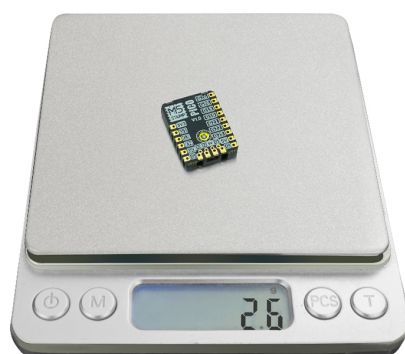
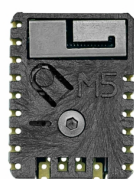
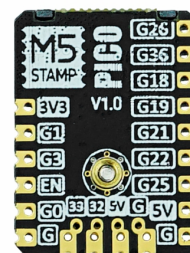
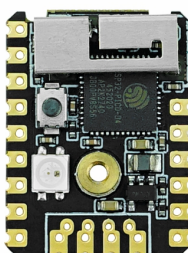


Stamp-Pico

SKU:C050-B



Description

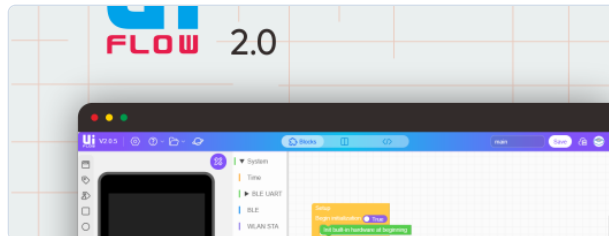
Stamp-Pico is a **plug-and-play**, cost-effective **Wi-Fi minimum core board**. Powered by the Espressif **ESP32** SoC, it is equipped with two low-power **Xtensa® 32-bit LX6** microprocessors running at up to 240 MHz. With its compact size, high performance and low power consumption, it is ideal for space-constrained or battery-powered **IoT applications**.

Tutorial



UiFlow

This tutorial shows you how to control the Stamp-Pico with the UiFlow graphical programming platform.



UiFlow2

This tutorial shows you how to control the Stamp-Pico with the UiFlow2 graphical programming platform.



Arduino IDE

This tutorial shows you how to program the Stamp-Pico with the Arduino IDE.

Features

- ESP32-PICO-D4 (2.4 GHz Wi-Fi)
- Multiple I/O breakouts, supporting various mounting methods (SMT, DIP, flying leads)
- Integrated programmable RGB LED and button
- ESP32 minimum system board
- High-temperature plastic armor for better protection of the 3D antenna and components
- On-board 5V → 3.3V DC/DC circuit, 12 × GPIO, 1 × programmable RGB LED, 1 × button
- Professionally tuned RF circuit for stable and reliable wireless communication
- Development Platform
 - UiFlow1
 - UiFlow2
 - Arduino IDE
 - ESP-IDF
 - PlatformIO

Includes

- 5 × Stamp-Pico
- 5 × High-temperature Sticker

Applications

- Smart home
- Wearable devices
- Medical equipment

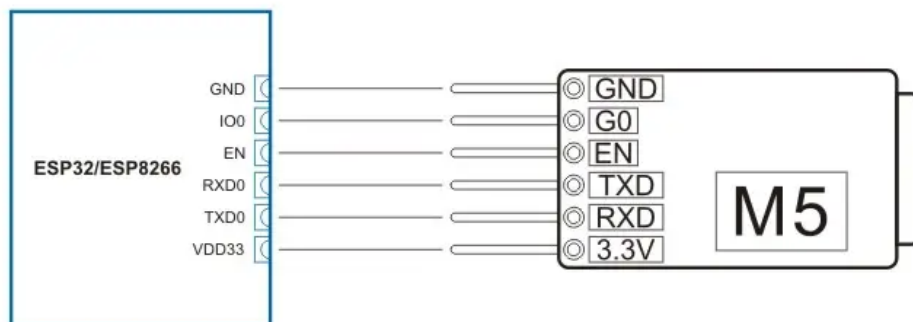
Specifications

Specification	Parameter
SoC	ESP32-PICO-D4 @ Xtensa® 32-bit LX6 dual-core processor, clock frequency up to 240MHz
Package	LGA48 (7×7mm)
Flash	4MB
Wi-Fi	2.4 GHz Wi-Fi
DMIPS	600
SRAM	520KB
Input Voltage	5V@500mA
Power Consumption	Normal standby: 5 V@29 mA / Wi-Fi STA mode: 5 V@60 mA / Classic Bluetooth TX: 5 V@84 mA / DeepSleep: 5 V@0.35 mA
Wireless Range	AP mode: 16 m / BLE mode: 110 m / Classic Bluetooth mode: 90 m
HMI	1 × Programmable physical button, 1 × Programmable RGB LED (SK6812)
Antenna Type	2.4 G 3D antenna
Wi-Fi	802.11 b/g/n (up to 150 Mbps with 802.11 n), spectrum range: 2.4 GHz ~ 2.5 GHz
Peripheral Interface	ADC, DAC, Touch Sensor, SD/SDIO/MMC Host Controller, SPI, SDIO/SPI Slave Controller, EMAC, Motor PWM, LED PWM, UART, I2C, I2S, IR Remote Controller, GPIO, PCNT
IO (12 pins)	G0, G1, G3, G26, G36, G18, G19, G21, G22, G25, G32, G33
IO Pitch	2.54 mm
Operating Temp.	0 ~ 60 °C
Mounting Screws	M2 × 4 Countersunk Hex Socket Machine Screws
Product Size	24.0 × 18.0 × 4.6 mm
Product Weight	13.7 g (5 pcs)
Package Size	138.0 × 93.0 × 5.6 mm
Gross Weight	16.3 g

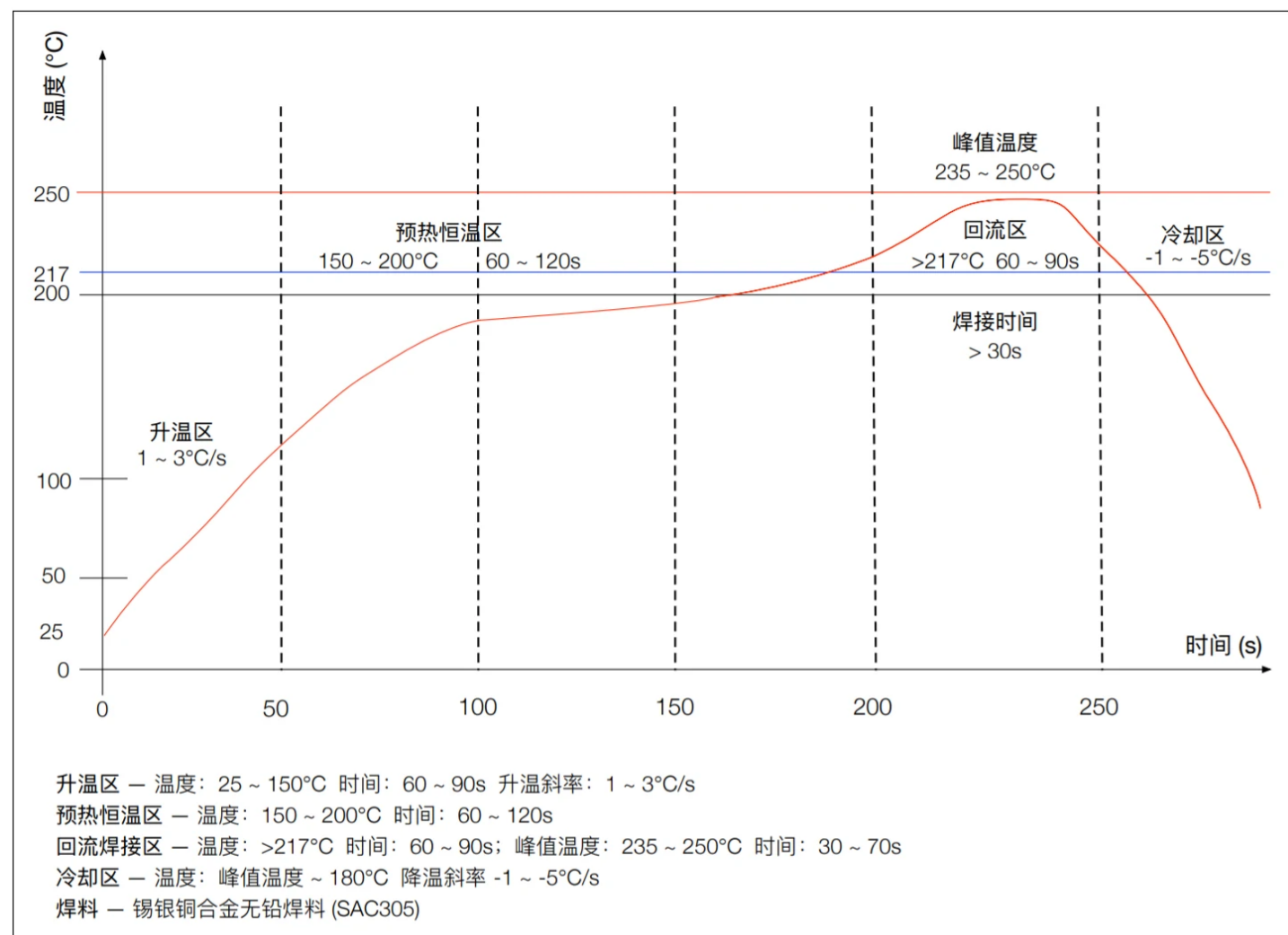
Learn

Download Program

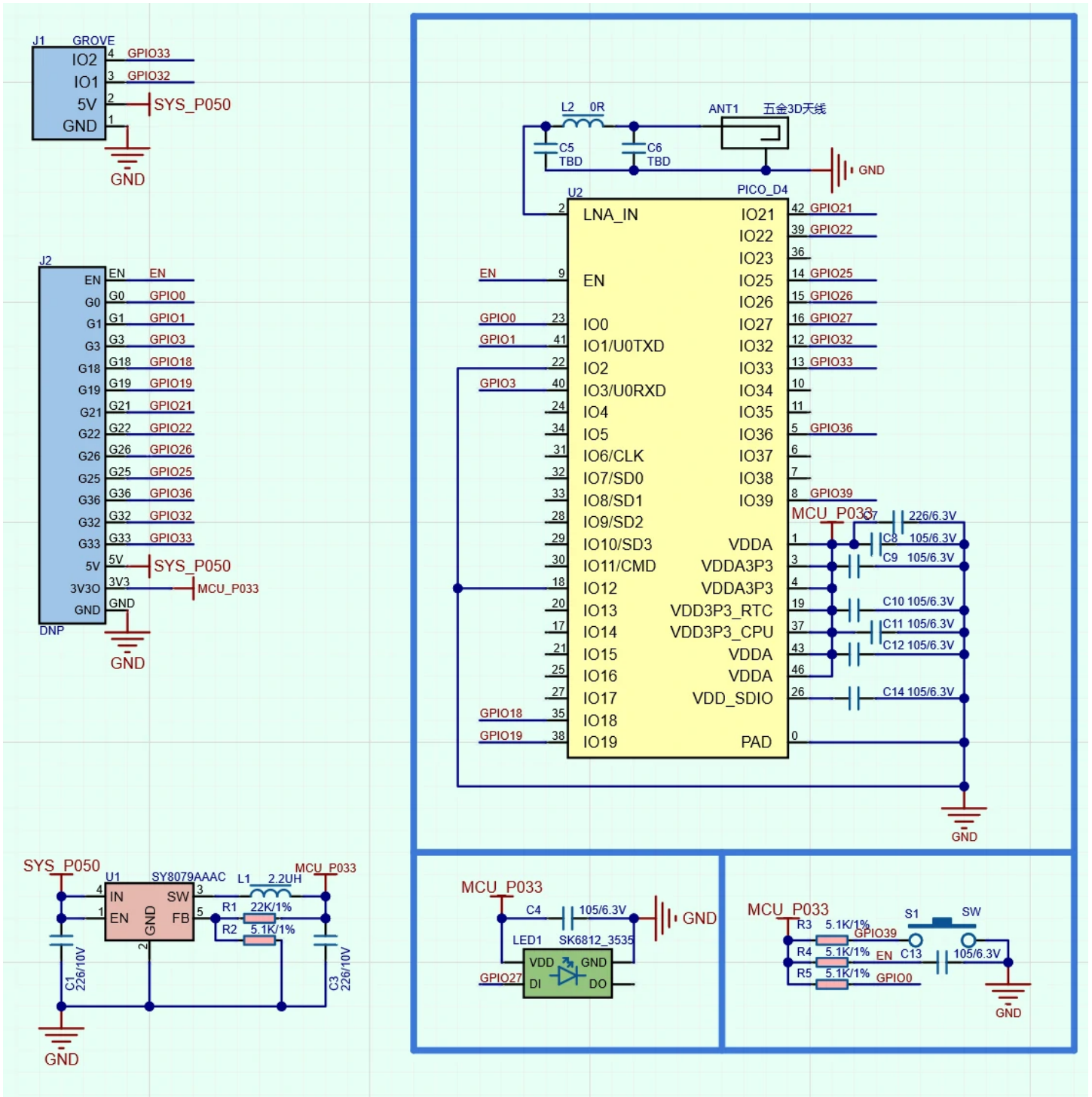
Stamp-Pico adopts an ultra-simplified circuit design and therefore does not include an onboard download circuit. To burn firmware, connect a USB-TTL downloader as shown below.



Reflow Soldering Temperature Curve for the Shell



Schematics



PinMap

SK6812, Button

ESP32-PICO-D4	G27	G39
SK6812	DI	/
Button	/	SW



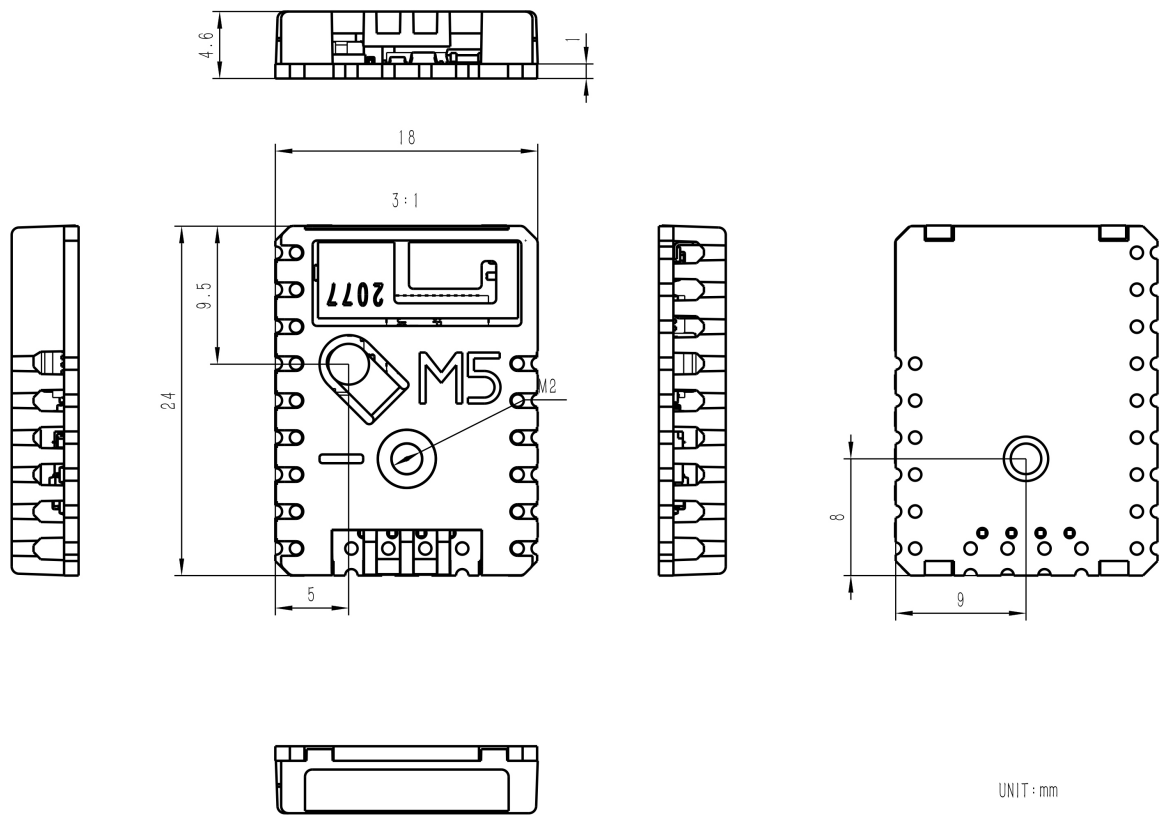
Model Size



Side View

Bottom View

UNIT: mm



Structure

- [Stamp-Pico Structure Files](#)

PCB

- [Stamp-C3 KiCad Library](#)

Datasheets

- [ESP32-PICO](#)

Softwares

Arduino

- [Stamp-Pico Arduino Quick Start](#)
- [Stamp-Pico Button Example](#)
- [Stamp-Pico IO Example](#)
- [Stamp-Pico LED Example](#)

UiFlow1

- [Stamp-Pico UiFlow1 Quick Start](#)

UiFlow2

- Stamp-Pico UiFlow2 Quick Start

USB Driver

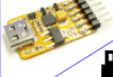
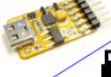
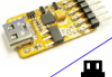
Before flashing, you need to connect a [USB-TTL downloader board](#) to the Stamp-Pico according to the silkscreen. Install the corresponding driver for the downloader on your PC.

For the easiest experience, purchase the Stamp-Pico kit with downloader. The cable order is identical to STAMP-PICO, allowing direct plug-in flashing without wiring. M5 currently provides downloaders with two driver chips: CP210X (for **CP2104**) / CH9102 (for **CH9102**). After extracting the package, choose the installer matching your OS bitness. (If you are unsure which USB chip your device uses, install both drivers.)

Driver Name	Applicable Chip	Download Link
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

Video

Product Comparison

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					OTG				
Pin spacing	2.54mm	2.54mm	2.54mm	2.54mm/1.27mm					
LCD interface	✗	✗	✗	✓					
CPU frequency	240MHz	160 MHz	160 MHz	240MHz					
Size	24 × 18 × 4.6mm	34 × 20 × 4.6mm	34 × 20 × 4.6mm	26 × 18 × 4.6mm					

To compare information on the Stamp 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.