Guide to add Wifi on BOARD_T41U5XBB or T41U5XBB_SS

There are 2 downloads needed to flash the Wemos D1 mini: <u>https://www.espressif.com/en/support/download/other-tools?keys=&field_type_tid%5B%5D=14</u> 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.

ESP8266 DC	WNLOAD TOO	DL V3.9.2		10	A CONTRACTOR		0770]	×
SPIDownload	HSPIDownlo	ad								
C:\Users\ C:\Users\ C:\Users\	\Desktop\ \Desktop\ \Desktop\	esp-link- esp-link- esp-link-	v2.2.3\boo v2.2.3\blar v2.2.3\usei	t_v1.5.Ł ik.bin 1.bin	în		0000	0x000 0x3FF 0x010	000	
							0			
SPIFlashConfig SPI SPEED 40MHz 26.7MHz 20MHz 80MHz	SPI MODE QIO QOUT DIO DOUT FASTRD		NotChgBir CK SETTINC ombineBir Default	n iS n	DETEC flash ve 20h : N flash de 4016h QUAD; crystal: 26 Mhz	TED I endo /A evID: 32M	NFC r: bit	^		
Download Pan FINISH 完成	el 1 AP: 42-F5-20-2	5-FF-21 S	STA: 40-F5	-20-25-	FF-21			~		< >
START	STOP	ERASE	COM: BAUD:	СОМ 11520	11 D					- -

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:

(a) esp-link × +		
← → C @ O & 192.168.4.1/home.html		II ☆ =
🕖 esp-link		
esp-link Home	System overview Pin a	assignment
WiFi Station	Hostname esp-link Presets	
WiFi Soft-AP	Network SSID	
μC Console	Reset	gpio12 v
Services	WiFi status unknown ISP/Flash	sh gpio13 v
RESI/MQTT	WiFi address 0.0.0.0 Conn LE	ED gpio0 ~
Debug ing	SLIP status disabled Serial LE	ED apio14 ~
	MQTT status disabled/disconnected	normal v
	Serial baud 115200 RX pull-ti	-up 🖬
	Chang	her.
	The JeeLabs esp-link firmware bridges the Syst	tem details
	program microcontrollers over the serial port, in particular Arduinos, AVRs, and NXP's WiFi me	node AP
	LPC800 and other ARM processors. Typical WiFi ch	hannel 1
	avrdude command line to program an Arduino: Flash cl	chip ID 0x20 0x4016
	/home/arduino/hardware/tools/avrdude \ -DV -patinega328p \ -Pretregrink.locali23 \	size 512KB:256/256
	-cardisho-bil3200-d-c\ /home/ardusho/hardware/tools /ardude.conf \ filabhurdy_detch.hexii	it partition usert bin
	where -Pnet:esp-link.localizs tells	ption:
	avrdude to connect to port 23 of esp-link.	
	You can substitute the IP address of your	
	esp-link for esp-link local if necessary	

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 failback. After this, the WIFI environment is scanned and after a while you get the results.

\leftrightarrow \rightarrow C \textcircled{a}	○ A 0- 192.168.4.1/wifi/wifiSta.html#				☆
esp-link			Error switching ne	twork:	
esp-link			. Station	Configuration	
Home			1 Station	Configuration	
WiFi Station					
WiFi Soft-AP		WiFi State	2	WiFi Association	
µC Console			-		
Services		WiFi mode	AP+STA	To connect to a WiFi network, please select	
REST/MQTT Debug log		WiFi channel	1	password, and hit the connect button	
Dobug log		Configured network		Network SSID	
		WiFi status	idle	o 🔒 .111 -79dB	
		WiFi address	0.0.0.0	DIRECT-dd-HP M148f LaserJet	
		WiFi rssi	0dB	O 🗰 📲 -85dB WLAN-7H2693	
				O 🔒 📶 -86dB WLAN-908820	
		vvi⊢i pny	110	O 🔓 📶 -91dB Telekom FON	
		WiFi MAC	40:15:20:25:ff:21		
		Switch to STA mod	<u>e</u>	-37dB FRITZIPOwenine 540E	
				● ■ +111 -83dB	
				0 🔒 📲 enge	
				-520B	
				0	
				WiFi password, if applicable:	
				••••••	
				Connect	

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

To coni one of passwo	nect to a WiFi network, please select the detected networks, enter the ord, and hit the connect button
Networ	k SSID
0	-80dB WLAN-7H2693
	-86dB CT-dd-HP M148f LaserJet
0	-91dB WLAN-908820
0	-71dB
E	
₀ 🔒	.III -81dB
0	-86dB FRITZ!Powerline 540E
0	

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 mode	STA
WiFi channel	13
Configured network	
WiFi status	got IP address
WiFi address	
WiFi rssi	-82dB
WiFi phy	11n
WiFi MAC	

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 ass	signment
Presets	~
Reset	disabled v
ISP/Flash	disabled ~
Conn LED	gpio2/TX1 ~
Serial LED	gpio14 ~
UART pins	normal ~
RX pull-up	
Change!	

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.

If you need a terminal, go to the ISP Link IP and choose the in the menu μ C Console, at "Console entry" you can type your terminal commands.

ποσοτμο	Clear Log Baud: 115200 - Fmt: 8N1
Console	
<hold:0 wpos:1< td=""><td>15.000,0.000,7.900 Bf:35,0 FS:0,0,0 Pn:PXYZ WCO:-15.000,0.00</td></hold:0 wpos:1<>	15.000,0.000,7.900 Bf:35,0 FS:0,0,0 Pn:PXYZ WCO:-15.000,0.00
GrblHAL 1.1f [['\$' or '\$HELP' for help]
error:2	
error:2	100211
[VER:1.1f.2021	1024 3 01
[OPT: VNMSL, 55,	ווענא,ג,ען דיי דע ואיעד דר פע פרה פהן
[FIRMWARE:grb]	HAL]
[NVS STORAGE:*	*FLASH]
[DRIVER: iMXRT1	1062]
[DRIVER VERSIC	D
tool change is	pending.]
[ERRORCODE:41	Spindle not running when motion commanded in CSS or spindl
[ERRORCODE:42	[Plane must be ZX for threading.]
[ERRORCODE: 43]	Max. feed rate exceeded.]
[ERRORCODE: 44]	[Rem out of fange.]
	[Home machine to continue.]
[ERRORCODE:46]	
[ERRORCODE:46]	TAULY CUPPONE FOOL IS NOT SOL SUPPORT FOOL MILES MAL
[ERRORCODE: 46]	(ENTER to submit, ESC to clear) Add: ☑CR(\r) ☑LF(\n)
[ERRORCODE: 46]	(ENTER to submit, ESC to clear) Add: ☑CR(\r) ☑LF(\n