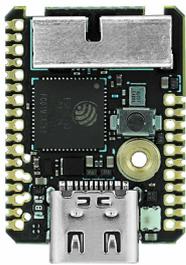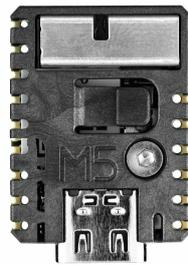# Stamp-S3A

SKU:S007-V033

Description

Stamp-S3A is a highly-integrated embedded module based on the Espressif ESP32-S3FN8. It is equipped with a 240 MHz Xtensa® 32-bit LX7 dual-core processor, integrates 8 MB Flash, a programmable RGB LED, and a user button. The deeply-optimized 3D antenna design offers stronger wireless communication performance. Twenty-three GPIOs are broken out and provided via 1.27 mm / 2.54 mm pitch SMT/DIP pin headers or sockets, allowing effortless PCB integration and enabling developers to build applications rapidly.

Tutorial

Arduino IDE

This tutorial shows you how to program and control the Stamp-S3A with the Arduino IDE.

UiFlow2

This tutorial shows you how to control the Stamp-S3A using the UiFlow2 graphical programming platform.

Features

- ESP32-S3FN8 (2.4 GHz Wi-Fi)
- Minimum-system board
- Rich I/O breakout supporting multiple application forms (SMT, DIP, fly-wire, Unit)
- Integrated programmable RGB LED and button
- Development Platform
    - UiFlow2
    - Arduino IDE
    - ESP-IDF
    - PlatformIO

Includes

- 1 x Stamp-S3A
- 1 x HY2.0-4P Terminal
- 1 x 2.54-9P Male Header
- 1 x 2.54-6P Male Header
- 1 x Hex Key L-Shape 1.5 mm (For M2 Screw)
- 1 x Pin Sticker

Applications

- Smart home
- Intelligent IoT devices
- Industrial control terminals
- Wearable devices

Specifications

Specification	Parameter
SoC	ESP32-S3FN8@Xtensa LX7 dual-core, main frequency up to 240MHz
Flash	8MB
DC-DC	MUN3CAD01-SC
Wi-Fi	2.4 GHz Wi-Fi
Input Voltage	DC 5 V
Power Consumption	Sleep mode: USB Type-C power supply: DC 5V@88.82uA; VIN_5V power supply: DC 5V@6.84uA Standby mode: USB Type-C power supply: 25.54mA; VIN_5V power supply: 25.53mA
HMI	Programmable physical button × 1, programmable RGB LED (WS2812B-2020) × 1
Antenna Type	2.4 GHz 3D antenna
Module Resource I/F	Touch Sensor, SD/SDIO/MMC Host Ctrl, SPI, SDIO/SPI Slave Ctrl, EMAC, Motor PWM, LED PWM, UART, I2C, I2S, GPIO, Pulse Counter
IO Interfaces × 23	G0/G1/G2/G3/G4/G5/G6/G7/G8/G9/G10/G11/G12/G13/G14/G15/G39/G40/G41/G42/G43/G44/G46
IO Pitch	2.54 mm and 1.27 mm
LCD FPC Pitch	0.5 mm @ 12 P or 8 P
Operating Temp.	0 ~ 40 °C
Product Size	26.0 × 18.0 × 4.7 mm
Product Weight	2.9 g
Package Size	138.0 × 93.0 × 10.5 mm
Gross Weight	7.1 g

Learn

Download Mode

To enter download mode, hold the G0 button on the Stamp-S3A before powering on, then release it after power is applied.
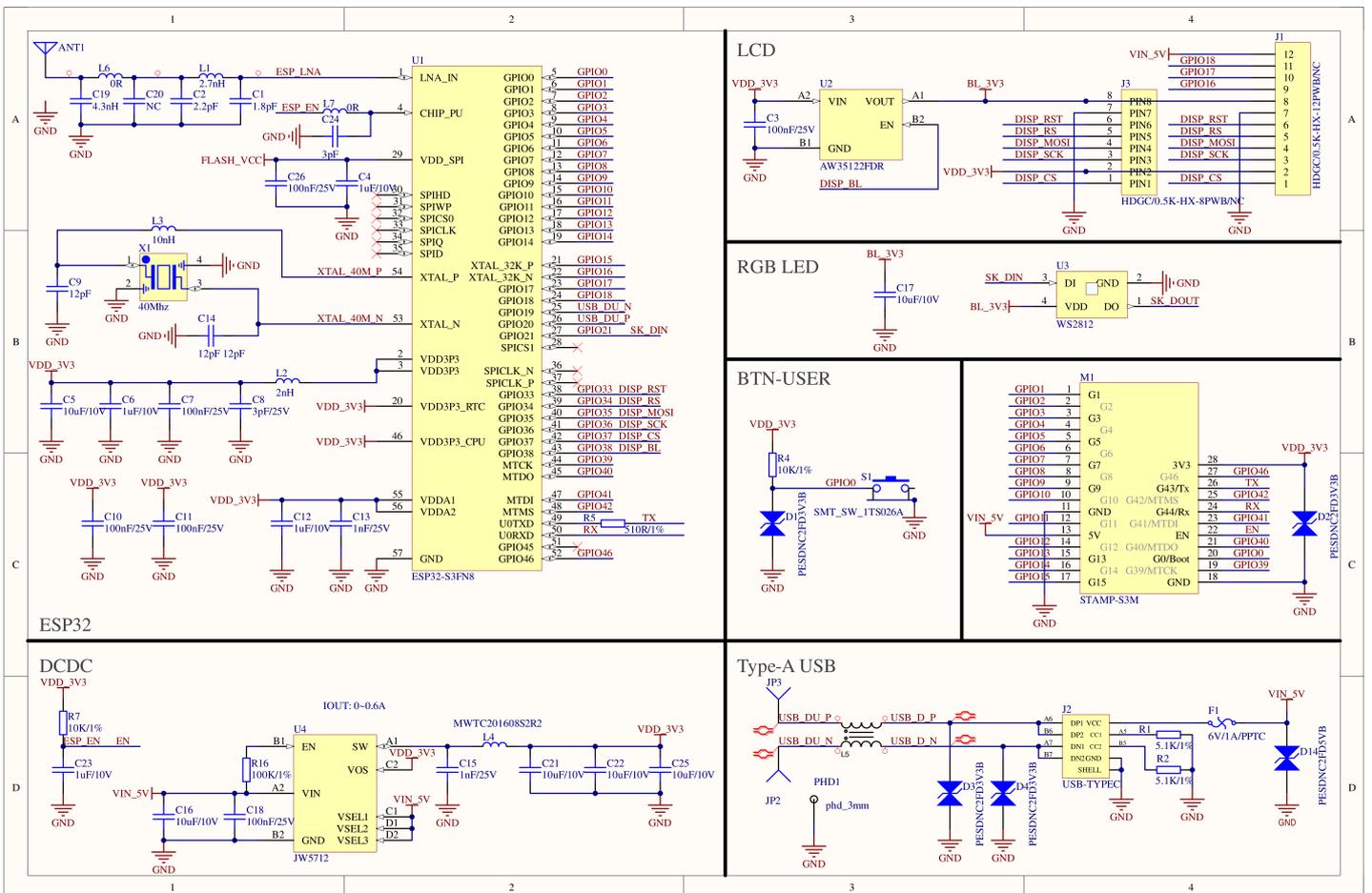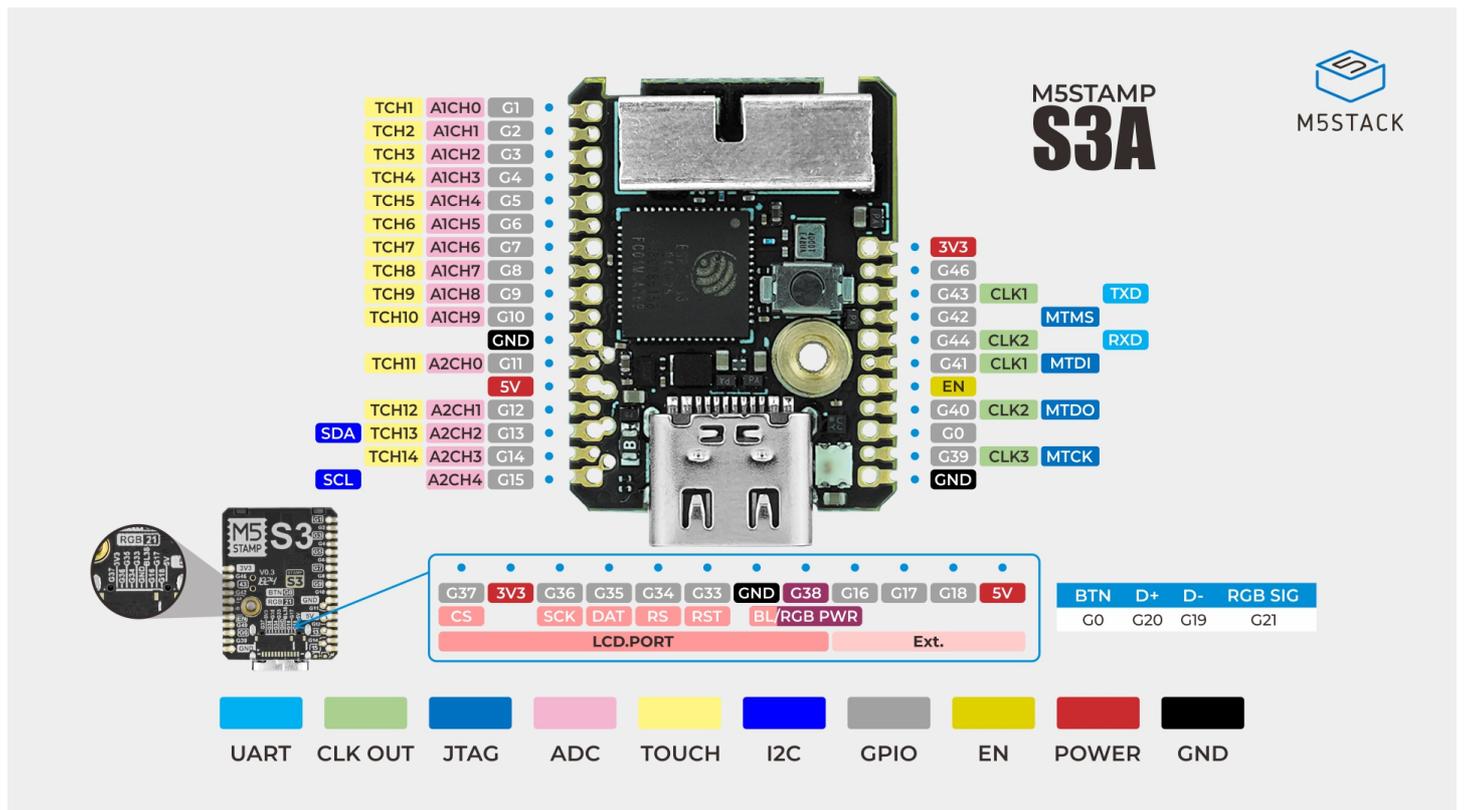
Additional Notes

○ ESP32-S3 pins G0 and G46 are strapping pins that determine the boot mode. By default, G0 is pulled-up and G46 is internally pulled-down, allowing the chip to boot from SPI Flash normally. Do not pull G46 high before the chip boots; otherwise, it cannot start correctly. Refer to the Strapping-Pin section of the ESP32-S3 datasheet for details.

○ An SPI interface for a TFT display is reserved on the back of the module. The compatible FPC connector specifications are 8 PIN and 12 PIN.
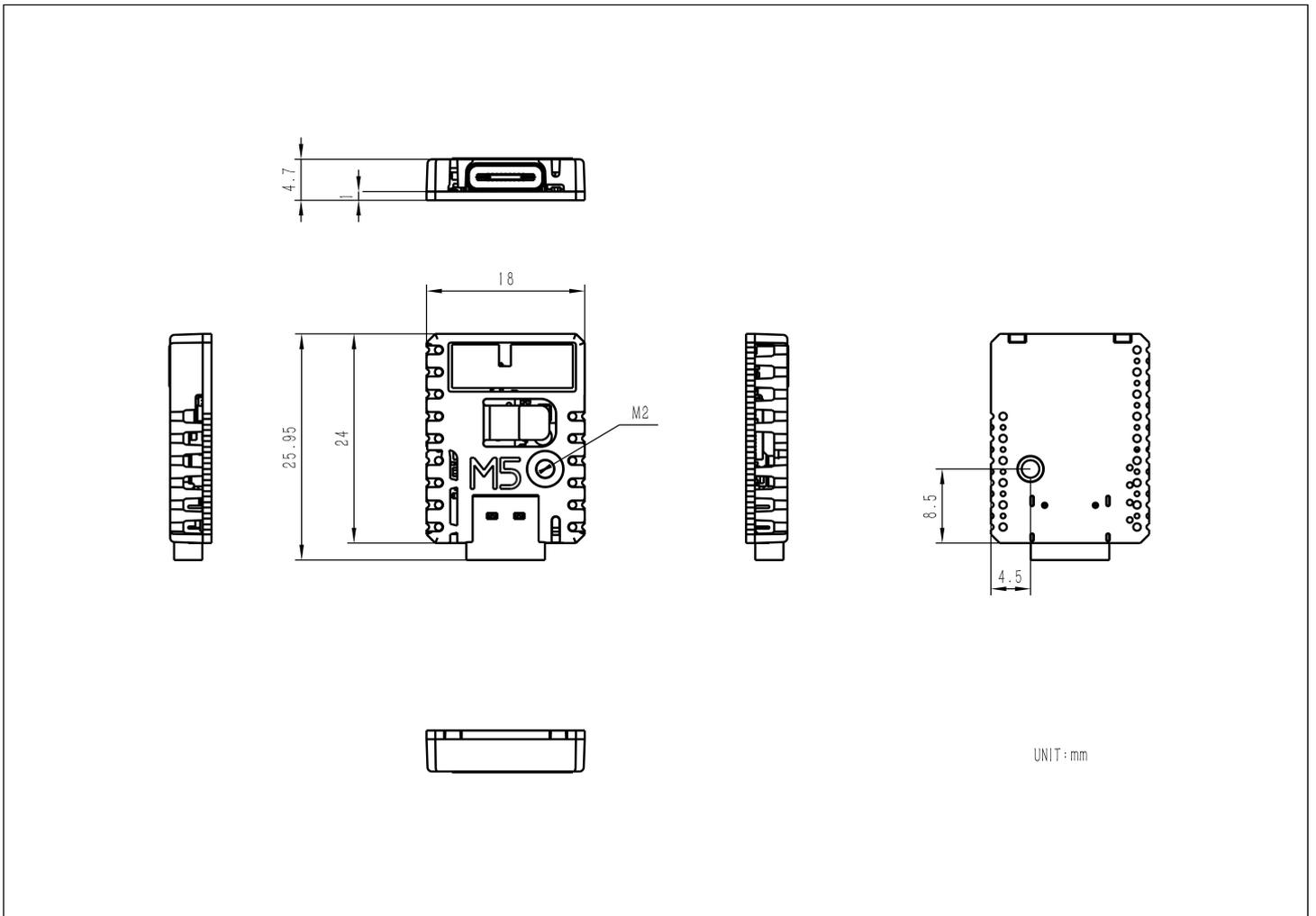
Schematics

○ Stamp-S3A Schematics PDF

PinMap

Model Size

[Stamp-S3A Model Size PDF](Stamp-S3A)

UNIT：mm

Datasheets

- ESP32-S3
- MUN3CAD01-SC

Softwares

Arduino

- Stamp-S3A Arduino Quick Start

UiFlow2

- Stamp-S3A UiFlow2 Quick Start

Video

- Stamp-S3A Product Introduction

S007-V033andS007-PIN127-V033_video.mp4

Product Comparison

Product Comparison Item

	Stamp-S3A	**Stamp-S3**
RGB LED Control Logic	RGB LED power is multiplexed with the reserved screen FPC bus backlight	Powered as soon as power is applied
Antenna Design	Optimized antenna design with better signal reception	Conventional antenna design
Module Boot Button	Improved tactile feel; 4.0 × 3.0 × 2.0 mm button	2.6 × 1.6 × 0.55 mm button
Power Consumption	Sleep Mode： Powered by USB Type-C： DC 5V@88.82uA； Powered by VIN_5V： DC 5V@6.84uA Standby Mode： Powered by USB Type-C：25.54mA； Powered by VIN_5V：25.53mA	Sleep Mode： Powered by USB Type-C： DC 5V@400.67uA Powered by VIN_5V：DC 5V@310.89uA； Standby Mode： Powered by USB Type-C：DC 5V@33.04mA； Powered by VIN_5V：DC 5V@33.56mA

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.