

LCD TV control board specification

液晶电视板卡规格书

产品型号: M3663.03B

产品形态: TV

文档编码: 19090101

Approved by		
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1.GENERAL DESCRIPTION (概述)

M3663.03B is a multi-purpose and energy-efficient LCDTV control board with single/dual 8bit LVDS interface, the resolution of LCDTV panel is up to 1920*1080.

M3663.03B 是一款带有单一/双重 LVDS 接口的多功能节能高效的液晶电视控制板, 最高分辨率支持 1920*1080.

M3663.03B supports DVB-T2/DVB-T/DVB-C and analog TV front-end (PAL/SECAM/NTSC) demodulator. HDMI、USB 、PC-RGB、Earphone output、AV1 video and audio input an audio class D amplifier which supports 2x3W (4ohm) outputs is built in.

M3663.03B 支持 DVB-T2/DVB-T/DVB-C 和模拟电视输入(PAL/SECAM/NTSC), HDMI, USB,PC-RGB,耳机输出, AV1 视频和音频输入, 内置 D 类放大器支持 2x3W (4ohm)功放输出.

M3663.03B Software upgrade and multimedia playback function are applicable with the USB slot.

M3663.03B 的 USB 接口可用于软件升级与视频播放功能.

M3663.03B power supports DC12V input. It fits for 28" panel.

M3663.03B 该款方案的电源为直流 12V 电源供电, 最大支持 28 寸屏幕.

2.FUNCTION LAYOUT (功能接口)

配置一	1 路 HDMI, 1AV IN, 1 路 USB, VGA
FUNCTIONS	【M3663.03B_R1】DC12V, VGA_IN, HDMI, AV_IN, PC_AUDIO_IN, EARPHONE, USB, TUNER.
Notes	RF 头是否加热缩套管, 以实际需求为准; 加热缩套管的直径为 11.8mm, 不加热缩套管的直径为11.2mm Whether add heat shrink sleeve on RF head depends on the actual demand. Diameter of RF head with shrink sleeve is 11.8mm, diameter of RF head without shrink sleeve is 11.2mm
FRONT VIEW	

3.FEATURES (特性说明)

Chipset 芯片	MSD3663LUA			
Market Area 市场	Asia Pacific 亚太地区(包括中国)			
OSD Language 屏幕语言	English/French/Spanish/Russian/German/Italian/Turkish/Portuguese 英文/法文/西班牙文/俄文/德文/意大利文/意大利文/葡萄牙文			
LCD Panel 液晶屏	Type	TFT-LCD,LED backlight LCD		
	Resolution	up to 1920*1080		
	Interface	single/dual 8bit LVDS		
	Panel power	12V/5V/3.3V		
RF Input 射频输入	ATV	Receiving Range	47.25MHz~867.25MHz	
		Input Impedance	75 ohm	
		Video System	PAL,SECAM,	
		Sound System	BG, DK, I	
		max storage channels	200	
	DTV	Receiving Range	DTMB:VHF (48.5MHz - 223MHz) UHF (470MHz - 806MHz)	
		Input Impedance	75 ohm	
		Channel Bandwidth	6MHZ/7MHZ/8MHZ	
		Video System	MPEG-2 MP@ML, MPEG-4 MP@HL, H.264	
		Sound System	MPEG-1 Layer 1/2, MPEG-2 Layer 2	
	Modulation	TDS-OFDM		
Video Input 视频输入	AV	Video System	PAL/NTSC	
		Video Level	1.0 Vp-p± 5%	
	Component	480i, 480p, 576i,576p,720p, 1080i, 1080p		
	HDMI	480i, 480p, 576i,576p,720p, 1080i, 1080p		
		HDCP 1.4		
	VGA	Format	Up to 1920x1080@60Hz	
	USB2.0	Multimedia playback and software upgrade (多媒体播放和软件升级)		
AV/Component	L/R RCA Input	0.2 – 2.0 Vrms		
Audio Output 音频输出	Max Output Power	2*3W(4ohm)		
	EARPHONE	2*150mVrms(32ohm)		
Key Function 按键功能	POWER,INPUT,MENU,CH+,CH-,VOL+,VOL-			
	Input	DC 12V		

Power 电源	Power Management	Standby Power Consumption <0.5W(board only)	
Terminal 端口	Input(输入)	TV	1 IEC type, 75
		AV	1 RCA Terminal(yellow)
		AV Audio	2 RCA Terminal(RED/WHITE)
		HDMI	1 HDMI Terminal
		VGA	D-SUB 15
		USB	2 USB Terminal
		12V_DC IN	1 DC Terminal
		VGA Audio	1 Earphone Terminal
	output(输出)	EARPHONE	1 Earphone Terminal

4.USB MULTIMEDIA PLAYBACK FORMAT (USB 多媒体播放格式)

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

表中可选功能都以“*”标示。

Multimedia (媒体)	File Extension (扩展名)	Video Codec (视频编码)	Audio Codec (音频编码)	Note (备注)	
Movie	TS (.ts, .trp, .tp)	MPEG1/2 MP@HL	MPEG1/2	【Video Codec】 up to 1080P@30fps H265 up to 1080P@60fps 【Audio Codec】 MPEG1 Layer1, MPEG2 Layer1: Sample rate 16KHz ~ 48KHz, Bit Rate 32Kbps ~ 448Kbps MPEG1 Layer2, MPEG2 Layer2: Sample rate 16KHz ~ 48KHz, Bit Rate 8Kbps ~ 384Kbps	
		H.264	Layer1/2		
		MP,HP@Level 4.1	MPEG1/2		
		VC1 AP@Level 3, SP, MP	Layer3		
	MPEG (.MPG, .MPEG)	MPEG4 SP,ASP	VC1 AP@Level 3, SP, MP	C3	MPEG1 Layer3, MPEG2 Layer3: Sample rate 16KHz ~ 48KHz, Bit Rate 8Kbps ~ 320Kbps
				MPEG1/2	
				MPEG1/2	
	MPEG (.DAT, .VOB)	MPEG1/2 MP@HL	MPEG1/2 MP@HL	Layer3	AC3: Sample rate 32KHz,44.1KHz,48KHz, Bit Rate 32Kbps ~ 640Kbps EAC3: Sample rate 32KHz, 44.1KHz,48KHz, Bit Rate 32Kbps ~ 6Mbps
				EAC3	
	MP4 (.mp4, .mov)	MPEG4 SP,ASP	MPEG1/2 MP@HL	MPEG1/2	
Layer3					

		DivX 3.11/4.12/5.x/6	AC3 EAC3	AAC-LC, HEAAC: Sample rate 8KHz ~ 48KHz Bit Rate: AAC-LC: 12kbps~ 576kbps V1: 6kbps ~ 288kbps V2: 3kbps ~ 144kbps VORBIS: Sample rate Up to 48KHz, Supports stereo decoding only	
		Xvid	AAC-LC,		
		H.264	HEAAC		
		MP,HP@Level 4.1	VORBIS		
		HEVC/H.265 Main/Main10 profile@Level4.1			
	MKV (.mkv)		MPEG4 SP,ASP	MPEG1/2	WMA: WMA 7, WMA 8, WMA 9 Standard,WMA Pro DTS: Sample rate Up to 48KHz, Bit Rate < 1.5Mbps
			Xvid	Layer1/2	
			MPEG1/2 MP@HL	MPEG1/2	
			DivX 3.11/4.12/5.x/6	Layer3 AC3	
			H.264	AAC-LC,	
			VC1	HEAAC	
			HEVC/H.265	WMA VORBIS DTS	
	FLV (.flv)		H.264	MPEG1/2	
			HEVC/H.265	Layer3 AAC-LC, HEAAC	
	DivX (.divx)		DivX 3.11/4.12/5.x/6	MPEG1/2 Layer1/2 MPEG1/2 Layer3 AC3 AAC-LC, HEAAC	
	AVI (.avi)		DivX 3.11/4.12/5.x/6	MPEG1/2 Layer1/2	
			MPEG1/2 MP@HL	MPEG1/2	
			MPEG4 SP,ASP	Layer3	
		Xvid	AC3		
		H.264	AAC-LC,		
		MP,HP@Level 4.1	HEAAC		
		VC1 AP@Level 3, SP, MP	WMA		
	MPEG1/2 MP@HL				

	ASF (.asf)	PEG4 SP,ASP	WMA	
		Xvid	MPEG1/2	
		H.264	Layer1/2	
		MP,HP@Level 4.1	MPEG1/2	
	VC1 AP@Level 3, SP, MP	Layer3		
3GPP (.3gpp, .3gp)	MPEG1/2 MP@HL	MPEG1/2	AC3,EAC3 AAC-LC, HEAAC VORBIS	
	MPEG4 SP,AS	Layer3		
	H.264 MP,HP@Level 4.1			
WMV (.wmv)	VC1 AP@Level 3, SP, MP	WMA STANDARD WMA PRO		
RM (.rm, .rmvb)	RV30/RV40	LBR (cook)	【Video Codec】 up to 1080P@30fps 【Audio Codec】 Bit Rate:6Kbps ~ 128Kbps Sample rate: 8KHz,11.025KHz,22.05KHz,44.1KHz	
Music	*.mp3	\	MPEG-1 Layer 3	Bit Rate: up to 320Kbps Sample Rate: 32KHz, 44.1KHz, 48KHz
		\	MPEG-2 Layer 3	
	AAC (*.aac,*m4a)	\	AAC HE-AAC V1 HE-AAC V2	Bit Rate: AAC:12kbps~ 576kbps V1: 6kbps ~ 288kbps V2: 3kbps ~ 144kbps Sample Rate: 8KHz ~ 48KHz
	*.wav	\	LPCM ADPCM	
Photo	*.jpeg *.jpg		Base-line	< 15360×8640 The limitation of size depends on DRAM siz
			Progressive	< 1024x768 The limitation of size depends on DRAM size

	*.png		non-interlace	< 9600x6400 The limitation of size depends on DRAM size
			interlace	< 1200x800 The limitation of size depends on DRAM size
	*.bmp			< 9600x6400 The limitation of size depends on DRAM size
<p>Note: Licenses involved in specifications above are supposed to be obtained by customers themselves. 注意： 以上规格涉及 License 部分需要客户自己获取。</p>				

5. BOARD PICTURE (板卡外观图)

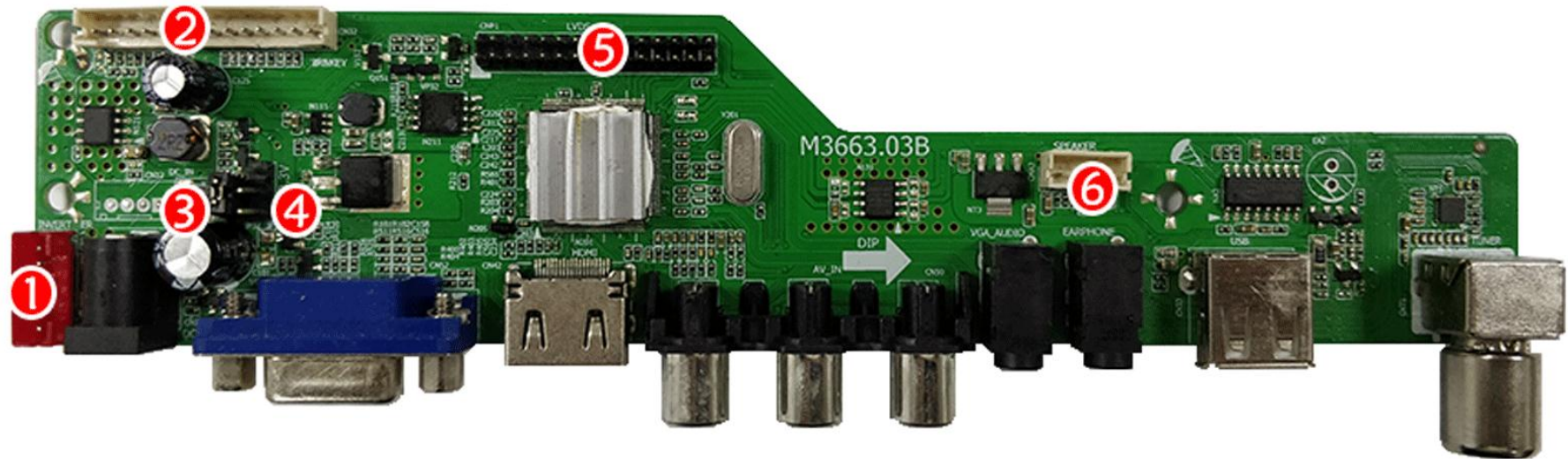
Pictures are for reference only,specific to prevail in kind.

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

以下图片仅供参考，请以结构图或实物为准。

可选接口或功能都以“*”标示。

NO	Position	Description (说明)
1	CN13	BL Inverter Socket
2	CN32	IR and LED board and Key socket
3	JP32	12V PANAL power select socket
4	JP31	3.3V/5V PANAL power select socket
5	CNP1	LVDS Socket
6	CNA3	Speaker socket



6.INTERFACE DEFINITION(接口定义)

◆ CN13 (6PIN/2.0) INVERTER Interface(背光控制接口)

PIN No.	Definition(定义)	Description
1	GND	GND
2	GND	GND
3	ADJ	ADJ
4	BL_ON/OFF	BL_ON/OFF
5	12V	12V
6	12V	12V

Note: The voltage of BL_ON/OFF at high level is 3.2V.
BL_ON/OFF 高电平时电压为 3.2V.

◆ CN32 (14PIN/2.0) IR & LED board & Key Interface(遥控接收,LED 板和按键接口)

PIN No.	Definition(定义)	Description(说明)
1	GND	GND
2	K7	OPTION
3	K6	OPTION
4	K5	OPTION
5	K4	OPTION
6	K3	OPTION
7	K2	OPTION
8	K1	OPTION
9	K0	OPTION
10	GND	GND
11	IR	IR
12	G	LED-G
13	R	LED-R
14	5V	5VSTB

◆ J32 (JUMP) PANAL POWER SELECT(屏电压)

PIN No.	Definition(定义)	Description(说明)
1	12V	12V_STB
2	OUT	OUT

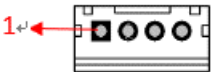
◆ J31 (JUMP) PANAL POWER SELECT(屏电压)



PIN No.	Definition(定义)	Description(说明)
1	5V	5V_STB
2	OUT	OUT
3	3.3V	3.3V_STB

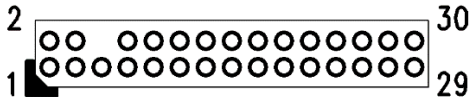
Note: JP31 and JP32 can't be supplied by built-in power supply.
在内置电源供电时，JP31,JP32不能上电。

◆ CNA3 (4PIN/2.0) Speaker Output(扬声器输出)



PIN No.	Definition(定义)	Description(说明)
1	R+	R+
2	R-	R-
3	L-	L-
4	L+	L+

◆ CNP1 (30PIN/2.0) LVDS Output(LVDS 输出)



PIN No.	Definition (定义)	Description(说明)	PIN No.	Definition (定义)	Description(说明)
1	VCC	Panel Power	16	RXOC+	RXOC+
2	VCC	Panel Power	17	RXO3-	RXO3-
3	VCC	Panel Power	18	RXO3+	RXO3+
4	GND	GND	19	RXE0-	RXE0-
5	GND	GND	20	RXE0+	RXE0+
6	NC	NC	21	RXE1-	RXE1-
7	RXO0-	RXO0-	22	RXE1+	RXE1+
8	RXO0+	RXO0+	23	RXE2-	RXE2-
9	RXO1-	RXO1-	24	RXE2+	RXE2+
10	RXO1+	RXO1+	25	GND	GND
11	RXO2-	RXO2-	26	GND	GND
12	RXO2+	RXO2+	27	RXEC-	RXEC-
13	GND	GND	28	RXEC+	RXEC+
14	GND	GND	29	RXE3-	RXE3-
15	RXOC-	RXOC-	30	RXE3+	RXE3+

*If you need to drive the 10BIT panel, please confirm with our salesman or engineer.

*如果需要驱动 10bit 屏幕，请与我司业务或工程人员确认。

7.MAIN BOARD POWER SUPPLY(主板供电信息)

Power Supply Mode	Voltage range	Max Current	Max ripple	Note
Board Power Supply	12V±10%	2500mA	180mVp-p@25°C; 260mVp-p@-10°C	Without the panel
USB power supply	5V±5%	600mA	80mVp-p@25°C; 200mVp-p@-10°C;	

◆ Panel power supply(屏供电参数)

Voltage	Standard current	Maximum current
3.3V	400MA	450MA
5.5V	800MA	1000MA
12V*	800MA	1000MA

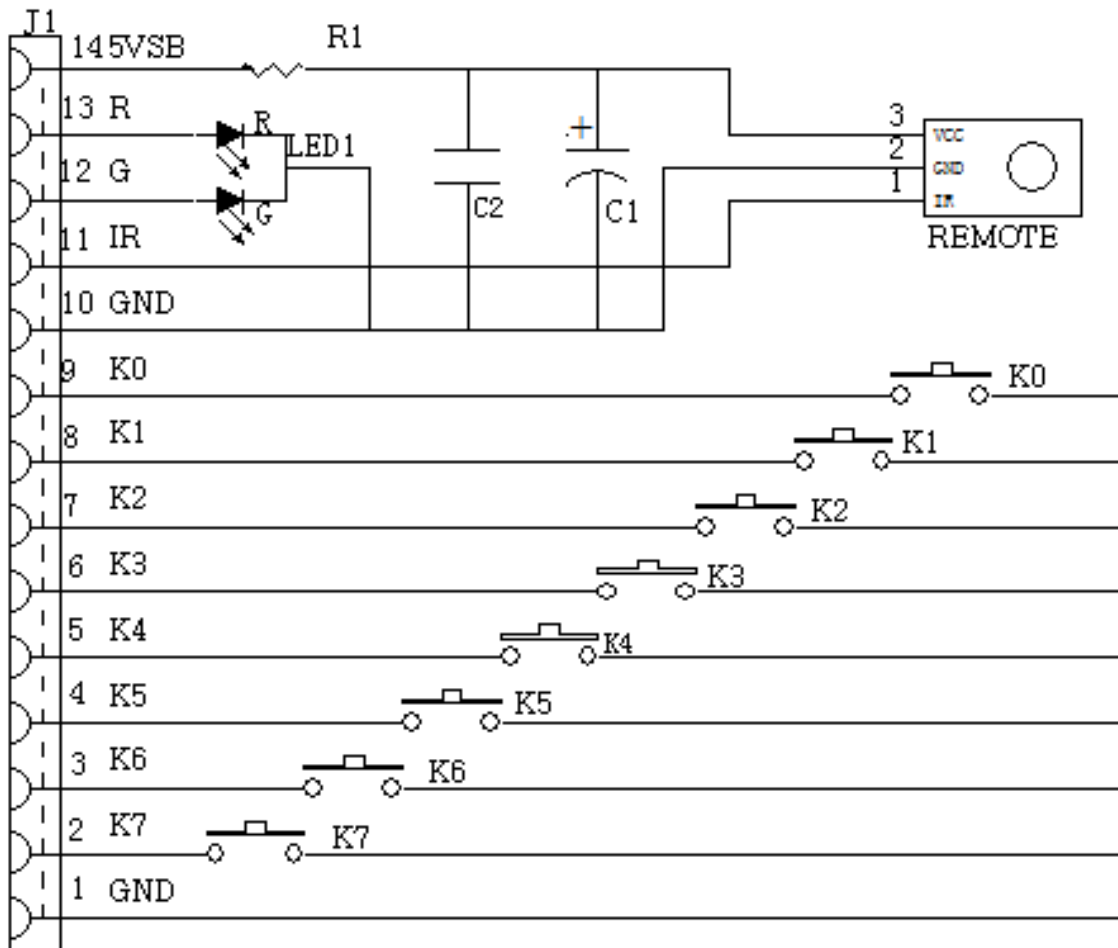
Notice :

- 1、If the panel power supply current exceeds the above parameters, please confirm with our engineers.
- 2、Confirmation of power supply parameters of 12V panel is necessary when external 12V battery is used for power supply.

注意:

- 1、如果屏供电电流超出上述参数，请与我司工程人员确认。
- 2、外接 12V 电池供电时，需要确认 12V 面板供电参数。

8.SCHEMATIC OF IR AND KEYBOARD(遥控接收和按键原理图)



按键功能: 信号源, 菜单, 音量+, 音量-, 频道+, 频道-, 电源

KEY FUNCTION: TV/AV, MENU, VOL+, VOL-, CH+, CH-, POWER

Note: The dividing resistor which is corresponding to the power key must be zero (equivalent to the voltage is zero). Otherwise, the board will not work. K6 is default power.

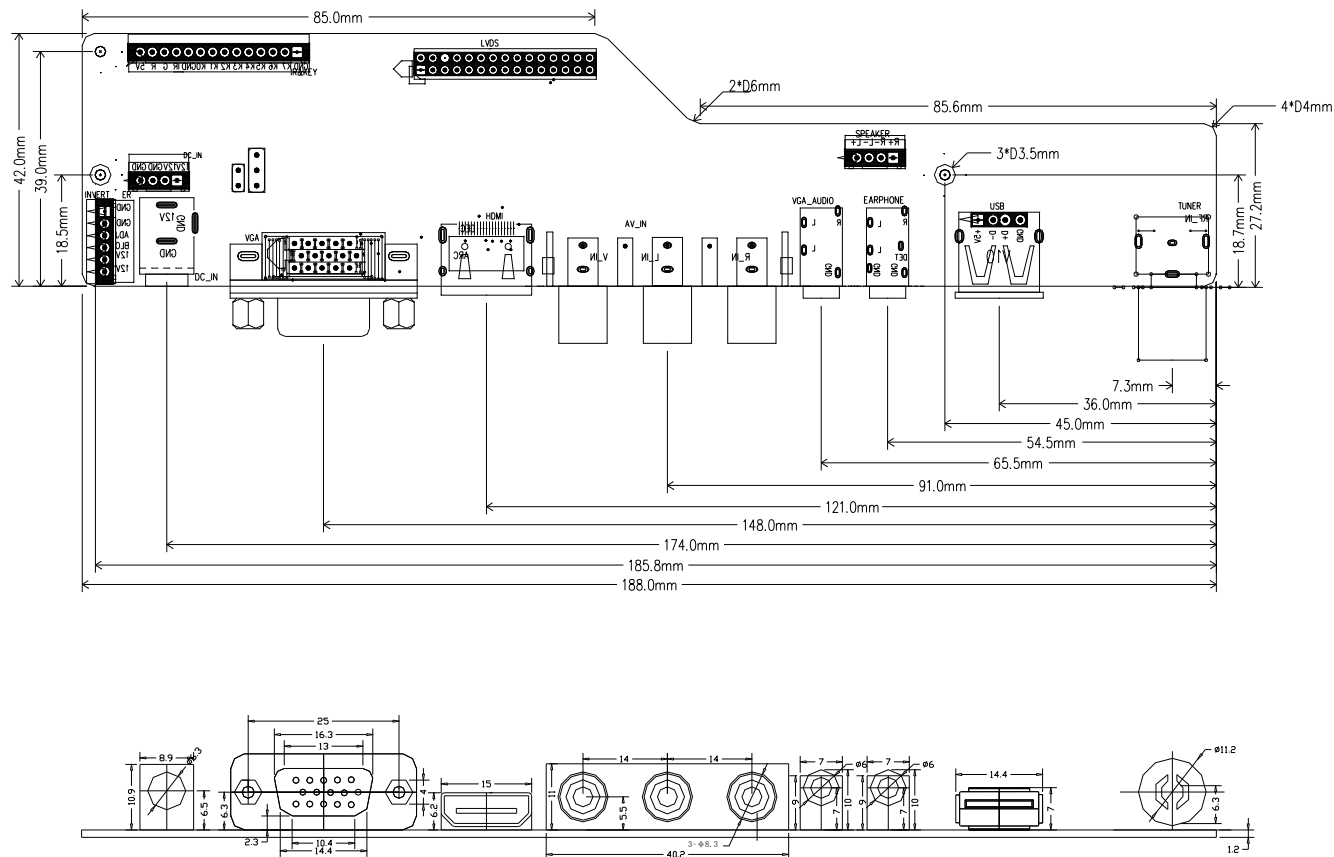
9.PCB DIMENSION (PCB 尺寸)

TV BOARD Height(板卡高度) = 20mm(MAX)(TOP:14.5mm,BOTTOM:4mm)

PCB Length(PCB长度) = 188mm

PCB Width(PCB宽度) = 27/42mm

PCB Screw Bore Size(PCB 螺钉孔尺寸) : 3* Diameter is 3.5mm



10.GENERAL PRECAUTION (注意事项)

- Keep away from water
请使板卡远离水
- Protect the board from static electricity in case of damage to the IC
请使板卡远离静电,否则将导致IC损坏
- Relative Humidity: $\leq 80\%$
相对湿度: $\leq 80\%$
- Storage Temperature: $-10\sim+60^{\circ}\text{C}$
存储温度: $-10\sim 60^{\circ}\text{C}$
- Operation Temperature: $0\sim+40^{\circ}\text{C}$
使用温度: $0\sim 40^{\circ}\text{C}$
- Don't push or pull the connectors when the board is working.
板卡工作时,请勿接入或拔出连接器.
- Don't press, distort or disassemble the board.
请勿挤压,扭曲或拆卸板卡.
- Clean the board with soft dry cloth when it is dirty.
如果板卡脏了,请用干布擦拭.
- Don't wire in the board to power supply before panel is correctly connected.
正确接好驱动屏线之前,请勿接通电源。