



REDSCAN Pro (RLS-50100V/RLS-3060V)
Notification Configuration Guide

Revision history

Date	Version	Description
2022/11/9	-	Initial release
2022/11/30	-	Template update

Disclaimer:

- Functions and guidance described in this document are written on assumptions of a typical application scenario. Setting parameters must be adjusted in situ for the optimal performance. OPTEX and its associated company will not be held responsible for any performance of the intended system resulting from this reference.
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1. Introduction

A notification function has been added to control external devices based on the event (R.E.C) detected by REDSCAN Pro. With this feature, for example, when REDSCAN Pro detects an intruder, it can rotate the direction of the connected camera. This document describes this notification feature.

2. Supported firmware version

The notification function works with REDSCAN Pro firmware version 2.1.0 or later.

3. Operation modes

There are two main modes of operation depending on the device to be driven.

- 1) Virtual input setting for Axis device
- 2) Generic device

The former is a mode that controls an Axis camera, and you can set the linkage with the Axis camera with simple settings.

The latter is a mode that works with devices other than Axis. Since the URL is set directly, it



can be linked with devices that support WebAPI (however, only GET method is supported).

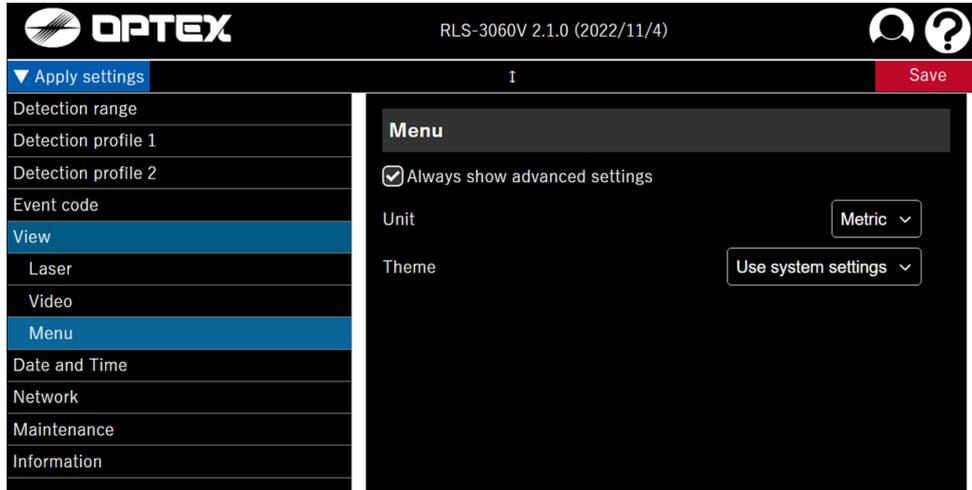


4. Setting

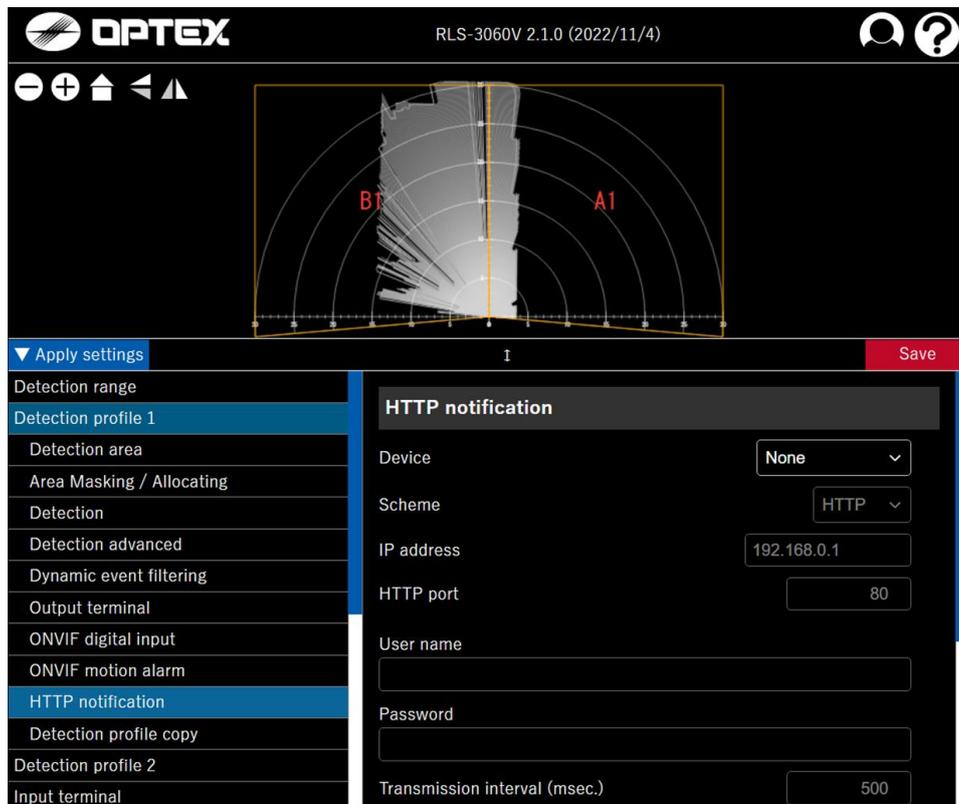
The notification function is set from the Web UI. At first, enable advanced menu.

Settings->View->Menu

Check "Always show advanced settings." And click "Save".



"HTTP notification" (ninth row in Detection profile X) is the menu.

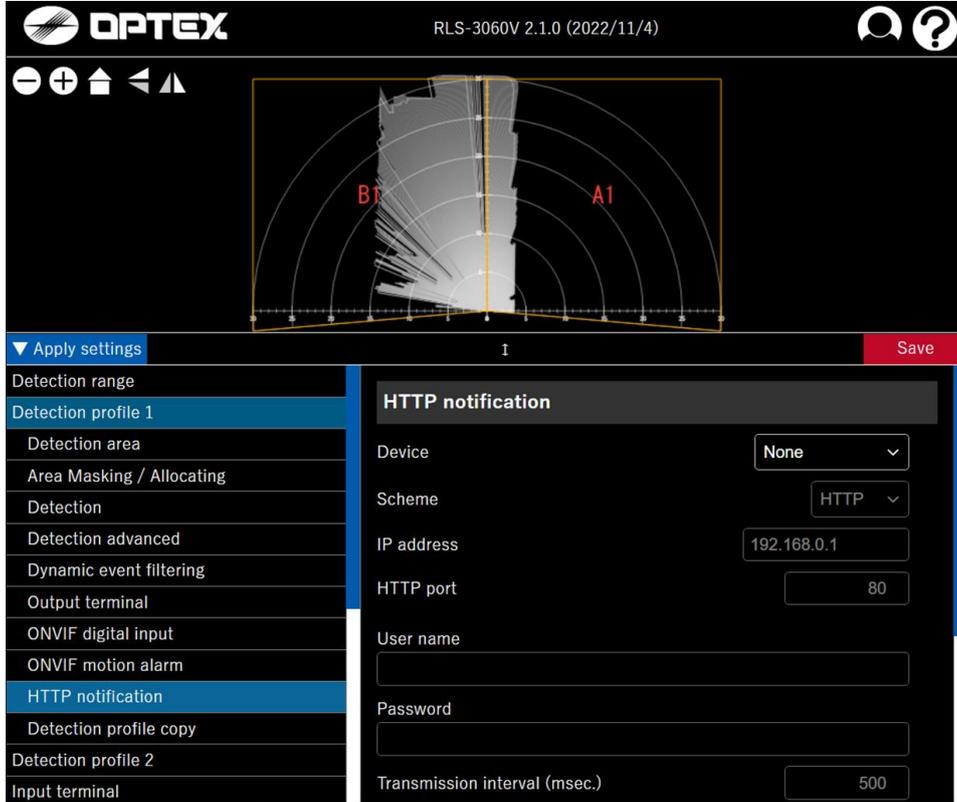


Hereafter, the function will be explained using the setting screen.



5. Selecting operation mode

By default, "None" mode is selected. This mode means that the notification feature is not being used. The setting screen is shown below.



The operation mode can be switched using the combo box at the top. The display when the combo box is dropped down is shown below.



6. Virtual input

To link REDSCAN Pro with Axis equipment, select "Axis device".

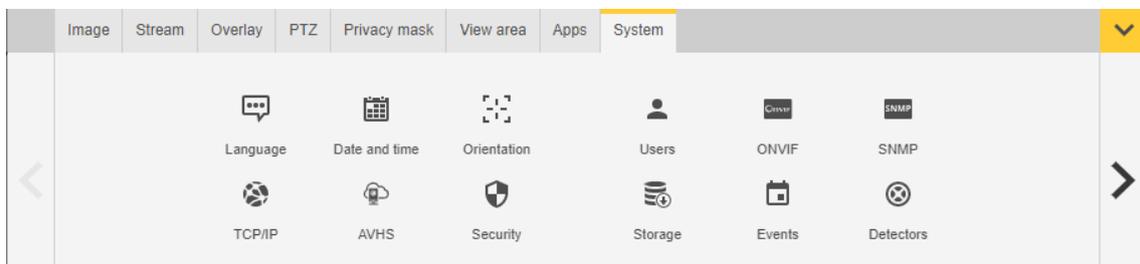
This mode does not work at the same time as the generic device mode described later.

Axis products have a function called "Virtual input" that operates by catching commands by WebAPI as input.

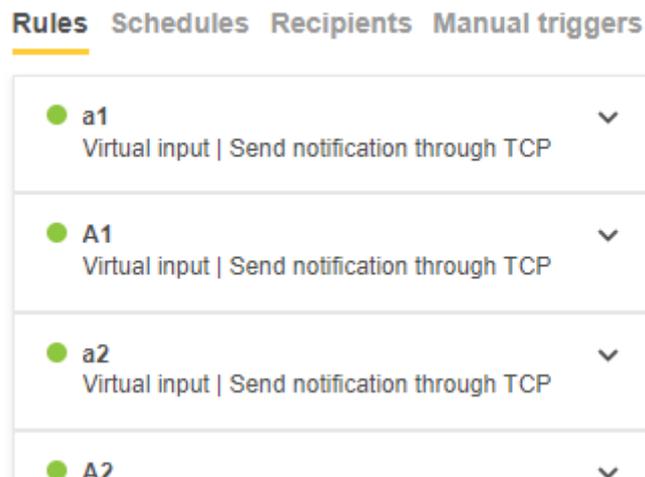
Virtual inputs have 32 input ports identified by IDs 1-32, each of which can be assigned its own behavior. For example, you can configure port 1 to start recording.

The setting method of Virtual input is explained using the setting screen of the network camera M3045-V as an example.

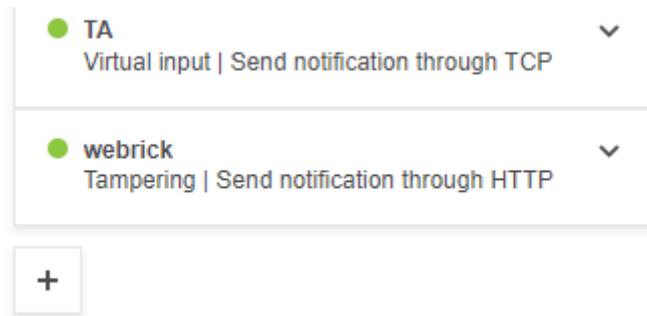
Open the settings screen of the M3045-V and select the System tab. The screen will change to the following.



Click the Events icon to open the Events setting screen. A list of configured Rules is displayed (see the figure below).



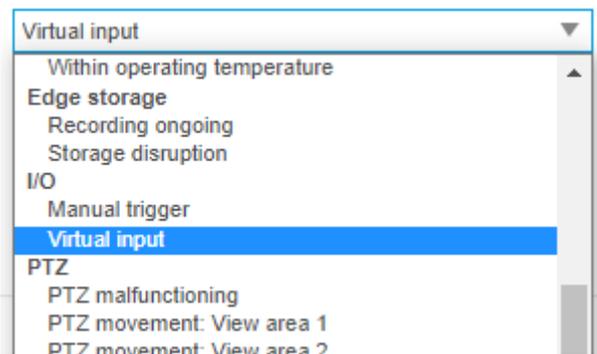
The operation when adding a new Virtual input event is described. scroll the list and send it to the bottom, the + button will appear.



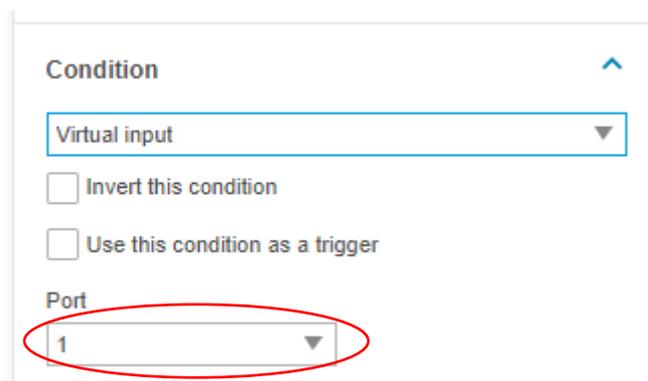
Click the "+" button to display the rule addition screen. Set the name. Here, "Virtual input #1" was entered.



Next, select "Virtual input" from the Conditions.



Additional setting items for Virtual input will be displayed, so set them.



Condition ^

Virtual input ▼

Invert this condition

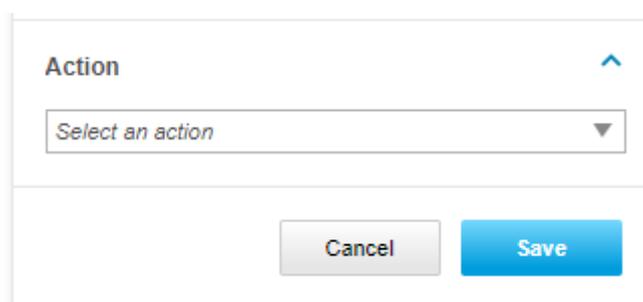
Use this condition as a trigger

Port

1 ▼

Here, "1" is selected for the Port.

Next, select the Action that defines the behavior when Virtual input is input.

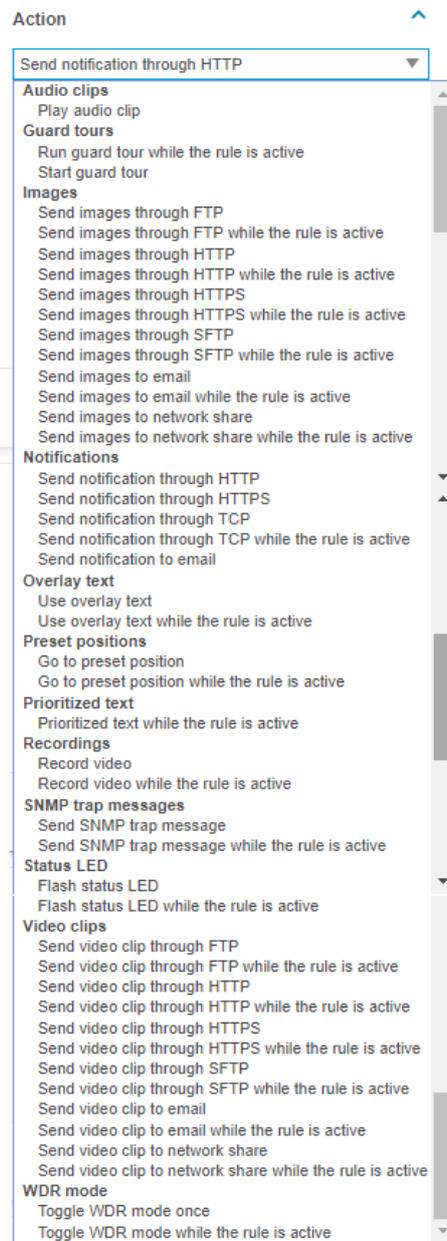


Action ^

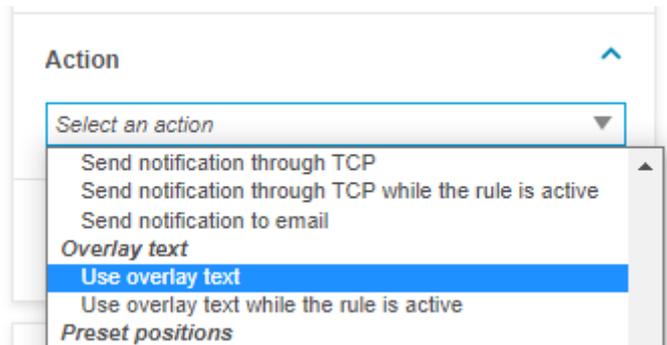
Select an action ▼

Cancel Save

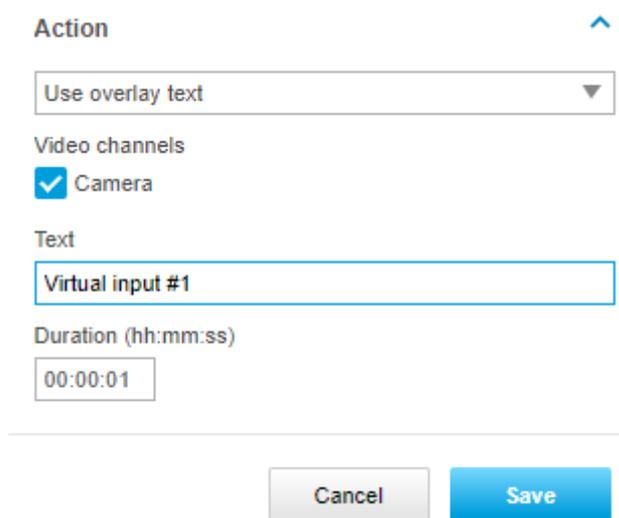
The actions that can be selected are as follows.



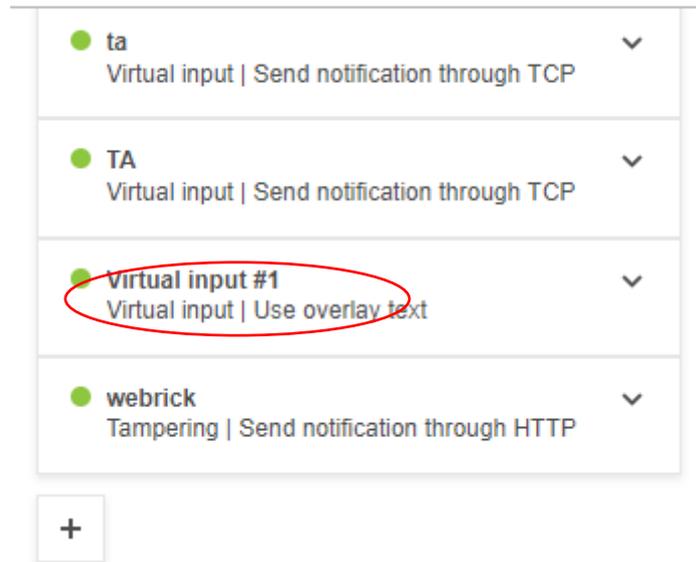
Here, "Overlay text" is selected as an example. From the Action choices, select "Use overlay text".



Check the desired channel from "Video channels" ("Camera" here), set the character string you want to display on the screen to "Text" ("Virtual input # 1" here), and click the "Save" button to save.



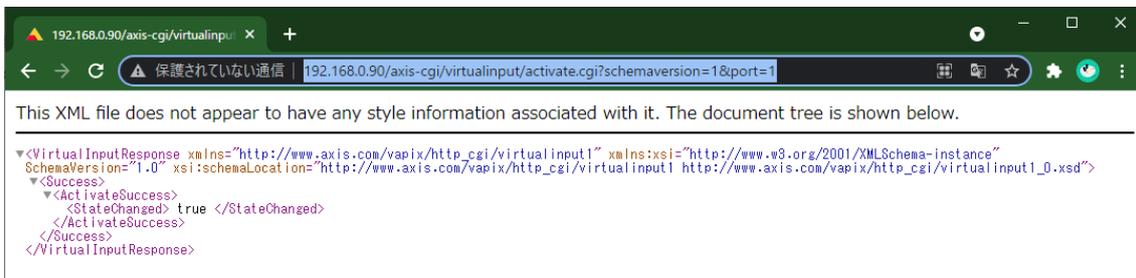
The screen returns to the "Event list". "Virtual input # 1" has been added to the list, and you can see that the settings have been reflected.



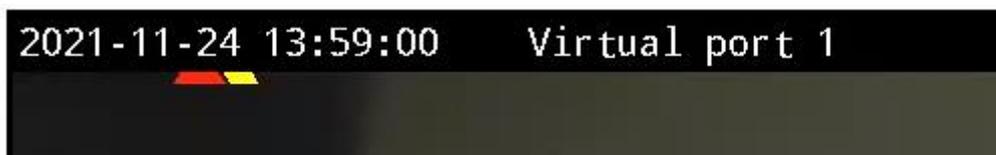
Let's test the operation. The test is performed by issuing a "VAPIX command" from the browser. If the IP address of the camera is "192.168.0.90", use a browser to access the following URL and execute the test.

<http://192.168.0.90/axis-cgi/virtualinput/activate.cgi?schemaversion=1&port=1>

If successful, the following results is returns:

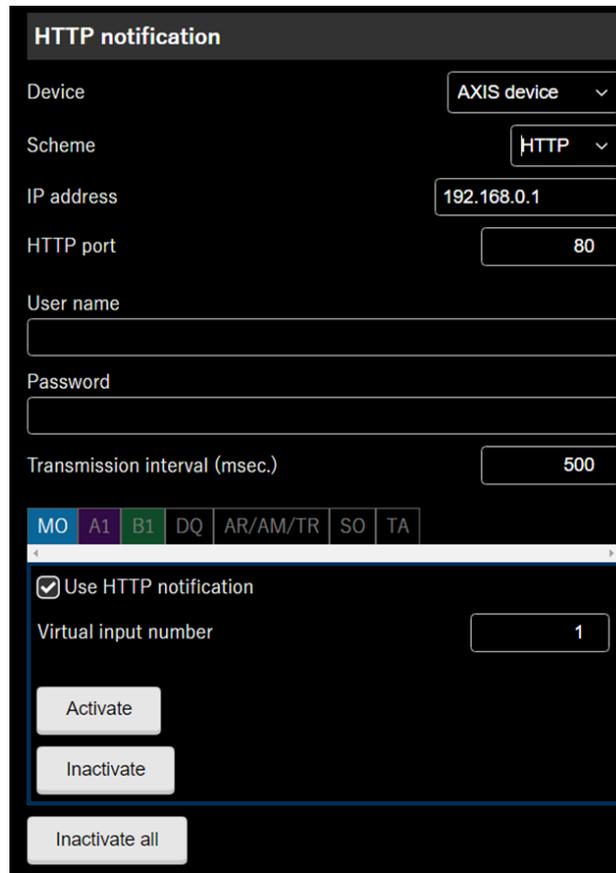


As a result of the run, the text will be displayed in the video window as below



7. Virtual input setting for Axis device

In "AXIS device" mode, the sensor issues "VAPIX commands" entered from the browser in the example above. The setting screen in the initial state is shown below.

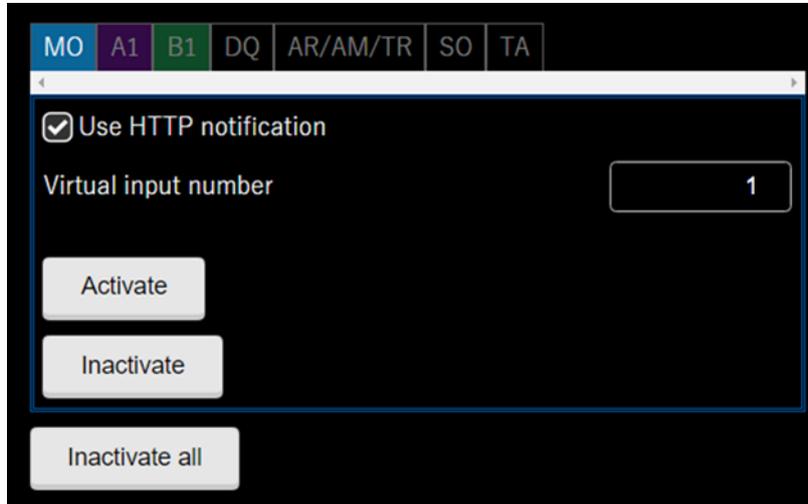


Choose HTTP or HTTPS in "Scheme". Set the IP address of the Axis product you want to control to "IP Address" and the port number to "HTTP Port". For User and Password, set the username and password used to log in to the connected Axis product.

Transmission interval sets the interval for Axis product control. REDSCAN Pro may detect many events depending on the installation environment. If the event occurs frequently and the device controlled each time, the operation of the device may not be stable. In such a case, setting this Transmission interval longer may make the operation calm.

The "Transmission interval" can be set every 100ms between 500ms and 10000ms (10s). Hereinafter, the time of arrival at each "Transmission interval" is referred to as "notification timing".

REDSKAN Pro can detect multiple events, such as object detection, an event that indicates the approximate position of the object, and an event that indicates a device error. Notification settings can be set individually for each event.



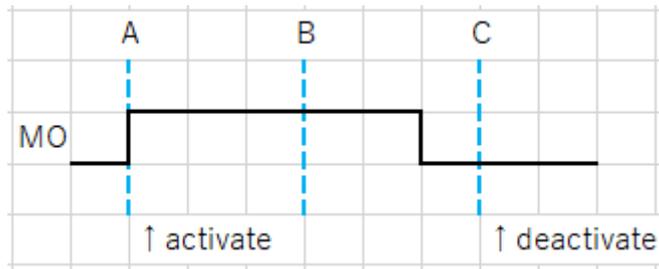
Set the Virtual input port in the range of 1 to 32. If you want to notify the event, check "Use HTTP notification" and click the "Save" button (not shown in the above figure) to enable the setting.

The meaning of each Event Code is shown below.

Name	Meaning
MO	Master alarm which means some object is detected.
A1,B1,A11,A12,A21,A22,B11,B12,B21,B22	Detected area.
DQ (Disqualification)	Disqualification status.
AR (Anti-rotation)	The unit is rotated.
AM (Anti-masking)	The unit is masked.
TR (Internal Error)	Internal error occurred.
SO (Soiling)	Laser window has dirt.
TA (Tamper)	The cover is opened, or the unit is removed from the wall.

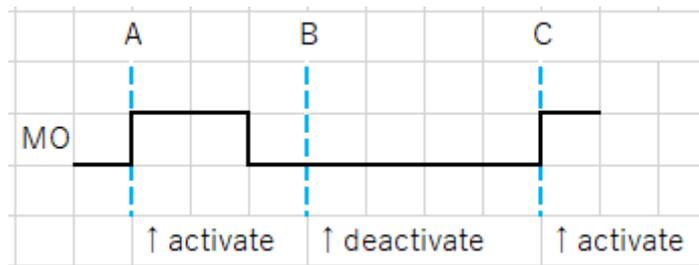
"Virtual input" has two state such as "open" and "close" of the contact input terminal, which are called "activate" and "deactivate", respectively. Therefore, when issuing "Virtual input", it is necessary to specify whether "activate" or "deactivate".

The timing chart is shown below using "MO" as an example.



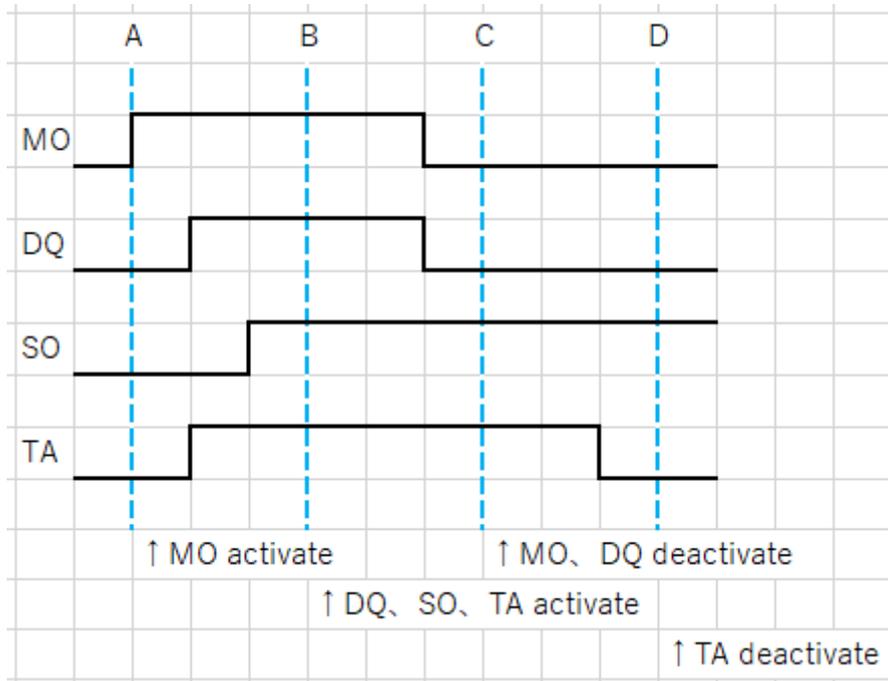
The blue dotted line indicates the notification timing. MO was detected at time "A". At this time, "activate" is issued to the device. Since the event has not changed at time B, nothing is notified. MO was cleared before time "C". The notification function issues "deactivate" at time "C".

The first "Notification timing" is set when the event is first detected. Conversely, if all events are cleared, the "Notification timing" will be undefined and will be reset when the next event occurs. This is shown below.



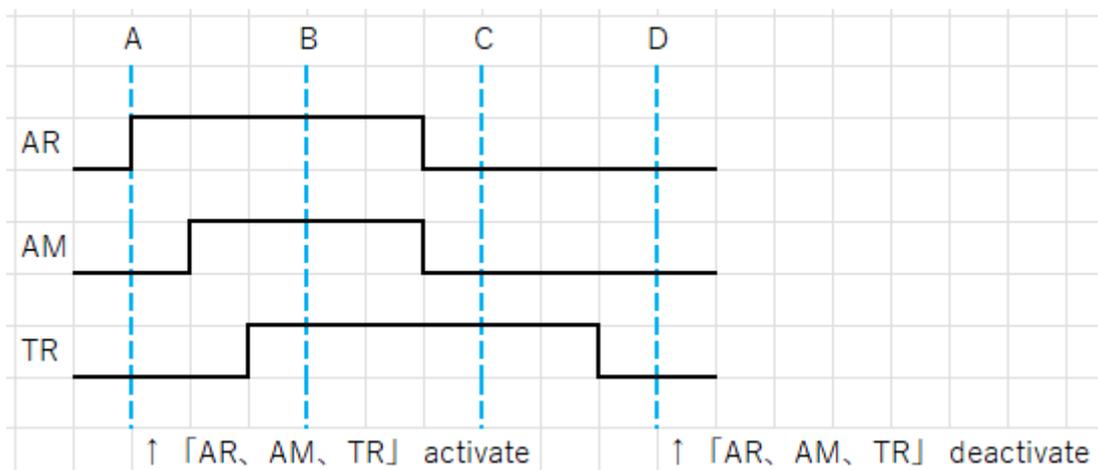
Since "MO" was detected at time "A", the "Notification timing" is set to time "A". After that, "MO" was cleared, so it will be deactivated at time "B". Since all the events have been cleared, the "Notification timing" after time "B" will be undefined. After that, "MO" was detected at time "C", so the "Notification timing" will set again from this point.

"MO", "DQ", "SO" and "TA" will be notified at the same time. This is shown below.



At time "A", the "MO" was detected, so the notification function activates the "MO". After that, "DQ", "SO", and "TA" are detected, and when time "B" is reached, "DQ", "SO", and "TA" are activated at the same time. After that, "MO" and "DQ" have been cleared, so they are deactivated at time "C". Next, since "TA" has been cleared, deactivation will be notified at time "D". The "Notification timing" is undefined after time "D".

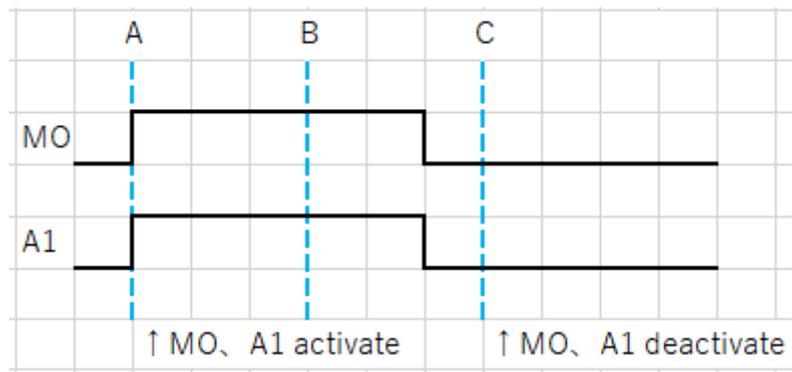
For "AR, AM, TR", activate is notified when any of "AR", "AM", and "TR" events are detected. Then, when all the events of "AR", "AM", and "TR" are cleared, deactivation is notified. This is shown below.





Since "AR" was detected at time "A", "AR, AM, TR" is activated. "AM" and "TR" are detected before time "B", but since they have been notified, nothing is notified at time "B". Next, "AR" and "AM" are cleared, but since "TR" remains, nothing is notified at time "C". After that, "TR" is canceled and "AR, AM, TR" is deactivated at time "D".

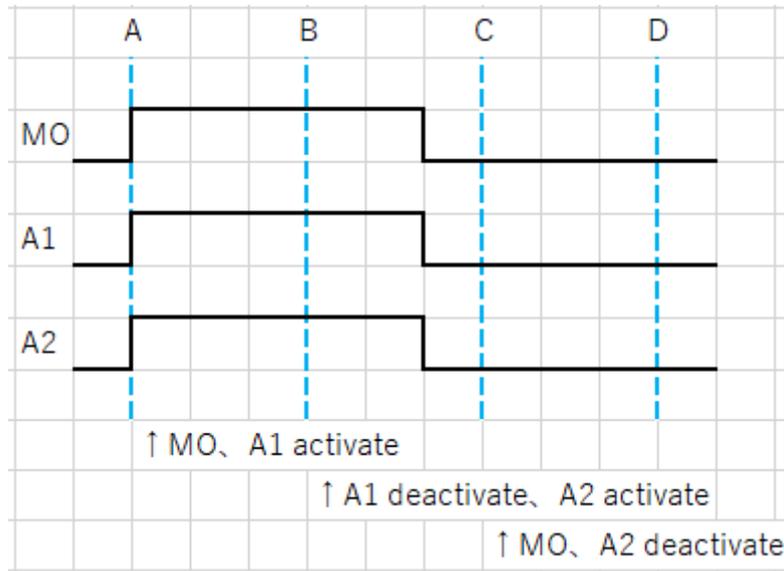
"MO" is a notification code indicating that an object has been detected, but "MO" is always notified with Area Allocating information from "A1" to "B1". Area Allocating settings can be set using WebUI. The following is an example of when "A1" is detected.



Since "A1" was detected at time "A", "MO" and "A1" were notified activation. Since "A1" was cleared between times "B" and "C", deactivation was notified at time "C".

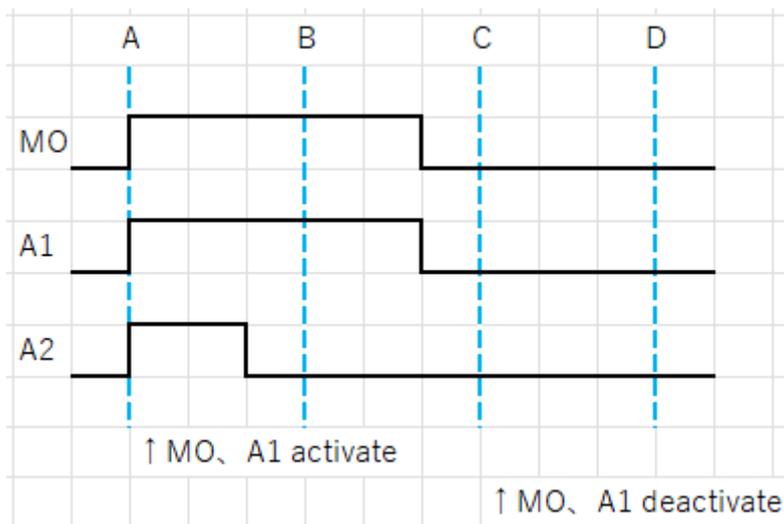
For Area Allocating of "A11", "A12", "A21", "A22", "B11", "B12", "B21", and "B22", only one place will be notified at one "Notification timing" according to the predetermined priority. The order of priority is "A11"> "A12"> "A21"> "A22"> "B11"> "B12"> "B21"> "B22".

If an object is detected in multiple areas, the area with the highest priority will be notified, but the area that was not notified will be notified at the next "Notification timing". At that time, the Allocating Area that has already been activated will be deactivated. This is shown below.



"A1" and "A2" were detected at time "A". According to priority, "MO" and "A1" were activated at time "A". At time "B", "A1" was deactivated and then "A2" was activated. After that, "A1" and "A2" were cleared. Therefore, "MO" and "A2" were deactivated at time "C".

If the unnotified Allocating Area is cleared before the notification, the notification will be cancelled. It is meaningless to notify about an event that has already been cleared. This is shown below.

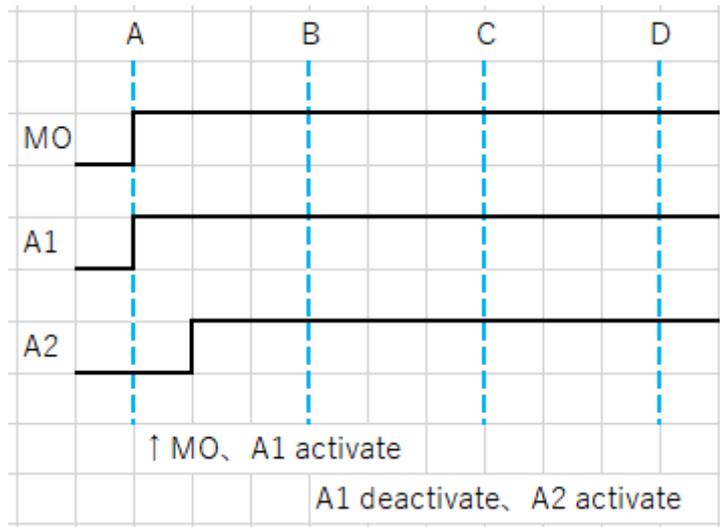


Since "A1" and "A2" were detected at time "A", "MO" and "A1" were activated. Since "A2" is cleared before time "C", "MO" and "A1" are deactivated at time "C".



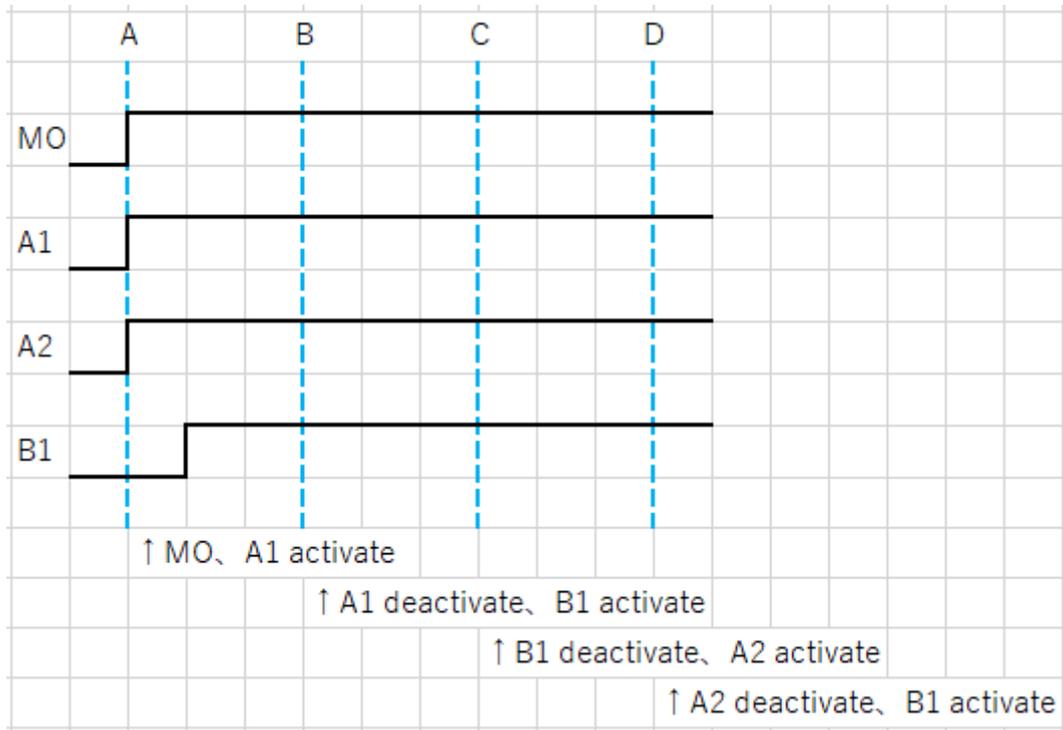
was cleared before time "B", "A2" will not be notified at time "B". After that, "A1" was cleared, so "MO" and "A1" were deactivated at time "C".

Unannounced events will be notified in sequence at the next "notification timing", but REDSCAN Pro emphasizes the "allocated space" that occurred last. The last "allocated space" found is called "latest". When a new "allocation space" is detected, the "latest" is updated. First, suppose "A1" is detected. The "latest" is "A1". The next time "A2" is detected, "A2" will be "latest". This is shown below.



Since "A1" was detected at time "A", "A1" was activated. "Latest" was "A1". After that, "A2" was detected, so "A1" was deactivated and "A2" was activated at time "B". "Latest" was "A2".

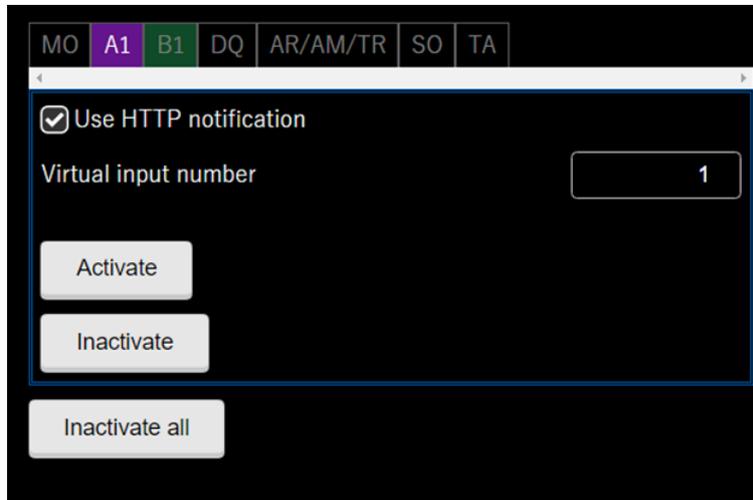
Since the notification function attaches importance to "Latest", the "Latest" will be notified again at the next "Notification timing" after notifying the unnotified "Allocating Area". After notifying "Latest", if there is an unnotified "Allocating Area", it will be notified. The figure below shows this case, including the explanations so far.



Since "A1" and "A2" were detected at time "A", "A1" and "MO" with high priority are activated. "Latest" was "A1". After that, "B1" was detected, so "A1" was deactivated and "B1" was activated at time "B". "Latest" was "B1". "A2" that was not notified was notified at time "C". Since "A2" notified at time "C" was not "Latest", reactivate "B1" which is "Latest" at time "D".

8. Testing Virtual input setting for Axis device

You can test that each setting is correct.



You can test by clicking the button, “Activate” and “Inactivate”. This test button allows you to perform a test that resembles the actual occurrence of an event. For example, clicking the "Activate" button at “A1” tab simulates "A1" detection and issues a "Virtual input" to the Axis product according to your settings. In the above case, port number 1 will be activated.

"A1" was clicked, but when "A1" is detected, "MO" is automatically notified. Activation for "MO" and "A1" are issued for the connected Axis device.

The settings do not need to be saved and will be tested using the values currently entered in the UI.

"DQ"- "TA" can be notified individually. Click the "Activate" button to activate each Virtual input. You can also click the "Inactivate" button to inactivate the corresponding “Virtual input”.

Click the "Inactivate All" button to deactivate all Virtual inputs assigned to "MO" to "TA". When testing, the current Virtual input status of the Axis device may be unknown. In that case, the "Inactivate All" button acts like an initialize button.

The test may fail due to incorrect input. In that case, an error message will be displayed. An example error message and its meaning are shown below.

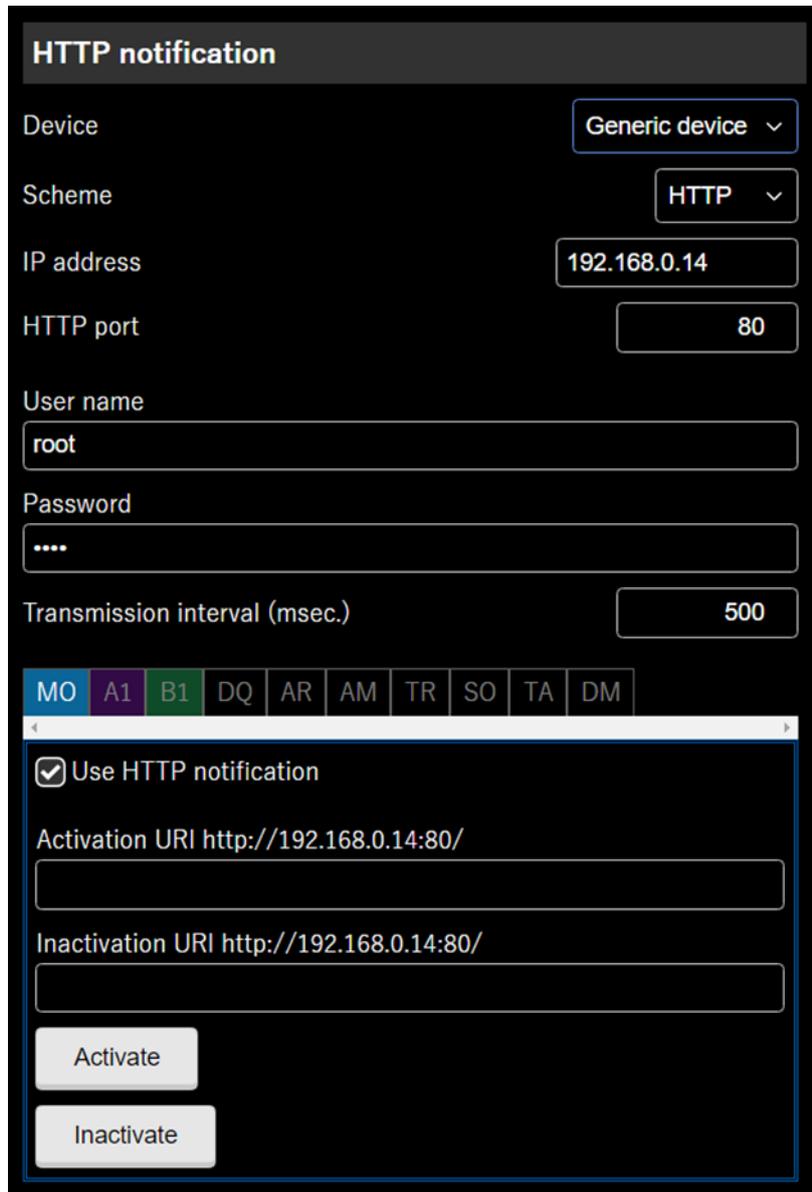
500 Failed to connect to 192.168.0.51 port 5002: Connection refused	Indicates that the specified Destination could not be connected. The IP address, port number, or both are incorrect.
---	--



400 Bad Request	The settings are incorrect.
HTTP/1.1 401 Unauthorized	Authentication did not pass. Please check your username and password.

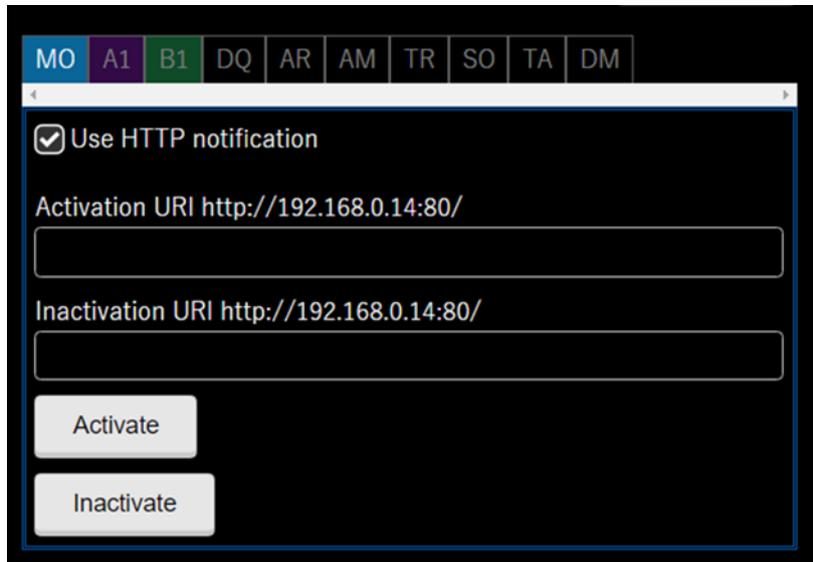
9. General device

"Generic device" mode is a mode that assumes control of devices other than Axis. Any device that supports HTTP control can be driven. The setting screen for using this function is shown below.



Choose HTTP or HTTPS in "Scheme". Set the IP address of the device you want to control to "IP Address" and the port number to "HTTP Port". For "User" and "Password", set the user and password used to log in to the connected device. Authentication corresponds to "BASIC authentication" and "DIGEST authentication".

"Transmission interval" sets the device control interval in milliseconds.



As shown in the figure, the API to be issued when each event occurs and its enabled state are able to be set. Specify the URI as a string of up to 255 characters. Of the URIs, the IP address and port number are reflected the values set in the destination settings above.

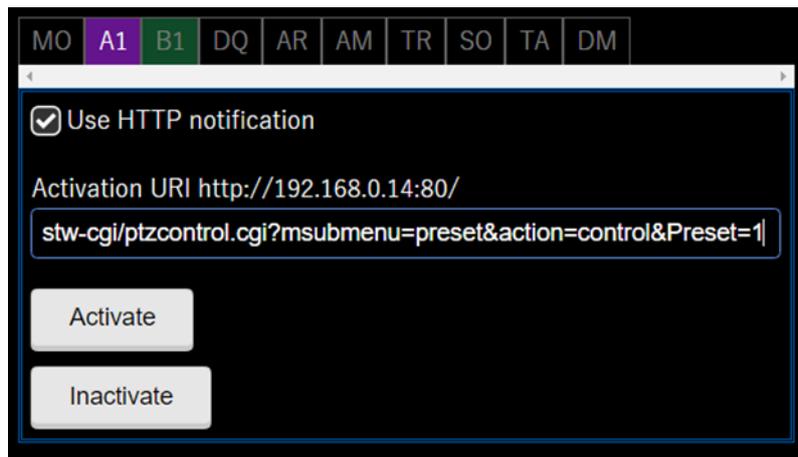
In case of Hanwha PTZ camera with SUNAPI, enter URI from “stw-cgi” in box.

2.5.4 Examples

2.5.4.1 Moving the camera to Preset 1 position

REQUEST

```
http://<Device IP>/stw-cgi/ptzcontrol.cgi?submenu=preset&action=control&Preset=1
```



To notify the event, check Enable and click the "Save" button (not shown in the above figure) to enable the setting.

The meaning of Event Code of MO to TA is the same as "Axis device" mode. "DM" is unique to "Generic device" mode and is an abbreviation for Device Monitoring, which can be used to monitor the life and death of devices. If you enable "DM", you will be notified of "DM" every time you notify.

For "MO", "DQ", "SO", "AR", "AM", "TR", and "TA", you can notify that they have been cleared separately from the detection. On the other hand, for "A1", "B1", "A11", "A12", "A21", "A22", "B11", "B12", "B21", "B22", and "DM", only the detection code is available. Unlike the "Axis device" mode, Allocating Area notifications are notified at the same time.

10. Testing Generic device

You can also test in "Generic device" mode. The test function in this mode is a simple function that issues the entered URI. The settings do not need to be saved, and the test is performed using the input values as they are. If the test fails, a message will be displayed depending on the reason for the failure.

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