

Femto.io

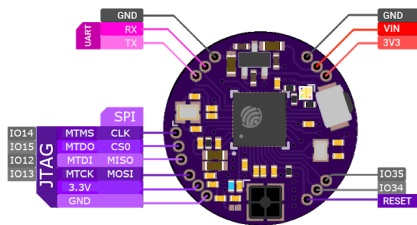
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FemtoBeacon ESP32 (ESP32-D2WD)

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Product Overview

This is an ESP32 based WiFi/Bluetooth coin! It operates at 3.3V, and uses the ESP32-D2WD chipset (Internal 2MiB flash, dual core). It is the size of a US Dime coin (9mm radius) and can fit just about anywhere! SPI/JTAG pins are available. Works with MicroPython (default) or Arduino!



Set Up

You will need a 3.3V Logic USB-to-UART adapter (not included) and the ability to **supply 5V to the coin's LDO regulator (VIN pin)**. Connect the VIN pin to the adapter's voltage pin, GND to ground, coin RX to the adapter's TX, and coin TX to the adapter's RX.

Voltage Pins

Please note: The VIN (LDO Regulator input) pin can take in 5.5V max and power the 3V3 line with 3.3V. **DO NOT EXCEED 3.3V on the 3V3 pin, or any GPIO pins!**

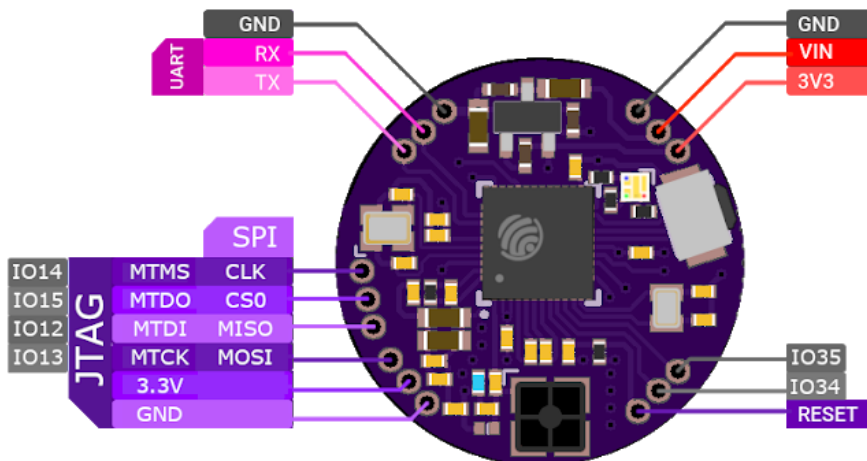
Arduino IDE Usage

If you are using the Arduino IDE, please use the latest Arduino IDE release. You will need to wire up your coin to the FTDI-to-UART adapter. Press and hold the “Boot” button before powering the coin to enter sketch upload mode.

To work with the FemtoBeacon ESP32 using the Arduino IDE, do the following:

- Arduino IDE: Add this to Preferences > Additional Boards Manager URL:
https://dl.espressif.com/dl/package_esp32_index.json
- Arduino IDE > Boards > Boards Manager: Install the ESP32 board package.
- Arduino IDE > Boards: Set board to “ESP32 Dev Module”
- Arduino IDE > Tools > Partition Scheme: Set to “Minimal SPIFFS”
- Arduino IDE > Tools > Flash Frequency: 40MHz (You can experiment w/ 80MHz)
- Arduino IDE > Tools > Flash Mode: DIO (You can experiment with QIO)
- Arduino IDE > Tools > Flash Size: Set Flash Size to “2MB”

Now you can select your port, and upload your sketch. Power cycle the coin (don’t hold the Boot button) and your sketch will execute.



MicroPython Usage

This board ships with MicroPython preinstalled. If you need to re-install MicroPython, see femtoarduino.com for the latest MicroPython binaries. Since this board has only 2MiB of Flash storage, please be mindful of storage space constraints.

You can connect your USB-to-UART adapter, and use your preferred Serial Terminal emulator (such as Minicom) to interact with REPL, or even manage python scripts using Adafruit's ampy.

NOTE: *You will need to disable hardware flow control to interact with REPL on the FemtoBeacon ESP32.*

