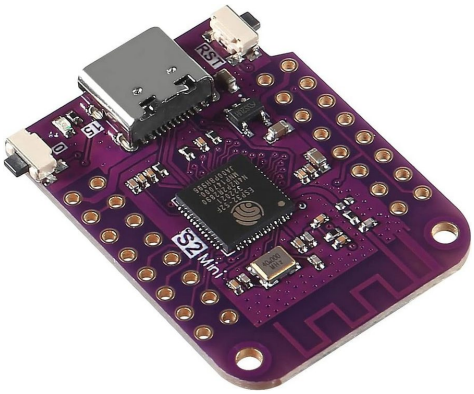
ESP32-S2 Mini Board

Compact Wi-Fi Development Board



The ESP32-S2 Mini is a compact Wi-Fi development board based on the ESP32-S2. Its small size, USB support and low-power design make it suitable for IoT, sensors, automation and embedded projects.

TOP USES

- IoT projects
- Wi-Fi sensors
- Home automation
- Compact embedded devices

KEY FEATURES

- ESP32-S2 MCU
- 2.4 GHz Wi-Fi
- USB support
- Low-power operation
- Compact size

Technical Specifications

ESP32-S2 Mini Board

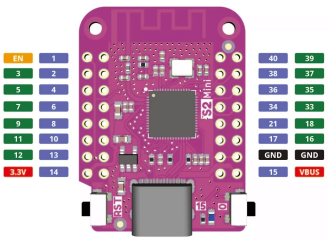
Parameter	Value
MCU	ESP32-S2
CPU	Single-Core Xtensa LX7
Frequency	Up to 240 MHz
Wi-Fi	2.4 GHz 802.11 b/g/n
Flash	Typically 4 MB
ADC	12-bit
Logic	3.3 V
USB	USB OTG

Pinout

ESP32-S2 Mini Board

S2 Mini V1.0.0 ESP32-S2

WIFI Development Board



PIN FUNCTIONS

Pin	Function	Notes
GPIO	Digital I/O	General purpose input/output
ADC	Analog	Analog sensor input
I2C	SDA / SCL	Sensor and display communication
SPI	SPI	High-speed peripherals
UART	TX / RX	Serial communication
3V3	Power	3.3 V supply
GND	Ground	Common ground

WIRING NOTES

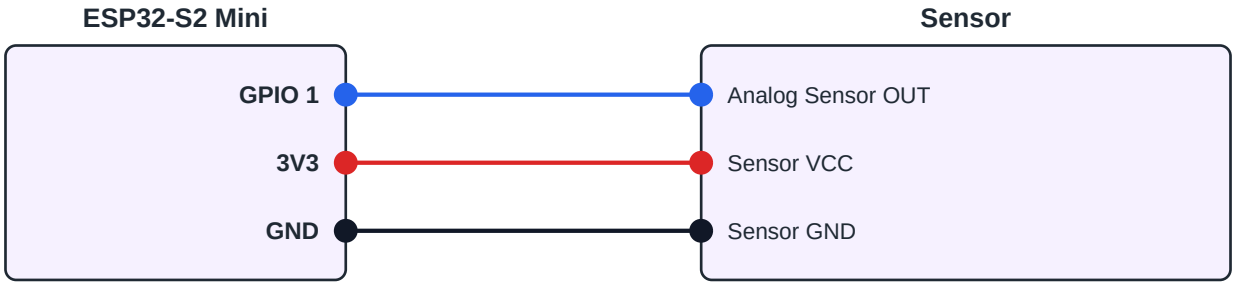
- GPIO uses 3.3 V logic.
- Do not apply 5 V directly to GPIO pins.

Example Project

Wi-Fi Sensor Monitor

Read an analog sensor and display its value through a simple web page hosted by the ESP32-S2 Mini.

CIRCUIT



EXAMPLE CODE

```
#include <WiFi.h>

const char* ssid = "YOUR_WIFI";
const char* password = "YOUR_PASSWORD";
WiFiServer server(80);
const int sensorPin = 1;

void setup() {
  Serial.begin(115200);
  WiFi.begin(ssid, password);
  while (WiFi.status() != WL_CONNECTED) delay(500);
  server.begin();
}

void loop() {
  WiFiClient client = server.available();
  if (!client) return;

  int value = analogRead(sensorPin);
  client.println("HTTP/1.1 200 OK");
  client.println("Content-Type: text/html");
  client.println();
  client.print("<h1>Sensor Value: ");
  client.print(value);
  client.println("</h1>");
  client.stop();
}
```

EXPECTED RESULT

- The ESP32-S2 connects to Wi-Fi.
- The analog sensor value is read by the board.
- The value can be viewed from a web browser.

Useful Links

ESP32-S2 Mini Board

Resource	Link
ESP32-S2 Documentation	https://docs.espressif.com/projects/esp-idf/en/latest/esp32s2/
Arduino ESP32 Core	https://docs.espressif.com/projects/arduino-esp32/en/latest/
Arduino IDE	https://www.arduino.cc/en/software/

COMPATIBLE COMPONENTS

- DHT22
- PIR Sensor
- OLED Display
- Relay Module
- Analog Sensors

Need this component?

Buy ESP32-S2 Mini Board >>

https://techzoneegypt.com/p/esp32-s2-mini-board