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## Esp 8266 firmware update by RaviP6 (/member/RaviP6/)

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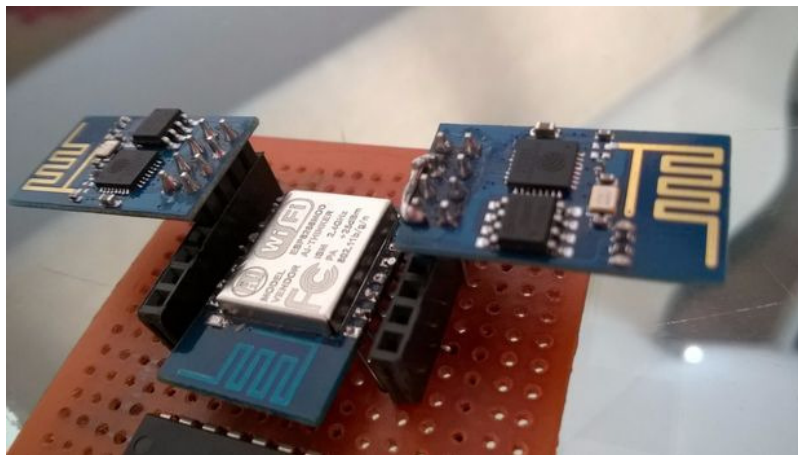
5 Steps

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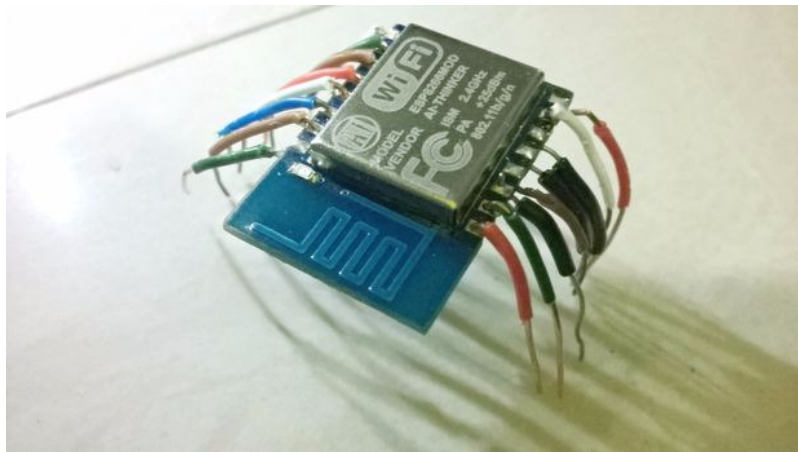
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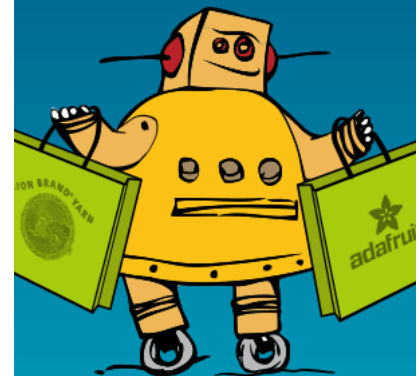
The ESP8266 module is a cheap wireless module. It has a system on chip that can handle TCP protocols. By default, these modules come with an AT command processor and can act as a serial to WiFi bridge. There is lots of info on the web about this module.

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

but accidentally 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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ESP8266 based web configurable wifi general purpose control (Part II) (<http://www.instructables.com>)



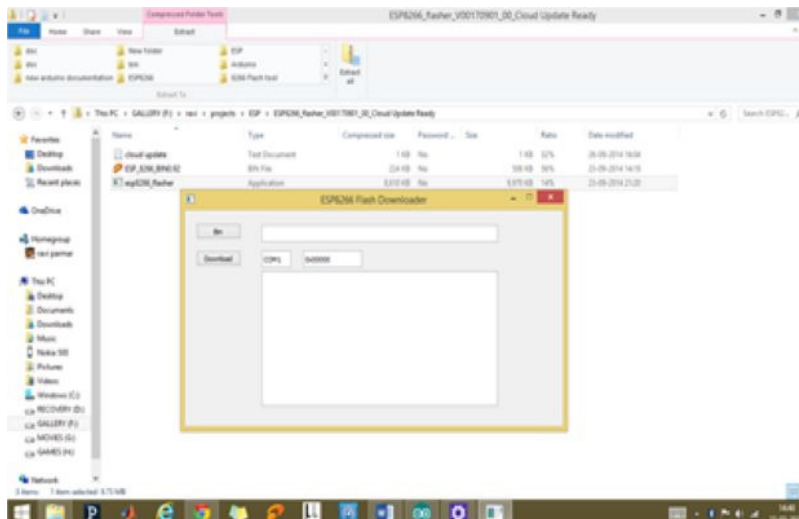
Use Arduino Due to program and test ESP8266 (<http://www.instructables.com>)  
Arduino-Due-to-program-



An inexpensive IoT enabler using ESP8266 (<http://www.instructables.com>)  
inexpensive-IoT-enabler-

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## Step 1: Find an esp8266 flasher.



(<http://cdn.instructables.com/FWT/HLQ0/I7IJB1UA/FWTHLQ0I7IJB1UA.LARGE.jpg>)

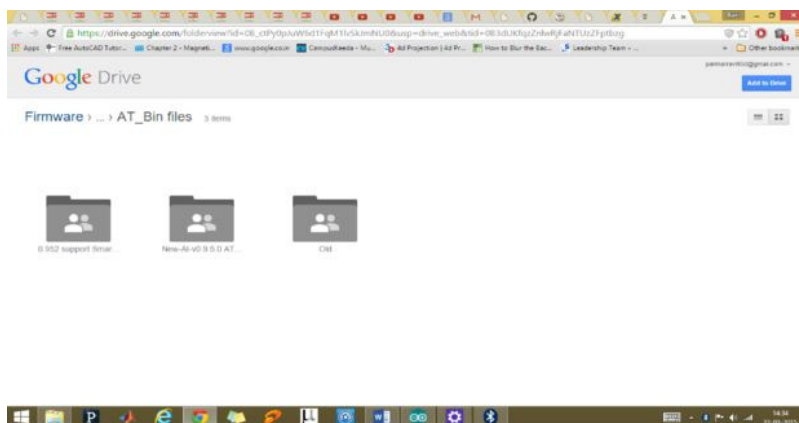
Download ESP flasher from the link <http://www.xess.com/blog/esp8266-reflash/> (<http://www.xess.com/blog/esp8266-reflash/>)

- 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 )

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



(<http://cdn.instructables.com/F1QBSN9/I7IJB2EN/F1QBSN9I7IJB2EN.LARGE.jpg>)

Go to this link below to find firmware files.

1. <https://drive.google.com/file/d/0B3dUKfqzZnIwUJUc2hkZDUyVjA/view> (<https://drive.google.com/file/d/0B3dUKfqzZnIwUJUc2hkZDUyVjA/view>)
2. [https://drive.google.com/folderview?id=0B\\_ctPy0pJuV6d1FqM1lvSkJmNU0&usp=drive\\_web&tid=0B3dUKfqzZnIwRjFaNTUzZFptbzg](https://drive.google.com/folderview?id=0B_ctPy0pJuV6d1FqM1lvSkJmNU0&usp=drive_web&tid=0B3dUKfqzZnIwRjFaNTUzZFptbzg) ([https://drive.google.com/folderview?id=0B\\_ctPy0pJuV6d1FqM1lvSkJmNU0&usp=drive\\_web&tid=0B3dUKfqzZnIwRjFaNTUzZFptbzg](https://drive.google.com/folderview?id=0B_ctPy0pJuV6d1FqM1lvSkJmNU0&usp=drive_web&tid=0B3dUKfqzZnIwRjFaNTUzZFptbzg))

id=0B\_ctPy0pJuW6d1FqM1lvSkJmNU0&usp=drive\_web&tid=0B3dUKfqzZnlwRjFaNTUzZFptbzg)

watch this video of Kevin Darrah of esp8266 getting started tutorial. How he updated his firmware and which firmware file you should pick

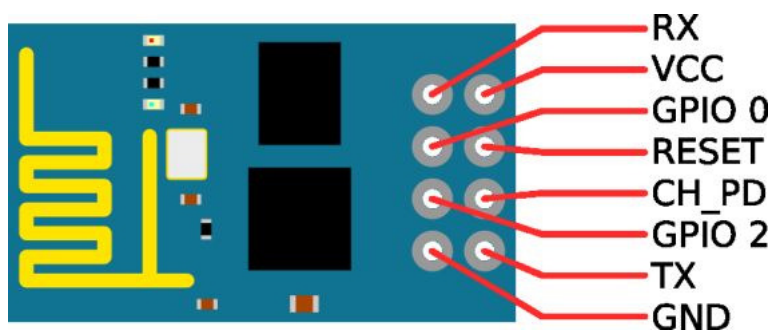
<https://www.youtube.com/watch?v=qU76yWHeQuw>

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(<https://www.youtube.com/watch?v=qU76yWHeQuw>) )

### Step 3: Connecting ESP to Flash mode



(<http://cdn.instructables.com/FNO/3RHA/I7IJB2W2/FNO3RHA/I7IJB2W2.LARGE.jpg>)

(<http://cdn.instructables.com/FS9/GX7E/I7IVLS3B/FS9GX7E/I7IVLS3B.LARGE.jpg>)

## 1. ESP-08 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 .

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

(<http://cdn.instructables.com/FES/NEMY/I7JB2XF/FESNEMY/I7JB2XF.LARGE.jpg>)

<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.

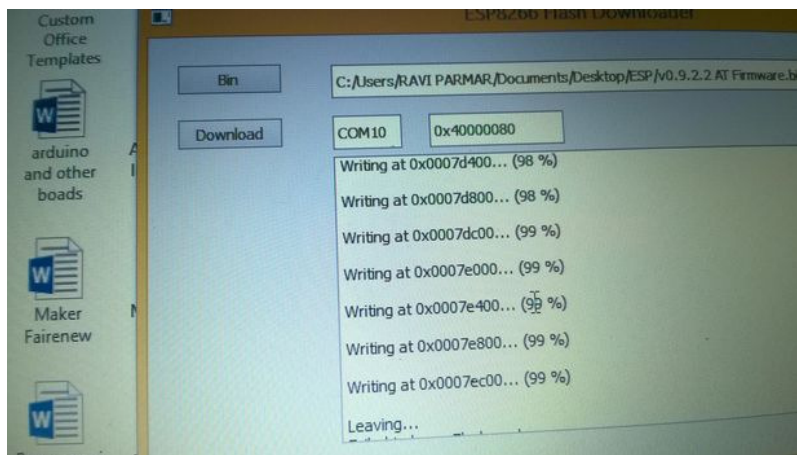
GPIO0 -> LOW

GPIO2 -> HIGH

GPIO15 -> LOW

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

## Step 4: Uploading Firmware



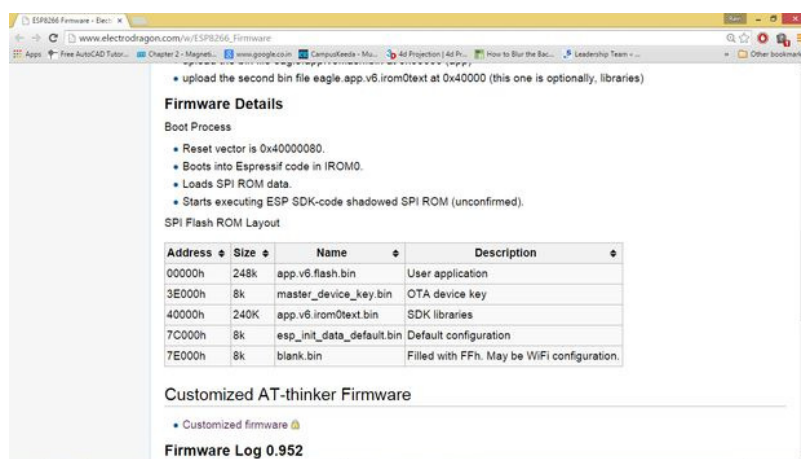
(<http://cdn.instructables.com/FHI/TR81/I7IVLPJR/FHITR81/I7IVLPJR.LARGE.jpg>)

(<http://cdn.instructables.com/FJ2/V6A5/I7IVLPJS/FJ2V6A5I7IVLPJS.LARGE.jpg>)

Before the start of firmware versioning, you have 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



(<http://cdn.instructables.com/FQK/DNBA/I7IVLRLX/FQKDNBAI7IVLRLX.LARGE.jpg>)

As I mentioned, I accidentally 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)  
([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.



**Akin Yildiz** (/member/Akin+Yildiz/)

1 month ago

[Reply](#)

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?](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)

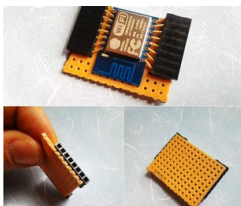
[\\_trksid=p5411.c100170.m2943&\\_trkparms=aid%3D111001%26algo%3DREC.S](http://www.instructables.com/id/Arduino-Wifi-Tempe...)  
just \$11 with an onboard esp chip. here is a great tutorial;

[http://www.instructables.com/id/Arduino-Wifi-Tempe...](http://www.instructables.com/id/Arduino-Wifi-Temperature-Logger/)

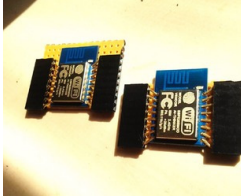
(<http://www.instructables.com/id/Arduino-Wifi-Temperature-Logger/>)

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.

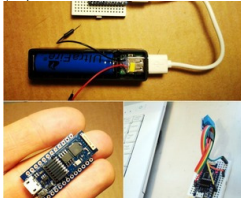
thank you for sharing..!!



(<http://cdn.instructables.com/FSJ/SG2VI7MX4QUD/FSJSG2VI7MX4QUD.LARGE.jpg>)



(<http://cdn.instructables.com/FZE/V61TI7MX4QUT/FZE/V61TI7MX4QUT.LARGE.jpg>)



(<http://cdn.instructables.com/FQX/Y7KS/I7MX4QWS/FQX/Y7KS/I7MX4QWS.LARGE.jpg>)

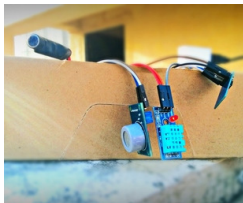


(/member/RaviP6/)

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 explorer tool ,you could add your program into the SOC,this will eliminate the use of arduino.

24 days ago

[Reply](#)



(<http://cdn.instructables.com/F0R/MYAY/I8FQZBK3/F0RMYAYI8FQZBK3.LARGE.jpg>)



(/member/Akin+Yildiz/)

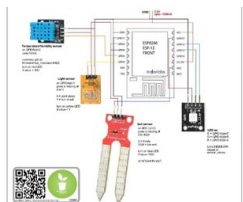
**Akin Yildiz (/member/Akin+Yildiz/)** RaviP6  
very nice, i have made some progress as well.

22 days ago

[Reply](#)

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.



(<http://cdn.instructables.com/FJQM77X/I8764JR2/FJQM77X/I8764JR2.LARGE.jpg>)

1.17/?pin=ON

1.17/?pin=ON ESP8266 v0.1 build 206 b...

(<http://cdn.instructables.com/FNV/U9M8/I7MXMM04/FNVU9M8I7MXMM04.LARGE.jpg>)



(/member/RaviP6/)

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

21 days ago

[Reply](#)



(/member/Akin+Yildiz/)

**Akin Yildiz (/member/Akin+Yildiz/)** RaviP6  
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;

21 days ago

[Reply](#)

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/)

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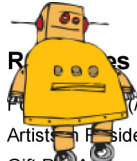
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