i⋅PRO

Operating Instructions

Extension Software
(AI Non-Mask Detection)

Model No. WV-XAE203W

Before attempting to connect or operate this software,
please read these instructions carefully and save this manual for future use.

The model number is abbreviated in some descriptions in this manual.

Contents

Introduction

Preface

The Extension Software WV-XAE203W (hereafter referred to as this product) is software for more conveniently using the network camera (option, hereafter referred to as the camera). By installing this product on the camera and registering the release key, the "AI Non-Mask detection function" which automatically recognizes non-mask wearers, can notify Information on non-mask wearers to external systems such as WV-ASM300 / WV-ASM300W (option) and WJ-NX series network recorders (option).

> **Important**
> • This product is necessary for each camera.
> • See the URL below for information such as the models supported by this product, the software version, etc.
>   https://i-pro.com/global/en/surveillance/training-support/support/technical-information

Features

• This product notifies the specified notification destination of the detected non-mask wearer information.
• This product has the following features.
  ①The deep learning technology and our proprietary image processing technology can recognize colored masks, pattern (geometric) masks, fashion masks and various mask shapes.
  ②You can use it immediately by installing this product on the camera without any settings.

Specifications

Recognized masks	Color masks, pattern (geometric) masks, fashion masks and various mask shapes (flat type, pleated type, three-dimensional type)
Maximum number of simultaneous detection	8 people
Maximum face orientation	45° left and right 30° up and down
Installation location	Indoors

* See the URL below for "Recommended minimum face size" informations.
  https://i-pro.com/global/en/surveillance/training-support/support/technical-information <Control No.: C0320>

About the Operating Instructions

This manual explains the method of installing this product in a camera, settings that need to be made before starting to operate this product, and the method of operation for using this product. Since this product is used after being installed on a camera, before using this product always be sure to also read the Operating Instructions of the camera with which this product is to be used.
Based on the specific model of a camera which is used, its screen may be different from the screen shown in this manual.

In this manual, a personal computer is referred to as a PC.

In this manual, WV-ASM300 and WV-ASM300W are referred to as WV-ASM300.

System requirements for a PC

For the requirements of PC which are used for settings refers to the Operating Instructions of a camera.

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On open source software used

- This product uses the open source software below.

Name of software	Name of license
cwebsocket	The MIT License

- For the corresponding license statement, see "Open Source Software" on page 11.

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(5) LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE (INCLUDING INITIALIZATION OF THE PRODUCT DUE TO FORGOTTEN UTHENTICATION INFORMATION SUCH AS A USER NAME AND PASSWORD).

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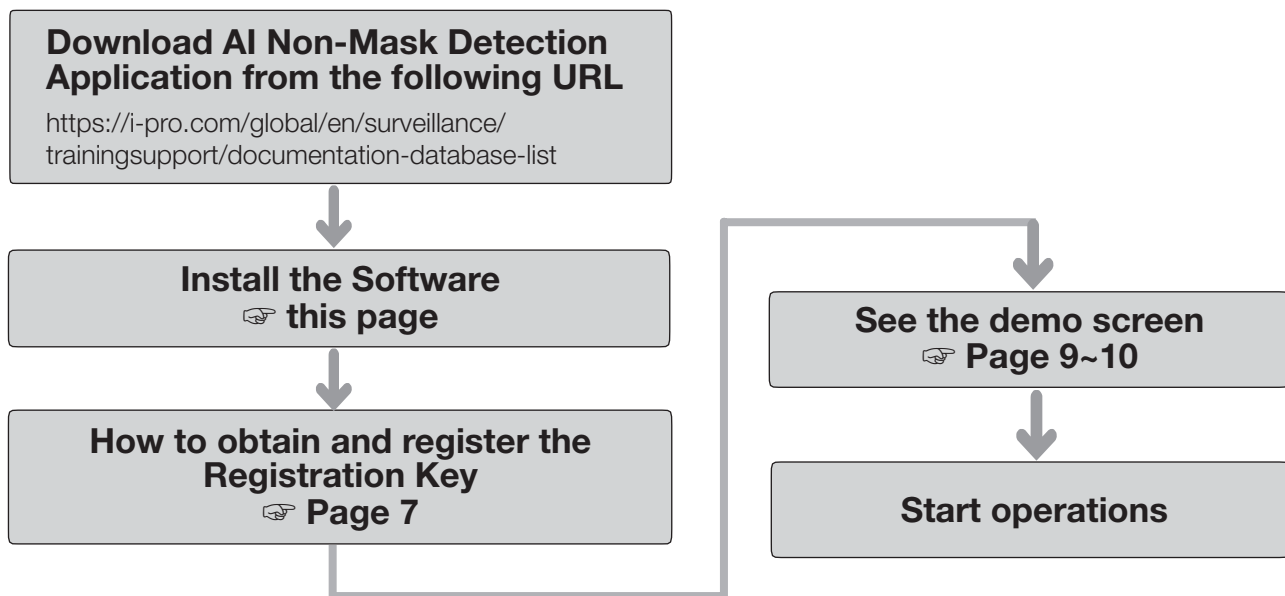
Before using this product

The following situations may be difficult for Non-Mask Detection, or may return a false positive.
- Not supported under IR-LED light.
- Mask may not be detected depending on how it is worn and its type.
- Fashion masks (specific objects, specific characters, specific hieroglyphs, etc.) may not be detected.
- When worn such as "Mask on the chin" or "Nose sticking out of the mask", it may not be detected.
- Non-detection or reduced accuracy may occur due to uneven light, changes in light conditions, face orientation, jewelry, fast movement of the subject, strong external light, etc.
- If it does not appear for more than 2 seconds, it may not be detected.
- The face is out of focus.
- The face is shaking.
- The face is overexposed or washed out.
- Only a part of the face is shown.
- The face is not looking up.
- The face is too close to the camera.
- The face is too small (size less than the specified face width).
- It may react to dolls and posters.

Other cautions are explained below.
- AI Non-Mask Detection Application supports "0° (Off)" and "180° (vertical rotation)" under "Image rotation" settings.
- For 4K network cameras, AI Non-Mask Detection Application limits the delivery frame rate from a maximum of 30 fps to 15 fps.
- When AI Non-Mask Detection Application is running, if you change the camera's imaging mode or stream settings, the application will restart. If the demo screen of AI Non-Mask Detection Application is open, please reboot it.
- If you have set a privacy zone, you cannot detect Non-Mask within the privacy zone.
- If 10 or more persons appear in the image, it may not be possible to detect the one not wearing the mask.
- The message ID of TCP alarm notification is '69'.
- When using TCP alarm notification, set "Additional alarm data" under "TCP alarm notification" of the camera to "On".
- When using multiple TCP alarm notification simultaneously, if one TCP alarm notification is received after setting the "Alarm mask time" of the WJ-NX series network recorder, no other TCP alarm notification will be received during the "Alarm mask time".
- For TCP alarm notification settings, refer to 'TCP alarm notification' in the Operating Instructions of the camera.
- Depending on various installation conditions and usage environment such as the brightness of the location and the movement of the subject, movement may be difficult to detect, or it may not be detected, or it may malfunction. Please evaluate the installation location before installing.
- We shall not be liable for any inconvenience, damage or loss caused by setting the Non-Mask Detection function or as a result thereof.

Operation flow

Download AI Non-Mask Detection Application from the following URL
https://i-pro.com/global/en/surveillance/trainingsupport/documentation-database-list

↓

Install the Software
☞ **this page**

↓

How to obtain and register the Registration Key
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See the demo screen
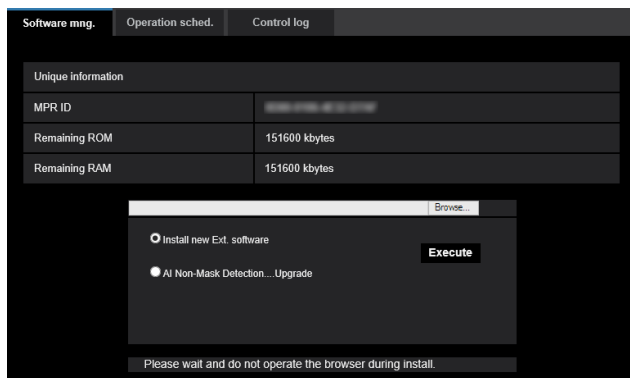☞ **Page 9~10**

↓

Start operations

Install the Software

Follow the steps below to download this product and install it on your camera.

(1) Access the following URL to download "AI Non-Mask Detection" and save it onto the PC.
https://i-pro.com/global/en/surveillance/training-support/documentation-database-list

> **Important:**
> - A space cannot be used in the name of the saving directory.

(2) Select the [Setup] - [Ext. software] - [Software mng.] tab of the camera.

Software mng.	Operation sched.	Control log

Unique information

MPR ID	
Remaining ROM	151600 kbytes
Remaining RAM	151600 kbytes

Browse...

○ Install new Ext. software   **Execute**

○ AI Non-Mask Detection....Upgrade

Please wait and do not operate the browser during install.

> **Important:**
> - Check "Remaining ROM" and "Remaining RAM" of the camera. If disk space is insufficient, uninstall any other extension software already installed. For how to uninstall, refer to the "Operation settings" section in the Operating Instructions of the camera.

(3) Click the [Browse...] button and designate the downloaded "AI Non-Mask Detection".

(4) Make sure that "Install new Ext. software" is selected and click the [Execute] button.
Then the software installation will begin.
When the installation is completed, "AI Non-Mask Detection" will be added to the list of extended software and the "Software mng." screen. (The names may be partially omitted.)

> **Important:**
> - Do not turn off the power of the camera when installing the software.
> - Do not perform any operations until the installation is completed.

How to obtain and register the Registration Key

This product needs to be activated by "Registration Key" issued by Key Management System before you start using.

Follow the steps below to obtain the Registration Key.
<If you do not have your User ID and password for the Key Management System>
   * Access the website of the Key Management System and create your User ID and password.
     Then start reading from STEP 1 below.
<If you already have your User ID and password for the Key Management System>
   * Access the website of the Key Management System and "Issue Registration Key" with the User ID and password
     that you have obtained.
     Then start reading from STEP 2 below.

Note:
- This product has a trial period, during which you can use this product without registering the Registration Key. If you keep using it after the trial period (30 days), obtain and register the Registration Key.

STEP 1 Sign up

Create your User ID and password, if this is the first time to access the Key Management system.
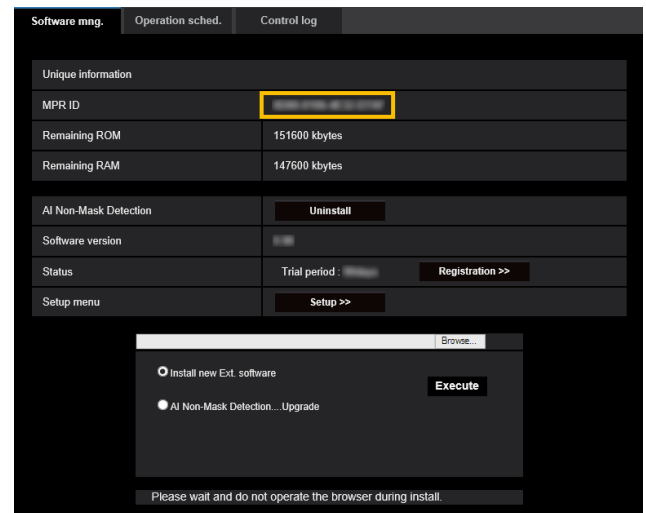(1)   Access the URL for PC below and sign up.
     • For PC
       https://kms.business.panasonic.net/ipkms/pc/home.htm
(2)   Login as a temporary user using the User ID and password written on the web page.
(3)   Register required information and create your User ID and password.

Important:
- Keep your User ID and password safe. You do not need to obtain a new User ID from the next time. Use the User ID already issued.
- It is recommended to change the password periodically.

STEP 2 Obtain the Registration Key

(1)   Check the MPR ID, Activation Key No. and Registration ID.
     • For the MPR ID, refer to [MPR ID] on the [Setup] - [Ext. software] - [Software mng.] tab of the camera.

- The Activation Key No. and Registration ID are shown on the Activation Key Card.

Note:
The MPR ID can also be checked on the product package.
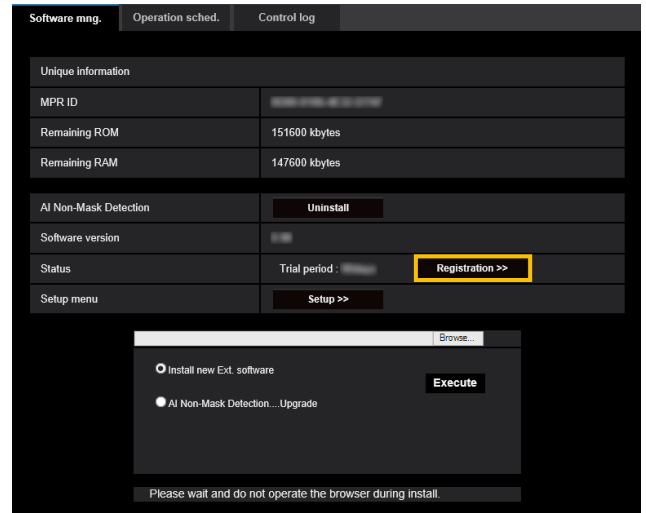

How to obtain and register the Registration Key (Continued)

(2) Access to the following URL "Key Management System" from your PC or Smartphone.
- For PC:
  https://kms.business.panasonic.net/ipkms/pc/home.htm
- For Smartphone:
  https://kms.business.panasonic.net/ipkms/m-key/

(3) Login using your User ID and password.

(4) Click [Issue Registration Key] button.

(5) Select your product from the menu and click [Next step] button.

(6) Input your "MPR ID", "Activation Key No." and "Registration ID".

(7) Click the [Issue] button.

(8) Then "Registration Key" will be issued on the screen and sent to your e-mail address.
We recommend keeping "Registration Key" together with Activation Key Card for future support.

Important:
- Please make sure the combination between "MPR ID" and "Activation Key No." is correct when issuing "Registration Key". Because once you issued "Registration Key", you cannot issue new one from the same "Activation Key No.".
- To issue the Registration Key for another camera, go through (6) and (7) of STEP 2.
- If you register multiple Registration Keys for one camera, you can issue them at the same time by entering multiple Activation IDs and Encryption IDs in STEP 2 (6).

STEP 3 **Register the Registration Key**

(1) Select [Setup] - [Ext. software] - [Software mng.] tab of the camera.

(2) Click the [Registration >>] button to display the "Registration of application" screen.

(3) Enter the Registration Key obtained in STEP 2 in the "Registration Key" field with no dashes (-) in between, and click the [Set] button. Once you register the Registration Key, the "AI Non-Mask Detection" function will be activated.
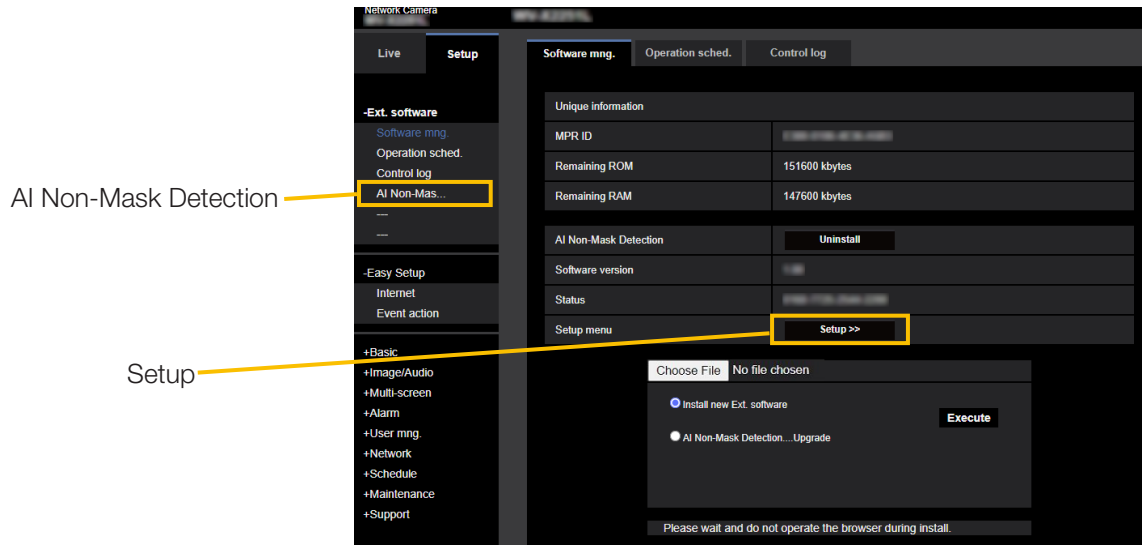

Note:
The registration of the Registration Key is only operable by users whose access level is "1. Administrator".
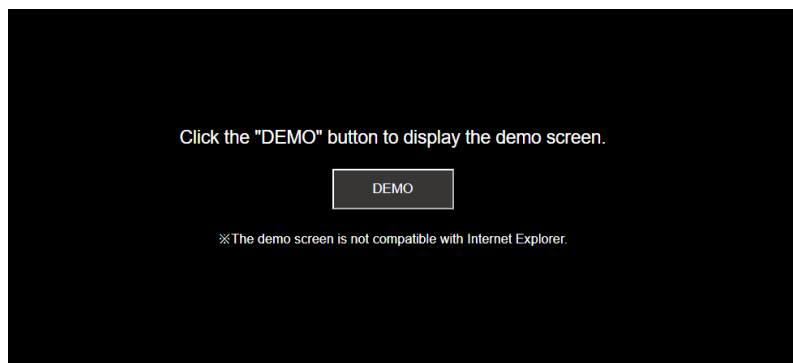Refer to the Operating Instructions of the camera for how to configure the access level.

See the demo screen

1. Open the demo launch screen

After installing AI Non-Mask Detection Application, go to camera "Setup" menu > "Ext. software" page, where "AI Non-Mask Detection" is added to "Software mng." tab.

Click "AI Non-Mask Detection", or "Setup", and then "Demo launch screen" opens. Also, in order to open the "Demo launch screen", it is necessary to register the schedule in advance on the "Operation sched." tab of the "Ext. software" page.
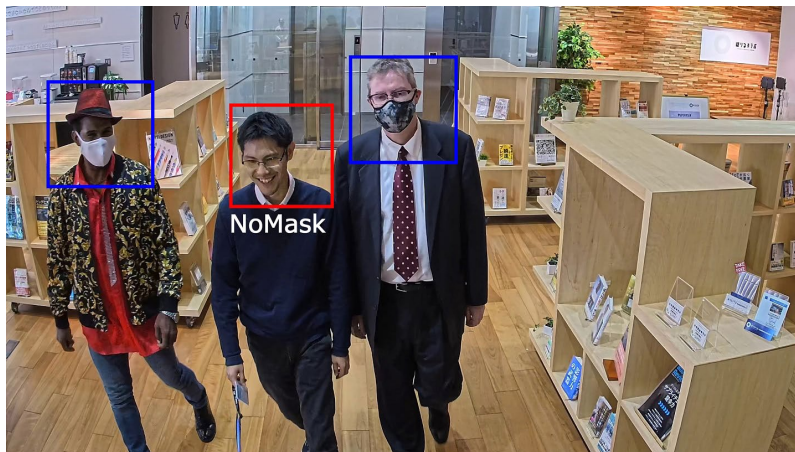

Demo launch screen

Note:
- If the "Operation sched." is outside the operating hours, the "Demo launch screen" cannot be opened.

See the demo screen (continued)

2. Open the demo screen

Click the [DEMO] button on the "Demo launch screen" to open the "Demo screen".

Demo screen

A JPEG image is displayed, and the result of mask detection for each frame is displayed in a frame.
Non-Mask Detection alarm is determined in multiple frames, the alarm is not notified even if the red frame is displayed in one frame.

 Red frame: Non-Mask Detection status
 Blue frame: Mask Detection status

Note:

- Use Firefox, Google™ Chrome™ and Microsoft edge to display the demo screen. Internet Explorer is not supported.
- The demo screen can be displayed on only one browser. It does not support simultaneous access by multiple browsers.
- If the data encryption is set to "On", the demo screen image will not be displayed.
- The demo screen does not support HTTPS connection.
- When used simultaneously with other extension software functions , the position of the face may be significantly misaligned with the frame on the demo screen.
- The demo screen is for demo purposes and is not recommended for actual operation.

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