

Product User Guide

MOBOTIX 2MP Vandal Bullet Analytics Camera

Mx-VB2A-2-IR-VA

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BeyondHumanVision

 HEVC Advance™
MOBOTIX

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Before You Start

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Support

If you need technical support, please contact your MOBOTIX dealer. If your dealer cannot help you, he will contact the support channel to get an answer for you as quickly as possible.

If you have internet access, you can open the MOBOTIX help desk to find additional information and software updates. Please visit:

www.mobotix.com > Support > Help Desk



Safety Warnings

- This product must not be used in locations exposed to the dangers of explosion.
- Electrical systems and equipment may only be installed, modified and maintained by a qualified electrician or under the direction and supervision of a qualified electrician in accordance with the applicable electrical guidelines. Make sure to properly set up all electrical connections.
- Make sure to install this product in a well-ventilated spot and do not close off any vent openings.
- Do not use this product in a dusty environment.
- Protect this product from moisture or water entering the housing.
- Make sure that you install this product as outlined in this document. A faulty installation can damage the product!
- Do not replace batteries of the product. Batteries can explode if they are replaced by an incorrect type.
- This equipment is not suitable for use in locations where children are likely to be present.
- This equipment is to be connected only to PoE networks without routing to other networks.
- If using a Class I adapter, the power cord shall be connected to a socket-outlet with proper ground connection.
- To comply with the requirements of EN 50130-4 regarding the power supply of alarm systems for 24/7 operation, it is highly recommended to use an uninterruptible power supply (UPS) for powering the product.

Legal Notes

Legal Aspects of Video and Sound Recording

You must comply with all data protection regulations for video and sound monitoring when using MOBOTIX AG products. Depending on national laws and the installation location of the 2MP Vandal Bullet Analytics Camera, the recording of video and sound data may be subject to special documentation or it may be prohibited. All users of MOBOTIX products are therefore required to familiarize themselves with all applicable regulations and to comply with these laws. MOBOTIX AG is not liable for any illegal use of its products.

Declaration of Conformity

The products of MOBOTIX AG are certified according to the applicable regulations of the EC and other countries. You can find the declarations of conformity for the products of MOBOTIX AG on www.mobotix.com under Support > Download Center > Certificates & Declarations of Conformity.

RoHS Declaration

The products of MOBOTIX AG are in full compliance with European Unions Restrictions of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS Directive 2011/65/EC) as far as they are subject to these regulations (for the RoHS Declaration of MOBOTIX, please see www.mobotix.com, Support > Download Center > Documentation > Brochures & Guides > Certificates).

Disposal

Electrical and electronic products contain many valuable materials. For this reason, we recommend that you dispose of MOBOTIX products at the end of their service life in accordance with all legal requirements and regulations (or deposit these products at a municipal collection center).

MOBOTIX products must not be disposed of in household waste! If the product contains a battery, please dispose of the battery separately (the corresponding product manuals contain specific directions if the product contains a battery).

Disclaimer

MOBOTIX AG does not assume any responsibility for damages, which are the result of improper use or failure to comply to the manuals or the applicable rules and regulations. Our General Terms and Conditions apply. You can download the current version of the **General Terms and Conditions** from our website at www.mobotix.com by clicking on the corresponding link at the bottom of every page.

Overview

This chapter contains the following information:

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About the Camera

The 2 MP Series is capable of supporting up to WDR 2 MP @ 30 fps / 720p @ 30 fps (WDR off 2 MP @ 60 fps / 720p @ 60 fps) video streaming. Moreover, combined with the latest WDR technology and low-light technology, the 2 MP Series is able to deliver high quality images in the dark, low light condition.

The camera is designed to withstand ever-changing outdoor environment and is compliant with IP66 & IK10 standard. It is equipped with IR LED with an effective distance of up to 40 meters to ensure its usability under poor lighting condition. The camera operating temperature ranges from -55 °C to 55 °C.

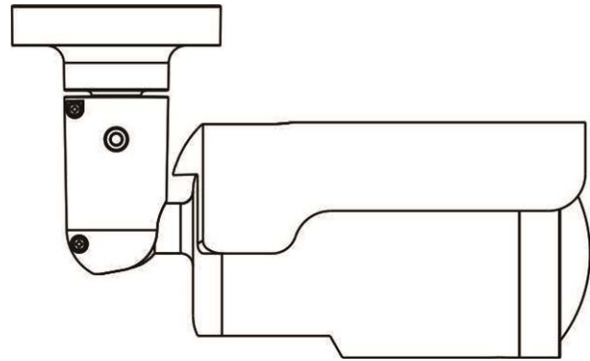
Features

- Multiple Progressive Scan CMOS Sensor Support of up to 2 MP resolution
- Multi Exposure Line-Interleaved WDR
- Multi Codec Support (H.265/ H.264/ MJPEG)
- Low Latency Streaming
- Quad Streams Support
- True Day/Night Function (ICR)
- IR LED (Working Distance up to 40 m)
- 3D Motion Compensated Noise Reduction (MCTF)
- Smart Event Functions:
 - External Input/Motion Detection/Network Failure Detection
 - Tampering Alarm/Periodical Event/Manual Trigger/Audio Detection
- Text Overlay and Privacy Masks
- Micro SD/ SDHC/ SDXC Card Support
- ONVIF Profile S/G/Q/T Support
- Smart Low Bitrate Control
- Weatherproof (IP66)
- Vandal Proof (IK10 Rating)

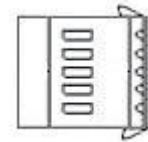
Package Contents

Check the package for the items listed below.

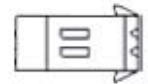
- Quick Installation
- 2 MP H.265 Vandal Bullet IP Camera (cable included)



- 5-Pin Alarm Terminal Block



- 2-Pin Power Terminal Block



- Plastic Dowel (x5)



- M5 Standard Screw (x1)



- M4 Self-Tapping Screw (x5)



- Security Torx Key



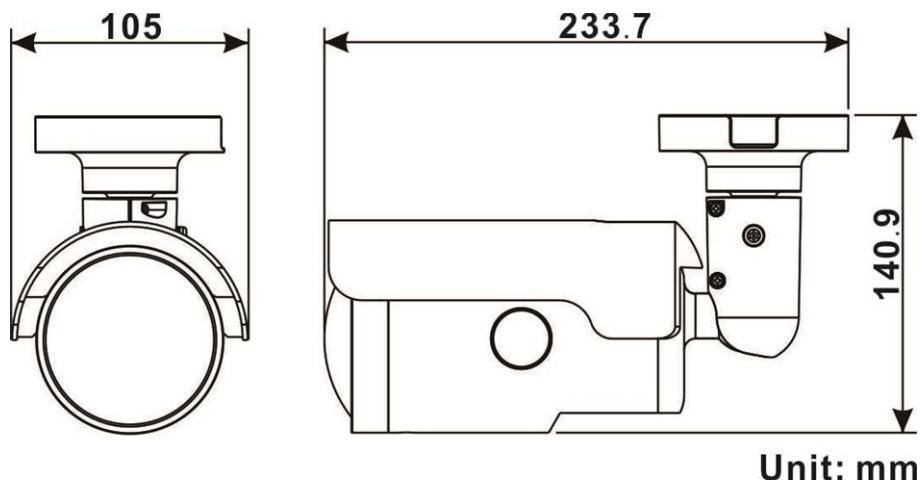
NOTE! To use an external power supply, contact the camera manufacturer to confirm that the power supply complies with the LPS requirements and shares the same power specifications with the camera.

NOTE! The supplied self-tapping screws are for soft substances / materials such as wood. For other installation environments such as cement wall, users **MUST** pre-drill and use plastic anchors before fastening the supplied self-tapping screws on the wall.

CAUTION! Do not replace batteries of the camera. Risk of explosion may occur if the battery is replaced by an incorrect type.

Dimensions

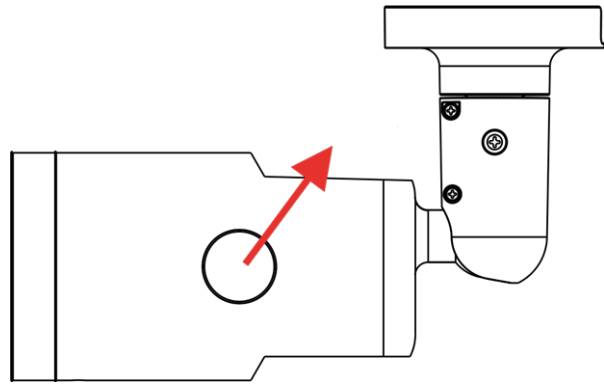
The dimensions of the camera are shown below.



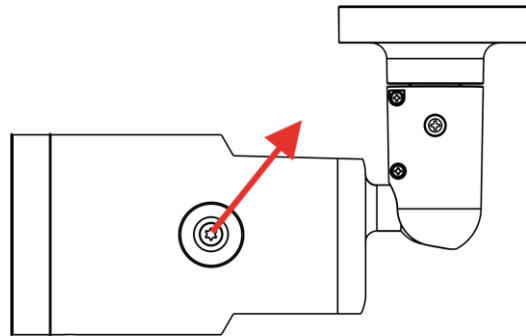
microSD Card Slot / Factory Default Button

The camera's microSD card slot and factory default button are inside the front housing. If users need to use them, the front housing must be opened. Follow the steps below to reach microSD card slot and factory default button.

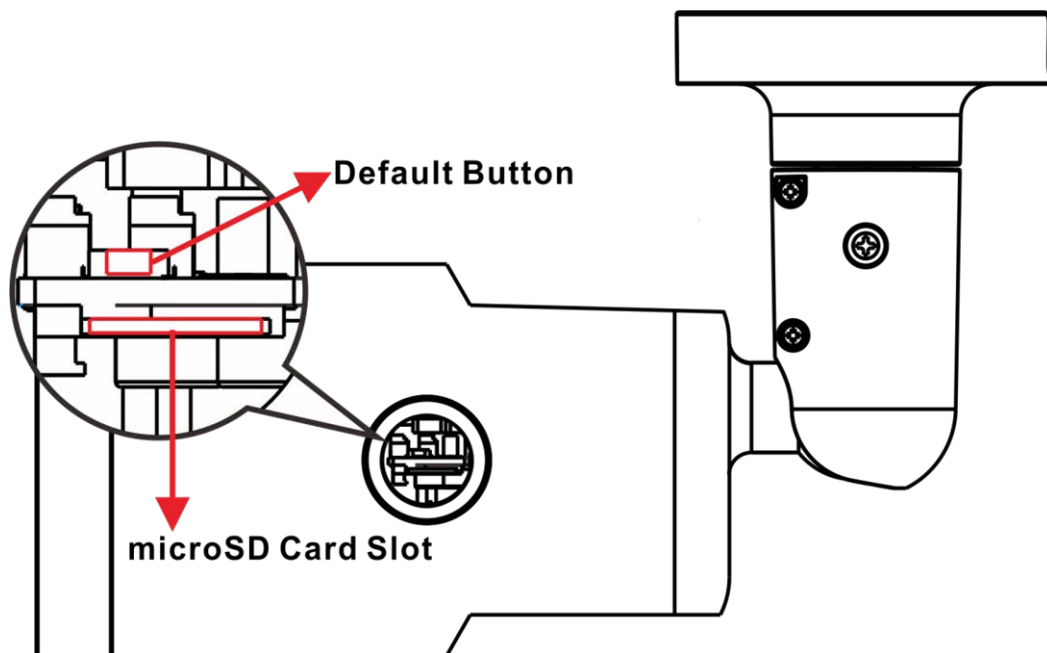
1. Open up the external cover using a flathead screwdriver.



2. Open up the internal cover using a security torx.



3. The positions of microSD card slot and default button are as shown.



NOTE! It is not recommended to record with the microSD card for 24/7 continuously, as it may not be able to support long term continuous data read/write. Please contact the manufacturer of the microSD card for information regarding the reliability and life expectancy.

Connecting

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Camera Cabling

Before users connect cables, make sure that all cables and the power adapter are placed in dry and well-waterproofed environments, e.g. waterproof boxes. The purpose is to prevent moisture accumulation inside the camera and moisture penetration into cables, which might lead to camera breakdown. Please refer to the following sections to complete camera connection.

Connect Power

For power connection, please use an AC 24V / DC 12V adapter and connect it to the 2-pin terminal block of the All-in-One cable and the power outlet. Alternatively, users can power the camera by PoE if a Power Sourcing Equipment (PSE) switch is available. Please refer to the section below for Ethernet cable connection.

NOTE! If the device is powered over Ethernet, make sure the PSE is connected to the network.

Connect Ethernet Cable

To have the best transmission quality, cable length shall not exceed 100 meters. Connect one end of the Ethernet cable to the RJ-45 connector of the All-in-One cable, and plug the other end of the cable to the network switch or PC.

NOTE! In some cases, Ethernet crossover cable might be needed when connecting the camera directly to the PC.

Check the status of the link indicator and the activity indicator LEDs. If the LEDs are unlit, check the LAN connection.

- Green Link Light indicates good network connection.
- Orange Activity Light flashes for network activity indication.

Connect Alarm I/O

For alarm I/O connection, please connect alarm devices to the 5-pin terminal block of the All-in-One cable.

Waterproof Cable Connectors

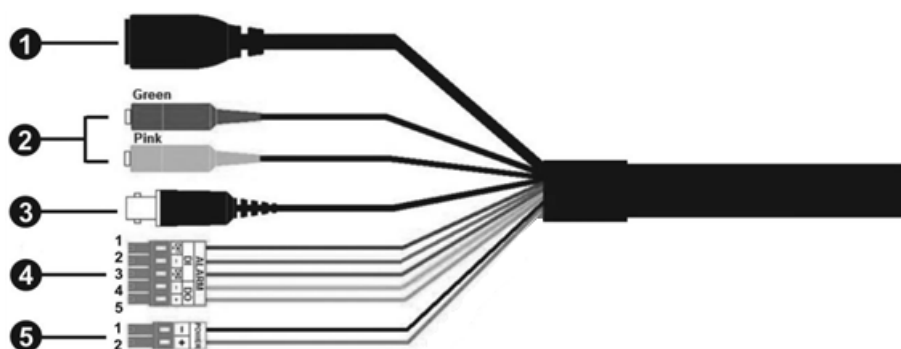
Follow the steps below to waterproof the connectors of the All-in-One cable.

1. Connect the required devices to the All-in-One cable and coat the joints with silicone gel. There should be no gap between the connectors and the cables. For alarm I/O connector and power connector, make sure the side with wires attached is also sealed with silicone gel.
2. Seal the end of the rubber coating of the All-in-One cable as indicated in the figure on the right.
Use enough silicone gel to fill in the hose and wrap around each wires; otherwise, waterproof function cannot be guaranteed.



All-in-One Cable

The diagram below shows the All-in-One cable of the camera. Definition for each cable is also given as follows.



Connecting

All-in-One Cable

No	Cable	Pin	Definition	Remarks
1	RJ-45	-	For network and PoE connections	
2	Audio I/O	Green	Audio Out / Mic Out (Line Out)	Two-way audio transmission
		Pink	Audio In / Mic In (Line In)	
3	BNC*	-	For analog video output	
4	Alarm I/O (5-pin Terminal Block)	1	Alarm In 2+	Alarm connection #Do NOT connect external power supply to the alarm I/O connector of the IP camera.
		2	Alarm In -	
		3	Alarm In 1+	
		4	Alarm Out -	
		5	Alarm Out +	
5	Power (DC 12V / AC 24V) (2-pin Terminal Block)	1	DC 12V -	Power connection
		2	DC 12V +	

(*) Optional

Installation

This chapter contains the following information:

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General Remarks

Read the instructions provided in this chapter thoroughly before installing the camera.

NOTE! This camera must be installed by qualified personnel and the installation must conform to all local codes.

Ceiling / Wall Mounting

The camera can be installed directly on a wall or ceiling with the integrated adjustable Bracket Mount. Please note that the wall or ceiling must have enough strength to support the camera. Follow the steps below to install the camera.

1. Place the camera at the installation location. On the ceiling / wall, mark the position of the two screw holes of the camera.
2. If the screw holes are blocked by the camera body, loosen the screw shown in the right figure but do not detach it. Then rotate the camera body to reach the screw holes.



3. At the center of the two marked holes, drill a 30 mm diameter (radius as 15 mm) cable entry hole. Then drill a hole slightly smaller than the supplied plastic dowel on each marked screw hole.

Thread the All-in-One cable of the camera through the cable entry hole. (Refer to chapter Camera Cabling for cable connections.)

4. Match the two screw holes of the camera with the plastic dowel at the installation location. Insert the plastic dowel into the two drilled holes, and then fasten the camera with the supplied M4x31 self-tapping screws.
5. Use a cross screwdriver to loosen the screw indicated in Figure 1, but do not detach it. Rotate the camera and point the camera to a desired direction. Then, tighten the screw. The camera joint will be fixed.



Figure 1



Figure 2

NOTE! If the camera joint is not tight enough for users, please fasten the supplied M5x10.5 standard screw into the hole as shown in Figure 2.

Configuration

This chapter contains the following information:

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System Requirements

To perform the IP camera via web browser, please ensure the PC is in good network connection, and meet system requirements as described below.

Items	System Requirement
Personal Computer	Minimum : ■ Intel® Core™ i5-2430M @ 2.4 GHz ■ 4 GB RAM> Recommended : ■ Intel® Core™ i7-870 @ 2.93 GHz ■ 8 GB RAM
Operating System	Windows 7 or later operating system
Web Browser	Microsoft Internet Explorer 11.0 (recommended)> Chrome Firefox Safari
Network Card	10Base-T (10 Mbps), 100Base-TX (100 Mbps) or 1000Base-T (1000 Mbps) operation
Viewer	ActiveX control plug-in for Microsoft IE

NOTE! The ITE is to be connected only to PoE networks without routing to the outside plant or equivalent description.

Access Camera

A client program will be automatically installed to the PC when connecting to the camera. Before logging in to the camera, ensure downloading the ActiveX control is allowed by either changing the ActiveX controls and plug-ins or setting Internet's security level to default.

ActiveX Controls and Plug-ins Settings

1. Start the Internet Explorer (IE).
2. Select **Tools** from the main menu of the browser. Then click on **Internet Options**.
3. Click on the **Security** tab and select **Internet**, and click on **Custom level** to change ActiveX settings.
4. Set “ActiveX controls and plug-ins” items to **Prompt** or **Enable**.

Internet Security Level settings

1. Start the Internet Explorer (IE).
2. Select **Tools** from the main menu of the browser. Then click on **Internet Options**.
3. Click on the **Security** tab and select **Internet**.
4. Down the page, click on **Default Level** and **OK** to confirm the setting. Close the browser window.

Camera Login

The default IP address of the camera is: 10.x.x.x. By default, the camera starts as DHCP client and automatically tries to get an IP address from a DHCP server.

1. Enter the camera’s IP address in the URL bar of the web browser and hit “Enter”.
2. Enter the default username (**admin**) and password (**meinsm**).

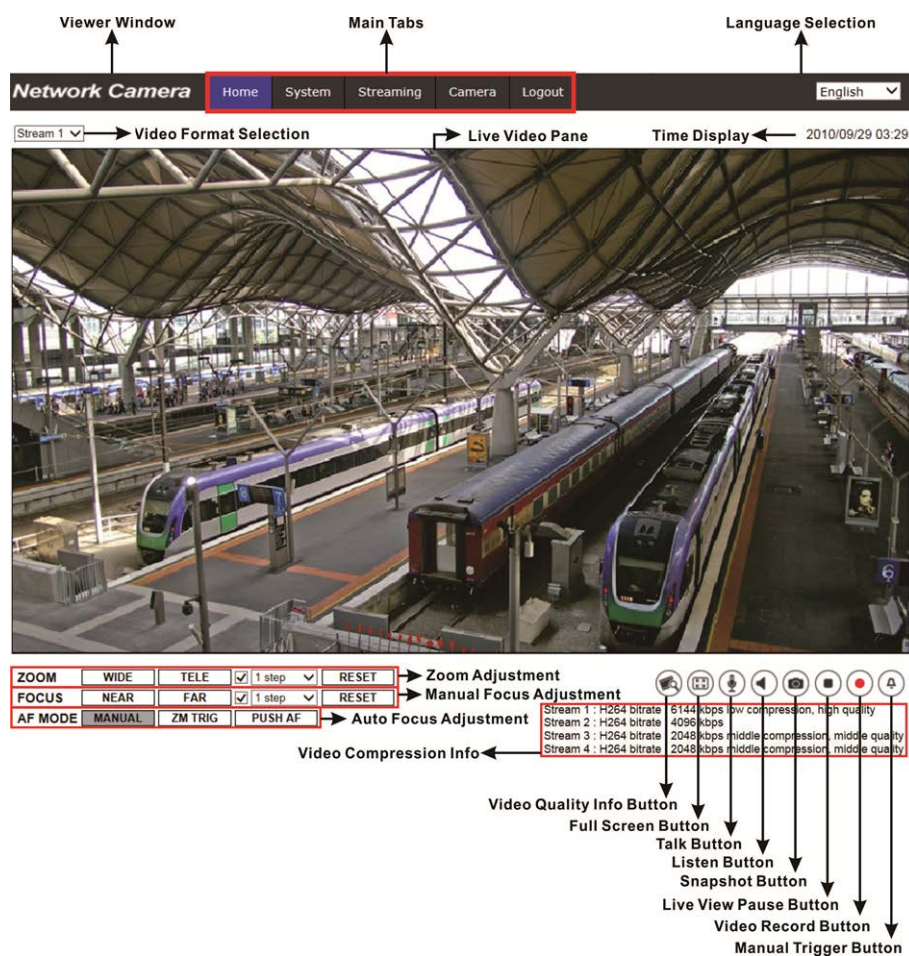
NOTE! ID and password are case sensitive.

CAUTION! It is strongly advised to change the default password. Refer to the menu tree of your 2 MP WDR IP camera for further details.

3. In the Viewer installation window, click on **Next** to start installation.
4. The status bar will show the installation progress. After the installation is completed, click on **Finish** to exit the installation process.
5. Click on **Finish** to close the Viewer installation page.

NOTE! Once the Viewer is successfully installed, the Home page of the IP camera will be displayed as the figure below.

Motorized Lens Models



Zoom and Focus Adjustment

The live image will be displayed on the Home page when the camera is successfully accessed. If zoom or focus is not at the desired position, please use the function buttons on the Home page to adjust zoom and focus.

NOTE! Refer to the menu tree of your 2 MP WDR IP camera for more button function details.

Setup Video Resolution

Users can setup video resolution on Video Configuration page of the user-friendly browser-based configuration interface.

Video Configuration can be found under: Streaming> Video Configuration.

The screenshot displays the 'Video Configuration' page of a 'Network Camera' interface. The top navigation bar includes 'Home', 'System', 'Streaming' (selected), 'Camera', 'Pan Tilt', and 'Logout'. A language dropdown is set to 'English'. The left sidebar lists various configuration options: 'Video Configuration', 'Video Rotation', 'Video Text Overlay', 'Video ROI', 'Video ROI Encoding', 'Video OCX Protocol', 'Video Mask', and 'Audio'. The main panel is titled 'Video Configuration' and contains settings for four video streams. Stream 1 and Stream 2 are active, both using H.264 encoding with VBR rate control and a Main profile. Stream 1 has a resolution of 2688 x 1512, a framerate of 30, a bitrate of 4096, and a GOV Length of 60. Stream 2 has a resolution of 800 x 600 with the same other settings. Stream 3 and Stream 4 are disabled, with their encoding set to 'No'. A 'BNC Support' section at the bottom is also set to 'No'. 'Save' and 'Reset' buttons are located at the bottom right of the configuration area.

The default values of video resolution are as below.

2 MP H.265/H.264- 2688 × 1512 (30/25 fps) +
H.265/H.264- 800 × 600 (30/25 fps)

Configuration Files Export / Import

To export / import configuration files, users can access the Maintenance page on the user-friendly browser-based configuration interface.

The Maintenance setting can be found under this path: **System > Maintenance**.

Users can export configuration files to a specified location and retrieve data by uploading an existing configuration file to the camera. It is especially convenient to make multiple cameras having the same configuration.

Export

Users can save the system settings by exporting the configuration file (.bin) to a specified location for future use. Click on the **Export** button, and the popup File Download window will come out. Click on **Save** and specify a desired location for saving the configuration file.

Upload

To upload an existing configuration file to the camera, please first click on **Browse** to select the configuration file, and then click on the **Upload** button for uploading.

Tech Support Information

This chapter provides information on how to delete previously-installed Viewer in the PC and how to setup the Internet security.

This chapter contains the following information:

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Delete the Existing Viewer

For users who have installed the Viewer in the PC previously, please first remove the existing Viewer from the PC before accessing to the IP camera.

Deleting the Viewer

In the Windows **Start Menu**, activate **Control Panel**, and then double click on **Add or Remove Programs**. In the **Currently installed programs** list, select **Viewer** and click on the button **Remove** to uninstall the existing Viewer.

Deleting Temporary Internet Files

To improve browser performance, it is suggested to clean up all the files in the **Temporary Internet Files**. The procedure is as follows.

1. Click on the **Tools** tab on the menu bar and select **Internet Options**.
2. Click on the **Delete** button under **Browsing history** section.
3. In the appeared window, tick the box beside **Temporary Internet files** and click on **Delete** to start deleting the files.

Setup Internet Security

If ActiveX control installation is blocked, please either set Internet security level to default or change ActiveX controls and plug-ins settings.

Internet Security Level: Default

1. Start the Internet Explorer (IE).
2. Click on the **Tools** tab on the menu bar and select **Internet Options**.
3. Click on the **Security** tab, and select **Internet** zone.
4. Down the page, click on the **Default Level** button and click on **OK** to confirm the setting. Close the browser window, and restart a new one later to access the IP camera.

ActiveX Controls and Plug-ins Settings

1. Repeat **Step 1 to Step 3** of the previous section above.
2. Down the page, click on the **Custom Level** button to change ActiveX controls and plug-ins settings. The Security Settings window will pop up.
3. Under **ActiveX controls and plug-ins**, set **ALL** items (as listed below) to **Enable** or **Prompt**. Please note that the items vary by IE version.

- Binary and script behaviors.
- Download signed ActiveX controls.
- Download unsigned ActiveX controls.
- Allow previously unused ActiveX controls to run without prompt.
- Allow Scriptlets.
- Automatic prompting for ActiveX controls.
- Initialize and script ActiveX controls not marked as safe for scripting.
- Run ActiveX controls and plug-ins.
- Only allow approved domains to use ActiveX without prompt.
- Script ActiveX controls marked safe for scripting*.
- Display video and animation on a webpage that does not use external media player.

4. Click on **OK** to accept the settings. A prompt window will appear for confirming the setting changes, click **Yes(Y)** to close the Security Setting window.
5. Click on **OK** to close the Internet Options screen.
6. Close the browser window, and restart a new one later to access the IP camera.



BeyondHumanVision

This document is part of the camera manufactured by MOBOTIX AG (called manufacturer in the following); the document describes how to use and to configure the camera and its components.

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Support

See [Support](#), p. 6.