

# Vizuo Application for Sigfox Sensors

Manual For Sigfox Sensor as the following link:<https://daviteq.com/en/manuals/books/manual-for-sigfox-sensors>

## 1. Introduction

Vizuo is a web-based software application to remotely configure device, parameter, alarm and event. In addition, Vizuo displays current values, historical values of parameters as well as events, alarms. Values of parameter are stored on database of GLOBIOTS server. Below figure describes the system which uses Vizuo application software:



## 2. User Information and Actions

### 2.1 Sign in

- Open a web browser (Google Chrome/Firefox/Internet Explorer...).
- Enter address in URL: <http://vizuo.globiots.com/>
- Sign-in page displays as follow:



- Enter username and password
- Click “Sign in” button.

- For user first time sign-in or reset password, user’s password must be changed after successful sign-in
- Screen of change password:



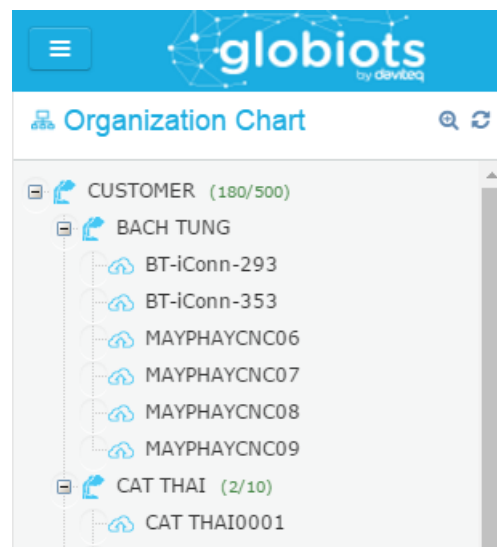
### 2.2 Configure Node

#### 2.2.1 Node Definition

In Organization Chart Panel, Node is used to create Organization Chart. Node name should be geographical area, type of energy or responsible person. A Node includes one or more sub-Node and Device

#### 2.2.2 Organization Chart

To close or open “Organization Chart” panel, you can click  on left corner of screen Organization Chart page includes all Node and Device in system:



- Node name
- Number using device of account/Max number device of account

Right click on Node name, menu of Node displays:



- New: Create new Node, Device
- Delete: Delete Node
- Assign to account: Assign Node and sub-Node to account
- Rename: Change name of Node

## 2.2.3 Create a Node

To Create a sub-Node:

- (1) Select Node
- (2) Right click and select "New"
- (3) Click "Node" to create new Node



- (4) Enter sub-Node name and click button Save, then click button OK to confirm

## 2.2.4 Rename Node

To change name of Node, right click on Node name → select Rename Or double click on Node. Enter new name and click button "Save Changes" to complete

## 2.2.5 Delete node

In Organization Chart, select Node that you want to delete, right click Node name → select "Delete", click button OK. Enter Username and Password of Account to confirm

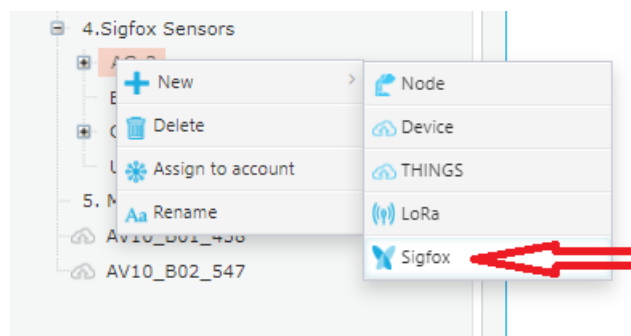
- Do not delete a Node that is assigned to account
- Do not delete a Node that includes sub-node

# 3. Adding the Daviteq Sigfox Sensors to Vizuo Globiots

## 3.1 Create a new Daviteq Sigfox Sensor

To create a new Daviteq Sigfox Sensors:

- (1) Select Node
- (2) Right click and select "New"
- (3) Click "Sigfox" to create a new Device



- (4) A box appears:

Name*	<input type="text"/>	
Sigfox Device ID*	<input type="text"/>	
Device ID (Text)*	<input type="text"/>	<button>Generate</button>
Device ID (Hex)	<input type="text"/>	
Radio Configuration*	<input type="text"/>	
Phone number	<input type="text"/>	
Created Date*	<input type="text"/>	
Last Updated*	<input type="text"/>	
Attached Date*	<input type="text"/>	
Status*	<input type="text" value="Registered"/>	
GPS*	<input type="text" value="Auto Update"/>	
Latitude	<input type="text"/>	
Longitude	<input type="text"/>	
Hardware Version	<input type="text"/>	
Firmware Version	<input type="text"/>	

- At Basic information tab, Enter parameters of Device:
  - Name: Name of Device (require 12 characters)
  - Sigfox Device ID: provided by manufacturer. Note: Do not enter the first character of Device ID string (0).
  - Click “Generate” button to create Device ID or enter ID directly.
  - Radio Configuration: Choose the right RC as Sigfox Backend/SDR Dongle.
- At Sigfox Network Server Config tab:
  - Device Category: Choose the right Sigfox sensor category. Default category is Daviteq Raw Payload Sensor.
  - Uplink Message: The information in this section is auto-generated to configure the Callbacks on Sigfox Backend/Dongle

## + Add Device

Basic Information

Sigfox Network Server Config

Device Category\*

Payload Decoder ?

No Device Category selected

Uplink Message ?

The URL of the endpoint:

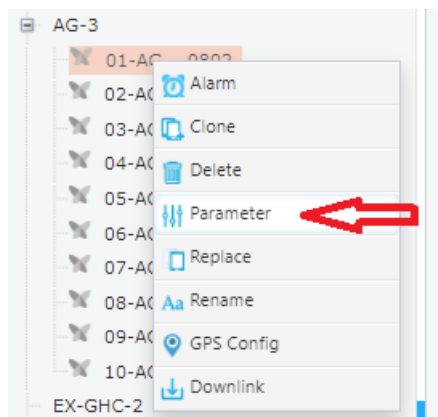
 Save

Click “Save” to continue, click button OK to confirm, and enter admin user and password to complete.  
 Note: After creating a Daviteq Sigfox sensor on Vizuo application, the connection between the Network Server and Vizuo to forwarding sensor data must be configured. Refer to the instructions in relevant Network Server document for this configuration.

## 3.2 Configure Parameter

Note: After receiving first uplink message, the default parameters are automatically created.

Click on Device, right-click, select Parameter



In List Parameters Page

[Home](#) > [Parameter Management](#) > [List Parameters](#)

List Parameters Of 'CAT THAI0001'

Import Parameter

Export Parameter

Add Parameter

Delete All

Show 5 Rows

Search

	Name	Virtual Parameter	Logged	Unit	Address	Data Type	Data Length
<div>⋮</div>	V31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	V	300A	Float	4
<div>⋮</div>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	V	2100	Float	4
<div>⋮</div>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	V	3000	Float	4
<div>⋮</div>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A	2055	Float	4
<div>⋮</div>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Hz	200A	Float	4

Showing 1 to 5 of 29 entries

First

Previous

Next

Last

- “Import Parameter”: click to Import Parameters from excel file. Excel file must have default structure.
- “Export Parameter”: click to export parameter to excel file.
- “Add parameter”: click to add a new parameter.

- o Name: Parameter name
- o Type: Real Parameter or Virtual parameter
  - ☐ Real Parameter: Parameter from Sigfox sensors
  - ☐ Virtual Parameter: Parameter only in Server. Virtual parameter is create from formula of one or multi real parameter
  - ☐ If type is Virtual parameter, formula in Expression should be added

### Mathematical Operators

Operator	Description
+	Additive operator / Unary plus
-	Subtraction operator / Unary minus
*	Multiplication operator, can be omitted in front of an open bracket
/	Division operator
%	Remainder operator (Modulo)
^	Power operator

### Boolean Operators

Operator	Description
=	Equals
==	Equals
!=	Not equals
<>	Not equals
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to
&&	Boolean and
	Boolean or

### Bit Operators

<<	Left-shift bit operator in byte
>>	Right-shift bit operator in byte
&	AND bit operator in byte
	OR bit operator in byte

### Mathematical Functions

Function*	Description
RANDOM()	Produces a random number between 0 and 1
MIN( <i>e1</i> , <i>e2</i> , ...)	Returns the smallest of the given expressions
MAX( <i>e1</i> , <i>e2</i> , ...)	Returns the biggest of the given expressions
ABS( <i>expression</i> )	Returns the absolute (non-negative) value of the expression
ROUND( <i>expression</i> ,precision)	Rounds a value to a certain number of digits, uses the current rounding mode
FLOOR( <i>expression</i> )	Rounds the value down to the nearest integer
CEILING( <i>expression</i> )	Rounds the value up to the nearest integer
LOG( <i>expression</i> )	Returns the natural logarithm (base e) of an expression
LOG10( <i>expression</i> )	Returns the common logarithm (base 10) of an expression
SQRT( <i>expression</i> )	Returns the square root of an expression
SIN( <i>expression</i> )	Returns the trigonometric sine of an angle (in degrees)
COS( <i>expression</i> )	Returns the trigonometric cosine of an angle (in degrees)
TAN( <i>expression</i> )	Returns the trigonometric tangens of an angle (in degrees)
COT( <i>expression</i> )	Returns the trigonometric cotangens of an angle (in degrees)
ASIN( <i>expression</i> )	Returns the angle of asin (in degrees)
ACOS( <i>expression</i> )	Returns the angle of acos (in degrees)
ATAN( <i>expression</i> )	Returns the angle of atan (in degrees)
ACOT( <i>expression</i> )	Returns the angle of acot (in degrees)
ATAN2( <i>y</i> , <i>x</i> )	Returns the angle of atan2 (in degrees)
SINH( <i>expression</i> )	Returns the hyperbolic sine of a value
COSH( <i>expression</i> )	Returns the hyperbolic cosine of a value
TANH( <i>expression</i> )	Returns the hyperbolic tangens of a value
COTH( <i>expression</i> )	Returns the hyperbolic cotangens of a value
SEC( <i>expression</i> )	Returns the secant (in degrees)
CSC( <i>expression</i> )	Returns the cosecant (in degrees)
SECH( <i>expression</i> )	Returns the hyperbolic secant (in degrees)
CSCH( <i>expression</i> )	Returns the hyperbolic cosecant (in degrees)
ASINH( <i>expression</i> )	Returns the angle of hyperbolic sine (in degrees)
ACOSH( <i>expression</i> )	Returns the angle of hyperbolic cosine (in degrees)

ATANH( <i>expression</i> )	Returns the angle of hyperbolic tangens of a value
RAD( <i>expression</i> )	Converts an angle measured in degrees to an approximately equivalent angle measured in radians
DEG( <i>expression</i> )	Converts an angle measured in radians to an approximately equivalent angle measured in degrees

### Data Type Conversion Functions

Function	Description
FLOAT	Converts values into 32-bit floating point number FLOAT(0x02, 0x02, 0x02, 0x02) FLOAT([2000], [2001], [2002], [2003])
UINT8	Converts values into 8-bit unsigned integer number UINT8(22) UINT8([2000])
INT8	Converts values into 8-bit signed 2's complement number INT8(22) INT8([2000])
UINT16	Converts values into 16-bit unsigned integer number UINT16(22, 23) UINT16([2000], [2001])
INT16	Converts values into 16-bit signed 2's complement number INT16(22, 23) INT16([2000], [2001])
UINT32	Converts values into 32-bit unsigned integer number UINT32(0x02, 0x02, 0x02, 0x02) UINT32([2000], [2001], [2002], [2003])
INT32	Converts values into 32-bit signed 2's complement number INT32(0x02, 0x02, 0x02, 0x02) INT32([2000], [2001], [2002], [2003])

### Logical Functions

Function*	Description
NOT( <i>expression</i> )	Boolean negation, 1 (means true) if the expression is not zero
IF( <i>condition,value_if_true,value_if_false</i> )	Returns one value if the condition evaluates to true or the other if it evaluates to false. The IF could be in another IF function
AND( <i>expression 1, expression 2, expression 3, ...</i> )	Returns 1 (means true) if all true expressions, return 0 (mean false) if at least one false expression.
OR( <i>expression 1, expression 2, expression 3, ...</i> )	Returns 1 (means true) if at least one true expression, return 0 (mean false) if all false expressions.

### Supported Constants

Constant	Description
e	The value of <i>e</i> , exact to 70 digits
PI	The value of <i>PI</i> , exact to 100 digits
TRUE	The value one
FALSE	The value zero
NULL	The null value

Example 1:

Value of Virtual Parameter have address at 2012 is calculated as follow [2012] = [2000] + [2002. ]In which address 2000 and 2002 are two real parameters

Example 2:

IF [2000]>10 then [2005]=1  
IF [2000]<=10 then [2005]=2

Example 3:

IF [2000]=1 And [2005]=2 then [2010]=5  
IF [2000]!=1 And [2005]!=2 then [2010]=[2007]+10

Example 4:

IF [2000]>10 then [200A]=1  
 IF [2000]<10 And [2010]=1 then [200A]=5  
 IF [2000]<10 And [2010]!=1 then [200A]=10

Example 5:

<b>Name*</b>	<input type="text" value="Exam 5"/>
<b>Type</b>	<input type="text" value="Virtual Parameter"/>
<b>Expression*</b>	<input type="text" value="FLOAT([2000], [2001], [2002], [2003])"/>
<b>Unit</b>	<input type="text" value="None"/>
<b>Logged</b>	<input type="checkbox"/>
<b>Logging Priority</b>	<input type="text"/>
<b>Logging Frequency</b>	<input type="text" value="2 minutes"/>
<b>Time To Live</b>	<input type="text" value="12 days"/>
<b>Data Type*</b>	<input type="text" value="Float"/>
<b>Data Length*</b>	<input type="text" value="4"/>
<b>Address (hex)*</b>	<input type="text" value="2023"/>
<b>Decimal Places*</b>	<input type="text" value="4"/>

If value from [2000] is 0x40, [2001] is 0xb0, [2002] is 0x00 and [2003] is 0x00. Then result form expression FLOAT([2000], [2001], [2002], [2003]) is 5.5

- o Unit: Unit of parameter
- o Logged: Tick to permit saving value of parameter into database
- o Logging Priority: enter any value
- o Time to live: select how long data will be stored in database
- o Data Type: Type of parameter
- o Data Length: Length of data type, byte unit, display automatically with data type. If data type is String, data length should be input
- o Address: Address on the server/cloud to store value of parameter
- o Decimal Places: number of decimal after the comma.
- Save: click to finish
- "Delete All": click to delete selected parameters
- Edit: click to edit this parameter
- Delete: delete parameter

# 3.3 Delete Daviteq Sigfox Sensors

To delete a Device: Right click Device name and select Delete and click OK to confirm

# 3.4 Clone Daviteq Sigfox Sensors

To create a new Device have same Parameters, Alarm Config, Modbus Command, Menmap, Event Configure ..., select original Device, right-click, select “clone”. Below page appears

+ Clone Device

Basic Information

Sigfox Network Server Config

Name\*

Sigfox Device ID\*

Device ID (Text)\*

Device ID (Hex)

Radio Configuration\*

Phone number

Created Date\*

Last Updated\*

Attached Date\*

Status\*

GPS\*

Latitude

Longitude

Hardware Version

Firmware Version

RC4

Registered

Auto Update

Generate

Refer to 3.1 “Create a new Device” for more details.

# 3.5 Replace Daviteq Sigfox Sensors

- To replace Device:
- Right click Device name and select Replace
  - A box displays:

Replace Device

Sigfox Device ID\*

Status\*

2F20D18

Registered

Cancel

OK

- o Enter the Sigfox Device ID of new device
- o Click “OK” to continue
- A box appears

Input admin username and password, then click “Yes” to complete device replacement.



## 3.6 Rename Daviteq Sigfox Sensors

To change name of Device: Right click Device name, select Rename, and enter new name.

## 3.7 Downlink type 0 and downlink type 5 for Sigfox Sensors

### 3.7.1 Get information of connection between Sigfox Backend and Globiots

From Vizuo main screen, click on the Sigfox device name, click tab Sigfox Network Server Configuration, save information of THE URL OF THE END POINT and information of HEADER VALUE for later configuration

The screenshot shows the 'Edit Device' page for a device named 'ATH--2A30DEB - 0.0.1.99'. The left sidebar shows an 'Organization Chart' with a tree structure including 'EVENT DEMO (45/50)', 'ATH--2A30DEB', 'ATH--2A30DEC', 'Agriculture demo', 'Demokit\_1355', 'EXHIBITION (13/15)', 'Engineering Dept. (0/2)', 'Standardized System (8/15)', 'TEST\_ULC\_223', 'WS433-01TO20', and 'WS433\_SIGNAL\_TEST'. The main content area has three tabs: 'Basic Information', 'Sigfox Network Server Config', and 'Monitoring'. The 'Sigfox Network Server Config' tab is active. It contains a 'Device Category\*' dropdown set to 'Daviteq Sigfox I2C ATH sensor - V2'. Below this is a 'Payload Decoder' section with a yellow box stating 'System will be decode by [Daviteq Sigfox I2C ATH sensor - V2]'. The 'Uplink Message' section includes 'The URL of the endpoint:' with a text input 'https://resources.globiots.com/rest/api/v1/sigfox-service/process-messa' and a copy icon, 'The HTTP method to use:' set to 'POST', 'Authorization:' with 'Header name: Authorization' and 'Header value:' containing a long Basic authentication string, and a copy icon.


### 3.7.2 CALL BACK configuration on Sigfox backend

#### 3.7.2.1. Enable Downlink Mode

Login Sigfox backend, click Device Type menu, click relevant Device Type of the sensor, at INFORMATION menu, click EDIT button, the below screen will be shown.

The screenshot shows the 'Device type 'Testing 1' - Information' page in the Sigfox backend. The top navigation bar includes 'BASE STATION', 'DEVICE', 'DEVICE TYPE' (highlighted), 'USER', 'GROUP', and 'BILLING'. The left sidebar has a menu with 'INFORMATION' (highlighted), 'LOCATION', 'ASSOCIATED DEVICES', 'DEVICES BEING REGISTERED', 'STATISTICS', 'EVENT CONFIGURATION', 'CALLBACKS', and 'BULK OPERATIONS'. The main content area displays details for 'Device type 'Testing 1' - Information'. It includes fields for 'Id: 65389710775ec4738eea8c2', 'Name: Testing 1', 'Description: Group for testing', 'Keep alive: N/A', 'Subscription automatic renewal: ☒', 'Group: Daviteq', 'Payload display: None', 'Downlink mode: CALLBACK', and 'Contracts: 1. Daviteq\_Ultra\_20\_UNPL-SO230007 (16 tokens left - geoloc: no, end date: 2024-11-01)'. At the bottom, it shows 'Alert Email:', 'Creation date: 2023-10-25 11:18:24', 'Created by: Phi Tran', 'Last edition date: 2024-03-06 09:00:29', and 'Last edited by: Phi Tran'. In the top right corner, there are buttons for 'Disengage sequence number', 'Restart', 'Edit', and 'Delete'.

Select CALLBACK from drop list of Downlink mode in the DOWNLINK DATA section.



BASE STATION    DEVICE    **DEVICE TYPE**    USER    GROUP    BILLING

INFORMATION

LOCATION

ASSOCIATED DEVICES

DEVICES BEING REGISTERED

STATISTICS

EVENT CONFIGURATION

**CALLBACKS**

BULK OPERATIONS

Device type Testing 1 - Edition

Device type information

Name

Testing 1

Description

Group for testing

Keep-alive (in minutes)

0

Subscription automatic renewal

☒ ?

Contracts

Daviteq\_Ultra\_20\_UNPL-SO230007 (16 tokens left - geoloc: no, end date: 2024-11-01) ✕

If we fail to call one of your callbacks, an email will be sent to the address below so that you can take action to fix the problem.

Alert email

Downlink data

Downlink mode

CALLBACK

For more details on Downlink modes, please refer to [documentation](#).

Expression must either include hexadecimal encoded bytes (ex: `deadbeefcafebab`) or the following variables: `-(time) 4 bytes` - `-(tapid) 4 bytes` - `-(rssi) 2 bytes` - `-(roaming) 1 byte`

Downlink data in hexa

 ?

Payload display

Select below the most suitable parsing mode for the display of your payloads in the backend (mostly appropriate for debugging and development)

Payload parsing


Regular (raw payload) ▼

Ok

Cancel

### 3.7.2.2 Create a CALLBACK

Click CALLBACKS menu on the right, the below screen will shown.



BASE STATION    DEVICE    **DEVICE TYPE**    USER    GROUP    BILLING

INFORMATION

LOCATION

ASSOCIATED DEVICES

DEVICES BEING REGISTERED

STATISTICS

EVENT CONFIGURATION

**CALLBACKS**







BULK OPERATIONS

Device type "Testing 1" - Callbacks

New

These callbacks transfer data received from the devices associated with this device type to your Infrastructure. For more information, please refer to the "Callback documentation"

DATA callbacks

Downlink	Enable	Channel	Subtype	Batch	Information	Edit	Errors	Delete
<input checked="" type="radio"/>	<input checked="" type="checkbox"/>		BIDIR	<input type="checkbox"/>	[POST] <a href="https://resources.globiot.com/rest/apl/v1/sigfox-service/process-messages">https://resources.globiot.com/rest/apl/v1/sigfox-service/process-messages</a>			
<input checked="" type="radio"/>	<input checked="" type="checkbox"/>		UPLINK	<input type="checkbox"/>	[POST] <a href="https://node-red.globiot.com/sigfox/uplink-message">https://node-red.globiot.com/sigfox/uplink-message</a>			

Click NEW button on the top right, select Custom callback from popup menu

BASE STATION

DEVICE

DEVICE TYPE

USER

GROUP

BILLING

INFORMATION

LOCATION

ASSOCIATED DEVICES

DEVICES BEING REGISTERED

STATISTICS

EVENT CONFIGURATION

CALLBACKS

BULK OPERATIONS

Device type 'Testing 1' - New Callback

Create callbacks to connect Sigfox cloud to your server/platform.  
A callback is a custom http request containing your device(s) data, along with other variables, sent to a given server/platform when the aforesaid device(s) message is received by Sigfox cloud.

Custom callback

Creates a new callback from Sigfox cloud to your own server. This is the "default" callback type.  
You can create a full custom request (http method, content type, headers, etc).

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UnaConnect Middleware Platform

UnaConnect allows you to remotely onboard and update a large and diverse fleet of IoT devices, to collect and process data across different networks. Simplify devices integration and deliver aggregated data to multiple end platforms in a secure, reliable and cost-efficient manner

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AWS IoT

AWS IoT is a managed cloud platform that lets connected devices easily and securely interact with cloud applications and other devices. AWS IoT can support billions of devices and trillions of messages, and can process and route those messages to AWS endpoints and to other devices reliably and securely.

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AWS Kinesis

Amazon Kinesis is a platform for streaming data on AWS, offering powerful services to make it easy to load and analyze streaming data, and also providing the ability for you to build custom streaming data applications for specialized needs.

After clicking CUSTOM CALLBACK section, the CALLBACK configuration screen will be shown

BASE STATION

DEVICE

DEVICE TYPE

USER

GROUP

BILLING

INFORMATION

LOCATION

ASSOCIATED DEVICES

DEVICES BEING REGISTERED

STATISTICS

EVENT CONFIGURATION

CALLBACKS

BULK OPERATIONS

Device type Testing 1 - Callback new

Callbacks

Type

DATA

BIDIR

Channel

URL

Custom payload config

?

URL syntax: http://host/path?id={device}&time={time}&key1={var1}&key2={var2}...

Available variables: device, time, data, seqNumber, deviceTypeId, ack

Custom variables:

Url pattern

https://resources.globiots.com/rest/api/v1/sigfox-service/process-messages

Use HTTP Method

POST

Send SNI

☒ (Server Name Indication) for SSL/TLS connections

Headers

Authorization

Basic YXBwLWtleS0xY2UxODY5Ny0zYjQ0LTQ4NWMiODhiOiA=

header

value

Content type

application/json

Body

```
{
  "device": "{device}",
  "time": "{time}",
  "seqNumber": "{seqNumber}",
  "device": "{device}",
  "data": "{data}"
}
```

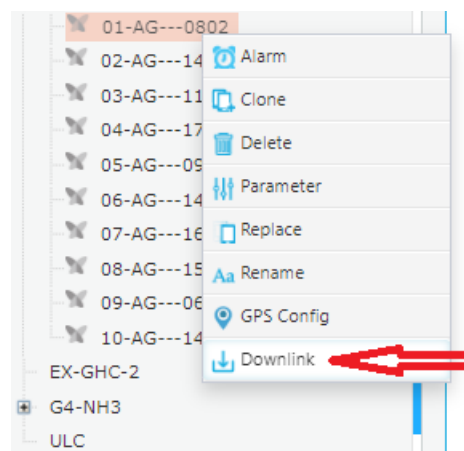
Fill out the form according to information in the following table, then click on Ok to save

Field name	Input value
Select Type	DATA – BIDIR
Select Channel	URL
URL pattern	https://resources.globiots.com/rest/api/v1/sigfox-service/process-messages
Select Use HTTP Method	POST
Send SNR	✓
Header name	Authorization
value	As information of HEADER VALUE in section 3.7.1
Content type	application/json
Body	<pre>{   "device": "{device}",   "time": "{time}",   "seqNumber": "{seqNumber}",   "deviceTypeId": "{deviceTypeId}",   "data": "{data}" }</pre>

After completing the CALL BACK configuration, click on round icon right below text DOWNLINK (as below figure), then click OK to activate the downlink function in the CALL BACK.

### 3.7.3 Create and send downlink type 0

At the organizational chart, right click on the Sigfox Sensor then select **Downlink**



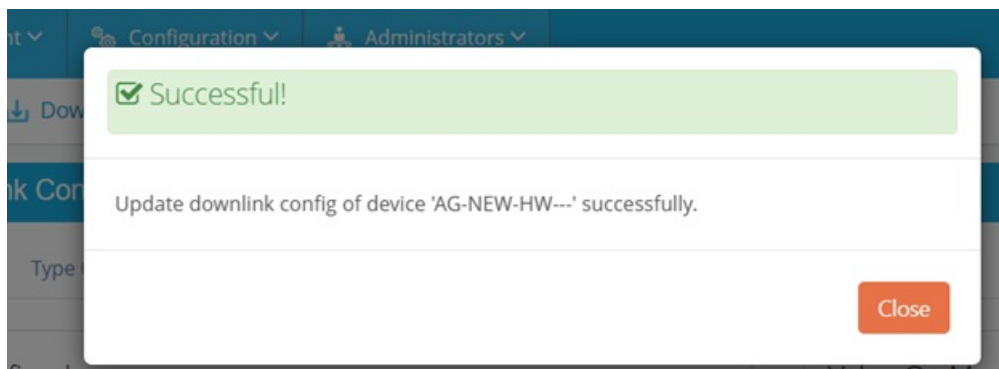
In **Downlink configuration** page, click tab **"Type 00"**

Input the downlink 0 payload (16 hexa) for the sensor, then click synchronize Type 00, then select OK to complete inputting the downlink 0 configuration.

Note:

User could click **Copy Latest Configuration** button to copy latest configuration and edit this configuration to create new configuration.

The below screen will be showed after clicking **OK** button

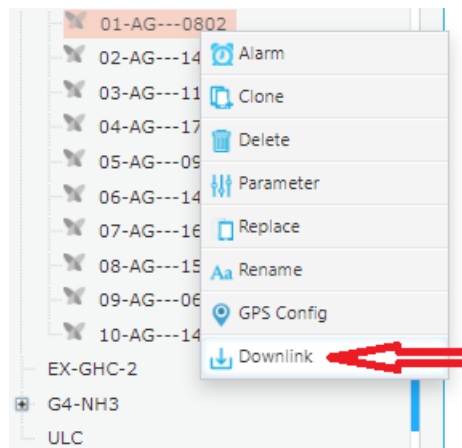


After that, the downlink type 0 will be sent to Sigfox Backend when there is `PARAMETER_UPDATE` or `HEART_BEAT` uplink message from the Sigfox Backend to Globiots.

The result of downlink process could be checked after the second `PARAMETER_UPDATE` or `HEART_BEAT` uplink. The downlink value in the device memory will be shown on section `VALUE ON MEMMAP`

### 3.7.4 Create and send Downlink type 5

At the organizational chart, right click on Sigfox Sensor then select **Downlink**.



In **Downlink configuration** page, select tab **"Type 05"**

Downlink Configuration '04-WSSFC-COM - 0.0.3.38'

Type 00 Type 05

User Defined

Configuration Type\* Manual Address (hex)\* PLEASE PROVIDE ADDRESS Data Length\* 4

Parameter Name PLEASE PROVIDE PARAMETER NAME Data Type\* Float Value\* Please provide value

Add

Memmap Configuration

Show Rows Search

Name	Address	Data Type	Data Length	Value	Final Config	Downlink Sent	Action
No data available in table							

Input parameter address (following the memory map of sensor) in **Address (hex)**

Fill parameter name in **Parameter Name**

Select data type of the parameter in the drop list at **Data Type** field.

Input value of parameter in **Value** field.

Click **Add** button to add input data.

User Defined

Configuration Type\* Manual Address (hex)\* 61 Data Length\* 2

Parameter Name BATTERY Data Type\* Unsigned Integer 16 Value\* 0001

Add

Memmap Configuration

Show Rows Search

Name	Address	Data Type	Data Length	Value	Final Config	Downlink Sent	Action
battery	61	Unsigned Integer 16	2	0001			

Showing 1 to 1 of 1 entries

First Previous Next Last

Synchronize Type 05

Click on **Synchronize Type 05** button and click OK button confirm the input of downlink type 5.

After that, the downlink type 5 will be sent to Sigfox Backend when there is PARAMETER\_UPDATE or HEART\_BEAT uplink message from the Sigfox Backend to Globiots.

## 4. Report

### 4.1 Create a new report

- To create a new report:
  - In menu Management, select Report
  - In Report page select "+" to create a new tab

globiots by oobtec

Management Configuration Administrators 22/08/2016 13:38:06 GMT+07:00 connected DEMO

Organization Chart

Home > Report

+ 01-POWER 01-Quality 01-System Status 02-Power 02-Quality 03-Humidity 03-Temperature 04-Door+Power Status 05-PROCESS

DEMO (18/20)

DEMOCASE

DEMOCASE-LEVEL01

DEMOCASE-CNC

DEMOCASE-ENE (1/4)

DEMOCASE-ENE

- Report Page will display as follow:

Enter full information:

- o Name: Name of Report tab
- o Report Type: Historical Trending (for parameter trend)
- o Parameter Configuration:
  - ☐ Name: Name of parameter which display in report. Name might input text or name of parameter.
  - ☐ Device: select Device
  - ☐ Parameter: select parameter of device which you want show
  - ☐ Click “Add” to add parameter. A report might have some parameters.
- o After completing adding parameter, click “save” to finish

## 4.2 Configure Report

- In Report page, select Report name which you want configure

[+](#) [01-POWER](#) [01-Quality](#) [01-System Status](#) [02-Power](#) [02-Quality](#) [03-Humidity](#) [03-Temperature](#) [04-Door+Power Status](#) [05-PROCESS](#) [BAN](#) [ENERGY REPORT](#) [ENERGY REPORT 2](#) [▼](#)

From  To

[Show](#) [Edit](#) [Delete](#)

- Click “Delete” to delete report
- Click “Edit” to edit report

[Home](#) > [Report](#)

Name

Report Type

Parameter Configuration

Name

»

Device

» Parameter

[Update](#) [Cancel](#)

☐ Quality

Show  Rows

Showing 1 to 2 of 2 entries

[First](#) [Previous](#) [Next](#) [Last](#)[Back](#) [Save](#)

- ☐ To edit available parameter, click in Action column, edit parameter, click Update
- ☐ To delete parameter, click in Action
- ☐ To Add new parameter: enter full information and click “Add”

## 4.3 View report

Select Time in “From ... To ...” and click “Show” to view data of parameters on report tab

Click on name of parameter (at the bottom of the report) to temporarily Show/Hide parameter on the report.

## 4.4 Export report

After click button Show to view report, click  on top right corner of screen, select Export to Excel or Export to pdf or Export to csv

☐ Click Export to Excel, select version of Excel (2003 or 2007), click Export. The exported file will be store on your PC

☐ Click Export to csv, select version Date Format in csv file, click OK. The exported file will be store on your PC

☐ Click Export to pdf, the exported file will be store on your PC

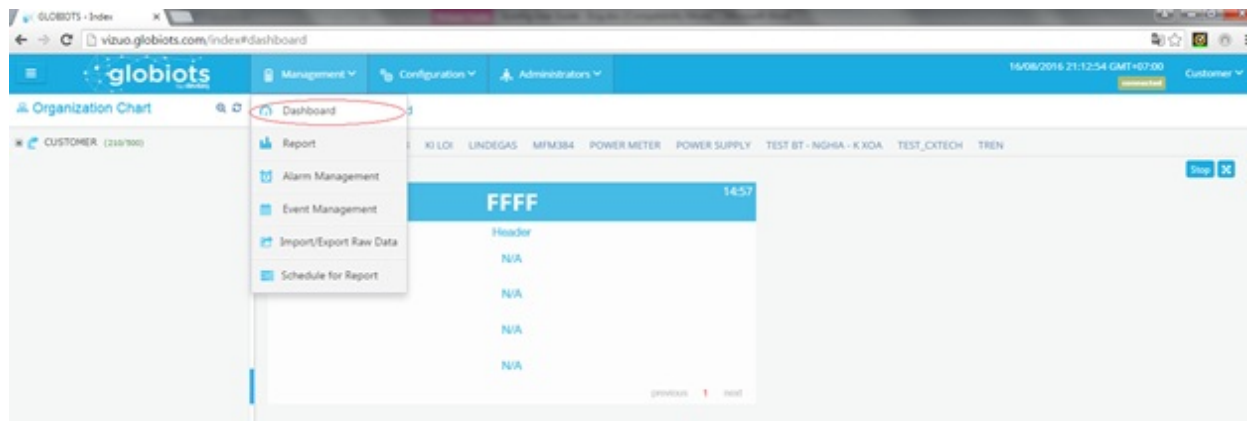
## 5. Dashboard

### 5.1 Dashboard Description

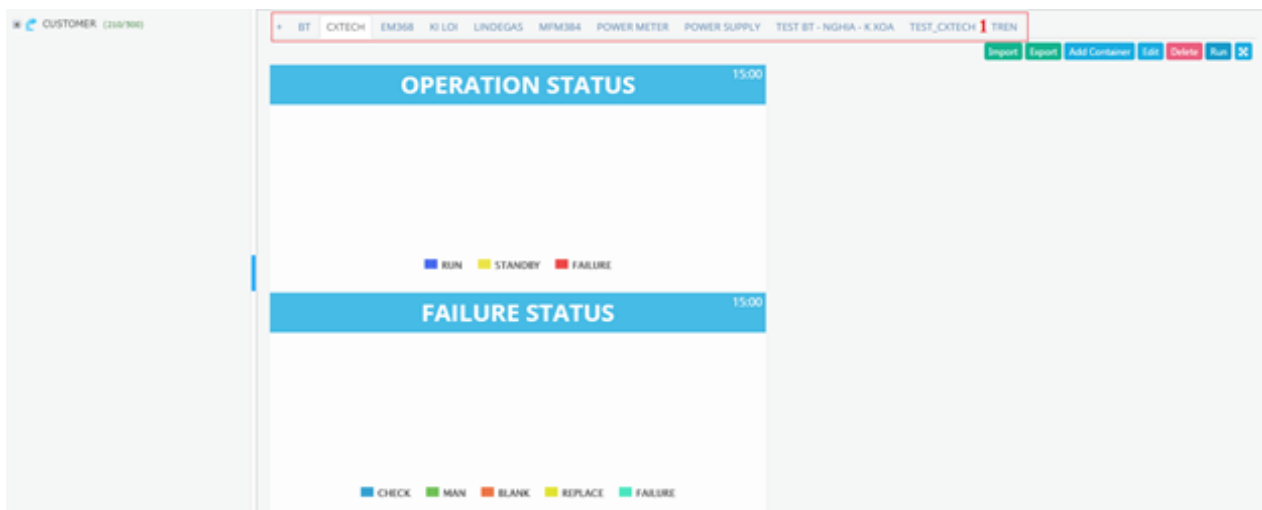
Dashboard views input text, last value and value from database. Each Dashboard is organized in one tab. When value is from database, dashboard will update the value after specific time. Dashboard consists of containers which contain widgets inside.

## 5.2 View Dashboard

- In Home screen, select menu Management → select sub-menu Dashboard to display current value of parameters.
- Screen of status “Dashboard”:



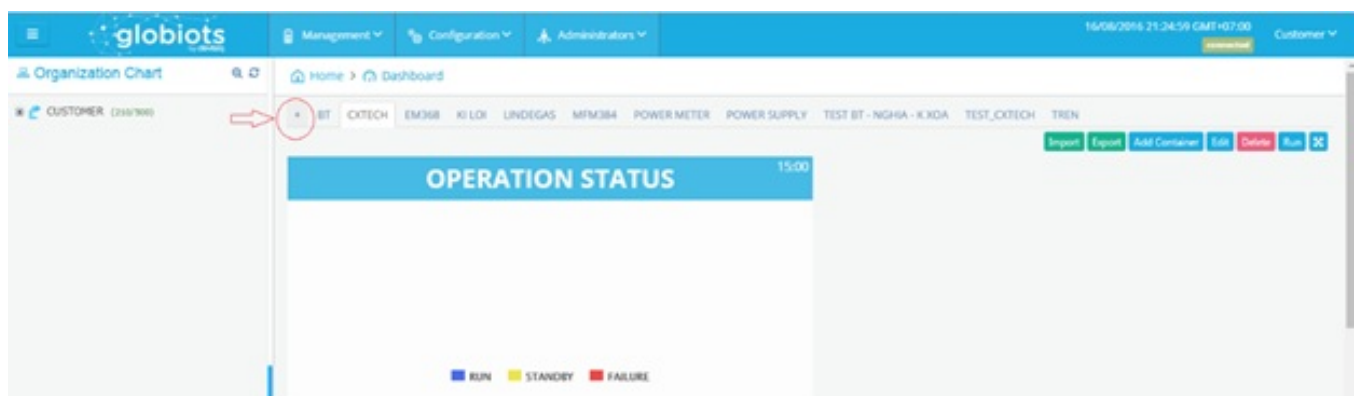
- Screen of status “Stop” of Dashboard:



- (1): Display list of Dashboard tabs which user are assigned to view
- Button “Run”: click to run Dashboard.
- Button “Stop”: click to stop selected Dashboard.
- Button “Delete”: click to delete Dashboard
- Button “Edit”: click to edit Dashboard
- Button “Add Container”: click to add new Container in Dashboard
- Button : click to full screen
- Button “Export”: click to export Dashboard to Excel File
- Button “Import”: Click to import Dashboard to Excel File

## 5.3 Create new Dashboard

- In Dashboard screen, click symbol “+” to create new tab





- New window display

Create a new dashboard

---

Name\*

Stop realtime after\*

Push interval\*

---

- Name: Name of new Dashboard tab
- Stop real time after: Running time of Dashboard to get real time data from iConnector. After this period of time, Dashboard will stop to get real time data from iConnector.
- Click button "Run" on top right corner to continue to get real time data
- Push Interval: Frequency to get real time data from iConnector
- Click Save to complete creating new Dashboard

## 5.4 Create New Container

- In Dashboard tab, click Add Container to add new Container

Add new container

---

Title\*

Font size

Text align

Poll interval

Style

Text color

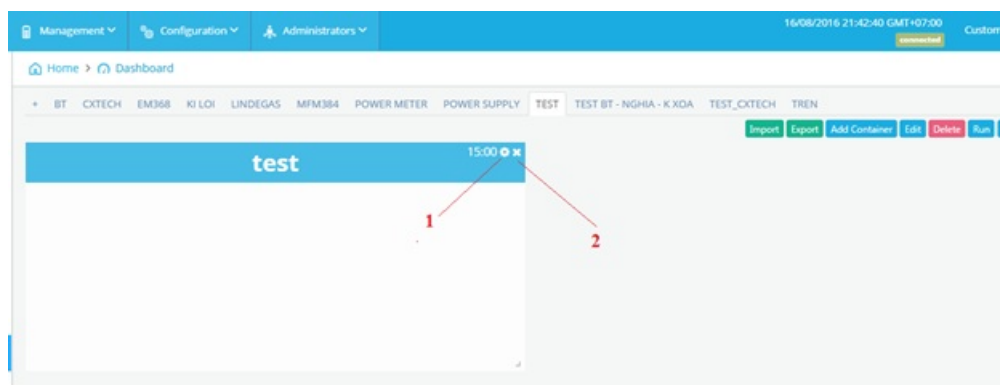
Background color

Layout

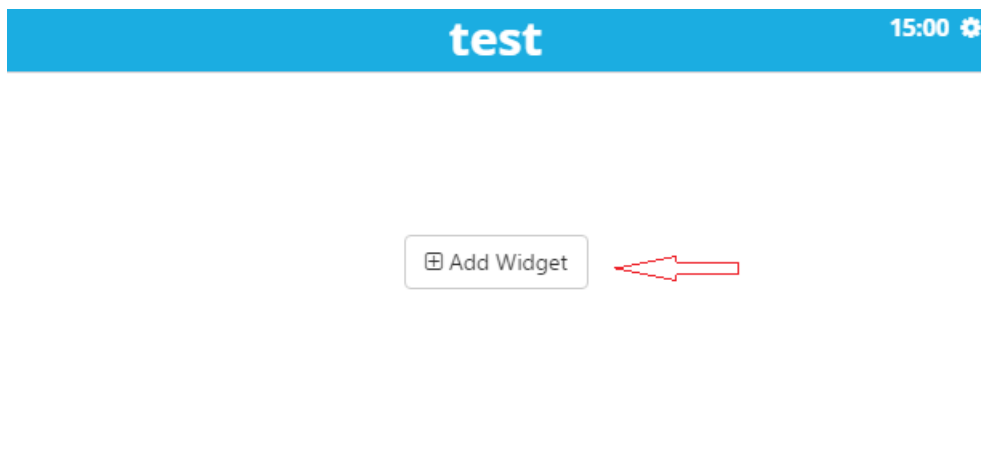
---

- Title: Name of container
- Format: Font size, Style, Text color, Text align, Background.
- Poll Interval: Frequency to get logged data from database to view on Dashboard
- Layout: Select layout of container. There are 07 layouts select
- Click Save to complete creating Container

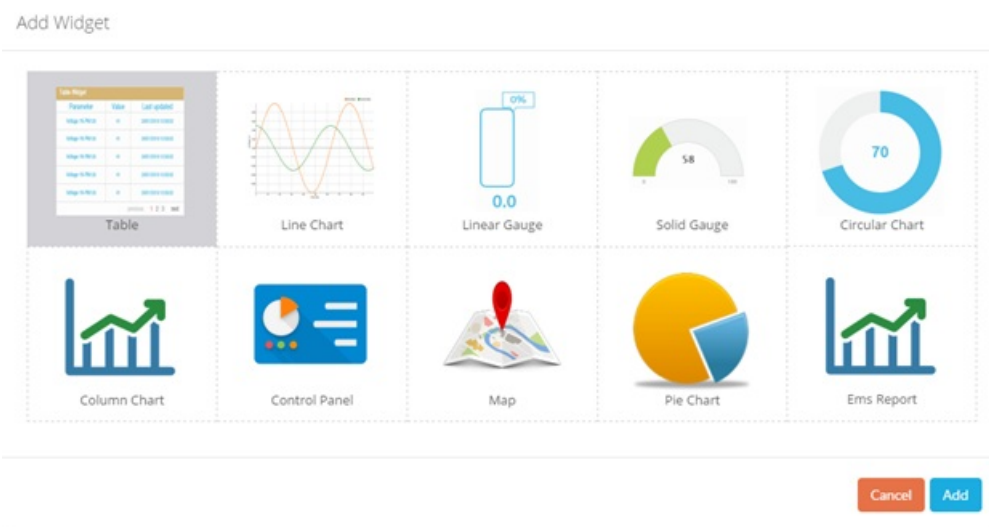
## 5.5 Configure a Container



- (1): Edit Container  
 (2): Delete container.  
 Click to Edit Container. Following screen will appear



- Click Add Widget to add new widget

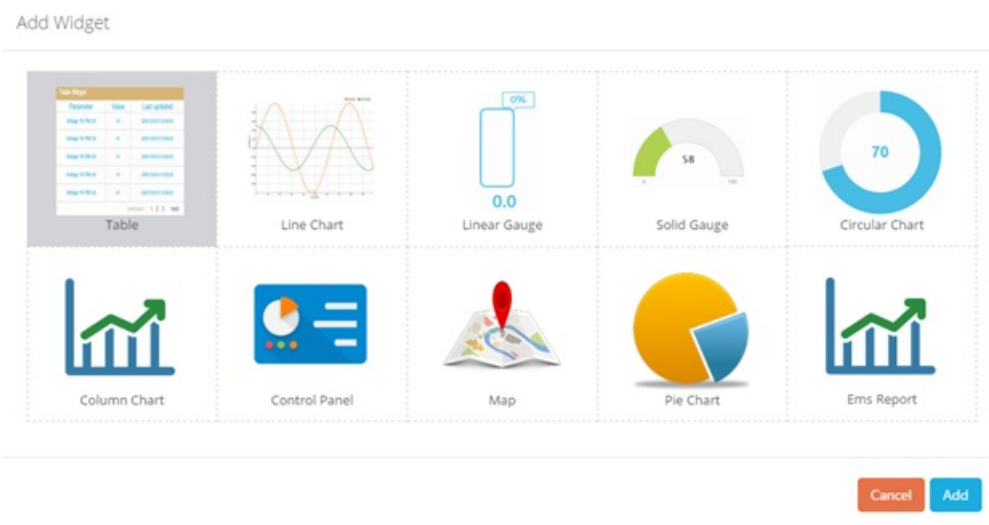


Note: Stop Dashboard before configure Container/Widget

## 5.6 Widget

### 5.6.1 Widget Description

Widget is a basic element of Dashboard to view constant, value of parameter. Currently, Vizuo has below widgets



After select widget click Add to add new widget to Container

### 5.6.2 Widget Table

- Paging: Tick to view table more than one page
- Border: Select type of border: None, Border and Inside
- New Column: Click to add new column
- New Row: Click to add new row

: Move column  
 : Configure cell

: Close/Delete column or row

: Copy new row  
 : Click to select type of border for cell

- Configure Row
- After clicking , configuration screen for new row will appear

#### Configure cell [0, 1]

Up/Down Icon ☐  
 Mapping ☐

- (1): Format  
 (2): Configure

Choose Data type: Constant (input text), Data from Database (Device Name, Parameter Name, Unit of Parameter, Last value of parameter in Database, time stamp of last value)

### 5.6.3 Widget Line Chart

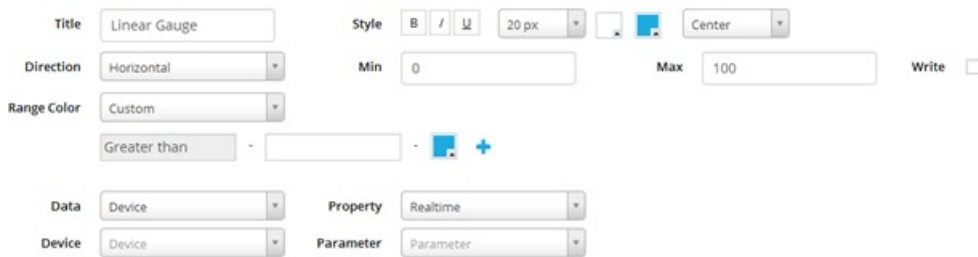
Click to configure widget Line Chart, the following screen will appear

- Title: Line Chart name
  - Style: Format of Title
  - YAxis: Fixed or Auto. If choose Fixed, enter min & max value. If select Auto, software will specify Max of Y axis based on value of displayed parameter.
  - Type: Data type of parameter to view (Data from device or from database)
- Type Database: Logged data from database, time period include: Today, Yesterday, Last 3 days or Custom (From...To)

• Line configuration: Select displayed parameter and displayed label (input text, parameter name or device name)  
Click Add button to add parameter to line chart. A line chart could view some parameters

## 5.6.4 Linear Gauge

Click  to configure widget Line Gauge, the following screen appear



- Title: Name
- Style: Format of title
- Direction: Vertical or Horizontal Linear Gauge
- Min, Max: Range of Gauge
- Range Color: Auto or Custom

Auto: Color of Gauge changes according to value of parameter

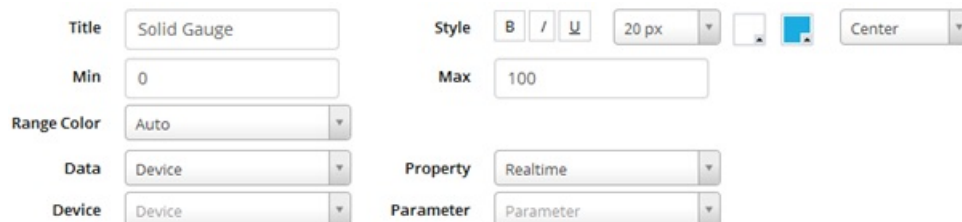
Custom: Configure specific color to specific range of value of parameter

- Data: Select type of display parameter (last logged data from Database)
- Device/Parameter: Select displayed parameter
- Write: Tick to enable to write value to parameter. Writing value to parameter by holding and drag on body of Linear Gauge

Click Save Changes to complete configuration

## 5.6.5 Solid Gauge

Click  to configure widget Solid Gauge, the following screen appear



- Title: Name
- Style: Format of title
- Min, Max: Range of Gauge
- Range Color: Auto or Custom

Auto: Color of Gauge changes according to value of parameter

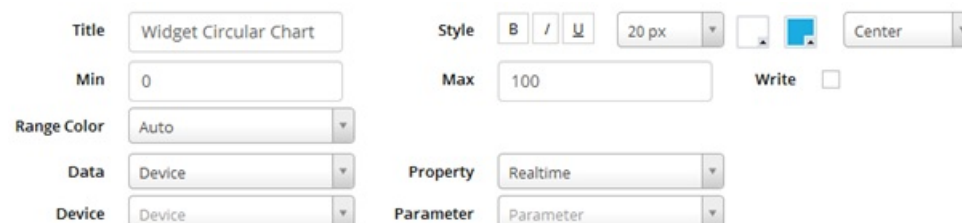
Custom: Configure specific color to specific range of value of parameter

- Data: Select type of display parameter (last logged data from Database)
- Device/Parameter: Select displayed parameter

Click Save Changes to complete configuration

## 5.6.6 Circular Chart

Click  to configure widget Solid Gauge, the following screen appear



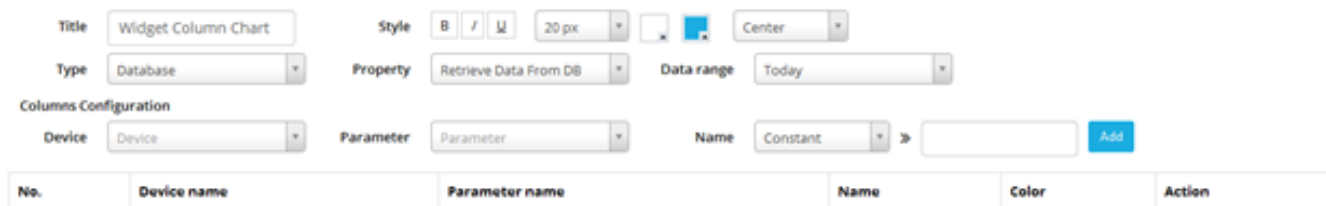
- Title: Name
- Style: Format of title
- Min, Max: Range of Chart
- Range Color: Auto or Custom
- Auto: Color of Chart changes according to value of parameter
- Custom: Configure specific color to specific range of value of parameter

- Data: Select type of display parameter (last logged data from Database)
- Device/Parameter: Select displayed parameter
- Write: Tick to enable to write value to parameter. Writing value to parameter by holding and drag on body of Circular Chart

Click Save Changes to complete configuration

## 5.6.7 Column Chart

Click  to configure widget Solid Gauge, the following screen appears




No.	Device name	Parameter name	Name	Color	Action
-----	-------------	----------------	------	-------	--------

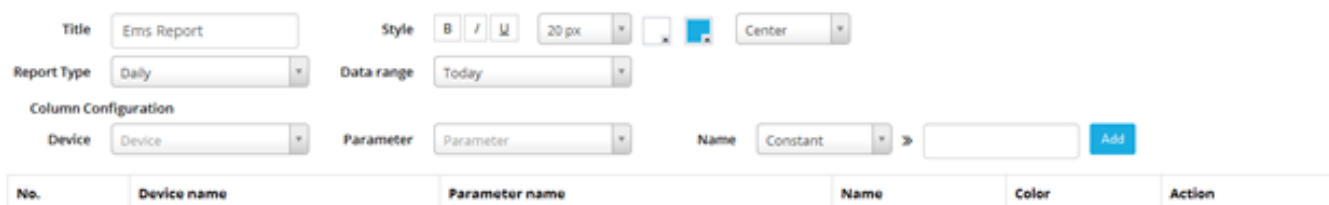
- Title: Column Chart name
- Style: Format of Title
- Type: Data type of parameter to view (Data from database)
- Type Database: Logged data from database, last value or value series in time period include: Today, Yesterday, Last 3 days or Custom (From...To)
- Column configuration: Select displayed parameter and displayed label (input text, parameter name or device name)

Click Add button to add parameter to column chart. A column chart could view some parameters

## 5.6.8 EMS Report

EMS Report views report for accumulative parameter such as running hour, kWh during period of time

Click  to configure widget EMS report, the following screen appears:



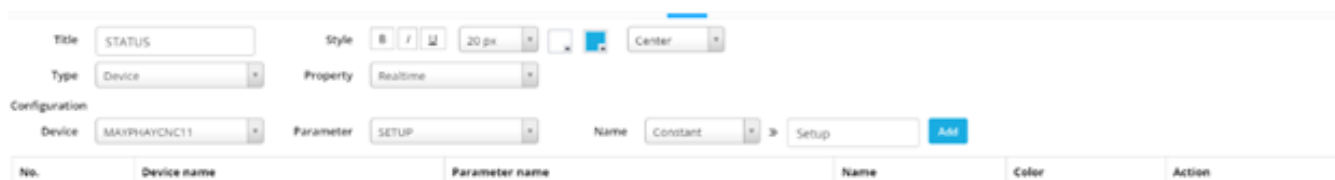
No.	Device name	Parameter name	Name	Color	Action
-----	-------------	----------------	------	-------	--------

- Title: Report title
- Style: Format of title
- Report type: Daily, Weekly, Monthly
- Data range: Today, yesterday, last month, this month, last week, this week
- Column Configuration: Configure displayed value of parameter and displayed name of parameter

Click Add to add parameter for report

## 5.6.9 Pie Chart

Pie Chart compares values between some parameters. Click to configure widget EMS report, the following screen appears:



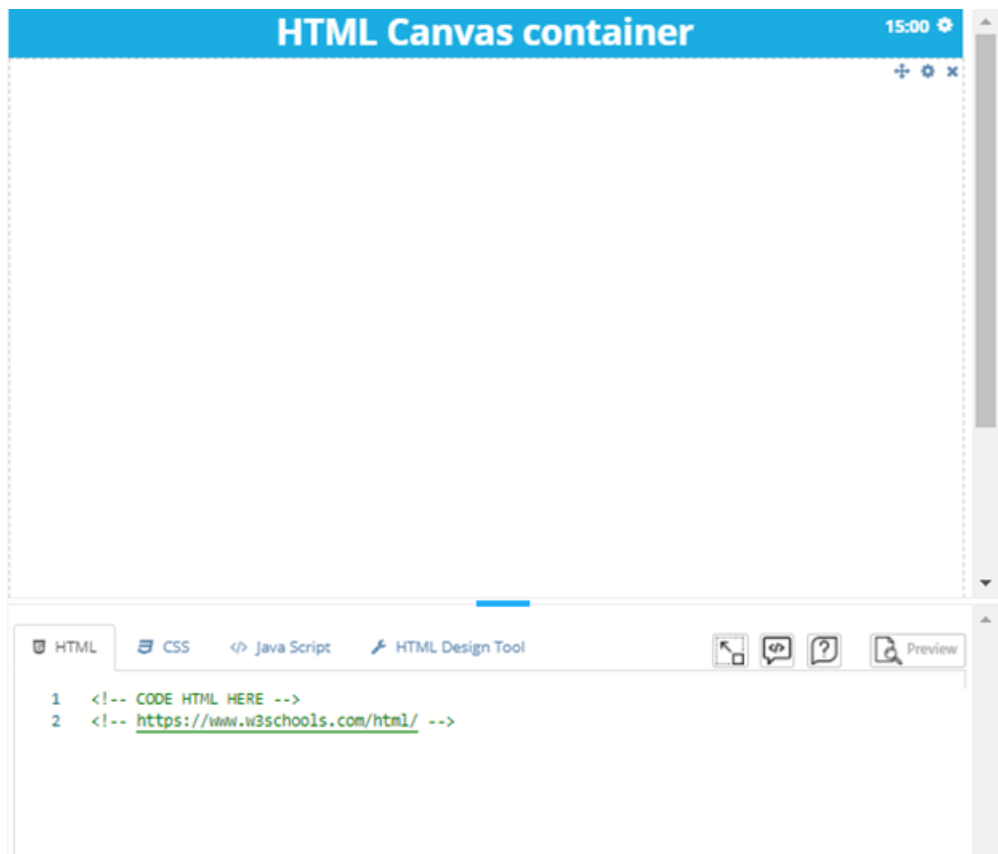
No.	Device name	Parameter name	Name	Color	Action
-----	-------------	----------------	------	-------	--------

- Title: Title of pie chart
- Style: Format of title
- Type: Data type, last value in database
- Configuration: Configure displayed value and displayed name of parameter

## 5.6.10 HTML Canvas

### How does the HTML Canvas widget work?

When you select the widget, you will find a code editor as depicted in the image below. The widget works with the same HTML/CSS/JS you would code when creating a simple website. There's no need to learn a special API.



It also considers the case when you may need to use a 3rd library (e.g. jQuery), so you can add these by inserting an URL containing the library.

#### IMPORTANT NOTE:

**You should consider when writing code in this widget that all the execution will be made by your browser, we do not do any kind of poly-filling here, so it's up to your browser to support all the features that you make use of.**

**The HTML code will be:**

```
<script src="https://code.jquery.com/jquery-3.5.1.min.js" integrity="sha256-9/aliU8dGd2tb6OSsuzixeV4y/faTqgFtohetphbbj0=" c
<progress id="progress-bar" value="73" max="100" style="margin-bottom:10px;">70 %</progress>

<fieldset>
  <legend>Choose your favorite device</legend>

  <input type="radio" id="kraken" name="monster">
  <label for="kraken">Device 0001</label><br/>

  <input type="radio" id="sasquatch" name="monster">
  <label for="sasquatch">Device 0002</label><br/>

  <input type="radio" id="mothman" name="monster">
  <label for="mothman">Device 0003</label>
</fieldset>
```

**The CSS code will be:**

- Parameter: select Device and Parameter
- Time Zone: select time zone

- Data format: select Data format for export time
  - From ...To: Duration of time to export
- Click **“Export”** to export value of parameter to csv file

## 7. Package Configuration

In menu Configuration, select package configuration. The List of Packages displays as follow:

The List Of Packages			
Show 10 Rows	Add Package		
	Name	Limited User	Limited Device
	BACHTUNG	10	20
		5	10
		10	20
	CX TECHNOLOGY	5	5
	DISTRIBUTOR	20	20
	HONG KY	5	10
	HUU TOAN - GENERATOR	20	20

- Click “Add package” to add new Package

Edit Package 'BACHTUNG' - Step 1 of 3

1 BASIC INFORMATION
2 FUNCTION
3 SUBMIT

Name\* BACHTUNG

Limited User\* 10

Limited Device\* 20

Cancel Continue

- Step 1: Enter basic information and click continue to next step
- Step 2: Select functions for package

Edit Package 'BACHTUNG' - Step 2 of 3

1 BASIC INFORMATION
2 FUNCTION
3 SUBMIT

Function	Permission
Package Management	
Group Management	
Report	
Node Management	
Schedule Report	
Action Log	
Import/Export Raw Data	
Account Management	
Parameter Management	

- In Permission, select appropriate authorities and click continue to next step
- Step 3: View information of configuration and click “save changes” to finish
- Click “Edit” to Edit available Package



- Click “Delete” to Delete Package

## 8. Administrators

### 8.1 Account Management

- Account might have sub-account to manage and assign authorities.
- In Home screen, select menu Administrators → select sub-menu Account Management
- In screen of account list, click button “Add account” to create new account.

+ Add Account - Step 1 of 4

1 BASIC INFORMATION 2 ADMIN INFORMATION 3 PACKAGE INFORMATION 4 SUBMIT

Name\* Account Hồ Chí Minh

Address\* 11 Đường 2G, Phường An Lạc, Quận Bình Tân

Country Việt Nam

Province TP. Hồ Chí Minh

Postal Code\* 0802

Fax Number Please provide fax number

Email Address\* hochiminh@yahoo.com

Time Zone\* Asia/Ho\_Chi\_Minh

Date Format\* dd/MM/yyyy

Time Format\* HH:mm:ss

First Day Of Week\* Sunday

Begin Time Of Day 00:00

Keep alive time\* 5 minutes

Realtime Refresh Time\* 1 second

Status\* ACTIVED

1

Cancel Continue

Enter information account into panel (1).

Email: enter email address. Email is unique.

Click button “Continue” to go to step 2.

- Field with mark \* must be filled
- In email address, uppercase and lowercase are the same.
- Select right Time Zone for user.
- After click button “Continue”, screen of step 2 should appear:

+ Add Account - Step 2 of 4

1 BASIC INFORMATION 2 ADMIN INFORMATION 3 PACKAGE INFORMATION 4 SUBMIT

Full Name\* Admin Hồ Chí minh

Gender Male

Username\* admin\_hcm

Password\* abc@123

Date Of Birth\* 15/04/1983

Contact Number 0123654784

Email Address\* admin@hochiminh.com

Language English

1

Cancel Back Continue

Enter information of admin user into panel (1):

- Username: Enter username. Username is unique.
  - Email: Enter email address. Email is unique.
  - Contact Number: Enter phone number. Phone number is unique.
  - Click button "Continue" to go to step 3.
- Screen of step 3 should appear:

+ Add Account - Step 3 of 4

1 ✓ BASIC INFORMATION   2 ✓ ADMIN INFORMATION   3 PACKAGE INFORMATION   4 SUBMIT

Choose Package\*   Package 1   1

Cancel   Back   Continue

- (1) Select package for account.  
Click button "Continue" to go to step 4.  
- Screen of step 4 should appear:

+ Add Account - Step 4 of 4

1 ✓ BASIC INFORMATION   2 ✓ ADMIN INFORMATION   3 ✓ PACKAGE INFORMATION   4 SUBMIT

**BASIC INFORMATION**

Name: Account Hồ Chí Minh  
Address: 11 Đường 2G, Phường An Lạc, Quận Bình Tân  
Country: Việt Nam  
Province: TP. Hồ Chí Minh  
Postal Code: 0802  
Fax Number:  
Email Address: hochiminh@yahoo.com  
Time zone: Asia/Ho\_Chi\_Minh  
Date Format: dd/MM/yyyy  
Time Format: HH:mm:ss  
First Day Of Week: Sunday  
Begin Time Of Day: 00:00  
Keep Alive Time: 5 minutes  
Realtime Refresh Time: 1 second  
Status: ☒ 1

**ADMIN INFORMATION**

Full Name: Admin Hồ Chí minh  
Username: admin\_hcm  
Gender: Male 2  
Date Of Birth: 15/04/1983  
Contact Number: 0123654784  
Email Address: admin@hochiminh.com

**PACKAGE INFORMATION**

Name: Package 1  
Limited User: 30  
Limited Device: 20 3

Cancel   Back   Save

- (1) Display basic information of account in step 1.  
(2) Display information of admin user in step 2.  
(3) Display assigned package information in step 3.  
Click button "Save" to save configuration.

After click button “Save”, confirmation screen should appear and click “OK” to finish.

- After successfully create new account, an admin user of account is also created.
- Number of used user of account increases by one for admin user.
- Information of admin user should be in user list.

## 8.2 User Management

User is created by following steps:

- In Home screen, click menu Administrators → select sub-menu User Management
- In screen of user list, click button “Add user” to add new user.

+ Add User - Step 1 of 3

1 BASIC INFORMATION 2 AUTHENTICATION 3 SUBMIT

Full Name\* Hong Van

Gender Female

Date Of Birth 08/11/1987

Contact Number 0932001025

Language English

Cancel Continue

Enter basic information into panel (1).

- Contact Number: Enter contact number. The number is unique.
  - Click button “Continue” to go to step 2.
- After click button “Continue”, screen of step 2 should appear:

+ Add User - Step 2 of 3

1 BASIC INFORMATION 2 AUTHENTICATION 3 SUBMIT

Email\* hongvan.pham@daviteq.com

Username\* hongvan

Password\* abc@123

Status ACTIVED

Cancel Back Continue

Enter information for user to sign-in into panel (1):

- Email: enter email address. Email is unique.
- Username: enter username for sign in. Username is unique. Username has at least 6 characters.
- Password: default password is “abc@123”. User must change password when user sign in in the first time.
- Click button “Continue” to go to step 3.

- Enter full information for user.

- Uppercase and lowercase of email and username are the same.

Example: username “USERNAME1” is the same as username “username1”.

- Screen of step 3 should appear:

**+ Add User - Step 3 of 3**

1 ✓ BASIC INFORMATION    2 ✓ AUTHENTICATION    3 SUBMIT

**BASIC INFORMATION**

Full Name: Hồng Văn  
 Gender: Female  
 Date Of Birth: 08/11/1987  
 Contact Number: 0932001025

**AUTHENTICATION**

Email: hongvam.pham@daviteq.com  
 User Name: hongvan  
 Status: ☒

Cancel Back Save

(1) Display basic information of user in step 1.

(2) Display information for sign in in step 2.

Click button "Save" to save information.

After click button "Save", confirmation screen should appear and click button "OK" to finish.

- If number of unused user of account > 0, user will be created successfully. Number of used user should increase by 1.

- If number of unused user of account is equal to 0, user will not be created successfully.

Screen of notification should appear when number of unused user of account is equal to 0:

✖ Error!

Create user of Văn Phạm is limited

Close

## 8.3 Group Management

- Group is used to assign authorities to users.

- In Home screen, select menu **Administrators** → select sub-menu **Group Management**

- In screen of group list, click button "Add Group" to create new group of account.

**+ Add Group - Step 1 of 7**

1 BASIC INFORMATION    2 FUNCTION    3 NODE    4 USER    5 LIVEVIEW    6 DASHBOARD    7 SUBMIT

Group Name\* Group 1  
 Description Quản lý Group 1

Cancel Continue

Enter basic information of group into panel (1).

- Group Name: Enter group name. Group name is unique.

- Click button "Continue" to go to step 2.

- After click button "Continue", screen of step 2 should appear:

Function	Permission
Package Management	
Group Management	
Report	
Node Management	
Schedule Report	
Action Log	
Imports/Exports Raw Data	
Account Management	
Parameter Management	
User Management	
Dashboard Management	
Device Management	
Alarm Management	
Event Management	
Memmap Management	
Staff Profile Management	

Cancel Back Continue

- Select assigned functions for group in area
  - Only display assigned functions of account.
  - Select one function to assign, then click into area (1) to display authorities of selected function. Click authority to add into group.
    - Click mark “x” (2) to remove authority.
    - Click button “Continue” to go to step 3.
- Screen of step 3 should appear:

**+ Add Group - Step 3 of 7**

1 2 ✓ FUNCTION 3 **NODE** 4 USER 5 LIVEVIEW 6 DASHBOARD 7 SUBMIT

✓ BASIC INFORMATION

DAVITEQ

- Node Test 1
  - Group 1
  - Group 2
- Node Test 3
  - Node new
  - Node new 1

1

Cancel Back Continue

- (1) Display available nodes of account. Tick nodes to assign to group.
  - Click button “Continue” to go to step 4.
- Screen of step 4 should appear:

**+ Add Group - Step 4 of 7**

1 2 ✓ FUNCTION 3 ✓ NODE 4 **USER** 5 LIVEVIEW 6 DASHBOARD 7 SUBMIT

✓ BASIC INFORMATION

**Users Of Group**

Show 10 Rows Search

Username	Fullname	Actions
hongvan.pham	Hồng Văn	<span>Remove</span>

Showing 1 to 1 of 1 entries

**List Of Users**

Show 10 Rows Search

Actions	Username	Fullname
<span>Assign</span>	vanchung	Văn Chung

Showing 1 to 1 of 1 entries

Cancel Back Continue

- (1) Display list of users. The users have not been assigned to the group.
- (2) Display list of users which has already been assigned to the group.
- Button “Assign”: click to assign selected user to group. After click “Assign” button, selected user should be in the list in panel (2).
- Button “Remove”: remove user from group. After click button “Remove”, selected user should be in the list in panel (1).

- Click button “Continue” to go to step 5.
- Screen of step 5 should appear:

- (1) Display list of Dashboard of signing in group. The Dashboard has not been assigned to group.
- (2) Display list of Dashboard of signing in group. The Dashboard has already been assigned to group.
- Button “Assign”: click to assign dashboard to group. Assigned dashboard should be in panel (2).
- Button “Remove”: remove dashboard out of group. Removed dashboard should appear in panel (1).
- Click button “Continue” to go to step 6.
- Screen of step 6 should appear to view Summary information of group from step 1 to step 8.
- Click button “Save” to save information.
- After click button “Save”, confirmation screen should appear and click button “OK” to finish.

## 9. Support contacts

9.

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<p><u>Manufacturer</u>  <b>Daviteq Technology Company Ltd.</b>  No.11 Street 2G, Nam Hung Vuong Res., An Lac Ward, Binh Tan Dist., Ho Chi Minh City, Vietnam.  Tel: +84-28-6268.2523/4 (ext.122)  Email: <a href="mailto:info@daviteq.com">info@daviteq.com</a>   <a href="http://www.daviteq.com">www.daviteq.com</a></p>	

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