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ARDUINO IDE v. 1.8.1

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Arduino UNO WiFi

Arduino or Raspberry Pi?
February 22 2017

New IDE for all Arduino boards!
December 22 2016

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Nuremberg

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Start with Arduino UNO WiFi

- Getting Started
- First Sketch
- Web Panel

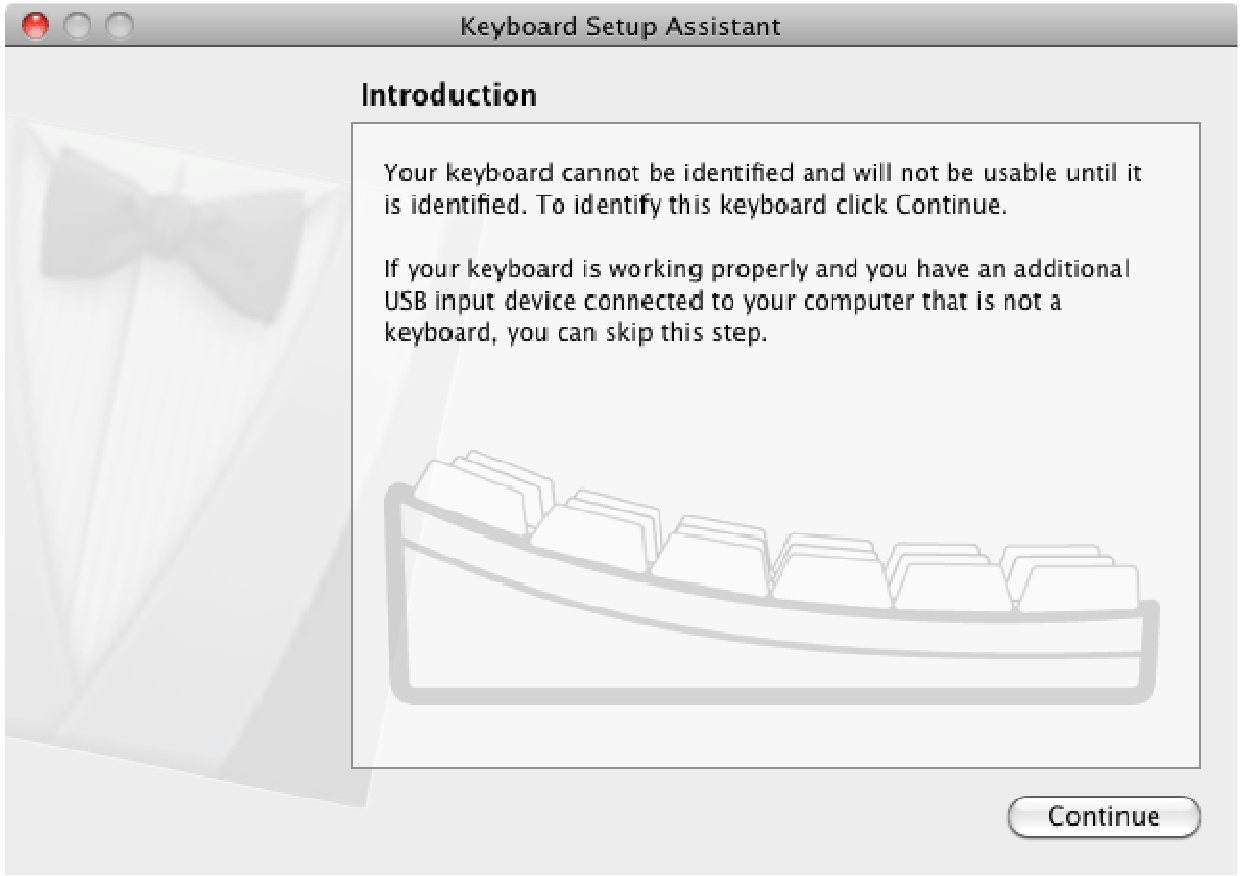
Connecting the Arduino UNO WiFi

To connect the Arduino UNO WiFi at your computer, you'll need an USB cable.
This USB cable provides the power and the data at the board.
When programming the UNO WiFi, you must choose "**Arduino UNO WiFi**" from the **"Tools > Board**" menu in the Arduino IDE.

Installing Drivers for the UNO WiFi

OSX

The first time you plug a 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 dialogue by clicking the red button in the top left of the window.



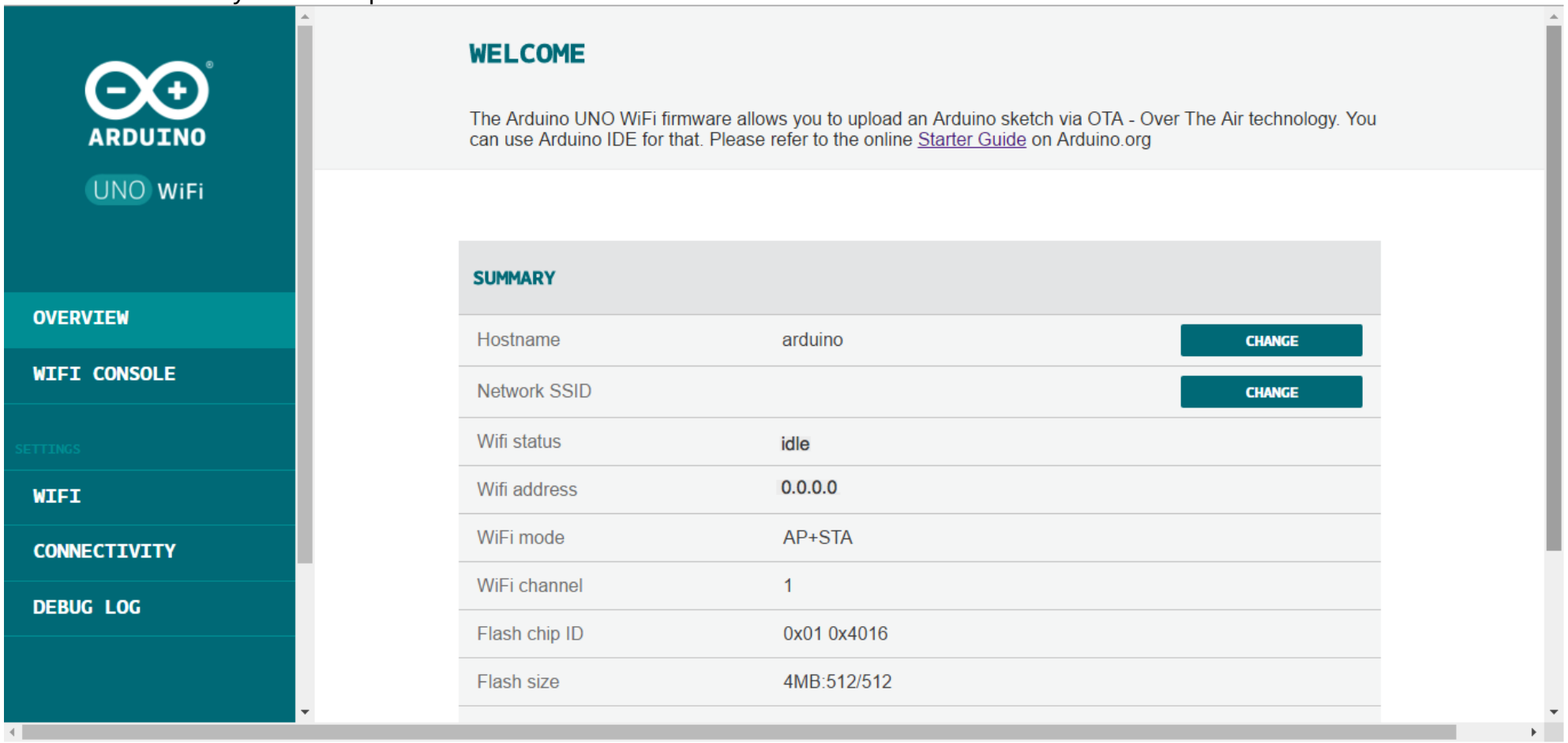
Windows
If you previously installed Arduino IDE, you already have drivers installed.
If you haven't yet installed Arduino IDE, download the Windows version of the Arduino software from the official page here.
When the download finishes, launch the file to install the software and the drivers.
If you downloaded the **.zip** version of the IDE, unzip the downloaded file. Make sure to preserve the folder structure.
Now your drivers will be downloaded and installed from Internet, directly from Windows.
If you have issues, you can find the "drivers" folder inside the unzipped file, for manual installation.

Linux
There is no need to install drivers for Ubuntu 10.0.4
In some computers, you need to setup user permissions and some udev rules.
You can find detailed informations on how to achieve this at this page.

First Configuration

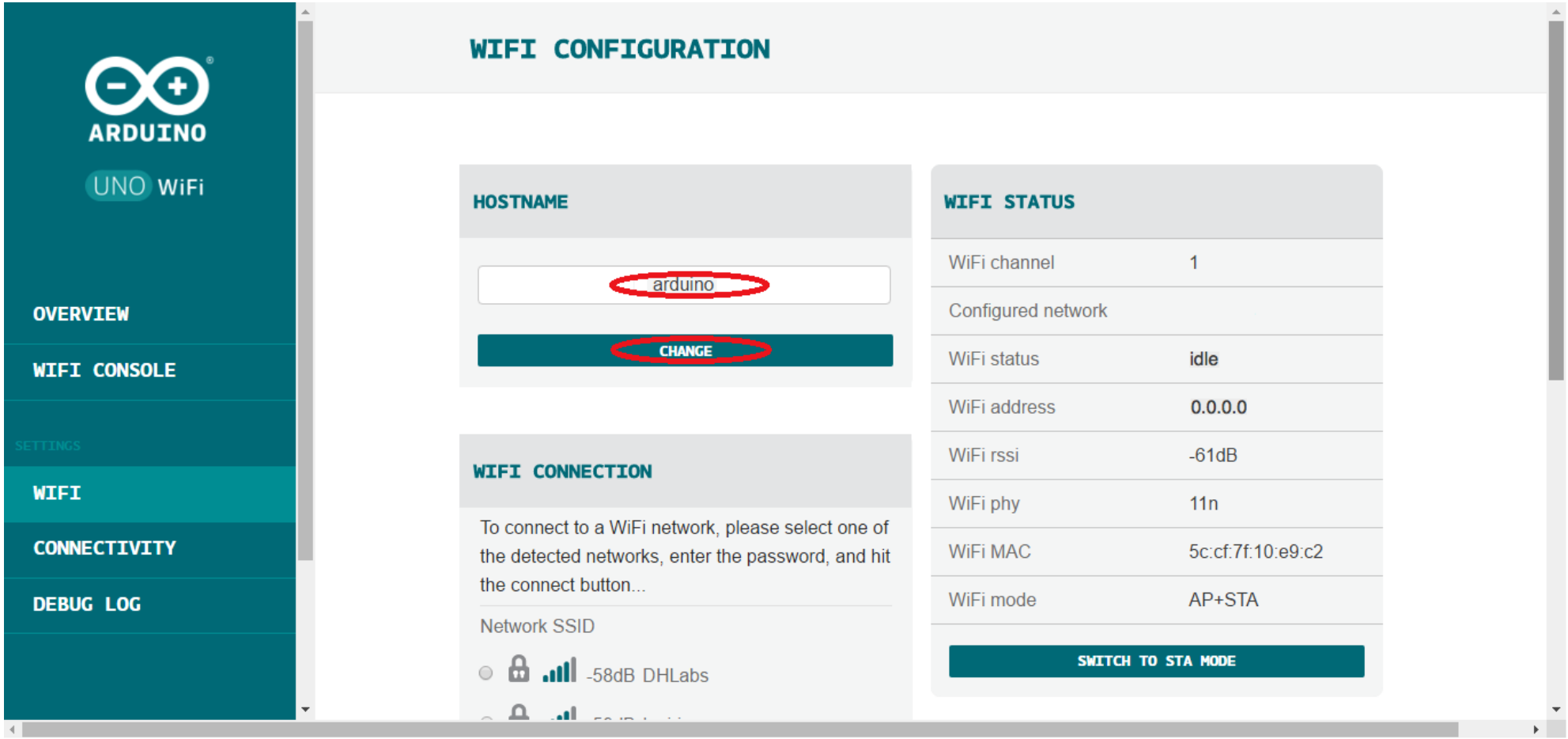
After powering the board, wait about a minute.
Now, connect your PC/MAC WiFi on Arduino UNO WiFi AP, ESSID like this: **Arduino-Uno-WiFi-xxxxxx**
Open your browser on PC/MAC and connect at this link: **http://192.168.240.1/**

This is the view that you must aspect:

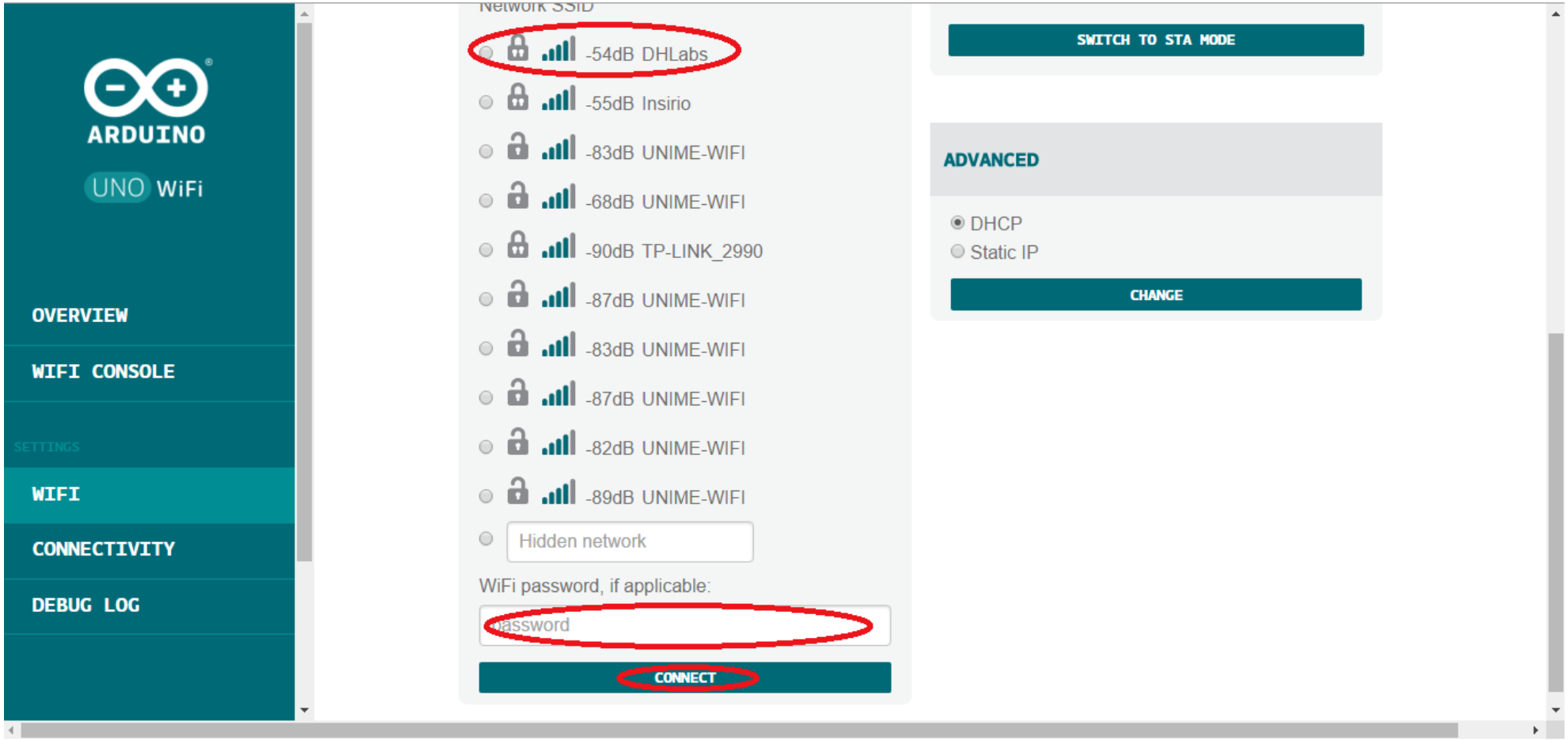


To modify the Hostname click on **CHANGE** or select the **WiF**i on the left menu. You can use the name that you prefer for identify more easy

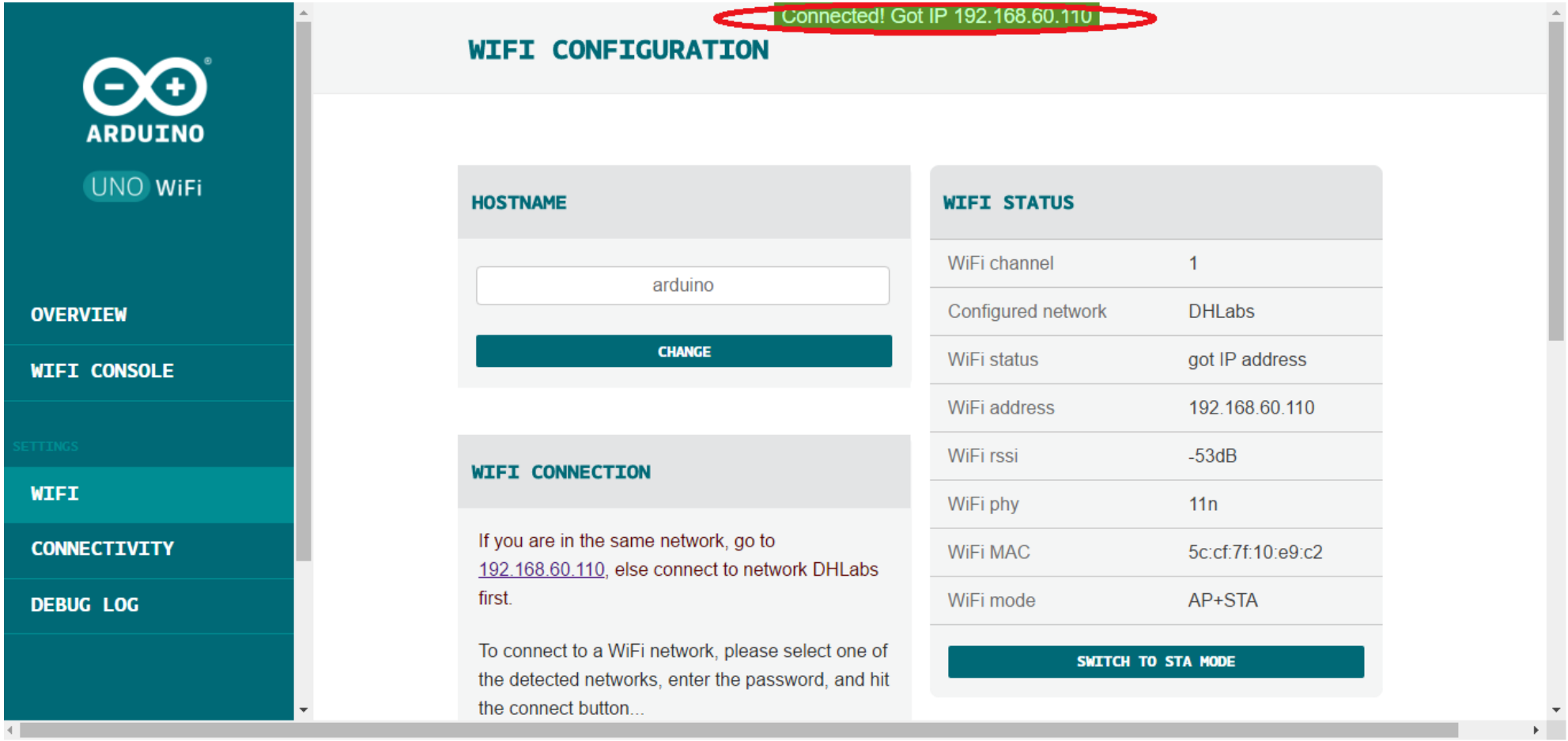
the board. Write new name and after click on **CHANGE**.



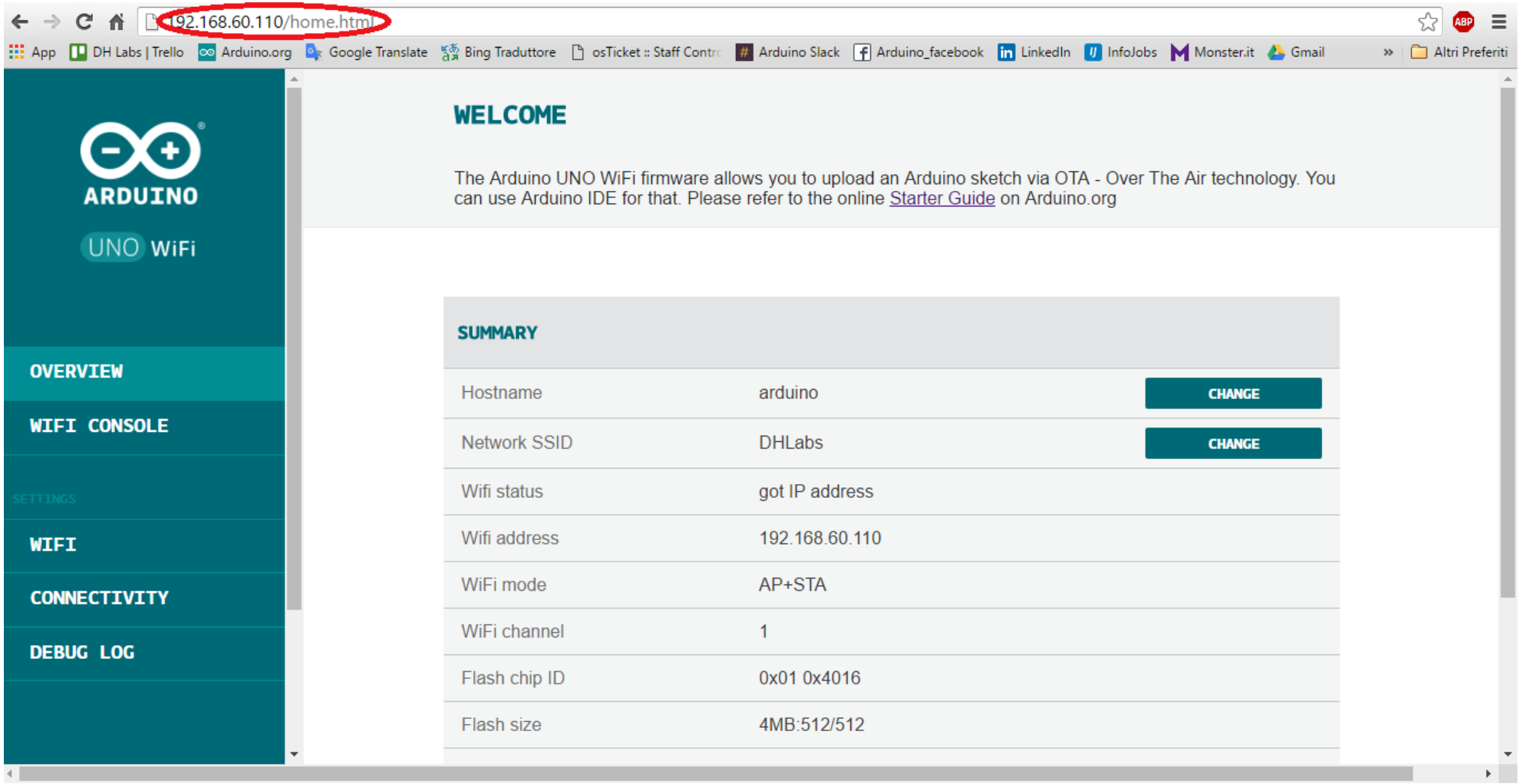
Connect the Arduino UNO WiFi to yours AccessPoint Router, selecting your network from **WiFi** Menu, insert the correct password and after click on **CONNECT**, as shown in the below image:



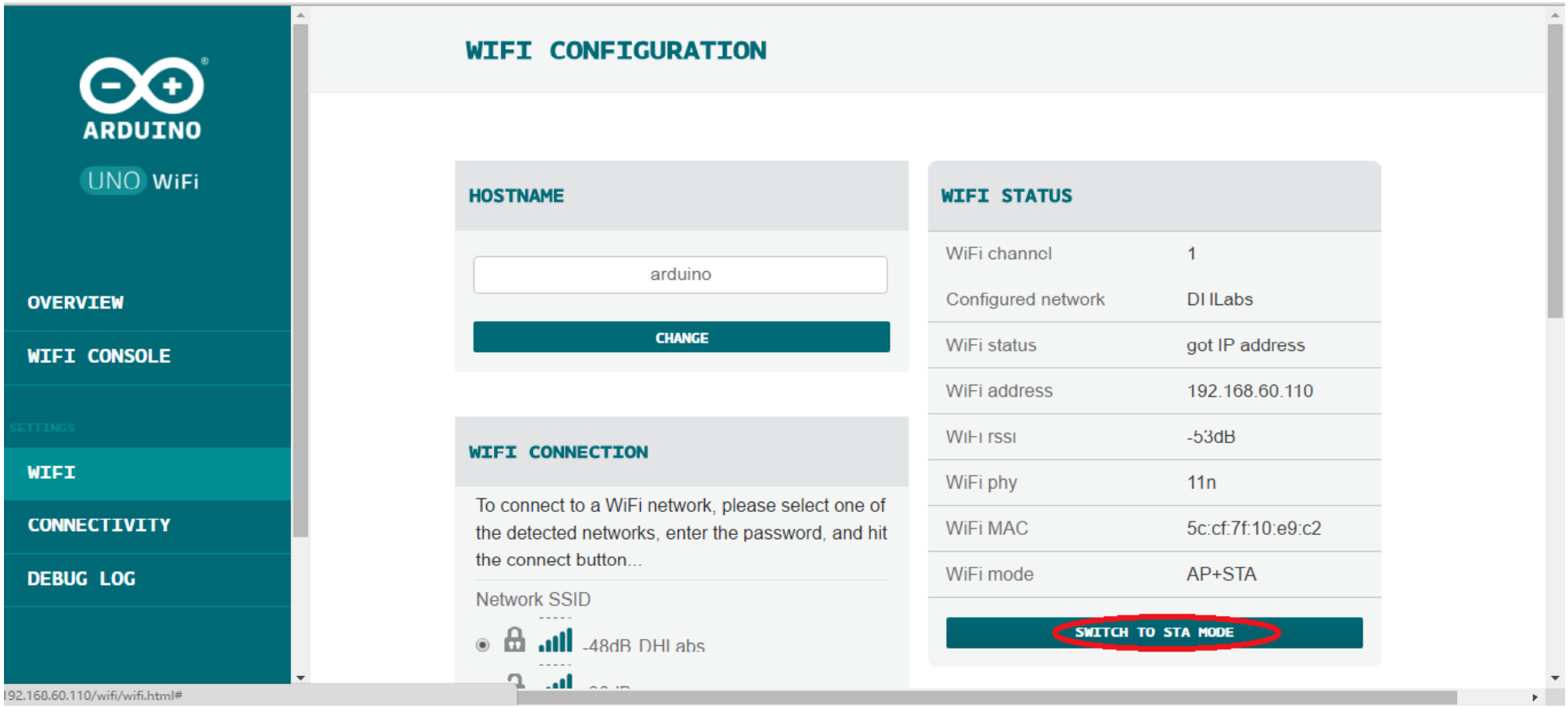
When the board will be connected to network, it will be shown the board ip address:



Now, connect the PC at the same board network and try to access to the board inserting the ip address on the browser.

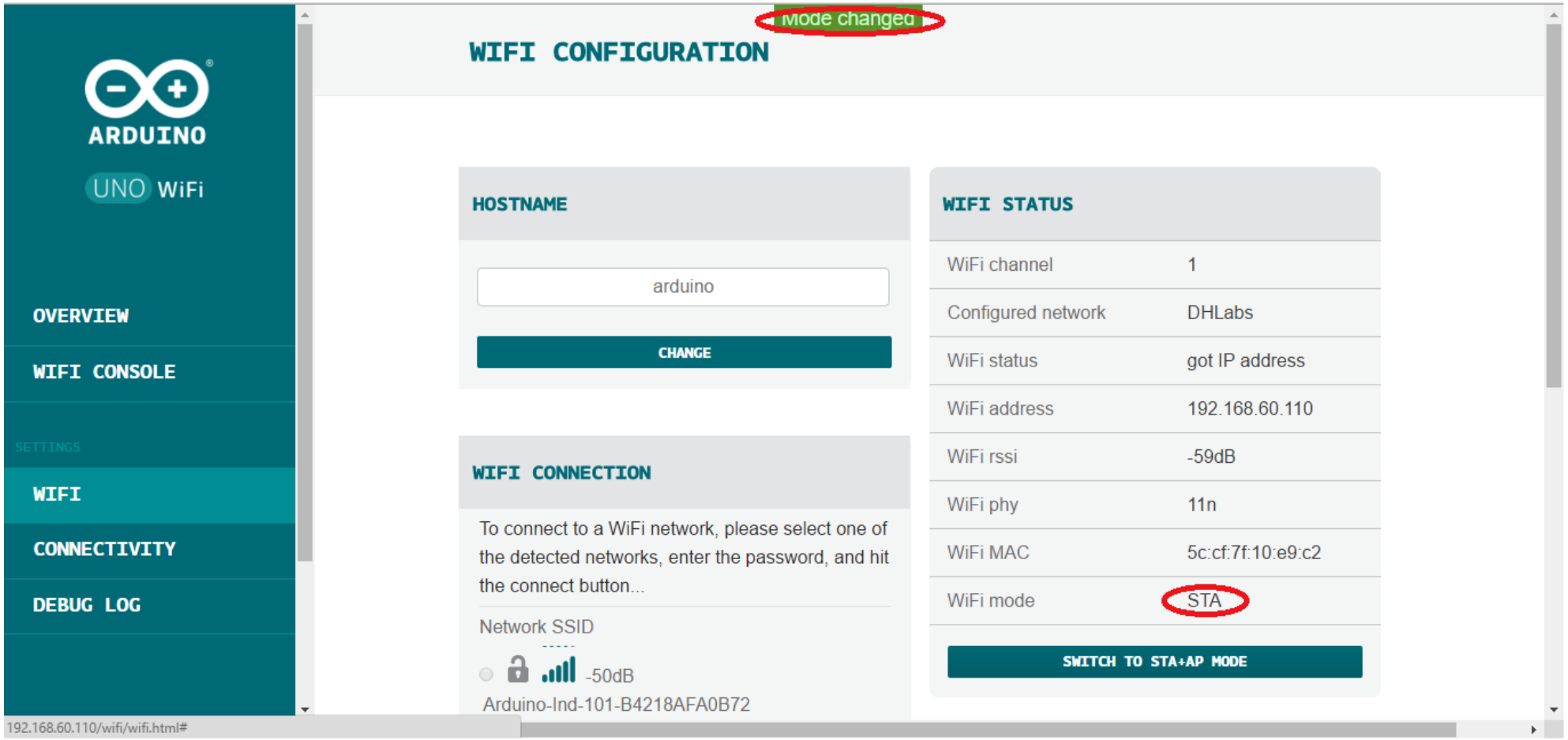


Click on **WiFi** in the left menu and change the wifi configuration mode switching to **STA MODE**, as shown in the below image:



Warning:
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 it should appear the below screen.



Now, you can access to webpage using the your hostname: http://hostname.local
Your Arduino UNO WiFi is ready.

Now you can use your board and you can upload the first sketch following this other guide.

If you want more information on the Web-panel of the Arduino UNO WiFi click here.

Software

you must download new Arduino IDE that support Arduino UNO WiFi, from this link:

http://www.arduino.org/software#ide

We suggest you to use Ciao Library for using the Arduino UNO WiFi.
You can include in your project that library using the Arduino IDE menu.

RestAPI example with ThingSpeak

Arduino UNO WiFi RestAPI Example with ThingSpeak
Follow all steps of this guide to upload your first sketch on Arduino UNO WiFi.

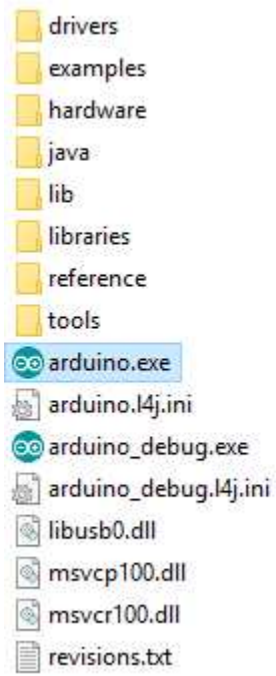
Arduino IDE - download and install

First you need the Arduino.org IDE.
You can download it from here.
After that you have downloaded the latest version Arduino IDE, extract it using 7-zip.
Now double click to install it, if you have downloaded the installer file.

Note:
Keep in mind that to use the Arduino UNo Wifi you need the Arduino.org IDE 1.7.9 or later.

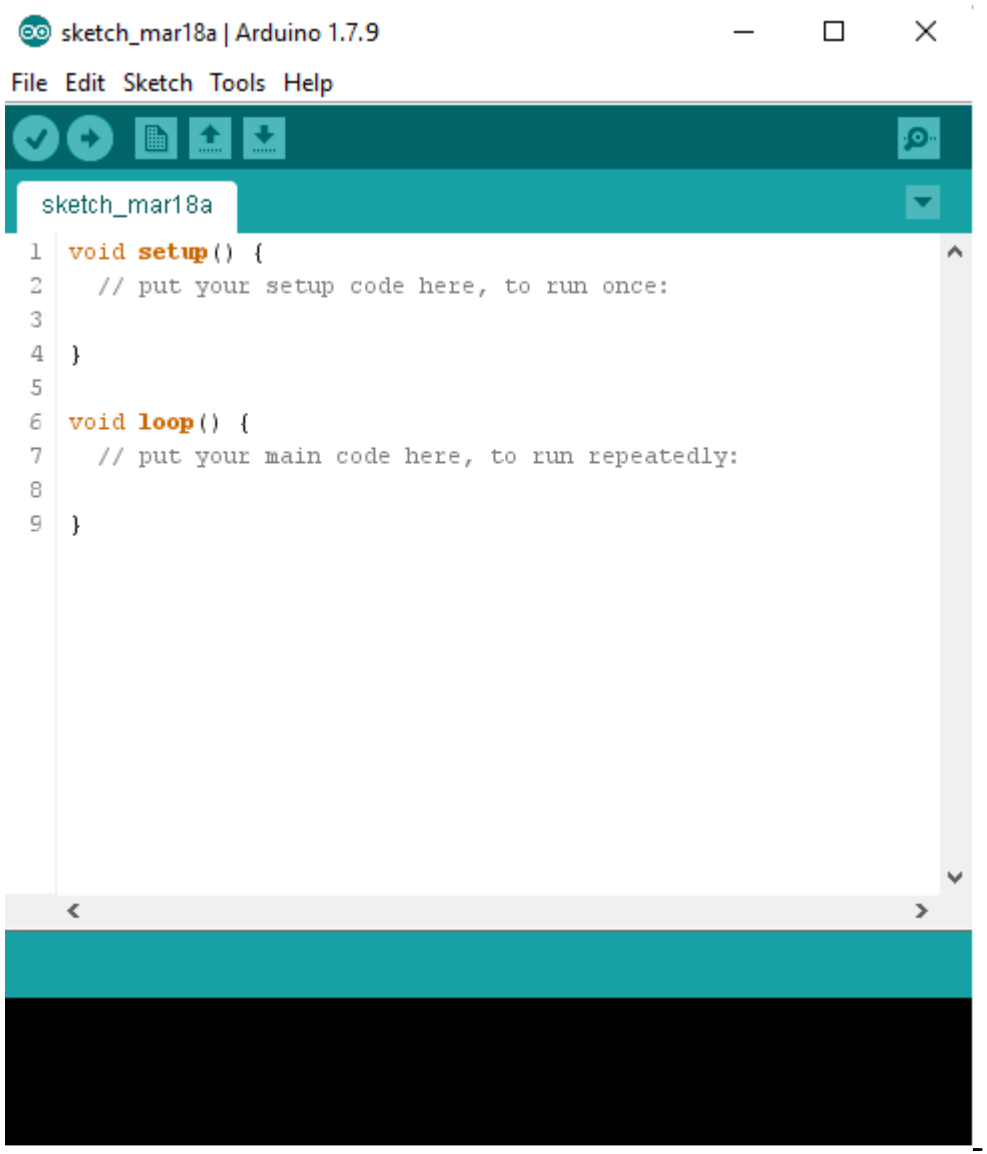
Lauch the Arduino IDE

Open the Arduino folder and double-click on the Arduino application.


drivers
examples
hardware
java
lib
libraries
reference
tools
arduino.exe
arduino.l4j.ini
arduino_debug.exe
arduino_debug.l4j.ini
libusb0.dll
msvcp100.dll
msvcr100.dll
revisions.txt


ARDUINO
ALWAYS AN OPEN SOURCE PROJECT WRITTEN, DEBUGGED
AND SUPPORTED WITH ♥ BY ARDUINO.ORG TEAM
BASED ON:
ARDUINO.CC IDE BY D. CURTIELLES, T. IGOE,
G. MARTINO, D. MELLIS AND M.BANZI
PROCESSING BY CASEY REAS AND BEN FRY

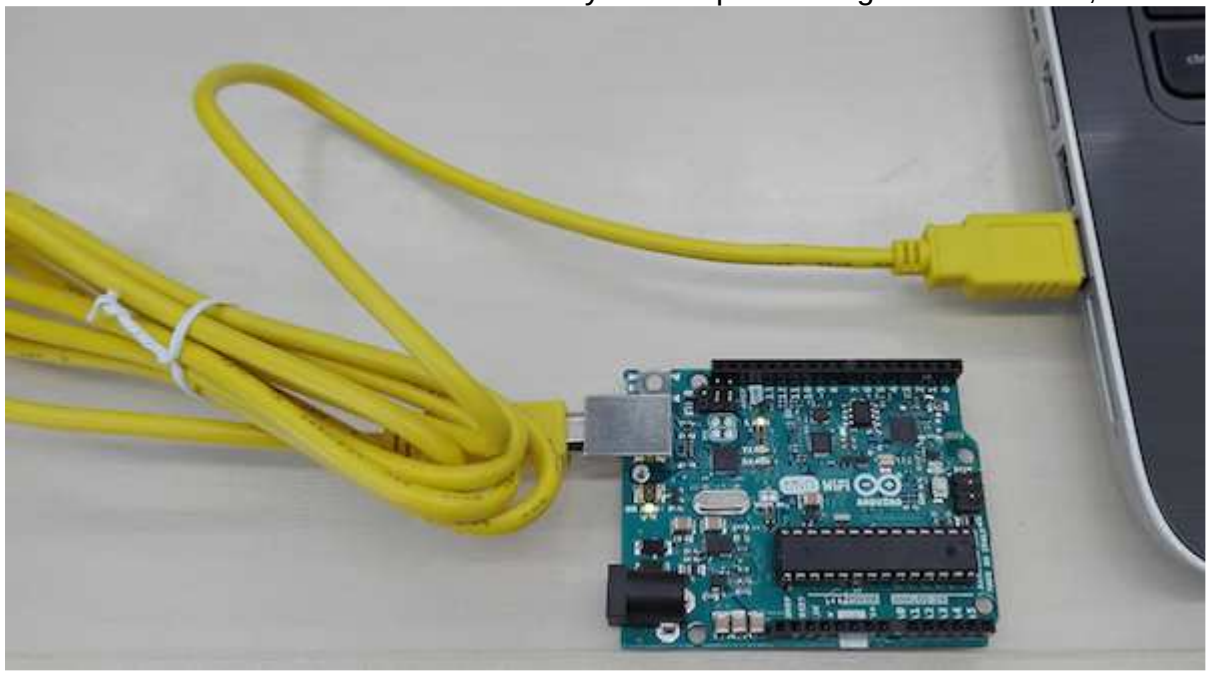
-



Warning:
If you are a Windows user and you have downloaded the administrator version then you need to click on right button of mouse and select the voice "Execute as administrator", to start the program.

Connect the board

Connect the Arduino UNO WiFi board to your computer using the USB cable, as shown in the below image:



The green power LED (labelled PWR) should go on.

Note:

When you connect your board, pay attention that the cable is correctly inserted then push strong.

Upload sketch

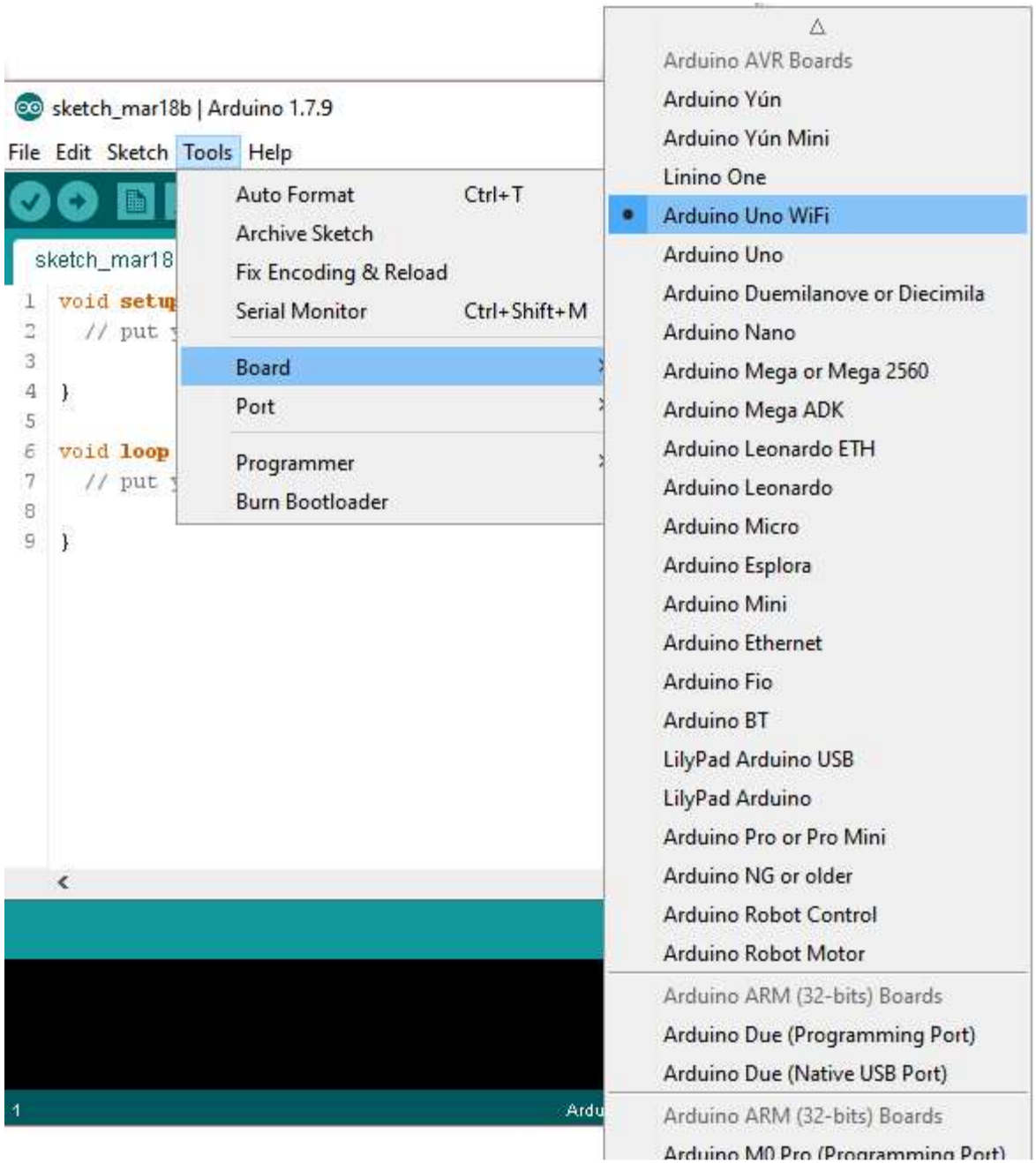
The Arduino UNO Wifi can be programmed in two ways: via Serial or via OTA, both these methods will be shown in this guide.

Programming via Serial

This is the classic procedure used to program all Arduino boards.

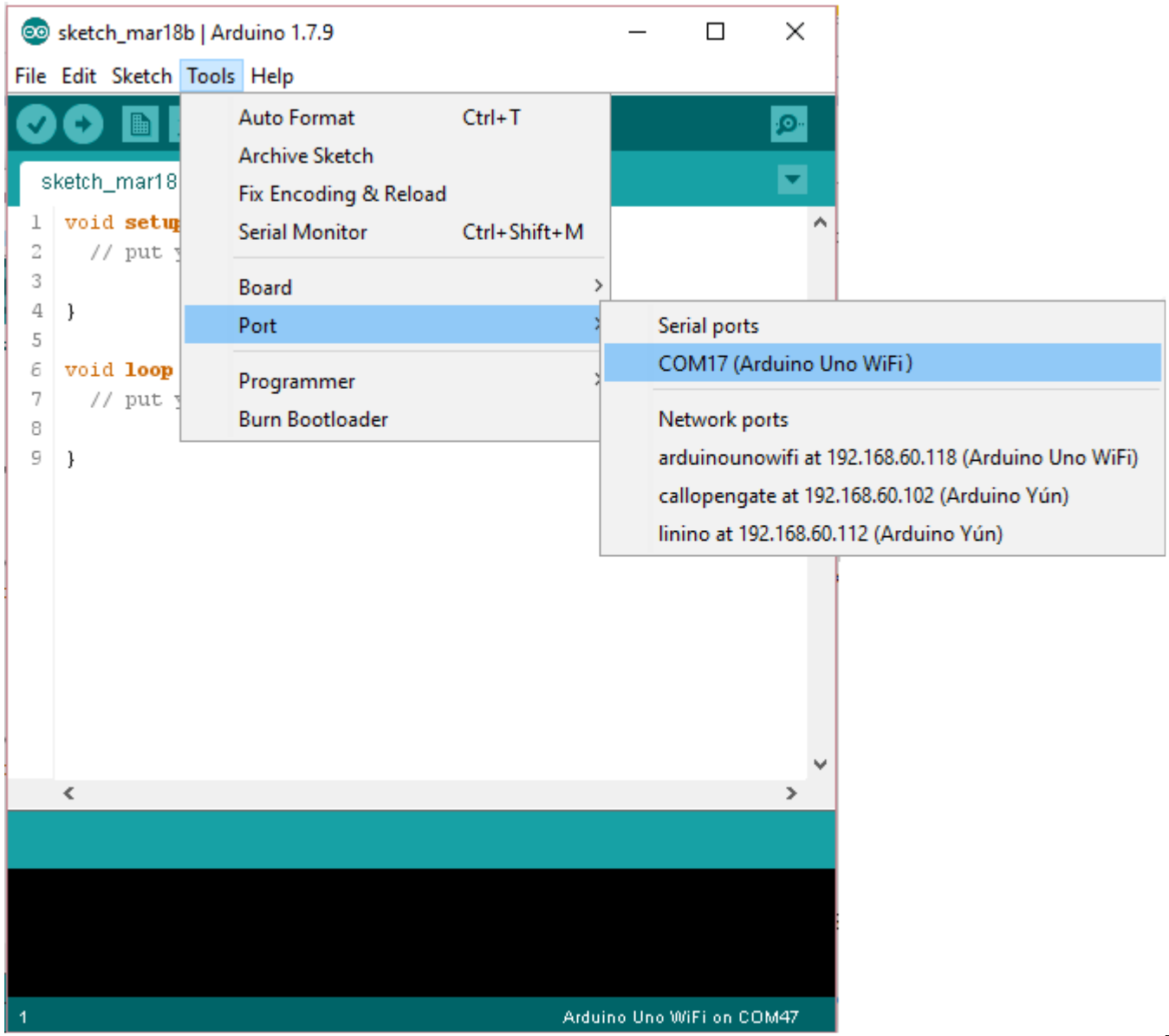
Select the board

Select the **Arduino Uno WiFi** as board from **Tools>Board** menu.


sketch_mar18b | Arduino 1.7.9
File Edit Sketch Tools Help
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Port
Programmer
Burn Bootloader
Arduino AVR Boards
Arduino Yún
Arduino Yún Mini
Linino One
Arduino Uno WiFi
Arduino Uno
Arduino Duemilanove or Diecimila
Arduino Nano
Arduino Mega or Mega 2560
Arduino Mega ADK
Arduino Leonardo ETH
Arduino Leonardo
Arduino Micro
Arduino Esplora
Arduino Mini
Arduino Ethernet
Arduino Fio
Arduino BT
LilyPad Arduino USB
LilyPad Arduino
Arduino Pro or Pro Mini
Arduino NG or older
Arduino Robot Control
Arduino Robot Motor
Arduino ARM (32-bits) Boards
Arduino Due (Programming Port)
Arduino Due (Native USB Port)
Arduino ARM (32-bits) Boards

Select port

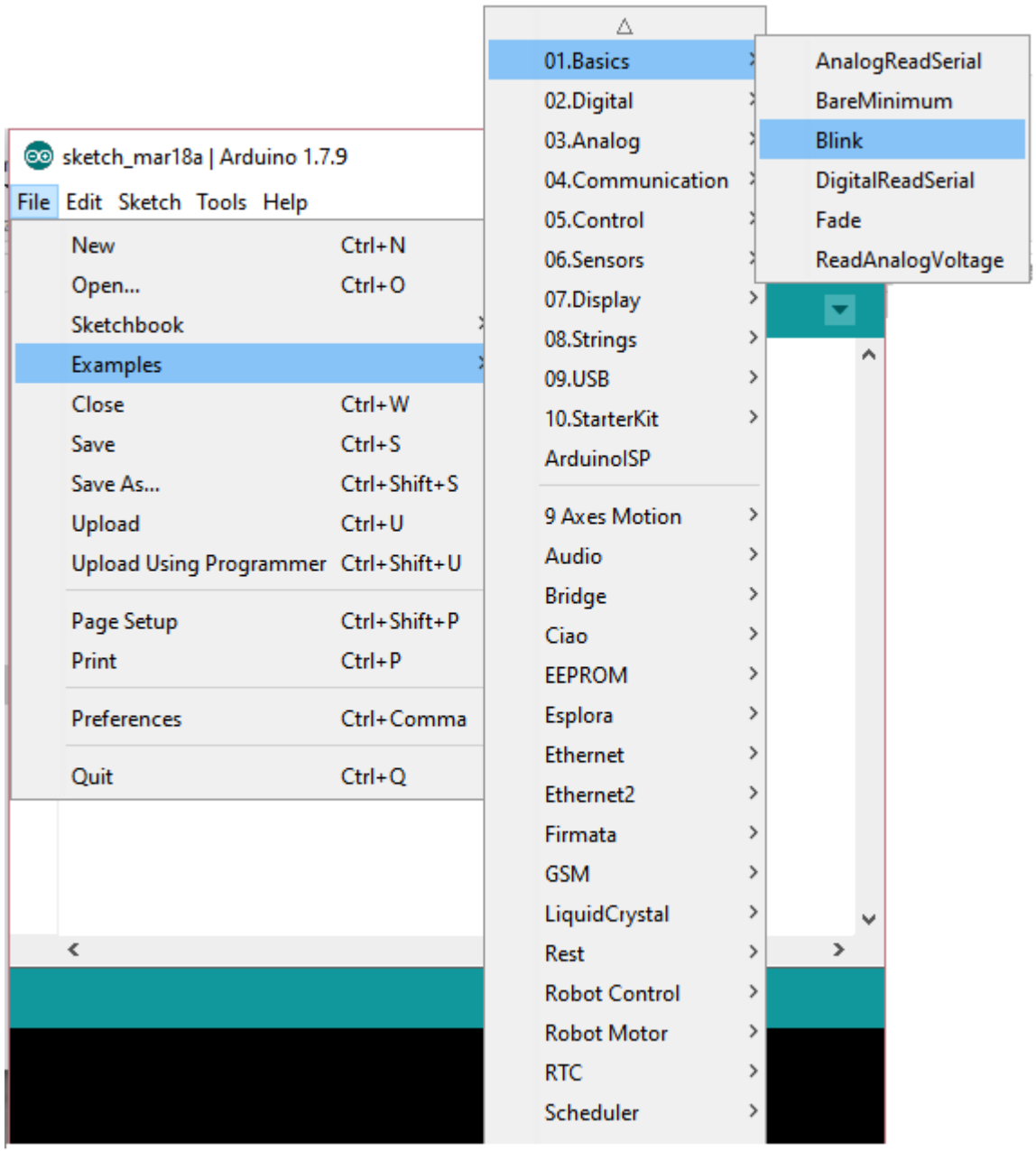
If the board is correctly connected to PC then it will appear in **Tool>Port** menu a device called **COMxx(Arduino Uno WiFi)** as shown in the below image, then select it:



Note:
If it doesn't appear as serial device then check the connection, try to change the cable or the USB port.

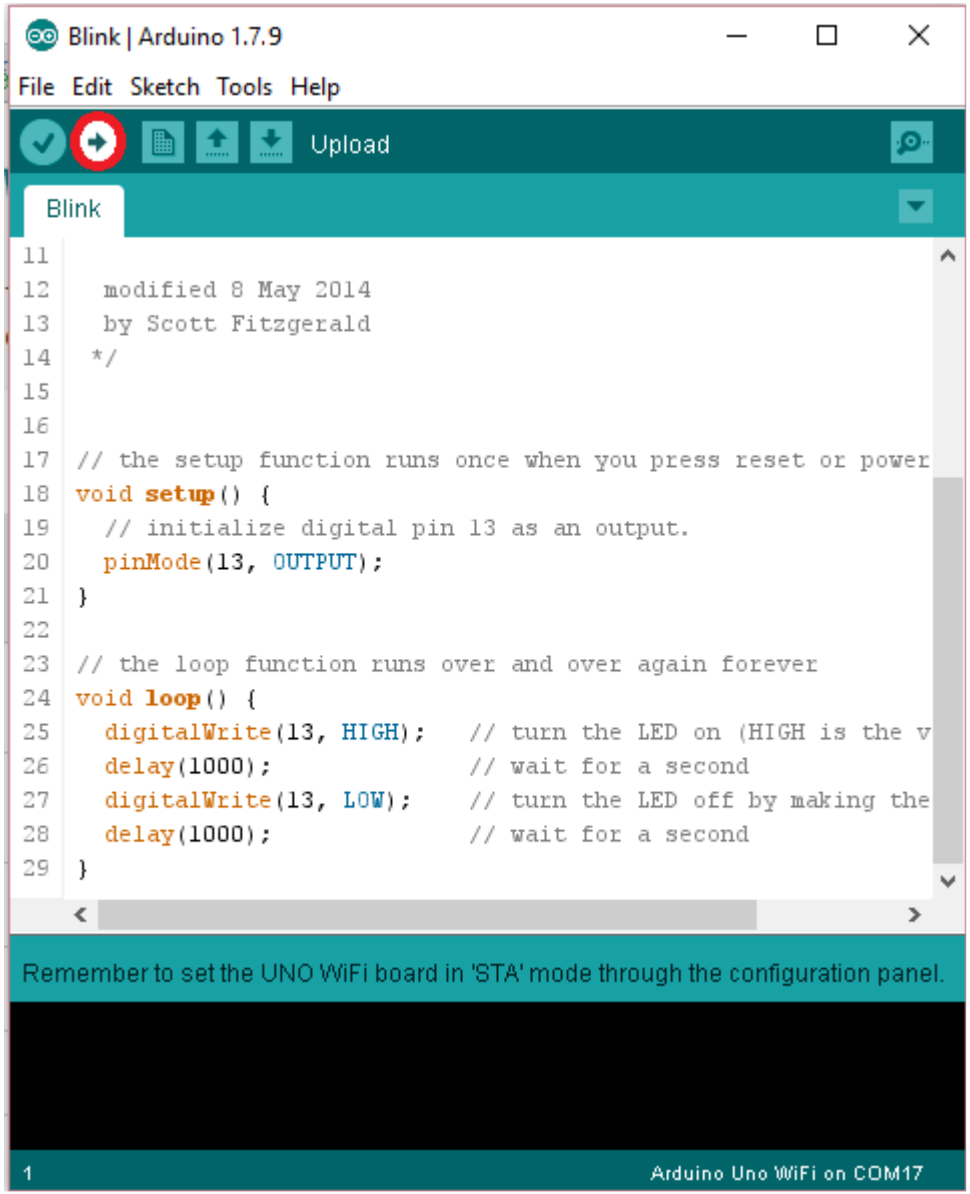
Open the Blink Sketch

Select the **Blink** sketch from **File>Examples>1.Basics** menu.

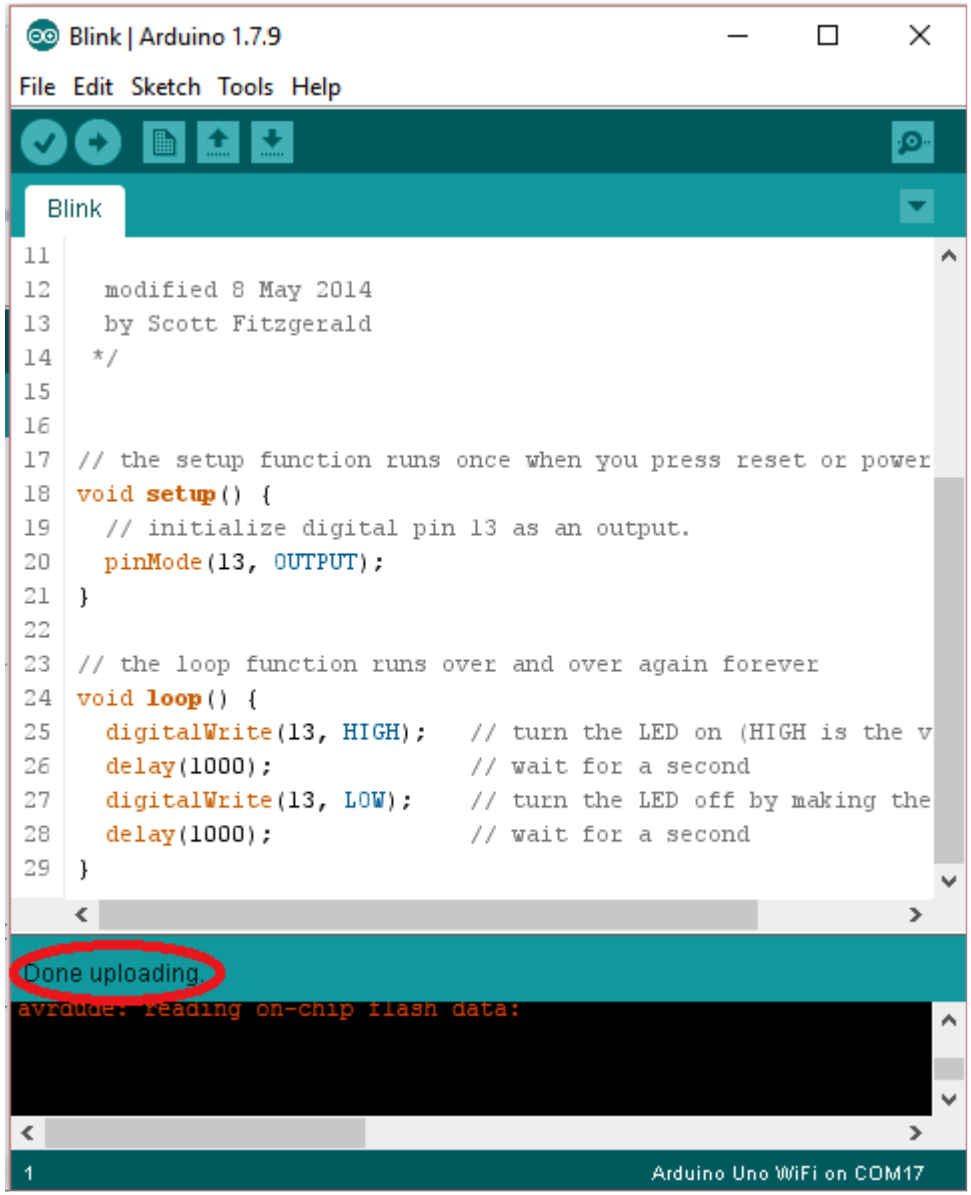

sketch_mar18a | Arduino 1.7.9
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit
ArduinoISP
9 Axes Motion
Audio
Bridge
Ciao
EEPROM
Esplora
Ethernet
Ethernet2
Firmata
GSM
LiquidCrystal
Rest
Robot Control
Robot Motor
RTC
Scheduler
AnalogReadSerial
BareMinimum
Blink
DigitalReadSerial
Fade
ReadAnalogVoltage

Upload the sketch

Now you can upload the sketch, clicking on **Upload** button as shown in the below image:



Wait that the operation is completed.

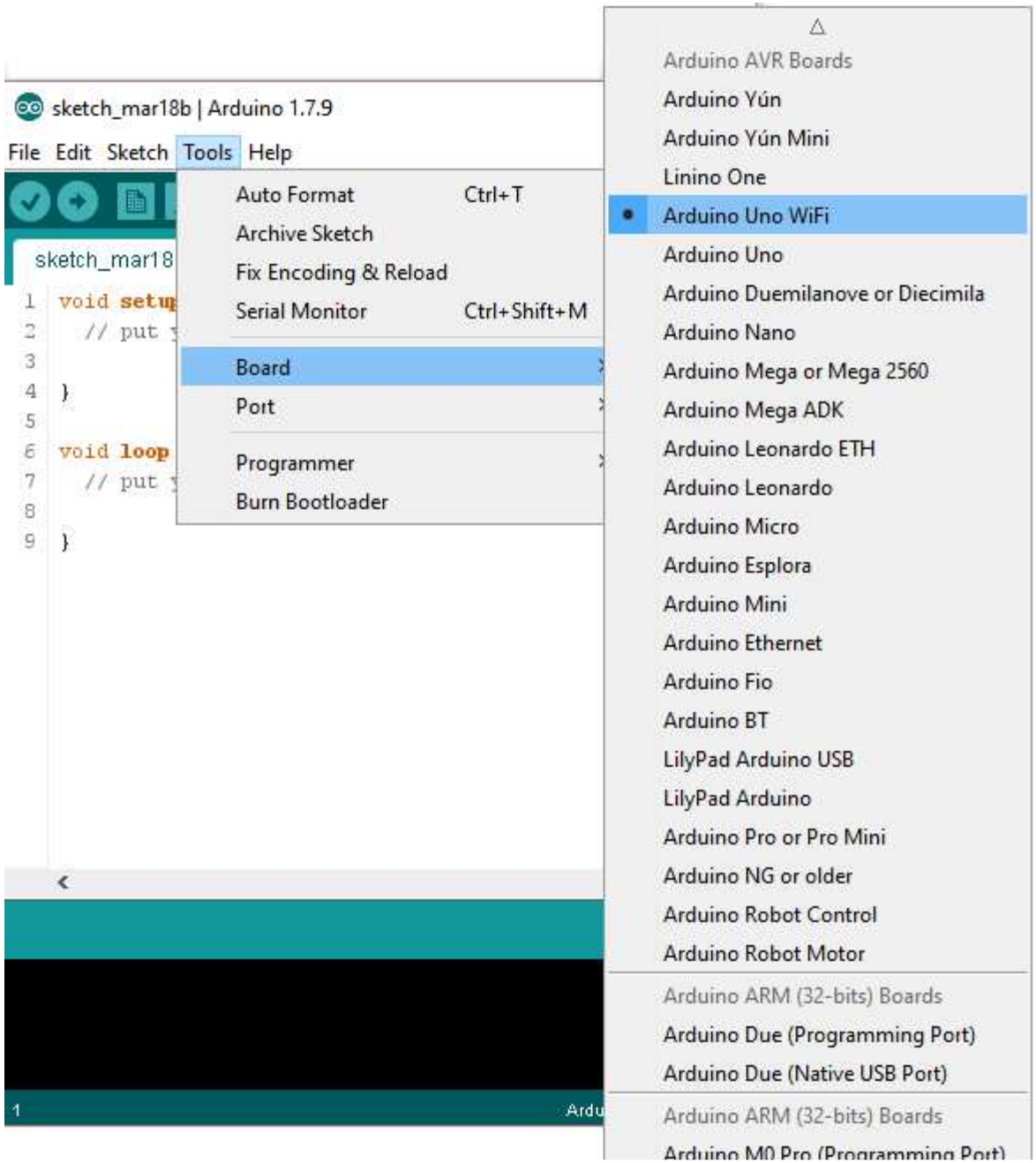


Programming via OTA

Power the board, for example connected it to PC using the USB cable or using an external power.
Connect the PC on the same board network.
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. Now you must select the board from network ports menu.
Below all steps:

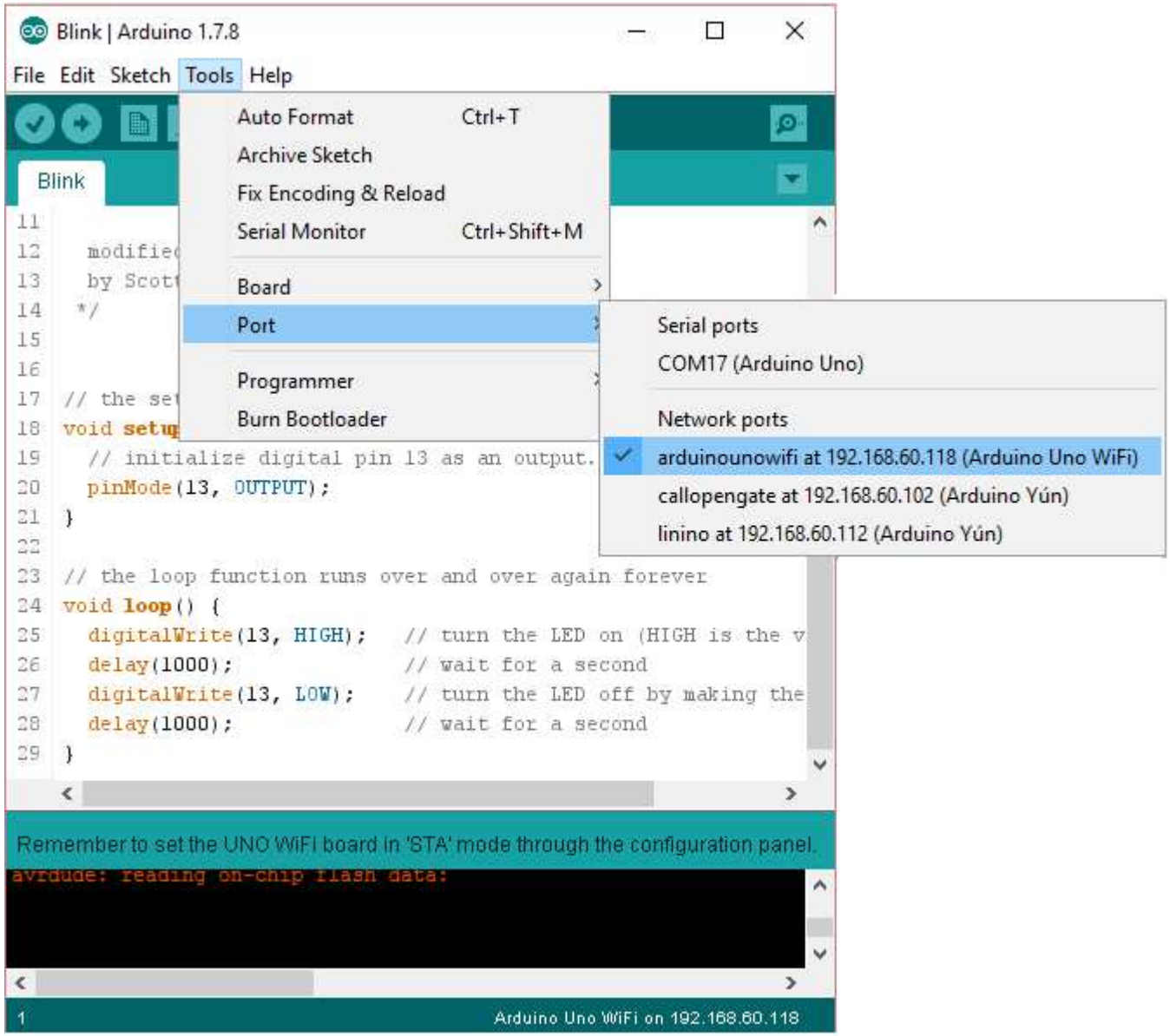
Select the board

Select the **Arduino Uno WiFi** as board from **Tools>Board** menu.


sketch_mar18b | Arduino 1.7.9
File Edit Sketch Tools Help
sketch_mar18
void setup
// put
}
void loop
// put
}
Auto Format Ctrl+T
Archive Sketch
Fix Encoding & Reload
Serial Monitor Ctrl+Shift+M
Board
Port
Programmer
Burn Bootloader
Arduino AVR Boards
Arduino Yún
Arduino Yún Mini
Linino One
Arduino Uno WiFi
Arduino Uno
Arduino Duemilanove or Diecimila
Arduino Nano
Arduino Mega or Mega 2560
Arduino Mega ADK
Arduino Leonardo ETH
Arduino Leonardo
Arduino Micro
Arduino Esplora
Arduino Mini
Arduino Ethernet
Arduino Fio
Arduino BT
LilyPad Arduino USB
LilyPad Arduino
Arduino Pro or Pro Mini
Arduino NG or older
Arduino Robot Control
Arduino Robot Motor
Arduino ARM (32-bits) Boards
Arduino Due (Programming Port)
Arduino Due (Native USB Port)
Arduino ARM (32-bits) Boards

Select port

Select the board from **Tool>Port>Network ports** menu it will appear a device as shown in the below image:

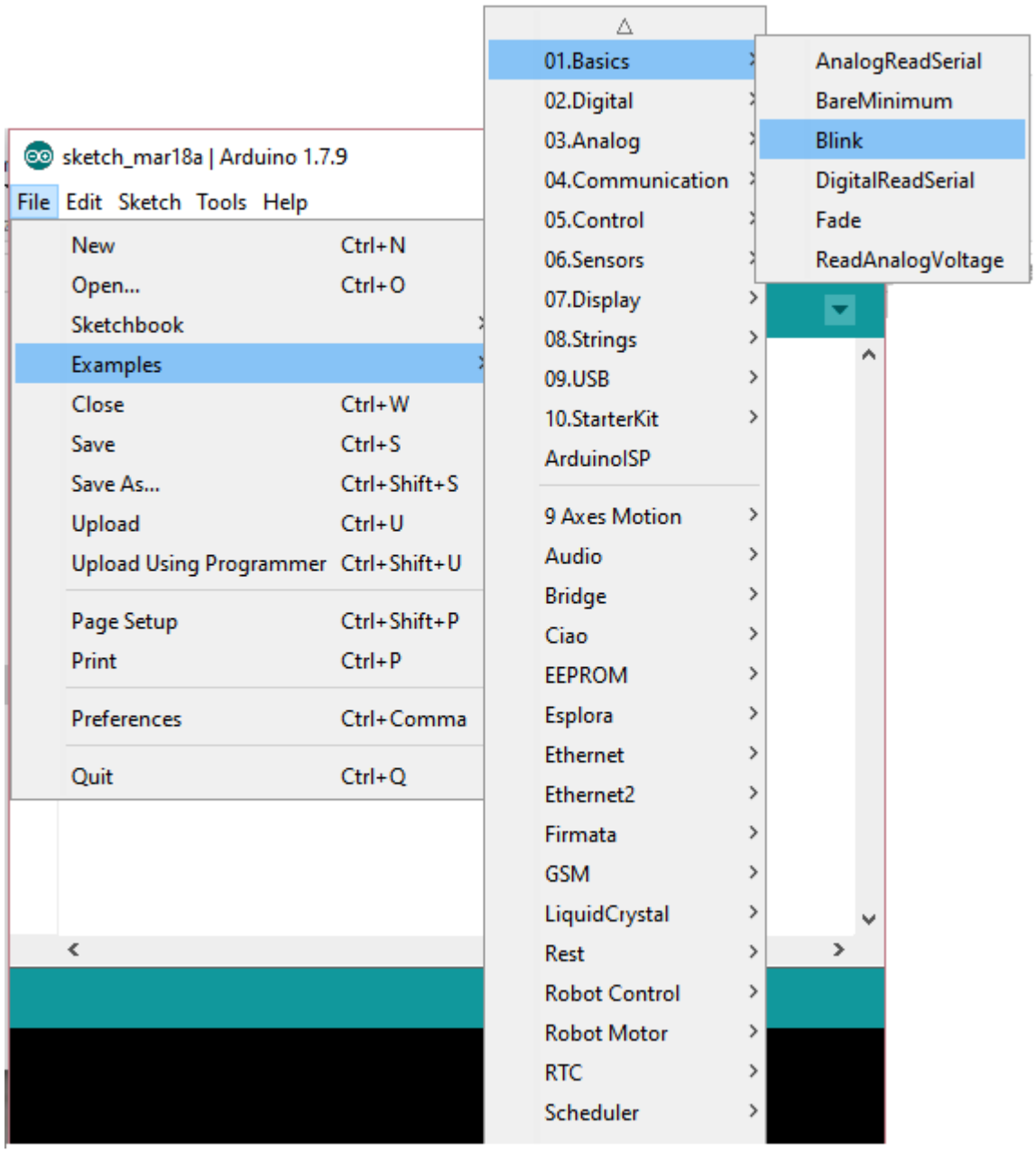


-

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 look the Getting started guide.

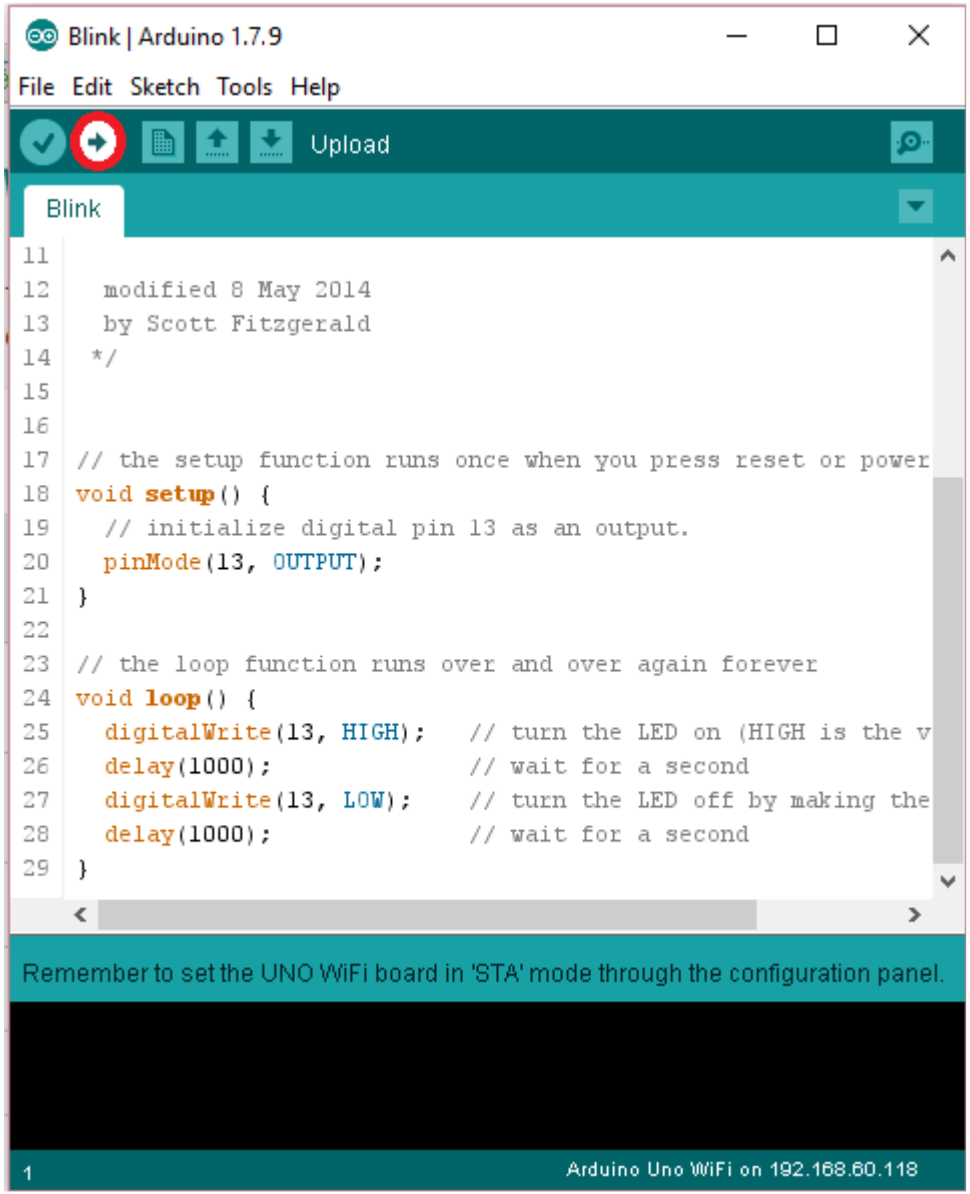
Open the Blink Sketch

Select the **Blink** sketch from **File>Examples>1.Basics** menu.

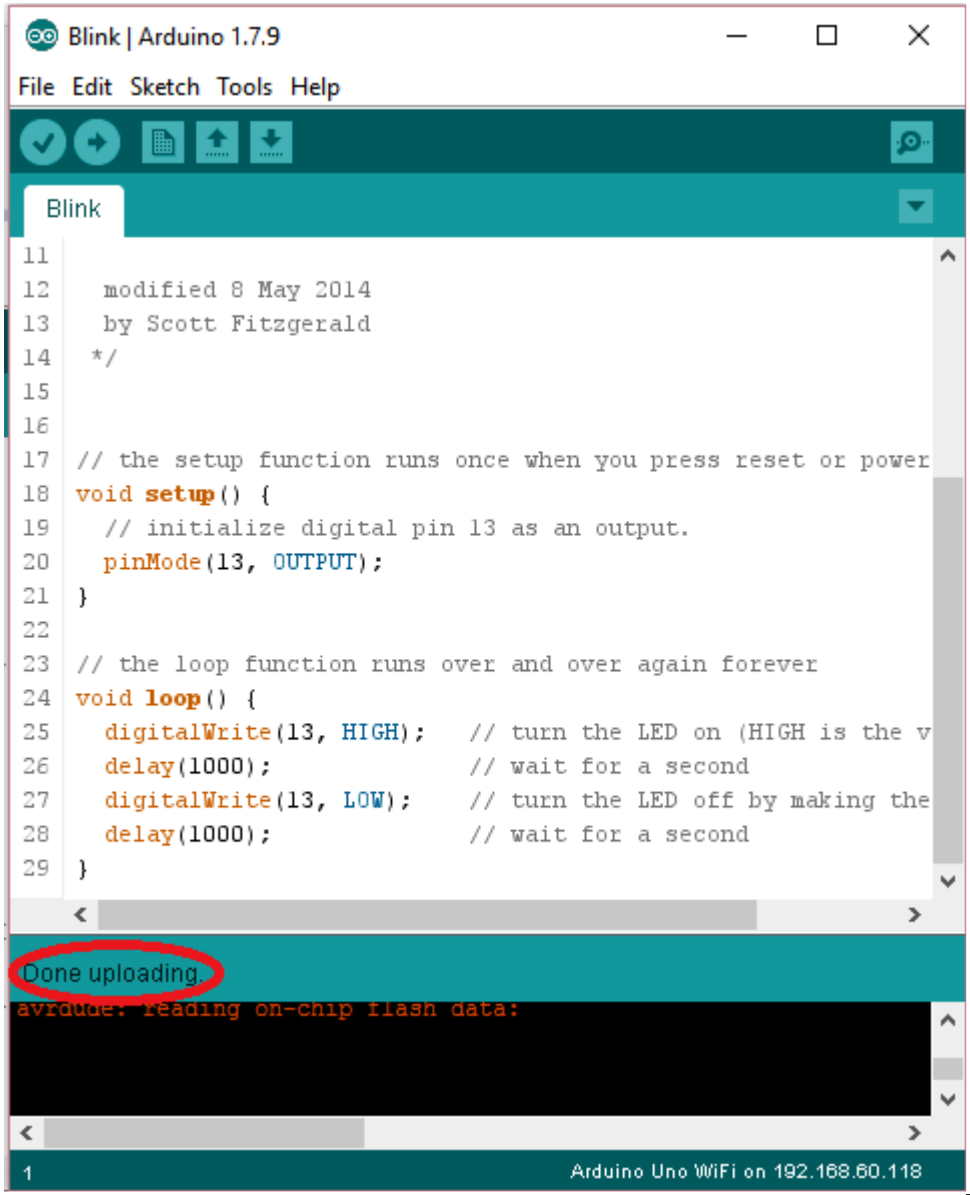

sketch_mar18a | Arduino 1.7.9
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Upload Ctrl+U
Upload Using Programmer Ctrl+Shift+U
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
01.Basics
02.Digital
03.Analog
04.Communication
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit
ArduinoISP
9 Axes Motion
Audio
Bridge
Ciao
EEPROM
Esplora
Ethernet
Ethernet2
Firmata
GSM
LiquidCrystal
Rest
Robot Control
Robot Motor
RTC
Scheduler
AnalogReadSerial
BareMinimum
Blink
DigitalReadSerial
Fade
ReadAnalogVoltage

Upload the sketch

Now you can upload the sketch, clicking on **Upload** button, as shown in the below image:



Wait the end of the operation.



If the Uploading is been correctly completed then the **Led13** will blink each second.

Now try to upload another example or try to create your custom sketch.

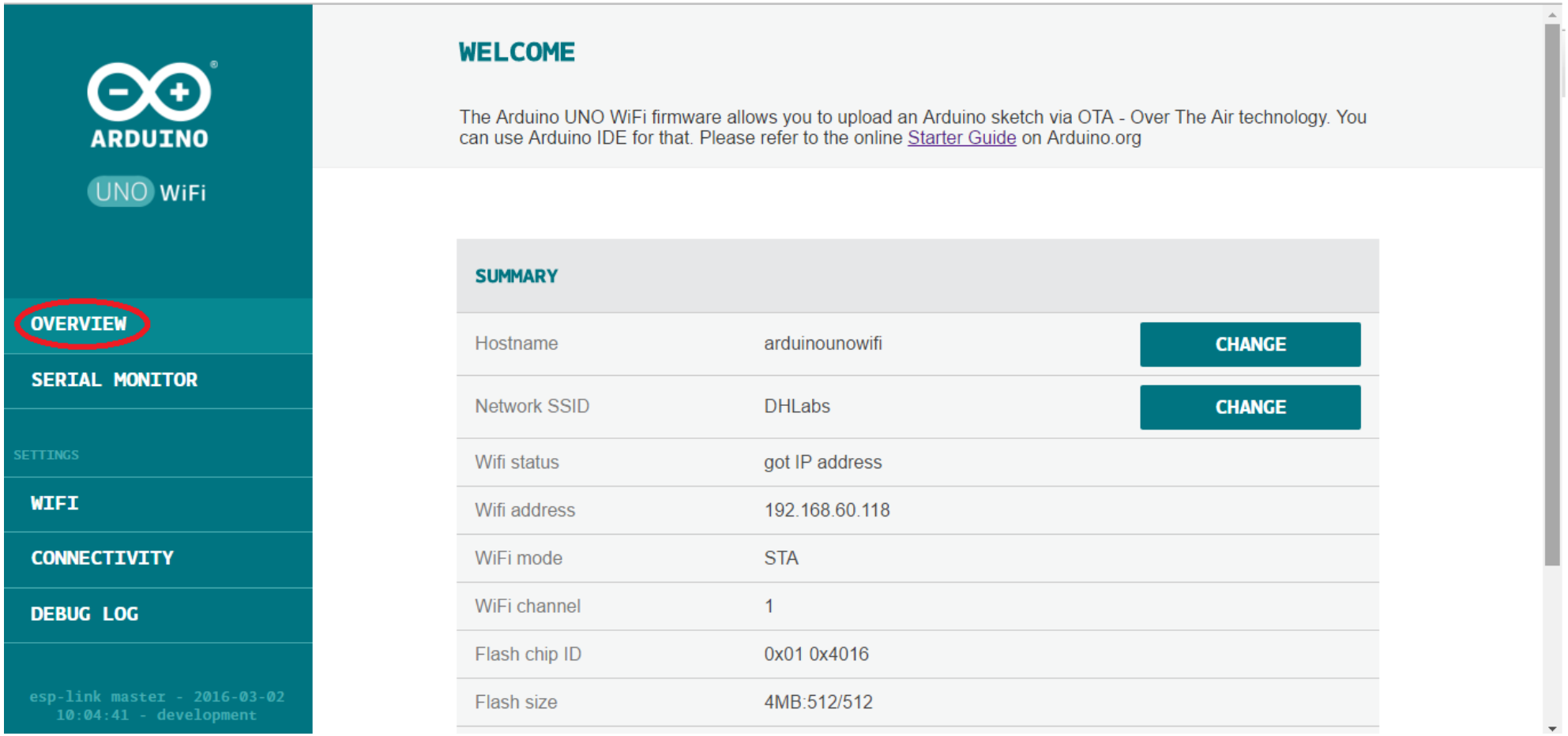
Look these examples:

- Button Example
- Read Analog Voltage Example
- Servo Example

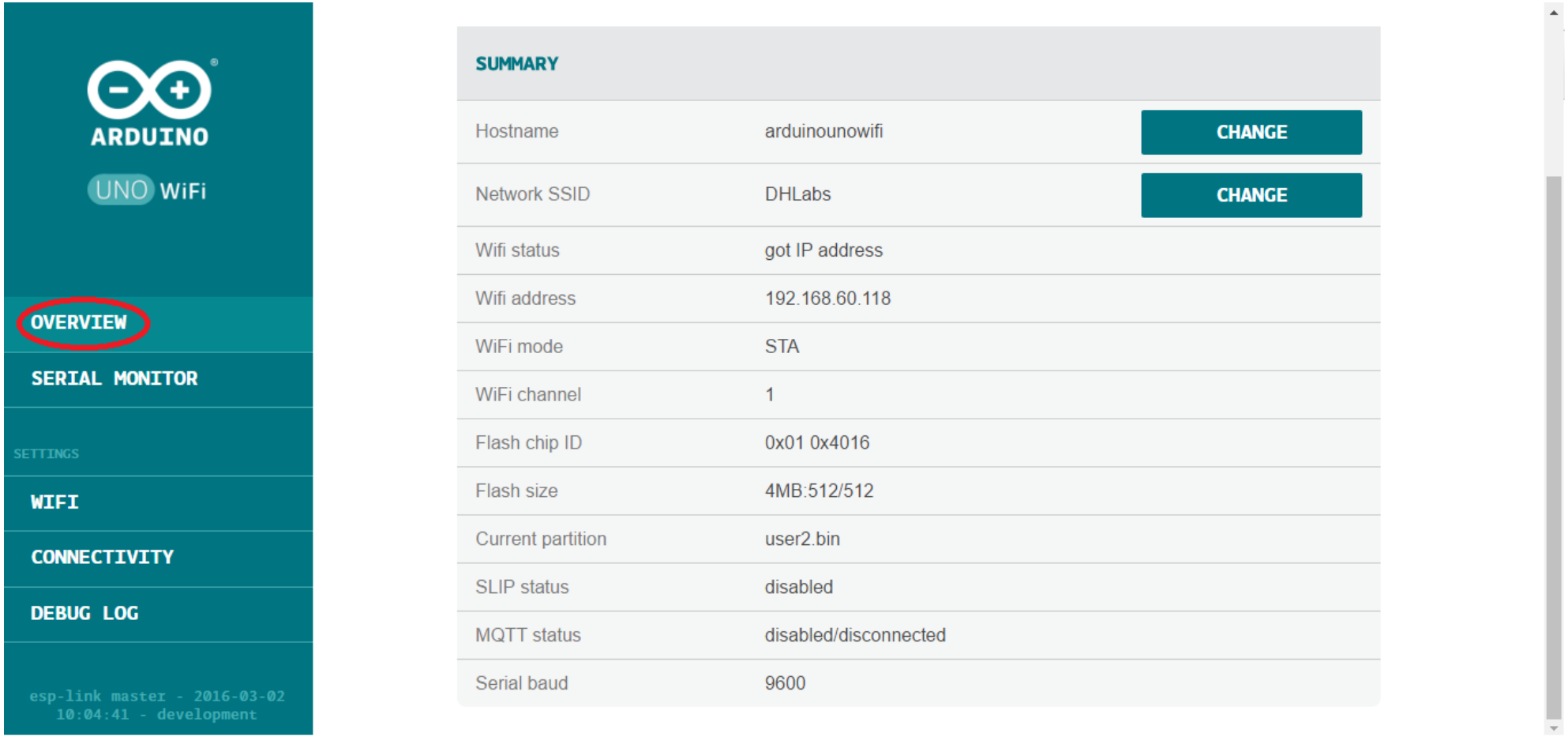
- CiaoRestClient-ThingSpeak
- ReadMacAddress
- RestServer and RestClient
- WebServer
- WebServerBlink

The Arduino UNO WiFi has a Web panel that it can be reached in different ways:
- If the board isn't been configurated yet, you can access inserting in the browser this link: http://192.168.240.1/
In this case look the getting started guide to configure it.
- If the board is been correctly configured then you can insert the ip address (xxx.xxx.xxx.xxx) or the hostname(hostname.local/) from browser.

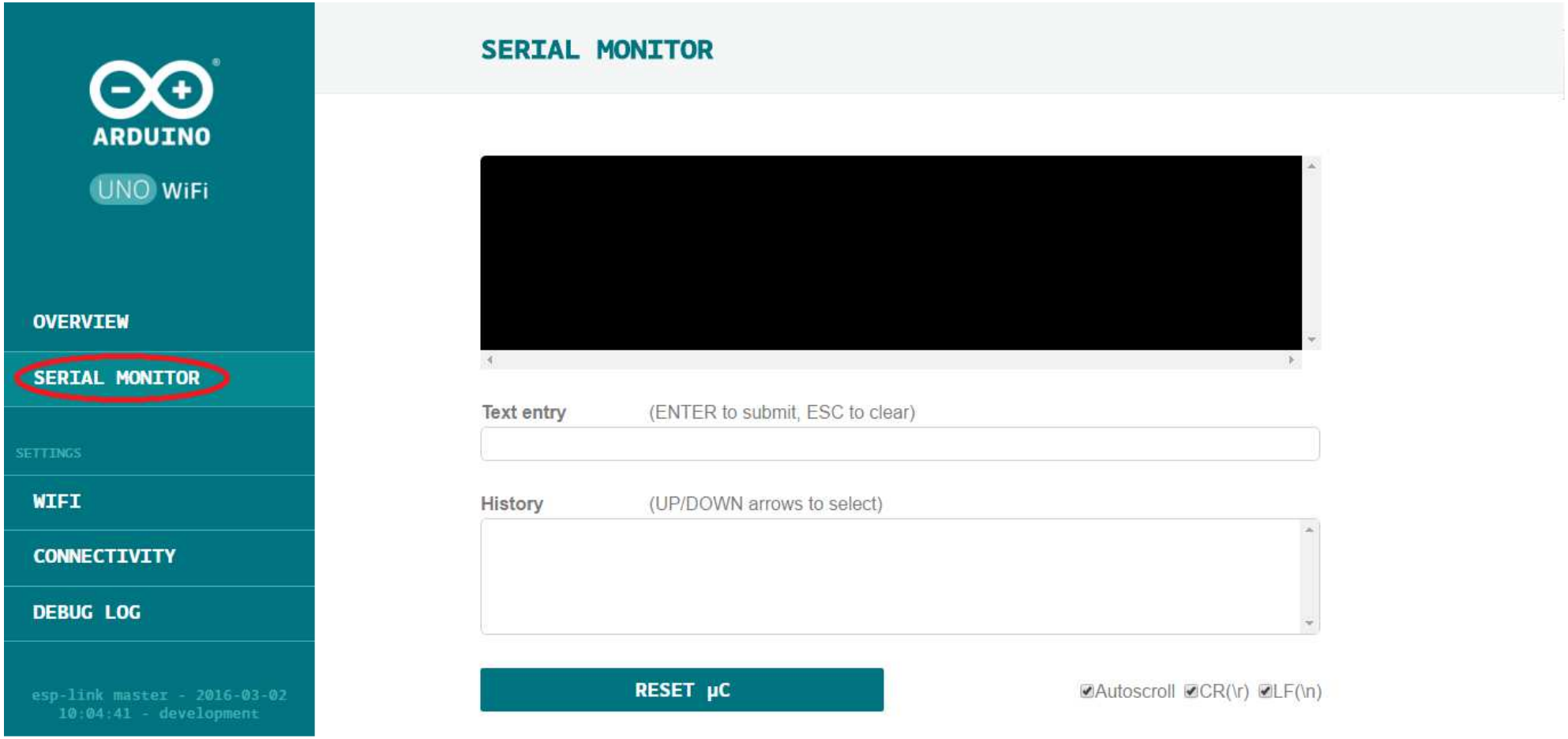
The Web panel has a simple menu that it is formed from five items: OVERVIEW, SERIAL MONITOR, WIFI,CONNECTIVITY and DEBUG LOG.
The Home page of the Web Panel corresponds to OVERVIEW menu, as shown in the below image:



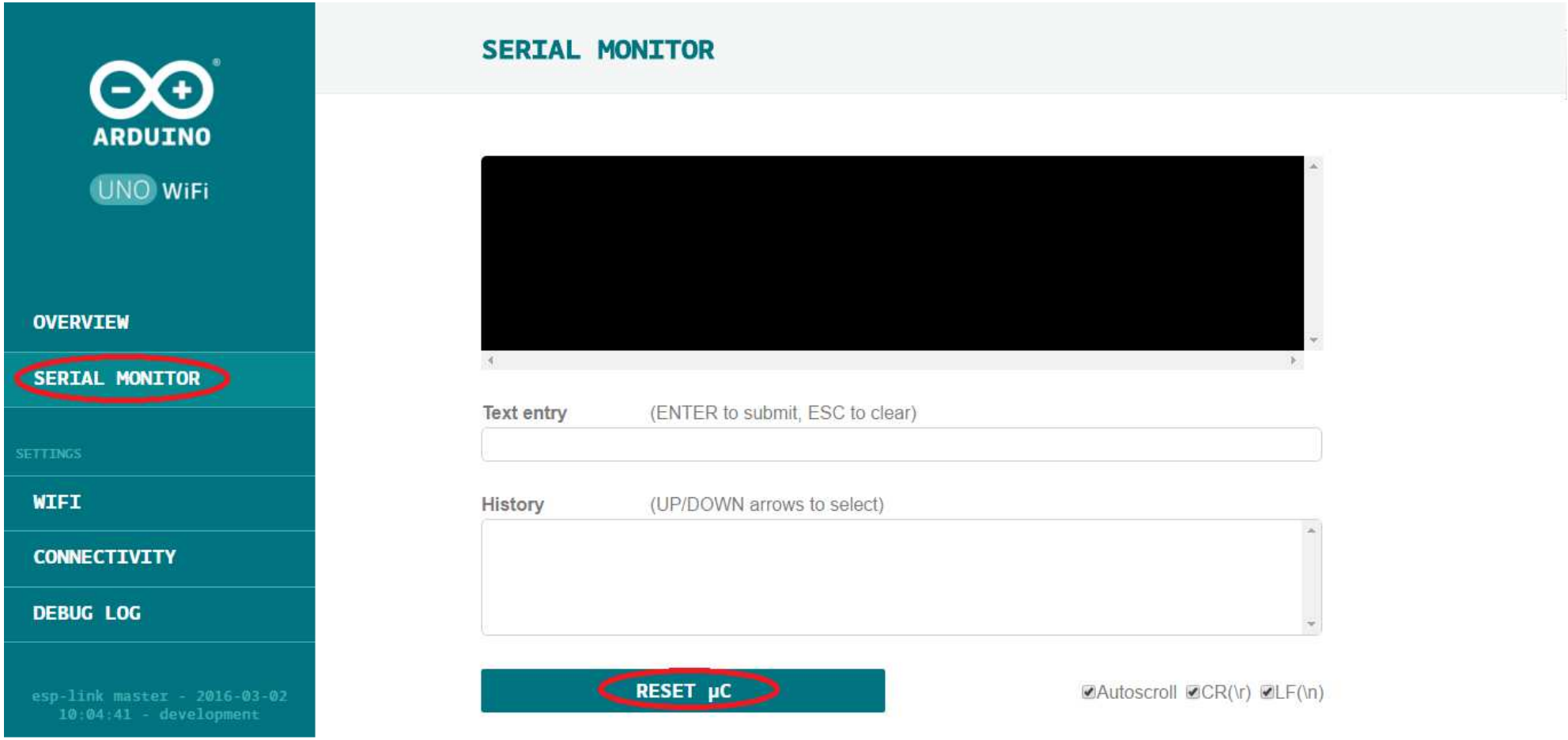
In the **Overview** are shown all the informations about the configuration board:
the hostname, the network SSID, Wifi address, Wifi mode,...



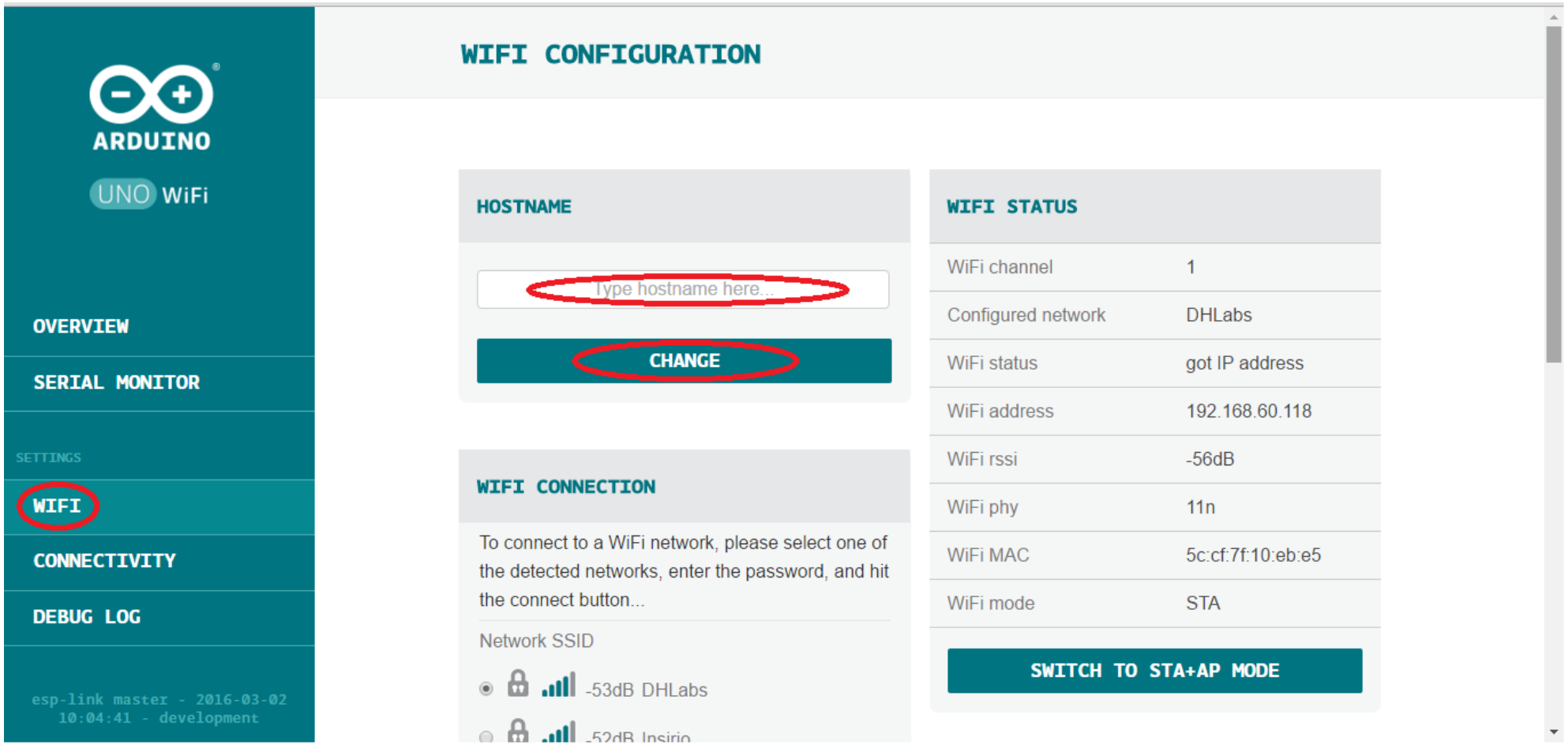
Clicking on **SERIAL MONITOR** appears a serial monitor useful to display the results when you upload a sketch.



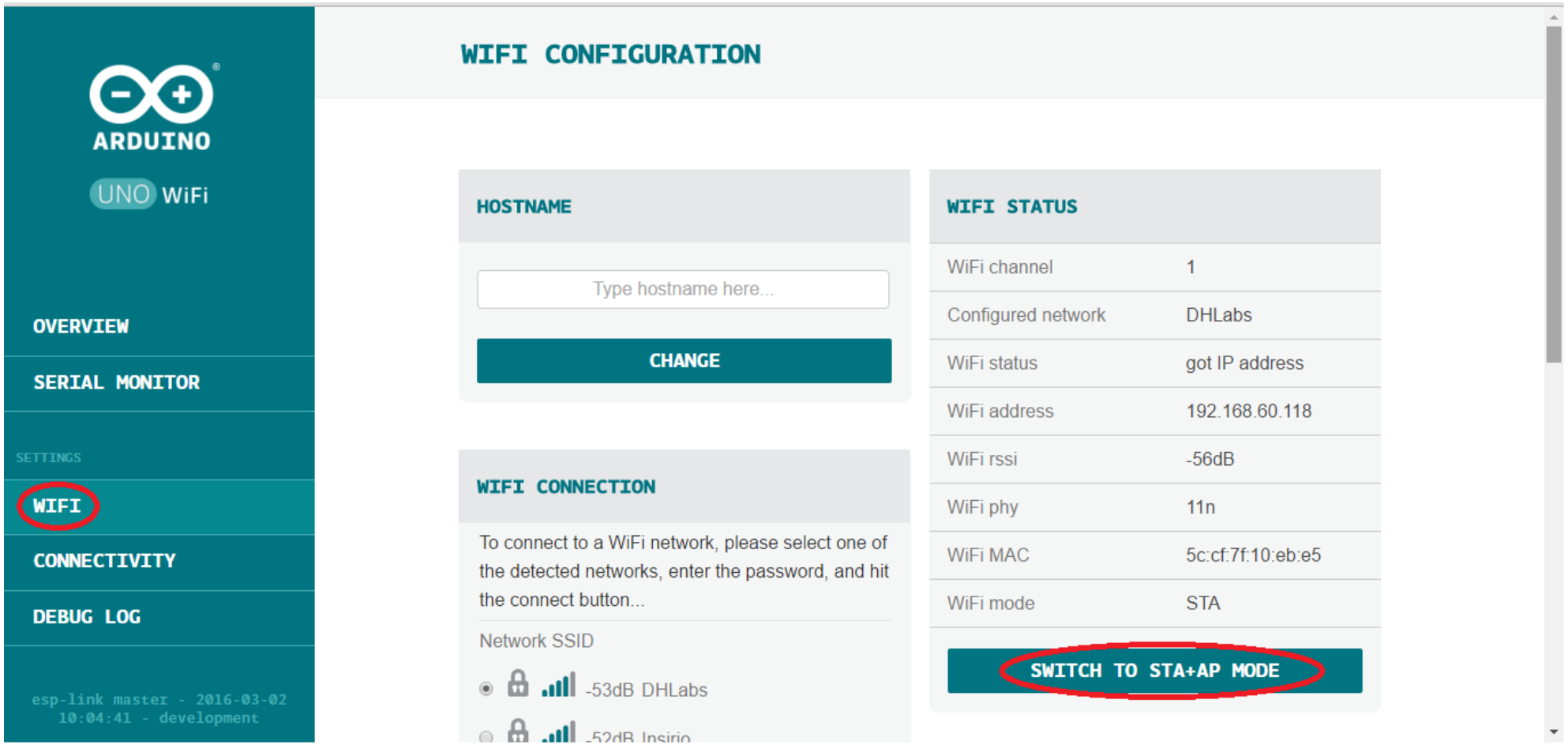
Furthermore in this section it is possible to reset the microcontroller clicking on RESET uC button.



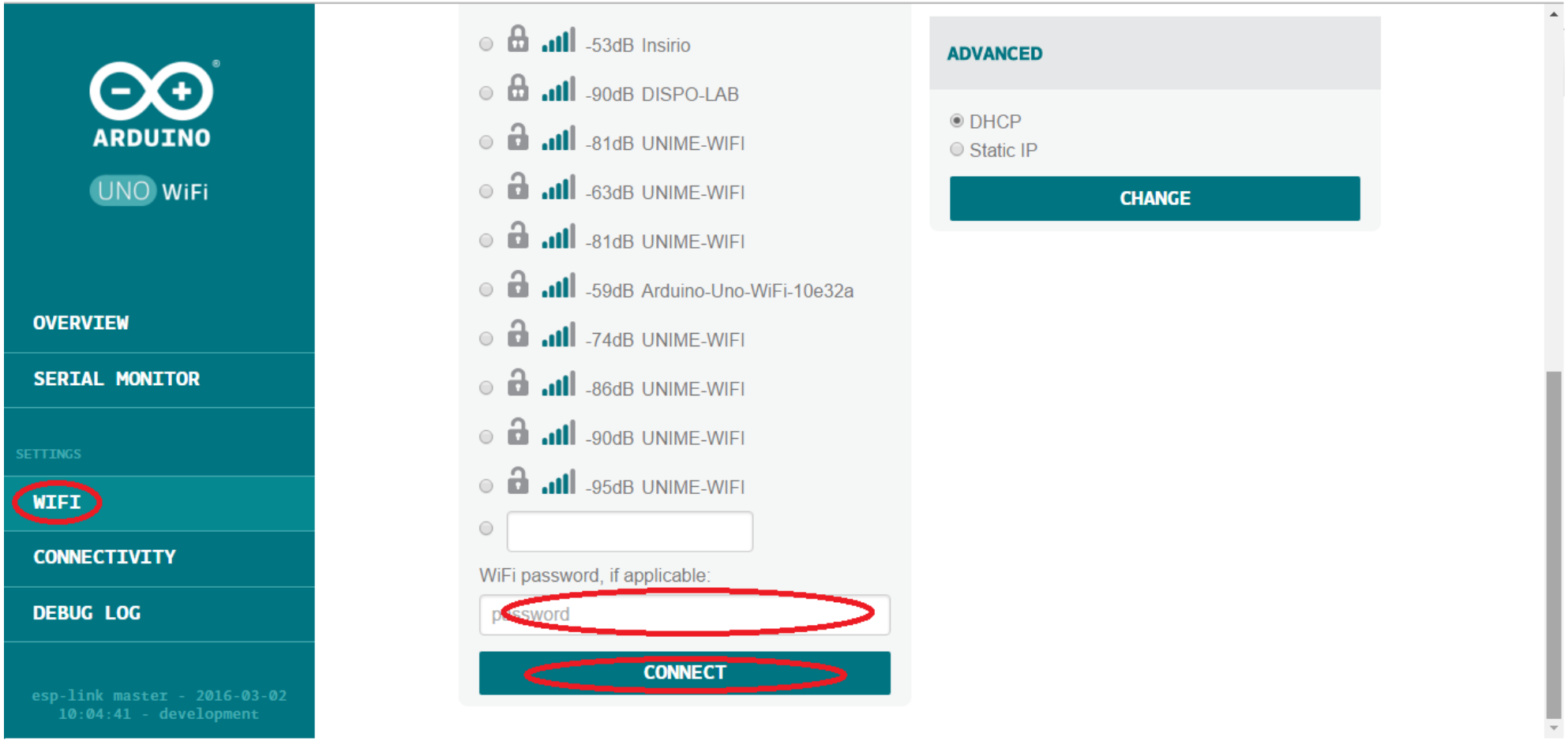
Instead selecting from left menu the **WIFI** section, you can change the hostname simply typing the new hostname in the dedicated bar and after to click on CHANGE button, as shown in the below image:



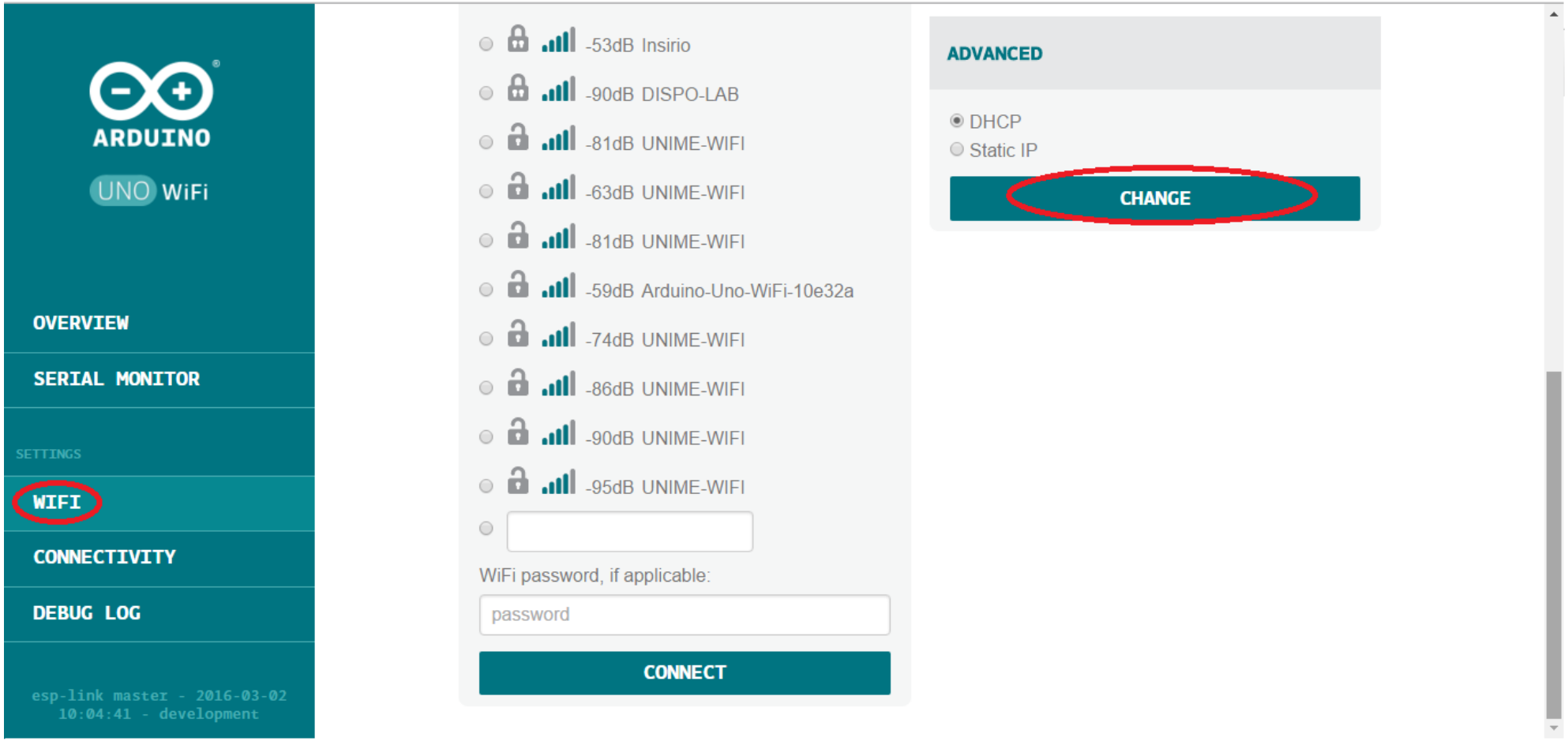
It is possible also to switch to STA MODE or STA+AP MODE clicking the specific button, but keep in mind that it is advised to switch only in STA MODE because so the board will be visible on the Arduino IDE and, furthermore, you will be able to protect it from possible attacks, since it will no longer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



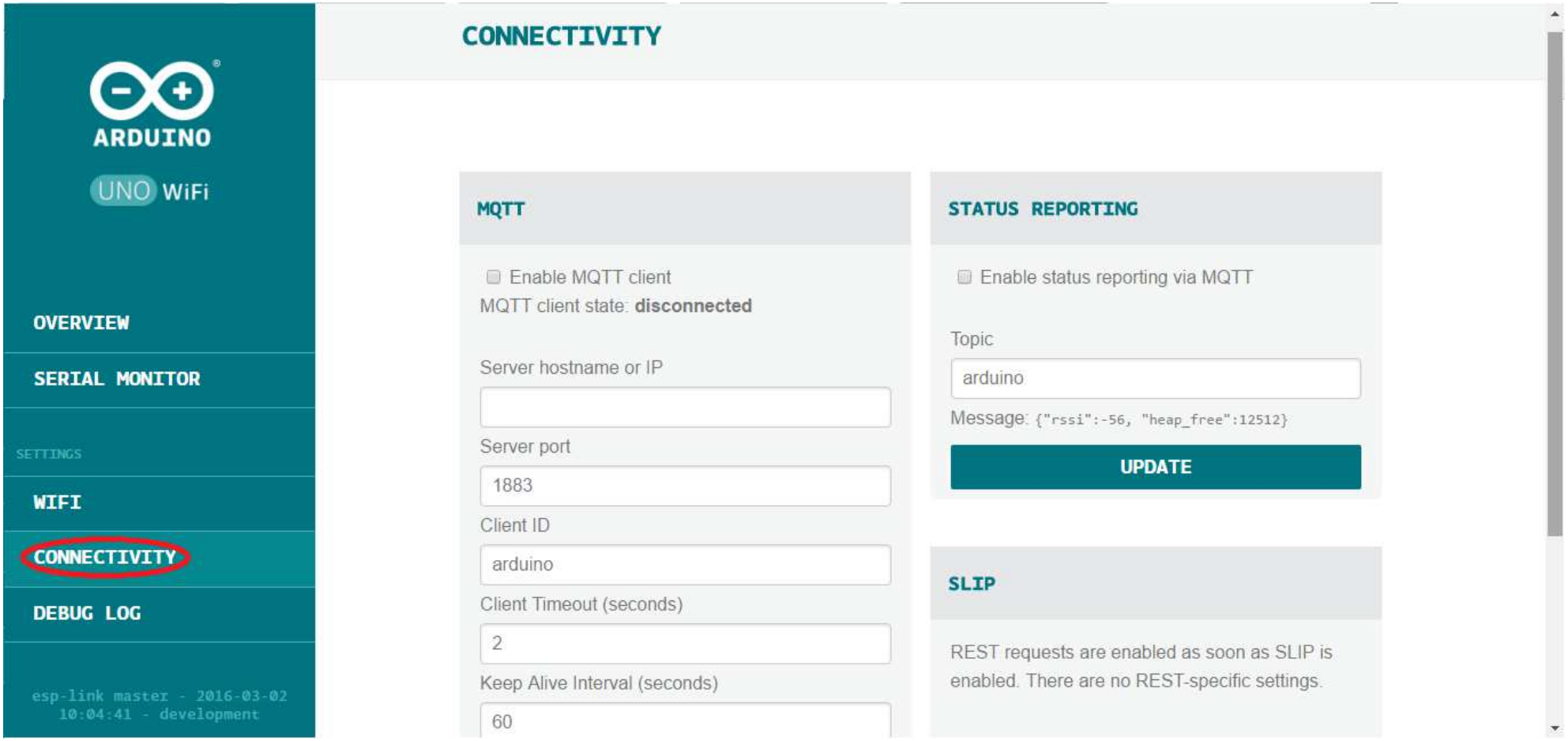
It is possible to connect the board to a network selecting it, inserting the correct password and clicking on CONNECTbutton.



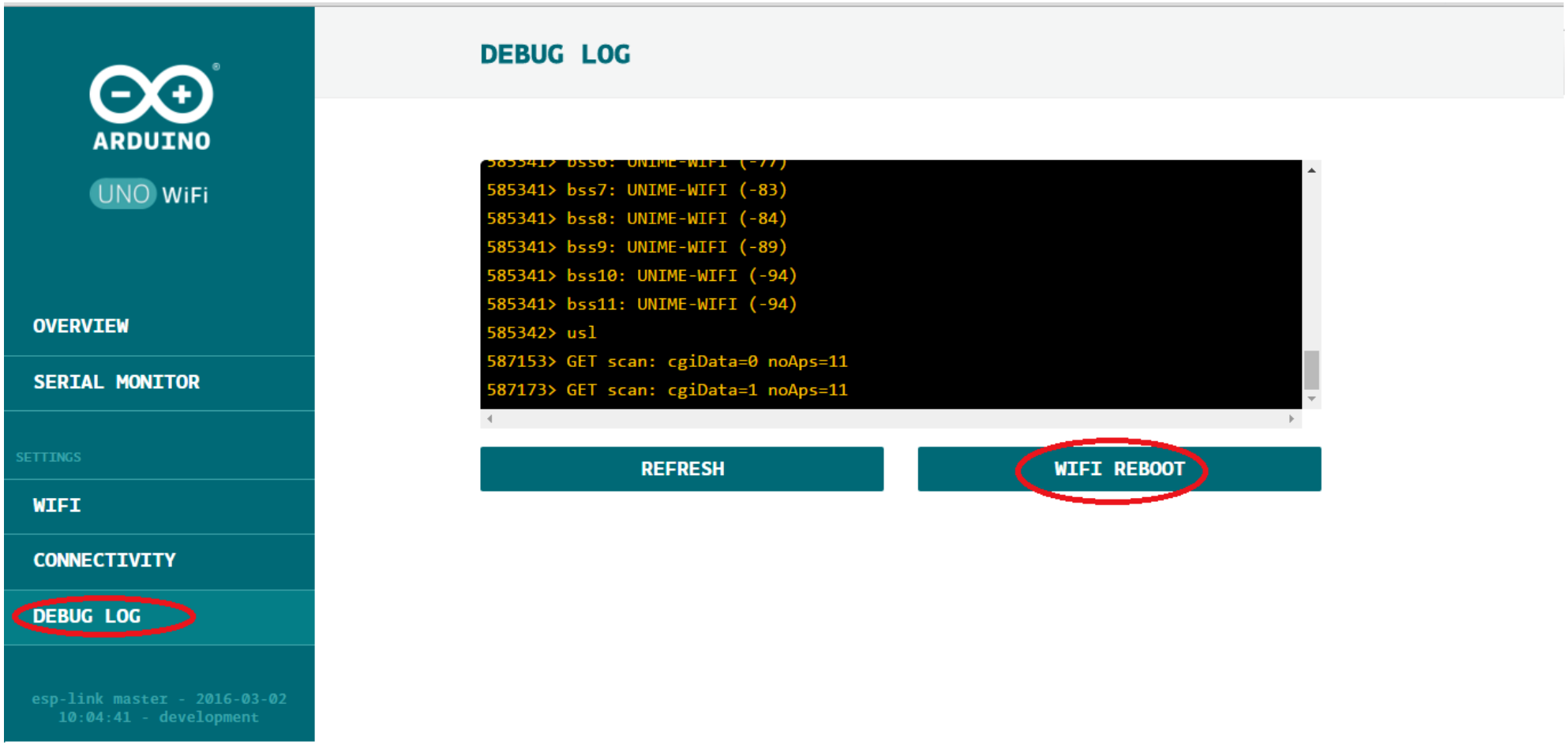
In this section you can also choose if to use the DHCP or the Static IP, as shown in the picture:



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



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


ARDUINO
UNO WiFi
OVERVIEW
SERIAL MONITOR
SETTINGS
WIFI
CONNECTIVITY
DEBUG LOG
esp-link master - 2016-03-02 10:04:41 - development
DEBUG LOG
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)
585342> usl
587153> GET scan: cgiData=0 noAps=11
587173> GET scan: cgiData=1 noAps=11
REFRESH
WIFI REBOOT

GETTING STARTED

FIRST STEPS

WHAT IS ARDUINO

BASIC CONCEPTS

Getting started with your board

- Start with Arduino UNO
- Start with Arduino Nano
- Start with Arduino Yun
- Start with Arduino Mega 2560
- Start with Arduino Tian
- Start with Arduino Industrial 101
- Start with Arduino M0 Pro
- Start with Arduino Leonardo ETH
- Start with Arduino DUE
- Start with Arduino M0
- Start with Arduino Yun Mini

- Start with Arduino MEGA ADK
- Start with Arduino Leonardo
- Start with Arduino Robot
- Start with Arduino ETHERNET
- Start with Arduino Micro
- Start with Arduino Mini
- Start with Arduino ESPLORA
- Start with Arduino STAR OTTO

Getting started with your shield

- Start with Arduino ETHERNET SHIELD 2
- Start with Arduino GSM SHIELD 2
- Start with Arduino WIFI SHIELD

Getting started with your accessories

- Start with Arduino Robot LCD
- Start with Arduino ISP
- Start with Arduino USB 2 Serial Micro
- Start with Arduino USB 2 Serial Mini
- Start with Arduino Mini USB Adapter

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