

Guidelines for Aranet PRO base station connection to WIFI network for remote access

Before You do steps written below, please have in Your possession a spare Ethernet cable with You in case the WIFI configuration is not successful. You need to be able to access Aranet PRO base station with Ethernet cable and make corrections.

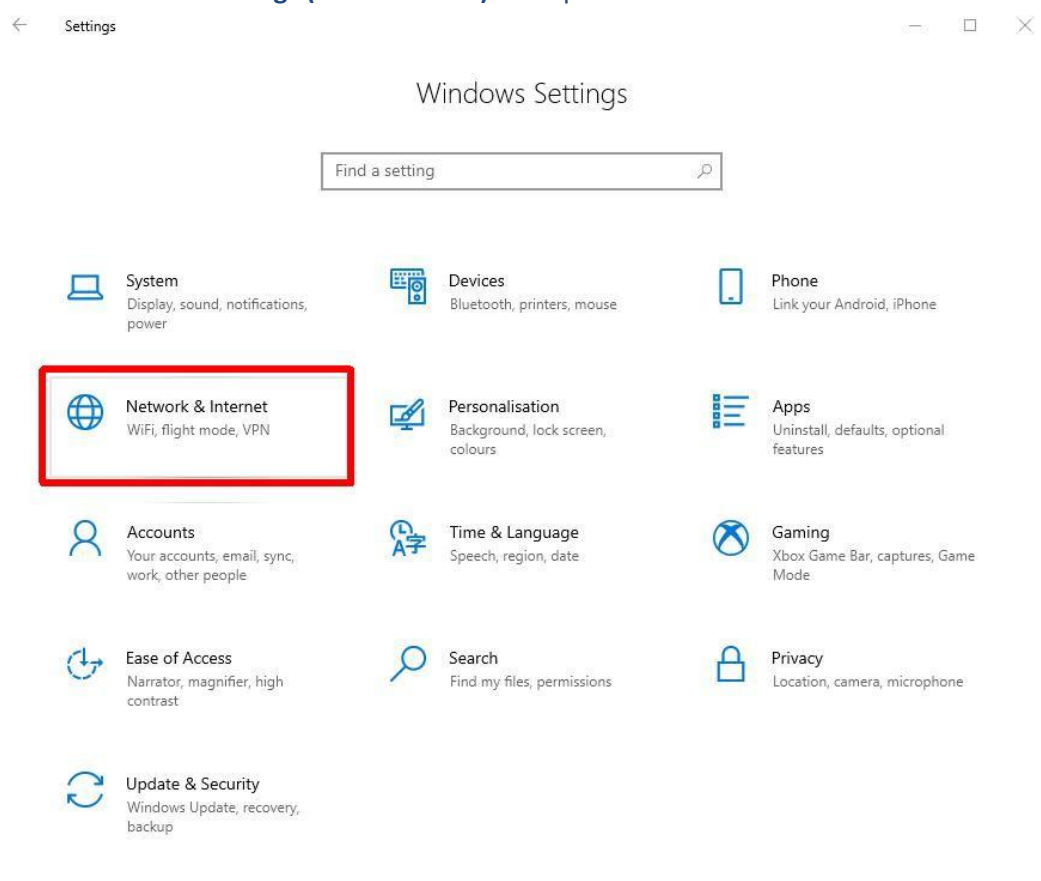


First Aranet PRO base station should be connected in local WIFI network following instructions given below:

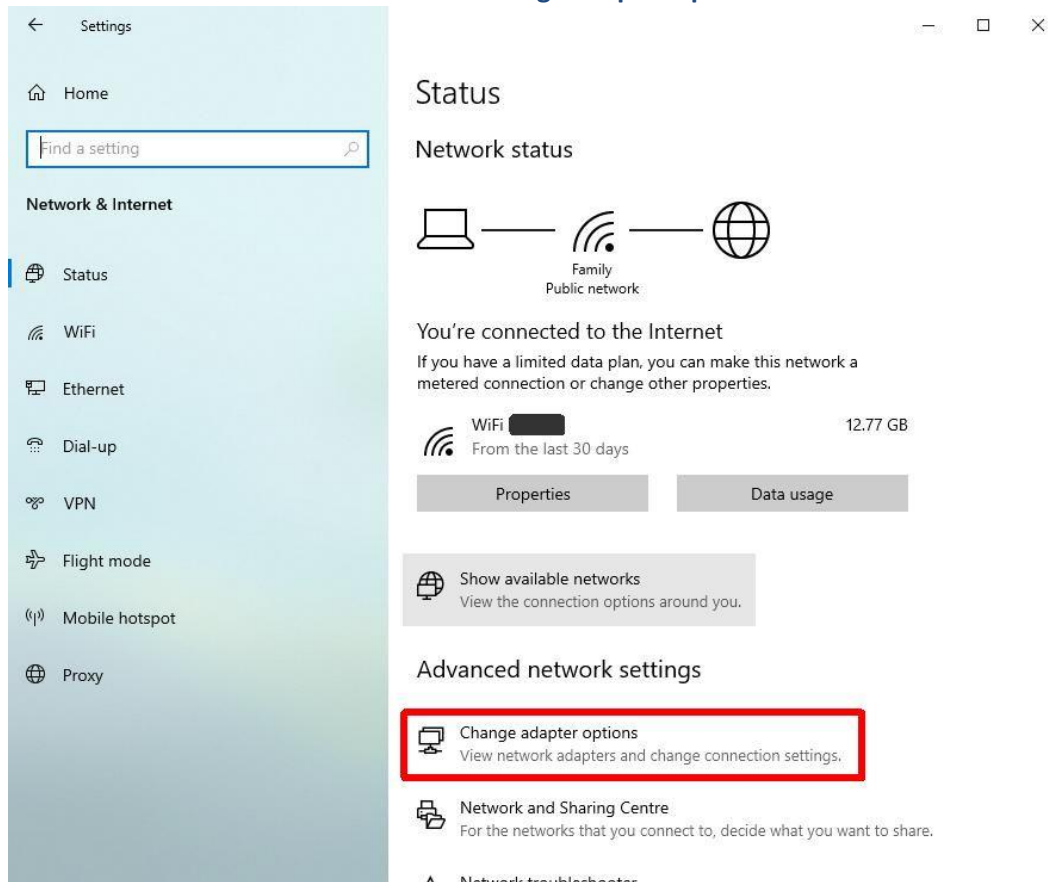
- I. Determine Your local WIFI network configuration. Here You must connect a laptop to the local WIFI network You are planning to use also for Aranet PRO base station. When connected to local WIFI network on the laptop You have two options: shorter - to use **Command Prompt** or if you prefer mouse operated steps - **Windows Explorer**.

Using **Windows Explorer** routine in **Windows 10**:

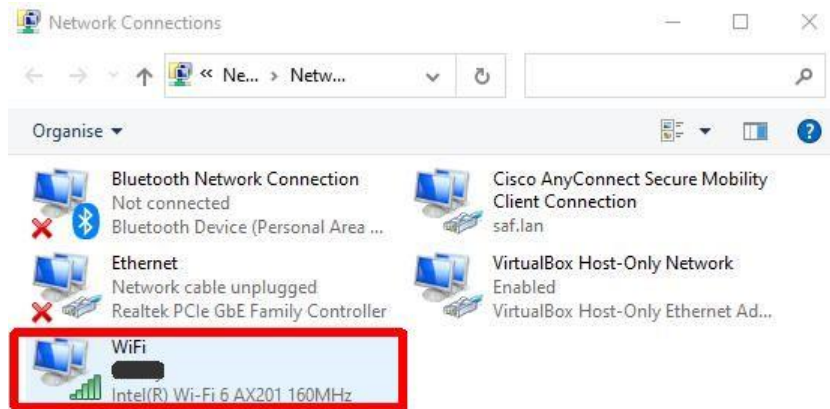
1. Go to **Start -> Settings (Control Panel)** and open **Network & Internet**



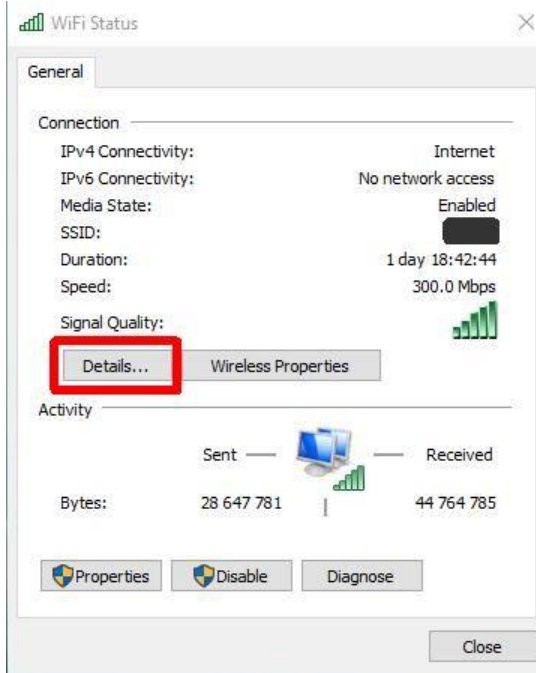
2. At Network Status window click on **Change adapter options**



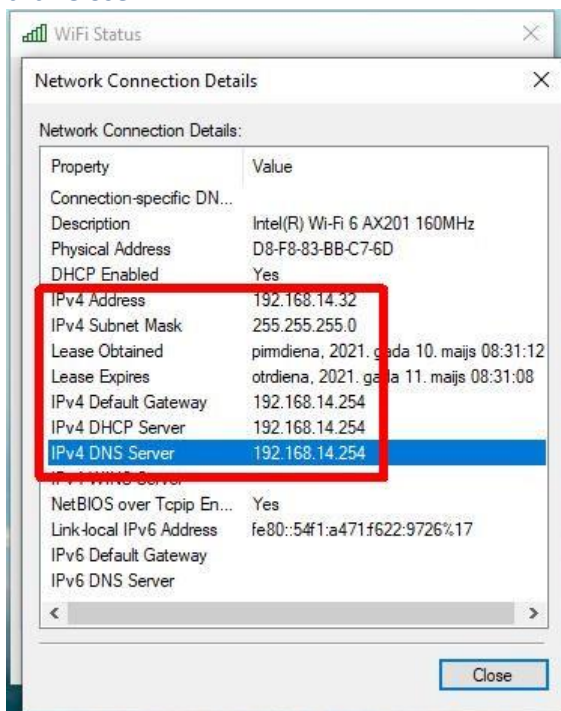
3. Double Click on active **WiFi connection** to open Wifi Status window



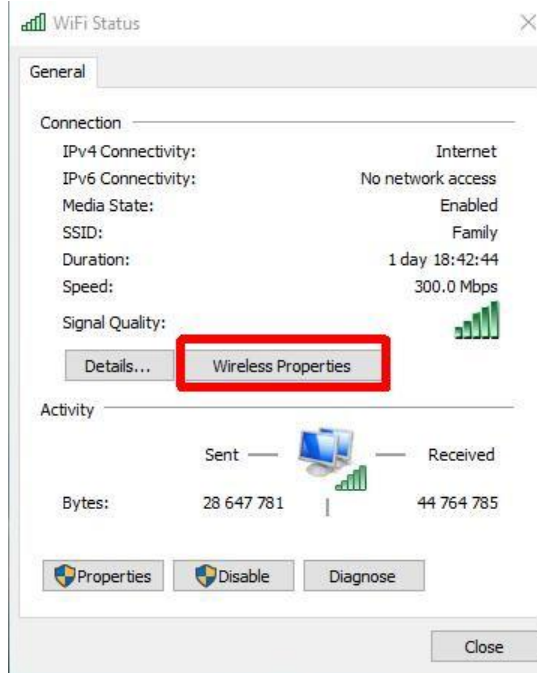
4. Click on **Details...**:



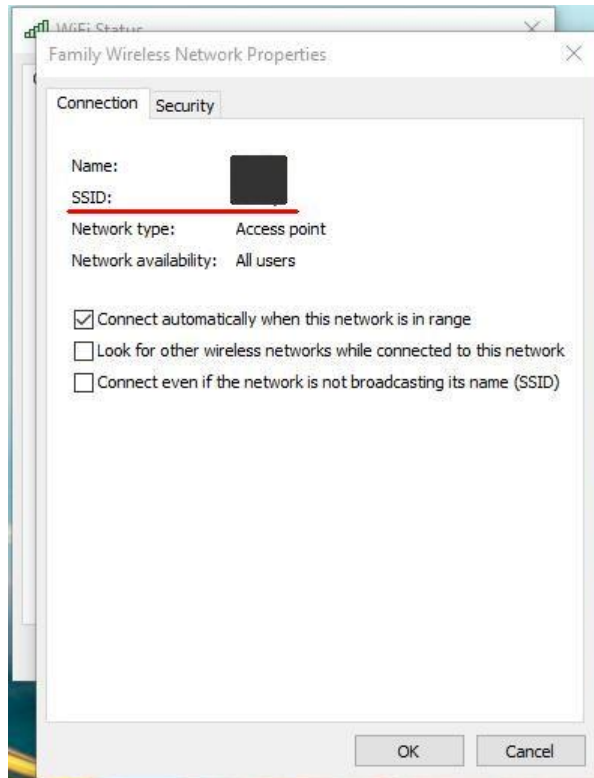
5. Write down *IPv4 Address, Subnet Mask, Default Gateway* and *DNS Servers* data and click **Close**



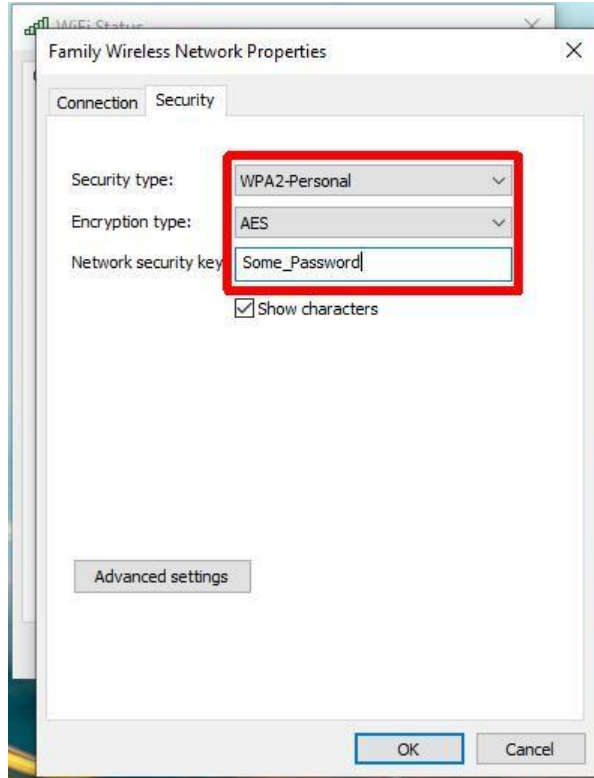
6. Click on **Wireless Properties**



7. Write down **WiFi network SSID** on **Connection** tab



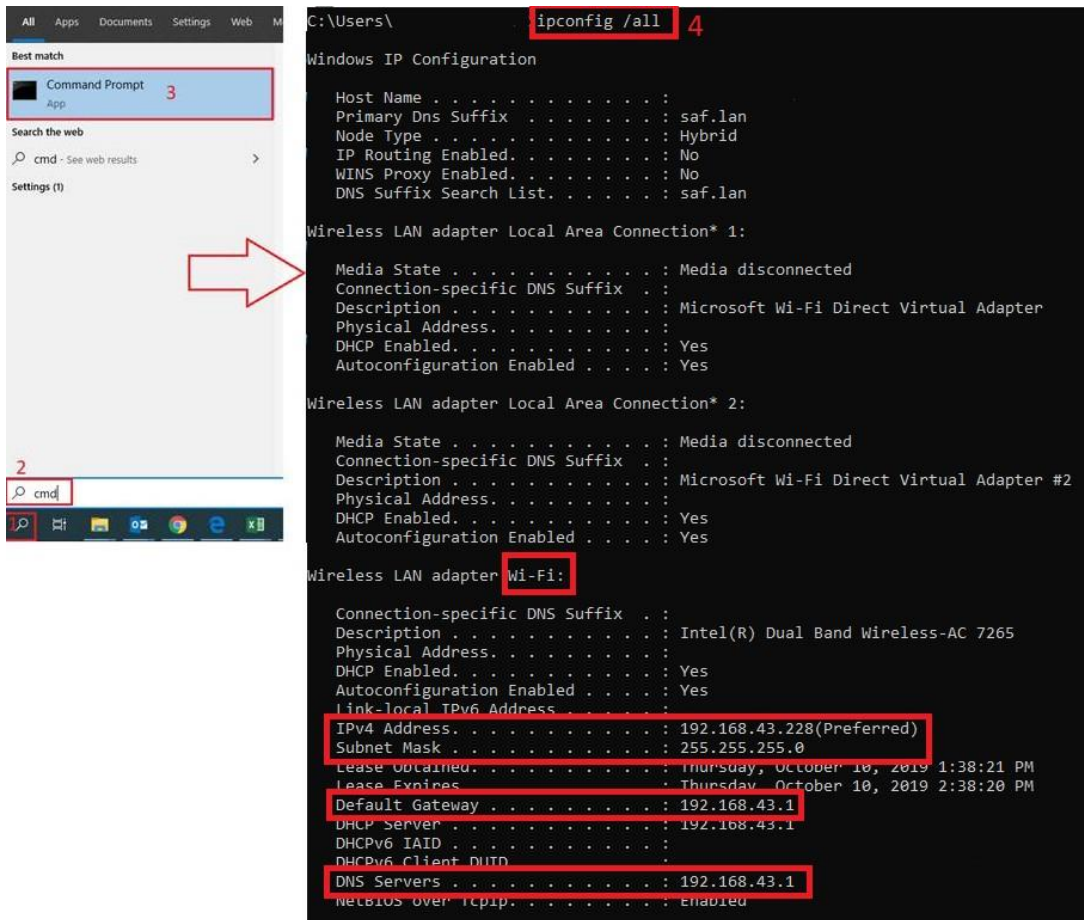
8. Switch to **Security** tab, mark check-in box **Show characters** and write down *Security type, Encryption type, Network security key*.



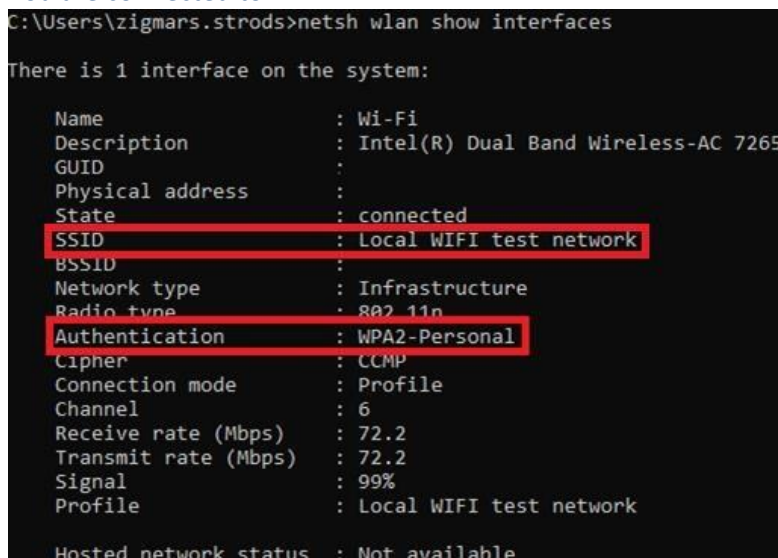
Now you can close or exit all **Settings** and **Control Panel** windows and proceed to step [3. Of Command Prompt](#) routine

Using **Command Prompt** routine in **Windows**

1. You have to open **Command Prompt** interface of Windows (f.e. press **Win + R** or click **Find (Looking Glass)**, type in **cmd** and click **OK**). In **Command Prompt** interface run command **ipconfig /all** and find line where Wi-Fi information about *IPv4 Address, Subnet Mask, Default Gateway* and *DNS Servers* is shown. Save or write down somewhere this information:



2. Additionally, in **Command Prompt** check also connected local WIFI network security type (*Authentication*) with command `netsh wlan show interfaces`. Note here also *SSID* which is the name of local WIFI network You are connected to:



3. Next You must find free and unused IP address in local WIFI network. Start this IP address selection process with checking IP address which has just last number increased by one comparing to *IPv4 Address* found in point [5. of Windows Explorer routine](#) or [point 1. Of Command Prompt routine](#)). In our example, *IPv4 Address* from point [1.](#) is **192.168.43.228**, so we first check **192.168.43.229**. IP address availability check-up is done from **Command Prompt** by executing command **ping** followed by IP address which You want to check. In our example:

```
Administrator: C:\Windows\system32\cmd.exe
C:\Users\DELL>ping 192.168.43.229
```

If IP address is already used, then **ping** command execution results will show that reply within some milliseconds has been received from this IP address and such IP address can't be used for Aranet PRO base station:

```
C:\Users\ >ping 192.168.43.229
Pinging 192.168.43.229 with 32 bytes of data:
Reply from 192.168.43.229: bytes=32 time=10ms TTL=100
Reply from 192.168.43.229: bytes=32 time=30ms TTL=100
Reply from 192.168.43.229: bytes=32 time=4ms TTL=100
Reply from 192.168.43.229: bytes=32 time=12ms TTL=100

Ping statistics for 192.168.43.229:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 30ms, Average = 14ms
```


If such situation occurs, then please continue IP address selection by increasing last digit of IP address gradually by one until free unused address is found. In case IP address is free **ping** command execution will show message that *Destination host unreachable*:

```
Pinging 192.168.43.229 with 32 bytes of data:
Reply from 192.168.43.229: Destination host unreachable.
Reply from 192.168.43.229: Destination host unreachable.
Reply from 192.168.43.229: Destination host unreachable.
Reply from 192.168.43.229: Destination host unreachable.
```

In this example, we assume that IP address **192.168.43.229** is free and we can use it for Aranet PRO base station configuration;

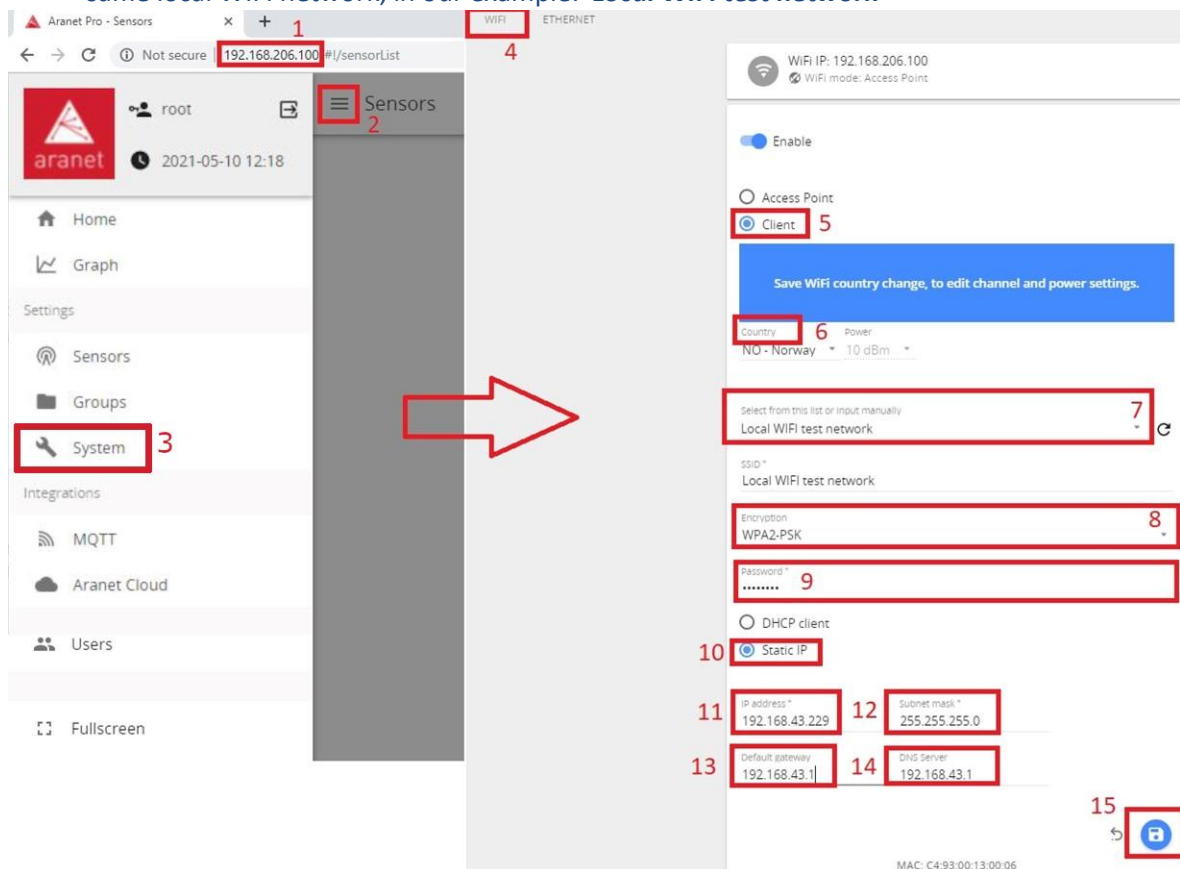
- II. As next disconnect Your laptop from local WIFI network and connect to Aranet PRO base station built-in WIFI access point.

1. Open any web browser and enter IP address of the Aranet PRO base station: **192.168.206.100**.

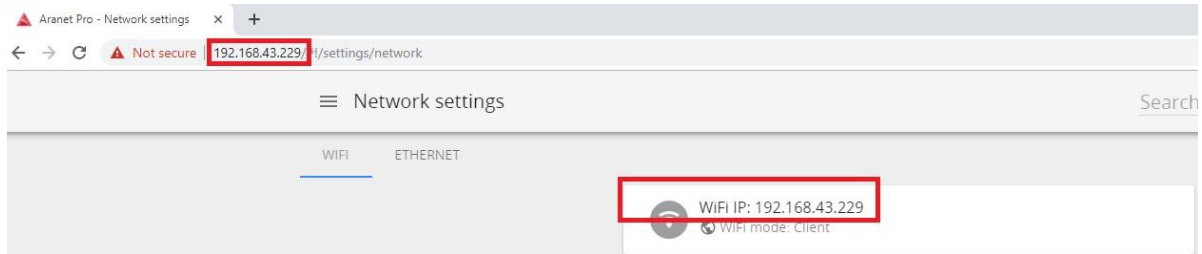
2. Then click on  which will open new menu on left side;
3. Next in this menu click **SYSTEM** and in the opened screen select **NETWORK** tab;
4. Aranet Pro base **WiFi** settings screen will be loaded;
5. Select **Client** mode;
6. Set your *Country* and *Power* settings (if you are not sure about *Power* setting, left it unchanged);
7. Select from list or input manually WiFi network **SSID**, which should be the same as **SSID** determined previously in point [7. Of Windows Explorer routine](#) or point [2. Of Command prompt routine](#). In our example it is **Local WIFI test network**;

8. Choose **Encryption** of local WIFI network which was determined in point [7. Of Windows Explorer routine](#) or point [2. Of Command prompt routine](#). In our example it is **WPA2-PSK**;
9. Enter WiFi **Password** determined as **Network security key** in point [8. Of Windows Explorer routine](#), or ask it to your network administrator;
10. Select **Static IP**;
11. Set **IP Address** which was found in [point 3. Of Command Prompt routine](#) for the Aranet PRO base station, in our example: **192.168.43.229**;
12. Set **Subnet Mask** which was determined in point [5. Of Windows Explorer routine](#) or point [1. Of Command Prompt routine](#), in our example: **255.255.255.0**;
13. Set **Default gateway** which was determined in point [5. Of Windows Explorer routine](#) or point [1. Of Command Prompt routine](#), in our example: **192.168.43.1**;
14. Set **DNS Server** which was determined in point [5. Of Windows Explorer routine](#) or point [1. Of Command Prompt routine](#), in our example: **192.168.43.1**;
15. Click **Save**.

When saved, then Your laptop will lose connection with Aranet PRO base station and base will be accessible only from laptops, computers, tablets or phones which are connected to the same local WIFI network, in our example: **Local WIFI test network**



So, connect Your laptop back to Your local WIFI network and in web browser enter Aranet PRO base station IP address which was set here in [point 11.](#), in our example, **192.168.43.229**:



Next step would be setup Aranet base station access from Internet. We have general recommendations for Aranet PRO base station accessing from Internet in User Guide page 54:

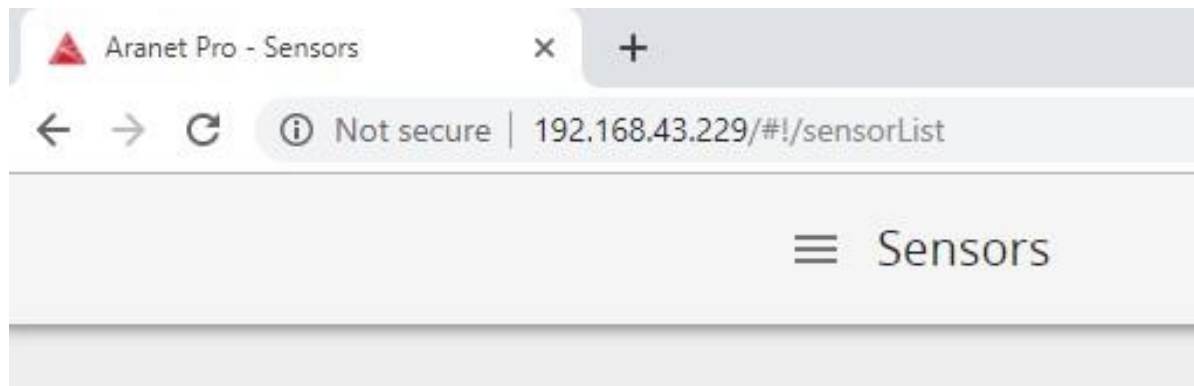
<https://dl.aranet.com/wp-content/uploads/2017/03/12164653/Aranet-PRO-User-Guide-EU-v6.pdf>

Port forwarding technique should be used for Aranet base station access from Internet. General idea on port forwarding and its setup is given, for example, on this video:

<https://www.youtube.com/watch?v=2G1ueMDgwxw&t=1s>

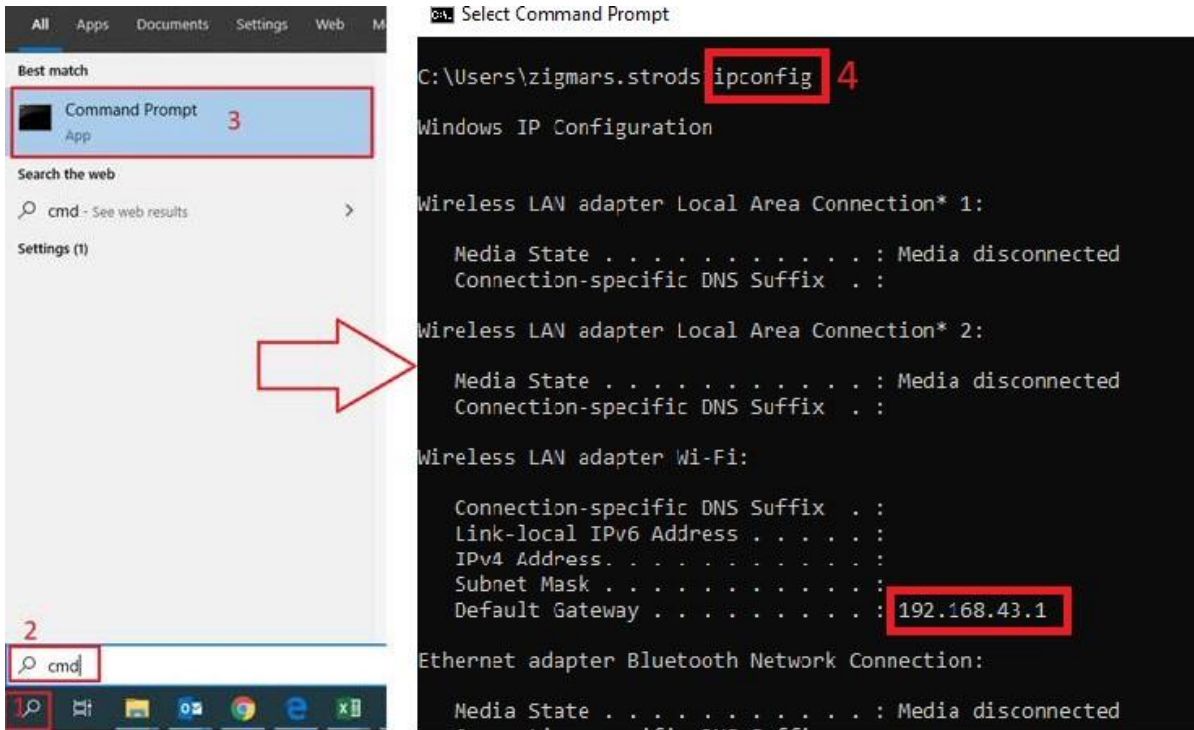
Main steps in port forwarding enabling would be:

- 1) Aranet PRO base station should be properly connected to a local IP network and You should know IP address which is configured on Aranet PRO base station for connection to this local IP network (You should be able to access base station via ordinary web browser while connected in local IP network). In our example Aranet PRO base can be accessed in local network via IP address **192.168.43.229**:



- 2) Next You should know local network address for the router/gateway where Aranet base station is connected, and You should have administrator user rights for management on this router. If You do not have administration user rights for management on the router, please contact Your Internet Service Provider or local IT stuff for proper configuration.

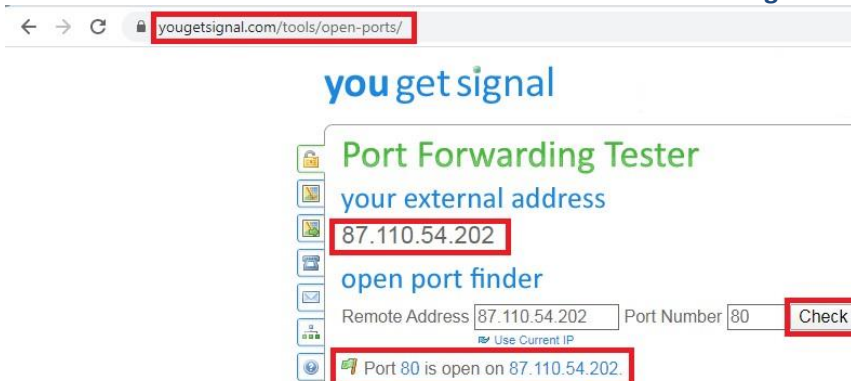
You can determine router local network address when connected with laptop to the same local network where the router is also connected. We have done this previously in point [5. Of Windows Explorer routine](#) or point [1. Of Command Prompt routine](#). When connected on the same local network You have to open **Command Prompt** interface of Windows. In **Command Prompt** You should run command **ipconfig** and find line where *Default Gateway* is mentioned. In this line local network address of the router is shown, in our example below it is **192.168.43.1**:



3) Now you have to determine also Internet external public IP address for router where Aranet base station is connected. Additionally, the router should have port **80** opened on it for external WEB access. To get router external public IP address and check status of port 80 on it You have to be connected to the same router with Your phone or laptop and You need to have WEB Internet access through this router. When connected to such router, visit <https://www.yougetsignal.com/tools/open-ports/> and there You will see router external public IP address, in our example below it is 87.110.54.202.

Here You can also check status of port 80 by pressing button **Check**. If the port 80 is open, then confirmation message with **Green** flag will be shown and You can proceed with next steps of these guidelines. If the port 80 is closed and **Red** flag is shown, then please contact Your Internet Service Provider and ask for some solution.

Note that router should have static external public IP address which does not change over time otherwise if the router address is dynamic and will change over time You will not be able to access also Aranet base station when router address has changed:



- 4) If You have all previous points confirmed, then while connected to the local IP network with laptop use web browser to log in to the router local network IP address (determined in point 2) with *administrator* user and *password* and create **port forwarding rule** on the router. To set such rule user usually has to create port forwarding record which contains
- local IP address* of the Aranet base station (determined in point 1),
 - port number* for WEB access to Aranet base station, which is **80**,
 - port number* for external Internet WEB access to Aranet base station which could be set to **8100**, but in general could be any open and unused port on the router.

Unfortunately, port forwarding rule setup interface on the routers is not standardized and not uniform as each vendor has made it in its own way. For precise way how to do port forwarding on a specific router one needs to check router's own user manual/guide.

For Huawei B315 (B525) routers some general configuration recommendations could be found: <https://d1l0iodieynis3.cloudfront.net/wp-content/uploads/2017/03/01173334/Howto-remotely-connect-to-the-Aranet-PRO-from-Internet.pdf>

- 5) If everything is done correctly then now You should be able to access Aranet base station from Internet via ordinary web browser just by entering external public IP address of Your router (determined point 3), semicolon and then port number for Aranet external Internet WEB access (set in point 4.c). In our example the router external IP address is 87.110.54.202 and port for Aranet external Internet WEB access is set to 8100, then we should enter in web browser address **87.110.54.202:8100**. Note that You will not be able to access Aranet PRO base station via external Internet WEB address while connected to the same local IP network.

In local network You should still use local IP address from [point 1](#).