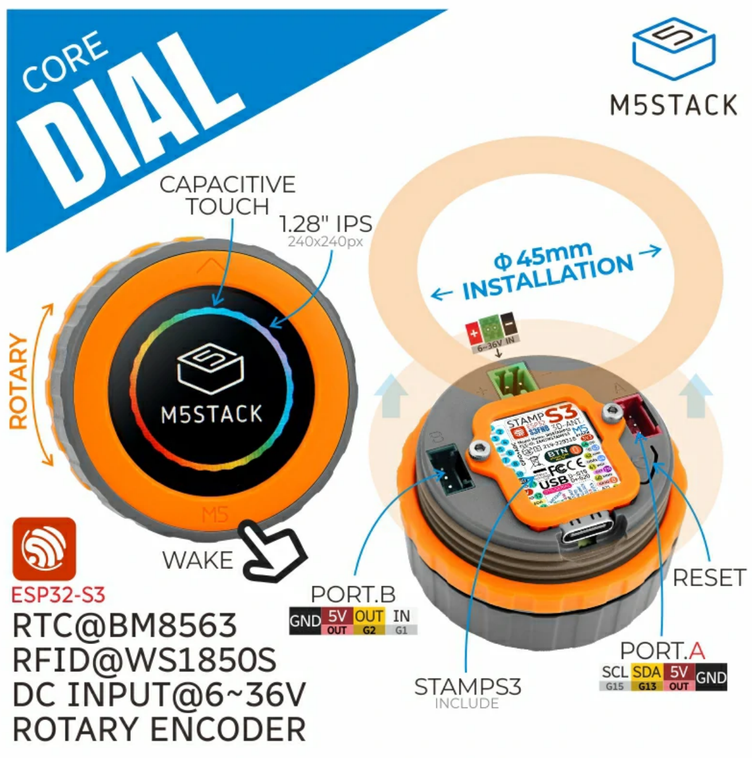
M5Dial

SKU:K130



Description

As a versatile embedded development board, **M5Dial** integrates the necessary features and sensors for various smart home control applications. It features a 1.28-inch round TFT touchscreen, a rotary encoder, an RFID detection module, an RTC circuit, a buzzer, and under-screen buttons, enabling users to easily implement a wide range of creative projects.

The main controller of M5Dial is M5StampS3, a micro module based on the ESP32-S3 chip known for its high performance and low power consumption. It supports Wi-Fi, as well as various peripheral interfaces such as SPI, I2C, UART, ADC, and more. M5StampS3 also comes with 8MB of built-in Flash, providing sufficient storage space for users.

The standout feature of M5Dial is its rotary encoder, which accurately records the position and direction of the knob, delivering a better interactive experience. Users can adjust settings such as volume, brightness, and menu options using the knob, or control home applications like lights, air conditioning, and curtains. The device's built-in display screen allows for displaying different interaction colors and effects.

With its compact size and lightweight design, M5Dial is suitable for various embedded applications. Whether it's controlling home devices in the smart home domain or monitoring and controlling systems in industrial automation, M5Dial can be easily integrated to provide intelligent control and interaction capabilities.

M5Dial also features RFID detection, enabling the recognition of RFID cards and tags operating at 13.56MHz. Users can utilize this function for applications such as access control, identity verification, and payments.Furthermore, M5Dial is equipped with an RTC circuit to maintain

accurate time and date. Additionally, it includes an onboard buzzer and a physical button for device sound prompts and wake-up operations.

In terms of power supply, M5Dial offers flexibility. It supports 6-36V DC input and provides a lithium battery interface and charging circuit, catering to different power requirements. Users can power M5Dial through the Type-C or DC interface and utilize a lithium battery for portable usage. M5Dial also reserves two PORTA and PORTB interfaces, supporting the expansion of I2C and GPIO devices. Users can connect various sensors, actuators, displays, and other peripherals through these interfaces, adding more functionality and possibilities.

> Power-on: WAKE up can be started by pressing the "Wake" button and IRQ signal triggered by RTC periodically. After triggering the wake up signal, the hold(G46) pin needs to be set to a high level (1) during program initialization to maintain the power supply, otherwise the device will enter the sleep state again.
> Shutdown: When no USB external power supply, press the RST key to achieve; Or when there is no USB external power supply, set HOLD(GPIO46)=0 in the program operation, that is, to achieve power off.

Tutorial

Arduino IDE

This tutorial will show you how to program and control M5Dial devices through Arduino IDE

Features

- Circular TFT touch screen
- M5StampS3
- Encoder
- RFID
- 6-36V voltage input
- Interface extension: reserved PORTA and PORTB interfaces
- Programming platform: Arduino, UIFlow、ESP-IDF

Includes

- 1x M5Dial

Applications

- Smart home control
- Internet of Things Project
- Access control system
- industrial control

Specification

Resources	Parameters
MCU	ESP32-S3@Xtensa LX7 ,8M-FLASH和8M-PSRAM,WIFI,OTG\CDC Function
Voltage input range	6-36V
Screen driver	GC9A01 1.28 Inch 240x240px
Touch driver	FT3267
RFID	WS1850S
Standby current (battery-powered standby current)	DC4.2V/1.9uA
Working current	DC6V power supply : DC6V/140.6mA DC12V power supply: DC12V/82.5mA DC36V power supply: DC36V/28.1mA
Product Size	45*45*32.3mm
Package Size	163*120*59mm
Product Weight	46.6g
Package Weight	83.83g

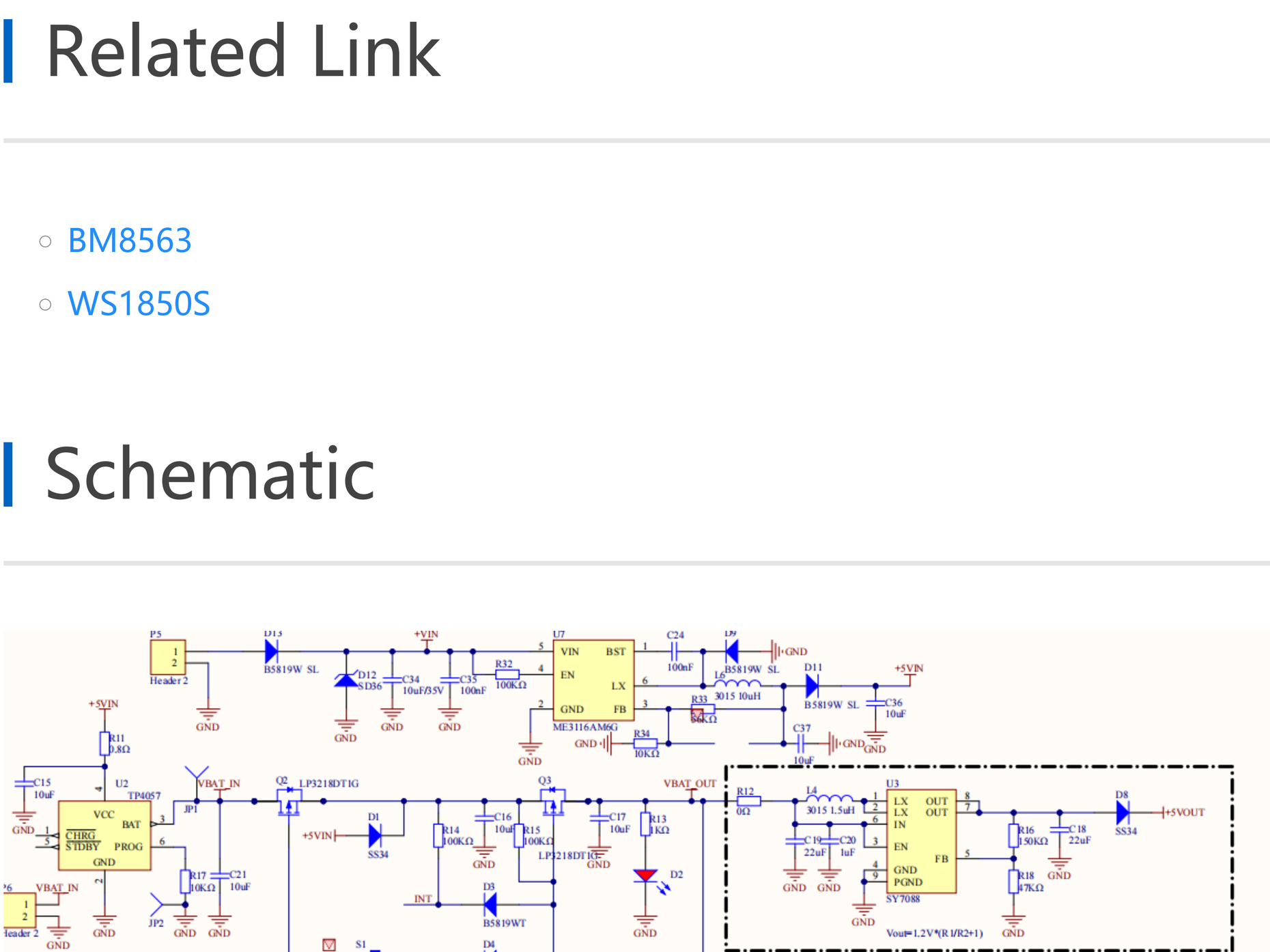
Products related to this item

StampS3 (S007)

Related Link

- BM8563
- WS1850S

Schematic



- Complete schematic pdf

PinMap

PORT A（RED）

M5Dial(PORT A)	SCL	SDA	VCC	GND
	G15	G13	5V	GND

PORT A（BLACK）

M5Dial(PORT B)	IN	OUT	VCC	GND
	G1	G2	5V	GND

I2C Sensor(RTC8563 & WS1850S)

ESP32S3 Chip	G9	G7	VCC	GND
RTC8563	TP_SCL	TP_SDA	5V	GND
WS1850S(RFID)	RC522_SCL	RC522_SCL	5V	GND

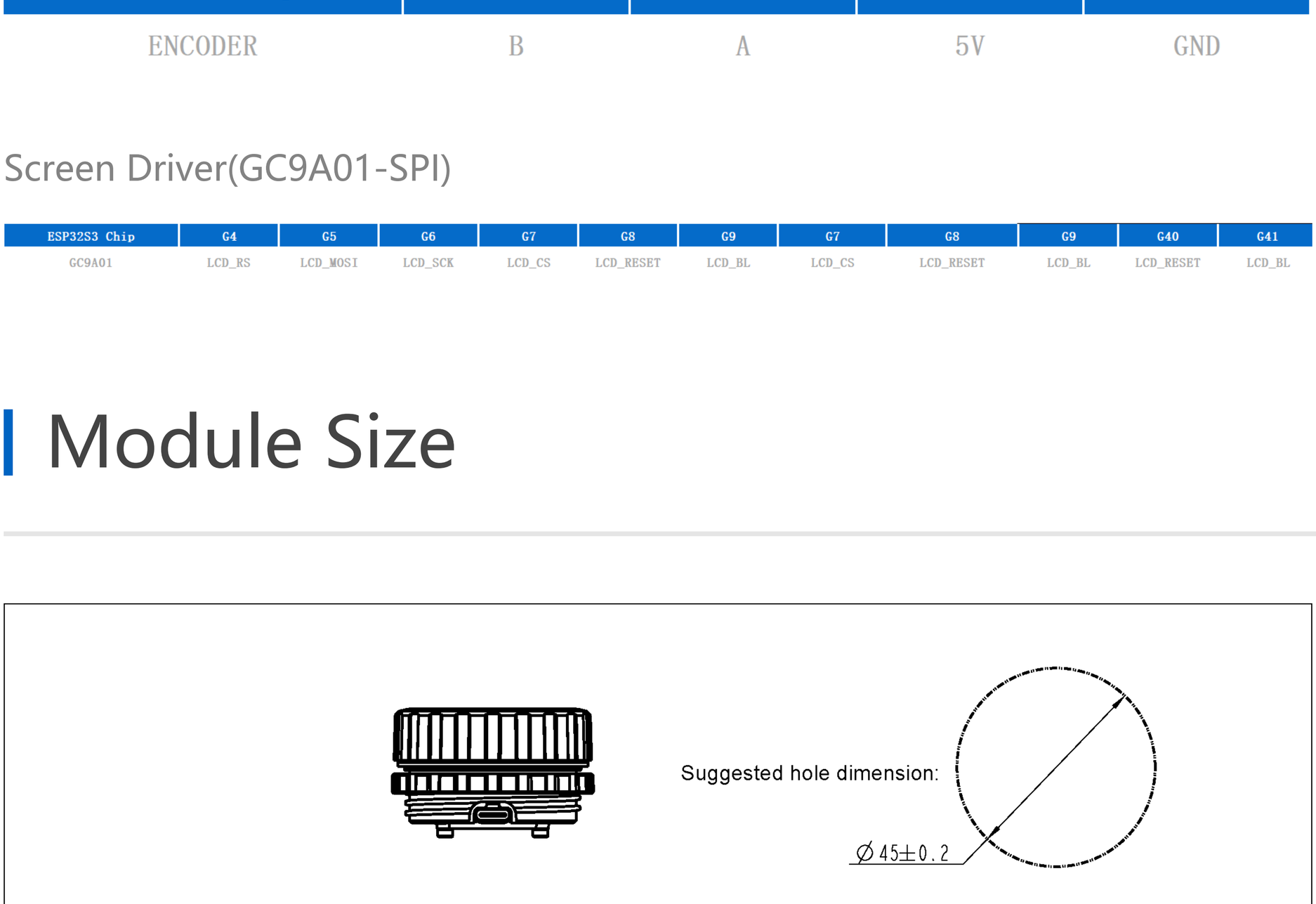
ENCODER

ESP32S3 Chip	G40	G41	VCC	GND
ENCODER	B	A	5V	GND

Screen Driver(GC9A01-SPI)

ESP32S3 Chip	G4	G5	G6	G7	G8	G9	G7	G8	G9	G40	G41
GC9A01	LCD_RS	LCD_MOSI	LCD_SCK	LCD_CS	LCD_RESET	LCD_BL	LCD_CS	LCD_RESET	LCD_BL	LCD_RESET	LCD_BL

Module Size



Examples

Arduino

- M5Dial Library
- M5Dial Demo(the video at the bottom of the article)

Video

- Introduction of M5Dial
- M5Dial Demo