Wi-Fi Modules for Arduino

Use your Arduino Uno WiFi on the Arduino Desktop IDE

If you want to program your Arduino Uno WiFi while offline you need to install the <u>Arduino</u> Desktop IDE.

Installing Drivers for the Uno WiFi

OSX The first time you plug an Uno WiFi into a Mac, the "Keyboard Setup Assistant" will launch. There's nothing to configure with the UNO WiFi, so you can close this window by clicking the red button in the top left of the window.

Windows (tested on XP, 7, Vista and 10) At this point of this Getting Started guide you already have installed the drivers together with the Arduino Software (IDE) and the board will be recognized automatically.

Open your first sketch

Open the LED blink example sketch: File > Examples >01.Basics > Blink.

Select your board type and port

You'll need to select the entry in the **Tools** > **Board** menu that corresponds to your Arduino Uno WiFi board.

Select the serial device of the board from the Tools | Serial Port menu. This is likely to be **COM3** or higher (**COM1** and **COM2** are usually reserved for hardware serial ports). To find out, you can disconnect your board and re-open the menu; the entry that disappears should be the Arduino Uno WiFi board. Reconnect the board and select that serial port.

Upload the program

Now, simply click the "Upload" button in the environment.



Wait a few seconds - you should see the RX and TX LEDs on the board flashing. If the upload is successful, the message "Done uploading." will appear in the status bar.

0	Blink Arduino		_		×
File	Edit Sketch Tools Help				
V					10
BI	link				
11					^
12	modified 8 May 2014				
13	by Scott Fitzgerald				
14	*/				
15	/				
16					
17	// the setup function runs of	once when you	press r	eset or	power
18	<pre>void setup() {</pre>	inoc when job	press r	0000 02	power
19	// initialize digital pin	13 as an out	but.		
20	<pre>pinMode(13, OUTPUT);</pre>		1		
21	}				
22					
23	// the loop function runs or	ver and over	again fo:	rever	
24	void loop() {		-		
25	<pre>digitalWrite(13, HIGH);</pre>	// turn the	LED on (1	HIGH is	the v
26	<pre>delay(1000);</pre>	// wait for	a second		
27	<pre>digitalWrite(13, LOW);</pre>	// turn the	LED off 1	by makin	g the
28	<pre>delay(1000);</pre>	// wait for	a second		
29	}				
	<				>
Don	ie uploading.				
avro	iude: réading on-chip flash d	lata:			~
<					×
1			Arduine He	10 WiFi on C	
L			Algaino Ur		00017

A few seconds after the upload finishes, you should see the on-board LED start to blink. If it does, congratulations! You've gotten your Uno WiFi board up-and-running for the USB programming.

Programming via OTA

This board allows you to upload your sketches over the air (OTA) using the WiFi connection. To get this method working, you need that your board is already connected to the same WiFi network to which your PC is connected. Please refer to the *First Configuration* chapter below to configure and connect the Arduino Uno WiFi to your WiFi network.

Power the board using the USB cable and a 5V USB power supply or use an external power supply connected to the power connector. Now the procedure to program the board via OTA is

the same of that shown above but it differs only when you select the port. Here are all the steps..

Select your board type and port

You'll need to select the entry in the **Tools** > **Board** menu that corresponds to your Arduino Uno WiFi board.

💿 Blink | Arduino × File Edit Sketch Tools Help Auto Format Ctrl+T Archive Sketch Blink Fix Encoding & Reload 11 Serial Monitor Ctrl+Shift+M modifie 12 by Scott 13 Board */ 14 Port Serial ports 15 COM17 (Arduino Uno) 16 Programmer 17 // the set Network ports Burn Bootloader 18 void setup \checkmark arduinounowifi at 192.168.60.118 (Arduino Uno WiFi) // initialize digital pin 13 as an output. 19 20 pinMode(13, OUTPUT); callopengate at 192.168.60.102 (Arduino Yún) 21 } linino at 192.168.60.112 (Arduino Yún) 22 23 // the loop function runs over and over again forever 24 void loop() (25 digitalWrite(13, HIGH); // turn the LED on (HIGH is the v // wait for a second 26 delay(1000); 27 digitalWrite(13, LOW); // turn the LED off by making the 28 delay(1000); // wait for a second 29 } < > Remember to set the UNO WiFi board in 'STA' mode through the configuration panel. on-chip flash data: ^ ¥ < > Arduino Uno WiFi on 192.168.60.118

Select the board from **Tool>Port>Network** ports menu

Note: Be sure that the PC and the board are connected to the same network and that the board is in STA MODE, for more information see *First Configuration* below.

Upload the program

Now, simply click the "Upload" button in the environment.



Wait a few seconds - you should see the RX and TX LEDs on the board flashing. If the upload is successful, the message "Done uploading." will appear in the status bar.

First configuration

Your Arduino Uno WiFi needs a first configuration to join your WiFi network and it allows you to enter the relevant information creating its own Access Point. Please execute the following procedure every time you bring Arduino Uno WiFi in a location where the WiFi network access needs to be reconfigured.

Power the board and wait some time. Search the board in the network list, it has an ESSID like this: **Arduino-Uno-WiFi-xxxxxx**. Connect your PC/MAC to the Arduino Uno WiFi AP: Open a browser and connect at this address: <u>http://192.168.240.1/</u>

WELCOME The Arduino UNO WiFi firmware allows you to upload an Arduino sketch via OTA - Over The Air technol can use Arduino IDE for that. Please refer to the online <u>Starter Guide</u> on Arduino.org			
	SUMMARY		
OVERVIEW	Hostname	arduino	CHANGE
WIFI CONSOLE	Network SSID		CHANCE
TTIMES	Wifi status	idle	
αει	Wifi address	0.0.0.0	
CONNECTIVITY	WiFi mode	AP+STA	
DEBUG LOG	WiFi channel	1	
	Flash chip ID	0x01 0x4016	
	Flash size	4MB.512/512	

This is the screen that it will appear:

If you want to modify the hostname of the board then click on **CHANGE** from **OVERVIEW** menu or select the **WiFi** on the left menu and insert a new name under **HOSTNAME** field and after click on **CHANGE**.

600	WIFI CONFIGURATION		
ARDUINO			
	HOSTNAME	WIFI STATUS	1
OVERVIEW	aiduno	Configured network	
WIFI CONSOLE	CHANCE	WiFi status	idle
		WIFi address	0.0.0.0
TIME	WIFI CONNECTION	WiFi rssi	-61dB
NIFI		WiFi phy	110
CONNECTIVITY	To connect to a WiFi network, please select one of the detected networks, enter the password, and hit	WIFI MAC	5c:cf:7f:10:e9:c2
DEBUG LOG	the connect button	WiFi mode	AP+STA
-	A	SWETC	H TO STA HODE

Connect the Arduino Uno WiFi to your AccessPoint Router, selecting your network from the **WiFi Menu**, insert the correct password and then click on **CONNECT**, as shown in the image below:

		SNITCH TO STA MODE
\sim	-54dB DHLabs	SHATCH TO STA PADE
$\odot \odot$		
ARDUINO	◎ all -83dB UNIME-WIFI	ADVANCED
UNO WIFI	◎ 🛱 📶 -68dB UNIME-WIFI	
	○	DHCP Static IP
OVERVIEW	◎ all .87dB UNIME-WIFI	CHANGE
	◎ all -83dB UNIME-WIFI	
WIFI CONSOLE	◎ 🛱 📶 -87dB UNIME-WIFI	
TTEND	◎ all -82dB UNIME-WIFI	
WIFI	◎ all -89dB UNIME-WIFI	
CONNECTIVITY	Hidden network	
DEBUG LOG	WiFi password, if applicable:	
	dissiword	>

When the board is connected to the network, the ip address will appear at the top of the panel:

	WIFI CONFIGURATION	ot IP 192.168.60.110	
UNO WIFI	HOSTNAME	WIFI STATUS	
		WiFi channel	1
OVERVIEW	arduino	Configured network	DHLabs
WIFI CONSOLE	CHANGE	WiFi status	got IP address
		WiFi address	192.168.60.110
ISTYDKS	WIFI CONNECTION	WiFi rssi	-53dB
WIFI		WiFi phy	11n
CONNECTIVITY	CTIVITY If you are in the same network, go to 192.168.60.110, else connect to network DHLabs		5c cf 7f 10 e9 c2
DEBUG LOG	first.	WiFi mode	AP+STA
	To connect to a WiFi network, please select one of the detected networks, enter the password, and hit the connect button	SMITCH	TO STA MODE

Now connect the PC to the same network to which the board is connected and try to access the board by inserting the ip address in the browser.

← → C fi2.168.60.110/home	shtm			☆ 😊 ≡
111 App 🛄 DH Labs Trello 🚾 Arduino.org 📭	Google Translate 👔 Bing Traduttore 🗋 osTicket : Staff Contri	Arduino Slack 🖪 Arduino_facebook 🛅 LinkedIn	🗾 Infolobs M Monster.it 🔥 Gmail	>> 🔝 Altri Preferiti
ARDUINO UNO WIFI	WELCOME The Arduino UNO WiFi firmware a can use Arduino IDE for that. Plea	llows you to upload an Arduino sketch via O se refer to the online <u>Starter Guide</u> on Arduir	TA - Over The Air technology. You no.org	
	SUMMARY			
OVERVIEW	Hostname	arduino	CHANCE	
WIFI CONSOLE	Network SSID	DHLabs	CHANCE	
SETTEMES	Wifi status	got IP address		
WIFI	Wifi address	192.168.60.110		
CONNECTIVITY	WiFi mode	AP+STA		
DEBUG LOG	WiFi channel	1		
	Flash chip ID	0x01 0x4016		
	Flash size	4MB:512/512		
a				

Click on **WiFi** in the left menu and change the Wi-Fi configuration mode switching to **STA MODE**, as shown in the image below:

ARDUINO			
UNO WIFI	HOSTNAME	WIFI STATUS	
	arduino	WiFi channol	1
OVERVIEW	an water ru	Configured network	DIILabs
WIFI CONSOLE	OWNCE	WiFi status	got IP address
		WiFi address	192.168.60.110
11164	WIFI CONNECTION	WiFi rssi	-53dB
WIFI		WiFi phy	11n
CONNECTIVITY	To connect to a WiFi network, please select one of the detected networks, enter the password, and hit	WIFI MAC	5c:cf:7f:10:e9:c2
DEBUG LOG	the connect button Network SSID	WiFi mode	AP+STA
	🔹 🛱 📶 -48d8 DHLabs		O STA MODE

Please note: It is important switching in **STA MODE** because so the board will be visible on the Arduino IDE and, furthermore, you will be able to protect it from possible attacks, since it will no longer be visible as open network.

Now the "Mode Changed" message should appear at the top of the panel:

ΟO	WIFI CONFIGURATION	WIFI CONFIGURATION			
ARDUINO UNO WIFI	HOSTNAME	WIFI STATUS			
	arduino	WiFi channel	1		
OVERVIEW	arouno	Configured network	DHLabs		
WIFI CONSOLE	OWNCE	WiFi status	got IP address		
		WiFi address	192.168.60.110		
frans	WIFI CONNECTION	WIFi rssi	-59dB		
WIFI		WiFi phy	11n		
CONNECTIVITY	To connect to a WiFi network, please select one of the detected networks, enter the password, and hit		5c.cf.7f.10.e9.c2		
DEBUG LOG	the connect button	WiFi mode	STA		
168.60.110/wdf/wdf.htmd#	Network SSID - 50dB Arduino-Ind-101-B4218AFA0B72	ЯКІТСИ ТО	STA+AP HODE		

Now, you can access the webpage using your hostname: http://hostname.local

Your Arduino UNO WiFi is ready.

Web panel functions details

The Arduino UNO WiFi has a Web panel that it can be reached in different ways:

- If the board hasn't been configured yet, you can access it entering in the browser this link: <u>http://192.168.240.1/</u> to configure the board read the **First configuration** paragraph.
- If the board is been configured already for your WiFi network then you can insert the ip address (xxx.xxx.xxx) or the hostname(hostname.local/) from browser.

The Web panel has a simple menu that it is formed from five items: **OVERVIEW**, **SERIAL MONITOR**, **WIFI**, **CONNECTIVITY** and **DEBUG LOG**.

The Home page of the Web Panel corresponds to **OVERVIEW** menu, as shown in the image below:

	WELCOME The Arduino UNO WiFi fi can use Arduino IDE for	irmware allows you to upload an Arduino s that. Please refer to the online <u>Starter Guis</u>	ketch via OTA - Over The Air technology. You de on Arduino.org
	SUMMARY		
OVERVIEW	Hostname	arduinounowifi	CHANGE
SERIAL MONITOR	Network SSID	DHLabs	CHANGE
	Wifi status	got IP address	
WIFI	Wifi address	192.168.60.118	
CONNECTIVITY	WiFi mode	STA	
DEBUG LOG	WiFi channel	1	
	Flash chip ID	0x01 0x4016	
	Flash size	4MB:512/512	

In the **Overview**is shown all the information about the configuration board: thehostname, **the network** SSID, **Wifi address**, **Wifi mode** and other details

$\Theta \Theta$	SUMMARY		
ARDUINO	Hostname	arduinounowifi	CHANGE
UNO WIFI	Network SSID	DHLabs	CHANGE
	Wifi status	got IP address	
OVERVIEW	Wifi address	192.168.60.118	
\smile	WiFi mode	STA	
SERIAL MONITOR	WiFi channel	1	
TTENES	Flash chip ID	0x01 0x4016	
WIFI	Flash size	4MB:512/512	
CONNECTIVITY	Current partition	user2.bin	
	SLIP status	disabled	
DEBUG LOG	MQTT status	disabled/disconnected	
esp-link master - 2016-03-02	Serial baud	9600	

Clicking on **SERIAL MONITOR** displays a serial monitor, useful to display the results when you upload a sketch.

OO)	SERIAL MONITOR
OVERVIEW	
SERIAL MONITOR	rext entry (ENTER to submit, ESC to clear)
SUTINGS	
WIFI	History (UP/DOWN arrows to select)
CONNECTIVITY	
DEBUG LOG	-
esp-link master - 2016-03-02 10:04:41 - development	RESET µC MAutoscroll ØCR(ir) ØLF(in)

Furthermore in this section it is possible to reset the microcontroller clicking on RESET μC button.

$\Theta \Theta^{\dagger}$	SERIAL M	IONITOR	
ARDUINO			A
MONITOR			v P
	Text entry	(ENTER to submit, ESC to clear)	
	History	(UP/DOWN arrows to select)	
(TY			·
DG			Ŧ
ez - 2016-03-02 development		RESET HC	ØAutoscroll ØCR(ir) ØLF(in)

Instead selecting from left menu the **WIFI** section, you can change the hostname simply typing the new hostname in the dedicated bar and after to click on CHANGE button, as shown in the below image:

COO [®]	WIFI CONFIGURATION		
ARDUINO UNO WIFI	HOSTNAME	WIFI STATUS	
		WIFi channel	1
VERVIEW	Type bostname here	Configured network	DHLabs
IAL MONITOR	CHANGE	WiFi status	got IP address
		WIFi address	192.168.60.118
		WIFi rssi	-56dB
D D	WIFI CONNECTION	WIFi phy	11n
NECTIVITY	To connect to a WiFi network, please select one of the detected networks, enter the password, and hit	WIFI MAC	5c:cf:7f:10:eb:e5
BUG LOG	the connect button	WiFi mode	STA
9-11nk master - 2016-03-02 10:04:41 - development	Retwork SSID S3dB DHLabs	SWITCH TO	STA+AP MODE

It is possible also to switch to **STA MODE** or **STA+AP MODE** clicking the specific button, but keep in mind that it is advised to switch only in STA MODE because so the board will be visible on the Arduino IDE and, furthermore, you will be able to protect it from possible attacks, since it will no longer be visible as open network.

	WIFI CONFIGURATION		
UNO WIFI	HOSTNAME	WIFI STATUS	
	Type hostname here	WiFi channel	1
OVERVIEW	Type nosiname nere	Configured network	DHLabs
SERIAL MONITOR	CHANGE	WiFi status	got IP address
		WiFi address	192.168.60.118
TTEMOS		WiFi rssi	-56dB
HIFI	WIFI CONNECTION	WiFi phy	11n
CONNECTIVITY	To connect to a WiFi network, please select one of the detected networks, enter the password, and hit	WIFI MAC	5c:cf:7f:10:eb:e5
DEBUG LOG	the connect button	WiFi mode	STA
osp-link master - 2016-03-02 10:04:41 - development	Network SSID Control	SWITCH TO	STA+AP MODE

It is possible to connect the board to a network selecting it, inserting the correct password and clicking on CONNECTbutton.

	⊙ 🛱 attl -53d8 Insirio	ADVANCED
\odot	○	* DHCP
ARDUINO	◎ all -stdb UNIME-WIFI	© Static IP
UNO WiFi	🛛 🛍 📶 -63dB UNIME-WIFI	CHANGE
	all -81dB UNIME-WIFI	
	Image: Second	
OVERVIEW	all -74dB UNIME-WIFI	
SERIAL MONITOR	○ all -86dB UNIME-WIFT	
SETTINGS	all -90dB UNIME-WIFI	
WIFI	◎ all .95dB UNIME-WIFI	
CONNECTIVITY	•	
CONNECTIVITY	WiFi password, if applicable:	
DEBUG LOG	p sword	
esp-link mester - 2016-03-02 10:04:41 - development	CONNECT	

In this section you can also choose if to use the DHCP or the Static IP, as shown in the picture:

	ADVANCED	
$\Theta \Theta$	🛛 🔒 📶 -90dB DISPO-LAB	
ARDUINO	B all -81dB UNIME-WIFI Static IP	
UNO WIFI		
	© 🛱 📶 -81dB UNIME-WIFI	
	💿 💼 📶 -59dB Arduino-Uno-WiFi-10e32a	
OVERVIEW	🛛 🔒 📶 -74dB UNIME-WIFI	
SERIAL MONITOR	○ all -86dB UNIME-WIFT	- 1
SETTINGS		
VIET	○ all -95dB UNIME-WIFT	
\smile		
CONNECTIVITY	WiFi password, if applicable:	
DEBUG LOG	password	
	CONNECT	
esp-link master - 2016-03-02 10:04:41 - development		

In the **CONNECTIVITY** section you can enable the connection services for example the client MQTT and the SLIP:

~~··	CONNECTIVITY		
ARDUINO			
UNO WIFI	нотт	STATUS REPORTING	
OVERVIEW	Enable MQTT client MQTT client state: disconnected	 Enable status reporting via MQTT Topic 	
SERIAL MONITOR	Server hostname or IP	arduino	
SETTINGS	Server port	Message: ("rss1":-56, "heap_free":12512) UPDATE	
WIFI	1883		
CONNECTIVITY	Client ID arduino		
DEBUG LOG	Client Timeout (seconds)	SLIP	
	2	REST requests are enabled as soon as SLIP is	
esp-link master + 2016-03-02	Keep Alive Interval (seconds)	enabled. There are no REST-specific settings.	
30:04:41 - development	60		

Finally in the **DEBUG LOG** it is shown the debug log and it is possible to reboot the WiFi clicking the WiFiREBOOTbutton:

COO)	DEBUG LOG
ARDUINO	
UNO WIFI	585341> bss7: UNIME-WIFI (-77) 585341> bss7: UNIME-WIFI (-83) 585341> bss8: UNIME-WIFI (-84)
	585341> bss9: UNIME-WIFI (-89)
	585341> bss10: UNIME-WIFI (-94)
	585341> bss11: UNIME-WIFI (-94)
OVERVIEW	585342> usl
SERIAL MONITOR	587153> GET scan: cgiData=0 noAps=11 587173> GET scan: cgiData=1 noAps=11
SETTINGS	REFRESH WIFI REBOOT
WIFI	
CONNECTIVITY	
DEBUG LOG	
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