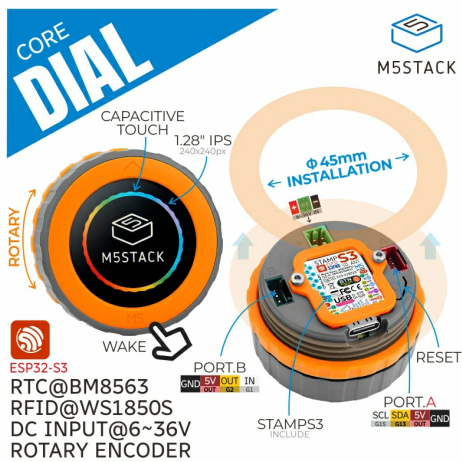


Dial

SKU:K130

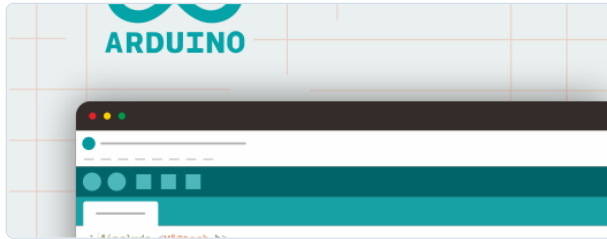


Description

Dial is a versatile embedded development board equipped with a **1.28-inch** circular TFT touch screen, powered by the **Stamp-S3** as the main controller, and includes a built-in rotary encoder for precise knob position recording. Additionally, the board features an RFID detection module, RTC circuit, onboard buzzer, and a screen button for device interaction and wake-up alerts. In terms of power supply, the

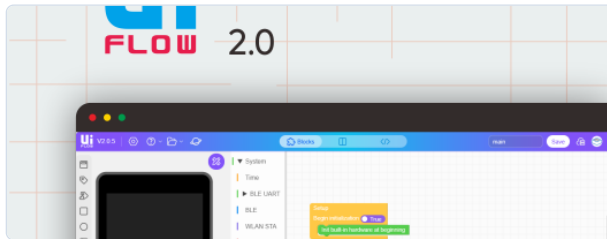
product supports a wide voltage input range of 6 ~ 36V DC and includes a lithium battery interface and charging circuit to meet various needs. Furthermore, the reserved PORT.A and PORT.B interfaces allow for easy expansion of I2C and GPIO devices. This product is suitable for smart home control, IoT projects, smart wearables, access control, industrial control, and educational maker projects.

Tutorial



Arduino IDE

This tutorial will introduce you to how to program and control the Dial device using the Arduino IDE.



UiFlow2

This tutorial will introduce you to how to control the Dial device using the UiFlow2 graphical programming platform.

Features

- Circular TFT touch screen
- Stamp-S3 as the main controller
- Rotary encoder
- RFID detection module
- Wide voltage input
- Interface expansion: Reserved PORT.A and PORT.B interfaces
- Development Platform
 - UiFlow2
 - Arduino IDE
 - ESP-IDF
 - PlatformIO

Includes

- 1 x Dial
- 1 x M2 hex wrench
- 1 x 2.54-2P terminal

Applications

- Smart home control
- IoT projects
- Access control systems
- Industrial control

Specifications

Specification	Parameter
SoC	ESP32-S3FN8 @ Xtensa® 32-bit LX7 dual-core processor, clock frequency 240MHz
USB	USB OTG, USB Serial/JTAG
Flash	8MB
Wi-Fi	2.4 GHz Wi-Fi
Power Supply	USB Type-C DC 5V Rear Power Terminal DC 6 ~ 36V Battery DC 3.7V
Display Driver	GC9A01 1.28 Inch 240x240px
Touch Driver	FT3267
RFID	WS1850S @Tag Operating Frequency: 13.56 MHz, ISO/IEC 14443 Type A/Type B Protocol
Encoder	Resolution: 16 Detents, 64 Pulses/Revolution
Buzzer	80dB
Battery Connector	1.25mm-2P
Sleep Current (Battery-Powered)	DC 4.2V@1.9uA
Operating Current (Rear Power Terminal)	DC 6V Input: DC 6V@140.6mA DC 12V Input: DC 12V@82.5mA DC 36V Input: DC 36V@28.1mA
Operating Temperature	0 ~ 40°C
Power Connector	KF2EDGV-2.54-2P, Straight Pin, 2.54mm Pitch (2-Pin), Green
Product Size	51.0 x 51.0 x 32.3mm
Product Weight	46.3g
Package Size	71.9 x 71.9 x 57.4mm
Gross Weight	61.4g

Learn

Power On/Off

Power On/Off

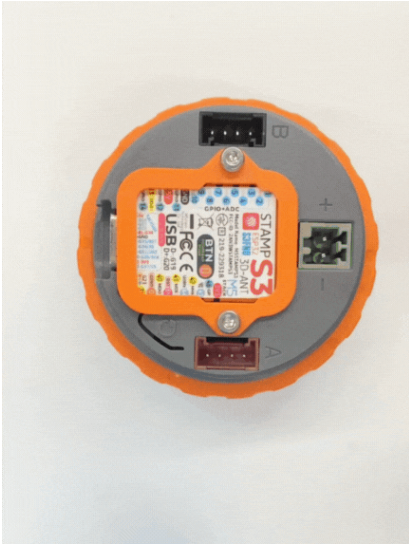
Power On: Can be awakened by pressing the "WAKE" button or by an RTC-triggered IRQ signal. After the wake-up signal is triggered, the program initialization needs to set the hold(G46) pin to high (1) to maintain power, otherwise the device will re-enter sleep mode.

Power Off: When there is no external USB power supply, press the RST button, or when there is no external USB power supply, set HOLD(GPIO46)=0 in the program to power off.

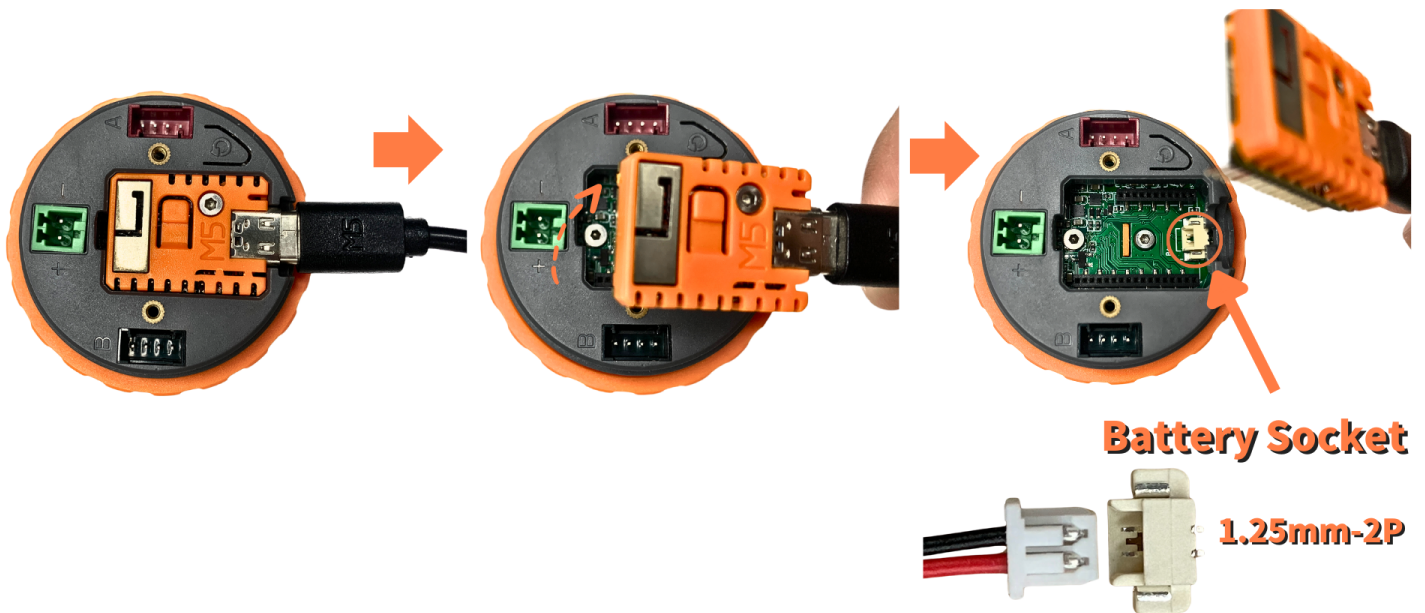
Download Mode

Download Mode

To enter download mode, hold the G0 button on the StampS3 before powering on, and release it after powering on.



Dial Lithium Battery Expansion Interface

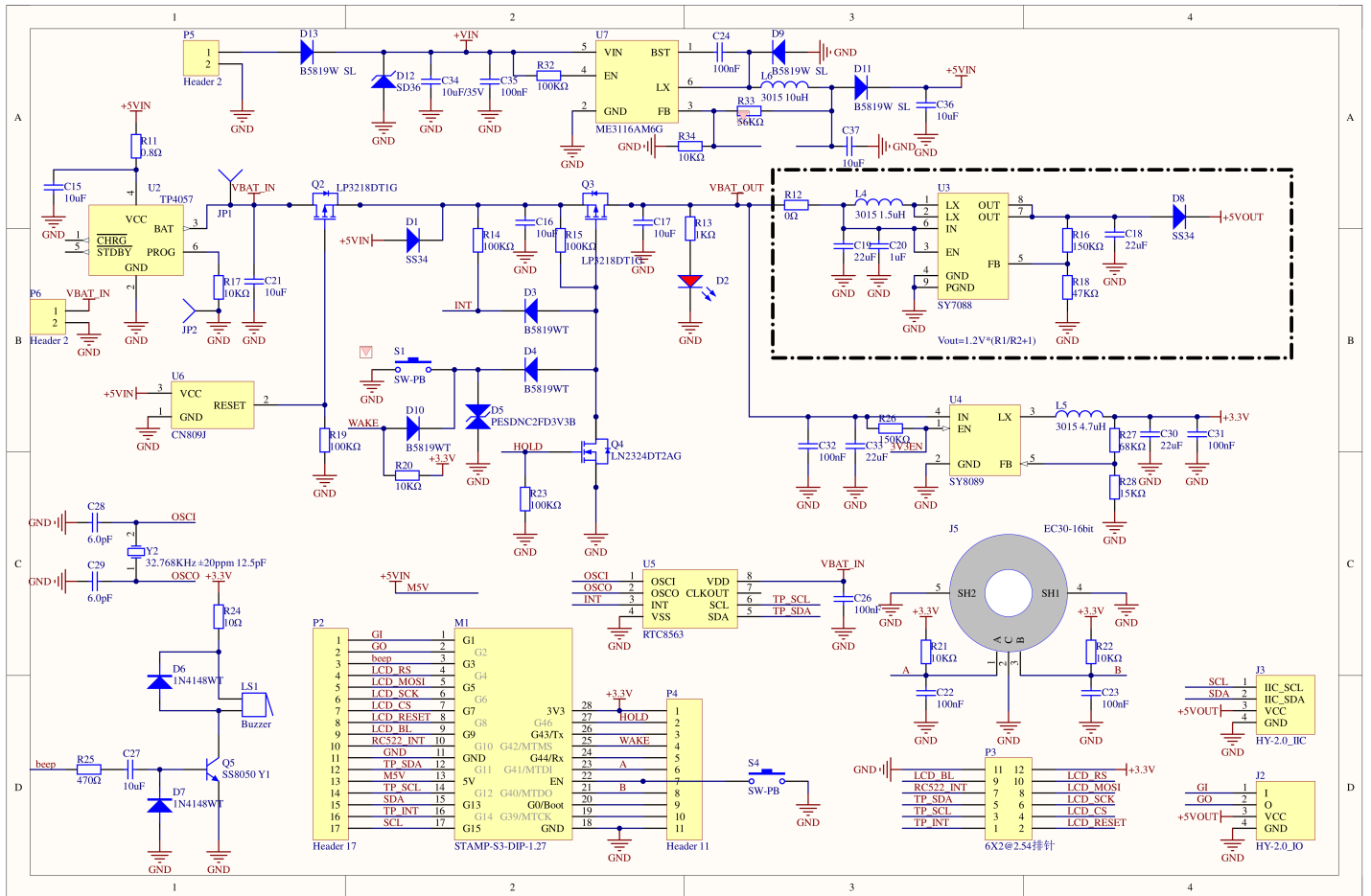
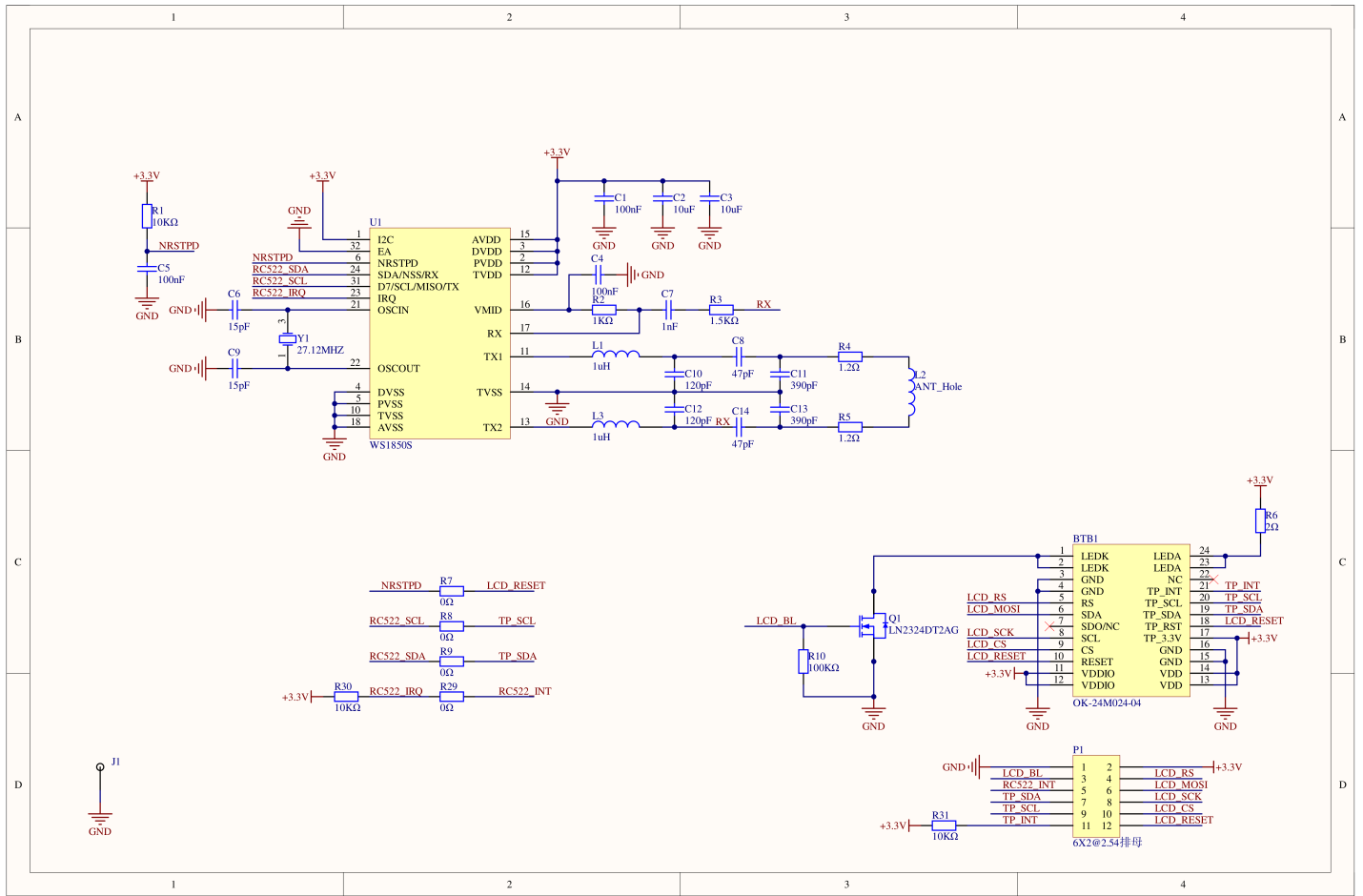


RFID Card

If the size of the RFID tag is smaller than the outer dimensions of the Dial, it may not be recognized or may cause communication errors. It is recommended to use an RFID card in the standard bank card size.

Schematics

- [Dial Schematics PDF](#)



I2C Sensor (RTC8563 & WS1850S)

ESP32-S3	G12	G11	G8	G10	G3
RTC8563 (0x51)	SCL	SDA			
WS1850S(RFID)(0x28)	SCL	SDA	RST	IRQ	
Buzzer					beep

ENCODER

ESP32-S3	G40	G41	VCC	GND
ENCODER	B	A	5V	GND

Screen Driver (GC9A01-SPI) & Touch Driver

ESP32-S3	G4	G5	G6	G7	G8	G9	G11	G12	G14
GC9A01	LCD_RS	LCD_MOSI	LCD_SCK	LCD_CS	LCD_RESET	LCD_BL			
FT3267(0x38)							TP_SDA	TP_SCL	TP_INT

HY2.0-4P

HY2.0-4P	Black	Red	Yellow	White
PORT.A	GND	5V	G13	G15
PORT.B	GND	5V	G2	G1

Structure

- Dial Structure Files

Datasheets

- BM8563
- WS1850S
- DC Power Terminal Specification
- Lithium Battery Holder

Softwares

Arduino

- Dial Arduino Quick Start
- Dial Arduino Driver Library

UiFlow2

- Dial UiFlow2 Quick Start

Easyloader

Easyloader	Download Link	Notes
Dial User Demo Easyloader	download	/
Dial Knob Panel Demo Easyloader	download	/

ESP-IDF

- [Espressif's Board Support Packages - M5Dial](#)
- [Dial User Demo](#)
- [Dial Knob Panel Demo](#)

| Video
