

Occupancy Monitoring Application

User Manual

VER 1.1

About Copyright

©2023 Hanwha Vision Co., Ltd. All rights reserved.

Trademark

Each of trademarks herein is registered. The name of this product and other trademarks mentioned in this manual are the registered trademark of their respective company.

Restriction

Copyright of this document is reserved. Under no circumstances, this document shall be reproduced, distributed or changed, partially or wholly, without formal authorization.

Disclaimer

Hanwha Vision makes the best to verify the integrity and correctness of the contents in this document, but no formal guarantee shall be provided. Use of this document and the subsequent results shall be entirely on the user's own responsibility. **Hanwha Vision** reserves the right to change the contents of this document without prior notice.

Table of Contents

About Copyright	2
Application Overview	5
Set Up Examples	5
Setting up Application	6
Default Setup	6
Occupancy Limit	6
Reset Time	6
Reset Count	6
Edit Display	6
Open Source Licenses	6
RTSP Settings for decoder SPD-151	7
Connecting over HTTPS	7
Registering Camera	8
Registering Camera	8
Deleting Registered Cameras	9
Setting up HTTP Device	10
Setting up Device Control Command	10
Using Advanced Features	10

Audio Clip Playback 11

Editing Monitor Screen 12

Editing Monitor Screen 12

 View Mode 12

 Title 12

 Show count..... 12

 Occupancy limitation message 12

 Warning Message 12

 Logo Image 13

 Entry Allowed Message 13

 Entry Allowed Image 13

 BG Image for Entry Allowed 13

 Entry Blocked Message 13

 Entry Blocked Image 13

 BG Image for Entry Blocked..... 13

 Preview 13

 Save 13

Using Monitor Screen 14

Monitor Screen Overview 14

Changing Setup in Monitor Screen..... 14

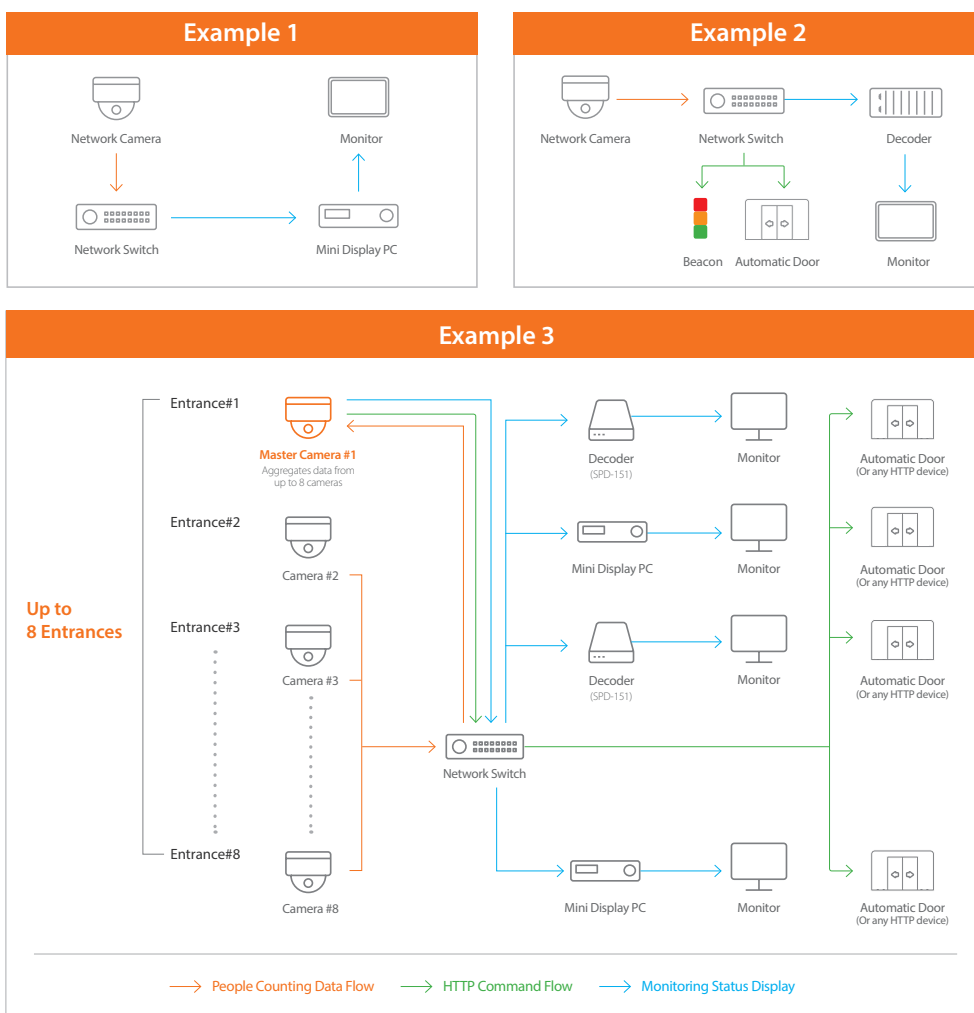
Open Source License Notification 15

Application Overview

Occupancy Monitoring Application is an application that allows you to set the permissible number of people and trigger an event when the number of occupants is below or above the set capacity.

By using the people counting analysis data from the registered cameras and working with entrance boom barrier, entrance monitor screen, and/or other system, it can control the boom barrier or display an entry prohibition message on the monitor screen. This is useful when controlling the number of occupants inside a building by making new visitors to wait outside until previous occupants leave.

Set Up Examples



Compatible Camera Models (P AI series)	Firmware version	Bridge firmware version
PND-A9081RV/A9081RF, PNV-A9081R, PNO-A9081R, PNB-A9081RX, PNB-A9001	2.21.12 or higher	2.19.99
PND-A6081RV/A6081RF, PNV-A6081R, PNO-A6081R, PNB-A6001	2.21.05 or higher	2.19.99
PNO-A9311R	2.21.00 or higher	-

Setting up Application

You can determine the default setup for Occupancy Monitoring Application.

Default Setup

You can determine the default application setup in the **Basic** menu.

Occupancy Limit

Enter the occupancy limit. You can enter any number between 1 and 9999999.

When the Occupancy Monitoring Application works with an external device, the occupancy limit becomes the basis of triggering events. For example, when the occupancy limit has been exceeded, the entrance boom barrier will operate or an entry prohibition message will show up. Or alarm output set for the camera might be activated.

Reset Time

To daily reset occupancy count data at a certain hour of the day, select **Enable** and enter the time to reset in **HH:MM** format. For example, if you select **Enable** and enter **23:00:00**, the occupancy count resets to 0 every day at 11:00 PM.

If camera time is changed at the reset time of the application's occupancy count data , the occupancy count could fail to reset. If there is any change to the camera time value, restart your application.

Reset Count

Sets the reset value that is defaulted to when the reset value is applied. You can enter any number between 0 and 9999.

Edit Display

Click **Next** to save the changes and go to the Monitor screen edit panel.

For more information on monitor screen, see [Editing Monitor Screen](#).

Open Source Licenses

We provide open source licenses used by this product. Click the **View** button to see the information of the open source licenses used by this product and full license texts.

RTSP Settings for decoder SPD-151

Occupancy Monitoring Application can be monitored using decoder SPD-151. To access the decoder, enter the following RTSP address and the Master Camera ID and password.

- `rtsp://{master camera's IP address}:3128/OccupancyMonitoring/media.smp`

Camera Registration

Auto

Manual

Protocol

☐ Wisenet
 ☐ ONVIF
 ☒ RTSP

Access Address

rtsp://

ex) rtsp://{master camera's IP address}:3128/OccupancyMonitoring/media.smp

ID

Password

More Detail

More Detail

OK

Cancel

Connecting over HTTPS

Occupancy Monitoring Application supports HTTPS. If the master camera is in HTTPS status, Occupancy Monitoring Application connects over HTTPS. When this happens, both the camera device registered and device controlled by HTTP command must be set to HTTPS mode.

Registering Camera

You can register or delete cameras that provide people counting analysis data.

Registering Camera

You can register cameras to detect and analyze the number of visitors to a building. Up to eight cameras can be registered.

Master camera is where this application has been installed and IP address has been entered.

If the ID and password of all registered cameras are identical, you can enter the ID and password for the master camera and click **Apply ID/PW of Master Cam 1 to all** to automatically apply the ID and password to all the other cameras.

1. Click the **Camera** tab.
2. Click the **Add** button.
3. Enter the camera information.
 - **IP address:** Enter the camera IP address.
 - **HTTP port:** Enter the HTTP port number. If the HTTP port of the camera has been changed, the port number must be entered. If you are using the default value, you do not have to enter anything.
 - **ID:** Enter the camera login ID.
 - **Password:** Enter the camera login password.
 - **Rules:** Select a rule to activate from the list of rules set for the camera. See the registered camera manual for People counting function setup.
 - Under **Status**, click the **Connecting test** button to test the camera connection. If successfully connected to the camera, **Connected** is displayed. If not, **Not connected** is displayed.
4. In **Update interval**, set the interval to bring the analytics data from the camera (in seconds). For example, if you enter **5**, the data of camera analyzing incoming visitors is updated every 5 seconds. If two cameras are registered, the interval can start from 1 sec; If three or more cameras are registered, the interval can start from 2 sec.

5. This sets the event action to be triggered by the master camera when an event occurs. Here, the master camera refers to the camera to which Occupancy monitoring application has been installed.
 - **Enable alarm input:** Selecting **Enable alarm input** enables alarm input feature with which users can directly enter alarm. The number of occupants resets to the number you set in **Reset count** when alarm input event occurs.
 - **Enable alarm output:** Selecting **Enable alarm output** activates the alarm output feature already set when an event is triggered in Occupancy Monitoring Application. The details of alarm output can be set under **Event > Alarm output** of the master camera.
 - If you want to output alarm when the maximum occupancy limit you set is exceeded, select **Over**. If you want to output alarm when the current occupancy is less than the maximum occupancy limit you set, select **Under**. If you want to send alarm in both cases, then select **Under/Over**. The maximum occupancy limit can be changed in **Occupancy limit**.
 - Enter alarm output time in seconds.
 - **Enable E-mail:** Selecting **Enable E-mail** activates the set e-mail when an event is triggered in Occupancy Monitoring Application.
 - If you want to send an e-mail when the maximum occupancy limit you set is exceeded, select **Over**. If you want to send an e-mail when the current occupancy is less than the maximum occupancy limit you set, select **Under**. If you want to send alarm in both cases, then select **Under/Over**. The maximum occupancy limit can be changed in **Occupancy limit**.
 - Enter the e-mail subject in the **Title** field. Only alphabetic characters, numbers, blanks, and , . () ! ; ~ ` / can be entered up to 60 characters.
 - Enter the e-mail body text in the **Description** field. Only alphabetic characters, numbers, blanks, and , . () ! ; ~ ` / can be entered up to 255 characters.



NOTE

To enable sending of e-mail, you have to go to the setup menu of the master camera, select **Event > App event**, and then set **App event** and **E-mail** options to **Enable**. E-mail can be set up under **Event > FTP/E-mail > E-mail configuration** of the master camera.

Deleting Registered Cameras

1. Select cameras to delete from the camera list.
2. Click the **Delete** button.

Setting up HTTP Device

You can control your device by sending an HTTP command to devices working with the Occupancy Monitoring Application when the number of occupants is above or below the occupancy limit.

Setting up Device Control Command

You can register up to eight devices, and set an HTTP command for each one of them when the number of occupants is above or below the occupancy limit.

If the ID and password of all HTTP devices are identical, you can enter the ID and password for the first device and click **Apply ID/PW of Device 1 to all** to automatically apply the ID and password to all the other cameras.

1. Click the **HTTP device** tab.
2. Click the **Add** button.
3. Enter an HTTP command in the **Control HTTP Command** field.
 - If the occupancy limit is exceeded, enter the HTTP command to control the device in the top field.
 - If the occupancy limit is not exceeded, enter the HTTP command to control the device in the bottom field.
4. Enter the device's ID and password in **ID** and **Password**, respectively.
5. Under **Status**, click the **Connecting test** button to test the device connection. If successfully connected to the device, **Connected** is displayed. If not, **Not connected** is displayed.

Using Advanced Features

An HTTP event can be triggered at every interval based on the specific number of visitors. Every time the number of visitors equivalent to the value set in **Visitors limit** is reached, the device communicating over HTTP is activated periodically.

To use the advanced features, click **Advanced**.

- Enter the number of visitors in **Visitors limit** that will trigger an HTTP event every time that amount of visitors enters.
- Enter the ID and Password of the device to activate, and enter the CGI command to control the device.

Audio Clip Playback

When the capacity is over or under the occupation limit, an audio clip registered to the camera can be played back.

The format of the command is as follows:

- `http://{camera's IP address}/stw-cgi/eventrules.cgi?msubmenu=audiooutfiles&action=control&Type=Play&Index=1`

Enter the audio clip command to play when the capacity is over the occupation limit, in the **Control HTTP Command** parent field. Enter the audio clip command to play when the capacity is under the occupation limit, in the **Control HTTP Command** sub field.

To register an audio clip file or check audio clip file index data, see the Camera setup.

Editing Monitor Screen

You can edit the information shown on the monitor screen. In the Setup page, click **Next** to change to monitor screen edit mode.

Editing Monitor Screen

By selecting **Over** and **Under** tabs, you can edit the monitor screen that appears in each different situation when the maximum occupancy limit is exceeded or when it is not.

By clicking the relevant options, you can hide or show different elements on the monitor screen. To edit text, you can directly click the edit screen and change the text as you want. You can change the image by clicking  at the top left.

View Mode

Select the monitor screen view mode. The Landscape mode is a horizontal view mode (1920x1080). The Portrait mode is a vertical view mode (1080x1920).

Changing the view mode resets the values to default.

Title

This text is normally used to display a store name or the title of the monitor screen. On the **Title** edit screen, click the title text to change the text as you want.

Show count

Select the number type to display on the monitor screen. Selecting **Remaining Occupancy** displays the number of visitors that can enter the building. Selecting **Current Occupancy** displays the number of visitors that is already inside the building.

Occupancy limitation message

This message displays the maximum occupancy limit you set. The value you set for **Occupancy limit** on the Setup page is automatically synchronized and entered in "\$count". For example, if you set **Occupancy limit** to '300' and type in "Up to \$count people can enter.", the following text is displayed on the monitor screen: "Up to 300 people can enter."

Warning Message

This is a message shown to users. Select **Animated message** if you want to animate the message, sliding it from right to left. When monitored with the decoder, no message is animated.

Logo Image

Logo image.

Entry Allowed Message

This is a text to be displayed on the monitor screen when the maximum occupancy limit you set is not exceed. This is an option you can set when the **Under** tab is selected.

Entry Allowed Image

This is an image to be displayed on the monitor screen when the maximum occupancy limit you set is not exceeded. This is an option you can set when the **Under** tab is selected.

BG Image for Entry Allowed

Select a background color to display on the monitor screen when the maximum occupancy limit you set is not exceeded. This is an option you can set when the **Under** tab is selected.

Entry Blocked Message

This is a text to be displayed on the monitor screen when the maximum occupancy limit you set is exceeded. This is an option you can set when the **Over** tab is selected.

Entry Blocked Image

This is an image to be displayed on the monitor screen when the maximum occupancy limit you set is exceeded. This is an option you can set when the **Over** tab is selected.

BG Image for Entry Blocked

Select a background color to display on the monitor screen when the maximum occupancy limit you set is exceeded. This is an option you can set when the **Over** tab is selected.

Preview

Clicking **Preview** allows you to see the monitor screen currently being edited.

Save

Clicking **Save** saves the current edits.

Using Monitor Screen

You can check the monitor screen that works with Occupancy Monitoring Application.

Monitor Screen Overview

You can check the monitor screen to see how the settings in the application is displayed on the monitor. If the Occupancy Monitoring Application works with this monitor device, you can see how the monitor screen is displayed to users. Visitors can get the information of the current number of occupants and permission of entry at the moment in the monitor device.

Changing Setup in Monitor Screen

You can change the setup on the monitor screen. If you hover mouse over the edge of the web browser on the left side, the setup option appears.

- **Change:** Enter the correct number of occupants, and click **Apply**.
- **Go to Setup:** Go to detailed setup page.
- **Reset:** Resets the number of occupants. If no value is set for **Reset count** on the Setup page, this resets to '0'; if a value is set for **Reset count**, this resets to that value.

Open Source License Notification

Open Source License Notification on the Product (Occupancy monitoring application)

=====

The software included in this product contains copyrighted software that is licensed under the BSD3-clause License/curl License

=====

<BSD 3-clause "New" or "Revised" License>

crypto-js, opencv

Copyright (c) 2012 by Cédric Mesnil.

Copyright (c) 2009-2012 by Jeff Mott.

Copyright (c) 2000-2008 Intel Corporation.

Copyright (c) 2005, 2008 Google Inc.

Copyright (c) 2008-2012 Willow Garage Inc.

Copyright (c) 2013 OpenCV Foundation.

Copyright (c) 2012 Arren Glover [aj.glover@qut.edu.au] and Will Maddern [w.maddern@qut.edu.au].

Copyright (c) 2007-2011 LISTIC Lab, Annecy le Vieux and GIPSA Lab, Grenoble, France.

Copyright (c) 2008-2009 Marius Muja (mariusm@cs.ubc.ca).

Copyright (c) 2008-2009 David G. Lowe (lowe@cs.ubc.ca).

Copyright (c) 2012 Eduard Feicho.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

Neither the name of the copyright holders nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

<curl License>

curl

Curl License

Copyright (c) 1996 - 2015, Daniel Stenberg, <daniel@haxx.se>.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

