Honeywell
THE POWER OF CONNECTED | Performance Series

Performance Series IP Cameras Configuration Guide

HED2PER3	**HBD2PER1**	**HEW4PER3**	**H4W4PER2**	**H4W4PER3**
HBW4PER1	**HBW4PER2**	**H2W2PC1M**	**HPW2P1**	**HBW2PER1**
HEW4PER2	**HEW4PER2B**	**HEW2PER2**	**H4W2PER2**	**HBW2PER2**
H2W4PER3	**H2W2PER3**	**H4W8PR2**	**HBW8PR2**	**H4W2PER3**
HEW2PER3	**HEW4PER3B**			

Recommended

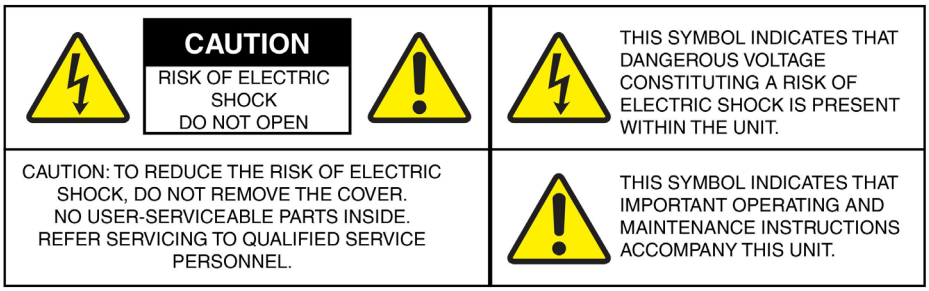
Find the latest version of this and other Performance Series IP camera documents on the Honeywell Video website. Go to: http://www.honeywellvideo.com/products/video-systems/Performance-s-ip/index.html to find your camera and view/download the latest documentation.

Refer to the Honeywell Open Technology Alliance to learn more about our open and integrated solutions (go to: http://www.security.honeywell.com/hota/).

Revisions

Issue	Date	Revisions
A	10/2018	New document.

Cautions and Warnings



WARNING **Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.**

WARNING **To ensure compliance with electrical safety standards this product is intended for use with a Listed Power Adapter marked with "Limited Power Source", "LPS", on the unit, output rated 12 V DC, minimum 0.7A, Tma=60°C or from Power over Ethernet (PoE) provided by Listed Information Technology Equipment meeting the IEEE 802.3af PoE standard.**

The Ethernet connection is not intended to be connected to exposed (outside plant) networks. Do not connect two power sources to the camera at the same time.

CAUTION Invisible LED radiation (850 nm). Avoid exposure to beam.

Regulatory Statements

FCC Compliance Statement

Information to the User: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note	Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.

Manufacturer's Declaration of Conformance

The equipment supplied with this guide meets the provisions of the following European Union council directives:

- 2014/30/EU for EMC
- 2001/95/EC for safety, and
- 2011/65/EU for RoHS compliance.

Waste Electrical and Electronic Equipment (WEEE)

Correct Disposal of this Product (applicable in the European Union and other European countries with separate collection systems).

This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

Safety Instructions

Before installing or operating the unit, read and follow all instructions. After installation, retain the safety and operating instructions for future reference.

1. **HEED WARNINGS** - Adhere to all warnings on the unit and in the operating instructions.
2. **INSTALLATION**
    - Install in accordance with the manufacturer's instructions.
    - Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.

- Any wall or ceiling mounting of the product should follow the manufacturer's instructions and use a mounting kit approved or recommended by the manufacturer.

3. **POWER SOURCES -** This product 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 supplied to your facility, consult your product dealer or local power company.
4. **MOUNTING SYSTEM** - Use only with a mounting system recommended by the manufacturer, or sold with the product.
5. **ATTACHMENTS/ACCESSORIES** - Do not use attachments/accessories not recommended by the product manufacturer as they may result in the risk of fire, electric shock, or injury to persons.
6. **CLEANING** - Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
7. **SERVICING** - Do not attempt to service this unit yourself. Refer all servicing to qualified service personnel.
8. **REPLACEMENT PARTS** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards. Using replacement parts or accessories other than the original manufacturers may invalidate the warranty.

Warranty and Service

Subject to the terms and conditions listed on the product warranty, during the warranty period Honeywell will repair or replace, at its sole option, free of charge, any defective products returned prepaid.

In the event you have a problem with any Honeywell product, please call Customer Service at 1.800.323.4576 for assistance or to request a **Return Merchandise Authorization (RMA)** number.

Be sure to have the model number, serial number, and the nature of the problem available for the technical service representative.

Prior authorization must be obtained for all returns, exchanges, or credits. **Items shipped to Honeywell without a clearly identified Return Merchandise Authorization (RMA) number may be refused**

Table of Contents

Figures

Tables

About This Document

This document provides instructions for accessing, configuring, and operating the Performance Series IP cameras. This document is intended for system installers, administrators, and operators.

Overview of Contents

This document contains the following chapters and appendixes:

- *Chapter 1, Introduction*, provides an overview of the main features of the Performance Series IP cameras.
- *Chapter 2 , Accessing the Camera*, describes how to install the ConfigTool to access the camera remotely from a web browser. It also describes how to update your camera's firmware.
- *Chapter 3, Logging In and Viewing Live Video*, describes how to log in to a camera and the Live View interface.
- *Chapter 4, Playing Back Video*, describes how to search for recorded video and snapshots and how to export them (**Note** This function is not supported by the following models: HPW2P1/HBW2PER1).
- *Chapter 5, Configuring Camera Settings*, describes camera configurations.
- *Chapter 6, Configuring Network Settings*, describes network configurations.
- *Chapter 7, Configuring Video Analytics*, describes video analytics configurations.
- *Chapter 8, Configuring Storage Settings*, describes storage configurations.
- *Chapter 9, Configuring System Settings, describes general system configurations.*
- *Chapter 10, Viewing System Information, describes system information, such as version, log and online user information.*
- *Chapter 11, Configuring Alarms Settings*, describes how to set up notifications for alarm inputs, motion detection, and network failure events.
- *Chapter 12, Troubleshooting*, lists common problems and solutions.
- *Chapter 13, Appendix*, lists maximum frame rate and resolution when integrating Performance Series IP cameras with Honeywell Embedded NVRs and lists the descriptions of symbols.
- *Chapter 14, Specifications*, lists the specifications of the Performance Series IP cameras.

1 Introduction

This chapter contains the following sections:

Overview

Honeywell's Performance Series IP cameras integrate traditional camera and network video technology, combining video data collection and transmission. These flexible, fully featured cameras are the ideal choice for a wide range of indoor and outdoor surveillance applications.

Plug-and-play compatible with Honeywell 4/8/16-channel Performance Series Embedded NVRs, the cameras offer 2, 4 or 8 megapixel resolution at up to 30 frames per second and use video compression technology to save bandwidth and storage while ensuring maximum video quality. All the cameras are True Day/Night with intelligent IR capability, providing up to 200 ft (60 m) of illumination in low-light and nighttime scenes. Also, all the cameras support WDR function at up to 120 dB.

Each camera comes with configurable motion detection and camera tamper detection and supports up to 4 user-defined privacy mask areas. In addition to a 12 VDC adapter, all the cameras support Power over Ethernet (PoE), eliminating the need for a separate power supply and associated wiring. Select models also support local video storage on microSDHC cards (up to 128 GB) when network service is interrupted.

You can monitor Performance Series IP cameras from anywhere, at any time, using the free HonView Touch mobile app for both Apple and Android smartphones and tablets.

Key Features

Key features of the Performance Series IP cameras include the following (* - the feature is only supported by certain models.):

Camera

- Day/Night mode auto-switch
- Video parameter setup, such as electronic shutter and gain
- Motion detection
- Camera tampering detection
- Scene change detection
- *Audio detection
- *Face detection
- *People counting

- Wide Dynamic Range
- Backlight compensation
- Video watermark function to prevent modification
- IR night vision

Storage

- Central server backup (configure in Alarm or Schedule settings)
- Recording over Internet, files stored on client PC
- Network storage (FTP)

Network Monitoring

- One-channel video data transmission to a network
- Terminal and decoding
- Latency time less than 200-250ms (network bandwidth support required)
- Up to 20 connections
- Compatible with the following network protocols: HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS

Network Management

- Camera configuration and management via Ethernet
- Device management via Internet or client PC

User Management

- Each user belongs to specific group
- Different user rights for each group
- User rights cannot exceed group rights

System Management

- Log function
- System resource information and running real-time status display

2 Accessing the Camera

This chapter contains the following sections:

Installing the IPC Tool Utility

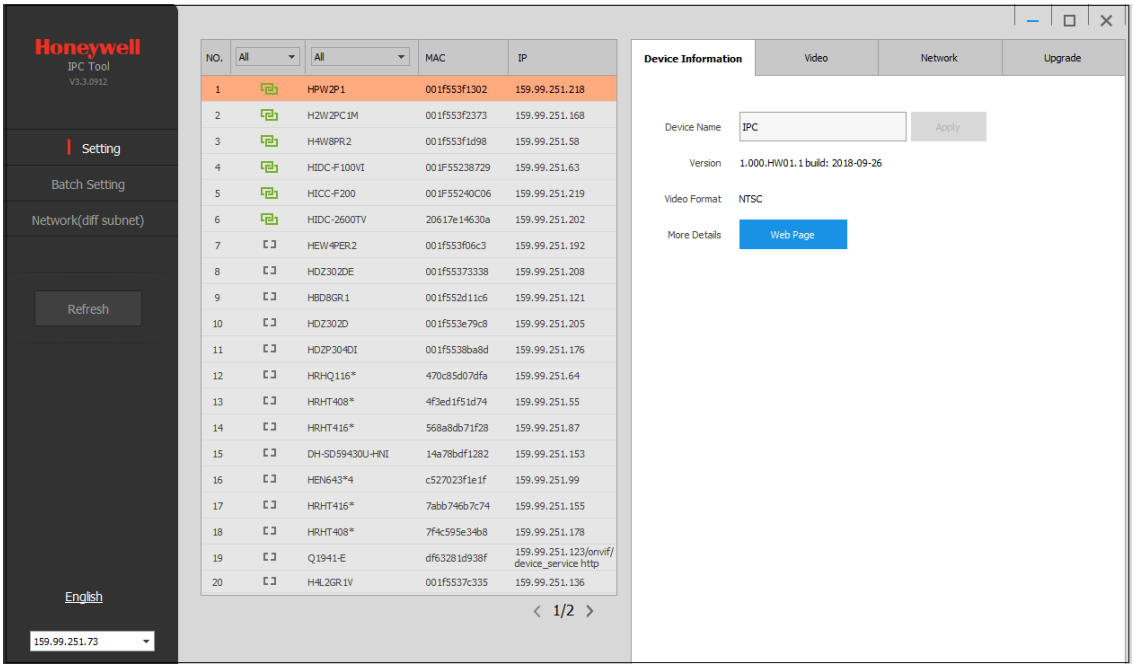
To install the IPC Tool utility and create a desktop shortcut:

1. Insert the included Software and Document disc into your PC's disc drive.
2. Install the IPC Tool utility to your PC. The shortcut  is added to the desktop.

Discovering Your Camera on the Network

To discover your network camera(s), open the IPC Tool utility  , enter your user name and password, and then click **Connect**. Cameras that are online have a green connected icon  next to them. Cameras that are offline have a gray X next to them. To refresh the list, click **Refresh**.

Figure 2-1 IPC Tool



Assigning a New IP Address to Your Camera

The current IP address of your camera appears in the **IP** column of the devices list. If you want, you can assign a new static IP address to the camera.

To change the IP address of a single camera:

1. Select the camera that you want to configure from the devices list.
2. Click the **Network** tab.
3. Clear the **DHCP** check box.
4. Enter the new IP settings in the **IP Address**, **Subnet Mask**, and **Default Gateway** fields.
5. Click **Apply** to apply the settings.

To change the IP addresses of multiple cameras at the same time:

1. In the left-most pane of the IPC Tool utility, click **Batch Setting**.
2. Select all the cameras that you want to configure from the devices list.
3. Click the **Network** tab.
4. Do one of the following:
   - To assign dynamic IP addresses, select the **Set all to DHCP** check box, and then click **Apply**.
   - To assign static IP addresses, enter the settings in **IP Range**, **Subnet Mask**, and **Default Gateway** fields, and then click **Apply**.

Upgrading the Camera's Firmware

Before you begin using your camera, make sure you have the latest firmware installed. You can upgrade a single camera or multiple cameras at the same time.

To upgrade a single camera:

1. Select the camera that you want to upgrade from the devices list.
2. Click the **Upgrade** tab.
3. Click **Browse**, navigate to the directory that contains the firmware file (.bin), select the file, and then click **Open**. The firmware file appears in the **Target File** field.
4. Click **Upgrade**. When the upgrade is complete, the camera will reboot.

To upgrade multiple cameras at the same time:

1. In the left-most pane of the IPC Tool utility, click **Batch Setting**.
2. Select all the cameras that you want to upgrade from the devices list.
3. Click the **Upgrade** tab.
4. Click **Browse**, navigate to the directory that contains the firmware file (.bin), select the file, and then click **Open**. The firmware file appears in the **Target File** field.
5. Click **Upgrade**. When the upgrade is complete, the cameras will reboot.

Accessing the Camera from a Web Browser

To access the camera from a web browser:

1. Select the camera that you want to access from the devices list. The camera must be online  .
2. On the **Device Information** tab, click **Web Page**. The web client opens in your default browser.

3 Logging In and Viewing Live Video

This chapter contains the following sections:

Logging In to the Camera via the Web Client

Using the web client, you can monitor live video, play back recorded video, and configure camera settings.

Before You Begin

Before you log in to the web client, ensure that the following conditions are met:

- The camera is properly connected to the network.
- The camera's IP address and the PC's IP address are in the same network segment. If there is a router, set the corresponding gateway and subnet mask.
- A network connection has been established. To check this, ping the camera's IP address. (Enter "ping [IP address]").

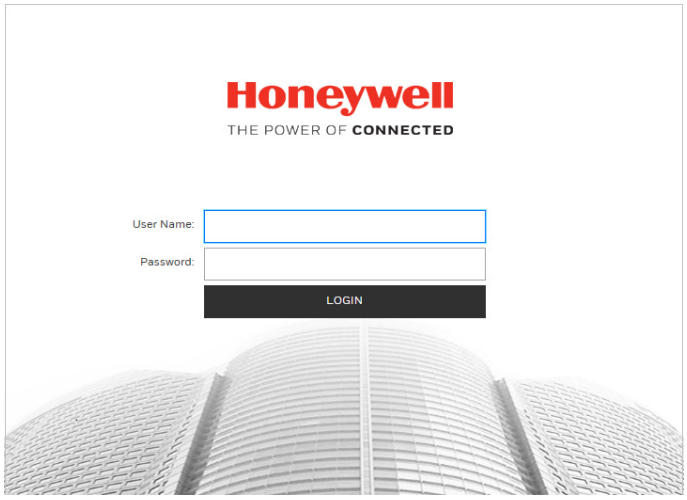
Logging In to the Camera

1. Open **Internet Explorer**, type the camera's IP address in the address bar, and then click **Enter**. For example, if your camera's IP address is **192.168.1.108**, you would type http://192.168.1.108.

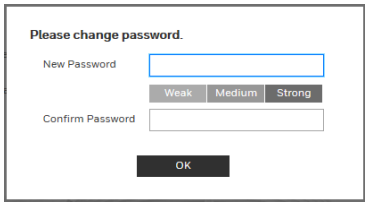
   Note Only Internet Explorer 11 is supported.

2. On the login screen, enter the admin user name and password, and then click **Login**. The default user name is **admin** (case-sensitive) and the default password is **1234**.

Figure 3-1 Login Interface



For security purposes, you are required to create a new secure password at the first login.



The password must be at least 8 characters long and contain at least one lowercase letter, one number, and one special character. The password cannot be blank.

Installing the Browser Plug-In

If you are logging in for the first time, you will be prompted to download and install a browser plug-in. Follow the on-screen instructions to install the plug-in. When the installation is complete, the web client automatically refreshes and the Live View interface opens (*Figure 3-4*).

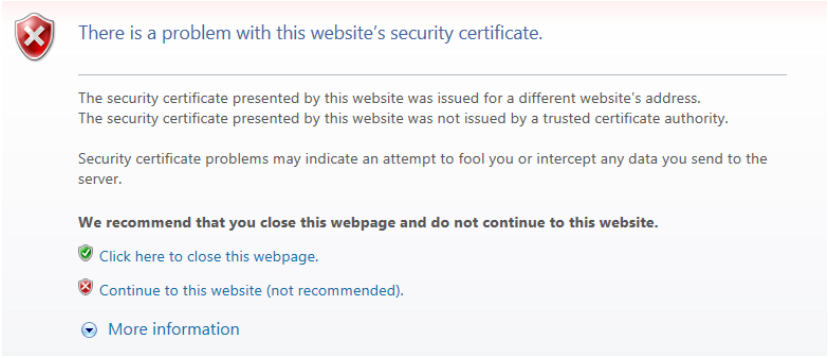
If this is your first time logging in, you will see the following message:

Click here to download and install the plug-in.

Perform the following steps to install the plug-in:

1. Click **Click here to download and install the plug-in**. The following window is displayed. Click **Continue to this website (not recommended)**.

Figure 3-2 Security Certificate Problem



2. A message appears asking if you want to run or save the file.

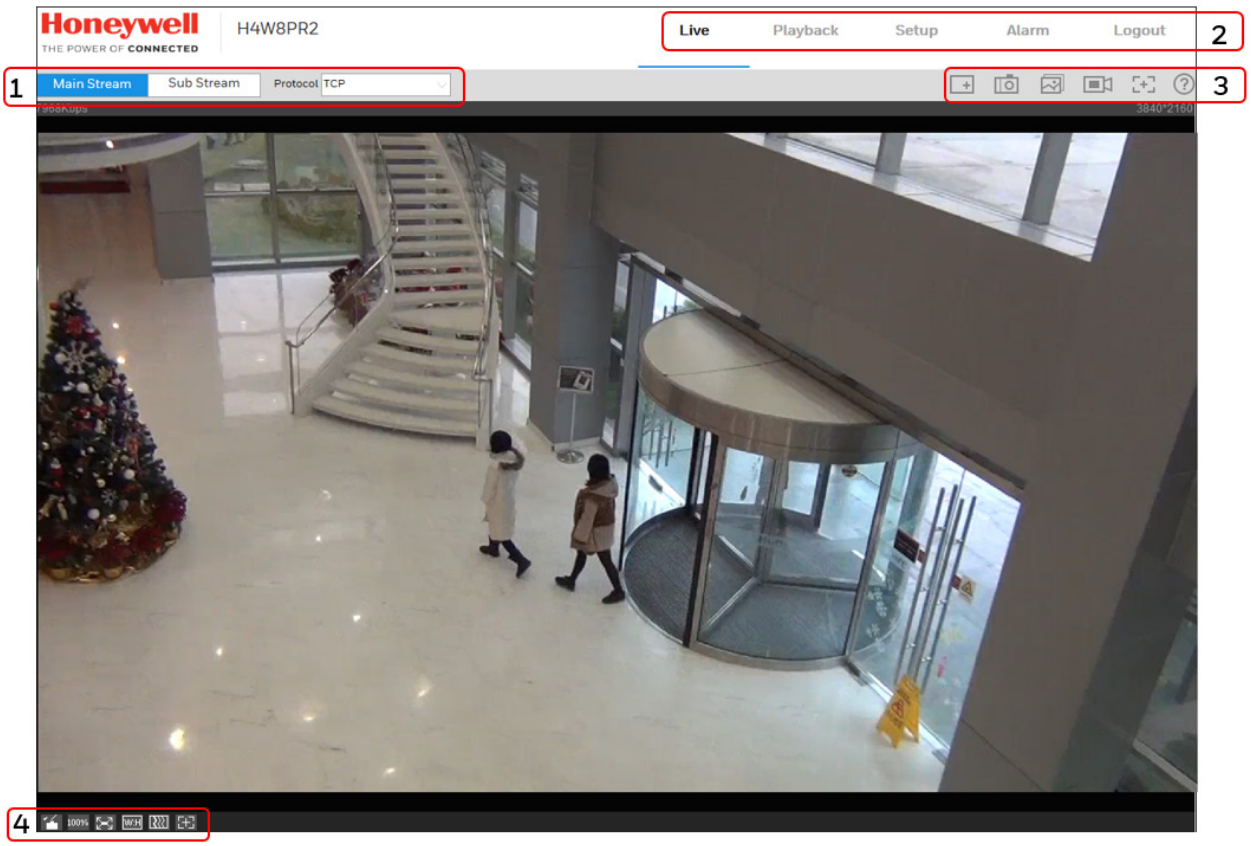
Figure 3-3 File Download Security Warning Message for the Plug-in

3. Click **Run** to start the installation.
4. After the plug-in installation is complete, login again and the web client displays the Live View interface (*Figure 3-4*).

Using the Live View Interface

The Live View window has four areas with controls and options for monitoring live video.

Figure 3-4 Live View Interface



1. Video encoder settings area (see *Video Encoder Settings, page 9*)
2. System menus (see *System Menus, page 10*)
3. Live View controls toolbar (see *Live View Controls, page 10*)
4. Live View interface settings toolbar (see *Live View Window Configuration, page 11*)

Video Encoder Settings

In the video encoder settings area of the Live View interface, you can choose a stream and set the stream protocol.

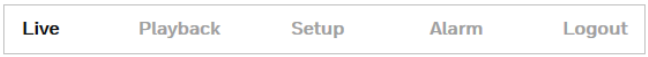
Figure 3-5 Video Encoder Settings

Table 3-1 Video Encoder Settings

Setting	Description
Main Stream	Delivers high definition video for real-time monitoring, recording, and storage. Uses the most bandwidth.
Sub Stream	Delivers low/standard definition video, typically for remote monitoring in lower network bandwidth environments.
Protocol	You can select the stream media protocol from the drop-down list. There are three options: **TCP**, **UDP**, or **Multicast**. **TCP**: Provides most reliable data transmission. Higher latency and bandwidth use than UDP. **UDP**: Provides fastest data transmission. Lower latency and bandwidth use than TCP but allows some data loss (such as dropped frames). **Multicast**: Provides the most efficient use of bandwidth if large numbers of clients are viewing the video simultaneously.

System Menus

Figure 3-6 System Menu



When you log in to the camera using the web client, the Live View interface opens by default. To access the Playback, Setup, and Alarm interfaces, or to log out, select the corresponding tab in the system menus area.

Live View Controls

From the Live View controls toolbar, you can zoom in on a scene, take a snapshot, or manually record video. These controls are described in more details below.

Figure 3-7 Live View Window Controls

Table 3-2 Live View Window Controls

Icon	Control	Description
	**Digital Zoom**	While viewing live video, click and hold down the left mouse button to zoom in on a specific area. Right-click the mouse to return to the previous magnification.
	**Snapshot**	Click to take a snapshot, saved as a JPEG at the default location (**\picture download**). To change the save path, see *Path* on page *61*. Or go to **Setup→Camera Setup→Video→Path**.

Icon	Control	Description
	Triple Snap	Click to take three snapshots at 1 fps. All images are saved to **Setup→Camera Setup →Video →Path.**
	Record	Click to start manual recording. All video is saved to **Setup→Camera Setup →Video→Path**.
	Easy Focus	Click to enable Easy Focus. You can see AF Peak and AF Max adjustments on the Preview window. Select from AF Peak and AF Max. **AF Peak**: Displays the video's definition when focusing. **AF Max**: Displays the most suitable focus for video definition. The closer the AF Peak and AF Max, the better the focus. **Note** Easy focus is available only for HEW4PER2/HEW2PER2/H4W2PER2/HBW2PER2/H4W8PR2/HBW8PR2 cameras.
	Help	Displays online help for the Live View window.

Live View Window Configuration

From the Live View window configuration toolbar, you can adjust the screen brightness, contrast, hue, or saturation; change the screen size and/or aspect ratio; and adjust image fluency. These controls are described in more detail below.

Figure 3-8 Live View Window Configuration Toolbar

Table 3-3 Live View Window Configuration Tools

	Image Control	Click to open the **Image Adjustment** panel. Move the sliders to adjust the image brightness, contrast, hue, or saturation. Click the **–** and **+** signs to make fine adjustments. To restore the settings to their default values (**64**), click **Reset**. **Note** These settings only apply to the client end. To change the settings at the camera end, go to **Setup → Camera Setup → Properties**.
	**Original Size**	Click to display the video at actual size (the exact dimensions are determined by the stream resolution).
	**Full Screen**	Click to display the video in full-screen mode. Double-click (or press Esc) to exit full-screen mode.
	**Width and Height Ratio**	Displays the video in its original size (**Original**) or fitted to your screen (**Adaptive**).
	**Adjust Fluency**	Sets the video fluency level (**Realtime**, **Normal**, or **Fluency**). Select a fluency level based on the capabilities of your network. For example, if your connection is slow, selecting **Fluency** will prioritize smoothness over image quality.
	**Zoom and Focus**	Opens the **Zoom and Focus** panel. Move the sliders to adjust the zoom and focus settings. Click the – and + signs to make fine adjustments. The **Step** number determines the magnitude of the adjustment. To set the focus automatically, click **Auto Focus**. To restore the default zoom and focus settings, click **Restore All**. To focus on a specific region, click **Regional Focus**, and then drag your mouse over the area in the video window. **Note** This option is available only for HEW4PER2/HEW2PER2/H4W2PER2/HBW2PER2/H4W8PR2/HBW8PR2.

4 Playing Back Video

This chapter contains the following sections:

Note	This function is not supported by the following models: HPW2P1/HBW2PER1.

Introduction

This chapter describes how to play back recorded video and saved snapshots on cameras using the web client, how to zoom in and take snapshots while playing back recorded video using the Playback Assistant, and how to create custom video clips.

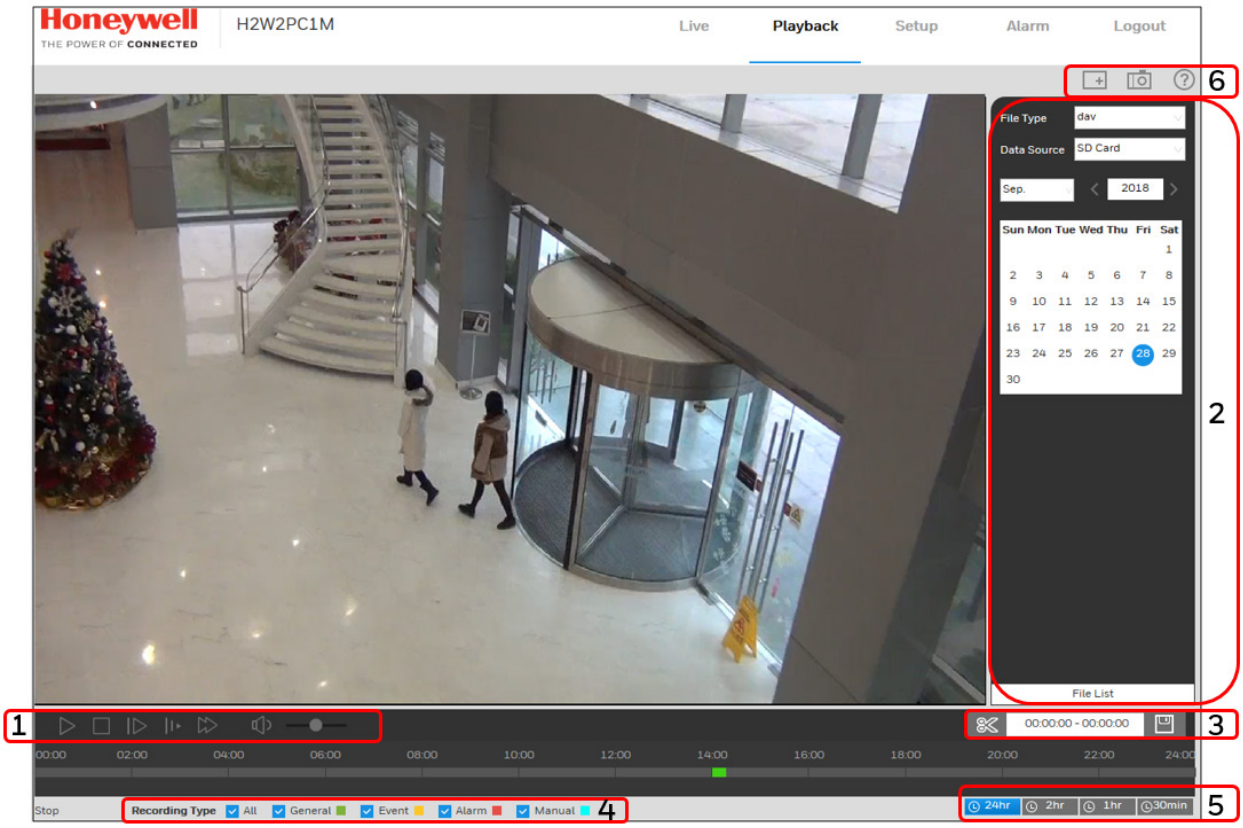
Note	Before you can play back recorded video or saved snapshots, you must first configure storage settings in the **Setup** menu. See *Configuring Storage Settings* on page *60*.

Click the **Playback** tab to display the playback interface.

Overview of the Playback Interface

The Playback interface has six areas with controls and options for playback (see *Figure 4-1*).

Figure 4-1 Playback Interface



1 Playback controls (see *Playback Controls on page 14*)

2 Calendar area (see *Playing a Recorded File from the Calendar on page 15*)

3 Clip selection (see *Creating a Video Clip on page 18*)

4 Recording type (see *Searching for a File by Recording Type on page 17*)

5 Timeline configuration (see *Timeline Configuration on page 18*)

6 Playback Assistant (see *Using the Playback Assistant on page 18*)

Playing Back Recorded Video

Playback Controls

Figure 4-2 Playback Controls

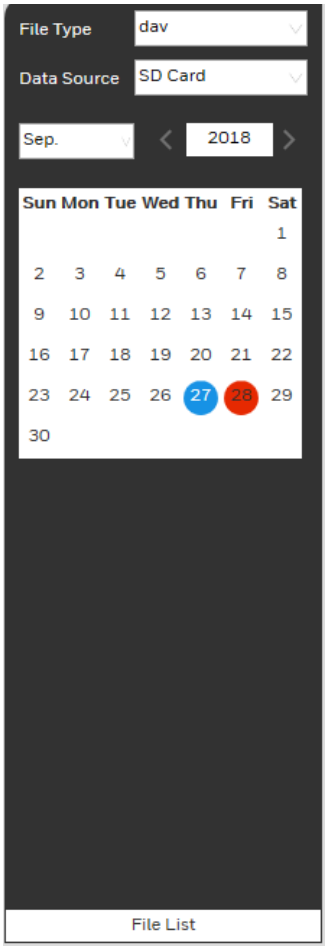
Table 4-1 Playback Controls

Control	Description
	Click to play video.
	Click to stop video playback.
	Click to go to the next frame. **Note** Video playback must be paused before you can use this function.
	Slow playback
	Fast playback
	Mute sound
	Volume control

Playing a Recorded File from the Calendar

On the playback calendar, a day in red indicates a day on which video was recorded and a day in blue indicates the day you select.

Figure 4-3 Playback Calendar

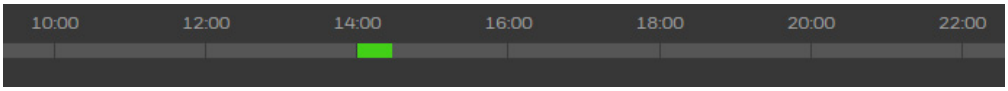


From the **File Type** list, select **dav** for video playback and **jpg** for snapshots. The default **Data Source** is **SD Card**.

Playing a Recorded File

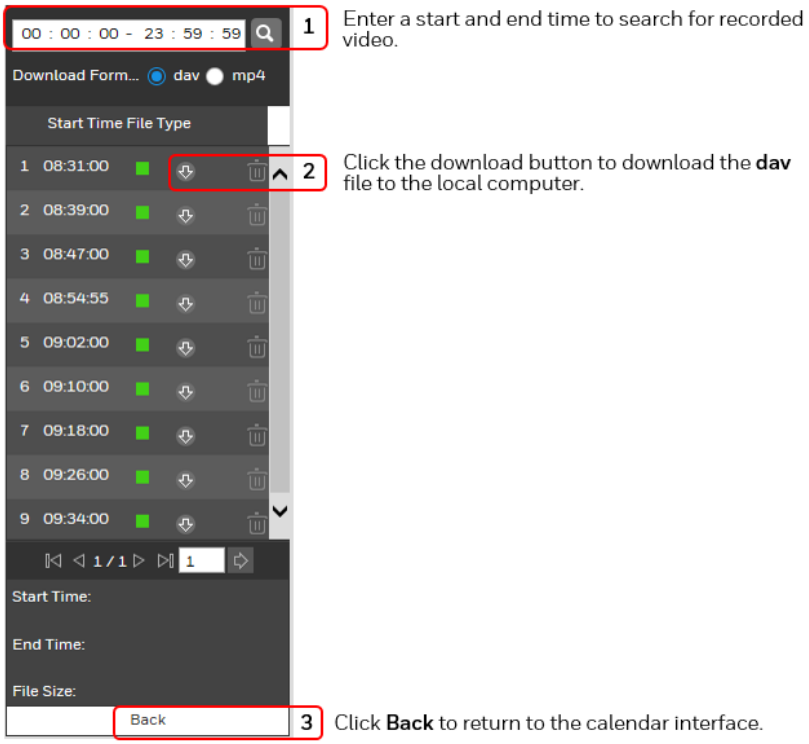
1. In the calendar field of the Playback interface, perform the following steps to find a recorded file:
   a. From the **File Type** list, select **dav**.
   b. From the **Data Source** list, select **SD Card**.
   c. Select the month and year that you want to search. Dates with recorded video are shown in red.
   d. Click the date that you want to search. Recordings for the selected date appear in the timeline (color coded according to recording type).
      - Green – Normal recording
      - Yellow – Motion detection recording
      - Red – Alarm-triggered recording.
      - Blue – Manual recording.

Figure 4-4 Recording Timeline



2. Below the calendar, click the **File List** button to narrow your search by time period and/or by download format.
3. Play the file using one of the following methods:
   - In the file list, double-click the file that you want to play.
   - In the timeline, click a colored bar at the time that you want to start playing from (click 30min to zoom in on the timeline), and then click the Play button.

Figure 4-5 Playback File Details



Note	On the playback file interface, you can download a file to your local PC.

Searching for a File by Recording Type

By selecting a recording file type, you can filter by a particular recording type so that the timeline and file list display only those types of recorded files. You can also select the recording type to display in the Playback interface. The filter is at the bottom of the Playback interface.

Figure 4-6 Recording Type Filter in Playback

Timeline Configuration

You can configure the playback timeline in Playback to show the last 24 hours, 2 hours, 1 hour, or 30 minutes of recorded video. Click to select the target time scale.

Figure 4-7 Playback Timeline Configuration

Using the Playback Assistant

The Playback Assistant buttons allow you to zoom in and out on video, and to take snapshots.

Note	This function is not supported by the following models: HPW2P1/HBW2PER1.

Zooming In and Out

To zoom in, in the Playback Assistant area (see *Figure 4-1*), click the **Zoom In** button  , and then use the scroll wheel on your mouse to zoom in on an area of the video.

Right-click the mouse to return the video to its original size.

Taking a Snapshot

Click  while playing video to manually take a snapshot. The snapshot is saved to the file path on your local PC. To configure the file path, see *Path* on page *61*.

Creating a Video Clip

You can clip and save a section of recorded video during video playback using the clip function. Playback of recorded video is automatically paused during clipping.

Note	This function is not supported by the following models: HPW2P1/HBW2PER1.

Figure 4-8 Clip Function Controls

1. Find the recording that you want to create a clip from.
2. On the timeline, click the recording at the time you want to start the clip, and then click  . This is the start time of the clip.
3. Next, click the recording at the time you want to end the clip, and then click  . This is the end time of the clip.
4. Click  to save the clipped file to your local PC. To configure the saving path, see *Path* on page *61*.

Viewing Snapshots

Note	This function is not supported by the following models: HPW2P1/HBW2PER1

1. In the calendar field of the Playback interface, perform the following steps to find a snapshot:
   a. From the **File Type** list, select **jpg**.
   b. From the **Data Source** list, select **SD Card**.
   c. Select the month and year that you want to search. Dates with snapshots are shown in red.
   d. Click the date (in red) that you want to search.
2. In the **Snapshot Type** field, you can refine your search results by selecting specific snapshot types to search (**General**, **Motion**, or **Alarm**).
3. Below the calendar, click **File List** to display a list of snapshots for the selected date.
4. If you want, you can refine your search results further by entering a specific time range to search.
5. To view a snapshot, double-click the file name (start time). To download a snapshot to your local PC, click the download button next to the file name. To configure the saving path, see *Path* on page *61*.

5 Configuring Camera Settings

This chapter contains the following sections:

Configuring Camera Properties

Go to **Setup →Camera Setup → Properties**.

This section describes how to configure camera properties (picture, exposure, lighting compensation, white balance, day and night, IR light, etc.).

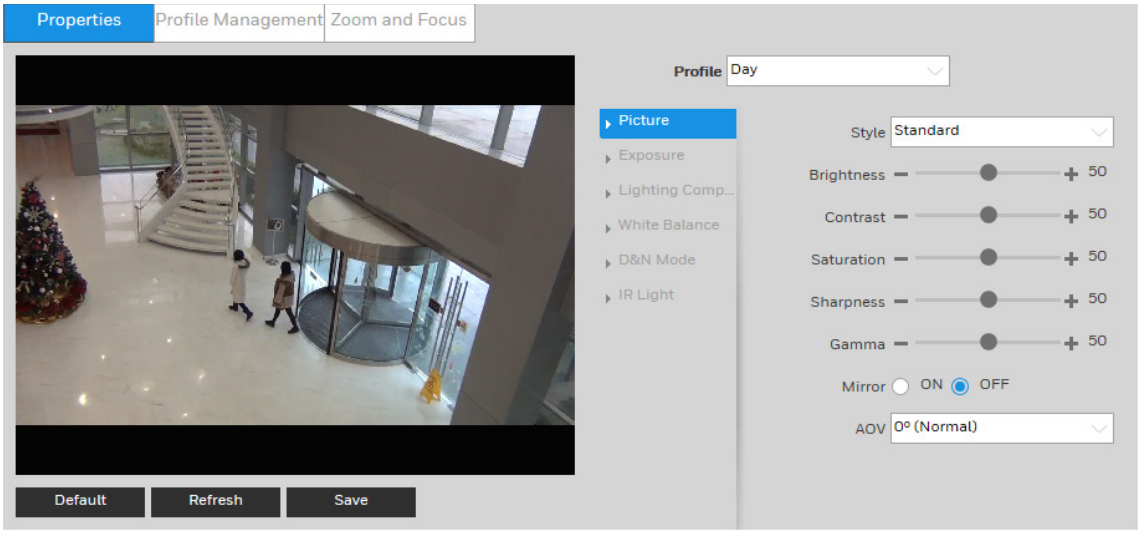
Properties

Go to **Setup →Camera Setup → Properties→ Properties**.

On the **Properties** tab, you can view camera property information. The configurations become valid immediately after they are saved.

Note	The settings that are available on the **Properties** tab may differ depending on the selections made in the **Profile Management** setup (see *Profile Management* on page *24* for more information).

Figure 5-1 Camera Properties



Profile

From the **Profile** list, select the camera profile that you want to configure settings for: **Normal**, **Day**, or **Night**.

Picture

In the **Picture** field, select a picture style from the Style list: **Soft**, **Standard**, or **Vivid**.

To adjust the image brightness, contrast, saturation, sharpness, or gamma settings, drag the slider left or right or click the – and + signs to make fine adjustments.

Brightness

Adjusts monitor brightness. Choosing a higher value increases the video brightness. Adjustments to this value affects the brightness of the video. Select from **0** to **100**. The recommended range is between **40** and **60**. The default value is **50**.

Note	If this value is too high, then the video can become hazy.

Contrast

Adjusts monitor contrast. Choosing a higher value increases the contrast. Select from **0** to **100**. The recommended range is between **40** and **60**. The default value is **50**.

Note	If this value is too low, then the video can become hazy. If this value is too high, then the dark parts of the video could lose details, and the bright parts of the video could become overexposed.

Saturation

Adjusts monitor color saturation. Choosing a higher value increases the color saturation/strength. This value has no effect on the general brightness of the video. Select from **0** to **100**. The recommended range is between **40** and **60**. The default value is **50**.

Sharpness

Adjusts video sharpness. Choosing a higher value increases the sharpness of the video. Select from **0** to **100**. The recommended range is between **40** and **60**. The default value is **50**.

Note	Choosing a higher value can introduce video noise to the image.

Gamma

Adjusts dynamic range. Choosing a higher value increases the brightness of the image non-linearly. Select from **0** to **100**. The recommended range is between **40** and **60**. The default value is **50**.

Mirror

Select **ON** to switch the video from left to right. This function is disabled by default.

AOV

0° (Normal): This is the default setting.
90° (Flip Mode 1): Rotates the video by 90°.
180° (Inverted): Rotates the video by 180°.

270° (Flip Mode 2): Rotates the video by 270°.

Exposure

In the **Exposure** field, you can set the anti-flicker mode, exposure mode, auto iris, and digital noise reduction level.

Anti-Flicker

This setting helps reduce flicker in the image. Select from **Outdoor**, **50 Hz** and **60 Hz** according to your environment.

Outdoor: Minimizes flicker in outdoor applications. Works with auto, low noise, low motion blur, and manual exposure modes

50 Hz: Minimizes flicker in indoor applications where the AC frequency is 50 Hz (generally PAL regions). Works with auto and manual exposure modes

60 Hz: Minimizes flicker in indoor applications where the AC frequency is 60 Hz (generally NTSC regions). Works with auto and manual exposure modes.

Mode

Select an exposure mode from Auto, Gain Priority, Shutter Priority and Manual.

Auto: The camera automatically sets the gain value and shutter speed.

Gain Priority: You set a gain value and the camera sets the proper exposure by assigning an appropriate shutter speed.

Shutter Priority: You set a shutter speed and the camera sets the proper exposure by assigning an appropriate gain.

3DNR

This setting reduces noise and retains good video quality in low light conditions. It is enabled by default.

Grade

This value ranges from **0** to **100**. The default value is **50** when 3D NR is on.

Lighting Compensation

In the **Lighting Compensation** field, you can apply backlight compensation (BLC), highlight compensation (HLC), or wide dynamic range (WDR) adjustment to the image.

Set Lighting Mode to OFF, BLC, HLC, or WDR.

WDR

By lowering the brightness of the brightest area, and enhancing the brightness of the darkest area, WDR balances brightness and darkness in a scene so that both the darkest area and the lightest area can be seen clearly at the same time.

This value ranges from **1** to **100**. The default value is 50.

Note	When you switch the camera from non-WDR to WDR mode, there might be a few seconds of lapse in video.

BLC

The camera automatically adjusts the exposure to suit the conditions, so that the darkest area of the video can be seen.

Default: Apply BLC to the entire scene.

Customized: Apply BLC to a specified portion of the scene.

HLC

When the HLC function is enabled, the camera can lower the brightness of the brightest section of video, according to the selected HLC control level. HLC can reduce the amount of halo and lower the brightness of the entire video image.

This value ranges from **1** to **100**. The default value is **50** when HLC is selected.

White Balance

Sets the **White Balance** mode, which affects the general hue of the video.

You can select different scene modes among **Auto**, **Natural**, **Street Lamp**, **Outdoor**, **Manual**, or **Customized Region**, to achieve the best quality video.

Auto: Auto white balance is on. The system automatically adjusts the color temperature to ensure that the video color is correct.

Natural: White balance is optimized for natural lighting.

Street Lamp: White balance is optimized for yellow-tinted lighting.

Outdoor: White balance is optimized for outdoor environments.

Manual: Red gain and blue gain values are set by the user. The value ranges from **0** to **100**.

D&N Mode

In the **D&N Mode** field, you can set the day and night mode, sensitivity, and delay time.

By default, the camera automatically outputs color video or black-and-white video depending on the amount of light in the scene. To output *only* color video, set **Mode** to **Color**. To output *only* black-and-white video, set **Mode** to **Black & White**.

Sensitivity

Adjusts the sensitivity threshold at which the camera switches from **Color** to **Black & White** mode. Set to **Low**, **Medium** (default), or **High**.

Note	Available only when **Day & Night** is set to **Auto**.

Delay

Adjusts the delay value of the switch from **Color** to **Black & White** mode. The value ranges from **2** to **10**. The default value is 6.

Note	Available only when **Day & Night** is set to **Auto**.

IR Light

In the **IR Light** field, you can set the infrared LED mode and other settings. Set **Mode** to **Manual**, **Smart IR**, or **OFF**.

Manual: IR near and far distance brightness are set by the user. The value ranges from **0** to **100**.

Smart IR: IR settings are adjusted automatically to prevent overexposure or underexposure.

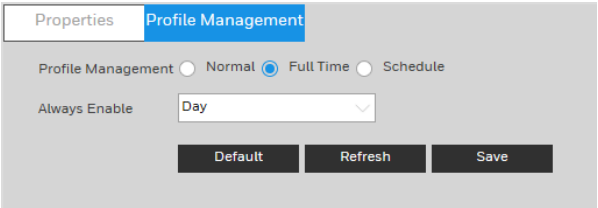
OFF: IR Light is off.

Profile Management

Go to **Setup →Camera Setup → Properties→ Profile Management**.

After you have configured the camera properties for each profile (Normal, Day, Night), you can set the profile(s) that you want the system to use.

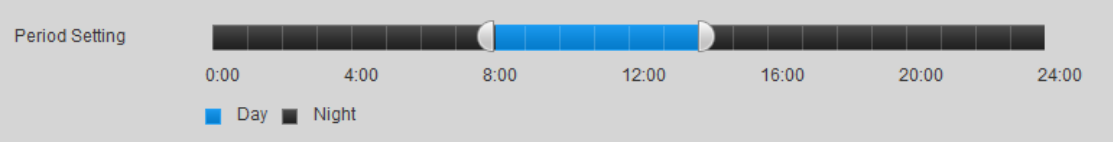
Figure 5-2 Profile Management



The Profile Management has three modes: **Normal**, **Full Time**, and **Schedule**. By default, the system has the **Day** profile always enabled.

- **Normal**: The Normal profile is always enabled.
- **Full Time**: The Day profile or Night profile is always enabled, depending on your selection.
- **Schedule**: The system switches between the Day profile and Night profile. Drag the sliders on the left and right sides of the timeline to set the Night-to-Day and Day-to-Night switching times.

  Figure 5-3 Schedule



Note	When you make changes to the video configuration, you will immediately see the effects of those changes in the video. However, you must click **Save** to save and apply these settings.

Zoom and Focus

Go to **Setup →Camera Setup → Properties→ Zoom and Focus**.

Note	This section only applies to HEW4PER2/HEW2PER2/H4W2PER2/HBW2PER2/H4W8PR2/HBW8PR2 motorized focus/zoom cameras.

Figure 5-4 Zoom and Focus

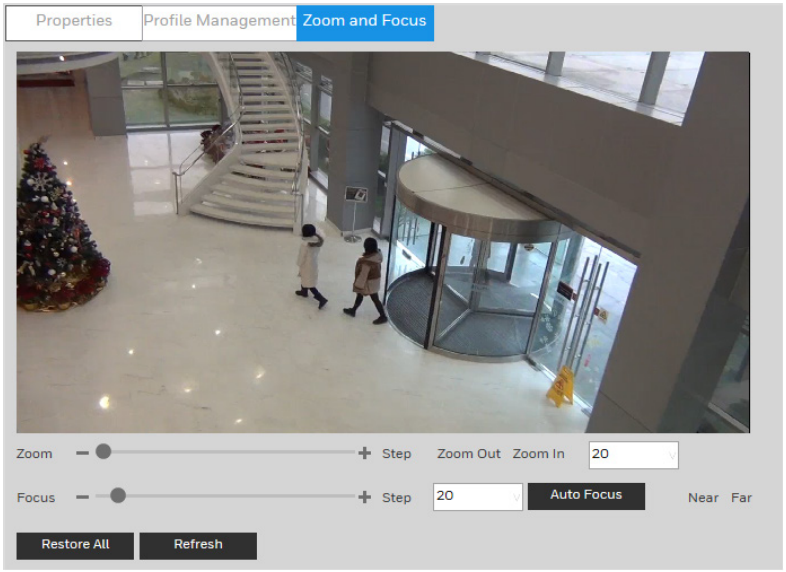


Table 5-1 Zoom and Focus

Parameter	Function
Zoom	Adjust the focal length of the lens by clicking "+" to zoom in or "–" to zoom out. Changing the **Speed** setting adjusts the length of a single-click increment. **Note** After adjusting zoom, the lens will focus automatically.
Focus	Adjust the definition of the image by clicking "+" to focus far or "–" to focus near. Changing the **Speed** setting adjusts the length of a single-click increment.
Auto Focus	Click to adjust the focus automatically.
Restore All	Click to reset the lens to 0 position. **Note** Reset the lens periodically if you are making a lot of zoom and focus adjustments.
Refresh	Click to refresh the video image.

Configuring Video Settings

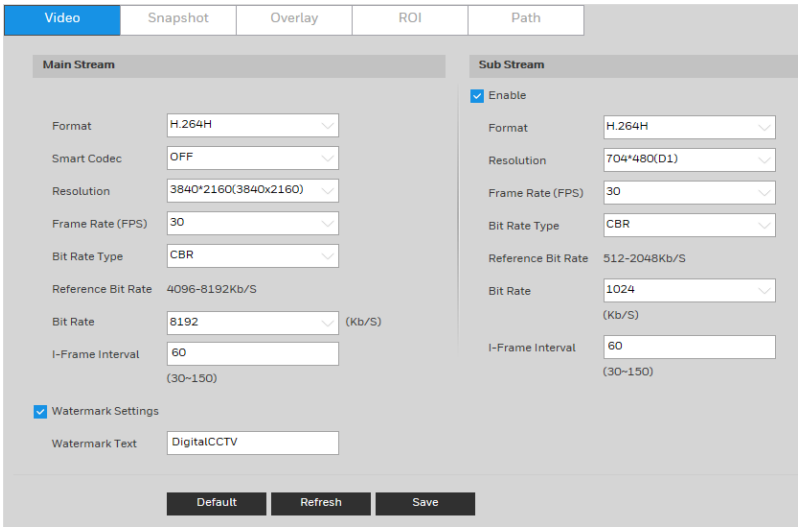
Go to **Setup →Camera Setup → Video**.

This section describes how to configure video streaming properties (format, resolution, frame rate, bit rate, I-frame interval, etc.).

Video Stream

Go to **Setup →Camera Setup → Video→ Video**.

Figure 5-5 Video Stream



Format

Select from four options for **Encode Mode**: **H.264** (Main Profile), **H.264H** (High Profile), **H.264B** (Baseline Profile), and **MJPEG** mode.

H.264: Main profile encoding mode.

H.264H: High profile encoding mode.

H.264B: Baseline profile encoding mode.

MJPEG: In this encoding mode, the video needs a larger bit stream to guarantee the video definition. You can use the maximum bit stream value in the **Recommended Bit** to get better video output.

Smart Codec

Set Smart Codec to **ON** or **OFF**.

By taking reference frames and applying them to refreshed frames, Smart Codec eliminates the need to transmit data for an unchanged image or parts of the image where there is no movement. Used together with H.264, Smart Codec can lead to storage savings of up to 60 percent and bandwidth savings of up to 40 percent over H.264 alone.

Note If **Smart Codec** is set to **ON**, video analytics will be unavailable.

Resolution

You can select from multiple resolutions from the drop-down list. The recommended bit stream value is different for each resolution.

Frame Rate (FPS)

In the **Frame Rate (FPS)** box, select a frame rate within the available range (1–30 fps for NTSC cameras; 1–25 fps for PAL cameras).

Bit Rate Type

In the **Bit Rate Type** box, select **CBR** or **VBR**.

CBR Constant bit rate. The bit rate remains constant (recommended for low-bandwidth environments). Required if MJPEG compression is used.

VBR Variable bit rate. The bit rate changes according to the complexity of the scene. Select a **Quality** level between **1** (lowest quality) and **6** (highest quality).

In the **Bit Rate** box, select a bit rate from the list using the **Reference Bit Rate** as a guide.

I-Frame Interval

In the **I-Frame Interval** box, set the number of P-frames between I-frames. The value ranges from **25** to **150**. The default value is **60**.

The recommended value for **I Frame Interval** is 2 times the frame rate setting.

Watermark Settings

Click to enable Watermark Settings and then type the watermark text. This function allows you to verify that the video has not been altered. The default watermark text is **DigitalCCTV**. The maximum length is 85 digits. Only numbers, letters, and the underscore character (_) can be used.

Snapshot

Go to **Setup →Camera Setup → Video→ Snapshot**.

Figure 5-6 Snapshot

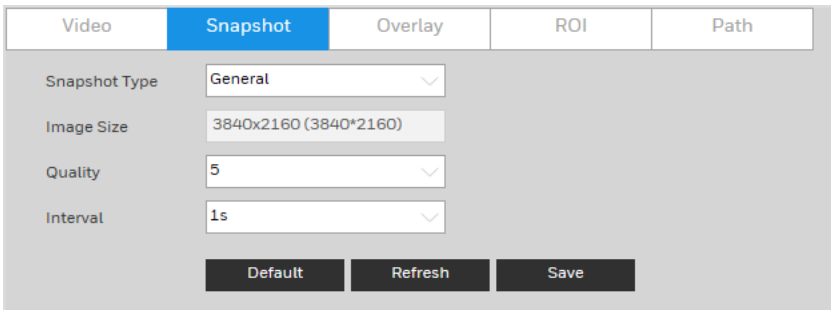


Table 5-2 Snapshot Configurations

Parameter	Function
Snapshot Type	Select from either **General** (schedule) or **Event** (activation). **General**: Snapshots are taken according to a user-defined schedule. **Event**: Snapshots are taken whenever an alarm, motion detection, camera tampering, or system event occurs.
Image Size	The image size is determined by the main stream resolution setting. It is not configurable.
Quality	Set the **Quality** to a value between **1** (lowest) and **6** (highest).
Interval	Select a snapshot frequency between **1** snapshot per second (**1s**) and **7** snapshots per second (**7s**), or click **Customized** to define a custom setting between **1** and **50,000** seconds.

Note	See *Path* on page *30* for information about configuring where snapshots are saved. Snapshots are saved as JPEGs.

Video Overlay

Go to **Setup →Camera Setup → Video→ Overlay**.

Figure 5-7 Video Overlay

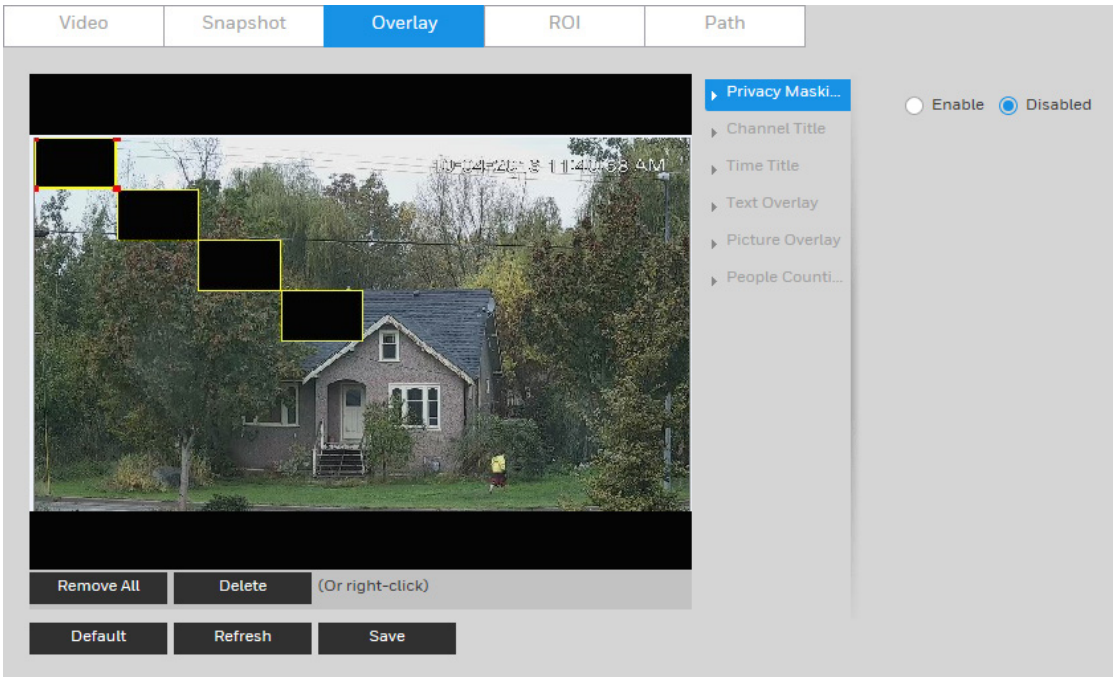


Table 5-3 Video Overlay Configurations

Parameter	Function
Privacy Masking	Masks areas of the video for privacy. To enable privacy masking, click **Enable**. Four privacy masks appear in the preview window. Delete any masks that you don't need. To delete a mask, right-click it or select it and then click **Delete**. To remove all the masks, click **Remove All**. To move a mask, select it and drag the center of the mask. To resize a mask, drag one of the corner handles. To draw a new mask, drag your mouse anywhere in the preview window.
Channel Title	Enable this function to overlay channel information in the video window. Use the mouse to drag the channel title to the desired position.
Time Title	Enable this function to overlay time information in the video window. Use the mouse to drag the time to the desired position.
Text Overlay	Enable this function to overlay text in the video window. Enter the text to be overlaid in the **Enter Text** field and select **Right** or **Left** alignment from the Text Alignment drop-down menu.
Picture Overlay	Enable this function to overlay picture in the video window. Select the picture to be overlaid by clicking **Upload Picture**.
People Counting	Enable this function to overlay the people counting information in the video window.

ROI

Go to **Setup →Camera Setup → Video→ ROI**.

To enable the ROI function, click **Enable**.

In the preview window, drag your mouse over the portion of the scene that you want to designate as a region of interest, select an **Image Quality** level between **1** (lowest) and **6** (highest), and then click **Save**. You can add up to 4 regions of interest.

To delete a single region of interest, select it, and then click **Delete**. To delete all regions of interest, click **Remove All**.

Path

Go to **Setup →Camera Setup → Video→ Path**.

Note	**Playback Snapshot**, **Playback Download** and **Video Clips** only apply to H2W2PRV3/H2W4PRV3/HBW2PR2/HBW4PR2/HEW2PR2/HEW4PR2/H4W2PRV2/H4W4PRV2 cameras.

Figure 5-8 Storage Path

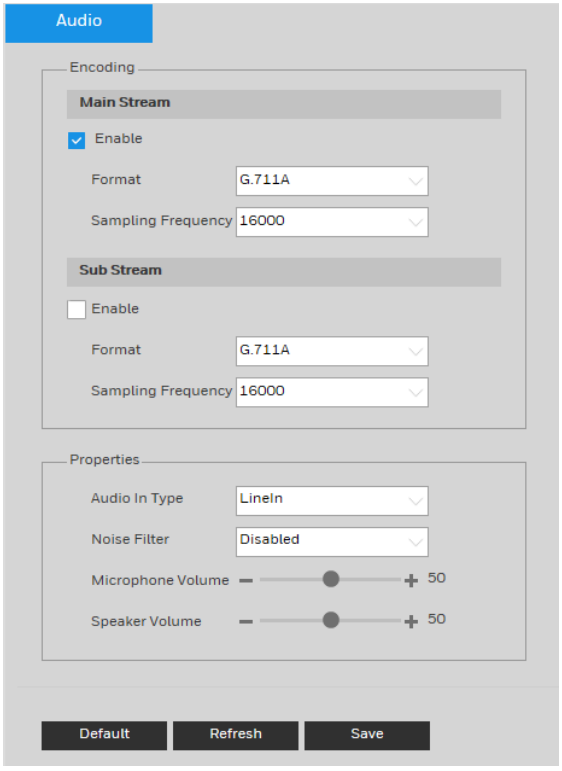
Set the storage path for snapshots (in the live interface) and for recorded video (in the live interface). Click **Browse** to select a storage path for snapshots and recorded videos.

Click **Save** to save any changes to the storage paths.

Configuring Audio Settings

Go to **Setup →Camera Setup → Audio.**

Figure 5-9 Audio



To enable audio for the stream, select the **Enable** check box, select the format (**G.711A**, **G.711Mu**, **G.726**, **AAC**), and then select a sampling frequency (**8–64 kHz**).

In the **Properties** area, select the audio input type (**LineIn**, **Mic**), enable or disable noise filtering, and adjust the microphone and/or speaker volumes by moving the sliders. Click the + and - signs to make fine adjustments. Click **Save** to apply the settings.

6 Configuring Network Settings

This chapter contains the following sections:

Configuring TCP/IP Settings

Go to **Setup →Network Setup → TCP/IP**.

Figure 6-1 TCP/IP

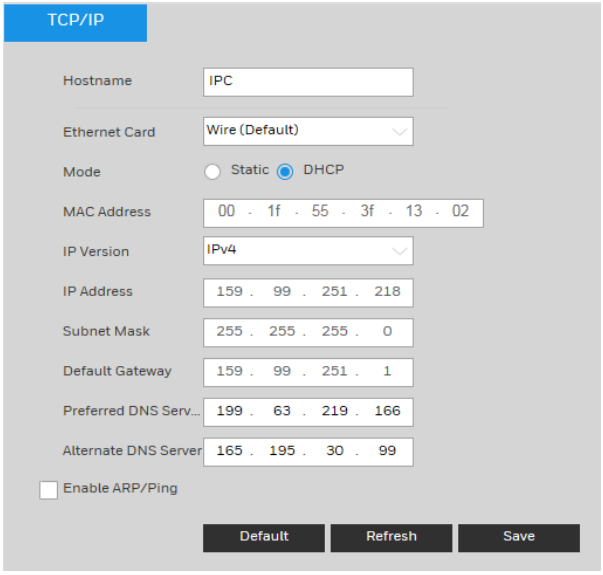


Table 6-1 TCP/IP Configurations

Parameter	Function
Hostname	Configure to set the current host camera's name.

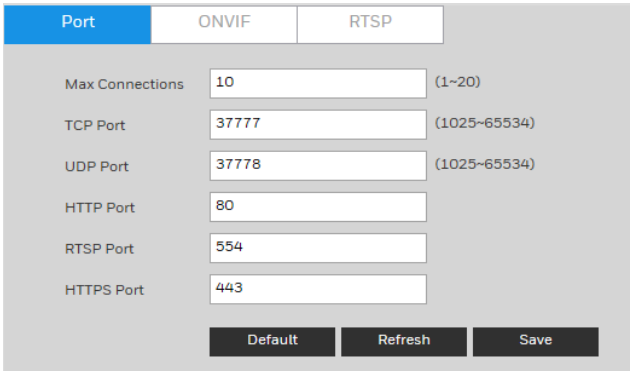
Parameter	Function
	Maximum 32 characters.
Ethernet Card	Select an Ethernet port. The default is **Wire (Default).** **Note** If you modify these settings, you should reboot your camera to activate the new setup.
Mode	Select **Static** or **DHCP** mode. The **IP Address**, **Subnet mask**, and **Default Gateway** fields are unavailable when you select **DHCP** mode to automatically search for the IP address. If **Static** mode is selected, you must manually assign the **IP Address**, **Subnet mask**, and **Default Gateway**. If **DHCP** mode is selected, the **IP Address**, **Subnet mask**, and **Default Gateway** are assigned automatically. **Note** **IP Address**, **Subnet mask**, **Default Gateway**, and **DHCP** are read-only when **PPPoE** is enabled.
MAC Address	Displays the MAC address.
IP Version	Select the IP version you are using: IPv4 or IPv6.
IP Address	If **Static** mode is selected, type values for the **IP Address**, **Subnet mask**, and **Default Gateway**.
Preferred DNS Server	Enter the preferred DNS server IP address.
Alternate DNS Server	Enter an alternate DNS server IP address.
Enable ARP/Ping	If you know the camera's MAC address, then use the ARP/Ping command to modify or set the camera's IP address. Before operating the camera, please ensure that the network camera and the PC are in the same LAN. Perform the following steps to set the IP address: 1. Get an IP address. Set up the network camera and the PC in the same LAN. 2. Get the physical address from the label on the network camera. 3. Open the **Run** interface (**Start menu > Run**), and then type the following commands: **arp -s <IP Address> <MAC> ping -l 480 -t <IP Address>** For example: **arp -s 192.168.0.125 11-40-8c-18-10-11 ping -l 480 -t 192.168.0.125** 4. Reboot the camera. If the setup was successful, output information such as **Reply from 192.168.0.125...** will appear in the command output lines. 5. Close the command line. Open your browser, type **http://<IP address>** in the address

Parameter	Function
	bar, and then press Enter

Configuring Port Settings

Go to **Setup →Network Setup → Port**.

Figure 6-2 Port



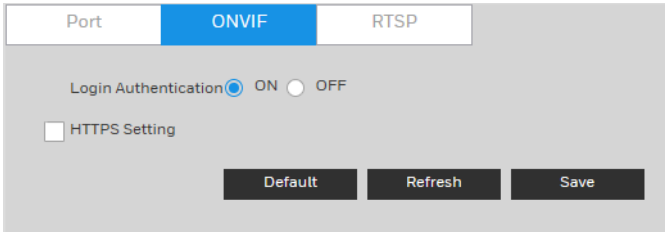
Port

Table 6-2 Port Configurations

Parameter	Function
Max Connection	Displays the maximum number of network connections for the same camera. The value ranges from **1** to **20**. The maximum number of connections is **20**.
TCP Port	The default setting is **37777**. You can modify this setting as necessary.
UDP Port	The default setting is **37778**. You can modify this setting as necessary.
HTTP Port	The default setting is **80**. You can modify this setting as necessary.
RTSP Port	The default setting is **554**. The RTSP stream query format is: **Main stream**: rtsp://username:password@ip:port/cam/realmonitor?channel=1&subtype=0 **Sub stream**: rtsp://username:password@ip:port/cam/realmonitor?channel=1&subtype=1 You are required to manually enter the following four items: **Username, Password, IP**, and **Port**. **IP**: The camera's IP address. **Port**: The default is **554**. You can leave this field blank if you are using the default value. Follow the standard RTSP protocols. When the encode mode is **MJPEG**, the maximum supported resolution is 2040×2040.
HTTPS Port	The default setting is **443**.

ONVIF

Figure 6-3 ONVIF



ONVIF (Open Network Video Interface Forum) is a global open standard for the interface of IP-based security products. It covers network video mode, interface, data type, and data interaction mode. The ONVIF specification aims at interoperability of network video products regardless of manufacturer.

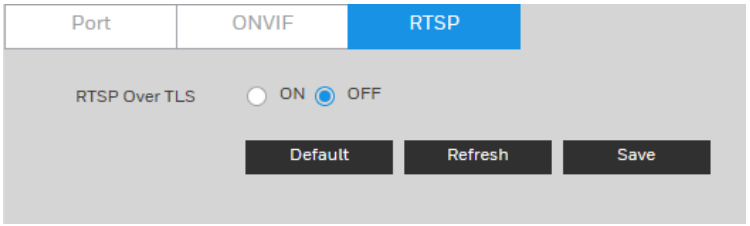
The ONVIF setting is enabled by default.

- To enable ONVIF, click **ON**.
- To disable ONVIF, click **OFF**.

Note	HTTPS is enabled by default. If your headend only supports ONVIF HTTP, you can disable HTTPS by clearing the **HTTPS Setting** check box and then clicking **Save**. A warning message will appear indicating that your connection is no longer secure.

RTSP

Figure 6-4 RTSP



RTSP Over TLS: RTSP Over TLS is used to encrypt video stream transmit between browser and device or device and headend. Click **ON** to enable **RTSP Over TLS**. The default setting is **OFF**.

Configuring PPPoE Settings

Go to **Setup →Network Setup → PPPoE**.

Figure 6-5 PPPoE

1. To enable PPPoE, select the **Enable** checkbox.
2. Select an authentication mode from **PAP**, **CHAP** or **EAP**. The default is **CHAP**. You can select the protocol according to your server. If you select all modes, the system will select a mode according to your system automatically.
3. Enter the PPPoE user name and password that you received from your Internet service provider (ISP).
4. Click **Save** to save the current setup, and then reboot the camera to activate this new setup. The camera connects to the Internet via PPPoE after rebooting.

Note	When **PPPoE** is enabled, disable **UPnP** so that it does not interfere with **PPPoE**.

Configuring SMTP (Email) Settings

Go to **Setup →Network Setup → SMTP (Email)** page.

Figure 6-6 SMTP

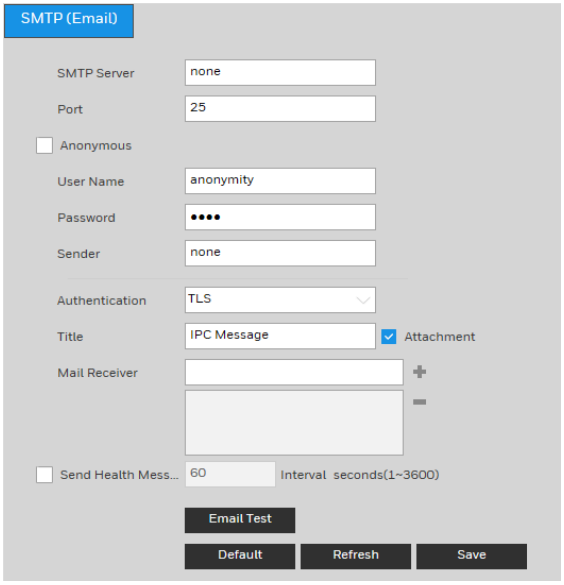


Table 6-3 SMTP (Email) Configurations

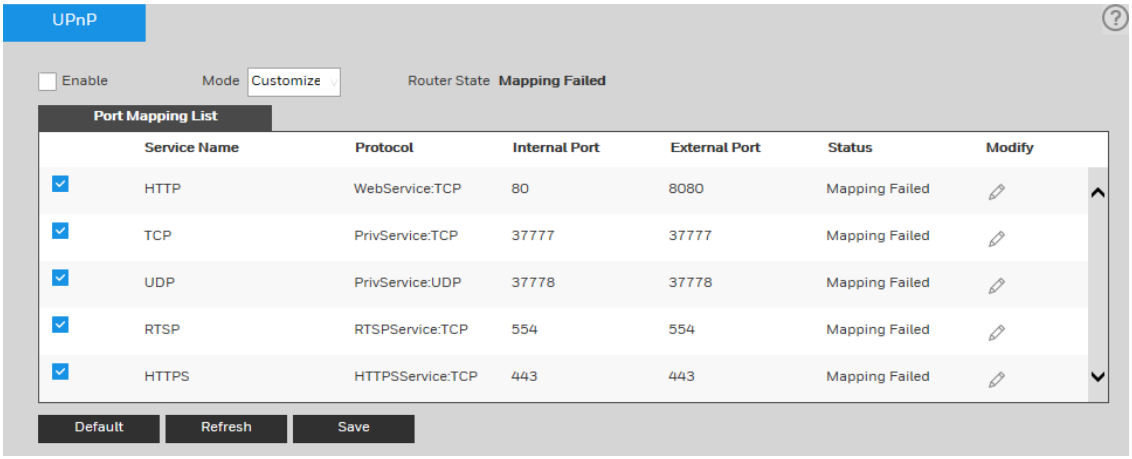
Parameter	Function
SMTP Server	Enter the server address.
Port	The default setting is **25**. You can modify this setting as necessary.
Anonymous	Supports the anonymity function for the server. You can automatically log in anonymously. You do not need to enter the user name, password, and the sender information.
User Name	Enter the username for the sender's email
Password	Enter the password for the sender's email
Sender	Enter the sender's email address.
Authentication	This is the encryption mode. Select **SSL**, **TLS**, or **None**.
Title	Enter the email subject.
Attachment	Select the check box to have the system send out a snapshot with the email.
Mail Receiver	Enter the receiver's email address here. You can enter up to three addresses.
Send Health Messages	To have the system periodically verify that the email notification settings are working, select the **Send Health Messages** check box, and specify the **Interval**.
Interval	The interval for sending ranges from 0 to 3600 seconds. 0 seconds means that there is no interval. The system will not immediately send the email when the alarm occurs. When an alarm, motion detection, or other event occurs to activate an email, the system sends the email according to the interval that you have specified here. This reduces the load on the email server when multiple emails are triggered simultaneously.
Email Test	The system will automatically send an email to test the connection. Before you can do an email test, you must save the email setup information.

Configuring UPnP Settings

Go to **Setup →Network Setup → UPnP**.

UPnP lets you establish the mapping relationship between the LAN and the public network. In the UPnP configuration interface, you can add, modify, or remove a UPnP item.

Figure 6-7 UPnP



Enabling UPnP in Windows

The UPnP protocol is used to detect network devices with clients running Windows.

To enable UPnP, select the **Enable** check box. The camera can now be detected by Windows' built-in network browser (My Network Places in Windows XP; Network in Windows 7).

To enable UPnP in Windows XP:

1. Go to **Start →Control Panel → Add or remove programs**.
2. Click **Add or remove programs**, then select **Networking Services** in the Windows Components Wizard.
3. Click **Details**, then select **Internet Gateway Device Discovery** and **Control Client and UPnP User Interface**.
4. Click **OK** to begin the installation.

To enable UPnP in Windows 7:

1. Go to **Start→ Control Panel→ Network and Internet → Network and Sharing Center**.
2. On the left pane, click **Change advanced sharing settings**.
3. On your current network profile, in the **Network discovery** area, click Turn on network discovery, and then click **Save changes**.

Configuring SNMP Settings

Go to **Setup →Network Setup → SNMP**.

SNMP (Simple Network Management Protocol) is a protocol for collecting, organizing, and exchanging management information between managed devices on a network.

Figure 6-8 SNMP

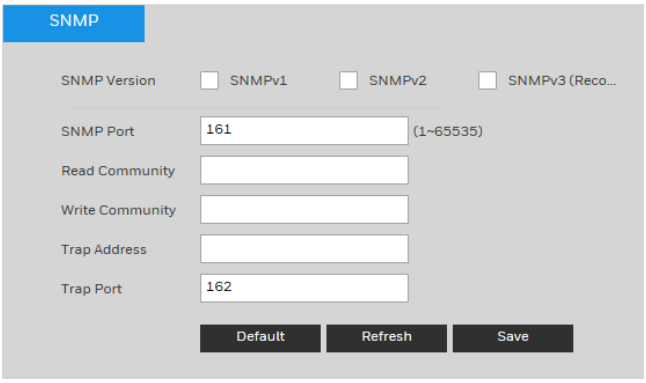


Table 6-4 SNMP Configurations

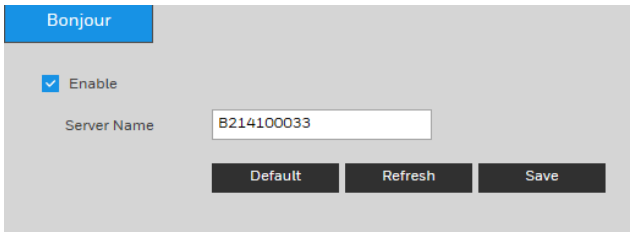
Parameter	Function
SNMP Version	When **SNMP v1** is selected, the device can only process SNMP v1 information. When **SNMP v2** is selected, the device can only process SNMP v2 information. When **SNMP v3** is selected, you can set user name, password and authentication type. The server needs to set the corresponding management system account when you want to access the device. For best security, use SNMPv3. You can select SNMPv1 only, SNMPv2 only, both SNMPv1 and SNMPv2, or SNMPv3 only.
SNMP Port	This is the listening port of the proxy applications in the device. The default value is **161**. The value ranges from **1** to **65535**.
Read Community	The community string will read all the objects the SNMP supported in the specified name. The default setup is public.
Write Community	The community string will read/write/access all the objects the SNMP supported in the specified name. The default setup is write.
Trap Address	The destination address of the trap information from the proxy program of the device.
Trap Port	By default, the Trap Port is **162**. To change the port, enter a number in the range **1** to **65535**.

Configuring Bonjour Settings

Go to **Setup →Network Setup → Bonjour**.

Bonjour is based on the multicast DNS service from Apple. It can automatically broadcast its service information and listen to the camera information from the other camera.

Figure 6-9 Bonjour



Bonjour is a zero configuration networking application that allows you to create a network in which devices can discover each other without requiring any user configuration.

When this function is enabled, you can discover the camera on a Mac OS computer by opening Safari and going to **Display All Bookmarks → Bonjour**.

Bonjour is enabled by default. To disable it, clear the **Enable** check box, and then click **Save**.

Configuring Multicast Settings

Go to **Setup →Network Setup → Multicast**.

Multicast is a transmission mode for data packets. When there are multiple hosts to receive the same data packet, multiple cast (multicast) is the best option for reducing the bandwidth and the CPU load. The source host can send out just one data packet. This function depends on the relationship between group members and the router's group.

In the **Multicast** configuration interface, you can set the multicast address and port.

Note	You must go to the **Live** interface to set the protocol to **Multicast**. See Protocols in *Video Encoder Settings* on page 9.

Figure 6-10 Multicast

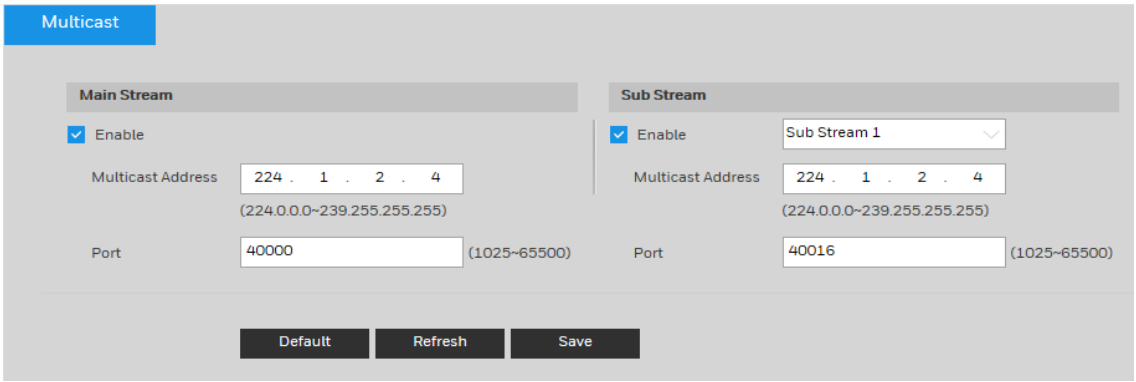


Table 6-5 Multicast Configurations

Parameter	Function
Enable	Select the check box to enable the multicast function. **Note** Main stream and sub stream cannot be used at the same time.
Multicast Address	The main/sub stream multicast address is **224.1.2.4** and its range is **224.0.0.0 – 239.255.255.255**.
Port	Multicast port. The default multicast port of main stream is **40000**, and the default multicast port of sub stream is **40016**. The range is **1025 – 65500**.

Configuring IEEE802.1X Settings

Go to **Setup →Network Setup →802.1X**.

IEEE802.1X is the access control and authentication protocol for local and metropolitan area networks. It uses a port-based network access control protocol to restrict unauthorized user and/or device access to the LAN.

IEEE802.1X supports the client's ability to manually choose how authentication works for accessing the LAN or not. IEEE802.1X supports the ability to:

- authenticate
- calculate the fee
- ensure security
- maintain requirements

Figure 6-11 802.1X

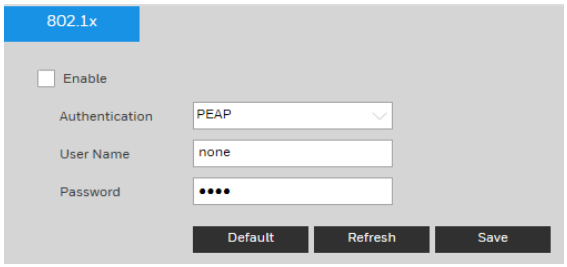


Table 6-6 802.1X Configurations

Parameter	Function
Enable	Select the check box to enable this function.
Authentication	PEAP (protected EAP protocol)
Username	Enter a username to log in. This username is authenticated by the server.
Password	Enter a password.

Configuring QoS Settings

Go to **Setup →Network Setup →Qos**.

Quality of Service (QoS) is a network security mechanism. It fixes problems with network delays and jams. For network service, the quality of service includes the transmission bandwidth, delay, and packet loss, for example. Through QoS, you can guarantee the transmission bandwidth, reduce the delay, reduce the loss of data packets, and enhance the transmission quality with packet prioritization.

Figure 6-12 QoS

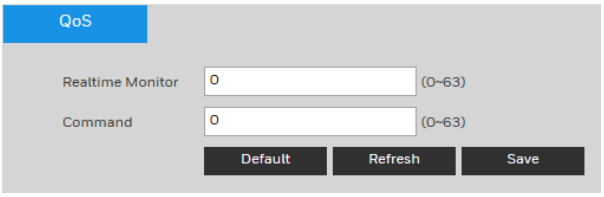


Table 6-7 QoS Configurations

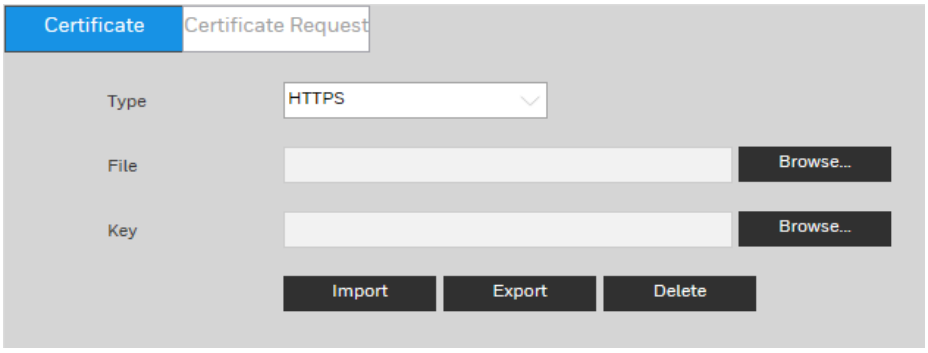
Parameter	Function
Realtime Monitor	This value ranges from **0** to **63**. The router or the switcher can provide different service for different packets.
Command	This value ranges from **0** to **63**. The router or the switcher can provide different service for different packets.

Configuring Certificate Settings

Go to **Setup →Network Setup →Certificate**.

The camera uses HTTPS, a secure communication protocol that verifies the identities of visited websites and servers and encrypts data exchanged between the client and the server. When you log in to the camera's web client for the first time, some browsers may display a warning that the connection is not private/secure. To access the web client, you must install a Honeywell-signed security certificate.

Figure 6-13 Certificate



Certificate

To install a Honeywell-signed root certificate:

1. Click **Export**, navigate to the directory where you want to save the certificate (**ca.crt**) on your PC, and then click **Save**.
2. Go to the directory where you saved the certificate and double-click the certificate. The **Certificate** window opens.
3. In the **Certificate** window, on the **General** tab, click **Install Certificate** to open the Certificate Import Wizard.
4. Click **Next** to continue.
5. Click **Place all certificates in the following store**, click **Browse**, click **Trusted Root Certification Authorities**, and then click **OK**.
6. Click **Next**, and then click **Finish** to close the Certificate Import Wizard. A confirmation dialog box appears with the message "The import was successful."
7. Click **OK**, and then click **OK** to close the Certificate window.

To import certificate from 3rd party:

1. Select a certificate type from the **Type** drop-down list.
2. In the **File** field, click **Browse** to select a certificate file you have already applied from 3rd party or CA domain.
3. In the **Key** field, click **Browse** to select a certificate key you have already applied from 3rd party or CA domain.
4. Click **Import** button and reboot camera.

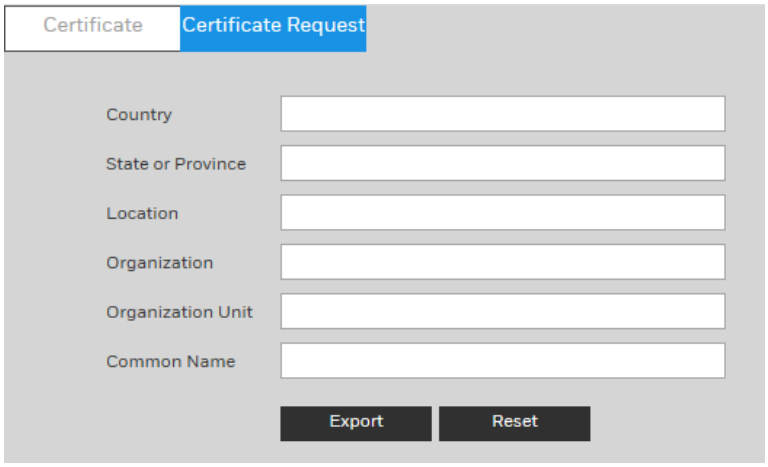
Note	Supported certificate type: HTTPS protocol. Supported certificate file and Key: PEM format.

Certificate Request

You can fill in certificate information and the certificate request file can be exported to the certificate issuing authority for signing and then being imported to camera.

1. Go to **Setup →Network Setup →Certificate Request**.
2. Enter the required information and then click **Export.**

Figure 6-14 Certificate Request



7 Configuring Video Analytics

This chapter contains the following sections:

Configuring Video Detection Settings

Configuring Motion Detection Settings

Go to **Setup →Video Analytics →Video Detection→Motion Detection**.

Figure 7-1 Video Detection

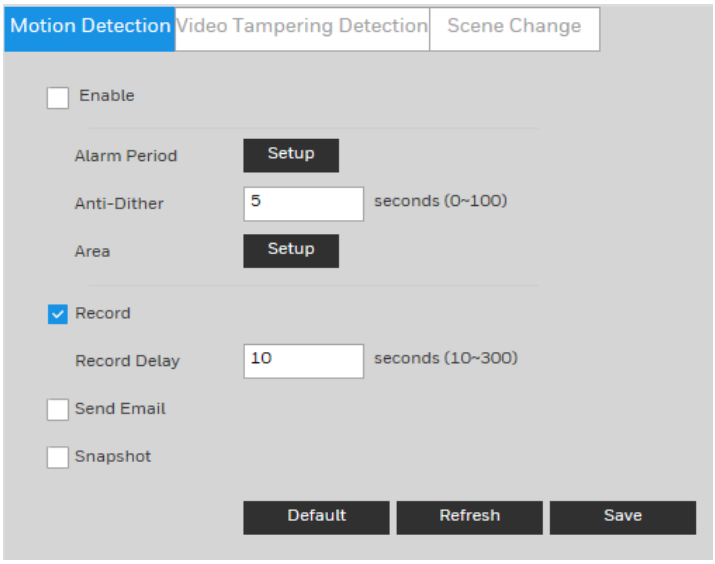


Table 7-1 Video Detection Configurations

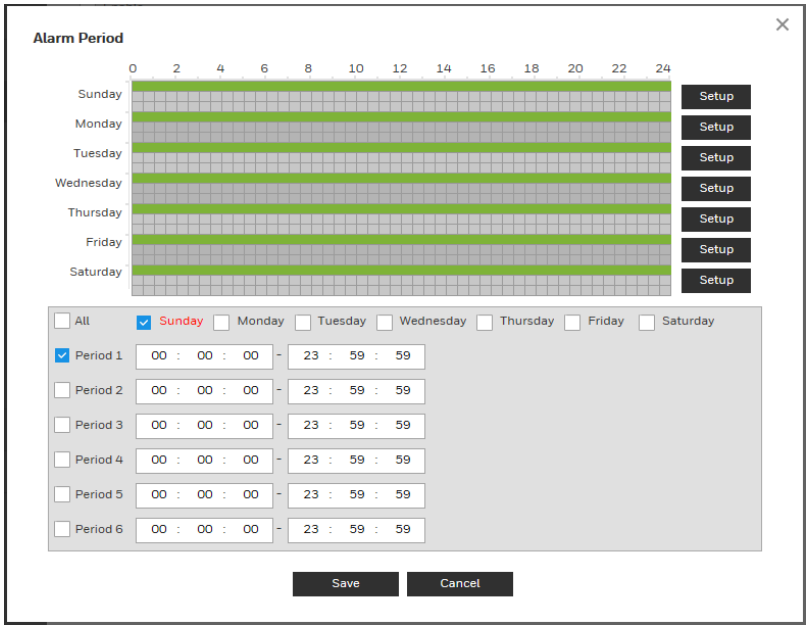
Parameter	Function
Enable	Click the checkbox to enable motion detection.
Alarm Period	Configure the arm/disarm period. Click **Setup** to open the setup menu. See *Configuring the Alarm Period* on page 47.

Parameter	Function
Anti-Dither	Enter the anti-dither time in seconds. Enter a value between **0** and **100** seconds. The system will only allow one motion detection event within this period.
Area	Configure the motion detection region, its sensitivity, and area. The default settings covers the entire area. Click **Save** to enable these settings. See *Configuring the Motion Detection Area* on page *48*.
Record	Click the checkbox to enable Record. You can trigger motion detection to activate recording.
Record Delay	The system can delay recording for a specified time after the alarm has ended. Choose a delay period from **10s** to **300s**.
Send Email	Click the checkbox to enable Send Email. The system will then send an email alert when an alarm occurs.
Snapshot	Click the checkbox to enable Snapshot. The system will then back up motion detection snapshot files. (See *Path* on page *61* for how to configure the path where snapshots are saved.)

Configuring the Alarm Period

Define a period during which motion detection is active.

Figure 7-2 Configuring the Alarm Period



Perform either of the following methods to configure the alarm period:

Method 1:

1. Select a day of the week check box. Select from a day of the week or All.

Note	• If you select All, the schedule will apply to all days of the week. • You can configure up to 6 periods within a day.

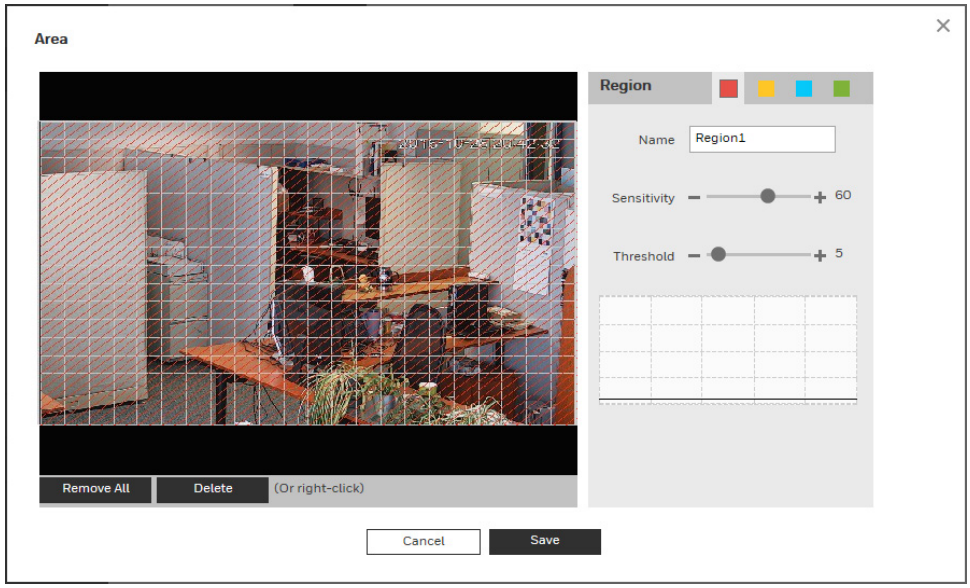
2. Configure a time range for when the motion detection is active, and then click the Period check box to select that time range for the selected day of the week.
3. Repeat steps 1 and 2 to set up multiple time periods in a day or to setup other days of the week, as required.
4. Click **OK**.

Method 2:

Use the green bar to configure the time periods needed for motion detection. Click the green bar to disable the time and day, drag on the target time and day to enable them.

Configuring the Motion Detection Area

Figure 7-3 Configuring the Motion Detection Area



Perform the following steps to configure the motion detection area:

1. Select the motion detection region from the 4 regions (red, yellow, blue and green). You can configure 4 different regions of motion detection. If necessary, enter a name for the region in the name field.
2. Select the detection area by clicking and dragging the mouse over the video image.

   There are 396 (PAL) or 330 (NTSC) small areas. The color of the area tile indicates which region is set for motion on that area. If there is no color, then motion detection is not set for that area.
3. Select a sensitivity value, from 1 to 100 for each region. The higher the number, the higher the motion detection sensitivity. It is recommended that you choose a sensitivity between 30 to 70. The default is 60.

4. Select a threshold value, from 1 to 100 for each region. The higher the number, the more motion will be needed to trigger a motion event. It is recommended that you choose a sensitivity between 5 to 50.
5. Click **Remove All** to delete all motion detection regions. Click **Delete** to delete the selected motion detection region.
6. Click **OK** to save the configurations. Click **Cancel** to exit the setup without saving the changes.

Configuring Camera Tampering Settings

Go to **Setup →Video Analytics →Video Detection→Video Tampering**.

Figure 7-4 Video Tampering

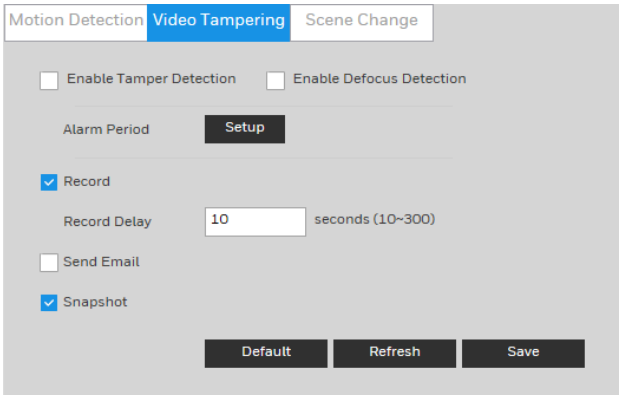


Table 7-2 Tampering Configurations

Parameter	Function
Enable Tamper Detection	Check to enable video tamper detection.
Enable Defocus Detection	Check to enable defocus detection. **Note** **Defocus Detection** is only supported by the following models: HEW4PER2/HEW2PER2/H4W2PER2/HBW2PER2/H4W8PR2/HBW8PR2.
Alarm Period	The camera tampering function is activated during the specified period. See *Configuring the Alarm Period* on page *47*. You can configure up to six periods per day. Select a date. If you do not select a date, the current setup will be applied to today only. You can select **All** to apply the alarm period to the whole week. Click **OK** to save the changes. The system goes back to the video tampering interface. Click **Save** to exit.
Record	If **Record** is enabled, a camera tampering event can activate recording.
Record Delay	The system will wait for the specified time before it begins recording. Select from **10s** to **300s**.
Send Email	When enabled, the system sends an email alert when an alarm occurs.

Snapshot	When enabled, the system attaches a snapshot to an email alert when an alarm occurs.

Configuring Scene Change Settings

Go to **Setup →Video Analytics →Video Detection→Scene Change**.

Figure 7-5 Scene Change

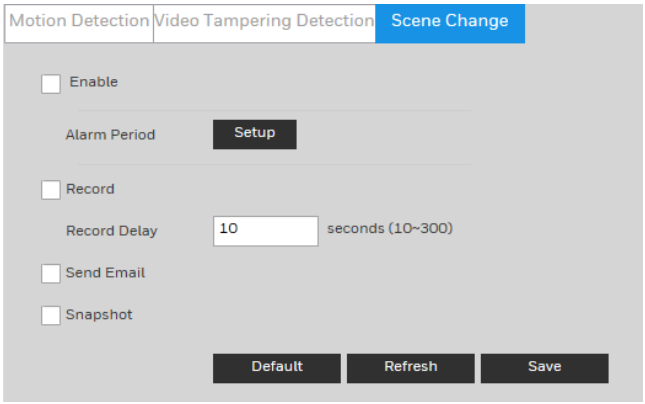


Table 7-3 Scene Change Configurations

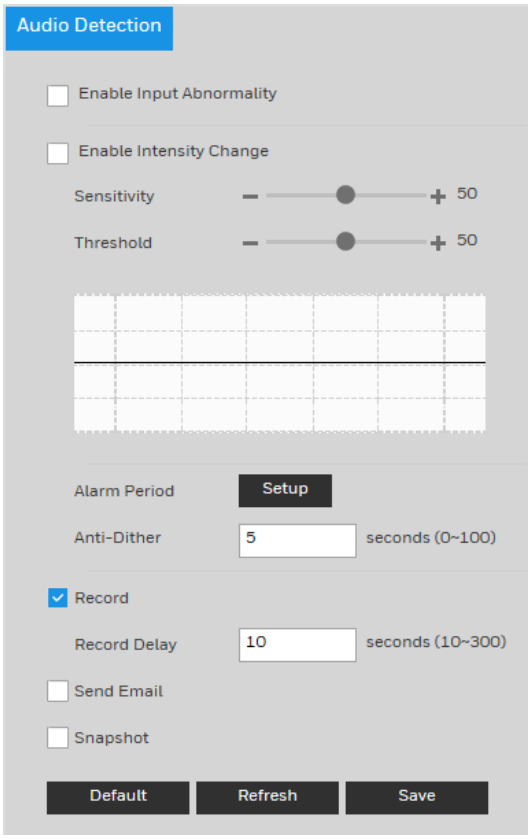
Parameter	Function
Enable	Check to enable scene change.
Alarm Period	The camera scene change function is activated during the specified period. See *Configuring the Alarm Period* on page 47. You can configure up to six periods per day. Select a date. If you do not select a date, the current setup will be applied to today only. You can select **All** to apply the alarm period to the whole week. Click **OK** to save the changes. The system goes back to the scene change interface. Click **Save** to exit.
Record	If **Record** is enabled, a scene change event can activate recording.
Record Delay	The system will wait for the specified time before it begins recording. Select from **10s** to **300s**.
Send Email	When enabled, the system sends an email alert when an alarm occurs.
Snapshot	When enabled, the system attaches a snapshot to an email alert when an alarm occurs.

Configuring Audio Detection Settings

Note This function is only supported by H2W2PER3/H2W4PER3/H2W2PC1M.

Go to **Setup →Video Analytics →Audio Detection**.

Figure 7-6 Audio Detection



Parameter	Function
Enable Input Abnormality	Select Enable Input Abnormal and it will trigger alarms when it detects audio input abnormity.
Enable Intensity Change	Select Enable Intensity Change and it will trigger alarms when it detects that audio intensity change exceeds the threshold.
Sensitivity	Drag the slider to adjust the sensitivity value. The default value is **50**. When the input volume change exceeds continuous environment volume, it can be judged as audio abnormity. You need to adjust it according to the actual environment test.

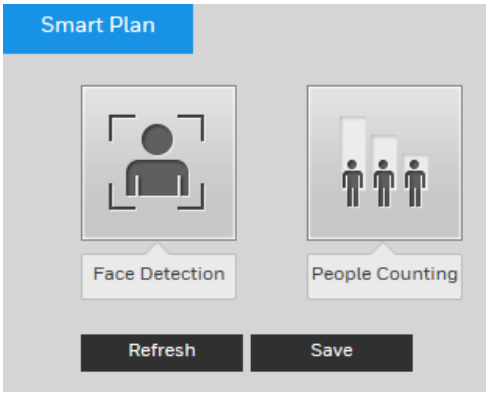
Threshold	Drag the slider to adjust the threshold value. The default value is **50**. If the environmental noise is too big, then the value needs to be set higher. You need to adjust it according to the actual environment test.
Alarm Period	The audio detection function is activated during the specified period. See *Configuring the Alarm Period* on page 47. You can configure up to six periods per day. Select a date. If you do not select a date, the current setup will be applied to today only. You can select All to apply the alarm period to the whole week. **Click OK to save the changes. The system goes back to the scene change interface. Click Save to exit.**
Anti-Dither	Enter the anti-dither time in seconds. Enter a value between **0** and **100** seconds. The system will only allow one motion detection event within this period.
Record	If **Record** is enabled, an audio detection event can activate recording.
Record Delay	The system will wait for the specified time before it begins recording. Select from **10s** to **300s**.
Send Email	When enabled, the system sends an email alert when an alarm occurs.
Snapshot	When enabled, the system attaches a snapshot to an email alert when an alarm occurs.

Configuring Smart Plan

Smart plan is a master switch for the intelligent analytics such as Face Detection and People Counting. The device intelligent functions can be valid after smart plan is enabled.

Go to **Setup → Video Analytics → Smart Plan**. Select the plan by clicking its icon and click **Save**.

Figure 7-7 Smart Plan

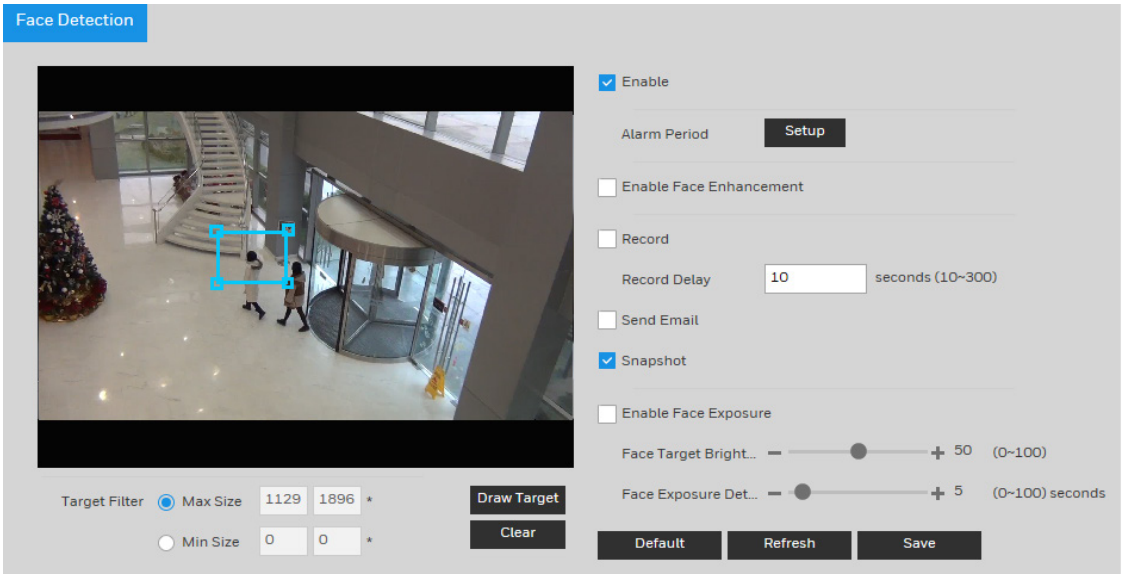


Configuring Face Detection Events

Note This function is only supported by HEW4PER2/HEW4PER3B/HEW2PER3/H2W2PER3/H2W4PER3/H2W2PC1M.

Go to **Setup → Video Analytics →Face Detection**.

Figure 7-8 Face Detection



To enable face detection:

1. Select the **Enable** check box.
2. Click **Draw Target** to set up the face detection area. You can move or resize the area using your mouse. To move the area, drag one of the sides. To resize the area, drag one of the corner handles.
3. Next to **Alarm Period**, click **Setup**. The **Alarm Period** window opens.
4. Set the days and times when you want the alarm function to be active, and then click **Save**.
5. To enable face enhancement, select the **Enable Face Enhancement** check box.
6. To start recording video when an event is detected, select the **Record** check box.
7. In the **Record Delay** field, enter the number of seconds that the system will continue to record video after the event has ended. Enter a value between **10** and **300**.
8. To send an email notification when an event is detected, select the **Send Email** check box. Email settings must be configured in **Setup → Network Setup → SMTP (Email).** See *Configuring SMTP (Email) Settings* on page *37*.
9. To take a snapshot when an event is detected, select the **Snapshot** check box.
10. To enable face exposure, select the **Enable Face Exposure** check box. Drag the slider to set the value of face target brightness and the value of face exposure detection interval.

Note	For the snapshot to be attached to the email notification, the **Attachment** check box must be selected in **Setup → Network Setup → SMTP (Email)**. See *Configuring SMTP (Email) Settings* on page 37.

11. Click **Save** to apply the settings.

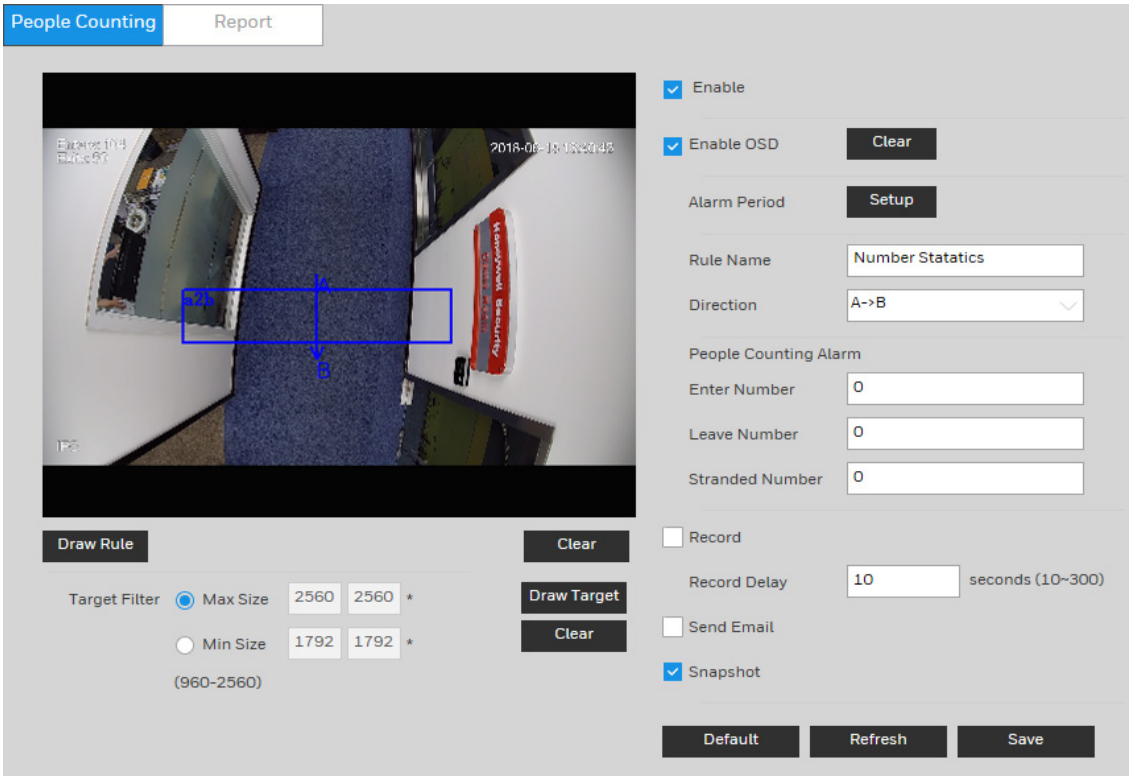
Configuring People Counting Events

Note	This function is only supported by H2W2PC1M.

People Counting

Go to **Setup → Video Analytics → People Counting**.

Figure 7-9 People Counting



To enable people counting:

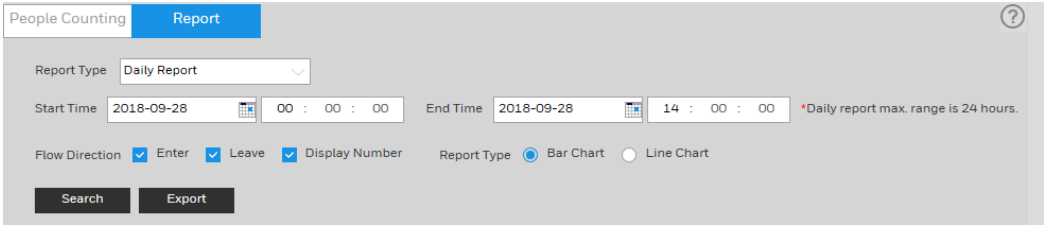
1. Select the **Enable** check box.
2. Click **Draw Rule** to set up an area for people counting. You can move or resize the area using your mouse. To move the area, drag one of the sides. To resize the area, drag one of the corner handles.
3. Click **Draw Target** to set up the target size. You can move or resize the area using your mouse. To move the area, drag one of the sides. To resize the area, drag one of the corner handles.
4. To enable OSD which displays the Enter and Leave numbers, select the **Enable OSD** check box. To restore the numbers, click **Clear**.
5. Next to **Alarm Period**, click **Setup**. The **Alarm Period** window opens.
6. Set the days and times when you want the alarm function to be active, and then click **Save**.
7. In the **Rule Name** field, enter the name of rule.
8. In the **Direction** field, select the direction of people counting. You can select A->B or B->A, the arrow direction always means the entrance direction.
9. In the People Counting Alarm field, set the enter number, leave number, stranded number. It will trigger alarm when it exceeds the limited stranded number.
10. To start recording video when an event is detected, select the **Record** check box.
11. In the **Record Delay** field, enter the number of seconds that the system will continue to record video after the event has ended. Enter a value between **10** and **300**.
12. To send an email notification when an event is detected, select the **Send Email** check box. Email settings must be configured in **Setup → Network Setup → SMTP (Email).** See *Configuring SMTP (Email) Settings* on page *37*.
13. To take a snapshot when an event is detected, select the **Snapshot** check box.

Note	For the snapshot to be attached to the email notification, the **Attachment** check box must be selected in **Setup → Network Setup → SMTP (Email)**. See *Configuring SMTP (Email) Settings* on page *37*.

14. Click **Save** to apply the settings.

Report

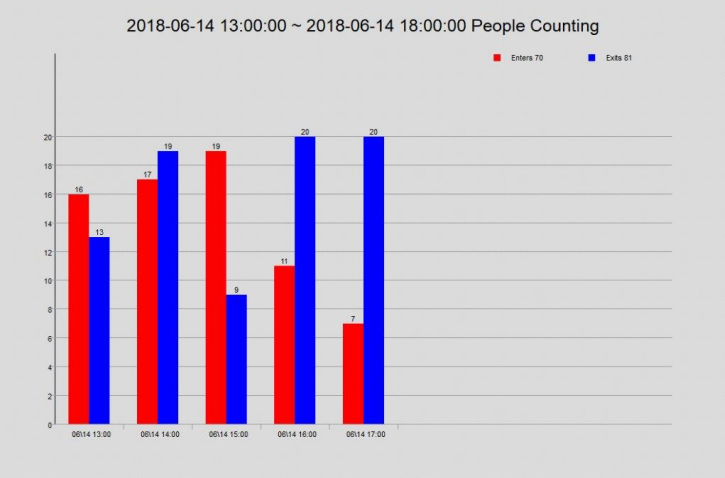
Go to **Setup → Video Analytics → People Counting → Report**.



To run a report, select the report type and set the criteria as needed. Click **Search** and the report will be displayed.

To export the report, click **Export**. The following is a sample report of bar chart.

Figure 7-10 Report – Bar Chart



Configuring System Events Settings

Configuring for SD Card Event Settings

Go to **Setup →Video Analytics →Event →SD Card**.

SD card events include **No SD Card**, **SD Card Error**, and **Capacity Warning**.

Note	This function is not supported by the following models: HPW2P1/HBW2PER1.

Figure 7-11 No SD Card Warning

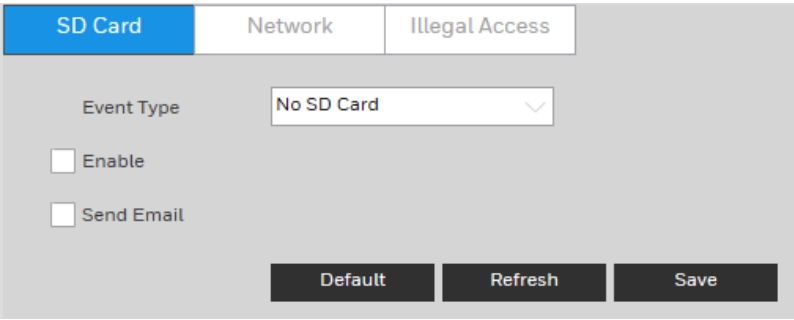


Figure 7-12 SD Card Error Warning Configuration Interface

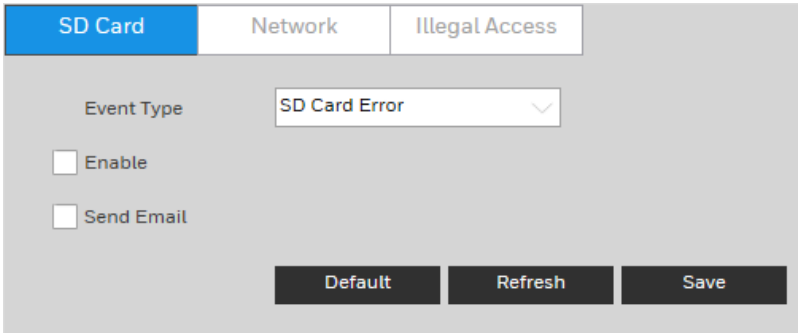


Figure 7-13 Capacity Warning

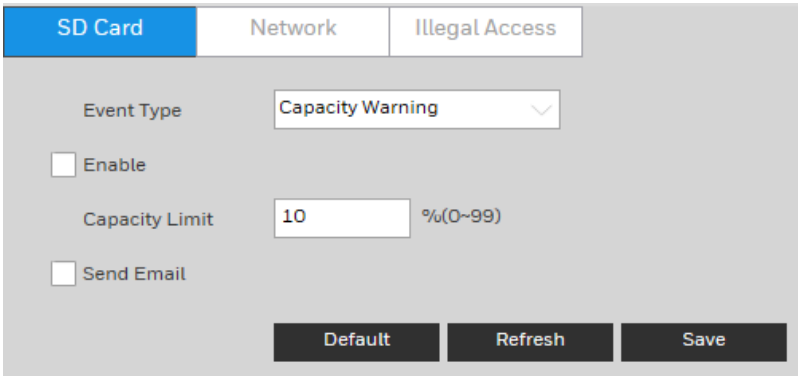


Table 7-4 SD Card Configurations

Parameter	Function
Event Type	Select an event type in the dropdown list.
Enable	Check to enable the selected event type
Send Email	When enabled, the system sends an email alert when the event occurs.
Capacity Limit	Enter a value between 0-99. If the capacity of SD card exceeds the set value, it will send a warning.

Note	Emails cannot be sent if the network is offline or if there is an IP conflict.

Configuring Network Event Settings

Go to **Setup →Video Analytics →Event →Network**.

Figure 7-14 Network Event

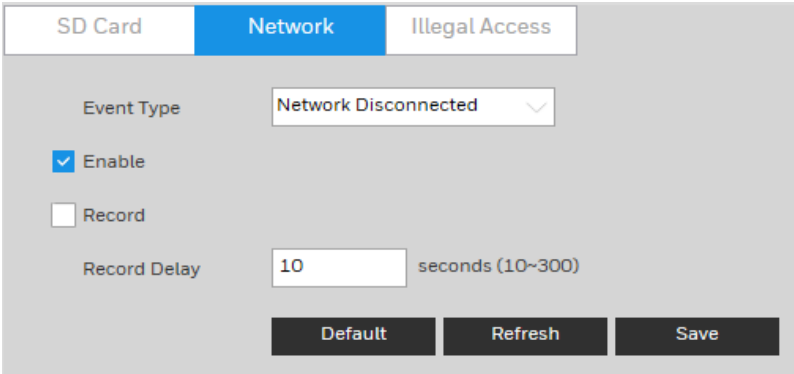


Table 7-5 Network Configuration

Parameter	Function
Event Type	Select a network event type in the dropdown list.
Enable	Check to enable the selected network event type.
Record	If **Record** is enabled, the selected event type can activate recording.
Record Delay	The system will wait for the specified time before it begins recording. Select from **10s** to **300s**.

Configuring Illegal Access Event Settings

Go to **Setup →Video Analytics →Event →Illegal Access**.

You can specify how many unsuccessful login attempts can be made before the system triggers an illegal access alarm.

Figure 7-15 Illegal Access Configuration

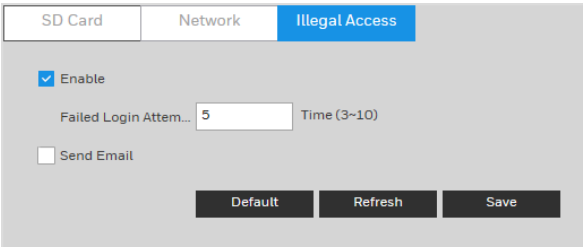


Table 7-6 Illegal Access Configurations

Parameter	Function
Enable	Check to enable the illegal access event.
Failed Login Attempts	Enter the number of times a user can attempt to log in. Select from 3 to 10.

Send Email	Check to send an email to a specified receiver if someone attempts to illegally access the camera.

8 Configuring Storage Settings

This chapter contains the following sections:

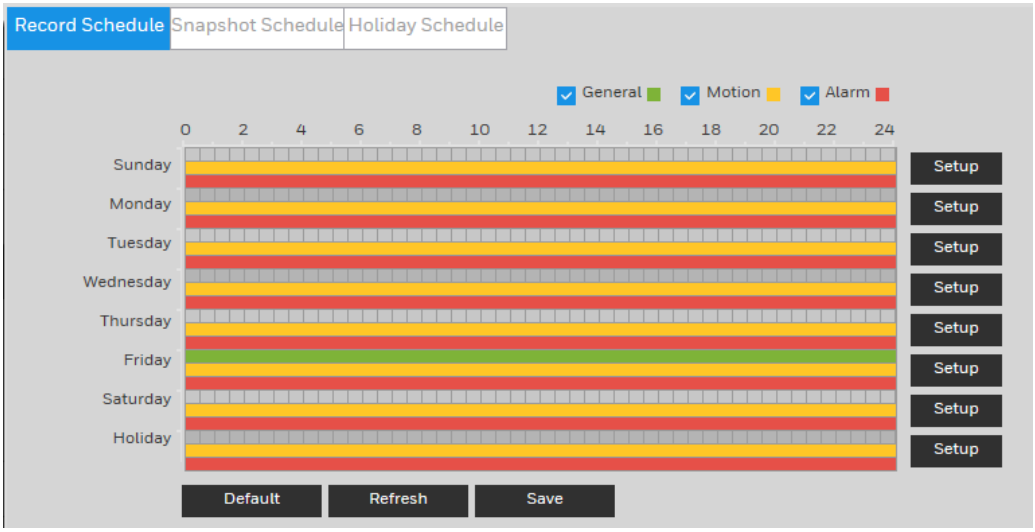
Configuring Schedule Settings

Configuring Record Schedule

Go to **Setup →Storage Setup →Schedule → Record Schedule**.

You can add or remove schedules for recording. There are three recording modes: **General** (auto), **Motion,** and **Alarm**. You can configure up to nine recording periods per day.

Figure 8-1 Record Schedule



Record Schedule Color Codes:

- **Green**: General recording
- **Yellow**: Motion detection recording
- **Red**: Alarm recording

Configuring Snapshot Schedule

Follow the same procedure to configure the settings on the **Record Schedule** tab.

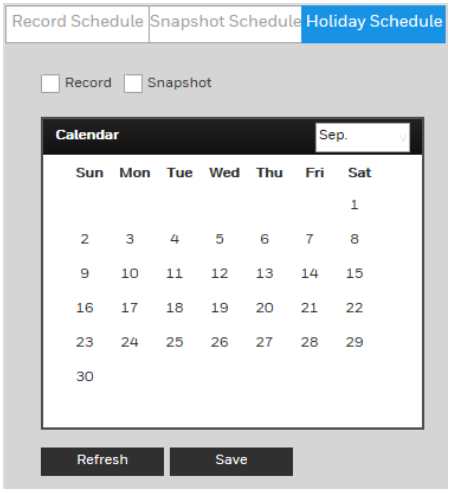
Setting Holidays

Go to **Setup →Storage Setup →Schedule → Holiday Schedule**.

You can designate holidays by clicking dates on the calendar.

On the selected dates, the video recording/snapshot schedule will follow the holiday settings you configured in the **Record Schedule** and **Snapshot Schedule** tabs. Click **Save** to apply the settings.

Figure 8-2 Holiday Schedule



Configuring Destination Settings

Go to **Setup →Storage Setup →Destination**.

Path

On the **Path** tab, you can assign where recorded video files or snapshots will be saved. Depending on your camera model, you can save recorded video or snapshots to a microSD card, an FTP server, and/or an NAS disk.

You can also set up the system to save recorded video files and snapshots according to event type (Scheduled, Motion Detection, Alarm), corresponding to the three recording modes in the **Schedule** interface (General, Motion, Alarm).

Figure 8-3 Path

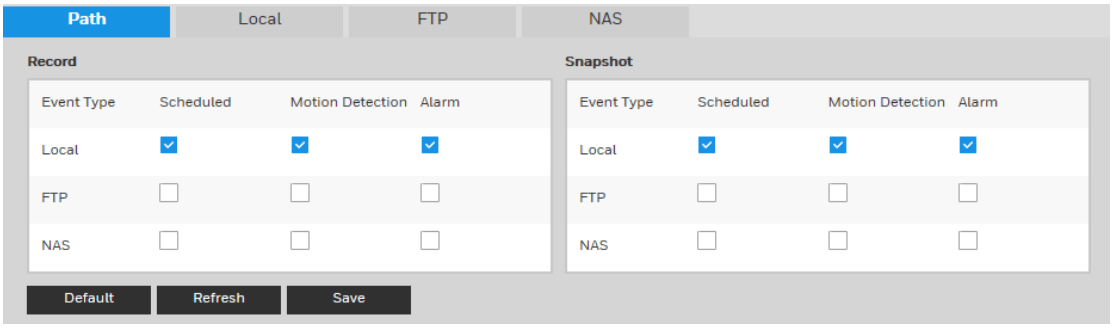


Table 8-1 Path Configurations

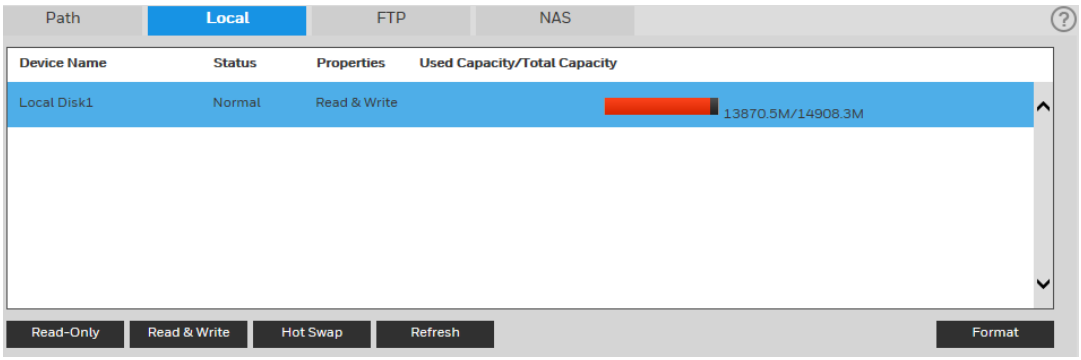
Parameter	Function
Event Type	Select **Scheduled**, **Motion Detection**, or **Alarm**.
Local	Select to save files to the microSD card
FTP	Select to save files to the FTP server.
NAS	Select to save files to the NAS disk.

Local

If the camera has a microSD card installed, the **Local** tab displays the microSD card details.

Note	This function is not supported by the following models: HPW2P1/HBW2PER1.

Figure 8-4 Local Storage



You can set up the installed microSD card for read-only, read-and-write, or hot swap operation by clicking the corresponding button.

- **Read Only**: Data on card can be displayed but not modified.
- **Read & Write**: Data on card can be displayed and modified.
- **Hot Swap**: Card can be inserted or removed without turning off the camera.

If you want to erase all the data on the microSD card, click **Format**. A confirmation message appears. Click **OK** to continue. The card is formatted and the camera reboots.

FTP

On the **FTP** tab, you can enable the FTP storage function. When enabled, event-triggered video and snapshots (either scheduled or motion detection, depending on what you chose in *Figure 8-3*) will be saved to the specified FTP server.

Figure 8-5 FTP

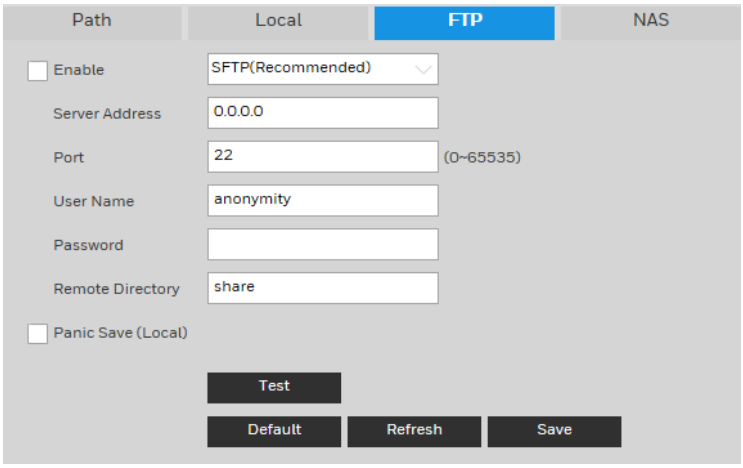


Table 8-2 FTP Configurations

Parameter	Function
Enable	Select SFTP (Recommended) or FTP.
Server Address	Enter the IP address of the FTP server.
Port	The default setting is **21**. You can modify this setting as necessary.
User Name	Enter the server user name.
Password	Enter the server password.
Remote Directory	Create a name for the directory where recorded video and snapshots will be stored.
Panic Save (Local)	Enable **Panic Save (Local)** to save to the local microSD card when the network connection to FTP is unavailable. **Note** This function is not supported by the following models: HPW2P1/HBW2PER1.

NAS

On the **NAS** tab, you can enable network attached storage and configure storage settings.

Figure 8-6 NAS

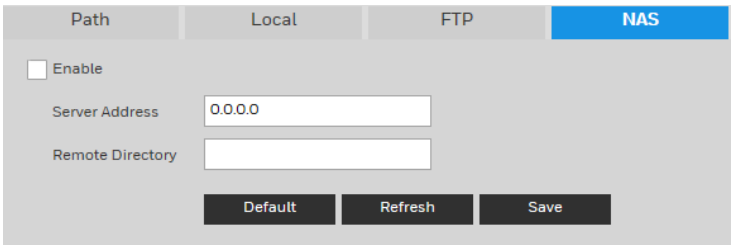


Table 8-3 NAS Configurations

Parameter	Function
Enable	Select the checkbox to enable this function.
Server Address	Set the IP address of the server.
Remote Directory	Set storage directory where recorded video and snapshots will be stored.

Configuring Recording Control

Go to **Setup →Storage Setup →Recording Control**.

Figure 8-7 Recording Control

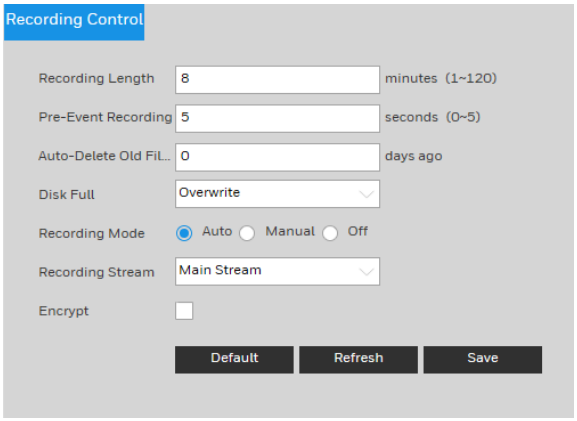


Table 8-4 Recording Control Configurations

Parameter	Function
Recording Length	Set the file size between1 to 120 minutes. The default is **8 minutes.**
Pre-Event Recording	Enter a pre-recording value. For example, if you enter 4, the system can record the four seconds of video in the buffer. Recording begins five seconds before the event trigger.

Parameter	Function
Disk Full	Select **Stop** or **Overwrite**. **Overwrite**: If the current working HDD is full, then the system will overwrite the previous file. **Stop**: If the current working HDD is full or is overwriting, the system will stop recording.
Recording Mode	Select **Auto**, **Manual**, or **Off**.
Recording Stream	Select **Main Stream** or **Sub Stream**.
Encrypt	Check to enable the **Encrypt** function. The recording in the SD card will be encrypted.

9 Configuring System Settings

This chapter contains the following sections:

General System Setup

Go to **Setup →System Setup →General**.

The general interface includes the local host setup (including the camera name and GUI language) and the date/time setup.

General

Figure 9-1 General System Configuration

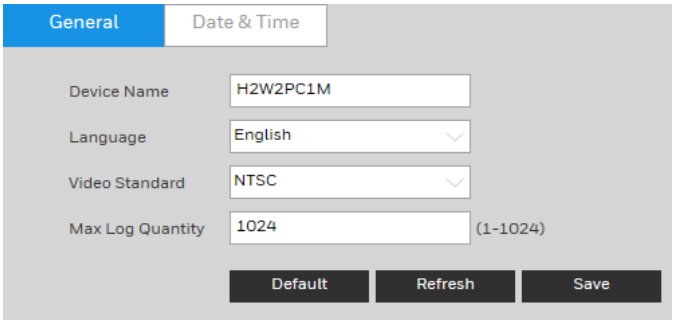


Table 9-1 General System Configurations

Parameter	Function
Device Name	Enter the camera's name.
Language	Select a language from the drop-down list.
Video Standard	Select the video standard: **NTSC** or **PAL**. **Note**: If you modified PAL/NTSC on the HRHT client, the modifications will not be synchronized to the IPC web client.
Max Log Quantity	Select a value between 1 to 1024. The default is **1024**.

Date and Time

Figure 9-2 Date and Time Configuration

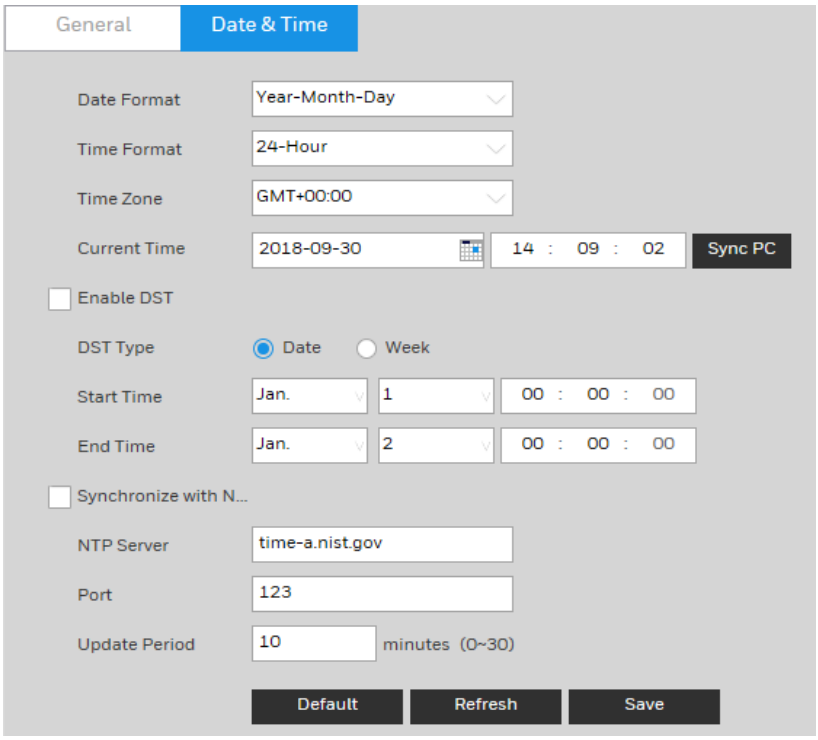


Table 9-2 Date and Time Configurations

Parameter	Function
Date Format	Select a date format from the drop-down list.
Time Format	Select a time format, either **24-hour** or **12-hour**.
Time Zone	Select the time zone for the camera.
Current Time	Set it to set the system's time. Click **Save** to activate this time.
Sync PC	Click to sync the camera's time with your PC's time.
Enable DST	Set when Daylight Saving Time begins and ends. Select **Date** or **Week** and then set the **Start Time** and **End Time**.
Synchronize with NTP	Click to enable synchronization with a Network Time Protocol (NTP) server.
NTP Server	Configure the NTP server.
Port	Configure the port for the NTP server.
Update Period	Configure synchronization periods between the camera and the NTP server.

Account Setup

Go to **Setup →System Setup →Account**.

The system supports up to 15 characters for the user name or user group name. You can use letters, numbers, and the underscore character (_) for the user or group name.

You can configure up to 18 users and eight groups (default factory settings). The factory default setup includes two user levels: **user** and **admin** (case-sensitive).

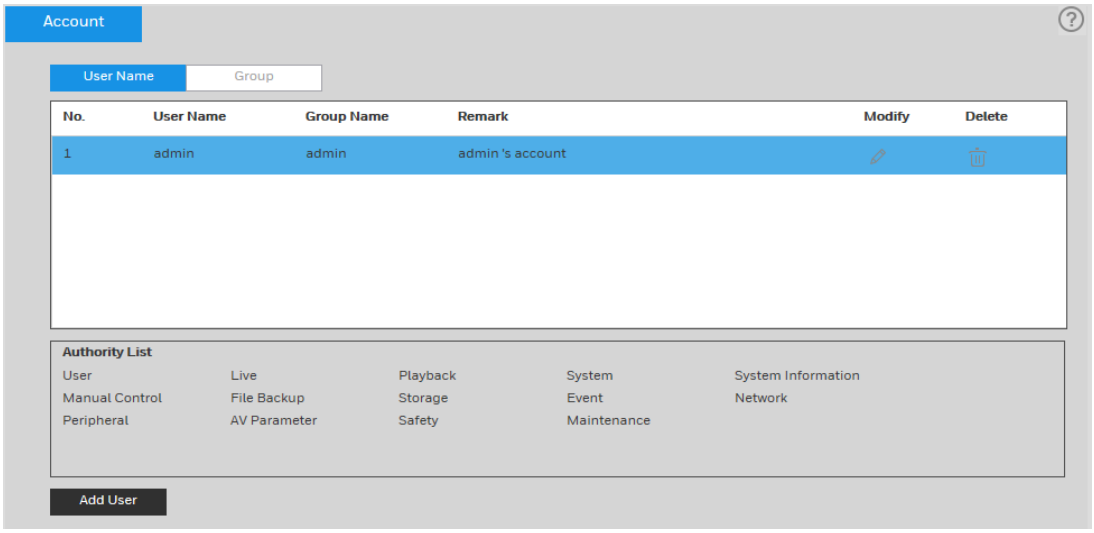
When configuring groups, you can configure the rights of those groups. You can also set permissions for individuals within groups.

Note	The user name and the group name should be unique. A user can be included in only one group at a time.

User Name

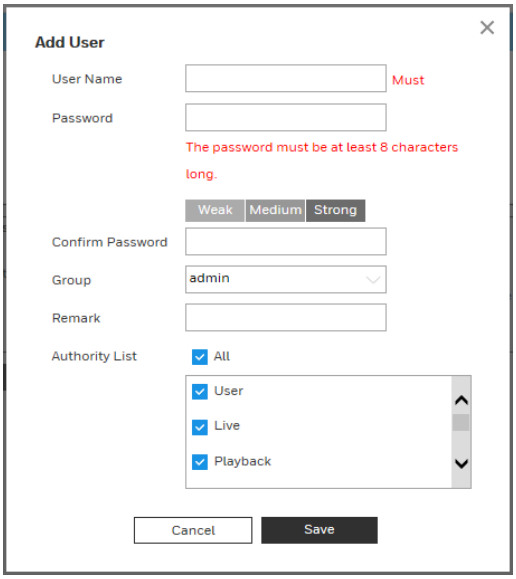
On the **Username Configuration** tab, you can add/remove users, and manage user accounts and permissions.

Figure 9-3 Username



Add User: Add a user to a group and configure the permissions for the user.

Figure 9-4 Add User

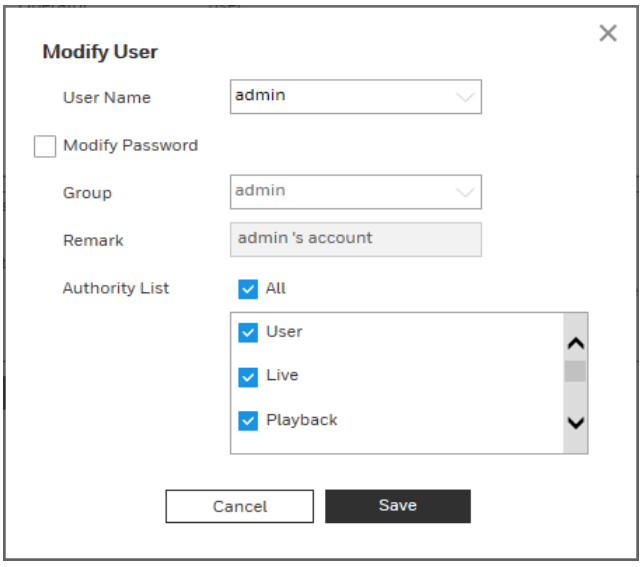


To add a user, in the **Add User** configuration interface, enter a user name and password, then select a group. Ensure that a general user has fewer rights than the admin user.

Note	A user's rights cannot exceed the rights of the group to which the user belongs.

Modifying Users: Click  to modify a user's properties, including their group, passwords, and rights.

Figure 9-5 Modifying User



Modifying Password: Enter the old password once, and then enter the new password twice to confirm the new password. Click **Save** to save the new settings.

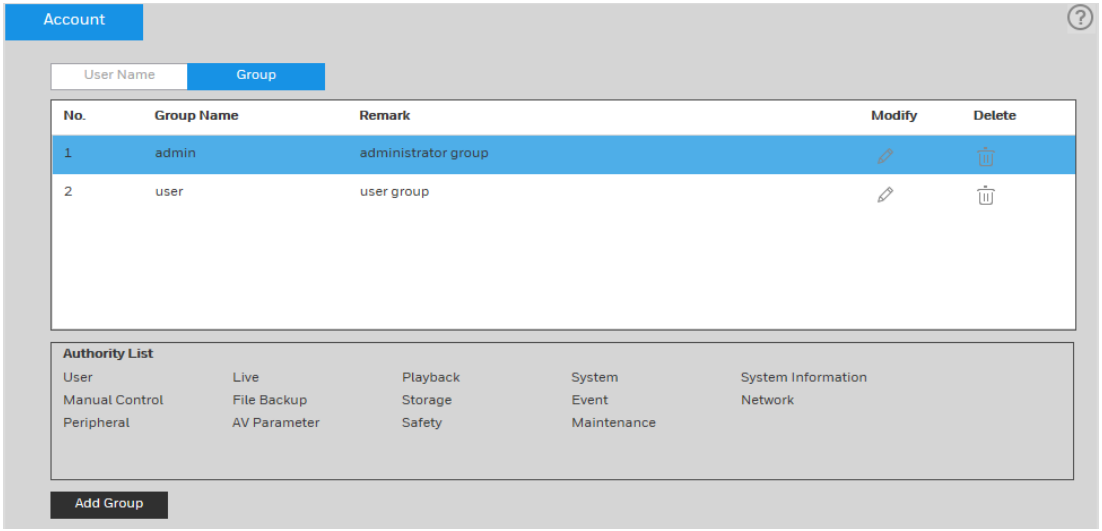
Note Passwords can contain up to 32 characters, using numbers and letters only.

Only users with account rights can modify other users' passwords.

Group

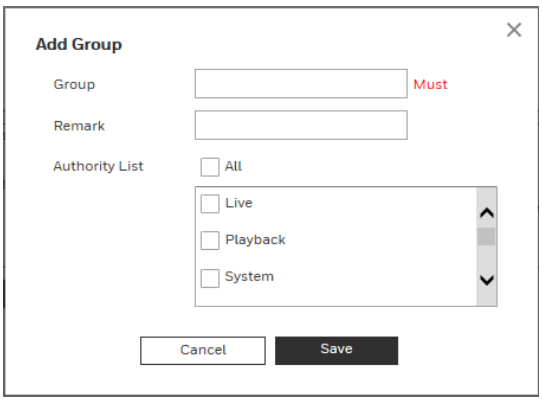
In the **Group** configuration interface, you can add/remove groups and modify group passwords.

Figure 9-6 Group Configuration



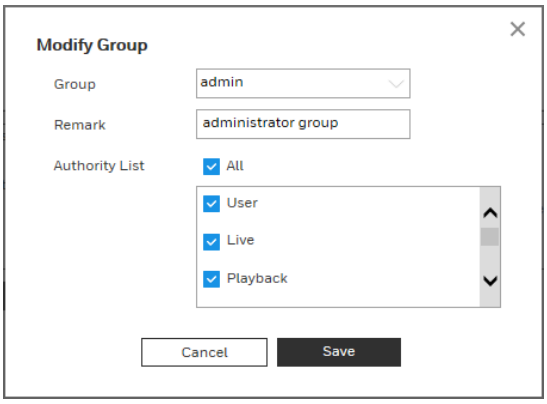
Click **Add Group**, enter the group name, select from the **Authority List** the rights that you want to assign to the group (for example, **Live**, **Record Control**, **Account**), then click **Save**.

Figure 9-7 Add Group Interface



Click  to edit the remark and/or the rights assigned to the group. Click **Save** to save the new settings.

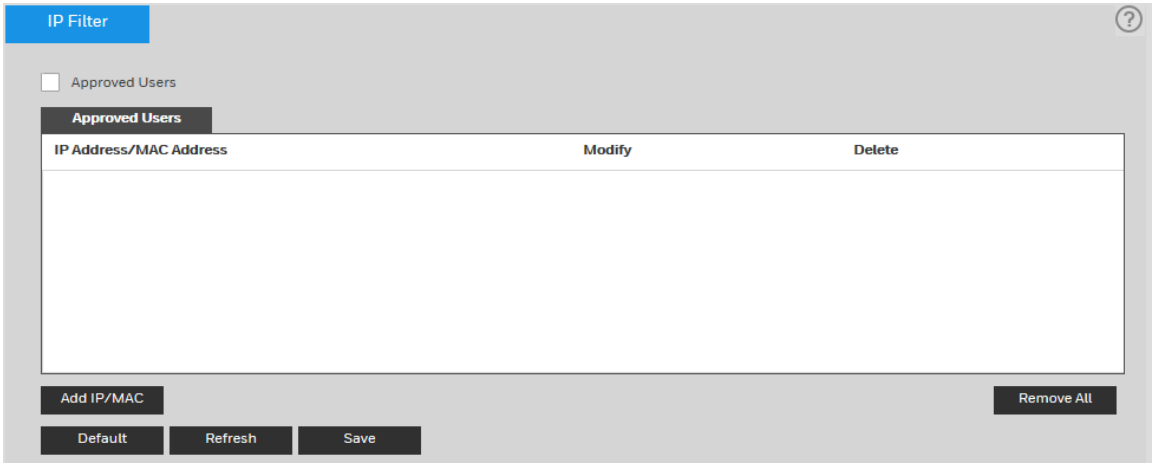
Figure 9-8 Modify Group



Security

Go to **Setup →System Setup →Security**.

Figure 9-9 Security



IP Filter

To restrict camera access to specific IP/MAC addresses, enable the IP filter. You can specify an IP address or an IP address segment (for example, from 192.168.1.1 to 192.168.1.100). If you do not click the check box to enable **Approved Users**, there will be no access limitation.

To enable the IP filter:

1. Click **Add IP/MAC**, enter the IP address(es) or IP address segments(s) that you want to allow, and then click **Save**.
2. Select the **Approved Users** check box.

Note	Trusted IP/MAC addresses must be added first before enabling **Approved Users**.

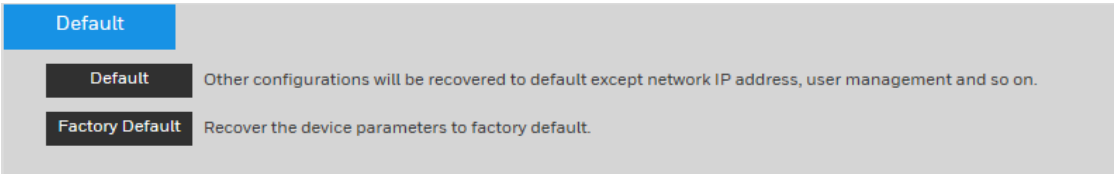
Note	If you specify a MAC address limitation here, the computer with the specified MAC address must be in the same network subnet as the IP camera.

CAUTION **If you set up the IP Filter/ Approved Users options and forget the IP/MAC address that is allowed to access the camera, you will have to return the camera to the factory to repair the problem.**

Restoring Default Settings

Go to **Setup →System Setup →Default**.

Figure 9-10 Default



To reset the camera, click:

- **Default** – Recover configurations to default except network IP address and user management.
- **Factory Default** – Completely recover device parameters to factory default.

A confirmation message appears. Click **OK** to continue. The camera reboots automatically and reverts to its factory default settings.

Import/Export

Go to **Setup →System Setup → Import/Export**.

Figure 9-11 Import/Export Configuration

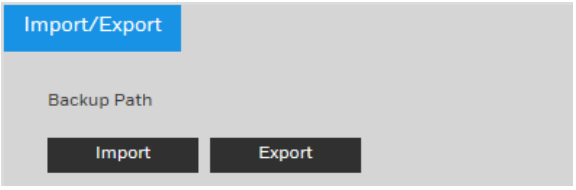


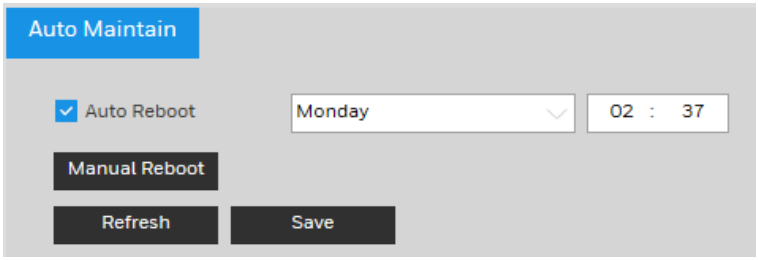
Table 9-3 Import/Export Configurations

Parameter	Function
Import	Click to import local setup files to the system.
Export	Click to export the current system setup to your local PC.

Automatic Maintenance

Go to **Setup →System Setup → Auto Maintain**.

Figure 9-12 Auto Maintain



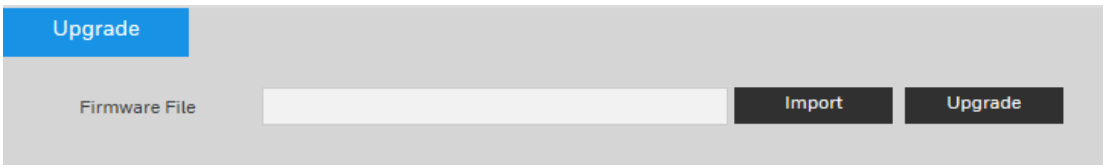
Auto Reboot: Click the checkbox to enable **Auto Reboot**. Select the day (**Everyday** or **Monday** to **Sunday**) and the time (from **00:00** to **24:00**) to reboot the camera automatically.

Manual Reboot: Reboot the camera manually.

Upgrade

Go to **Setup →System Setup → Upgrade**.

Figure 9-13 Upgrade



Click **Import**, go to the location of the upgrade file on your computer, select it, and click **Upgrade**.

Note	Selecting the incorrect upgrade file might cause a camera malfunction.

10 Viewing System Information

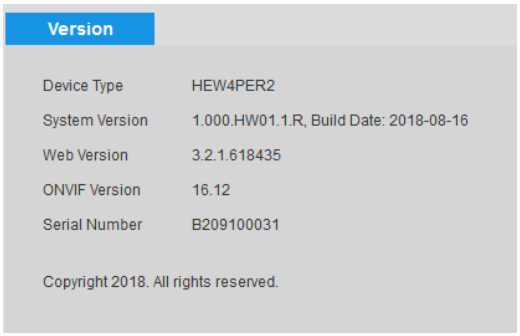
This chapter contains the following sections:

Version

Go to **Setup →Information →Version**.

In the **Version** interface, you can view the system hardware features, the software version, and the release date. This information is for reference only.

Figure 10-1 Version



Log

Go to **Setup →Information →Log**.

Figure 10-2 Log

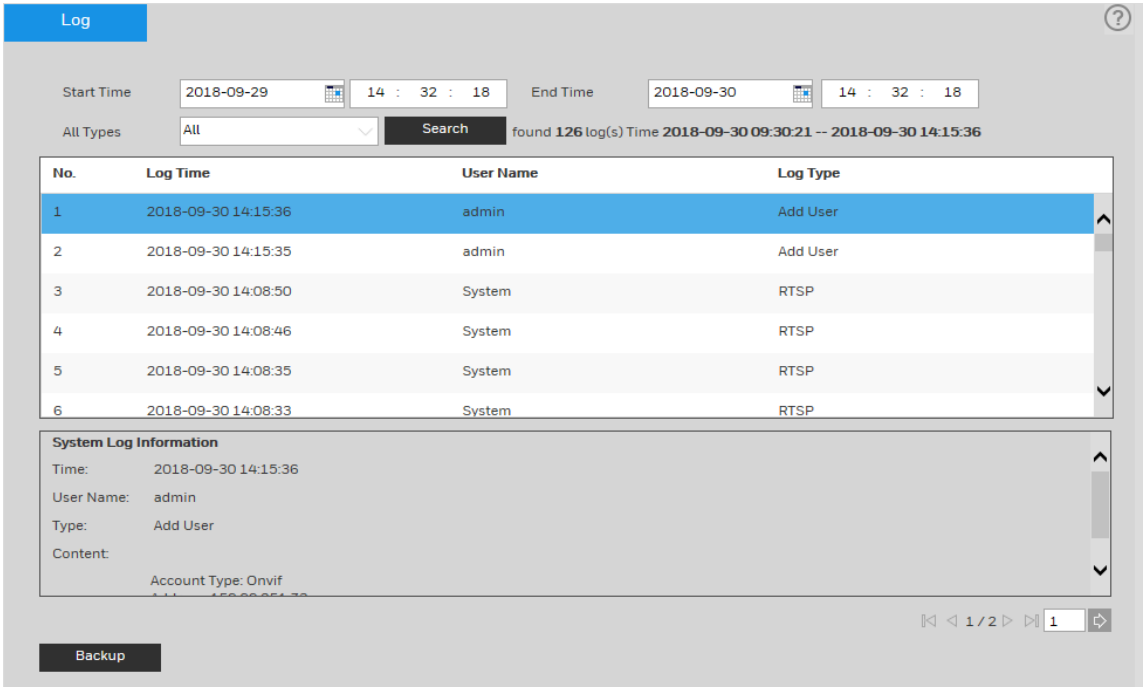


Table 10-1 Log Interface Configurations

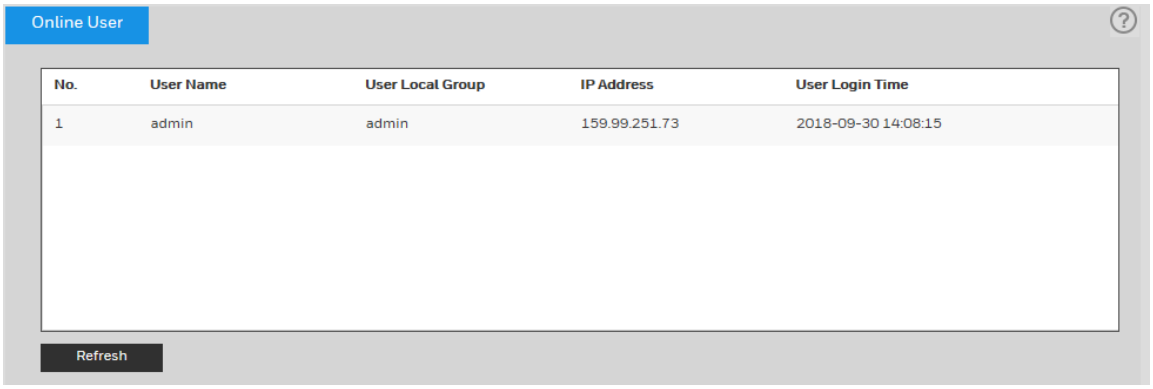
Parameter	Function
Start Time	Configure the start time for the requested log.
End Time	Configure the end time for the requested log.
Types	Select a log type: **System**, **Setting**, **Data**, **Event**, **Record**, **Account**, **Clear Log**.
Search	Select a log type from the drop-down list, and then click **Search** to view the list that is generated by the search. Click **Stop** to terminate the current search.
System Log Information	Select one item to view its detailed information.
Backup	Click **Backup** to back up log files to the currently selected PC.

Online User

Go to **Setup →Information →Online User**.

You can view the current online users, group names, IP addresses, and login times.

Figure 10-3 Online User



11 Configuring Alarms Settings

Click the **Alarm** tab to open the alarm configuration interface.

Figure 11-1 Alarm Configuration

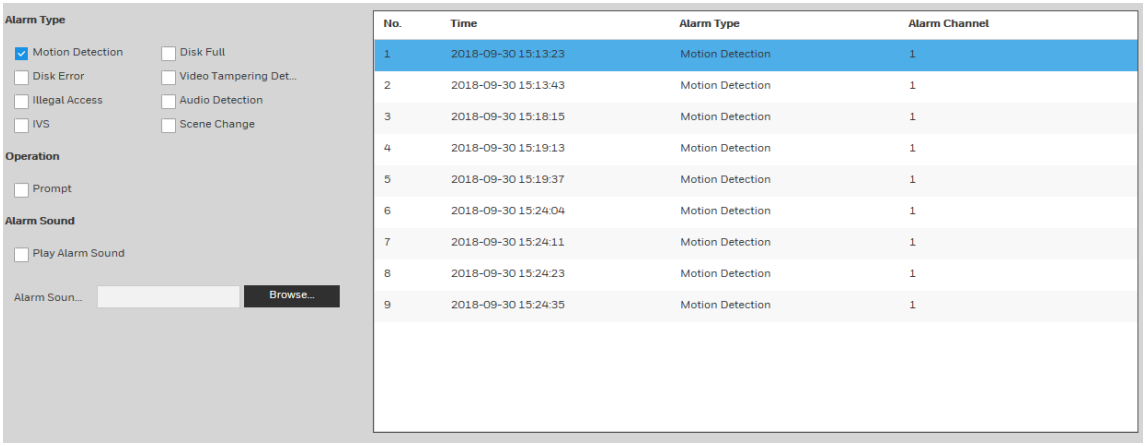


Table 11-1 Alarm Configurations

Type	Parameter	Function
Alarm Type	**Motion Detection**	Check to enable Motion Detection. The system will then trigger an alarm when motion is detected under the specified circumstances.
	Disk Full	Check to enable Disk Full. The system will then trigger an alarm when the disk (microSD card) is full. **Note** This function is not supported by the following models: HPW2P1/HBW2PER1.
	Video Tampering	Check to enable Video Tampering. The system will then trigger an alarm when the camera has been tampered with.
	Disk Error	Check to enable Disk Error. The system will then record alarm information when a microSD card error occurs. **Note** This function is not supported by the following models: HPW2P1/HBW2PER1.
	Illegal Access	Check to enable Illegal Access. The system will then trigger an alarm when someone attempts to illegally access the camera.
	Scene Change	Check to enable Scene Change. The system will then trigger an alarm when the camera scene change event occurs.
Operation	**Prompt**	Check to enable Prompt. The system will then automatically pop up an alarm message on the main window when there is an alarm.
Alarm Sound	**Play Alarm Sound**	Check to enable Play Alarm Sound. When an alarm occurs, the system automatically generates an audible sound. You can select a sound from your PC for the alarm sound prompt.
	Alarm Sound Path	Select the alarm sound file.

12 Troubleshooting

Refer to the following guidelines to troubleshoot any performance issues. If you require additional assistance, contact Honeywell Technical Support (see back cover for contact information).

Table 12-1 Troubleshooting

Issues	Solutions
Cannot play downloaded file	• Use the player located on the CD that came with your camera. • Ensure that DirectX 8.1 or higher is installed on your PC. • Install the DivX503Bundle.exe plugin for playing AVI files. • If you are running Windows XP, install the ffdshow codec.
Cannot set camera frame rate above 20 fps when Embedded NVR resolution set at 3 MP or lower.	1. On the NVR, go to NVR setup and set the resolution to 3MP and click **Save**. 2. Go to **Remote Device** and click **Delete** to remove the camera. Then select the camera in the Searched Device area and click **Add**. 3. Click Modify for the camera in the Added Device area. Select **ONVIF** from the drop-down list of manufacturers and click **Save**. You can now set the frame rate at 20 fps or above for 3 MP or lower resolutions at the NVR end.
Cannot get 4 MP resolution at the NVR.	1. Make sure the NVR supports 4 MP (2688×1520) resolution. 2. On the NVR, go to NVR setup→**Remote Device** and click **Modify** for the 4 MP camera in the added device area. Select **ONVIF** from the drop-down list of manufacturers and click **Save**. You can now setup 4 MP resolution on the NVR end.
IR video is poor.	• Ensure that the power supply is adequate. An inadequate power supply may not be able to support the IR lights.

	• Ensure that the objects to be illuminated are within the camera's IR range. • If the IR-cut filter does not switch to Night mode, the photosensitive chip at the front of the camera may be malfunctioning.
Cannot upgrade firmware through the network	• If you cannot upgrade firmware over the network, try using port 3800.
Cannot install/log in to web client.	• Ensure that your browser's security settings allow ActiveX controls. • Ensure that DirectX 8.1 or higher is installed on your PC. • Ensure that you have a valid network setup and that you are using the correct login user name and password.
Water leaking into camera housing.	• Ensure that the front glass cap and rear waterproof cap are tightly secured. Loosening or removing the front and rear caps will allow water to enter the housing.
Power supply is unstable.	• The operating temperature range for the supplied power adapter is approximately 32°F to 104°F (0°C to 40°C). Replace with an industry-level power adapter if operating the camera in temperatures below 32°F (0°C). • Use of a UPS power supply is strongly recommended.
No alarms	After you enabled the events on the IPC web client, you must click **Refresh** on the NVR client.

13 Appendix

Embedded NVR Integration Capacity Matrix

Refer to the following table when integrating Performance Series IP cameras with Honeywell Embedded NVRs.

Table 13-1 Embedded NVR Integration Matrix - Maximum Frame Rate and Resolution (1)

Part No	HEN041*3	HEN081*3	HEN161*3	HEN04103L	HEN08103L	HEN16103L	HEN32103L	HEN081*4
HBW2PER1	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080
H4W2PER3	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080
H4W2PER2	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080
HBW2PER2	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080
HEW2PER2	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080
HEW4PER2	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296
HEW4PER2B	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296
H2W4PER3	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520
H2W2PER3	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080
H2W2PC1M	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080
HEW2PER3	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080
HEW4PER3B	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520
HBW8PR2	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160
H4W8PR2	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160
HPW2P1	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080

Table 13-2 Embedded NVR Integration Matrix - Maximum Frame Rate and Resolution (2)

Part No	HEN161*4	HEN321*4	HEN162*4	HEN322*4	HEN642*4	HEN163*4	HEN323*4	HEN643*4
HBW2PER1	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080
H4W2PER3	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080
H4W2PER2	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080
HBW2PER2	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080
HEW2PER2	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080

HEW4PER2	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296
HEW4PER2B	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296	20fps 2688*1520 25/30fps 2304*1296
H2W4PER3	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520
H2W2PER3	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080
H2W2PC1M	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080
HEW2PER3	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080	50/60fps 1920*1080
HEW4PER3B	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520	25/30fps 2688×1520
HBW8PR2	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160
H4W8PR2	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160	25/30fps 3840×2160
HPW2P1	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080	25/30fps 1920*1080

List of Symbols

The following is a list of symbols that may appear on the camera:

Symbol	Explanation
	The WEEE symbol. This symbol indicates that when the end-user wishes to discard this product, it must be sent to separate collection facilities for recovery and recycling. By separating this product from other household-type waste, the volume of waste sent to incinerators or landfills will be reduced, and thus natural resources will be conserved.
	The UL compliance logo. This logo indicates that the product has been tested and is listed by UL (formerly Underwriters Laboratories).
	The FCC compliance logo. This logo indicates that the product conforms to Federal Communications Commission compliance standards.
	The direct current symbol. This symbol indicates that the power input/output for the product is direct current.
	The alternating current symbol. This symbol indicates that the power input/output for the product is alternating current.
	The RCM compliance logo. This logo indicates that the product conforms with Australian RCM guidelines.
	The CE compliance logo. This logo indicates that the product conforms to the relevant guidelines/standards for the European Union harmonization legislation.
	The caution symbol. This symbol indicates important information.
	The protective earth (ground) symbol. This symbol indicates that the marked terminal is intended for connection to the protective earth/grounding conductor.

14 Specifications

H4W8PR2 Dome Camera

Table 14-1 H4W8PR2 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive scan
IMAGE SENSOR	1/2" 8Megapixel Progressive Scan CMOS
NUMBER OF PIXELS (H × V)	3840(H) × 2160(V)
MINIMUM ILLUMINATION	0.09lux/F1.9(color,30IRE), 0 Lux with IR ON
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 30m (98ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	2
DAY/NIGHT	Auto (ICR) / Color / B&W
BACKLIGHT COMPENSATION	BLC / HLC / WDR
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	N/A
LENS	3.7mm~11mm, F1.9, Motorized
ANGLE OF VIEW	H:113°~50°, V:60°~28°
VIDEO	
VIDEO COMPRESSION	H.264/H.264B/H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	4K(3840×2160)/6M(3072×2048)/5M(3072*1728)/5M(2592*1944)/4M(2688*1520) /3M(2048x1536)/3M(2304×1296)/1080P(1920×1080)/1.3M(1280x960) /720P(1280×720) Sub Stream: D1(704×480/576)/VGA(640×480)/CIF(352×240/288)
FRAME RATE	Main Stream: 4K (1~25/30fps) Sub Stream: D1(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	4Kbps~15104Kbps

NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V PoE (802.3af) (Class 0)
POWER CONSUMPTION	<10.9W
MECHANICAL	
DIMENSIONS	Ø122mm×88.9mm (4.80"x3.50")
PRODUCT WEIGHT	Approx. 0.49Kg (1.09lb)
PACKAGE WEIGHT	Approx. 0.66Kg(1.46lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	–22°F to 140°F (–30°C to 60°C)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	IK10
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

HBW8PR2 Bullet Camera

Table 14-2 HBW8PR2 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive scan
IMAGE SENSOR	1/2" 8Megapixel Progressive Scan CMOS
NUMBER OF PIXELS (H × V)	3840(H) × 2160(V)
MINIMUM ILLUMINATION	0.09lux/F1.9(color,30IRE), 0 Lux with IR ON
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 60m (197ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	4
DAY/NIGHT	Auto (ICR) / Color / B&W
BACKLIGHT COMPENSATION	BLC / HLC / WDR
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	N/A
LENS	3.7mm~11mm, F1.9, Motorized
ANGLE OF VIEW	H:113°~50°, V:60°~28°
VIDEO	
VIDEO COMPRESSION	H.264/H.264B/H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	4K(3840×2160)/6M(3072×2048)/5M(3072*1728)/5M(2592*1944)/4M(2688*1520)3M(2048x1536)/3M(2304×1296)/1080P(1920×1080)/1.3M(1280x960)/720P(1280×720) Sub Stream:D1 (704×480/576) /VGA(640×480)/ CIF(352×240/288)
FRAME RATE	Main Stream: 4K (1~25/30fps) Sub Stream: D1(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	4Kbps~15104Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win7 Win10

PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V PoE (802.3af)(Class 0)
POWER CONSUMPTION	<14.3W
MECHANICAL	
DIMENSIONS	Ø244.1mm×79mm×75.9mm (9.61”×3.11”×2.99”)
PRODUCT WEIGHT	0.95kg (lb)
PACKAGE WEIGHT	1.16kg (lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	–22°F to 140°F (–30°C to 60°C)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	IP66
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

HEW4PER2/HEW4PER2B Eyeball Camera

Table 14-3 HEW4PER2/ HEW4PER2B Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/3" 4Megapixel progressive scan CMOS
NUMBER OF PIXELS (H × V)	2688(H)x1520(V)
MINIMUM ILLUMINATION	0.3lux/F1.4(color,30IRE) 0Lux/F1.4(IR on)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 50m (164ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	2
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	NA
LENS	2.7mm~13.5mm, F1.4, Motorized
ANGLE OF VIEW	H:108°~28°, V:58°~16°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	4M(2688×1520)/3M(2304×1296)/1080P(1920×1080)/1.3M(1280x960)/720P(1280×720)/D1(704×480/576)/VGA(640×480)/CIF(352×240/288)
FRAME RATE	Main Stream: 4M(1~20fps) Sub Stream: D1(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.265: 12K ~ 6400Kbps H.264: 32K ~ 10240Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win7 Win10

PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<9.5W
MECHANICAL	
DIMENSIONS	Ø 122mm x 102mm(4.8'' x4.0'')
PRODUCT WEIGHT	0.6kg (1.32lb)
PACKAGE WEIGHT	0.75kg (1.65lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White/Grey
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

HEW4PER3B Eyeball Camera

Table 14-4 HEW4PER3B Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/3" 4Megapixel progressive scan CMOS
NUMBER OF PIXELS (H × V)	2688(H)x1520(V)
MINIMUM ILLUMINATION	0.4lux/F1.6(color,30IRE) 0Lux/F1.6(IR on)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 50m (164ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	1
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	Supported
AUDIO DETECTION	Supported
LENS	2.8mm, F1.6, Fixed
ANGLE OF VIEW	H:104°, V:58°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	4M(2688×1520)/3M(2304×1296)/1080P(1920×1080)/1.3M(1280x960)/720P(1280×720)/D1(704×480/576)/CIF(352×240/288)
FRAME RATE	Main Stream: 4M(1~25/30fps) Sub Stream: D1(1~25/30fps) Third Stream: 720P(1~25/10fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.264: 24~10240Kbps H.265: 14~9984Kbps
NETWORK	

ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<5.5W
MECHANICAL	
DIMENSIONS	Ø 106mm×93.7mm (4.17”×3.69”)
PRODUCT WEIGHT	0.46kg (1.01lb)
PACKAGE WEIGHT	0.65kg (1.43lb)
MATERIAL	Metal
CONSTRUCTION COLOR	Grey
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

HEW2PER2 Eyeball Camera

Table 14-5 HEW2PER2 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.8" 2Megapixel progressive CMOS
NUMBER OF PIXELS (H × V)	1920(H) x1080(V)
MINIMUM ILLUMINATION	0.05lux/F1.4(color,30IRE) 0Lux/F1.4(IR on)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 50m (164ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	2
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	NA
LENS	2.7mm~13.5mm, F1.4, Motorized
ANGLE OF VIEW	H:108°~30°, V:60°~18°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	1080P(1920×1080)/1.3M(1280x960)/720P(1280×720)/ D1(704×480/576) /VGA(640×480)/CIF(352×240/288)
FRAME RATE	Main Stream: 1080P(1~25/30fps) Sub Stream: D1(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.265: 12K ~ 6400Kbps H.264: 32K ~ 10240Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11

SUPPORTED OS	Win7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<9.5W
MECHANICAL	
DIMENSIONS	Ø 122mm x 102mm(4.8'' x4.0'')
PRODUCT WEIGHT	0.6kg (1.32lb)
PACKAGE WEIGHT	0.75kg (1.65lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

HEW2PER3 Eyeball Camera

Table 14-6 HEW2PER3 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.8" 2Megapixel progressive scan CMOS
NUMBER OF PIXELS (H × V)	1920(H) x1080(V)
MINIMUM ILLUMINATION	0.06lux/F1.6(color,30IRE) 0Lux/F1.6(IR on)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 30m (98ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	1
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	Supported
AUDIO DETECTION	Supported
LENS	2.8mm, F1.6, Fixed
ANGLE OF VIEW	H:110°, V:60°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	1080P(1920×1080)/1.3M(1280x960)/720P(1280×720)/D1(704×480/576)/CIF(352×240/288)
FRAME RATE	Main Stream: 1080P (1~50/60fps) Sub Stream: D1(1~50/60fps) Third Stream: 1080P(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.264: 24K ~ 10240Kbps H.265: 14K ~ 9984Kbps
NETWORK	

ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<5.5W
MECHANICAL	
DIMENSIONS	Ø 106mm×93.7mm (4.17”×3.69”)
PRODUCT WEIGHT	0.46kg (1.01lb)
PACKAGE WEIGHT	0.65Kg (1.43lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

HBW2PER1 Bullet Camera

Table 14-7 HBW2PER1 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.8" 2Megapixel progressive CMOS
NUMBER OF PIXELS (H × V)	1920(H) x1080(V)
MINIMUM ILLUMINATION	0.07lux/F2.0(color,30IRE) 0Lux/F2.0(IR on)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 30m (98ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	18
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	NA
LENS	3.6mm Fixed, F2.0
ANGLE OF VIEW	H:88°, V:48°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	1080P(1920×1080)/1.3M(1280x960)/720P(1280×720)/ D1(704×480/576) /VGA(640×480)/CIF(352×240/288)
FRAME RATE	Main Stream: 1080P(1~25/30fps) Sub Stream: D1(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.265: 12K ~ 6400Kbps H.264: 32K ~ 10240Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11

SUPPORTED OS	Win7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<5.2W
MECHANICAL	
DIMENSIONS	Ø 70mm×164.7mm(2.76"x6.49")
PRODUCT WEIGHT	0.38kg (0.84lb)
PACKAGE WEIGHT	0.5kg (1.1lb)
MATERIAL	Metal+Plastic
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

HBW2PER2 Bullet Camera

Table 14-8 HBW2PER2 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.8" 2Megapixel progressive CMOS
NUMBER OF PIXELS (H × V)	1920(H) x1080(V)
MINIMUM ILLUMINATION	0.05lux/F1.4(color,30IRE) 0Lux/F1.4(IR on)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 60m (197ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	4
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	NA
LENS	2.7mm~13.5mm, F1.4, Motorized
ANGLE OF VIEW	H:108°~30°, V:60°~18°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	1080P(1920×1080)/1.3M(1280x960)/720P(1280×720)/D1(704×480/576)/VGA(640×480)/CIF(352×240/288)
FRAME RATE	Main Stream: 1080P(1~25/30fps) Sub Stream: D1(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.265: 12K ~ 6400Kbps H.264: 32K ~ 10240Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)

SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V PoE (802.3af)(Class 0)
POWER CONSUMPTION	<11.4W(-ZS)
MECHANICAL	
DIMENSIONS	72mm×80mm×212.8mm (2.8" x 3.1"x 8.4")
PRODUCT WEIGHT	0.64kg (1.41lb)
PACKAGE WEIGHT	0.82kg (1.80lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

H4W2PER2 Dome Camera

Table 14-9 H4W2PER2 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.8" 2Megapixel progressive CMOS
NUMBER OF PIXELS (H × V)	1920(H) x1080(V)
MINIMUM ILLUMINATION	0.05lux/F1.4(color,30IRE) 0Lux/F1.4(IR on)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 30m(98ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	2
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	NA
LENS	2.7mm~13.5mm, F1.4, Motorized
ANGLE OF VIEW	H:108°~30°, V:60°~18°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	1080P(1920×1080)/1.3M(1280x960)/720P(1280×720)/ D1(704×480/576)/VGA(640×480)/CIF(352×240/288)
FRAME RATE	Main Stream: 1080P(1~25/30fps) Sub Stream: D1(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.265: 12K ~ 6400Kbps H.264: 32K ~ 10240Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)

SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<9W
MECHANICAL	
DIMENSIONS	Ø 122mm×88.9mm(4.80"x3.50")
PRODUCT WEIGHT	0.50kg (1.10lb)
PACKAGE WEIGHT	0.66kg (1.46lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	IK10
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

H4W2PER3 Dome Camera

Table 14-10 H4W2PER3 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.8" 2Megapixel progressive CMOS
NUMBER OF PIXELS (H × V)	1920(H) x1080(V)
MINIMUM ILLUMINATION	0.07lux/F2.0(color,30IRE) 0Lux/F2.0(IR on)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	Distance up to 30m(98ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	24
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	NA
LENS	2.8mm, F2.0, Fixed
ANGLE OF VIEW	H:107°, V:57°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	1080P(1920×1080)/1.3M(1280x960)/720P(1280×720)/D1(704×480/576) /VGA(640×480)/CIF(352×240/288)
FRAME RATE	Main Stream: 1080P(1~25/30fps) Sub Stream: D1(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.265: 12K ~ 6400Kbps H.264: 32K ~ 10240Kbps
NETWORK	

ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<4.6W
MECHANICAL	
DIMENSIONS	Ø 109.9mm × 81mm (4.33" x 3.19")
PRODUCT WEIGHT	0.36kg (0.79lb)
PACKAGE WEIGHT	0.50kg (1.10lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	IK10
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

H2W2PER3 Mini Dome Camera

Table 14-11 H2W2PER3 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.8" 2Megapixel progressive scan CMOS
NUMBER OF PIXELS (H × V)	1920(H)x1080(V)
MINIMUM ILLUMINATION	0.07lux/F2.0(Color,30IRE) 0Lux/F2.0(IR on)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3(4)~1/100000s
IR DISTANCE	Distance up to 20m (66ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	10
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	Supported
AUDIO DETECTION	Supported
LENS	2.8mm F2.0 Fixed, Board-in
ANGLE OF VIEW	H: 110°, V:60°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	1080P(1920x1080)/1.3M(1280x960)/720P(1280×720)/ D1(704×480/576)/CIF(352×240/288)
FRAME RATE	Main Stream: 1080P (1~50/60fps) Sub Stream: D1(1~50/60fps) Third Stream: 1080P(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.264: 24~9472Kbps H.265: 14~5632Kbps

NETWORK	
ETHERNET	RJ-45 (10/100Base-T)/M12 D-Coding
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<4.5W
MECHANICAL	
DIMENSIONS	Ø 106mm×50.3mm (4.17”×1.98”)
PRODUCT WEIGHT	0.32kg (0.71lb)
PACKAGE WEIGHT	0.46kg (1.01lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	IK10
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

H2W4PER3 Mini Dome Camera

Table 14-12 H2W4PER3 Specifications

OPERATIAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/3" 4Megapixel progressive scan CMOS
NUMBER OF PIXELS (H × V)	2688(H)x1520(V)
MINIMUM ILLUMINATION	0.3lux/F2.0(Color,30IRE) 0Lux/F2.0(IR On)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3(4)~1/100000s
IR DISTANCE	Distance up to 20m (66ft)
IR Light Control	Manual/SmartIR/OFF
IR Light Number	10
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	Supported
AUDIO DETECTION	Supported
LENS	2.8mm F2.0 Fixed, Board-in
ANGLE OF VIEW	H: 104°, V:58°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	4M(2688×1520)/3M(2304×1296)/1080P(1920×1080)/1.3M(1280x960)/720P(1280×720)/D1(704×480/576)/CIF(352×240/288)
FRAME RATE	Main Stream: 4M(1~25/30fps) Sub Stream: D1(1~25/30fps) Third Stream: 720P(1~25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.264: 24~10240Kbps H.265: 14~9984Kbps

NETWORK	
ETHERNET	RJ-45 (10/100Base-T)/M12 D-Coding
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<4.5W
MECHANICAL	
DIMENSIONS	Ø 106mm×50.3mm (4.17”×1.98”)
PRODUCT WEIGHT	0.32kg (0.71lb)
PACKAGE WEIGHT	0.46kg (1.01lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	IK10
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

H2W2PC1M People Counting Camera

Table 14-13 H2W2PC1M Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.8" 2Megapixel progressive scan CMOS
NUMBER OF PIXELS (H × V)	1920(H)x1080(V)
MINIMUM ILLUMINATION	0.08lux/F2.0(Color,30IRE) 0.04Lux/F2.0(B/W,30IRE)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	NA
IR Light Control	NA
IR Light Number	NA
DAY/NIGHT	Auto(ICR) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	Supported
AUDIO DETECTION	Supported
PEOPLE COUNTING	Supported
LENS	2.1mm F2.0 Fixed, Board-in
ANGLE OF VIEW	H: 128°, V:70°
VIDEO	
VIDEO COMPRESSION	H.264H/ H.265 / MJPEG (Sub Stream)
RESOLUTION	1080P(1920x1080)/1.3M(1280x960)/ 720P(1280×720)/D1(704×480/576)/CIF(352×240/288)
FRAME RATE	Main Stream: 1080P (1~25/30fps) Sub Stream: D1(1~25/30fps) Third Stream: 1080P(1~25/30fps)
BIT RATE CONTROL	CBR/VBR

BIT RATE	H.264: 24~9472Kbps H.265: 14~5632Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, Capacity warning, Network disconnection, IP conflict, Illegal access
ELECTRICAL	
POWER SUPPLY	DC12V, PoE (802.3af)(Class 0)
POWER CONSUMPTION	<4.5W
MECHANICAL	
DIMENSIONS	Ø 106mm×50.3mm (4.17”×1.98”)
PRODUCT WEIGHT	0.32kg (0.71lb)
PACKAGE WEIGHT	0.46kg (1.01lb)
MATERIAL	Metal
CONSTRUCTION COLOR	White
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95% RH
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	IK10
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

HPW2P1 Pinhole Camera

Table 14-14 HPW2P1 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.7" 2Megapixel progressive CMOS
NUMBER OF PIXELS (H × V)	1920(H) x1080(V)
MINIMUM ILLUMINATION	0.082lux/F2.4 (Color,30IRE) 0.18Lux/F2.4 (B/W,30IRE)
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3~1/100000s
IR DISTANCE	N/A
IR Light Control	N/A
IR Light Number	N/A
DAY/NIGHT	Auto(Electronic) / Color / B/W
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
FACE DETECTION	Supported
AUDIO DETECTION	Supported
LENS	2.8mm, F2.4, Fixed, Board-in
ANGLE OF VIEW	H:108°, V:60°
VIDEO	
VIDEO COMPRESSION	H.265/H.264/H.264B/H.264H/MJPEG(Sub Stream)
RESOLUTION	1080P(1920×1080)/960P(1280×960)/720P(1280×720)/D1(704×480/576)/ VGA(640×480)/CIF(352×240/288)
FRAME RATE	Main Stream: 1080p (1 ~ 25/30fps) Sub Stream: D1(1 ~ 25/30fps)
BIT RATE CONTROL	CBR/VBR
BIT RATE	H.265: 12K ~ 6400Kbps H.264: 32K ~ 8192Kbps
NETWORK	

ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win 10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	Network disconnection, IP conflict, Illegal access, Voltage Detection
ELECTRICAL	
POWER SUPPLY	DC12V
POWER CONSUMPTION	<1.5W
MECHANICAL	
DIMENSIONS	44.9mm × 57.7mm×34.35mm (1.77” x 2.27”x 1.35”)
PRODUCT WEIGHT	0.10Kg (0.22lb)
PACKAGE WEIGHT	0.17Kg (0.37lb)
MATERIAL	Metal
CONSTRUCTION COLOR	Black
ENVIRONMENTAL	
OPERATING TEMPERATURE	-30° C ~ +60° C (-22° F ~ +140° F)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	N/A
REGULATORY	
EMISSIONS	FCC Part 15B, EN55032
IMMUNITY	EN 50130-4
SAFETY	UL 60950-1, EN 62368-1
ROHS	EN50581

H4W4PER2 Mini Dome Camera

Table 14-15 H4W4PER2 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/3" 4 MP CMOS
NUMBER OF PIXELS (H × V)	2688 (H) × 1520 (V)
MINIMUM ILLUMINATION	0.03 lux color @ F1.4 (Color, 1/3s, 30 IRE) 0 lux B/W with IR LEDs on @ F1.4
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3(4) – 1/100,000 s
IR DISTANCE	Up to 148 ft (45 m), depending on scene reflectance
SMART IR	Auto/Manual
IR Light Control	N/A
IR Light Number	N/A
DAY/NIGHT	Auto (ICR)/Color/BW
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
DIGITAL ZOOM	16x
FACE DETECTION	NA
AUDIO DETECTION	NA
LENS	2.7 – 13.5 mm, MFZ, F1.4
ANGLE OF VIEW	104° – 28° (H), 55° – 16° (V)
VIDEO	
VIDEO COMPRESSION	H.265+/H.265/H.264+/H.264
RESOLUTION	4 MP (2688×1520), QHD (2560×1440), 3 MP (2304×1296), 1080p (1920×1080), SXGA (1280×1024), 1.3 MP (1280×960), 720p (1280×720), D1(704×480/576), VGA (640×480), CIF(352×240/288)
FRAME RATE	4 MP at 1 – 20fps, 3 MP at 1 – 25/30fps D1/CIF at 1 – 25/30fps
BIT RATE CONTROL	CBR/VBR

BIT RATE	H.265: 12K – 8448 Kbps H.264: 32K – 10240 Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win 10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, SD card capacity warning, Network disconnection, IP address conflict, Illegal access, Video tampering, Motion detection
EVENT NOTIFICATION	Record (SD card, NAS, FTP), relay output, email, snapshot
MICRO SD	Up to 128 GB microSDHC card, Class 10 (not included)
ELECTRICAL	
POWER SUPPLY	PoE (802.3af) Class 0, 12 VDC
POWER CONSUMPTION	8.5 W max. (IR LEDs on)
MECHANICAL	
DIMENSIONS	4.8" × 3.5" (122.0 mm × 88.9 mm)
PRODUCT WEIGHT	0.88 lb (0.4 kg)
PACKAGE WEIGHT	1.19 lb (0.54 kg)
MATERIAL	Die-cast aluminum housing with powder coat
CONSTRUCTION COLOR	RAL 9003 (White)
ENVIRONMENTAL	
OPERATING TEMPERATURE	–22°F to 140°F (–30°C to 60°C)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	IK10
REGULATORY	
EMISSIONS	FCC Part 15B, EN 55032
IMMUNITY	EN 50130-4
SAFETY	EU: EN 60950-1 North America UL listed to UL/CSA 60950-1
ROHS	EN50581

H4W4PER3 Mini Dome Camera

Table 14-16 H4W4PER3 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/3" 4 MP CMOS
NUMBER OF PIXELS (H × V)	2688 (H) × 1520 (V)
MINIMUM ILLUMINATION	0.08 lux color @ F2.0 (Color, 1/3s, 30 IRE) 0 lux B/W with IR LEDs on @ F2.0
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3(4) – 1/100,000 s
IR DISTANCE	Up to 82 ft (25 m), depending on scene reflectance
SMART IR	Auto/Manual
IR Light Control	N/A
IR Light Number	N/A
DAY/NIGHT	Auto (ICR)/Color/BW
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
DIGITAL ZOOM	16x
FACE DETECTION	NA
AUDIO DETECTION	NA
LENS	2.8 mm, fixed, F2.0
ANGLE OF VIEW	104°/87° (H), 57°/48° (V)
VIDEO	
VIDEO COMPRESSION	H.265+/H.265/H.264+/H.264
RESOLUTION	4 MP (2688×1520), QHD (2560×1440), 3 MP (2304×1296), 1080p (1920×1080), SXGA (1280×1024), 1.3 MP (1280×960), 720p (1280×720), D1(704×480/576), VGA (640×480), CIF(352×240/288)
FRAME RATE	4 MP at 1 – 20fps, 3 MP at 1 – 25/30fps D1/CIF at 1 – 25/30fps
BIT RATE CONTROL	CBR/VBR

BIT RATE	H.265: 12K – 8448 Kbps H.264: 32K – 10240 Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win 10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	Network disconnection, IP address conflict, Illegal access, Video tampering, Motion detection
EVENT NOTIFICATION	Record (SD card, NAS, FTP), relay output, email, snapshot
MICRO SD	NA
ELECTRICAL	
POWER SUPPLY	PoE (802.3af) Class 0, 12 VDC
POWER CONSUMPTION	4.58 W max. (IR LEDs on)
MECHANICAL	
DIMENSIONS	4.33" × 3.19" (110 mm × 81 mm)
PRODUCT WEIGHT	0.75 lb (0.34 kg)
PACKAGE WEIGHT	1.04 lb (0.47 kg)
MATERIAL	Die-cast aluminum housing with powder coat
CONSTRUCTION COLOR	RAL 9003 (White)
ENVIRONMENTAL	
OPERATING TEMPERATURE	–22°F to 140°F (–30°C to 60°C)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	IK10
REGULATORY	
EMISSIONS	FCC Part 15B, EN 55032
IMMUNITY	EN 50130-4
SAFETY	EU: EN 60950-1 North America UL listed to UL/CSA 60950-1
ROHS	EN50581

HBD2PER1 Bullet Camera

Table 14-17 HBD2PER1 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/2.9" 2 MP CMOS
NUMBER OF PIXELS (H × V)	1920 (H) × 1080 (V)
MINIMUM ILLUMINATION	0.08 lux color @ F2.0 (Color, 1/3s, 30 IRE) 0 lux B/W with IR LEDs on @ F2.0
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3(4) – 1/100,000 s
IR DISTANCE	Up to 98 ft (30 m), depending on scene reflectance
SMART IR	Auto/Manual
IR Light Control	N/A
IR Light Number	N/A
DAY/NIGHT	Auto (ICR)/Color/BW
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
DIGITAL ZOOM	16x
FACE DETECTION	NA
AUDIO DETECTION	NA
LENS	3.6 mm, fixed, F2.0
ANGLE OF VIEW	110°/83° (H), 56°/44° (V)
VIDEO	
VIDEO COMPRESSION	H.265+/H.265/H.264+/H.264
RESOLUTION	1080p (1920×1080), SXGA (1280×1024), 1.3 MP (1280×960), 720p (1280×720), D1(704×480/576), VGA (640×480), CIF(352×240/288)
FRAME RATE	2 MP at 1 – 25/30fps D1/CIF at 1 – 25/30fps
BIT RATE CONTROL	CBR/VBR

BIT RATE	H.265: 12K – 6400 Kbps H.264: 32K – 10240 Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win 10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	Network disconnection, IP address conflict, Illegal access, Video tampering, Motion detection
EVENT NOTIFICATION	Record (NAS and FTP), relay output, email, snapshot
MICRO SD	NA
ELECTRICAL	
POWER SUPPLY	PoE (802.3af) Class 0, 12 VDC
POWER CONSUMPTION	5.03 W max. (IR LEDs on)
MECHANICAL	
DIMENSIONS	6.49" × 2.79" (164.8 mm × 71.0 mm)
PRODUCT WEIGHT	0.84 lb (0.38 kg)
PACKAGE WEIGHT	0.97 lb (0.44 kg)
MATERIAL	Die-cast aluminum housing with powder coat
CONSTRUCTION COLOR	RAL 9003 (White)
ENVIRONMENTAL	
OPERATING TEMPERATURE	–22°F to 131°F (–30°C to 55°C)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	NA
REGULATORY	
EMISSIONS	FCC Part 15B, EN 55032
IMMUNITY	EN 50130-4
SAFETY	EU: EN 60950-1 North America UL listed to UL/CSA 60950-1
ROHS	EN50581

HBW4PER1 Bullet Camera

Table 14-18 HBW4PER1 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/3" 4 MP CMOS
NUMBER OF PIXELS (H × V)	2688 (H) × 1520 (V)
MINIMUM ILLUMINATION	0.08 lux color @ F2.0 (Color, 1/3s, 30 IRE) 0 lux B/W with IR LEDs on @ F2.0
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3(4) – 1/100,000 s
IR DISTANCE	Up to 98 ft (30 m), depending on scene reflectance
SMART IR	Auto/Manual
IR Light Control	N/A
IR Light Number	N/A
DAY/NIGHT	Auto (ICR)/Color/BW
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
DIGITAL ZOOM	16x
FACE DETECTION	NA
AUDIO DETECTION	NA
LENS	3.6 mm, fixed, F2.0
ANGLE OF VIEW	104°/87° (H), 57°/48° (V)
VIDEO	
VIDEO COMPRESSION	H.265+/H.265/H.264+/H.264
RESOLUTION	4 MP (2688×1520), QHD (2560×1440), 3 MP (2304×1296), 1080p (1920×1080), SXGA (1280×1024), 1.3 MP (1280×960), 720p (1280×720),D1(704×480/576), VGA (640×480), CIF(352×240/288)
FRAME RATE	4 MP at 1 – 20fps, 3 MP at 1 – 25/30fps D1/CIF at 1 – 25/30fps
BIT RATE CONTROL	CBR/VBR

BIT RATE	H.265: 12K – 8448 Kbps H.264: 32K – 10240 Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win 10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	Network disconnection, IP address conflict, Illegal access, Video tampering, Motion detection
EVENT NOTIFICATION	Record (NAS and FTP), relay output, email, snapshot
MICRO SD	NA
ELECTRICAL	
POWER SUPPLY	PoE (802.3af) Class 0, 12 VDC
POWER CONSUMPTION	5.7 W max. (IR LEDs on)
MECHANICAL	
DIMENSIONS	6.49" × 2.79" (164.8 mm × 71.0 mm)
PRODUCT WEIGHT	0.84 lb (0.38 kg)
PACKAGE WEIGHT	0.97 lb (0.44 kg)
MATERIAL	Die-cast aluminum housing with powder coat
CONSTRUCTION COLOR	RAL 9003 (White)
ENVIRONMENTAL	
OPERATING TEMPERATURE	–22°F to 131°F (–30°C to 55°C)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	NA
REGULATORY	
EMISSIONS	FCC Part 15B, EN 55032
IMMUNITY	EN 50130-4
SAFETY	EU: EN 60950-1 North America UL listed to UL/CSA 60950-1
ROHS	EN50581

HBW4PER2 Bullet Camera

Table 14-19 HBW4PER2 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/3" 4 MP CMOS
NUMBER OF PIXELS (H × V)	2688 (H) × 1520 (V)
MINIMUM ILLUMINATION	0.03 lux color @ F1.4(Color, 1/3s, 30 IRE) 0 lux B/W with IR LEDs on @ F1.4
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3(4) – 1/100,000 s
IR DISTANCE	Up to 164 ft (50 m), depending on scene reflectance
SMART IR	Auto/Manual
IR Light Control	N/A
IR Light Number	N/A
DAY/NIGHT	Auto (ICR)/Color/BW
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
DIGITAL ZOOM	16x
FACE DETECTION	NA
AUDIO DETECTION	NA
LENS	2.7 – 13.5 mm, MFZ, F1.4
ANGLE OF VIEW	104° — 28° (H), 55° — 16° (V)
VIDEO	
VIDEO COMPRESSION	H.265+/H.265/H.264+/H.264
RESOLUTION	4 MP (2688×1520), QHD (2560×1440), 3 MP (2304×1296), 1080p (1920×1080), SXGA (1280×1024), 1.3 MP (1280×960), 720p (1280×720),D1(704×480/576), VGA (640×480), CIF(352×240/288)
FRAME RATE	4 MP at 1 – 20fps, 3 MP at 1 – 25/30fps D1/CIF at 1 – 25/30fps
BIT RATE CONTROL	CBR/VBR

BIT RATE	H.265: 12K – 8448 Kbps H.264: 32K – 10240 Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win 10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	No SD card, SD card error, SD card capacity warning, Network disconnection, IP address conflict, Illegal access, Video tampering, Motion detection
EVENT NOTIFICATION	Record (SD card, NAS, and FTP), relay output, email, snapshot
MICRO SD	Up to 128 GB microSDHC card, Class 10 (not included)
ELECTRICAL	
POWER SUPPLY	PoE (802.3af) Class 0, 12 VDC
POWER CONSUMPTION	11.74 W max. (IR LEDs on)
MECHANICAL	
DIMENSIONS	8.46" × 3.56" (214.8 mm × 90.4 mm)
PRODUCT WEIGHT	1.51 lb (0.685 kg)
PACKAGE WEIGHT	1.90 lb (0.86 kg)
MATERIAL	Die-cast aluminum housing with powder coat
CONSTRUCTION COLOR	RAL 9003 (White)
ENVIRONMENTAL	
OPERATING TEMPERATURE	–22°F to 140°F (–30°C to 60°C)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	NA
REGULATORY	
EMISSIONS	FCC Part 15B, EN 55032
IMMUNITY	EN 50130-4
SAFETY	EU: EN 60950-1 North America UL listed to UL/CSA 60950-1
ROHS	EN50581

HED2PER3 Ball Camera

Table 14-20 HED2PER3 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/3" 2 MP CMOS
NUMBER OF PIXELS (H × V)	1920 (H) × 1080 (V)
MINIMUM ILLUMINATION	0.08 lux color @ F2.0 (Color, 1/3s, 30 IRE), 0 lux B/W with IR LEDs on @ F2.0
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3(4) – 1/100,000 s
IR DISTANCE	Up to 82 ft (25 m), depending on scene reflectance
SMART IR	Auto/Manual
IR Light Control	N/A
IR Light Number	N/A
DAY/NIGHT	Auto (ICR)/Color/BW
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
DIGITAL ZOOM	16x
FACE DETECTION	NA
AUDIO DETECTION	NA
LENS	2.8 mm, fixed, F2.0
ANGLE OF VIEW	110°/83° (H), 56°/44° (V)
VIDEO	
VIDEO COMPRESSION	H.265+/H.265/H.264+/H.264
RESOLUTION	1080p (1920×1080), SXGA (1280×1024), 1.3 MP (1280×960), 720p (1280×720),D1(704×480/576), VGA (640×480), CIF(352×240/288)
FRAME RATE	2 MP at 1 – 25/30fps D1/CIF at 1 – 25/30fps
BIT RATE CONTROL	CBR/VBR

BIT RATE	H.265: 12K – 6400 Kbps H.264: 32K – 10240 Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win 10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	Network disconnection, IP address conflict, Illegal access, Video tampering, Motion detection
EVENT NOTIFICATION	Record (NAS and FTP), relay output, email, snapshot
MICRO SD	NA
ELECTRICAL	
POWER SUPPLY	PoE (802.3af) Class 0, 12 VDC
POWER CONSUMPTION	4.12 W max. (IR LEDs on)
MECHANICAL	
DIMENSIONS	3.68" × 3.14" (93.4 mm × 79.7 mm)
PRODUCT WEIGHT	0.51 lb (0.23 kg)
PACKAGE WEIGHT	0.85 lb (0.38 kg)
MATERIAL	Die-cast aluminum housing with powder coat
CONSTRUCTION COLOR	RAL 9003 (White)
ENVIRONMENTAL	
OPERATING TEMPERATURE	–22°F to 131°F (–30°C to 55°C)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	NA
REGULATORY	
EMISSIONS	FCC Part 15B, EN 55032
IMMUNITY	EN 50130-4
SAFETY	EU: EN 60950-1 North America UL listed to UL/CSA 60950-1
ROHS	EN50581

HEW4PER3 Ball Camera

Table 14-21 HEW4PER3 Specifications

OPERATIONAL	
VIDEO STANDARD	NTSC/PAL
SCANNING SYSTEM	Progressive
IMAGE SENSOR	1/3" 4 MP CMOS
NUMBER OF PIXELS (H × V)	2688 (H) × 1520 (V)
MINIMUM ILLUMINATION	0.08 lux color @ F2.0 (Color, 1/3s, 30 IRE), 0 lux B/W with IR LEDs on @ F2.0
S/N RATIO	More than 45dB
ELECTRONIC SHUTTER SPEED	1/3(4) – 1/100,000 s
IR DISTANCE	Up to 82 ft (25 m), depending on scene reflectance
SMART IR	Auto/Manual
IR Light Control	N/A
IR Light Number	N/A
DAY/NIGHT	Auto (ICR)/Color/BW
BACKLIGHT COMPENSATION	BLC / HLC / WDR(120dB)
WHITE BALANCE	Auto/Natural/Street Lamp/Outdoor/Manual/Customized Region
GAIN CONTROL	0~100
WIDE DYNAMIC RANGE	120dB
NOISE REDUCTION	3D DNR
PRIVACY MASKING	Off / On (4 Areas, Rectangle)
MOTION DETECTION	Off / On (4 Zones, Rectangle)
REGION OF INTEREST	Off / On (4 Zones)
DIGITAL ZOOM	16x
FACE DETECTION	NA
AUDIO DETECTION	NA
LENS	2.8 mm, fixed, F2.0
ANGLE OF VIEW	104°/87° (H), 57°/48° (V)
VIDEO	
VIDEO COMPRESSION	H.265+/H.265/H.264+/H.264
RESOLUTION	4 MP (2688×1520), QHD (2560×1440), 3 MP (2304×1296), 1080p (1920×1080), SXGA (1280×1024), 1.3 MP (1280×960), 720p (1280×720), D1(704×480/576), VGA (640×480), CIF(352×240/288)
FRAME RATE	4 MP at 1 – 20fps, 3 MP at 1 – 25/30fps D1/CIF at 1 – 25/30fps
BIT RATE CONTROL	CBR/VBR

BIT RATE	H.265: 12K – 8448 Kbps H.264: 32K – 10240 Kbps
NETWORK	
ETHERNET	RJ-45 (10/100Base-T)
SUPPORTED WEB BROWSERS	IE11
SUPPORTED OS	Win 7 Win 10
PROTOCOLS	HTTP; HTTPs; TCP; ARP; RTSP; RTP; RTCP; UDP; SMTP; DHCP; DNS; PPPoE; IPv4/v6; QoS; UPnP; NTP; Bonjour; IEEE 802.1x; Multicast; ICMP; IGMP; TLS
INTEROPERABILITY	ONVIF Profile G/S
MAXIMUM USERS ACCESS	20 Users
SECURITY	User account and password protection HTTPS, IP Filter, Digest authentication, User access log, TLS1.2 only, AES-128/256, SSH/Telnet closed, sFTP by default, PCIDSS compliance
EVENT	Network disconnection, IP address conflict, Illegal access, Video tampering, Motion detection
EVENT NOTIFICATION	Record (NAS and FTP), relay output, email, snapshot
MICRO SD	NA
ELECTRICAL	
POWER SUPPLY	PoE (802.3af) Class 0, 12 VDC
POWER CONSUMPTION	4.68 W max. (IR LEDs on)
MECHANICAL	
DIMENSIONS	3.68" × 3.14" (93.4 mm × 79.7 mm)
PRODUCT WEIGHT	0.51 lb (0.23 kg)
PACKAGE WEIGHT	0.85 lb (0.38 kg)
MATERIAL	Die-cast aluminum housing with powder coat
CONSTRUCTION COLOR	RAL 9003 (White)
ENVIRONMENTAL	
OPERATING TEMPERATURE	–22°F to 131°F (–30°C to 55°C)
RELATIVE HUMIDITY	Less than 95%, non-condensing
INGRESS PROTECTION	IP66
IMPACT RESISTANCE	NA
REGULATORY	
EMISSIONS	FCC Part 15B, EN 55032
IMMUNITY	EN 50130-4
SAFETY	EU: EN 60950-1 North America UL listed to UL/CSA 60950-1
ROHS	EN50581

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