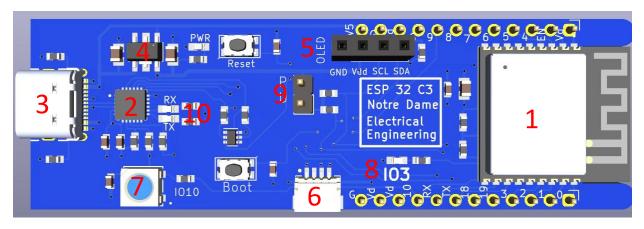
### Notre Dame EIH: Build a Board

#### **Board Features:**

- ESP32 C3 Processor 160 MHz, WiFi Bluetooth LE
- Connector for OLED
- Addressable RGB LED (for fun.)
- Connector for Adafruit and Sparkfun breakout boards.
- USBC connector.
- Programmable in multiple environments.
  - o Arduino IDE
  - o PlatformIO extension in Visual Studio
  - o Circuit Python (untested)

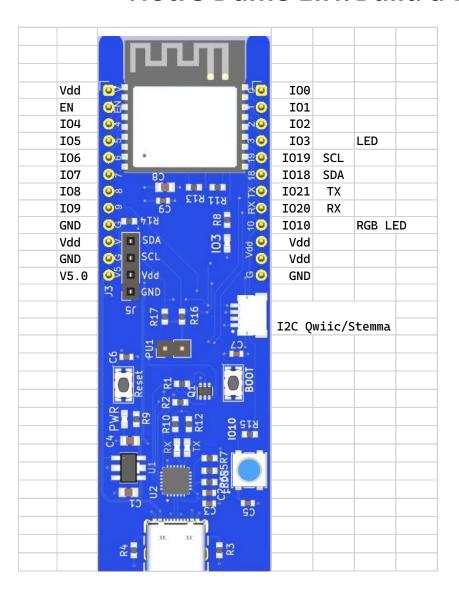


#### About the Board:

- 1. ESP32 C3 Processor 160 MHz, Wi-Fi, Bluetooth LE. Spec Sheet
- 2. CP2102n USB-Serial converter. Spec Sheet

  Note the you may have to download USB drivers for this part from here.
- 3. USBC Connector. GCT4105. Spec Sheet
- 4. 3.3V regulator One of the following:
  - a. XC6220. SOT89-5 package. Spec Sheet
  - b. AZ1117I. SOT223 package. Spec Sheet
- 5. Connection for I2C OLED. Note that the device must have the indicated pin order.
- 6. 4 pin JST SH connector. Works with Adafruit Stemma QT and Sparkfun <a href="Qwiic">Qwiic</a> devices.
- 7. Addressable LED connected to GPIO10. One of the following:
  - a. Inolux: IN-PI55TATPRPGPB (RGB). Spec Sheet
  - b. Inolux: IN-PI55QATPRPGPBPW-40 (RGBW). Spec Sheet
- 8. "Blink" LED (Blue) connected to GPIO3.
- 9. Jumper pins. Install to use onboard I2C pull-up resistors (4.7KΩ)
- 10. Indicator LED for serial transmit and receive.

## Notre Dame EIH: Build a Board



### Demo Software:

Demo programs were created in PlatformIO running in Visual Studio Code.

Note that some of the software uses the Real Time Operating System that is part of the software environment for the ESP32.

Zip files of the software projects are <a href="here:">here:</a>

KiCad 7 files for a similar board, and a library with some of the parts can be found <a href="here:">here:</a>

# Notre Dame EIH: Build a Board

**OLED Display:** Display should be installed as shown. Note that the pins on both the board and the OLED are labeled with signal names. (GND (ground) VDD (power) SCL (clock) SDA (data))

