

AVERTX

HD438

Night Vision HD Indoor/Outdoor IP
Mini Bullet Camera

User Manual



HD IP

AVX-HD438IR: Night Vision HD Indoor/Outdoor IP Bullet

Operations Manual

Manual Edition 37080AC – July 2020

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The following words and symbols mark special messages throughout this guide:

WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

IMPORTANT SAFEGUARDS

1. **Read Instructions**
Read all of the safety and operating instructions before using the product.
2. **Retain Instructions**
Save these instructions for future reference.
3. **Attachments / Accessories**
Do not use attachments or accessories unless recommended by the appliance manufacturer as they may cause hazards, damage product and void warranty.
4. **Installation**
Do not place or mount this product in or on an unstable or improperly supported location. Improperly installed product may fall, causing serious injury to a child or adult, and damage to the product. Use only with a mounting device recommended by the manufacturer, or sold with the product. To ensure proper mounting, follow the manufacturer's instructions and use only mounting accessories recommended by manufacturer.
5. **Power source**
This product should be operated only from the type of power source indicated on the marking label.

PRECAUTIONS

Operating

- Before using, make sure power supply and others are properly connected.
- While operating, if any abnormal condition or malfunction is observed, stop using the camera immediately and then contact AvertX Customer Support.

Handling

- Do not disassemble or tamper with parts inside the camera.
- Do not drop or subject the camera to shock and vibration as this can damage camera.
- Care must be taken when you clean the clear lens cover. Scratches and dust will ruin the image quality of your camera. Do not use strong or abrasive detergents when cleaning the camera body. Use a dry cloth to clean the camera when it is dirty. In case the dirt is hard to remove, use a mild detergent and wipe the camera gently.

Installation and Storage

- Do not install the camera in areas of extreme temperatures in excess of the allowable range. (-22°F ~ 140°F / -30°C ~ 60°C)
- Avoid installing in humid or dusty places. The relative humidity must be below 90%.
- Avoid installing in places where radiation is present.
- Avoid installing in places where there are strong magnetic fields and electric signals.
- Avoid installing in places where the camera would be subject to strong vibrations.
- Never face the camera toward the sun. Do not aim at bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects. Otherwise the camera may be damaged.

REGULATION

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste in accordance with Directive 2002/96/EC. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By proper waste handling of this product you ensure that it has no negative consequences for the environment and human health, which could otherwise be caused if this product is thrown into the garbage bin. The recycling of materials will help to conserve natural resources.

Compliance is evidenced by written declaration from our suppliers, assuring that any potential trace contamination levels of restricted substances are below the maximum level set by EU Directive 2002/95/EC, or are exempted due to their application.

WARNING

DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE.

REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION



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INTRODUCTION

OVERVIEW

The AVX-HD438IR Night Vision HD Indoor/Outdoor IP camera is capable of streaming real time ultra HD 4K video. The dual streaming can be used in a variety of building surveillance installations.

Power over Ethernet (PoE) eliminates the need for separate power cables and significantly reduces installation costs. The light weight and small size allow for quick and simple installation.

The AVX-HD438IR is equipped with True Wide Dynamic Range, which dramatically improves overall image quality in environments with various levels of illumination. The IR LEDs light up the night and work in tandem with the 8MP resolution and smart compression to bring optimum nighttime video without extreme bandwidth and storage consumption.

Camera Default Settings

IP Address	192.168.51.2
Username	admin
Password	<p>All AvertX IP cameras ship without a default password</p> <p>The admin user password can be set using the following methods:</p> <ol style="list-style-type: none">1. ProConnect recorders running software version 2.1 or newer will automatically set a new unique password by:<ul style="list-style-type: none">➤ Connecting to the built-in PoE switch➤ Connecting to a network switch through the camera network port and selected then adding the camera in setup2. Connect to the camera directly through a Web Browser and follow the onscreen prompts.3. Use the Network Camera Manager (NCM) Utility.

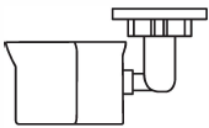
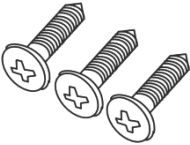


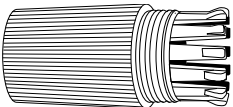

Product Features

- 4K Resolution
- Edge Storage on a MicroSD Card (up to 128GB)
- Record still shots to edge storage
- H.264+ Smart Compression
- Dual Streaming
- True Wide Dynamic Range (WDR)
- Motion Detection
- Privacy Masks
- True Day/Night
- Integrated IR
- IP67 Outdoor Rated

GETTING STARTED

BOX CONTENTS

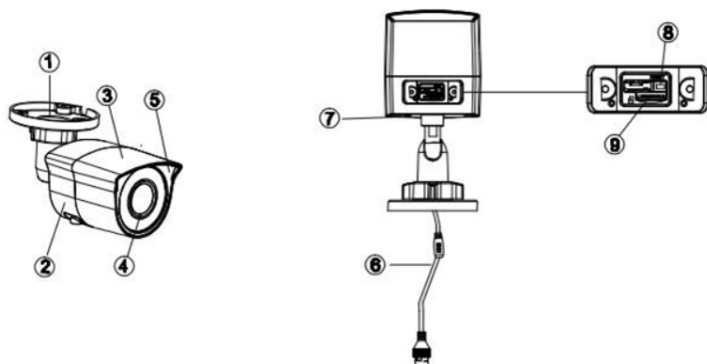
Before proceeding, please check that the box contains the items listed here. If any item is missing or has defects, do not install or operate the product and contact your dealer for assistance.

		
AVX-HD438IR Camera	Self-Tapping Mounting Screws	Plastic Anchors
		
Quick Start Guide	IP66 Cable Connector	Torx Tool

CAMERA OVERVIEW

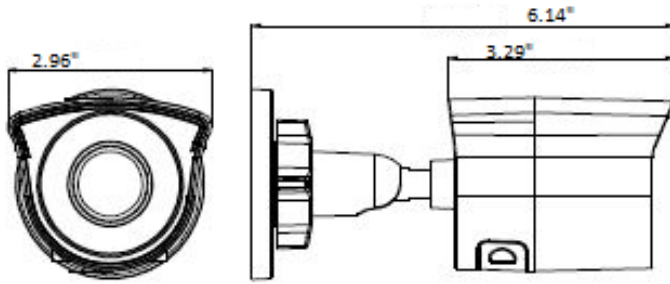
Before installing or connecting the bullet camera, please refer to this section and complete preparations for camera setup and all switch settings.

Camera Diagram



1	Mounting Bracket	
2	Rear Housing	
3	Front Housing	
4	Lens Glass	
5	Housing Decoration	
6	RJ-45 Connector	
7	Ground Screw	
8	Reset Button	Use the reset button to restore the factory default settings. To reset your camera: <ol style="list-style-type: none">1. Disconnect the cat5e cable from the camera for 30 seconds.2. Hold the reset button down while reconnecting cat5e and continue holding the reset button for 30 seconds after reconnecting.3. Allow 2 minutes before attempting to rediscover camera.
9	MicroSD card slot	Supports up to 128GB MicroSD card

Dimensions



Length – 6.14" (155.95 mm)

Width – 2.95" (75.21 mm)

Height – 2.52" (63.95 mm)

Connections

The AVX-HD438IR cameras use Power over Ethernet (PoE). The only connection on the camera is the RJ45 Ethernet dongle located on the rear of the camera. Connect one end of the Ethernet cable to the dongle, and connect the other end to the recorder, or to a PoE switch.

- Protect the network cable connection from water damage by running the cord inside a wall or ceiling, or through conduit.
- If passing the cord through a wall or ceiling, drill a 7/8" hole.
- For outdoor installations, seal any holes in the wall or ceiling with silicone caulk to protect against water intrusion.



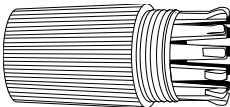

AvertX recommends using Cat5e cable to connect the camera to your network. For the best transmission quality, the cable length should not exceed 300 feet.

Weather Resistant Cable Connector

This camera features an IP66-rated weather resistant connector. For unprotected outdoor connections, screw the connector on the included Ethernet camera cable onto the camera dongle. If your installation location does not require a water-resistant connection, loosen and slide the connector back on the cable until it's out of the way.

This camera features an IP66-rated waterproof cable connector for unprotected outdoor connections. ***You do not need to re-terminate the cable to use the waterproof cable connector.***

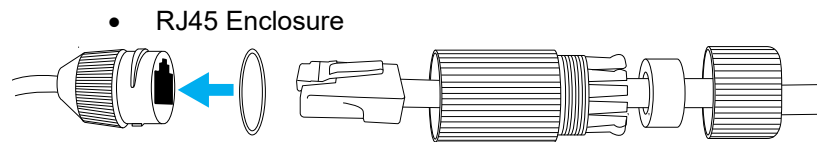
Included Pieces:

	
Thread Lock Cap	Silicone Seal Ring
	
RJ45 Enclosure	Silicone "O" Ring

To install the weather resistant cable connector:

1. Slide all pieces of the waterproof cable connector over the cable plug in this order:
 - Thread Lock Cap
 - Flexible silicone seal ring. You will need to stretch the silicone seal over the RJ-45 plug.

Tip: Insert the flexible silicone seal ring onto the tip of a pair of needle nose pliers and stretch the seal over the RJ45 plug.



2. Stretch the small silicone “O” ring onto the camera dongle.
3. Connect the camera cable to the plug on the dongle. Screw the RJ45 Enclosure into the dongle.
4. Insert the flexible silicone seal into the “crown” section of the large plastic ring.
5. Screw the small plastic ring into the large plastic ring.

Tip: To remove the RJ45 enclosure from the camera cable, tape down the locking tab on the RJ45 plug with electrical or office tape.

CAUTION: Do not attempt to disconnect the camera connection without loosening the smaller thread lock cap. Forcing the assembly will break the camera dongle and void the camera warranty.

INSTALLING THE CAMERA

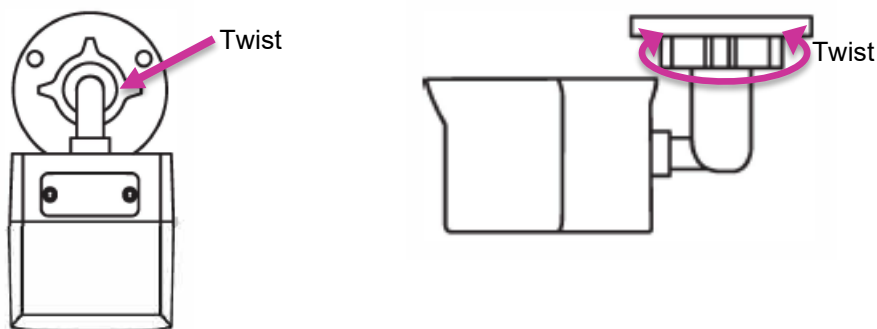
The camera can be installed directly onto the wall or ceiling. Be sure that the structure is strong enough to support the camera.

Ceiling and Wall Installation

Bullet cameras are suitable for mounting on either a wall or ceiling.

1. Use the included mounting template to pre-drill holes for the mounting screws and, if passing the cable through the ceiling or wall, drill a 7/8" hole.
2. Connect the ethernet cable to the dongle on the camera.
 - Protect the network cable connection from water damage by running the cord inside a wall or ceiling, or through conduit.
 - For outdoor installations, seal any holes in the wall or ceiling with silicone caulk to protect against water intrusion.
3. Loosen the locknut on the camera bracket mount. Aim the camera down to access screw holes.

Mounting Bracket Base



4. Affix the camera base to the ceiling or wall with the included screws. When mounting on an unprotected outside wall, the cable notch should be positioned downward.
5. Adjust the position of your camera. Be careful not to damage the cable when moving the camera.
6. Adjust the position of the camera to the image coverage desired.
7. Tighten the locknut to secure your camera.

Tip: Use the AvertX Connect mobile app to view the camera while adjusting view.

Note: AvertX recommends sealing the opening at the wall and at the base of the camera with silicone caulking.

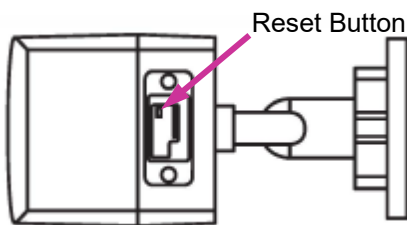
Considerations for Infrared (IR) Lights

Environmental factors can limit the performance of night vision using IR illuminator lights. Infrared light behaves the same as visible light and will reflect off of bright or shiny objects and overexpose the image. The camera will adjust to properly expose the bright areas of the image, which may leave the dark areas obscured.

For best IR Night Vision performance:

Be aware of surfaces that can cause IR light to reflect back into the camera.

- Reflective (shiny) or light-colored surfaces and objects close to the camera can reflect IR light back into the camera.
 - Remove the reflective (shiny) or light-colored surfaces and objects or reposition the camera away from these objects.
- Mounting the camera directly to light colored or shiny soffits (white aluminum, for example) can reflect IR light back into the camera.
 - Reposition the lens so the IR lights aren't pointed at the soffit.
 - Cover the reflecting surfaces with non-reflective surface (non-reflective tape, dark paint)
 - Mount the camera on a nearby wall using a mounting bracket.



Resetting the Camera

Use the reset button to restore the factory default settings. To reset your camera:

1. Disconnect the cat5e cable from the camera for 30 seconds.
2. Hold the reset button down while reconnecting cat5e and continue holding the reset button for 30 seconds after reconnecting.
3. Allow 2 minutes before attempting to rediscover camera.

Removing the Lens Cover

Removing the lens cover or otherwise opening the camera may damage components and void the warranty.

Focusing the Camera Lens

The AVX-HD438IR is pre-focused at the factory and cannot be adjusted by the end user. Contact AvertX support if your camera is out of focus.

Cleaning the Lens Cover

The Lens Cover of the AVX-HD438IR is extremely durable but can be damaged if cleaned improperly.

To clean the lens cover:

- To clean dust or loose dirt, use compressed air.
- To clean smudges or stuck on dirt, use warm water with a few drops of dish soap and a clean microfiber cloth.

CAUTION: Do not use solvents, paper towels, newspaper, or other rough materials to clean the lens cover. This can scratch the lens cover and cause IR distortion.

CONNECTING

BENCH TEST

AvertX recommends bench testing your camera(s) before installation. This will confirm that your camera is functioning correctly before it is installed and possibly out of reach.

To bench test your camera, attach the camera network connector to your recorder and test whether or not the camera is functioning correctly. Once the camera is connected to the recorder, test all functions to ensure proper operation.

If the camera will not connect or is not functioning correctly, do not install and contact AvertX Support.

CONNECTING TO AN AVERTX RECORDER

This camera is designed to be plug and play compatible with AvertX ProConnect recorders. When plugged into the Power Over Ethernet Camera ports on the recorder, the camera will automatically connect, display in live view and begin recording.

Plug and play discovery can take several minutes. If your camera does not automatically connect and display live video after 5 minutes, try [resetting the camera](#). If resetting the camera doesn't work, please contact AvertX Support.

NETWORK CAMERA MANAGER

Network Camera Manager (**NCM**) is a software tool that allows you to quickly and easily connect and configure your AvertX IP cameras. This software allows you to assign IP addresses, configure video settings, and update firmware on multiple cameras at once.

NCM is pre-installed on all AvertX ProConnect recorders and is also available for download at www.avertx.com/support for installation on your personal computer or laptop.

Launch Network Camera Manager

Open the Settings menu, go to the **Cameras** page and click **Advanced** (located near the top-middle on the page).

Tip: The default IP address of this camera is 192.168.51.2.

Finding Network Devices

Click **Refresh** to reload the Device List.

To narrow your search by Camera Model or Network Location, use the Model Filter and Networks dropdowns.

Changing the IP Address

AvertX recorders will automatically apply a DHCP IP address. If you are not connecting the camera to an AvertX recorder or DHCP network, you must set a static IP address. NCM allows you to do this in the bottom left corner:

1. Select the applicable camera.
2. Enter the IP address, Subnet Mask, Gateway, and DNS.
3. Click **Apply**.
4. Wait 10 seconds and click **Refresh**.

CONNECTING TO THE CAMERA

Connecting in a Web Browser

1. Type the IP address of the camera in a web browser.
- OR -
Use the **Network Camera Manager** software and locate the camera on the list, then click **Load** in the row of the desired camera.
2. Log in to the camera with the appropriate User Name and Password.

User Name and Password

IMPORTANT: AvertX cameras ship without a default password; the **admin** password is required to gain access or establish a connection.

The admin user password can be set using the following methods:

1. AvertX ProConnect recorders will check the camera for a password once connected.
 - i. **If AvertX software does not detect a password, it will set the camera password to a secure text string of 8 to 16 characters** (Including upper-case letters, lower-case letters, digits and special characters (!"#\$%&'()*+,-./:;<=>?@[\\]^_`{|}~ space)).
2. Network Camera Manager
3. Camera Web Browser

Connecting a Stream

AvertX IP cameras are optimized for use with AvertX ProConnect recorders, but you can also connect to your AvertX IP cameras using third party software like VLC media player (<http://www.videolan.org>).

To connect the camera, you may need to provide the stream URL. All AvertX IP cameras are capable of delivering two RTSP streams over HTTP. The stream URLs are listed below:

- rtsp://< IPADDRESS >/Streaming/Channels/101
 - H.264 Stream 1
- rtsp://< IPADDRESS >/Streaming/Channels/102
 - H.264 Stream 2

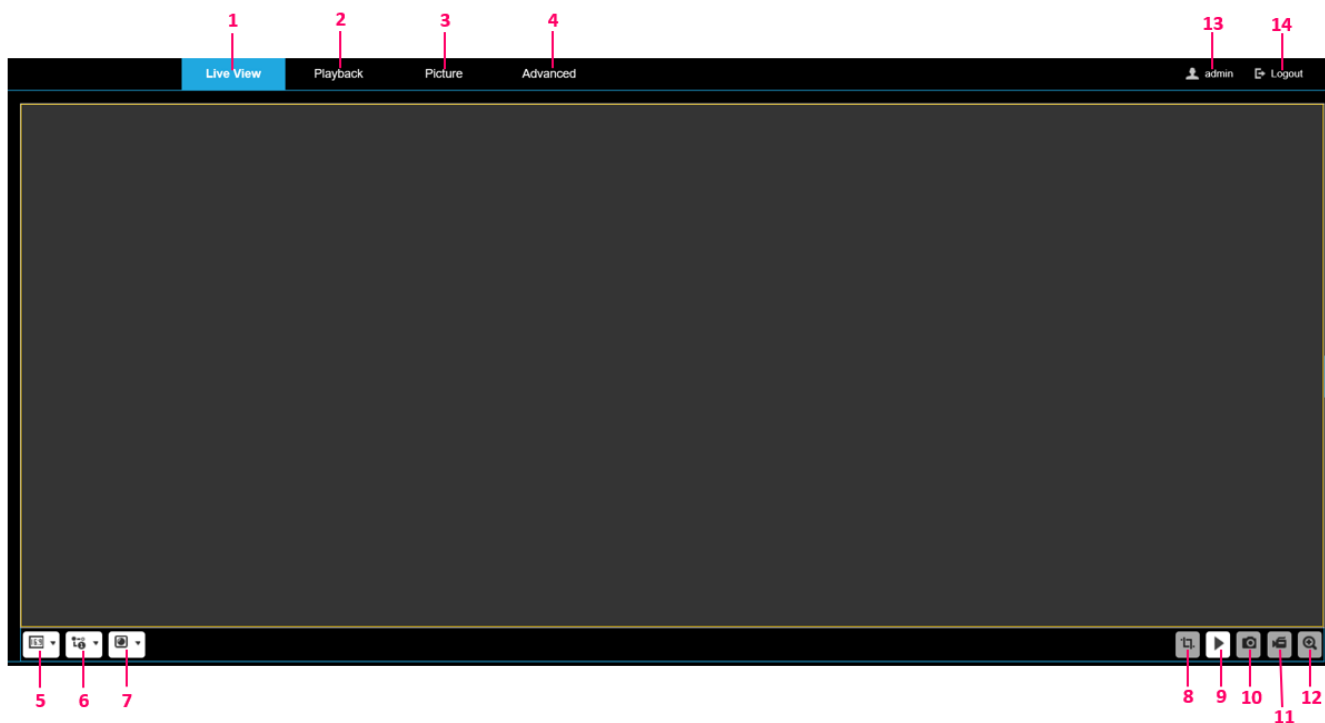
Note: VLC will ask for the user name and password for your AvertX camera.

LOGGING INTO THE WEB INTERFACE

The default static IP address of the camera is 192.168.51.2, and the default subnet mask is 255.255.255.0. DHCP is turned on by default; If a DHCP server is used in the network, the IP address of your camera will be assigned dynamically.

- Browse to the login page by entering the IP address of your camera in the address bar.
- Enter the **user name** and **password**, and then click **Login**.

LIVE VIEW



No.	Description
1	Browse to Live View page to view live video
2	Browse to Playback page to search video recorded to onboard storage.
3	Browse to Picture page to enter the picture searching interface.
4	Browse to Advanced Page
5	Change Aspect Ratio in Live View
6	Select which stream displays in Live View
7	Click to select the third-party plug-in.
8	Enable/Disable Pixel Counter. Select an area to see pixel quantity.
9	Start/Stop Live View

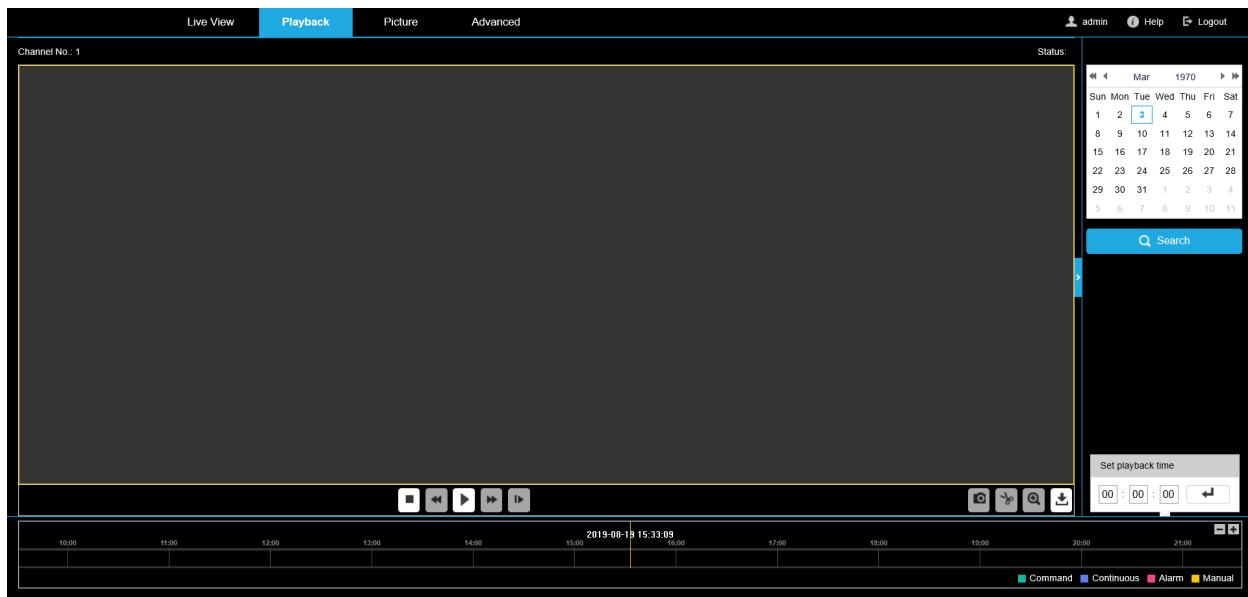
10	Capture live view image and save to selected location.
11	Start/Stop Live View recording.
12	Start/Stop Digital Zoom.
13	Current user account.
14	Exit the device interface.

PLAYBACK

This section explains how to view the recorded video files stored on the microSD card.

Notes: Playback menu can only be accessed in Internet Explorer.

You must be running Internet Explorer as admin to retrieve images or recorded video on the microSD card.



1. Click **Playback** on the menu bar to enter playback interface.
2. Select the **date** and click **Search**.
3. Click to play the video files found on this date.

The toolbar on the bottom of Playback interface can be used to control playing process.

Button	Operation	Button	Operation
	Play		Capture a picture
	Pause		Start/Stop clipping video files
	Stop		Audio on and adjust volume/Mute
	Speed down		Download
	Speed up		Playback by frame
	Enable/Disable digital zoom		

Note: Choose the file paths locally for downloaded playback video files and pictures in Local Configuration interface.

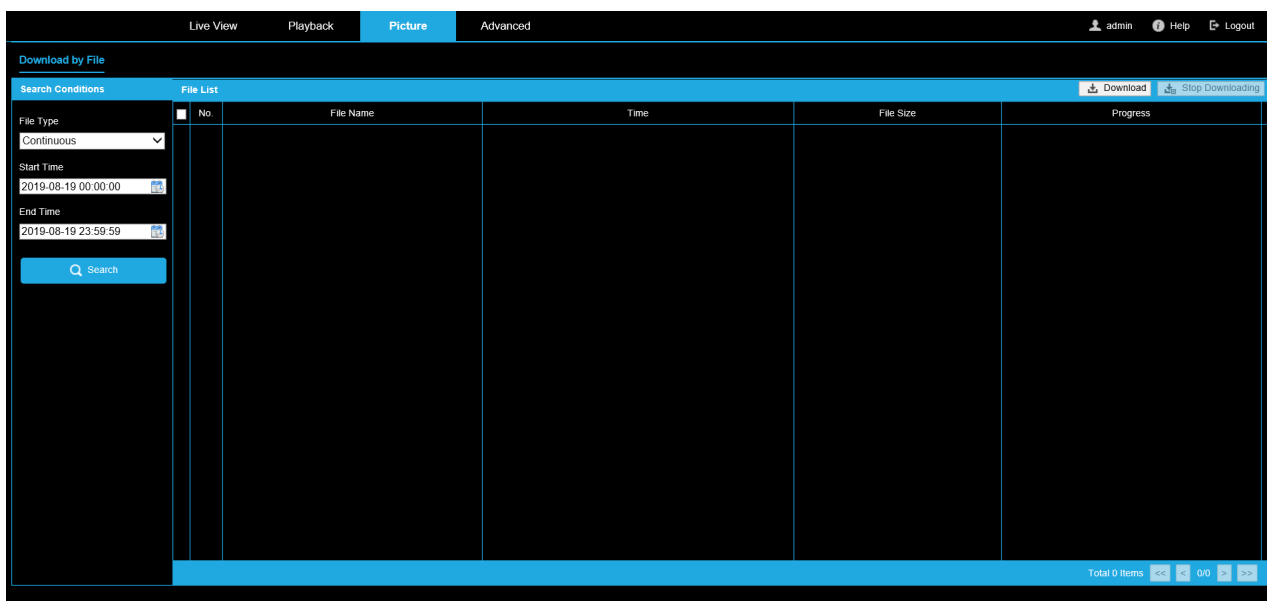
You can also input the time and click to locate the playback point in the Set playback time field. You can also click to zoom out/in the progress bar.



The different colors of the video on the progress bar stand for the different video types.

PICTURE

The picture searching interface allows user to search, view, and download the pictures stored in the local storage or network storage.



To search for pictures:

1. Select the **File Type** from the dropdown list.
2. Select the **Start Time** and **End Time**.
3. Click **Search** to search the matched pictures.
4. Check the checkbox of the pictures and then click **Download** to download the selected pictures.

Note: Up to 4000 pictures can be displayed at one time.

ADVANCED

Local

Local configuration refers to the parameters of the live view, record files and captured pictures.

The screenshot displays the 'Advanced' configuration tab for 'Local' settings. The interface is divided into three main sections: 'Live View Parameters', 'Record File Settings', and 'Picture and Clip Settings'. Each section contains various settings with radio buttons for selection and text input fields for file paths. A 'Save' button is located at the bottom of the configuration area.

Section	Parameter	Options / Values
Live View Parameters	Protocol	<input checked="" type="radio"/> TCP, <input type="radio"/> UDP, <input type="radio"/> MULTICAST, <input type="radio"/> HTTP
	Play Performance	<input type="radio"/> Shortest Delay, <input checked="" type="radio"/> Balanced, <input type="radio"/> Fluent, <input type="radio"/> Custom
	Rules	<input type="radio"/> Enable, <input checked="" type="radio"/> Disable
	Display POS Information	<input type="radio"/> Enable, <input checked="" type="radio"/> Disable
	Image Format	<input checked="" type="radio"/> JPEG, <input type="radio"/> BMP
Record File Settings	Record File Size	<input type="radio"/> 256M, <input checked="" type="radio"/> 512M, <input type="radio"/> 1G
	Save record files to	[Text Field] [Browse] [Open]
	Save downloaded files to	[Text Field] [Browse] [Open]
Picture and Clip Settings	Save snapshots in live vi...	[Text Field] [Browse] [Open]
	Save snapshots when pla...	[Text Field] [Browse] [Open]
	Save clips to	[Text Field] [Browse] [Open]

Live View Parameters

Set the protocol type and live view performance.

Protocol Type: TCP, UDP, MULTICAST and HTTP are selectable.

- **TCP:** Ensures complete delivery of streaming data and better video quality, although the real-time transmission will be affected.
- **UDP:** Provides real-time audio and video streams.
- **MULTICAST:** It's recommended to select MCAST type when using the Multicast function.

HTTP: Allows the same quality as of TCP without setting specific ports for streaming under some network environments.

- **Play Performance:** Set the play performance to Shortest Delay, Balanced, Fluent or Custom.
- **Rules:** It refers to the rules on your local browser, select enable or disable to display or not display the colored marks when the motion detection is triggered.
- **Display POS Information:** Your camera does not support this feature.
- **Image Format:** Choose the image format for picture capture.

Record File Settings

Set the saving path of the recorded video files. Valid for the record files you recorded with the web browser.

- **Record File Size:** Select the packed size of the manually recorded and downloaded video files to 256M, 512M or 1G. After the selection, the maximum record file size is the value you selected.
- **Save record files to:** Set the saving path for the manually recorded video files.
- **Save downloaded files to:** Set the saving path for the downloaded video files in playback mode.

Picture and Clip Settings

Set the saving paths of the captured pictures and clipped video files. Valid for the pictures you capture with the web browser.

- **Save snapshots in live view to:** Set the saving path of the manually captured pictures in live view mode.
- **Save snapshots when playback to:** Set the saving path of the captured pictures in playback mode.
- **Save clips to:** Set the saving path of the clipped video files in playback mode.
 - Click **Browse** to change the directory for saving the clips and pictures.
 - Click **Open** to open the set folder of clips and picture saving.
- Click **Save** to save the settings.

System

System Settings

Time Settings

Configure the time synchronization and DST settings.

Select the **Time Zone** of your location from the drop-down menu.

To configure the NTP settings:

- Click to enable the NTP function.
- Configure the following settings:
 - **Server Address:** IP address of NTP server.
 - **NTP Port:** Port of NTP server.
 - **Interval:** The time between synchronizing actions with NTP server.

Note: You can click the Test button to test the time synchronization function via NTP server.

To configure Manual Time Sync:

- Enable the manual time synchronization function. (enabled by default)
- Click the icon to select the date, time from the pop-up calendar.

Note: Check **sync with computer time** to synchronize the time of the device with that of the local PC.

DST (Daylight Savings Time)

Configure daylight savings time, if needed.

To configure DST:

1. Select the **Start Time** and the **End Time**.
2. Select the **DST Bias**.
3. Click Save to activate the settings.

Maintenance

Upgrade & Maintenance

Process the operations, including reboot, partly restore, restore to default, export/import the configuration files, and upgrade the device.

Reboot: Restart the device.

Restore: Reset all the parameters, except the IP parameters and user information, to the default settings.

Default: Restore all the parameters to the factory default.

Note: Restoring the default settings will require setting the admin password again; the IP address is also restored to the default IP address.

Device Parameters: Export the current configuration file of the camera. This operation requires the admin password. The user will be required to create an encryption password for the exported file. The encryption password is required when you import the file to other cameras.

Diagnose Information: Download log and system information.

Import Config. File: Configuration file is used for the batch configuration of cameras.

To import a configuration file:

1. Click Browse to select the saved configuration file.
2. Click Import and input encryption password to start importing configuration file.

Note: The camera will need to reboot after importing configuration file.

Upgrade: Upgrade the device firmware.

- Select firmware or firmware directory to locate the upgrade file.

Firmware: Locate the exact path of the upgrade file.

Firmware Directory: Only the directory the upgrade file belongs to is required.

- Click Browse to select the local upgrade file and then click Upgrade to start remote upgrade.

Note: The upgrading process will take 1 to 10 minutes. Do not disconnect the camera during the upgrade process; the camera will reboot automatically after upgrade.

Log

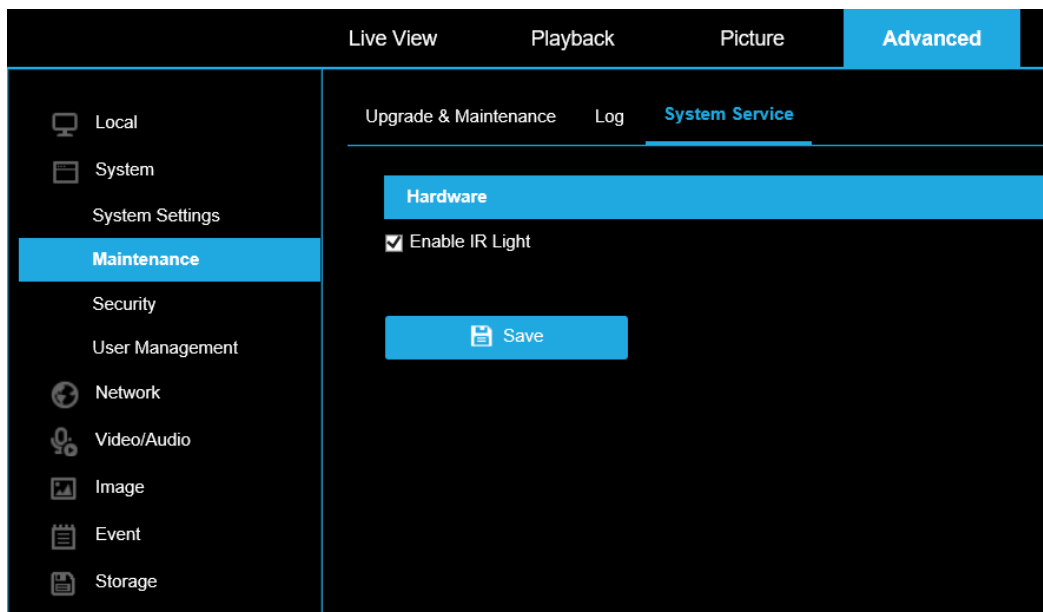
Export the camera log files.

To export log files:

1. Set the log search conditions to specify the search, including **Major Type**, **Minor Type**, **Start Time** and **End Time**.
2. Click **Search** to search log files. The matched log files will be displayed on the log list interface.
3. Click **Export** to save the log files.

System Service

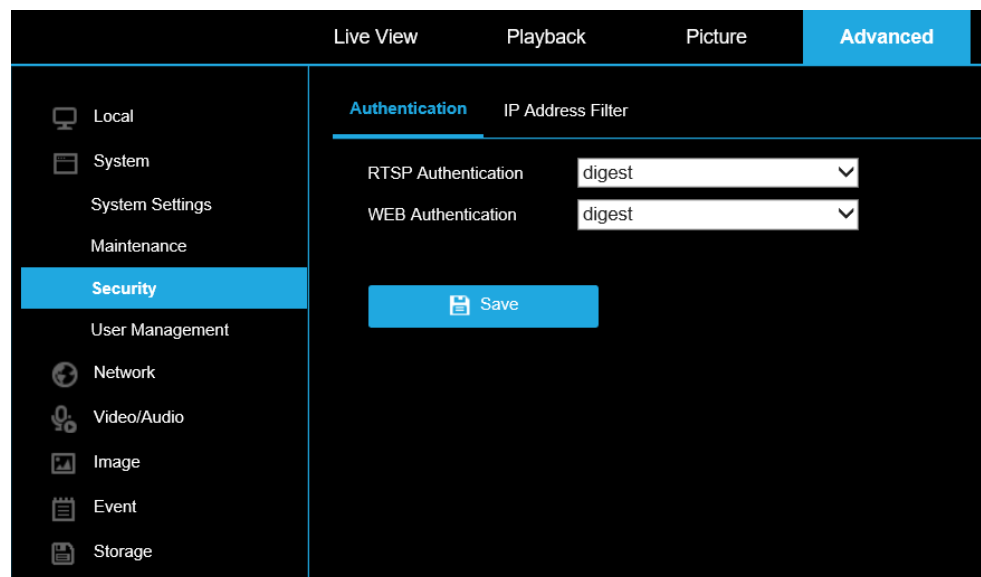
Enable / Disable IR Light



Security

Configure the parameters, including **Authentication**, **IP Address Filter**, and **Security Service**.

Authentication



1. Set up authentication method for RTSP authentication and WEB authentication.

CAUTION: Digest is the recommended authentication method for data security. Be aware of the risk if you adopt basic as the authentication method.

2. Click **Save** to save the settings.

IP Address Filter

Live View Playback Picture **Advanced**

Local System System Settings Maintenance **Security** User Management Network Video/Audio Image Event Storage

Authentication **IP Address Filter**

☐ Enable IP Address Filter

IP Address Filter Type: Forbidden

IP Address Filter Add Modify Delete

No.	IP	

Save

To configure IP Address Filtering:

1. Check the checkbox of **Enable IP Address Filter**.
2. Select the type of IP Address Filter in the drop-down list, **Forbidden** and **Allowed** are selectable.
3. Setup the IP Address Filter list.
 - **Add**: Add an IP Address
 - **Modify**: Modify an IP Address
 - **Delete**: Delete an IP Address
4. Click **Save** to save the settings.

User Management

As Administrator:

The admin user can **Add**, **Modify** or **Delete** user accounts, and grant them different permissions. We highly recommend you manage the user accounts and permissions properly.

User Management Online Users			
User List			
			Add Modify Delete
No.	User Name	Level	
1	admin	Administrator	

Note: Admin password is required for adding and modifying a user account.

Adding a User:

The admin user has all permissions by default and can create/modify/delete other accounts.

The admin user cannot be deleted and you can only change the admin password.

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1. Click **Add** to add a user.
2. Input the admin Password, User Name, select Level and input Password.
3. Check or uncheck permissions for the new user.
4. Click **OK** to finish the user addition.

Notes: Up to 31 user accounts can be created.

Users of different levels own different default permissions.

Modifying a User:

1. Select the user from the list and click **Modify**.
2. Modify the User Name, Level and Password.
3. You can check or uncheck the permissions.
4. Click **OK** to finish the user modification.

Deleting a User:

1. Click to select the user you want to delete and click **Delete**.
2. Click **OK** on the pop-up dialogue box to confirm the deletion.

As Operator or User:

Operator or user can modify password. Old password is required for this action.

Online Users

Lists current users who are visiting the device through the web interface.

Click **Refresh** to refresh the list.

User Management		Online Users			
User List					Refresh
No.	User Name	Level	IP Address	User Operation Time	
1	admin	Administrator	10.0.30.166	1970-03-03 20:50:50	
2	admin	Administrator	10.0.21.186	1970-03-03 20:59:35	

Network

Basic Settings

TCP/IP

Configure the basic network settings, including the **NIC Type**, **IP Address**, **Subnet Mask**, **Gateway**, **MTU settings** and **Multicast Address**.

The screenshot shows the 'Basic Settings' page for network configuration. The sidebar on the left contains icons for 'Local', 'System', 'Network', 'Basic Settings' (highlighted), 'Advanced Settings', 'Video/Audio', 'Image', 'Event', and 'Storage'. The main content area has tabs for 'Live View', 'Playback', 'Picture', and 'Advanced' (selected). Under the 'Advanced' tab, there are sub-tabs for 'TCP/IP' (selected), 'DDNS', and 'Port'. The 'TCP/IP' section includes the following settings: 'NIC Type' set to 'Auto', 'DHCP' checked, 'IPv4 Address' set to '192.168.51.2' with a 'Test' button, 'IPv4 Subnet Mask' set to '255.255.255.0', 'IPv4 Default Gateway' (empty), 'IPv6 Mode' set to 'Route Advertisement' with a 'View Route Advertisement' button, 'IPv6 Address' (empty), 'IPv6 Subnet Mask' (empty), 'IPv6 Default Gateway' (empty), 'Mac Address' set to '4c:91:7a:b0:13:b7', 'MTU' set to '1500', and 'Enable Multicast Discovery' checked. Below the TCP/IP section are sections for 'DNS Server' (Preferred DNS Server: '8.8.8.8', Alternate DNS Server: empty) and 'Domain Name Settings' (Enable Dynamic Domain Name: unchecked, Register Domain Name: empty). A 'Save' button is located at the bottom of the page.

(Optional):

1. Check **Enable Multicast Discovery**, and then the online network camera can be automatically detected by client software via private multicast protocol in the LAN.
2. Configure the DNS server. Input the preferred DNS server, and alternate DNS server.
3. Click **Save** to save the above settings.

Notes: The valid value range of MTU is 1280 ~ 1500.

The Multicast sends a stream to the multicast group address and allows multiple clients to acquire the stream at the same time by requesting a copy from the multicast group address. Before utilizing this function, you have to enable the Multicast function of your router.

A reboot is required for the settings to take effect.

DDNS

Note: Registration on the DDNS server is required before configuring the DDNS settings of the camera.

1. Check the **Enable DDNS** checkbox to enable this feature.
2. Select **DDNS Type**. Two DDNS types are selectable: **DynDNS** and **NO-IP**.

DynDNS:

1. Enter **Server Address** of DynDNS (e.g. members.dyndns.org).
2. In the **Domain** text field, enter the domain name obtained from the DynDNS website.
3. Enter the **User Name** and **Password** registered on the DynDNS website.
4. Click **Save** to save the settings.

NO-IP:

1. Choose the **DDNS Type** as NO-IP.
2. Enter the **Server Address** as www.noip.com
3. Enter the **Domain** name you registered.
4. Enter the **User Name** and **Password**.
5. Click **Save** and then you can view the camera with the domain name.

Note: Reboot the device to make the settings take effect.

Port

The screenshot shows the 'Port' configuration page under the 'Advanced' tab. The left sidebar contains a menu with 'Local', 'System', 'Network', 'Basic Settings', 'Advanced Settings', 'Video/Audio', 'Image', 'Event', and 'Storage'. The 'Basic Settings' section is expanded, showing 'TCP/IP', 'DDNS', and 'Port' sub-tabs. The 'Port' sub-tab is active, displaying input fields for 'HTTP Port' (80), 'RTSP Port' (554), 'HTTPS Port' (443), 'Server Port' (8000), and 'Enhanced SDK Service P...' (8443). A 'Save' button is at the bottom.

HTTP Port: The default port number is 80, and it can be changed to any port No. which is not occupied.

RTSP Port: The default port number is 554 and it can be from 1 to 65535.

HTTPS Port: The default port number is 443, and it can be any port which is not occupied.

Server Port: The default server port number is 8000, and it can be from 2000 to 65535.

Advanced Settings

HTTPS

HTTPS provides authentication of the web site and its associated web server, which protects against Man-in-the-middle attacks.

The screenshot shows the 'HTTPS' configuration page under the 'Advanced' tab. The left sidebar is the same as the previous screenshot. The 'Advanced Settings' section is expanded, showing 'Video/Audio', 'Image', 'Event', and 'Storage'. The 'Video/Audio' sub-tab is active, displaying 'Enable' (checked), 'Enable HTTPS Browsing' (unchecked), 'Certificate Details', 'Export Certificate', and 'Self-signed Certificate' sections. The 'Certificate Details' section shows the 'Installed Certificate' with its 'Property' (Subject, Issuer, Validity) and a 'Result' of 'Normal'. An 'Export' button is at the bottom.

Note: HTTPS is enabled by default. If HTTPS is enabled, the camera creates an unsigned certificate automatically.

1. Check **Enable** to access the camera via HTTP or HTTPS protocol.
2. Check **Enable HTTPS Browsing** to access the camera only via HTTPS protocol.

Integration Protocol

Displays ONVIF version

Video/Audio

Video

Configure parameters for the main and sub video streams.

Parameter	Value
Stream Type	Main Stream(Normal)
Video Type	Video Stream
Resolution	3840*2160
Bitrate Type	Variable
Video Quality	Medium
Frame Rate	15 fps
Max. Bitrate	8192 Kbps
Max. Average Bitrate	4096 Kbps
Video Encoding	H.264
H.264+	ON
Profile	Main Profile
I Frame Interval	30
SVC	OFF

Select the **Stream Type**:

Supported stream types are listed in the drop-down:

- **Main stream** is used for recording motion events and live view with good bandwidth.
- **Sub-stream** is used for continuous recording and live view.

Customize the following parameters for the selected stream type:

Resolution: Select the resolution of the video output.

Bitrate Type: Select the bitrate type to constant or variable.

Video Quality: When bitrate type is selected as Variable, 6 levels of video quality are selectable.

Note: Increasing **Video Quality** increases bitrate.

Frame Rate: Set the frame rate.

Max. Bitrate: Set the max. bitrate from 32 to 16384 Kbps. The higher value corresponds to the higher video quality and increased bandwidth use.

Max. Average Bitrate: When you set a maximum bitrate, its corresponding recommended maximum average bitrate will be shown in the Max. Average Bitrate box.

Video Encoding: The camera supports multiple video encodings types, such as H.264 and H.265. H.265 is a new encoding technology which reduces the transmission bitrate under the same resolution, frame rate and image quality compared with H.264.

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H.264+ / H.265+:

- **H.264+:** If you set the main stream as the stream type, and H.264 as the video encoding, you can see H.264+ available. H.264+ is an improved compression coding technology based on H.264. By enabling H.264+, users can estimate the HDD consumption by its maximum average bitrate. Compared to H.264, H.264+ reduces storage by up to 50% with the same maximum bitrate in most scenes.
- **H.265+:** If you set the main stream as the stream type, and H.265 as the video encoding, you can see H.265+ available. H.265+ is an improved compression coding technology based on H.265. By enabling H.265+, users can estimate the HDD consumption by its maximum average bitrate. Compared to H.265, H.265+ reduces storage by up to 50% with the same maximum bitrate in most scenes.

Profile: When you select H.264 or H.265 as video encoding, you can set the profile.

I Frame Interval: Set I Frame Interval from 1 to 400.

Scalable Video Coding (SVC): is an extension of the H.264/AVC and H.265 standard.

- Select **OFF/ON** to disable/enable the SVC function.
- Select **Auto** and the device will automatically extract frames from the original video when the network bandwidth is insufficient.

Note: AvertX does not recommend enabling SVC.

Note: The camera will require a reboot to turn H.264+/H.265+ **ON** or **OFF**.

IMPORTANT: AvertX ProConnect recorders do not currently support H.265/H.265+ video encoding.

Notes: Upgrade your video player to the latest version if live view or playback does not work properly due to compatibility.

With H.264+/H.265+ enabled, the parameters such as profile, I frame interval, video quality, and SVC are greyed out.

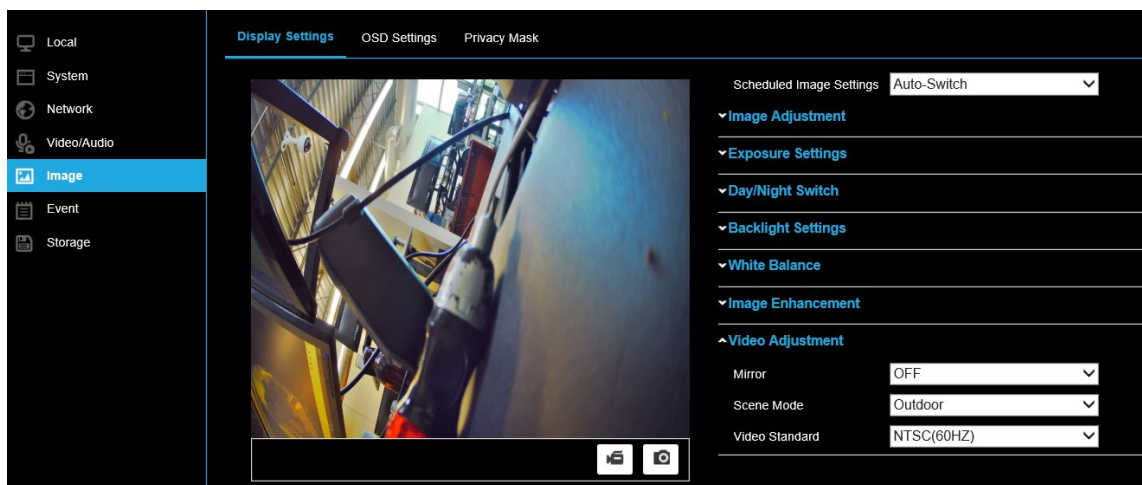
With H.264+/H.265+ enabled, some functions are not supported.

H.264+/H.265+ can spontaneously adjust the bitrate distribution according the requirements of the actual scene in order to realize the set maximum average bitrate in the long term. The camera needs at least 24 hours to adapt to a fixed monitoring scene.

Image

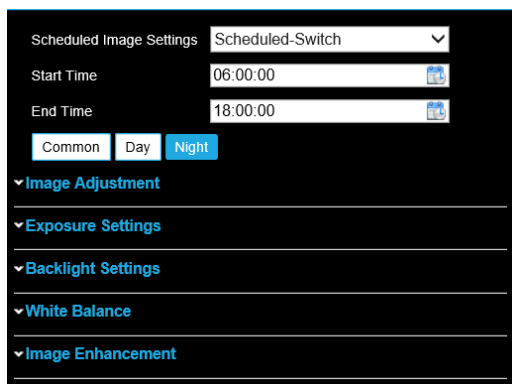
Display Settings

Configure the image adjustment, exposure settings, day/night switch, backlight settings, white balance, image enhancement, video adjustment, and other parameters in display settings, OSD settings, and privacy mask.



Scheduled Image Settings

Scheduled image settings provide the ability to set the camera parameters for day and night separately, providing the ability for optimal image quality in day and night settings.



Click the calendar icon to select the start time and the end time of the switch.

Note: The start time and end time refer to the valid time for day mode.

- The time period can start and end on two days in a row.
- For example, if you set start time as 10:00 and end time as 1:00, the day mode will be activated at 10 o'clock in the morning and stopped at 1 o'clock early in the next morning.

Common: parameters applicable to the day and night mode.

Day: parameters applicable to day mode only.

Night: parameters applicable to night mode only.

Settings save automatically.

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Image Adjustment




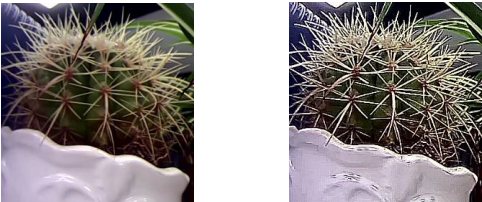


Brightness describes brightness of the image, which ranges from 1 to 100.

Contrast describes the contrast of the image, which ranges from 1 to 100.

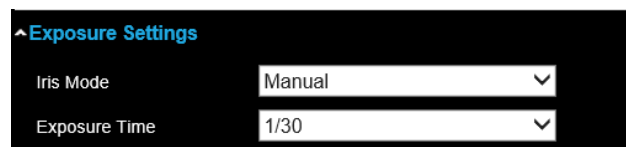
Saturation describes the intensity of the image color, which ranges from 1 to 100.

Sharpness describes the edge contrast of the image, which ranges from 1 to 100.

Item	Description
Brightness	Set the degree of brightness of images. 
Saturation	Set the intensity of color in the image. 
Contrast	Set the degree of difference between the blackest pixel and the whitest pixel. 
Sharpness	Contrast of boundaries of objects in an image. 
Digital Noise Reduction	Reduce the noise of images. The function may cause image blurring.

Exposure Settings

Manual is the only available setting.

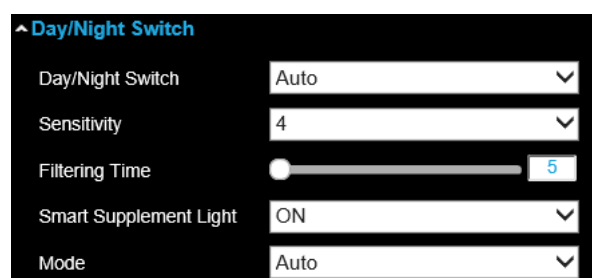


Exposure Time refers to the electronic shutter time, which ranges from 1 to 1/100,000s. Adjust it according to the actual luminance condition.

Day/Night Switch

Select the **Day/Night Switch** mode according to different surveillance demand.

- Day, Night, Auto, Scheduled-Switch are the available options.



- **Day:** The camera provides high-quality color images using the existing light.
- **Night:** The camera provides high-quality black and white images using the existing light.
- **Auto:** The camera outputs the optimum images according to the light condition. In this mode, the camera can switch between night mode and day mode automatically.
- **Scheduled-Switch:** Set the start time and the end time to define the duration for day/night mode.

Sensitivity ranges from 0 to 7, the higher the value is, the easier the mode switches.

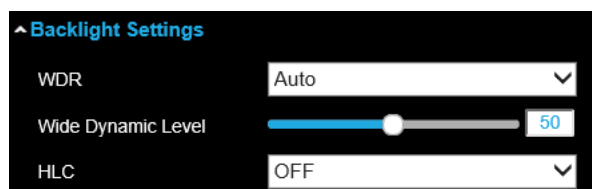
Filtering Time refers to the interval time between the day/night switch. You can set it from 5s to 120s.

Smart Supplement Light: Set the supplement light as On + Auto, On + Manual, or OFF.

- **Auto** - Supplement light changes according to the actual luminance.
 - e.g., if the current scene is bright enough, then the supplement light adjusts itself to lower power; and if the scene is not bright enough, the light adjusts itself to higher power.
- **Manual** - Adjust the supplement light by adjusting the distance.
 - Lower value indicates the object is closer to the camera; the value increases as the object distance increases.

Note: Smart Supplement Light is also known as Adaptive IR Technology.

Backlight Settings



BLC Area: An object against strong backlight will be too dark to be seen clearly. BLC adjusts light around the object to improve visibility. OFF, Up, Down, Left, Right, Center, Auto, and Custom are available options.

Note: BLC Custom mode allows the user to draw a BLC area of interest.

WDR: Wide Dynamic Range should be used when the scene contains a mix of bright and dark areas.

HLC: High Light Compression should be used when the scene contains bright lights affecting the image quality.

White Balance

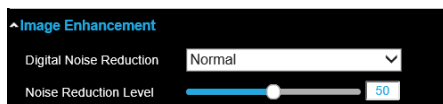
White balance is the process of offsetting unnatural color cast in images under different color temperatures to output images that best suit human eyes.



Image Enhancement

Digital Noise Reduction: DNR reduces the noise in the video stream. OFF, Normal and Expert are the available options.

- Normal Mode: 0 to 100



- Expert Mode:
 - Space DNR level: 0 – 100
 - Time DNR level: 0 – 100



Video Adjustment

Image Flip: It mirrors the image so you can see it inversed. Flip Horizontal, Flip Vertical, and OFF are selectable.

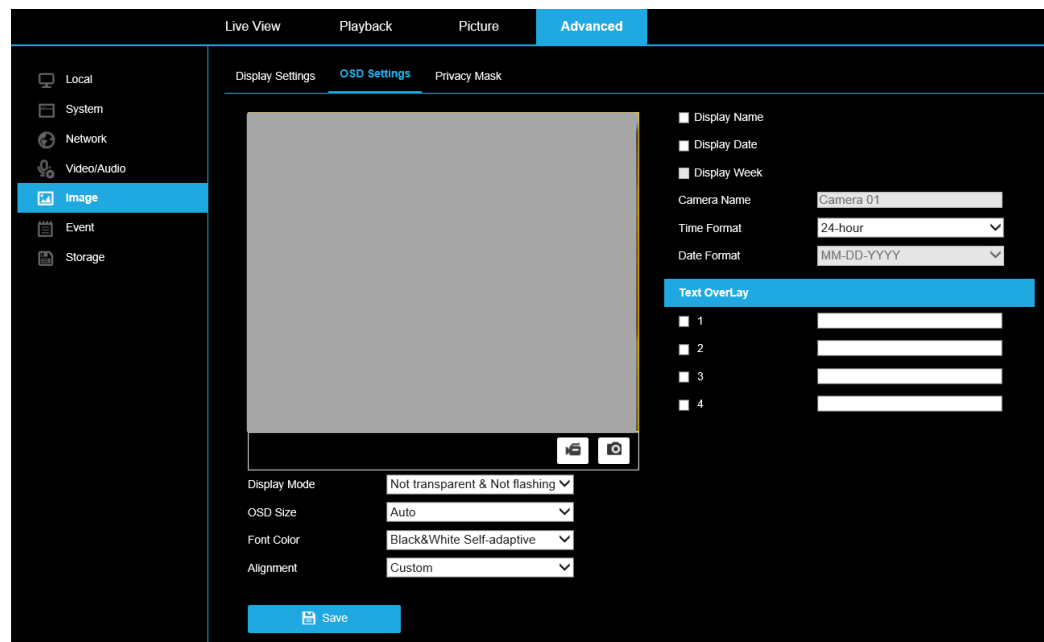
Scene Mode: Choose the scene as indoor or outdoor according to the real environment.

Video Standard: 50 Hz and 60 Hz are the available options. NTSC (60HZ) is the default mode.

Note: NTSC is the Video Standard in North and South America.

OSD Settings

Customize the camera name, time/date format, display mode, and OSD size displayed in live view.



To configure OSD settings:

- Check the applicable checkbox to display the camera name, date or week.
- Edit the camera name in the text field of Camera Name.
- Select from the drop-down list to set the time format and date format.
- Select from the drop-down list to set the time format, date format, display mode, OSD size and OSD color.

To configure the text overlay settings:

- Check the checkbox in front of the textbox to enable the on-screen display.
- Input the characters in the textbox.

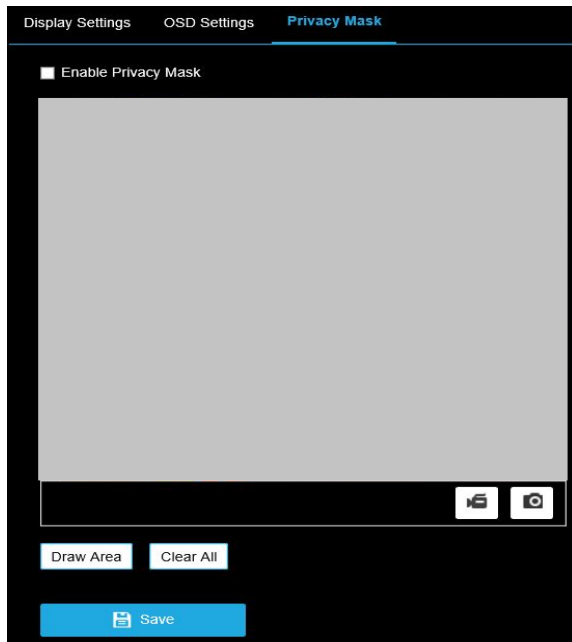
Note: Up to 4 text overlays are configurable.

- Adjust the position and alignment of text frames.
 - Left align, right align and custom are selectable.
 - Select custom to use the mouse to click and drag text frames in the live view window to adjust their positions.

Note: The alignment adjustment is only applicable to Text Overlay items.

Privacy Mask

Privacy mask enables you to cover certain areas on the live video to prevent certain spots in the surveillance area from being viewed and recorded. Privacy mask areas are used to protect privacy, for example, covering the keypad of an ATM machine, or the entry to fitting rooms.



To configure privacy masks:

1. Check the checkbox of **Enable Privacy Mask**.
2. Click **Draw Area**.
3. Click and drag the mouse in the live video window to draw the mask area.

Note: Draw up to 4 areas on the same image.

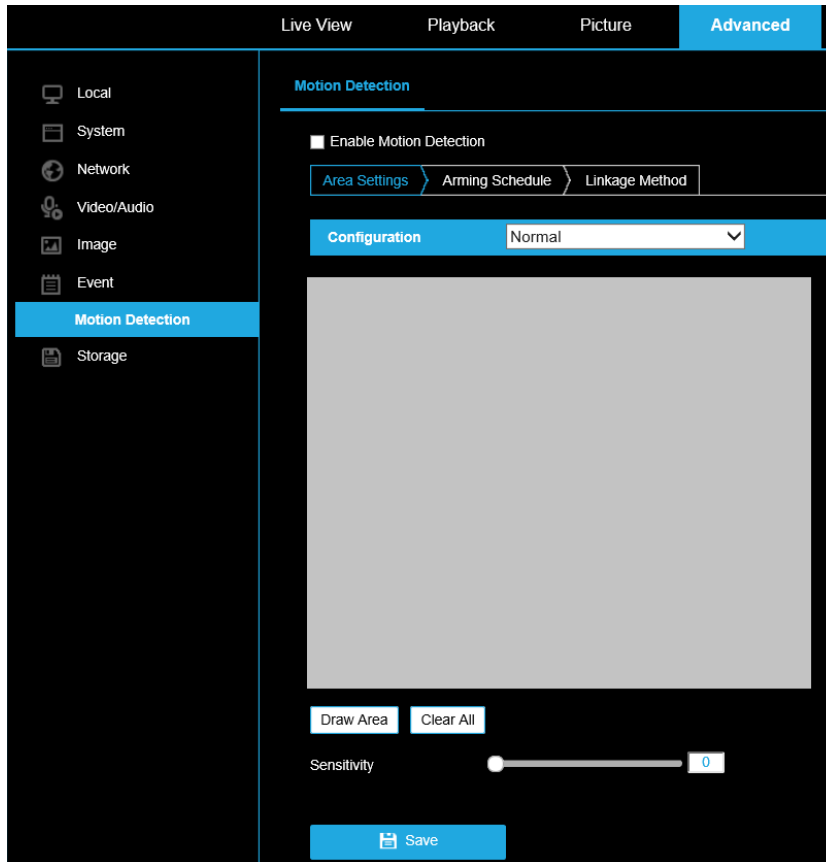
4. Click **Stop Drawing** to finish drawing.
5. Click **Save**.

Click **Clear All** to remove all of the areas.

Event

Motion Detection

Motion detection detects moving objects in the defined areas. In order to detect the moving objects accurately and reduce the false alarm rate, **normal configuration** and **expert configuration** are available for varied motion detection environments.



To configure Normal motion detection:

1. Check **Enable Motion Detection**.
2. Click **Draw Area**.
3. Click and drag the mouse on the live video to draw a motion detection area.
4. Click **Stop Drawing** to finish drawing one area.
 - (Optional) Click **Clear All** to clear all detection areas.
 - (Optional) Move the slider or type a number in the text box to set the detection **sensitivity** level.
 - 0 – no detection; 100 – Maximum sensitivity
5. Click **Save**.

Expert motion detection

Expert motion detection is primarily used to configure the sensitivity and proportion of object on each area for different day/night switch.

Scheduled Image Settings: OFF

Area: 1

Sensitivity: 50

Percentage: 0

1. Draw the detection area.
2. Select OFF for **Scheduled Image Settings**.
3. Select the **Area** by number.
4. Adjust the **sensitivity** and **percentage** of an object in the motion detection area.
5. Set the **arming schedule** and **linkage method** as in the normal configuration mode.
6. Click **Save** to save the settings.

Auto-Switch

Scheduled Image Settings: Auto-Switch

Area: 1

Day

Sensitivity: 50

Percentage: 0

Night

Sensitivity: 50

Percentage: 0

1. Draw the detection area as in the normal configuration mode.
2. Select Auto-Switch for **Scheduled Image Settings**.
3. Select the **Area** by number.
4. Adjust the **Sensitivity** and **Percentage** of an object in the motion detection area for day and night independently.
5. Set the **arming schedule** and **linkage method** as in the normal configuration mode.
6. Click **Save** to save the settings.

Scheduled-Switch

Scheduled Image Settings: Scheduled-Switch

Start Time: 06:00:00

End Time: 18:00:00

Area: 1

Day

Sensitivity: 50

Percentage: 0

Night

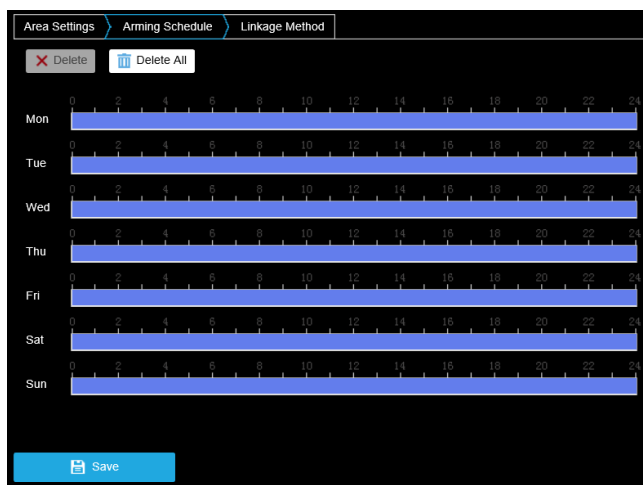
Sensitivity: 50

Percentage: 0

1. Draw the detection area as in the normal configuration mode.
2. Select Scheduled-Switch for **Scheduled Image Settings**.
3. Select the **Start time** and the **End time** for the day/night switch.
4. Select the **Area** by number.
5. Adjust the **Sensitivity** and **Percentage** of an object in the motion detection area for day and night independently.
6. Set the **arming schedule** and **linkage method** as in the normal configuration mode.
7. Click **Save** to save the settings.

Set the Arming Schedule for Motion Detection:

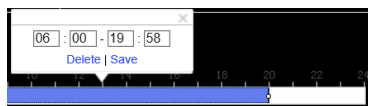
Note: Arming Schedule applies only to event-triggered recording of video and snapshots to onboard storage and does not impact what, when, or how video is recorded on AvertX recorders.



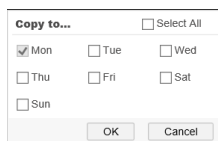
To configure the Motion Detection Schedule:

1. Click on the time bar and drag the mouse to select the time period.

Note: Click on the selected time period, you can adjust the time period to the desired time by either moving the time bar or input the exact time period.

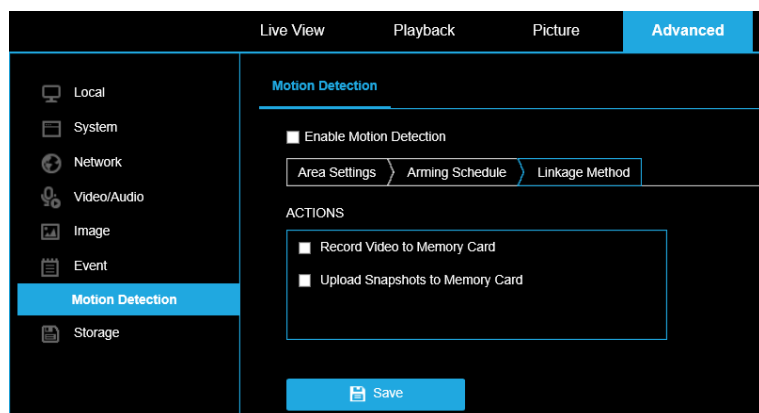


- (Optional) Click **Delete** to delete the current arming schedule.
2. Move the mouse to the end of each day, a copy dialogue box pops up, and you can copy the current settings to other days.
 3. Click **Save** to save the settings.



Note: The time of each period can't be overlapped. 8 periods can be configured for each day.

Set the Linkage Method for Motion Detection:



Use the checkboxes to enable the available actions.

ACTIONS (Arming Schedule must be configured to enable):

Record Video to Memory Card – Video will be recorded when motion is detected.

Upload Snapshots to Memory Card – Capture the image when a person or vehicle is detected and save the picture to the onboard microSD card.

Note: These actions require a microSD card installed in camera. (Not Included)

Click **Save** after selecting actions.

Note: Refer to **Storage > Schedule Settings** & **Storage > Storage Management** sections of this manual to configure microSD card storage.

Storage

Schedule Settings

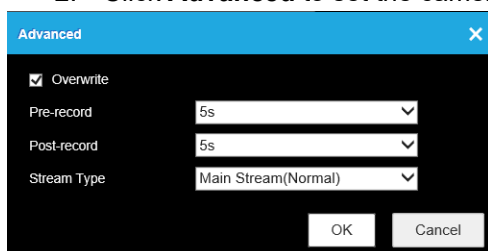
Record Schedule

This camera includes an integrated microSD™ card slot that can be used to record video. The card slot is compatible with a microSD™ card up to 128GB. This section is used to define when video should be recorded to the microSD™ card.



To configure record schedule:

1. Check **Enable** to enable scheduled recording.
2. Click **Advanced** to set the camera record parameters.



3. Select the **record type**, and click-and-drag the mouse on the time bar to set the record schedule.
4. Click **Save** to save the settings.

Pre-record: length of time set to start recording before the scheduled time or the event. The Pre-record time can be configured as **No Pre-record, 5s, 10s, 15s, 20s, 25s, 30s** or **not limited**.

- Example: If motion is detected and triggers recording at 10:00, and the pre-record time is set as 5 seconds, the camera starts to record at 9:59:55.

Post-record: length of time set to record after the end of event. The Post-record time can be configured as 5s, 10s, 30s, 1 min, 2 min, 5 min or 10 min.

- Example: If a motion event ends at 11:00, and the post-record time is set as 5 seconds, the camera records until 11:00:05.

Stream Type: Select the stream type for recording.

Record Type: The record type can be Continuous, Motion, Motion + Alarm, Events.

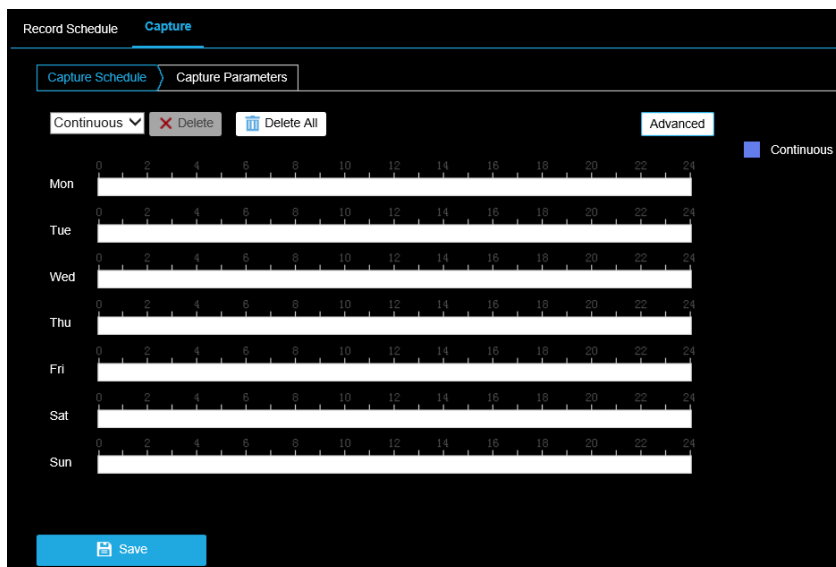
Continuous: Video will be recorded automatically according to the time of the schedule.

Record Triggered by Motion Detection: Video will be recorded when the motion is detected.

Note: Motion detection area must be enabled and configured for this function.

Capture Schedule

This camera includes an integrated microSD™ card slot that can be used to record images. The card slot is compatible with a microSD™ card up to 128GB. This section is used to define when images should be saved to the microSD card.



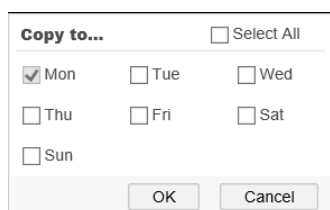
To configure the capture schedule:

1. Click on the time bar and drag the mouse to select the time period.

Note: Click on the selected time period, you can adjust the time period to the desired time by either moving the time bar or input the exact time period.



- (Optional) Click **Delete All** to delete all schedules.
2. Move the mouse to the end of each day, a copy dialogue box pops up, and you can copy the current settings to other days.
 3. Click **Save** to save the settings.



Capture Parameters

Capture Schedule Capture Parameters

Timing

☒ Enable Timing Snapshot

Format: JPEG

Resolution: 3840*2160

Quality: High

Interval: 1000 millisecond

Event-Triggered

☐ Enable Event-Triggered Snapshot

Format: JPEG

Resolution: 3840*2160

Quality: High

Interval: 1000 millisecond

Capture Number: 4

Save

1. Check **Enable Timing Snapshot**.
2. Select the quality and capture interval.
 - **Quality:** Low, Medium, High
 - **Interval:** length of time between images
3. Check **Enable Event-Triggered Snapshot**.
4. Select the quality, capture interval, and capture number.
 - **Quality:** Low, Medium, High
 - **Interval:** length of time between images
 - **Capture Number:** Quantity of images to capture
5. Click **Save** to save the settings.

Storage Management

View the capacity, free space, status, type, formatting type, and property of the disk.

[illegible]

Note: The camera must be powered off when installing the microSD card.

If the status of the disk is *Uninitialized*, check the corresponding checkbox to select the disk and click **Format** to start initializing the disk. When the initialization completes, the status of disk will become Normal.

1. Define the quota for record and pictures:
 - Input the quota percentage for picture and for record.
2. Click **Save** and **refresh** the browser page to activate the settings.

Note: This camera model does not support writing to network hard drives.

Recommended MicroSD Card Specifications:

- Storage Capacity: Up to 128GB
- Read speed: 100 MB/s
- Write speed: 60 MB/s +
- Speed Class rating: Class 10 / UHS Class 3

IMPORTANT: Video recorded to the microSD card cannot be accessed through AvertX software. Video recorded to the microSD card must be accessed and downloaded directly from the camera's web interface.

Are any parts of this manual incomplete or unclear? Please let us know! Contact us at support@avertx.com with your comments.

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