

O2MD2




speco technologies®

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 power adapters compatible with the unit.

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

All 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 the moisture through the wire for 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 generate, 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
Mar 27 th , 2014	1.0	First manual revision creation.

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1. Introduction

1.1. Overview

O2MD2 is multi-codec (H.264, MJPEG) IP camera (or network camera) built with embedded software and hardware technology in pancake housing. It enables real time transmission of video of up to 1080P. Remote clients can connect to O2MD2 for the real time video data through various client solutions running on PC or smart device.

O2MD2 is specialized in video transmission which economic and practical products removing audio, sensor, replay, etc and the videos can be only available in the field and place where needed.

Embedded PoE (Power over Ethernet, IEEE 802.3af) will enable the owner to reduce TCO (Total Cost of Ownership) by reducing on-site wiring works for the installation.

1.2. Specification

Camera	
Image sensor	Progressive scan 1/2.9 inch CMOS 2.0M pixels
Full resolution	1,920 x 1,080 pixels (Full HD)
Min. illumination	0.2Lux (Color, DSS On), 0.00 Lux (IR LED On)
S/N Ratio	50dB or more
White Balance	AWB
DSS	Supported
WDR	Supported
Lens	3.7mm, F2.5
Day & Night	Supported (TDN & IR LED)
IR LED	12EA
Video	
Compression method	Simultaneous Dual Codec (H.264 / MJPEG)
Resolution	1920x1080@30fps
Multi-Profile Streaming	- 3 simultaneous video profiles - Select the codec type, resolution and frame rates for each profile.
Intelligent Bit-Rate Control	VBR or CBR
PTZ	Digital PTZ & video crop
Image Setting	Text overlay, Privacy mask, De-interlace filter
Motion detection	3 regions
Network	
Network Protocol	- IPv4/v6, TCP, UDP, IGMP, ICMP, ICMPv6, ARP, RARP, PPPoE, RTCP - RTP, RTSP, SDP, HTTP, HTTPS, SMTP, FTP, DHCP, UPnP - NTP, DNS, DynDNS, SOCKS
Dynamic IP	Speco DDNS (free of charge)
Security	- User ID & Password protection, IP address filtering - HTTPS encryption, Digest Authentication, User Access Log
Streaming method	- RTSP streaming with proprietary format for control informations - Standard RTSP streaming - HTTP streaming

External Terminals	
LAN	10/100BaseT LAN (auto MDIX)
Power	DC 12V input
Factory Reset	Supported
Alternate Power	
Standard PoE	IEEE802.3af Supported
Alarm & Event	
Intelligent Video	Motion Detection
Alarm Triggers	Intelligent Video
Alarm Events	Video file upload(FTP), Still Image(Email)
Alarm Buffer (Audio/Video)	configurable Pre-alarm (5~10 sec) & Post-alarm (10~30 sec)
Client Software	
Speco NVR	Windows XP/Vista/7 (free of charge)
Speco ONSIP	Android™, iPhone®, iPad® (free of charge)
Miscellaneous	
Operating Temperature	0°C ~ 45°C (32°F~113°F)
Operation Humidity	8~80% RH
Power	DC 12V, 0.6A
Dimensions(W x H x D)	Ø122mm(4.8") x 55mm(2.1")
Weight	0.4Kg (0.88Lb)
Casing	AL, PC
Approvals	FCC, CE, KCC, RoHS
Package information	Unit, CD, mounting screws
Optional Items	
Adapter	DC 12V, 1.5A

1.3. Applications of O2MD2

- Small Office, Home environment, Personal user.
- Security surveillance (buildings, stores, manufacturing facilities, parking lots, banks, government facilities, military, etc.)
- Remote monitoring (hospitals, kindergartens, traffic, public areas, etc.)
- Weather and environmental observation

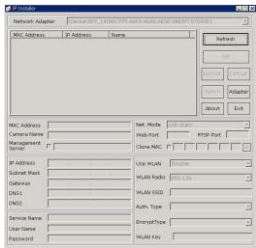
2. Product Description

2.1. Contents

The product package contains followings :

Contents	Description	Remarks
O2MD2	IP camera O2MD2 main unit	
Accessories	Screws (3 pieces of 1 type), Anchors (3 pieces of 1 type), L-type wrench 1EA	
CD	Software & User's Guide	
Quick Reference Guide	Quick installation guide	
Power Adaptor	Default built in standard PoE module (IEEE802.3af)	12V DC Adaptor (Optional item)

2.2. Product Preview

O2MD2	IP Installer	VMS Software (Speco NVR)
		
Main Unit	PC software to allocate an IP address to the IP Camera	PC software to view and record the A/V streaming data transmitted from IP camera. (Simultaneous support of up to 64 IP cameras@D1)

2.3. Physical description

2.3.1. External View



Figure 2-1. External view of O2MD2

2.3.2. Dimension

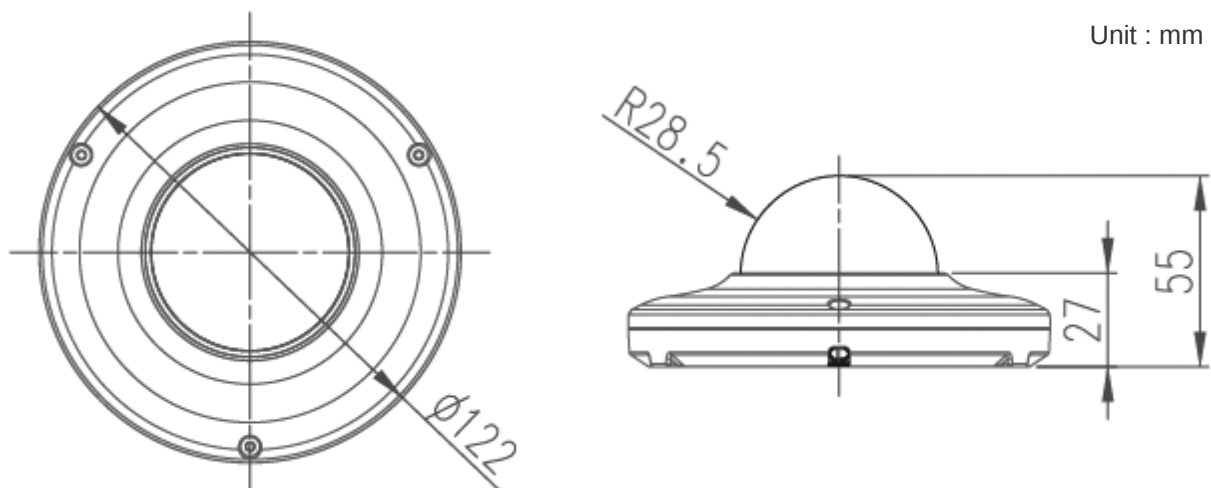


Figure 2-2. Dimension

2.3.3. External Connector

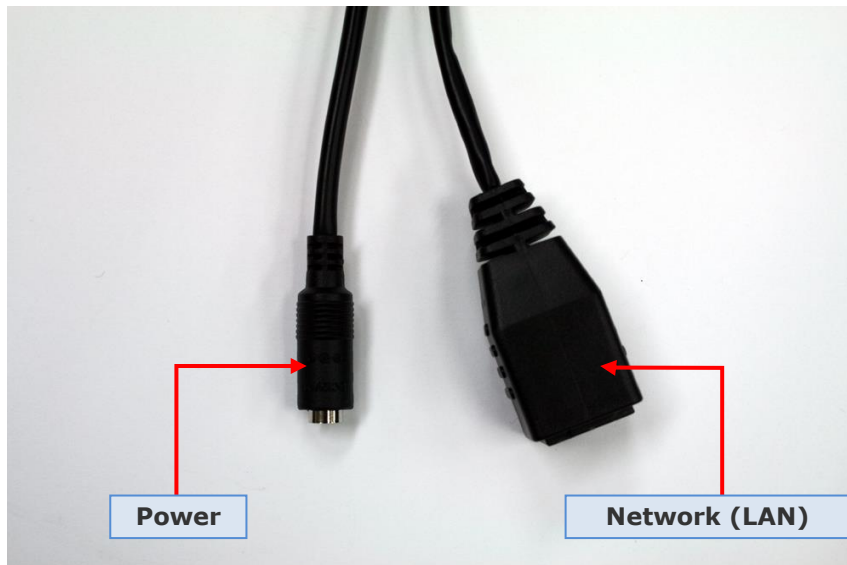


Figure 2-3. Connector for external connection

2.4. Functional Description

- **Power :** Power input for supplying 12V DC power.

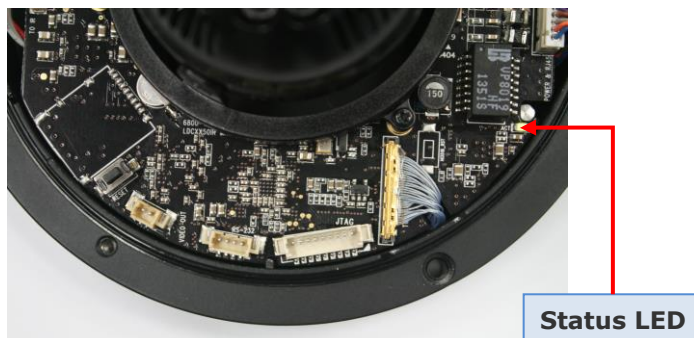


Caution : If O2MD2 is powered by PoE, do not plug in DC Jack with active DC power into DC power connector.

- **Network (LAN)**

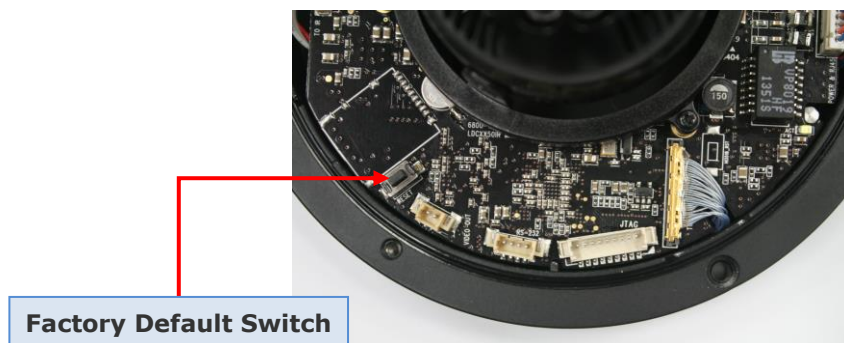
100Mbps Ethernet connector (RJ-45) with PoE standard (802.3af). LED on the Ethernet connector shows the status of O2MD2 as the followings:

- **Status LED** (It will be lit in green or red depending on the status)
 - ① Green : Green color indicates that the camera is in normal operation mode. Continuous green indicates that data transmission is possible..



- **Factory Default Switch**

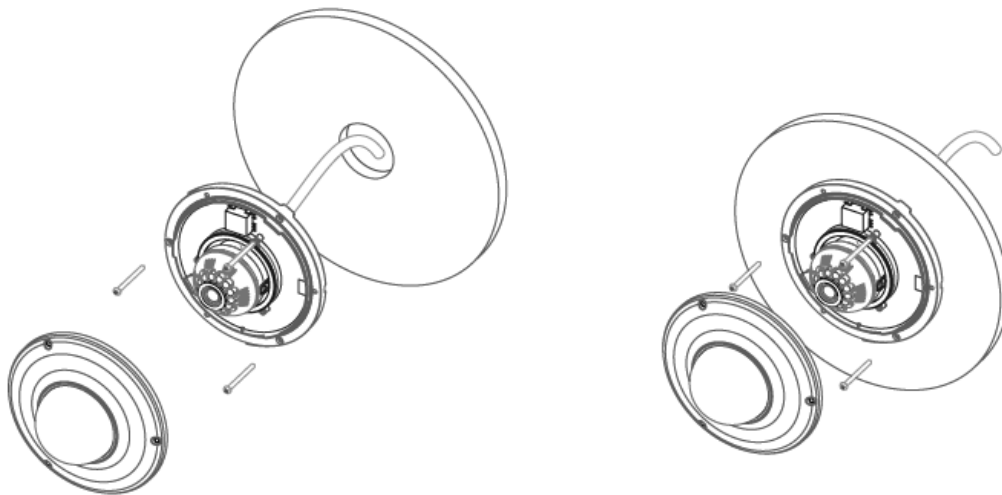
Factory default switch is provided for returning the IP camera to factory default state. Unscrew the cover to access the switch. Press the switch about 5 seconds while power is applied to return to factory default state



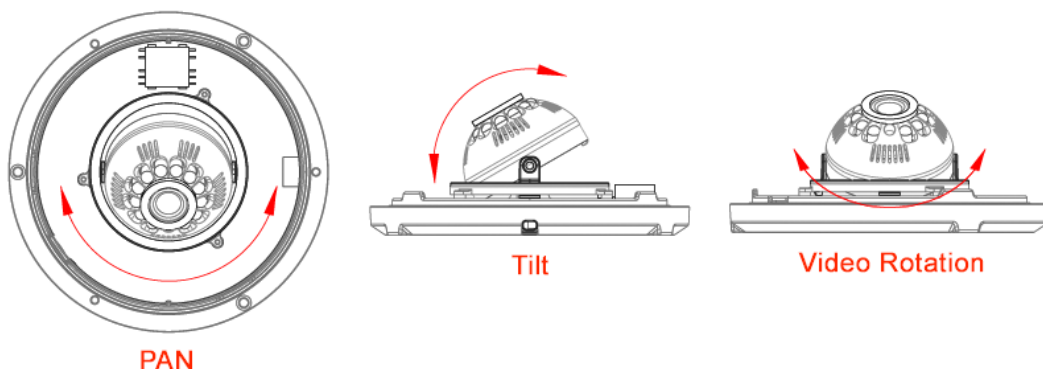
3. On Site Installation

Use cables and conduits that are suitable for the installation. Particular attention should be paid in the installation so that no moisture is allowed to penetrate into the unit through the cables or conduits during the life time of the product. Products of which the internal parts are exposed to moisture because of improper installation are not covered by warranty

1. Remove the top cover.
2. Fix the base on the wall.



3. Adjust the rotational position of the camera for desired viewing of the site.



4. Place top cover.

4. Getting Started

Brief information for first time operation of O2MD2 is provided in this chapter.

4.1. PC Requirement

Audio/Video streaming data received from O2MD2 can be displayed or stored in a PC running client programs. Minimum requirement of the PC is described below:

ITEM	Minimum Requirement	Recommended Specification
CPU	Intel Core i3 3Ghz	Intel Core i7
Main Memory	2GB	4GB
Operating System*	Windows XP	Windows 7 (64bit)
Web Browser	Internet Explorer 8, 9	Internet Explorer 8, 9
Graphic Card	Video RAM 256MB Resolution 1920x1080	Video RAM 1GB Higher than 1920x1080
Network	10 Base-T Ethernet	100 Base-T Ethernet

* Operating Systems supported: Windows 2000 Professional, Windows XP / Vista / 7

4.2. Quick Installation Guide

4.2.1. Connect PC and O2MD2 to network.

1. Prepare a PC to run programs for the installation and video connection
(PC is needed to assign IP address to O2MD2)
2. In the case of using PoE, connect the PC and O2MD2 to the network using one of the following ways. If your LAN Switch does not support standard PoE, connect O2MD2 as shown in dotted line in Figure 4-1. The DC power is applied through DC adaptor.

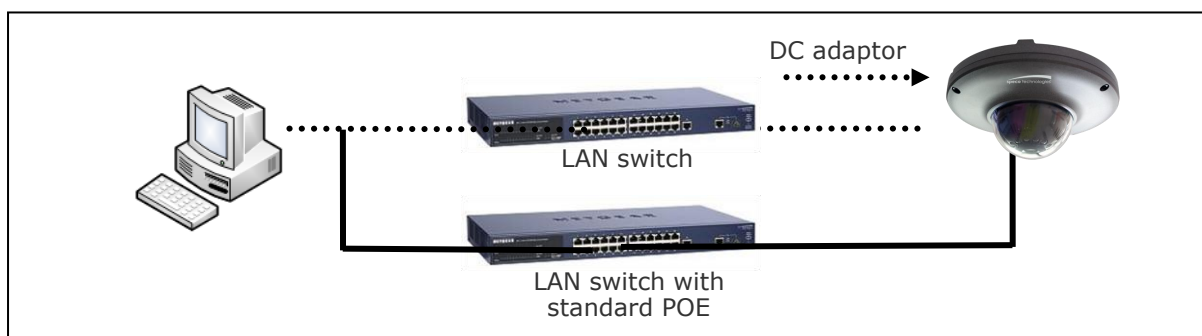


Figure 4-1. Power and network connection

4.2.2. Install Speco-NVR and set IP parameters on O2MD2

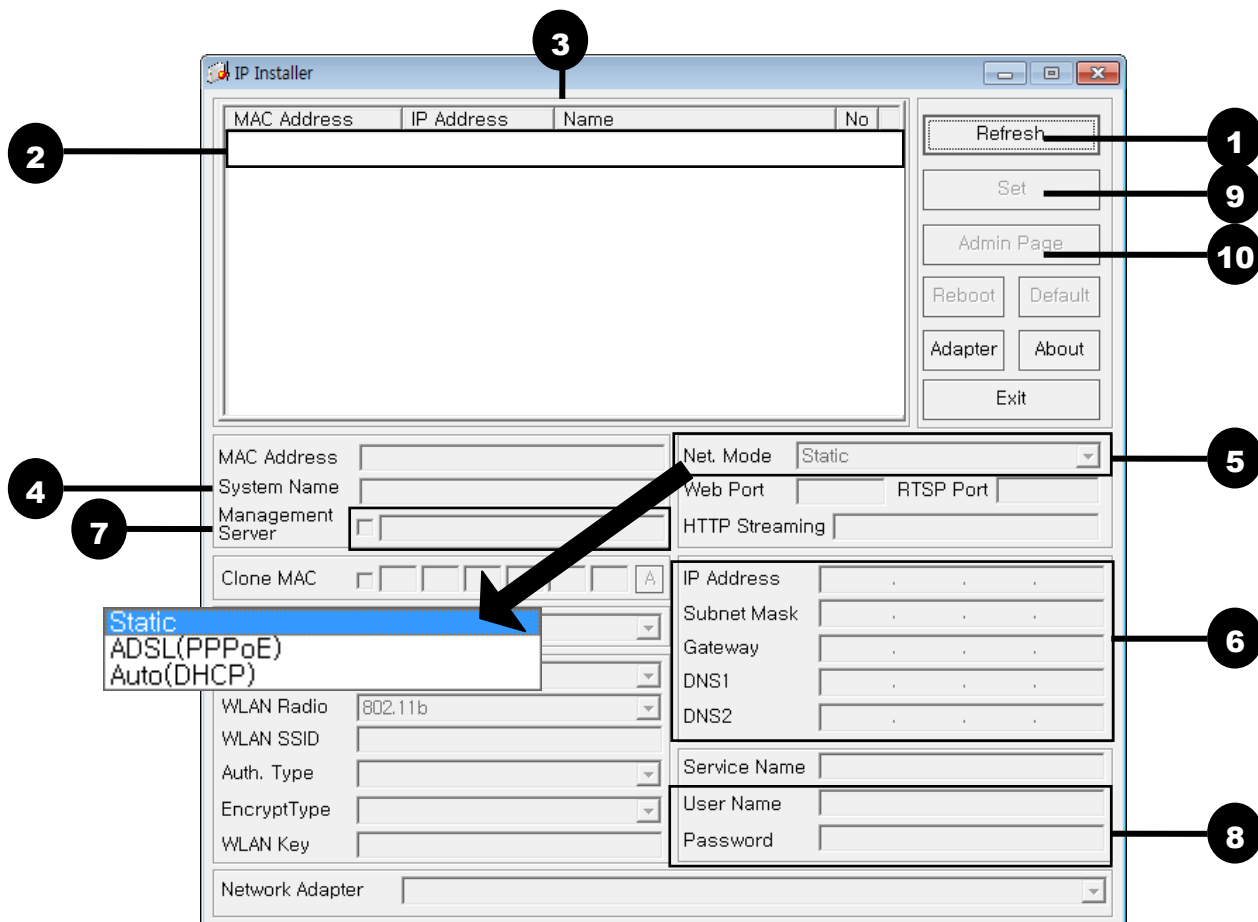
Speco-NVR is a multi-channel VMS program for the IP camera. Install Speco-NVR on remote PC to connect to these products. It is needed to assign connection information to Speco-NVR program before connection. Insert the CD provided with product into the PC and install Speco-NVR.



Figure 4-2. Speco-NVR

Follow the sequence below for setting the IP parameter

1. Run ONSIP installer
2. Click ① in ONSIP installer window.> Double click on ② > Fill in ④ > make a selection in ⑤ > Fill the parameters in ⑥
3. Click on ⑨ to apply the settings.
4. You can connect to admin page by clicking on ⑩.



Click on the field in ③ for sorting and rearranging the list.

Select network mode that best suits from the drop down list in ⑤. You can choose either Static or ADSL and Auto (DHCP), respectively. If ADSL and Auto are selected, the fields in ⑥ is deactivated.

In case of ADSL, fill the User Name and Password in ⑧ with the values provided by your ISP.

If DDNS service is needed, Check at the box and fill the empty field with hostname you want in ⑦.

4.2.3. Remote video connection to O2MD2

1. Connection through Web Viewer

Web Viewer offers simplest way of video connection to O2MD2. For video connection, enter the IP address of O2MD2 in the URL window of Internet Explorer as:

[e.g.] Port 80

 http://172.16.64.133/

Can be omitted the default port of 80

[e.g.] Port 8080

 http://172.16.64.133:8080/



Note : Active-X module should be installed on your PC before actual connection. If your PC is not connected to the internet, you cannot download Active-X module. Most convenient way of installing the Active-X module is installing Speco-NVR which is available from the CD or our web site.

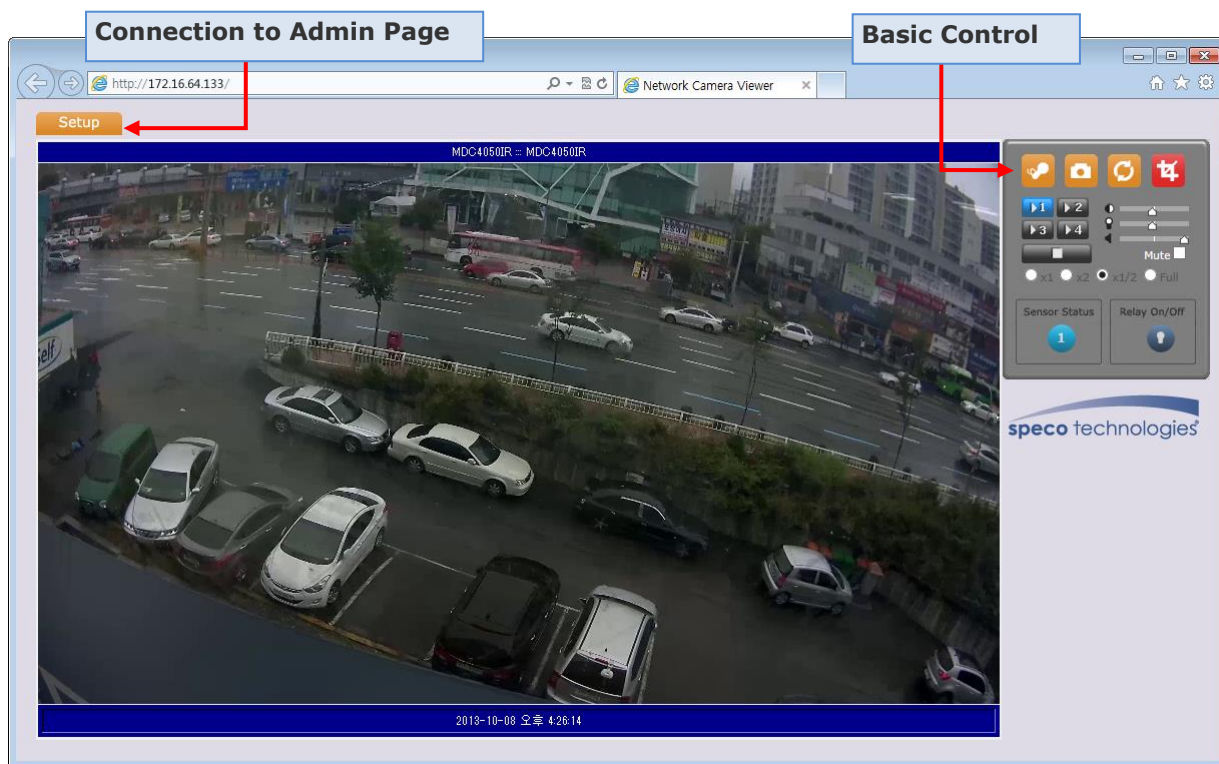


Figure 4-3. Web Viewer

Default ID and password of Admin Page are **“admin”**, **“1234”**.

For more detailed information, please refer to the **“Configuration_Guide”** Guide.

1. Connection through Speco-NVR

Click the camera assignment button for setting the camera address. Input the description, address, Ch#, User ID, Password and port and then click the save button. After assignment procedure, you must click the SAVE button. You can see the live video when you click the live view button as below. When you exit Speco-NVR, you have to input the ID/PW, admin/1234. Details for Speco-NVR can be found in [Speco-NVR User's Guide].

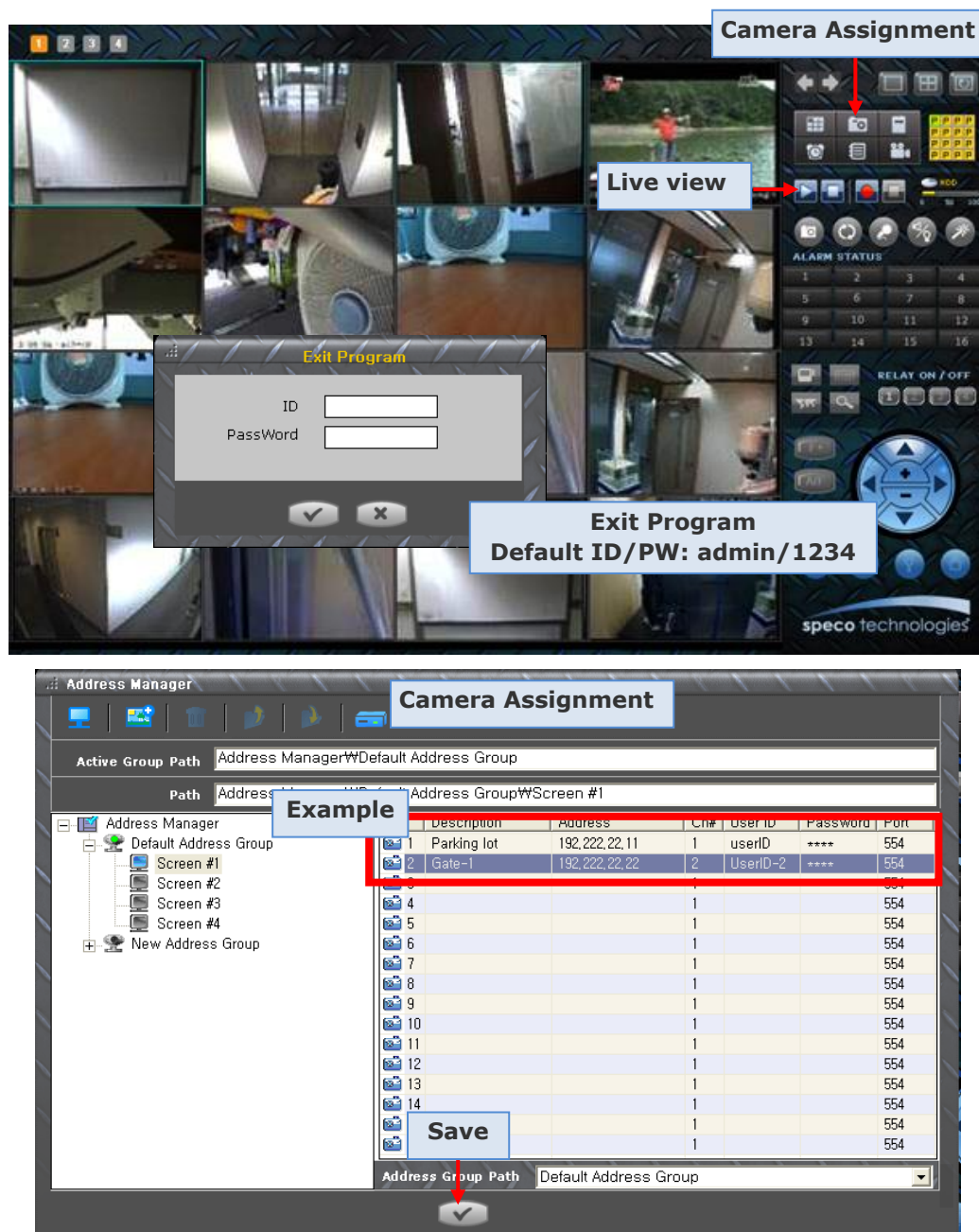


Figure 4-4. Speco-NVR

4.2.4. Additional settings through connection to the Admin Page

All parameters of the camera are factory default out of the box. For a more sophisticated target application, parameters need to be changed through the admin page. The admin page can be connected through

"http://IP_Address:Port_Number/admin.htm"

ID and password of the administrator are required. Default ID and password are **"admin"**, **"1234"**.

It is highly recommended to change the ID and password to prevent illegal access to the IP camera.

For more detailed information, **Please refer to the "Configuration_Guide" Guide.**

5. Trouble Shooting

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 adaptor

If PoE is not applied, the power and network connection should be made through separate cables.

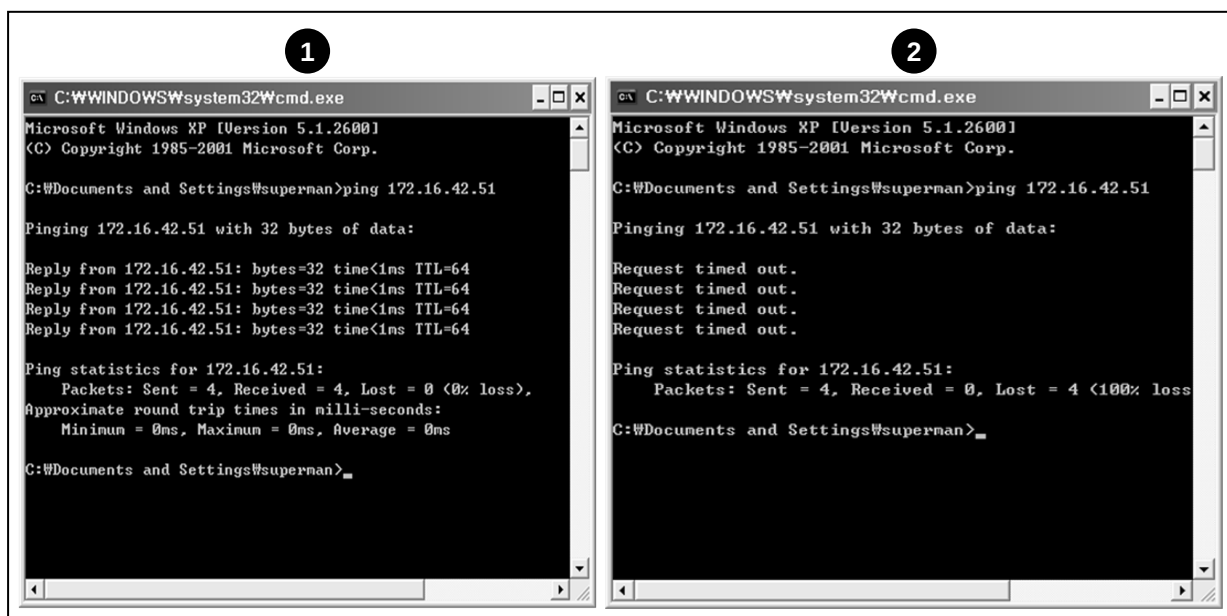
It is recommended to use DC adaptor supplied by provider for the feeding of the power. In case of replacing the DC power supply, make sure that the power supply meets with the power requirement of the IP camera to prevent damage or malfunction.

5.2. Cannot connect to the Video

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.



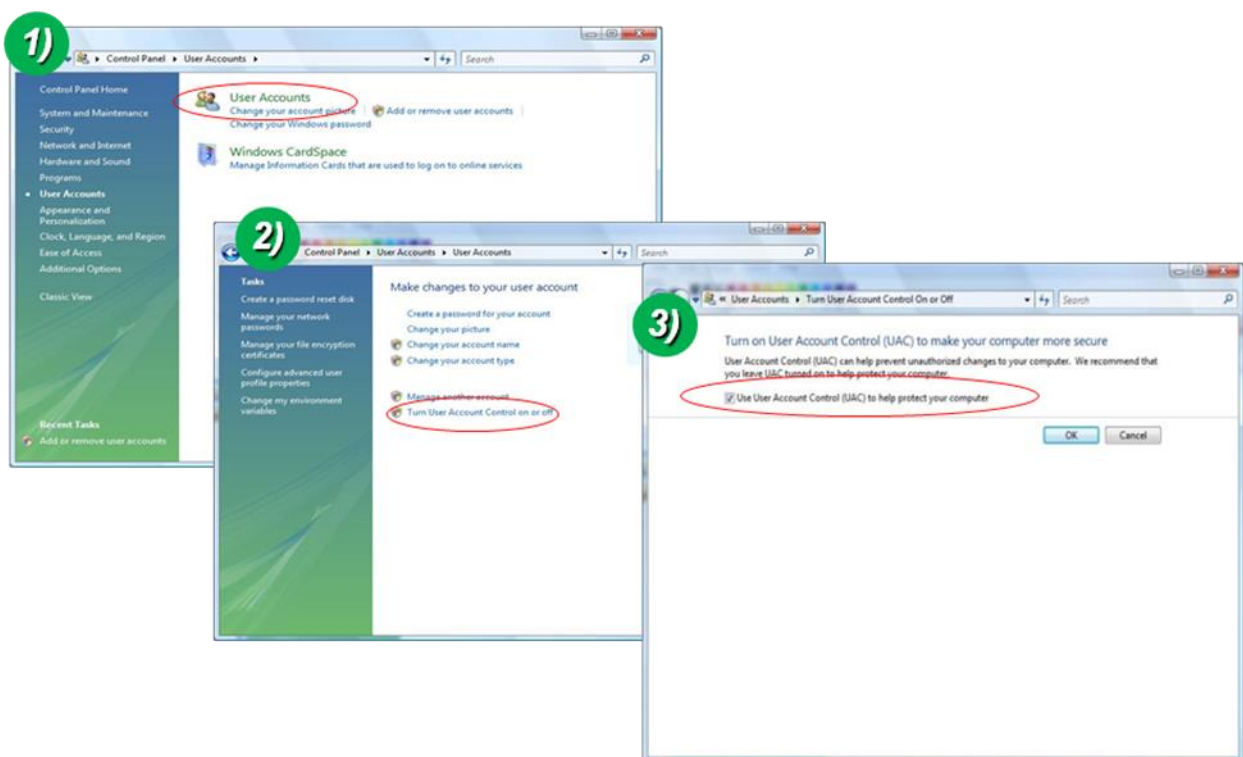
5.3. Windows Vista or Windows 7

Windows Vista and Windows 7 users need to configure UAC (User Access Control) and Privilege Level for proper recording and still video capture in Speco-NVR and Web Viewer.

<Windows Vista>

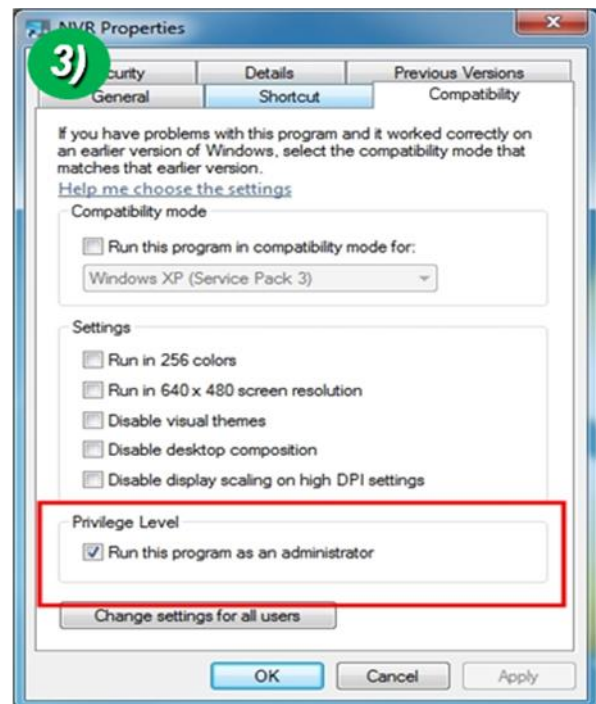
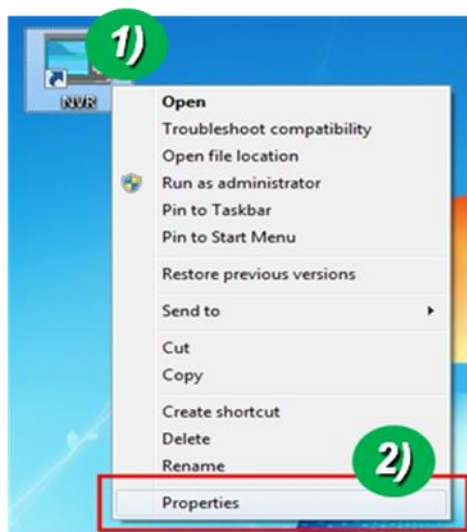
1. UAC (User Access Control) configuration

- 1) Double-click "User Accounts" in control panel
- 2) Double-click "Turn User Account Control on or off"
- 3) Uncheck "Use UAC to help protect your computer"



2. Privilege Level Control

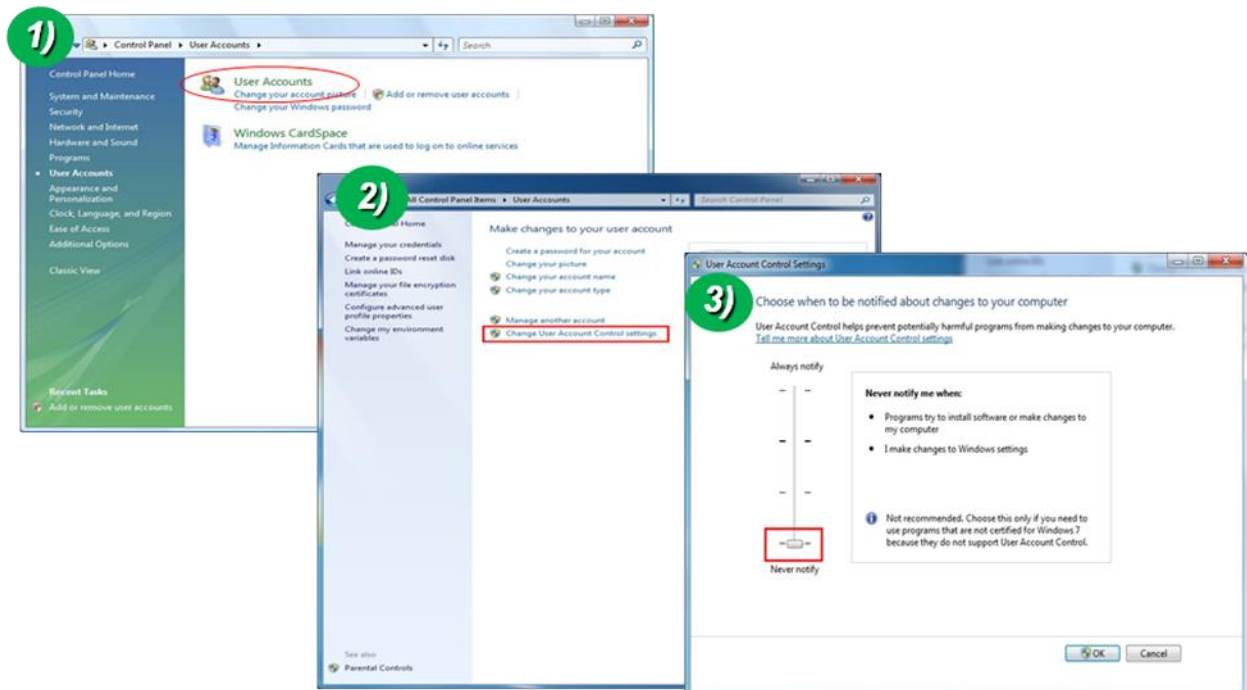
- 1) Select "NVR" icon on the desktop
- 2) Click right mouse button and select "Properties"
- 3) Check "Privilege Level" in "Compatibility" tab



<Windows 7>

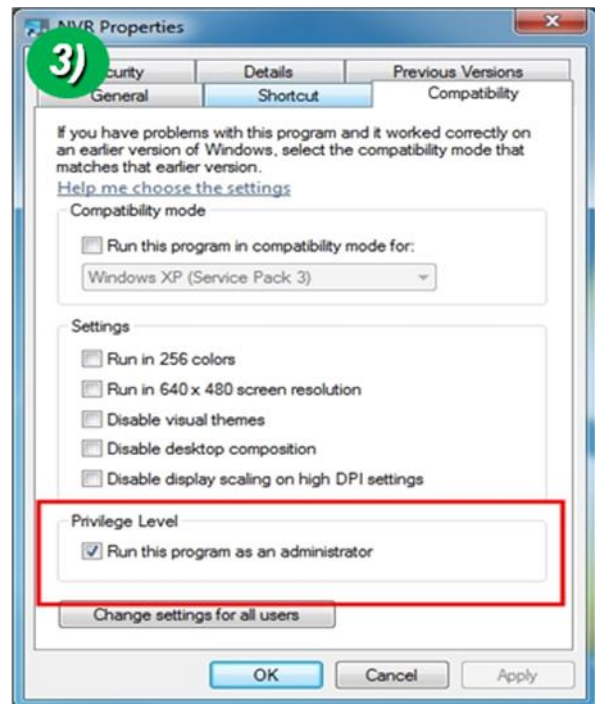
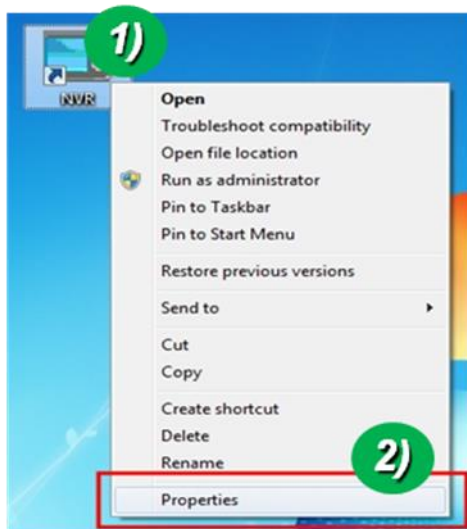
1. UAC (User Access Control) configuration

- 1) Double-click "User Accounts" in control panel
- 2) Double-click "Change User Account Control setting"
- 3) Set to "Never notify"



2. Privilege Level Control

- 1) Select "NVR" icon on the desktop
- 2) Click right mouse button and select "properties"
- 3) Check "Privilege Level" in "Compatibility" tab



5.4. Technical Assistance

If you need any technical assistance, please contact your dealer. For immediate service please provide the following information.



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