Indoor Mini Dome

Hardware Manual

Q92, Q93, Q94

Ver. 2016/11/24

ACTi
Connecting Vision

Table of Contents

Precautions 4

Safety Instructions 6

Introduction 7

List of Models 7

Package Contents 8

Physical Description 9

Mounting Options 10

Installation Procedures 11

Step 1: Prepare for Installation 11

General Installation 12

Door Installation 12

Escalator Installation 13

Step 2: Open the Dome Cover 14

Step 3: Route the Cables 15

Step 4: Install the Camera 16

Step 5: Connect to Network 17

Step 6: Close the Dome Cover 17

Step 7: Access the Camera Live View 18

Other Adjustments and Accessories 19

How to Install / Remove the Memory Card 19

How to Insert the Memory Card 19

How to Remove the Memory Card 19

How to Connect the Power Adapter (Optional) 20

Accessing the Camera 21

Configure the IP Addresses 21

Using DHCP Server to Assign IP Addresses 21
Using the Default Camera IP Address 23
Access the Camera.....25
Initial People Counting Configuration 27
How to Configure People Counting?.....30
Where to Save the Counting Data? 34
How to Create the Camera Identity?.....34
Other People Counting Firmware Setup Tips 35

Using the Live People Counting Viewer 36

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

ACTi and ACTi logo are registered trademarks of ACTi Corporation. All other names and products used in this manual are registered trademarks of their 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. 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.

Federal Communications Commission Statement

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 instructions, 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.

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

European Community Compliance Statement

This product has been tested and found to comply with the limits for Class B 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

Cleaning

Disconnect this product from the power supply before cleaning.

Accessories and Repair Parts

Use only the accessories and repair parts recommended by the manufacturer. Using other attachments not recommended by the manufacturer may cause hazards.

Installation

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 product yourself. Refer all servicing to qualified service personnel.

Damage Requiring service

Disconnect this 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 product.
3) If the inner parts of product have been directly exposed to rain or water.
4) If the product does not operate normally even by following the operating instructions in this manual. Adjust only those controls that are covered by the instruction manual, as improper adjustment of other controls may result in damage, and will often require extensive work by a qualified technician to restore the product to its normal operation.

Safety Check

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

Introduction

List of Models

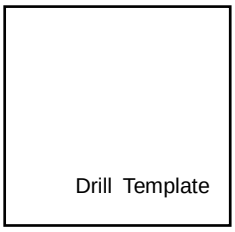
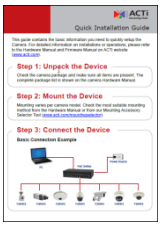
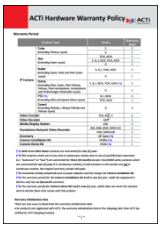
This hardware manual contains the following models:

Q92		2MP People Counting Indoor Mini Dome with D/N, Adaptive IR, Extreme WDR, SLLS, Fixed lens
Q93		1MP People Counting Indoor Mini Dome with D/N, Adaptive IR, Extreme WDR, SLLS, Fixed lens
Q94		1MP People Counting Indoor Mini Dome with D/N, Adaptive IR, Extreme WDR, SLLS, Fixed lens

From the installation perspective, the above models are very similar; therefore one manual is used for all of them.

Package Contents

Check if the camera package comes with the following items:

Camera	Drill Template	Screw Kit
		
Quick Installation Guide	**Warranty Card**	**Converter Cable**
		

IMPORTANT: When the camera is taken out from the box, the lens cover is covered by a thin film. DO NOT remove this film. It is used to protect the lens cover from scratches or fingerprint marks which may happen during installation. Remove this film only after the camera is securely installed and all connections are complete.

Physical Description

Item		Description
1	**Memory Card Slot**	Insert a memory card (not included) into the slot for local recording purposes. See ***How to Install / Remove the Memory Card*** on page 19 for more information. **NOTE:** Supports microSDHC and microSDXC cards
2	**IR LEDs**	Provide IR illumination.
3	**Reset Button**	Restores the factory default settings of the camera. To reset the camera, while the power is on, press and hold the **Reset Button** for at least 5 seconds or until the **Power LED** lights up.
4	**System LEDs**	Indicates the camera status: ● **Activity (Amber) LED**: Blinks when network activity is in progress. ● **Power (Red) LED**: Lights up when the camera is powered up and goes off again after the boot up process is complete. ● **Link (Green) LED**: Lights up when the camera is connected to a network.
5	**Ethernet Port (RJ-45)**	Connects to a network using an Ethernet cable with RJ-45 connector.
6	**DC 12V Power Input**	Connects to a DC 12V power when a Power-over-Ethernet (PoE) switch or injector is not available. See ***How to Connect the Power Adapter (Optional)*** on page 20 for more information.

Mounting Options

The camera is a People Counting Camera, wherein only mounting on ceiling or pendant mount are the recommended installation methods. Select the most suitable solution for your installation environment.

Mount Types	Accessories
Surface Mount	Suitable when mounting the camera directly on ceilings without additional mounting accessories. See ***Installation Procedures*** on page 11 for more information.
Gangbox	Suitable when mounting the camera on a 4” Round or 4” Octagon Gangbox inside the ceiling. The use of gangbox is lawfully required in some areas in the United States. A Gangbox Converter (purchased separately) is required for this type of installation.
Pendant Mount	Suitable when installing the camera on high ceilings where a straight tube is used to lower the camera. The Pendant Mount with Mount Kit (optional accessory set) is required for this type of installation.

NOTE:

- For more information about the mounting solutions and accessories, please check the *Mounting Accessory Selector* in our website (http://www.acti.com/mountingselector).
- The above mounting accessories are not included in the package. Contact your sales agents to purchase.

Installation Procedures

This section describes procedures in mounting the camera on the ceiling.

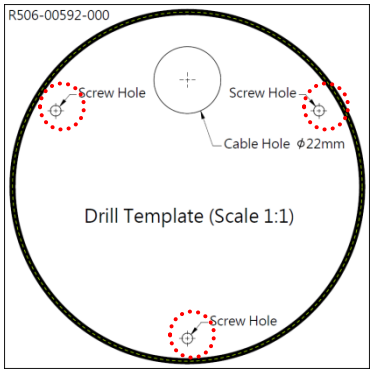
NOTE:

- There is a plastic film protecting the lens. Do not remove the plastic film until the installation is complete. However, the plastic film has been removed on the camera images in this documentation to capture them more clearly.
- The camera images on this documentation are for reference only and may be different from the actual camera.

Step 1: Prepare for Installation

Before installation, refer to the People Counting Camera Selector for tips and other information which may be useful for your application.

Depending on the material of the surface where the camera will be installed, it may be necessary to drill the three (3) screw holes and use the supplied screw plugs. In this case, attach the bundled drill template on the surface and drill the screw holes.

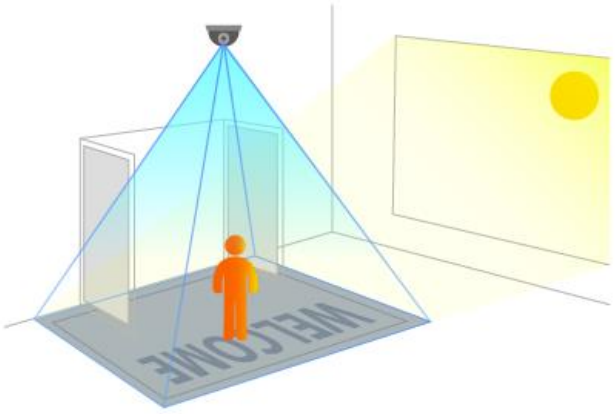


Note that the camera logo indicates the upright camera orientation. For ease of configuration, it is recommended that camera is installed with the logo facing the people passing by.

Before installation, take note of the following installation tips to select the appropriate location to install the camera:

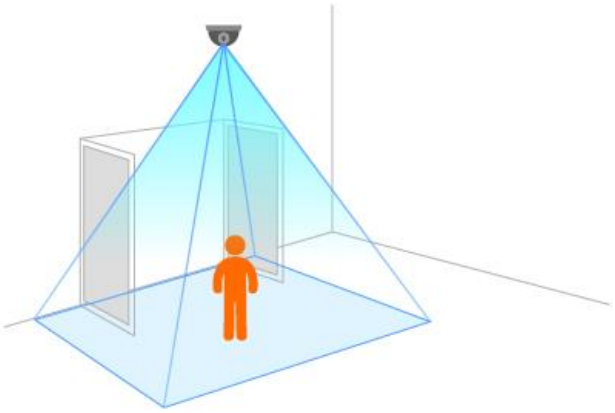
General Installation

- ✓ Place the camera straight down over where the people are walking.
- ✓ Do not tilt the camera.
- ✓ If the floor tiles or glass window has light reflection or shadows appear on the floor, it is recommended to place a floor mat or plain carpet on the area of detection.



Door Installation

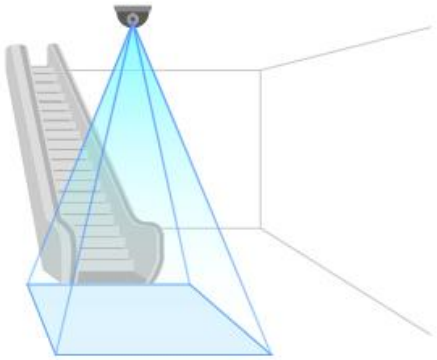
- ✓ Mount the camera where the edge of the field of view will meet the doors.
- ✓ Mount the camera where the detection line will be in the center of the field of view. The logo on the camera should be facing the target view
- ✓ Make sure that the doors are not opened on the detection line.



- ✓ Do not mount the camera too far away from the door to avoid missing people.

Escalator Installation

- ✓ The recommended areas for people counting on the escalator are before a person can get on the escalator or after getting off the escalator. Not on the moving escalator itself.



- ✓ Mount the camera where the edge of the field of view will meet the edge of the escalator.

Step 2: Open the Dome Cover

1. Hold the camera on its base with one hand and twist the dome cover towards the left with the other hand.

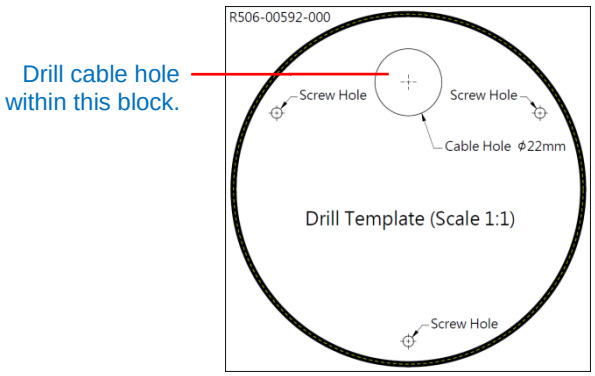
2. Lift to remove the dome cover.

Step 3: Route the Cables

Determine whether the cable will pass through a hole on the surface or be routed along the surface:

If the cable will pass through a hole on the surface:

1. Drill the hole for the cable on the surface.



2. Route the cable from the network side through the hole and connect it to the Ethernet port of the camera.
3. Push the cable through the hole on the surface.

If the cable will be routed along the surface

1. Cut off the marked tab on the dome cover and the camera body.

2. Route the camera cable through the gap on the camera and the cover.

Step 4: Install the Camera

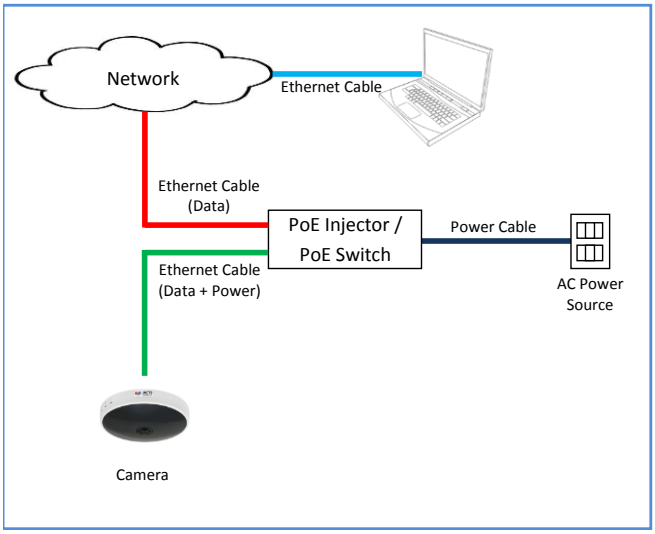
1. If necessary, insert a memory card into the memory card slot of the camera. See ***How to Insert the Memory Card*** on page 19 for more information.

2. Install the camera to the surface using the three (3) bundled screws.

NOTE: Please make sure the screw is flat on the plate.

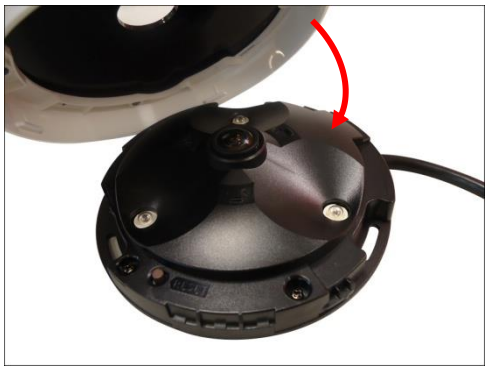
Step 5: Connect to Network

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



Step 6: Close the Dome Cover

1. Align the cable tab side of the dome cover to the direction of the network cable to close the cover.



2. Twist the dome cover towards the right to lock the cover into place.

Final installation should look similar to the illustration below.

Step 7: Access the Camera Live View

See ***Accessing the Camera*** on page 21 for more information on how to access the Live View of the camera.

Other Adjustments and Accessories

How to Install / Remove the Memory Card

NOTE: Supports microSDHC and microSDXC cards.

How to Insert the Memory Card

1. Hold the camera on its base with one hand and twist the dome cover towards the left with the other hand to open the dome cover.

2. Insert the memory card into the card slot with the metal contacts facing the bottom side of the camera.

3. Push the card completely until it clicks into place.
4. Attach the dome cover to the camera, twist the dome cover towards the right to lock the cover into place.

How to Remove the Memory Card

In case there is a need to remove the card, make sure to access the camera Web Configurator to safely “unmount” the card first (see the camera Firmware User’s Manual for more information). Once unmounted from the firmware, push the card to eject it from the slot.

How to Connect the Power Adapter (Optional)

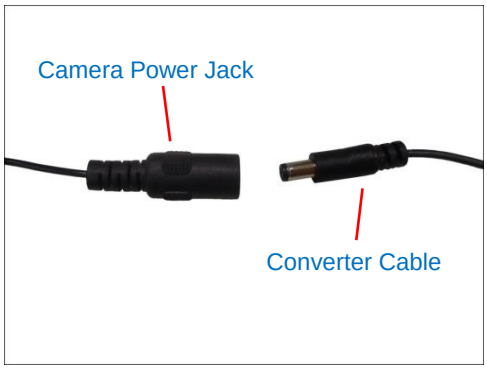
For some locations where Power-over-Ethernet (PoE) is not available, the camera can be powered up by an external DC12V power adapter, PPBX-0002 (purchased separately).
An extra converter cable is included in the package.

To connect the power adapter, do the following:

1. Map the power adapter wires to the wires on the converter cable by mapping them according to the table below.

Converter Cable	PPBX-0002 Power Adapter
White	Cable ***WITH*** white stripe
Black	Cable ***without*** stripe

2. Connect the other end of the converter cable to the camera power jack.



Accessing the Camera

Configure the IP Addresses

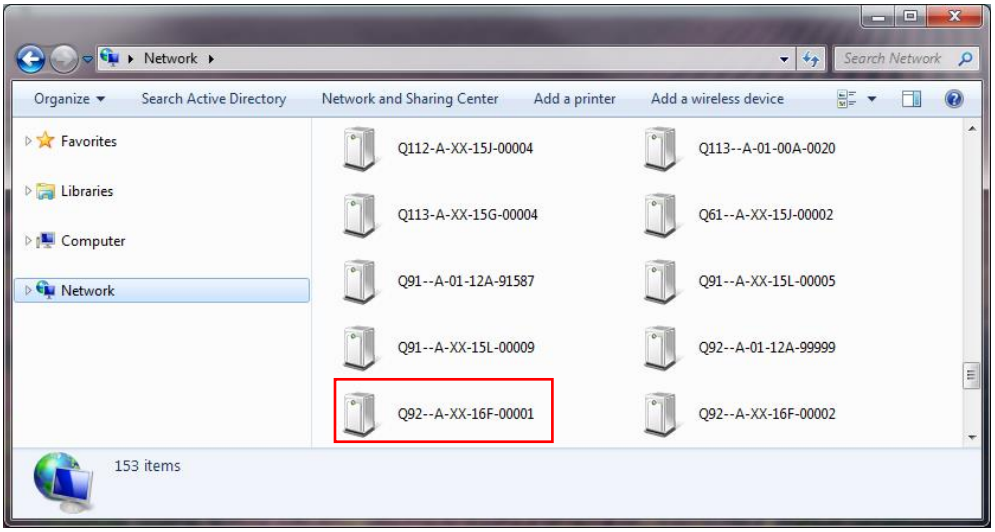
In order to be able to communicate with the camera from your PC, both the camera and the PC have to be within the same network segment. In most cases, it means that they both should have very similar IP addresses, where only the last number of the IP address is different from each other. There are 2 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 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 other to be able to access it by 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.

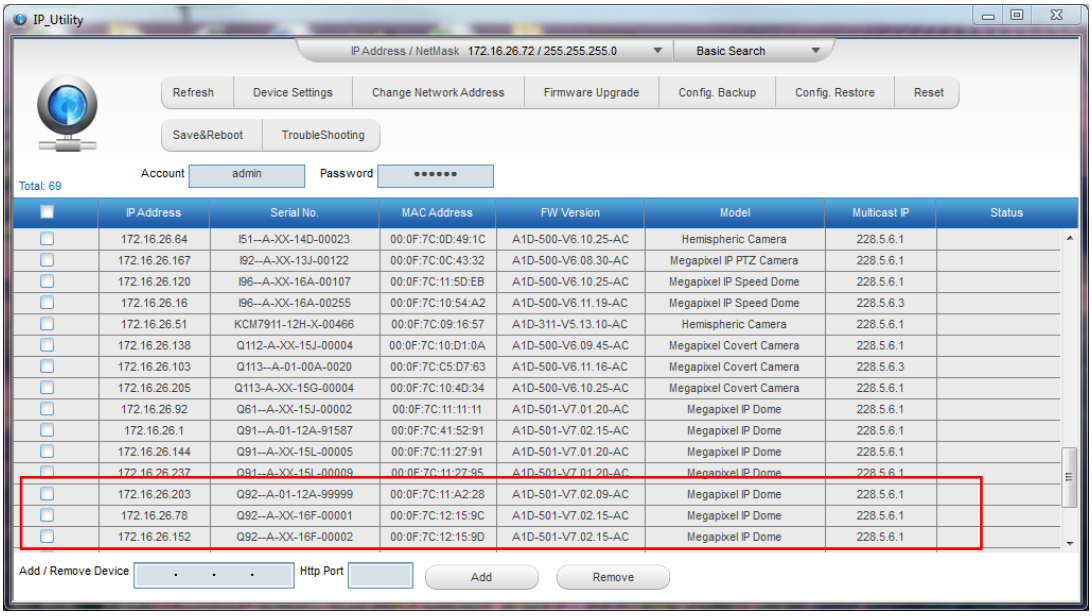
In the example below, we successfully found the camera that we had just connected to the network.



By double-clicking with the left mouse on the camera model, it is possible 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.

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.

The IP Utility can be downloaded for free from **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. 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.

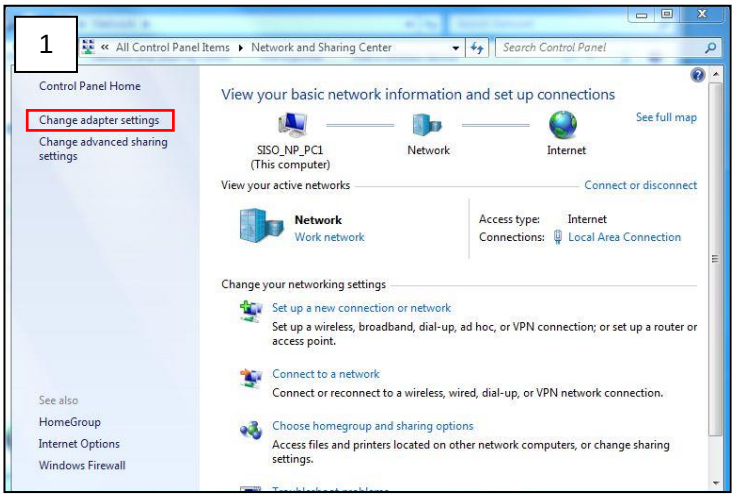
When the camera is plugged into network and it does not detect any DHCP services, it will automatically assign itself a default IP:

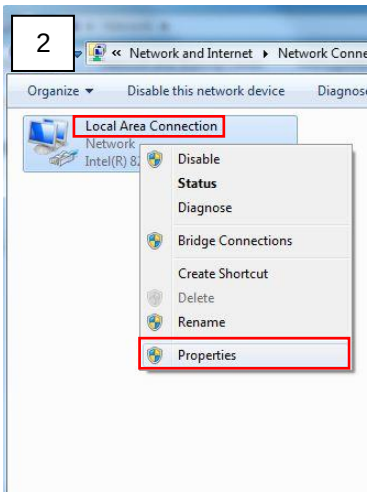
192.168.0.100

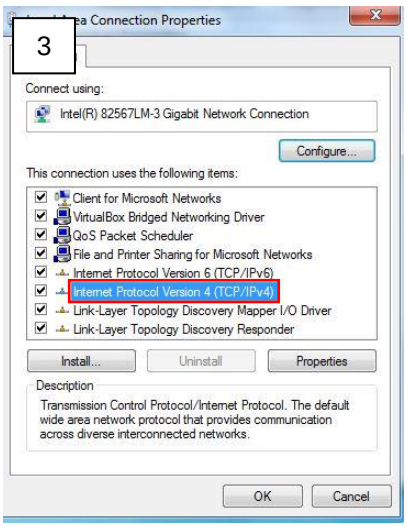
Whereas the default port number would be **80**. In order to access that camera, the IP address of the PC has to be configured to match the network segment of the camera.

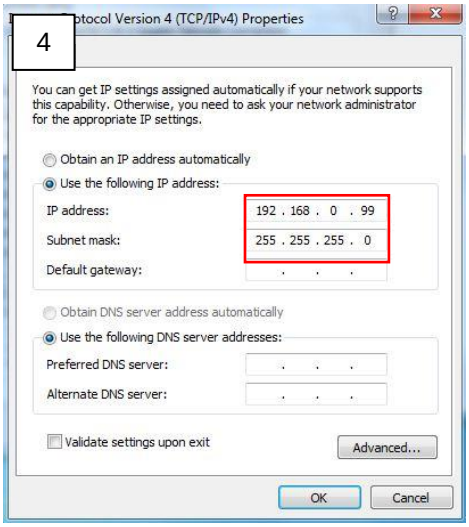
Manually adjust the IP address of the PC:

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:



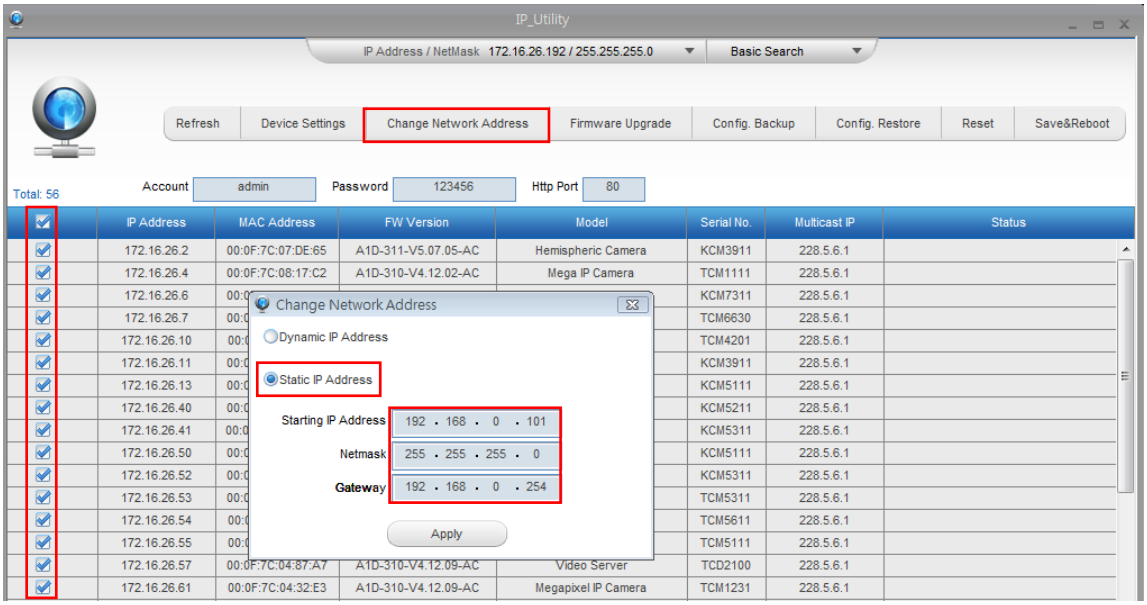






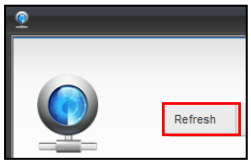
Manually adjust the IP addresses of multiple cameras:

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

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 **any of the browsers** to access the camera, however, the full functionality is provided only for **Microsoft Internet Explorer**.

The browser functionality comparison:

Functionality	Internet Explorer	Other browsers
Live Video	Yes	Yes*
Live Video Area Resizable	Yes	No
PTZ Control	Yes	Yes
Capture the snapshot	Yes	Yes
Video overlay based configuration (Motion Detection regions, Privacy Mask regions)	Yes	No
All the other configurations	Yes	Yes

* When using non-Internet Explorer browsers, free third-party software plug-ins must be installed to the PC first to be able to get the live video feed from the camera:

Browser	Required Plug-In
Safari	QuickTime (http://www.apple.com/quicktime/download/)
Other non-Internet Explorer browsers	Basic VLC Media Player (http://www.videolan.org)

Disclaimer Notice: The camera manufacturer does not guarantee the compatibility of its cameras with VLC player or QuickTime – since these are third party softwares. The third party has the right to modify their utility any time which might affect the compatibility. In such cases, please use Internet Explorer browser instead.

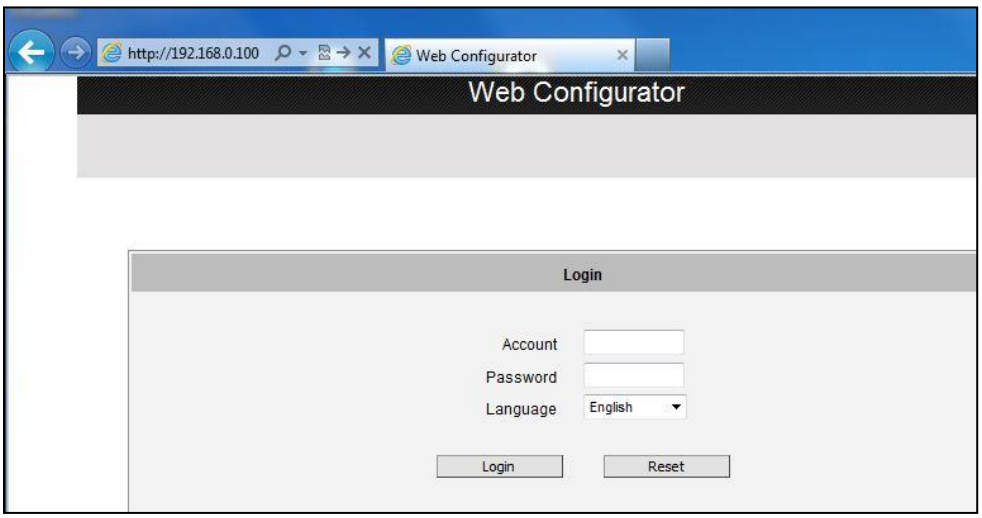
When using Internet Explorer browser, the ActiveX control for video stream management will be downloaded from the camera directly – the user just has to accept the use of such control when prompted so. No other third party utilities are required to be installed in such case.

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 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 know the factory default Account and Password of the camera.

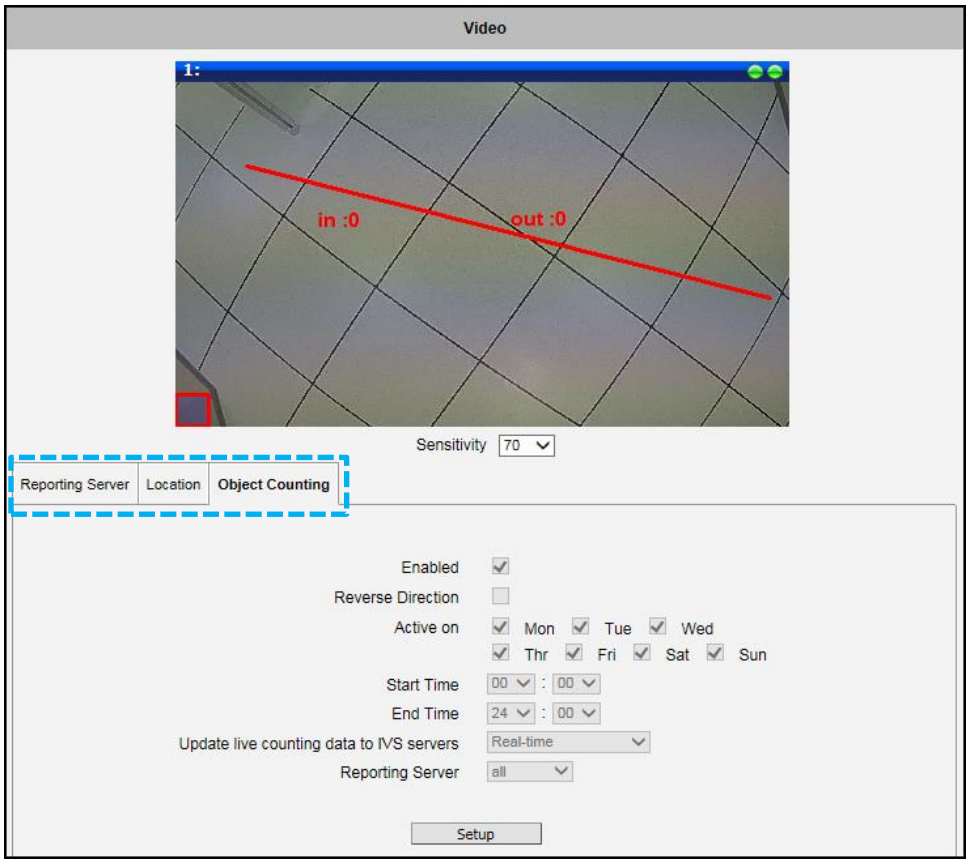
Account: **Admin**

Password: **123456**

Initial People Counting Configuration

People Counting cameras count the number of people passing through a virtual line on the video image. This feature is useful for retail businesses to survey and count the number of people entering or leaving the store.

To use the People Counting feature, the parameters on the **Reporting Server**, **Location** and **Object Counting** pages must be configured on the firmware.



The pages are used to configure the following:

- **Object Counting**: Defines the virtual line for people counting and the schedule to send reports. See

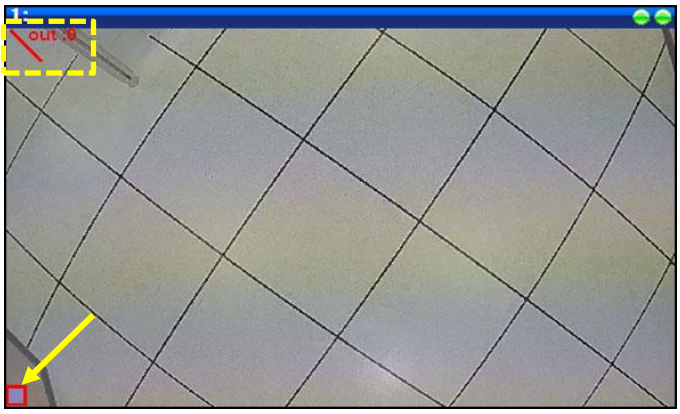
- ***How to Configure People*** Counting? on page 30.
- **Reporting Server**: Defines where the counting data is saved. See

- ***Where to Save the Counting*** Data? on page 34.
- **Location**: Defines the exact location where the camera is installed. The information on this page will be used to identify the camera and will appear on the Reporting Server application. See ***Other People Counting Firmware Setup Tips*** on page 35.

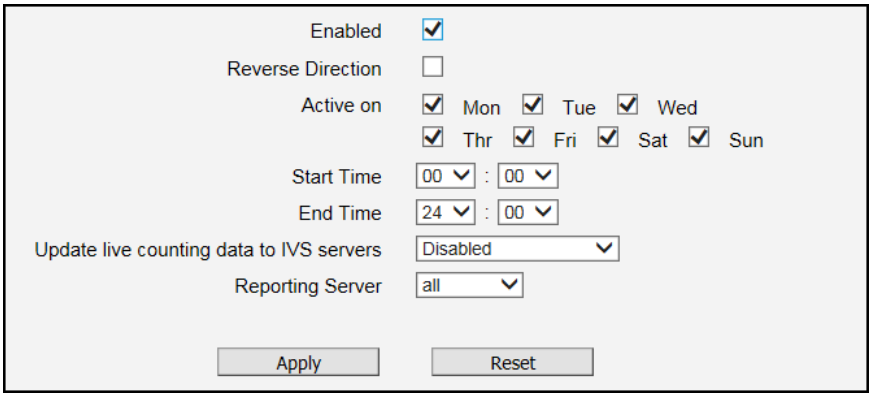
How to Configure People Counting?

NOTE: The camera must be installed on the ceiling to accurately detect and count the moving objects.

On the **Object Counting** page, a line appears on the upper left corner and a purple box (detection size) on the lower left corner for first-time configuration.

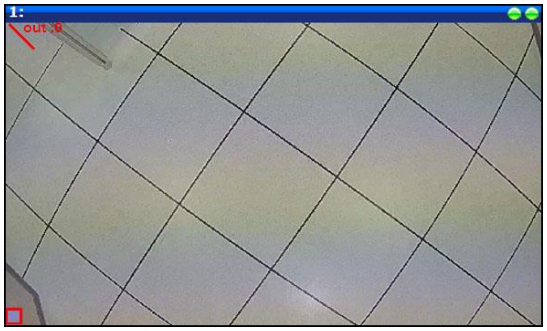


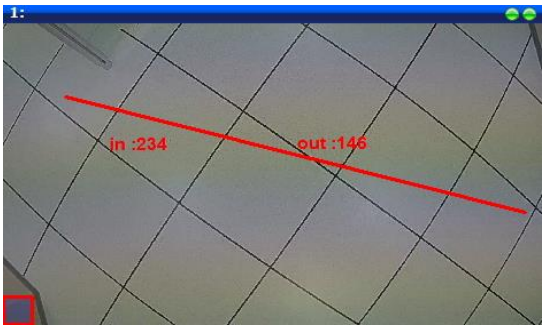
To configure or modify an existing configuration, click on "**Setup**" to adjust the line and define its parameters. Click "**Enabled**" to enable People Counting.



Size and Location of the Line

The size and location of the line can be defined by the users. Click on the line and drag to the location where you want to position it. To resize the line, click on the line drag its corners.

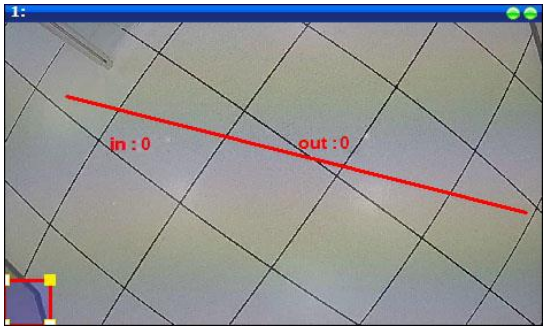


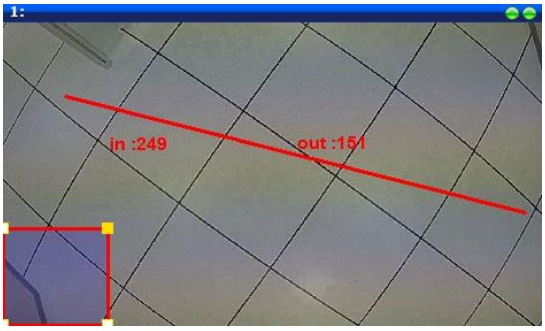


Detection Size of Head

The purple box on the lower left corner indicates the detection size of a person's head. Resize the box to define the size of a person's head based on the camera view. It is recommended to keep the detection size as close to the size of people's head to derive accurate counting.

Click on the box to show the corners, drag the upper-right corner to resize.



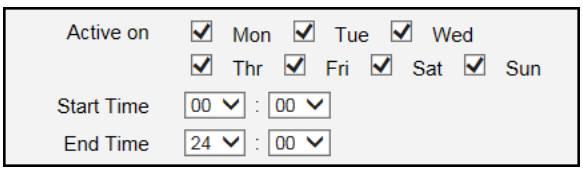


Reverse Direction

The camera counts people that go in or out of the line. The line has "in" and "out" indicators, "in" for inbound and "out" for outbound counting. The numbers that appear next to these indicators are the counted values. Check "**Reverse Direction**" to reverse the in or out direction.

Counting Schedule

The camera can be set to count only on specific time and days of the week. Check the day(s) when to activate counting and set the starting and ending time.



Send Counting Data to IVS Server

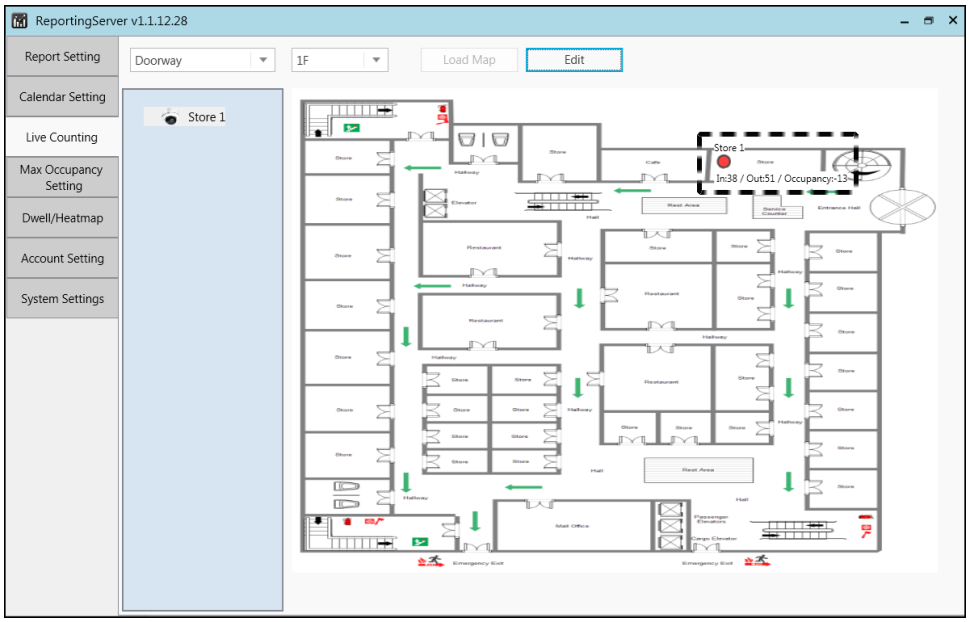
The camera can send the counting data to a Reporting Server (see

Where to Save the Counting Data? on page 34 on how to configure the Reporting Server).

From the "**Update live counting data to IVS servers**", select how often will the data be sent to the reporting server; to send data as soon as the counter is changed, select "**Real-time**".

Regardless of the selected option, a Daily Counting Report will be sent every day to the **Reporting Server** software application based on the time set on the Reporting Server (please refer to the Reporting Server User's Manual for more information about the configurations).

Below is an example of a live counting data on the Reporting Server, boxed with a dotted line.



Reporting Server

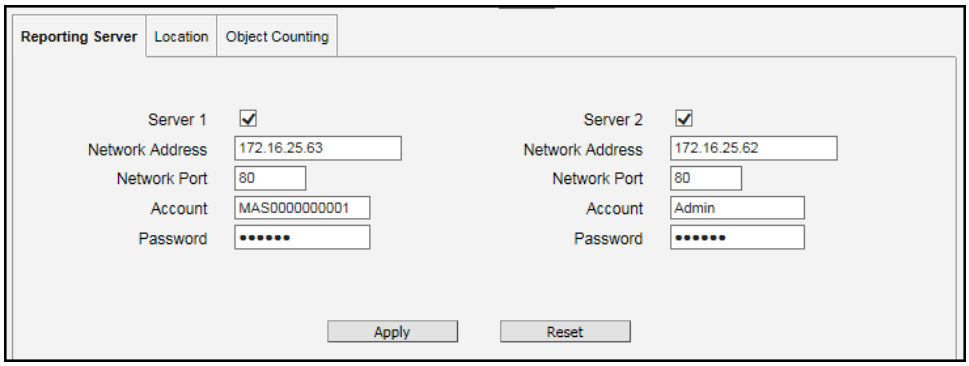
Up to two reporting servers can be configured for one camera.

The counting data can be sent to **Server 1** or **Server 2** or select "**all**" to send to both servers as configured on the **Reporting Server** page.

Where to Save the Counting Data?

Download the **Reporting Server** application from www.acti.com and save it on a computer which will be the server. The data can be sent to up to two reporting servers.

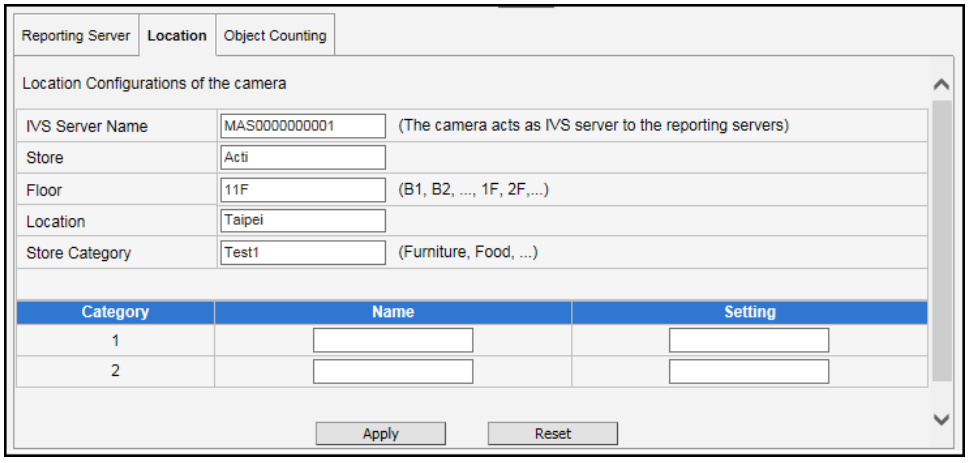
Check **Server 1** or **Server 2** to enable and configure the servers. Enter the computer "**Network Address**", "**Network Port**", and "**Account**" and "**Password**" which will used to login to the Reporting Server.



After changing any of the items above, press **Apply** to save the changes. The **Reset** button undoes the changes that have just been made but not applied yet.

How to Create the Camera Identity?

To easily identify the camera on the reporting server application, enter the camera details on the **Location** page.



Details can be freely written based on the user needs and application. Since the retail applications vary, two additional categories with **Name** and **Setting** parameters are provided for flexibility; common application for this is to provide more detailed location information on the report.

Other People Counting Firmware Setup Tips

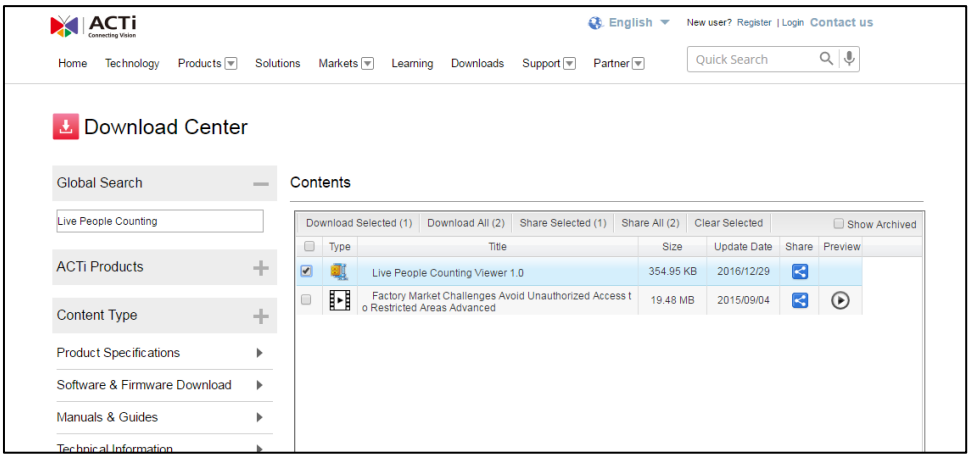
- Set the camera shutter speed to at least 1/60 or more.
- Draw the detection line on the center of the field of view.

- Draw the detection line to cover the width where people will pass by. Do not draw the line to be too short to avoid missing people.

Using the Live People Counting Viewer

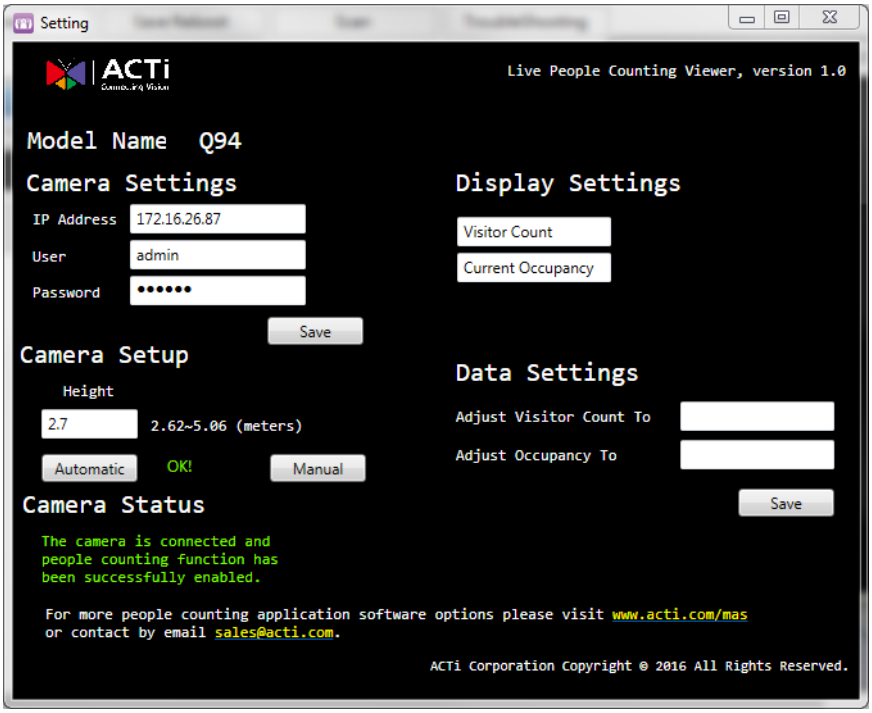
For automatic camera configuration, the Live People Counting Viewer can be used for initial installation and configuration.

1. From ACTi's Download Center, download and install the application to the computer.

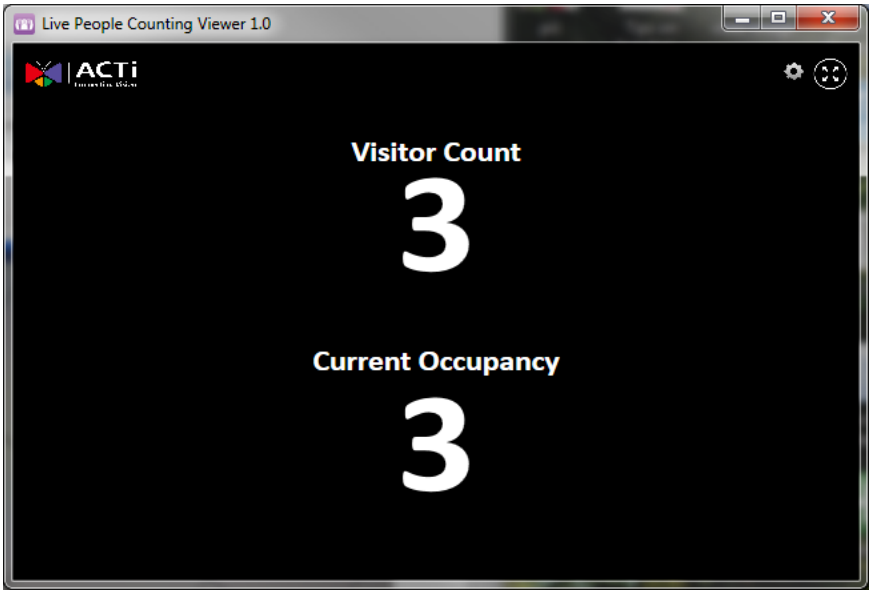


2. Enter the camera **IP address**, **user** and **password**.

   (Default user and password: admin, 123456)



3. Enter the Height of camera installation, then click **Automatic**.



The counter changes as people pass by the camera.

Copyright © 2016, ACTi Corporation All Rights Reserved

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