alphatronics

Operating instructions

alphatronics STREAM 5G EVO

TABLE OF CONTENTS

1. INTRODUCTION

Congratulations and thank you for purchasing this product. This user manual is designed to help you use and operate the product. Please read the instructions carefully before using the product. Keep the manual for the entire service life of the product and pass it on to subsequent users or owners. Please check the package contents for completeness and ensure that there are no faulty or damaged parts.

1.1 Intended use

This device is a powerful 5G router that has been specially developed for mobile use and reliably receives and transmits both 4G (LTE) and 5G signals. Two physical SIM card slots enable flexible operation at home and abroad – for example, by using local prepaid cards.

Setup and configuration are conveniently carried out via a browser-based web interface or, alternatively, via the free „Teltonika RutOS" app. Thanks to the integrated Auto-APN function, the device automatically recognises the access data of most well-known European network operators, so that manual entry is usually not necessary. In addition, the router can dial into existing local Wi-Fi networks and offers advanced features such as VPN tunnel setup, making it suitable for security-critical applications or use abroad.

The scope of delivery includes a comprehensive accessory package with a powerful outdoor antenna and rod antennas for indoor use. This gives you maximum flexibility in a wide range of application scenarios – whether in a motorhome, truck or, , in stationary operation. Power can be supplied either via 12 V or 24 V on-board voltage, and a power supply unit for connection to a 230 V socket is also included in the scope of delivery.

1.2 Structure of the operating instructions

This user manual has been deliberately designed to be more detailed, as it describes both setup via the Teltonika RutOS app and directly via the web interface. Depending on your needs, you can jump directly to the chapter that is relevant to you.

Chapters 7 and 8 describe setup via the web interface using a laptop. From Chapter 8.1 onwards, setup using the Teltonika RutOS smartphone app is explained.

Important! In order to set up the device exclusively via the app, the PIN protection of the SIM card must first be removed (e.g. via a smartphone). If this is not the case, you will need to log in to the web interface to enter the SIM PIN there.

At the time of writing, this function was only available via the web interface. Deactivating SIM protection via a smartphone is explained in Chapter 8.3.5.

We recommend that more experienced users set up the router via the web interface, as this offers more advanced settings options. For customers who are using a router for the first time, we recommend setting up the router via the app, as this is limited to the basic functions and is particularly user-friendly.

2. SAFETY INSTRUCTIONS

For your own safety and to prevent unnecessary damage to your device, please read and observe the following safety instructions:

- This product is intended for private, non-commercial use.
- You are solely responsible for how you use your device and for all consequences of its use. Use of the device is subject to safety measures to protect users and their environment.
- Like all electrical products, this product should be kept out of the reach of children!
- This product is not intended for use by persons (including children) with limited physical, sensory or mental capabilities, or lack of experience and/or knowledge, unless they are supervised by a person responsible for their safety or have been instructed by you on how to use the device.
- The product must be installed in accordance with the manufacturer's instructions.
- Only use approved accessories! Do not use the product with incompatible products or accessories.
- Always handle the product and its accessories with care and store them in a clean and dust-free place.
- Do not paint the product or its accessories.
- Do not use the product in a closed environment or in places with poor heat dissipation.
- Protect the product from moisture, water, rain, snow or spray and only use the product in dry environments. The product has an IP30 protection rating.
- Never expose the product to high temperatures or extreme cold. Please refer to the operating temperature specified in the technical data.
- Do not expose the product or its accessories to open flames.
- Do not deliberately drop the product or expose it to extreme shocks.
- Arrange power, antenna and Ethernet cables so that no one can step on them or place other objects on them.
- Do not disassemble the product into its individual parts. The device does not contain any components that can be serviced by the user. Improper reassembly may result in electric shock or malfunction.
- Do not modify the product, as this will void any warranty claims.
- Never open the device! Any repair attempts by unqualified persons can be dangerous and void the warranty!
- Do not operate the product outside the specified performance limits.
- Ensure that the voltage and rated current of the power source meet the requirements of the device. Do not connect the device to an unsuitable power source.
- If your device or its accessories have been submerged in water, punctured or subjected to a heavy fall, do not use it until it has been checked by an authorised service centre.

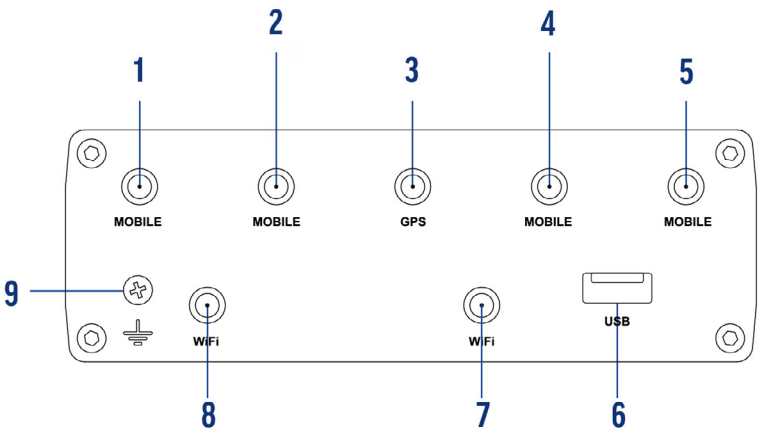
- Like any wireless device, this device operates using radio signals that cannot guarantee a connection under all conditions. Therefore, you should never rely solely on a wireless device for emergency communications or otherwise use the device in situations where the interruption of data connectivity could result in death, personal injury, property damage, data loss or other losses.

For regulatory and safety reasons (CE), you must not modify and/or alter the product. If you use the product for purposes other than those described above, the product may be damaged. In addition, improper use may cause hazards such as short circuits, fire, electric shock, etc.

3. SCOPE OF DELIVERY

- 5G LTE / WIFI router
- 12V connection cable with cigarette lighter plug
- 230V power supply
- High-performance outdoor antenna in white ABS housing
- Mounting accessories (outdoor antenna) for different roof thicknesses
- 6x rod antennas for screw mounting (4x LTE + 2x WIFI)
- GPS antenna with 3M adhesive pad
- Mounting clip for attaching the router
- 1.5 m LAN cable
- 2x SIM card adapters + SIM needle
- Mounting & operating instructions

4. PRODUCT IN DETAIL



1 LTE antenna connection (SIM slot 1)

2 LTE antenna connection (SIM slot 1)

3 GPS antenna connection

4 LTE antenna connection (SIM slot 2)

5 LTE antenna connection (SIM slot 2)

6 USB port

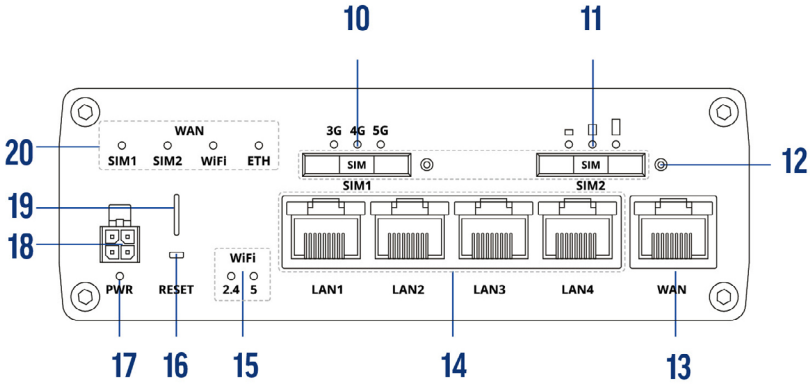
7 WIFI antenna connection

8 WIFI antenna connection

9 Screw for ground connection

Information

Connectors **1, 2, 3, 4** and **5** are RP-SMA connectors, while connectors **7** and **8** are SMA connectors.



10 SIM card slot (SIM 1)

11 SIM card slot (SIM 2)

12 SIM button to eject SIM slot

13 1x WAN connection

14 4x LAN port

15 Status LED WIFI (2.4 GHz + 5 GHz)

16 Reset button (access only with SIM needle)

17 Power status LED

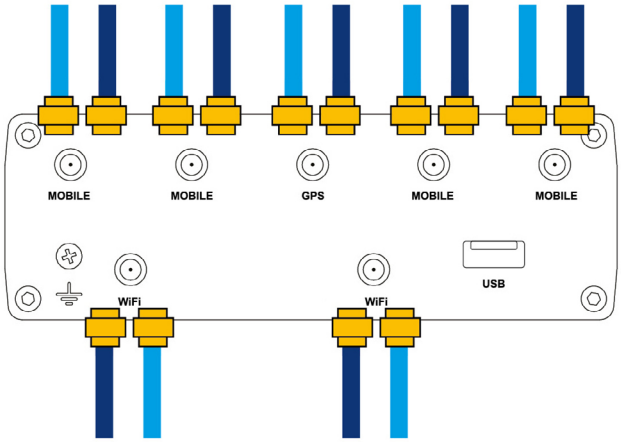
18 Power supply connection (PWR)

19 Holder for the SIM needle

20 Status LEDs Interfaces

5. INITIAL START-UP

5.1 General connection diagram



Variant 1 (light blue) connection via external antenna

Variant 2 (dark blue) connection via indoor antenna

⚠ Important safety information regarding the choice of installation location!

If you do not have sufficient expertise, be sure to have the external antenna installed by a specialist company, as otherwise water could penetrate the interior of the vehicle through the installation site! alphatronics GmbH accepts no liability for this!

⚠ Note! Distance between router and antenna

When installing the external antenna, pay attention to the distance to the router. The supplied, preconfigured antenna cable has a maximum length of 2.0 m. Therefore, place the router within this radius of the external antenna.

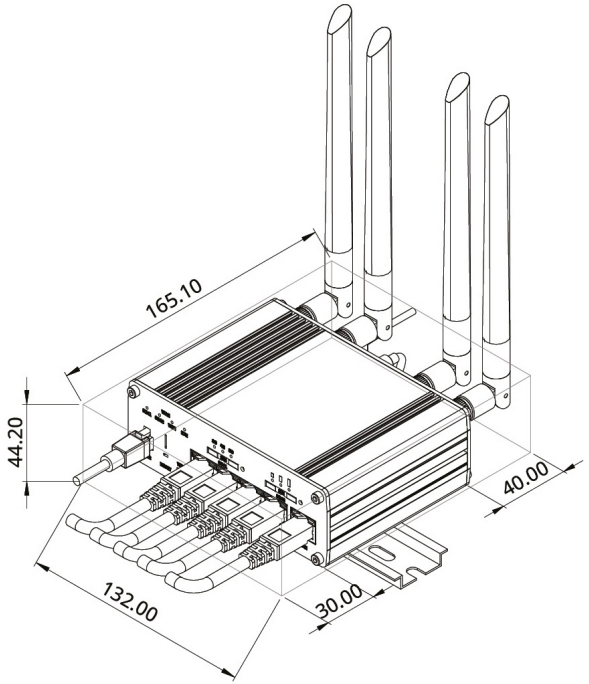
5.2 Requirements for the installation location

⚠ Important safety information regarding the choice of installation location!

- Do not position the product in the immediate vicinity of air conditioning systems or heat sources such as radiators, heating fins, ovens or other heat-generating devices (including amplifiers). Please observe the information listed for operating and ambient temperature.

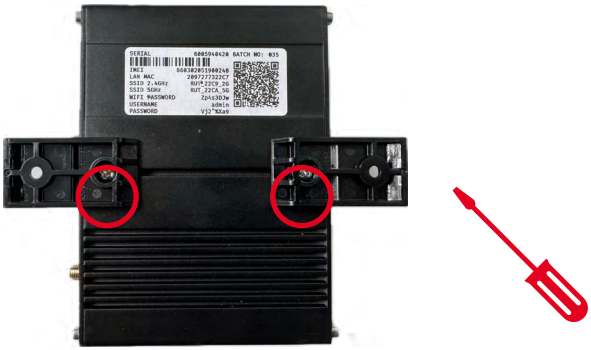
- Ensure that the installation location provides adequate ventilation for the device and do not install it in completely enclosed cabinets or boxes to prevent overheating due to insufficient heat dissipation.
- Do not use the product in a very dusty environment. Dust particles and other foreign objects can cause damage to the product.
- Protect the power cable from being stepped on or bent sharply, especially at the plugs, multiple sockets and the point where the cable is connected to the device.
- When using a 230 V power supply, ensure that the socket is located near the device and that it is easily accessible.
- Operating the device outside the permissible range can significantly reduce its service life.

Space requirements (when using the internal antennas)



5.3 Attaching the mounting bracket

The complete set includes two mounting brackets for secure installation of the router in the vehicle. These are attached to the back of the router using the screws provided. This ensures professional installation and also allows for easy removal for service purposes or to retrieve the access data on the device.



Pro tip – Transferring or photographing the data

The Wi-Fi SSID, Wi-Fi password and access data for the web interface are located on the back of the device. As the router is permanently mounted or screwed into the vehicle, we recommend carefully copying or photographing the relevant data before installation.

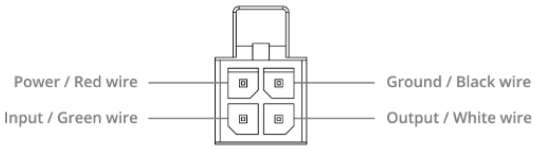
Information – Heating of the product

A certain amount of heating of the product during use (especially over a longer period of time) is normal.

5.4 Power connection

The router can be operated using either the enclosed power cable for the cigarette lighter (12/24 V) or an external 230 V power supply unit. Select one of the two depending on the application.

PIN assignment of the power connector



5.5 Connecting the antennas

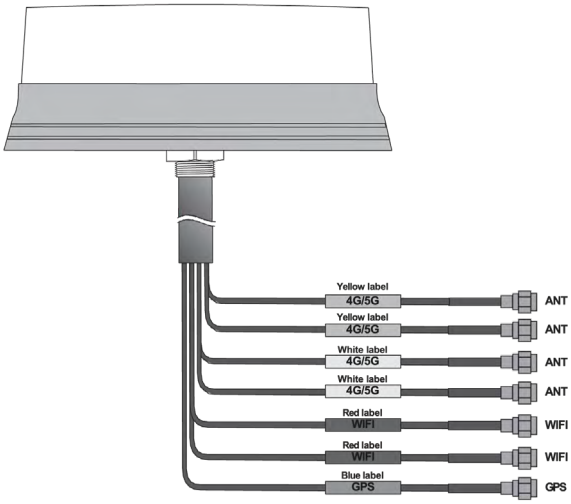
To offer you maximum flexibility, the scope of delivery includes several antenna designs. This allows you to choose between an indoor or outdoor antenna, depending on your personal preferences or the structural conditions of your vehicle.

Please note that all antennas must always be fully connected to ensure proper functioning of the device. Only the GPS antenna is an optional connection. For the GPS functions to be used effectively, additional remote access is also required, which can be booked directly through Teltonika.

Teltonika Remote Management System (RMS)

With the Teltonika Remote Management System (RMS), you can conveniently and securely monitor and manage your router remotely. The user-friendly, cloud-based interface allows you to adjust settings, perform firmware updates and check connections – regardless of where you are. For more information, visit: **https://www.teltonika-networks.com/de/products/rms**

5.5.1 Connecting the outdoor antenna



Overview of outdoor antenna mounting accessories

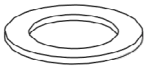
(1) Nut
(M18 x 5.7 mm)

(2) Nut
(M24 x 12 mm)

(3) Toothed washer
(locking) (M18 x 1.5 mm)

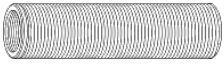
(4) Serrated washer
(locking) (M24 x 1.5 mm)

(5) Washer
(M18 x 3 mm)



(6) Washer
(M24 x 3 mm)

(7) Thread extension
(M24 x 38 mm)



(8) Thread extension
(M24 x 85 mm)

Required mounting accessories

Step drill bit (22 mm)

Drill

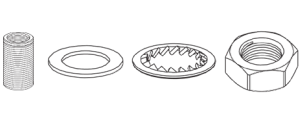
Safety goggles

Open-end spanner (M18 or M24)

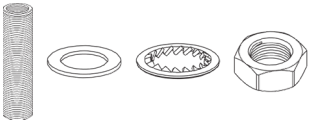
Adhesive tape

Where should which accessories be used?

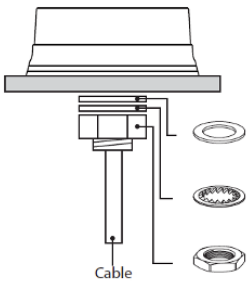
(1) + (3) + (5)
Roof thickness (thin)

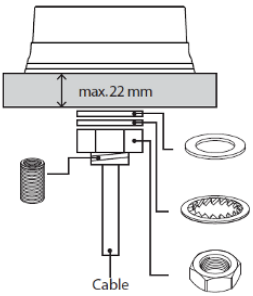


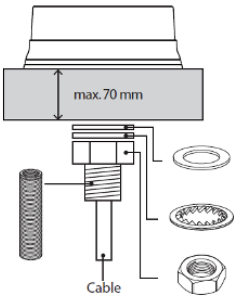
(7) + (6) + (4) + (2)
Roof thickness (medium)



(8) + (6) + (4) + (2)
Roof thickness (thick)







General installation instructions	
Selecting the installation location	• Select a flat, stable surface that is at least 50 cm away from heat sources. • Ensure that there is a clear view of the sky.
Marking the installation point	• Ensure that there are no obstacles (e.g. cables or ducts) beneath the intended installation surface. • Then mark the installation location for the mounting nut and cable gland. • To prevent the tool from slipping, stick adhesive tape over the drilling point. This secures the drill bit and also protects the painted surface from hot chips.
Drilling the mounting hole	• Carefully drill the required hole at the marked location.
Cleaning the mounting surface	• Clean the entire surface to prevent damage to the paintwork and ensure optimum adhesion of the foam seal. • It is best to use alcohol wipes for this to reliably remove oil and dirt residues.
Selecting the appropriate extension	• Use the 38 mm extension for roof thicknesses of up to 22 mm. • Use the 85 mm extension for roof thicknesses of up to 70 mm.

Installation steps

Step 1 – Preparing the antenna base

Thoroughly clean the plastic surface of the antenna base and the threaded stud.

Step 2 – Attaching the antenna

Remove the protective film from the adhesive surface and then press the antenna firmly onto the prepared surface.

Step 3 – Securing the fastening nut

Tighten the nut evenly until the foam seal is completely compressed.

Recommendation for sealing

To ensure 100% tightness, we recommend using Sikaflex® 292 or an equivalent PU structural adhesive. Apply a layer of adhesive as shown in the illustration (blue circle) and then press the antenna firmly into place.

Knowledge – Conductive pads

The conductive pads on the underside of our antennas are not used for grounding. This applies to all commercially available antennas, regardless of the manufacturer. Accordingly, it is not necessary to install an additional metal plate under the antenna. The function of these pads is rather to specifically influence the propagation of magnetic fields in the higher frequency bands. More precisely, they help to direct the resulting magnetic field back towards the antenna, ensuring optimised signal reception within the respective frequency range. This improves the reception quality of digital signals in particular.

5.5.2 Connecting the rod antennas (indoor installation)

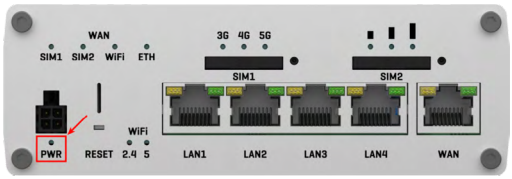
If you wish to use the router with the supplied rod antennas, please screw them onto the antennas and the router as indicated by the markings. The GPS antenna is also optional in this case. Tighten the antennas by hand without over-tightening the threads. From experience, we recommend first screwing the antennas in completely and then carefully moving them to the desired position or bending them.

6. COMMISSIONING

Once the product has been connected as described in Chapter 5, you can now start with the initial setup and commissioning of the device. When the power supply is active, the device starts automatically and initialises itself. This is indicated by the green power LED below the power supply (PWR). Once the router has booted up completely and the LEDs are lit, the router can now be connected via the WiFi settings.

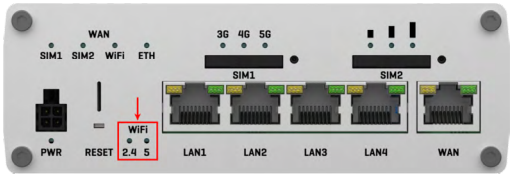
6.1 Status LEDs

LED (POWER)



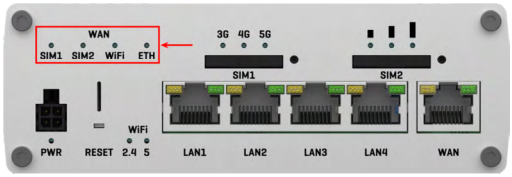
LED on	The device is switched on.
LED off	The device is not switched on.

LEDs (WIFI)



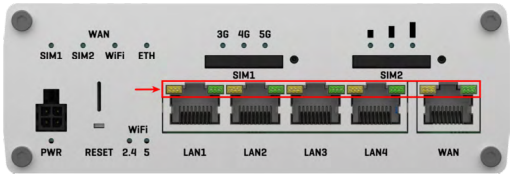
2.4 LED switched on	At least one 2.4 GHz network is in operation
2.4 LED off	No 2.4 GHz networks are active
5 LED on	At least one 5 GHz network is in operation
5 LED off	No 5 GHz networks are active

LEDs (interfaces)



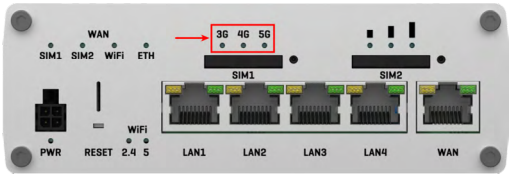
SIM1 LED is lit	A mobile data connection on SIM1 is active
SIM1 LED off	A mobile data connection on SIM1 is inactive
SIM2 LED lit	A mobile data connection on SIM2 is active
SIM2 LED off	A mobile data connection on SIM2 is inactive
WLAN LED is lit	A WLAN data connection (WLAN-WAN) is active
WLAN LED off	A WLAN data connection (WLAN-WAN) is inactive
ETH LED on	An Ethernet data connection (wired WAN) is active
ETH LED off	An Ethernet data connection (wired WAN) is inactive

LEDs (Ethernet ports)



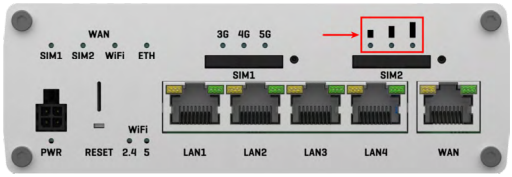
Orange	10/100/1000 Mbit/s connection
Green	1000 Mbit/s connection
LED on	A data connection on the port is operational (cable plugged in, terminal device visible, no data is being transferred).
LED off	There is no data connection on the port (no cable, defective cable or terminal device not visible for other reasons
LED flashing	Connection established and data is being transferred via this port.

LEDs (mobile communications)



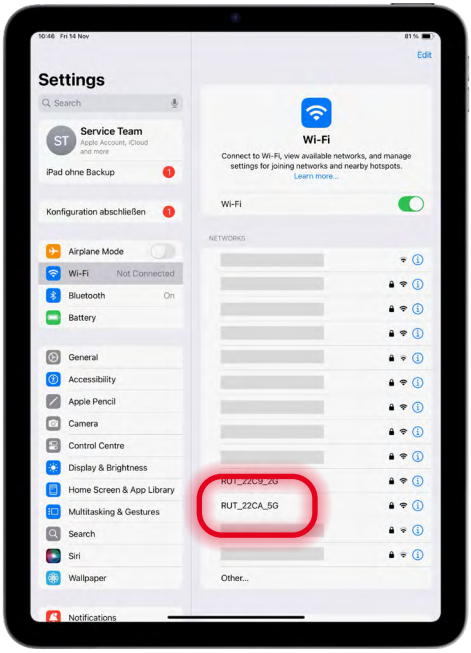
LED codes	Description
3G LED switched on	The device is connected to a 3G network
4G LED on	The device is connected to a 4G network
5G LED on	The device is connected to a 5G network via 5G SA
4G and 5G LEDs are on	The device is connected via 5G NSA
3G flashing	The device is connected to a 3G network but has not received an IP address
3G is flashing rapidly	The device is connected to a 3G network and data is being transferred
4G is flashing	The device is connected to a 4G network but has not received an IP address
4G flashes rapidly	The device is connected to a 4G network and data is being transferred
5G flashes	The device is connected to a 5G SA network but has not received an IP address
5G flashes rapidly	The device is connected to a 5G SA network and data is being transferred
4G and 5G flashing	The device is connected to a 5G NSA network but has not received an IP address
4G and 5G are flashing rapidly	The device is connected to a 5G NSA network and data is being transferred
All LEDs flash simultaneously every 500 ms	No SIM card or incorrect PIN
All LEDs turn on and off one after the other	The device is attempting to establish a connection

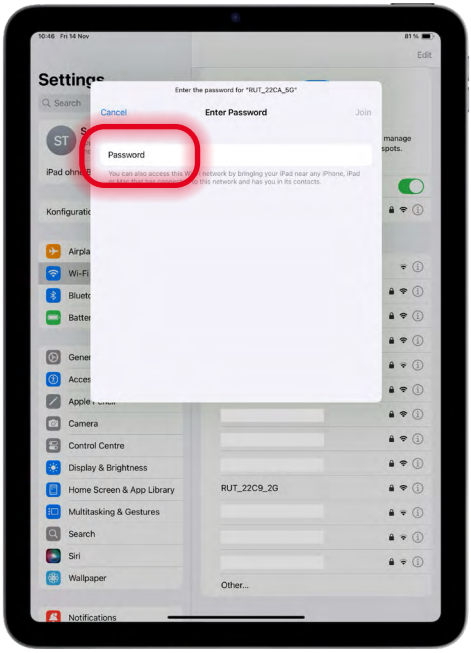
LEDs (signal strength)



Number of illuminated LEDs	Signal strength value
0	≤ -111 dBm
1	-110 dBm to -82 dBm
2	-81 dBm to -52 dBm
3	≥ -51 dBm

6.2 Establishing a connection with the router





Connect your mobile device to the router by selecting the appropriate network SSID (network name – always begins with RUTxxx_xxxx) in the Wi-Fi settings.

The router provides two networks: one with 2.4 GHz and one with 5 GHz. You can use either of these for the setup. In our example, we choose the 5 GHz network, as this is supported by our tablet. The relevant data (SSID & password) can be found on the back of the router. Ideally, these have been photographed and copied down as described in the pro tip.

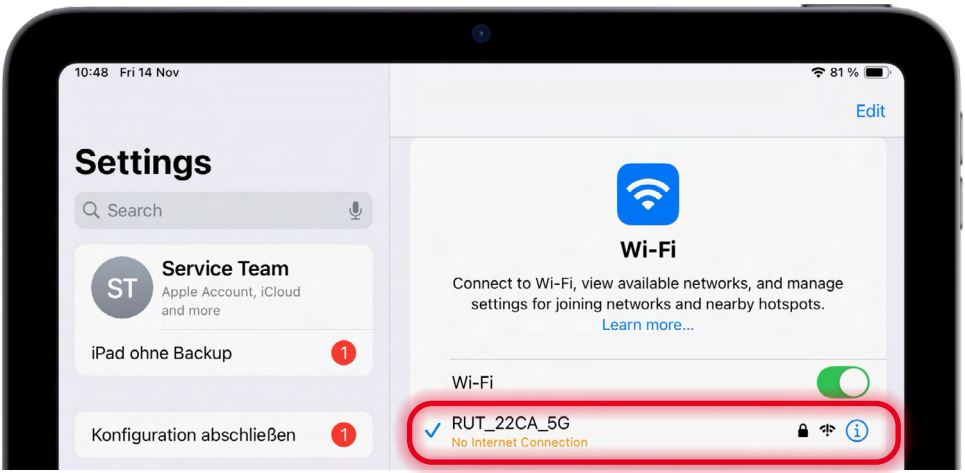
Information – 2.4 GHz & 5 GHz

2.4 GHz offers greater range and better penetration of walls, but is slower.

5 GHz enables higher speeds and more stable connections, but has a shorter range.

Information – Access data

Each router comes with an individually generated network name (SSID) and password. This is to ensure the protection of the product and the network against misuse and is required by law.



Wait until the smartphone has successfully connected to the router.

Important information – Low security message

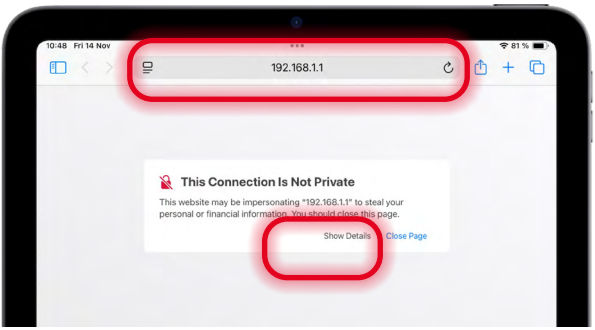
As the router has not yet been configured, messages such as „Low security“ or „No network connection“ may be displayed (see illustration). These messages can be ignored for the time being. However, please ensure that your tablet or mobile device does not automatically switch to another available network during this phase.

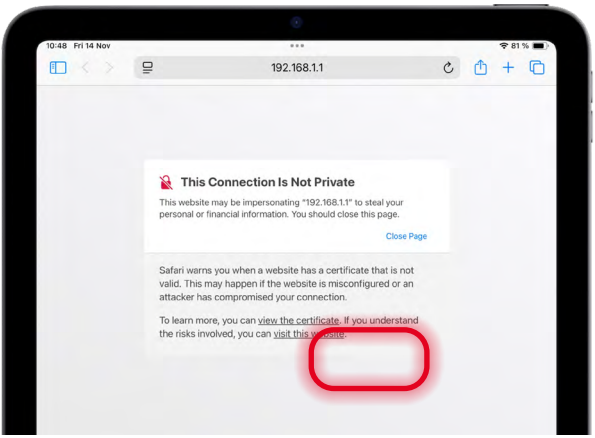
6.2.1 Open interface

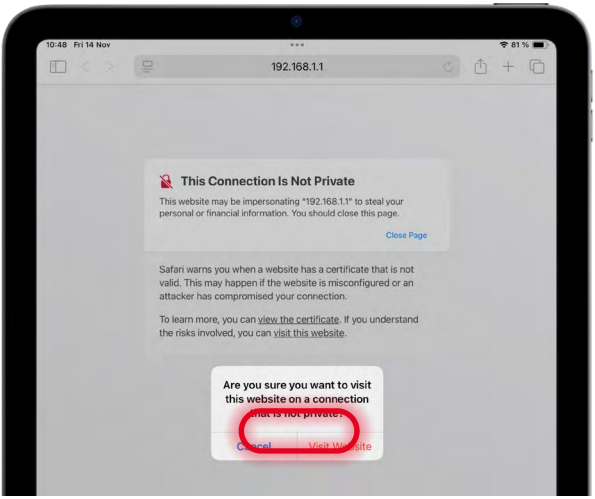
What should I do if the 192.168.1.1 website is not displayed?

Since the address 192.168.1.1 does not access a public website but rather the local device interface, many mobile devices initially display a security warning message. This usually appears with the note „This connection is not private/secure“ and prevents direct access.

Please note: This warning does not pose a security risk. You can open the page without hesitation. To do so, select the „Show details“ option and then „Visit this website“. Then refresh your browser – the interface will now be displayed as usual.


10:48 Fri 14 Nov
81 %
192.168.1.1
This Connection Is Not Private
This website may be impersonating "192.168.1.1" to steal your personal or financial information. You should close this page.
Show Details
Close Page


10:48 Fri 14 Nov
81 %
192.168.1.1
This Connection Is Not Private
This website may be impersonating "192.168.1.1" to steal your personal or financial information. You should close this page.
Close Page
Safari warns you when a website has a certificate that is not valid. This may happen if the website is misconfigured or an attacker has compromised your connection.
To learn more, you can view the certificate. If you understand the risks involved, you can visit this website.

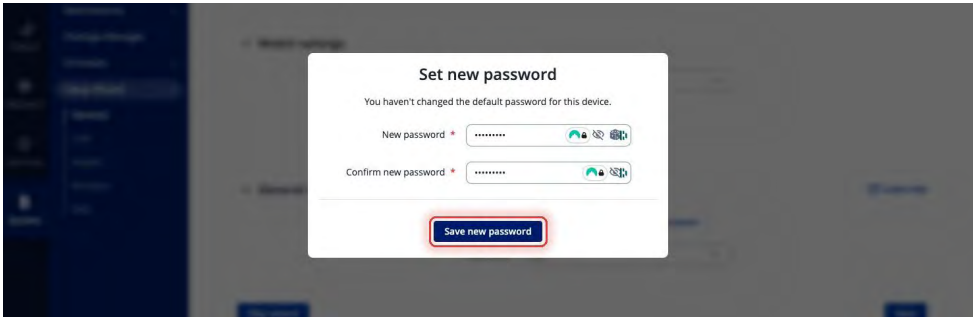

10:48 Fri 14 Nov
81 %
192.168.1.1
This Connection Is Not Private
This website may be impersonating "192.168.1.1" to steal your personal or financial information. You should close this page.
Close Page
Safari warns you when a website has a certificate that is not valid. This may happen if the website is misconfigured or an attacker has compromised your connection.
To learn more, you can view the certificate. If you understand the risks involved, you can visit this website.
Are you sure you want to visit this website on a connection
Cancel
Visit Website

6.2.2 Logging in to the web interface

Enter the access data from the back of the router.

Note: You need the password at the bottom, not the one for the Wi-Fi!

You can now log in using the **„Log in“** field.

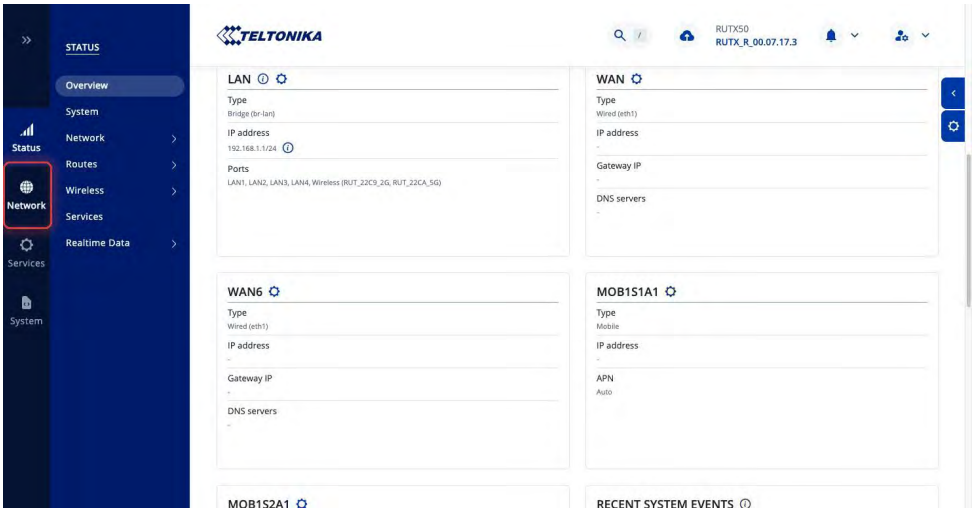


When logging in for the first time, you must assign a new password for security reasons and confirm it with **„Save new password“.**

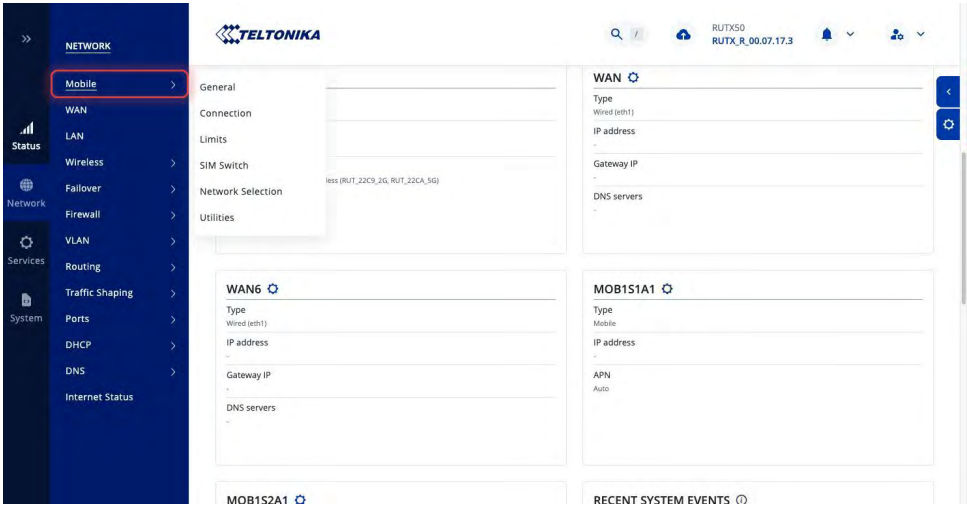
Important! Please make a note of the password or memorise it carefully, as losing it will prevent you from logging into the web interface and the router will have to be reset to its factory settings. Especially when entering the password via a mobile device, we recommend saving it in the respective keychain (e.g. iCloud or Google Password Manager).

6.2.1 Configuring the SIM card

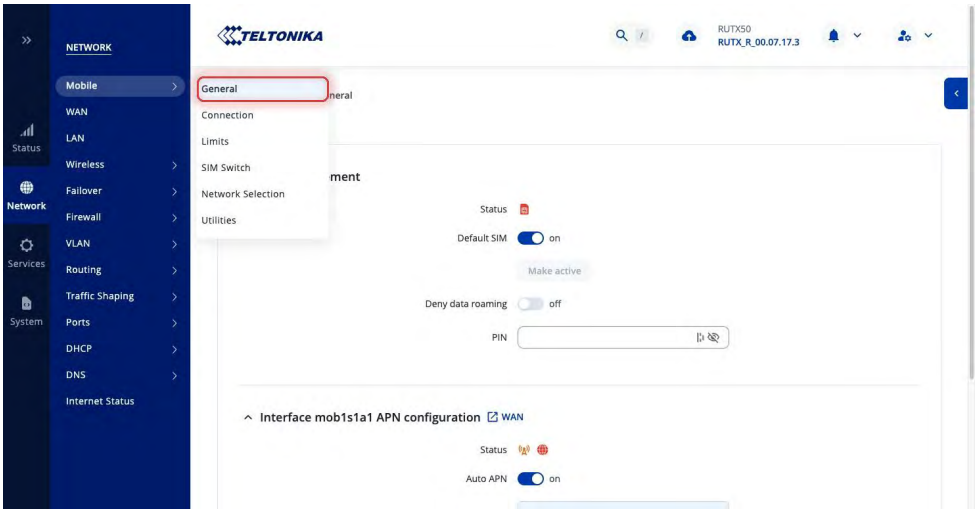
Next, we will configure the SIM card to establish an active Internet connection via the router.



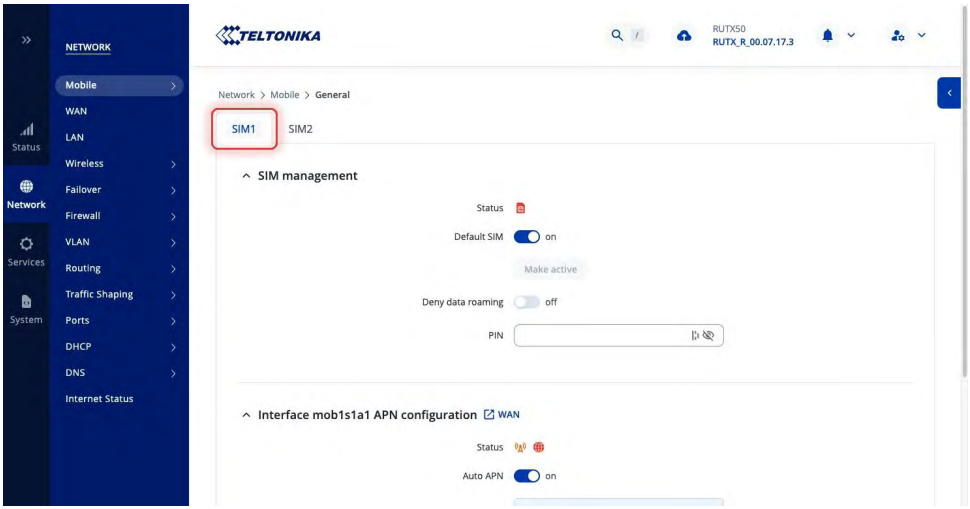
Select **„Network“** in the sidebar.



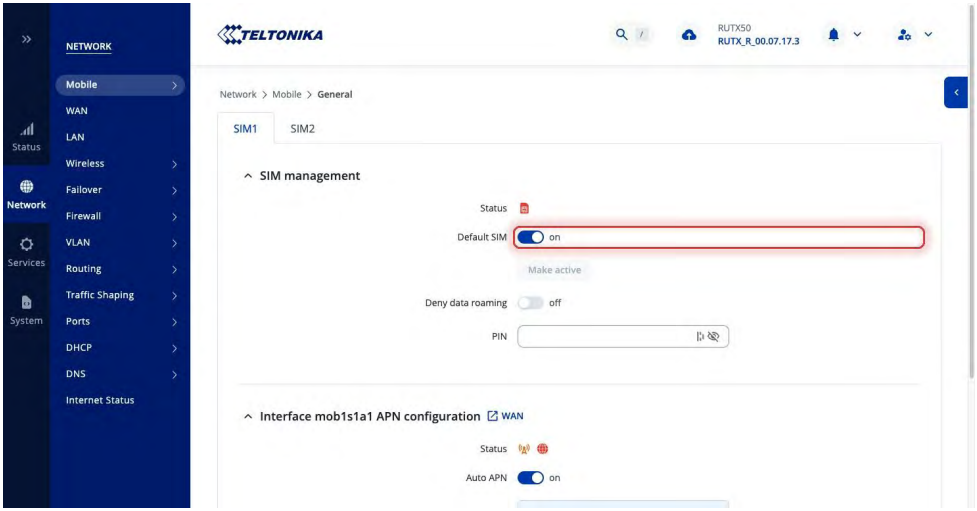
Then select **„Mobile“.**



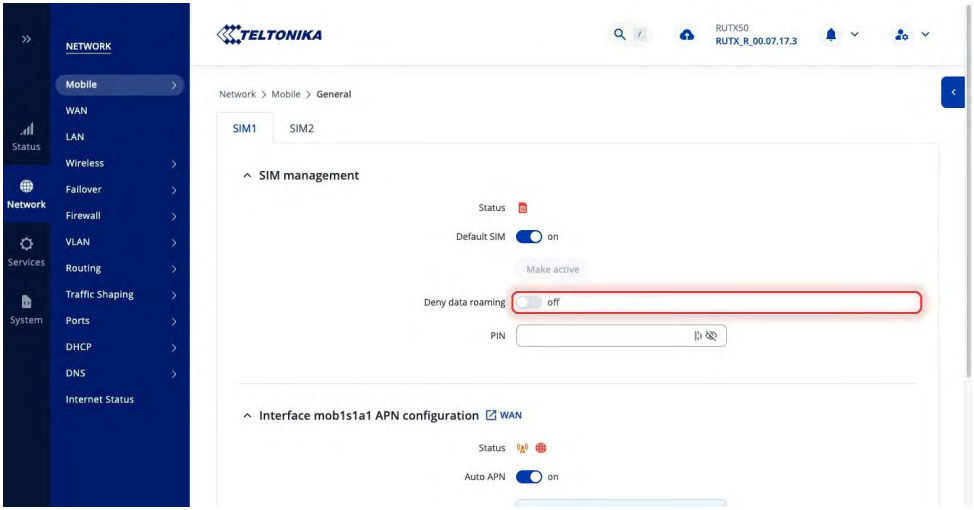
And **„General“.**



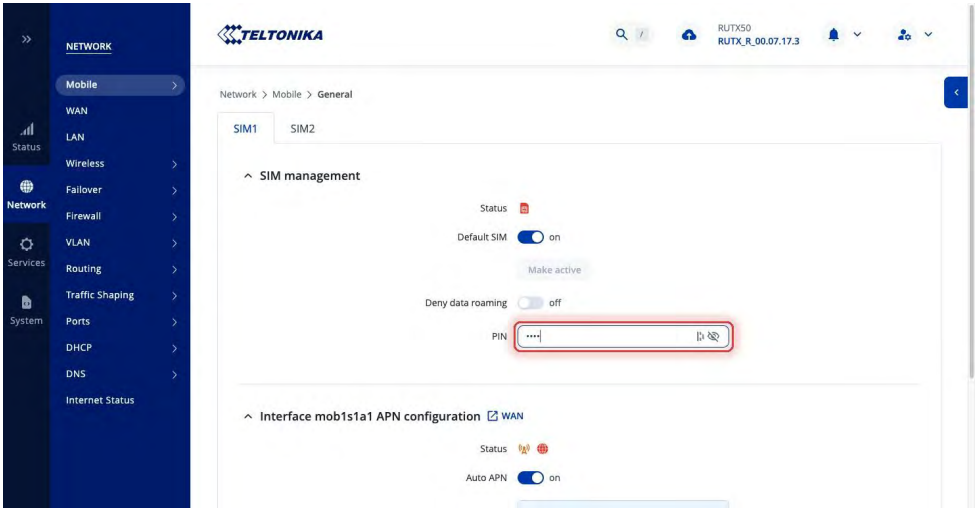
Since we have inserted our SIM card (Telekom) into SIM slot 1, we select **„SIM1“** in the tab.



SIM1 is to be used as the main card, so we leave the **„Default SIM“** option enabled.

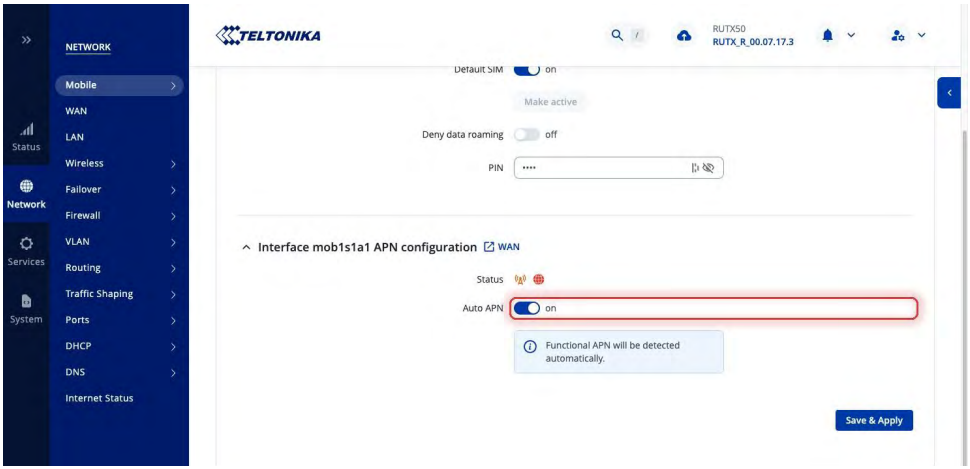


If the „**Deny data roaming**“ option is selected, data roaming for the SIM card is disabled.
The card cannot then be used for mobile data abroad.
As our card includes an EU flat rate, we leave this function deactivated.

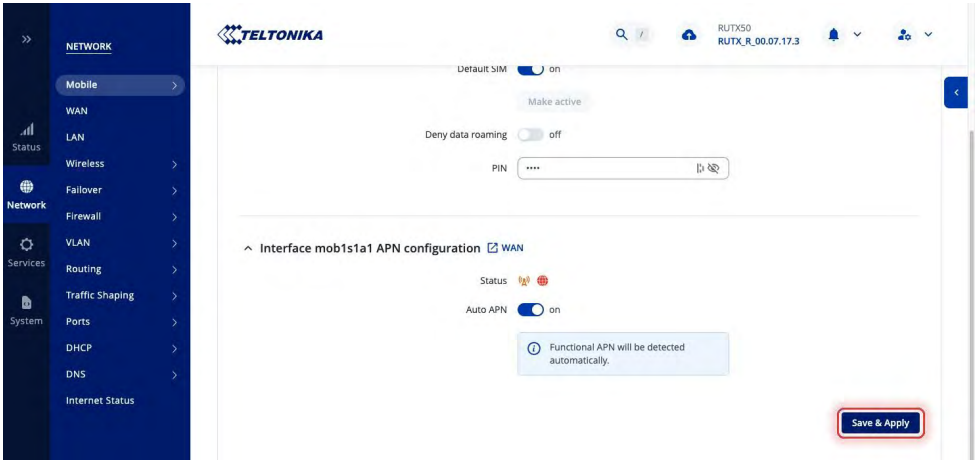


Next, we enter the **4-digit PIN code for our SIM card.**

Note: If the PIN has already been deactivated, this field can be left blank!



If this function is activated, the router will automatically attempt to determine the appropriate configuration. The access data for most common providers is already stored in the router. **We therefore recommend leaving the function activated for the time being.** Only if problems arise – for example, if the provider is not recognised – is it advisable to enter the APN data manually (see chapter Manual APN entry).



We save the stored data using the **„Save & Apply“** button.

The router then automatically starts establishing a connection via the SIM card used.

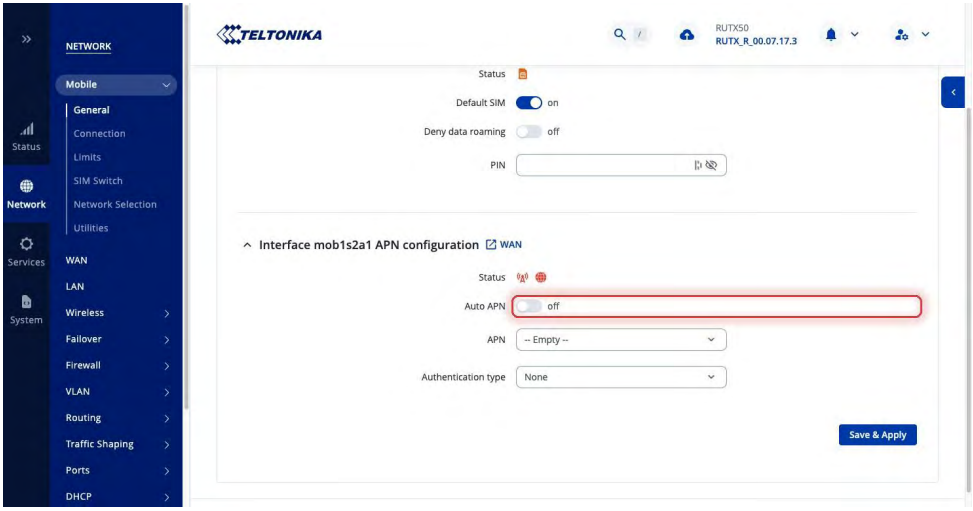
Once the connection has been successfully established, the status icon changes from red to green, indicating that an active Internet connection is in place.

6.2.2 Manual APN entry

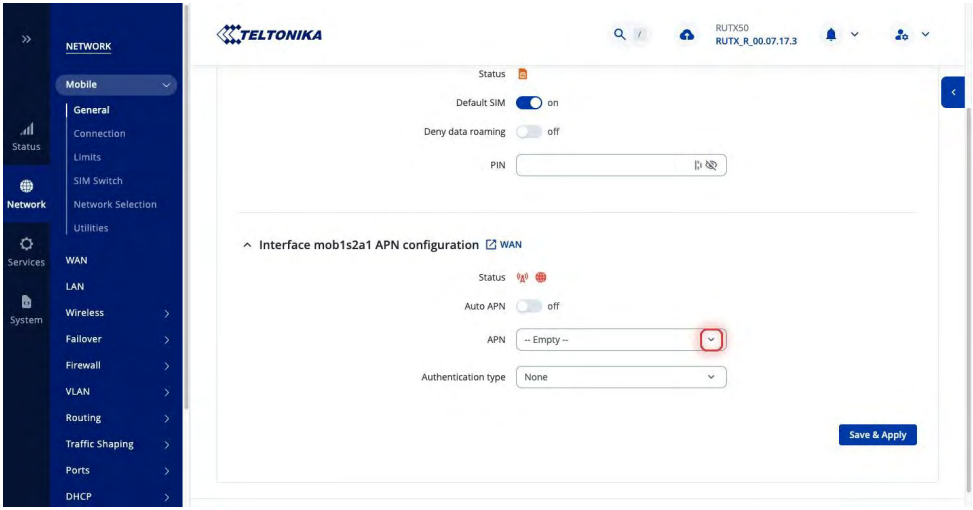
If the APN of a SIM card is not automatically stored in the router, it can be easily entered manually. This occasionally occurs, particularly with smaller providers. In this case, we recommend searching for the name of the respective SIM provider together with the term „APN“ in order to obtain the correct access data. Below, we show the manual configuration using CAMPERSIM as an example.

Info CAMPERSIM

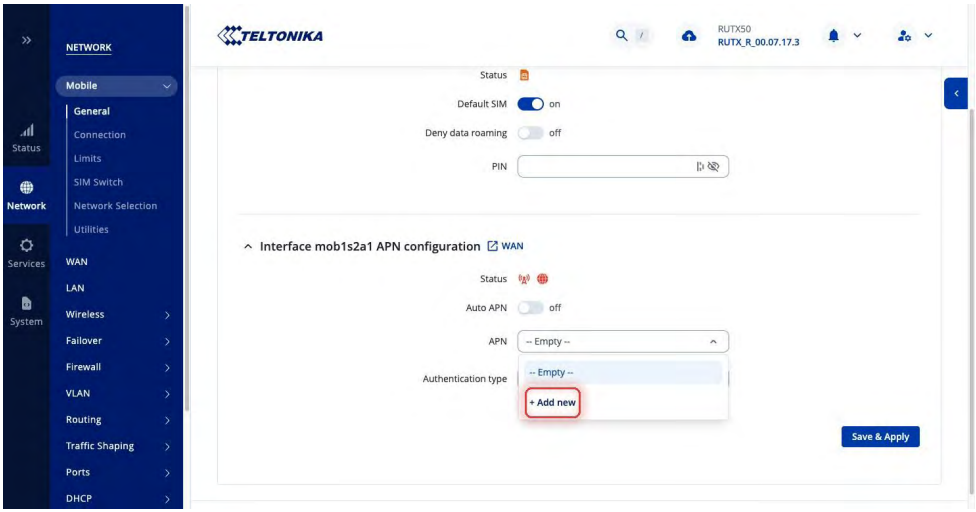
CAMPERSIM is a SIM card specially developed for motorhomes that flexibly uses the best available mobile network in over 36 countries. It is ideal for mobile Internet on the go, as it does not require a contract, offers automatic network selection and thus enables a stable connection at all times. Another advantage is transparent cost control: flexible monthly packages that can be booked according to individual needs allow you to keep track of your expenses at all times. For more information **https://campersim.com**.



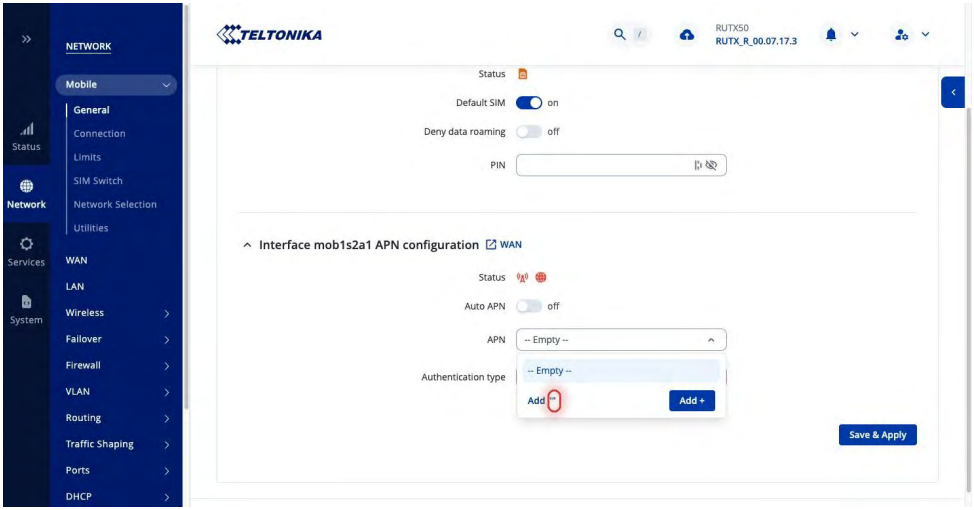
Deactivate the **„Auto APN“** function to enter the access data manually.



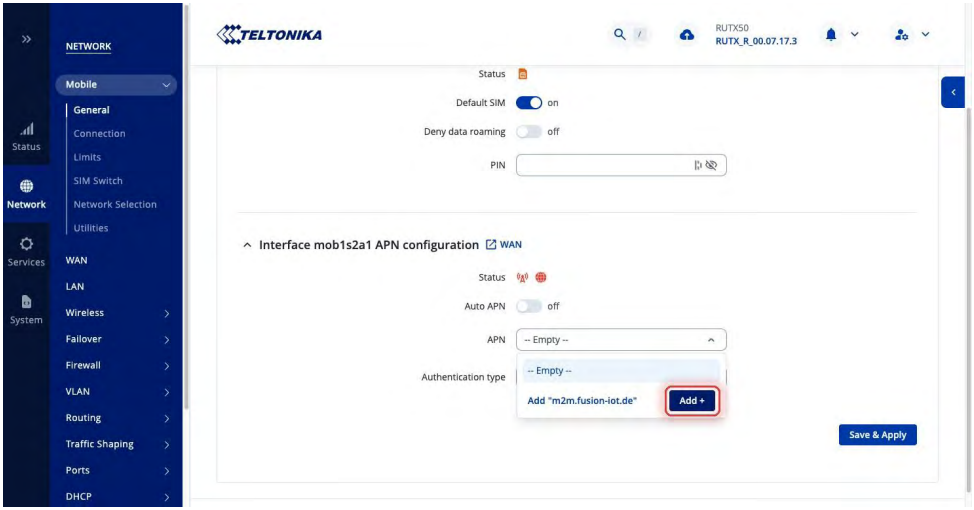
Select the down arrow in the **„APN“** drop-down field.



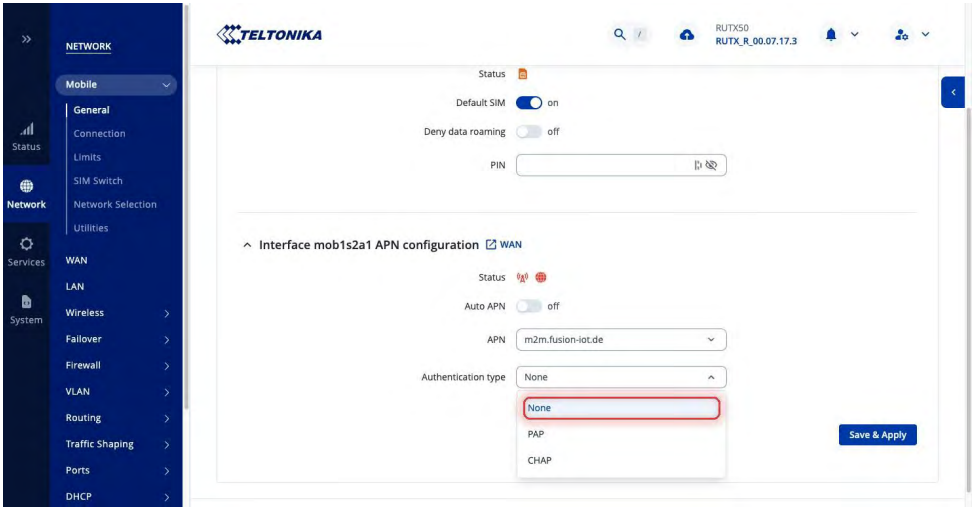
Then select **„Add new“** to create a new APN.



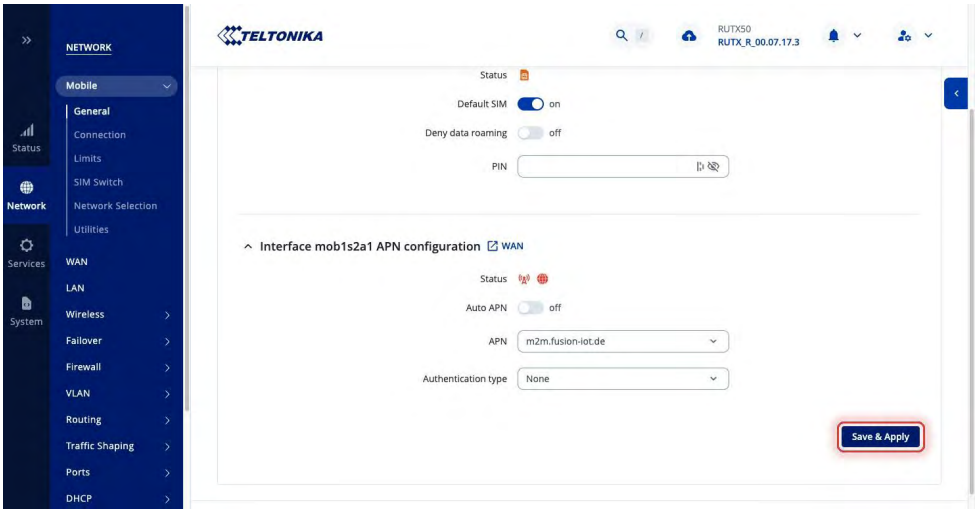
Now you can enter the APN name between the two „ „ symbols.



Only the required APN name is entered in this field. In our example, this is **m2m.fusion-iot.de** for CAMPERSIM. Click on the **„Add +“** button to add the entered APN.



Finally, we select the **„Authentication Type“.** In our example, this is „None“ because no authentication is required. However, if your provider requires the PAP type, additional fields for username and password will automatically appear, which must be filled in accordin



Click **„Save & Apply“** to save the changes you have made. The router will then start establishing a connection using the new access data. Please remember to enter the SIM PIN if your card requires it.

7. EXPLANATION OF THE INTERFACE

Note on your router's user interface! All of the router's submenus can be accessed via the menu icon (represented by three horizontal lines or two arrows) at the top left of the screen.

Please note: Due to the large number of functions, the user interface may appear complex at first glance. However, the underlying firmware follows a logical structure, so that even advanced configuration options remain clear and well-organised.

For basic and regular use – such as switching between two SIM cards or connecting to a local Wi-Fi network – we recommend the free „Teltonika RutOS" app. This provides a particularly user-friendly interface for the most important settings.

A particular advantage of your device: unlike some manufacturers who restrict or hide certain functions via their user interfaces, you have unrestricted access to all options here. The advanced administration interface remains fully available – even in parallel with the app – so you retain full control over your device at all times.

7.1 Explanation of the main groups

Status: The Status section provides a comprehensive overview of the router's current operating status – including mobile connection, data usage, signal strength, network activity and system information such as temperature and runtime.

Network: Under Network, you can configure all network-specific settings, such as the connection to mobile networks (via SIM cards), Wi-Fi settings, LAN ports, firewall rules, and access to local or public Wi-Fi networks.

Services: The Services menu item provides access to advanced features such as VPN (e.g. OpenVPN, WireGuard), remote access, SMS services, DynDNS, Mobile Data Limiter, and hotspot and firewall services for customising your Internet connection.

System: In the System section, you can manage basic device settings such as language, password, time zone, firmware updates, backup functions, restarts, and user rights – for secure and stable operation of your router at all times.

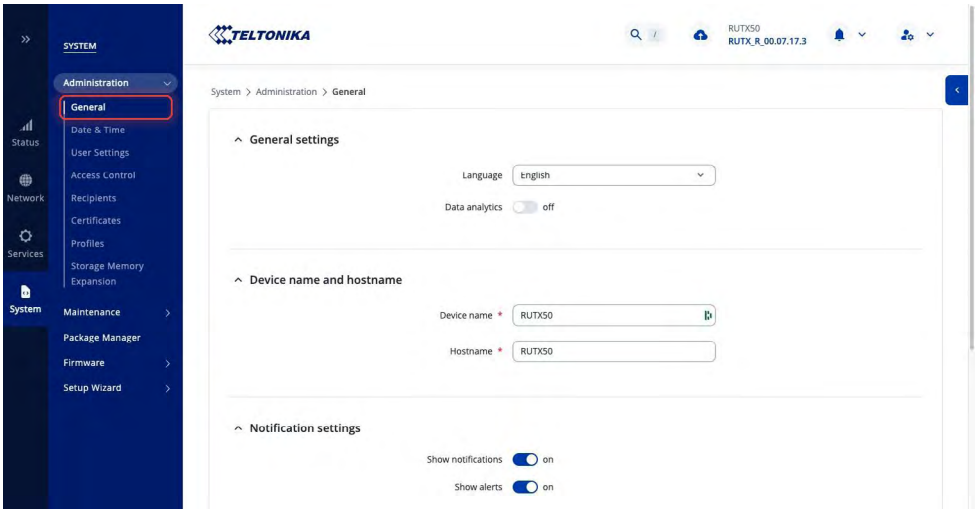
8. THE MOST IMPORTANT SETTINGS BY GROUP

8.1 Basic functions

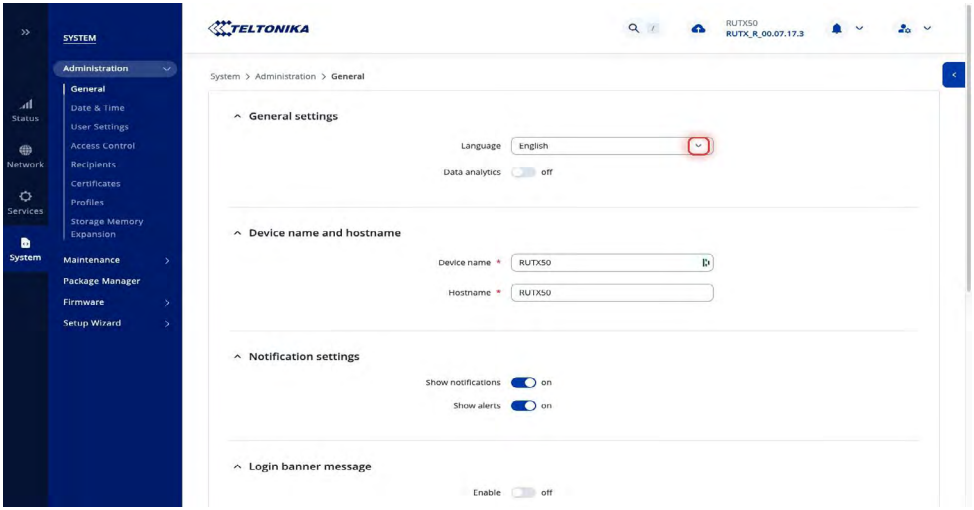
8.1.1 Changing the system language

The default language on the router is English. For this reason, all screenshots used in this manual were created in English.

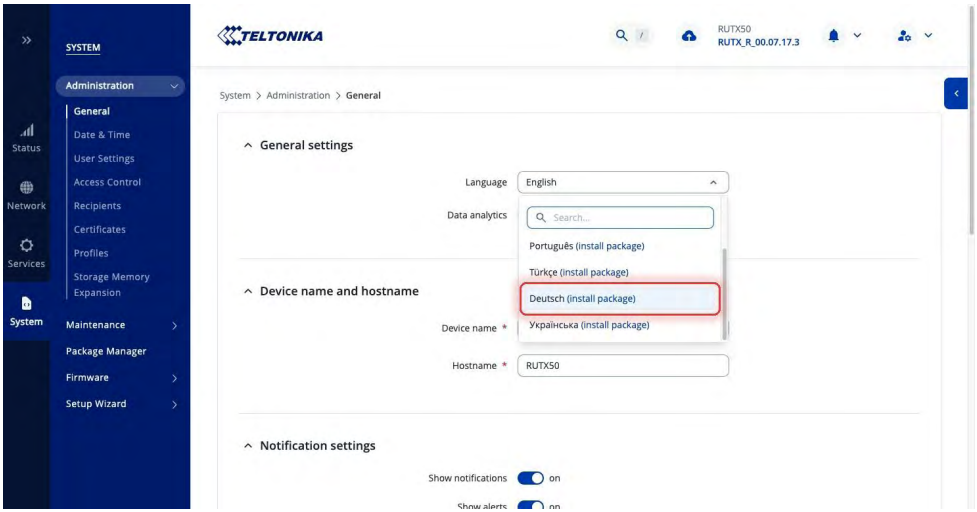
Of course, you can change the user interface to your local language if you wish. Please note, however, that as a technical peripheral device, a router uses numerous technical terms and abbreviations, some of which may be translated incompletely or inconsistently. An active internet connection is also required to install additional language packs.



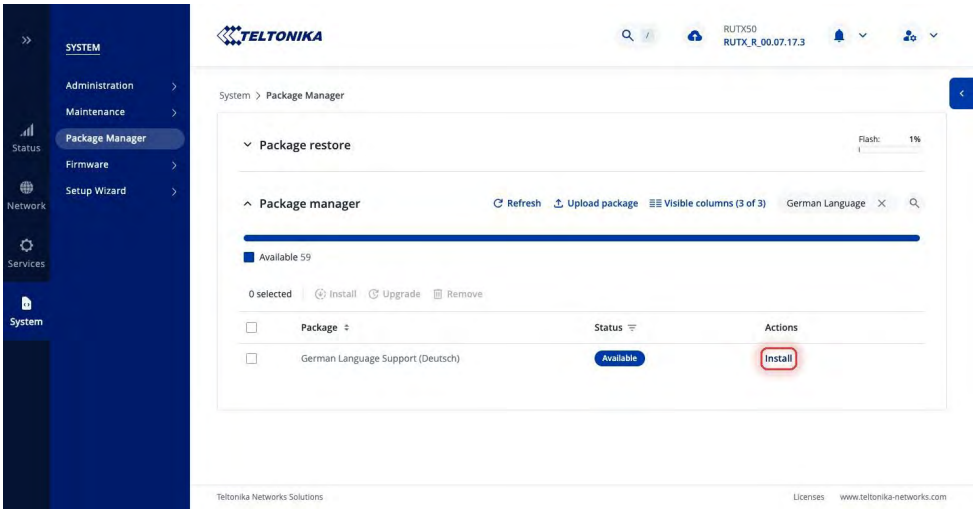
Open the path: **System > Administration > General.**



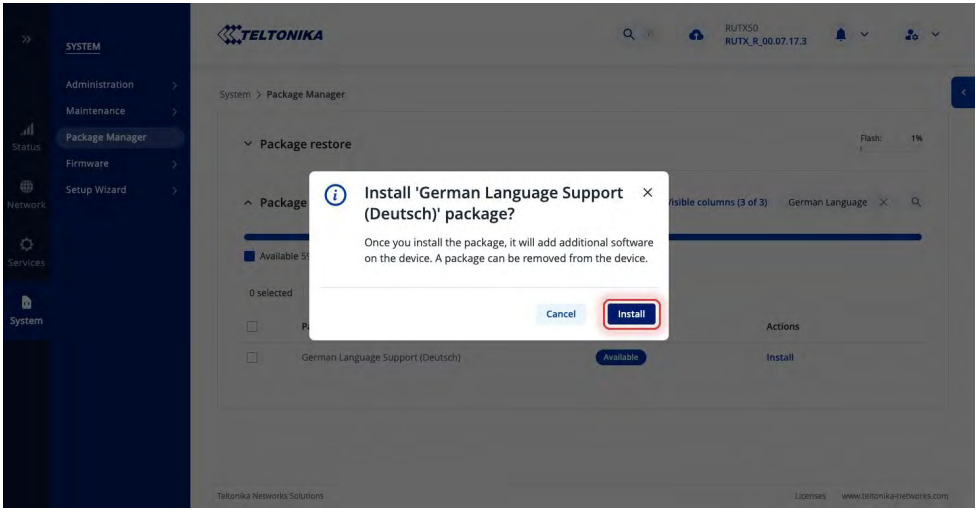
Now select the drop-down arrow under **„Language“.**



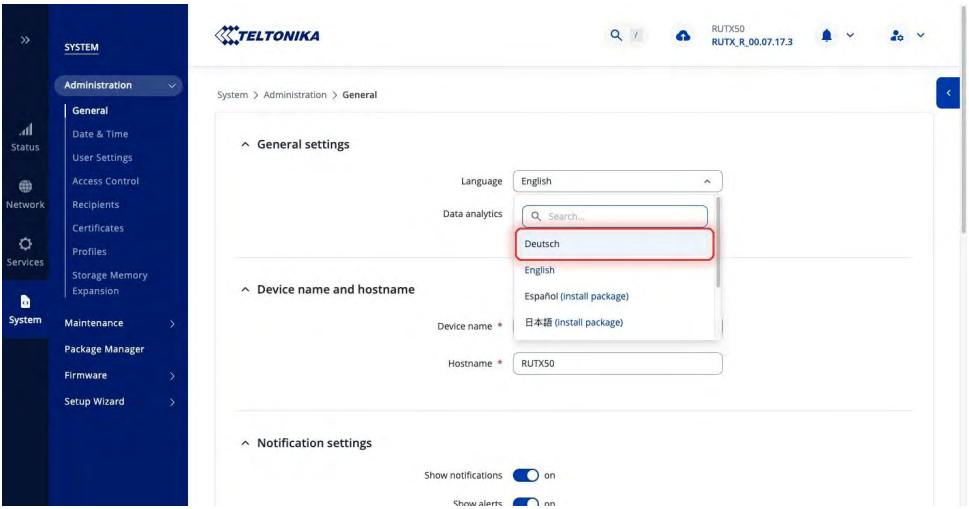
Now you can select and install the desired language (in our case, **„Deutsch“**). Now select **„install package“.**



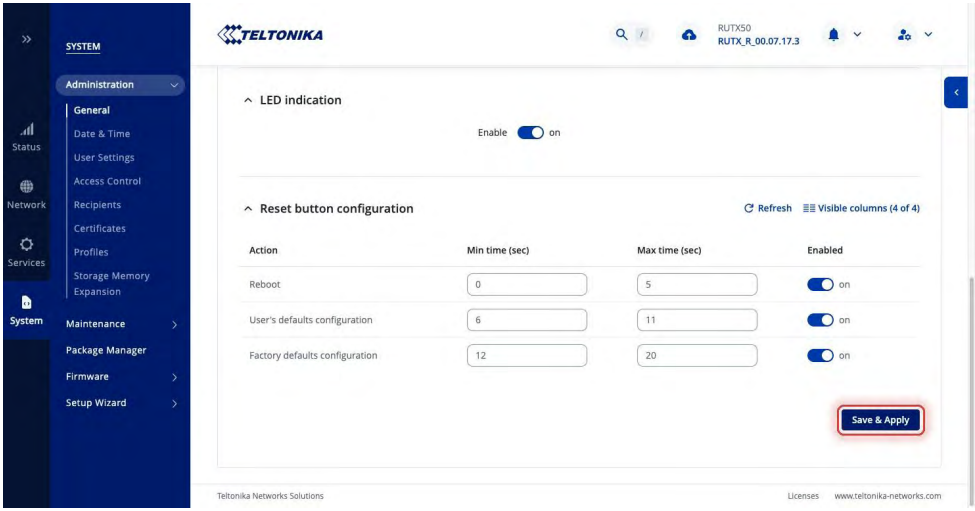
The router will now automatically open a new view where add-ons (packages) can be installed. Click on **„Install“** to start the installation.



A message will now appear asking if you really want to install the package. Confirm this again by clicking on **„Install“.**



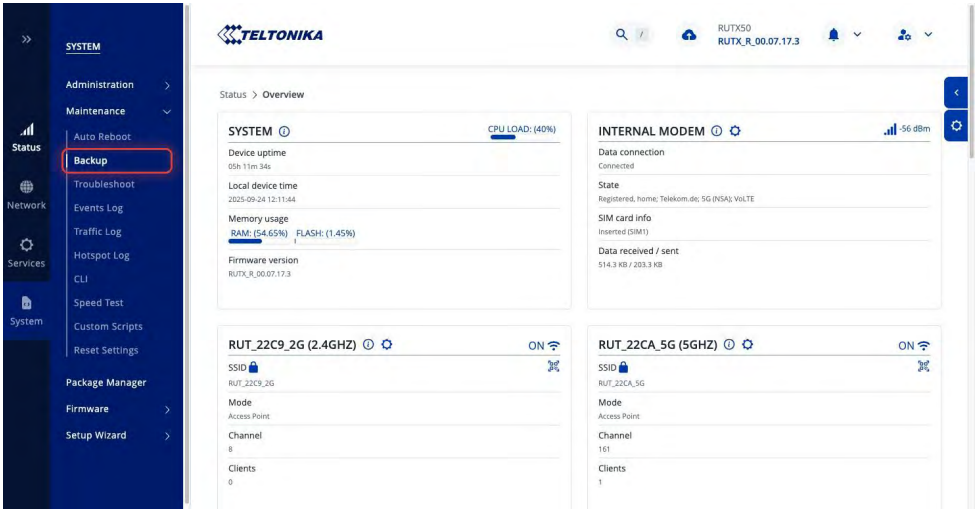
You can then return to the initial screen and select the language there: **System > Administration > Language**



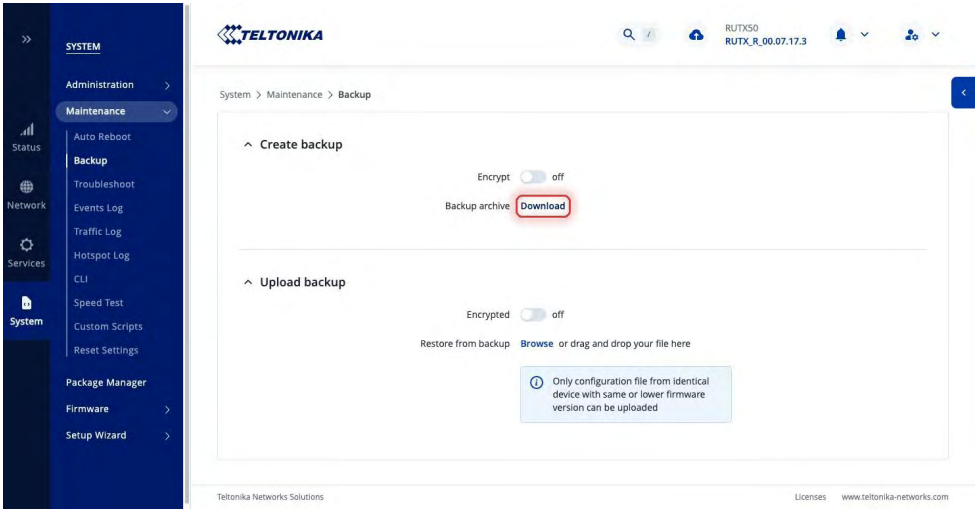
Click **„Save & Apply“** to save the changes you have made.

8.1.2 Creating a backup

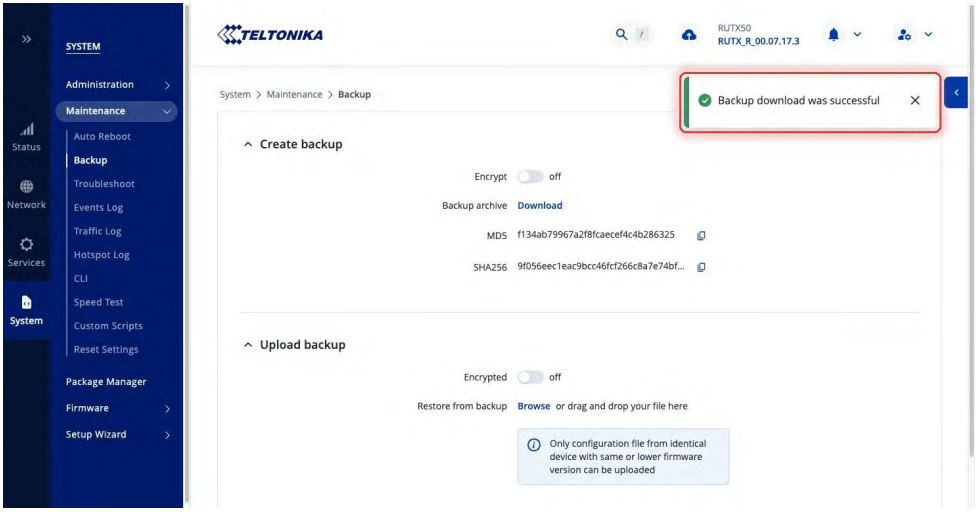
Depending on the application, it is advisable to create a complete backup of all settings and extensions – for example, before extensive software updates or in the event of servicing. The backup is not stored on the router itself, but conveniently on your mobile device. This allows the backup to be created quickly, reliably and efficiently.



Open the path: **System > Maintenance > Backup**

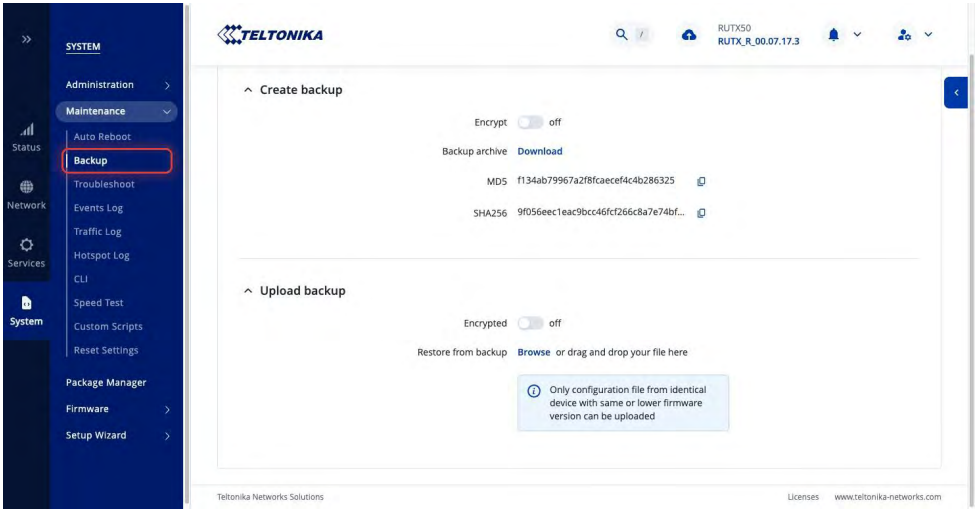


You can now create a complete backup via the **„Backup archive“** and **„Download“** options. A USB stick is not required for this – the backup is stored directly on your mobile device or laptop.

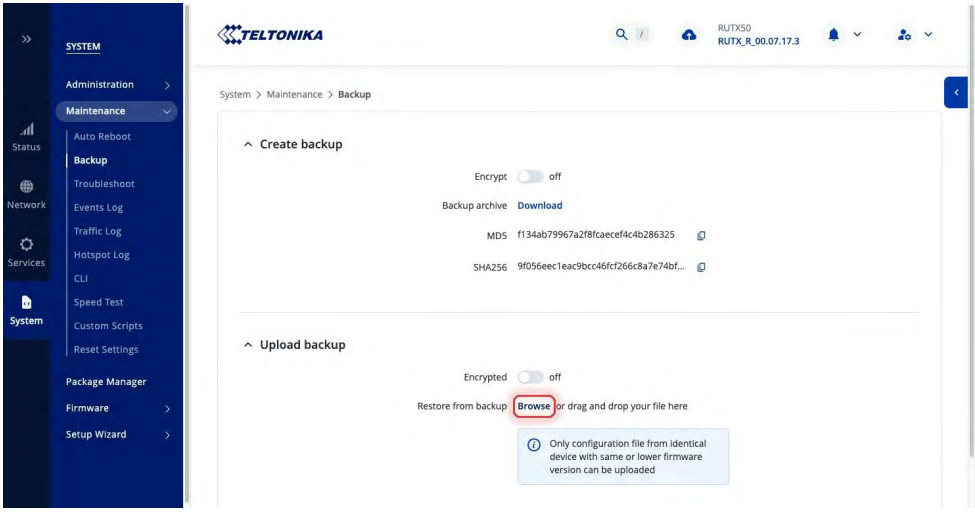


A **message** confirms that the backup has been successfully downloaded.

8.1.3 Importing a backup



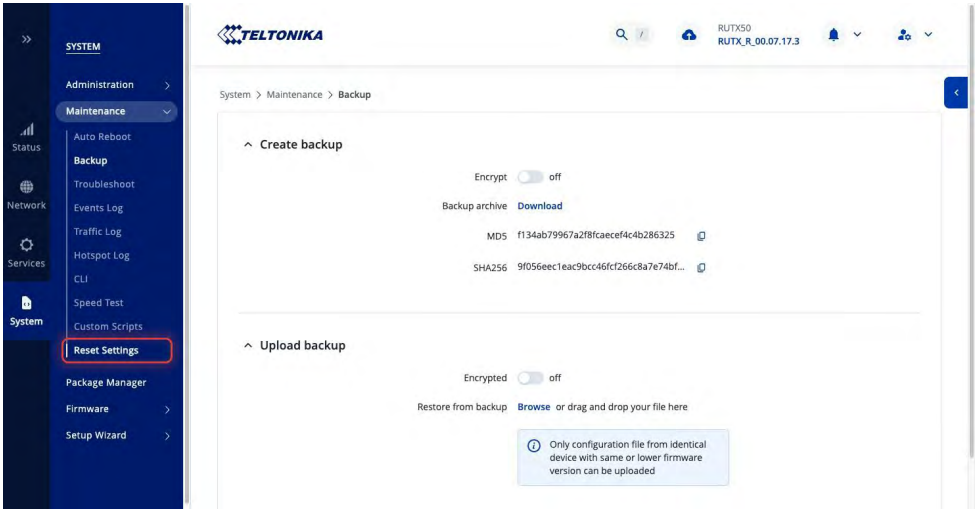
Open the path: **System > Maintenance > Backup**



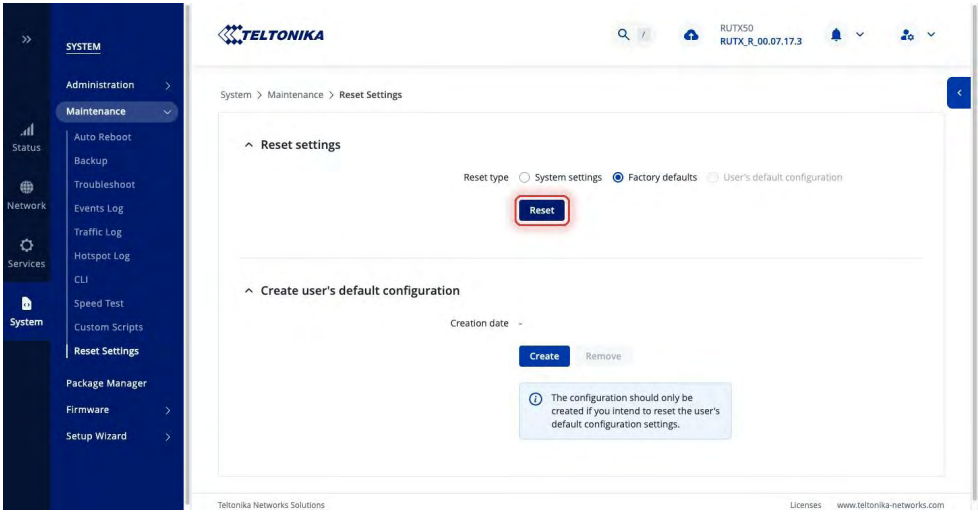
In the **„Upload backup“** section, you can select and upload your backup using the **„Browse“** button.

8.1.4 Resetting the device

In the event of resale or if problems arise, it is possible to reset the router to its factory settings. There are two options to choose from: either only the system settings are reset, or the device is completely restored to its original delivery state.



To do this, open the path: **System > Maintenance > Reset Settings**



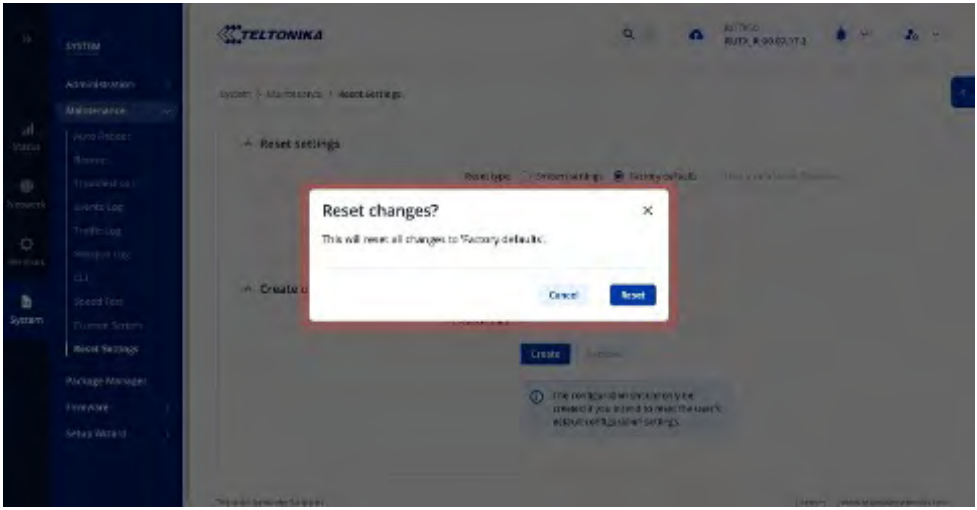
In the **„Reset settings“** menu item, you can choose between two options:

„System settings“: Only the system settings are reset. Your personal user data and passwords remain unchanged.

“Factory defaults“: All settings are deleted and the device is completely reset to its original factory settings.

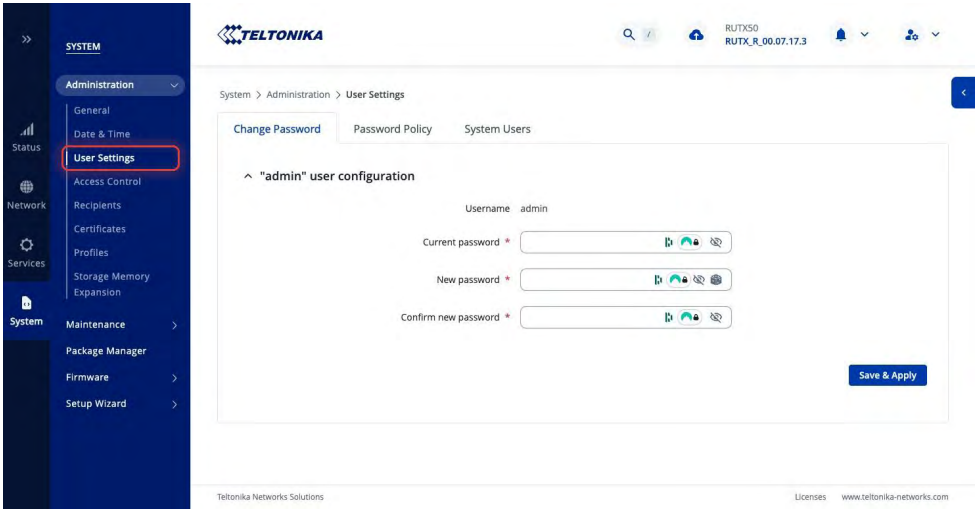
Note: The main difference is that **„System settings“** preserves your individual data, while **„Factory defaults“** performs a complete factory reset.

For our example, we select **„Factory defaults“** and confirm the process by clicking on the **„Reset“** button.

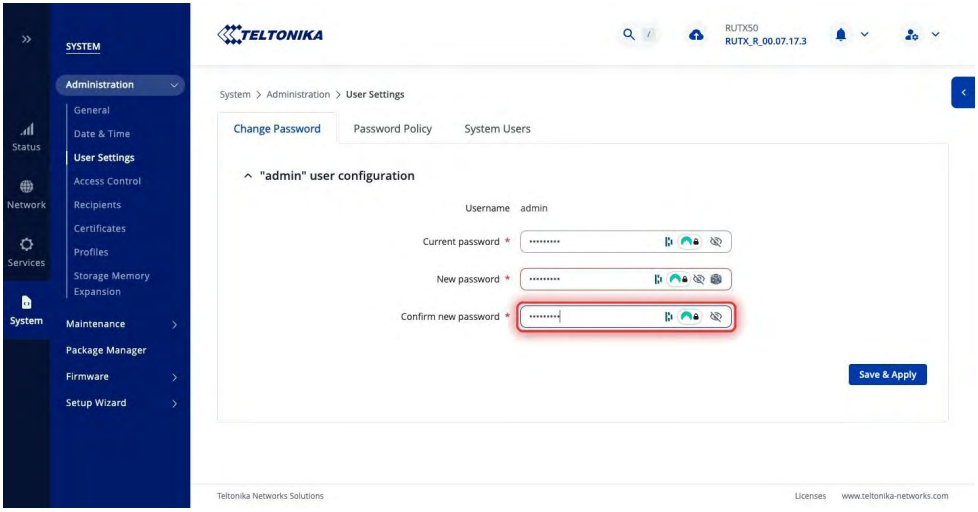


After making your selection, a security prompt appears, reminding you that a reset is about to be performed. Confirm this prompt by clicking on the **„Reset“** button to finally start the process. The device then deletes all data and performs several restarts. After about five minutes, the router will be visible again via Wi-Fi and can be reconnected using the original access data (indicated on the back of the device

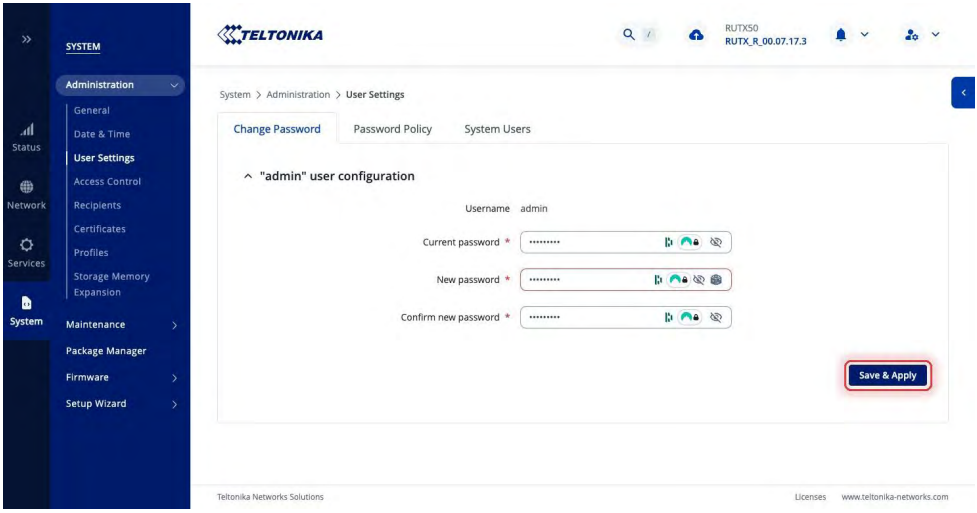
8.1.5 Changing the login password



Open the path: **System > Administration > User Settings**



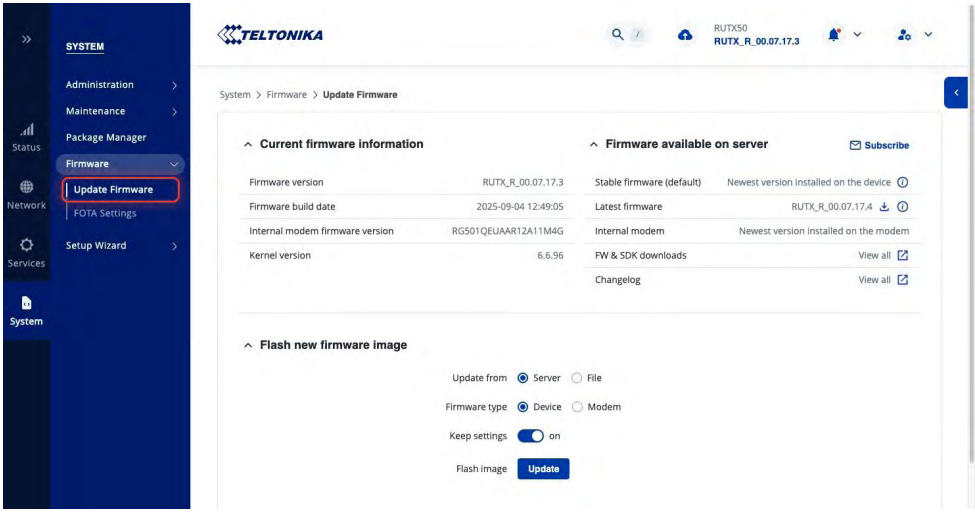
First enter your current password and then set a new one. This password will be required in future to log in to the web interface.



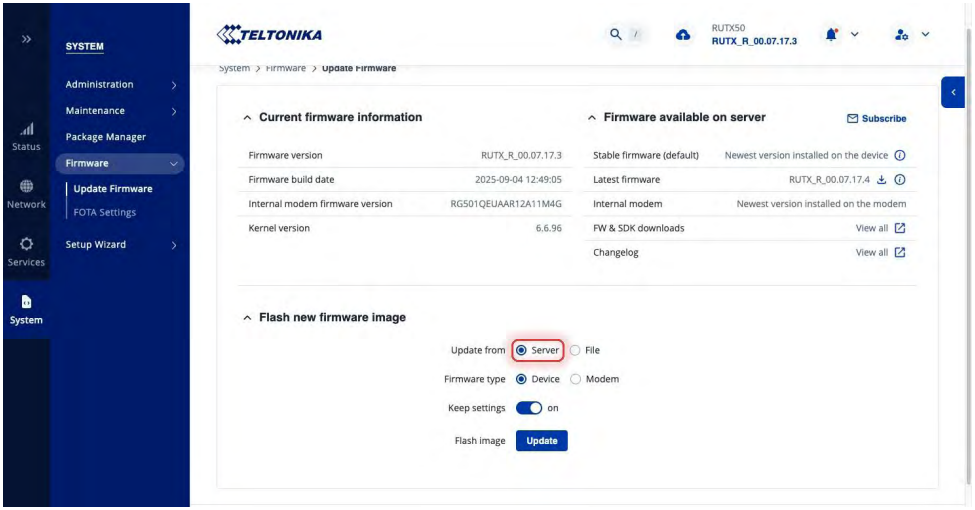
You can apply and save this by clicking the **„Save & Apply“** button.

8.1.6 Firmware update

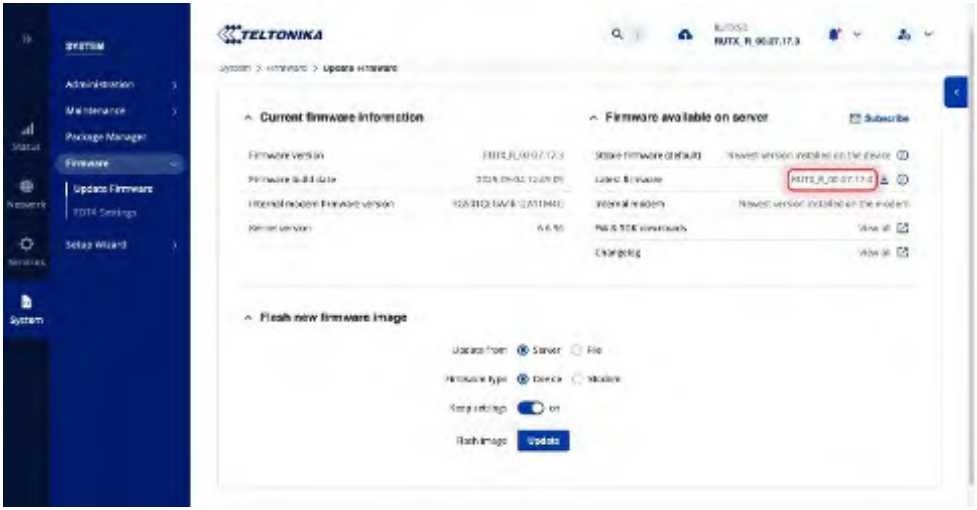
Updates for this device can be performed either via local files or directly via the Teltonika server. As we use the original Teltonika firmware, we recommend always performing updates to the modem or device firmware via the server. This ensures that you only receive tested and up-to-date versions.



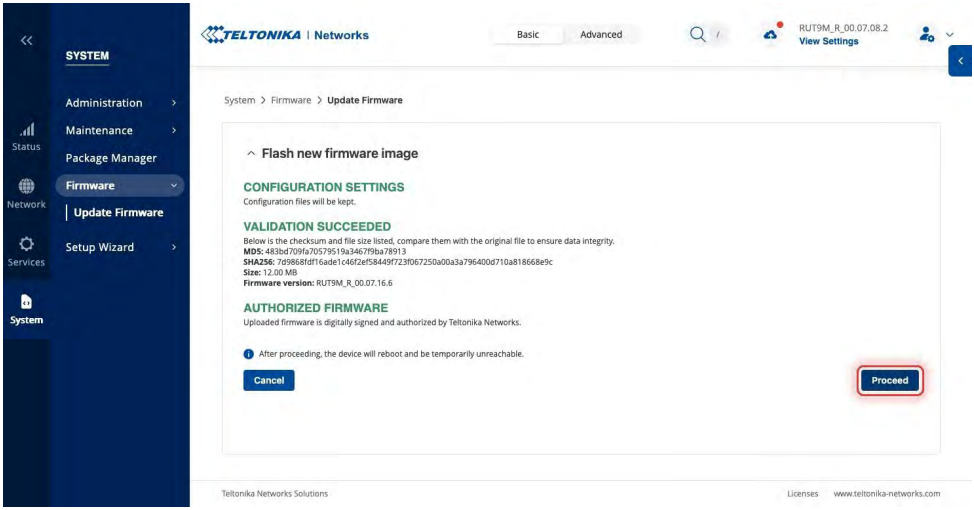
Open the path: **System > Firmware > Update Firmware**

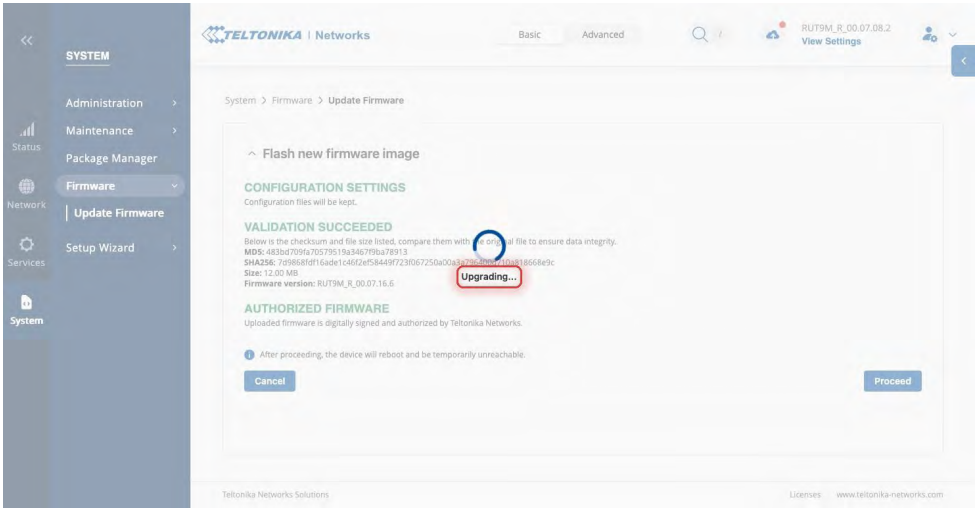


Function	Selection	Explanation
Update from	Server or file	Here you can choose whether the update should be performed using an existing file or directly via the server.
Firmware Type	Device or modem	Here you can specify whether the firmware of the device or the firmware of the modem should be updated.
Keep settings	On or Off	Make sure that this option is enabled. This is the only way to ensure that your stored settings and data are retained during the update.
Start Update		This selection field is used to start the update.



In the upper right corner, you can see whether an update is available for your router. We now select that we want to perform the update via the server and click on **„Update“.**





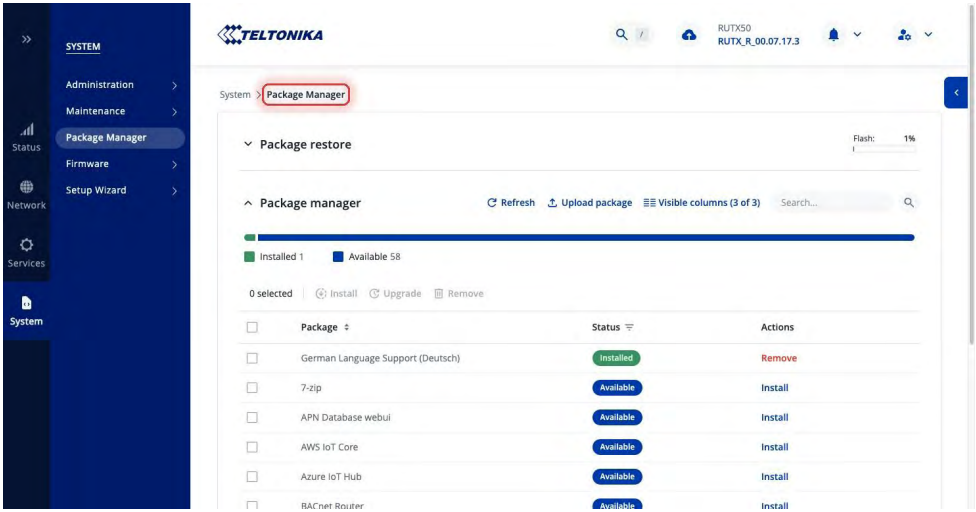
Once an update has been initiated, a new window will appear in which you must confirm once again that you actually want to perform a software update. The software will also be checked for compatibility.

Important note!

Be sure not to disconnect the router's power cable during the software update. The router will restart several times during the process and lose connection to the connected devices. Experience has shown that the update takes about five to ten minutes until the router is fully operational again and displays an active connection.

8.1.7 Installing extensions

The router allows you to install extensions, such as additional language packs, as described in section 8.1.1. You can view all available add-on packages in the „Package Manager“ and install them as required. This is particularly useful for users who want to use advanced features such as DLNA, UPnP or Tinc VPN.

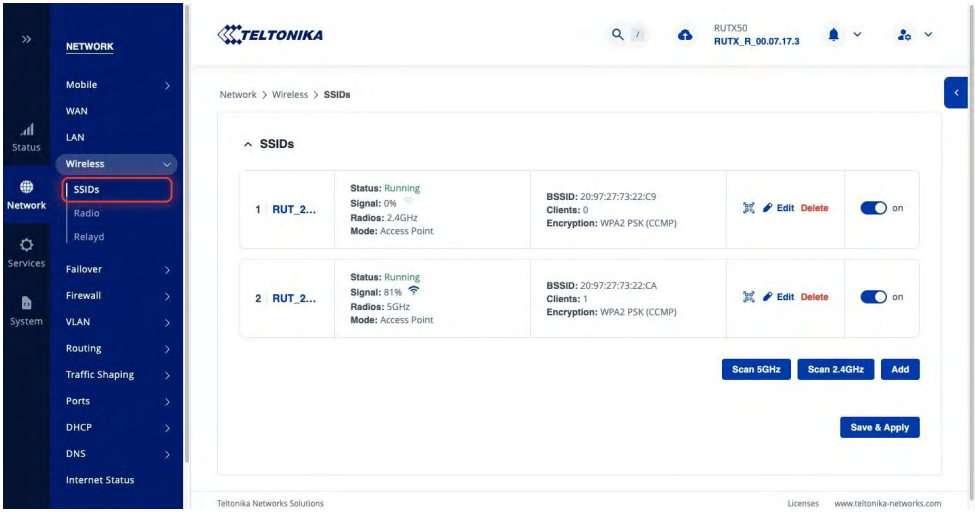


To do this, open the path: **System > Package Manager**

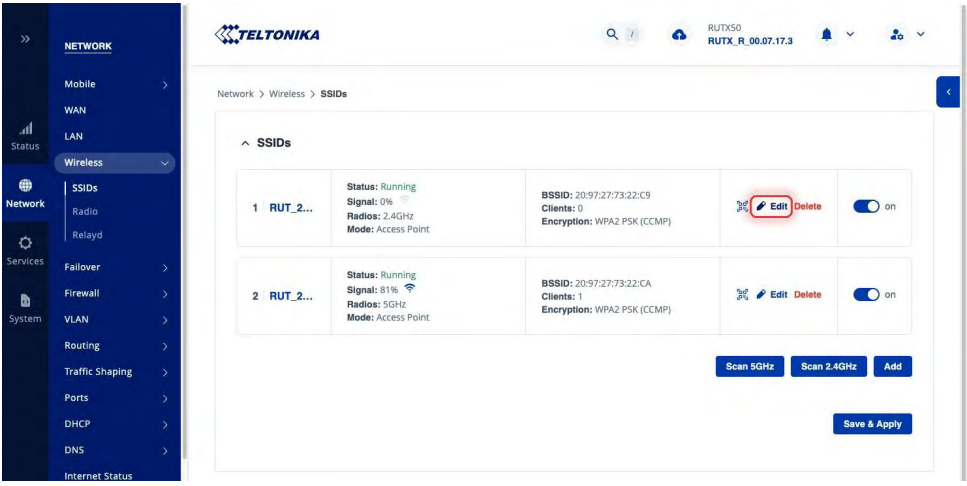
8.2 Network functions

8.2.1 Changing network data

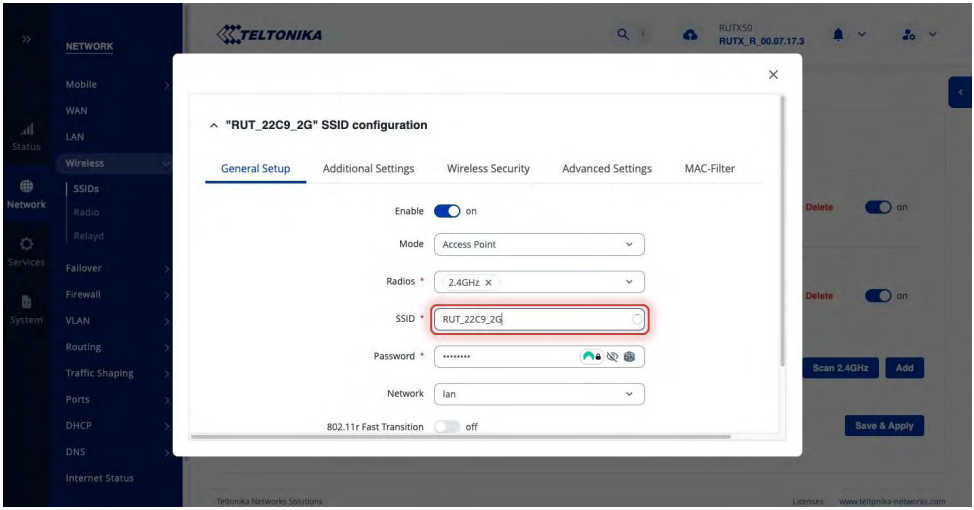
Of course, both Wi-Fi networks (2.4 GHz and 5 GHz) can be named individually according to your preferences and protected with a personal access password.



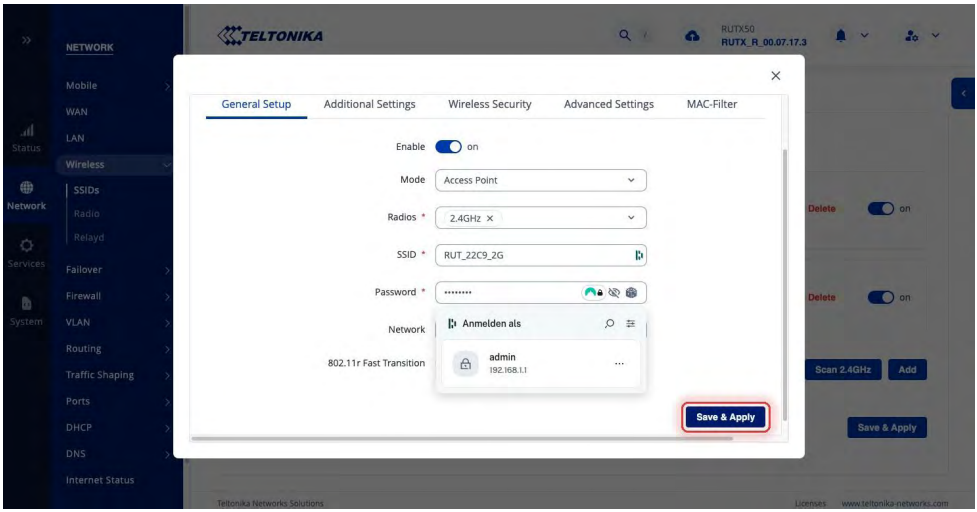
To do this, select the path: **Network > Wireless > SSIDs.**



Now select the desired network and then click on the **„Edit“** button.



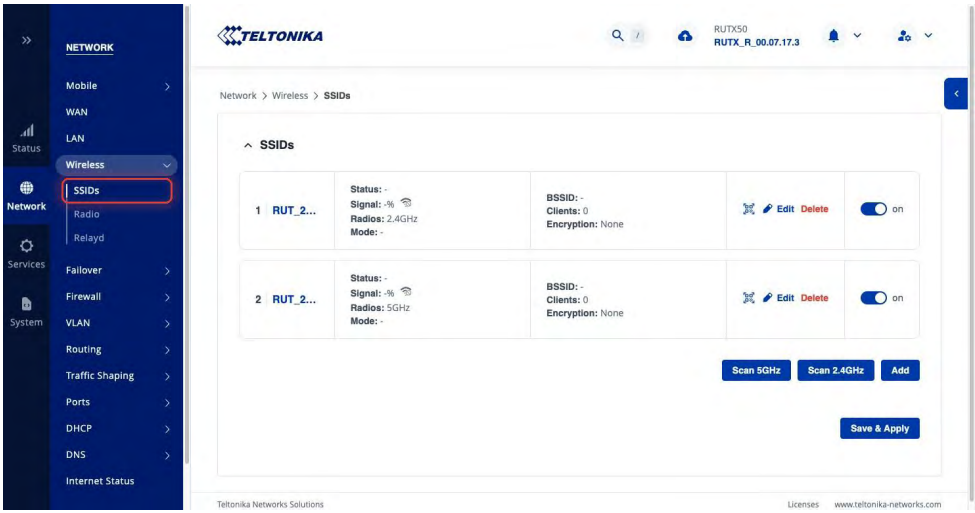
You can now change the name and access password as desired. Save the changes by clicking on the **„Save & Apply“** button. Please note that, depending on the device, the Wi-Fi settings may need to be reconfigured as the old SSID is no longer available.



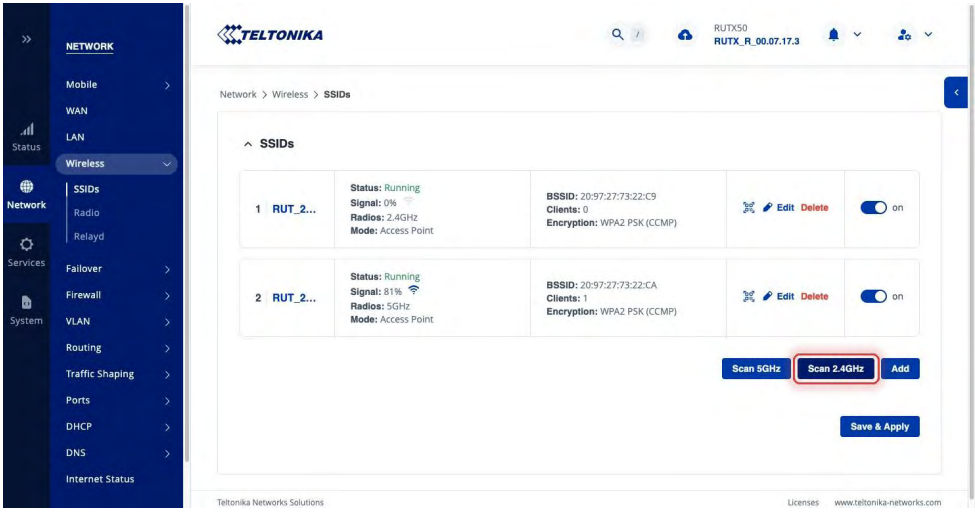
Use the **„Save & Apply“** button to save the change.

8.2.2 Connecting to a local Wi-Fi network

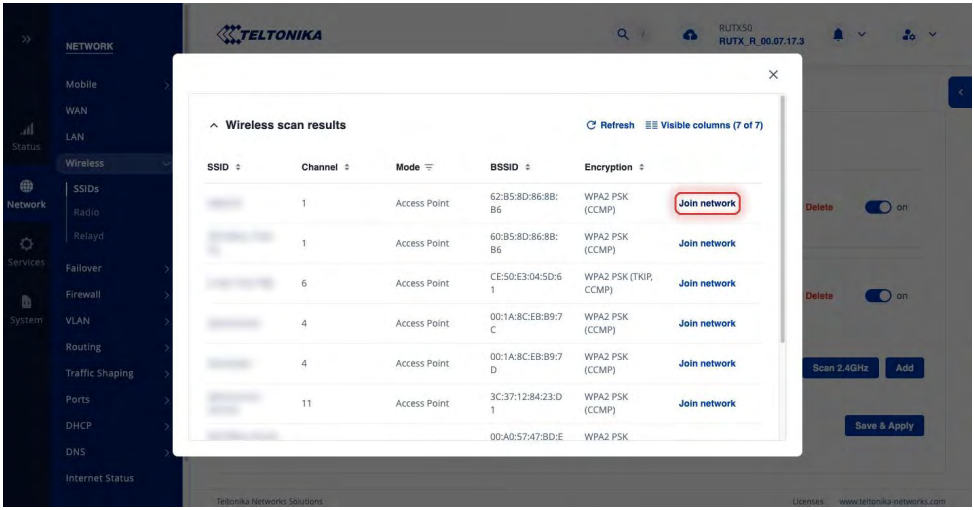
To reduce your data consumption when on the move, the router also has the option of connecting to a local network, e.g. when visiting a fast food chain or camping site.



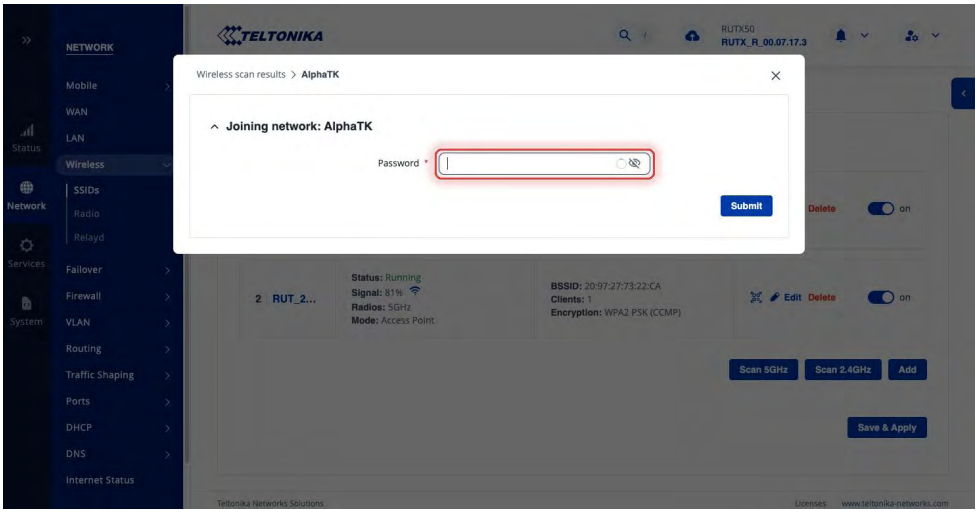
Open the path: **Network > Wireless > SSIDs**



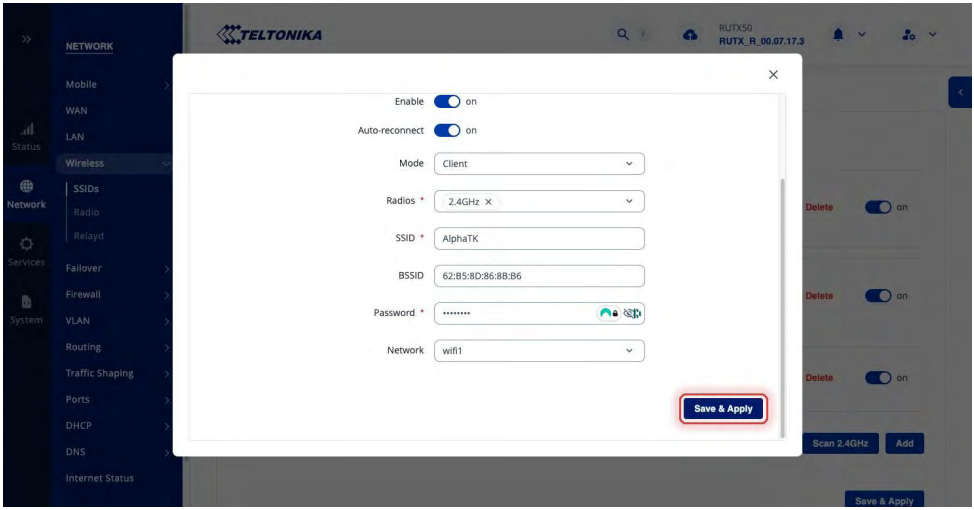
Now select the „Scan 2.4 GHz“ or „Scan 5 GHz“ button. When travelling, we recommend always searching in 2.4 GHz Wi-Fi, as experience has shown that most campsites only offer this.



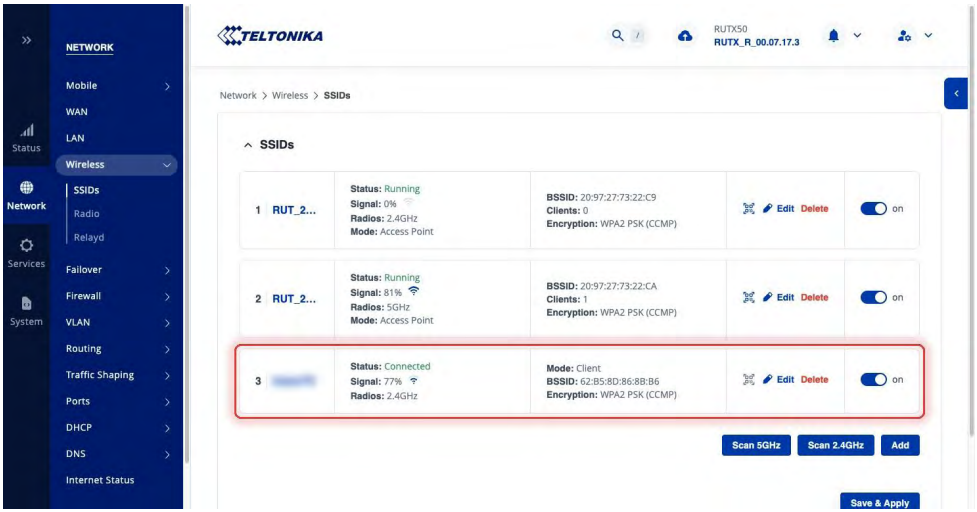
Now select the desired network and press the **„Join networ**k“ button.



Next, you must enter the password for the Wi-Fi network. You can confirm your entry by clicking on the **„Submit“** button.



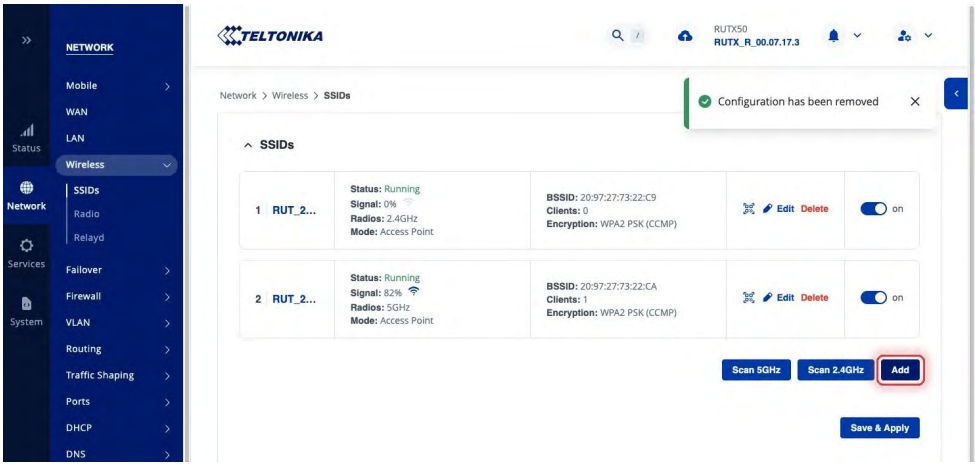
All network data will now be displayed, which you can confirm by clicking on **„Save & Apply“.**



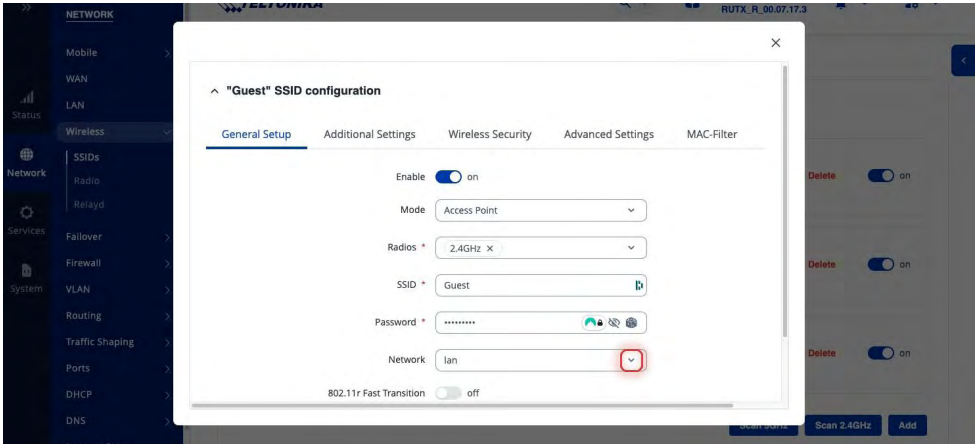
Finally, you will find the WiFi network displayed under the **„SSIDs“** tab.

8.2.3 Setting up a guest network

To set up a guest network, please proceed as follows:



Open the path: **Network > Wireless > SSIDs** and select the **„Add“** button.

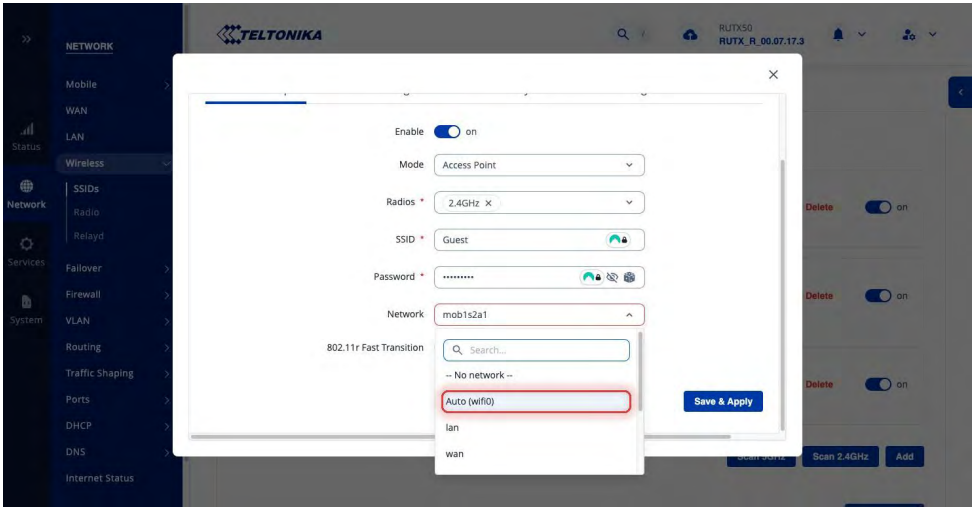


A window will now open in which you can configure the guest network.

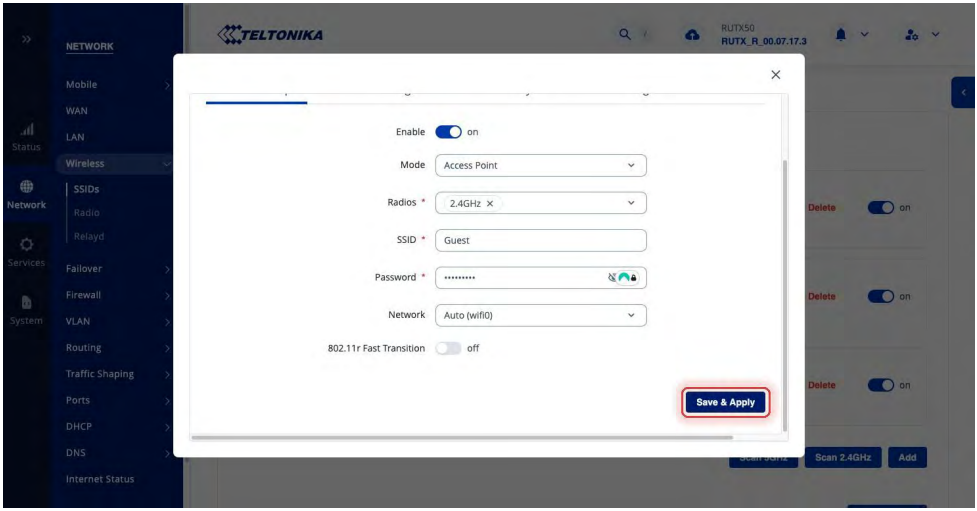
1. First, assign a new name for the SSID, for example with the addition „Guest“.

2. Then set a password for access.

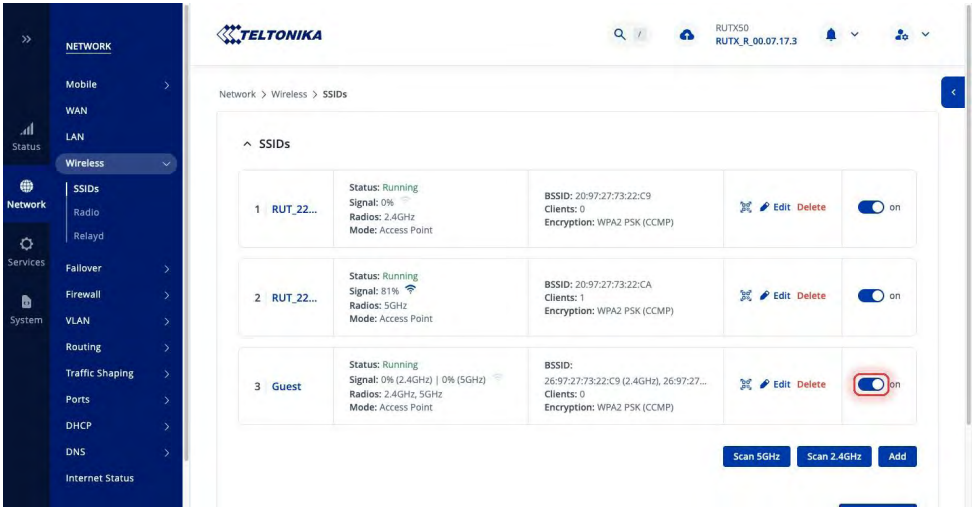
3. Since the guest network should only transmit via 2.4 GHz, also deactivate the 5 GHz network in the „Radios“ menu item.



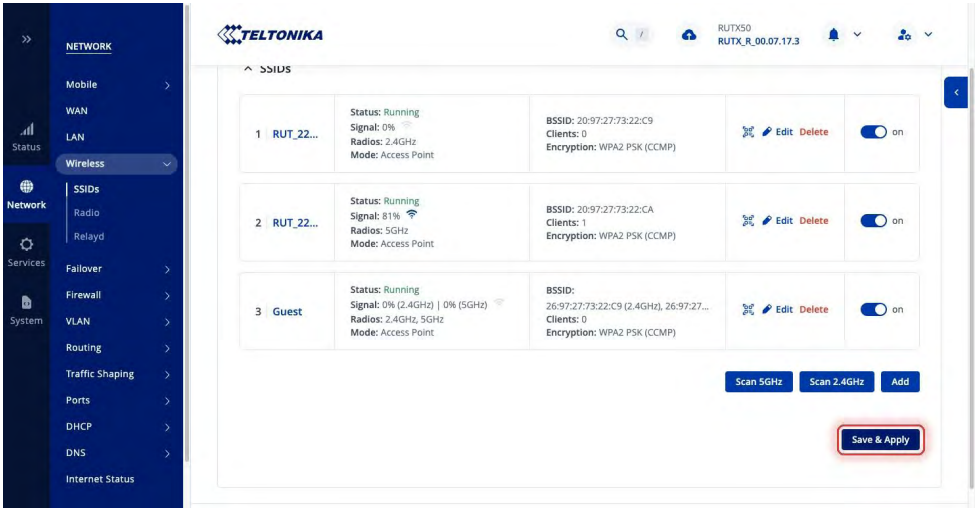
Under the **„Network“** item, we now select **„Auto (wifi0)“.** All other settings remain unchanged in our example.



We save the configuration with **„Save & Apply“.**



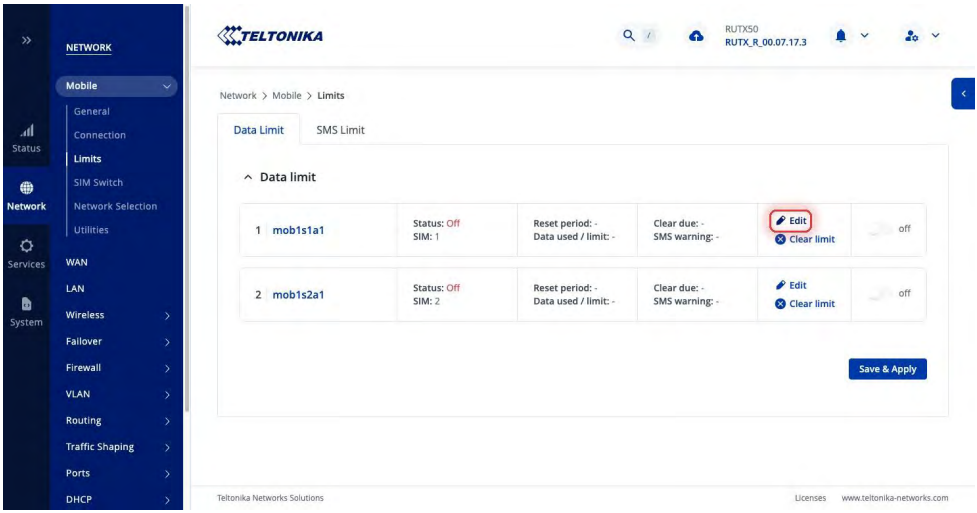
The network can now be activated under **Network > Wireless > SSIDs.**



Click „**Save & Apply**“ to apply the change and the network will be visible after about 2 minutes.

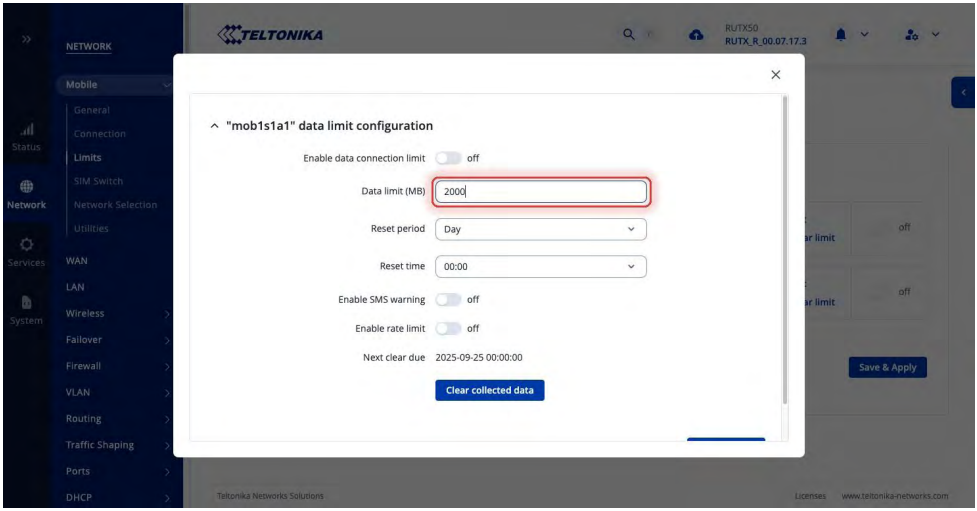
8.3 Settings (mobile communications)

8.3.1 Setting a data limit

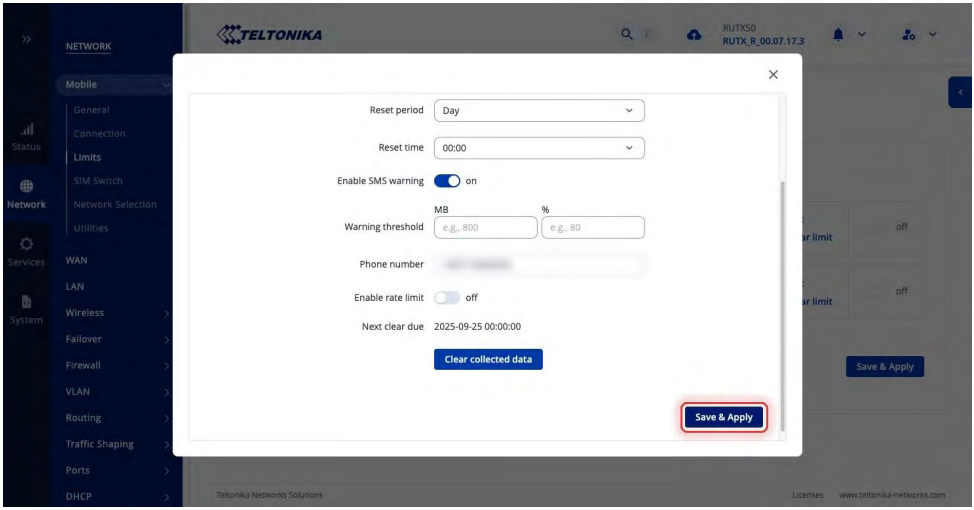


Open the path: **Network > Mobile > Limits**

Then select **„Edit“** for the SIM card for which you want to set the data limit.

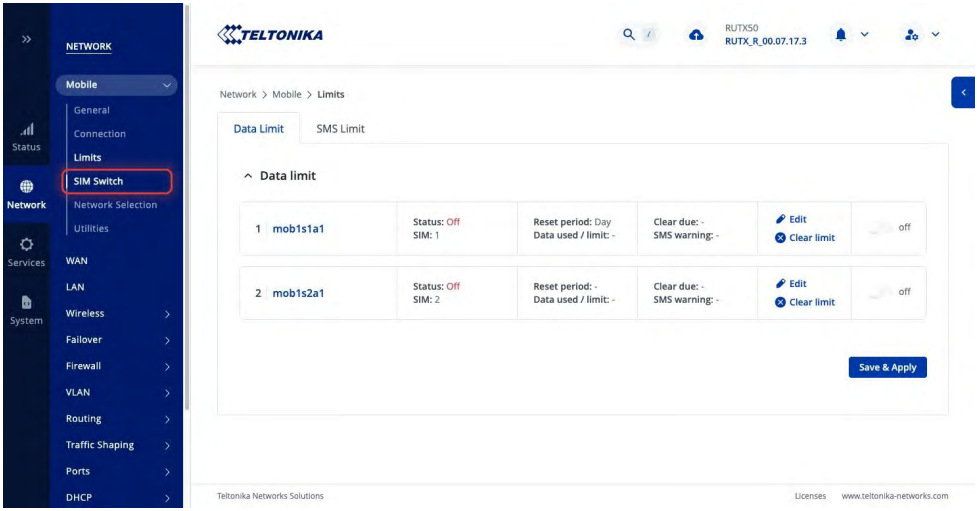


Next, set the daily limit to **2 GB, i.e. 2000 MB.**

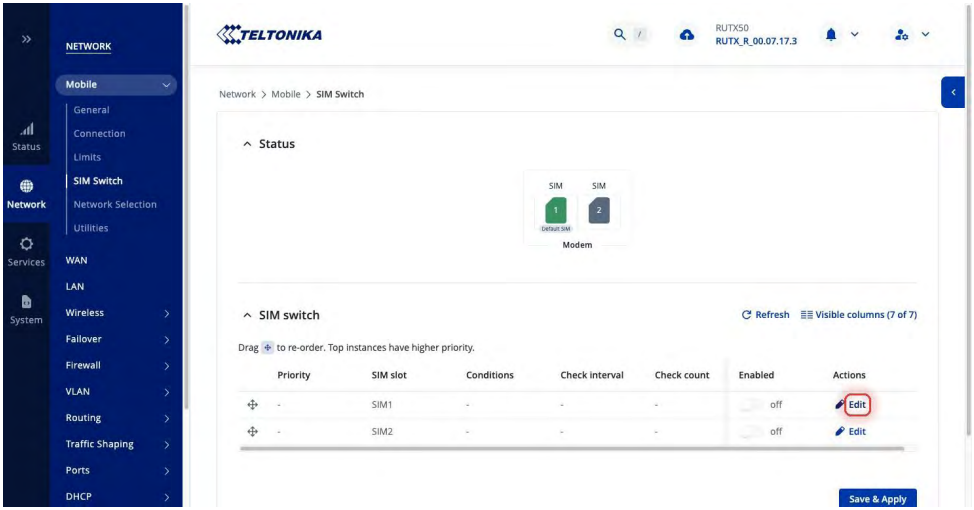


Since it is important for us to receive a notification as soon as the daily limit is reached, we activate the **„Enable SMS Warning“** function and enter a corresponding telephone number. Then we save the configuration via **„Save & Apply“.**

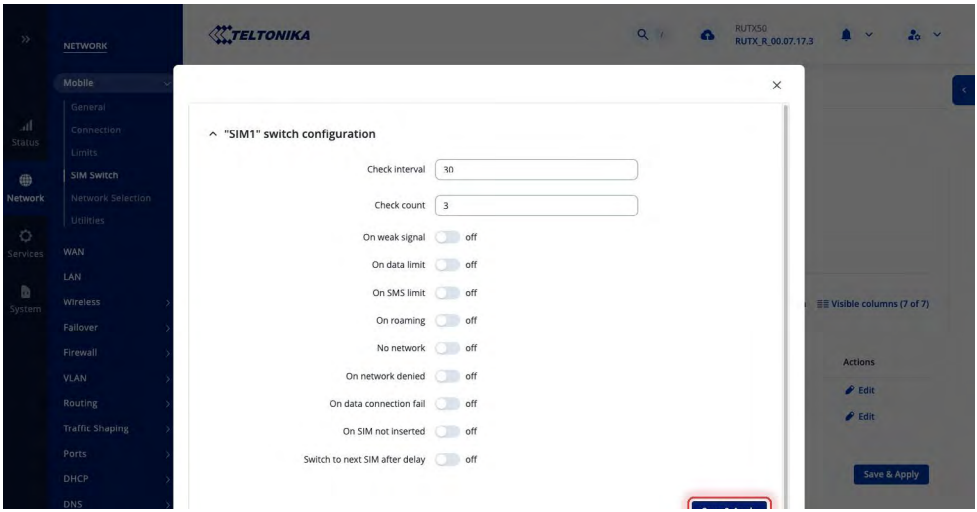
8.3.2 Setting up automatic SIM switching



Open the path: N**etwork > Mobile > SIM Switch**

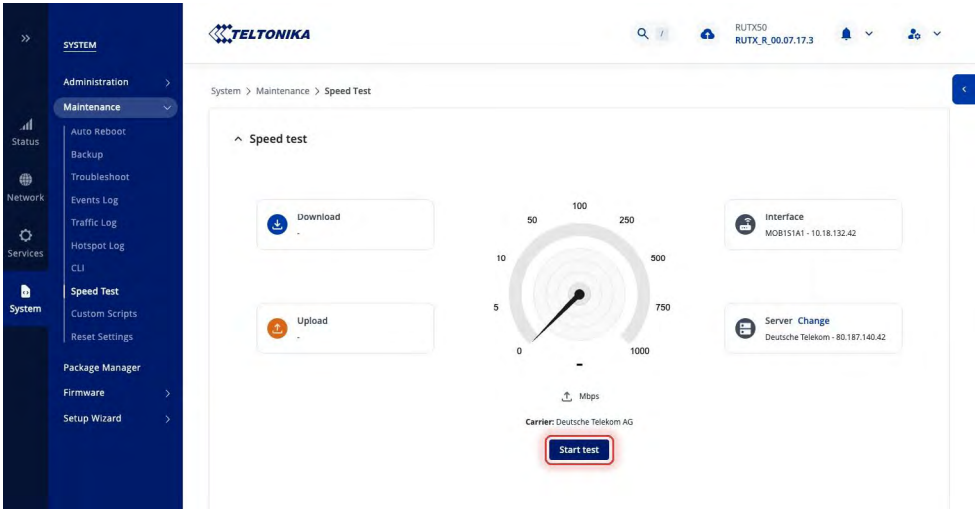


Now we select **„Edit“** for SIM1, which should switch automatically.

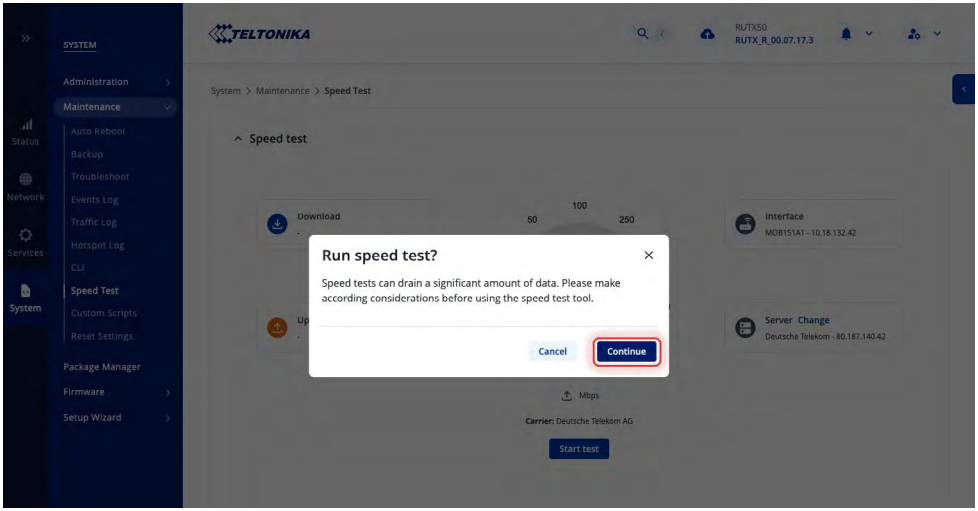


In this screen, you can now specify how the SIM card should behave for each option. **Important!** Please note, especially when switching SIM cards with a second card, that the options do not cancel each other out.

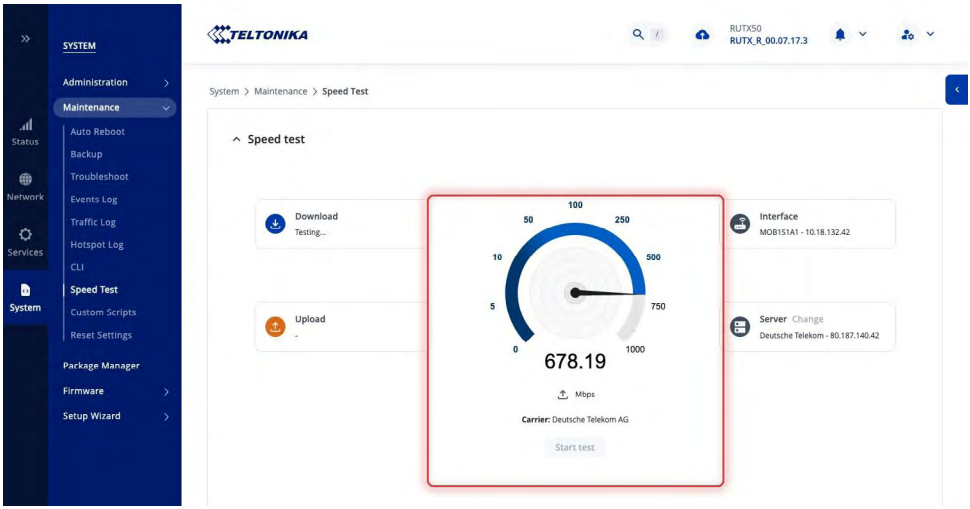
8.3.3 Starting a speed test



Open the path: **System > Maintenance > Speed Test** and then select the **„Start Test“** button. Please note that this test can only be performed if a mobile connection or an external Wi-Fi network is actively connected.

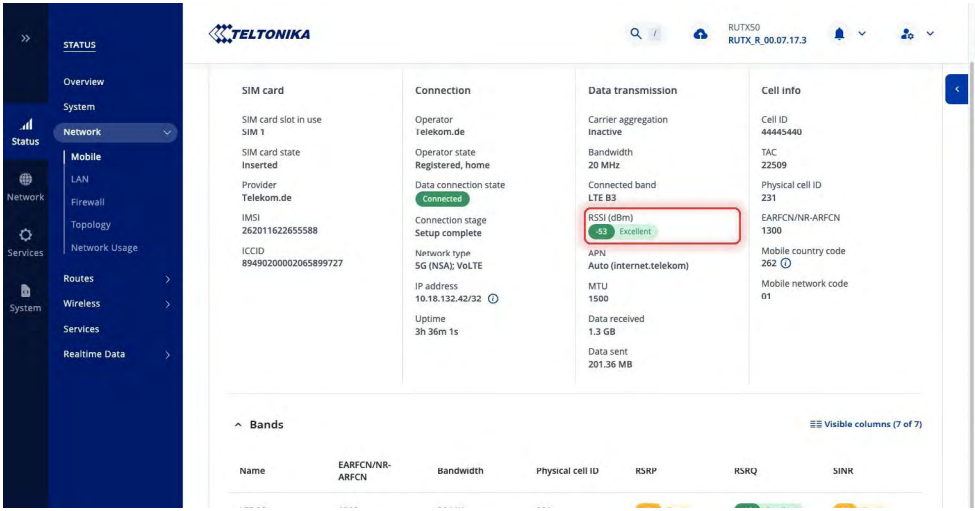


Confirm the message by clicking the **„Continue“** button.



The speed test will now start.

8.3.4 Checking the connection quality



If you want to check the connection status of your mobile connection, we recommend that you open the following path: **Status > Network > Mobile**

Guideline values

-50 to -70 dBm:	Very good to good signal strength
-70 to -85 dBm:	Adequate to mediocre signal strength
-85 to -100 dBm:	Weak signal strength, connection interruptions possible
< -100 dBm:	Very poor signal strength, connection barely usable

8.3.5 Deactivating the SIM PIN

To remove the PIN protection from your SIM card easily and efficiently, insert the SIM card into your smartphone and deactivate the PIN there. The corresponding menu paths for the most important brands are listed below. Please note that these may change slightly due to software updates from the manufacturers.

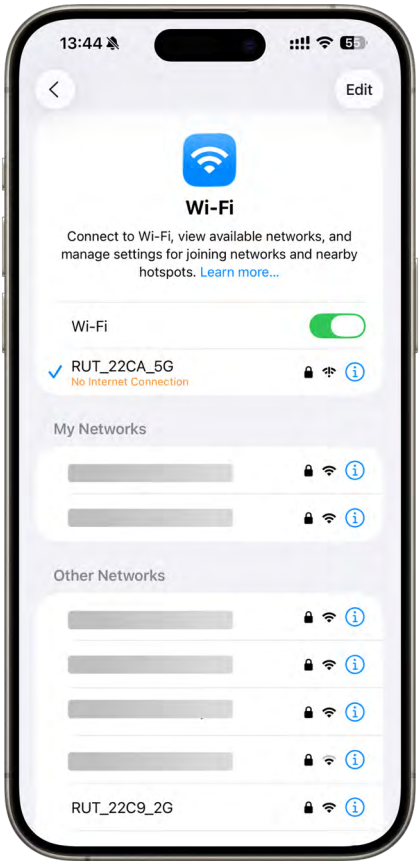
Apple (from iOS 16):	Settings > Mobile > SIMs > select desired SIM card > SIM PIN > Turn off SIM PIN
Samsung:	Settings > Security and privacy > Additional security settings > SIM card security / Set up SIM lock
Other Android smartphones:	Settings > Security or Security and Privacy > SIM card lock

8.4 Download or app

The **„Teltonika RutOS“** app is available for download from both the Apple App Store for iOS devices and the Google Play Store for Android devices. You can either search for the app directly in the respective store under the name mentioned or simply scan the corresponding QR code below.

App Store	Google Play Store

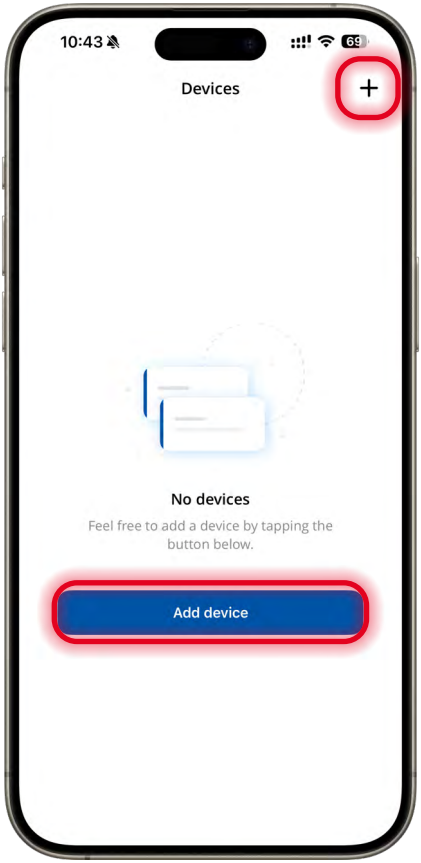
8.4.1 Connecting the router to the app



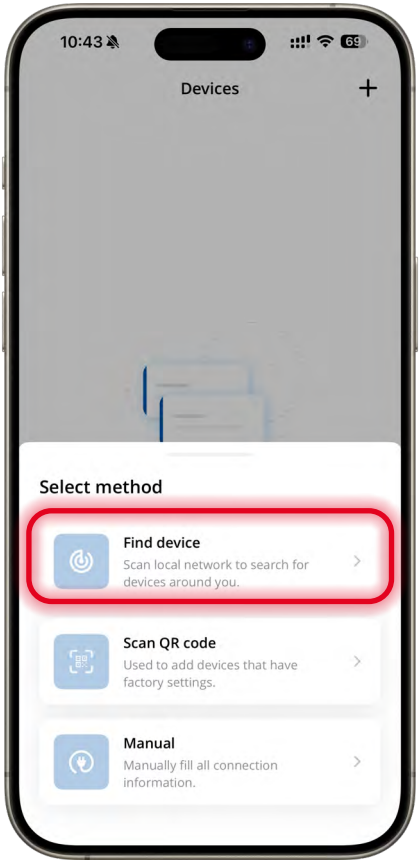
Select Wi-Fi network: First, connect to the router's Wi-Fi network. In our example, we select the network „RUT_22CA_5G" and establish the connection. Since the router has not yet been set up in this case, we use the access data from the back of the device.

Open the app and save the router: Next, we open the app on the home screen.

8.4.2 Setting up the app

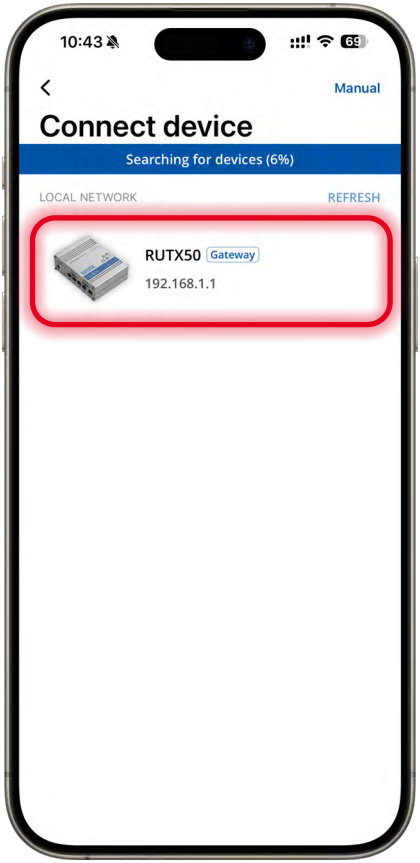


Now select the „+“ or „Add Device“ to add a new device.

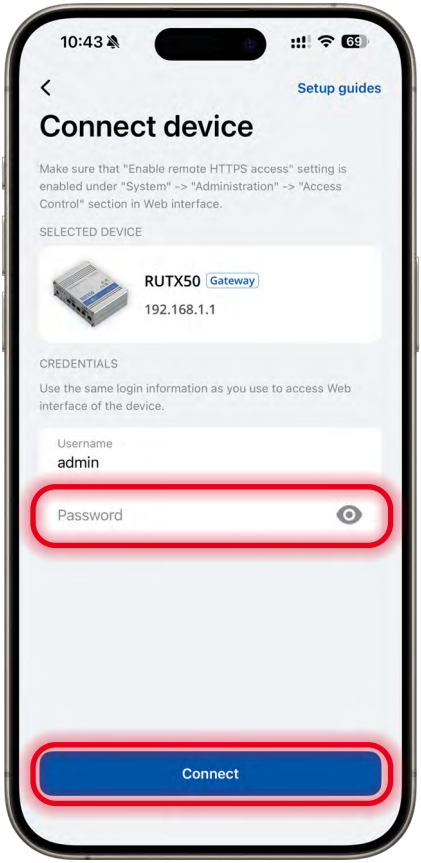


Select „Find device“ to start the search automatically.

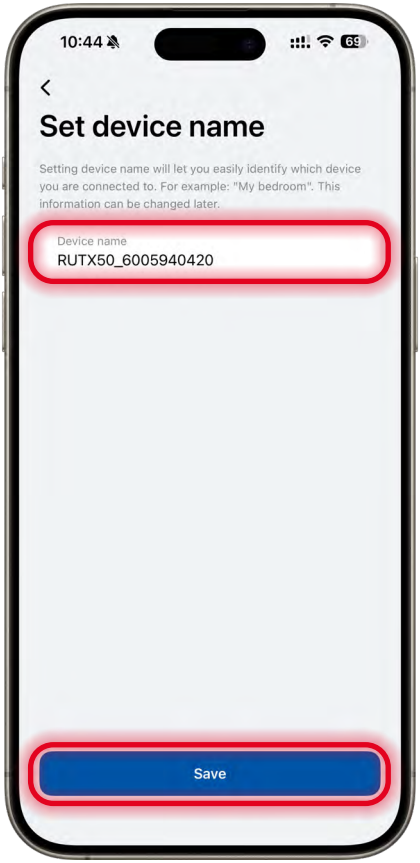
Alternatively, you can add the router using the QR code on the back of the housing. However, as this is already installed in most cases, we recommend using the „Find device“ method.



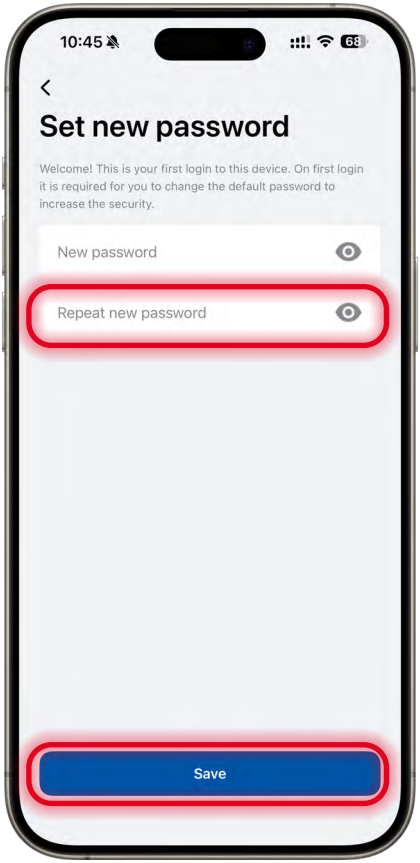
The router is now displayed with its default name RUTX50. Click on it to select it.



Now enter the access password from the back of the device (the bottom password). After successfully entering it, click on „Connect“.



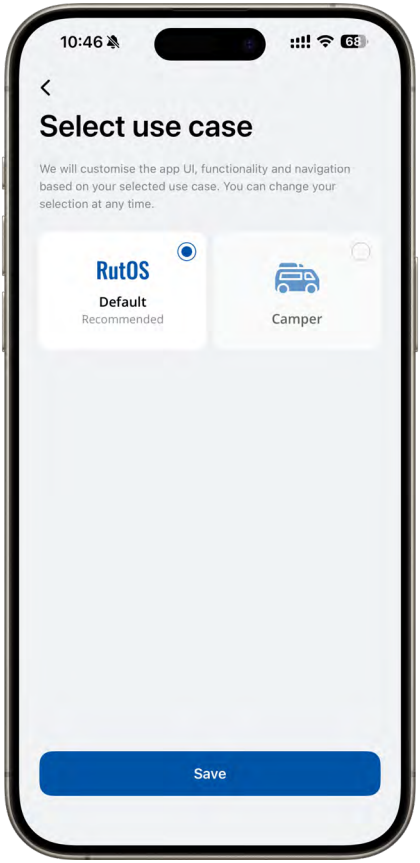
Once the device has been successfully added, you can change the device name. In our example, the name remains unchanged, so we select „Save“ to continue.



Next, the access password for the device must be changed.

Important! This is the password for the router‘s web interface, not the Wi-Fi password. Enter your new password twice and confirm with „Save“.

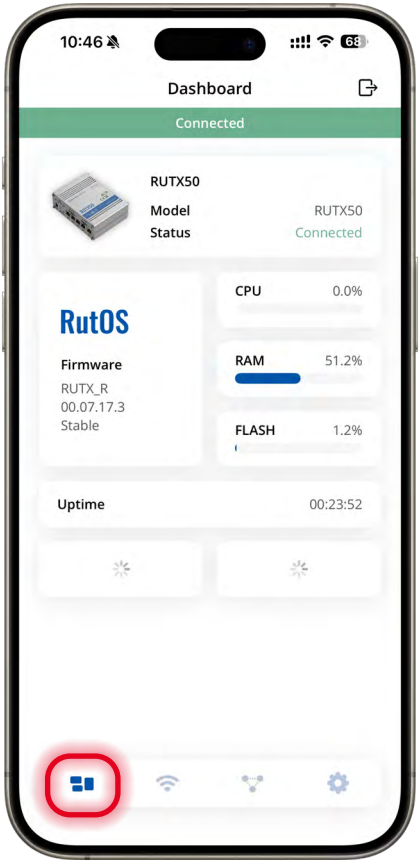
Tip: As you cannot access the router or interface without this password, we strongly recommend storing it in a password safe or in your smartphone‘s keychain.



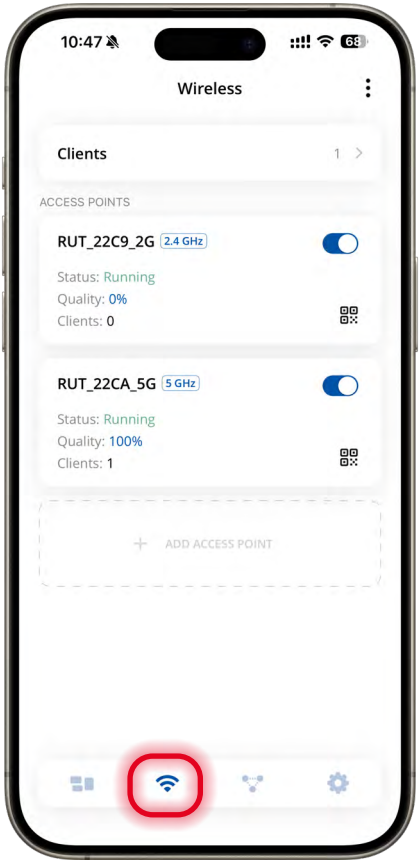
Now you can select the interface setup in the app. While RutOS offers more device details and advanced settings, Camper Mode focuses on establishing connections and logging into local Wi-Fi networks.

In the case shown, we select „RutOS“.

8.4.3. Interface in RutOS mode

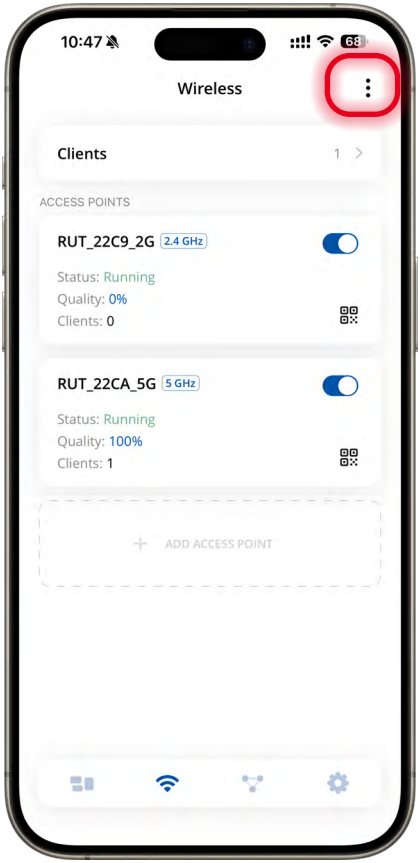


The start screen now displays the most important device information, such as the firmware version and CPU, RAM and FLASH utilisation.

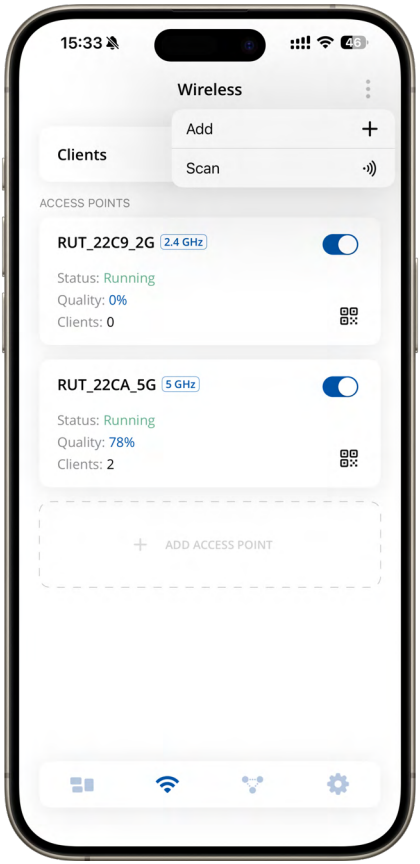


The second tab deals with the Wi-Fi settings and the two networks provided by the router. In the „Clients“ section, you can see which devices are currently connected to the router. You can also deactivate the respective networks if necessary using the „ „ switches behind the network names.

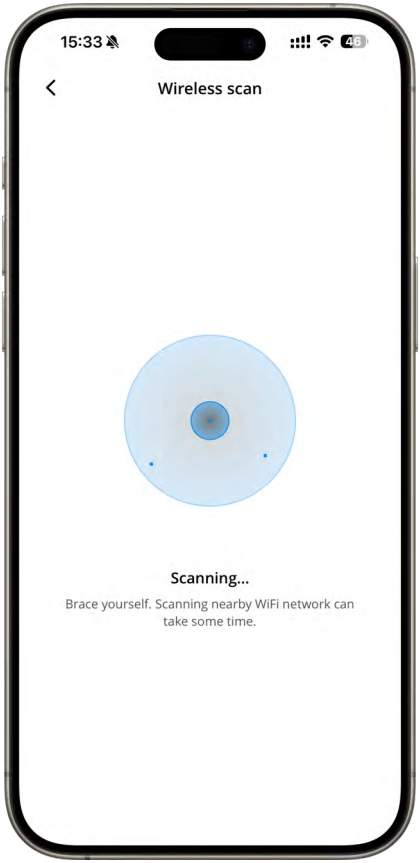
How do I connect the router to a local Wi-Fi network?



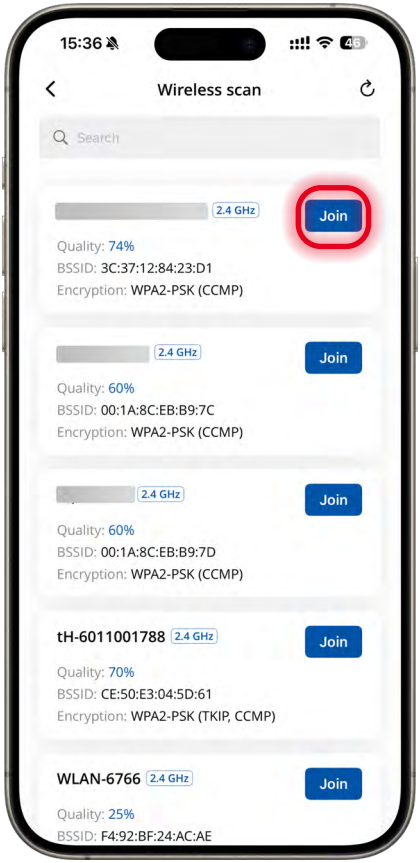
Select the icon with the 3 dots in the upper right corner.



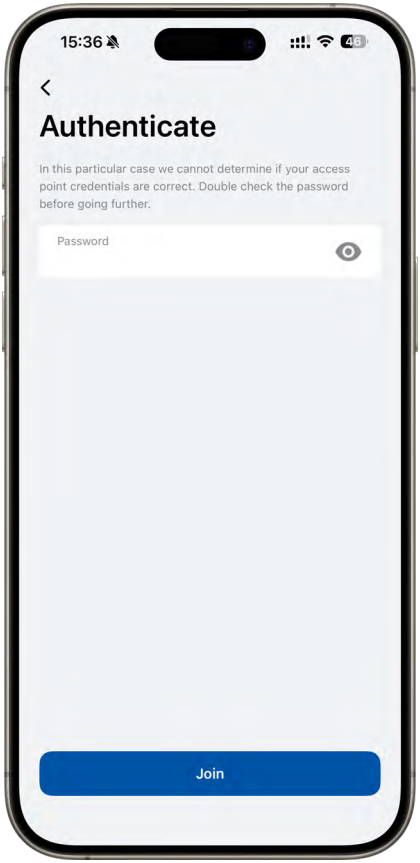
Now press „Scan“ to start the network search.



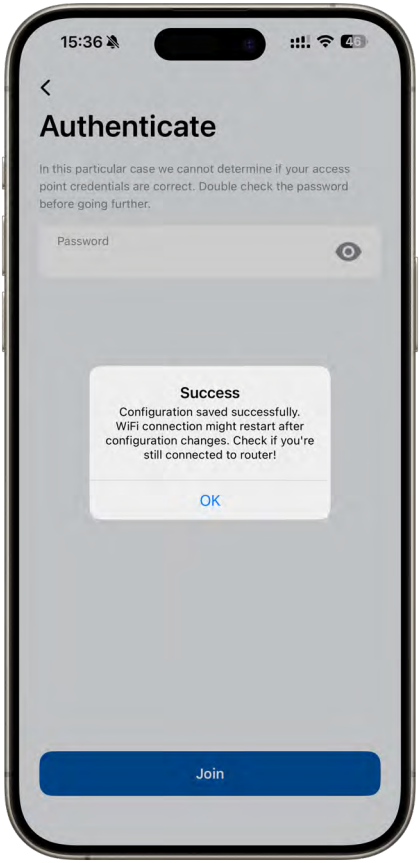
The router will now search for all available networks in the vicinity.



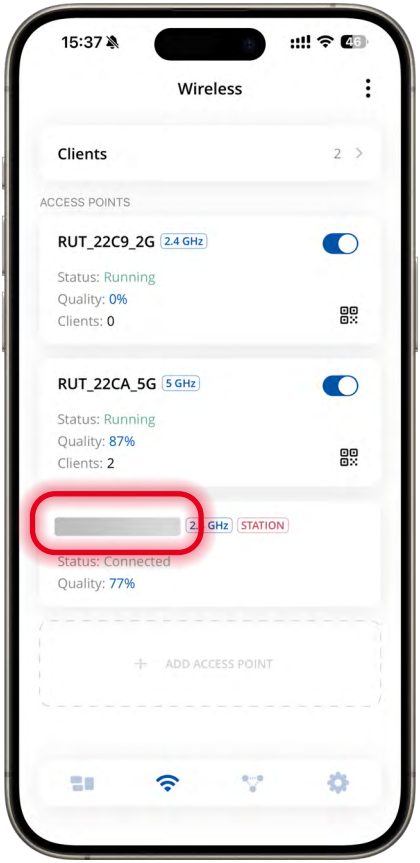
Select the desired network by pressing the „Join“ button.



Now you must enter the password for the Wi-Fi network. If you are using a public network with forwarding, the corresponding confirmation window will open automatically.

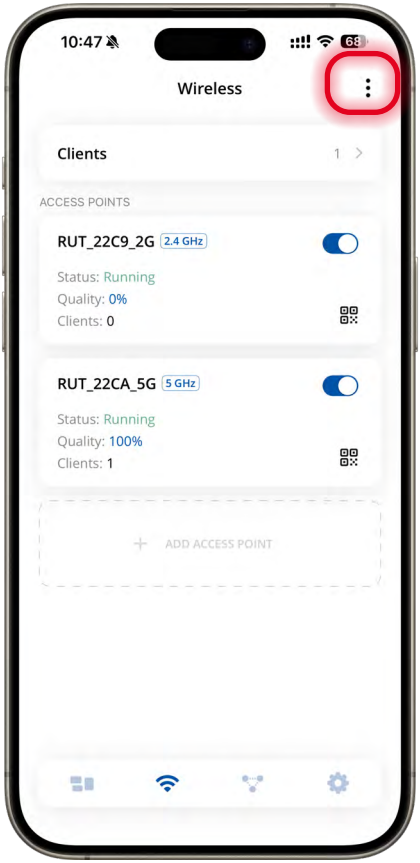


Once the connection has been successfully established, a message will appear which you can confirm by pressing „OK“.

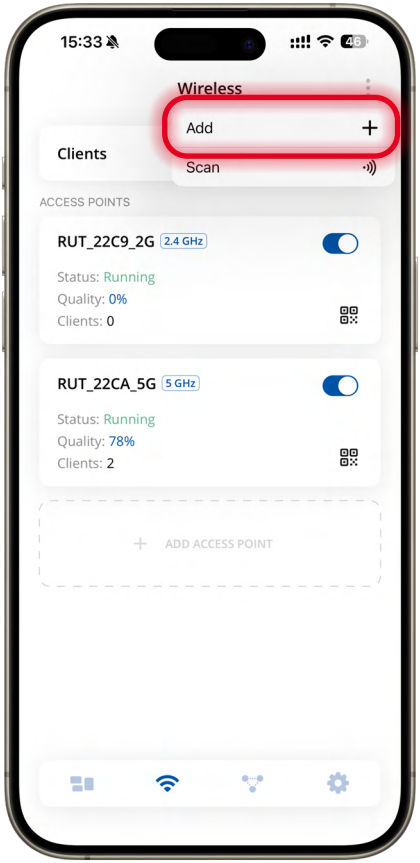


The new network will now appear below your own Wi-Fi networks.

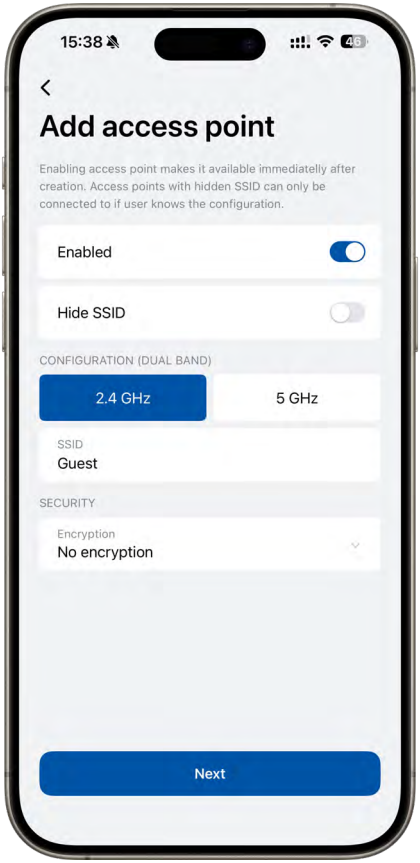
How do I set up a guest network?

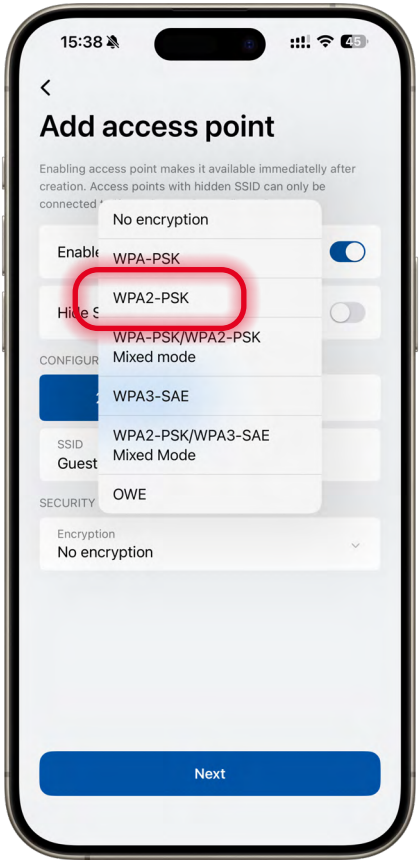


Select the icon with the 3 dots in the upper right corner.



Now press „Add“ to add a new network.





Enabled activates the network

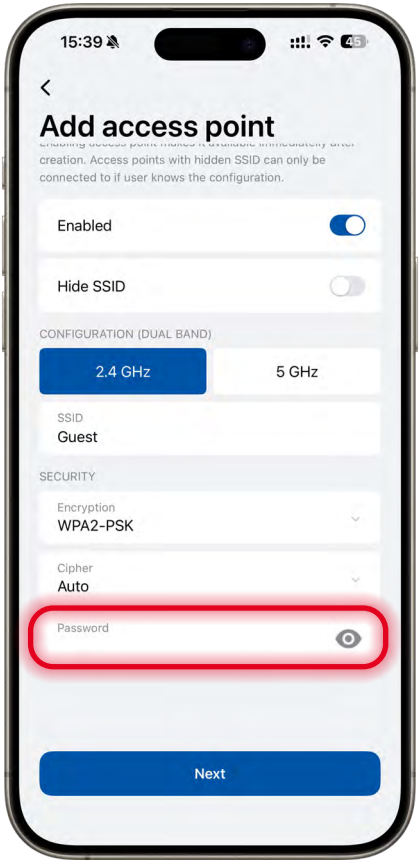
Hide SSID this allows the network name to be suppressed so that it is not visible to other devices.

2.4 GHz or 5 GHz select the frequency on which the router should transmit

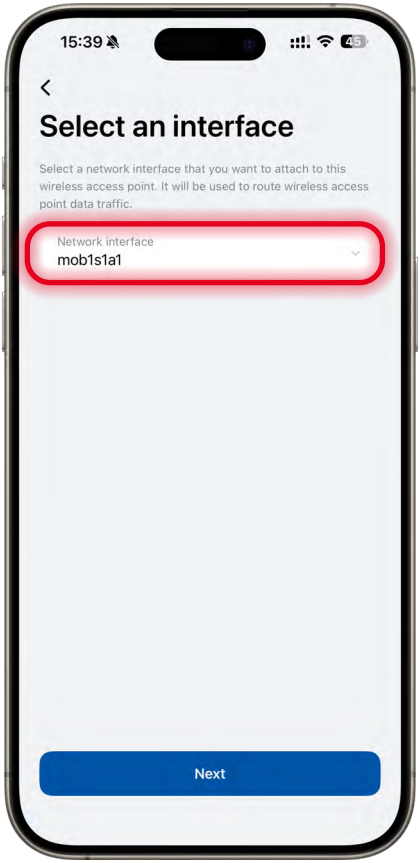
SSID here you can assign the desired network name

Encryption encryption type – we always recommend selecting WPA2-PSK here

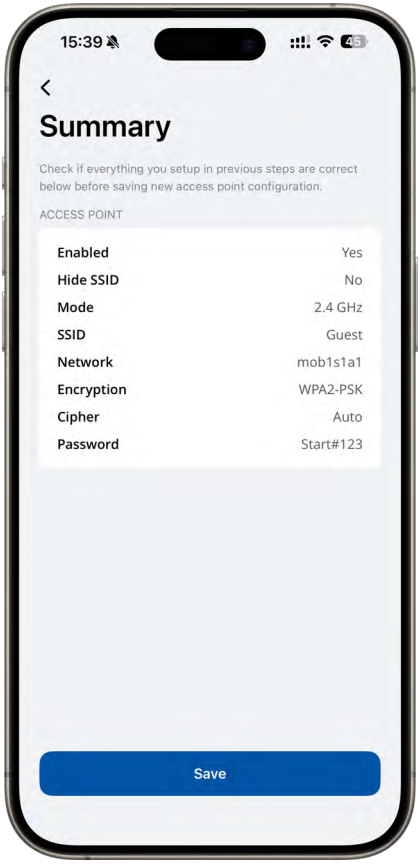
Now select the name Guest under „SSID“ and set the encryption to „WPA2-PSK“.



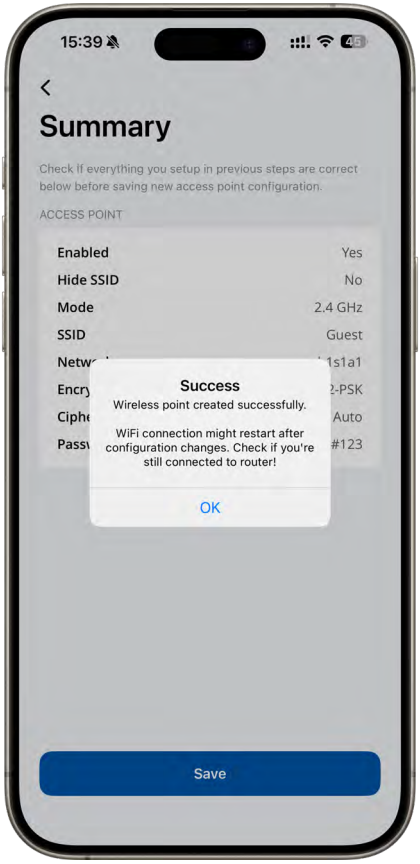
Next, we assign a password that guests must enter in order to use the router's network and select „Next".



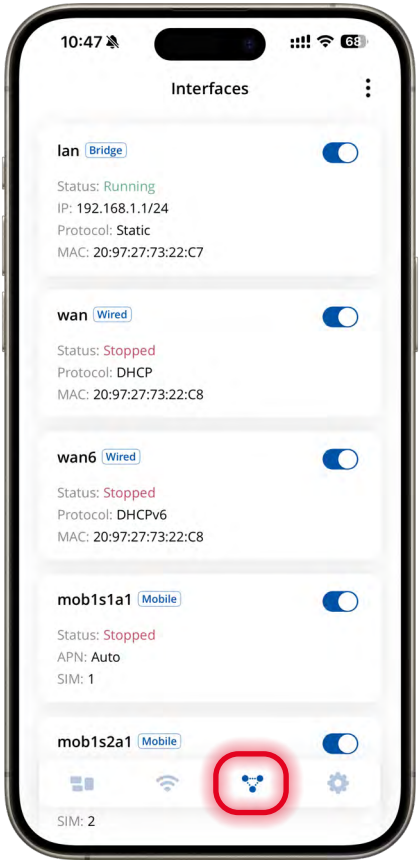
In the last step, we now specify which connection (called interface) the router should use to obtain the data. Since we have inserted an active SIM card into SIM slot 1, we select mob1s1a1.



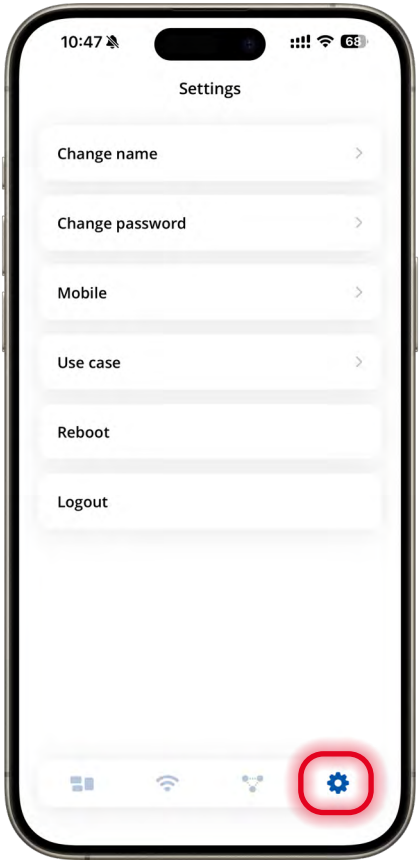
We now receive a summary of all the data we have entered, which we can save by clicking the „Save“ button.



A message confirms that the new network has been successfully saved.



The third tab shows all of the device's interfaces. These include the mobile interfaces (SIM1 and SIM2) as well as the Wi-Fi interfaces and LAN ports. If necessary, you can deactivate interfaces in this view or reconfigure LAN or WAN interfaces using the three dots at the top.

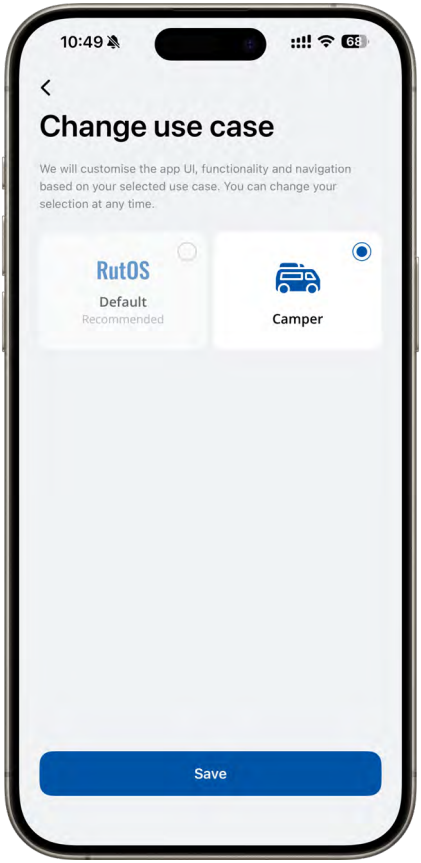


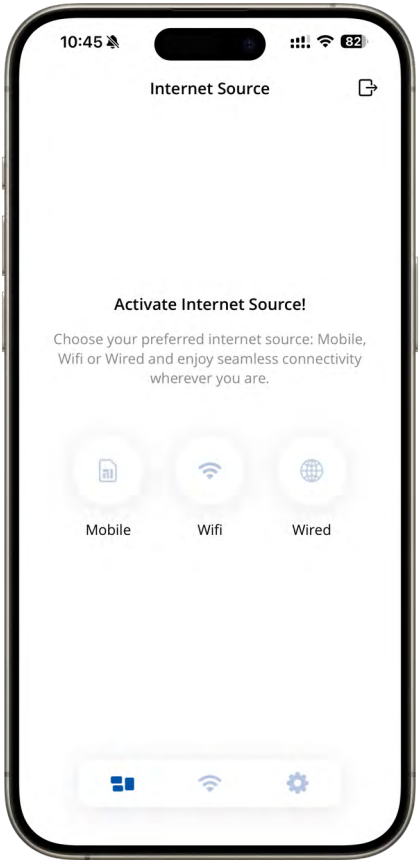
In the fourth and last tab, you can configure all the router settings. Under „Change Name", you can change the device name, while „Change Password" allows you to change the password for accessing the web interface.

Via „Mobile" you can activate or deactivate the two SIM cards. With „Use Case" you can switch between the RutOS interface and the special camper mode.

„Reboot" restarts the device via a soft reset, and „Logout" logs you out of the router interface – useful when multiple devices are in use.

8.4.4 Interface in camper mode

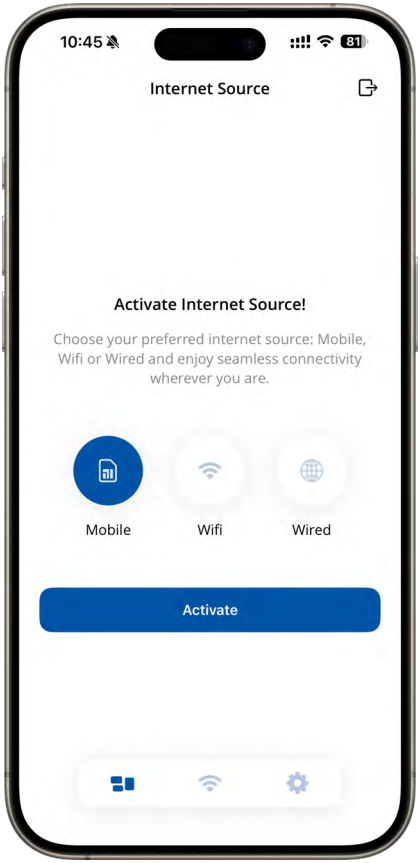




An optimised interface for campers has been integrated into the app specifically for mobile use. This can either be selected directly when connecting the router to the app or alternatively changed later via the settings in the fourth tab under „Use Case“. Depending on your preference, it offers the same range of functions, but in a slightly adapted and a clearer display. In the following, we will also discuss all the setting options here.

The first tab of this interface covers all of the device‘s interfaces, including mobile reception, Wi-Fi settings and LAN settings.

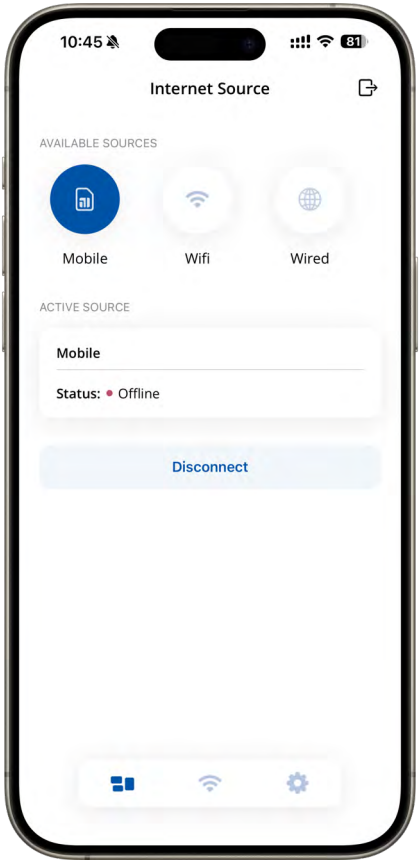
How do I activate my SIM card in this interface?



First select the „Mobile“ button and then „Activate“.

The app will now automatically start activating the SIM module.

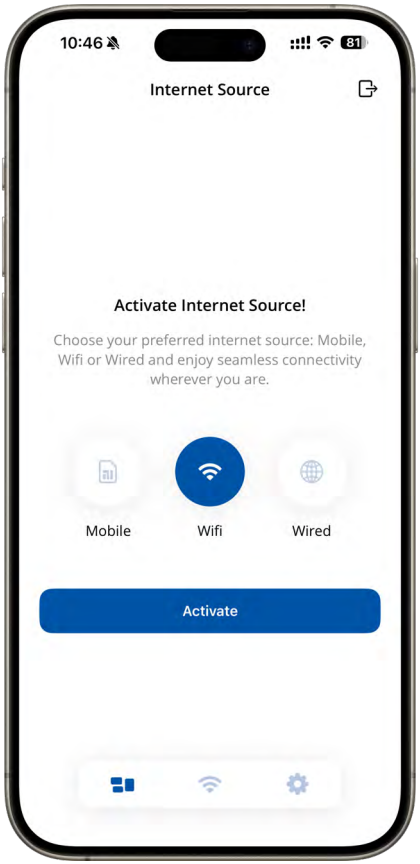
Note: Please note that the SIM protection (PIN query) of the SIM card must be deactivated beforehand. If this is not the case, the PIN code of the SIM card must be entered manually via the web interface at the address 192.168.1.1



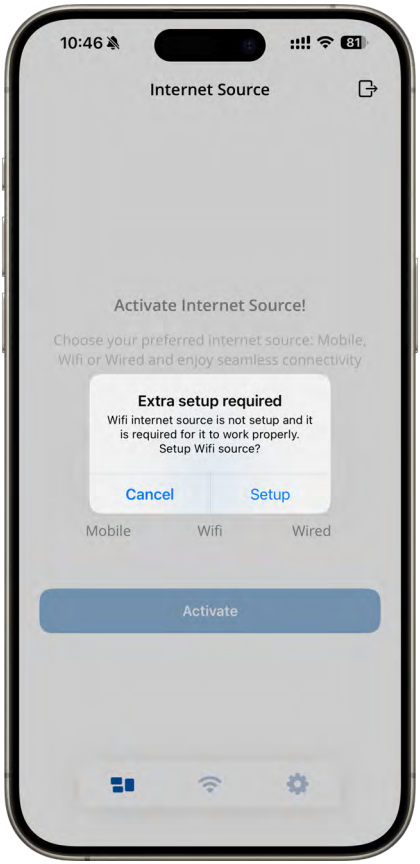
The app will now show you the currently active interface.

Note! In this mode, the app only accesses the main SIM card (default SIM). It is not possible to switch between different SIM cards here. This function is only available via the RUTOS interface in the last tab of the settings.

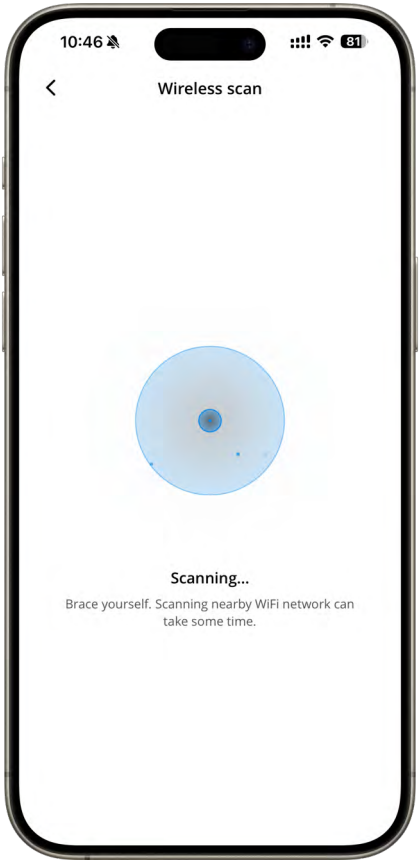
How do I search for local Wi-Fi networks?



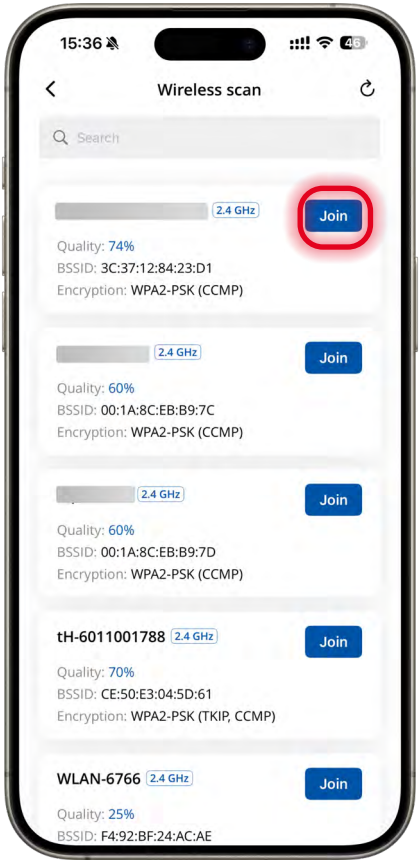
First select the „Wifi“ button and then „Activate“.



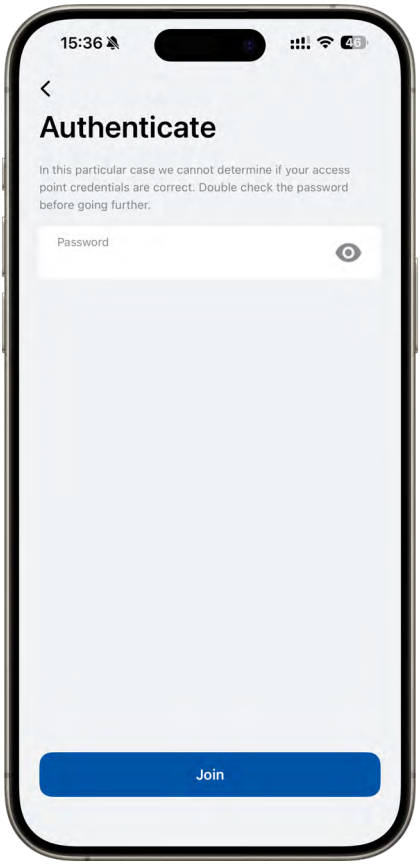
A message will appear indicating that further configuration is required. In this case, select the „Setup“ option.



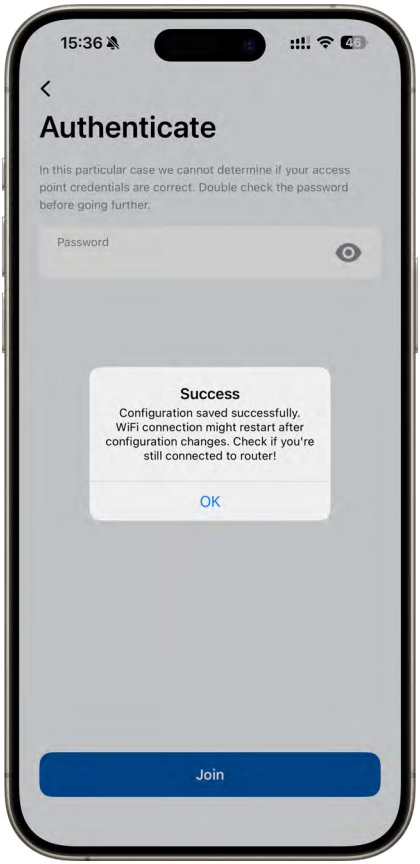
The router will now search for all available networks in the vicinity.



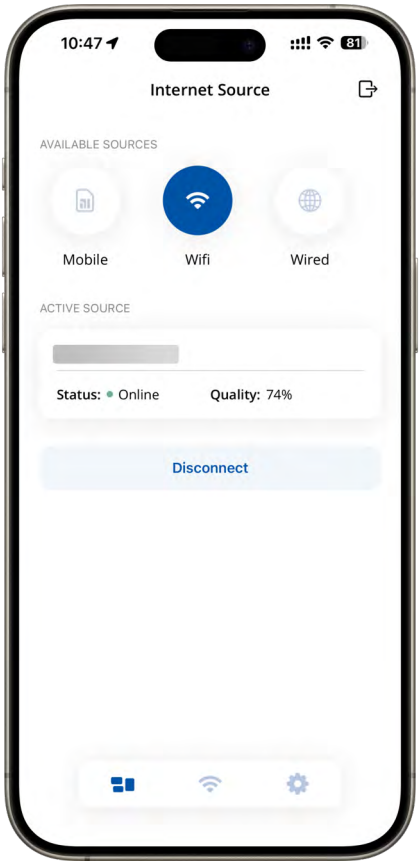
Select the desired network by pressing the „Join“ button.



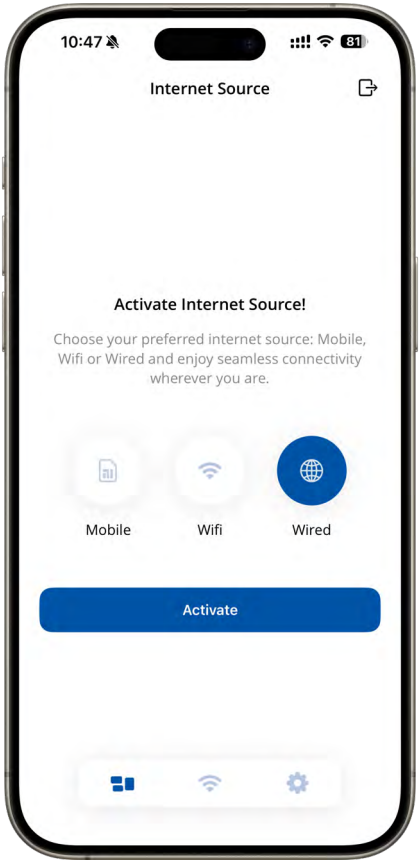
Now you must enter the password for the Wi-Fi network. If you are using a public network with forwarding, the corresponding confirmation window will open automatically.



Once the connection has been successfully established, a message will appear which you can confirm by pressing „OK“.

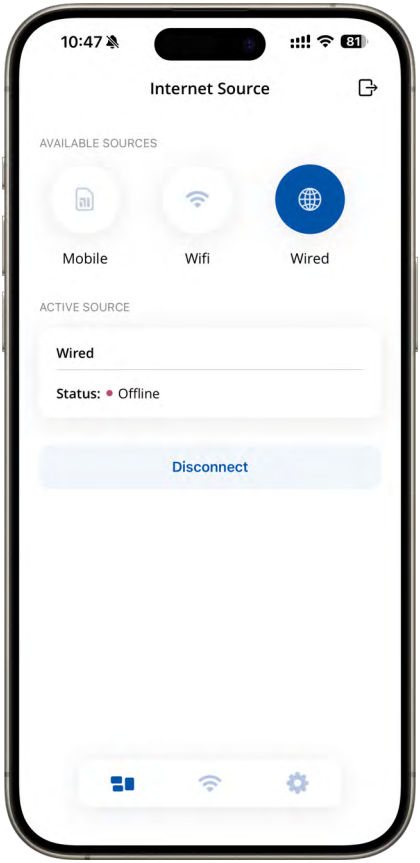


The app will now display the corresponding network name, the current connection status and the signal quality as a percentage.

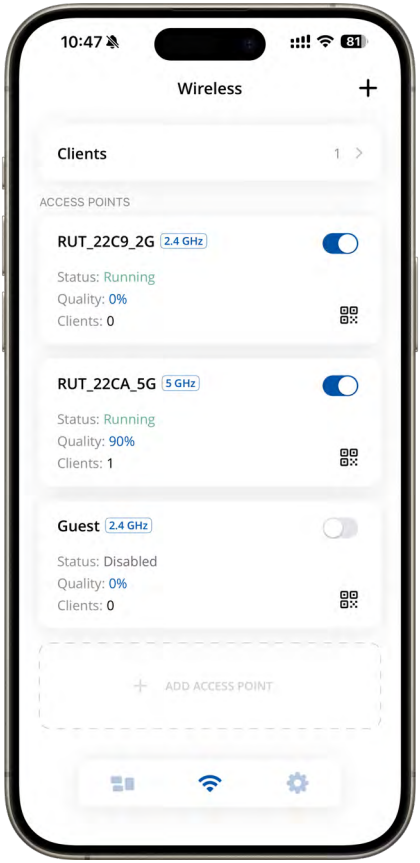


First select the „Wired“ button and then „Activate“.

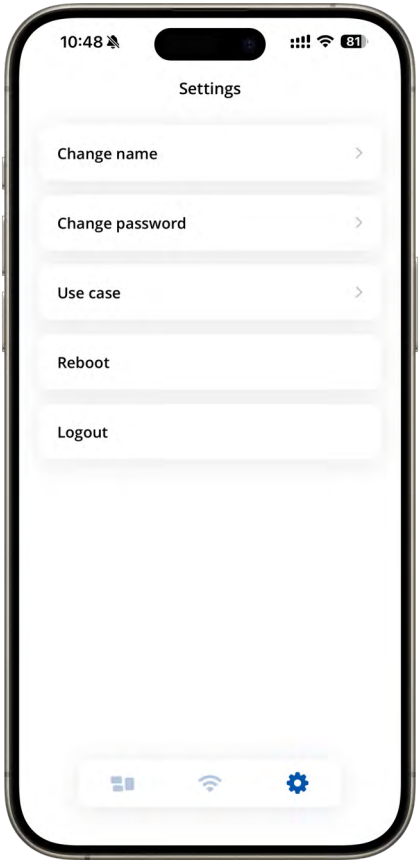
The app will now automatically start activating the LAN connection.



The app will now display the corresponding network name and status.



The second tab of this user interface covers all of the device's interfaces, including mobile reception, Wi-Fi settings and LAN settings. Here, you can easily activate or deactivate the respective functions.



In the third and final tab, you can configure all of the router's settings. Under „Change Name", you can change the device name, while „Change Password" allows you to change the password for accessing the web interface.

Use „Use Case" to switch between the RutOS interface and the special camper mode.

„Reboot" restarts the device via a soft reset, and „Logout" logs you out of the router interface – useful when multiple devices are in use.

9. TECHNICAL DATA

Item description	alphatronics Stream 5G
Item number	990784
Dimensions (W x D x H)	132 x 45 x 95 mm
Weight	540 grams
Housing material	Aluminium
Protection class	IP30
Operating temperature	-40˚ C to +75˚ C
Operating humidity	10% to 90% (non-condensing)
Connections	4 x RP-SMA (socket) for LTE
	2 x RP-SMA (socket) for GPS
	2x SMA (socket) for WLAN
	3 x LAN socket + 1 x WAN socket
	1 x USB socket (USB 2.0)
	1x 4-pin power connection (DC)
	2x SIM slot (SIM1 & SIM2)
Supported regions	Europe, Middle East, Africa, Oceania
Number of SIM slots	2x (2FF format)
Mobile network standards	5G Sub - 6Ghz SA/NSA 2.1/3.3 Gbps DL (4x4 MIMO) 900/600 Mbps UL (2x2)
	4G (LTE) – LTE Cat 20 2.0Gbps DL, 200Mbps UL
	3G – 42 Mbps DL, 5.76Mbps UL
Auto APN	(automatic configuration) Available for the most common operators
WIFI standards	2.4 GHz (IEEE 802.11b/g/n)
	5.0 GHz (IEEE 802.11ac/n/a)
WiFi modes	802.11b/g/n/ac Wave 2 (WiFi 5), access point (AP), station (STA)
Number of WIFI participants	Max. 100

Encryption	WPA3-EAP, WPA3-SAE, WPA2-Enterprise-PEAP, WPA2-PSK, WEP; AES-CCMP, TKIP, Auto Cipher, Client Separation
Input voltage range	9 – 50 V
Power consumption	max. 18W

10. CLEANING

Important safety information!

Always switch off the product and disconnect it from the power supply before cleaning. When cleaning, ensure that no moisture gets into the product.

Use a soft, lint-free cloth for cleaning. Under no circumstances use liquid, gaseous or highly flammable cleaning agents such as sprays, abrasives, polishes or alcohol.

When cleaning, ensure that no moisture gets inside the product. In particular, do not spray cleaning fluids onto the product. Gently wipe the surfaces of the housing. Always take care not to accidentally scratch the surfaces.

11. DISPOSAL

All products marked with this symbol are electrical waste and electrical equipment (WEEE according to EU Directive 2012/19/EU) and must not be mixed with unsorted household waste. Instead, protect your fellow human beings and the environment by taking your devices to a designated collection point set up by the government or a local authority for the recycling of electronic waste and electrical appliances. Proper disposal and recycling help to prevent negative effects on the health of the environment and people. Please contact your installer or local authorities for information on the location and terms and conditions of such collection points.

To protect against damage during transport, the product is delivered in packaging made from recyclable materials. Dispose of these materials separately in the collection containers provided. For environmentally friendly disposal of the product, please contact your local waste disposal company or municipal administration.

12. LEGAL INFORMATION

Disclaimer

alphatronics GmbH accepts no liability or warranty for damage resulting from improper installation or assembly, improper use of the product or failure to observe the safety instructions.

Improvements and changes to this operating manual – due to printing errors, inaccuracy of the information provided or improvements to the product – may be made by alphatronics at any time without prior notice. Such changes will be incorporated into newer editions of this operating manual or in the online version. All images are for illustrative purposes only and do not necessarily represent the actual device 100% accurately.

Copyright

Warranty information

The warranty period begins with the purchase of the device. Please provide proof of purchase to verify this date. Please keep these documents in a safe place. Our warranty service is based on our warranty conditions valid at the time of purchase. The warranty period for this product is 3 years.

Legal information

Apple®, iPhone® and iPad® are trademarks, App Store is a service mark of Apple Inc., registered in the U.S.A. and other countries.

Google® and Android® are trademarks of Google, Inc.

Other names or designations mentioned may be trademarks or registered trademarks of their respective owners.

Licence Statement / GPL Code Statement

This product contains software code developed by third parties, including software code covered by the GNU General Public Licence Version 2 („GPLv2“).

Simplified Declaration of Conformity according to RED Directive

alphatronics GmbH hereby declares that the radio equipment type described complies with Directive 2014/53/EU and other directives applicable to the product. The full text of the EU Declaration of Conformity is available at the following Internet address: https://alphatronics.de/de/support/konformitaetserklaerung,83/

Additional legal information:

Frequency ranges

Mobile communications	699 – 868 MHz / 1850 – 2690 MHz
WIFI	2400 – 2500 GHz
GNSS	1575.42 – 1602 MHz

Maximum transmission power:

WIFI 2.4 GHz:	17.82 dBm (EIRP)
WIFI 5.0 GHz:	20.40 dBm (EIRP)
WIFI 5.8 GHz:	13.26 dBm (EIRP)
LTE Band 1/2/8/20/28/28/40:	3 dBm
LTE Band 7:	24 dBm
LTE Band 42/43:	26 dBm
5G NR Band 1/2/8/20/28/28/40:	23 dBm
5G NR Band 41/77/78:	26 dBm

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