

## Guide to add Wifi on BOARD\_T41U5XBB or T41U5XBB\_SS

There are 2 downloads needed to flash the Wemos D1 mini:

[https://www.espressif.com/en/support/download/other-tools?keys=&field\\_type\\_tid%5B%5D=14](https://www.espressif.com/en/support/download/other-tools?keys=&field_type_tid%5B%5D=14)

Get there "Flash Download Tools"

Also you need the firmware for the Wemos D1 mini:

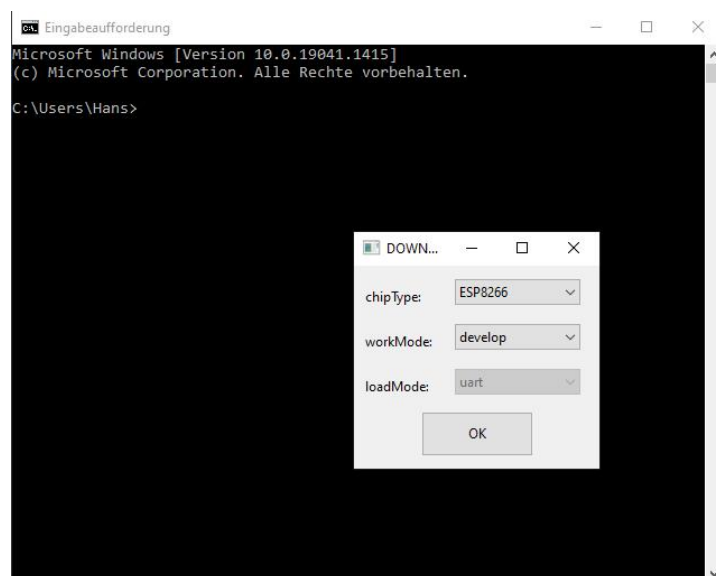
<https://github.com/jeelabs/esp-link/releases/tag/v2.2.3>

there you find

esp-link-v2.2.3.tgz

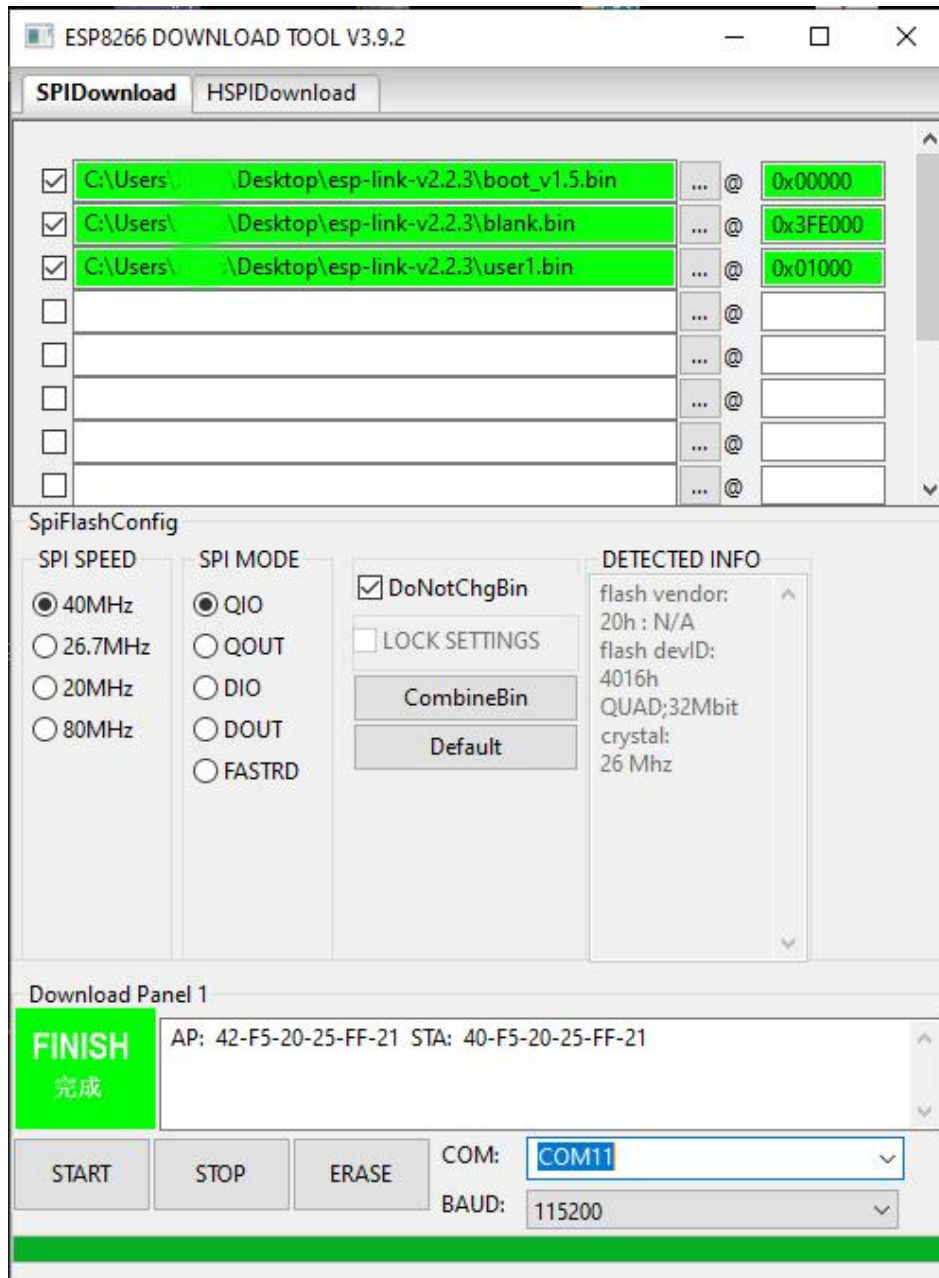
Download and unpack.

Start the downloadtool file with the connected D1 mini, then you get a console window and a pop-up



Leave it as is and click „OK“ and the you see the tool.

1. First choose the correct COM-port.
2. Insert the files from esp-link-v2.2.3.tgz, which you have unzipped before.
3. Don't forget to check them at the left side.



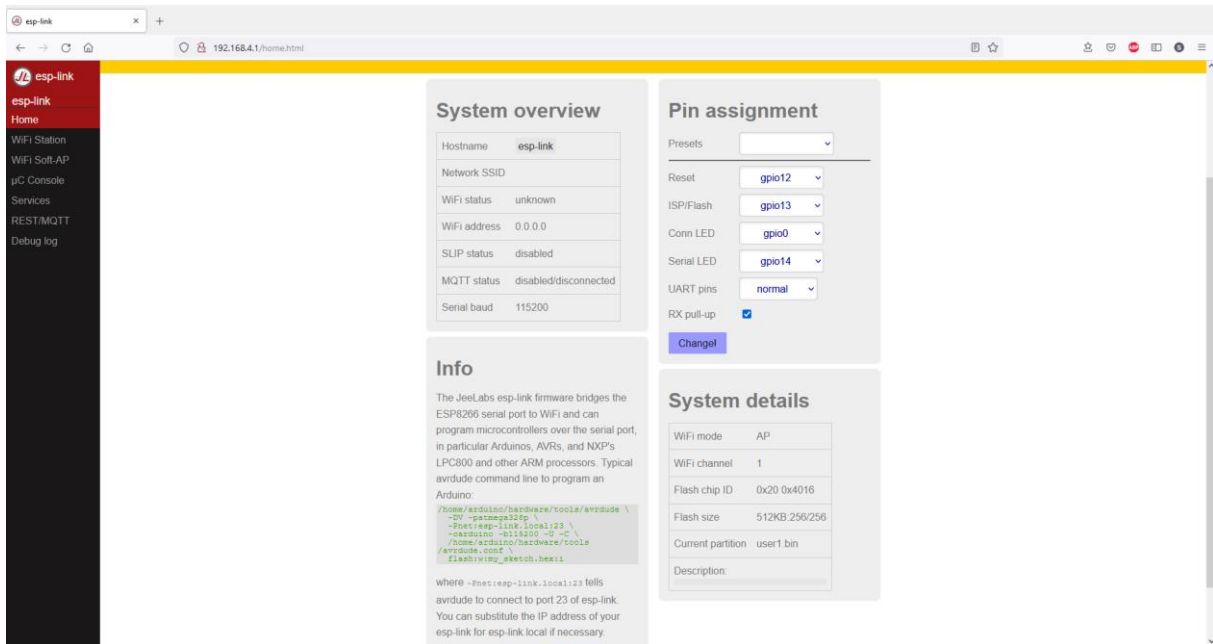
flash boot\_v1.5.bin to 0x00000  
flash blank.bin to 0x3FE000  
flash user1.bin to 0x01000

Be sure to use the commandline flags when flashing the bootloader to set the correct flash size.  
If everthing is ok, click on „START“ and beginn the flashing procedure.

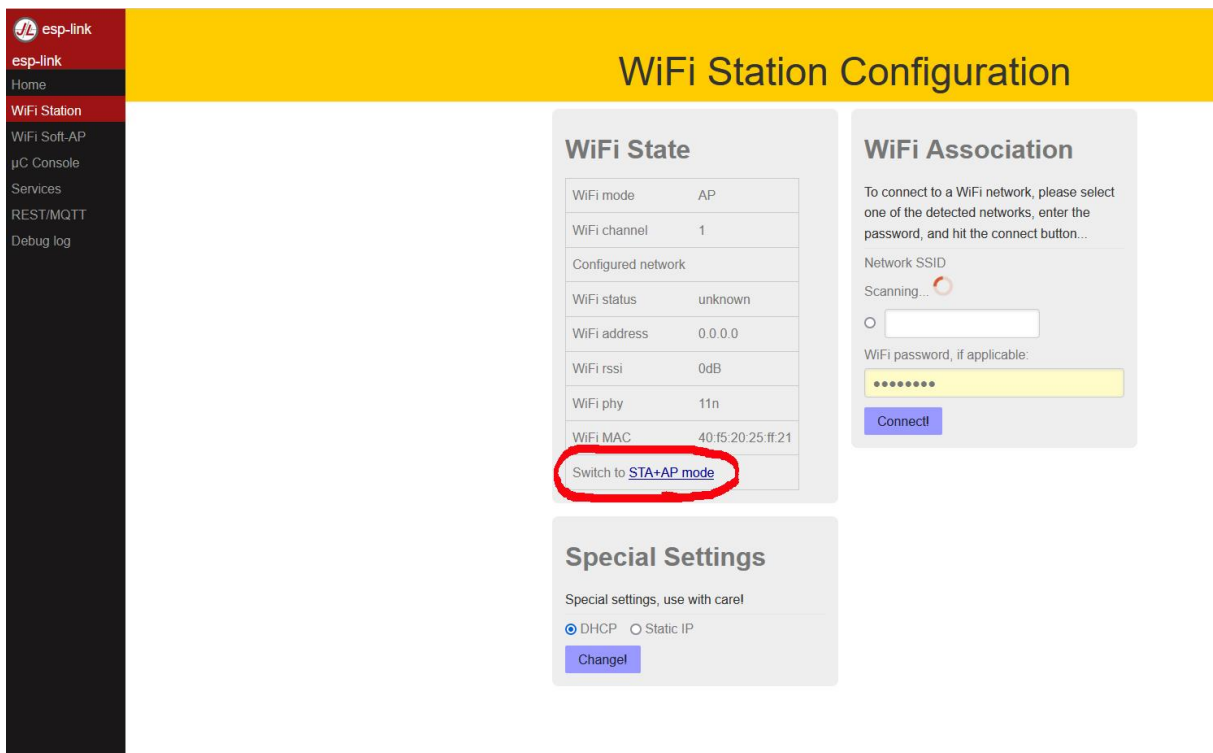
There is no message when finished, you will see the green progress bar going from left to right.

Unplug or reset the D1 Mini now.

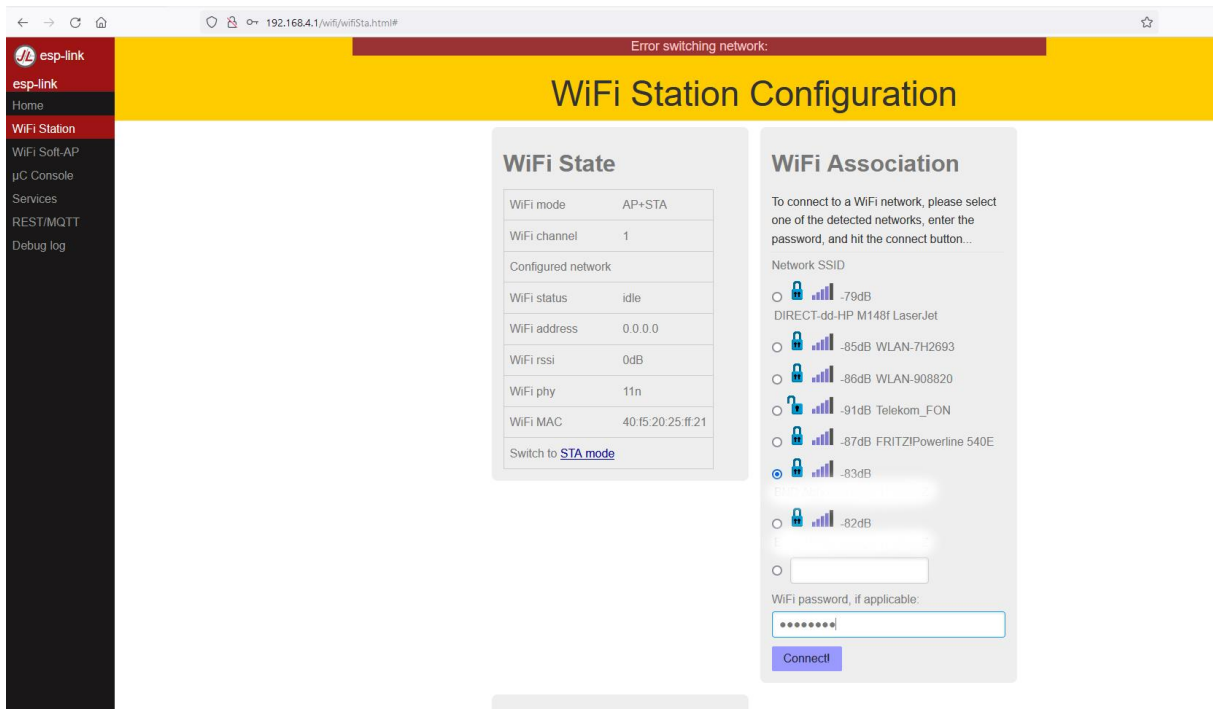
Now you see in WIFI a new station called ESPXXXX, establish a connection with it. Standard IP is 192.168.4.1  
Open your browser and type this IP as URL and your ESP Link opens:



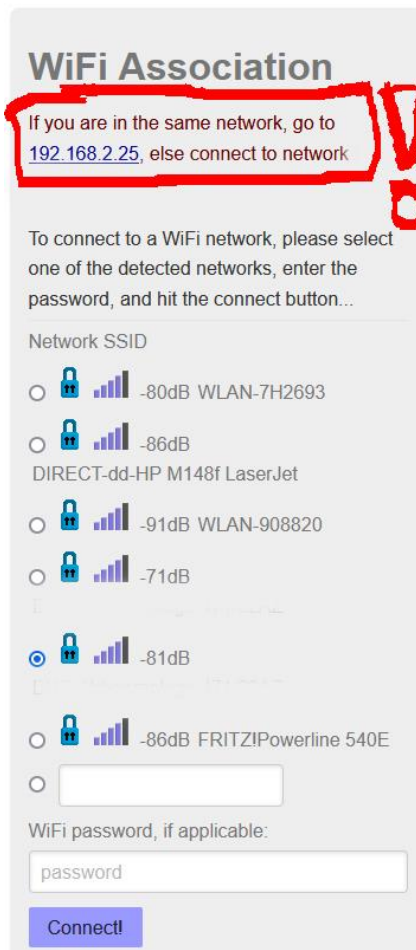
First you need to connect to your WIFI-station, click it at the left side.



Before doing anything else, change to STA-AP Mode, don't worry about the AP mode, it's just a fallback. After this, the WIFI environment is scanned and after a while you get the results.



Pick here the desired network and insert the needed password for access, after this click „Connect“



Now the D1 Mini AP station is disabled and you have to return to your WIFI network, you are going to find the ESP Link under the IP shown above.

After reconnecting you find the config page again with a few changes:

### WiFi State

WiFi mode	STA
WiFi channel	13
Configured network	
WiFi status	got IP address
WiFi address	
WiFi rssi	-82dB
WiFi phy	11n
WiFi MAC	
Switch to <a href="#">STA+AP mode</a>	

Now under „Presets“ choose „esp-Bridge“, but as you don't need a few things, disable them like shown below, if you like, assign the D1 LED as CONN LED or SERIAL LED for a visual feedback.

### Pin assignment

Presets

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Reset

ISP/Flash

Conn LED

Serial LED

UART pins

RX pull-up

Now you can unplug the D1 Mini, the setup as WIFI-UART Bridge is done.

## Wiring

The T41U5XBB have a serial I/O header at the right side of the Teensy wire there:

**GND to GND**

**3,3v to 3,3v**

**RX to TX**

**TX to RX**

## Start and connect the board to IOsender:

To use the Telnet port we need to reconfigure the board, open your **maschine.h** file and uncomment the following:

```
///define NETWORK_TELNET_PORT 23 at line 107
```

Save the file and compile/upload again tot the Teensy.

Now you can use a 5v source to start the board or plug in an USB connection, **just don't use the USB connector at the D1 Mini !**

If you use this, your Teensy runs with 3,3v and also the UART connections is lost, because RX and TX are the same as at the USB connector.

You can swap the RX TX if you want in the ESP Link config page, TX is then GPIO 15 and RX is GPIO 13 on the D1 Mini board.

Now open the **App.config** file in ioSender and change there:

```
<PortParams>ESPLink IP here:23</PortParams>
```

**That's all, now you have WIFI on board.**

