Starting Out with the Arduino Editor and the ESP32 TinyPICO

First, download the Arduino IDE 1.8.19 (Integrated Development Environment) free software off the net from: https://www.arduino.cc/en/software which has an editor, a library, and examples for you to use. Note this IDE can run on Windows, MACs, and Linux machines, so pick the right one for your computer. For new users, I recommend you download and run the "windows installer" as it does a more complete setup and will install the windows drivers for you too.

Now take a glance at the ***Install the Arduino Desktop IDE*** on https://www.arduino.cc/en/Guide and the info in TinyPICO_Getting_Started.pdf in the download. Just a quick read to give you some context. I had people get lost at this point, so I'll step you through the rest. The accelerated learners among you can also glean more info from: http://arduino.cc/en/Tutorial/HomePage and there are a lot of topics there for search for a subject or browse or http://www.instructables.com/files/orig/F3J/MTJN/FVW22MXN/F3JMTJNFVW22MXN.pdf
or http://www.richardvannoy.info/arduino.php or http://arduino-info.wikispaces.com/TUTORIALS
These offer info at different learning levels so pick one you are comfortable with.

Now you should have the ESP32 TinyPICO board, a USB cable with a compatible micro USB at one end, and the IDE software loaded.

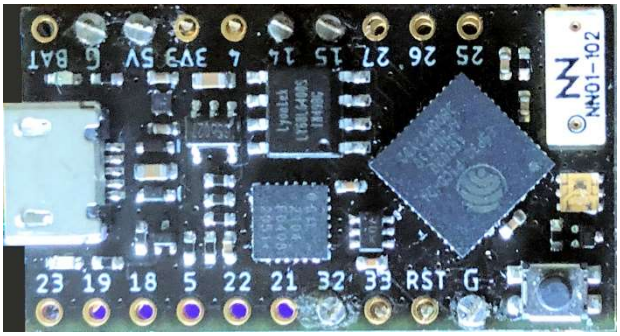


Figure 1, ESP32 TinyPICO



Figure 2, USB A to USB micro connector

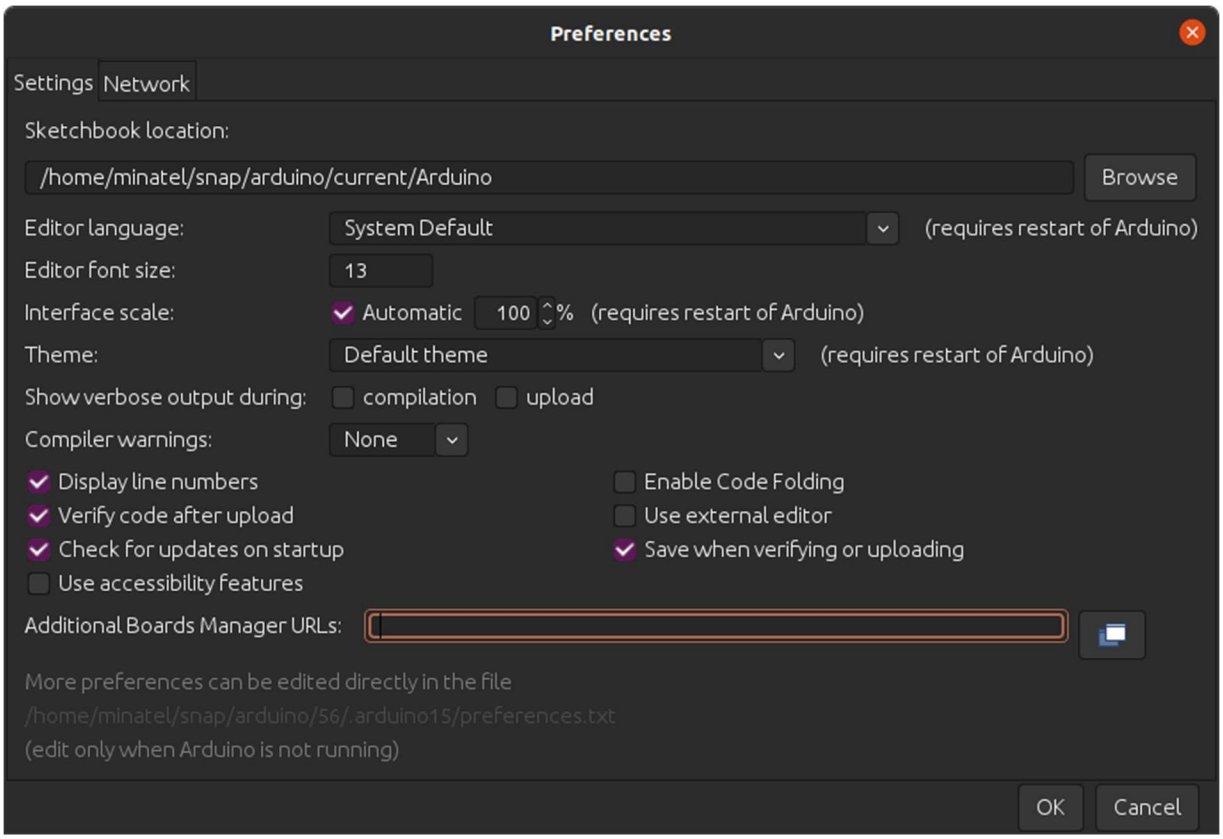
Plug the USB A side of the cable into your computer. For Windows installs https://www.arduino.cc/en/Guide/Windows is a good detailed, step by step. The drivers you want to install are in the Arduino folder (from my example above) C:\arduino-1.8.1\drivers\. For other operating Systems go to http://arduino.cc/en/Guide/HomePage and poke around there. Remember the serial port number for the serial cable installation.

Download **WILD_Materials.zip** and unzip. Copy **only** the entire **contents** of **WILD_Arduino_Load** from the unzipped download materials and paste **all** the folders and **all** their contents into your …Documents\Arduino\ folder. This will likely include **D17_32_TinyPico, Blink_TinyPICO, libraries,** and **tools** folders.

Next, follow these steps to install the Arduino-ESP32 support:

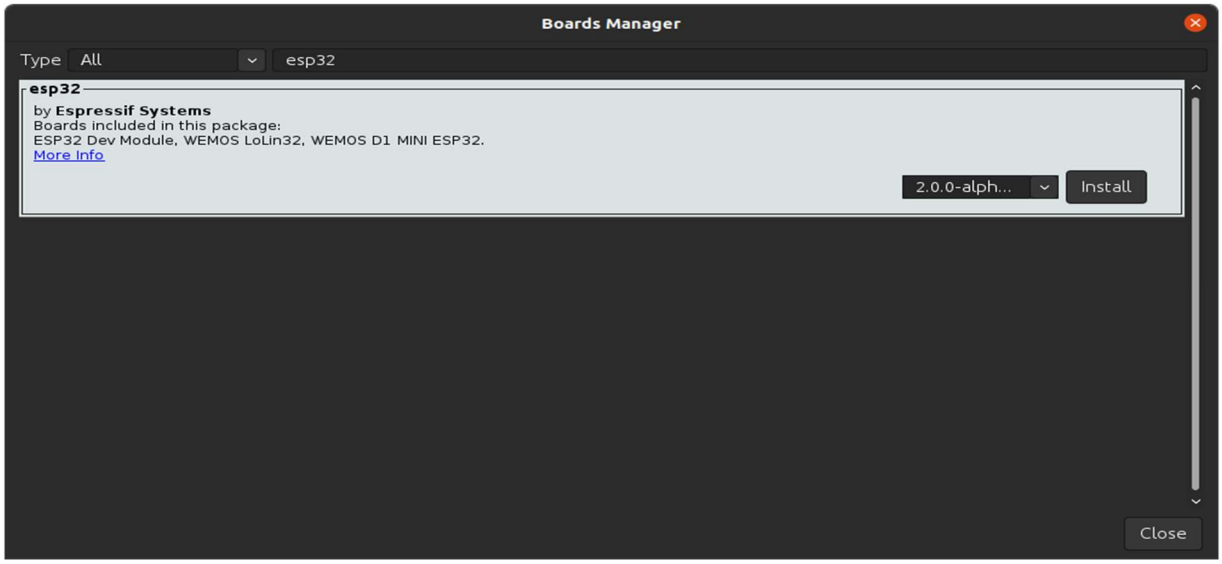
Copy this link:
https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package_esp32_index.json

- After installing the current Arduino IDE at the 1.8 level or later. (The current version is at the arduino.cc website.)
- Start Arduino and open the Preferences window.



Enter the release link copied above into *Additional Board Manager URLs* field. You can add multiple URLs, separating them with commas, then clock **OK**.

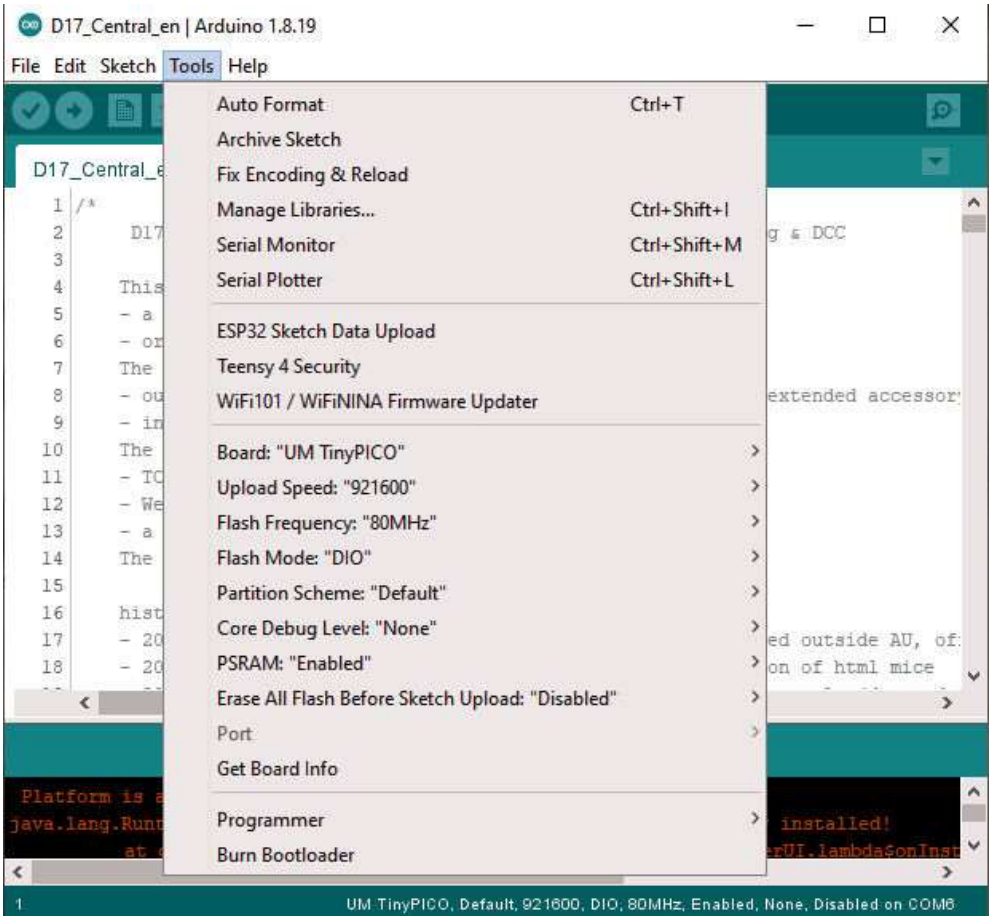
Open Boards Manager from Tools > Board menu and install *esp32* platform (and do not forget to select your ESP32 board from Tools > Board menu after installation).



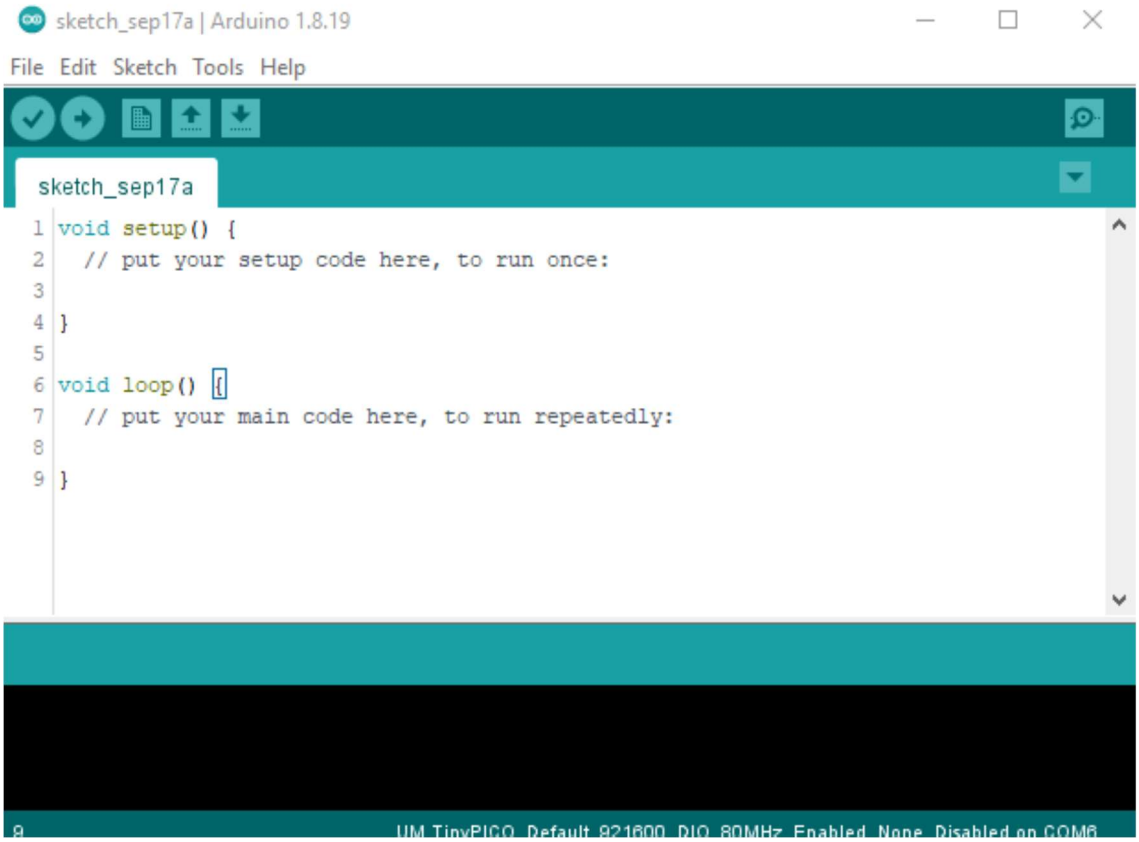
Restart Arduino IDE.

Version 2.0.5 of the ESP32 Arduino Core is now available in the Arduino IDE boards manager - please make sure you are on the latest version. I recommend you upgrade to the Arduino IDE 1.8.19 also.

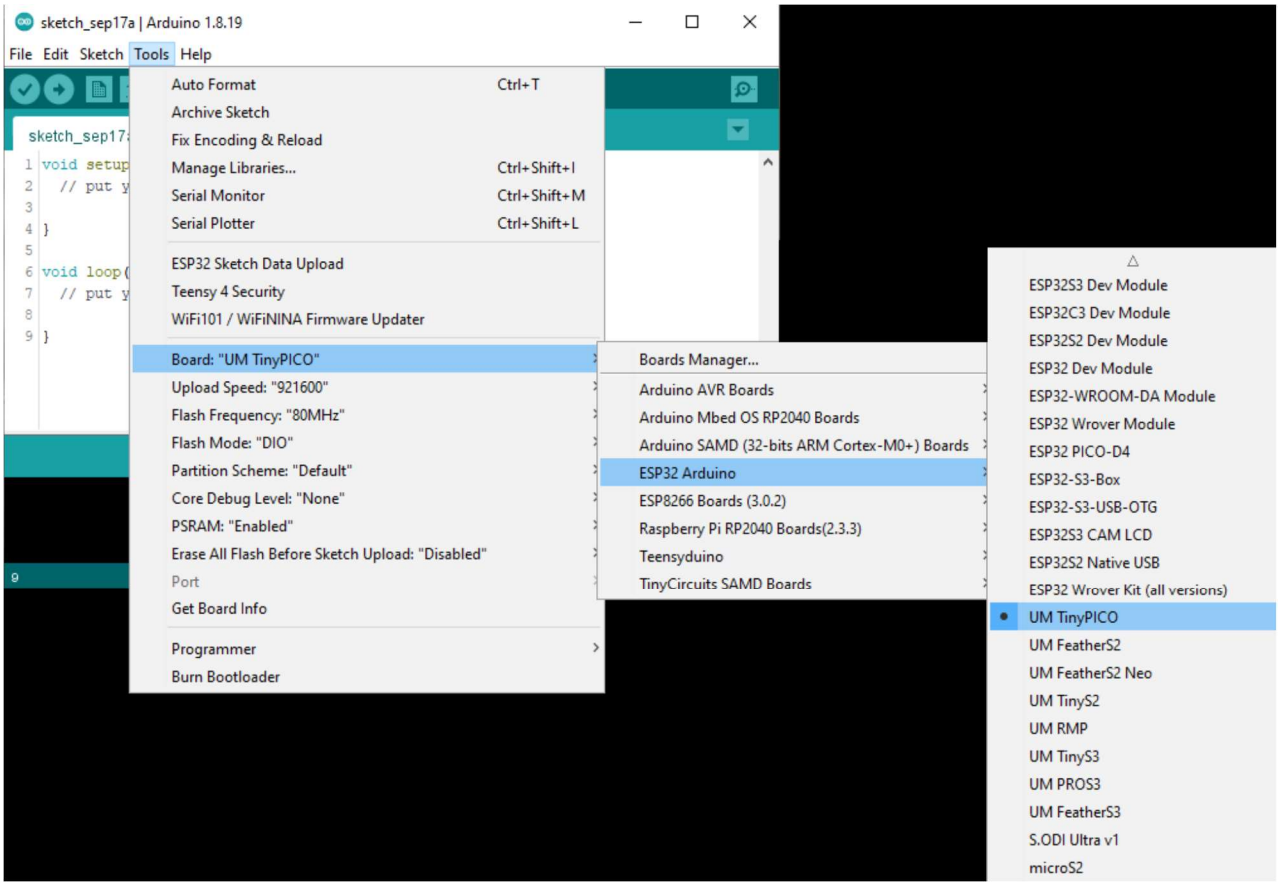
If everything has been installed correctly, you'll need to select **UM TinyPICO** from the Tools->Boards->ESP32 Arduino-> UM TinyPICO boards list. Last check that Under Tools->**Flash Mode** is set to **DIO**.



Now start up the Arduino IDE software you loaded, and you should get a window like this: (All my examples will be MS Windows based)

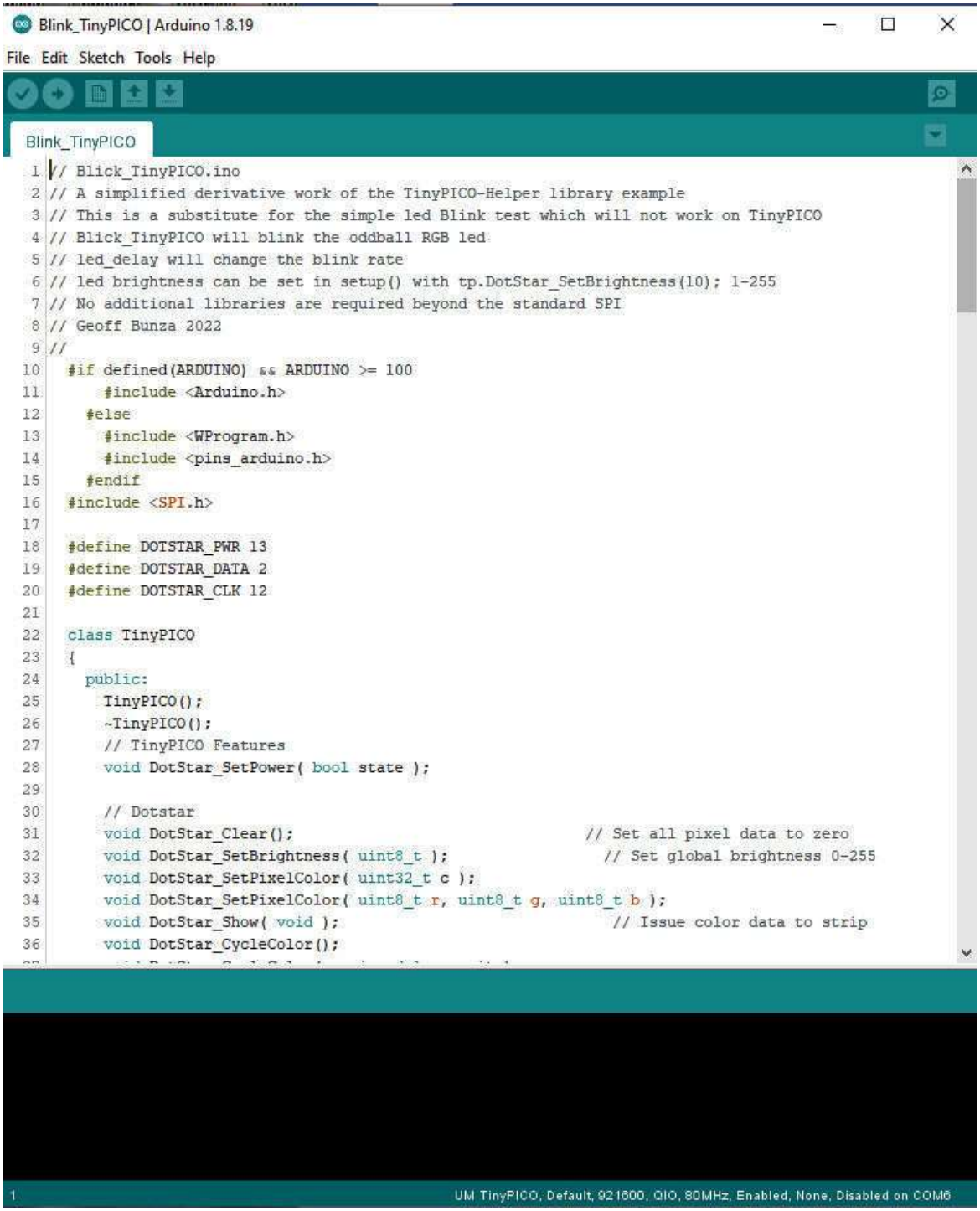


This is the window for the Arduino Editor, where you can recall programs from libraries or create your own. You can load, edit, save, and download your programs, called sketches, for the TinyPICO. Go to the top menu bar, mouse click on Tools, then Board, then **UM TinyPICO** This will place a black dot next to your selection, and corresponds to the TinyPICO Board I referenced before. Note well that there are many variations of Arduinos. They all can run the same examples we will use. The Arduino TinyPICO is small, low power, cheap, fast, and comes with a large program memory.



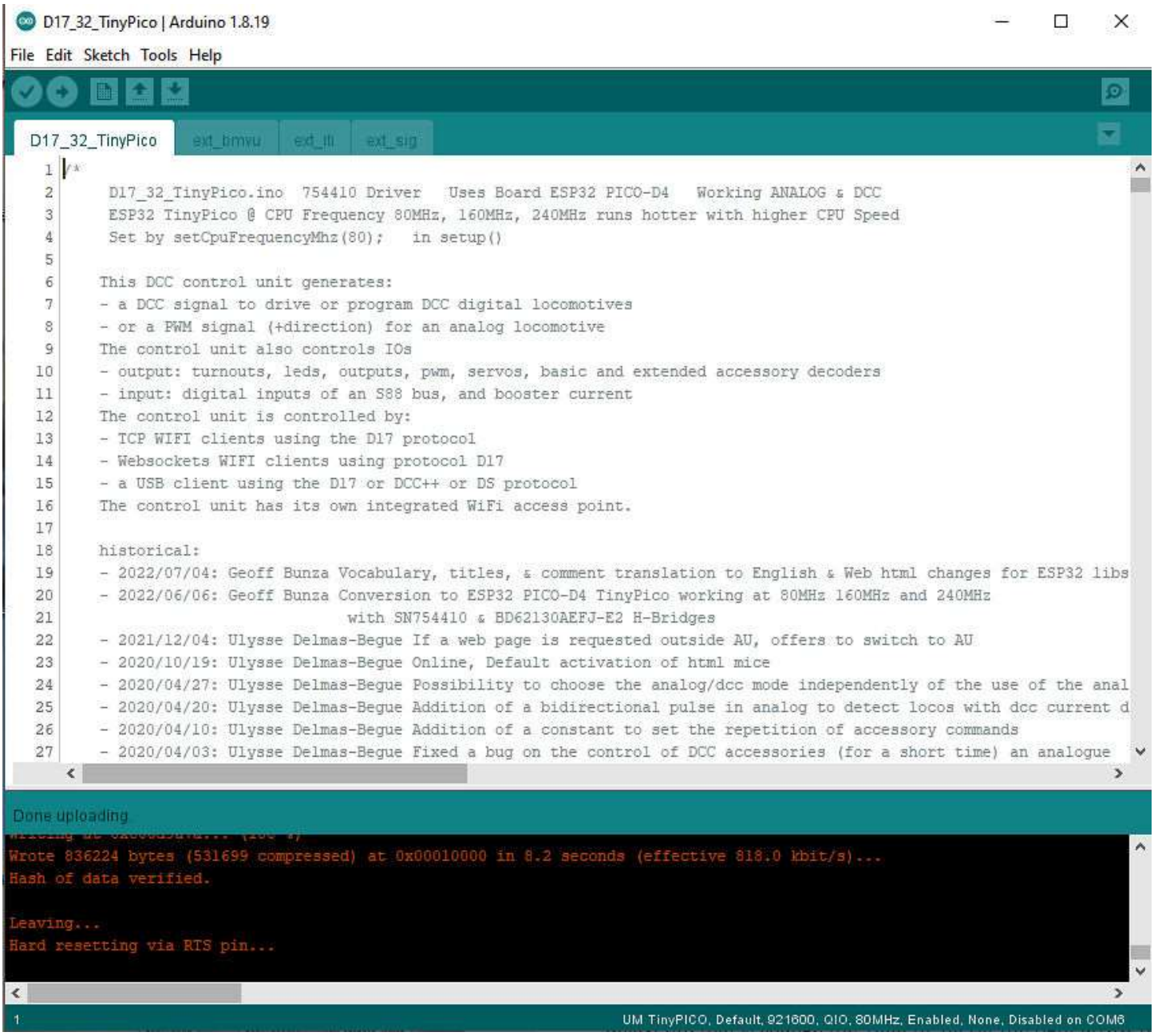
Now go back to the top menu bar, mouse click on Tools, then Serial Port. Select the Serial Port corresponding to the USB cable you set up before. All that we've done so far only needs to be done ONCE.

OK, now we are ready to do something with the TinyPICO. In the open window of the Arduino IDE, click on File, then Open, then find **Blink_TinyPICO** and in your Arduino directory and double click to open it. Then select **Blink_TinyPICO.ino** and click Open, and you should see:



Then click the right arrow below Edit in the Menu bar. Your Blink sketch should load and you should see the multicolor led on the TinyPICO blinking.

Then find **D17_32_TinyPico.ino,** load it.
After you see:
Hard resetting via RTS pin... in the messages box at the bottom of the editor,



Go to the **Tools** menu at the top of the screen and click on **ESP32 Sketch Data Upload**. This will load your TinyPICO with a set of HTML files that will be used for your throttle and setup via WiFi.

This completes the setup and initial load of your TinyPICO for WILD1.