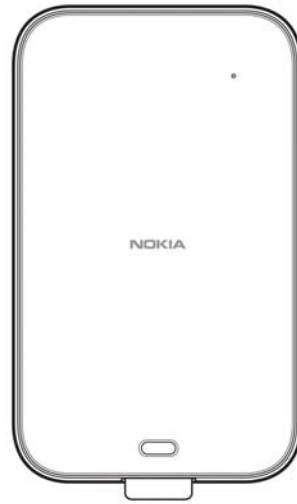# NOKIA

Nokia FastMile 5G Receiver 5G14-B

User Guide

June 2022

Nokia is committed to diversity and inclusion. We are continuously reviewing our customer documentation and consulting with standards bodies to ensure that terminology is inclusive and aligned with the industry. Our future customer documentation will be updated accordingly.

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Safety Guidelines

Read the Safety and Regulatory information that is included with the product, and follow these guidelines when installing or using the FastMile 5G Receiver

Warning: Be careful not to drop the FastMile 5G Receiver, especially when mounting it on the outside of a window.

If the FastMile 5G Receiver is dropped -especially on a hard surface -or in case of suspected damage, contact your service provider or the seller from which the device was purchased.

Warning: The FastMile 5G Receiver must be used with cables supplied with the equipment.

Warning: Do not install the FastMile 5G Receiver on a window designated as an emergency exit window.

Warning: Do not install the FastMile 5G Receiver on a window that is above a doorway or above anywhere else where people could get injured by the device falling from overhead.

Warning: The FastMile 5G Receiver must be used with the supplied PoE injector. The supplied PoE injector is intended for indoor use only.

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Introduction

This guide describes how to install the FastMile 5G Receiver using guidance from the Nokia Wireless Mobile App, and how to operate the FastMile 5G Receiver using its web-based graphical user interface. This guide also provides some troubleshooting information.

The contents of this guide are subject to change without notice.

Getting to know your FastMile 5G Receiver

The FastMile 5G Receiver is a fully self-contained indoor/outdoor device that connects a 4G/LTE or 5G mobile network to a gateway through a standard 1 Gbps Ethernet LAN interface.

The FastMile 5G Receiver supports 4G LTE connectivity and 5G NR NSA/SA (3GPP Rel-15 standards) connectivity. Where both 4G and 5G signals are available, the FastMile 5G Receiver supports dual connectivity EN-DC.

5G NR provides the best download and upload speeds, thus providing an improved user experience for services such as Internet browsing and video streaming. In case 5G NR coverage is not available in your area, the FastMile 5G Receiver can operate with 4G LTE as your mobile network connection.

The FastMile 5G Receiver has been designed to be mounted on a window or placed near a window to provide optimal connection for 5G radio frequencies that typically have limited indoor penetration.

There are different kits for the FastMile 5G Receiver allowing it to be mounted directly on the outside or inside of a window or placed close to the inside of a window.

Figure 1   **Examples of three ways to install the FastMile 5G Receiver**
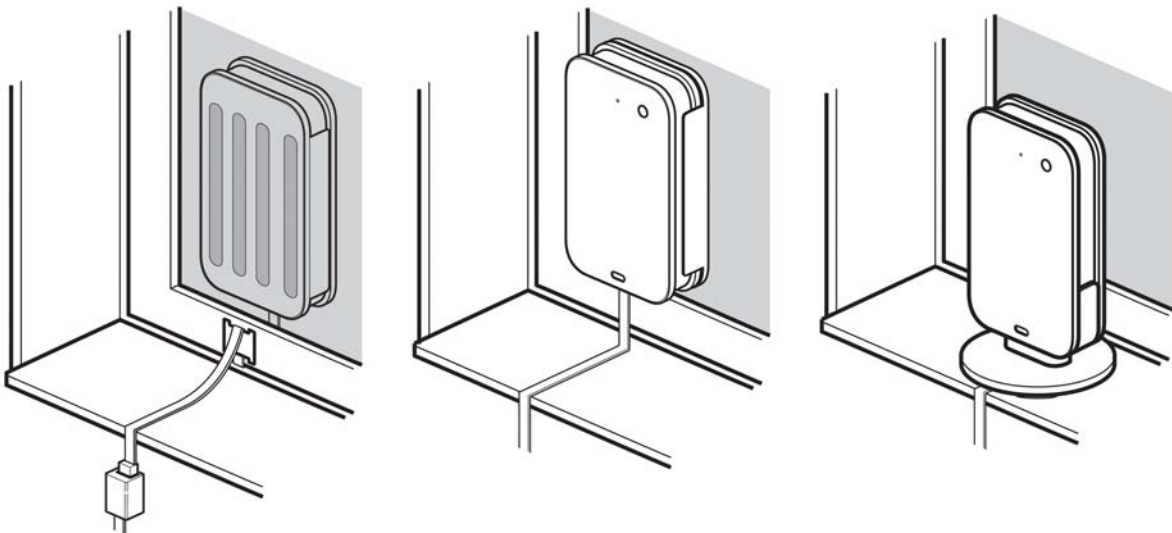
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The contents of kits for the FastMile 5G Receiver vary, depending in part on if the FastMile 5G Receiver is to be:

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  • mounted on a window (either outside or inside; uses a mounting sleeve)
  • placed close to the inside of a window (uses a desktop stand)

Kit contents can include the following, but note that contents vary by kit:

  • FastMile 5G Receiver, with a pre-attached PoE cable (the length and type of cable depends on the kit)
  • cable clamp
  • PoE injector (indoor use only)
  • PoE cable (provided in kits primarily intended for outside window applications)
  • PoE injector AC cable
  • Either of the following
    – mounting sleeve (has a side with four adhesive strips for attaching to the window)
    – desktop stand
  • Cleaning wipes (wet and dry; window mount only)
  • Quick onboarding guide (a sticker that has a QR code, username and password, and a Bluetooth PIN code, along with quick steps for onboarding)
  • Quick Start Guide
  • Safety and warranty cards, including leaflet that has cabling installation safety guidelines

➡ **Note:** Some kits may include an Ethernet LAN cable that you can use to connect the PoE injector to the 1 Gbps Ethernet LAN port of your gateway.

You will need to provide an Ethernet LAN cable if it is not included in your kit.

Physical interfaces

Physical interfaces for the FastMile 5G Receiver are located on the front, back, and bottom of the device.

The front of the device has a multicolor LED that indicates status and signal strength (it is synchronized with the LED on the back of the device). The LED is described in detail in Understanding the LED colors.

Figure 2 **Location of interfaces on the front of the FastMile 5G Receiver**
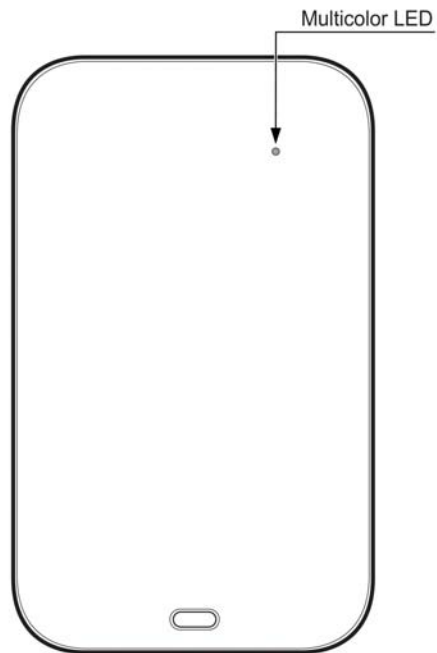
Multicolor LED

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The back of the device has a signal test button and a multicolor LED that indicates device status and signal strength. The LED is synchronized with the LED on the front of the device. The LED is described in detail in Understanding the LED colors; the signal test button is described in detail in Using the signal test button.

Figure 3   **Location of interfaces on the back of the FastMile 5G Receiver**
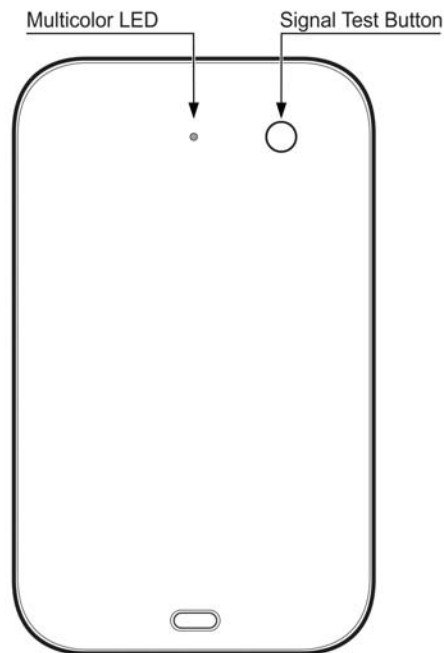
The bottom of the device has:

  • a pre-attached PoE cable

  • a reset button (requires the use of a paper clip or similar)

  • a slot for a nano SIM card

Note: The reset button and the SIM card slot are accessible through a cover on the bottom of the device; the cover has been removed in the following illustration to show the reset button and the SIM card slot.

Figure 4   **Location of interfaces on the bottom of the FastMile 5G Receiver**

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                   Use subject to agreed restrictions on disclosure and use.
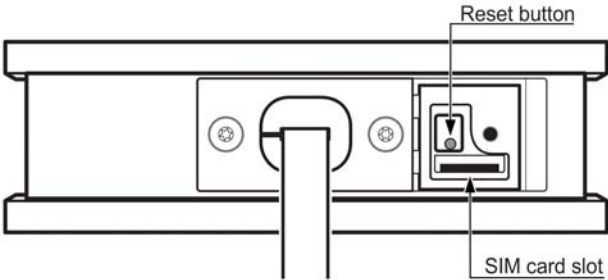
Installing the FastMile 5G Receiver

Unpack the contents from the shipping box.

Quick onboarding guide

Use the adhesive backing of the quick onboarding guide to affix it on the PoE injector or another suitable location. Alternatively, the quick onboarding guide can be placed somewhere else without use of the adhesive backing.

Figure 5   **Example of the quick onboarding guide**

Inserting the SIM card

If not pre-installed by your service provider, you will need to install an appropriate 4FF/nano-size SIM card for FastMile 5G Receiver to connect to the 4G/5G mobile network.

The FastMile 5G Receiver supports PIN-locked SIM cards so that a PIN code is required to unlock the SIM card. For PIN-locked SIM cards:

- The SIM PIN code is provided with the SIM card. Typically, the original plastic packaging of a PIN-locked SIM card has a PUK code that you will need to use to unblock the SIM card if you enter the SIM PIN code incorrectly three times. Keep the SIM PIN code and the PUK code for later use when unlocking or unblocking a PIN-locked SIM card as described in System screen.
- The PIN code is required to unlock the SIM card for service; the PIN code for the SIM card is not required to unlock access to the device.

- If after another PIN-locked SIM card with its PIN enabled is inserted and its PIN is verified, for the first PIN-locked SIM card, the PIN code is needed when it is inserted as described later in this document.

➡️ **Note:** The FastMile 5G Receiver might not start as expected without a SIM card.

You will need an M3 Phillips screwdriver to insert the SIM card in the FastMile 5G Receiver.

Ensure that the FastMile 5G Receiver is not yet connected to the PoE injector or to any other source of power.

Use the screwdriver to remove the screw from the bottom cover of the FastMile 5G Receiver.

Figure 6   **Location of the screw to access the SIM card slot**
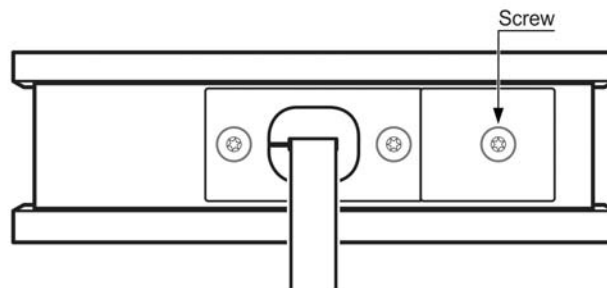
Remove the SIM tray from the SIM card slot.

Figure 7   **Location of the SIM card slot**

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Use subject to agreed restrictions on disclosure and use.
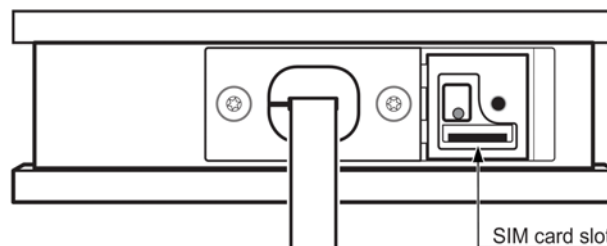
Place the SIM card securely in the SIM tray, making sure that the two triangle indicators point in the same direction, and slide the SIM tray back into the SIM card slot.

Figure 8   **Sliding the SIM tray into the SIM card slot**
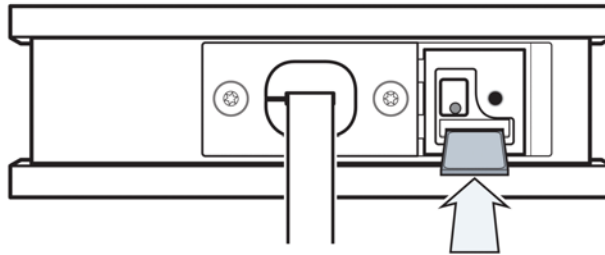
Place the bottom cover back onto the FastMile 5G Receiver.

Using care, use the screwdriver to secure the bottom cover.

For a PIN-locked SIM card, you will need to enter the PIN code after the FastMile 5G Receiver is connected to power as described in this document.

Using the Nokia Wireless Mobile App to find the best installation location

The Nokia Wireless Mobile App can be installed on a smart phone to provide information that can help with FastMile 5G Receiver installation, such as finding the best location for installing the FastMile 5G Receiver.

The following are some tips that could help when determining the best location for installing the FastMile 5G Receiver:

- depending on the kit, the FastMile 5G Receiver can be mounted on the outside or inside of a window or placed close to the inside of a window, such as on an indoor windowsill
- metal-coated windows can have an attenuation up to 30 dB, so it is recommended that the FastMile 5G Receiver be mounted on the outside of metal-coated windows
- the FastMile 5G Receiver should be located where it will not be impacted by the window, or sections of the window, being opened or closed

- the FastMile 5G Receiver should be located where it will not be impacted by window coverings being opened or closed
- the FastMile 5G Receivershould be located where it will not be impacted by any insect screens on the window
- close to an electrical outlet
- on the side of a room closest to the mobile network base station (if known)
- on higher elevation or an upper floor
- away from possible sources of interference, like electronic devices such as printers, microwave ovens, and so on
- away from metal fixtures, enclosures, cabinets, appliances, blinds, reinforced concrete, and pipes
- not in a location where mobile network connectivity might be poor, such as in a basement

The FastMile 5G Receiver uses Bluetooth for connection to the smart phone to provide information (such as FastMile 5G Receiver signal test results) to the Nokia Wireless Mobile App.

Note: Be prepared for the possibility of the need to move the FastMile 5G Receiver and PoE injector when using the Nokia Wireless Mobile App to find the best location for the FastMile 5G Receiver.

Do not secure the FastMile 5G Receiver, PoE injector, or any cables in place yet. Do not connect the PoE injector to your gateway yet.

Download the Nokia Wireless Mobile App from Google play or the Apple App Store to your smart phone.

Figure 9   **Google play**

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Figure 10   **Apple App Store**

Using your smart phone, use the in-app QR code scanner to read the QR code for the FastMile 5G Receiver. The QR code can be found on:

- the outside of the shipping box of the FastMile 5G Receiver
- the sticker fixed to the PoE cable that is pre-attached to the FastMile 5G Receiver
- the quick onboarding guide:

Figure 11   **Example of QR code on the quick onboarding guide**

Wait until the smart phone connects to the mobile network

Connect the FastMile 5G Receiver to power at a potential installation location for FastMile 5G Receiver as described in Connecting the FastMile 5G Receiver to power.

Enable Bluetooth on your smart phone. The smart phone and downloaded app pair with the FastMile 5G Receiver. If you are requested by the Nokia Wireless Mobile App to enter the Bluetooth PIN number, enter the Bluetooth PIN code that is provided on the quick onboarding guide. The multicolor LEDs on the front and back of the FastMile 5G Receiver blink blue during pairing. The LEDs turn solid blue when the pairing process completes.

Follow the on-screen guidance provided by the Nokia Wireless Mobile App to find the best location for the FastMile 5G Receiver.

The Nokia Wireless Mobile App will do an app-performed signal test, and might recommend that you reposition the FastMile 5G Receiver based on the signal test results. See Repositioning for a better signal for information about repositioning the FastMile 5G Receiver.

The Nokia Wireless Mobile App can be used to do a speed test using Ookla.

Once you have finished using the Nokia Wireless Mobile App to determine the best location for the FastMile 5G Receiver, you can finish off the installation:

- see Finishing off installation of the FastMile 5G Receiver on a window for instructions on how to mount it on the outside or inside of a window
- see Finishing off installation of the FastMile 5G Receiver on a desktop stand for instructions on how to place it on a desktop stand close to a window

Connecting the FastMile 5G Receiver to power

You can connect the FastMile 5G Receiver to power when:

- trying different locations
- confirming the final location
- finishing off the installation if the FastMile 5G Receiver is not already connected to power

The FastMile 5G Receiver requires the supplied PoE injector and cables in order to connect to power. The FastMile 5G Receiver starts up when it is connected to power through the supplied PoE injector.

Details for connecting the FastMile 5G Receiver to the PoE injector depend on the type of installation and on the kit:

- for kits for which the FastMile 5G Receiver comes with an ultra flat cable as the pre-attached PoE cable, connection to the PoE injector will be through the supplied PoE cable that you connect to the pre-attached PoE cable; the following figure shows this type of installation
- for kits for which the FastMile 5G Receiver comes with a flat cable as the pre-attached PoE cable, connection to the PoE injector will be directly through the pre-attached cable; connectivity is similar to that shown in the following figure except that no PoE cable is used for the connection to the PoE injector

Both of the above installation types are described in the procedure in this section.

Figure 12   **Connecting the FastMile 5G Receiver to power**
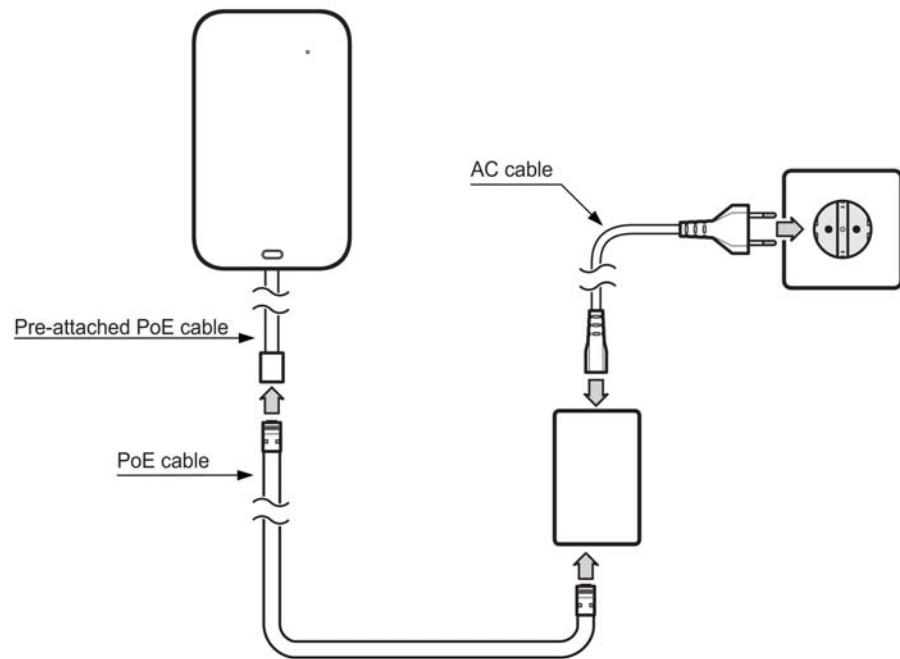
Connect the FastMile 5G Receiver to power by:

- If applicable, such as for mounting on the outside of a window, connecting the supplied PoE cable to the free end of the pre-attached PoE cable of the FastMile 5G Receiver
- Connecting the following to the POE/WAN port on the supplied PoE injector as applicable:
    - the other end of the supplied PoE cable
    - the free end of the pre-attached PoE cable of the FastMile 5G Receiver

Note: Do not plug the PoE injector AC cable into an electrical outlet before you have first connected the PoE injector AC cable to the PoE injector, as described in the two following items.

- Connecting the PoE injector AC cable to the PoE injector

- Plugging the other end of the PoE injector AC cable into an electrical outlet. The LED on the PoE injector turns green to indicate that the PoE injector and FastMile 5G Receiver are successfully connected to power. If the LED on the PoE injector is yellow or does not turn on, make sure that the FastMile 5G Receiver is connected to the POE/WAN port of the PoE injector.

Finishing off installation of the FastMile 5G Receiver on a window

This section describes how to finish off installation of the FastMile 5G Receiver on the outside or inside of a window.

It is recommended that mounting on a window not be done on a wet or rainy day.

Ensure that the selected window is not cracked or broken and that it is completely smooth. There should not be any thermal film or stickers which could pose a risk of the mounting sleeve not attaching properly to the glass. The window must be strong enough that it will not bend or change shape, such as by strong winds.

If mounting the FastMile 5G Receiver on the outside of a window, make sure that the pre-attached PoE cable of the FastMile 5G Receiver can be routed freely to the inside through the window seal.

If the FastMile 5G Receiver is to be installed on a window that has a side hinge, it is recommended that near the bottom corner of the hinge side of the window be used.

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Figure 13   **Recommended location on a window with a side hinge**
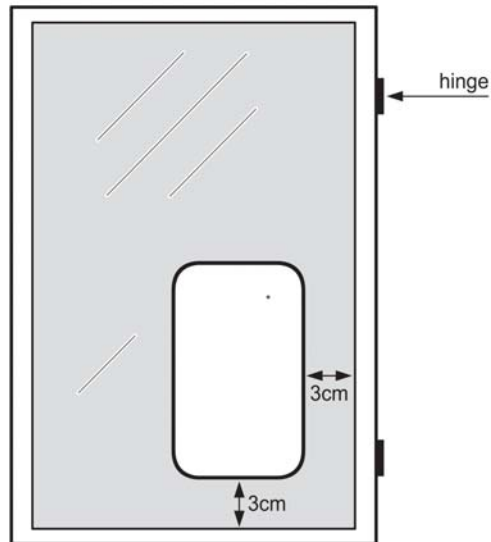
Please note the following mounting conditions information when mounting the FastMile 5G Receiver on the outside of a window:

- As stated in the product documentation, the FastMile 5G Receiver (specifically, the combination of the device, mounting sleeve, and adhesive strips) can withstand temperatures ranging from -40°C to +55°C. The product is compliant to Ingress Protection IP66 rating for Outdoor mount.

- The mounting sleeve and adhesive strips can be mounted in temperatures ranging from -40°C to +55°C. The most optimized result can be obtained between +20°C to +38°C.

- The mounting of the device with the adhesive strips works best on a very flat, clean and dry surface (no ice, free of grease, no dust, no loose particles, no oil, no separating agents)

- Avoid air bubbles by applying enough pressure for at least 30 seconds

- The allowed adhesive strip temperature ranges from approximately -50°C to +150°C. This covers the allowed FastMile 5G Receiver temperature range; as well, the adhesive strips are capable of withstanding the effects of increased glass temperature due to sun load conditions and heat dissipation from the device (tested according to ETSI EN 300 019-2-4 V2.4.1 Class 4.1E)

- If otherwise not feasible to mount on a dry and clean flat surface, please consider preparing the surface accordingly or mount the device on the window indoors or whenever ambient temperatures are more favorable

⚠️ **Warning:** A correct cable routing ensures the safety of your installation.

Observe the following cabling installation safety practices when finishing off installation of the FastMile 5G Receiver on the outside of a window. Following these practices helps to prevent accidents from potential water leakage through the window frame:

- It is recommended to create a cable loop outdoors whenever possible for a FastMile 5G Receiver with a pre-attached flat cable that is being mounted on the outside of a window. This might not always be possible with a FastMile 5G Receiver that has the pre-mounted ultra-flat ("thin") cable (30 cm), but it is highly recommended for devices with the pre-attached flat cable (1.5/2.5/10 m lengths provided by Nokia).
- Always use the provided cable clamp to lock the FastMile 5G Receiver pre-attached PoE cable indoors (on a window frame or on the wall)
- Whenever possible, it is recommended to install the PoE injector so that the POE/WAN port used for connecting the PoE injector to the FastMile 5G Receiver faces downwards
- Ensure that the window seal is properly placed and not damaged during the installation process

Ensure that the mounting area of the glass is clean and dry by using a supplied wet wipe to clean the glass where the mounting sleeve is to be affixed, and then drying with a supplied dry wipe.

Peel off the protective stickers from the four adhesive strips on the back of the mounting sleeve.

Figure 14   **Peeling the protective stickers from the adhesive strips**
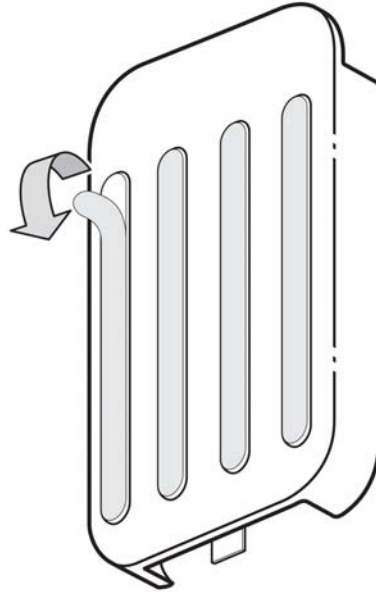
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Orient the mounting sleeve so that the metal clip is at the bottom of the sleeve. Press the mounting sleeve against the glass for 30 seconds to ensure good contact; be sure to press out any air bubbles in the adhesive strips. It is important that there is good contact on all the adhesive strips, so keep pressing until there are no air bubbles in the strips. You can ensure this by checking from the other side of the window: the color of the strips becomes darker when the contact is good.

Figure 15   **Pressing the mounting sleeve to the glass**
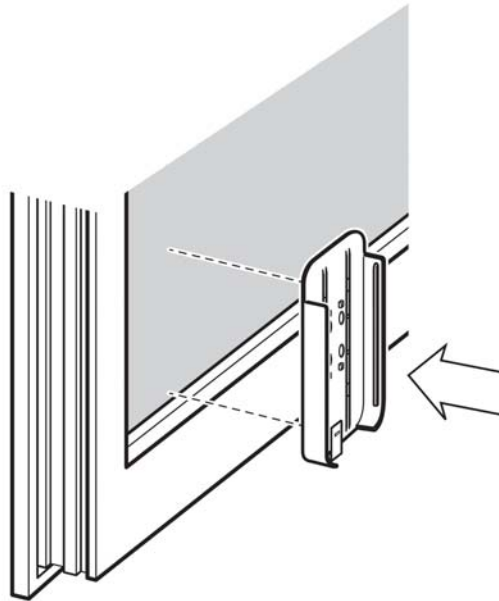
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Slide the FastMile 5G Receiver into the mounting sleeve. Ensure that the signal test button faces towards the inside of the room (the Nokia logo should face outside). The FastMile 5G Receiver secures into place by clipping into the metal clip that is on the bottom of the mounting sleeve.

For a FastMile 5G Receiver that is being mounted on the outside of a window, route the pre-attached PoE cable of the FastMile 5G Receiver through the window seal and into the room. If possible, make sure that there is enough slack in the pre-attached PoE cable on the outside of the window to form a loop so that any water that runs down the cable below the FastMile 5G Receiver will drip off the cable lower than the window seal.

Figure 16   **Cable slack when mounting on the outside of a window**
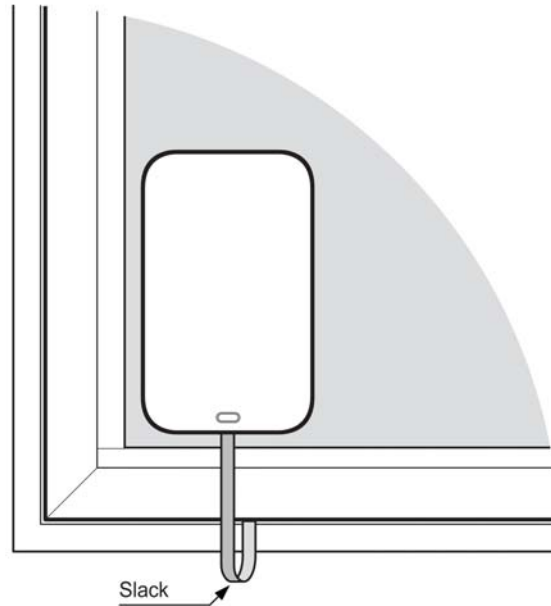
Use the provided cable clamp to secure the pre-attached PoE cable of the FastMile 5G Receiver against the window frame, windowsill, or wall.

➡️ **Note:** If the FastMile 5G Receiver is being mounted on the outside of the window, the cable clamp should be installed on the inside of the room, not outside.

Figure 17   **Example of cable clamp usage**
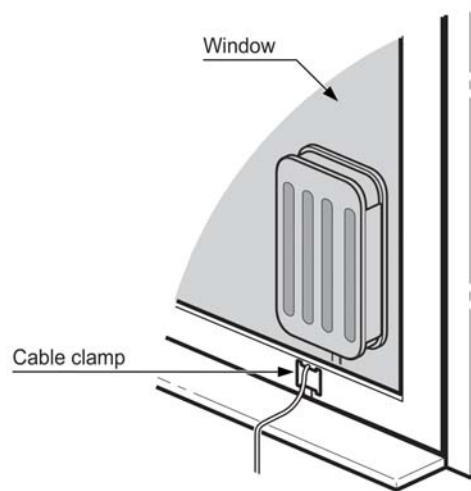
If the FastMile 5G Receiver is not connected to power, connect it to power as described in Connecting the FastMile 5G Receiver to power.

Secure the PoE injector in place as appropriate. It is recommended to install the PoE injector so the POE/WAN port used for connecting the PoE injector to the FastMile 5G Receiver faces downwards. Be sure to allow for any required slack in the cabling attached to the FastMile 5G Receiver.

Connect a 1 Gbps Ethernet LAN cable between the PoE injector and your gateway. You will need to provide the cable if it was not supplied as part of the kit for the FastMile 5G Receiver.

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Figure 18   **Connecting the Ethernet cable LAN cable to the PoE injector**
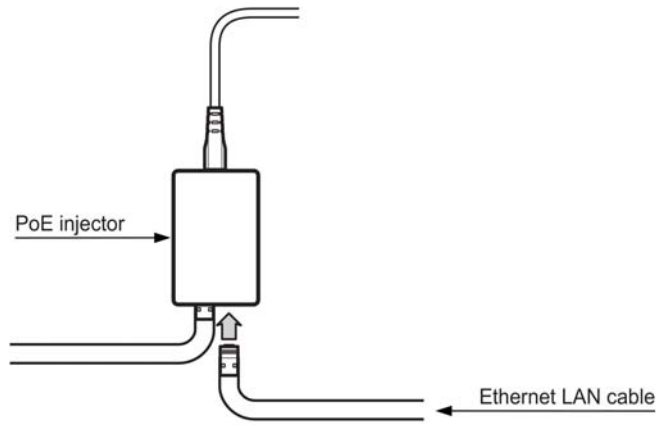
Make any other connections to your gateway.

You can now manage the FastMile 5G Receiver through the Nokia Wireless Mobile App or through the WebUI. See About the WebUI for information about using the WebUI.

Finishing off installation of the FastMile 5G Receiver on a desktop stand

This section describes how to finish off installation of the FastMile 5G Receiver on a desktop stand that will be set up close to a window, such as on an inside windowsill.

Slide the FastMile 5G Receiver into the desktop stand so the pre-attached PoE cable of the receiver passes through the base of the desktop stand.

Figure 19   **Sliding the FastMile 5G Receiver into the desktop stand**

Use the clip in the base of the desktop stand to secure the cable in place underneath the base.

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Figure 20   **Securing the cable in place**

Orient the desktop stand and FastMile 5G Receiver so that the signal test button faces towards the inside of the room (the Nokia logo should face outside), and place in position.

If included in your kit, attach the cable clamp to the pre-attached PoE cable of the FastMile 5G Receiver and use it to secure the pre-attached PoE cable of the receiver to the windowsill, wall, or furniture.

If the FastMile 5G Receiver is not connected to power, connect it to power as described in Connecting the FastMile 5G Receiver to power.

Secure the PoE injector in place as appropriate. Be sure to allow for any required slack in the cabling attached to the FastMile 5G Receiver.

Connect a 1 Gbps Ethernet LAN cable between the PoE injector and your gateway. You will need to provide the cable if it was not supplied as part of the kit for the FastMile 5G Receiver.

Figure 21   **Connecting the Ethernet cable LAN cable to the PoE injector**
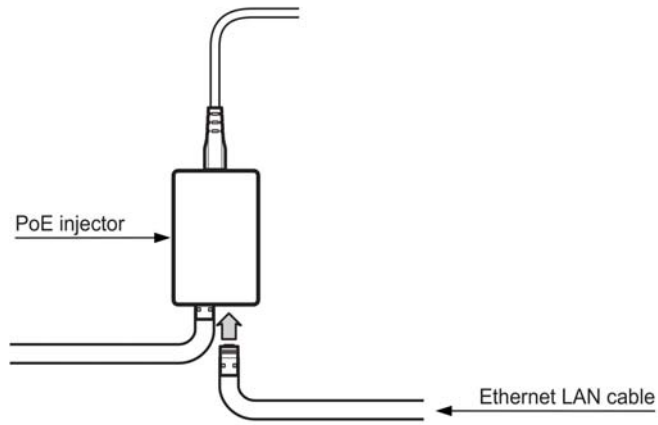
Make any other connections to your gateway.

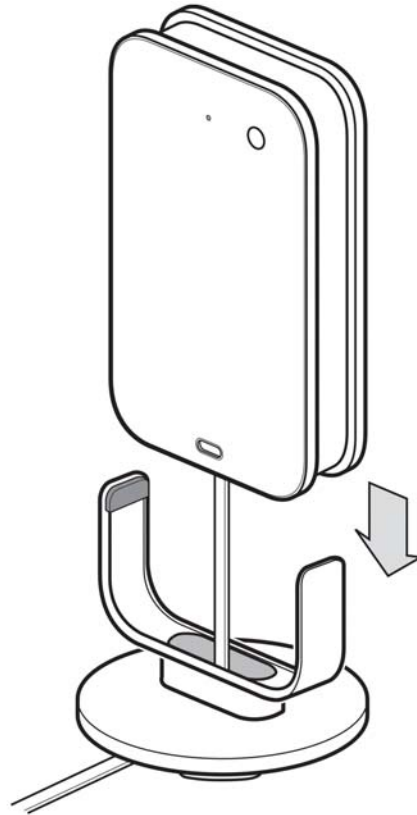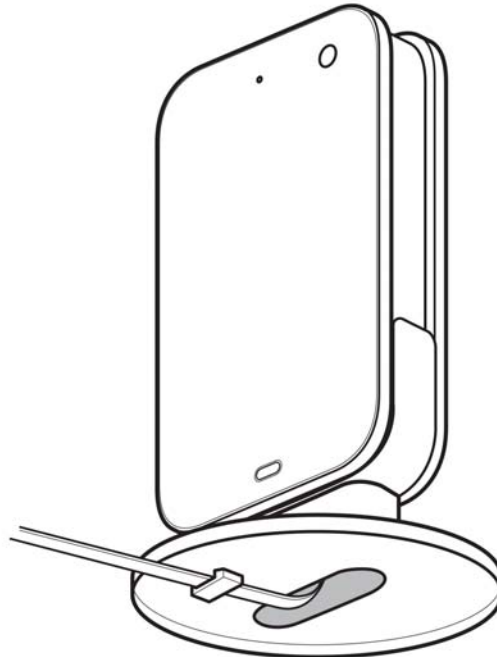You can now manage the FastMile 5G Receiver through the Nokia Wireless Mobile App or through the WebUI. See About the WebUI for information about using the WebUI.

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About the WebUI

The FastMile 5G Receiver supports a web-based graphical user interface known as the WebUI. The WebUI can be used for configuration, maintenance, and some troubleshooting. You can check device status through the WebUI for information on network connectivity. The WebUI also displays other useful information about the FastMile 5G Receiver.

The WebUI can be used through a PC, laptop, or tablet that has a connection to a gateway that has an Ethernet LAN connection to a FastMile 5G Receiver that is connected to power.

➡ **Note:** The WebUI screens are designed for 1920 * 1080p resolution.

The WebUI supported browsers include Chrome, Firefox, Edge, and Safari. You should always use latest versions of browsers.

Accessing the WebUI

This section describes:

- how to establish a connection from the device on which you will access the WebUI for the FastMile 5G Receiver
- how to log into the WebUI

Make sure that your PC, laptop, or tablet has a connection to a gateway that has an Ethernet LAN connection to a powered-up FastMile 5G Receiver. Ensure the Local Area Connection setting on your device is configured as "Obtain an IP address automatically",

On your device, open a web browser, and enter the IP address that is provided on the quick onboarding guide, for example:

http://192.168.1.1

→ **Note:** The above IP address is the default generic configuration; the IP address for you to use might differ as per customer-specific configuration. If you cannot access the FastMile 5G Receiver through the above IP address, refer to information available through your service provider.

The WebUI appears, with its menu on the left side of the screen and the Overview screen appears on the right side.

The Overview screen is the only screen of the WebUI that can be accessed without logging in.

Figure 22   **WebUI screen example before logging in**
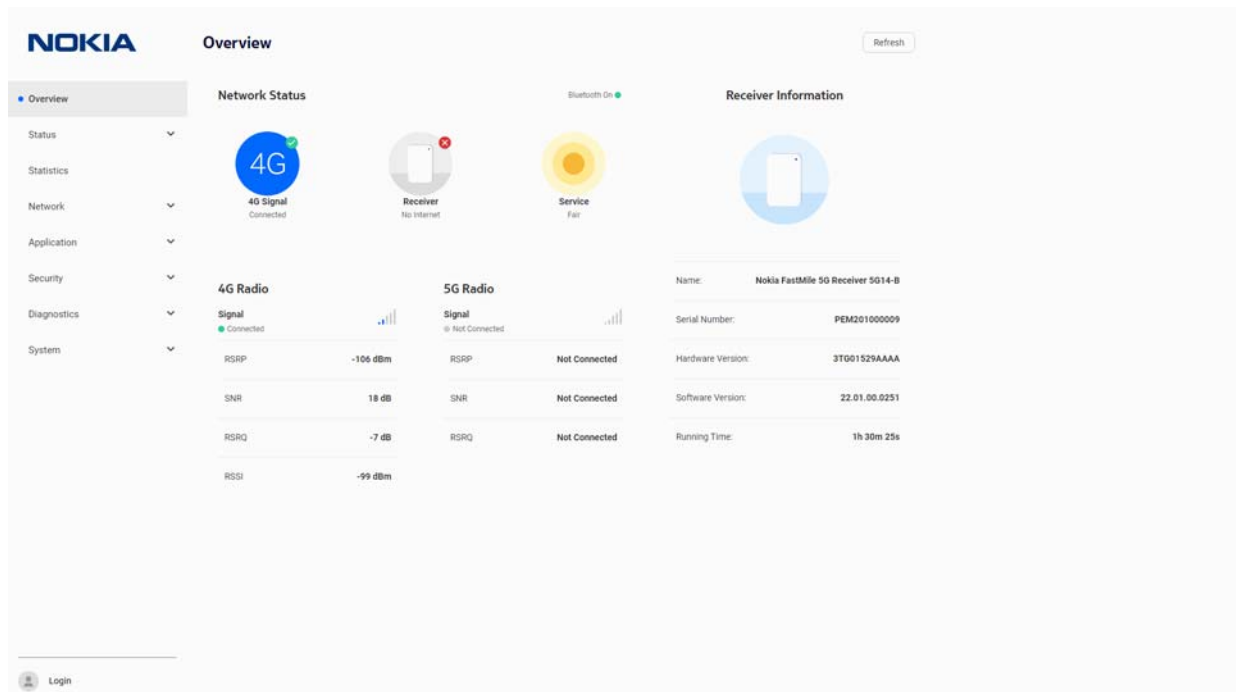
To log in, click Login (bottom left corner of the screen) or click any of the menu items on the left side of the screen.

You are prompted to log in.

The username and password to use are provided on the quick onboarding guide.

Type those values in the login text box and then click Login.

Note: You will be locked out for a specific amount of time after a predefined number of consecutive unsuccessful login attempts.

After successful login, you should see that the WebUI now provides Logout in the bottom left corner of the screen.

To improve security, it is recommended to change the default password. You can do this by doing the Changing the password procedure.

WebUI screens

The following figure illustrates the WebUI screen hierarchy for the FastMile 5G Receiver to help you quickly navigate to tasks that you may need to complete.

Figure 23   **WebUI screen hierarchy for the FastMile 5G Receiver**
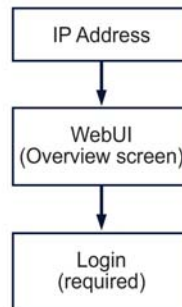
Logging in allows you to access the following main menu screens of the WebUI:

- Overview screen (does not require logging in)
- Status screen
- Statistics screen
- Network screen
- Application screen
- Security screen
- Diagnostics screen
- System screen

Overview screen

From the WebUI's left-side menu, selecting Overview if it is not already selected gives you a way to view a range of information about the FastMile 5G Receiver.

Figure 24   **Overview screen example**
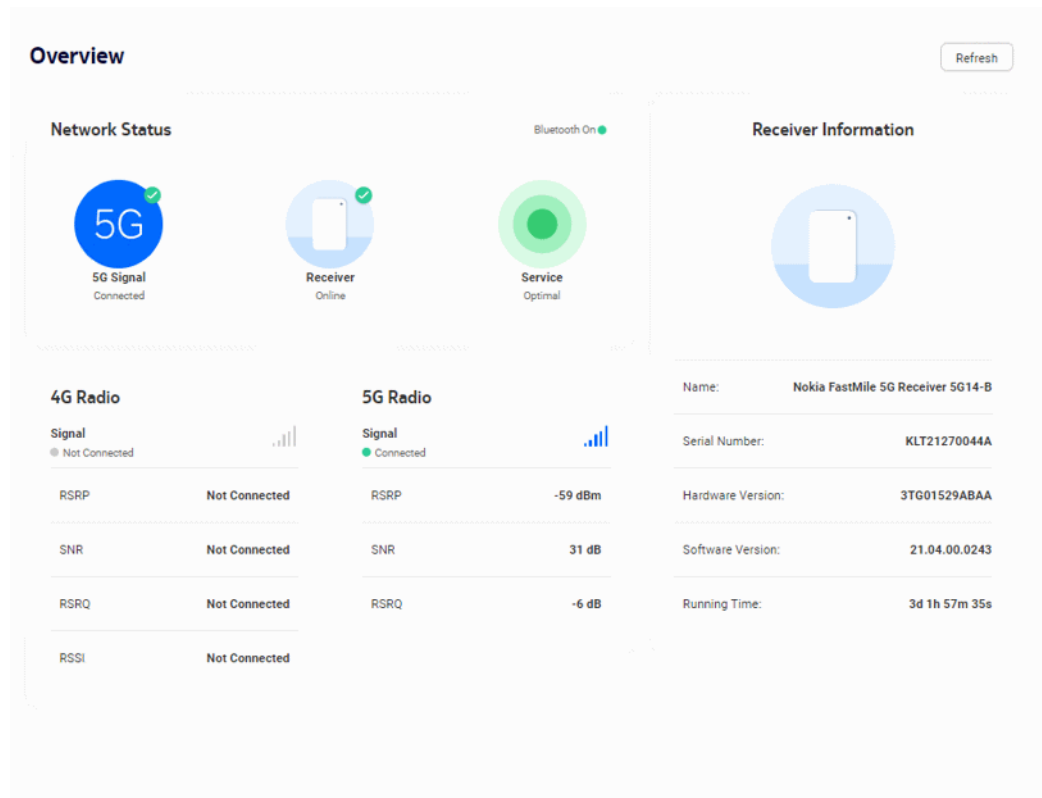
The Overview screen contains the following sections:

- Network Status
- Receiver information
- 4G Radio
- 5G Radio

Click Refresh at any time to update the screen.

Network status section:

The Network Status section of the Overview screen shows the type of signal and status, Receiver status (online or offline), and service quality. A green dot indicates that Bluetooth is On and working well. A gray dot indicates that Bluetooth is Off.

Receiver information section:

The Receiver information section of the Overview screen shows the following for the FastMile 5G Receiver:

- Name
- Serial number
- Hardware version
- Software version
- Running time

4G Radio section:

The 4G Radio section of the Overview screen shows 4G signal strength represented by the number of bars. A green dot indicates that 4G is available and connected. A grey dot indicates that 4G is not connected.

Values are shown for the following:

- RSRP
- SNR
- RSRQ
- RSSI

5G Radio section:

The 5G Radio section of the Overview screen shows 5G signal strength represented by the number of bars. A green dot indicates that 5G is available and connected. A grey dot indicates that 5G is not connected.

Values are shown for the following:

- RSRP
- SNR
- RSRQ

Status screen

From the WebUI's left-side menu, selecting Status gives you a way to:

- view general status information (including cellular network information)
- view cellular status information (specifically, detailed 4G and 5G cellular information)

General status information

To view general status information, select Status from the WebUI's left-side menu, and then select General.

Figure 25   **Status/General screen example**
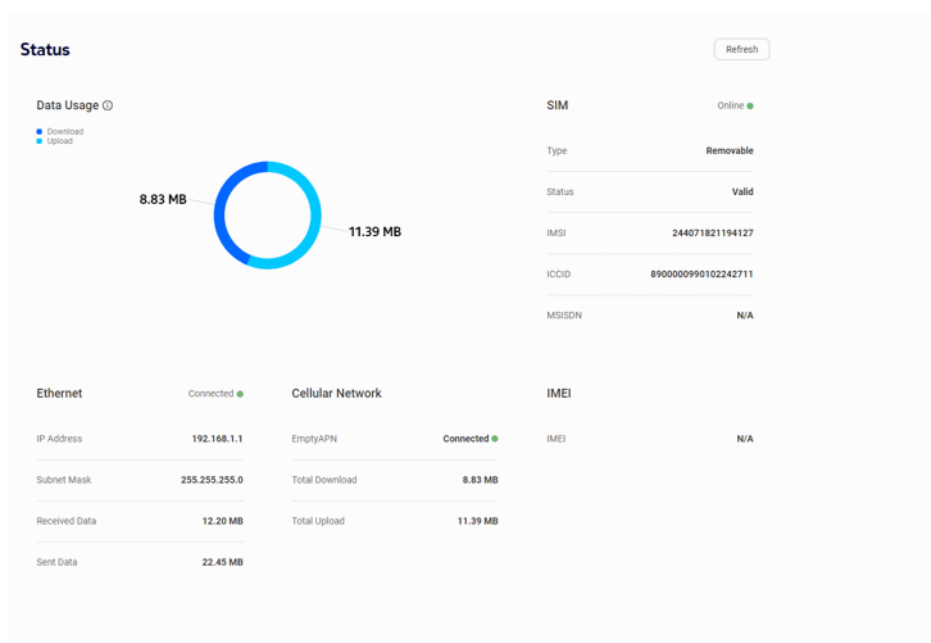
The Status/General screen has sections that provide information for:

- • Data usage
- • SIM
- • Ethernet
- • Cellular network
- • IMEI

Click Refresh at any time to update the screen.

Data usage section:

The Data Usage section of the Status/General screen shows the amount of cellular data that has been downloaded and uploaded from the FastMile 5G Receiver since its last reset/power-cycle.

SIM section:

The SIM section of the Status/General screen shows the SIM card status. A green dot, indicating the Online status, indicates that your SIM card is activated and working well. A gray dot could be due to any of the following:

- no SIM card is installed
- the SIM card is not installed correctly
- the SIM card might not be working
- the PIN code needs to be entered to unlock a PIN-locked SIM card
- the PUK code needs to be entered to unblock a PIN-locked SIM card
- a PIN-locked SIM card is disabled because the PUK code was entered incorrectly too many times

Please contact your service provider if you have checked the above for the SIM card but it is still not working.

The SIM section of the Status/General screen also shows the following for the SIM card:

- Type
- Status:

  If the FastMile 5G Receiver has a PIN-locked SIM card, and the status is Available, it means that the SIM card needs to be unlocked; if the status is Blocked for a PIN-locked SIM card, it means that the SIM card needs to be unblocked by entering the PUK code and a new PIN code; see information in System screen to unlock or unblock a PIN-locked SIM card.

  If the status for a SIM card is Error, it could mean any of the following:
  - a modem failure
  - a broken SIM card
  - for a PIN-locked SIM card, the PIN-locked SIM feature is not activated on the FastMile 5G Receiver, or the SIM card is disabled because the PUK code was entered incorrectly too many times; you will need to contact your service provider to activate the feature or enable the SIM card
- IMSI
- ICCID
- MSISDN

Ethernet section:

The Ethernet section of the Status/General screen indicates whether a device is connected to the FastMile 5G Receiver via Ethernet:

- Green dot: there is an Ethernet connection

• Grey dot: there is no Ethernet connection

The Ethernet section also shows:

- IP address: local address
- Subnet mask: default subnet mask
- Received data: the amount of data received via the Ethernet connection
- Sent data: the amount of data sent via the Ethernet connection

Cellular Network section:

The Cellular Network section of the Status/General screen shows if the cellular network is connected or not connected, along with other information. A green dot indicates a connection to the cellular network. A gray dot indicates that there is no connection to the cellular network.

IMEI section:

The IMEI section of the Status/General screen shows the IMEI identifier for each mobile subscriber.
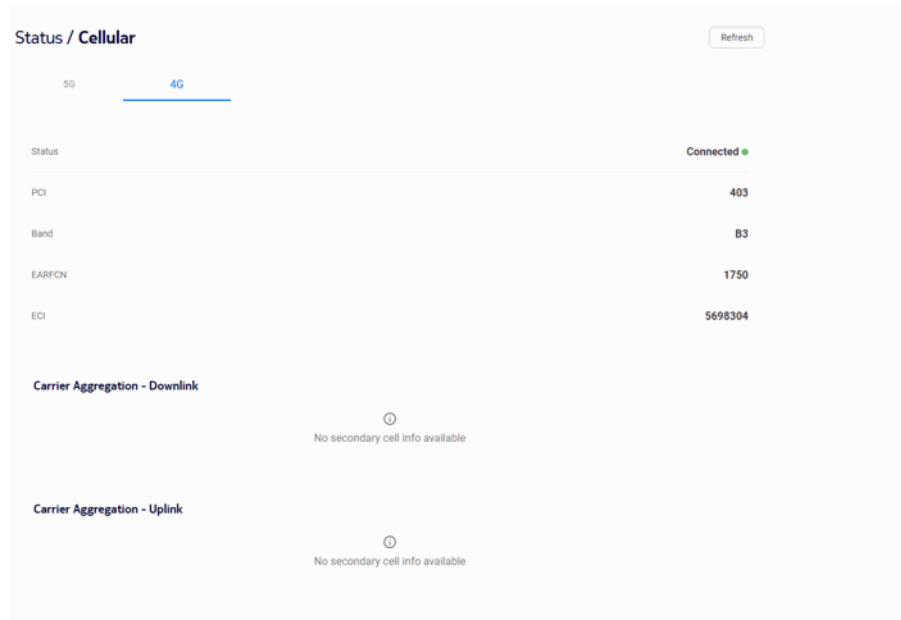
Cellular status information

To view cellular status information, select Status from the WebUI's left-side menu, and then select Cellular. The Status/Cellular screen appears and provides detailed 4G or 5G cellular information, including Carrier Aggregation information.

To view detailed cellular information:

- click 4G for detailed 4G cellular information
- click 5G for detailed 5G cellular information
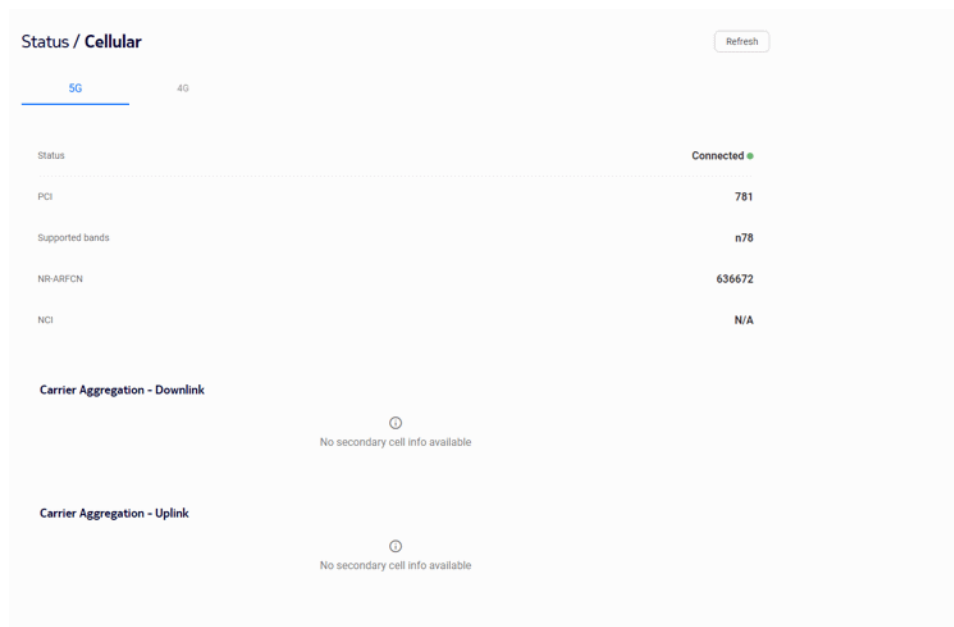
Detailed 4G cellular information

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Figure 26   **Status/Cellular screen 4G example**

The following detailed 4G cellular information is displayed on the Status/Cellular screen:

> • Connection status (grey or green dot)
> • PCI
> • Band
> • EARFCN
> • ECI
> • Downlink Carrier Aggregation
> • Uplink Carrier Aggregation

Click Refresh at any time to update the screen.

Detailed 5G cellular information

Figure 27   **Status/Cellular screen 5G example**

The following detailed 5G cellular information is displayed on the Status/Cellular screen:

- Connection status (grey or green dot)
- PCI
- Supported bands
- NR-ARFCN
- NCI
- Downlink Carrier Aggregation
- Uplink Carrier Aggregation

Click Refresh at any time to update the screen.

Statistics screen

From the WebUI's left-side menu, selecting Statistics gives you tabs that provide a way for you to view statistics counters for:
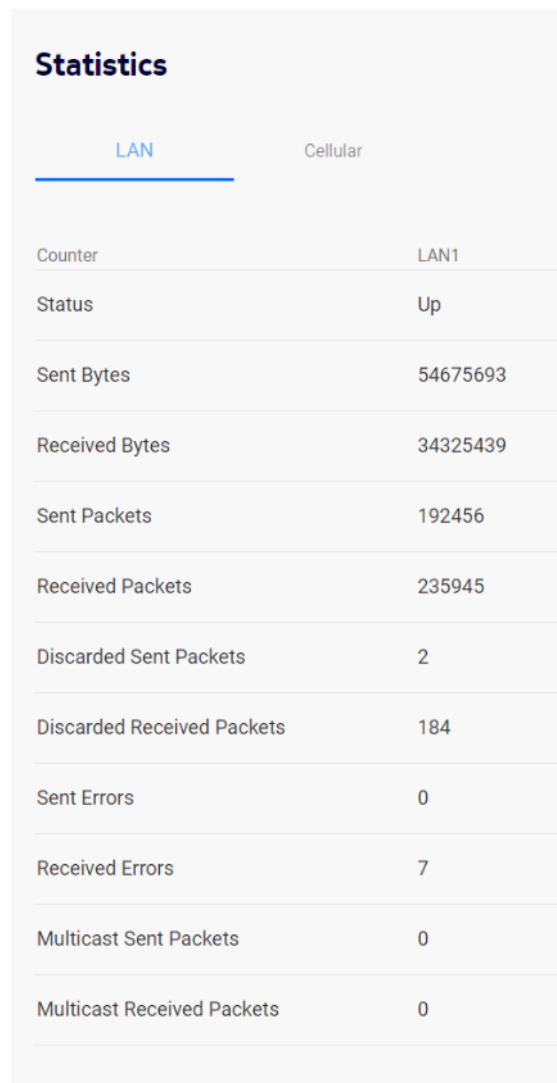
- LAN

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• Cellular

LAN

Click the LAN tab along the top of the Statistics screen.

Figure 28   **Statistics/LAN tab screen example**

Statistics

Counter	LAN1
Status	Up
Sent Bytes	54675693
Received Bytes	34325439
Sent Packets	192456
Received Packets	235945
Discarded Sent Packets	2
Discarded Received Packets	184
Sent Errors	0
Received Errors	7
Multicast Sent Packets	0
Multicast Received Packets	0

Refresh the page to update the displayed information.

Cellular

Click the Cellular tab along the top of the Statistics screen.

Figure 29   **Statistics/Cellular tab screen example**

Refresh the page to update the displayed information.

Network screen

From the WebUI's left-side menu, selecting Network gives you a way to view or configure:

- Ethernet:
  – LAN
  – LAN IPv6
- APN settings (Cellular/APN - Access Point Name)
- Static routes
- Connected devices

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Ethernet /LAN

To view Ethernet LAN information, select Network from the WebUI's left-side menu, and then select Ethernet. Click on the arrow beside Ethernet and then select LAN to view the LAN settings, including static DHCP information.

Figure 30   **Network/Ethernet/LAN screen example**

You can configure the following Ethernet LAN parameters:

- IPv4 address
- Subnet Mask
- enable/disable DHCP
- DHCP start IP address
- DHCP end IP address
- DHCP lease time

Click Save changes.

For static DHCP, bind MAC addresses to the LAN by entering the MAC and IP addresses, and then clicking Add. Repeat for all MAC addresses to be bound.

Ethernet/LAN IPv6

To enable or disable DHCPv6 for the FastMile 5G Receiver, select Network from the WebUI's left-side menu, and then select Ethernet. Click on the arrow beside Ethernet and then select LAN IPv6.

Figure 31   **Network/Ethernet/LAN IPv6 screen example**

Slide the switch button to enable or disable DHCPv6.

Cellular/APN - Access Point Name

To view or configure the APN settings, select Network from the WebUI's left-side menu, and then select Cellular. Click on the arrow beside Cellular to view or edit the settings for APN - Access Point Name.

Figure 32   **Network/Cellular/APN - Access Point Name screen example**
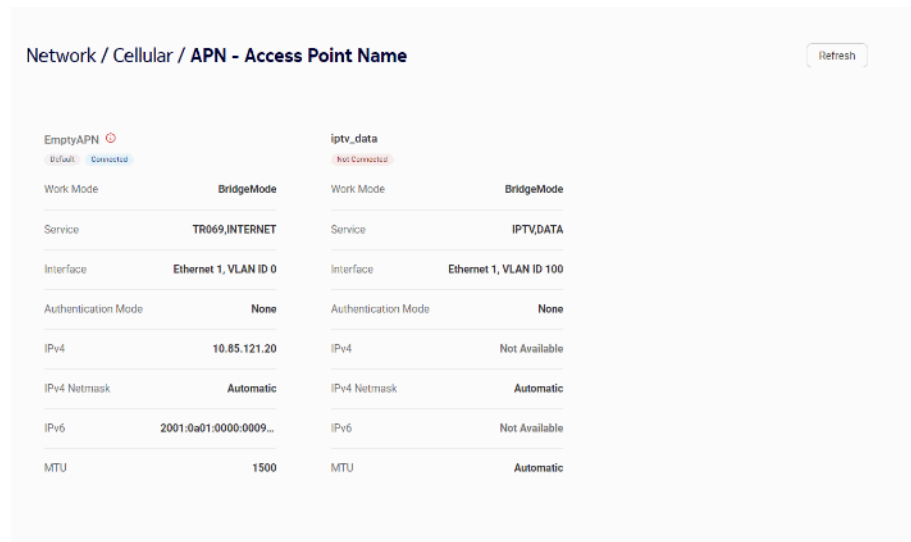
You can view or edit the following APN settings:

  • Status

  • Work mode (Route or Bridge)

  • Service type (TR069, Internet, and IPTV; note that Internet and IPTV can only work if the Work mode is set for Bridge; TR069 can be configured if the Work mode is set for Bridge or Route)

  • Interface:

    – Ethernet interface (The available option is Ethernet 1; only applicable if the Work mode is Bridge)

    – VLAN ID (only applicable if the Work mode is Bridge)

  • Authentication mode (None, PAP, or CHAP)

  • IPv4 IP address

  • IPv4 netmask setting

  • IPv6 address (in dotted format)

  • Maximum Transmission Unit (MTU)

Click Refresh to update the screen.

Static routes

To add static routes, select Network from the WebUI's left-side menu, and select Static Routes.

Figure 33   **Network/Static Routes screen example**

You can configure the following static route parameters:

- Destination IP v4 address in dotted format
- Destination netmask in dotted format
- Gateway IP v4 address in dotted format
- Interface, by selecting from the pull-down
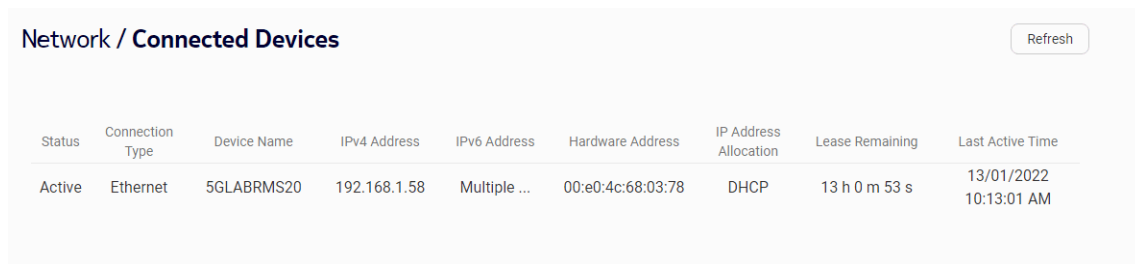
Click Add.

To remove an existing static route, find it in the filtered list and click Delete.

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Connected devices

To view devices connected to the FastMile 5G Receiver, select Network from the WebUI's left-side menu, and select Connected Devices.

Figure 34   **Network/Connected Devices screen example**

Status	Connection Type	Device Name	IPv4 Address	IPv6 Address	Hardware Address	IP Address Allocation	Lease Remaining	Last Active Time
Active	Ethernet	5GLABRMS20	192.168.1.58	Multiple ...	00:e0:4c:68:03:78	DHCP	13 h 0 m 53 s	13/01/2022 10:13:01 AM

Click Refresh to update the displayed information.

Application screen

From the WebUI's left-side menu, selecting Application and then Port Forwarding gives you a way to view or configure port forwarding parameters.

Figure 35 **Application/Port Forwarding screen example**

You can configure the following port forwarding parameters:

- Application name
- WAN port
- LAN port
- Internal client
- Protocol
- WAN connection list

Click Add.

To remove an existing port forwarding configuration, find it in the list and click Delete.

Security screen
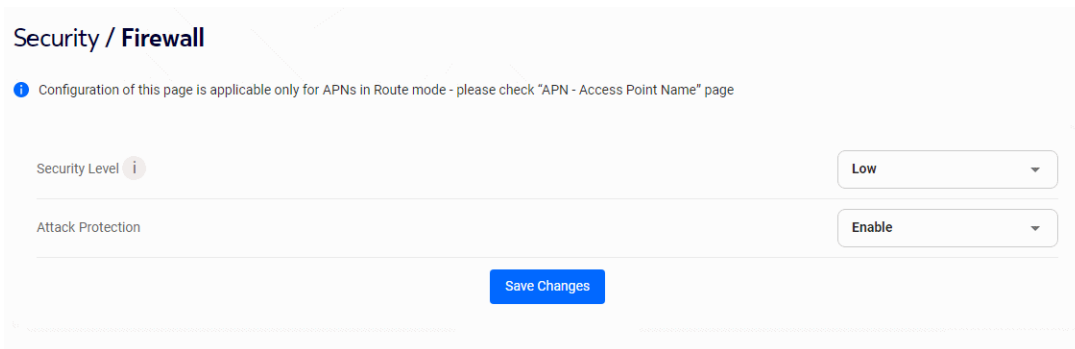
From the WebUI's left-side menu, selecting Security gives you a way to view or configure:

- firewall security level
- IP filter
- ALG and DMZ

Firewall security level

From the WebUI's left-side menu, selecting Security and then Firewall gives you a way to view or configure the security firewall level for the FastMile 5G Receiver. The firewall security level only applies to services provided by the FastMile 5G Receiver. Internet access from the LAN side is not affected by the firewall security level.

Figure 36   **Security/Firewall screen example**

Configure the firewall security level:

- Off: All inbound and outbound traffic is allowed
- Low: All outbound traffic and pinhole-defined inbound traffic is allowed
- High: all inbound traffic is denied and only minimal common outbound services are permitted

Enable Attack Protection to prevent malicious user exploitation.

Click Save Changes.

IP filter

From the WebUI's left-side menu, selecting Security and then IP Filter gives you a way to view or configure IP filter parameters.

Figure 37   **Security/IP Filter screen example**

Configure IP filter parameters:

- Enable/disable IP filter
- Mode
- Internal client
- Local IP address
- Source subnet mask
- Remote IP address
- Destination subnet mask
- Protocol

Click Save Changes.

To remove an existing IP filter, find it in the list and click Delete.

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ALG and DMZ

From the WebUI's left-side menu, selecting Security and then DMZ/ALG gives you a way to view or configure ALG and DMZ parameters.

Figure 38   **Security/ALG and DMZ Configuration screen example**

Configure ALG parameters by sliding the switch to enable or disable the following:

- FTP
- TFTP
- SIP
- H323
- RTSP
- L2TP
- IPSEC

• PPTP

Click Save changes to save the ALG configuration.

Configure DMZ parameters by configuring the following:

- WAN connection list
- DMZ IP address
- Enable/disable DMZ

Click Save changes to save the DMZ configuration.

Diagnostics screen

From the WebUI's left-side menu, selecting Diagnostics allows you to configure log settings and view logged events.

Logs

On the Diagnostics screen, click Logs. The Logs screen appears.

Figure 39 **Diagnostics/Logs screen example**
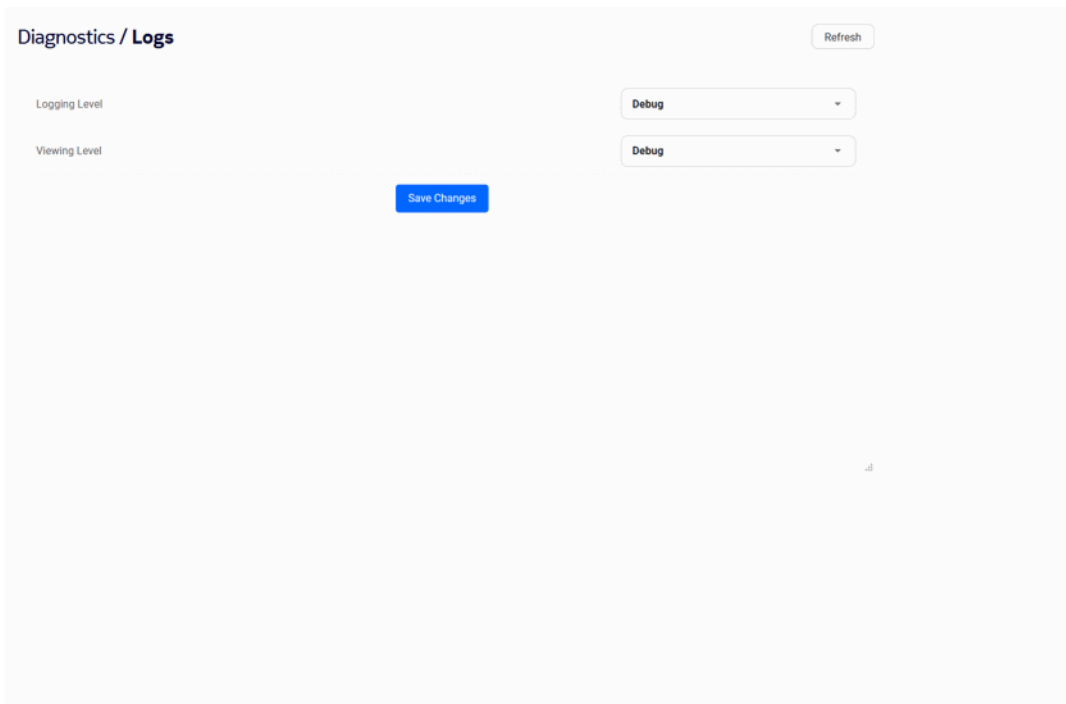
Choose a write level from the Logging Level drop-down menu to determine what types of events are to be recorded in the log file.

Choose a read level from the Viewing Level drop-down menu to determine what types of events are to be shown from the log file.

Click Save Changes.

System screen

The System screen allows you to:

- perform general tasks
- configure NTP parameters

General tasks

From the WebUI's left-side menu, selecting System and then selecting General will let you perform a number of general system tasks.

Figure 40   **System/General screen example**
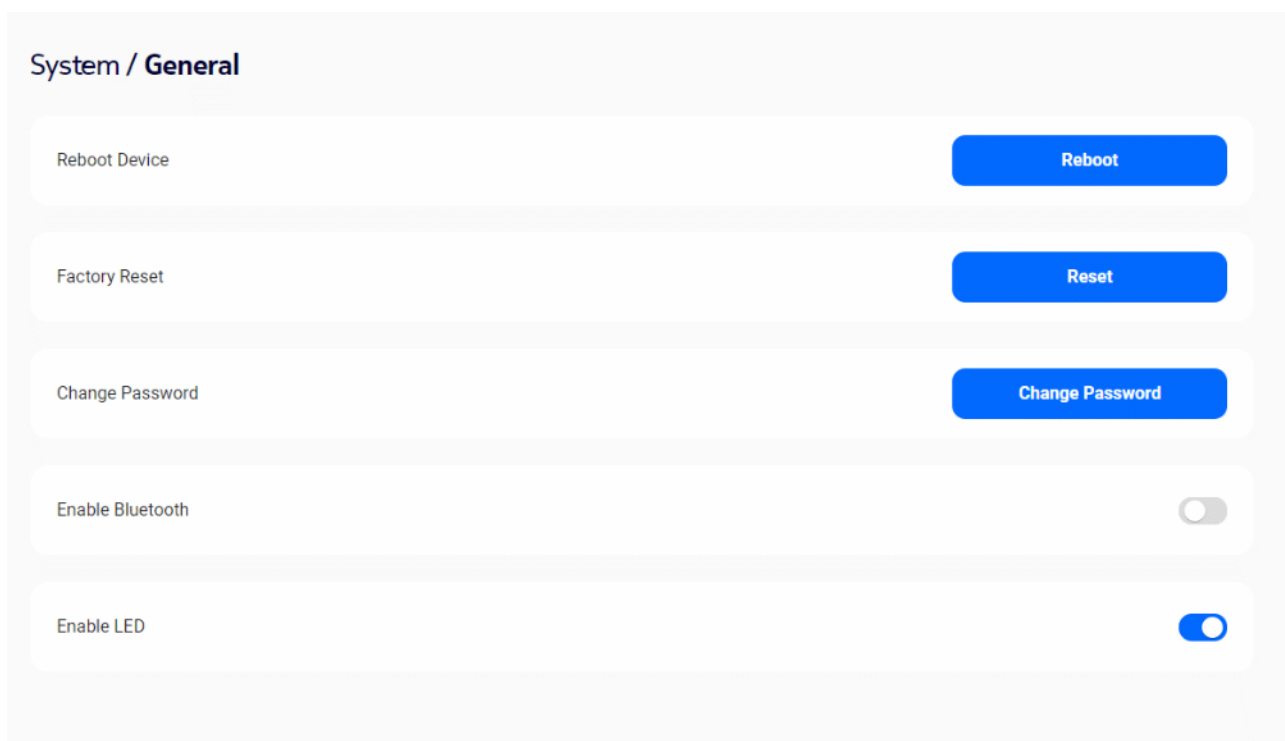
You can perform the following tasks from the System/General screen:

- Unlock a PIN-locked SIM card
- Unblock a blocked PIN-locked SIM card
- Reboot Device
- Factory Reset
- Change Password
- Enable or disable Bluetooth
- Enable or disable LED

Unlocking a PIN-locked SIM card

Note: If the SIM card provided for your FastMile 5G Receiver is a PIN-locked SIM card, the PIN code for unlocking the SIM card is provided with the SIM card.

From the System/General screen, click Enter PIN.

The "Enter PIN to unlock your SIM" window appears.

Enter the PIN code for your SIM card, and then click Enter PIN. You are allowed three attempts to correctly enter the PIN code. If you enter an incorrect PIN code three times, see Unblocking a blocked PIN-locked SIM card to unblock the SIM card.

Unblocking a blocked PIN-locked SIM card

Note: If the SIM card provided for your FastMile 5G Receiver is a PIN-locked SIM card and it is blocked (such as when the SIM PIN code is entered incorrectly three times), the PUK code needed to unblock it is typically provided on the original plastic packaging of the SIM card.

From the System/General screen, click Enter PUK.

The "Enter PUK to unblock your SIM" window appears.

Enter the PUK code for the SIM card, along with a new PIN code (two times), and then click OK. You are allowed ten attempts to correctly enter the PUK code.

If the PUK code is not correctly entered within ten attempts, the SIM card is disabled, and you will need to contact your service provider to obtain a new SIM card.

Rebooting the FastMile 5G Receiver

This section describes how to reboot the FastMile 5G Receiver through the WebUI; to reboot the FastMile 5G Receiver through the reset button, see Rebooting or resetting the FastMile 5G Receiver.

➡️ **Note:** Unsaved data will be lost as a result of the reboot.

Rebooting the FastMile 5G Receiver cycles power to the device and keeps all configurations saved to date. Note that if the FastMile 5G Receiver has a PIN-locked SIM card, you might need to unlock the SIM card after the reboot is done.

From the System/General screen, click Reboot.

The FastMile 5G Receiver reboots and keeps saved configuration parameters.

Resetting the FastMile 5G Receiver to factory default

This section describes how to reset the FastMile 5G Receiver through the WebUI; to reset the FastMile 5G Receiver to factory default through the reset button, see Rebooting or resetting the FastMile 5G Receiver.

Resetting the FastMile 5G Receiver to factory default removes all configurations made to date. Note that if the FastMile 5G Receiver has a PIN-locked SIM card, you might need to unlock the SIM card after the reset is done.

➡️ **Note:** During factory reset, the FastMile 5G Receiver could restart twice. This is normal behavior.

From the System/General screen, click Reset.

The FastMile 5G Receiver restarts and erases existing configuration.

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Changing the password

Note: For security reasons, it is recommended that you change the default password once you have logged into the WebUI.

Passwords must contain 10-64 characters.

Passwords must have at least three of the following four types of characters:

- uppercase character (A-Z)
- lowercase character (a-z)
- number (0-9)
- special character (!#+,-/:=@_)

The first character of the password cannot be a special character.

The same character cannot be used consecutively eight times.

From the System/General screen, click Change Password.

The Change Password window appears.

Enter the current password (the original password is located on the quick onboarding guide).

Enter the new password; enter the new password again to confirm.

Click Update Password.

Your password is changed.

Enabling Bluetooth

From the System/General screen, slide the Enable Bluetooth button to enable or disable Bluetooth.

Enabling the LED

From the System/General screen, slide the Enable LED button to enable or disable the LED. Note that even if the LED is disabled through the WebUI, it will light for important events such as critical alarms.

NTP parameters

From the WebUI's left-side menu, selecting System and then NTP will let you configure NTP-related parameters.

Figure 41   **System/NTP screen example**

You can configure the following from the System/NTP screen:

- Enable NTP
- Primary Time Server
- Secondary Time Server
- Third Time Server
- Time Zone

Click Save Changes.

Logging out of the WebUI

Click Logout from the bottom of the WebUI menu.

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Troubleshooting

This section provides information about:

- Understanding the LED colors
- Using the signal test button
- Repositioning for a better signal
- Rebooting or resetting the FastMile 5G Receiver
- Removing a window mount

Understanding the LED colors

You can check either of the multicolor LEDs on the FastMile 5G Receiver to determine the status of the device or to confirm that the location has good broadband performance

Figure 42 **Location of the multicolor LEDs**
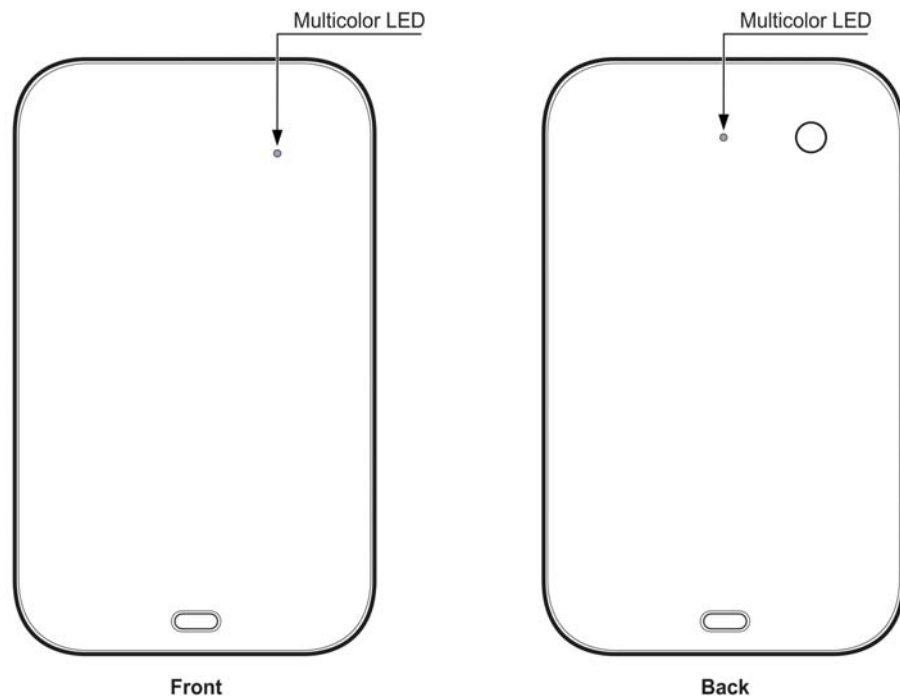
The following table describes the behavior of the multicolor LEDs; the table provides the meaning of the LED behavior, and also includes some recommended actions.

Note: LED indications can change over time due to variable 4G/LTE or 5G signal conditions.

Note: LED indications will be different than described in the table if signal thresholds have been changed by your service provider.

Note: If the LED indication is that the FastMile 5G Receiver has a good 4G/LTE or 5G connection, it is recommended that you do not reposition it.

Table 1 **LED behavior**

LED color	Behavior	Meaning	Recommended action
Off	Off	No power	Connect the FastMile 5G Receiver to power
White	Blinking	Signal test in progress (the signal test button is pressed and cell measurement is triggered)	Do nothing
		A factory reset will start when the reset button is released	Do nothing
Orange	Solid	Part of start up sequence	Do nothing
Green	Blinking	Part of start up sequence	Do nothing
	Solid	Good 4G or 5G connection	Do nothing
Yellow	Solid	Medium 4G or 5G connection	Reposition the FastMile 5G Receiver

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Table 1   **LED behavior (Continued)**

LED color	Behavior	Meaning	Recommended action
Red	Blinking	There is no 4G or 5G connection	Reposition the FastMile 5G Receiver
		One or more critical alarms	Resolve the alarm condition; do a reboot of the FastMile 5G Receiver to clear the alarm
		Reset to factory settings is in progress	Do nothing, as the FastMile 5G Receiver is being reset
	Solid	SIM card problem	Insert the SIM card or replace it
		Poor 4G or 5G connection	Reposition the FastMile 5G Receiver
Blue	Blinking	The FastMile 5G Receiver is pairing with the smart phone using Bluetooth	Do nothing
	Solid	Bluetooth pairing with the smart phone is complete	Do nothing

Using the signal test button

You can check and test the signal strength at any time by pressing the signal test button on the back of the FastMile 5G Receiver.

Figure 43   **Location of the signal test button**
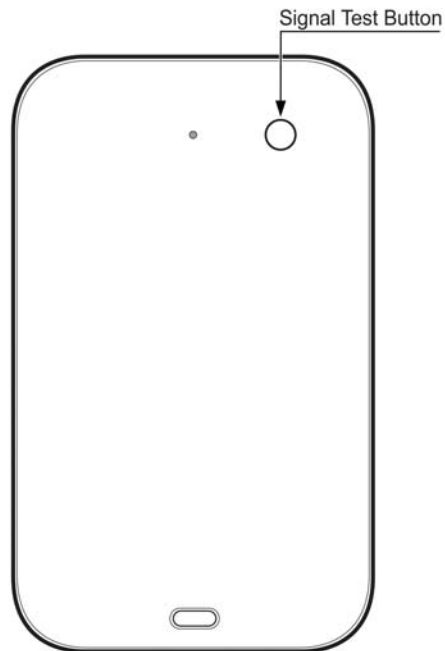
Signal Test Button

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You can check the results of the signal test by looking at the LEDs (see Understanding the LED colors) or by viewing the results on the Nokia Wireless Mobile App.

➡ **Note:** Once the results of a signal test indicate that the FastMile 5G Receiver has a good 4G/LTE or 5G connection, it is recommended that you do not reposition it.

Repositioning for a better signal

You may need to reposition the FastMile 5G Receiver as a result of the following:

- the Nokia Wireless Mobile App recommends that you reposition the FastMile 5G Receiver based on the app-performed signal test results
- results of a speed test using Ookla done through the Nokia Wireless Mobile App
- the recommended action for the LED activity is that you should reposition the FastMile 5G Receiver

When repositioning the FastMile 5G Receiver, keep in mind the tips for determining the best location listed in Using the Nokia Wireless Mobile App to find the best installation location.

Disconnect the PoE injector from the electrical outlet.

Move the FastMile 5G Receiver and the PoE injector to a different location.

Plug the PoE injector to an electrical outlet at the new location (see Connecting the FastMile 5G Receiver to power).

Do the following as appropriate:

- if you are using the Nokia Wireless Mobile App to determine the best location, resume use of the app
- run another speed test using Ookla through the Nokia Wireless Mobile App
- check the multicolor LED of the FastMile 5G Receiver (see Understanding the LED colors)
- do a signal test (see Using the signal test button)

Rebooting or resetting the FastMile 5G Receiver

You can do a reboot or a factory reset of the FastMile 5G Receiver through the following:

- the WebUI as described in System screen
- the Nokia Wireless Mobile App
- the reset button as described in this section

See Understanding the LED colors for a description of the multicolor LED behavior during a factory reset.

➡ **Note:** The FastMile 5G Receiver might restart twice during a factory reset. This is normal behavior.

You will need an M3 Phillips screwdriver to access the reset button and a paper clip or similar to press the reset button.

If the FastMile 5G Receiver is installed, remove it from the mounting sleeve or desktop stand by pressing on the clip at the bottom of the mounting sleeve or loosening the clip on the base desktop stand to release the FastMile 5G Receiver.

Use the screwdriver to remove the screw from the bottom cover of the FastMile 5G Receiver.

Figure 44   **Location of the screw to access the reset button**
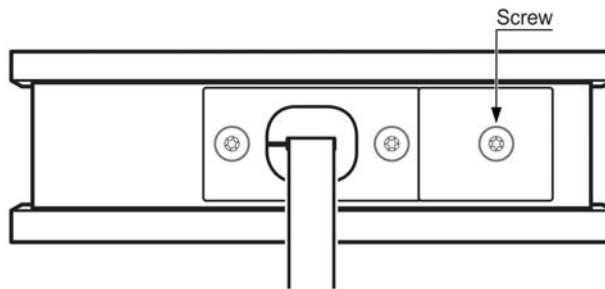
Reboot or reset the FastMile 5G Receiver by using the end of a paper clip or similar to firmly press, and then release, the reset button:

- pressing the reset button for less than five seconds reboots the FastMile 5G Receiver; configured settings are kept
- pressing the reset button for five seconds or more resets the FastMile 5G Receiver to its factory default settings; configured settings are not kept

Figure 45   **Location of the reset button**
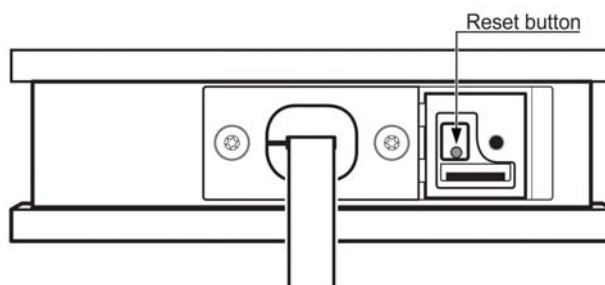
Place the bottom cover back onto the FastMile 5G Receiver.

Using care, use the screwdriver to secure the bottom cover.

➡ **Note:** If the FastMile 5G Receiver has a PIN-locked SIM card, you might need to unlock the SIM card after the reboot or reset is done as described in System screen.

Removing a window mount

Once fixed in place, the adhesive strips on the mounting sleeve used for mounting the FastMile 5G Receiver on a window should not be regularly detached from the window. It is highly recommended that upon correct installation, the position is not changed. However, detaching from the window is feasible as long as the measures outlined in this section are taken.

If you do need to remove the mounting sleeve from a window, use a hair blow dryer with a warm or hot setting to gradually warm up the adhesive strips and then peel them off from the window at the same time. If you are going to move the mounting sleeve to another window, be sure that the strips remain attached to the mounting sleeve.

Note: The adhesive strips are reusable by gently washing with water and drying thoroughly. Do not remove the strips from the mounting sleeve when cleaning them.

The mounting sleeve might not be as secure if you move it to another window. Repeated reuse of the adhesive strips will reduce their adhesive strength. It is recommended that you do not move the mounting sleeve too often.

Glossary

This glossary provides the explanation and optional descriptions of most acronyms and initialisms that appear in this document.

3GPP	3rd Generation Partnership Project
4FF	4th Form Factor
AC	Alternating Current
APN	Access Point Name
CB	Certification Body
CE	Consumer Electronics
CEC	Consumer Electronics Control
DHCP	Dynamic Host Configuration Protocol
EN-DC	E-UTRAN New Radio - Dual Connectivity
EARFCN	E-UTRA Absolute Radio Frequency Channel Number
HPUE	High Power User Equipment
IMEI	International Mobile Equipment Identification
IMSI	International Mobile Subscriber Identity
IP	International Protection or Internet Protocol
IPv6	Internet Protocol version 6
LED	Light Emitting Diode
LTE	Long Term Evolution
MIMO	Multiple-Input Multiple-Output
MPE	Multi-Protocol Encapsulation
MTU	Maximum Transmission Unit
MU-MIMO	Multi-User Multiple-Input Multiple Output
NR	New Radio
NR-ARFCN	New Radio Absolute radio-frequency channel number
NSA	Non-Standalone
NTP	Network Time Protocol
OUI	Organizationally Unique Identifier
PCI	Peripheral Component Interconnect
QCI	QoS Class Identifier
QSG	Quick Start Guide
RCM	Resource Capacity Management
RF	Radio Frequency
RSRP	Reference Signal Received Power
RSRQ	Reference Signal Received Quality

SA	Service Affecting or Standalone
SIM	Subscriber Identify Module
SNR	Signal to Noise Ratio
SSID	Service Set identifier
UL	Up link
USB	Universal Serial Bus
VDC	Volts Direct Current
WAN	Wide Area Network
WebUI	Web User Interface
WLAN	Wireless Local Area Network

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Technical specifications

Dimensions without mounting sleeve	Width 110 mm (4.3 in) x Height 183 mm (7.2 in) Depth 35 mm (1.4 in) Weight 0.45 kg (0.99 lbs)
Dimensions with the mounting sleeve	Width 116 mm (7.3 in) x Height 186 mm (7.3 in) Depth 40.5 mm (1.6 in) Weight 0.45 kg (0.99 lbs)
Model	5G14-B
Certifications	CE\CB(IP66)\RCM\GCF\K.21(6KV)
Operating environment	-40°C to 55°C (-40°F to 131°F)
Operating humidity	5% to 95% relative humidity, non-condensing
Short-term humidity	5% to 95% relative humidity, non-condensing
Storage temperature	-40°C to 85°C (-85°F to 185°F)
SIM card	4FF/nano-sized SIM slot
Power	Maximum 11W
Antenna	High gain antenna (up to 9 dBi gain for n78)
Radio frequency safety distance	20 cm (10 in)
HPUE (Power Class 2, 26 dBm)	5G NR SA bands: n41/n78 LTE bands: B41
Temperature sensor	Temperature is considered low if at least one of the temperature sensor's measured values is below the low threshold; the lowest temperature value is reported as the current temperature. Temperature is considered high if all the temperature sensor's measured values are above the high threshold; the highest temperature value is reported as the current temperature.

5G NR specifications

3GPP Release 15 - 5G NR NSA: Option 3X and SA: Option 2

Supported 5G NR radio bands:

Sub-6 GHz (FDD):

- n1 2100 (UL: 1920-1980 MHz; DL: 2110-2170 MHz)
- n3 1800 (UL: 1710-1785 MHz; DL: 1805-1880 MHz)
- n5 850 (UL: 869-894 MHz; DL: 824-849 MHz)
- n7 2600 (UL: 2500-2570 MHz; DL: 2620-2620MHz)
- n8 900 (UL: 880-915 MHz; DL: 925-960 MHz)
- n20 800 (UL: 832-862 MHz; DL: 791-821 MHz)
- n28 700 (UL: 703-748 MHz; DL: 758-803 MHz)

Sub-6 GHz (TDD):

- n38 TD 2600 (2570-2620 MHz)
- n40 TD 2300 (2300-2400 MHz)
- n41 TD 2500 (2496-2690 MHz)
- n78 TD 3500 (3300-3800 MHz)

5G NR antenna gains:

- n78: 4-9 dBi
- n7/n38/n40/n41: 3-6.5 dBi
- n1/n3: 3-4 dBi
- n5/n8/n20/n28: 1-2 dBi

4G/LTE specifications

Supported 4G/LTE radio bands:

FDD:

- B1 (2100 MHz)
- B3 (1800 MHz)
- B5 (850 MHz)
- B7 (2600 MHz)
- B8 (900 MHz)
- B20 (800 MHz)
- B28 (700 MHz)
- B32 (1500 MHz)

TDD:

- B38 (2600 MHz)
- B40 (2300 MHz)
- B41 (2500 MHz)
- B42 (3500 mHz)

4G/LTE antenna gains

- B42: 4-8 dBi
- B1, B3, B7, B32, B38, B40, B41: 3-4 dBi
- B5, B8, B20, B28: 1-2dBi

Note: Actual supported radio frequency (RF) bands may vary in different regions due to certifications.

Radio - cellular (WAN-side)

Supported 5G NR channel bandwidths:

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- n1: 5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz, 50MHz
- n3: 5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz
- n5: 5MHz, 10MHz, 15MHz, 20MHz
- n7: 5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz, 50MHz
- n8: 5MHz, 10MHz, 15MHz, 20MHz
- n20: 5MHz, 10MHz, 15MHz, 20MHz
- n28: 5MHz, 10MHz, 15MHz, 20MHz, 30MHz
- n38: 5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz
- n40: 5MHz, 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80MHz
- n41: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz, 100MHz
- n78: 10MHz, 15MHz, 20MHz, 25MHz, 30MHz, 40MHz, 50MHz, 60MHz, 80MHz, 90MHz, 100MHz

5G modulation:

- 3GPP Release 5G UL highest order modulation: 256 QAM
- NR bands with UL SISO (NSA) n1, n3, n5, n7, n8, n20, n28, n38. n40, n41, n78
- NR bands with UL SISO (SA) n5, n8, n20, n28, n1, n3, n7, n38, n40, n41
- NR bands with UL 2x2 MIMO (SA) n78
- MIMO 5G NR NSA:
    - Downlink: 4x4MIMO (1T4R): n1/n3/n7/n38/n40/n41/n78
    - Downlink: 2x2 MIMO (1T2R): n5/n8/n20/n28
- MIMO 5G SA:
    - 2T4R: n41/n78
    - 1T4R: n1/n3/n7/n40
    - 1T2R: n5/n8/n20/n28
- 4G/LTE modulation:
- 4G/LTE DL highest order modulation: 256 QAM
- 4G/LTE UL highest order modulation: 256 QAM
- 4G/LTE UE category DL: 19
- 4G/LTE UE category UL: 18
- 4G/LTE MIMO:
- DL MIMO 4x4 (1T4R): B1, B3, B7, B38, B40, B41, and B42
- DL MIMO 2x2 (1T2R): B5, B8, B20, B28, and B32

Certification

The FastMile 5G Receiver is certified for CE regions which cover the following 4G/LTE and 5G NR bands:

Table 2

4G LTE bands:	B1		5G NR bands	n1
	B3			n3
	B5			n5
	B7			n7
	B8			n8
	B20			n20
	B28			n28
	B32 (DL only)			-
	B38			n38
	B40			n40
	B41			n41
	B42			n78

Warranty and safety

For information on the hardware Limited Warranty, please go to www.nokia.com/fastmile.

Read the Safety and Regulatory information that is included with the FastMile 5G Receiver for the following information:

- safety warnings (risk of electrical shock or fire)
- caution (potential equipment damage)
- environmental and regulatory requirements
- end of life collection and treatment
- simplified EC declaration or conformity
- specific precautions for EMS warnings.

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Manufacturer information

Table 3

Manufacturer	Nokia Solutions & Networks Oyj www.nokia.com
Address	Karakaari 7, 02610 Espoo, Finland
Customer Support	Contact your service provider or the seller from which the device was purchased.

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About Nokia

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