ICP DAS
IoTstar Dashboard
Service
User Manual

[Version 1.0.3 - 2021/10/14]

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1 Introduction

IoTstar is a software developed by ICP DAS for WISE/PMC/PMD controllers for use in a variety of Industrial IoT applications. IoTstar can be installed on a general PC platform and works as a Private IoT Cloud system, or on the VM (Virtual Machine) platform of Microsoft Azure, IBM Bluemix, Google Cloud or Amazon AWS, etc. and works as a Public IoT Cloud system. By using IoTstar to build a IoT Cloud system, it can provide 5 major services:

1. Controller Remote Access Service : Status Monitoring, System Setting, and Firmware Update for WISE/PMC/PMD controllers.
2. Sensor Data Service : Collect the data of the sensor connected to the controller and import the data into the Database on cloud.
3. Sensor Data Visualization Service : Review the data of the sensor connected to the controller through Dashboard interface.
4. Sensor Data Report Service : Provide statistical report for the data of the sensor connected to the controller.
5. Bot Service with Mobile Phone : Review the data of the sensor connected to the controller by mobile phone Bot service.

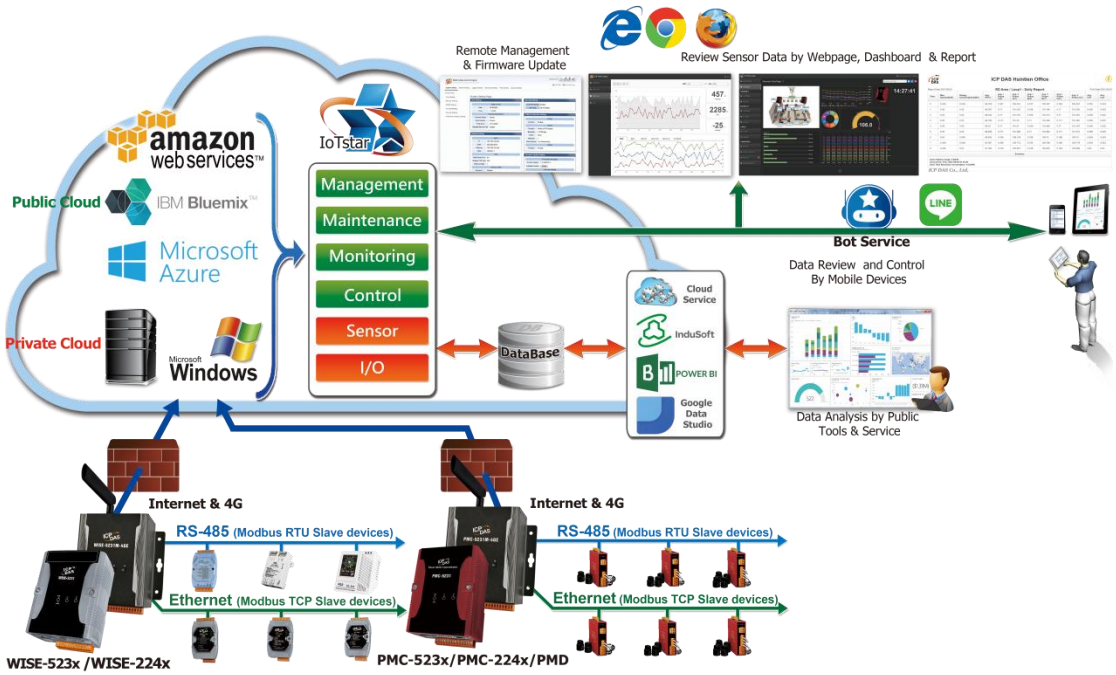


Figure 1-1: System Architecture of IoTstar

IoTstar Dashboard Service is an optional software package for IoTstar that provides users the Dashboard editor and a variety of Widget components. Based on the function which IoTstar Dashboard Service provide, the users can setup the Dashboard pages to review the Real-Time sensor data (and Power data) from the I/O modules (or Sensor) and Power Meter connected to WISE / PMC / PMD controllers, and instantly change the values of the DO/AO output channels of the I/O modules (or power meters) connected to WISE/PMC/PMD controllers .

Through the IoTstar Dashboard Service, users can quickly set up the Dashboard pages required for the review of real-time I/O channel data and interact with the I/O modules, sensors, power meters connected to WISE/PMC/PMD controllers and operators.

The following are the Widget components provided by IoTstar Dashboard Service.

Figure 1-2: The Widget components IoTstar Dashboard Service provide

The following is the examples of Dashboard built by IoTstar Dashboard Service:

Figure 1-3: Example by using IoTstar Dashboard Service(1)

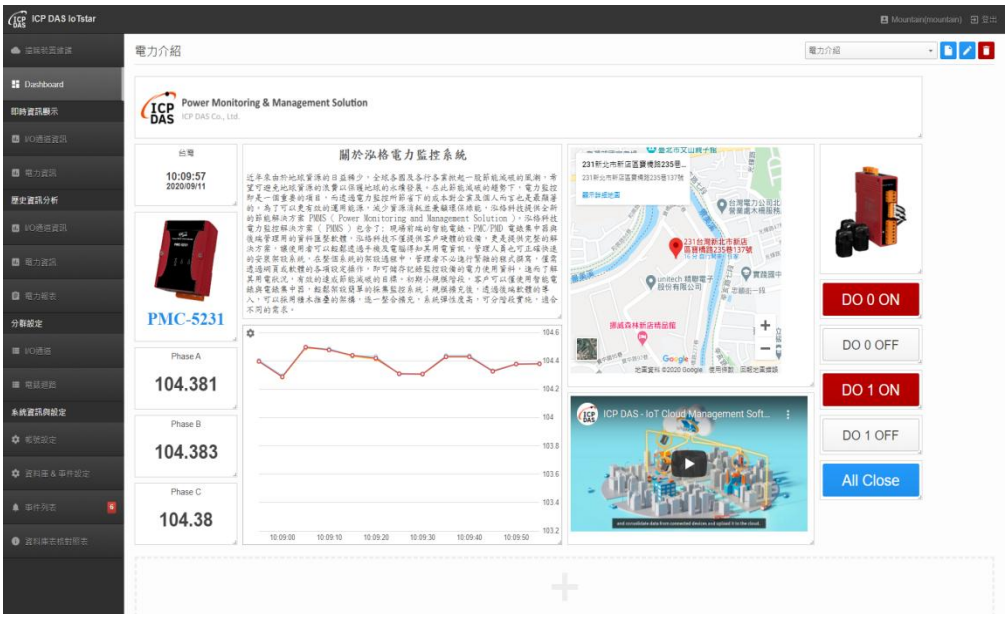


Figure 1-4: Example by using IoTstar Dashboard Service(2)

Figure 1-5: Example by using IoTstar Dashboard Service(3)

2 Before Installation

2.1 Precondition

Before using IoTstar Dashboard Service, you must first complete the setting of the following preconditions.

- Complete the installation of IoTstar, and complete the connection setting of IoTstar and WISE/PMC/PMD controllers.
- To ensure the front-end WISE/PMC/PMD controllers can connect to IoTstar correctly and actively, please make sure the PC (or platform) to install the IoTstar on must be “Static IP” setting.
- If user want to review the Dashboard pages which IoTstar Dashboard Service provide directly in the internet environment, please make sure the PC (or platform) to install the IoTstar on must be with “Public Static IP” or “Dynamic IP + DDNS” setting.

The requirement for IoTstar and WISE/PMC/PMD firmware.

- IoTstar v2.0.0 or later version.
- WISE-523x/WISE-224x firmware v1.5.1 or later version.
- PMC-523x/PMC-224x/PMD firmware v3.4.7 or later version.

2.2 Enable IoTstar Dashboard Service(Trial service)

IoTstar v2.0.0 (and later version) includes the IoTstar Dashboard Service (Trial service). After you complete the installation of IoTstar v2.0.0 (or later version) and import the license file of IoTstar Dashboard Service(Trial service), the IoTstar will provide you a full-function trial service of IoTstar Dashboard Service for thirty days.

Following is the steps to enable IoTstar Dashboard Service (Trial service).

i. Go to IoTstar official website http://iotstar.icpdas.com/en/index.php, and click the “Download” button on the main page.

ii. On the “Download” page, click the “Apply for trial” button of “Trial

Service for Support Package" section to enter the IoTstar Trial Service page.

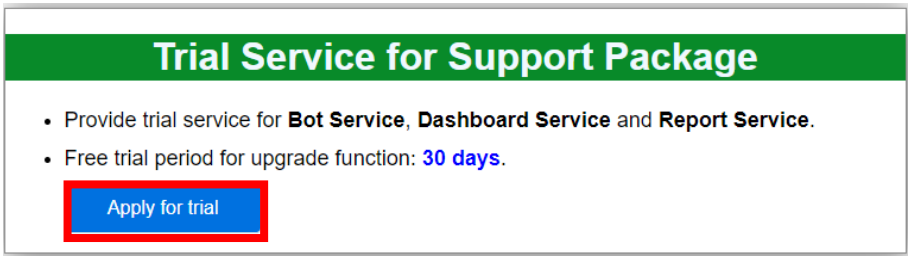


Figure 2-1: Apply for IoTstar Dashboard Service(Trial service)

iii. On the IoTstar "Trial Service for Support Package" page, select the "Dashboard service" on the "Trial service option" field. For the "Hardware ID", please click the button next to the "Hardware ID" field and follow the instructions on the Pop-up window to get the Hardware ID of the platform which IoTstar is installed and enter the Hardware ID you get in the "Hardware ID" field. Click the "Download Trial License" button. If the above information is correct. Users can obtain the IoTstar Dashboard Service (Trial service) License File.

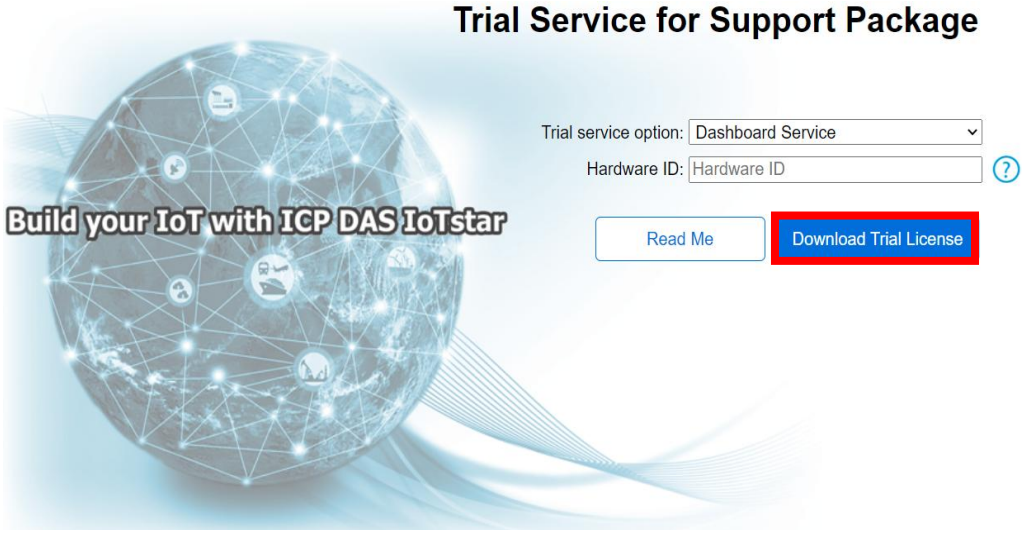
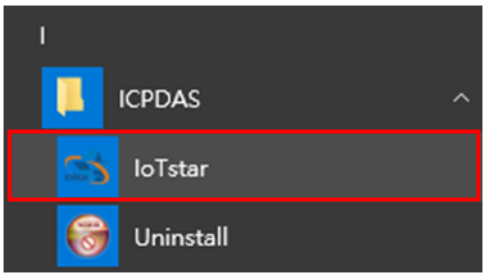
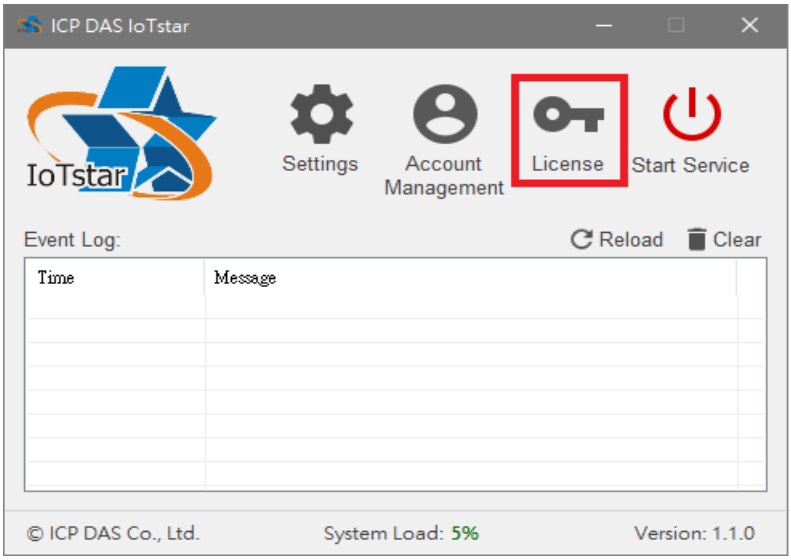


Figure 2-2: Download IoTstar Dashboard Service(Trial service) License

iv. After you get the license file of IoTstar Dashboard Service (Trial service), click "Start Menu"→ "All apps"→ "ICPDAS"→ "IoTstar" to open the IoTstar system interface.



v. Click the “License” button on the IoTstar system interface to enter the License setting window.



vi. In the “License” setting window, click the “Browse...” button to find the location of the IoTstar Dashboard Service (Trial service) license file, and then click the “OK” button.

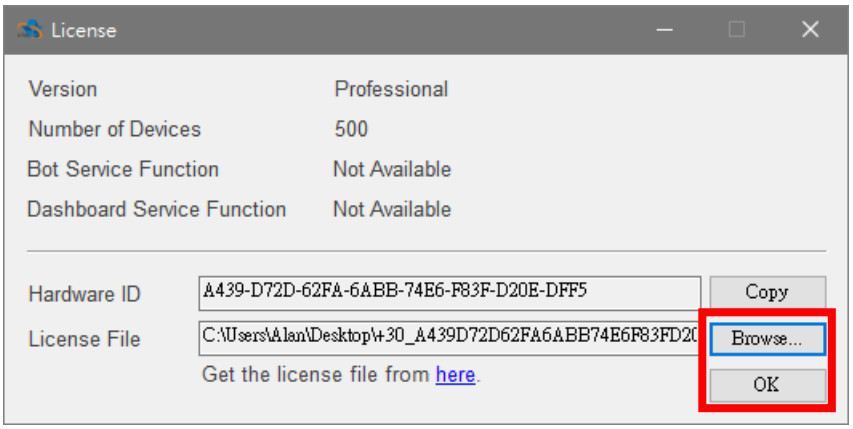


Figure 2-3: Import IoTstar Dashboard Service(Trial service) License

vii. If the license file is valid, the expiration date of IoTstar Dashboard Service (Trial service) will be displayed.

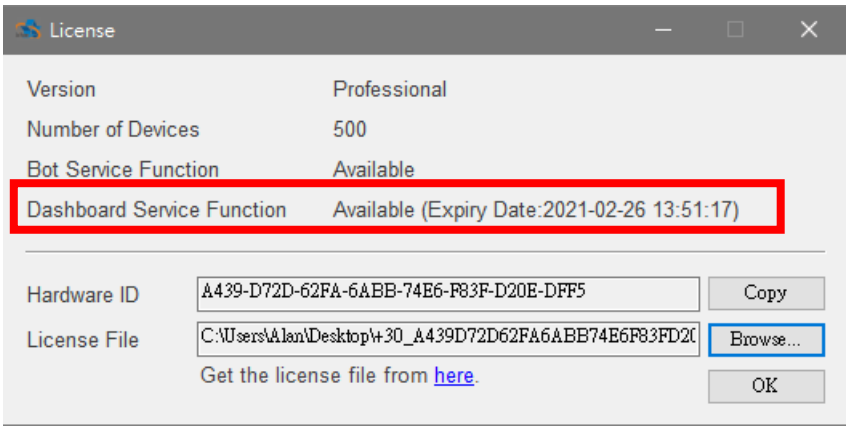


Figure 2-4: Status of Import IoTstar Dashboard Service(Trial service)

viii. Return to IoTstar system interface, click "Start Service" to start IoTstar, then the IoTstar Dashboard Service (Trial service) will also be enabled at the same time.

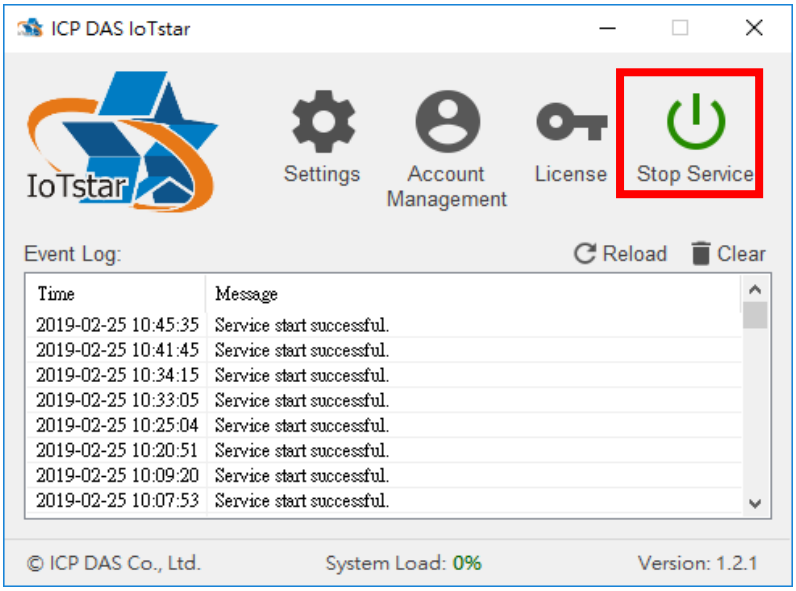


Figure 2-5: Start IoTstar Dashboard Service(Trial service)

2.3 Enable IoTstar Dashboard Service(Formal service)

To enable IoTstar Dashboard Service(Formal service), you have to install the IoTstar Professional version v2.0.0 (and later version) first, and then contact with ICP DAS to purchase the upgrade code to enable the IoTstar Dashboard

Service(Formal service). The following steps will introduce the process to enable the IoTstar Dashboard Service(Formal service).

i Click the "Package Upgrade" button on the IoTstar official webpage.

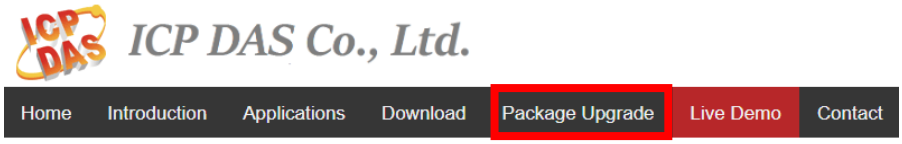


Figure 2-6: Upgrade to IoTstar Dashboard Service(Formal service) (1)

ii Enter the Serial Number of IoTstar (Professional version) and the Upgrade Code of IoTstar Dashboard Service (Formal service), and click the "Upgrade" button to upgrade your IoTstar Serial Number with the authorization to use IoTstar Dashboard Service(Formal service). Click "Generate the License File" to go to the registration page.

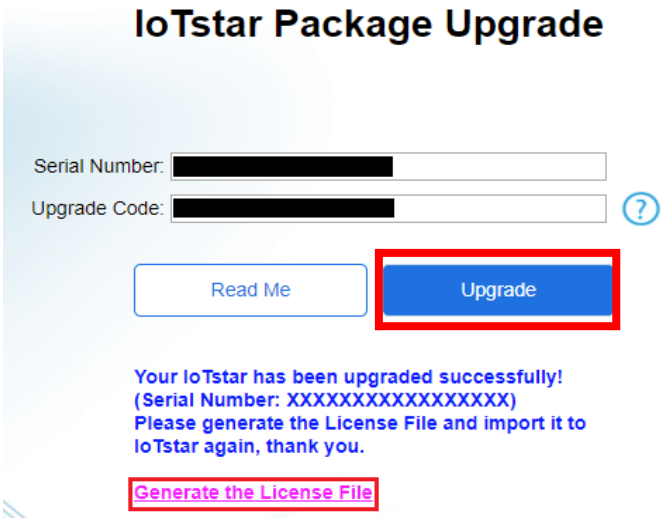


Figure 2-7: Upgrade to IoTstar Dashboard Service(Formal service) (2)

iii Enter the required information and click the "Registration" button to get the new License File.

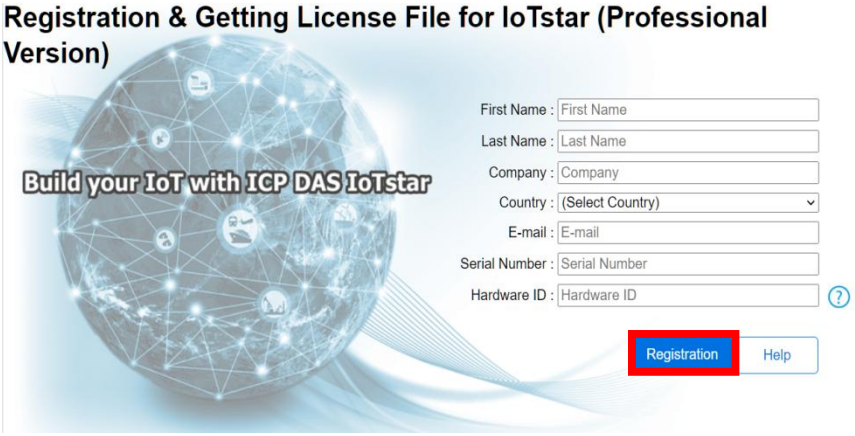
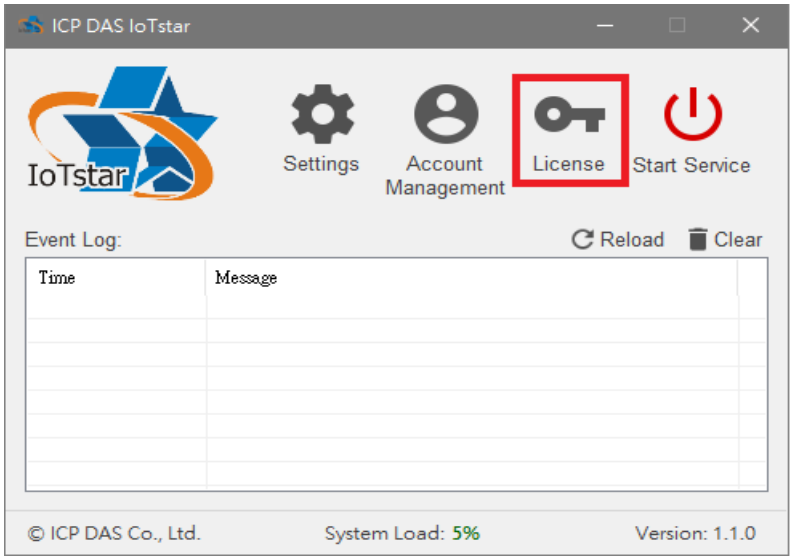


Figure 2-8: Upgrade to IoTstar Dashboard Service(Formal service)(3)

iv After getting the License file for IoTstar Dashboard Service (Formal service), please open the IoTstar system interface, click "License" button to enter the License setting window.



v Enter the License setting window, click "Browse" button to find the location of the IoTstar Dashboard Service (Formal service) license file, and then click the “OK” button.

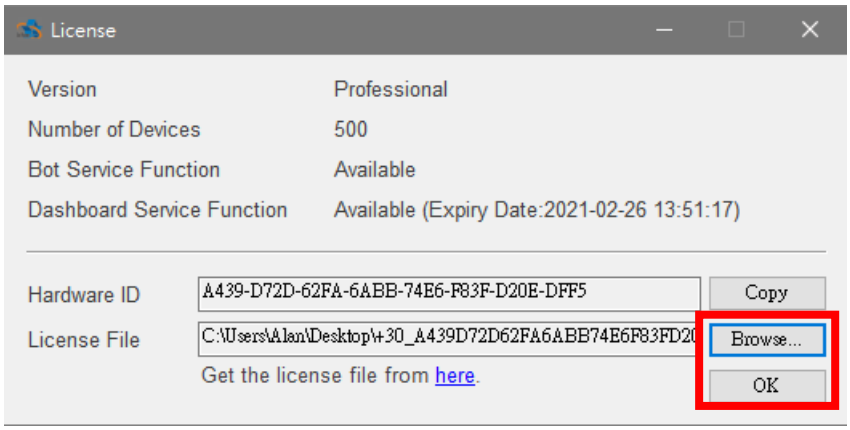


Figure 2-9: Import IoTstar Dashboard Service(Formal service) License

vi If the license file is valid, the status of IoTstar Dashboard Service (Formal service) will be displayed.

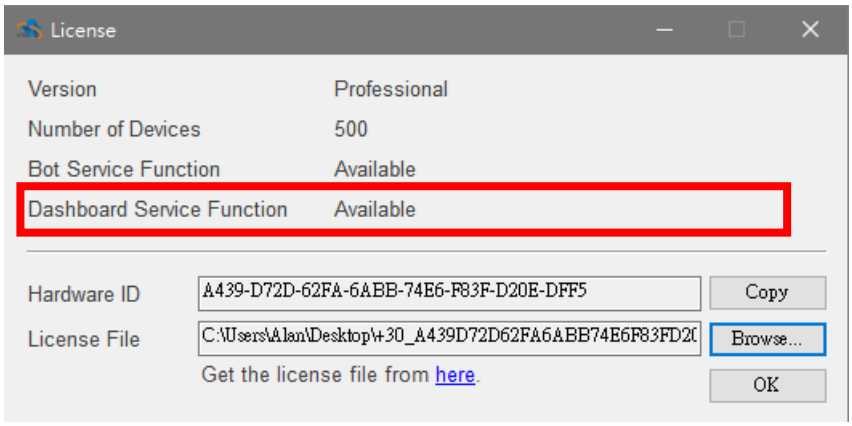


Figure 2-10: Status of IoTstar Dashboard Service (Formal service)

vii Return to IoTstar system interface, click "Start Service" to start IoTstar, then the IoTstar Dashboard Service (Formal service) will also be enabled at the same time.

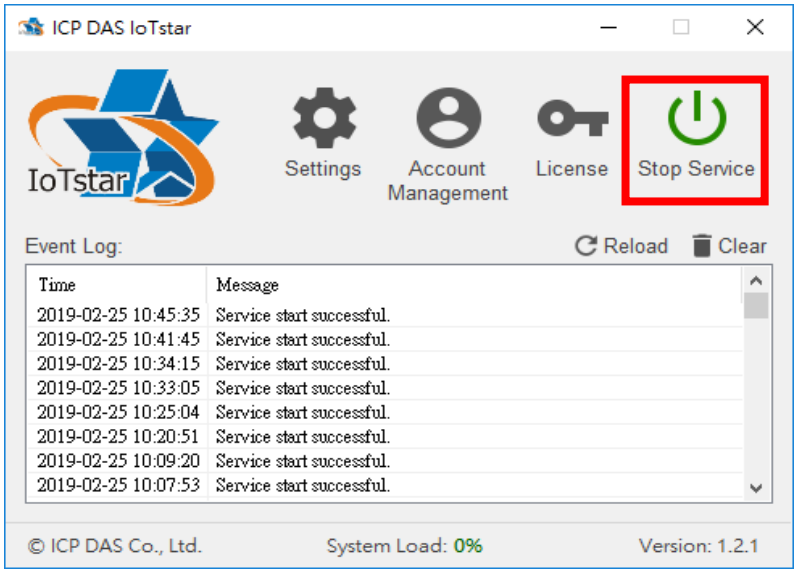


Figure 2-11: Start IoTstar Dashboard Service(Formal service)

3 Set up Dashboard of IoTstar Dashboard Service

When the installation of IoTstar v2.0.0 is completed and the IoTstar Dashboard Service is enabled, user can use the Dashboard Editor and Widgets provided by IoTstar Dashboard Service to set up the Dashboard pages to review the Real-Time I/O channel data (or Power data) from the I/O modules, sensor, or power meter connected to WISE / PMC / PM controllers, and instantly change the values of the DO/AO output channels of the I/O modules, sensor, or power meter.

Following is the description of the process to set up the Dashboard pages.

3.1 Launch IoTstar Dashboard Service

Log in to IoTstar website, user can click on the "Dashboard Service" button on the "Data Display & Analysis" section of IoTstar Webpage to enter the IoTstar Dashboard Service page.

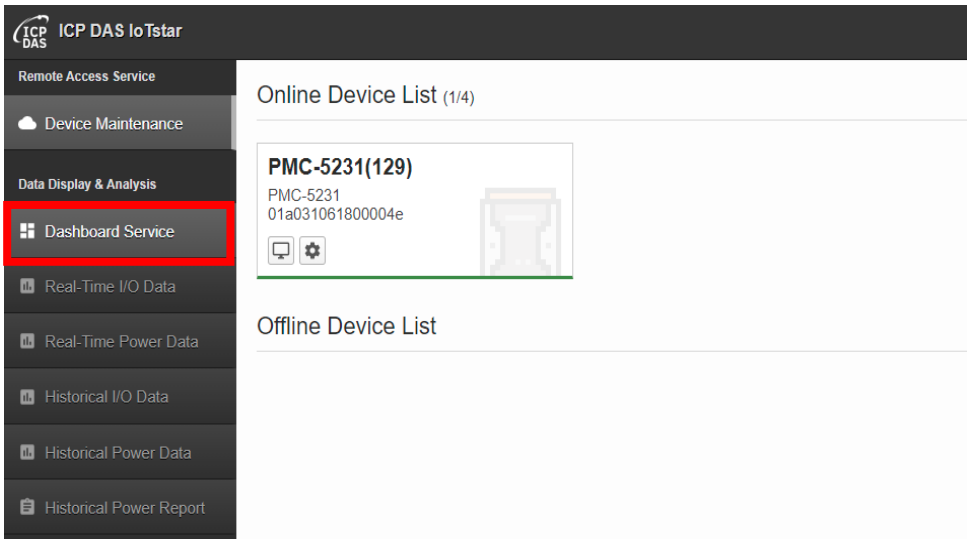


Figure 3-1: Launch IoTstar Dashboard Service

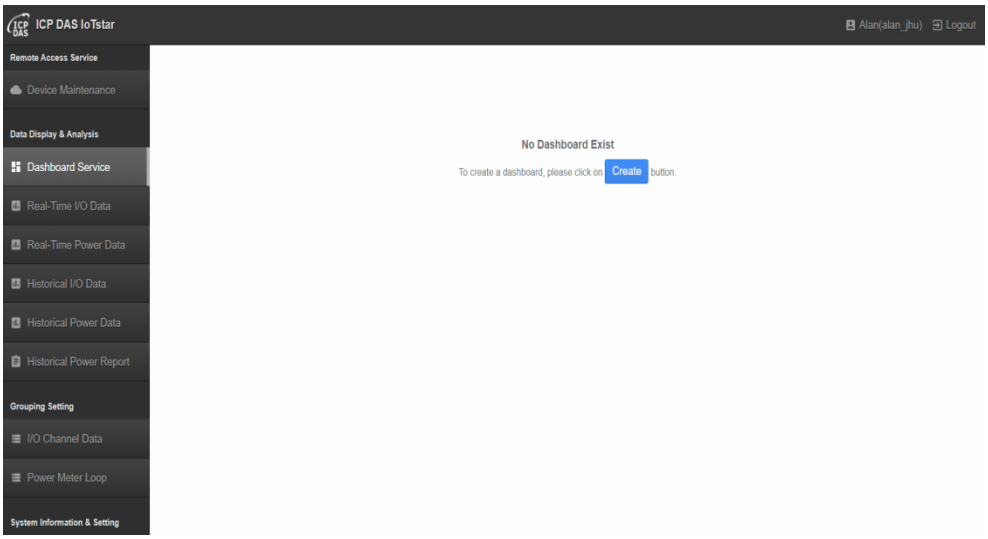


Figure 3-2: Enter IoTstar Dashboard Service Page

3.2 Create Dashboard

If user enters IoTstar Dashboard Service page for the first time, he can click the "Create" Create button, and the system will create a new Dashboard for the user account. If user has previously built a Dashboard, he can click the "Create Dashboard" button at the upper right of the IoTstar Dashboard Service page to create a new Dashboard.

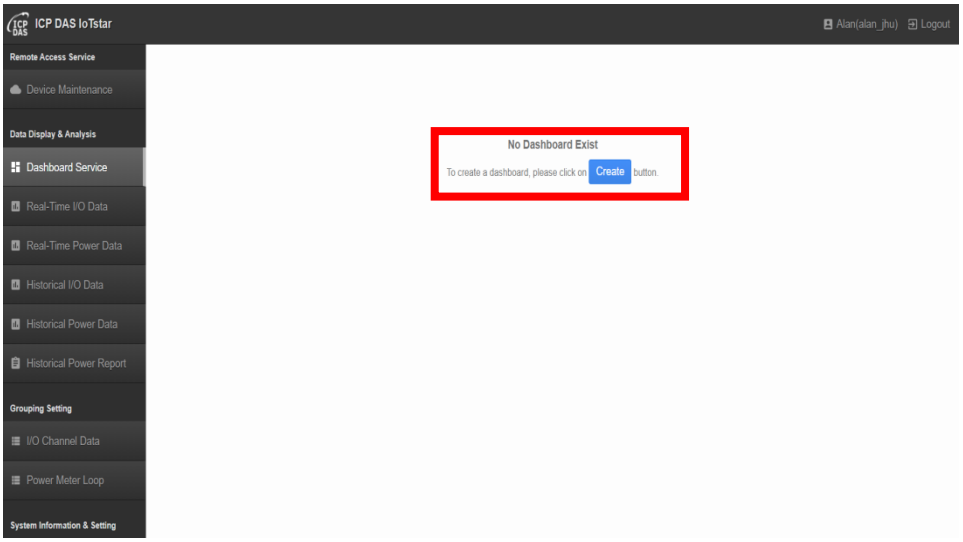


Figure 3-3: Create a Dashboard

Now, the "Create Dashboard" window will appear. The parameter setting interface of this window is described as follows:

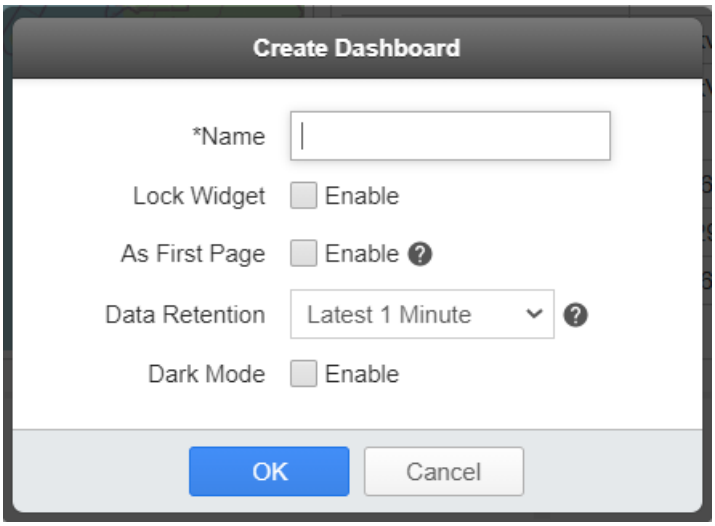


Figure 3-4: "Create Dashboard" Window

- Name: Input a nickname for the Dashboard.
- Lock Widget: Check "Enable" to lock the size and location of all widgets in the Dashboard.
- As First Page: Check "Enable" to assign the Dashboard as the home page of the IoTstar Dashboard Service for the user account.
- Data Retention: Assign the time period for the system to keep the most recent I/O channel data (power data) during this assigned time period, and the data can be displayed by the Widgets of the Dashboard. There are 5 options: Latest 30 seconds, Latest 1 minute, Latest 3 minutes, Latest 5 minutes and Latest 10 minutes.
- Dark Mode: Check "Enable" to assign the Dashboard to use "Dark Mode" for display.

3.3 Change Dashboard Setting

After create Dashboard, the Dashboard setting interface will be shown on the upper right of IoTstar Dashboard Service page, The setting interface is described as follows:

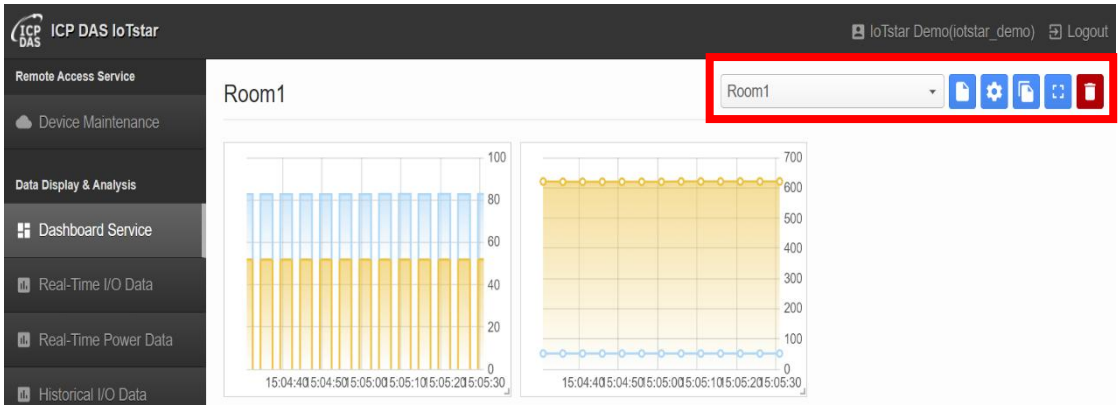
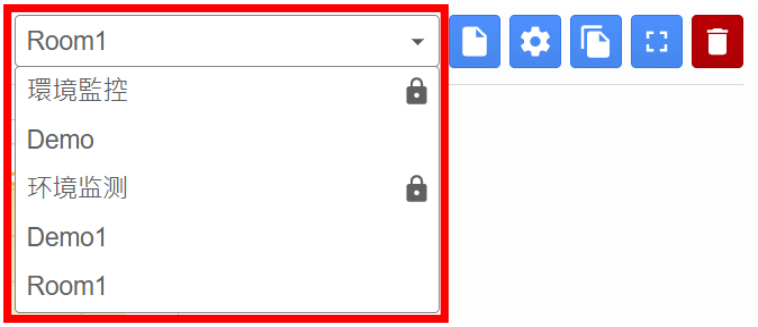


Figure 3-5: Dashboard List and related operations

- Dashboard List: It list the Dashboards created by the user account through IoTstar Dashboard Service. User can select the Dashboard page from the list, and then the service will switch to the selected Dashboard page for display. If the Dashboard page which enable the "As First Page" setting, it will be set as the first page of the list. In addition, if there is an icon behind the name of the dashboard page, it means the dashboard is in the “Lock Widget” mode.



- "Create Dashboard" Button: User can click this button to create a new Dashboard. The "Create Dashboard" window will be shown .
- "Edit Dashboard" Button: User can click this button to edit the parameter of the Dashboard selected in the Dashboard List. The "Edit Dashboard" window will be shown.
- "Copy Dashboard" Button: When user clicks the button, the system will create a new dashboard and copy all the settings from

the dashboard selected in the "Dashboard List" to the new dashboard, and the default name of the new dashboard is "The name of selected Dashboard(Copy)".

- "Full Screen mode" Button: User can click this button to display the Dashboard selected in the Dashboard List in the Full Screen mode. When the system is in Full Screen mode, user can click the button to return to Normal mode.

- "Remove Dashboard" Button: User can click this button to delete the Dashboard selected in the Dashboard List.

3.4 Edit Dashboard Content

IoTstar Dashboard Service provide the editing interface and variety of Widget for user to edit the content of Dashboard. Following is the steps for the Dashboard editing operation:

i. Click the "+" icon on the page of IoTstar Dashboard Service to add widget.

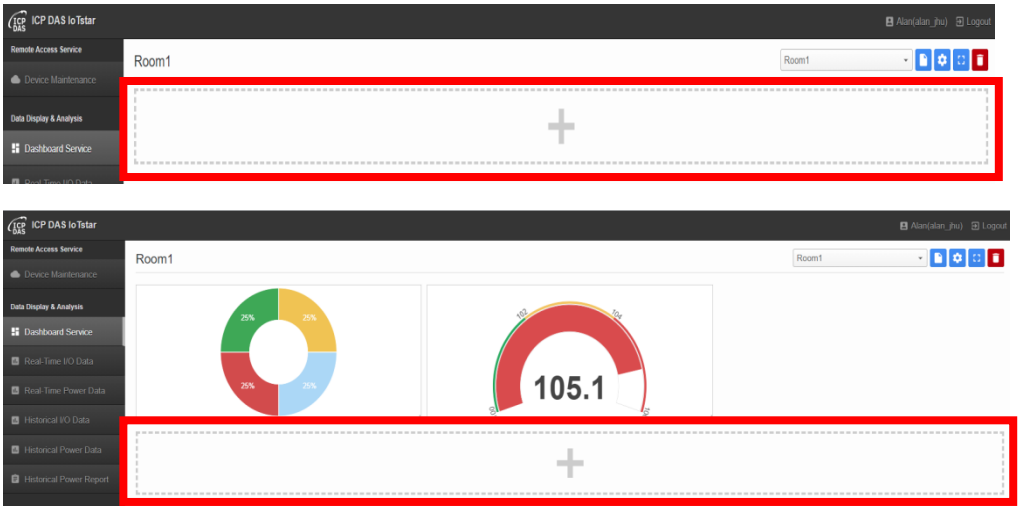


Figure 3-6: Add Widget for Dashboard

ii. After clicking, the "Add Widget" window will open. Please click the "Type" button at the upper left of the "Add Widget" window to enter the

"Widget Type" selection page where user can select the desired widget he want to add in the Dashboard.

Figure 3-7: Type Selection Page of Widget

iii. After finish the Widget selection, please continue to click the "Property" button at the upper left of the "Add Widget" window to enter the "Property" setting page. User needs to set up the parameters of the selected Widget.
Please Note: For the description of the parameter of Widgets which IoTstar Dashboard Service provide, please refer to "4 Widget Provided by IoTstar Dashboard Service" chapter.

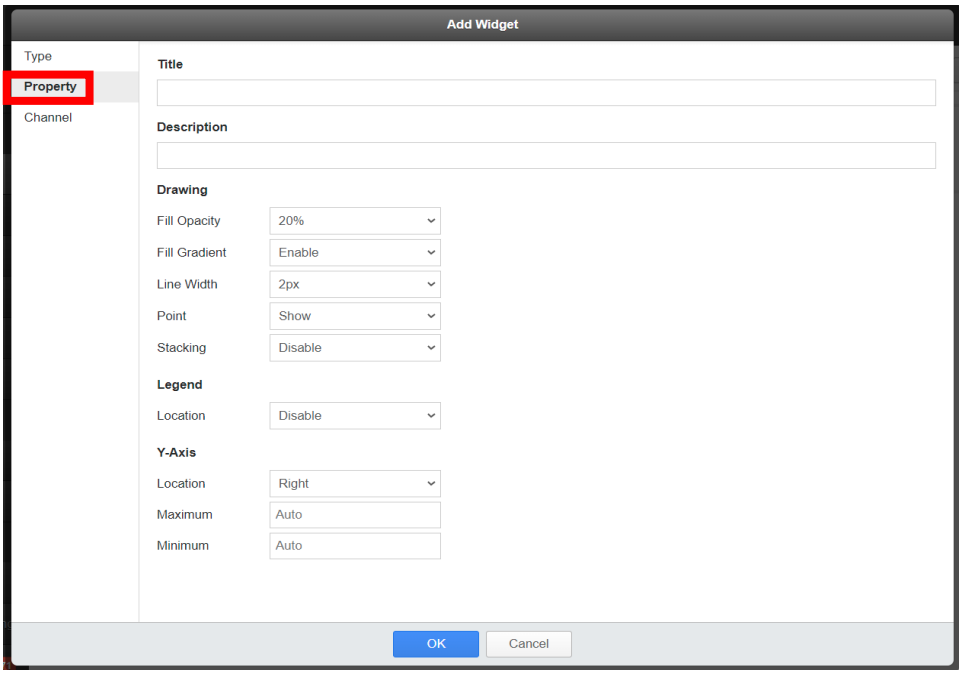


Figure 3-8: Parameter Setting Page of Widget

iv. After finish the parameter setting, please continue to click the "Channel" button at the upper left of the "Add Widget" window to enter the "Channel" setting page. This page provides the interface for user to set up the I/O channel (or power data) that the Widget needs to bind, so that the corresponding Real-time I/O channel data (or power data) can be displayed by the Widget. Please click the "Add" Add button at the bottom of the "Channel" setting page.

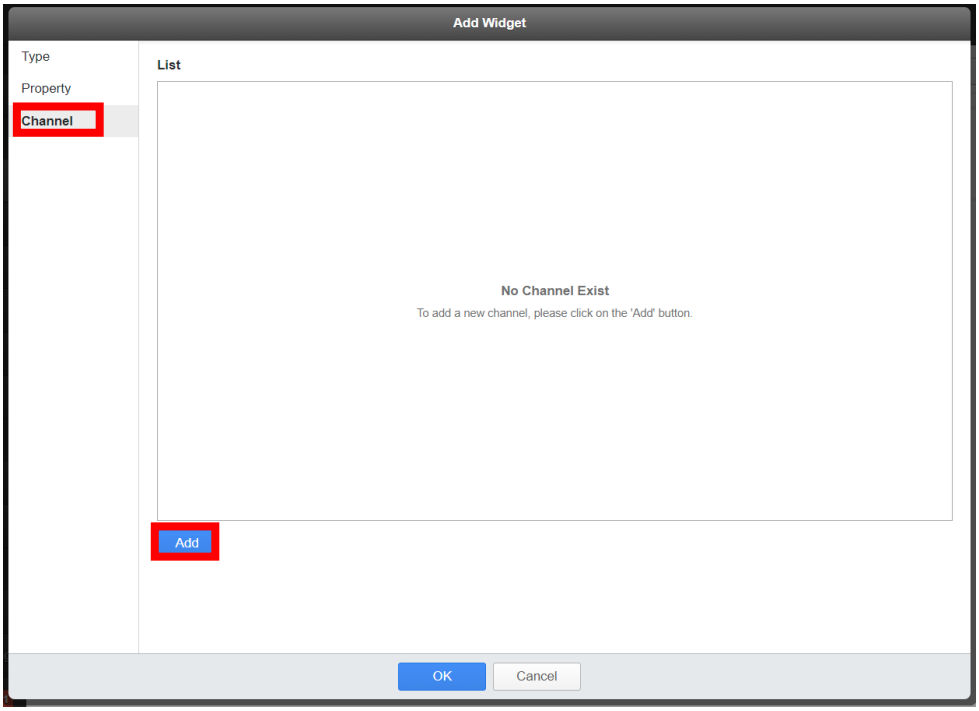


Figure 3-9: Channel Setting Page of Widget

v. After clicking, the "Add Channel" window will be open. User can select the module (I/O module, sensor or power meter) to be bound with the Widget through the module list at the upper left of the page. After complete selection, the page will display the I/O channel list (or power meter) of the selected module, and then user can select the I/O channel (or power data) to be displayed through the Widget.

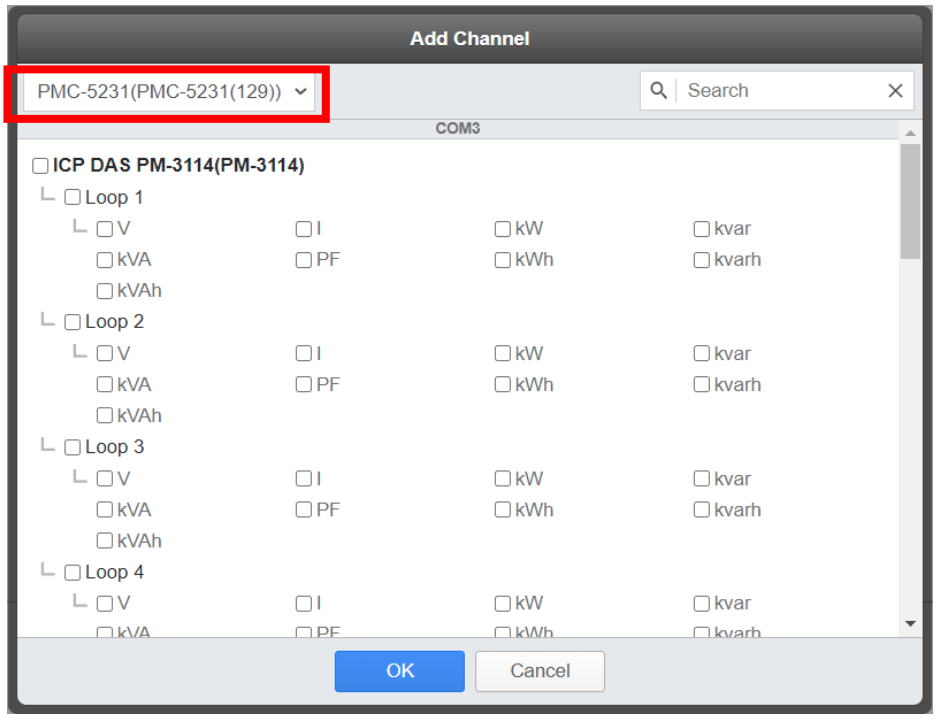


Figure 3-10: Channel Selection for Widget(1)

After selection, please click the "OK" button.

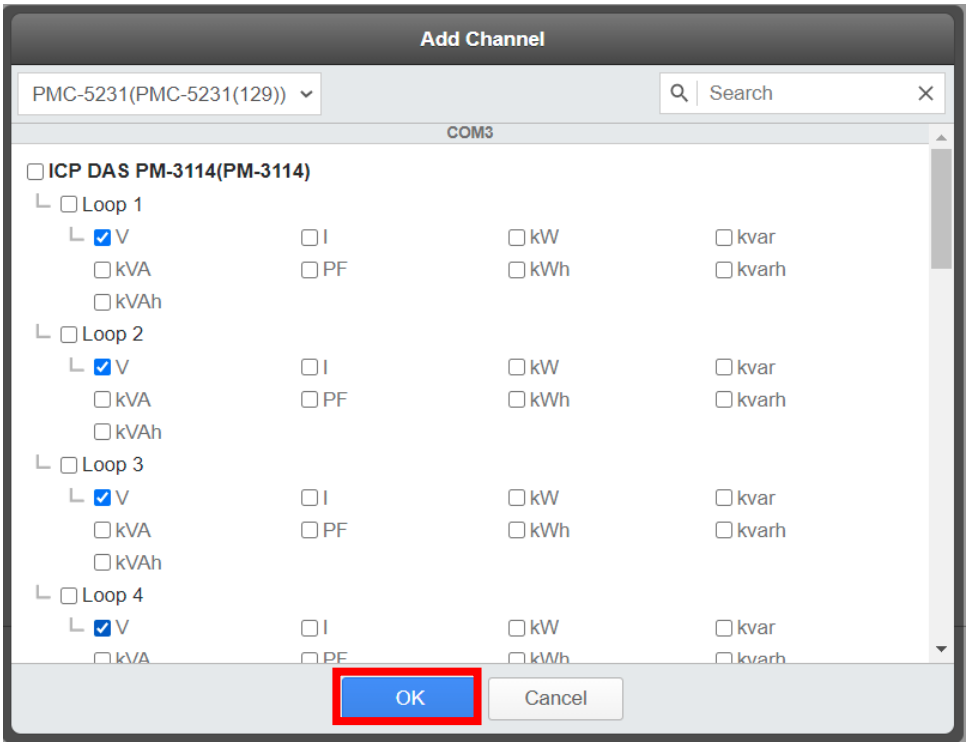


Figure 3-11: Channel Selection for Widget(2)

After selection, the "Channel" page will show the list of the I/O channels (or power data) currently bound to the Widget. If need, user can click the button in front of the I/O channel (or power data) to add the image file (Icon) for the I/O channel (or power data). In addition, user can directly drag the button to sort the I/O channels (power data) in the list. After complete the I/O channel (or power data) setting, please click the "OK" OK button at the bottom of the page, and the Widget will start to display the real-time data of the bound I/O channel (power data).

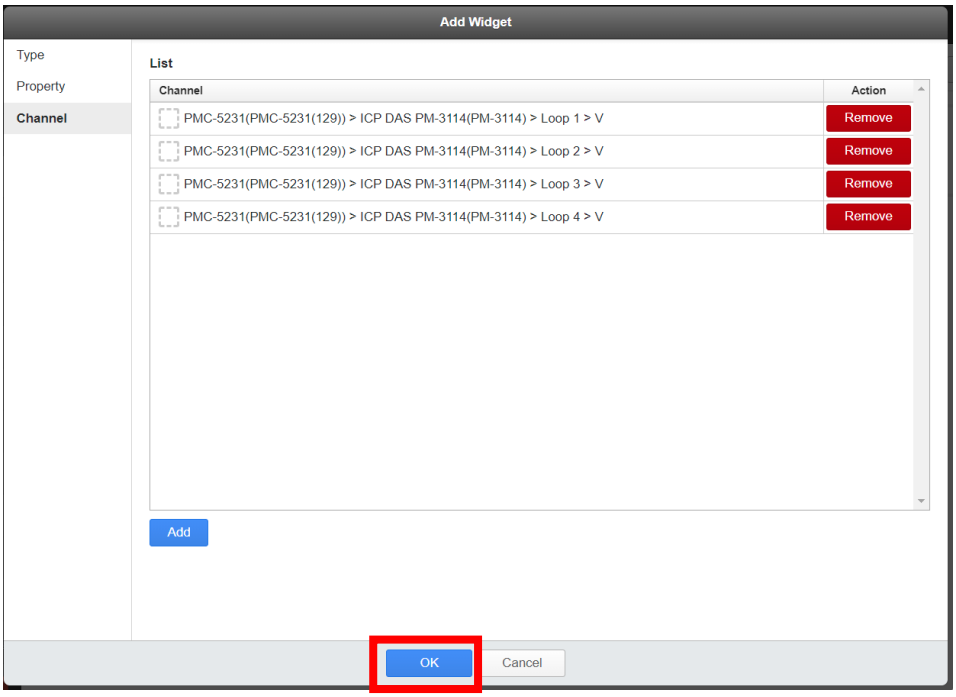


Figure 3-12: The Channel list bound with the Widget

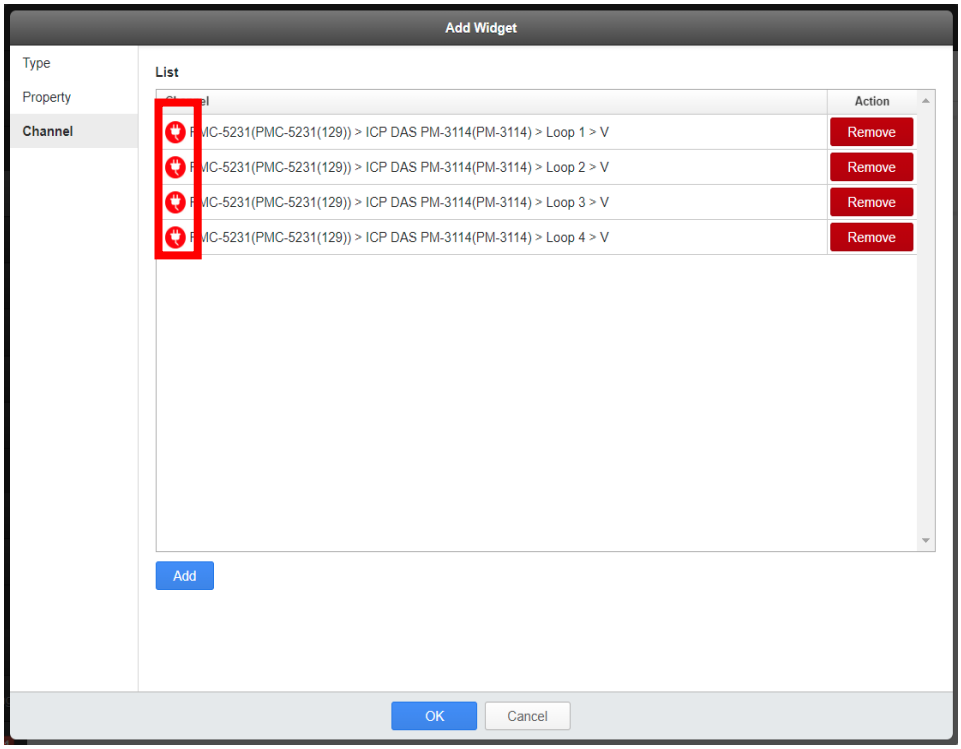


Figure 3-13: The Channel list bound with the Widget (with Icon)

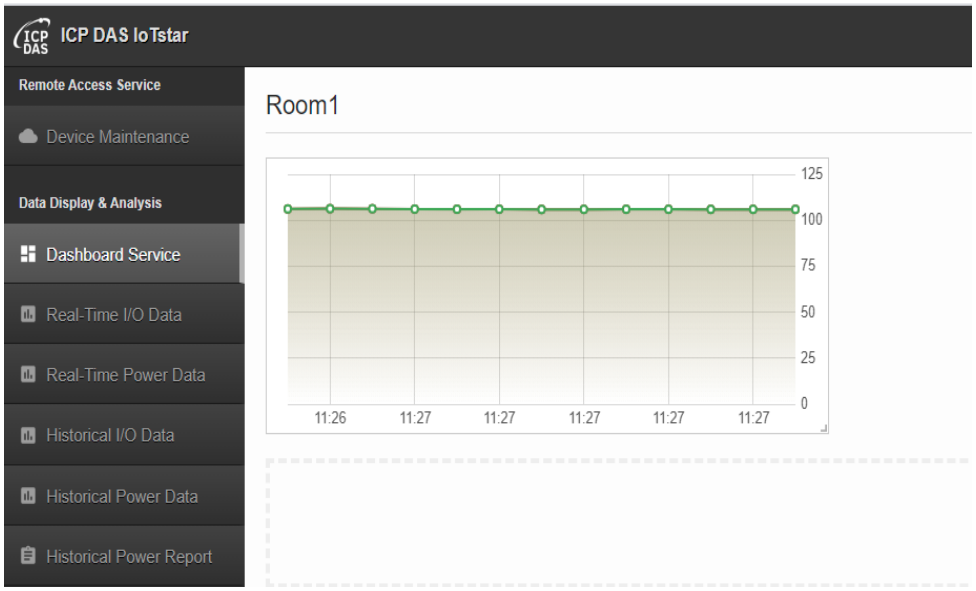


Figure 3-14: Data Display by Dashboard (Line Chart)

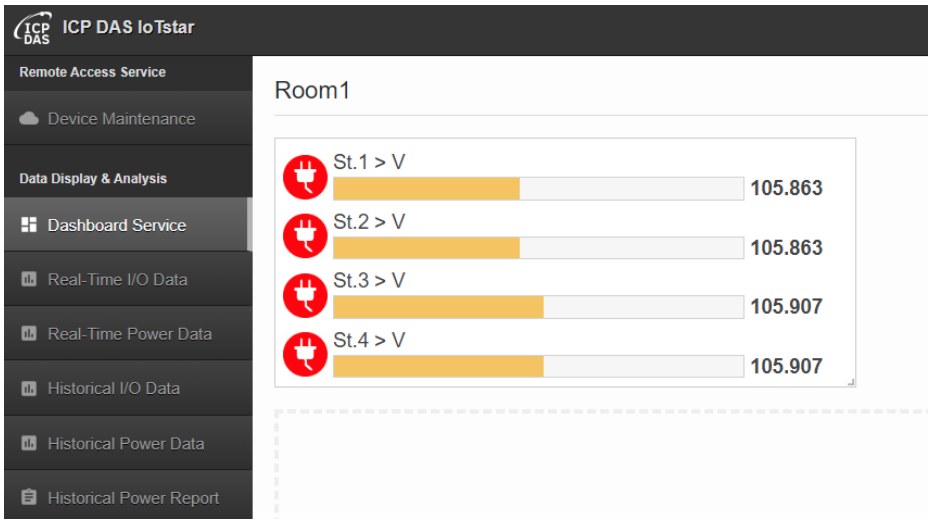


Figure 3-15: Data Display by Dashboard (Plot Bar with Icon)

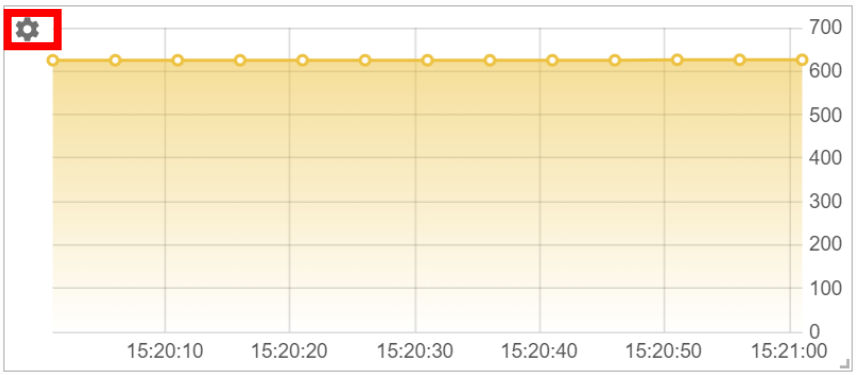
vi. User can repeat the steps of "Step i~Step v" to add the required Widgets to the Dashboard page in sequence.

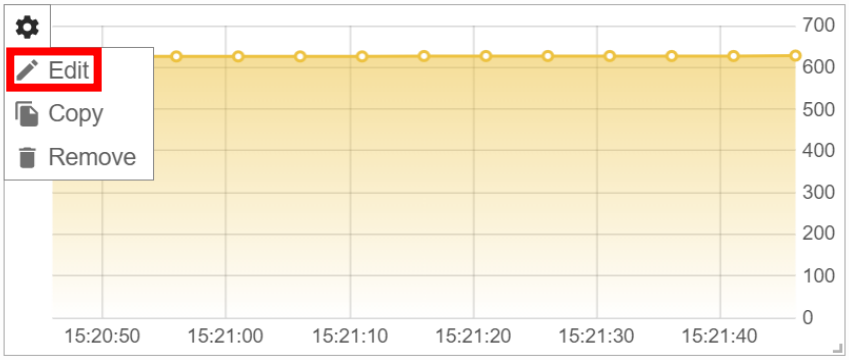
3.5 Change Widget Setting

If user needs to adjust the setting, location, size of Widget, or want to copy or delete the Widget from the Dashboard page, please refer to following information.

- Adjust Widget setting

  Click the ⚙ button at the upper left of the Widget, then click the "Edit" button.

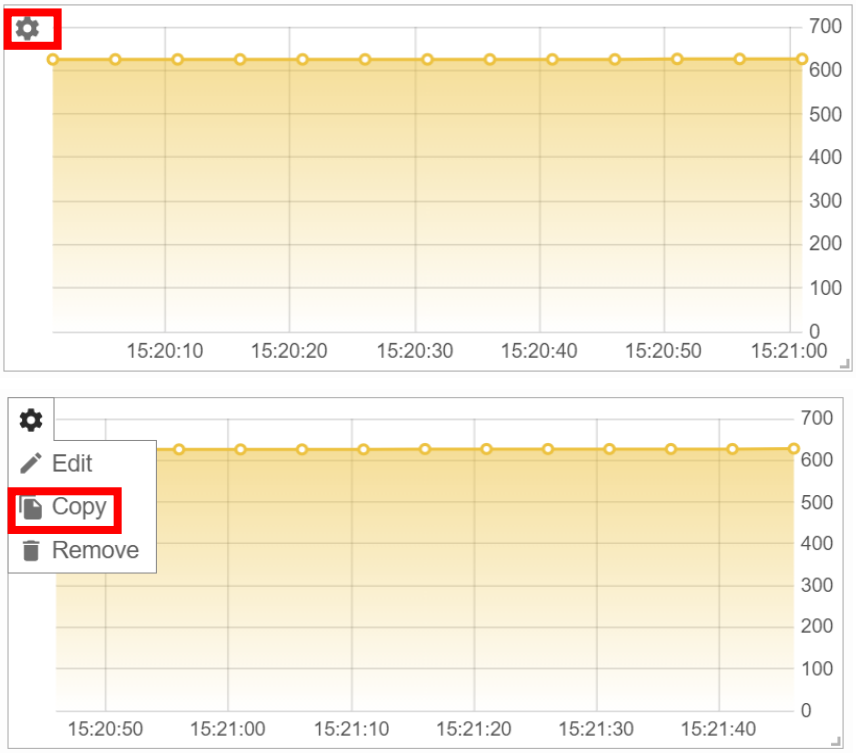




The "Edit Widget" window of the selected Widget will open. User can adjust the "Type", "Property" and "channel" settings of this Widget in sequence.

- Copy Widget

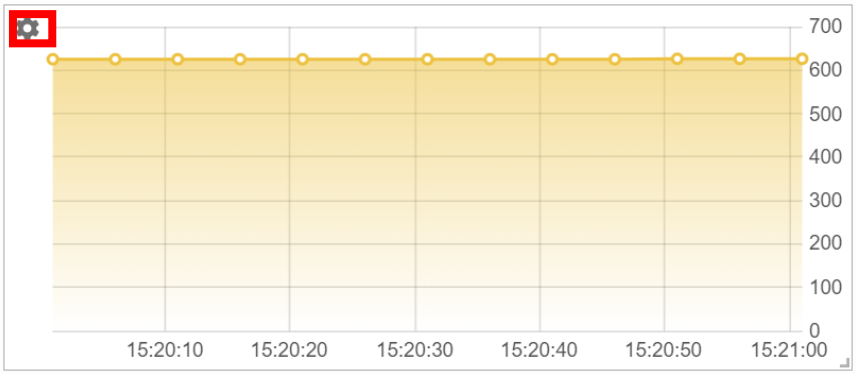
  Click the ⚙ button at the upper left of the Widget, then click the "Copy" button.



The system will create a new Widget with the same type as the selected Widget, and copy the settings from the selected Widget to the new Widget.

- Delete Widget

  Click the ⚙ button at the upper left of the Widget, then click the "Remove" button to delete the Widget.

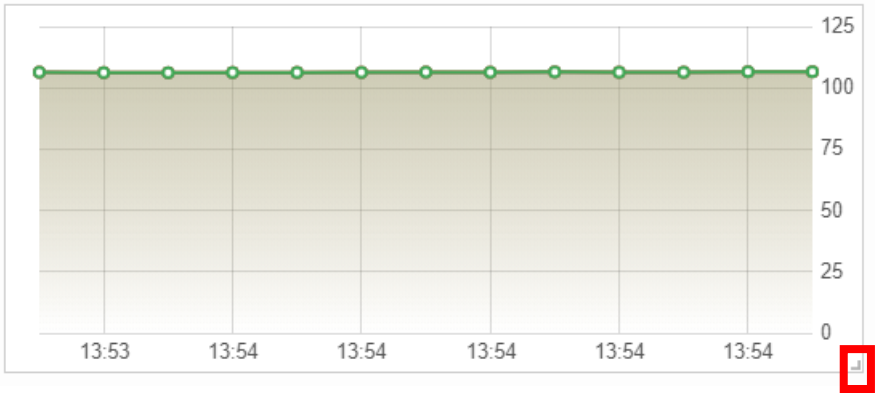


- Adjust Widget location

  User can move the mouse to the top of the Widget, and drag the Widget by pressing the left button of the mouse to change the location of the Widget.

- Adjust Widget size

  User can move the mouse to the lower right corner of Widget and drag the Widget by pressing the left button of the mouse to change the size of the Widget.



4 Widget Provided by IoTstar Dashboard Service

IoTstar Dashboard Service provide variety of Widgets for user to edit the Dashboard page for the display of real-time I/O channel data (or power data). For the description of the parameters of these Widgets, please refer to the following sections.

4.1 Line Chart

Line Chart can display the real-time I/O channel data (or power data) received by the Widget through the binding I/O channels (or power loop) according to the setting of "Data Retention" of the Dashboard. It provides an easy way for user to view the I/O channel data (or power data), and further more compare, analyze and observe the trend. Following is the description of the parameters of Line Chart.

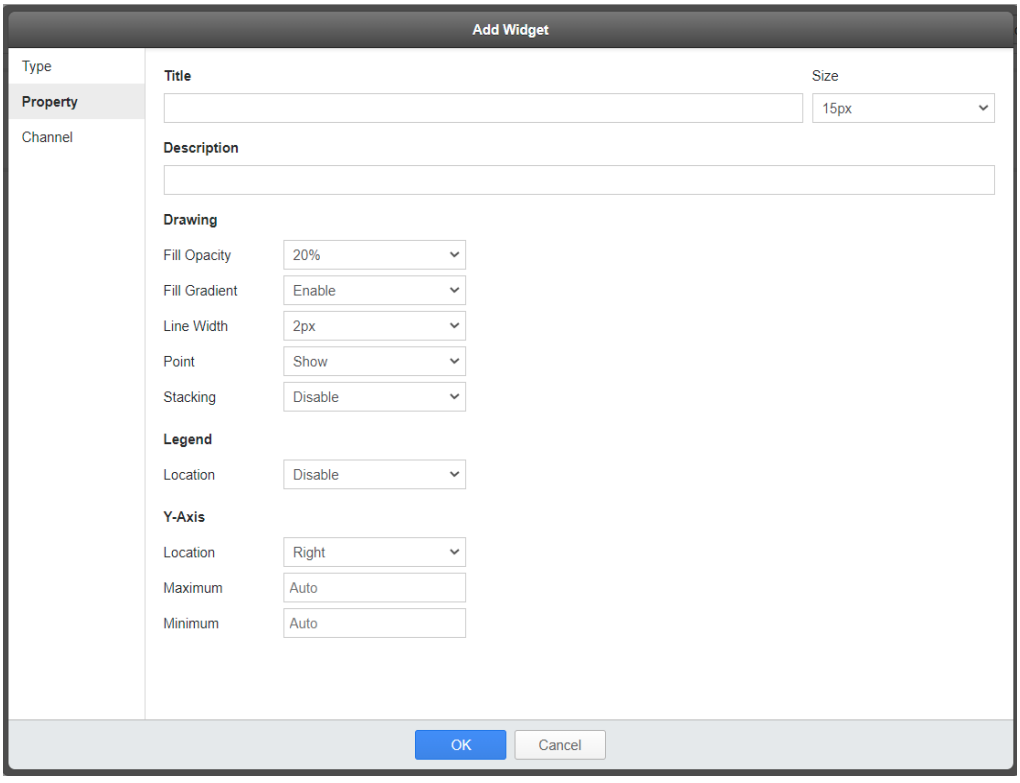


Figure 4-1: Parameter setting of Line Chart

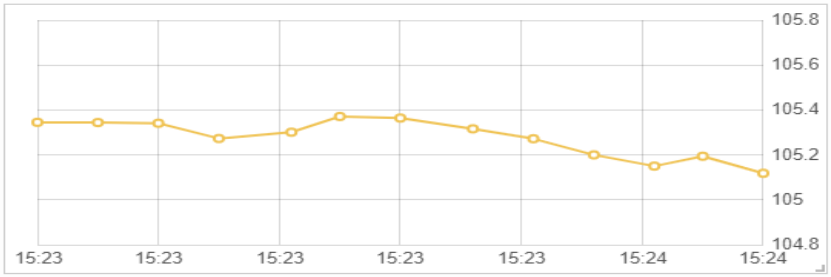
Basic parameter

- Title: For user to define the name of the Widget and its size.

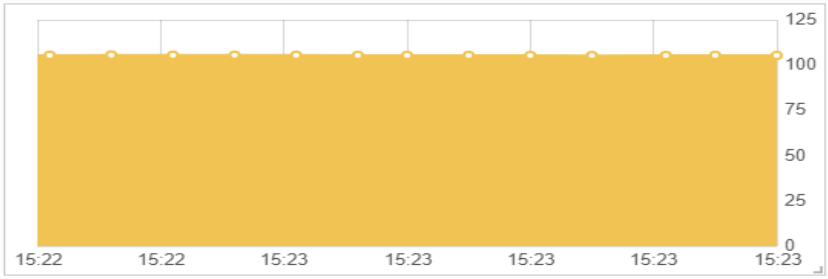
- Description: This field provides a space for the user to make a brief description of this Widget.

Drawing parameter

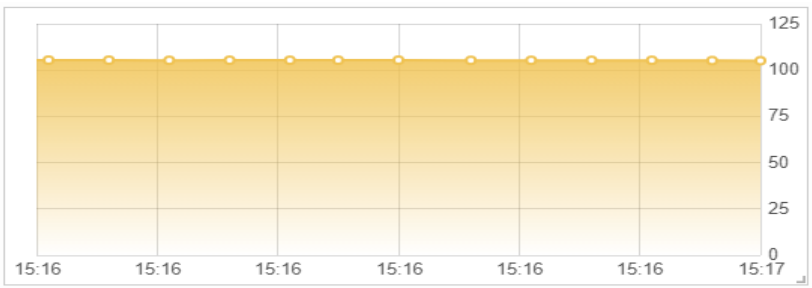
- Fill Opacity: For user to define the "Fill Opacity" for the Widget. There are 11 options: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90% and 100%.
  - When "Fill Opacity" is 0%, the Widget is shown as below.



  - When "Fill Opacity" is 100%, the Widget is shown as below.

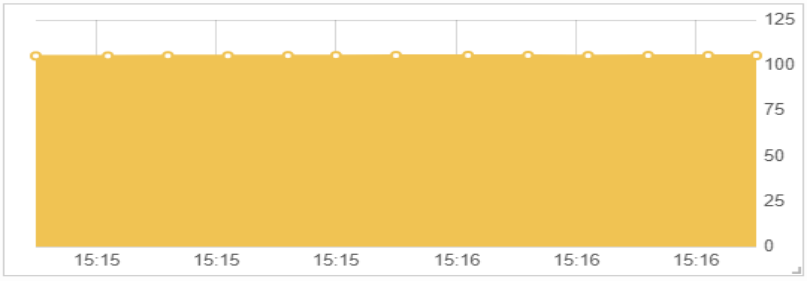


- Fill Gradient: For user to enable the "Fill Gradient" parameter of the Widget, or not.
  - When "Fill Opacity" is 100% and enable "Fill Gradient", the Widget is shown as below.

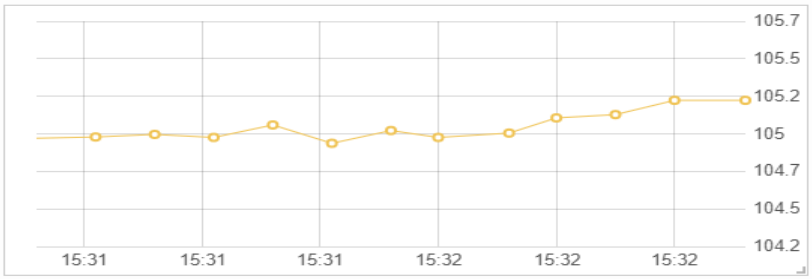


  - When "Fill Opacity" is 100% and disable "Fill Gradient", the

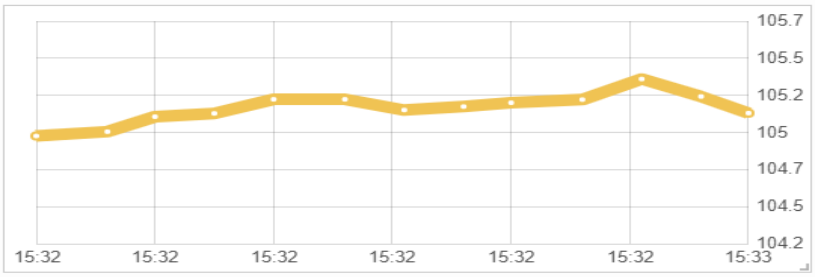
Widget is shown as below.



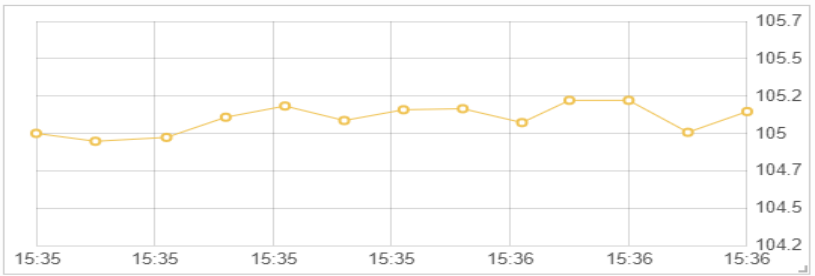
- Line Width: For user to set the line width of the Widget. There are 6 options: 0, 1, 2, 3, 5 and 10. The unit is Pixel(px).
  - ➢ When " Line Width " is 1px, the Widget is shown as below.



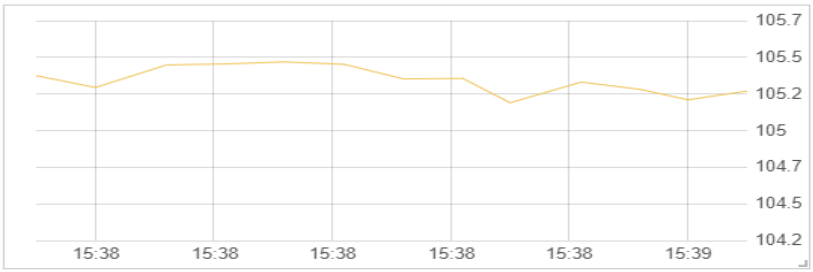
  - ➢ When " Line Width " is 10px, the Widget is shown as below.



- Point: For user to set if the end points of the line segment of the Widget need to be shown, or not.
  - ➢ Select "Show", the Widget is shown as below.

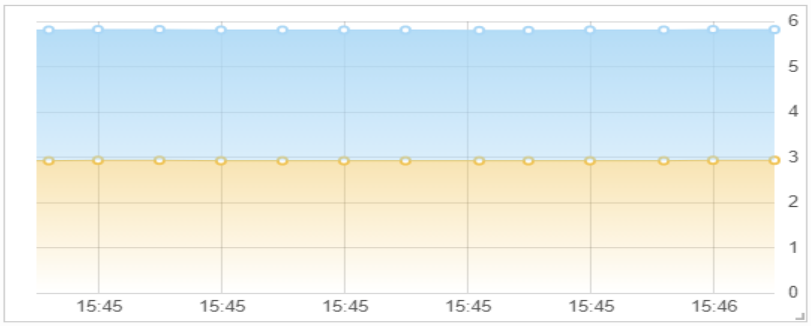


➢ Select "Hide", the Widget is shown as below.

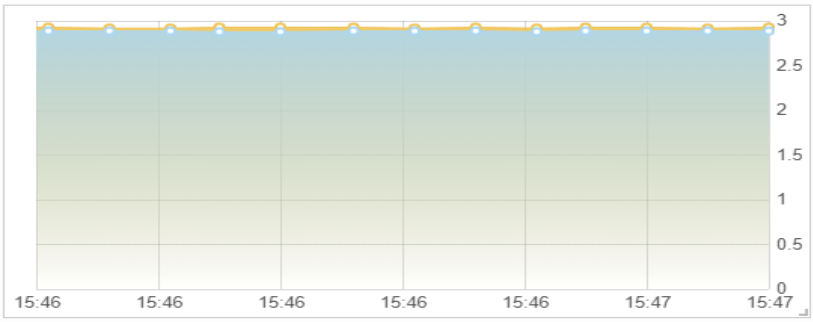


- Stacking: When the Widget is bound with multiple I/O channels (or power loops) at the same time, user can set the parameter to display the corresponding data of these I/O channels (or power loops) in the Stacking mode, or not.

  ➢ Select "Enable", the Widget is shown as below.



➢ Select "Disable", the Widget is shown as below.



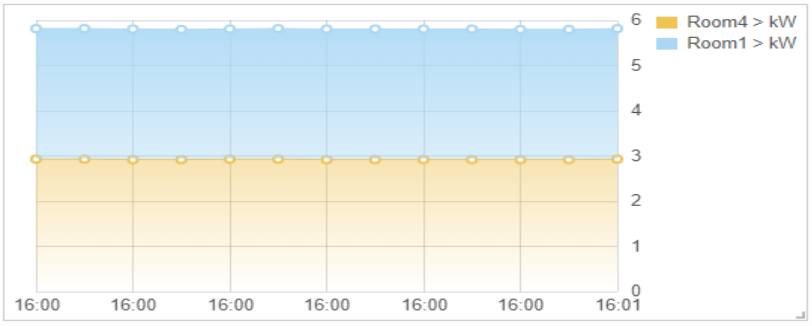
Legend parameter

- Location: For user to define the location of the legend for the I/O channels (or power loops) bound to the Widget. If user select "Disable", the Widget will not show legend.

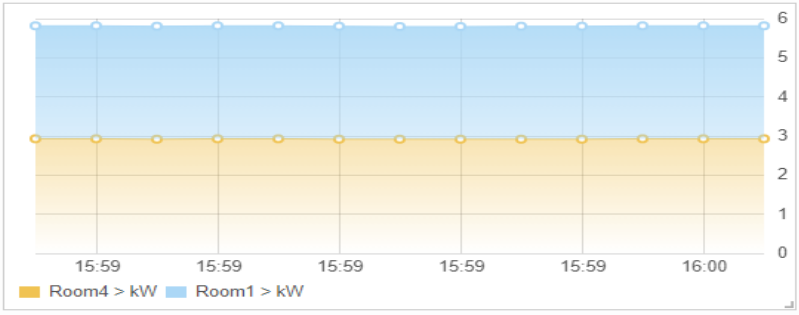
  Please Note: Regarding the setting of legend for the corresponding I/O channel (or power loops), user can open the WISE/PMC/PMD

Web page through the IoTstar's "Remote Access Service" to set up the name of the I/O channel of I/O modules (or the loop of power meters) which connect to WISE/PMC/PMD, and then download the new setting to WISE/PMC/PMD.

➢ Select "Right", the Widget is shown as below.



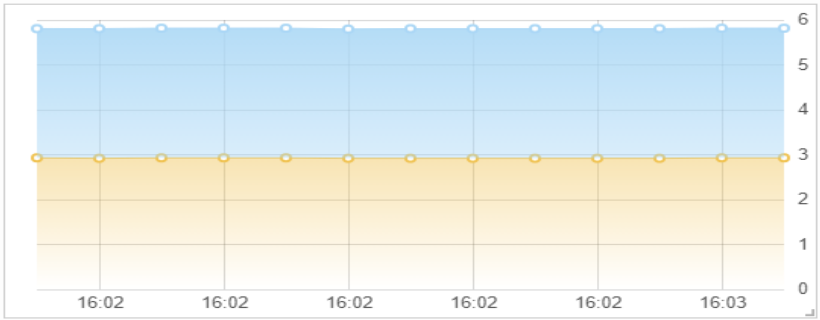
➢ Select "Bottom", the Widget is shown as below.



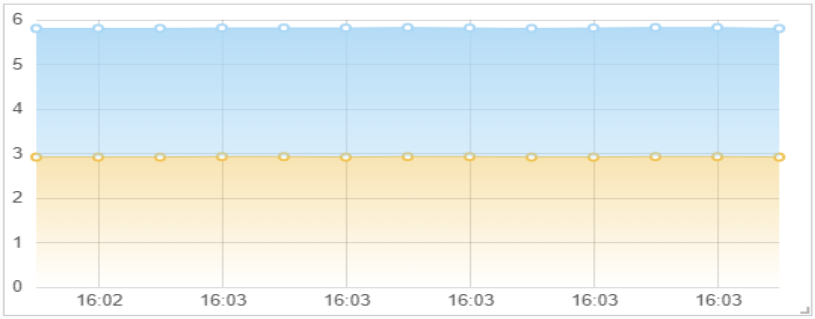
Y-Axis parameter

- Location: For user to define the location of the Y axis of the Widget.

➢ Select "Right", the Widget is shown as below.



➢ Select "Left", the Widget is shown as below.



- Maximum: For user to define the maximum value of the Widget's Y axis. If there is no value be entered in this field, the maximum value of the Widget's Y-axis will be dynamically adjusted by the system.

- Minimum: For user to define the minimum value of the Widget's Y axis. If there is no value be entered in this field, the minimum value of the Widget's Y-axis will be dynamically adjusted by the system.

4.2 Bar Chart

Bar Chart can display the real-time I/O channel data (or power data) received by the Widget through the binding I/O channels (or power loops) according to the setting of "Data Retention" of the Dashboard. It provides an easy way for user to view the I/O channel data (or power data), and further more compare, analyze and observe the trend. Following is the description of the parameter of Bar Chart.

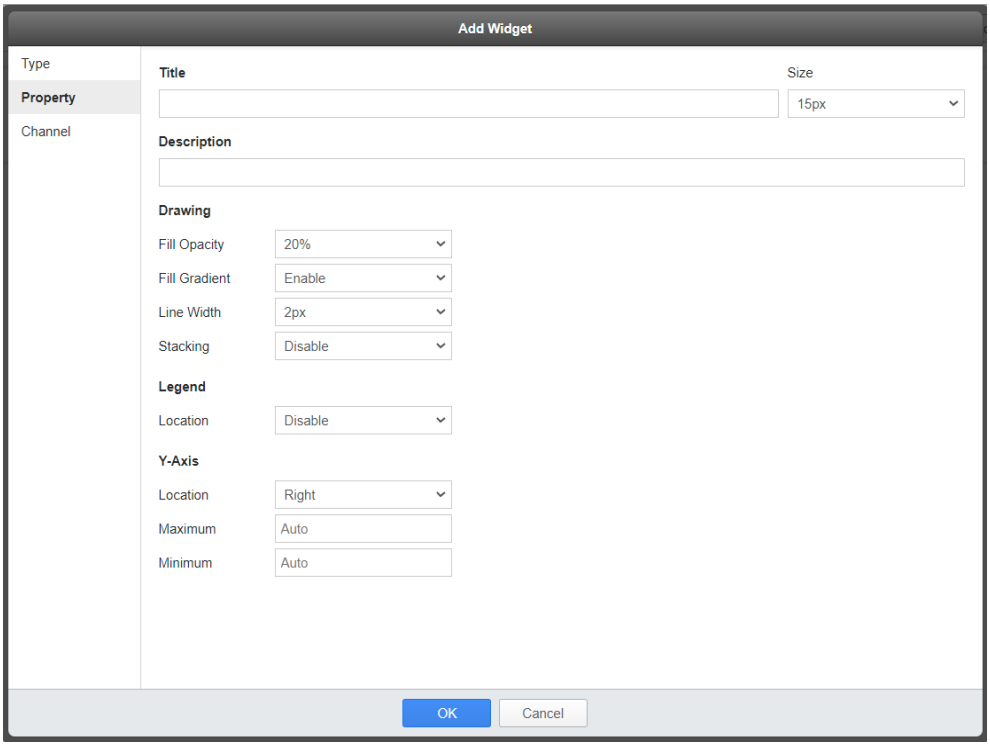


Figure 4-2: Parameter setting of Bar Chart

Basic parameter

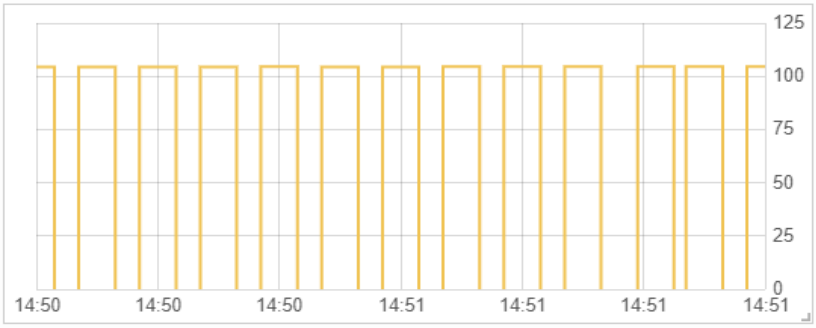
- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

Drawing parameter

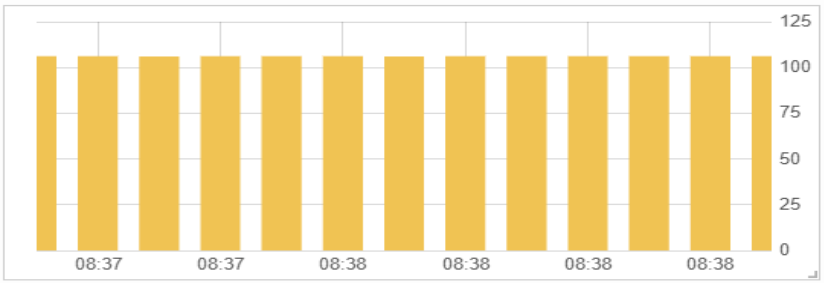
- Fill Opacity: For user to define the "Fill Opacity" for the Widget. There are 11 options: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%,

80%, 90% and 100%.

➢ When "Fill Opacity" is 0%, the Widget is shown as below.

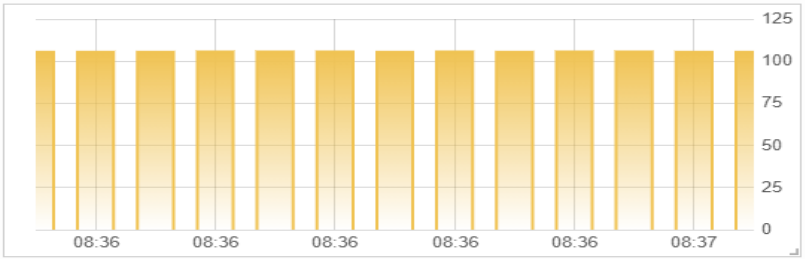


➢ When "Fill Opacity" is 100%, the Widget is shown as below.

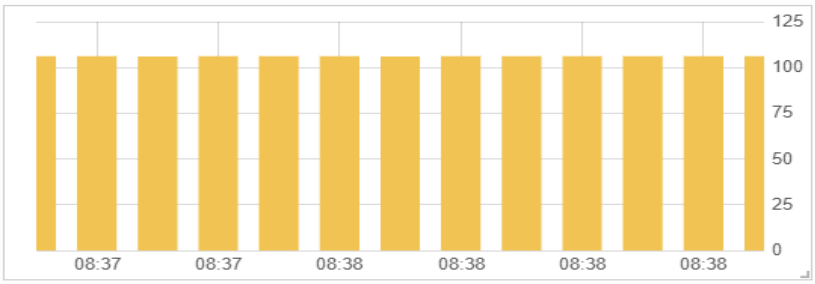


- Fill Gradient: For user to enable the "Fill Gradient" parameter of the Widget, or not.

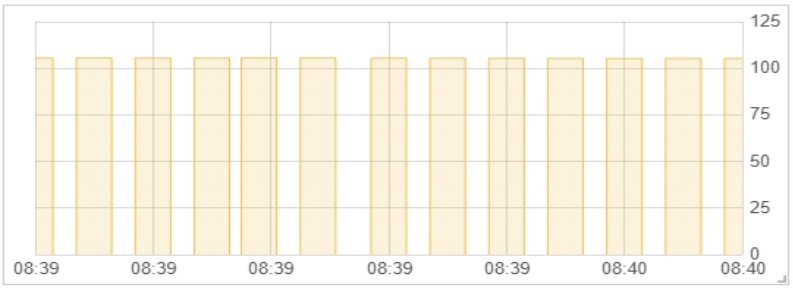
  ➢ When "Fill Opacity" is 100% and enable "Fill Gradient", the Widget is shown as below.



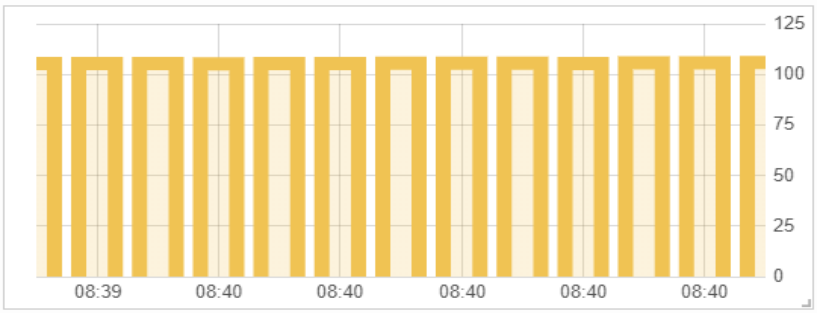
  ➢ When "Fill Opacity" is 100% and disable "Fill Gradient", the Widget is shown as below.



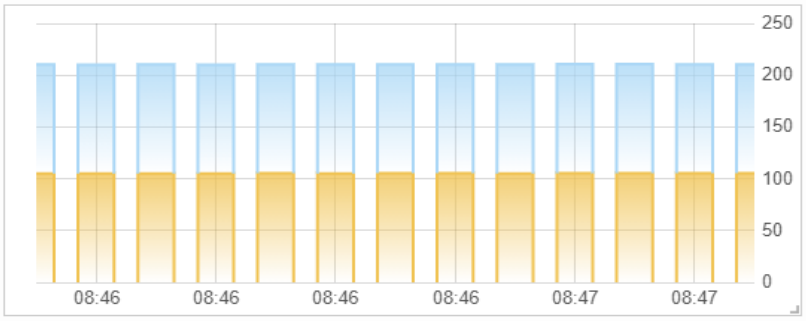
- Line Width: For user to define the line width of the Widget. There are 6 options: 0, 1, 2, 3, 5 and 10. The unit is Pixel(px).
  - ➢ When " Line Width " is 1px, the Widget is shown as below.



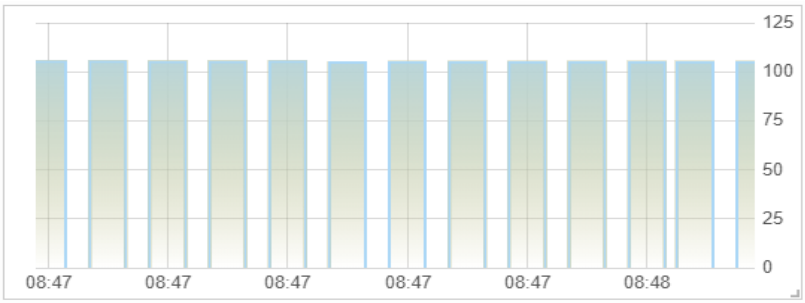
  - ➢ When " Line Width " is 10px, the Widget is shown as below.



- Stacking: When the Widget is bound with multiple I/O channels (or power loops) at the same time, user can set the parameter to display the corresponding data of these I/O channels (or power loops) in the Stacking mode, or not.
  - ➢ Select "Enable", the Widget is shown as below.



➢ Select "Disable", the Widget is shown as below.

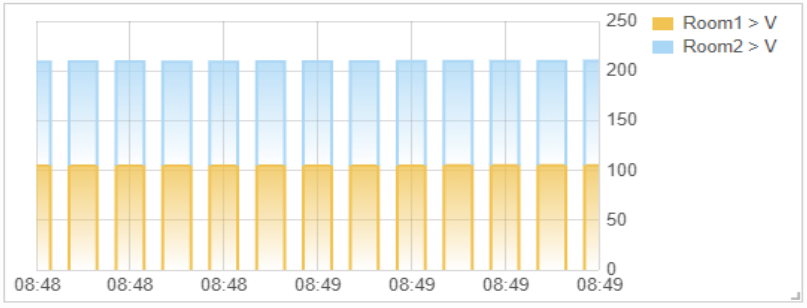


Legend parameter

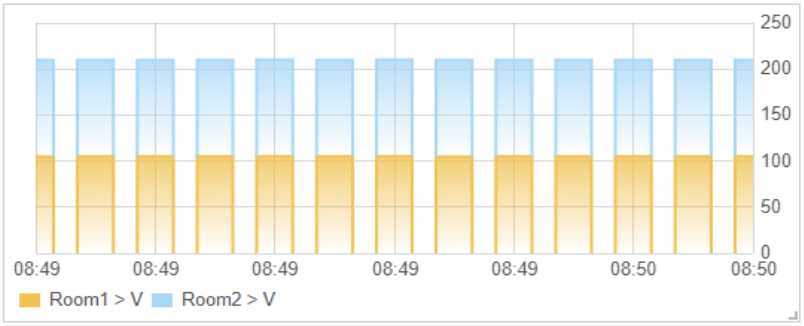
- Location: For user to define the location of the legend for the I/O channel (or power loop) bound to the Widget. If user select "Disable", the Widget will not show legend.

  Please Note: Regarding the setting of legend for the corresponding I/O channel (or power loop), user can open the WISE/PMC/PMD Web page through the IoTstar's "Remote Access Service" to set up the name of the I/O channel of I/O modules (or the loop of power meters) which connect to WISE/PMC/PMD, and then download the new setting to WISE/PMC/PMD.

➢ Select "Right", the Widget is shown as below.



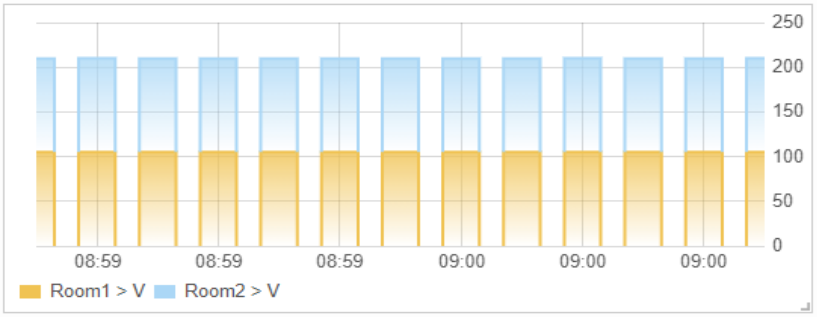
➢ Select "Bottom", the Widget is shown as below.



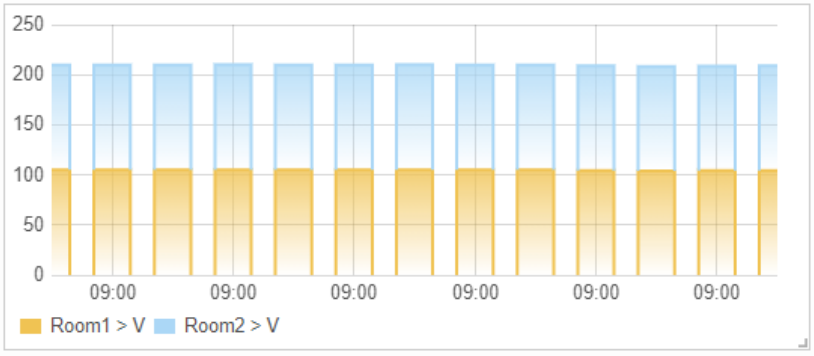
Y-Axis parameter

- Location: For user to define the location of the Y axis of the Widget.

  ➢ Select "Right", the Widget is shown as below.



  ➢ Select "Left", the Widget is shown as below.



- Maximum: For user to define the maximum value of the Widget's Y axis. If there is no value be entered in this field, the maximum value of the Widget's Y-axis will be dynamically adjusted by the system.

- Minimum: For user to define the minimum value of the Widget's Y

axis. If there is no value be entered in this field, the minimum value of the Widget's Y-axis will be dynamically adjusted by the system.

4.3 Pie Chart

Pie Chart can receive the real-time I/O channel data (or power data) through the binding I/O channels (or power loops), and calculate the percentage of the total amount of each I/O channel data (or power data) in the Pie format. It provides an easy way for user to view the relationship between each I/O channel data (or power data). Following is the description of the parameter of Pie Chart.

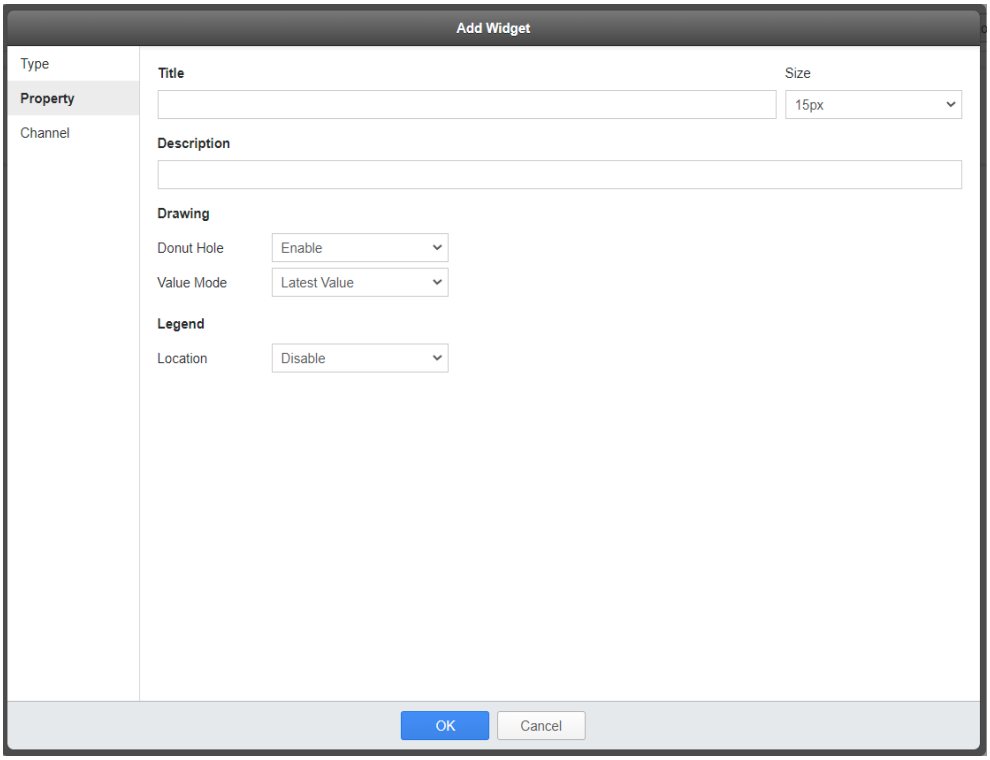


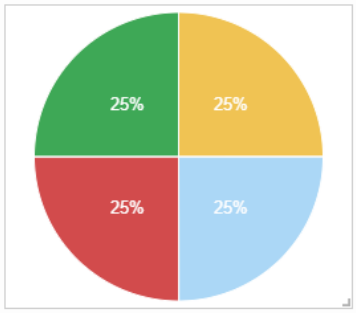
Figure 4-3: Parameter setting of Pie Chart

Basic parameter

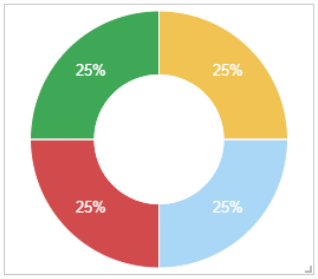
- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

Drawing parameter

- Donut Hole: For user to define whether the Widget is hollow, or not.
  - When disable the "Donut Hole" setting, the Widget is shown as below.



  - When enable the "Donut Hole" setting, the Widget is shown as below.



- Value Mode: For user to define the "Value Calculation" mode of the Widget.
  - When set to "Average Value", the Widget will be set according to the "Data Retention" setting of Dashboard, and dynamically calculate the average I/O channel data (or power data) of each binding I/O channel (or power loop), and then use these average value to calculate the percentage of the total amount of each I/O channel data (or power data).
  - When set to "Latest Value", the Widget will use the latest I/O channel data (or power data) of each binding I/O channel (or power loop) to calculate the percentage of the total amount of each I/O channel data (or power data).

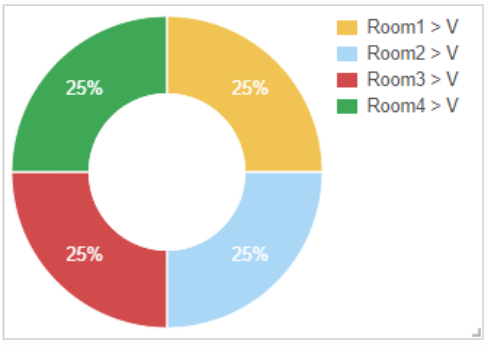
Legend parameter

- Location: For user to define the location of the legend for the I/O

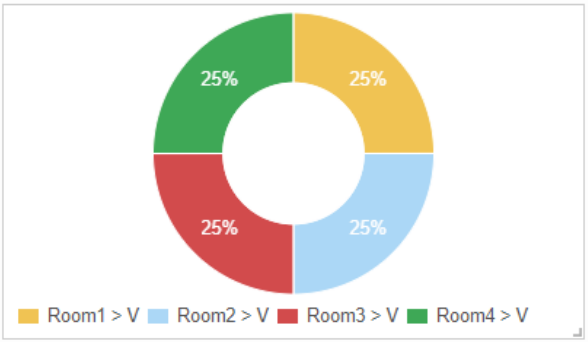
channel (or power loop) bound to the Widget. If user select "Disable", the Widget will not show legend.

Please Note: Regarding the setting of legend for the corresponding I/O channel (or power loop), user can open the WISE/PMC/PMD Web page through the IoTstar's "Remote Access Service" to set up the name of the I/O channel of I/O modules (or the loop of power meters) which connect to WISE/PMC/PMD, and then download the new setting to WISE/PMC/PMD.

➢ Select "Right", the Widget is shown as below.



➢ Select "Bottom", the Widget is shown as below.



4.4 Gauge

Gauge can display the real-time I/O channel data (or power data) through the binding I/O channels (or power loop). It also provides the setting of Threshold. Following is the description of the parameter of Gauge.

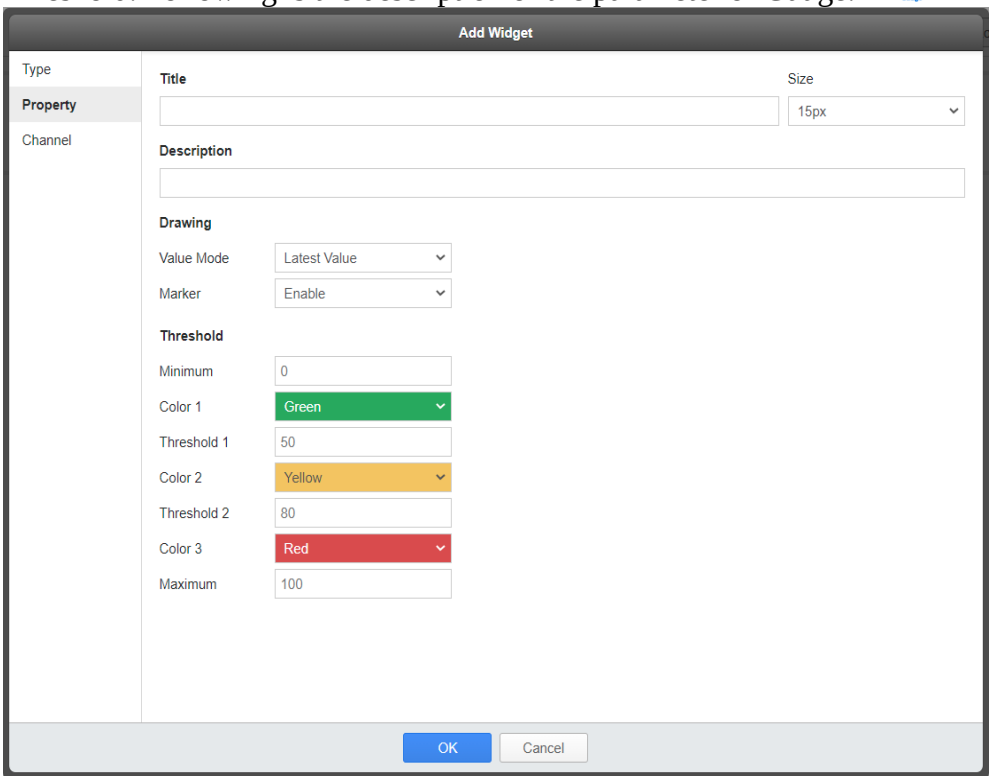


Figure 4-4: Parameter setting of Gauge

Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

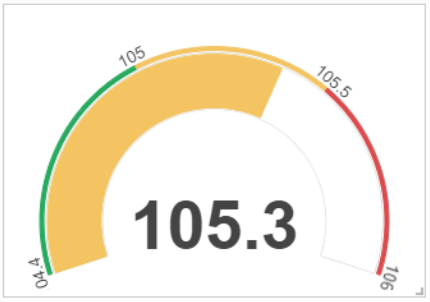
Drawing parameter

- Value Mode: For user to define the "Value Calculation" mode of the Widget.
  - ➢ When set to "Average Value", the Widget will be set according to the "Data Retention" setting of Dashboard, and dynamically calculate the average I/O channel data (or power data) of each binding I/O channel (or power loop), and then use these average value to calculate the percentage of the total amount of each I/O

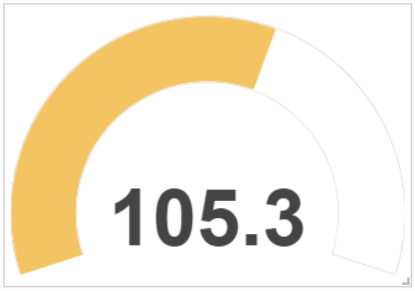
channel data (or power data).

- When set to "Latest Value", the Widget will use the latest I/O channel data (or power data) of each binding I/O channel (or power loop) to calculate the percentage of the total amount of each I/O channel data (or power data).

- Marker: For user to define whether the "Marker" of the Widget be shown, or not.
  - If it is "Enable", the Widget will show the "Marker" based on the setting of the "Threshold" section. The Widget is shown as below.



  - If it is "Disable", The Widget is shown as below.



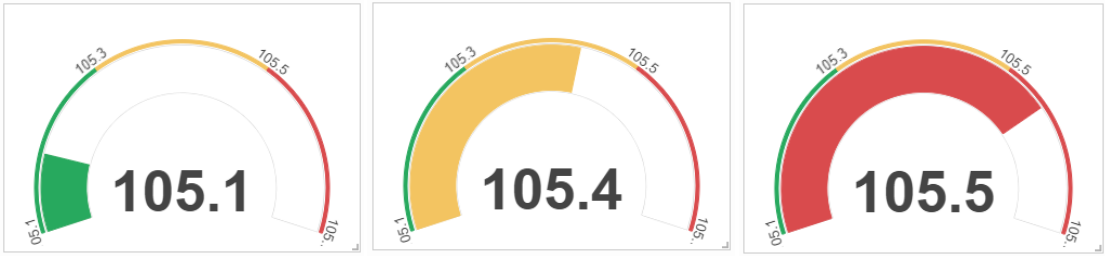
Threshold parameter

The Widget provides the Threshold function, user can set three threshold intervals and the corresponding colors for the function. When the I/O channel data (or power data) which the Widget receive belongs to a Threshold interval, the corresponding color of the Threshold interval will be used for drawing.

- Minimum: For user to set the minimum value of the Widget's Marker.
- Color 1: For user to define the corresponding color of the "Threshold interval 1" (Value between "Minimum ~ Threshold 1").

- Threshold 1: For user to define the value of "Threshold 1".
- Color 2: For user to define the corresponding color of the "Threshold interval 2" (Value between "Threshold 1 ~ Threshold 2").
- Threshold 2: For user to define the value of "Threshold 2".
- Color 3: For user to define the corresponding color of the "Threshold interval 3" (Value between "Threshold 3 ~ Maximum").
- Maximum: For user to set the maximum value of the Widget's Marker.

After enable "Marker", and complete the Threshold setting, the Widget is shown as below.



4.5 Plot Bar

Plot Bar can display the real-time I/O channel data (or power data) through the binding I/O channels (or power loop). Following is the description of the parameter of Plot Bar.

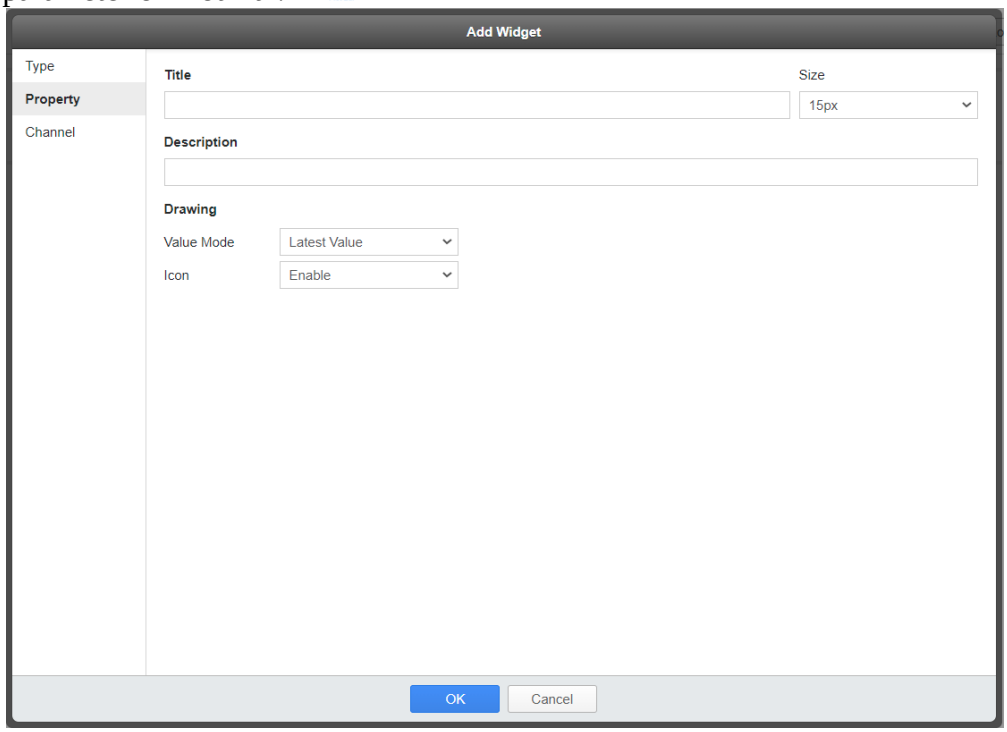


Figure 4-5: Parameter setting of Plot Bar

Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

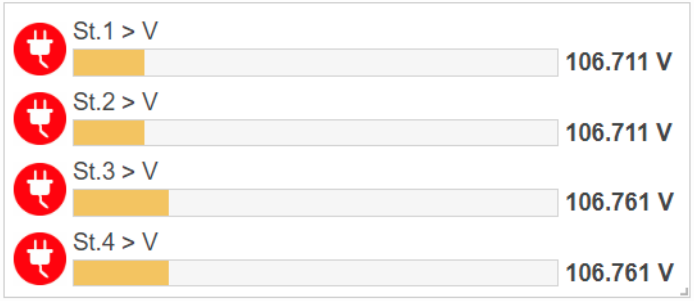
Drawing parameter

- Value Mode: For user to define the "Value Calculation" mode of the Widget.
  - ➢ When set to "Average Value", the Widget will be set according to the "Data Retention" setting of Dashboard, and dynamically calculate the average I/O channel data (or power data) of each binding I/O channel (or power loop), and then use these average value to calculate the percentage of the total amount of each I/O channel data (or power data).

➢ When set to "Latest Value", the Widget will use the latest I/O channel data (or power data) of each binding I/O channel (or power loop) to calculate the percentage of the total amount of each I/O channel data (or power data).

- Icon: For user to define whether to import the "Icon" file for the I/O channel (or power) bound to this component, or not.

  ➢ If it is "Enable", and user import the Icon file. The Widget is shown as below.



  ➢ If it is "Disable", the Widget is shown as below.

Please Note: This Widget provide the unit display function for the I/O channel data (or power data). About the unit of power data, it is provided by IoTstar. About the unit of I/O channel data, user can open the WISE Web page through the IoTstar's "Remote Access Service" to set up the unit of the I/O channel of I/O modules which connect to WISE, and then download the new setting to WISE.

4.6 Value

Value Widget can display the real-time I/O channel data (or power data) through the binding I/O channels (or power loop). Following is the description of the parameter of Value Widget.

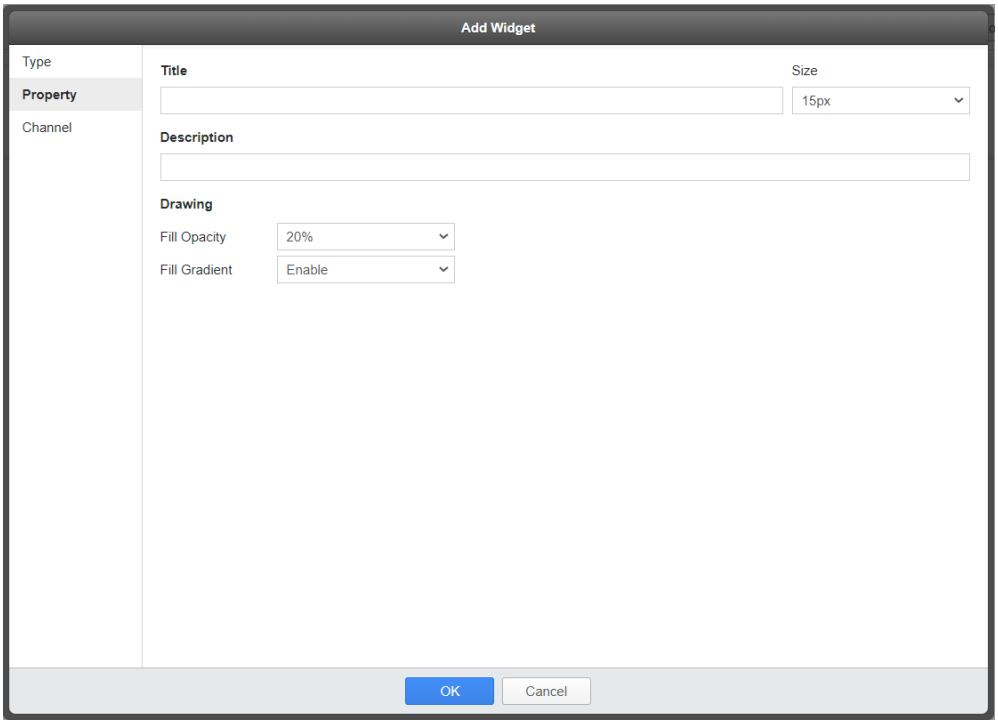


Figure 4-6: Parameter setting of Value Widget

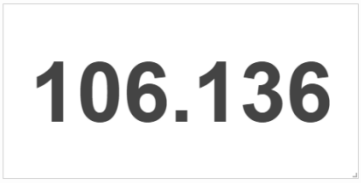
Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

Drawing parameter

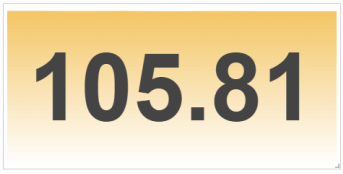
- Fill Opacity: For user to define the "Fill Opacity" for the Widget. There are 11 options: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90% and 100%.

  ➢ When "Fill Opacity" is 0%, the Widget is shown as below.

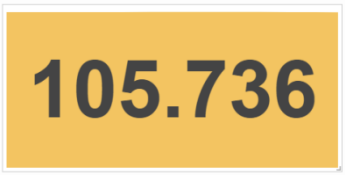
  

  ➢ When "Fill Opacity" is 0%, the Widget is shown as below.

- Fill Gradient: For user to enable the "Fill Gradient" parameter of the Widget, or not.
  - When "Fill Opacity" is 100% and enable "Fill Gradient", the Widget is shown as below.



  - When "Fill Opacity" is 100% and disable "Fill Gradient", the Widget is shown as below.



4.7 Value Table

Different from the Value Widget which can only display single I/O channel data (or power data), the Value Table can display multiple I/O channels (or power data) in the Table format. It is convenient for user to compare the multiple I/O channel data (or power data) at the same time. Following is the description of the parameter of Value Table.

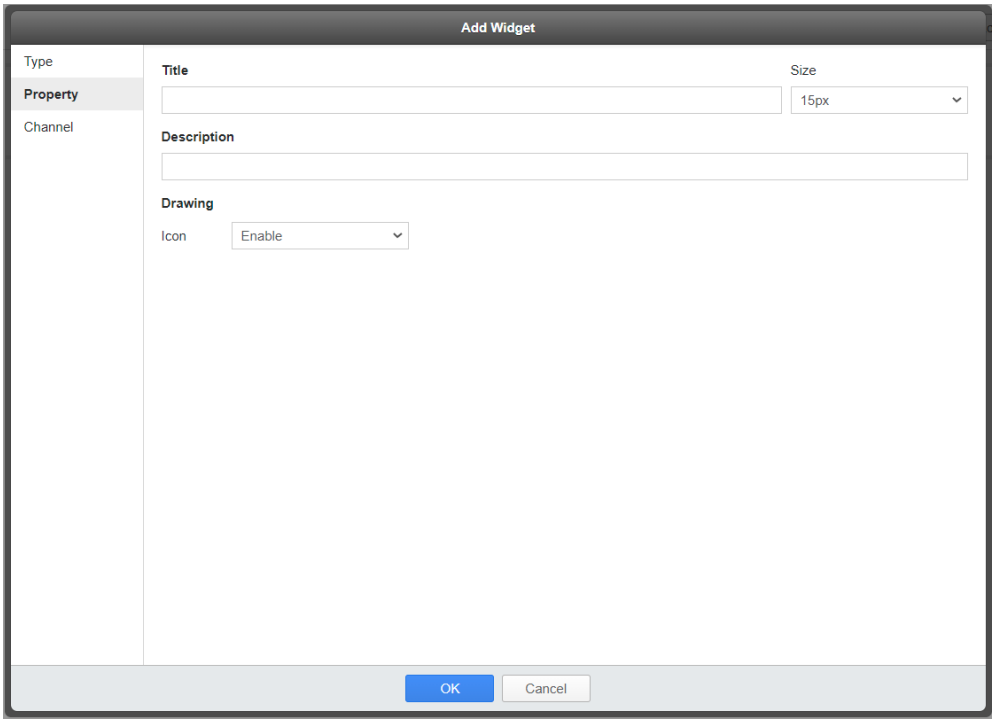


Figure 4-7: Parameter setting of Value Table

Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

Drawing parameter

- Icon: For user to define whether to import the "Icon" file for the I/O channel (or power) bound to this component, or not.
  - ➢ If it is "Enable", and user import the Icon file. The Widget is shown as below.

Channel	Value
St.1 > V	104.638 V
St.2 > V	104.638 V
St.3 > V	104.711 V
St.4 > V	104.711 V

  - ➢ If it is "Disable", the Widget is shown as below.

Channel	Value
St.1 > V	104.638 V
St.2 > V	104.638 V
St.3 > V	104.711 V
St.4 > V	104.711 V

Please Note: This Widget provide the unit display function for the I/O channel data (or power data). About the unit of power data, it is provided by IoTstar. About the unit of I/O channel data, user can open the WISE Web page through the IoTstar's "Remote Access Service" to set up the unit of the I/O channel of I/O modules which connect to WISE, and then download the new setting to WISE.

4.8 Value Output

The Value Output Widget can be used to set the output value of the DO/AO channel of I/O module (or power meter) connected to WISE/PMC/PMD, or the value of Internal Register of WISE/PMC/PMD. When user changes the output value of the DO/AO channel or the value of the Internal Register through the Widget, the command will be transmitted to WISE/PMC/PMD through IoTstar. After WISE/PMC/PMD receive the command, WISE/PMC/PMD will execute the corresponding actions to change the output value of the DO/AO channel of the I/O module (or power meter) or the value of the WISE/PMC/PMD Internal Register. Following is the description of the parameter of Value Output Widget.

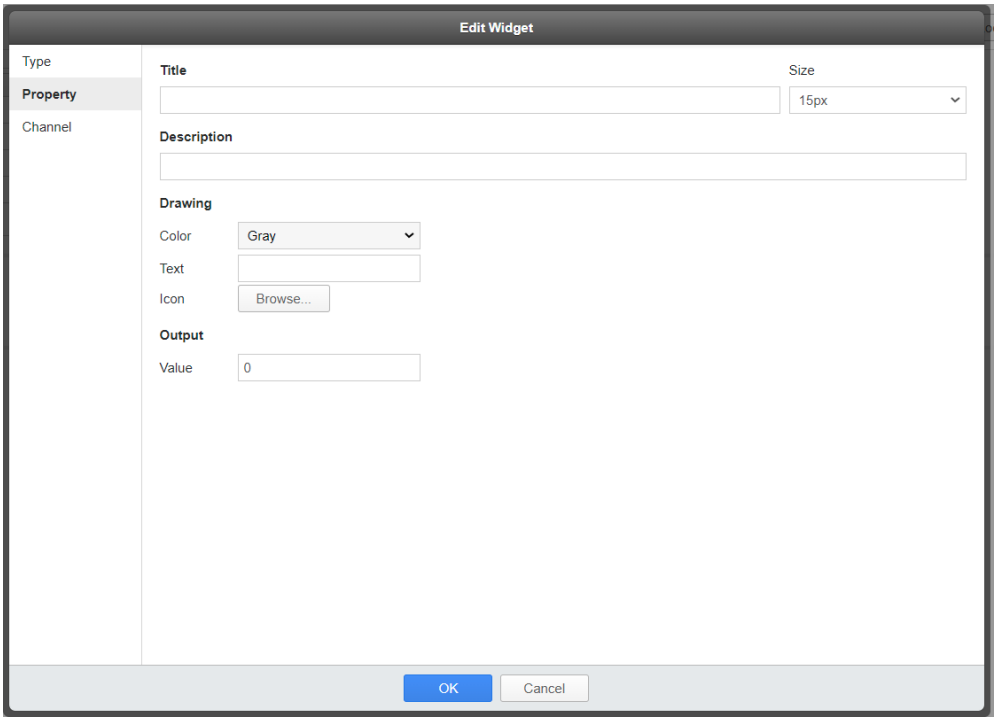


Figure 4-8: Parameter setting of Value Output Widget

Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

Drawing parameter

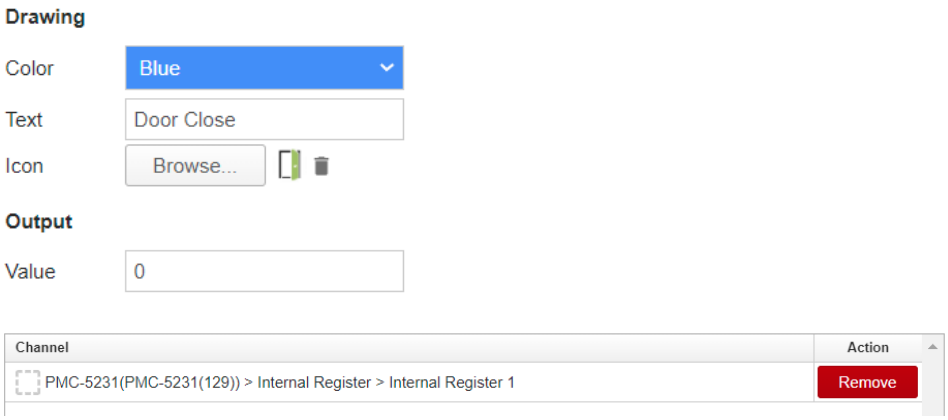
- Color: For user to set color of the Widget, it provides three colors (Gray, Blue, Red) for selection.
- Text: For user to set the text will be shown by the Widget.
- Icon: For user to set the icon will be shown by the Widget.

Output parameter

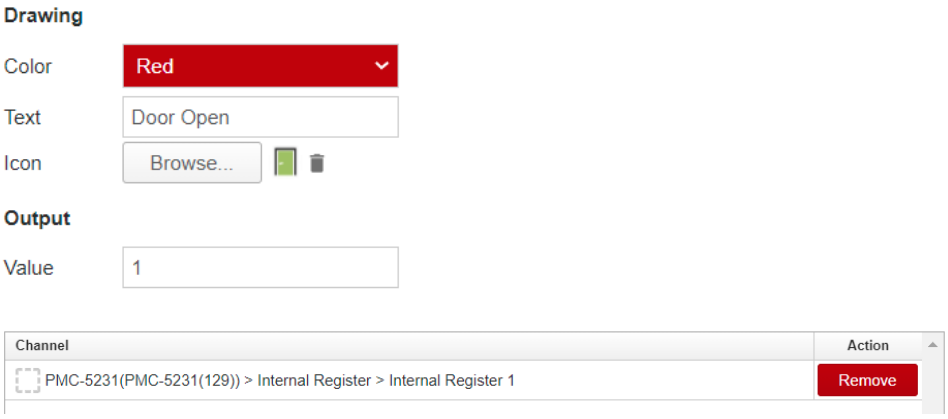
- Value: For user to set the output value of the Widget.

Following is an example to change the Internal Register value of PMC by 2 Value Output Widgets. One is naming as "Door Close", the other is naming as "Door Open".

- The setting of "Door Close" Widget.



- The setting of "Door Open " Widget.



- When user clicks on "Door Close" Widget, the Internal Register value of PMC will be change to 0.

- When user clicks on "Door Open" Widget, the Internal Register value of PMC will be change to 1.

4.9 Time Clock

The Time Clock is used to display the system time of the web Browser.

Following is the description of the parameter of Time Clock.

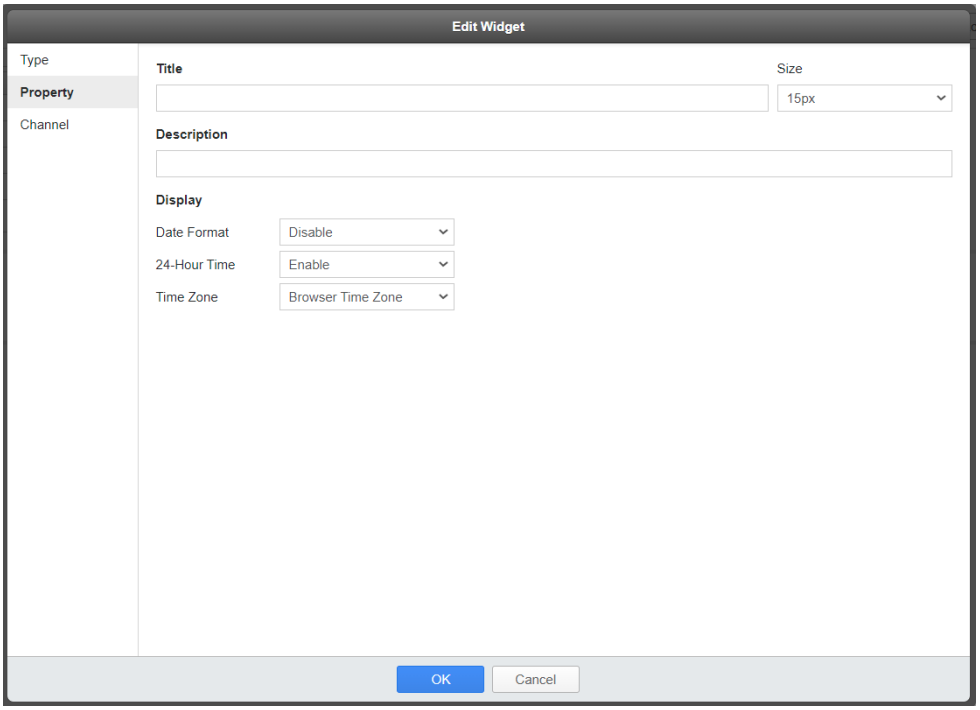


Figure 4-9: Parameter setting of Time Clock

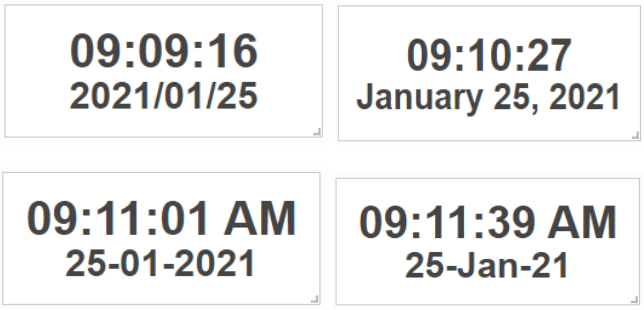
Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

Display parameter

- Date Format: For user to set the display format of the date. There are 9 options for selection. If user selects "Disable", the Widget will not show the date.
- 24-Hour Time: For user to define whether to use the "24-hour clock" format to show the time information, or not.
- Time Zone: For user to set the Time Zone.

Following is the example of Time Clock.



4.10 Countdown Timer

The Countdown Timer is used to display the countdown from the target time user set to the system time of the web Browser. Following is the description of the parameter of Countdown Timer.

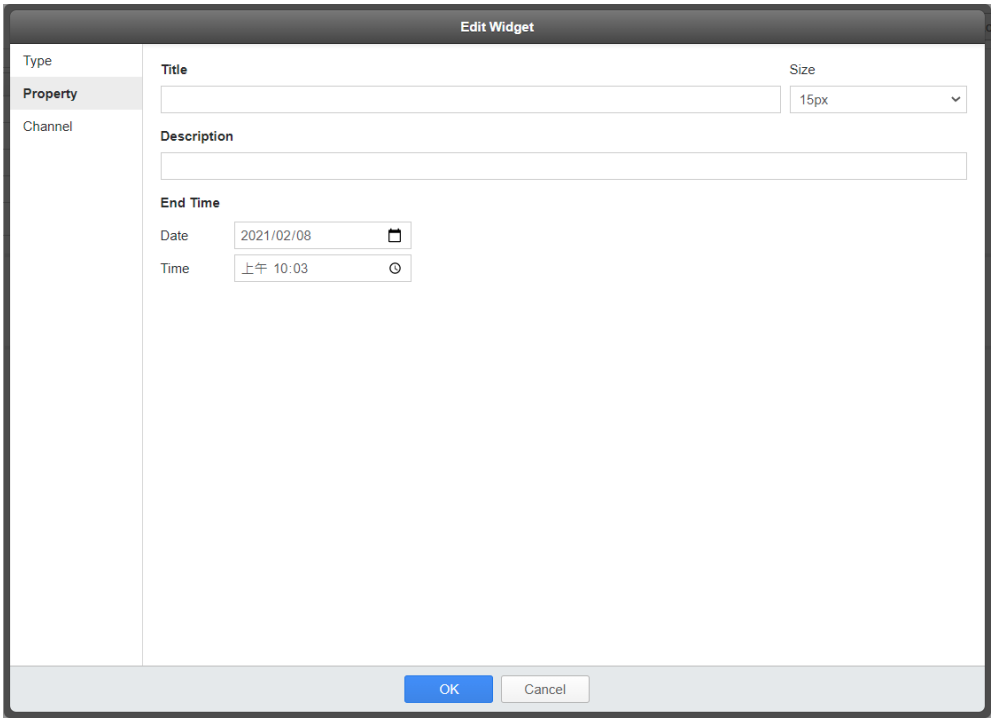


Figure 4-10: Parameter setting of Countdown Timer

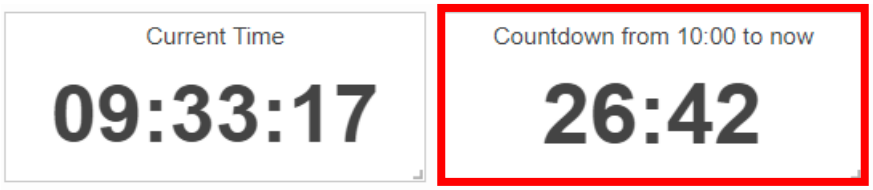
Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

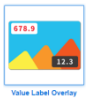
"End Time" parameter

- Date: For user to set the target date.
- Time: For user to set the target time.

Following is the example of Countdown Timer.



4.11 Value Label Overlay

The Value Label Overlay Widget allows user to import image file, and add the I/O channel data (or power data) at the top of the image. In addition, it also provides the Heatmap function. Following is the description of the parameter of Value Label Overlay Widget. 

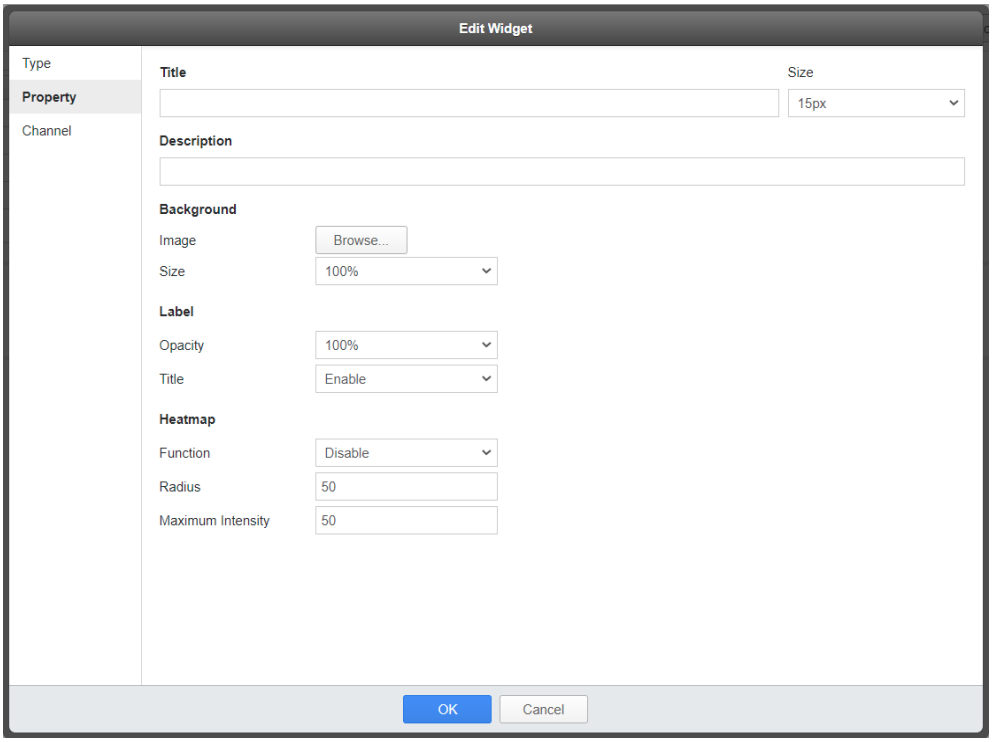


Figure 4-11: Parameter setting of Value Label Overlay Widget

Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

Background parameter

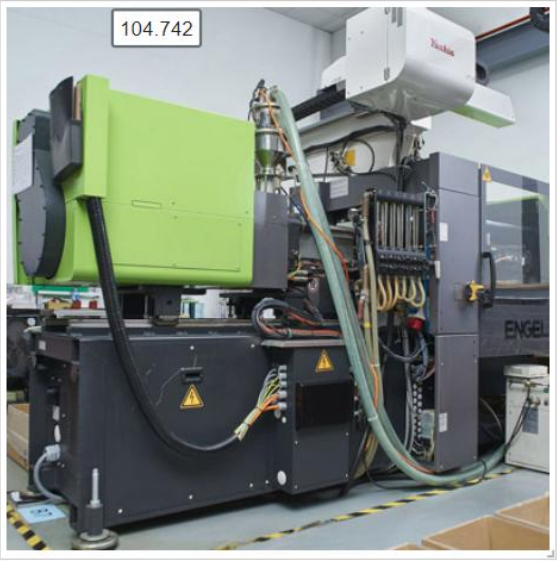
- Image: For user to set the image file that the Widget needs to import.
- Size: For user to set the display size of the image file in the "Preview" area.

Label parameter

- Opacity: For user to set the opacity of the data label on the image. There are 11 options: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90% and 100%.
- Title: For user to set whether to display the title of data label on the image, or not.

Following is the example of "Opacity is 50%" and "enable Title shown".

Following is the example of "Opacity is 100%" and "disable Title shown".



Heatmap parameter

- Function: For user to set whether to enable the Heatmap function, or not.
- Radius: For user to set the influence radius of the Heatmap function.
- Maximum Intensity: For user to set the maximum intensity of the Heatmap function.

Following is an example of the Heatmap function for the CO2 concentration of the office.

4.12 Video Event List

The Video Event List allows user to browse and review the video record files uploaded to IoTstar from the WISE controller (with ICP DAS iCAM IP Camera). Following is the description of the parameter of Video Event List.

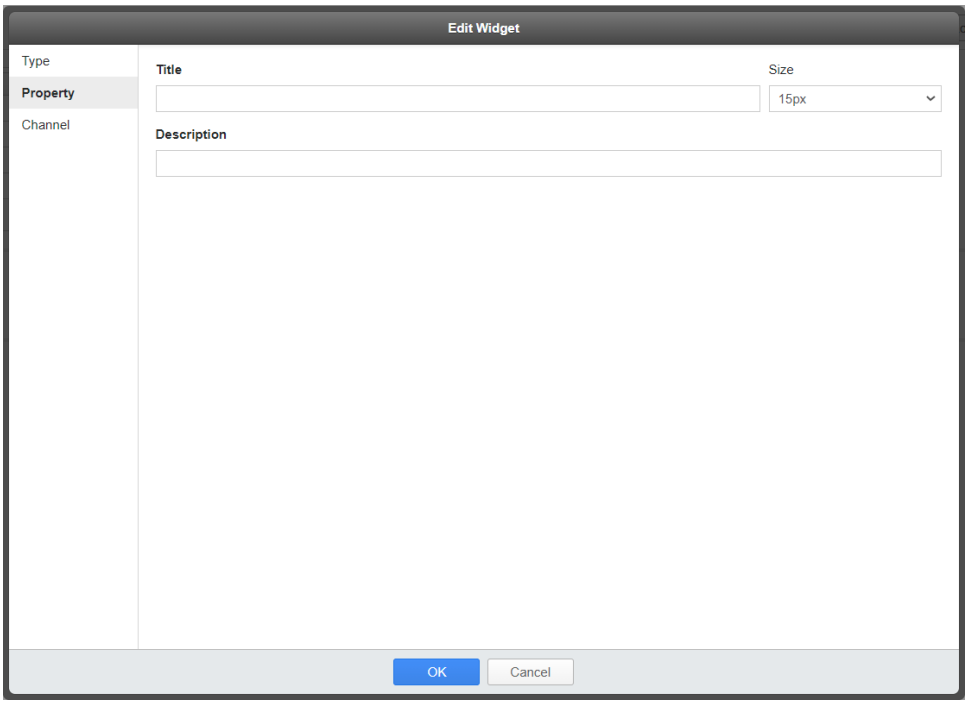
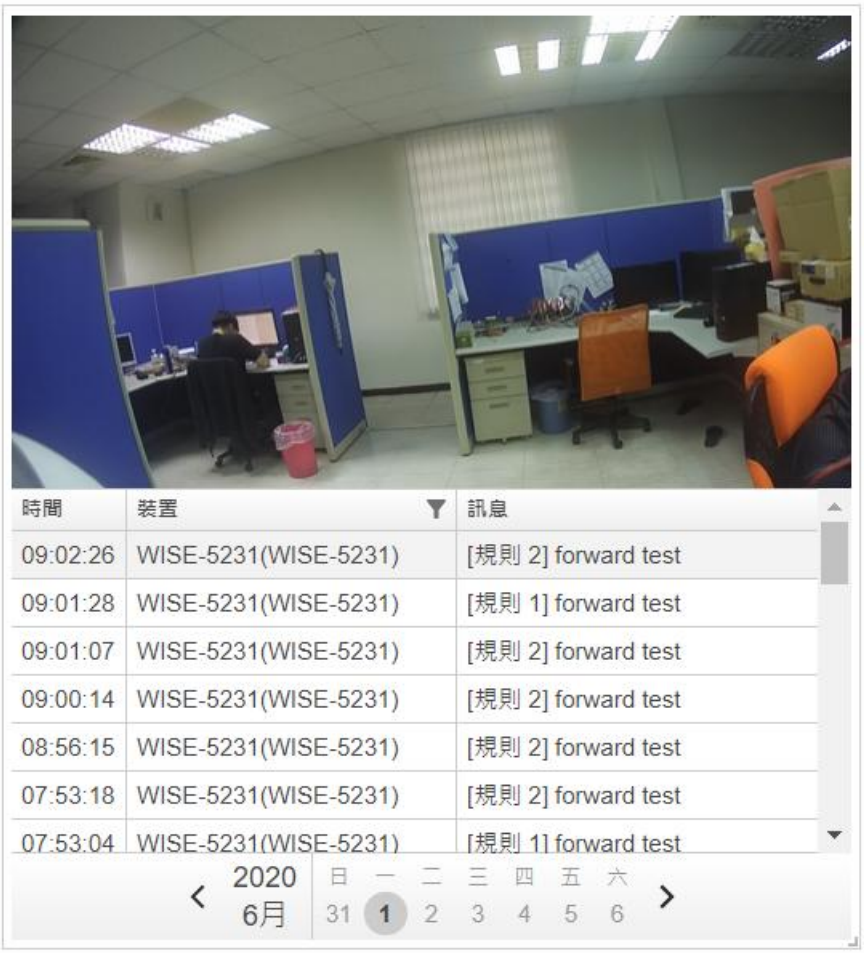


Figure 4-12: Parameter setting of Video Event List

Basic parameter

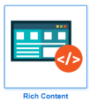
- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

Following is an example of Video Event List. This widget will list each video record files uploaded by WISE to IoTstar according to the date and time. User can directly click on the video file in the list, then the system will play the video record file.



時間	裝置	訊息
09:02:26	WISE-5231(WISE-5231)	[規則 2] forward test
09:01:28	WISE-5231(WISE-5231)	[規則 1] forward test
09:01:07	WISE-5231(WISE-5231)	[規則 2] forward test
09:00:14	WISE-5231(WISE-5231)	[規則 2] forward test
08:56:15	WISE-5231(WISE-5231)	[規則 2] forward test
07:53:18	WISE-5231(WISE-5231)	[規則 2] forward test
07:53:04	WISE-5231(WISE-5231)	[規則 1] forward test

4.13 Rich Content

The Rich Content Widget provides the WYSIWYG (What You See Is What You Get) editor for user. It allows user to edit the content that the Widget needs to display by himself (For example: import HTML code, import text, import Webpage, import image file, import video file, etc.). Following is the description of the parameter of Rich Content Widget. 

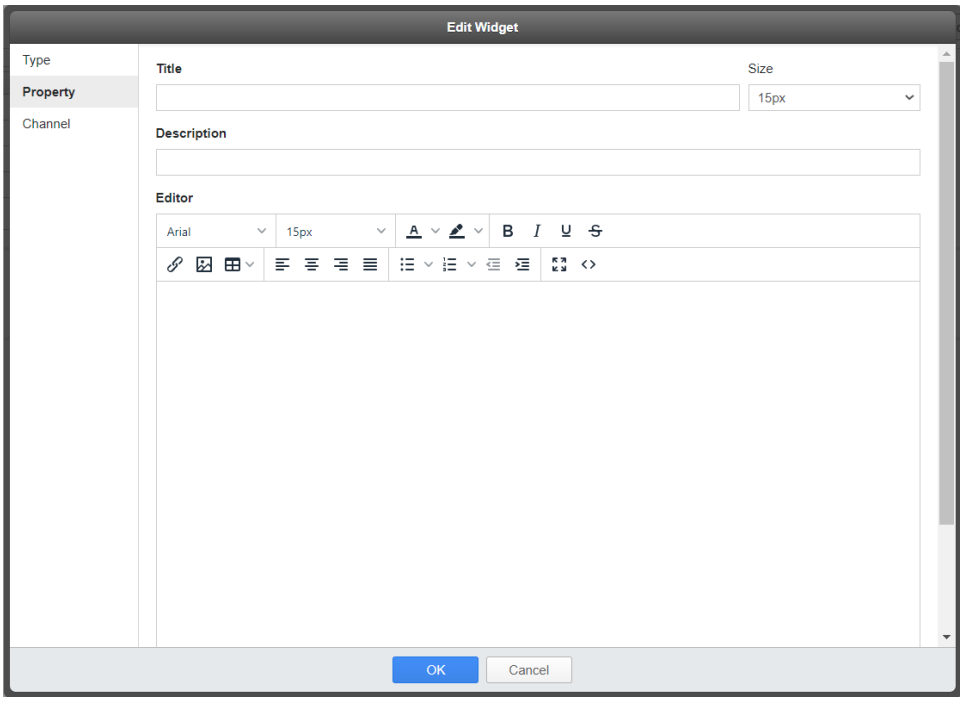


Figure 4-13: Parameter setting of Rich Content Widget

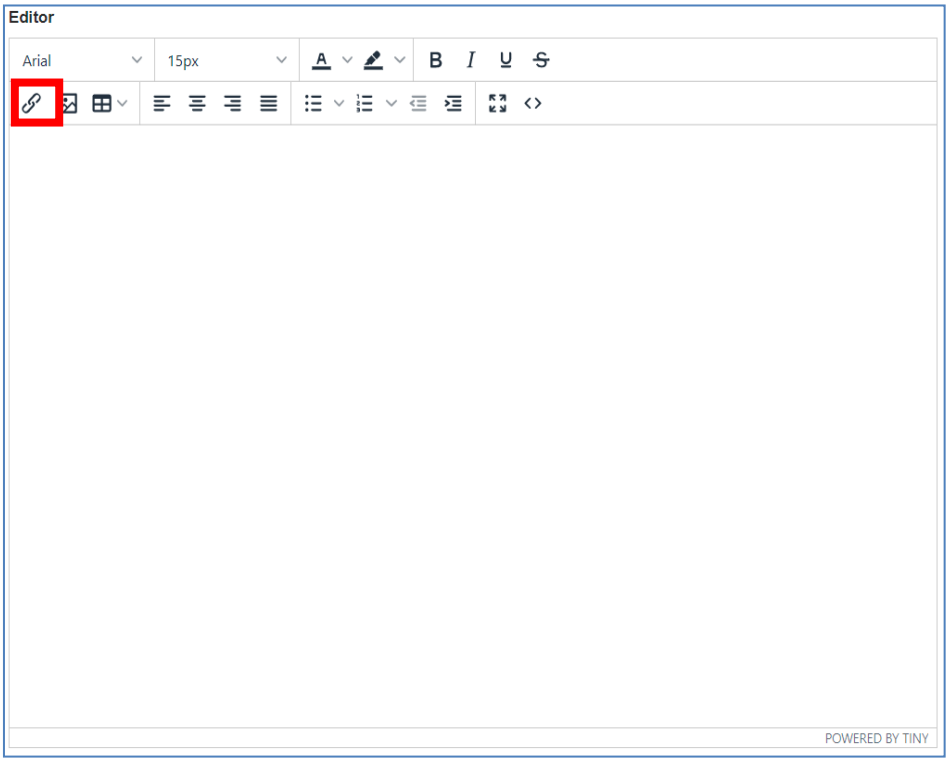
Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

Editor

- Provide the WYSIWYG (What You See Is What You Get) editor for user to edit the content of the Widget. In addition, through the "hyperlink" function which WYSIWYG editor provide, user can click it to switch the Dashboard pages.

  Please Note: The editor is powered by Tiny.



Following is an example for the Rich Content Widget, user can edit the content of the Widget by import HTML code, text, Webpage, image file and video file, etc.

4.14 Map

User can display the map information to the Dashboard through the Map Widget. Following is the description of the parameter of Map Widget.

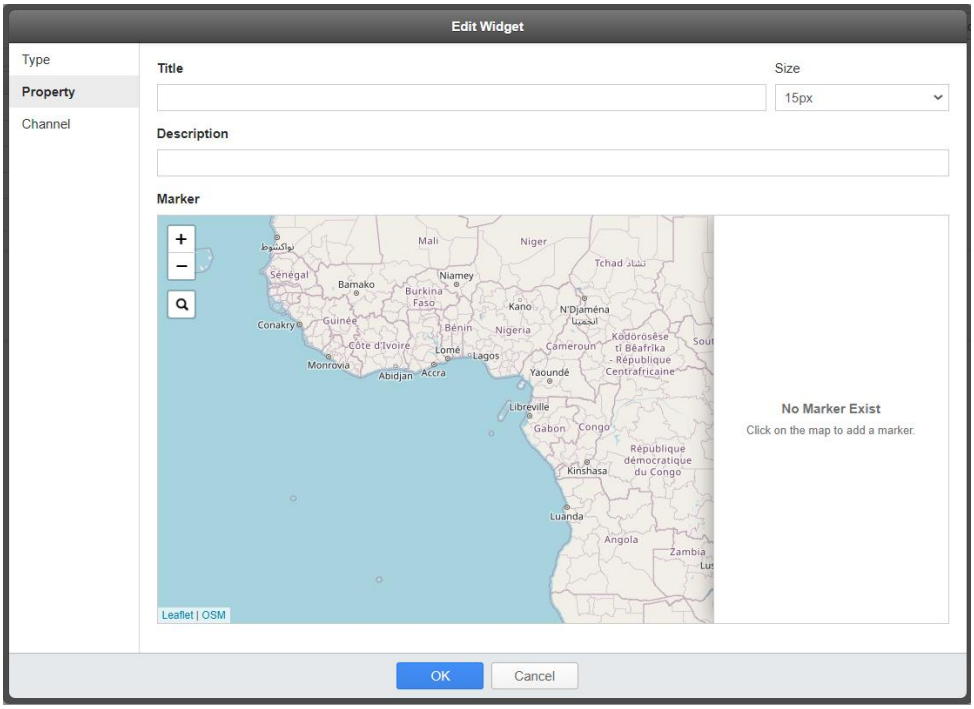


Figure 4-14: Parameter setting of Map Widget

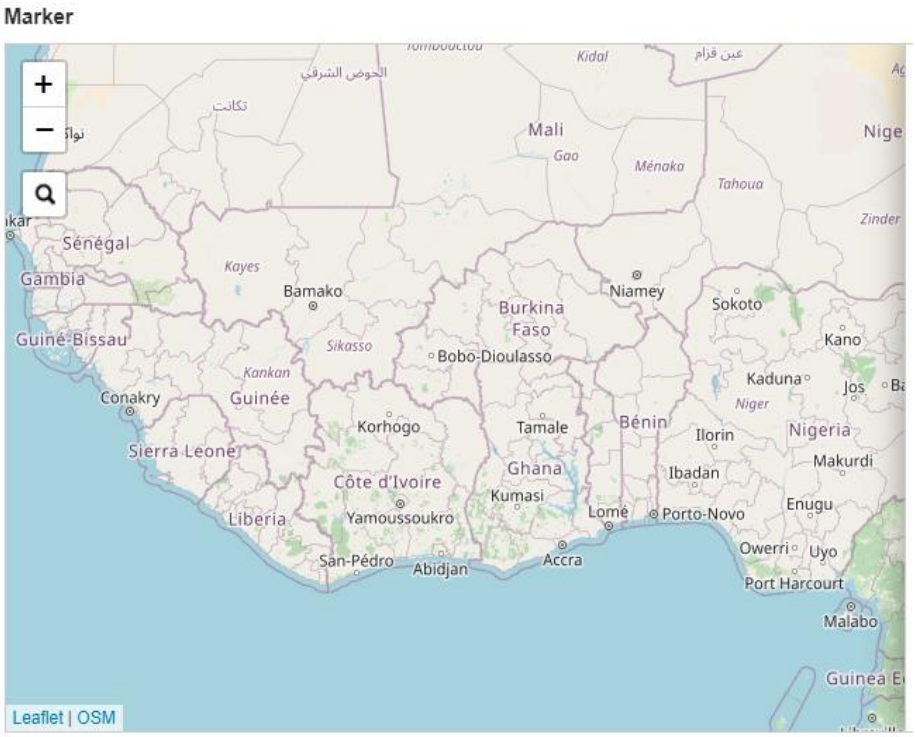
Basic parameter

- Title: For user to define the name of the Widget and its size.
- Description: This field provides a space for the user to make a brief description of this Widget.

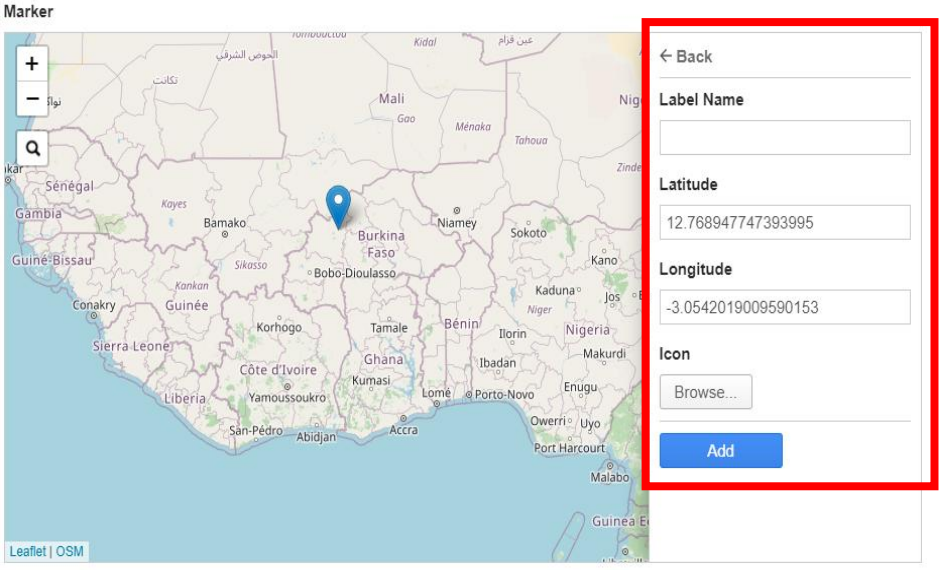
Marker parameter

About the setting of Marker, please refer to following steps.

i. User can move the mouse to the position of the map which need to be marked.



ii. After confirming the position which need to be marked, click the left button of the mouse on the position, then the Marker parameter window will be shown. Following is the description of the parameter of the Marker parameter window.

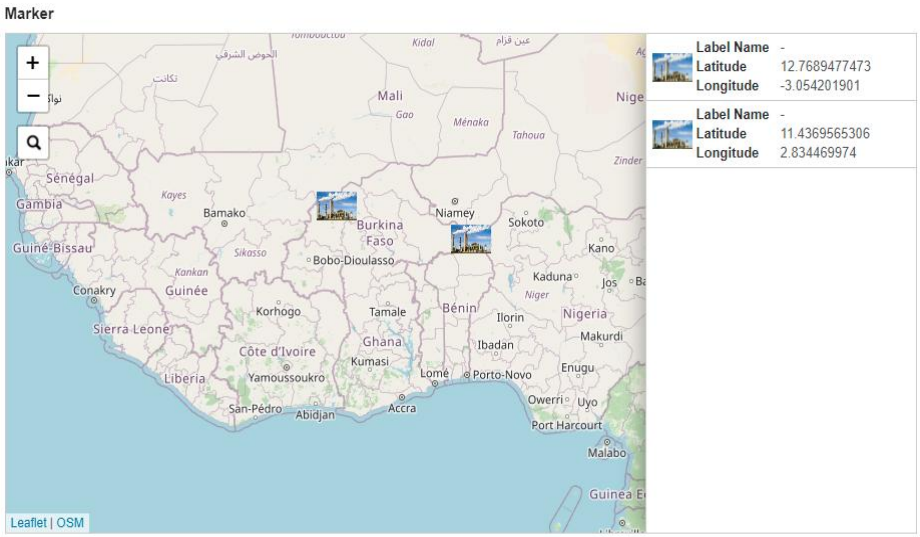


- Label Name: Set the name of the Marker.
- Latitude: The system will display the latitude of the Marker, and the user can adjust the value by changing the latitude of the Marker

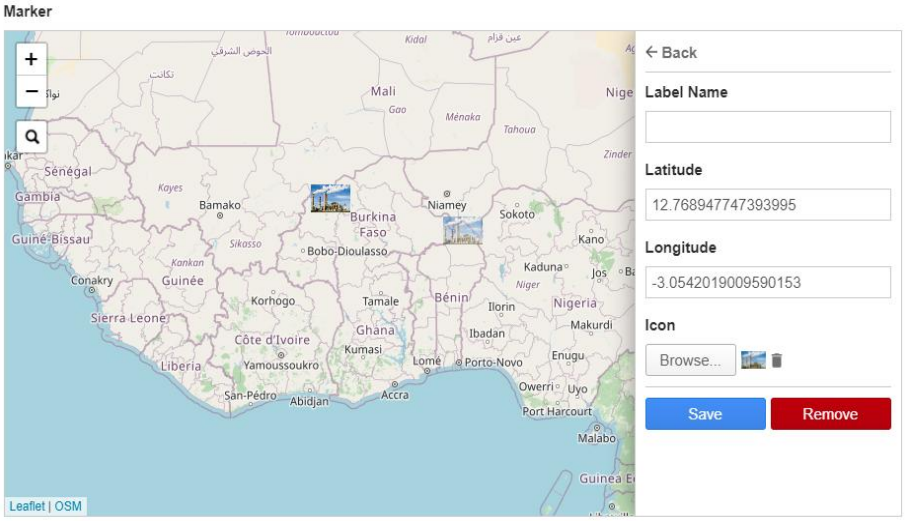
directly.

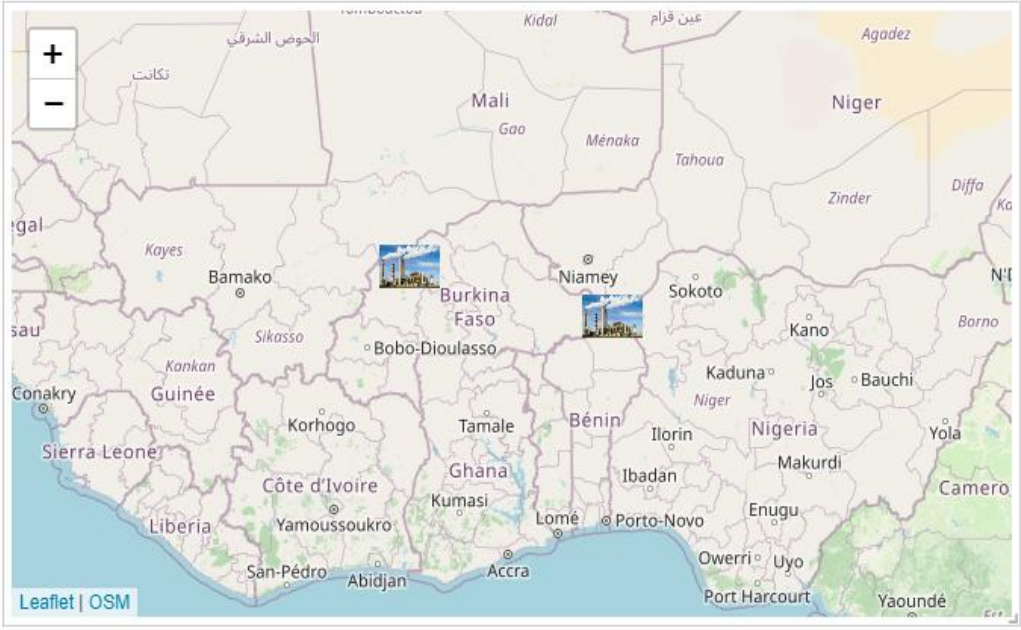
- Longitude: The system will display the longitude of the Marker, and the user can adjust the value by changing the longitude of the Marker directly.
- Icon: Import the Icon file as the Icon of the Marker.

iii. After complete the setting, please press "Add" button. The Marker will be shown in the map, and there is also the list of Marker for reference.



iv. If user wants to modify the settings of the Marker, he can directly click on the Marker on the map (or on the list), and the Marker parameter window will be shown for user to modify its setting.



v. After complete the setting of the Marker parameters, click the Save button to save the new settings. If need, user can click the ← Back button to ignore the new setting. To delete the Marker, please click the Remove button.

Following is an example for the Map Widget in the Dashboard.