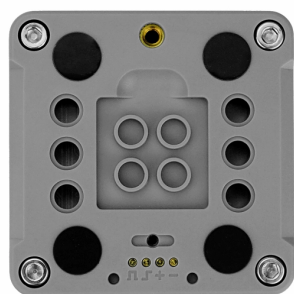
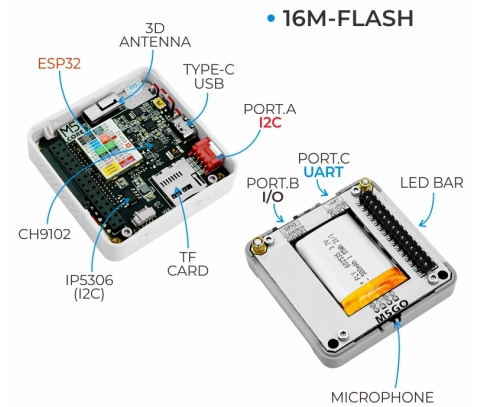


M5GO IoT Kit v2.6

SKU:K006-V26





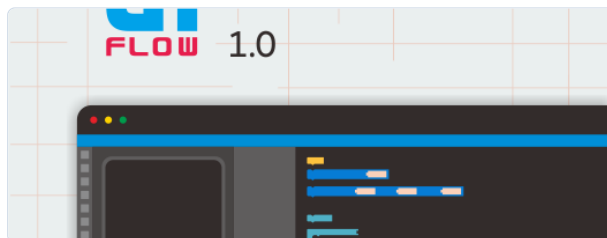
Description

M5GO IoT Kit v2.6 is a cost-effective entry-level IoT development kit.

The kit contains a **core controller M5GO** plus **6 expansion Units** with different functions (sensor / actuator / hub).

The core controller **M5GO** adopts Espressif's **ESP32** chip and integrates two low-power **Xtensa® 32-bit LX6** processors running at up to **240 MHz**. With the **16MB Flash** on board, it can accommodate larger programs. In addition to powerful hardware performance, the MCU also supports **Wi-Fi**, enabling applications such as wearable devices and **smart-home** projects.

Tutorial



UIFlow

This tutorial shows you how to control the M5GO device with the UIFlow graphical programming platform.



UiFlow2

This tutorial shows you how to control the M5GO device with the UiFlow2 graphical programming platform.



Arduino IDE

This tutorial shows you how to program and control the M5GO device using the Arduino IDE.

Features

- ESP32-based development
- 16MB Flash
- Integrated full-color HD IPS display panel and multiple hardware peripherals
- Rich I/O interfaces; fully compatible with the M5Stack stacking-module and sensor ecosystem, offering great scalability
- Base openings compatible with 8 mm LEGO bricks for fun structural building
- Microsoft Azure Certified Device
- Development Platform

- UiFlow1
- UiFlow2
- Arduino IDE
- ESP-IDF
- PlatformIO

M5GO IoT Controller

- **Low-code development:**
 - Supports UIFlow graphical programming, scripting, compilation-free workflow, and cloud pushing
 - Fully compatible with Arduino, ESP32-IDF and other mainstream development platforms
 - Supports FreeRTOS; dual-core and multitasking mechanism help organize task logic efficiently and optimize program performance
- **High integration:**
 - 2.0-inch IPS display, 6-axis IMU, programmable RGB LEDs × 10, microphone, speaker, and 3 customizable buttons
 - Built-in battery, integrated power-management chip, power supply via Type-C and POGO PIN interfaces
 - Professionally tuned RF circuit provides stable and reliable wireless communication quality
- **Great expandability:**
 - GROVE expansion ports × 3 (I2C, GPIO, UART)
 - Easily connect to the M5Stack software and hardware ecosystem; stackable module design and plug-and-play sensor expansion

6× Expansion Units

- Unit ENV-III: **Temperature, humidity & barometric pressure sensor**, I2C interface for quick environmental data acquisition.
- Unit PIR: **Human presence sensor**, passive infrared principle for body detection, digital output.
- Unit Angle: **Rotary potentiometer**, analog input suitable for music / light adjustment.
- Unit IR: Integrated **infrared transmitter and receiver**, freely programmable for IR transmission and reception.
- Unit RGB: 3× **programmable RGB LEDs**, support arbitrary color display via programming.
- Unit Hub: **I2C splitter**, expands one I2C bus into three, allowing devices with different **I2C addresses** to connect.

| Includes

- 1 × M5GO
- 6 × Units (Unit ENV-III, Unit PIR, Unit Angle, Unit IR, Unit RGB, Unit Hub)
- 4 × LEGO bricks
- 12 × LEGO connectors
- 4 × GROVE cables
- 1 × USB Type-C Cable (20 cm)
- 1 × M2 × 12 mm machine screw
- 2 × M3 × 16 mm machine screws
- 1 × Hex Key L-Shape 1.5 mm (For M2 Screw)
- 1 × Quick Start Guide

| Applications

- STEM education
- IoT controller
- Smart home
- Smart weather station

Specifications

Specification	Parameter
SoC	ESP32-D0WDQ6-V3 @ Xtensa® 32-bit LX6 dual-core processor, clock frequency 240MHz
DMIPS	600
SRAM	520KB
Flash	16MB
Wi-Fi	2.4 GHz Wi-Fi
Input Voltage	5V@500mA
Host Interface	USB Type-C x1, POGO PIN x1, I2C x1, GPIO x1, UART x1
IPS Display	2 inch, 320x240 Colorful TFT LCD, ILI9342C, 853nit max brightness
Buttons	Custom Keys x 3
Speaker	1W-0928
Microphone	Analog BSE3729 Microphone
IMU	6-axis MPU6886
USB Chip	CH9102F
LED	SK6812 RGB LED x 10
Antenna	2.4G 3D antenna
Battery	500mAh@3.7V
Operating Temperature	0 ~ 40°C
Case Material	Plastic (PC)
Product Size	54.0 x 54.0 x 21.0mm
Product Weight	56.4g
Package Size	147.0 x 90.0 x 40.0mm
Gross Weight	228.0g

Note

BMM150 Magnetic Interference

Products containing magnets may interfere with the BMM150 magnetic sensor, resulting in abnormal readings. When used together with M5 main controllers that include magnets, please remove the magnets and avoid placing the BMM150 sensor near strong magnetic fields.

Operation Instructions

Power On/Off

- Power on: single-click the red power button on the left side
- Power off: quick double-click the red power button on the left side
- USB power: by default, the device cannot be powered off while USB powered

[Click for detailed parameters](#)[illegible]

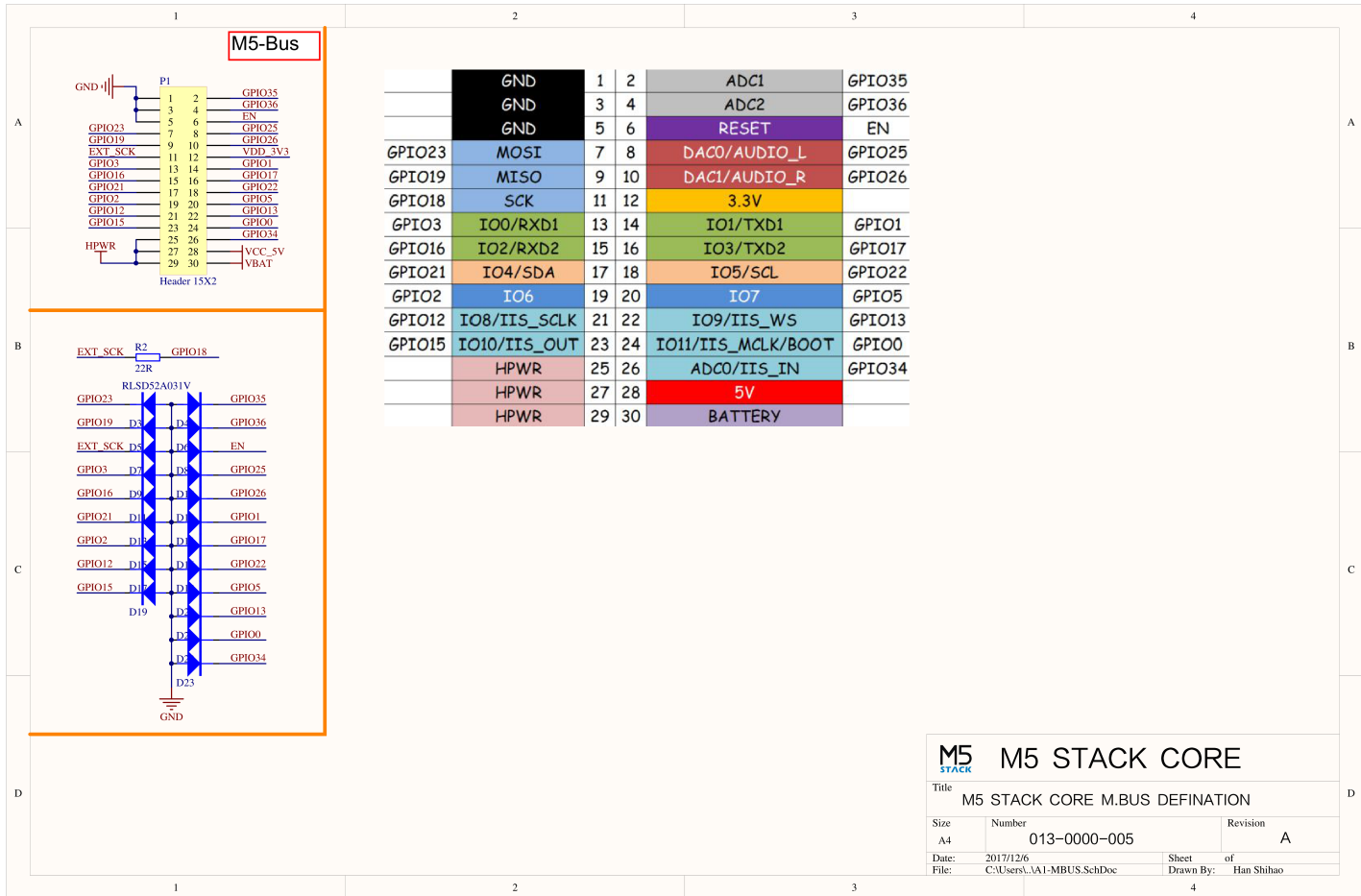
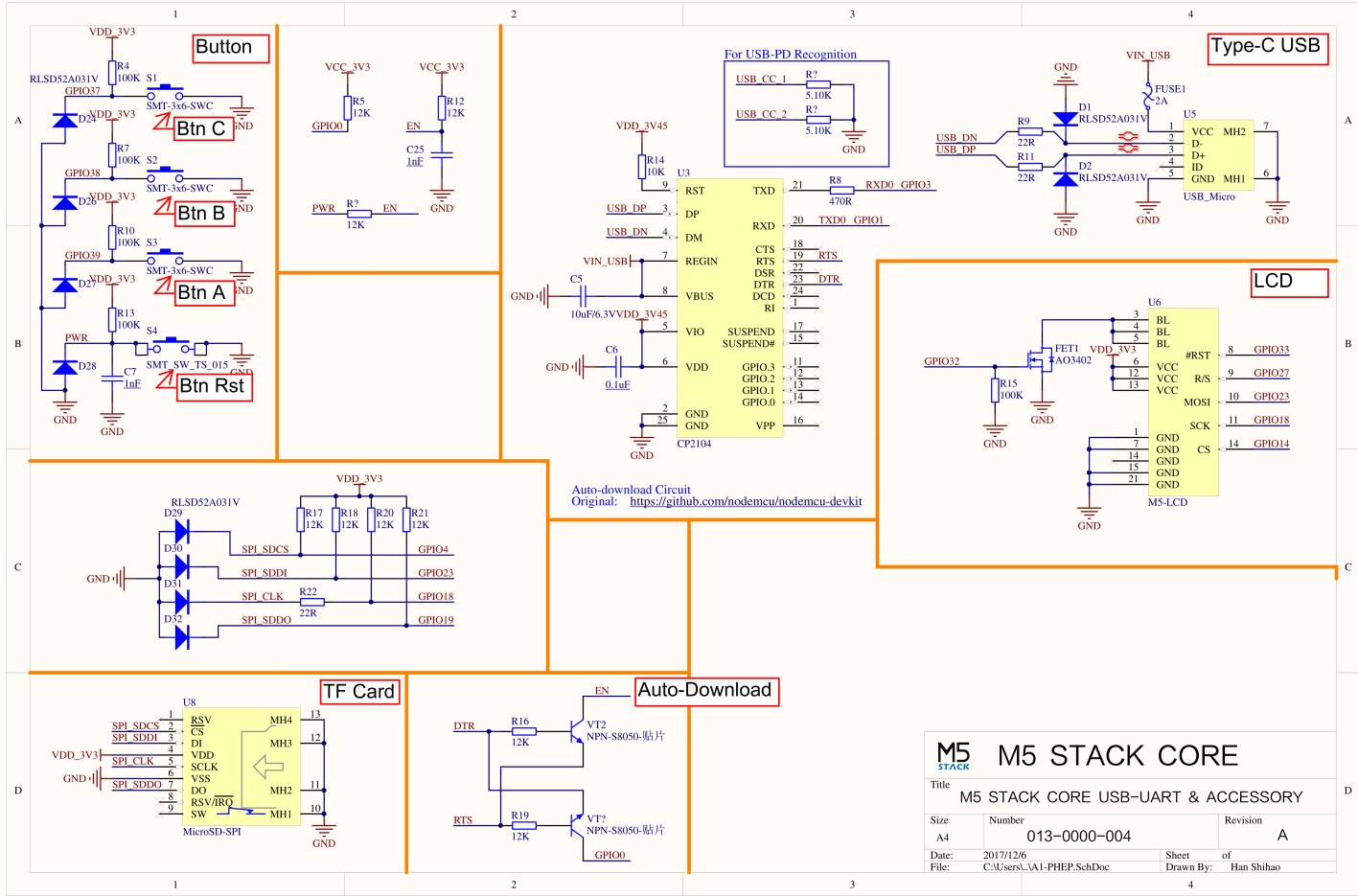
- [M5Core Schematics PDF](#)

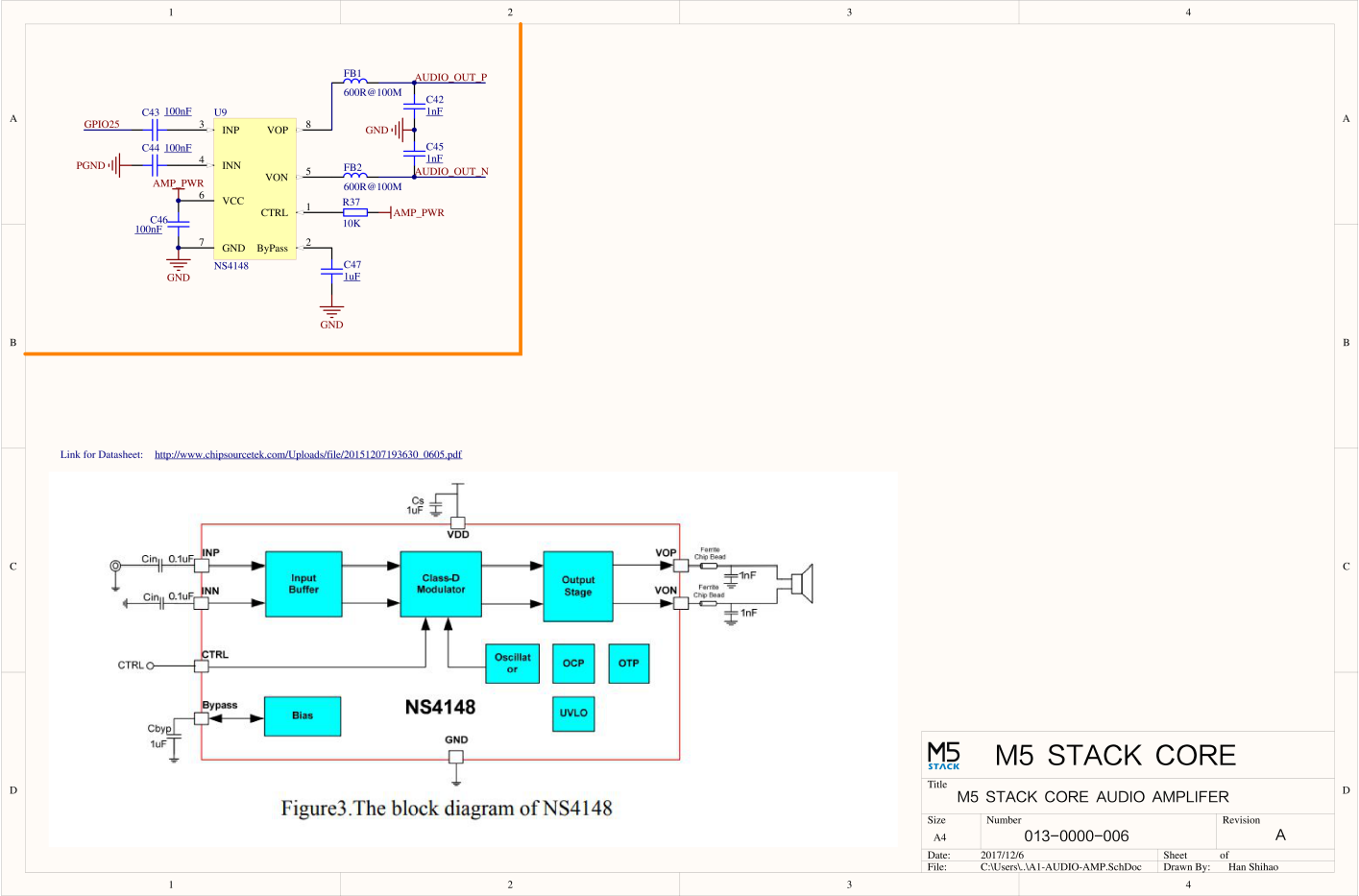
REV	DESCRIPTION	DATE	BY
A13	OFFICIAL RELEASE VERSION	10/11/2017	Han

PAGE NO.	SCHEMATIC PAGE
1	COVER PAGE
2	POWER MANAGEMENT
3	ESP32 SUBSYSTEM
4	USB-UART & ACCESSORY
5	M.BUS DEFINITION
6	AUDIO AMPI IFFR

M5 STACK

 M5 STACK CORE			
Title			
M5 STACK CORE COVER			
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PinMap

LCD Screen & TF Card

LCD resolution: 320 × 240
TF card supports up to 16 GB

ESP32 Chip	G23	G19	G18	G14	G27	G33	G32	G4
ILI9342C	MOSI/MISO	/	CLK	CS	DC	RST	BL	
TF Card	MOSI	MISO	CLK					CS

Buttons & Speaker

ESP32 Chip	G39	G38	G37	G25
Button Pins	BUTTON A	BUTTON B	BUTTON C	
Speaker				Speaker Pin

GROVE Port A & IP5306

The power-management chip (IP5306) is a customized I2C version with address 0x75. Click [here](#) to view the IP5306 register manual.

ESP32 Chip	G22	G21	5 V	GND
GROVE A	SCL	SDA	5 V	GND
IP5306 (0x75)	SCL	SDA	5 V	GND

IP5306 Charge / Discharge Voltage Parameters

Charging	Discharging
0.00 ~ 3.40 V → 0 %	4.20 ~ 4.07 V → 100 %
3.40 ~ 3.61 V → 25 %	4.07 ~ 3.81 V → 75 %
3.61 ~ 3.88 V → 50 %	3.81 ~ 3.55 V → 50 %
3.88 ~ 4.12 V → 75 %	3.55 ~ 3.33 V → 25 %
4.12 ~ / → 100 %	3.33 ~ 0.00 V → 0 %

MPU6886 Gyroscope & Accelerometer

MPU6886 I2C address 0x68

ESP32 Chip	G22	G21	5 V	GND
MPU6886 (0x68)	SCL	SDA	5 V	GND

M5GO Base PinMap

LED Strip & Microphone MIC

ESP32 Chip	G15	G34	G25
LED Strip	Signal Pin		
MIC		MIC Pin	

ESP32 ADC/DAC

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

HY2.0-4P

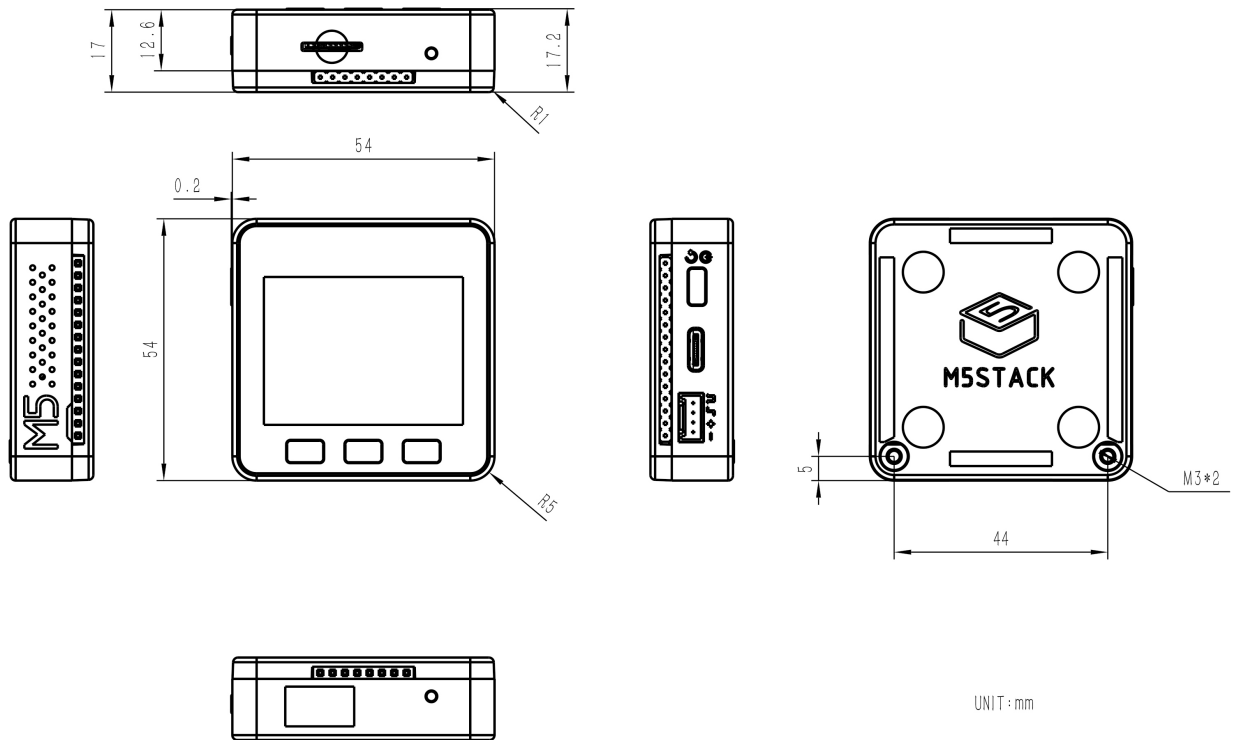
HY2.0-4P	Black	Red	Yellow	White
PORT.A	GND	5V	G21	G22
PORT.B	GND	5V	G26	G36
PORT.C	GND	5V	G17	G16

M5-Bus

FUNC	PIN	LEFT	RIGHT	PIN	FUNC
	GND	1	2	G35	ADC
	GND	3	4	G36	ADC
	GND	5	6	RST	EN
MOSI	G23	7	8	G25	DAC/SPK
MISO	G19	9	10	G26	DAC
SCK	G18	11	12	3V3	
RXD0	G3	13	14	G1	TXD0
RXD2	G16	15	16	G17	TXD2
Int SDA	G21	17	18	G22	Int SCL
GPIO	G2	19	20	G5	GPIO
I2S_SK	G12	21	22	G13	I2S_WS
I2S_OUT	G15	23	24	G0	I2S_MK
	HPWR	25	26	G34	I2S_IN
	HPWR	27	28	5V	
	HPWR	29	30	BAT	

When using the RGB LED on G15, it is recommended to initialize the pin with `pinMode(15, OUTPUT_OPEN_DRAIN);`.
For more information on pin assignment and remapping, please refer to the [ESP32 datasheet](#).

Model Size



Datasheets

- [ESP32](#)
- [ILI9342C](#)
- [MPU6886](#)
- [IP5306](#)

Softwares

Arduino

- [M5GO Arduino Quick Start](#)
- [M5GO Sensor Kit Arduino Example Programs](#)
- [M5GO IoT Kit v2.6 Arduino Test Programs](#)
- [Arduino API](#)

UiFlow1

- [M5GO UiFlow1 Quick Start](#)

UiFlow2

- [M5GO UiFlow2 Quick Start](#)

USB Driver

Click the links below to download the driver matching your operating system. Two driver chip versions are available, CP210X (for **CP2104**) / CP34X (for **CH9102**). After extracting the archive, select the installer matching your OS bit-version.

(If you are unsure which USB chip your device uses, you may install both drivers. **CH9102_VCP_SER_MacOS v1.7** may report an error during installation, but the driver is actually installed—just ignore the message.)

If you encounter errors when downloading (timeout or “Failed to write to target RAM”), try reinstalling the driver.

Driver Name	Supported Chip	Download
CP210x_VCP_Windows	CP2104	Download
CP210x_VCP_MacOS	CP2104	Download
CP210x_VCP_Linux	CP2104	Download
CH9102_VCP_SER_Windows	CH9102	Download
CH9102_VCP_SER_MacOS v1.7	CH9102	Download

Easyloader

Easyloader	Download	Note
M5GO IoT Kit User Demo Easyloader	download	/

Product Comparison

To compare information on the controller series products, you can visit the [Product Selection Table](#), check the target products, and get the comparison results. The selection table covers key information such as core parameters and functional features, and supports comparison of multiple products simultaneously.

Version Change

Release Date	Product Changes	Note
2023.2	Changed packaging	/
2021.8	Upgraded to v2.6: removed BMM150 magnetometer, changed CP2104 to CH9102, optimized structural details, ENV Unit changed to Unit ENV-III	/
2020.6	ENV Unit in the kit changed to Unit ENV-II	/
2019.11	Battery capacity changed from 600mAh to 500mAh	/
2019.7	TN screen changed to IPS screen	Please upgrade your M5Stack library to the latest version (v0.2.8 or above) to solve the screen color inversion problem.
2019.6	MPU9250 changed to MPU6886+BMM150	/
2018.4	First release	/

Note

Devices with **2018.2A** PCB version do not support C2C (Type-C to Type-C) connection or PD power supply.

