Honeywell

Honeywell 30 Series

IP Cameras

HC30W42R3	HC30W45R3	HC30W45R2
HC30WB2R1	HC30WB5R1	HC30WB5R2
HC30WE2R3	HC30WE5R3	HC30WE5R2
HC30WF5R1	HC30W25R3	HC30W25R3-12V

User Guide

Recommended

Find the latest version of this and other Honeywell 30 Series IP camera documents on our website: https://buildings.honeywell.com/security.

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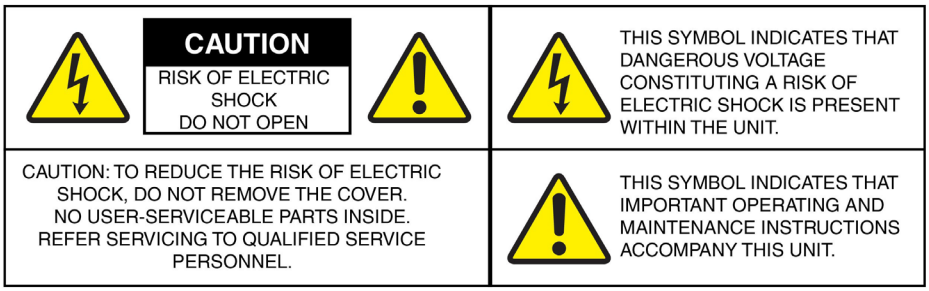
Revision

Issue	Date	Revisions
A	04/2019	New document.
B	04/2019	Add Compatible SD Card
V1-A	05/2019	Add Fisheye features; Modify special characters in password; Add HLC; Add Pixel Calculator; Modify HTTPS; Add Certificate Request and upload files; Modify Motion detection (intrusion detection, people detection); Add audio settings; Add audio detection settings; Add audio detection event settings; Delete remote log server; Modify Version screenshot; Add mount type.
V2-A	06/2019	Modify the Focus section and the Configuring Audio Detection.
V3-A	09/2019	Add specifications; Add troubleshooting on smart codec; Password GUI change; SD card format after upgrading firmware; Select Language on main page after uploading the custom language file.
V4-A	12/2019	Update the screenshot of General Settings for Video Standard and related description; Add trouble shooting for people detection; Update IR Control settings; Add a note in Export CA Certificate.
V5-A	01/2021	Add HC30W25R3/HC30W25R3-12V models; Update all the screenshots of the whole document and the corresponding description; Update the accessing tool; Add recording MP4 to pc; Add Configuring Audio Detection; Update SD card list
V5-B	06/2021	Layout and contact list updating

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

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.

Regulatory Statements

Photobiological safety

This product fulfills the requirements for photobiological safety according to IEC/EN 62471 (risk group 1).

General Data Protection Regulation

Please be aware that this product can store personal data.

Personal data is protected by the General Data Protection Regulation (2016/679) in Europe and therefore the owners of personal data have obtained certain rights thanks to this regulation.

We strongly advise you to be fully aware of these owner ("data subjects") rights as well as which limitations you have to obey regarding the use and distribution of this data.

Further details can be found on the GDPR website of the EU:
https://ec.europa.eu/commission/priorities/justice-and-fundamental-rights/data-protection/2018-reform-eu-data-protection-rules_en

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

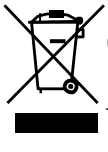
This Class B digital apparatus complies with Canadian ICES-003.

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
- 2014/35/EU for LVD
- 2015/863 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.

Regulation (EC) No 1907/2006

According to Article 33 of Reach Regulation be informed that the substances listed below may be contained in these products above the threshold level of 0.1% by weight of the listed article.

Product	Part Name	Substance Name	CAS Number
HC30W25R3	Screw	Lead	7439-92-1
	Solder paste(D3,D11)	Lead	7439-92-1
	Wafer Passivation_Glass(D3,D11)	Lead	7439-92-1
	Smd Diode-Body(D19,D20)	Lead	7439-92-1
	GPP COMMUTATING DIODE CORE	Lead	7439-92-1
	High lead tin paste(D1,D15)	Lead	7439-92-1
HC30W25R3-12V	Screw	Lead	7439-92-1
	Solder paste(D3,D11)	Lead	7439-92-1
	Wafer Passivation_Glass(D3,D11)	Lead	7439-92-1
	Smd Diode-Body(D19,D20)	Lead	7439-92-1
	BLACK BODY(D14)	Lead	7439-92-1
	GPP COMMUTATING DIODE CORE	Lead	7439-92-1
	High lead tin paste(D1,D15)	Lead	7439-92-1

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 Honeywell 30 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 Honeywell 30 Series IP cameras.
- Chapter 2 Accessing the Camera, describes how to install the Unified Tool to access the camera remotely from a web browser and how to update a camera's firmware.
- Chapter 3 Using the Main Page, describes how to log in to a camera and introduce the main page.
- Chapter 4 Configuring Camera, describes camera configurations.
- Chapter 5 Configuring Network, describes network configurations.
- Chapter 6 Configuring Video Analytics, describes video analytics configurations.
- Chapter 7 Configuring Storage, describes storage configurations.
- Chapter 8 Configuring System, describes general system configurations.
- Chapter 9 Viewing System Info, describes system information, such as the version, log and online user information.
- Chapter 10 Troubleshooting, lists common problems and solutions.
- Chapter 11 Appendix, lists the descriptions of symbols.

CHAPTER

1 INTRODUCTION

This chapter contains the following sections:

Overview

Honeywell 30 Series IP cameras integrate traditional cameras 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 30 Series Network Video Recorder, the cameras offer 2 or 5 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 165 ft (50 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 5 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. All models also support local video storage on microSDHC cards (up to 256 GB) when network service is interrupted.

Key Features

Key features of the Honeywell 30 Series IP cameras include the following:

Camera

- Day/Night mode auto-switch
- Video parameter setup, such as electronic shutter and gain
- Motion detection

- Camera tampering detection
- People detection
- Wide dynamic range
- IR night vision
- Fisheye dewarping

Storage

- Central server backup (configure in Event settings)
- Recording over Internet, files stored on client PC
- Network storage (NAS)

Network Monitoring

- Latency time less than 500ms (network bandwidth support required)
- Up to 10 connections
- Compatible with the following network protocols: IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, CIFS/SMB, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS

Network Management

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

User Management

- Each user belongs to a 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

CHAPTER

2 ACCESSING THE CAMERA

This chapter contains the following sections:

Installing the Unified Tool

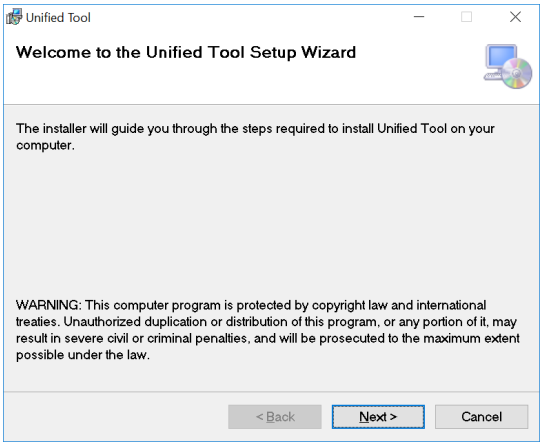
To get the installation package of Unified Tool:

- Go to https://mywebtech.honeywell.com and login. Go to **Download Center → Video → IP Cameras → Camera Discovery Tools & Utilities → Honeywell Unified Tool**. Download and unzip the installation package of Unified Tool to your computer.
- Copy the installation package of Unified Tool from the CD along with the package of the camera to your computer.

To install the Unified Tool:

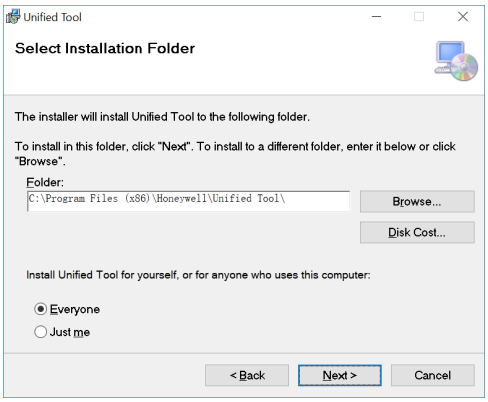
1. Double-click the installation program  in the installation package.

Figure 1 Install Unified Tool



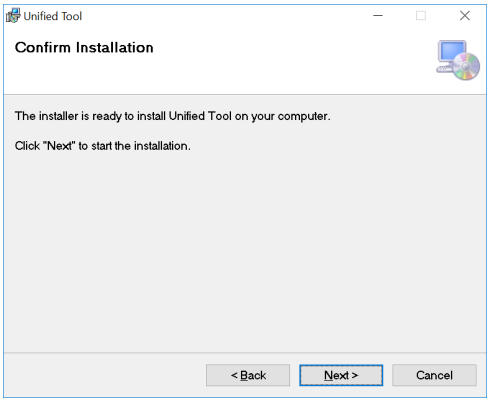
2. Click Next and the following figure is displayed:

Figure 2 Select Installation Folder



3. Follow the on-screen instructions to configure settings and click Next. The following figure is displayed:

Figure 3 Confirm Installation

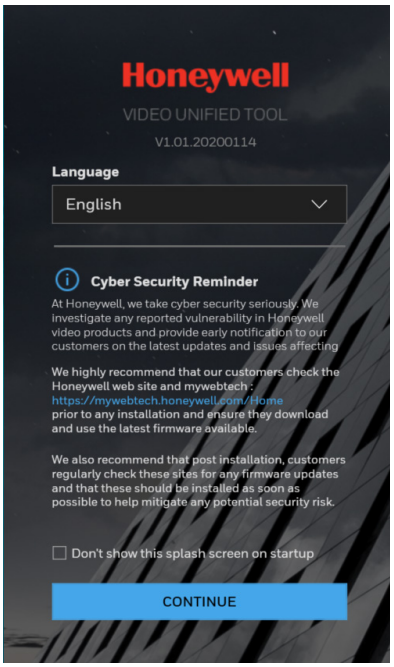


4. Click Next. When the installation is completed, click Close. A shortcut of Unified Tool will be displayed on your desktop.

Discovering Your Camera in the Network

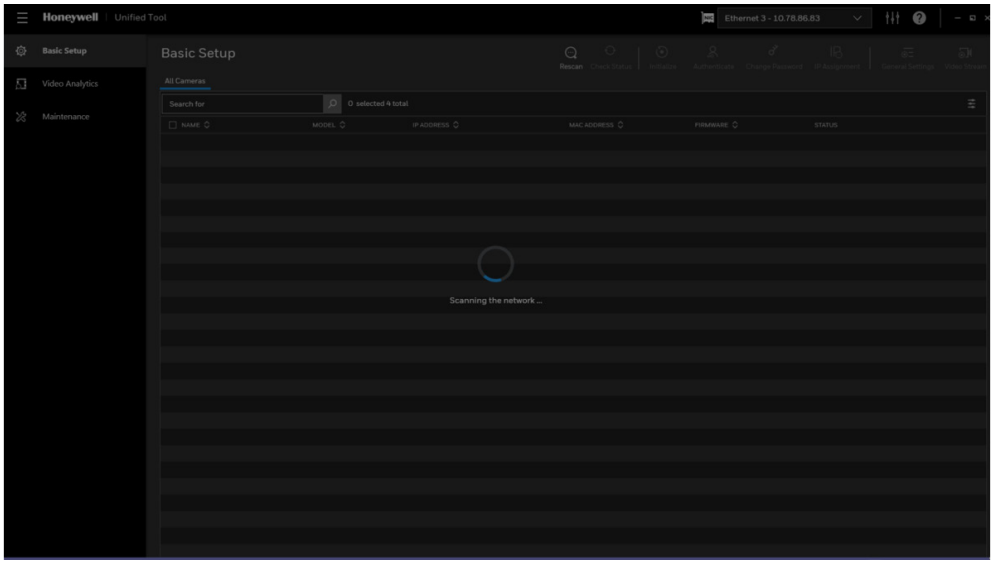
Double-click on the desktop and the following figure is displayed:

Figure 4 Splash Screen



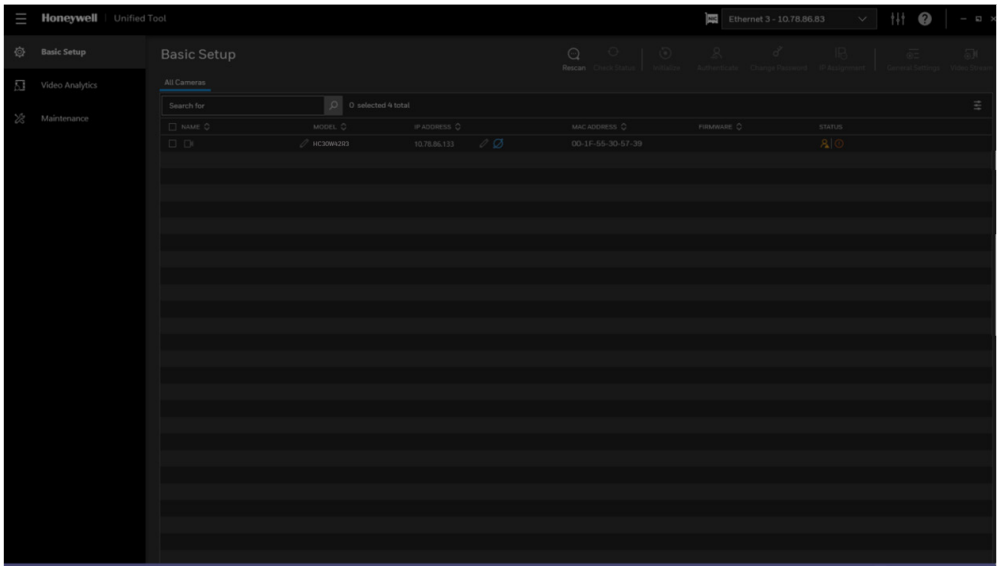
1. Select your language from the drop-down list of Language. Currently, only English is supported.
2. Check “Don’t show the splash window on startup” and this page can be skipped next time. If you want to check the splash window again, click as shown in Figure 6 and select the checkbox of Show the splash page on startup.
3. Click CONTINUE. It will scan devices in the network automatically.

Figure 5 Scanning the Network



After the scanning, all scanned devices in the same subnet and different subnet will be displayed in the devices list.

Figure 6 Device List

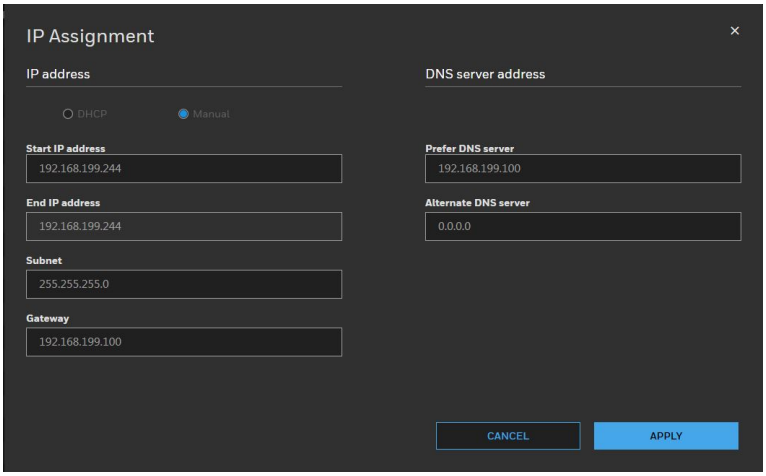


Assigning a New IP Address to a Camera

The current IP address of a camera appears in the **IP ADDRESS** column of the devices list. You can assign a new static IP address to the camera.

Select the target device(s) as shown in Figure 6, click IP Assignment and the following figure is displayed:

Figure 7 IP Assignment



Configure IP Address Setting

- To obtain IP address, subnet mask, and default gateway settings automatically, check **DHCP**.

- To configure IP address, subnet mask, and default gateway settings manually, check Manual and enter the settings. If you enter the start IP address, the system can calculate the end IP address automatically according to the number of selected device(s).
- When all settings are completed, click **APPLY**.

Configure DNS Server Address

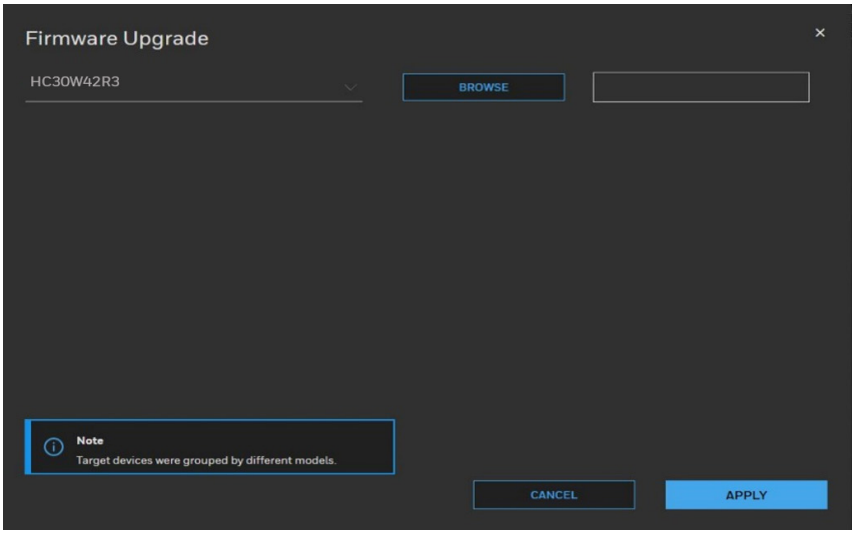
Configure the DNS server address and click **APPLY**.

Upgrading the Camera's Firmware

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

Select the **Maintenance** tab from the left pane as shown in Figure 6. Select target device(s) and click Firmware Update. The following window is displayed:

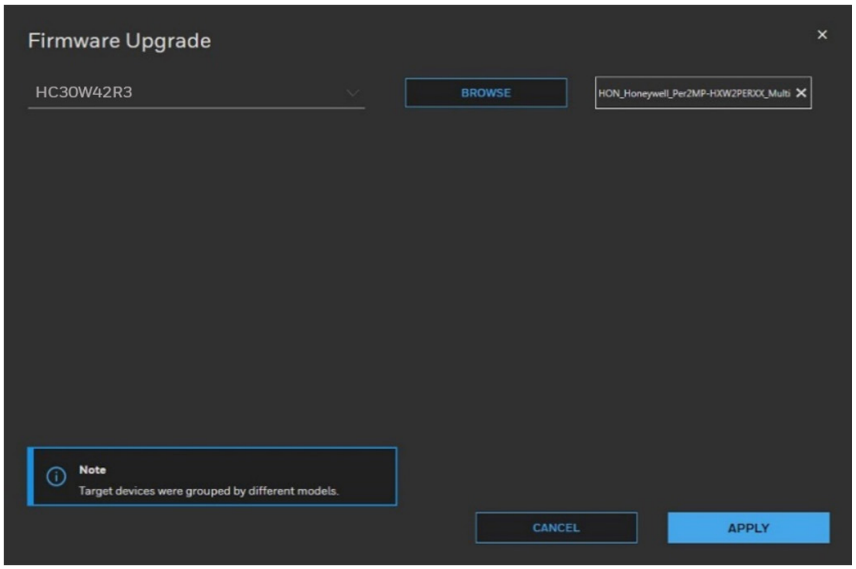
Figure 8 Firmware Upgrade



The devices are grouped by model. To upgrade the firmware:

1. Select the target device(s) under a model.
2. Click BROWSE and select the upgrade file from your computer.

Figure 9 Firmware Upgrade 2



3. Click APPLY. You can check the progress status in the device list.

Accessing the Camera from a Web Browser

To access the camera from a web browser, click  next to the IP address of the device as shown in Figure 6.

CHAPTER

3 USING THE MAIN PAGE

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

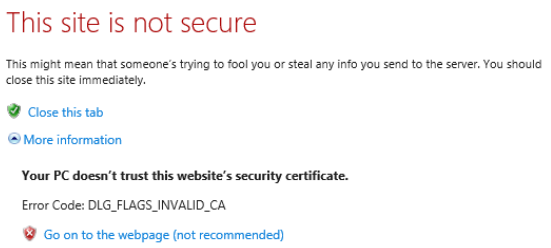
Logging in via Internet Explorer

1. Type the camera's IP address in the address bar of Internet Explorer, press Enter on the keyboard. For example, if your camera's IP address is 192.168.1.108, you would type https://192.168.1.108.

Note: Internet Explorer 11 (or later) with ActiveX plug-in is supported.

2. The following window is displayed. Click Go on to the webpage (not recommended).

Figure 10 Security Certificate Problem

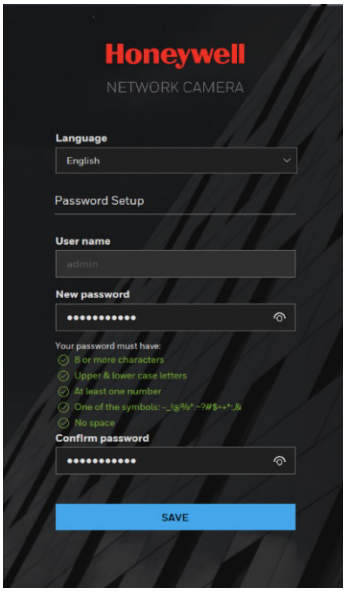


For how to resolve the security certificate problem, see Export CA Certificate on page 81.

3. Setup a new password according to the password requirements at the first login. Click SAVE.

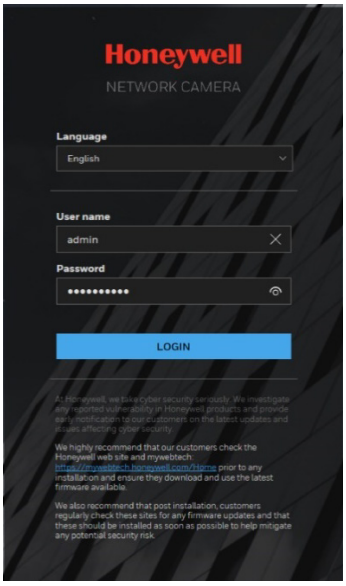
The password cannot be blank.

Figure 11 Setup a New Password



4. Enter the user name as admin and newly created password. Click LOGIN.

Figure 12 Login Page



If you are logging in for the first time, you will be prompted to download and install the plugin. Follow the on-screen instructions to install it. When the installation is complete, the web client automatically refreshes, and the main page opens.

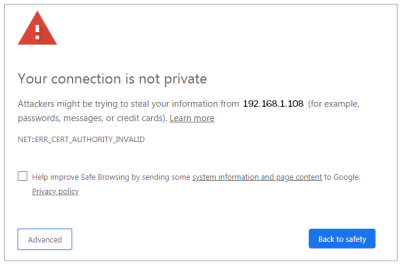
Logging in Via Google Chrome

1. Type the camera's IP address in the address bar of Google Chrome and press Enter on the keyboard. For example, if your camera's IP address is 192.168.1.108, you would type https://192.168.1.108.

Note: *Chrome 71 (or later) is supported for H.264 video. Chrome is not supported for H.265 video.*

2. The following window is displayed. Click Advanced.

Figure 13 Safety Problem



3. The following window is displayed. Click Proceed to 192.168.1.108 (unsafe).

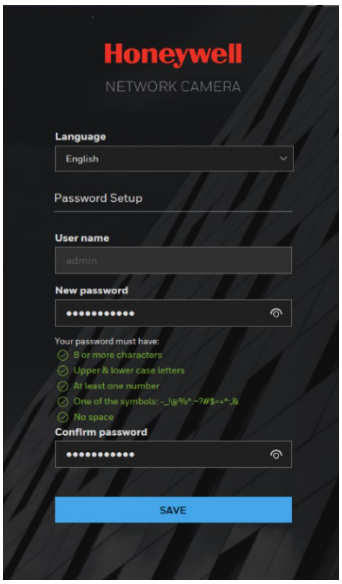
Figure 14 Security Certificate Problem

For how to resolve the security certificate problem, see Export CA Certificate on page 81.

4. Setup a new password according to the password requirements at the first login. Click SAVE.

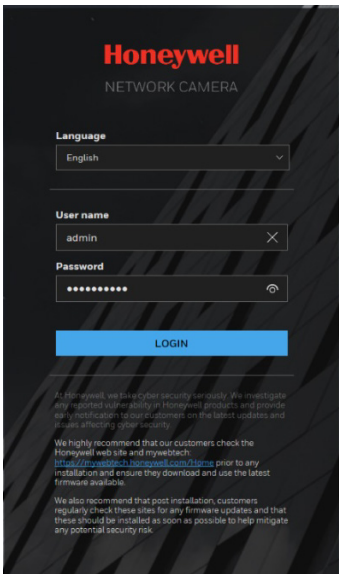
The password cannot be blank.

Figure 15 Setup a New Password



5. Enter the user name as admin and newly created password. Click LOGIN.

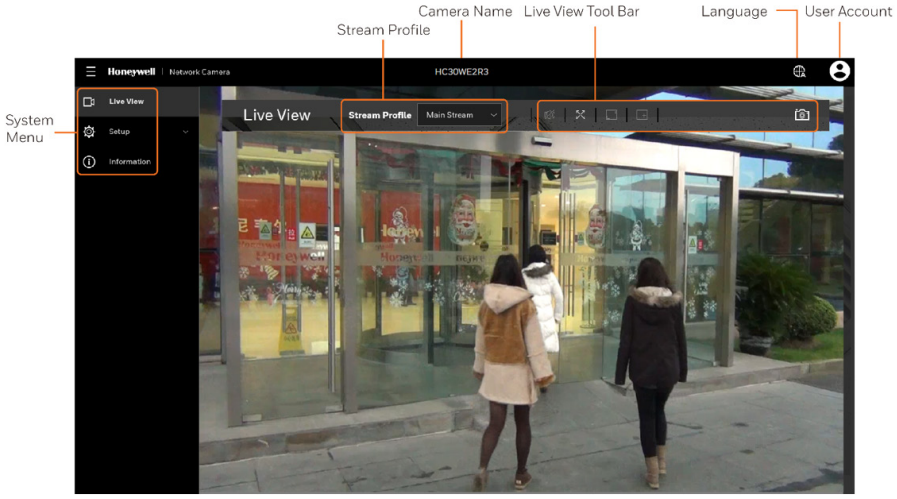
Figure 16 Login Page



Using the Main Page

The main page includes the following areas: system menu, live view tool bar, language selection and user account settings.

Figure 17 Main Page



The main page of the Fisheye model (HC30WF5R1) is different from the other models. For the main page of the Fisheye model, see Fisheye Main Page on page 16.

System Menu

When you log in to the camera via the web client, the main page opens by default. To access the **Setup** page or **Information** page, select the corresponding tab.

Stream Profile

In the **Stream Profile** list, select **Main Stream**, **Sub Stream**, or **Third Stream** to set the stream profile.

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.
Third Stream	Delivers low definition video.

The properties for each stream type are configured on the **Setup → Camera Setup → Video** page (see Configuring Video Settings on page 27).

Camera Name

You can change the camera name according to your needs. For more information, see Configuring System General Settings on page 76.

Live View Tool Bar

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

Figure 18 Live View Window Controls

Table 1 Live View Window Controls

Icon	Description
	Click to turn on the audio to listen to the monitoring site. Click it again to turn off the audio. The audio button is grey in the Chrome browser.
	Click to switch to the full screen mode. Press **Esc** on the keyboard or double click the screen to switch to the normal mode.
	Click to auto fit the image. This function is not applicable in the Chrome browser.
	Click and uncheck **Disable digital zoom** to enable the zoom operation. The navigation screen shows the part of the image being magnified. To resize the navigation area, put the cursor on a border and drag the border. To move to a different area you want to magnify, drag the navigation screen. To zoom the image, scroll the mouse wheel. This function is not applicable in the Chrome browser.
	Click to record the video clip in MP4 file format and save it to your computer. You can play the video clip by VLC player. Click the button again to stop recording. When you exit the web browser, video recording stops accordingly. • If you run the Internet Explorer as administrator and this is the first time you record, the recording will be stored under C:\Record. • If you run the Internet Explorer as non-administrator, a pop-up window will be displayed for you to select the destination. If you have selected the storage path as non-administrator, and then you run the Internet Explorer as administrator, the recording will be stored in your previously selected path.
	Click to capture and save video images. The captured images will be displayed in a pop-up window. Right click the image and select **Save picture as** to save it in JPEG (*.jpg) or BMP (*.bmp) format.

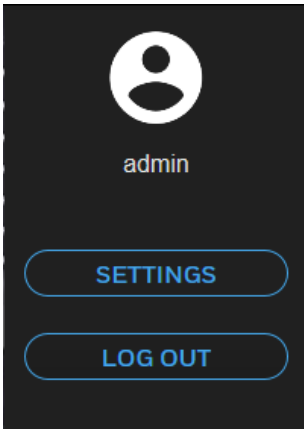
Language

To switch a language, click as shown in Figure 17.

User Account

To configure user account or log out the current account, click as shown in Figure 17 and the following figure is displayed:

Figure 19 User Account



To configure the user account, click **SETTINGS**. For details, see Configuring User Accounts Settings on page 82.

To log out the current account, click **LOG OUT**.

Fisheye Main Page

Click  on the right of the Fisheye main page to access the Fisheye panel.

Figure 20 Fisheye Main Page

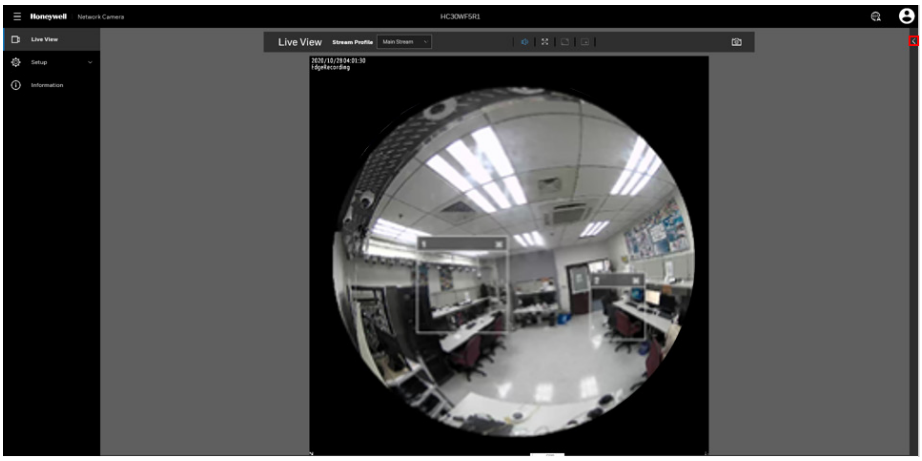
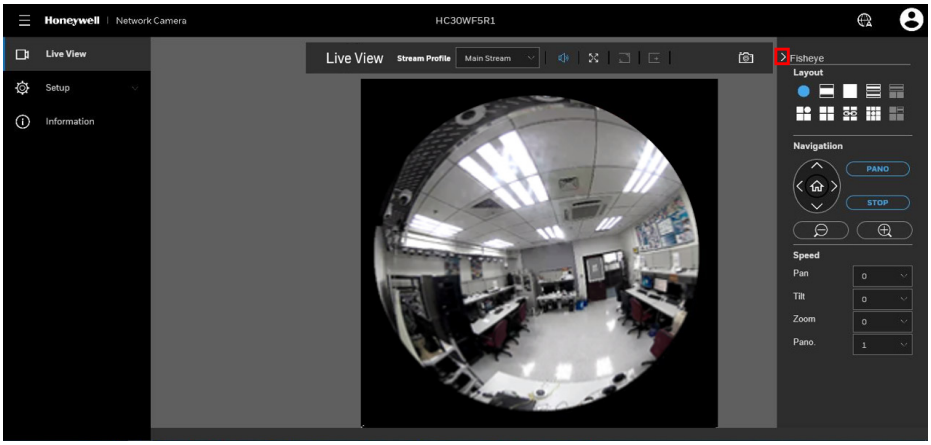


Figure 21 Fisheye Panel



Fisheye Layout

Due to the fisheye lens' wide coverage of 180º hemispheric and 360º panoramic views and to manipulate the details within, the following types of layout are provided:

Figure 22 Fisheye Layout

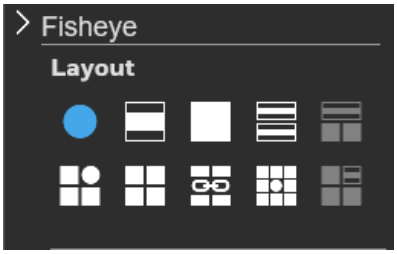


Table 2 Fisheye Layout

Layout	Display Mode	Description
	1O	One original view
	1P	One panoramic view
	1R	One regional view
	2P	Two panoramic views
	1P2R	One panoramic and two regional views (Wall mount)
	1O3R	One original and three regional views
	4R	Four regional views

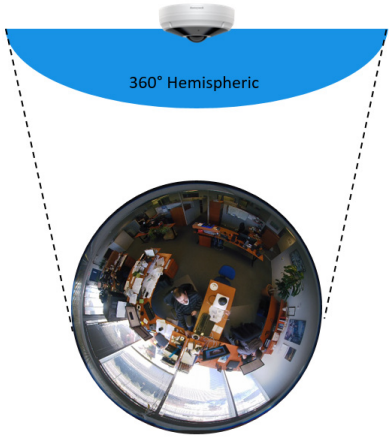
	4R PRO	Four regional views interactively displayed when the field of view changes in any of the views
	1O8R	One original and eight regional views
	1P3R	One Panoramic and three Regional views (Wall mount)

One Original View

When mounted on a ceiling, the fisheye camera can cover an approximate of 64 m² surveillance area (installed at a height of approximately 3 meters), while keeping details in videos with recognizable facial features of people passing through the area.

This layout is especially adequate for taking an overview glimpse of the surveillance area when mounted on the ceiling.

Figure 23 One Original View

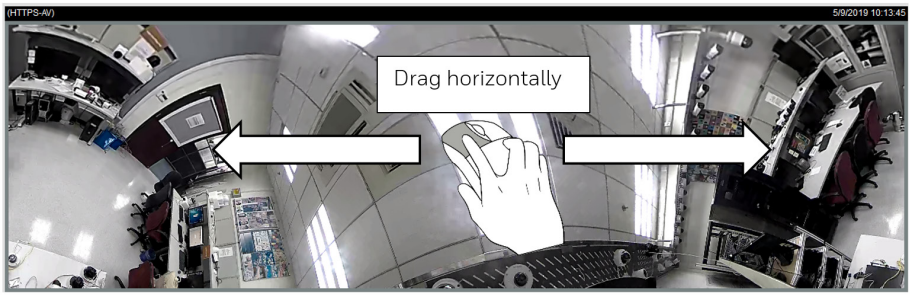


One Panoramic View

With the image correction algorithms in firmware, the hemispheric image is transformed into a rectilinear stripe in the 1P display mode. You can use the PTZ panel or simply use mouse drags to quickly move through the 360° panoramic view. (Mouse control on the Panoramic view is available with the Ceiling mount type.)

When mounted on a wall, this layout can cover a 180° overview from side to side, e.g., on the entrance of a building or a corridor.

Figure 24 One Panoramic View

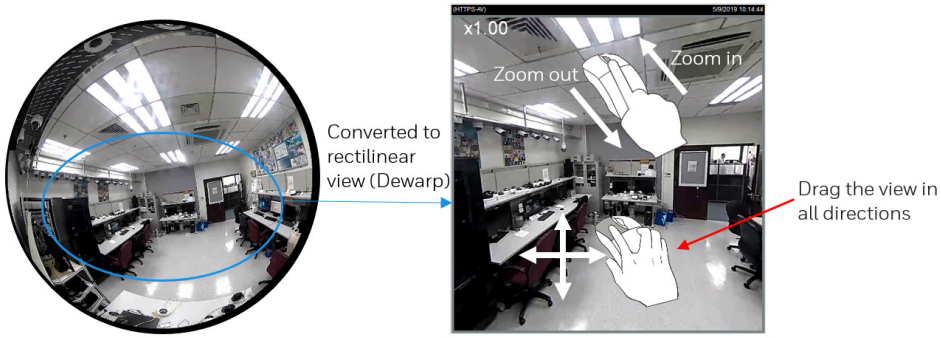


Note: *This layout is applicable to an overview, the Zoom in/out function does not apply in this mode.*

One Regional View

This layout provides access to one image section within the hemisphere. You can zoom in or out (using the mouse wheel or PTZ panel) or move to other areas in the hemisphere using mouse clicks and drags. A single click on an object can bring the object to the center of your view window. Click and hold down the left mouse button, and you can drag the view in all directions.

Figure 25 One Regional View



One Panoramic and Two Regional Views

This layout provides access to two regional views and the reference to their relative positions on a panoramic view. This layout is available only when you select the Wall mount type, see the Video Settings on page 25.

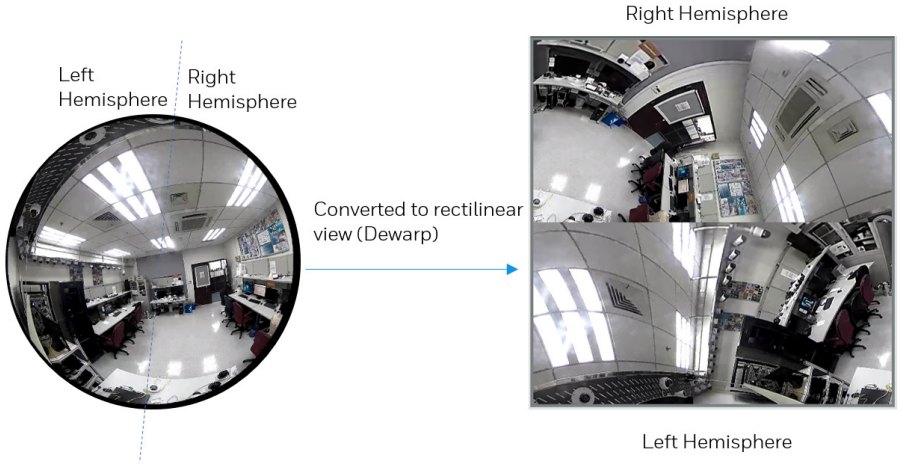
The operations of this layout is similar to the operations of the One Original and Three Regional Views, see One Original and Three Regional Views on page 20.

Two Panoramic Views

This layout provides simultaneous access to both the left and right sections of a hemisphere. Both panoramic views are corrected into a more viewable dewarped image.

You can use a mouse click and drag to quickly scroll horizontally through the surveillance area.

Figure 26 Two Panoramic Views



One Panoramic and Three Regional Views

This layout provides access to two regional views and the reference to their relative positions on a panoramic view. It is available only when you select the Wall mount type, see the Mount type section in Video Settings on page 25.

The operations of this layout is similar to the operations of the One Original and Three Regional Views, see One Original and Three Regional on page 20.

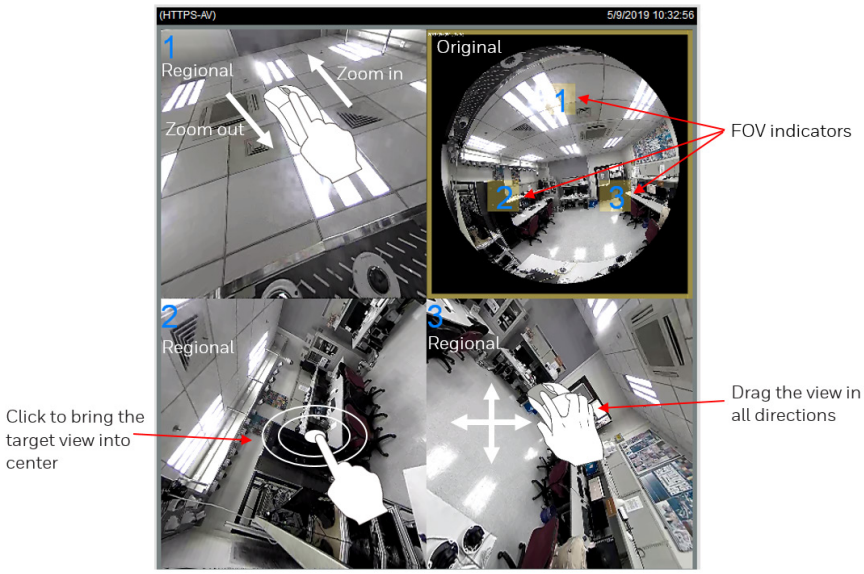
One Original and Three Regional Views

This layout provides access to multiple live view sections within the hemisphere and the reference to their relative positions on an Original circular view. The FOV (Field of View) indicators (#1 ~ #3) interact with your current operation when you zoom in/out or move the live view window to a different place.

You can zoom in or out or move to other areas within the hemisphere using identical methods as previously described in the 1R mode.

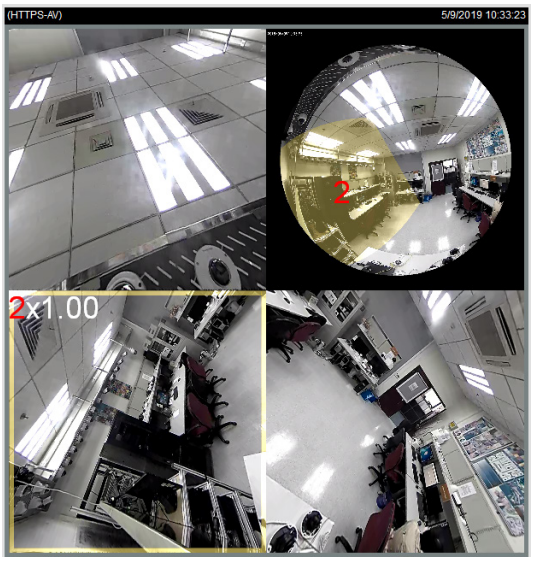
You can also change the locations of Regional views by dragging the FOV indicators on the "Original" circular view.

Figure 27 One Original & Three Regional Views



If you select a regional window, you can see the position of the regional window in the original window.

Figure 28 Regional Window Selection



Note: After you click the live image, the mouse wheel becomes the zoom in/out tool.

Four Regional Views

This layout control and look and feel are identical to that as described in the One Original and Three Regional Views except that the Original circular view is absent from this mode.

Figure 29 Four Regional Views

Four Regional Proactive Views

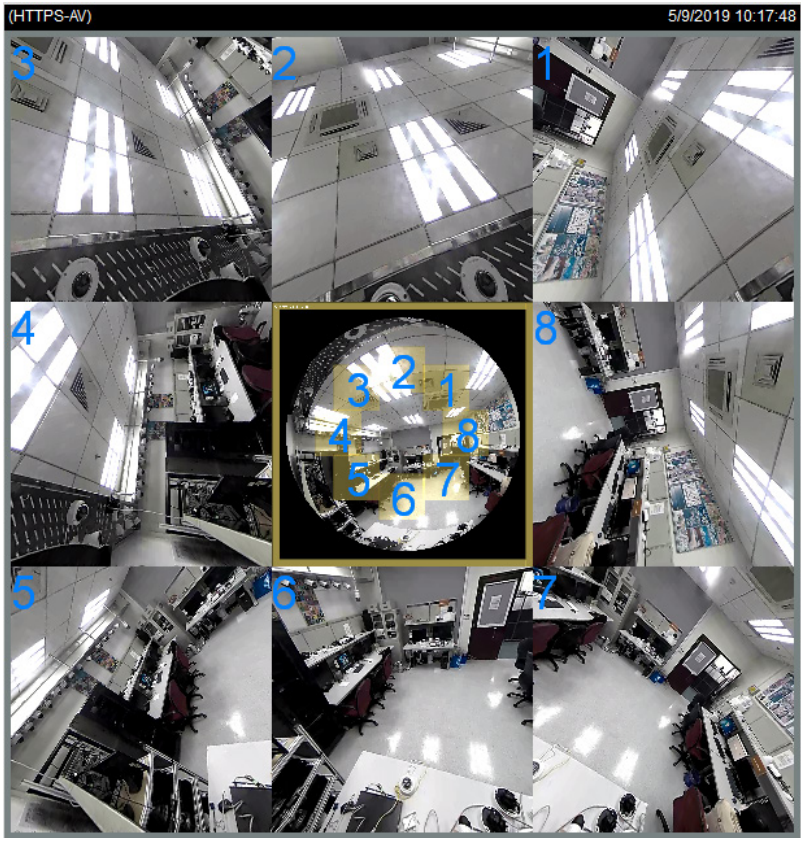
This layout is like the layout of the Four Regional Views except that the quad view windows consecutively rotate in correspondence to the change of view area in one window.

Note: The zoom in/out and tilt control is not available in this mode.

One Original and Eight Regional Views

This layout control and look and feel are identical to that as described in the One Original and Three Regional Views.

Figure 30 One Original and Eight Regional Views



Note: *If you change the position of a view in hemisphere, e.g., the #3 window, you will lose the configuration change when switching to another display mode. The live view window does not automatically save your view section layout.*

CHAPTER

4 CONFIGURING CAMERA

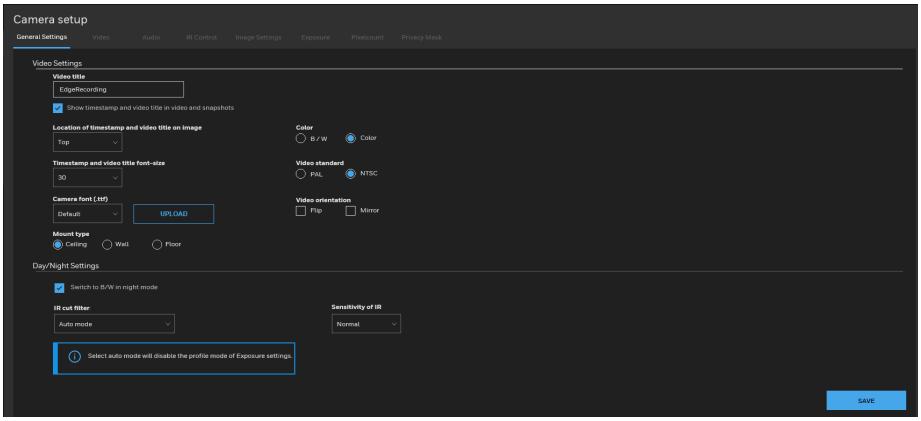
This chapter contains the following sections:

Configuring General Settings

Go to **Setup → Camera Setup → General Settings**.

On this page, you can configure the general video settings and day/night settings.

Figure 31 General Settings



The Audio Settings function applies to HC30WF5R1/HC30W25R3-12V/HC30W25R3 cameras.

Note: The Focus function applies to HC30W45R2/HC30WB5R2/HC30WE5R2 cameras. The Pixelcount function applies to the HC30WF5R1 camera. See Pixel Calculator (Fisheye Model Only) on page 40.

Video Settings

Video Title: Enter a name that will be displayed on the title bar of the live video.

Show timestamp and video title in video and snapshots: Check to display timestamp and video title in live video and snapshots.

Location of time stamp and video title on image: Select a position from the drop-down list to display timestamp and video title on the top or at the bottom of the video stream.

Time stamp and video title font-size: Select a font size for the timestamp and title.

Camera font (.ttf): You can select a True Type font file for the display of textual messages on video.

Mount type (Fisheye Model Only): The camera provides 3 Mount types - Ceiling, Wall, and Floor.

- **Ceiling**: The Ceiling mount type automatically delivers upside-down images. The Ceiling mode supports the following Display modes - 1O, 1P, 1R, 2P, 1O3R, 4R, 4R PRO, and 1O8R.
- **Wall**: The Wall mount type applies to the monitoring of long, side-to-side surveillance areas, such as when mounted on a wall facing a corridor. Different Mount types have different options with the Display mode settings. For example, the 1P2R (1 Panoramic & 2 Regional) and 1P3R (1 Panoramic & 3 Regional) display modes are only available when the “Wall” Mount type is applied.
- **Floor**: The Display modes with the Floor mount type are identical to those for the Ceiling mount except that the images are not vertically flipped.

Color: Select to display color or black/white video streams.

Video Standard: Select the video standard: NTSC or PAL.

Note: If the video standard is changed, you must disconnect and reconnect the power cord of the camera for the new setting to take effect.

Video orientation:

- **Flip**: vertically reflect the display of the live video;
- **Mirror**: horizontally reflect the display of the live video.

- Select both Flip and Mirror if the camera is installed upside-down (e.g., on the ceiling) to correct the image orientation.
- **Rotate**: Rotate the video by 90 degrees or 270 degrees. The rotation here indicates clockwise rotation. Rotation can be applied with flip, mirror, and physical lens rotation settings to adapt to different mounting locations, such as a corridor.

Table 3 Video Orientation

Original	Flip	Original	Mirror	Original	Rotate 90 degrees (clockwise)
					

Note: *The flip/mirror/rotate operation will clear the video settings, privacy mask settings, exposure window, motion detection settings, preset position and focus window.*

Day/Night Settings

Switch to B/W in night mode: Check to enable the camera to automatically switch to Black/White during night mode.

IR cut filter:

- Auto mode (The Day/Night Exposure Profile will not be available if Auto mode is selected)

  The camera automatically removes the filter by judging the level of ambient light.

Note: *Select auto mode will disable profile of exposure settings.*

- Day mode

  In day mode, the camera always switches on the IR cut filter to block infrared light from reaching the sensor so that the colors will not be distorted.

- Night mode

  In night mode, the camera always switches off the IR cut filter for the sensor to accept infrared light, thus helping to improve low light sensitivity.

- Schedule mode

  The camera switches between day mode and night mode based on a specified schedule. Enter the start and end time for day mode. The time format is [hh:mm] and is expressed in 24-hour clock

time. By default, the start and end time of day mode are set to 07:00 and 18:00.

Sensitivity of IR: Adjust the responsiveness of the IR filter to lighting conditions as **Low**, **Normal**, or **High**.

Configuring Video Settings

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

This section describes how to configure viewing window and video streaming properties (format, resolution, frame rate, bit rate, I-frame interval and so on.).

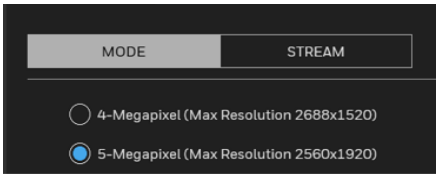
Mode

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

In **MODE** tab, you can set the pixel mode for different cameras.

Note: *Changing the video mode will clear the following settings: privacy mask, exposure widow, motion and focus window.*

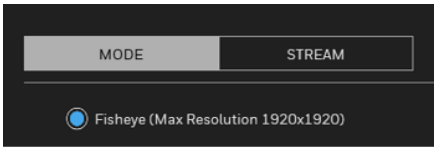
Figure 32 Mode Tab 1



4-Megapixel (Max Resolution 2688x1520): Select it and the maximum resolution will be 2688x1520. The aspect ratio will be 16:9. This mode applies to HC30W45R3/HC30W45R2/HC30WB5R1/HC30WB5R2/HC30WE5R3/ HC30WE5R2/HC30W25R3/HC30W25R3-12V cameras (see Figure 32).

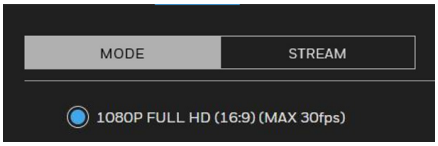
5-Megapixel (Max Resolution 2560x1920): Select it and the maximum resolution will be 2560x1920. The aspect ratio will be 4:3. This mode applies to HC30W45R3/HC30W45R2/HC30WB5R1/HC30WB5R2/HC30WE5R3/ HC30WE5R2/HC30W25R3/HC30W25R3-12V cameras (see Figure 32).

Figure 33 Mode Tab 2



Fisheye (Max Resolution 1920x1920): Select it and the maximum resolution will be 1920x1080. This mode applies to HC30WF5R1 cameras (see Figure 33).

Figure 34 Mode Tab 3



1080P FULL HD (16:9) (MAX 30fps): Select it and the maximum resolution will be 1920x1080. The aspect ratio will be 16:9. This mode applies to HC30W42R3/ HC30WB2R1/HC30WE2R3 cameras (see Figure 34).

Video Stream

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

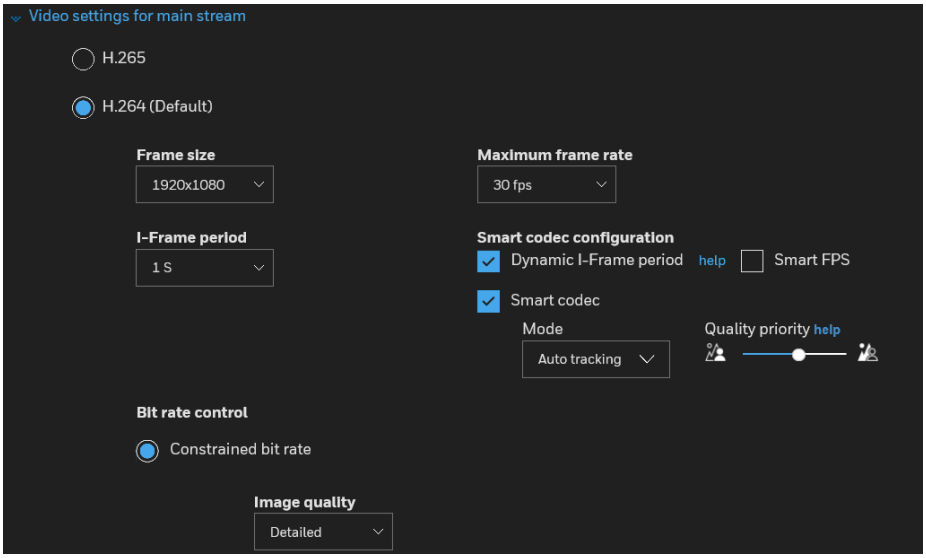
See the following table for streams and frame sizes of each model:

Table 4 Stream and Frame Size Matrix

Model	Main Stream	Sub Stream	Third Stream
HC30W42R3	1920×1080/1600x904/1360x768/1280x720/640x360	1280x720/640x360	640x360
HC30W45R3 (4MP)	2688x1520/1920x1080/1600x904/1280x720/640x360	1280x720/640x360	640x360
HC30W45R3 (5MP)	2560x1920/2048x1536/1600x1200/1280x960/800x600/704x480/640x480	800x600/704x480/640x480	640x480/704x480
HC30W45R2 (4MP)	2688x1520/1920x1080/1600x904/1280x720/640x360	1280x720/640x360	640x360
HC30W45R2 (5MP)	2560x1920/2048x1536/1600x1200/1280x960/800x600/704x480/640x480	800x600/704x480/640x480	640x480/704x480
HC30WB2R1	1920×1080/1600x904/1360x768/1280x720/640x360	1280x720/640x360	640x360
HC30WB5R1 (4MP)	2688x1520/1920x1080/1600x904/1280x720/640x360	1280x720/640x360	640x360
HC30WB5R1 (5MP)	2560x1920/2048x1536/1600x1200/1280x960/800x600/704x480/640x480	800x600/704x480/640x480	640x480/704x480
HC30WB5R2 (4MP)	2688x1520/1920x1080/1600x904/1280x720/640x360	1280x720/640x360	640x360
HC30WB5R2 (5MP)	2560x1920/2048x1536/1600x1200/1280x960/800x600/704x480/640x480	800x600/704x480/640x480	640x480/704x480
HC30WE2R3	1920×1080/1600x904/1360x768/1280x720/640x360	1280x720/640x360	640x360
HC30WE5R3 (4MP)	2688x1520/1920x1080/1600x904/1280x720/640x360	1280x720/640x360	640x360
HC30WE5R3 (5MP)	2560x1920/2048x1536/1600x1200/1280x960/800x600/704x480/640x480	800x600/704x480/640x480	640x480/704x480
HC30WE5R2 (4MP)	2688x1520/1920x1080/1600x904/1280x720/640x360	1280x720/640x360	640x360

Model	Main Stream	Sub Stream	Third Stream
HC30WE5R2 (5MP)	2560x1920/2048x1536/1600x1200/1280x960/800x600/704x480/640x480	800x600/704x480/640x480	640x480/704x480
HC30WF5R1	1920x1920/1536x1536/1200x1200/960x960/480x480	960x960/480x480	480x480
HC30W25R3(4MP)	2688x1520/1920x1080/1600x904/1280x720/640x360	1280x720/640x360	640x360
HC30W25R3(5MP)	2560x1920/2048x1536/1600x1200/1280x960/800x600/704x480/640x480	800x600/704x480/640x480	640x480/704x480
HC30W25R3-12V(4MP)	2688x1520/1920x1080/1600x904/1280x720/640x360	1280x720/640x360	640x360
HC30W25R3-12V(5MP)	2560x1920/2048x1536/1600x1200/1280x960/800x600/704x480/640x480	800x600/704x480/640x480	640x480/704x480

Figure 35 Video Stream Settings



Frame Size

You can set different video resolutions for different viewing devices. For example, you can configure a smaller frame size and lower bit rate for remote viewing on mobile phones and a larger video size and a higher bit rate for live viewing on web browsers or recording the stream to an NVR. A larger frame size takes up more bandwidth.

Maximum Frame Rate

This limits the maximum refresh frame rate per second. Set the frame rate higher for smoother video quality and for recognizing moving objects in the field of view.

If the power line frequency is set to PAL, the frame rates are selectable from 1-50 fps. If the power line frequency is set to NTSC, the frame rates are selectable from 1-60 fps. You can also select **Customized** and manually enter a value.

The frame rate will decrease if you select a higher resolution.

Intra Frame Period

Determine how often for firmware to plant an intra frame. The shorter the duration, the more likely you will get better video quality, but at the cost of higher network bandwidth consumption. Select the intra frame period from the following durations: 1/4 second, 1/2 second, 1 second, 2 seconds, 3 seconds, and 4 seconds.

Smart Codec Configuration

Dynamic Intra Frame Period

High quality motion codecs, such as H.265, utilize the redundancies between video frames to deliver video streams at a balance of quality and bit rate. The encoding parameters are summarized and illustrated below. The I-frames are completely self-referential and they are largest in size. The P-frames are predicted frames. The encoder refers to the previous I- or P-frames for redundant image information.

Smart FPS

In a static scene, the algorithm puts old frames in queue when no motions occur in scene. When motions occur, the encoding returns to normal to deliver real-time streaming.

By queuing the old frames from a static scene, both the computing efforts and the size of P frames are reduced. It is beneficial for keeping up with the frame rate requirements.

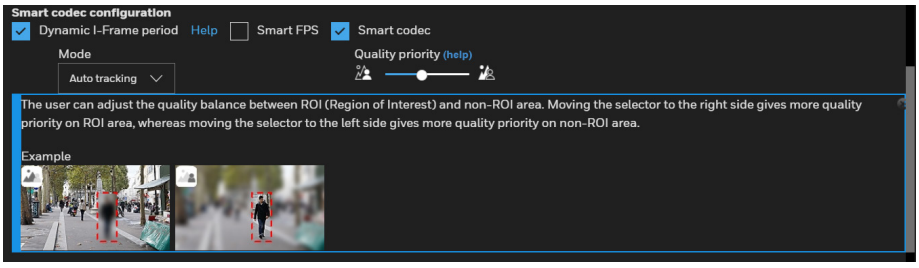
A default frame difference threshold, 1%, is embedded in firmware for returning from Smart FPS to normal encoding when motions occur.

Smart Codec

Smart codec effectively reduces the quality of the whole or the non-interested areas on a screen and therefore reduces the bandwidth consumed.

You can manually specify the video quality for the foreground and the background areas.

Figure 36 Smart Codec Configuration



Select an operation mode if **Smart codec** is preferred.

- **Auto tracking**: The Auto mode configures the whole screen into the non-interested area. The video quality of part of the screen returns to normal when one or more

objects move in that area. The remainder of the screen where there are no moving objects (no pixel changes) will still be transmitted in low-quality format.

- **Manual**: The Manual mode allows you to configure 3 ROI windows (Region of Interest, with Foreground quality) on the screen. Areas not included in any ROI windows will be considered as the non-interested areas. The details in the ROI areas will be transmitted in a higher-quality video format.
- **Hybrid**: The major difference between the "Manual" mode and the "Hybrid" mode is that:

  In the "Hybrid" mode, any objects entering the non-interested area will restore the video quality of the moving objects and the area around them. The video quality of the associated non-interested area is immediately restored to normal to cover the moving objects.

  In the "Manual" mode, the non-interested area is always transmitted using a low-quality format regardless of the activities occurring inside.
- **Quality priority**: Drag the slider to adjust the quality contrast between the ROI and non-interested areas.

  The farther the slider is to the right, the higher the image quality of the ROI areas.

  On the contrary, the farther the slider to the left, the higher the image quality of the non-interested area.

  In this way, you can set up an ROI window as a privacy mask by covering a protected area using an ROI window, while the rest of the screen becomes the non-interested area. You can configure the non-interested area to have a high image quality, or vice versa.

Bit Rate Control

Constrained Bit Rate

A complex scene generally produces a larger file size, meaning that higher bandwidth will be needed for data transmission. The bandwidth utilization is configurable to match a selected level, resulting in mutable video quality performance.

- **Image quality**: Select a desired quality ranging from Medium to Excellent. If you select Customized, you can enter a value to specify the quality.
- **Maximum bit rate**: Select a bit rate from the drop-down list. The bit rate ranges from 20 Kbps to a maximum of 80 Mbps. If you select Customized, you can enter a value to specify the maximum bit rate.
- **Priority**: If Frame rate is selected, the camera will try to maintain the frame rate per second performance, while the image quality will be compromised. If Image quality is selected, the camera may drop some video frames in order to maintain image quality.

Fixed Quality

All frames are transmitted with the same quality.

- **Quality**: Select a desired quality

ranging from **Medium** to **Excellent**. If you select **Customized**, you can enter a value to specify the quality.

- **Maximum bit rate**: Select a bit rate from the drop-down list. The bit rate ranges from 1 Mbps to a maximum of 40Mbps. If you select **Customized**, you can enter a value to specify the maximum bit rate.

The Maximum bit rate setting in the Fixed quality configuration can ensure a reasonable and limited use of network bandwidth. For example, in low light conditions where a Fixed quality setting is applied, video packet sizes can tremendously increase when noises are produced with electrical gains.

Configuring Audio Settings

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

Note: HC30WF5R1/HC30W25R3-12V/HC30W25R3 supports this function.

Figure 37 Audio Settings (HC30W25R3)

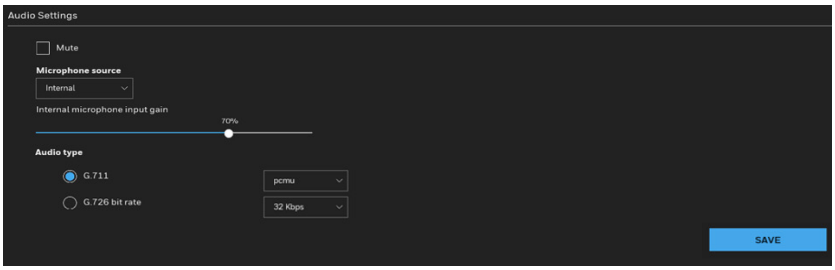
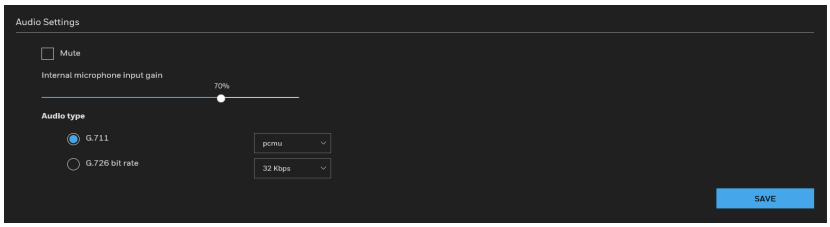


Figure 38 Audio Settings (HC30WF5R1/HC30W25R3-12V)



Mute: Check to disable audio transmission from the network cameras to all clients.

Microphone source: Select **Internal** or **External** from the drop-down list.

Internal microphone input gain: Select the gain of the internal audio input according to ambient conditions. Adjust the gain from 0% (least) to 100% (most).

External microphone input gain (HC30W25R3): Select the gain of the external audio input according to ambient conditions. Adjust the gain from 0% (least) to 100% (most).

Audio type: Select audio codec as G.711 or G.726 and the bit rate.

- G.711 provides good sound quality and requires about 64Kbps. Select pcmu (˚-Law) or pcma (A-Law) mode.
- G.726 is a speech codec standard covering voice transmission at rates of 16, 24, 32, and 40kbit/s.

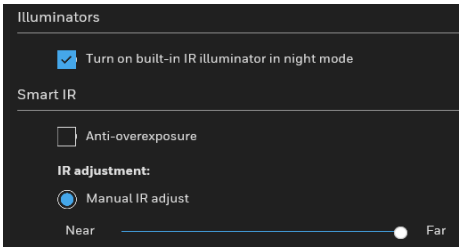
After you complete the settings on this page, click **SAVE** to enable the settings.

Configuring IR Control Settings

Go to **Setup → Camera Setup → IR Control**.

On this page, you can turn on the IR illuminator and adjust the luminance of IR lights.

Figure 39 IR Control Settings



IR Illuminators

Turn on built-in IR illuminator in night mode: Check to turn on the camera's onboard IR illuminator when the camera detects low light condition and enters the night mode.

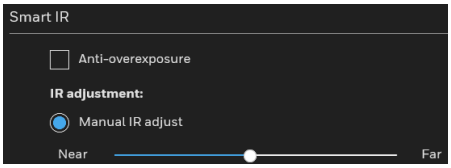
Smart IR

Anti-overexposure: Check to automatically adjust the shutter speed, Gain and IRIS through algorithm of the firmware to avoid over-exposure in the night mode.

Note: *The IRIS control only applies to HC30W45R2/HC30WB5R2/HC30WE5R2 motorized focus/zoom cameras.*

IR adjustment: Adjust the luminance of IR lights.

Figure 40 Smart IR



Manual IR adjust: Check it to control the luminance of IR lights manually. To increase the luminance of IR lights, drag the slider to the right; to decrease the luminance of IR lights, drag the slider to the left.

Note: *If you enable Anti-overexposure, the effect of manual IR adjustment may be not obvious.*

Configuring Image Settings

Go to **Setup → Camera Setup → Image Settings**.

On this page, you can configure the white balance and adjust image parameters.

Two sets of image settings are available:

- In **Normal Light Mode** tab, configure normal situations for image settings.
- In **Profile Mode** tab, configure special situations for image settings.

Figure 41 Image Settings

White Balance

Adjust the value for the best color temperature.

Auto: Select it and the camera will automatically adjust the color temperature.

Fixed current: Select it and the camera will use current color temperature value.

Manual: You can manually tune the color temperature by dragging the R Gain and B Gain slider.

Image Adjustment

Brightness: Adjust the image brightness level (0% to 100%).

Contrast: Adjust the image contrast level (0% to 100%).

Saturation: Adjust the image saturation level (0% to 100%).

Sharpness: Adjust the image sharpness level (0% to 100%).

Gamma curve: Adjust the image sharpness level (0.45 to 1, Detailed to Contrast).

- **Optimize**: The system automatically adjusts the gamma curve.
- **Manual**: Drag the slider to change the preferred level of gamma correction towards higher contrast or towards the higher luminance for detailed expression for both dark and lighted areas of an image.

Note:

- *The gamma curve function is disabled when the WDR feature in Exposure settings is enabled.*
- *The brightness setting from 0% to 100% doesn't have obvious change due to the limitation of Sony senor.*

Defog

Check to improve the visibility quality of captured image in poor weather conditions such as smog, fog, or smoke.

3D Noise Reduction

Drag the slider to adjust the reduction strength (from low to high).

Note: *3D Noise Reduction is mostly applied in low-light conditions. In a low-light condition with fast moving objects, trails of after-images may occur. You can select a lower strength level.*

All changes made to image settings are directly shown on screen. To recall the original settings without incorporating the changes, click **RESTORE**. After you completed the settings, click **SAVE**.

Configuring Exposure Settings

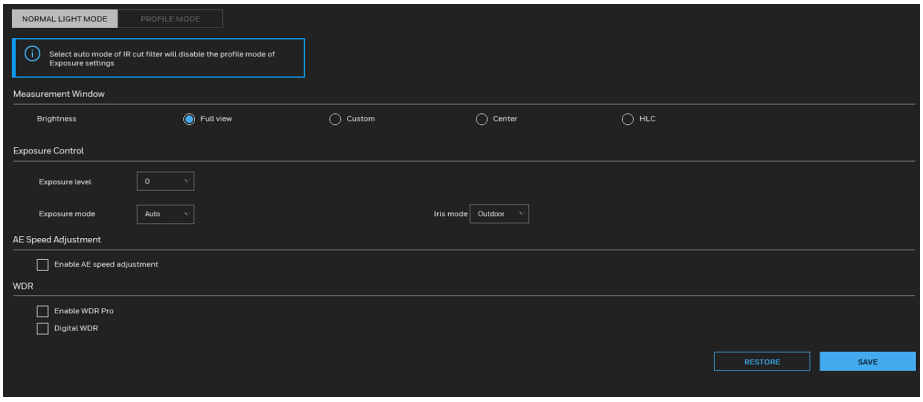
Go to **Setup → Camera Setup → Exposure**.

On this page, you can set the Exposure measurement window, Exposure level, Exposure mode, Exposure time, Gain control, and Day/Night mode settings.

Two sets of exposure settings are available:

- In **NORMAL LIGHT MODE** tab, configure normal situations for image settings.
- In **PROFILE MODE** tab, configure special situations for exposure settings.

Figure 42 Exposure Settings



Measurement Window

Measurement Window: This function allows users to set measurement window(s) for low light compensation. For example, when low-light objects are posed against an extremely bright background you can exclude the bright sunlight shining through a building's corridor.

- **Full view**: Calculate the full range of view and offer appropriate light compensation.
- **Custom**: Manually add customized windows as inclusive or exclusive regions. A total of 10 windows can be configured.

The inclusive windows have a higher priority. You can overlap these windows. If you place an exclusive window within a larger inclusive window, the exclusive part of the overlapped windows will be deducted from the inclusive window. An exposure value will then be calculated out of the remaining of the inclusive window.

- **Center**: This option will automatically add an inclusive window in the middle of the window and give the necessary light compensation.
- **HLC (Highlight Compensation)**: Firmware detects strong light sources and compensates on affected spots to enhance the overall image quality. For example, the HLC helps reduce the glares produced by spotlights or headlights.

Exposure Control

Exposure level: You can manually set the Exposure level, which ranges from -2.0 to +2.0 (dark to bright) (for IPC model).

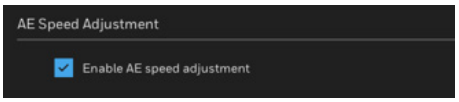
Flickerless: Check to reduce flicker in the image.

AE Speed Adjustment

Check **Enable AE speed adjustment** to apply it in fast changing lighting conditions, such as a highway lane or entrance of a parking area at night where cars passing by with their lights on and it can bring fast changes in light levels. It is also applicable to a situation if the camera is installed

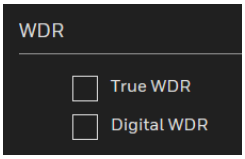
on a vehicle, and when it needs to adapt to fast changes of light when entering and leaving a tunnel.

Figure 43 AE Speed Adjustment



WDR

Figure 44 WDR



True WDR: Check to enable the Wide Dynamic Range function which can capture details in a high contrast environment. Use the slide bar to select the strength (from **Low** to **High**), depending on the lighting condition at the installation site. You can select a higher effect when the contrast is high (between the shaded area and the light behind the objects).

Digital WDR: Check to enable the Digital Wide Dynamic Range function. Use the slide bar to select the strength (from **Low** to **High**).

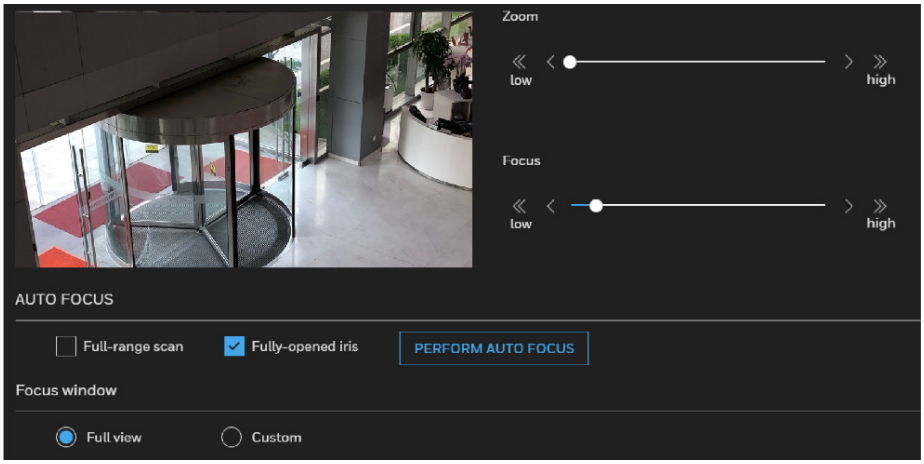
Digital WDR is a software-based technique that enhances the image quality by adjusting the gamma value to brighten dark areas. True WDR is a sensor-based technology. A True WDR CCTV can produce images with an extremely wide dynamic range. The WDR image sensor can capture several images with short and long exposures, then combining them into a single frame.

Configuring Focus

Focus here refers to the Remote Focus, applicable to the cameras that are equipped with a stepping motor lens. The automated focus adjustment function eliminates the needs to physically adjust camera focus. In an outdoor deployment consisting of many cameras, the auto focus function can be very helpful when these cameras become out of focus after days or weeks of operation. And that can easily result from the effects of natural forces, e.g., shrink and expand due to a wide range of operating temperatures and the vibration caused by wind.

Go to **Setup → Camera Setup → Focus**.

Figure 45 Focus



- To zoom in on an image, drag the slider to the right.
- To zoom out on an image, drag the slider to the left.
- To fine-tune the zoom, click « ‹ or › ».

Note: *The zoom function applies to HC30W45R2/HC30WB5R2/HC30WE5R2 cameras. If you are not satisfied with the results of zooming, click PERFORM AUTO FOCUS. It takes about 15 to 20 seconds (full-range scan unchecked) or 30 to 80 seconds (full-range scan checked) to perform the auto focus scan. You need to fine-tune the focus depending on the live image on your screen.*

To perform the automated Focus function:

1. Select from the bottom of the screen whether you want to perform focus adjustment on the Full view or within a Custom focus window. You can create a custom window and click and drag the window to a desired position on screen.
2. It is recommended to Reset to the default back focus position of the sensor board.
3. You can check Fully-opened iris (default) to increase the iris size for a better focus adjustment result.
4. Check Fully-opened iris or Full-range scan buttons.

   Full-range scan: Check it to run a full-range scan about 30 to 80 seconds through the camera's entire focal length. If it is not checked, the auto focus scan will only go through the length where optimal focus may occur, and that takes about 15 to 20 seconds. In theory, best results of the auto scan can be acquired when the camera's iris is fully open.
5. Wait for the scan to complete. After a short while, the clearest image obtained should be displayed and the optimal focus range achieved. Use the arrow marks on the sides to fine-tune the focus if you are not satisfied with the results. You need to use the arrow marks to fine-tune the focus depending on the live image on your screen. “>” means moving from wide to tele end; and “<” tele to wide.

   Focus window:

By default, the optimal focus is found on a full view window. You can designate a custom window within your current field of view to acquire the best focus out of it. However, you cannot place a focus window on a distant background, e.g., a hallway that stretches away for 3 meters or farther.

- Full view: The focus tuning takes place by referring to the full view.
- Custom: You can create a focus window and drag it to a place of interest in your view window.

Note: *It is recommended to use this function only when there's a solid object showing a consistent color or texture in your view window. This function will not take effect if you set the focus window on a distant background.*

Configuring Privacy Mask

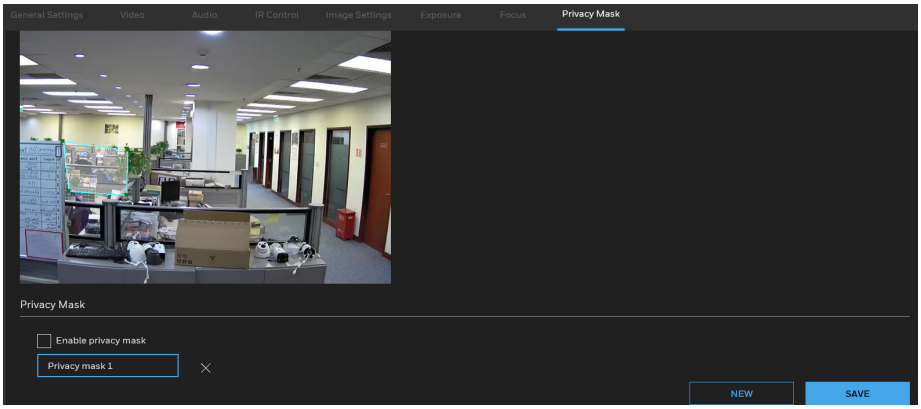
On this page, you can block out sensitive view areas to address privacy concerns.

Go to **Setup → Camera Setup → Privacy Mask**.

To configure privacy masks for Non-PTZ models:

1. Click NEW to add a new privacy mask window on the video screen.
2. Use 4 mouse clicks to create a new mask window, which is recommended to be at least twice the size of the object (height and width) you want to cover.
3. Enter a name for the privacy mask and click SAVE to enable the setting.
4. Check Enable privacy mask to enable this function.

Figure 46 Privacy Mask



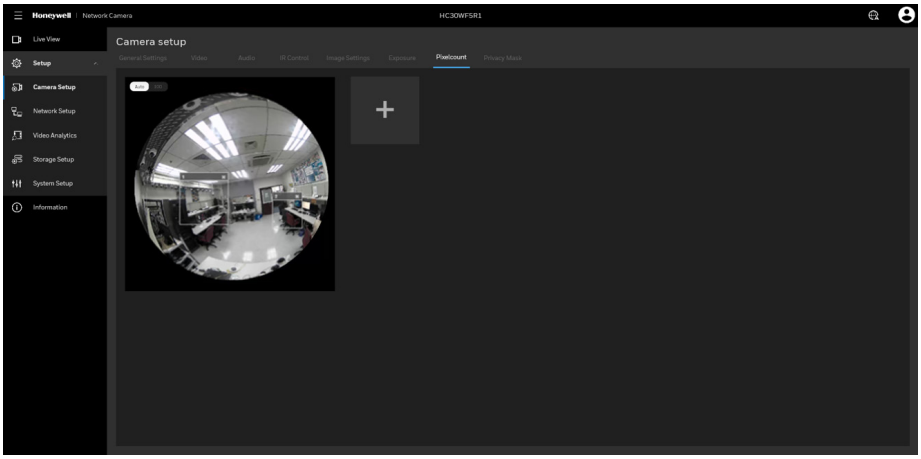
Note:
- *Up to 5 privacy mask windows can be configured on the same screen.*
- *If you want to delete the privacy mask window, click ✕ on the right side of privacy mask window name.*

Pixel Calculator (Fisheye Model Only)

With the pixel calculator feature, you can estimate a coverage area, the distance from the subject, and place a ruler or an object of known size. You can then draw a calculator frame to cover the subject of your interest.

Go to **Setup → Camera Setup → Pixelcount**.

Figure 47 Pixel Calculator



Perform the following steps to use the pixel calculator feature:

1. Click  to create a pixel calculator window.
2. Move it to an area of your interest.
3. Place the cursor to the right bottom corner of window and drag the corner to change the size of window.
4. The calculated numbers will be listed at the lower screen. You can see if the current setting fulfills your requests for the number of pixels. For instance, for recognizing the faces of persons passing through a location. A facial recognition usually requires around 130 pixels per meter or higher.

   If your current configuration cannot fulfill a requirement, you can raise the resolution of the stream, use the stream that fulfill the requirement or lower the installation height of camera.

CHAPTER

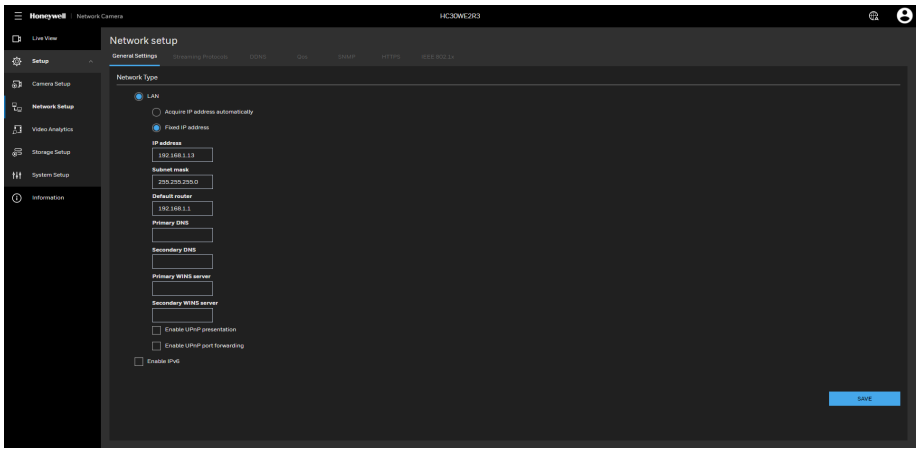
5 CONFIGURING NETWORK

This chapter contains the following sections:

Configuring Network General Settings

This section describes how to configure a wired network connection for the camera.

Figure 48 Network Type



LAN

Acquire IP address automatically: Check to obtain an available dynamic IP address assigned by the DHCP server every time the camera is connected to the LAN.

Fixed IP address: Check to manually assign a static IP address to the camera.

- IP address:

1. Use Unified Tool in the software CD to set up the camera on LAN. See Accessing the Camera on page 4.
2. Enter the Static IP, Subnet mask, Default router, and Primary DNS provided by your ISP or network administrator.
   - Subnet mask: This is used to determine if the destination is in the same subnet. The default value is 255.255.255.0.
   - Default router: This is the gateway used to forward frames to destinations in a different subnet. Invalid router setting will disable the transmission to destinations across different subnets.
   - Primary DNS: The primary domain name server that translates hostnames into IP addresses.
   - Secondary DNS: Secondary domain name server that backups the Primary DNS.
   - Primary WINS server: The primary WINS server that maintains the database of computer names and IP addresses.
   - Secondary WINS server: The secondary WINS server that maintains the database of computer names and IP addresses.

   Enable UPnP presentation: Check to enable UPnP presentation for your camera so that whenever a camera is presented to the LAN, the shortcuts to connected cameras will be listed in Network and Sharing Center. You can click the shortcut to link to the web browser.

Note: Click SAVE to enable the settings after you completed the settings on each page.

Enable UPnP port forwarding: Check to allow the camera to open ports automatically on the router so that video streams can be sent out from a LAN. To utilize of this feature, make sure that your router supports UPnP and it is activated.

Enabling UPnP in Windows

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

The camera can be detected by Windows' built-in network browser.

To enable UPnP in Windows 10:

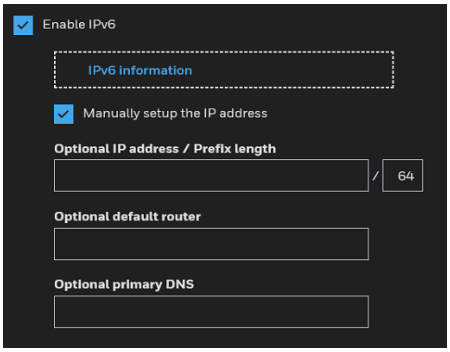
1. Go to Start → Control Panel → Network and Sharing Center.
2. On the left pane, click Change advanced sharing settings.
3. On your current network profile of the Network discovery area, click Turn on network discovery, and then click Save changes.

Enable IPv6

Select this option and click **SAVE** to enable IPv6 settings.

Note: This function only works if your network environment and hardware equipment support IPv6. The browser should be Microsoft® Internet Explorer 11.0+ or Chrome 71+.

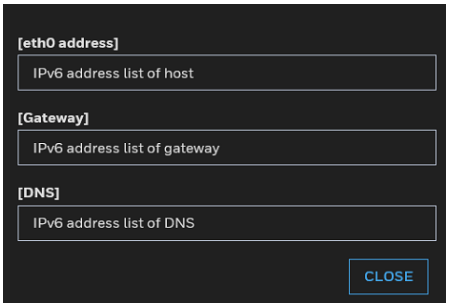
Figure 49 Enable IPv6



When IPv6 is enabled, by default, the network camera will listen to router advertisements and be assigned with a link-local IPv6 address accordingly.

IPv6 Information: Click to obtain the IPv6 information as shown below.

Figure 50 IPv6 Information



If your IPv6 settings are successful, the IPv6 address list will be listed in the pop-up window.

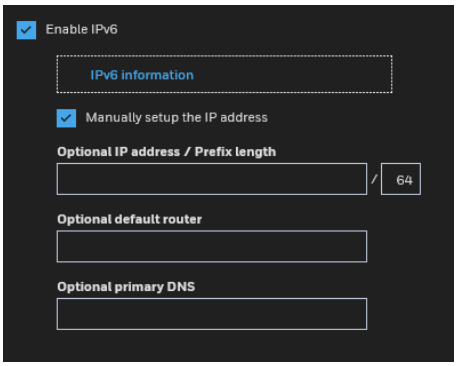
Follow the steps below to link to an IPv6 address:

1. Open your web browser.
2. Enter the link-global or link-local IPv6 address in the address bar of your web browser.
3. The format should be: http://[2001:0c08:2500:0002:0202:d1ff:fe04:65f4]/
4. Press Enter on the keyboard or click Refresh button to refresh the webpage.

Note: If you have a Secondary HTTP port (the default value is 8080), you can also link to the webpage using the following address format: (see Configuring Streaming Protocols on page 44 for detailed information.)

Manually setup the IP address: Check to manually set up IPv6 settings if your network environment does not have DHCPv6 server and router advertisements-enabled routers. If you check this item, the following blanks will be displayed for you to enter the corresponding information:

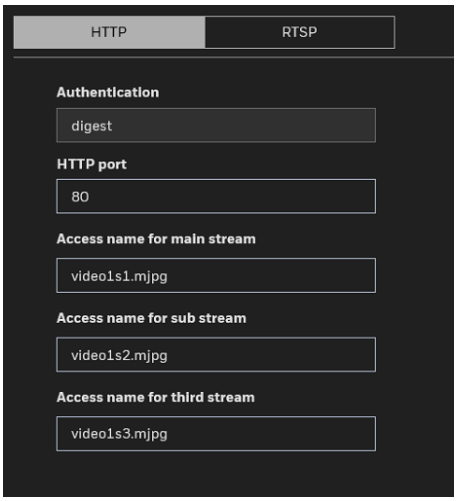
Figure 51 Manually Setup IP Address



Configuring Streaming Protocols

Go to **Setup→Network Setup→Streaming Protocols**.

Figure 52 Streaming Protocols - HTTP



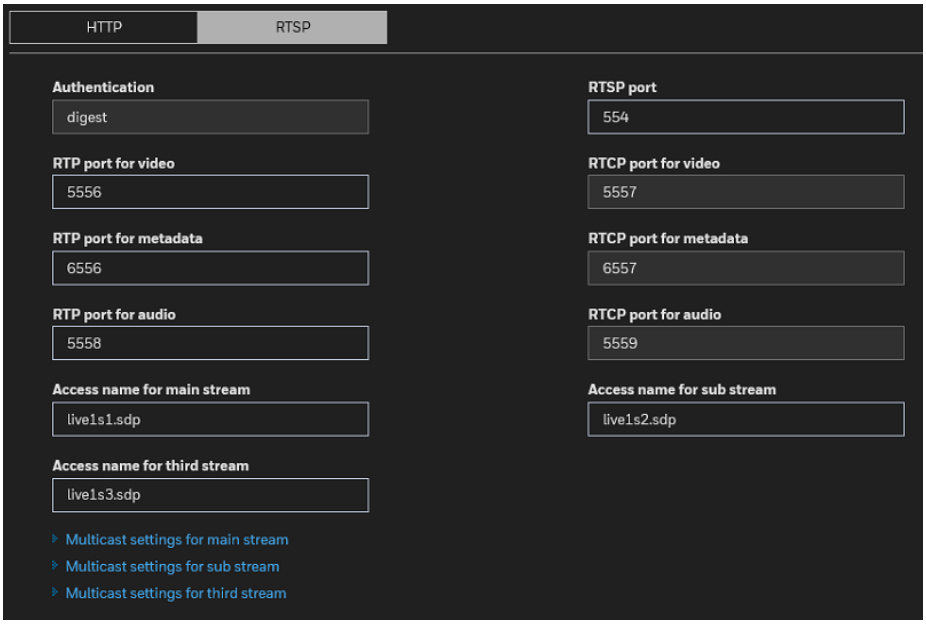
To utilize HTTP authentication, make sure that you have set a password for the camera first. For more information, see Configuring User Accounts Settings on page 82.

Authentication (digest): User credentials are encrypted with MD5 algorithm which provide better protection against unauthorized accesses.

HTTP port: By default, the HTTP port is set to 80. It can also be assigned to another port number between 1025 and 65535.

Access name for main stream/sub stream/third stream: The camera supports multiple streams simultaneously. The access name is used to identify different video streams. You can set up the video quality of linked streams. For more information, see Video Stream on page 28.

Figure 53 Streaming Protocols – RTSP



To utilize RTSP streaming authentication, make sure that you have set a password for controlling the access to video stream first. For more information, see Configuring User Accounts Settings on page 82.

Authentication (digest): User credentials are encrypted with MD5 algorithm which provides better protection against unauthorized access.

Access name for main stream/sub stream/third stream: The camera supports multiple streams simultaneously. The access name is used to differentiate the streaming source.

If you want to use an RTSP player to access the camera, you must set the video mode to H.264 or H.265 and use the following RTSP URL command to request transmission of the streaming data.

rtsp://<ip address>:<rtsp port>/<access name for stream 1 to 3>

For example, when the access name for stream 1 is set to live.sdp:

1. Launch an RTSP player.
2. Choose File → Open URL. A URL dialog box will pop up.
3. Type the above URL command in the text box.
4. The live video will be displayed in your player.

RTSP port/RTP port for video/RTCP port for video:

- RTSP (Real-Time Streaming Protocol) controls the delivery of streaming media. By default, the RTSP port number is set to 554.

- The RTP (Real-time Transport Protocol) is used to deliver video data to the clients. By default, the RTP port for video is set to 5556.
- The RTCP (Real-time Transport Control Protocol) allows the camera to transmit the data by monitoring the Internet traffic volume. By default, the RTCP port for video is set to 5557.

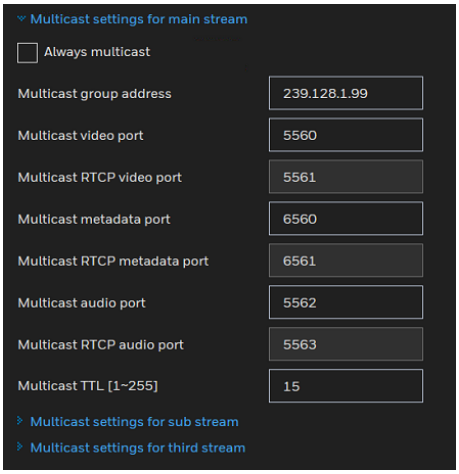
The ports can be changed to values between 1025 and 65535. The RTP port must be an even number and the RTCP port is the RTP port number plus one, and thus is always an odd number. When the RTP port changes, the RTCP port will change accordingly.

RTP port for metadata: By default, the RTP port for metadata is set to 6556.

RTCP port for metadata: By default, the RTCP port for video is set to 6557.

Multicast settings for streams: Click to display the detailed configuration information.

Figure 54 Multicast Settings



Always multicast: Check to enable multicast for video streams.

Multicast group address: Enter the Multicast group address.

Multicast video port/Multicast RTCP video port: The ports can be changed to values between 1025 and 65535. The multicast video port must be an even number and the multicast RTCP video port number is the multicast video port number plus one, and thus is always odd. When the multicast video port changes, the multicast RTCP video port will change accordingly.

Multicast metadata port/Multicast RTCP metadata port: The ports can be changed to values between 1025 and 65535. The multicast metadata port must be an even number and the multicast RTCP metadata port number is the multicast metadata port number plus one, and thus is always odd. When the multicast metadata port changes, the multicast RTCP metadata port will change accordingly.

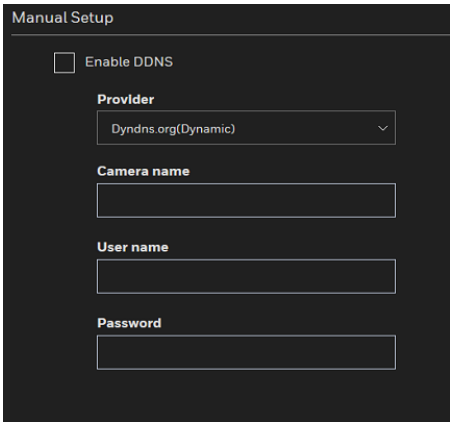
Multicast TTL [1~255]: The multicast TTL (Time to Live) is the value that defines the router the range a packet can be forwarded. The default value is **15**.

Configuring DDNS Settings

Go to **Setup→Network Setup→DDNS**.

This section describes how to configure the dynamic domain name service for the camera. DDNS is a service that allows your camera, especially when assigned with a dynamic IP address, to have a fixed host and domain name.

Figure 55 DDNS



Enable DDNS: Check to enable the DDNS setting.

Note: *Before utilizing this function, apply for a dynamic domain account first and then access the system through that domain. Refer to the following link to apply for a dynamic domain account:*
http://www.dyndns.com/

Provider: Select a DDNS provider from the drop-down list.

Camera name: Enter the camera name of your dynamic domain account.

User name: Enter the user name of your dynamic domain account.

Password: Enter the password of your dynamic domain account.

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.

To utilize QoS in a network environment, the following requirements must be met:

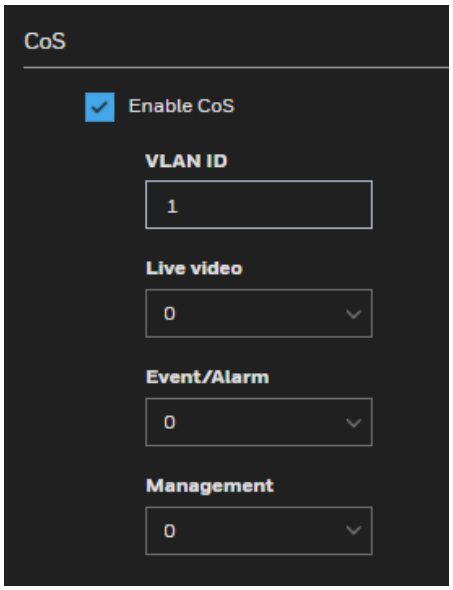
- All network switches and routers in the network must include support for QoS.

- The network video devices used in the network must be QoS-enabled.

CoS

CoS refers to Class of Service. It indicates the frame priority level from 0 (lowest) to 7 (highest). The priority is set up on the network switches, which then use different queuing disciplines to forward the packets.

Figure 56 CoS



Enter the **VLAN ID** of your switch (0~4095) and choose the priority for each application (0~7).

If you assign Video the highest level, the switch will handle video packets first.

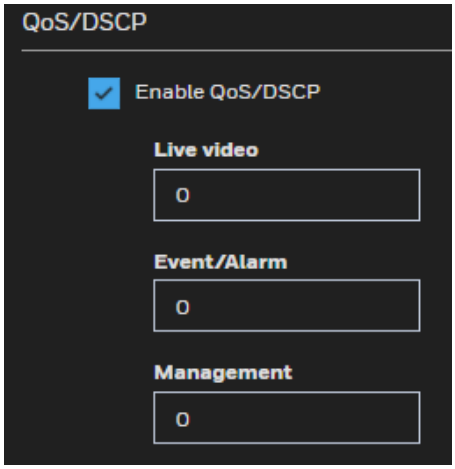
Note:

- *A VLAN Switch (802.1p) is required. Web browsing may fail if the CoS setting is incorrect.*
- *The Class of Service technologies do not guarantee a level of service in terms of bandwidth and delivery time; they offer a "best-effort." Users can think of CoS as "coarsely-grained" traffic control and QoS as "finely-grained" traffic control.*
- *Although CoS is simple to manage, it lacks scalability and does not offer end-to-end guarantees since it is based on L2 protocol.*

QoS/DSCP

Routers at each network node classify packets according to their DSCP (Differentiated Services Codepoint) value and give them a forwarding treatment; for example, how much bandwidth to reserve for it.

Figure 57 QoS/DSCP



Specify the DSCP value for each application (0~63).

Configuring SNMP Settings

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

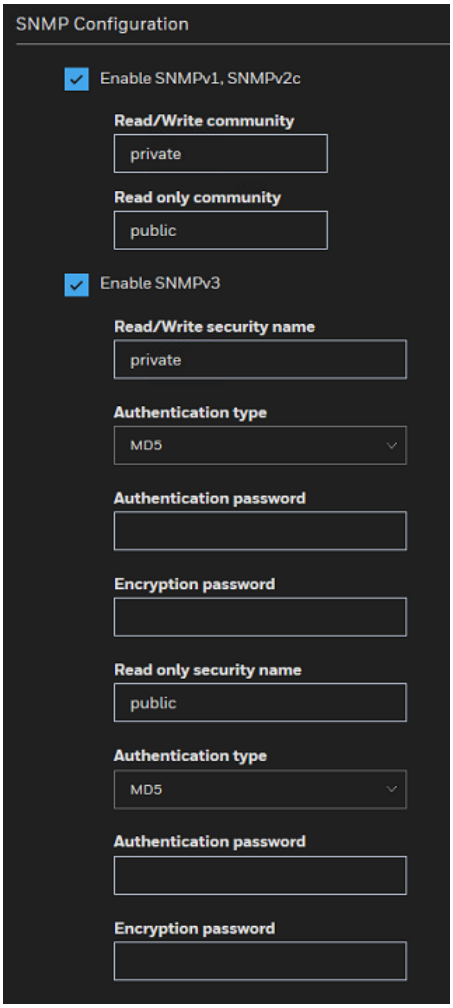
SNMP (Simple Network Management Protocol) is a protocol for collecting, organizing, and exchanging management information between managed devices in a network.

The SNMP consists of the following three key components:

- Manager: Network-management station (NMS), a server which executes applications that monitor and control managed devices.
- Agent: A network-management software module on a managed device which transfers the status of managed devices to the NMS.
- Managed device: A network node in a managed network. For example: routers, switches, bridges, hubs, computer hosts, printers, IP telephones, network cameras, web server, and database.

Before configuring SNMP settings on the page, enable your NMS first.

Figure 58 SNMP Configurations



Enable SNMPv1, SNMPv2c: Check to enable SNMPv1, SNMPv2c.

Enter the names of Read/Write community and Read Only community according to your NMS settings.

Enable SNMPv3: Check to enable SNMPv3 which contains cryptographic security, a higher security level.

- Security name: Choose Read/Write or Read Only and enter the community name according to your NMS settings.
- Authentication type: Select MD5 or SHA as the authentication method.
- Authentication password: Enter the password for authentication (at least 8 characters).
- Encryption password: Enter a password for encryption (at least 8 characters).

Configuring HTTPS Settings

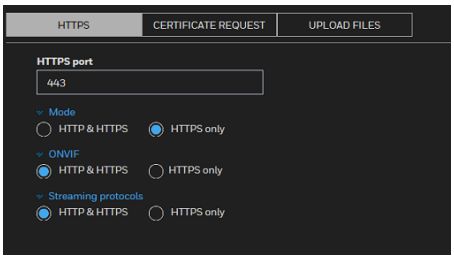
Go to **Setup → Network Setup → HTTPS**.

HTTPS

Go to **Setup → Network Setup → HTTPS → HTTPS**.

This section explains how to enable authentication and encrypted communication. It helps protect streaming data transmission over the Internet on higher security level.

Figure 59 HTTPS



HTTP & HTTPS: Check to enable the web browser to be accessed via HTTP or HTTPS.

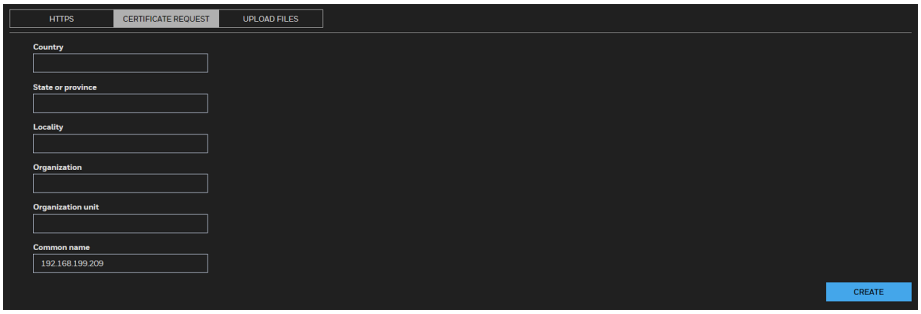
HTTPS only: Check to enable the web browser to be accessed via only HTTPS with higher security level. This option is selected by default.

Certificate Request

Go to **Setup → Network Setup → HTTPS → 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.

Figure 60 Certificate Request



Enter the information of Country, State or province, Locality, Organization and Organization unit. Click **CREATE**.

Click **EXPORT** to export the certificate request to your local computer. After you get the signing certificate from the certificate issuing authority, click **CHOOSE FILE** and **UPLOAD** to import it to the camera. The imported certificate will replace the original self-signed certificate of the camera.

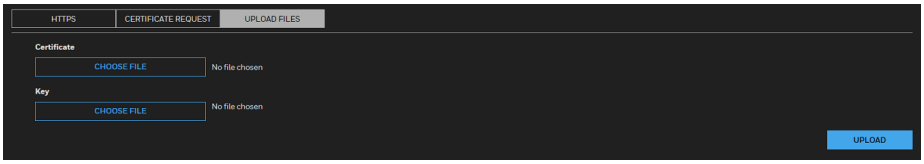
After the certificate file is uploaded successfully, if you want to remove the certificate, click **REMOVE**.

Upload files

Go to **Setup → Network Setup → HTTPS → UPLOAD FILES**.

You can import the certificate from third party here.

Figure 61 Upload Files



To import the certificate from third party:

1. In the Certificate field, click CHOOSE FILE to select a certificate file you have already applied from 3rd party or CA domain.
2. In the Key field, click CHOOSE FILE to select a certificate key you have already applied from 3rd party or CA domain.
3. Click UPLOAD and reboot camera.

   After the certificate file is uploaded successfully, if you want to remove the certificate, click **Remove**.

Note:

- *Supported certificate type: HTTPS protocol.*
- *Supported certificate file format: *.cert format.*
- *Supported Key format: PEM format.*

Configuring IEEE 802.1X 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. The network devices, intermediary switch/access point/hub, and RADIUS server must support and enable 802.1x settings.

To configure IEEE 802.1x settings:

1. Before connecting the camera to the protected network with 802.1x, apply a digital certificate from a Certificate Authority (i.e., your network administrator) which can be validated by a RADIUS server.
2. Connect the camera to a PC or notebook outside of the protected LAN. Open the configuration page of the camera as shown below.

Figure 62 IEEE 802.1X Configurations – EAP-PEAP

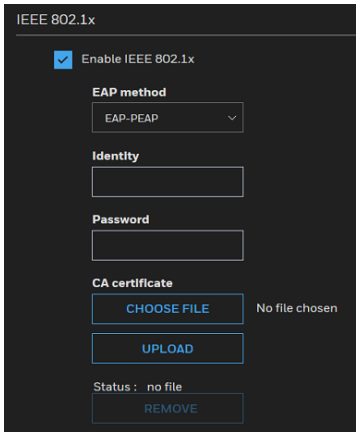
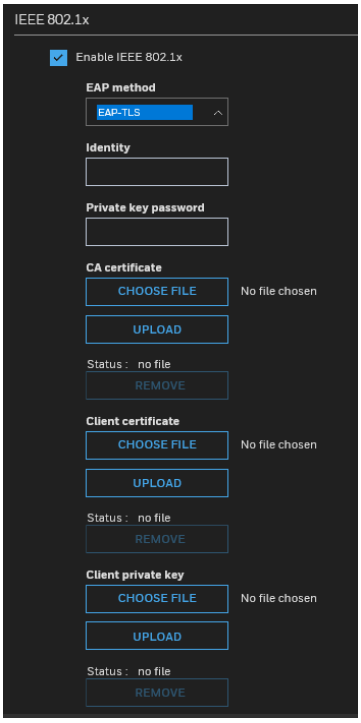


Figure 63 IEEE 802.1X Configurations – EAP-TLS



Select **EAP-PEAP** or **EAP-TLS** as the EAP method. Enter your ID and password issued by the CA, and then upload related certificate(s).

3. When all settings are complete, move the camera to the protected LAN by connecting it to an 802.1x enabled switch. The devices will then start the authentication automatically.

CHAPTER

6 CONFIGURING VIDEO ANALYTICS

This chapter contains the following sections:

Configuring Motion Detection Settings

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

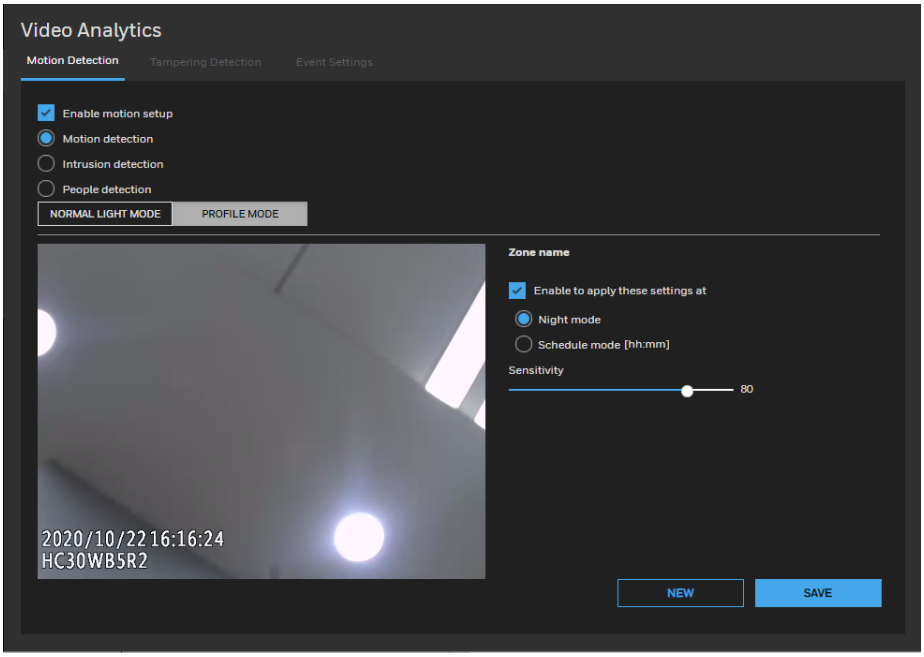
Two sets of motion detection settings are available:

- In **Normal Light Mode** tab, configure normal situations for motion detection settings.
- In **Profile Mode** tab, configure special situations for motion detection settings.

  Night Mode: Check **Enable** to apply these settings at and select this mode to apply the settings at night.

  Schedule Mode: Check **Enable** to apply these settings at and select this mode to apply the settings at a specific period. Enter the time manually in the field.

Figure 64 Motion Detection



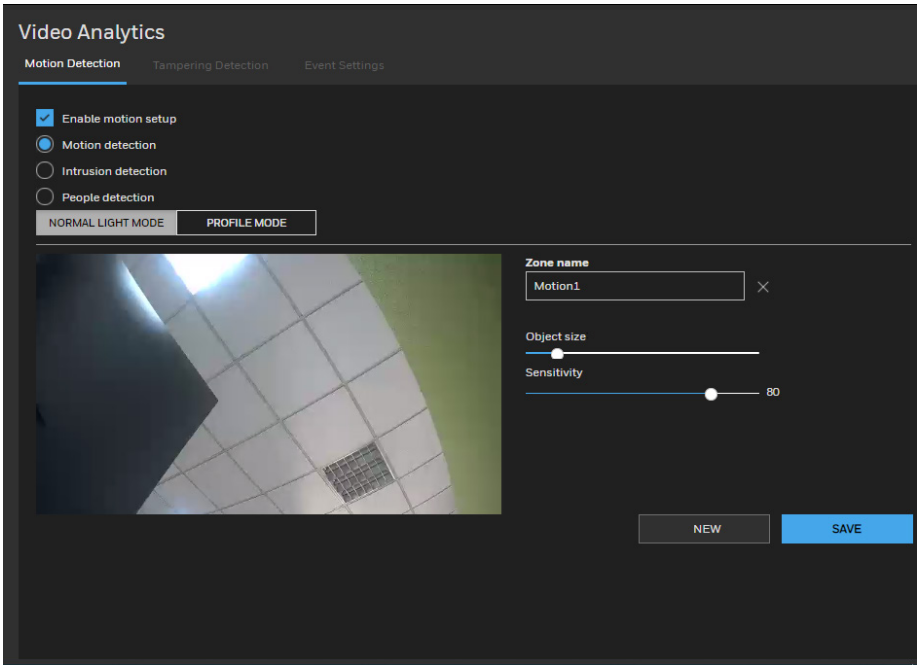
Motion Detection

The Motion Detection detects motions in customized windows. If a motion is detected, the frame of the customized window will become flashing red.

To enable motion detection:

1. Click NEW to add a new motion detection window.
2. In the Window Name text box, enter a name for the motion detection window.
    a. Draw a detection area by clicking four corner points on the target area. You can change the shape of the detection area by dragging the corner points.
    b. Drag the object size slider to change the minimum size of item to trigger an alarm. An object size box will appear in the center of screen for your reference (in semi-transparent red). An intruding object must be larger than the Object size to trigger an alarm. Change the object size according to the live view.
    c. To delete a window, click on the right of the window name.
    d. Define the sensitivity to moving objects by moving the Sensitivity slider. A high sensitivity is prone to produce false alarms such as the fast changes of light (such as day/night mode switch, turning lights on/off). A movement must persist longer than 0.3 second for the motion to be detected.
3. Click SAVE to enable the settings.
4. Select Enable motion detection to enable this function.

Figure 65 Configuring Motion Detection Settings

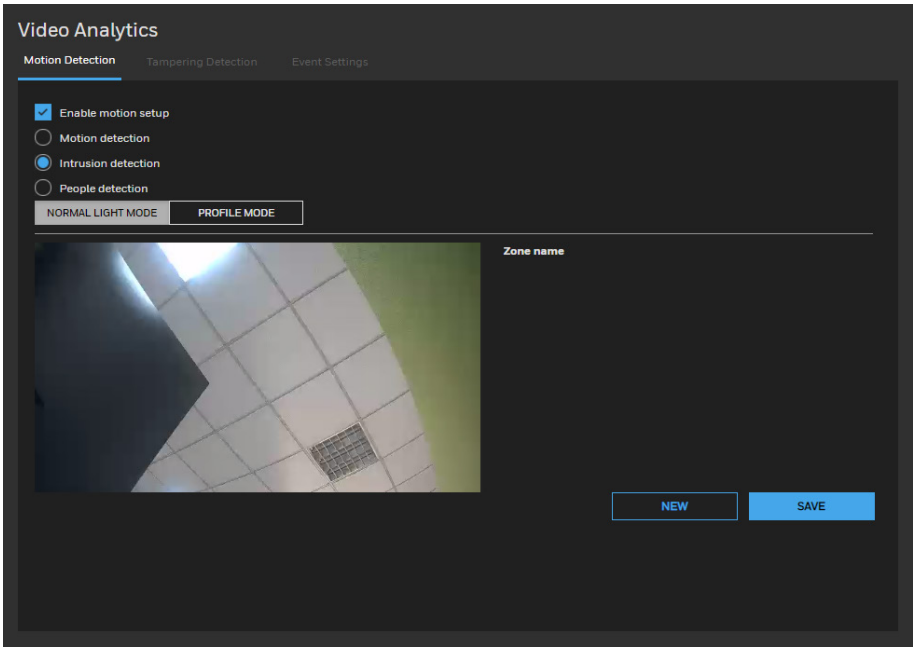


Intrusion Detection

Note: Fisheye model (HC30WF5R1) doesn't support intrusion detection function.

The intrusion detection function detects people motions in customized windows. If a people motion is detected, the frame of the customized window will become flashing red.

Figure 66 Intrusion Detection



To enable intrusion detection:

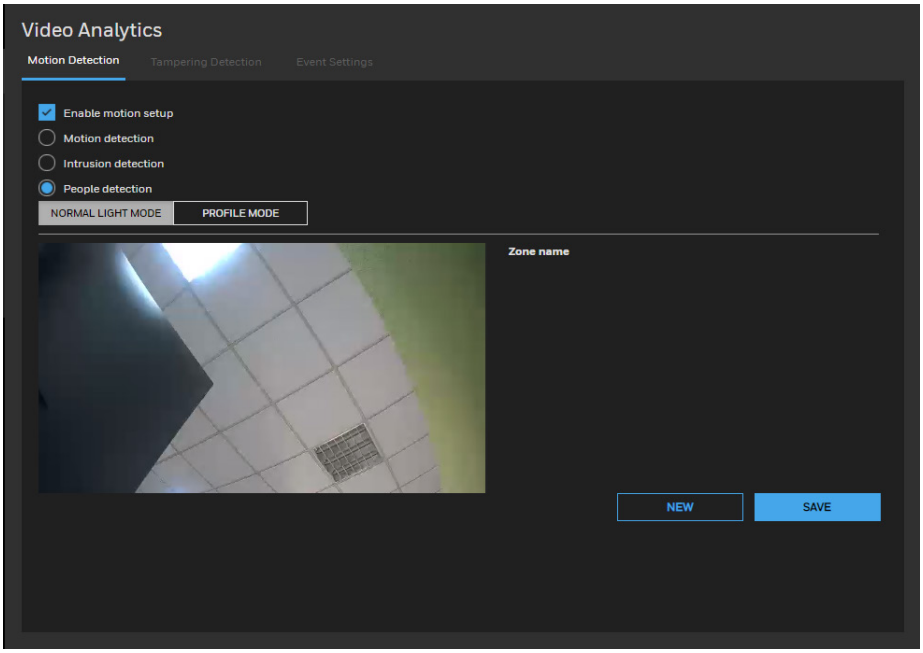
1. Click NEW to add a new intrusion detection window.
2. In the Window Name text box, enter a name for the intrusion detection window. To delete a window, click ✕ on the right of the window name.
3. Draw a detection area by clicking four corner points on the target area. You can change the shape of the detection area by dragging the corner points.
4. Click SAVE to enable the settings.
5. Select Enable motion detection to enable this function.

People Detection

Note: Fisheye model (HC30WF5R1) doesn't support people detection function.

The people detection function can detect and trace people motions in customized windows. If a people motion is detected, a flashing red window will frame the head of the people and follow the motion of the people.

Figure 67 People Detection



To enable people detection:

1. Click NEW to add a new people detection window.
2. In the Window Name text box, enter a name for the people detection window. To delete a window, click ✕ on the right of the window name.
3. Draw a detection area by clicking four corner points on the target area. You can change the shape of the detection area by dragging the corner points.
4. Click SAVE to enable the settings.
5. Check Enable motion detection to enable this function.

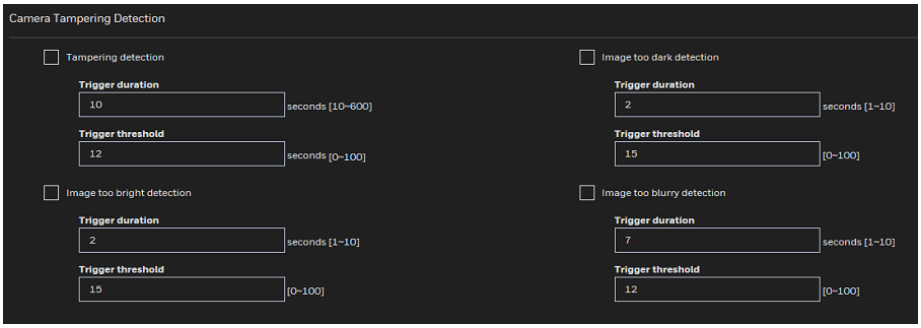
Note: *Only one kind of motion detection (motion detection, intrusion detection or people detection) can be enabled at a time.*

Configuring Tampering Detection Settings

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

This section explains how to configure camera tamper detection settings. With tamper detection, the camera can detect incidents such as **redirection**, **blocking or defocusing**, or even **spray paint**.

Figure 68 Tampering Detection Configurations



Tampering detection: Check to enable tampering detection.

Image too dark detection: Check to enable image too dark detection. Too dark can be a cover on the camera or a spraying paint on the camera.

Image too bright detection: Check to enable image too bright detection. Too bright can be a flashlight shining to the camera.

Image too blurry detection: Check to enable image too blurry detection. To blurry can be the result of strong interference on the camera, such as EMI interference.

Trigger duration: It specifies a set of time before the tampering is considered as a real alarm. This helps avoid false alarms by short-lived changes.

Trigger threshold: It determines how sensitive the tamper detection setting is. The lower the threshold value, the easier the detection is triggered.

You can configure Tampering Detection as a trigger element to the proactive event configurations in **Video Analytics → Event settings → Trigger**. For example, when the camera is tampered with, camera can be configured to send the pre- and post-event video clips to a networked storage device. For more information, see Trigger on page 62.

Configuring Audio Detection

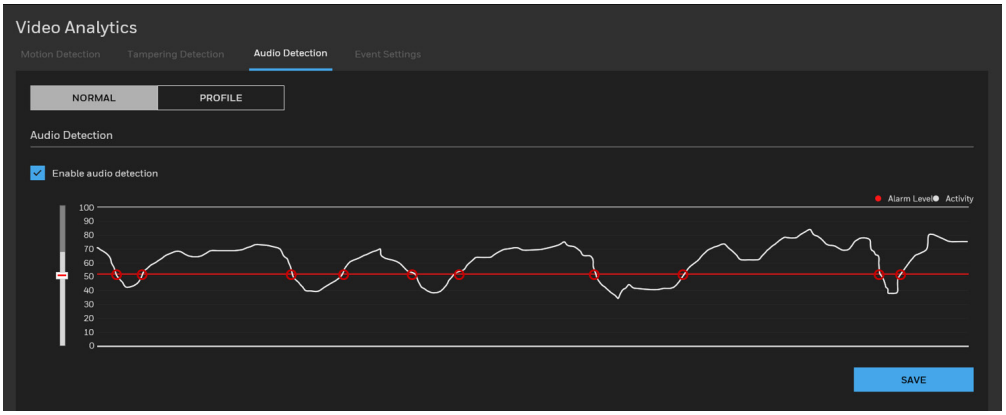
Go to **Setup →Video Analytics → Audio Detection**.

Note: HC30WF5R1/ HC30W25R3/HC30W25R3-12V cameras support this function.

Audio detection, along with video motion detection, is applicable in the following scenarios:

- Detection of activities not covered by camera view, e.g., a loud input by gun shots or breaking a door/ window.
- A usually noisy environment, such as a factory, suddenly becomes quiet due to a breakdown of machines.
- Dark environments where video motion detection may not function well.

Figure 69 Audio Detection: NORMAL Tab



The red circles indicate where the audio alarms can be triggered when exceeding or falling below the preset threshold.

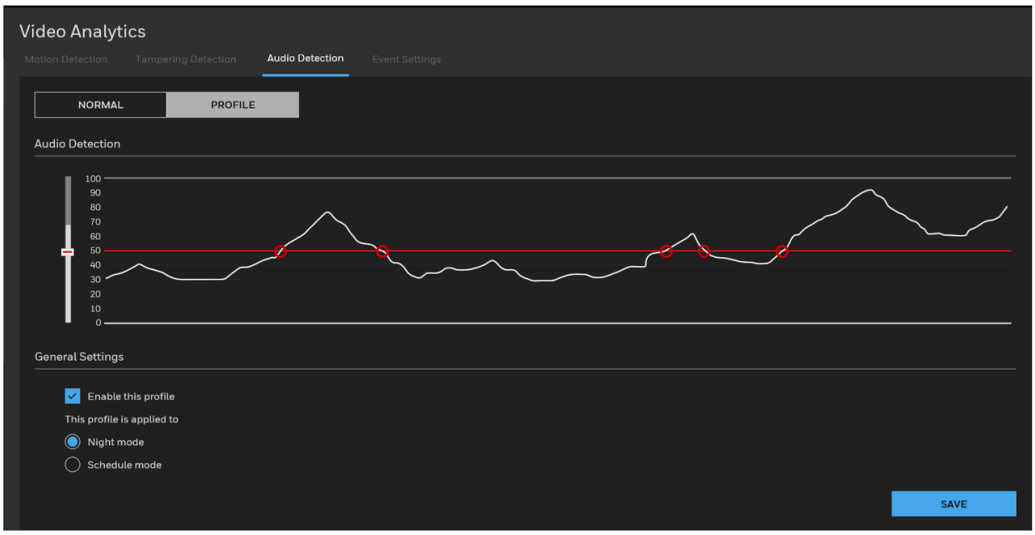
Perform the following steps to configure Audio detection in the **NORMAL** tab:

1. Once the Audio detection window is opened, the current sound input will be interactively indicated by a fluctuating white wave diagram.
2. Drag the Alarm level slider to a preferred location on the left slide bar.
3. Check Enable audio detection and click SAVE.

Note:

- *The volume numbers (0~100) on the left side of wave diagram does not represent decibel (dB). Sound intensity level has already been mapped to preset values. You can, however, use the real-world inputs at your installation site that are shown on the wave diagram to configure an alarm level.*
- *To configure this feature, you must not mute the audio in Setup →Camera Setup → Audio. The default of the camera can be muted due to the lack of an internal microphone. An external microphone is provided by users.*

Figure 70 Audio Detection: PROFILE Tab



You can configure a different audio detection setting in the **PROFILE tab**. For example, a place can be noisy in the day time and become very quiet in the night.

1. Check Enable this profile. Once the Audio detection window is opened, the current sound input will be interactively indicated by a fluctuating white wave diagram.
2. Drag the Alarm level slider to a preferred location on the left slide bar.
3. Check the Night mode or Schedule mode. You may also manually configure a period of time during which this profile will take effect.
4. Click SAVE.

Note:

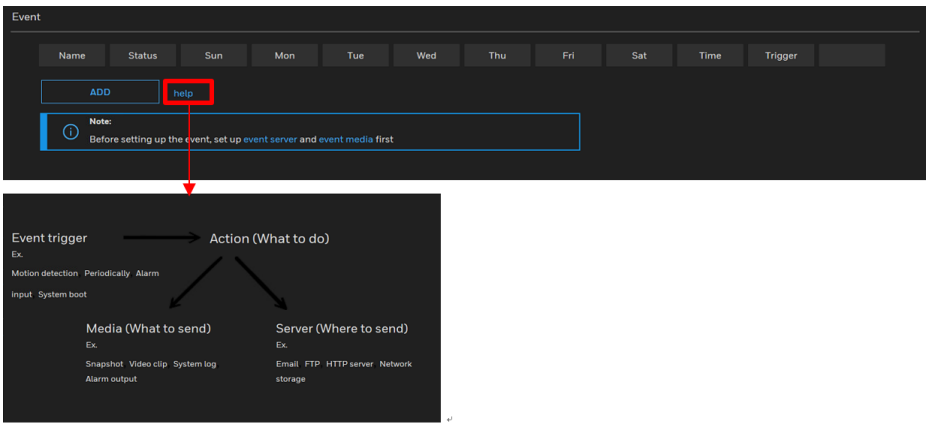
- *If the Alarm level and the received volume are set within a range of 20% on the wave diagram, frequent alarms will be triggered. It is recommended to set the Alarm level farther apart from the detected sound level.*
- *To configure and enable this feature, you must not configure video stream #1 into Motion JPEG. If an external microphone input is connected and recording of audio stream is preferred, audio stream is transmitted between camera and viewer/recording station along with stream #1.*

Configuring Event Settings

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

This section describes how to configure the camera to respond to some situations (events). A typical application is that when a motion is detected, the camera sends buffered images to an e-mail address as notifications. Click **Help**, there is an illustration shown in the pop-up window explaining that an event can be triggered by many sources, such as motion detection or external digital input devices. When an event is triggered, you can specify what type of action that will be performed. You can configure the camera to send snapshots or videos to your email address.

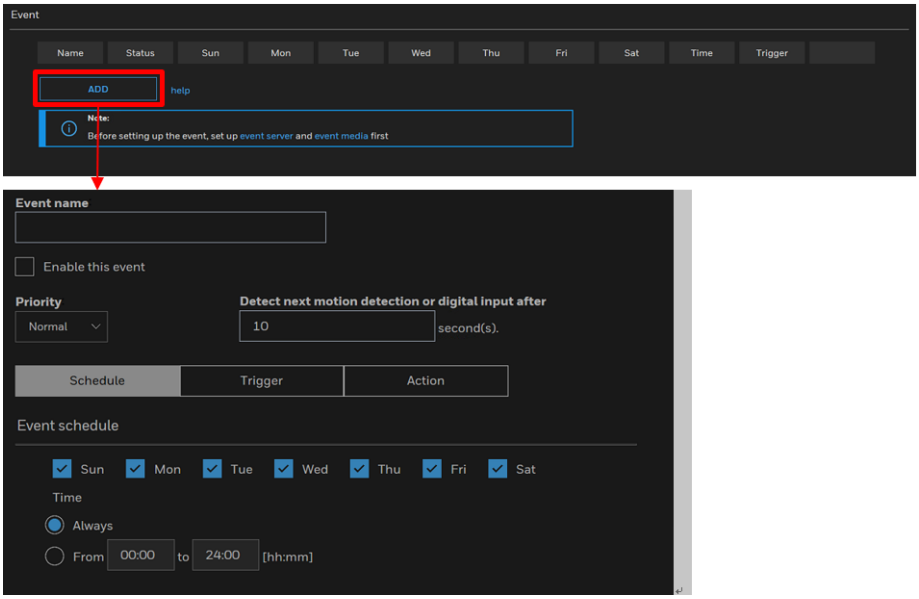
Figure 71 Event Settings



Adding Events

In the **Event** tab, click **ADD** to open the event settings window. To set an event, you should configure **Schedule**, **Trigger**, and **Action**.

Figure 72 Event



- **Event name**: Enter a name for the event setting.
- **Enable this event**: Check to enable the event setting.
- **Priority**: Select the relative importance of this event (**High**, **Normal**, or **Low**). Events with a higher priority setting will be executed first.
- **Detect next motion detection or digital input after x seconds**: Enter the duration in seconds to pause motion detection after a motion is detected. This can prevent event-related actions to take place too frequently.

Schedule

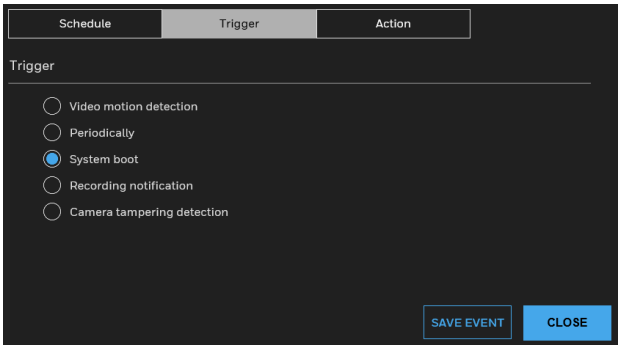
Specify the time period during which the event trigger will take effect. Select the days of a week and the time in a day (in 24-hr time format) for the event triggering schedule. For example, you can trigger an event only during the off-office hours.

Trigger

This is the cause or stimulus which defines when to trigger the camera.

There are several choices of trigger sources as shown below:

Figure 73 Trigger Sources



Video motion detection

This option makes use of the built-in motion detection mechanism as a trigger source. To enable this function, you need to configure a Motion Detection Window first. For more information, see Configuring Motion Detection Settings on page 54.

Periodically

This option allows the camera to trigger periodically for every other defined minutes. Up to 999 minutes can be set.

System boot

This option triggers the camera when the power to the camera is disconnected and re-connected.

Recording notification

This option allows the camera to trigger when the recording disk is full or when recording starts to overwrite older data.

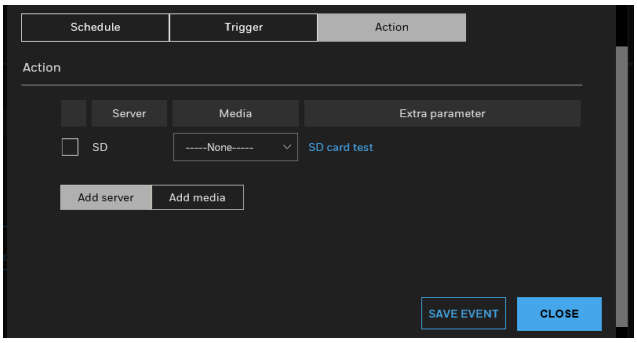
Camera tampering detection

This option allows the camera to trigger when the camera detects that is being tampered with. To enable this function, you need to configure the **Tampering Detection** option first, see Configuring Tampering Detection Settings on page 58.

Action

It defines the actions to be performed by the camera when a trigger is activated.

Figure 74 Action



SD card test: Click to test your SD card. The system will display a message indicating the result as a success or a failure. If you want to use your SD card for local storage, format it before use. For more information, see SD Card Format on page 70.

View: Click to open a file list window. This function is only for SD card and network storage.

- If you click the View button for an SD card, a content management page will prompt so that you can manage the recorded files on SD card. For more information, see Content Management on page 71.
- If you click the View button for network storage, a file directory window will prompt for you to view recorded data on network storage.

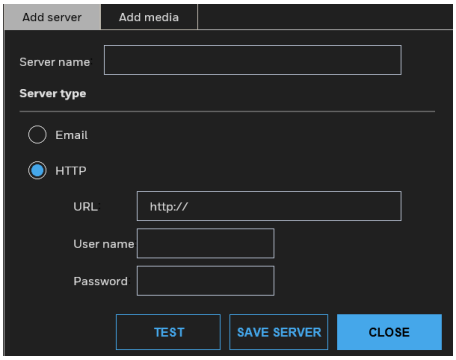
Create folders by date, time, and hour automatically: If you select this item, the system will automatically create folders by the date when video footages are stored onto the network storage.

Add Server

Click **Add server** to open the server setting window. You can specify where the notification messages are sent to when a trigger is activated. A total of 5 server settings can be configured.

There are the following server types available: Email and HTTP. Select the item to display the detailed configuration options. You can configure either one or all of them.

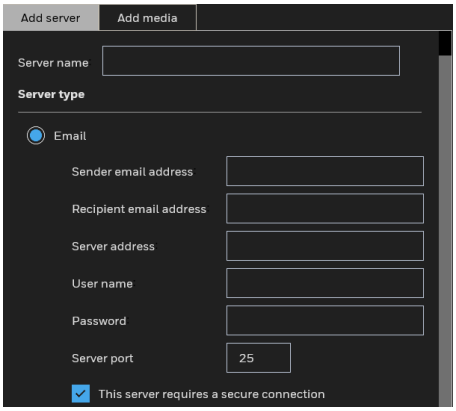
Figure 75 Add Server



Server Type - Email

Select to send the media files via email when a trigger is activated.

Figure 76 Server Type - Email



- Server name: Enter a name for the server setting.
- Sender email address: Enter the email address of the sender.
- Recipient email address: Enter the email address of the recipient.
- Server address: Enter the domain name or IP address of the email server.
- User name: Enter the user name of the email account if necessary.
- Password: Enter the password of the email account if necessary.
- Server port: The default mail server port is set to 25. You can also manually set another port.
- If your SMTP server requires a secure connection (SSL), select **This server requires a secure connection**.
- To verify if the email settings are correctly configured, click **TEST**. The result will be shown in a pop-up window. If successful, you will also receive an email indicating the result.

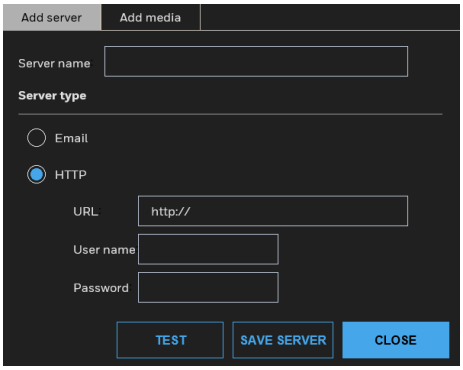
Click **SAVE SERVER** to enable the settings.

After you configure the first event server, the new event server will be automatically display on the Server list. If you wish to add other server options, click **Add server**.

Server type - HTTP

Select to send the media files to an HTTP server when a trigger is activated.

Figure 77 Server Type – HTTP



- Server name: Enter a name for the

server setting.

- URL: Enter the URL of the HTTP server.
- User name: Enter the user name if necessary.
- Password: Enter the password if necessary.

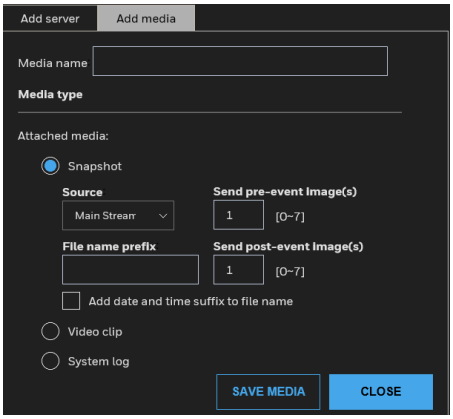
To verify if the HTTP settings are correctly configured, click **TEST**. The result will be shown in a pop-up window. If successful, you will receive a test.txt file on the HTTP server.

Click **SAVE SERVER** to enable the settings.

Add Media

Click **Add media** to open the media setting window. You can specify the type of media that will be sent when a trigger is activated. There are three choices of media types available: Snapshot, Video Clip, and System log. Select the item to display the detailed configuration options. You can configure either one or all of them.

Figure 78 Add Media



Media type - Snapshot

Select to send snapshots when a trigger is activated.

- Media name: Enter a name for the media setting.
- Source: Select to take snapshots from any of the video streams.
- Send pre-event image(s)

The camera has a buffer to temporarily hold data up to a certain limit. Enter a number to decide how many images to capture before a trigger is activated. Up to 7 images can be generated.

- Send post-event image(s)

Enter a number to decide how many images to capture after a trigger is activated. Up to 7 images can be generated.

For example, if both the Send pre-event images and Send post-event images are set to 7, a total of 15 images can be generated after a trigger is activated.

- File name prefix

Enter the text that will be appended to the front of the file name.

- Add date and time suffix to the file name

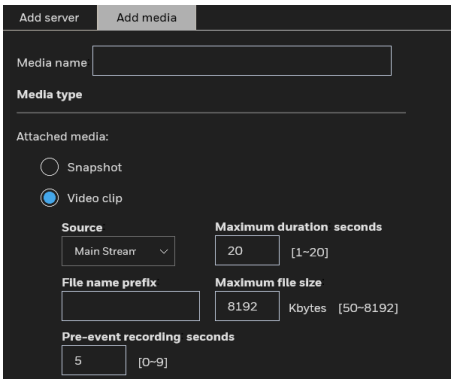
Select this option to add a date/time suffix to the file name.

Click **SAVE MEDIA** to enable the settings. The new media server will be automatically displayed in the Media list. If you wish to add more media options, click **Add media**.

Media type - Video clip

Select to send video clips when a trigger is activated.

Figure 79 Media Type - Video Clip



- Media name: Enter a name for the media setting.
- Source: Select a video stream as the source of video clip.
- Maximum duration seconds

Specify the maximum recording duration in seconds. The duration can be up to 10 seconds.

For example, if pre-event recording is set to five seconds and the maximum duration is set to ten seconds, the camera continues to record for another 4 seconds after a trigger is activated.

- File name prefix

Enter the text that will be appended to the front of the file name.

- Maximum file size

Specify the maximum file size allowed. Some users need to stitch the video clips together when searching and packing up forensic evidence.

- Pre-event recording seconds

The camera has a buffer to temporarily hold data up to a certain limit. Enter a number to decide the duration of recording before a trigger is activated. Up to 9 seconds can be set.

Click **SAVE MEDIA** to enable the settings.

Media type - System log

Select to send a system log when a trigger is activated.

Click **SAVE MEDIA** to enable the settings, and then click **CLOSE** to exit the page.

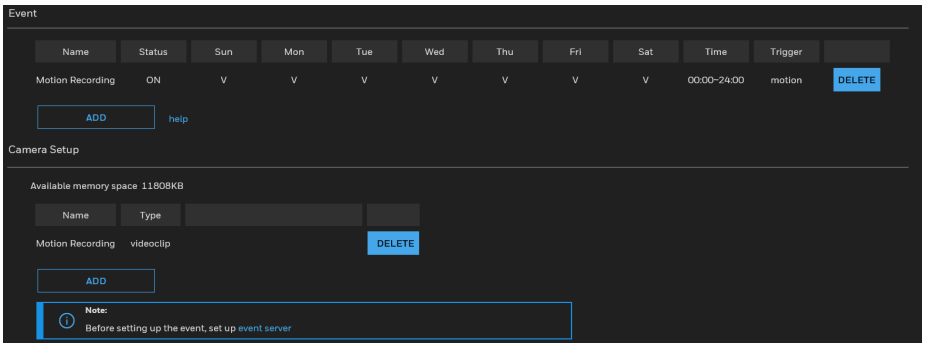
In the **Event Settings** tab, the **Servers** and **Medias** you configured will be listed.

Note: Make sure the Event Status is set to ON to enable the event triggering action.

When completed, click **SAVE EVENT** to enable the settings and click **CLOSE** to exit.

See the example of the **Event Settings** page below:

Figure 80 Event Settings Examples



When the **Event Status** is **ON**, the event configuration above is triggered by motion detection, the camera will automatically send snapshots via e-mail.

If you want to stop the event trigger, click on the **ON** button to turn it to **OFF** status or click **DELETE** to remove the event setting.

- To remove a server setting from the list, select a server name and click **DELETE**.

  You can only delete a server setting when it is not applied in an existing event setting.

- To remove a media setting from the list, select a media name and click **DELETE**.

  You can only delete a media setting when it is not applied in an existing event setting.

CHAPTER

7 CONFIGURING STORAGE

This chapter contains the following sections:

SD Card Management

Go to **Setup → Storage Setup → SD Card Management**.

This section describes how to manage the local storage on the camera. Here you can view SD card status and implement SD card control.

See the following table for compatible SD Card.

Table 5 Compatible SD Card

SD Card Brand	Model	Size	Cameras *	Cameras **
Sandisk	microSDXC UHS-I Card	256G	√	√
Toshiba	microSDXC UHS-I Card	256G	√	√
Samsung	microSDXC UHS-I Card	256G	√	√
Toshiba	microSDXC UHS-I Card	128G	√	√
Sony	Smart SD micro SDXC	64G	√	√
Sony	Ultra microSDHC UHS-I 48MB/s	64G	√	-
Samsung	microSDXC UHS-I Card	64G	-	√
Micron	microSDXC UHS-I Card	64G	-	√
Sandisk	microSDHC UHS-I Card	32G	√	√

- Cameras * refers to: HC30W42R3/HC30W45R3/HC30W45R2/HC30WB2R1/HC30WB5R1/HC30WB5R2/HC30WE2R3/HC30WE5R3/HC30WE5R2/HC30WF5R1

- Cameras ** refers to: HC30W25R3/HC30W25R3-12V

Note:

- *It is recommended to use the Class 10 SD card.*
- *It is recommended to turn OFF the recording activity before you remove an SD card from the camera.*
- *The lifespan of an SD card is limited. Regular replacement of the SD card can be necessary.*
- *Camera file system takes up several megabytes of memory space. The storage space cannot be used for recording.*
- *Using an SD card that already contains data recorded by another device should not be used in this camera.*
- *Do not modify or change the folder names in the SD card. That may result in camera malfunctions.*
- *If you want to use the SD card in another camera, format the SD card in another camera first. For how to format the SD card, see* SD Card Format *on page* 70*.*

SD Card Status

This tab shows the status and reserved space of your SD card. Remember to format the SD card when using it for the first time, see *SD Card Format* on page *70*.

Figure 81 No SD Card

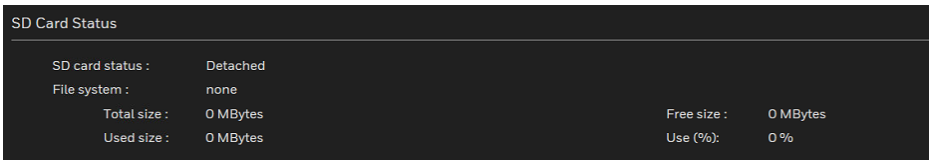
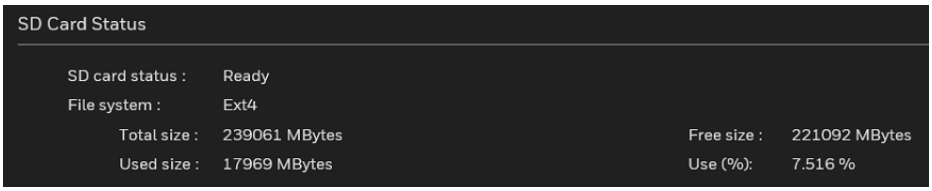


Figure 82 SD Card Onboard



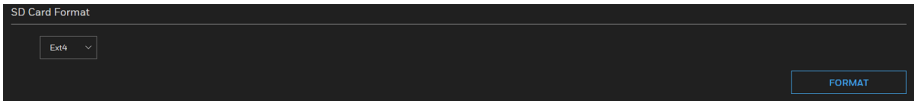
SD Card Format

To format the SD Card, click **FORMAT**.

Note:

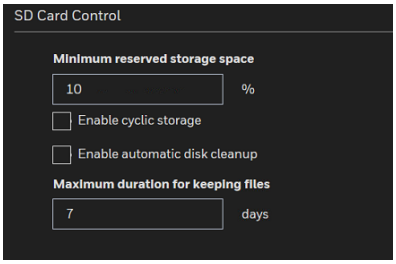
- *SD card encryption by LUKS (Linux Unified Key Setup)*
- *Please wait for a while to format a SD card. It takes 1 to 2 minutes to format a 4G SD card, 10 to 15 minutes to format a 128G card, and 15 to 25 minutes to format a 256G card.*

Figure 83 SD Card Format



SD Card Control

Figure 84 SD Card Control



Minimum reserved storage space: Enter a percentage for minimum storage space you want to reserve.

- **Enable cyclic storage**: Check to enable cyclic recording. When the maximum capacity is reached, the oldest file will be overwritten by the latest one.
- **Enable automatic disk cleanup**: Check to enable automatic disk cleanup. Enter the number of days you wish to retain a file. For example, if you enter “7 days”, the recorded files will be stored on the SD card for 7 days.

Maximum duration for keeping file: Enter a day number for maximum duration for keeping files.

Click **SAVE** to enable settings.

Content Management

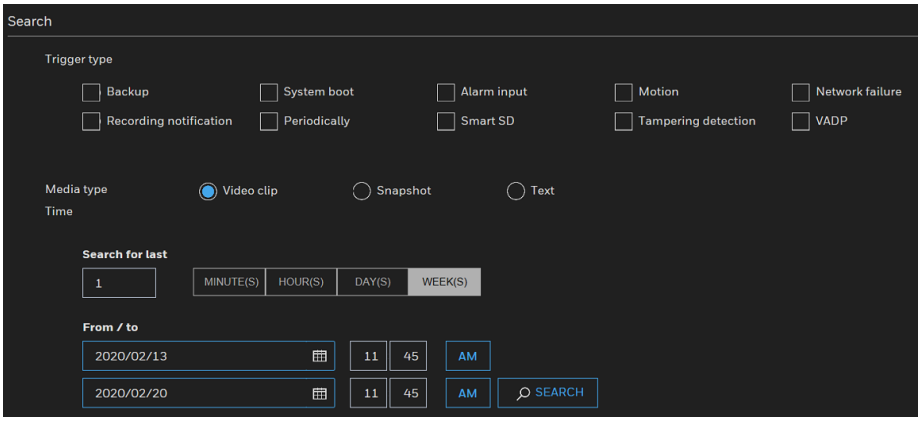
Go to **Setup → Storage Setup → Content Management**.

This section describes how to manage the content of recorded videos on the camera. You can search and view the records and view the searched results.

Searching and Viewing the Records

This tab allows the user to set up search criteria for recorded data. When clicking **SEARCH** without selecting any criteria, all recorded data will be listed in the **Search Results** tab.

Figure 85 Search the Records



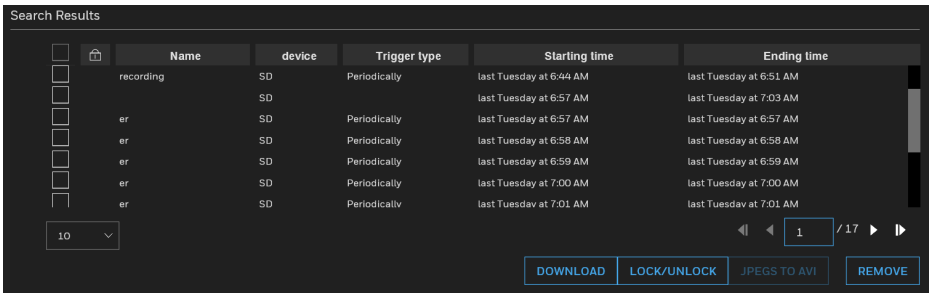
- **Trigger Type**: Select one or more trigger types.
- **Media Type**: Select a media type (Video clip, snapshot or text).
- **Time**: Manually enter the time range you want to search for contents created at a specific point in time.

Click **SEARCH** and the recorded data corresponding to the search criteria will be listed in **Search Results** tab.

Search Results

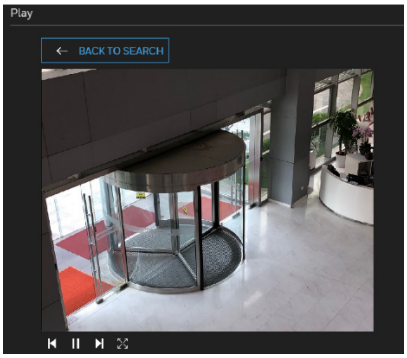
The following is an example of search results. To sort the search results, click each column header.

Figure 86 Search Results



- **Play**: Click on a search result and a **Play** window will be displayed for immediate review of the selected file.

Figure 87 Play Search Result



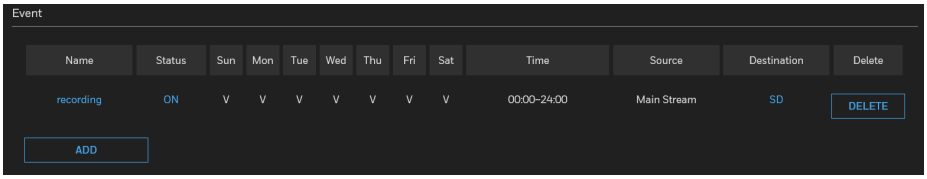
- **Download**: Click on a search result and click **DOWNLOAD**, and a file download window will pop up for you to save the file. You can play the video clip by VLC player.
- **JPEGs to AVI**: This function only applies to "JPEG" format files such as snapshots. You can select several snapshots from the list and then click **JPEGS TO AVI**. Those snapshots will be converted into an AVI file.
- **Lock/Unlock**: Select the checkbox in front of a desired search result, then click **LOCK/UNLOCK**. The selected items will become Locked, which will not be deleted during cyclic recording. You can click again to unlock the selections.
- **Remove**: Select the desired search results, then click REMOVE to delete the files.

Recording Settings

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

This section describes how to configure the recording settings for the camera.

Figure 88 Recording Settings



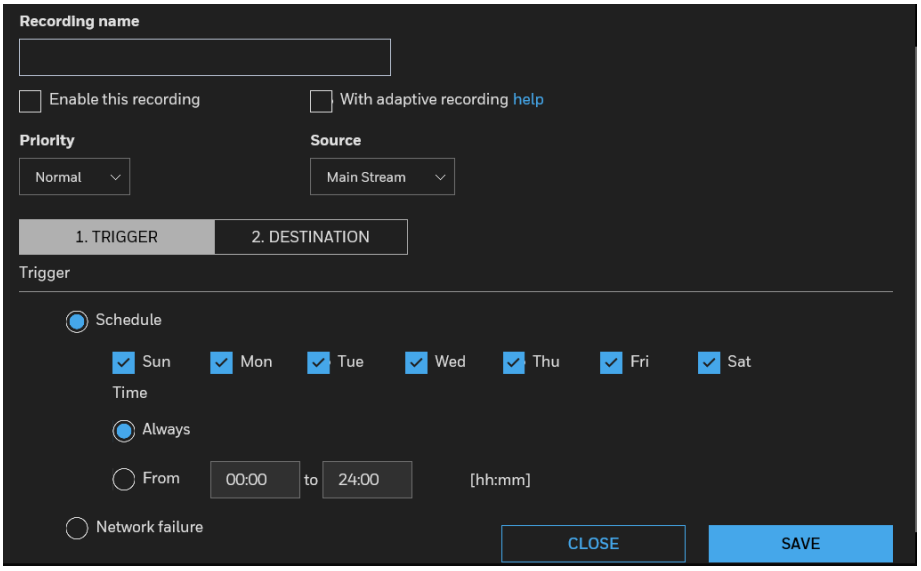
SD Test: Insert the SD card and click here to test.

Note: *Format your SD card via the camera's web console when using it for the first time. For more information, see* SD Card Status *on page* 70.

Adding a Recording Setting

Click **Add** to open the recording setting window. On this page, you can define the adaptive recording, recording source, recording schedule, and recording capacity. A total of 2 recording settings can be configured.

Figure 89 Recording Settings Details



- Recording name: Enter a name for the recording setting.
- Enable this recording: Select this option to enable video recording.
- With adaptive recording:

Select this option will activate the frame rate control according to alarm trigger.

The frame control means that when there is a triggered alarm, the frame rate will raise up to the value you've configured on the Video quality page. For more information, see Smart Codec Configuration on page 30.

If you enable adaptive recording on a camera, only when an event is triggered on camera will the server record the full frame rate streaming data; otherwise, it will only request the I frame data during normal monitoring, thus effectively saves bandwidths and storage space.

Note:

- *To enable adaptive recording, make sure you've set up the trigger source such as Motion Detection or Manual Trigger. For more information, see Configuring Event Settings on page 61.*
- *When there is no alarm trigger:*
- *JPEG mode: record 1 frame per second.*
- *H.264 mode: record the I frame only.*
- *When the I frame period is >1s on Video settings page, firmware will force decreasing the I frame period to 1s when adaptive recording is enabled.*

- Pre-event recording and post-event recording

  The camera has a buffer that temporarily holds data for a period. Therefore, when an event occurs, the camera can retrieve image frames taken several seconds ago. Enter a number to define the duration of recording before and after a trigger is activated.

- Priority: Select the relative importance of this recording (High, Normal, or Low).

Recording with a higher priority setting will be executed first.

- Source: Select a video stream as the recording source.

Note: *To enable recording notification, configure Event settings first, see Configuring Event Settings on page 61.*

Setting up a Recording

To set up a recording:

1. Select a trigger source.

   Schedule: The server will start to record files on the local storage.

   Network failure: When network fails, the server will start to record files on the local storage (SD card).

2. Set a destination (SD) for the recorded video files.

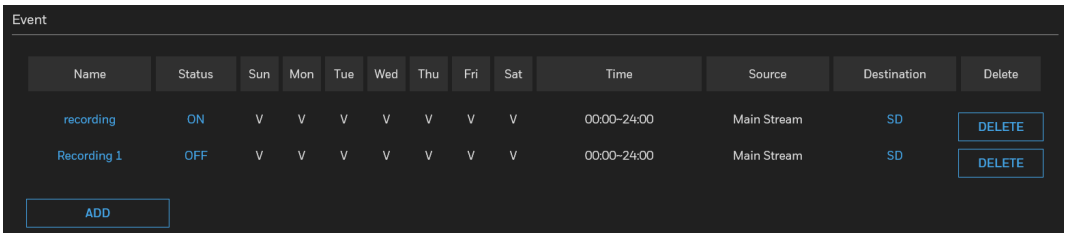
   - Manually assign the Maximum duration and the Maximum file size for each recording footage.
   - File name prefix: Enter the text that will be appended to the front of the file name.

   If you want to enable recording notification, click **Event** to configure event triggering settings. For more information, see Configuring Event Settings on page 61.

   When completed, select **Enable this recording**. Click **SAVE** to enable the setting and click **CLOSE** to exit this page. When the system begins recording, it will send the recorded files to the network storage. The new recording name will be displayed on the recording settings page as shown below.

   To remove a recording setting from the page, click **DELETE**.

Figure 90 Recording 1



- Click Recording 1 (Name): Open the Recording Settings page to modify.
- Click ON (Status): The Status will become OFF and stop recording.
- Click SD (Destination): Open the file list of recordings.

CHAPTER

8 CONFIGURING SYSTEM

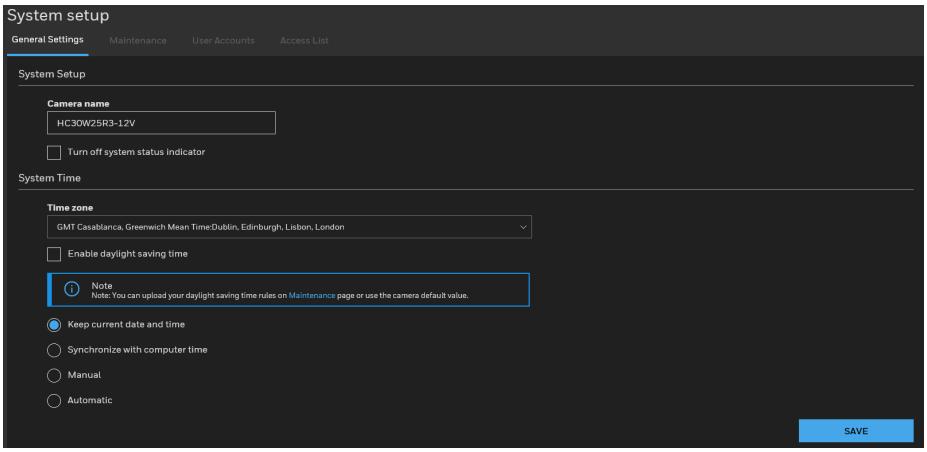
This chapter contains the following sections:

Configuring System General Settings

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

This section explains how to configure the basic settings for the camera, such as the host name and system time.

Figure 91 Configuring System General Settings



Camera Name: Enter a name for the camera. The text will be displayed at the top of the main page.

Turn off system status indicator: If you don't want others to notice the network camera is in operation, you can select this option to turn off the system status indicators.

Time zone: Select the appropriate time zone from the drop-down list. If you want to upload **Daylight Savings Time** rules, see Configuring Maintenance Settings on page 77.

Keep current date and time: Select this option to preserve the current date and time of the camera. The camera's internal real-time clock maintains the date and time even when the power of the system is turned off.

Synchronize with computer time: Select this option to synchronize the date and time of the camera with the local computer. The read-only date and time of the PC is displayed as updated.

Manual: The administrator can enter the date and time manually. The date and time formats are [yyyy/mm/dd] and [hh:mm:ss].

Automatic: The Network Time Protocol is a protocol which synchronizes computer clocks by periodically querying an NTP Server.

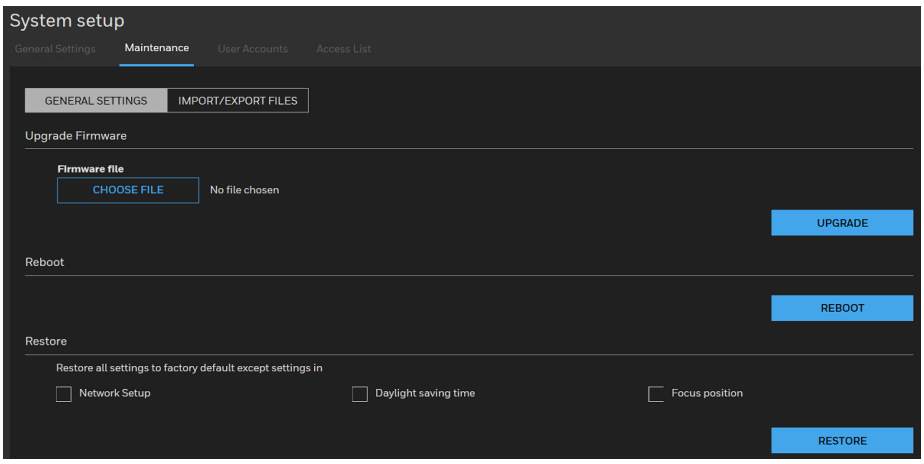
- NTP server: Assign the IP address or domain name of the time server. Leaving the text box blank connects the camera to the default time servers. The precondition is that the camera must have the access to the Internet.
- Updating interval: Select to update the time using the NTP server on an hourly, daily, weekly, or monthly basis.

Configuring Maintenance Settings

Go to **Setup → System Setup → Maintenance**.

This chapter describes how to restore the camera to factory default, upgrade firmware version and so on.

Figure 92 Maintenance Settings



Upgrading Firmware

You can upgrade the firmware of the camera on the **GENERAL SETTINGS** tab. It takes a few minutes to complete the process.

Note:
- *Do not power off the camera during the upgrade.*
- *If an SD card is used in your camera, backup your SD card contents before the upgrade.*

Follow the steps below to upgrade the firmware:

1. Go to Setup → System Setup → Maintenance → GENERAL SETTINGS.
2. Click CHOOSE FILE and locate the firmware file.
3. Click UPGRADE. The camera starts to upgrade and will reboot automatically when the upgrade completes.

Note:
- *If an SD card is used in your camera, it will be formatted automatically after the upgrade. The formatting takes 5 to 20 minutes.*
- *After the SD card is formatted, it will be encrypted and its content cannot be read on other cameras.*
- *If you want to use the SD card in another camera, format the SD card in another camera first. For how to format the SD card, see* SD Card Format *on page* 70*.*
- *A new SD card inserted to camera will also be formatted automatically after the camera is upgraded.*

If the upgrade is successful, the "Reboot system now!! This connection will close" message will be displayed. After that, re-access the camera. If an SD card is inserted to the camera, wait for the SD card formatting to complete.

If the power is disconnected during firmware upgrade or if there is unknown reason causing abnormal LED status, and a Restore cannot recover normal working condition, you can perform the following steps to activate the camera with its backup firmware:

1. Press and hold down the reset button for at least one minute.
2. Power on the camera until the Red LED blinks rapidly.
3. After booting up, the firmware returns to the previous version before the camera hanged and the LED status returns to normal. The procedure takes 5 to 10 minutes, longer than the normal boot-up process.

Rebooting the Camera

On this page, you can reboot the camera. It takes about one minute to complete and then the live video page will be displayed in your browser.

If the connection fails after rebooting, manually enter the IP address of the camera in the address field to resume the connection.

Restoring the Camera

Restore the camera to factory default settings.

Network Setup: Check to retain the network type settings (see Configuring Network General Settings on page 41).

Daylight saving time: Check to retain the daylight saving time settings (see Importing/Exporting Files on page 79).

Custom language: Check this option to retain the custom language settings.

Focus position: Check to retain the lens focus position using the previously saved position parameters.

If none of the options is selected, all settings will be restored to factory default. Click **RESTORE** and the camera will be rebooted.

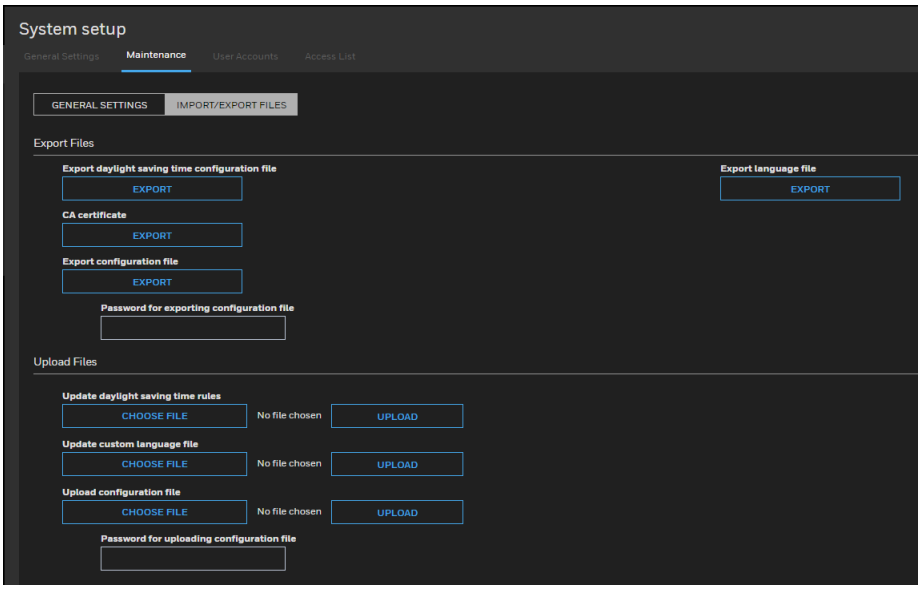
After it is completed, the live video page will be displayed in your browser.

If the connection fails after rebooting, manually enter the IP address of the camera in the address field to resume the connection.

Importing/Exporting Files

Export/Update daylight saving time rules, custom language file, configuration file, and server status report.

Figure 93 Import/Export Files



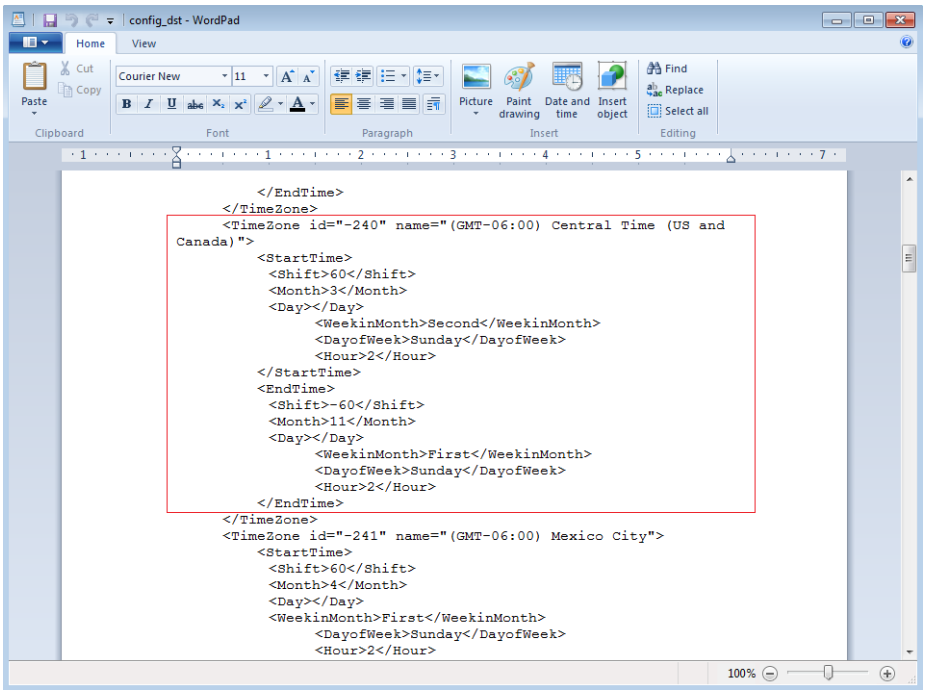
Export Daylight Saving Time Configuration File

Follow the steps below to export daylight saving time configuration file from the camera and set the start and end time of DST.

1. Click EXPORT under Export daylight saving time configuration file.
2. A file download dialog will be displayed. Click Open to review the XML file or click Save to store the file for editing.
3. Open the file with Microsoft® Wordpad and locate your time zone. Set the start and end time of DST. Save the file.

   In the example below, DST begins each year at 2:00 a.m. on the second Sunday in March and ends at 2:00 a.m. on the first Sunday in November.

Figure 94 Set the Start and End Time of DST



Export Language File

The camera supports the following languages: English, German, Spanish, French, Italian, Japanese, Portuguese, Russian and traditional Chinese. If your language is not listed, perform the following steps to customize the camera language.

Taking the English language file for example:

1. Click EXPORT to export the export_translator.xml file.
2. Save and open the export_translator.xml file.
3. Replace all English string value in bold black (see Figure 95) into your own language and save the file. The following figure is a sample segment.

Figure 95 Editing Language String

4. Upload the updated export_translator.xml file to your system. See Update Custom Language File on page 82.

Export CA 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 display a warning that the connection is not private/secure. To access the web client, you must install a Honeywell-signed security certificate.

1. Click EXPORT to save the root certificate (ca.crt) on your local computer.
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 and click Browse. Click Trusted Root Certification Authorities and 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. And now your browser will not display a warning that the connection is not private/secure.

Note: *Please ensure to install the certificate to ensure a secure communication with the camera and to avoid delays in the web page navigation.*

Export Configuration File

Enter a password for exporting the configuration file and then click **EXPORT** to export all parameters for the camera and user-defined scripts.

Update Daylight Saving Time Rules

Follow the steps below to update daylight saving time rules:

1. Click CHOOSE FILE under “Update daylight saving time rules”.
2. Select the XML file to update.
3. Click UPLOAD.

Update Custom Language File

1. Click CHOOSE FILE under “Update custom language file”.
2. Select your custom language file to update.
3. Click UPLOAD.
4. Go to the main page (see Figure 17), and select your own custom language from the Language menu to apply the custom language.

Upload Configuration File

Follow the steps below to upload a configuration file:

1. Enter a password for uploading the configuration file.

   The password must be the same as the password of the configuration file you set for exporting, or the uploading will be failed. For example, if you set a password A for a configuration file A and you set a password B for a configuration file B. When you want to upload the configuration file B, you must use the password B.

2. Click CHOOSE FILE to locate the configuration file and then click UPLOAD to upload the configuration file.

Note: *The model and firmware version of the device should be the same as the configuration file. If you have set up a fixed IP or other special settings for your device, it is not suggested to update a configuration file.*

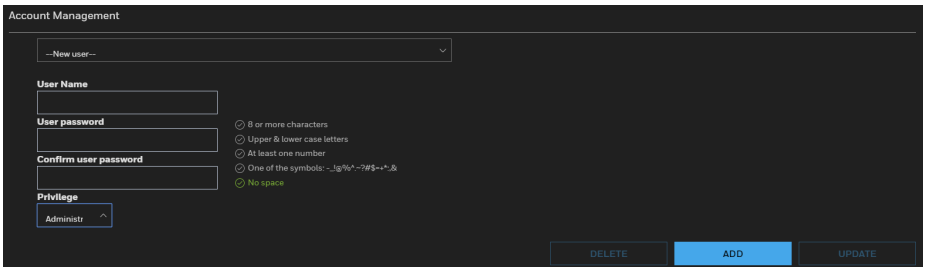
Configuring User Accounts Settings

Go to **Setup → System Setup → User Accounts**.

This section describes how to create multiple accounts and grant privileges to these accounts.

Account Management

Figure 96 Account Management



The administrator account name is **admin**, which is permanent and cannot be deleted.

The administrator can create up to 20 user accounts.

To create a new user:

1. Select New user from the drop-down list.
2. Enter the new user's name and password and confirm the password. Set the new password according to the password requirements (see Figure 96).
3. Select the privilege level for the new user account. Click ADD to enable the setting.

The privilege levels are listed below:

Role	Privilege
Administrator	Full control
Viewer	Live, Language

Access rights are sorted by user privilege (Administrator, Operator, and Viewer). Only administrators can access the **Configuration** page. Viewers can only access the main page for live viewing.

To change a user's access rights or delete a user account:

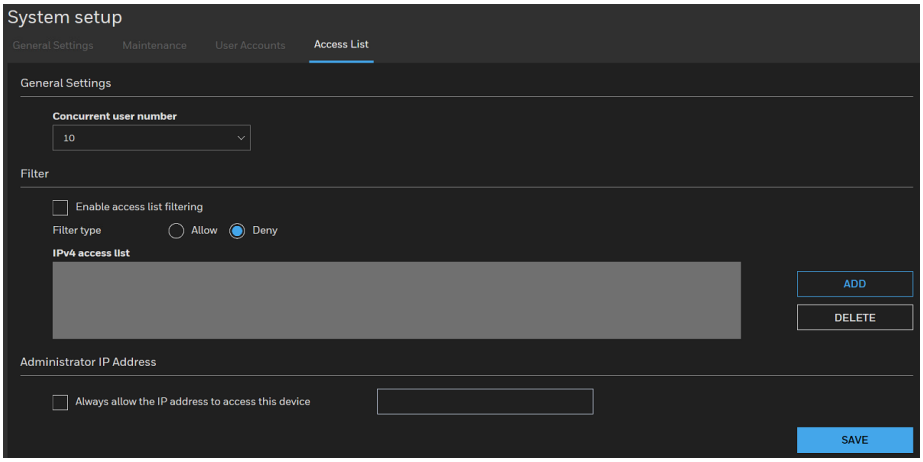
1. Select an existing account to modify.
2. Make necessary changes and click UPDATE or DELETE to enable the setting.

Configuring Access List Settings

Go to **Setup → System Setup → Access List**.

This section describes how to control access permission by verifying the client PC's IP address.

Figure 97 Access List



General Settings

Concurrent user number: Simultaneous live viewing for 1~10 clients (including main stream to third stream). The default value is 10.

Filter

Enable access list filtering: Check this item and click **SAVE** to enable the access list filtering function.

Filter type: Select **Allow** or **Deny** as the filter type.

- If you choose **Allow**, only those clients whose IP addresses are on the **Access List** below can access the camera, and the others cannot.
- If you choose **Deny**, those clients whose IP addresses are on the **Access List** below will not be allowed to access the camera, and the others can.

Click **ADD** and you can add a rule to the following **Access List**.

Single: This rule allows the user to add an IP address to the **Allowed/Denied List**.

Network: This rule allows the user to assign a network address and corresponding subnet mask to the **Allow/Deny List**. The address and network mask are written in CIDR format.

Range: This rule allows the user to assign a range of IP addresses to the **Allow/Deny List**.

Note: *The IPv6 access list column will not be displayed unless you enable IPv6 on the Network page. For more information about IPv6 settings, see* Enable IPv6 *on page 43**.*
The Range rule only applies to IPv4 addresses.

Administrator IP address

Always allow the IP address to access this device: Check it and add the Administrator's IP address in this field to make sure the Administrator can always connect to the device.

CHAPTER

9 VIEWING SYSTEM INFO

This chapter contains the following sections:

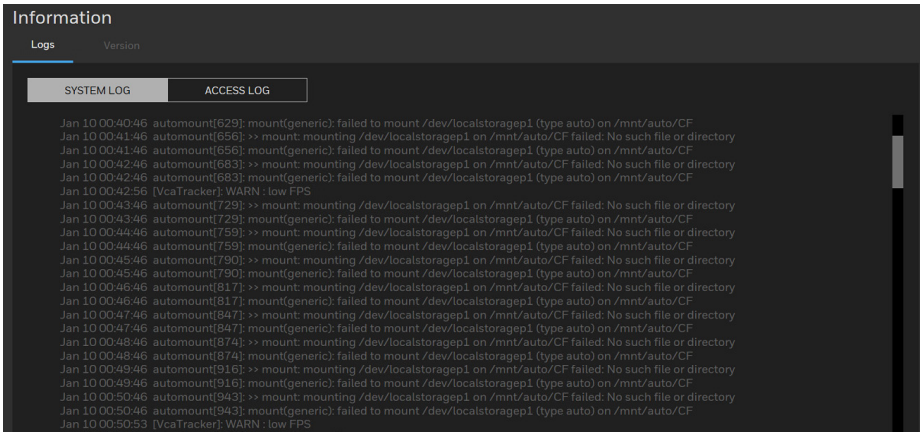
Log

Go to **Setup → Information → Logs**.

System Log

System log displays the system events in a chronological order. The system log is stored in the camera's buffer area and will be deleted after the camera is rebooted.

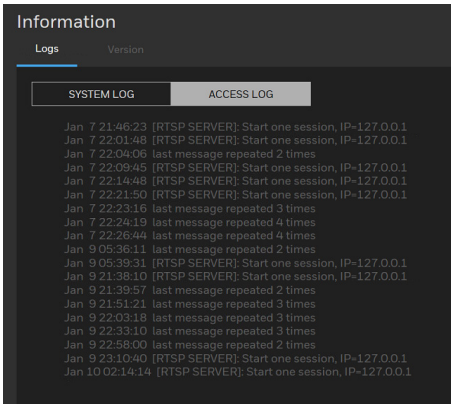
Figure 98 System Log



Access Log

Access log displays the access time and IP address of all viewers (including operators and administrators) in a chronological order. The access log is stored in the camera's buffer area and will be deleted after the camera is rebooted.

Figure 99 Access Log

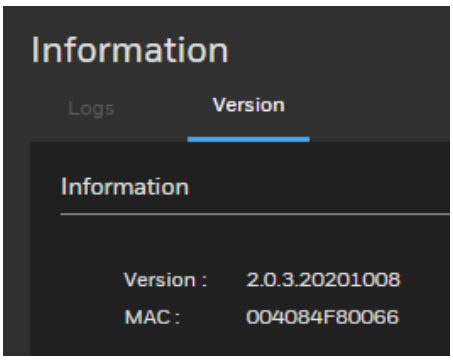


Version

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

On the **Version** page, you can view the software version.

Figure 100 Version



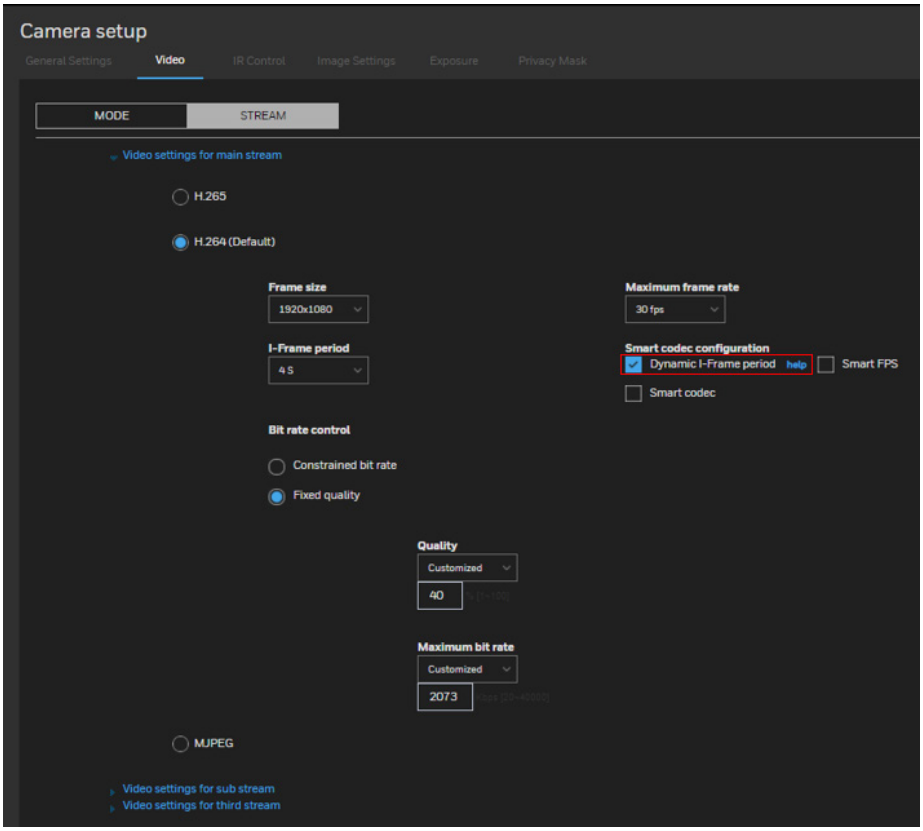
CHAPTER

10 TROUBLESHOOTING

Troubleshooting for Dynamic Intra Frame Period

Before connecting the camera to NVR(s) and VMS(es) with Smart codec unsupported, log on to the camera's web page, go to **Setup → Camera Setup → Video → STREAM → Video settings for main stream/Video settings for sub stream/Video settings for third stream** and uncheck **Dynamic I-Frame period** as shown in the following illustration.

Figure 101 Video Settings for Dynamic I-Frame Period



Otherwise, the following problems may be observed on NVR(s) and VMS(es), when an operator is doing actions, e.g. play live videos, play back videos and export clips.

Note:

- *Maxpro NVR version: R560 T-Patch*
- *Maxpro VMS version: R560*
- *HEN*3 version: V3.215.00HW001.1.R.20190308*
- *HEN*4 version: V3.215.00HW002.0.R.20190319*
- *ADPRO version: 4.5.0 and 4.5.1*
- *DVM version: R700.1*

Table 6 Troubleshooting for Dynamic I-Frame Period

<table>
<tr><th rowspan="2">Feature</th><th colspan="4">Problem</th><th rowspan="2">Solution</th></tr>
<tr><th>Maxpro NVR</th><th>Maxpro VMS</th><th>HEN*3/ HEN*4</th><th>DVM/ ADPRO</th></tr>
<tr><td>Live view</td><td colspan="3">Need to wait for at most 10 seconds to display live video</td><td rowspan="7">Not support Smart Codec</td><td rowspan="7">Uncheck Dynamic I-Frame period.</td></tr>
<tr><td>2x and above forward playback</td><td>Playback speed is not accurate</td><td colspan="2">OK</td></tr>
<tr><td>Reverse playback</td><td colspan="3">Playback speed is not accurate</td></tr>
<tr><td>Playback from a specific time</td><td colspan="2">The playback will start from at most 10 seconds later of the specific time.</td><td>OK</td></tr>
<tr><td>Playback video with event</td><td colspan="2">Need to wait for at most 10 seconds to start the playback.</td><td>OK</td></tr>
<tr><td>Export clips</td><td colspan="2">Fail to export or miss at most 10 seconds of clip</td><td>OK</td></tr>
</table>

Troubleshooting for Common Issues

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 7 Troubleshooting for Common Issues

Issues	Solutions
Cannot play downloaded file	Use the player located on the CD that came with your camera.
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.
Cannot install/log in to web client.	• Ensure that your browser's security settings allow ActiveX controls. • 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.	Do not unscrew the air tight hole.
Power supply is unstable.	Use of a UPS power supply is strongly recommended.
The page of changing password is lost.	Change the password of the camera in IPC Tool.
IP address of the camera is shown as 0.0.0.0 in IPC Tool	Configure the IP address settings of the camera and the computer in the same segment.
Recommended scenario for intrusion/people detection in indoor environment	• General scenario: Camera Height: 2M\ Angle: point to the ground with 15 degree \ Distance to target people: 3M • BW mode scenario: Camera Height: 2M\ Angle: point to the ground with 15 degree \ Distance to target people: 2M

CHAPTER

11 APPENDIX

Specifications

HC30W42R3/HC30W45R3

OPERATIONAL	
Video Standard	NTSC/PAL
Scanning System	Progressive
Image Sensor	**HC30W42R3**: 1/2.9" Progressive CMOS **HC30W45R3**: 1/2.7" Progressive CMOS
Number Of Pixels (H × V)	**HC30W42R3**: 1920(H) x 1080(V) **HC30W45R3**: 2560(H) x 1920(V)
Minimum Illumination	**HC30W42R3**: 0.065 lux color @ F2.0, 0 lux B/W with IR LEDs on @ F2.0 **HC30W45R3**: 0.03 lux color @ F2.0, 0 lux B/W with IR LEDs on @ F2.0
S/N Ratio	> 55 dB
Electronic Shutter Speed	1/5 ~ 1/32,000
IR Distance	Distance up to 30m (98ft)
IR Light Control	Smart IR (Auto/Manual)/OFF
IR Light Number	2
Day/Night	Auto/Day/Night/Schedule
Backlight Compensation	WDR, HLC
White Balance	Auto/Fixed Current/Manual
Gain Control	0-100%
Wide Dynamic Range	120dB
Noise Reduction	3D DNR
Privacy Masking	Off / On (5 Areas)
Motion Detection	Motion/Intrusion/People detection
Tampering Detection	Tampering Detection/Image too dark detection/Image too bright detection/ Image too blurry detection
Region Of Interest	Support
Lens	2.8mm, Fixed, F2.0
Angle Of View	**HC30W42R3**: H:109°, V:59° **HC30W45R3**: H:103°, V:76° @5M **HC30W45R3**: H:108°, V:60° @4M
VIDEO	
Video Compression	H.265/H.264/Smart Codec/MJPEG
Resolution	**HC30W42R3**: 1920×1080/1600x904/1360x768/ 1280x720/640x360; **HC30W45R3**(5MP): 2560x1920/2048x1536/ 1600x1200/1280x960/800x600/640x480; **HC30W45R3**(4MP): 2688x1520/1920×1080/ 1600x904/1280x-720/640x360
Frame Rate	**HC30W42R3**: Main Stream: 1080P (1 ~ 25/30fps); Sub Stream: 720P (1 ~ 25/30fps); Third Stream: 640x360(1 ~ 25/30fps); **HC30W45R3**: Main Stream: 5M/4M (1 ~ 25/30fps); *Up to 30fps @5M under H.265 only Sub Stream: 800x600 (1 ~ 25/30fps); Third Stream: VGA (1 ~ 25/30fps)
Bit Rate Control	Constrained bit rate/Fixed quality
Bit Rate	20K ~ 40Mbps
NETWORK	
Ethernet	10 Base-T/100 Base-TX Ethernet (RJ-45)
Supported Web Browsers	Chrome 71+, Internet Explorer 11.0+
Supported OS	Microsoft Windows 7/10
Protocols*	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS
Interoperability	ONVIF Profile G/S
Maximum Users Access	10 Users
Security	User account and password protection, HTTPS, IP Filter,Digest authentication, TLS1.2 only, Stream encryption, AES-128/256, SSH/Telnet closed, PCIDSS compliance
Event	Event notification using HTTP, SMTP, NAS server and MicroSD card File upload via HTTP, SMTP, NAS server and MicroSD card
Micro SD	Micro SD/SDHC/SDXC card slot (256GB)
ELECTRICAL	
Power Supply	DC12V, PoE (IEEE 802.3af) (Class 2)
Power Consumption	MAX 6.49W
MECHANICAL	
Dimensions	Ø117.11mm x 89.51mm (Ø4.61" x3.52")
Product Weight	0.54kg
Package Weight	0.88kg
Material	Die-casting aluminum housing with coating
Construction Color	RAL 120-1 (Lyric White)
ENVIRONMENTAL	
Operating Temperature	Starting: -10°C ~ 60°C (14°F ~ 140°F) Working: -30°C ~ 60°C (-22°F ~ 140°F)
Relative Humidity	Less than 90%, non-condensing
Ingress Protection	IP66
Vandal Resistance	IK10
REGULATORY	
Emissions	FCC PART 15B, EN 55032, EN61000-6-3
Immunity	EN 50130-4
Safety	UL 62368-1, EN 62368-1
ROHS	EN 50581
Country of Origin	Taiwan

**Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.*

HC30W45R2

OPERATIONAL	
Video Standard	NTSC/PAL
Scanning System	Progressive
Image Sensor	1/2.7" Progressive CMOS
Number Of Pixels (H × V)	2560(H) x 1920(V)
Minimum Illumination	0.035lux color @ F1.4, 0 lux B/W with IR LEDs on @ F1.4
S/N Ratio	> 55 dB
Electronic Shutter Speed	1/5 ~ 1/32,000
IR Distance	Distance up to 30m (98ft)
IR Light Control	Smart IR (Auto/Manual)/OFF
IR Light Number	2
Day/Night	Auto/Day/Night/Schedule
Backlight Compensation	WDR, HLC
White Balance	Auto/Fixed Current/Manual
Gain Control	0-100%
Wide Dynamic Range	120dB
Noise Reduction	3D DNR
Privacy Masking	Off / On (5 Areas)
Motion Detection	Motion detection/Intrusion detection/ People detection
Tampering Detection	Tampering Detection/Image too dark detection/Image too bright detection/ Image too blurry detection
Region Of Interest	Support
Lens	2.8mm~12mm, MFZ, F1.4~F2.8
Angle Of View	H: 88°~30°, V: 65°~23° @5MP H: 93°~32°, V: 51°~18° @4MP
VIDEO	
Video Compression	H.265/H.264/Smart Codec/MJPEG
Resolution	(5MP) 2560x1920/2048x1536/ 1600x1200/1280x960/800x-600/640x480; (4MP) 2688x1520/1920×1080/1600x904/ 1280x720/640x360
Frame Rate	Main Stream: 5M/4M (1 ~ 25/30fps); *Up to 30fps @5M under H.265 only Sub Stream: 800x600 (1 ~ 25/30fps); Third Stream: VGA (1 ~ 25/30fps)
Bit Rate Control	Constrained bit rate/Fixed quality
Bit Rate	20K ~ 40Mbps

NETWORK	
Ethernet	10 Base-T/100 Base-TX Ethernet (RJ-45)
Supported Web Browsers	Chrome 71+, Internet Explorer 11.0+
Supported OS	Microsoft Windows 7/10
Protocols*	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS
Interoperability	ONVIF Profile G/S
Maximum Users Access	10 Users
Security	User account and password protection, HTTPS, IP Filter,Digest authentication, TLS1.2 only, Stream encryption, AES-128/256, SSH/Telnet closed, PCIDSS compliance
Event	Event notification using HTTP, SMTP, NAS server and MicroSD card File upload via HTTP, SMTP, NAS server and MicroSD card
Micro SD	Micro SD/SDHC/SDXC card slot (256GB)
ELECTRICAL	
Power Supply	DC12V, PoE (IEEE 802.3af) (Class 0)
Power Consumption	MAX 12.95W
MECHANICAL	
Dimensions	Ø133.3mm x 99.8mm (Ø5.25" x3.93")
Product Weight	0.76kg
Package Weight	1.1kg
Material	Die-casting aluminum housing with coating
Construction Color	RAL 120-1 (Lyric White)
ENVIRONMENTAL	
Operating Temperature	Starting: -10°C ~ 60°C (14°F ~ 140°F) Working: -30°C ~ 60°C (-22°F ~ 140°F)
Relative Humidity	Less than 90%, non-condensing
Ingress Protection	IP66
Vandal Resistance	IK10
REGULATORY	
Emissions	FCC PART 15B, EN 55032, EN61000-6-3
Immunity	EN 50130-4
Safety	UL 62368-1, EN 62368-1
ROHS	EN 50581
Country of Origin	Taiwan

**Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.*

HC30WB5R2

OPERATIONAL	
Video Standard	NTSC/PAL
Scanning System	Progressive
Image Sensor	1/2.7" Progressive CMOS
Number Of Pixels (H × V)	2560(H) x 1920(V)
Minimum Illumination	0.035lux color @ F1.4, 0 lux B/W with IR LEDs on @F1.4
S/N Ratio	> 55 dB
Electronic Shutter Speed	1/5 ~ 1/32,000
IR Distance	Distance up to 50m (165ft)
IR Light Control	Smart IR (Auto/Manual)/OFF
IR Light Number	2
Day/Night	Auto/Day/Night/Schedule
Backlight Compensation	WDR, HLC
White Balance	Auto/Fixed Current/Manual
Gain Control	0-100%
Wide Dynamic Range	120dB
Noise Reduction	3D DNR
Privacy Masking	Off / On (5 Areas)
Motion Detection	Motion detection/Intrusion detection/ People detection
Tampering Detection	Tampering Detection/Image too dark detection/Image too bright detection/ Image too blurry detection
Region Of Interest	Support
Lens	2.8mm~12mm, MFZ, F1.4~F2.8
Angle Of View	H: 88°~30°, V: 65°~23° @5MP H: 93°~32°, V: 51°~18° @4MP
VIDEO	
Video Compression	H.265/H.264/Smart Codec/MJPEG
Resolution	(5MP) 2560x1920/2048x1536/ 1600x1200/1280x960/800x-600/640x480; (4MP) 2688x1520/1920x1080/1600x904/ 1280x720/640x360
Frame Rate	"Main Stream: 5M/4M (1 ~ 25/30fps); *Up to 30fps @5M under H.265 only Sub Stream: 800x600 (1 ~ 25/30fps); Third Stream: VGA (1 ~ 25/30fps)"
Bit Rate Control	Constrained bit rate/Fixed quality
Bit Rate	20K ~ 40Mbps

NETWORK	
Ethernet	10 Base-T/100 Base-TX Ethernet (RJ-45)
Supported Web Browsers	Chrome 71+, Internet Explorer 11.0+
Supported OS	Microsoft Windows 7/10
Protocols*	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS
Interoperability	ONVIF Profile G/S
Maximum Users Access	10 Users
Security	User account and password protection, HTTPS, IP Filter, Digest authentication, TLS1.2 only, Stream encryption, AES-128/256, SSH/ Telnet closed, PCIDSS compliance
Event	Event notification using HTTP, SMTP, NAS server and MicroSD card File upload via HTTP, SMTP, NAS server and MicroSD card
Micro SD	Micro SD/SDHC/SDXC card slot (256GB)
ELECTRICAL	
Power Supply	DC12V, PoE (IEEE 802.3af) (Class 0)
Power Consumption	MAX 12.95W
MECHANICAL	
Dimensions	215.6mm x 85mm x 85mm (8.49" x 3.35" x 3.35")
Product Weight	0.78kg
Package Weight	1.0kg
Material	Die-casting aluminum housing with coating
Construction Color	RAL 120-1 (Lyric White)
ENVIRONMENTAL	
Operating Temperature	Starting: -10°C ~ 60°C (14°F ~ 140°F) Working: -30°C ~ 60°C (-22°F ~ 140°F)
Relative Humidity	Less than 90%, non-condensing
Ingress Protection	IP66
REGULATORY	
Emissions	FCC PART 15B, EN 55032, EN61000-6-3
Immunity	EN 50130-4
Safety	UL 62368-1, EN 62368-1
ROHS	EN 50581
Country of Origin	Taiwan

**Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.*

HC30WB2R1/HC30WB5R1

OPERATIONAL	
Video Standard	NTSC/PAL
Scanning System	Progressive
Image Sensor	**HC30WB2R1**: 1/2.9" Progressive CMOS **HC30WB5R1**: 1/2.7" Progressive CMOS
Number Of Pixels (H × V)	**HC30WB2R1**: 1920(H) x 1080(V) **HC30WB5R1**: 2560(H) x 1920(V)
Minimum Illumination	**HC30WB2R1**: 0.065 lux color @ F2.0, 0 lux B/W with IR LEDs on @ F2.0 **HC30WB5R1**: 0.03 lux color @ F2.0, 0 lux B/W with IR LEDs on @ F2.0
S/N Ratio	> 55 dB
Electronic Shutter Speed	1/5 ~ 1/32,000
IR Distance	Distance up to 50m(165ft)
IR Light Control	Smart IR (Auto/Manual)/OFF
IR Light Number	2
Day/Night	Auto/Day/Night/Schedule
Backlight Compensation	WDR, HLC
White Balance	Auto/Fixed Current/Manual
Gain Control	0-100%
Wide Dynamic Range	120dB
Noise Reduction	3D DNR
Privacy Masking	Off / On (5 Areas)
Motion Detection	Motion/Intrusion/People detection
Tampering Detection	Tampering Detection/Image too dark detection/Image too bright detection/ Image too blurry detection
Region Of Interest	Support
Lens	4.0mm, Fixed, F2.0
Angle Of View	**HC30WB2R1**: H:81°, V:44° **HC30WB5R1**: H:78°, V:59° @5M **HC30WB5R1**: H:82°, V:46° @4M
VIDEO	
Video Compression	H.265/H.264/Smart Codec/MJPEG
Resolution	**HC30WB2R1**: 1920×1080/1600x904/1360x768/ 1280x720/640x360; **HC30WB5R1**(5MP): 2560x1920/2048x1536/ 1600x1200/1280x960/800x-600/640x480; **HC30WB5R1**(4MP): 2688x1520/1920×1080/ 1600x904/1280x720/640x360
Frame Rate	**HC30WB2R1**: Main Stream: 1080P (1 ~ 25/30fps); Sub Stream: 720P (1 ~ 25/30fps); Third Stream: 640x360(1 ~ 25/30fps); **HC30WB5R1**: Main Stream: 5M/4M (1 ~ 25/30fps); *Up to 30fps @5M under H.265 only Sub Stream: 800x600 (1 ~ 25/30fps); Third Stream: VGA (1 ~ 25/30fps)
Bit Rate Control	Constrained bit rate/Fixed quality
Bit Rate	20K ~ 40Mbps
NETWORK	
Ethernet	10 Base-T/100 Base-TX Ethernet (RJ-45)
Supported Web Browsers	Chrome 71+, Internet Explorer 11.0+
Supported OS	Microsoft Windows 7/10
Protocols*	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS
Interoperability	ONVIF Profile G/S
Maximum Users Access	10 Users
Security	User account and password protection, HTTPS, IP Filter, Digest authentication, TLS1.2 only, Stream encryption, AES-128/256, SSH/ Telnet closed, PCIDSS compliance
Event	Event notification using HTTP, SMTP, NAS server and MicroSD card File upload via HTTP, SMTP, NAS server and MicroSD card
Micro SD	Micro SD/SDHC/SDXC card slot (256GB)
ELECTRICAL	
Power Supply	DC12V, PoE (IEEE 802.3af) (Class 2)
Power Consumption	MAX 6.49W
MECHANICAL	
Dimensions	ø91.1mm x 177mm (ø3.59" x 6.97")
Product Weight	0.53kg
Package Weight	0.74kg
Material	Die-casting aluminum housing with coating
Construction Color	RAL 120-1 (Lyric White)
ENVIRONMENTAL	
Operating Temperature	Starting: -10°C ~ 60°C (14°F ~ 140°F) Working: -30°C ~ 60°C (-22°F ~ 140°F)
Relative Humidity	Less than 90%, non-condensing
Ingress Protection	IP66
REGULATORY	
Emissions	FCC PART 15B, EN 55032, EN61000-6-3
Immunity	EN 50130-4
Safety	UL 62368-1, EN 62368-1
ROHS	EN 50581
Country of Origin	Taiwan

**Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.*

HC30WE5R2

OPERATIONAL	
Video Standard	NTSC/PAL
Scanning System	Progressive
Image Sensor	1/2.7" Progressive CMOS
Number Of Pixels (H × V)	2560(H) x 1920(V)
Minimum Illumination	0.035lux color @ F1.4, 0 lux B/W with IR LEDs on @F1.4
S/N Ratio	> 55 dB
Electronic Shutter Speed	1/5 ~ 1/32,000
IR Distance	Distance up to 50m (165ft)
IR Light Control	Smart IR (Auto/Manual)/OFF
IR Light Number	2
Day/Night	Auto/Day/Night/Schedule
Backlight Compensation	WDR, HLC
White Balance	Auto/Fixed Current/Manual
Gain Control	0-100%
Wide Dynamic Range	120dB
Noise Reduction	3D DNR
Privacy Masking	Off / On (5 Areas)
Motion Detection	Motion detection/Intrusion detection/ People detection
Tampering Detection	Tampering Detection/Image too dark detection/Image too bright detection/ Image too blurry detection
Region Of Interest	Support
Lens	2.8mm~12mm, MFZ, F1.4~F2.8
Angle Of View	H: 88°~30°, V: 65°~23° @5MP H: 93°~32°, V: 51°~18° @4MP
VIDEO	
Video Compression	H.265/H.264/Smart Codec/MJPEG
Resolution	(5MP) 2560x1920/2048x1536/ 1600x1200/1280x960/800x600/640x480; (4MP) 2688x1520/1920x1080/1600x-904/1280x720/640x360
Frame Rate	Main Stream: 5M/4M (1 ~ 25/30fps); *Up to 30fps @5M under H.265 only Sub Stream: 800x600 (1 ~ 25/30fps); Third Stream: VGA (1 ~ 25/30fps)
Bit Rate Control	Constrained bit rate/Fixed quality
Bit Rate	20k ~ 40Mbps

NETWORK	
Ethernet	10 Base-T/100 Base-TX Ethernet (RJ-45)
Supported Web Browsers	Chrome 71+, Internet Explorer 11.0+
Supported OS	Microsoft Windows 7/10
Protocols*	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS
Interoperability	ONVIF Profile G/S
Maximum Users Access	10 Users
Security	User account and password protection, HTTPS, IP Filter, Digest authentication, TLS1.2 only, Stream encryption, AES-128/256, SSH/ Telnet closed, PCIDSS compliance
Event	Event notification using HTTP, SMTP, NAS server and MicroSD card File upload via HTTP, SMTP, NAS server and MicroSD card
Micro SD	Micro SD/SDHC/SDXC card slot (256GB)
ELECTRICAL	
Power Supply	DC12V, PoE (IEEE 802.3af) (Class 0)
Power Consumption	MAX 12.95W
MECHANICAL	
Dimensions	ø120mm x 90.5mm (ø4.72"x3.56")
Product Weight	0.64kg
Package Weight	0.96kg
Material	Die-casting aluminum housing with coating
Construction Color	RAL 120-1 (Lyric White)
ENVIRONMENTAL	
Operating Temperature	Starting: -10°C ~ 60°C (14°F ~ 140°F) Working: -30°C ~ 60°C (-22°F ~ 140°F)
Relative Humidity	Less than 90%, non-condensing
Ingress Protection	IP66
Vandal Resistance	IK10
REGULATORY	
Emissions	FCC PART 15B, EN 55032, EN61000-6-3
Immunity	EN 50130-4
Safety	UL 62368-1, EN 62368-1
ROHS	EN 50581
Country of Origin	Taiwan

**Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.*

HC30WE2R3/HC30WE5R3

OPERATIONAL	
Video Standard	NTSC/PAL
Scanning System	Progressive
Image Sensor	**HC30WE2R3**: 1/2.9" Progressive CMOS **HC30WE5R3**: 1/2.7" Progressive CMOS
Number Of Pixels (H × V)	**HC30WE2R3**: 1920(H) x 1080(V) **HC30WE5R3**: 2560(H) x 1920(V)
Minimum Illumination	**HC30WE2R3**: 0.065lux color @ F2.0, 0 lux B/W with IR LEDs on @ F2.0 **HC30WE5R3**: 0.03 lux color @ F2.0, 0 lux B/W with IR LEDs on @ F2.0
S/N Ratio	> 55 dB
Electronic Shutter Speed	1/5 ~ 1/32,000
IR Distance	Distance up to 50m (165ft)
IR Light Control	Smart IR (Auto/Manual)/OFF
IR Light Number	2
Day/Night	Auto/Day/Night/Schedule
Backlight Compensation	WDR, HLC
White Balance	Auto/Fixed Current/Manual
Gain Control	0-100%
Wide Dynamic Range	120dB
Noise Reduction	3D DNR
Privacy Masking	Off / On (5 Areas)
Motion Detection	Motion/Intrusion/People detection
Tampering Detection	Tampering Detection/Image too dark detection/Image too bright detection/ Image too blurry detection
Region Of Interest	Support
Lens	2.8mm, Fixed, F2.0
Angle Of View	**HC30WE2R3**: H:109°, V:59° **HC30WE5R3**: H:103°, V:76° @5M **HC30WE5R3**: H:108°, V:60° @4M
VIDEO	
Video Compression	H.265/H.264/Smart Codec/MJPEG
Resolution	**HC30WE2R3**: 1920×1080/1600x904/1360x768/ 1280x720/640x360/480x272 **HC30WE5R3** (5MP): 2560x1920/2048x1536/ 1600x1200/1280x960/800x600/640x480; **HC30WE5R3** (4MP): 2688x1520/1920×1080/ 1600x904/1280x720/640x360
Frame Rate	**HC30WE2R3**: Main Stream: 1080P (1 ~ 25/30fps); Sub Stream: 720P (1 ~ 25/30fps); Third Stream: 640x360(1 ~ 25/30fps); **HC30WE5R3**: Main Stream: 5M/4M (1 ~ 25/30fps); *Up to 30fps @5M under H.265 only Sub Stream: 800x600 (1 ~ 25/30fps); Third Stream: VGA (1 ~ 25/30fps)
Bit Rate Control	Constrained bit rate/Fixed quality
Bit Rate	20k ~ 40Mbps

NETWORK	
Ethernet	10 Base-T/100 Base-TX Ethernet (RJ-45)
Supported Web Browsers	Chrome 71+, Internet Explorer 11.0+
Supported OS	Microsoft Windows 7/10
Protocols*	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS
Interoperability	ONVIF Profile G/S
Maximum Users Access	10 Users
Security	User account and password protection, HTTPS, IP Filter, Digest authentication, TLS1.2 only, Stream encryption, AES-128/256, SSH/ Telnet closed, PCIDSS compliance
Event	Event notification using HTTP, SMTP, NAS server and MicroSD card File upload via HTTP, SMTP, NAS server and MicroSD card
Micro SD	Micro SD/SDHC/SDXC card slot (256GB)
ELECTRICAL	
Power Supply	DC12V, PoE (IEEE 802.3af) (Class 2)
Power Consumption	MAX 6.49W
MECHANICAL	
Dimensions	ø105mm x 82.5mm (ø4.13"x3.25")
Product Weight	0.47kg
Package Weight	0.81kg
Material	Die-casting aluminum housing with coating
Construction Color	RAL 120-1 (Lyric White)
ENVIRONMENTAL	
Operating Temperature	Starting: -10°C ~ 60°C (14°F ~ 140°F) Working: -30°C ~ 60°C (-22°F ~ 140°F)
Relative Humidity	Less than 90%, non-condensing
Ingress Protection	IP66
Vandal Resistance	IK10
REGULATORY	
Emissions	FCC PART 15B, EN 55032, EN61000-6-3
Immunity	EN 50130-4
Safety	UL 62368-1, EN 62368-1
ROHS	EN 50581
Country of Origin	Taiwan

**Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.*

HC30WF5R1

OPERATIONAL	
Video Standard	NTSC/PAL
Scanning System	Progressive
Image Sensor	1/2.7" Progressive CMOS
Number Of Pixels (H × V)	2560(H) x 1920(V)
Minimum Illumination	0.05lux color @ F2.25, 0 lux B/W with IR LEDs on @ F2.25
S/N Ratio	>55dB
Electronic Shutter Speed	1/5 ~ 1/32,000
IR Distance	Distance up to 20m (65.6ft)
IR Light Control	Smart IR (Auto/Manual)/OFF
IR Light Number	6
Day/Night	Auto/Day/Night/Schedule
Backlight Compensation	WDR, HLC
White Balance	Auto/Fixed Current/Manual
Gain Control	0-100%
Wide Dynamic Range	120dB
Noise Reduction	3D DNR
Privacy Masking	Off / On (5 Areas)
Motion Detection	Motion detection
Tampering Detection	Tampering Detection/Image too dark detection/Image too bright detection/ Image too blurry detection
Audio Detection	Support
Region Of Interest	Support
Lens	1.16mm, Fixed, F2.25
Angle Of View	180°
VIDEO	
Video Compression	H.265/H.264/Smart Codec/MJPEG
Resolution	1920x1920/1536x1536/1200x1200/ 960x960/480x480
Frame Rate	Main Stream: 1920x1920 (1 ~ 25/30fps); Sub Stream: 960x960 (1 ~ 25/30fps); Third Stream: 480x480 (1 ~ 25/30fps)
Bit Rate Control	Constrained bit rate/Fixed quality
Bit Rate	20K ~ 40Mbps
Dewarping mode	Ceiling Mount: 1O/1P/1R/2P/1O3R/4R/ 4R PRO/1O8R; Wall Mount:1O/1P/1R/1P2R/1O3R/ 1P3R/4R; Floor Mount: 1O/1P/1R/2P/1O3R/4R/ 4R PRO/1O8R
AUDIO	
Audio Interface	1 built-in microphone
Audio Compression	G711/G726
NETWORK	
Ethernet	10 Base-T/100 Base-TX Ethernet (RJ-45)
Supported Web Browsers	Chrome 71+ Internet Explorer 11.0+
Supported OS	Microsoft Windows 7/10
Protocols*	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS
Interoperability	ONVIF Profile G/S
Maximum Users Access	10 Users
Security	User account and password protection, HTTPS, IP Filter, Digest authentication, TLS1.2 only, Stream encryption, AES-128/256, SSH/ Telnet closed, PCIDSS compliance
Event	Event notification using HTTP, SMTP, and MicroSD card File upload via HTTP, SMTP, and MicroSD card
Micro SD	Micro SD/SDHC/SDXC card slot (256GB)
ELECTRICAL	
Power Supply	DC12V, PoE (IEEE 802.3af) (Class 0)
Power Consumption	MAX 10.8W
MECHANICAL	
Dimensions	ø159.95mm x 59.7mm(ø6.3"x2.35") (w/Mount plate) ø159.95mm x 51.2mm(ø6.31"x 2.02")
Product Weight	0.82kg
Package Weight	1.50kg
Material	Die-casting aluminum housing with coating
Construction Color	RAL 120-1 (Lyric White)
ENVIRONMENTAL	
Operating Temperature	Starting Temperature: -10°C ~ 60°C (14°F ~ 140°F) Working Temperature: -30°C ~ 60°C (-22°F ~ 140°F)
Relative Humidity	Less than 90%, non-condensing
Ingress Protection	IP66
Vandal Resistance	IK10
REGULATORY	
Emissions	FCC PART 15B, EN 55032, EN61000-6-3
Immunity	EN 50130-4
Safety	UL 62368-1, EN 62368-1
ROHS	EN 50581
Country or Region of Origin	Taiwan

**Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.*

HC30W25R3/HC30W25R3-12V

OPERATIONAL	
Video Standard	NTSC/PAL
Scanning System	Progressive
Image Sensor	1/2.7" CMOS
Number Of Pixels (H × V)	2560(H) x1920(V)
Minimum Illumination	0.2lux color @ F2.0, 0 lux B/W with IR LEDs on @ F2.0
S/N Ratio	> 55 dB
Electronic Shutter Speed	1/5 ~ 1/32,000
IR Distance	Distance up to 20m
IR Light Control	Smart IR (Auto/Manual)/OFF
IR Light Number	8
Day/Night	Auto/Day/Night/Schedule
Backlight Compensation	WDR, HLC
White Balance	Auto/Fixed Current/Manual
Gain Control	0-100%
Wide Dynamic Range	120dB
Noise Reduction	3D DNR
Privacy Masking	Off / On (5 Areas)
Motion Detection	Motion detection/Intrusion detection/ People detection
Tampering Detection	Tampering Detection/Image too dark detection/Image too bright detection/ Image too blurry detection
Region Of Interest	Support
Audio Detection	Support
Lens	2.8mm, Fixed, F2.0
Angle Of View	H:103º, V:76º @5M H:108º, V:60º @4M
Pan Range	+/-30°
Tilt Range	90°
VIDEO	
Video Compression	H.265/H.264/Smart Codec/MJPEG
Resolution	**5MP:** 2560x1920/2048x1536 /1600x1200/1280x960/800x600 /704x480/640x480; **4MP:** 2688x1520/1920x1080 /1600x904/1280x720/640x360
Frame Rate	**Main Stream:** 5M/4M (1 ~ 25/30fps); *Up to 30fps @5M under H.265 only **Sub Stream:** 800x600 (1 ~ 25/30fps); **Third Stream:** VGA (1 ~ 25/30fps)
Bit Rate Control	Constrained bit rate/Fixed quality
Bit Rate	20K ~ 40Mbps
AUDIO	
Audio Compression	G.711/G.726
Audio Stream	**HC30W25R3:** Full duplex **HC30W25R3-12V:** Microphone in
Audio Interface	**HC30W25R3:** Built-in Microphone & Line In / Output **HC30W25R3-12V:** Built-in Microphone

NETWORK	
Ethernet	10 Base-T/100 Base-TX Ethernet (RJ-45)
Supported Web Browsers	Chrome 71+ Internet Explorer 11.0+
Supported OS	Microsoft Windows 7/10
Protocols*	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, DHCP, NTP, DNS, DDNS, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, TLS
Interoperability	ONVIF Profile G/S
Maximum Users Access	10 Users
Security	User account and password protection, HTTPS, IP Filter,Digest authentication, TLS1.2 only, Stream encryption, AES- 128/256, SSH/Telnet closed, PCIDSS compliance
Event	Event notification using HTTP, SMTP, and MicroSD card File upload via HTTP, SMTP, and MicroSD card
Micro SD	Micro SD/SDHC/SDXC card slot (256GB)
ELECTRICAL	
Power Supply	**HC30W25R3:** PoE (IEEE 802.3af) (Class 2) **HC30W25R3-12V:** DC12V, PoE (IEEE 802.3af) (Class 2)
Power Consumption	MAX 6.49W
MECHANICAL	
Dimensions	Ø110mm x 59.5mm (Ø4.33" x2.34")
Dome diameter	51mm (2.0")
Product Weight	0.4kg (0.88lb)
Package Weight	0.7kg (1.54lb)
Material	Die-casting aluminum housing with coating
Construction Color	Honeywell White
ENVIRONMENTAL	
Operating Temperature	Starting Temperature: -10ºC ~ 60ºC (14ºF ~ 140ºF) Working Temperature: -30ºC ~ 60ºC (-22ºF ~ 140ºF) (IR OFF) -30ºC ~ 45ºC (-22ºF ~ 113ºF) (IR ON)
Relative Humidity	Less than 90%, non-condensing
Ingress Protection	IP66, IP67
Vandal Resistance	IK10
REGULATORY	
Emissions	FCC PART 15B, EN 55032, EN61000-6-3
Immunity	EN 50130-4
Safety	UL 62368-1, EN 62368-1
ROHS	EN 50581
Country or Region of Origin	Taiwan

*Some development may be required in specific user cases to support some of these protocols in the field as they mature over time.

Honeywell Building Technologies – Security Americas (Head Office)
Honeywell Commercial Security
715 Peachtree St. NE
Atlanta, GA 30308
Tel: +1 800 323 4576

Honeywell Building Technologies – Security Mexico
Mexico: Av. Santa Fe 94, Torre A, Piso 1, Col. Zedec,
CP 012010, CDMX, México.
Colombia: Edificio Punto 99, Carrera 11a.
98-50, Piso 7, Bogota, Colombia.
Tel: 01.800.083.59.25

Honeywell Building Technologies – Security Middle East/N. Africa
Emaar Business Park, Building No. 2, Sheikh Zayed Road
P.O. Box 232362
Dubai, United Arab Emirates
security_meta@honeywell.com
Tel: +971 4 450 5800

Honeywell Building Technologies – Security Europe/South Africa
140 Waterside Road, Hamilton Industrial Park
Leicester, LE5 1TN, United Kingdom
Tel: +44 (0) 1928 378005

Honeywell Building Technologies – Security Northern Europe
Stationsplein Z-W 961, 1117 CE Schiphol-Oost, Netherlands
Tel: +31 (0) 299 410 200

Honeywell Building Technologies – Security Deutschland
Johannes-Mauthe-Straße 14
D-72458 Albstadt
Germany
Tel: +49 (0) 7431 801-0

Honeywell Building Technologies – Security France
Immeuble Lavoisier
Parc de Haute Technologie
3-7 rue Georges Besse
92160 Antony, France
Tel: +33 (0) 1 40 96 20 50

Honeywell Building Technologies – Security Italia SpA
Via Achille Grandi 22,
20097 San Donato Milanese (MI), Italy

Honeywell Building Technologies – Security España
Josefa Valcárcel, 24
28027 – Madrid, España
Tel.: +34 902 667 800

Honeywell Building Technologies – Security Россия и СНГ
121059 Moscow,
UI, Kiev 7
Russia
Tel: +7 (495) 797-93-71

Honeywell Building Technologies – Security Asia Pacific
Building #1, 555 Huanke Road,
Zhang Jiang Hi-Tech Park Pudong New Area,
Shanghai, 201203, China
Tel: 400 840 2233

Honeywell Building Technologies – Security and Fire (ASEAN)
Honeywell International Sdn Bhd
Level 25, UOA Corp Tower, Lobby B
Avenue 10, The Vertical, Bangsar South City
59200, Kuala Lumpur, Malaysia
Email: buildings.asean@honeywell.com
Technical support (Small & Medium Business):

Vietnam: +84 4 4458 3369
Thailand: +66 2 0182439 Indonesia: +62 21 2188 9000
Malaysia: +60 3 7624 1530
Singapore: +65 3158 6830
Philippines: +63 2 231 3380

Honeywell Home and Building Technologies (India)
HBT India Buildings
Unitech Trade Centre, 5th Floor,
Sector – 43, Block C, Sushant Lok Phase – 1,
Gurgaon – 122002, Haryana, India
Email: HBT-IndiaBuildings@honeywell.com
Toll Free Number: 000 800 050 2167
Tel: +91 124 4975000

Honeywell Building Technologies – Security and Fire (Korea)
Honeywell Co., Ltd. (Korea)
5F SangAm IT Tower,
434, Worldcup Buk-ro, Mapo-gu,
Seoul 03922, Korea
Email: info.security@honeywell.com
Customer support: HSG-CS-KR@honeywell.com; +82 1522-8779
Tel: +82-2-799-6114

Honeywell Building Technologies – Security & Fire (Pacific)
Honeywell Ltd
9 Columbia Way
BAULKHAM HILLS NSW 2153
Email: hsf.comms.pacific@Honeywell.com
Technical support:
Australia: 1300 220 345
New Zealand: +64 9 623 5050

Honeywell

https://buildings.honeywell.com/security
+1 800 323 4576 (North America only)
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