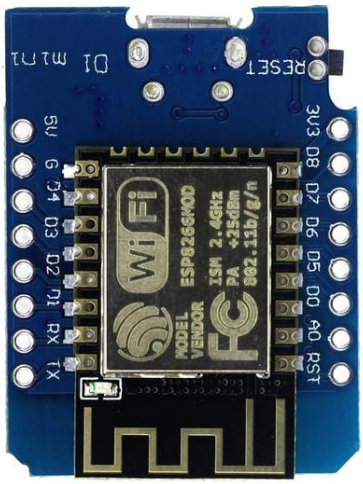
Hardware Requirements for basic setup

- Wemos D1 Mini

https://robu.in/product/d1-mini-v2-nodemcu-4m-bytes-lua-wifi-internet-of-things-development-board-based-esp8266/



- DHT 11

https://robu.in/product/dht11-temperature-and-humidity-sensor-module-with-led/

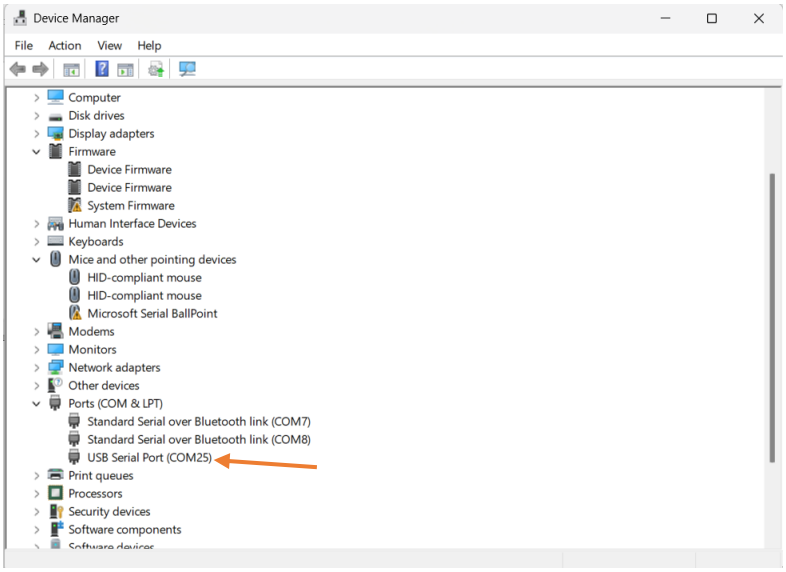
- Micro usb cable
- female to female jumpers: 3-4 pcs

Uploading BIN files to an Wemos D1 Mini (ESP8266)

Download nodemcu-flasher from Gdrive:

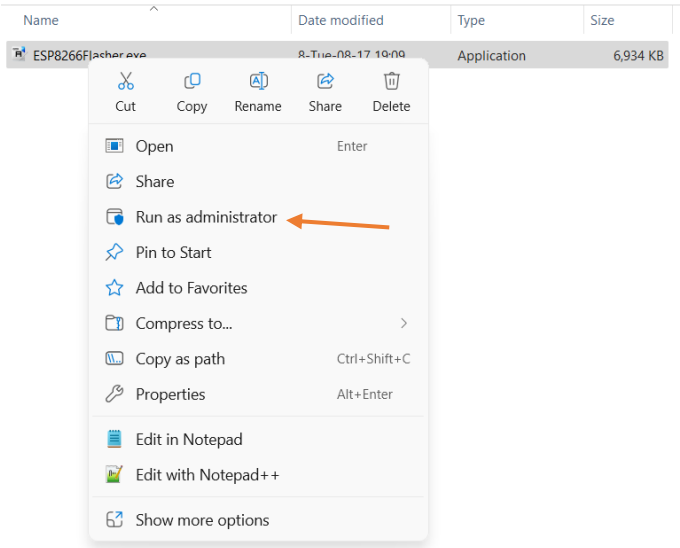
https://drive.google.com/drive/folders/1Jr-8lz06fxJDTsEEtfGwZtn3OogKy-7V?usp=sharing

1) Open device manager from windows search, Plug in wemos mini and check for COM port in device manager. Mine shows COM 25, Yours might be same or different.

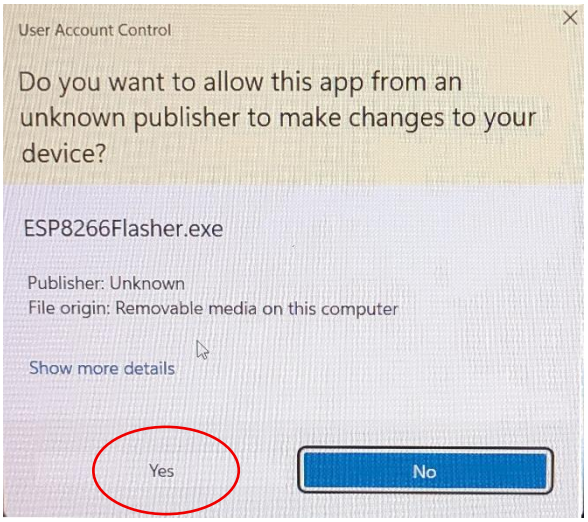


Note: Incase COM ports is not visible or driver not available ,refer to Installing CH340g pdf

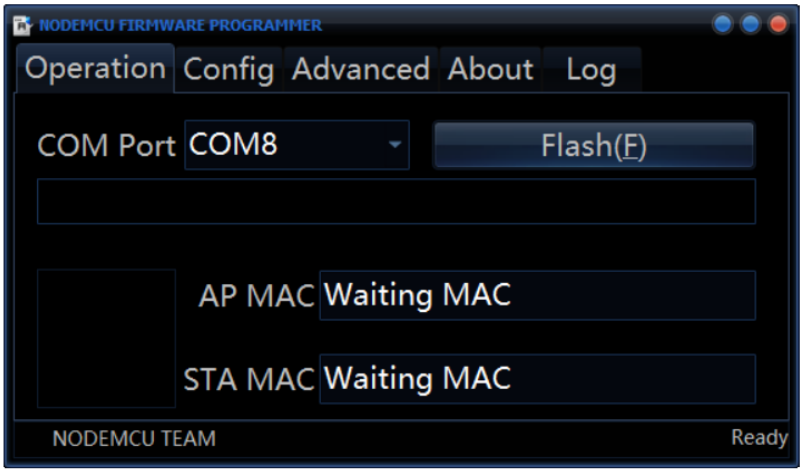
2) Download all file from the gDrive, Navigate to Nodemcu Flasher/Win64 folder and Right Click on ESP8266Flasher.exe and select Run as administrator.



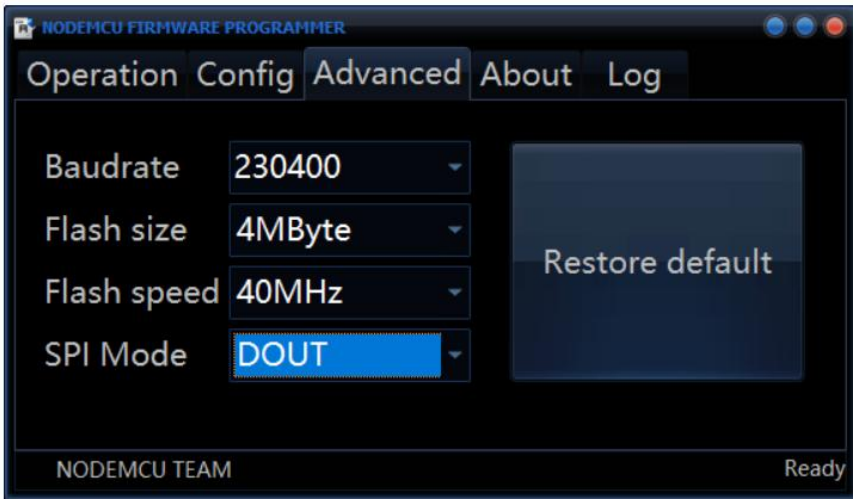
3) Windows asks for permission, Click on Yes



This is the Flasher window, Select correct port of the device (previously checked in device manager).



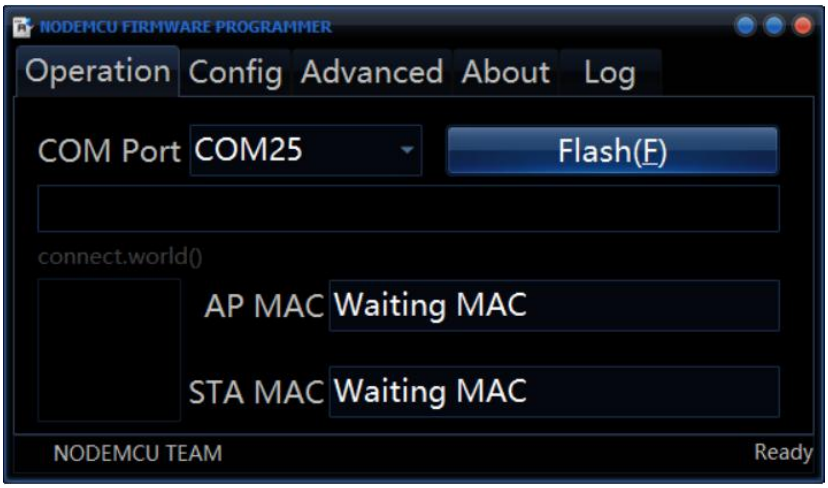
4) In the “Advanced” tab, select the “DOUT” option for SPI Mode.

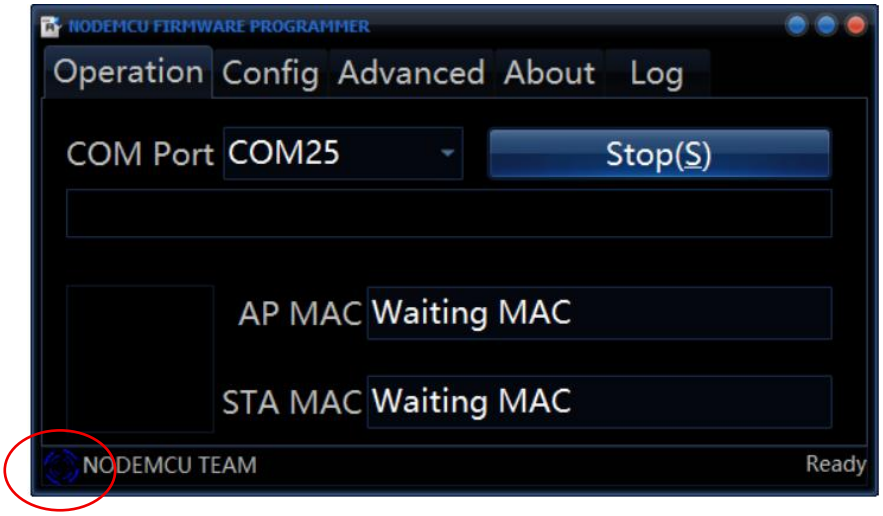


5) Click on gear icon and navigate to the folder containing BIN file.

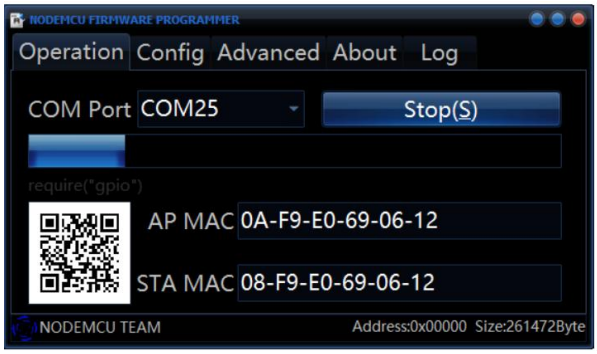
Do not change 0x00000 offset

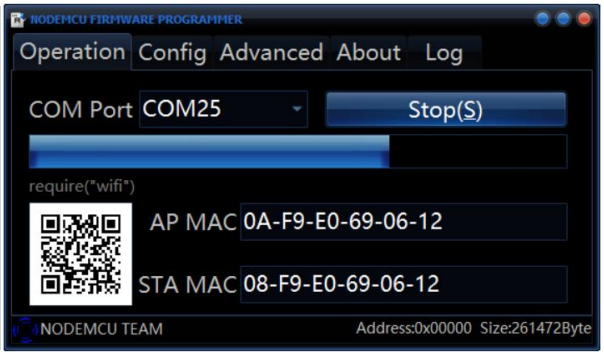
6) In the “Operation” tab, you can now press “Flash” to upload the binary file. Don’t forget to reset the device so that the upload is taken into account.

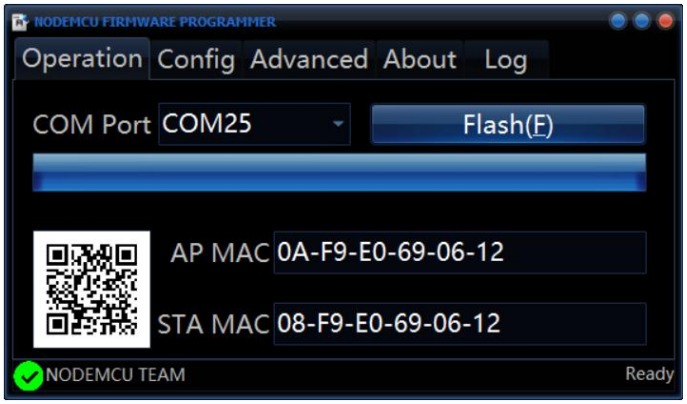




Once wemos is connected AP mac and STA mac is displayed. Blue icon appears to be rotating which confirms flashing process has started.







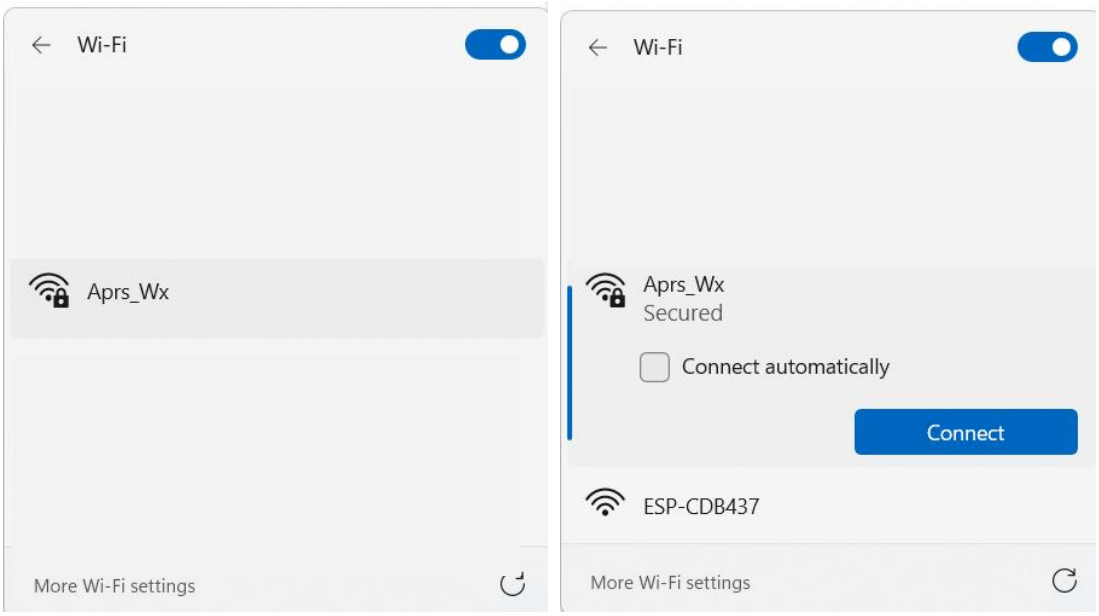
After this disconnect wemos from pc.

This completes the process

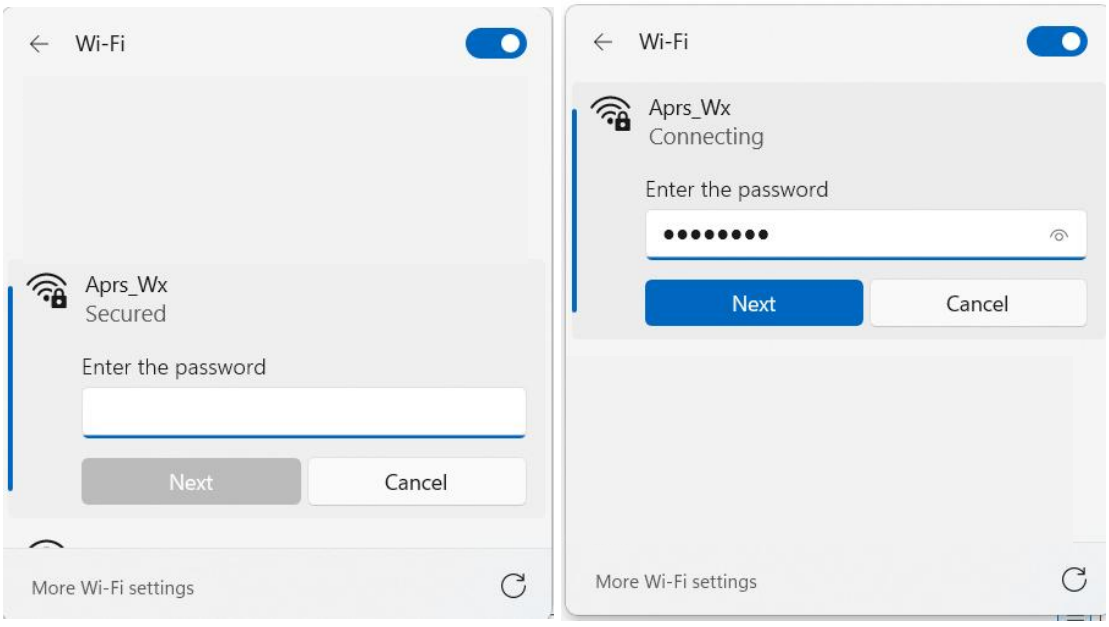
Configuring device parameters in webpage

Note: These instructions are for pc, should work same for phone also.

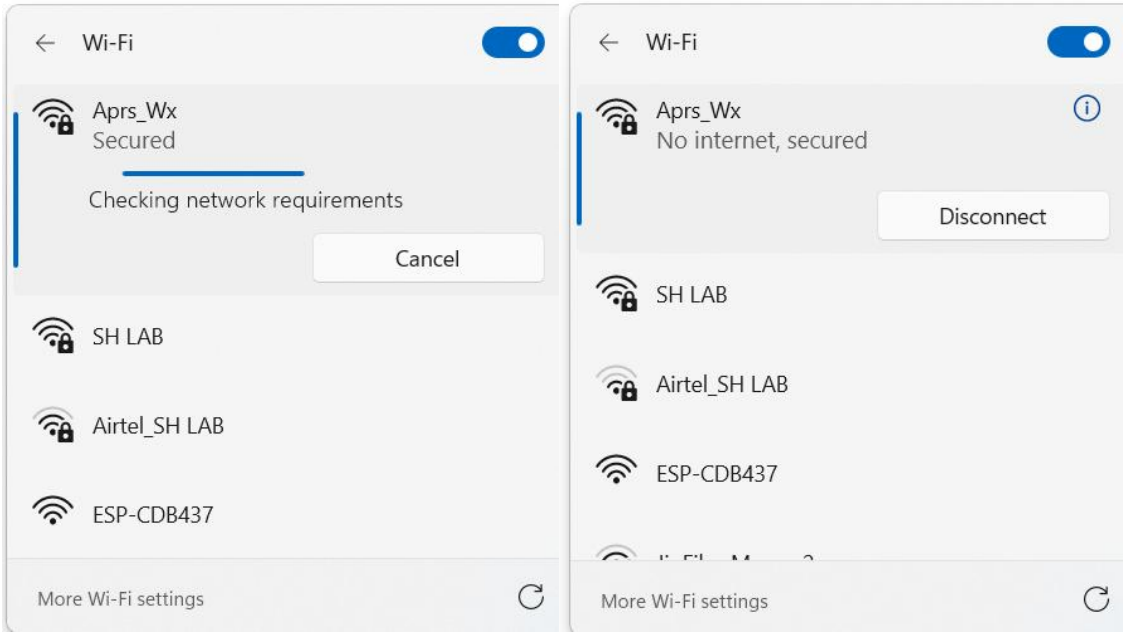
1) Connect jumper between D5 and G (GND), BLUE led will blink slow. This puts device in config mode.
2) Click on wifi icon and search for Aprs_Wx



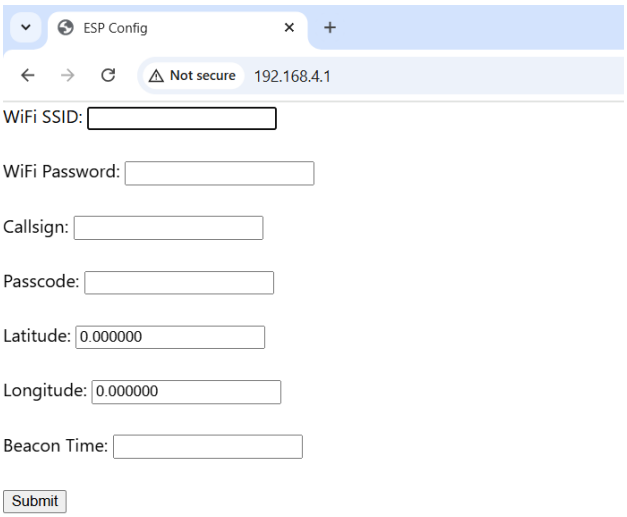
3) Select Aprs_Wx and enter password 12345678 , jumper CAN BE REMOVED AFTER THIS



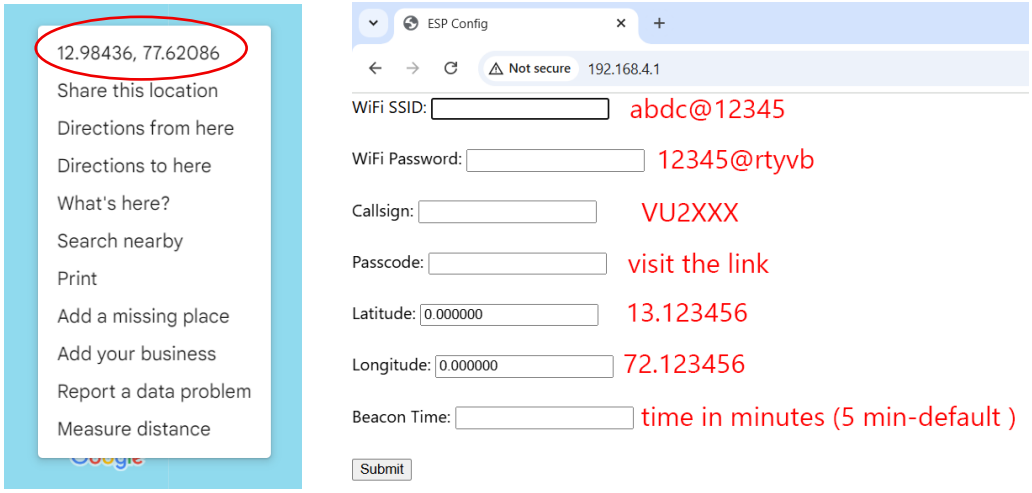
4) Takes few minutes to connect.



5) Once connect, Open Chrome/Edge browser and enter IP: 192.168.4.1
Enter the details.



Example: Open GOOGLE MAP , search for your location , right click on the location will give you latitude and longitude.

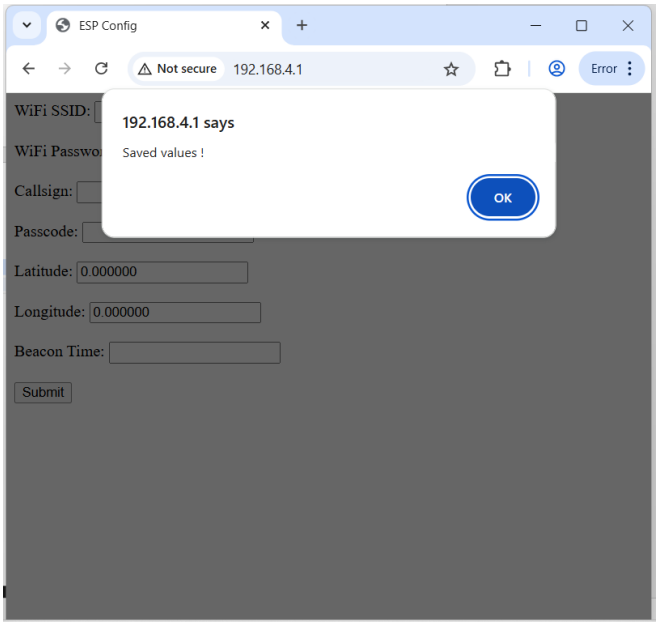


Passcode: https://apps.magicbug.co.uk/passcode/

Note: Default beacon time is 5min, preferred is 15-20min or max 30min

Sending frequent data (Overloading) APRS server might get you banned.

6) Once all information is entered, click submit and Settings will get stored in EEPROM



This completes the process

Device Wiring

D1 Mini V2 NodeMcu

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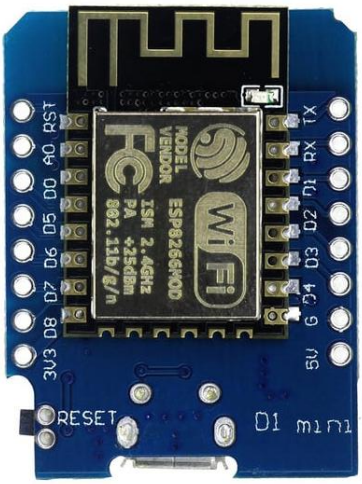
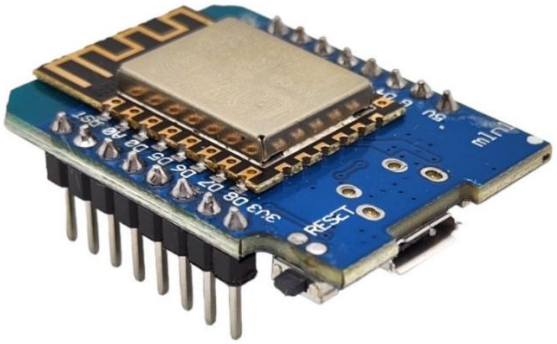


Solder male headers



DHT11 Temperature

https://robu.in/product/dht11-temperature-and-humidity-sensor-module-with-led/

Disconnect device from USB , Connect wire as shown and connect USB again. Blue LED starts blinking slowly indicating data is getting transmitted.

Open https://aprs.fi to locate your station

Wemos	DHT11
3v3	VCC
D2	DATA
G	GND

DeBuging

LED blinks:

Booting to Config mode – one blink every 3 sec

Booting to Run mode - one blink per sec

Fast blink – sending APRS data

Call sign Error- – 3 blinks

Wifi not connected -4 blinks

Wifi trying to connect – one blink in per ½ sec

sensor Error- – 6 blinks

Normal Run - double blink every 15sec

Using Serial console:

Download PuTTY Portable | PortableApps.com , Extract it and run PuTTYPortable.exe.

Serial line: check for COM port in device manager

Speed: 9600

Connection type: Serial

Click open and press reset button on Wemos mini, All debugging information will be visible