

LCD Controller Board

CUSTOMER: _____

MODEL NO.: TUD4K _____

DESCRIPTION: _____

DATE: 2015/8/30 _____

Revision: V 0.1

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Contact	
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Approval by :		
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Review by : K.C

Design by : Tony

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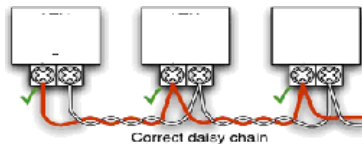
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1. SCOPE

TUD4K board is high performance LCD controller board which can support up to Max. 4096x2160(4K2K) panel at 60Hz.

1.1 PRODUCT FEATURES

- DP x1 , VGA x1, HDMIx5, DP(output) x1
- Support HDMI 2.0(6Ghz), Display port V1.2(5.4GHz,HBR2/2.7GHz/1.62GHz)
- Display Port V1.1 and V1.2
- Support Display port 1.2 MST daisy-chain



- V-BY-One, eDP, 8 Ch LVDS is supported
- Display port with Daisy Chain Capability
- Display image rotation with 90/180/270/360 degree



- Max support 4 PIP/POP (Picture in Picture/ Picture Over Picture)



- DDC/CI Command is support
- 5 HDMI +One Display Port input, One Display Port Output
- External Open frame power module support
- Optional Ethernet TCP/IP support to Control Contrast/Brightness/Power On/OFF/OSD function (this function is optional, Still Under development)
- UART is supported

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POWER

- Two input for control board : 12V to 24V +-15% DC
- (a) Jack 5.5×2.5Φ
- Output for LCD panel : 3.3V / 5V / 12V./24V
-



2. ELICTRICAL POWER CONSUMPTION

Working condition	Consuming current	Watt
Board only @running mode	TBD	
Board only @No sync mode	TBD	
Board only @sleep mode	TBD	
Panel Power Consumption	Depend on LCD Power Consumption	check

ITEM	Symbol	MIn	Typical	Max	Unit
DC_POWER	DC_PWR	--	24V	26	V
LCD VCC	VCC_FP				V
DigitalPWM	PWM	2.5	3 to 5V	5.5	V
Analog_Bright	Anag_bright	0	NA	5	V
Panel_OFF	On-off	0	NA	NA	

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2.



DC IN

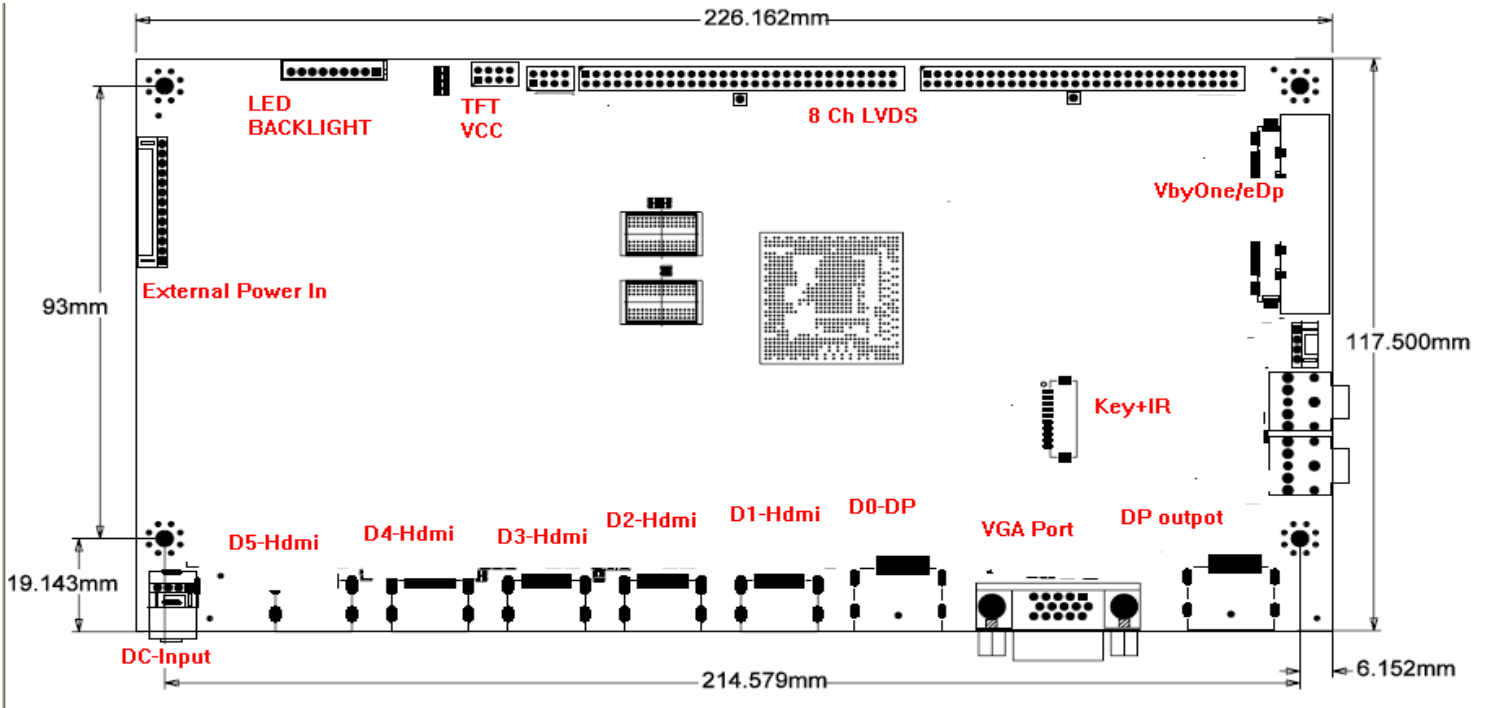
HDMI Input

Display port Input

Display port output

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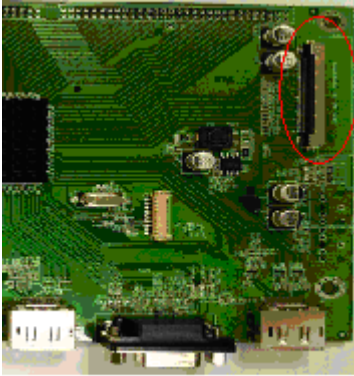
3. DIMENSIONS



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4. Connector

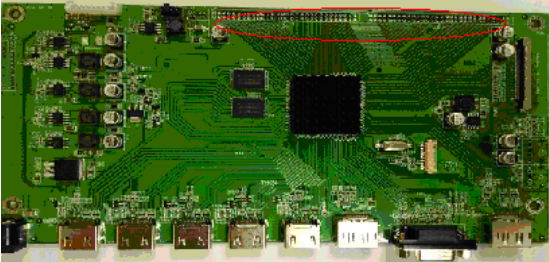
V-BY-One /eDP connector



	V-BY-ONE	eDP	
PIN 1	GND	GND	
2	VBO-7+	eDP-7+	
3	VBO-7-	eDP-7-	
4	GND	GND	
5	VBO-6+	eDP-6+	
6	VBO-6-	eDP-6-	
7	GND	GND	
8	VBO-5+	eDP-5+	
9	VBO-5-	eDP-5-	
10	GND	GND	
11	VBO-4+	eDP-4+	
12	VBO-4-	eDP-4-	
13	GND	GND	
14	VBO-3+	eDP-3+	
15	VBO-3-	eDP-3-	
16	GND	GND	
17	VBO-2+	eDP-2+	
18	VBO-2-	eDP-2-	
19	GND	GND	
20	VBO-1+	eDP-1+	
21	VBO-1-	eDP-1-	
22	GND	GND	
23	VBO-0+	eDP-0+	
24	VBO-0-	eDP-0-	
25	GND	GND	
26	Lock Detect		
27	Hot plug		
28	GND		
29	GND		
30			
31	LD_EN		
32			
33	SCL	Aux-N	
34	SDA	Aux-P	
35	2D/3D enable		
36			
37			
38	GND	GND	
39	GND	GND	
40	GND	GND	
41	GND	GND	
42	GND	GND	
43			
44	LCD POWER	LCD POWER	
45	LCD POWER	LCD POWER	

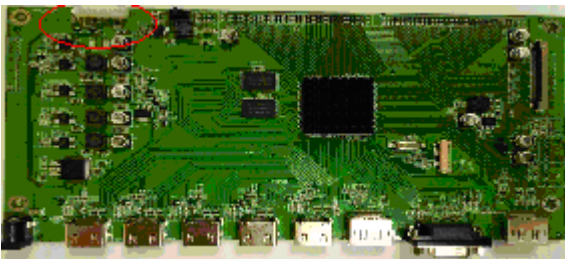
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	46	LCD POWER	LCD POWER	
	47	LCD POWER	LCD POWER	
	48	LCD POWER	LCD POWER	
	49	LCD POWER		
	50	LCD POWER		
	51	LCD POWER		

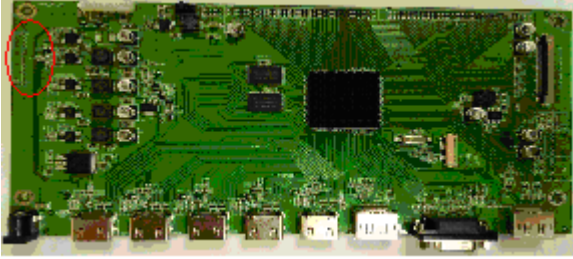
		JN1	JN2	
<p>LVDS Connector</p> 	PIN 1			
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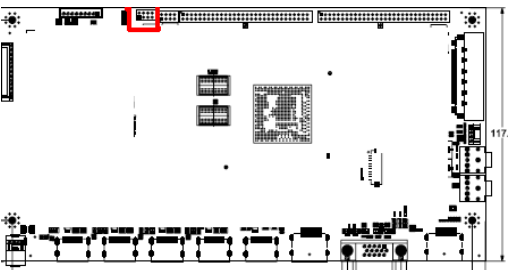
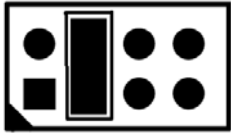

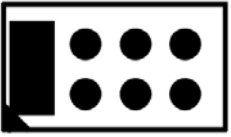
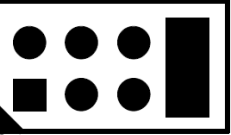
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Backlight Input JST PHR 2.0 		JP1	
	PIN 1	Backlight VCC	
	2	Baclight VCC	
	3	GND	
	4	GND	
	5	Backlight VCC	
	6	GND	
	7	Digital PWM	
	8	Analog Brightness	
	9	Backlight Enable	

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		J2	Note
External Power Input JST-PHR 2.0 	PIN 1	DC POWER(24V)	
	2	DC POWER(24V)	
	3	DC POWER(24V)	
	4	Backlight Power	
	5	Backlight Power	
	6	Backlight Power	
	7	LCD Power	
	8	LCD Power	
	9	LCD Power	
	10	GND	
	11	GND	
	12	GND	
	13	GND	
	14	GND	
	15	GND	

J6: Pitch 2.0 		LCD POWER=12V	
		LCD POWER=5V	
		LCD POWER=24V	
		LCD POWER=3.3V	