

Flat Panel TV Control Board Specification

平板电视控制板规格书

Customer (客 户): _____

Product Type (产品型号): LA.MV56U.A

Applicable Size (适用尺寸): 26'以下

Approved By Customer(客户确认)		
Confirmed/确认	Approved/批准	Signature /签章

Electrical Specification**History**

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1. General Description(概述)

LA.MV56U.A is a flat panel TV control board designed for Asia-Pacific market, the board has excellent and mature performance . LA.MV56U.A can support LCD and LED panel, the maximum resolution supported is 1920x1080. It can drive a LCD or LED panel smaller than 26' to get a cost-effective and high performance and popular flat panel analog TV set.

LA.MV56U.A 是一款适用于亚太地区的平板电视控制板，性能优良，成熟稳定。LA.MV56U.A 可支持 LCD 和 LED 屏，所支持的最高分辨率为 1920x1080，适合驱动 26'寸以下液晶屏以打造一台高性价比的主流模拟平板电视机。

LA.MV56U.A can support the port including, DC, VGA, HDMI, AV IN, PC AUDIO, EARPHONE, USB, RF.

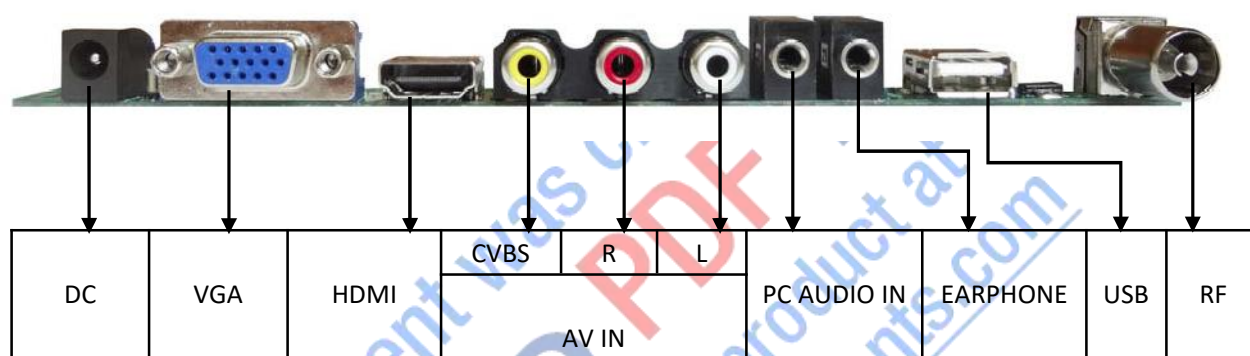
LA.MV56U.A 可支持的端口，包括 DC, VGA, HDMI, AV IN, PC AUDIO, EARPHONE, USB, RF。

It's very easy to upgrade software by a USB disk for LA.MV56U.A

LA.MV56U.A 可通过USB接口轻松快捷的升级软件。

2. Product Photograph(产品外观图)

Front View of LA.MV56U.A (主视图)



3. Configuration & General Precautions(使用注意事项)

For safety issue, please keep the board at least 8.0mm away from metal parts of the TV .

基于安全考虑，请在安装时确保板卡与其他金属材料保持 8.0mm 以上的距离。

A ESD shield bag is offered to protect the board from electrostatic or magnetic shock , please take care of ESD at anytime.

本产品采用防静电包装，请在任何时候注意静电防护。

The brightness of panel is influenced greatly by temperature, you should measure it after power on 10~30 minutes.

因屏的亮度易受温度影响，请在开机 10~30 分钟后再测量。

Keep the board surface clean. Check the appearance of the board if there is any defective parts, such as dilapidated, weighty nick, etc.

保持产品表面整洁。检查产品外观是否有明显品质不良存在，如：破损，严重划痕等。

Keep the board away from conductor when it is working.

请确保板卡工作时远离导体。

- Don't press, distort or disassemble the board.

请勿强压、扭曲或拆解板卡。

- Clean the board with soft dry cloth when it's dirty.

如果板卡脏了，请用干布擦拭。

- Don't switch on the power supply before panel is correctly connected.

通电前请确保屏线连接正确。

4. Product Features(特性说明)

Chipset (主芯片)	TSUMV56RUU-Z1		
Target Market (目标市场)	Asia-Pacific (亚太)		
OSD Language (OSD 语言)	S. Chinese(简体中文), T.Chinese(繁体中文), English(英文), Arab(阿拉伯语), Uighur(维吾尔语), German(德语), French(法语), Spanish(西班牙语),...		
Panel (屏)	Panel Type (屏类型)	LCD/LED	
	Panel Interface (驱屏接口)	Single/Double 8bit LVDS (单/双 8bit LVDS)	
	Max Resolution (最大分辨率)	1920x1080	
TV INPUT (电视输入)	TV	Receive Range (接收范围)	48.25MHz – 863.25MHz
		Input Impedance (输入阻抗)	75Ω
		Color System (彩色制式)	PAL/SECAM/NTSC
		Sound System (声音制式)	B/G, D/K, I, M/N
		Channels (预存频道)	200
		TELETEXT	V56: 1000 Pages(页)
VIDEO INPUT (视频输入)	PC	Format (格式)	Max Resolution (最高支持) 1920×1080@60Hz

	AV	Color System (彩色制式)	PAL/NTSC/SECAM
		Video Level (视频信号幅度)	1.0Vp-p±5%
	HDMI, YPbPr	480i, 480p, 576i, 576p, 720p, 1080i, 1080p	
Audio Input (音频输入)	PC	Input Level (输入幅度)	0.2~2.0 VRMS
	AV	Input Level (输入幅度)	0.2~2.0 VRMS
Audio Output (音频输出)	Frequency Response (频率响应)	100Hz~15K Hz @±3dB(1KHz, -12dB reference signal)	
	Max Output Power (最大输出功率)	2x2W(4Ω) THD+N<10%@1KHz	
Power (电源)	Power Supply (供电输入)	12V	
	Panel Power (驱屏电压)	3.3V,5V,12V	
	Power Management (电源管理)	Standby Power Consumption <0.3W(Board Only) (板卡待机功耗小于 < 0.3W)	
Comb Filter (梳状滤波器)	3D		
De interlace (隔行转逐行)	3D		

TSUMV56 USB MULTIMEDIA FORMAT (TSUMV56 USB 多媒体播放支持格式列表)

Media (媒体)	File Ext. (扩展名)	Codec(编解码器)		Remark(备注)
		Video(视频)	Audio(音频)	
Movie	.avi	MJPEG	MP3, WMA, AAC, MP2,	Max Resolution And Frame Rate: 640×480@30fps Max Data Rate: 10 Mbps
		Xvid, MPEG-2, MPEG-4, DivX, H.264		

	.mp4	MPEG-2, MPEG-4, DivX,H.264	PCM, AC3	1920×1080@30fps Max Data Rate: 20 Mbps
	.ts/ .trp	MPEG-2,H.264		
	.mkv/ .mov	MPEG-4, H.264		
	.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	V8, RV9, RV10	COOK	Max Resolution And Frame Rate: 1280×720@30fps Max Data Rate: 10 Mbps
Music	.mp3	--	MP3	Sample Rate: 32K~48KHz Bit Rate: 128K~320Kbps Channel: Mono/Stereo
	.wma	--	WMA	Bit Rate: 8K~48Kbps Sample Rate: 128K~320Kbps Channel: Mono/Stereo
	.m4a/ .aac	--	AAC	Sample Rate: 8K~48KHz Bit Rate: 128K~442Kbps Channel: Mono/Stereo
Photo	.jpg/ .jpeg	Progressive JPEG		Max Resolution: 1024×768
		Baseline JPEG		Max Resolution: 15360×8640
	.bmp	--		Max Resolution: 9600×6400
	.png	Non-Interlaced		Max Resolution: 9600×6400
		Interlaced		Max Resolution: 1200×800
Text	.txt	ANSI/UNICODE GB/UTF8		File Size: Max 1MB

File system: Hi Speed FS, FAT32, FAT16, NTFS(NTFS compressed file is not supported).

文件系统: Hi Speed FS, FAT32, FAT16, NTFS (不支持 NTFS 压缩文件。)

Note:

1.Licenses involved in specifications above are supposed to be obtained by customers themselves, eg: AC3、DivX、RM、RMVB、WMA、AAC.

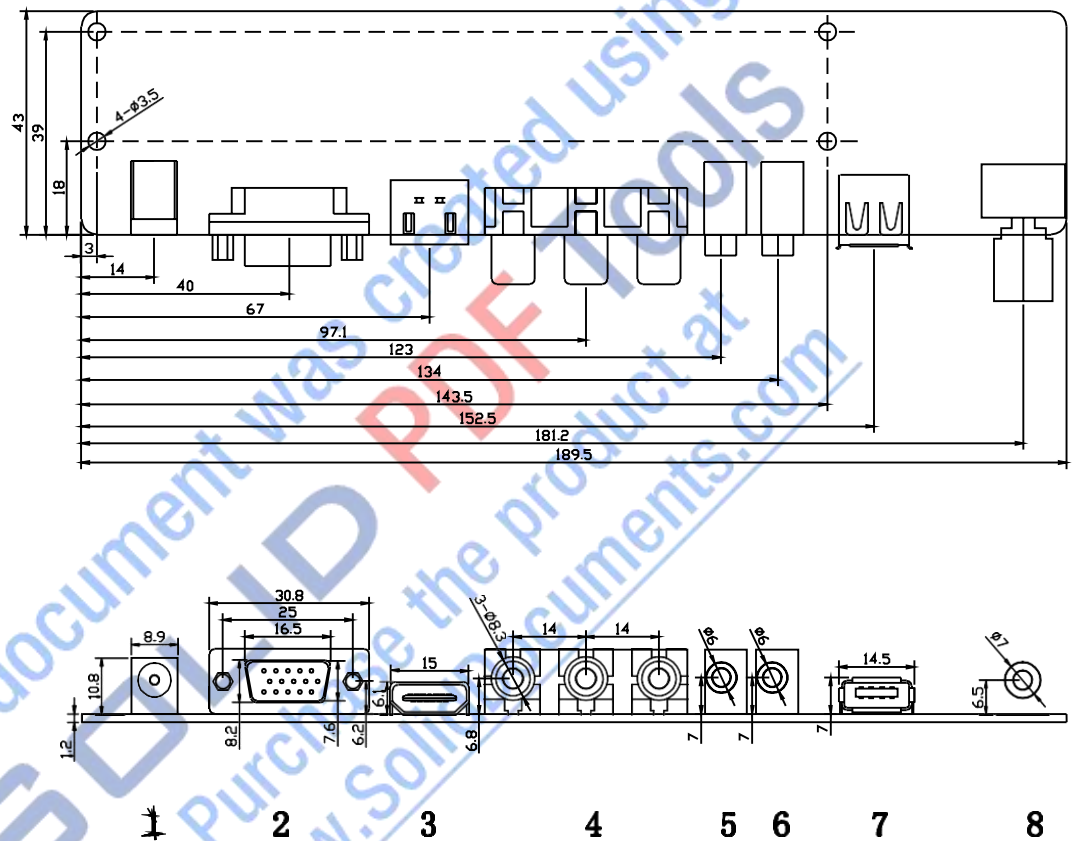
1.以上规格涉及 License 部分需要客户自己获取。

2.MP4 cannot support GMC.

2. MP4 不支持 GMC。

5. PCB Dimension(结构尺寸图)

No.	Description
1	DC
2	VGA
3	HDMI
4	AV IN
5	PC AUDIO
6	EARPHONE
7	USB
8	RF



6. IR & Key Schematic (IR & Key 原理图)

LA.MV56U.A*supports keypad of 7 IO keys, but also supports keypad of 1 AD input.

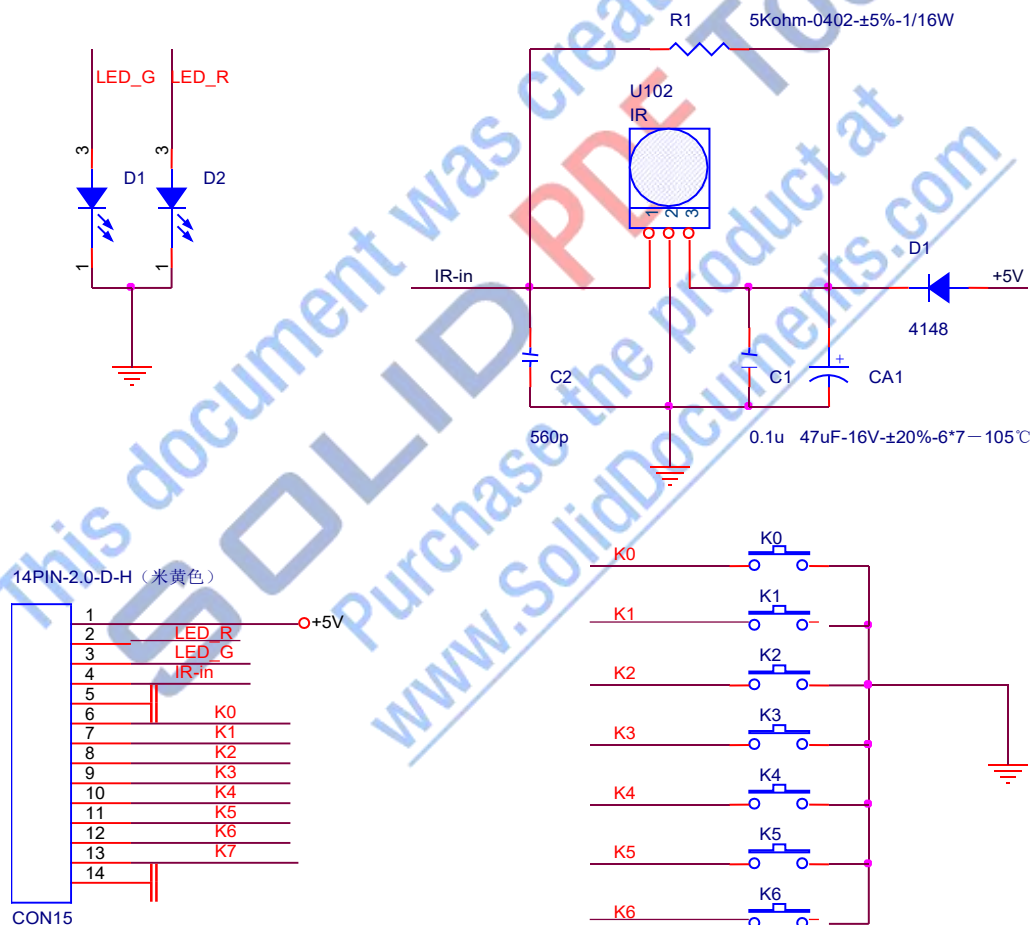
LA.MV56U.A 默认支持对地 7 键按键板,可按客户需求改 1 输入 AD 型按键板。

The LEDS (Green, Red) are Common cathode.

双色 LED(绿,红)为共阴极类型。

The following schematic is for reference only:

下列原理图仅供参考:

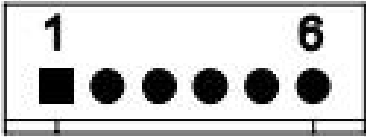


7. Interface definition(接口定义)

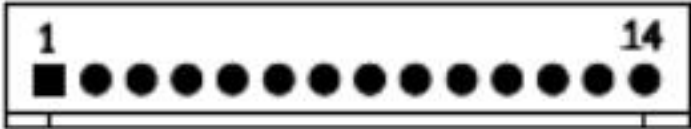
注：■方形焊盘定义为 NO.1

通用性板卡的插座定义是按照插座开口向内，从左向右开始计数(客户订制型板卡除外)。

7.1 CONW4(6PIN/2.0): INVERTER CONNECTOR (背光接口)

		
No.(管脚)	Symbol(板上丝印)	Description(描述)
1	+12V	+12V Power Supply for Backlight (背光板用+12V电源输出)
2	+12V	
3	BLON	Backlight On/Off Control(背光开关信号)
4	ADJ	Brightness Adjust Voltage Signal (亮度调节电压信号)
5	GND	Ground(地)
6	GND	

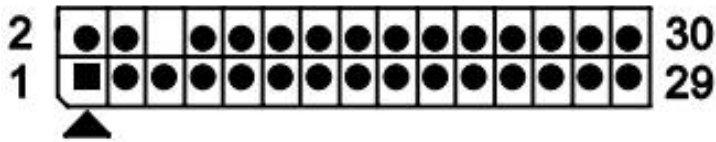
7.2 CONL2(14PIN/2.0): IR & KEY BOARD CONNECTOR(遥控和按键控制接口)

		
NO.(引脚)	Symbol(板上丝印)	Description(描述)
1	+5V	+5V Power Supply for IR(+5V电源输出)
2	IR IN	IR Input(遥控头信号输入)
3	GND	Ground(地)
4	K0	Power(电源)
5	LEDR	Red LED(红色LED)
6	LEDG	Green LED(绿色LED)
7	GND	Ground(地)

8	K1	Menu(菜单)
9	K2	Input Source(输入)
10	K3	VOL+(音量+)
11	K4	VOL-(音量-)
12	K5	CH+(频道+)
13	K6	CH-(频道-)
14	K7	Reserved(预留)

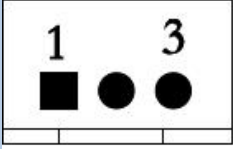
注：如客户对按键定义有特殊需求时，可以按照客户的实际需求修改按键定义。可作为 POWER 键的引脚默认为 K0。

7.3 CONE1(2×15PIN/2.0): LVDS INTERFACE CONNECTOR(LVDS接口)

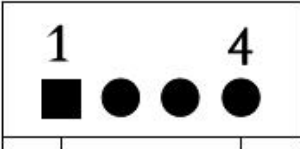
		
NO.(引脚)	Symbol(定义)	Description(描述)
1	VSEL	Power Supply for Panel
2	VSEL	
3	VSEL	
4	GND	Ground(地)
5	GND	
6	NC	NC
7	TX00-	LVDS ODD 0- Signal
8	TX00+	LVDS ODD 0+ Signal
9	TX01-	LVDS ODD 1- Signal
10	TX01+	LVDS ODD 1+ Signal
11	TX02-	LVDS ODD 2- Signal
12	TX02+	LVDS ODD 2+ Signal
13	GND	Ground(地)
14	GND	
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(地)
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

7.4 CONV3(3PIN/2.0) : EXT-PC AUDIO IN (外挂 PC AUDIO IN)

		
No.(管脚)	Symbol(板上丝印)	Description(描述)
1	PC-R	PC Right Channel Input(PC右声道输入)
2	GND	Ground(地)
3	PC-L	PC Left Channel Input(PC左声道输入)

7.5 CONA2(4PIN/2.0): SPEAKER (喇叭)

		
NO. (引脚)	Symbol(定义)	Description(描述)
1	LOUT+	Left Channel Output+(左声道输出+)
2	LOUT-	Left Channel Output-(左声道输出-)

3	ROUT-	Right Channel Output-(右声道输出-)
4	ROUT+	Right Channel Output+(右声道输出+)

7.6 CONV1(12PIN/2.0):VGA CONNECTOR(VGA 接口)



No.(管脚)	Symbol (定义)	Description(描述)
1	GND	Ground(地)
2	VS	Vertical Synchroniz Signal(场同步信号)
3	HS	Horizontal Synchroniz Signal (行同步信号)
4	GND	Ground(地)
5	R	Red Signal Input(红信号输入)
6	GND	Ground(地)
7	G	Green Signal Input(绿信号输入)
8	GND	Ground(地)
9	B	Blue Signal Input(蓝信号输入)
10	GND	Ground(地)
11	SDA	SDA(数据传输)
12	SCL	SCL (时钟控制)

7.7 CONW2(4PIN/2.0): POWER SUPPLY(供电插座)



NO. (引脚)	Symbol(定义)	Description(描述)
1	GND	Ground (地)
2	GND	Ground (地)
3	+12V	+12V电源供电
4	+12V	+12V电源供电

8. Environmental Characteristics(环境特性要求)

8.1 Temperature(环境温度)

Operating: 0°C to +40°C

Store: -20°C to +70°C

8.2 Humidity(环境湿度)

Operating: 10% to 90% (non-condensing)

Store: 5% to 95% (non-condensing)

8.3 Altitude(海拔高度)

Operating: 10,000 ft.(max)

Store: 20,000ft.(max)

8.4 High Temperature & Storage(高温负荷与存储)

Test method & condition please refer to the description of GB2423.2 "Test Bd & Bb"

测试方法和测试条件参见GB2423.2 "试验Bd & Bb"之说明

8.5 Low Temperature & Storage(低温负荷与存储)

Test method & condition please refer to the description of GB2423.1 "Test Ad & Ab"

测试方法和测试条件参见GB2423.1 "试验Ad & Ab"之说明

8.6 Humidity & Temperature Test(潮热试验)

Test method & condition please refer to the description of GB2423.3 "Test Ca" & GB2423.22 "Test Nb"

测试方法和测试条件参见GB2423.3 "试验Ca" 和GB2423.22 "试验Nb"之说明