Verizon 5G USB Modem

USER GUIDE

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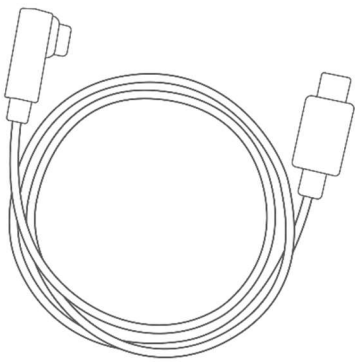
1. Overview

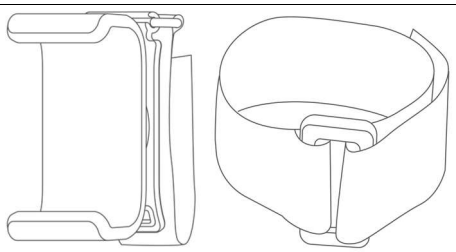
Raven 5G Dongle is a multimode (LTE & 5G) wireless dongle, which provides 5G & LTE connectivity. With its compact dimensions and light weight, it can be used to provide internet access for mobile devices the like of AR/VR and laptops, as well as at home & office environments.

1.1. Package Contents

The box includes the following items:

5G USB Modem	
Quick Start Guide	
USB Cable (60cm)	

Overview

Modem Holder & Additional Strap	

1.2. Product Specification

Item	Description
Chipset	Mediatek T750
Flash/Memory	LPDDR4 1GB/ Flash 1GB
Status Indicator	RGBW LED x1
I/O Interface	Nano-SIM Reset Key USB-C (Tethering) USB-C PD Passthrough (Up to 60W)
Color	Black
Dimension	110 x 57 x 16mm/95g
Platform Support	Windows 10, Linux, Chrome OS, Android, Mac OS
Management	Web GUI, Verizon OMADM, Verizon MDM

1.3 Device description

1.3.1 LED Indicator

The Raven 5G Dongle features a single LED indicator located on the top side of the device. This LED serves as a visual cue to provide information about the connectivity and status of your device.

Keep an eye on the LED indicator to stay informed about the status of your Raven 5G Dongle and ensure a seamless connectivity experience.

LED Color/Status	**Meaning**
Off	No power or cable connected to Raven.
Blinking White	Device booting up (~1 minute)
Solid White	Connected to the internet. USB Tethering is successful.
Blinking Blue	Connected to the internet, but device does not support USB data transfer due to the host device compatibility.
Solid Red	No Service/ No SIM card inserted
Blinking Green	Factory Reset (~ 1 minute)
Fast Blink Red	If the host's power source capability is less than 2.5W, it means insufficient power supply. In every 10 seconds, LED indicator will be red fast blinking (0.5s) for 5 seconds.
Fast Blink White	Firmware Upgrade in process.
Solid Green	Device is thermal throttled and limiting internet access.

1.3.2 Side Views

Note:

To utilize the PD passthrough function, ensure both your device and adapter support USB PD. The USB Modem can still be powered via its Data port for standalone use.

In cases where either the device or adapter does not support PD, the power source can still power the USB modem and provide connectivity to the device.

1.4 Environmental

Operating temperature: 32°F to 104°F (0°C to 40°C)

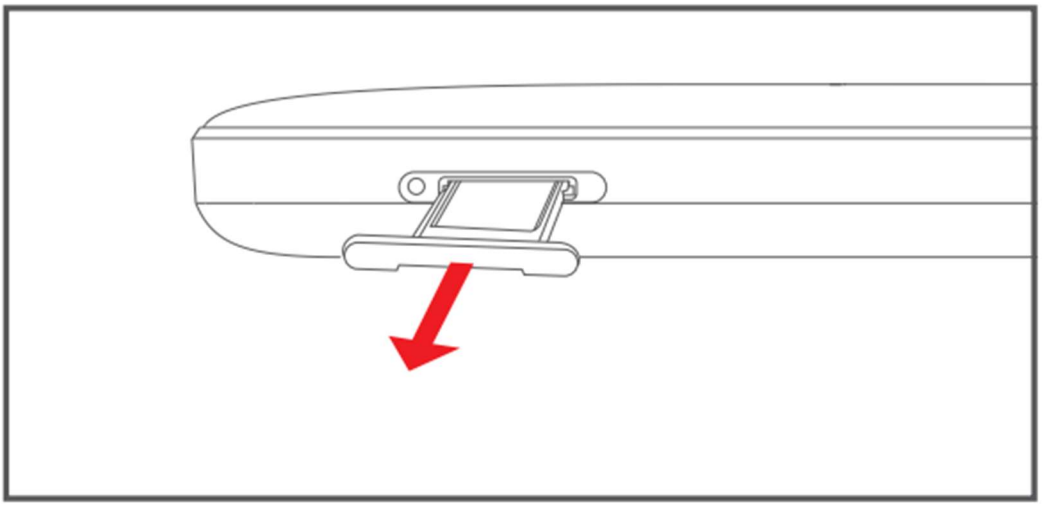
Storage temperature: -4°F to 140°F (0°C to 45°C)

2. Installation

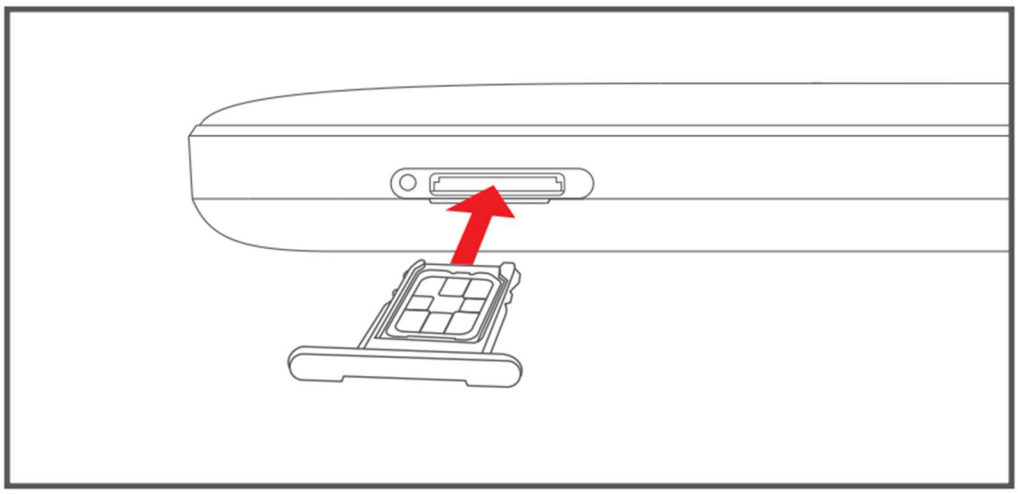
2.1 First-time setup

The 5G USB Modem comes with Verizon's SIM card pre-installed. The following steps demonstrate how to change the SIM card for the 5G USB Modem:

1. Pry open the SIM Tray with your fingers.



2. Insert the SIM card into the SIM tray with the gold contacts facing upwards. Make sure the SIM card is installed with the gold contacts faced up to prevent damaging the device or SIM card.



3. Fully insert the SIM tray back into the device until the surface is flush.

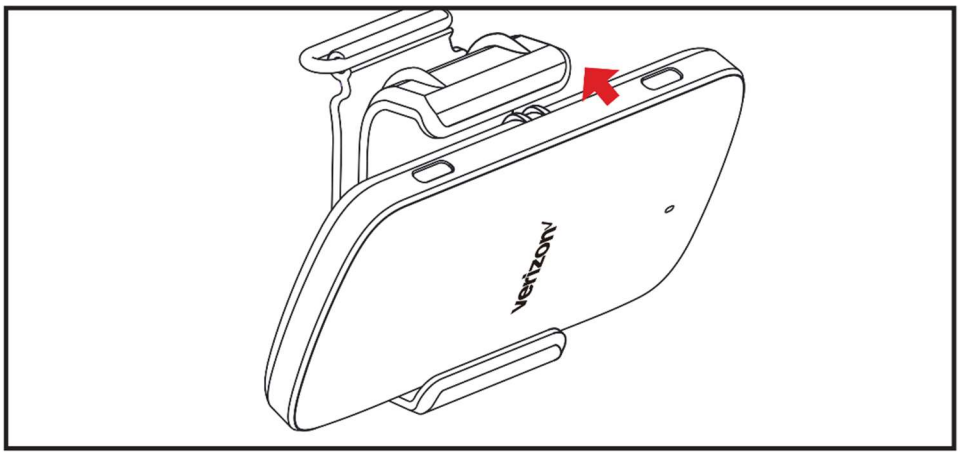
2.2 Getting Online

Ensure the Raven 5G Dongle is powered on and connected to the network. Once the LED indicator shows solid white the device is ready and connected to the internet.

For AR/VR devices, if the Status LED shows blinking blue, the headset may not support data from its USB-C port. Please contact your AR/VR vendor for more information.

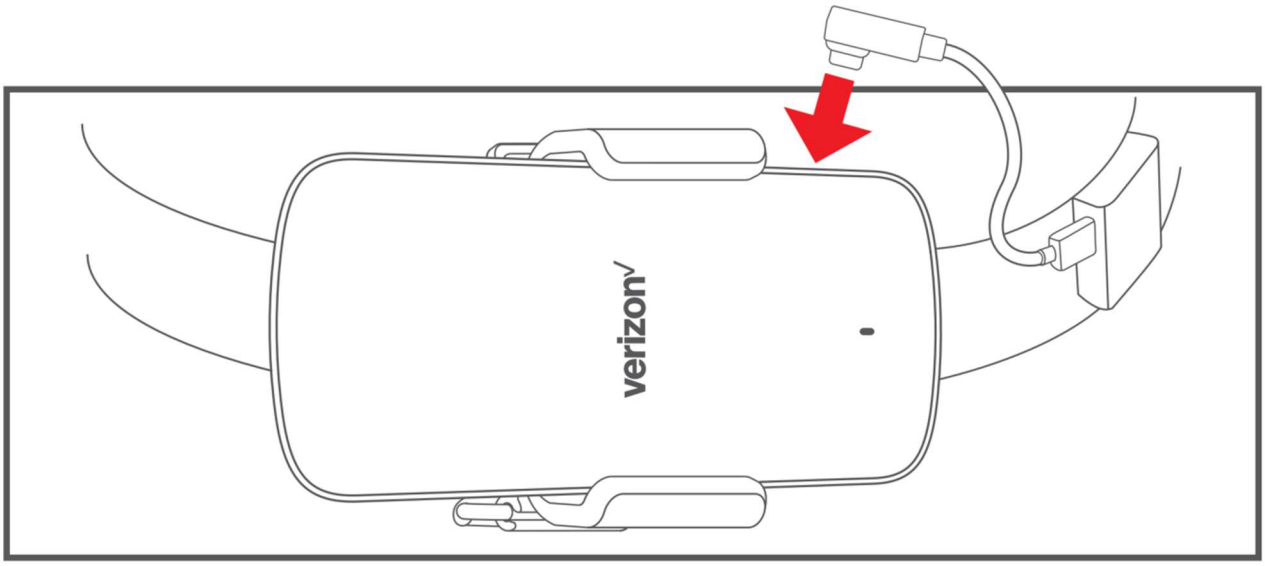
2.3 Setting Up the USB Modem – AR/VR Holder

For installing the USB Modem, you could mount the device via the Modem Holder to either your arm or onto the AR/VR device.

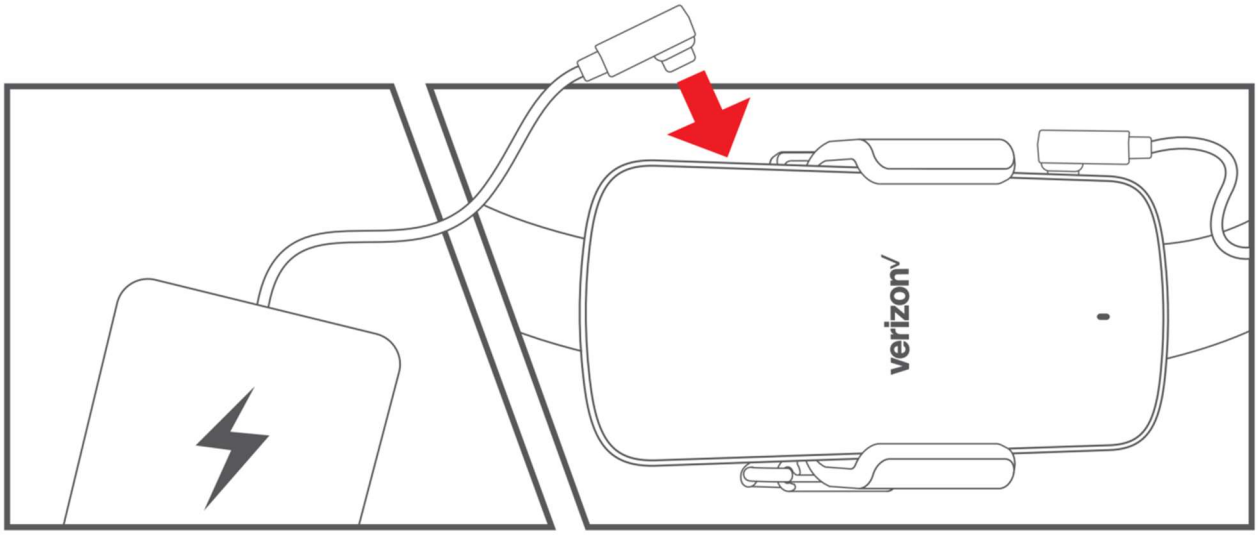


1. Placing one side of the device into the holder, aligning the center ribs to the middle of the holder. Make sure the Verizon Logo is facing outwards from the holder for optimal antenna performance.
2. After one side of the device is aligned, snap-in the USB Modem into the holder.
3. Wrap the holder onto desired area via the Velcro straps. For AR/VR devices with wider bands, please remove the shorter strap from the buckle and use the included longer additional strap to secure the holder to the AR/VR.
4. Plug the cable from the Data port to your AR/VR device.
5. The USB modem is connected to the internet when the status light is solid white.

2.4 Setting Up the USB Modem – AR/VR

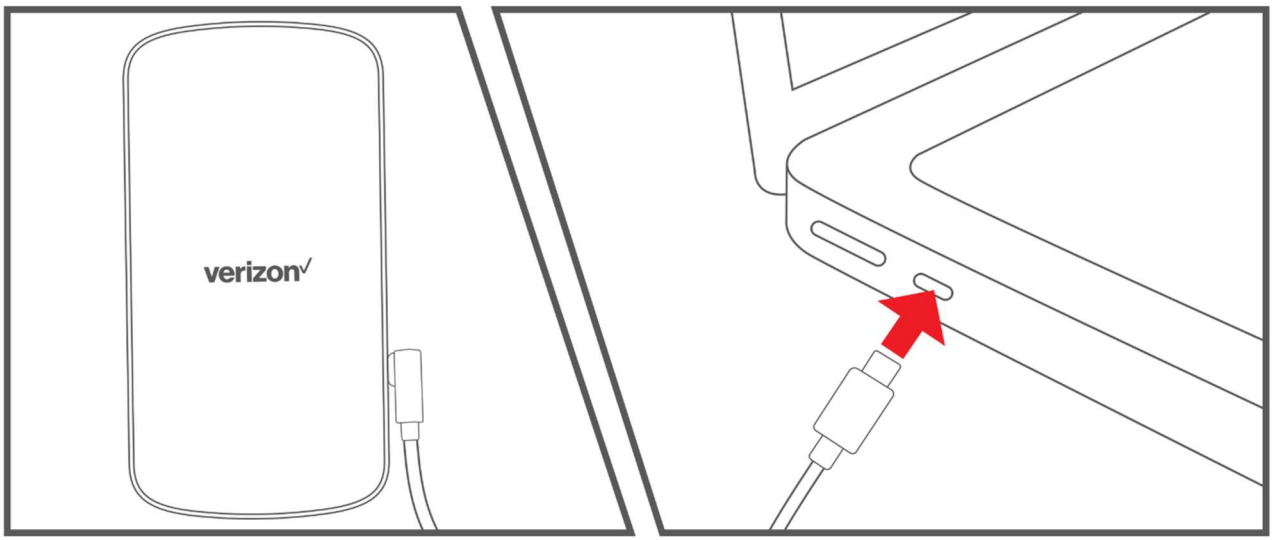


1. With the USB Modem installed onto the USB Holder, secure the holder onto the AR/VR device via the Velcro straps.
2. Plug in the USB Modem from its Data Port into your AR/VR device.
3. While starting up, the status light slowly blinks white.
4. The 5G USB Modem is connected to the internet when the status light is solid white.

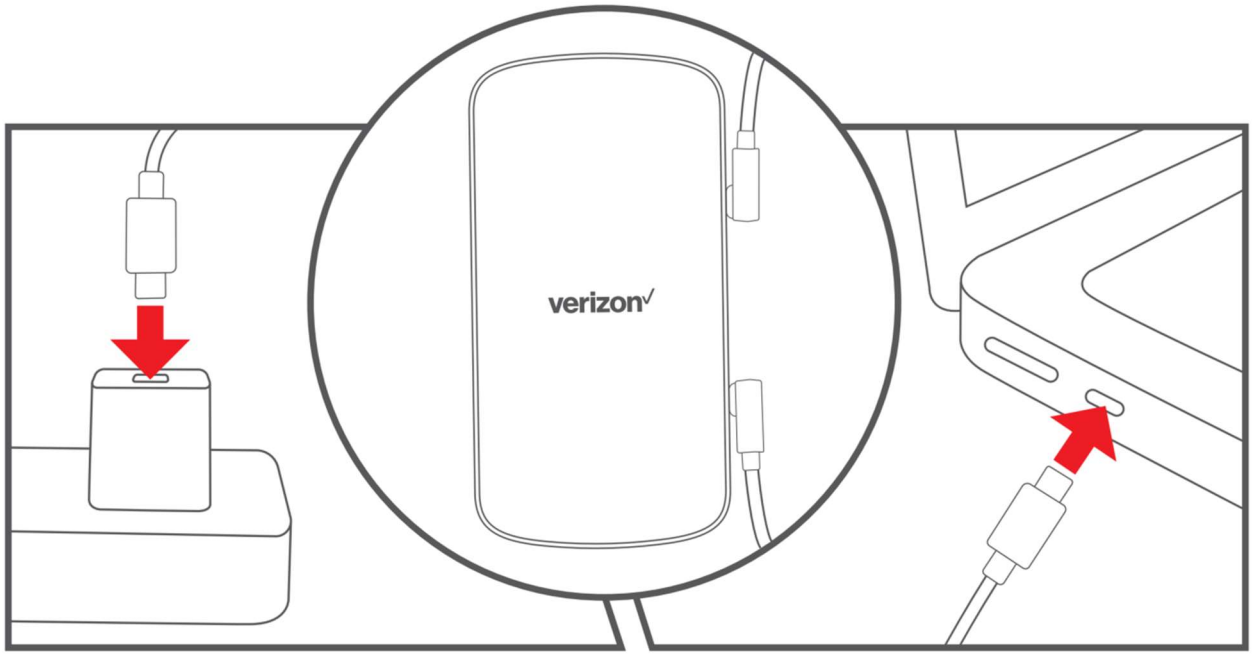


Note: If there are no lights from the LED indicator, it means that the AR/VR device does not provide power to the USB modem. Please use an external battery pack and connect it to the Power port to power up the USB modem. For AR/VR devices, if the Status LED shows blinking blue, the headset may not support data from its USB-C port. Please contact your AR/VR vendor for more information.

2.5 Setting Up the USB Modem – Laptop



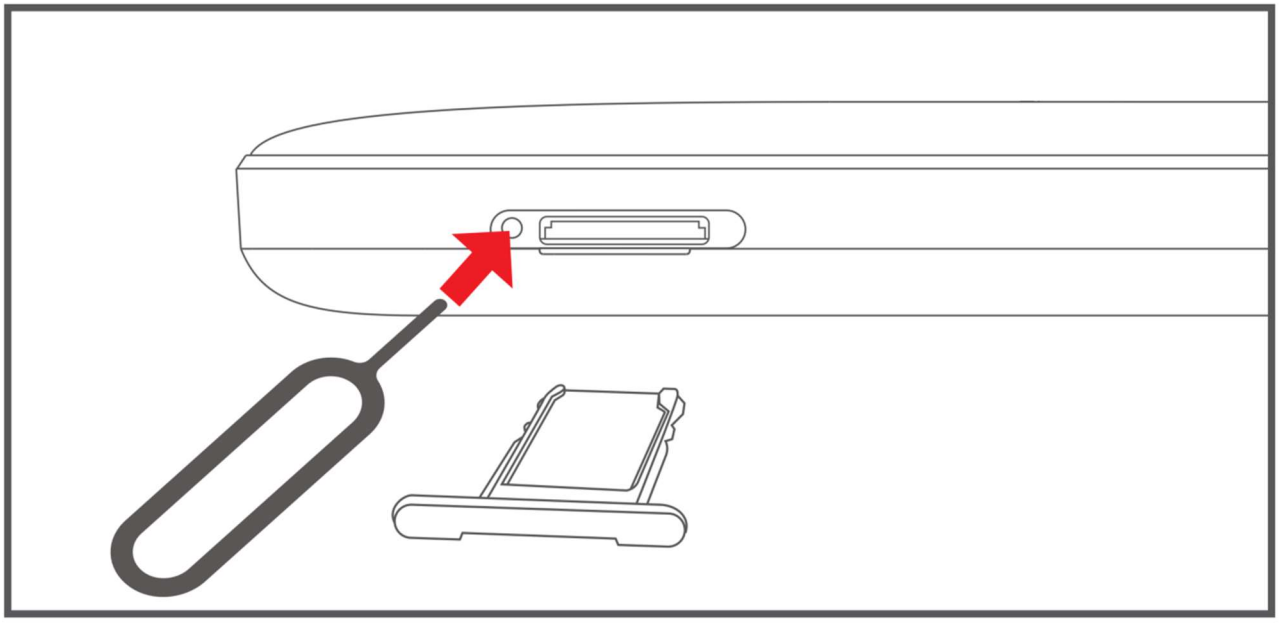
1. Plug in the USB Modem from its Data Port into your laptop.
2. While starting up, the status light slowly blinks white.
3. It is connected to the internet when the status light is solid white.



Note: The USB Modem can also support PD passthrough to your laptop via the Power port when a PD-compatible charger is plugged in.

2.6 Device Troubleshooting (Forgotten Password, Device Not Responding, etc.)

If you are unable to remember your WebUI password, you can reset the device to its factory default settings via the reset pin hole. Insert a smartphone's SIM tool or a straightened paper clip into the reset pin hole and gently press the reset key for 10 seconds while the device is powered on.



After 10 seconds of pressing, you should see red flashing LED on the top of the device. Please do not remove the power source when performing a factory reset.

3. Web UI Home Page

3.1 Web User Interface (UI)

The Web User Interface is compatible with the following browsers:

- Google Chrome (the latest two version)
- Mozilla Firefox (the latest two version)
- Safari (the latest two version)
- Microsoft Edge (the latest two version)

3.1.1 Logging in to the Web UI

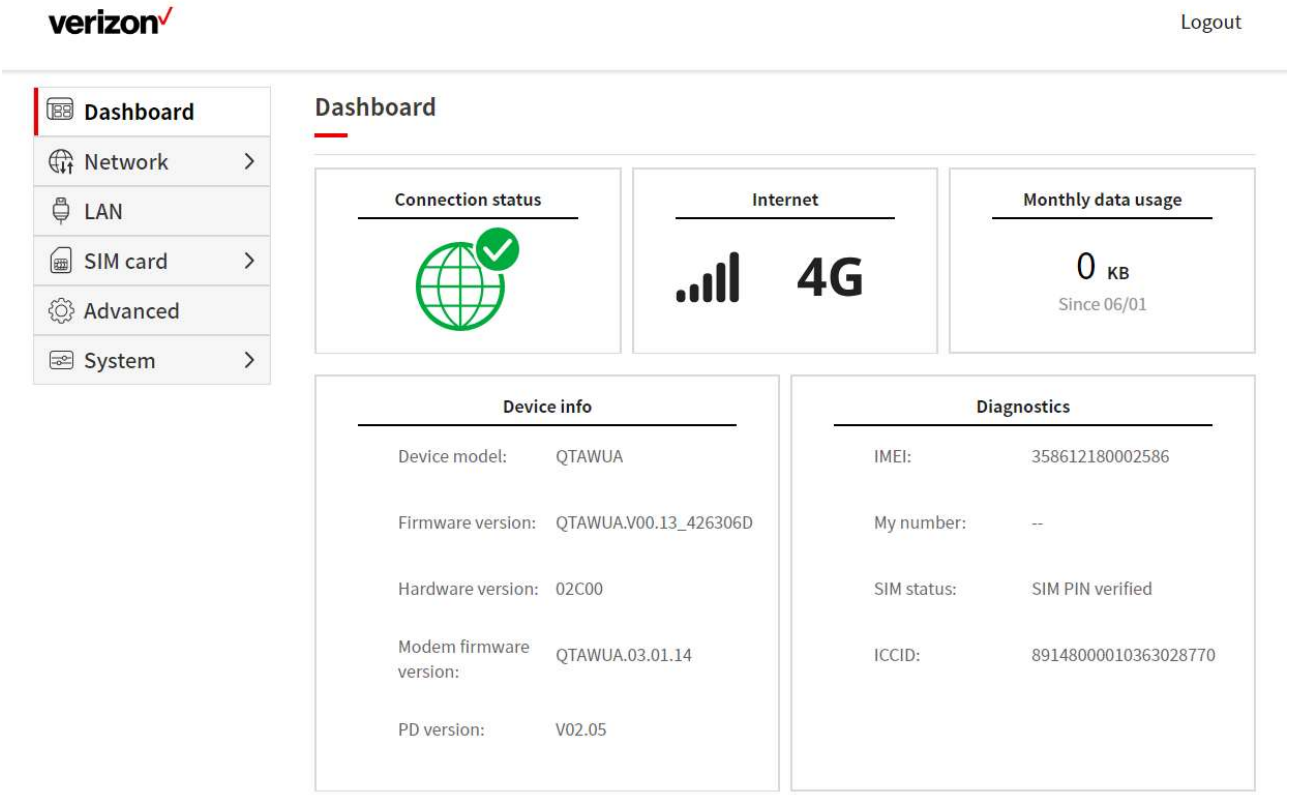
1. Open your web browser from another device.
2. Type http://192.168.1.1 into the address bar and press enter. The Home page will then load, as shown in the screenshot below.

3. On the Home page, enter the password as found on the device or the Important Information Card and click Log In.

   Note: You will need to change your password the first time you login.

WebUI Home Page

Home Screen:



The 5G USB Modem comes equipped with a user-friendly dashboard that provides essential information about the device's status and connectivity. The dashboard offers quick access to key details, allowing you to monitor and manage your USB Modem effectively.

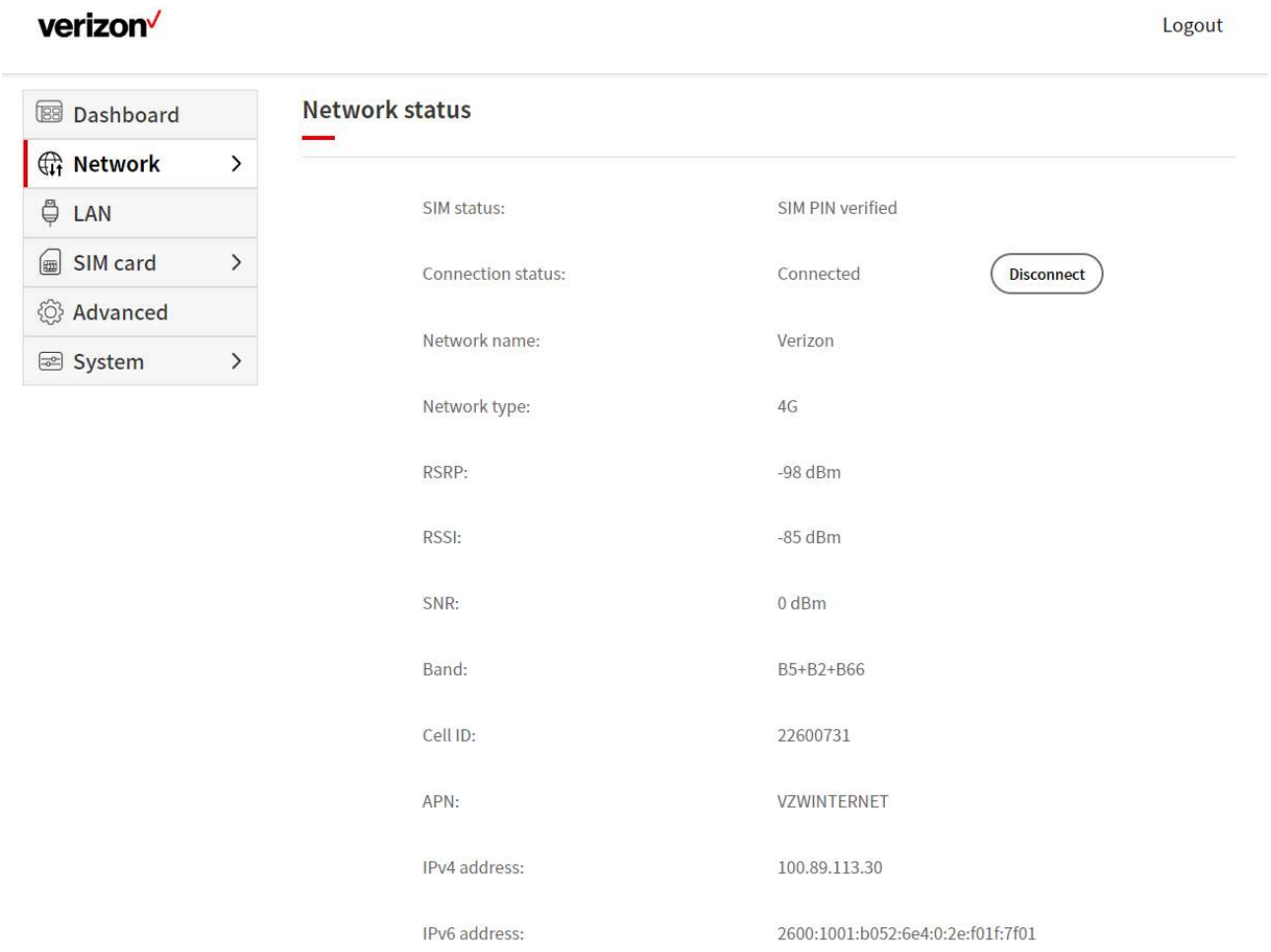
Displayed Information:

- Connection Status: The dashboard displays the current network status, indicating whether the Raven is connected to a 4G or 5G network to stay informed about the strength and stability of your network connection.
- Signal Strength: You can easily gauge the signal strength of your network connection from the dashboard. A clear indication of signal strength ensures optimal performance and reliability.
- Data Usage: Keep track of your data usage directly from the dashboard. Monitor your usage in real-time to avoid exceeding your data limits and optimize your connectivity experience

4. Network Settings

4.1 Network Status

Network Status provides an overview of the current connection status of the 5G USB Modem. Users can also manually disconnect the current connection.
When the SIM card is locked, users may need to manually enter the SIM card's PIN and PUK codes to unlock it. Please contact your carrier provider for more information on how to obtain these details.



4.2 Network Connection

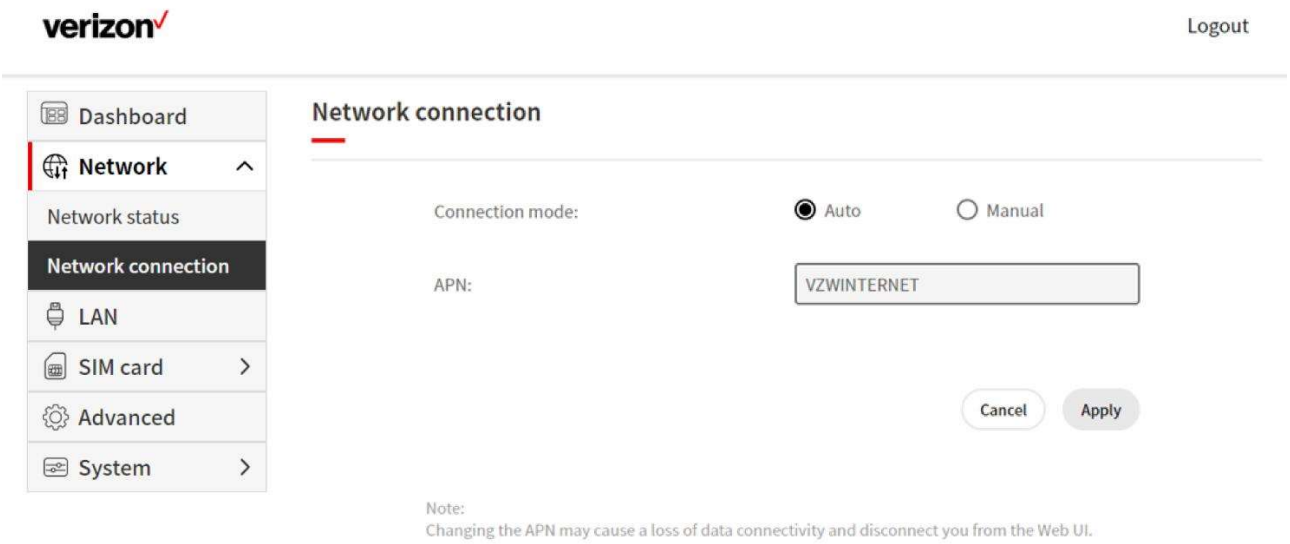
Connection mode allows you to :

- Selecting Auto will establish an internet connection automatically.
- Selecting Manual will require you to manually establish an internet connection by clicking the connect button on the Internet Status page.

APN Setting:

If your carrier allows it, you can view and change your APN settings under the APN setting.

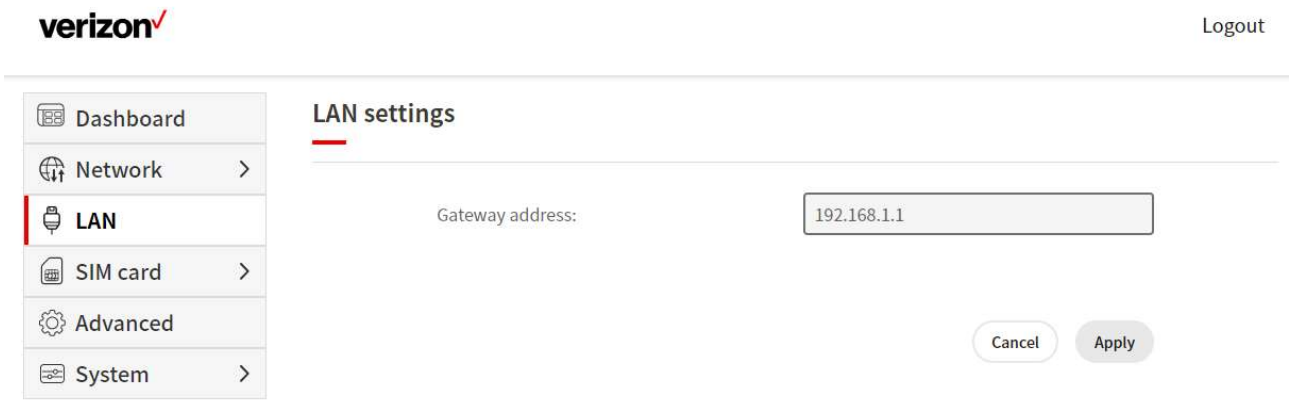
If you enter incorrect APN settings, you might lose cellular data connectivity and receive additional charges. Don't edit the APN unless directed by your carrier or mobile device administrator. Contact your carrier to verify the correct APN settings.



5. LAN Settings

In the instance where the default IP is taken, LAN Settings allow users to modify the default LAN IP of the 5G USM Modem that the host device receives when the modem is plugged in.

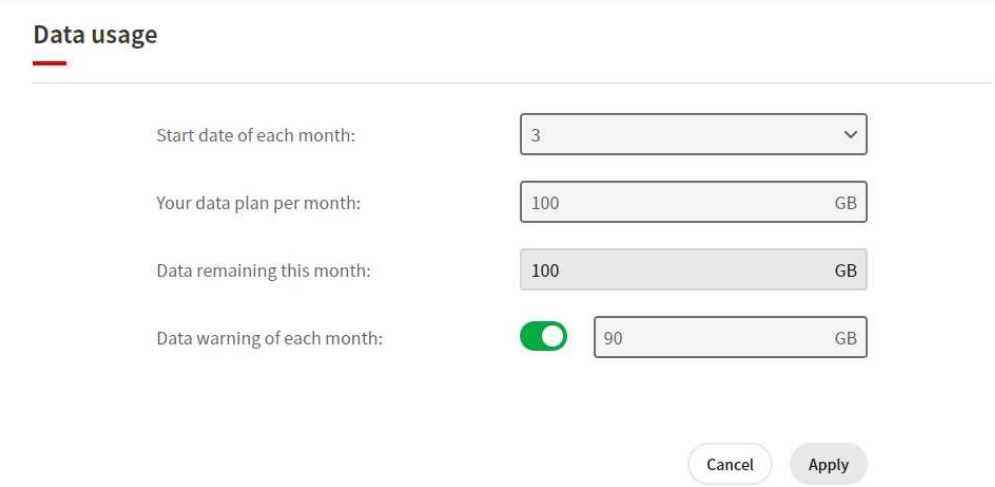
Keep note that the IP used to access the WebUI will also be modified.



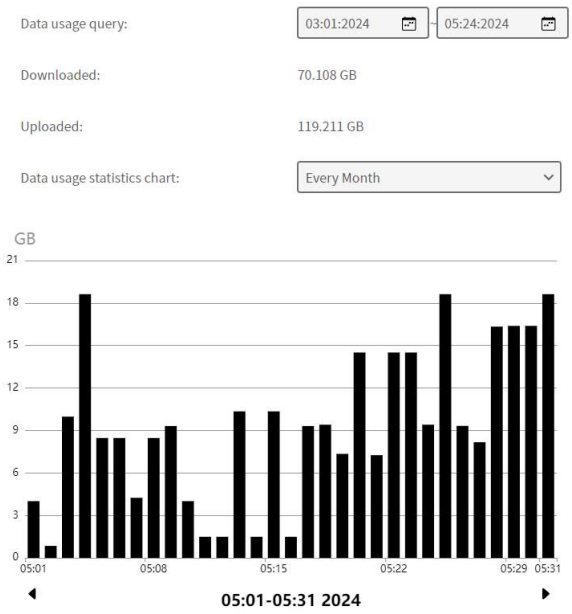
6. SIM Card Settings

6.1 Data Usage

Data Usage displays graphs of the 5G USB Modem's data usage for the current billing cycle. Depending on the billing & usage cycle of the current data plan, user may change the starting date, data plan per month, and data usage threshold warning for every month's data usage.



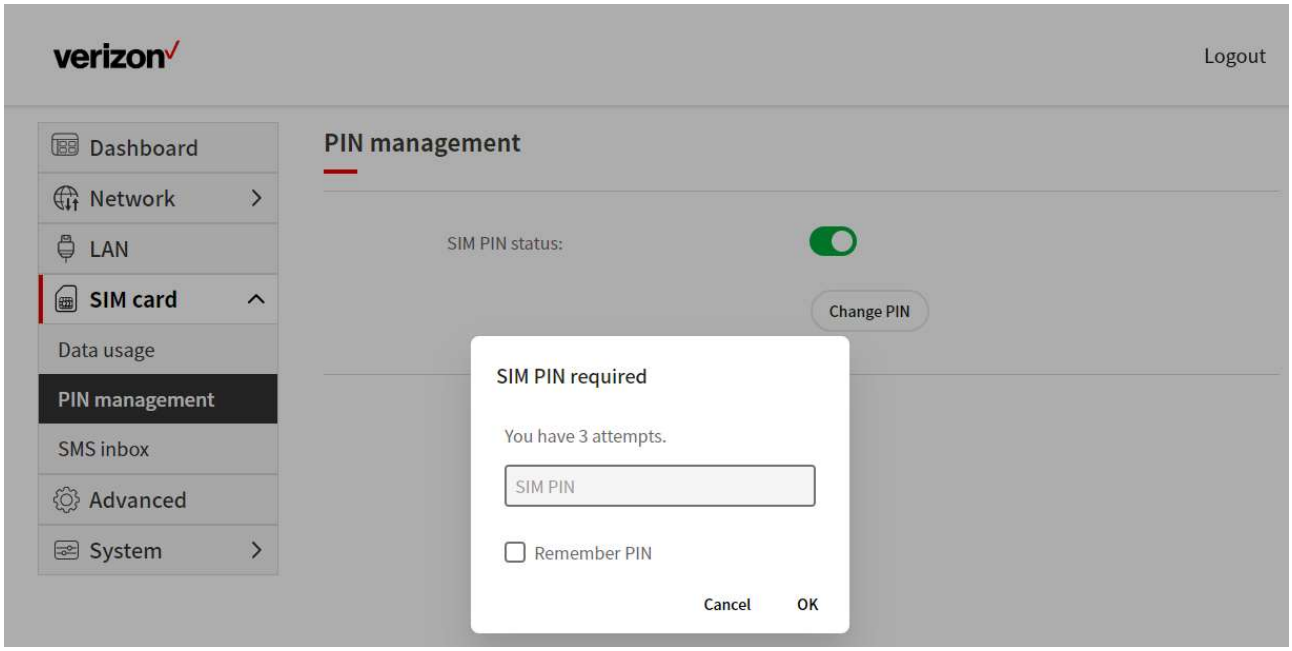
You may also use the query function within the same tab to check previous data usages for up to three months.



Please note that the data usage recorded by the 5G USB Modem is an estimate. For the most accurate data usage statistics, refer to your network operator for more details.

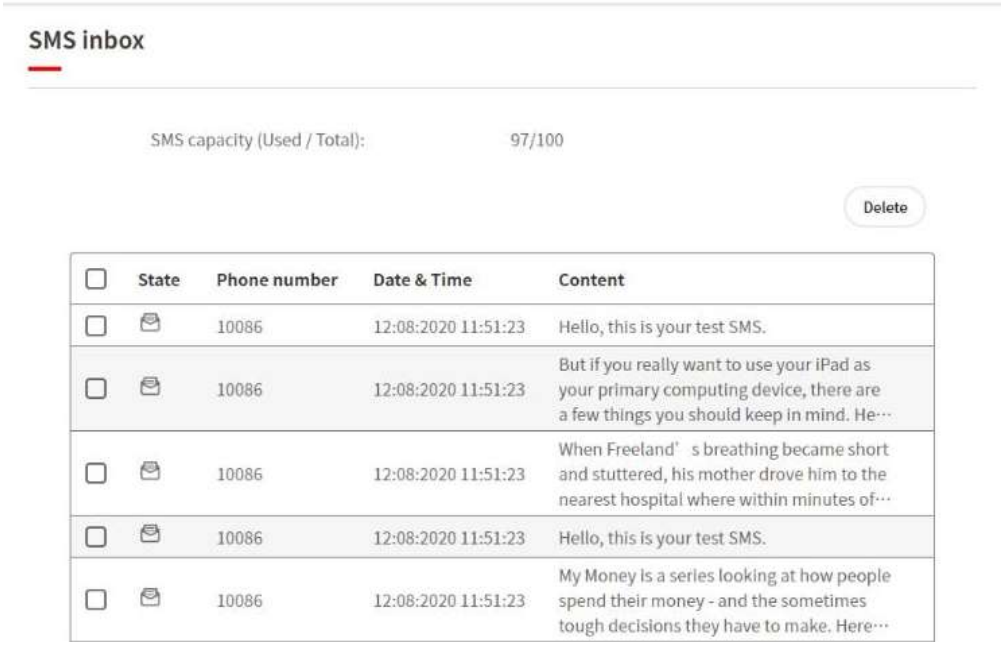
6.2 PIN Management

When SIM lock is enabled for the current SIM, you may unlock & change the SIM card PIN via the PIN management settings.



6.3 SMS Inbox

SMS Inbox allows you to view text messages sent to the SIM card's phone number. You can view, delete, and reply to text messages via the WebUI.



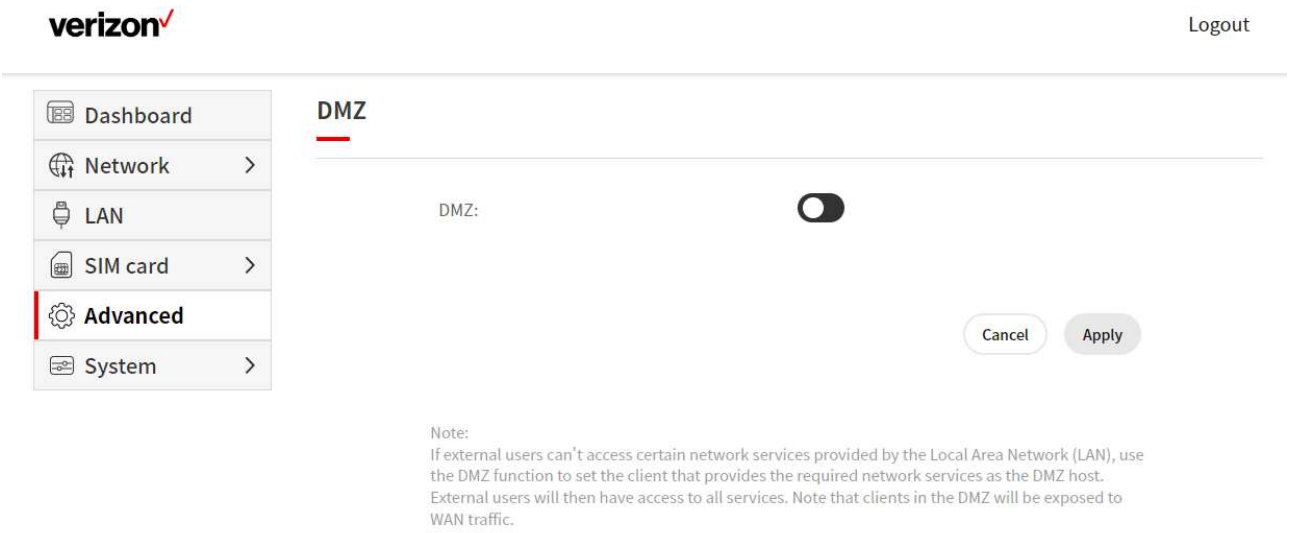
How to read, reply, and delete an SMS:

1. Left-click the content of the message you wish to read.
2. Write the reply message in the reply text box.
3. Click Send to reply to the message.
4. Click Delete to delete the current message.

7. Advanced Setting

7.1 DMZ (Demilitarized Zone)

A DMZ or demilitarized zone is a perimeter network that protects and adds an extra layer of security to an organization's internal local-area network from untrusted traffic.
For the 5G USB Modem, DMZ allows the device your host device to bypass firewall restrictions and allows the internet to directly access your host device.

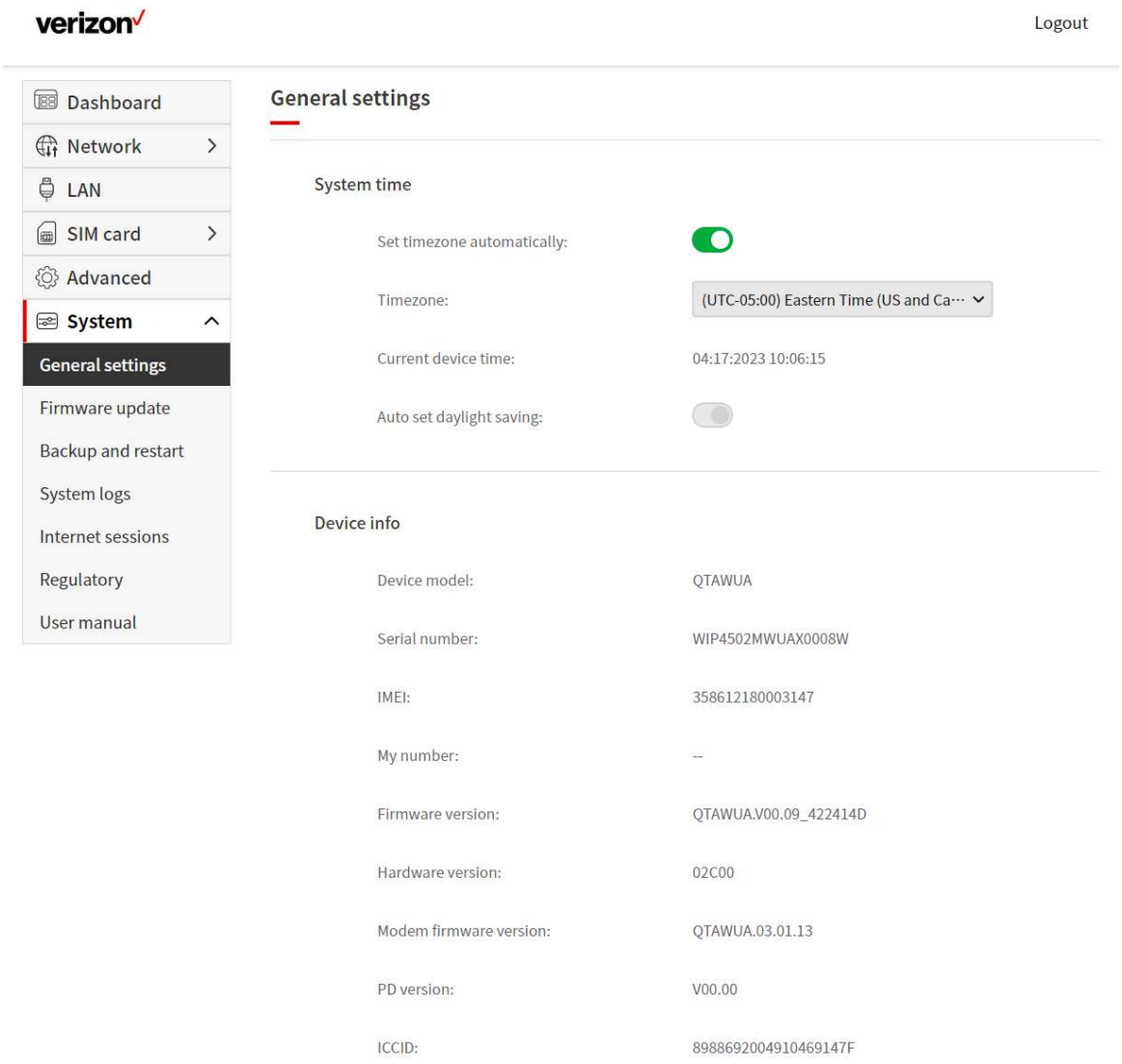


8. System Settings

8.1 General Settings

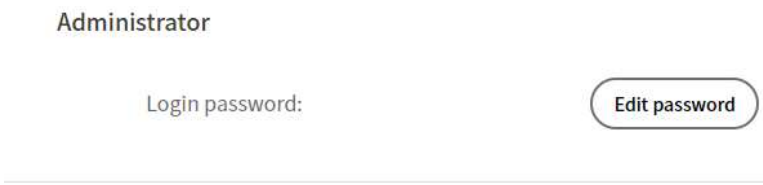
You can view information about your 5G USB Modem here such as the IMEI, your mobile phone number, serial number, software version and MAC address.

You may also set up system time for either under the same time zone or adjust manually.



System Settings

The login password is what you use to sign into the WebUI. The default Admin password can be located on the back cover of the 5G USB Modem.



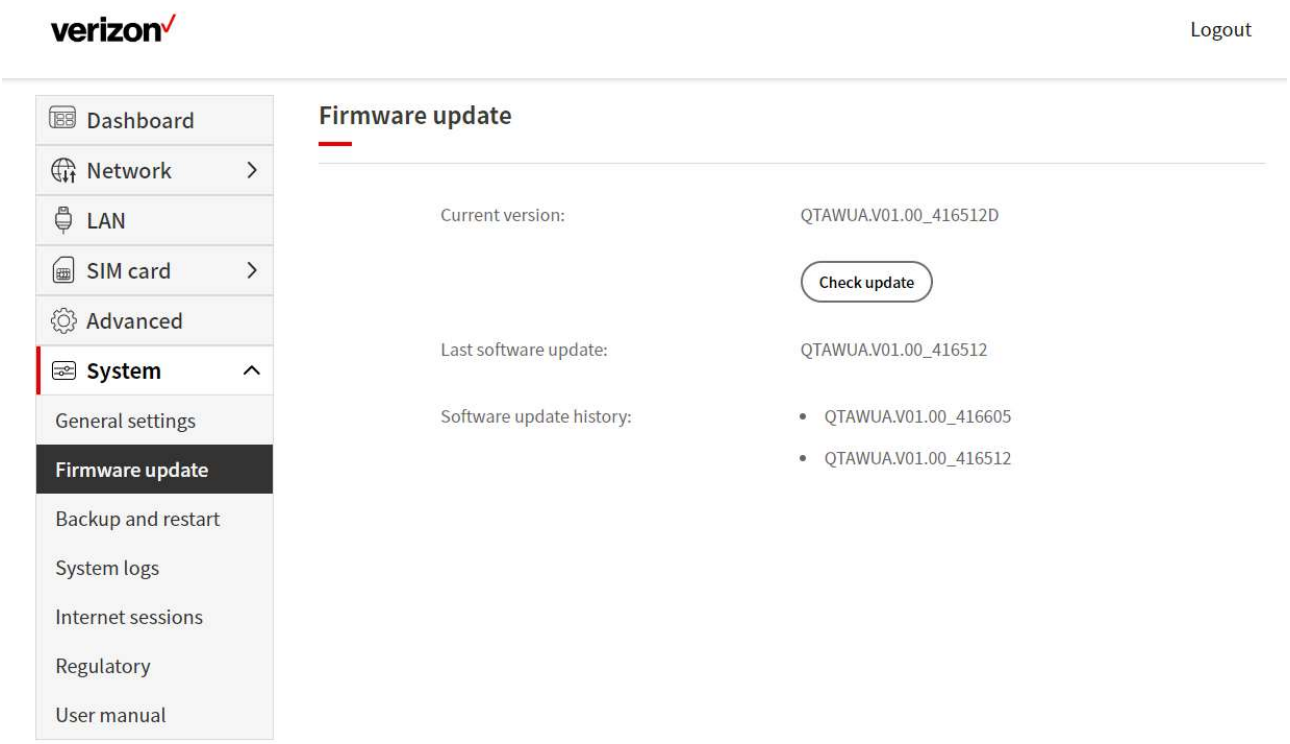
For access to the WebUI, you may also change the authentication method. You may also use a custom certificate (.cer or .pem file) to authenticate the access of the WebUI. The 5G USB Modem will use the uploaded certificate after a custom certificate is uploaded to the WebUI.

Keep note that http://192.168.1.1 or http://my.usb will be the new WebUI site when using HTTP as the authentication method.
Keep note that https://192.168.1.1 or https://my.usb will be the new WebUI site when using HTTPs as the authentication method.

8.2 Firmware Update

While connected to the internet, clicking “Check Update” allows the 5G USB Modem to check if there is an update available. If new firmware is found, you may click Download to begin the update. The firmware update will take up to 5 minutes to complete.

Note: Please do not unplug/power off the device during the update process as this may cause irreversible damage.



8.3 Backup and Restart

In the instance you would like to keep current configuration, you can use the backup function to retain a backup of the current configuration for future use.

How to backup and save device configurations:

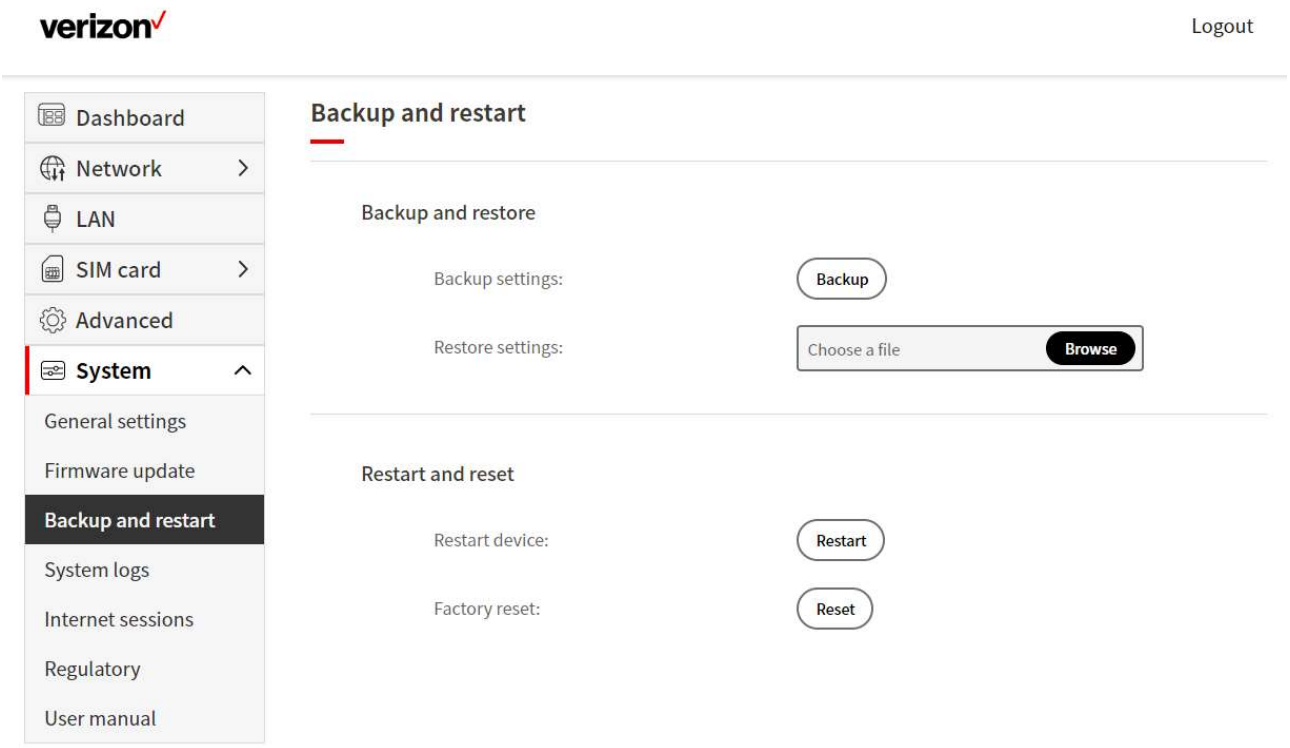
1. Click Backup to backup current device configurations.
2. On both Windows and Mac OS, the default path is to save configurations to your Downloads folder and the file name will be “configure.bin”.

How to restore the backup configurations:

1. Click Browse to select a backup configuration file.
2. Click Restore.

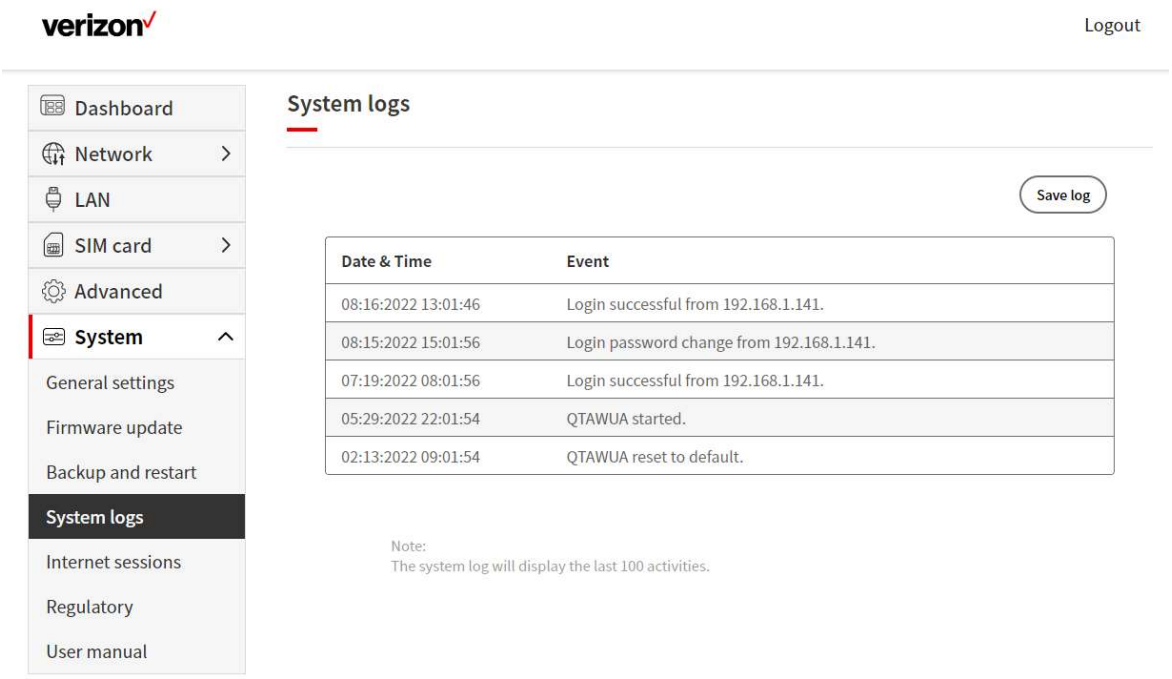
Aside from unplugging the device to restart it and holding down the reset key within the SIM tray for ten seconds, you can also perform these actions via the WebUI.

Note: Please do not unplug/power off the device during the factory reset process as this may cause irreversible damage to the 5G USB Modem.



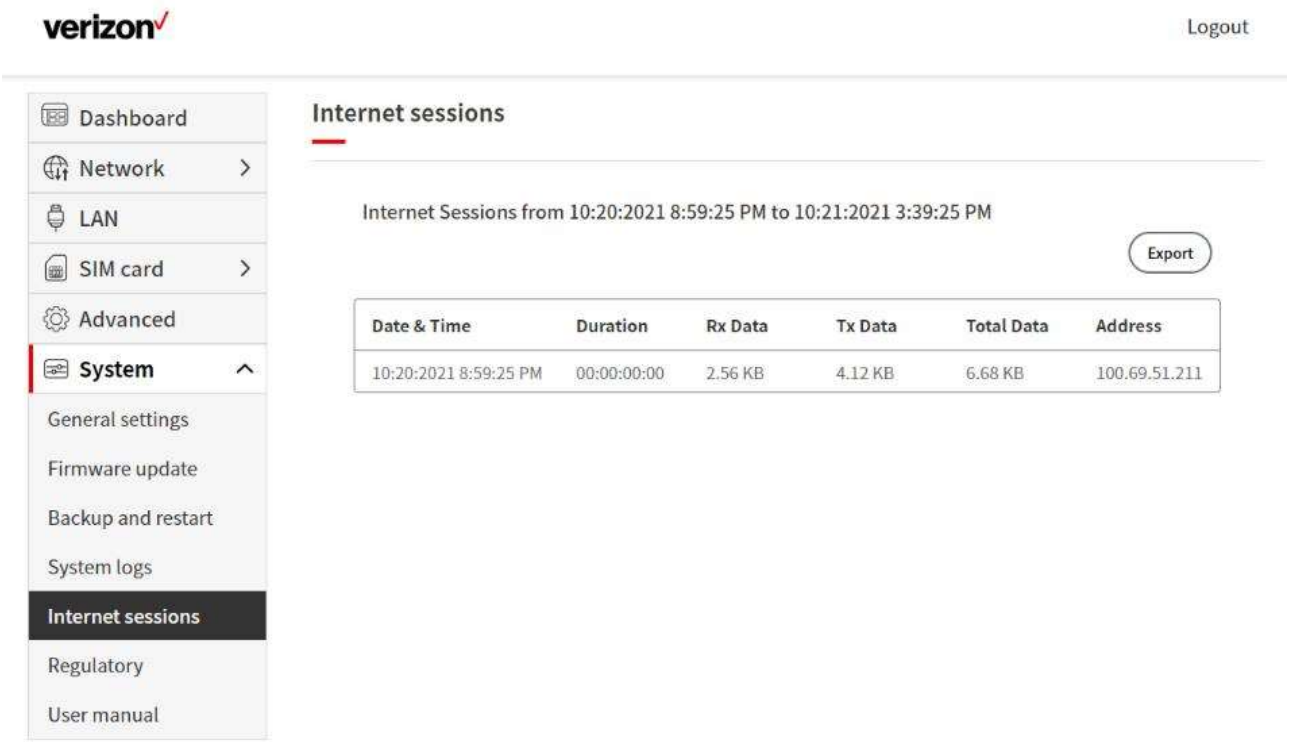
8.4 System Logs

System Logs allows you to see last 100 activities on the system.



8.5 Internet Sessions

Internet Sessions allows you to see each session's time, duration, and data usage.



9. Regulatory Information

9.1 Important Safety Precaution

Your device is manufactured to comply with FCC safety standards. This section outlines the safety precautions associated with using the device. Please read the safety and operation instructions before using your device and other accessories. Keep these instructions safe for future reference.

9.2 Condition of Use

- The device is not water-resistant. Please protect the device from water or moisture and do not touch the device with wet hands. Otherwise short-circuit and malfunction of the product or electric shock may occur.
- Keep the device and accessories in a cool, well- ventilated area and away from direct sunlight. Do not place the device in a container with poor heat dissipation. Do not enclose or cover your device with clothes, towels, or other objects.
- Put your device in places beyond the reach of children. Do not allow children to use the wireless device without guidance.
- Do not use your device at places for medical treatment (in an operating room, intensive care unit, or coronary care unit, etc.) where wireless device use is prohibited.
- To reduce the risk of accidents, do not use your device while driving.
- RF signals may affect the electronic systems of motor vehicles. For more information, consult the vehicle manufacturer.
- It is highly recommended to use the charger supplied with your device. Use of another type of charger may result in malfunction and/or danger.

9.3 Cleaning and Maintenance

- Do not attempt to dry your device with an external heat source, such as a microwave oven or hair dryer.
- Use a clean, soft, and dry cloth to clean the device and accessories.
- Before you clean your device, disconnect all cables connected to it and do not use.
- Do not use any chemical detergent, powder, or other chemical agents (i.e. alcohol and benzene) to clean the device or any accessories. These substances may cause damage to parts or present a fire hazard.
- When not in use, store in a cool, dry place.

9.4 Warning

- Do not attempt to open the device by yourself. Disassembling may result in damage to the device. Small parts may also present a choking hazard.
- When this device is switched on, it should be kept at least 15 cm from any medical device such as a pacemaker, a hearing aid or insulin pump, etc.
- Switch this device off when you are near gas or flammable liquids. Strictly obey all signs and instructions posted in any potentially explosive atmosphere.

9.5 FCC Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- Operations in the 5.15-5.25GHz band are restricted to indoor usage only.
- This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

Radiation Exposure Statement:

The product complies with the FCC portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF

exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

Carry this device at least 10 mm away from your body to ensure exposure levels remain at or below the as-tested levels. Choose the belt clips, holsters, or other similar body-worn accessories which do not contain metallic components to support operation in this manner. Cases with metal parts may change the RF performance of the device, including its compliance with RF exposure guidelines, in a manner that has not been tested or certified, and use such accessories should be avoided.

This device has been tested and meets applicable limits for Radio Frequency (RF) exposure. Specific Absorption Rate (SAR) refers to the rate at which the body absorbs RF energy. SAR limits are 1.6 W/kg (over a volume containing a mass of 1 gram of tissue) in countries that follow the United States FCC limit. The highest reported SAR value for body is 1.17W/kg. Tests for SAR are conducted using standard operating positions with the device transmitting at its highest certified power level in all tested frequency bands.

The FCC has granted an Equipment Authorization for this model device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model device is on file with the FCC and can be found under the Display Grant section of www.fcc.gov/oet/ea/fccid after search on FCC ID: HFS-QTAWUA.

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