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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.

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Q Filter History Collections	Turn LED on • Turn LED on	x +	No Environment	
Class B Reference 2 requests	POST + https://gms.machineq.	net/downlink?DevEUI=1234567812345678&FPort=2&Payload=01 Yre-request Script Tests	Params Send	Save +
	TYPE Inherit auth from parent • The authorization header will be automatically generated when you send the request. Learn more about authorization	This request is using an authorization helper fn	om collection <u>Class B Refer</u>	rence.
	Response	Hit the Send button to get a response.		
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 Download the .json collection file from <u>https://comcast.box.com/s/0offiku6f36khsma2e1akkinlzvb4zzl</u> and save it to your desktop.

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Q. Filter       History       Collections       Image: Class B Reference 2 requests       Image: Property Service 2 requests	Turn LED or     IMPORT     X       * Turn LED or     Import a Postman Collection. Environment, data dump, curi command, or a RAML/ WADL / Swagger/UN/2) / Runscope file.     Import File     Import Folder     Import From Link     Paste Raw Text       Type Inherit autor automatication     The autoritation     Import File     Import Folder     Import From Link     Paste Raw Text       Type Inherit autor automatication     Drop files here     Choose Files	No Environment • • • • • • • • • • • • • • • • • • •

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 <u>Activating the Gateway</u> section in this document.

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

- Navigate to mQCentral (<u>https://mqcentral.machineq.net/</u>) 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 (<u>machineQ\_Support@comcast.com</u>).
- 2. Click the **Gateways** side tab.

machineQ	Dashboard
n Dashboard	ADD ITEM
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-∧ Log Stream	
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D Notifications	
	22.5 
[→ Logout	

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

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€	Output Profiles					
~	Log Stream					
lo	Account			Create a Gateway		
4	Netifications			Tou haven't created any sateways yet. Add a sateway to get started.		
[→	Logout					

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

Add a Gateway		×
Details		Coordinates
Name*		Latitude*
Gateway Profile*		Longitude*
Select	•	
Mac Address*		Height above ground in meters*
Node Id*	Telebolic Hone Mage	0000000000
Location Type*		
Select	•	
Antenna Gain*		
		CANCEL SUBMIT

Field	Required	Туре	Description
Name	Required	<string></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 <b>mQHub</b> .

Field	Required	Туре	Description
Mac Address	Required	12 character hexadecimal, separated by colons:	Network address of the gateway.
		00:00:00:00:00:00	
Node Id	Required	16-character hexadecimal	LoRa node ID found on the back of the gateway.
Location Type	Required	Valid values are: Indoor Outdoor	General location of the gateway. Because the mQHub is designed for indoor use only, select <b>Indoor</b> .
Antenna Gain	Optional	<number></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></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).

<ol><li>Open the Postmar</li></ol>	application if it isn	i't already open a	and expand <b>mgapi</b> .
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File Edit View Help		My Workspace 👻 🌲 Invite	ء ک 🙆	🔺 🎔 Sign In
Q Filter History Collections	Turn LED on • Turn LED on	x +	No Environment	•     •     •       Examples (0)     •
Class B Reference 2 requests	POST v https://gms.machineq.r Authorization Headers Body Pr	net/downlink?DevEUI=1234567812345678&FPort=2&Payload=01 -e-request Script Tests	Params Send	Save      Save      Cookies Code
Mappi 9 requests	TYPE Inherit auth from parent	This request is not inheriting any authorization helper at th parent's authorization i	e moment. Save it in a collectio helper.	in to use the
	Response	Hit the Send button to get a response.		
				0 4 . 0

5. 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.

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Q Filter	furn LED on	No Environment	Ŧ	0	
Class B Reference 2 requests A	GET   http://13.14.15.1/api/wifi/accesspoint  wuthorization Headers Body Pre-request Script Tests	Params Send	Exa	Save	) ▼ Code
mapi     grequests     GET /api     GET /api/device     Api/device/reboot     GET /api/defi/device/reboot     GET /api/defi/device/reboot	TYPE Inherit auth from parent   The authorization header will be This request is using an authorization helpe automatically generated when you send the request. Learn more about authorization	r from collection mgapi.			
Get         /api/wit/accesspoint         Ri           Get         /api/wif/network         Ri           Post         /api/wif/network         Ri           Post         /api/wif/network         Ri           Post         /api/wif/network         Ri           Post         /api/wif/network/delete         Post           Post         /api/wifi/accesspoint/delete         Post	esponse Hit the Send button to get a response.				

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).

6. 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":	"MyBusi	nessNetwork", "wifikey":"MyBusinessNetwork	<password< th=""><th>d″}</th></password<>	d″}
Q Filter		/api/wifi/accesspoint /api/wifi/network • + ••••	No Environment	v 💿 🌣
History	Collections	→ /api/wifi/network		Examples (0) 🔻
	C1	DOCT - http://12.14.15.1/api/wifi/aatwork	Darame Cond	- Caulo -
mqapi v0.1.3 ★ 9 requests		PUS1         Intuity 75, 14, 15, 174 promitmetwork           Authorization         Headers         Body         Pre-request Script         Tests	Params	Cookies Code
<b>сет</b> /арі		● form-data ● x-www-form-urlencoded ● raw ● binary Text ▼		
GET /api/device		<pre>1 { "ssid":"MyBus", "wifikey":"MyBusPassword" }</pre>		
POST /api/device/reboot	t			
GET /api/wifi				
GET /api/wifi/accesspoi	int			
GET /api/wifi/network				
POST /api/wifi/network				
POST /api/wifi/network/c	delete			
POST /api/wifi/accesspoi	int/delete			
mqapi     9 requests				

- 7. Click Send.
- 8. 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.

		Postman	
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Q Filter	/api/wifi/accesspoint /api/wifi/network • /api/w	fi /api/device/reboot × + ····	No Environment * 👁 3
Conections	/api/device/reboot		Examples (0)
mqapi v0.1.3 ★ 9 requests	POST * http://13.14.15.1/api/device/reboot Authorization Headers Body Pre-request Script	Tests	Params Send • Save • Cookies Coc
er /api/device por /api/device/reboot pr /api/device/reboot pr /api/vefi/accesspoint dr /api/vefi/accesspoint	TYPE Inherit auth from parent • The authorization header will be automatically generated when you send the request. Learn more about authorization	This request is using an authorization h	relper from collection map) x0.1.3.
/api/wifi/network     /api/wifi/network/delete	Body Cookies Headers (3) Test Results Pretty Raw Preview JSON *		Status: 200 OK Time: 47 ms Size: 114 E
9 requests	1 = { 2 3 }		

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.

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â	Dashboard	Gateways	Bulk Upload		Q Search C	Sateways	ADD A GATEWA	AY .
۲	Devices							
Ê	Gateways	Gateway	Gateway Profile	Mac Address	Statistics	Edit	Delete	
	Output Profiles	MyTest mQHub	mQHub	11:11:11:11:11	In	Ø	1 <del>.</del>	^
∿	Log Stream							*
Do	Account							
Ĉ	Notifications							
[→	Logout							

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

Libble Lect New	Multitech AP	00080007A30418	
Gateway Statistics			X
	ConnectionState	CNX	
	HealthState	ACTIVE	

### **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 <u>Support</u> .
Slow blink red	There is a LoRa issue.	Contact <u>Support</u> .
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.