

# 深圳市博合数码科技有限公司

Shenzhen Bohoo Digi-Tech Co.,Ltd

## SPECIFICATION

MODEL: BH-7233-B

Rev: 1.1

Part Number:

Published Date:

Approved by		
Prepared by 编写	Checked by 审核	Approved by 批准

Please return us one original approved by you with your signatures.

客户承认签章后敬请寄回正本一份

Approved by customer		
Comments 确认意见	Approved by 批准签字	Company's seal 盖章
Customer's Name:		

## Content 目录

1.General Description( 概述) .....	2
2.Function Layout(产品外观图) .....	2
3.Features( 特性说明).....	3
4.Interface Definition( 接口定义) .....	4
5.Mechanical Dimension( 结构尺寸图) .....	7
6.Configuration & General Precautions( 使用环境和注意事项) .....	8
7.Packing,Shipping & Storing ( 组装注意事项) .....	8

## REVISION HISTORY

Rev	DATE	PAGE	DESCRIPTION	AUTHOR
1.0	17.11.23	All	First issued	Danny Xu
1.1	18.04.19	2.3	Update board picture	徐洪亮

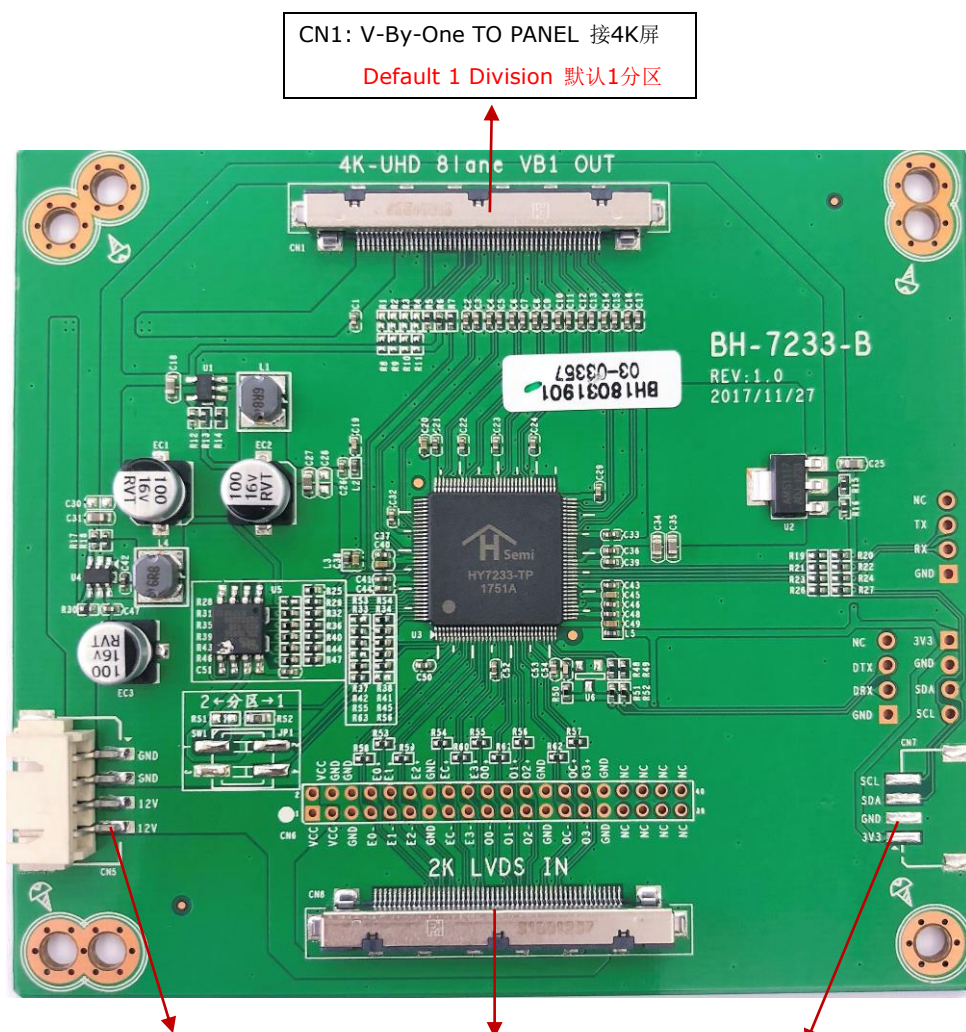
All right reserved. Please refer to the last sample if the specification has change

## 1. GENERAL DESCRIPTION (概述)

**BH-7233-B** doubles the pixels ( $1920 \times 1080 @ 60\text{Hz} \rightarrow 3840 \times 2160 @ 60\text{Hz}$  conversion) of the video signal output (Full-HD signal by LVDS interface) from a TV control board and then supplies the  $4\text{K} \times 2\text{K} @ 60\text{Hz}$  video signal to a panel provided with **V-By-One** input. It supports 1/2 Division V-By-One data format out.

**BH-7233-B** 是一款2K-4K信号转接板 ( $1920 \times 1080 @ 60\text{Hz} \rightarrow 3840 \times 2160 @ 60\text{Hz}$  转换), 提供标准Full-HD LVDS输入接口(LG定义), 经过Scaler图像放大等图像处理, 生成4K超高清V-by-One型号, 并直接驱动4K@60Hz面板, 输出支持1分区、2分区4K V-by-One信号格式。

## 2. FUNCTION LAYOUT (产品外观)



CN1: V-By-One TO PANEL 接4K屏

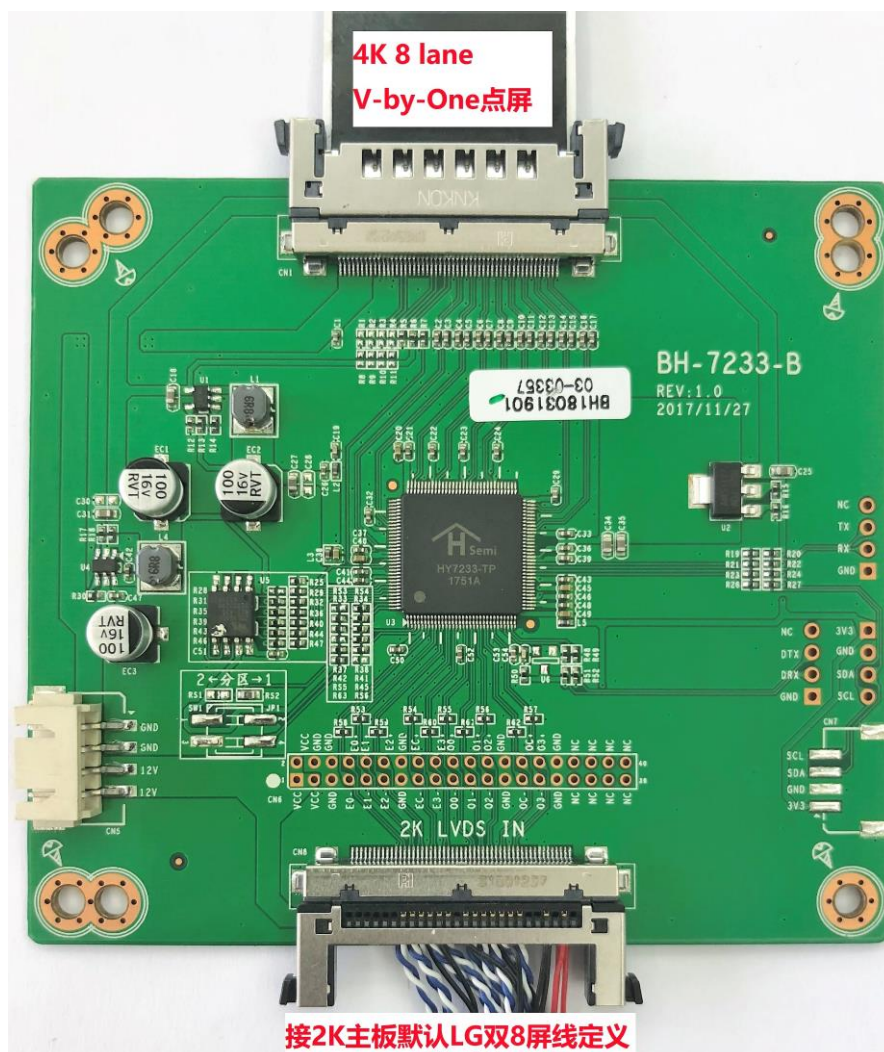
Default 1 Division 默认1分区

CN5: 12V 输入  
NC Default

CN8: LVDS AB Port IN  
Default 1920\*1080 8bit IN

CN7:I2C  
(升级口)

接线说明图:



### 3. FEATURES

CHIPSET	HY7233
COLOR DEPTH	8bit
LVDS FORMAT	JEIDA/VESA
POWER REQUIREMENT	12V
POWER CONSUMPTION	≤3W

## 4. INTERFACE DIFINITION(接口定义)

### ◆ CN1 (51PIN/0.5): V-By-One TO PANEL CONNECTOR(For LG)

- 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	Rx0n	V-by-One HS DATA LANE0
49	12V	Power Supply +12.0V	23	Rx0p	
48	12V	Power Supply +12.0V	22	GND	Ground
47	12V	Power Supply +12.0V	21	Rx1n	V-by-One HS DATA LANE1
46	12V	Power Supply +12.0V	20	Rx1p	
45	12V	Power Supply +12.0V	19	GND	Ground
44	12V	Power Supply +12.0V	18	Rx2n	V-by-One HS DATA LANE2
43	NC	No Connection	17	Rx2p	
42	GND	Ground	16	GND	Ground
41	GND	Ground	15	Rx3n	V-by-One HS DATA LANE3
40	GND	Ground	14	Rx3p	
39	GND	Ground	13	GND	Ground
38	NC	No Connection	12	Rx4n	V-by-One HS DATA LANE4
37	D_Format0	[1:0]: 01 Default For LG panel Mode2:2 Division	11	Rx4p	
36	D_Format1		10	GND	Ground
35	NC	No Connection	9	Rx5n	V-by-One HS DATA LANE5
34	PNL_SDA	PANEL I2C Data Signal	8	Rx5p	
33	PNL_SCL	PANEL I2C Clock Signal	7	GND	Ground
32	NC	No Connection	6	Rx6n	V-by-One HS DATA LANE6
31	BIT_SEL	'H' or NC = 10bit (Default);	5	Rx6p	
30	D_Format	Set LG PANEL to 2Division	4	GND	Ground
29	NC	No Connection(L_DIM ENABLE)	3	Rx7n	V-by-One HS DATA LANE7
28	GND	Ground	2	Rx7p	
27	HTPDN	Hot Plug Detect	1	GND	Ground
26	LOCKN	Lock Detect	-	-	-

### ◆ CN7 (51PIN/0.5): LVDS AB Port INPUT CONNECTOR(For LG)

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

NO.	SYMBOL	DESCRIPTION	NO.	SYMBOL	DESCRIPTION
1	NC	No Connection	27	NC	No Connection
2	NC	No Connection	28	RxO0N	LVDS In ODD 0- Signal
3	NC	No Connection	29	RxO0P	LVDS In ODD 0+ Signal

4	NC	No Connection	30	RxO1N	LVDS In ODD 1- Signal
5	NC	No Connection	31	RxO1P	LVDS In ODD 1+ Signal
6	NC	No Connection	32	RxO2N	LVDS In ODD 2- Signal
7	NC	No Connection	33	RxO2P	LVDS In ODD 2+ Signal
8	NC	No Connection	34	GND	Ground
9	NC	No Connection	35	RxOCN	LVDS In ODD Clock- Signal
10	NC	No Connection	36	RxOCP	LVDS In ODD Clock+ Signal
11	GND	Ground	37	GND	Ground
12	RXE0N	LVDS In EVEN 0- Signal	38	RxO3N	LVDS In ODD 3- Signal
13	RXE0P	LVDS In EVEN 0+ Signal	39	RxO3P	LVDS In ODD 3+ Signal
14	RXE1N	LVDS In EVEN 1- Signal	40	NC	No Connection
15	RXE1P	LVDS In EVEN 1+ Signal	41	NC	No Connection
16	RXE2N	LVDS In EVEN 2- Signal	42	NC	No Connection
17	RXE2P	LVDS In EVEN 2+ Signal	43	NC	No Connection
18	GND	Ground	44	GND	Ground
19	RXECLKN	LVDS In EVEN Clock- Signal	45	GND	Ground
20	RXECLKP	LVDS In EVEN Clock+ Signal	46	GND	Ground
21	GND	Ground	47	NC	No Connection
22	RXE3N	LVDS In EVEN 3- Signal	48	VCC	+12V Power Supply
23	RXE3P	LVDS In EVEN 3+ Signal	49	VCC	+12V Power Supply
24	NC	No Connection	50	VCC	+12V Power Supply
25	NC	No Connection	51	VCC	+12V Power Supply
26	NC	No Connection	-	-	-

◆ **CN5 (4PIN/2.54): POWER INPUT CONNECTOR**(\*Note1)

NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	
3	12V	+12V power supply
4	12V	+12V power supply

\*Note1: Please leave it open default, use for software update.

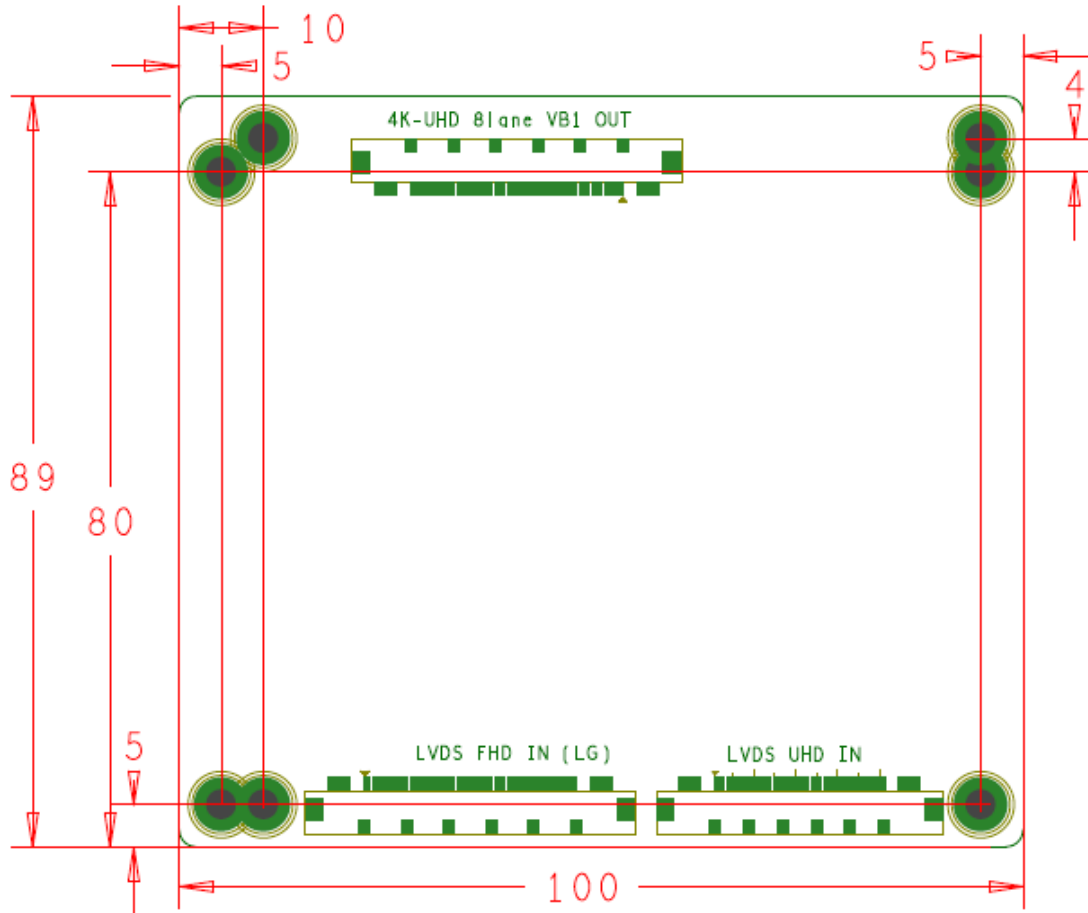
一般不需要单独供电，LVDS输入供12V即可，仅供升级软件时用  
 ≥75寸时建议单独12V供电。

◆ **CN7 (4PIN/2.0): UART for Update CONNECTOR** (升级用)

NO.	SYMBOL	DESCRIPTION
1	NC	No Connect
2	GND	Ground
3	SDA	I2C Clock signal
4	SCL	I2C Data signal

## 5. PCB Dimension 尺寸图

The overall height of BH-7233-B is 14mm.



## 6. CONFIGURATION & GENERAL PRECAUTIONS

### 使用环境和注意事项

- Storage temperature: -10~60°C.
- 存储温度: -10~60°C。
- Operation temperature: 0~40°C.
- 工作温度: 0~40°C。
- Operating: 10% to 90% (Non-condensing, 无冷凝)
- 工作湿度: 10% ~ 90%
- Store: 5% to 95%
- 储存湿度: 5%~95%
- Operating: 10,000ft (max)
- 工作高度: 10,000ft (最大)
- Store: 20,000ft (max)



- 储存高度: 20,000ft ( 最大)
- Vibration ( 振动) 5-55Hz, 19.6m/s<sup>2</sup>(2G), 20minutes each along X, Y and Z axis.
- 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。
- Don't push or pull the connectors when the board is working.
- 板卡工作时请勿按压和扭曲。
- Don't press, distort or disassemble the board.
- 请勿拆解板卡。
- 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 wire in the board to power supply before panel is correctly connected.
- 正确接好驱屏线前请勿接通电源。
- Inner wires of the whole set should match reasonable, we suggest the LVDS twisted pair wire between the main board and panel must be tied up well and try to use shielding wire. If it's possible, try to put on the magnetic belt ring on the wire which near the board terminal, each connected wire try to not directly cross the PCB board, especially cross over from the main chips, avoid affecting the whole set EMC performance.
- 机内需合理布线, 芯片上方不建议走线, LVDS屏线必须使用双绞线并建议使用屏蔽网, 同时将地环锁死在PCB孔位上。

## 7. PACKING, SHIPPING & STORING (包装、运输、贮存)

### 7.1、Packing (包装)

Product name, part number, supplier's logo, QC stamp, Pb-free display and date must be printed on the package case.

包装箱上有产品名称、型号、厂家标识、厂家质量部门的检验合格证、制造日期等。

### 7.2、Shipping (运输)

This product can be transported through land, sea or air. Measures should be taken for water and sun proof. Also, it should be handled with care.

适应于车、船、飞机运输, 运输中应遮蓬、防晒、文明装卸。

### 7.3、Storing(贮存)

Please keep staying in the package case before using and keep away from hazardous gas, flammable or explosive substances and erosive chemical material. Avoid dramatic vibration or shock and strong magnetic field. The package cases should be racked 20cm above the ground and 50cm away from the wall, window, heat source or ventilation port. Generally the storage term of this product is 2 years. All the products should be double checked after that time.

产品未使用时应存放在包装箱内, 仓库内不允许有有害气体, 易燃, 易爆的产品及有腐蚀性的化学物品, 并且无强烈的机械振动, 冲击和强磁场作用, 包装箱应垫离地至少20cm高, 距离墙壁、热源、窗口或空气入口至少50cm, 在本规定条件下的贮存期一般为2年, 超过2年后应重新进行检验。