



mQHub
User Guide

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Introduction

This guide explains how to set up your new mQHub gateway.

Note: Ensure that the AC outlet that powers the gateway cannot be inadvertently switched off.

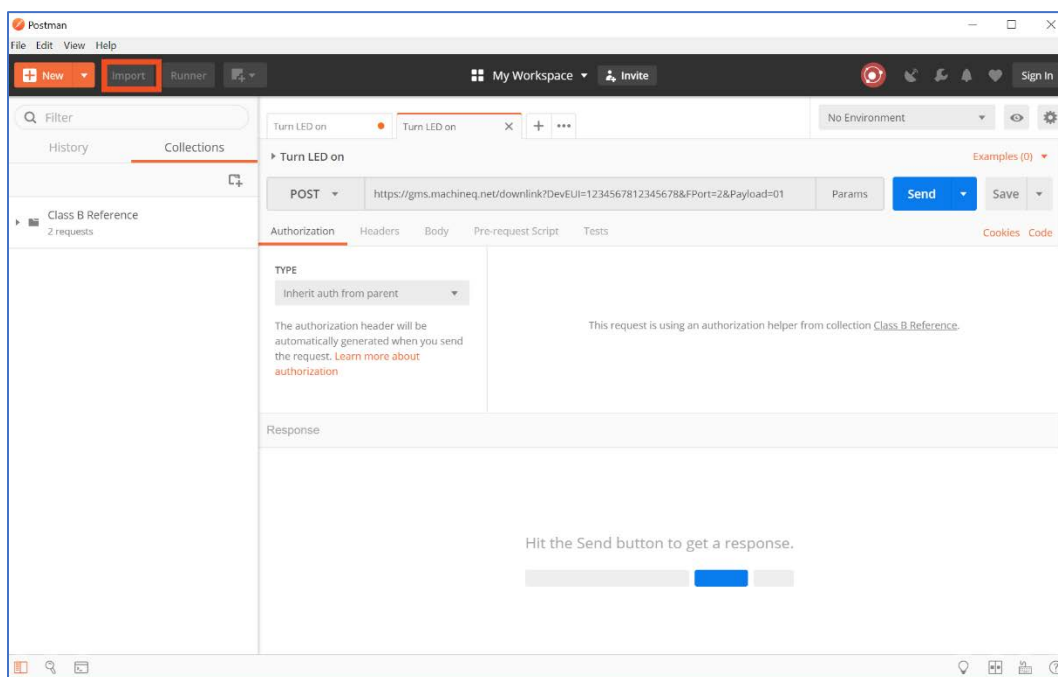
Prerequisites

Before performing the steps in this guide, you must download the Postman application and get the mQHub .json file:

1. Go to <https://www.getpostman.com/>
2. Download the appropriate Postman client for your machine (PC, Mac, or Linux)
3. Open the Postman client.
4. Click the orange **Sign In** button.

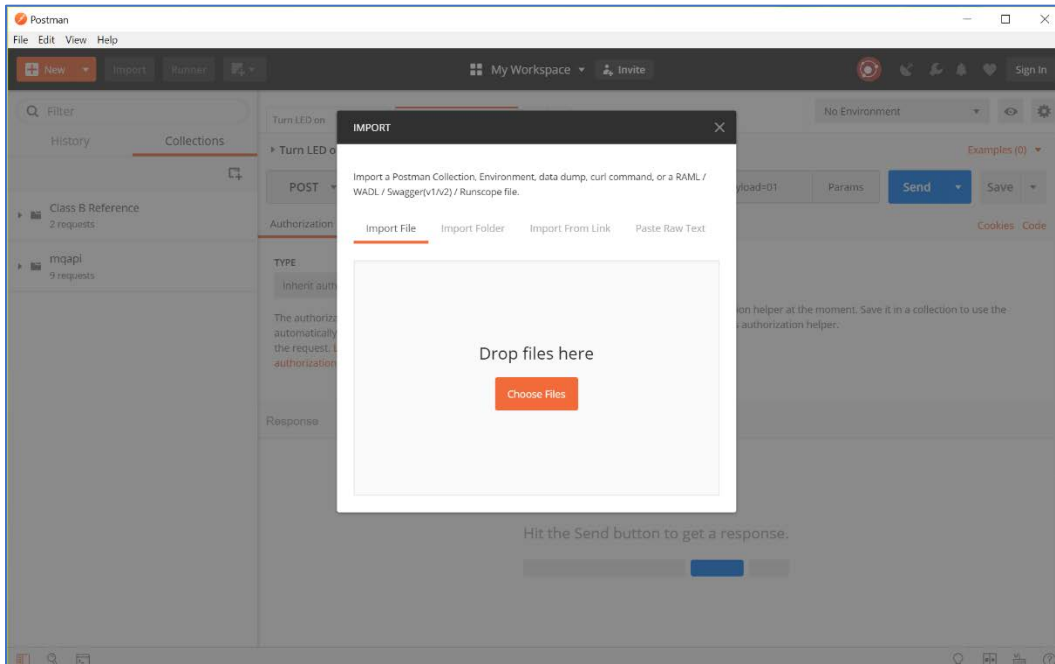
If you already have a Postman account, sign in. If not, click the orange **Create Account** link and set up a new account. You can also bypass signing in by going directly to the app.

5. Click **Import** in the top left-hand corner.



6. Download the .json collection file from <https://comcast.box.com/s/0offiku6f36khsma2e1akkinlvb4zzl> and save it to your desktop.

7. Drag the file into the Postman **Drop files here** box.

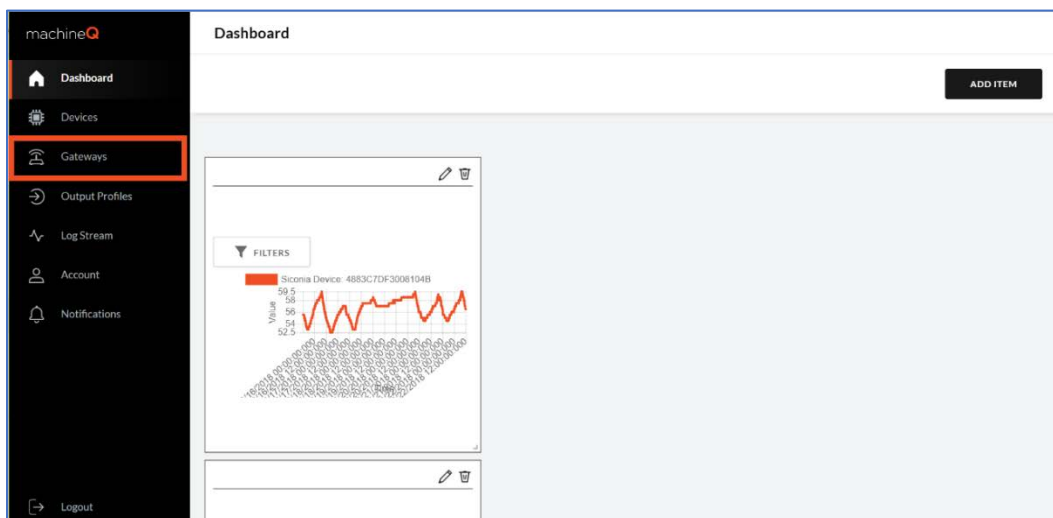


Provisioning the Gateway in mQCentral

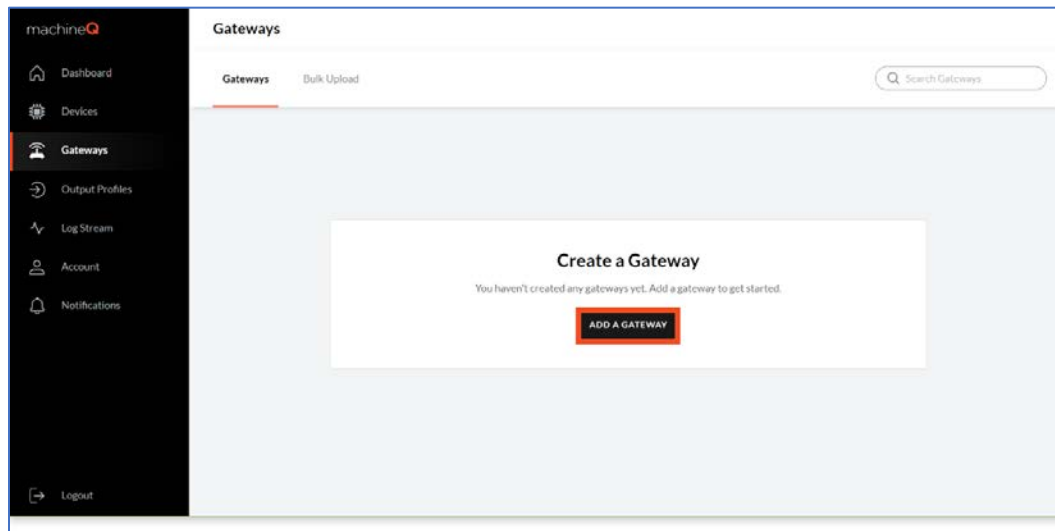
mQCentral is the portal you will use to view data and verify the operation of your gateways and sensors. Your gateway may have been set up in mQCentral before it was shipped to you. If that is the case, skip to the [Activating the Gateway](#) section in this document.

To provision the gateway in mQCentral, perform the following steps:

1. Navigate to mQCentral (<https://mqcentral.machineq.net/>) and log in with your credentials. If you do not have credentials, please reach out to our customer support by phone (855-671-5672) or email (machineQ_Support@comcast.com).
2. Click the **Gateways** side tab.



- On the Gateways screen, click **Add a Gateway**.



- Enter the appropriate information in the pop-up box to define your gateway, and then click **Submit**.

Add a Gateway

Details

Name*

Gateway Profile*

Select

Mac Address*

Node Id*

Location Type*

Select

Antenna Gain*

Coordinates

Latitude*

Longitude*

Height above ground in meters*

CANCEL

SUBMIT

<i>Field</i>	<i>Required</i>	<i>Type</i>	<i>Description</i>
Name	Required	<String>	An identifier for the gateway. This will be a quick way to find it if you have a number of gateways.
Gateway Profile	Required	Drop-down value	Make and model as found on the back of the gateway, in this case mQHub .

<i>Field</i>	<i>Required</i>	<i>Type</i>	<i>Description</i>
Mac Address	Required	12 character hexadecimal, separated by colons: 00:00:00:00:00:00	Network address of the gateway.
Node Id	Required	16-character hexadecimal	LoRa node ID found on the back of the gateway.
Location Type	Required	Valid values are: <ul style="list-style-type: none"> • Indoor • Outdoor 	General location of the gateway. Because the mQHub is designed for indoor use only, select Indoor .
Antenna Gain	Optional	<number>	Only required if an external antenna is required. Because the mQHub does not have an option for an external antenna, this should be blank.
Latitude	Required	Number between -90 and 90	Latitude of the gateway.
Longitude	Required	Number between -180 and 180	Longitude of the gateway.
Height above ground in meters	Required	<number>	Estimate how high the gateway is above street level.

Activating the Gateway

To set up the gateway, perform the following steps:

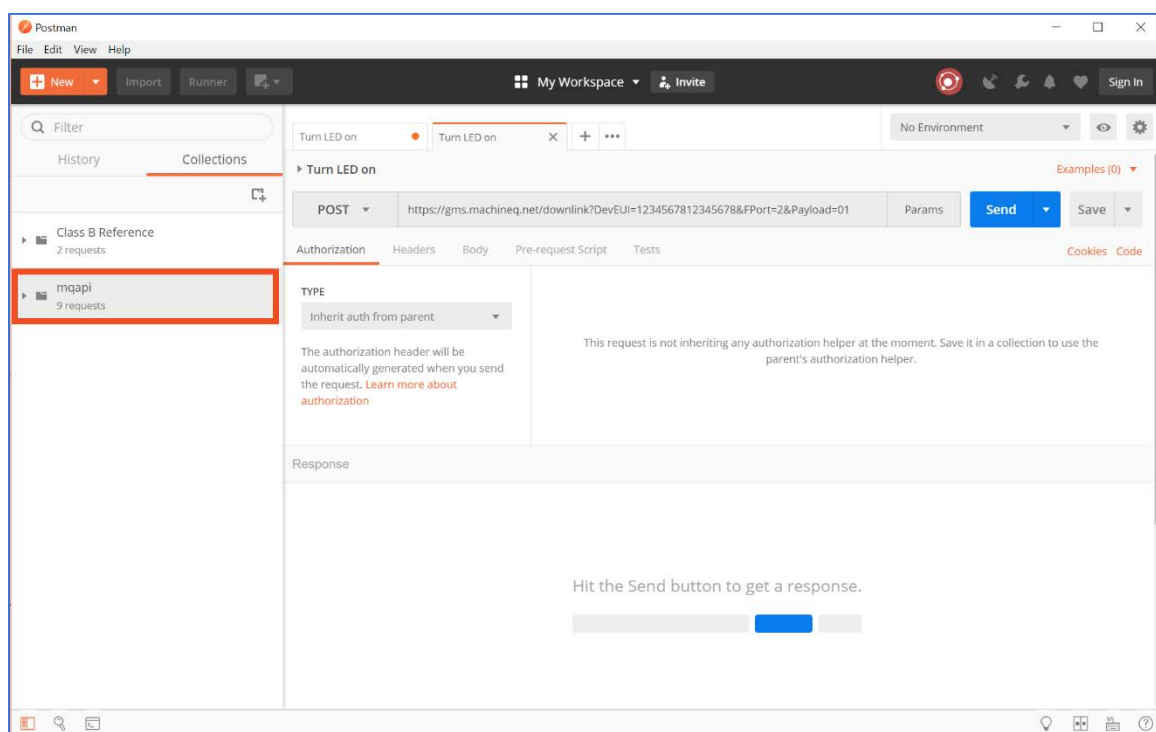
1. Plug it in to a power source.

It is very important that you plug the device into a wall outlet so it is oriented vertically. Do not plug it into a power strip, which would orient it horizontally.

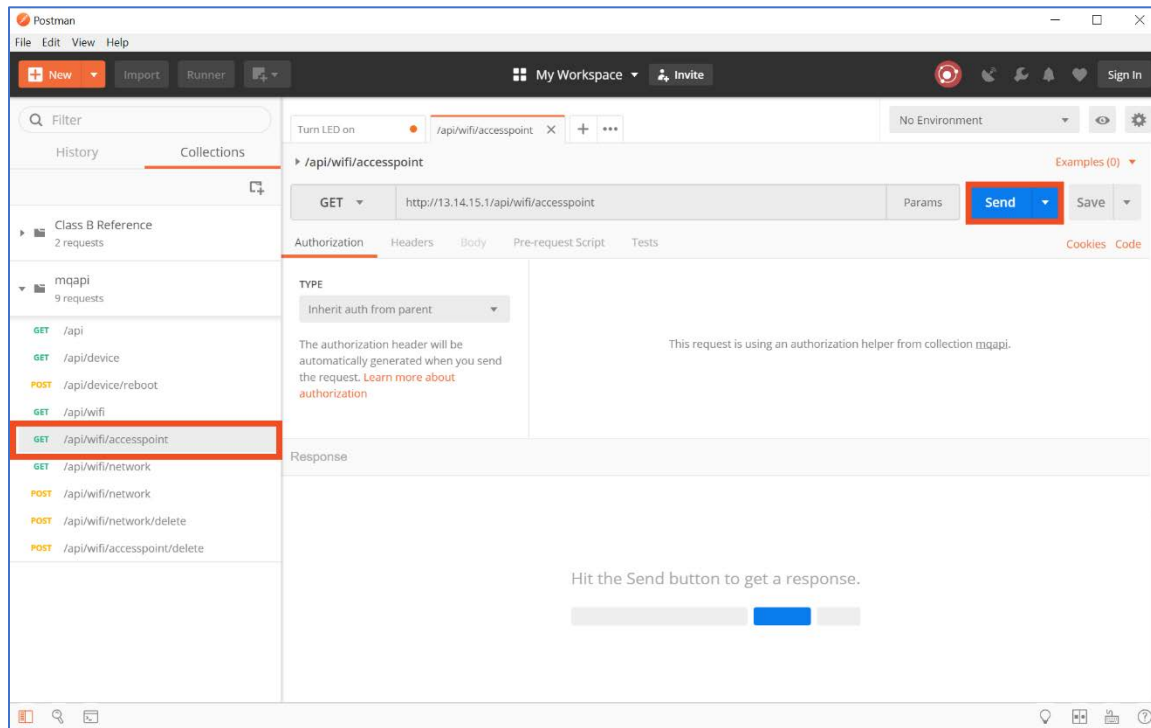
The signal strength will be reduced if it is oriented horizontally.

Ensure that the AC outlet that powers the gateway cannot be inadvertently switched off.

2. Look at your available Wi-Fi networks—you will see **MQH** followed by 8 digits.
3. Connect to this network with your computer as you normally would with your business or home or business Wi-Fi network. Your mQHub will now begin to blink amber (it will blink white while it is booting up).
4. Open the Postman application if it isn't already open and expand **mqapi**.



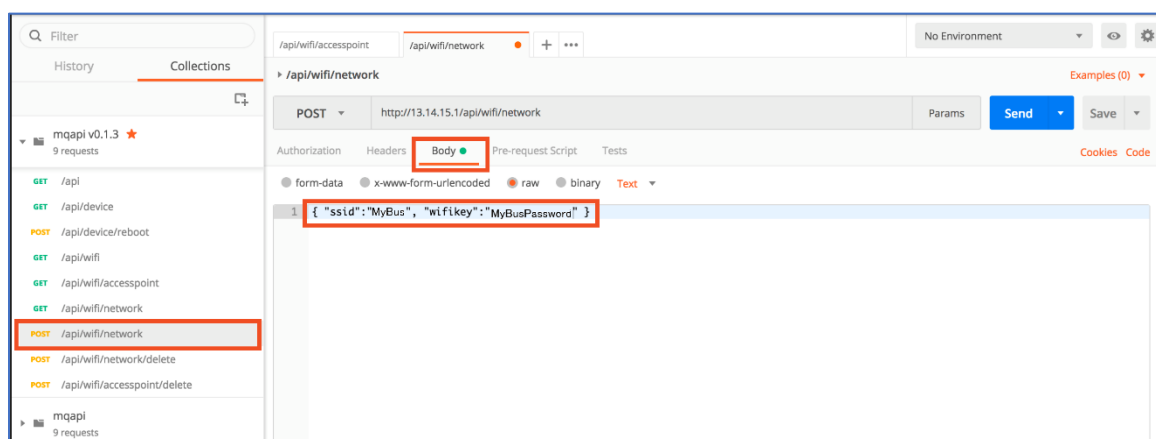
- Click **GET /api/wifi/accesspoint** and click **Send** to scan for a network to connect your mQHub to. If you already know which one you want to use, you can skip to the next step.



Postman will return a list of all available access points with details about them so you can choose one. Write down the SSID of the network you want to use (this will be one of your standard home or business networks).

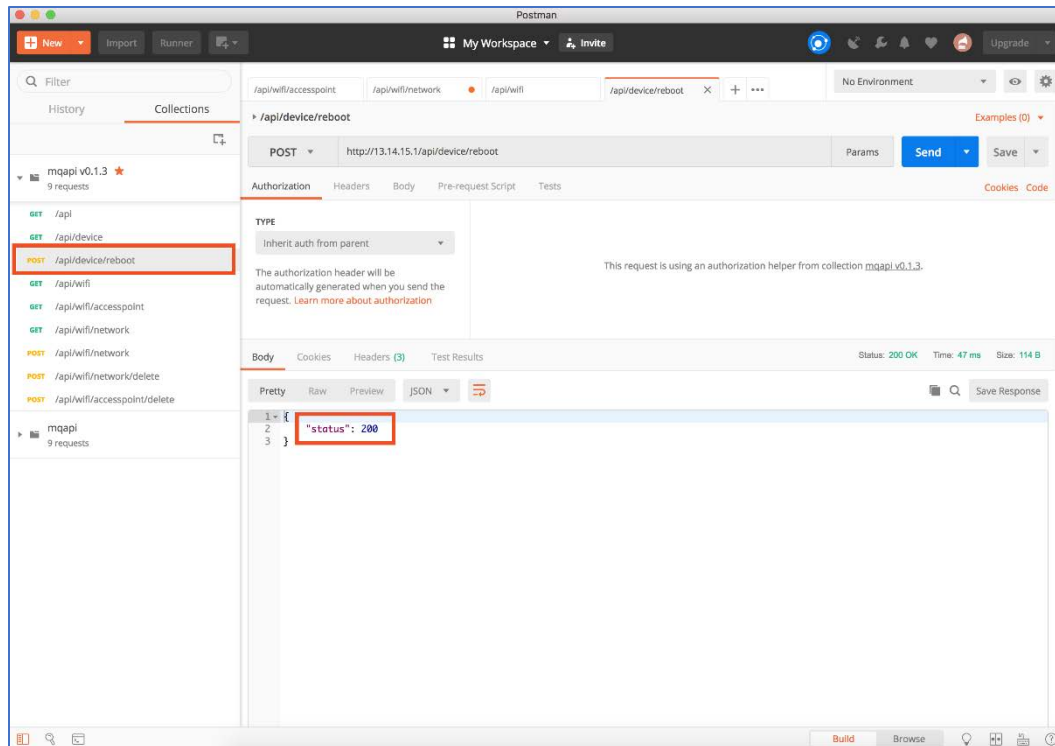
- Click **POST /api/wifi/network** and click the **Body** tab. Enter the following text, but change the value for "ssid" to your home or business Wi-Fi network's ID and "wifikey" to the corresponding passcode. Make sure to enter the values between quotation marks.

```
{ "ssid": "MyBusinessNetwork", "wifikey": "MyBusinessNetworkPassword" }
```



- Click **Send**.
- Reboot the mQHub by unplugging it, waiting 30 seconds and plugging it back in.

You can also reboot the gateway from Postman by clicking **POST /api/device/reboot**, and then clicking Send. You should receive a status of 200.

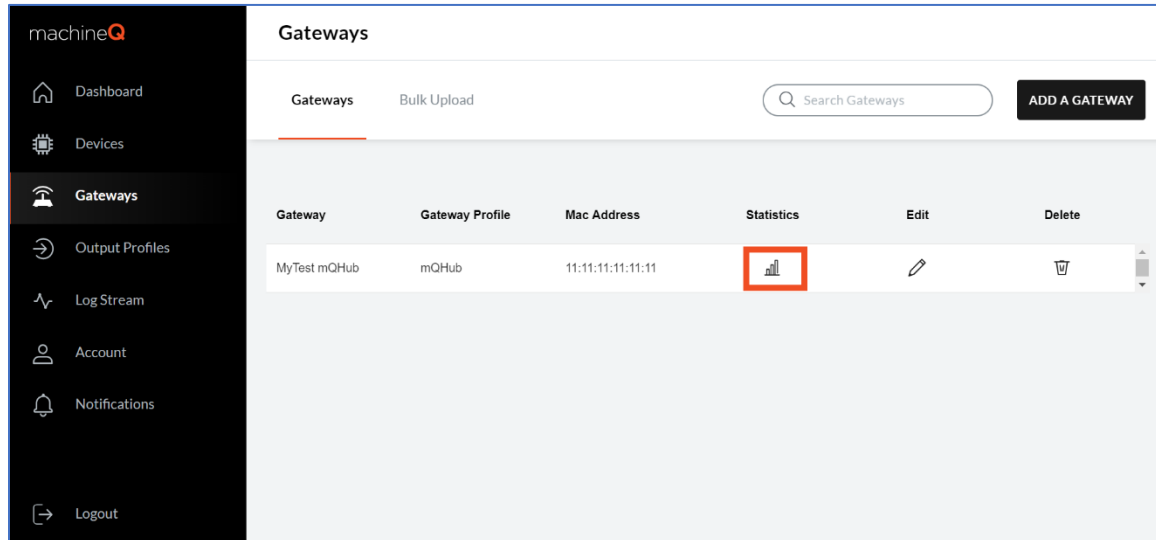


The gateway is now set up. It will display a white LED light when it is connected to the Internet.

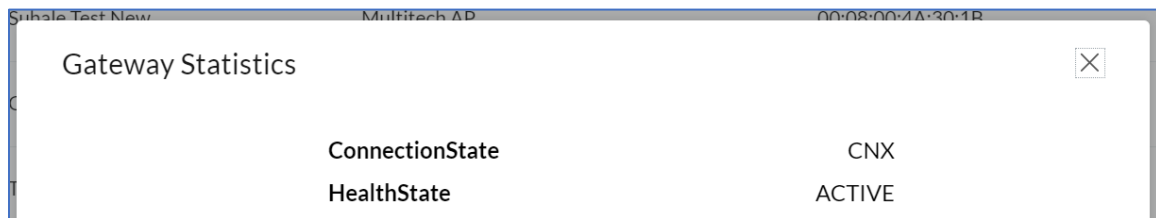
Checking the Gateway's Status

After your gateway is set up, you can see its status in mQCentral.

1. Log in to mQCentral and click **Gateways**.



2. The Connection State field will contain CNX if the gateway is connected and receiving data.



Additional Information

There is a WPS button located on the side of the gateway if you choose to use WPS to connect the gateway to your Wi-Fi router.

You can reset the Wi-Fi network by holding the reset button in for three seconds using a paperclip or small instrument. The reset button will put it back the gateway back into access point mode which will then allow you to reconfigure your gateway Wi-Fi network using the above instructions.

If you have any questions, contact [Support](#).

Appendix A: LED Indicator Definitions

The following table describes the possible LED indications you may see on your gateway.

Lights	Description	Response
Solid white	Running, no issues.	
Slow blink white	The gateway is powering up, booting.	Wait, this state is temporary.
Solid red	The bootloader has failed.	Contact Support .
Slow blink red	There is a LoRa issue.	Contact Support .
Solid amber	The gateway is disconnected from Wi-Fi.	Set the device to Wi-Fi using Postman, as described earlier in this document.
Slow blink amber	The gateway is in AP mode instead of Wi-Fi.	Set the device to Wi-Fi using Postman, as described earlier in this document.
Fast blink white and orange	Wi-Fi Protected Setup mode is on.	Wait, this state is temporary.

Appendix B: Product Specifications

Model Number: FXQX1AM0S

- Dimensions: (L x W x H) 2.4" x 3.7" x 1.9" (60 x 95 x 48 mm)
- Weight: 3.4 oz. (96g)

Supported Protocols:

- 802.11 b/g/n
- TCP/IP, HTTP, HTTPS, SSH

LoRa:

- LoRa packet forwarder
- Transceiver: I/Q Multi-PHY mode, 802.15.4g
- Frequency: 903-928 MHz
- Tx Output: 27dBm

Wi-Fi:

- Standard: IEEE 802.11b/g/n
- WPS SW pairing functionality
- Configuration: 2x2
- Frequency band: 2.4GHz
- Frequency range: 2412–2462 MHz (b/g/n/20MHz), 11 CH.; 2422–2452 MHz (n/40 MHz), 7 CH.
- Security: WPA, WPA2
- Tx Output: +20 dBm (b/g/n)

Environment & Reliability:

- Operating Temp: 0° — 40° C
- Storage Temp: -20° — 50° C
- Operating humidity: 5% — 85% RH
- Vibration: IEC 68-2-29
- Shock: IEC 68-2-29
- Drop: IEC 68-2-32

Safety and Regulatory Compliance:

- UL 62368-1
- FCC/IC 15b and 15c
- RoHS approved

Appendix C: Safety and Regulatory Information

Notice: This product for indoor use only.

Warning: No user serviceable parts inside.



Warning: Hazardous voltages inside.

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

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

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

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under the Federal Communications Commission's rules.

In order to comply with FCC RF Exposure requirements, this device must be installed to provide at least 20 cm (8 inches) separation from the human body at all times.