
To: _____

4K2K液晶屏驱动板
MULTI INTERFACE CONTROLLER FOR 4K2K TFT PANEL
SPECIFICATION

产品型号 Model: OPDU18-5J-E7(B1)

驱动板功能 Functions: DP,HDMI *3 input USB SPDIF OUT

版本信息 Ver: 1.0

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INSTRUCTIONS

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It is essential that these instructions are read and understood before connecting or powering up this controller.

■版本变更记录Revision History

修改日期 Date	版本号 Rev No.	变动页码 Page	版本变更描述 Summary
2018-04-09	V1.00	全部 All	第一次发行 First issued
NC			

■Introduction

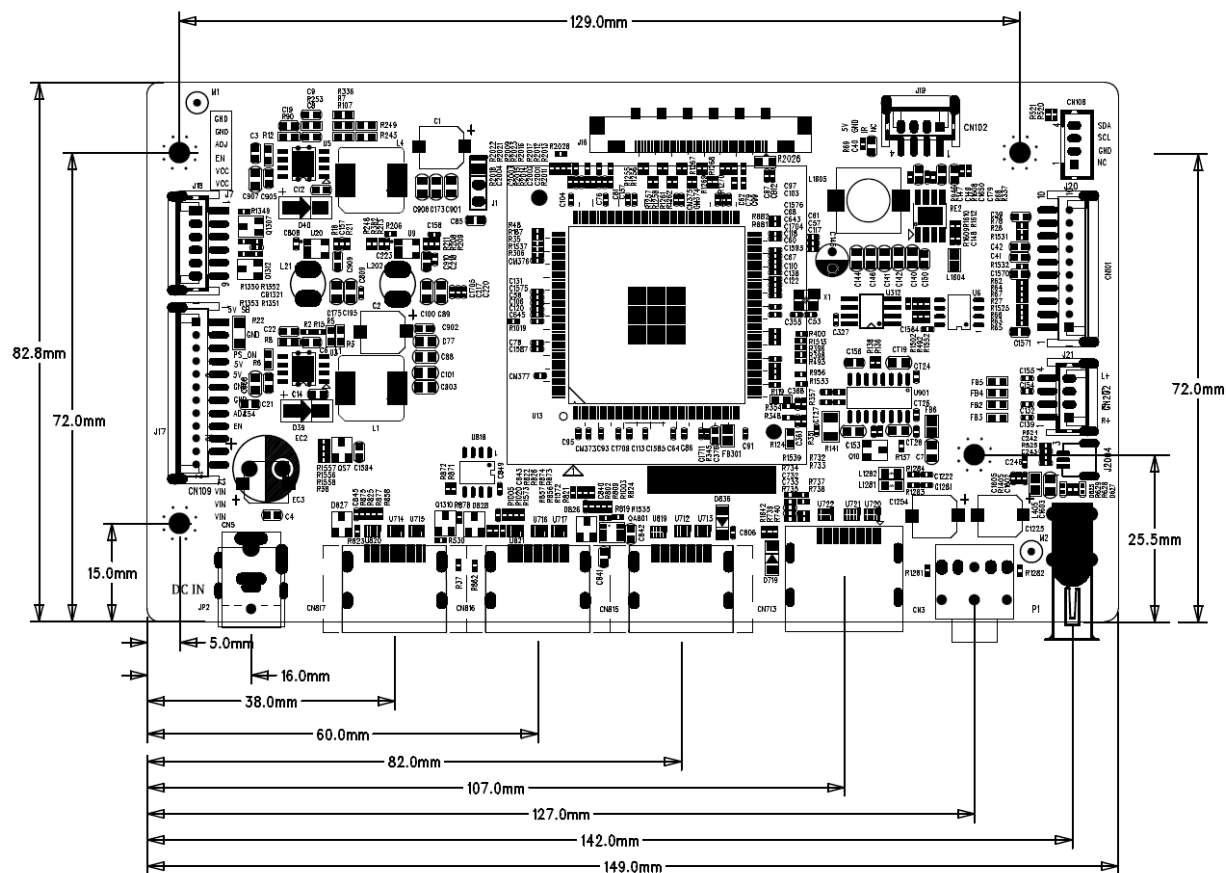
Designed for LCD monitor and other flat panel display applications, **OPDU18-5J-E7(B1)** is a feature rich interface controller for:

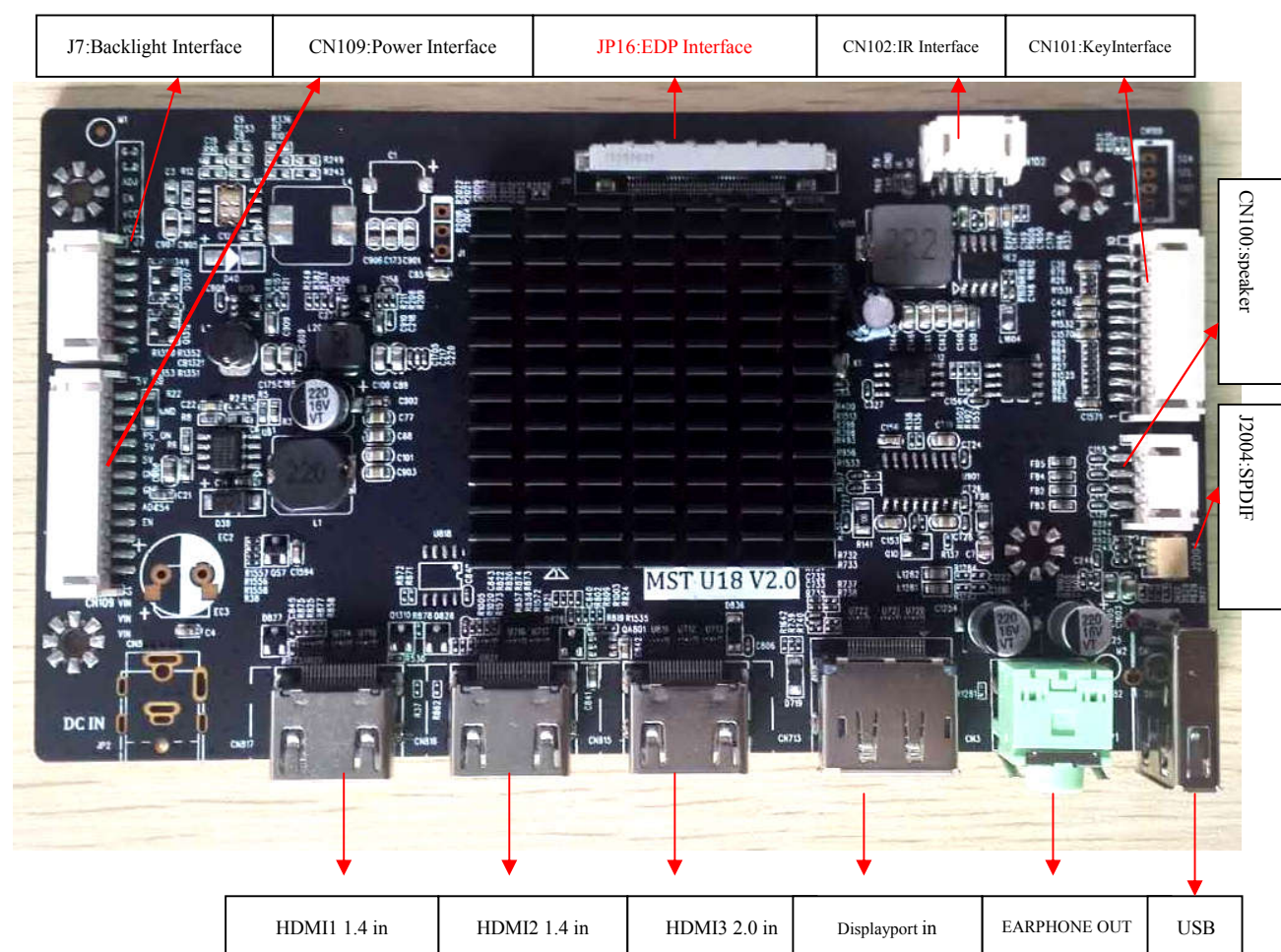
- ◆TFT LCD panels of 4096*2160 resolutions in 60HZ with **EDP** interface.
- ◆Support true 10 bits panel.
- ◆Support **HDMI**, Display Port input.
- ◆Supports up to two windows PIP/PBP(only 8-bit mode,sub window 1080p@no NR).
- ◆Supports audio in/out with L/R stereo.

■General Specifications.

Item	Description	Remark
Scaler Solution	Mstar MSTXXX	
Number of Colors	8/10 bit,1.07G colors	
Panel signal	EDP 41PIN	
Vertical Refresh Rate	Up to 60HZ at UHD(4096*2160)	
Graphics Formats	SVGA,XGA,SXGA(+),WXGA,UXGA,WUXGA,QWXGA,QXGA,QHD,UHD/HD	
Input	HDMI1.4/2.0 MHL3.0 Display Port V1.2 (a) Audio SPDIF OUT USB Software Update	
OSD Control(Optional)	Input, Menu, Left, Right, Down, Up, Power	7Keys
Audio output	2*3W(8Ω)	
STANDBY POWER	<0.2W	
Plug & Play	VESA DDC 2B /2Bi/Ci compatible	
Power	Supply Voltage : DC 12V	
Board Size	W * H * D (mm) : 149 x 82.8 x 15	

■Controller dimensions(unit:mm)





■产品接口定义 CONNECTORS, PINOUTS & JUMPERS

The various connectors are:

Summary: Connectors

Ref	Purpose	Description
CN817/816/815	HDMI	HDMI connector
CN713	Displayport	Display port connector
P1	USB	USB Connector
J20	Key Board	PH2.0 10PIN 90°
CN102	IR control	PH2.0 4PIN 90°
J16	EDP CONNECT	41PIN 0.5MM Connector
J7	Backlight inveter	PH2.0 6PIN 90°
J17	External power input	PH2.0 12PIN 90°
CN202	Reserved for Speaker out	PH2.0 4PIN 90°
J2004	SPDIF OUT Connect	3PIN/1.0
P1	USB CONNECT	USB-A-05 侧卧

Specifications subject to change without notice

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CN713 – Display Port input

PIN	SYMBOL	DESCRIPTION
1	ML_Lane 0 (p)	Lane 0 (positive)
2	GND	Groud
3	ML_Lane 0 (n)	Lane 0 (negative)
4	ML_Lane 1 (p)	Lane 1 (positive)
5	GND	Groud
6	ML_Lane 1 (n)	Lane 1 (negative)
7	ML_Lane 2 (p)	Lane 2 (positive)
8	GND	Groud
9	ML_Lane 2 (n)	Lane 2 (negative)
10	ML_Lane 3 (p)	Lane 3 (positive)
11	GND	Groud
12	ML_Lane 3 (n)	Lane 3 (negative)
13	CONFIG1	connected to Ground
14	CONFIG2	connected to Ground
15	AUX CH (p)	Auxiliary Channel (positive)
16	GND	Groud
17	AUX CH (n)	Auxiliary Channel (negative)
18	Hot Plug	Hot Plug Detect
19	GND	Groud
20	DP_PWR	Power for connector (3.3 V 500 mA)

CN815/816/817- HDMI connector

PIN	SYMBOL	DESCRIPTION
1	DATA2+	TMDS Data2+
2	DATA2S	TMDS Data2 Shield
3	DATA2-	TMDS Data2-
4	DATA1+	TMDS Data1+
5	DATA1S	TMDS Data1 Shield
6	DATA1-	TMDS Data1-
7	DATA0+	TMDS Data0+
8	DATA0S	TMDS Data0 Shield
9	DATA0-	TMDS Data0-
10	CLK+	TMDS Clock+
11	CLK@	TMDS Clock Shield
12	CLK-	TMDS Clock-
13	CEC	CEC
14	NC	No conection
15	SCL	SCL (I ² C Serial Clock for DDC)
16	SDA	SDA (I ² C Serial Data Line for DDC)
17	CEC/GND	Ground

18	+5V	+5 V Power (max 50 mA)
19	HPDET	Hot Plug Detect

J20 -Key Board connector:PH2.0 10PIN 90°

PIN	SYMBOL	DESCRIPTION
1	-/LEFT	For OSD Left Switch
2	+/RIGHT	For OSD Right Switch
3	DOWN	For OSD Down Switch
4	AUTO	For Source Switch
5	MENU	For OSD Menu Switch
6	UP	For OSD Up Switch
7	GND	Ground
8	LED_G	Green Color
9	LED_R	Red Color
10	POWER	For Power Switch

CN102-IR connector:PH2.0 4PIN, 90°

PIN	SYMBOL	DESCRIPTION
1	NC	NC
2	IR_INPUT	IR Data
3	GND	Ground
4	+VCC	+5V

J16-FFC EDP output connector:FFC 0.5 41PIN

J16 edp Connector:

PIN	SYMBOL	DESCRIPTION
1	VLCD	Power input (+12V)
2	VLCD	Power input (+12V)
3	VLCD	Power input (+12V)
4	NC	NC
5	GND	Ground
6	GND	Ground
7	GND	Ground
8	NC	NC
9	NC	NC
10	NC	NC
11	NC	NC
12	EDP_HPDI	HPDI
13	AUXTX_N1	Negative AUX Channel differential data input
14	AUXTX_P1	Positive AUX Channel differential data input
15	GND	Ground

16	EDP7_ON	Negative EDP Channel differential data input
17	EDP7_OP	Positive EDP Channel differential data input
18	GND	Ground
19	EDP6_ON	Negative EDP Channel differential data input
20	EDP6_OP	Positive EDP Channel differential data input
21	GND	Ground
22	EDP5_ON	Negative EDP Channel differential data input
23	EDP5_OP	Positive EDP Channel differential data input
24	GND	Ground
25	EDP4_ON	Negative EDP Channel differential data input
26	EDP4_OP	Positive EDP Channel differential data input
27	EDP_HPDP0	HPDP0
28	AUXTX_N0	Negative AUX Channel differential data input
29	AUXTX_P1	Positive AUX Channel differential data input
30	GND	Ground
31	EDP3_ON	Negative EDP Channel differential data input
32	EDP3_OP	Positive EDP Channel differential data input
33	GND	Ground
34	EDP2_ON	Negative EDP Channel differential data input
35	EDP2_OP	Positive EDP Channel differential data input
36	GND	Ground
37	EDP1_ON	Negative EDP Channel differential data input
38	EDP1_OP	Positive EDP Channel differential data input
39	GND	Ground
40	EDP0_ON	Negative EDP Channel differential data input
41	EDP0_OP	Positive EDP Channel differential data input

CN109-Power connector:PH2.0 12PIN 90°

PIN	SYMBOL	DESCRIPTION
1	+5VSB	+5V STANDBY POWER supply
2	GND	Ground
3	PD_CTL	PD_CTL
4	+5V	power board supply
5	+5V	power board supply
6	GND	Ground
7	GND	Ground
8	DIM	Backlight adjust DC 调光
9	EN	Backlight On/Off control (enable)
10	+12V	power board supply, +12V
11	+12V	power board supply, +12V
12	+12V	power board supply, +12V

CN202 Speaker Connector: PH2.0 4PIN 90°

PIN	SYMBOL	DESCRIPTION
1	R+	Speaker Right+
2	R-	Speaker Right-
3	L-	Speaker Left-
4	L+	Speaker Left+

J17-Backlight inverter connector: PH2.0 6PIN 90°

PIN	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	Ground
3	DIM	Backlight adjust DC 调光
4	BLCTRL	Backlight On/Off control (enable)
5	VBKL	DC, backlight power supply
6	VBKL	DC, backlight power supply

J17-Backlight inverter connector: 1.0 3PIN SMT

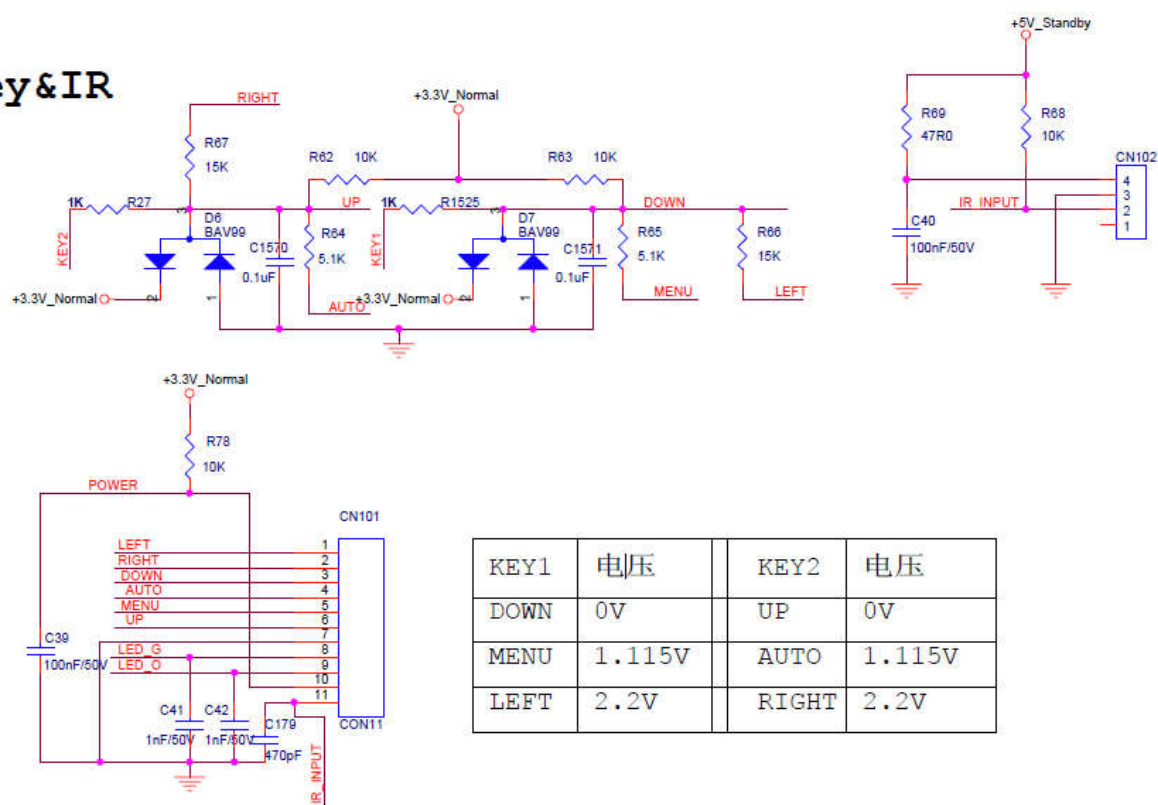
PIN	SYMBOL	DESCRIPTION
1	GND	Ground
2	SPDIF	SPDIF OUT
3	5V	5V POWER

P1 Speaker Connector: USB-A-05 侧卧 USB Software Update

PIN	SYMBOL	DESCRIPTION
1	USB_5V	USB POWER
2	USB_DM	USB_D-
3	USB_DP	USB_D+
4	GND	Ground

■产品的遥控以及按键定义 SCHEMATICS OF IR BOARD & KEY BOARD

Key&IR



■运输、存储及使用要求 CONFIGURATION & GENERAL PRECAUTIONS

Relative humidity: $\leq 80\%$.

Storage temperature: $-10\sim 60^{\circ}\text{C}$.

Operation temperature: $0\sim 40^{\circ}\text{C}$.

Protect the board from static electricity in case of damage to the IC.

Keep the board away from conductor when it is working.

Don't push or pull the connectors when the board is working.

Don't press , distort or disassemble the board.

Clean the board with soft dry cloth when it's dirty.

Don't wire in the board to power supply before panel is correctly connected.