SPECIFICATION

产品规格书

Model:BTP-LC-NT68676

REVISION HISTORY

VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V0	2021.03.04	M.NT68676.3 B21103	All	First Issued.	Yve

Content

1. STANDARD CONFIGURATION（标准配置）

下表为我们主推的标准配置：

标准配置一	**1 路 HDMI，1 路 DVI，1 路 VGA，带耳机输入&输出**
FUNCTIONS	【3_A1】HDMI,DVI,VGA(端子),PC AUDIO IN,EARPHONE OUT
Notes	--
FRONT VIEW	

OPTIONAL FUNCTION	--

备注：如以上表格不包含您需要的配置，请单独向我司销售人员进行申请。

Note: If the configurations above can’t meet your demand, please apply to our sales stuff.

2. BOARD PICTURE（板卡外观图）

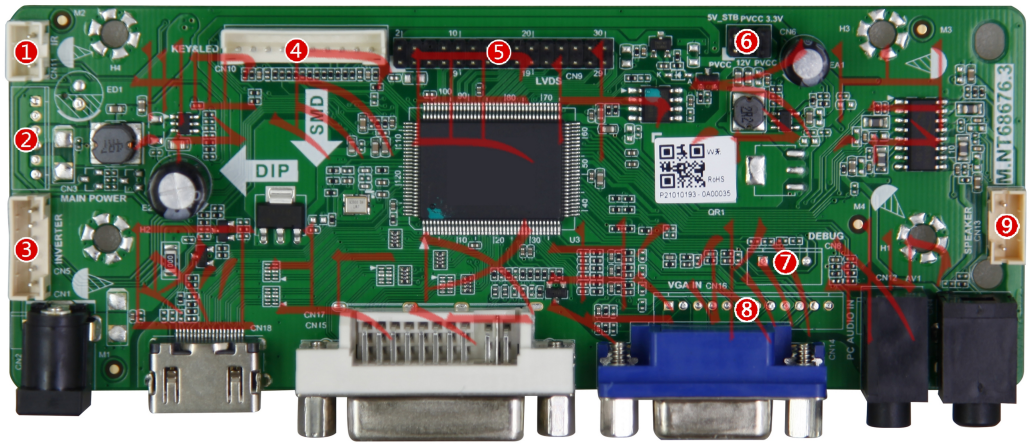
Pictures are for reference only, specific to prevail in kind.

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

以下图片仅供参考，请以【结构图】或【实物】为准。

可选的接口或者功能都以"*"标示。

尺寸：139mm(L)*53mm(W)*1.2mm(H)（H 为 PCB 厚度）



No.	Position	Description
1	CN11	IR
2	*CN3	MAIN POWER
3	CN5	INVERTER
4	CN10	KEY&LED
5	CN9	LVDS
6	CN6	PVCC
7	*CN8	DEBUG
8	*CN16	VGA IN
9	CN13	SPEAKER

3. FEATURES（特性说明）

MAIN CHIPSET 主芯片	NT68676UFG		
OSD LANGUAGE **OSD** 语言	Simplified Chinese, Traditional Chinese, English, French, German, Italian, Spanish, Portuguese, Korean (optional)		
PANEL 面板	Panel Type	TFT LCD	
	Interface	Dual LVDS	
	Max Resolution	1920*1080	
VIDEO INPUT 视频输入	PC-RGB	Format	Up to 1920×1080@60Hz
	HDMI	480i, 480p, 720p, 1080i, 1080p	
	DVI	480i, 480p, 720p, 1080i, 1080p	
AUDIO INPUT 音频输入	PC Audio	PC Audio Input	0.2 ~ 2.0 V_{RMS}
AUDIO OUTPUT 音频输出	Earphone	Earphone output	130 ~ 150mV_{RMS} Audio Input: 0.5V_{RMS}
	Frequency response	150Hz-15KHz @±3dB(1KHz -12dB reference signal)	
	Max Output power	2×1W(8Ω) THD+N<10%@1KHz (Power Supply:5V,Audio Input: 2V_{RMS})	
POWER TO PANEL 驱屏电压 **(屏供电规格/电流最大值)**	3.3V/1200mA 5V/1200mA 12V/1000mA		
Management 电源管理	Standby Power Consumption < 0.2W(Board Only) 待机功耗< 0.2W（仅主板）		
Button Types 按键类型	Ground Key Interface 对地按键接口		
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。			

3.1 CRITICAL MATERIALS of Monitor Part（Monitor 部分关键物料清单）

The table is for reference only, specific to prevail in kind. 此表仅供参考，请以实物为准。

NAME 物料名称		TYPE 型号	BRAND 品牌	BACKUP 备用型号	BACKUP 备用品牌
AMPLIFIER		CS85636S	CHIPSTAR	--	--
FLASH	**4M bit**	GD25Q40CTIG	GD	--	--
SPXO		SPXO,12MHz,±10ppm, 9pF,SMD3225,SMD,	JWT	--	--

	CF4012M00009T2115160			

3.2 ELECTRICAL CHARACTERISTICS & REQUIREMENTS （电气特性和要求）

Symbol	Voltage Range			Ripple	Total current	MAX. current(mA)of Individual part			
	MIN	TYP	MAX	Voltage		Mainboard	AMP	Back light	Panel
12V	11	12	13	600 mV_{P-P}	4000mA	2500	700	1000	1000

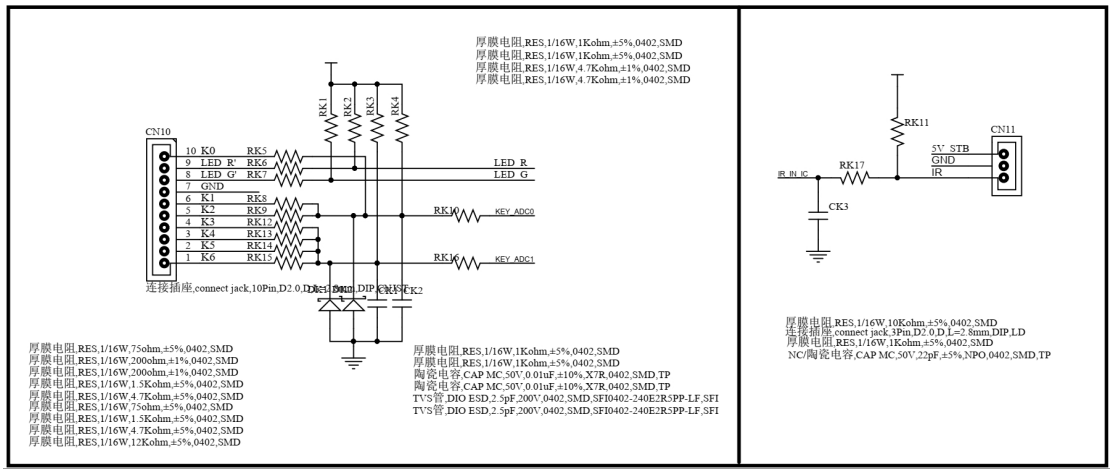
Note: 1. The current of inverter and extension modules are not included in maximum current.

2. Please confirm with CVTE engineers if the current of panel exceeds the above specification.

备注：1. Inverter 以及扩展模块的电流不包含在最大电流中。

2. 当屏供电规格超过如上规格时，需和 CVTE 工程师确认。

4. SCHEMATICS OF IR & KEY BOARD（遥控按键原理图）



按键功能：信号源，菜单，音量+，音量-，频道+，频道-，电源

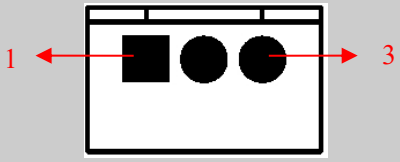
KEY FUNCTION: TV/AV, MENU, VOL+, VOL-, CH+, CH-, POWER

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.

5. INTERFACE DEFINITION（接口定义）

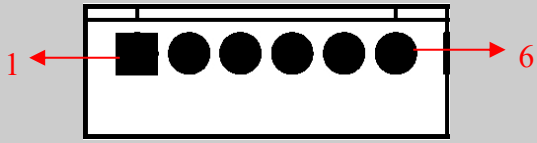
The optional connectors and terminals are marked with "*".标 "*" 的为可选。

◆ CN11(3PIN/2.0): IR CONNECTOR(遥控接口)



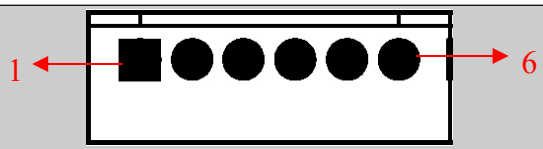
NO.	SYMBOL	DESCRIPTION
1	5V_STB	+5V power supply when Standby
2	GND	Ground
3	IR	IR Receiver

◆ *CN3(6PIN/2.0): MAIN POWER CONNECTOR(主供电接口)



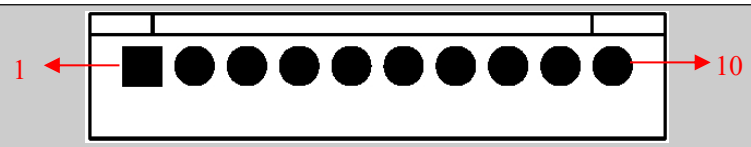
NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	
3	5V_STB	+5V power supply when Standby
4	5V_STB	
5	+5V	+5V power supply
6	POWER	Power On/Off

◆ CN5(6PIN/2.0): INVERTER CONNECTOR(INVERTER 接口)



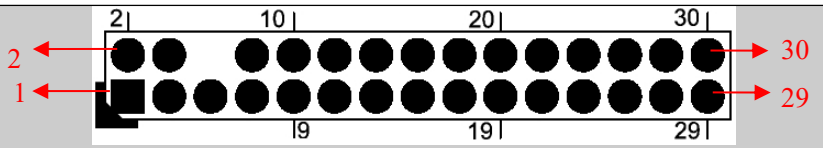
NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	
3	ADJ	Brightness Adjustment for Panel
4	BL_ON	Back-Light ON/OFF Control for Panel
5	12V	+12V power supply
6	12V	

◆ CN10(10PIN/2.0): KEY & LED CONNECTOR(按键和 LED 灯控制接口)



NO.	SYMBOL	DESCRIPTION
1	K6	Key6
2	K5	Key5
3	K4	Key4
4	K3	Key3
5	K2	Key2
6	K1	Key1
7	GND	Ground
8	LED_G	Green Indicator, V_{OH}≥2V (I_{OMHAX}: 2mA), V_{OL}≤0.8V (I_{OLMAX}: 2mA)
9	LED_R	Red Indicator, V_{OH}≥2V (I_{OHMAX}: 1.3mA), V_{OL}≤0.8V (I_{OLMAX}: 0.5mA)
10	K0	Key0

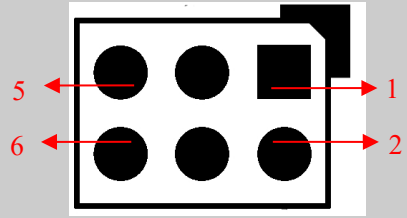
◆ CN9(2×15PIN/2.0): LVDS CONNECTOR (LVDS 接口)



NO.	SYMBOL	DESCRIPTION
1	VCC_PANEL	Power Supply for Panel
2	VCC_PANEL	
3	VCC_PANEL	
4	GND	Ground
5	GND	
6	NC	No Connection
7	RXO0-	LVDS ODD 0- Signal
8	RXO0+	LVDS ODD 0+ Signal
9	RXO1-	LVDS ODD 1- Signal
10	RXO1+	LVDS ODD 1+ Signal
11	RXO2-	LVDS ODD 2- Signal
12	RXO2+	LVDS ODD 2+ Signal
13	GND	Ground
14	GND	
15	RXOC-	LVDS ODD Clock- Signal
16	RXOC+	LVDS ODD Clock+ Signal

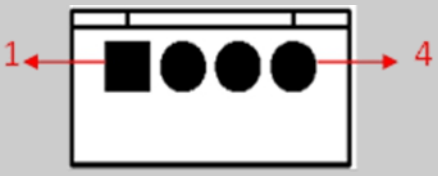
17	RXO3-	LVDS ODD 3- Signal
18	RXO3+	LVDS ODD 3+ Signal
19	RXE0-	LVDS EVEN 0- Signal
20	RXE0+	LVDS EVEN 0+ Signal
21	RXE1-	LVDS EVEN 1- Signal
22	RXE1+	LVDS EVEN 1+ Signal
23	RXE2-	LVDS EVEN 2- Signal
24	RXE2+	LVDS EVEN 2+ Signal
25	GND	Ground
26	GND	
27	RXEC-	LVDS EVEN Clock- Signal
28	RXEC+	LVDS EVEN Clock+ Signal
29	RXE3-	LVDS EVEN 3- Signal
30	RXE3+	LVDS EVEN 3+ Signal

◆ **CN6(2×3PIN/2.0): PVCC CONNECTOR (PVCC 接口)**



NO.	SYMBOL	DESCRIPTION
1	PVCC	PVCC
2	5V_STB	+5V power supply when standby
3	12V	+12V power supply
4	PVCC	PVCC
5	PVCC	
6	3.3V	+3.3V power supply

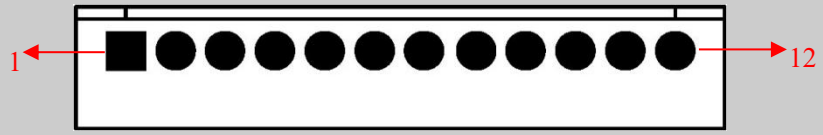
◆ ***CN8(4PIN/2.0): DEBUG CONNECTOR (DEBUG 接口)**



NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	TXD	UART TX

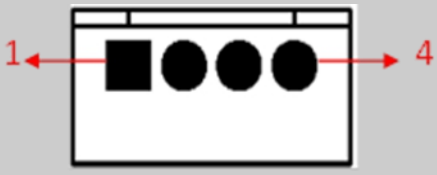
3	RXD	UART RX
4	5V	+5V power supply

◆ ***CN16(12PIN/2.0): VGA IN CONNECTOR(VGA 输入接口)**



NO.	SYMBOL	DESCRIPTION
1	SCL	I2C Clock signal
2	SDA	I2C Data signal
3	GND	Ground
4	B	Blue Signal Input
5	GND	Ground
6	G	Green Signal Input
7	GND	Ground
8	R	Red Signal Input
9	GND	Ground
10	HS	H SYNC
11	VS	V SYNC
12	GND	Ground

◆ **CN13(4PIN/2.0): SPEAKER CONNECTOR (喇叭输出接口)**



NO.	SYMBOL	DESCRIPTION
1	R-OUT+	Audio Right Channel Output+
2	R-OUT-	Audio Right Channel Output-
3	L-OUT-	Audio Left Channel Output-
4	L-OUT+	Audio Left Channel Output+

NOTE:

(1) 参数说明

V_{OH}：高电平输出电压；I_{OHMAX}：高电平输出驱动电流；V_{OL}：低电平输出电压；I_{OLMAX}：低电平输出驱动电流；

V_{IH}：高电平输入电压；V_{IL}：低电平输入电压；I_{ILmin}：低电平最小输入电流；I_{IHmin}：高电平最小输入电流；

(2) 在匹配应用时，各控制和通讯口以及供电须在本规格书中描述的电气特性范围内，若有特殊需求，请与我司硬件工程师联系确认。

6. CONFIGURATION & GENERAL PRECAUTIONS

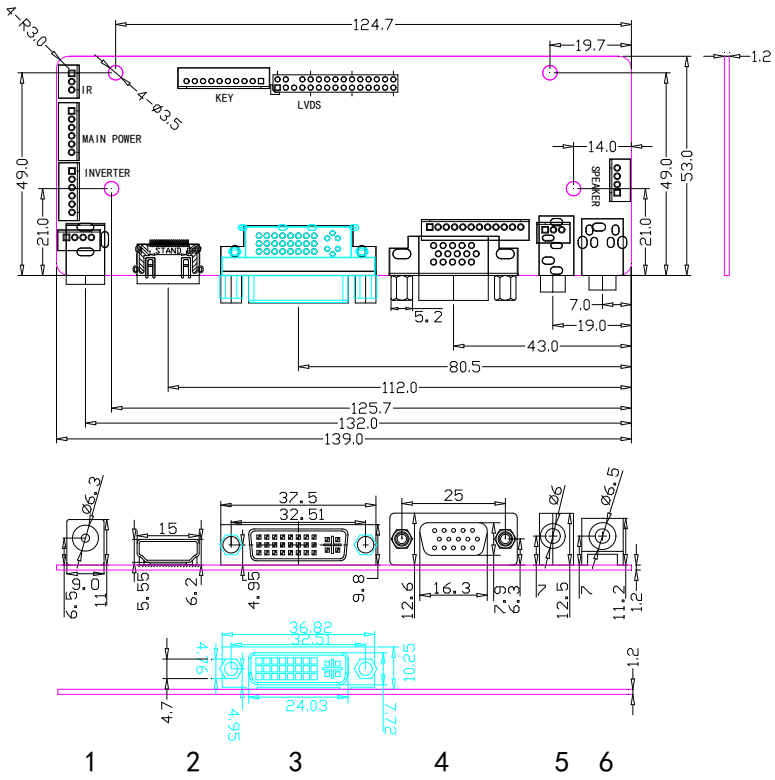
（使用注意事项）

- Relative humidity: ≤ 80%.
- 相对湿度： ≤ 80%。
- Storage temperature: -10~60°C.
- 存储温度： -10~60°C。
- System Operating: 0~40°C.
- 系统工作温度：0~40°C。
- Protect the board from static electricity in case of damage to the IC.
- 请使板卡远离静电。
- Keep the board away from conductor when it is working.
- 请确保板卡工作时远离导体。
- Do not press the PCBA during transportation or placement.
- 在运输、放置时，请勿重压板卡。
- Do not bend or deform the board during the whole machine assembling, especially when connecting the cable.
- 在整机组装过程，特别是接插线时，请勿使板卡弯折变形。
- Do not plug or unplug the cable while the board is working.
- 板卡工作时，请勿插拔线材。
- Mount the board considering the heat dissipation direction of your TV set to avoid abnormal system work because of poor heat dissipation.
- 请注意结合整机散热方向安装板卡，避免散热不佳引起系统工作异常。
- 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 power on before panel is correctly connected.
- 正确接好驱屏线前请勿接通电源。
- The whole machine certification performance will be subject to the impact of the whole machine, must use the whole machine to test and confirm.
- 整机认证性能会受整机匹配的影响，必须使用整机进行测试确认。

- When using the I2C interface to communicate with the outside, please confirm the matching of the pull up resistance and the series resistance with CVTE hardware engineer.
- 使用 I2C 接口跟外部通信时，需与我司硬件工程师确认上拉电阻以及串接电阻的匹配性
- To ensure communicating properly between the mainboard and external expansion modules, it's recommend that test related control and communication signals and power supply voltage waveform after installing prototype to confirm whether to meet the relevant requirements.
- 为保障 TV 主板与外部扩展模块间能正常通讯控制，建议装样机后对相关控制和通讯信号以及供电等的电压波形进行测试，确认是否满足相关要求。

7. MECHANICAL DIMENSION（结构尺寸图）

配置1【3_A1】	
Ver.	A0
NO.	Description
1	DC IN
2	HDMI IN
3	DVI IN
4	VGA IN
5	PC AUDIO IN
6	EARPHONE OUT



PCB Tolerance			Connector Tolerance
PCB size	±0.15mm		(Unless Otherwise Stated)
PCB thickness	≤1.0mm	±0.1mm	±0.3mm
	>1.0mm	±10%	

NOTE:

1. 端子器件最高12.5mm，板内顶层器件最高12.5mm，焊脚最高3mm；
2. 螺丝（包括螺帽）选用需与板卡孔位及露铜匹配，避免出现装配或电气不良。CVTE推荐：螺帽直径至少为D+3mm（D为螺丝直径）。