

# *Sensi*Configurator

## Getting Started

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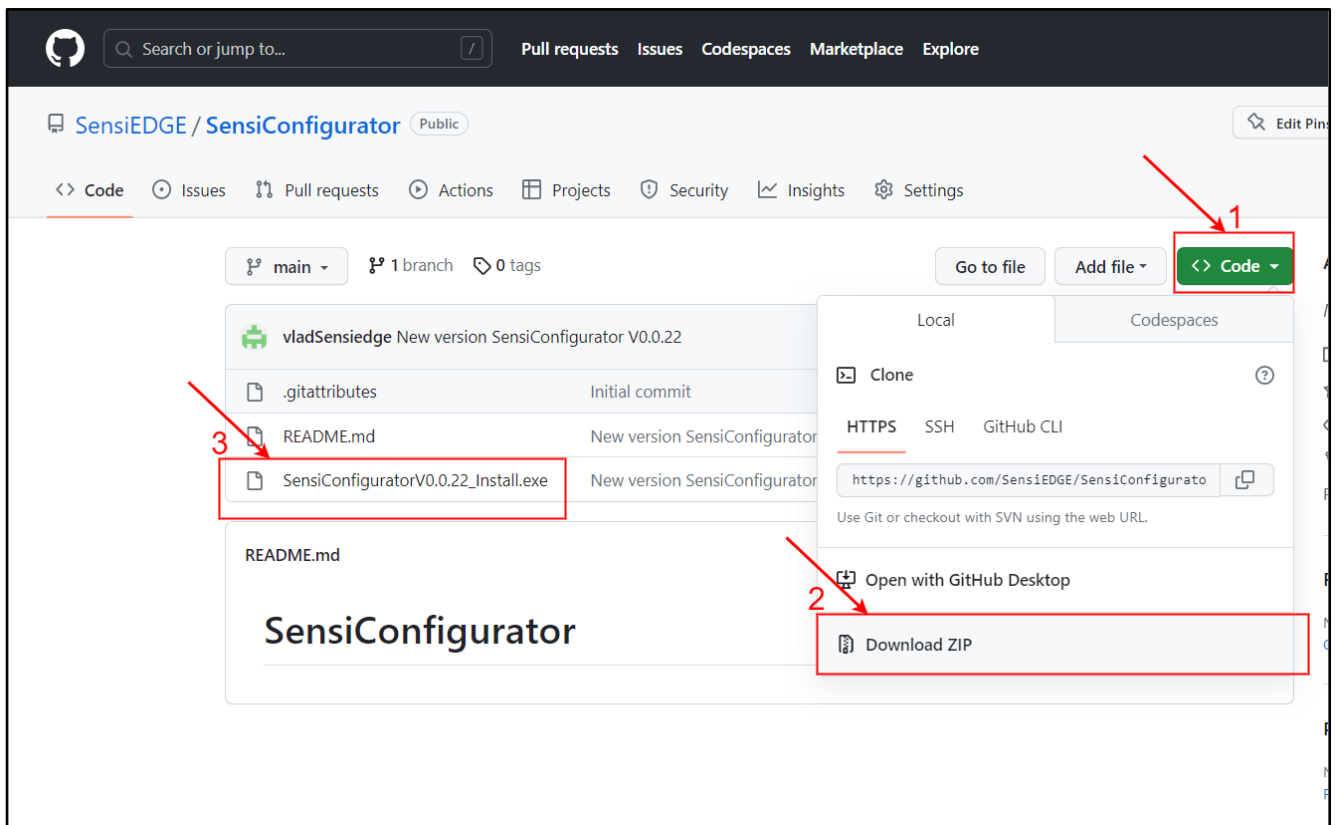
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# 1. Install SensiConfigurator for Windows

1. Download SensiConfigurator for this link: [Download SensiConfigurator Windows](#). Click on **Code** (step 1), then click on **Download ZIP** (step 2), and in Download ZIP click on **SensiConfigurator\_Install.exe** (step 3).

**Figure 1.** Download SensiConfigurator

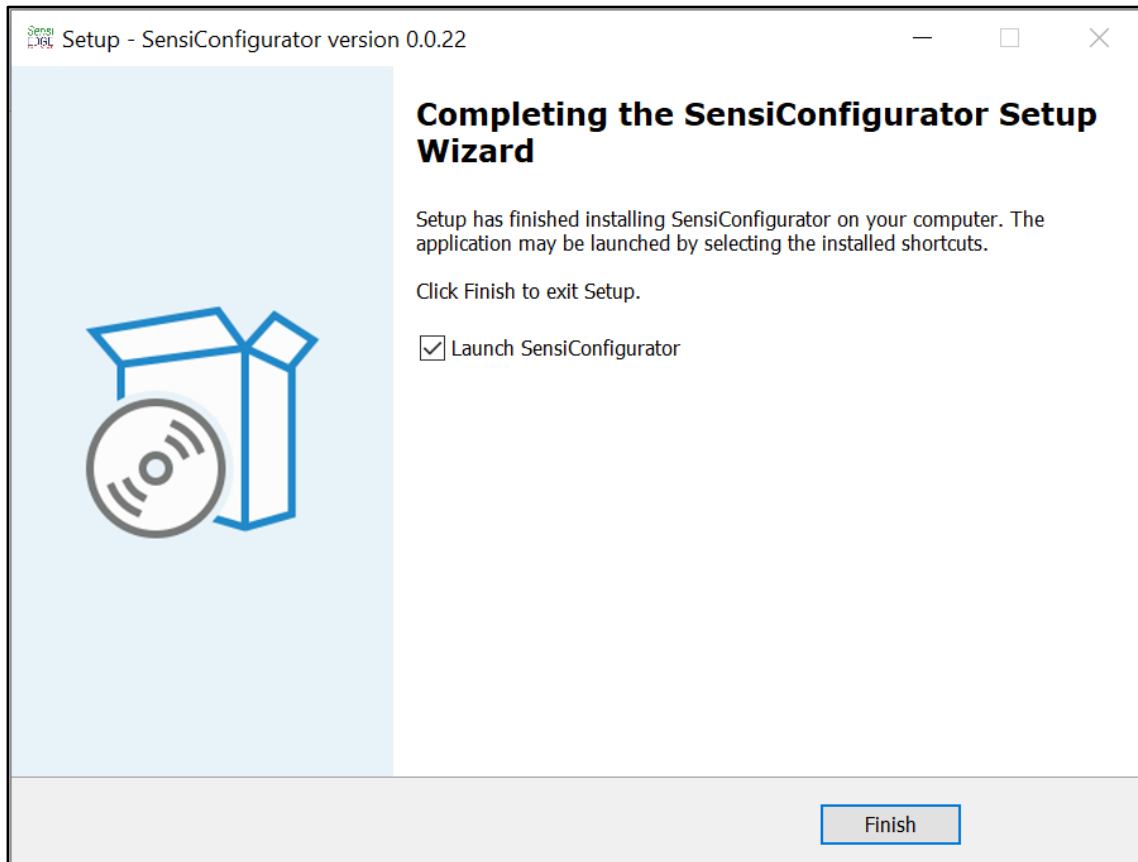


2. During installation, select the program **installation path** and check the box **Create a desktop shortcut**.

3. After installing the program, you can run the program through the icon or do not uncheck the box **Launch SensiConfigurator** and click on **Finish** in Setup, then the **SensiConfigurator** program will automatically start.



**Figure 2.** StartSensiConfigurator



4. If you are using an older version of Windows than Windows 10, you need to download and install the driver: [STM32 Virtual COM Port Driver](#)

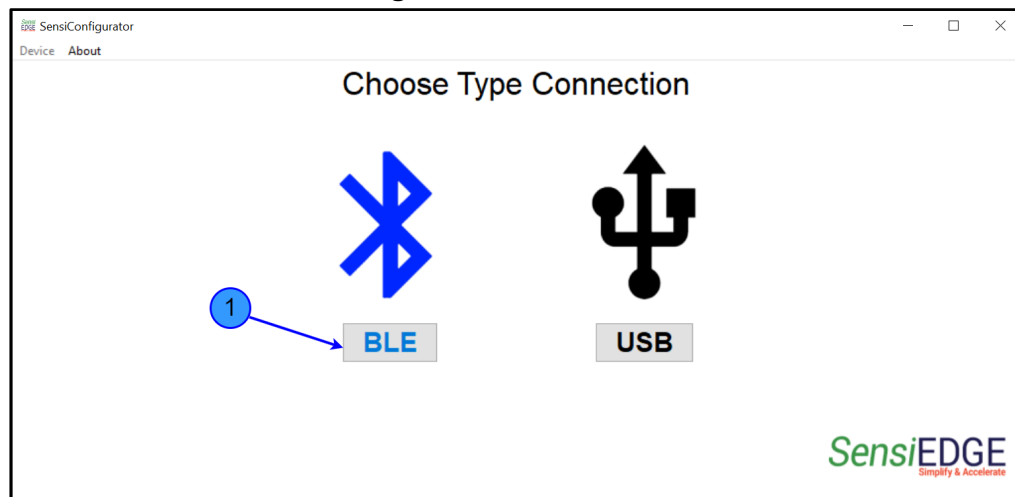
## 2. Connection types

## 2.1 Connection from BLE

1. Turn on Bluetooth and choose a **BLE** connection. Bluetooth connection is supported by the following devices:

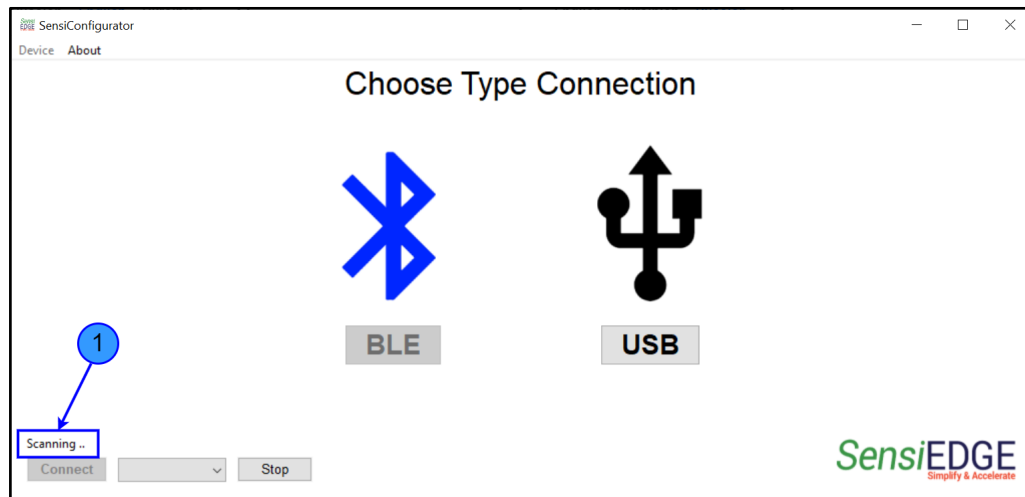
- SensiBLE 1.0
- SensiBLE 2.1

**Figure 3.** Choose BLE



2. After clicking BLE, automatic scanning of BLE devices will begin. The scan will last 7 seconds.

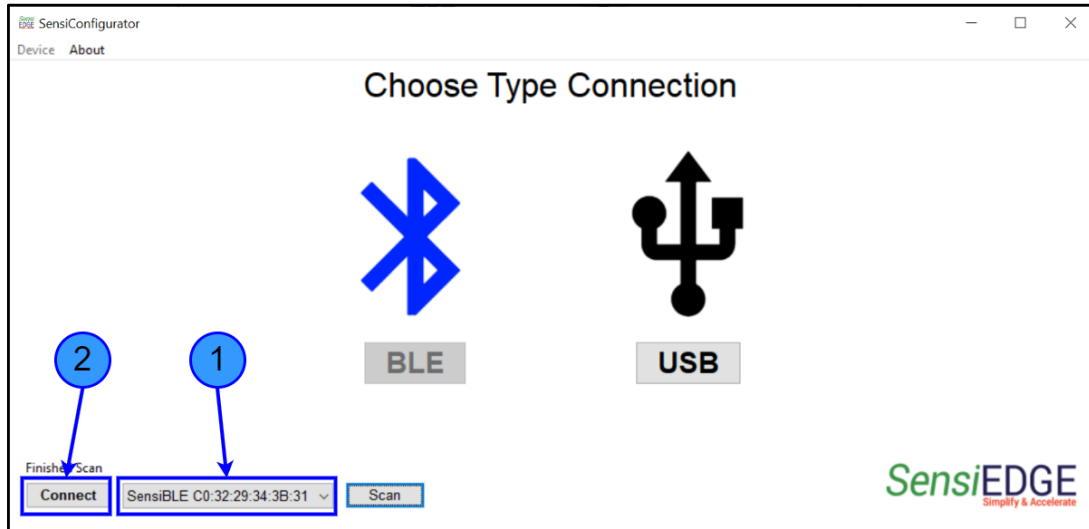
**Figure 4.** Scanning BLE devices



3. In the window (step 1) you can see a list of found devices. Select the desired device (step 1) and click the **Connect** button (step 2). If no

devices were found, then click the **Scan** button again, also check whether the device you want to connect to is working.

**Figure 5.** Connected to BLE device

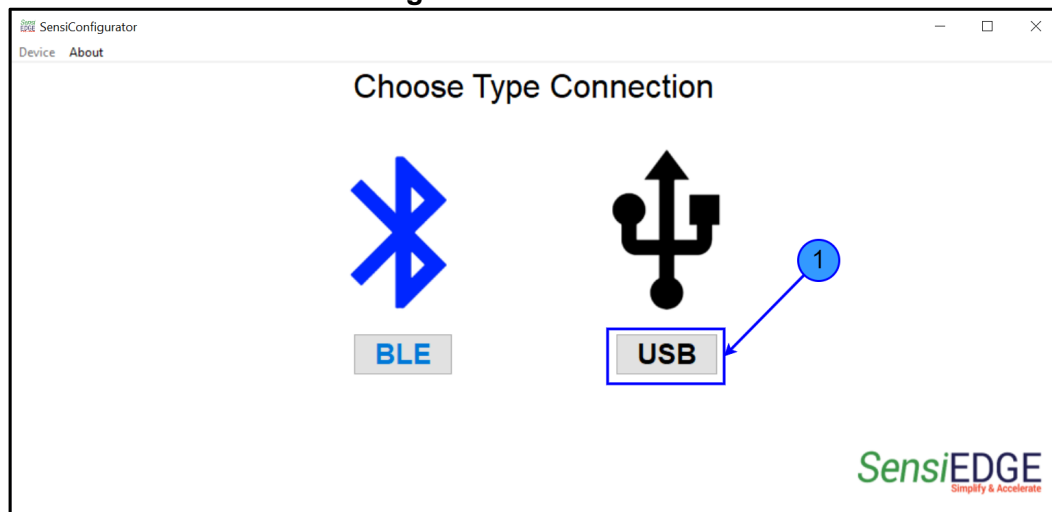


## 2.2 Connection from USB

1. Choose a **USB** connection. USB connection is supported by the following devices:

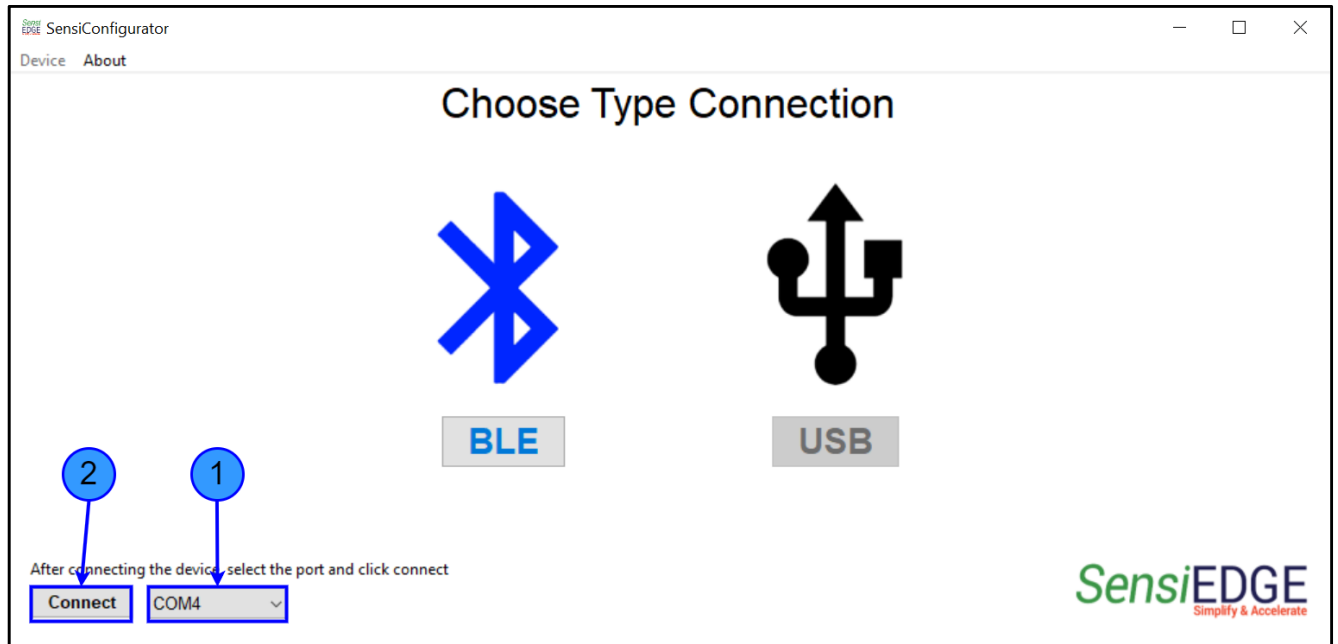
- SensiLoRa 2.0
- CommonSense

**Figure 6.** Choose USB



2. In the window (step 1) you can see a list of found devices. Select the desired device (step 1) and click the **Connect** button (step 2).

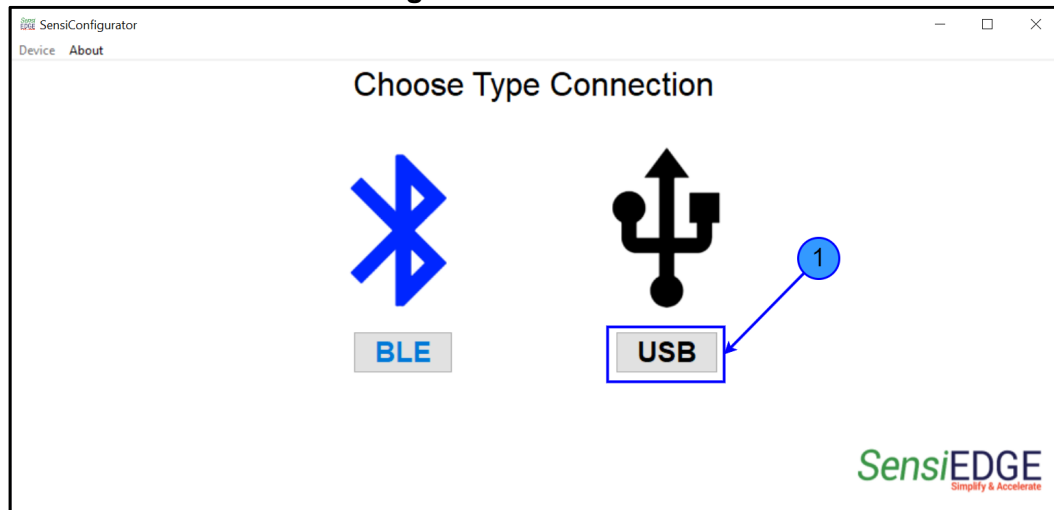
**Figure 7.** Connected to USB device



### 2.3 Example connection to SensiLoRa 2.0

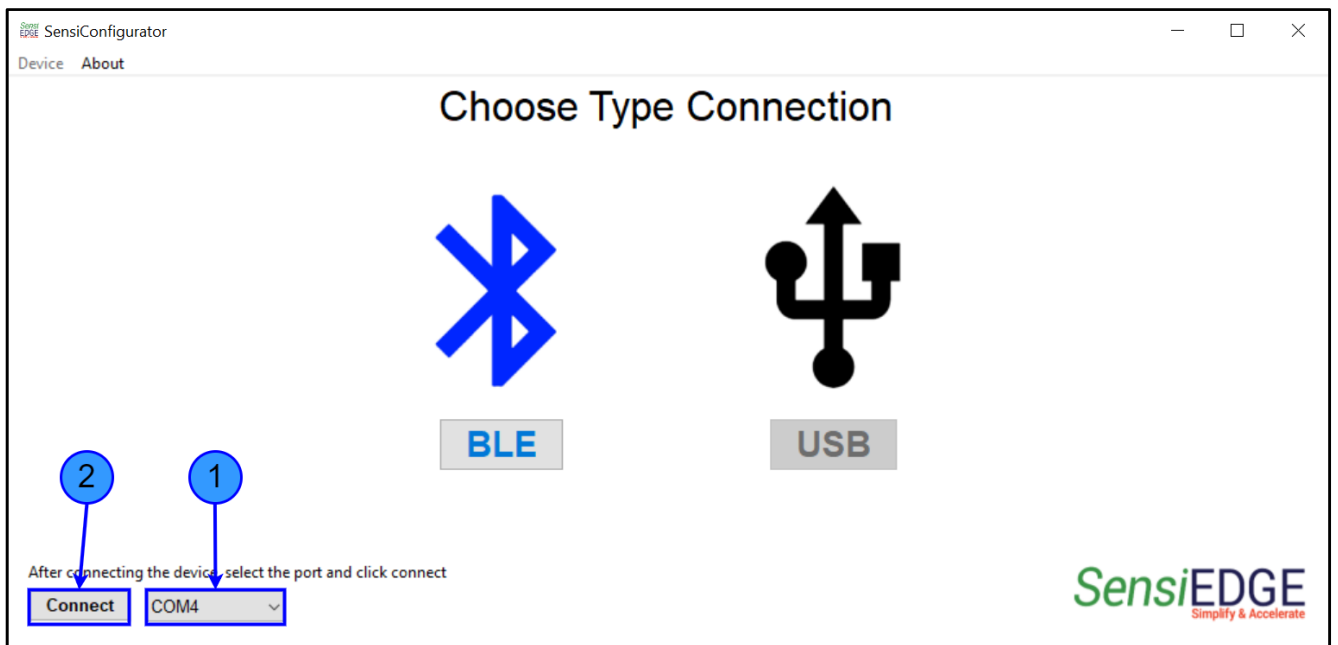
1. Choose a **USB** connection.

**Figure 8.** Choose USB



2. Connect the SensiLoRa 2.0 device to the computer using the USB Type-C port. After connecting the device, a computer port should appear in the window. Choose com-port and click the **Connect** button.

**Figure 9.** Connected to SensiLora 2.0



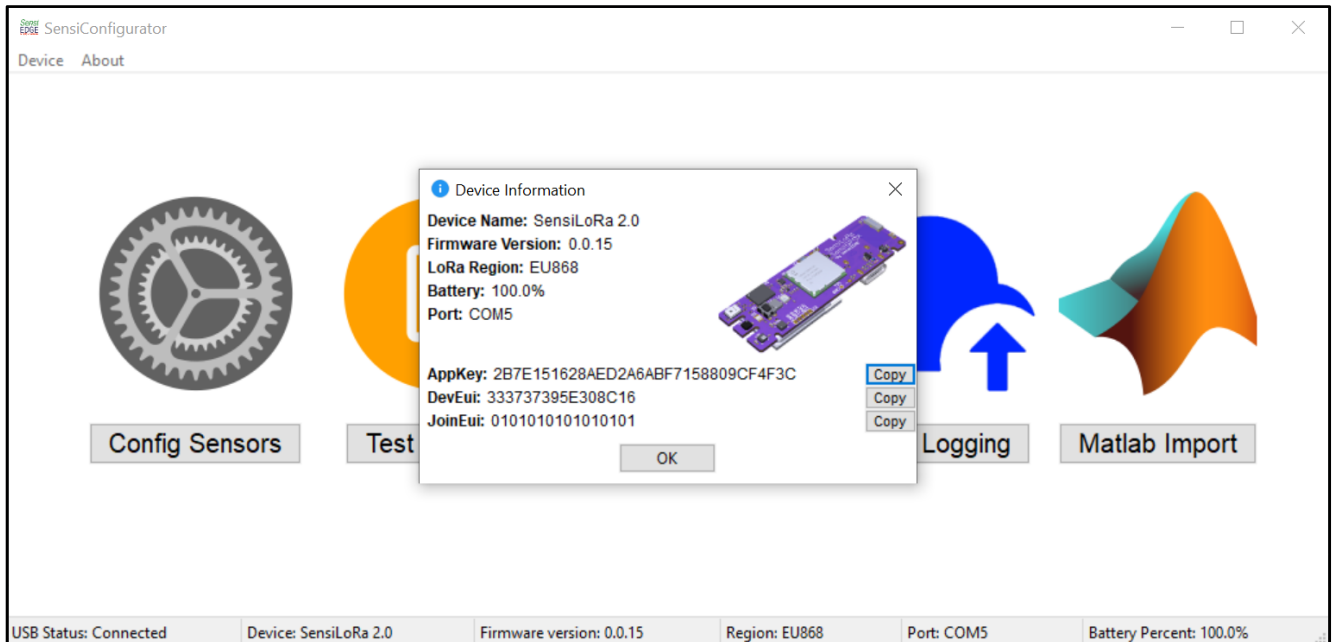
3. If the connection is successful, then we will see a message **Device Information**.

**Warning:** After connecting, wait 3 minutes before reading temperature and humidity values. This is because when the SensiLoRa 2.0 is connected to the computer, the battery starts charging and this heats up the board. Correction coefficients have been added to the firmware, which are applied when connected to the SensiConfigurator to stabilize temperature and humidity values.

**Warning:** When charging the battery, the SensiLoRa 2.0 heats up and because of this, the temperature value increases and the humidity reading decreases.

**Warning:** During USB charging additional heating is influenced by Temperature and Pressure sensor. Be advised to use the measurement of those sensors only from battery operation.

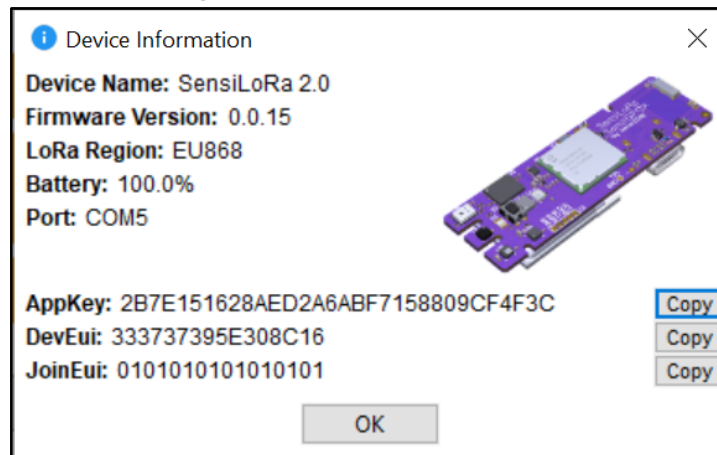
**Figure 10.** Successful connection



4. In a message **Device Information**, where:

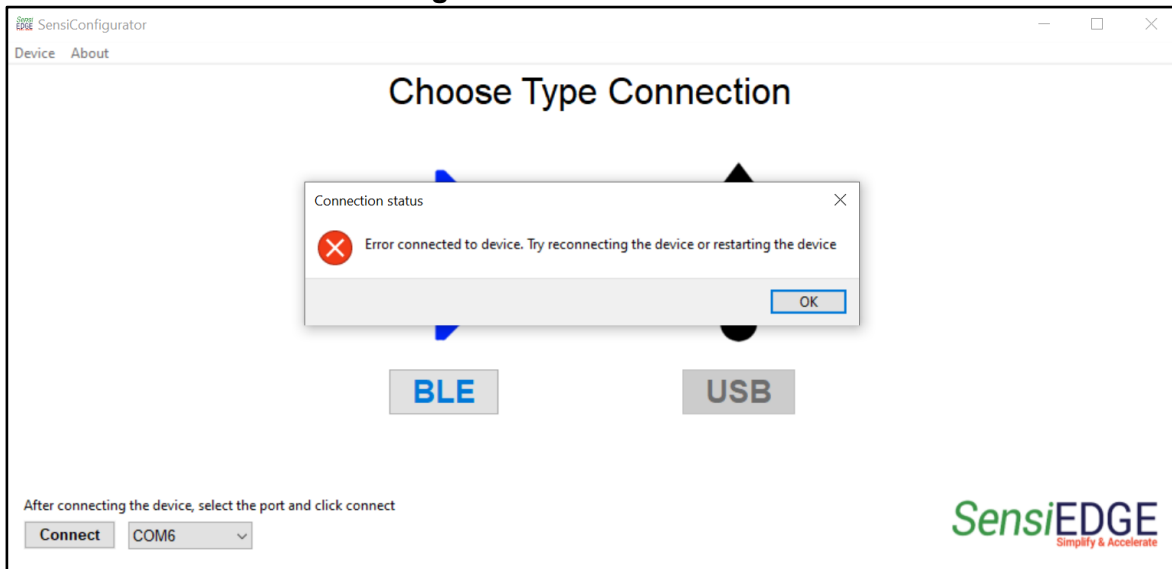
- **Device Name** - Device name of the connected device;
- **Firmware Version** - Firmware version of the connected device;
- **Lora Region** - Lora region, which is used in the connected device;
- **Battery** - Battery percent;
- **Port** - USB Com Port;
- **AppKey** - AES128 Root Key, used for LoRa Server;
- **DevEui** - 64-bit end-device identifier, used for LoRa Server;
- **JoinEui** - 64-bit end-device identifier, used for LoRa Server;

**Figure 11.** Device Information



5. If there is an error when connecting, then try to select another comport, press the connection again, check the USB cable, or restart the device by disconnecting the USB cable and batteries using the jump J4.

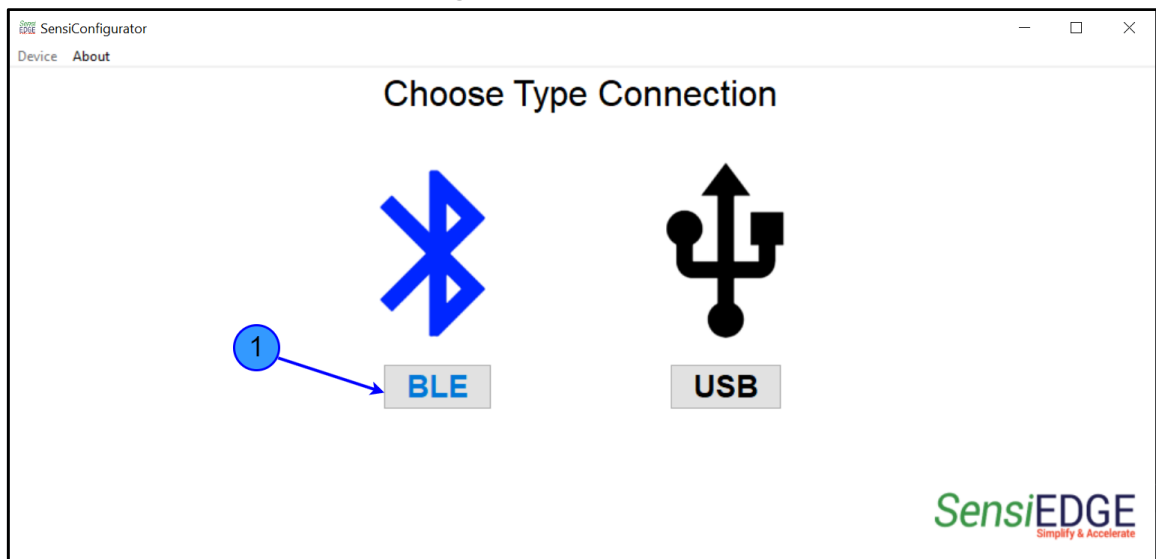
**Figure 12.** Connected error



## 2.4 Example connection to SensiBLE 1.0

1. Turn on Bluetooth and choose a **BLE** connection.

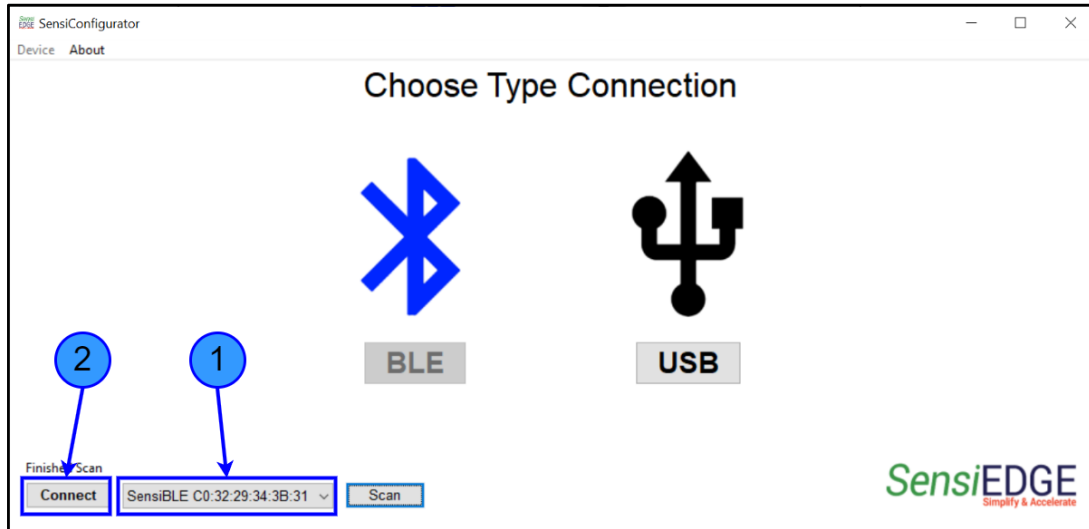
**Figure 13.** Choose BLE



2. in the window (step 1) you can see a list of found devices. Select the desired device (step 1) and click the **Connect** button (step 2). If no

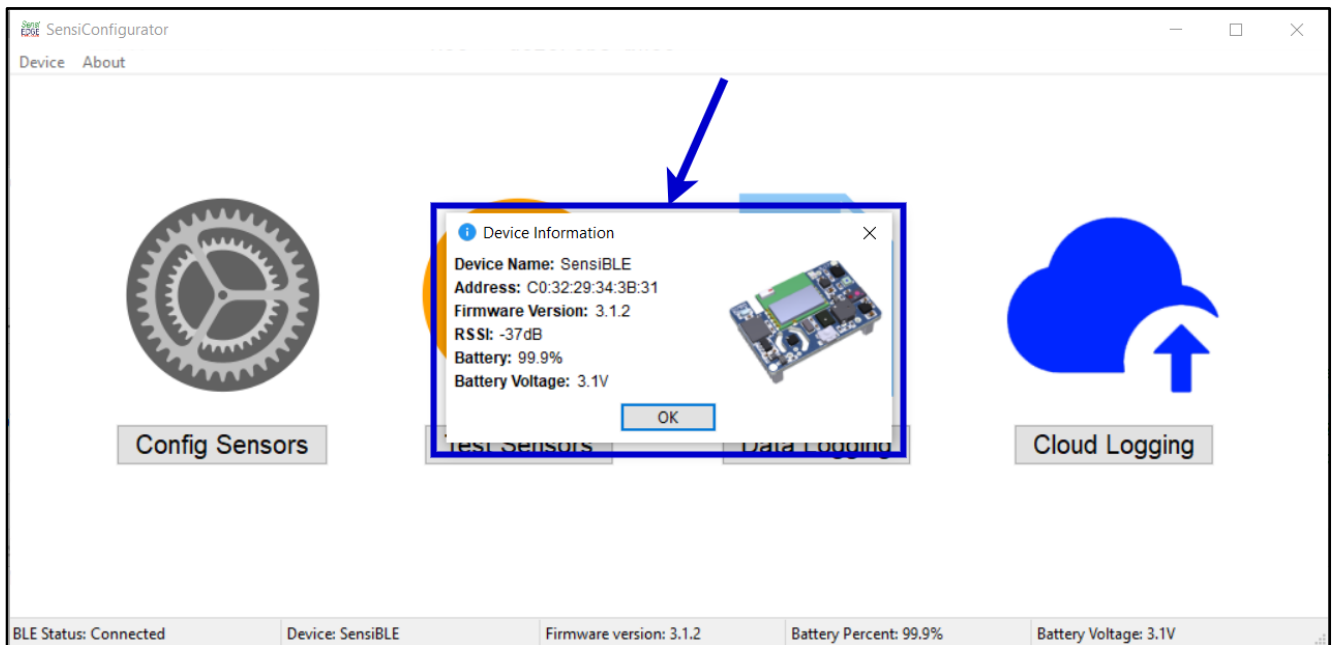
devices were found, then click the **Scan** button again, also check whether the device you want to connect to is working.

**Figure 14.** Connected to SensiBLE 1.0



3. If the connection is successful, then we will see a message **Device Information**.

**Figure 15.** Successfully connected to SensiBLE 1.0



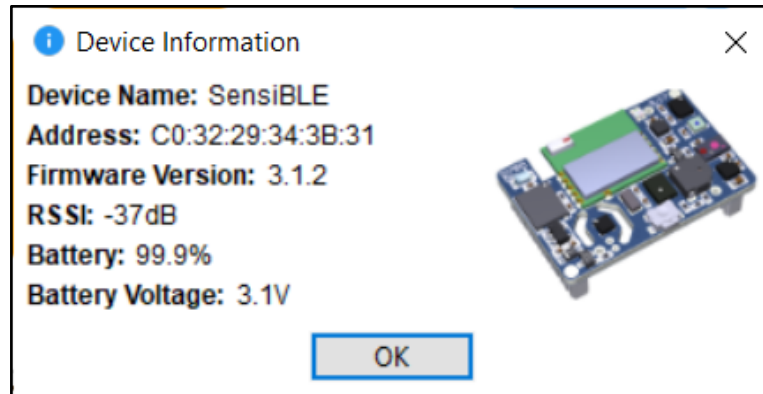
4. In a message **Device Information**, where:

- **Device Name** - Device name of the connected device;
- **Address** - MAC address of the connected device;



- **Firmware Version** - firmware version of the connected device;
- **RSSI** - Received Signal Strength Indicator
- **Battery** - Battery percent;
- **Battery voltage** - Battery voltage;

**Figure 16.** Device Information



### 3. Choose Page

#### 3.1. Description

1. After Connected will appear Choose Page, where:

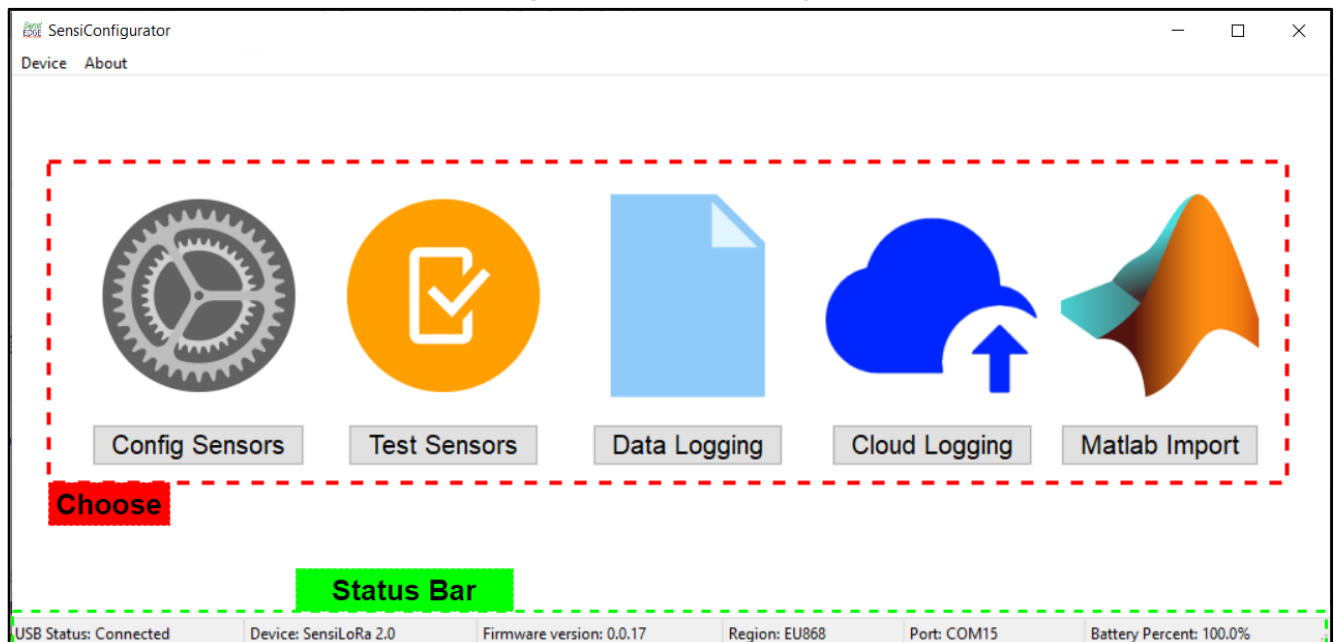
Choose:

- **Config Sensors** - Configuration Sensors, Calculate LoRa distance, changes LoRa Region and Period Transmit.
- **Test Sensors** - Displaying Sensors values.
- **Data Logging** - Data Logging indication values.
- **Cloud Logging** - Send Sensors value to Cloud
- **Matlab Import** - Generate script for Matlab. (Support only SensiLoRa 2.0)

StatusBar:

- **USB status** - status Device connect.
- **Device** - name connected device.
- **Firmware version** - Firmware version connected device.
- **Region** - LoRa Region which uses. (Support only SensiLoRa 2.0)
- **Port** - USB Com Port which is connected.
- **Battery** - Battery Percent.

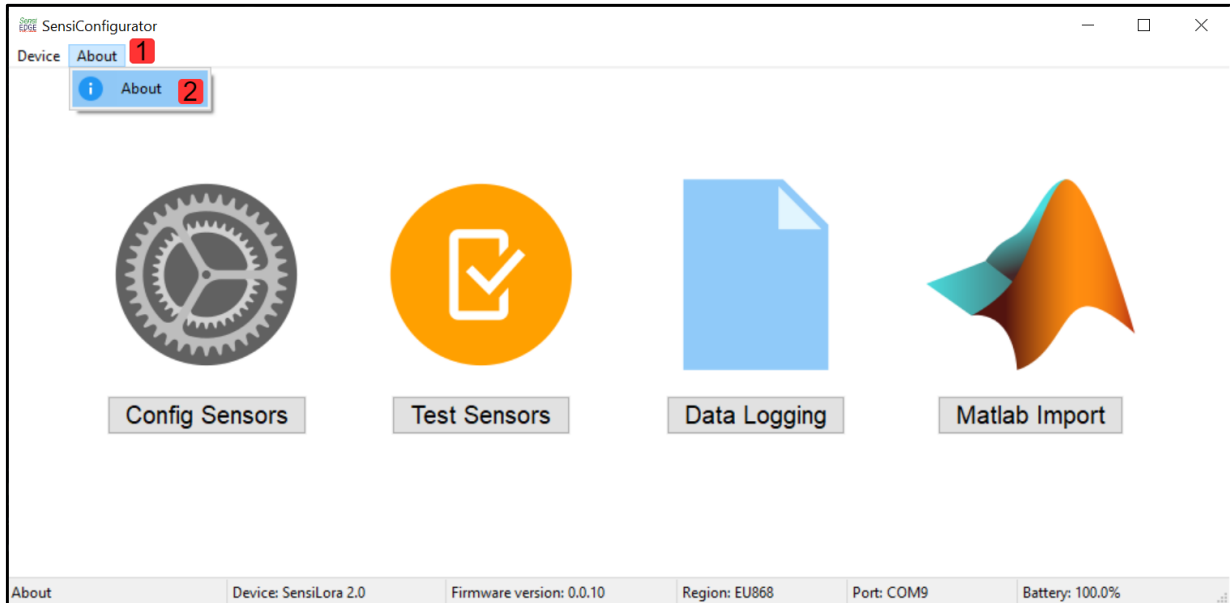
**Figure 17.** Choose Page



### 3.2 About Program

1. To view information about the program go to **About** (1 step) and select **About** (2 step).

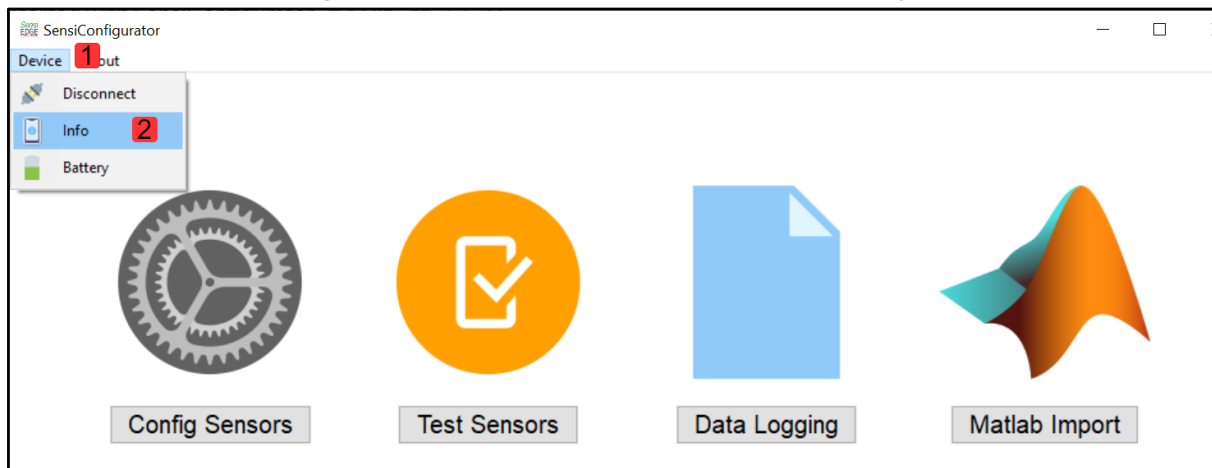
**Figure 18.** Choose About Page



### 3.3 Device Information

1. To view information about the device go to **Device** (1 step) and select **Info** (2 step). Also, this information appears when connecting.

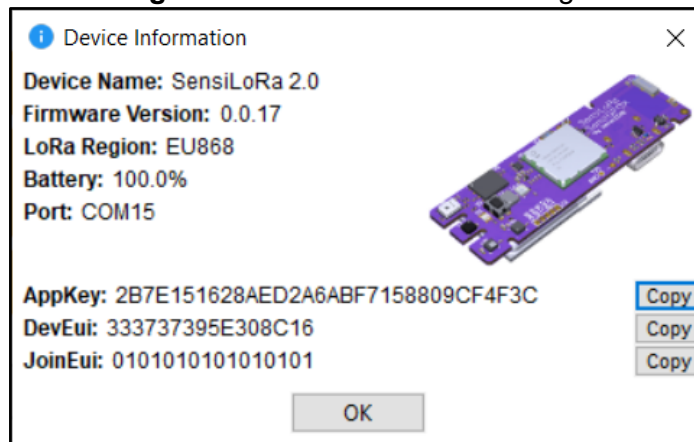
**Figure 19.** Choose the Information Device Page



2. In the Information Page located:

- **Device Name** - Device name of the connected device;
- **Firmware Version** - Firmware version of the connected device;
- **Lora Region** - Lora region, which is used in the connected device;
- **Battery** - Battery percent;
- **Port** - USB Com Port;
- **AppKey** - AES128 Root Key, used for LoRa Server;
- **DevEui** - 64-bit end-device identifier, used for LoRa Server;
- **JoinEui** - 64-bit end-device identifier, used for LoRa Server.

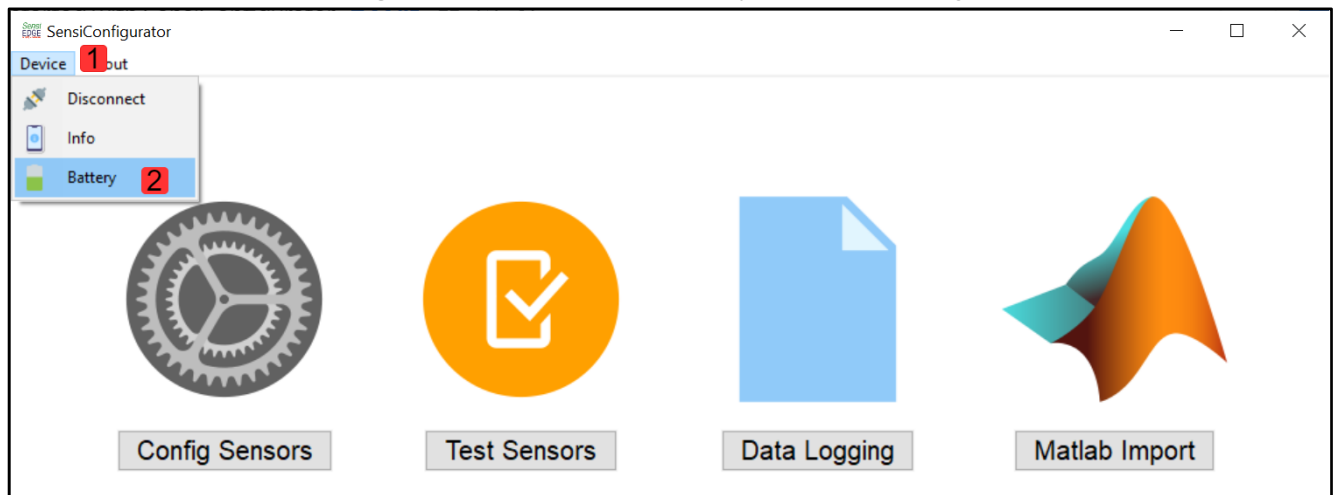
**Figure 20.** Information Device Page



### 3.4 Battery Information (only SensiLoRa 2.0)

1. To view information about the device go to **Device** (1 step) and select **Battery** (2 step).

**Figure 21.** Choose the Battery Information Page



2. In Battery Information Page, located:

- **Estimated time work with Battery** - calculate the work time of the device from the remaining percentage of the battery. The work time is affected by the parameters of the data transmission period LoRa and the power of the LoRa transmitter.
- **Battery remaining time** - calculate the battery life of the device when fully charged. The operating time is affected by the parameters of the data transmission period and the power of the Lora transmitter.
- **Percent Battery** - percent Battery.
- **Battery Voltage** - Voltage Battery.

**Figure 22.** Battery Information Page

### 3.5 Changes in Battery Capacity

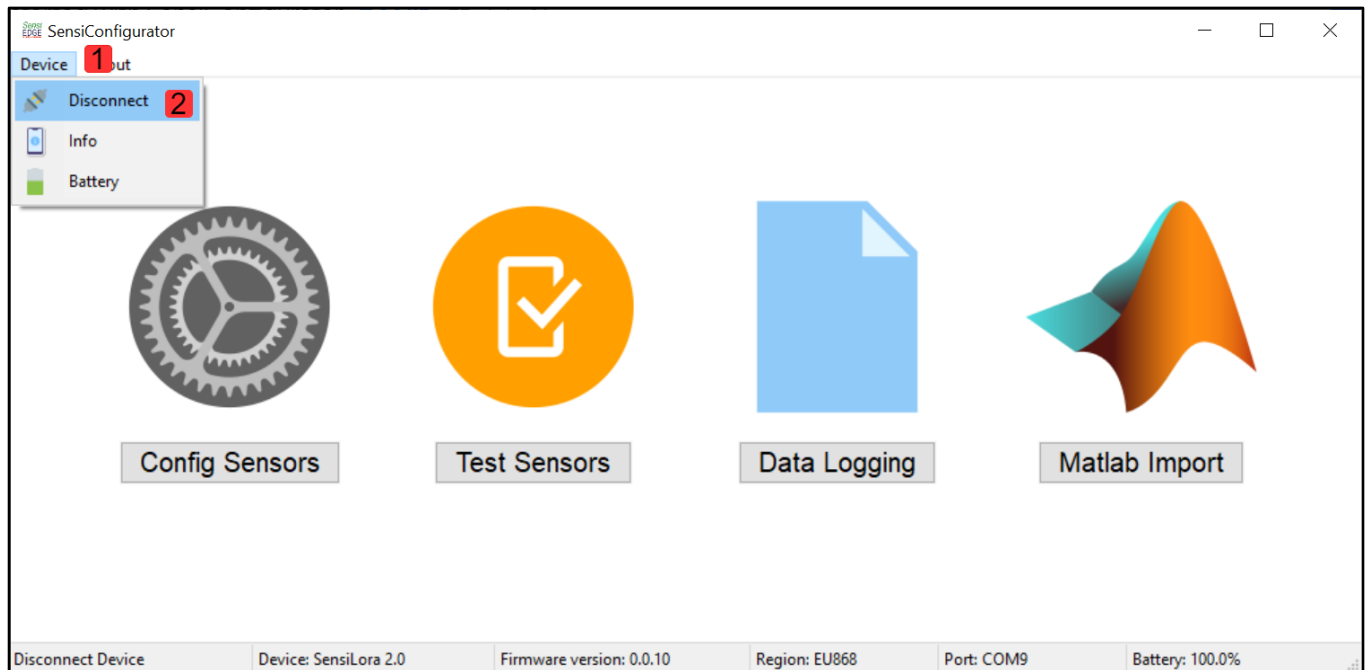
1. For changes to Battery capacity click to enable **Changes Battery Capacity** (step 1), then change the value to **Battery capacity** (step 2) and click to **Save** (step 3) new capacity.

**Figure 23.** Changes Battery Capacity

### 3.6 Disconnect device

1. To view information about the device go to **Device** (1 step) and select **Disconnect** (2 step).

**Figure 24.** Disconnect Device

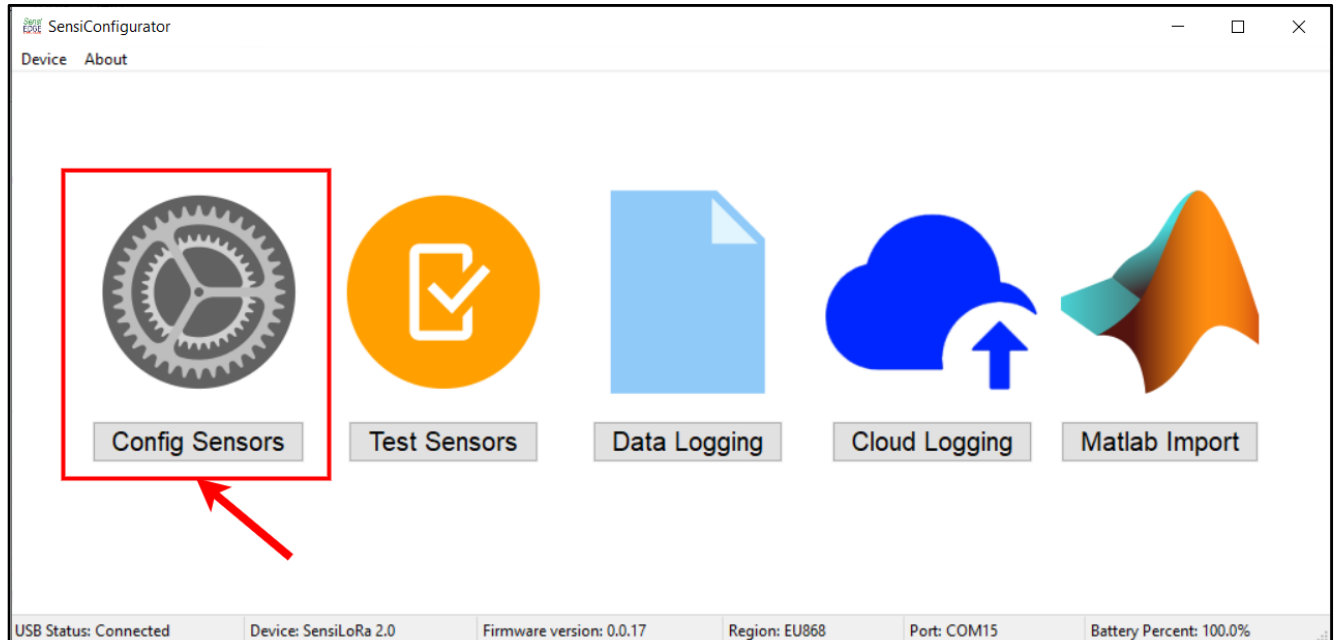


## 4. Configuration Sensors

### 4.1 Description

1. Choose **Config Sensors** Page.

**Figure 25.** Choose Config Sensors Page



2. In the Config Sensors Page located:

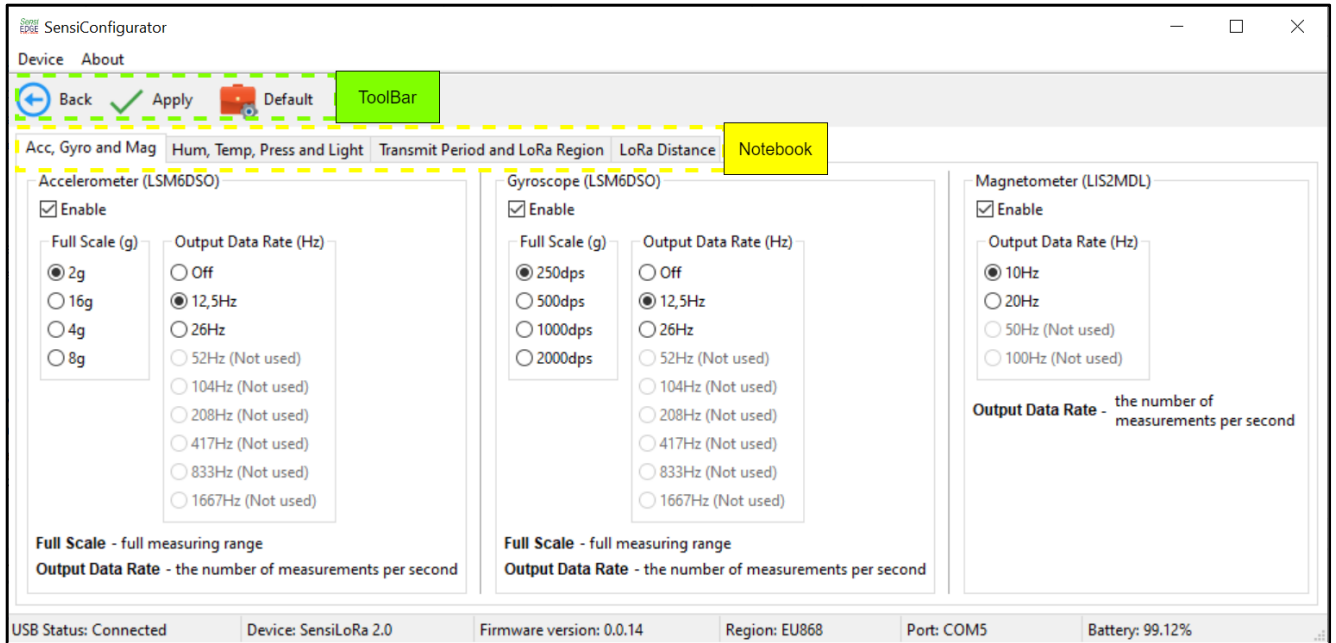
#### ToolBar

- **Back** - Back in Menu Page
- **Apply** - Apply the change configuration
- **Default** - Apply default configuration sensors

#### Notebook

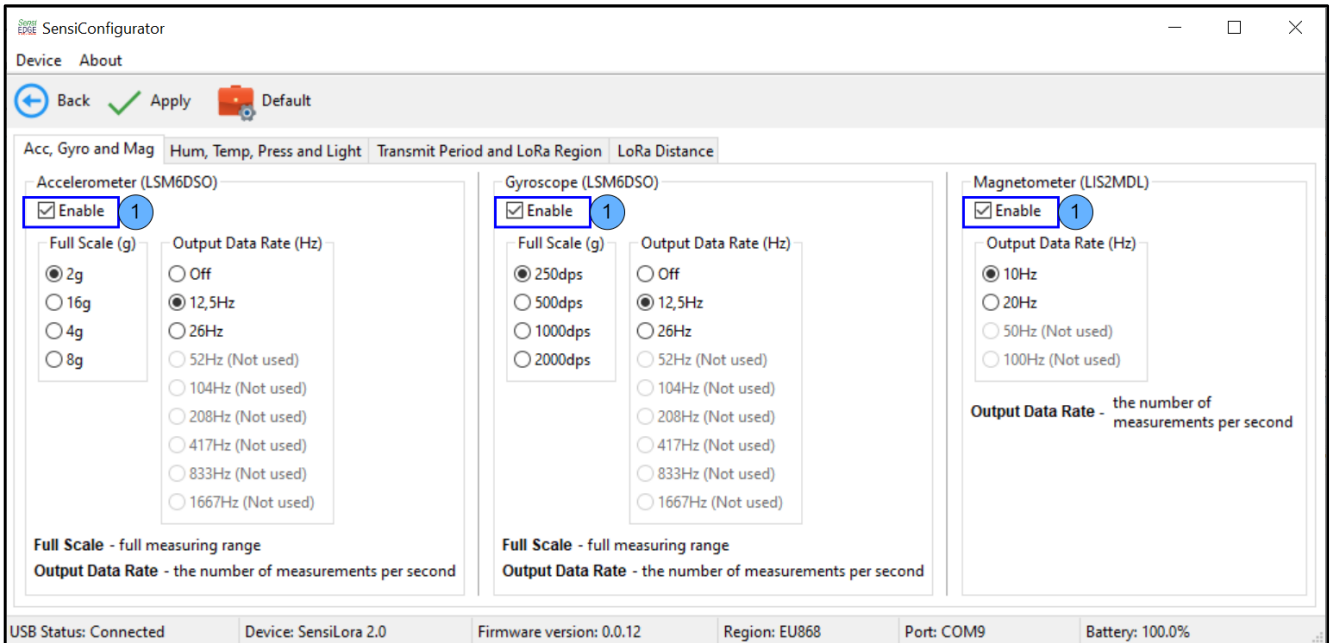
- **Acc, Gyro, and Mag** - configuration Accelerometer, gyroscope, and Magnetometer sensors
- **Hum, Temp, Press, and Light** - configuration Humidity, Temperature, Pressure, and Light sensors
- **Transmit Period and LoRa Region** - change Period Transmit data and Lora Region (only SensiLoRa 2.0)
- **LoRa Distance** - calculate Lora Distance (only SensiLoRa 2.0)

**Figure 26.** Configuration Sensors Page



3. Each sensor can be enabled or disabled, if the checkbox is checked, the sensor is enabled (step 1). If the sensor is disabled, then instead of its values, 0 will be transmitted to the LoRa server.

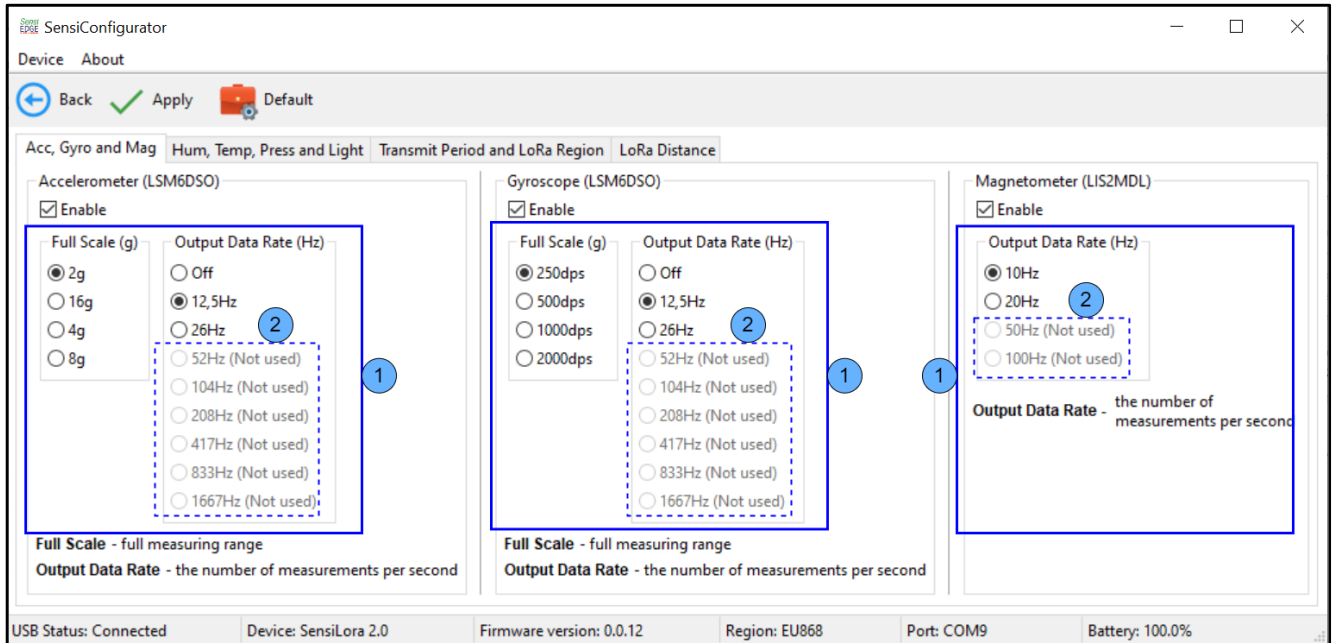
**Figure 27.** Enable/Disable Sensor





4. Each Sensor has its settings, which are taken from the Datasheet for the Sensor (step 1). Some settings for sensors are not used on the SensiLoRa 2.0 board (step 2).

**Figure 28.** Settings Sensor



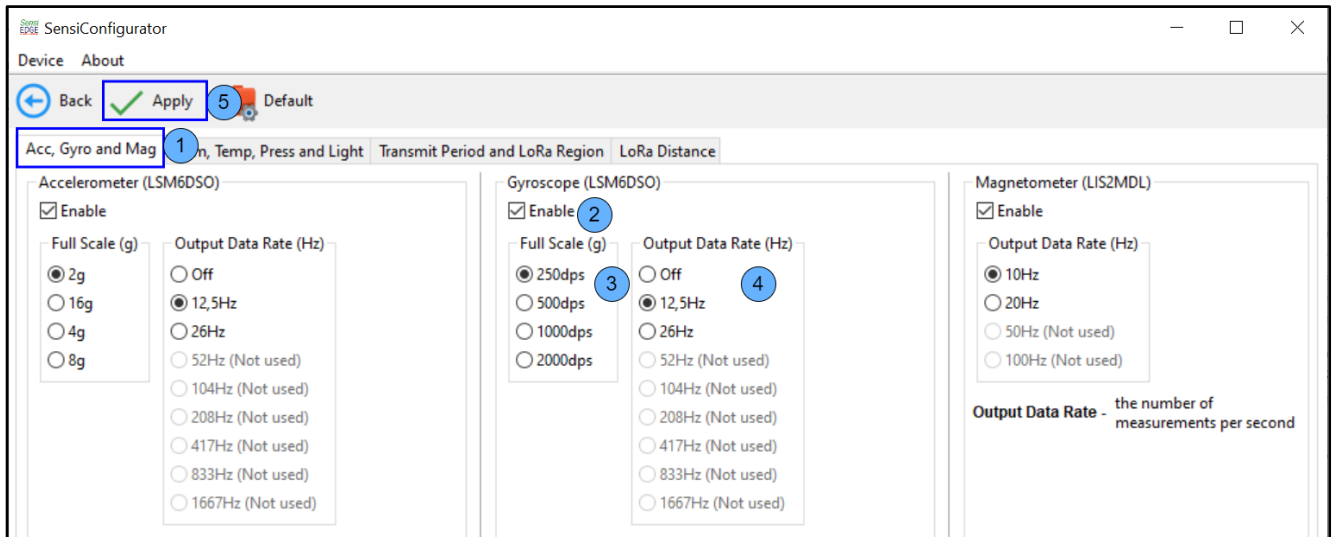
### 5. Description of settings:

- **Full Scale (FS)** - It defines the range of values that can be measured. If the sensor is temporarily exposed to high levels out of the range, no damage is expected unless a critical value is applied.
- **Output Data Rate (ODR)** - Rate (in Hz) at which new sensor data are available to the user
- **Average samples** (Humidity or Temperature) - the numbers of averaged (humidity or temperature) samples. The larger the value, the greater the accuracy, and the less noise affects the measurements.
- **Resolution/Bit Width (Bit)** - this setting is used for the Light Sensor. The larger the BIT, the more accurate the measurement, but the measurement takes longer.
- **Measurement Rate (Ms)** - this setting is used for the Light Sensor. The time of the measurement, the longer the Measurement Rate, the greater the accuracy.

## 4.2 Example Configuration Gyroscope Sensor

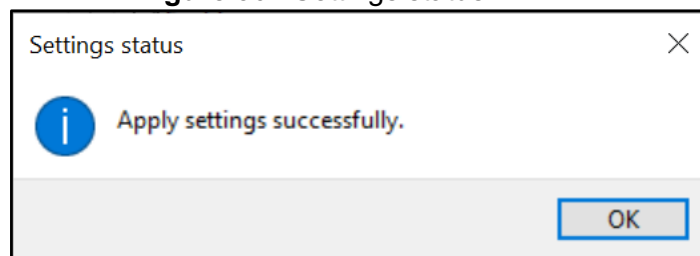
1. To change the Gyroscope configuration, select the **Acc, Gyro, and Mag** table (step 1), then find the parameters for the Gyroscope and select **on/off** (step 2) and the needed parameter **Full Scale** (step 3), **Output Data Rate** (step 4) and click to **Apply** new parameters (step 5).

**Figure 29.** Configuration Gyroscope Sensor



2. After successfully applying the settings, the following window should appear.

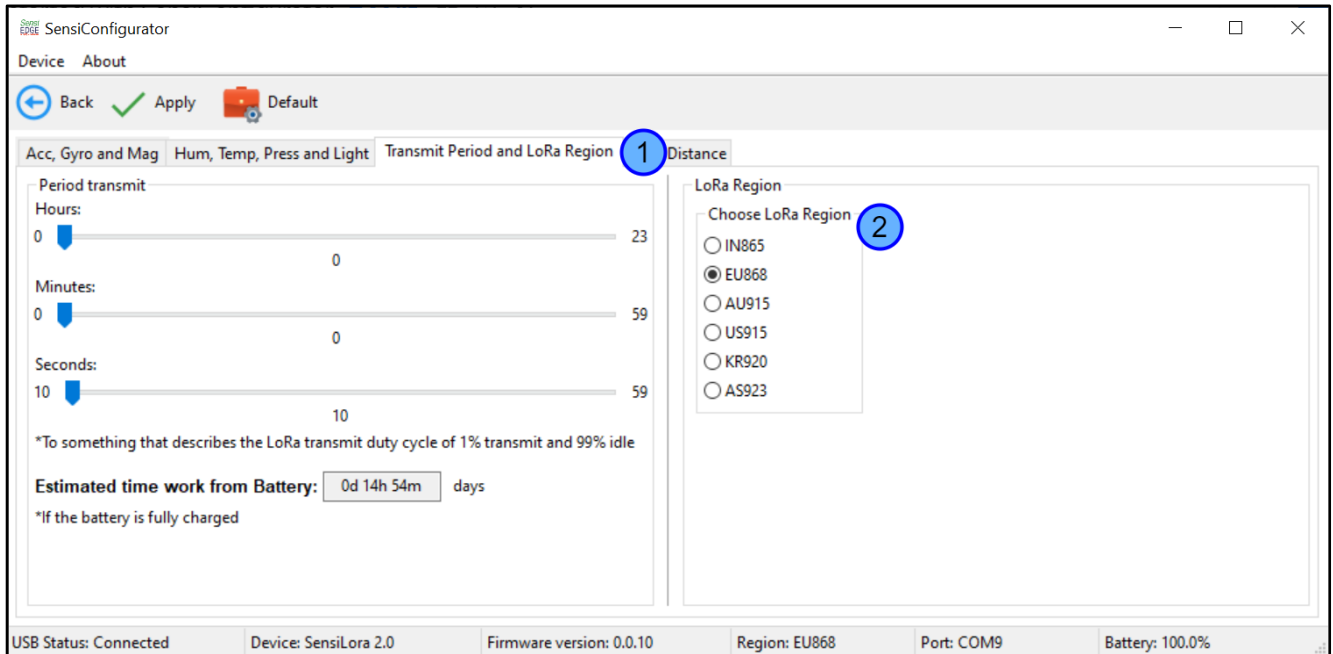
**Figure 30.** Settings status



### 4.3 Example Changes LoRa Region (only SensiLoRa 2.0)

1. To change the LoRa Region, select **Transmit Period and LoRa Region table** (step 1) and select **Need LoRa Region** (step 2).

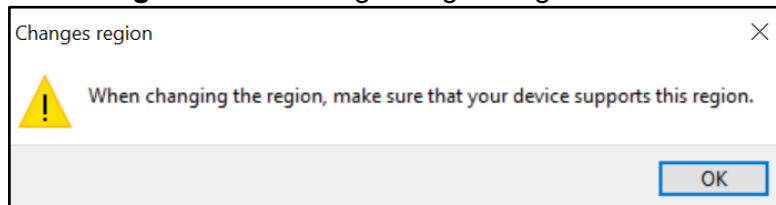
**Figure 31.** Changes LoRa Region



2. After changing the LoRa Region, a warning will appear that you need to check the compatibility of the region with the device:

- **EU866** - supports EU868 and IN865 LoRa Regions
- **US915** - supports AU915, US915, KR920, and AS923 LoRa Regions

**Figure 32.** Warning changes Region



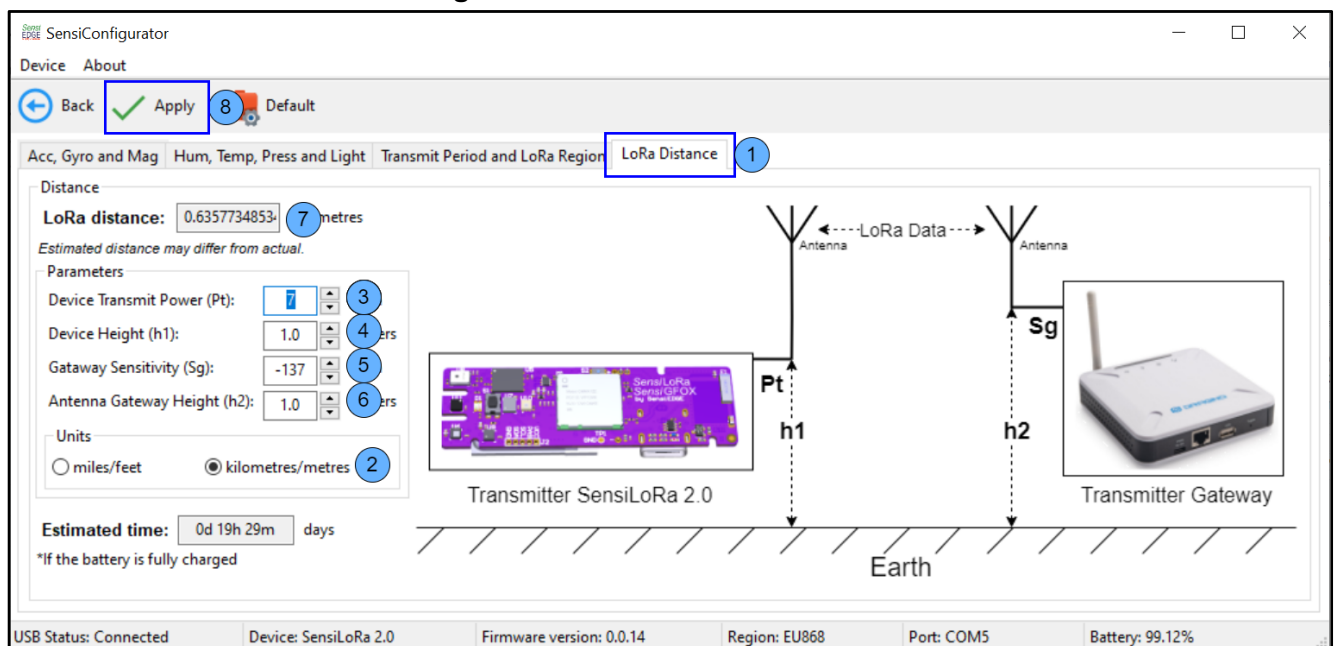
## 4.4 Example Calculate LoRa Distance (only SensiLoRa 2.0)

1. To calculate Distance, select the **LoRa Distance** table (step 1), then select **Units** (step 2) and enter the parameters:

- **Device Transmit Power** (step 3) - when the Transmit power is increased, the range will increase, but the battery work of the device will decrease
- **Device Height** (step 4) - the LoRa antenna is soldered on the device, you need to specify the distance of the device from the ground
- **Gateway Sensitivity** (step 5) - this parameter is the sensitivity of the LoRa receiver in the Gateway, it can be found on the manufacturer's website on Gateway or in the datasheet for the Gateway. For example, Dragino LPS8 has -137 Sensitivity.
- **Antenna Gateway Height** - you need to specify the distance of the LoRa Antenna Gateway from the ground

2. In the window, there is a range for parameters that are lower (step 7). For save parameters click to **Apply** (step 8).

**Figure 33.** Calculate LoRa Distance

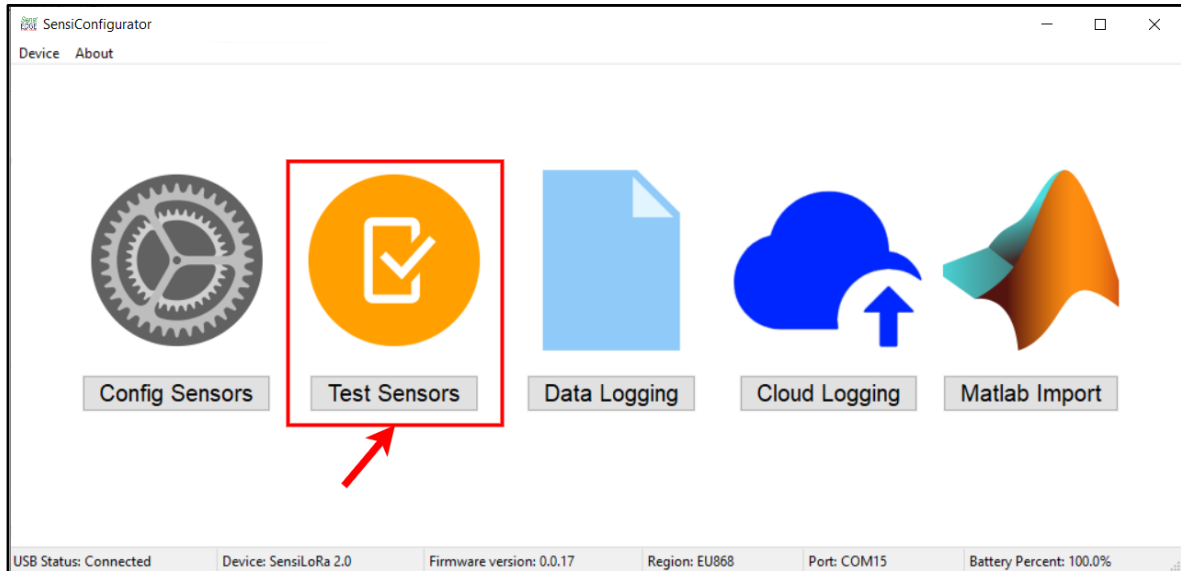


## 5. Test Sensors Page

### 5.1 Overview

1. Choose the Test Sensors Page.

**Figure 34.** Choose the Test Sensors Page



2 In the Test Sensors Page we see

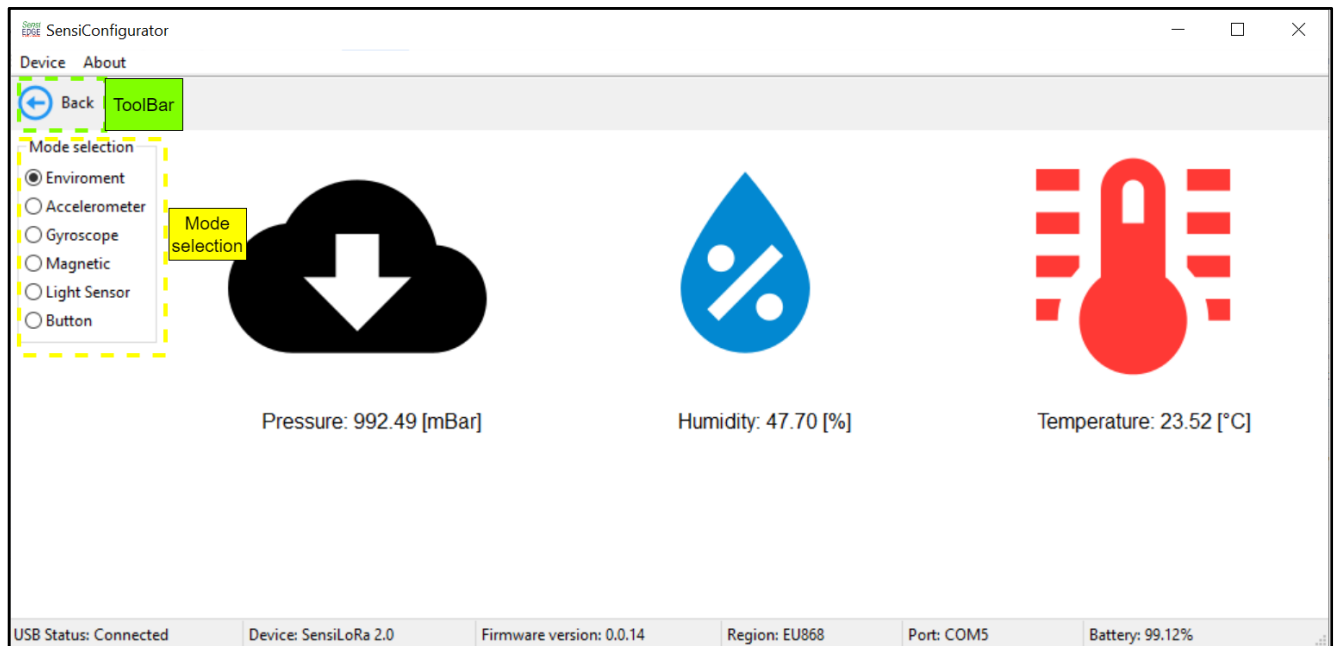
ToolBar:

- **Back** - Back to Menu Page

Mode Selection:

- **Environment** - Pressure, Humidity, and Temperature value Sensors
- **Accelerometer** - Accelerometer values Axes
- **Gyroscope** - Gyroscope values Axes (not support SensiBLE 2.1)
- **Magnetic** - Magnetometer values Axes
- **Light** - Light value
- **Button** - Button click test (only for SensiLoRa 2.0)
- **Proximity Sensor** - Distance value (only for CommonSense)
- **Orientation** - position of the device in space (not support CommonSense)
- **Sound Meter** - measure noise volume in decibels
- **Buzzer** - test Buzzer (only for CommonSense)
- **Volatile organic compounds Sensor** - value VOC (only for CommonSense)

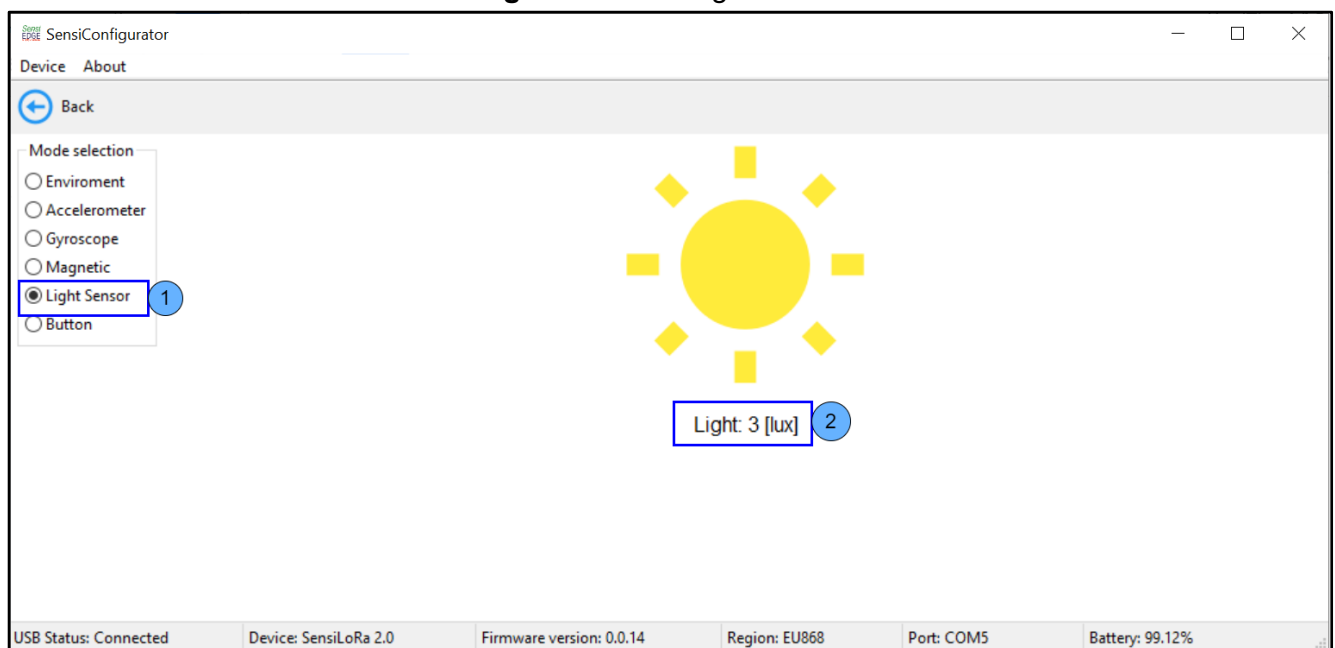
**Figure 35.** Test Sensors Page for SensiLoRa 2.0



## 5.2 Example Test Light Sensor

1. In Mode selection choose **Light Sensor** (step 1) and a window with the illumination value will appear (step 2).

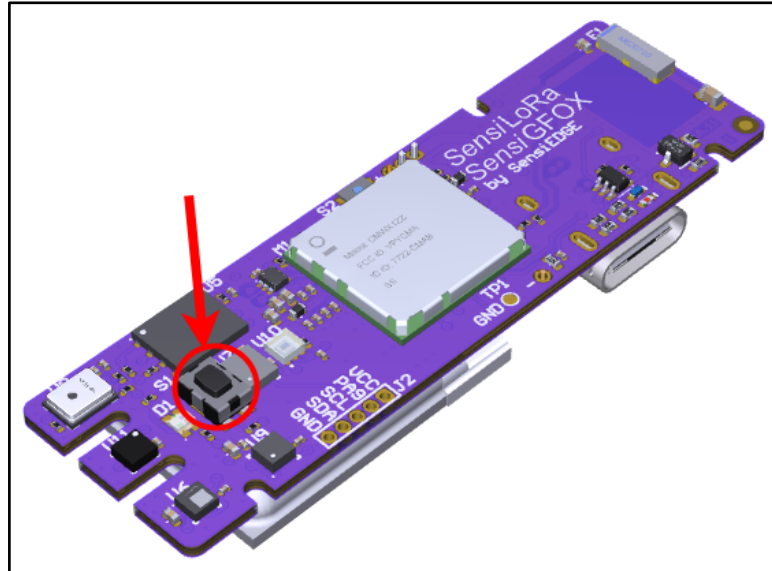
**Figure 36.** Test Light Sensor



### 5.3 Example Test a Button (only for SensiLoRa 2.0)

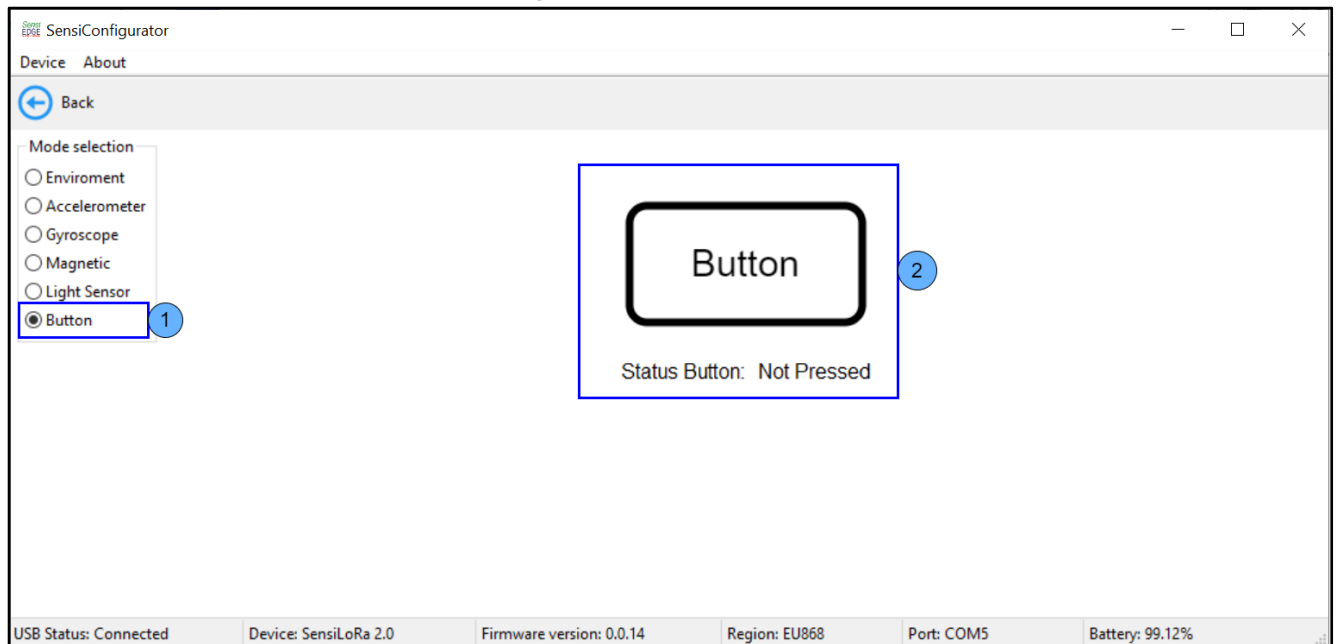
1. Placement of the button **S1** on the SensiLoRa 2.0 board.

**Figure 37.** Button



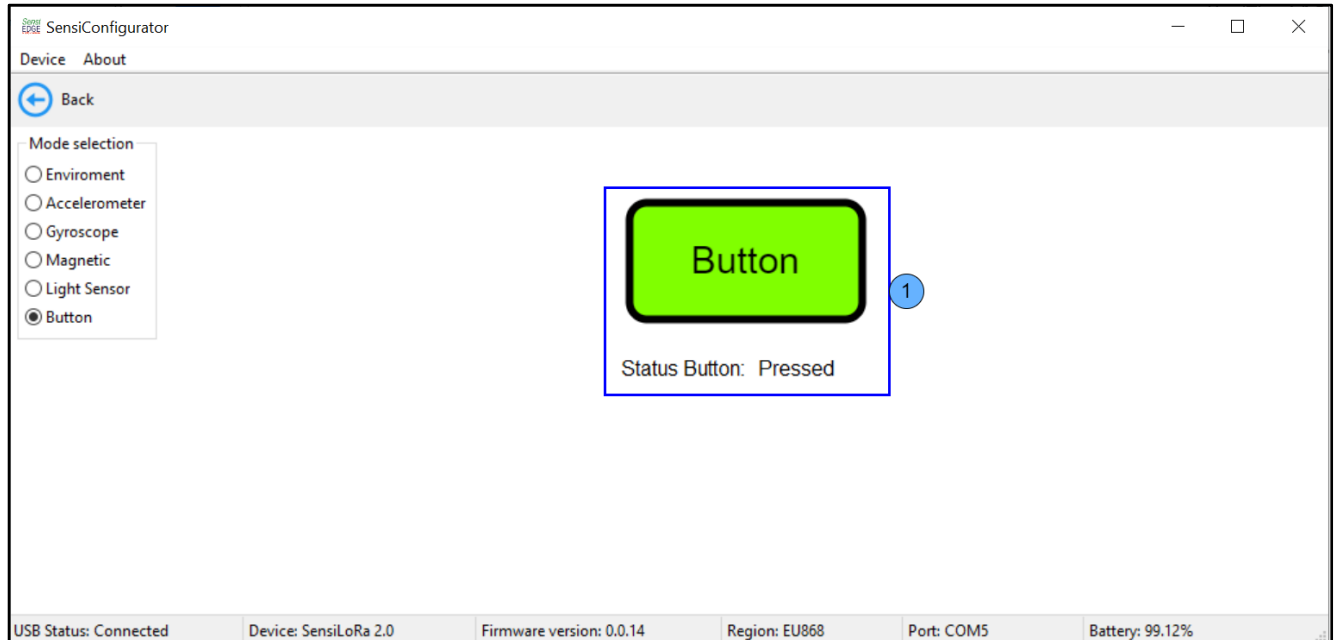
2. In Mode selection choose **Button** (step 1). If the button is not pressed, this animation will be seen (step 2).

**Figure 38.** Test a Button



3. When you click on the button S1, an animation should appear (step 1).

**Figure 39.** Test a Button



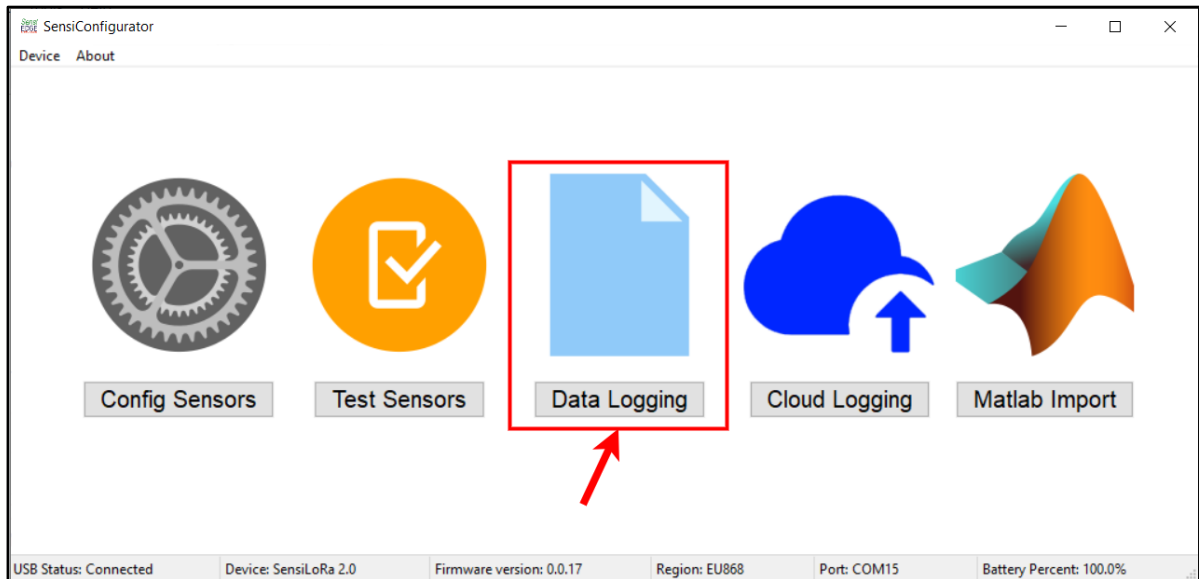
## 6. Data Logging Page

### 6.1 Data Logging Start

1. Choose the **Data Logging** Page.

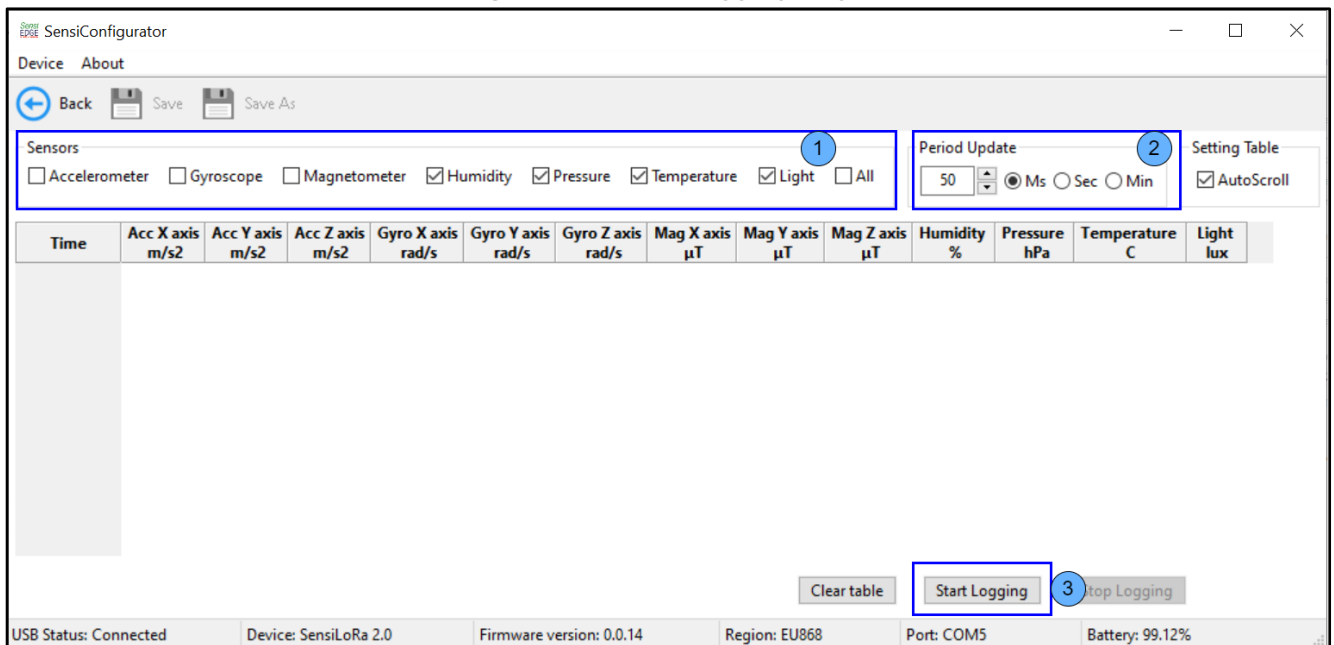


Figure 40. Choose the Data Logging Page



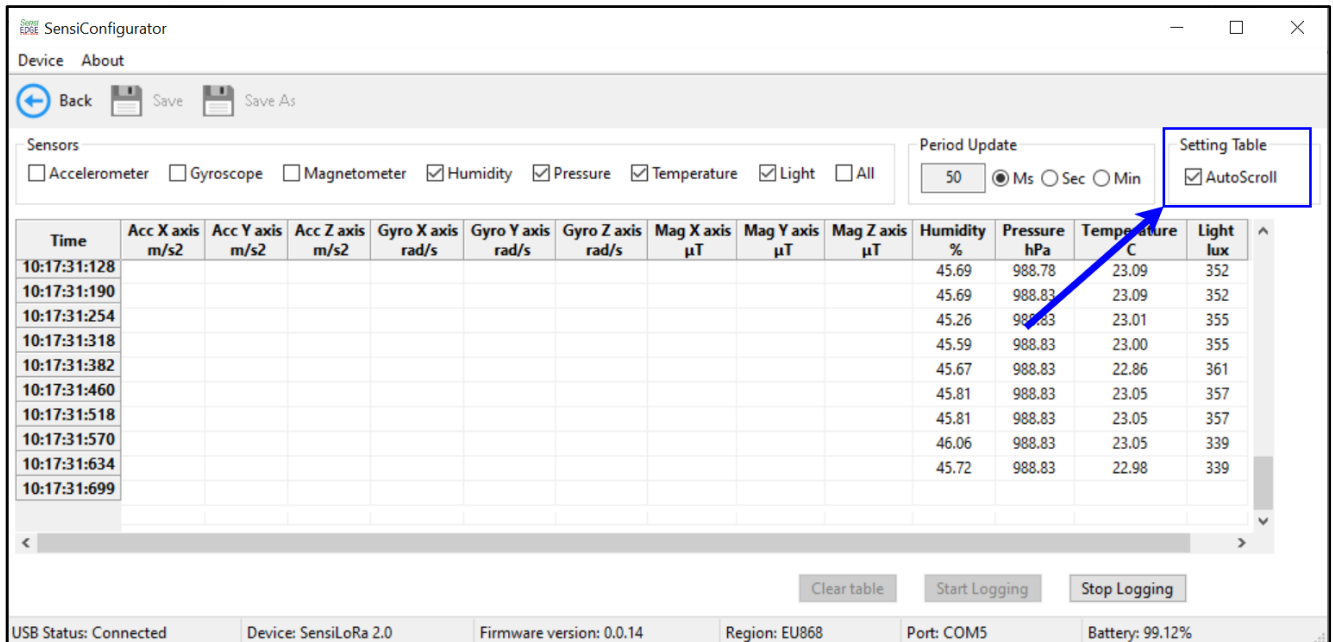
2. For Data Logging values Sensors, first, choose to need sensors (step 1). Second, choose a period to get value sensors (step 2). Third, click **Start Logging** (step 3) and the table will start populating.

Figure 41. Data Logging Page



3. To enable/disable auto scroll click on **AutoScroll**.

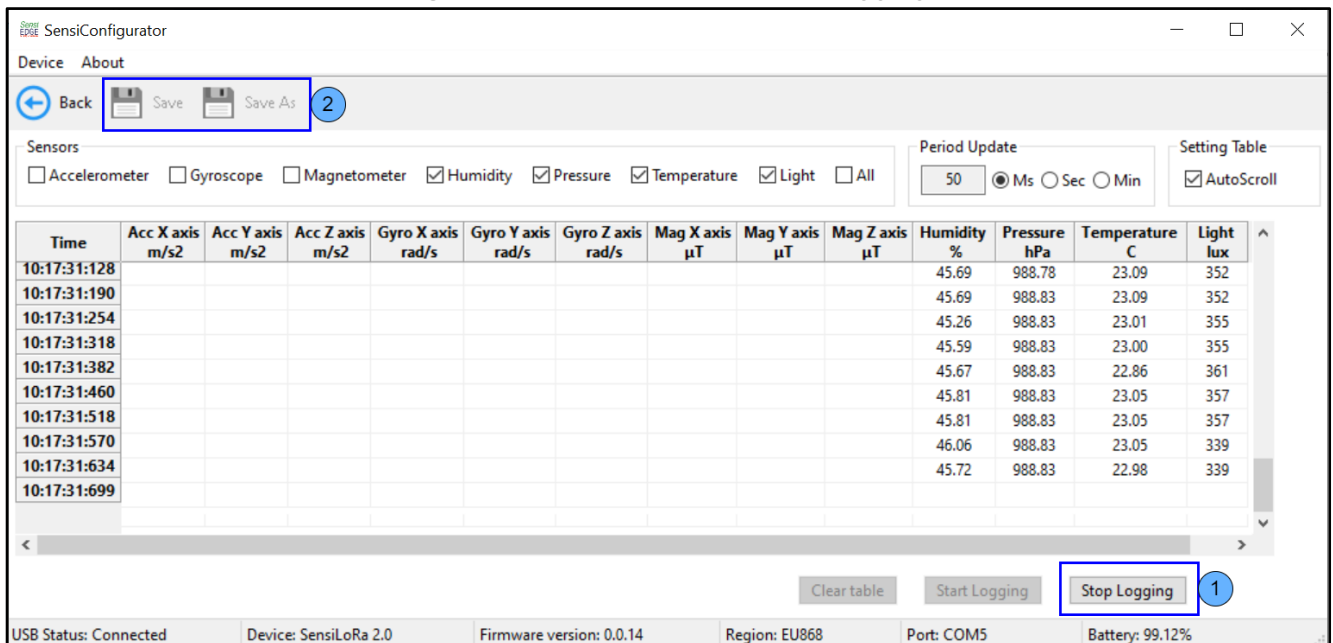
Figure 42. AutoScroll



## 6.2 Stop and Save Data Logging

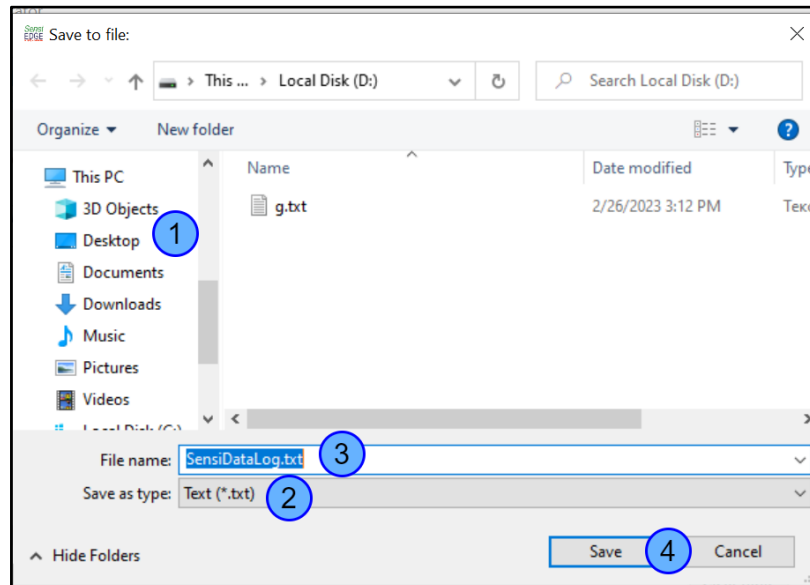
1. To stop Logging sensors click on **Stop Logging** (step 1) and then click on the icon **Save** or **Save As**(step 2).

Figure 43. Stop and Save Data Logging



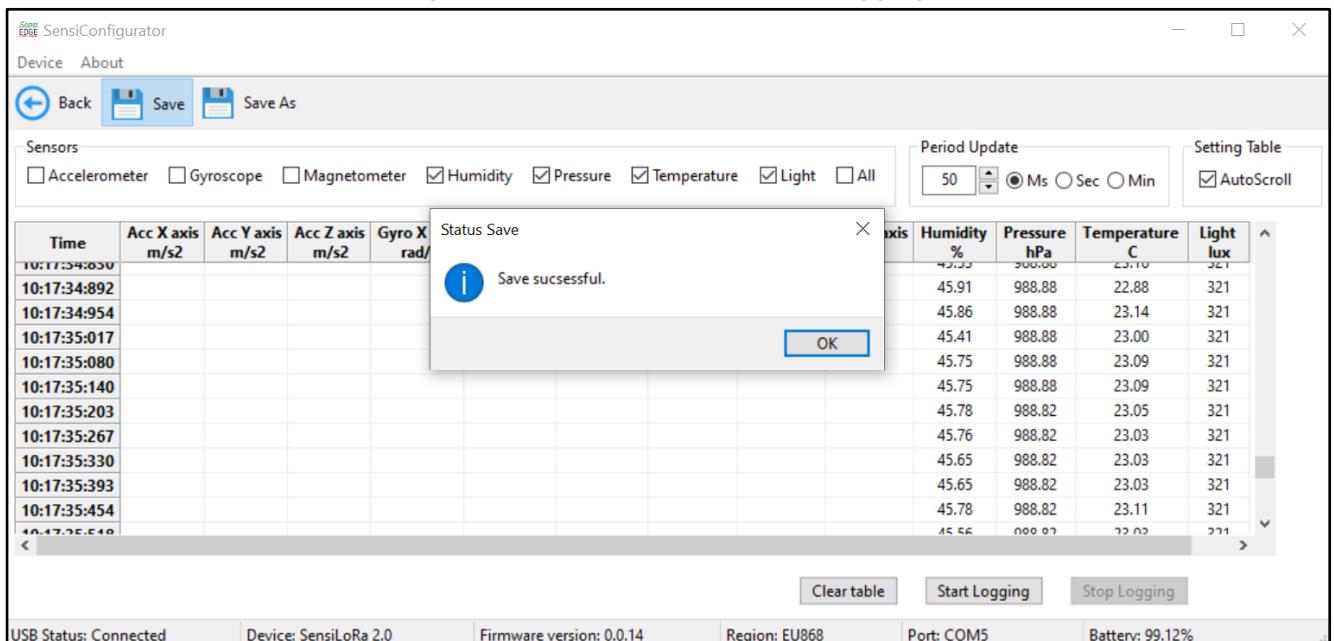
2. When saving for the first time, a window will appear where you need to specify the save **Path** (step 1), **file type** (step 2), and **file name** (step 3). After clicking on **Save** (step 4).

**Figure 44.** Save to file



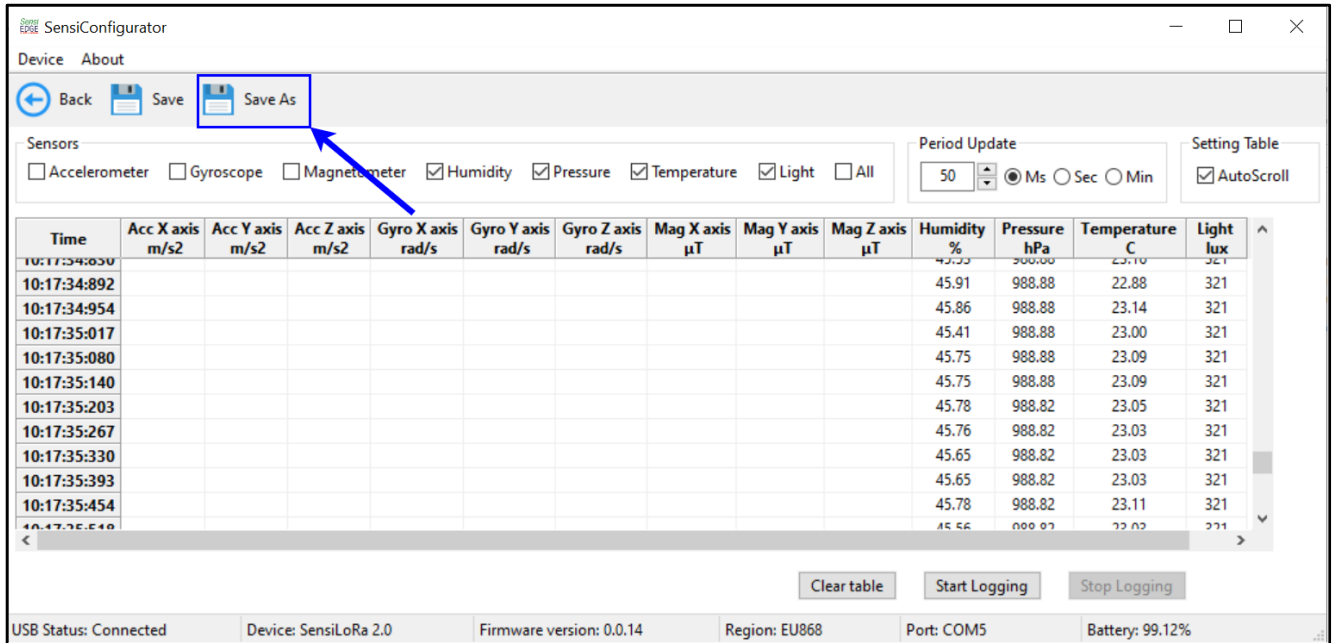
3. If the save is successful, a window will appear.

**Figure 45.** Stop and Save Data Logging



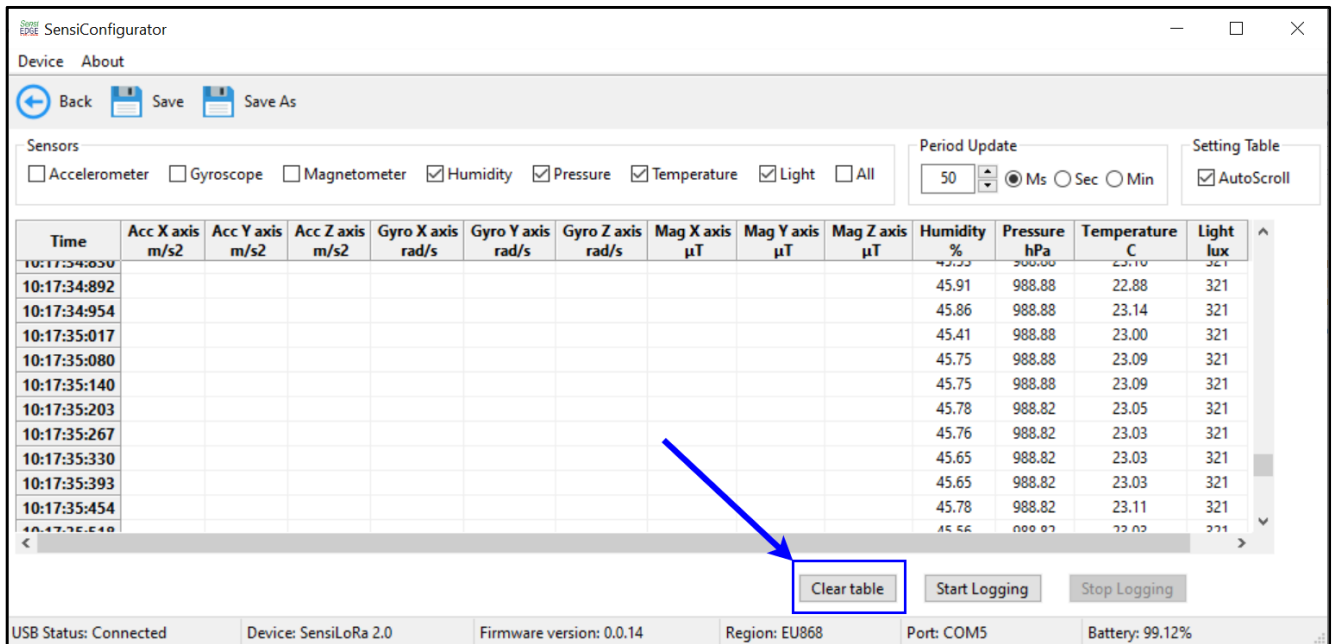
4. To change the save path, file type, or file name. Need to click **Save As**.  
**As**.

Figure 46. Save As



5. To clear the table click on the **Clear table** button.

Figure 47. Clear table

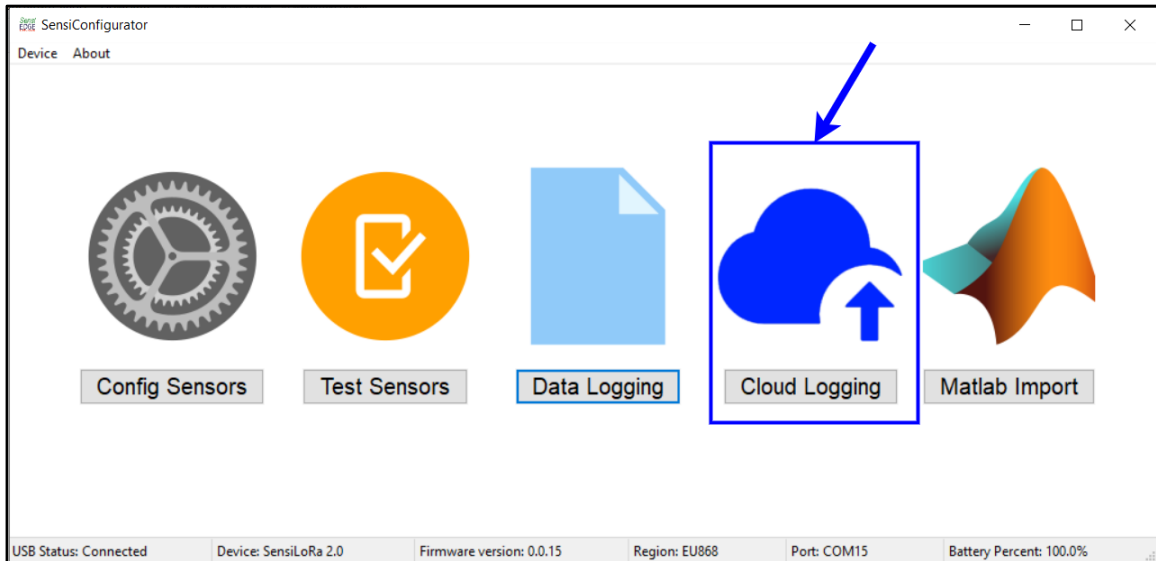


## 7. Cloud Logging Page

### 7.1 Choose Cloud Logging

1. Choose the **Cloud Logging** Page.

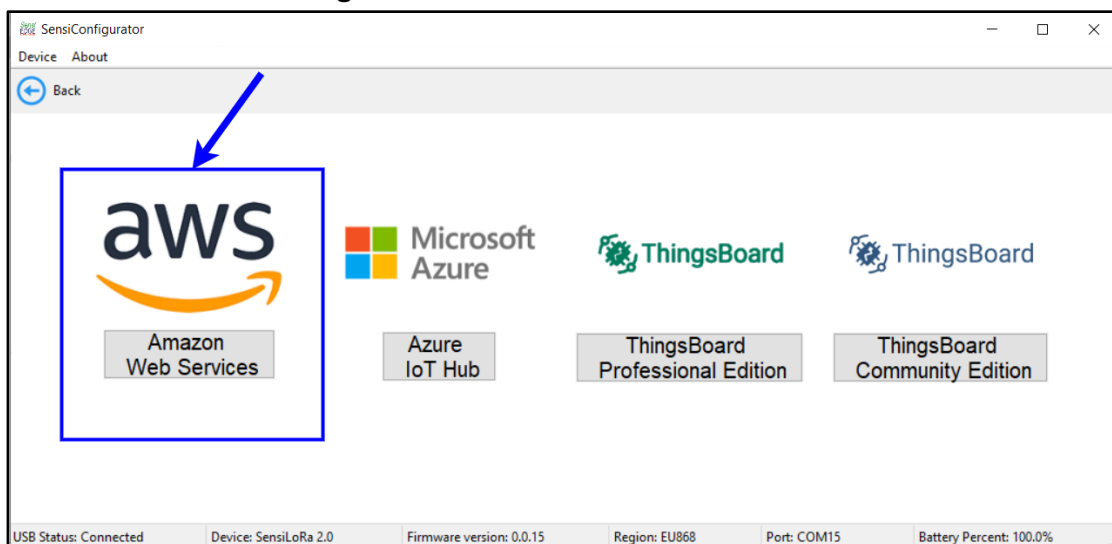
Figure 48. Choose the Cloud Logging Page



### 7.2 Choose the Amazon Web Services cloud.

1. Choose the **Amazon Web Services cloud** Page.

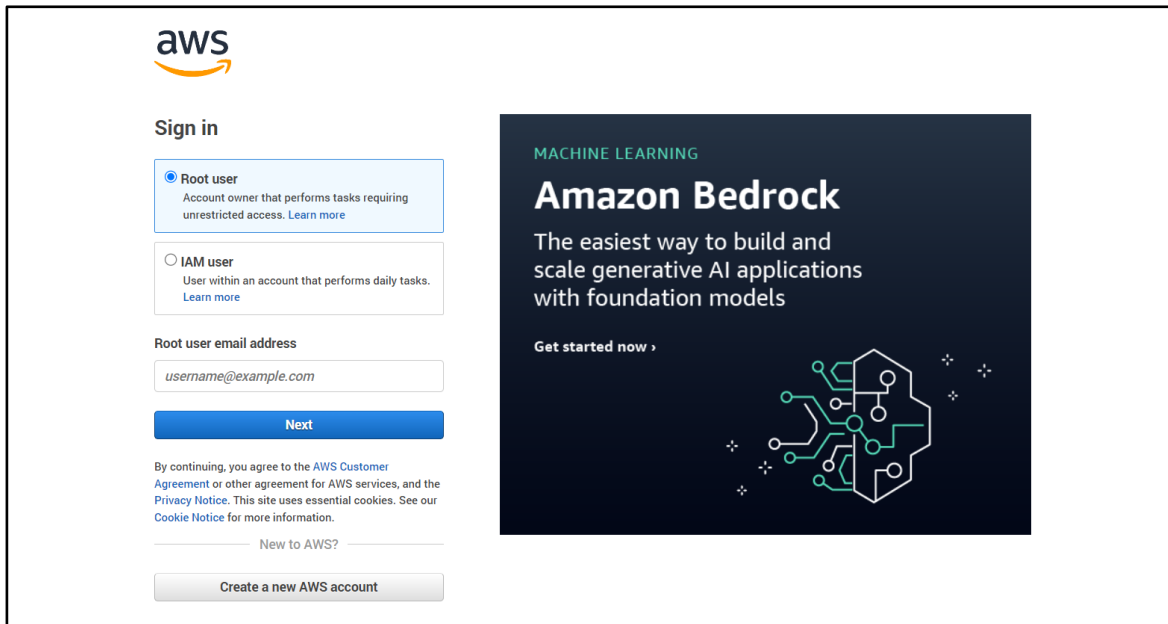
Figure 49. Choose the Amazon Cloud



### 7.2.1 Create device

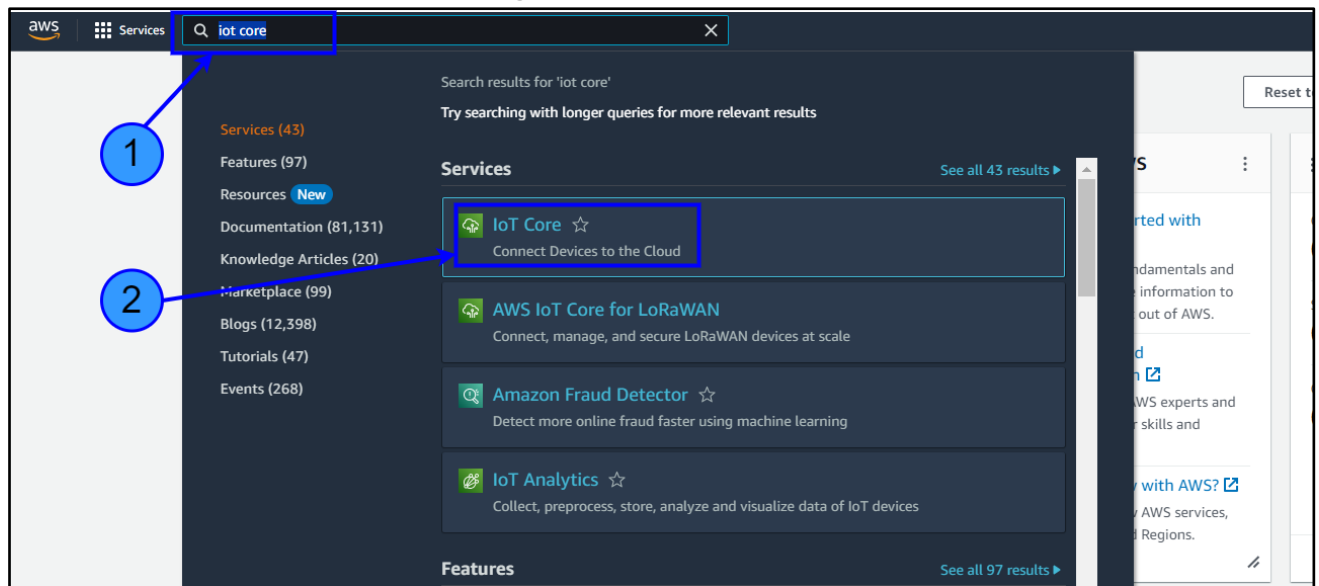
1. To connect to the server need a Certificate, Private Key, Amazon Root CA\_1 files, and Endpoint. To get them go to [Amazon Web Services](#).

**Figure 50.** Sign in to AWS



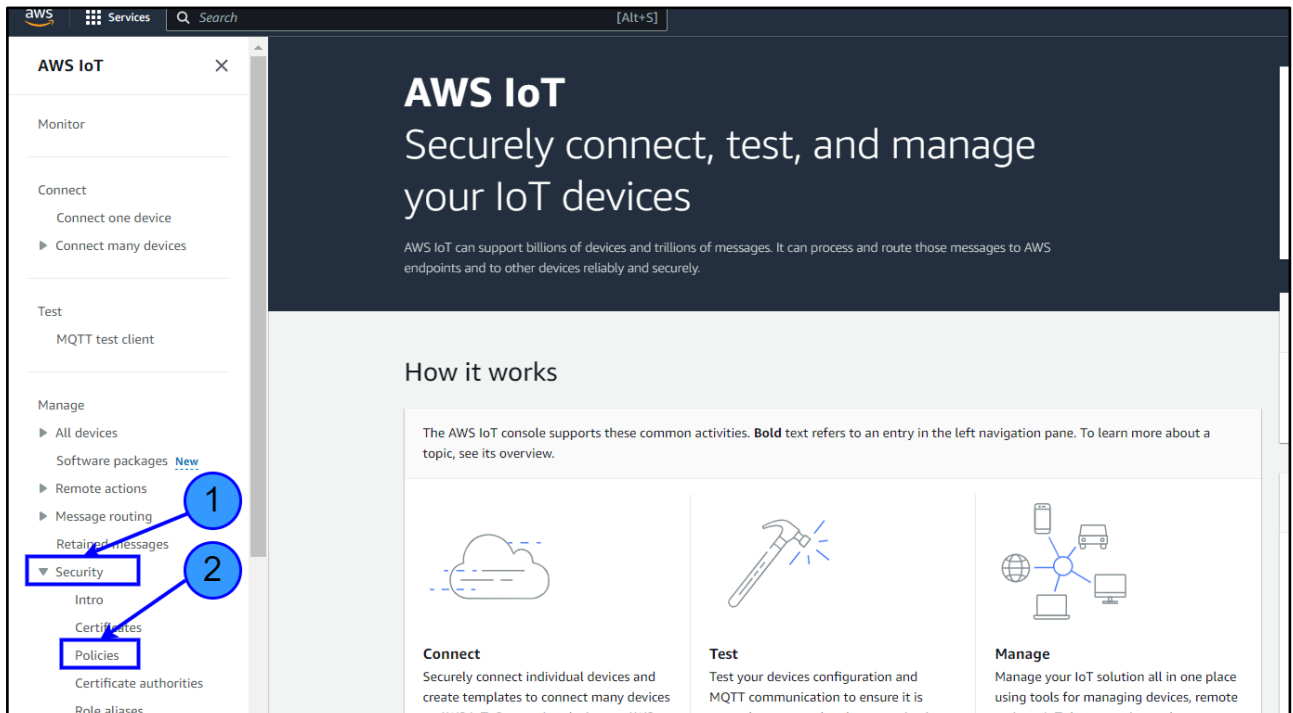
2. After registration, enter in the search bar **IoT Core** (step 1) and as a result of the search select **IoT Core** (step 2).

**Figure 51.** Go to IoT Core



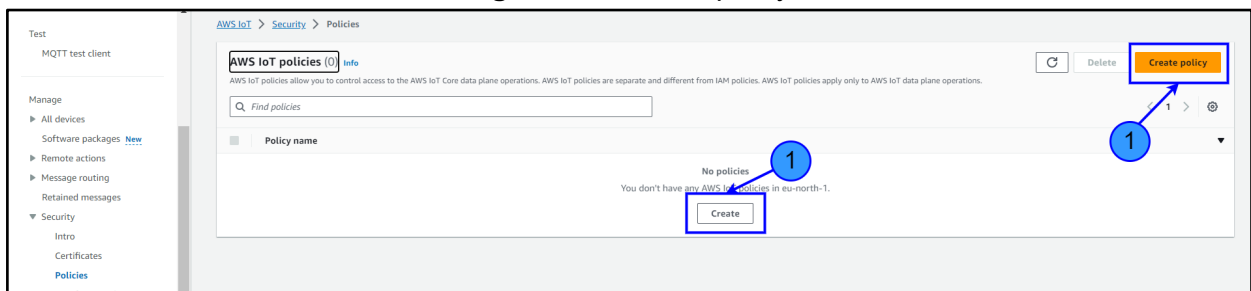
3. Select the **Security** item (step 1) and then the sub-item **Policies** (step 2).

**Figure 52. Go to Policies**



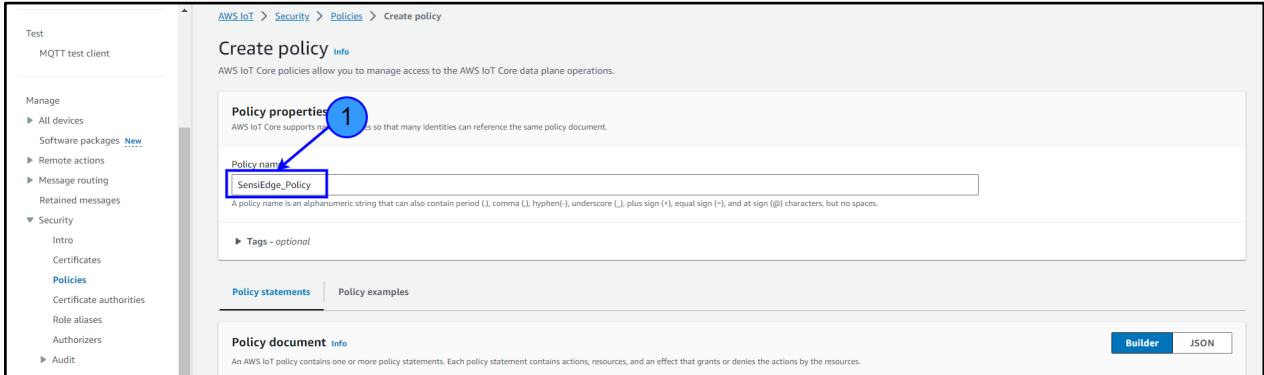
4. Click to **Create** or **Create policy** (step 1).

**Figure 53. Create policy**



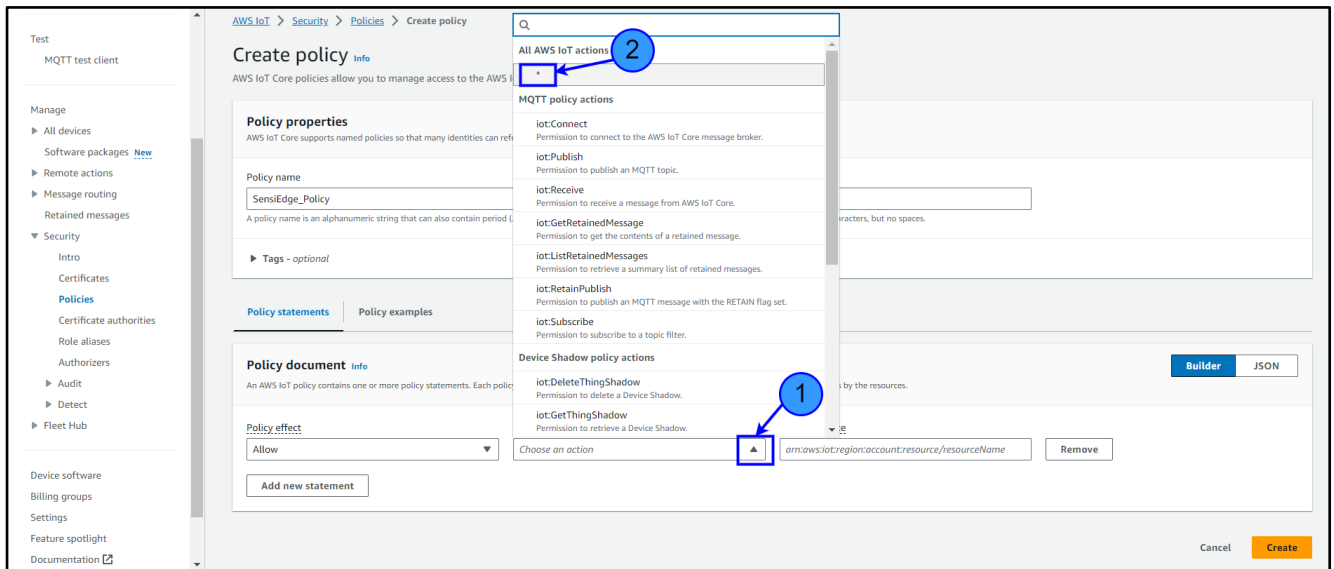
5. Enter the **SensiEdge Police** name in the field **Police name** (step 1).

**Figure 54. Police name**



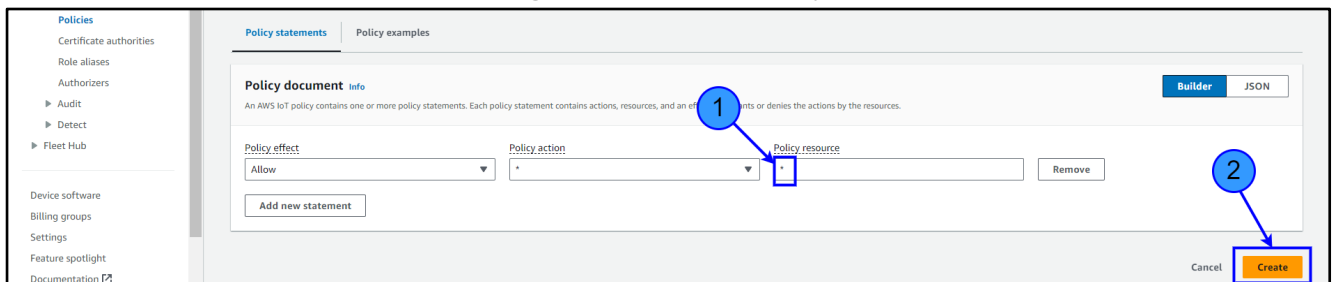
6. In **Police action**(step 1) choose **\*** (**All AWS IoT actions**) (step 2).

**Figure 55. Police action**



7. In the field **Police resource** enter **\*** (step 1) and then click to **Create** (step 2).

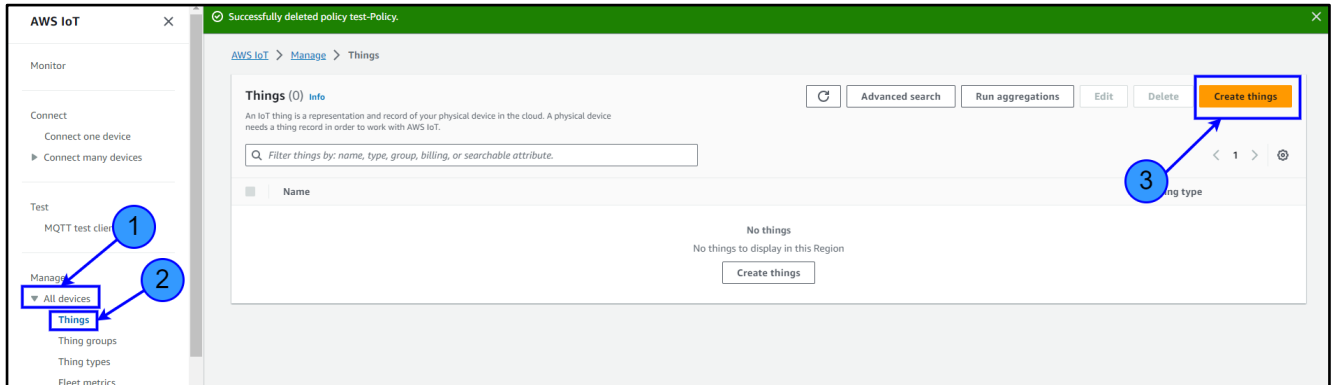
**Figure 56. Create policy**





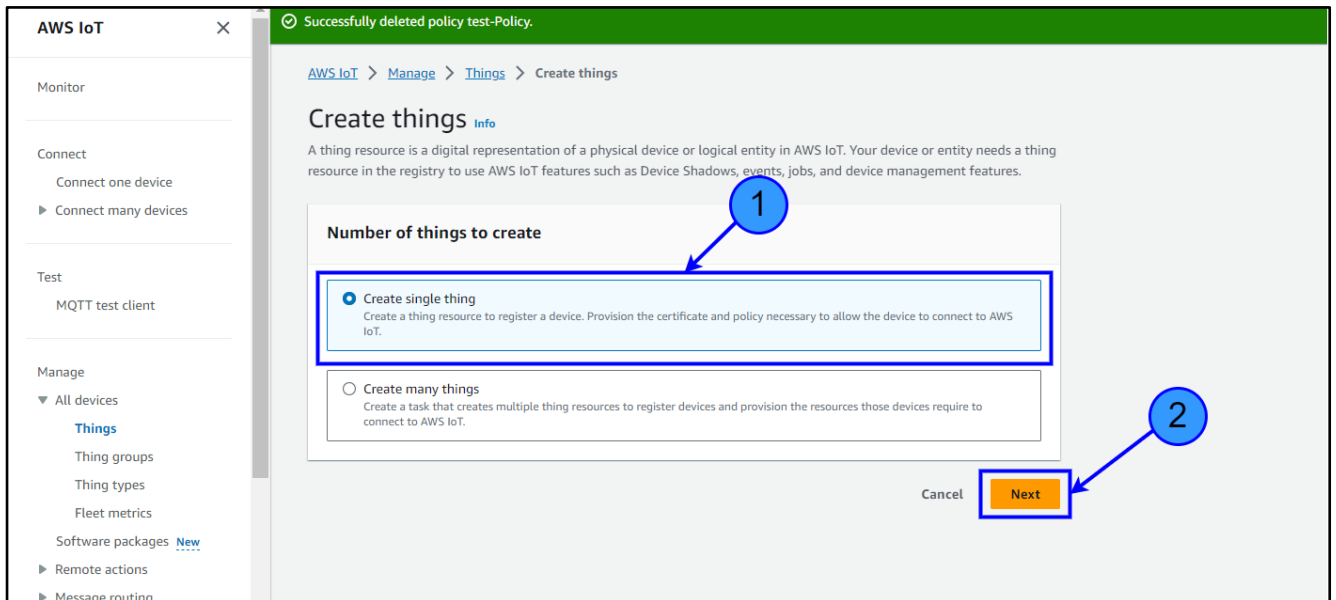
8. Select the **All devices** item (step 1), then the sub-item **Things** (step 2) and click on **Create things** (step 3).

Figure 57. Go to Create Thing



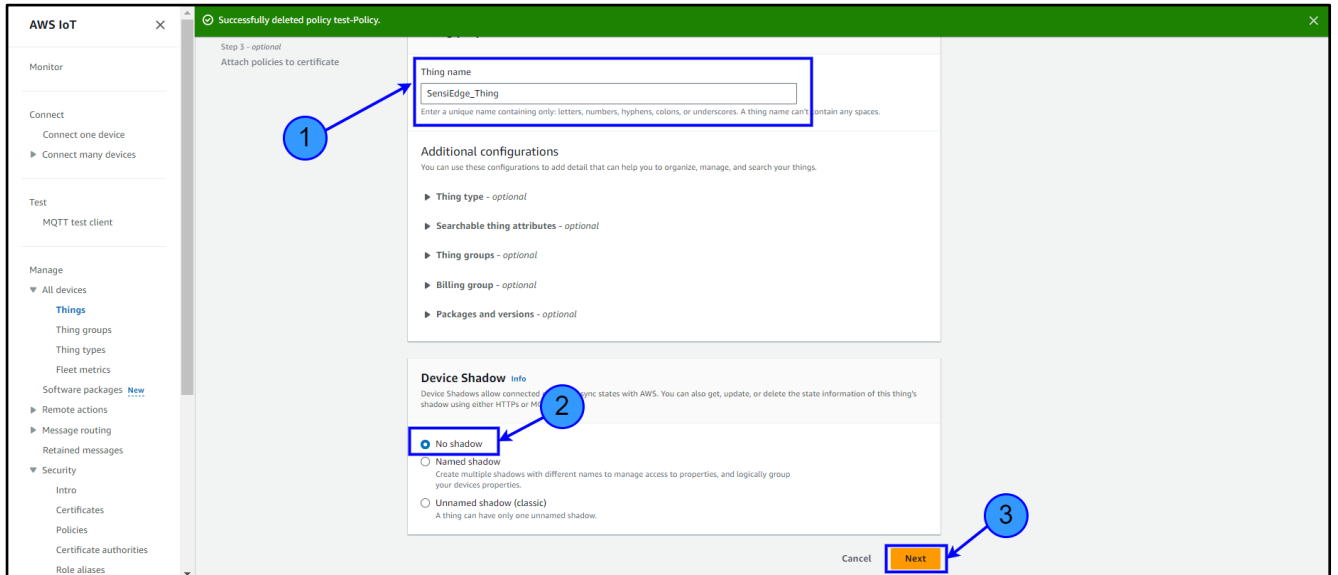
9. Choose a **Create single thing** (step 1) and click on **Next** step (step 2).

Figure 58. Create a single thing



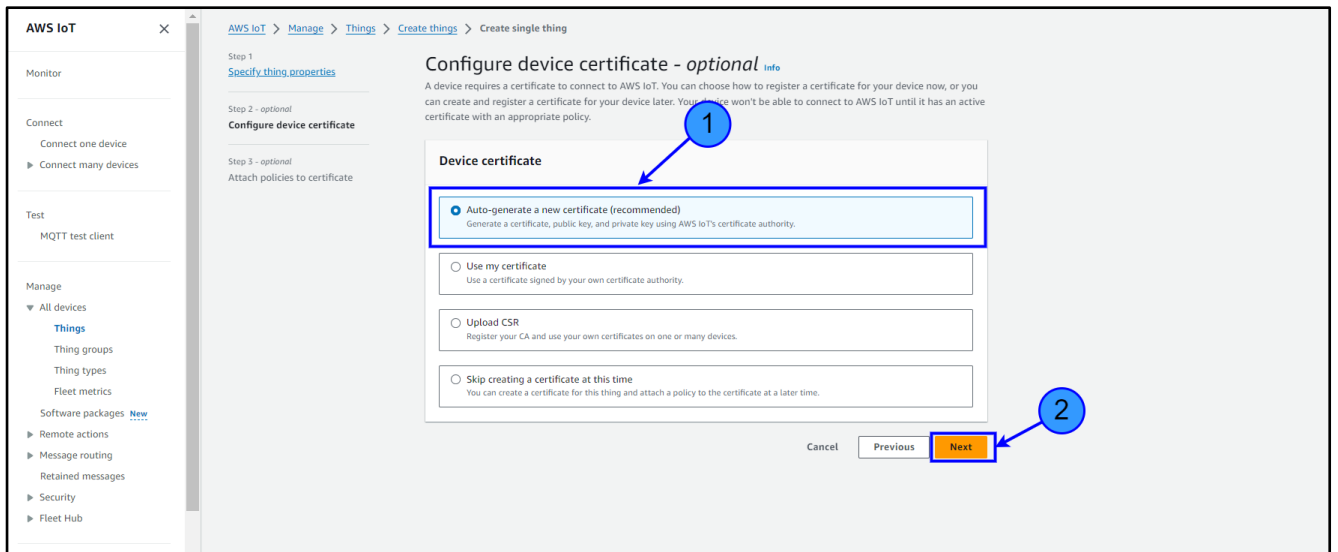
10. Enter the **SensiEdge\_Thing** name in the field **Thing name**(step 1), choose **No shadow** (step 2), and click on **Next** step (step 3).

Figure 59. Thing name



11. Choose **Auto-generate a new certificate** (step 1) and click on **Next** (step 2).

Figure 60. Device certificate



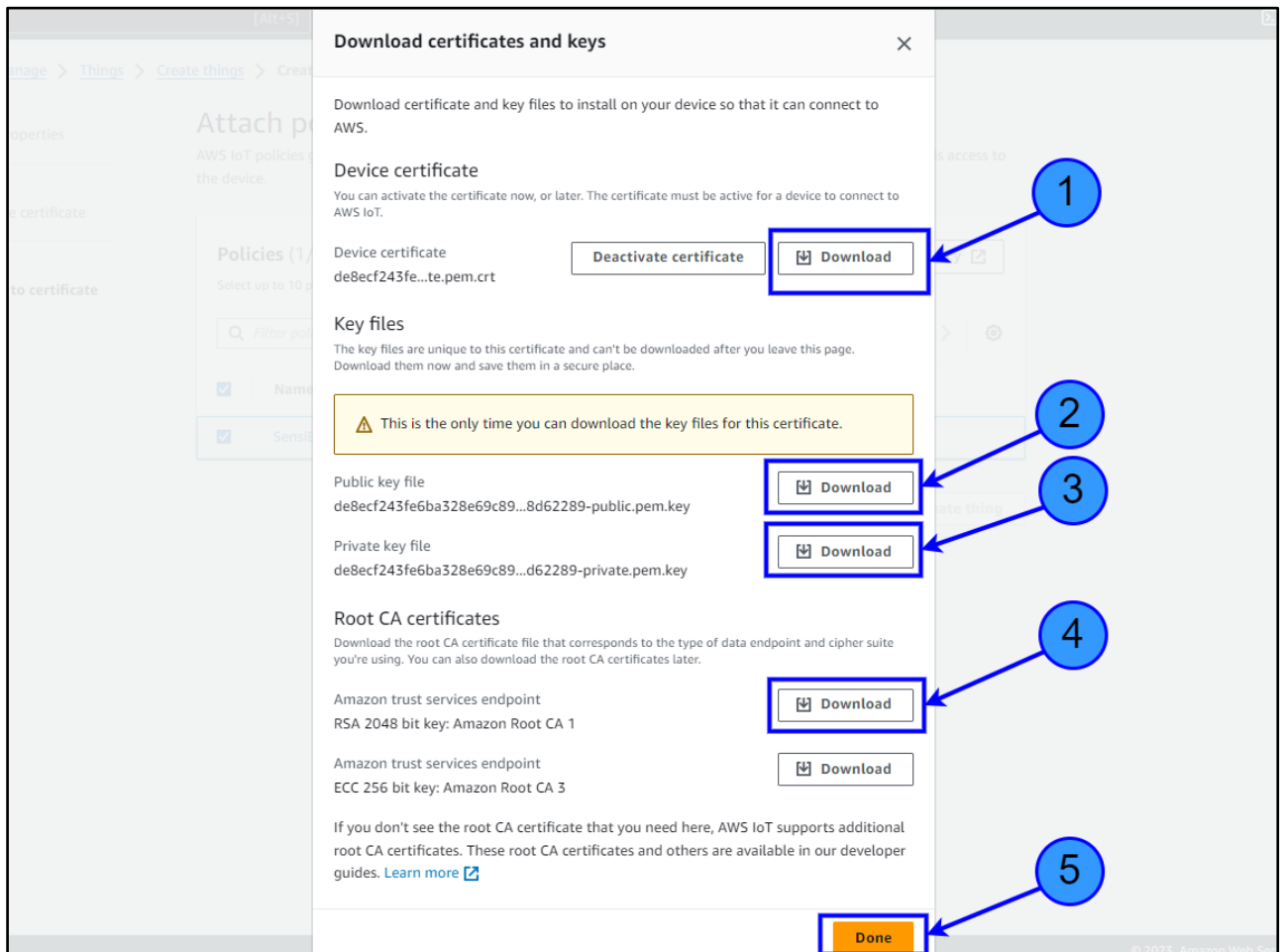
12. Choose **SensiEdge Policy** (step 1) and click on **Create thing** (step 2).

Figure 61. Create thing



13. Click to Download **Device certificate** (step 1), **Public key file** (step 2), **Private key file** (step 3), **Amazon Root CA 1** (step 4) and click on **Done** (step 5).

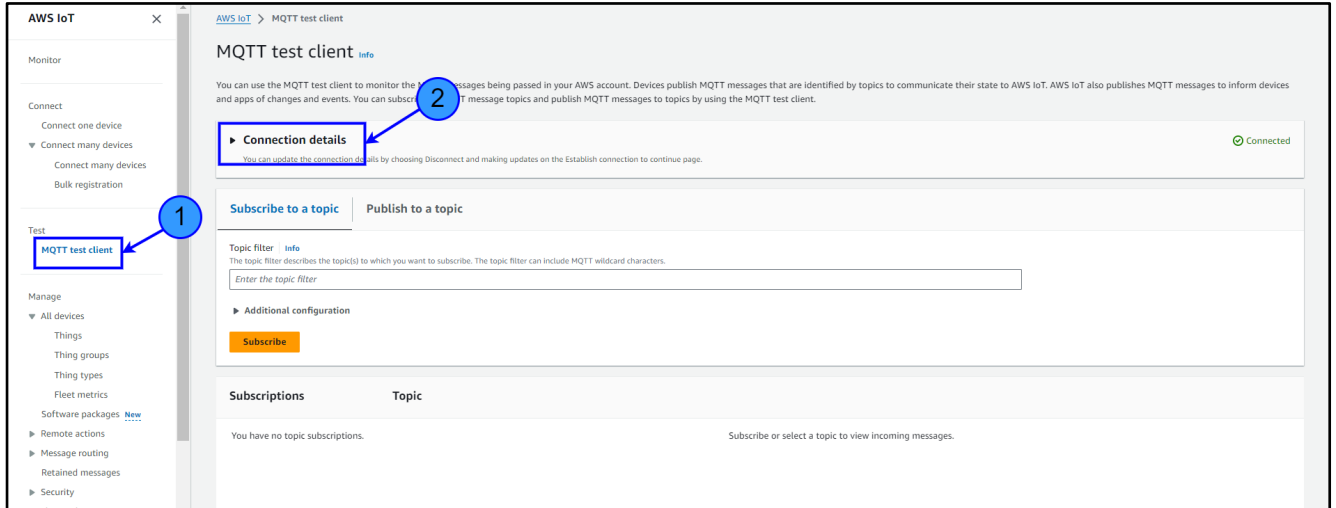
Figure 62. Download files



## 7.2.2 Connect to AWS

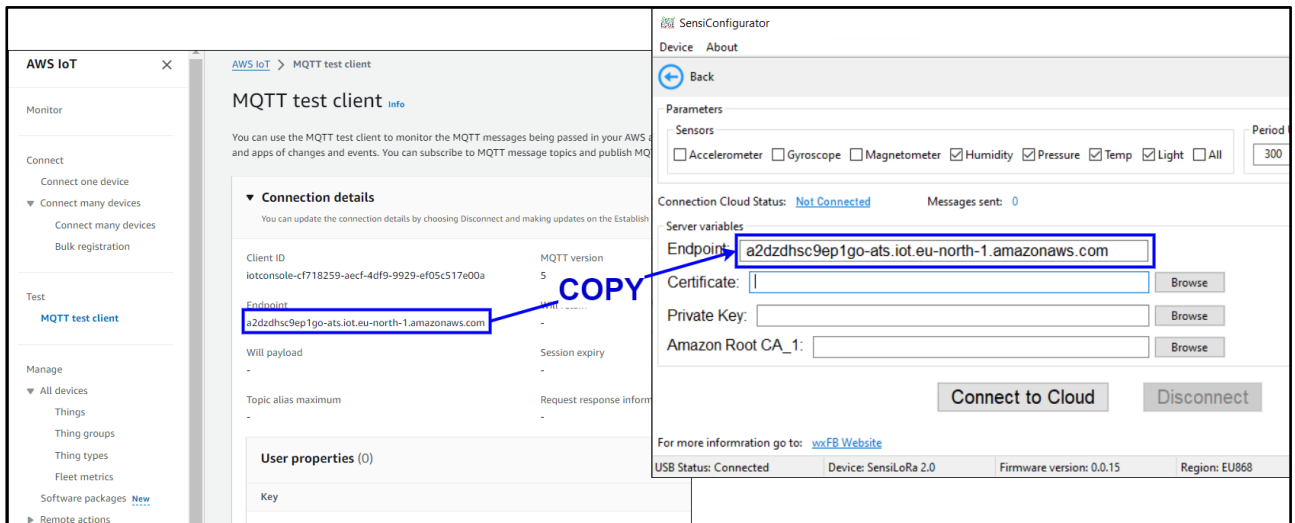
1. Click on MQTT test client (step 1), and next click on Connection details (step 2).

**Figure 63.** Go to MQTT test client



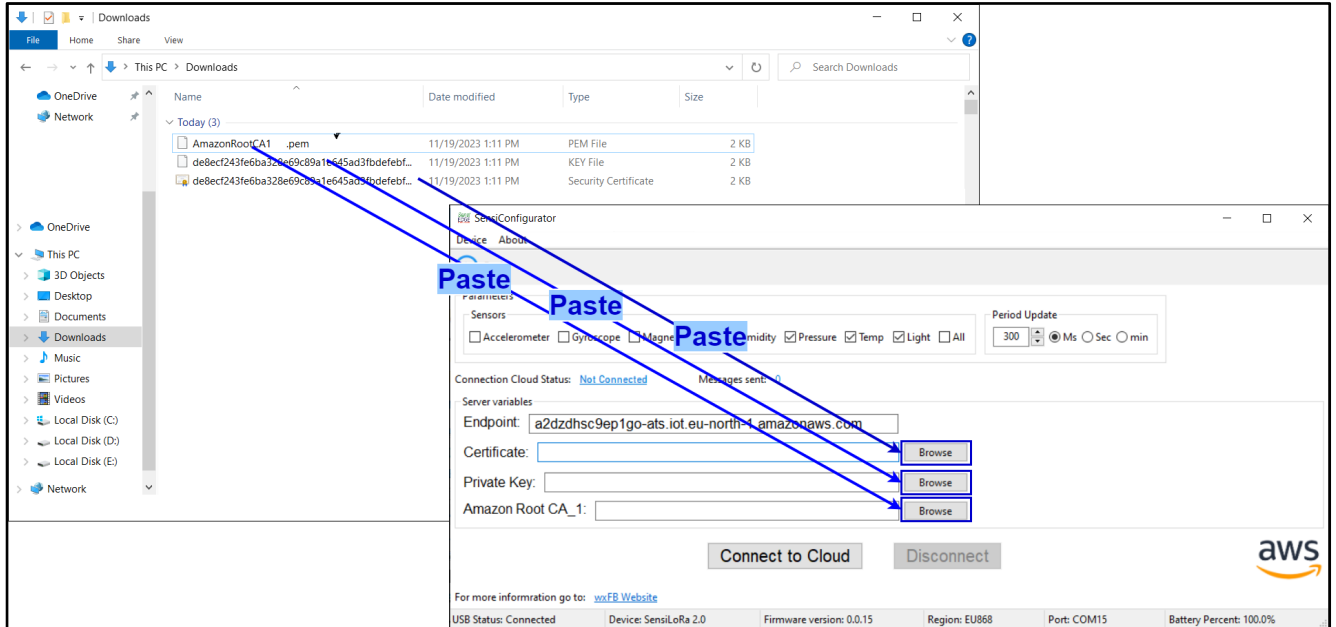
2. Copy the **Endpoint value** and paste it to the **Endpoint string** in the SensiConfigurator program.

**Figure 64.** Copy Endpoint



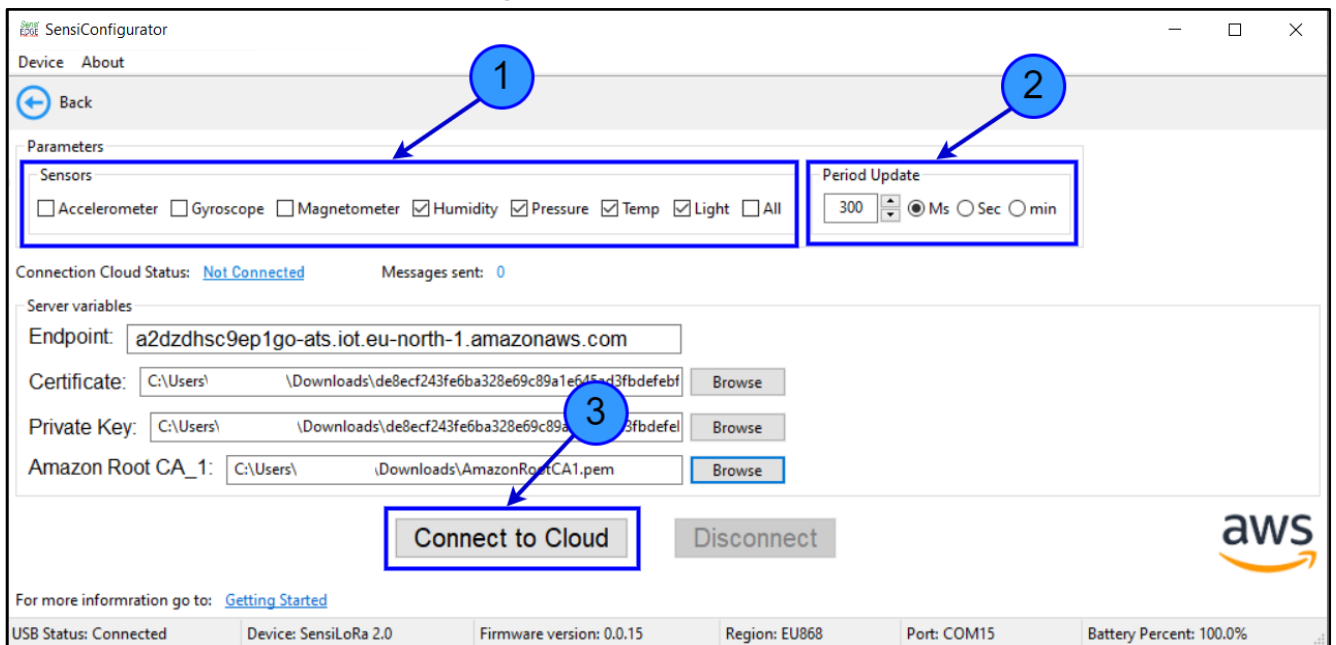
3. Using the select button **Browse**, select the files (**Certificate**, **Private Key**, and **Amazon Root CA\_1**) that were previously downloaded. (step 1).

**Figure 65. Paste files**



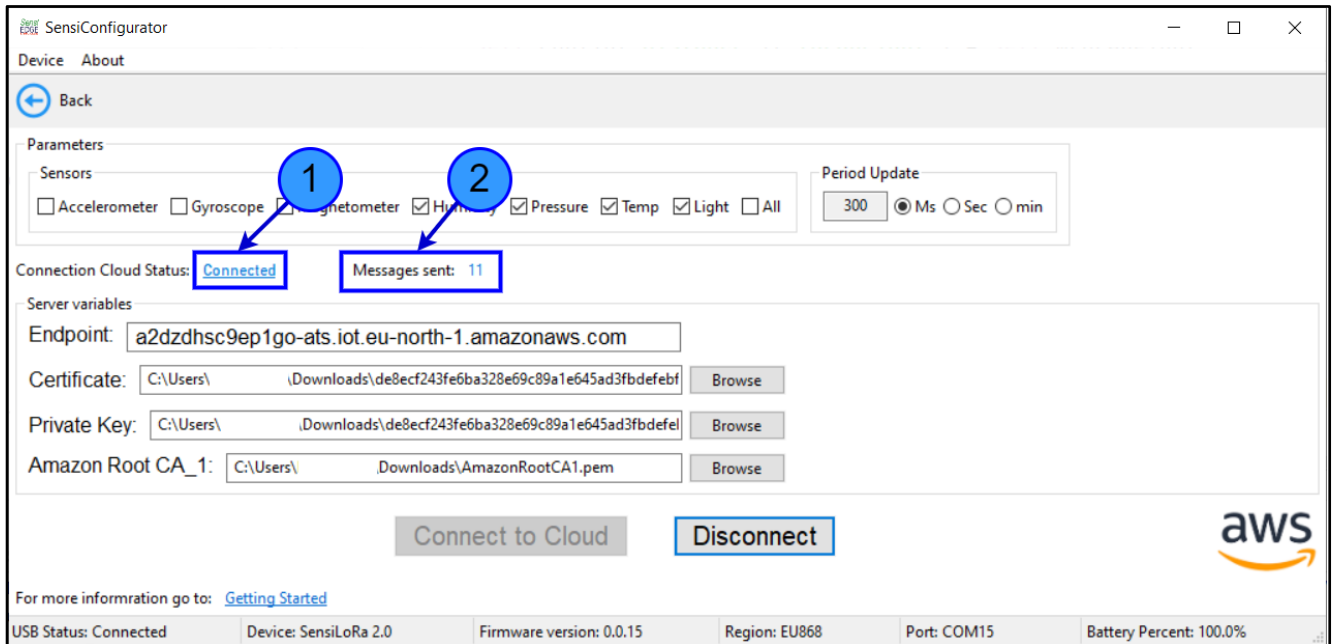
4. Choose **Sensors** (step 1) and **Period** send information to Cloud (step 2) and then click on **Connect to Cloud** (step 3).

**Figure 66. Connect to Cloud**



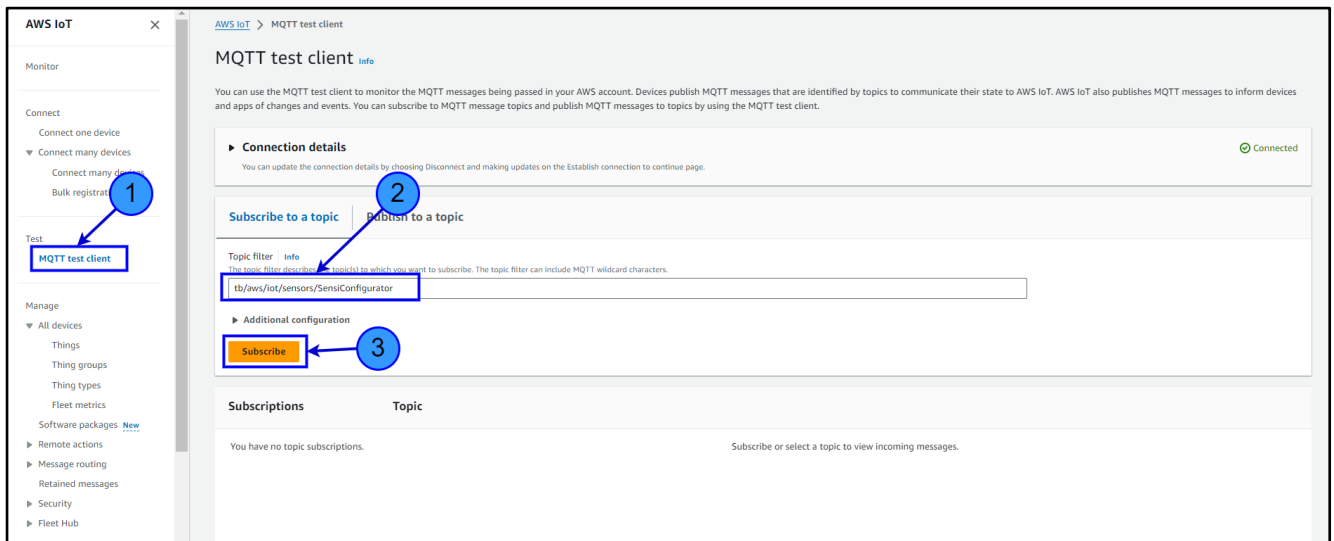
5. If the connection is successful, the **Connection Cloud Status** will change to **Connected** (step 1) and the **Message sent** (step 2) counter will begin counting the number of messages sent to the cloud.

**Figure 67.** Cloud Status



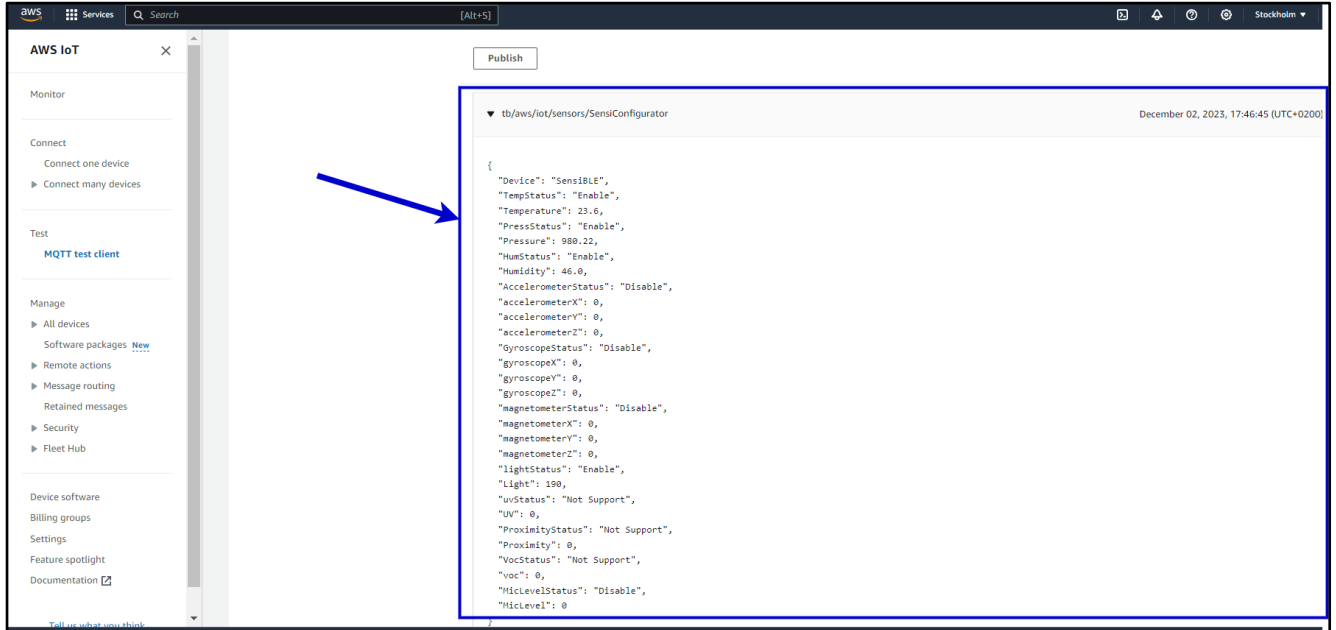
6. To see the message from the device, choose **MQTT test client** (step 1), enter **tb/aws/iot/sensors/SensiConfigurator** in the **Topic filter** line (step 2), and click on **Subscribe** (step 3).

**Figure 68.** Enter the Topic filter



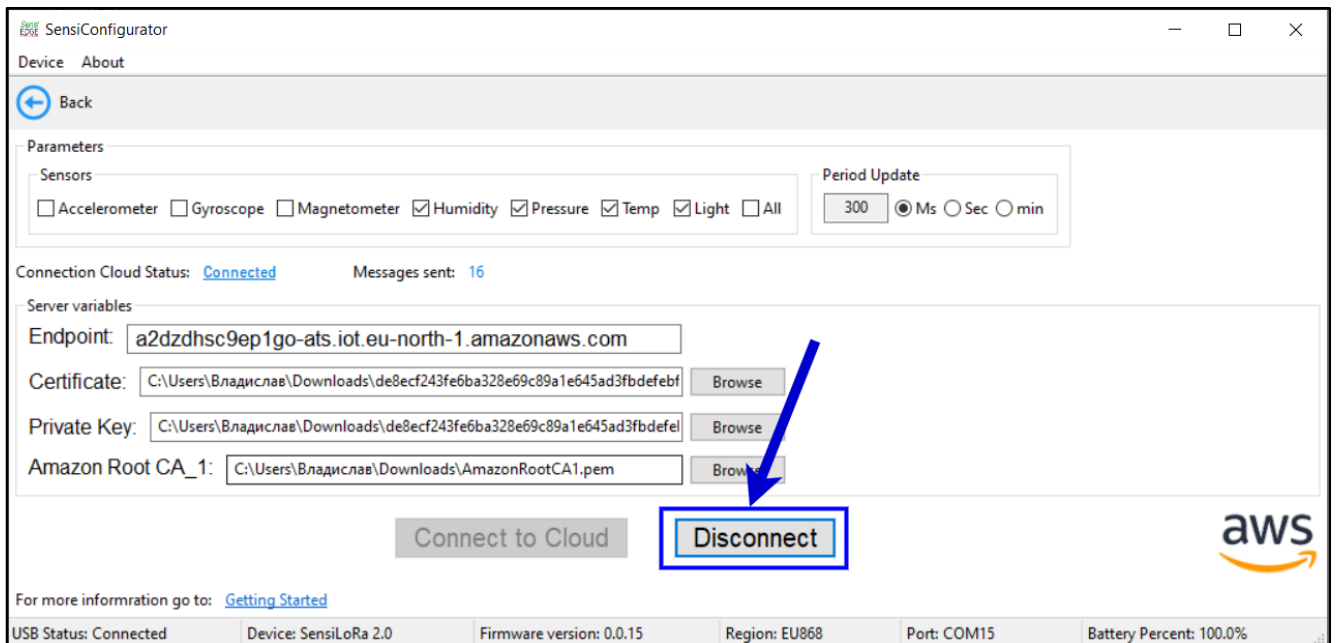
7. When the cloud receives the message, it will be displayed in the **Subscriptions** window.

**Figure 69.** Message from device



8. To stop sending messages to the cloud, click on Disconnect.

**Figure 70.** Disconnect from Cloud

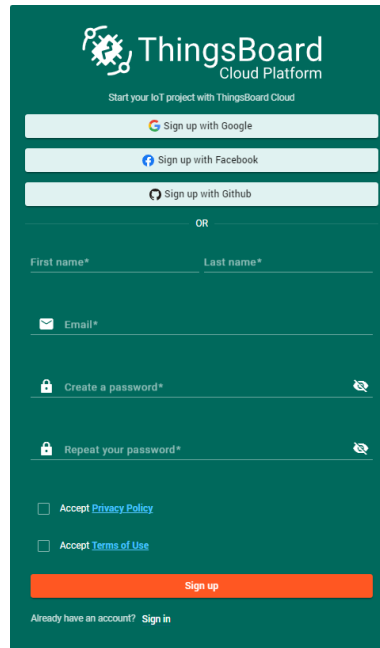


## 7.2.3 Integration AWS cloud to ThingsBoard

### 7.2.3.1 Import Data Converter

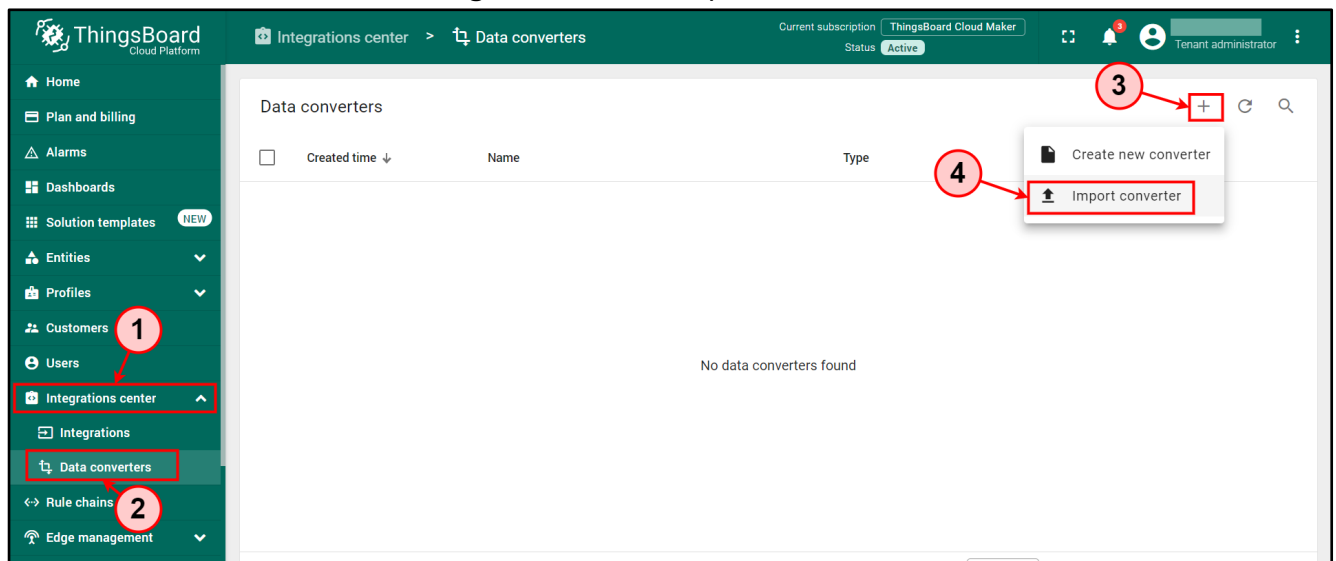
1. Go to the [ThingsBoard Professional Edition](#) website and register.

**Figure 71.** Sing up to cloud



2. Go to **Integrations center** (step 1), **Data converters** (step 2), and click on **Add** (step 3), and **Import converter** (step 4).

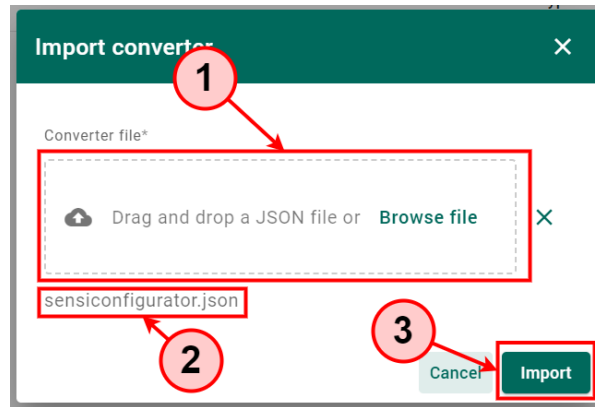
**Figure 72.** Go to Import converter





3. In this link download Converter: [SensiConfigurator Converter](#). After downloading the converter **Drag and drop** it (step 1), after the file is inserted, its name will appear (step 2), and click on **Import** (step 3).

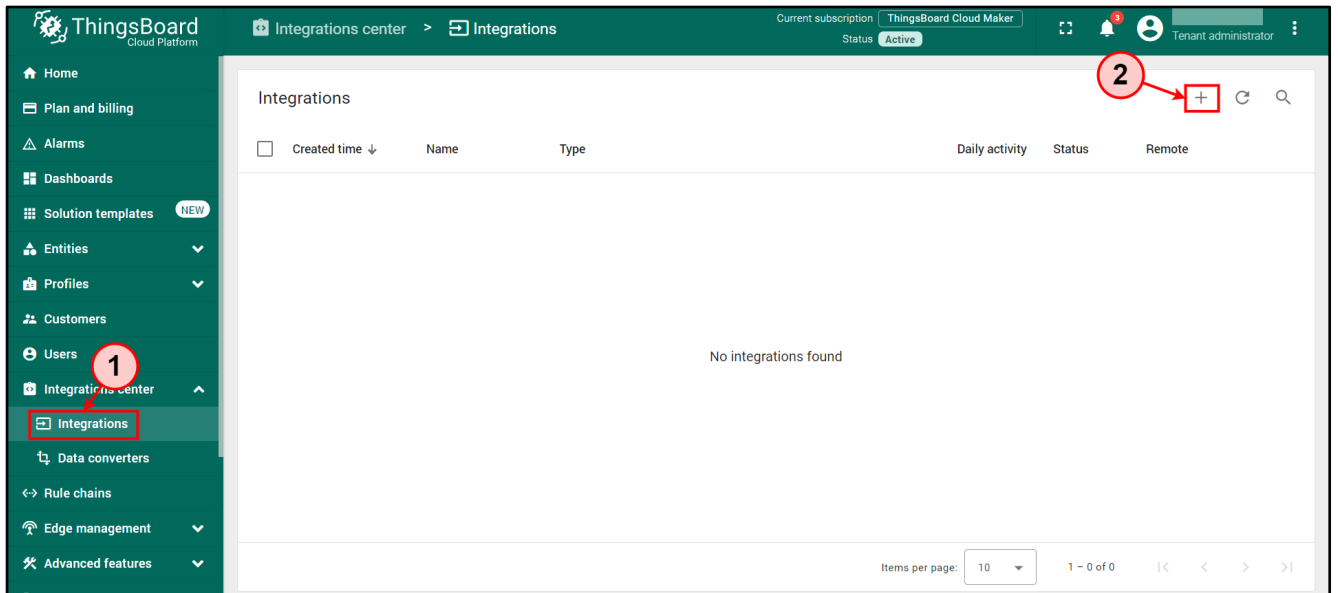
**Figure 73.** Choose the converter file



### 7.2.3.2 Integration AWS Cloud

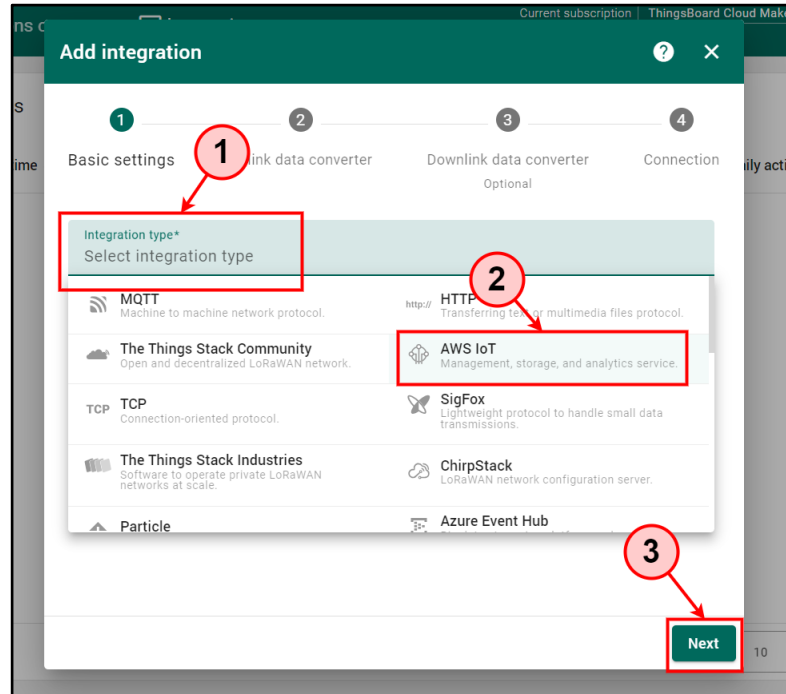
1. Go to **Integrations** (step 1) and click on **Add** (step 2).

**Figure 74.** Go to Integrations



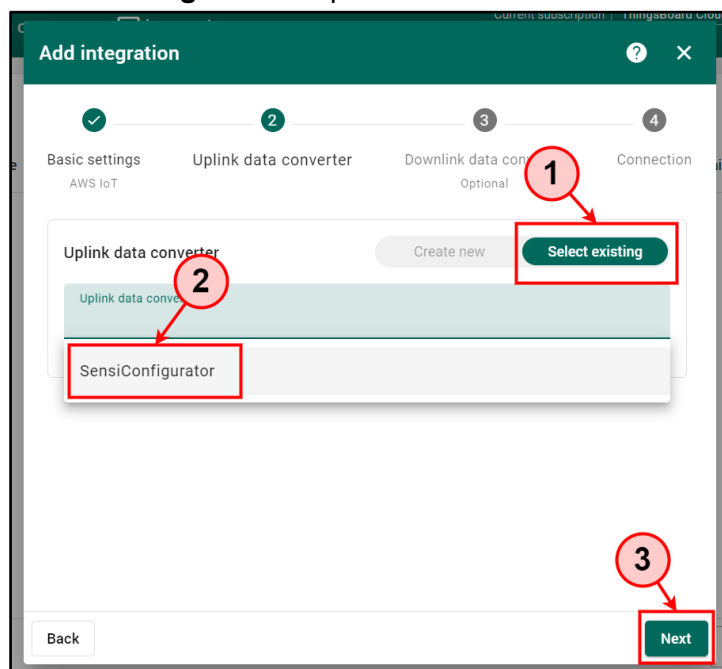
2. In **Integration type** (step 1) choose **AWS IoT** (step 2) and click on **Next** button (step 3).

**Figure 75.** Choose the AWS IoT cloud



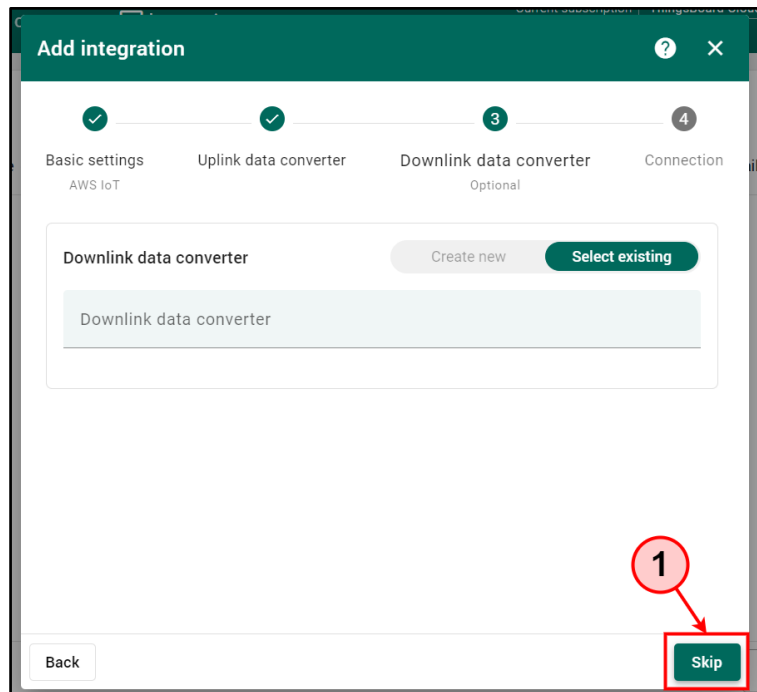
3. Choose **Select existing** (step 1), select **SensiConfigurator** (step 2), and click on **Next** (step 3).

**Figure 76.** Uplink data converter



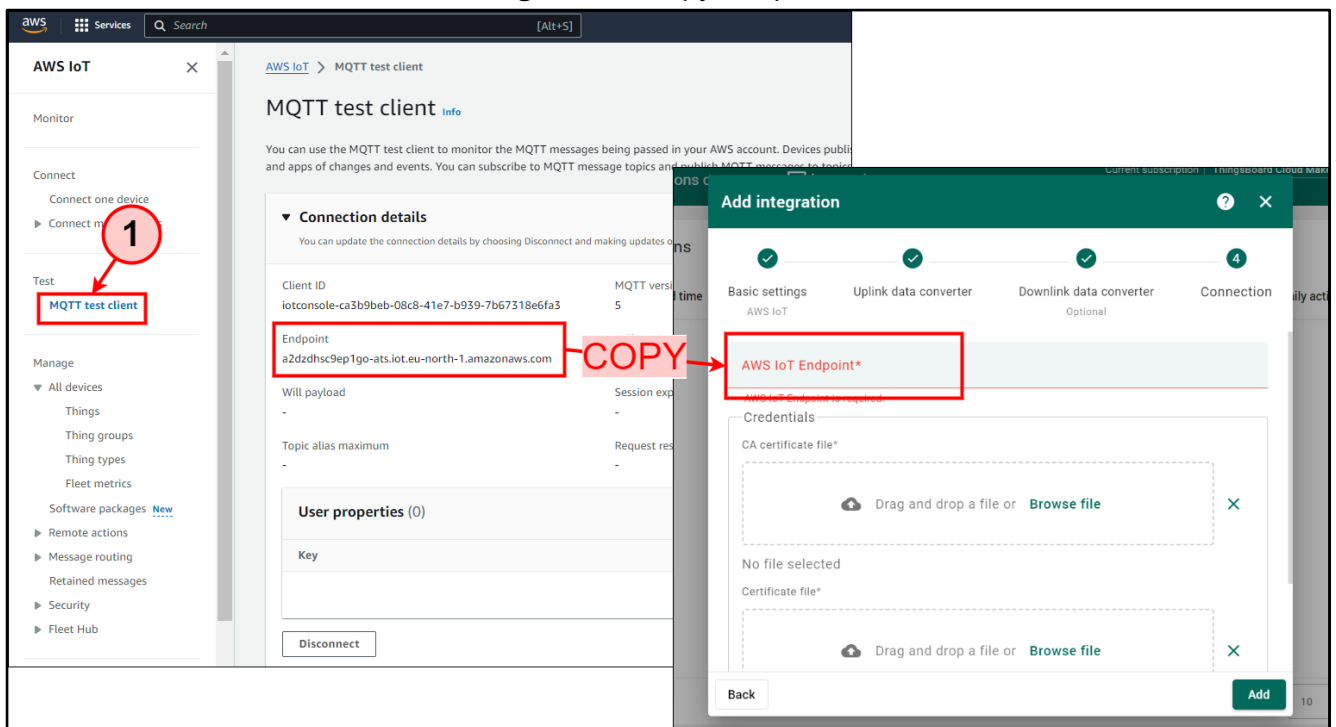
4. Click on **Skip** Downlink data converter.

**Figure 77. Downlink data converter**



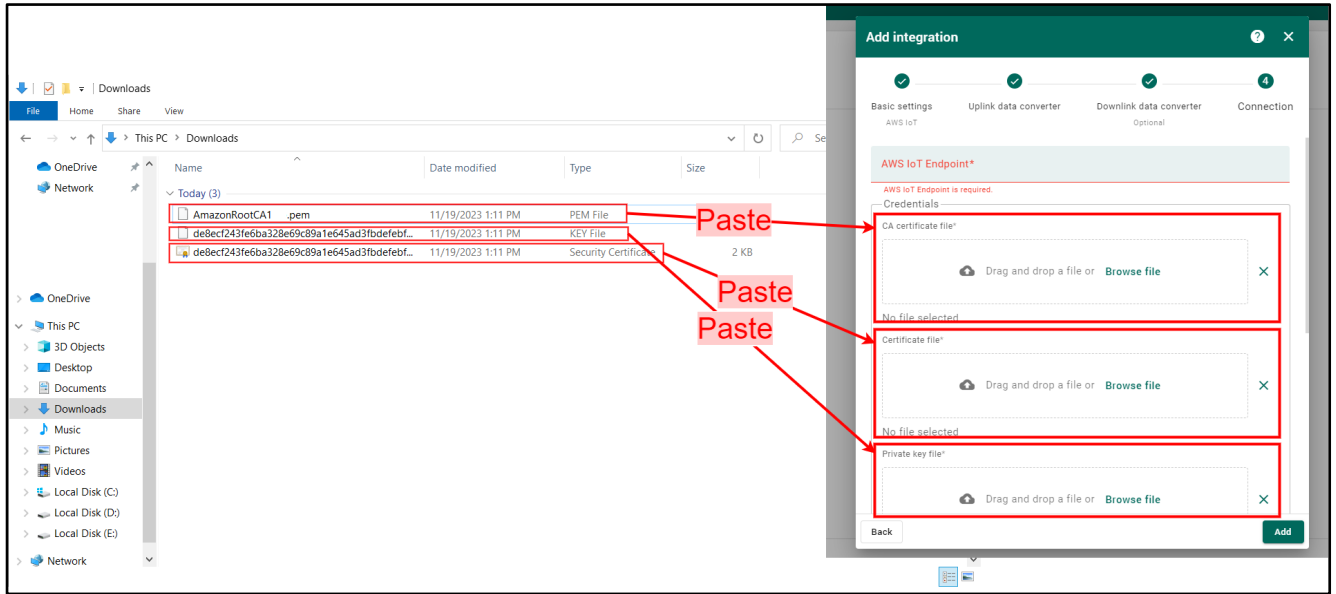
5. In Aws lot go to **MQTT test client** and Copy **Endpoint** to ThingsBoard.

**Figure 78. Copy Endpoint**



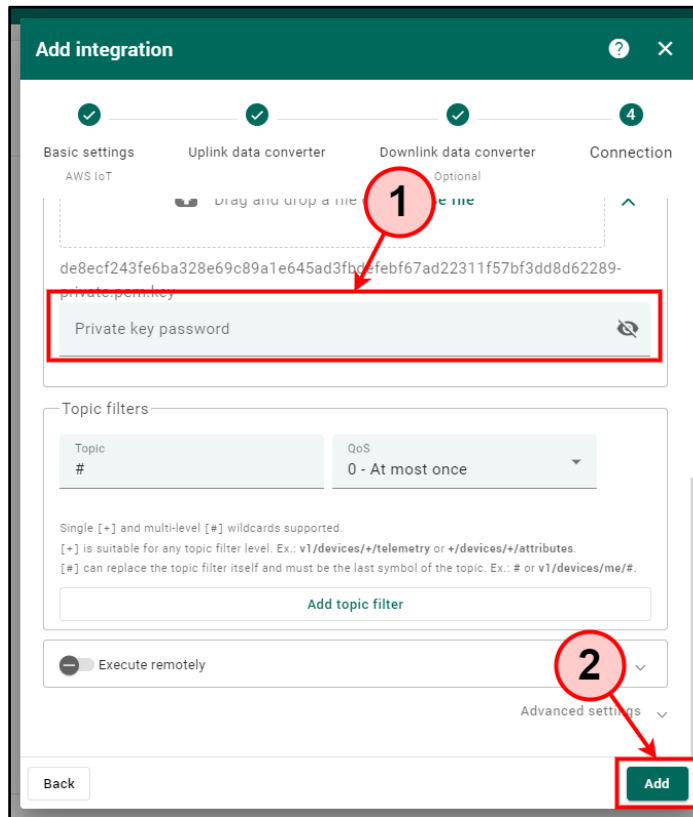
6. Drag and drop the files that download early.

**Figure 79. Paste files**



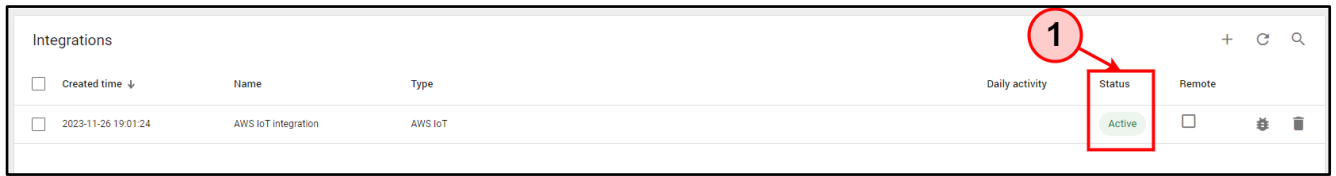
7. The **private key password** line must be empty (step 1), and click on **Add** (step 2).

**Figure 80.** Private key



8. Let's wait until the **Status** becomes Active.

**Figure 81.** Status integration



### 7.2.3.3 Dashboard

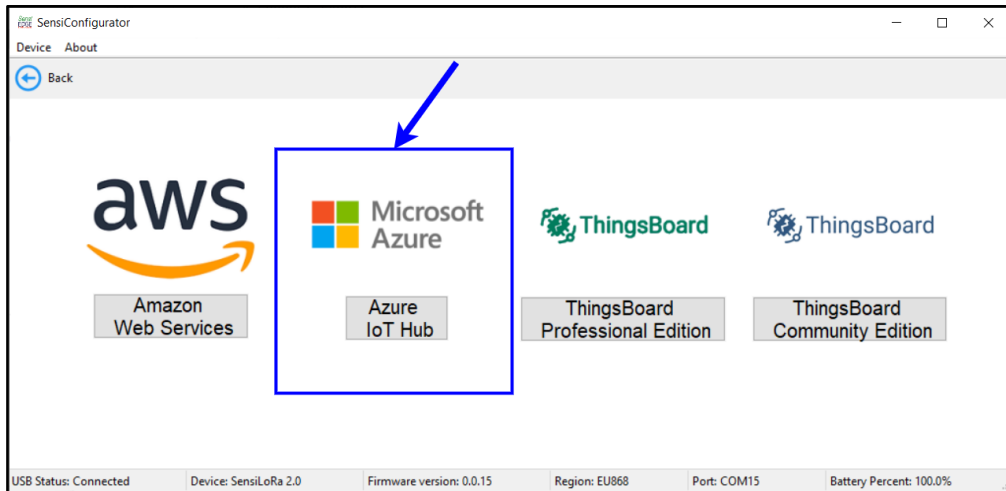
1. Go to [7.4.3 Dashboard](#) and follow the steps.

## 7.3 Microsoft Azure IoT Hub Cloud

### 7.3.1 Create IoT Hub

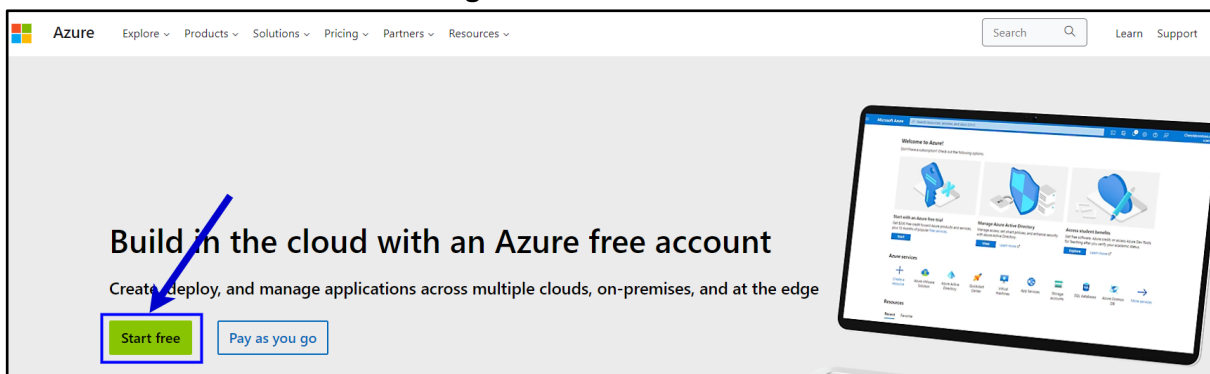
1. Choose the **Azure IoT Hub cloud** Page.

**Figure 82.** Choose the Azure IoT Cloud



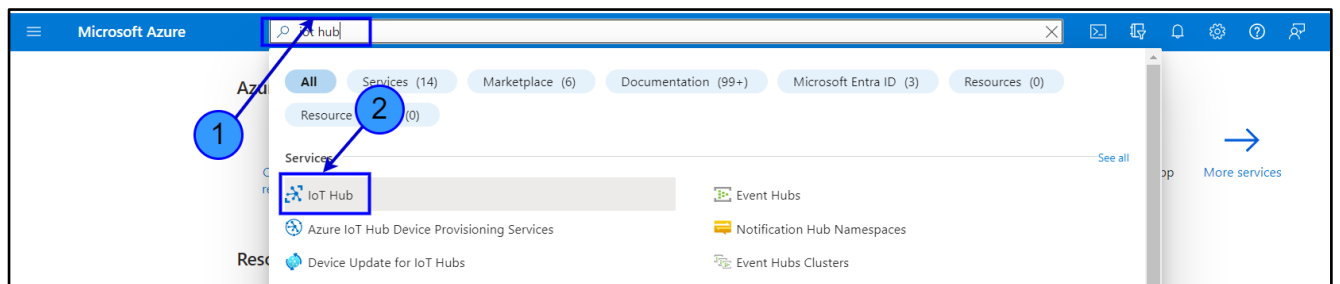
2. Go to the [Microsoft Azure](#) website and choose **Start free**.

**Figure 83.** Azure website



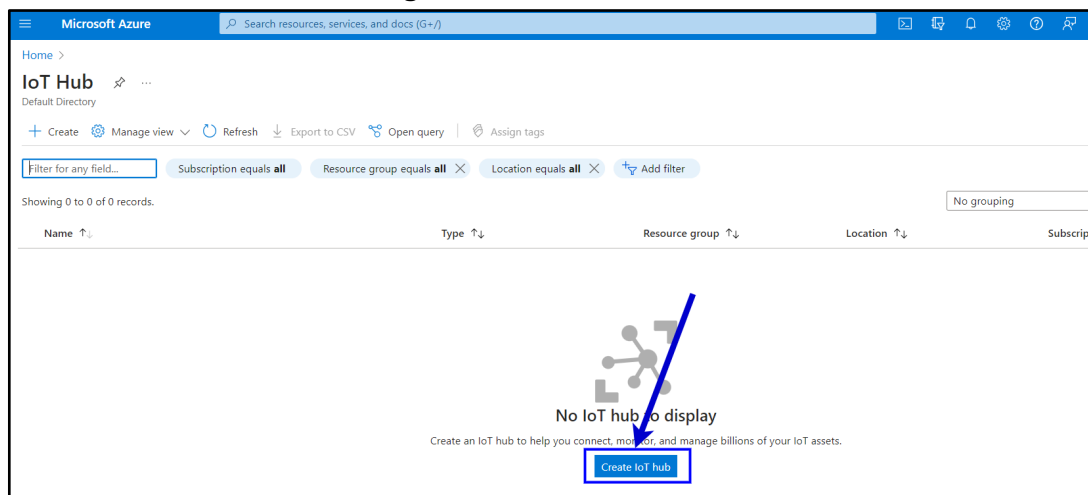
3. After registration enter the **iot hub** in **Search** (step 1) and choose **IoT Hub** (step 2).

**Figure 84.** Go to IoT Hub



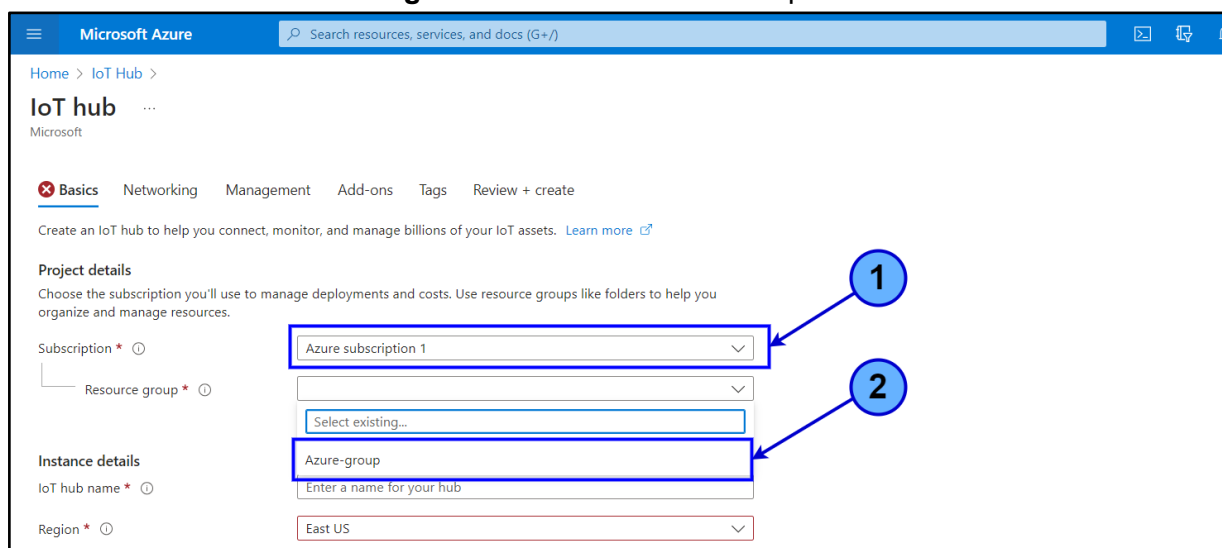
4. Click on Create IoT Hub.

**Figure 85.** Create IoT Hub



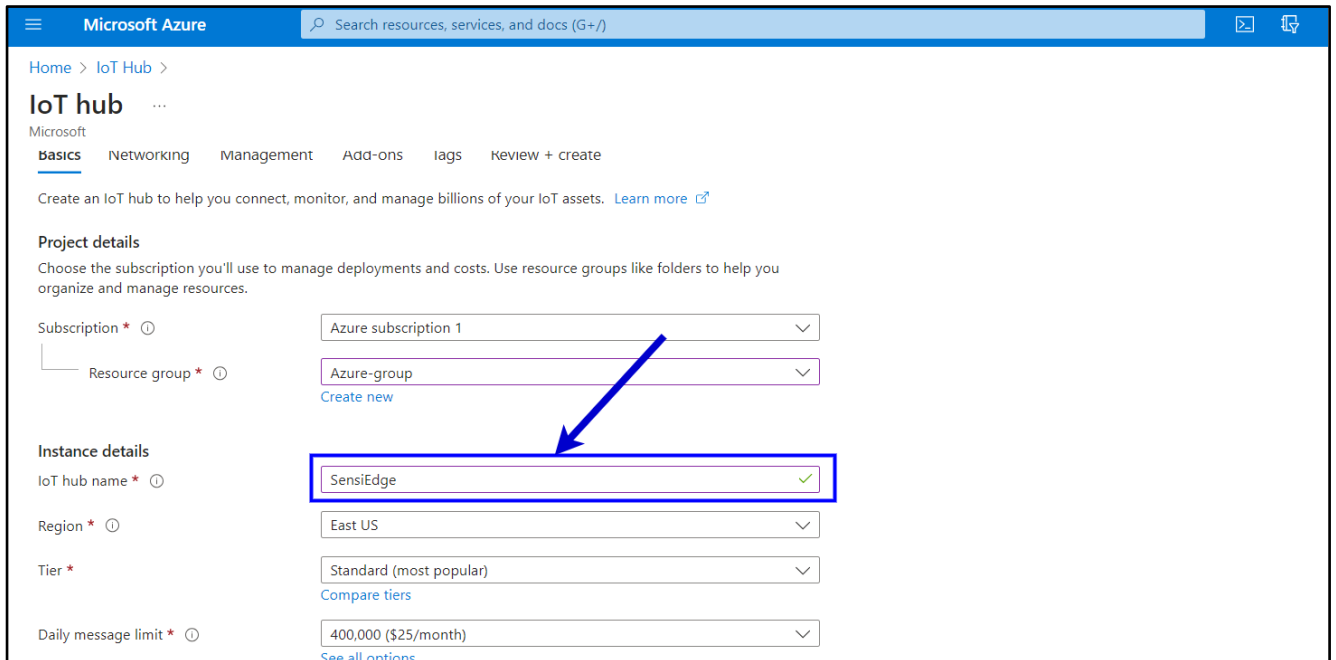
5. Choose **Subscription** (step 1) and **Azure-group** (step 2).

**Figure 86.** Choose the Subscription

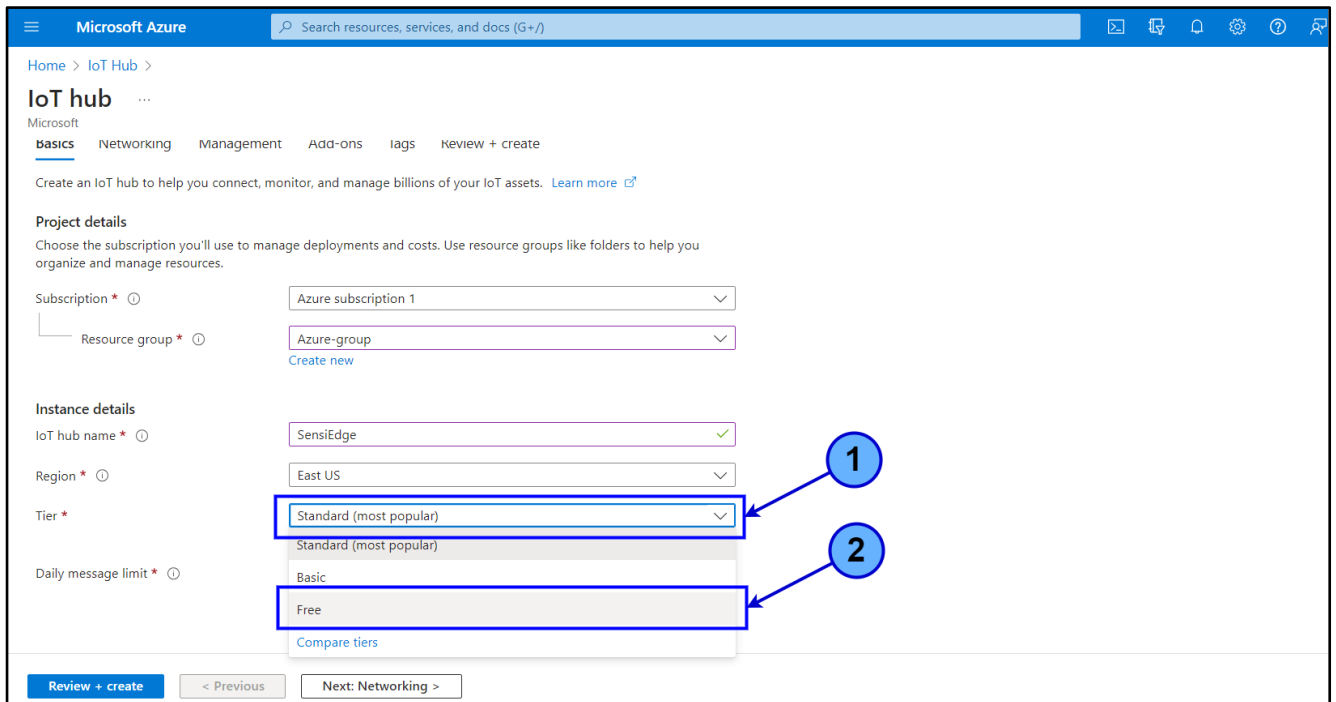


6. Enter the **SeniEdge** name in the **IoT hub name** line.

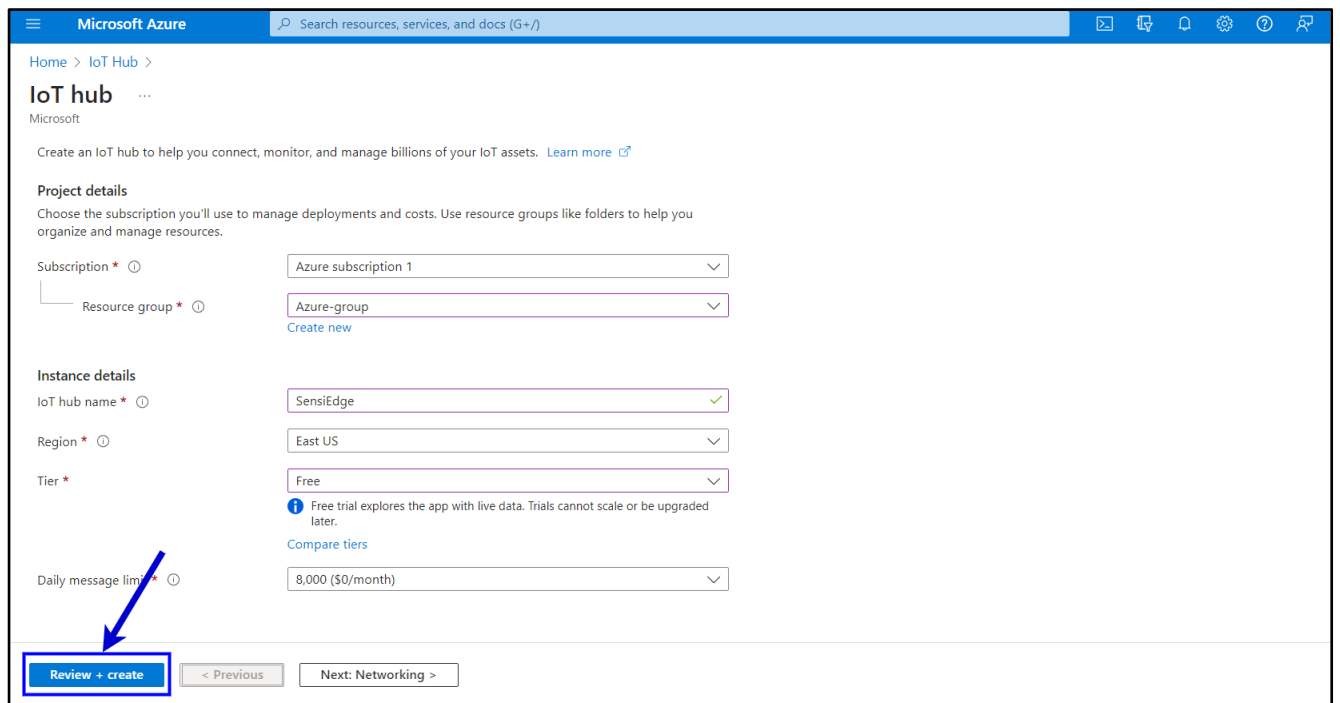
**Figure 87.** IoT hub name



7. Click on **Tier** (step 1) and choose the **Free** (step 2).  
**Figure 88.** Choose the Tier

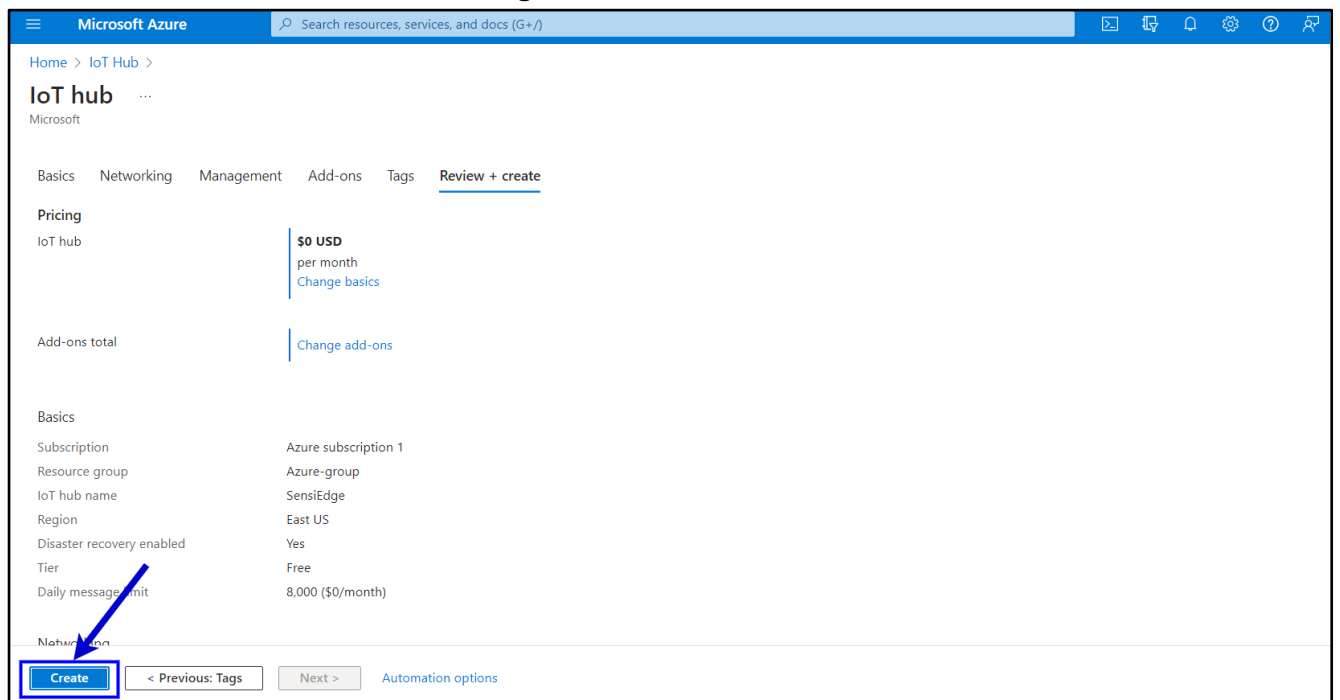


8. Click on **Review + create**.  
**Figure 89.** Review IoT hub



9. Click on Create.

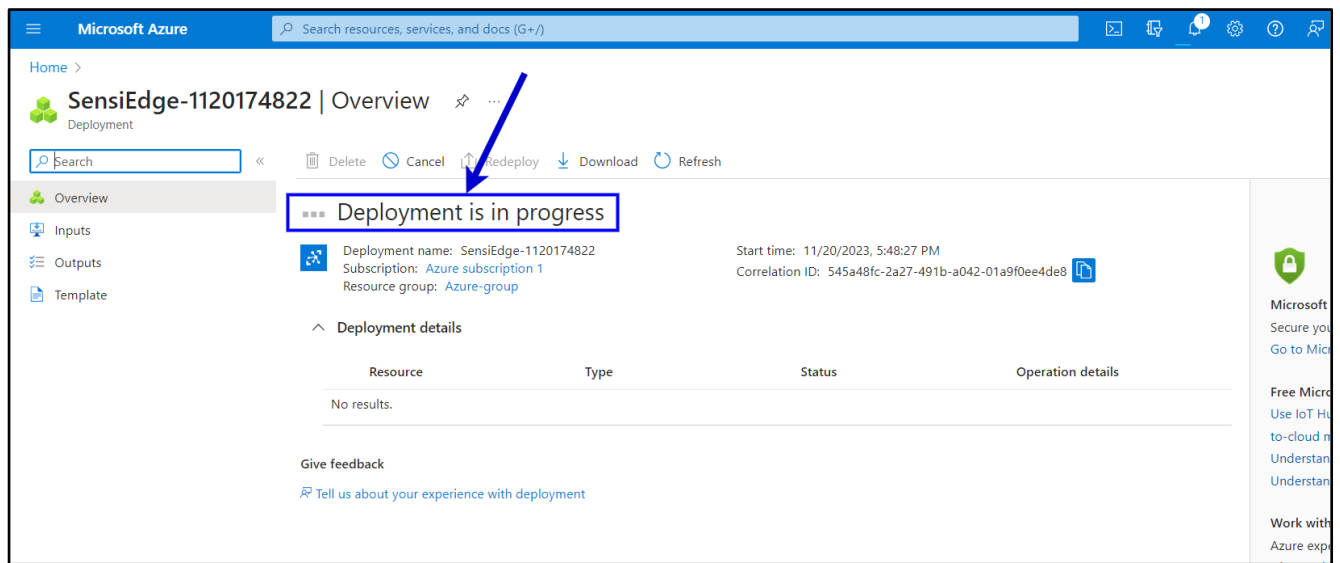
**Figure 90.** Create IoT hub



10. Waiting for our Hub to be created.

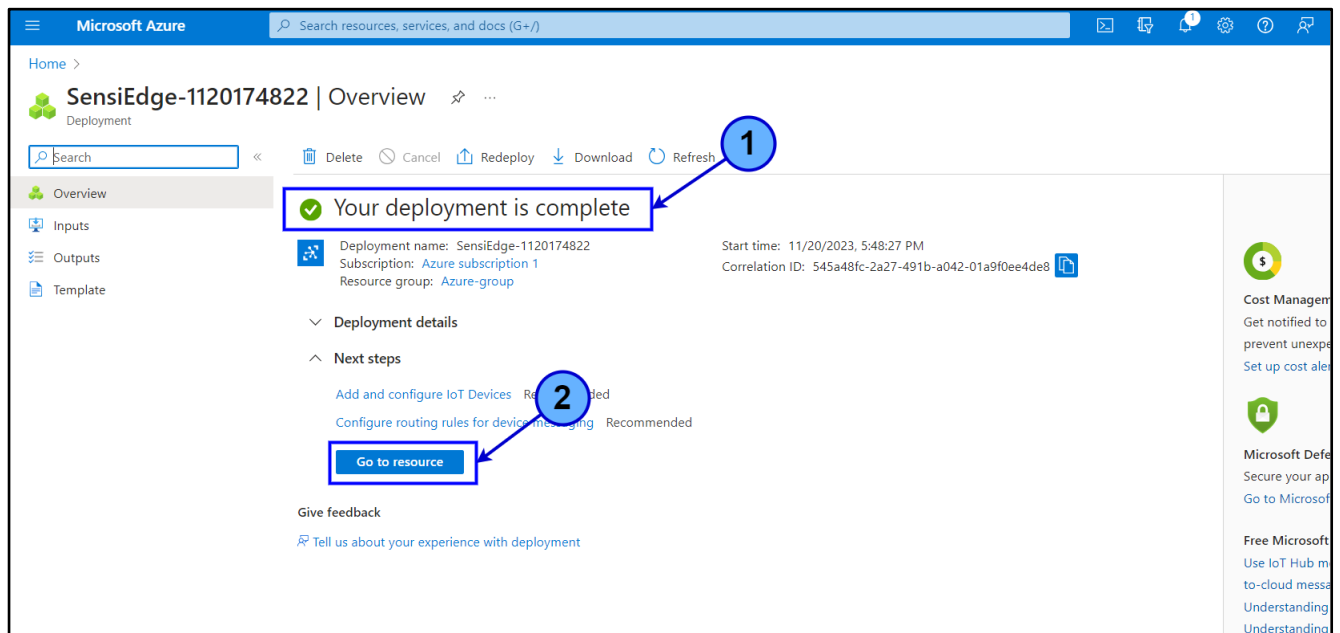
**Figure 91.** Status IoT Hub





11. After the status changes to Your deployment is complete (step 1), click on Go to resource (step 2).

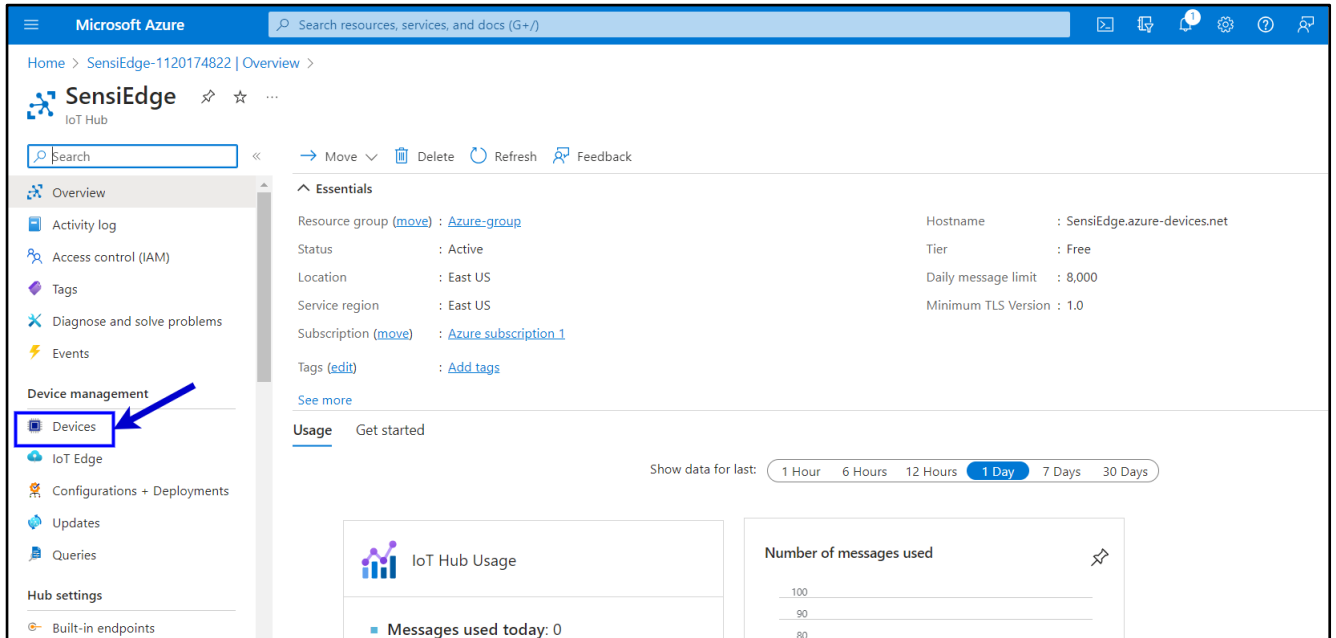
**Figure 92.** Go to resource



### 7.3.2 Add Device

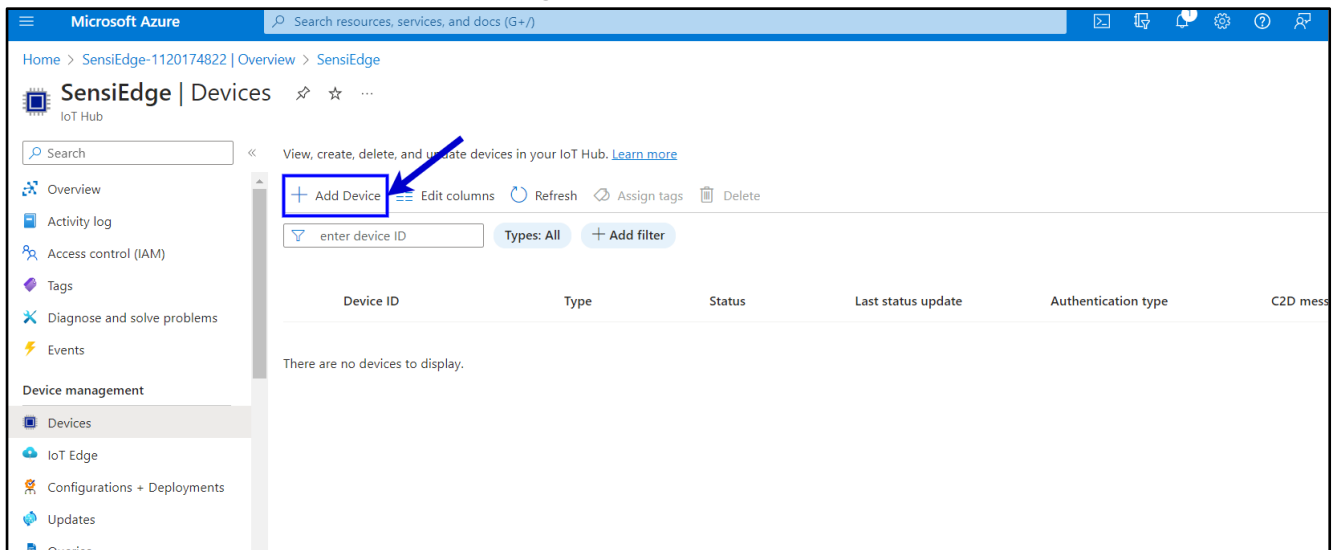
1. Go to the **Devices** page.

**Figure 93.** Go to Devices



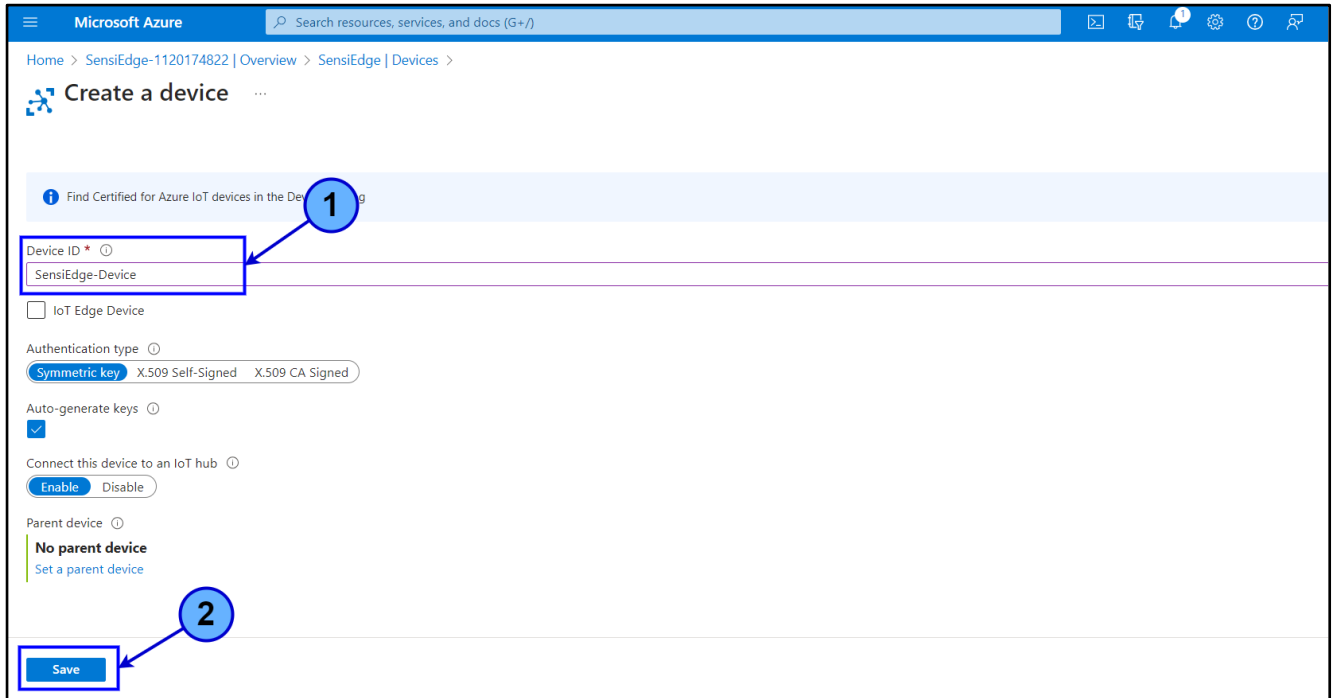
2. Click on **Add Device**.

**Figure 94.** Add Device



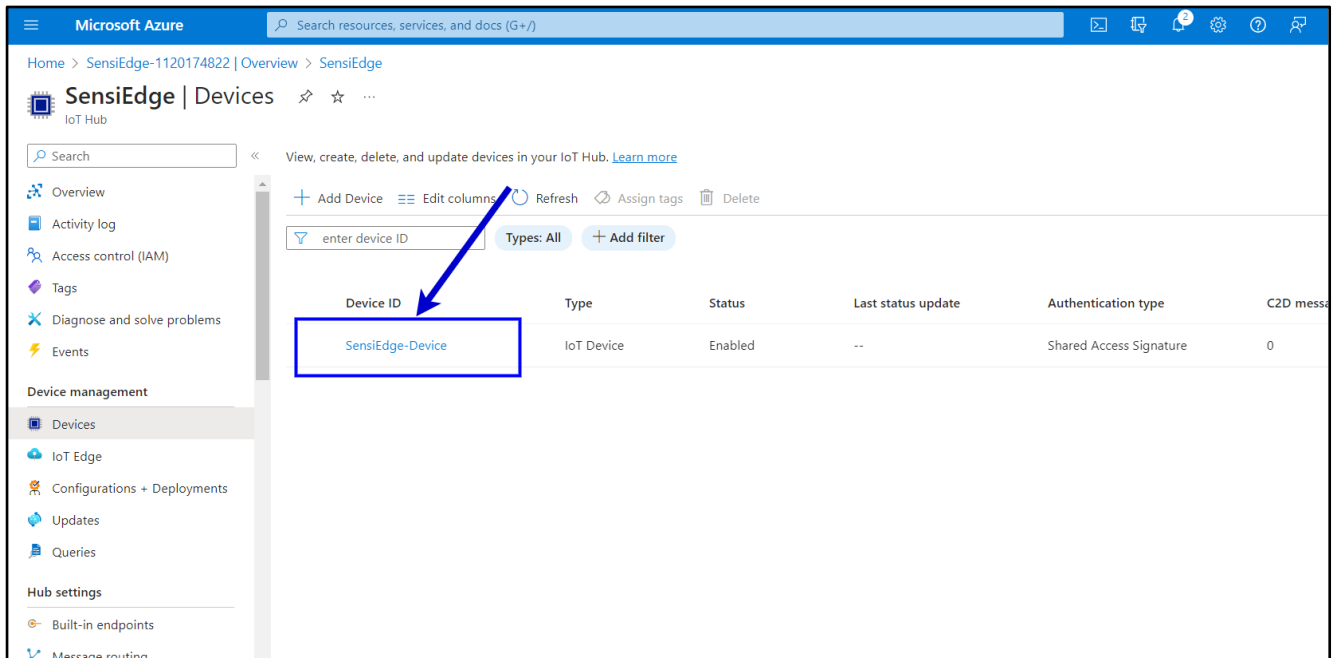
3. Enter the **SensiEdge-Device** name in **Device ID** (step 1) and click on **Save** (step 2).

Figure 95. Device ID



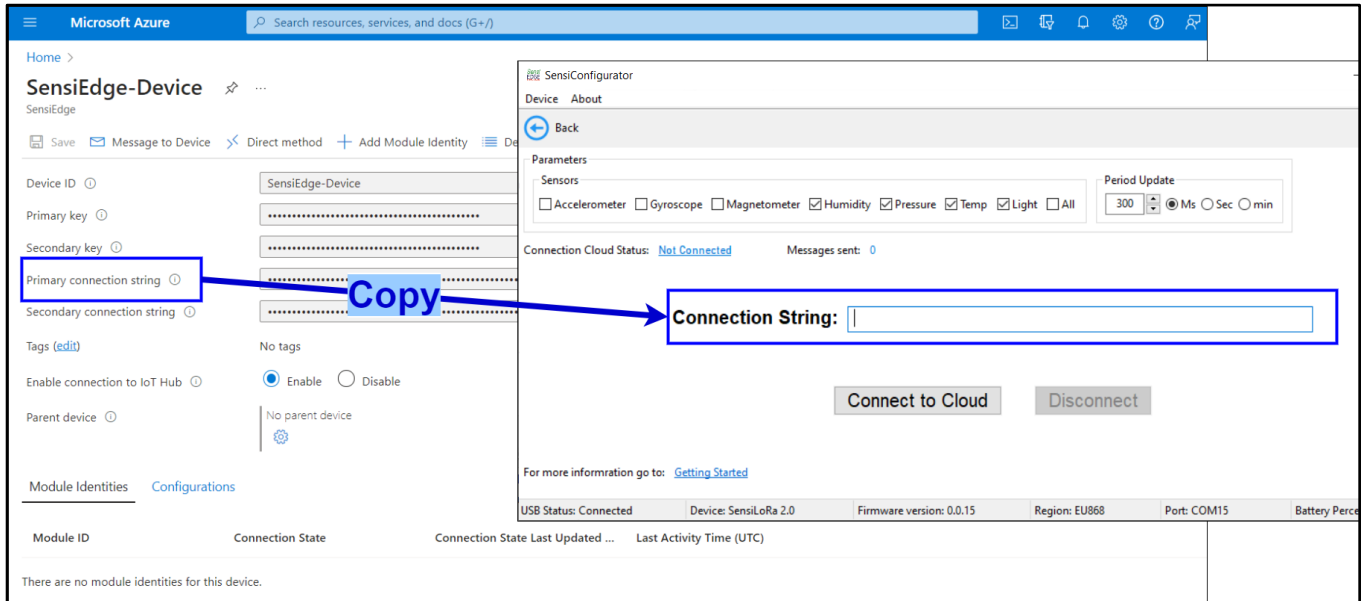
4. Choose the **SeniEdge-Device**.

Figure 96. Go to Device information



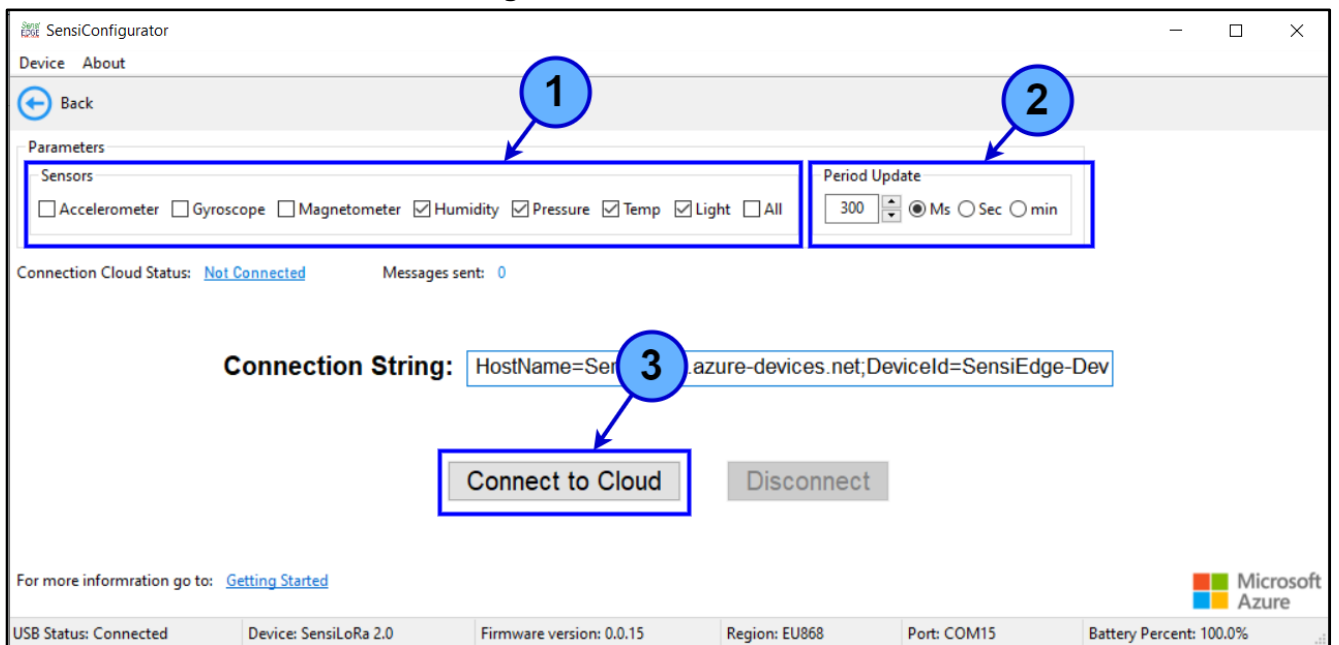
5. Copy the **Primary connection string** to the **Connection String** line in the SensiConfigurator program.

**Figure 97.** Copy connection string



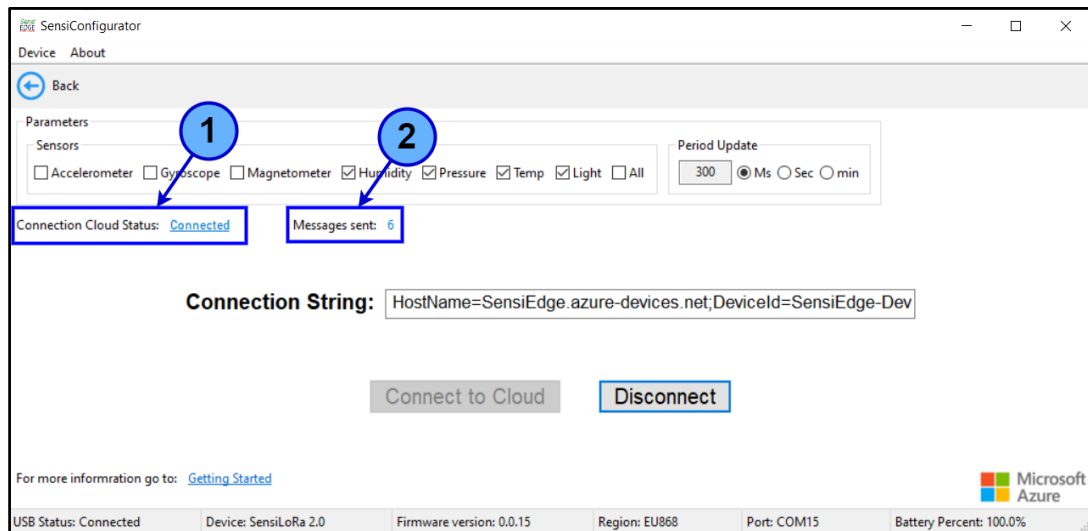
6. Choose **Sensors** (step 1) and **Period** send information to Cloud (step 2) and then click on **Connect to Cloud** (step 3).

**Figure 98.** Connect to cloud



7. If the connection is successful, the **Connection Cloud Status** will change to **Connected** (step 1), and the **Message sent** (step 2) counter will begin counting the number of messages sent to the cloud.

Figure 99. Status cloud



### 7.3.3 Integration Azure IoT cloud to ThingsBoard

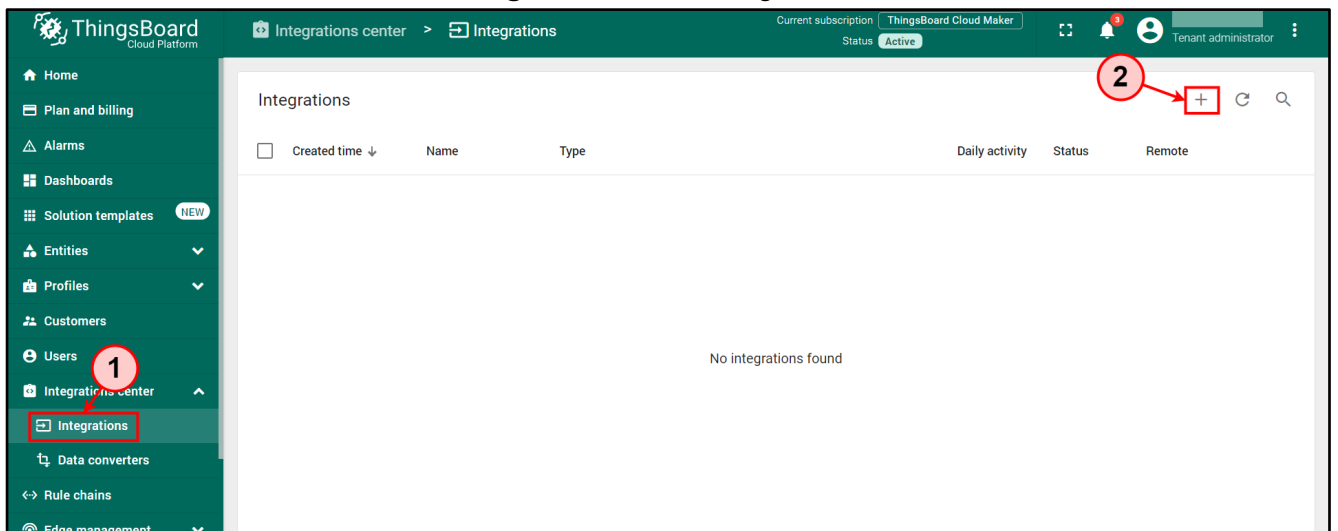
#### 7.3.3.1 Import Data Converter

1. Go to [7.2.3.1 import Data Converter](#) and follow the steps.

#### 7.3.3.2 Integration Azure IoT Cloud

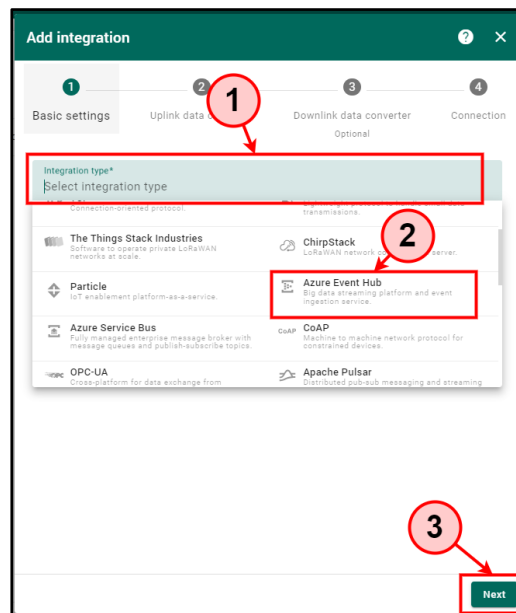
1. Go to **Integrations** (step 1) and click on **Add** (step 2).

Figure 100. Add integration



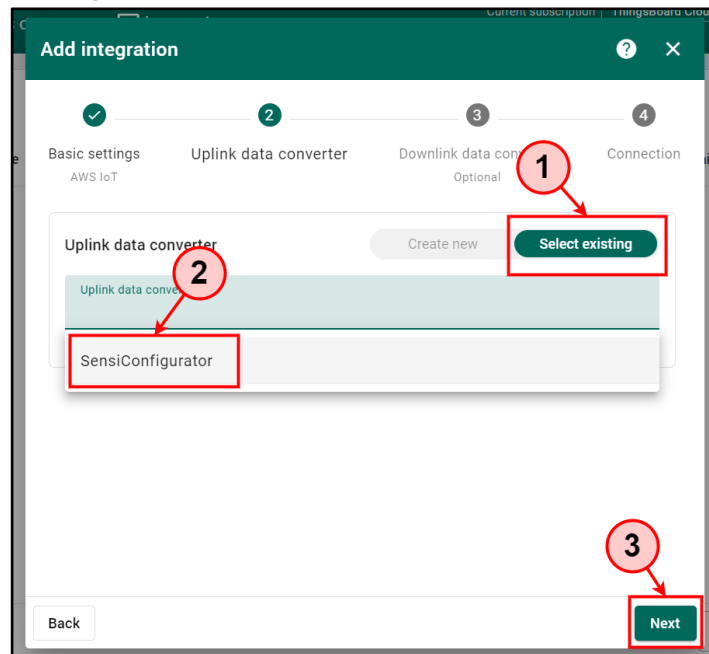
2. In **Integration type** (step 1) choose **AWS IoT** (step 2) and click on **Next** button (step 3).

Figure 101. Choose the Azure Event Hub



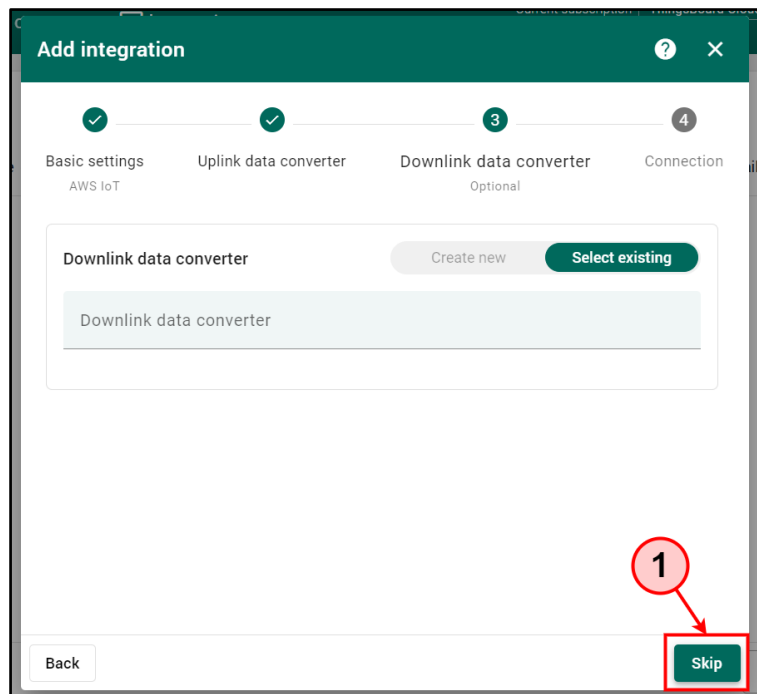
3. Choose **Select existing** (step 1), select **SensiConfigurator** (step 2), and click on **Next** (step 3).

Figure 102. Choose the Uplink data converter

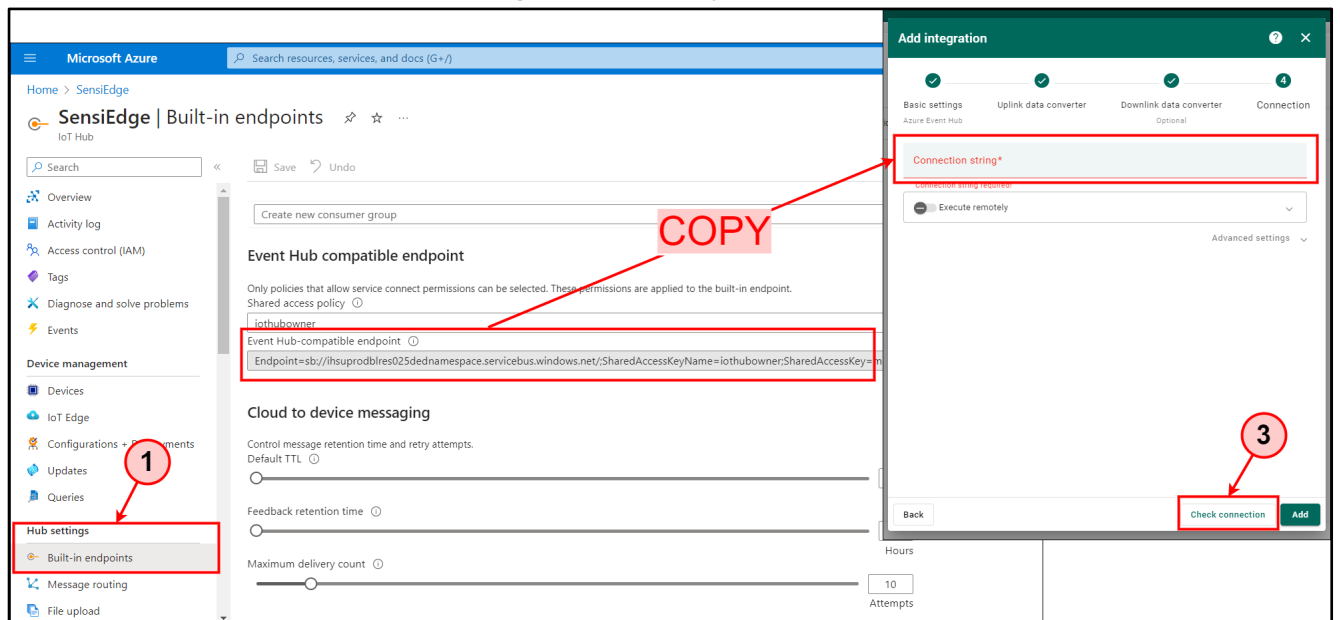


4. Click on **Skip** Downlink data converter.

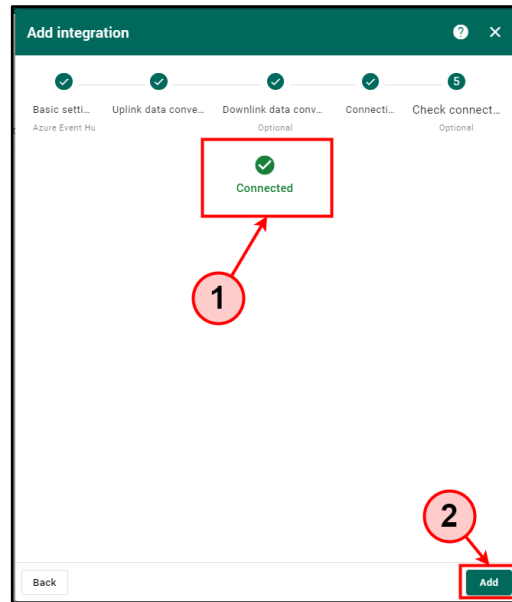
Figure 103. Downlink data converter



5. Click on **Skip** Downlink data converter.  
Figure 104. Copy endpoint



6. Click on **Skip** Downlink data converter.  
Figure 105. Status connection



### 7.3.3.3 Dashboard

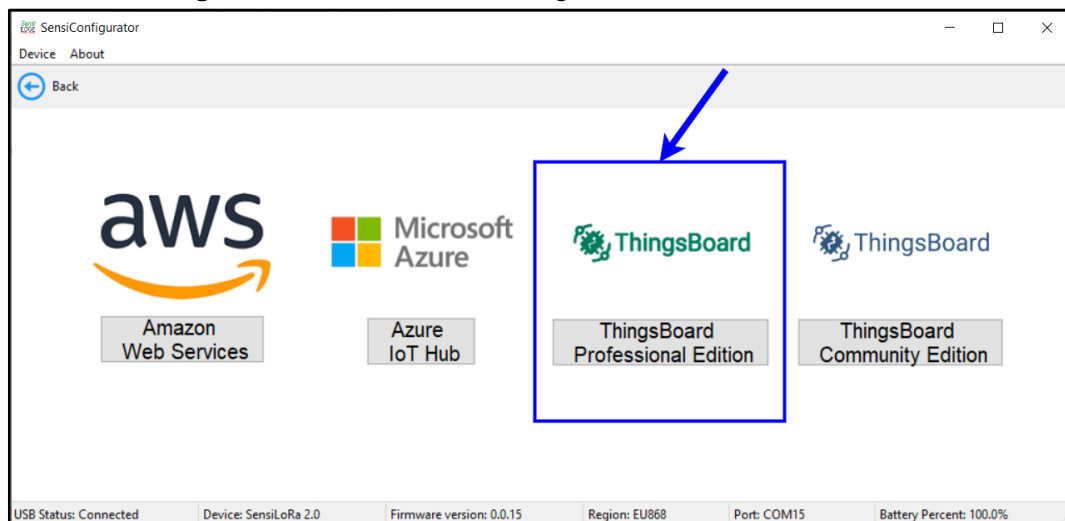
1. Go to [7.4.3 Dashboard](#) and follow the steps.

## 7.4 ThingsBoard Professional Edition Cloud

### 7.4.1 Add Device

1. Choose the **ThingsBoard Professional Edition Cloud** Page.

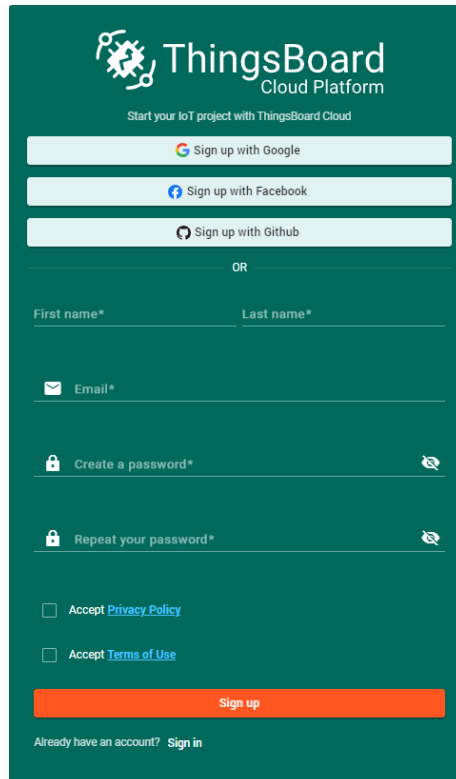
**Figure 106.** Choose the ThingsBoard Professional cloud



2. Go to the [ThingsBoard Professional Edition](#) website and register.

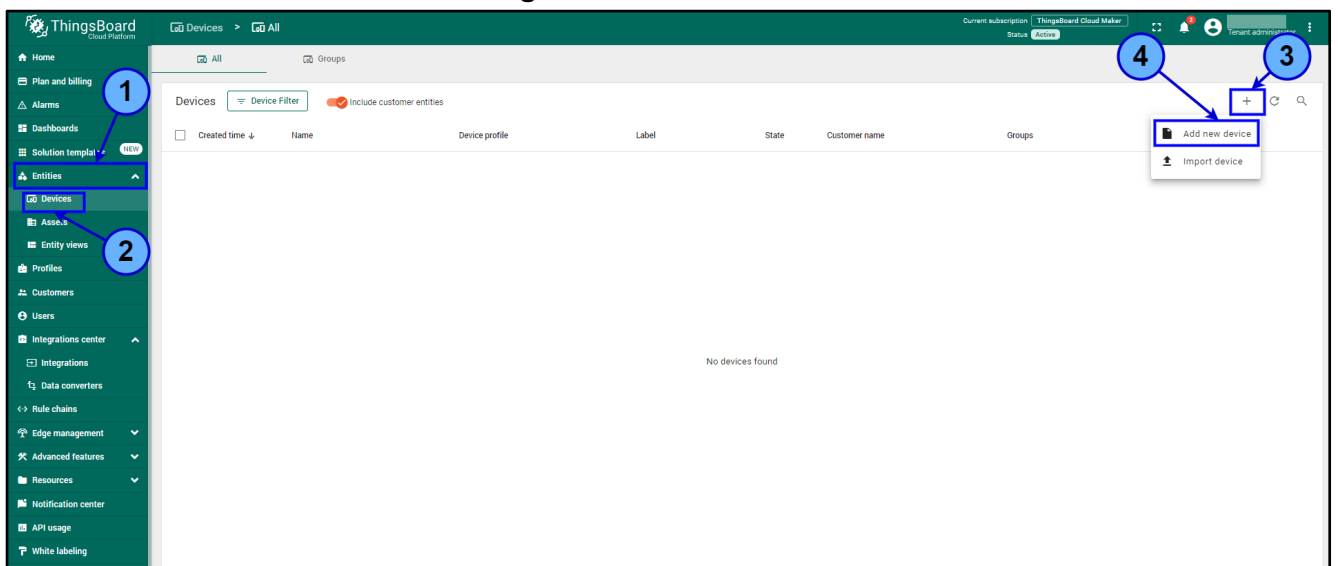
**Figure 107.** Sing up to cloud





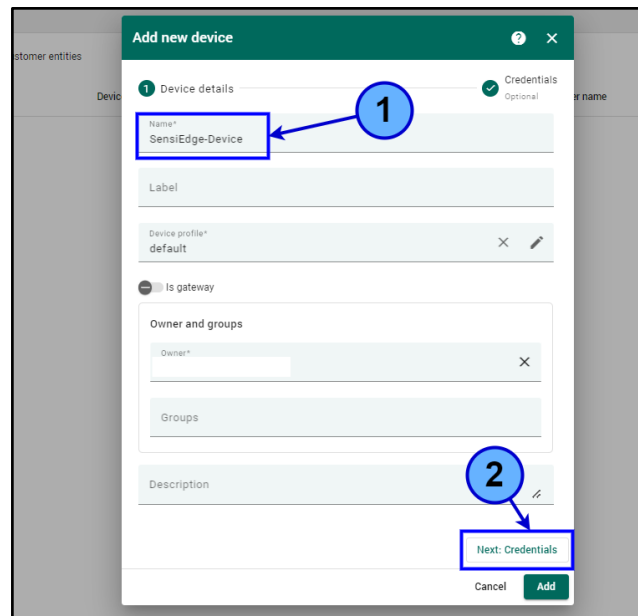
3. Go to **Entities** (step 1), **Devices** (step 2), and click on **Add** (step 3) and choose **Add new device** (step 4).

Figure 108. Add a device



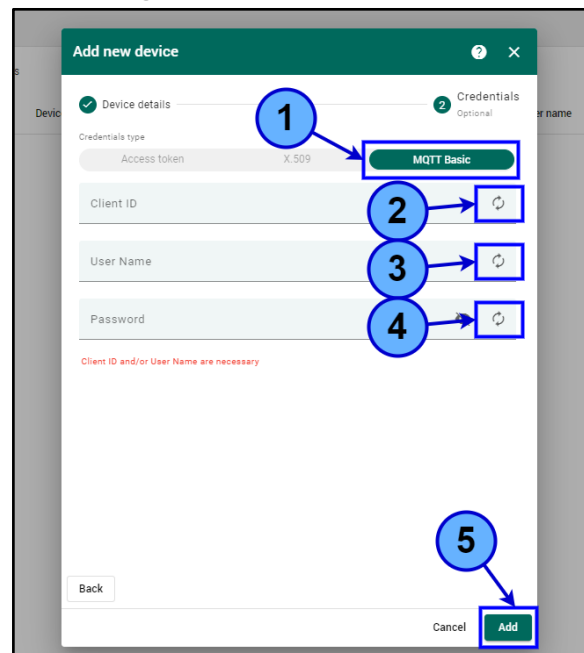
4. Enter the **SensiEdge-Device** in the **Name line** (step 1) and click on **Next: Credentials** (step 2).

**Figure 109.** Name the device



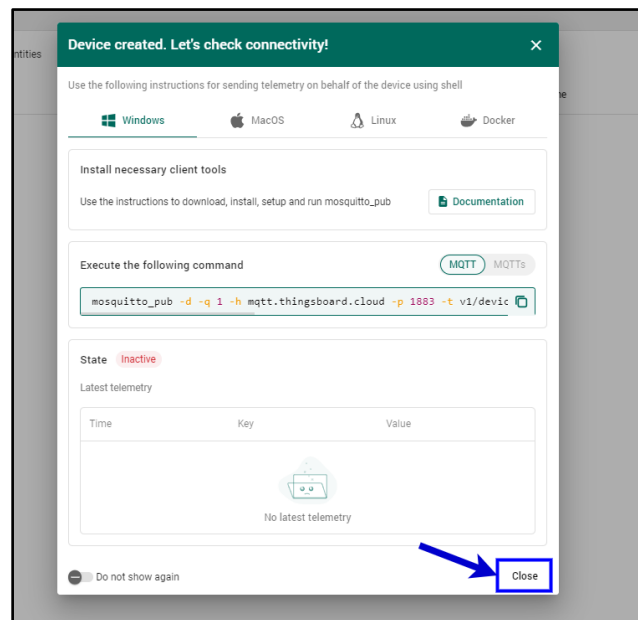
5. Choose the **MQTT Basic** (step 1). Click on **Generate Client ID** (step 2), **User Name** (step 3), **Password** (step 4), and click on **Add** (step 5).

**Figure 110.** Generate MQTT



6. Click on **Close**.

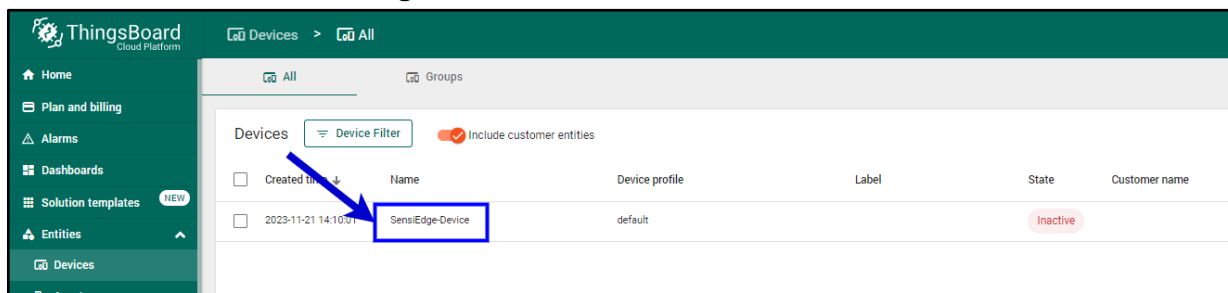
**Figure 111.** Check connection



## 7.4.2 Connect to Cloud

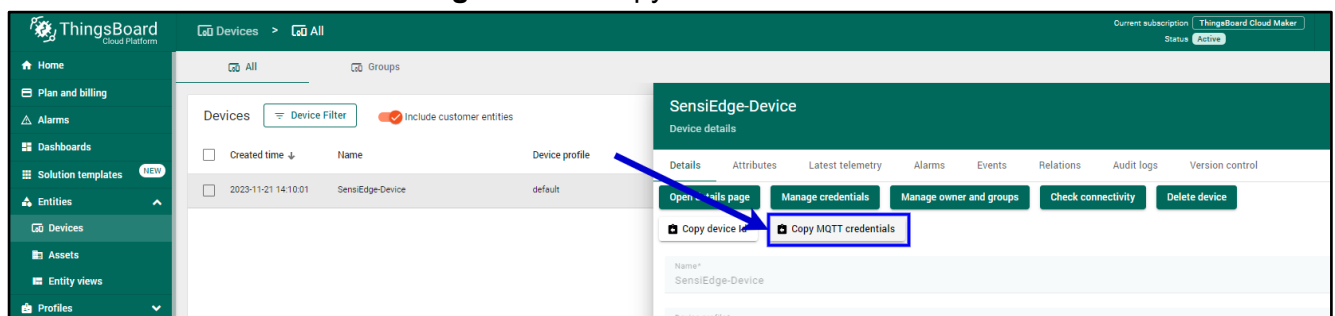
1. Choose the **SensiEdge-Device** Device.

Figure 112. Go to Device information



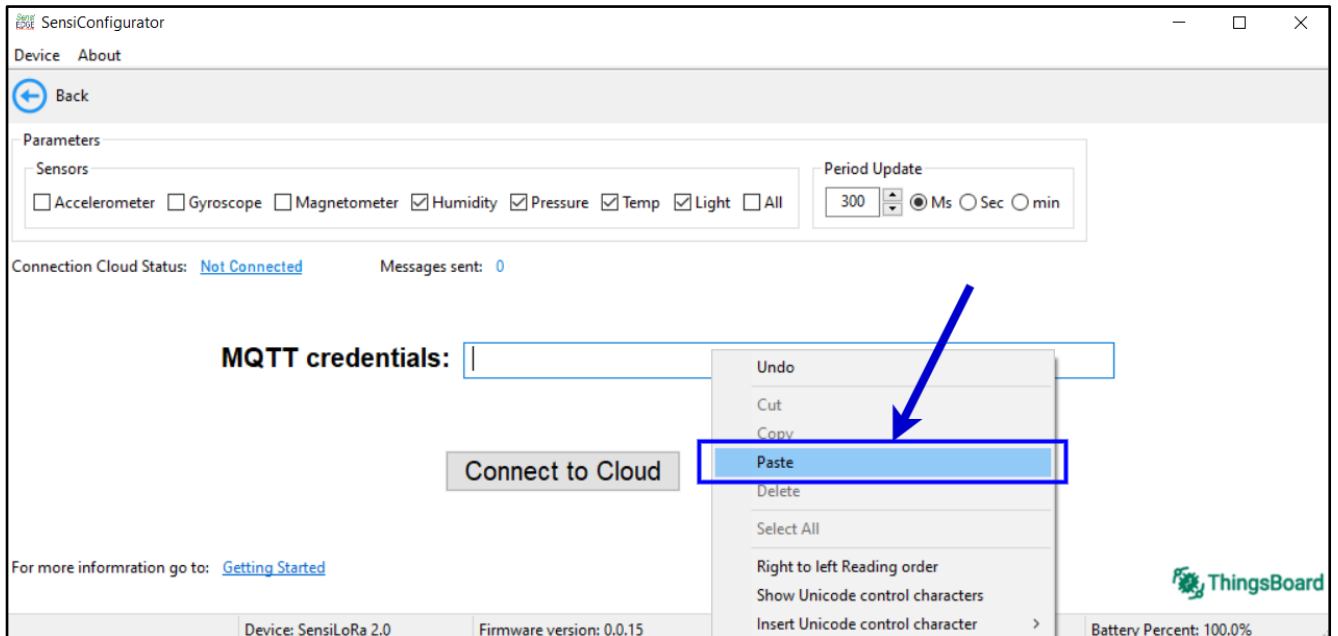
2. Click on **Copy MQTT credentials**.

Figure 113. Copy MQTT credentials



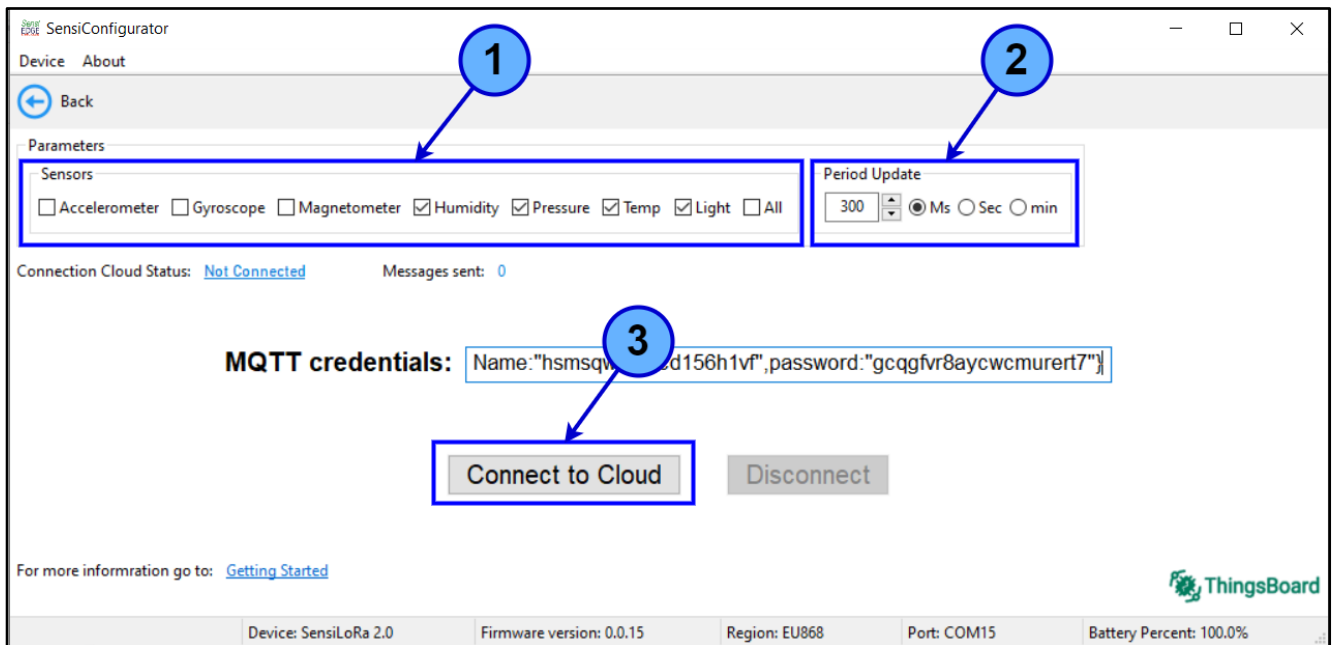
3. Paste **MQTT credentials**.

Figure 114. Paste MQTT



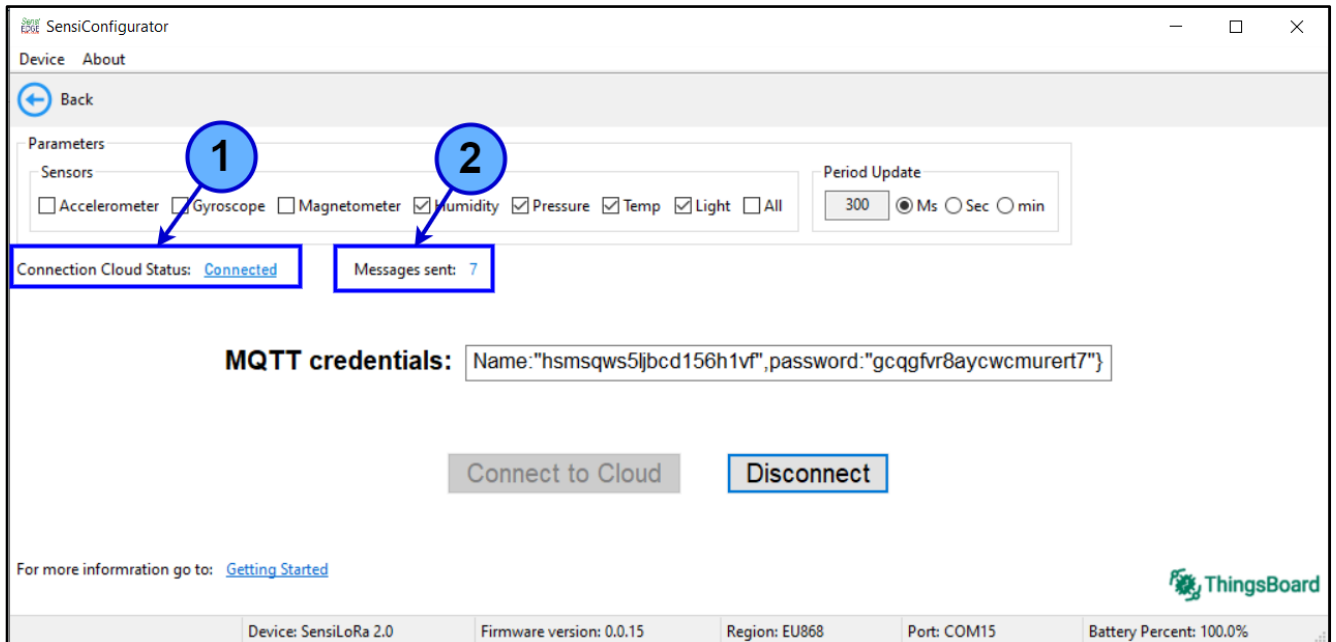
4. Choose **Sensors** (step 1) and **Period** send information to Cloud (step 2) and then click on **Connect to Cloud** (step 3).

**Figure 115.** Connect to cloud



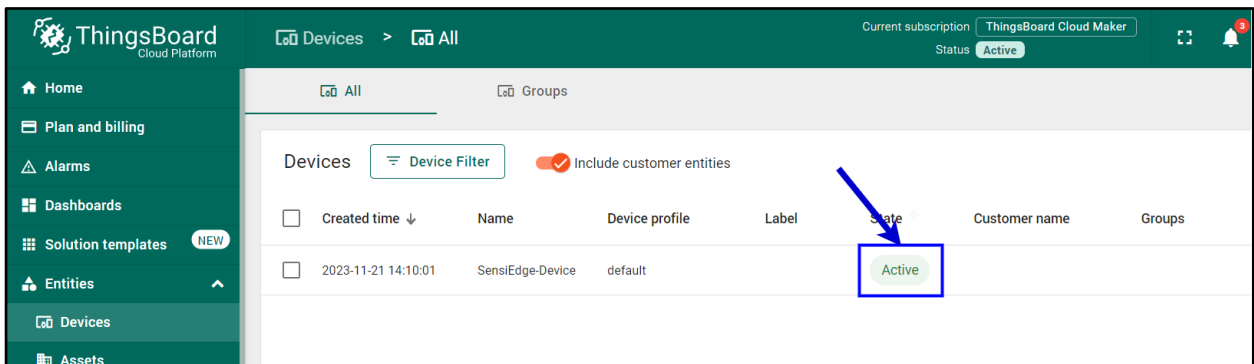
5. If the connection is successful, the **Connection Cloud Status** will change to **Connected** (step 1) and the **Message sent** (step 2) counter will begin counting the number of messages sent to the cloud.

**Figure 116.** Status cloud



6. If the device is connected to the Cloud then the **State** will be **Active**.

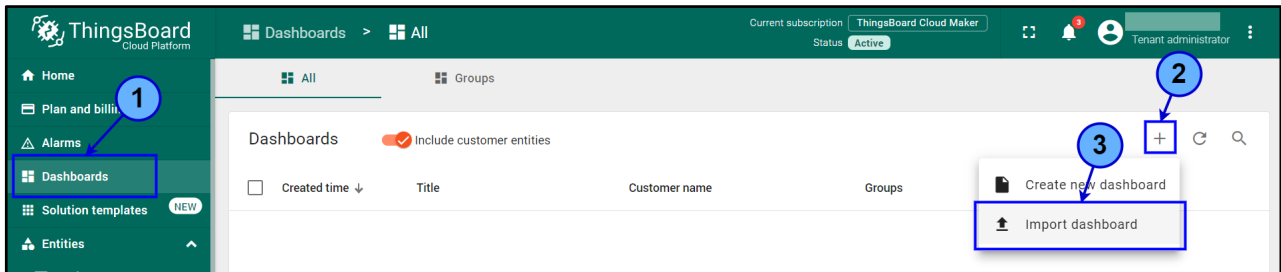
**Figure 117. Device status**



### 7.4.3 Dashboard

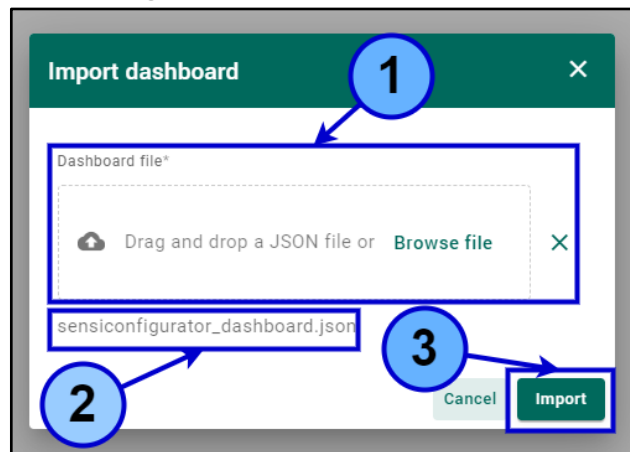
1. Go to **Dashboards** (step 1), click on **Add** (step 2), and choose **Import dashboard** (step 3).

**Figure 118. Import Dashboard**



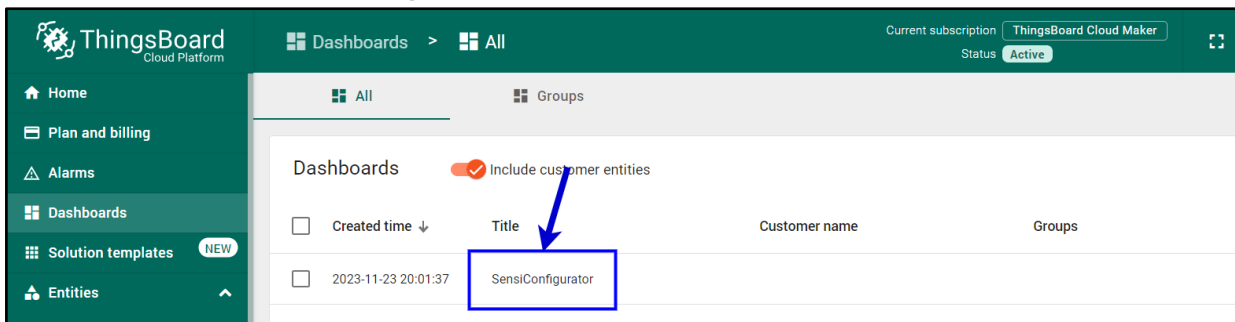
2. Download the Dashboard at this link: [sensiconfigurator dashboard](#)  
After Downloading the Dashboard file, drag and drop it into the **Dashboard file window** (step 1), after the name file appears (step 2) click on **Import** (step 3).

Figure 119. Add dashboard file



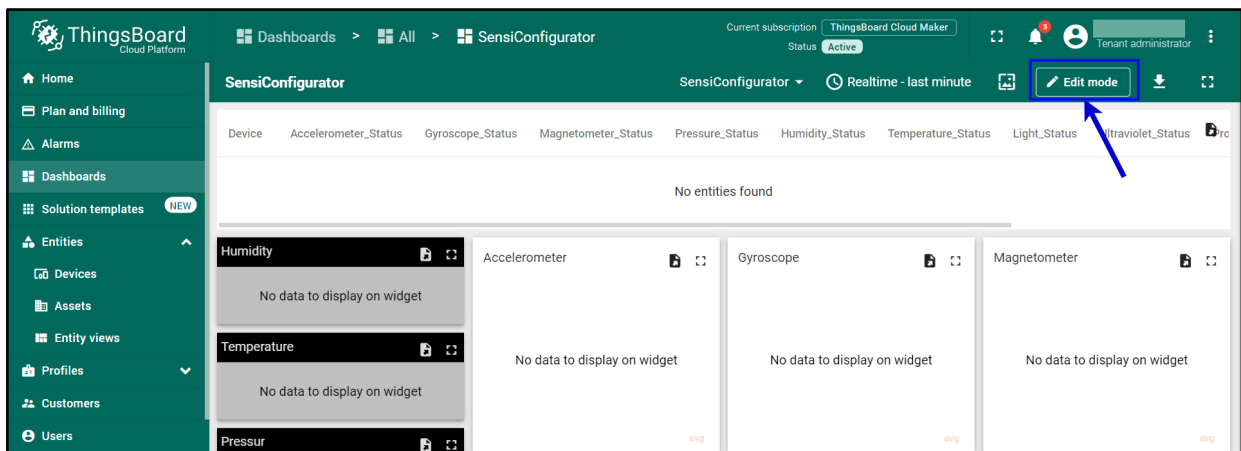
3. Click on **SensiConfigurator** Dashboard.

Figure 120. Go to import Dashboard



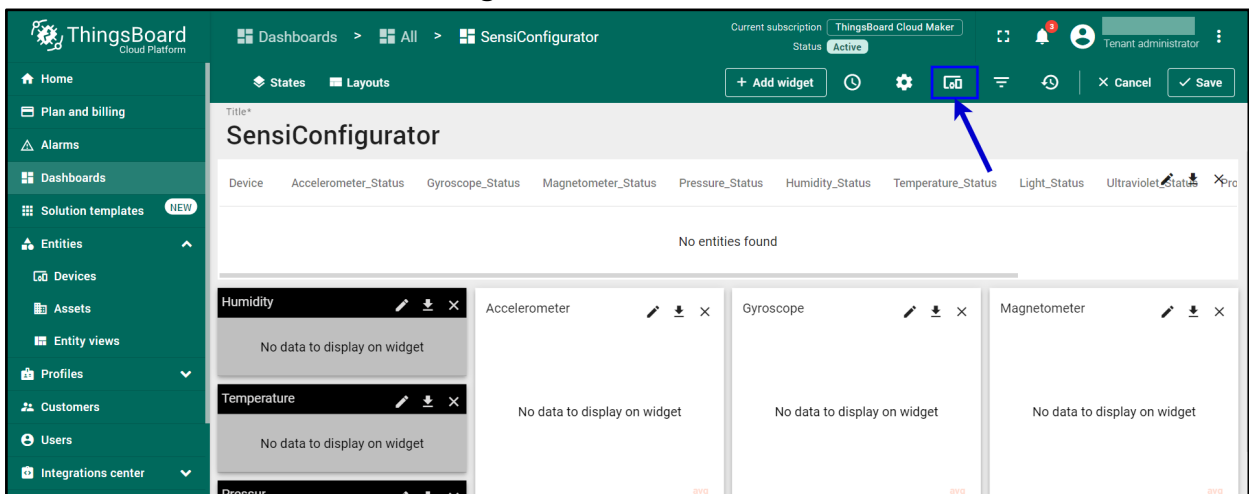
4. Click on **Edit mode**.

Figure 121. Go to Edit mode



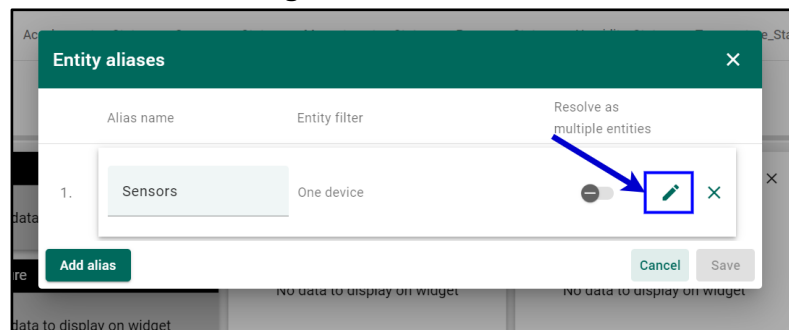
5. Click on **Aliases**.

Figure 122. Go to Aliases



6. Click on **Edit Alias**.

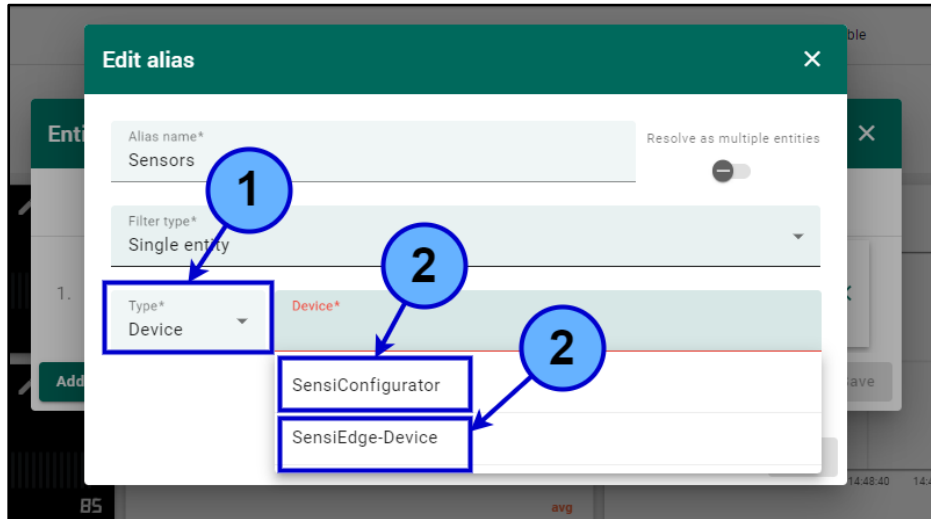
Figure 123. Edit Alias



7. Choose **Type Device** (step 1) and choose **SensiEdge-Device**, if using ThingsBoard cloud in SensiConfigurator Program or choose

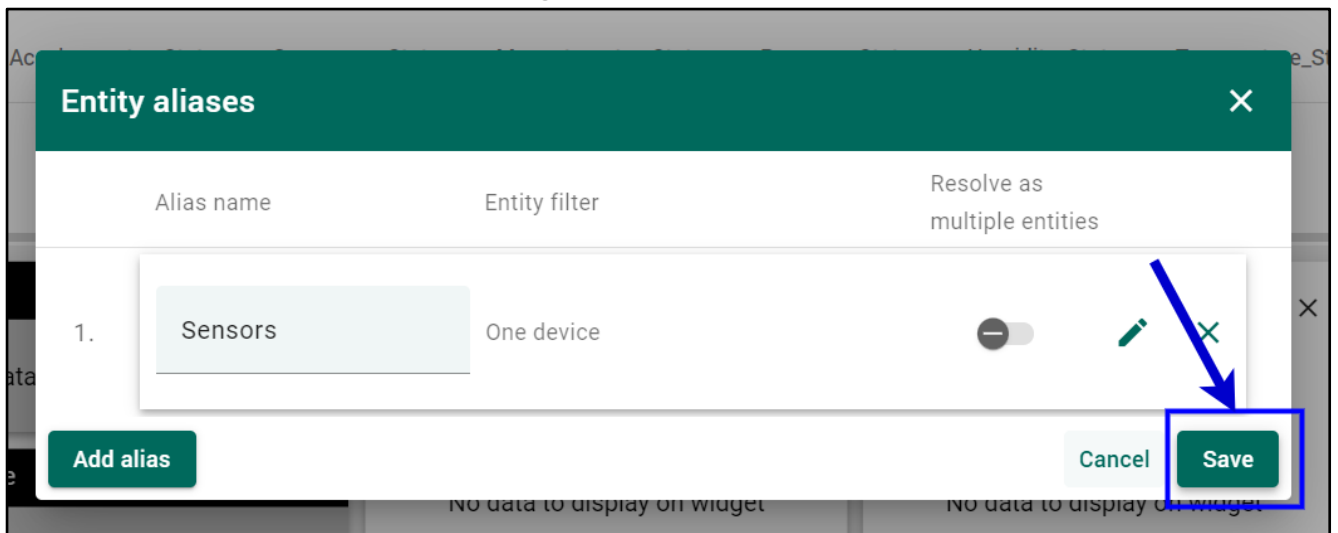
**SensiConfigurator**, if using integration AWS or Azure cloud (step 2), after clicking on **Save**.

**Figure 124.** Choose Device



8. Click on **Save**.

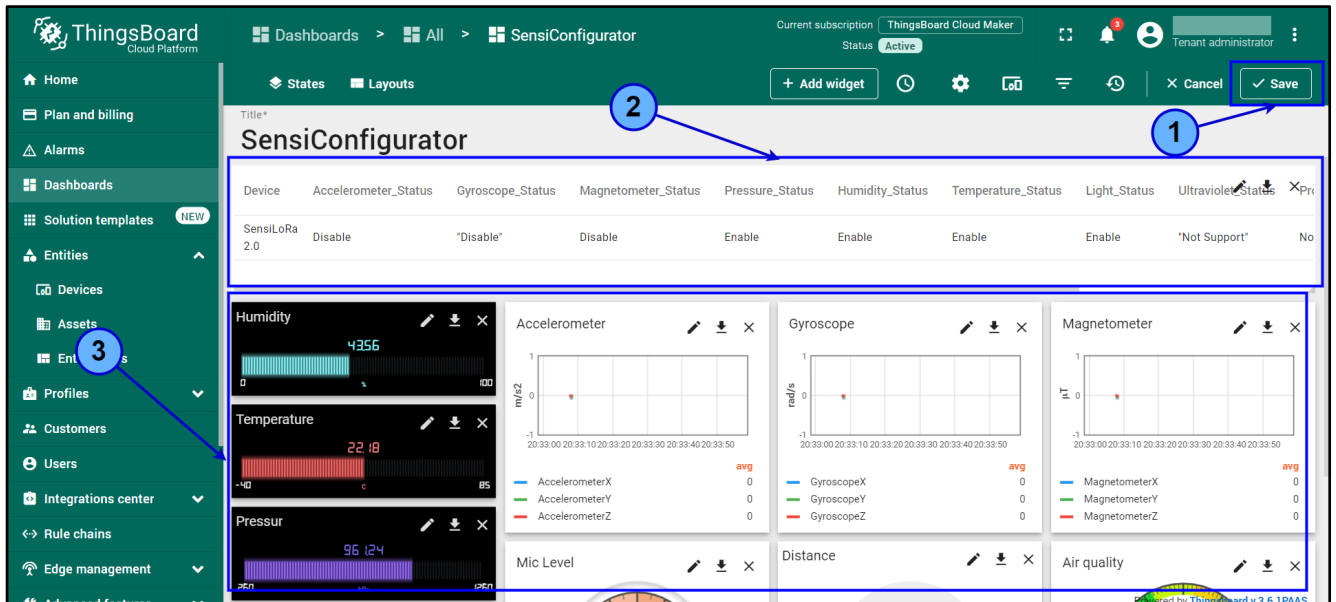
**Figure 125.** Save alias



9. Click on Save (step 1). The table (step 2) displays the name of the device that is connected to the SensiConfigurator, and the status of the sensor (**Enable** or **Disable**). Also, if some boards do not have some sensors from the list, then there will be a message **Not support**. For each sensor, a data visualization is displayed (step 3). If the sensor is disabled or not supported by the board, then the value will be zeros.

**Figure 126.** Save dashboard



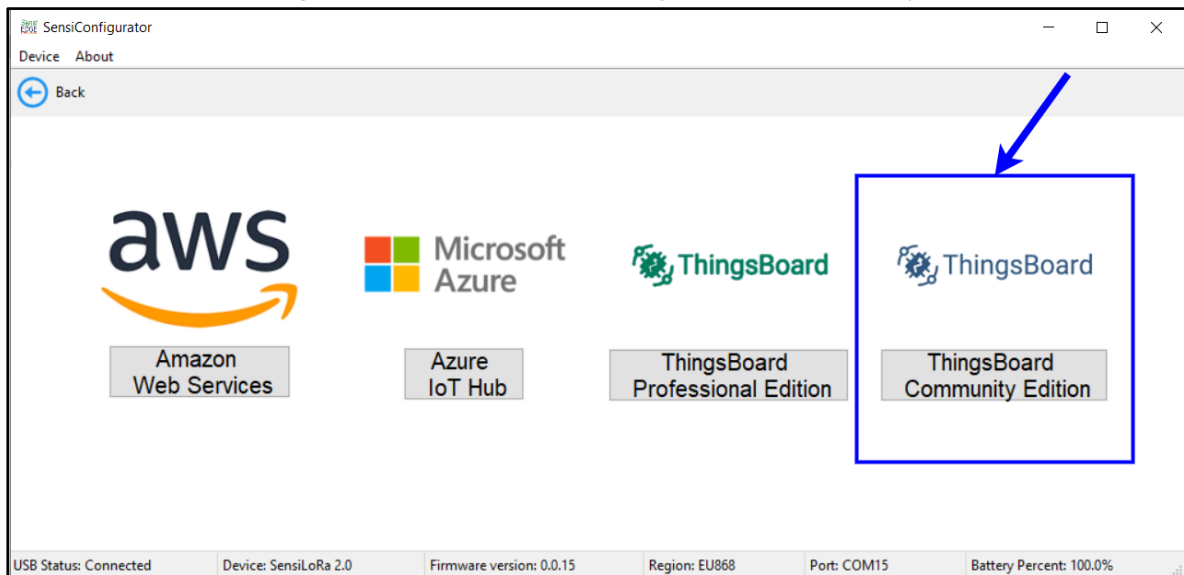


## 7.5 ThingsBoard Community Edition Cloud

### 7.5.1 Add Device

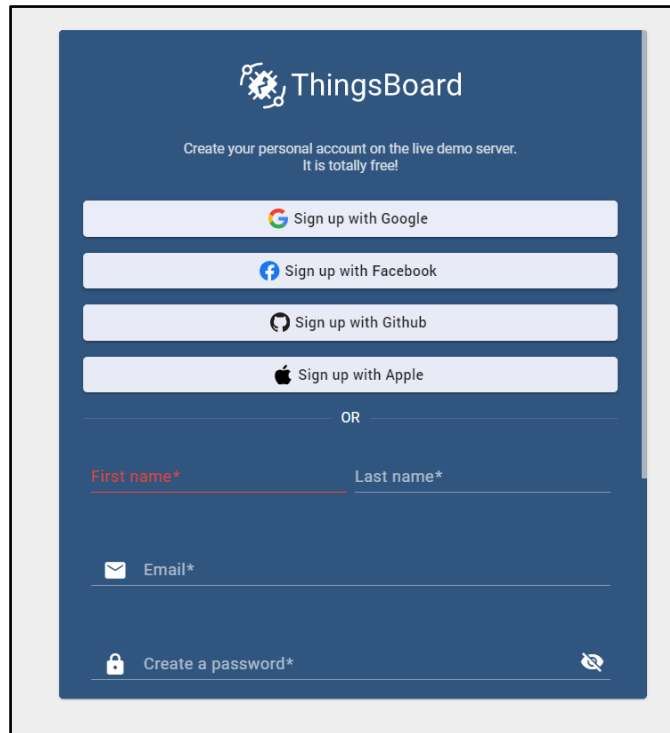
1. Choose the **ThingsBoard Community Edition cloud** Page.

**Figure 127.** Choose the ThingsBoard Community



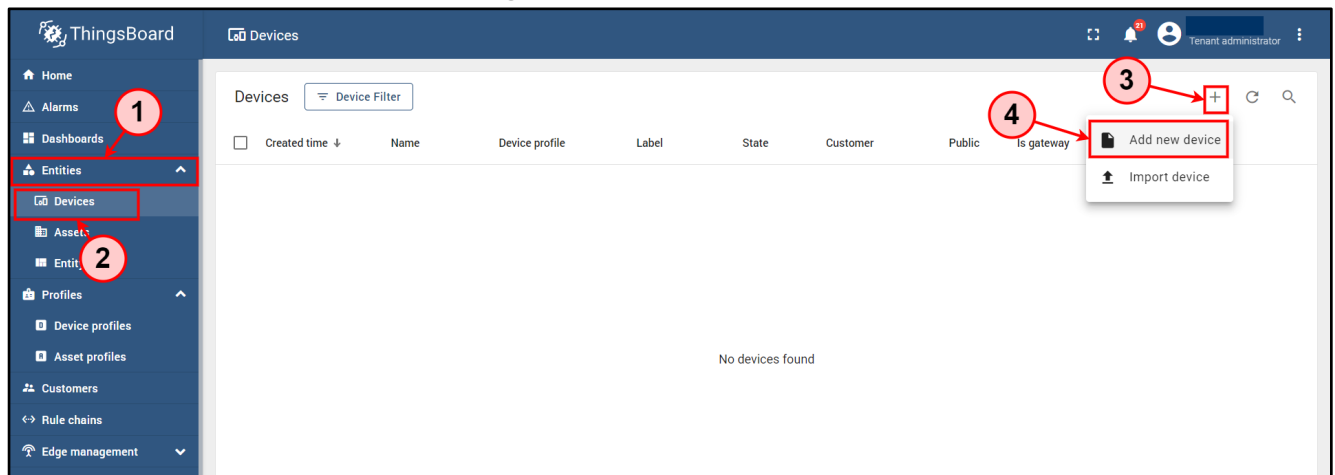
2. Go to the **ThingsBoard Community Edition** website and register.

**Figure 128.** Sing up to cloud



3. Go to **Entities** (step 1), **Devices** (step 2), and click on **Add** (step 3) and choose **Add new device** (step 4).

**Figure 129.** Add new device



4. Enter the **SensiConfigurator-Sensors** in the **Name line** (step 1) and click on **Create new** Device profile (step 2).

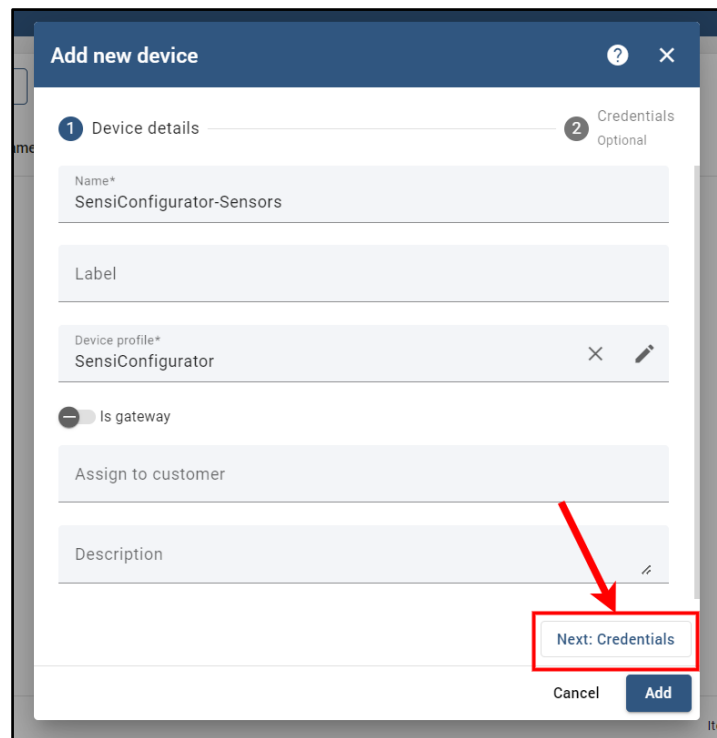
**Figure 130. Device name**

5. Enter the **SensiCofigurator** in line **Name** (step 1) and click on **Add** (step 2).

**Figure 131. Profile name**

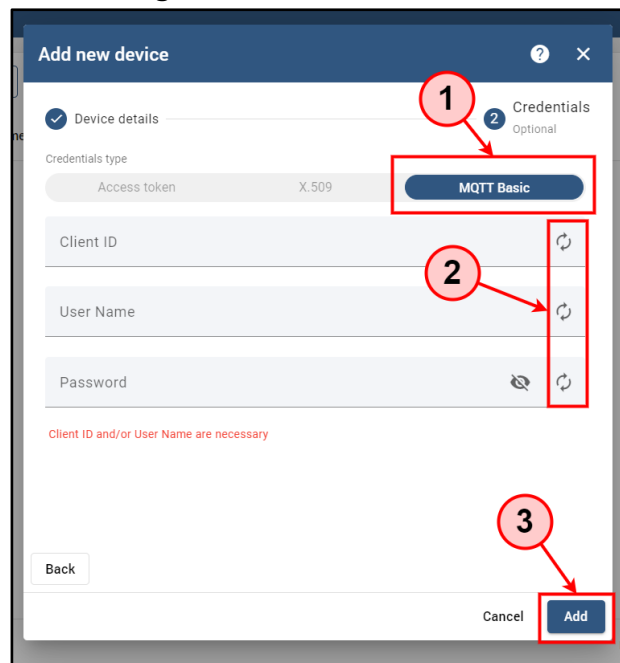
6. Click on **Next: Credentials**.

**Figure 132. Device details**



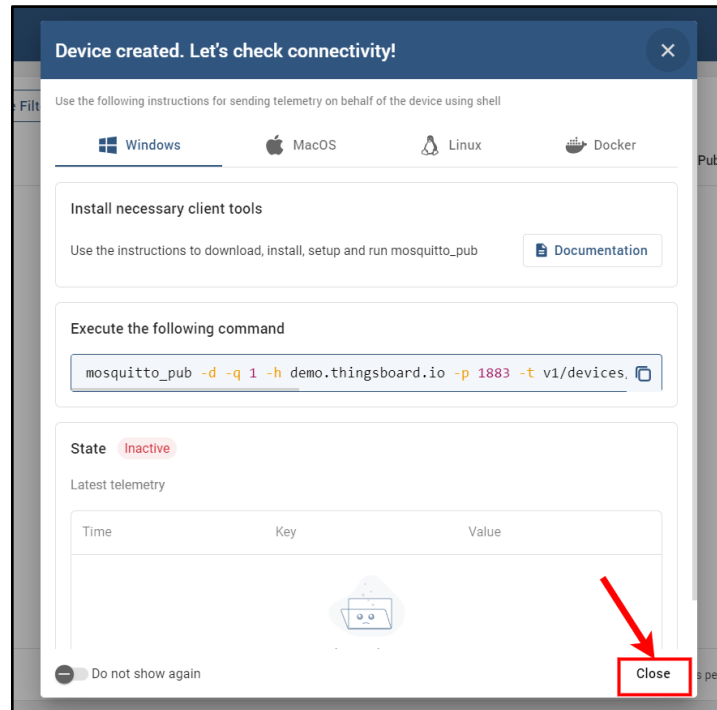
7. Choose the **MQTT Basic** (step 1). Click on **Generate Client ID, User Name, and Password** (step 2), and click on **Add** (step 3).

**Figure 133.** Generate MQTT



8. Click on **Close**.

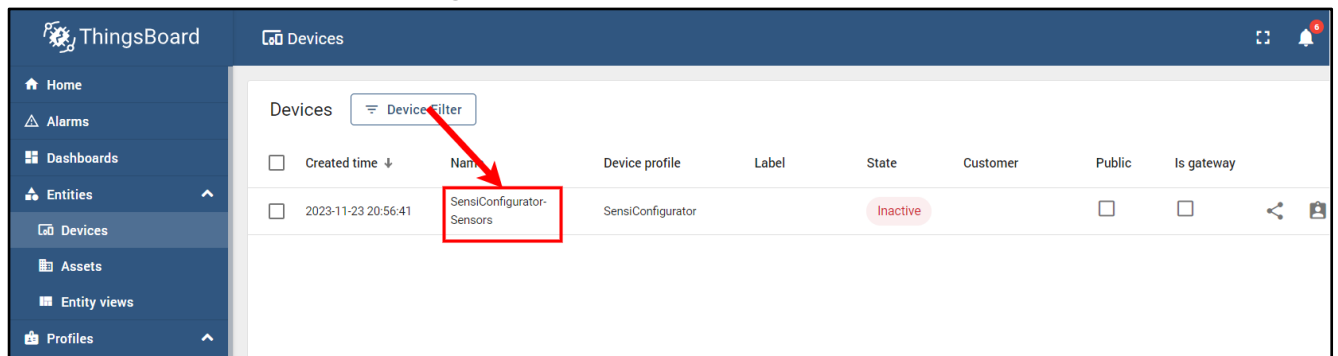
**Figure 134.** Check connectivity



## 7.5.2 Connect to Cloud

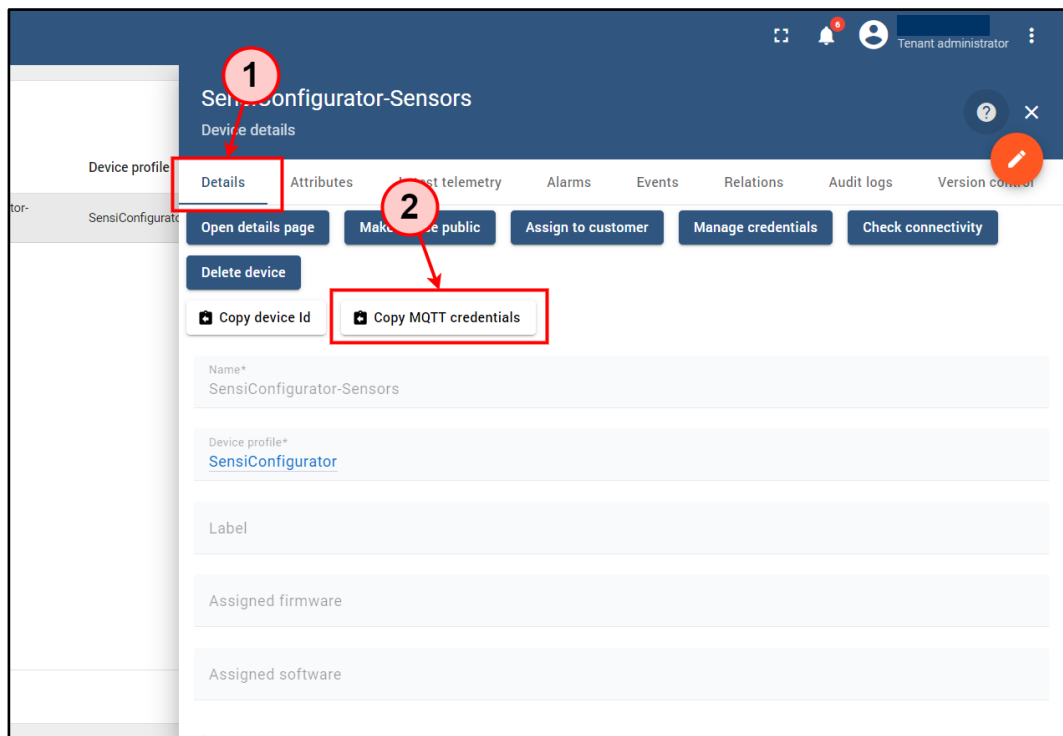
1. Choose the **SensiConfigurator-Sensors** Device.

**Figure 135.** Go to device information



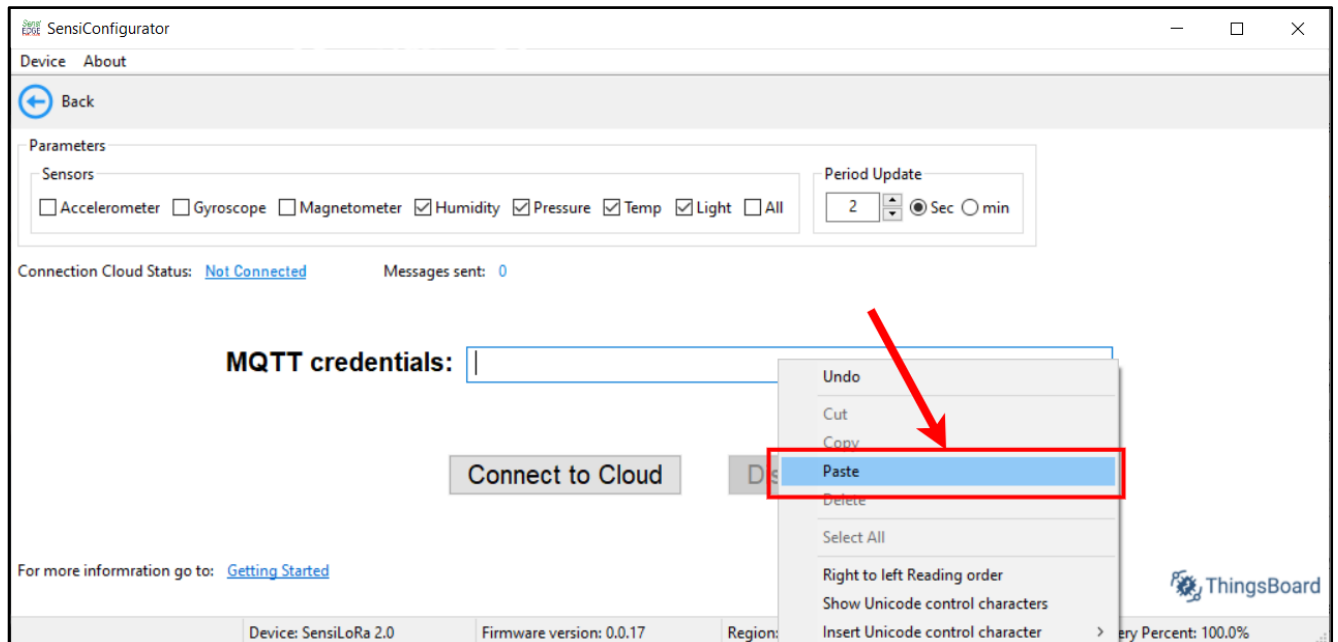
2. Choose the **Details** (step 1), and click on **Copy MQTT credentials** (step 2).

**Figure 136.** Copy MQTT



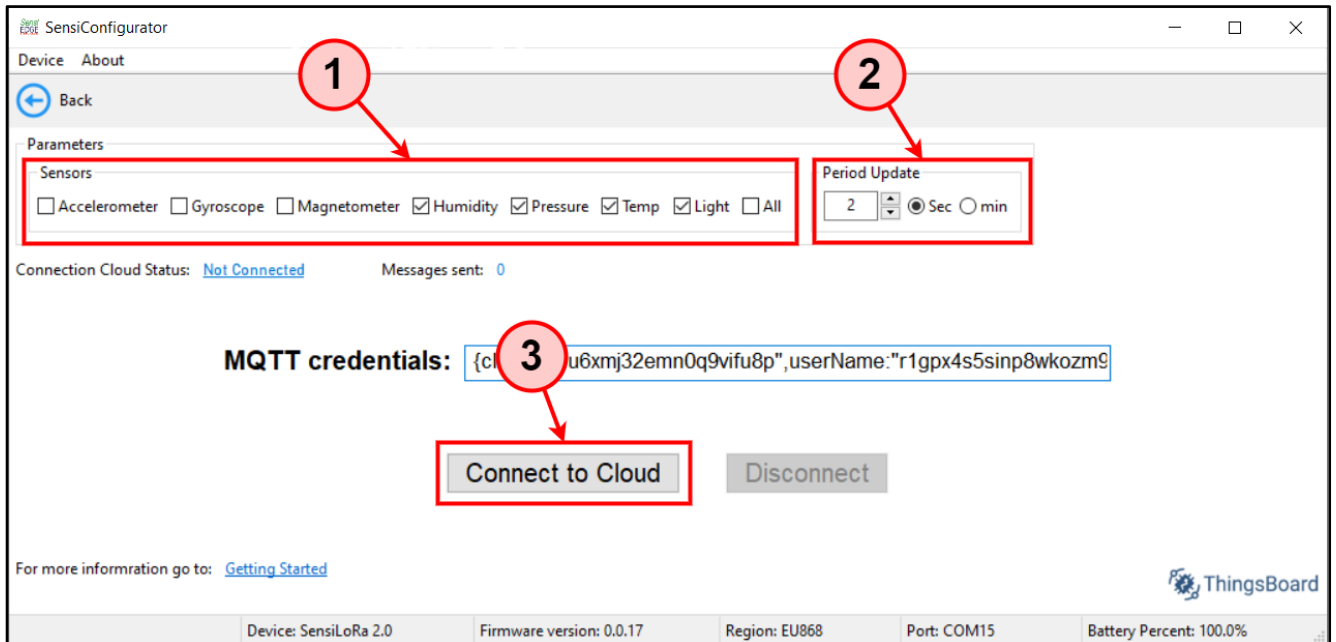
3. Paste **MQTT credentials**.

Figure 137. Paste MQTT



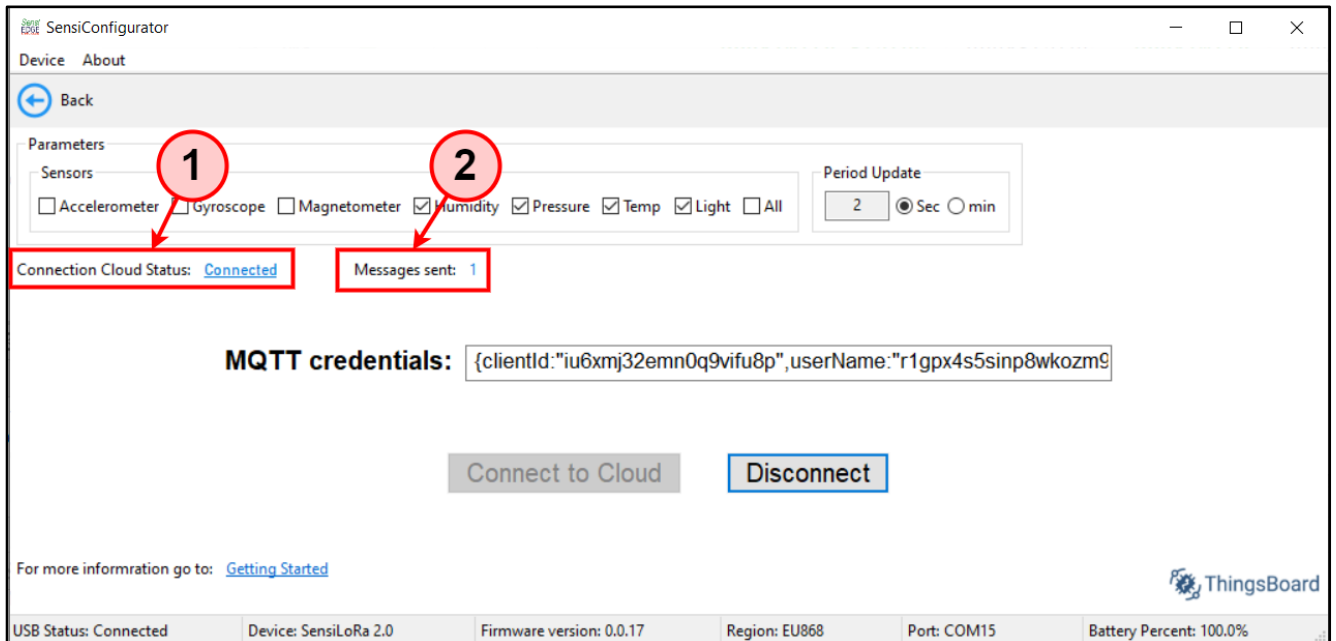
4. Choose **Sensors** (step 1) and **Period** send information to Cloud (step 2) and then click on **Connect to Cloud** (step 3).

Figure 138. Connect to cloud



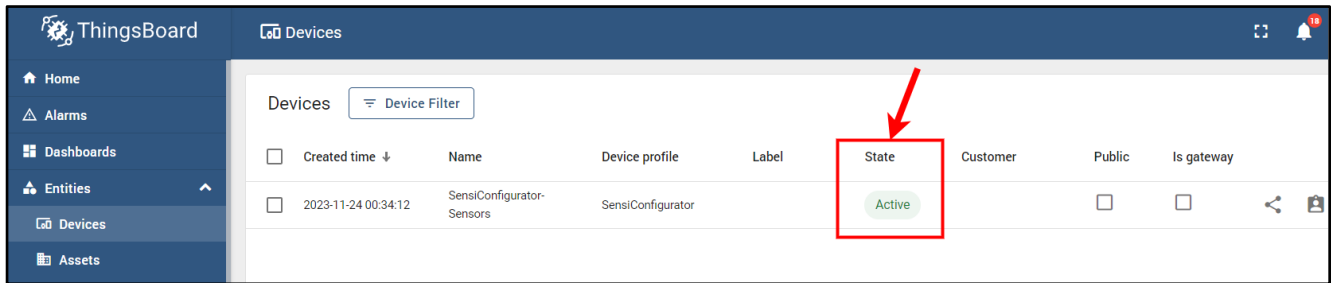
5. If the connection is successful, the **Connection Cloud Status** will change to **Connected** (step 1) and the **Message sent** (step 2) counter will begin counting the number of messages sent to the cloud.

**Figure 139.** Status cloud



6. If the device is connected to the Cloud then the **State** will be **Active**.

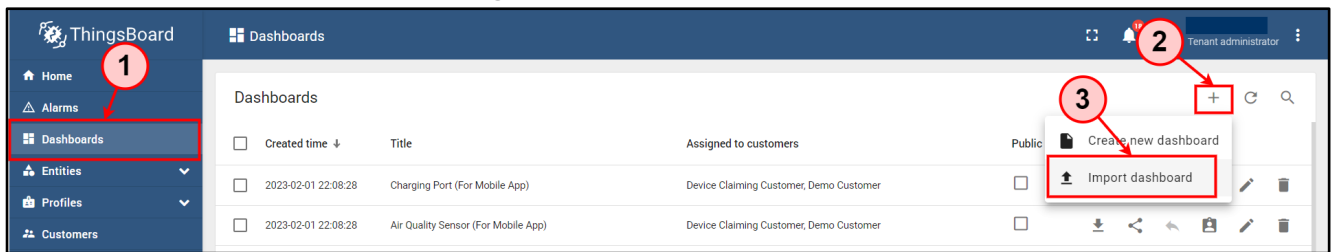
**Figure 140.** Device status



### 7.5.3 Dashboard

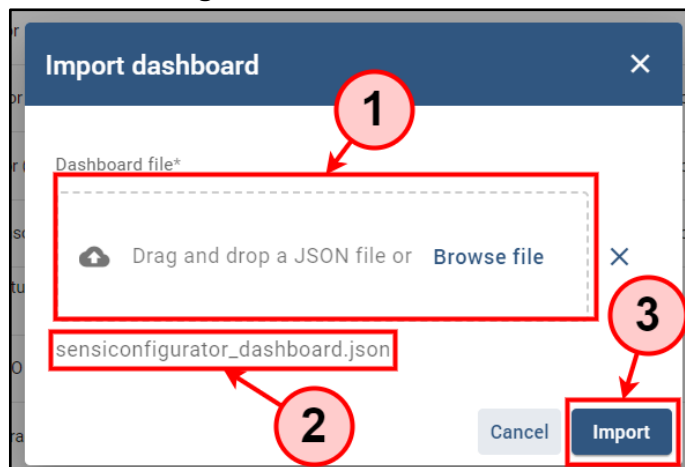
1. Go to **Dashboards** (step 1), click on **Add** (step 2), and choose **Import dashboard** (step 3).

**Figure 141.** Import dashboard



2. Download the Dashboard at this link: [sensiconfigurator dashboard](#)  
After Downloading the Dashboard file, drag and drop it into the **Dashboard file window** (step 1), after the name file appears (step 2) click on **Import** (step 3).

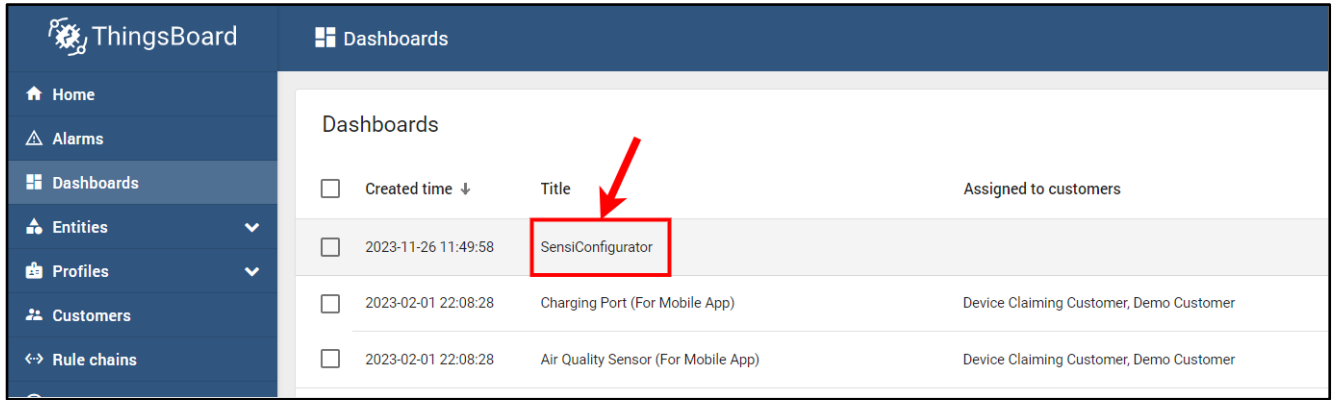
**Figure 142.** Dashboard file



3. Choose the **SensiConfigurator** Dashboard.

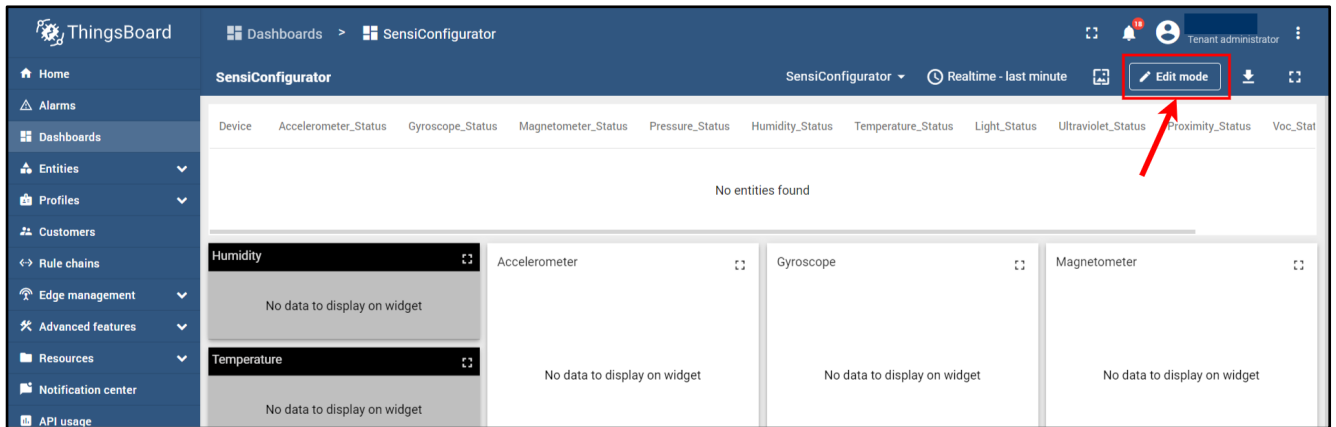
**Figure 143.** Go to Dashboard





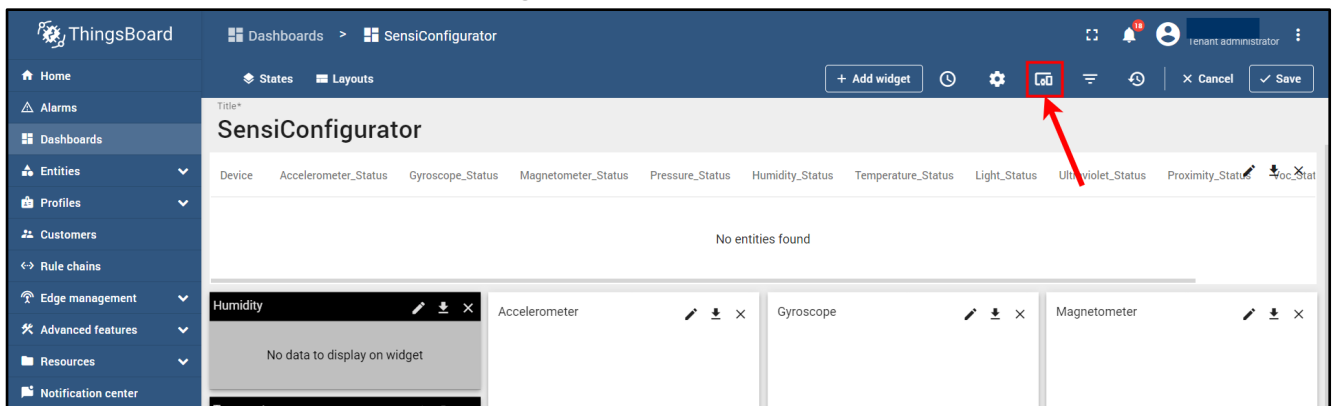
4. Click on **Edit mode**.

Figure 144. Go to Edit mode



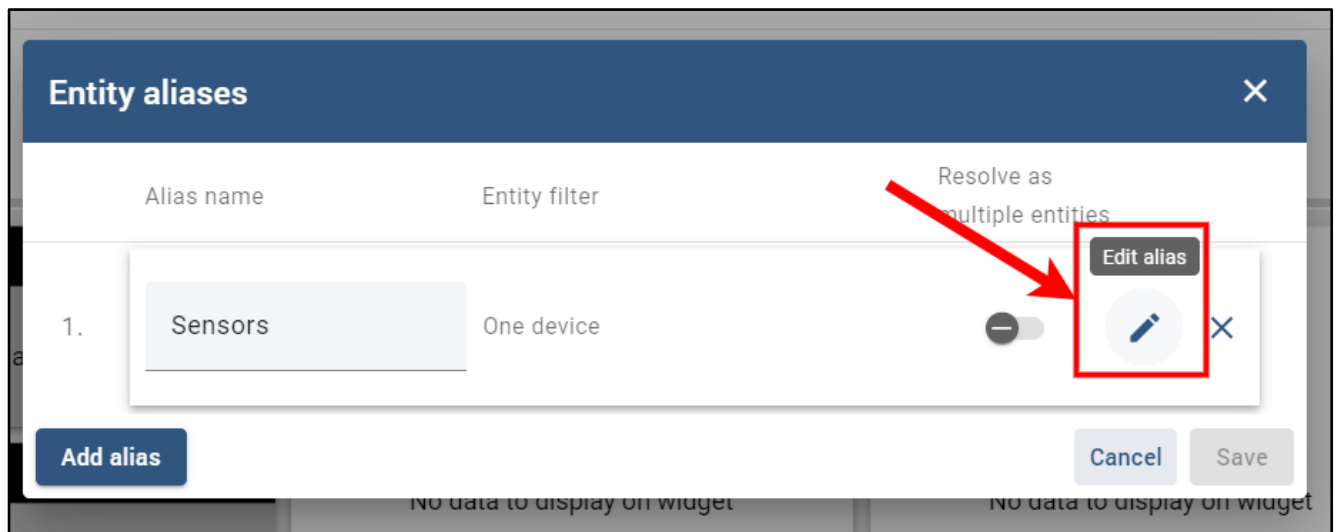
5. Click on **Aliases**.

Figure 145. Go to Aliases



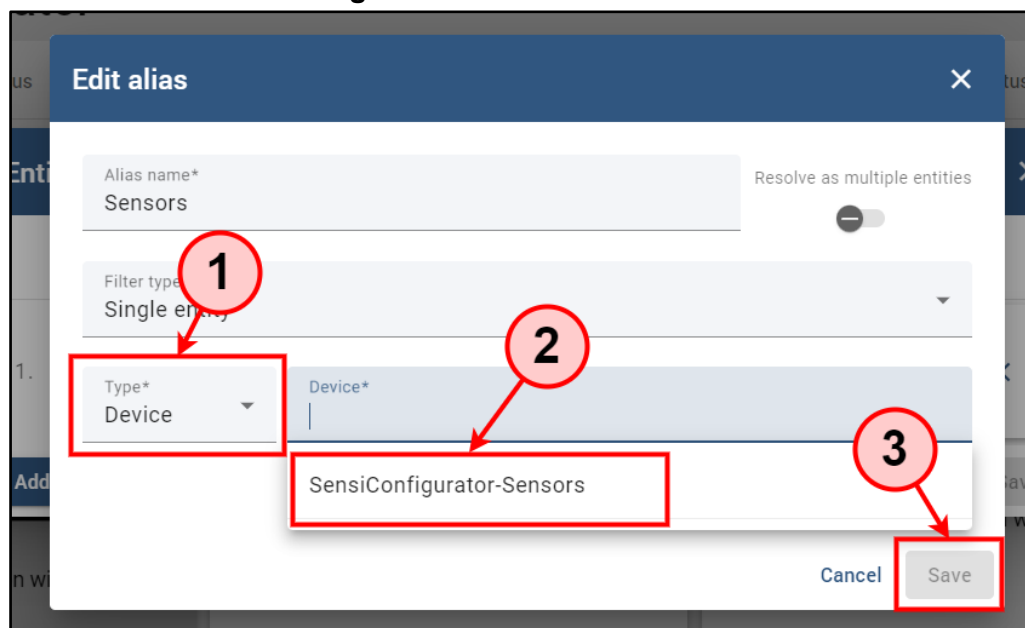
6. Click on **Edit Alias**.

Figure 146. Edit alias



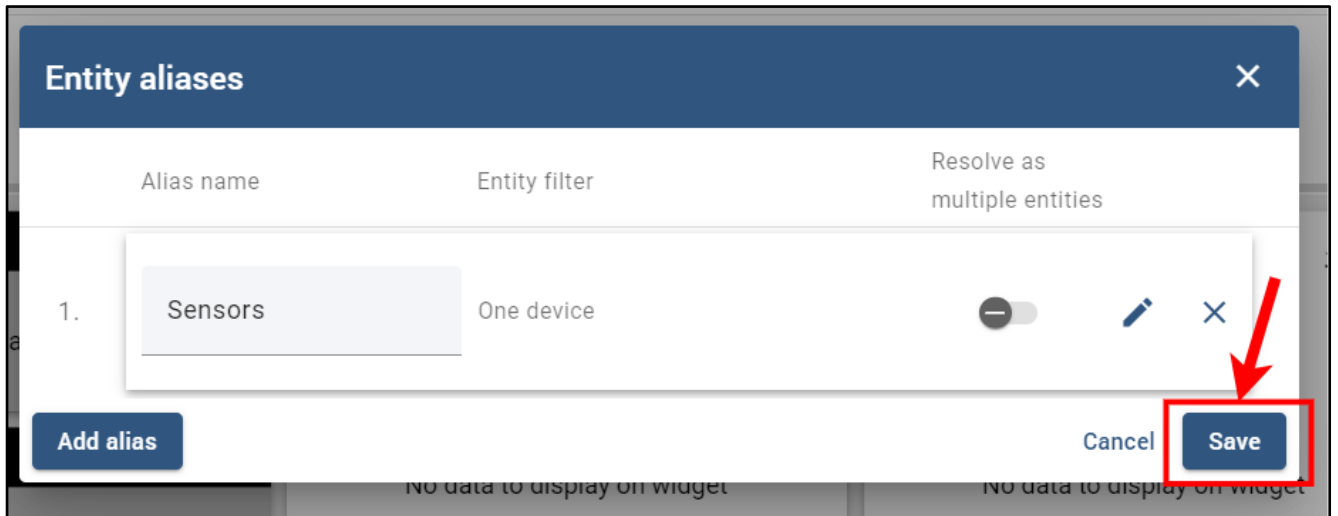
7. Choose **Type Device** and choose **SensiEdge-Device** (step 1), after clicking on **Save** (step 2).

Figure 147. Choose a Device



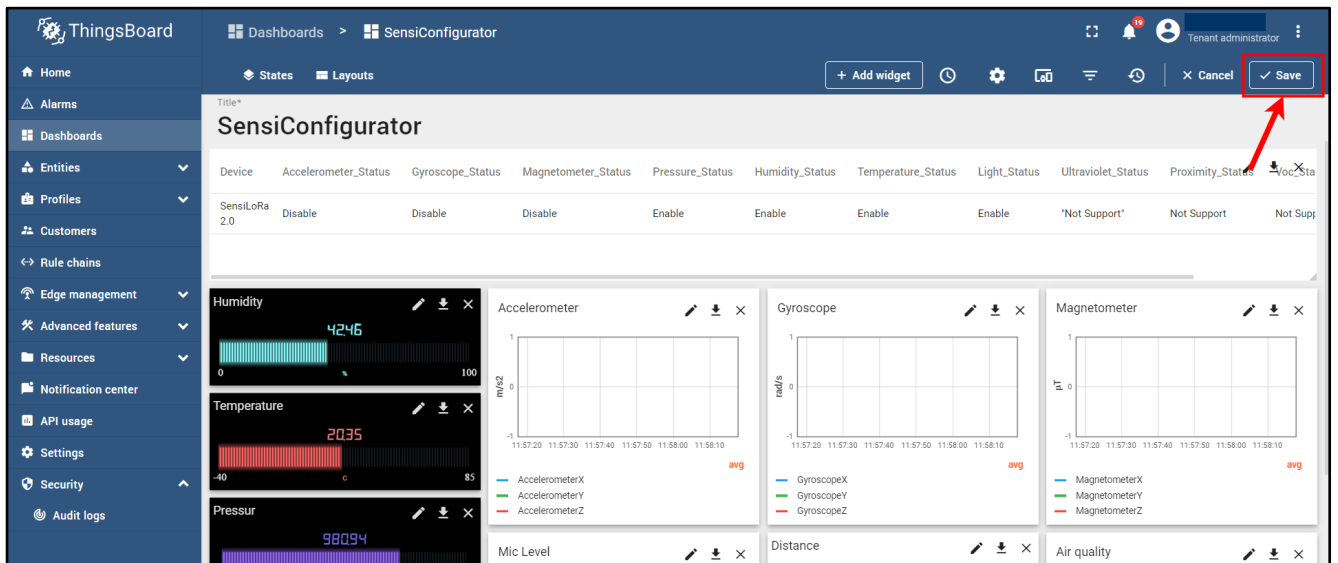
8. Click on **Save**.

Figure 148. Save alias



9. Click on Save.

**Figure 149.** Save dashboard



## 8. Matlab Import Page (only SensiLora 2.0)

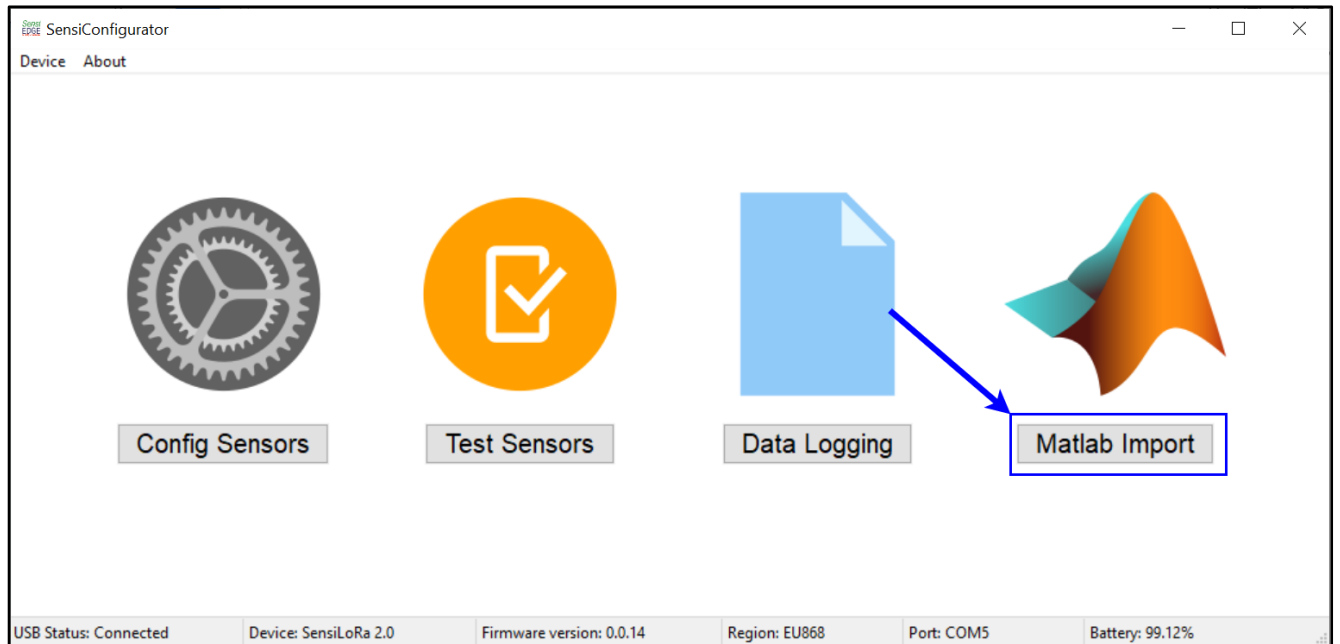
### 8.1 Description

1. The program generates a script for Matlab. This script collects data from the selected sensors and draws a graph with the specified number of points, then the received data can be saved and processed.

## 8.2 Generate Script

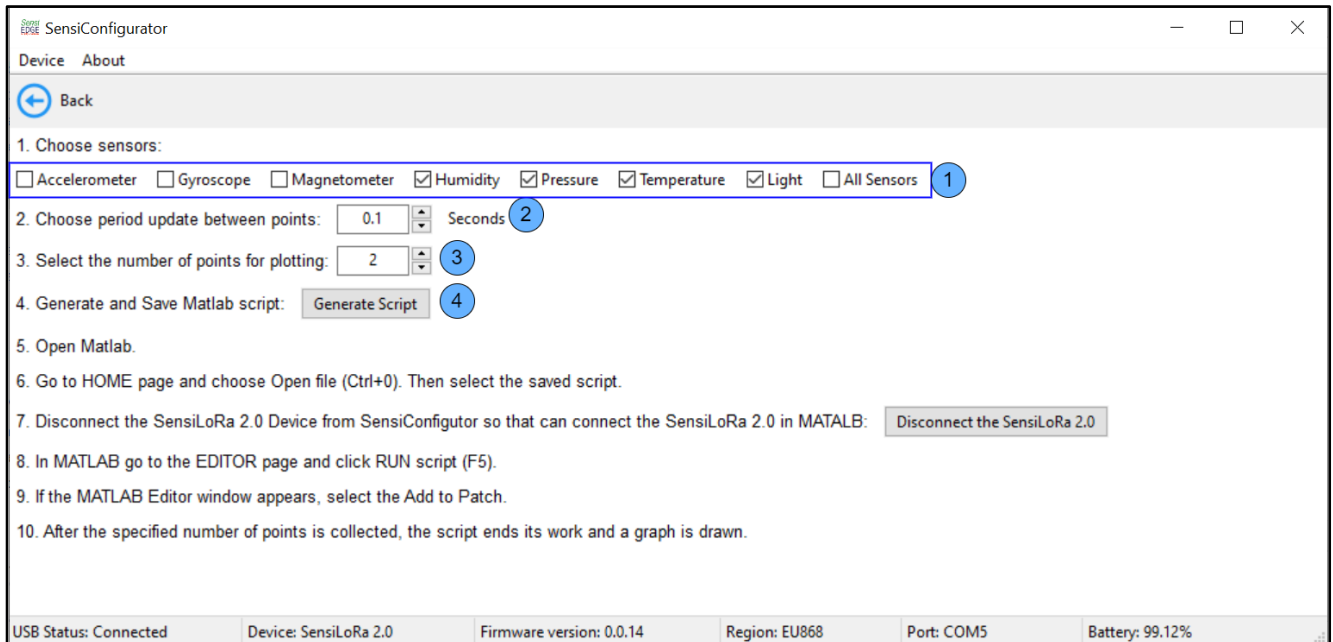
1. Choose **Matlab Import** Page.

**Figure 150.** Choose Matlab Import Page



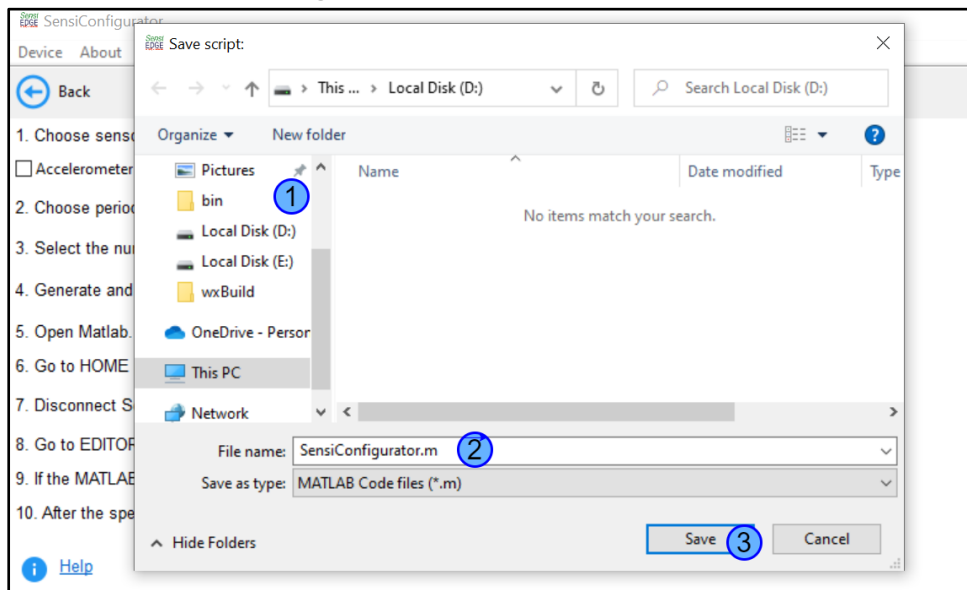
2. First, choose the needed sensors (step 1). Second, choose period update receiving data from sensors (step 2). Third, select the number of points for plotting (step 3). Fourth, click on **Generate Script** (step 4).

**Figure 151.** Matlab Import Page



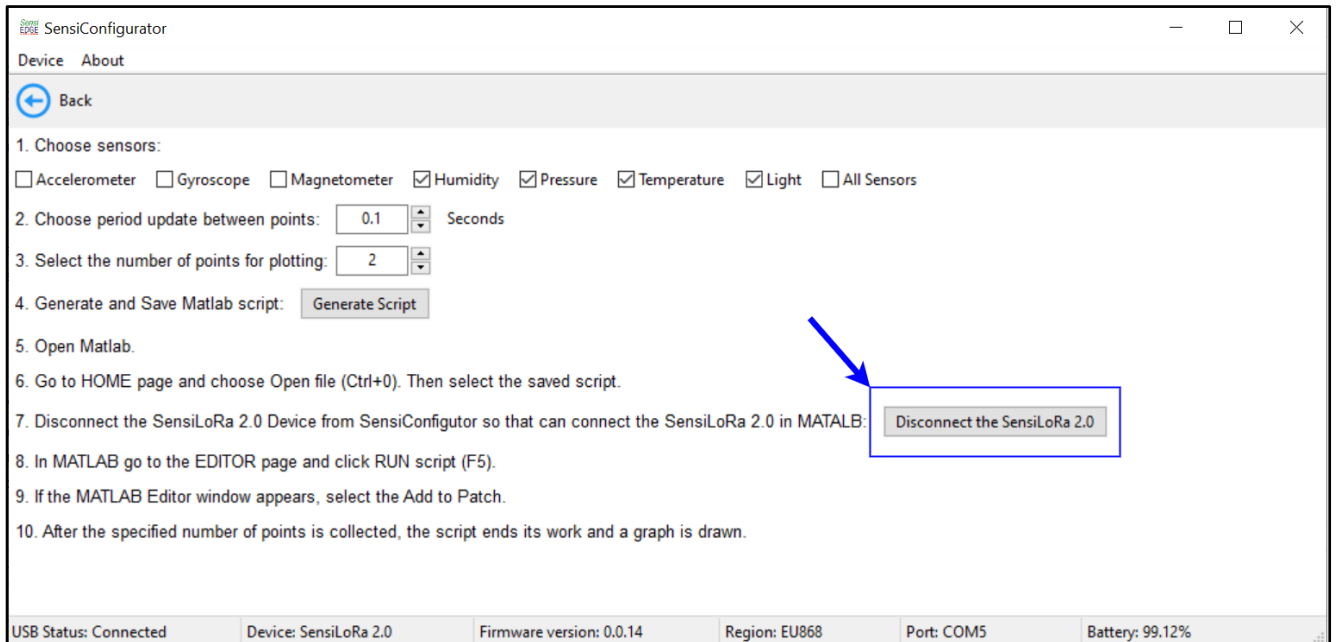
3. In the window Save script, you need to enter the path (step 1), and file name (step 2). After clicking on **Save** (step 3).

**Figure 152.** Save Matlab script



4. Click to Disconnect the SensiLoRa 2.0 device from the SensiConfigurator program so that MATLAB can connect to the SensiLoRa 2.0 device (step 1).

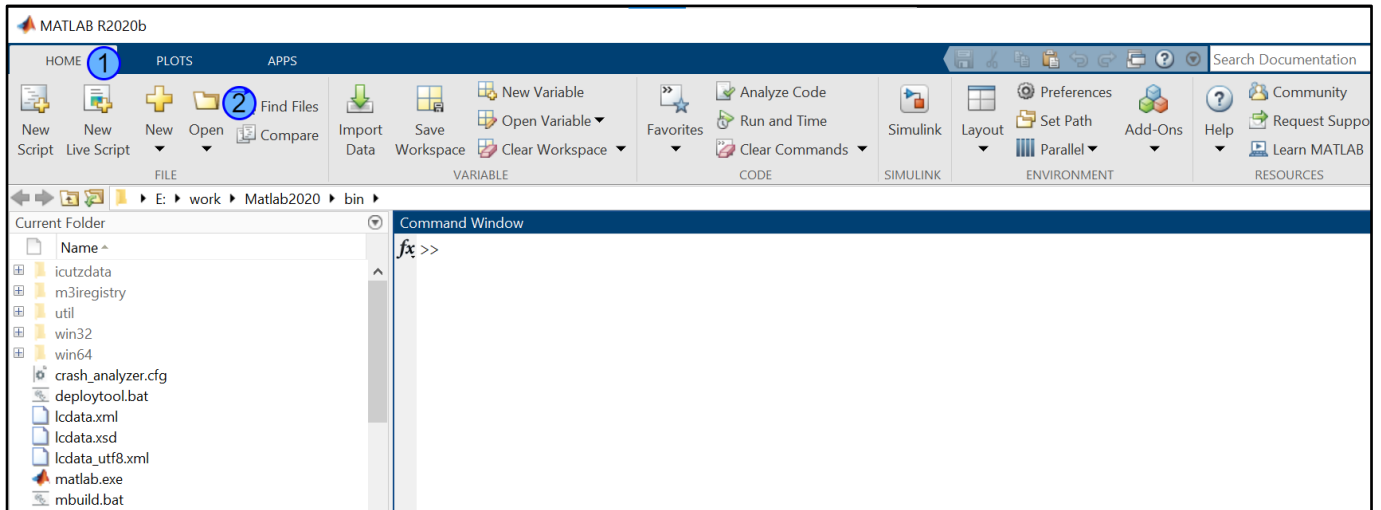
**Figure 153.** Save Matlab script



### 8.3 Open and Run Script

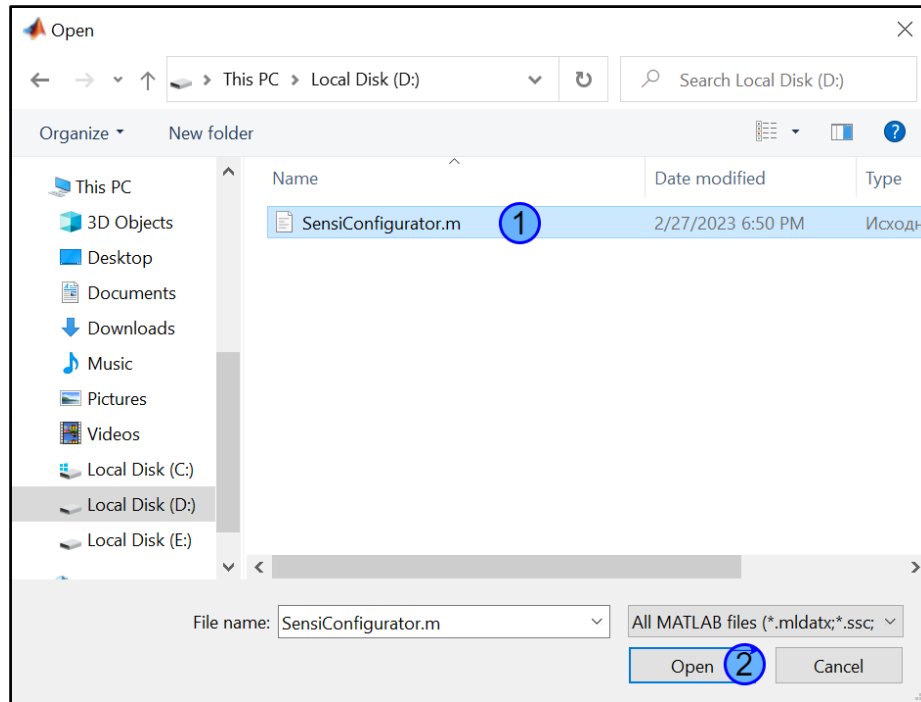
1. Open Matlab. Go to the **HOME** Page (step 1) and click on the **Open** icon(step 2).

**Figure 154.** Matlab Program



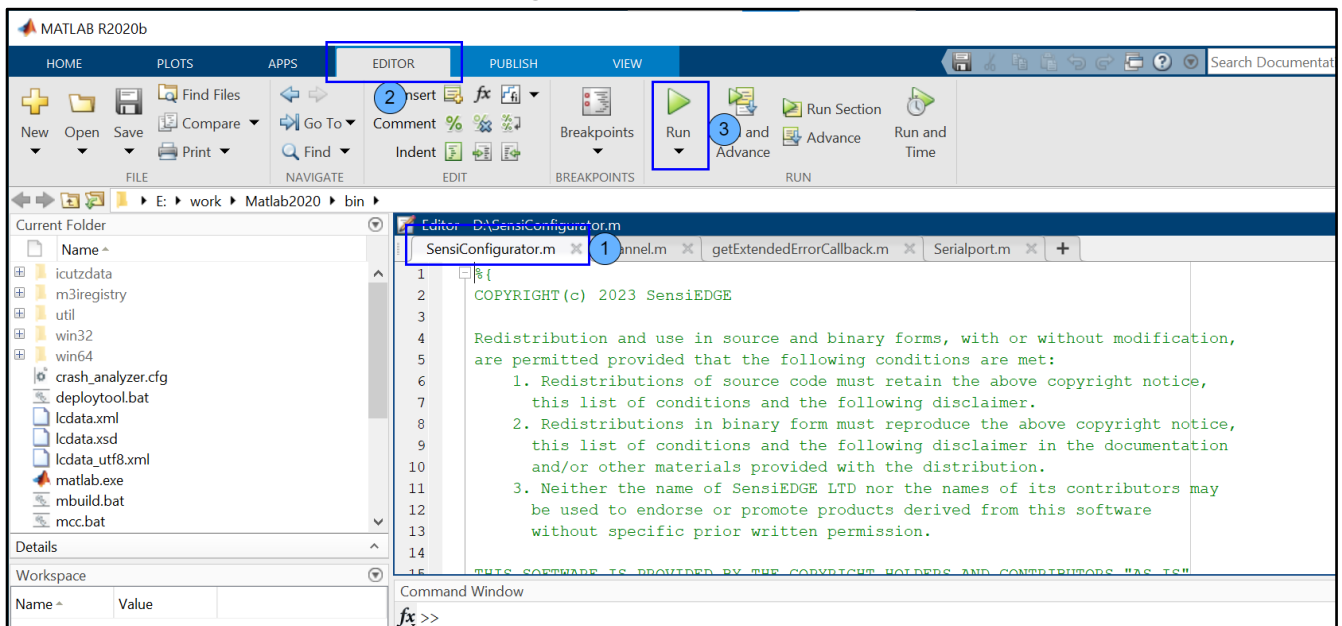
2. Choose the saved script (step 1) and click **Open** (step 2).

**Figure 155.** Open Script



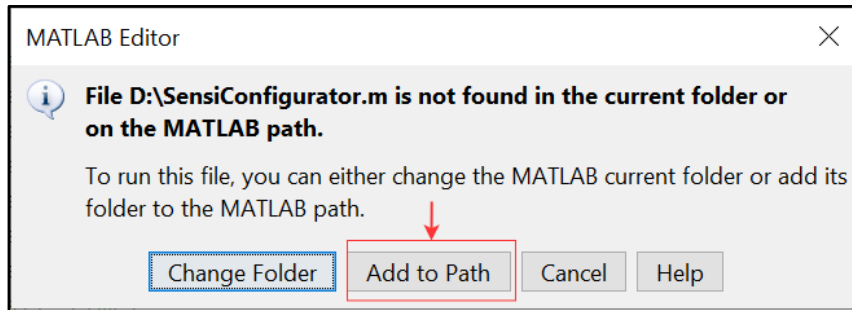
6. After opening, a window will appear with the saved script (step 1), to run the script go to the **EDITOR** tab (step 2) and press **RUN** (step 3).

**Figure 156.** Open Script



7. At the first start, a window **MATLAB Editor** will appear, in this window, select **Add to Path**.

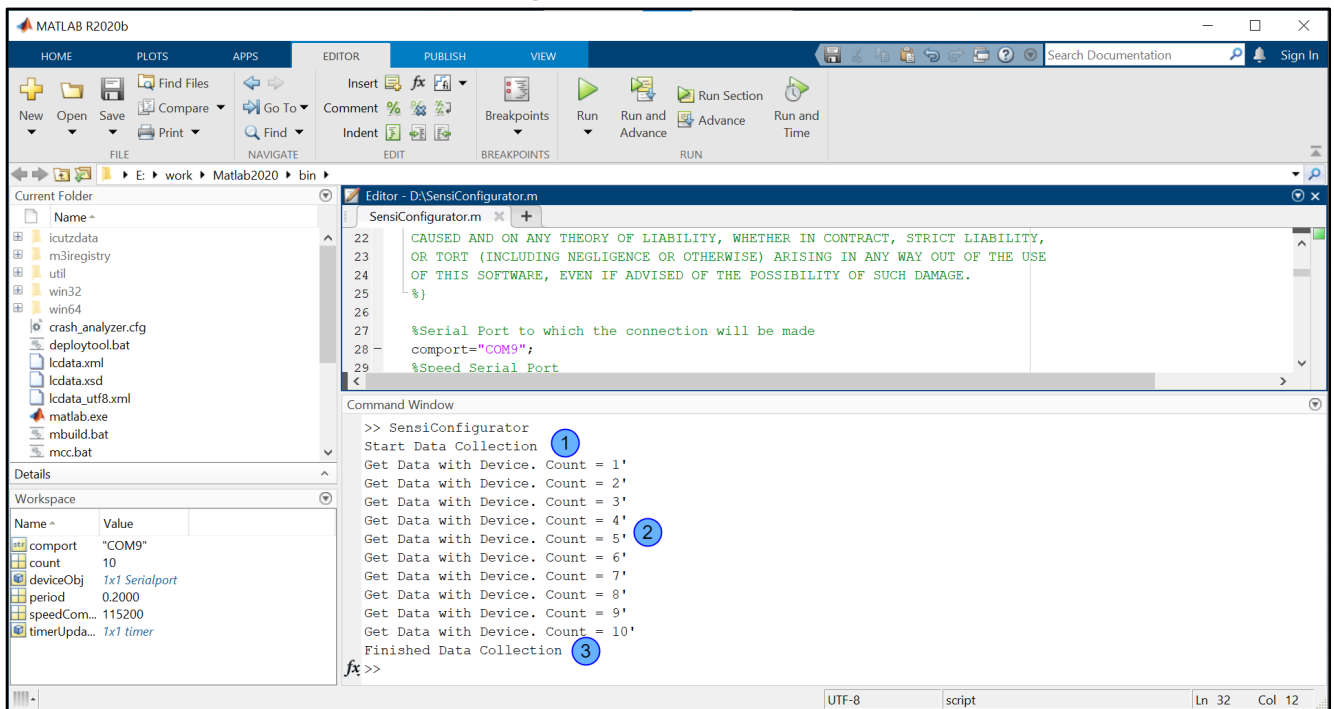
**Figure 157.** Open Script



8. After running the script, the status of the script execution will be displayed in the window:

- **Start Data Collection** - start Script.
- **Get Data with Device. Count = <number>** - received data from the device. <number> - how many points were collected.
- **Finished Data Collection** - finished work Script, disconnect Device.

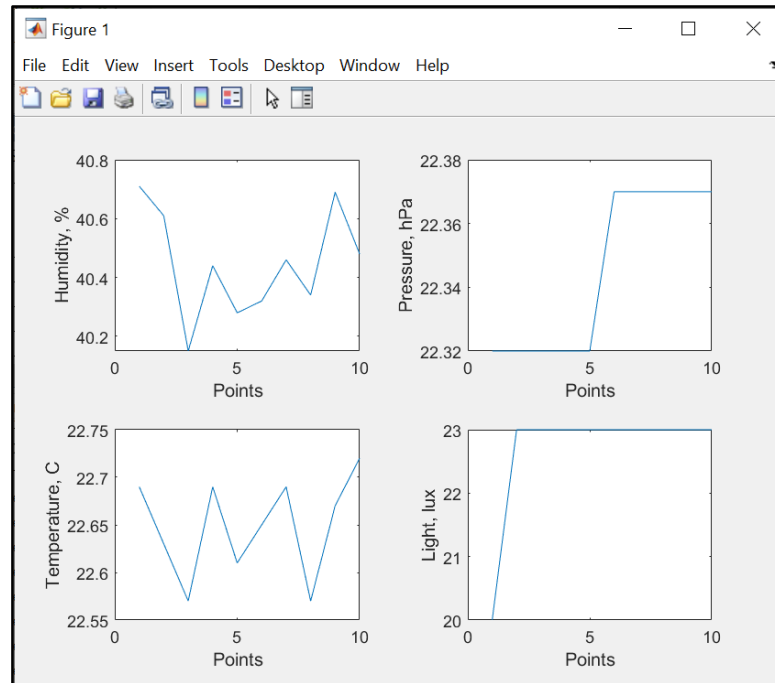
**Figure 158.** Open Script



9. After finished work, the script, a window with graphs will appear.

**Figure 159.** Open Script





10. In the script, you can manually change the following parameters:
1. **Comport** - com port can be found in Device Manager.
  2. **Period** - the period of receiving data from the device. 0.2 sec is 200 milliseconds.
  3. **Count** - the number of points.

**Figure 160.** Open Script

```

26
27 %Serial Port to which the connection will be made
28 comport="COM9"; 1
29 %Speed Serial Port
30 speedComPort=115200;
31 %Period update between points
32 period=0.2; 2
33 %Amount of points
34 count=10; 3
35
36 % Connect to Serial Port
37 deviceObj = serialport(comport, speedComPort, "Timeout",5);
38
39 %Configuration Terminator
40 configureTerminator(deviceObj, "CR/LF");
41

```