

☐ Preliminary Specifications

☒ Final Specifications

Module	LCD Controller Board (AD Board) For eDP Display
Model Name	AD-0112
Document Version	Rev.2.1

Customer	

Approved by	Date
_____	_____
Notice : This Specification is subject to change without notice.	

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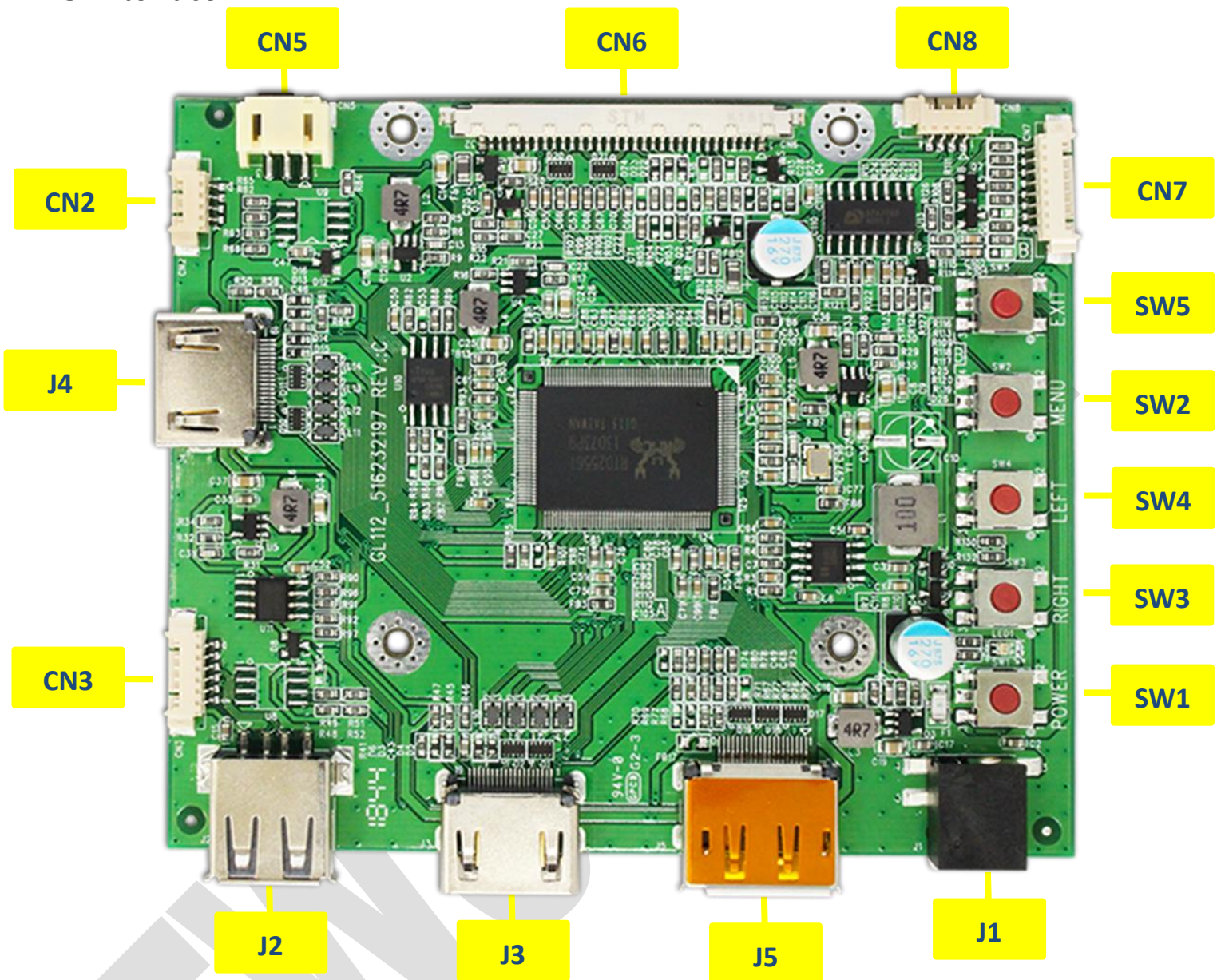
1.General Function

- A. TFT-LCD MODULE DRIVE BOARD.
- B. RESOLUTION UP TO 1920 x 1080 @ 60Hz
- C. HDMI 1.4a CONNECTOR INPUT
- D. DISPLAY PORT 1.2 CONNECTOR INPUT
- E. 1/2 LANE eDP INTERFACE OUTPUT TO PANEL
- F. OSD (On Screen Display) CONTROL MENU.
- G. SUPPORTING HDCP PROTOCOL (OPTIONAL).
- H. SUPPORTING DDC/CI PROTOCOL.

2. Specification

Model	AD-0112
Panel Interface	1/2 lane eDP
Maximum Resolution	Up to WUXGA 1920x1080 8 bits per color , total 16.7M colors
Vertical Refresh Rate	WUXGA up to 75Hz
Input Source	HDMI 1.4a Display Port 1.2
Audio Output	1.6W+1.6W at 8 Ohm speaker
Dot Clock Maximum (Pixel clock)	165 MHz
User Controls	Power On/Off OSD Menu Adjust — Adjust + EXIT
Board Dimension	100 x 85 mm
Voltage for LCD Panel	3.3V DC
Storage Temperature Limits	Temperature -40°C~70°C
Operation Temperature Limits	Temperature -10°C~60°C Humidity : Less than 85%

3. Interface



- 3-1 J1 : 2.0 mm DC Jack (DC 12V Input)
- 3-2 J2 : USB Output (by passed TOUCH signal - CN3 to J2)
- 3-3 J3 : HDMI Connect (HDMI Signal Input)
- 3-4 J4 : HDMI Connect (HDMI Signal Input)
- 3-5 J5 : Display Port Connect (Display Port Signal Input)
- 3-6 CN2 : 5V Output
- 3-7 CN3 : Input Port (for USB TOUCH signal through)
- 3-8 CN5 : Color Type Selector
- 3-9 CN6 : eDP Output
- 3-10 CN7 : OSD Key Output Extend
- 3-11 CN8 : Speaker Output
- 3-12 SW1,SW2,SW3,SW4,SW5 : OSD Key On Board

4.Support PC Timing

NO.	Description	H-Freq. (KHz)	V-Freq. (Hz)
1.	VGA640×400	31.480	70
2.	VGA640×480	31.649	60
3.	VGA720×400	37.469	70
4.	VESA 640×480	37.862	72.809
5.	VESA 640×480	37.5	75
6.	VESA 800×600	35.156	56.25
7.	VESA 800×600	37.9	60
8.	VESA 800×600	48.077	72.188
9.	VESA 800×600	46.875	75
10.	VESA 1024×768	48.363	60
11.	VESA 1024×768	56.476	70
12.	VESA 1024×768	60.023	75
13.	VESA 1152×864	67.5	75
14.	VESA 1280 x 768	47.8	60
15.	VESA 1280 x 768	60.3	75
16.	VESA 1280×960	60	60
17.	VESA 1280×1024	63.981	60
18.	VESA 1280×1024	79.977	75
19.	VESA 1440x900	59.9	60
20.	VESA 1440x900	75	75
21.	VESA 1600x1200	75	60
22.	VESA 1600x1200	81.3	65
23.	VESA 1600x1200	87.5	70
24.	VESA 1600x1200	93.8	75
25.	VESA 1680x1050	65.3	60
26.	VESA 1680x1050	74.9	75
27.	VESA 1920x1080	56.25	50
28.	VESA 1920x1080	67.5	60

Note: depends on panel

5.Signal input connections

5-1 Power Input

Location – J1 : DC JACK D=2.0mm, 12V DC Input

5-2 USB Output (by passed TOUCH signal - CN3 to J2)

Location – J2 : USB A TYPE

5-3 HDMI Input

Location – J3&J4 :HDMI Connector

Pin Assign and Definition

Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL
1	HDMI_DATA2+	8	GND	15	HDMI_SCL
2	GND	9	HDMI_DATA0-	16	HDMI_SDA
3	HDMI_DATA2-	10	HDMI_CLK+	17	GND
4	HDMI_DATA1+	11	GND	18	HDMI_5V
5	GND	12	HDMI_CLK-	19	HDMI_HPD
6	HDMI_DATA1-	13	CEC	-----	-----
7	HDMI_DATA0+	14	NC	-----	-----

5-4 Display Port Input

Location – J5 :Display Port Connector

Pin Assign and Definition

Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL
1	LANE3-	8	GND	15	AUX_CHP
2	GND	9	LANE1+	16	DP DET
3	LANE3+	10	LANE0-	17	AUX_CHN
4	LANE2-	11	GND	18	HPD
5	GND	12	LANE0+	19	RETURN
6	LANE2+	13	GND	20	DP_5V
7	LANE1-	14	GND	-----	-----

5-5 5V Output

Location – CN2 : 4PIN wafer pitch 1.25mm 90D

Pin assign and definition

Pin No.	SYMBOL
1	+5V
2	+5V
3	GND
4	GND

5-6 Input Port (for USB TOUCH signal through)

Location – CN3 : 6PIN wafer pitch 1.25mm 90D

Pin assign and definition

Pin No.	SYMBOL	Pin No.	SYMBOL
1	NC	4	USB D-
2	GND	5	USB 5V
3	USB D+	6	NC

5-7 Color Type Selector

Location – CN5 : 3PIN (with 2P Jumper)

Pin2, Pin3 short select color mode (2.0mm Jumper)

Pin2, Pin1 short or empty(8bits)

5-8 eDP OUTPUT

Location – CN6 : WF13-423-3033

Pin Assign and Definition

Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL
1	+12V	11	NC	21	D1-
2	+12V	12	HPD	22	D1+
3	+12V	13	AUX-	23	D0-
4	+12V	14	AUX+	24	D0+
5	Dimming control	15	D3-	25	GND
6	Back Light Enable	16	D3+	26	GND
7	GND	17	GND	27	NC
8	GND	18	GND	28	VLCD for Panel
9	GND	19	D2-	29	VLCD for Panel
10	GND	20	D2+	30	VLCD For Panel

5-9 OSD Key Output Connector

Case1: On Board OSD Key Switch

Location – SW1,SW2,SW3,SW4,SW5 Switch TSZ-R

Location	SYMBOL
SW1	POWER KEY
SW3	RIGHT KEY
SW4	LEFT KEY
SW2	MENU KEY
SW5	EXIT KEY

Case2: For Extend OSD 5Key

Location – CN7 : 8PIN wafer pitch 1.25mm 90D

All Key Active Low Level , All LED Active HI Level , Output Current 10mA MAX

Pin assign and definition

Pin No.	SYMBOL	Pin No.	SYMBOL	Pin No.	SYMBOL
1	MENU KEY	4	RIGHT KEY	7	LED_G
2	EXIT KEY	5	GND	8	POWER KEY
3	LEFT KEY	6	LED_O	---	-----

Note: Standard Status in Case1

5-10 Speaker Output

Location – CN8 :4PIN wafer pitch 1.250mm 90D

Audio Output 1.6W + 1.6W at 8 Ohm

Pin assign and definition

Pin No.	Signal
1	L -
2	L +
3	R +
4	R -

6. LCD Controller Board Dimension

