

AD BOARD SPECIFICATIONS

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1. —General Function

1.1 Technical Information Summary

■Analog RGB Compliant Input ports

- support up to UXGA @75Hz
- supports RGB/YPbPr/YPcPr / composite Sync and SOG

■HDCP/HDMI Compliant Input port

- HDCP 1.4 compliant receiver
- HDMI 2.0 compliant receiver
- DP 1.2a HBR2 compliant
- DVI 1.0

■Output display Interface

- Supports up to 4096 X 2160 @60Hz panel
- Supports eDP compliant transmitter up to 8 lanes with 2.7Gbps link rate
- Supports 8 pairs VX1 @3Gbps interface
- Supports flexible spread spectrum frequency and up modulation

■Frame Buffer Support

- Embedded frame buffer.
- Supports up to two windows PIP/PBP

1.2 General Feature

- VGA X 1 up to 1920 x 1080 @60Hz
- HDMI X 1 FHD @60Hz
- HDMI X 1 4K X 2K @60Hz
- DP X 1 4K X 2K @60Hz
- DVI X 1 FHD @60Hz
- RS232 X 1
- USB X 1 firmware update use
- Audio amplifier 2X15W(RL: 4ohm Vp=22V)
- IR receiver(NEC format)
- OSD key: Power, Menu, Right, Left, Exit

1.3. Power consumption

Condition: RGB Mode

Panel: LG 23.8" LM238WR2

DC IN: 12V

Back light: LED

Condition		Min	Max
A/D board only		3W	5W
Power saving		0.2W	0.5W

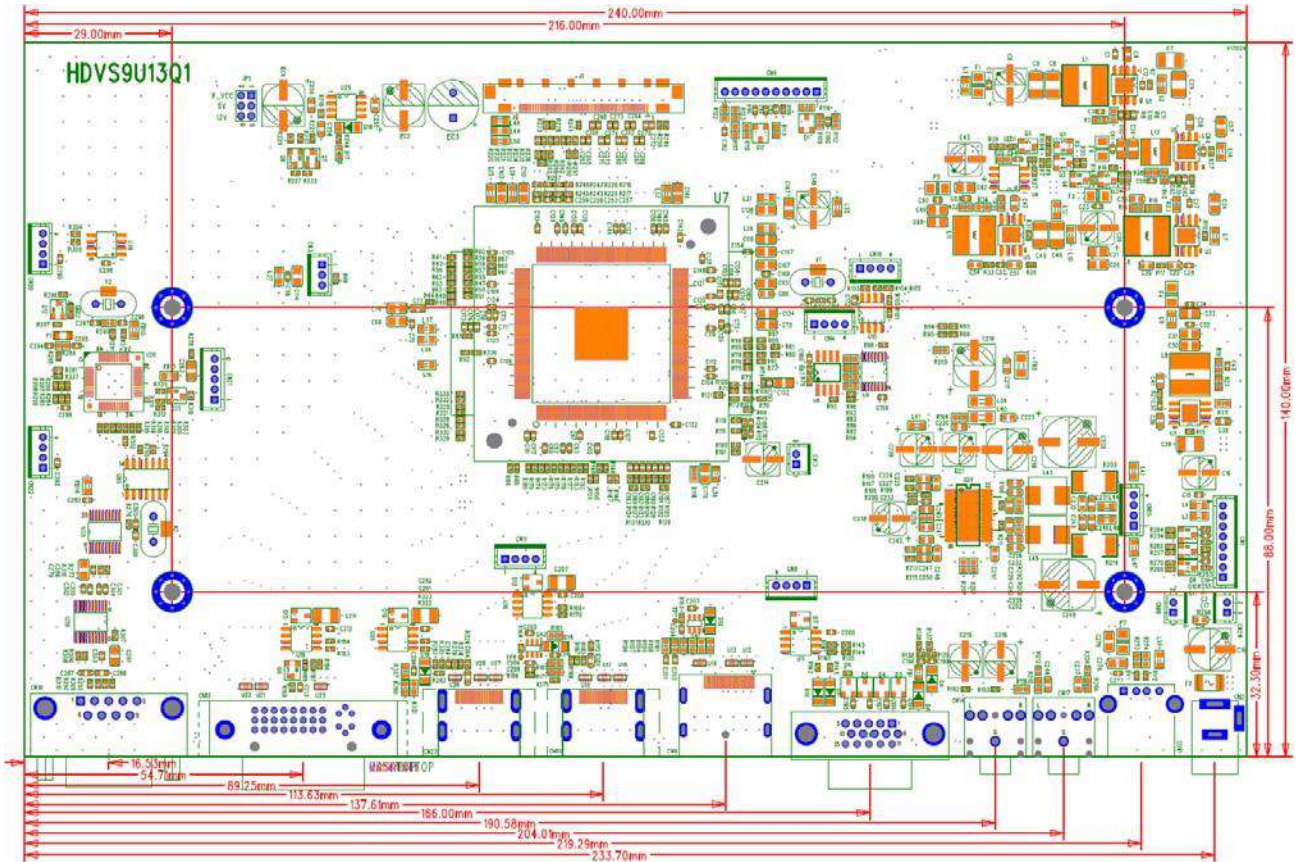
Temperature: Operating 0 to 70 C, storage -20 to 100 C

Humidity: 90% R.H. max

Plug & Play: Power management: VESA® DPMS™

2. Dimensions and PIN Definitions

2.1 Dimensions: 240mm (L) * 140.5 mm (W)* 14mm (H)



2.2 PIN Definitions

Power I/F

CN5 2.0mm 12pin

PIN	説明	PIN	説明
1	ADJ	2	BL ON/OFF
3	PS_ON	4	ADJ_PWM
5	+5V	6	+5V
7	GND	8	GND
9	+12V	10	+12V
11	GND	12	GND

OSD KEY

CN25 2.0mm 10pin

PIN	説明	PIN	説明
1	R_LED	2	GND
3	G_LED	4	Power
5	Menu	6	Source
7	Up	8	Down
9	+	10	-

Speaker

CN15, 2.0mm 2pin

PIN	説明	PIN	説明
1	SPK_L +	2	SPK_L -

CN16

PIN	説明	PIN	説明
1	SPK_R +	2	SPK_R -

eDP I/F

J13 51pin

PIN	説明	PIN	説明
1	GND/BL_PWM	2	eDP7-
3	eDP7+	4	GND
5	eDP6-	6	eDP6+
7	GND	8	eDP5-
9	eDP5+	10	GND
11	eDP4-	12	eDP4+
13	GND	14	eDP3-
15	eDP3+	16	GND
17	eDP2-	18	eDP2+
19	GND	20	eDP1-
21	eDP1+	22	GND
23	eDP0-	24	eDP1+
25	GND	26	LOCK
27	HTPD	28	GND
29	NC	30	NC
31	NC	32	HPD1
33	HPD0	34	AUXTXP1
35	AUXTXN1	36	AUXTXP0
37	AUXTXN0	38	GND
39	GND	40	GND
41	GND	42	GND
43	NC/BL_ENABLE	44	PANEL_VCC/BL_PWR
45	PANEL_VCC/BL_PWR	46	PANEL_VCC
47	PANEL_VCC	48	PANEL_VCC
49	PANEL_VCC	50	PANEL_VCC
51	PANEL_VCC	-	

3. VGA Timing

Resolution	Refresh Rate	Horizontal Frequency	Pixel Frequency	Standard Type	Remarks
640 X 480	60 Hz	31.50 KHz	25.175 MHz	Industrial Standard	
	75 Hz	37.50 KHz	31.500 MHz	VESA Standard	
800 X 600	60 Hz	37.9 KHz	40.000 MHz	VESA Guideline	
	72 Hz	48.10 KHz	50.000 MHz	VESA Standard	
	75 Hz	46.90 KHz	49.500 MHz	VESA Standard	
1024 X 768	60 Hz	48.40 KHz	65.000 MHz	VESA Guideline	
	70 Hz	56.5 KHz	75.000 MHz	VESA Standard	
	75 Hz	60.00 KHz	78.750 MHz	VESA Standard	
1152X868	75Hz	67.5KHz	108.000MHz		
1280X768	60Hz	47.8KHz	79.5MHz		
1280X960	60Hz	60.0KHz	108.000MHz		
1280 X 1024	60 Hz	64.00 KHz	108.000 MHz		
	75Hz	80KHz	135.000MHz		
1360X768	60HZ	47.7KHz	85.500MHz		
1440 X 900	60Hz	59.9KHz	106.500MHz		
	75Hz	75.0KHz	136.750MHz		
1680X1050	60HZ	65.3KHz	146.25MHz		
	75HZ	82.3KHz	187.000MHz		
1920 X 1080	60Hz	59.9KHz	106.500MHz		

4. Menu



5. Burn-in mode & others

5.1. Burn-in Mode

- a. unplug input source
- b. unplug DC power, press “menu” key continually and plug power. Until start running burn in mode then release “menu” key.
- c. Only “power” key can release burn in mode.

5.2. F/W update

Code name must change to **TST.001** and save to USB **root catalog**.

There are 2 ways to update f/w.

5.2.1 hard key update

- a. unplug DC power, press “down” key continually then power in and keep press “down” key until LED off and start flash then can release “down” key.
- b. After f/w update finish, scaler board will restart automatically.

5.2.2 osd f/w update