

MeMos D1 Mini

Loading and Configuring the Firmware

The firmware used on the D1 Mini was developed by Tim Blythman and published in the April 2018 issue of Silicon Chip magazine. For the full description you should read the article:

<https://www.siliconchip.com.au/Issue/2018/April/The+Clayton%E2%80%99s+%E2%80%99CGPS%E2%80%9D+time+signal+generator>

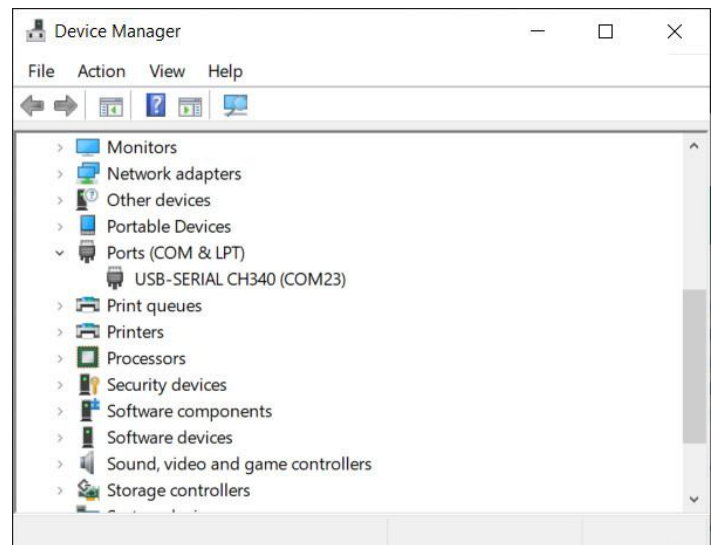
These instructions are for a Windows computer. For other computers you will need to use the Arduino IDE as described in the above article.

Plug the D1 Mini into a USB port on your computer.

You should get the “USB device connected” sound.

Use Device Manager to determine the virtual serial port allocated by Windows to the D1 Mini which is listed as “USB-SERIAL CH340” as illustrated on the right.

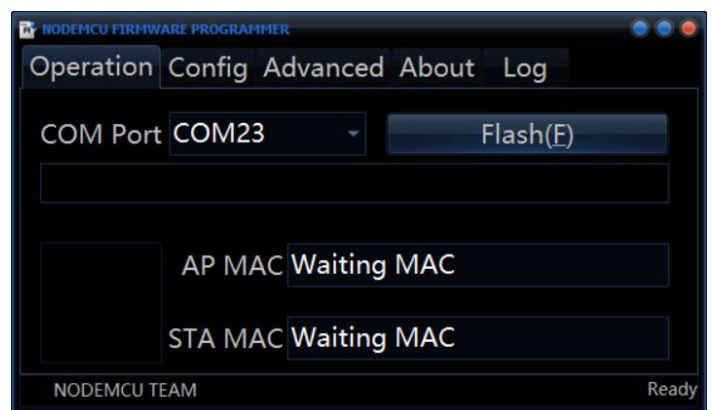
In this case it is COM23.



Run the program “ESP8266Flasher.exe”.

It should look like this:

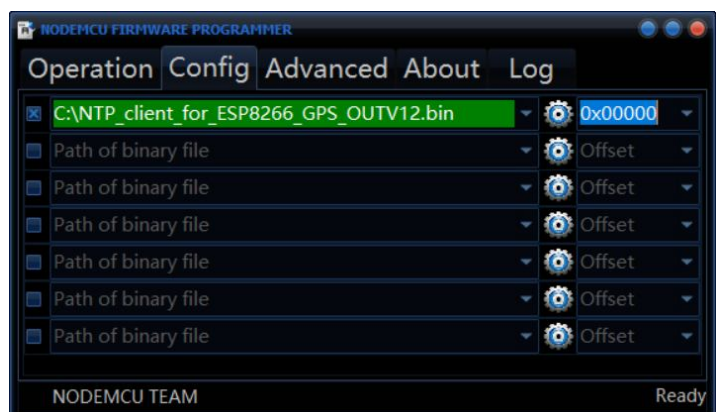
Note that the program will guess at the COM port. If this is wrong you will have to change it.



Select the **Config** tab and enter the location of the firmware file on your computer. (ie, NTP_client_for_ESP8266_GPS_OUTV12.bin)

Clicking on the gear icon will allow you to browse for the file

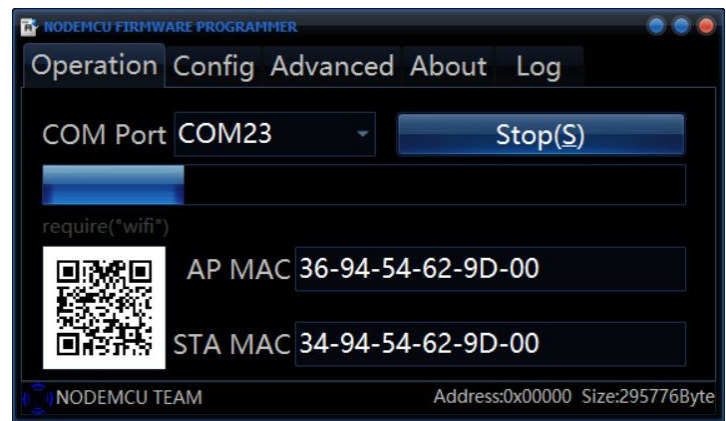
Leave the starting address at 0x00000.



Return to the **Operation** tab and click on the **Flash(F)** button.

The software should read the MAC addresses from the D1 Mini then start loading the firmware into the D1 Mini's flash. This screenshot shows the program in action.

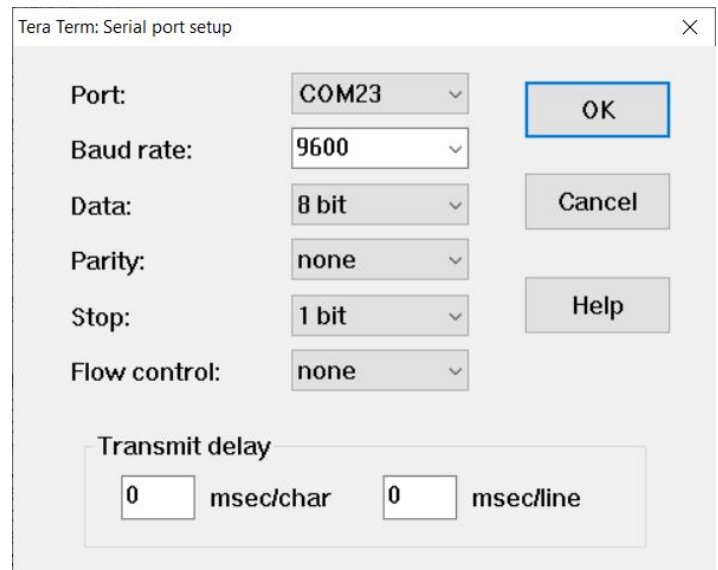
When the load operation has completed you should see a green tick mark on the bottom left corner of the program. If you do not see this you can select the **Log** tab and scroll to the bottom to find the cause of the error.



Close the programmer. Then disconnect the USB to your computer and reconnect it again.

This will reboot the D1 Mini and you should hear the “USB device connected” sound again. The blue LED on the top of the D1 Mimi should also illuminate.

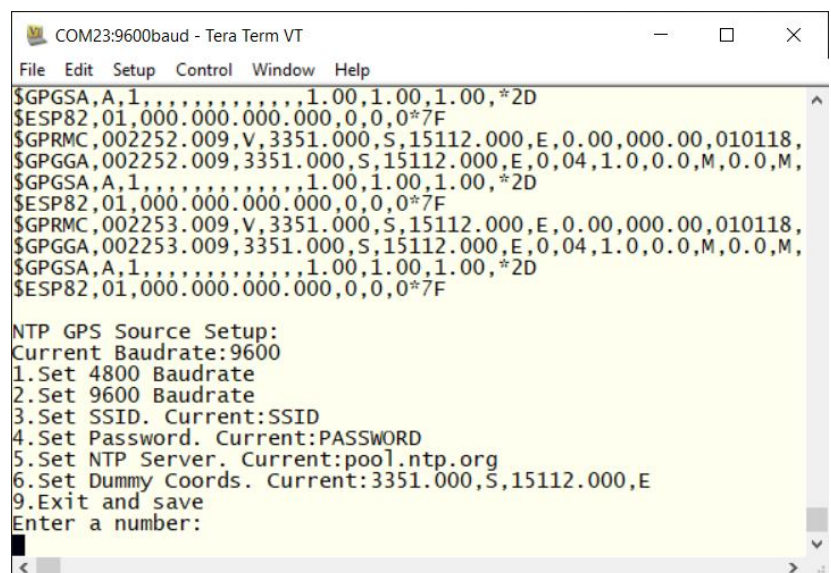
Start a terminal emulator (I recommend Tera Term tera-term.en.lo4d.com) and configure it for the COM port being used by the D1 Mini and set the baudrate to 9600 as shown on the right.



Then connect to the virtual serial port and you should see the pseudo GPS data coming from the D1 Mini. This is emulating a GPS module that does not have a lock on any satellites.

Enter the tilde (~) character on your keyboard and you should see the setup menu as shown on the right.

Enter the number 3, then enter the SSID of your WiFi network (followed by the Enter key). Then enter the number 4, followed by the password for your WiFi network. Finally enter the number 9 to save and exit.



Close the terminal emulator. Then disconnect the USB to your computer then reconnect it again. This will reboot the D1 Mini and the blue LED on the top of the module should illuminate for a few seconds while the firmware connects to your WiFi network then accesses a public time server on the Internet. When it has the correct time the LED will change to a short flash every second.

If you want to check the data being generated you can reconnect your terminal emulator to the virtual serial port via USB as described above.

You can now install the WeMos D1 Mini on your clock controller board.