# SMART DISPLAY MODULE SPECIFICATION

| 7.0 Inch Smart Display with TOUCH | |
|---|---|
| **Model:** | UEDX80480070E-WB-A |
| **Version:** | V1.1 |
| **Date:** | 2024-08-19 |



**Customer Confirmation**

| Approved by | Notes |
|---|---|
| | |

# REVISION HISTORY

| Revision | Date | Contents of Revision Change | Remark |
|---|---|---|---|
| V1.0 | 20240814 | Preliminary release | |
| V1.1 | 20240819 | Optimize PCB positioning holes | |
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# 1. Introduction

## 1.1 Features

**Brief Info:**

1) Two buttons: a reset button and a boot button.
2) Backup IO: download ports and multiple IO leads to use on both sides of the periphery.
3) Power: DC 5V, 300mA

**System**

1) OS: RTOS
2) CPU: ESP32-S3 240Mhz
3) RAM: 8MB
4) Flash: 16MB
5) Interface: UART/USB
6) Support 2.4GHz Wi-Fi、BLE 5、BLE Mesh

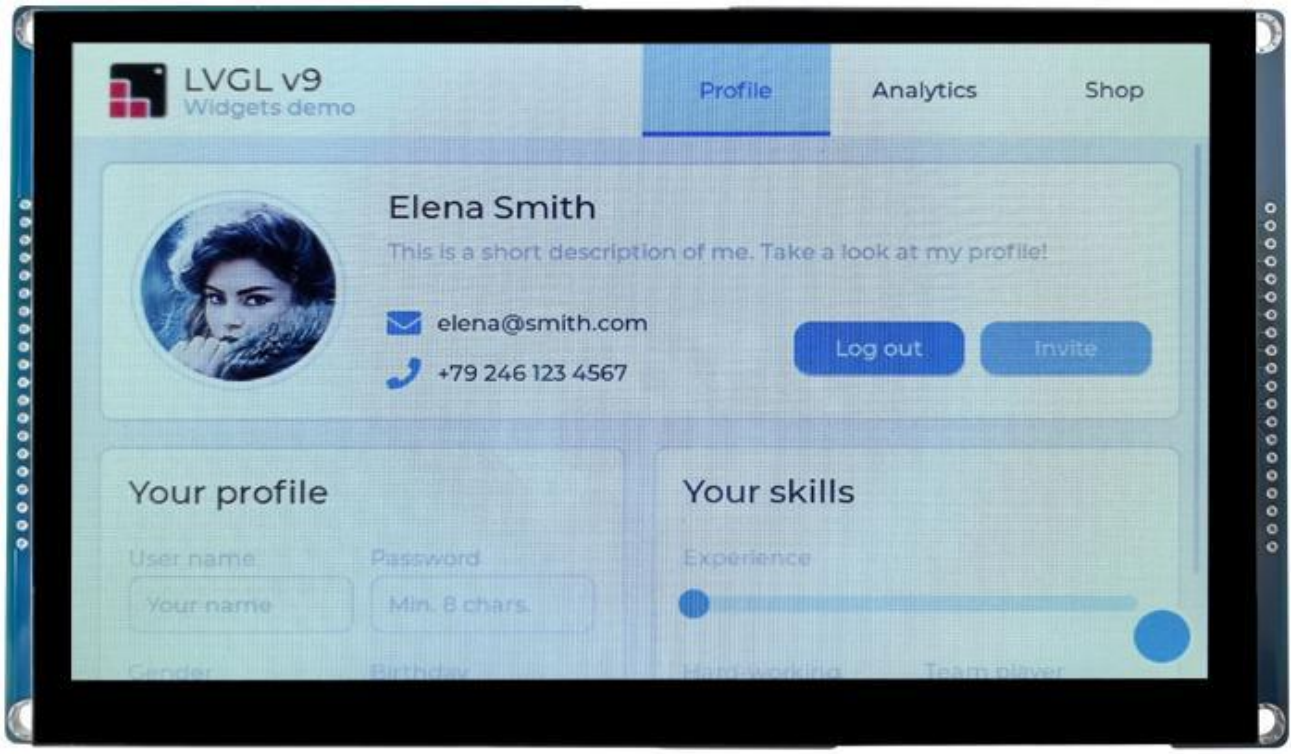
**Display**

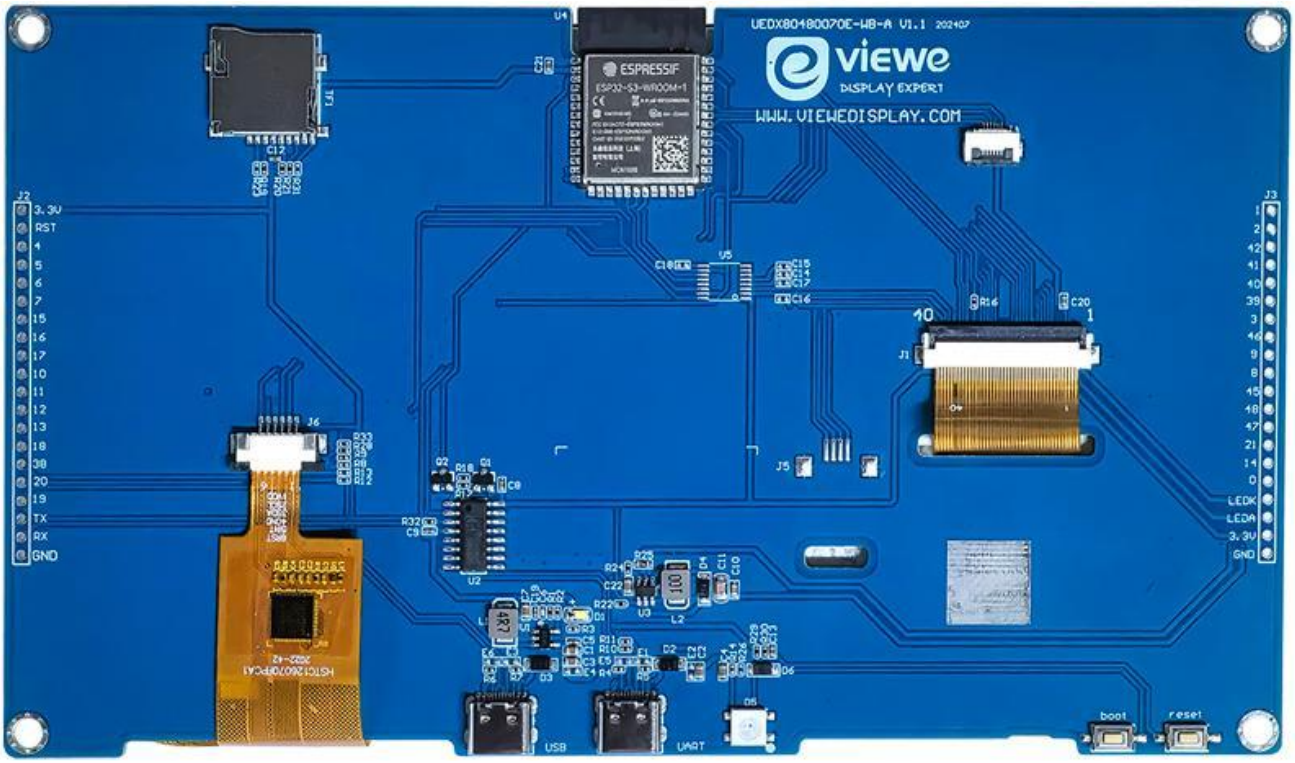
1) Size: 7.0 Inch
2) Resolution: 800 *480
3) Mode: TN
4) Brightness: 300 cd/$m^2$
5) Touch: CTP

**Other**

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

## 1.2 Appearance picture



# 2. Product information

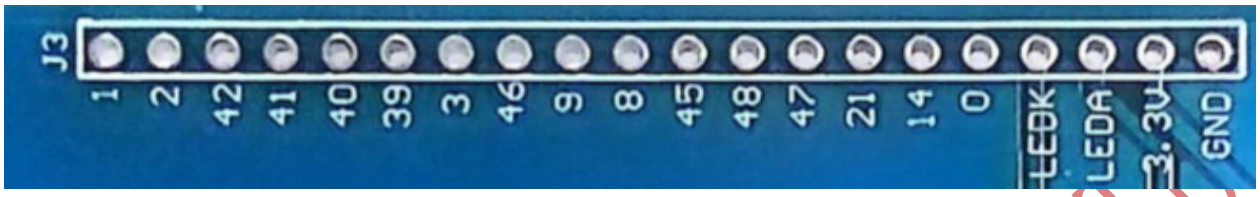
## 2.1 Interface Description

| Pin NO. | Symbol | Description | Voltage Range | Current Occupancy |
|---|---|---|---|---|
| 1 | 3.3V | Power 3.3V | 3.3V | Power 3.3V |
| 2 | RST | High: on, enables the chip<br>Low: off, the chip powers off.<br>Note: Do not leave the EN pin floating | 0-3.3V | Note: Do not leave the EN pin floating |
| 3 | 4 | RTC_GPIO4, GPIO4, TOUCH4, ADC1_CH3 | 0-3.3V | GPIO4 |
| 4 | 5 | RTC_GPIO5, GPIO5, TOUCH5, ADC1_CH4 | 0-3.3V | GPIO5 |
| 5 | 6 | RTC_GPIO6, GPIO6, TOUCH6, ADC1_CH5 | 0-3.3V | GPIO6 |
| 6 | 7 | RTC_GPIO7, GPIO7, TOUCH7, ADC1_CH6 | 0-3.3V | GPIO7 |
| 7 | 15 | RTC_GPIO15, GPIO15, U0RTS, ADC2_CH4, XTAL_32K_P | 0-3.3V | GPIO15 |
| 8 | 16 | RTC_GPIO16, GPIO16, U0CTS, ADC2_CH5, XTAL_32K_N | 0-3.3V | GPIO16 |
| 9 | 17 | RTC_GPIO17, GPIO17, U1TXD, ADC2_CH6 | 0-3.3V | GPIO17 |
| 10 | 10 | RTC_GPIO10, GPIO10, TOUCH10, ADC1_CH9, FSPICS0, FSPIIO4, SUBSPICS0 | 0-3.3V | SUBSPICS0 |
| 11 | 11 | RTC_GPIO11, GPIO11, TOUCH11, ADC2_CH0, FSPID, FSPIIO5, SUBSPID | 0-3.3V | GPIO11 |
| 12 | 12 | RTC_GPIO12, GPIO12, TOUCH12, ADC2_CH1, FSPICLK, FSPIIO6, SUBSPICLK | 0-3.3V | SUBSPICLK |
| 13 | 13 | RTC_GPIO13, GPIO13, TOUCH13, ADC2_CH2, FSPIQ, FSPIIO7, SUBSPIQ | 0-3.3V | GPIO13 |
| 14 | 18 | RTC_GPIO18, GPIO18, U1RXD, ADC2_CH7, CLK_OUT3 | 0-3.3V | GPIO18 |
| 15 | 38 | GPIO38, FSPIWP, SUBSPIWP | 0-3.3V | GPIO38 |
| 16 | 20 | RTC_GPIO20, GPIO20, U1CTS, ADC2_CH9, CLK_OUT1, USB_D+ | 0-3.3V | USB_D+ |
| 17 | 19 | RTC_GPIO19, GPIO19, U1RTS, ADC2_CH8, CLK_OUT2, USB_D- | 0-3.3V | USB_D- |
| 18 | TX | U0TXD, GPIO43, CLK_OUT1 | 0-3.3V | U0TXD |
| 19 | RX | U0RXD, GPIO44, CLK_OUT2 | 0-3.3V | U0RXD |
| 20 | GND | Grounds | 0V | Grounds |

The following picture shows the pins with 20 pind spacing between 2.54mm


| Pin NO. | Symbol | Description | Voltage Range | Current Occupancy |
|---|---|---|---|---|
| 1 | 1 | RTC_GPIO1, GPIO1, TOUCH1, ADC1_CH0 | 0-3.3V | GPIO1 |
| 2 | 2 | RTC_GPIO2, GPIO2, TOUCH2, ADC1_CH1 | 0-3.3V | GPIO2 |
| 3 | 42 | MTMS, GPIO42 | 0-3.3V | GPIO42 |
| 4 | 41 | MTDI, GPIO41, CLK_OUT1 | 0-3.3V | GPIO41 |
| 5 | 40 | MTDO, GPIO40, CLK_OUT2 | 0-3.3V | GPIO40 |
| 6 | 39 | MTCK, GPIO39, CLK_OUT3, SUBSPICS1 | 0-3.3V | GPIO39 |
| 7 | 3 | RTC_GPIO3, GPIO3, TOUCH3, ADC1_CH2 | 0-3.3V | GPIO3 |
| 8 | 46 | GPIO46 | 0-3.3V | GPIO46 |
| 9 | 9 | RTC_GPIO9, GPIO9, TOUCH9, ADC1_CH8, FSPIHD, SUBSPIHD | 0-3.3V | GPIO9 |
| 10 | 8 | RTC_GPIO8, GPIO8, TOUCH8, ADC1_CH7, SUBSPICS1 | 0-3.3V | GPIO8 |
| 11 | 45 | GPIO45 | 0-3.3V | GPIO45 |
| 12 | 48 | SPICLK_N_DIFF,GPIO48, SUBSPICLK_N_DIFF | 0-3.3V | GPIO48 |
| 13 | 47 | SPICLK_P_DIFF,GPIO47, SUBSPICLK_P_DIFF | 0-3.3V | GPIO47 |
| 14 | 21 | RTC_GPIO21, GPIO21 | 0-3.3V | GPIO21 |
| 15 | 14 | RTC_GPIO14, GPIO14, TOUCH14, ADC2_CH3, FSPIWP, FSPIDQS, SUBSPIWP | 0-3.3V | GPIO14 |
| 16 | 0 | RTC_GPIO0, GPIO0 | 0-3.3V | GPIO0 |
| 17 | LEDK | BL- | TDB | BL- |
| 18 | LEDA | BL+ | TDB | BL+ |
| 19 | 3.3V | Power 3.3V | 3.3V | Power 3.3V |
| 20 | GND | Grounds | 0V | Grounds |

The picture below shows a 1*21 needle row with a spacing of 2.54mm




The following picture shows the boot button on the left and the reset button on the right.


The following figure is the schematic diagram of USB. USB is used for power and download.


## 2.2 Display Information

| Item | Parameter | Description |
|---|---|---|
| Color | 65K colors | R5G6B5 16bits |
| AA | 154.08(W)×85.92(H) | 7.0 inch |
| Resolution | 800*480 | Rectangle |
| Backlight | LED | 30000Hour Min |
| Brightness | 300 cd/m$^2$ | |

## 2.3 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 | | 300 | | mA |
| | VCC= +5V,backlight off | - | 150 | - | mA |
| Recommended power supply:5V 1A DC | | | | | |

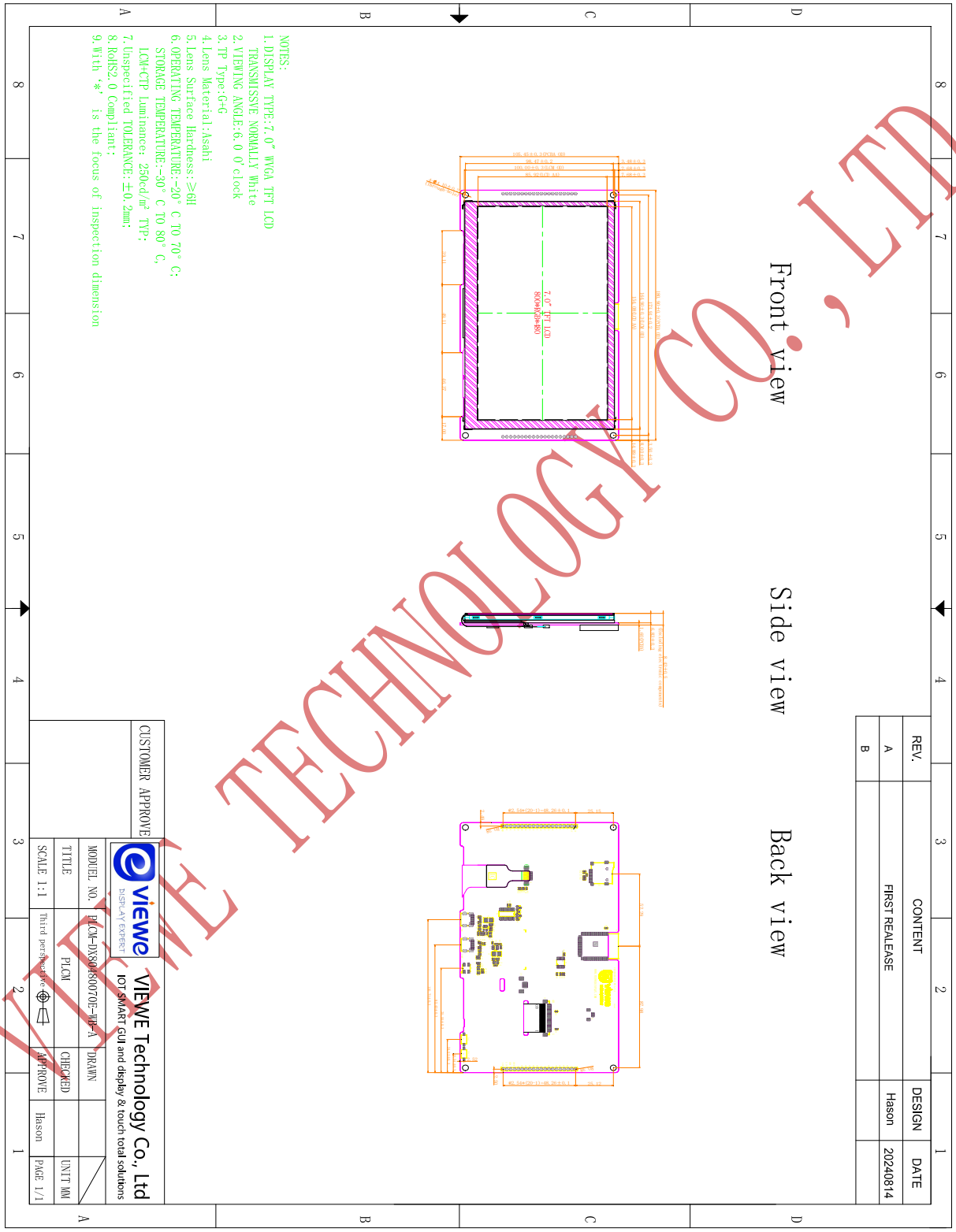
## 2.4 Reliability Test

| 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<br>Air: ±8KV | | | KV |

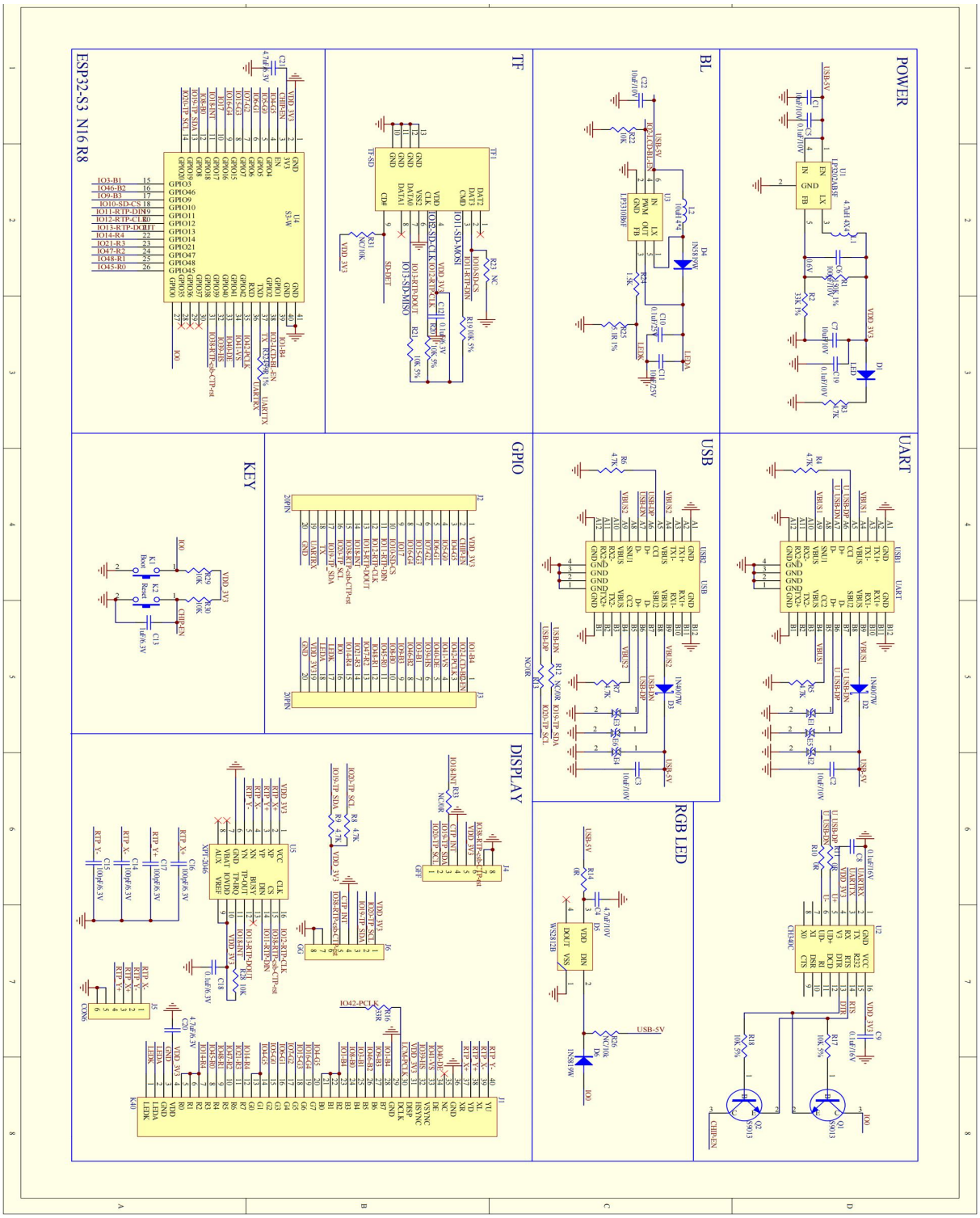
## 2.5 Related software

| Software name | Version | Software associated configuration | Development environment configuration link |
|---|---|---|---|
| Arduino IDE | 2.0.17 (esp32) | 1. Board: ESP32S3 Dev Module<br>2. CPU Frequency: 240MHz (WiFi)<br>3. Flash Frequency: NO<br>4. Flash Mode: QIO 80MHz<br>5. Flash Size: 16MB (128Mb)<br>6. Partition Scheme: Default 4MB with spiffs (1.2MB APP/1.5MB SPIFFS)<br>7. PSRAM: OPI PSRAM<br>8. Programmer: Esptool | ESP32-Arduino config (github.com) |
| ESP-IDF | 5.1.1<br>5.2.2 | Once configured, no configuration is required<br>（If you have any problem with the configuration, please contact us, we will help you） | ESP-IDF config (github.com) |

# 3. MECHANICAL DRAWING



# 4. Schematic



# 5. Related downloads

## 5.1 Arduino relevant information

We are working hard to debug it. Please look forward to it. We are sorry for any inconvenience caused to you.

## 5.2 Libraries required for Arduino

We are working hard to debug it. Please look forward to it. We are sorry for any inconvenience caused to you.

## 5.3 IDF relevant information

ESP32-IDF/examples/7.0inch/DX80480070E-WB-A-SDK at main · VIEWESMART/ESP32-IDF (github.com)