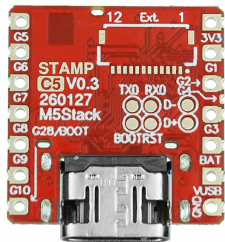
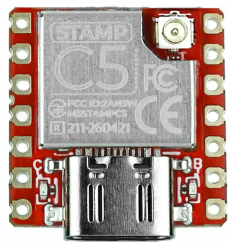
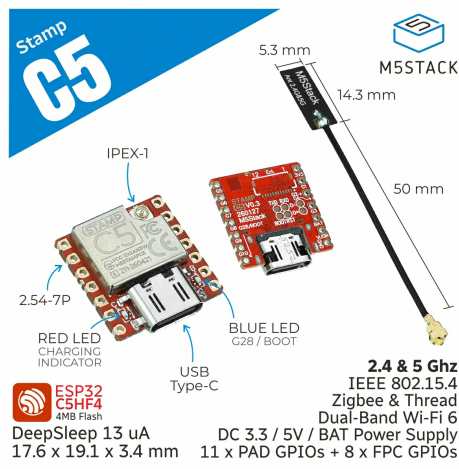


Stamp-C5

SKU:S016





Description

Stamp-C5 is a highly integrated wireless connectivity module based on the Espressif ESP32-C5HF4, designed for IoT applications that require efficient and stable communication. It supports 2.4 & 5 GHz dual-band Wi-Fi 6, BLE 5, and IEEE 802.15.4 (Zigbee, Thread) multi-protocol connectivity, meeting device access requirements across different network scenarios. The module uses a RISC-V 32-bit single-core processor with a clock frequency of up to 240MHz, includes 4MB Flash, and integrates hardware resources such as USB Type-C, a battery power input, an FPC expansion interface, and an IPEX-1 antenna connector. The module adopts a 2.54mm pad pitch design, making it easy to quickly connect various peripherals and expand functions. While ensuring connectivity performance and security, it helps developers complete prototype validation and product implementation more efficiently.

Tutorial



Arduino IDE

This tutorial explains how to program and control Stamp-C5 using Arduino IDE.

Features

- ESP32-C5HF4 main controller
 - RISC-V 32-bit single-core processor, up to 240MHz
 - 4MB Flash
- Wireless connectivity
 - 2.4 & 5 GHz dual-band Wi-Fi 6
 - BLE 5
 - IEEE 802.15.4 (Zigbee, Thread)
- Interface and hardware design
 - USB Type-C
 - DC 3.7V battery power input
 - 2.54mm pad pitch
 - IPEX-1 antenna connector
 - Rear FPC 0.5mm-12P interface
 - SGM40567-4.2XG/TR charging IC
 - 2.4 & 5 GHz shared antenna design
- Status indicators
 - RED: Charging indicator (blinks while charging; turns off when fully charged)

- BLUE: G28 / BOOT indicator

Includes

- 1 x Stamp-C5
- 1 x FPC Antenna (2.4G & 5G, IPEX-1, 14.3 x 5.3mm, 50mm cable)

Applications

- Dual-band Wi-Fi 6 IoT devices
- Zigbee / Thread edge nodes
- Low-power wireless sensing devices

Specifications

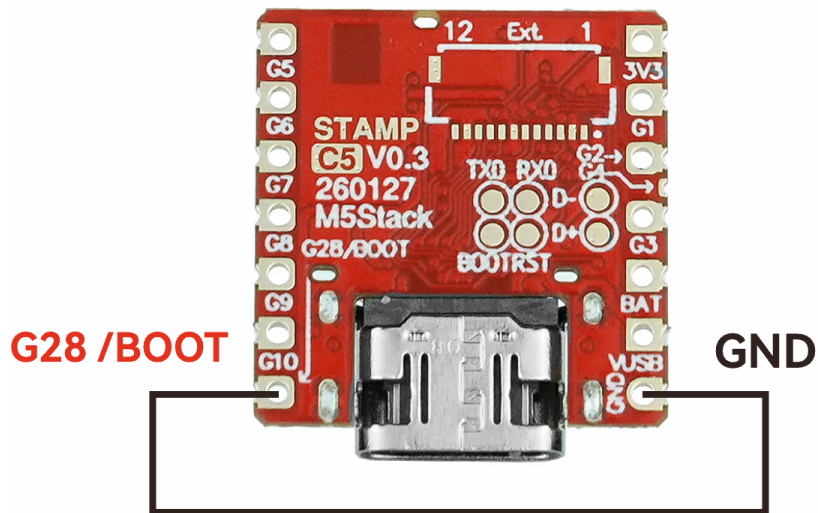
Specification	Parameter
SoC	ESP32-C5HF4 @ RISC-V 32-bit single-core processor, up to 240MHz
SRAM	384KB
Flash	4MB
Wi-Fi	2.4 & 5 GHz dual-band Wi-Fi 6
BLE	BLE 5
IEEE 802.15.4	Supports Zigbee, Thread
USB Interface	USB Type-C
Battery Input	DC 3.7V
Antenna	IPEX-1
Dual-Band Diplexer	LFD182G45DCHD481 (2.4 & 5 GHz shared antenna)
Charging IC	SGM40567-4.2XG/TR
Status Indicator	2 x LED (RED: charging; BLUE: G28 / BOOT)
GPIO Output	19x GPIO total (pad 11x GPIO + FPC 8x GPIO)
Pad GPIO	G1, G2, G3, G4, G5, G6, G7, G8, G9, G10, G28
FPC GPIO	G23, G0, G24, G25, G26, G27, G11, G12
Pad Pitch	2.54mm
Rear Expansion Interface	FPC 0.5mm-12P
Charging Current	Approx. 200mA
Power Consumption	Deep sleep (battery powered): 3.7V@13uA
Product Size	17.6 x 19.1 x 3.4mm
Product Weight	1.8g
Package Size	138.0 x 93.0 x 8.0mm
Gross Weight	6.9g

3.3V Output Stability

When the load current on the 3.3V output from the Stamp-C5 pads or FPC interface reaches 300mA or higher, connect a 100µF or larger capacitor in parallel at the output to reduce ripple interference caused by high current and improve power supply stability.

Enter Download Mode

Connect G28 to GND, then power on the device to enter download mode.



STEP.1



STEP.2



STEP.3

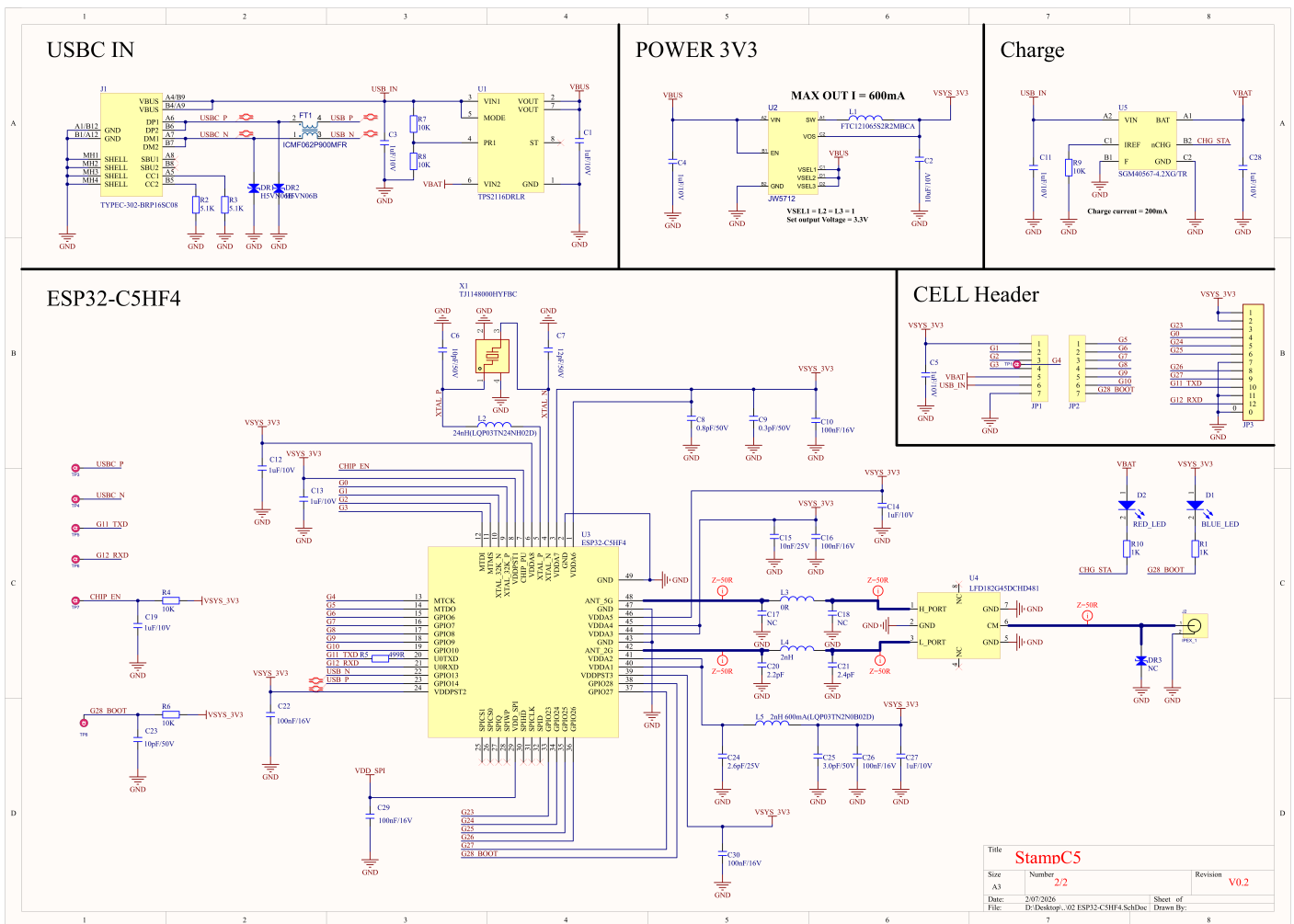
Connect G28 to GND

Connect USB

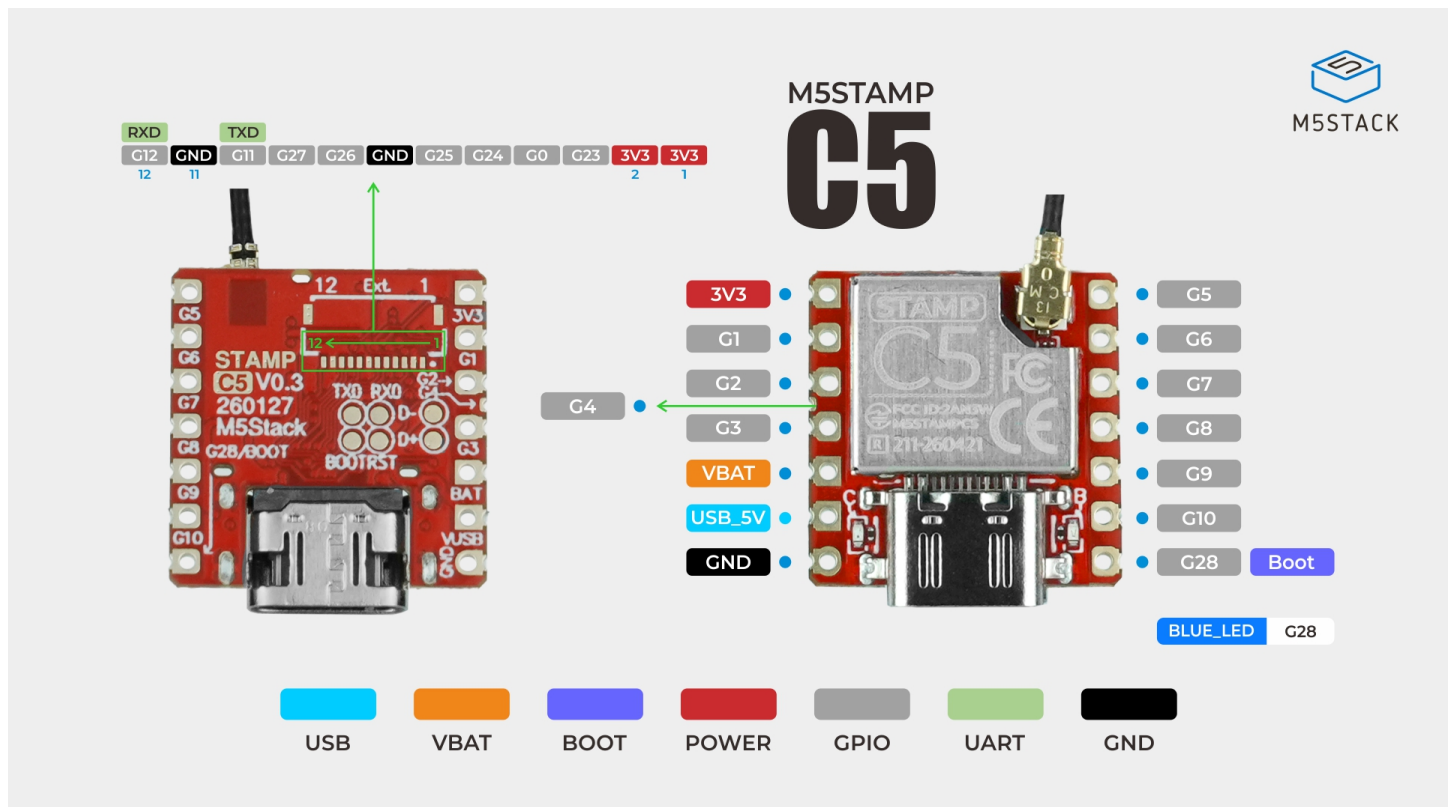
Download Mode

Schematics

- [Stamp-C5 Schematics PDF](#)



PinMap



Note

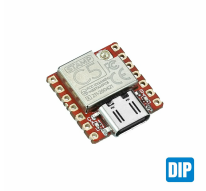
When connecting the device FPC cable, strictly check whether the pin sequence matches correctly. Otherwise, the hardware may be burned out and damaged.

EXT.FPC		Stamp-C5
Pin1		3V3
Pin2		3V3
Pin3		G23
Pin4		G0
Pin5		G24
Pin6		G25
Pin7		GND
Pin8		G26
Pin9		G27
Pin10		TXD(G11)
Pin11		GND
Pin12		RXD(G12)

Model Size

- [Stamp-C5 Model Size PDF](#)

Product Comparison



Stamp-C5 DIP



Stamp-C5

Default soldered FPC connector

Yes

No

Pin headers included

Includes 2 x 2.54-7P pin headers

No