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# ATIM Cloud Wireless

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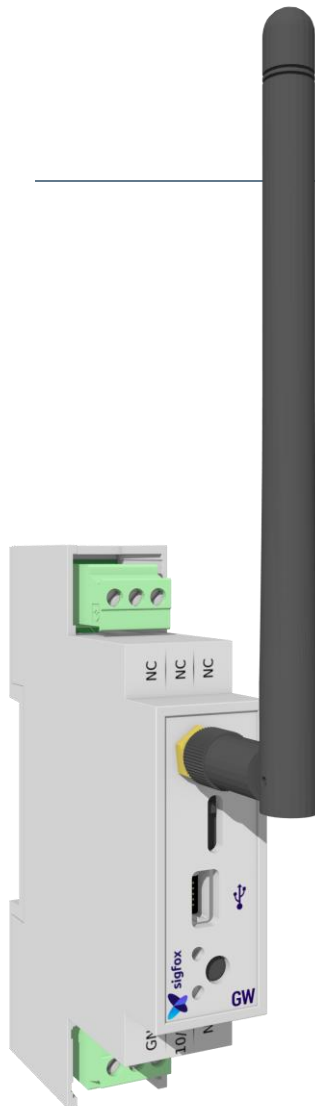
## Gateway

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## 868 / Sigfox

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## User Guide



Model concerned:

ACW/SF8-GW



## TABLE OF CONTENTS

Document version history.....	2
Disclaimer.....	2
Trademarks and copyright .....	2
Declaration of compliance .....	3
Environmental recommendations .....	3
Explosive atmosphere.....	3
Environment.....	3
Radio .....	4
Technical specifications .....	5
Footprint and installation .....	6
Set up .....	6
a. Positioning .....	6
b. Modem connection.....	7
c. Meaning of the lights.....	8
d. Pushbutton .....	8
Configuration du modem.....	9
a. Configuration in 868 Mode (Modbus slave) .....	10
b. Configuration compatible with ACW-SF8 .....	11
Access to data on the web .....	13
a. ACW platform modem visualization .....	13
b. Registering the modem on the SIGFOX network.....	14
Help.....	15
Technical Support .....	15

## Document version history

Version	Date	Description	Author
1.0	08/12/2016	Creation of the ACW GW User Guide	AM
1.1	13/02/2017	Rereading and corrections	FR

## Disclaimer

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## Trademarks and copyright

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## Declaration of compliance

All ACW Atim Cloud Wireless® products comply with the regulatory requirements of the R&TTE Directive (1999/5/EC), article 3:



### **1 SAFETY** (Article 3.1a of the 1999/5/EC Directive)

NF EN60950-1 Ed. 2006/A1:2010/A11:2009/A12:2011 (health)

EN62479: 2010 (power <20mW) or EN62311:2008 (power > 20mW)

### **2 Electromagnetic compatibility** (Article 3.1b of the 1999/5/EC Directive)

EN 301489-3 v1.4.1, EN 301489-1 V1.9.2

### **3 Efficient use of the radio frequency spectrum** (Art.3.2 of the 1999/5/EC Directive)

ETSI EN300 220-2 v2.4.1 and EN300 220-1 v2.4.1

## Environmental recommendations

### Explosive atmosphere

Except for the ACW-ATEX line specifically intended for this purpose, do not use ACW radio modems in the presence of flammable gases or fumes. Using the equipment in such an environment constitutes a safety hazard.

### Environment

Respect the temperature ranges for storage and operation of all products. Failing to respect these guidelines could disrupt device operation or damage the equipment. ACW products in IP65 water- and dust-resistant housings may be placed outdoors, but must not, under any circumstances, be submerged.

Follow the instructions and warnings provided below to ensure your own safety and that of the environment and to protect your device from any potential damage.



**General hazard** – Failure to follow the instructions presents a risk of equipment damage.



**Electrical hazard** – Failure to follow the instructions presents a risk of electrocution and physical injury.



Direct-current symbol



**WARNING:** do not install this equipment near any source of heat or any source of humidity.



**WARNING:** for your safety, it is essential that this equipment be switched off and disconnected from mains power before carrying out any technical operation on it.



**WARNING:** the safe operation of this product is ensured only when it is operated in accordance with its intended use. Maintenance may only be performed by qualified personnel.



Waste disposal by users in private households within the European Union. This symbol appears on a product or its packaging to indicate that the product may not be discarded with another household waste. Rather, it is your responsibility to dispose of this product by bringing it to a designated collection point for the recycling of electrical and electronic devices. Collection and recycling waste separately at the time you dispose of it helps to conserve natural resources and ensure a recycling process that respects human health and the environment. For more information on the recycling centre closest to your home, contact your closest local government office, your local waste management service or the business from which you purchased the product.

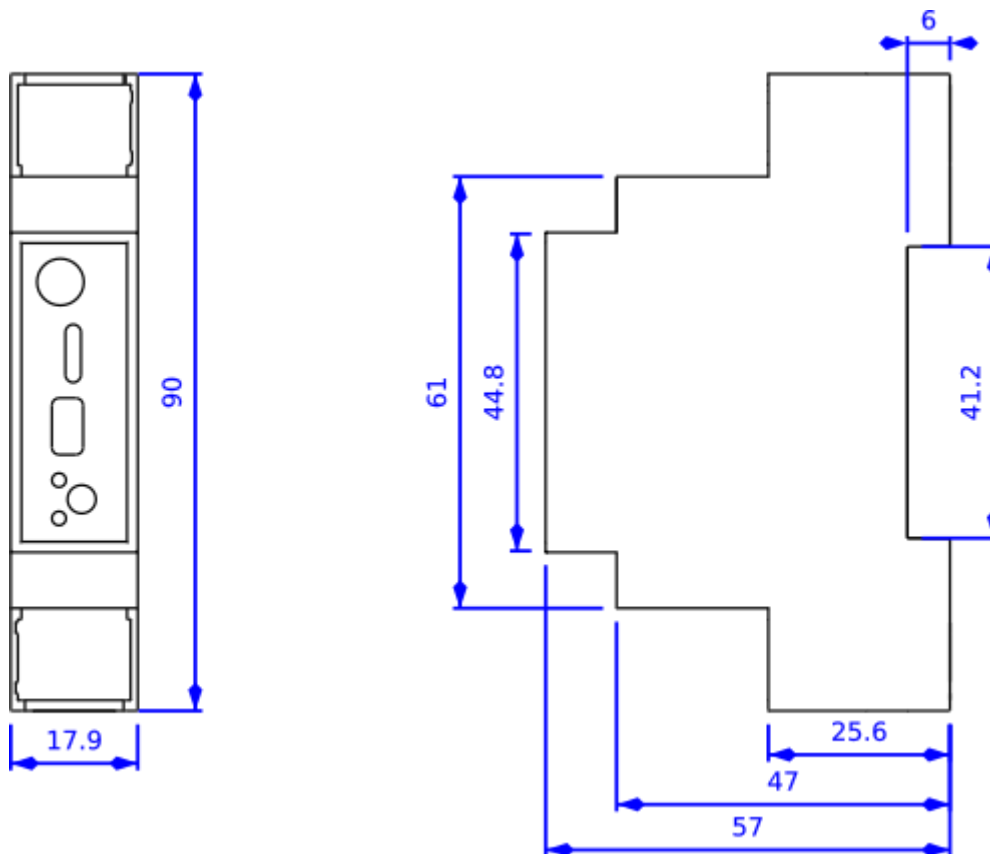
## Radio

Modems in the ACW line are radio-communication modems that use the ISM (industrial, scientific and medical) bands, which may be used freely (at no cost and with no authorisation required) for industrial, scientific and medical applications.

## Technical specifications

<b><i>Dimensions</i></b>	90 x 57 x 67 mm
<b><i>Antenna</i></b>	External (SMA connector)
<b><i>Temperature</i></b>	-20°C to +55°C (operating) -40°C to +70°C (storage)
<b><i>Mounts to</i></b>	DIN-Rail
<b><i>Battery</i></b>	1 x alimentation 10-30Vcc
<b><i>Frequency</i></b>	865 – 870 MHz
<b><i>Power</i></b>	25 mW (14 dBm)
<b><i>Rate</i></b>	Local: 1.2à 115 Kbit/s Sigfox: 100 bps
<b>Consumption (10V)</b>	30mA (Rx), 50 (Tx)

## Footprint and installation



Dimensions given in mm.

ACW modems in 'breaker' format are attached to a DIN-rail.

## Set up

### a. Positioning

This version has been designed for installation in an electrical box made of PVC or metal. If the cabinet is made of insulating material (PVC, ABS, fiberglass), it is possible to simply use a small whip-wave antenna: Ref ATIM ANT868-12FSC. This antenna must be firmly screwed on the SMA connector is positioned vertically, preferably upwards.

- In the case of a metal box, it is imperative to deport the antenna to the outside to have good results in radio (avoid the Faraday cage!)

For best results, it is advisable to move the antenna up and clear of any metal obstacle within a radius of 1 meter if possible.

## b. Modem connection



### Terminals:

Name	Designation	Input / Output
GND	Ground	Input (alimentation)
10/30V	Alimentation between 10V and 30V	Ground

### Antenna (SMA):

Before powering the product, a 50Ω / 868MHz antenna must be connected, either directly to the SMA connector or via a 50Ω cable in case of antenna offset.

### Alimentation (Lower terminal):

The ACW-GW module must be powered with a DC power supply between 10V and 30V that can provide a minimum current of 100mA.

### USB:

The USB connector is used to configure the ACW via a PC and a USB cable. See the '[Modem Configuration](#)' section for more details

→ The configuration must be done with the device powered by 10 / 30Vdc.



### c. Meaning of the lights

When the power is turned on or after removing the USB cable, the red LED (bottom LED) stays on for 3 seconds, indicating the start cycle. Then, the green LED (top LED) illuminates for a brief moment indicating a good start of the ACW.

In USB configuration mode, the green LED flashes until the configuration is completed and the USB cable is removed.

Overall, in normal operation, lighting the green LED indicates a radio communication. The red LED lights to indicate any errors that may occur.

### d. Pushbutton

The push button located on the front of the box makes it possible to emit a test frame in order to validate the installation on site. A test frame consists of the following way:

Octet :	1	2
Data :	0x05	Metering

#### Note

The value 'Counter' is incremented with each press.

## Modem configuration

Download and install the configuration software " setupACW.exe " at:

<http://www.atim.com/produit/atim-cloud-wireless-acw/>

Connect the radio modem to your computer with a USB cable and then launch the software. When you are logged in, the software window changes to allow you to access the main features. Automatically, the current configuration of the connected module is retrieved and displayed.

The different configuration modes are described below.

Once the configuration is done, you just have to click on the **Write** key. After a few seconds of waiting, a message appears next to it to inform you if the module update succeeded or failed.



Once the configuration is complete, do not leave the module connected to USB. This mode of operation is very energy intensive. When you remove the USB link without disconnecting the power supply, the module automatically returns to normal operation

### a. Configuration in 868 Mode (Modbus slave)

In this mode of operation, an ACW-868 with the MASTER function will work with the ACW-GW to transmit messages to the Sigfox network.

Configurateur ACW

File Help

Atim Cloud Wireless  
Gateway 868 to SF8

Max Sigfox frame: 144 /Day

ACW SF8 parameters

ACW SF8:

ACW 1: 0x 0 0 0 0

ACW 2: 0x 0 0 0 0

ACW 3: 0x 0 0 0 0

ACW 4: 0x 0 0 0 0

ACW 5: 0x 0 0 0 0

ACW 6: 0x 0 0 0 0

ACW 868 parameters

@Modem: 1

Baudrate (bps): 1200

Channel: 522

Max power: 14|27dBm

Default Write

sw: [icon] Id sfx: [icon]

To activate this operating mode, the « ACW 868 parameters » box must be checked.

- ✓ Max Sigfox frame  
This setting sets the frame limit per day (24h) allowed. This value is to be indicated according to your Sigfox subscription.
- ✓ Radio parameters  
These are the radio parameters that will have to be selected carefully according to the environment in which the ACW is located
  - All ACWs that must communicate together must have the same radio settings ('Baudrate' and 'Channel').
  - To increase the radio range, decrease the 'Baudrate' rate. The 'Channel' channel will have to be chosen according to the environment.
- ✓ @Modem  
This parameter corresponds to the address (Modbus slave) of the ACW-GW, this value is also to be entered in the ACW sensors (Configured in Modbus master) in the @Remote zone

## b. Configuration compatible with ACW-SF8

In this mode of operation, a compatible ACW-SF8 device will work with the ACW-GW to transmit (relay) messages to the Sigfox network.

Configurateur ACW

File Help

Atim Cloud Wireless  
Gateway 868 to SF8

Max Sigfox frame: 144 /Day

ACW SF8 parameters

ACW SF8:

ACW 1: 0x 0 0 0 0

ACW 2: 0x 0 0 0 0

ACW 3: 0x 0 0 0 0

ACW 4: 0x 0 0 0 0

ACW 5: 0x 0 0 0 0

ACW 6: 0x 0 0 0 0

ACW 868 parameters

@Modem: 1

Baudrate (bps): 4800

Channel: 29

Max power: 14|27dBm

Default Write

sw: [icon] Id sfx: [icon]

To activate this operating mode, the "ACW SF8 parameters" box must be checked.

A maximum of 6 ACW-SF8 can be relayed. For an ACW-SF8 device to be relayed to the Sigfox network, you must enter its Sigfox identifier (in hexadecimal) in the boxes provided for this purpose (The boxes in front of ACW x: 0x).

### Attention

A message appears, if several ACWs have the same purpose of identifying Sigfox (The last box on the right in the configurator, which corresponds to the low byte to identify Sigfox). In this case, you will not be able to distinguish between your different devices on the ACW platform.

### Formatage des frames :

When a frame from an ACW-SF8 is received, it is padded with 0 except the last byte which is the end of the Sigfox identifier (Low Byte). This new 12-byte frame will be sent to the Sigfox network.

### Note

If the frame from an ACW-SF8 consists of 12 bytes, it will be replaced by the Sigfox identifier.

## Example

Frame coming from an ACW-SF8 having as Sigfox identifier: 0xFF5F7A9B.

Octet :	1	2
Data :	0x05	0x42

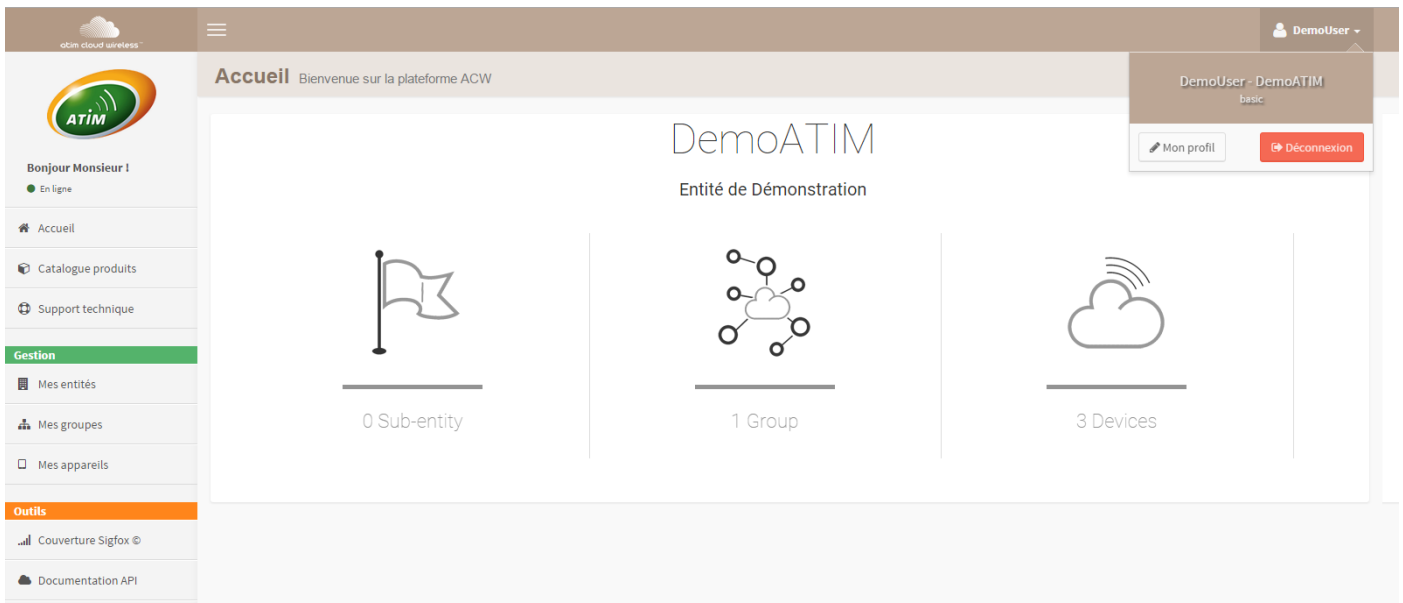
Frame to be issued by ACW-GW:

Octet :	1	2	3	4	5	6
Data :	0x05	0x42	0x00	0x00	0x00	0x00
Octet :	7	8	9	10	11	12
Data :	0x00	0x00	0x00	0x00	0x00	0x9B

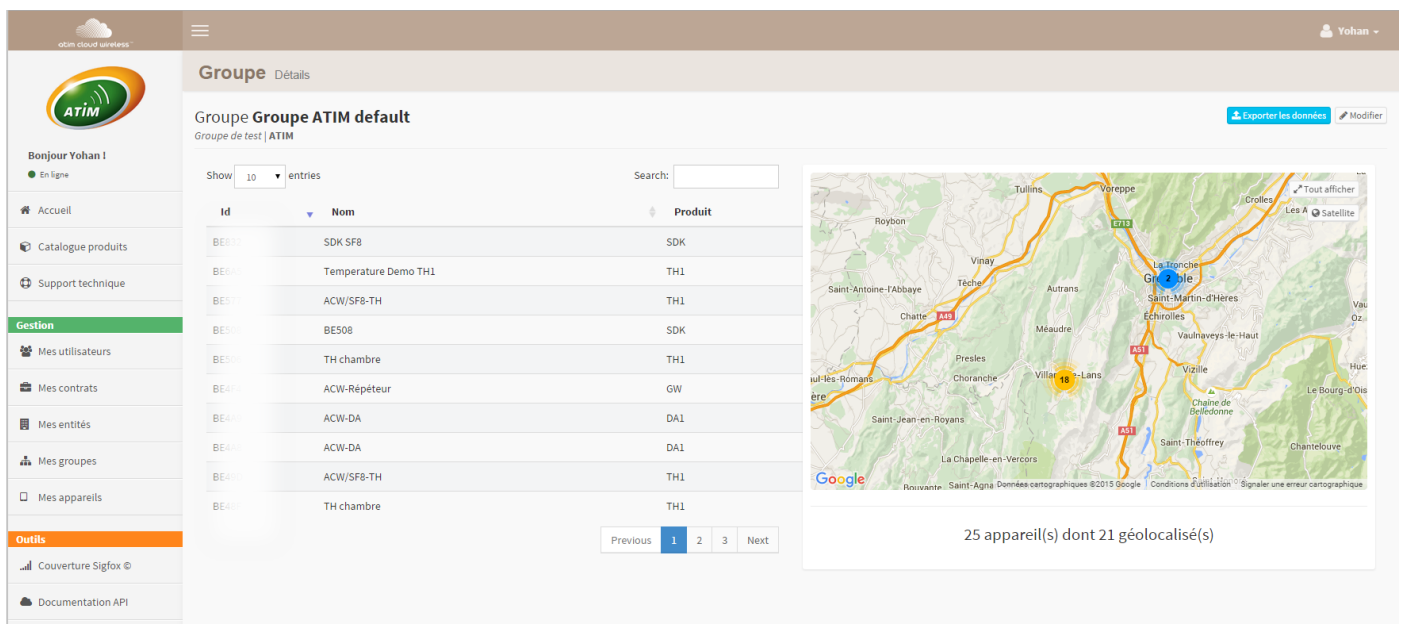
# Access to data on the web

## a. ACW platform modem visualization

Log on to the web platform <http://acw.atim.com> to access your devices and view your data. Your login details will be provided by email to the shipping of your order.



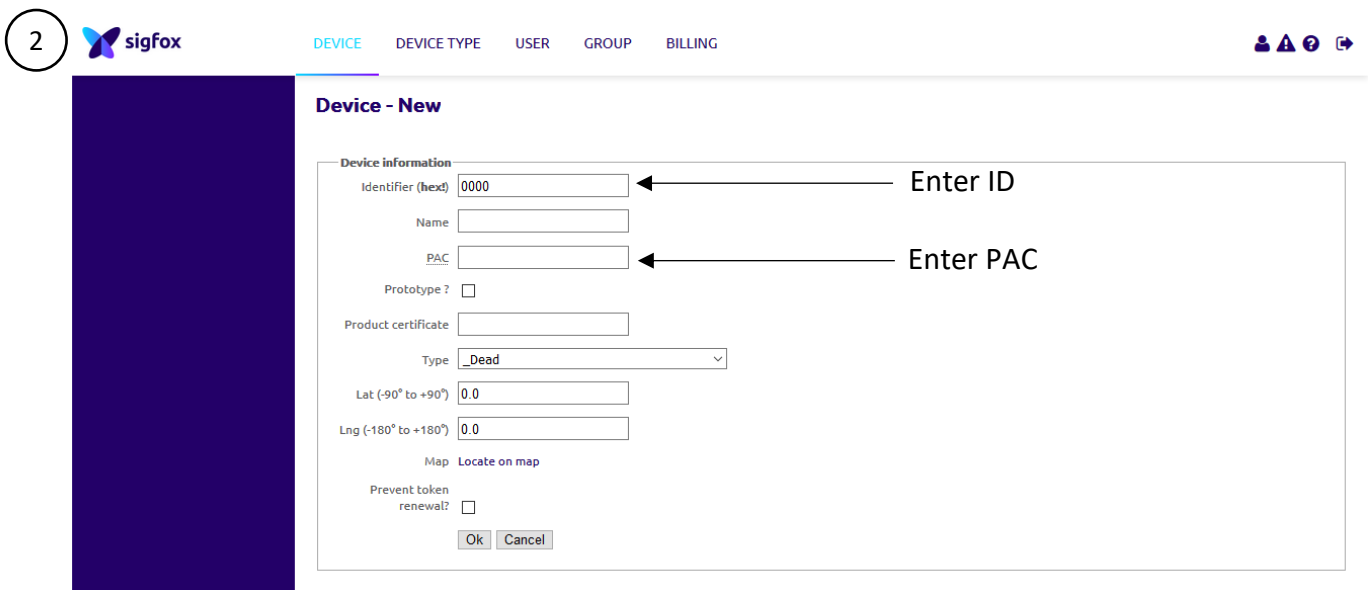
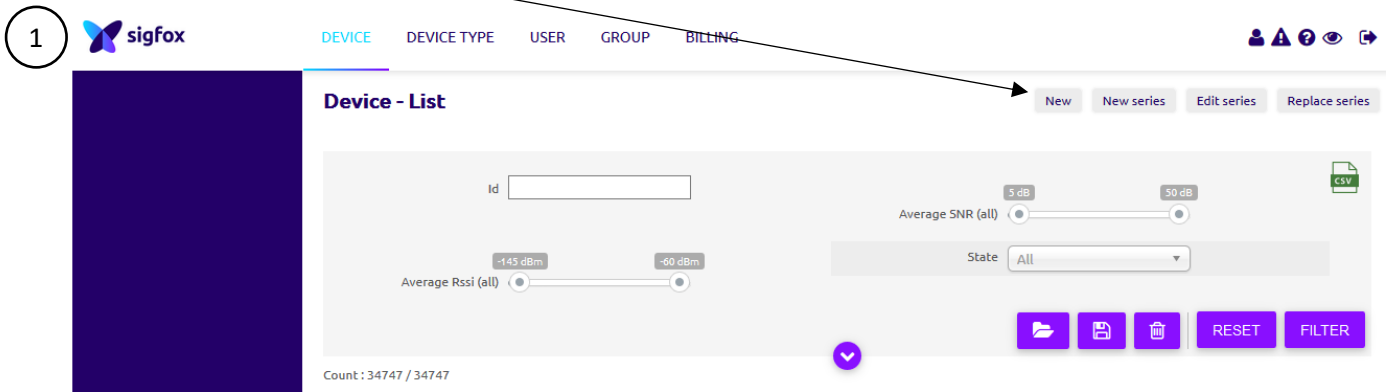
In the page "My groups" you will find all your geo devices located according to your installation.



## b. Registering the modem on the SIGFOX network

To register the modem with the SIGFOX network, open an Internet browser and go to <https://backend.sigfox.com>

Click on « New » to add a new device



Your product is now being imported into your SIGFOX account. The import may take several hours.

## Help

### The modem is not configured via USB or the configurator page does not update

- Check if the power supply is properly connected to the modem
- Check if the light is flashing
- Check that "Windows Update" is enabled, that the PC is connected to the Internet and that the driver installation is complete. Also check that your version of the configurator is up to date (Menu File -> Update).
- Replace the USB cable
- In case of Failed to write the configuration, unplug and reconnect the USB cable

### Radio data is not received

- Check if the power supply is properly connected to the modem
- Check if the modem has been registered on the network
- Check if radio network coverage is available

### Modem LED does not flash

- Check if the power supply is properly connected to the modem
- Configure the modem using the USB configurator

## Technical Support

For any information or technical problems, you can contact our technical support by e-mail and phone:

**[www.atim.com/fr/technical-support](http://www.atim.com/fr/technical-support)**