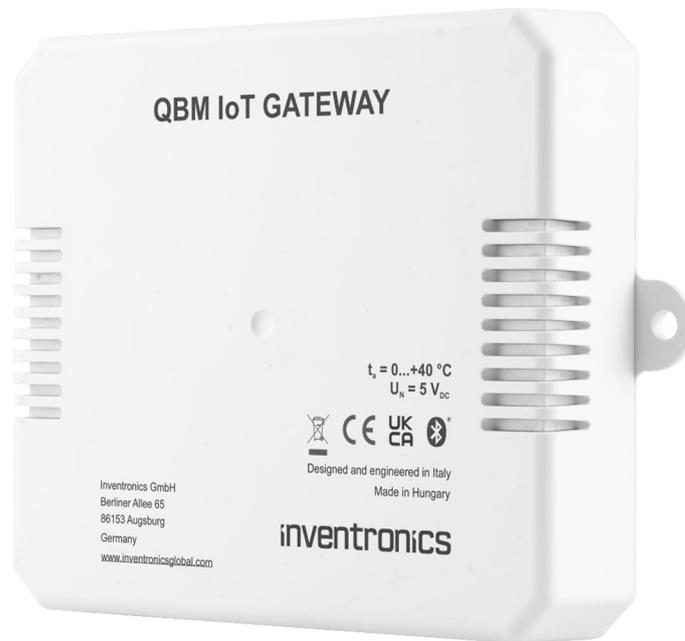


QBM IoT Gateway



QBM IoT Gateway Quick installation guide

QBM IoT Gateway

Quick installation guide

This user manual provides the user with comprehensive instructions and insights into the usage and functionality of the QBM IoT Gateway. Whether you are a lighting professional, an installer, or a system administrator, this guide will assist you in commissioning the QBM IoT Gateway.

The web user interface shall enable you to setup, commission your device into the Bluetooth mesh network.

All information in this guide has been prepared with great care. INVENTRONICS, however, does not accept liability for possible errors, changes and/or omissions.

Please check www.inventronics-light.com or contact your sales partner for an updated copy of this guide.

1. Terminology

Provisioning

The process of joining a Bluetooth node to a Bluetooth mesh network, making the node an active device able to interact with the other devices according to the models implemented. Provisioning and un-provisioning are done by means of HubSense Commissioning mobile app.

The QBM IoT Gateway provisioning can be done off-line i.e., with no internet connection.

Commissioning

The process of acquiring all the information regarding an existing Bluetooth mesh network e.g., app & network keys, number of nodes, elements, models, and profiles implemented by each node etc.

The commissioning requires internet connection because it consists in downloading data from the cloud. The commissioning must be repeated every time any change on the mesh is reported, like removing or adding a node.

2. Web server

The web server is a tool for executing basic functionalities on the QBM IoT Gateway, like commissioning, IP addressing, data download etc. For the time being only the commissioning functionality is available.

The web server can only be used locally, that means you can access its functionalities if the user PC is connected to the same local network where the QBM IoT Gateway operates. No remote connection to the QBM IoT Gateway web server is possible.

To open the web server interface with a browser, the user first needs to identify the QBM IoT Gateway IP address. Please refer to Setup.

2.1. Setup

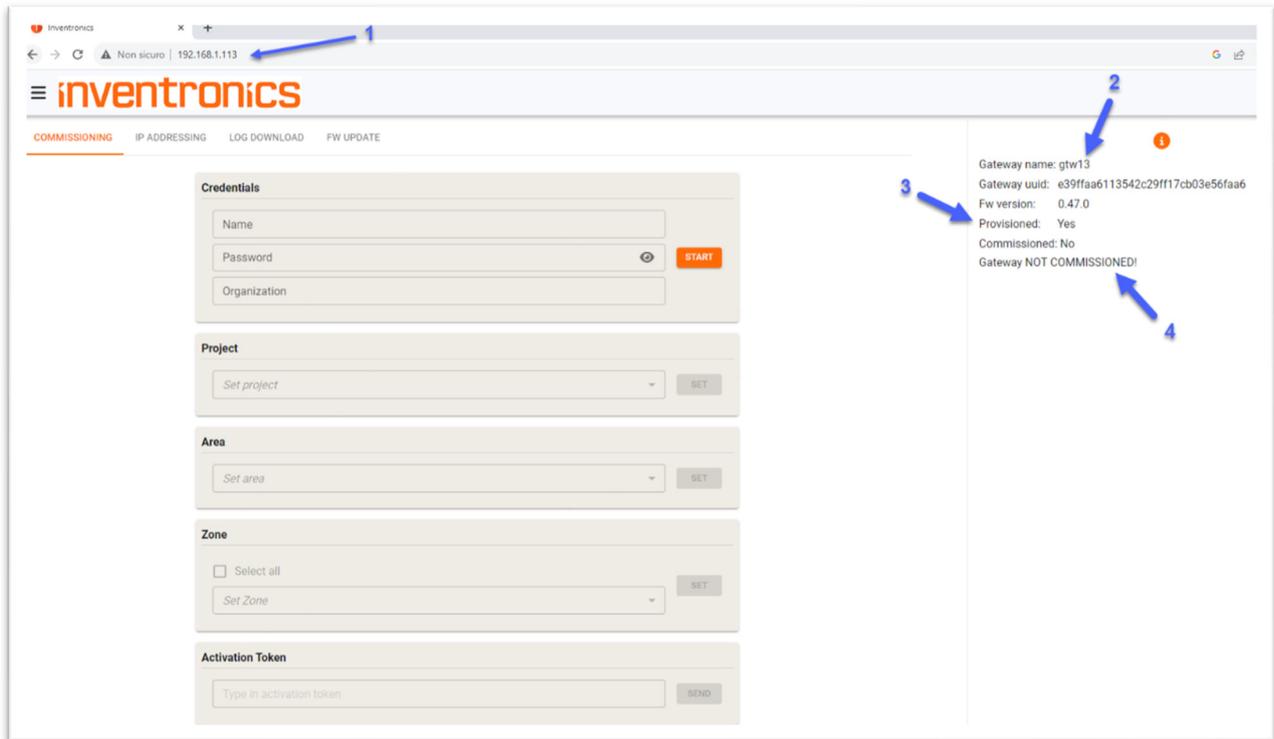
Connect the QBM IoT Gateway to a network with internet access and power it up. Wait for few seconds (roughly 10 s) that the QBM IoT Gateway is ready and running.

Notice that, when the QBM IoT Gateway establishes the connection with the cloud, the red LED blinks quickly (30ms on - 200ms off.) If the connection is not possible the red LED blinks slowly (1s on - 3 s off). Please refer to LEDs and button for additional information.

By default, the QBM IoT Gateway is in DHCP mode therefore, after power-up, it gets an IP address from the local DHCP server.

To access the web server functionalities the user shall retrieve the IP address assigned to the QBM IoT Gateway

Once the QBM IoT Gateway IP address is known, you can type it in the web browser (Edge and Chrome suggested) address bar. The page below shall appear:



Notice on the example pic above:

1. IP address of the QBM IoT Gateway.
2. Name of the QBM IoT Gateway.
3. The QBM IoT Gateway is provisioned i.e., it has been added to a Bluetooth mesh network by means of a dedicated mobile app.
4. The QBM IoT Gateway is not commissioned yet i.e., it does not have the information (number of nodes, models implemented, etc.) of the network it belongs to.

Important note: if your browser cannot open the page, please make sure to clean the cache. It is suggested to open a new page InPrivate (Edge) or in Incognito mode (Chrome).

2.2. Commissioning

The commissioning phase is meant to transfer to the QBM IoT Gateway all the information needed to operate within the Bluetooth mesh network where it has been added.

Please fill in all the required fields (refer to the pic above), starting from:

Credentials: use your HubSense Commissioning credentials. Credentials are not saved nor retained by the QBM IoT Gateway, just used to access the cloud, and download the required data. Organization is not in use yet, please type in anything.

Project: select from the drop-down menu the project of interest.

Area: select from the drop-down menu the area of interest.

Zone: select one or more zones of interest. Any data published by a device of an unselected zone is ignored by the QBM IoT Gateway.

Activation Token: type in the activation token received with the QBM IoT Gateway.

After few seconds a message shall appear saying the QBM IoT Gateway is commissioned and the information on the right panel shall update, turning the Commissioning state to Yes. In case of commissioning success, the red LED starts blinking twice 30ms On and then 1s Off.

Important note: if any error occurs during the commissioning process, the user shall wait at least 1 minute before repeating the procedure. This is a limitation imposed by the cloud to reduce uncontrolled access.

In case of persistent error, reload the page.

Cause of commissioning failure:

Wrong credentials.

Connection drop. When internet connection is missing the QBM IoT Gateway is not able to reach the cloud.

Wrong activation token.

Gateway already commissioned on a different project.

Timeout. The commissioning process resets if the user takes too long to proceed through the commissioning steps (more than 1 minute per step).

3. LEDs and Button

The tables below summarize the meaning of the LEDs' signals

Green LED	Signal
Node Attention command	0.5s ON - 0.5s OFF
Node is provisioned	1 blink 30ms - ON 2s OFF
Node is un-provisioned	1 blink 30ms - ON 0.3s OFF
Ping reply is missing from radio module	ON

Red LED	Signal
Fault condition	ON
Cloud connection NOT established with Gateway NOT commissioned.	1 blink 1s ON, 3s OFF
Cloud connection established with Gateway NOT commissioned	1 blink 30ms ON, 0.2s OFF
Cloud connection NOT established with Gateway commissioned	1 blink 30ms ON, 1s OFF
Cloud connection established with Gateway commissioned	2 blinks 30ms ON, 1s OFF

The following table explains the button functionalities.

Function	Action		Wait for	Confirm	Confirmed
System reset	long push	5s	None	None	None
Un-provisioning	long push	10s	Green led ON	2 short pushes within 10s	None
Factory reset*	long push	20s	Red & green led ON	2 short pushes within 10s	Red & green led 1s ON, 1s OFF

3.1. Test mode

At power-up the QBM Gateway attempts to enter test-mode, looking for the tFTP server of end-of-production-line tester. While searching for the tFTP server, both green and red LEDs are steady on. If the tFTP server is not found, after some seconds the QBM Gateway gets out of test mode and starts the normal functioning.

3.2. Fault condition

If at power-up, the ethernet cable is disconnected or the QBM Gateway is not able to get a valid IP address (e.g., DHCP server not available), both green and red LEDs remain steady on. If the button is pressed while in fault condition, both LEDs switch off, then at each button press both LEDs switch ON.

Appendix

To access the web server functionalities the user shall retrieve the IP address assigned to the QBM IoT Gateway. This can be done in several ways:

By accessing the local network router setup page and by checking the list of devices present.

By doing an address search with an IP scanner like [Advanced IP Scanner](#).

By asking to your IP department to identify the QBM IoT Gateway IP address for you.

By getting the QBM Gateway status by means of the Hubsense API.

Inventronics GmbH

Parkring 31-33, 85748 Garching, Germany

Email: support@inventronicsglobal.com