



# Outdoor Multi-Imager Dome

## Hardware Manual

Q75

2020/08/13



**ACTi**  
Connecting Vision

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# Precautions

## Read these instructions

You should read all the safety and operating instructions before using this product.

- Do not use the camera in unstable lighting conditions.
- Never use the camera close to gas or oil leak.
- Never face the camera to strong light for long periods of time.

## Heed all warnings

You must adhere to all the warnings on the product and in the instruction manual. Failure to follow the safety instructions given may directly endanger people, cause damage to the system or to other equipment.

## Servicing

Do not attempt to service this video device yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

## Trademarks

All names used in this manual are probably registered trademarks of respective companies.

## Liability

Every reasonable care has been taken during the writing of this manual. Please inform your local office if you find any inaccuracies or omissions. We cannot be held responsible for any typographical or technical errors and reserve the right to make changes to the product and manuals without prior notice.

**Federal Communications Commission Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense.

**European Community Compliance Statement**

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to European Standard EN 55022 and EN 55024. In a domestic environment, this product may cause radio interference in which cause the user may be required to take adequate measures.

## Safety Instructions

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### **Cleaning**

Disconnect this video product from the power supply before cleaning.

### **Attachments**

Do not use attachments or accessories not recommended by the video product manufacturer as they may cause hazards.

### **Water and Moisture**

Install other devices (such as PoE injector, alarm, etc.) that will be used with the camera in a dry place protected from weather.

### **Servicing**

Do not attempt to service this video product yourself. Refer all servicing to qualified service personnel.

### **Damage Requiring service**

Disconnect this video product from the power supply immediately and refer servicing to qualified service personnel under the following conditions:

- 1) When the power-supply cord or plug is damaged.
- 2) If liquid has been spilled or objects have fallen into the video product.
- 3) If the inner parts of the video product have been directly exposed to rain or water.
- 4) If the video product does not operate normally by following the operating instructions in this manual. Adjust only those controls that are covered by the instruction manual, as an improper adjustment of other controls may result in damage, and will often require extensive work by a qualified technician to restore the video product to its normal operation.

### **Safety Check**


Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine if the video product is in proper operating condition.

# Introduction

## List of Models






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This hardware manual contains the following model:

Q75		20MP Outdoor Multi-Imager Panoramic Dome with D/N, Adaptive IR, Extreme WDR, SLLS, 4 Fixed Lenses, 4 pcs 5MP Sensors

## Package Contents

Check if the following items come with the camera package. If any of them is missing, please contact your local sales agents or the [Customer Help Desk \(CHD\)](#).

Camera	Cable Gland	Screw Pack
		
Rubber Ring	Wrench	Drill Template
		<div data-bbox="1070 936 1283 1106" style="border: 1px solid black; padding: 5px; text-align: center;">                     Drill Template                 </div>
QIG & Warranty Card		
<div data-bbox="336 1337 480 1422" style="border: 1px solid black; padding: 5px; text-align: center;">                     QIG &amp; Warranty Card                 </div>		



## Physical Description



No.	Item	Description
1	Digital Output	This connector connects to digital output device, such as alarm, etc. Digital Output (DO) devices are used for applications like motion detection, event triggering, alarm notifications, etc. See <a href="#">How to Connect Digital Input / Digital Output Devices</a> on page 25 for information.
2	Digital Input	This connector connects to a digital input device, such as a panic button, etc. Digital Input (DI) devices are used for applications like motion detection, event triggering, alarm notifications, etc. See <a href="#">How to Connect Digital Input / Digital Output Devices</a> on page 25 for information.
3	Power Input	This jack connects to the power adapter and power cord to supply power to the camera. See <a href="#">How to Connect a Power Adapter</a> on page 24.
4	Audio Output	This jack connects to an audio output device, such as a speaker. See <a href="#">How to Connect Audio Devices</a> on page 27.
5	Reset Button	The reset button is used to restore the factory default settings of the camera, including the administrator's password.  To reset the camera, do the following: Press and hold the reset button for at least 10 seconds. The camera may take a few second to start resetting.

No.	Item	Description
6	Audio Input	This jack connects to an audio input device, such as a microphone with built-in amplifier. See <a href="#">How to Connect Audio Devices</a> on page 27. <b>NOTE:</b> Make sure that the connected audio input device has a built-in amplifier. Connecting an ordinary microphone will dwarf sounds and will result in inaudible recording.
7	Ethernet Port	The Ethernet port connects to a network using a standard Ethernet cable.
8	Memory Card Slot	Insert a memory card for local recording. See <a href="#">Insert the Memory Card (Optional)</a> on page 12.

## Mounting Options

The camera can be directly mounted on the surface by removing the mount kit which is attached at the top of the camera (see [Mounting the Camera Directly on the Surface](#) on page 16 for instructions). However, there are also several mounting installation options that you can use, such as pendant mount, wall mount, pole mount, etc. For more information about mounting solutions and accessories, please visit our website (<http://www.acti.com/mountingselector>).

Mount Types	Accessories
Pendant Mount	Suitable when mounting the camera on a hard ceiling.
Straight Wall Mount	Suitable when mounting the camera on a straight wall.
Vertical Pole Mount	Suitable when mounting the camera on a vertical pole.
Horizontal Pole Mount	Suitable when mounting the camera on a horizontal pole.
Corner Mount	Suitable when mounting the camera on a corner wall.

## Precautions

- **Do not use the camera in extreme temperature.** Air vent is required at high temperature.
- **Do not use or store the camera in humid environment.** It may cause poor image quality.
- **Do not use the camera in unstable lighting conditions.** Inconsistent lighting or flickering may cause poor image quality.
- **Never use the camera close to gas or oil leak.** It may not operate properly.
- **Do not disassemble the camera.** There is no user serviceable part inside.
- **Do not drop the camera or apply force on it.** It may cause a malfunction.
- **Never face the camera to strong light for long periods of time.** It may damage the CMOS sensor.
- **External power supply cannot be used with POE simultaneously, or it may damage the camera.**

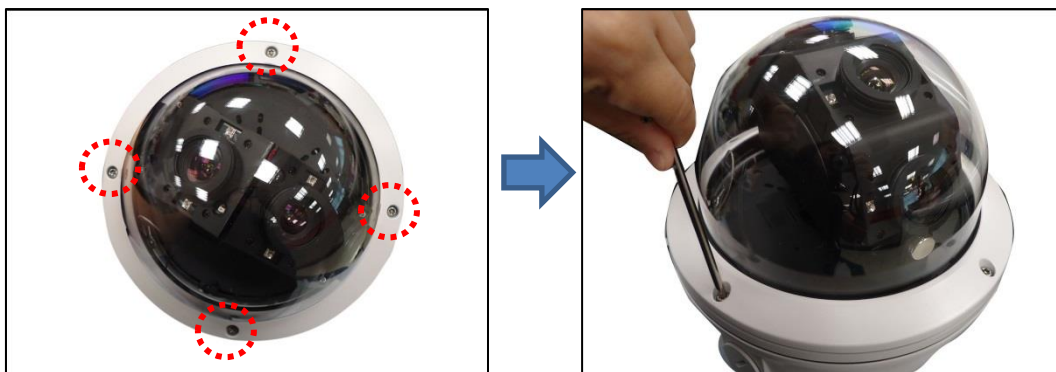
## Before Installation

This section describes the procedures that can be done to prepare the camera prior to installation. Note that some may not be applicable to your installation environment; do them as needed.

### Open the Dome Cover

You need to open the dome cover to adjust the camera tilt and viewing angle, a memory card will be inserted in the camera, or when you need to remove the mount kit to install the camera on a flat surface without additional accessories.

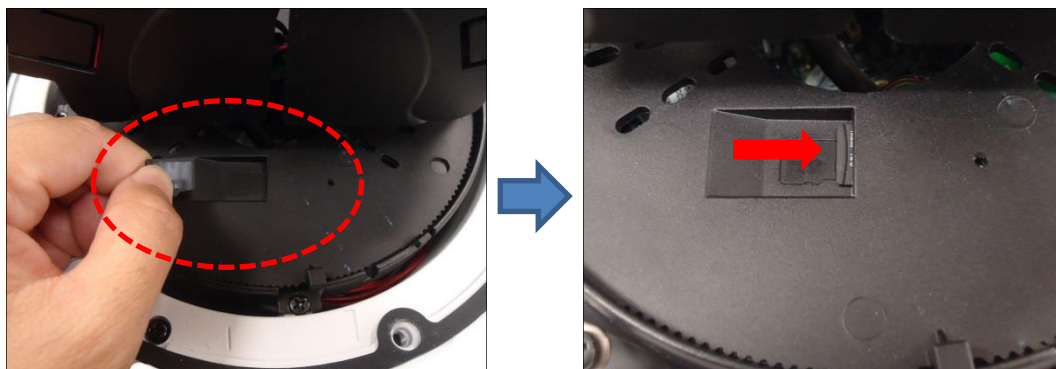
Using the bundled wrench, loosen the four (4) screws securing the dome cover.



### Insert the Memory Card (Optional)

If a memory card will be used for local recording, do the following to insert the memory card.

1. Open the dome cover. Locate the memory card slot on the base of the lens module.
2. Insert the card with the card contacts facing down the card logo. Push the card until it clicks into place.



# Installation Procedures

Installation procedures vary depending on the desired mounting solution. Cables may be connected first before mounting the camera or vice versa.

Below are the basic installation procedures when mounting the camera on the surface or with the use of a wall mount. Similar procedures apply when using other mounting options. For detailed information and other mounting solutions, check the website (<http://www.acti.com/mountingselector>).

**NOTE:** The following pictures are for reference only, actual camera and cable connections may slightly vary.

## Mounting the Camera with Wall Mount

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For the wall mount installation procedures below, PMAX-0345 is used as an example. Similar procedures can be applied for other accessories.

### 1. Drill the Required Holes

Use the drill template that came with your mounting accessory to drill the holes on the surface such as screw holes or cable hole.

### 2. Route the cables

Route the cables from the network side through the cable hole on the wall and into the wall mount, ready to be connected to the camera cables later.

### 3. Install the Mounting Solution

Attach the wall mount to the wall. Make sure the converter ring on the wall mount is removed first because the cables will not pass through the converter ring.



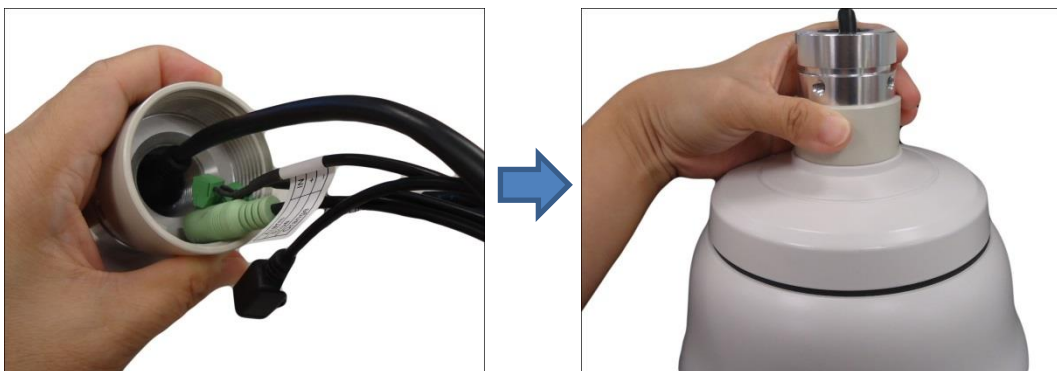
### 4. Attach the Rubber Ring to the Mount Kit

Attach the bundled rubber ring to the top of the mount kit.



### 5. Attach the Wall Mount Converter Ring to the Camera

Insert the camera cables through the converter ring and secure the converter ring on the camera's mount kit.



### 6. Insert and Connect the Cables

Connect the camera cables to the network side cables. Push the cables into the mount until it is completely inside the mount or the wall.



**CAUTION:** The camera itself is waterproof, however take note that the cable connections are not. If the cable connections will be exposed outdoors, make sure to shield or adapt proper waterproofing methods. See [Waterproof the Cable Connections](#) on page 19.

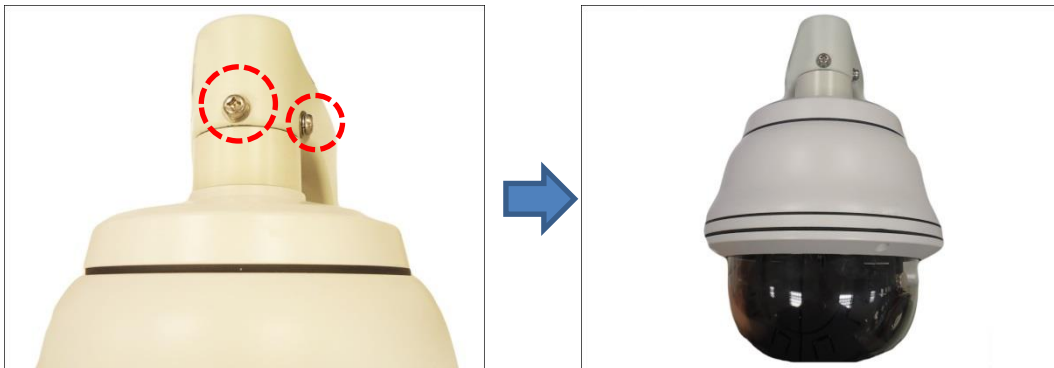
**DISCLAIMER:** ACTi will not be responsible for camera damage caused by water entering the cable connections.

## 7. Mount the camera

1. Align the gap on the camera to the tab inside the mounting solution and insert the camera through the mount. Attach the screws included in the wall mount package to secure the camera.



2. Attach the two (2) screws included in the wall mount package to secure the camera.



3. Adjust the camera tilt and viewing angle to complete the installation, see [Adjust Camera Tilt and Viewing Angle](#) on page 23.

## Mounting the Camera Directly on the Surface

The camera can be directly mounted on a flat surface without using additional mounting accessories. To do this, you need to remove first the mount kit which comes attached to the camera, by default.

### Remove the Mount Kit

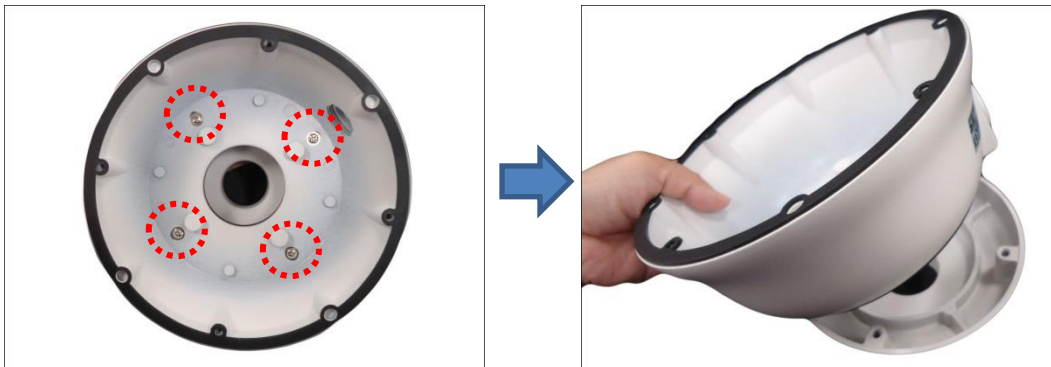
1. Remove the dome cover.
2. Using a screwdriver, loosen the four (4) screws securing the camera module to the housing.



3. Lift the camera module and pull out the cables through the mount kit and housing.



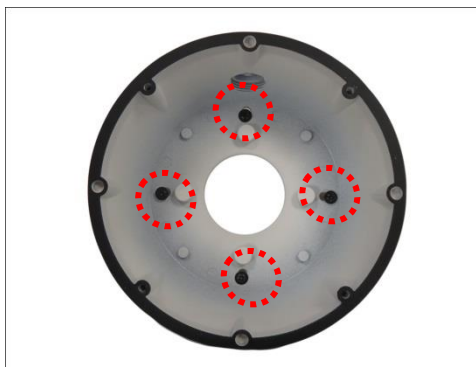
4. Remove the four (4) screws securing the mount kit to the housing, and then detach the mount kit.



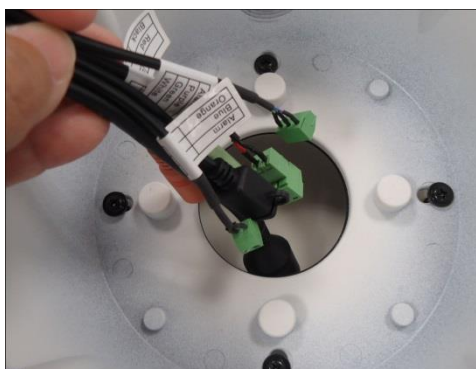


## Mount the Camera

1. Using the drill template that came with the camera, drill the holes on the surface such as screw holes and cable hole.
2. Install the camera housing on the surface using four (4) screws.



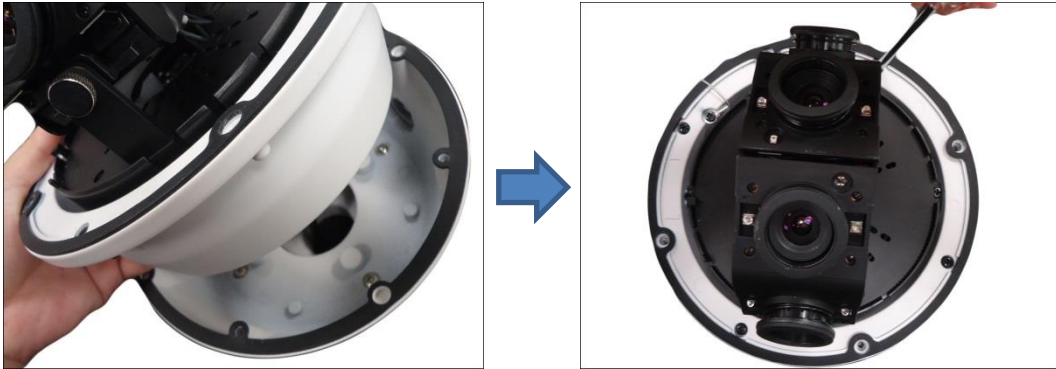
3. Route the cables from the network side and the camera cables through the housing and then connect the cables.



**CAUTION:** The camera itself is waterproof, however take note that the cable connections are not. If the cable connections will be exposed outdoors, make sure to shield or adapt proper waterproofing methods. See [Waterproof the Cable Connections](#) on page 19.

**DISCLAIMER:** ACTi will not be responsible for camera damage caused by water entering the cable connections.

4. Attach the camera module to the housing by securing the four (4) screws.



5. Adjust the camera tilt and viewing angle to complete the installation, see [Adjust Camera Tilt and Viewing Angle](#) on page 23.

## Waterproof the Cable Connections

The camera itself is waterproof, however take note that the “pigtail” or cable connections are not.

If the camera is mounted directly on the ceiling/wall where the cables pass through the ceiling/wall, then your installation is complete and you do not need to waterproof the cable connections. However, if the camera is mounted where the cables may be exposed then it is recommended to waterproof the cable connections.

### How to Use the Cable Gland

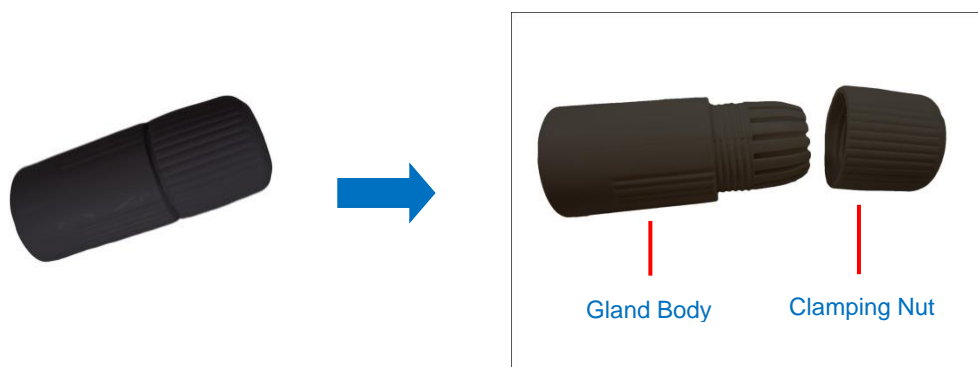
This section describes how to waterproof the cable-out or “pigtail” of the camera using the bundled cable gland.

Before connection, prepare the following materials:

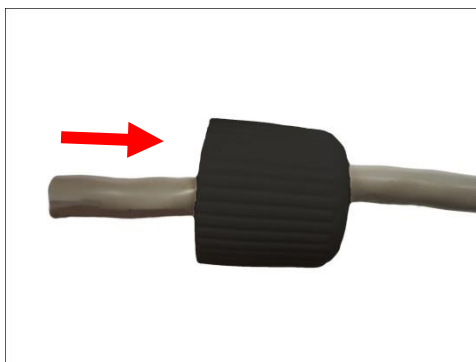
- An exterior-grade Ethernet cable without the RJ-45 connector
- RJ-45 connector
- Crimping Tool
- Scissors

Perform the following to waterproof the “pigtail” using the cable gland:

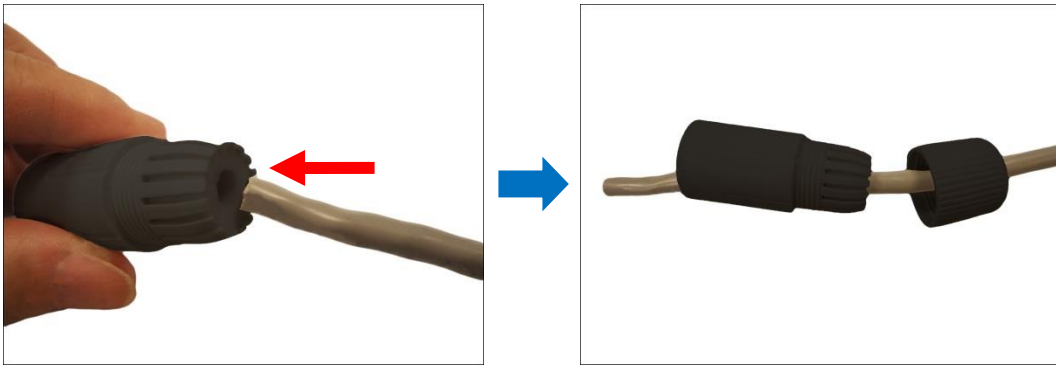
1. Detach the clamping nut from the cable gland:



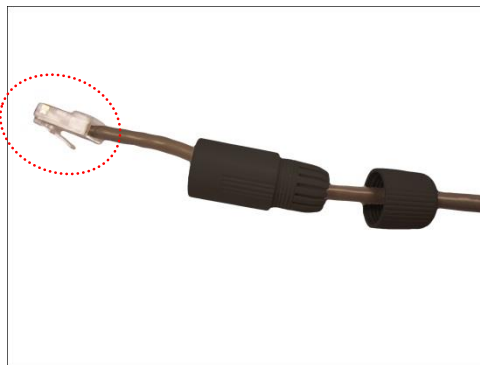
2. Insert the clamping nut into the Ethernet cable (without connector).



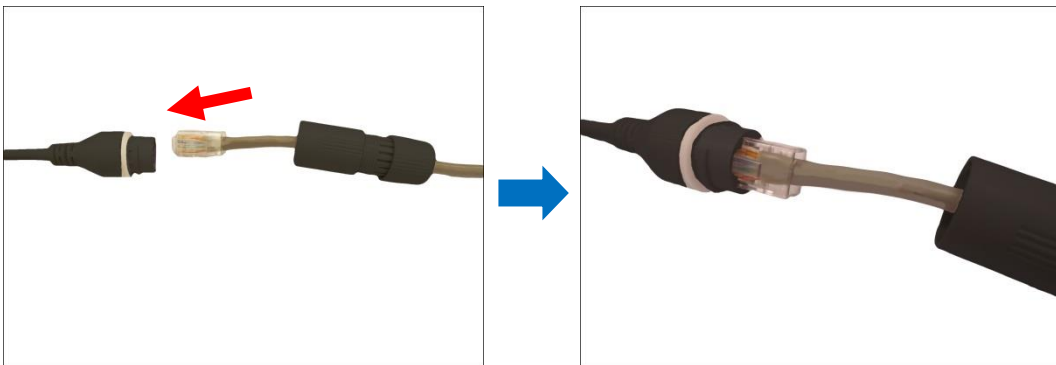
3. Insert the cable through the gland body.



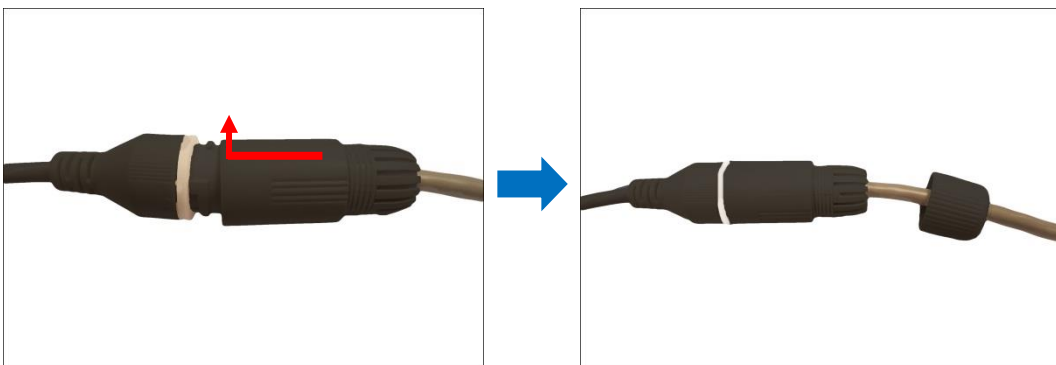
4. Attach the RJ-45 connector to the cable. For pin mapping and detailed instructions, see [How to Attach the RJ-45 Connector](#) for page 28 for detailed information.



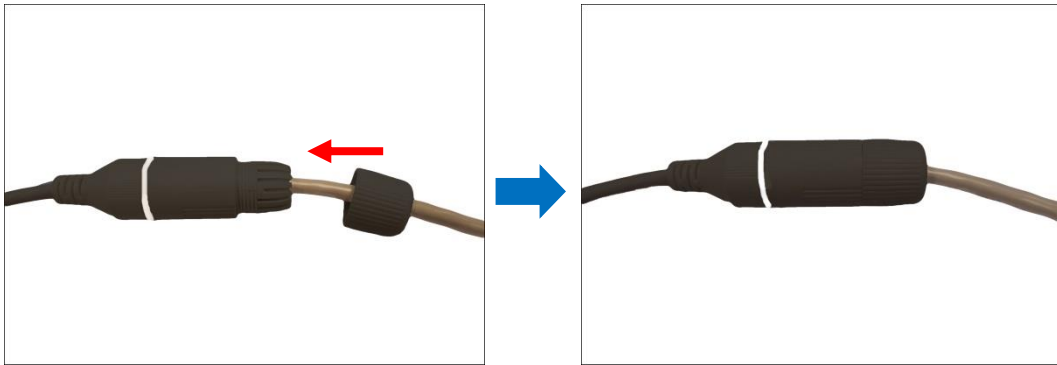
5. Connect the RJ-45 connector to the camera connector.



6. Attach the gland body to the camera connector.



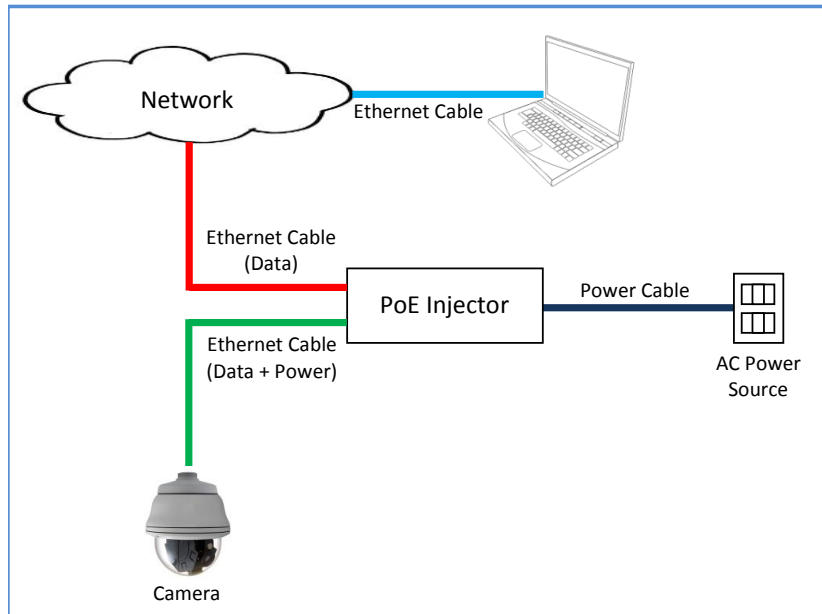
7. Attach the clamping nut to the gland body to complete the cable solution.



**NOTE:** Make sure the clamping nut is tightly attached to the cable gland body and the sealing insert is squeezed tightly.

## Connect to Network

Connect the other end of the network cable to a switch or injector. Then, connect the switch or injector to a network, PC, and a power source. See Power-over-Ethernet (PoE) connection example below.



**NOTE:** Use only the supplied power adapter and power cord that came with the camera or the optional High PoE Injector available for purchase. Using other accessories not approved by the manufacturer may cause damage to the equipment.

See [Accessing the Camera](#) on page 30 for more information on how to access the Live View of the camera.

## Adjust Camera Tilt and Viewing Angle

Based on the live view, you can adjust the viewing angle of the camera.

1. Loosen the tilt adjustment screws, then tilt the lens module as needed.
2. Tighten the tilt adjustment screws to fix its position.

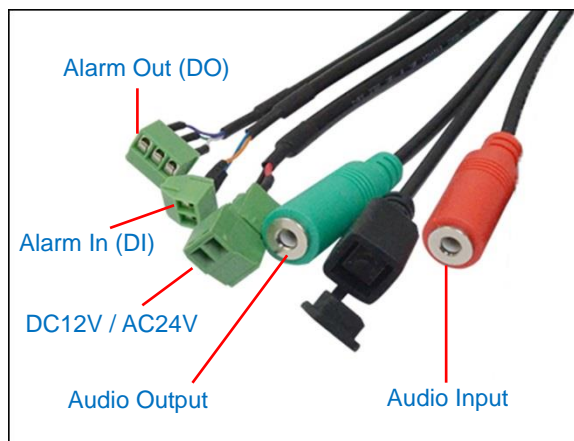


3. Move the module base to pan the camera.



# Other Cable Connections

This section describes the procedures in preparing and connecting an external power adapter, optional Digital Input and Digital Output (DI/DO), such as alarms, sensors, etc., and Audio Input and Output devices. The use of these devices, however, is optional.



## How to Connect a Power Adapter (Optional)

The camera can be powered by a Power over Ethernet (PoE) switch is IEEE802.3at (Class4) compliant. In case of using a non-PoE switch, you can purchase a power adapter and directly connect the camera to an external power supply.

**WARNING: External power supply cannot be used with PoE simultaneously, or it may damage the camera.**

Connect the wires of the power adapter to the corresponding pins on the terminal block of the power cable. See table below:

POWER	Terminal Block Pin	
	DC12~24V	AC24V
Red	+	~
Black	-	~

Make sure to protect the cable connection inside a junction box or wrap the connection using a waterproof tape (can be purchased in hardware stores) if cable connection will be exposed after installation.



## How to Connect Digital Input / Digital Output Devices

Depending on your surveillance needs, you may need to connect digital input or output devices to your camera to trigger events or notifications.

Digital Input (DI) or alarm input devices can be used to notify the camera about an activity in the camera site. DI can be triggers of events. For example, you can connect a “panic button” to the camera; as such when the panic button is pressed, the alarm signal will be sent through the camera. Other common DI device applications are emergency button, smoke detector, passive infrared sensor, etc.

Digital Output (DO) or alarm output devices are external devices that are activated by the camera upon an event inside the camera. For example, you can connect an “alarm horn” to the camera; as such when an event occurs inside the camera (e.g. detected intruder), the alarm horn will sound. Other common DO device applications are motion-triggered lights, electric fence, magnetic door locks, etc.

### Connecting DI/DO Devices

Map the pins to the terminal block of the DI (Alarm input) or DO (Alarm output) cables as shown on the table below. Loosen the screw and insert the wire through the pin slot on the terminal block, then tighten the screw to secure the wire.

ALARM OUT (DO)	Terminal Block Pin
Purple	NC
Green	COM
White	NO

ALARM IN (DI)	Terminal Block Pin
Blue	+
Orange	-

After mapping the wires to the terminal block, connect the terminal block to the DI/DO connectors of the camera and be sure to protect the cable connection inside a junction box or wrap the connection using a waterproof tape (can be purchased in hardware stores) if cable connection will be exposed after installation. Sample below:



**NOTE:** For more information on DI/DO connections, please refer to the article *All About Digital Input and Digital Output* downloadable from <http://Download.acti.com?id=516>.

## How to Connect Audio Devices

The camera comes with audio input / output jacks to connect a microphone or speaker to the camera. The audio jacks are covered with a rubber protection.

If using an audio input device, such as a microphone with a built-in amplifier, connect the device to the **Audio Input** jack (PINK) of the camera. If using an audio output device, such as a speaker, connect the device to the **Audio Output** jack (LIGHT GREEN) jack of the camera.

If the camera is installed outdoors, be sure to wrap the audio connectors with Waterproof tape (can be purchased in hardware stores).

**DISCLAIMER:** ACTi will not be responsible for damaged cameras due to water leakage caused by improper waterproofing of cables.



**NOTE 1:** Make sure that the connected audio input device has a built-in amplifier. Connecting an ordinary microphone will dwarf sounds and will result in inaudible recording.

**NOTE 2:** If the audio connectors will not be used, leave the rubber caps on to avoid water and dust from entering the connectors.

Be sure to protect the audio cable connections inside a junction box or wrap with waterproof tape (can be purchased in hardware stores).

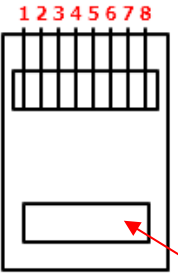


## How to Attach the RJ-45 Connector

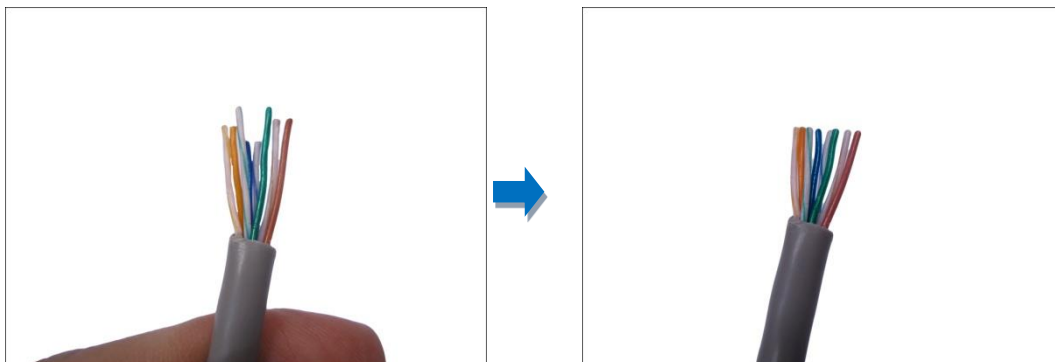
1. Prepare the following tools:
  - a. RJ-45 connector
  - b. Crimping tool
  - c. Scissors
2. Cut about one (1) inch into the plastic sheath from the end of the cable.



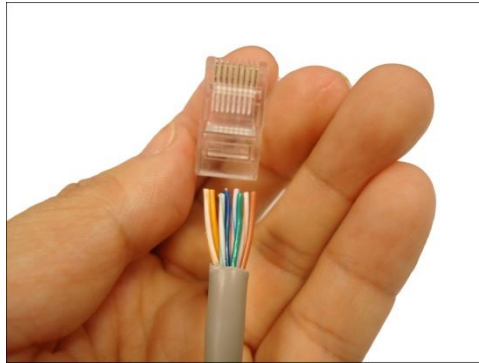
3. Unwind the wires and arrange them according to the color sequence below.

	1	Stripe Orange
	2	Orange
	3	Stripe Green
	4	Blue
	5	Stripe Blue
	6	Green
	7	Stripe Brown
	8	Brown

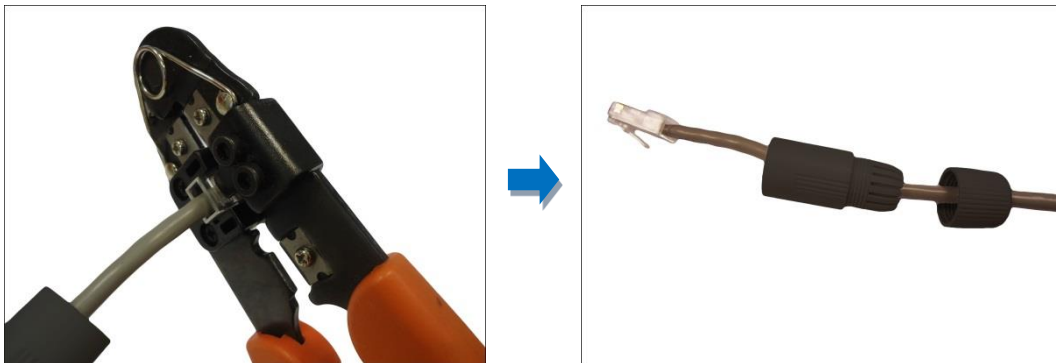
4. Straighten out the wires and use the scissors to make a straight cut ½ inch from the cut end.



5. With the RJ-45 connector tab facing down, push down the wires into the connector all the way to the end.



6. Place the connector into the crimping tool, and cinch down to secure the RJ-45 connector to the Ethernet cable.



# Accessing the Camera

## Configure the IP Addresses

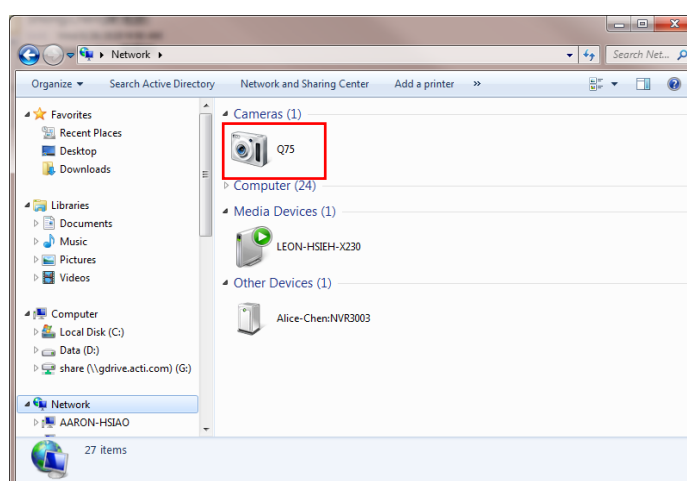
In order to be able to communicate with the camera from your PC, both the camera and the PC have to be within the same network segment. In most cases, it means that they both should have very similar IP addresses, where only the last number of the IP address is different from each other. There are 2 different approaches to IP Address management in Local Area Networks – by DHCP Server or Manually.

### Using DHCP server to assign IP addresses

If you have connected the computer and the camera into the network that has a DHCP server running, then you do not need to configure the IP addresses at all – both the camera and the PC would request a unique IP address from the DHCP server automatically. In such case, the camera will immediately be ready for the access from the PC. The user, however, might not know the IP address of the camera yet. It is necessary to know the IP address of the camera in order to access it using a Web browser.

**The quickest way to discover the cameras in the network** is to use the simplest network search, built in the Windows system – just by pressing the “Network” icon, all the cameras of the local area network will be discovered by Windows, thanks to the UPnP function support of our cameras.

In the example below, the camera model that has just been connected to the network is successfully found.

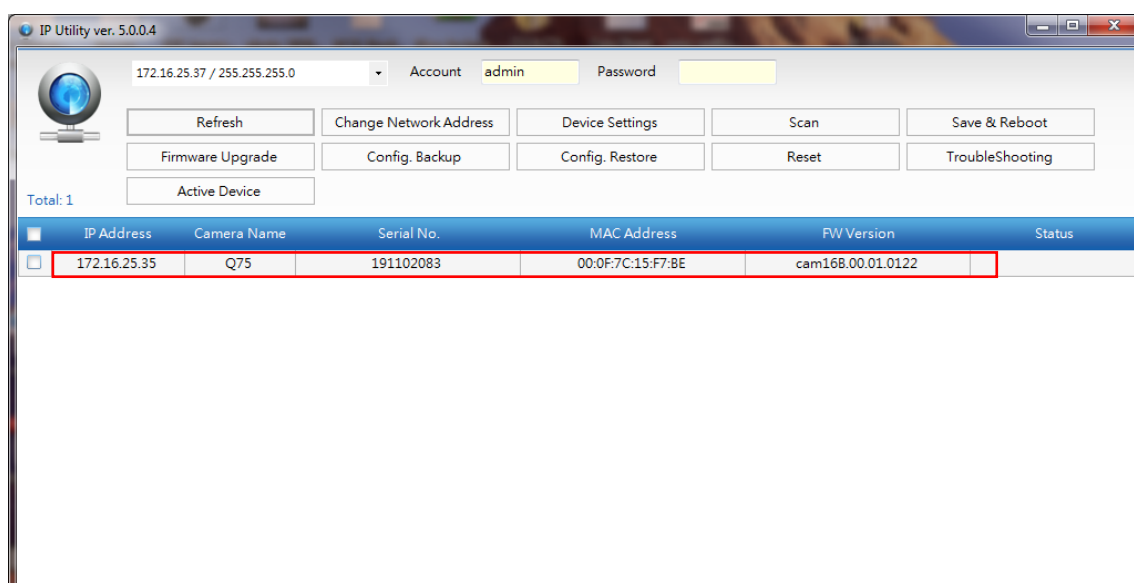


Double-click the mouse on the camera model name, the default browser of the PC is automatically launched and the IP address of the target camera is already filled in the address bar of the browser.

If you work with our cameras regularly, then **there is even a better way to discover the cameras in the network** – by using **IP Utility**. The IP Utility is a light software tool that can not only discover the cameras, but also list lots of valuable information, such as IP and MAC addresses, serial numbers, firmware versions, etc, and allows quick configuration of multiple devices at the same time.

Search and download IP Utility for free from <http://www.acti.com/DownloadCenter>.

When you launch IP Utility, the list of connected cameras in the network will be shown. See sample illustration below:



The camera model name is shown on the list. Double-click on the IP address to automatically launch the default browser of the PC with the IP address of the target camera already filled in the address bar of the browser.

## Use the default IP address of the camera

If there is no DHCP server in the given network, the user may have to manually assign the IP addresses to both the PC and the camera to make sure they are in the same network segment.

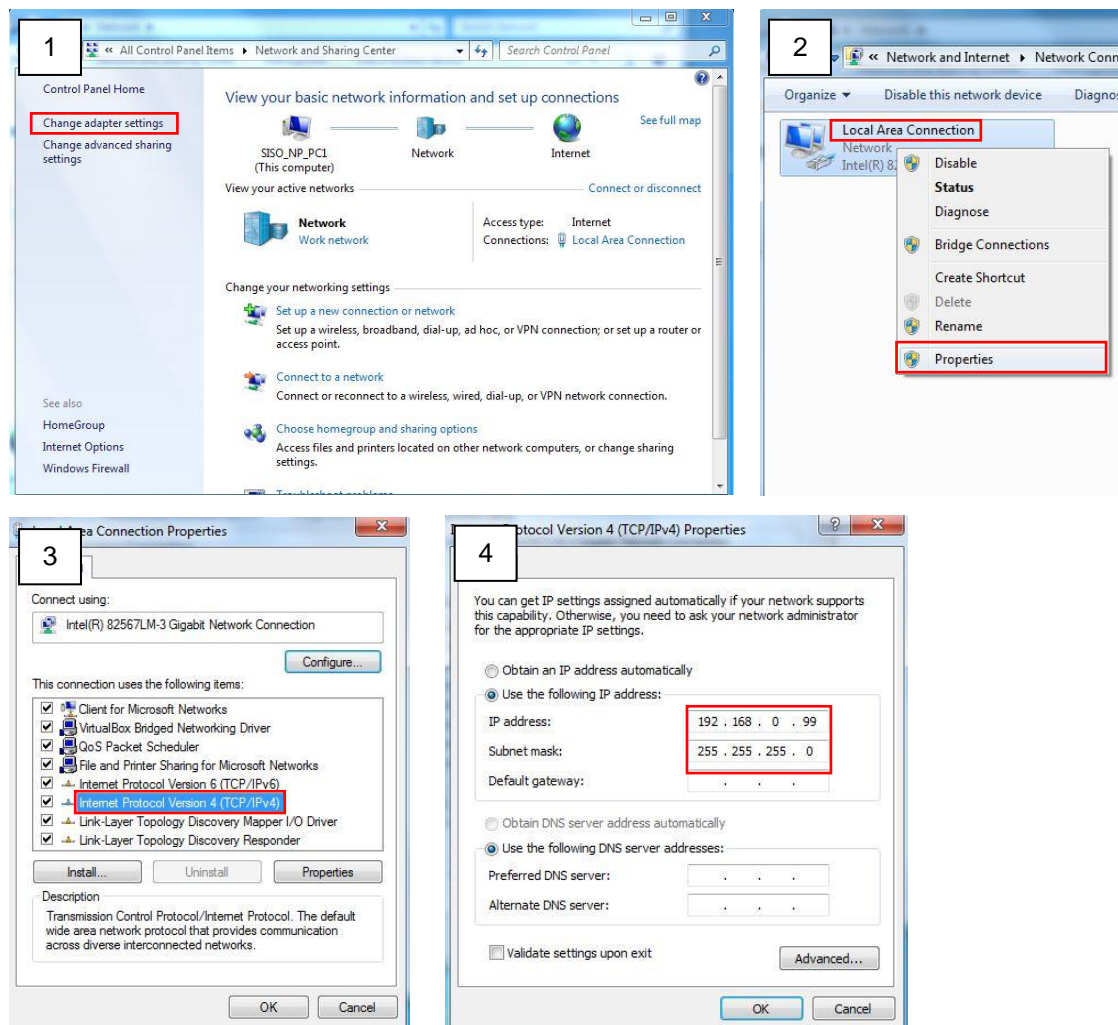
When the camera is plugged into the network and it does not detect any DHCP services, it will automatically assign itself a default IP:

**192.168.0.100**

Whereas the default port number would be **80**. In order to access that camera, the IP address of the PC has to be configured to match the network segment of the camera.

## Manually adjust the IP address of the PC

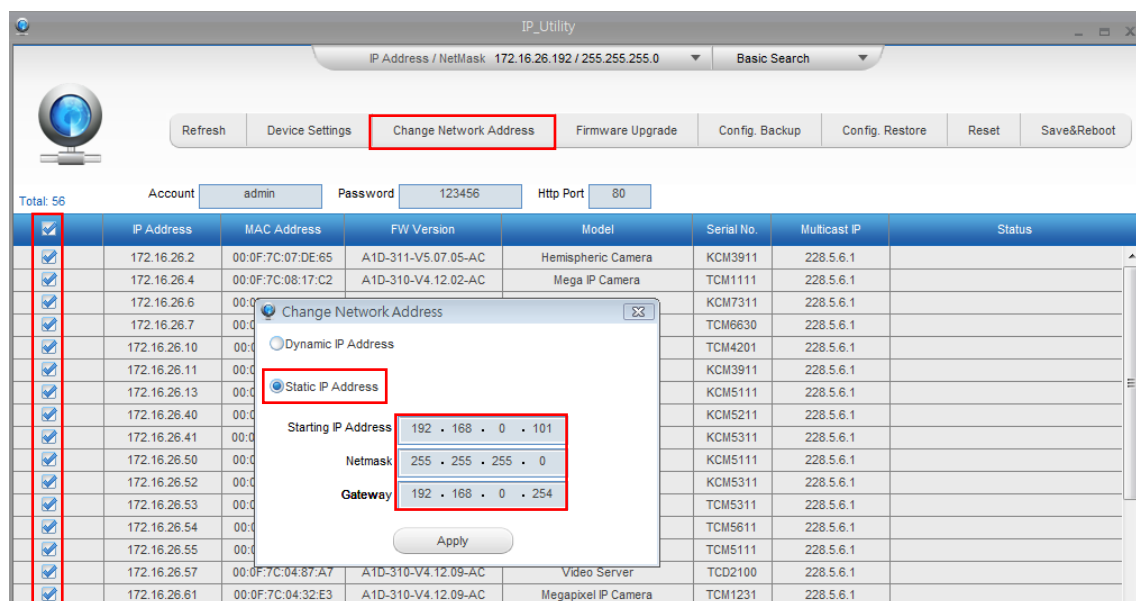
In the following example, based on Windows 7, we will configure the IP address to **192.168.0.99** and set Subnet Mask to **255.255.255.0** by using the steps below:





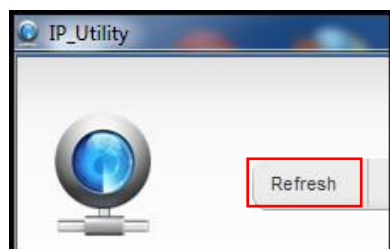
### Manually adjust the IP addresses of multiple cameras

If there are more than one camera to be used in the same local area network and there is no DHCP server to assign unique IP addresses to each of them, all of the cameras would then have the initial IP address of **192.168.0.100**, which is not a proper situation for network devices – all the IP addresses have to be different from each other. The easiest way to assign cameras the IP addresses is by using **IP Utility**:



With the procedure shown above, all the cameras will have unique IP addresses, starting from 192.168.0.101. In case there are 20 cameras selected, the last one of the cameras would have the IP 192.168.0.120.

Later, by pressing the “Refresh” button of the IP Utility, you will be able to see the list of cameras with their new IP addresses.



Please note that it is also possible to change the IP addresses manually by using the Web browser. In such case, please plug in only one camera at a time, and change its IP address by using the Web browser before plugging in the next one. This way, the Web browser will not be confused about two devices having the same IP address at the same time.

## Access the Camera

Now that the camera and the PC both have their unique IP addresses and are under the same network segment, you can use **Microsoft Internet Explorer** or other browsers as indicated on the Product Specification on the PC to access the camera.

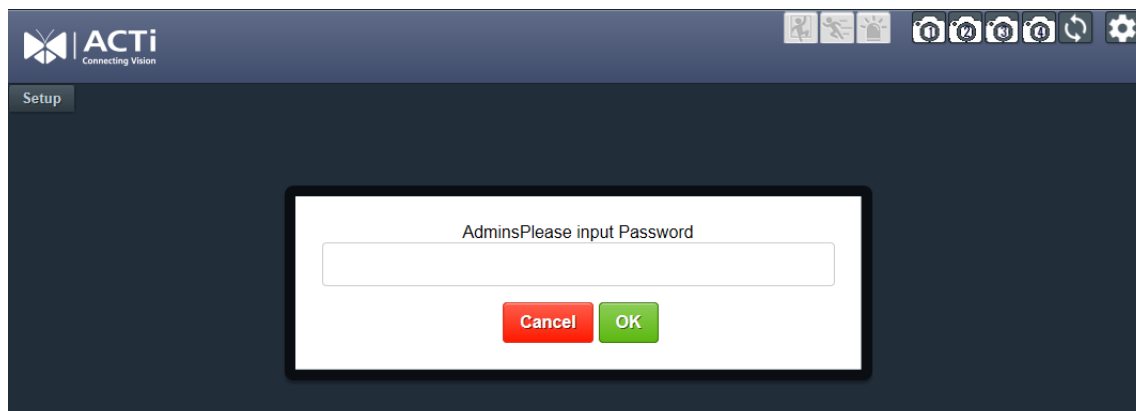
When using Internet Explorer browser, the ActiveX control for video stream management will be downloaded from the camera directly – the user just has to accept the use of such control when prompted so. No other third party utilities are required to be installed in such case.

**The following examples in this manual are based on Internet Explorer browser in order to cover all functions of the camera.**

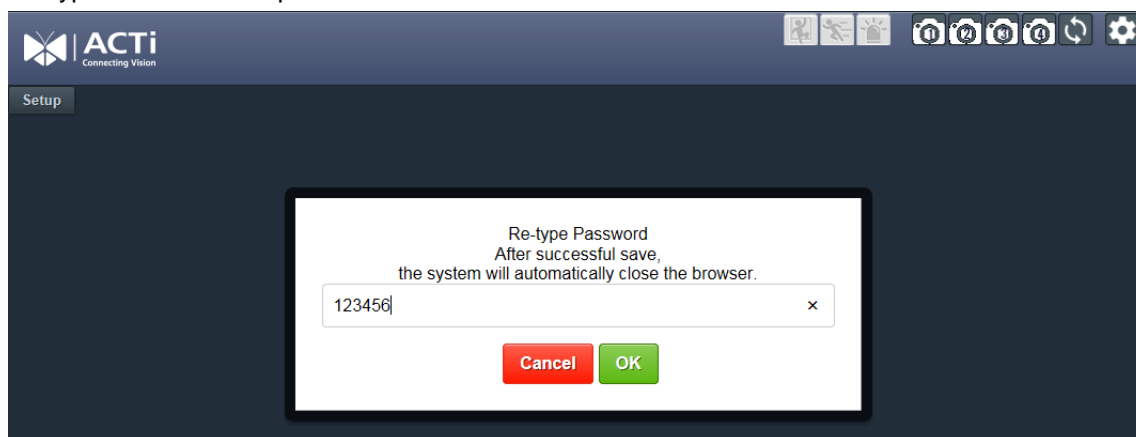
Assuming that the camera’s IP address is **192.168.0.100**, you can access it by opening the Web browser and typing the following address into Web browser’s address bar:

**http://192.168.0.100**

Upon successful connection to the camera, the user interface will appear. For first time use, you need to setup the administration password.

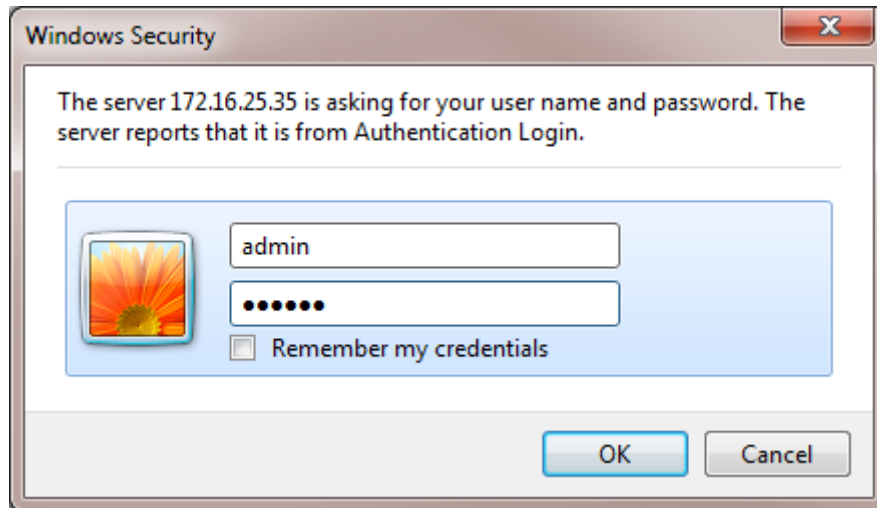


Re-type to confirm the password.



If an empty page opens, close the page and access the camera again. The user interface will prompt for the account and password for login.

Type the default account: “**admin**”, and type the password you have just setup.



For further operations, please refer to the **Firmware User Manual**.



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