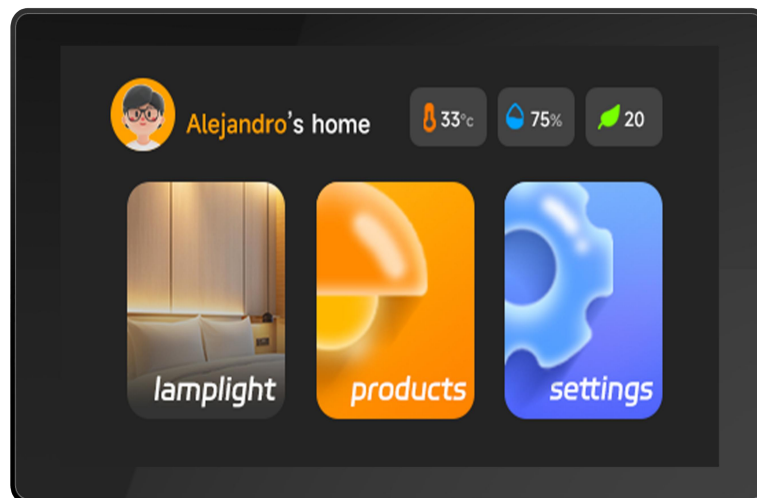


# 4.3inch Touch Screen

## WT32S3-43H (ZX4D30CE08S)



## Changelog:

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

## Features:

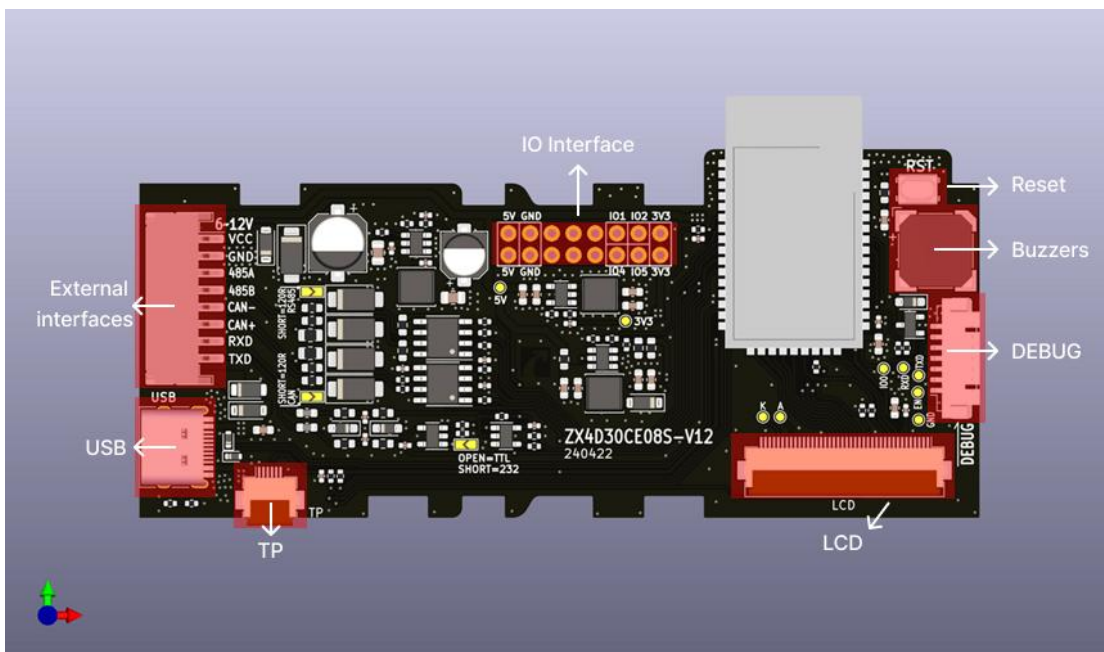
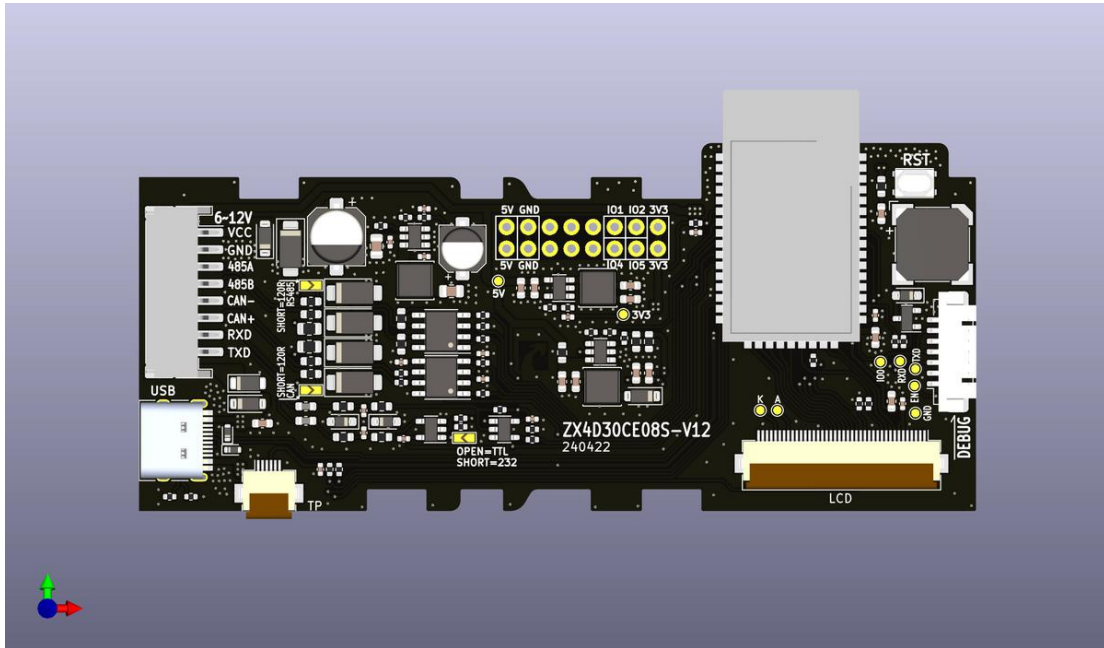
1. Rapid development

## Core Item List (Tab.0):

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

## Hardware interface:

Hardware interface diagram:



Hardware Interface (Figure 1 Hardware Interface Diagram).

## 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:

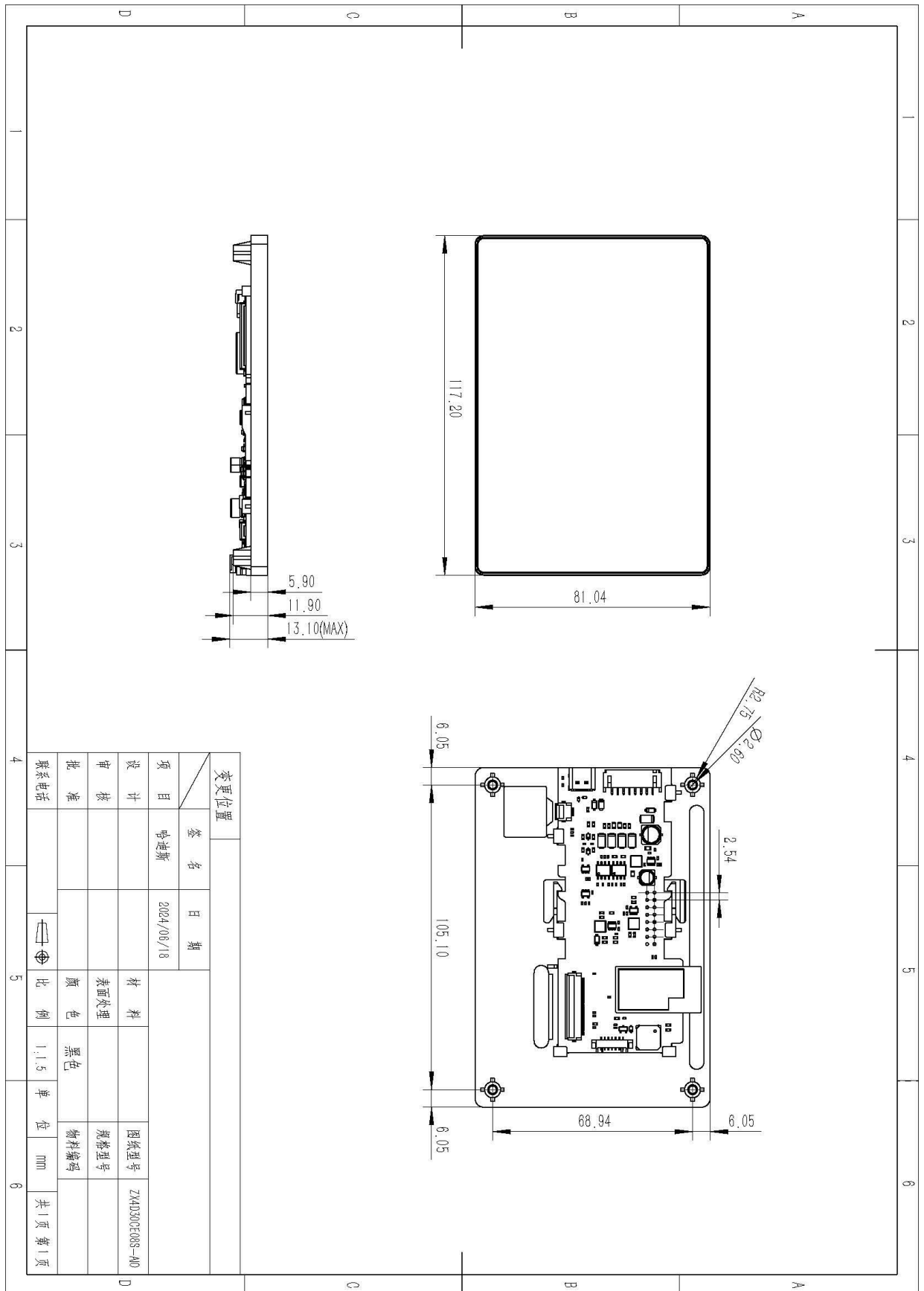
[1] Display parameters (Tab.1)

<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.
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.

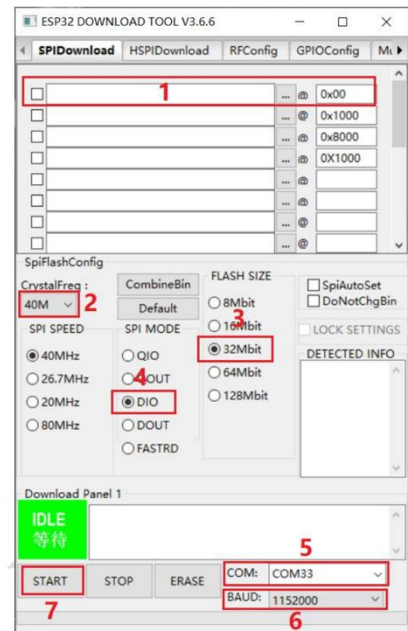


Figure 4 (Fig.4)

## Software reference:

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

ESP-IDF for SDK:

<https://github.com/espressif/esp-idf/tree/release/v4.4>

8ms-SDK:

<https://github.com/smartpanle/QMSD-ESP32-BSP>

Online Platform User Manual: <http://doc.panel-tag.com/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>