This document helps you connect your uRADMonitor unit via WiFi.

It applies to all uRADMonitor devices with WiFi connectivity, including:

- model D
- model A3
- model INDUSTRIAL
- model CITY
- model SMOGGIE (all flavours PM/CO2/GAS)

Version

- uRADMonitor devices with WLAN connectivity

uRADMonitor HW108 motherboard with WLAN module (black / top-right)

Description

uRADMonitor devices with WiFi connectivity will monitor air quality then export the data automatically, via your Wireless Internet connection. The uRADMonitor devices are automated monitoring stations with an array of sensors that track important environmental parameters. The data is centralized to the uRADMonitor Data server and can be viewed online, on dedicated dashboards and in the mobile app, or it can be accessed programmatically via the uRADMonitor API.

This document helps you get your uRADMonitor with WiFi connectivity online.

Two configuration options are available

All recent uRADMonitor devices with WiFi also have an USB port for configuration, data access and debugging. For the purpose of this guide, the uRADMonitor unit USB port is a valuable asset that makes the configuration part easy. Otherwise, older units that do not have an USB port (A3 HW105 or older and INDUSTRIAL HW103 or older) can still be configured via their WiFi local hotspot.

1. USB Configuration

This is the preferred option. The uRADMonitor units use the CH340g USB Chip. All major OS platforms come with built in drivers (Windows, Linux, MacOS). If you still need a driver, you can get it on http://www.uradmonitor.com/products under the "Documentation" section.
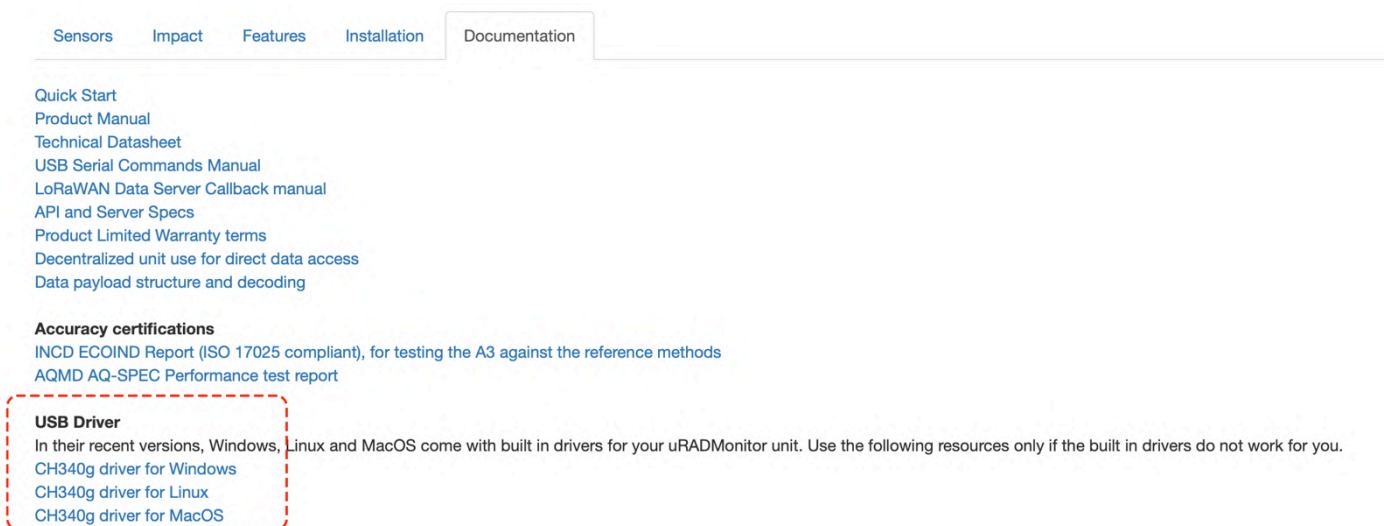

Downloading USB Driver from uRADMonitor Webpage

Connect the uRADMonitor device to your computer using a standard micro-USB Data Cable. The uRADMonitor connector is marked with the "USB" label:
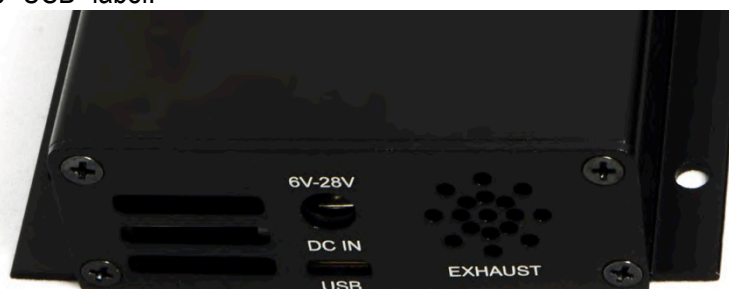
Position of USB connector on the newer uRADMonitor A3 devices

With the driver correctly installed, the serial port assigned to your uRADMonitor becomes available automatically. On Windows you can right click "My Computer", open "Device Manager" and identify the COM port assigned to "CH340g":
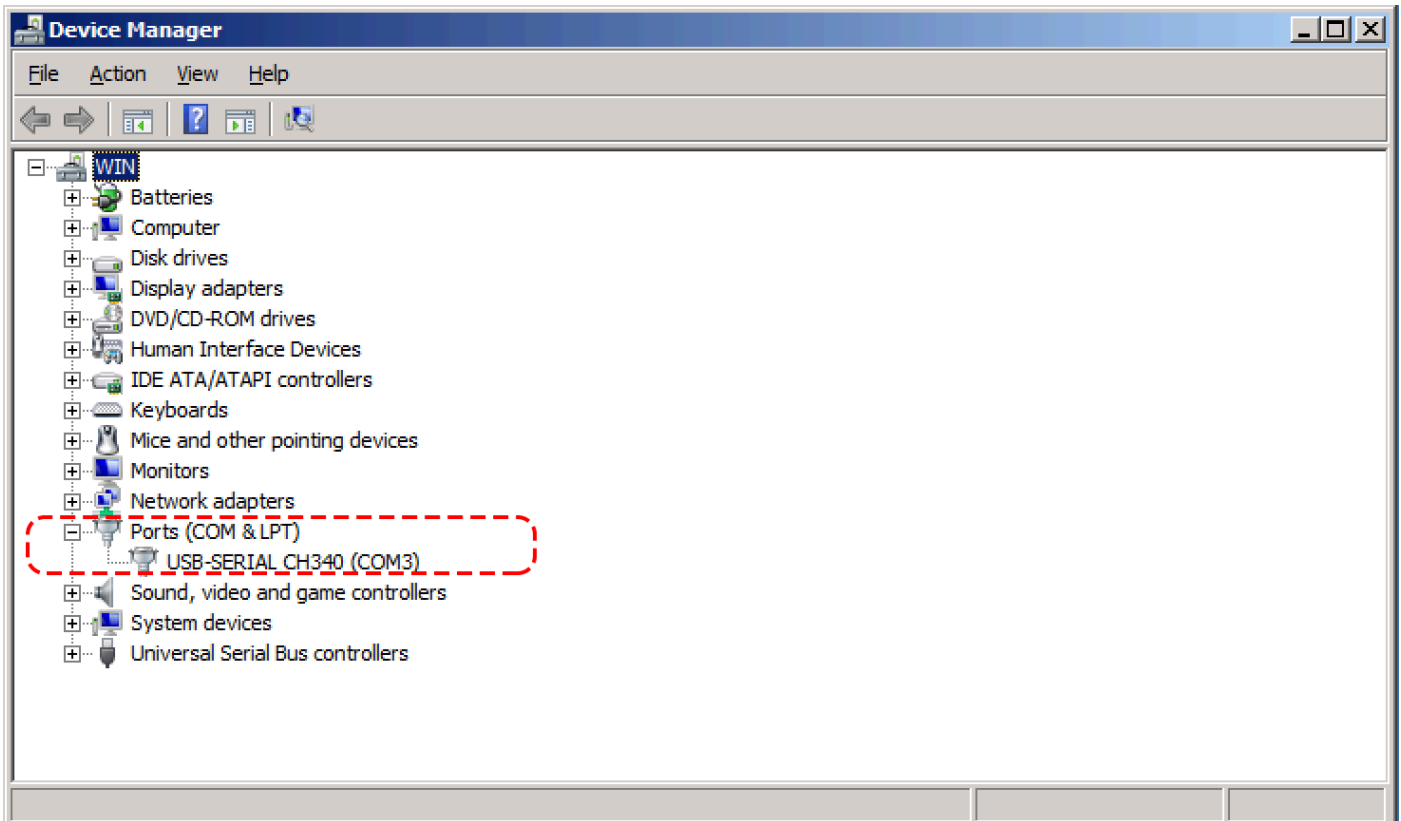
uRADMonitor serial port on Windows, when the cable is connected

Download a Serial Terminal program. Best for the job is CoolTerm, but simpler tools like Putty can also be used. Both are free and multiplatform. Download links: https://freeware.the-meiers.org, https://www.putty.org . This guide will illustrate the involved steps using CoolTerm, but the same steps can be applied with any other tool.

Open CoolTerm, and go to "Options", click "Rescan Serial Ports" button. Open the dropdown and select the serial port assigned to your uRADMonitor. On Windows you will see the COMx port listed under Device Manager. On MacOS it will be either usbserial-1410 (left USB port) or usbserial-1420 (right USB port). Select it, and make sure the Baudrate is 9600bps . Hit OK to close "Options", then click Connect.
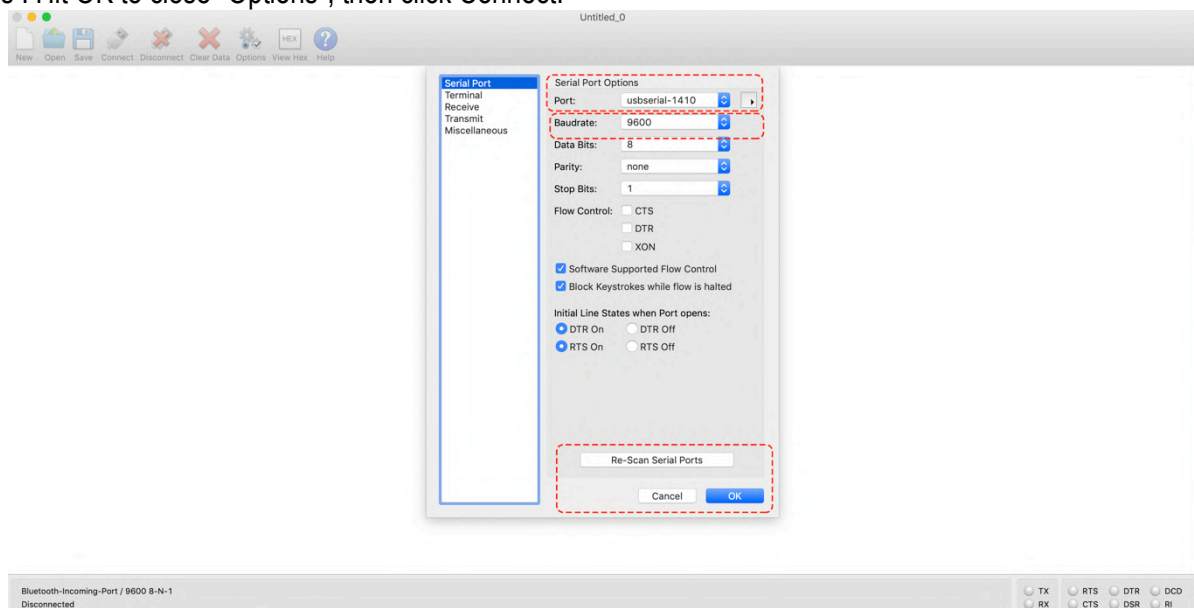
CoolTerm on MACOS

The bottom status indicator in CoolTerm will say "Connected" and a timer counts the time. Go to Menu "Connection"->"Send String" to open a popup where you can type text. Type "getsettings" , with quotes and no spaces, press Enter to jump to second line (every command needs to be terminated by an Enter) then click "Send":
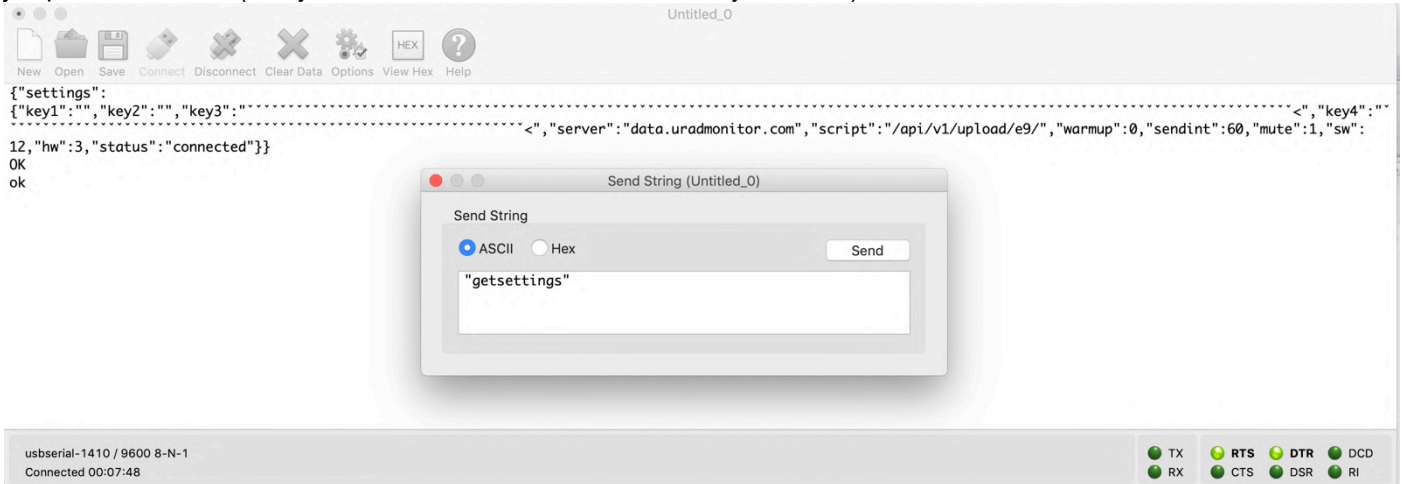
"getsettings" command returning data on a uRADMonitor SMOGGIE

Just to make sure you are doing this correctly, after the "getsettings" command you must hit Enter so your cursor jumps on the next line before you press Send.
The output shows the current configuration. Most of the parameters there can be changed. We are only interested in configuring the WiFi connection to your Wireless Internet Router. Two commands are needed for that:
"key1","Your Wireless Internet Network Name"
Then
"key2","Your Wireless network key"

You should get a confirmation in the main screen for all commands you sent. If you don't, make sure you added the Enter/Empty line and press the SEND button again. Finally, send a new "getsettings" to make sure your settings are in place:
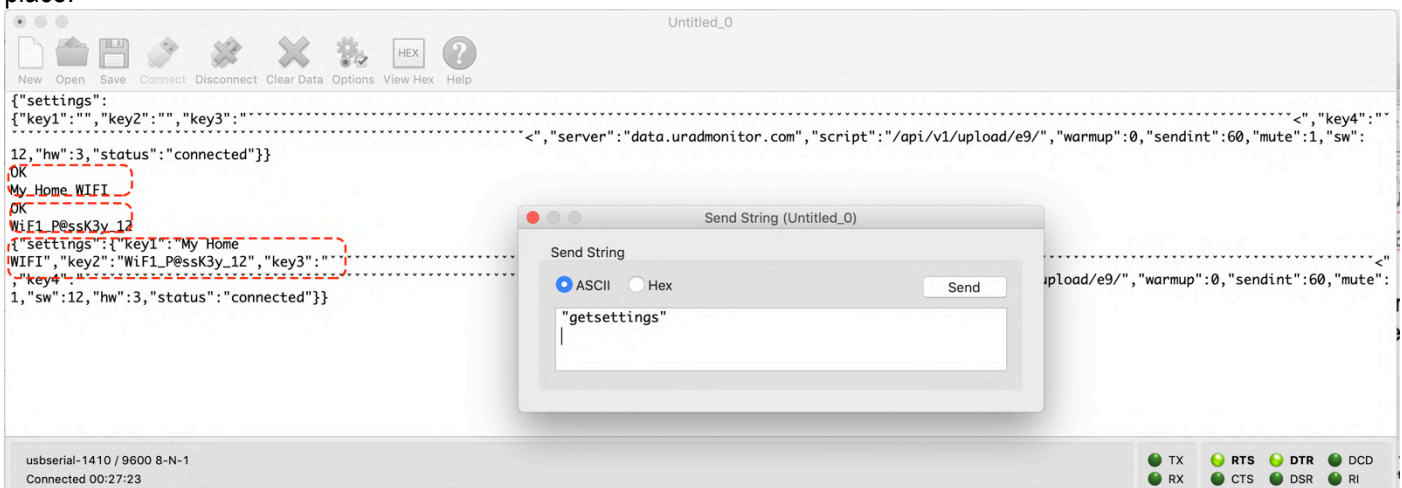
Configuring your uRADMonitor to connect to your WIFI Router

2. WiFi Configuration

Connect power to your uRADMonitor unit either via the DC connector (9V adapter) or via the USB port (5V USB adapter). When powered on, the uRADMonitor will generate a local Wifi network named "uRADMonitor-XX", where XX are the last two digits of the Device ID printed on the unit. For example, a SMOGGIE unit with ID 160000E1 will generate a local network named "uRADMonitor-E1".

Connect to this Wifi Network, using the Device ID as a password. The Device ID is printed on your uRADMonitor. For this example, the key for uRADMonitor-E1 is 160000E1. The Device ID contains only hex digits 0,1,2,3,4,5,6,7,8,9 and A,B,C,D,E,F.

If you cannot connect, see the troubleshooting section of this manual. Once connected, open your Browser and type address **192.168.4.1** to access your uRADMonitor internal webpage. It looks like this:
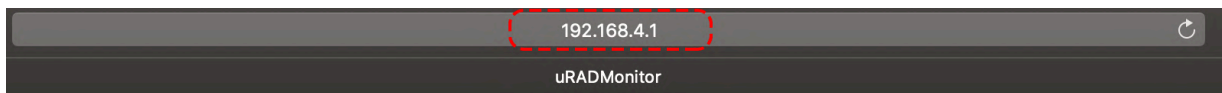
### uRADMonitor SMOGGIE 160000E1 - HW:3 SW:12

Temperature:17.95C	**PM1.0:**0ug/m^3	**Time:**162s	**WIFI:**connected
Pressure:100082Pa	**PM2.5:**0ug/m^3	**Interval:**60s	**IP:**(IP unset)
Humidity:45.30RH	**PM10:**0ug/m^3	**Stats:**0/2 0	**DNS:**(IP unset)

Warmup: 0s | JSON | CONFIG

uRADMonitor, a Magnasci SRL 2015-2019 project

uRADMonitor SMOGGIE Internal Webpage when accessing 192.168.4.1

Click "CONFIG" to open the configuration page:
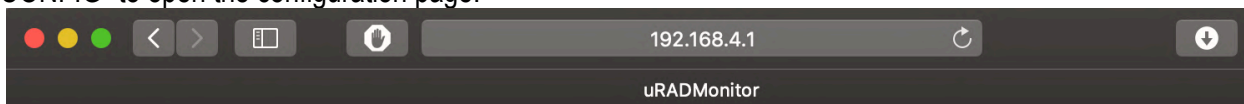
Configuration

Connect to WIFI:

My Home WIFI   ••••

Status: connected

Save   Back

Enter your Internet Wireless Network Credentials to give Internet Access to your uRADMonitor unit

Enter your Home Wireless network name and password in the two boxes and press Save. The uRADMonitor will reboot, so wait a few seconds then open 192.168.4.1 again. It should say connected and you should see a local IP being assigned to it. Alternatively , you can also check your Router's DHCP table to see the LAN IP allocated to your uRADMonitor. You can then connect to it via your LAN, using the uRADMonitor LAN IP assigned by your router. If this is too technical, just wait about 60seconds then check your unit on the uRADMonitor page.

Checking the results

If you entered the correct credentials, and the signal is good, your uRADMonitor will start transmitting its readings online. In about 60 seconds it will become visible on the uRADMonitor global map, and the location is estimated based on your external IP. You can change the location yourself, by going to http://www.uradmonitor.com/dashboard .
You can jump to your unit directly using these two links:
www.uradmonitor.com/?open=DeviceID
www.uradmonitor.com/tools/dashboard-04/?open=DeviceID
The Device ID is an 8 hex digit number, unique to your device and is printed on the enclosure. It is used to distinguish your uRADMonitor in the network. A valid example is: https://www.uradmonitor.com/?open=16000060&sensor=pm25
This will open uRADMonitor unit 16000060 and status should say "Online" if the unit can communicate via Wifi.

Unit successfully went online
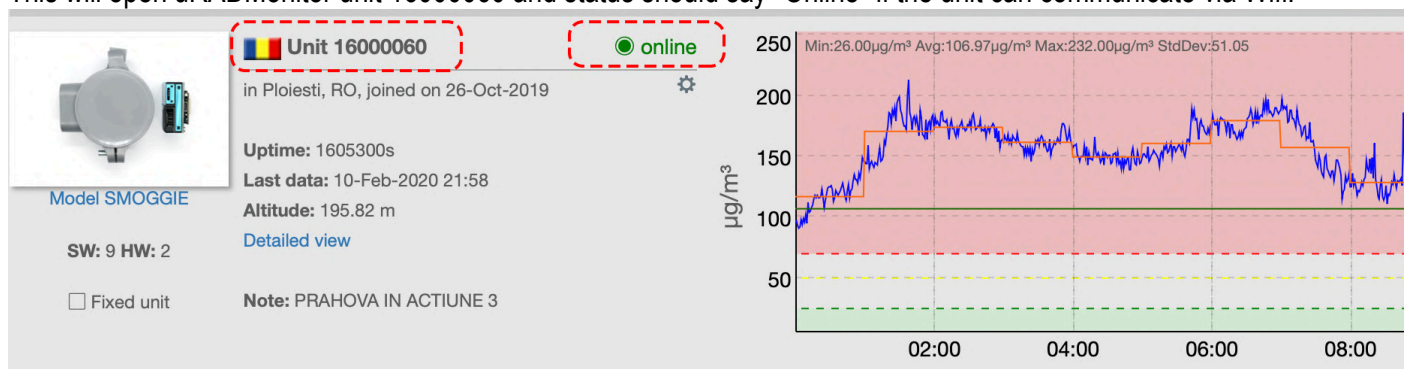
If you don't see it online, please check your settings again or see the "Troubleshooting" section below.

Troubleshooting

For USB :
- You cannot see the uRADMonitor serial port in Coolterm. **Suggestions:** check CH340g driver and the USB Cable. Unplug it then reconnect it and try again.
- I cannot get any answers from the uRADMonitor via the serial connection. The "getsettings" returns nothing. **Suggestions:** check the connection (CoolTerm should say "Connected" in the status bar), check baudrate in options, must be 9600bps.

For WiFi Config:
- I cannot connect to the local uRADMonitor Hotspot (uRADMonitor-XX). I get "Incorrect password" or "Cannot connect" error messages. **Suggestions:** try connecting from a different device, phone / laptop. Try connecting at close range, then try connecting from at least 10meters. Try connecting with a wall in between you and the uRADMonitor, to filter the signal. Try rebooting the uRADMonitor device. In some cases this can take a few attempts, but it will ultimately work.

- I cannot access 192.168.4.1 in the browser. **Suggestions:** make sure you successfully connected to the uRADMonitor local hotspot (uRADMonitor-XX). Make sure your browser allows connecting although there is no internet connection. Try a different browser.
- I set the credentials, but the uRADMonitor won't go online. **Suggestions:** make sure the Wifi signal is good, meaning that the uRADMonitor is sufficiently close to your Internet Wireless Router.

For any other issues or problems , contact us at http://www.uradmonitor.com/about or support@uradmonitor.com .