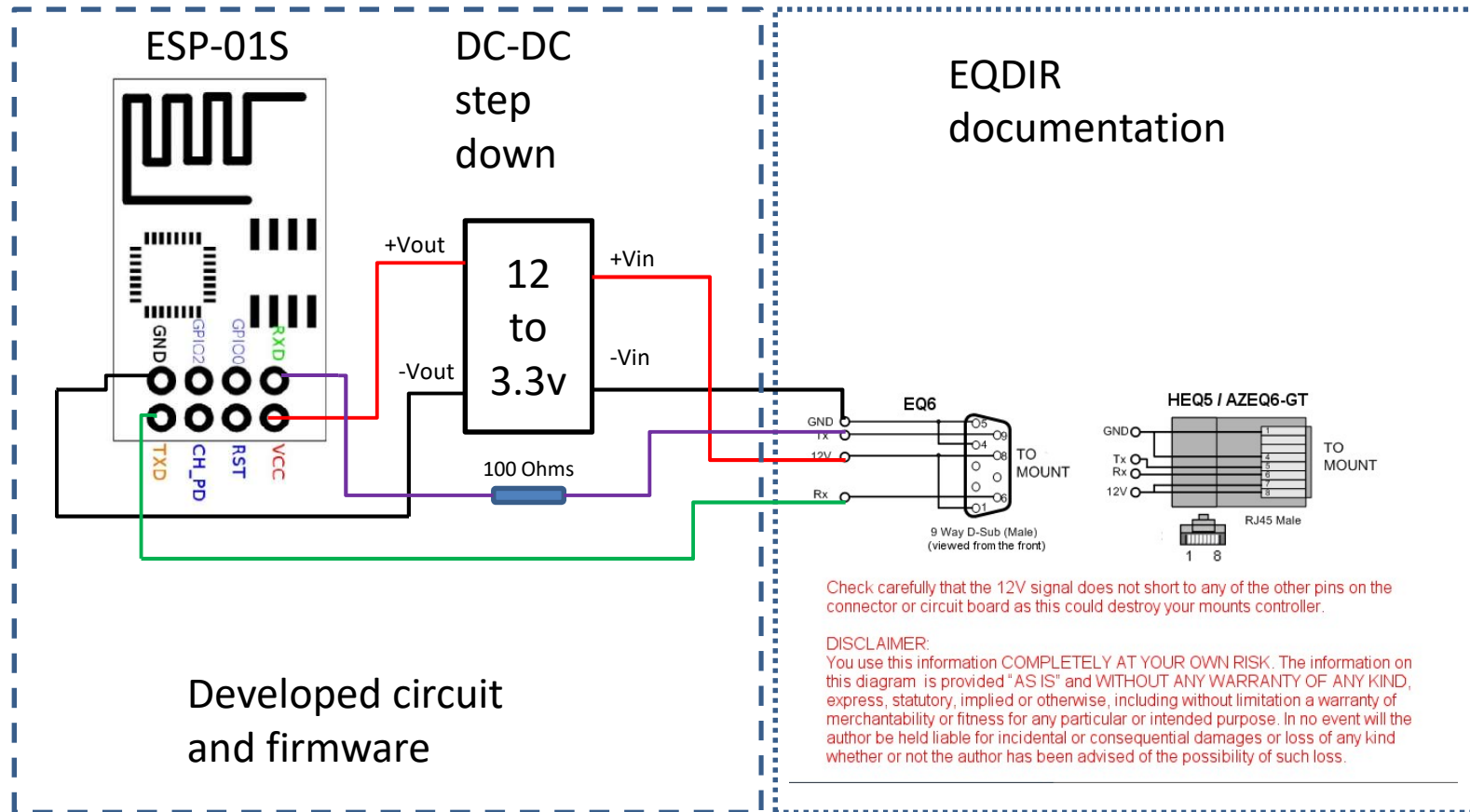
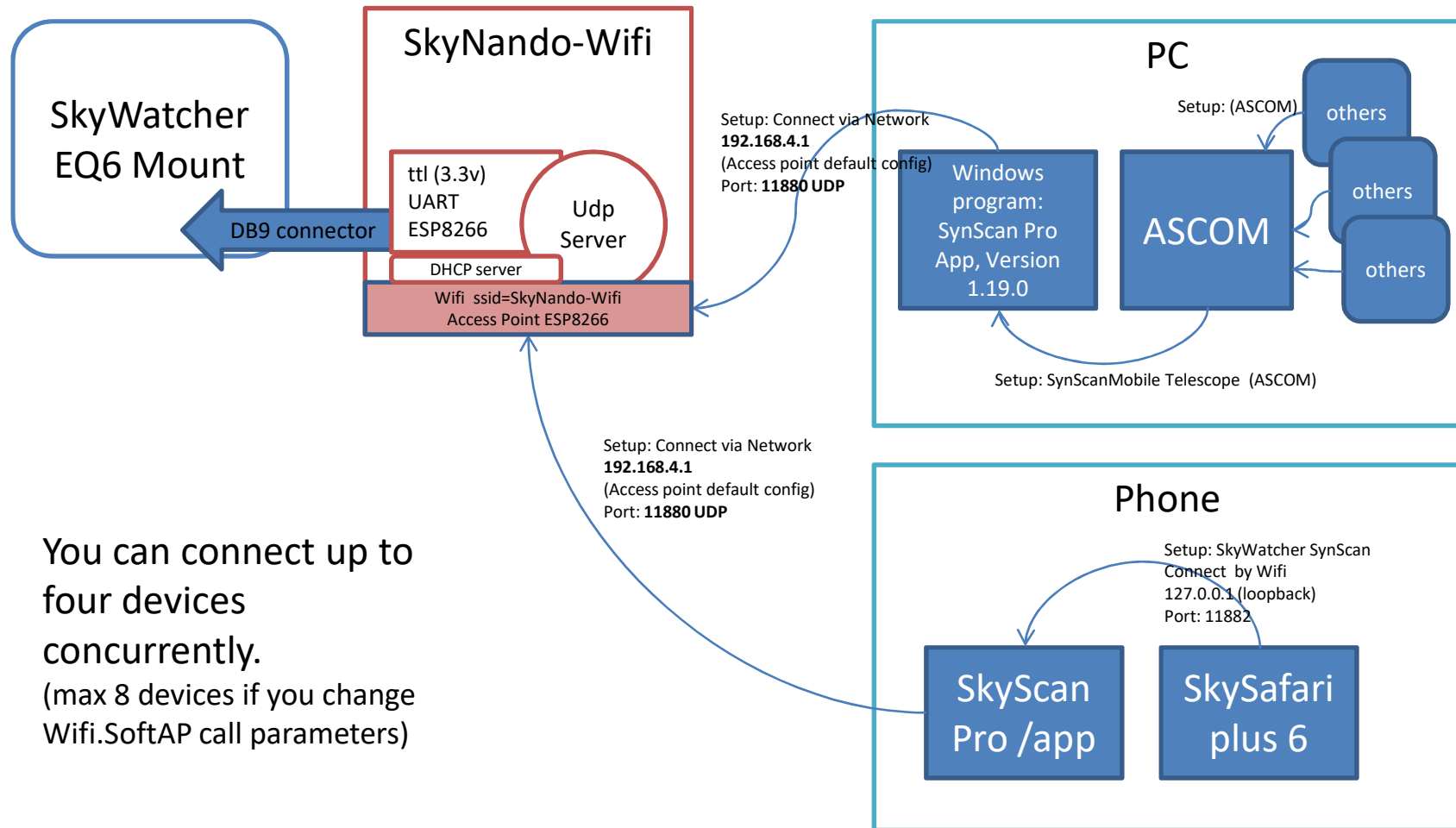


Electronics

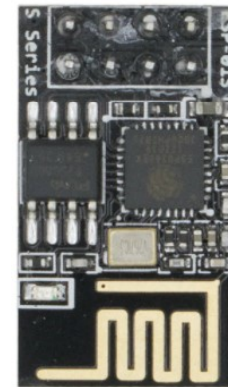


Communications context



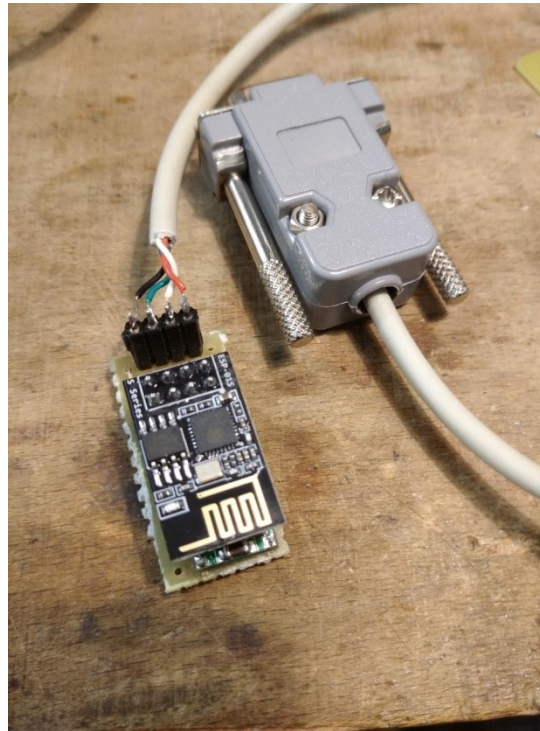
BoM (Bill of materials)

- Modules
 - ESP-01S (better than ESP-01, there is pull-up resistors and it's easy to integrate)
 - DC-DC step down mini
- Resistors
 - 100 Ohms 1/8w
- Miscellaneous
 - 1x DB9 male connector
 - 1x Connector Shell
 - 20cm 4 wire cable (like USB cable)
 - 1x4 pin sockets and 1x4 pin male.
 - mini-board 6x14 dots from a development board

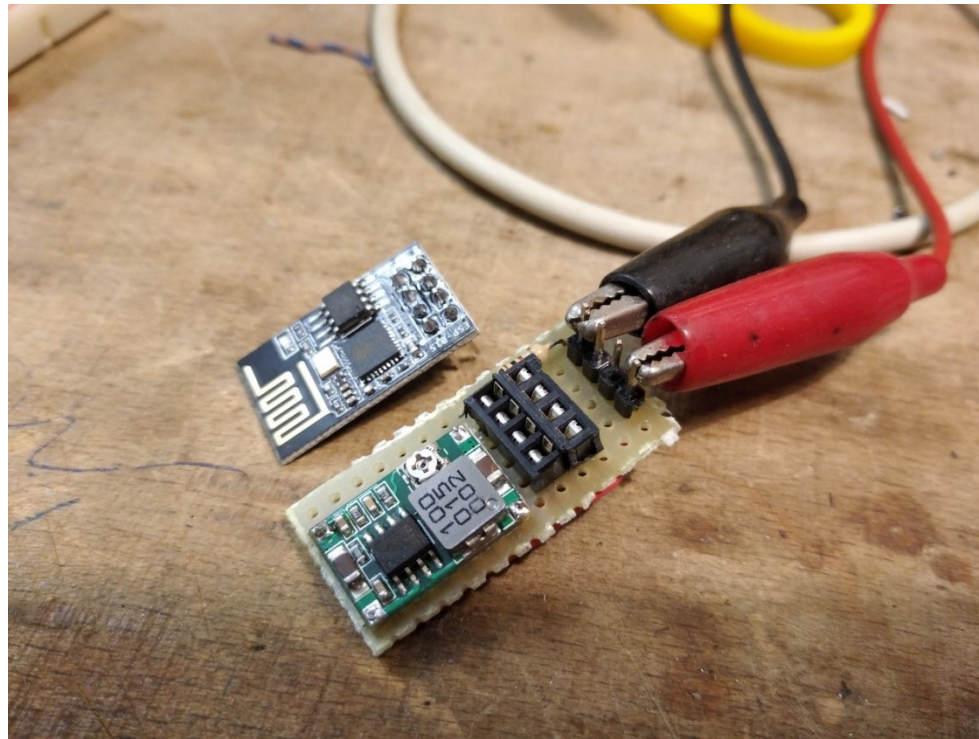


Assembly instructions (1)

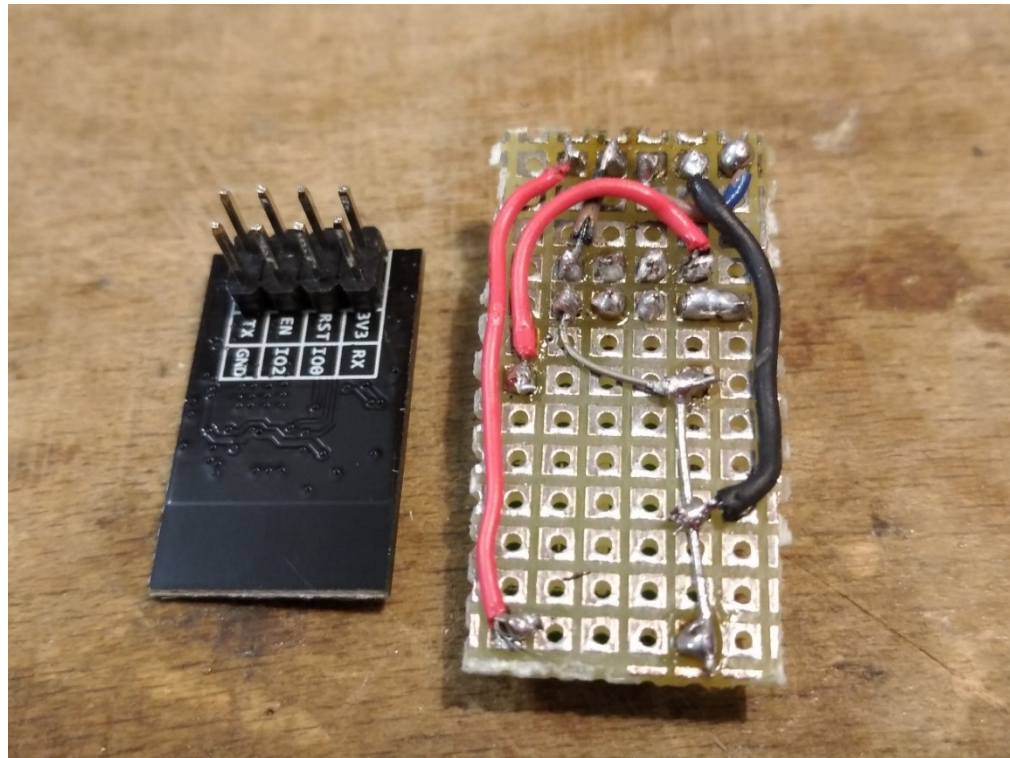
Follow the wiring diagram in Electronics page and build one device like this:



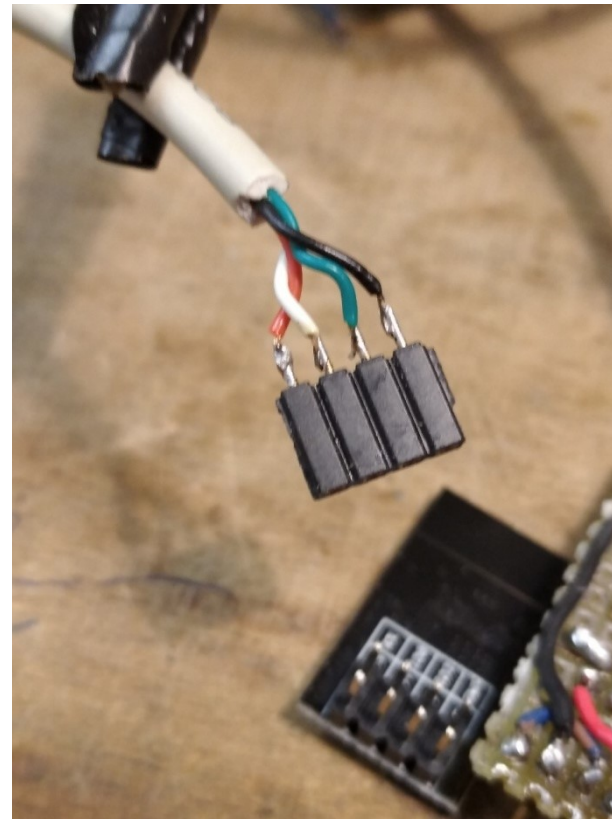
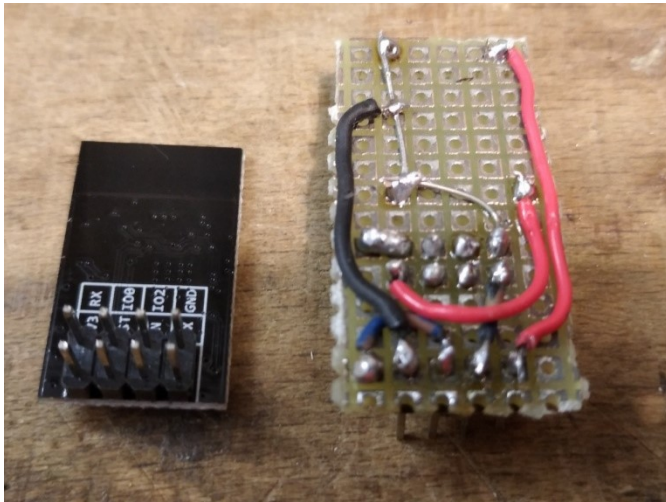
Assembly instructions (2)



Assembly instructions (3)



Assembly instructions (4)

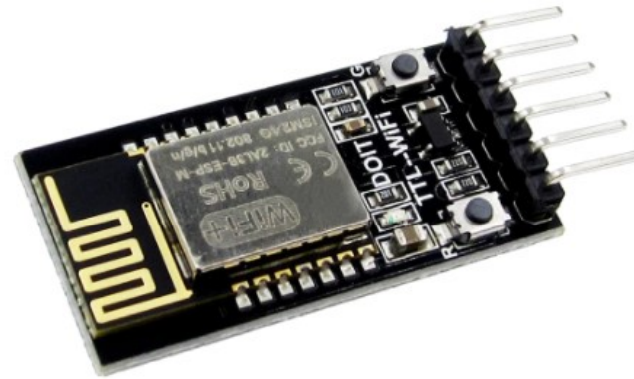


HW Alternative

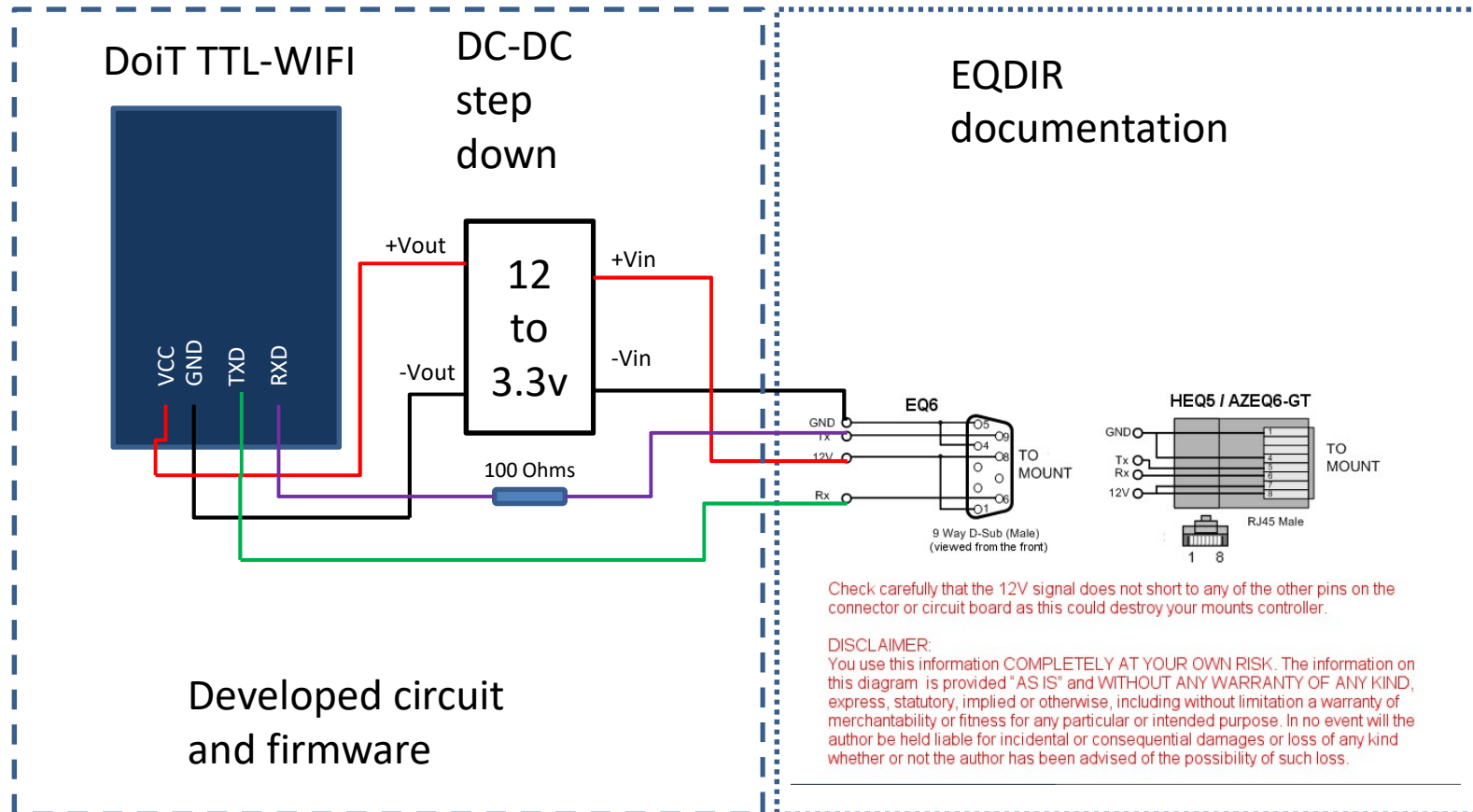
- You can build a device using the “Doit TTL-WiFi” item.

- BoM

- Modules
 - ESP-01S (better than ESP-01, there is pull-up resistors and it's easy to integrate)
 - DC-DC step down mini
- Resistors
 - 100 Ohms 1/8w
- Miscellaneous
 - 1x DB9 male connector
 - 1x Connector Shell
 - 20cm 4 wire cable (like USB cable)
 - 1x4 pin sockets and 1x4 pin male.
 - mini-board 6x14 dots from a development board



Electronics (2)



Configure Doit TTL-WiFi (1)

As Access point...

Up to you !

18:54 0.0KB/s No hi ha connexió a Internet

192.168.4.1/wifi_set.ht

STATUS MODULE MORE

Soft AP Settings

☒ Enable ☐ Disable

SSID Name

SkyNando-WiFi

Password

1234

SoftAP IP

192.168.4.1

SoftAP netmask

255.255.255.0

SoftAP gateway

192.168.4.1

Station Settings

☐ Enable ☒ Disable

SSID name

Wireless_Router

Recomended

18:54 0.0KB/s No hi ha connexió a Internet

Station Settings

☐ Enable ☒ Disable

SSID name

Wireless_Router

SSID list

Password

Wireless Router Password

☒ Enable DHCP ☐ Disable DHCP

Assign IP address

192.168.1.1

Assign Netmask

255.255.255.0

Assign Gateway

192.168.1.1

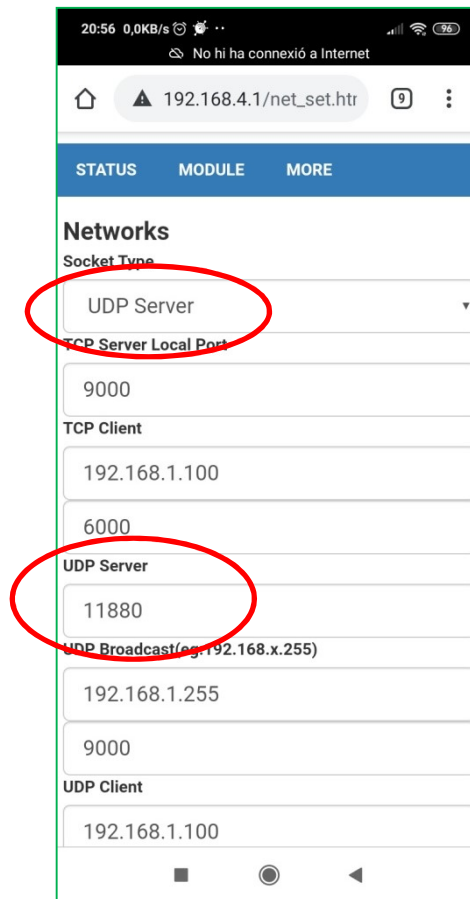
Save

Doctors of Intelligence&Technogoly www.doit.am

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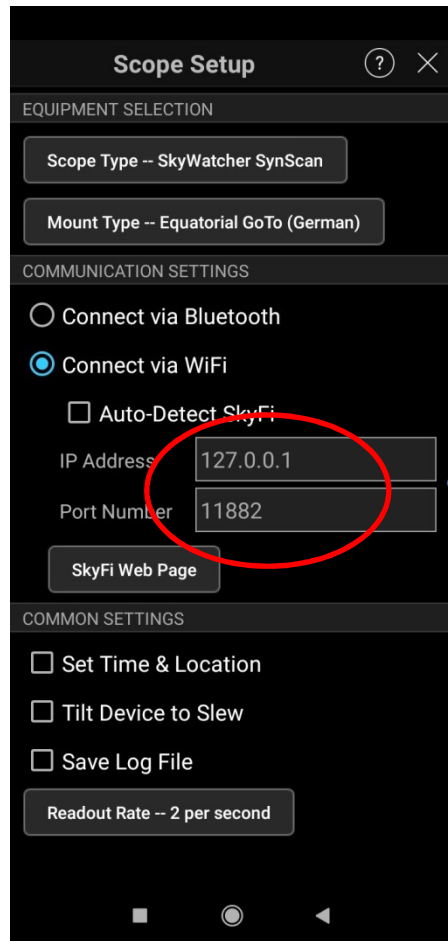
Configure Doit TTL-WiFi ()

In “Network”, you should configure the UDP protocol listening in 11880 port

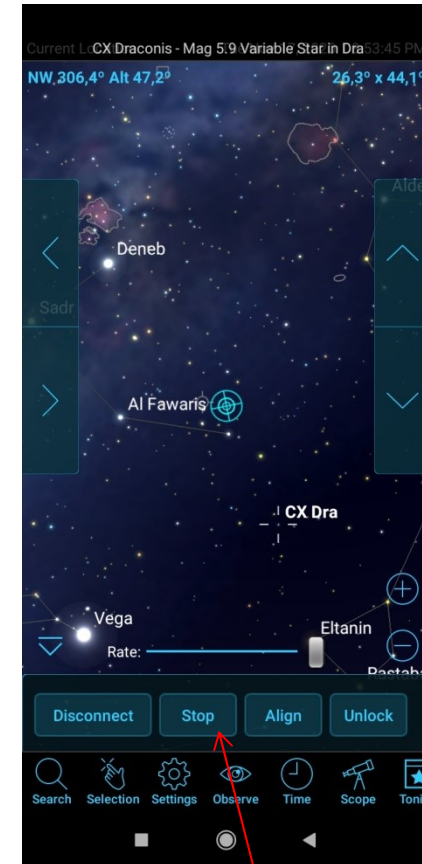
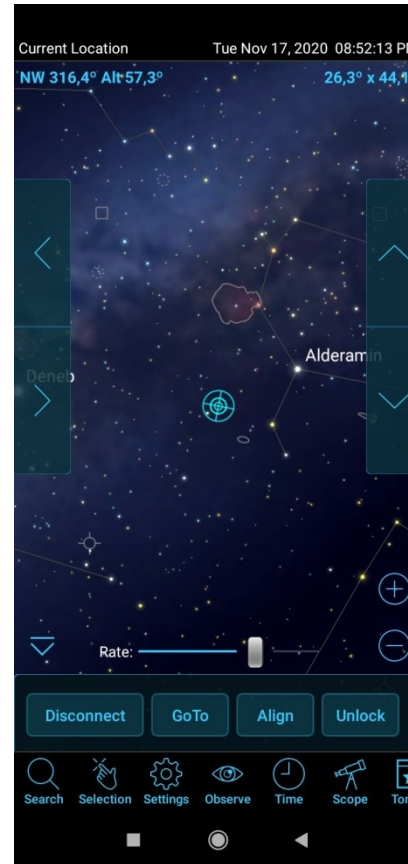


The screenshot shows a mobile application interface for configuring network settings. The status bar at the top displays the time 20:56, data usage 0.0KB/s, and a warning that there is no internet connection. The address bar shows the URL 192.168.4.1/net_set.htm. Below the address bar is a navigation bar with three tabs: STATUS, MODULE, and MORE. The main content area is titled "Networks" and contains several configuration sections. The "Socket Type" section has a dropdown menu set to "UDP Server", which is circled in red. The "TCP Server Local Port" section has a text input field containing "9000". The "TCP Client" section has a text input field containing "192.168.1.100" and a text input field containing "6000". The "UDP Server" section has a text input field containing "11880", which is also circled in red. The "UDP Broadcast (eg: 192.168.x.255)" section has a text input field containing "192.168.1.255" and a text input field containing "9000". The "UDP Client" section has a text input field containing "192.168.1.100".

Configure *Safari 6 plus app*



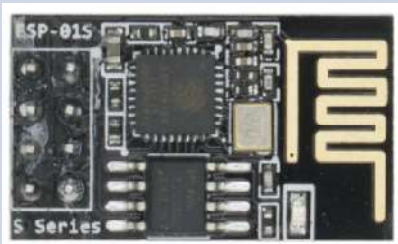
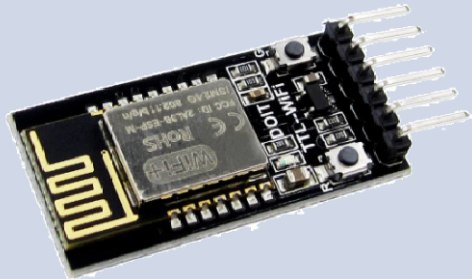
Loopback
address &
port



Connected and slew motion...

You could have in your hands an stellarium that can control your mount.

Comparative

	ESP-01S	DoiT TTL-WiFi
Picture	 A small black PCB module with a gold antenna on the right side. The text 'ESP-01S' is visible at the top left and 'S Series' at the bottom left.	 A black PCB module with a gold antenna on the left side. It features a reset button and a red LED indicator. The text 'DoiT' and 'TTL-WiFi' are visible on the right side.
Cost	Cheapest under 1€	Cheap unde 3€
Programing	Easy throught Arduino IDE (but not for novice)	You don't need programming nothing, only configure
Integration	Easy	Easy
Advantages	Speed	Reset button, led indicator
Disadvantages	nothing	Some retrying packets in comms test

Diagnostics

With SynScan Pro App you have a Diagnostics option and a response time test. There you have the result using each item.



Response Time		Clear All
Count		
All	10990	
Failed	0	
Resent	18	
Resent and Successful	18	
Response Time (ms)		
Most Recent	19	
Average	30	
Maximum	693	
Maximum of Successful	693	
<50	<100	<150 <200 <250 <Inf
10085	859	22 5 8 11
Test Communication		
Start		



Response Time		Clear All
Count		
All	1412	
Failed	0	
Resent	13	
Resent and Successful	13	
Response Time (ms)		
Most Recent	63	
Average	63	
Maximum	488	
Maximum of Successful	488	
<50	<100	<150 <200 <250 <Inf
0	1398	1 0 2 11
Test Communication		
Start		

Working...

- SkyNando-Wifi (ESP-01s version)
- <https://www.youtube.com/watch?v=sFFKFTEkweU>
- SkyNando-Wifi (DoiT TTL-WiFi version)
- <https://www.youtube.com/watch?v=DeSCxQLQGFw>

Record ESP-01S

11:04 0,0KB/s 95

Response Time

Clear All

Count

All

5319

Failed

0

Resent

0

Resent and Successful

0

Response Time (ms)

Most Recent

16

Average

17

Maximum

161

Maximum of Successful

161

<50

<100

<150

<200

<250

<Inf

5314

3

1

1

0

0

Test Communication

Start

In a tests with 5k packets the average is 17 ms, no resent packets and no failures!!!

Conclusion:

If you could I recommend you to build the interface with ESP-01s.