SMART DISPLAY MODULE SPECIFICATION

1.5 Inch Smart Knob Display with Touch	
Model:	UEDX46460015-WB-A
Version:	V1.1
Date:	2024-10-16

Customer Confirmation

Approved by	Notes

REVISION HISTORY

Revision	Date	Contents of Revision Change	Remark
V1.0	20241010	Preliminary release	
V1.1	20241016	Add GitHub project links, and environment config links	

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1. Introduction

1.1 Features

Brief Info:

1) Outline Dimension: ϕ51.6 Round
2) Interaction Method: Rotate and Press
3) Shell Color: Black/Silver/Customized
4) Power: DC 5V, 100mA

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

Note: The Bluetooth and WIFI functions are still under test, we will complete them as soon as possible, please forgive the inconvenience caused to you

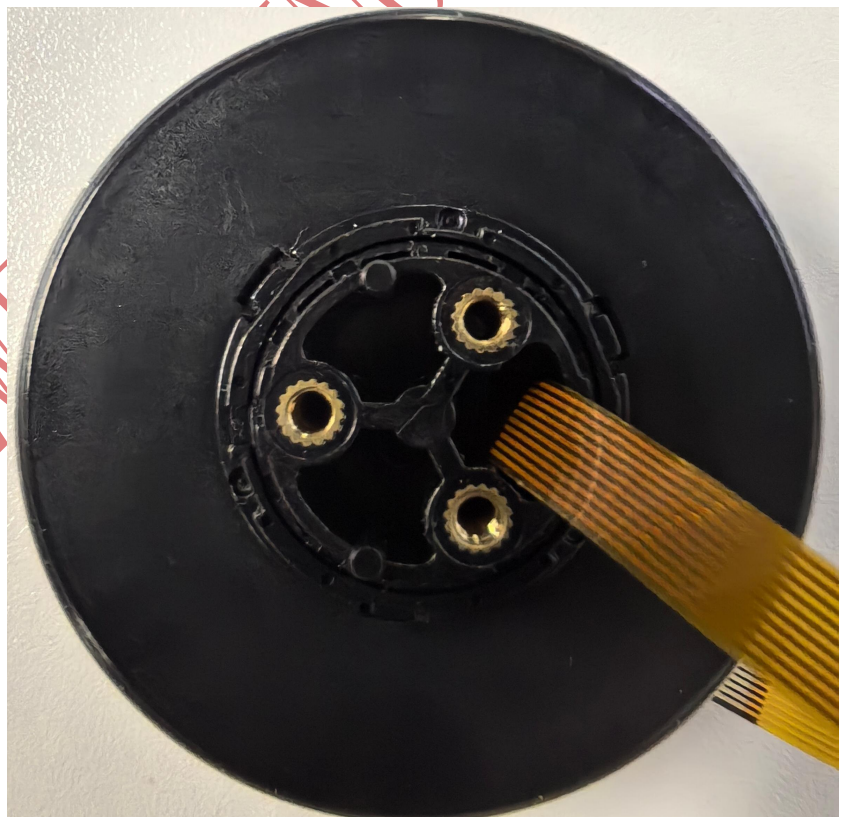
Display

1) Size: 1.5 Inch
2) Resolution: 466*466
3) Mode: AMOLED
4) Driver IC: CO5300AF-42
5) Interface type: QSPI
6) Brightness: 1000 cd/m^2
7) Touch IC: CST820

Other

1) Operation Temperature：-20~60℃
2) Storage Temperature：-30~70℃

1.2 Appearance picture



2. Product information

2.1 Connector Interface Description

Pin NO.	Symbol	Description	Voltage Range	Remarks
1	VCC	Power 5V	5V	
2	GPIO38	GPIO38	-	
3	GND	Grounds	0V	
4	GPIO40	GPIO40	-	
5	GPIO39	GPIO39	-	
6	RX	UART Receive	0-3.3V	
7	TX	UART Transmit	0-3.3V	
8	CHIP-EN	CHIP-EN	0-3.3V	
9	D+	USB D+	3.3V	
10	D-	USB D-	3.3V	

The connector specifications is 10PIN 0.5mm pitch

2.2Display interface description

Pin No.	Symbol	I/O	Description
1	**VCI_EN**	P	Power supply
2	**NC**	-	-
3	**NC**	-	-
4	**NC**	-	
5	**QSPI_SI03**	I	QSPI Data3 input pin
6	**QSPI_SI02**	I	QSPI Data2 input pin
6	**QSPI_SI01**	I	QSPI Data1 input pin
7	**QSPI_SI00**	I/O	QSPI Data0 input pin
9	**NC**	-	-
10	**SCL**	I	SPI pclk input signal
11	**NC**	-	-

12	**CS**	I	Chip selection pin. Low-active
13	**GND**	P	Power Ground
14	**TE**	O	Tearing effect signal is used to synchronize MCU to frame memory
15	**IOVCC**	P	Power supply to the internal logic power regulator
16	**MTP(NC）**	-	-
17	**VBAT**	P	Power supply
18	**RST**	I	The signal will reset the LCM, Signal is active low.
19	**TP_SCL**	I	I2C clock signals for CTP
20	**TP_SDA**	I/O	I2C data signal for CTP
21	**TP_RST**	I	The signal will reset the CTP,Signal is active low
22	**TP_INT**	I	Interrupt signals for CTP
23	**TP_VCC**	P	Power supply for TP
24	**GND**	P	Power Ground

2.3 Display Information

Item	Parameter	Description
Color	16.7M colors	24bits
AA	38.3052*38.3052	1.51 inch
Resolution	466*466	Round
Brightness	1000cd/m2	-
Interface Mode	QSPI	-
Driver IC	CO5300AF-42	-
Pixel Driving element	AMOLED	-

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	100	150	mA
	VCC= +5V,backlight off	-	50	-	mA
Recommended power supply:5V 1A DC					

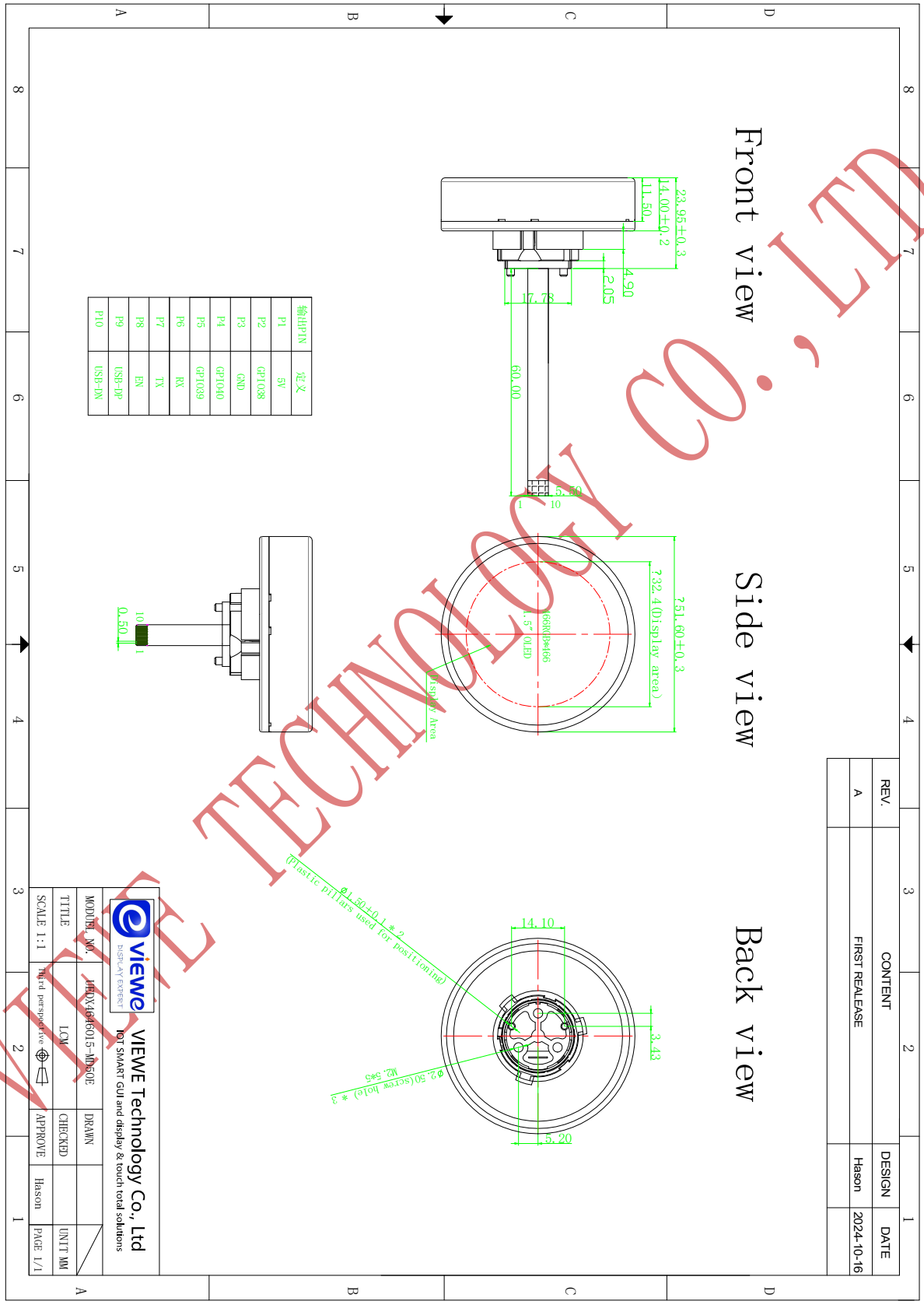
2.5 Reliability Test

Item	Conditions	Min	Typ	Max	Unit
Working Temperature	60%RH at 5V voltage	-20	25	60	C
Storage Temperature	---	-30	25	70	C
Working Humidity	25°C	10%	60%	90%	RH
ESD	---	Contact: ±4KV Air: ±8KV			KV

2.6 Related software

Software name	Version	Software associated configuration	Development environment configuration link
Arduino IDE	Trying to match	1. Board: ESP32S3 Dev Module 2. CPU Frequency: 240MHz (WiFi) 3. Flash Frequency: NO 4. Flash Mode: QlO 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	5.3	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. Related downloads

4.1 Arduino and IDF relevant information

https://github.com/VIEWESMART/UEDX46460015-MD50ESP32-1.5inch-Touch-Knob-Display

4.2 Libraries required for Arduino

https://github.com/VIEWESMART/UEDX46460015-MD50ESP32-1.5inch-Touch-Knob-Display/tree/main/Libraries