H.265 Network Cameras

User Manual

Ver. 1.0

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Revision History

Version	Description	Date
1.0	Initial release	October 2019

Disclaimer

ℹ️	**CAUTION!**

The default password is used for your first login. To ensure account security, please change the password after your first login. You are recommended to set a strong password (no less than eight characters).

- To the maximum extent permitted by applicable law, the product described, with its hardware, software, firmware and documents, is provided on an "as is" basis.
- Best effort has been made to verify the integrity and correctness of the contents in this manual, but no statement, information, or recommendation in this manual shall constitute formal guarantee of any kind, expressed or implied. We shall not be held responsible for any technical or typographical errors in this manual. The contents of this manual are subject to change without prior notice. Update will be added to the new version of this manual.
- Use of this manual and the subsequent result shall be entirely on the user's own responsibility. In no event shall we be reliable to you for any special, consequential, incidental, or indirect damages, including, among others, damages for loss of business profits, business interruption, or loss of data or documentation in connection with the use of this product.
- Video and audio surveillance can be regulated by laws that vary from country to country. Check the law in your local region before using this product for surveillance purposes. We shall not be held responsible for any consequences resulting from illegal operations of the device.
- The illustrations in this manual are for reference only and may vary depending on the version or model. The screenshots in this manual may have been customized to meet specific requirements and user preferences. As a result, some of the examples and functions featured may differ from those displayed on your monitor.
- This manual is a guide for multiple product models and so it is not intended for any specific product.
- Due to uncertainties such as physical environment, discrepancy may exist between the actual values and reference values provided in this manual. The ultimate right to interpretation resides in our company.

Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

Symbols

The symbols in the following table may be found in this manual. Carefully follow the instructions indicated by the symbols to avoid hazardous situations and use the product properly.

Symbol	Description
⚠️ **WARNING!**	Contains important safety instructions and indicates situations that could cause bodily injury.
ℹ️ **CAUTION!**	Means reader be careful and improper operations may cause damage or malfunction to product.
📝 **NOTE!**	Means useful or supplemental information about the use of product.

Table of Contents

Chapter 1. Overview

CAM2441HC-5 H.265 Box IP Camera is capable of simultaneous video streaming in H.265, H.264 and M-JPEG format. The camera has a maximum resolution of 4MP @ 30fps in both H.265 and H.264 in High Dynamic Range (HDR) mode to ensure more image details are captured under challenging lighting conditions.
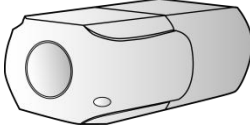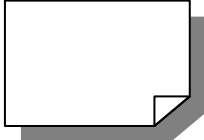
The camera has an optional Auto Back Focus (ABF) mechanism that adapts to compatible CS mount mega pixel lenses, and the auto focus function can be done by camera itself, or executed remotely to save time and labor cost needed for on-site focus adjustment.

1.1 Feature

- Multiple Progressive Scan CMOS Sensor Support up to 4MP Resolution
- Multi Exposure HDR
- Multi Codec Support (H.265 / H.264 / MJPEG)
- Low Latency Streaming
- Quad Streams Support
- True Day/Night Function (ICR)
- BNC Analog Output for Installation Support
- RS-485 Support
- 3D Motion Compensated Noise Reduction (MCTF)
- Smart Event Function-
  External Input/ Motion Detection/ Network Failure Detection/ Tampering
  Alarm/ Periodical Event/ Manual Trigger/ Audio Detection
- Text Overlay and Privacy Masks
- Micro SD/SDHC/SDXC Card Support
- ONVIF Profile S/G/Q Support
- Smart Low Bitrate Control

1.2 Package Contents

Please check the package containing the following items listed below.

CAM2441HC-5 H.265 Box IP Camera	
2-Pin Power Terminal Block	Quick Guide

⚠️ **NOTE:** To use an external power supply, please contact the camera manufacturer to confirm that the power supply uses the same power specifications as the camera. The power supply must comply with the LPS requirements.

⚠️ **NOTE:** Do not replace batteries of the camera. Risk of explosion may occur if the battery is replaced by an incorrect type.

1.3 Dimensions

The dimensions of the camera are shown below.

Non-ABF Models
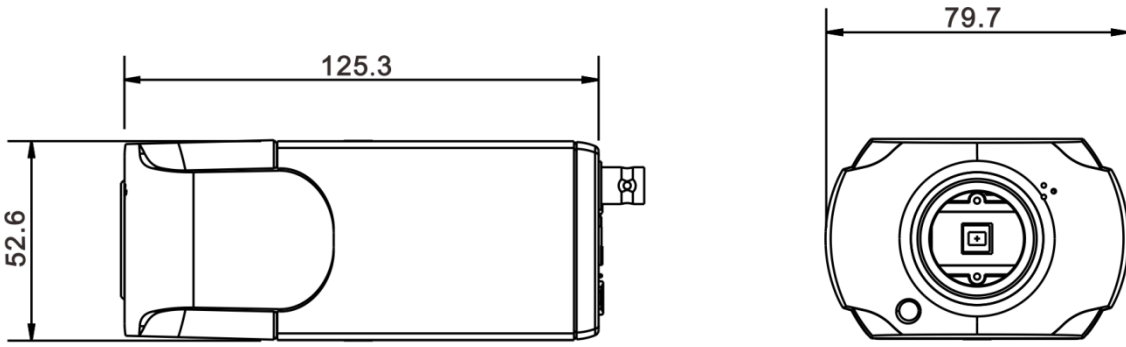
Unit: mm

ABF Models
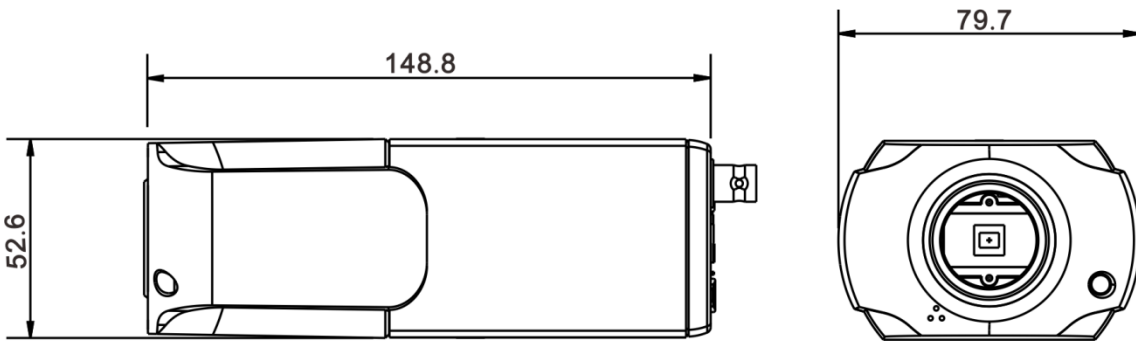
Unit: mm

1.4 Connectors

The diagram below shows the various connectors of the camera. Definition for each connector is given as follows.
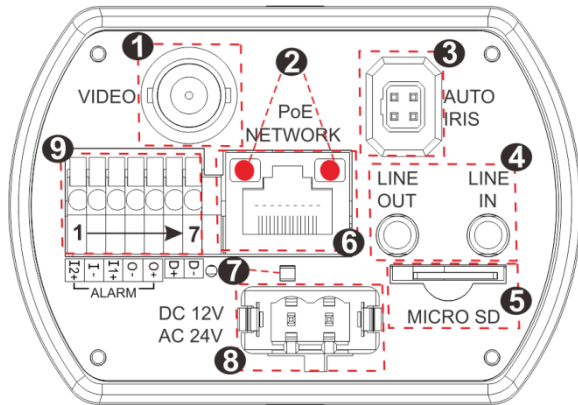
No.	Connector	Pin	Definition	Remarks
1	BNC	-	For analogue video output	
2	Network LEDs	-	For network activity and power connection indication	
3	Auto Iris	-	Auto iris lens connection	
4	Audio I/O (Line In/Out)	-	Two-way audio transmission	
5	microSD Card Slot	-	Insert the microSD card into the card slot to store videos and snapshots. Do not remove the microSD card when the camera is powered on.	
6	PoE Network (RJ-45)	-	For network and PoE connections	
7	Default Button	-	Press the button with a proper tool for at least 20 seconds to restore the system.	
8	Power (DC 12V/AC 24V)	-	For power connection	
9	Alarm I/O & RS-485	1	Alarm In 2 +	Alarm connection
		2	Alarm In –	#Do NOT connect external power supply to the alarm I/O connector of the IP camera.
		3	Alarm In 1 +	
		4	Alarm Out –	
		5	Alarm Out +	
		6	D +	RS-485 connection
		7	D –	

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

1.4.1 Light Sensor

A light sensor is used to detect the ambient light for day/night switching function. The light sensor is located at the front of the cameras. The location and definition of the light sensor is as below.

Light Sensor   Light Sensor
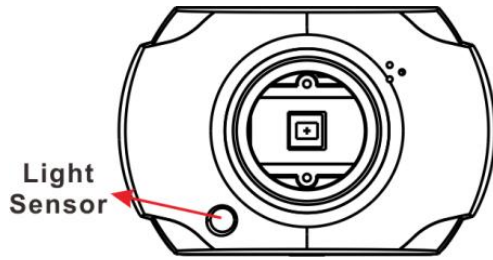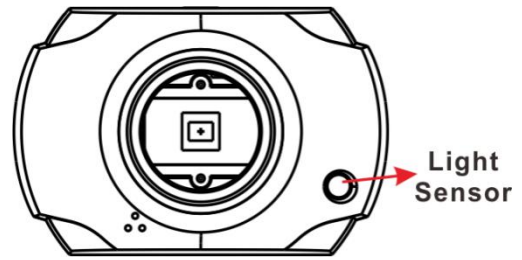
Non-ABF Models   **ABF Models**

Chapter 2. Camera Cabling

Please follow the instructions below to complete the cable connections.

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

2.1 Power Connection

For power connection, please refer to section Connectors. Alternatively, users can power the camera by PoE if a Power Sourcing Equipment (PSE) switch is available. Refer to the section below for Ethernet cable connection.

NOTE: If PoE is used, make sure PSE is in use in the network.

2.2 Ethernet Cable Connection

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

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

Check the status of both power and network activity indicator LEDs. If either LED is unlit, please check the corresponding connection.
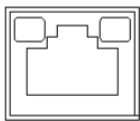
Green Power LED lights up when the camera is powered up.

Orange Network LED (1) flashes when data is being transmitted over network, (2) lights up for good network connection.

2.3 Lens Mounting

Follow the steps below to mount the C/CS Mount Lens to the camera.

Step 1: Remove the plastic cover of the camera.

Step 2: Remove the dustproof protective film from the CMOS image sensor.

Step 3: For Non-ABF models, mount the C/CS Mount Adapter to the camera.

Step 4: Attach the C/CS Mount Lens to the adapter.

CS Mount Adapter	Completion

2.4 Alarm I/O Connection

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

The camera supports one alarm input and one relay output for alarm application. Refer to alarm pin definition below to connect alarm devices to the IP camera if needed.
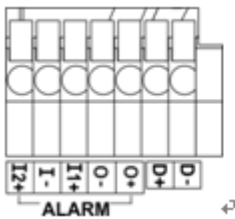
1. Alarm In 2 +

2. Alarm In −

3. Alarm In 1 +

4. Alarm Out −

5. Alarm Out +

NOTE: Do NOT connect external power supply to the alarm I/O connector of the IP camera.

2.5 RS-485 Connection

The RS-485 connector is the interface for connecting with the pan & tilt positioning system.
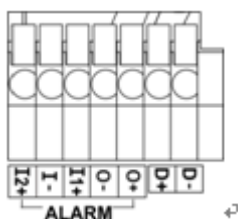
6. D +

7. D -

Chapter 3. System Requirements

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

Items	System Requirement
Personal Computer	**Minimum :** 1. Intel® CoreTM i5-2430M @ 2.4 GHz 2. 4 GB RAM
	Recommended : 1. Intel® CoreTM i7-870 @ 2.93 GHz 2. 8 GB RAM
Operating System	Windows 7 or later operating system
Web Browser	Microsoft Internet Explorer 11.0 (recommended) Chrome Firefox Safari
Network Card	10Base-T (10 Mbps), 100Base-TX (100 Mbps) or 1000Base-T operation
Viewer	ActiveX control plug-in for Microsoft IE

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

Chapter 4. Access Camera

For initial access to the IP camera, users can search the camera through the installer program: Search Tool.exe.

Accessing the Camera by Device Search Software

Step 1: Double click on the program Device Search.exe.

Step 2: After its window appears, click on the <Device Search> button on the top. All the finding IP devices will be listed in the page.

Step 3: Find the camera in the list by its IP address and click on it. The default IP address of the camera is: 192.168.0.250.

Step 4: The default IP address of the camera may not be in the same LAN as the IP address of the PC. If so, the IP address of the camera needs to be changed. Right click on the camera and click <Network Setup>. Meanwhile, record the MAC address of the camera, for future identification.

Step 5: The <Network Setup> page will come out. Select <DHCP> and click <Apply> down the page. The camera will be assigned with a new IP address.

Step 6: Click <OK> on the Note of setting change. Wait for one minute to re-search the camera.

Step 7: Click on the <Device Search> button to re-search all the devices. Find the camera in the list by its MAC address. Then double click or right click and select <Browse> to access the camera directly via a web browser.

Step 8: A prompt window requesting for default username and password will appear. Enter the default username and password shown below to login to the camera.

Login ID	Password
Admin	1234

NOTE: ID and password are case sensitive.

NOTE: It is strongly recommended that administrator's password be altered for the security concerns.

Installing DCViewer Software Online

For the initial access to the IP camera, a client program, DCViewer, will be automatically installed to the PC when connecting to the camera.

If the web browser doesn't allow DCViewer installation, please check the Internet security settings or ActiveX controls and plug-ins settings (refer to section Setup Internet Security) to continue the process.

The Information Bar (just below the URL bar) may come out and ask for permission to install the ActiveX Control for displaying video in browser. Right click on the Information Bar and select <Install ActiveX Control…> to allow the installation.

The download procedure of DCViewer software is specified as follows.

Step 1:   In the DCViewer installation window, click on <Next> to start installation.

Step 2:   The status bar will show the installation progress. After the installation   is completed, click on <Finish> to exit the installation process.

Step 3:   Click on <Finish> to close the DCViewer installation page.

Once the Viewer is successfully installed, the Home page of the IP camera will be able to correctly display as the figure below.

Non-ABF Models

ABF Models

Viewer Window — Main Tabs — Language Selection

Network Camera | Home | System | Streaming | Camera | Logout | English

Stream 1 → Video Format Selection — Live Video Pane — Time Display ← 2011/03/29 23:13

FOCUS | NEAR | FAR | ☐ 1 step ∨ | RESET → Manual Focus Adjustment
AF MODE | LOCK | PUSH AF | ☐ Precise AF → Auto Focus Adjustment

Stream 1 : H264 bitrate : 6144 kbps low compression, high quality
Stream 2 : H264 bitrate : 4096 kbps
Stream 3 : H264 bitrate : 2048 kbps middle compression, middle quality
Stream 4 : H264 bitrate : 2048 kbps middle compression, middle quality

Video Compression Info ←

Video Quality Info Button
Full Screen Button
Talk Button
Listen Button
Snapshot Button
Live View Pause Button
Video Record Button
Manual Trigger Button

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4.1 Lock ABF Function (ABF Models Only)

Lock function is to lock the ABF function of the camera after focus is adjusted to the best position. This function is to prevent the camera from being out of focus when the camera is moved afterwards or is accidentally adjusted locally or remotely via NVR/VMS.

Step 1: Once the camera is powered on, click on < RESET >.

Step 2: Manually adjust the lens to the approximate zoom and focus position.

Step 3: Check the <Precise AF> box and click < PUSH AF >.

Step 4: Click on < LOCK > to lock the current focus position of the camera.

Note that all function items related to focus cannot be accessed.

Click < LOCK > to disable this function and adjust the focus of the camera.

Chapter 5. Setup Video Resolution

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

Video Configuration can be found under: **Streaming> Video Configuration.**
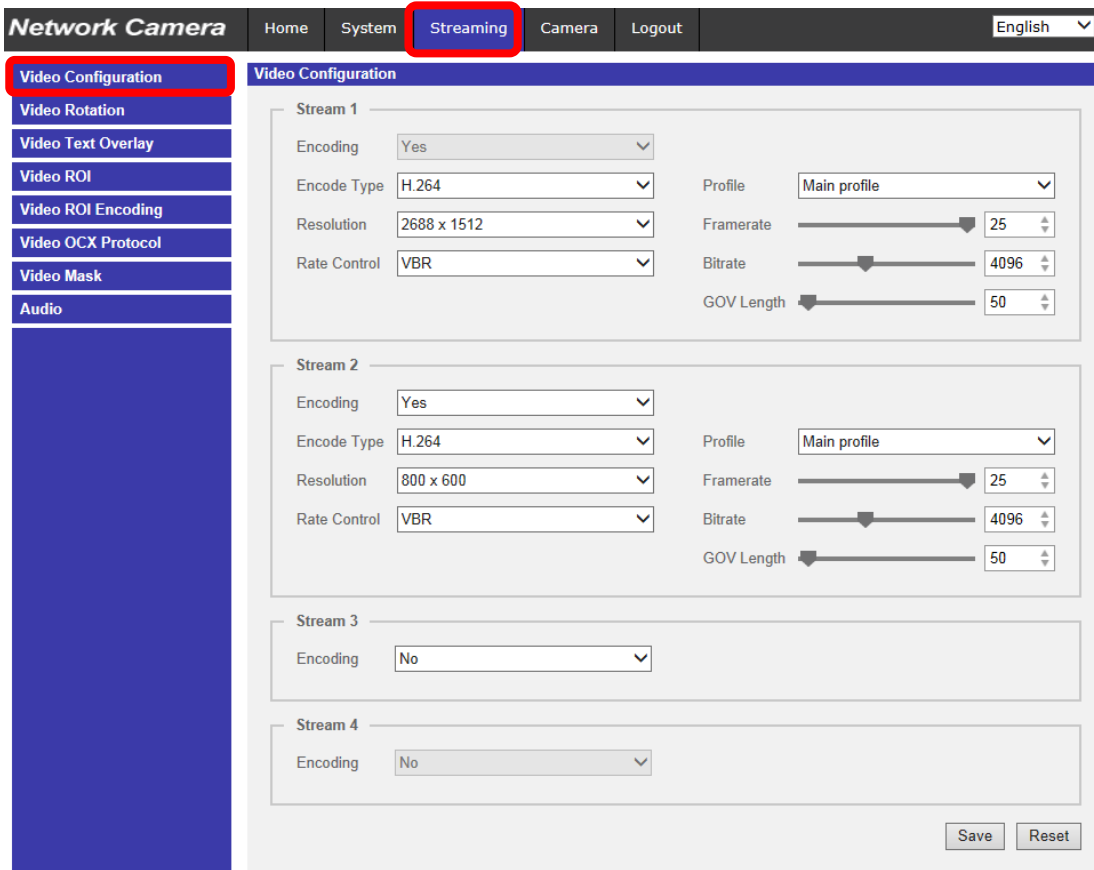
The default values of video resolution are as below.

4M	H.265/H.264- 2688 x 1512 (30/25 fps) + H.265/H.264- 800 x 600 (30/25 fps)

Chapter 6. Configuration Files Export / Import

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

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

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

Export

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

Upload

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

Chapter 7. Tech Support Information

This chapter will introduce how to delete previously-installed Viewer in the PC and how to setup the Internet security.

7.1 Delete the Existing DCViewer

This chapter will introduce how to delete previously-installed DCViewer in the PC and how to setup the Internet security.

Deleting the DCViewer

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

Deleting Temporary Internet Files

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

Step 1: Click on the <Tools> tab on the menu bar and select <Internet Options>.

Step 2: Click on the <Delete> button under <Browsing history> section.

Step3: In the appeared window, tick the box beside <Temporary Internet files> and click on <Delete> to start deleting the files.

7.2 Setup Internet Security

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

Internet Security Level: Default

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

ActiveX Controls and Plug-ins Settings

Step 1: Repeat Step 1 to Step 3 of the previous section above.
Step 2: Down the page, click on the <Custom Level> button to change ActiveX controls   and plug-ins settings. The Security Settings window will pop up.

Step 3: Under <ActiveX controls and plug-ins>, set ALL items (as listed below) to <Enable> or <Prompt>. Please note that the items vary by IE version.

ActiveX controls and plug-ins settings:

1. Binary and script behaviors.

2. Download signed ActiveX controls.

3. Download unsigned ActiveX controls.

4. Allow previously unused ActiveX controls to run without prompt.

5. Allow Scriptlets.

6. Automatic prompting for ActiveX controls.

7. Initialize and script ActiveX controls not marked as safe for scripting.

8. Run ActiveX controls and plug-ins.

9. Only allow approved domains to use ActiveX without prompt.

10. Script ActiveX controls marked safe for scripting*.

11. Display video and animation on a webpage that does not use external media player.

Step 4: Click on <OK> to accept the settings. A prompt window will appear for confirming the setting changes, click <Yes(Y)> and close the Security Settings window.

Step 5: Click on <OK> to close the Internet Options screen.

Step 6: Close the browser window, and restart a new one later to access the IP camera.