AI BOX

Quick Guide

DV-2232

Before reading this manual

This manual contains basic instructions on installing and using AI BOX, an IDIS product.
Users who are using this product for the first time, as well as users with experience using comparable products, must read this manual carefully before use and heed to the warnings and precautions contained herein while using the product. Safety warnings and precautions contained in this manual are intended to promote proper use of the product and thereby prevent accidents and property damage and must be followed at all times.
Once you have read this manual, keep it at an easily accessible location for future reference.

- The manufacturer will not be held responsible for any product damage resulting from the use of unauthorized parts and accessories or from the user's failure to comply with the instructions contained in this manual.
- It is recommended that first-time users of AI BOX and individuals who are not familiar with its use seek technical assistance from their retailer regarding product installation and use.
- If you need to disassemble the product for functionality expansion or repair purposes, you must contact your retailer and seek professional assistance.
- Both retailers and users should be aware that this product has been certified as being electromagnetically compatible for commercial use. If you have sold or purchased this product unintentionally, please replace with a consumer version.
- This equipment has the PFC (Power Factor Correction) circuit. For stable operation, use a sign-wave output UPS with an AVR(Automatic Voltage Regulator).

Safety Precautions

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Symbol	Publication	Description
	IEC60417, No.5032	Alternating current

WARNING
Hazardous moving parts
Keep away from moving fan blades

AVERTISSEMENT
Pièces mobiles dangereuses
Se tenir éloigné des pales de ventilateurs mobiles

Important Safeguards

1. Read Instructions

All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions

The safety and operating instructions should be retained for future reference.

3. Cleaning

Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.

4. Attachments

Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.

5. Water and/or Moisture

Do not use this equipment near water or in contact with water.

6. Ventilation

Place this equipment only in an upright position. This equipment has an open-frame Switching Mode Power Supply (SMPS), which can cause a fire or electric shock if anything is inserted through the ventilation holes on the side of the equipment.

7. Accessories

Do not place this equipment on an unstable cart, stand or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

This equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

8. Power Sources

This equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company. You may want to install a UPS (Uninterruptible Power Supply) system for safe operation in order to prevent damage caused by an unexpected power stoppage. Any questions concerning UPS, consult your UPS retailer.

This equipment should be remain readily operable.

9. Power Cords

Operator or installer must remove power and TNT connections before handling the equipment.

10. Lightning

For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges.

11. Overloading

Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

12. Objects and Liquids

Never push objects of any kind through openings of this equipment as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the equipment.

13. Servicing

Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.

14. Damage requiring Service

Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

A. When the power-supply cord or the plug has been damaged.

B. If liquid is spilled, or objects have fallen into the equipment.

C. If the equipment has been exposed to rain or water.

D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation.

E. If the equipment has been dropped, or the cabinet damaged.

F. When the equipment exhibits a distinct change in performance — this indicates a need for service.

15. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

16. Safety Check

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

17. Field Installation

This installation should be made by a qualified service person and should conform to all local codes.

18. Correct Batteries

Warning: Risk of explosion if battery is replaced by an incorrect type. Replace only with the same or equivalent type. Dispose of used batteries according to the instructions. The battery shall not be exposed to excessive heat such as sunshine, fire or the like.

Avertissement: risque d'explosion en cas d'utilisation d'une batterie de type incorrect. Le remplacer uniquement par un type identique ou équivalent. Mettre les batteries usées au rebut conformément aux instructions. La batterie ne doit pas être exposée à une source de chaleur excessive, telle que le soleil, le feu, ou analogue.

19. Tmra

A manufacturer's maximum recommended ambient temperature (Tmra) for the equipment must be specified so that the customer and installer may determine a suitable maximum operating environment for the equipment.

20. Elevated Operating Ambient Temperature

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).

21. Reduced Air Flow

Installation of the equipment in the rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

22. Mechanical Loading

Mounting of the equipment in the rack should be such that a hazardous condition is not caused by uneven mechanical loading.

23. Circuit Overloading

Consideration should be given to connection of the equipment to supply circuit and the effect that overloading of circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

24. Reliable Earthing (Grounding)

Reliable grounding of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

HDMI Port Precautions

- Use a certified cable marked with an HDMI logo when using HDMI. The screen may not display or a connection error may occur if you do not use a certified HDMI cable.
- It is recommended that you use the following HDMI cable type.
  - High-speed HDMI Cable
  - High-speed HDMI Cable with Ethernet

In-Text

Symbol	Type	Description
	Caution	Important information concerning a specific function.
	Note	Useful information concerning a specific function.

User's Caution Statement

Caution: Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

FCC Compliance Statement

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE, IN WHICH CASE USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

WARNING: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS OF DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE CAUSING EQUIPMENT REGULATIONS.

WEEE (Waste Electrical & Electronic Equipment)

Correct Disposal of This Product

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

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The software included in this product contains some Open Sources. You may obtain the corresponding source code which we have to distribute according to the license policy. Go to Client Menu - About page for more information. This product includes software developed by the University of California, Berkeley and its contributors, and software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/). Also, this product includes cryptographic software written by Eric Young (eay@cryptsoft.com), and software written by Tim Hudson (tjh@cryptsoft.com).

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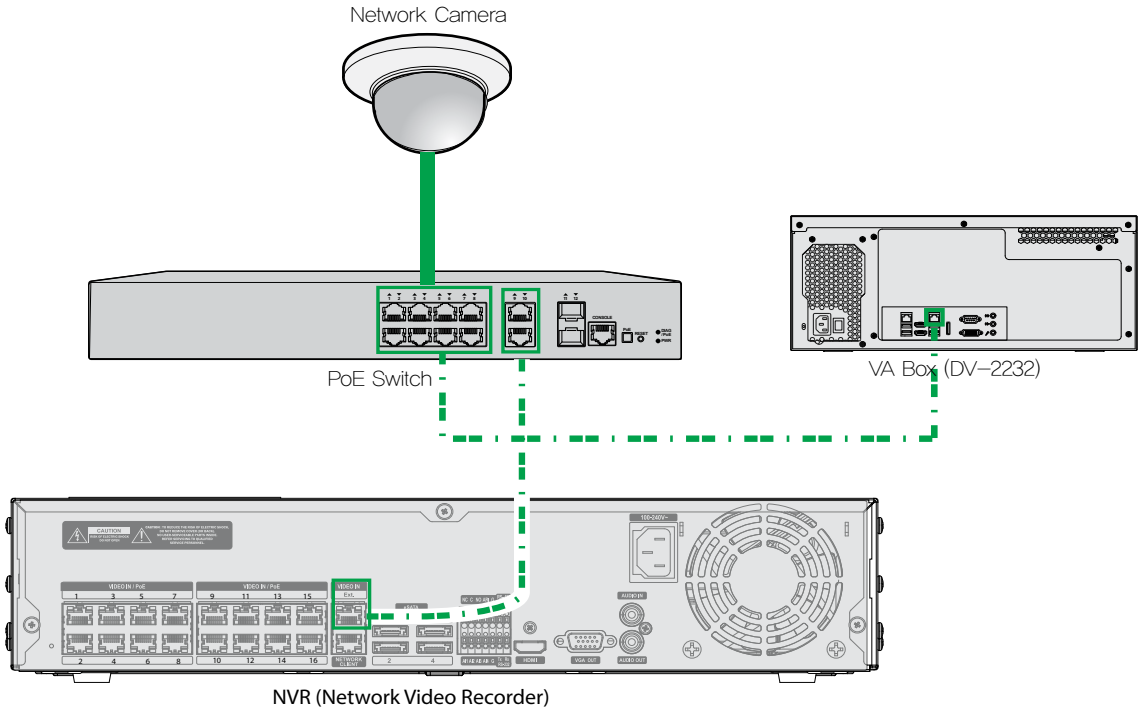
Part 1 – Product Information

Product Features

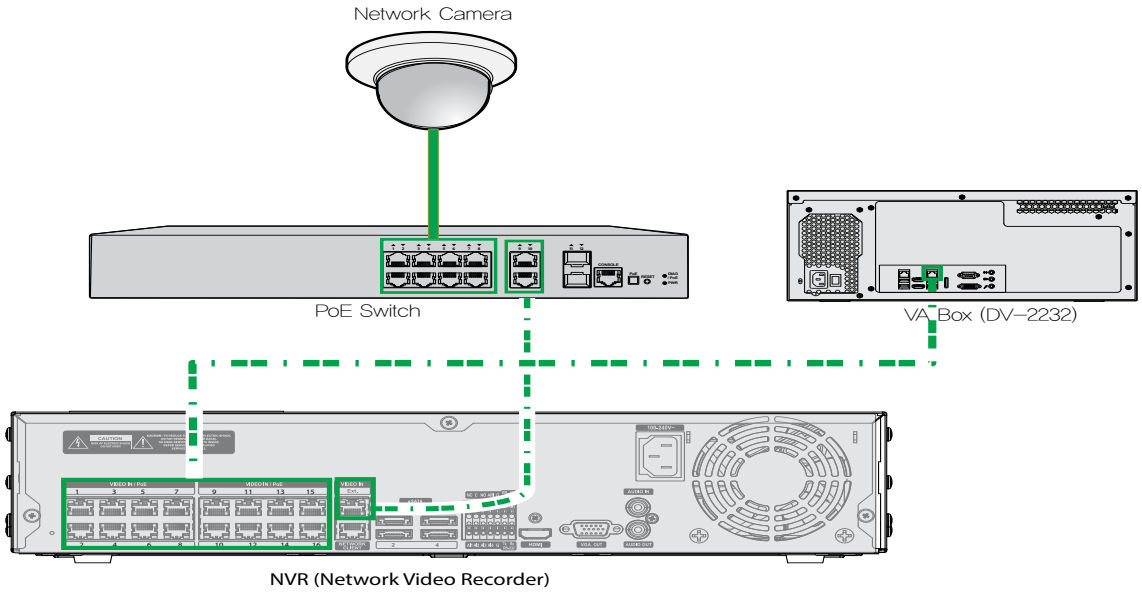
This VA in the Box (VA Box) analyzes the live video from DirectIP™ cameras and transmits the video over Ethernet connections. This product offers the following features:

- 32-channel H.264 and H.265 IP camera supported
- DirectIP™ protocol supported
- Various image analysis function such as People Counting, Crowd Detection, Social Distancing Violation, Mask Rule Violation.
  - **People Counting :** Counts the number of people passing through the line on the video.
  - **Crowd Detection :** Alarm occurs according to the analysis of the number of people detected in the video.
  - **Social Distancing Violation :** Alarm occurs according to the estimating and analyzing the distance between people detected in the video.
  - **Mask Rule Violation :** Selected camera detects a face and an event occurs according to the mask wearing rule set on the face.
- Configuration of device settings and integrated management of multiple VA Boxes on the NVR (Network Video Recorder)

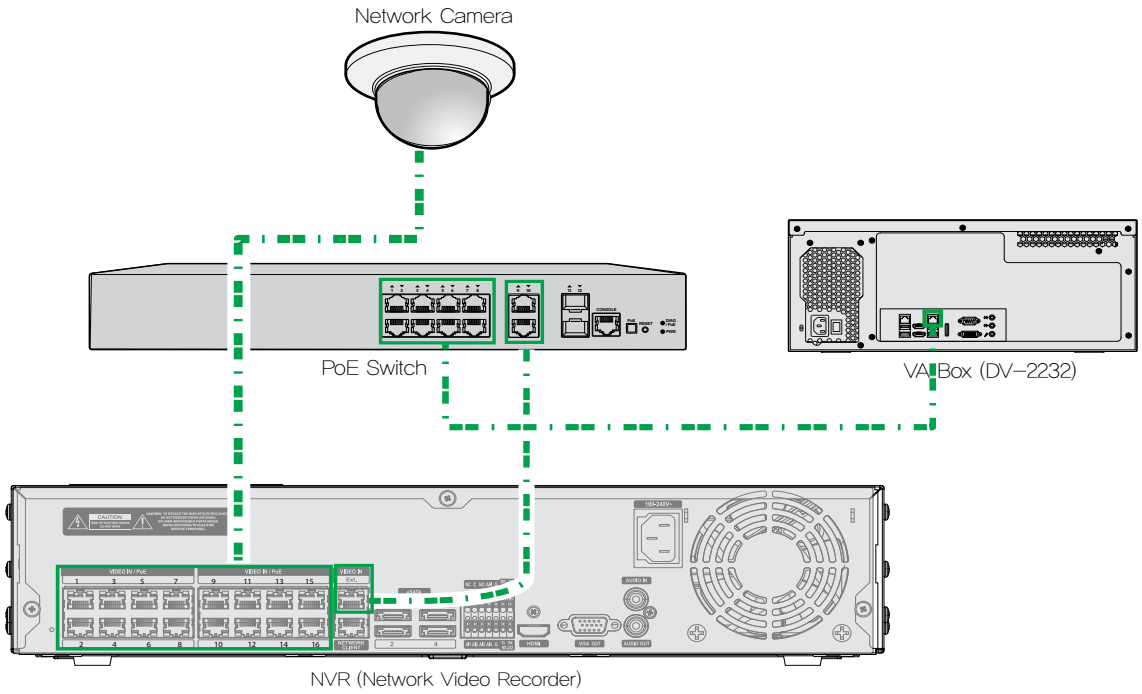
Example 1 : VA Box Connection Diagram Using PoE Switch



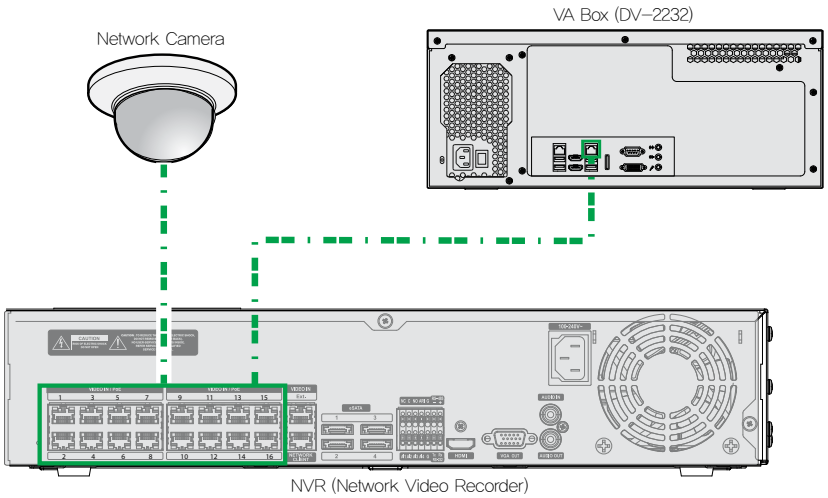
Example2 : VA Box Connection Diagram Using PoE Switch



Example 3 : VA Box Connection Diagram Using PoE Switch



Example 4 : VA Box Connection Diagram without PoE Switch



Types of Cables	
- - - - - -	LAN Cable (Data + PoE Power)

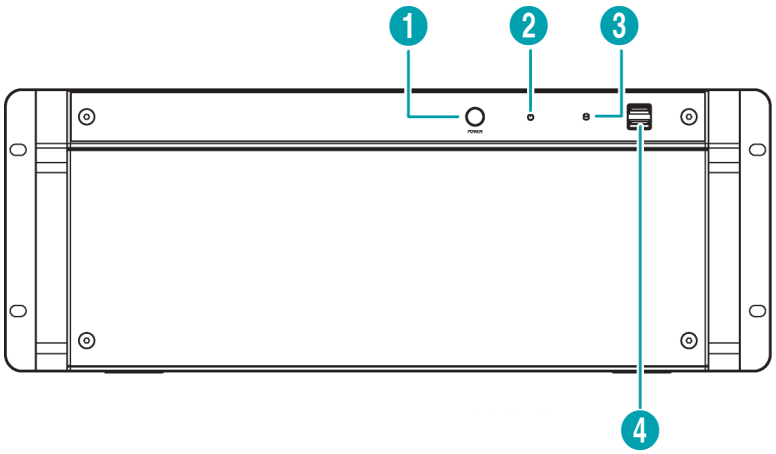
Accessories

Upon unpacking the product, check the contents inside to ensure that all the following contents are included.

- VA in the Box
- Instruction Manual (This document)
- Keyboard
- Mouse
- L wrench
- Screw

Overview

Front Panel



1	**Power Button**	2	**Power LED**	3	**HDD LED**	4	**USB Port**

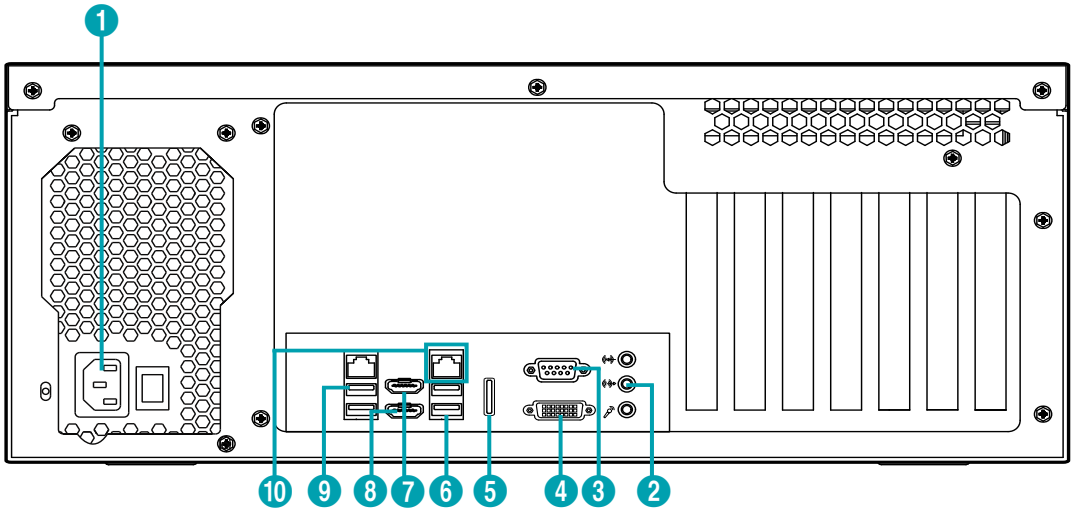
① Power Button
Turn the system on or off.

② Power LED
Is lit when the unit is turned on.

③ HDD LED
Flickers when the unit accesses to the hard disk drive.

④ USB Port
Connect USB devices such as a mouse, keyboard, USB storage device or printer.

Rear Panel



1	**Power In**	2	**Audio Out**	3	**RS232**	4	**VGA (D-Sub)**
5	**E-SATA**	6	**USB 3.0**	7	**DP**	8	**HDMI**
9	**USB 2.0**	10	**Network (LAN1)**				

① **Power In**

Connect a power cord.

② **Audio Out**

Connect an amplifier (Line-out). The NVR does not have amplified audio output, so you will need a speaker with an amplifier.

③ **RS232**

Connect a remote control device for RS232 communication.

④ VGA (D-Sub)

Connect an HD (High-Definition) PC monitor which supports a D-Sub interface. Connect a monitor before turning on the system. Video might not be displayed on the monitor when connecting a monitor after turning on the system.

⑤ E-SATA

Connect an external hard disk drive which supports an eSATA interface.

⑥ USB 3.0

Connect USB devices such as a mouse, keyboard, USB storage device or printer.

⑦ DP

Connect an HD (High-Definition) PC monitor which supports a DP interface.

⑧ HDMI

Connect an HD (High-Definition) PC monitor which supports an HDMI interface.

⑩ Network (LAN1)

Connect a CAT 5e or higher cable with an RJ-45 connector.

- The location of ports in slots can be different from the image above.
- If the LAN 1 and LAN 2 is connected to the same network, the system may malfunction.

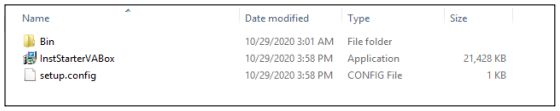
Part 2 - Installation

System Installation

Installation

1 Download DV-2232 software from IDIS website (www.idisglobal.com).

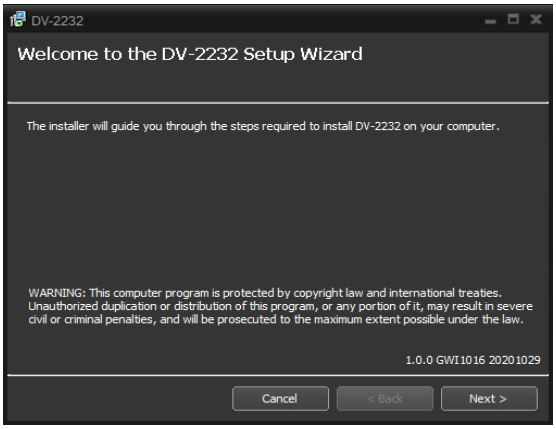
2 Execute InstStarterVABox.exe in the version information folder of the downloaded file.



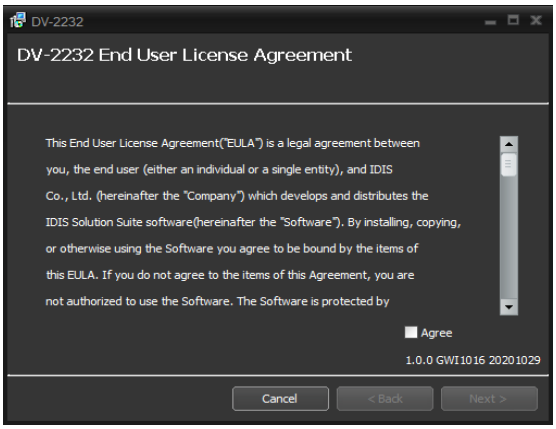
- Installing for the first time after purchase, install DV-2232 S/W using the installation file on the desktop.
  - C:\Users\admin\Desktop\Version\Setup

3 Select the language.

4 Select the Next after reading the instructions.

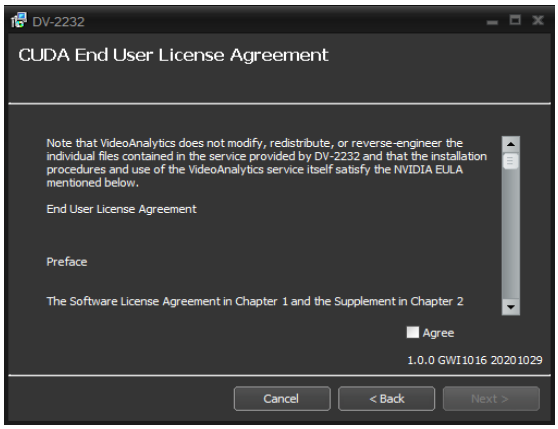


5 After reading the DV-2232 license terms, choose whether to accept it, and then select Next.



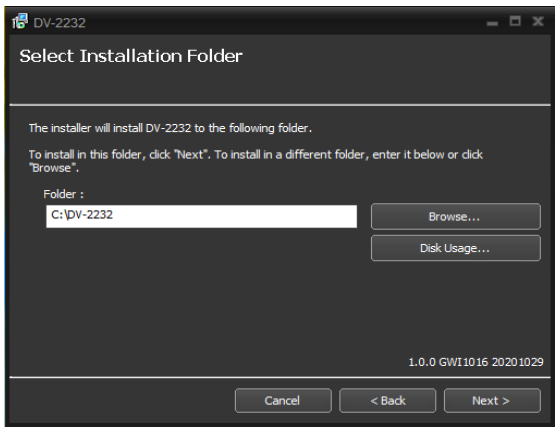
If you do not agree, it cannot proceed with the installation.

6 Read the full CUDA End User License Agreement, choose whether to accept it, and then select Next.

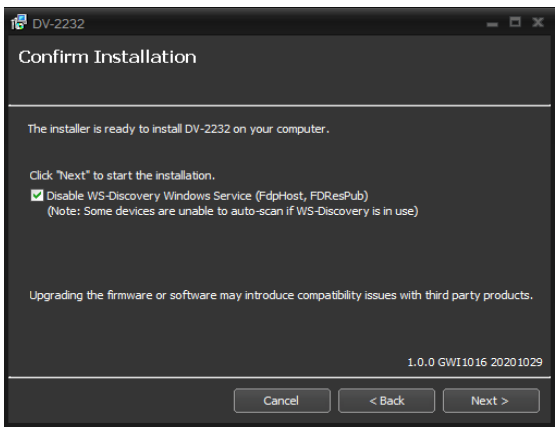


If you do not agree, it cannot proceed with the installation.

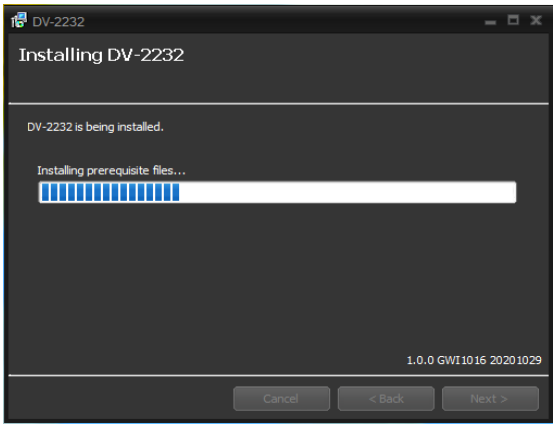
7 After specifying the installation path, select Next..



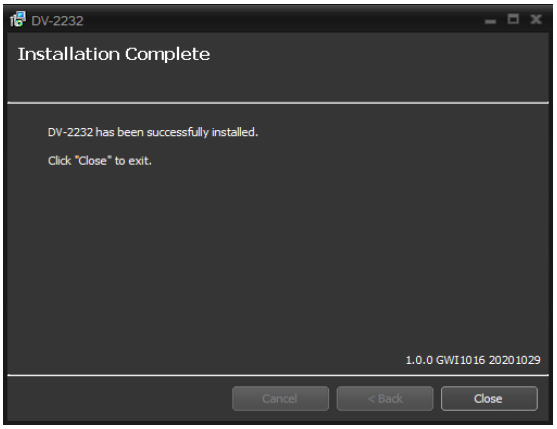
8 Check the Confirm Installation then select Next.



9 Wait for the installation to complete.

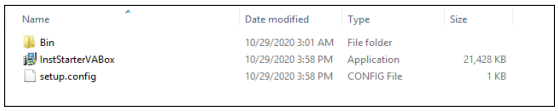


10 Check the installation completion message and click Close to complete the installation.



Upgrade

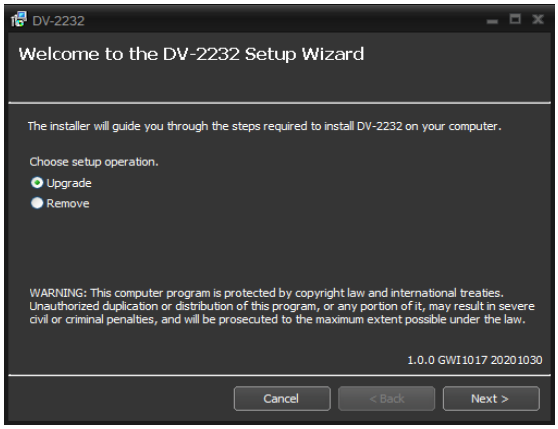
1 Execute InstStarterVABox.exe in the version information folder of the downloaded file.



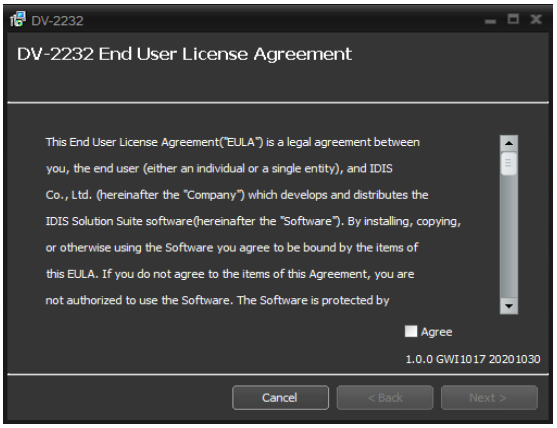
- Installing for the first time after purchase, install DV-2232 S/W using the installation file on the desktop.
  - C:\Users\admin\Desktop\Version\Setup

2 Select the language.

3 After reading the instructions, Select the Upgrade ans then Next.

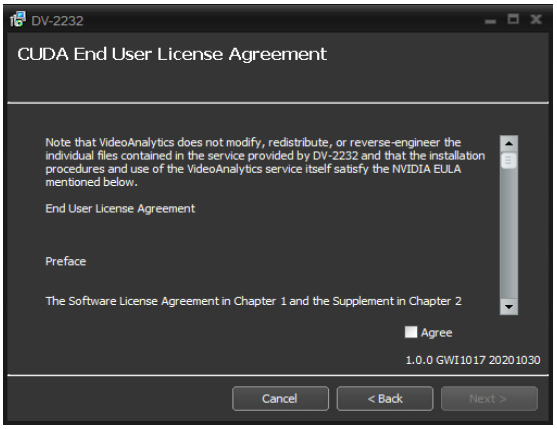


4 After reading the DV-2232 license terms, choose whether to accept it, and then select Next..



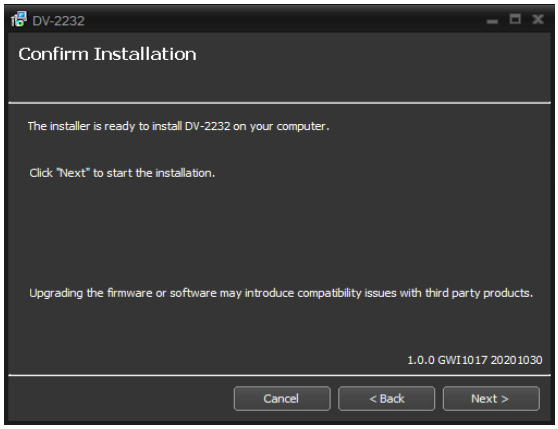
If you do not agree, it cannot proceed with the installation.

5 Read the full CUDA End User License Agreement, choose whether to accept it, and then select Next..

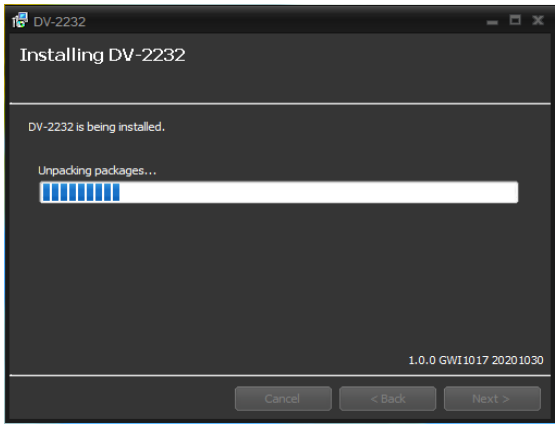


If you do not agree, it cannot proceed with the installation.

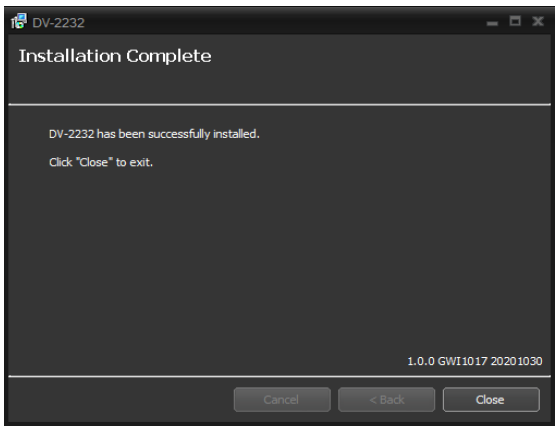
6 Check the Confirm Installation then select Next.



7 Wait for the installation to complete.



8 Check the installation completion message and click Close to complete the installation.

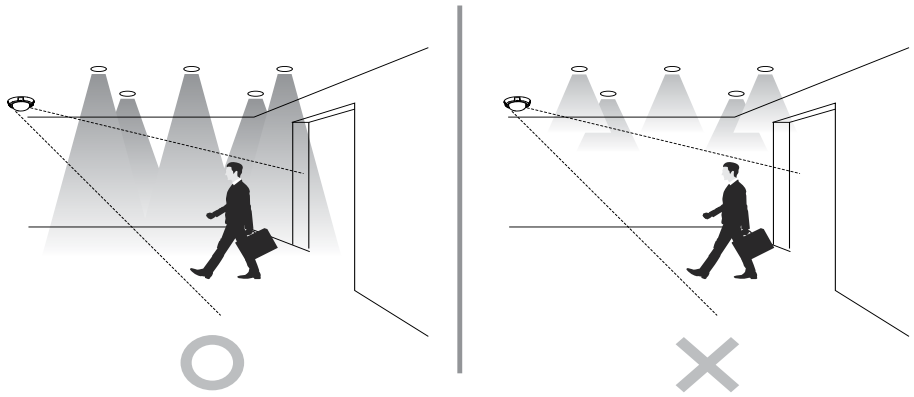


Camera Installation

General Guidline for VA Box Camera

In order to properly operate and manage VA Box such as cameras, especially people counting, Crowd Detection, Social distance violations, and mask rule violations, the following must be applied.

Make sure that the lighting is sufficient.



[Make sure there is enough light]

The Exceeding the limit, Crowd Detection, Social Distancing Violation and Mask Rule Violation of the VA in the Box may cause errors in actual measurements. So there may be errors in the actual measurement. In the following conditions, the analytical performance may suffer due to faulty detections.

- If there is not enough light.
- If it is difficult to obtain a sufficient view.
- If only part of the object is visible at the edge of the field of view.
- When several extremely fast moving objects appear randomly in the image.
- When a person is lying down or sitting without standing upright.
- When a moving object is too close to the camera.
- When several people move as a group and their motions block one another.
- When an object moves quickly.
- If an object is reflected on the floor, wall, glass, metal or water or makes a shadow from a light source.
- If the position of the camera differs from the direction of a light source and it makes a shadow.
- Fisheye analysis not supported.
- Corridor Format analysis not recommended.
- When it can be recognized as a person such as a mannequin or video screen.

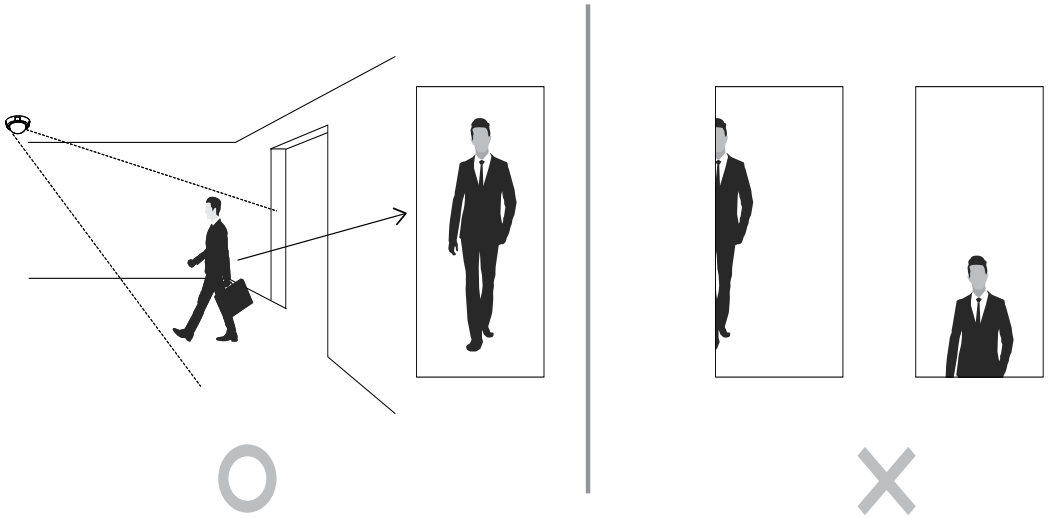
People Counting

Camera Installation

The whole body appears at the place to be counted, and it is installed diagonally so that the front and rear people passing by do not block each other.

- It is installed so that the movement of a person passing through the boundary line can be easily captured.

- The image should be installed so that the person does not tilt more than 30 degrees, and the size of the person on the image should be larger than 1/16th of the image size.



In the case of VA in the Box people counting, the recognition rate may decrease in the following cases.

- If there is a narrow gap between people passing through the counter line.
- A congested environment in which both incoming and outgoing are made at the same time based on the counting line.

Crowd Detection

In the case of VA in the Box Crowd Detection, the recognition rate may decrease in the following cases.

- Place with a large floating population
- People who near the camera cover the body of the person behind.

Social Distancing Violation

In the case of VA in the Box Social Distancing Violation, the recognition rate may decrease in the following cases.

- Only part of the human body is visible
- The perspective of distant and close people is lost due to a horizontal or low-angle camera.
- People close to the camera occupy too much area of the image to obscure nearby people
- People who near the camera cover the person in around.

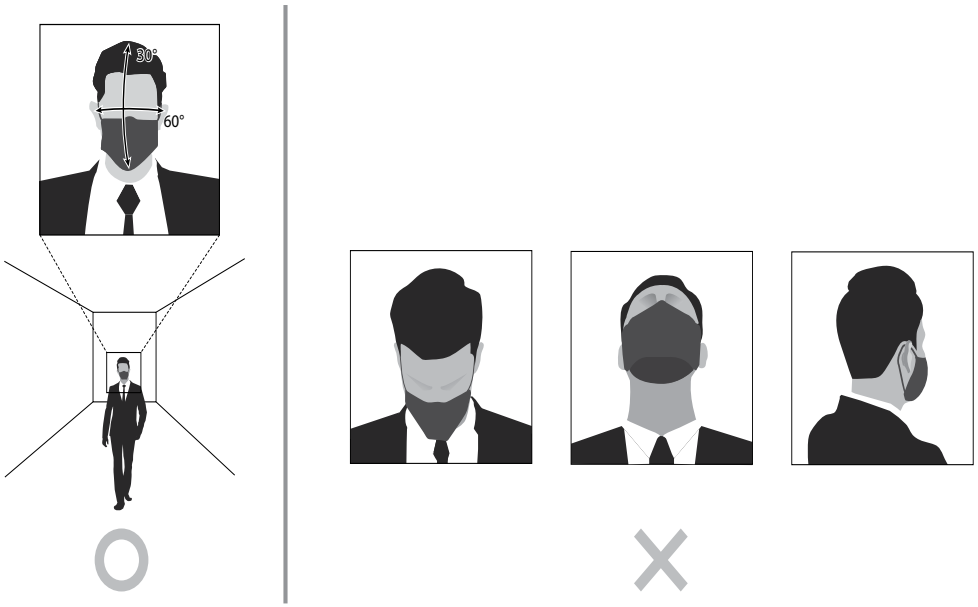
Mask Rule Violation

Camera Installation

The conditions must be satisfied to determine whether the subject violates the mask rules. It is recommended that the camera be installed at the average height of a person.

- When the resolution is 1920x1080, it can be detected when the size of the face is over 50x50 pixels.

- Based on the front of a person's face, it is detected only within 30℃ up and down and 60℃ left and right.



Part 3 - VA in the Box Setting via NVR

<Before You Configure VA settings>

Configure basic VA Box settings and all other system settings.

- Screen images may vary depending on the model.
- When using the camera with Intelleigent Codec, it could delay the image analysis up to 10 seconds.

- When the MAT (Motion Adaptive Transmission) function is active, the image analysis may not work properly.
- It is recommended that you do not use the MAT function of the associated camera to increase the accuracy of the image analysis.
- In the case of cameras to be used for video analysis, if one or more stream settings are not set to 640x360@10ips or more and 2mp@10ips or less, the video analysis may not work properly.

Camera Protocol

VA Box supports **DirectIP™** protocol.

- **DirectIP™** protocol:
  - Using with a DirectIP™ NVR enables VA Box use without the need to configure network settings.
  - The DirectIP™ NVR also allows you to control all VA Box settings directly from the NVR, without the need for a computer.

- For more information on configuring VA Box settings from a DirectIP™ NVR, refer to the **Part 3 - VA in the Box Setting via NVR on page <?>**.
- For more information about video analysis report, refer the **Part 4 - Video Analysis Report via IDIS Center Program on page <?>**.

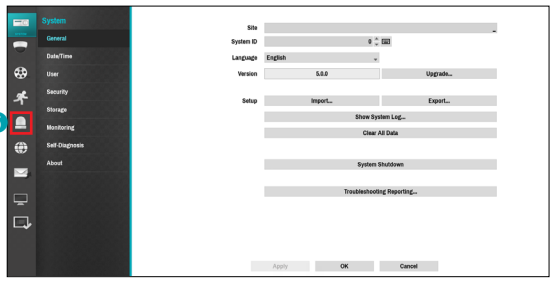
Firmware Upgrade

Remote software upgrade is not supported. If necessary, Prepare a monitor, keyboard, and firmware for the device to perform the upgrade yourself.

VA Box Setup

Select ❺ **Device Setup-VA Box** from the setup menu. Login with an ID that has permission to access the setup menu is needed to access and make changes to the Setup menu.

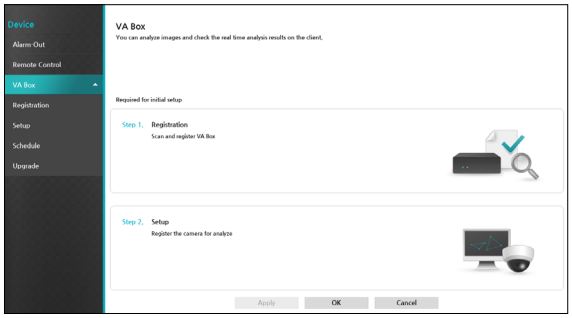
1 While in Live mode, press the remote control's **SETUP** button or select Live menu > Setup using the mouse.



2 Use the remote control's arrow buttons to select an option and then press the remote control's ↵ button or left-click on the option using the mouse.

VA Box

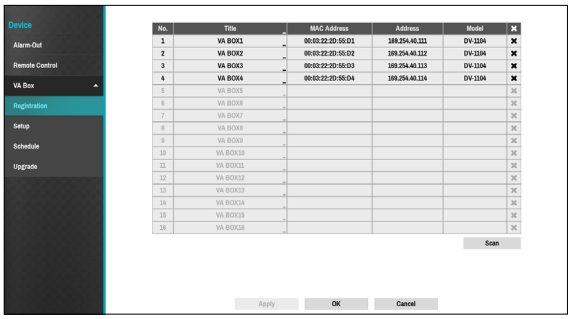
By analyzing camera images, you can check real-time analysis results from a client program such as the IDIS Center.



VA Box can only analyze the video from the camera using H.264 and H.265.

VA BOX_Registration

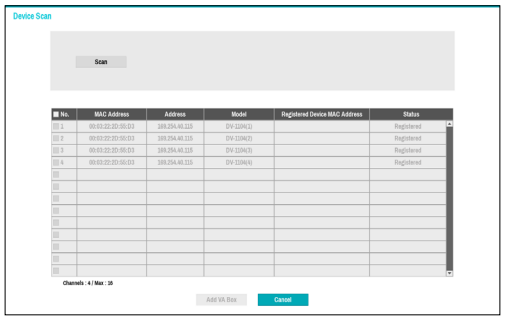
You can register VA Box at remote locales.



- **Title:** Edit the VA Box's name.
- **MAC Address**: Displays the VA Box's MAC address registered to the NVR.
- **Address**: Displays the VA Box's IP address registered to the NVR.
- **Model**: Indicates the VA Box's model.
- **Scan**: Select to scan and register the device connected to the NVR.

Device Scan

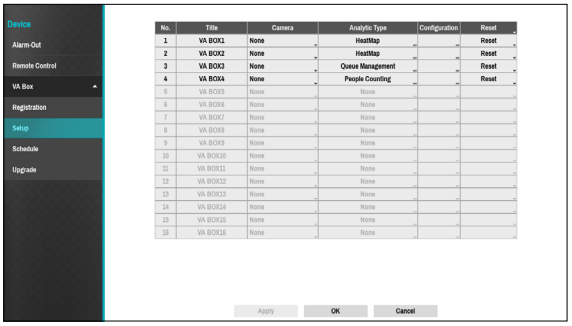
Scan the device under **Registration** - **Scan**.



- **No.**: Select the registered VA Box number and click the **Add Box** button to register the camera.
- **MAC Address**: Displays the scanned device's MAC address.
- **Address**: Displays the scanned device's IP address.
- **Model**: Indicates the device model.
- **Registered Device MAC Address**: Displays the MAC address of the NVR to have registered VA Box.
- **Status**: The "Registered" indicates the VA Box is registered to the NVR and "Not registered" indicates the VA Box is not registered to the NVR.

VA BOX_Setup

Configure VA Box-related settings.



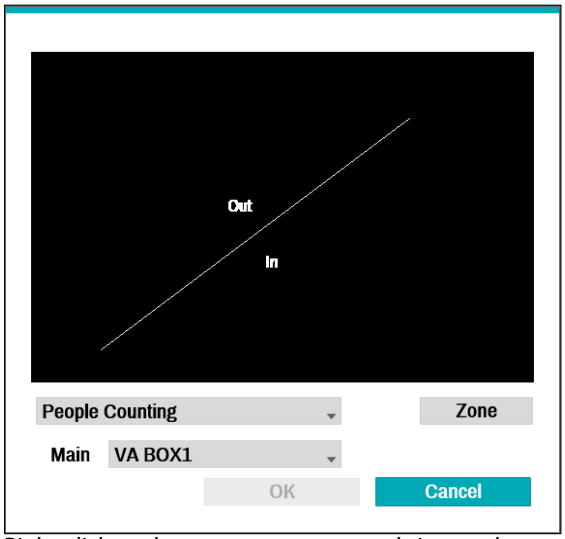
- **Title**: Displays the name of a VA Box.
- **Camera**: Select the camera to analyze the video. Only one camera can be set for each VA Box channel
- **Set up:** The setting items appear differently depending on the VA Box's type. For the setting items, refer to the setting items of each VA Box's type.

  The video analytics may not be supported depending on the model.

- **Analytic Type**: Select one among People Counting, Crowd Detection, Social Distancing Violation and Mask Rule Violation. A single video analysis function is available for each VA Box channel.

People Counting

Count the number of people passing through the line on the live screen.



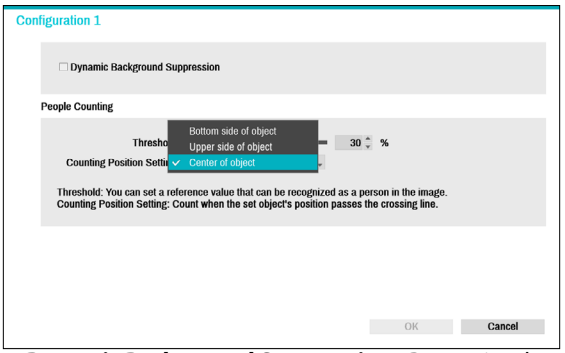
Right-click on the zone setup screen to bring up the People Counting Menu.

- **Main:** Add the total number of people by sending them to the desired channel. The channel designated as the main can use the Exceed Occupancy Limit event.
- **Boundary:** Set a virtual border to count the floating population.

  Depending on the location of the boundary, the number of people may be incorrectly calculated.

- **Save:** Save the changes and exit the menu.
- **Cancel :** Exit the setup screen without saving the changes.

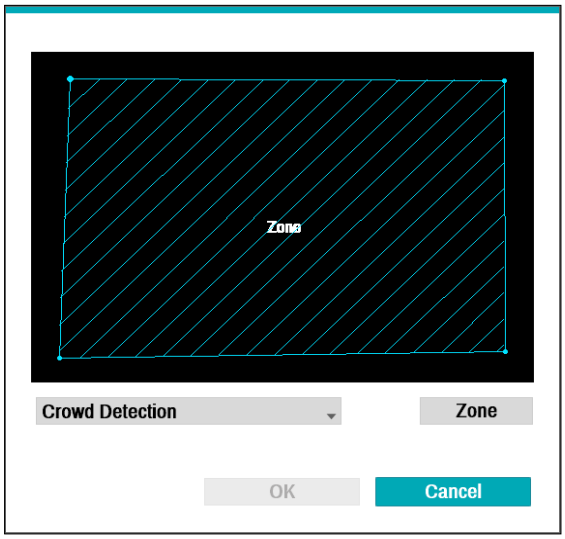
- **Configuration**: Set the environment of people counting. Select People Counting as the video analysis type, and then select Settings. Below is an example of a screen in which the video analysis type is set to people counting.



- **Dynamic Background Suppression :** Recognize the objects (people) even if the background is moving.
- **Threshold :** Set the reference value that can be recognized as a person in the image.
- **Counting position setting:** Set the position of the reference point of a person to count the number of people passing through the boundary.

Crowd Detection

Analyze the number of people detected in the set area of the image. Draw an area by clicking the left mouse button. When modifying an already drawn area, drag and drop the vertices or click the left mouse button to reset the area.

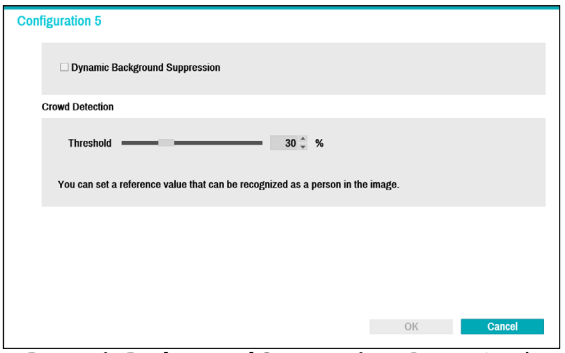


Lines cannot cross when setting the zone.

Right-click on the zone setup screen to bring up the Crowd Detection Menu.

- **Undo :** Return to the previously set zone.
- **Save:** Save the changes and exit the menu.
- **Cancel :** Exit the setup screen without saving the changes.

- **Configuration**: Set the environment of Crowd Detection. Select Crowd Detection as the video analysis type, and then select Settings. Below is an example of a screen in which the video analysis type is set to Crowd Detection.



- **Dynamic Background Suppression :** Recognize the objects (people) even if the background is moving.
- **Threshold :** Set the reference value that can be recognized as a person in the image.

Social Distancing Violation

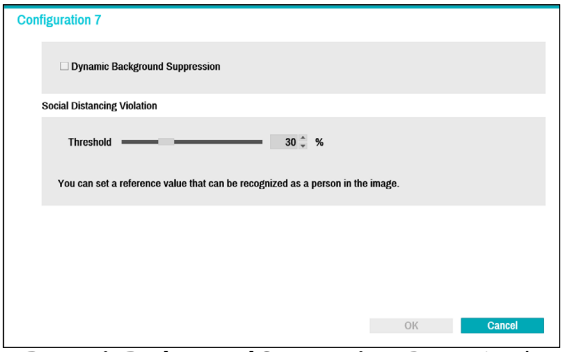
Violation event occurs when the distance between detected people in the set area of the image is estimated and analyzed and the distance is less than the set interval. Draw an area by clicking the left mouse button. When modifying an already drawn area, drag and drop the vertices or click the left mouse button to reset the area.

Lines cannot cross when setting the zone.

Right-click on the zone setup screen to bring up the Social Distancing Violation Menu.

- **Undo :** Return to the previously set zone.
- **Save:** Save the changes and exit the menu.
- **Cancel :** Exit the setup screen without saving the changes.

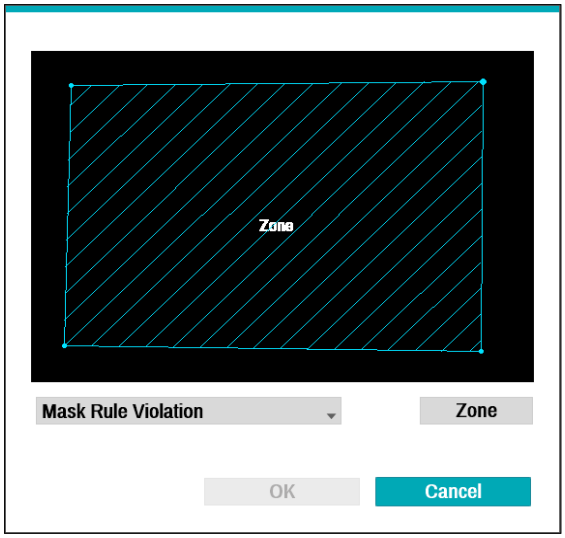
- **Configuration**: Set the environment of Social Distancing Violation. Select Social Distancing Violation as the video analysis type, and then select Settings. Below is an example of a screen in which the video analysis type is set to Social Distancing Violation.



- **Dynamic Background Suppression :** Recognize the objects (people) even if the background is moving.
- **Threshold :** Set the reference value that can be recognized as a person in the image.

Mask Rule Violation

The camera selected detects the face and events occur according to the mask-wearing rule setting on the face. Draw an area by clicking the left mouse button. When modifying an already drawn area, drag and drop the vertices or click the left mouse button to reset the area.

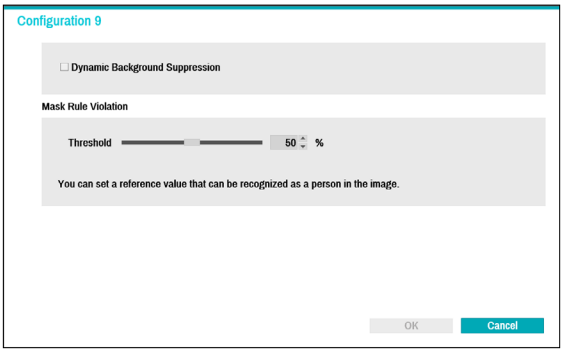


Lines cannot cross when setting the zone.

Right-click on the zone setup screen to bring up the Mask Rule Violation Menu.

- **Undo :** Return to the previously set zone.
- **Save:** Save the changes and exit the menu.
- **Cancel :** Exit the setup screen without saving the changes.

- **Configuration**: Set the environment of Mask Rule Violation. Select Mask Rule Violation as the video analysis type, and then select Settings. Below is an example of a screen in which the video analysis type is set to Mask Rule Violation.



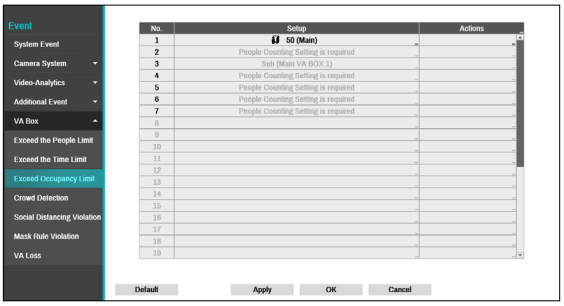
- **Dynamic Background Suppression :** Recognize the objects (people) even if the background is moving.
- **Threshold :** Set the reference value that can be recognized as a person in the image.

VA Box_Event Set up

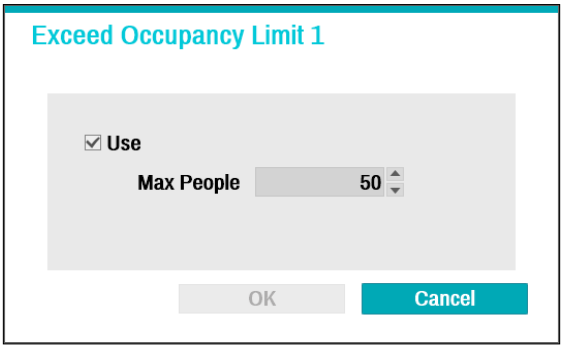
A list of events that occur on VA Box.

VA Box_Exceed Occupancy Limit

Event occurs when the In/Out coefficient is detected and the coefficient of the relevant VA Box channel is added in real time to exceed the specified conditions.



- **Set up :** Set the Exceed Occupancy Limit event.



– **Max People :** An event occurs when a person in the area in excess of the number of people set by a person.

- To use the limit head count function, the channel must have a People Counting setting on DV-2232.
- For inquiries related to the Occupancy Dashboard web, please contact local sales representative.

- **Actions:** Specify which actions to take when an event occurs.

– **Record:** Specify which cameras to begin linked recording on when an event occurs. If the schedule is set to Event or Time & Event mode, the selected cameras will begin linked recording when an event occurs.

– **Alarm-Out:** Designate event-triggered alarm-out channels (each for the NVR and camera) and beeps.

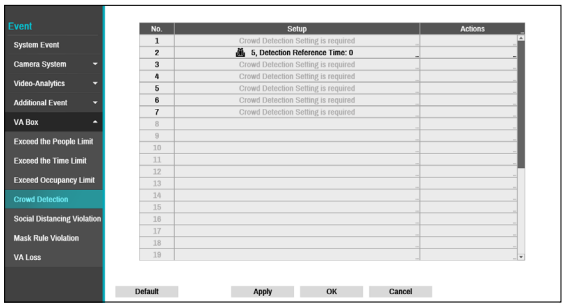
–**Notify:** Configure to be notified of events by Mail, LAN1 through 5, Push, FTP, and/or Alert Window.

– **PTZ:** Moves the PTZ camera to a specific preset position when an event occurs.

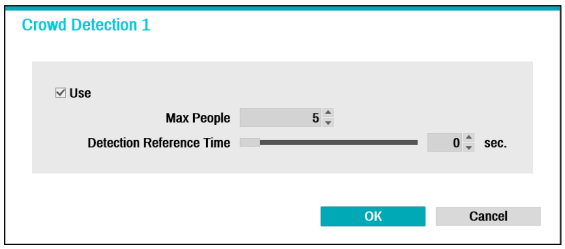
– **Event Monitoring:** Selects the cameras to monitor when an event occurs.

VA Box_Crowd Detection

An event occurs when a person is detected and the maximum number of people is set in the unit area.



- **Set up :** Set the Crowd Detection event.



  - **Max People :** An event occurs when a person stays in the area in excess of the number of people set by a person.
  - **Detection Reference Time :** Set the minimum time required to be detected as a person in the area.

    To use the Crowd Detection, the Crowd Detection must be set on that channel.

- **Actions:** Specify which actions to take when an event occurs.

  – **Record:** Specify which cameras to begin linked recording on when an event occurs. If the schedule is set to Event or Time & Event mode, the selected cameras will begin linked recording when an event occurs.

  – **Alarm-Out:** Designate event-triggered alarm-out channels (each for the NVR and camera) and beeps.

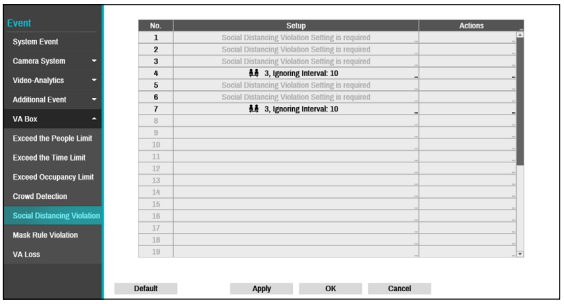
  –**Notify:** Configure to be notified of events by Mail, LAN1 through 5, Push, FTP, and/or Alert Window.

  – **PTZ:** Moves the PTZ camera to a specific preset position when an event occurs.

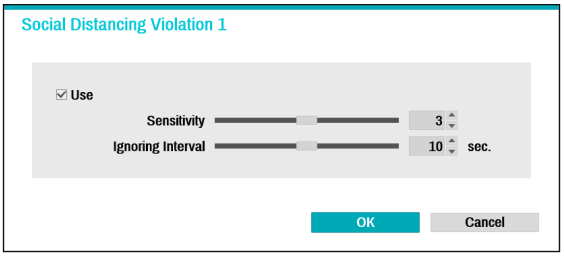
  – **Event Monitoring:** Selects the cameras to monitor when an event occurs.

VA Box_Social Distancing Violation

Event occurs when the distance is less than the interval that is set by estimating the distance between people by human detection.



- **Set up :** Set the allowable interval between people.



  - **Sensitivity :** The higher the sensitivity value, the greater the probability of being detected as an event, if the distance between people is equal to the step relative value of the distance between people.
  - **Ignoring Interval :** Event log and remote notification are not performed for Social Distancing Violation events detected within a certain period of time after the event was detected.

    To use the Social Distancing Violation, the Social Distancing Violation must be set on that channel.

- **Actions:** Specify which actions to take when an event occurs.

  – **Record:** Specify which cameras to begin linked recording on when an event occurs. If the schedule is set to Event or Time & Event mode, the selected cameras will begin linked recording when an event occurs.

  – **Alarm-Out:** Designate event-triggered alarm-out channels (each for the NVR and camera) and beeps.

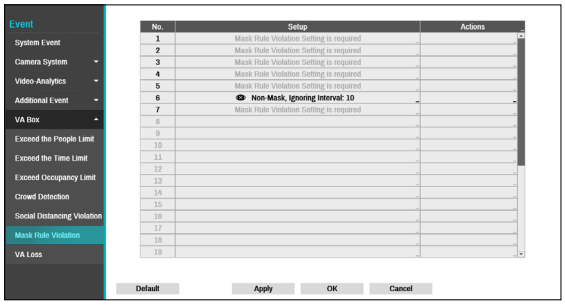
  –**Notify:** Configure to be notified of events by Mail, LAN1 through 5, Push, FTP, and/or Alert Window.

  – **PTZ:** Moves the PTZ camera to a specific preset position when an event occurs.

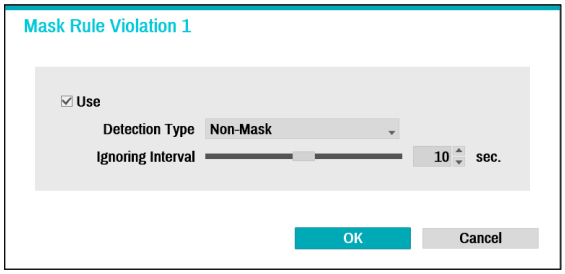
  – **Event Monitoring:** Selects the cameras to monitor when an event occurs.

VA Box_Mask Rule Violation

The camera selected detects the face and events occur according to the mask-wearing rule setting on the face.



- **Set up :** Check the rules for wearing a mask on a person's face and set the event to occur when a violation occurs.



  - **Detection Type :** Set the Non-Mask / Mask Rule.
  - **Ignoring Interval :** Event log and remote notification are not performed for mask rule violation events detected within a certain period of time after the event was detected.

To use the mask rule violation, the mask rule violation must be set on that channel.

- **Actions:** Specify which actions to take when an event occurs.

  – **Record:** Specify which cameras to begin linked recording on when an event occurs. If the schedule is set to Event or Time & Event mode, the selected cameras will begin linked recording when an event occurs.

  – **Alarm-Out:** Designate event-triggered alarm-out channels (each for the NVR and camera) and beeps.

  –**Notify:** Configure to be notified of events by Mail, LAN1 through 5, Push, FTP, and/or Alert Window.

  – **PTZ:** Moves the PTZ camera to a specific preset position when an event occurs.

  – **Event Monitoring:** Selects the cameras to monitor when an event occurs.

Part 4 -View Analysis in Remote Client

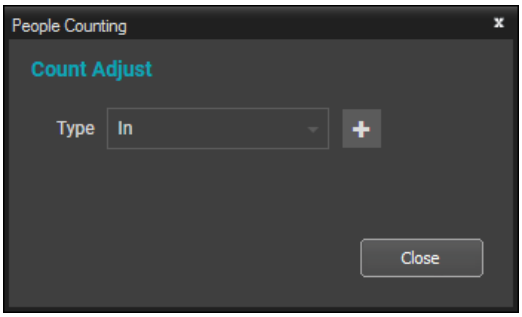
VA Box

VA Box View

Click the right mouse button to display the screen menu. The menu is activated according to the type of the current video analysis when mouse over the video analysis display on the screen menu.

- When People counting is selected, real-time In/out information and sensing objects are displayed on the image.
- Select Crowd Detection, social distance violation, and mask violation, and NVR-set areas and sensing objects are printed on the Video.
- For details, please refer to the IDIS Center or the latest IDIS Solution Suite manual.

Personnel Adjustment



- Change the In/Out information displayed above the image by selecting Personnel Adjustment in the video analysis display.
- Select In or Out in the Personnel Adjustment window and click the + button to increase In or Out data.

VA Dashboard

The information of violations and events detected from a VA device is displayed in a dashboard format. Up to 4 sites can be searched and displayed with results. Select New Tab from the System menu and click VA Dashboard to add a tab.

VA Dashboard Screen

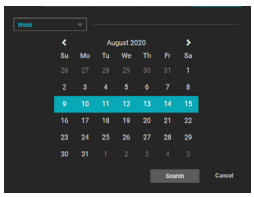
1	**Page Name**	Displays the current page name. Click the (edit) button or double-click to edit the name. The page name is maintained until the next login.
2	**Search Range Setup and Menu**	Set up the search range selecting between the preset or user custom options. Click the (menu) button to use actions related to the current page.
3	**Violations**	Displays violation information within the search range and a graph visualizing the violation trend.
4	**Events**	Displays detected events and items within the search range as a graph and a list.
5	**Site Panel Title Bar**	Displays the registered site name and setting buttons of the site panel. When the site panel is folded, the summary of violation information is displayed.

You can adjust the size of each section by dragging the size adjust bar between the violations and events sections.

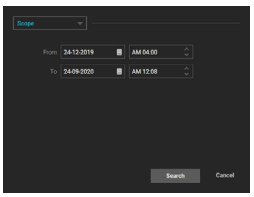
Search Range

You can set the scope of search between the preset mode and the user custom mode.

- **Today:** Searches for today's data.
- **This Week:** Searches for this week's data including today. You can select the starting day of a week from **System > Setup > System > Date/Time.**
- **This Month:** Searches for this month's data including today.
- **Custom:** A user can select the search range. Select from the calendar by **Day, Week, Month**, or enter **From/To** range under **Scope**.



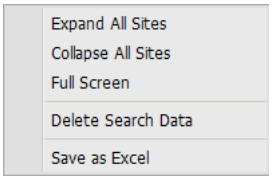
Search by Week



From/To Search

Page Menu

Functions which can be applied to the page or the whole site pnael are provided.



- **Expand All Sites:** Expands all of site panels.
- **Collapse All Sites:** Collapses all of site panels.
- **Full Screen:** Displays the current page in full screen mode.
- **Delete Search Data:** Deletes the search data of all site panels.
- **Save as Excel:** Saves violation and event information of all site panels as an excel file.

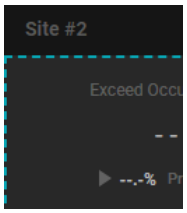
Site Panel Toolbar

Actions and settings of the site panel can be controlled.

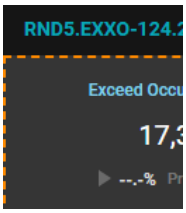
- **(Refresh):** Reloads data of the site panel.
- **(Stop Search):** Stops the data search. Search results before the pause are displayed on the panel.
- **(Save as Excel):** Saves violation and event data as an excel file.
- **(Delete Search Data):** Deletes all search results displayed on the site panel.
- **(Unregister Site):** Disconnects the registered site.
- **(Settings):** Configure the site panel settings.
- / **(Collapse/Expand):** Collapses or expands the site panel.

Registration and Search

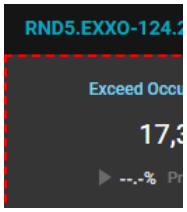
1 Select a device from the Site list and drag to the device site panel. Depending on whether or not a site can be registered, the border color is displayed in the site panel as the following.



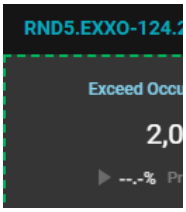
Registrable (New)



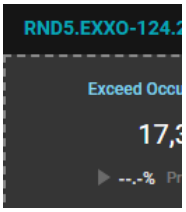
Registrable (Replace)



Unable to Register



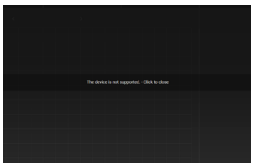
Register while Searching



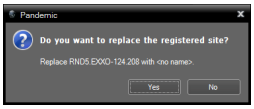
Same Site or Re-register

2 If you drag and drop a site which cannot be registered, a notifying message pops up on the site panel. If you drop a registrable site on the panel with already registered site, a message pops up which asks if you would like to replace.

If the panel is during search or attempts to register the same site, the action is ignored.



Unable to register message



Site replacement message window

3 When a site is registered on the site panel, the site name is displayed and the (Unregister Site) button and the (Settings) button are activated.

If more than one site are available, the search section is activated.

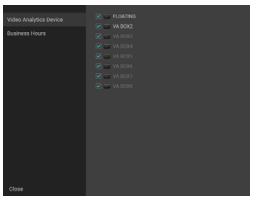
4 Select the scope of search to start data search. Select from **Today, This Week, This Month** or click **Custom** to designate the search range and click **Search**. The search range is displayed on the left. If no data is available within the search range, the "There is no video analytics data" message is displayed on the site panel.

5 Once the search is complete, a graph illustrating violation/ event information and violation trend.

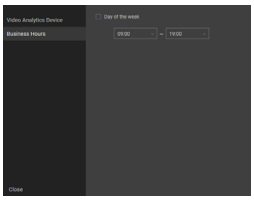
6 Click the (Unregister Site) button to disconnect the registered device from the site panel.

Site Panel Setup

Configure the site panel settings. Click (Settings) from the site panel toolbar to bring up the setup window.



Video Analytics Device

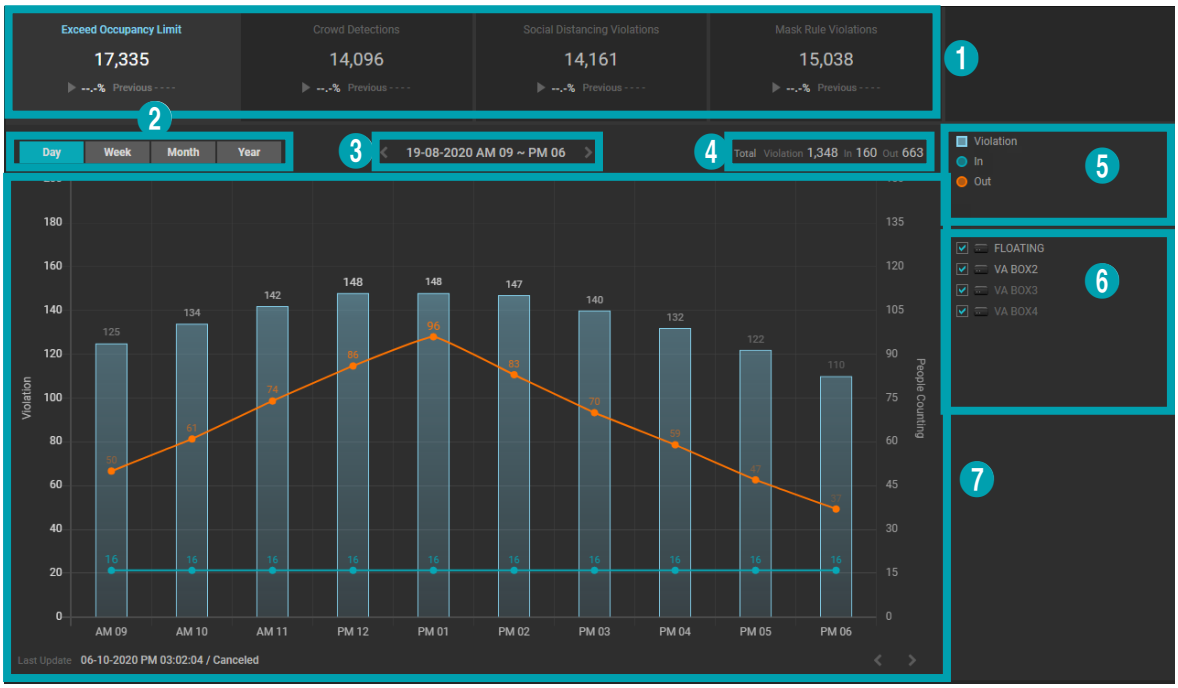


Business Hours

- **Video Analytics Device:** Select a video analytics device for data search.
- **Business Hours:** Set up the time range in which data is displayed. Select **Day of the week** to configure time for each day. Select **Closed** under the **Day of the week** option to exclude the selected day.

Violation

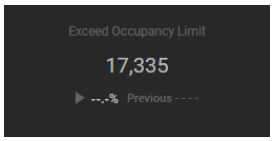
The violation (Exceed Occupancy Limit, Crowd Detections, Social Distancing Violations, Mask Rule Violations) search results are displayed.



❶	**Violation Data File**	Displays the searched violation information according to categories. Clicking a tile displays each violation trend on the graph, and clicking the selected tile again displays the violation trend of all categories.
❷	**Unit of Time**	Select the value for the x-axis of the graph. • **Day:** Displays data for a day, up to 24 hours on an hourly basis. • **Week:** Displays data for a day, up to 7 days on a daily basis. • **Month:** Displays data for a month, up to 31 days on a daily basis. • **Year:** Displays data for a year, up to 12 months on a monthly basis.
❸	**Graph Time Range**	Displays the time range of the data on the graph. Click to change the date/time of the graph.
❹	**Total Data Value**	Indicates the total sum of values displayed on the graph for each category.
❺	**Legend**	Indicates the data displayed on the graph. Click to toggle on/off. The legends for Social Distancing Violation and Mask Rule Violation are not displayed, since eacah has only one legend.
❻	**Video Analytics Device List**	Displays data of selected video analytics devices on the graph.
❼	**Graph**	Displays violation data and additional data as a bar or line graph. The additional violation data are as the following: – Exceed Occupancy Limit: In/Out – Crowd Detections: Maximum number of people

Violation Data Tile

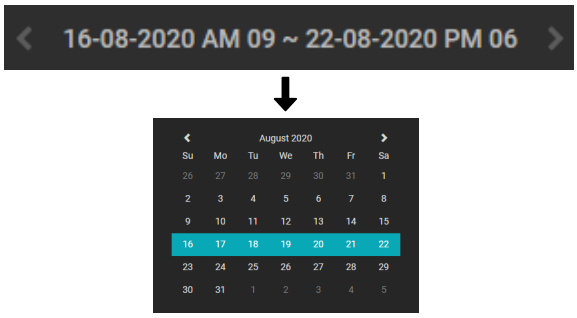
Information related to violation data is displayed.



- **Type:** Displays the type of violation.
- **Violation Value:** Displays the violation value within the search range.
- **Previous Value:** Displays the previous violation value. The search range is the same as the current search range.
- **Increase/Decrease Rate:** Indicates the increase or decrease rate between the previous and the current value.

Previous Value and **Increase/Decrease Rate** are not displayed in the case of **Custom** search range.

Time Shift of Graph



- Click the left/right of the time range or the / (Previous/Next) buttons on the right bottom of the graph to display the graph corresponding to the previous/next time range.
- Clicking the time range displays a calendar and selecting the time displays the corresponding data on the graph.
- Range of selection on the calendar differs according to the unit of time (day, week, month, year).
- Clicking the bar or line graph works as follows:
  - Left mouse click: Displays the graph in a narrower range of time unit. The graph including the time of the clicked bar or line is displayed.
  - Right mouse click: Displays the graph in a broader range of time unit. The graph including the currently illustrated range is displayed. Information related to violation data is displayed.

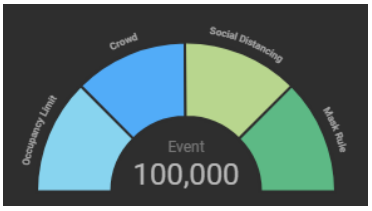
Left Mouse Click on the Graph (Year - Month - Week - Day)

Right mouse click on the graph changes the time unit in the order of Day - Week - Month - Year.

Event

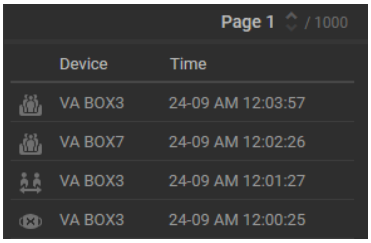
Violation events are displayed on the graph and list.

Event Chart



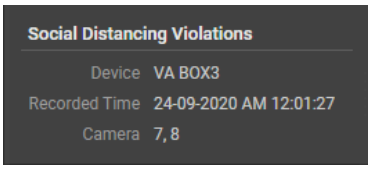
- The number of violation events for each violation type is displayed.
- Clicking the specific violation event activates the violation chart and the corresponding event items are displayed on the list.
- Clicking the selected violation event displays the total violation event items on the list.
- The number of selected violation event or the number of total events is displayed in the middle of the chart.
- The maximum number of events is 100,000.

Event List



- Violation event items within the search range are listed (up to 100,000 items).
- 100 event items can be displayed on one page of list in maximum.
- The current page/total pages is displayed on the top of the list.
- Click the spin button on the right of the current page number to turn the page.
- Clicking the current page number to display the page list. Time indicates the time when the first event of the page occurred. Clicking the page item moves to the corresponding page.

Event List Tooltip



- **Event Type:** Displays the violation type of the event.
- **Device:** Indicates the video analytics device where the event occurred.
- **Recorded Time:** Indicates the time when the event occurred.
- **Camera:** Displays the cameras related to the video analytics device where the event occurred.

Part 5 - Appendix

Troubleshooting

Problem	Check
Power LED will not turn on	• Check the LAN cable. • Check that the power cable is connected or the NVR has power.
The system is unable to recognize network interface	• Check the LAN cable. • Check the network LED.

Specifications

These product specifications may change without prior notice.

CONNECTOR	
Monitor Output	1 HDMI, 1 DP, 1 VGA
Audio Input / Output	1 AUX connector (3.5 Φ) / 1 AUX connector (3.5 Φ)
Alarm	Terminal Block
Ethernet Port	2 RJ-45 (1 Gbps Ethernet)
eSATA Port	1 eSATA
RS-232 Serial Port	DB9 (P)
USB	USB 2.0: X2 (Front), X2 (Back) / USB 3.0: X2 (Back)

STORAGE	
Main Storage	SATA HDD (Max. 5)
Secondary Storage (Extension)	eSATA HDD

GENERAL	
Unit Dimensions (W x H x D)	440mm x 177mm x 462mm (17.3"x7.0"x18.2")
Unit Weight	14kg (30.86 lbs.)
Working Temperature	0°C to 40°C
Operating Humidity	0% ~ 90%
Power Input	AC 100-240 V, 50/60Hz, 5.5-2.5A
Power Consumption	AC 100-240 V, 50/60Hz, 5.5-2.5A, 350W
Channel Analysis Performance	Max. 32 channels (640x360 @ 10 ips video input)
CPU	Intel Skylake I7-7700, 3.6GHz
RAM	DDR4 PC-19200, 8GB
VGA	RTX2060 SUPER, 8GB
Approvals	FCC, UL**, CE, CB

** CAUTION: Risk of Explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions. This equipment is indoor use and all the communication wiring are limited to inside of the building.

IDIS Co., Ltd.

For more information, please visit at
www.idisglobal.com