SMART DISPLAY MODULE SPECIFICATION

4.3 Inch Smart Display with TOUCH	
Model:	PLCM-UEDX48270043E-WB-A
Version:	V1.0
Date:	2026-7-22

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Customer Confirmation

Approved by	Notes

REVISION HISTORY

Revision	Date	Contents of Revision Change	Remark
V1.0	202607022	Initial release based on UEDX80480043E-WB-structure.	

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1. Introduction



PLCM-UEDX48270043E-WB-B is a high-performance smart display development board based on the ESP32-S3, featuring a 4.3-inch RGB touch screen (480x272). It is designed by VIEWE and is suitable for IoT and HMI applications requiring rich peripheral interfaces and Wi-Fi/BLE connectivity.

Notice: The UEDX80480043E-WB-A development board will be gradually phased out and replaced by the UEDX80480043E-WB-B development board. New designs are recommended to migrate to this version.

1.1 Product Features

CPU:

1. Processor
    1) Equipped with an Xtensa 32-bit LX7 dual-core processor, with a main frequency up to 240 MHz.
    2) Integrated Wi-Fi 2.4GHz (802.11 b/g/n) and Bluetooth 5 (LE) & BLE Mesh.
2. Memory

1) 8 MB PSRAM.
2) 16 MB Flash.

3. Peripheral Interfaces

3) Two 2*20 Pin Headers are on-board, breaking out multiple programmable GPIOs, supporting SPI, UART, I2C, I2S, LCD, Camera, USB OTG, and other interfaces.
4) On-board USB Type-C port for power supply, programming, and serial debugging (CH340C).
5) On-board Micro SD card slot (SPI interface).
6) Reset and Boot buttons.

For more information on ESP32-S3-WROOM-1, please refer to the following link:datasheet_en.pdf

Display

1) Size: 4.3 Inch
2) Resolution: 480 * 272
3) Pixel Arrangement：RGB Vertical Stripe
4) Interface Mode：40PIN RGB 24bits
5) Driver IC：IL6485A-M0T0061
6) Touch IC: GT911
7) Brightness: 250 cd/m^2
8) Touch: CTP

Other

1) Operation Temperature：-20~70℃
2) Storage Temperature：-30~80℃

1.2 Applications

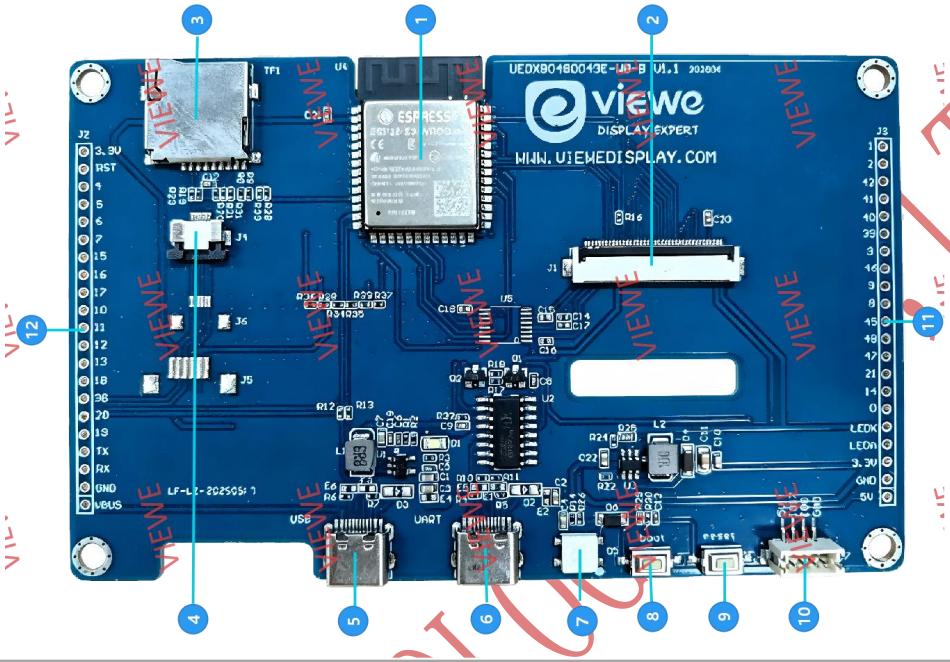
With rich connectivity and powerful processing capabilities, the PLCM-UEDX48270043E-WB-B is an ideal choice for IoT devices in the following areas:

• Smart Home Control Panels
• Industrial Automation HMI
• Smart Appliances
• Consumer Electronics
• Wireless Data Loggers
• Touch Screen Interfaces
• Educational Learning Platforms

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2. Product information

2.1 Interface Description



1、Main Control Chip: ESP32S3-MCN16R8
Dual-core processor, up to 240MHz operating frequency

2、Display Interface:
40-Pin RGB 24-bit display output, supporting R0-R7, G0-G7, B0-B7.However, only RGB565 can be used due to chip limitations. Please refer to the following Display Interface table for specific I/O details and descriptions.

3、SD Card Slot
SPI interface connected for external storage expansion

4、**Touch interface**
I2C interface (SDA/SCL), plus interrupt and reset pins for GT911 CTP. Please refer to the following TP Interface table for specific I/O details and descriptions.

5、USB Type-C interface
Used for 5V DC power supply

6、UART Serial port
Standard TX/RX connectivity for debugging or communication.

7、**RGB-LED** (WS2812B)

8、Boot Buttons
BOOT button (GPIO0) for firmware download mode.

9、**Reset Buttons**
RESET button (CHIP-EN) for resetting the board.

10、4-pin 1.25mm
You can choose to use I2C, UART and other interfaces according to your actual situation. If you are worried about interference, you can remove the RGB lights on the development board.

11 12、External GPIO Headers
Dual-row 2*21 headers providing access to a wide range of GPIOs, including ADC, touch sensors, and standard digital I/O.

Display Interface:

Pin No.	Symbol	I/O	Description
1	**LEDK**	P	Power supply for backlight cathode
2	**LEDA**	P	Power supply for backlight anode
3	**GND**	P	Power Ground
4	**VDD**	P	Power supply to the internal logic power regulator(3.3V)
5-12	**R0-R7**	I	Red data input.
13-20	**G0-G7**	I	Green data input.
21-28	**B0-B7**	I	Blue data input.
29	**GND**	P	Power Ground
30	**CLK**	I	Pixel clock input pin, Negative polarity
31	**DISP**	I	Standby mode. Normally pulled high.
32	**HSYNC**	I	Horizontal sync signal, Negative polarity
33	**VSYNC**	I	Vertical sync signal, Negative polarity
34	**DEN**	I	Data input enable. Display access is enabled when DE is "H"
35	**NC**	I	Dummy
36	**GND**	P	Power Ground
37	**XR**	-	Dummy
38	**YD**	-	Dummy
39	**XL**	-	Dummy
40	**YU**	-	Dummy

I：Input；O：Output；P：Power

TP Interface:

Pin No.	Symbol	I/O	Description
1	**GPIO20**	P	TP SCL
2	**GPIO19**	P	TP SDA
3	**GPIO18**	P	INT(It's not actually used)
4	**GND**	P	Power Ground
5	**VDD**	I	Power supply to the internal logic power regulator(3.3V)
6	**GPIO38**	I	RTP-csb-CTP-rst
7	**GND**	P	Power Ground
8	**GND**	P	Power Ground

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2.2 GPIO Definition

GPIO Number	Current Usage	Function Description
CHIP-EN	Reset	Reset Button
GPIO0	Boot	Boot Button
GPIO1	LCD-B4	LCD Blue Data B4
GPIO2	LCD-BL-EN	LCD Backlight Enable
GPIO3	LCD-B1	LCD Blue Data B1
GPIO4	LCD-G5	LCD Green Data G5
GPIO5	LCD-G0	LCD Green Data G0
GPIO6	LCD-G1	LCD Green Data G1
GPIO7	LCD-G2	LCD Green Data G2
GPIO8	LCD-B0	LCD Blue Data B0
GPIO9	LCD-B3	LCD Blue Data B3
GPIO10	SD-CS	SD Card Chip Select
GPIO11	SD-MOSI	SD Card MOSI
GPIO12	SD- SCLK	SD Card SCLK
GPIO13	SD-MISO	SD Card MISO
GPIO14	LCD-R4	LCD Red Data R4
GPIO15	LCD-G3	LCD Green Data G3
GPIO16	LCD-G4	LCD Green Data G4
GPIO17	Free	Free/Unused IO
GPIO18	TP-INT	Touch Interrupt
GPIO19	TP-SDA	Touch I2C SDA
GPIO20	TP-SCL	Touch I2C SCL
GPIO21	LCD-R3	LCD Red Data R3
GPIO38	TP-RST	Touch Reset
GPIO39	LCD-HS	LCD Horizontal Sync
GPIO40	LCD-DE	LCD Data Enable
GPIO41	LCD-VS	LCD Vertical Sync
GPIO42	LCD-PCLK	LCD Pixel Clock
GPIO43	UART TX	UART TX
GPIO44	UART RX	UART RX
GPIO45	LCD-R0	LCD Red Data R0
GPIO46	LCD-B2	LCD Blue Data B2
GPIO47	LCD-R2	LCD Red Data R2
GPIO48	LCD-R1	LCD Red Data R1

Reset Boot GPIO
LCD SD Card
Touch UART

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2.3 Display Information

Item	Specification	Unit	Remark
Pixel Driving element	TN TFT	-	-
Screen Size	4.3	Inch	Diagonal
Resolution	480(W)*3(RGB)*272(H)	Dots	-
Interface	RGB 24bits	-	40PIN
Module Power Consumption	0.838	Watt	Typ.
Active Area	95.04(W)*53.86(H)	mm	-
Pixel pitch (W*H)	0.066(W)*0.198(H)	mm	-
CTP Module Size (W*H*D)	105.5(W)*67.2(H)*4.45(D)	mm	-
Luminance	250	cd/m^2	Typ.
Viewing Direction	12	O'clock	-
Display Color	16.7M	Colors	24bits

2.4 Voltage & Current

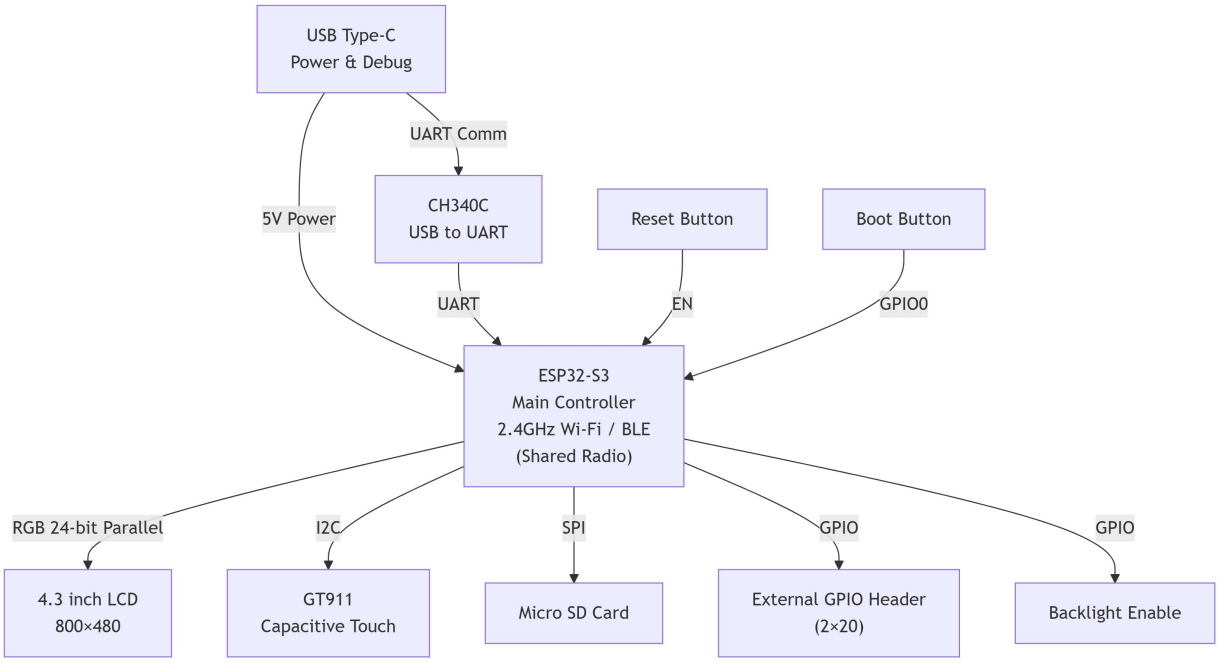
Item	Conditions	Min	Typ	Max	Unit
Power Voltage	DC	4. 0	5.0	5.5	V
Operation Current	VCC= +5V, Maximum backlight current	50	280	150	mA
	VCC= +5V,backlight off	-	150	-	mA
Recommended power supply:5V 1A DC					

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	85	C
Working Humidity	25°C	10%	60%	90%	RH
ESD	---	Contact: ±4KV Air: ±8KV			KV

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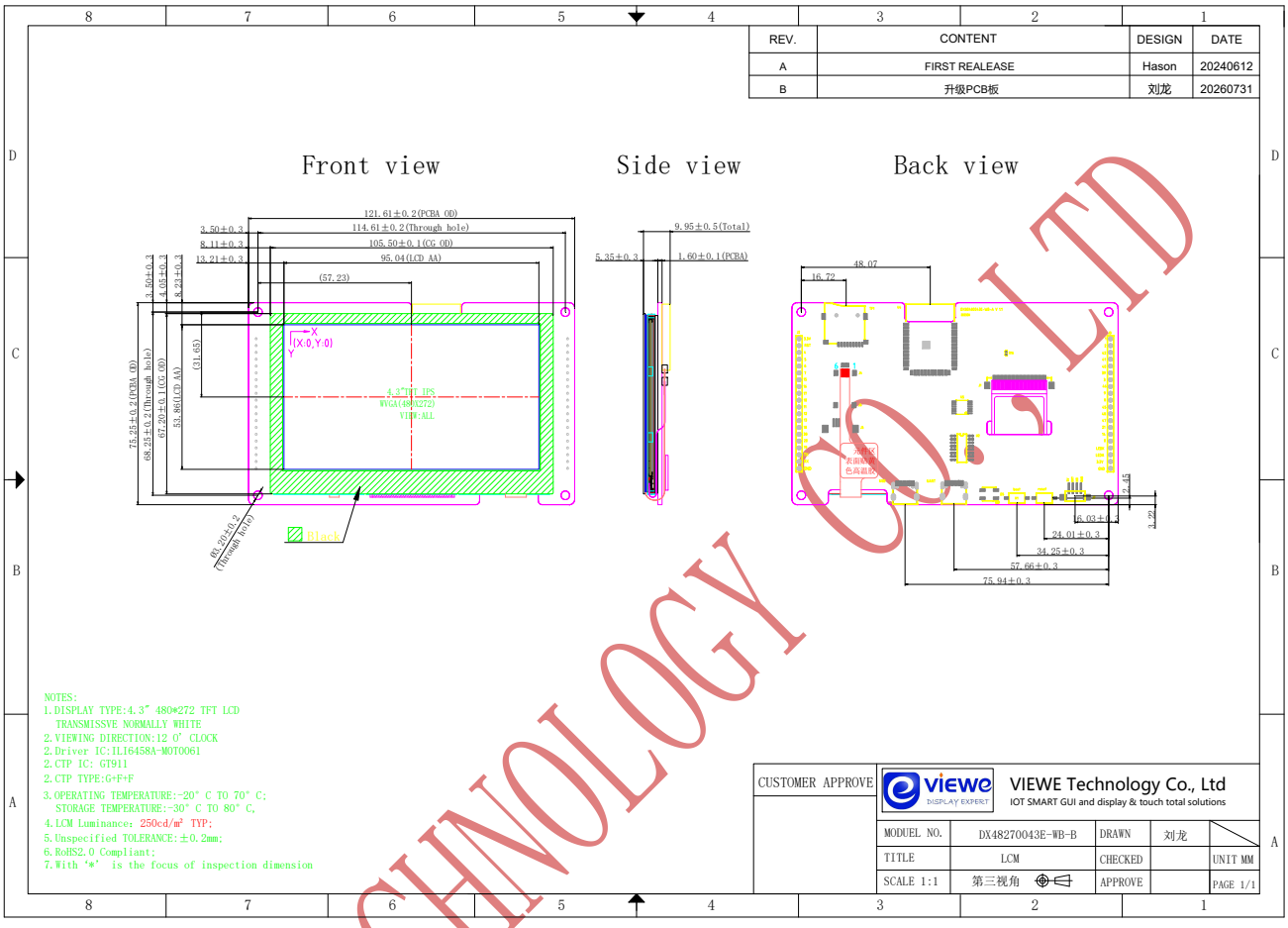
3. Functional Block Diagram



Note: The ESP32-S3 features a 2.4 GHz radio that supports Wi-Fi (802.11 b/g/n) and Bluetooth 5 (LE). Because they share the same RF front-end, Wi-Fi and BLE cannot transmit or receive simultaneously; the radio switches between protocols as needed. This is indicated by "Shared Radio" in the block.

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4. MECHANICAL DRAWING



5. Related Documents

- UEDX80480043E-WB-B Schematic Diagram (PDF)
- 2D Drawing(dwg)
- Display Specification (PDF)
- Display Chip Specification (PDF)
- Touch Chip Specification (PDF)
- ESP32-S3-WROOM-1 Datasheet (Chinese)
- ESP32-S3-WROOM-1 Datasheet (English)

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6. Detailed information (codes, drawings...)

- Github:UEDX48270043E-ESP32-4.3inch-Touch-Display
- Gitee:UEDX48270043E-ESP32-4.3inch-Touch-Display

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