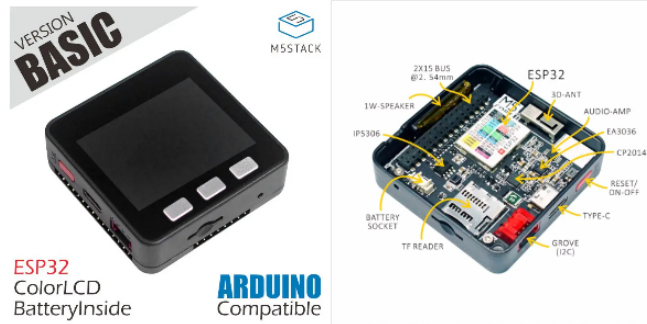


# BASIC SKU:K001



ESP32  
ColorLCD  
BatteryInside

ARDUINO  
Compatible

## Description

M5Stack BASIC Kit, like its namesake, is a starter kit among the M5Stack development kit series. It's a modular, stackable, scalable, and portable device which 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. This Basic kit provides a friendly price and full-featured resources which makes it a good starter kit for you to explore IoT.

If you want to explore the fastest way of IoT prototyping, M5Stack development board is the perfect solution. Not like others, M5Stack development board is highly efficient, covered with industrial grade case and ESP32-based development board. It integrates with Wi-Fi & Bluetooth modules and contains a dual-core and 16MB of SPI Flash. Together with 30+ M5Stack stackable modules, 40+ extendable units and different levels of program language, you can create and verify your IoT product in a very short time.

Supportive development platforms and programming languages: Arduino, Blockly language with [UIFlow](#), MicroPython. Regardless of what level 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 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 developing platform ESP-IDF has transplanted with FreeRTOS. With dual-core and real time OS you can get more organized code and much high speed processor.

M5Stack Basic consists with two separable parts. The upside part has all kinds of processors, chips and some other slot components. The bottom part has a lithium battery, M-BUS socket and extendable pins on both sides.

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

## Product Features

- ESP32 -based
- Built-in Speaker, Buttons, Color LCD, Power/Reset button
- TF card slot (16G Maximum size)
- Magnetic suction at back
- Extendable Pins & Holes
- M-Bus Socket & Pins
- Program Platform: [UIFlow](#), [MicroPython](#), [Arduino](#)

## Include

- 1x BASIC
- 10x Dupont
- 1x Type -C USB(20cm)
- 1x User Manual
- 1x Sticker

## Applications

- Internet of things terminal controller
- Stem education product
- DIY creation
- Smart home equipment

## Specification

Resources	Parameter
ESP32	240MHz dual core, 600 DMIPS, 520KB SRAM, Wi-Fi, dual mode Bluetooth

Flash Memory	16MB
Power Input	5V @ 500mA
Port	TypeC x 1, GROVE(I2C+I/O+UART) x 1
Core Bottom Port	PIN (G1, G2, G3, G16, G17, G18, G19, G21, G22, G23, G25, G26, G35, G36)
IPS Screen	2 inch, 320x240 Colorful TFT LCD, ILI9342C, max brightness 853nit
Button	Custom button x 3
Speaker	1W-0928
Battery	110mAh @ 3.7V
Antenna	2.4G 3D Antenna
Operating Temperature	32°F to 104°F ( 0°C to 40°C )
net weight	47.2g
Gross weight	93g
Product Size	54 x 54 x 18mm
Package Size	95 x 65 x 25mm
Case Material	Plastic ( PC )

## EasyLoader

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. Please install the corresponding driver according to the device type. M5Core host [Please click here to view the CP210X driver installation tutorial](#), M5StickC/V/T/ATOM series can be used without driver)

## PinMap

### LCD & TF card

LCD : 320x240 TF card Maximum size 16GB

ESP32 Chip	GPIO23	GPIO19	GPIO18	GPIO14	GPIO27	GPIO33	GPIO32	GPIO4
ILI9342C	MOSI/MISO	/	CLK	CS	DC	RST	BL	
TF Card	MOSI	MISO	CLK				CS	

### Button & Speaker

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

### GROVE Port A & IP5306

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

## IP5306 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%

## M5PORT EXPLAIN

PORT	PIN	Note:
PORT-A(Red)	G21/22	I2C
PORT-B(Black)	G26/36	DAC/ADC

## ESP32 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

For more information about Pin assignment and Pin Remapping, Please refer to [ESP32 Datasheet](#)

## Related Link

### Datasheet

[ESP32](#)  
[IP5306](#)

## Schematic

[Schematic](#)

## Version Change

Release Date	Product Change	Note:
2017.7	Initial public release	/
2019.7	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.
2020.3	Battery capacity changed from 150mAh to 110mAh	/
2020.6	Flash size changed from 4MB to 16MB	/

## Example

### Arduino IDE

[Click here](#) to get Arduino code

## Video

M5Stack Introduce