

User manual

Data transmission using the MSR145W2D Data Logger

Notice: Please read the "Brief instructions MSR145W2D" that describes the basic functions of the data logger.

A supplementary quick reference guide "Additional instructions MSR145W2D in a WiFi network" for a quick overview as well as software updates and answers to frequently asked questions can be found on the download section at www.msr.ch/en/msr145w2d

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Introduction

Using the MSR145W2D (logger) enables you to:

- ✓ Download data (records) locally stored on the logger to a PC via USB cable.
- ✓ Store, analyse and download measurement data from MSR145W2D in MSR SmartCloud.
- ✓ Save current measurement data (since the MSR145W2D began actively connecting to the network) to a PC that is connected to the local area network.
- ✓ Display measurement data on the local area network on a connected PC in a browser and create snapshots (MSR LocalViewer).
- ✓ Process measurement data using WiFi integration of the logger in a LabView® environment (see separate instructions).

Background:

With an established WiFi connection, the logger always connects to a background process (server) that makes the measurement data available for its respective application (e.g. MSR SmartCloud or MSR LocalViewer). Either this server is accessed globally via an internet connection, as with the MSR SmartCloud, or it is accessed via the local area network to which the logger is connected via WiFi if the MSR LocalViewer or MSR LabViewer applications for displaying and processing measurement data are installed and open.

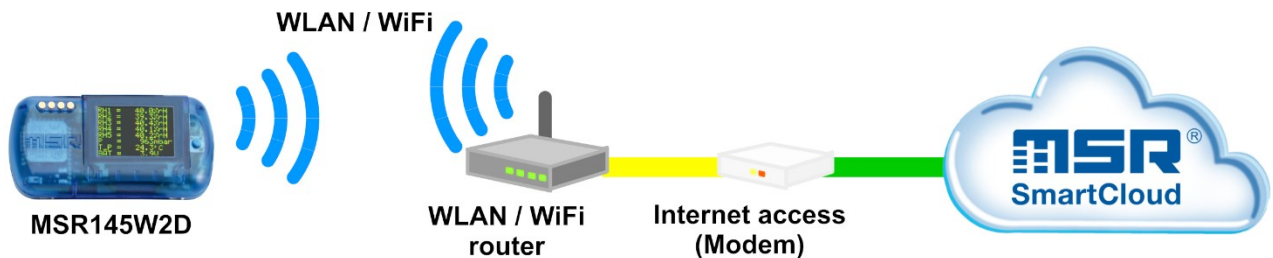
Notice:

Data stored in the logger via the Logger default function "Data Recording/Record" can only be read out via the direct connection logger - PC via USB cable.

1. Data transfer from MSR145W2D to MSR SmartCloud

Prior to transferring measurement data to the MSR SmartCloud, an MSR SmartCloud user account must be created and the data logger must be registered there. For instructions on how to proceed, please refer to the sheet with the activation code that you received with the data logger. Alternatively, the activation code for the data logger can be requested from the MSR customer service.

1.1. Sending data through an existing WiFi network to the MSR SmartCloud



Setup

Network (SSID)

Network Key (WPA2)

Destination (URL)

Network (SSID)

Network Key (WPA2)

Destination (URL): msrsmartcloud.com

For this option you do not require any additional hardware, as it uses the existing network infrastructure.

In order to be able to send the current measurement values and/or recorded data to the MSR SmartCloud via an existing network, the logger must be connected to this wireless local area network (WiFi). The network **must** have Internet access. If this is not possible, we recommend **variant 1.2**.

Enter the configuration data required by the data logger in the setup program of the MSR PC software under "WiFi":

- ✓ Connect the MSR145W2D to the PC using a USB cable (see also the MSR145W2D Quick Reference Guide www.msr.ch/en/msr145w2d)
- ✓ Start the MSR PC program (For download and installation: please refer to www.msr.ch/en/support/pcsoftware).
- ✓ Run setup.
- ✓ "WLAN/WiFi" tab
- ✓ Please enter settings (see **also Appendix A2**):
- ✓ Network (SSID): Name of the WiFi network in which the logger should be integrated.
- ✓ Network Key (WPA 2): Enter the corresponding WiFi password for WPA 2.
- ✓ Destination: URL -> **MSR Smartcloud** as target to choose.

Basic settings | Display | Channels | Format memory | WiFi | Logo

Data transfer | Setup | State

Information about the WiFi module

Version: v1.01 : CL26153 PF18 PR31 V1 B1 [1417ff8d]
MAC address: 80:7D:3A:86:01:C8

WiFi: local network

Network (SSID): **WiFi name**

Network Key (WPA2): **WiFi password** (only writeable)

Write key

Destination

URL or IP address:

MSR SmartCloud

For testing the WiFi connection for the first time, activate the WiFi of the logger connected to the cable via the **"Activating"** status tab. To check, the status of the WiFi connection of the logger must then be **"read"**.

Basic settings | Display | Channels | Format memory | WiFi | Logo

Data transfer | Setup | State

State:
Result:

OK

- ✓ If the "ready" and "WiFi on" indicators for status and result appear, the logger is successfully connected to your WiFi network and the SmartCloud server and the measurement data is sent.
- ✓ **For more details, tips and assistance, please refer to *Appendix A1, A2 and A3*.**
- ✓ Visit <https://www.msrsmartcloud.com/dashboard> and log in to see the measurement data.

The logger's WiFi module on the MSR145W2D is autonomously activated and deactivated for the period of use:

- ✓ Press the data logger button to activate the display. Press and hold the button again until the "WiFi" option appears.
- ✓ -> Release and press the button again: The data logger now connects to the WiFi network.
- ✓ Press the button again to deactivate the logger's WiFi module.
- ✓ By pressing and holding the button again, the "State" option appears. The OLED display shows the same setup status information as described above.

1.2. Sending data through an additional WiFi network to the MSR SmartCloud



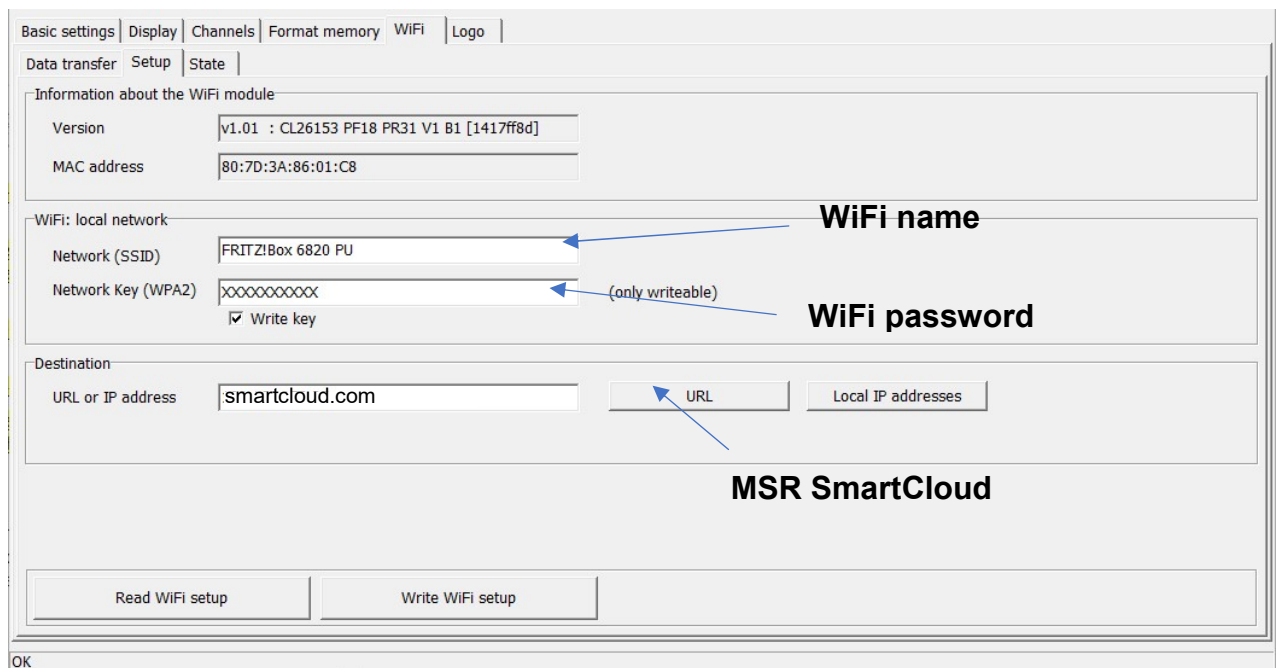
Setup

Network (SSID)	←	Network (SSID)	
Network Key (WPA2)	←	Network Key (WPA2)	
Destination (URL)	←	Destination (URL): msrsmartcloud.com	

In this option a standalone WiFi network and internet access using the mobile web are established – e.g. through a Fritz!Box. In order to be able to send the current measurement values and/or recorded data to the MSR SmartCloud via an independent network with a wireless connection established specifically for the measurement task, you must connect the logger to this wireless local area network (WiFi). The network **must** have Internet access (e.g. via LTE).

- **Appendix A4** provides a description of how to set up an independent WiFi connection using as an example the Fritz!Box 6820 LTE in conjunction with a corresponding mobile phone SIM card.
- Enter the configuration data required by the data logger in the setup program of the MSR PC software under "WiFi":
 - ✓ To set up the MSR145W2D connect a suitable PC to the independent network.
 - ✓ Start the MSR PC program (download and installation: refer to www.msr.ch/en/support/pcsoftware)
 - ✓ Connect the MSR145W2D to the PC using the USB cable (refer also to the MSR145W2D quick start guide, www.msr.ch/msr145w2d).

- ✓ Run setup.
- ✓ "WiFi" tab
- ✓ Please enter settings (see **also Annex A2**):
- ✓ Network (SSID): Name of the WiFi network in which the logger should be integrated.
- ✓ Network Key (WPA 2): Enter the corresponding WiFi password for WPA 2.
- ✓ Destination: **URL** -> **MSR Smartcloud** as target to choose.

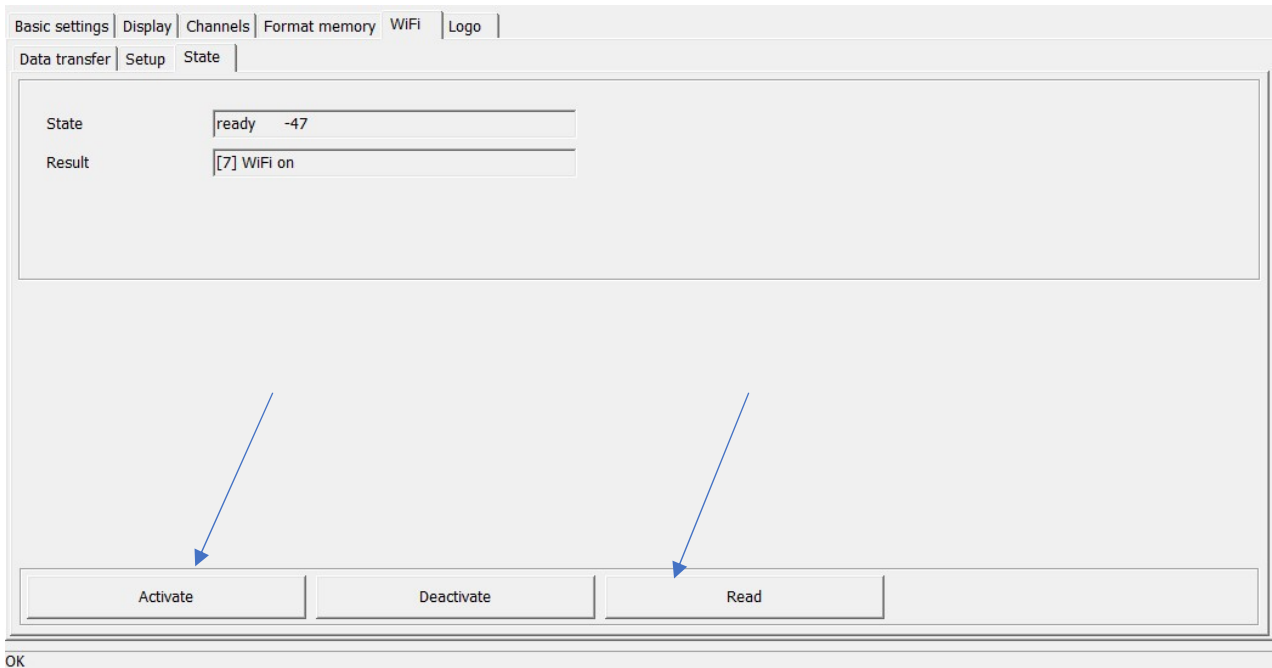


The screenshot shows the 'WiFi' configuration tab in the MSR SmartCloud interface. It includes the following sections:

- Information about the WiFi module:**
 - Version: v1.01 : CL26153 PF18 PR31 V1 B1 [1417ff8d]
 - MAC address: 80:7D:3A:86:01:C8
- WiFi: local network:**
 - Network (SSID): FRITZ!Box 6820 PU (labeled as **WiFi name**)
 - Network Key (WPA2): XXXXXXXXXXXX (labeled as **WiFi password** and *(only writeable)*)
 - Write key
- Destination:**
 - URL or IP address: smartcloud.com (labeled as **MSR SmartCloud**)
 - Buttons: URL, Local IP addresses
- Buttons: Read WiFi setup, Write WiFi setup

For testing the WiFi connection for the first time, activate the WiFi of the logger connected to the cable via the "**Activating** status" tab. To check, the status of the WiFi connection of the logger must then be "**read**".

- ✓ If the "ready" and "WiFi on" indicators for status and result appear, the logger is successfully connected to your WiFi network and the SmartCloud server and the measurement data is sent.



- ✓ For more details, tips and assistance, please refer to **Appendix A1, A2 and A3**.
- ✓ Visit <https://www.msrsmartcloud.com/dashboard> and log in to see the measurement data.

It is recommended to activate and deactivate the logger's WiFi module at the MSR145W2D itself for the period of use:

- ✓ Press the data logger button to activate the display. Press and hold the button again until the "WiFi" option appears.
- ✓ -> Release and press the button again: The data logger now connects to the WiFi network.
- ✓ Press the button again to deactivate the logger's WiFi module.
- ✓ By pressing and holding the button again, the "State" option appears. The OLED display shows the same setup status information as described above.

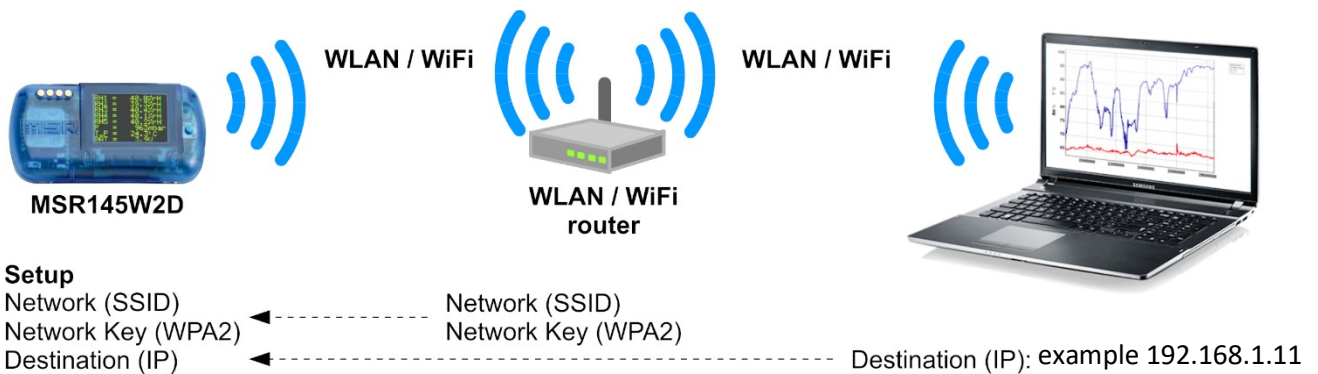
2. Data transmission from MSR145W2D to a local application (no internet access required)

The following MSR applications are available for processing your measurement data in the local area network:

- MSR LocalViewer
- MSR LabViewer

The MSR145W2D LocalViewer requires a release from the operating system to receive data from the MSR145W2D data loggers – check **Appendix 5**, please.

2.1. Sending data through an existing WiFi network to a local application



In this option you do not require any additional hardware, as it uses the existing network infrastructure. There is no Internet access needed, as the measuring data are sent to a local application directly.

Various local applications are available in the download area at www.msr.ch/de/msr145w2d.

Notice:

Before commissioning on the local system, it is helpful to save the current installation files (ZIP archives) for the MSR PC software and the MSR application on a mobile data storage device in order to make them available to the PC that you will subsequently use.

- Please install the latest version of the MSR application (see above) on your PC (a link to the MSR website with the latest version can be found in the download section at www.msr.ch/de/msr145w2d)
- Please start the application. This will open e.g. the MSR LocalViewer window in your standard browser.

- To send the current measurement values to the local application via an existing network, you must connect the logger to this wireless local network (WiFi). The network does not need to have Internet access.
- Enter the configuration data required by the data logger in the setup program of the MSR PC software under "WiFi":
 - ✓ To set up the MSR145W2D connect a suitable PC to the independent network.
 - ✓ Start the MSR PC program (download and installation: refer to www.msr.ch/en/support/pcsoftware)
 - ✓ Connect the MSR145W2D to the PC using the USB cable (refer also to the MSR145W2D quick start guide, www.msr.ch/msr145w2d).
 - ✓ Run setup.
 - ✓ "WiFi" tab
 - ✓ Please enter settings (see **also Annex A2**):
 - ✓ Network (SSID): Name of the WiFi network in which the logger should be integrated.
 - ✓ Network Key (WPA 2): Enter the corresponding WiFi password for WPA 2.
 - ✓ Destination: **URL -> local IP-addresses** as target to choose.

For testing the WiFi connection for the first time, activate the WiFi of the logger connected to the cable via the "**Activating**" status" tab. To check, the status of the WiFi connection of the logger must then be "**read**".

If the "ready" and "WiFi on" indicators for status and result appear, the logger is successfully connected to your WiFi connection and the local server (background process of the application) and the measurement data is sent.

✓ **For more details, tips and assistance, please see Appendix A1, A2 and A3**



It is recommended to activate and deactivate the logger's WiFi module at the MSR145W2D itself for the period of use:

- ✓ Press the data logger button to activate the display. Press and hold the button again until the "WiFi" option appears.
- ✓ -> Release and press the button again: The data logger now connects to the WiFi network.
- ✓ Press the button again to deactivate the logger's WiFi module.
- ✓ By pressing and holding the button again, the "State" option appears. The OLED display shows the same setup status information as described above.

In the selected MSR application, please select the relevant logger to display the current measurement data ("Select Logger"). This displays the current measurement data received from the WiFi connection logger router since it was established. This data is also stored on the PC as a log file (.CSV) (-> right click on the MSR LocalViewer icon in the **task bar** -> "open logs").

Notice:

If the logger you are looking for is not listed, this may be for the following reason:

- No WiFi connection between the MSR145W2D and the network on which the PC running the MSR application is located.
 - > Please check the WiFi connection logger - router - PC, see above.
 - > the wrong IP address may have been selected in the WiFi setup (see above)

2.2. Sending data through an additional WiFi network to a local application



Setup

Network (SSID) ← Network (SSID)

 Network Key (WPA2) ← Network Key (WPA2)

 Destination (IP) ← Destination (IP): example 192.168.1.11

In this option an standalone WiFi network is established – e.g. through a Fritz!Box. Internet access is not required. To be able to send the current measured values to the local PC application via an independent network established especially for the measuring task, you must connect the logger to this wireless local network (WLAN/WiFi). No Internet access is required.

Various local applications are available in the download area at www.msr.ch/en/msr145w2d

Appendix A4 provides a description of how to set up an independent WiFi connection using as an example the Fritz!Box 6820 LTE.

Notice:

Before commissioning on the local system, it is helpful to save the current installation files (ZIP archives) for the MSR PC software and the MSR application on a mobile data storage device in order to make them available to the PC that you will subsequently use.

- Please install the latest version of the MSR application (see above) on your PC (a link to the MSR website with the latest version can be found in the download section at www.msr.ch/en/msr145w2d)
- Please start the application. This will open e.g. the MSR LocalViewer window in your standard browser.

- To send the current measurement values to the local application via a standalone wireless network, you must connect the logger to this wireless local network (WiFi). The network does not need to have Internet access.
- Enter the configuration data required by the data logger in the setup program of the MSR PC software under "WiFi":
 - ✓ To set up the MSR145W2D connect a suitable PC to the independent network.
 - ✓ Start the MSR PC program (download and installation: refer to www.msr.ch/en/support/pcsoftware)
 - ✓ Connect the MSR145W2D to the PC using the USB cable (refer also to the MSR145W2D quick start guide, www.msr.ch/msr145w2d).
 - ✓ Run setup.
 - ✓ "WiFi" tab
 - ✓ Please enter settings (see **also Appendix A2**):
 - ✓ Network (SSID): Name of the WiFi network in which the logger should be integrated.
 - ✓ Network Key (WPA 2): Enter the corresponding WiFi password for WPA 2.
 - ✓ Destination: **URL -> local IP-addresses** as target to choose.

Basic settings | Display | Channels | Format memory | **WiFi** | Logo

Data transfer | Setup | State

Information about the WiFi module

Version: v1.01 : CL26153 PF18 PR31 V1 B1 [1417ff8d]

MAC address: 80:7D:3A:86:01:C8

WiFi: local network

Network (SSID): FRITZ!Box 6820 PU **WiFi name**

Network Key (WPA2): XXXXXXXXXXXX (only writeable) **WiFi password**

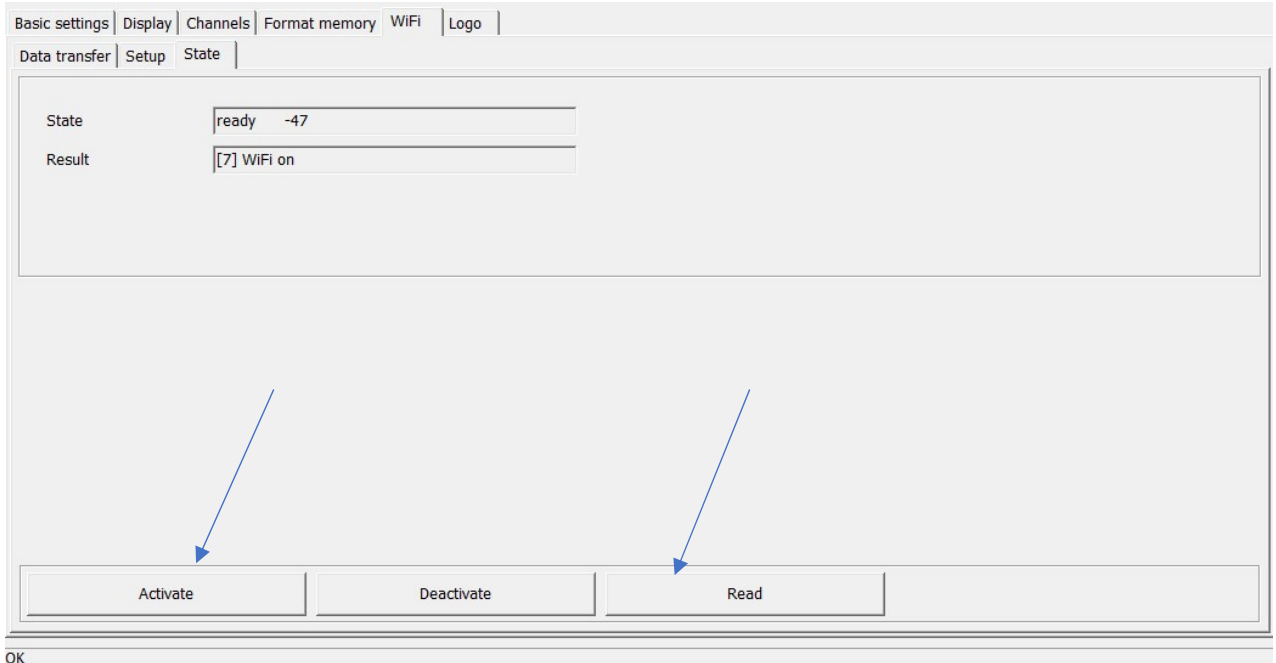
Write key

Destination

URL or IP address: 192.168.178.25 **current IP address of the PC, local area network**

OK

For testing the WiFi connection for the first time, activate the WiFi of the logger connected to the cable via the "**Activating** status" tab. To check, the status of the WiFi connection of the logger must then be "**read**".



If the "ready" and "WiFi on" indicators for status and result appear, the logger is successfully connected to your WiFi connection and the local server (background process of the application) and the measurement data is sent.

✓ **For more details, tips and assistance, please see Appendix A1, A2 and A3**

It is recommended to activate and deactivate the logger's WiFi module at the MSR145W2D itself for the period of use:

- ✓ Press the data logger button to activate the display. Press and hold the button again until the "WiFi" option appears.
- ✓ -> Release and press the button again: The data logger now connects to the WiFi network.
- ✓ Press the button again to deactivate the logger's WiFi module.
- ✓ By pressing and holding the button again, the "State" option appears. The OLED display shows the same setup status information as described above.

In the selected MSR application, please select the relevant logger to display the current measurement data ("Select Logger"). This displays the current measurement data received from the WiFi connection logger router since it was established. This data is also stored on the PC as a log file (.CSV) (-> right click on the MSR LocalViewer icon in the **task bar** -> "**open logs**").

Notice:

If the logger you are looking for is not listed, this may be for the following reason:

- No WiFi connection between the MSR145W2D and the network on which the PC running the MSR application is located.
-> Please check the WiFi connection logger - router - PC, see above.
-> the wrong IP address may have been selected in the WiFi setup (see above)

Should you have any further questions, please contact the point of sale where you purchased your MSR data logger. More than 90 MSR sales partners in over 50 countries around the world are at your disposal to give professional advice. www.msr.ch/en/contact

We wish you every success in your measuring tasks.

MSR Electronics GmbH

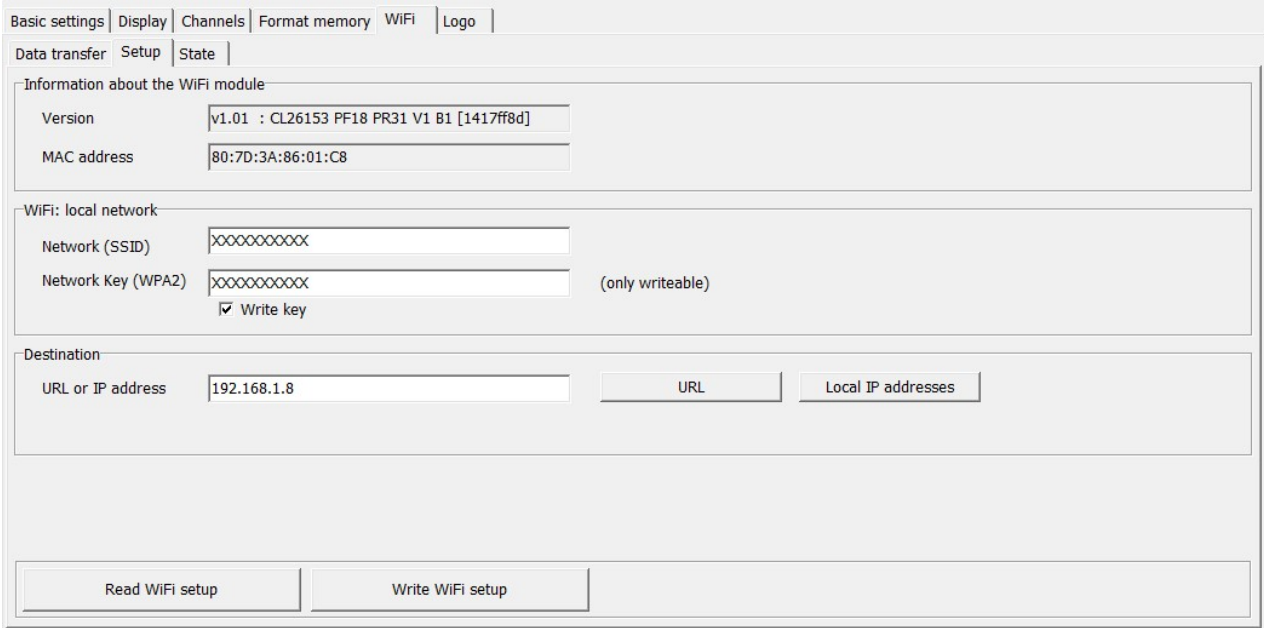
Appendix A1: Connect PC to the WiFi network

- Connect the PC to the WLAN/WiFi in which the MSR145W2D ("Logger") should be integrated. To do this select the relevant network (SSID) under "Network" in Windows® and enter the password. Remember both and have them at hand.
- As an alternative the PC can also be connected to the relevant router using a network cable.
- If a network connection has been established, please determine the network address (IP address) assigned to the PC:
- For example: In Windows® open the command prompt / right click on the Windows symbol -> select Windows Powershell -> enter "ipconfig" and press "Enter". The IPv4 address of the PC and the standard gateway (the address of the network/WiFi router in which the PC is located and in which the logger should be integrated).
- Please remember the IPv4 address of the PC.

Notice: It is recommended to make the IPv4 address of the PC in the router static or to assign a name to the PC in the network. For a setup example, please refer to "Example" below: Local area network with the Fritz!Box 6820 LTE" - please refer to **Appendix A4**.

Appendix A2: WiFi setup in the MSR PC program

- Connect the MSR145W2D to the PC using a USB cable
- Start the MSR PC program (download and installation: refer to www.msr.ch/en/support/pcsoftware)
- Run setup
- "WLAN/WiFi" tab
- Enter settings:



Basic settings | Display | Channels | Format memory | **WiFi** | Logo

Data transfer | **Setup** | State

Information about the WiFi module

Version: v1.01 : CL26153 PF18 PR31 V1 B1 [1417ff8d]

MAC address: 80:7D:3A:86:01:C8

WiFi: local network

Network (SSID): XXXXXXXXXXXX

Network Key (WPA2): XXXXXXXXXXXX (only writeable)

Write key

Destination

URL or IP address: 192.168.1.8 URL Local IP addresses

Read WiFi setup Write WiFi setup

OK

- Version: For information only, no input required.
- MAC address: For information purposes, the logger-specific MAC address (media access control address) is entered here, which acts as the hardware address of the logger network adapter, which serves as the unique identifier of the logger in the computer network.
- Network (SSID): Name of YOUR WiFi network in which the logger should be integrated.
- Network Key (WPA 2): Enter the WPA 2 type WiFi password.
Notice: A password already stored in the logger will not be read out by the setup program and will be overwritten by entering a password (to enter a password, please check "Write key" box).
- Destination: Enter the global URL of the server name (e.g. msrsmartcloud.com - button "URL") to which the measurement data should be sent (Internet connection required). As an alternative, the IPv4 address of the PC (determined, Appendix A1) to which the measured logger data should be sent can be entered here. By selecting the "Local IP addresses" button, the local PC network addresses directly available in the network will be suggested.

Notice:

The local network address IPv4 is required to be able to transmit and display current measurement data on this PC, transmitted via WiFi, using the web browser available on the PC and e.g. the **MSR LocalViewer** software (must be downloaded and installed separately).

- The setup settings are transferred to the logger by clicking the "**Write WiFi setup**" button.

Notice: clicking on "Read WiFi Setup" will read out the WiFi settings from the connected logger, excluding the WiFi password.

For system administrators: The MSR145W2D supports a 2.4GHz WiFi (IEEE 802.11 b/g/n) and dynamic IP address assignment via DHCP server. When using a URL, an additional DNS server (port 53) is required. Port 9294 (TCP and UDP) is used for data transmission.

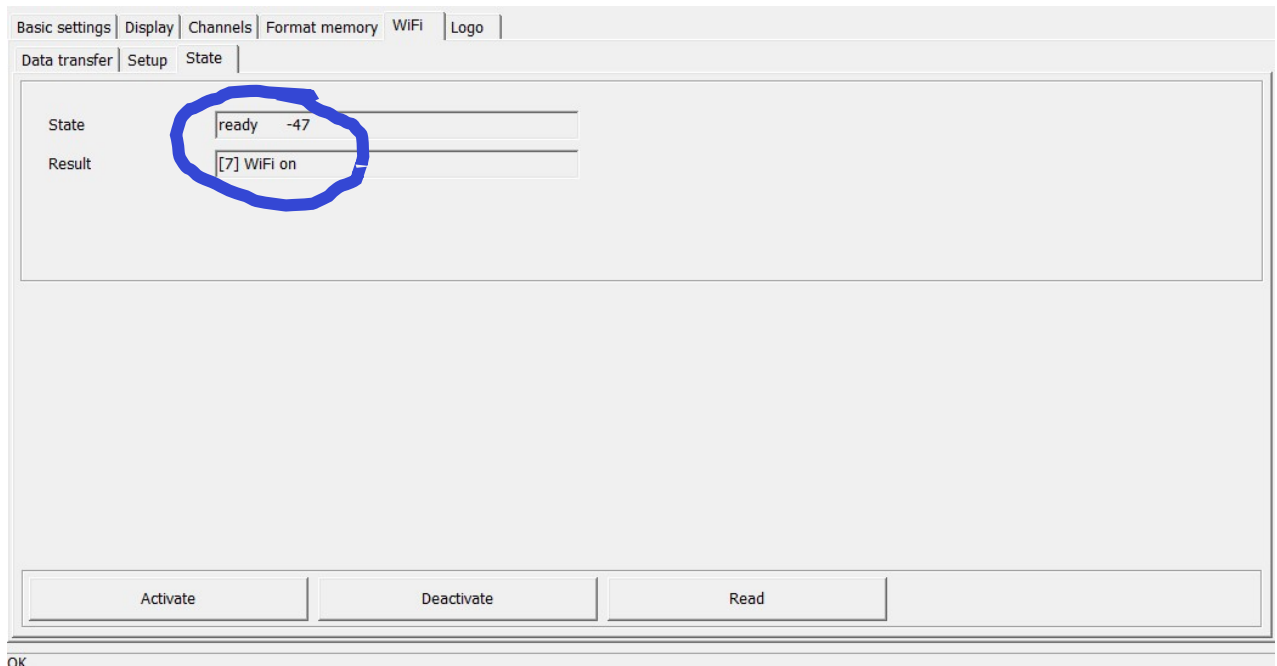
➤ TIP regarding the MSR LocalViewer:

- ✓ A link to the current version of the MSR LocalViewer software can be found in the download section at www.msr.ch/en/msr145w2d
- ✓ After the PC has been launched and the MSR LocalViewer has been started, the MSR LocalViewer icon in the task bar (right click) must be used to continue operating the B/W, to close the MSR LocalViewer or to display the page again. A link to the recorded data in the Explorer can be found there as well ("Open Logs").

Appendix A3: Display WiFi connection

To establish the WiFi connection please proceed as follows:

- Connect the MSR145W2D to the WiFi network (see Appendix A2)
- For an initial test of the WiFi connection, the WiFi of the logger connected to the cable must be activated using the "Activating status" tab. To check, the status of the WLAN connection of the logger must then be "Read".



- The following indicators for the WiFi status ("State") are relevant:

State	Meaning
Inactive	WiFi module is switched off.
Scanning ...	Searching for a WiFi network (SSID). -> If necessary, please check whether the relevant WiFi network is switched on.
Joined XX ¹	Joined a WiFi network. SSID and password are correct.
Connected XX ¹ :	Connected to WiFi, IP address received.
Ready XX ¹ :	The MSR145W2D is successfully connected to the destination, e.g. the MSR SmartCloud or local application and data will be transmitted.
Retry ...:	The logger's WiFi module could not establish a connection and was automatically switched off. A new connection attempt will be initiated.
Get version:	Version number of the WiFi module will be queried.

¹ XX: RSSI value (indicator for the reception field strength; > -70 = good, < -80 = bad)

- The following indicators for the WiFi connection result ("Result") are relevant:

Result	Meaning
<u>Startup xxx:</u>	WiFi module cannot be initialised. Please repeat the procedure or switch on WiFi module (if "inactive")!
<u>Wrong SSID:</u>	No WiFi available or incorrect network name (SSID). Please check the network name.
	-> Please switch off and on the Logger WiFi module and reduce the distance between the logger and the WiFi transmitter.
	-> Please check the correct SSID (network name) and/or re-enter the password and save ("write") the WiFi setup once again.
<u>Wrong Key:</u>	-> Please check your router whether the MAC filter is deactivated or the correct MAC address of the logger has been entered in the MAC list.
	Wrong password (of type WPA2). Please re-enter the password and save ("Write") the WiFi setup once again.
<u>No IP assigned:</u>	No IP address received from the network router or Fritz!Box (for example). Please check the firewall settings of your router.
<u>Unknown URL:</u>	Destination (URL) unknown. Please check URL and DNS server.
<u>No Server:</u>	Data is not processed by the destination.
<u>No transfer:</u>	The sent data is not confirmed by the destination.
	-> Depending on the entry made in the settings (setup), either the MSR SmartCloud is not accessible (e.g. due to the router's missing internet connection) or the MSR LocalViewer (as a local server in the background) is not activated in the local area network/PC with the assigned IPv4 address. It is possible that the IPv4 address of the local PC is not static and has changed after the PC or router has been restarted. Please compare the IPv4 address of the PC (with "ipconfig", see below) with the entry in the Logger WLAN/WiFi setup.
<u>Nothing to do:</u>	There is no data to be transferred.

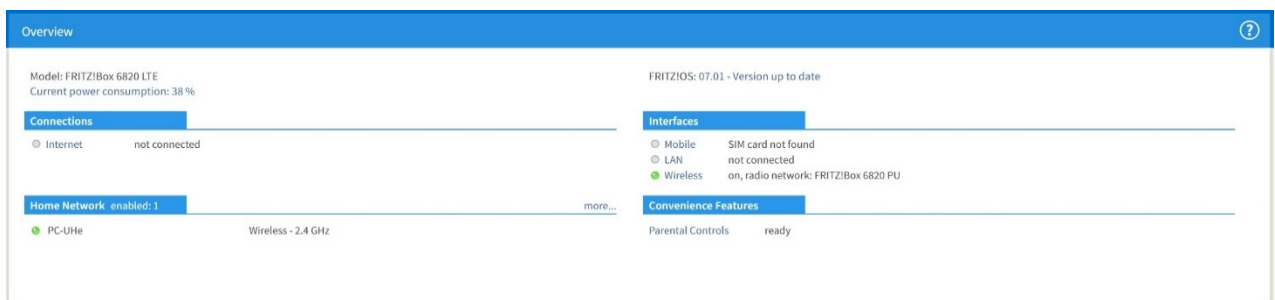
Appendix A4: Additional network using the Fritz!Box 6820 LTE

In order to set up an additional network, optionally with internet access via mobile radio, for measurement tasks with the MSR145W2D, the AVM Fritz!Box 6820 LTE for example is suitable. This and an appropriate SIM card that can be used in many countries are available on request from MSR Electronics GmbH.

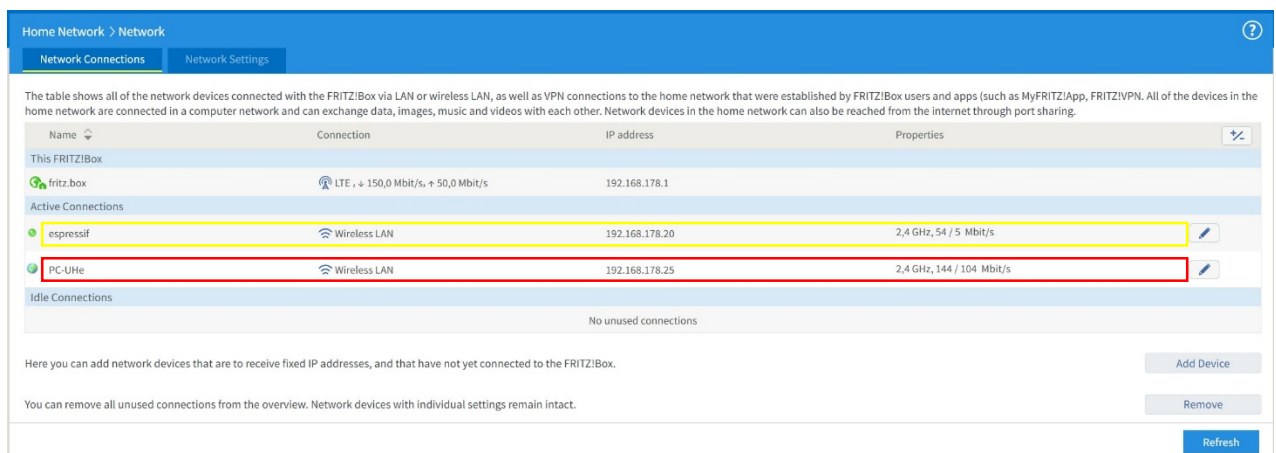
Basic configuration:

- (1) Commissioning and assignment of the SSID (WiFi name) of the modem as described in the modem operating manual.
- (2) Activate the WiFi connection of the MSR145W2D.
- (3) Connect the PC to the network (cable or WiFi) - see also **Appendix A1**.

Result:



- (4) Run Fritz!Box setup with "fritz.box" in the web browser and then log in with the Fritz!Box password.
- (5) In "Home network > network" the actively used PC should be listed with name and IP address. The active data logger is marked with "MSR" and the serial number or with "espressif" for older models.



- (6) The details of the user or network device can be viewed or adjusted in "Edit (pencil icon)".

- (7) The same IPv4 address can also be assigned to the network device, which means that the IPv4 address of the PC stored in the MSR145W2D during the setup process is always assigned to the PC by the modem/router (e.g. after a network reboot).

Details for [redacted]

This page shows detailed information on the network device or user.

Name: [redacted]

IP Address: 192.168.178.25

Always assign this network device the same IPv4 address
 Permit independent port sharing for this device
This option allows this network device to independently open ports for sharing via PCP or UPnP.

Connection to home network

PC-UHe — *WLAN* — fritz.box

- (8) The WiFi access of WiFi devices can be controlled under "WiFi > Security". By default, all devices are allowed WiFi access.

Restricting wireless LAN access

The list shows the wireless devices that are currently connected to the FRITZ!Box home network directly or via Mesh WiFi, or devices that are known from previous connections. You can restrict wireless access to known wireless devices (MAC address filter).

Name	MAC Address	
Home network FRITZ!Box 6820 PU	[redacted]	<input type="button" value="x"/>
Unconnected devices		
PC-192-168-178-20	[redacted]	<input type="button" value="x"/>

Allow all new wireless devices
 Do not allow any new wireless devices

- (9) If a restriction of the WiFi access is desired, this will be possible (see above) In this case the MSR145W2D must also be entered with its MAC address in the mask shown:

FRITZ!Box 6820 LTE

Add Device

Enter a name and the MAC address of the network device.

Name: [redacted]

MAC Address: [redacted]

Enter the IP address to be assigned to the network device as a fixed address.

IP address: 192 . 168 . 178 . 21

- (10) To optionally connect the Fritz!Box to the Internet, the mobile phone network can be used. To accomplish this a SIM card from a suitable network operator must be inserted into the modem.

The screenshot shows the 'Overview' page of the Fritz!Box web interface. It displays the following information:

- Model:** FRITZ!Box 6820 LTE
- Current power consumption:** 51 %
- FRITZ!OS:** 07.01 - Version up to date
- Connections:** Internet is connected since 07.03.2020, 21:28. Throughput: + 150,0 Mbit/s + 50,0 Mbit/s.
- Home Network:** enabled: 1. A PC-UHe is connected via Wireless - 2.4 GHz.
- Interfaces:** Mobile is connected (+ 150,0 Mbit/s + 50,0 Mbit/s). LAN is not connected. Wireless is on, radio network: FRITZ!Box 6820 PU.
- Convenience Features:** Parental Controls are ready.

- (11) In order to avoid having to enter the SIM PIN again after a restart of the modem, it is recommended to switch off the PIN protection of the SIM card.

- (12) In order to use the SIM card internationally, roaming must be permitted.

Warning: If you enable roaming, additional charges may apply. Please contact your provider for details.

The screenshot shows the 'Internet > Account Information' settings page. It includes the following sections:

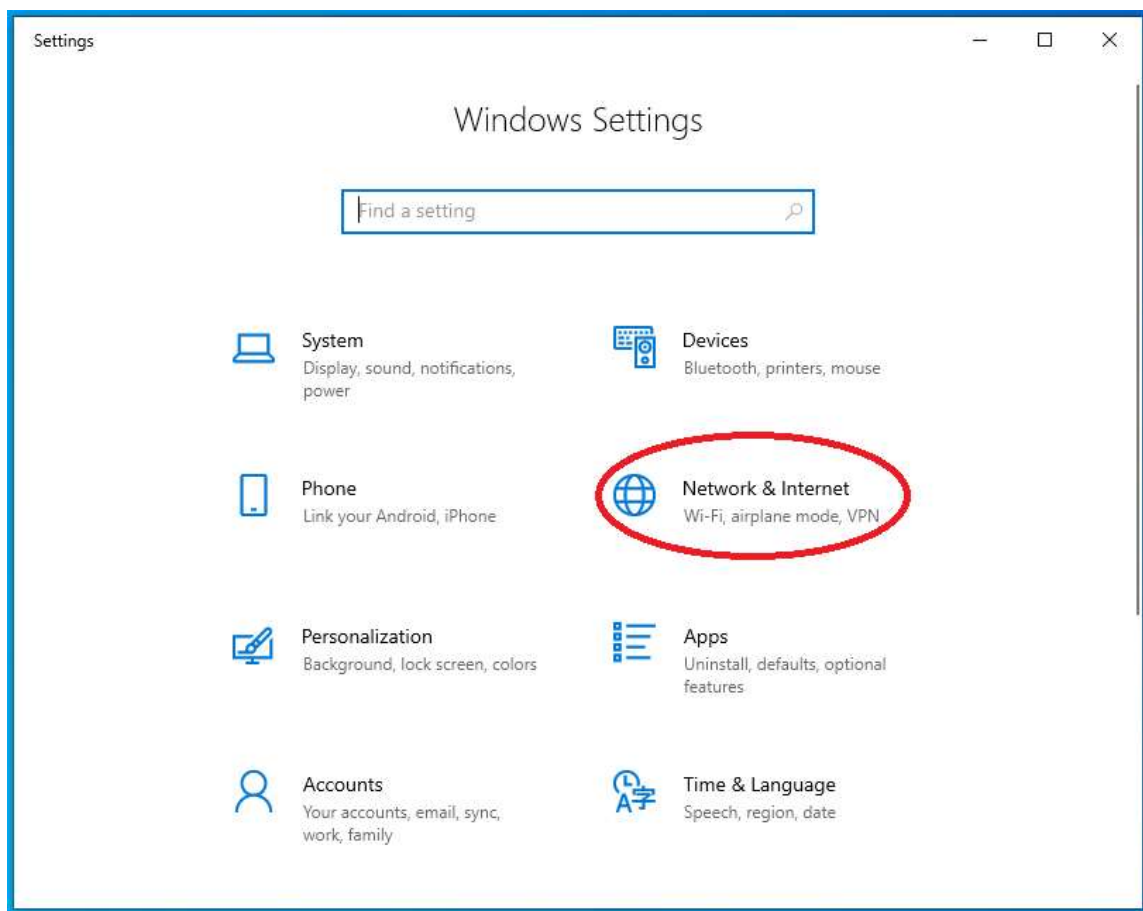
- settings** | **AVM Services**
- On this page you can configure the data of your internet connection, and adjust the connection if needed.
- Select your internet service provider.
 - Internet service provider: other internet service provider
 - Name: [input field]
- Use standard access point name (APN)
 - Access point: [input field]
 - Normally no account information (user/password) is required. Enter this information only if your provider requires that you submit account information.
 - Use account information
 - User: [input field]
 - Password: [input field]
- Your SIM card is ready for operation.
- If no LTE network is available from your provider, the FRITZ!Box can establish the connection using the network of another provider, as long as this provider supports roaming. Attention: If you enable roaming, additional costs may accrue. Contact your provider for details.
 - Permit roaming
 - Roaming via provider: Automatically
- Disable PIN protection** (indicated by a blue arrow pointing to the left)

Appendix A5: How to open a port in Windows 10 Firewall

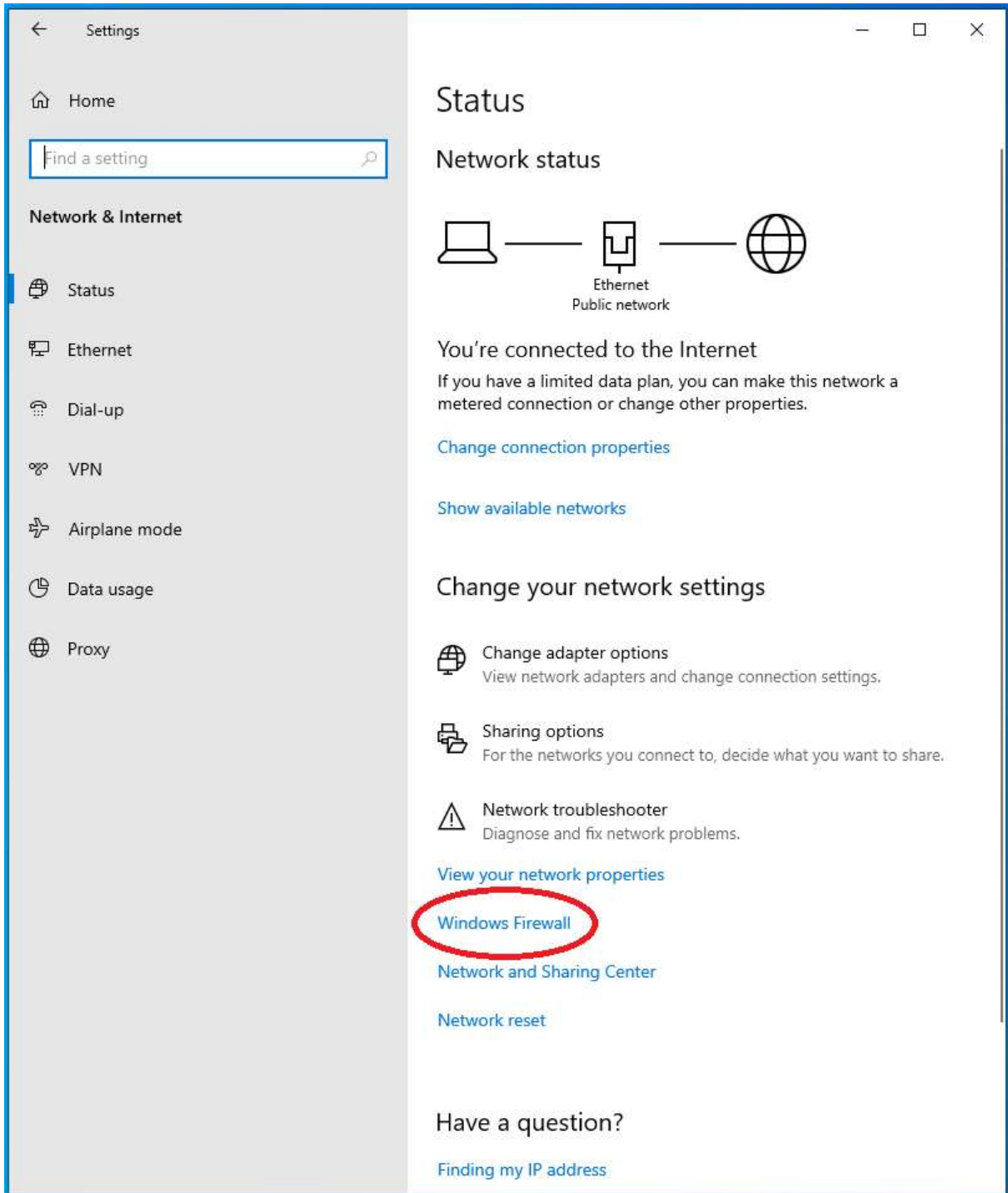
The MSR145W2D LocalViewer requires a release from the operating system to receive data from the MSR145W2D data loggers. However, on Windows 10, the Windows Defender Firewall does not automatically grant this share. The first time the LocalViewer is started, the firewall asks for permission to share. If this is not agreed, the LocalViewer cannot receive and display data.

Subsequently, the release can be granted as follows:

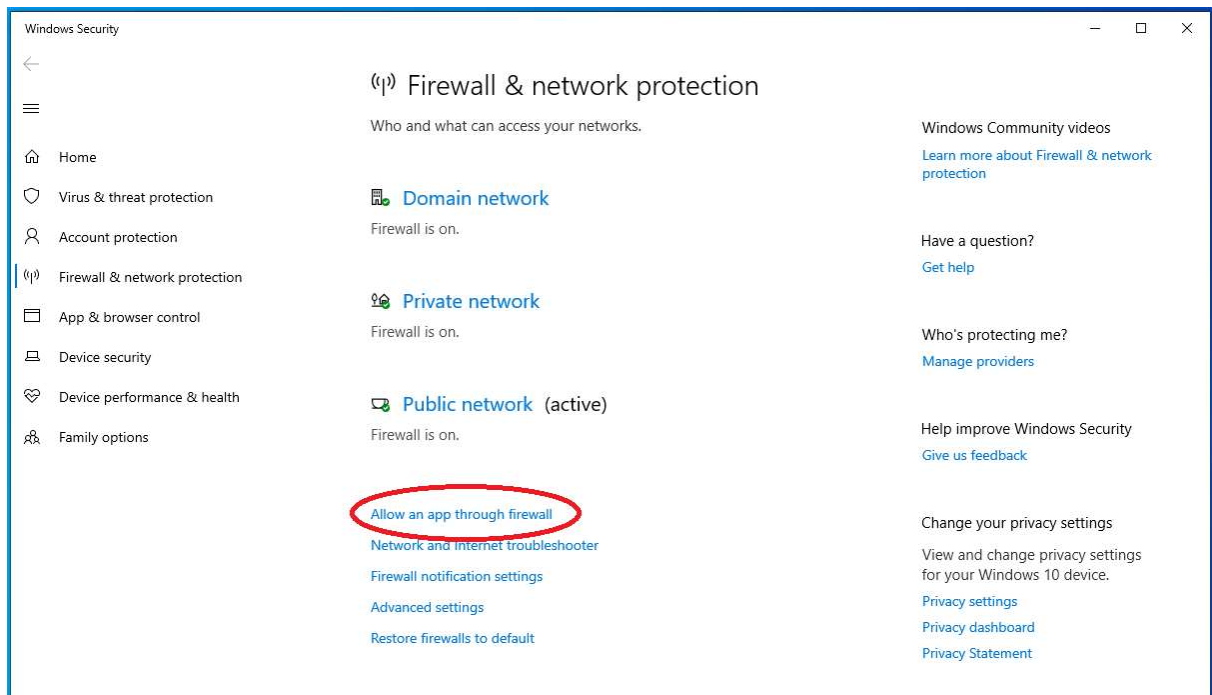
1. Use the Windows startup button to go to the settings.
2. Select "Network and Internet".



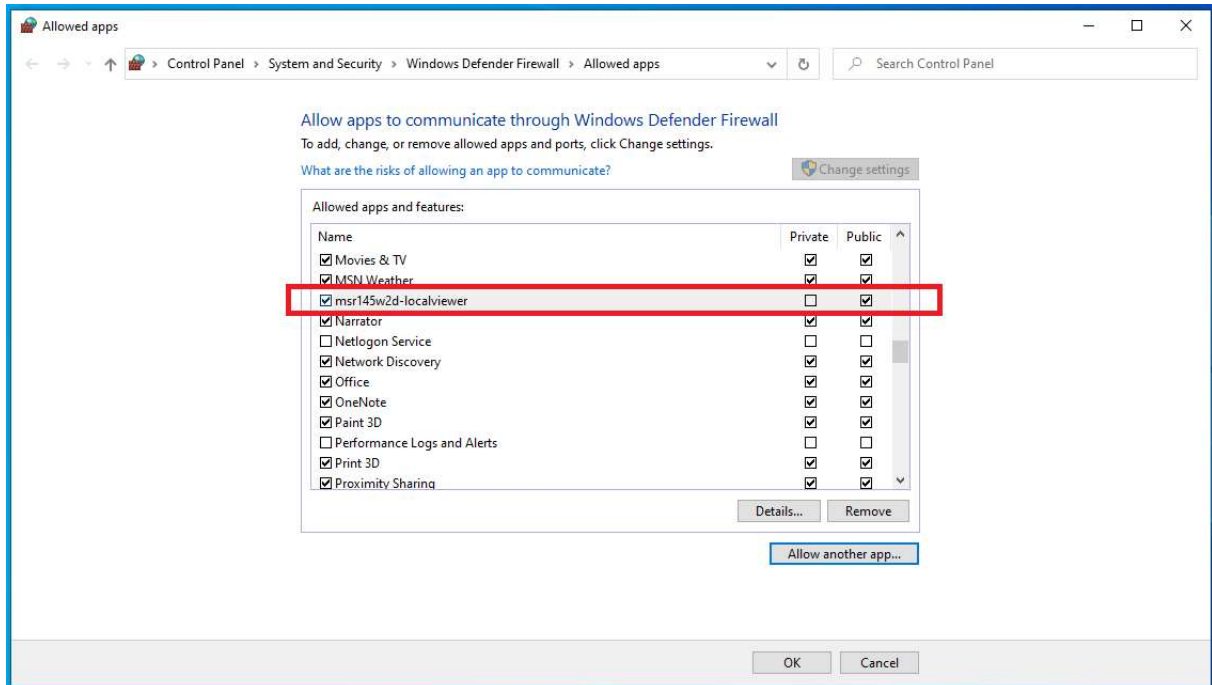
3. Select "Windows Firewall".



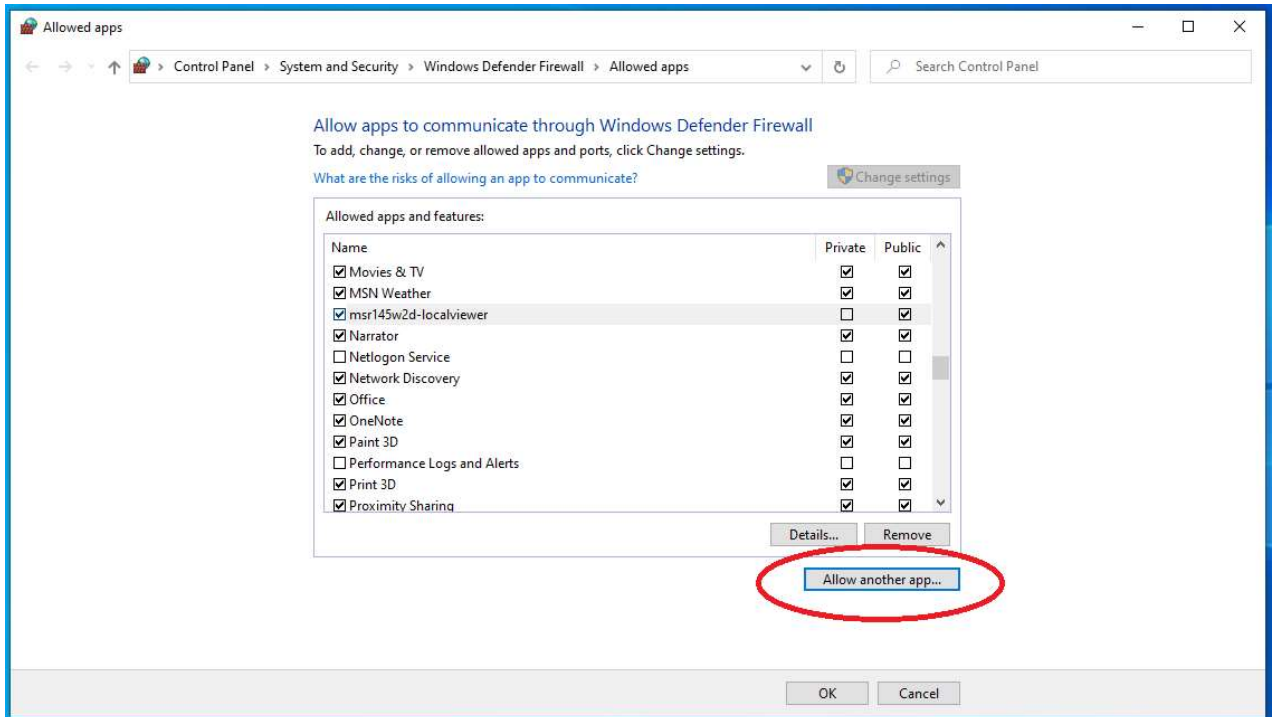
4. Select "Allow access from app through firewall".



- The LocalViewer must now be listed under "msr145w2d-localviewer". The corresponding check marks allow the release in the respective network. If the LocalViewer is not on the list, please go to point 6.



6. Select "Allow another app." to add the LocalViewer to the exception list.



More information on the MSR145W2D as well as software updates and answers to frequently asked questions can be found on the download section at www.msr.ch/en/msr145w2d