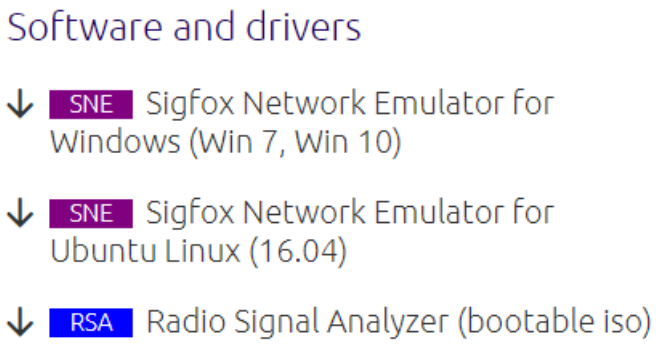
Daviteq Sigfox Sensor on SDR Dongle Gateway

1. Download the Sigfox Network Emulator.

You can download **SNE** for the software and drivers from the link:https://support.sigfox.com/products#sdr

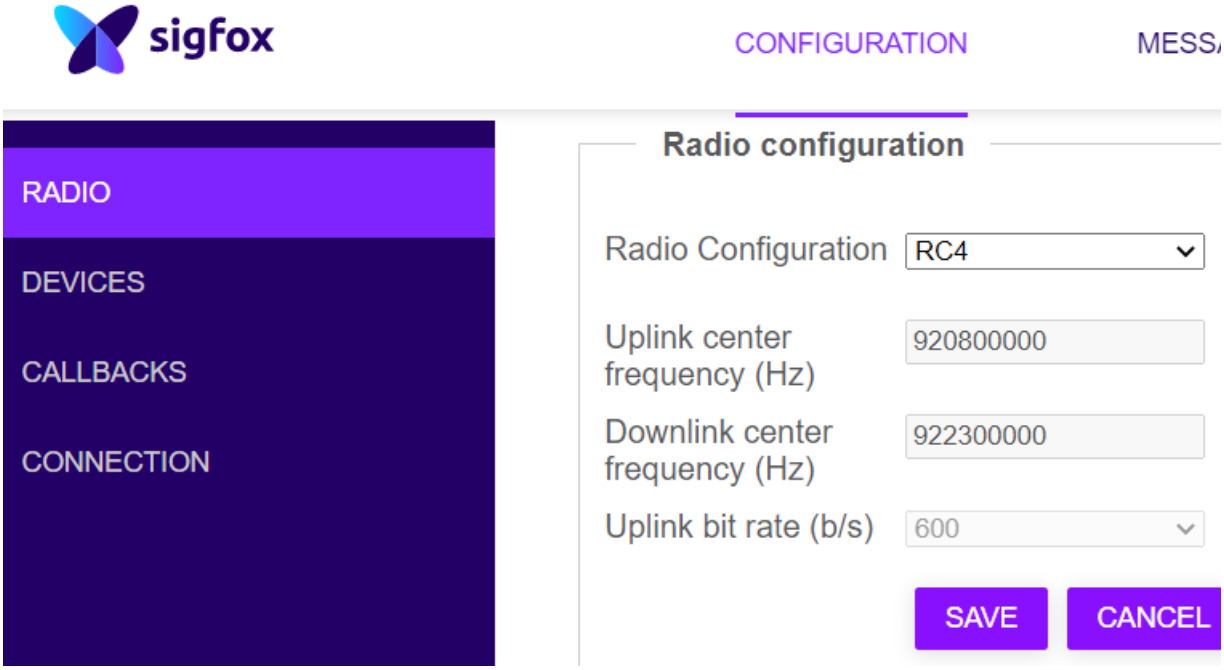


2. Register the device on the Sigfox Network Emulator of your local webpage.

Click **CONFIGURATION** > **RADIO.**

From the left side of the local web page, select**RADIO** for your Radio Configuration.

For example, choose **RC4** from the Radio Configuration's dropdown menu if you want to connect to the device in RC4.

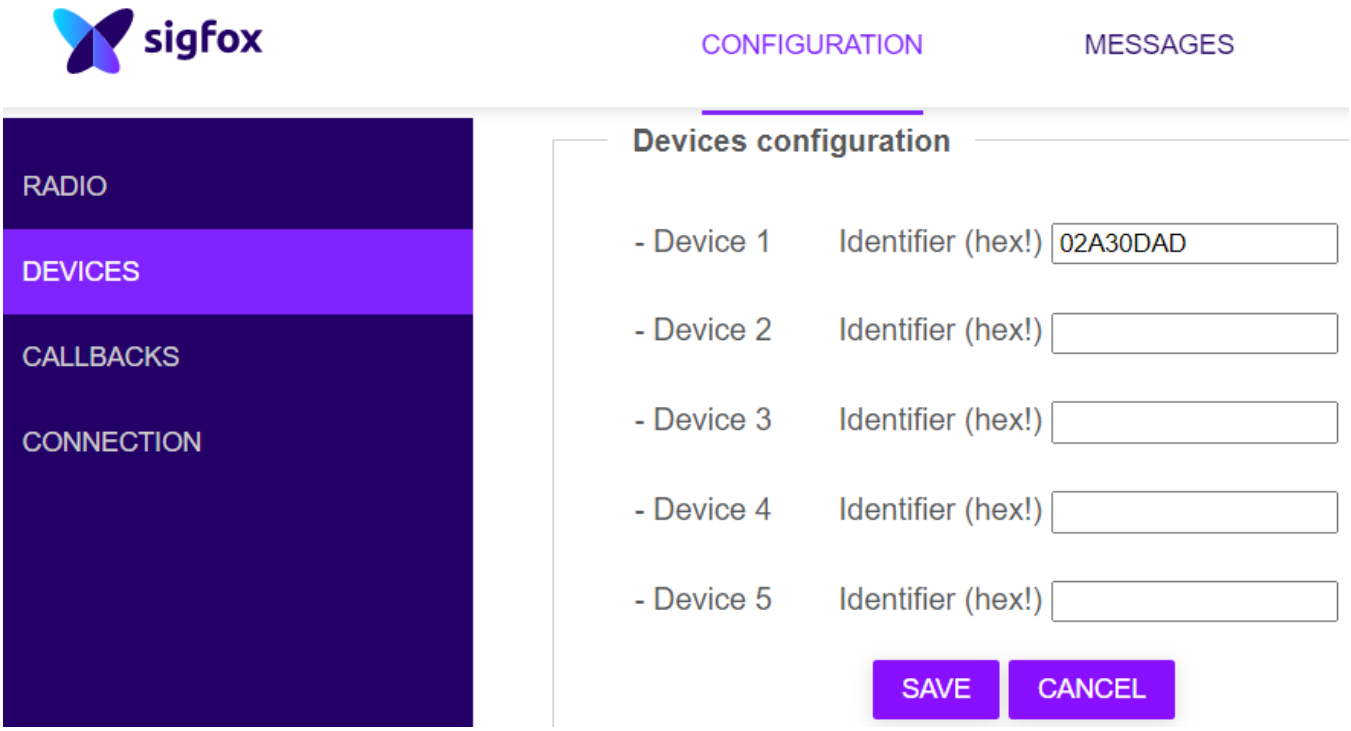


After completing your registration page, please click**SAVE**.

Next, click **DEVICES.**

> Note: You can find the value for**Identifier (hex!)** which is the **ID** located on the label of the sensor.

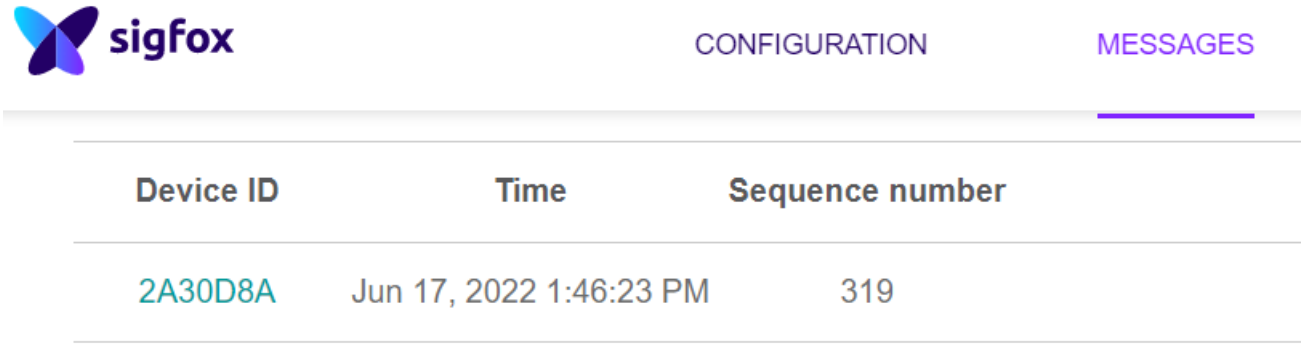
For example, Device 1 has the digits of ID as**02A30DAD.**



After completing your registration page, please click**SAVE**.

3. Manage your view for the payload of the device.

Click **MESSAGES.**



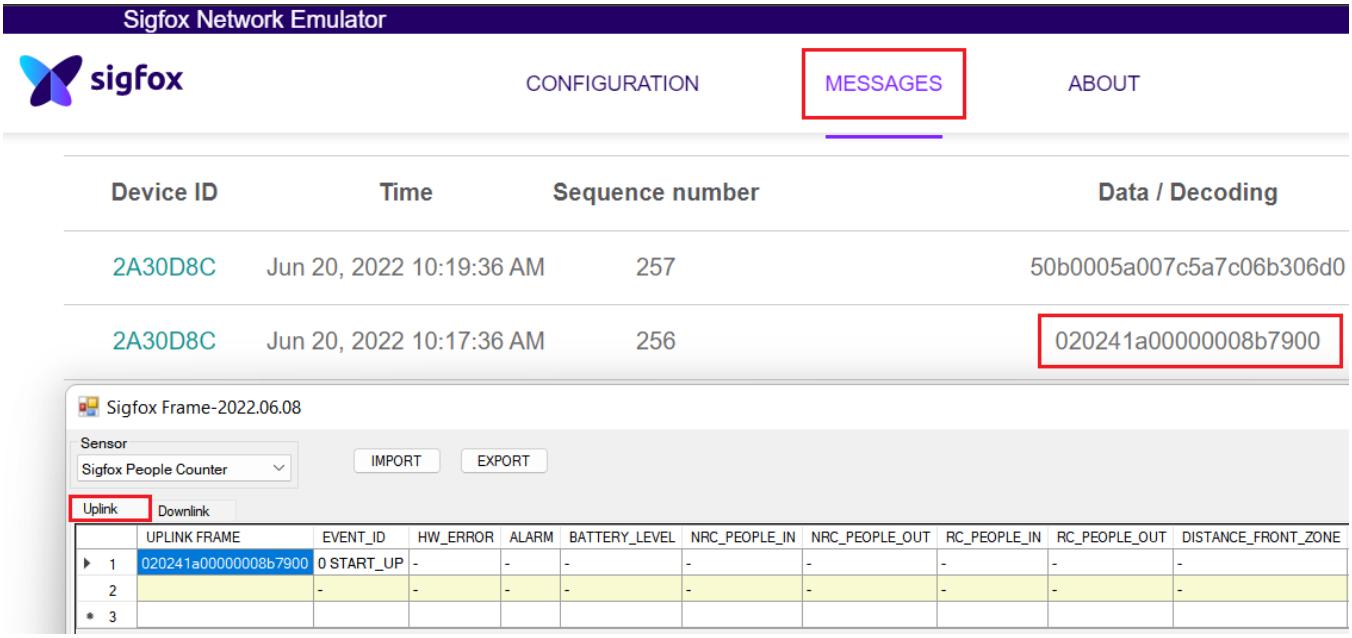
- The device has 2 modes of operation which are***Configuration mode*** and ***Power mode***. In order to be able to send data during the power supply provided, the power source should last after 60 seconds to enter the power mode.

1. ***Configuration mode*** allows you to read or write the parameter's value which is the property of R/W of your device such as *CURRENT_CONFIGURATION, RADIO_CONFIG, SERVER_CONFIG*, etc.
2. ***Power mode*** allows your device to transmit uplink or receive downlink data. This is when the sensor is ready to communicate with the Sigfox network.

- If your device operates with a period of time to send data, the device will send uplink data in every cycle.
- If your device sends the uplink data intentionally, you can draw the Magnet key to the Contact point as below.

The device provides means to force an uplink transmission in one time.

In both cases, the data packet will be sent to your SDR Dongle gateway. Measuring data is formed in several specific payloads.



For the meaning of every uplink message or downlink data, please refer to the next section in the hint below:

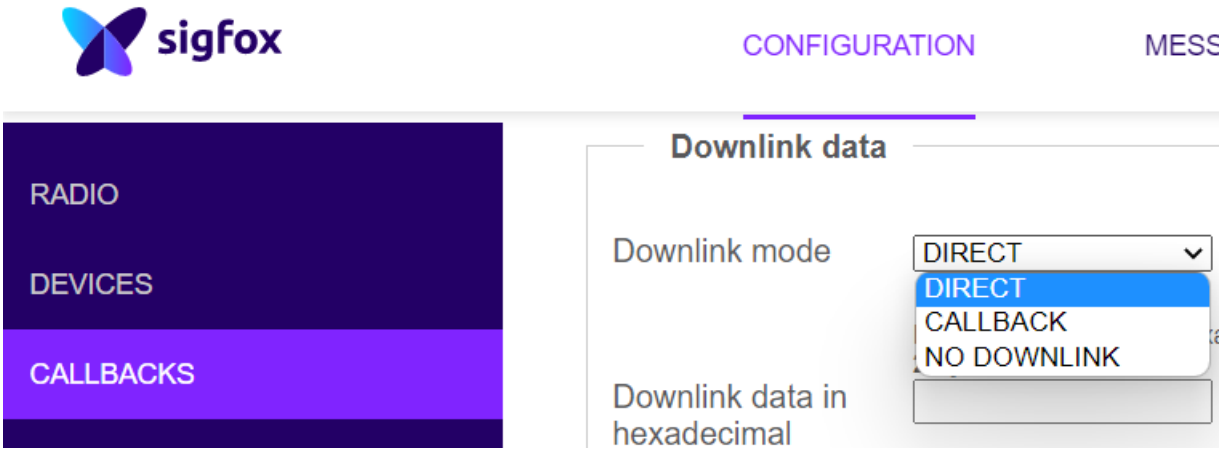
Use of the Daviteq SigfoxFrame software

4. Send Downlink to the device

As your device communicates with the SDR Dongle, you can prepare downlink data in advance to meet the schedule right after one of the uplink frame transmissions from the device on the Sigfox network.

The downlink data is added to the devicedownlink queue, downlinks may be sent only after an uplink from the device.

1. Click **CONFIGURATION** > **CALLBACKS,** select **DIRECT** in Downlink mode field



- If you plan to create the downlink data for your device, please follow the instruction below.

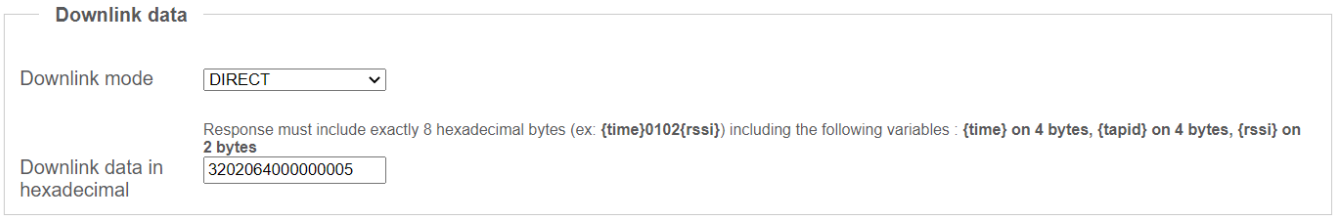
Parameter	PRM_ADDRESS	PRM_LENGTH	PRM_FORMAT	PRM_VALUE	DOWNLINK_TYPE	Full Downlink
(bytes)	1	1		4	2	8
DISTANCE_THRESHO	0x32	0x02	unit16	***Example***: 10 ==> 0x000A0000	0x0005	

For the Sigfox People Counter sensor, a parameter "DISTANCE_THRESHOLD" that supports the downlink property should only calculate the value according to that PRM_VALUE format. The ***Example*** of a Decimal number "10" and a Hex number "000A0000" are shown, Full Downlink = 3202000A00000005. This indicates the value of the DISTANCE_THRESHOLD parameter is set to 10 if you write this downlink data into the device.

For example, your newly-calculated DISTANCE_THRESHOLD's value is 1600, Full Downlink = 3202064000000005.

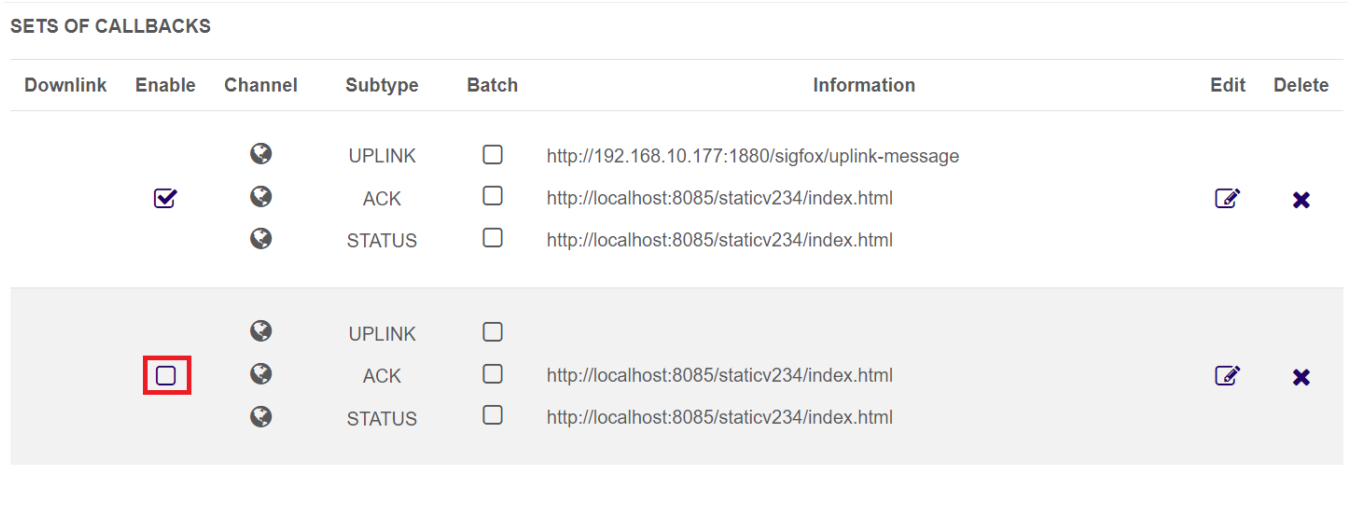
For ease of calculation, you should identify a Decimal number, then convert it to a Hex number.

2. Enter your desired downlink data,**3202064000000005**.



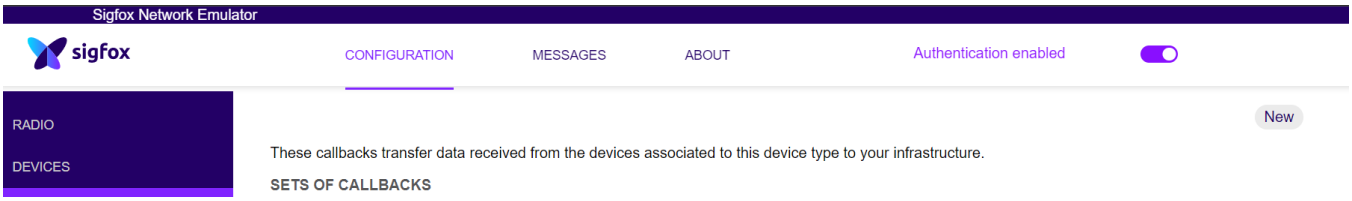
After completing your setting, please click**SAVE**.

3. Enable your SET OF CALLBACKS.



5. Configure Callbacks to forward payloads to Microsoft Teams

1. Click **CONFIGURATION** > **CALLBACKS** > **New**.

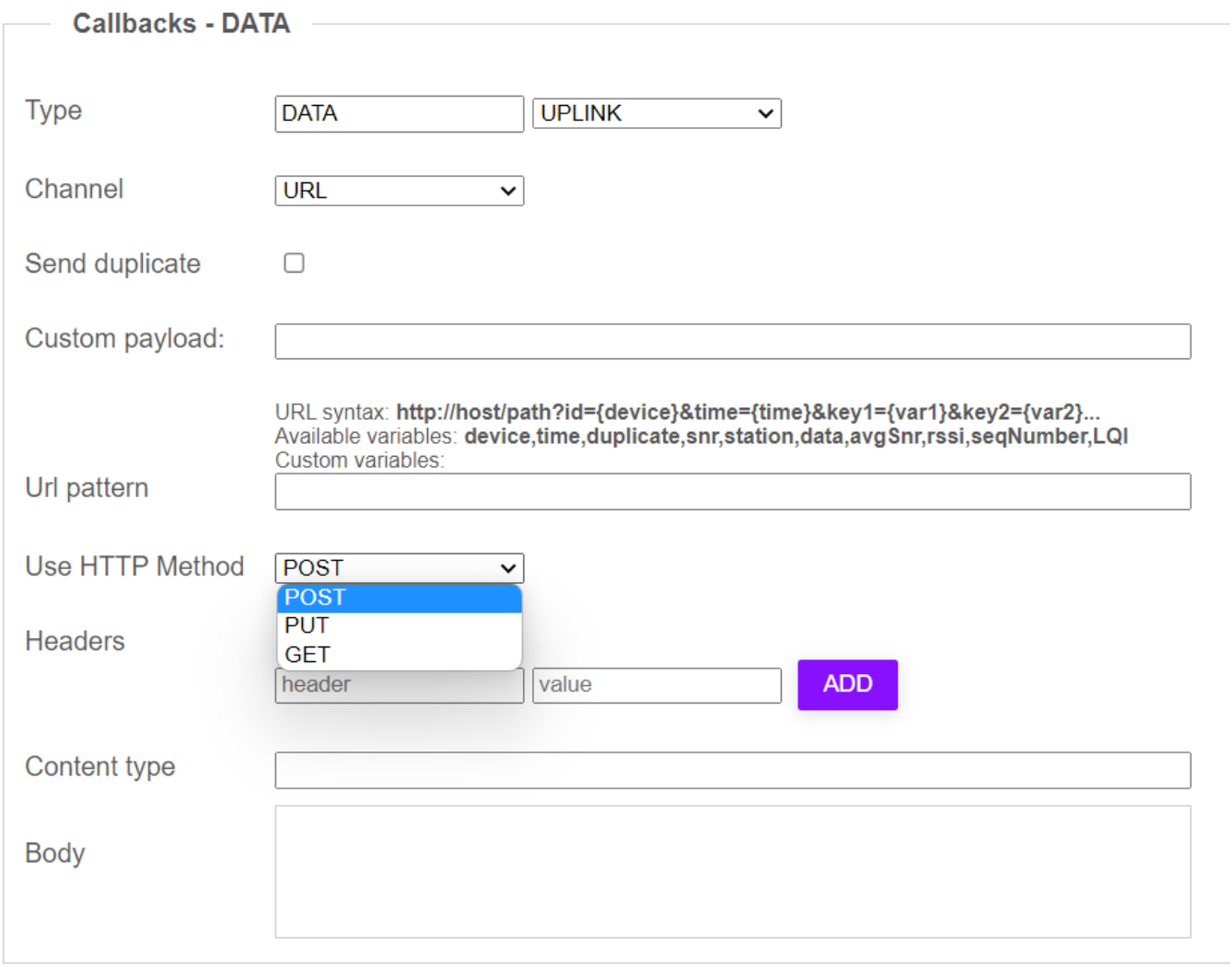


2. Navigate to the dashboard of **Callbacks - DATA**.

3. Select **Type** > **UPLINK**.

4. Select **Channel** > **URL**.

5. Select **Use HTTP Method** > **POST.**



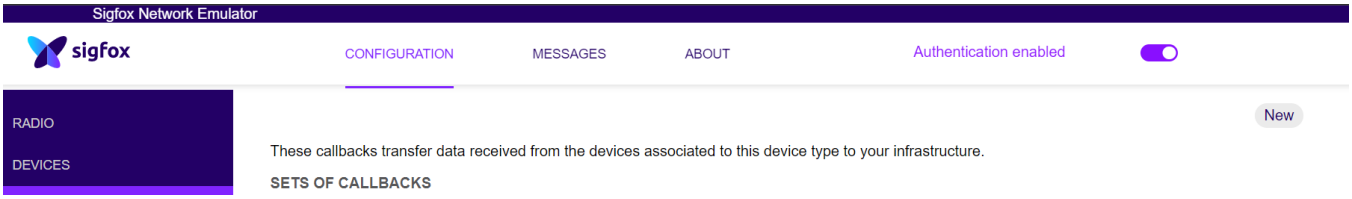
6. Fill out the form according to the following table:

Field	Input field
URL pattern	http://192.168.10.177:1880/sigfox/uplink-message
Header	Authorization
value	BasicYXBwLWtleS05MWE2Y2FjMi03YzFhLTQ2Y2UtYWJhNS1jNWJjNmU2N2U
Content type	application/json

Body	{
	"device": "{device}",
	"time": "{time}",
	"seqNumber": "{seqNumber}",
	"device": "{device}",
	"station": "{station}",
	"rssi": "{rssi}",
	"snr": "{snr}",
	"data": "{data}"
	}

6. Configure Callbacks to forward payload to Daviteq Globiots platform

1. Click **CONFIGURATION** > **CALLBACKS** > **New**.



2. At the section **Downlink data**, select **CALLBACK** at **Downlink mode** field

3. Navigate to the dashboard of **Callbacks - DATA**.

4. Select **Type** > **BIDIR**

4. Select **Channel** > **URL**.

5. Select **Use HTTP Method** > **POST.**

6. Fill out the form according to the following table:

Field	Input field
URL pattern	https://resources.globiots.com/rest/api/v1/sigfox-service/process-messages
Header	Authorization
value	Copy this value from Globiots: Login Globiots, click the Sigfox sensor name, click tab Sigfox Network Server Config, copy Header value and paste to value field on Callbacks-DATA section
Content type	application/json

Body	{
	"device": "{device}",
	"time": "{time}",
	"seqNumber": "{seqNumber}",
	"device": "{device}",
	"station": "{station}",
	"rssi": "{rssi}",
	"snr": "{snr}",
	"data": "{data}"
	}

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Updated Mon, Dec 5, 2022 7:25 AM by Phan Van Luc