

SERVICE MANUAL

6M31G CHASSIS



Design and specifications are subject to change without prior notice. (Only for Reference)

SIZE:A4

Description: SERVICE MANUAL 6M31G	
MODEL.	Brand Name:
JOB NO.	
Engineering Dept:	
Artwork By:	Date: 2015-6-10
Checked By:	Date:
Approved By:	Date:

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Technical Specification

1. Application Area:

This product standard is use for LED 6M30G chassis.

2. Specification:

All the standard are measured under following conditions without other specification.

2.1 Ambient Temperature: 20+/-5℃

2.2 Relative Humidity: 65+-10%

2.3 Power Supply Voltage: Standard Input Voltage(100～240V AC 50/60HZ)

2.4 Adjust after 20 minutes warm-up.

3. Test and check method:

3.1 Capability: According to nation test standard

3.2 Safety: IEC60065 standard

3.3 EMC: standard

Technical Specification

4. Safety and Regulation

NO.	Item	Min	Typ	Max	Unit	Remark
1.	Force Stability-Incline plane Tip Test		10		deg	
2.	Force Stability-Level Tip Test		100		N	
3.	Isolation Gap AC-AC/AC-DC	3			mm	
4.	Isolation Gap	6			mm	
5.	Power Consumption				W	
					W	
					W	
					W	
					W	
6.	Power consumption Standby			1	W	
7.	Dielectric Voltage	3			kV	
8.	Isolation Resistance	4			M Ω	
9.	Leakage Current		5		mApp	
10.	Power cord captivity		40		N	
11.	Flammability—Back Cover		PASS			
12.	Sharp edge		PASS			
13.	UL Compliance		NO			
14.	FCC Compliance		NO			
15.	CDRH Radiation Compliance		NO			
16.	CSA Compliance		NO			
17.	CEB Compliance		NO			
18.	CE Compliance					Base on different order
19.	CB Compliance		YES			

5. Video

NO.	Item	Min	Typ	Max	Unit	Remark
1.	Linearity Distortion, Vertical		1		%	
2.	Linearity Distortion, Horizontal		1		%	
3.	Trapezoidal Distortion, Vertical		1		%	
4.	Trapezoidal Distortion, Horizontal		1		%	
5.	Over scan, Vertical	95		97	%	
6.	Over scan, Horizontal	95		97	%	
7.	Brightness Maximum	180	200			

Technical Specification

8.	Video Noise Limited Sensitivity(@S/N=30dB) VHF			51	dBuV	
9.	Video Noise Limited Sensitivity(@S/N=30dB) UHF			54	dBuV	
10.	Selectivity -1.5M	35			dB	
11.	Selectivity +8M	40			dB	
12.	Tuning Range	-0.7			MHz	
13.	Resolution Horizontal		1920		Lines	
14.	Resolution Vertical		1080		Lines	

6. Chroma

NO.	Item	Min	Typ	Max	Unit	Remark
1.	White Balance, X axis					
2.	White Balance, Y axis					
3.	White Balance, Color Temperature	6500	9800	12500	kdeg	12500(266,276) 9800(280,290) 6500(313,329)
4.	Color Sensitivity		30		dB	
5.	Color Burst Lock-in Range	+/-300			Hz	
6.	Color Killer Sensitivity		30		dBuV	

7. Audio

NO.	Item	Min	Typ	Max	Unit	Remark
1.	Audio Noise Limited Sensitivity, VHF-L		25		dBuV	
2.	Audio Noise Limited Sensitivity,VHF-H		25		dBuV	
3.	Audio Noise Limited Sensitivity, UHF		28		dBuV	
4.	Buzz(S/N Ratio)		40		dB	
5.	Distortion		3		%	
6.	Audio ouput,L/R,at 10% THD		6		W	
7.	Audio ouput,Center		6		W	
8.	Stereo Separation		21		dB	
9.	Speaker Impedance		6		ohm	
10.	Speaker Power rating		6		W	

8. Power

NO.	Item	Min	Typ	Max	Unit	Remark
1.	DC Voltage, Audio		12		V	
2.	DC Voltage, Tuner		3.3		V	

Technical Specification

9. External Interface

NO.	Item	Min	Typ	Max	Unit	Remark
1.	Video Input Level		1		Vpp	75 ohm
2.	Video Input Frequency Response	4.5			MHz	
3.	Video Input S/N		40		dB	
4.	Audio Input Level		0.5		Vrms	
5.	Audio Input Frequency Response			20	kHz	
6.	Audio Input S/N		40		dB	
7.	Audio Input Distortion		3		%	
8.	Audio Input Dynamic Range		2		V	
9.	Video output Level		1		Vpp	
10.	Video output Frequency Response		4.2		MHz	
11.	Video output S/N		50		dB	
12.	Audio output Level		0.5		Vrms	
13.	Audio output Frequency Response	80		15000	Hz	
14.	Audio output S/N		40		dB	
15.	Audio output Distortion		6		%	
16.	Video Input Level,R/G/B		0.7		VPP	
17.	Video Input Level,Component(Y,Pb,Pr)		0.7		VPP	
18.	RGB Input Resolution,Vertical			1920	pixel	
19.	RGB Input Resolution,Horizontal			1080	pixel	
20.	RGB Input Horizontal Frequency			68	kHz	
21.	RGB Input Frame Rate			60	Hz	

10. The Others

NO.	Item	Min	Typ	Max	Unit	Remark
1.	Search sensitivity		40		dBuV	
2.	Clock,real time gain or loss(sec per day)		NO		sec	
3.	Software Functionality Test		YES			
4.	REMOCON Working sensitivity,Straight		8		m	
5.	REMOCON Working sensitivity,T/B/L/R		6		m	
6.	Close caption sensitivity		46		dBuV	
7.	Teletext sensitivity		46		dBm	
8.	Resonance of unit(sweep freq:50~1000)		NO			

Technical Specification

11. Customer Menu Setup(as shipped condition)

NO.	Item	Specification	Remark
1.	PSM	Standard	
2.	SSM	Standard	
3.	Volume	30	
4.	Mute	off	
5.	Input Mode	RF-Air	
6.	Customer menu language	English	Base on different order
7.	AVL	off	
8.	Sleep Timer	off	
9.	Auto sleep	off	
10.	Surround	off	
11.	Noise Reduction	Middle	

12. Reliability

NO.	Item	Min	Typ	Max	Unit	Remark
1.	ESD		4		kV	IEC-1000-4-2
2.	EFT/Burst				kV	IEC-1000-4-4
3.	Surge Immunity				kV	IEC-1000-4-5
4.	Voltage Dip Test,10ms				%	IEC-1000-4-11
5.	Voltage Dip Test,100ms				%	IEC-1000-4-11
6.	Operation Temperature				deg	
7.	Operation Humidity				%	
8.	Storage Temperature				deg	
9.	MTBF(confidence Level:90%)				hour	

Technical Specification

DTV-Productions Specification

Please refer to the picture		
Brief Information		
	Product Name	
	Chassis Name	6M31G
	Key functions	DVB-T/T2/S/S2/C;
	Target Market	Europe
	Product Category	LED iDTV
	Product Positioning	
	Product size	
Panel Specification		
Model Number		
	Panel Manufacturer	
	Model Number	
Mechanical		
	Panel Size	
	Dimension	32"
	Active Area (mm) : H x V	
	Pixel Format (H x V)	
	Backlight Type	
	Diagonal Screen Size	
	Pixel Pitch (mm)	
Electronic Parameter		
	Brightness (cd/m ²)	200
	Contrast Ratio	
	Viewing Angle	TBD
	Response Time (ms)	
	Back light Time (Hours)	TBD
	120Hz(100Hz)/240Hz(200Hz)	60Hz
	3D No/PR/SG	No
Signal Receiving System		
ATV Receiving System		
	PAL BG/I/DK/NTSC-M	No

	PAL/SECAM BG/DK/I SECAM L/L"	PAL/SECAM BG/DK/I
	PAL M/N NTSC-M	No
DTV Receiving System		
	ISDB-T/ISDB-S/SBTVD-T	No
	ATSC	No
	DTMB	No
	DVB-T	Yes
	DVB-T2	Yes
	DVB-C	Yes
	DVB-S	Yes
	DVB-S2	Yes
	DVB-CI(*Not a system, but important to indicate the type of DTV)	Yes
	DVB-CI+(*Not a system, but important to indicate the type of DTV)	Yes
Antenna input		
	Antenna Input port: 1	No
	Antenna Input port: 1 (1 for both analogue and digital)	1x IEC connector for DVB-T/T2/S/S2/C analogue
	Antenna Input port: 2 (1 air + 1 Cable)	No
	Antenna input port 2 (1 Sat)	No
	Type of Antenna Input Port	IEC169-2 Female
	Receiving Frequency range (ATV)	48.25MHz~855.25MHz
	Receiving Frequency range (DTV)	DVB-T: 174 MHz ~ 230 MHz, 470 MHz ~ 860 MHz;
External Signal Receiving System		
Composite Input	PAL 50Hz/60Hz	Yes
	SECAM	Yes
	NTSC 3.58	Yes
	NTSC4.43	Yes
Component Input	480i /480p/720p/1080i (60Hz)	No

	576i /576p/720p/1080i (50Hz)	No
	1080P 24Hz/25Hz/30Hz/50Hz/60Hz	No
PC Input	VGA (640 x 480)	No
	S-VGA (800 x 600)	No
	XGA (1024 x 768)	No
	W-XGA (1280 x 768)	No
	W-XGA (1360×768)	No
	S-XGA (1280 x 1024)	No
HDMI Input	480i /480p/720p/1080i (60Hz) (Video Format)	Yes
	576i /576p/720p/1080i (50Hz) (Video Format)	Yes
	1080P 24Hz/25Hz/30Hz/50Hz/60Hz (Video Format)	Yes
	VGA (640 x 480) (PC Format)	Yes
	S-VGA (800 x 600) (PC Format)	Yes
	XGA (1024 x 768) (PC Format)	Yes
	W-XGA (1280 x 768) (PC Format)	Yes
	W-XGA (1360×768) (PC Format)	Yes
	S-XGA (1280 x 1024) (PC Format)	Yes
USB	Media player formats	TBD
Features		
Picture		
	Picture Mode	Dynamic/Standard/Mild /User
	Picture Size	4: 3/ 16: 9/ Just Scan /Zoom2/ Zoom1
	Picture Freeze	Yes
	Backlight Adjust	NO
	Auto Format	No
	3:2 Pull Down	No
	4:3 Stretch	No
	Comfilter	3D
	PIP(Single tuner)	No
	Noise Reduction	Of f / Low/ Middle/ High

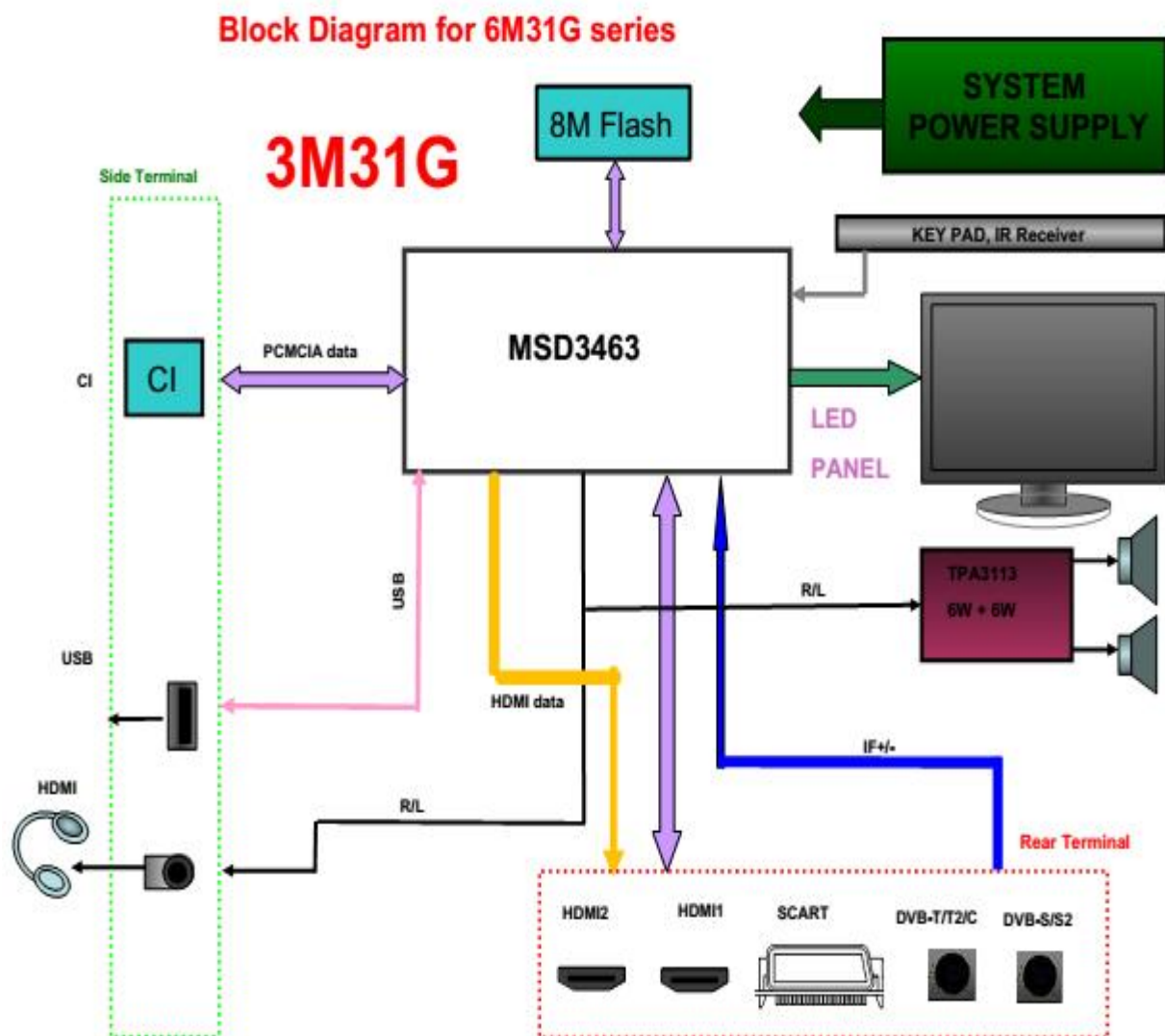
	MPEG Reduction	Of f / Low/Middle/ High
	Color temperature	Medium/Warm/User/Cool
Sound		
	Sound Mode	St andard/ Music/ Movie/Sports/User
	For personal mode:Treble/Bass/Balance	Yes
	Surround virtuell	Yes
	Equalizer	No
	Audio Output Power	2x 6W
	NICAM	Yes
	A2	No
	BTSC(MTS)	No
Teletext		
	FLOF/TOP	TBD
	Memory Page	1000
	Character Language	CP1251(cyrillic)
	Teletext Level	no
Program Management		
	V-Chip	No
	Parent Control(Child Lock)	Parental Guidance
	Closed Caption	No
	Subtitle	Yes
	EPG	Yes
	Channel list	Yes
	Faivorate Channel List	Yes
	Channel Editor	Yes
	Sleep Timer	Yes
	On/Off timer	no
	Channel Swap timer	no
	Blue Screen	yes
AC Input		
	AC Input Range	100-240V AC (-10%,+10%)
	AC Plug Type	VDE/2pins
	AC Cable Length	1.8m
	Power Consumption	TBD
	Standby Power Consumption	0.5w
HDMI		
	CEC	Yes
	ARC	NO
	3D	NO

	MHL	Yes,HDMI1
Software Update		
	By USB	Yes
	By Internet	TBD
	Internet Auto search	TBD
	By Over-Air	TBD
	By other Service Port	no
PVR		
	By External USB or HDD	Yes
	Built in HDD	No
	Time Shift	Yes, with external HDD
OSD Language		
	OSD Language	TBD
USB File System		
	FAT16	Yes
	FAT32	no
	NTFS	no
Middle Ware		
	MHEG5	yes
	Ginga	No
	MHP	No
	HbbTV	yes
Wifi		
	Wifi Dongle	No
	Wifi Built in	No
Terminals Configuration		
Teminal Direction (Side and Bottom & Side and Rear)		Side and Bottom
Input		
	Tuner	2, bottom
	Composite	No
	S-Video	No
	Full Scart	1, bottom
	Half Scart	No
	Component	No
	PC input with 3.5mm mini jack audio input	No
	HDMI	2bottom
	USB	1 side
	LAN	No

	CI Slot	Yes
	CA Slot	No
Output		
	Video Output	No
	Audio Output (Fixed & Variable)	No
	Digital Audio Output (Coaxial & Optical)	No
	Earphone	1 side
Diagram of Teminal Configuration		
Mechanical Spec		
Cabinet		
Cabinet color	For front back stand	TBD
Operation Keys / Touch sensor		1, STANDBY
AC Power Switch	Mechanical power switch	No
LED Indicator	Power on (Green)	No
	Power on / Standby (Green / Red)	Power on / Standby (Blue or Green / Red)
	Power on / Standby / Recording(Green / Red / Orange)	No
	Program Timer / Recoding (Green / Red)	No
	On Timer or Program Timer(Green)	No
	Red / Green / Blue, indepentent PWM controlled	No
Logo Style	Silk Printing / SUS Badge (inlet type)	TBD
Stand	Tilt / Swivel	No
Dimension & Stuffing		
	Size (with stand)(mm)	
	Size (without stand) (mm)	
	Package Size (with stand)(mm)	
	Net Weight(Kg)	
	Gross Weight	

	Loading quantity (20GP/40GP/40GP) with pallet	
	Loading quantity (20GP/40GP/40GP) without pallet	
	Stand build in Packing Box (together or separately)	
Accessories		
Remote Controller		
	Type No.	TBD
	Battery	Yes
Instruction Manual		
	Paper size	TBD
	Printing Color	TBD
	Languages (Refer to Sales Country Sheet)	TBD
	Total Pages	TBD
	Instruction manual CD	TBD
Others		
	3D Glasses	No
	Camera	No
Requested Certification		
CB		TBD
UL		No
EMC		TBD
FCC		No
HDMI		TBD
USB		TBD
CI+		TBD
Dolby		TBD
DOLBY +		TBD
Dvix Hometheatre		TBD
DviX HD		No
DviX+HD		No
MHL		TBD
DLNA		TBD
CTS		TBD
Energy Star		TBD
CE		TBD

Block Diagram

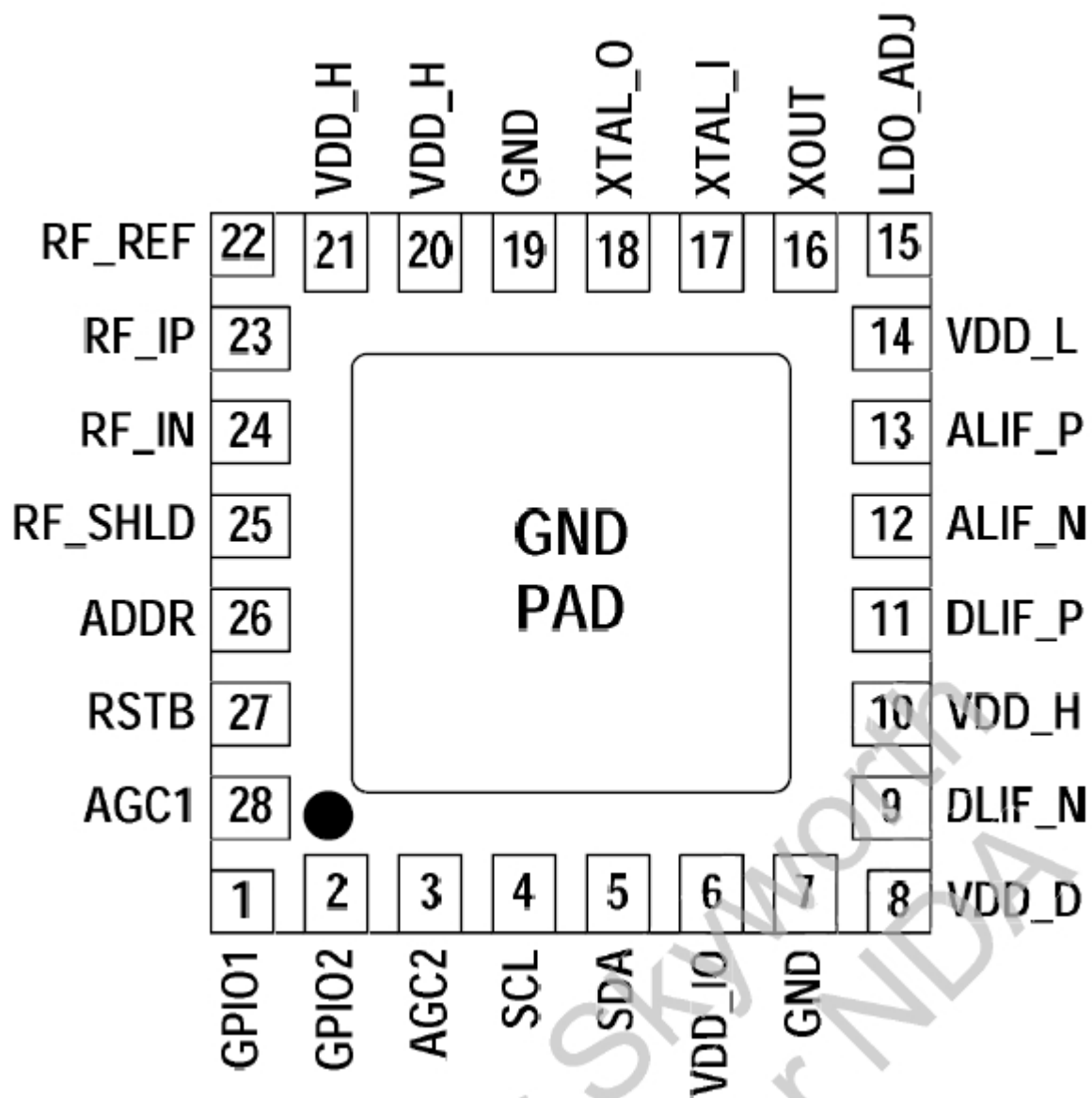


List of key parts

NO.	name	position	model	Spec.	P/N
1	IR RECEVIE	MOK1	SDR138	SMD MODULE 38KHZ	5300-147438-1S00
2	SPEAKER		SL411-05E	SPEAKER 6 OHM 10W MAX	5631-106144-0020
3	CRYSTAL	X2T0 Y201	HC-49U/S	24.000000MHZ	4900-124053-R000
		X2T1	HC-49/US	27.000000MHZ	4900-127053-R000
4	TUNER	U202	SI2157-A30-GM R	SMD IC	471J-SI2150-0280
5	IC	U201	MSD3463GSA	SMD IC	475C-M34630-2160
		U0P2 U0P7	MP1470GJ-Z	SMD IC	476A-M14700-0060
		U0A4	TPA3113D2	SMD IC	4722-T31130-0280
		U0M1	GD25Q64CSIG	SMD IC	47F2-G25641-0080
		U0P1	AOZ3015AI	SMD IC	4786-A30150-0080
		U0P8	AS1117L/TR-HF	SMD IC	47B6-A11174-0300
		U1P1 U1P3	LD1117-3.3	SMD IC	47DG-L11171-0030
		U0J4	G524D3T11U	SMD IC	474R-G52420-0050
		U0P6	MP8126DF	SMD IC	476A-M81261-0160
		U0T1	RDA5815M	SMD IC	47DF-R58150-0200
		U0N1	RT6919BGQV	SMD IC	472L-R69190-0560
6	MOS	U0L1	STM9435	SMD IC	472T-S94351-0080

IC Block Diagram

1. TUNER:SL2157



Si2157-A30

Table 13. Si2157 Pin Descriptions

Pin Number(s)	Name	I/O	Description
1*	GPIO1	I/O	General purpose input/output #1
2*	GPIO2	I/O	General purpose input/output #2
3*	AGC2	I	ALIF/DLIF output amplitude control input #2 (optional)
4	SCL	I	I ² C clock input
5	SDA	I/O	I ² C data input/output
6	VDD_IO	S	I/O supply voltage, 3.3 V
7	GND	S	Ground. Connect GND pins to GND_PAD.
8	VDD_D	S	Digital supply voltage, 1.8 V
9*	DLIF_N	O	DLIF differential output to DTV demodulator (negative)
10	VDD_H	S	Analog high supply voltage, 3.3 V
11*	DLIF_P	O	DLIF differential output to DTV demodulator (positive)
12*	ALIF_N	O	ALIF differential output to SoC or ATV demodulator (negative)
13*	ALIF_P	O	ALIF differential output to SoC or ATV demodulator (positive)
14	VDD_L	S	Analog low supply voltage, 1.8 V
15*	LDO_ADJ	O	Control output for external PNP transistor used for single-supply operation
16*	XOUT	O	Output reference clock to secondary tuner or receiver
17	XTAL_I	I	Crystal pin 1 (or RCLK input driven by XOUT of another tuner or receiver)
18*	XTAL_O	O	Crystal pin 2 (leave floating if XTAL_I is driven by XOUT of another tuner or receiver)
19	GND	S	Ground. Connect GND pins to GND_PAD.
20	VDD_H	S	Analog high supply voltage, 3.3 V
21	VDD_H	S	Analog high supply voltage, 3.3 V
22	RF_REF	O	RF reference voltage output
23	RF_IP	I	RF input (positive)
24	RF_IN	I	RF input (negative)
25	RF_SHLD	S	RF input shield
26	ADDR	I	I ² C address select
27*	RSTB	I	Hardware reset (active low)
28*	AGC1	I	ALIF/DLIF output amplitude control input #1 (optional)

*Note: Pin should be left floating if unused.

2. MSD3463GSA

Power Pins

Pin Name	Pin Type	Function	Pin
AVDD_5V	5V Power	Analog 5V Power	204
AVDD33_DADC	3.3V Power	DEMODO ADC Power	55
AVDD33_DMPLL	3.3V Power	Crystal Power	62
AVDD33_AU	3.3V Power	Audio Power	39
AVDD33_ADC	3.3V Power	Video ADC Power	22
AVDD33_EAR	3.3V Power	Earphone Driver Power	52
AVDD33_ETH	3.3V Power	Ethernet Power	190
AVDD_MOD	3.3V Power	MOD 3.3V Power	7, 75, 155, 158, 184
VDDIO_CMD	1.5V Power	DDR Command Power	73
VDDIO_DATA	1.5V Power	DDR Data Power	185, 187
VDDIO_DRAM	1.5V Power	DDR DRAM Power	188, 189
DVDD_DDR_DATA	1.15V Power	DDR DATA Power	183
VDDC	1.15V Power	Digital Core Power	38, 66, 74, 158, 166, 174, 206
AVDDL_DVI	1.15V Power	DVI Power	206
GND	Ground	Ground	186, 195

3.TDA3113

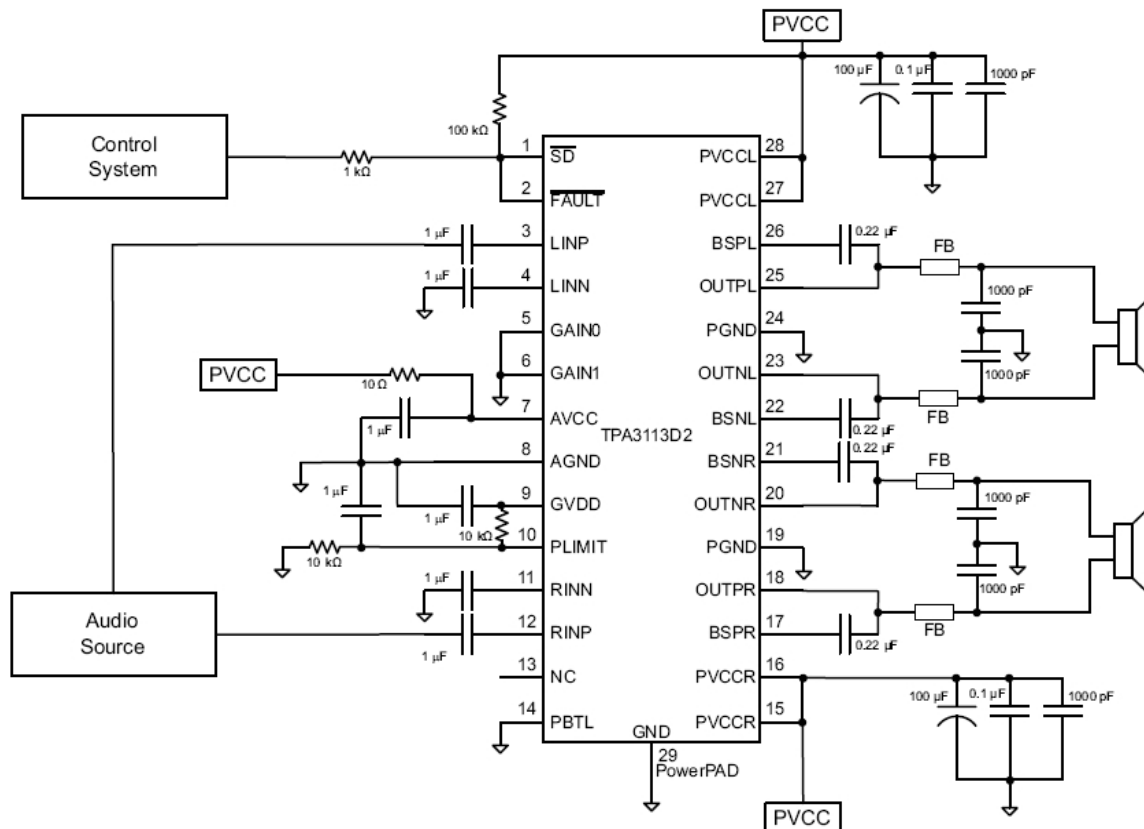
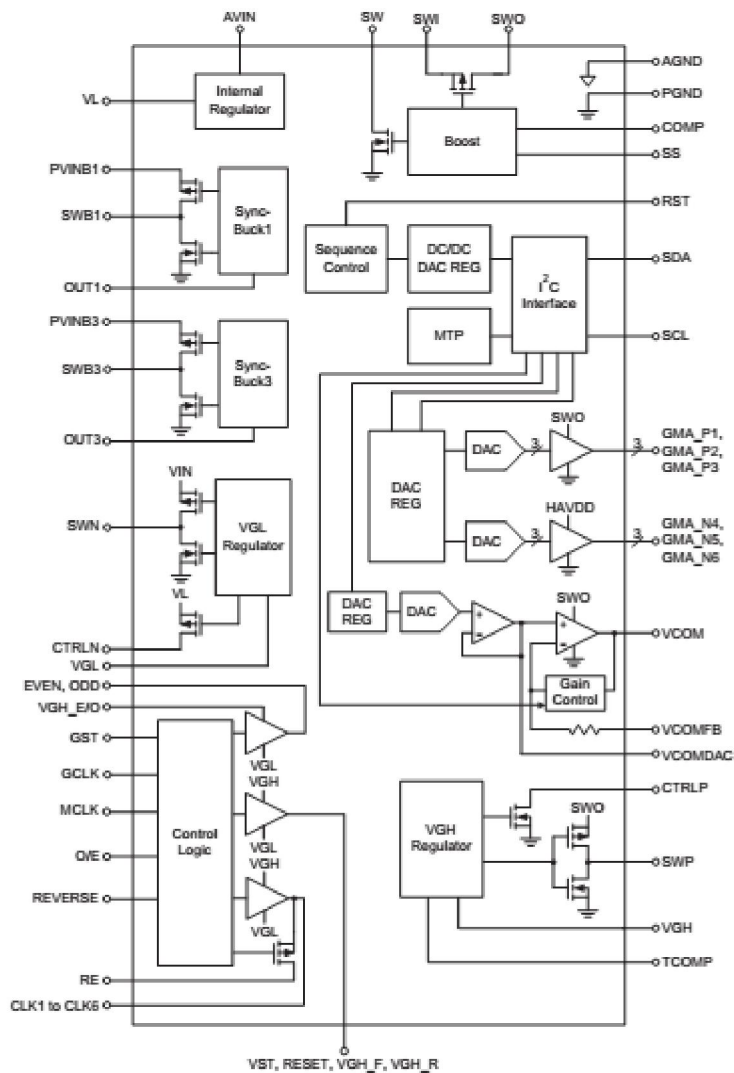


Figure 33. Stereo Class-D Amplifier with BTL Output and Single-Ended Inputs

4.RT6919BGQV

Function Block Diagram



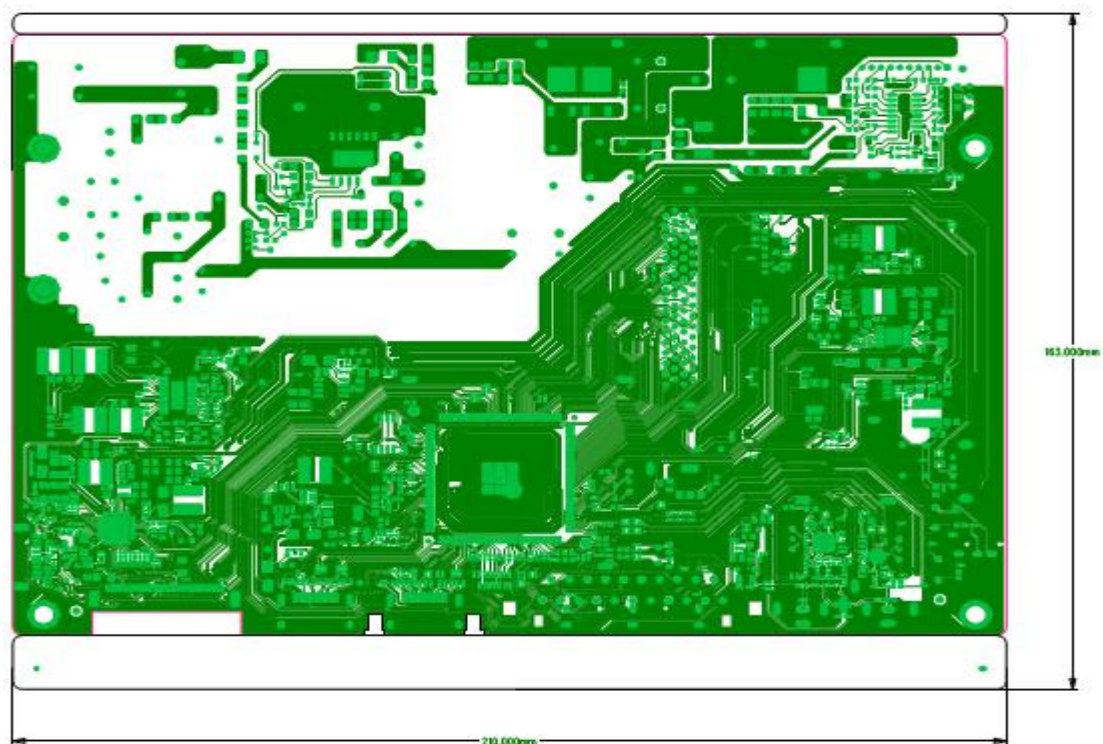
Functional Pin Description

Pin No.	Pin Name	I/O	Pin Function
1	REVERSE	I	BI-SCAN input (High : Reverse, Low : Normal).
2	GCLK	I	GCLK Input.
3	MCLK	I	MCLK Input.
4	GST	I	GST Input.
5	E/O	I	E/O Input.
6	AGND	--	Analog Ground.
7	VGL	I	Negative Charge Pump (VGL) Output Voltage Sense Input.
8	SWN	I/O	Switch Node of Negative Charge Pump with 50% Duty.
9	CTRLN	O	Base Control Output for Negative Charge Pump (VGL).
10	RST	O	Reset Generator Open-Drain Output (0V to V _{CC}).
11	OUT1	I	Output Sense Input for Buck Converter 1 (VCC).
12	SWB1	I/O	Switch Node of Buck Converter1 (VCC).
13	PGND	--	Power Ground (VCC Buck PGND).
14	PVINB1	I	Power Input for Buck Converter1 (VCC).
15	AVIN	I	Internal Regulator Supply Pin.
16	PVINB3	I	Power Input for Buck Converter3 (HVDD).
17	SWB3	I/O	Switch Node of Buck Converter3 (HVDD).
18	OUT3	I	Output Sense Input for Buck Converter3 (HVDD).
19	PGND	--	Power Ground (HAVDD Buck PGND)

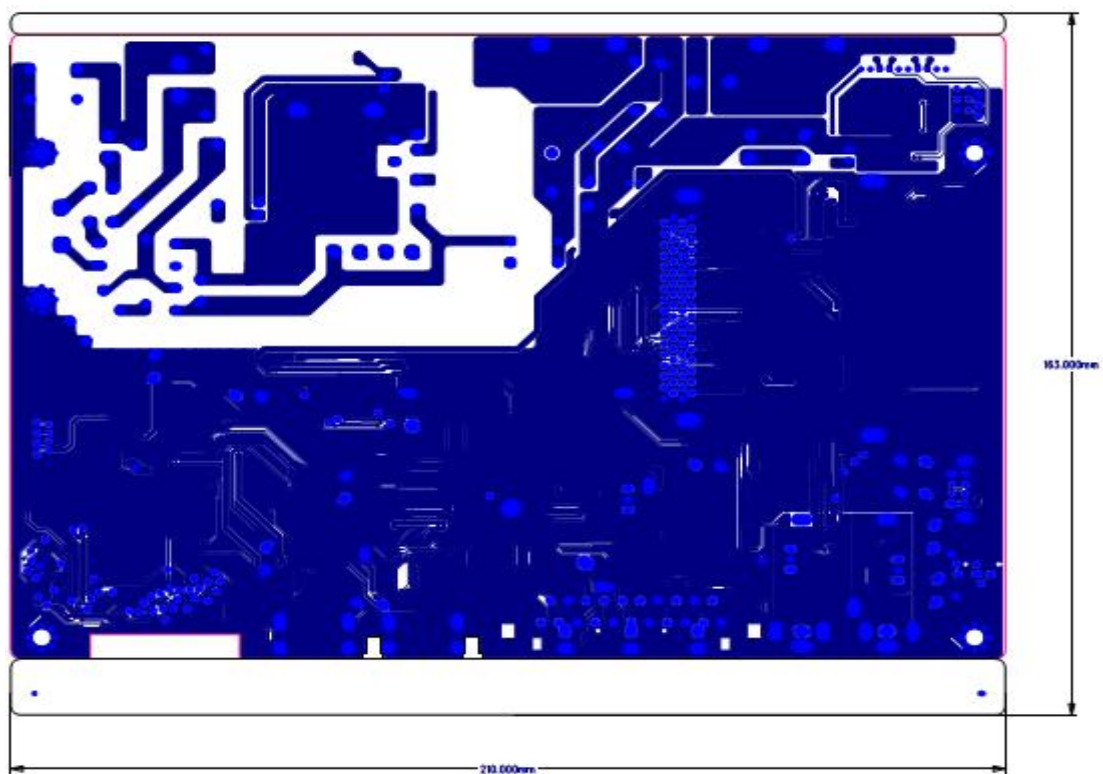
Pin No.	Pin Name	I/O	Pin Function
20	SCL	I	I ² C Clock Input.
21	SDA	I	I ² C Data Input.
22	VL	O	Internal Regulator Output.
23	TCOMP	I	Temperature Compensation Input.
24	PGND	–	Power Ground (AVDD Boost PGND).
25, 26	SW	I/O	Switch Node of Boost Converter (AVDD).
27	SWI	I	Isolation Switch Input.
28	SWO	O	Isolation Switch Output.
29	SS	O	Boost Converter (AVDD) Soft-Start.
30	COMP	I/O	Compensation Node of Boost Converter (AVDD).
31	GMA_P1	O	P-gamma Out CH1 (Positive).
32	GMA_P2	O	P-gamma Out CH2 (Positive).
33	GMA_P3	O	P-gamma Out CH3 (Positive).
34	GMA_N4	O	P-gamma Out CH4 (Negative).
35	GMA_N5	O	P-gamma Out CH5 (Negative).
36	GMA_N6	O	P-gamma Out CH6 (Negative).
37	AGND	–	Analog Ground.
38	VCOM	O	VCOM Out.
39	VCOMFB	I	VCOM Feedback Voltage Input.
40	CTRLP	O	Base Control Output for Positive Charge Pump (VGH).
41	SWP	I/O	Switch Node of Positive Charge Pump Pulse with 50% Duty.
42	VGH	I	Positive Charge Pump (VGH) Output Voltage Sense Input.
43	VGH_E/O	I	Positive Supply Voltage for ODD and EVEN Outputs.
44	RESET	O	GIP RESET Output.
45	VST	O	VST Output.
46	EVEN	O	EVEN Output.
47	ODD	O	ODD Output.
48	VGH_F	O	VGH_F Output.
49	VGH_R	O	VGH_R Output.
50	CLK6	O	Level Shifter CLK6 Output.
51	CLK5	O	Level Shifter CLK5 Output.
52	CLK4	O	Level Shifter CLK4 Output.
53	CLK3	O	Level Shifter CLK3 Output.
54	CLK2	O	Level Shifter CLK2 Output.
55	CLK1	O	Level Shifter CLK1 Output.
56	RE	I	Gate Shaping Resistor Connection.
57 (Exposed Pad)	PGND	–	The Exposed Pad should be soldered to a large PCB and connected to PGND for maximum thermal dissipation.

MAIN PCB

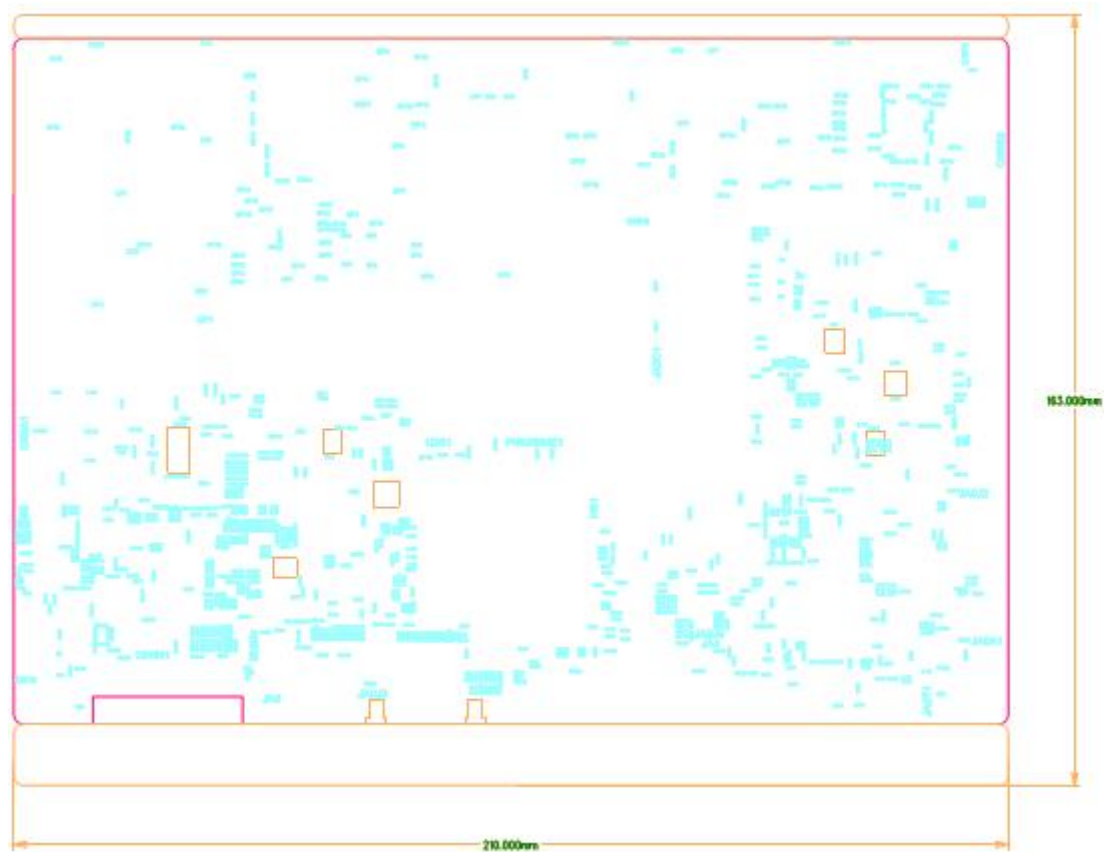
1.TOP



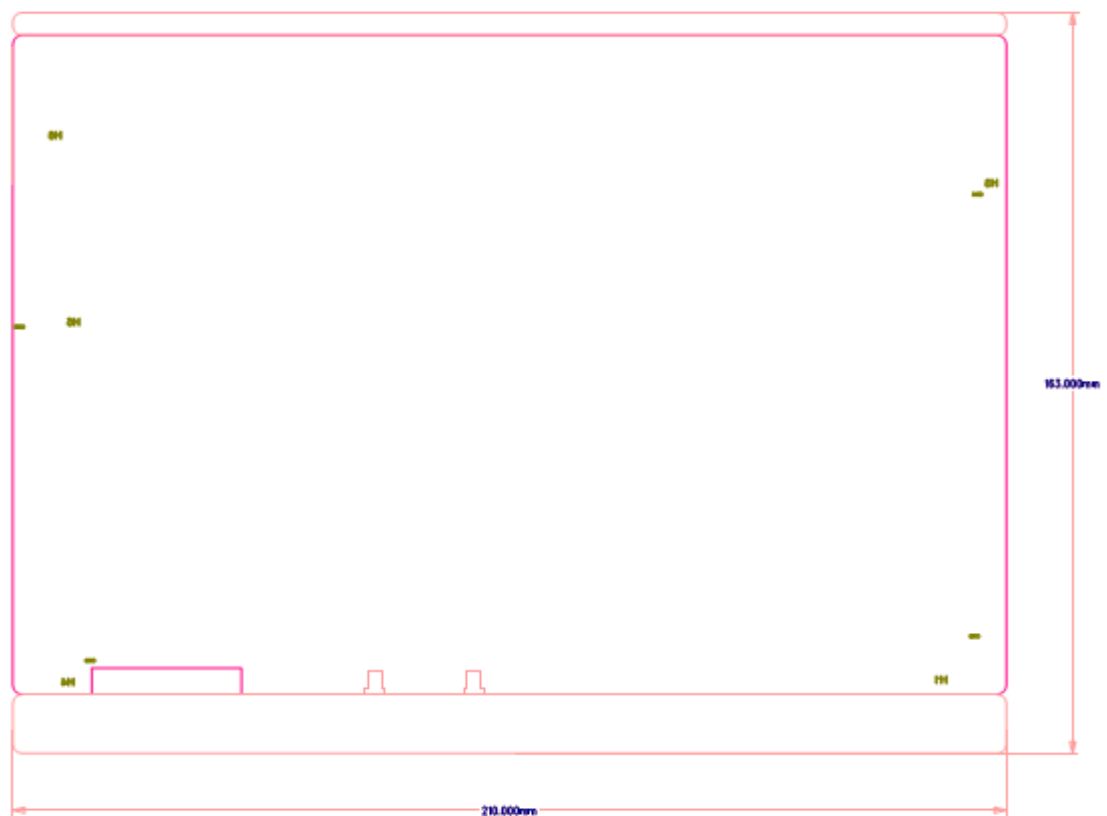
3. BOTTOM



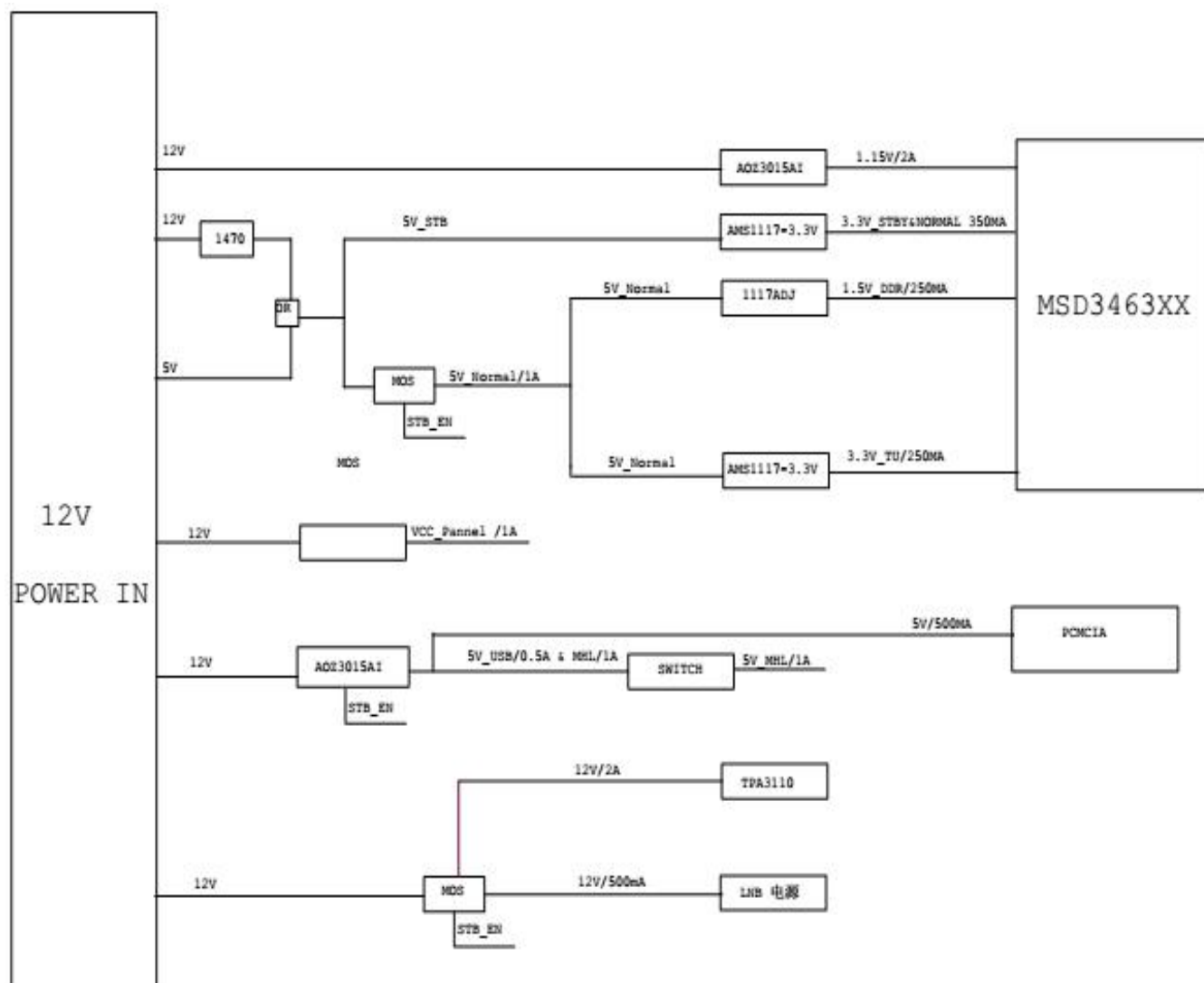
3、TOP SILK



4、BOTTOM SILK

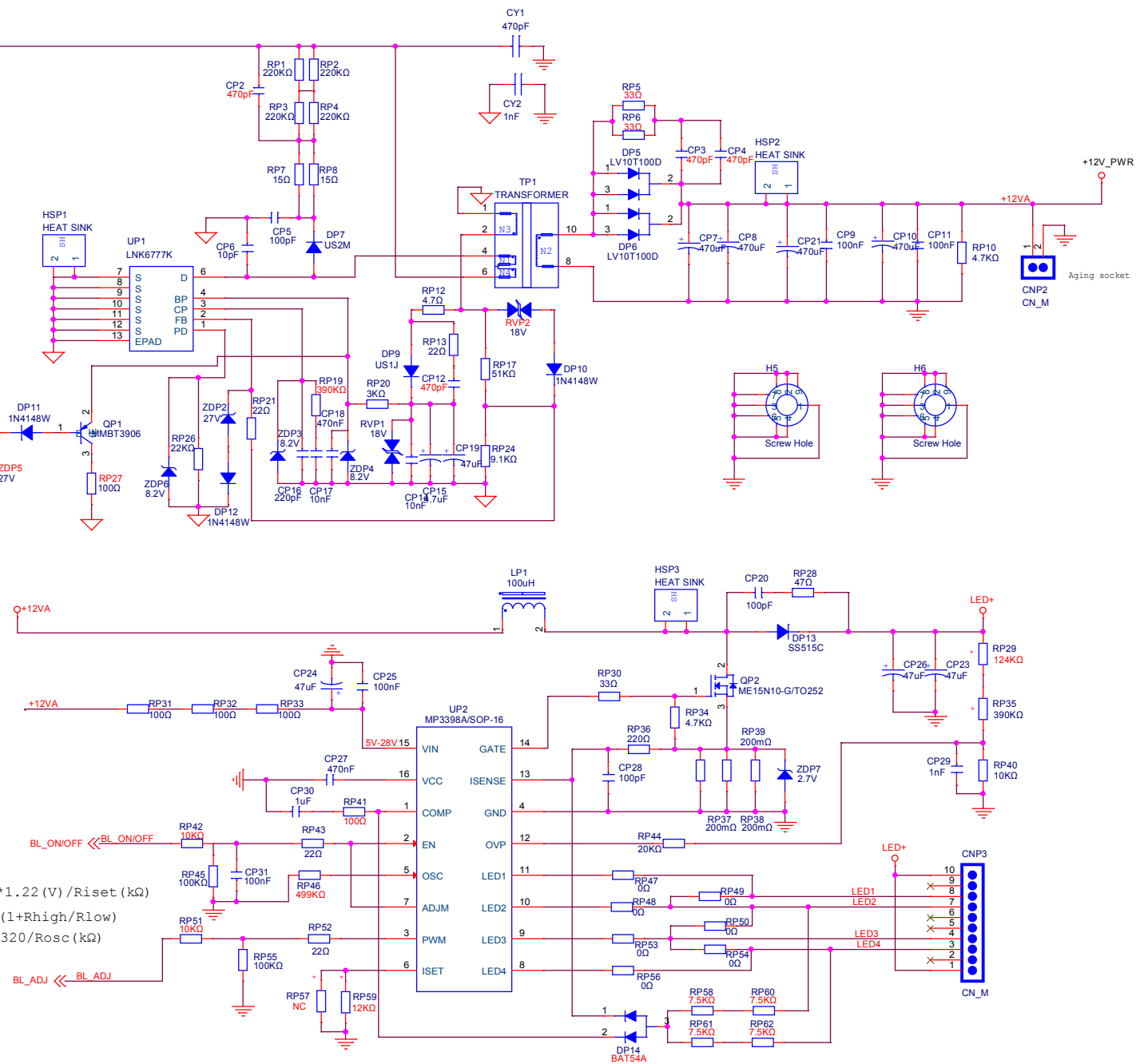


CIRCUIT DIAGRAMS

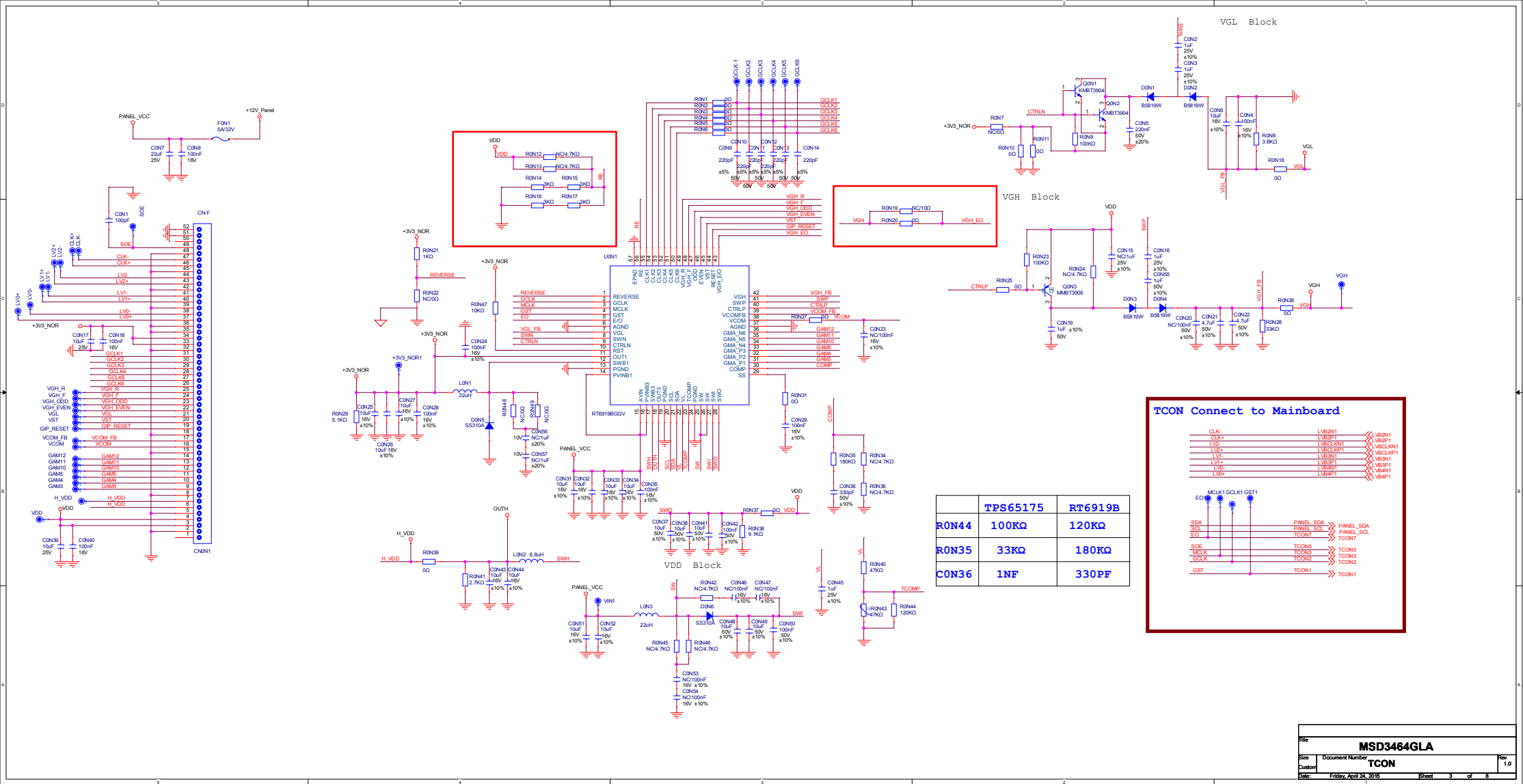


SPECIFICATION
INPUT: 100-240V AC
OUTPUT: +12V/3A

$I_{led} (mA) = 810 \times 1.22 (V) / R_{iset} (k\Omega)$
 $V_{ovp} (V) = 1.23 (1 + R_{high} / R_{low})$
 $Freq (KHz) = 67320 / R_{osc} (k\Omega)$
 $R_{low} = 10 (k\Omega)$



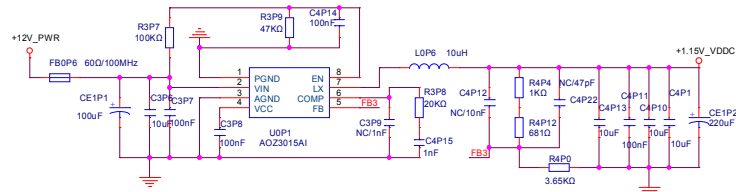
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		Rev	<RevCode>



1.15V 2A for VDDC

5、+12V_NOR转+1.5V_VDDC

(DC-DC价格0.14USD 规格标称最大3A 500KHZ 输入电压范围4.5V-18V 轻载高效 优选)
考虑到DC-DC的温升问题.. 输出为5V时, 最大负载不能超过2.4A



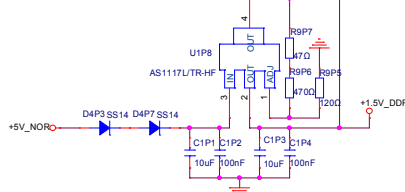
- 说明: 1、该电路当前的参数是输出+5V_NOR. 如果要输出其他电压, 如3.3V/2.5V/1.5V可以参照表格里的参数调整R1和R2的大小就可以了
2、PCB排版时输入电容和输出电容尽量靠近IC PCB排版时储能电感要尽量靠近IC
3、通过增大输入和输出电容的容量可以减小纹波的大小 选择小ESR值的电容也可以减小纹波的大小
4、输入输出电容的材质推荐使用X5R或者X7R, 不能使用Y5V材质, 注意耐压值.
5、模块成本仅供参考, 受元器件价格及汇率影响会有变化 (成本统计时间20140103)
6、EN端的电压根据实际使用的需要可以进行调整
7、如果负载动态变化比较大的话适当加大输出电容, C3P8的接地一定要良好, 如果打过孔的话一定要打穿.

$V_{out} = 0.8 \times (1 + (R1/R2))$ $R1 = R4P4 + R4P12$ $R2 = R4P0$ $L = L0P6$

R1(推荐编号)	R2(推荐编号)	Vout	最大负载	模块成本
4100-CA130-2200(1.8kΩ)+4100-CA130-2200(1.1kΩ)	4100-CA1030-2200(10kΩ)	5.00V	800~81100~A800(1.0uH)	1.443RMB
4100-CA130-2200(10kΩ)+4100-CA130-2200(1.1kΩ)	4100-CA1030-2200(10kΩ)	3.30V	800~81100~A800(1.0uH)	1.443RMB
4100-CA130-2200(10kΩ)+4100-CA130-2200(1.1kΩ)	4100-CA1030-2200(10kΩ)	2.50V	800~81100~A800(1.0uH)	1.443RMB
4100-CA130-2200(10kΩ)+4100-CA130-2200(1.1kΩ)	4100-CA1030-2200(10kΩ)	1.50V	800~81100~A800(1.0uH)	1.443RMB

8、LDO +5V_NOR转+1.5V_DDR

(优选 LDO价格0.1864RMB SOT-223 规格标称最大1A)
实际带载能力需要根据压降及P_D计算, 要考虑LDO的温升问题



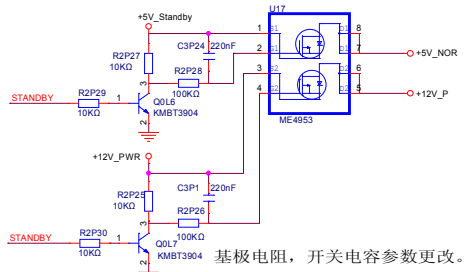
- 说明: 1、这是一款可调节输出电压的LDO.
2、PCB排版时输入电容和输出电容尽量靠近IC 3、如果需要调节输出电压, 可以根据公式计算.

$V_{out} = 1.25 \times (1 + (R2/R1))$

$R1 = R9P6 + R9P7$ $R2 = R9P5$

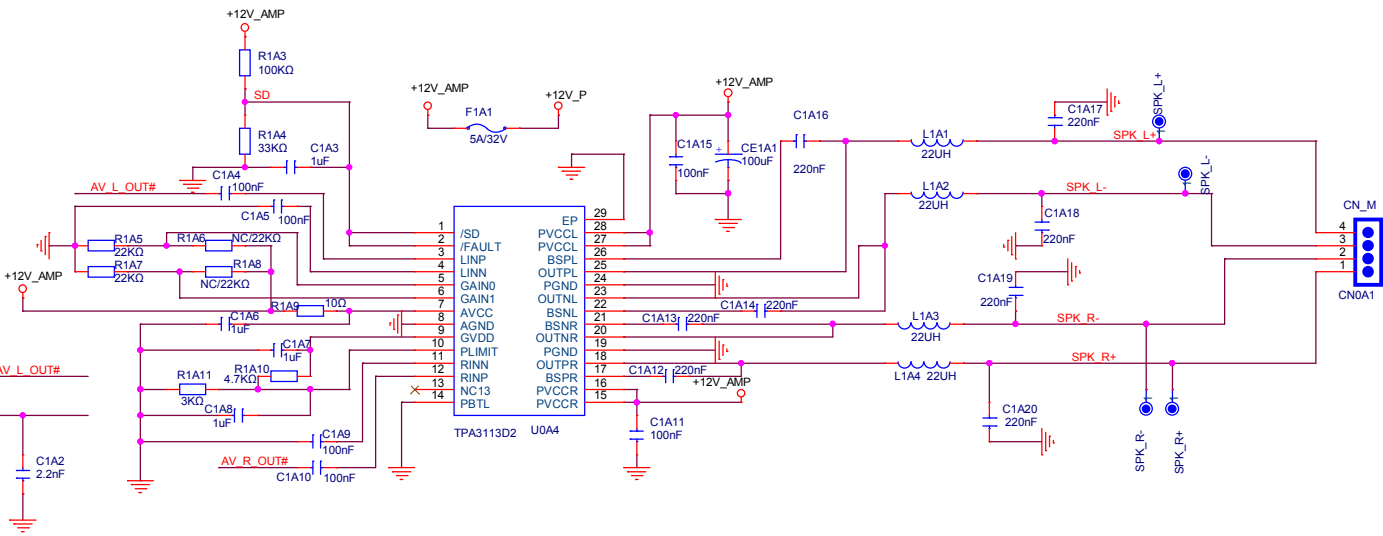
R1	R2	Vout
4100-CA130-2200(10kΩ)+4100-CA130-2200(1.1kΩ)	4100-CA1030-2200(10kΩ)	3.3V
4100-CA130-2200(10kΩ)+4100-CA130-2200(1.1kΩ)	4100-CA1030-2200(10kΩ)	2.5V
4100-CA130-2200(10kΩ)+4100-CA130-2200(1.1kΩ)	4100-CA1030-2200(10kΩ)	1.5V

POWER SWITCH



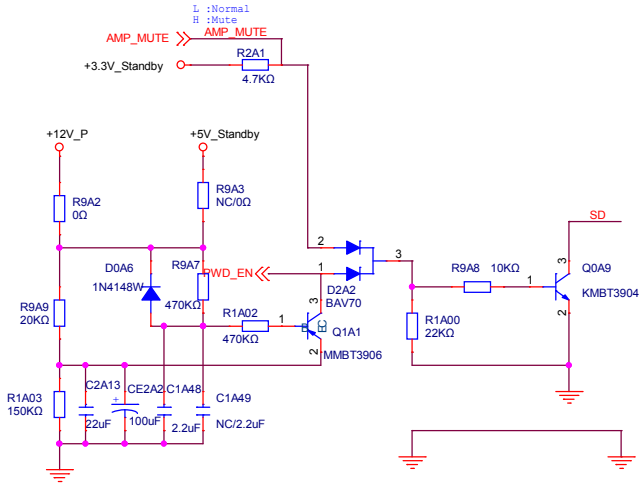
AUDIO AMP

功放输出端增益放大倍数表				
GAIN1	GAIN0	AMP	Input阻抗	
R650 低	R649 低	20db	60	
R650 低	R648 高	26db	30	
R651 高	R649 低	32db	15	
R651 高	R648 高	36db	9	

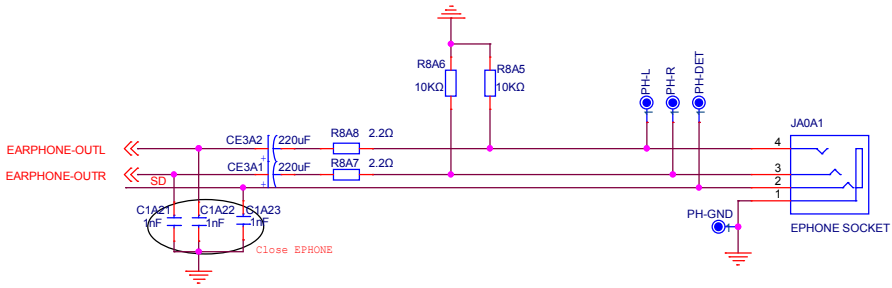


MUTE CONTROL

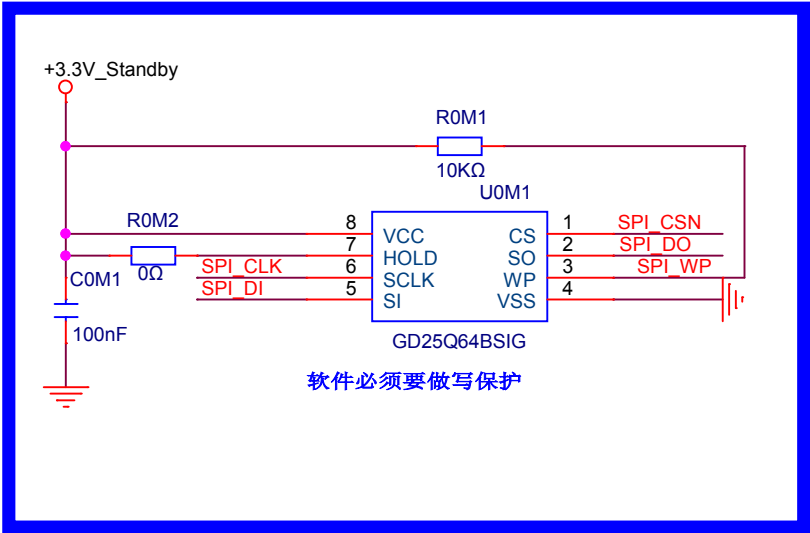
AMP_RST=0 MUTE
AMP_MUTE=0 MUTE
静音电路



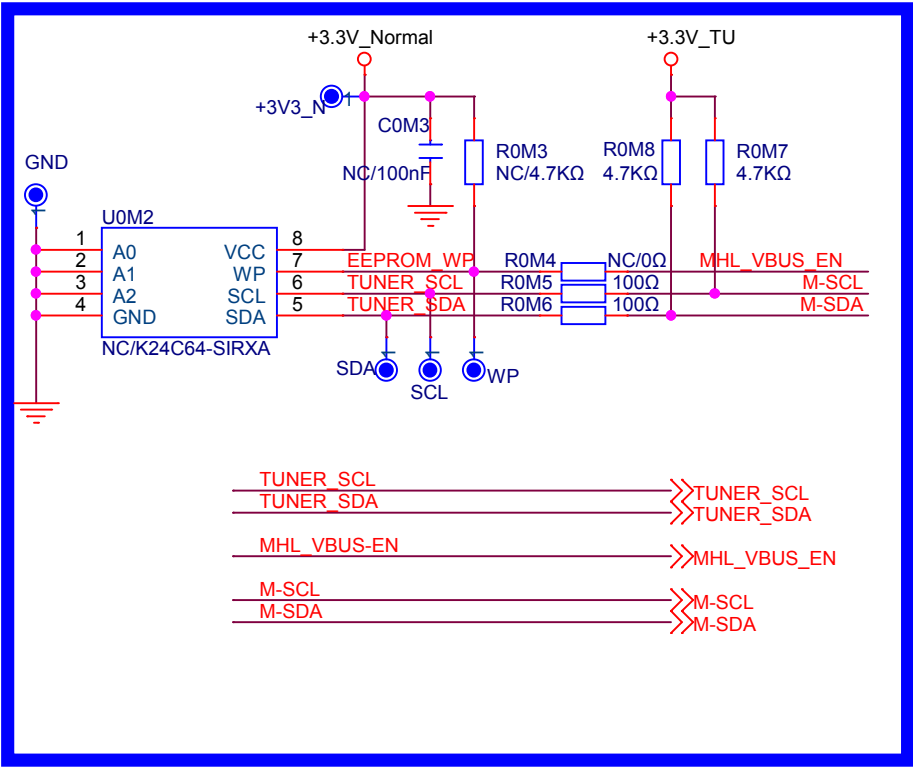
EARPHONE OUT



SPI NOR FLASH

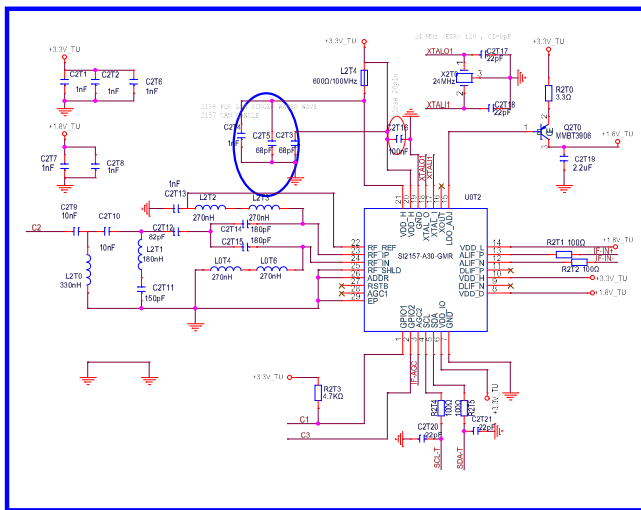


EEPROM

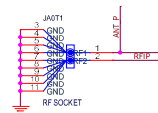


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MEMORY			
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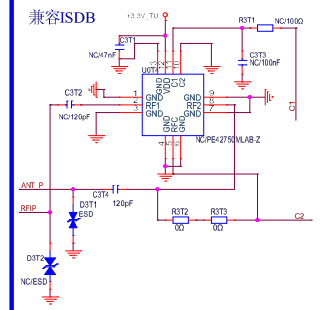
T SI TUNER (OK)



TUNER CASE (OK)



兼容ISDB



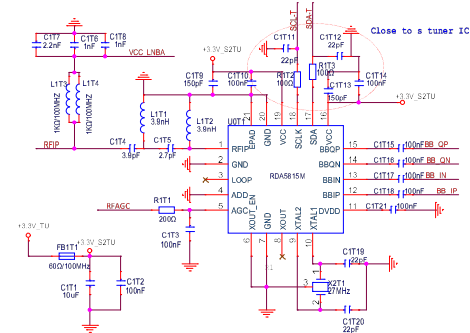
Satellite DIF



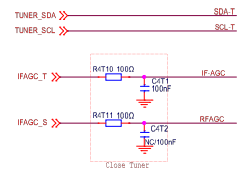
DVB-C/T/T2 DIF



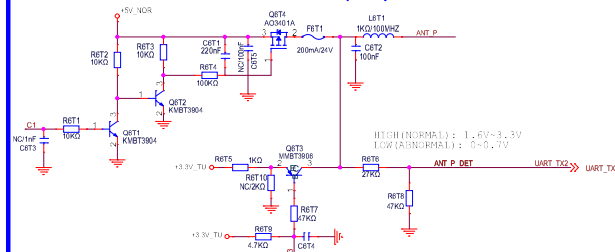
S2 SI TUNER



AGC RC Filter & I2C



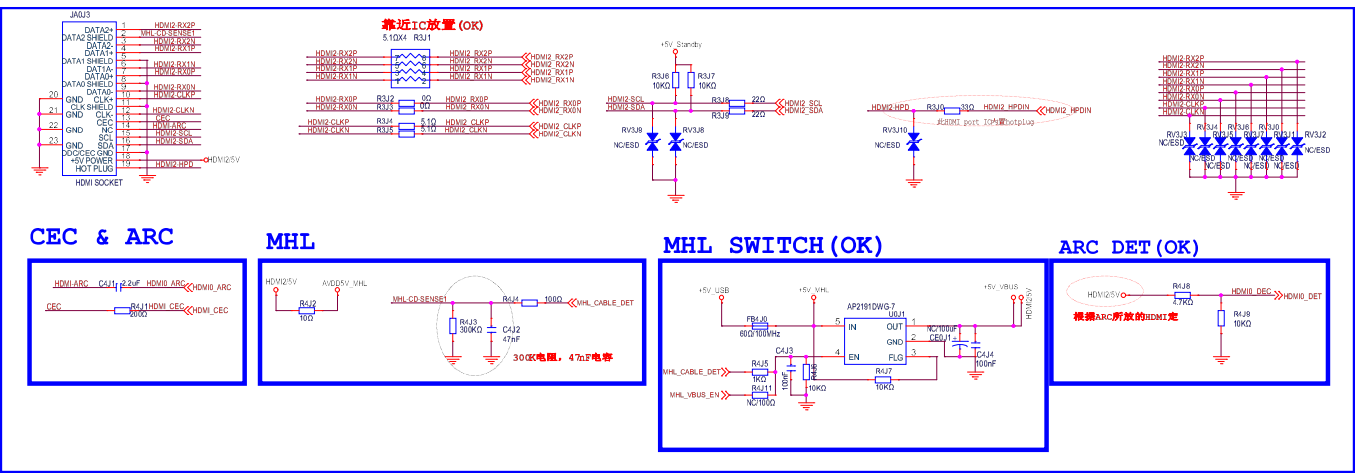
Tuner 5V OUT (NC)



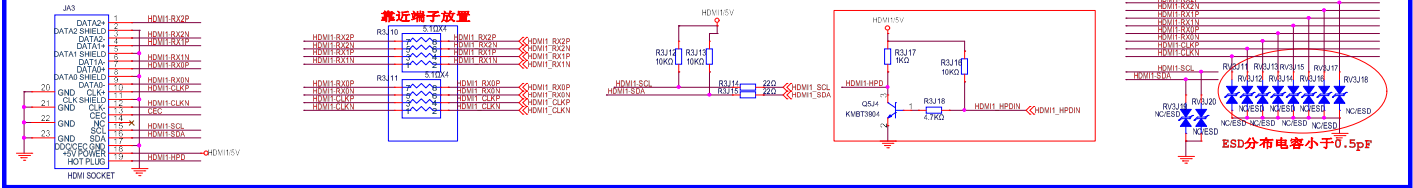
天线馈电控制:

- 大线接收器接收到的 RSER 并关闭 C3 及 C4 输出, RSER 为高电平时, C1 输出高电平, C3 输出高电平, 打开 9 号输入检测功能 OFF 时, C1 输出低电平, C3 输出高电平, 关闭 9 号电平检测功能 2. 故障诊断及恢复机制 OS 菜单中的 F 键为 ON 时起作用 A. 正常情况下, F 键为低电平, C3 输出低电平, C4 输出低电平, 此时 C1 需置为高电平, C3 置为低电平, 此后当 C3 检测到高电平时, 恢复 C1 高电平输出, 同时 C3 恢复为高电平, 重新回到正常工作状态

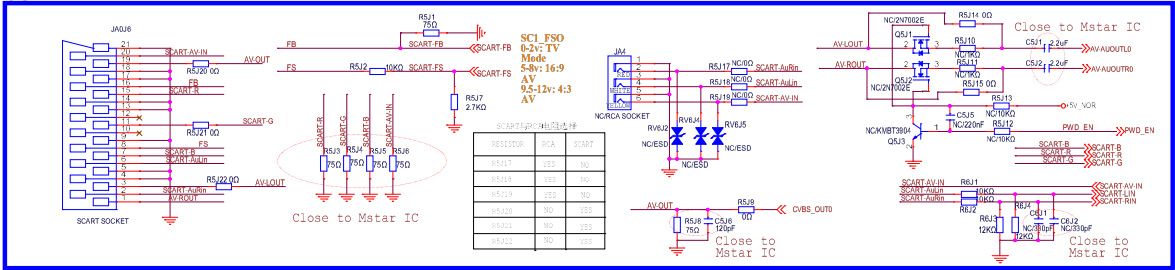
HDMI1 MHL



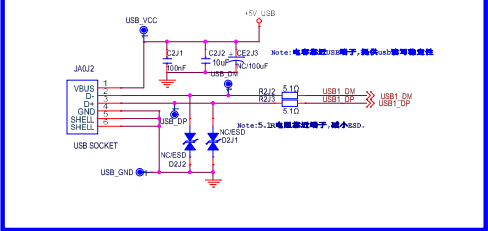
HDMI2

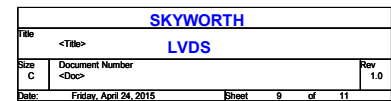


SCART

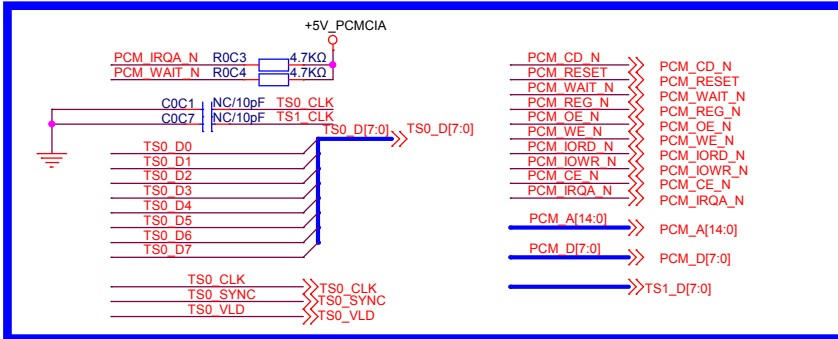
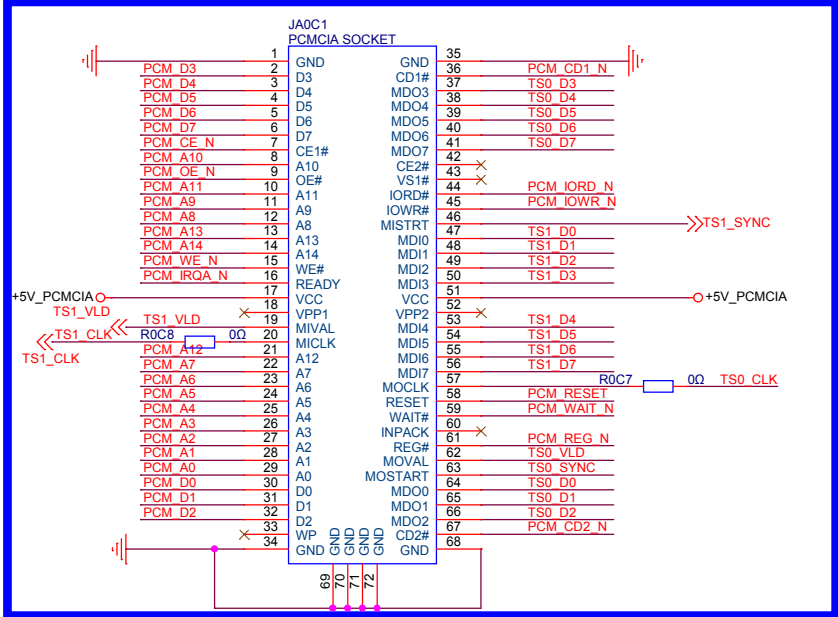


USB2.0 INTERFACE

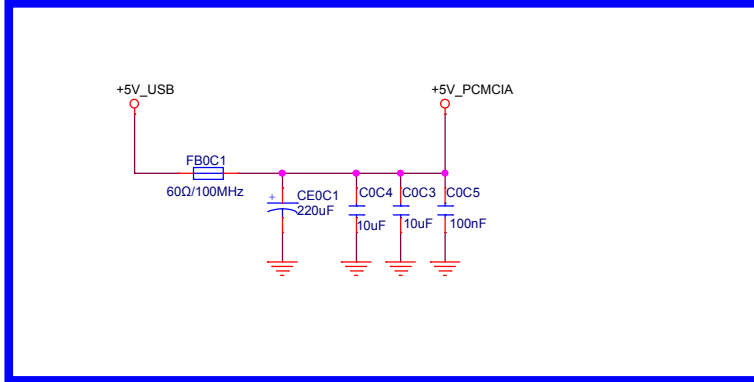


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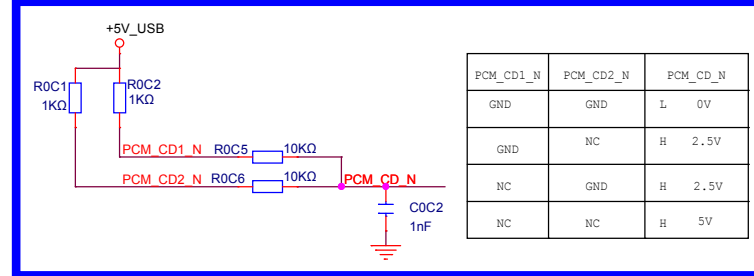
PCMCIA



PCMCIA POWER



CARD DETECT



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