

# PanelLan

## ZX4D30CE08S

### SC07



#### Changelog:

date	Change of person	illustrate
2024/06/13	hades	Create a document

## Features:

1. Rapid development

## Core Item List (Tab.0):

serial number	name	Model	remark
1	ESP32-S3	WT32-S3-WROVER-N16R2	



## Interface description:

[1] External interface (Tab.1).

Pin	Description	Voltage range	Remark
1	VCC	6~12V	Power input
2	GND	0V	The power supply is grounded
3	485A	RS485	RS485 bus, UART3 using PB10/PB11
4	485B	RS485	
5	CAN-	CAN	CAN bus, CAN1 using PA2/PA3
6	CAN+	CAN	
7	RXD	TTL(5V MAX)	TTL serial port, UART2 using PA4/PA5
8	TXD	TTL(5V MAX)	

[2] USB port (Tab.2).

*5V POWER INPUT, USB CONNECTED TO IO19/IO20, SUPPORT USB2.0 FS  
HOST/DEVICES.*

[3] Extended Interface (Tab.3).

Pin	Description	Remark
1~2	5V	5V power input or output
3~4	GND	Power Ground
5~10	NC	Not connected to any network, can do multi-purpose board
11	GPIO-04	The GPIO connected to ESP32-S3 can be used to expand other hardware, and only supports 3.3V level, without more protection
12	GPIO-01	
13	GPIO-05	
14	GPIO-02	
15~16	3.3V	The 3.3V power supply output can supply power to devices up to 100mA

[4] Debug Interface (Tab.4).

Pin	Description	Module PIN	Voltage range	Remark
1	+5V	-	5V	
2	+3.3V	-	3.3V	For reference use, not for power input
3	ESP_TXD	TXD0	3.3V TTL	
4	ESP_RXD	RXD0	3.3V TTL	
5	EN	EN	0-3.3V	Chip enabled
6	BOOT	GPIO 0	0-3.3V	
7	GND	-	0V	earthing

[5] LCD interface + touch screen interface (Tab.5).

*Connect to the USB port of the smart screen .*

description	Module PIN	remark
LCD_RESET,TP_RST	GPIO-38	The touch screen with LCD reset line pulls down the reset
LCD_TE	GPIO-48	LCD Tearing Effect signal
LCD_RS	GPIO-47	LCD RS signal, data/command signal
LCD_WR	GPIO-21	LCD Write signal, clock line
LCD_DB0	GPIO-39	LCD data cable, 8-bit
LCD_DB1	GPIO-40	
LCD_DB2	GPIO-41	
LCD_DB3	GPIO-14	
LCD_DB4	GPIO-13	
LCD_DB5	GPIO-12	
LCD_DB6	GPIO-11	
LCD_DB7	GPIO-10	
LCD_BL	GPIO-15	Backlit control cables
TP_INT	GPIO-42	The touch screen breaks the line
IIC_SDA	GPIO-09	Touch screen IIC cable
IIC_SCL	GPIO-03	
LCD_RESET,TP_RST	GPIO-38	The touch screen with LCD reset line pulls down the reset
LCD_TE	GPIO-48	LCD Tearing Effect signal
LCD_RS	GPIO-47	LCD RS signal, data/command signal
LCD_WR	GPIO-21	LCD Write signal, clock line
LCD_DB0	GPIO-39	LCD data cable, 8-bit

## Interface Package:

Description of the interface	Interface encapsulation	Remark
Debug interfaces	MX1.25-7P	
External interfaces	PH2.0-8P	

## Hardware Peripherals:

The name of the peripheral	description
buzzer	GPIO-45
RS485 bus	485_RX: GPIO-17,485_TX: GPIO-16,485_DE: GPIO-46
CAN bus	CAN_TX: GPIO-06,CAN_RX: GPIO-07
TTL interface	USART_TXD: GPIO-08,USART_RXD: GPIO-18

## Schematic

*There are several pages, see the attached document for details*



## Specification parameters:

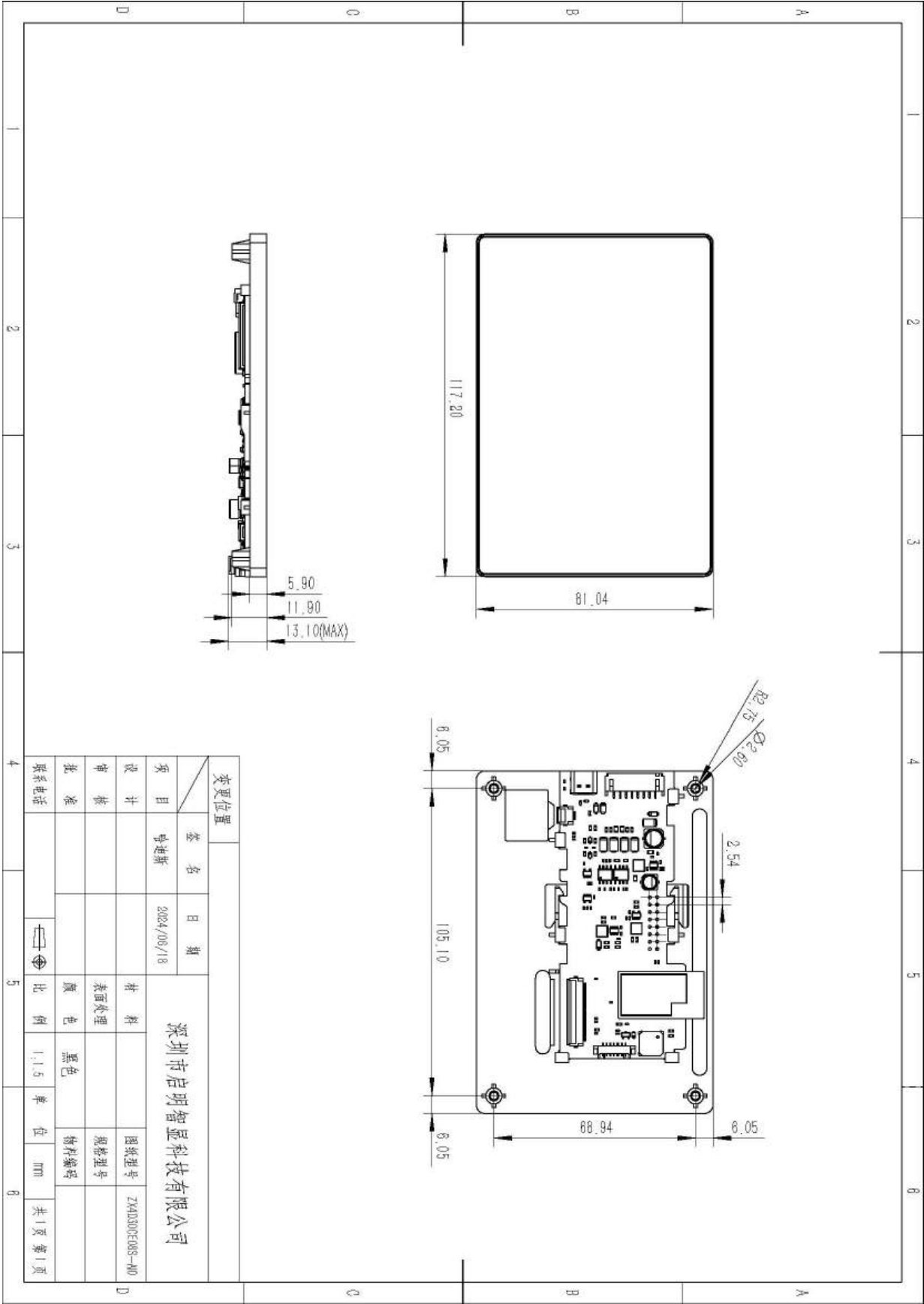
### [1] Display parameters (Tab.1)

<b>Display type</b>	TFT-LCD
<b>Driver IC model</b>	NV3041A-01
<b>visual angle</b>	All O'clock
<b>resolution</b>	480x272
<b>interface</b>	MCU8BIT
<b>color</b>	16.7M
<b>Backlight mode</b>	Transmissive

### [2] Touch parameters (Tab.2).

<b>Touch screen type</b>	Capacitive touch screen
<b>Driver IC model</b>	CST3240
<b>interface</b>	I2C
<b>Touchscreen structure</b>	GFF
<b>Touch mode</b>	contact
<b>Surface hardness</b>	6H
<b>Light transmittance</b>	85%

Exterior structure diagram (Fig.2).



## Firmware burning:

1. Connect the downloader (ZXACC-ESPDB) via USB-Type C and connect the ZX3D50CE02S board to the downloader (ZXACC-ESPDB) with an MX1.25-7P cable. Since the downloader (ZXACC-ESPDB) does automatic data flow control, the firmware can be automatically downloaded through the ESP32 Flash Download Tools.



Figure 3 (Fig.)

2. As shown in Figure 4 (Fig.4) on the right: select the firmware path to be burned in 1, the address is usually 0X00, and remember to tick the front after setting; Select 40MHz for the system clock at 2; Select 3 locations for the size of Flash as 32Mbit; Select SPI MODE to DIO mode at 4; Select the port number recognized by the current board on the computer at 5; Select the serial port baud rate at 6 (the higher the value, the faster the firmware download rate, the maximum support is 1152000bps);
3. After completing the previous configuration, click at 7 to start burning the firmware.
4. After completing the above two steps, press the reset button on the back of the board to start running the firmware you just flashed.

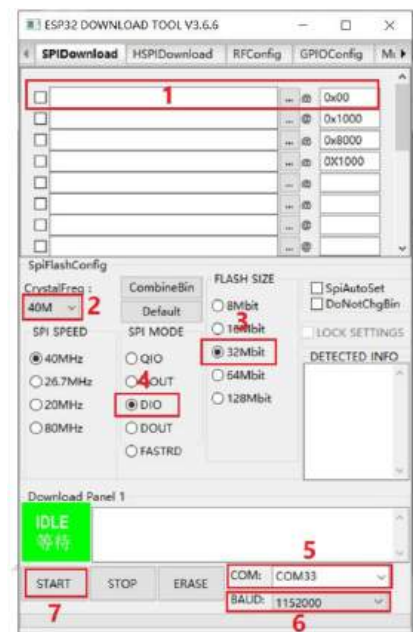
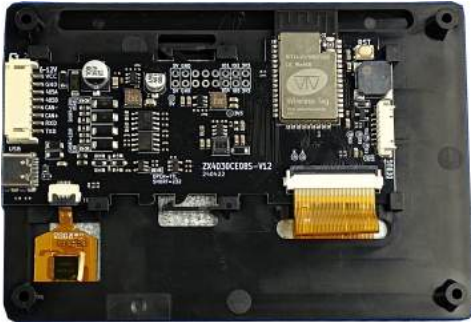


Figure 4 (Fig.)4

## Operating Instructions:

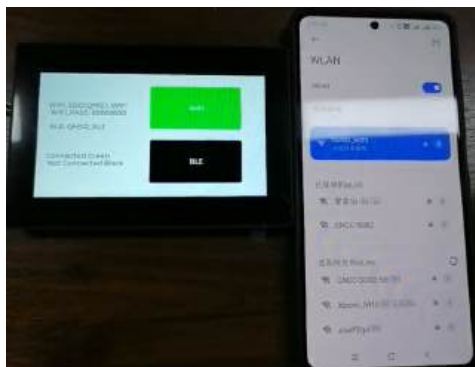
1. Power supply to DC 5V through the Type-C port (step 1)



2. After burning the software, set it in the background, and connect Bluetooth & WiFi (step 2)



3. Tap the WiFi option, find the corresponding WIFI in your phone and enter the original password (step 3)



5. Prepare the product body and accompanying items (step 4)



## Product use:

1. ESP32-S3 software verification work, as ESP32-S3 chip platform development board
2. 4.3 inch 480\*272 MCU screen display effect test and UI effect verification
3. Quickly test ESP32-S3 related hardware resources

## Usage scenario:

This product is used for software and hardware functional verification of ESP32-S3+4.3 inch 480\*272 MCU screen, and is used as a rapid development experimental hardware platform on which further software development is carried out. The finish use case is embedded. Finally, this product is mainly embedded use, fixed installation

## Installation instructions:

1. The back shell purchased separately according to the size of the embedded built-in space is screwed and packaged.
2. Connect the DC 5V power supply, insert the product using strong glue to fix the on the household electrical equipment.
3. The product can then be used directly on the embedded household electrical equipment.

## Application scenario:

**Color screen home appliance embedded application function demonstration software is widely used in a variety of home appliances, including but not limited to:**

1. Smart refrigerator: display refrigeration status, food management, recipe recommendation and other functions.
2. Smart washing machine: display laundry mode, washing status, appointment time and other information.
3. Intelligent air conditioner: Control temperature, humidity, wind speed and other parameters to display indoor air quality.
4. Smart TV: demo channel switching, program recommendation, voice control and other functions.
5. Smart oven: display cooking mode, preheating state, baking time and other information.
6. Smart water heater: display water temperature, heating state, energy saving mode, etc.

## FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC RF exposure statement:

The equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance between 20cm the radiator your body.

## Software reference:

URL: <http://doc.panel-tag.cn/ESP32-S3/flash.html>

SDK: <https://gitee.com/qiming-zhixian/qmsd-esp32-bsp>

Online Platform User Manual: <http://doc.panel-tag.cn/ESP32-S3/index.html>

LVGL official website link: <https://lvgl.io/>

*LVGL is recommended to be used in version v8.3.1. The recommended UI development tool is NXP  
-GUI Guider*

GUI Guider download link: <https://www.nxp.com/design/design-center/software/development-software/gui-guider:GUI-GUIDER>

## Contact

Website: [http://www. panel-tag.com/](http://www.panel-tag.com/)

Email: [panlee@smartpanle.com](mailto:panlee@smartpanle.com)

Sample purchase address: <https://shop212317088.taobao.com/>

WeChat public account:

