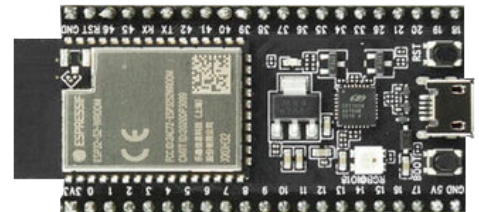# ESP32-S2-Saola-1M Development Board
DFR0812

Product Overview
03-06-2023
For the most up-to-date information, visit www.mouser.com or the supplier's website.

Description

DFRobot ESP32-S2-Saola-1M Development Board is a small-sized ESP32-S2-based development board. This board is equipped with an ESP32-S2-WROOM module, a powerful and generic Wi-Fi MCU module with a rich periphery set. All available GPIO pins (except for the SPI bus for flash and PSRAM) are broken out to the pin headers on the board. Users can program the ESP32-S2 chip to enable multiple functions such as SPI, I²S, UART, I²C, touch sensors, and PWM.
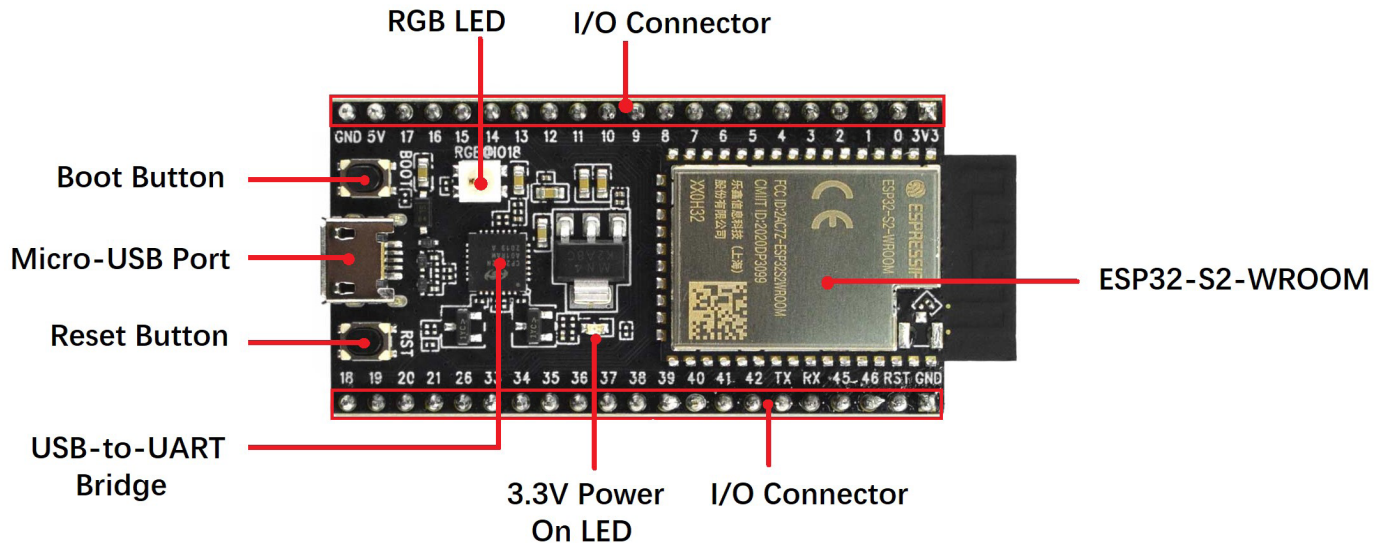

The ESP32-S2-Saola-1M development board features 128KB ROM, 320KB SRAM, 16KB RTC SRAM, and 4MB SPI flash and is integrated with a 40MHz crystal oscillator. This board operates from 3V to 3.6V supply voltage range and a -40°C to 85°C temperature range. Typical applications include smart homes and wearable electronics.
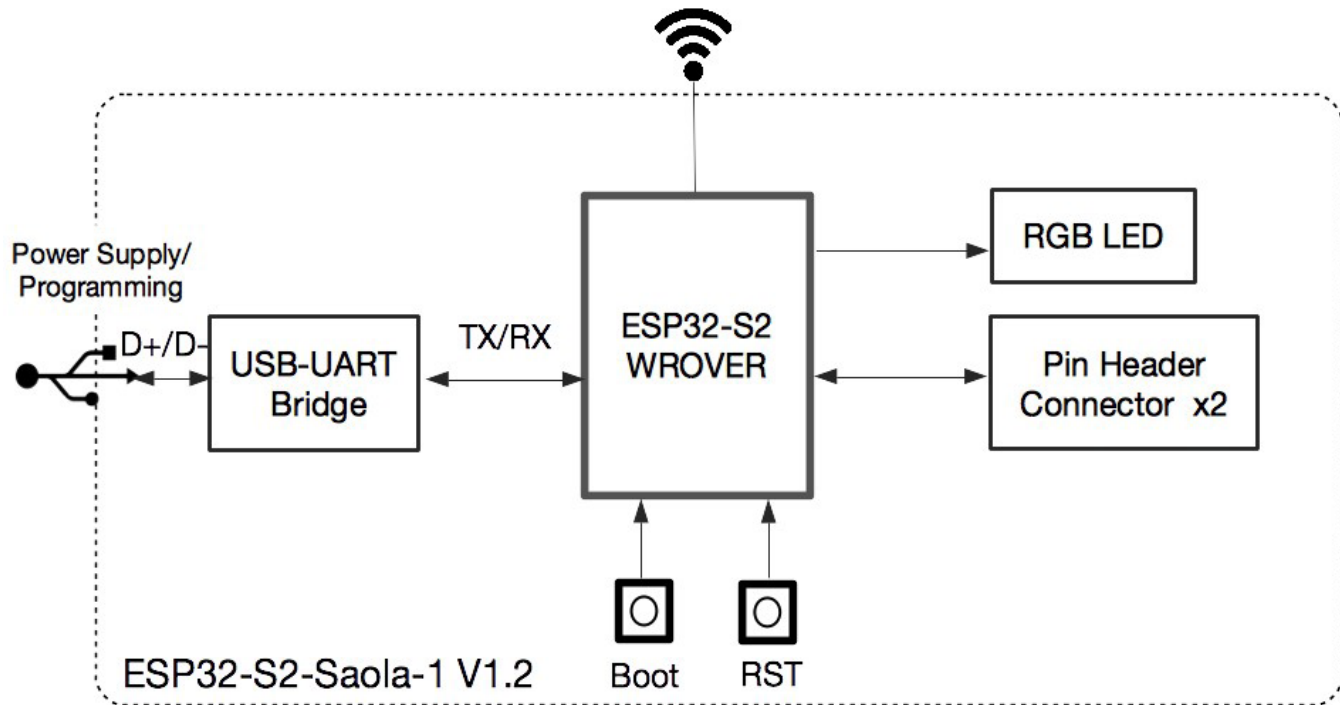
Features

- ESP32-S2 chip
- Xtensa single-core 32bit LX7 microcontroller
- 128KB ROM
- 320KB SRAM
- 16KB RTC SRAM
- 40MHz crystal oscillator integrated
- 4MB SPI flash
- 3V to 3.6V supply voltage range
- -40°C to 85°C temperature range

Key Components

RGB LED   I/O Connector

Boot Button

Micro-USB Port

Reset Button

USB-to-UART Bridge

3.3V Power On LED

I/O Connector

ESP32-S2-WROOM

- **ESP32-S2-WROVER:**
  - ESP32-S2-WROVER is a powerful, generic Wi-Fi MCU module that integrates ESP32-S2. It has a PCB antenna, a 4MB external SPI flash, and an additional 2MB PSRAM
- **Pin headers:**
  - All available GPIO are broken out to the pin headers on the board. Users can program the ESP32-S2 chip to enable multiple functions
- **3.3 V power ON LED:**
  - Turns on when the USB power is connected to the board
- **USB-to-UART bridge:**
  - Single USB-UART bridge chip provides transfer rates up to 3Mbps
- Reset button
- **Micro-USB port:**
  - USB interface. Power supply for the board, as well as the communication interface between a computer and the ESP32-S2 chip
- **Boot button:**
  - Download button. Holding down Boot and then pressing reset initiates Firmware download mode for downloading firmware through the serial port
- **RGB LED:**
  - Addressable RGB LED (WS2812), driven by GPIO18

Block Diagram

Mouser Part Number

View Part

To learn more, visit https://www.mouser.com/new/dfrobot/dfrobot-esp32-s2-saola-1m-board/