atim cloud wireless™
PRODUCT LINE

ATIM Cloud Wireless®

Metering and Dry Contacts
DIND80/160 - GPS

User Guide

Model concerned:

ACW/LW8-DIND80-G
ACW/LW8-DIND160-G

LoRaWAN™

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Document version history

Version	Date	Description	Author
0.9	10/06/2017	First version	AM
1.0	26/06/2017	Corrections	FR
1.1	27/09/2017	Complete version in SF8	AM
1.2	15/03/2018	SF8/LW version in 8 and 16 inputs Downlink command addition	AM
1.3	05/04/2018	Inputs decoding precision	AM

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Trademarks and copyright

Declaration of compliance

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

CE

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.

Description

The ACW-DIND80/160 GPS is intended to raise the digital input states (Dry contacts) on an IoT network such as Sigfox or LoRaWAN. These inputs are configurable and can be enabled / disabled as single inputs or as counter inputs.
A temperature sensor can be connected as an option. It also has a shock sensor for issuing an alert in case of tearing of the limp.

Technical features

a. Product

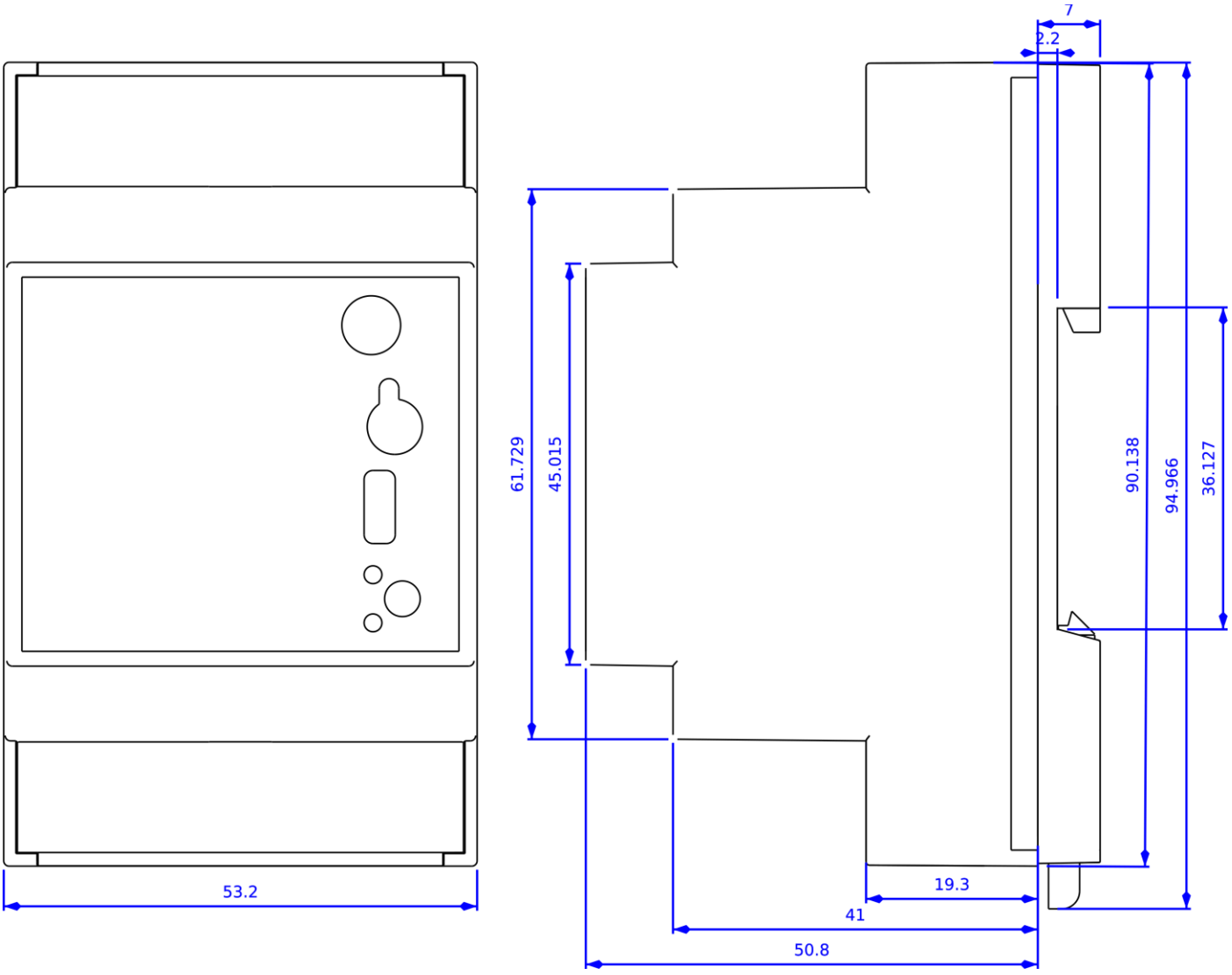
Dimensions	53.2 x 50.8 x 90.1 mm	
Antenna	External SMA connector	
Temperature	-20°C à +55°C (operating mode) -40°C à +70°C (storage)	
Mount	DIN Rail	
Power supply	10-30 Vcc (100 mA)	
Digital inputs (Dry Contacts)	8 or 16 configurable inputs: 1. Alerts on change of state 2. Metering (8, V1.2.0 and forward) 3. Inputs' group activation (4 maximum)	
Set up	Via USB or through downlink connection	
Alarm	Wrenching / Shock	
Frequency	865 – 870 MHz	
Power	25 mW (14 dBm)	
Rate	Sigfox: 100 bps LoRaWan: 300 bit/s to 10 Kbit/s	
Consumption (in 24V)	Sigfox	LoRaWan
Tx mode	25 mA	23 mA
Sleep mode	10 mA	10 mA
Rx mode	20 mA	16 mA

b. Metering indexes backup

Since version V1.2.0, the counters are saved in the memory of the ACW to the west of several events:

- When writing counters via the USB configurator
- When writing via a downlink command.
- During a power failure.

Footprint and mounting



Dimensions given in mm.

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

Set up

c. Antenna positioning

This version was designed for installation in a cabinet. 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 correctly screwed on the SMA connector and positioned vertically, preferably upwards.

➔ In the case of a metallic enclosure, the antenna must be removed outside to have good radio results (avoid the Faraday cage!)

For optimal results, it is advisable to move the antenna up and clear of any metallic obstacle in a radius of 1 meter.

d. Modem connection

Preview of the front panel:

Antenna (SMA connector)

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.

Power Supply (Lower terminal)

The ACW-DIND80/160 module must be powered with a DC power supply between 10V and 30V that can provide a minimum current of 100mA. The POWER pin corresponds to the **+** terminal and the GND pin to the **-** **(0V)** terminal.

Note

All the GND terminals of the ACW-DINDIO8 / 16 are connected internally. Only the GND terminal, bottom right, should be used to connect the power cable.

Jack connector

This connector is used to connect an optional temperature sensor (supplied with a 2m cable).

Micro USB

This connector is used to configure the product via an USB interface on PC.

Note

The configuration via USB can directly power the ACW-DINDIO8 / 16 and does not require an external power supply (10 / 30V). But an external power supply can also be present.

Terminals' description

Below you will find a table describing the different connection pins:

Name	Designation	Input / Output
GND	Ground (-) for GPIO1, 2 and 3	Ground
GPIO1	Digital input ALERT 1	Input
GPIO2	Digital input ALERT 2	Input
GPIO3	Digital input ALERT 3	Input
GND	Ground (-) for GPIO4, 5 and 6	Ground
GPIO4	Digital input ALERT 4	Input
GPIO5	Digital input ALERT 5	Input
GPIO6	Digital input ALERT 6	Input
GND	Ground (-) for GPIO7, 8 and OUT1	Ground
GPIO7	Digital input ALERT 7	Input
GPIO8	Digital input ALERT 8	Input
OUT1	Digital output Dry contacts (Non used)	Output
GPIO9(1)	Digital input ALERT 9	Input
GPIO10(1)	Digital input ALERT 10	Input
GPIO11(1)	Digital input ALERT 11	Input
GPIO12(1)	Digital input ALERT 12	Input
GND	Ground (-) for GPIO9, 10, 11 and 12	Ground
GPIO13(1)	Digital input ALERT 13	Input
GPIO14(1)	Digital input ALERT 14	Input

GPIO15(1)	Digital input ALERT 15	Input
GPIO16(1)	Digital input ALERT 16	Input
GND	Ground (-) for GPIO13, 14, 15 and 16	Ground
POWER	Power supply between +10V and +30V	Input (Alim +)
GND	Ground (-)	Ground (Alim 0V)

(1) The DIN-DIO8 version does not include GPIO9 to GPIO16 inputs. **Do not log on these pins**

e. Pushbutton

The push button located on the front of the box makes it possible to send a test frame to validate the installation on site by checking the arrival of the message on the ATIM Cloud Wireless® platform.

f. LEDs meaning

The indicator lights are used to characterize the correct operation or not of the ACW-DINDIO8 / 16. In general, the green LED indicates correct operation and the red LED indicates a critical, non-critical error, an alarm or a loss of power.

Failure or success of an operation

Behavior:

The red or **green** light flashes rapidly for about 1/2 second.

A failure is characterized via the red light and a success is characterized via the **green** light.

Event:

- On power-up (after a brief moment after power-up), to confirm that it has started properly.
- After passing a configuration or command (USB or Downlink).
- When sending a radio message on the network.

Radio activity

When a radio message is transmitted over the network, the green LED flashes every half-second during the sending time. In Sigfox, this can take up to a minute but usually only takes about 10 seconds.

Alarm

When a shock is detected, the red-light flashes quickly for one second.

Wirecut

As of version V1.2.0, a small energy reserve is embedded in the product. When the power supply is lost, the red light stays on until the power reserve is exhausted.

Non critic error

Behavior:

The red-light flashes briefly every ten seconds.

Error source:

➔ The previous radio message could not be transmitted.

Critical error

Behavior:

The red-light flashes briefly every second.

Error source:

➔ The ACW-DINDIO8 / 16 could not start correctly.

Correct behavior at startup

On power-up, after a moment, the **green** LED flashes rapidly for about 1/2 second, to attest to a good start.

1 minute after power up, 3 frames are sent:

- 1 test frame
- 1 keep alive frame

- 1 input frame with the state of every inputs' states

Then, 4 other test frames are successively sent on the network at a rate of 1 frame per minute for 4 minutes. During this transmission, the **green** LED flashes.

Setup et configuration

a. Setup

Inputs setup:

All inputs are configurable and can be assigned to different modes of operation. Each entry can be deactivated or assigned to one of 14 different events available. For each event, a trigger mode is associated among three different modes available, as well as the type of draw of entries.

Available event are the followings:

- Off (by default)
- Sending an alert frame to the state change if input 1 is open.
- Sending an alert frame to the state change if input 8 is open.
- Send warning frame to status change if input 9 is open (only in ACW-DIN-DIO16 version).
- Send warning frame to status change if input 16 is open (only in ACW-DIN-DIO16 version).
- Sending an alert frame to the state change.
- Incrementation of meter 1
- Incrementation of meter 2
- Incrementation of meter 3
- Incrementation of meter 4
- Incrementation of meter 5 (V1.2.0 and uppers)
- Incrementation of meter 6 (V1.2.0 and uppers)
- Incrementation of meter 7 (V1.2.0 and uppers)
- Incrementation of meter 8 (V1.2.0 and uppers)

Pulling types (from version V1.2.0):

- Pull-up: Suitable for dry contacts connecting the input and ground (0V). This default configuration is used in versions below V1.2.0.
- Pull-down: Suitable for dry contacts connecting the input and the 10 / 30V.

The available trigger modes are:

- At the change of state of a contact, from "closed" to "open" (rising edge).
- At the change of state of a contact, from "open" to "closed" (falling edge).
- At state change on rising and falling edge (default).

Bounce time parameter:

All inputs are affected by a debounce time that can be adjusted between 5 and 250 ms, depending on the type of Dry contacts you are using.

Paramètre de la trame périodique :

The periodic frames make it possible to regularly go back up the state of the inputs / counters. This frequency is set to 1 hour by default but can be set from 10 minutes to 45 days, 12 hours and 15 minutes.

Depending on the setting you have chosen, it is possible that several frames are sent. In this case and only in the Sigfox version the minimum periodicity can be affected:

- If two frames are to be sent, the minimum period is 20 minutes.
- If three frames are to be sent, the minimum period is 30 minutes.
- If four frames are to be sent, the minimum period is 40 minutes.
- If five frames are to be sent, the minimum period is 50 minutes.

Keep alive frame parameters:

A life frame can be emitted periodically. This frame will remount the supply voltage of the product.

The available periods are as follows:

- Disabled
- Every hour
- Every two hours
- Every four hours
- Every eight hours
- Everyday
- Every two days
- Every three days
- Every four days (by default)
- Every week.
- Every month (30 days)

Temperature parameters (Offset):

If a temperature sensor is connected, it is possible to assign an offset value for calibration of the sensor. By default, a value of 0 ° C is affected and the possible values are from -10 to +10 ° C in steps of 0.1 ° C.

Pairing method setup:

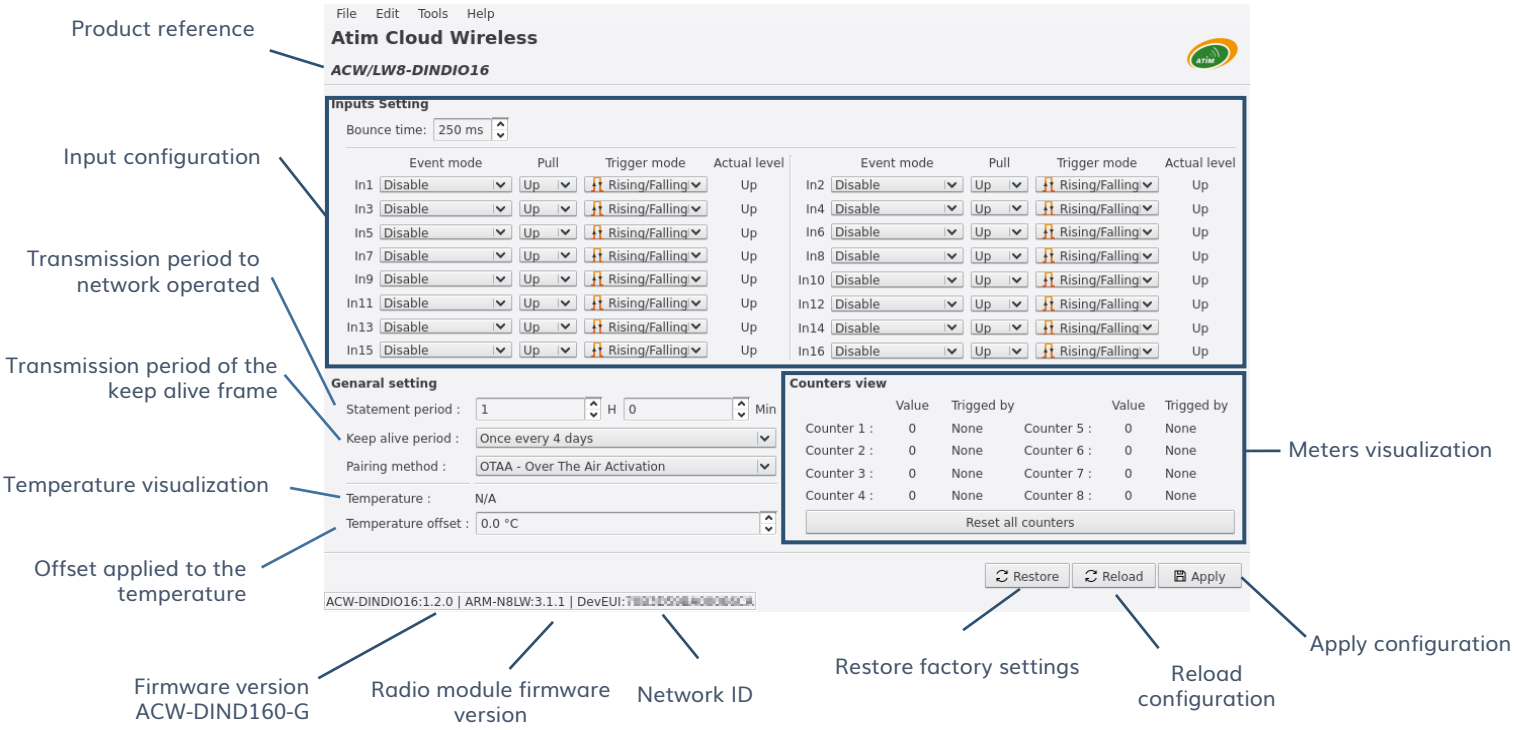
In the LoRaWAN version it is possible to choose the method of pairing between OTAA (Over The Air Activation) and ABP (Activation By Personalization).

b. Configuration via USB

Download and install the "ACW Configurator" software, which you will find at the following address:

http://www.atim.com/fr/support/telecharger/

Connect the ACW to your computer with a micro-USB cable, then launch the software if you have not already done so. When you connect the ACW-DIND80/160 GPS, the software window changes to allow you to access the ACW configuration. Automatically, the current configuration of the connected ACW is retrieved and displayed. You can then see a window like the one below (eg for an ACW-DIND160):



In addition to having access to all the parameters described in the Parameters section, you have access to a visualization on the state of the inputs, meters and temperature (if the sensor and connected). The display of all these parameters is refreshed every 2 to 3 seconds.

Note

It is necessary to apply the configuration to be able to increment and to visualize the counters.

Note

It is possible during the first connection that the values of the counters are random. In this case, you will have to click on the button 'Reset all counters' to initialize to 0 all the counters.

Uplinks on IoT networks (Sigfox/LoRaWAN)

a. Test frame

This frame is sent to the network every minute for five minutes when the product is started. It can also be triggered via the push button on the front of the ACW-DIND80/160-G. Each time this frame is sent, a counter is incremented and inserted in the frame.

Frame format

Octet	1	2
Data	0x05	Cpt

Cpt deals with the meter value.

b. Keep alive frame

This frame is sent to the network periodically (configurable) and after transmission of the first 5 test frames.

Frame format

Octet	1	2	3	4	5	6
Data	0x01	Power supply tension (millivolt)		Power supply tension (millivolt)		0x64

c. State frame

The state of the inputs and counters, as well as the temperature (if connected) are sent either periodically or on change of state of a previously configured input.

To raise the status of all inputs and counters, it is possible that several frames are sent.

The frames below will be sent depending on the configuration.

Digital input frame

In case the temperature sensor is disconnected and counter 1 and counter 2 are deactivated.

Octet	1	2	3
Data	0x42	State of digital inputs	

Digital inputs and temperature frame

In case the temperature sensor is connected, and all the counters are deactivated.

Octet	1	2	3	4	5
Data	0x41	State of digital inputs		Temperature in 1/10 of °C	

Frame of digital inputs, temperature and counter 1

the case where only counter 1 is activated and the temperature sensor is connected.

Octet	1	2	3	4	5	6	7	8	9
Data	0x4e	State of digital inputs		Temperature in 1/10 of °C		Meter 1			

Digital input frame, counter 1 and counter 2

In case the counter 1 or / and 2 is / are activated and the temperature sensor is disconnected.

Octet	1	2	3	4	5	6	7	8	9	10	11
Data	0x4f	State of digital inputs		Meter 1				Meter 2			

Frame of digital inputs and counter 1

In case only counter 1 is activated and the temperature sensor is disconnected.

Octet	1	2	3	4	5	6	7
Data	0x52	State of digital inputs		Meter 1			

Counter 1 & 2 frame

In case the meter 2 is activated and the temperature sensor is connected

Octet	1	2	3	4	5	6	7	8	9
Data	0x50	Meter 1				Meter 2			

Counter 3 & 4 frame

In the case where the counter 3 and / or the counter 4 are / is activated.

Octet	1	2	3	4	5	6	7	8	9
Data	0x51	Meter 3				Meter 4			

Counter 5 & 6 frame

the case where the counter 5 and / or the counter 6 are / are activated.

Octet	1	2	3	4	5	6	7	8	9
Data	0x5f	Meter 5				Meter 6			

Counter 7 & 8

In the case where the counter 7 and / or the counter 8 are / is activated (s).

Octet	1	2	3	4	5	6	7	8	9
Data	0x60	Meter 7				Meter 8			

Frame of digital inputs, temperature and counter 1 to counter n (only in LoRaWAN)

In the case where counters are activated, and the temperature sensor is connected.

Octet	1	2	3	4	5	6	7	8	9	...
Data	0x5d	State of digital inputs		Temperature in 1/10 of °C		Meter 1				Meter 2 to n

Note

If there are 8 counters to send the 0x60 frame will also be sent.

Digital input frame, counter 1 to counter n (only in LoRaWAN)

In the case where counters are activated, and the temperature sensor is disconnected.

Octet	1	2	3	4	5	6	7	...
Data	0x5e	State of digital inputs		Meter 1				Meter 2 to n

d. Alarm or shock frame

This frame is sent to the network during the detection of a shock on the case. This feature is disabled for 10 minutes after this frame is sent.

Octet	1	2
Data	0x43	cpt

Cpt is the value of a counter that increments each time this frame is sent.

e. Format/decoding of data/frames

State of digital inputs:

The layout of the digital inputs in bytes 2 and 3 for frames 0x41, 0x42, 0x4e, 0x4f, 0x5d, 0x5e and 0x52 are described in the table below.

Bit	7	6	5	4	3	2	1	0
Octet 2	Input 8	Input 7	Input 6	Input 5	Input 4	Input 3	Input 2	Input 1
Octet 3	Input 16(1)	Input 15(1)	Input 14(1)	Input 13(1)	Input 12(1)	Input 11(1)	Input 10(1)	Input 9(1)

Metering:

All counters are in 32 bits or 4 bytes, they are sent with the most significant byte (MSB) first. It's up to you to convert your physical value according to the type of impulse counted.

Note(1)

the DINDIO8 version these inputs are not used and are replaced by high level.

Temperature in 1/10 of °C:

The temperature is sent in 10th of degrees Celsius on two bytes coded in complement two. The most significant byte (MSB) is sent first.

Power supply tension (millivolt):

The supply voltage is sent in millivolt on two bytes, the most significant byte (MSB) is sent first.

Metering:

All counters are coded on 4 bytes, the most significant byte (MSB) is sent first.

f. Frames summary

Type	Description	Frame format										
		octet 0 (hex)	octet 1 (hex)	octet 2 (hex)	octet 3 (hex)	octet 4 (hex)	octet 5 (hex)	octet 6 (hex)	octet 7 (hex)	octet 8 (hex)	octet 9 (hex)	octet 10 (hex)
Keep Alive	Keep alive frame	01	Power supply tension (mV)		Power supply tension (mV)		64					
Test	Test frame	05	Meter									
DIO16	Digital inputs frame	42	Digital inputs state									
DIO16	Digital inputs and temperature frame	41	Digital inputs state		Temperature (1/10 of °C)							
DIO16	Digital inputs, temperature and meter 1 frame	4E	Digital inputs state		Temperature (1/10 of °C)		Meter 1					
DIO16	Digital inputs, meter 1 & 2 frame	4F	Digital inputs state		Meter 1				Meter 2			
DIO16	Digital inputs and meter 1 frame	52	Digital inputs state		Meter 1							
DIO16	Meter 1 & 2 frame	50	Meter 1				Meter 2					
DIO16	Meter 3 & 4 frame	51	Meter 3				Meter 4					
DIO16	Meter 5 & 6 frame	5F	Meter 5				Meter 6					
DIO16	Meter 7 & 8 frame	60	Meter 7				Meter 8					
DIO16	Digital inputs, temperature and meters frame	5D	Digital inputs state		Temperature (1/10 of °C)		Meter 1				Meters ... n	
DIO16	Digital inputs and meters frame	5E	Digital inputs state		Meter 1				Meters ... n			
DIO16	Alarm and shock frame	40	Meter									

Downlinks from IoT networks (Sigfox/LoRaWAN)

If your product has a compatible radio version, you can benefit from this feature.

Sigfox radio firmware: Version **5931** or forward

LoRaWAN radio firmware: Version **2.3.3** or forward

The operation of the exchange frames of this function is explained in the document "ATIM_ACW-DLConfig_UG_EN_Vx.x.pdf" This document is available for download at www.atim.com . Otherwise, contact your technical support to obtain it.

a. Parameters

Below is a description of all the downlink modifiable parameters:

Keep alive frame parameters (Code 03) :

Size and Code (Octet 1)	Value (Octet 2)
0x00|03=0x03	0x00 = Disabled. 0x05 = Every hour. 0x0a = Every two hours. 0x0b = Every four hours. 0x0c = Every eight hours. 0x06 = Every day. 0x0d = Every two days. 0x0e = Every three days. 0x0f = Every four days. 0x07 = Every week. 0x08 = Every month (30 days).

Inputs parameters (Code 10 to 25) :

Size and Code (Octet 1)	Value (Octet 2)
Input 1: 0x00|10=0x0a **Input 2: 0x00|11=0x0b** **Input 3: 0x00|12=0x0c** **Input 4: 0x00|13=0x0d** **Input 5: 0x00|14=0x0e** **Input 6: 0x00|15=0x0f** **Input 7: 0x00|16=0x10** **Input 8: 0x00|17=0x11**	0xYY

Input 9: 0x00|18=0x12 Input 10: 0x00|19=0x13 Input 11: 0x00|20=0x14 Input 12: 0x00|21=0x15 Input 13: 0x00|22=0x16 Input 14: 0x00|23=0x17 Input 15: 0x00|24=0x18 Input 16: 0x00|25=0x19	

The value (0xYY) is composed of an event, a trigger mode and a draw type. The value (0xYY) is thus divided into three concatenated parts.

Note

The 8-input version (ACW-DIND8) does not have codes 18 to 25.

Note

The type of print and available only from version V1.2.0.

Events - bits 0 to 4:

The possible values in the byte for these bits are:

- 0x00 = Disabled.
- 0x01 = Sending an alert frame to the state change if input 1 is high.
- 0x13 = Sending an alert frame to the state change if input 8 is high.
- 0x14 = Sending an alert frame to the state change if input 9 is high. (Available only in version 16 entries)
- 0x15 = Sending an alert frame to the state change if the input 16 is in the high state. (Available only in version 16 entries)
- 0x02 = Sending an alert frame to the state change
- 0x03 = Counter increment 1
- 0x04 = Counter increment 2
- 0x05 = Counter increment 3
- 0x06 = Counter increment 4

- 0x07 = Counter increment 5 (V1.2.0 and forward)
- 0x08 = Counter increment 6 (V1.2.0 and forward)
- 0x09 = Counter increment 7 (V1.2.0 and forward)
- 0x0A = Counter increment 8 (V1.2.0 and forward)

Pull types - bits 5 (from V1.2.0):

The possible values in the byte for these bits are:

- 0x00 = Pull-up (by defaults for lower versions of V1.2.0).
- 0x20 = Pull-down

Trigger modes - bits 6 to 7 :

The possible values in the byte for these bits are:

- 0x40 = At the change of state, from the low state to the high state (rising edge).
- 0x80 = At the change of state, from the high state to the low state (falling edge).
- 0xc0 = At the change of state (rising and falling edge).

Example:

For example, if you want to configure the input 10 (code 19) on the counter 3 (0x05) on the rising edge only (0x40 and a pull up (0x00), the following parameterization must be generated:

Size and Code (Octet 1)	Value (Octet 2)
0x00|19=0x13	0x05|0x40|0x00 =0x45

Rebound time parameter (Code 30):

Size and Code (Octet 1)	Value (Octet 2)
0x00|30=0x1e	0xYY

The value (0xYY) is encoded in milliseconds. From 5 (for 5 milliseconds) to 255 (for 255 milliseconds).

Parameter of the periodic frame (Code 31):

Size and Code (Octet 1)	Value (Octet 2)	Value (Octet 3)
0x40|31=0x5f	0xYY	0xZZ

The value (0xZZYY) is coded in minutes. From 10 (for 10 minutes) to 65535 (for 45 days, 12 hours and 15 minutes). The low byte (0xYY) is first in the frame.

Settings on temperature - Offset (Code 32):

Size and Code (Octet 1)	Value (Octet 2)
0x00|32=0x20	0xYY

The value (0xYY) is coded in addition to two and tenths of ° C. From -100 (for -10 ° C) to 100 (for + 10 ° C).

b. Commands

Restart

To restart the ACW-DIND80/160-G remotely, you will need to send the following command:

Octet 1	Octet 2
0x01	0x01

The ACW will restart and not send confirmation.

About

To obtain the information about the ACW-DIND80/160-G it will be necessary to send him the following command:

Octet 1	Octet 2
0x01	0x02

The ACW will return the information in the following format:

	Description and Value
Octet 1	Answer to command frames: 0x07
Octet 2	About command: 0x02
Octet 3	ACW type:

	• DIND80 - 0x0B • DIND160 - 0x09
Octet 4	ACW version (LSB)
Octet 5	ACW version (MSB)
Octet 6	Radio type: 1. Sigfox only uplink - 0x03 2. Sigfox uplink/downlink - 0x04 3. LoRaWan - 0x05
Octet 7	Radio version (LSB)
Octet 8	Radio version (MSB)
Octet 9 à n	Serial number (devEUI|sfx) (MSB first).

Reconfiguration with default settings

To reconfigure the parameters to the default values, it will be necessary to send him the following command:

Octet 1	Octet 2
0x01	0x03

The ACW will return a confirmation in the following format:

	Description and Value
Octet 1	Answer to command frames: 0x07
Octet 2	Configuration command by default: 0x03
Octet 3	Indicates whether the reconfiguration went well: • Returns 0x00 to indicate that the configuration went smoothly. • Returns a value other than 0x00 to indicate that the configuration failed.

Obtain the complete configuration

To obtain the complete configuration of the ACW, it will be necessary to send him the following command:

Octet 1	Octet 2
0x01	0x04

The ACW will return several frames with all its parameters:

	Description and Value
Octet 1	Answer to command frames: 0x07
Octet 2	Configuration command by default: 0x04
Octet 3, n	The parameters are encapsulated in the configuration frames.

Obtain the version of the used protocol

To obtain the version of the Downlink ATIM protocol implemented in the ACW, the following command must be sent:

Octet 1	Octet 2
0x01	0x07

The ACW will return the version in the following format:

	Description and Value
Octet 1	Answer to command frames: 0x07
Octet 2	Command version of the protocol: 0x07
Octet 3	Protocol version LSB
Octet 4	Protocol version MSB

Apply a value to the counters (from version V1.2.0)

To write the value of one or more counters, it will be necessary to send him the following command:

Octet 1	Octet 2	Octet 3	Octet 4	Octet 5-8
0xC1	Frame size - 0x06	0x0A	Meter Index	Meter(s) value

The value of one or more counters is defined in bytes 5 to 8. The value is on 32 bits with the LSB first (byte 5).

Byte 4 is the index of the counter where the value is to be applied. For example, 4 for counter 4, 7 for counter 7, etc ... An index of 255 (0xff) will affect all counters. For example to put all counters at 256, the following frame should be sent:

Octet 1	Octet 2	Octet 3	Octet 4	Octet 5	Octet 6	Octet 7	Octet 8
0xC1	0x06	0x0A	0xff	0x00	0x01	0x00	0x00

If the counter (s) may have been affected by the value, the ACW will save the value in its memory and return the following confirmation frame:

	Description and Value
Octet 1	Answer to command frames: 0x07
Octet 2	Command, meter : 0x0A

Access to data on the web, Sigfox solutions

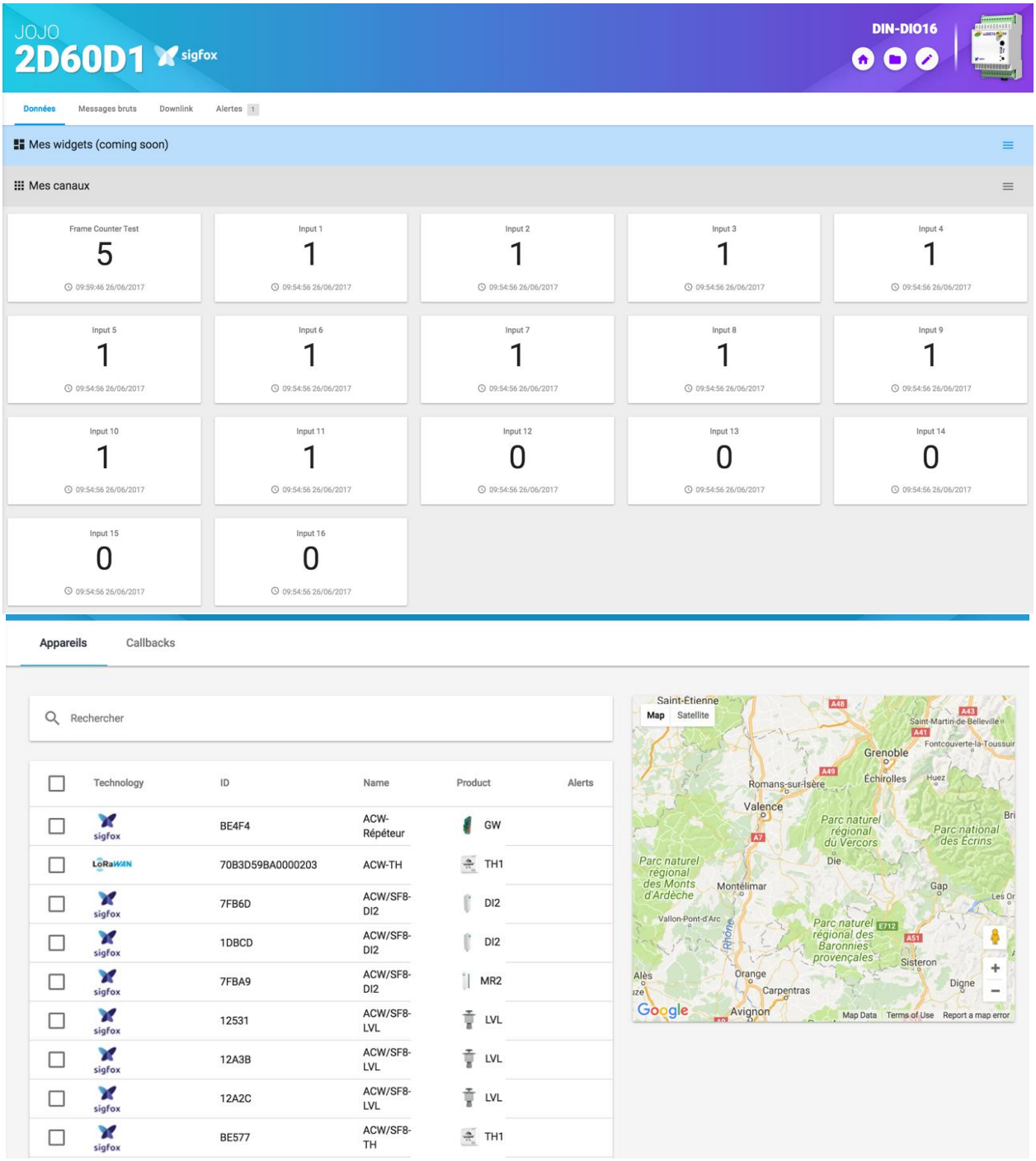
a. Cloud Wireless® platform modem visualization

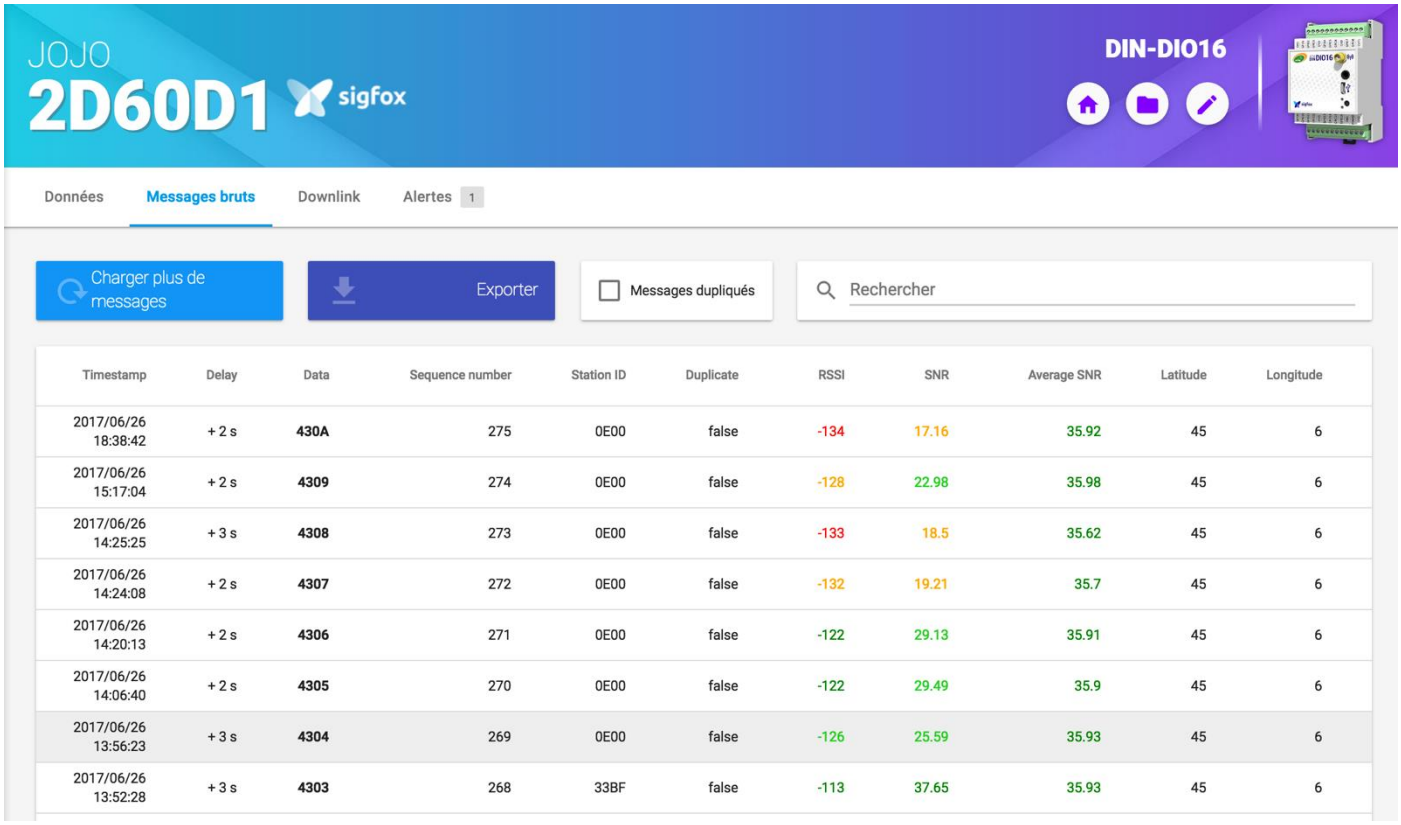
Log on to the web platform http://acw.beta.atim.com to access your devices and view your

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 geolocated devices according to your installation.

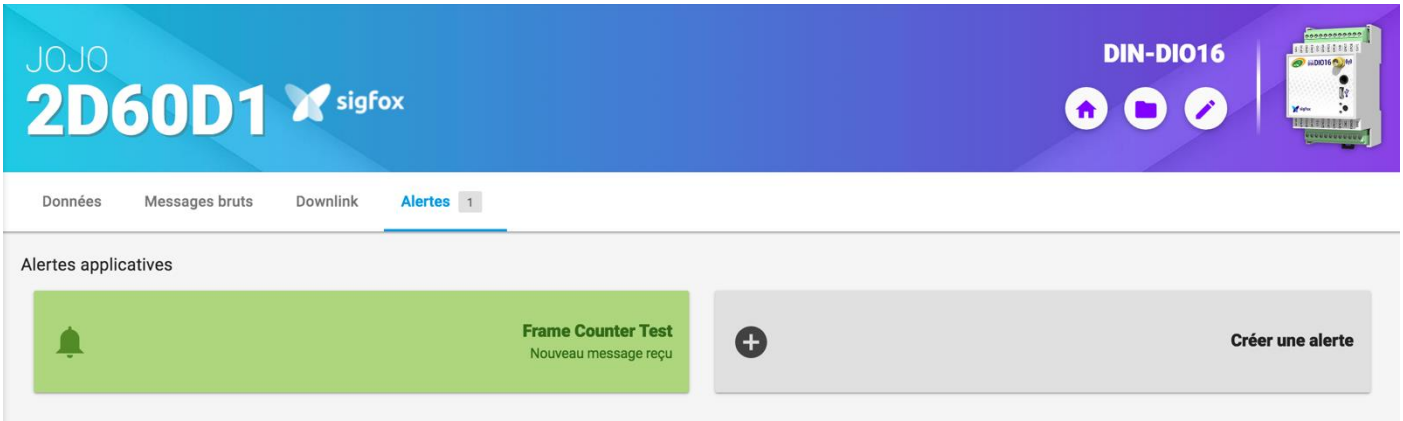
b. Data visualization

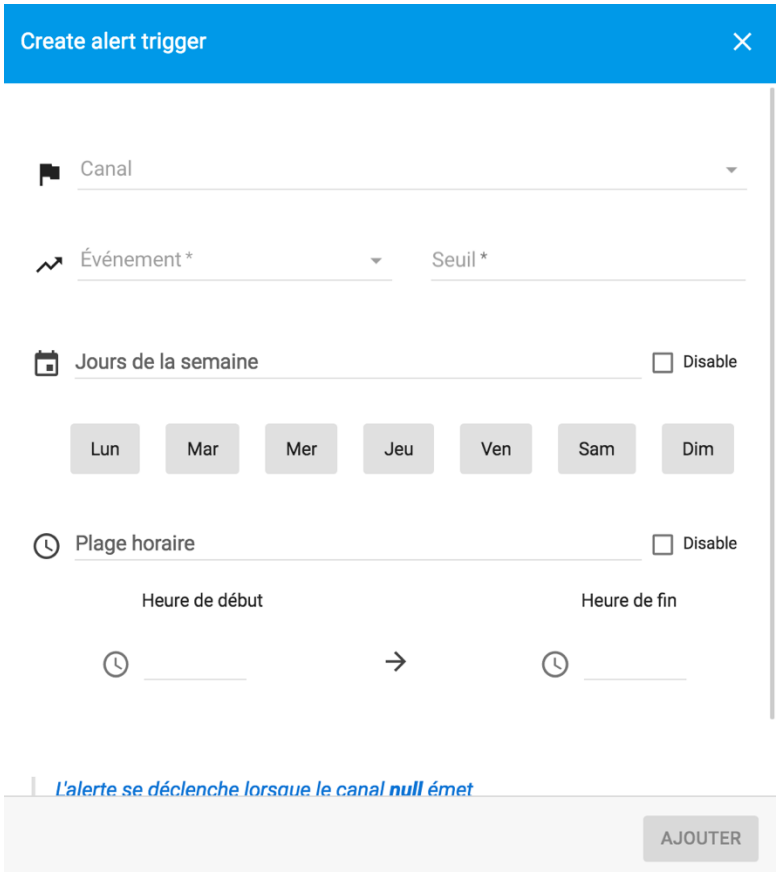


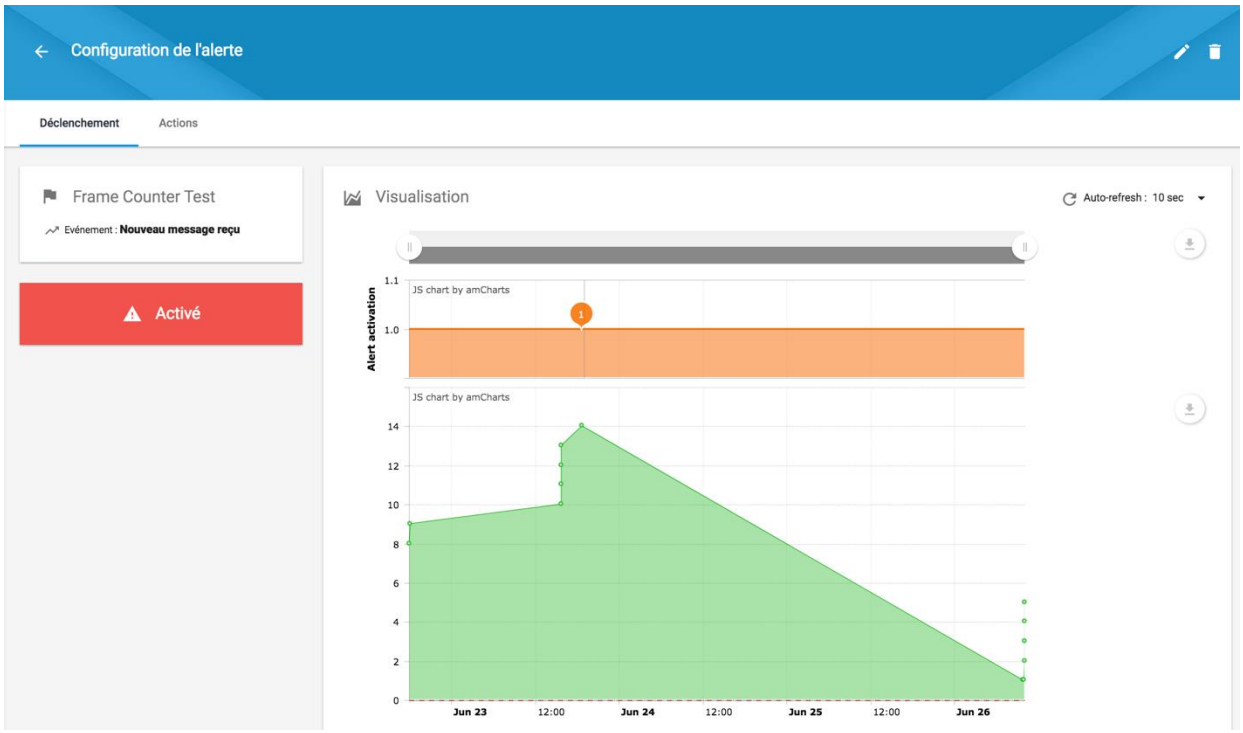


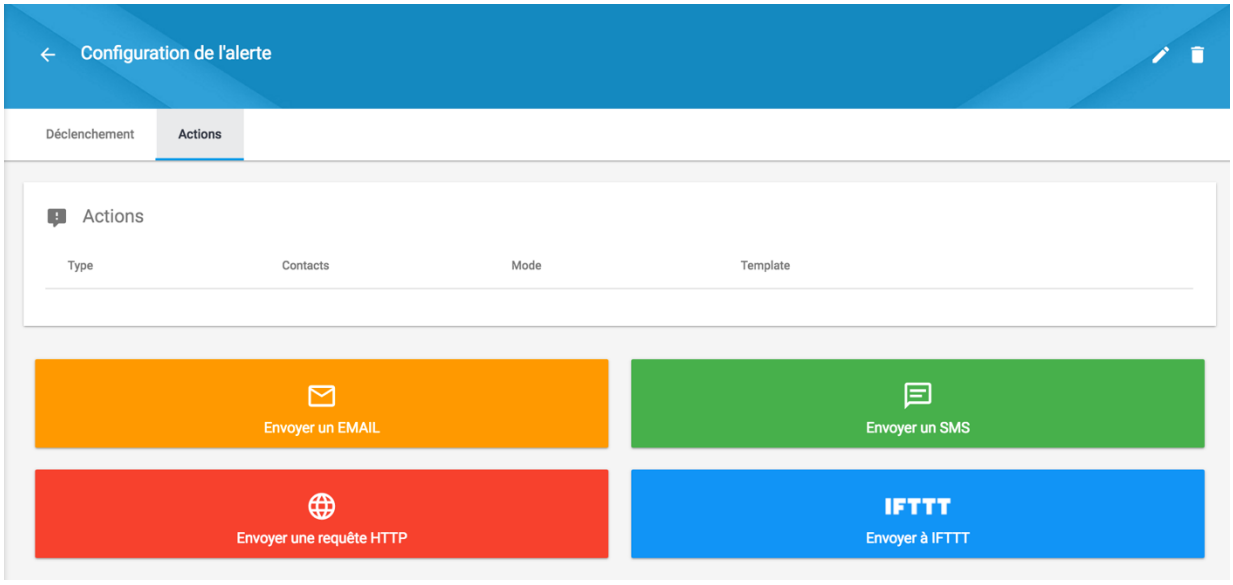
Timestamp	Delay	Data	Sequence number	Station ID	Duplicate	RSSI	SNR	Average SNR	Latitude	Longitude
2017/06/26 18:38:42	+ 2 s	430A	275	0E00	false	-134	17.16	35.92	45	6
2017/06/26 15:17:04	+ 2 s	4309	274	0E00	false	-128	22.98	35.98	45	6
2017/06/26 14:25:25	+ 3 s	4308	273	0E00	false	-133	18.5	35.62	45	6
2017/06/26 14:24:08	+ 2 s	4307	272	0E00	false	-132	19.21	35.7	45	6
2017/06/26 14:20:13	+ 2 s	4306	271	0E00	false	-122	29.13	35.91	45	6
2017/06/26 14:06:40	+ 2 s	4305	270	0E00	false	-122	29.49	35.9	45	6
2017/06/26 13:56:23	+ 3 s	4304	269	0E00	false	-126	25.59	35.93	45	6
2017/06/26 13:52:28	+ 3 s	4303	268	33BF	false	-113	37.65	35.93	45	6

c. Alerts setup




Create alert trigger
Canal
Événement *
Seuil *
Jours de la semaine
Disable
Lun
Mar
Mer
Jeu
Ven
Sam
Dim
Plage horaire
Disable
Heure de début
Heure de fin
L'alerte se déclenche lorsque le canal null émet
AJOUTER


Configuration de l'alerte
Déclenchement
Actions
Frame Counter Test
Evénement : Nouveau message reçu
Activé
Visualisation
Auto-refresh : 10 sec
JS chart by amCharts
Alert activation
1.1
1.0
JS chart by amCharts
14
12
10
8
6
4
2
0
Jun 23
12:00
Jun 24
12:00
Jun 25
12:00
Jun 26


Configuration de l'alerte
Déclenchement
Actions
Actions
Type
Contacts
Mode
Template
Envoyer un EMAIL
Envoyer un SMS
Envoyer une requête HTTP
IFTTT
Envoyer à IFTTT

Technical Support

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

https://www.atim.com/en/technical-support/