



# Speed Dome Camera

## Hardware Manual

**Z959**

**2025/06/2**



**ACTi**  
Connecting Vision

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# Precautions

## **Read these instructions**

Read all the safety and operating instructions before using this product.

## **Heed all warnings**

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 product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

## **Trademarks**

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## **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. ACTi will not be held responsible for any typographical or technical errors and reserves the right to make changes to the product and manuals without prior notice.

## Regulatory Compliance

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### FCC Part 15

This equipment has been tested and found to comply with the limits for 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 not installed and used in accordance with the instruction manual, 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 his own expense.

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

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

### LVD/EMC Directive



This product complies with the European Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU.

### WEEE Directive-2012/19/EU



The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.

### Battery Directive-2023/1542



Battery in the product complies with the European Battery Directive 2023/1542. For proper recycling, return the battery to your supplier or to a designated collection point.

## Safety and Compliance Information

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Installation and removal of the unit and its accessories must be carried out by qualified personnel. You must read all of the Safety Instructions supplied with your equipment before installation and operation.

### Installation

- This device is a class A product and may cause radio interference. Take measures if necessary.
- Make sure the camera operates in an environment where the temperature and humidity meet requirements. Keep the camera from excessive pressure, vibration, moisture, dust, and intensive electromagnetic radiation.
- Use a power adapter or a PoE device that meets requirements. Otherwise, the device may be damaged.
- Make sure the length of the power cable between the power adapter and the camera is not too long, otherwise the voltage of the camera is lowered, causing the camera to work abnormally. If it is required to lengthen the power cable, lengthen the cable between the power adapter and the mains.
- Do not hold the tail cable by hand for weight bearing. Otherwise, the cable connector of the camera could be loosened.
- Do not cut the tail cable. Exposed tail cables may cause short circuit and damage the camera.
- When connecting to an external interface, use an existing connection terminal, and ensure that the cable terminal (latch or clamp) is in good condition and properly fastened. Ensure that the cable is not tense during mounting, with a proper margin reserved to avoid poor port contact or loosening caused by shock or shake.
- The end of the tail cable must be kept under good protection. Take waterproof measures to protect the tail cable.
- During the process of transportation, special attention is required for the protection of the transparent dome cover to prevent friction, scratch and contamination, etc. In order to keep the cover clean, do not remove the protective film on the cover during mounting. After mounting is finished, remove the film before the device is powered on.
- Contact professionals for maintenance information. Do not attempt to dismantle the device by yourself. We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.

## Network Security

Please take all necessary measures to enhance network security for your device.

The following are necessary measures for the network security of your device:

- Change default password and set strong password: You are strongly recommended to change the default password after your first login and set a strong password of at least nine characters including all three elements: digits, letters and special characters.
- Keep firmware up to date: It is recommended that your device is always upgraded to the latest version for the latest functions and better security. Visit our official website or contact your local dealer for the latest firmware.

The following are recommendations for enhancing network security of your device:

- Change password regularly: Change your device password on a regular basis and keep the password safe. Make sure only the authorized user can log in to the device.
- Enable HTTPS/SSL: Use SSL certificate to encrypt HTTP communications and ensure data security.
- Enable IP address filtering: Allow access only from the specified IP addresses.
- Minimum port mapping: Configure your router or firewall to open a minimum set of ports to the WAN and keep only the necessary port mappings. Never set the device as the DMZ host or configure a full cone NAT.
- Disable the automatic login and save password features: If multiple users have access to your computer, it is recommended that you disable these features to prevent unauthorized access.
- Choose username and password discretely: Avoid using the username and password of your social media, bank, email account, etc, as the username and password of your device, in case your social media, bank and email account information is leaked.
- Restrict user permissions: If more than one user needs access to your system, make sure each user is granted only the necessary permissions.
- Disable UPnP: When UPnP is enabled, the router will automatically map internal ports, and the system will automatically forward port data, which results in the risks of data leakage. Therefore, it is recommended to disable UPnP if HTTP and TCP port mapping have been enabled manually on your router.
- SNMP: Disable SNMP if you do not use it. If you do use it, then SNMPv3 is recommended.
- Multicast: Multicast is intended to transmit video to multiple devices. If you do not use this function, it is recommended you disable multicast on your network.
- Check logs: Check your device logs regularly to detect unauthorized access or abnormal operations.
- Physical protection: Keep the device in a locked room or cabinet to prevent unauthorized physical access.

- Isolate video surveillance network: Isolating your video surveillance network with other service networks helps prevent unauthorized access to devices in your security system from other service networks.

### **Safety Warnings**

The device must be installed, serviced and maintained by a trained professional with necessary safety knowledge and skills. Before you start using the device, please read through this guide carefully and make sure all applicable requirements are met to avoid danger and loss of property.

### **Storage, transportation, and use**

- Store or use the device in a proper environment that meets environmental requirements, including and not limited to, temperature, humidity, dust, corrosive gases, electromagnetic radiation, etc.
- Make sure the device is securely installed or placed on a flat surface to prevent falling.
- Unless otherwise specified, do not stack devices.
- Ensure good ventilation in the operating environment. Do not cover the vents on the device. Allow adequate space for ventilation.
- Protect the device from liquid of any kind.
- Make sure the power supply provides a stable voltage that meets the power requirements of the device. Make sure the power supply's output power exceeds the total maximum power of all the connected devices.
- Verify that the device is properly installed before connecting it to power.
- Do not remove the seal from the device body without consulting our company first. Do not attempt to service the product yourself. Contact a trained professional for maintenance.
- Always disconnect the device from power before attempting to move the device.
- Take proper waterproof measures in accordance with requirements before using the device outdoors.

### **Power Requirements**

- Installation and use of the device must be in strict accordance with your local electrical safety regulations.
- Use a UL certified power supply that meets LPS requirements if an adapter is used.
- Use the recommended cord set (power cord) in accordance with the specified ratings.
- Only use the power adapter supplied with your device.
- Use a mains socket outlet with a protective earthing (grounding) connection.
- Ground your device properly if the device is intended to be grounded.

### Battery Use Caution

- When battery is used, avoid:
  - High or low extreme temperatures during use, storage and transportation;
  - Extremely low air pressure, or low air pressure at high altitude.
- Use the battery properly. Improper use of the battery such as the following may cause risks of fire, explosion or leakage of flammable liquid or gas.
  - Replace battery with an incorrect type;
  - Dispose of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery;
- Dispose the used battery according to your local regulations or the battery manufacturer's instructions.

### Maintenance

- If there is dust on the front glass surface, remove the dust gently using an oil-free brush or a rubber dust blowing ball.
- If there is grease or a dust stain on the front glass surface, clean the glass surface gently from the center outward using anti-static gloves or an oil-free cloth. If the grease or the stain still cannot be removed, use anti-static gloves or an oil-free cloth dipped with detergent and clean the glass surface gently until it is removed.
- Do not use organic solvents, such as benzene or ethanol when cleaning the transparent dome cover.




- Never look at the transmit laser while the power is on. Never look directly at the fiber ports and the fiber cable ends when they are powered on.
- Use of controls or adjustments to the performance or procedures other than those specified herein may result in hazardous laser emissions.

# Introduction

## List of Models

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This hardware manual contains the following models:

Z959		4MP 16x Outdoor Speed Dome with IR LED 120m, WDR 145dB

## Package Contents

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Contact your local dealer if the package is damaged or incomplete. The attachments may vary with models, please see the actual model for details.

- Camera
- Power Adapter
- Cable Gland
- Hex Screwdriver
- Quick Installation Guide
- Drill Template

## Physical Description



Item		Description
1	<b>DC12V Power Input</b>	In case the camera is connected to a non-PoE (Power over Ethernet) switch, use this connector to connect the camera to the bundled power adapter.
2	<b>Ethernet Port</b>	Connects to a network using an Ethernet cable with RJ-45 connector.
3	<b>Audio Input / Output</b>	Connects to audio input / output devices, such as a microphone with built-in amplifier or speaker, etc.
4	<b>Serial Port</b>	Connects to a serial device, such as a PT controller, etc.
5	<b>Digital Input / Output</b>	Connects to input and output devices, such as a panic button, or an alarm trigger, etc.
6	<b>Reset Button</b>	Press and hold the reset button for at least 10 seconds to restore the camera to its default settings. <b>NOTE:</b> The reset button only works within 10 minutes after the camera is powered on.
7	<b>Memory Card Slot</b>	Insert a memory card (not included) into the slot for local recording purposes. See <a href="#">Install Memory Card (Optional)</a> on page 13.

**NOTE:**

- The above photo is for reference only; depending on the location or time the product is purchased, some components may not be available on the actual product.

- Please disconnect the power before mounting the camera.
- The camera does not provide power for external devices. Make sure to use external power source to power up external devices such as alarm input/output, audio, etc.

# Installation Procedures

## Prepare for Installation

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The following figures are for reference only. See the actual product for details.

Before mounting the camera, check the device model, accessory types and quantities against the packing list to ensure the components are complete.

### **Verify the bearing capacity of the mounted position**

Verify that the mounted position meets the bearing requirements. Otherwise, you are advised to reinforce the mounted position for the device weight. For more information, see the product datasheet.

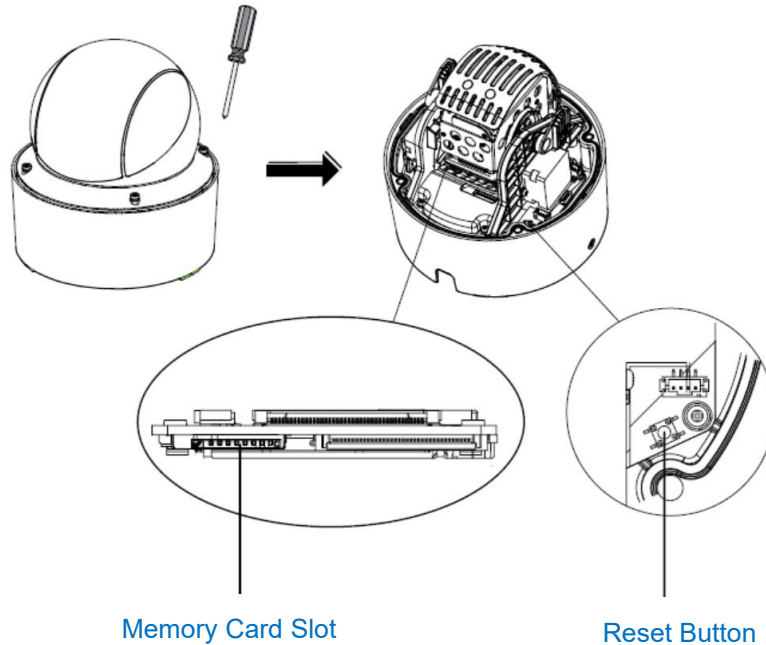
### **Verify the lightning protection and grounding requirements**

Select proper lightning protection devices for the power supply, audio and video signals interfaces, and RS485 interfaces.

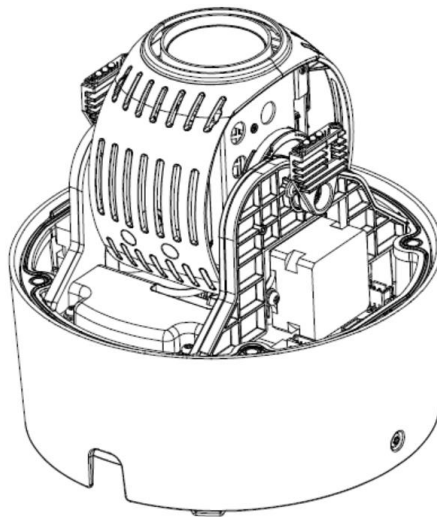
## Install Memory Card (Optional)

Make sure the camera is disconnected from the power before installation, otherwise the camera or the memory card may be damaged.

1. Loosen the four screws to detach the dome cover.
2. Insert the memory card into the slot.



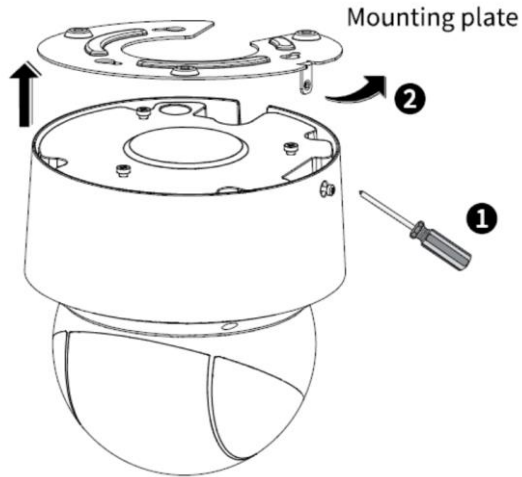
3. Manually turn the camera module to face upwards, otherwise, the dome cover cannot be properly installed.



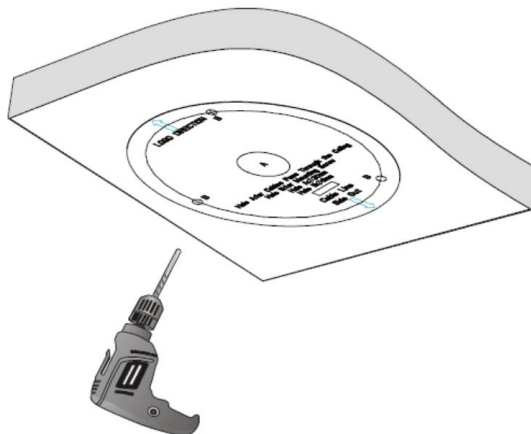
4. Attach the dome cover back in place, and tighten the screws.

## Mount on the Ceiling

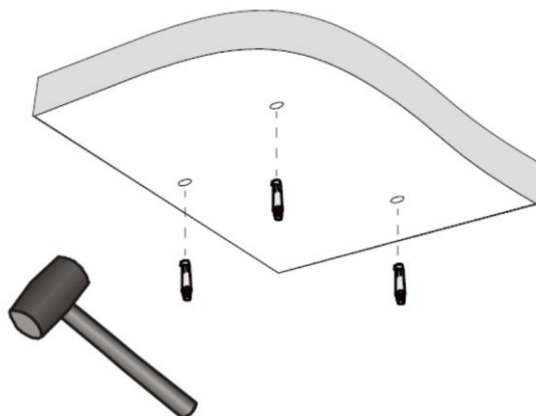
1. Loosen the side screw of the camera.
2. Rotate the mounting plate counter-clockwise to detach it.



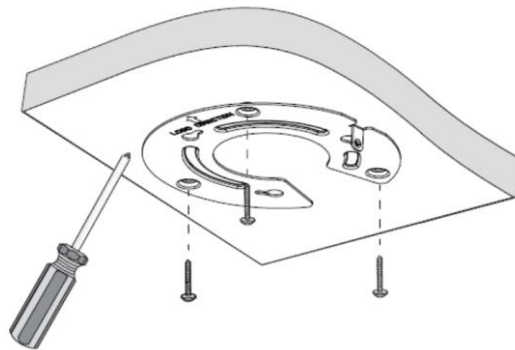
3. Attach the bundled drill template on the ceiling and drill the required holes.



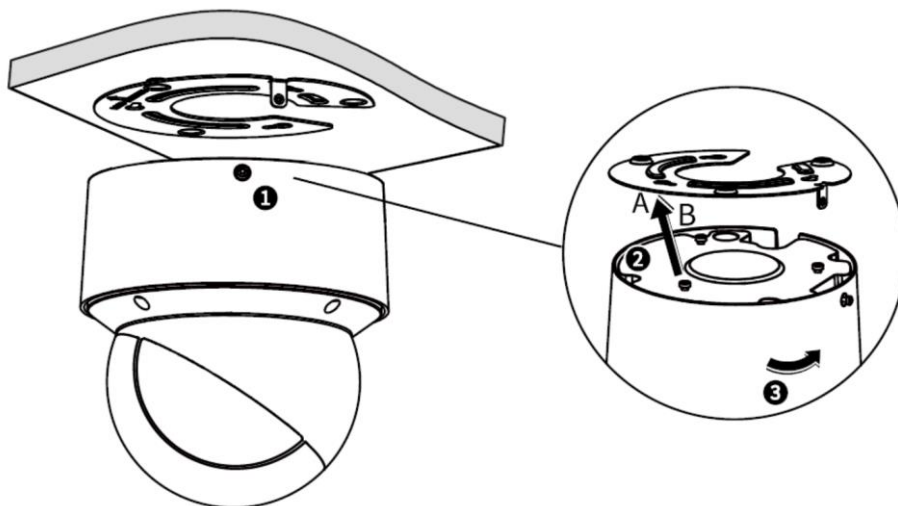
4. Insert the plastic rivets into the holes.



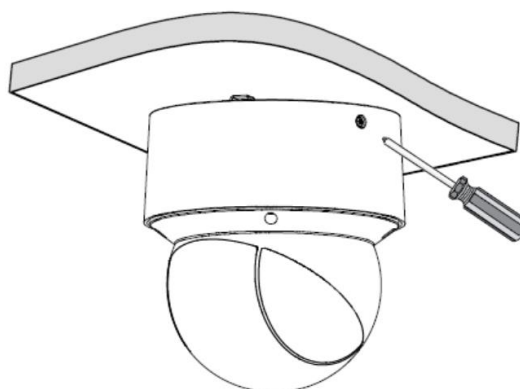
- Align the indicator on the mounting plate with that on the drill template and then use self-tapping screws to fasten the mounting plate.



- Align the screws and the screw holes of the camera and the mounting plate. Then, rotate the camera counter-clockwise until the screws are securely locked onto the mounting plate.

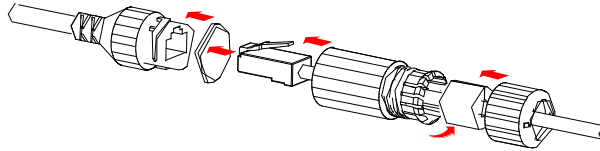


- Fasten the camera side screw.



## Waterproof Ethernet Cable

1. Attach the rubber ring to the network cable. Then attach the cable gland according to the sequence shown below.



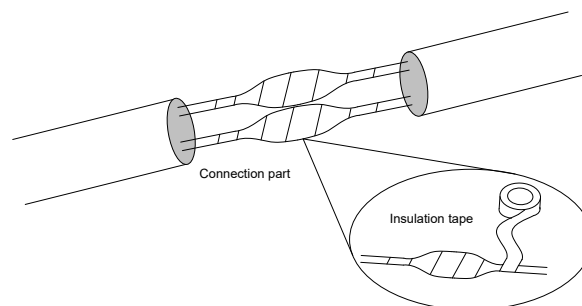
2. Insert the cable from the network into the Ethernet port of the camera. Then, tighten the cable gland.

**NOTE:** Please waterproof the cables in accordance with the following instructions. Users shall assume responsibility for device damage caused by water due to improper waterproof measures.

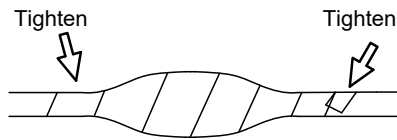
## Waterproof Other Cables

Connect the other cables to their corresponding devices. Then take the following steps to protect the cables from water using waterproof tapes. The figures are for your reference only.

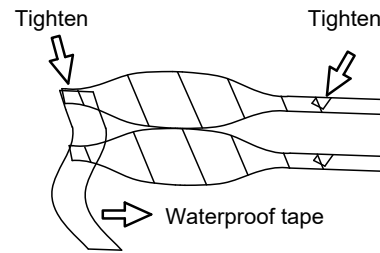
1. Connect the cables to their corresponding devices, and protect the cables and cable connections using insulating tapes. Then wrap each cable connection using insulating tapes.



2. Waterproof the cables with self-adhesive waterproof tape. Wrap the waterproof tape tightly and make sure the tape is fully stretched during the process. Tighten the tape at both ends to prevent water leakage.



Wrap the used cables separately



Wrap the unused cables together into a bundle

**NOTE:**

- Avoid short circuits when insulating the cables.
- Use self-adhesive waterproof tapes that will stick together with the twisted cables.
- Tighten waterproof tapes when wrapping the cables and make sure the cable connections are fully covered.
- You are recommended to put the waterproof cables in a waterproof junction box (purchased separately).

# Access 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.

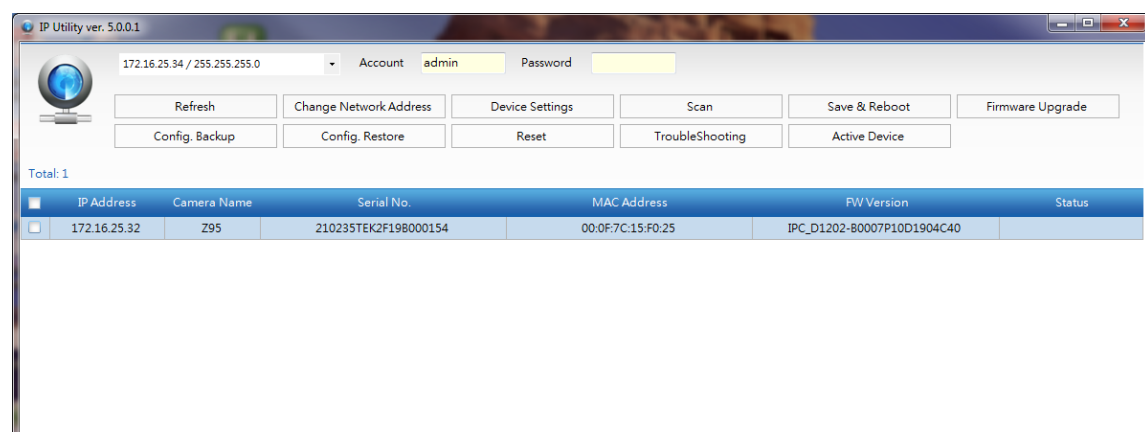
### Using DHCP Server to Assign IP Addresses

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 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 be able to access it by using a Web browser.

If you work with our cameras regularly, **there is 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.

The IP Utility can be downloaded for free from [http://www.acti.com/IP\\_Utility](http://www.acti.com/IP_Utility)

With just one click, you can launch the IP Utility and there will be an instant report as follows:



You can quickly see the camera model in 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 filled in the address bar of the browser already.

## Using the Default Camera IP Address

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

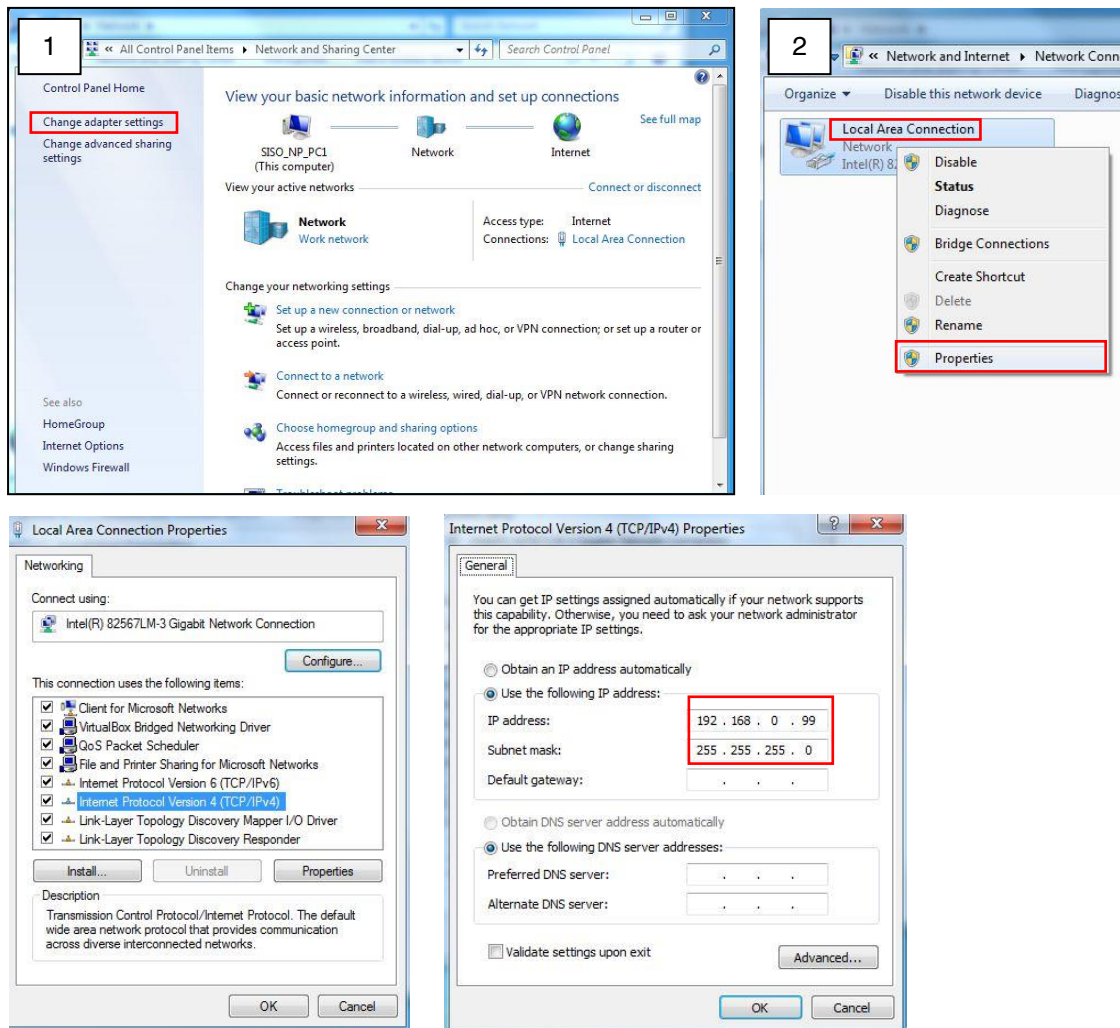
When the camera is plugged into network and it does not detect any DHCP services, it will automatically assign itself a default IP:

**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.

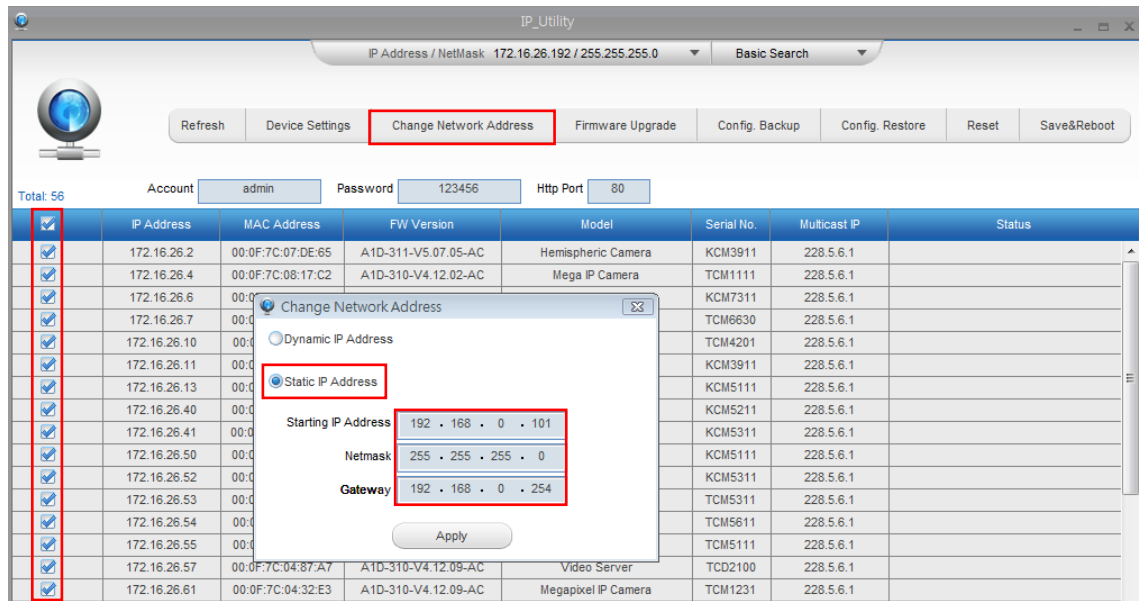
## Manually adjust the IP address of the PC:

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 1 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

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Now that the camera and the PC are both having their unique IP addresses and are under the same network segment, it is possible to use the Web browser of the PC to access the camera.

You can use Edge, Chrome or Firefox to access the camera.

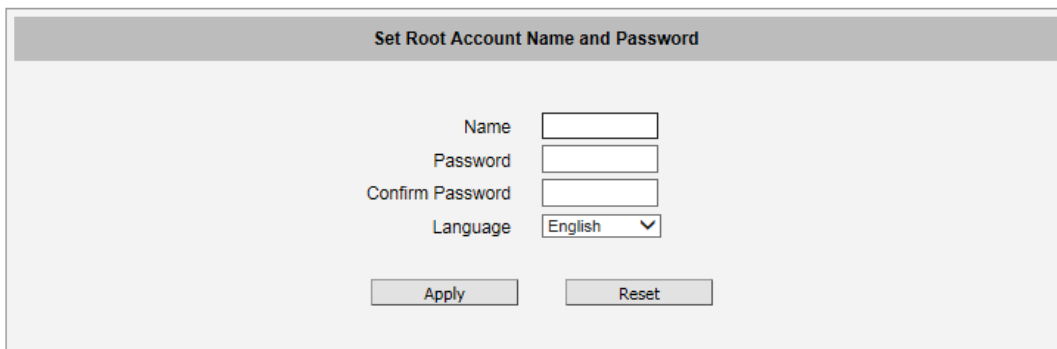
An ActiveX control for video stream management will be downloaded from the camera directly – the user has to accept the use of such control when prompted so. No other third party utilities are required to be installed in such case.

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 called **Web Configurator** would appear together with the login page. The HTTP port number was not added behind the IP address since the default HTTP port of the camera is 80, which can be omitted from the address for convenience.

Before logging in, you need to setup the root Account and Password of the camera.



Set Root Account Name and Password

Name

Password

Confirm Password

Language

Then use this newly setup **Account** and **Password** to login to the Web Configurator.



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7F, No. 1, Alley 20, Lane 407, Sec. 2, Ti-Ding Blvd., Neihu District, Taipei, Taiwan 114, R.O.C.

TEL : +886-2-2656-2588    FAX : +886-2-2656-2599

Email: [sales@acti.com](mailto:sales@acti.com)