

Product Specifications

Product Model: LRX_VHDP556_LVDSEDP_E_V1.0

Product Code: A00801

Update Date: 2025.09.11

Drafting	Review	Approval
Sandy.Hu	Peter.Pan	Thanch.Li

Table of contents

1. Product Overview	3
2. Product Features.....	3
3. Interface Function Description.....	4
4. Interface Definition.....	4
4.1 CN1: 12V/24V power input.....	5
4.2 CN2: Built-in 12V/24V power input.....	5
4.3 CN3: HDMI input.....	5
4.4 JP5: Built-in HDMI input.....	6
4.5 CN4: DP input.....	6
4.6 CN5: VGA interface	7
4.7 CN5: Built-in VGA interface	7
4.8 CN7: Infrared remote control interface	8
4.9 CN8: Keypad interface	8
4.10 JP1: Screen voltage selection jumper	8
4.10 JP3: LVDS output interface	9
4.11 CN10: 30-pin eDP output interface	10
4.12 JP2: 4-Lane eDP output interface	11
4.13 CN12/CN13: Backlight control interface	11
4.14 JP4: Jumper selection for boost converter dimming method.....	12
5. Product dimensions.....	12
6. Operating environment.....	13
7. Precautions.....	13
8. Version updates.....	13

1. Product Overview.

The LRX_VHDP556_LVDSERP_E_V1.0 is a multi-functional display driver board that supports 1 HDMI 1.4, 1 DP 1.2, and 1 VGA signal input, 2-Port LVDS/4 (gold pin)/2 (FPC) lane eDP output. LVDS output supports up to 1920x1200@60Hz, and eDP output supports up to 2560x1600@60Hz. It features a built-in OSD menu, button/infrared remote control for adjusting brightness/contrast/multiple languages, etc., and supports 2x3W power amplifier output. The power supply voltage input supports 12V/24V, and a 24V backlight control interface is reserved for large-size high-brightness backlights. A jumper is used to select the backlight dimming method.

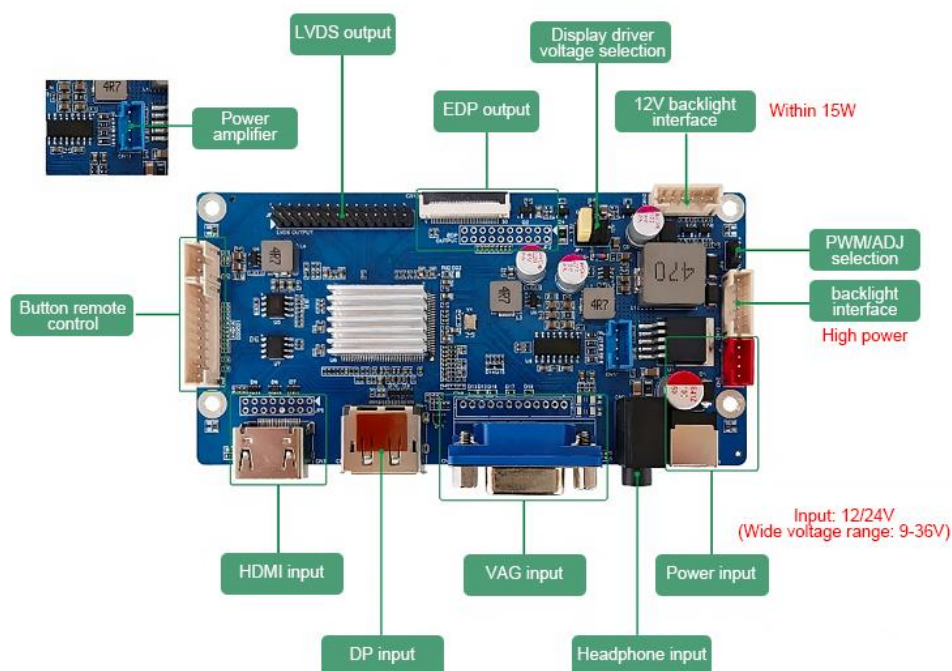
2. Product features.

Features	Describe
Power input	DC12/24V
Signal input	VGA (with built-in connector), HDMI 1.4 (with built-in connector), DP 1.2
Signal output	2-Port LVDS, 4-Lane (gold pins) / 2-Lane (FPC) eDP
Buttons/Infrared remote control	Supports multi-language OSD menu operation and OSD menu adjustment.
Audio	3.5mm headphone input, 2 x 3W amplifier output
Backlight interface	One output is a fixed 12V, and the other output is equal to the input voltage (please check the operating voltage range of the boost converter when using a 24V input).

3. Interface function description.

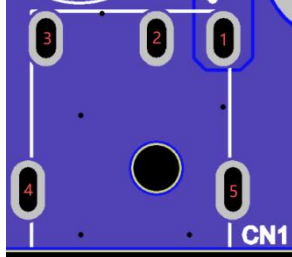
Seat number	Describe
CN1 / CN2	12V/24V power input (voltage fluctuation range 9V-36V)
CN3 / JP5	HDMI input
CN4	DP input
CN5/CN6	VGA input
CN7	Infrared remote control interface
CN8	Keypad interface
CN9	Φ3.5 Headphone audio input
CN11	Amplifier output: 2*3W (LR=4Ω)
CN12	12V output backlight control interface
CN13	The backlight control interface has a voltage equal to the DC input voltage.
CN10	Standard 30-pin eDP interface (2-Lane, up to 1920x1200@60Hz)
JP2	4-lane eDP interface (4-lane, up to 2560x1600@60Hz, non-standard cable)
JP3	2-Port LVDS interface
JP4	Backlight control method selection

Top view (interface description)

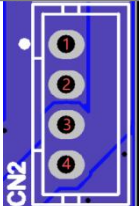


4. Interface definition.

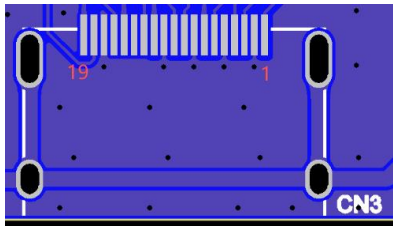
4.1 CN1: 12V/24V Power input

Pin	Pin markings	Top view corresponding to serial number (Interface description: DC-044A 5.5*2.1mm)	
1	12V/24V		
2	GND		
3	GND		
4	GND		
5	GND		

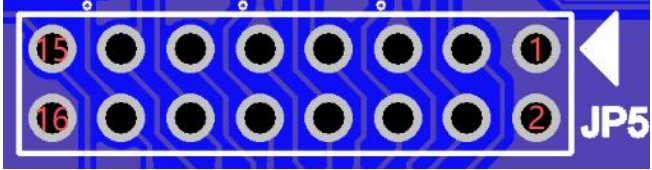
4.2 CN2: Built-in 12V/24V power input

Pin	Pin markings	Top view corresponding to serial number (Interface description: PH2.0mm-4Pin)	
1	GND		
2	GND		
3	12V/24V		
4	12V/24V		

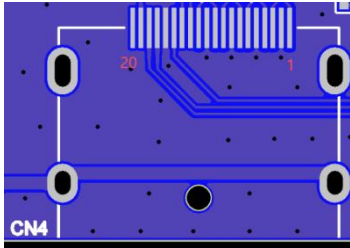
4.3 CN3: HDMI input

Pin	Pin markings	Pin	Pin markings	(Corresponding serial number in the top view)
1	DATA2+	11	CLK SHIELD	Interface parameters can be referenced from the following models:HDMI-001S 
2	DATA2	12	CLK-	
3	DATA2-	13	NC	
4	DATA1+	14	NC	
5	DATA1	15	SCL	
6	DATA1-	16	SDA	
7	DATA0+	17	GND	
8	DATA0	18	+5V POWER	
9	DATA0-	19	HOT PLUG	
10	CLK+			

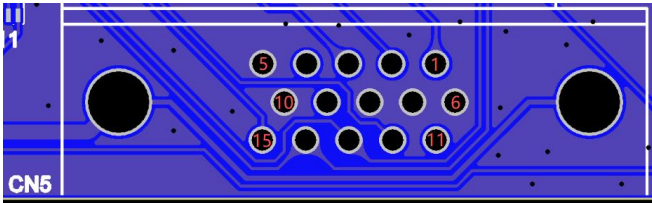
4.4 JP5: Built-in HDMI input

Pin	Pin markings	Top view corresponding to serial number (Interface description: 2.0mm-2x8Pin)
1	GND	
2	GND	
3	DATA2+	
4	DATA2-	
5	DATA1+	
6	DATA1-	
7	DATA0+	
8	DATA0-	
9	CLK+	
10	CLK-	
11	NC	
12	SCL	
13	SDA	
14	HOT PLUG	
15	+5V POWER	
16	GND	

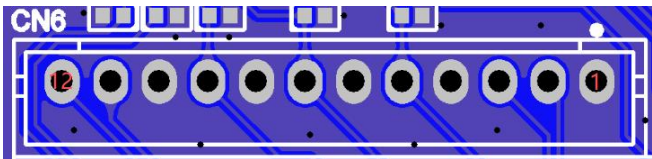
4.5 CN4: DP interface

Pin	Pin markings	Pin	Pin markings	(Corresponding serial number in the top view)
1	LANE3-	11	LANE0 SHIELD	Interface parameters can be referenced from model: DP-001-C-W 
2	LANE3	12	LANE0+	
3	LANE3+	13	GND	
4	LANE2-	14	GND	
5	LANE2	15	AUX+	
6	LANE2+	16	AUX SHIELD	
7	LANE1-	17	AUX-	
8	LANE1	18	HOT PLUG	
9	LANE1+	19	DP PWR RETURN	
10	LANE0-	20	DP PWR	

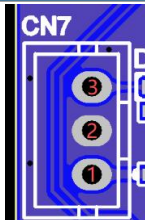
4.6 CN5: VGA interface

Pin	Pin markings	(Corresponding serial number in the top view)
1	RED+	
2	GREEN+	
3	BLUE+	
4	NC	
5	GND	
6	RED-	
7	GREEN-	
8	BLUE-	
9	+5V	
10	GND	
11	NC	
12	SDA	
13	HS	
14	VS	
15	SCL	

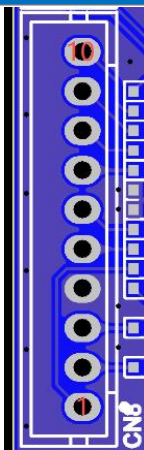
4.7 CN5: Built-in VGA interface

Pin	Pin markings	(Corresponding to the top view diagram) Interface description: PH2.0mm-12Pin
1	GND	
2	VS	
3	HS	
4	GND	
5	RED+	
6	RED-	
7	GREEN+	
8	GREEN-	
9	BLUE+	
10	BLUE-	
11	SDA	
12	CL	

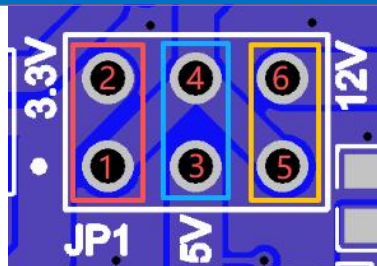
4.8 CN7: Infrared remote control interface

Pin	Pin markings	(Corresponding to the top view diagram) Interface description: PH2.0mm-3Pin
1	5V	
2	GND	
3	IR	

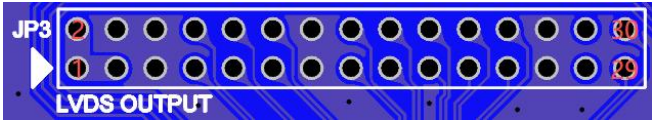
4.9 CN8: Keypad interface

Pin	Pin markings	(Corresponding to the top view diagram) Interface description: PH2.0mm-10Pin
1	K0	
2	LEDR	
3	LEDG	
4	GND	
5	K1	
6	K2	
7	K3	
8	K4	
9	K5	
10	K6	

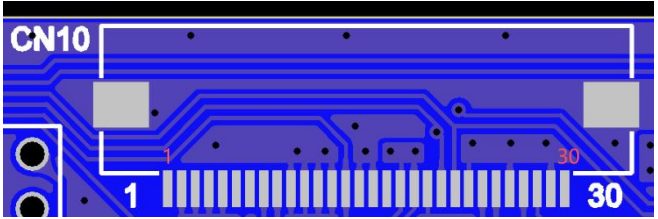
4.10 JP1: Screen voltage selection jumper

Jump hat position	Screen voltage	(Corresponding serial number in the top view)
1-2	3.3V	
3-4	5V	
5-6	12V	

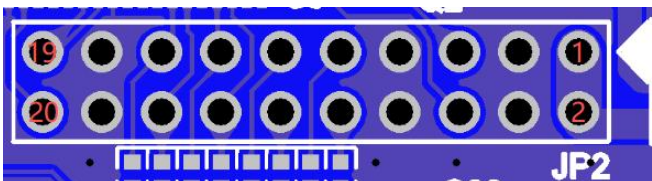
4.10 JP3: LVDS Output interface

Pin	Pin markings	(Top view corresponding to the sequence number) Interface description: 2.0mm-2x15Pin
1	VCC	
2	VCC	
3	VCC	
4	GND	
5	GND	
6	GND	
7	A0N	
8	A0P	
9	A1N	
10	A1P	
11	A2N	
12	A2P	
13	GND	
14	GND	
15	ACN	
16	ACP	
17	A3N	
18	A3P	
19	B0N	
20	B0P	
21	B1N	
22	B1P	
23	B2N	
24	B2P	
25	GND	
26	GND	
27	BCN	
28	BCP	
29	B3N	
30	B3P	

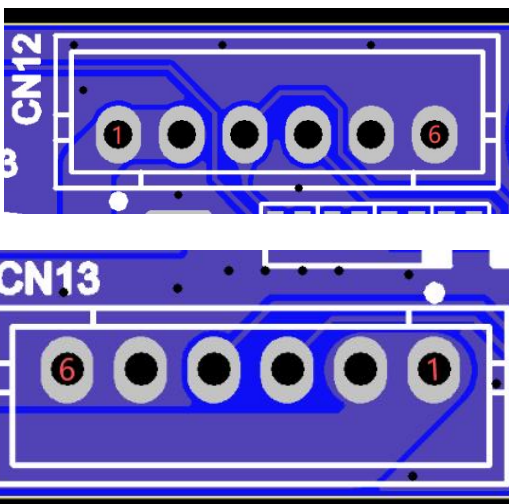
4.11 CN10: 30Pin eDP output interface

Pin	Pin markings	(Corresponding to the top view diagram) Interface description: 0.5mm-30Pin
1	NC	
2	BL_PWR 12V	
3	BL_PWR 12V	
4	BL_PWR 12V	
5	BL_PWR 12V	
6	NC	
7	NC	
8	BL_PWM	
9	BL_EN	
10	BL_GND	
11	BL_GND	
12	BL_GND	
13	BL_GND	
14	HPD	
15	GND	
16	GND	
17	NC	
18	VDD 3.3V	
19	VDD 3.3V	
20	GND	
21	AUXN	
22	AUXP	
23	GND	
24	D0P	
25	D0N	
26	GND	
27	D1P	
28	D1N	
29	GND	
30	NC	

4.12 JP2: 4-Lane eDP output interface

Pin	Pin markings	(Top view corresponding to the sequence number) Interface description: 2.0mm-2x10Pin
1	VCC	Pin 1/2: Jumper selection for voltage Pin 19: Fixed 3.3V 
2	VCC	
3	GND	
4	GND	
5	AUXN	
6	AUXP	
7	GND	
8	GND	
9	D3N	
10	D3P	
11	D2N	
12	D2P	
13	D1N	
14	D1P	
15	D0N	
16	D0P	
17	GND	
18	GND	
19	3.3V	
20	HPD	

4.13 CN12/CN13: Backlight control interface

Pin	Pin markings	(Corresponding serial number in top view) Interface description: PH2.0-6Pin
1	CN12:12V	
2	CN13:Equal to the input voltage	
3	EN	
4	ADJ/PWM	
5	GND	
6		

4.14 JP4: Jumper selection for boost converter dimming method

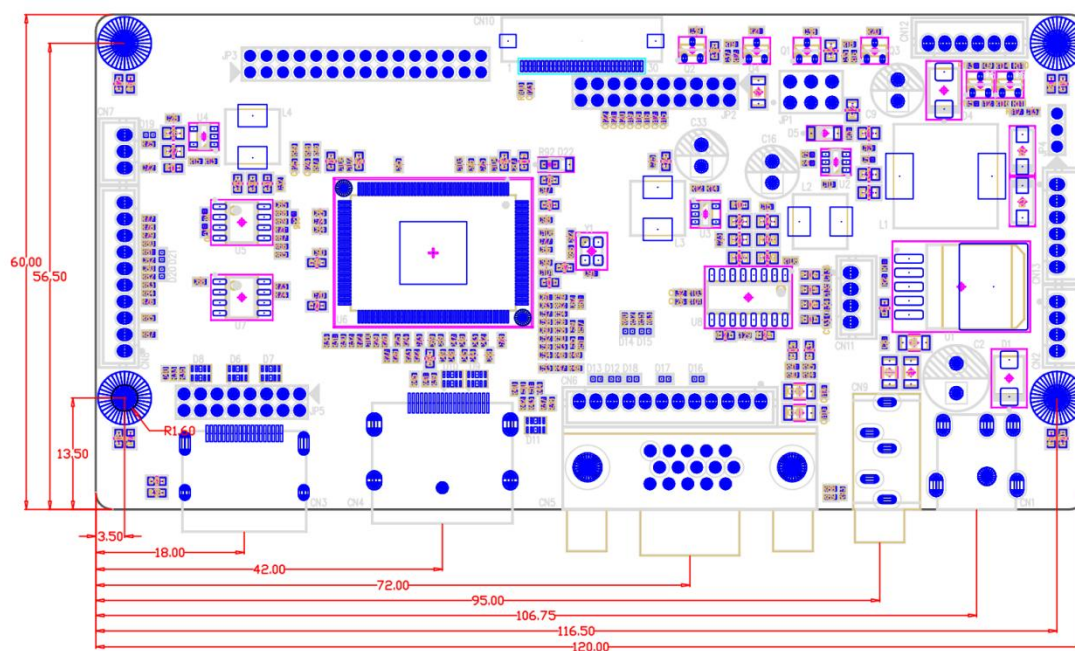
Jumper cap	Dimming method	(Top view corresponding to the sequence number) Interface description: 2.0mm-2x10Pin
1-2	PWM	
2-3	ADJ	

5. Product dimensions.

PCB mechanical dimensions

Unit: mm

Tolerance: $\pm 0.3\text{mm}$



6. Usage environment.

- Relative humidity (non-condensing): $\leq 80\%$
- Storage conditions: Temperature -40°C to $+85^{\circ}\text{C}$; Relative humidity 5-85%
- Operating conditions: Temperature -20°C to $+70^{\circ}\text{C}$; Relative humidity 20-80%

7. Precautions

- Keep the circuit board away from strong static electricity.
- Ensure you use a suitable power adapter; overvoltage or undervoltage may cause abnormal operation or even damage.
- Before powering on, carefully check the direction of the connecting cables and ensure the screen voltage is correct; otherwise, the LCD module may be damaged.
- Avoid dropping metal objects onto the circuit board while it is operating.
- Do not plug or unplug connectors while the circuit board is operating.
- Do not disassemble the module.
- If the mainboard surface is dirty, please clean it with a soft cloth (not a wet cloth).

8. Version update.

Rev.	Date	Note
V1.0	2025-09-11	First edition