Anybus® Wireless Bolt LTE™

USER MANUAL

Important User Information

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Table of Contents

1. Preface

1.1. About This Document

This document describes how to install and configure Anybus® Wireless Bolt LTE™.

For additional documentation and software downloads, FAQs, troubleshooting guides and technical support, please visit www.anybus.com/support.

1.2. Document Conventions

Lists

Numbered lists indicate tasks that should be carried out in sequence:

1. First do this
2. Then do this

Bulleted lists are used for:

• Tasks that can be carried out in any order
• Itemized information

User Interaction Elements

User interaction elements (buttons etc.) are indicated with bold text.

Program Code and Scripts

```
Program code and script examples
```

Cross-References and Links

Cross-reference within this document: Document Conventions (page 1)

External link (URL): www.anybus.com

Safety Symbols

⚠	**DANGER** Instructions that must be followed to avoid an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠	**WARNING** Instructions that must be followed to avoid a potential hazardous situation that, if not avoided, could result in death or serious injury.
⚠	**CAUTION** Instruction that must be followed to avoid a potential hazardous situation that, if not avoided, could result in minor or moderate injury.
❗	**IMPORTANT** Instruction that must be followed to avoid a risk of reduced functionality and/or damage to the equipment, or to avoid a network security risk.

Information Symbols

> **NOTE**
> Additional information which may facilitate installation and/or operation.

> **TIP**
> Helpful advice and suggestions.

1.3. Trademarks

Anybus® is a registered trademark and Wireless Bolt LTE™ is a trademark of HMS Networks AB.

All other trademarks are the property of their respective holders.

2. Safety

2.1. General Safety

> ⚠ **CAUTION**
> This equipment emits RF energy in the ISM (Industrial, Scientific, Medical) band. Make sure that all medical devices used in proximity to this equipment meet appropriate susceptibility specifications for this type of RF energy.

> ⚠ **CAUTION**
> This equipment contains parts that can be damaged by electrostatic discharge (ESD). Use ESD prevention measures to avoid damage.

> ⚠ **CAUTION**
> Minimum temperature rating of the cable to be connected to the field wiring terminals, 90 °C.

> ⚠ **CAUTION**
> Use copper wire only for field wiring terminals.

> ⚠ **CAUTION**
> This equipment is recommended for use in both industrial and domestic environments. For industrial environments it is mandatory to use the functional earth connection to comply with immunity requirements. For domestic environments the functional earth must be used if a shielded Ethernet cable is used, in order to meet emission requirements.

2.2. Intended Use

The intended use of this equipment is as a communication interface and router.

The equipment receives and transmits data over Ethernet and Cellular standard networks.

3. Preparation

3.1. Support and Resources

For additional documentation and software downloads, FAQs, troubleshooting guides and technical support, please visit www.anybus.com/support.

> **TIP**
> Have the product article number available, to search for the product specific support web page. You find the product article number on the product cover.

3.2. Network Environment

Ensure that you have all the necessary information about the capabilities and restrictions of your local network environment before installation.

3.3. SIM Card

Prepaid Data Plan

If a prepaid data plan is used, ensure that:

- the data amount is sufficient
- that any SMS notifications are sent to a monitored number

3.4. Network Operator Certified Firmware

You may need to install a firmware certified for the operator you are going to use, it is not possible to connect the Bolt LTE to the operator network otherwise.

Before you start to configure the Bolt LTE settings:

- Ensure that the current firmware installed on the Bolt LTE is valid for the network operator you are going to use.
- You find the firmware version number in the Bolt LTE built-in web interface Overview page. See Bolt LTE Built-In Web Interface (page 17).
- If you need to install a firmware version certified for your network operator:
  Download the firmware update file, specific for your network operator, from www.anybus.com/support.
- For information on how to update the firmware, see Firmware Update (page 41).

3.5. Required Distance Between Devices

For optimal reception, cellular devices should not be confined in buildings made of concrete or metal, without windows.

To avoid interference, a minimum distance of 50 cm between cellular devices should be observed.

At least 20 cm separation distance between the device and the user's body must be maintained at all times.

See Wireless Technology Basics.

3.6. Firewall and Routing

There are routing options set for the system.

By default, the firewall allows routing of:

• Outgoing traffic for TCP, UDP and ICMP (for IPv4 only).
• Incoming traffic for already established connections only.

For other possible configurations, see NAT/Port Forward Settings (page 29).

4. Installation

4.1. Install SIM Card

> **NOTE**
> Supported SIM card types are Nano SIM for IoT and M2M, for data communication, as well as standard mobile phone Nano SIM.
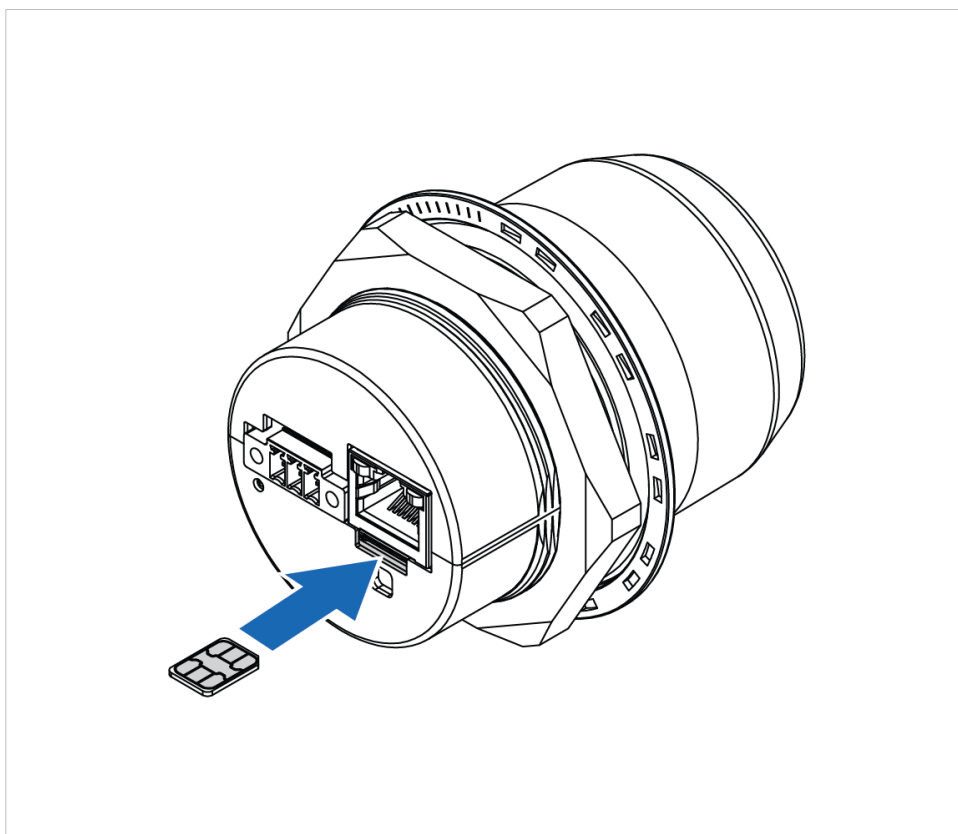

Figure 1. Insert SIM card

To connect Bolt LTE to a cellular data network, install a cellular SIM card:

1. Insert a SIM card into the Bolt LTE SIM card holder.

> **NOTE**
> Ensure that the SIM card contact surface is facing towards the Ethernet port.

4.2. Mechanical Installation

Placement

• The device is intended to be mounted on top of a machine or cabinet through an M50 (50.5mm) hole using the included sealing ring and nut.

• The top mounting surface, in contact with the sealing, must be flat with a finish equivalent to Ra 3.2 or finer and cleaned and free from oils and greases.

• For optimal reception, cellular devices require a zone around them clear of objects that could obstruct or reflect the signal.

  To avoid interference, a minimum distance of 50 cm between Bolt LTE and other cellular devices should be observed.

Installation

> **(!) IMPORTANT**
> Make sure that the sealing ring is correctly placed in the circular groove in the top part of the housing before tightening the nut.

> **(!) IMPORTANT**
> Always hold the BOTTOM part of the unit when untightening the nut, not the top part (the cap).

Tightening torque: 5 Nm ±10 %
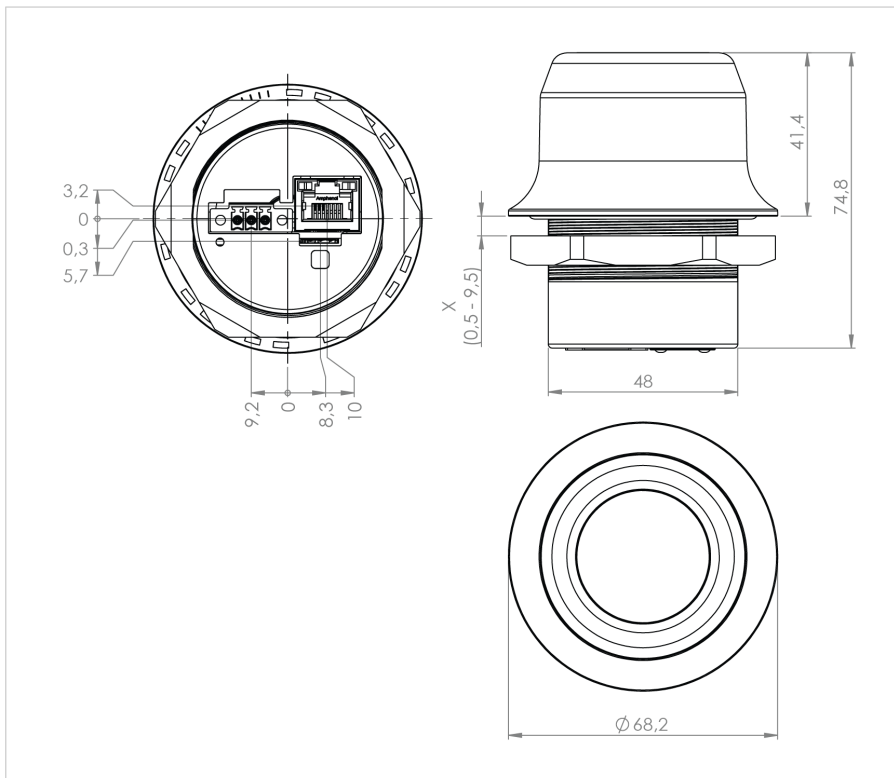
All measurements are in mm.

Figure 2. Installation drawing

4.3. Connect to Power Over Ethernet (PoE)

Before You Begin

> **(!) IMPORTANT**
> Connecting the Bolt LTE to PoE and DC power simultaneously may result in a current loop that could damage both the power sources and the Bolt LTE. Ensure to use only one of the power connections at a time.

> **📝 NOTE**
> Both shielded and unshielded Ethernet cables may be used.

> **📝 NOTE**
> Bolt LTE is designed to comply with PoE, IEEE 802.3at Type 1 (Class 0, 37-57 VDC, max 12.95 W).

Procedure
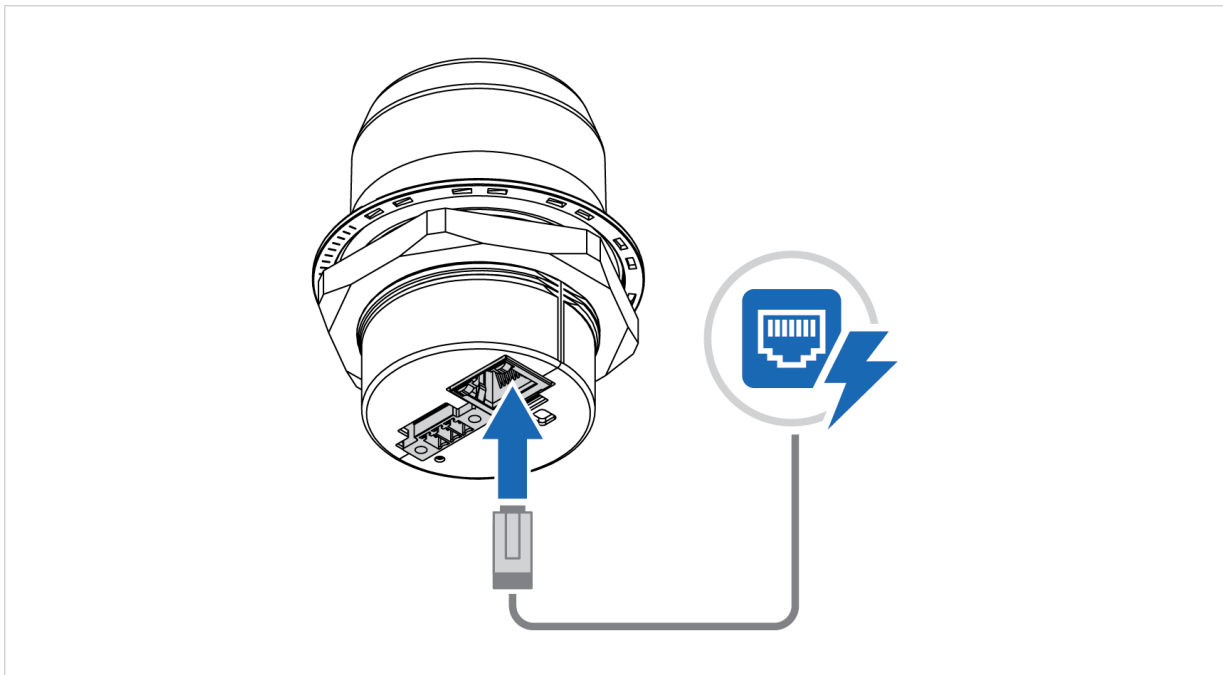
Figure 3. Connect to Power Over Ethernet (PoE)

Connect the Bolt LTE Ethernet port to Ethernet/PoE.

RJ45 Ethernet PoE Connector
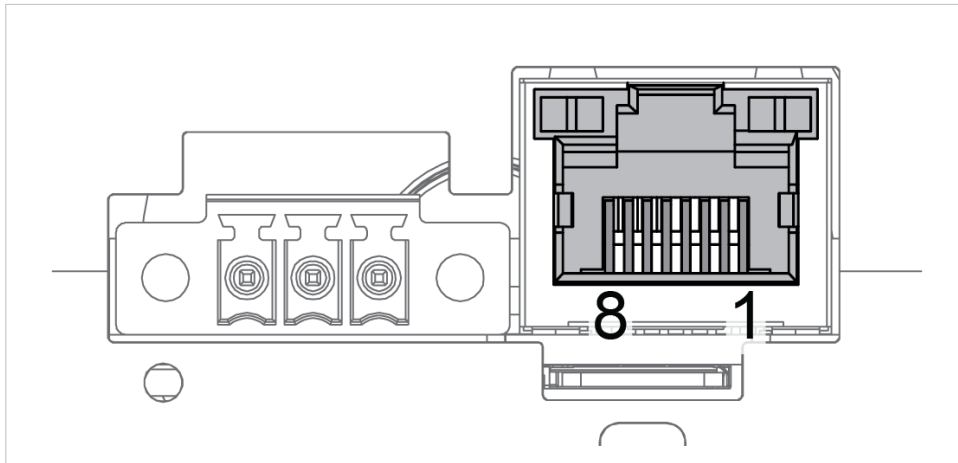
Table 1. RJ45 Ethernet PoE Connector pinning

Pin	Data	PoE	
1	TD+	A+	Positive power from alt. A PSE
2	TD-		
3	RD+	A-	Negative power from alt. A PSE (with pin 6)
4	N/A	B+	Positive power from alt. B PSE
5			
6	RD-	A-	Negative power from alt. A PSE (with pin 3)
7	N/A	B-	Negative power from alt. B PSE
8			
Housing	Shield	Functional Earth (FE), via 1 nF capacitor and 1 MΩ bleeder resistor	

4.4. Connect to Power and Ethernet

Before You Begin

> ⚠ **CAUTION**
> Connecting power with reverse polarity or using the wrong type of power supply may damage the equipment. Make sure that the power supply is connected correctly and of the recommended type.

> ❗ **IMPORTANT**
> Connecting the Bolt LTE to PoE and DC power simultaneously may result in a current loop that could damage both the power sources and the Bolt LTE. Ensure to use only one of the power connections at a time.

> ❗ **IMPORTANT**
> When Bolt LTE is powered via the power connector, Functional Earth (FE) must be connected.

> 📝 **NOTE**
> When Bolt LTE is installed in an environment with a high level of electrical noise, use a power/Functional Earth (FE) cable with a maximum length of 3 meters.

See also Technical Data (page 53) regarding power supply requirements.

Functional Earth (FE) Wire Screw Placement
When Bolt LTE is mounted on a sheet metal plate, connect Functional Earth (FE) to the plate near Bolt LTE.
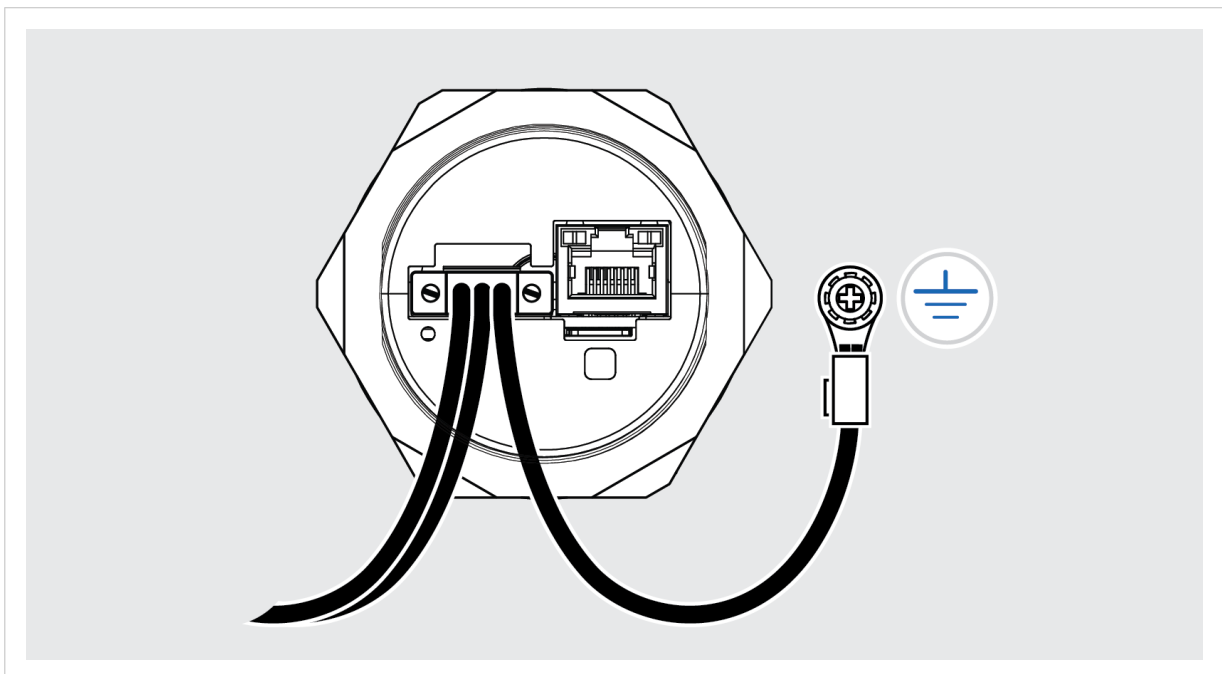
Figure 4. Functional earth wire screw placement, view from below

Procedure

Connect to power and Functional Earth (FE)
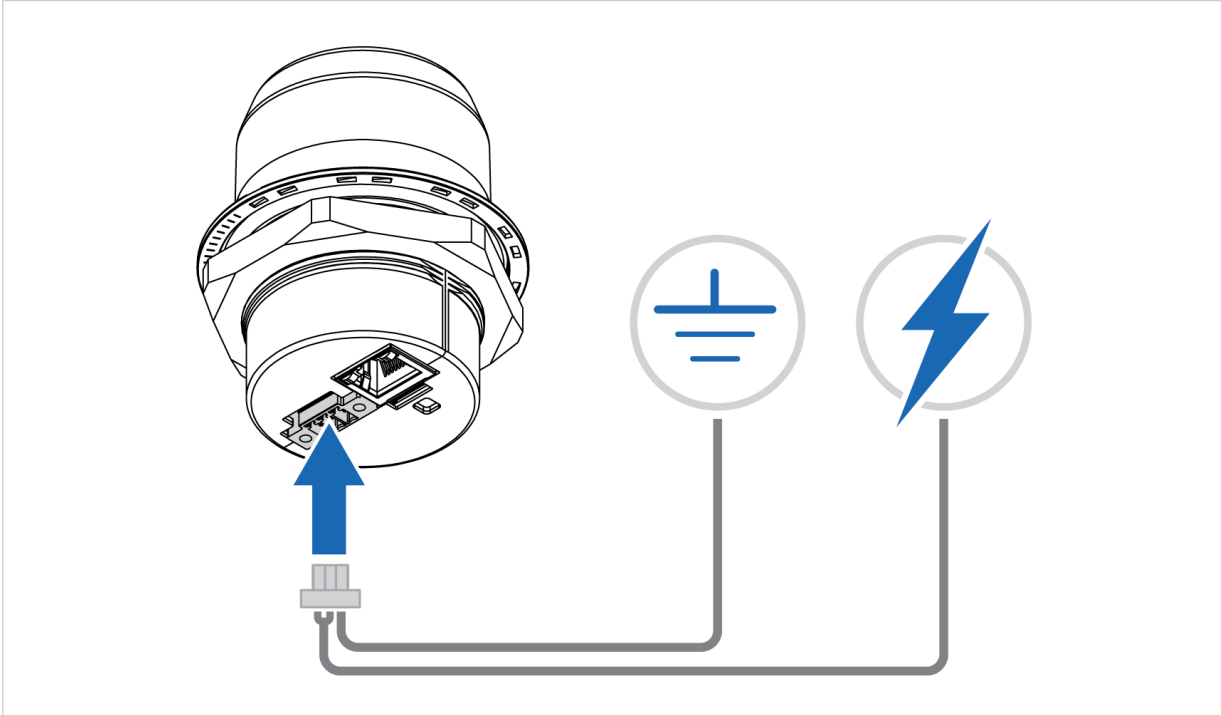
Figure 5. Power and Functional Earth (FE)

1. Connect Bolt LTE Power connector to a power supply.
2. Connect Bolt LTE Power connector to Functional Earth (FE).
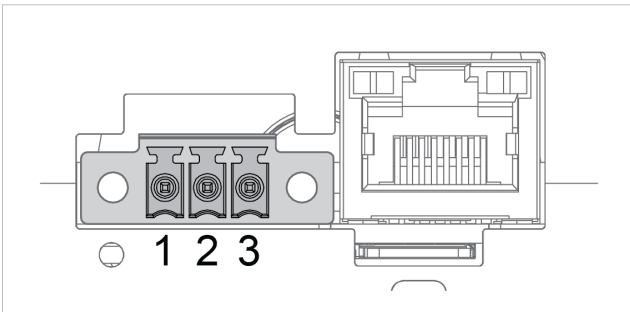
Table 2. Power connector, 3-pin terminal block

Pin	Function	
1	+	11-33 VDC
2	-	
3	Functional Earth (FE)	

Connect to Ethernet

3.   Connect the Bolt LTE to Ethernet.
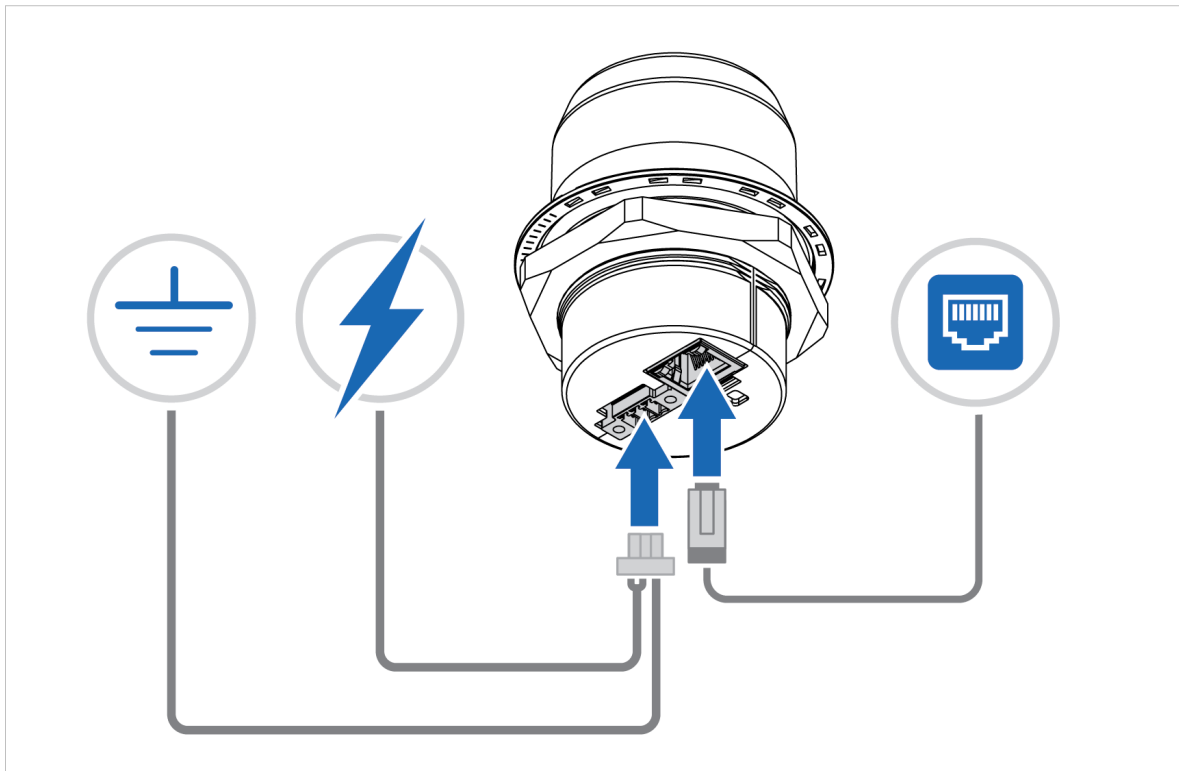
Figure 6. Connect to Ethernet

5. Configuration

5.1. Before You Begin Configuration

By default, the Bolt LTE APN Assignment is set to automatically search for the SIM card APN setting and assign it to the Bolt LTE.

In cases where no additional configuration of the settings in the Bolt LTE built-in web interface is required, see Setting Up Bolt LTE with Automatic APN Assignment (page 34).

5.2. Connect to PC and Power

When configuring Bolt LTE it must be connected to a PC.
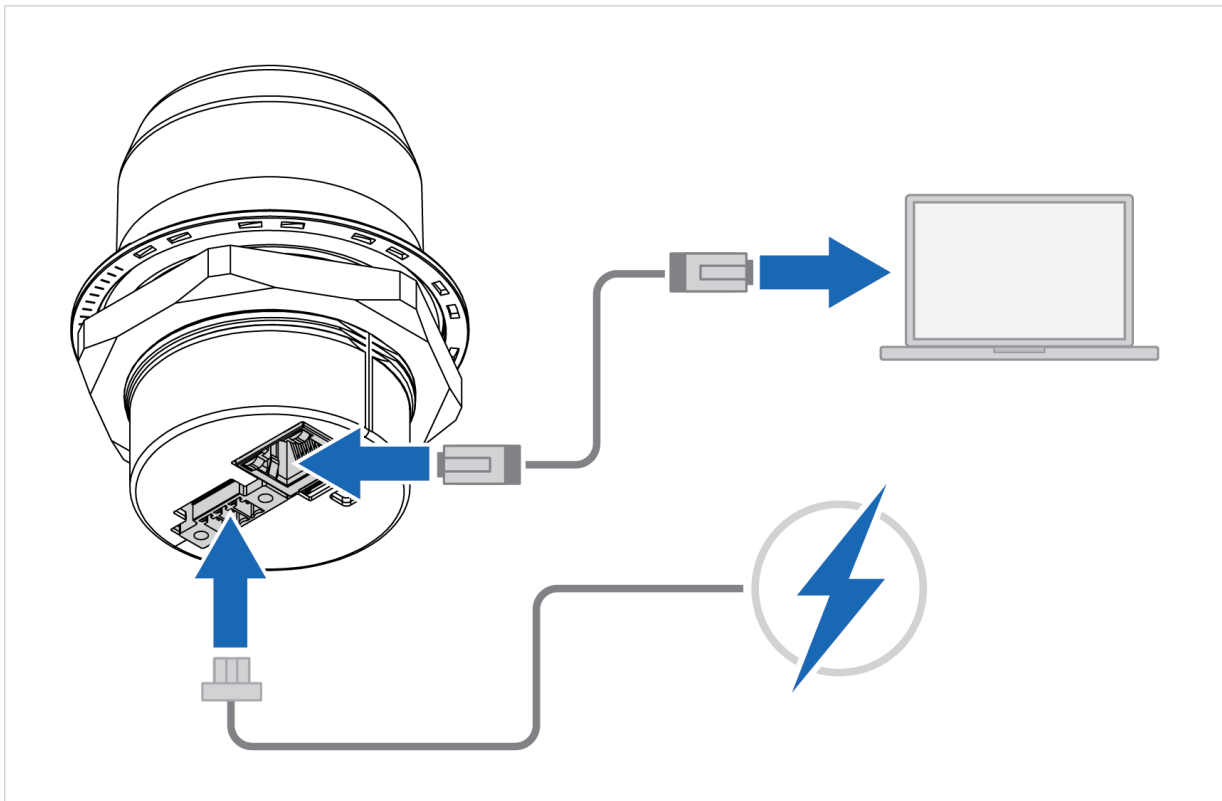
Figure 7. Connect to PC and Power

1. Connect the Bolt LTE Ethernet port to your PC.
2. Connect the Bolt LTE Power connector to a power supply.

5.3. Access the Built-In Web Interface

5.3.1. Required IP Address Settings

To be able to access the Bolt LTE built-in web interface you may need to adjust the IP settings, choose one of the following methods.

> **NOTE**
> The Bolt LTE default IP address is 192.168.0.98 and the subnet mask is 255.255.255.0.

Option 1 - Enable DHCP on Your PC
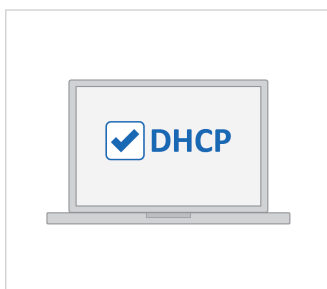
When DHCP is enabled on the PC accessing the Bolt LTE, you do not need to change the IP address settings for the Bolt LTE to be able to access the Bolt LTE built-in web interface.

Option 2- Set a Static IP Address on Your PC

> **NOTE**
> When you change to a static IP address on your PC, internet access is lost.
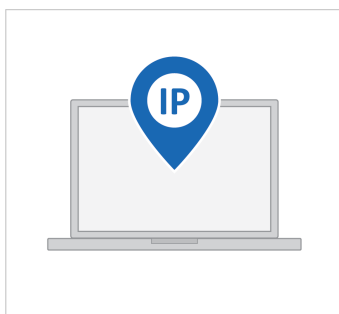
On the PC accessing the Bolt LTE built-in web interface, set a static IP address within the same IP address range as the Bolt LTE IP address.

Result

> **NOTE**
> The Bolt LTE comes with a default username and password. The default username is admin, written in lowercase letters. You find the default password on the Bolt LTE product housing.

Now you can enter the Bolt LTE IP address in your web browser and search to access the built-in web interface login page.

5.3.2. Login to the Built-In Web Interface

The Bolt LTE built-in web interface can be accessed from a standard web browser.

Before You Begin

> ⚠ **IMPORTANT**
> Before installing the Bolt LTE on a network, change the Bolt LTE default username and password.

> ✎ **NOTE**
> The Bolt LTE comes with a default username and password. The default username is admin, written in lowercase letters. You find the default password on the Bolt LTE product housing.

> ✎ **NOTE**
> The Bolt LTE default IP address is 192.168.0.98 and the subnet mask is 255.255.255.0.

Procedure

Login to the Bolt LTE built-in web interface:

1. Open a web browser.

2. Click to select the **Address bar** and enter and the Bolt LTE IP address.

Figure 8. Enter IP address in web browser

3. Press **Enter**.
   The Bolt LTE built-in web interface login screen appears.
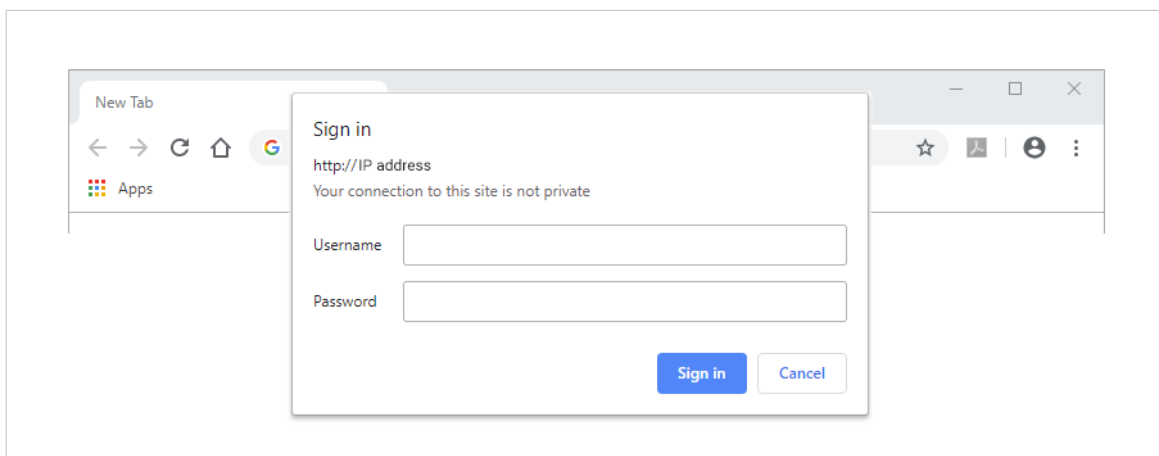
4.

Figure 9. Built-in web interface login screen

Result

You are logged in to the **System Overiew** page.

Figure 10. **System Overview** page

5.4. Bolt LTE Built-In Web Interface

The Bolt LTE built-in web interface is used to configure the Bolt LTE system settings as well as for diagnostics and maintenance.

The **System Overview** page shows the current settings and network connection status.

Figure 11. N/A built-in web interface, example

A. **System Overview**
   Shows the current settings and network connection status

B. **Left sidebar menu**
   • System Overview
   • Ethernet Settings
   • Cellular Settings
   • NAT/Port Forward Settings
   • VPN Settings
   • Positioning Settings
   • Firmware Update
   • Logs
   • System
   • Diagnostics

C. **Save and Reboot** button and **Cancel All Changes** button

5.5. Factory Default Settings

Bolt LTE comes with the following factory default settings.
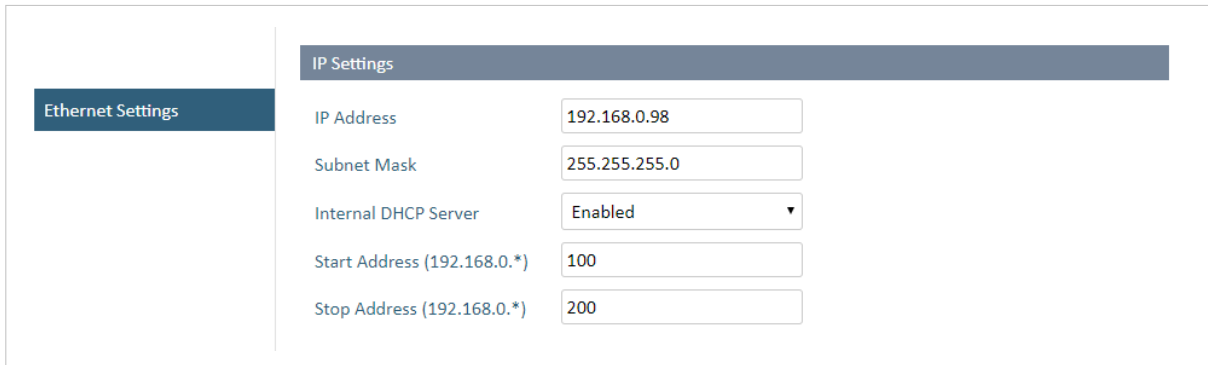
Table 3. Bolt LTE default settings

IP Assignment	Static
IP Address	192.168.0.98
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.98
Internal DHCP Server	Enabled
Network Type	Modem Preset List Connects automatically to an available network according to priority order LTE, UMTS and GSM mobile network.
Incoming Traffic	NAT/Port Forward incoming traffic is Disabled.

You can restore factory default settings by making a Factory Reset. Refer to Factory Reset Using the Reset Button (page 51) and Factory Reset Using the Built-In Web Interface (page 52).

5.6. Ethernet Settings

IP Settings

Figure 12. **Ethernet Settings** page, default IP Settings with Internal DHCP Server Enabled

To Change the Bolt LTE IP Address

> **NOTE**
> The default Bolt LTE static IP address is 192.168.0.98.

Procedure

1. In the **IP Address** field, enter the new IP address.
2. For the setting to take effect, click **Save and Reboot**.
    The Bolt LTE reboots.
3. You may need to reconfigure your PC to match the new Bolt LTE IP address. See Required IP Address Settings (page 14).
4. In your web browser, enter the new IP address and press **Enter**.
    The Bolt LTE built-in web interface login screen appears.
5. Enter Username and Password and click **Sign in**.

Subnet Mask

> **NOTE**
> The default subnet mask is 255.255.255.0. The subnet mask identifies the subnetwork to which the static IP address belongs.

Internal DHCP Server

> **IMPORTANT**
> By default, the Bolt LTE internal DHCP server is enabled. To avoid interference, keep only one DHCP server enabled on the network.

> **NOTE**
> The DHCP server is only enabled on the LAN interface.

By default, **Internal DHCP Server** is set to **Enabled**.

This means that the IP address settings are set automatically by the Bolt LTE internal DHCP server.

IP Address Range

> **NOTE**
> When the Bolt LTE is enabled, you can still use static IP addresses within the remaining IP address range. The devices assigned to these IP addresses can set Bolt LTE as the default gateway and DNS server.

The internal DHCP server address host ID range is by default set to start at 100 and stop at 200.

You can set a preferred host ID range.

5.7. Cellular Settings

Before You Begin

When you are going to connect Bolt LTE to a cellular network, ensure that you have installed a SIM card in the Bolt LTE SIM card holder.

Refer to Install SIM Card (page 6).

5.7.1. Network Settings

Before You Begin

About Preferred Network Type
By default, the **Preferred Network Type** is set to **Modem Preset List**.

The most recently registered network type takes precedence.

When a specific Preferred Network Type is selected and available, the Bolt LTE modem might remain locked to that network type, even if you switch to Modem Preset List.

Solution: If the Bolt LTE modem is locked to a network type you do not want to use, ensure that the network type is no longer available to the Bolt LTE. The Bolt LTE modem then selects the next available network type.

Procedure
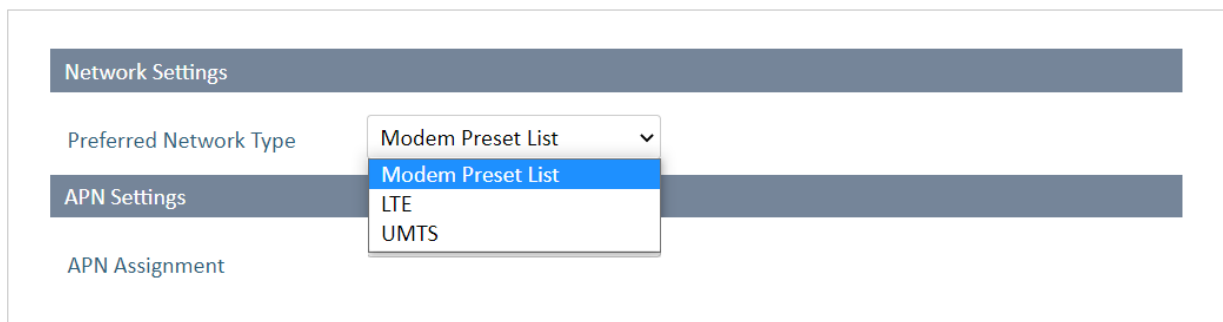
Figure 13. **Cellular Settings** page

Select a Preferred Network Type:

Setting	Description
Modem Preset List	Use the Modem Preset List search order for Radio Access Technology (RAT).
	Connects automatically to an available network according to following priority order LTE, UMTS and GSM mobile network.
	The Bolt LTE modem scans for all available Public Land Mobile Networks (PLMN) in each RAT.
LTE	Use LTE network
UMTS	Use UMTS network.

5.7.2. APN Settings

Automatic APN Assignment

> ❗ **IMPORTANT**
> An APN automatically derived from SIM card identification may not give full access to the cellular network. Follow your network operator's guidelines.

> ❗ **IMPORTANT**
> By default, Bolt LTE is set to automatically search for the SIM card APN setting.
>
> If a general APN string is available for the network operator, it will be set as the APN Assignment.
>
> Ensure that the general APN string is recommended by the network operator and in accordance with the SIM card IoT data plan.
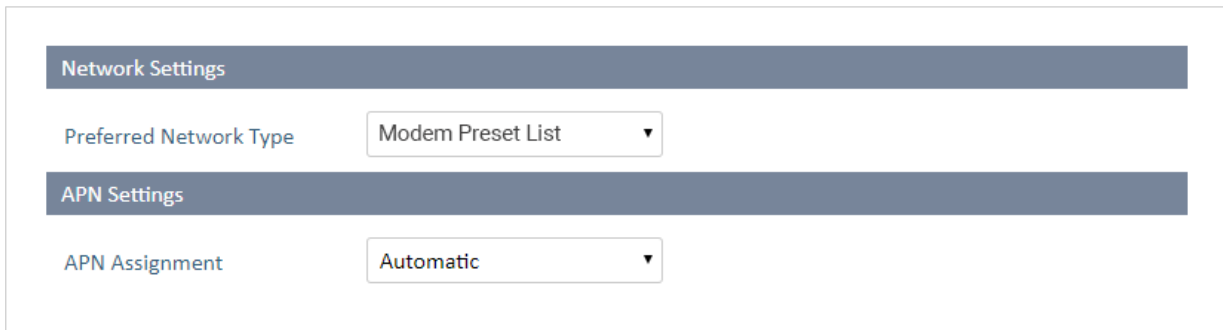
Figure 14. **Cellular Settings** page, Automatic APN Assignment

By default, **APN Assignment** is set to **Automatic**. The APN (Access Point Name) is assigned automatically.

Manual APN Assignment

Ensure that you have the APN supplied by your carrier available.
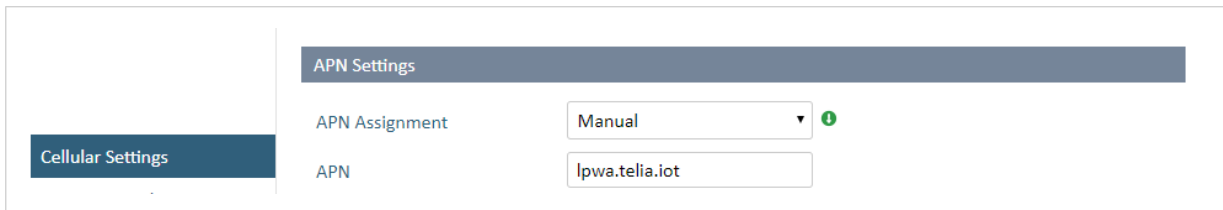
Figure 15. APN settings example

To set the APN Assignment manually:

1. In the **APN Assignment** drop down menu, select **Manual**.
2. Enter the APN in the **APN** field.

APN Authentication

By default, **APN Authentication** is set to **No**. When enabled, PAP method is used.

> **NOTE**
> **APN Authentication** is to be configured only if your carrier has setup APN (Access Point Name) with username and password.

Ensure that you have the APN username and password supplied by your carrier available.

Network Settings	
Preferred Network Type	Modem Preset List
APN Settings	
APN Assignment	Manual
APN	network.apn.requires.auth
APN Authentication	Yes (PAP)
User	
Password	

Cellular Settings

Save and Reboot

Figure 16. Cellular Settings page, APN Authentication

To activate APN Authentication:

1. Set the **APN Authentication** setting to **Yes (PAP)**.
2. In the **User** field, enter a username.
3. In the **Password** field, enter a password.
4. For the settings to take effect, click **Save and Reboot**.
    The Bolt LTE reboots.

5.7.3. SIM PIN and PUK Settings
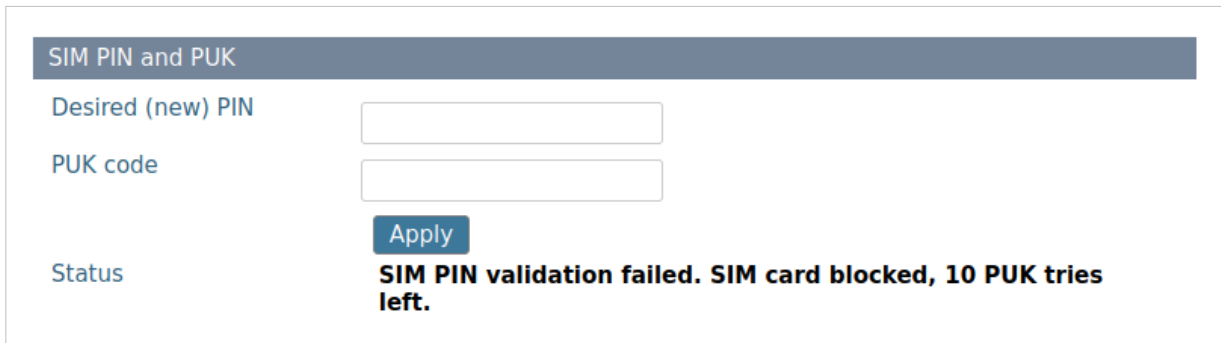
Navigate to the **Cellular Settings** page, **SMS PIN and PUK**.

SIM Card PIN Code

SIM PIN and PUK	
Enter PIN	
	Validate
Status	**SIM card present and needs PIN, 3 tries left**

Figure 17. SIM card PIN code required

If the SIM card installed in the Bolt LTE is locked with a PIN code, enter it in the **Enter PIN** field.

SIM Card PUK Code

Figure 18. PUK code is required

If you have entered the wrong PIN code three times in a row, the SIM card is blocked.

To unlock it, you must enter a new PIN code and the SIM card PUK (PIN Unlock Key) code.

Check the number of attempts to enter the correct PUK code that applies to your operators' SIM cards.

If you enter the wrong PUK code too many times, the SIM Card becomes permanently locked.

SIM Card without PIN Code

Figure 19. SIM card no PIN code required

If the SIM card installed in the Bolt LTE does not require a PIN code, the **Status** message "PIN not required for current SIM. Non is configured or validated" is displayed.

5.7.4. Enable SMS API

The Bolt LTE SMS application can receive, parse and respond to SMS.

By default, **Handle incoming SMS** is set to **Externally via API**.

Sending of SMS(es) is done by intermittently using the SMS REST API. The Bolt LTE does not parse or respond to the SMS(es).

Procedure

On the **Cellular Settings** page, **SMS Settings**:
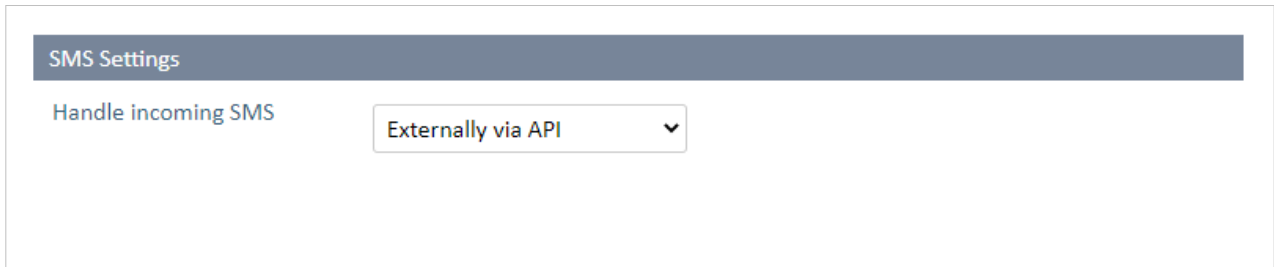
Figure 20. SMS Settings

1. In the **Handle incoming SMS** menu, select **Externally via API**.
2. Set Up Bolt LTE as an Internet Router, see Set Up Bolt LTE as an Internet Router (page 36).
3. Send REST command to the Bolt LTE, see Setting Up with REST Commands (page 32).

5.7.5. Enable SMS Communication

The Bolt LTE SMS application can receive, parse and respond to status information SMS.

By default, **Handle incoming SMS** is set to **Externally via API**.

Procedure

On the **Cellular Settings** page, **SMS Settings**:

Figure 21. SMS Settings

1. In the **Handle incoming SMS** menu, select **Internally in Bolt LTE**.
2. In the **Access code** field, enter an access code.

> **!** **IMPORTANT**
> To prevent unauthorized access, the SMS must start with an access code. If no Access code is defined, SMS parsing is disabled. The access code most consist of at least one character.

> **NOTE**
> The Access code set here must be included in each SMS sent from the Bolt LTE. See To Send SMS Messages to the Bolt LTE (page 27).

3. In the **Trusted numbers** fields, enter Country code, National destination and the Subscribing number. You can add three trusted phone numbers, from which the Bolt LTE will accept SMS.

> **NOTE**
> In the National destination code, omit the initial 0.

> **NOTE**
> Do not use spaces between the numbers.

Example 1. Trusted number format

Trusted number: +4635172900

- Country code: +46
- National destination code: 035
- Subscriber number: 172900

---

4. In the **Site name** field, you can enter a label to identify the Bolt LTE.
    The **Site name** is included in the automatically generated welcome SMS sent from the Bolt LTE.

5. Click **Save and Reboot**.

6. To verify the phone number, the Bolt LTE sends an automatically generated welcome SMS to the handheld device with the specified phone number.

To Do Next

Send commands from the handheld device to the Bolt LTE.

See .

5.7.6. To Send SMS Messages to the Bolt LTE

Before You Begin

Use a handheld device with a phone number set as a **Trusted number** in the built-in web interface of the Bolt LTE to which you want to send SMS messages.

Ensure you have the phone number available for the SIM card installed in the Bolt LTE to which you want to send SMS messages.

Ensure you have the configured **Access code** avaiable for the Bolt LTE to which you want to send SMS messages.

For information about how to configure the SMS communication settings, see .

For information about the available commands, see

Procedure

1. On the handheld devices, start a new SMS message.

2. Enter the phone number or contact name of each Bolt LTE to which you are sending the SMS message to.

3. Enter the `Access code`.

Example 2. SMS message with access code
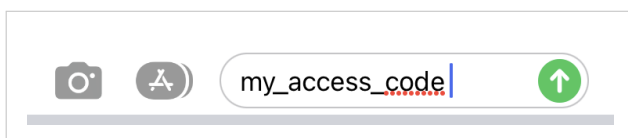
In this example we use the access code `my_access_code`.

4. Enter the command.

Example 3. SMS message with access code and command
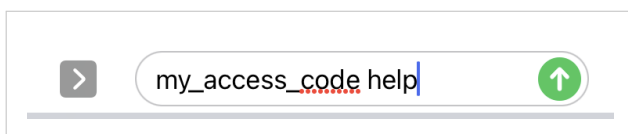
In this example we use the command `help`

5. Send the SMS message.

Result

Depending on which command is sent, the Bolt LTE returns a message containing information or a prompt with instructions on how to continue.

For information about the available commands, see

Example 4. SMS message with list of available commands

> my_access_code help
>
> Syntax:
>
> access_code cmd
>
> cmd list:
> help
> id
> info
> ip
> mac
> mast
> phys
> ping destination
> pos
> reboot
> version
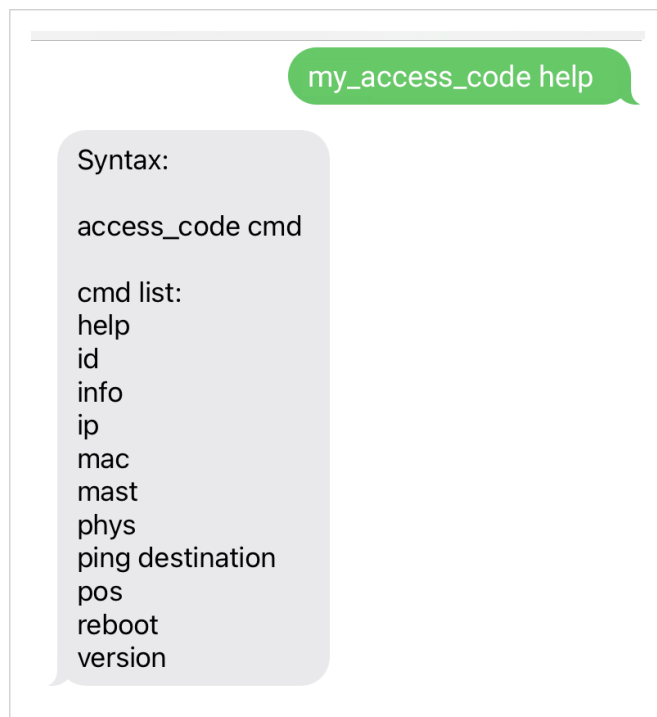
In this example we sent the command `help` to get a list with the available commands.

5.7.7. Notification SMS

At certain times, the Bolt LTE will attempt to send notification SMS message to the handheld devices with the trusted numbers.

> **NOTE**
>
> If Bolt LTE is unable to send the notification SMS message at boot, when a change was detected, no further attempts to send the SMS is made.

The Bolt LTE sends an notification SMS message when:

• A phone number is added.
  Sent to newly added **Trusted number**.
• A phone number is removed.
  Sent to newly removed **Trusted number**.
• The Bolt LTE is in SMS parsing state.
  Sent to trusted numbers on configuration change.

5.8. NAT/Port Forward Settings

Before You Begin

NAT/Port forward is used to allow incoming traffic from an external (cellular mobile-radio) network access to a device IP address on the internal (Ethernet) network.

The Source Filter setting is used to prevent unauthorized traffic on the local network.

By default, Incoming Traffic **NAT 1:1** is set to **Disabled**. All incoming traffic from the external network is rejected.

Procedure

Figure 22. **NAT/Port Forward Settings** page

To configure the NAT 1:1 settings:

1. In the **Incoming Traffic** drop down menu, select **NAT 1:1**.
2. In the **Local IP to receive all traffic** field, enter the IP address to receive all incoming traffic from the external network.
3. In the **Source Filter** drop down menu, select the desired source filter.

Source Filter	Description
Source Filter adds a layer of security on the internal network. The source filter controls which IP addresses on the external network that have access to the Local IP address.	
Network	Default setting Allow any IP address on a specific network to access the Local IP address. Enter **Source base IP** and **Source IP netmask**.
Range	Allow a specific IP address range to access the Local IP address. Enter the **Source IP range start** and **Source IP range stop** addresses.
Host(s)	Allow a specific host(s) to access the Local IP address. Enter **Source IP(s)**. You can add up to five Source IP(s).
Any	Allow any external IP address to access the Local IP address.

Result

The communication is redirected to one specific device IP address on the local network, that will receive all incoming traffic from the external network.

5.9. VPN Settings

Before You Begin
OpenVPN Client is used to secure and encrypt the data sent between the Bolt LTE and a remote VPN Server over cellular network.

By default, **OpenVPN Client** is set to **Disabled**.

OpenVPN Configuration File
Ensure you have downloaded a OpenVPN configuration (.ovpn) file from you VPN provider.

Connect Bolt LTE to OpenVPN Server
Procedure
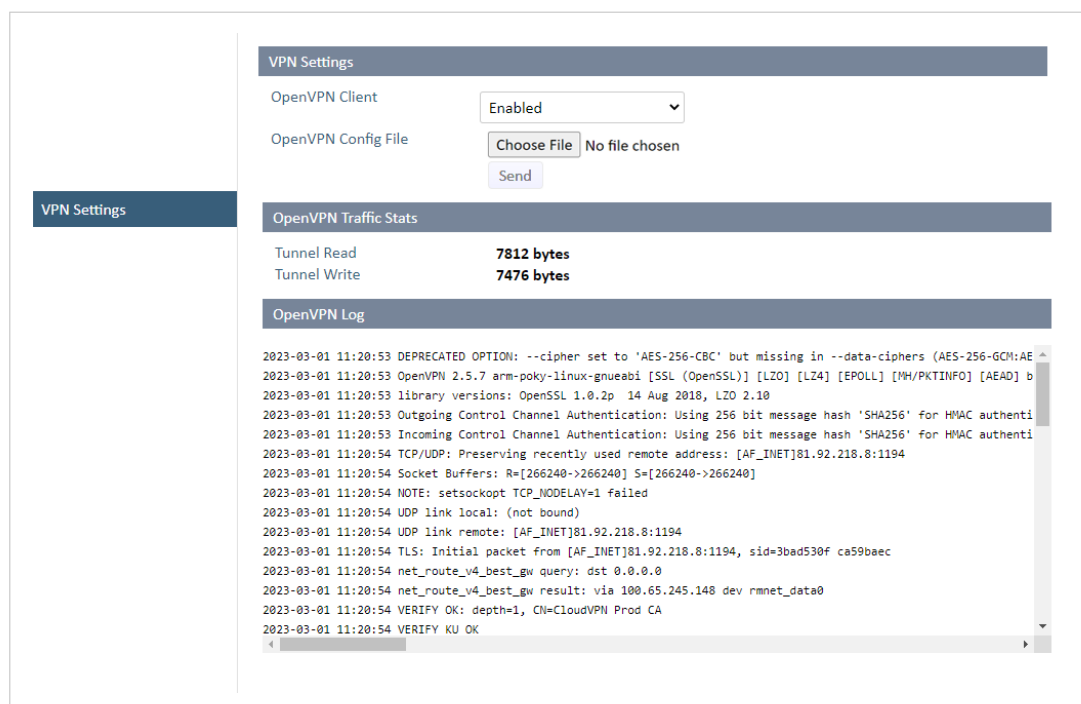
Figure 23. VPN settings page

1. On the **VPN Settings** page, select **Enabled** from the **OpenVPN** drop down menu.
2. To upload a **OpenVPN Configuration File**, click **Choose File**.
    In the **Open** dialog box, browse to and select the OpenVPN configuration (.ovpn) file and click **Open**.
3. To import the file to the Bolt LTE, click **Send**.
4. To establish OpenVPN connection, click **Save and Reboot**.
    The Bolt LTE connects to the OpenVPN server.

OpenVPN Traffic Status
In the **OpenVPN Traffic Status** pane, you can view the status of the data traffic between the Bolt LTE and the OpenVPN Server.

OpenVPN Log
In the **OpenVPN Log** pane, you can view log messages with entries for successful connections as well as failures and errors.

The log messages start with date and time.

5.10. Positioning Settings

Before You Begin
Use the positioning function to locate the position of the Bolt LTE.

For example, the Bolt LTE position is available and can be retrieved from the Bolt LTE via REST API.

By default, Positioning Service is **Disabled**.

Procedure
To activate Positioning Service:

1. On the Positioning Settings page, select **Enable** from the Positioning Service drop down menu.
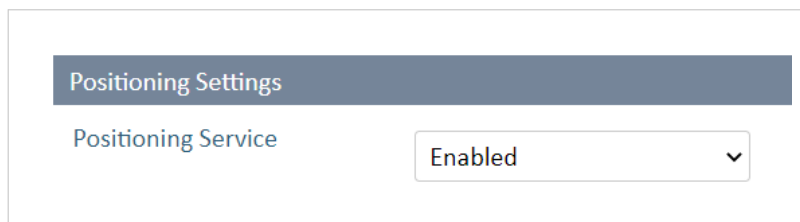
Figure 24. Positioning Service, Enabled

2. In the left sidebar menu, click **Save and Reboot**.
    Bolt LTE automatically reboots for the setting to take effect.

Result
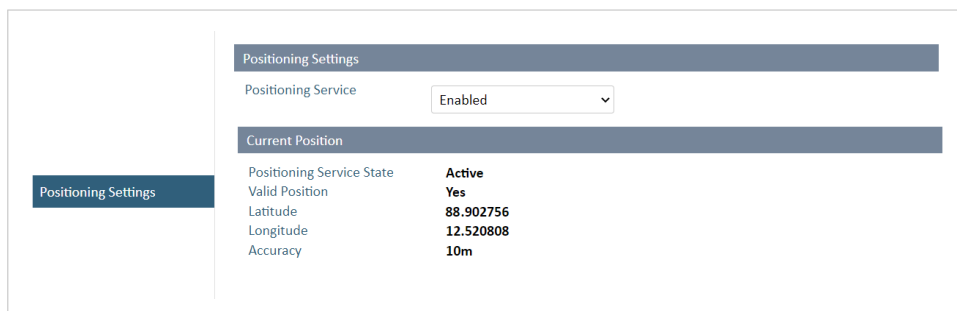
Figure 25. Example, Current Position information

In Current Position you can view the following information.

Current Position	Description
Positioning Service State	When the Positioning Service is: • Enabled the status is Active. • Disabled the status is Disabled.
Valid Position	Yes: The satellite coverage is sufficient to provide a position. No: The satellite coverage is insufficient to provide a position. This can occur: • at startup, before the Bolt LTE has found enough satellites to provide a position. • if the Bolt LTE is installed in a location where the satellite coverage is poor.
Latitude	The latitude of the Bolt LTE current location
Longitude	The longitude of the Bolt LTE current location
Accuracy	The closeness of the measured location to the actual location of the Bolt LTE.

5.11. Setting Up with REST Commands

How To Use REST Commands
For information about the supported REST commands and how to use them, refer to the REST Commands Reference Guide at www.anybus.com/support.

Use/Test REST Commands From a Web Browser
For information about the supported REST commands, refer to the REST Commands Reference Guide at www.anybus.com/support.

Procedure
1. Setup the Bolt LTE as an internet router.
   Refer to Set Up Bolt LTE as an Internet Router (page 36)

To send the REST command to the Bolt LTE:

2. Connect the Bolt LTE to your PC and log in to the Bolt LTE built-in web interface.
3. Open a new tab in your web browser.
4. Enter the desired command string in the **Address bar**.
5. To send the string, press **Enter**.

Result
- The command is sent to the TCP port 80 on the Bolt LTE Ethernet interface.
- The Bolt LTE enters the state requested by the REST command.

Example 5. URL

```
http://192.168.0.99/cgi-bin/info.cgi
```

Example 6. Response

```
{"uptime":"338053","time":"1980-01-11 02:24:04",
"radio_power":"1","sim":"2","signal_strength":"4",
"signal_strength_raw":"22","signal_quality":"-10",
"cell_id":"26650646",""operator":"Telavox","status":"1",
"amplifier_temp":"31","controller_temp":"31","connection_state":"2",
"voltage":"3868","iotbolt_version":"1.00.50-dev",
"modem_version":"SWI9X06Y_02.16.06.00","pri":"GENERIC_001.028_004",
"apn":"online.telia.se","rat_specific":"7","imsi":"240017431192642",
"imei":"352653090225053","cellular_gateway":"10.209.230.108",
"cellular_ip":"10.209.230.107","iccid":"89460100174311926424"}
```

5.12. Lock Configuration

When configuration is locked, you can still access and use the Bolt LTE built-in web interface, but the settings cannot be configured.
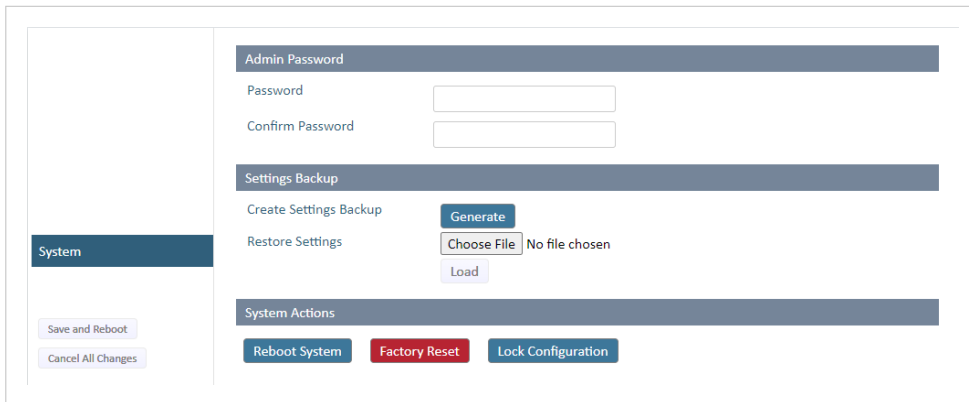
Figure 26. **System** page, Lock Configuration

To lock the configuration:

1. Navigate to the **System** page.
2. Click **Lock Configuration**.
3. To confirm lock configuration, click **OK**.

5.13. Unlock Configuration

To unlock configuration, do a factory reset using the Bolt LTE **Reset** button.

Refer to Reset and Recovery (page 50).

5.14. To Save and Reboot
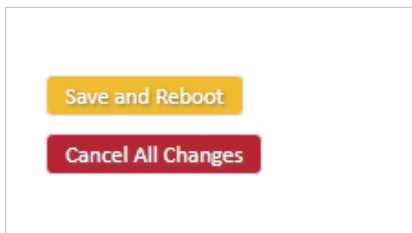
Cancel Changes

To cancel changes, you have made to the settings:

•   In the left sidebar menu, click **Cancel All Changes**.

To restore settings, see Restore Settings From Backup File (page 44).

Apply Changes

•   To apply changes, click **Save and Reboot** in the left sidebar menu.
    Bolt LTE restarts for the changes to take effect.

6. Use Cases

6.1. Setting Up Bolt LTE with Automatic APN Assignment

Before You Begin

By default, the Bolt LTE APN Assignment is set to automatically search for the SIM card APN setting and assign it to the Bolt LTE.

> **❗ IMPORTANT**
>
> An APN automatically derived from SIM card identification may not give full access to the cellular network. Follow your network operator's guidelines.

> **❗ IMPORTANT**
>
> By default, Bolt LTE is set to automatically search for the SIM card APN setting.
>
> If a general APN string is available for the network operator, it will be set as the APN Assignment.
>
> Ensure that the general APN string is recommended by the network operator and in accordance with the SIM card IoT data plan.

Procedure

In cases where no additional configuration of the settings in the Bolt LTE built-in web interface is required, continue with this procedure.

When additional configuration is needed, see Configuration (page 13) and Set Up Bolt LTE as an Internet Router (page 36).

Figure 27. Connect your device to internet

1. Insert a cellular SIM card in the Bolt LTE SIM card holder.

> **📝 NOTE**
>
> Ensure that the SIM card contact surface is facing towards the Ethernet port.

2. Connect the Bolt LTE to a power supply and to Functional Earth (FE).
   See Connect to Power and Ethernet (page 10)
3. To verify the connection status, check the Bolt LTE RJ45 LED indicators.
   See LED Status Indication (page 40)
4. Connect an Ethernet cable between the Bolt LTE and the device to be connected to the internet.
5. Verify that the device is connected to the internet.

6.2. Set Up Bolt LTE as an Internet Router

Before You Begin

Use Bolt LTE as an internet router to connect machines, controllers or other devices to internet.

> **NOTE**
> The Bolt LTE comes with a default username and password. The default username is admin, written in lowercase letters. You find the default password on the Bolt LTE product housing.

> **NOTE**
> The Bolt LTE default IP address is 192.168.0.98 and the subnet mask is 255.255.255.0.

To access the Bolt LTE built-in web interface, ensure that the Bolt LTE IP address and your PC IP address are within the same IP address range.

Procedure

Connect Bolt LTE to internet
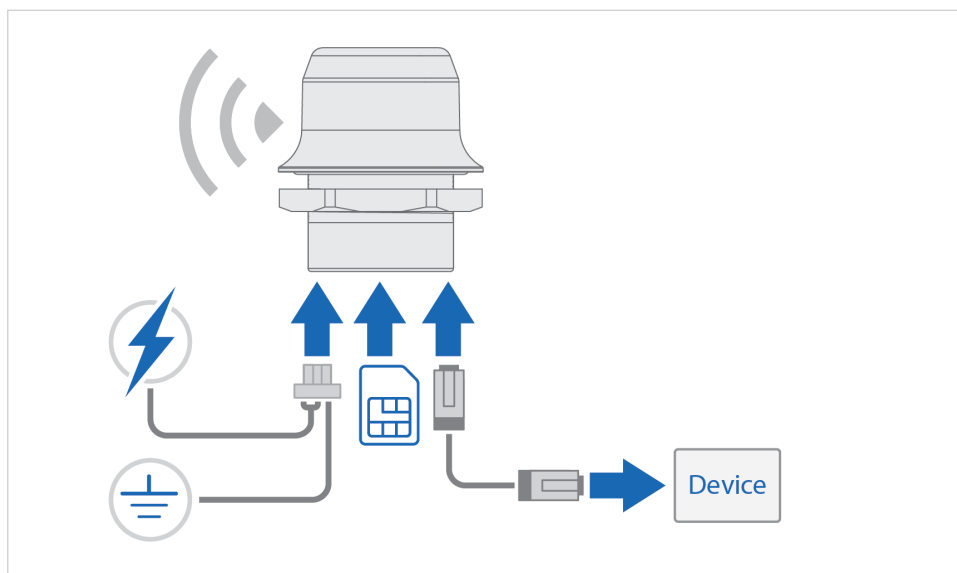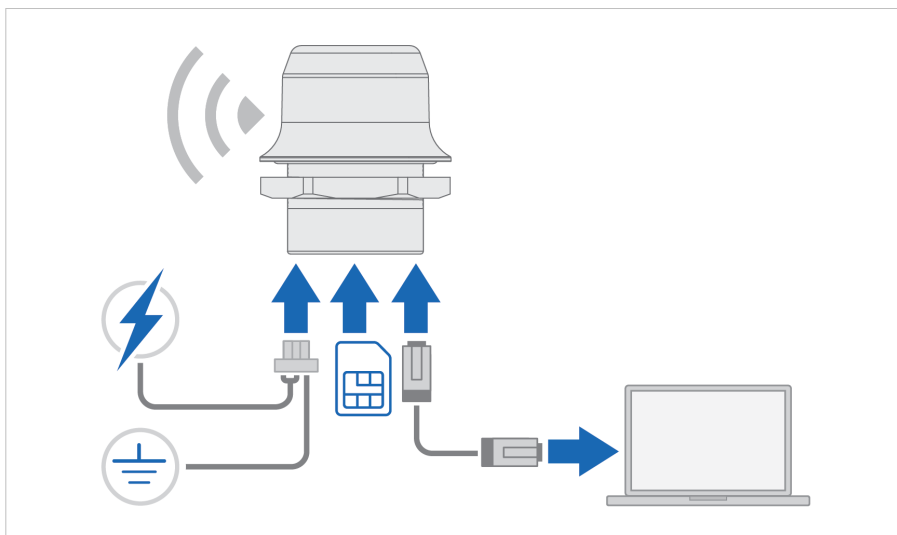

Figure 28. Connect to internet

1. Insert a cellular SIM card in the Bolt LTE SIM card holder.

    > **NOTE**
    > Ensure that the SIM card contact surface is facing towards the Ethernet port.

2. Connect the Bolt LTE Ethernet port to your PC.
3. Connect the Bolt LTE Power connector to a power supply.
4. To access the built-in web interface, enter the Bolt LTE IP address in your web browser and click Enter.
5. Login to the Bolt LTE built-in web interface.
6. Configure the **Ethernet Settings**, IP address and internal DHCP server settings.
7. Verify that the **APN Settings** are correct. You can adjust the settings manually.
8. In the left sidebar menu, click **Save and Reboot**.
    Bolt LTE automatically reboots for the settings to take effect
9. On the **System Overview** page, verify that the cellular **Data Connection** has status **Yes**.

Verify Internet Connection

Bolt LTE should now be connected to internet.

> **NOTE**
> Depending on the mobile network operator and network type, it can take up to 10 minutes the first time Bolt LTE is connecting to internet.

Verify that Bolt LTE is connected to internet, by sending a ping to Google Public DNS.

1. On the **Diagnostics** page, select the **Ping** method.
2. In the **Target** field, enter the IP address 8.8.8.8.
3. To **Perform Action**, click **Start**.
   The ping request is sent. When the ping response return, a message appears.

Figure 29. Example, Ping response message from Target 8.8.8.8

To Do Next
Connect Devices
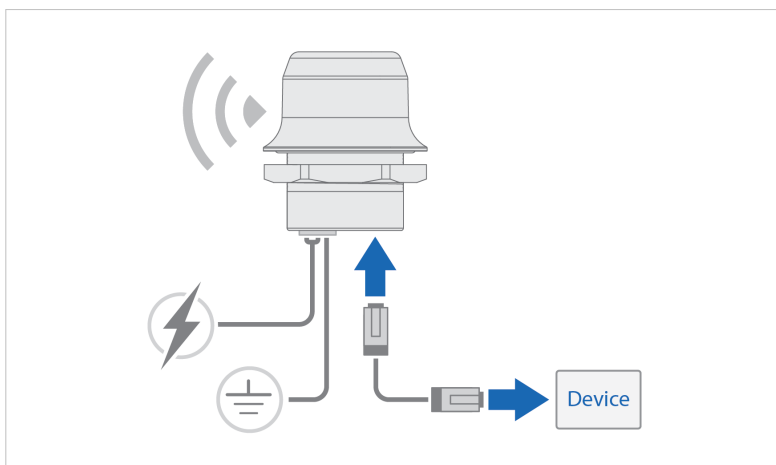
Figure 30. Connect a device to internet

To connect a device to internet:

1. Connect an Ethernet cable between Bolt LTE and the device.
2. Verify that the device is connected to internet.

6.3. Set Up Bolt LTE with ULPM REST Command

> **NOTE**
> The Bolt LTE variant for the US market does not support the ULPM REST Command.

You can use Bolt LTE as an internet router with Ultra Low Power Mode (ULPM) to save electrical energy.

Devices using other power sources than grid connected power, such as devices powered by batteries and/or solar panels, benefit from using ULPM.

> **NOTE**
> A power cycle will cancel ULPM. When power is restored, the ULPM command must be re-sent for the Bolt LTE to re-enter ULPM.

For more information about the ULPM REST command, refer to Use/Test REST Commands From a Web Browser (page 32).

7. Verify Operation

7.1. System Settings and Network Connection

On the **System Overview** page, verify the settings and network connection status.

Figure 31. Example, Verify Settings and Network Connection

7.2. LED Status Indication
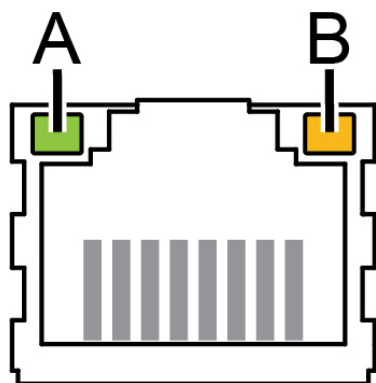
Figure 32. RJ45 LED indicators

LED A – LINK/ACTIVITY	Function
Off	No Ethernet link
Yellow	10 Mb/s Ethernet link established
Yellow, flashing	10 Mb/s Ethernet activity
Green	100 Mb/s Ethernet link established
Green, flashing	100 Mb/s Ethernet activity

LED B – STATUS	Function
Off	No power
Blue	Connected on LTE
Alternating blue/purple	Trying to connect
Purple	Connected on UMTS
Red	Recoverable/unrecoverable fault
Red, slow blink	No configured cellular interface/no SIM card/no valid configuration
Yellow	Booting or sleep

8. Maintenance

8.1. Firmware Update

Before You Begin

> **NOTE**
> The configuration settings are not affected when updating firmware.

Download the Firmware Update File

1. Download the firmware update file from www.anybus.com/support.
2. Connect Bolt LTE to your computer, refer to Connect to PC and Power (page 13).

Procedure
Update the Bolt LTE firmware.

Figure 33. Firmware Update, Choose file

1. Click **Choose File**.
2. In the **Open** dialog box, browse to and select the firmware update file and click **Open**.
3. To start the file transfer, click **Send**.

> **NOTE**
> Do not refresh or leave the Firmware Update page until the process has finished.

Firmware update progress
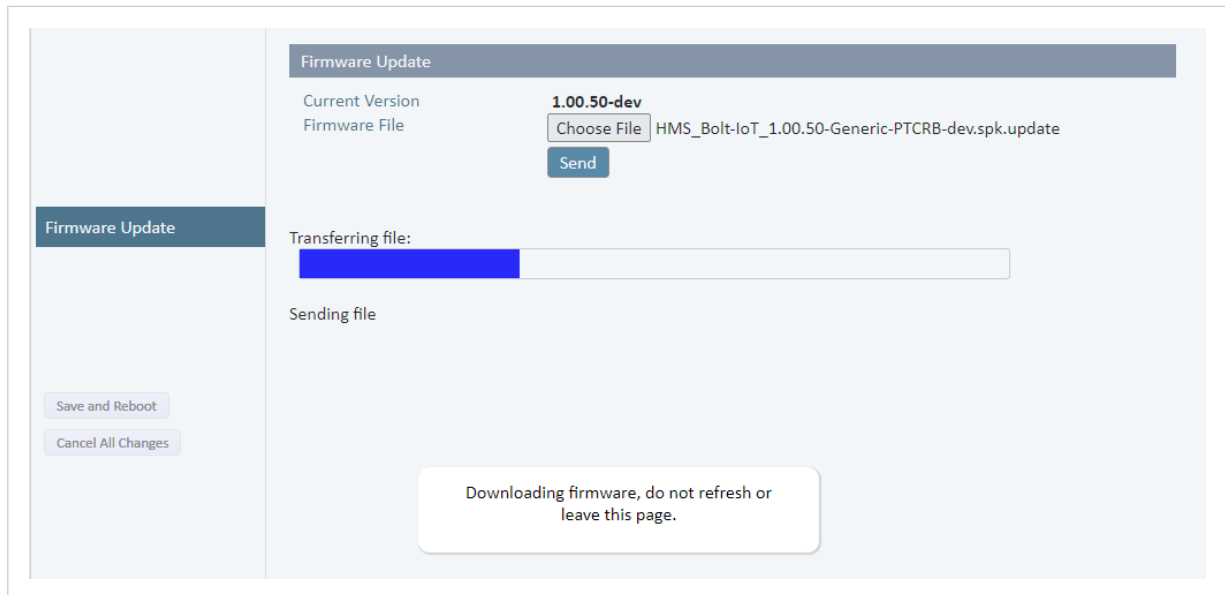
Figure 34. Firmware Update, Transferring file

- The progress bar, Transferring file, indicates the progress of the file transfer.
  Status messages show the progress of the firmware update stages.
- When the file transfer is finished, the progress bar turns green.

Reboot
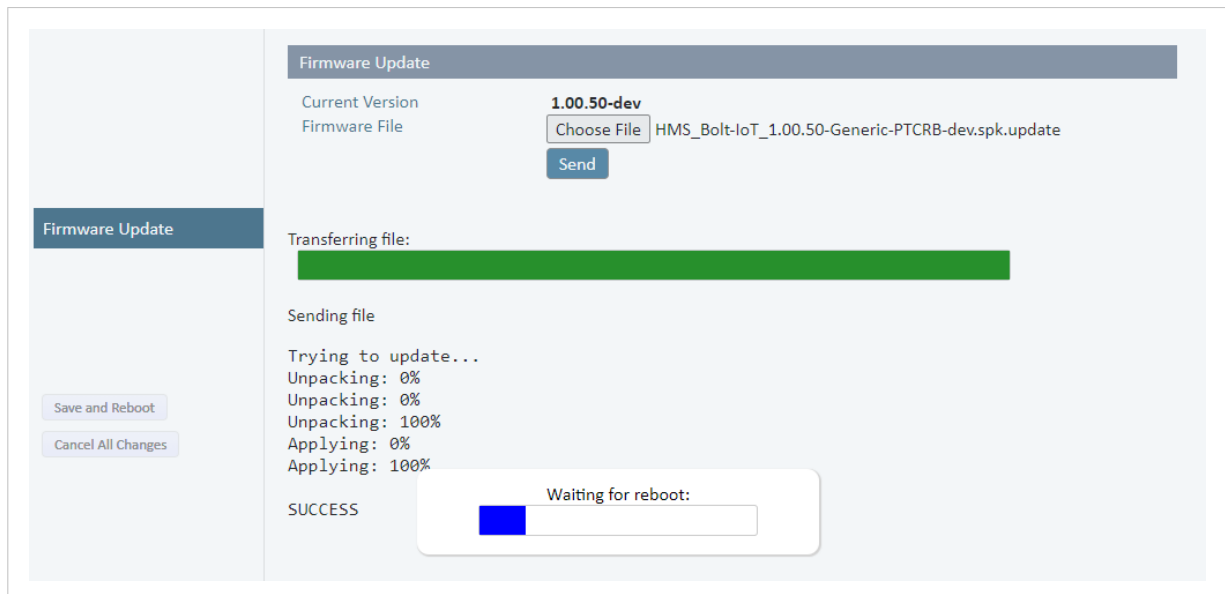
Figure 35. Firmware Update, Waiting for reboot

- When the firmware update is finished, Bolt LTE automatically reboots for the updates to take effect.
  The progress bar, Waiting for reboot, indicates the progress.
- When the reboot is complete, the web browser automatically redirects to the **System Overview** page.

8.2. Set Administrator Password

! **IMPORTANT**
   Before installing the Bolt LTE on a network, change the Bolt LTE default username and password.

📝 **NOTE**
   The Bolt LTE comes with a default username and password. The default username is admin, written in lowercase letters. You find the default password on the Bolt LTE product housing.

System Settings page, **Admin Password** pane

1. In the **Password** field, enter your preferred admin password.
2. To confirm the admin password, enter it in the **Confirm Password** field.
3. In the left sidebar menu, click **Save and Reboot**.
    Bolt LTE restarts and you will be prompted to log in to the web interface with the new admin password.

8.3. Settings Backup

8.3.1. Create Settings Backup File

! **IMPORTANT**
   The Administrator Password is not saved in the settings backup file.

   When settings are restored from a settings backup file, the Administrator Password is reset to the Bolt LTE default password. You find the default password on the Bolt LTE product housing.

Figure 36. System page

Create Settings Backup

• To save the current configuration in a backup file, click **Generate**.
   A backup file is automatically downloaded and saved in the Downloads folder on your PC.

8.3.2. Restore Settings From Backup File

> ⓘ **IMPORTANT**
> When you restore settings from a backup file, all the current settings except the Administrator
> Password are overwritten by the settings loaded from the backup file.
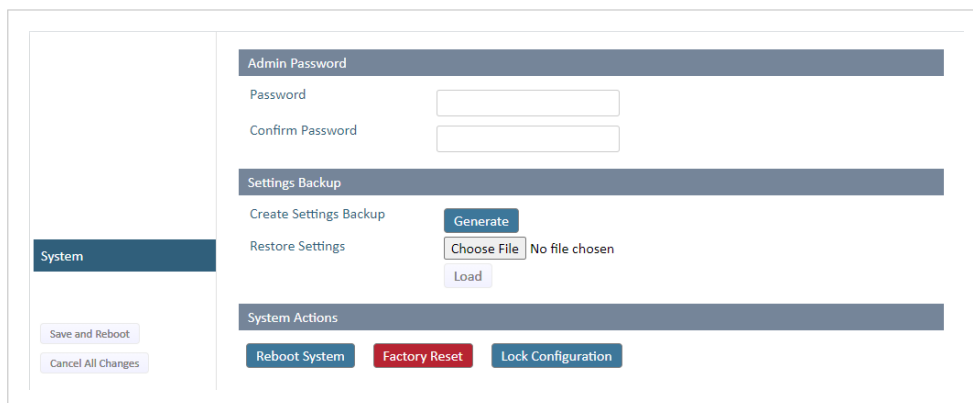
Figure 37. Restore Settings from a backup file

Restore settings from a backup file

1. Click **Choose** file.

2. Browse to and select your backup file.

3. Click **Load**.
   The Bolt LTE reboot automatically, for the settings loaded from the backup file to take effect.

8.4. Reboot System
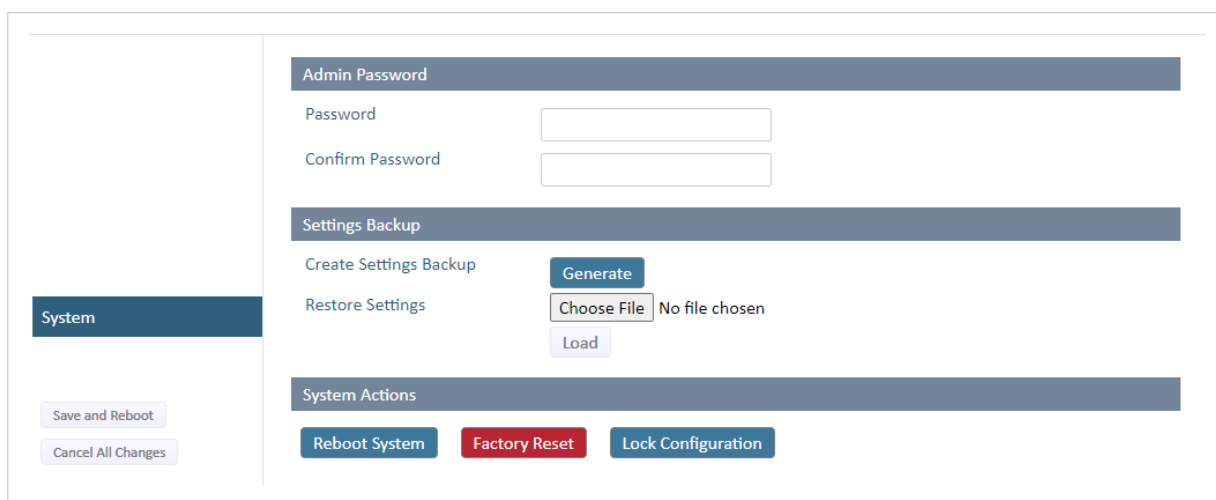
Figure 38. **System** page, Reboot System

1. If you have made any changes to the settings, you are prompted to click:
   - **Save**, to save the settings.
   - **Cancel**, to reboot the system without applying changes.

2. To reboot the system, press **Reboot System**.

9. Troubleshooting

9.1. Logs

The System Log contain useful information for troubleshooting issues that may occur in the system.

The Log file contains additional information, such as messages from the kernel, drivers, init scripts, services, and applications.

> **NOTE**
>
> Before you contact support for assistance, it is suggested that you save the System Log file and then add it as an attachment when you create the support ticket.
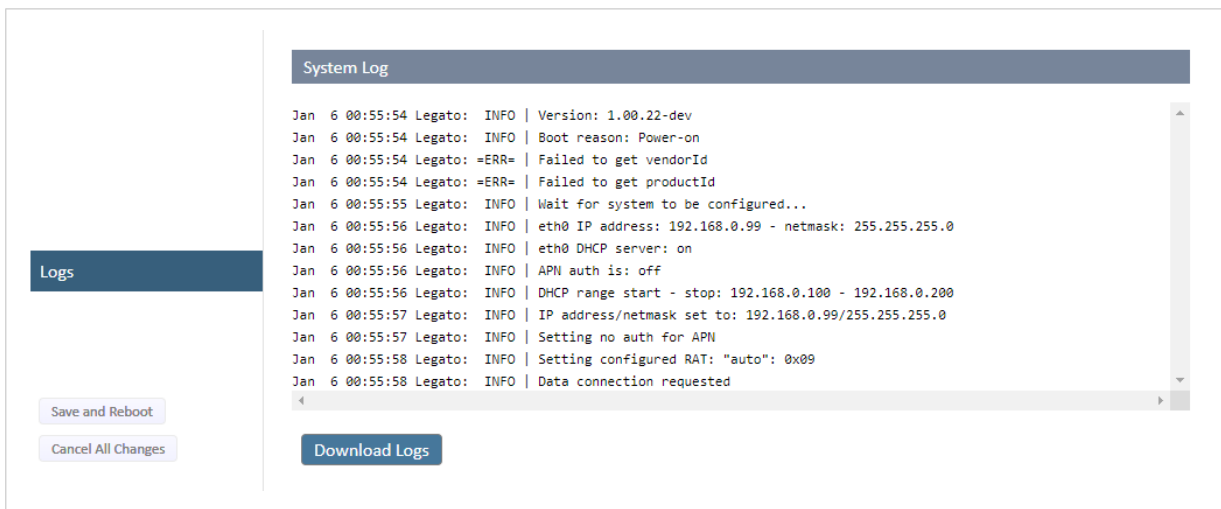
Figure 39. **Logs** page

To download current full system log and, if present, two previous boots logs, click **Download Logs**.

A GNU zip (.gz) file is automatically downloaded and saved in the **Downloads** folder on your PC.

9.2. Diagnostics
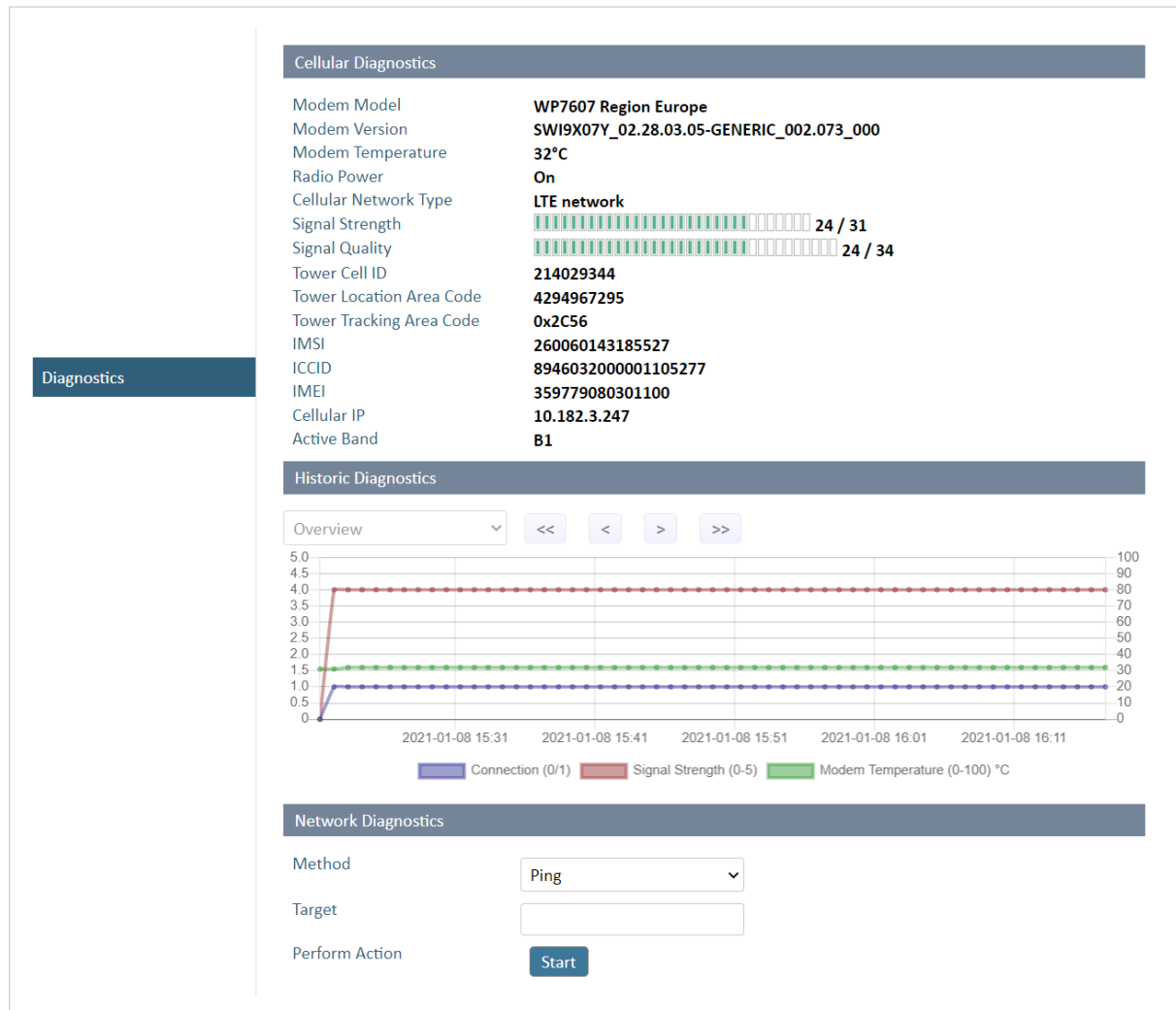
Figure 40. **Diagnostics** page

9.2.1. Cellular Diagnostics

Monitor Signal Strength and Quality

You can use the diagnostics information when planning the installation of Bolt LTE.

If Bolt LTE is to be placed in a fixed installation and there are several possible locations to choose between, it is viable to monitor the signal strength and quality in the intended locations.

View Mobile Network Information

Cellular diagnostic information, such as Tower Cell ID, IMEI (International Mobile Equipment Identity) and ICCID (Integrated Circuit Card ID), is useful when you are in contact with your mobile network operator.

9.2.2. Historic Diagnostics

In the Historic Diagnostics you can overview the connection and signal strength over time in a diagram.

Select **Overview** or **Detailed** view.

9.2.3. Network Diagnostics

> **NOTE**
> If Bolt LTE is installed on a private cellular network, the methods are limited according to the restrictions of the private network.

> **NOTE**
> The methods are useful when evaluating the connection on the cellular network. Complete the evaluation by performing tests from the connected device on the LAN network.

> **NOTE**
> To get reliable network diagnostics results, large amounts of data may be used.
>
> Before running the Wget method, check the SIM card data rate.

The network diagnostics methods work for both modem devices and for LAN interface devices.

Procedure

To perform a network diagnosis:

1.   Select the **Method**.

Method	Description
Ping	Ping sends packets to the specified address and then waits for the response.
	Some devices do not expect longer round trip time, introduced by cellular network connection.
	Use ping to measure the round trip time.
	Ideally, measure towards the host that your device connects to, or another host at a similar distance. The host must be configured to respond to these types of requests.
	If errors exist, ping reports the errors.
	Ping can also show packet loss.
	If the host's IP address is known, start by pinging the host's IP address and then the host's DNS name. The DNS name is dependent on name server lookup.
	To verify that Bolt LTE is connected to internet, you can send a ping to a host or an IP number capable of returning ICMP echo responses, such as Google Public DNS.
	In the **Target** field, enter the IP address (IPv4) 8.8.8.8 or 8.8.4.4.
Nslookup	Nslookup is used to query internet domain name servers.
	When Nslookup is run, the IP address of the DNS server and the targeted host IP address are shown. The DNS server is usually specified by the network operator.
Wget	Retrieve files using HTTP.
	The retrieval can help you evaluate the real download capacity of the connection. The retrieved file is not saved to the Bolt LTE.
	Wget can be used to evaluate performance. The reply message shows the elapsed time between the request being sent to the Target and the response being returned.

2.   Enter a **Target**.
3.   To **Perform Action**, click **Start**.
     The request is sent to the target. When the target response returns, a message appears.

Example 7. Ping response message from target 8.8.8.8

```
Network Diagnostics

Method              Ping                    ▼

Target              8.8.8.8

Perform Action      Start

Starting: ping -w 30 -c 4 -4 -s 56 8.8.8.8
PING 8.8.8.8 (8.8.8.8): 56 data bytes
64 bytes from 8.8.8.8: seq=0 ttl=52 time=521.234 ms
64 bytes from 8.8.8.8: seq=1 ttl=52 time=196.823 ms
64 bytes from 8.8.8.8: seq=2 ttl=52 time=174.440 ms
64 bytes from 8.8.8.8: seq=3 ttl=52 time=175.135 ms

--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 174.440/266.908/521.234 ms
ping finished: 0
```

Example 8. Nslookup response message from target www.anybus.com

```
Network Diagnostics

Method              Nslookup                ▼

Target              www.anybus.com

Perform Action      Start

Starting: nslookup www.anybus.com
Server:    195.67.199.27
Address 1: 195.67.199.27 resolver1-g-fo.skanova.com

Name:      www.anybus.com
Address 1: 40.69.205.62
dns finished: 0
```

Example 9. Wget response message from target Speedtest
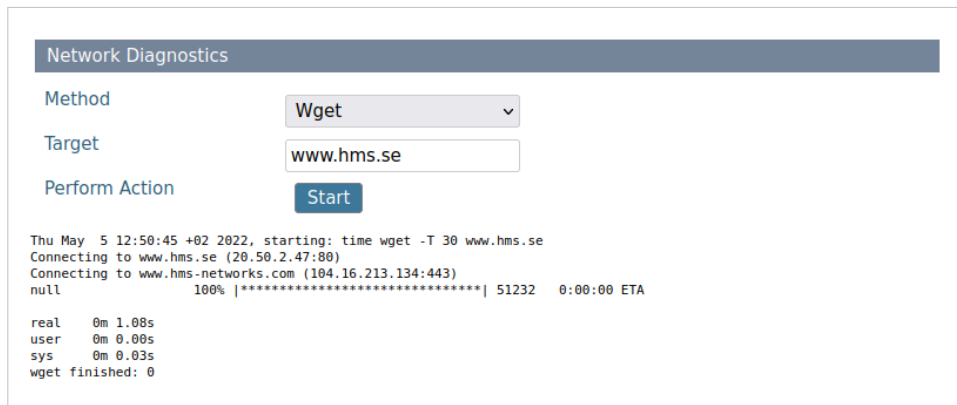
```
Network Diagnostics

Method              Wget                    ▼

Target              speedtest.ftp.otenet.gr/files/

Perform Action      Start

Starting: wget -T 30 speedtest.ftp.otenet.gr/files/test100k.db
Connecting to speedtest.ftp.otenet.gr (83.235.64.44:80)

null              12% |***                        | 12534   0:00:07 ETA
null              34% |*********                  | 35574   0:00:03 ETA
null              59% |*****************          | 61174   0:00:02 ETA
null              60% |*****************          | 62454   0:00:02 ETA
null              60% |*****************          | 62454   0:00:03 ETA
null              62% |*****************          | 63734   0:00:03 ETA
null              84% |************************   | 86774   0:00:01 ETA
null             100% |***************************|  100k   0:00:00 ETA
wget finished: 0
```

Example 10. Wget response message from target webpage


```
Network Diagnostics

Method          Wget                     ˅
Target          www.hms.se
Perform Action  Start

Thu May  5 12:50:45 +02 2022, starting: time wget -T 30 www.hms.se
Connecting to www.hms.se (20.50.2.47:80)
Connecting to www.hms-networks.com (104.16.213.134:443)
null                 100% |*****************************| 51232   0:00:00 ETA

real     0m 1.08s
user     0m 0.00s
sys      0m 0.03s
wget finished: 0
```
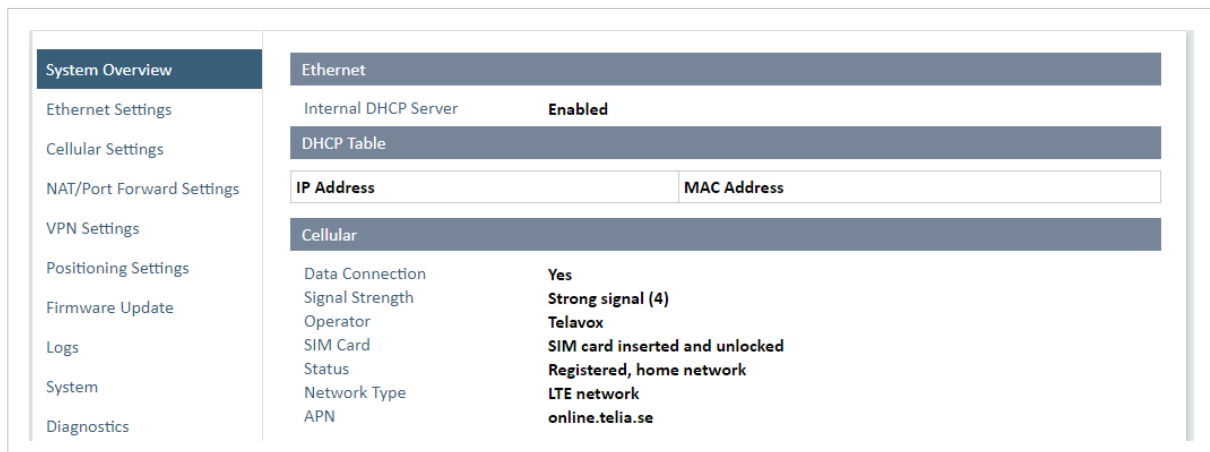
Response message with elapsed time between the request being sent to the Target and the response being returned.

9.3. Data Connection Termination


```
System Overview         Ethernet

Ethernet Settings       Internal DHCP Server     Enabled

Cellular Settings       DHCP Table

NAT/Port Forward Settings   IP Address                          MAC Address

VPN Settings
                        Cellular
Positioning Settings
                        Data Connection          Yes
Firmware Update         Signal Strength          Strong signal (4)
                        Operator                 Telavox
Logs                    SIM Card                 SIM card inserted and unlocked
                        Status                   Registered, home network
System                  Network Type             LTE network
                        APN                      online.telia.se
Diagnostics
```

Figure 41. **System Overview** page, **Data Connection** status **Yes**

On the **System Overview** page, **Data Connection** status **Yes** is picked up from the underlying system and is not tested for data transfer.

The Bolt LTE modem may get a control connection, but once data is sent the connection is terminated immediately.

This can be caused by discrepancy between the selected network technology, the SIM card and the operator setting.
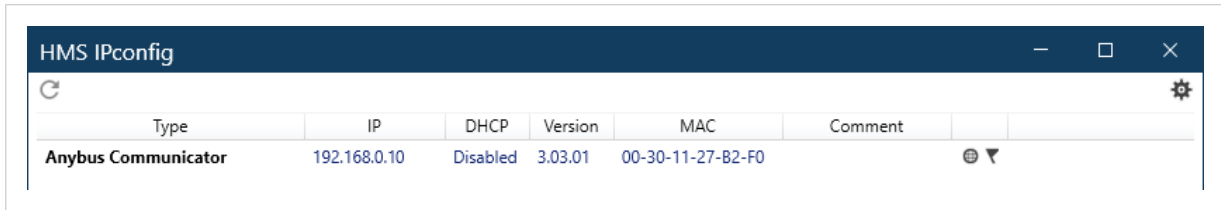
To troubleshoot the cause of the termination, analyze the **System Log**, refer to Logs (page 45).

If the problem recurs, contact your network operator.

9.4. Find the Bolt LTE IP Address

You can use the software application HMS IPconfig to find the Bolt LTE IP address.

Example 11. Device IP address detected in HMS IPconfig

Figure 42. HMS IPconfig

To download the installation files, please visit www.anybus.com/support and enter the product article number to search for the Bolt LTE support web page. You find the product article number on the product cover.

9.5. Reset and Recovery

9.5.1. Reset Button
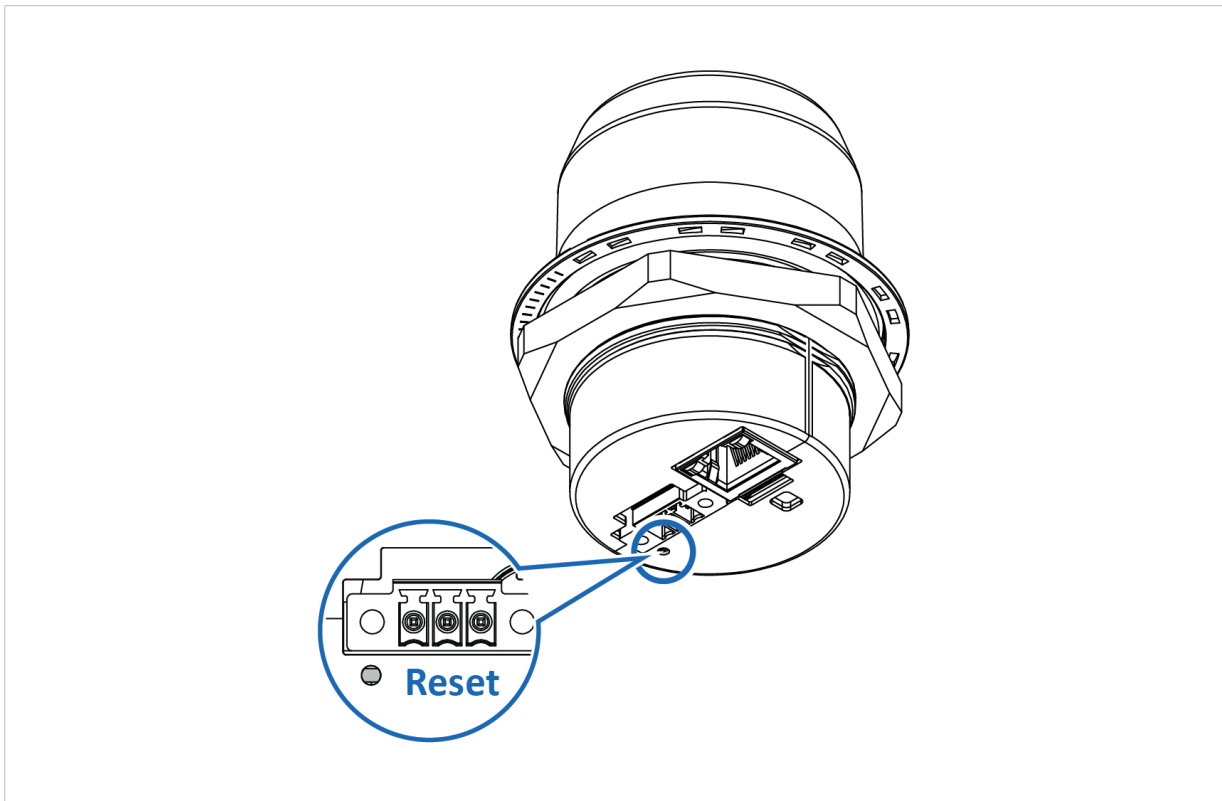
Figure 43. Reset button

The **Reset** button is located on the bottom of the Bolt LTE.

9.5.2. Factory Reset Using the Reset Button

> **❗ IMPORTANT**
> Factory Reset will result in the loss of all configuration settings and logs.

1. Ensure that the Bolt LTE is powered on and running.

   Figure 44. Power on the N/A

2. Use a pointed object (such as a ballpoint pen) to press and hold the **Reset** button for >10 seconds and then release it.
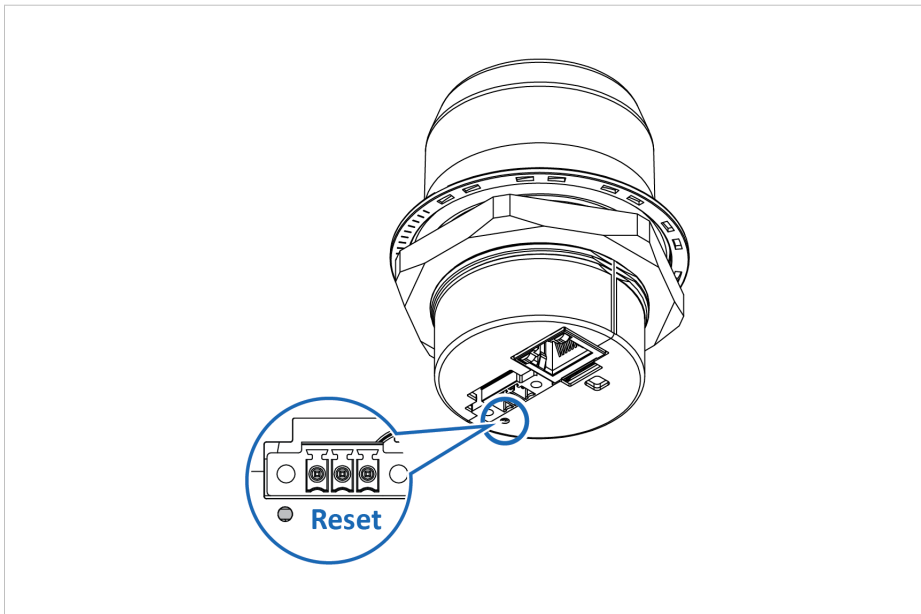
Figure 45. Reset button

Result
Bolt LTE is reset to the factory default settings.

9.5.3. Factory Reset Using the Built-In Web Interface

> **❗ IMPORTANT**
> Factory Reset will result in the loss of all configuration settings and logs.

Figure 46. **System** page, System Actions

1. Click **Factory Reset**.
2. To confirm factory reset, click **OK**.

Result
Bolt LTE is reset to the factory default settings.

10. Technical Data

10.1. Technical Specifications

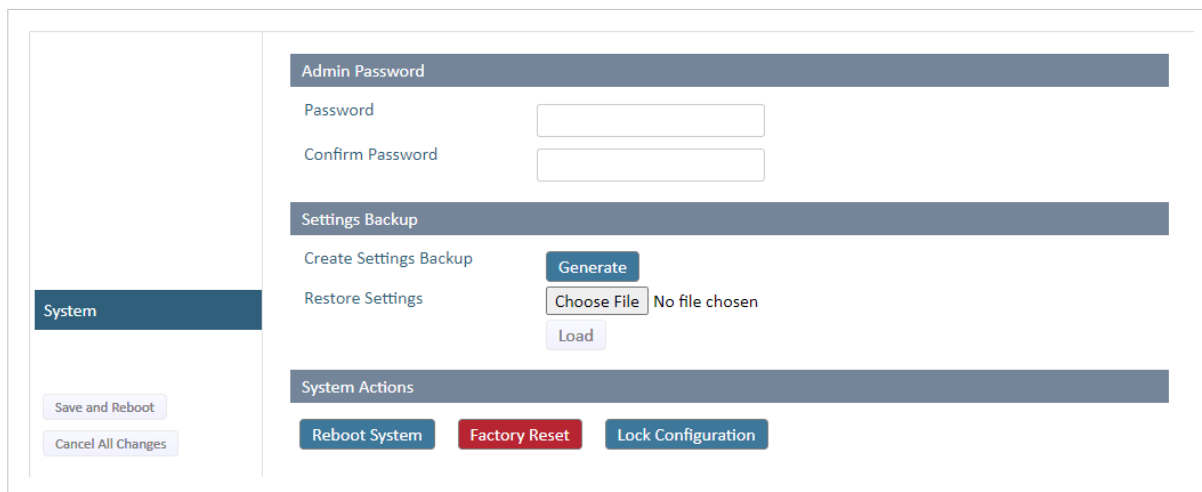| Order code	EMEA: AWB1500 Americas: AWB1502	EMEA: AWB1501 Americas: AWB1503
Color	Black	White top and black base
Operating temperature	Shadow: -40 to +65 °C Direct sunlight: -40 to +45 °C	Shadow: -40 to +65 °C Direct sunlight: -40 to +65 °C
Storage temperature	-40 to +85 °C	
Host interface	RJ45 Ethernet 10/100 Mbit/s, PoE	
Humidity	EN 600068-2-78: Damp heat, +40 °C, 90% (non-condensing)	
Vibration	Refer to datasheet at www.anybus.com/support.	
Power	3-pin screw connector and PoE (Power over Ethernet) 11-33 VDC through Power connector, PoE, IEEE 802.3at Type 1 (Class 0, 37-57 VDC, max 12.95 W) Redundant or separate operation of PoE and DC connectors Power Consumption: • Sleep Mode: Power connector 0.1 W. PoE 0.3 W • Idle Mode: Power connector 0.6 W. PoE 0.8 W • Worst Case average power: Power connector 3.2 W. PoE 3.6 W. • Worst case peak current: 1.2A@11VDC	
Dimensions	Diameter: 68 mm Height: 75 mm without power connector, 84 mm incl. power connector Height above mounting surface: 41 mm	
Weight	100 g	
Housing material	Plastic (see data sheet for details)	
Protection class	Top (outside of host): IP66 and IP67 / UL Type 4X Base (inside of host): IP21	
Mounting	M50 screw and nut (50.5 mm hole needed)	
Maximum data speeds	Max download speed: 100 Mbit/s Max upload speed: 50 Mbit/s	
Cellular standards	EMEA: LTE B1, B3, B7, B8, B20, B28, Fallback 3G Americas: LTE B2, B4, B5, B12, B13, B14, B25, B26, B66, Fallback 3G	
Ethernet protocols	Transparent transfer of any TCP/UDP based protocol, Built-in firewall, NAT and DHCP server	
Positioning standards and functions	Positioning services: Satellite Systems - GNSS (GPS, Galileo, Glonass, BeiDou)	
Certifications	Refer to datasheet at www.anybus.com/support.	

Additional technical data and information related to the installation and use of this product can be found at www.anybus.com/support.

11. Reference Guides

11.1. SMS Commands and Returns

The SMS Commands and Returns Reference Guide only applies to the SMS communication setting **Internally via SMS**, see Enable SMS Communication (page 26).

For in-depth information about the commands, see the REST Commands Reference Guide at www.anybus.com/support.

In the examples, `my_access_code` is used to indicate where an access code should be used.

11.1.1. Available Commands

Command: `help`

Returns, list with available commands:

- `help`
- `id`
- `info`
- `ip`
- `mac`
- `mast`
- `phys`
- `ping destination`
- `pos`
- `reboot`
- `version`

Example 12. Get list with available commands

Message to Bolt LTE:

```
my_access_code help
```

Reply message from Bolt LTE:

```
Syntax:
access_code cmd

Cmd list:
help
id
info
ip
mac
mast
phys
ping destination
pos
reboot
version
```

11.1.2. SIM Card ID

Get information about the SIM card installed in the Bolt LTE.

Command: `id`

Returns:

- Integrated circuit card identifier `iccid`
- International mobile subscriber identity `imsi`
- International mobile equipment identity `imei`

Example 13. Get information about the SIM card

Message to Bolt LTE:

```
my_access_code id
```

Reply message from Bolt LTE:

```
iccid:01234567890123456789
imsi:012345678901234
imei:012345678901234
```

11.1.3. System Information

Command: `info`

Returns:

- The time for which the Bolt LTE has been running: `uptime`
- RAT (Radio Access Technology) network type: `rat`
- Access technology of the serving cell: `rat_specific`
- Network registration status: `status`
- Data session state: `connection_state`
- Signal strength (0..5): `signal_strength`
- Signal quality (dBm): `signal_quality`
- The SIM card operator: `operator`
- The SIM card operators APN (Access Point Name): `apn`
- The Bolt LTE Site name: `hostname`

Example 14. Get information about the operator, signal strength, etc.

Message to Bolt LTE:

```
my_access_code info
```

Reply message from Bolt LTE:

```
uptime: 654
rat: 5
rat_specific: 2
status: 2
connection_state: 2
signal_strength: 4
signal_quality: -13
operator: Tele2
apn: 4g.tele2.se
hostname: MyBoltLTE
```

11.1.4. IP Address

Command: `ip`

Returns:

- `cellular_ip`
- `cellular_gateway`
- `eth0_ip`
- `eth0_mask`

Example 15. Get the Bolt LTE IP addresses

Message to Bolt LTE:

```
my_access_code ip
```

Reply message from Bolt LTE:

```
cellular_ip: 100.12.345.67
cellular_gateway: 100.12.345.68
eth0_ip: 123.45.678.9.11
eth0_mask: 255.255.255.0
```

11.1.5. MAC Address

Command: `mac`

Returns: The Bolt LTE MAC (Media Access Control) address.

Example 16. Get the Bolt LTE MAC address

Message to Bolt LTE:

```
my_access_code mac
```

Reply message from Bolt LTE:

```
MAC: 00:00:5E:00:53:AF
```

11.1.6. Mast

Command: `mast`

Returns:

- Serving Cell Identifier: `cell_id`
- Location Area Code of the serving cell: `lac`
- Tracking Area Code of the serving cell (LTE only): `tac`

Example 17. Get information about the mobile data mast that is used

Message to Bolt LTE:

```
my_access_code mast
```

Reply message from Bolt LTE:

```
cell_id: 19738246
lac: 1346798293
tac: 0x80
```

11.1.7. Phys

Command: `phys`

Returns:

- The temperature of the amplifier: `amplifier_temp`
- The temperature of the controller: `controller_temp`
- Voltage: `voltage`

Example 18. Get information about phys

Message to Bolt LTE:

```
my_access_code phys
```

Reply message from Bolt LTE:

```
amplifier_temp: 41
controller_temp: 41
voltage: 3871
```

11.1.8. Ping Destination

Issue a ping command to destination.

Command: `ping destination`

Returns: The last lines of the ping command response.

Example 19. Send ping command to destination

Message to Bolt LTE:

```
my_access_code ping destination
```

Reply message from Bolt LTE:

```
4 packets transmitted, 4 packets received, 0% packet loss round-trip
min/avg/max = 34.521/41.956/49.357 ms ping finished: 0
```

11.1.9. Position

Get information about the Bolt LTE position provided by Global Navigation Satellite Systems (GNSS).

To use this command, ensure **Position Service** is **Active** in the Bolt LTE. See .

Command: `pos`

Returns:

- The Positioning Service can be Active or Disabled: `state`
- Valid position: `valid`
- Latitude: `latitude`
- Longitude: `longitude`
- Accuracy in meters: `accuracy`

Example 20. Get information about the Bolt LTE position

Message to Bolt LTE:

```
my_access_code pos
```

Reply message from Bolt LTE:

```
state: active
valid: 1
latitude: 85.90254468
longitude: 15.23597845
accuracy: 10.000000
```

11.1.10. Reboot

> **NOTE**
> Reboot commands sent before the Bolt LTE connected to network is removed and not honored.

To make the Bolt LTE reboot, two SMS must be sent.

To prevent spoofed numbers access, a one-time code is returned on the first reboot command to the sending trusted number.

Command: `reboot`

Example 21. To reboot the Bolt LTE

In this example we use the one-time code `OJUUKWDI`.

1. Send message including access code and reboot command:
   `my_access_code reboot`
2. The Bolt LTE returns a message with a one-time code:
   `Really reboot? Continue sequence by sending`
   `my_access_code reboot OJUUKWDI`
   `within two minutes`
3. Within two minutes, send a reply message including: access code, reboot command and one-time code:

   > **NOTE**
   > The one-time code is valid for two minutes and must be included in the second reboot SMS as an argument.

   `my_access_code reboot OJUUKWDI`
4. The Bolt LTE returns a confirmation message:
   `Will perform reboot`

11.1.11. Version

Command: `version`

Returns:

- Bolt LTE version: `iotbolt_version`
- Modem model: `modem_model`
- Modem firmvare version: `modem_version`
- Carrier name and version: `pri`

Example 22. Get information about the Bolt LTE version

Message to Bolt LTE:

```
my_access_code version
```

Reply message from Bolt LTE:

```
iotbolt_version: 1.01.11
modem_model: WP7607
modem_version: SWI09X07Y_03.39.05.00
pri: GENERIC_003.092_001
```