

# 深圳市博合数码科技有限公司

Shenzhen Bohoo Digi-Tech Co.,Ltd

## SPECIFICATION

MODEL: PS-6M40-D01

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## REVISION HISTORY

Rev	DATE	PAGE	DESCRIPTION	AUTHOR
0.1	15.04.01	All	First issued	Danny Xu

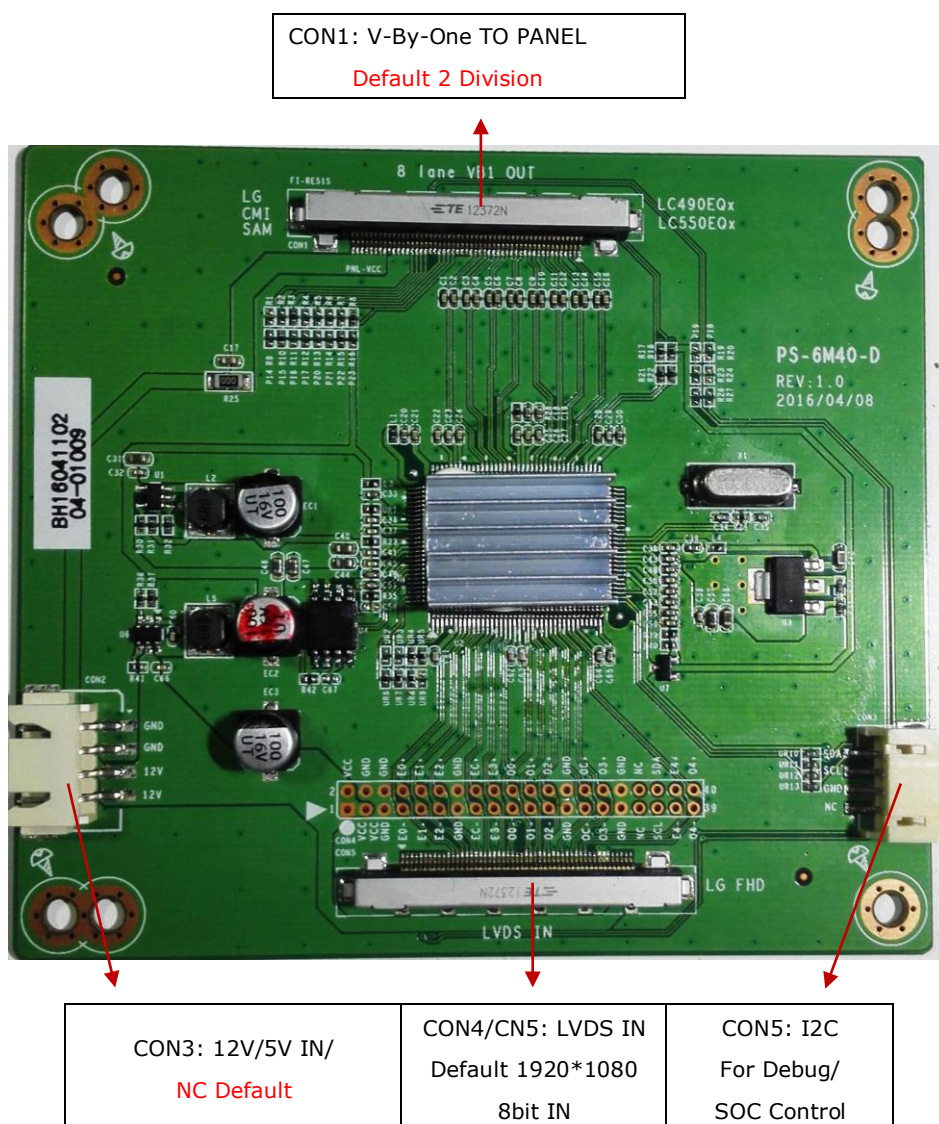
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## 1. GENERAL DESCRIPTION （概述）

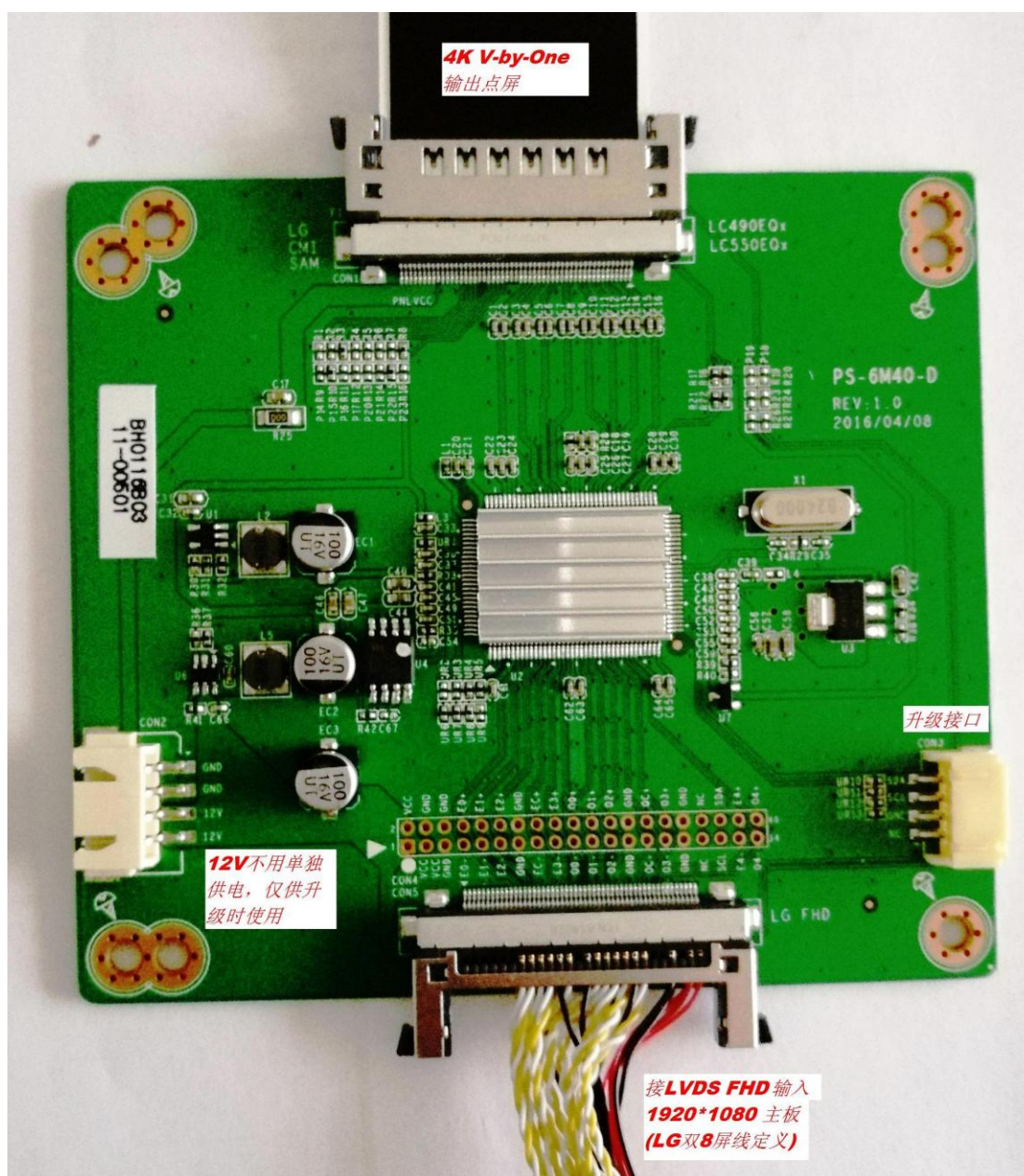
**PS-6M40-D01** doubles the pixels ( $1920 \times 1080 @ 60\text{Hz} \rightarrow 3840 \times 2160 \text{Hz} @ 60\text{Hz}$  conversion) of the video signal output (Full-HD signal by LVDS interface) from a TV control board and then supplies the  $4\text{K} \times 2\text{K} @ 60\text{Hz}$  video signal to a panel provided with **V-By-ONE** input. It supports panel such as LC550EQE-FGF1 etc.

**PS-6M40-D01** 是一款2K-4K信号转接板（ $1920 \times 1080 @ 60\text{Hz} \rightarrow 3840 \times 2160 \text{Hz} @ 60\text{Hz}$  转换），提供标准Full-HD LVDS输入接口，经过Scaler图像放大及MEMC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，如LC550EQE-FGF1等。

## 2. FUNCTION LAYOUT （产品外观）



接线示意图:



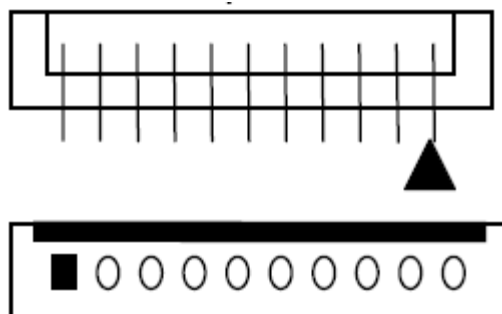
### 3. FEATURES

CHIPSET	MST6M40KUC
COLOR DEPTH	8/10bit
LVDS FORMAT	JEIDA/VESA
POWER REQUIREMENT	12V or 5V
POWER CONSUMPTION	≤2.5W

## 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): V-By-One TO PANEL CONNECTOR(For LG)

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

NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	Rx7p	V-by-One HS DATA LANE7
3	Rx7n	
4	GND	Ground
5	Rx6p	V-by-One HS DATA LANE6
6	Rx6n	
7	GND	Ground
8	Rx5p	V-by-One HS DATA LANE5
9	Rx5n	
10	GND	Ground
11	Rx4p	V-by-One HS DATA LANE4
12	Rx4n	
13	GND	Ground
14	Rx3p	V-by-One HS DATA LANE3
15	Rx3n	
16	GND	Ground
17	Rx2p	V-by-One HS DATA LANE2
18	Rx2n	
19	GND	Ground
20	Rx1p	V-by-One HS DATA LANE1
21	Rx1n	
22	GND	Ground

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23	Rx0p	V-by-One HS DATA LANE0
24	Rx0n	
25	GND	Ground
26	LOCKN	Lock Detect
27	HTPDN	Hot Plug Detect
28	GND	Ground
29	NC	AGP (NC)
30	NC	Local Dim Enable(NC)
31	BIT_SEL	'H' or NC = 10bit (Default); 'L'=8bit
32	NC	No Connect
33	PNL_SCL	PANEL I2C Clock Signal
34	PNL_SDA	PANEL I2C Data Signal
35	NC	No Connect
36	D_Format1	Output Data Format [1:0]: 01 Default For LG panel Mode2
37	D_Format0	
38	NC	No Connect
39	GND	Ground
40	GND	
41	GND	
42	GND	
43	NC	No Connect
44	VLCD	Power Supply +12V
45	VLCD	
46	VLCD	
47	VLCD	
48	VLCD	
49	VLCD	
50	VLCD	
51	VLCD	

## ◆ CON4 (2x20PIN/2.0): LVDS INPUT CONNECTOR



NO.	SYMBOL	DESCRIPTION
1	VCC	Power Supply for Panel
2	VCC	
3	VCC	
4	GND	Ground



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5	GND	
6	GND	
7	RX00-	LVDS In ODD 0- Signal
8	RX00+	LVDS In ODD 0+ Signal
9	RX01-	LVDS In ODD 1- Signal
10	RX01+	LVDS In ODD 1+ Signal
11	RX02-	LVDS In ODD 2- Signal
12	RX02+	LVDS In ODD 2+ Signal
13	GND	Ground
14	GND	
15	RXOC-	LVDS In ODD Clock- Signal
16	RXOC+	LVDS In ODD Clock+ Signal
17	RX03-	LVDS In ODD 3- Signal
18	RX03+	LVDS In ODD 3+ Signal
19	RXE0-	LVDS In EVEN 0- Signal
20	RXE0+	LVDS In EVEN 0+ Signal
21	RXE1-	LVDS In EVEN 1- Signal
22	RXE1+	LVDS In EVEN 1+ Signal
23	RXE2-	LVDS In EVEN 2- Signal
24	RXE2+	LVDS In EVEN 2+ Signal
25	GND	Ground
26	GND	
27	RXEC-	LVDS In EVEN Clock- Signal
28	RXEC+	LVDS In EVEN Clock+ Signal
29	RXE3-	LVDS In EVEN 3- Signal
30	RXE3+	LVDS In EVEN 3+ Signal
31	GND	Ground
32	GND	
33	SEL	LVDS Format Control from Main board
34	3D Flag	Left right image flag input
35	SCL	Main Board I2C Master SCL Signal
36	SDA	Main Board I2C Master SDA Signal
37	RX04-	LVDS In ODD 4- Signal
38	RX04+	LVDS In ODD 4+ Signal
39	RXE4-	LVDS In EVEN 4- Signal
40	RXE4+	LVDS In EVEN 4+ Signal

## ◆ CON5 (51PIN/0.5): LVDS INPUT CONNECTOR(For LG)

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

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NO.	SYMBOL	DESCRIPTION
1	NC	No Connect
2	SCL	I2C Slave Clock Signal (Reserved)
3	SDA	I2C Slave Data Signal (Reserved)
4-10	NC	No Connect
11	GND	Ground
12	RX00-	LVDS In ODD 0- Signal
13	RX00+	LVDS In ODD 0+ Signal
14	RX01-	LVDS In ODD 1- Signal
15	RX01+	LVDS In ODD 1+ Signal
16	RX02-	LVDS In ODD 2- Signal
17	RX02+	LVDS In ODD 2+ Signal
18	GND	Ground
19	RXOC-	LVDS In ODD Clock- Signal
20	RXOC+	LVDS In ODD Clock+ Signal
21	GND	Ground
22	RX03-	LVDS In ODD 3- Signal
23	RX03+	LVDS In ODD 3+ Signal
24	RX04-	LVDS In ODD 4- Signal
25	RX04+	LVDS In ODD 4+ Signal
26-27	NC	No Connect
28	RXE0-	LVDS In EVEN 0- Signal
29	RXE0+	LVDS In EVEN 0+ Signal
30	RXE1-	LVDS In EVEN 1- Signal
31	RXE1+	LVDS In EVEN 1+ Signal
32	RXE2-	LVDS In EVEN 2- Signal
33	RXE2+	LVDS In EVEN 2+ Signal
34	GND	Ground
35	RXEC-	LVDS In EVEN Clock- Signal
36	RXEC+	LVDS In EVEN Clock+ Signal
37	GND	Ground
38	RXE3-	LVDS In EVEN 3- Signal
39	RXE3+	LVDS In EVEN 3+ Signal
40	RXE4-	LVDS In EVEN 4- Signal
41	RXE4+	LVDS In EVEN 4+ Signal
42	NC	No Connect
43	NC	No Connect
44	GND	Ground
45	GND	
46	GND	



47	NC	No Connect
48	VLCD	+12V Power Supply
49	VLCD	
50	VLCD	
51	VLCD	

◆ **CON3 (4PIN/2.54): POWER INPUT CONNECTOR**(\*Note1)

NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	
3	VIN	+5V or 12V power supply
4	VIN	+5V or 12V power supply

\*Note1: Power Supply for this board only. Please leave it open when R38 0Ω/1206 mounted.

**默认用LVDS输入的12V给板子供电。请不要再单独供电。**

◆ **CON5 (4PIN/2.0): I2C SLAVE CONNECTOR** (\*Note1)

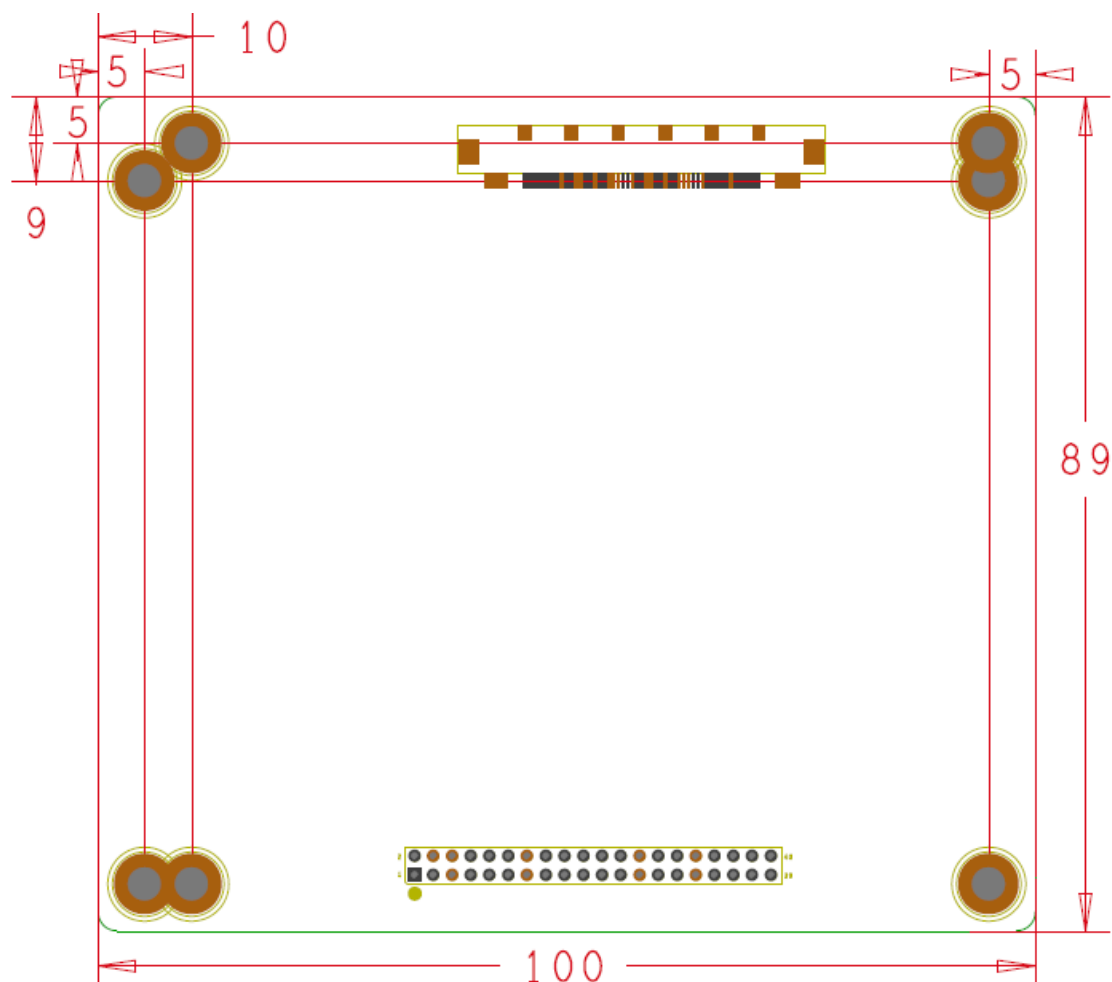
NO.	SYMBOL	DESCRIPTION
1	NC	No Connect
2	SCL	I2C Slave SCL Signal
3	SDA	I2C Slave SDA Signal
4	GND	Ground

\*Note1: Used to upgrade software of 6M40KUC, Please leave CON5 open, if CON10 LVDS INPUT CONNECTOR I2C connected already.

可用于转接板软件升级，如果CON7 LVDS IN接口已经连接I2C，CON5不用连接

## 5. PCB Dimension 尺寸图

**The overall height of PS-6M40-D01 is 16 mm.**



## 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。