

Product: LCD Controller Board

RTD2513V2.1

1. General Description (整体概述)

RTD2513V2.1 is a multi-purpose LCD monitor. It supports PC-AUDIO input function and horn output function, can support the highest resolution to 1920*1200@60Hz.

(RTD2513V2.1 是一个多功能液晶显示驱动板。它支持 PC-AUDIO 输入功能和喇叭输出功能，最高支持到 1920*1200 @60Hz。)

RTD2513V2.1 can support DC,HDMI, VGA, PC Audio signal input .

(RTD2513V2.1 支持 DC, HDMI, VGA, PC Audio signal 输入。)

Support DC 12V input (支持 DC12V 输入)

Note: The specification of the board includes the description of all functions. Therefore, our clients can select the functions which they require to produce the board. But the specification can be introduced universally.

(注：此规格书为板卡全功能规格书，客户可以根据需要选择性的生产。此规格书具有通用性。)

2. Products Features (产品特性)

Detailed feature (详细特性)

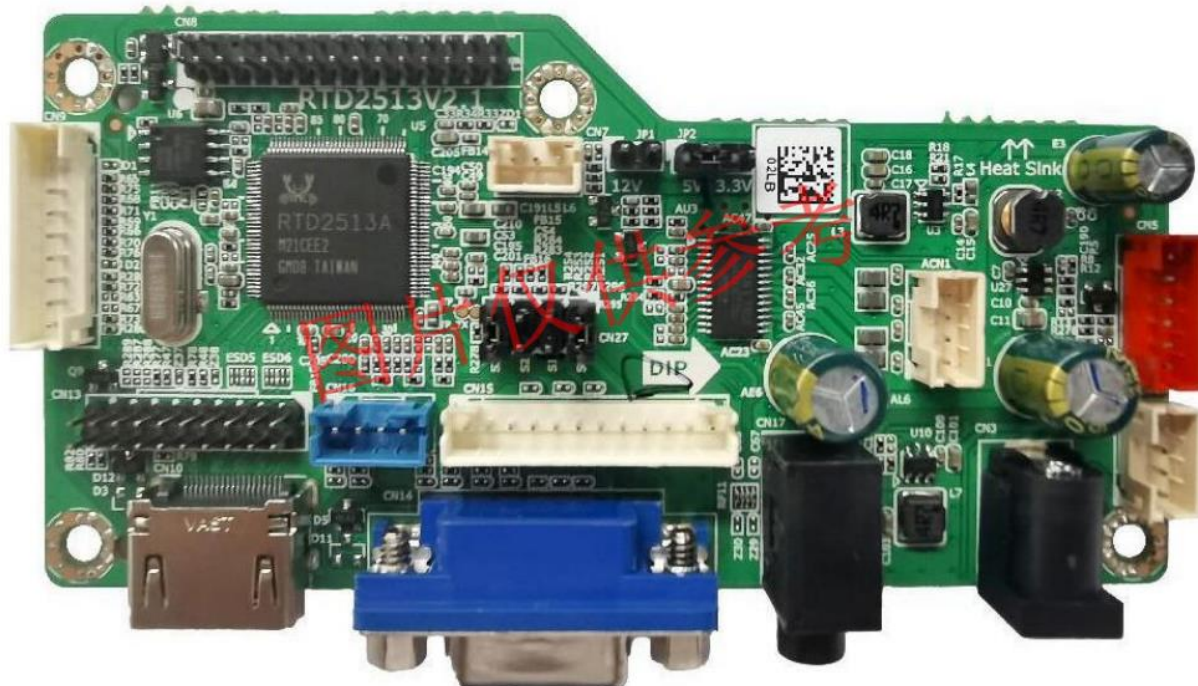
MARKET AREA (市场区域)	Global market (全球市场)		
OSD LANGUAGE (菜单语言)	English(英文),Chinese(中文),French(法语),Spanish(西班牙语),Russian(俄语),German(德语),Italian(意大利语),Korean(韩语)		
CHIPSET (芯片)	RTD2513A-CG		
VIDEO INPUT (视频输入)	PC-RGB	Format (格式)	Up to 1920*1080@60Hz
		Color (颜色)	6bit, 8bit, 10bit, 12bit
POWER (功率)	Power Requiremet (电源需求)	DC 12V	
	To panel (驱屏电压)	3.3V, 5V, 12V	
	Management (电源管理)	Low power consumable mode (only for PCB board):standby≤0.25w (PCB 板待机功耗)	
KEY FUNCTIONS (按键功能)	MENU,AUTO,LEFT,RIGHT,ON/OFF (菜单, 自动, 左, 右, 开/关)		

AUDIO OUTPUT (音频输出)	2*8W@ 8Ω MAX 12V		
TERMINALS (端子)	Input	HDMI Input	1 HDMI terminal (1 HDMI 端子)
		PC-RGB Input	1D-SUB 15PIN terminal blue color (1 D-SUB 端子, 15PIN, 蓝色)
		PC Audio Input	1 PC Audio terminal black color (1 音频端子, 黑色)
		DC Input	1DC terminal black color (1 DC 端子, 黑色)
	Output	To Panel	Double LVDS 30PIN/2.0 jack

3. Port Configuration (端口配置)

All of pictures below are only for reference. Please take the actual objects as a standard.

(以下图片仅供参考,请以实物为准)

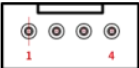


Port In:

1	HDMI IN	PCB Tolerance		
		PCB size	$\pm 0.15\text{mm}$	
2	VGA IN	PCB thickness	$\leq 1.0\text{mm}$	$\pm 0.1\text{mm}$
			$> 1.0\text{mm}$	$\pm 10\%$
3	PC AUDIO IN	Connector Tolerance (Unless Othwise Stated)		
4	DC IN	$\pm 0.5\text{mm}$		


4. Interface Definition (接口定义)

CN16(4PIN/2.0MM) DEBUG INTERFACE(调试接口)

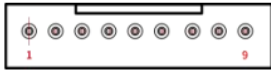


NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	GND	GND (地)
2	TX	Transmit data (发送数据)
3	RX	Receive data (接收数据)
4	5V	+5V Power Supply (+5V 供电)

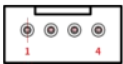
CN7(3PIN/2.0mm) IR BOARD INTERFACE (遥控接口)



NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	IR	Remote receiver (遥控信号输入端)
2	GND	Ground (地)
3	VCC	+5V power supply (+5V 供电)

CN9(9PIN/2.0mm) KEY & IR BOARD INTERFACE (按键和遥控接口)

NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	EXIT/SEL	EXIT (退出)
2	M	MENU Key (菜单)
3	AUTO	AUTO (自动)
4	V-	VOL- Key (音量-)
5	V+	VOL+ Key (音量+)
6	GND	Ground (地)
7	G	Green indicator (绿色指示器)
8	R	Red indicator (红色指示器)
9	ON/OFF	ON/OFF Key (开/关)

ACN1(4PIN/2.0mm) SPEAKER INTERFACE (喇叭接口)

NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	RP	Positive right audio channel out (右声道音频输出正极)
2	RN	Negative right audio channel out (右声道音频输出负极)
3	LN	Negative left audio channel out (左声道音频输出负极)
4	LP	Positive left audio channel out (左声道音频输出正极)

CN8(2*15PIN/2.0MM) LVDS PANEL INTERFACE (LVDS 接口)



NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	VCC	Power for panel (驱屏电压)
2	VCC	Power for panel (驱屏电压)
3	VCC	Power for panel (驱屏电压)
4	GND	Ground (地)
5	GND	Ground (地)
6	NC	NC
7	O0-	LVDS ODD 0- Signal (LVDS 奇数 0-信号)
8	O0+	LVDS ODD 0+ Signal (LVDS 奇数 0+信号)
9	O1-	LVDS ODD 1- Signal (LVDS 奇数 1-信号)
10	O1+	LVDS ODD 1+ Signal (LVDS 奇数 1+信号)
11	O2-	LVDS ODD 2- Signal (LVDS 奇数 2-信号)
12	O2+	LVDS ODD 2+ Signal (LVDS 奇数 2+信号)
13	GND	Ground (地)
14	GND	Ground (地)
15	EC-	LVDS EVEN Clock- Signal (LVDS 偶数时钟-信号)
16	EC+	LVDS EVEN Clock+ Signal (LVDS 偶数时钟+信号)
17	O3-	LVDS ODD 3- Signal (LVDS 奇数 3-信号)
18	O3+	LVDS ODD 3+ Signal (LVDS 奇数 3+信号)
19	E0-	LVDS EVEN 0- Signal (LVDS 偶数 0-信号)
20	E0+	LVDS EVEN 0+ Signal (LVDS 偶数 0+信号)
21	E1-	LVDS EVEN 1- Signal (LVDS 偶数 1-信号)
22	E1+	LVDS EVEN 1+ Signal (LVDS 偶数 1+信号)
23	E2-	LVDS EVEN 2- Signal (LVDS 偶数 2-信号)
24	E2+	LVDS EVEN 2+ Signal (LVDS 偶数 2+信号)

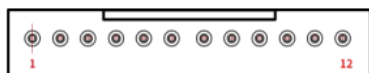
25	GND	Ground (地)
26	GND	Ground (地)
27	OC-	LVDS ODD Clock- Signal (LVDS 偶数时钟-信号)
28	OC+	LVDS ODD Clock+ Signal (LVDS 偶数时钟+信号)
29	E3-	LVDS EVEN 3- Signal (LVDS 偶数 3-信号)
30	E3+	LVDS EVEN 3+ Signal (LVDS 偶数 3+信号)

CN13(2*10PIN/2.0MM) EXTERNAL HDMI INTERFACE (外甩 HDMI 接口)



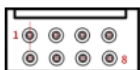
NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	RX2P	HDMI Data 2+ (HDMI 2+数据)
2	RX2N	HDMI Data 2- (HDMI 2-数据)
3	RX1P	HDMI Data 1+ (HDMI 1+数据)
4	RX1N	HDMI Data 1- (HDMI 1-数据)
5	RX0P	HDMI Data 0+ (HDMI 0+数据)
6	RX0N	HDMI Data 0- (HDMI 0-数据)
7	CLKP	HDMI Clock+ (HDMI 时钟+)
8	CLKN	HDMI Clock- (HDMI 时钟-)
9	SCL	I2C Clock signal (I2C 时钟信号)
10	SDA	I2C Data signal (I2C 数据信号)
11	NC	NC
12	NC	NC
13	GND	Ground (地)
14	NC	NC
15	HPD	HDMI Hot Plug (HDMI 热插拔检测)
16	5V	+5V from external HDMI model supply (+5V HDMI 供电)
17	GND	Ground (地)
18	GND	Ground (地)
19	RESET	RESET (重置)
20	5V-S	+5V from external HDMI model supply (+5V HDMI 供电)

CN15(12PIN/2.0MM) VGA INTERFACE (VGA 接口)



NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	SCL	I2C Clock signal (I2C 时钟信号)
2	SDA	I2C Data signal (I2C 数据信号)
3	GND	Ground (地)
4	B	Blue primary signal (蓝基色信号)
5	GND	Ground (地)
6	G	Green primary signal (绿基色信号)
7	GND	Ground (地)
8	R	Red primary signal (红基色信号)
9	GND	Ground (地)
10	H	Horizontal sync signal (行同步信号)
11	V	Field sync signal (场同步信号)
12	GND	Ground (地)

CN27(8PIN/2.54mm) Resolution jumper pin (分辨率跳帽插针)

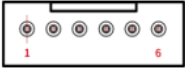


NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	S0	Screen resolution selection (屏幕分辨率选择)
2	GND	Ground (地)
3	S1	Screen resolution selection (屏幕分辨率选择)
4	GND	Ground (地)
5	S2	Screen resolution selection (屏幕分辨率选择)
6	GND	Ground (地)
7	S3	Screen resolution selection (屏幕分辨率选择)
8	GND	Ground (地)

普通程序跳帽定义 1: 插上跳帽 0: 不插跳帽

CN27 像素	S0	S1	S2	S3	排位
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1680×1050 dou 8	0	0	0	0	0
1280×1024 dou 8	1	0	0	0	1
1024×768 sig 8	0	1	0	0	2
800×600 sig 6	1	1	0	0	3
1024×768 sig 6	0	0	1	0	4
1440×900 dou 8	1	0	1	0	5
1024×600 sig 6	0	1	1	0	6
1280×800 sig 6	1	1	1	0	7
1366×768 sig 8	0	0	0	1	8
1920×1080 dou 8	1	0	0	1	9
1920×1200 dou 8	0	1	0	1	10

CN5(6PIN/2.0mm) BACKLIGHT BOARD INTERFACE (背光板接口)

NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	GND	Ground (地)
2	GND	Ground (地)
3	ADJ	BRI_ADJ (背光亮度调节)
4	BK	Back-light on/off control (背光控制开关)
5	12V	+12V DC Power supply (+12V 直流供电)
6	12V	+12V DC Power supply (+12V 直流供电)

CN4(4PIN/2.0MM) EXTERNAL DC INTERFACE (外甩 DC 接口)

NO. (管脚)	SYMBOL (板上丝印)	DESCRIPTION (描述)
1	12V	+12V DC Power supply (+12V 直流供电)
2	12V	+12V DC Power supply (+12V 直流供电)
3	GND	Ground (地)
4	GND	Ground (地)

5. International Standard (国际标准)

Safety (安全)

The power supply shall compliance with following Criterion:

(电源安全性满足下列标准)

- ◆ UL62368-1
- ◆ EN62368-1
- ◆ IEC62368-1
- ◆ GB4943-2011/GB8898-2011

Isolation (隔离)

- ◆ HI-POT (耐压测试)

Input to Output: 3000Vac 50Hz 1minute \leq 10mA

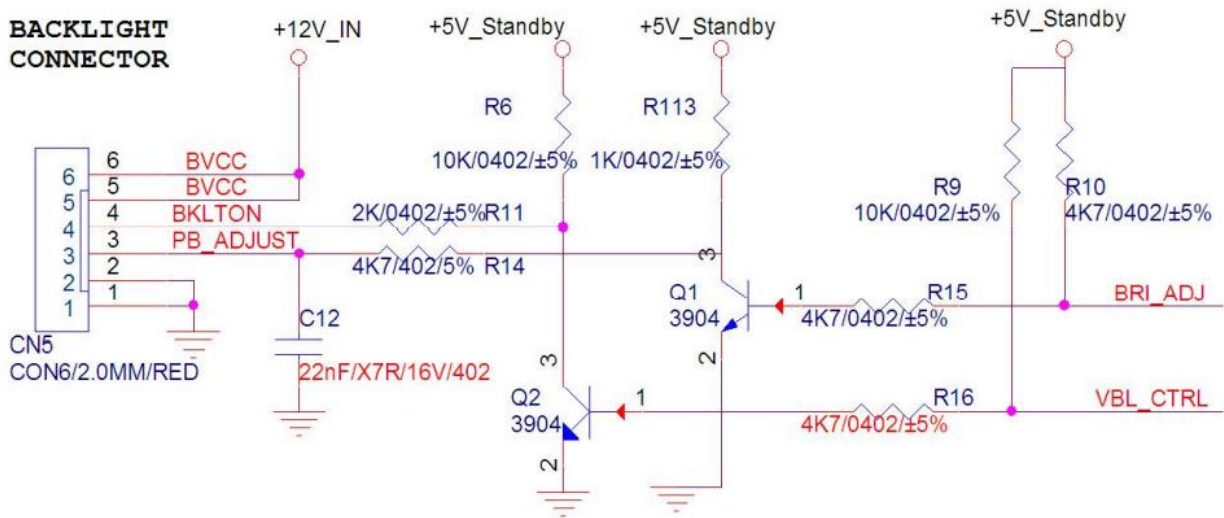
- ◆ Isolation Resistance (隔离电阻)

Input to Output: DC 500V 50M Ω min (at room temperature)

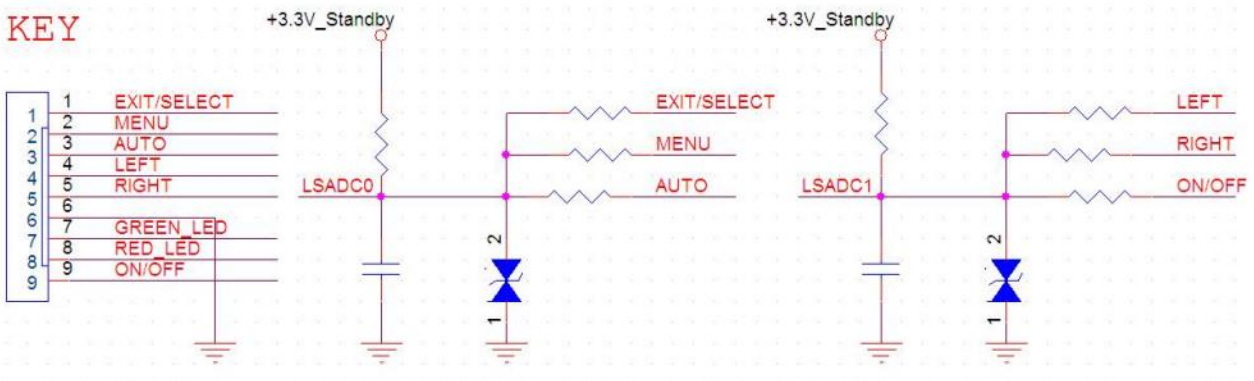
6. BK&ADJ Board System Schematic (BK 和 ADJ 原理图)

The Motherboard ADJ and BK control circuits refer to below and confirm motherboard circuit compatibility before adapting for external power supply.

(主板 ADJ 和 BK 控制电路参考如下，适配外置电源前需确认主板电路兼容性。)



7. Key & IR Board System Schematic (按键遥控原理图)



8. Matters Need Attention (注意事项)

Mount Matters Need Attention (装配注意事项) :

D	$\leq 5.5\text{mm}$
H	$\geq 7.0\text{mm}$

Note:

◆ Mount the TV board to the mounting board using M3 screw.

The maximum value of the tightening torque is 0.4N/M. The insertion depth of the screw should be less 5.5mm.

◆ If $H \leq 7.0\text{mm}$.Add Mylar under PCB bottom.

Environmental Requirement (环境要求) :

- ◆ Do not pressed and distorted. (禁止挤压和弯曲)
- ◆ Keep away from static and water. (远离静电和水)
- ◆ Relative humidity : 10% ~ 90%. (相对湿度: 10% ~ 90%)
- ◆ Storage humidity : 5% ~ 95%. (储存湿度: 5% ~ 95%)
- ◆ Storage temperature: -10~ +60°C. (储存温度: -10~ +60°C)
- ◆ Operation temperature: 0~ +40°C. (操作温度: 0~ +40°C)
- ◆ Cooling Method: Ventilation cooling. (冷却方式: 通风)
- ◆ The production shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on it. (该产品不能遭到水滴或水溅, 而且设备上不能放置诸如花瓶一类装满液体的物品)
- ◆ Please use it under the condition of good aeration. (该产品使用时需有良好通风)

