



SPECIFICATION

MODEL: BTP-LC-4K02-E

Rev: 1.3

Part Number:

Published Date:

Approved by		
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REVISION HISTORY

Rev	DATE	PAGE	DESCRIPTION	AUTHOR
1.0	18.7.11	All	First issued	Danny Xu
1.1	18.11.30	2,3,5	Del eDP description 删除eDP描述; Modify keyboard definition 修订按键板CH+, CH-描述, 更改为UP Down。	
1.3	19.07.18	2-5	硬件升级版本, 更新产品图片,增加功放功能。	Danny Xu
	23.10.25	2,5	硬件升级版本, 更新产品图片,增加逻辑板12V单独供电接口, 增加eDP屏接口定义。	Danny Xu
	23.12.11	2	更新产品图片	Danny Xu

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1. GENERAL DESCRIPTION (概述)

BTP-LC-4K02-E is a multi-function 4K driver board, with 8 lane v-by-one or eDP output for Large Size 4K@60Hz panel, it supports HDMI2.0 input and Display Port 1.2a input. It supports 90° or 270° image rotation.

是一款多功能4K显示板卡，可直接驱动8 lane V-by-one或HBR2 EDP 4K 60Hz大尺寸面板。支持1路HDMI2.0输入（支持4K点对点显示），1路DP输入；支持图像90度或270度旋转，广泛用于数字标牌商业显示领域。

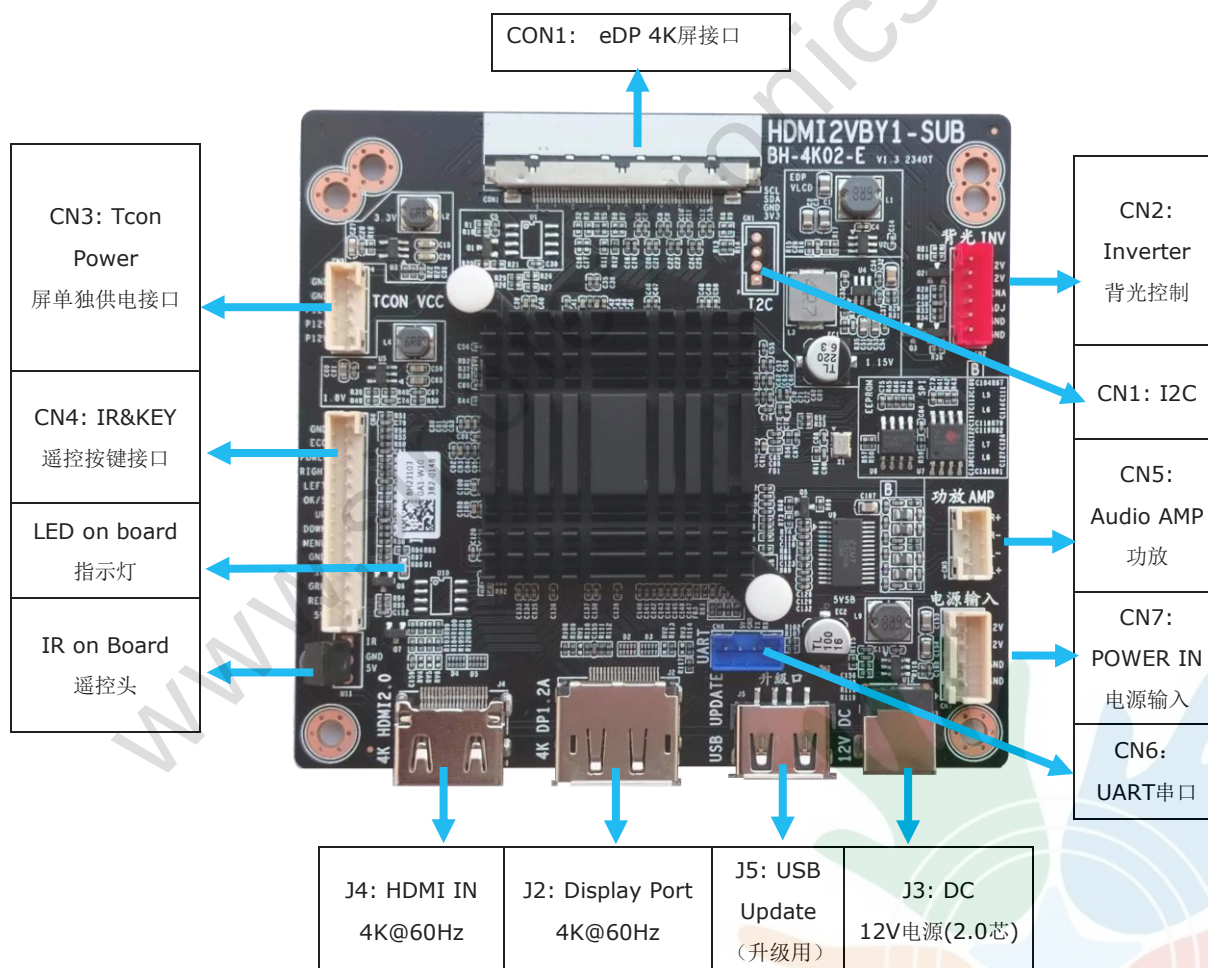
BTP-LC-4K02-E only need Single 12V power supply, and it's bootup time is less than 4.5 seconds, is suitable for digital signage application.

单12V供电，开机速度快(4.5S出图)，为数字标牌等商用显示领域提供方便实用的4K显示驱动方案。

2. FUNCTION LAYOUT (产品外观)

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

INTERFACE VIEW OF BTP-LC-4K02-E (内部接口示意图)





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3. FEATURES

3.1 Main Features Overview (主要特性)

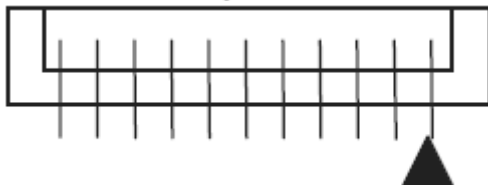
CHIPSET (主芯片)	Mstar	
MARKET (目标应用)	4K Monitor; Education whiteboard; Medical Monitor;	
OSD LANGUAGE (OSD语言)	English, Chinese, Multi-Language, 英文, 中文, 多国语言	
PANEL (面板)	Panel Type(类型)	8 lane V-By-One 4K UHD@60Hz HBR2 EDP 4K@60Hz
	Resolution (分辨率)	Up to 3840x2160
VIDEO INPUT (视频信号输入)	Display Port	480i, 480p, 576i, 576p, 720p, 1080i, 1080p, 4Kx2K@60Hz
	HDMI	480i, 480p, 576i, 576p, 720p, 1080i, 1080p, 4Kx2K@60Hz
POWER REQUIREMENT	12V	
POWER CONSUMPTION	Standby(待机)	≤ 0.5W
POWER TO TCON (屏TCON供电)	To Panel (驱屏电压)	12V
COMB FILTER (梳状滤波器)	3D	
DE-INTERLACE (隔逐行转换)	3D	
KEY FUNCTION (按键功能)	MENU, UP, Down, VOL+, VOL-, INPUT, POWER, ECO 菜单, 上, 下, 音量+, 音量-, 信号源, 电源, 节能	
Note: Licenses involved in specifications above are supposed to be obtained by customers themselves. 注意: 以上规格涉及License部分需要客户自己根据需要获取。		



4. INTERFACE DIFINITION(接口定义)

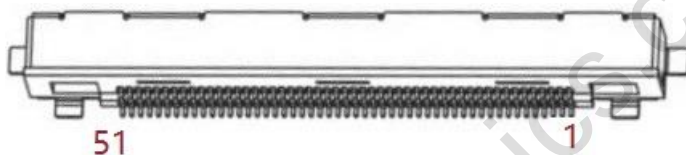
All connecting plug-ins recognize tacitly the square pin as No.1 pin. The pin definition also refers to PCBA bottom silkscreen. No.1 pin of 2.0/2.54mm pitch sockets show as below picture:

Pin脚顺序, PCB封装方脚均表示第1脚。2.0/2.54mm间距插座缺口朝上时, 最左边为第1脚, 如下图所示:



◆ CON1 (51PIN/0.5): eDP TO PANEL CONNECTOR

- FI-RE51S-HF (manufactured by JAE)
- Mating Connector: FI-R51HL (JAE) or compatible



NO.	SYMBOL	DESCRIPTION	NO.	SYMBOL	DESCRIPTION
51	12V	Power Supply +12.0V	25	GND	Ground
50	12V	Power Supply +12.0V	24	eDP0_0+	Signal 0 pair of eDP Channel0
49	12V	Power Supply +12.0V	23	eDP0_0-	
48	12V	Power Supply +12.0V	22	GND	Ground
47	12V	Power Supply +12.0V	21	eDP0_1+	Signal 1 pair of eDP Channel0
46	12V	Power Supply +12.0V	20	eDP0_1-	
45	12V	Power Supply +12.0V	19	GND	Ground
44	12V	Power Supply +12.0V	18	eDP0_2+	Signal 2 pair of eDP Channel0
43	NC	No Connection	17	eDP0_2-	
42	GND	Ground	16	GND	Ground
41	GND	Ground	15	eDP0_3+	Signal 3 pair of eDP Channel0
40	GND	Ground	14	eDP0_3-	
39	GND	Ground	13	GND	Ground
38	eHPD1	Hot plug of eDP channel 1	12	eDP1_0+	Signal 0 pair of eDP Channel1
37	NC	No Connection	11	eDP1_0-	
36	eHPD0	Hot plug of eDP channel 0	10	GND	Ground
35	NC	No Connection	9	eDP1_1+	Signal 1 pair of eDP Channel1
34	PNL_SDA	PANEL I2C Data Signal	8	eDP1_1-	
33	PNL_SCL	PANEL I2C Clock Signal	7	GND	Ground
32	NC	No Connection	6	eDP1_2+	Signal 1 pair of eDP Channel2
31	NC	No Connection	5	eDP1_2-	
30	NC	No Connection	4	GND	Ground



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29	AUX_T1P	eDP Aux chanel 1 Signal Pair	3	eDP1_3+	Signal 1 pair of eDP Channel3
28	AUX_T1N		2	eDP1_3-	
27	AUX_T0N	Aux Channel 0 signal Pair	1	GND	Ground
26	AUX_T0P		-	-	-

◆ CN3 (5PIN/2.0): TCON POWER SUPPLY CONNECTOR 屏单独供电接口

NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	
3	P12V	+12V Power Supply for PANEL TCON (逻辑板单独供电)
4	P12V	
5	P12V	

◆ CN2 (6PIN/2.0): INVERTER CONNECTOR 背光控制接口

NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	
3	ADJ	Backlight brightness adjust(0V-5V, 默认5V最亮)
4	ON/OFF	Backlight Control(H:ON, L:OFF)
5	12V	+12V Power Supply
6	12V	

◆ CN6 (4PIN/2.5): POWER IN CONNECTOR 电源输入接口

NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	
3	12V	+12V Power Supply
4	12V	+12V Power Supply

◆ CN1 (4PIN/2.0): I2C CONNECTOR I2C接口

NO.	SYMBOL	DESCRIPTION
1	3V3	+3.3V power supply
2	GND	Ground
3	SDA	IIC Data Signal
4	SCL	IIC Clock Signal



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◆ CN4 (14PIN/2.0): IR&KEY BOARD CONNECTOR 遥控按键接口

NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	K7/ECO	ADC KEY7 (ECO Key) 节能键 (控制背光开关)
3	K6/Power	ADC KEY6 (Power Key default) 默认电源键
4	K5/Right	ADC KEY5 (Volume+ Key default) 默认音量加/右键
5	K4/Left	ADC KEY4 (Volume- Key default) 默认音量减/左键
6	K3/ok	ADC KEY3 (Source Key default) 默认输入源/确认键
7	K2/Up	ADC KEY2 (UP Key default) 默认向上键
8	K1/Down	ADC KEY1 (Down Key default) 默认向下键
9	K0/Menu	ADC KEY0 (Menu Key default) 默认菜单键
10	GND	Ground
11	IR	Remote control 红外遥控接收
12	GRN	Green indicator 绿色指示灯
13	RED	Red indicator 红色指示灯
14	5V	+5V power supply for IR 遥控接收头5V供电

◆ CN5 (4PIN/2.0): SPEAKER CONNECTOR 喇叭接口

NO.	SYMBOL	DESCRIPTION
1	L+	Audio Left Channel Output+ 左声道正输出
2	L-	Audio Left Channel Output- 左声道负输出
3	R-	Audio Right Channel Output- 右声道负输出
4	R+	Audio Right Channel Output+ 右声道正输出

◆ CN6 (4PIN/2.0): UART CONNECTOR 串口TTL接口

NO.	SYMBOL	DESCRIPTION
1	NC	No Connection
2	GND	Ground
3	TX	UART Transmitter Signal
4	RX	UART Receiver Signal



5. PCB Dimension 尺寸图

The overall height of BH-4K02-E is 16 mm.

