

SMART DISPLAY MODULE SPECIFICATION

7.0 Inch Smart Display	
Model:	UEDX70QE-HMD-RB-A
Version:	V1.0
Date:	2024-09-23

Customer Confirmation

Approved by	Notes

REVISION HISTORY

Revision	Date	Contents of Revision Change	Remark
V1.0	20240920	Preliminary release	

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1. Introduction

1.1 Features

Brief Info:

- 1) 7.0inch standard monitor with 2400*2560 hardware resolution.
- 2) Also monitor Raspberry Pi, BB Black, Banana Pi and other mainstream mini PCS
- 3) When used as a Raspberry Pi monitor, it supports Raspbian, Ubuntu, WIN10IOT and other systems, with single o'clock control and no drive
- 4) When used as a computer monitor, it supports Windows 7/8/81/10
- 5) Support common game consoles such as Microsoft PS4, XBOX360,3D printer and Ren Tianxue

On-board chip: LT6911C**HDMI1.4 to Dual-port MIPI DSI/CSI/LVDS with Audio****1) HDMI1.4 Receiver**

- a. Compliant with the HDMI 1.4 specification with TMDS data rates up to 3.4Gbps per channel
- b. Support HDCP 1.4
- c. Adaptive receiver Equalization for PCB, cable and connector losses

2) Single/Dual-Port MIPI® DSI/CSI Transmitter

- a. Compliant with DCS1.02, D-PHY1.2& DSI1.02 & CSI-2 1.0
- b. 1 Clock Lane, and 1~4 Configurable Data Lanes per port
- c. 1/2 configurable port
- d. 80Mbps~1.5Gbps per data lane
- e. Maximum 64pixels overlap for each half
- f. Both non-burst and burst video mode supported
- g. Support RGB666, Loosely RGB666, RGB888, RGB565, 16-bit YCbCr4:2:2, 20-bit YCbCr4:2:2, 24-bit YCbCr 4:2:2 Video Format
- h. Video stream copy mode for each port
- i. Side-by-side 3D support

3) Single/Dual-Port LVDS Transmitter

- a. Compatible with VESA and JEIDA standard
- b. 1/2 Configurable Port
- c. 1 clock lane and 4 configurable data lanes per port

- d. Support Maximum Data Rate 1.2Gbps/lane
- e. Output Color Depth supports 6-bit and 8-bit
- f. Video stream copy mode for each port
- g. Side-by-side 3D support

4) Miscellaneous

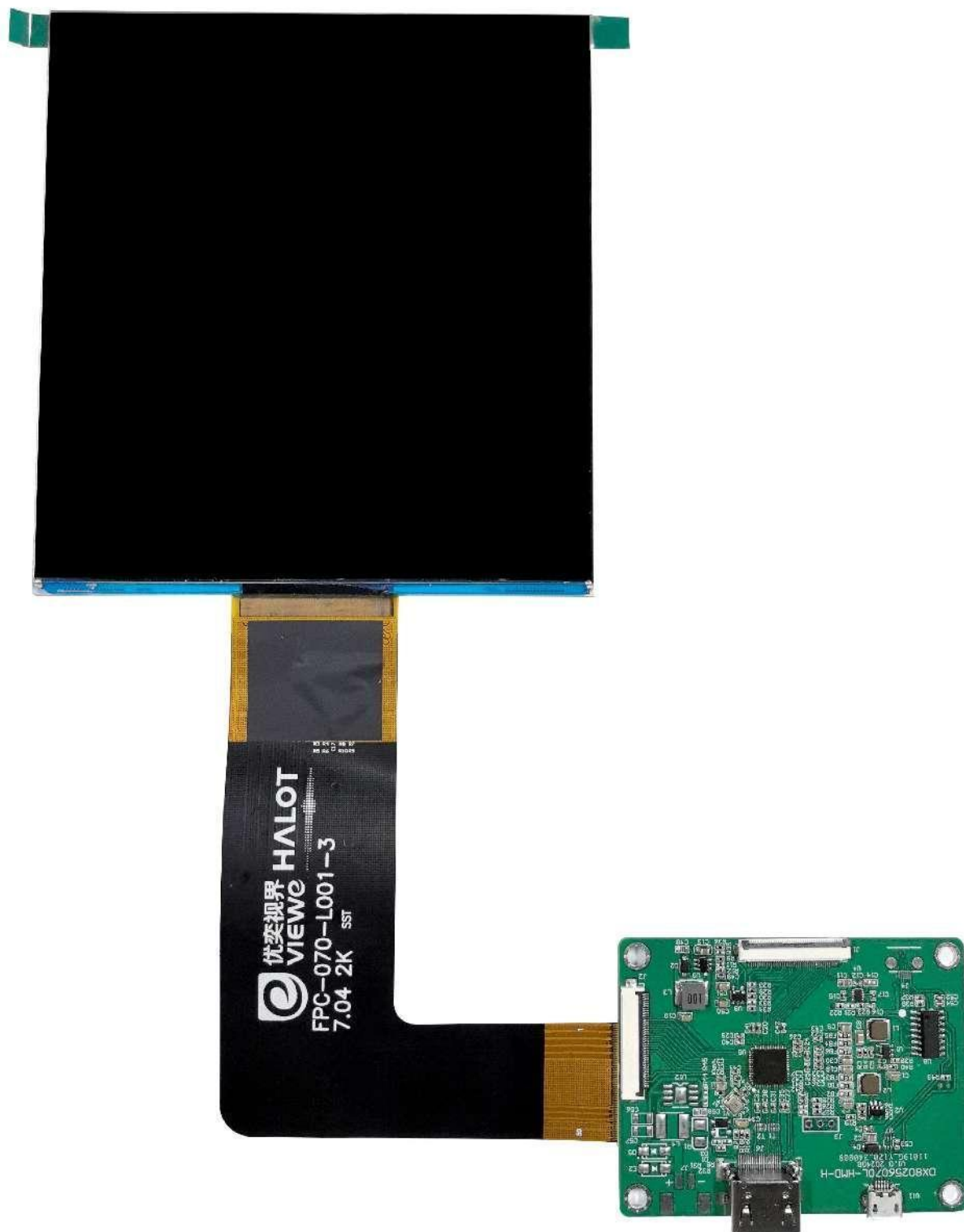
- a. 3.3V/1.2V Supply Power
- b. Internal CSC support conversions between YCbCr 4:4:4 and RGB, and between YCbCr 4:2:2 and YCbCr 4:4:4
- c. Support SPDIF and 2-channel IIS audio output
- d. Support 100KHz I2C slave
- e. Integrated Microprocessor
- f. Temperature Range: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- g. ESD 2kV HBM

Display:

- 1) Size: 7.0 Inch
- 2) Resolution: 2400(W)*2560(H)
- 3) Pixel Arrangement: 1 dot Vertical Stripe
- 4) Interface Mode: MIPI 4 Lanes
- 5) Driver IC: XM91080; Touch IC: FT6336U
- 6) Backlight Type: White LED
- 7) Display mode: Normally black, Transmissive
- 8) Pixel Density: 498 PPI
- 9) LED life time: 3000 Hours
- 10) Operation Temperature: -20~70°C
- 11) Storage Temperature: -30~80°C

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1.2 Appearance picture



2. Product information

2.1 Display Interface Description

Pin No.	Symbol	I/O	Description
1	GND	P	Power Ground
2	MIPI_D2P_M	I	MIPI-DSI data lane 2 positive-end input pin
3	MIPI_D2N_M	I	MIPI-DSI data lane 2 negative-end input pin
4	GND	P	Power Ground
5	MIPI_D1P_M	I	MIPI-DSI data lane 1 positive-end input pin
6	MIPI_D1N_M	I	MIPI-DSI data lane 1 negative-end input pin
7	GND	P	Power Ground
8	MIPI_CLKP_M	I	MIPI-DSI clock lane positive-end input pin
9	MIPI_CLKN_M	I	MIPI-DSI clock lane negative-end input pin
10	GND	P	Power Ground
11	MIPI_D0P_M	I/O	MIPI-DSI data lane 0 positive-end input pin
12	MIPI_D0N_M	I/O	MIPI-DSI data lane 0 negative-end input pin
13	GND	P	Power Ground
14	MIPI_D3P_M	I	MIPI-DSI data lane 3 positive-end input pin
15	MIPI_D3N_M	I	MIPI-DSI data lane 3 negative-end input pin
16	GND	P	Power Ground
17	MIPI_D2P_S(NC)	-	No connected
18	MIPI_D2N_S(NC)	-	No connected
19	GND	P	Power Ground
20	MIPI_D1P_S(NC)	-	No connected
21	MIPI_D1N_S(NC)	-	No connected
22	GND	P	Power Ground
23	MIPI_CLKP_S(NC)	-	No connected
24	MIPI_CLKN_S(NC)	-	No connected
25	GND	P	Power Ground
26	MIPI_D0P_S(NC)	-	No connected
27	MIPI_D0N_S(NC)	-	No connected
28	GND	P	Power Ground
29	MIPI_D3P_S(NC)	-	No connected
30	MIPI_D3N_S(NC)	-	No connected
31-32	GND	P	Power Ground
33	TE	O	Tearing effect outputsignal. If not used, please let this pin open
34	RESET	I	The signal will reset the LCM, Signal is active low.

35	NC	-	No connected
36	GND	P	Power Ground
37	VCC(NC)	-	No connected
38	GND	P	Power Ground
39	IOVCC	P	Power supply to interface pins(1.8V)
40-41	GND	P	Power Ground
42	NC	-	No connected
43	VSN(-5.5V)	P	Negative input analog power for driver IC use
44	NC	-	No connected
45	VSP(+5.5V)	P	Positive input analog power for driver IC use
46-49	NC	-	No connected
50	GND	P	Power Ground

I: Input; O: Output; P: Power

2.2 Hardware Interface Description

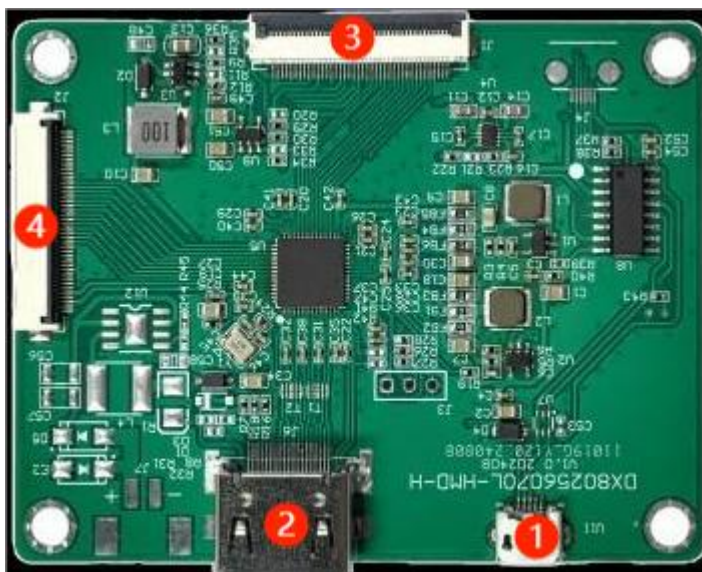


Figure 1

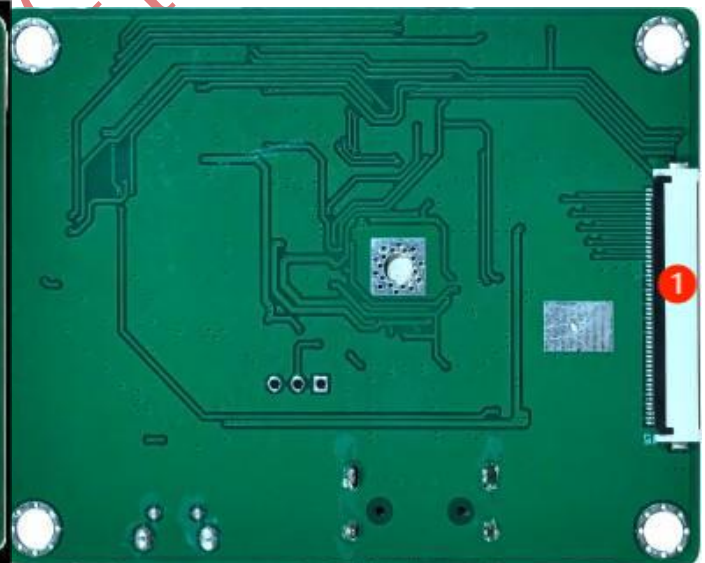


Figure 2

Figure 1:

- ① power supply interface, used for power supply
- ② Display: HDMI interface, used to connect the motherboard and LCD display for HDMI transmission
- ③ Display Interface: 40pin display interface for another product
- ④ Extending the interface

Figure 2:

- ① Display Interface: 50pin display interface for this product

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2.3 Display Information

Item	Specification	Unit	Remark
Pixel Driving element	IPS TFT	-	-
Screen Size	7.04	Inch	Diagonal
Resolution	2400(W)*2560(H)	Dots	-
Interface	MIPI	-	4 Lanes
Module Power Consumption	0.5	Watt	Typ.
Active Area	122.4(W)*130.56(H)	mm	-
Pixel pitch (W*H)	0.051(W)*0.051(H)	mm	-
Module Size (W*H*D)	129(W)*138.79(H)*4.95(D)	mm	-
Viewing Direction	All	O'clock	-
Display Color	Mono	Colors	2 Bit
Product Life	3000	Hour	

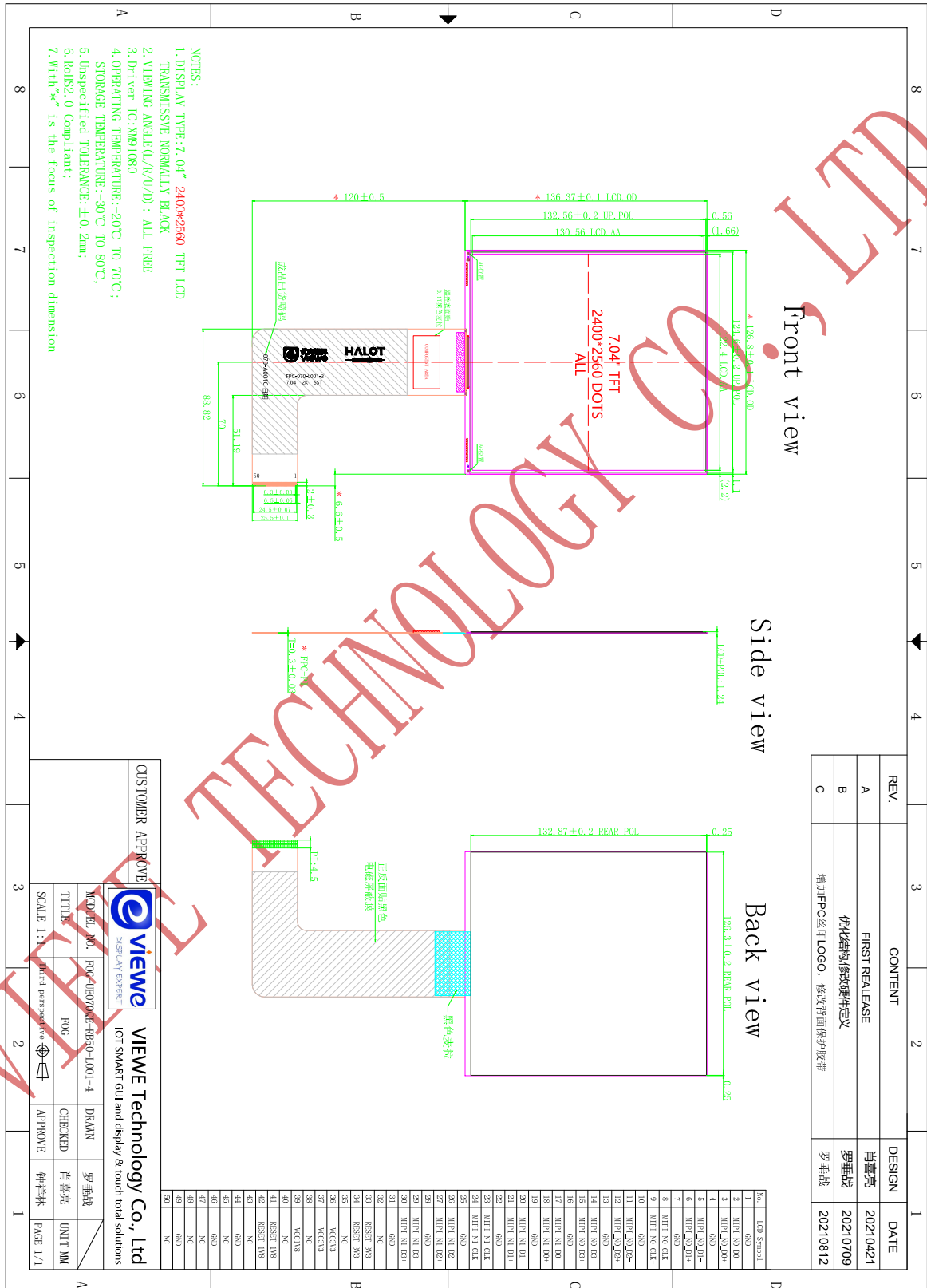
2.4 Voltage & Current

Item	Conditions	Min	Typ	Max	Unit
Power Voltage	DC	4.0	5.0	5.5	V
Operation Current	VCC= +5V, Maximum backlight current		260		mA
	VCC= +5V,backlight off	-	150	-	mA
Recommended power supply:5V 1A DC					

2.5 Reliability Test

Item	Conditions	Min	Typ	Max	Unit
Working Temperature	60%RH at 5V voltage	-20	25	70	C
Storage Temperature	---	-30	25	80	C
Working Humidity	25°C	10%	60%	90%	RH
ESD	---	Contact: ±4KV Air: ±8KV			KV

3. MECHANICAL DRAWING



4. Operating instructions

4.1 Used in Raspberry PI Raspbian/Ubuntu Mate/Win10 IoT Core system

Step 1: Install the official image

- A. Download the latest image from the official
- B. Install the system according to the steps of the official tutorial

Step 2 : Modify the config.txt configuration file Step 1 After the burn is completed, open the config.txt file in the root directory of the Micro SD card and add the following code at the end of the file. Save and safely eject the Micro SD card.

```
hdmi_force_edid_audio=1
max_usb_current=1
hdmi_force_hotplug=1
config_hdmi_boost=7
hdmi_group=2
hdmi_mode=1
hdmi_mode=87
hdmi_drive=2
hdmi_cvt 2400 2560 60 6 0 0 0
```

Step 3: Insert the Micro SD card into the Raspberry PI, connect the HDMI cable to the Raspberry PI and the LCD, connect the USB cable to any of the four USB ports of the Raspberry PI, connect the other end of the USB cable to the USB port of the LCD, and then power up the Raspberry PI. If the display and touch are normal, the drive is successful.

4.2 How to use it as a computer monitor

Step 1 : Use the HDMI cable to connect the computer HDMI output signal to the LCD HDMI interface;

Step 2: Connect one end of the MicroUSB cable to the USB Touch interface of the LCD, either of the two MicroUSB can be), and the other car is connected to the USB port of the computer;

If there are multiple monitors, please unplug the other monitor interfaces first and test this LCD as the only monitor.