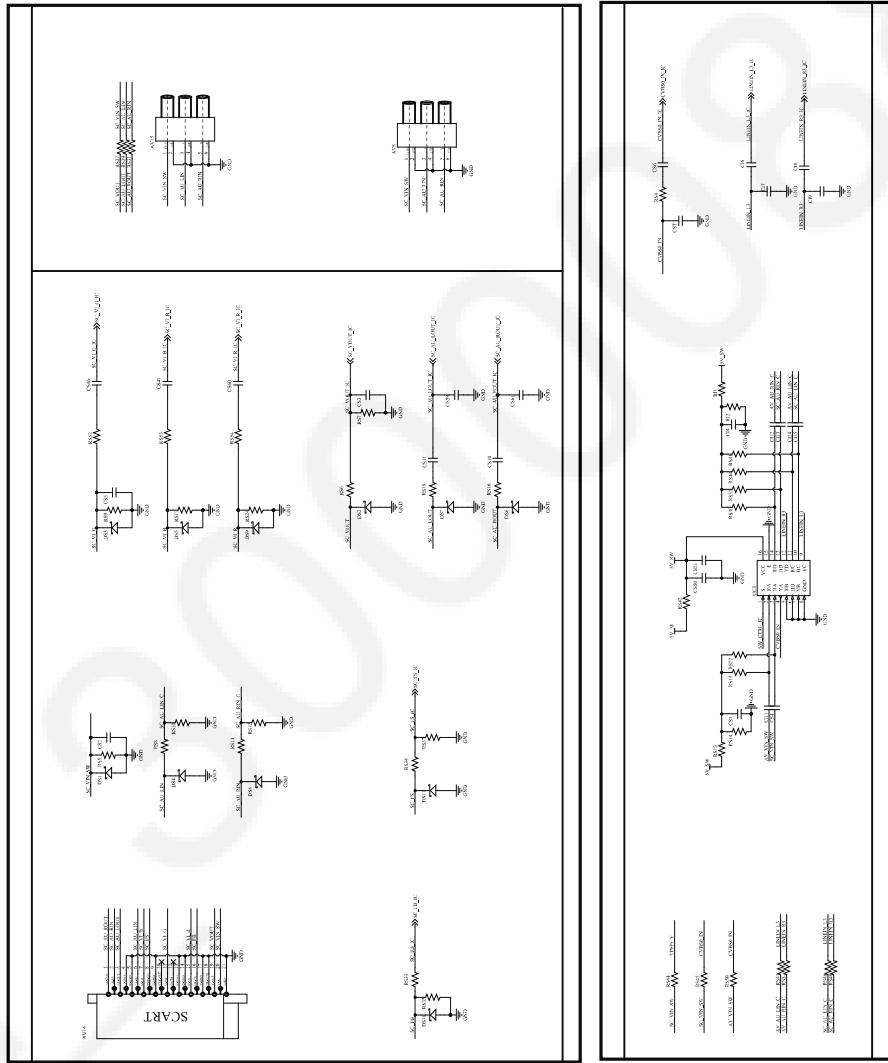
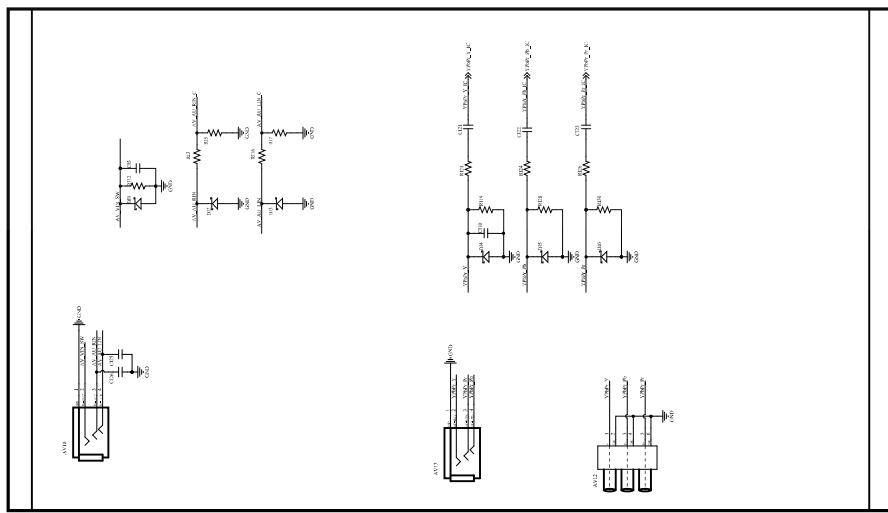


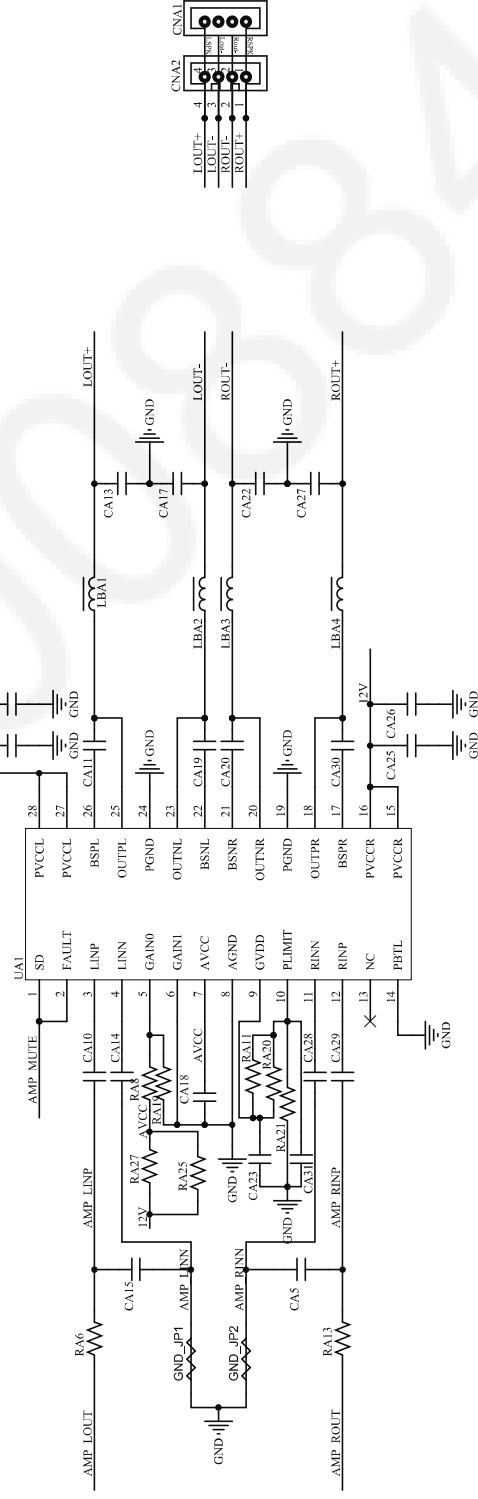
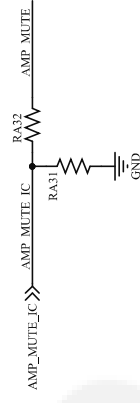
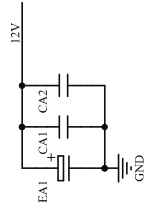
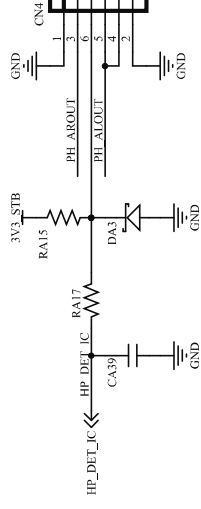
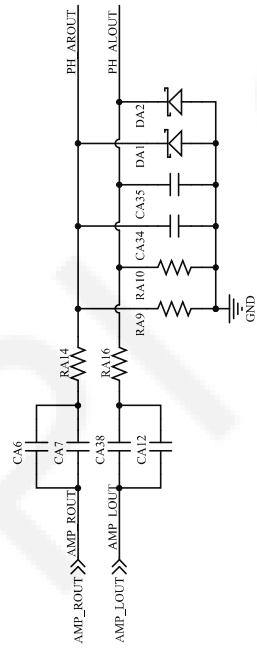
E

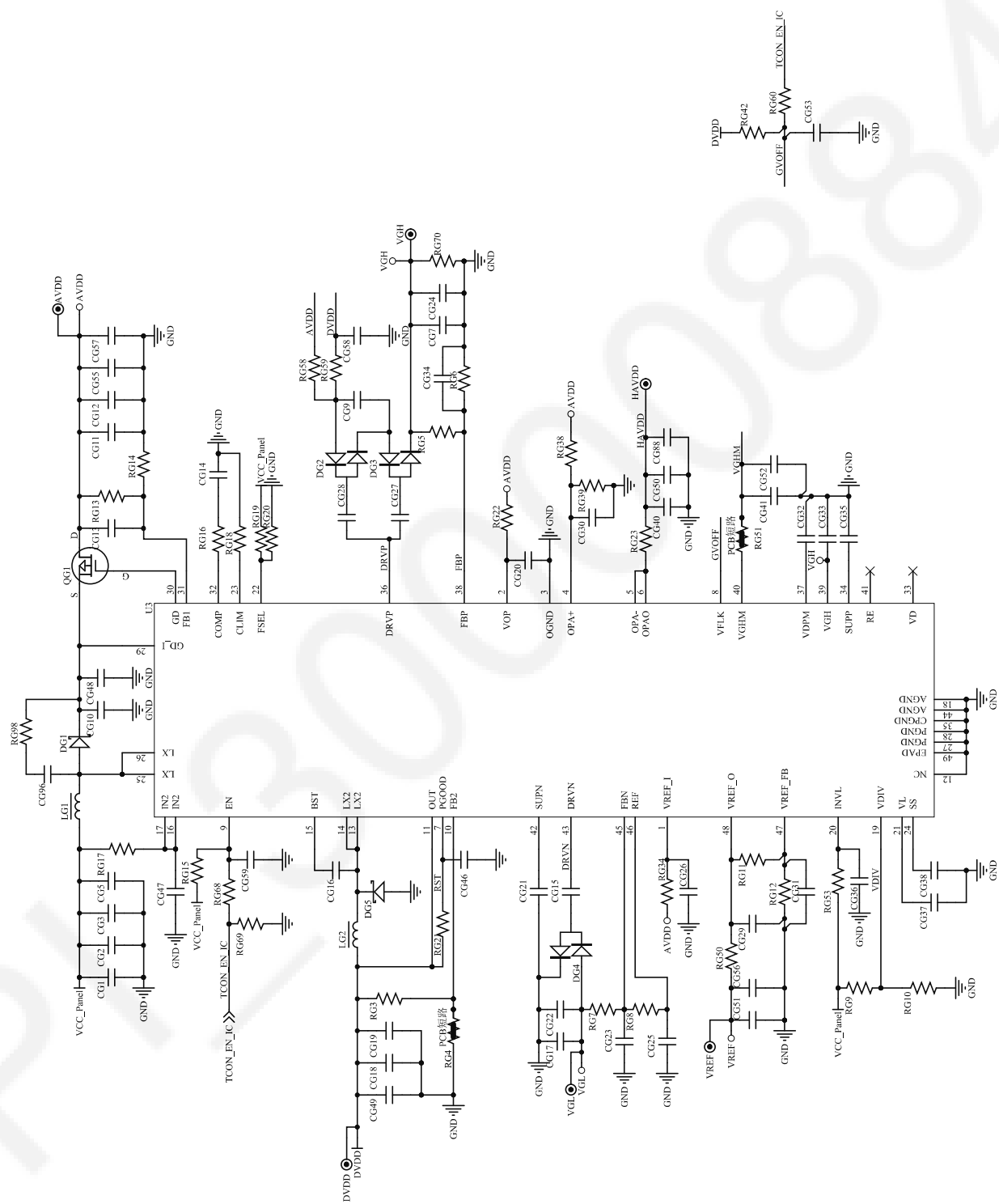












The schematic diagram illustrates the internal architecture of the AD7714, a 24-bit sigma-delta ADC. The circuit is divided into several functional blocks:

- Input Stage:** The input signal is connected to the VREF pin through a resistor network. The input is also connected to the VCOM pin through a resistor network.
- Sigma-Delta Modulator:** The core of the ADC, consisting of a feedback loop with a digital-to-analog converter (DAC) and a sigma-delta modulator.
- Digital Output Register:** The output of the modulator is a 12-bit digital signal (VOUT[11:0]).
- Power and Timing:** The circuit is powered by a 3.3V supply and includes various decoupling capacitors and resistors.

The diagram also includes a table of pin connections:

Pin	Signal	Connection
27	VCOM_ADJ	0
28	VCOM_FB	1
30	VCOM_OUT	0

A

B

C

D

A

B

C

D

12

11

10

9

8

7

6

5

4

3

2

1

12

11

10

9

8

7

6

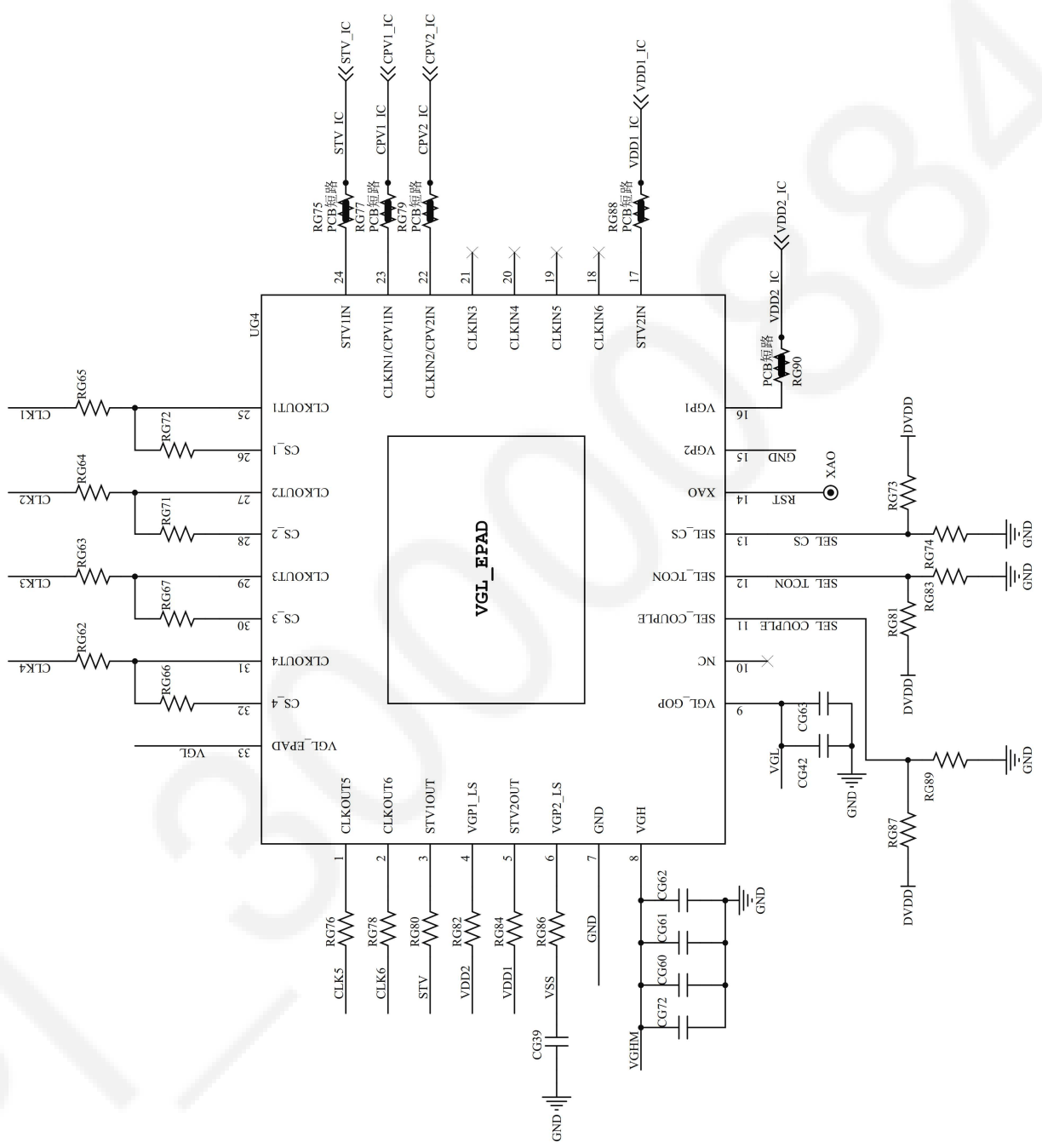
5

4

3

2

1

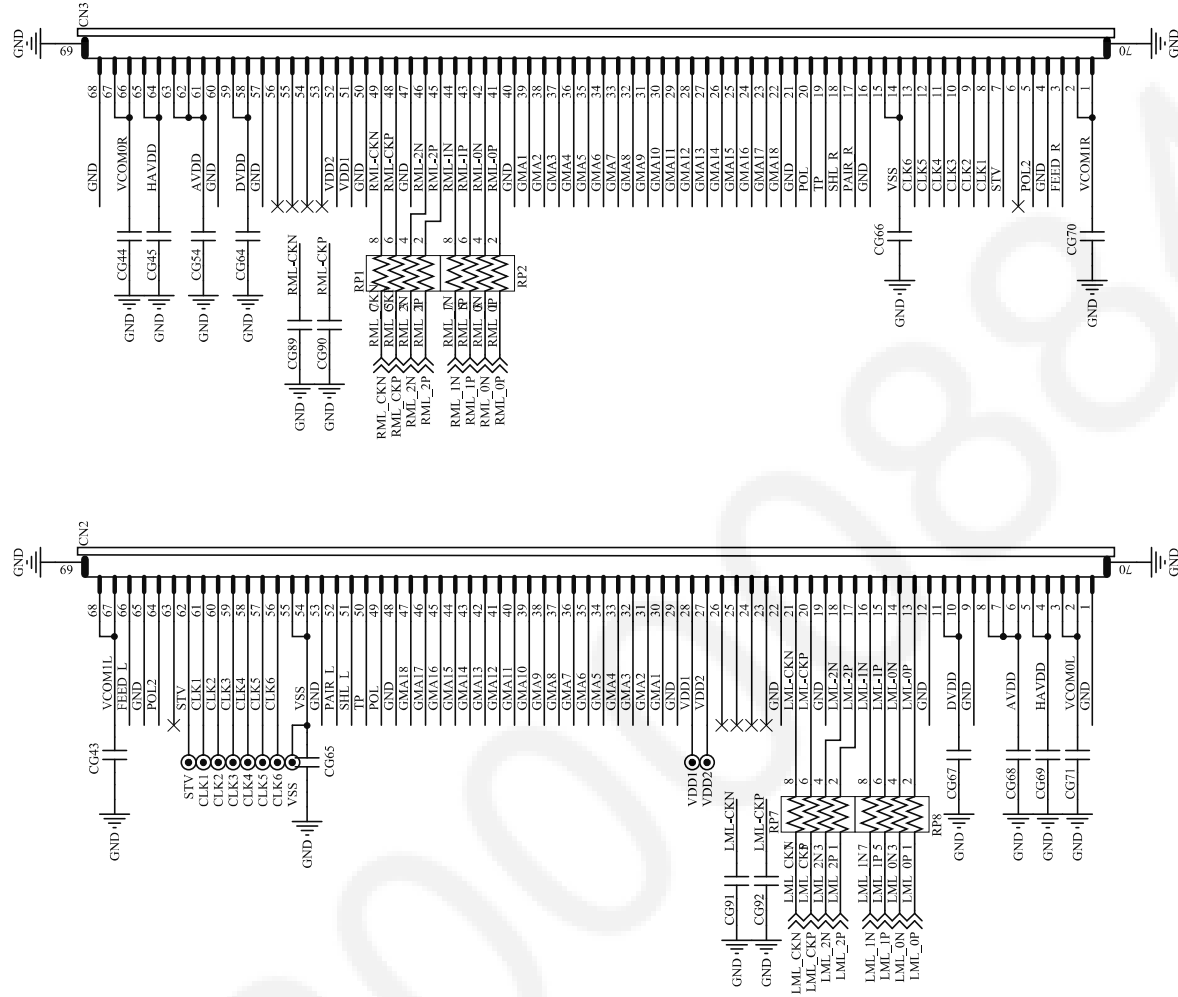
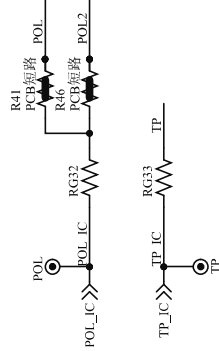
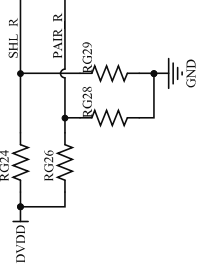
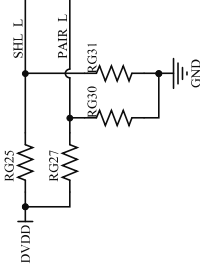


Selects mini-LVDS input mode (Default: Pulled High)

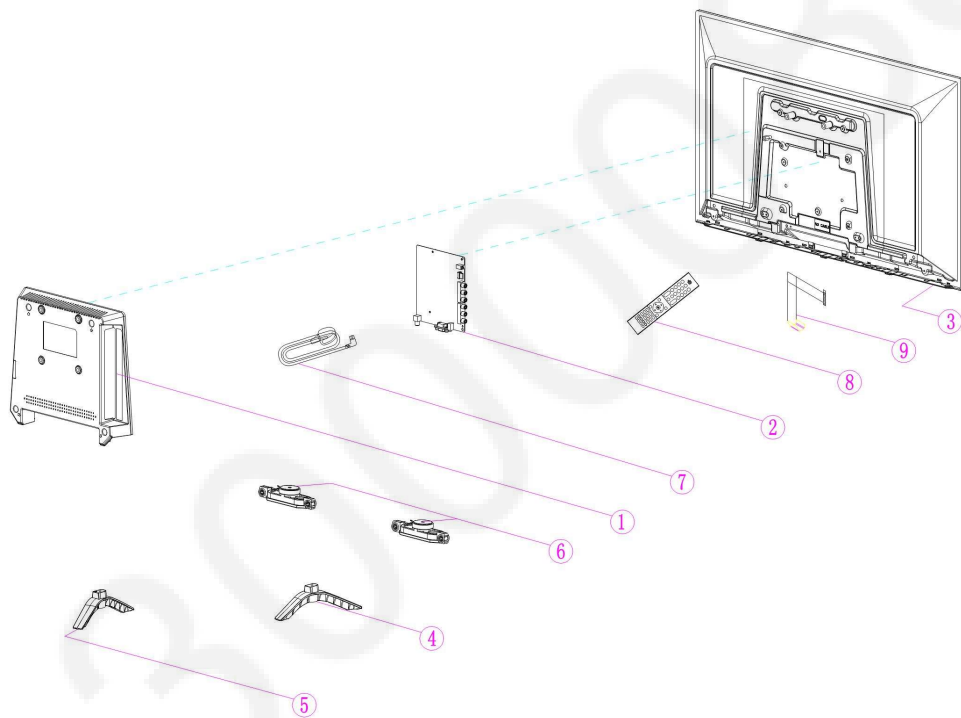
1. P_SEL = "L", 3-Pair Mode
2. P_SEL = "H", 6-Pair Mode

Selects left or right shift
 SHL "H" DIO1 Y1 Y2 Y3 Y10/4 Y10/3 Y10/2 Y10/1 Y3 Y2 Y1 Y10/1
 SHL "L" DIO2 Y10/4 Y10/3 Y10/2 Y10/1 Y3 Y2 Y1 Y10/1

SHL : Shift
 H : High
 L : Low
 DIO1 : Input
 DIO2 : Output
 Y1 : Output
 Y2 : Input
 Y3 : Output
 Y10/1 : Input
 Y10/2 : Output
 Y10/3 : Input
 Y10/4 : Output



15. Exploded view



16. PARTS LIST

Ref.NO	Part NO	Part Name & Description	Qty	Unit	Model	Area
1	1002-32E20T01-2102	Back Cover	1	PC	TH-32G300S	Singapore (Mekong)
2	53AW-475U05-T000MF	Main Board	1	SET	TH-32G300S	Singapore (Mekong)
2	475C-M36630-2160	Ret NO. M3663 in Schematic Diagram	1	PC	TH-32G300S	Singapore (Mekong)
3	7702-132000-1220	Open cell	1	PC	TH-32G300S	Singapore (Mekong)
3	7765-632000-D630	LED BAR	2	PC	TH-32G300S	Singapore (Mekong)
3	7626-CE200L-T00702	Panel	1	PC	TH-32G300S	Singapore (Mekong)
4	1020-32E3XL10-2104	Pedestal (L)	1	PC	TH-32G300S	Singapore (Mekong)
5	1020-32E3XR10-2104	Pedestal (R)	1	PC	TH-32G300S	Singapore (Mekong)
6	53FJ-3932E2-0020	Speaker	2	PC	TH-32G300S	Singapore (Mekong)
7	5942-A16203-1040	Power Cord	1	PC	TH-32G300S	Singapore (Mekong)
8	53LC-260403-W000	Remote	1	PC	TH-32G300S	Singapore (Mekong)
9	595G-F22130-5000	LVDS Cable	1	PC	TH-32G300S	Singapore (Mekong)
1	1002-32E20T01-2102	Back Cover	1	PC	TH-32G300K	Malaysia
2	53AW-475U05-T000MF	Main Board	1	SET	TH-32G300K	Malaysia
2	475C-M36630-2160	Ret NO. M3663 in Schematic Diagram	1	PC	TH-32G300K	Malaysia
3	7702-132000-1220	Open cell	1	PC	TH-32G300K	Malaysia
3	7765-632000-D630	LED BAR	2	PC	TH-32G300K	Malaysia
3	7626-CE200L-T00702	Panel	1	PC	TH-32G300K	Malaysia
4	1020-32E3XL10-2104	Pedestal (L)	1	PC	TH-32G300K	Malaysia
5	1020-32E3XR10-2104	Pedestal (R)	1	PC	TH-32G300K	Malaysia
6	53FJ-3932E2-0020	Speaker	2	PC	TH-32G300K	Malaysia
7	5942-A16203-1040	Power Cord	1	PC	TH-32G300K	Malaysia
8	53LC-260403-W000	Remote	1	PC	TH-32G300K	Malaysia
9	595G-F22130-5000	LVDS Cable	1	PC	TH-32G300K	Malaysia

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