

V1.1

TV CONTROL BOARD SPECIFICATION

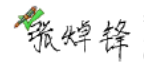
MODEL: T.MS6M181.7X(Asia)

Part Number: MST-10120903

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REVISION HISTORY

VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V1.0	2010.12.09	T.MS6M181.7A 10464	All	First issued	Fanny
V1.1	2011.01.17	T.MS6M181.7A 10464	6	Modify the PCB DIMENSIONS in part 4.	Fanny

1. GENERAL DESCRIPTION

T.MS6M181.7X is a multi-purpose LCD TV control board which can support LCD panel with dual/single LVDS interface. It supports LCD panel less than 26" which resolution is up to 1920×1080.

T.MS6M181.7X supports TELETEXT, NICAM/A2, ATV, USB, HDMI, PC-RGB, CVBS, component, AV out as well as Earphone and coaxial out. It includes an audio power amplifier which can support 2X3W (4Ω) output.

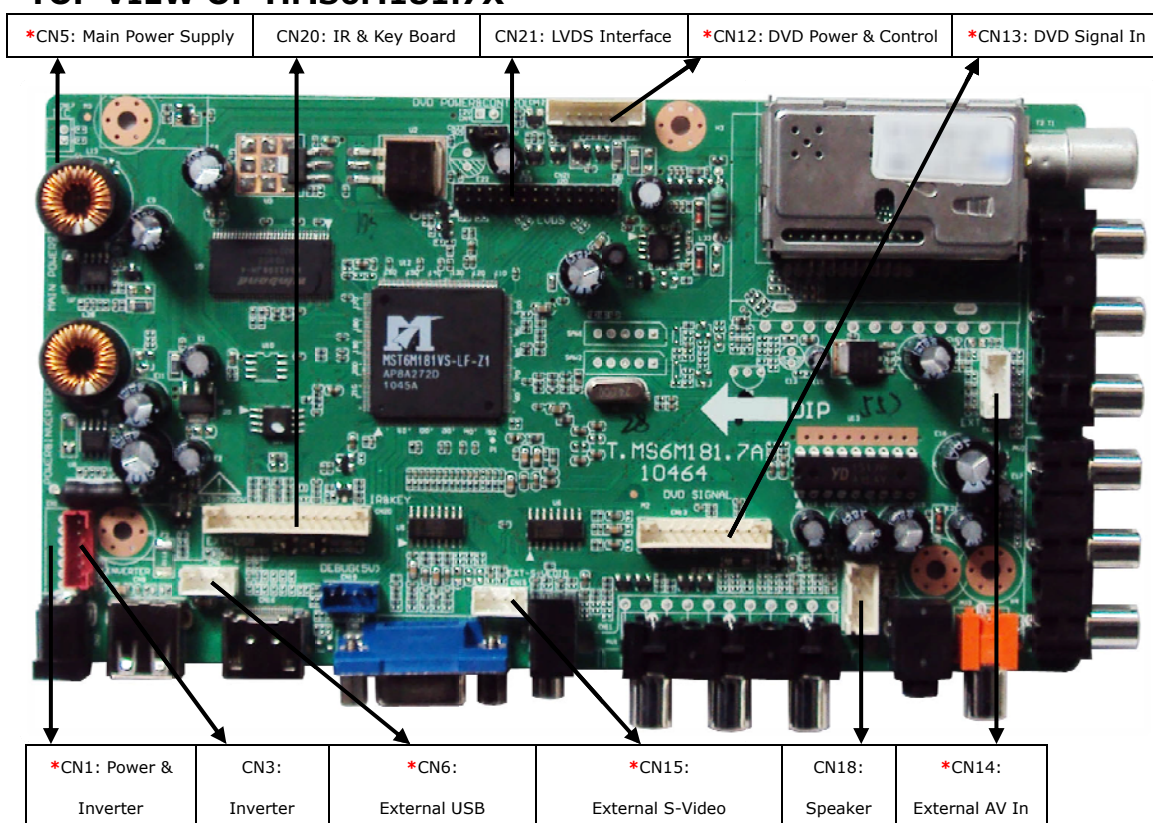
T.MS6M181.7X can connect with accessory modules to support extended functions such as built-in DVD, External AV, External S-Video and External USB. Its USB slot can be used for software upgrade and multimedia playback.

2. FUNCTION LAYOUT

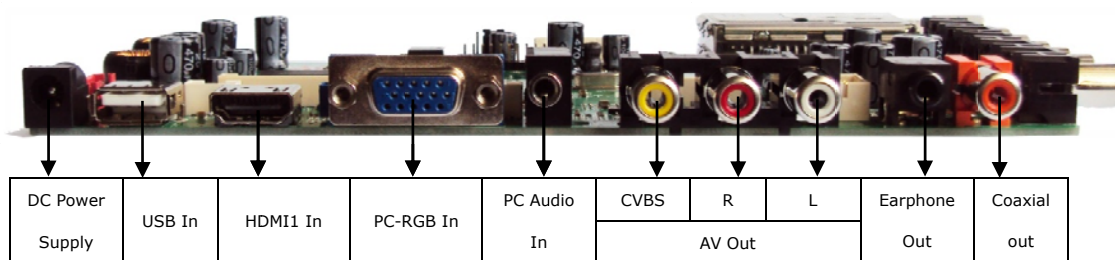
The picture is for a reference only, the actual item is the standard.

The optional connectors and terminals are marked with "*".

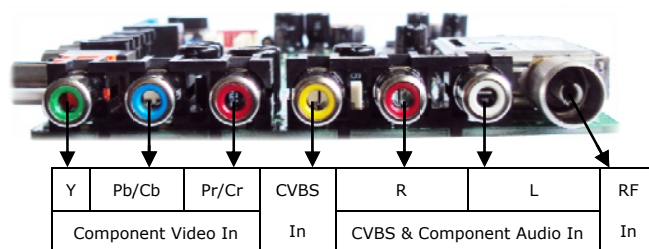
TOP VIEW OF T.MS6M181.7X



FRONT VIEW OF T.MS6M181.7X



SIDE VIEW OF T.MS6M181.7X



3. FEATURES

CHIPSET	MST6M181VS(without TELETEXT and NICAM) /MST6E181V (with TELETEXT and NICAM)		
MARKET AREA	Asia-Pacific, Middle-East		
OSD LANGUAGE	Chinese, English		
PANEL	Panel Type	LCD	
	Interface	Single/Dual LVDS Interface	
	Max Resolution	1920×1080	
VIDEO INPUT	TV	Receiving Range	48.25MHz-863.25MHz
		Input impedance	75Ω
		Video System	PAL/SECAM
		Sound System	B/G,D/K,I
			NICAM/A2
		Max storage Channels	200CH
		TELETEXT	1000Pages
	PC-RGB	Format	Up to SXGA@75Hz
	CVBS	Video System	PAL/NTSC/SECAM
		Video level	1.0 V _{P-P} ±5%
	Ext. S-Video	S-Y:0.714 V _{P-P} ±5%, S-C:0.286 V _{P-P} ±5%	
	Component	480i, 480p, 576i, 576p, 720p, 1080i, 1080p	
	HDMI	480i, 480p, 576i, 576p, 720p, 1080i, 1080p	
AUDIO INPUT	PC Audio	Earphone Input	0.2 ~ 2.0 V _{RMS}
	CVBS1 Audio	L/R RCA Input	0.2 ~ 2.0 V _{RMS}
	CVBS1 & Component Audio	L/R RCA Input	0.2 ~ 2.0 V _{RMS}
AUDIO OUTPUT	Frequency Response	120Hz~14KHz @±3dB (1KHz, 0dB reference signal)	
	Max Output power	2×3W(4Ω) THD+N<10%@1KHz (Power Supply: 12V, Audio Input: 0.5V _{RMS})	
POWER	Requirement	12V DC,12V(Built In),12V/5V(Built In), 12V/5V/5VSB(Built In)	
	To Panel	3.3V, 5V, 12V	
	Management	Standby Power Consumption < 0.5W(Board Only)	

COMB FILTER	3D		
DEINTERLACE	3D		
WEAK SIGNAL ENHANCEMENT	YES		
NOISE REDUCTION	YES		
USB FUNCTION	Multimedia, Software upgrade		
KEY FUNCTION	MENU, CH+, CH-, VOL+, VOL-, INPUT, POWER		
EXPANDABLE FUNCTION	DVD, External AV, External S-Video, External USB		
TERMINALS	INPUT	TV	1IEC-Connector 75Ω
		USB	1 USB Slot(horizontal)
		HDMI	1 HDMI terminal(horizontal)
		PC-RGB	1 D-SUB terminal(blue,15 pin)
		PC Audio	1 Earphone terminal(black)
		CVBS1	1 RCA terminal(yellow)
		Component	3 RCA terminals(green, blue, red)
		CVBS2	1 RCA terminal(yellow)
		CVBS2 & Component Audio	2 RCA terminals(red, white)
	OUTPUT	Coaxial(optional)	1 RCA terminal(orange)
		Earphone Out	1 Earphone terminal(black)

USB MULTIMEDIA PLAYBACK FORMAT

Media	File Ext.	Codec		Remark
		Video	Audio	
Movie	.avi	MJPEG	MP3, WMA, AAC MP2, PCM	Max Resolution And Frame Rate: 720p@30fps Max Data Rate: 10 Mbps
		Xvid, MPEG-2, MPEG-4		Max Resolution And Frame Rate: 720p@30fps Max Data Rate: 20 Mbps
	.mp4	MPEG-2, MPEG-4		
	.ts/ .trp	MPEG-2		
	.mkv/ .mov	MPEG-4		
	.mpg	MPEG-1, MPEG-2		
	.dat	MPEG-1	MP2	Max Resolution: 352×288 Max Data Rate: 20 Mbps
	.vob	MPEG-2		Max Resolution: 720×576 Max Data Rate: 20 Mbps
	.rm/ .rmvb	RV8, RV9, RV10	COOK	Max Resolution And Frame Rate: 720p@30fps Max Data Rate: 10 Mbps

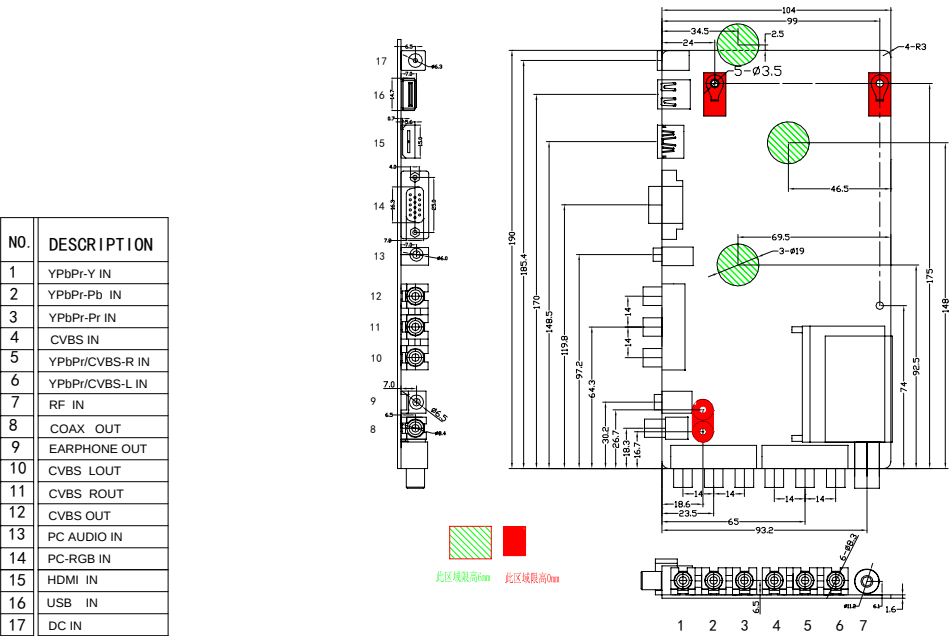
Media	File Ext.	Codec		Remark
		Video	Audio	
Music	.mp3	--	MP3	Sample Rate: 32K~48KHz Bit Rate: 32K~320Kbps Channel: Mono/Stereo
	.wma	--	WMA	
	.m4a/ .aac	--	AAC	Sample Rate: 8K~48KHz Bit Rate: 24K~384Kbps Channel: Mono/Stereo
Photo	.jpg/	Progressive JPEG		Max Resolution: 1024×768
	.jpeg	Baseline JPEG		Max Resolution: 15360×8640
	.bmp	--		Max Resolution: 9600×6400 Pixel Depth: 1/4/8/16/24/32 bpp
	.png	Non-Interlaced		Max Resolution: 9600×6400
		Interlaced		Max Resolution: 1200×800
File system: Hi Speed FS, FAT32, FAT16, NTFS(NTFS compressed file is not supported).				

ELECTRICAL CHARACTERISTICS & REQUIREMENTS

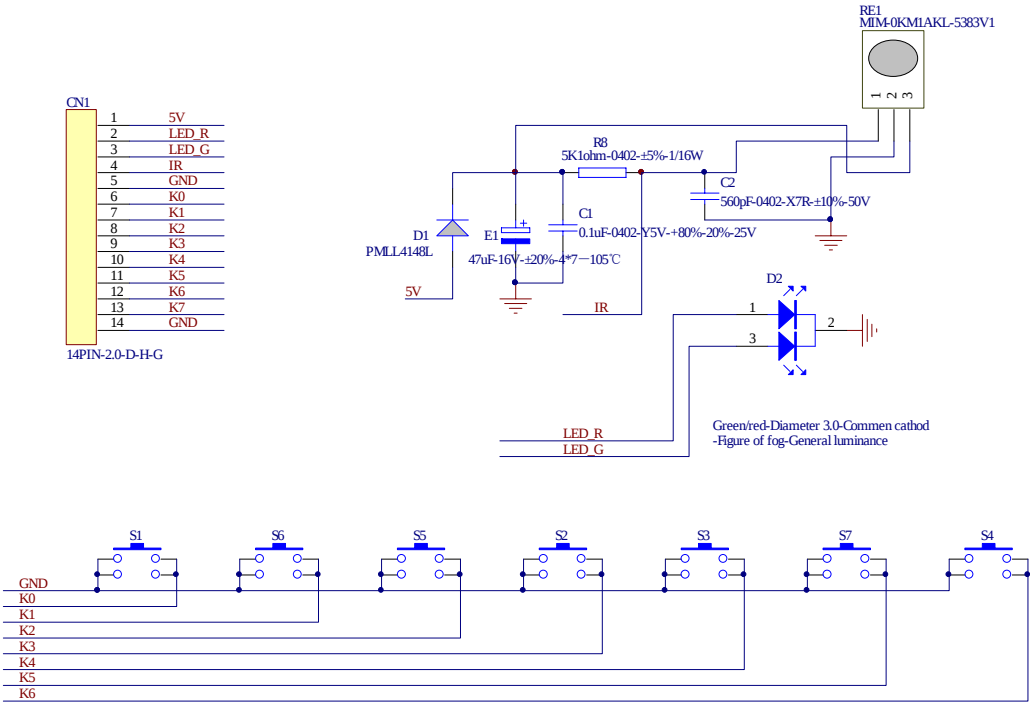
Power Supply Mode	Symbol	Voltage Range	Max Current	Ripple Voltage@25℃	Startup Time	Rise Time
12V (Ext. Adaptor)	12V	12V±0.6V	2000mA	120mV _{p-p}	≤100ms	≤50ms
12V (Built-In)	12V	12V±0.6V	2000mA	120mV _{p-p}	≤100ms	≤50ms
12V/5V (Built-In)	12V	12V±0.6V	1300mA	120mV _{p-p}	≤100ms	≤50ms
	5V	5.1V±0.05V	1500mA	50mV _{p-p}	≤100ms	≤50ms
12V/5V/5VSB (Built-In)	12V	12V±0.6V	1300mA	120mV _{p-p}	≤100ms	≤50ms
	5V	5.1V±0.05V	1400mA	50mV _{p-p}	≤100ms	≤50ms
	5VSB	5.1V±0.05V	150mA	50mV _{p-p}	--	≤50ms
Note: The current of panel, inverter and extension modules are not included in max current.						

4. PCB DIMENSIONS

The overall height of T.MS6M181.7X is 22 mm.



5. SCHEMATICS OF IR BOARD & KEY BOARD



6. INTERFACE DEFINITION

The optional connectors are marked with “*”.

◆ *CN1(10PIN/2.0): BUILT-IN POWER SUPPLY & INVERTER CONNECTOR

NO.	SYMBOL	DESCRIPTION
1	12V	+12V DC Power Supply
2	12V	
3	12V	
4	12V	
5	BLO	Back-Light ON/OFF Control for Panel
6	ADJ	Brightness Adjustment for Panel
7	GND	Ground
8	GND	Ground
9	GND	Ground
10	GND	Ground

◆ CN3(6PIN/2.0): INVERTER CONNECTOR

NO.	SYMBOL	DESCRIPTION
1	12V	+12V DC Power Supply for high-pressure bar
2	12V	
3	BLO	Back-Light ON/OFF Control for Panel
4	ADJ	Brightness Adjustment for Panel
5	GND	Ground
6	GND	

◆ *CN5(6PIN/2.0): 5V POWER SUPPLY CONNECTOR

NO.	SYMBOL	DESCRIPTION
1	5V	+5V DC Power Supply
2	5V	
3	GND	Ground
4	GND	
5	5VSB	+5V DC Power Supply for Standby Mode
6	PWON	Power On/Off

◆ *CN6(4PIN/2.0): EXTERNAL USB CONNECTOR

NO.	SYMBOL	DESCRIPTION
1	5V	+5V DC Power Supply for USB
2	DM	USB Data-
3	DP	USB Data+
4	GND	Ground

◆ *CN12(8PIN/2.0): DVD POWER SUPPLY & CONTROL CONNECTOR

NO.	SYMBOL	DESCRIPTION
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NO.	SYMBOL	DESCRIPTION
1	D5V	+5V DC Power Supply for DVD
2	D5V	
3	GND	Ground
4	GND	
5	D12	+12V DC Power Supply for DVD
6	DIR	IR Data Transfer to DVD
7	DAT/RX	Data Receiver/Serial Data Receiver
8	STB/TX	DVD Standby Control/Serial Data Transmitter

◆ ***CN13(11PIN/2.0): DVD SIGNAL INPUT CONNECTOR**

NO.	SYMBOL	DESCRIPTION
1	COAX	DVD Digital Audio Coaxial Input
2	GND	Ground
3	DRI	DVD Audio Right Channel Input
4	GND	Ground
5	DLI	DVD Audio Left Channel Input
6	DPB	DVD Component-Pb Input
7	GND	Ground
8	DPR	DVD Component-Pr Input
9	GND	Ground
10	DY	DVD Component-Y Input
11	GND	Ground

◆ ***CN14(5PIN/2.0): EXTERNAL AV INPUT CONNECTOR**

NO.	SYMBOL	DESCRIPTION
1	CVBS	CVBS Input
2	GND	Ground
3	AV_L	CVBS Audio Left Channel Input
4	GND	Ground
5	AV_R	CVBS Audio Right Channel Input

◆ ***CN15(4PIN/2.0): EXTERNAL S-VIDEO INPUT CONNECTOR**

NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	S_C	External S-Video – C Input
3	GND	Ground
4	S_Y	External S-Video – Y Input

◆ **CN18 (4PIN/2.54): SPEAKER CONNECTOR**

NO.	SYMBOL	DESCRIPTION
1	LO	Audio Left Channel Output
2	GND	Ground
3	GND	
4	RO	Audio Right Channel Output

◆ **CN20(14PIN/2.0): KEY & IR BOARD CONNECTOR**

NO.	SYMBOL	DESCRIPTION
1	5V	+5V DC Power Supply
2	RED	Red Indicator
3	GRN	Green Indicator
4	IR	IR Receiver
5	GND	Ground
6	K0	Key0
7	K1	Key1
8	K2	Key2
9	K3	Key3
10	K4	Key4
11	K5	Key5
12	K6	Key6
13	K7	Key7(Reserved)
14	GND	Ground

◆ **CN21(2×15PIN/2.0): LVDS INTERFACE CONNECTOR**

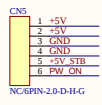
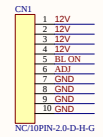
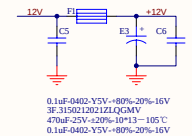
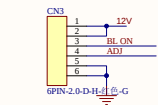
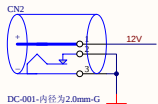
NO.	SYMBOL	DESCRIPTION
1	VSEL	Power Supply for Panel
2	VSEL	
3	VSEL	
4	GND	Ground
5	GND	Ground
6	GND	
7	TXO0-	LVDS ODD 0- Signal
8	TXO0+	LVDS ODD 0+ Signal
9	TXO1-	LVDS ODD 1- Signal
10	TXO1+	LVDS ODD 1+ Signal
11	TXO2-	LVDS ODD 2- Signal
12	TXO2+	LVDS ODD 2+ Signal
13	GND	Ground
14	GND	
15	TXOC-	LVDS ODD Clock- Signal
16	TXOC+	LVDS ODD Clock+ Signal
17	TXO3-	LVDS ODD 3- Signal
18	TXO3+	LVDS ODD 3+ Signal
19	TXE0-	LVDS EVEN 0- Signal
20	TXE0+	LVDS EVEN 0+ Signal
21	TXE1-	LVDS EVEN 1- Signal
22	TXE1+	LVDS EVEN 1+ Signal
23	TXE2-	LVDS EVEN 2- Signal
24	TXE2+	LVDS EVEN 2+ Signal
25	GND	Ground

NO.	SYMBOL	DESCRIPTION
26	GND	
27	TXEC-	LVDS EVEN Clock- Signal
28	TXEC+	LVDS EVEN Clock+ Signal
29	TXE3-	LVDS EVEN 3- Signal
30	TXE3+	LVDS EVEN 3+ Signal

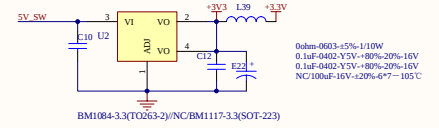
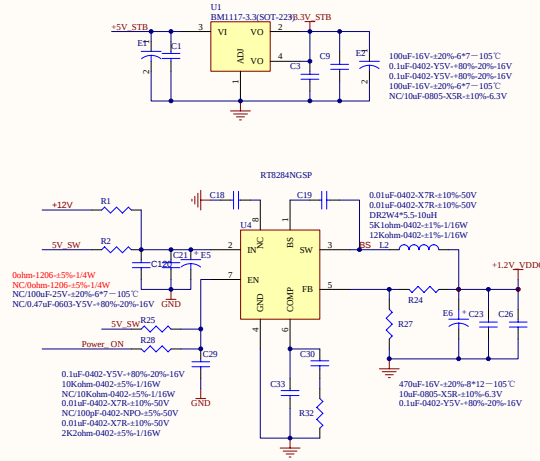
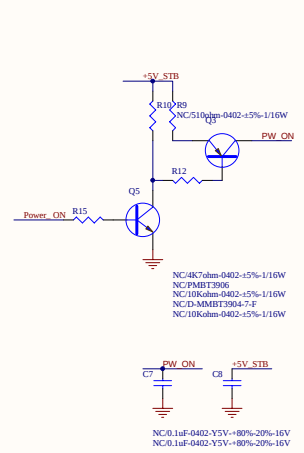
7. CONFIGURATION & GENERAL PRECAUTIONS

- Relative humidity: $\leq 80\%$.
- Storage temperature: $-10\sim 60^{\circ}\text{C}$.
- Operation temperature: $0\sim 40^{\circ}\text{C}$.
- Protect the board from static electricity in case of damage to the IC.
- Keep the board away from conductor when it is working.
- Don't push or pull the connectors when the board is working.
- Don't press , distort or disassemble the board.
- Clean the board with soft dry cloth when it's dirty.
- Don't wire in the board to power supply before panel is correctly connected.

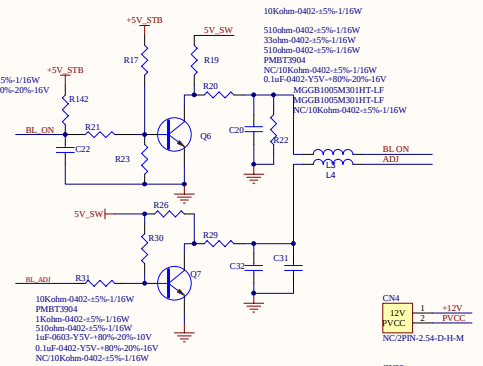
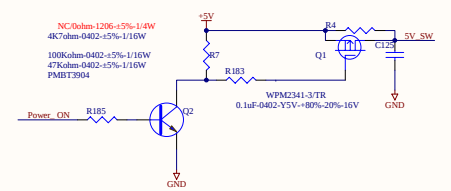
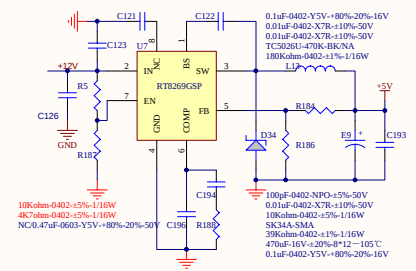
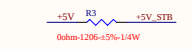
A



B



C



D

