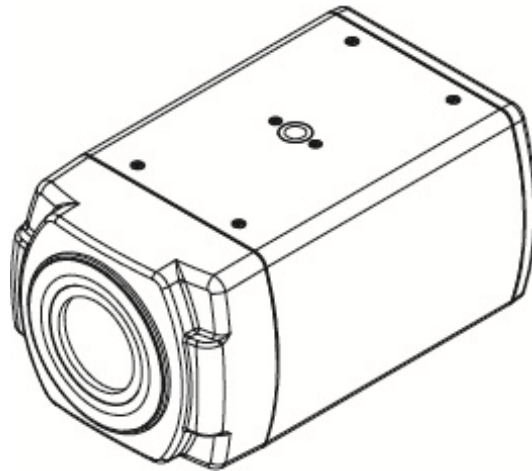


# Network Camera Manual (O2T7)



### **Directions**

Be careful not to cause any physical damage by dropping or throwing the camera. Especially keep the device out of reach from children.

Do not disassemble the camera. No after service is assumed when disassembled.

Use only the power adapter provided with the camera.

Be careful to prevent moisture or water penetration into the unit. Attention is needed when installing the camera. The screw holes for the installation screws and pipe should be maintained water tight during the whole life time of the product.

All of the electrical connection wires running into the unit should be prepared so that water from the outside cannot flow into the unit through the surface of the wires. Penetration of moisture through the wire for an extended period can cause malfunction of the unit or deteriorated image.

### **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 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 and outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

### Caution

Any changes or modifications in construction of this device which are not explicitly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### Revision History

Date	Revision	Details
May 10, 2017	1.0	First manual revision creation.

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## **1. Introduction**

### **1.1. Overview**

The O2T7 is a 2 megapixel, triple-codec (H.265, H.264, MJPEG) IP camera built with embedded software and hardware technology. It enables real time transmission of synchronized video of up to 1080p and audio data. Remote clients can connect to device for real time video/audio data through various client solutions running on PCs and smartphones. Real time 2-way communication is available through the bidirectional audio communication feature.

Intensifier® technology is an optimized solution for surveillance in low light conditions, achieved by using a superior CMOS sensor with an ISP for low light sensitivity. Intensifier® is beneficial in poor lighting environments, efficiently reducing noise and ghosting while maintaining a color image without the use of IR LEDs.

Designed to be a stand-alone streaming audio & video transmission device, this camera can be applied to various applications such as video security, remote video monitoring, remote education, video conference or internet broadcasting system.

Integrated PoE (Power over Ethernet, IEEE 802.3af) will reduce the total cost of ownership by reducing on-site wiring for installation.

## 1.2. Specifications

<b>LENS</b>	
Lens Type	C&CS Mount Lens
<b>CAMERA</b>	
Image Sensor	1/2.8" 2 Megapixel Sony CMOS
Minimum Illumination	COLOR : 0.05 lux F1.4 / BW : 0.0025 lux F1.4
Scanning Mode	Progressive Scan
Dynamic Range	108dB (true WDR)
Electronic Shutter	Auto
<b>VIDEO</b>	
Compression Algorithm	H.265, H.264, MJPEG
Compression Resolution	352X240, 640X360, 704X480, 1280x720, 1920x1080
Bitrate Control	H.264-CBR /VBR (up to 12Mbps) / H.265 - CBR / VBR (up to 5Mbps)
Maximum Frame Rate	30fps @ 1080p + 30fps @ 720p + 30fps @ 4CIF Max Triple Streaming
Multi Stream	3 streams
<b>AUDIO</b>	
Compression Algorithm	G.726 (16KHz), G.711 $\mu$ - Law (8KHz)
<b>INPUTS/OUTPUTS</b>	
Video Output	1 BNC
Audio Input	1 line in
Audio Output	1 line out
Alarm Input	1 TTL, NC/NO programmable, 4.3V (NC) or 0.3V (NO) threshold, 5 VDC
Alarm Output	1 relay out, NO only, 0.3A @ 125 VAC, 1A @ 30 VDC
Network Connectivity	10/100 Mbps Ethernet
<b>CONNECTORS</b>	
Video Output	BNC
Audio In/Out	3.5mm audio jack
Alarm In	Wires
Alarm Out	Wires
Ethernet Port	RJ-45
<b>GENERAL</b>	
Dimensions ( $\varnothing$ x H)	2.71"(W)X2.16"(H)X4.33"(D)
Unit Weight	0.99lbs
Operating Temperature	14°F to 122°F (-10°C to 50°C)
Operating Humidity	0% to 90%

Power Supply	12 VDC, PoE (Power over Ethernet) (IEEE 802.3af, Class 3)
Power Consumption	Max. 3W
Approval	FCC, CE

**Specifications are subject to change without notice.**

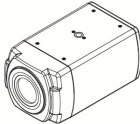
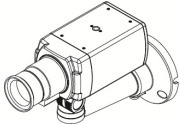




### **1.3. Applications of O2T7**

- Security surveillance (buildings, stores, manufacturing facilities, parking lots, banks, government facilities, military, etc.)
- Remote monitoring (hospitals, education, traffic, public areas, etc.)
- Teleconference (Bi-directional audio conference). Remote Learning, Internet broadcasting
- Weather and environmental observation

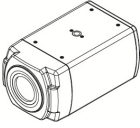
## 2. Product Description

### 2.1. Contents

The product package contains the following:

Contents	Description	Image	Remarks
Main Body	O2T7		
Tools and Mounting Screws	4X25 Tapping Screw 2EA, BH M5X10 Tapping screw 1EA 1/4" Screw 1EA, Core 1EA		
CD	Software & User's Guide		
Quick Reference Guide	Quick installation guide		
GPL License	Open Source Guide		

### 2.2. Product Preview

O2T7	IP Scanner	SecureGuard® VMS
		
Box IP Camera	PC software to locate IP cameras on the network and assign IP addresses	PC software to view and record video from the IP camera.



## 2.3. Physical description

### 2.3.1. External View

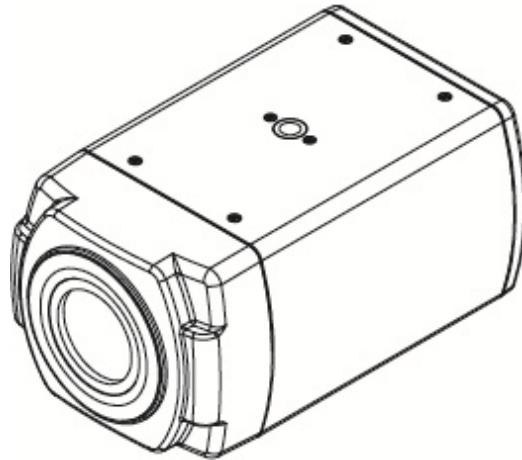


Figure 2-1. External view of O2T7

### 2.3.2. Dimensions

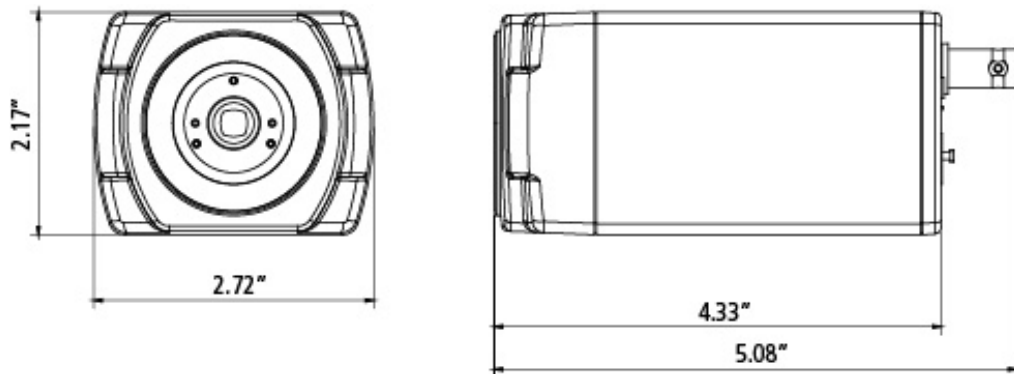
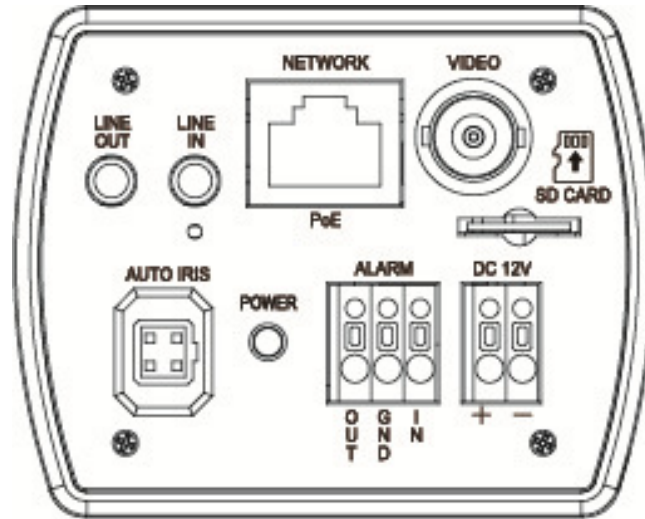


Figure 2-2. Dimensions

2.3.3. Connector information



1. Network Port
2. BNC Video Out
3. Power In
4. Ground
5. Audio In/Out
6. Alarm In/Out

Figure 2-3. Connector information

## 2.4. Functional Description

- **Power**

Power input for supplying 12V 1A DC power.



**Caution: If the camera is powered by PoE, do not plug in DC Jack with active DC power into DC power connector.**

- **Audio (MIC/LINE) IN**

Connect external audio source or microphone.

- **Audio (Line) In**

Connect speakers with built in amplifier. Audio from remote site is output through Line out in bi-directional audio mode.

- **RJ-45 Ethernet (100Base-T) / PoE (IEEE802.3af)**

100Mbps Ethernet connector (RJ-45) with standard PoE (802.3af).

- **SENSOR IN**

Connect external alarm sensor. Examples of sensing devices are infrared sensor, motion sensor, heat/smoke sensor, magnetic sensor, etc. Connect the two wires of the sensors to "Sensor In". The sensor type (NC/NO) can be set in the admin page. Multiple sensor devices can be connected in parallel.

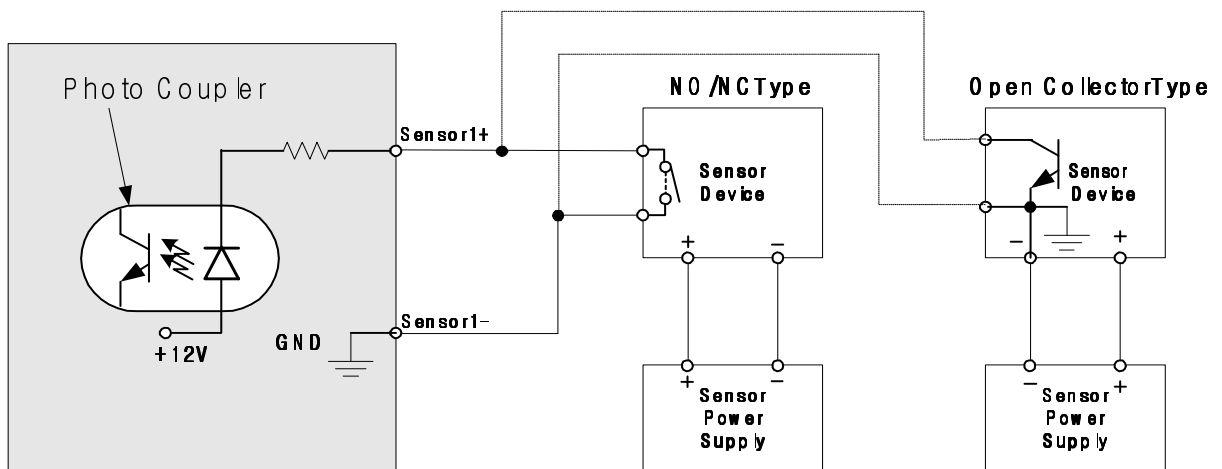


Figure 2-4. SENSOR input and connection of the sensor

- **Factory Default Switch**

A switch provided for returning the IP camera to factory default state. Unscrew the cover to access the switch. Press the switch about 5 seconds while power is applied.

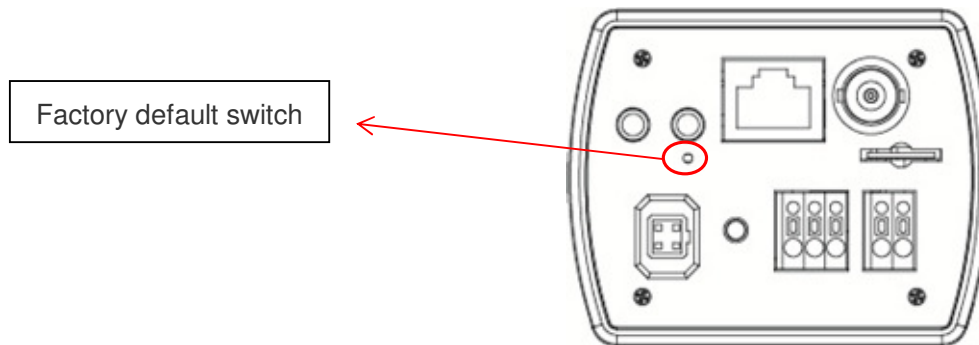


Figure 2-5. Factory Default Switch

## 2.5. Accessories for installation

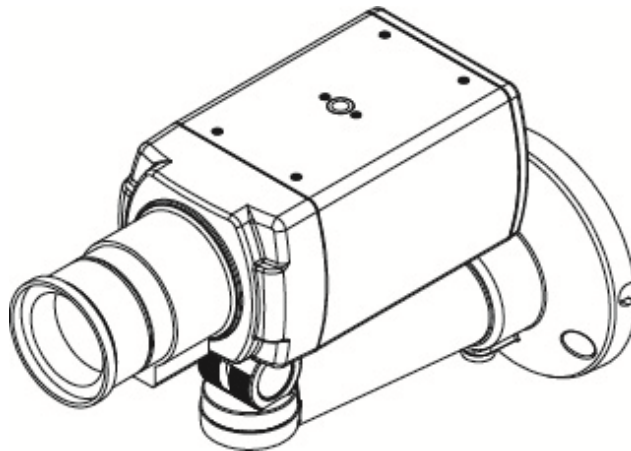
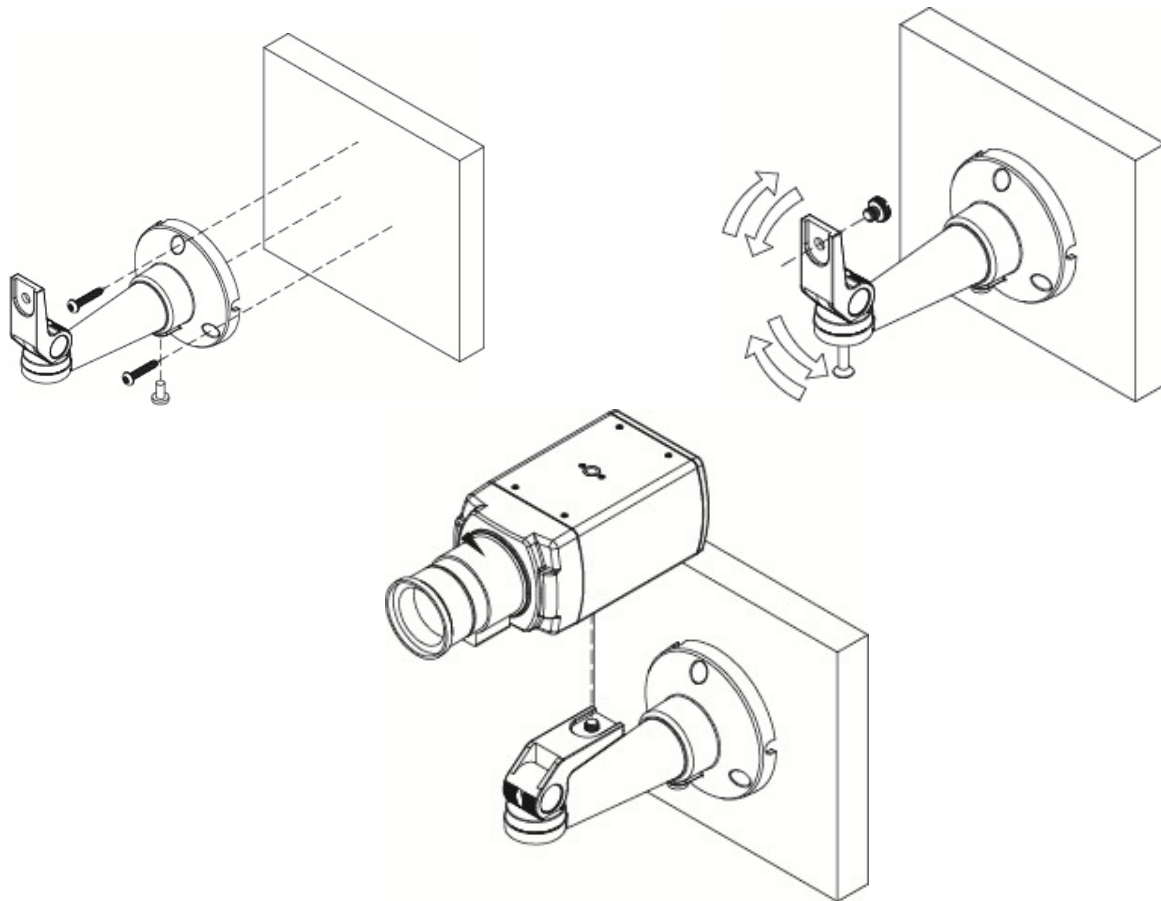


Figure 2-6. Accessories for installation of O2T7

### 3. On Site Installation

Use cables and conduits that are suitable for the installation. Close attention should be paid to the installation so that no moisture is allowed to penetrate into the unit through the cables or conduits during the lifetime of the product. Products that have internal parts exposed to moisture due to improper installation are not covered by warranty.

#### 3.1. Installation



**WARNING:** You might need to reinforce the wall or ceiling. If the wall or ceiling is not strong enough to support the camera, the camera might fall damaging the camera or causing injuries.

## 4. Getting Started

Brief information for the initial operation of O2T7 is provided in this chapter.

### 4.1. PC System Requirements

Audio/Video streaming data received from O2T7 can be displayed or stored in a PC running client programs. Minimum requirements of the PC are described below:

	Minimum Requirements	Recommended Specifications
CPU	Intel Core i3	Intel Core i5
Main Memory	2GB	4GB
Operating System *	Windows XP	Windows 7,8 (64bit)
Web Browser	Internet Explorer 8	Internet Explorer 8 or higher
Graphic Card	Video RAM 256MB or more Resolution 1920x1080	Video RAM 1GB Resolution 1920x1080
Network	100 Base-T Ethernet	100 Base-T Ethernet

\* Operating Systems supported: Windows XP / Vista / 7 / 8

## 4.2. Quick Installation Guide

### 1. Connect PC and O2T7 to network.

- 1) Prepare a PC to run programs for the installation and video connection
- 2) In the case of using PoE, connect the PC and O2T7 to the network using one of the following ways.

If your LAN Switch does not support standard PoE, connect O2T7 as shown in dotted line in Figure 4-1. The DC power is applied through DC adapter.

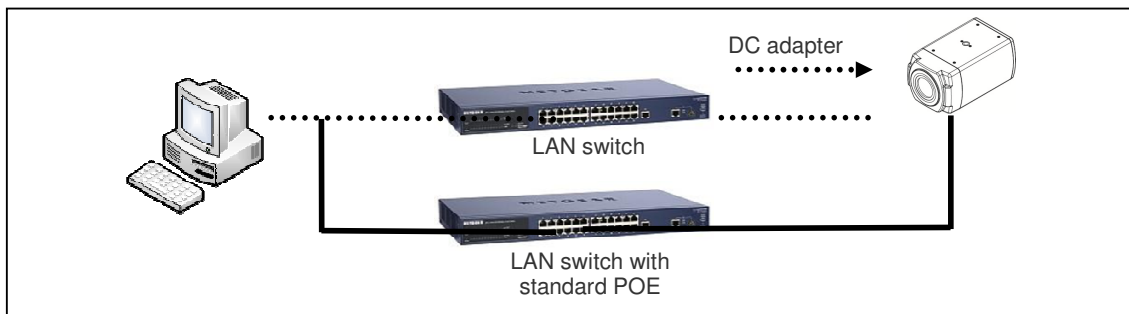


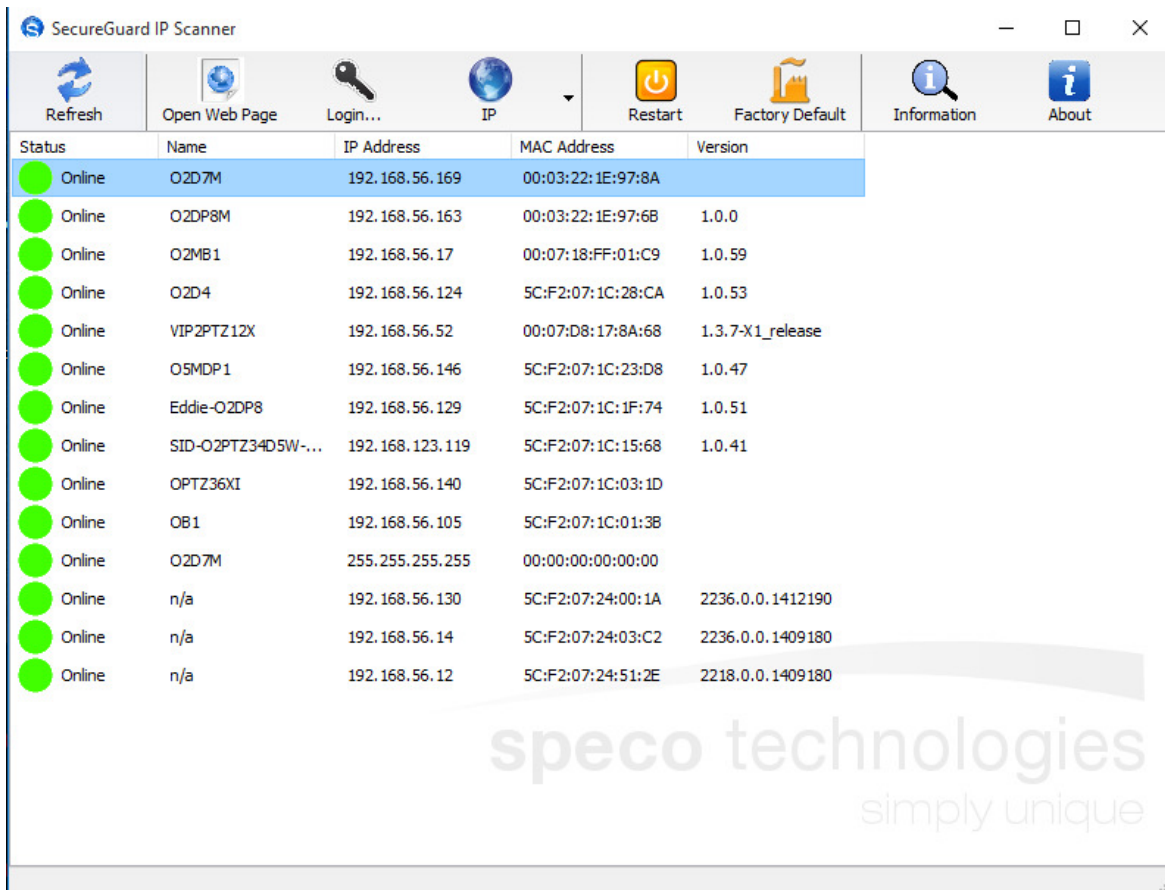
Figure 4-1. Power and network connection

## 2. Install IP Scanner

IP Scanner is a utility to discover IP cameras on the local network. The camera is set to DHCP mode out of the box.

Follow the sequence below to access the camera settings

- i) Install IP Scanner on the PC that will be used on the same local network as the IP camera. IP Scanner can be found on the CD included in the package or downloaded from [specotech.com](http://specotech.com).
- ii) Run IP Scanner
- iii) The available cameras on the local network will show automatically
- iv) Highlight and double-click on the applicable model to launch the camera web viewer (default browser must be set to Internet Explorer to view video)



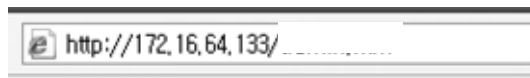


### 3. Remote video connection to O2T7

#### 1) Connection through Web Viewer

The web viewer offers the simplest way to connect to the O2T7. For video connection, enter the IP address of O2T7 in the Internet Explorer address bar as:

[e.g.] Port 80



Port 80 (default) can be omitted

[e.g.] Port 8080



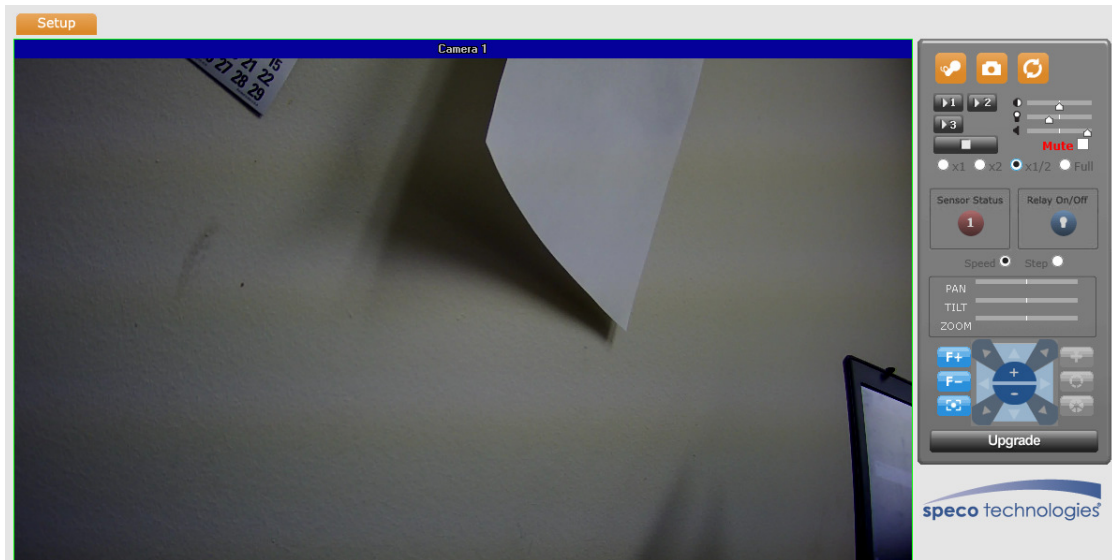
**Note :** When prompted, install and allow the Active X controls as needed



The default login ID and password are **admin, 1234**.

#### 4. Additional settings

All parameters of the camera are set to factory default out of the box. For a more sophisticated target application, parameters can be changed through the settings page. The settings page can be accessed by clicking on "Setup" in the web viewer.



## 5. Troubleshooting

### 5.1. No power is applied

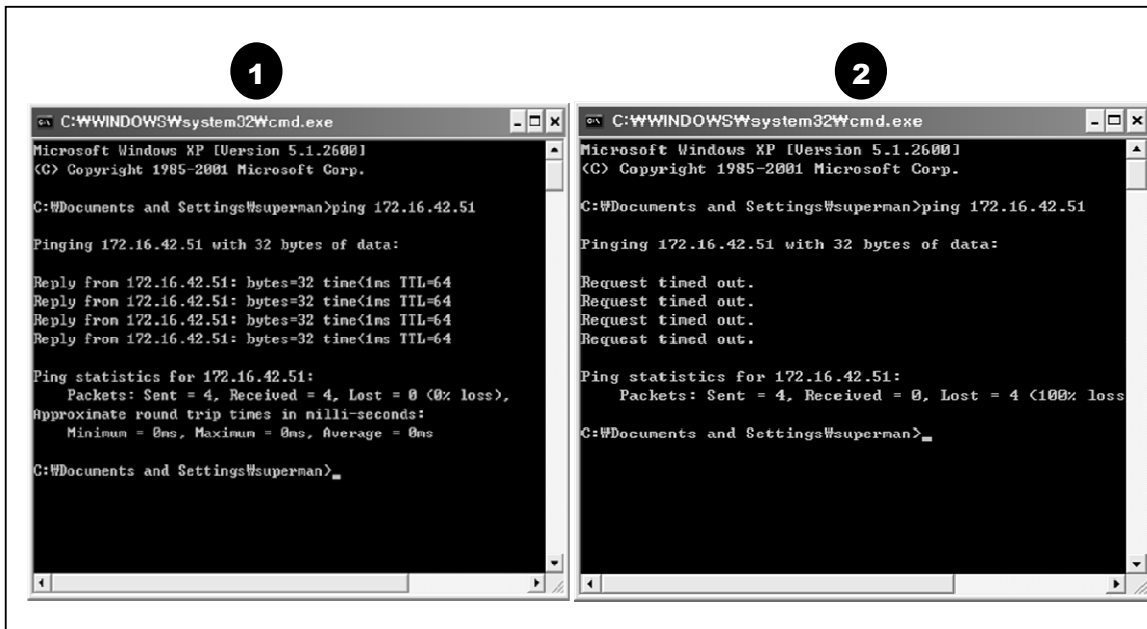
- In case of Standard PoE (Power over Ethernet)  
Power supply through standard PoE is possible only when the following conditions are met.
  1. Standard PoE is supported on the product.
  2. The LAN switch supports standard PoE.Make sure that both the IP camera and the LAN switch support standard PoE (IEEE 802.3af)
- In case of DC adapter  
If PoE is not applied, the power and network connection should be made through separate cables. Use the DC adapter recommended by the provider. In case of replacing the DC power supply, make sure that the power supply meets the power requirement of the IP camera to prevent damage or malfunction.

## 5.2. Cannot connect to the camera

Check the status of the network connection through PING test.

Try the following on your PC:

- Start > Run > Cmd > Ping IP address (Ex : Ping 172.16.42.51)
- If "Reply from ~" message is returned (① in the figure below), the network connection is in normal state. Try connection to the video again. If the problem persists, or refer to other trouble shooting notes.
- If "Request timed out" message is returned. (② in the figure below), the network connection or network setting is not in normal state. Check the network cable and settings.



### **5.3. Technical Assistance**

If you need any technical assistance, please contact Speco's technical support. Please provide the following information.



1. **Model name**
2. **MAC address**
3. **Purchase date**
4. **Description of the problem**
5. **Error message**