

# Programming Wemos Mega + WiFi R3

<https://robotdyn.com/catalog/wifi/mega-wifi-r3-atmega2560-esp8266-flash-32mb-usb-ttl-ch340g-micro-usb.html>

## Installation Instructions and Settings

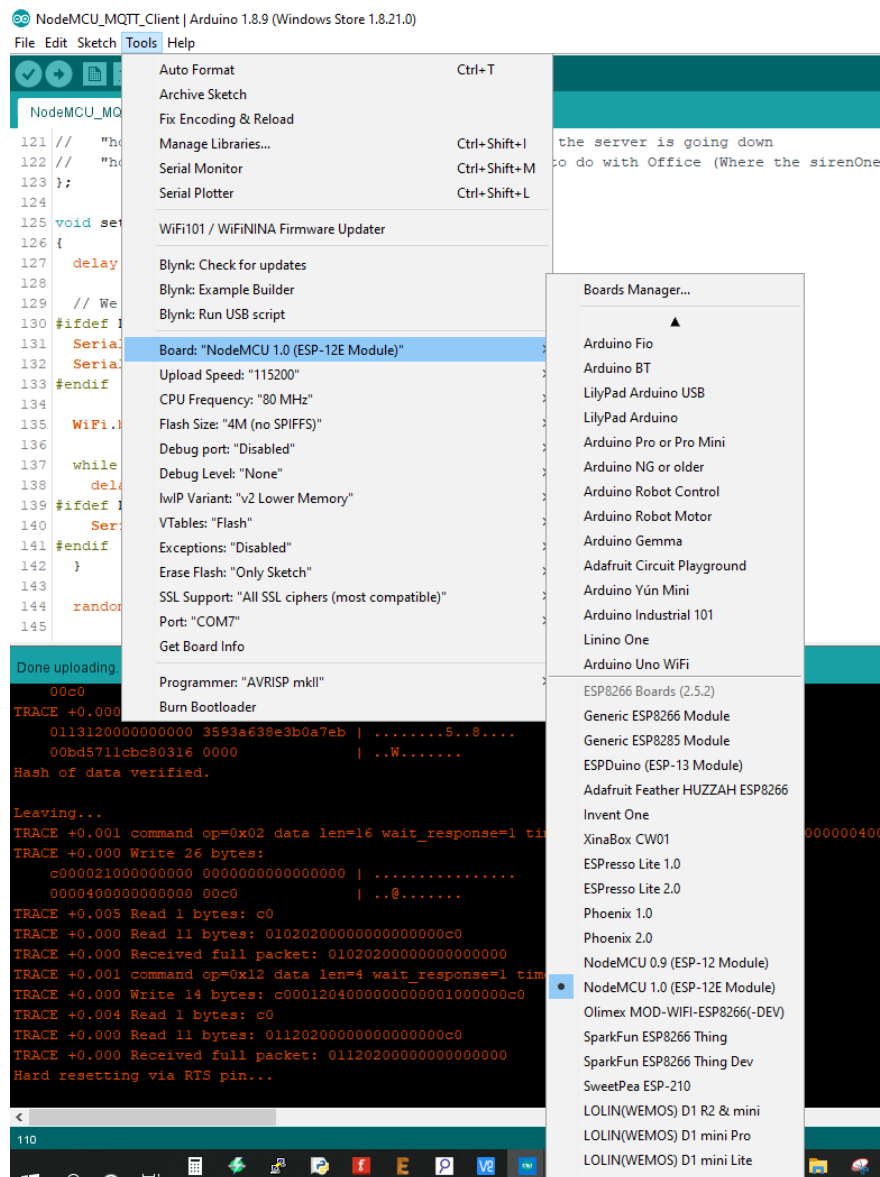
Needed to download driver for my Chinese knockoff.

Few versions of CH341SER about. Got an older version that worked for me.

Plugged board in and recognised on COM7

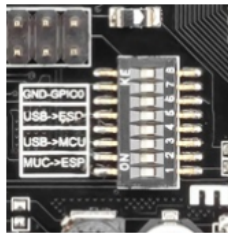
## Programming the ESP8266

Selected Board: NodeMCU 1.0 (ESP-12E Module)



Set the board dip switches for programming the ESP

Operating mode is selected by means of DIP switches on-board:

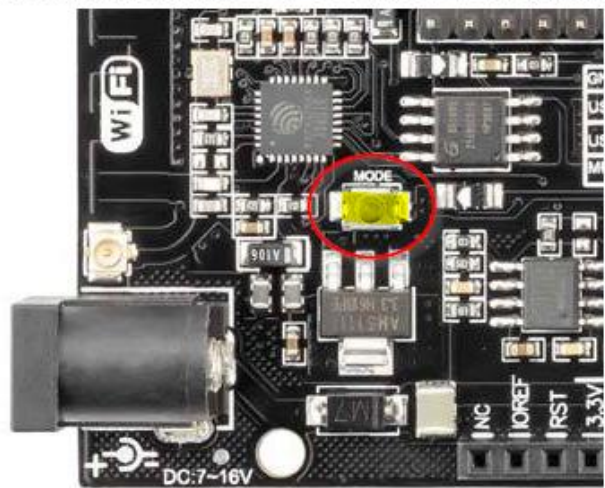


Switch status and mode selection:

	1	2	3	4	5	6	7	8
CH340 connect to ESP8266 (upload sketch)	OFF	OFF	OFF	OFF	ON	ON	ON	NoUSE
CH340 connect to ESP8266 (connect)	OFF	OFF	OFF	OFF	ON	ON	OFF	NoUSE
CH340 connect to ATmega2560 (upload sketch)	OFF	OFF	ON	ON	OFF	OFF	OFF	NoUSE
CH340 connect to Mega2560 COM3 connect to ESP8266	ON	ON	ON	ON	OFF	OFF	OFF	NoUSE
Mega2560+ESP8266	ON	ON	OFF	OFF	OFF	OFF	OFF	NoUSE
All modules work independent	OFF	OFF	OFF	OFF	OFF	OFF	OFF	NoUSE

It says make sure you hold the Mode button, I didn't and seemed to work ok.

It is important that when the ESP8266 module is programming, it is necessary to press the button "Mode"



NOTE: Make sure nothing plugged into the RX/TX pins as this seemed to interfere with the programme loader.

Testing the NodeMCU Code

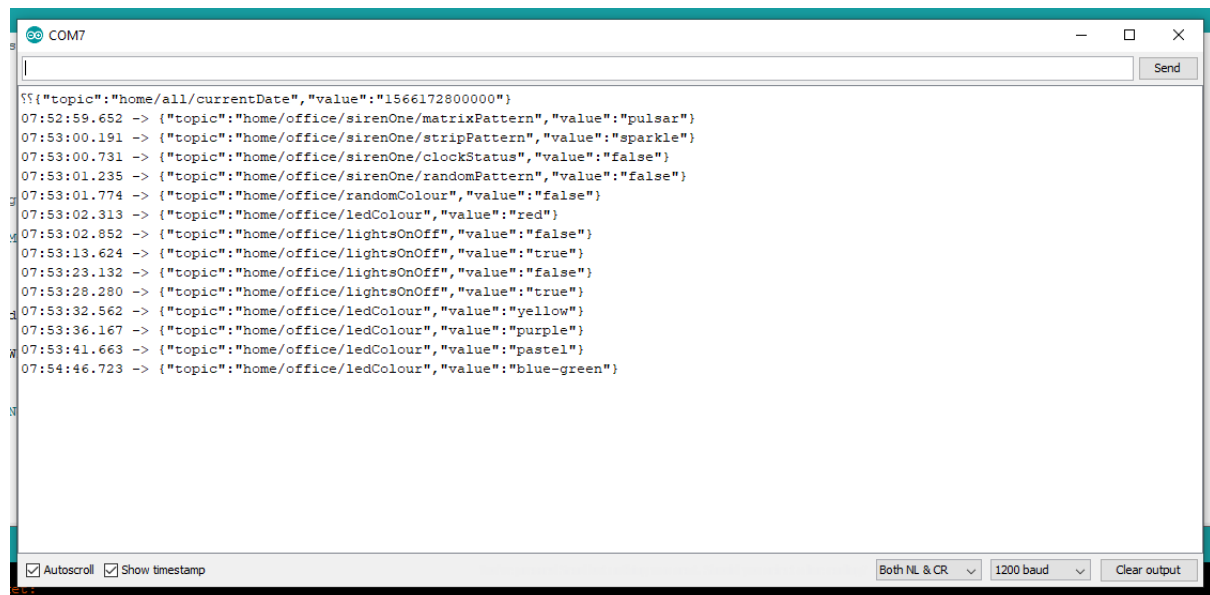
Set the board dip switches to put it into connect mode

#### Switch status and mode selection:

	1	2	3	4	5	6	7	8
CH340 connect to ESP8266 (upload sketch)	OFF	OFF	OFF	OFF	ON	ON	ON	NoUSE
CH340 connect to ESP8266 (connect)	OFF	OFF	OFF	OFF	ON	ON	OFF	NoUSE
CH340 connect to ATmega2560 (upload sketch)	OFF	OFF	ON	ON	OFF	OFF	OFF	NoUSE
CH340 connect to Mega2560 COM3 connect to ESP8266	ON	ON	ON	ON	OFF	OFF	OFF	NoUSE
Mega2560+ESP8266	ON	ON	OFF	OFF	OFF	OFF	OFF	NoUSE
All modules work independent	OFF	OFF	OFF	OFF	OFF	OFF	OFF	NoUSE

Now the serial monitor will output whatever is running on the NodeMCU.

e.g.

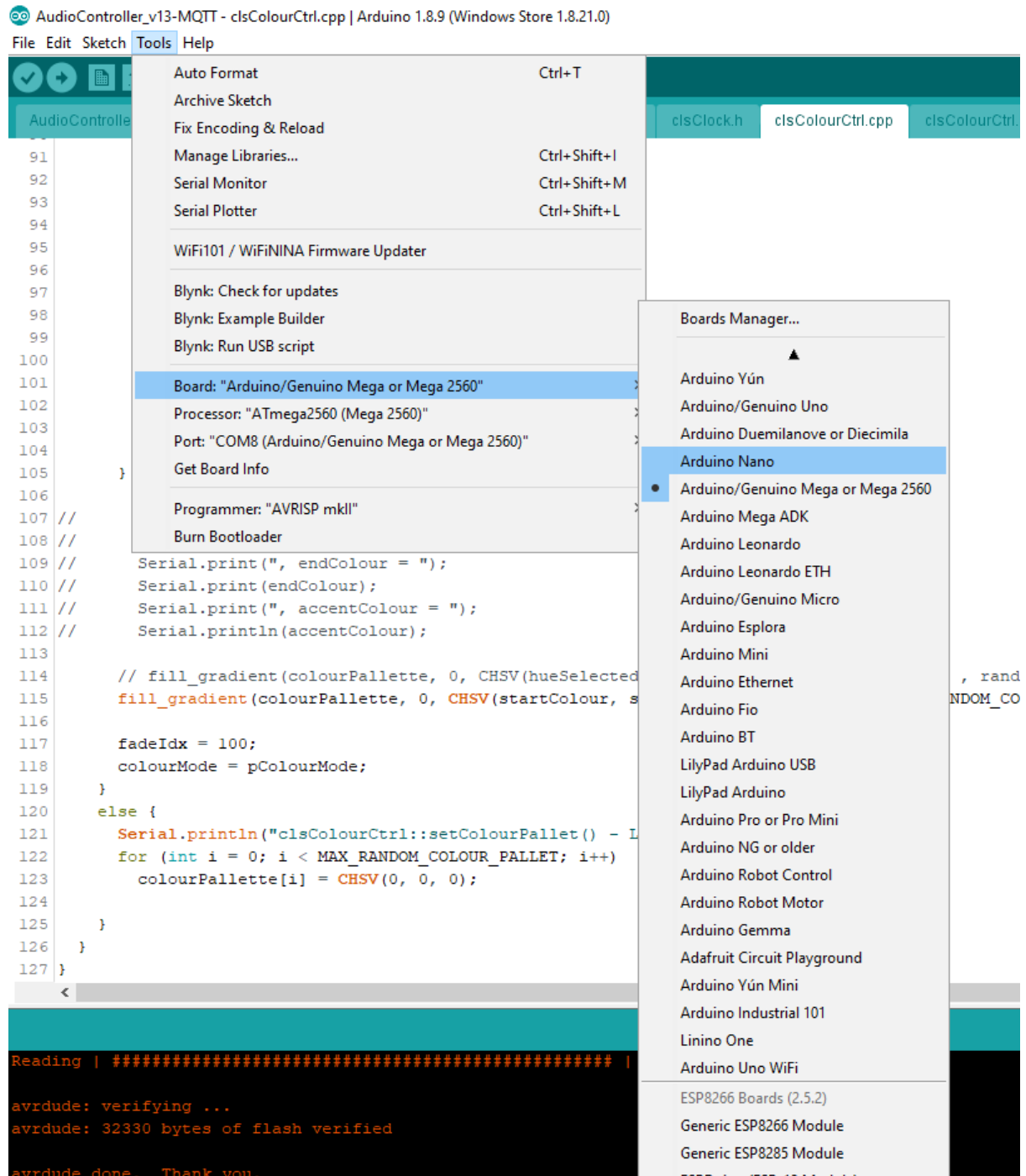


```
{{"topic": "home/all/currentDate", "value": "1566172800000"}
07:52:59.652 -> {"topic": "home/office/sirenOne/matrixPattern", "value": "pulsar"}
07:53:00.191 -> {"topic": "home/office/sirenOne/stripPattern", "value": "sparkle"}
07:53:00.731 -> {"topic": "home/office/sirenOne/clockStatus", "value": "false"}
07:53:01.235 -> {"topic": "home/office/sirenOne/randomPattern", "value": "false"}
07:53:01.774 -> {"topic": "home/office/randomColour", "value": "false"}
07:53:02.313 -> {"topic": "home/office/ledColour", "value": "red"}
07:53:02.852 -> {"topic": "home/office/lightsOnOff", "value": "false"}
07:53:13.624 -> {"topic": "home/office/lightsOnOff", "value": "true"}
07:53:23.132 -> {"topic": "home/office/lightsOnOff", "value": "false"}
07:53:28.280 -> {"topic": "home/office/lightsOnOff", "value": "true"}
07:53:32.562 -> {"topic": "home/office/ledColour", "value": "yellow"}
07:53:36.167 -> {"topic": "home/office/ledColour", "value": "purple"}
07:53:41.663 -> {"topic": "home/office/ledColour", "value": "pastel"}
07:54:46.723 -> {"topic": "home/office/ledColour", "value": "blue-green"}
```

So now I can see the NodeMCU connected to the network and receiving messages from my MQTT server, and sending this JSON over the Serial Port.

## Programming the Mega

Select Board and Port



Set the board dip switches to put it into connect mode

	1	2	3	4	5	6	7	8
CH340 connect to ESP8266 (upload sketch)	OFF	OFF	OFF	OFF	ON	ON	ON	NoUSE
CH340 connect to ESP8266 (connect)	OFF	OFF	OFF	OFF	ON	ON	OFF	NoUSE
CH340 connect to ATmega2560 (upload sketch)	OFF	OFF	ON	ON	OFF	OFF	OFF	NoUSE
CH340 connect to Mega2560 COM3 connect to ESP8266	ON	ON	ON	ON	OFF	OFF	OFF	NoUSE
Mega2560+ESP8266	ON	ON	OFF	OFF	OFF	OFF	OFF	NoUSE
All modules work independent	OFF	OFF	OFF	OFF	OFF	OFF	OFF	NoUSE

And upload sketch

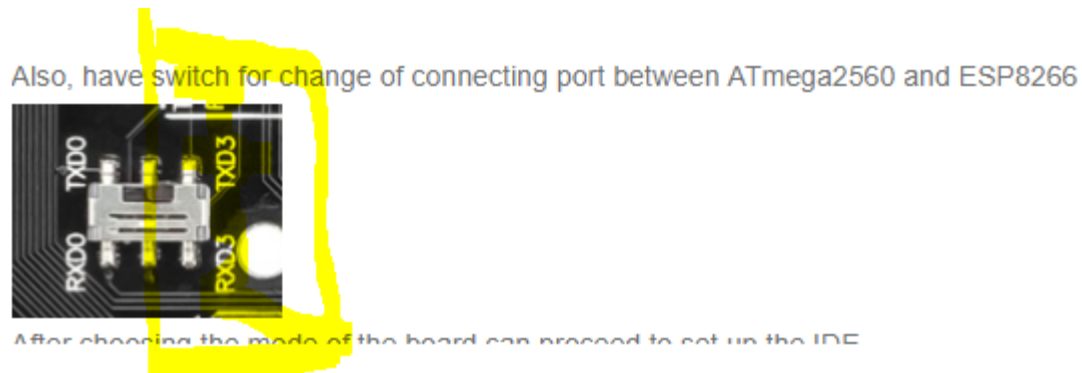
To Test open Serial Monitor.

### Connect NodeMCU to Mega

To Now Connect the NodeMCU to Mega we need to change the dip switch setting and feed the Serial output from the NodeMCU to the Mega

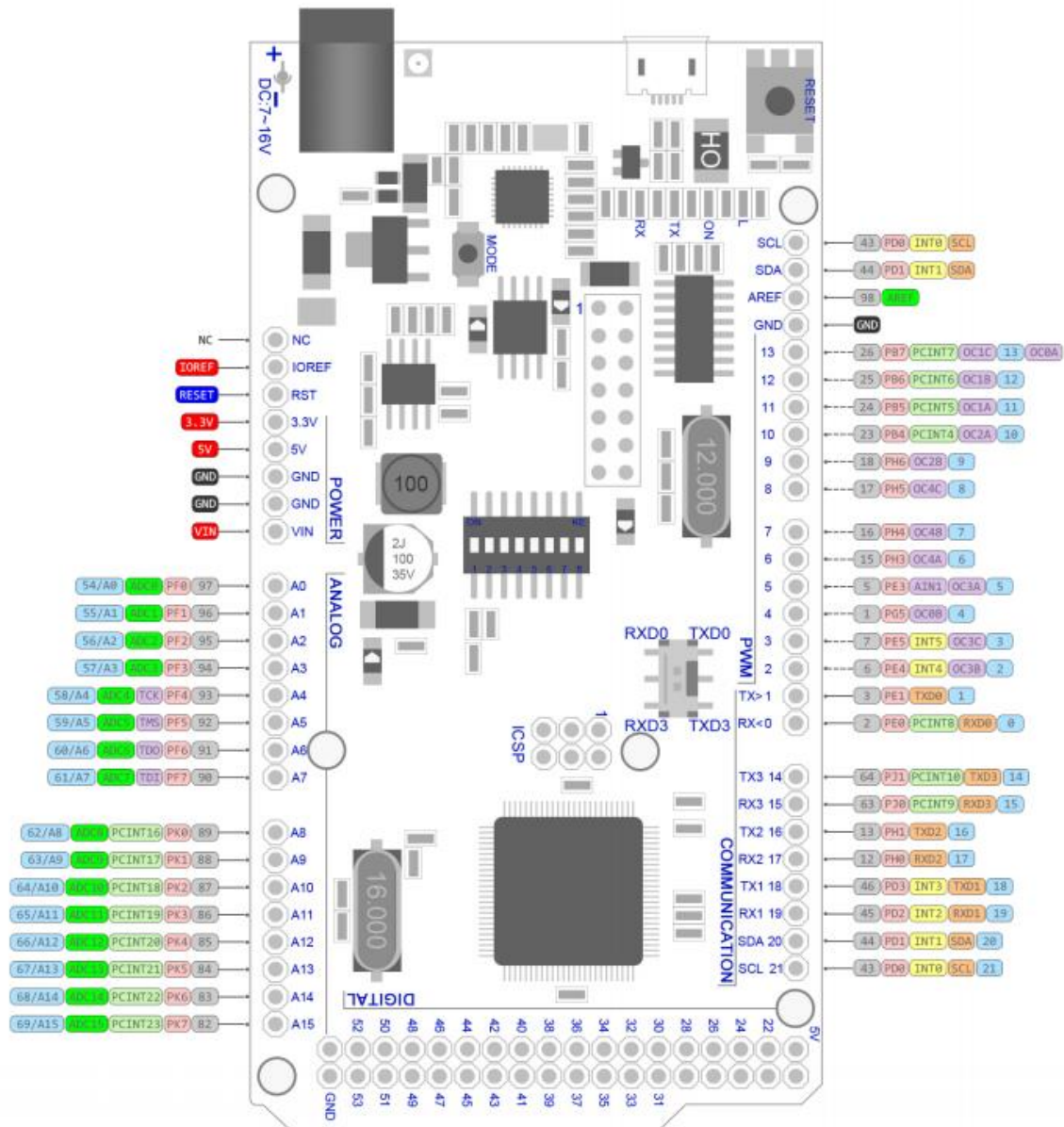
	1	2	3	4	5	6	7	8
CH340 connect to ESP8266 (upload sketch)	OFF	OFF	OFF	OFF	ON	ON	ON	NoUSE
CH340 connect to ESP8266 (connect)	OFF	OFF	OFF	OFF	ON	ON	OFF	NoUSE
CH340 connect to ATmega2560 (upload sketch)	OFF	OFF	ON	ON	OFF	OFF	OFF	NoUSE
CH340 connect to Mega2560 COM3 connect to ESP8266	ON	ON	ON	ON	OFF	OFF	OFF	NoUSE
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All modules work independent	OFF	OFF	OFF	OFF	OFF	OFF	OFF	NoUSE

To connect the Serial Ports (NodeMCU Serial -> Mega Serial3)



Now the Serial Monitor (USB) will be outputting anything streamed to the Mega Serial Port.  
Mega Serial3 will now be listening (and sending) to information coming in from the NodeMCU.

## Board Ports



MEGA+WiFi R3 ATmega2560+ESP8266,  
flash 32MB, USB-TTL CH340G, Micro-USB

