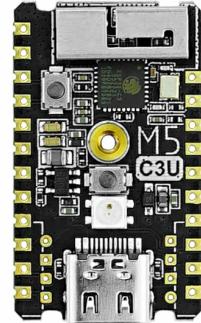
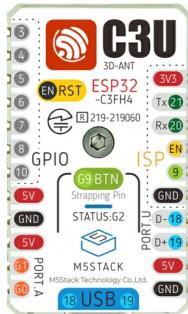


STAMP-C3U

SKU:C122-B, K122



Quick-Start

ESP-IDF

Description

The newly M5Stamp C3U featuring ESPRESSIF ESP32-C3 RISC-V MCU, with Wi-Fi 5 (LE) connectivity, applicable for home appliances and Industrial Automation. By combining RSA-3072-based secure boot and the AES-128-XTS-based flash encryption. The compact size and powerful functions, make it applicable for multiple IoT scenarios.

The M5Stamp C3U is based on 32-bit RISC-V micro controller, and operates at a maximum clock frequency of 160 MHz. With 400 KB of internal RAM and 4 MB Flash, it can facilitate many different use cases, involving connected devices. The M5Stamp C3U provides, Furthermore, the exceptional heat resistance plastic enclosure is sustained at a higher operating temperature.

Note: If you need to use SPIFFS filesystem in Arduino IDE. Please install a [patch package](#) first.

Product Features

- MULTIPLE STYLE:
 - Three types soldering options are available (SMT, DIP, fly wire);
 - High-temperature resistant plastic enclosure, Peak temperature = 230°C;
- HIGH INTEGRATION:
 - M5Stamp C3 contains 5V->3.3V DC/DC design, GPIOx14;
 - USB Type C port;
 - Programmable RGB LED x1, Reset button x1, button x1;
 - 3D antenna, providing stable and reliable wireless communication.
- DEVELOPMENT PLATFORM:
 - Arduino, ESP32-IDF (UIFlow support coming soon)

Application

- DIY, Prototyping
- Industrial Automation
- Smart Home
- Wearable Devices
- Medical Devices
- Consumer Electronics

Note: The newly updated C3U shares the same features as C3, but the difference is that M5Stamp C3U without the USB download chip and the program download method is different ((The C3U uses the ESP32-C3's built-in USB Serial for program download)) . If you are looking for a more affordable project, you can add this to your shopping list!

Program Download/Notes

Enter the program download mode operation:

1. Long press the center button (G9) of STAMP C3U under power failure condition.
2. Connect to the computer while holding the button, after the port is successfully identified, program burning.

USB CDC enabled:

By default, USB CDC is not enabled, the serial port output started by C3U will be output through UART0, if you need to output through USB, please use IDE to make it USB CDC before downloading the program option enabled. (Arduino users can enable it through **Tools -> USB CDC on Boot - Enabled** , IDF users please refer to ESP IDF official documentation.)

product comparison

Model	Master	IO quantity	Button IO	USB chip	USB interface function
STAMP-C3	ESP32-C3	13	G3	CH9102	Download / Serial
STAMP-C3U	ESP32-C3	14	G9	/	Download / JTAG / CDC Serial

Specifications

Specifications	Parameters
ESP32-C3	32bit RISC-V single-core processor, clocked at 160 MHz
Storage	384KB ROM, 400KB SRAM, 8KB RTC SRAM, 4MB FLASH
Wi-Fi	2.4 GHz band supports 20 MHz and 40 MHz bandwidth, IEEE 802.11 b/g/n protocol, data rate up to 150 Mbps
Input voltage	5V @ 500mA
HMI	Programmable physical button x 1, reset debugging button x 1, programmable RGB LED (SK6812) x 1
USB interface	TypeC x1
Antenna Type	2.4G 3D Antenna
Module peripheral interface resources	ADC, GPIO, SPI, UART, I2C, I2S, PWM, RMT, DMA, USB serial port, TWAI
IO interface x14	G0, G1, G3, G4, G5, G6, G7, G8, G9, G10, G18, G19, G21, G22
IO interface spacing	2.54mm
Fixing screw specifications	M2*4 countersunk head hexagon socket mechanical teeth
Net weight	3.8g
Product size	34 * 20 * 4.6mm
Packing size	85*55mm sealing bag (translucent)



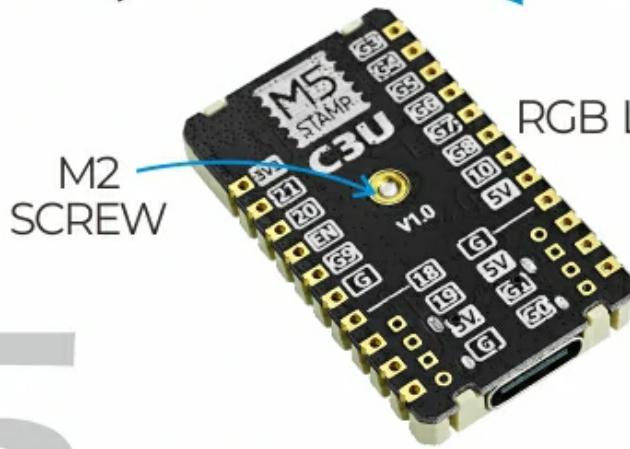
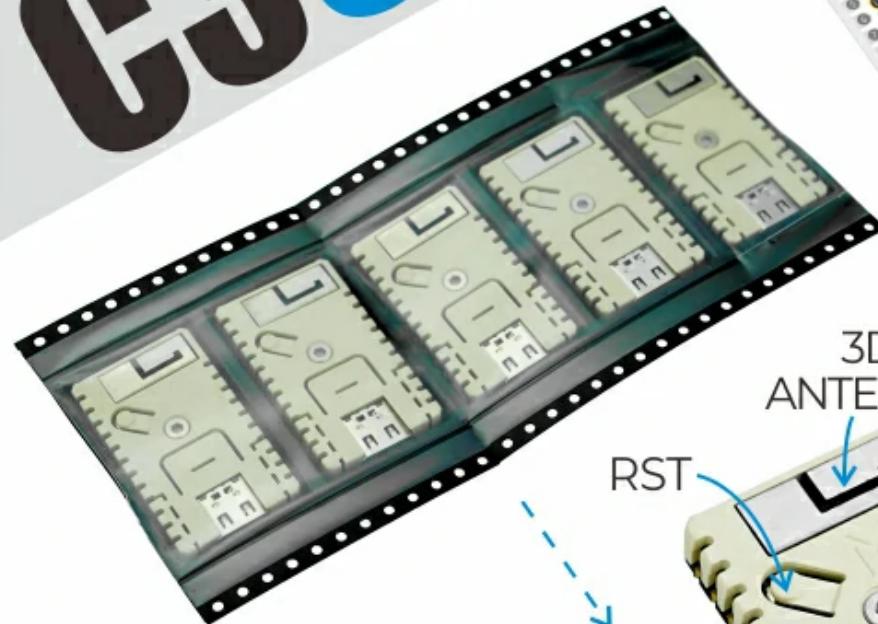
Include

- [Purchase link](#)
- M5Stamp C3U (5pcs):
 - 5 x M5Stamp C3U
 - 5 x Heat Resistant Sticker

M5STAMP
C3U



M5STACK



RST

3D
ANTENNA

BUTTON

RGB LED



ESP32

HEAT
RESISTANT
PLASTIC
(250°C)

USB-UART
CDC-ACM
INSIDE

RISC-V

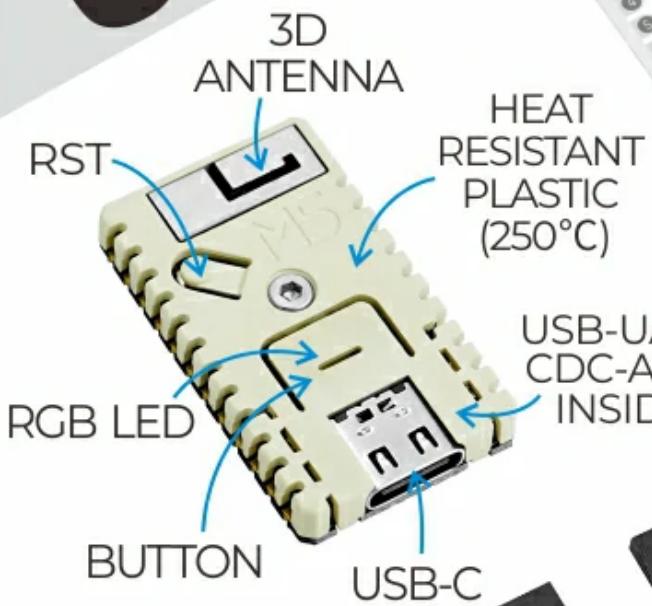
FLASH 4M
ESP32-C3FH4

SMT/DIP/JUMP WIRE/UNIT STYLE

5 PCS

- [Purchase link](#)
- M5Stamp C3U Mate:
 - 1 x M5Stamp C3U
 - 1 x Heat Resistant Sticker
 - 2 x 2.54-12P female headers
 - 2 x 2.54-10P pin headers
 - 2 x 90° HY2.0-4P terminals
 - 1 x 1.5mm hex key

M5STAMP
C3U MATE
3D



HEAT
RESISTANT
PLASTIC
(250°C)

HEAT
RESISTANT
STICKER



M5STACK



Hex Key



HY2.0-4P



2.54-12P



2.54-12P



2.54-10P



2.54-10P



ESP32

FLASH 4M ESP32-C3FH4

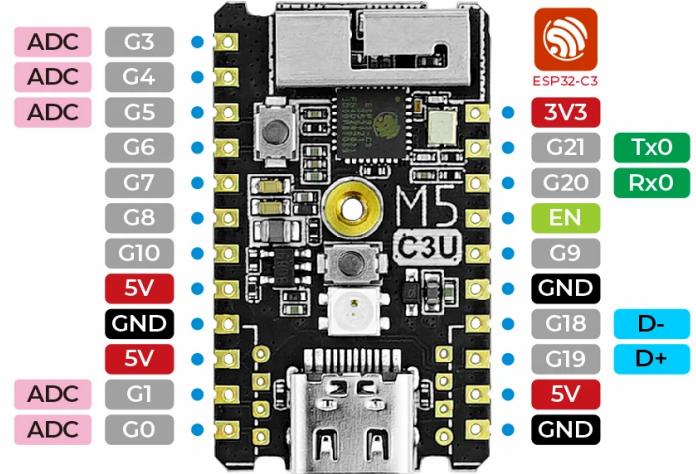
SMT/DIP/JUMP WIRE/UNIT STYLE

RISC-V

PinMap



M5STACK



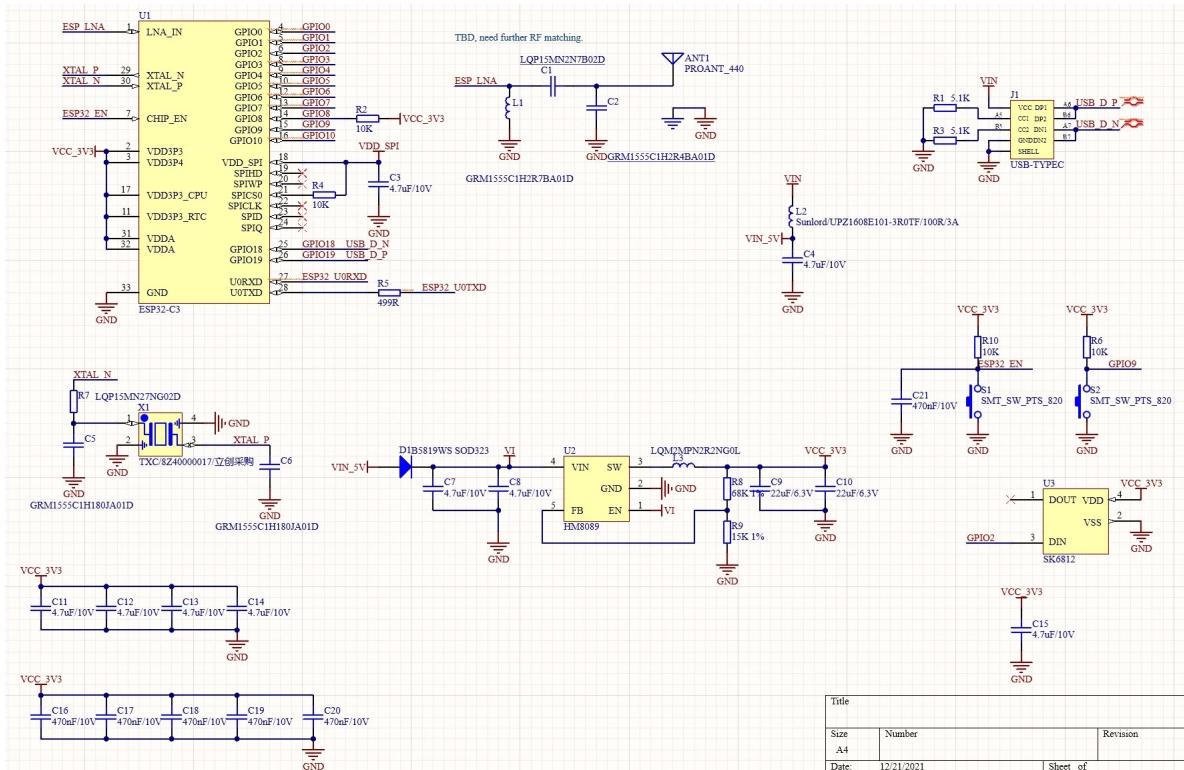
M5STAMP
C3U

CHIP ADC USB UART IN/OUT POWER GND

SK6812 (RGB LED) and Button

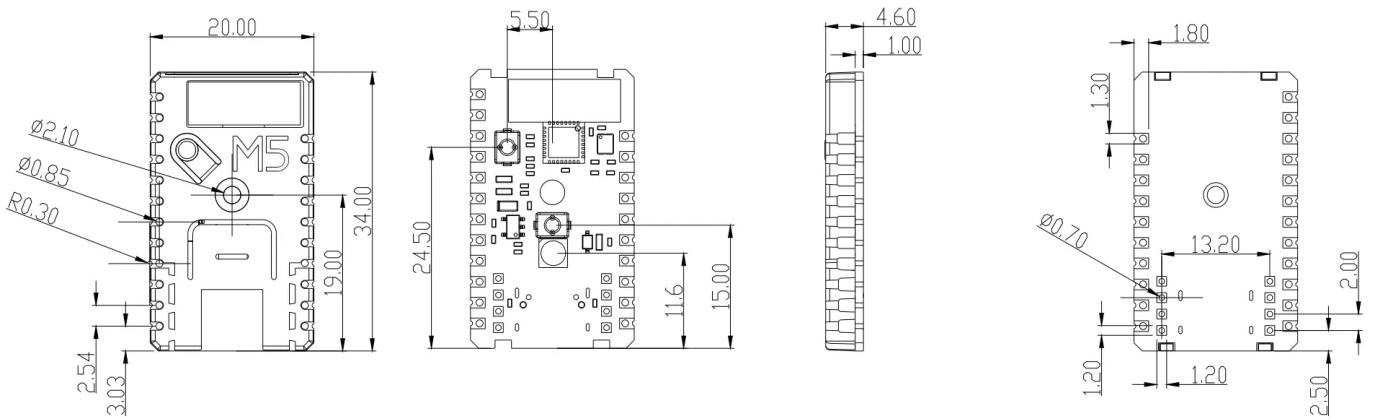
ESP32	GPIO2	GPIO9
SK6812	DI	/
Button	/	SW

Schematic



Module size

- C3&C3U



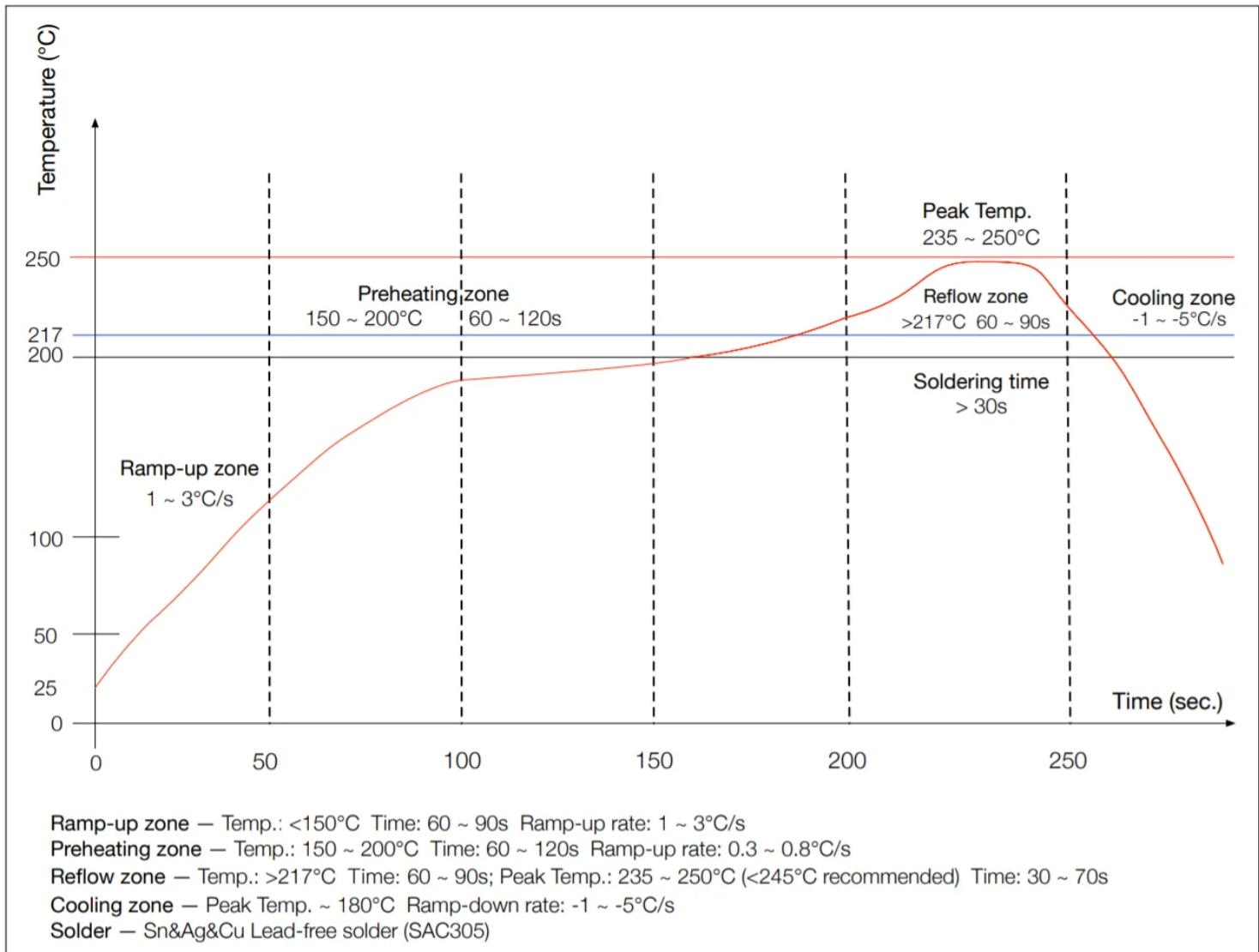
Top View

Side View

Bottom View

UNIT: mm

The shell supports Reflow Profile



Related Links

- **Datasheet**
 - [ESP32-C3](#)
- **PCB**
 - [LCEDA STAMP-C3U Component](#)

Example

ESP-IDF

- RGB LED Control

Video

[STAMP_C3U_VIDEO_01.mp4](#)

Compare

M5STAMP

Comparison chart

COMPARISON	STAMP PICO	STAMP C3U	STAMP C3	STAMP S3
PICTURE				
Number of IO ports	12	14	13	23
FLASH	4M	4M	4M	8M
Serial IC	/	USB CDC	CH9102F	USB CDC
Download method				
Pin spacing	2.54mm	2.54mm	2.54mm	2.54mm/1.27mm
LCD interface				
CPU frequency	240MHz	160 MHz	160 MHz	240MHz
Size	24 x 18 x 4.6mm	34 x 20 x 4.6mm	34 x 20 x 4.6mm	26 x 18 x 4.6mm