Esp 8266 firmware update

by RaviP6 (/member/RaviP6/)

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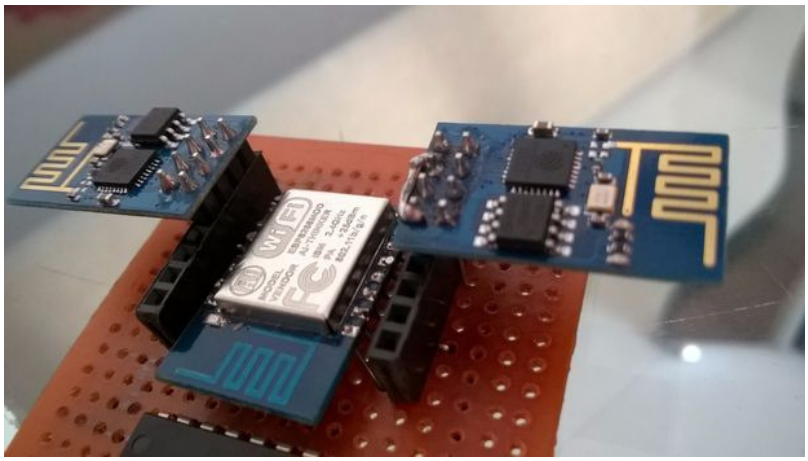

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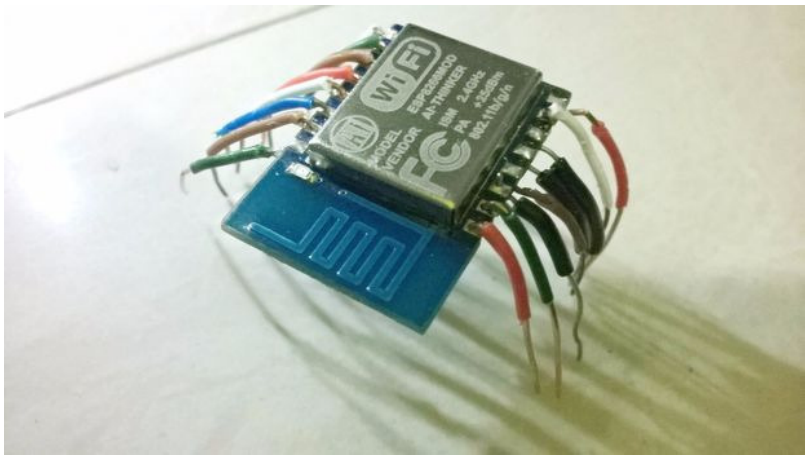

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The ESP 8266 module is a cheap wireless module.It has SOC(system on chip) that can handle TCP protocols.By default, these modules come with an AT command processor and can act as a serial to WiFi bridge. There is lots of info on the web about this module.

I got 3 of the ESP8266 for my home automation project, initially the module was working perfect.

but accidently i uploaded wrong files and my esp8266 stopped working after then the serial port was giving me random garbage values,so i tried myself to solve this problem.

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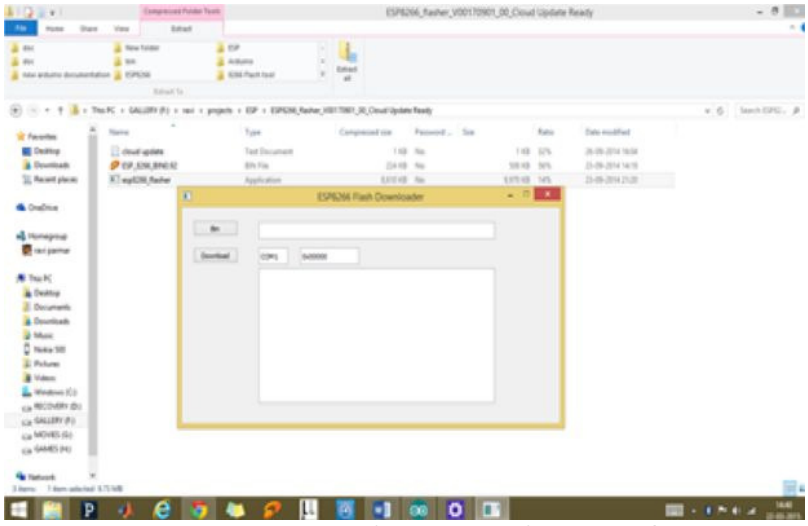
Step 1: Find an esp8266 flasher.



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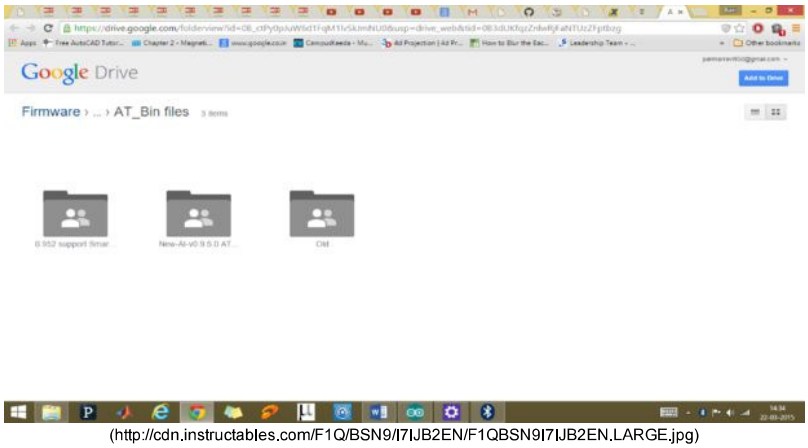
reflash/ (http://www.xess.com/blog/esp8266-reflash/)

- The ESP flasher is easy software to put firmware on to the Esp SOC.
- Make sure you download write bin file (this bin files are firmware files of different version)

Step 2: Find proper ESP8266 firmware files or bin files.



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1. https://drive.google.com/file/d/0B3dUKfqzZnlwdUJUc2hkZDUyVjA/view (https://drive.google.com/file/d/0B3dUKfqzZnlwdUJUc2hkZDUyVjA/view)
2. https://drive.google.com/folderview?id=0B_ctPy0pJuW6d1FqM1IvSkJmNU0&usp=drive_web&tid=0B3dUKfqzZnlwRjFaNTUzZFptbzg (https://drive.google.com/folderview?

id=0B_ctPy0pJuW6d1FqM1IvSkJmNU0&usp=drive_web&tid=0B3dUKfqzZnI
wRjFaNTUzZFptbzg)

watch this video of Kevin Darrah of esp8266 getting started tutorial. How he updated his firmware and which firmware file you should pick
https://www.youtube.com/watch?v=qU76yWHeQuw

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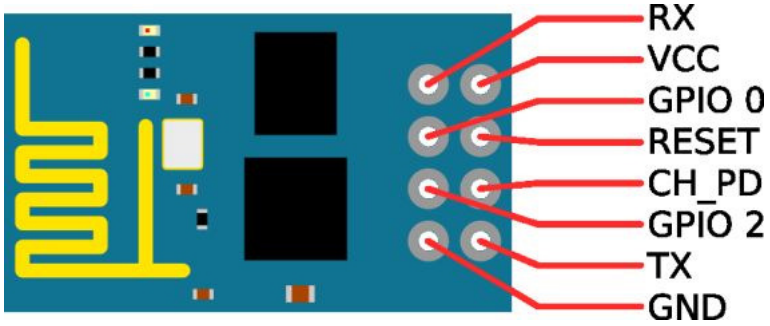
Step 3: Connecting ESP to Flash mode



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1. **ESP 8266 01 module**

I connected esp directly to tx and rx of Arduino .Connect Esp RX to Arduino Rx and esp TX to Arduino TX, ***the module works on 3.3v logic according to documentation but I had no issue with 5v rx and tx of arduino. play it at your own risk*** .you can use simple voltage divider to cutdown 5v to 3.3 v .I am not going into details of connection now .

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The esp module goes into flash mode by making GPIO 0 ground

2. **Esp 8266-12 module**

I found daflabs instructables best for this module so far

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http://www.instructables.com/id/Getting-Started-with-the-ESP8266-ESP-12/ (http://www.instructables.com/id/Getting-Started-with-the-ESP8266-ESP-12/)

I used Arduino instead of cp2102 module, and I had no issue in communication.

The connection will remain mostly same for esp8266-12 to run it in flash mode.

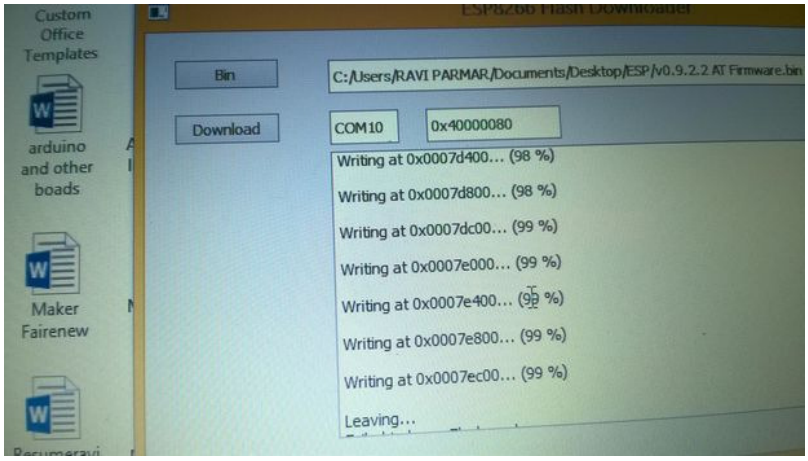
GPIO0 -> LOW

GPIO2 -> HIGH

GPIO15 -> LOW

YOU can upload any firmware to any of the Esp8266 module.

Step 4: Uploading Firmware



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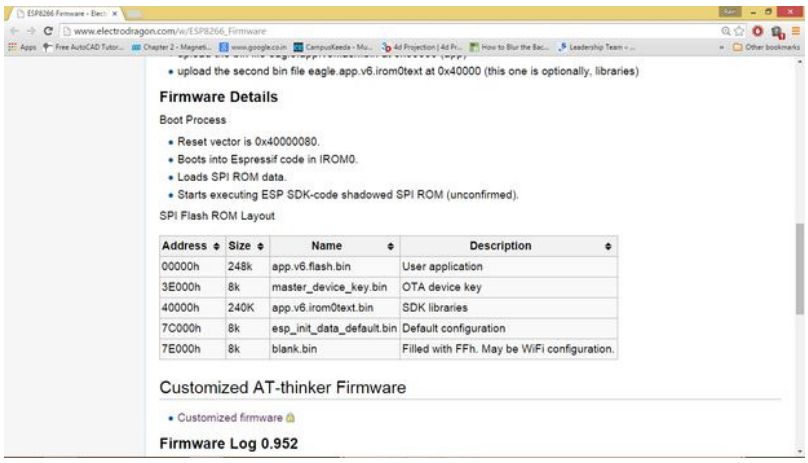
Browse the bin file of firmware version files, you want to upload to Esp 8266 module, then write the proper address **.By default it is 0x000000 but I used 0x40000080** and also check the correct **com port**

- Then just click download button ,if everything is fine the flasher will show you the status of download and also your esp 8266 module led will blink very fast.
- **In the end at 99% it will show some error but this is ok.** Congratulation!!! .you have uploaded latest firmware to esp8266.
- IT's time to test your Esp module .now just remove GPIO 0 wire that was connected to GND ,you can connect it to VCC or leave it like this.
- Now plug your Arduino back to pc and open serial port.
- Open 9600 baud rate ,most of the esp works fine.on this baud rate .
- NOW its time to test AT commands .enter "AT" in serial port and you will get "OK". Now enter "AT+GMR" and check the firmware version.

Step 5: Troubleshooting



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As I mentioned, I accidently uploaded garbage values in esp8266 module. After that my ESP8266 stopped working, it was only transmitting data and was not receiving any data from serial port.

Go to this link http://www.electrodragon.com/w/ESP8266_Firmware (http://www.electrodragon.com/w/ESP8266_Firmware) And find **Firmware Details**

Note: If you got something wrong during uploading your esp8266 firmware

This is where you could try to fix it .I used the address 0x40000080 which is

A Reset Vector address of SOC and then just clicked the download button

And the firmware got into ESP8266 Successfully.

We have a **be nice** comment policy.
Please be positive and constructive.

I Made it! Add Images Make Comment

Akin Yildiz (/member/Akin+Yildiz/) 1 month ago Reply

(/member/Akin+Yildiz/)

this is great, i'm in the process of doing these steps.. i may be back with some questions :)

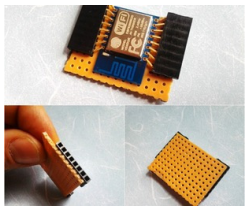
.

are you familiar with the cactus micro board.?
http://www.ebay.com/itm/Cactus-Micro-tiny-size-ard...
(http://www.ebay.com/itm/Cactus-Micro-tiny-size-arduino-compatible-board-plus-WIFI-chip-esp8266/251889996681?_trksid=p5411.c100170.m2943&_trkparms=aid%3D111001%26algo%3DREC.S
just $11 with an onboard esp chip. here is a great tutorial;
http://www.instructables.com/id/Arduino-Wifi-Tempe...
(http://www.instructables.com/id/Arduino-Wifi-Temperature-Logger/)

but i want to code the esp chips to run them on their own, no arduino. i need to read data from 3 analog sensors and turn an rgb led on based on the data collected, and post this data on thingspeak as well... no luck in LUA yet however, still trying.

.

thank you for sharing.!!



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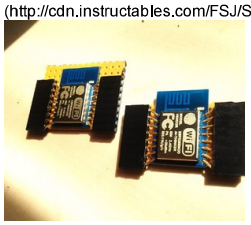

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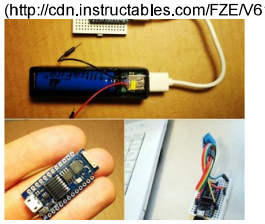

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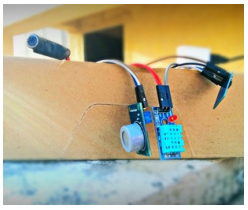
RaviP6 (/member/RaviP6/) (author) Akin Yildiz


(/member/RaviP6/)

24 days ago Reply

Good work akin.LUA firmware is something new,i also have not tried it yet .I recently ended up with weather monitoring project using thingspeak and esp8266.To run esp standalone you have to add your program on SOC of esp 8266,i found that with LUA firmware and esplorer tool ,you could add your program into the SOC,this will eliminate the use of arduino.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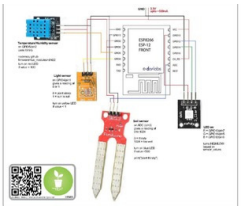
(/member/Akin+Yildiz/)

Akin Yildiz (/member/Akin+Yildiz/) RaviP6 22 days ago Reply

very nice, i have made some progress as well.
i am now able to control all the sensors using just esp rev-12 and create a webserver to display data and control GPIOs.. either manual or automatic.

.

i will soon be making a new post about all of this. the below schematics work, my post will include the code and webserver etc.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(http://cdn.instructables.com/FNV/U9M8/I7MXMM04/FNVU9M8I7MXMM04.LARGE.jpg)


(/member/RaviP6/)

RaviP6 (/member/RaviP6/) (author) Akin Yildiz 21 days ago Reply

nice work akin.it looks like you have uploaded lua code and it looks perfect,using analog pin on esp 8266-12 was nice idea,i am going to try this out surely .


(/member/Akin+Yildiz/)

Akin Yildiz (/member/Akin+Yildiz/) RaviP6 21 days ago Reply

ADC helps alot, and you can technically connect many analog sensors this way, check these out. it wasn't my idea, author breagan22 (http://www.instructables.com/member/breagan22/)has us covered;

1. http://www.instructables.com/id/ESP8266-ADC-Analog... (http://www.instructables.com/id/ESP8266-ADC-Analog-Sensors/)

2. http://www.instructables.com/id/ESP8266-with-Multi... (http://www.instructables.com/id/ESP8266-with-Multiple-Analog-Sensors/)

.

make sure to share your work, also the city sensor project as well.. what type of sensors do you have on there.?!


(/member/seamster/)

seamster (/member/seamster/) 1 month ago Reply

Nicely done. Thanks for sharing this!

RaviP6 (/member/RaviP6/) (author) seamster 1 month ago Reply

Thank you seamster ..

(/member/RaviP6/)