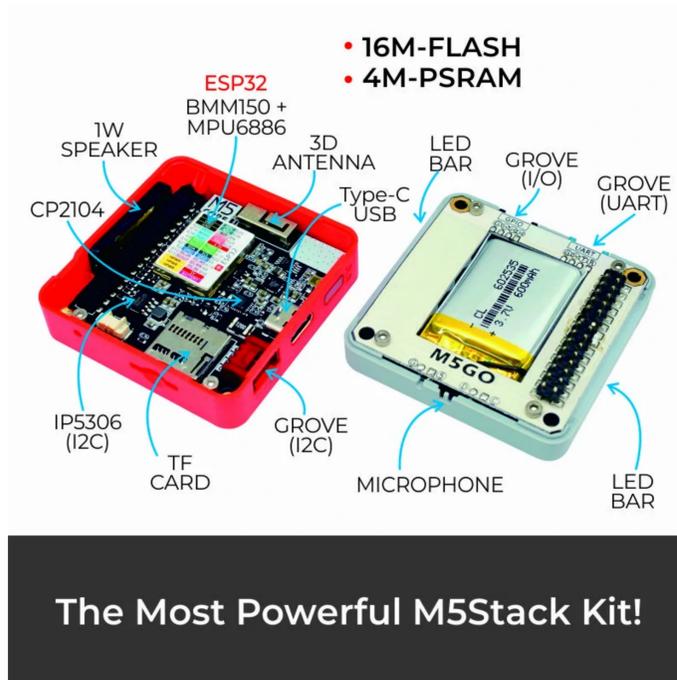


FIRE

U:K007



Tutorial & Quick-Start

Use the development platform you want to use, view the corresponding tutorial & quick-start.

Flow [Arduino](#)

Description

The **M5Stack FIRE Kit**, as one of the M5Stack developing kit series, is an upgrade from the Gray kits. Providing 9-Axis IMU sensor (6-Axis posture acceleration measurement + 3-Axis magnetic measurement), it equips with more hardware resources: 16M Flash + 8M PSRAM, enhanced Base (M5GO Base and M5Stack Base), larger battery, etc. For those developers who ask for hardware performance, Fire will be a good choice.

With a 9-Axis IMU posture sensor, there are a lot of situations which you can apply this kit to: detecting acceleration, angulation, and trajectory. You can make various products like sports data collector, 3D remote gesture controller and more based on the above functions.

The M5Stack FIRE is an M5 Core device. Its modular, stackable, scalable, and portable device is powered with an ESP-32 core, which makes it open source, low cost, full-function, and easy for developers to handle new product development on all stages including circuit design, PCB design, software, mold design and production.

The M5Stack FIRE comes with three separable parts. The top part, just like Basic and Gray Kit, has all kinds of processors, chips, sockets, 2.4G antenna, ESP32, power management IC, a LCD screen and some other interface components. The middle part is called M5GO base which provides a lithium battery, M5Stack Base, LED bar and three more GROVE Ports. The bottom part is a charge table, which can be connected to the M5GO base via POGO pins.

It supports multiple development platforms and programming languages: Arduino, Blockly language with [UIFlow](#), MicroPython. Regardless of what level of programming skill you have, M5Stack would guide you in every step of the way to realize your idea as well as to the final productization.

If you have ever played with ESP8266, you would realize that ESP32 is a perfect upgrade out of ESP8266. In comparison, ESP32 has more GPIOs, more analog inputs and two analog outputs, multiple extra peripherals (like a spare UART). Official development platform ESP-IDF has transplanted with FreeRTOS. With a Wi-Fi core and real-time OS you can get more organized code and much high-speed processor.

Notice:

The GPIO 16 / 17 in Fire is connected to the PSRAM by default, so when you connect or stack other function modules, you

need to avoid conflicts with these two pins to prevent the device from working improperly and causing instability.

Power on/off:

Power on: click the red power button on the left

Power off: Quickly double-click the red power button on the left

Note: By default, when USB is powered, it cannot be shut down**

Product Features

ESP32-based

Speaker, 3 Buttons, LCD(320*240)

TF card slot (16G Maximum size)

Battery Socket & Lipo Battery

Extendable Pins & Holes

I2C-Bus Socket & Pins

Development Platform [UIFlow](#), [MicroPython](#), [Arduino](#)

Package Include

1 x FIRE

1 x M5GO CHG Base

1 x LEGO block

1 x LEGO connector

1 x M3 HEX KEY

1 x Type-C USB(100cm)

1 x User Manual

Applications

Internet of things terminal controller

STEM education product

DIY creation

Specification

Resources	Parameter
ESP32	240MHz dual core, 600 DMIPS, 520KB SRAM, Wi-Fi, dual mode Bluetooth
Flash Memory	16MB
PSRAM	8MB
Power Input	5V @ 500mA
Port	TypeC x 1, GROVE(I2C+I/O+UART) x 1
IPS Screen	2 inch, 320x240 Colorful TFT LCD, ILI9342C, max brightness 853nit
Speaker	1W_0928

Resources	Parameter
Button	Custom button x 3
MEMS	BMM150 + MPU6886
Battery	500 mAh @ 3.7V
Antenna	2.4G 3D Antenna
Operating Temperature	0°C to 60°C
Net weight	62.3g
Gross weight	162g
Product Size	54mm x 54mm x 30.5mm
Package Size	105mm x 65mm x 40mm
Case Material	Plastic (PC)

GO Bottom

[to view details parameters](#)

asyLoader

EasyLoader is a concise and fast program writer, which has a built-in case program related to the product. It can be burned to the main control by simple steps to perform a series of function verification.

[Download Windows Version Easyloader](#)

Description:

Load UIFlow firmware, built-in demo program supports testing of accelerometer, LED BAR, microphone, buttons and some peripheral sensors. The firmware can be used for UIFlow graphical programming.

peripherals Pin Map

& TF card

: 320x240 TF card Maximum size 16GB

SP32 Chip	GPIO23	GPIO19	GPIO18	GPIO14	GPIO27	GPIO33	GPIO32
ILI9342C	MOSI/MISO	/	CLK	CS	DC	RST	BL
TF Card	MOSI	MISO	CLK				

on & Speaker

ESP32 Chip	GPIO39	GPIO38	GPIO37	GPIO25
------------	--------	--------	--------	--------

ESP32 Chip	GPIO39	GPIO38	GPIO37	GPIO25
Button Pin	BUTTON A	BUTTON B	BUTTON C	/
Speaker				Speaker Pin

VE Port A & IP5306

Use the customized I2C version of IP5306, on power management.

I2C address is 0x75. Click [here](#) to check its datasheet

ESP32 Chip	GPIO22	GPIO21	5V	GND
GROVE A	SCL	SDA	5V	GND
IP5306	SCL	SDA	5V	GND

06 charging/discharging, Voltage parameter

charging	discharging
0.00 ~ 3.40V -> 0%	4.20 ~ 4.07V -> 100%
3.40 ~ 3.61V -> 25%	4.07 ~ 3.81V -> 75%
3.61 ~ 3.88V -> 50%	3.81 ~ 3.55V -> 50%
3.88 ~ 4.12V -> 75%	3.55 ~ 3.33V -> 25%
4.12 ~ / -> 100%	3.33 ~ 0.00V -> 0%

is MotionTracking Sensor MPU6886

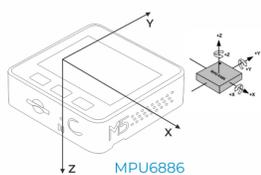
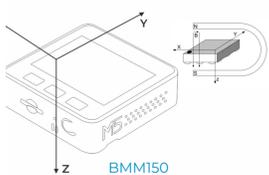
6886 I2C address 0x68

ESP32 Chip	GPIO22	GPIO21	5V	GND
MPU6886	SCL	SDA	5V	GND

is Geomagnetic Sensor BMM150

1150 I2C address 0x10

ESP32 Chip	GPIO22	GPIO21	5V	GND
BMM150	SCL	SDA	5V	GND



15GO Base Port

VE Port B

ESP32 Chip	GPIO36	GPIO26	5V	GND
GROVE B	GPIO36	GPIO26	5V	GND

VE Port C

ESP32 Chip	GPIO16	GPIO17	5V	GND
GROVE C	RXD	TXD	5V	GND

Bar & Micphone & Speaker

ESP32 Chip	GPIO15	GPIO34	GPIO25
Hardwares	SIG Pin	MIC Pin	Speaker Pin

15PORT EXPLAIN

PORT	PIN	Note:
PORT-A(Red)	G21/22	I2C
PORT-B(Black)	G26/36	DAC/ADC
PORT-C(Blue)	G16/17	UART

SP32 ADC/DAC

ADC1	ADC2	DAC1	DAC2
8 channels	10 channels	2 channels	2 channels
G32-39	G0/2/4/12-15/25-27	G25	G26

I-BUS

Analog Function	M-BUS			Analog Function	GPIO TYPE
	LINE 0	LINE 1			
	GND	ADC	G35	ADC1_CH7	I
	GND	ADC	G36	ADC1_CH0	I
	GND	RST	EN		
	G23	MOSI	DAC/SPK	G25	ADC2_CH8 I/O/T
	G19	MISO	DAC	G26	ADC2_CH9 I/O/T
	G18	SCK	3.3V		
	G3	RXD1	TXD1	G1	I/O/T
	G16	RXD2	TXD2	G17	I/O/T
	G21	SDA	SCL	G22	I/O/T
ADC2_CH2/T2	G2	GPIO	GPIO	G5	I/O/T
ADC2_CH5	G12	IIS_SK	IIS_WS	G13	ADC2_CH4/T4 I/O/T
ADC2_CH3/T3	G15	IIS_OUT	IIS_MK	G0	ADC2_CH1/T1 I/O/T
	HPWR	IIS_IN	G34	ADC1_CH6	I
	HPWR	5V			
	HPWR	BATTERY			

n using the RGB LED of gpio15, it is recommended to initialize, pinMode(15, OUTPUT_OPEN_DRAIN); For more information about Pin assignment ar emapping, Please refer to [ESP32 Datasheet](#)

chematic

Related Link

Datasheet

- [ESP32](#)
- [MPU6886](#)
- [BMM150](#)
- [SH200Q](#)
- [IP5306](#)

API

- [Arduino API](#)

Learn



M5Stack Christmas Snow Globe

Modern times make modern solutions possible. Therefore, the step to a digital snow globe is not that far.



Q-Bot

We aim to build a robot that is effective in sanitizing surfaces without putting cleaners in harm's way.



Office M5Stack Assistant

An IoT office assistant with "free, busy and lunch" indicators, Pomodoro timers and quick meetings with IFTTT and your calendar integration.



Audio Spectrum Display with M5Stack

An audio spectrum visualiser using the M5Stack internal mic or FC-04 sound sensor with the M5Stack core. Translated from a guide by macsbug



M5Stack COM.LoRaWAN Using UIFlow

M5Stack recently released an updated LoRaWAN module. This tutorial teaches you how to connect it to The Things Network using UIFlow.



RTC Modules with M5Stack

Out of the M5Stack family only the M5StickC has an inbuilt RTC. Here's how to add one to your other M5Stack devices

Example

Arduino

[Click here](#) to get Arduino code

Version Change

Release Date	Product Change	Note:
2018.6	Initial public release	/
2019.7	MPU9250 changed to SH200Q+BMM150, TN screen changed to IPS screen	before use . pls upgrade your M5Stack lib to the latest version (after 0.2.8) to solve screen reverse color problem.
2019.8	SH200Q changed to MPU6886	/
2019.11	Battery capacity changed from 600mAh to 500mAh	/
2020.4	PSRAM Size changed from 4MB to 8MB	/