SMART DISPLAY MODULE SPECIFICATION

2.1 Inch Smart Knob Display with Wi-Fi /BLE	
Model:	UEDX48480021-MD80E
Version:	V3.2
Date:	2024-08-12

Customer Confirmation 客户确认

Approved by	Notes

REVISION HISTORY

Revision	Date	Contents of Revision Change	Remark
V1.0	20221014	Preliminary release	
V2.0	20240218	Change to English version	
V3.0	20240730	Add schemata, GitHub project links, and environment configuration links	
V3.1	20240807	Upgrade mechanical drawing	
V3.2	202408012	GitHub links to required libraries for Arduino	

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1. Introduction

1.1 Features

Brief Info:
1) Outline Dimension: φ 80 Round
2) Interaction Method: Rotate and Press
3) Shell Color: Black/White/Silver/Customized
4) Power: DC 5V, 1A

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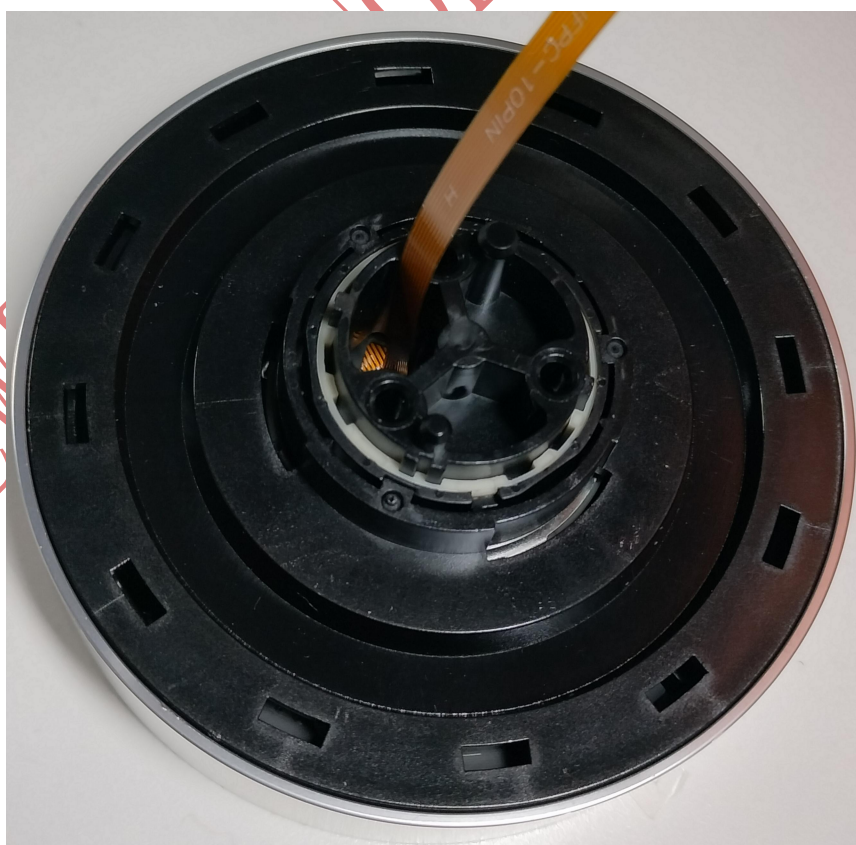5) Interface: UART/USB
6) Support 2.4GHz Wi-Fi、BLE 5、BLE Mesh

Display
1) Size: 2.1 Inch
2) Resolution: 480*480
3) Mode: IPS
4) Brightness: 300 cd/m^2
5) Touch: without

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	Remarks
1	VCC	Power 5V	5V	
2	ADC	GPIO3, ADC IO	0-3.3V	
3	GND	Grounds	0V	
4	NC	NC	-	
5	NC	NC	-	
6	RX	UART Receive	0-3.3V	
7	TX	UART Transmit	0-3.3V	
8	RST	Reset signal, do not connect if not in use	0-3.3V	
9	D+	USB D+	3.3V	
10	D-	USB D-	3.3V	

The connector specifications is 10PIN 0.5mm pitch

2.2 Display Information

Item	Parameter	Description
Color	65K colors	R5G6B5 16bits
AA	53.28(W)*53.28(H)	2.1 inch
Resolution	480*480	Round
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	-	320	-	mA
	VCC= +5V,backlight off	-	100	-	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	80	C
Working Humidity	25°C	10%	60%	90%	RH
ESD	---	Contact: ±4KV 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 2. CPU Frequency: 240MHz (WiFi) 3. Flash Frequency: NO 4. Flash Mode: QIO 80MHz 5. Flash Size: 16MB (128Mb) 6. Partition Scheme: Default 4MB with spiffs (1.2MB APP/1.5MB SPIFFS) 7. PSRAM: OPI PSRAM 8. Programmer: Esptool	ESP32-Arduino config (github.com)
ESP-IDF	5.1.1 5.2.2	Once configured, no configuration is required （If you have any problem with the configuration, please contact us, we will help you）	ESP-IDF config (github.com)

3. MECHANICAL DRAWING
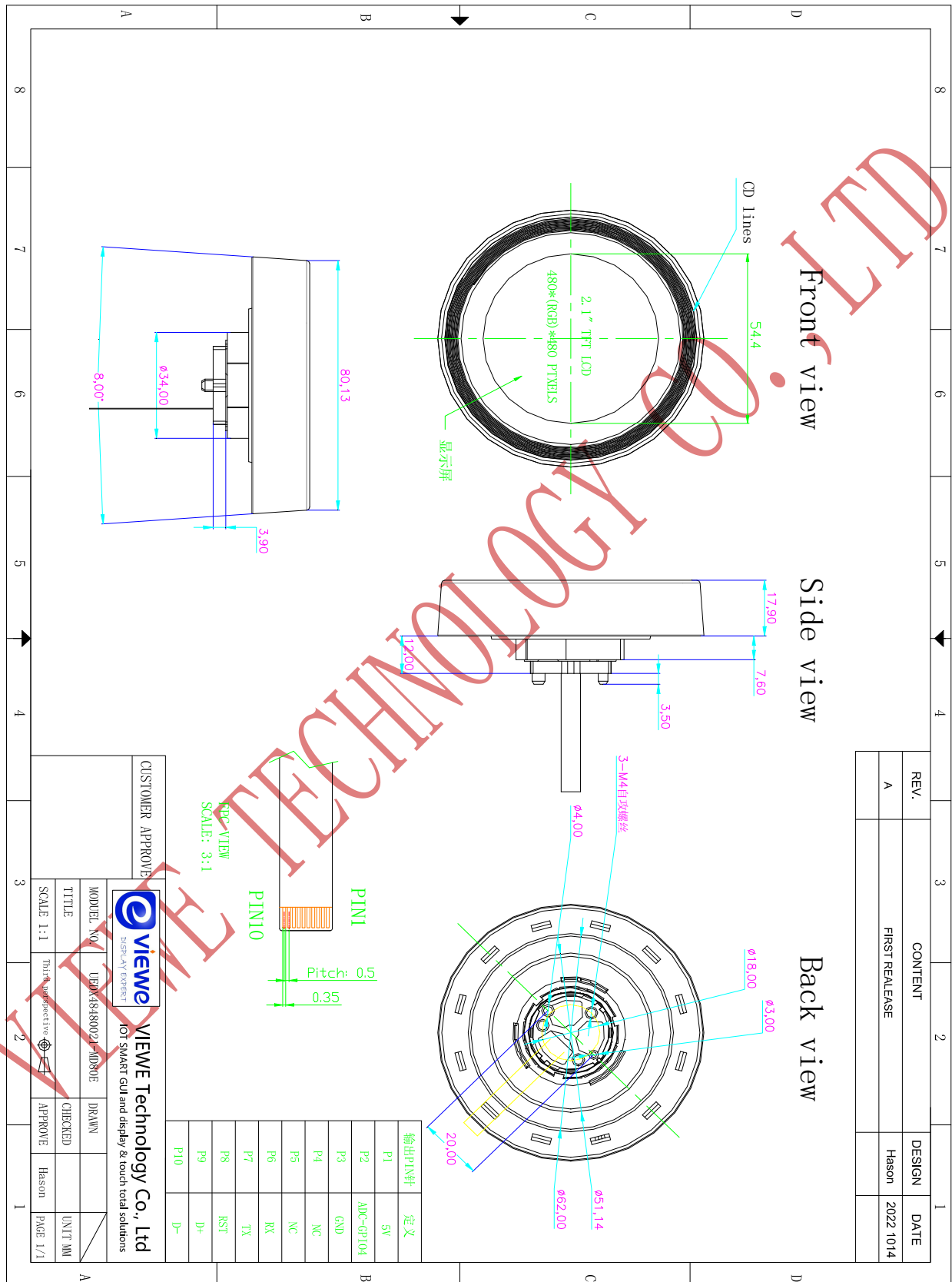
4. Schematic
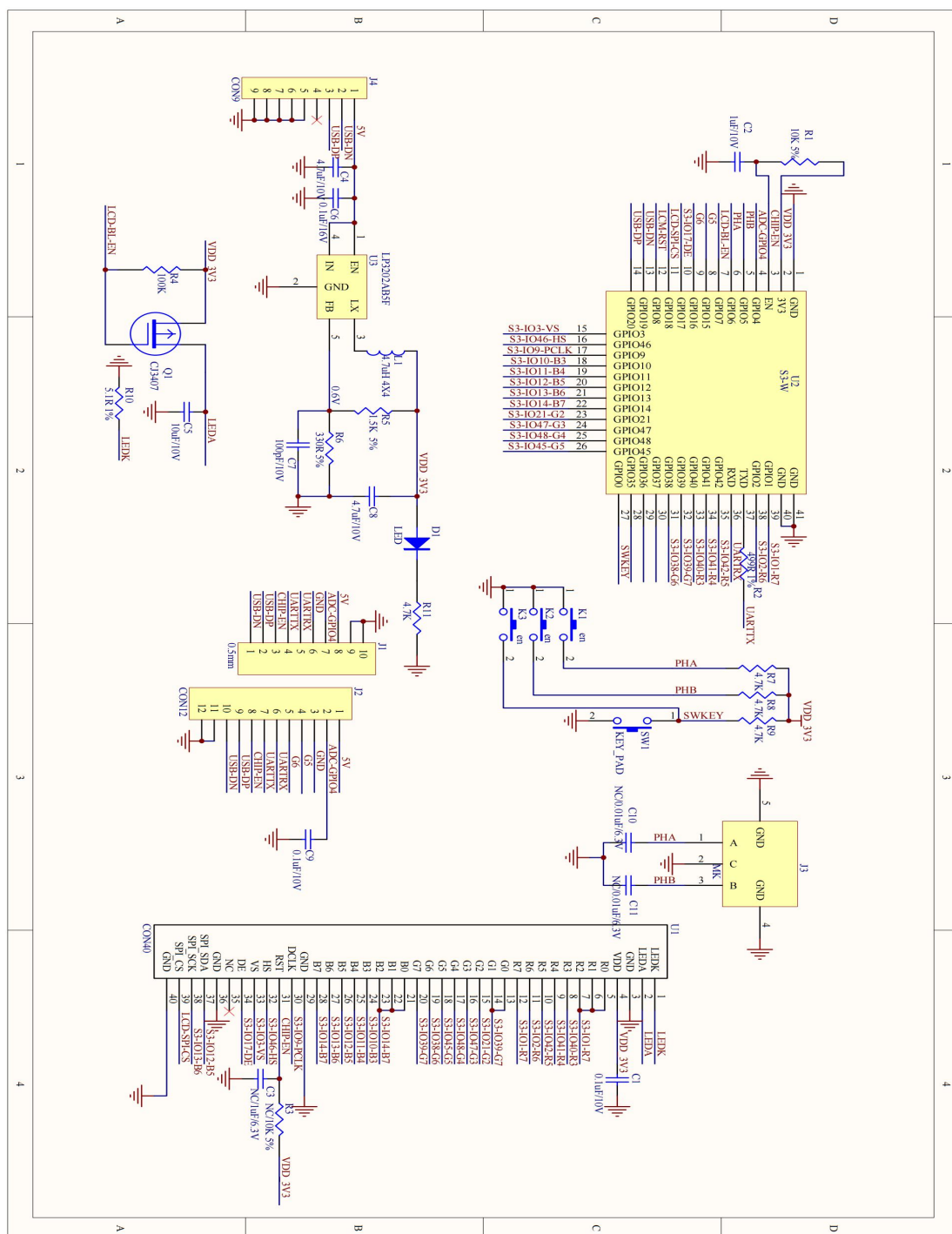
5. Related downloads

5.1 Arduino relevant information

ESP32-Arduino/examples/UEDX48480021-MD80E-Arduino-SDK at main · VIEWESMART/ESP32-Arduino (github.com)

5.2 Libraries required for Arduino

ESP32-Arduino/examples/2.1inch/libraries at main · VIEWESMART/ESP32-Arduino (github.com)

5.3 IDF relevant information

ESP32-IDF/examples/UEDX48480021-MD80E-SDK at main · VIEWESMART/ESP32-IDF (github.com)