StickC-Plus

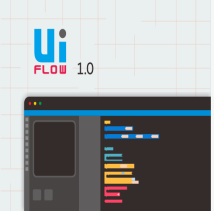
SKU:K016-P

Description

StickC-Plus is the large-screen version of the M5StickC. Its main controller uses the ESP32-PICO-D4 module, which supports Wi-Fi. Inside its compact body, it integrates rich hardware resources such as infrared, RTC, microphone, LED, IMU, buttons, buzzer, PMU, and more. While retaining the original functions of the M5StickC, it adds a passive buzzer. Additionally, the screen size has been upgraded to 1.14 inches, with a resolution of 135 x 240 TFT, increasing the display area by 18.7% compared to the previous 0.96-inch screen. The battery capacity is 120mAh, and the interface supports HAT and Unit series products.

This compact and exquisite development tool can unleash unlimited creative potential. StickC-Plus can help quickly build IoT product prototypes, greatly simplifying the entire development process. Even for beginners who are just starting to learn programming, it can be used to create interesting applications and apply them to real-life scenarios.

Tutorial



UIFlow

This tutorial will introduce how to control the StickC-Plus device through the UIFlow graphical programming platform.

UiFlow2

This tutorial will introduce how to control the StickC-Plus device through the UiFlow2 graphical programming platform.

Arduino IDE

This tutorial will introduce how to program and control the StickC-Plus device using the Arduino IDE.

Features

- Based on ESP32 development, supports Wi-Fi
- Built-in 3-axis accelerometer and 3-axis gyroscope
- Built-in Red LED
- Integrated infrared transmitter
- Built-in RTC
- Integrated microphone
- User button, LCD (1.14 inch), power/reset button
- 120 mAh lithium battery
- Expansion interface
- Integrated passive buzzer
- Wearable & mountable
- Development Platform
  - UiFlow1

- UiFlow2
- Arduino IDE
- ESP-IDF
- PlatformIO

Includes

- 1 x StickC-Plus

Applications

- Wearable devices
- IoT controllers
- STEM education
- DIY projects
- Smart home devices

Specifications

Main Controller Resources	Parameters
SoC	ESP32-PICO-D4,240MHz dual core，600 DMIPS，520KB SRAM，Wi-Fi
Flash Memory	4MB Flash
Input Voltage	5V @ 500mA
Interface	Type-C x 1, GROVE (I2C+I/O+UART) x 1
LCD Screen	1.14 inch, 135 x 240 Colorful TFT LCD, ST7789v2
Microphone	SPM1423
Buttons	Custom buttons x 2
LED	Red LED x 1
RTC	BM8563
PMU	AXP192
Buzzer	Onboard buzzer
IR	Infrared transmission
MEMS	MPU6886
Antenna	2.4G 3D antenna
External Pins	G0, G25/G26, G36, G32, G33
Battery	120 mAh @ 3.7V, inside vb
Operating Temperature	0 ~ 60°C
Casing Material	Plastic (PC)
Product Size	48.0 x 24.0 x 13.5mm
Product Weight	16.9g
Package Size	104.4 x 65.0 x 18.0mm
Gross Weight	24.1g

Learn

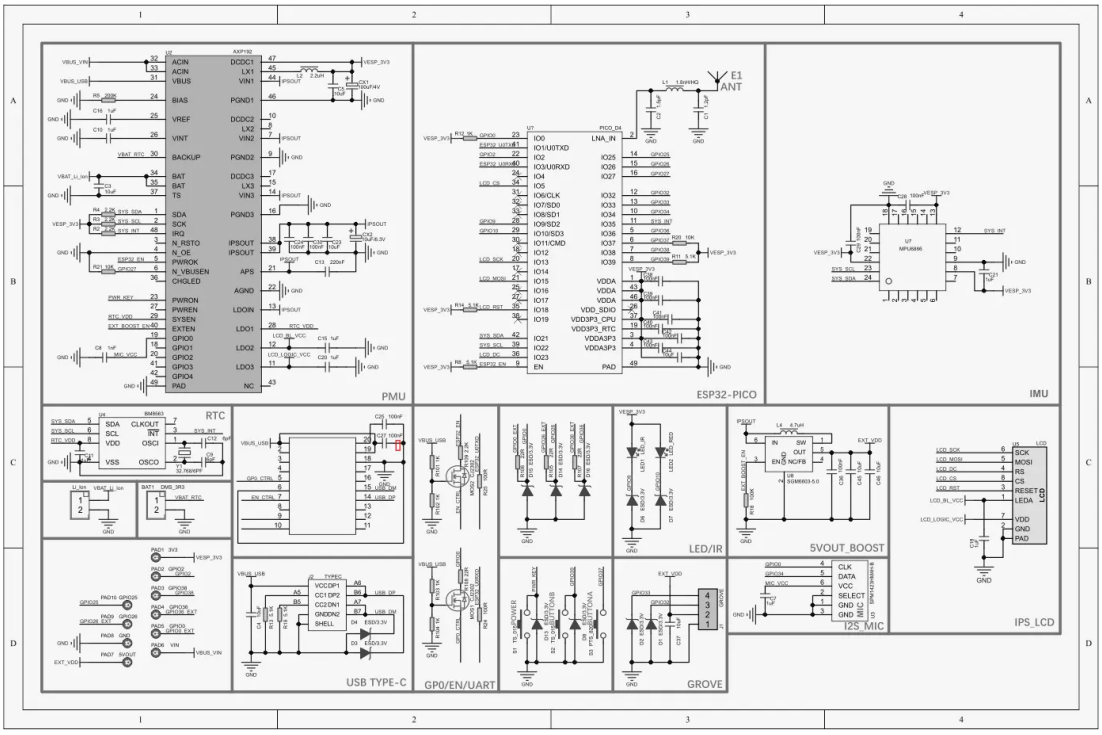
> **StickC-Plus can use most programs of M5StickC. Due to hardware differences such as the screen, please download the StickC-Plus library before compiling the program and modify the header file reference in the program to `M5StickCPlus.h` .**

Power On/Off Operations:

- Power On: Press the reset button for at least 2 seconds
- Power Off: Press the reset button for at least 6 seconds

Schematics

- StickC-Plus Schematic PDF



PinMap

Red LED & IR Transmitter & Button & Buzzer

ESP32-PICO-D4	GPIO10	GPIO9	GPIO37	GPIO39	GPIO2
Red LED	LED Pin				
IR Transmitter		IR Pin			
Button A			Button Pin		
Button B				Button Pin	
Passive Buzzer					Buzzer Pin

Color TFT Screen

Driver Chip: ST7789v2

Resolution: 135 x 240

ESP32-PICO-D4	GPIO15	GPIO13	GPIO23	GPIO18	GPIO5
TFT Screen	TFT_MOSI	TFT_CLK	TFT_DC	TFT_RST	TFT_CS

Microphone MIC (SPM1423)

ESP32-PICO-D4	GPIO0	GPIO34
Microphone MIC	CLK	DATA

6-Axis IMU (MPU6886) & Power Management Chip (AXP192)

ESP32-PICO-D4	GPIO22	GPIO21
6-Axis IMU	SCL	SDA
Power Management Chip	SCL	SDA

Power Management Chip (AXP192)

Microphone	RTC	TFT Backlight	TFT IC	ESP32/3.3V MPU6886	5V GROVE
LDOio0	LDO1	LDO2	LDO3	DC-DC1	IPSOUT

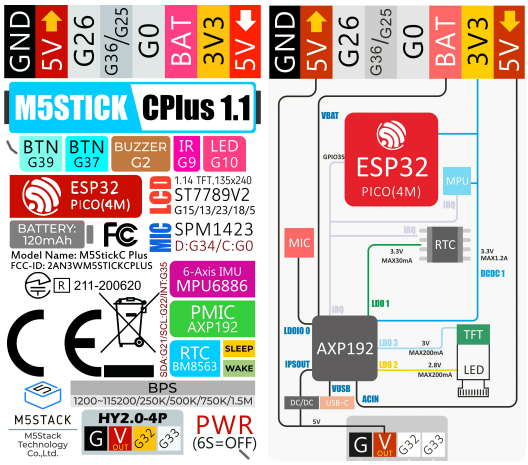
Power Switch

APX192	PWRON
Power Switch	pwr_key

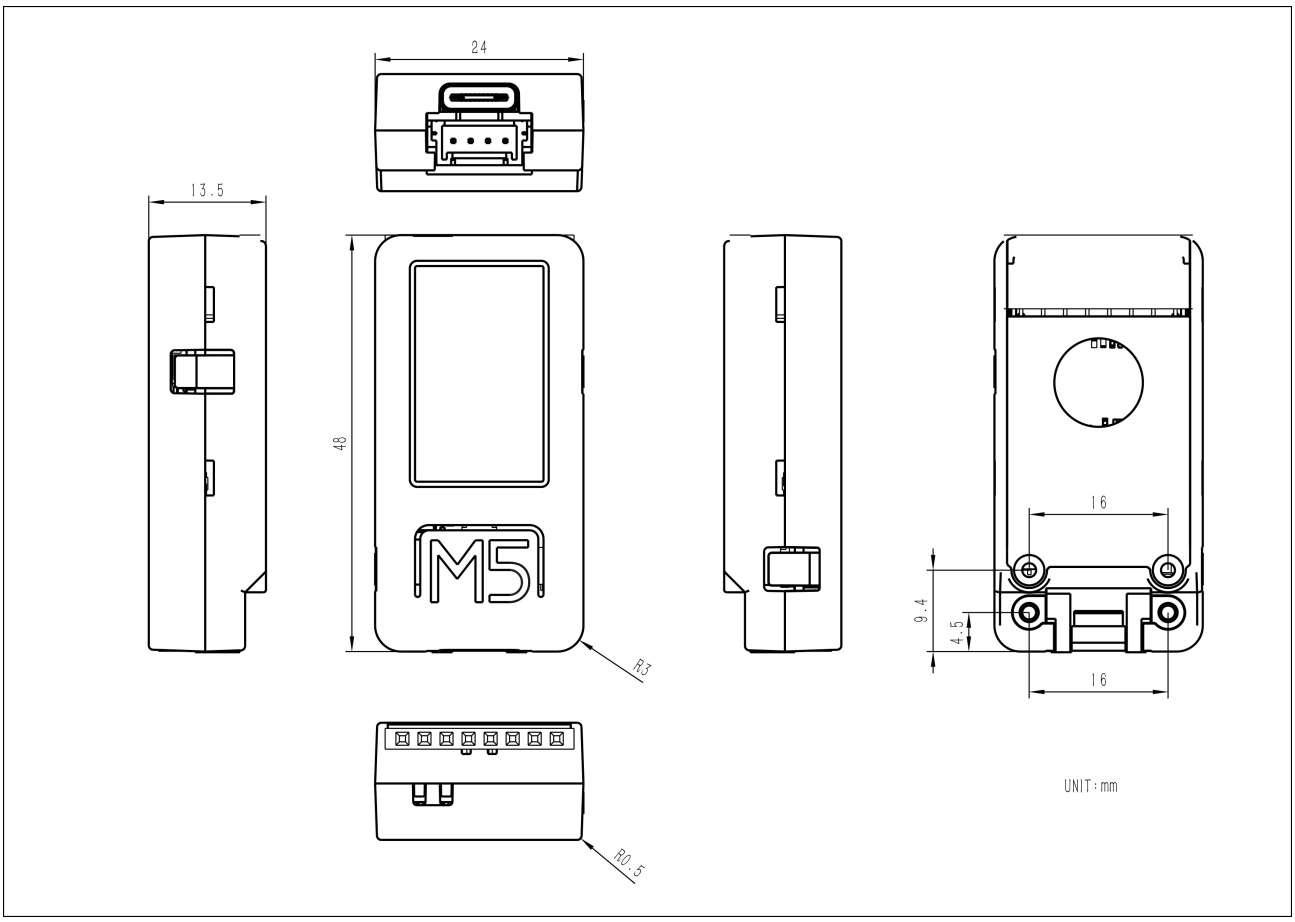
HY2.0-4P

HY2.0-4P	Black	Red	Yellow	White
PORT.CUSTOM	GND	5V	G32	G33

Power Structure Diagram



Model Size



Datasheets

- ESP32-PICO
- ST7789v2
- BM8563
- MPU6886
- AXP192 Datasheet
- AXP192 Register
- SPM1423

Softwares

Arduino

- StickC-Plus Arduino Quick Start
- StickC-Plus Arduino Driver Library
- StickC-Plus Factory Test Example

UiFlow1

- StickC-Plus UiFlow1 Quick Start

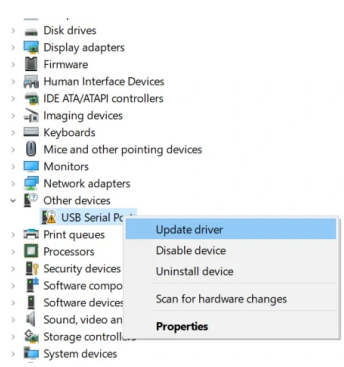
UiFlow2

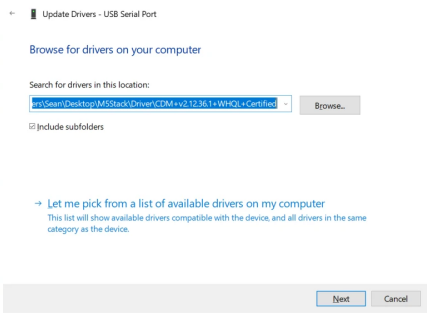
- StickC-Plus UiFlow2 Quick Start

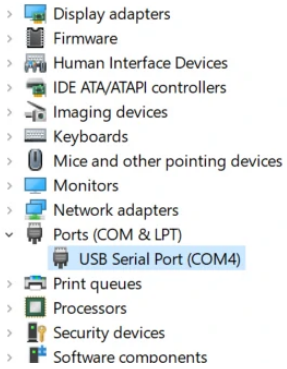
USB Driver

> **Baud Rate Limitation**
>
> When downloading programs to the device, it is recommended to select one of the following serial baud rates. Using other speeds may cause the program to fail to download correctly. **1500000 bps / 750000 bps / 500000 bps / 250000 bps / 115200 bps**

Connect the device to the PC and install the FTDI driver via Device Manager. Taking Windows 10 as an example, download the driver that matches your operating system, unzip it, and install it through Device Manager. (Note: In certain system environments, the driver needs to be installed twice before it becomes effective. Unrecognized device names are usually **M5Stack** or **USB Serial**. On Windows, it is recommended to install directly through Device Manager (custom update) using the driver files; the executable installer may not work properly). Click here to download the FTDI driver







Others

- StickC-Plus Restore Factory Firmware Guide

Note:

- StickC-Plus supported baud rates: 1200 ~115200, 250K, 500K, 750K, 1500K
- G36/G25 share the same port. When using one pin, set the other pin to floating input.
  - For example, to use the G36 pin as an ADC input, configure the G25 pin as floating.
- The input range of VBUS_VIN and VBUS_USB is limited to 4.8-5.5V. When powered by VBUS, the AXP192 power management will charge the internal battery.

```
setup()
{
   M5.begin();
   pinMode(36, INPUT);
   gpio_pulldown_dis(GPIO_NUM_25);
   gpio_pullup_dis(GPIO_NUM_25);
}
```

Easyloader

Easyloader	Download Link	Remarks
StickC-Plus Firmware Easyloader	download	/

Video

- Accelerometer, microphone, LED, IR, RTC, wireless connection, and other hardware tests. Click button A or B to switch test items.

M5StickC Plus.mp4

- Create a charging controller system

ESP32 Li-ion Battery Charger-ch.mp4

Version Change

Release Date	Product Changes	Remarks
/	Initial release	/
2021.12	Added sleep and wake functions, version changed to v1.1	/

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M5Stack:

K016-P