

StickC-Plus2

SKU:K016-P2





Description

StickC-Plus2 is the iterative version of StickC-Plus. It is powered by the ESP32-PICO-V3-02 chip, providing Wi-Fi connectivity. Within its compact body, it integrates a rich variety of hardware resources, including IR emitter, RTC, microphone, LED, IMU, buttons, buzzer, and more. It features a 1.14-inch TFT display driven by the ST7789V2 with a resolution of 135 x 240.

The battery capacity has been increased to 200 mAh, and the interface is compatible with both HAT and Unit series modules.

This sleek and compact development tool can ignite unlimited creativity. StickC-Plus2 helps you quickly build IoT product prototypes and greatly simplifies the entire development process. Even beginners who are new to programming can create interesting applications and apply them in real life.

Tutorial



UIFlow

This tutorial will introduce how to control the StickC-Plus2 device through the UIFlow graphical programming platform.



UIFlow2

This tutorial will introduce how to control the StickC-Plus2 device through the UIFlow2 graphical programming platform.



Arduino IDE

This tutorial will introduce how to program and control the StickC-Plus2 device using the Arduino IDE.

Note

Port Not Recognized

When using a C-to-C cable, if the port cannot be recognized, please perform the following power-on procedure:
disconnect StickC-Plus2, power it off (long-press the power button until the green LED lights up), then
reconnect the USB cable to power on.

Features

- Based on ESP32-PICO-V3-02 with Wi-Fi support
- Built-in 3-axis accelerometer and 3-axis gyroscope
- Integrated IR emitter
- Built-in RTC
- Integrated microphone
- User buttons, 1.14-inch LCD, power/reset button
- 200 mAh Li-ion battery
- Expansion connector
- Integrated passive buzzer
- Wearable & mountable
- Development Platform
 - UIFlow1
 - UIFlow2
 - Arduino IDE
 - ESP-IDF
 - PlatformIO

Includes

- 1 x StickC-Plus2

Applications

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

Specifications

Specification	Parameter
SoC	ESP32-PICO-V3-02 240 MHz dual-core, Wi-Fi, 2 MB PSRAM, 8 MB Flash
PSRAM	2 MB PSRAM
Flash	8 MB Flash
Input Voltage	5 V @ 500 mA
Interface	Type-C x 1, GROVE (I2C + I/O + UART) x 1
LCD Screen	1.14 inch, 135 x 240 Color TFT LCD, ST7789V2
Microphone	SPM1423
Buttons	User buttons x 3
LED	Green LED x 1 (non-programmable, sleep indicator) Red LED x 1 (shares control pin G19 with IR emitter)
RTC	BM8563
Buzzer	On-board passive buzzer
IMU	MPU6886
Antenna	2.4 G 3D antenna
External Pins	G0, G25/G26, G36, G32, G33
Battery	200 mAh @ 3.7 V, inside
Operating Temp	0 ~ 40 °C
Enclosure	Plastic (PC)
Product Size	48.0 x 24.0 x 13.5mm
Product Weight	16.7 g
Package Size	104.4 x 65.0 x 18.0mm
Gross Weight	26.3 g

Operation Instructions

Power On/Off

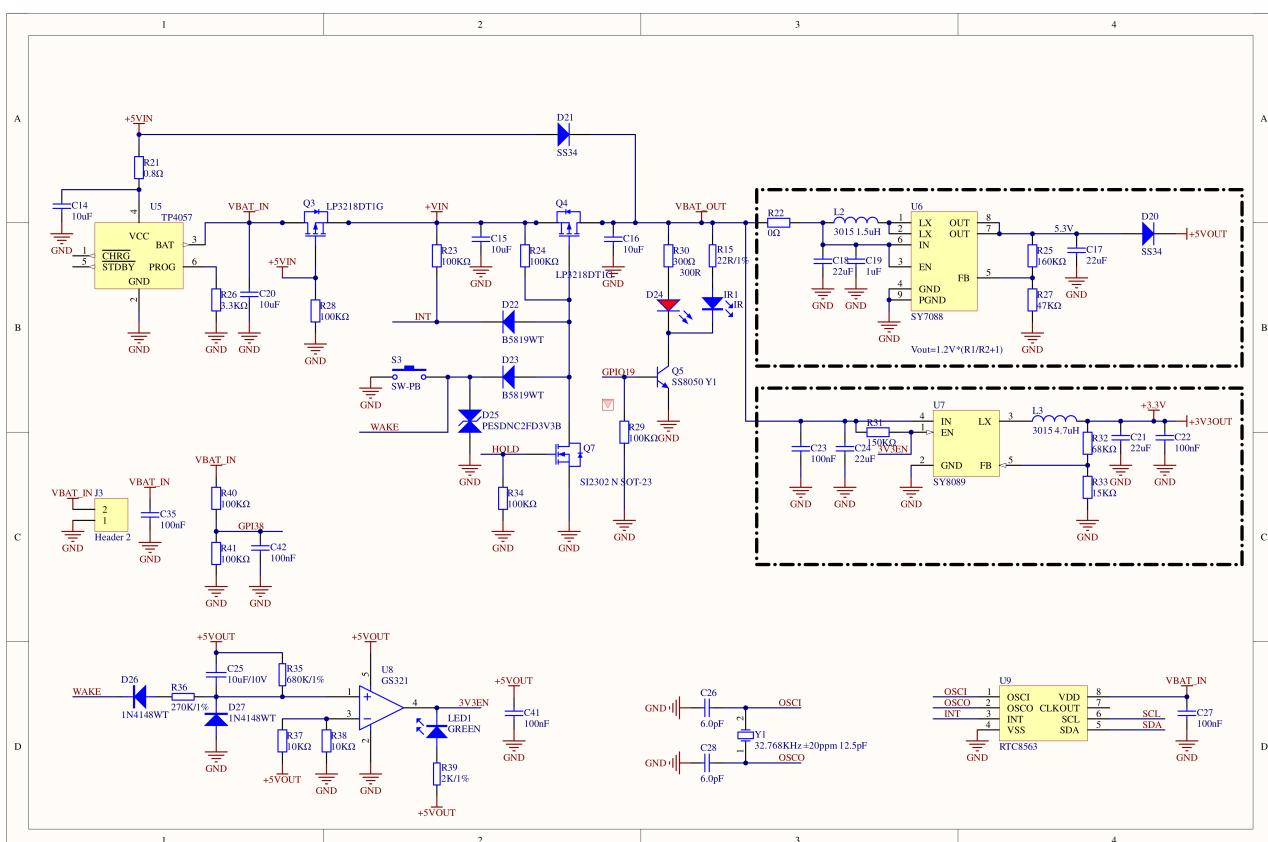
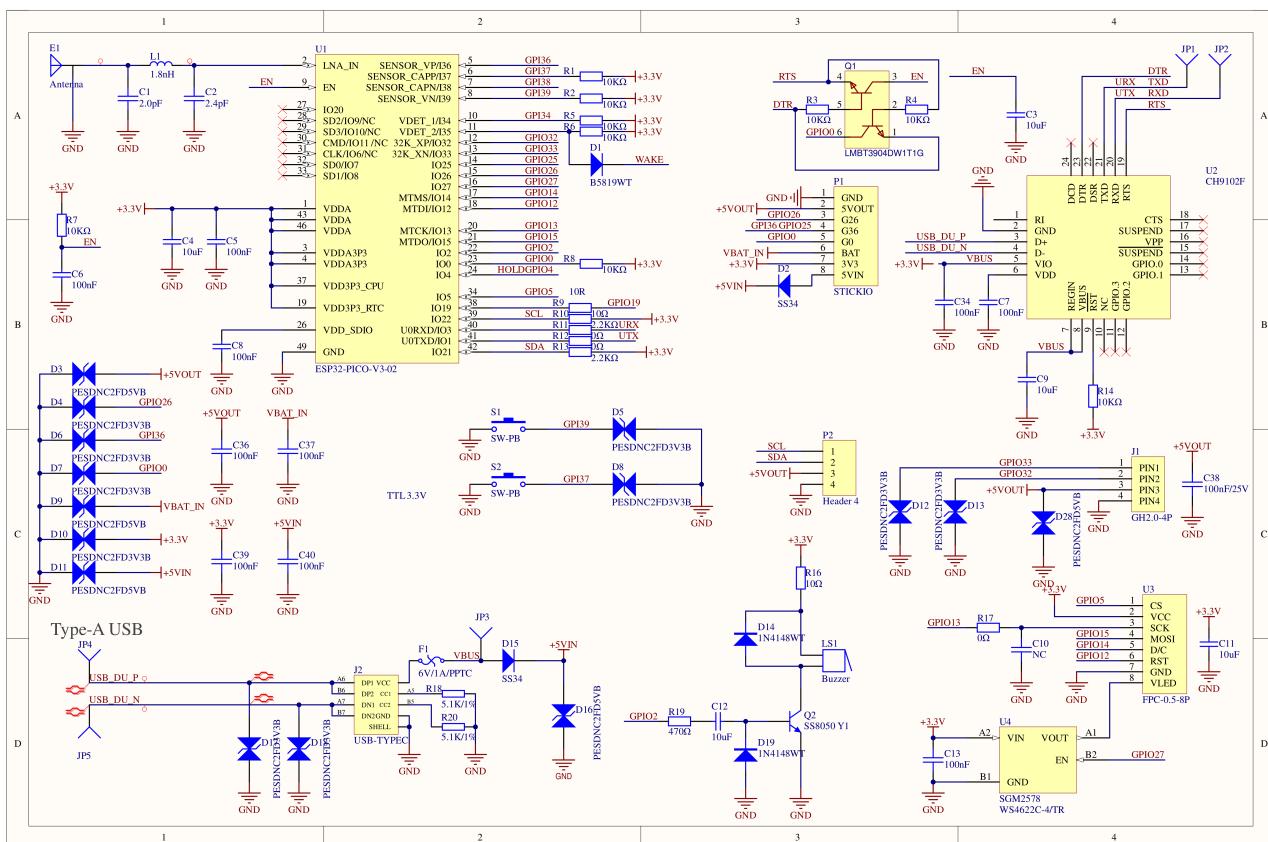
Power-on: Press the “BUTTON C” for more than 2 seconds, or wake up via the RTC IRQ signal. After the wake-up signal is triggered, the program must set the HOLD pin (G4) to high (1) to keep the power on, otherwise the device will shut down again.

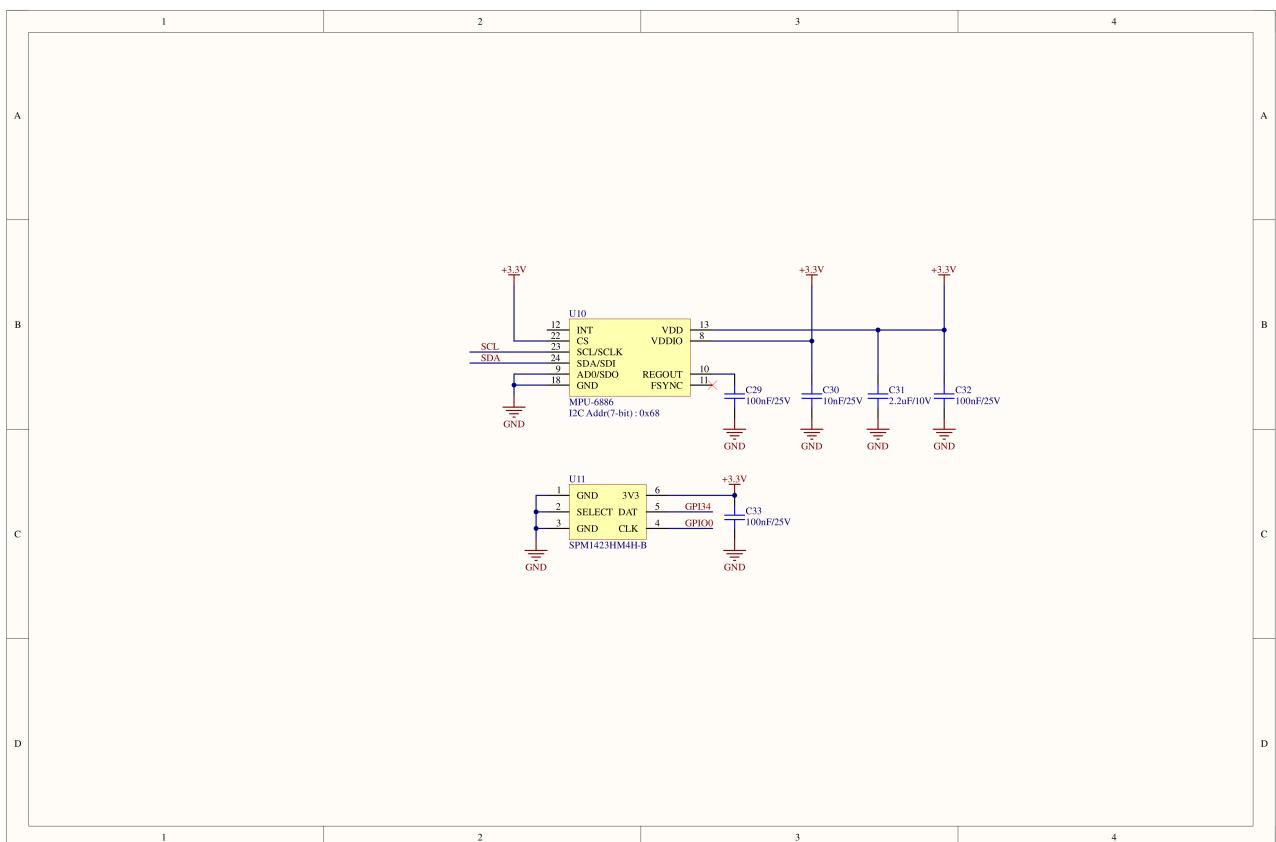
Power-off: Without external USB power, press “BUTTON C” for more than 6 seconds, or set HOLD (GPIO4)=0 in the program to power off. While USB is connected, pressing “BUTTON C” for more than 6 seconds will turn off the screen and enter sleep mode (not a full power-off).



Schematics

- o [StickC-Plus2 Schematics PDF](#)





PinMap

Red LED & IR Emitter | Button A | Button B | Buzzer

ESP32-PICO-V3-02	GPIO19	GPIO37	GPIO39	GPIO35	GPIO2
IR Emitter & Red LED	IR emitter & Red LED pin				
Button A		Button A			
Button B			Button B		
Button C				Button C	
Passive Buzzer					Buzzer

Color TFT Display

Driver IC: ST7789V2

Resolution: 135 x 240

ESP32-PICO-V3-02	G15	G13	G14	G12	G5	G27
TFT Display	TFT_MOSI	TFT_CLK	TFT_DC	TFT_RST	TFT_CS	TFT_BL

Microphone MIC (SPM1423)

ESP32-PICO-V3-02	G0	G34
MIC SPM1423	CLK	DATA

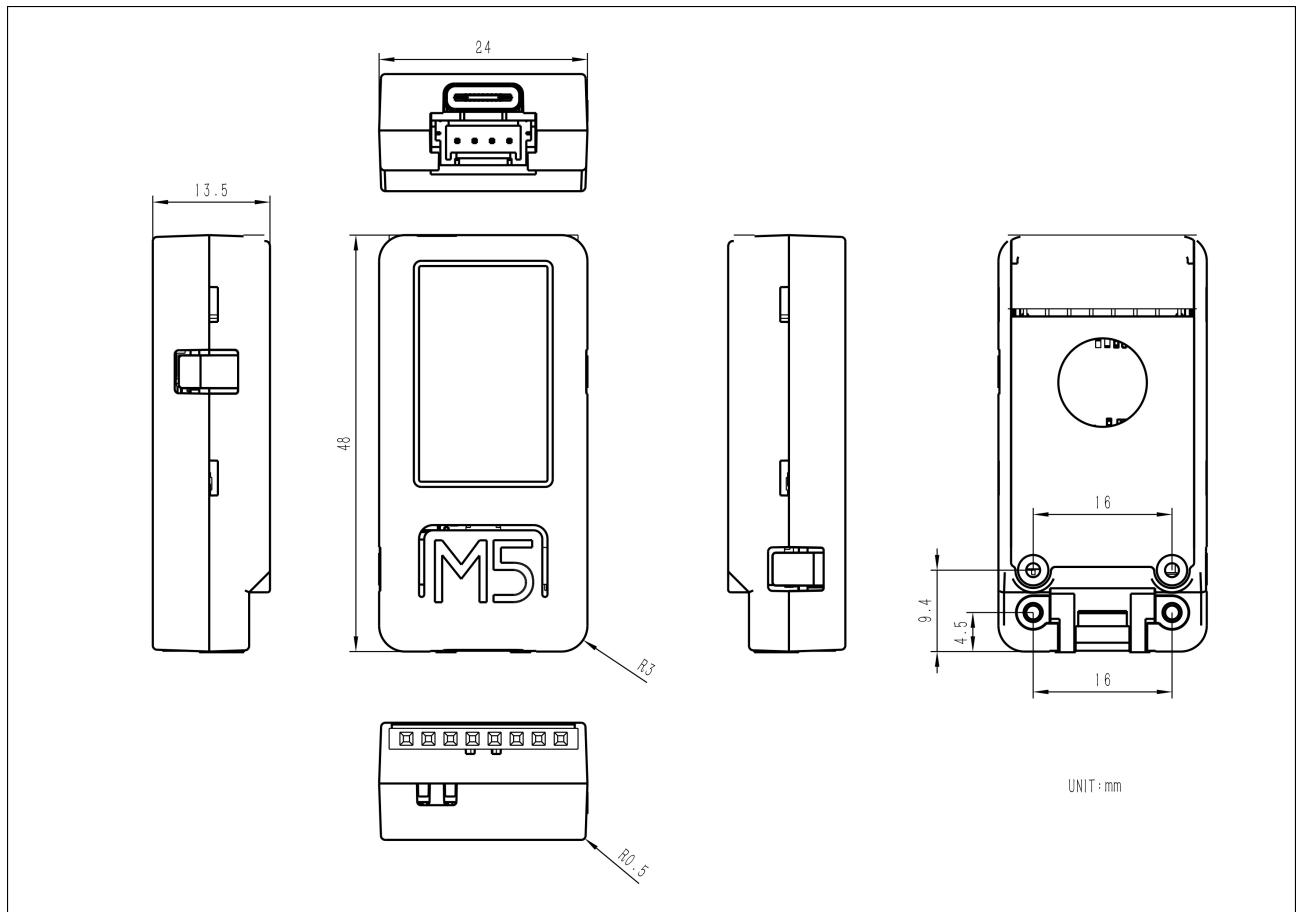
6-Axis IMU (MPU6886) & RTC BM8563

ESP32-PICO-V3-02	G22	G21	G19
IMU MPU6886	SCL	SDA	
BM8563	SCL	SDA	
IR Emitter			TX
Red LED			TX

HY2.0-4P

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

Model Size



Datasheets

- [ESP32-PICO-V3-02](#)
- [ST7789V2](#)
- [BM8563](#)
- [MPU6886](#)
- [SPM1423](#)

Softwares

Arduino

- [StickC-Plus2 Arduino Quick Start](#)
- [StickC-Plus2 Library](#)
- [StickC-Plus2 Factory Test Firmware](#)

UiFlow1

- [StickC-Plus2 UiFlow1 Quick Start](#)

UiFlow2

- StickC-Plus2 UIFlow2 Quick Start

PlatformIO

```
[env:m5stack-stickc-plus2]
platform = espressif32@6.7.0
board = m5stick-c
framework = arduino
upload_speed = 1500000
monitor_speed = 115200
build_flags =
    -DBOARD_HAS_PSRAM
    -mfix-esp32-psram-cache-issue
    -DCORE_DEBUG_LEVEL=5
lib_deps =
    M5Unified=https://github.com/m5stack/M5Unified
```

USB Driver

Click the links below to download the driver that matches your operating system. The package contains CP34X drivers (for **CH9102**). After extracting the archive, run the installer that matches your OS bit-depth.

If you encounter issues such as timeout or “Failed to write to target RAM” during downloading, please try reinstalling the driver.

Driver Name	Supported Chip	Download
CH9102_VCP_SER_Windows	CH9102	Download
CH9102_VCP_SER_MacOS v1.7	CH9102	Download

macOS Port Selection

Two serial ports may appear on macOS. Please select the port named **wchmodem**.

Easyloader

EasyLoader is a lightweight program flasher that comes with a demonstration firmware. By following a few simple steps, you can flash it to the controller for quick functional verification.

Easyloader	Download	Note
FactoryTest for Windows	download	/

Other

- StickC-Plus2 Restore Factory Firmware Guide

| Video

- #### ○ StickC-Plus2 Feature Introduction

StackC Plus2 视频.mp4

| Version Change

Release Date	Change Description	Note
/	First release	/
2021-12	Added sleep and wake-up function, version updated to v1.1	/
2023-12	Removed PMIC AXP192, MCU changed from ESP32-PICO-D4 to ESP32-PICO-V3-02, different power-on/off method, version v2	/

| Product Comparison



| Hardware Differences

Product Name	SoC	Power Management	Battery Capacity	Memory	USB-UART Chip	Color
StickC-Plus	ESP32-PICO-D4	AXP192	120 mAh	520 KB SRAM + 4 MB Flash	CH522	Red-orange
StickC-Plus2	ESP32-PICO-V3-02	/	200 mAh	2 MB PSRAM + 8 MB Flash	CH9102	Orange

Pin Differences

Product Name	IR	LED	TFT	BUTTON A	BUTTON B	BUTTON C (WAKE)	HOLD	Battery Voltage Detect
M5STICKC PLUS	G9	G10	DC (G23)	G37	G39	Regular button	/	Via AXP192
M5STICKC PLUS2	G19	G19	DC (G14)	G37	G39	G35	G4	G38

Power On/Off Differences

Product Name	Power On	Power Off
StickC-Plus	Press reset button (BUTTON C) for at least 2 s	Press reset button (BUTTON C) for at least 6 s
StickC-Plus2	Press "BUTTON C" for more than 2 s, or wake via RTC IRQ. After wake-up, set HOLD (G4)=1 in the program to keep power on, otherwise the device will shut down again.	Without USB power, press "BUTTON C" for more than 6 s, or set HOLD (GPIO4)=0 in the program to power off. With USB connected, pressing "BUTTON C" for more than 6 s will turn off the screen and enter sleep, but not a full power- off.

Because StickC-Plus2 removes the PMIC AXP192, the power-on/off method differs from previous versions. As mentioned at the beginning of this document, the operation is largely similar, but the supported libraries will differ. Wi-Fi and IR signal strength have both been improved compared to the previous model.