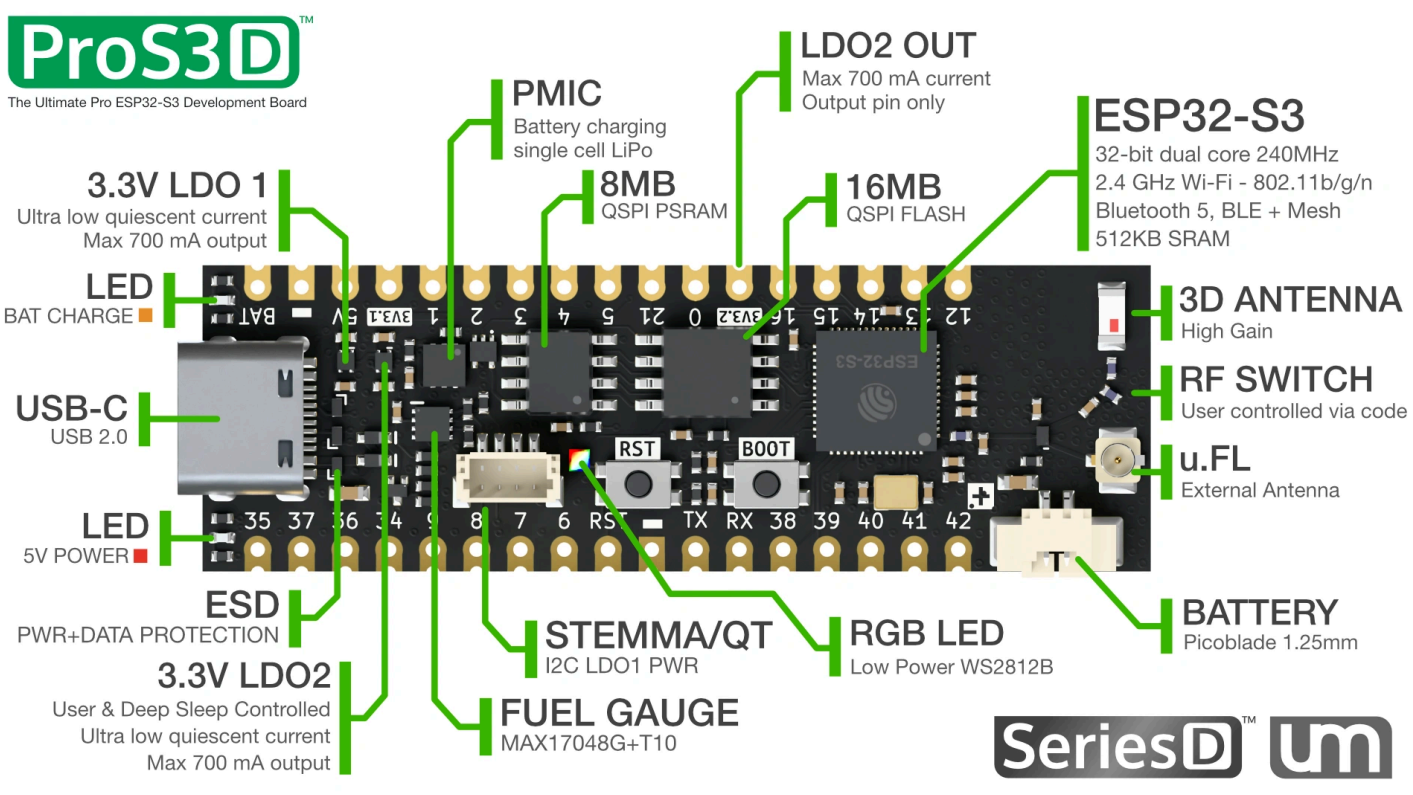
# ProS3[D]

## Meet ProS3[D] - our *Extremely Pro* ESP32-S3 board!

ProS3[D] is the ProS3 you know, re-designed with the Series[D] upgrades: an onboard antenna and a u.FL connector on the same board, switchable from your code, an I²C fuel gauge for accurate battery monitoring & a new ultra low power 1010 Neopixel RGB LED. It keeps its USB ESD protection, castellated edges, 16 MB of flash and 8 MB of PSRAM.






**Both antennas. One board.**

Onboard antenna and external antenna connector. No separate versions to choose between.




**Switch in software.**

Change antennas from your code, even while your code is running.



**Know your battery.**

An I²C fuel gauge for battery monitoring, plus onboard LiPo charging.

**NOTE** The onboard antenna is selected by default, so you never need to worry about the RF switch being in a bad state, or the ESP32-S3 getting damaged if you forget to plug in an external antenna.

## Features & Specifications

| PROCESSOR | FLASH | PSRAM | GPIO |
|---|---|---|---|
| **ESP32-S3** | **16 MB** | **8 MB** | **27** |
| 32-bit · Dual-core LX7 · up to 240 MHz | QSPI | QSPI | |

**WIRELESS**

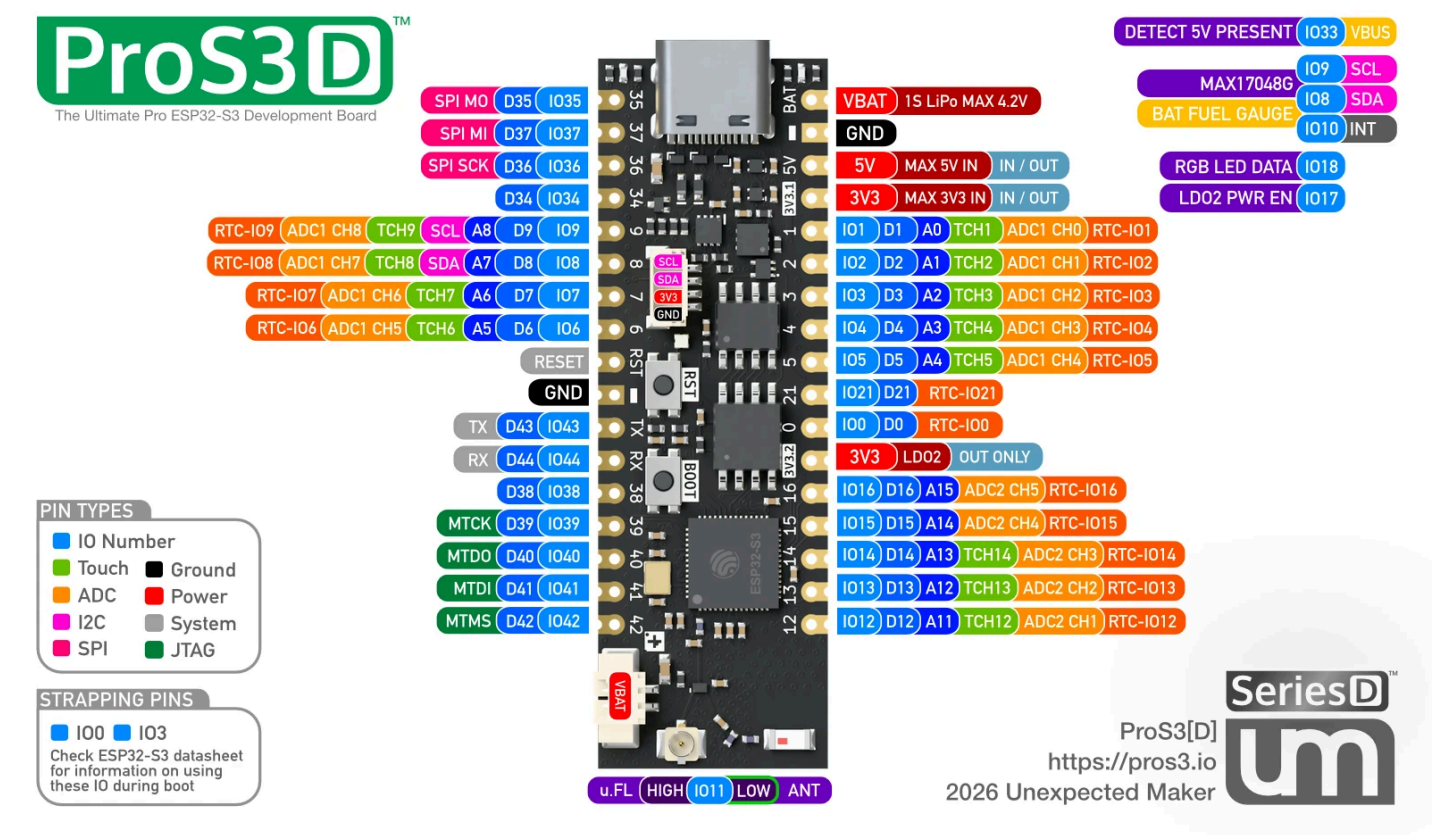
**Wi-Fi 4** 2.4 GHz · 802.11b/g/n **BLE 5 + Mesh**

| | |
|---|---|
| **Coprocessor** | RISC-V ultra-low-power core |
| **USB** | USB-C · USB Serial/JTAG and exposed JTAG pins |
| **Protection** | USB ESD protection · reverse USB back-feed protection |
| **Power** | 2 × 700 mA · 3.3 V regulators |
| **Sleep** | Ultra-low deep sleep current |
| **Expansion** | STEMMA QT connector powered by LDO1 |
| **Battery** | LiPo charging · MicroBlade connector · I²C battery fuel gauge |
| **Sensing** | 5V presence detection |
| **Onboard** | Low-power RGB LED · red power and orange charge LEDs |
| **Antenna** | 3D high-gain antenna and u.FL connector · software switching |
| **Connection** | Castellated headers |
| **Format** | TinyPICO, TinyS2 and TinyS3 compatible |
| **Size** | 55 × 17.8 mm |
| **Thickness** | 5.4 mm at the vertical STEMMA QT connector |

### In the box

| | |
|---|---|
| **Included** | Colour pinout card<br>Unassembled male headers<br>JST-PH 2.0mm to Picoblade 1.25mm battery cable converter<br>Antistatic bag |
| **Optional** | external 2.4GHz antenna |

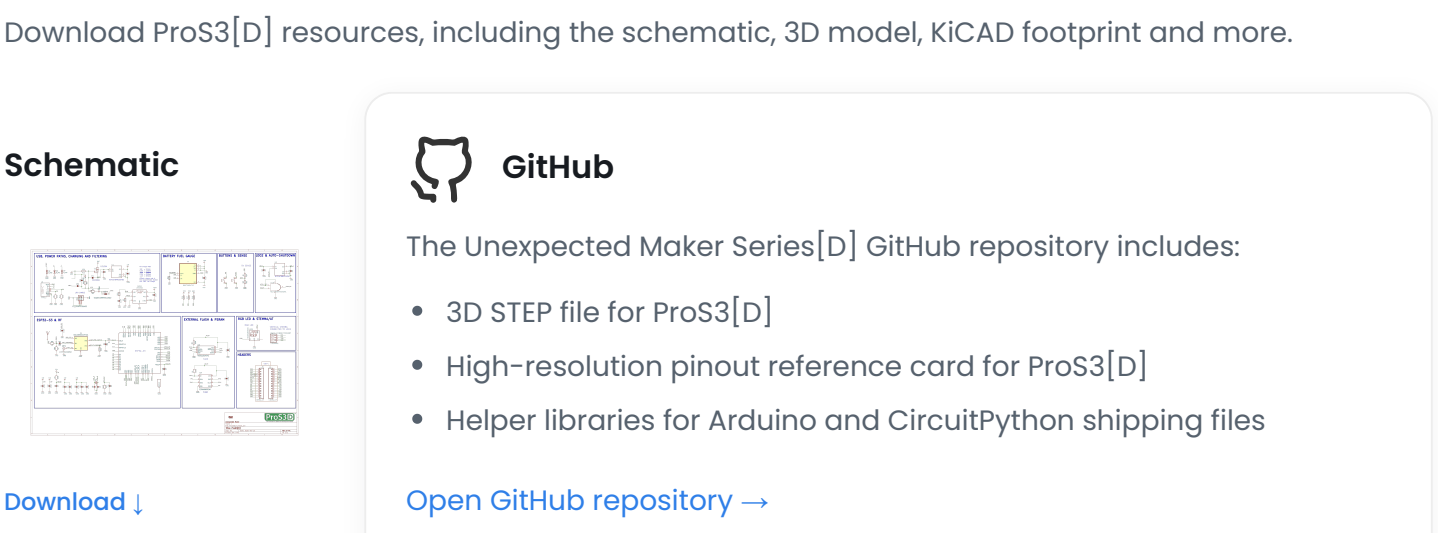
## Pinout




Board dimensions 55 × 17.8 mm · Max thickness 5.4 mm at the vertical STEMMA QT connector

## TinyS3[D] Compatible

The first 11 pins on the top and 12 pins on the bottom from the USB connector end are the same IO numbers and peripheral functionality as the TinyS3[D], making the ProS3[D] compatible with all TinyPICO/TinyS3[D] shields.




## Code any way you like!

### Ships with CircuitPython pre-installed!

The ProS3[D] ships with the latest version of CircuitPython that supports the ESP32-S3. It also ships with the UF2 bootloader, so you can easily update your ProS3[D] with the latest CircuitPython firmware, whenever you desire.

Of course, you can choose from a wonderful array of other languages and platforms. Explore them all below....

CircuitPython · MicroPython · Arduino · ESP-IDF · PlatformIO · .NET nanoFramework · Rust · PHP · TinyGo

## Downloads

Download ProS3[D] resources, including the schematic, 3D model, KiCAD footprint and more.

### Schematic



Download ↓

### GitHub

The Unexpected Maker Series[D] GitHub repository includes:

- 3D STEP file for ProS3[D]
- High-resolution pinout reference card for ProS3[D]
- Helper libraries for Arduino and CircuitPython shipping files

Open GitHub repository →

### ESP32-S3 datasheet

For detailed information about the ESP32-S3, including full IO capabilities and other functionality, refer to the datasheet from Espressif.

View ESP32-S3 datasheet →