

MVC4050VR

Vandal/Weather Proof Full HD IP Camera



Directions

Be careful not to cause any physical damage by dropping or throwing MVC4050VR. Especially keep the device out of reach from children.

Do not disassemble MVC4050VR. No After Service is assumed when disassembled.

Use only the power adapter provided with MVC4050VR.

Be careful to prevent moisture or water penetration into the unit. Particular attention is needed when installing MVC4050VR. 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
2013-12-01	1.0	First manual revision creation.

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1. Introduction

1.1. Overview

The MVC4050VR is a state-of-the-art mega-pixel, multi-codec (H.264, MJPEG) IP camera (or network camera) built with embedded software and hardware technology. It enables real time transmission of synchronized video of up to 2M pixels and audio data. Remote clients can connect to MVC4050VR for the real time video/audio data through various client solutions running on PC, mobile phones. Real time 2-way communication is available through bidirectional audio communication feature.

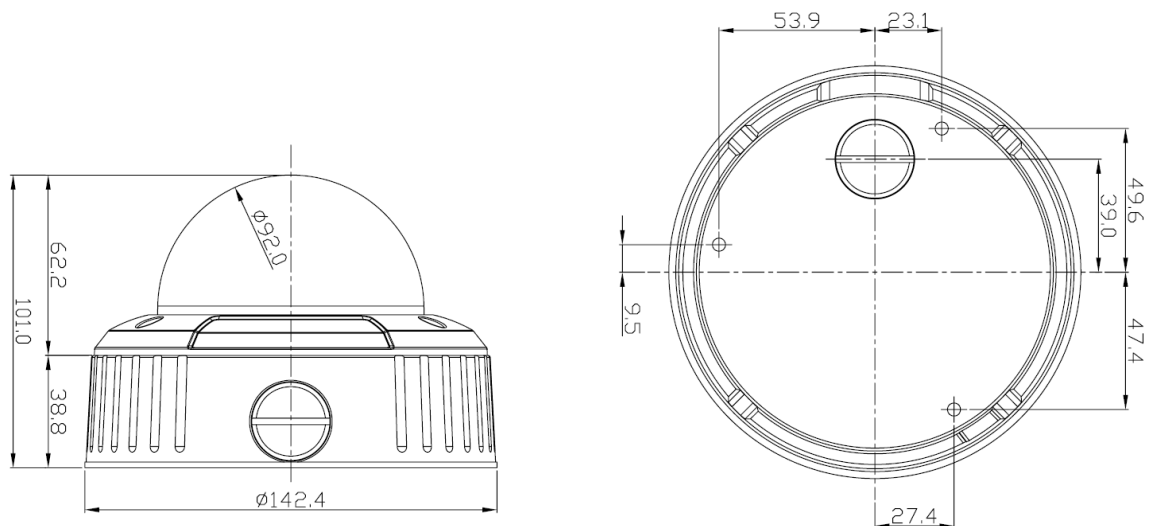
Designed to be a stand-alone streaming audio & video transmission device, MVC4050VR can be applied to various application area such as video security, remote video monitoring, distance education, video conference or internet broadcasting system.

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 Module	
Image sensor	Progressive scan 1/2.9 inch CMOS 2.0M pixels
Full resolution	1,920 x 1,080 pixels (Full HD)
Min. illumination	Color : 0.12 Lux (F 1.4) / IR LED on : 0Lux
S/N Ratio	50dB or more
White Balance	AWB
Sync System	Internal
Lens	3.5~16mm
Day & Night	Supported (TDN, IR LED)
Video Part	
Compression method	Simultaneous Dual Codec (H.264 / MJPEG)
Resolution	1920X1080@30fps
Multi-Profile Streaming	- 5 simultaneous video profiles - Select the codec type, resolution and frame rates for each profile.
Intelligent Bit-Rate Control	Hybrid Bit Rate control (VBR+CBR)
PTZ	Digital PTZ & video crop
Image Setting	Text overlay, Privacy mask, De-interlace filter
Motion detection	3 regions
Audio Part	
Mono Upstream	32Kbps G.726 ADPCM ~ LINE-in / MIC-in
Mono Downstream	128Kbps 16-bit Linear PCM ~ LINE-out(1Vpk)
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	Supported (through CNB's management server)
Security	- User ID & Password protection, IP address filtering - HTTPS encryption, Digest Authentication, User Access Log

External Terminals	
LAN	10/100BaseT LAN (auto MDIX)
Analog output	1 channel D1 CVBS output of the encoding video
Alarm input / output	Alarm I/O (1 Sensor input & 1 Relay output)
Factory Reset	Supported
other	MIC, Line in / Line out / 12VDCin
Installation	
Standard PoE (IEEE802.3af)	Supported
System Integration	
Intelligent Video	Motion Detection + IVS module(option)
Alarm Triggers	Intelligent Video + Sensor Input
Alarm Events	video file upload(FTP), still Image(Email), PTZ presets, Relay output
Video Buffer	00 sec Pre-alarm & 00 sec Post-alarm
Client Software	
NVR-Pro	64ch@D1(free of charge)
Operating Environment, Power, Dimensions	
Operating Temperature	0 °C ~ 45°C (32°F~113°F)
Operating Humidity	8~80% RH
Power	12V DC, 1A
Approvals	FCC, CE, MIC, RoHS
Package information	IP camera, CD (User's guide, Software...), L wrench, Ceiling mount, Screws, DC power adaptor(Optional)






1.3. Applications of MVC4050VR

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


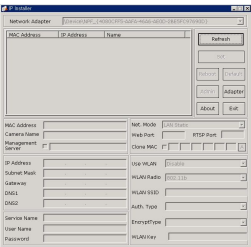
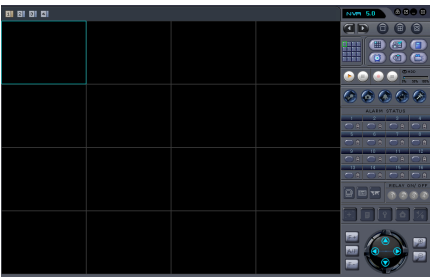
2. Product Description

2.1. Contents

The product package contains followings :

Contents	Description	Remarks
MVC4050VR	IP camera MVC4050VR main unit	
Tools and Mounting Screws		
CD	Software & User's Guide	
Quick Reference Guide	Quick installation guide	
Power Adaptor	Default built in standard PoE module (IEEE802.3af)	12VDC Adaptor (Optional item)

2.2. Product Preview

MVC4050VR	IP-Installer	CMS Software (NVR)
		
Vandal Proof Megapixel Mini Dome IP Camera	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)

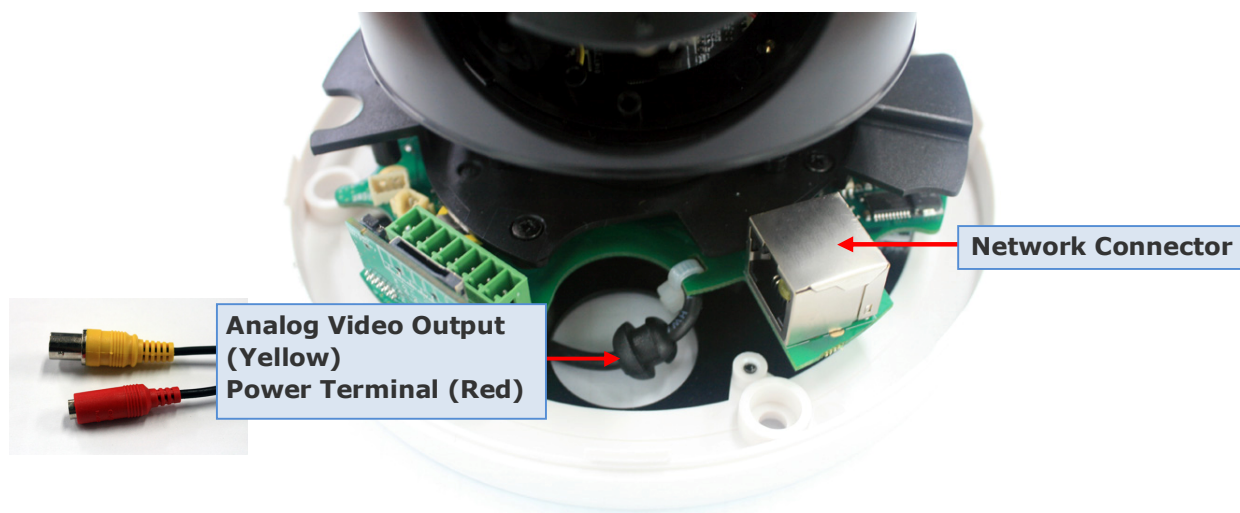
2.3. Physical description

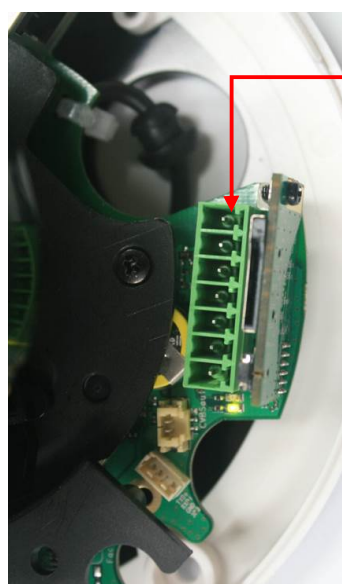
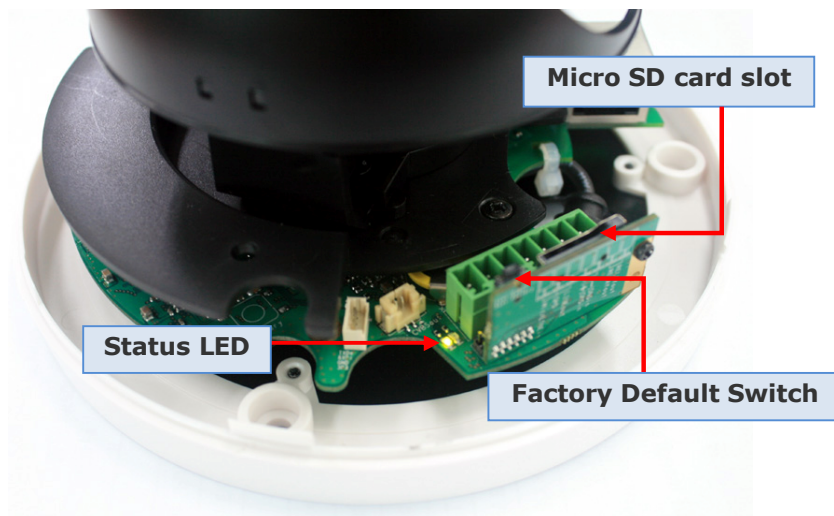
2.3.1. External View



2.3.2. Switch and Controls

This shows Camera module inside the dome cover.





Input/Output Connector

<input type="checkbox"/>	- Relay out
<input type="checkbox"/>	- Relay out
<input type="checkbox"/>	- Sensor Input(-)
<input type="checkbox"/>	- Sensor Input (+)
<input type="checkbox"/>	- Line Output
<input type="checkbox"/>	- GND
<input type="checkbox"/>	- MIC / Line Input

2.4. Functional Description

- **Power :** Power input for supplying 12V DC, 1A power.



Caution : If MVC4050VR is powered by PoE, do not plug in DC Jack with active DC power into DC power connector.

- **Network connector**

100Mbps Ethernet connector (RJ-45) with PoE standard (802.3af). LED on the Ethernet connector shows the status of MVC4050VR as the followings:

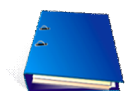
- Link LED (Orange)

It will be lit with orange color when network cabling is all right. Blinking orange color indicates that normal data transmission is under way. Off state indicates that there is trouble in network connection.

- **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. Blinking green means that someone is connected to MVC4050VR.
- ② Red : Continuous or blinking red indicates that hardware is in abnormal condition.



LED will be lit with red momentarily and it will be lit with green after a while when power is applied into MVC4050VR

- **Micro SD card slot**

Please insert SD memory card when you want to use SD memory card. In case of pulling out SD memory card, please push the SD card.

- **MIC/Line Input**

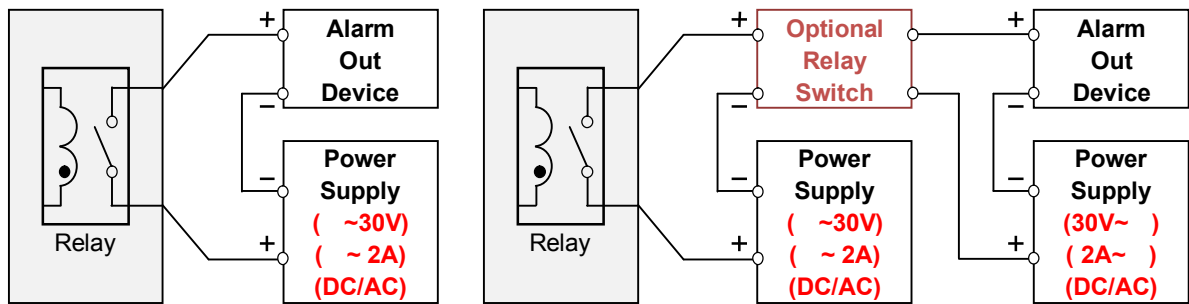
Connect external audio source or microphone.

- **Line Output**

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

• Relay Output

Relay output is provided for connecting alarm devices or for remote on/off control of devices such as light. Relay is normal open and it will be closed upon alarm annunciation or remote on. The relay is capable of switching **30V AC/DC, 2A**. For the application which needs power switching beyond this limit, use additional relay switch as shown in the right of Figure 2-1.



* Left : switching requirement below 30V, 2A

* Right : switching requirement higher than 30V, 2A. Apply this connection when either voltage or current exceed the limit.

Figure 2-1. RELAY Output connection

• Sensor Input

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 "SNS In". The sensor type(NC/NO) can be set in admin page. Multiple sensor devices can be connected in parallel.

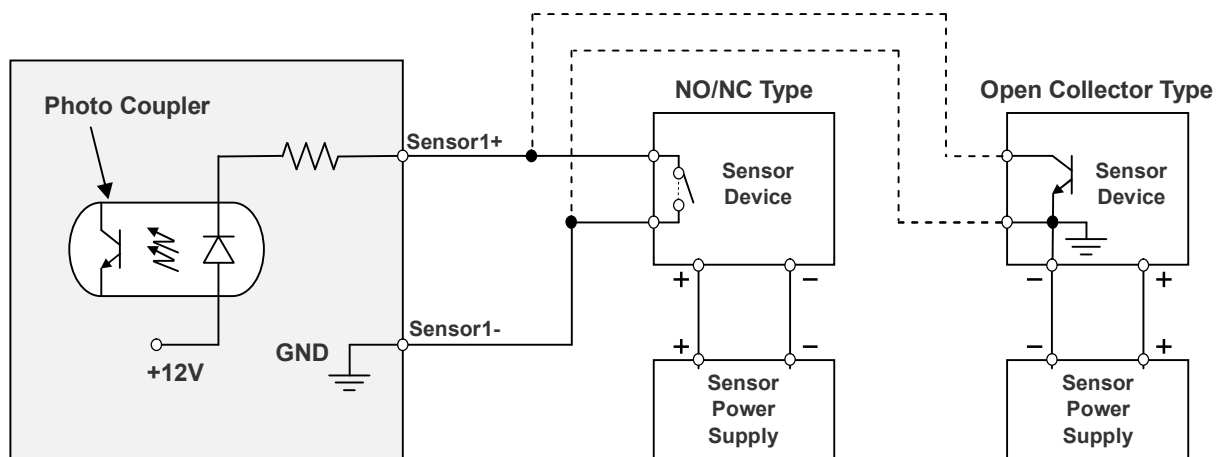


Figure 2-2. SENSOR input and connection of the sensor

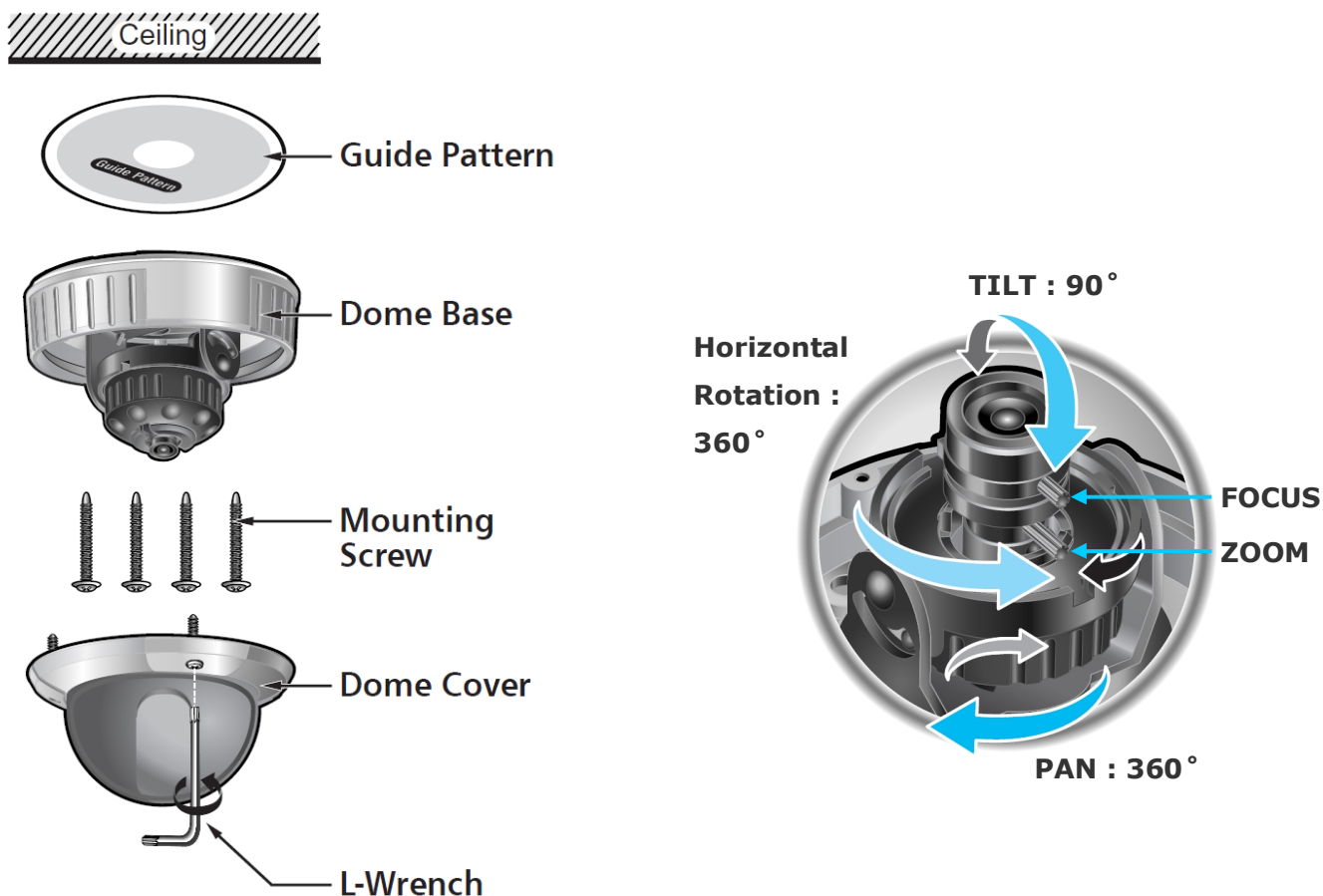
• Factory Default Switch

Open the dome cover and press the switch for a few seconds while power is applied.

3. On Site Installation

3.1. Ceiling or Wall Installation

1. Open the dome cover
2. Make a hole for cables.
3. Connect cables
 - * After supplying power (DC or PoE), check the LED indicator
4. Fix the camera on wall or ceiling using screw provided.
5. Adjust direction and focus using two levers. First time levers are fastened. Unfasten the levers and then adjust. After finishing focus control, fasten the lever to keep focus.
6. Assemble dome cover.



4. Getting Started

Brief information for first time operation of MVC4050VR is provided in this chapter.

4.1. PC Requirement

Audio/Video streaming data received from MVC4050VR can be displayed or stored in a PC running client programs. Minimum requirement of the PC is described below:

	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	100 Base-T Ethernet	100 Base-T Ethernet

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

4.2. Quick Installation Guide

1. Connect PC and MVC4050VR to network.

- 1) Prepare a PC to run programs for the installation and video connection
(PC is needed to assign IP address to MVC4050VR)
- 2) In the case of using PoE, connect the PC and MVC4050VR to the network using one of the following ways.

If your LAN Switch does not support standard PoE, connect MVC4050VR as shown in dotted line in Figure 4-1. The DC power is applied through DC adaptor.

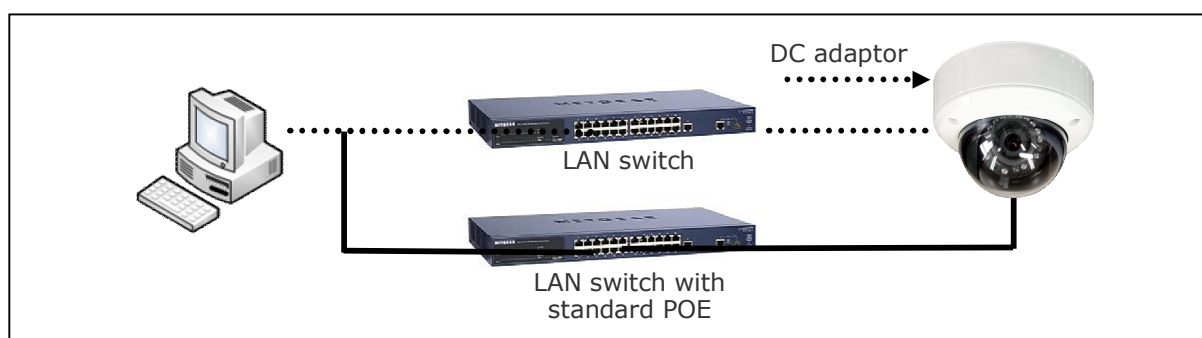


Figure 4-1. Power and network connection

2. Install “IP installer and set IP parameters on MVC4050VR

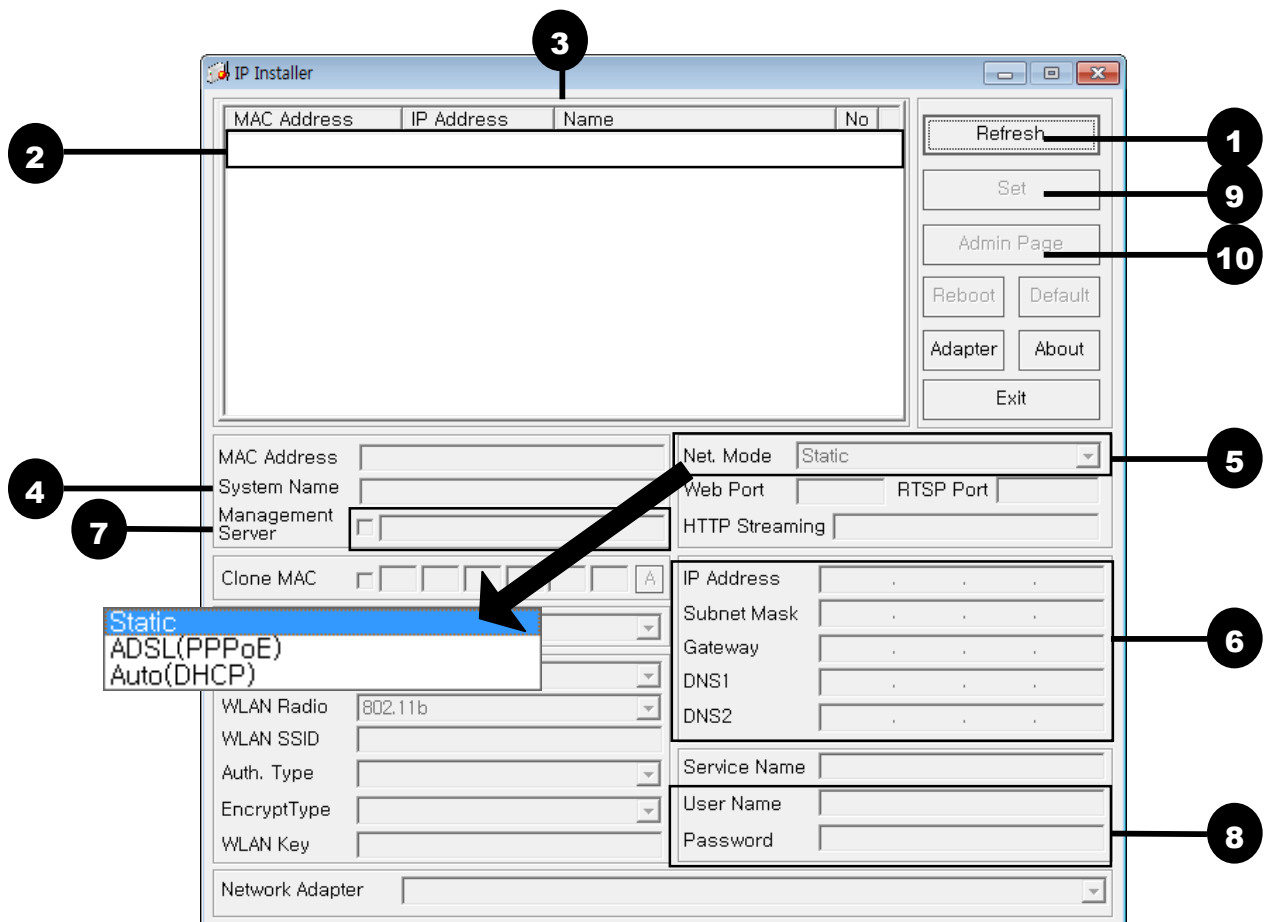
Insert the CD provided with product into the PC. Install WinPcap and IP Installer in sequence. Make sure that IP Installer can't run without WinPcap.



IP installer Ver. **3.0.1 or later** is needed in the configuration of MVC4050VR.

Follow the sequence below for setting the IP parameter

- 1) Run IP installer > Select Network Adaptor > OK
- 2) Click ① in IP 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.

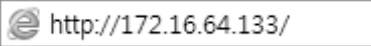
If DDNS service is needed, do the followings:

- 1) Check at the box and fill the empty field with "Host name" in ⑦.
- 2) Register the IP camera on DDNS. Visit <http://www.autoipset.com> for the registration. If you don't have an account on www.autoipset.com, open an account and register the IP camera after login.

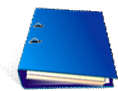
3. Remote video connection to MVC4050VR

1) Connection through Web Viewer

Web Viewer offers simplest way of video connection to MVC4050VR. For video connection, enter the IP address of MVC4050VR in the URL window of Internet Explorer as:

[e.g.] Port 80  Can be omitted the default port of 80

[e.g.] Port 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 NVR-pro which is available from the CD or our web site.

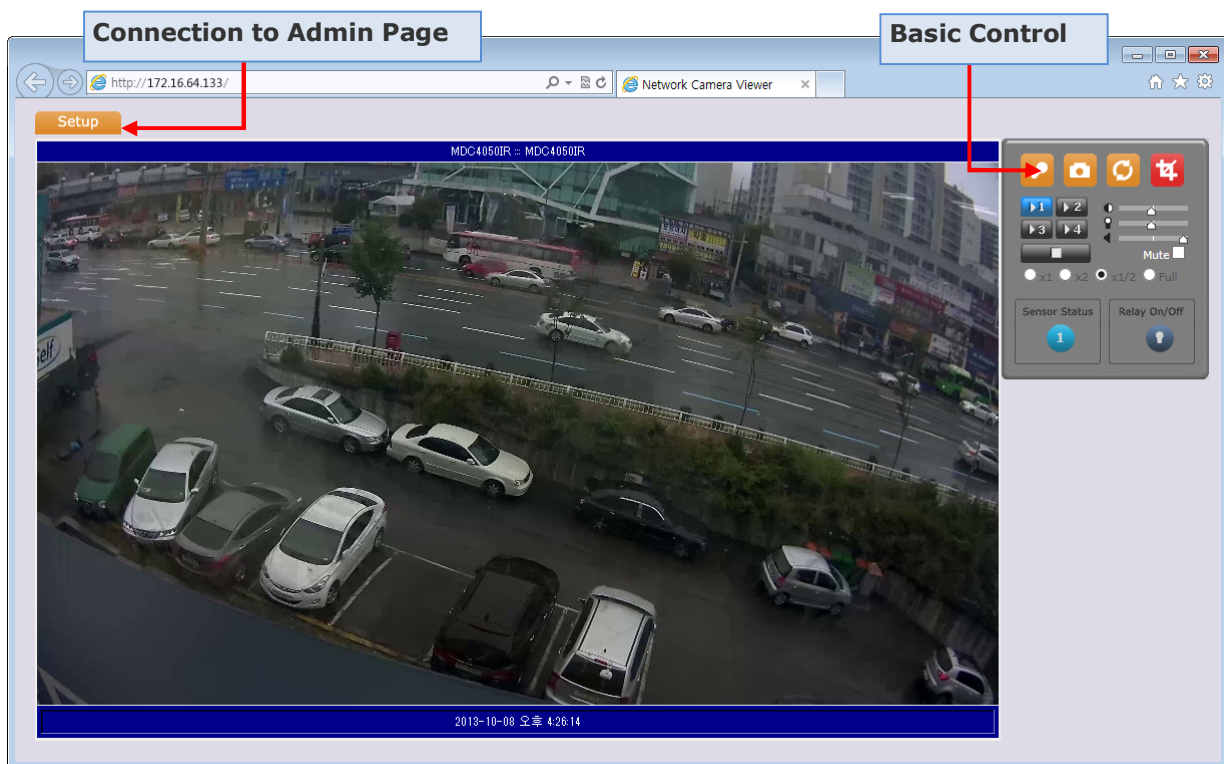


Figure 4-2. Web Viewer

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

For more detailed information, please refer to the **“User manual_Eng_Rev.1.0”** Guide.

2) Connection through NVR-Pro

NVR-Pro is a multi-channel CMS program for to IP camera or Video server. Install NVR-Pro on remote PC to connect to these products. It is needed to assign connection information to NVR-Pro program before connection. Details for the NVR-Pro can be found in [NVR-Pro User's Guide].

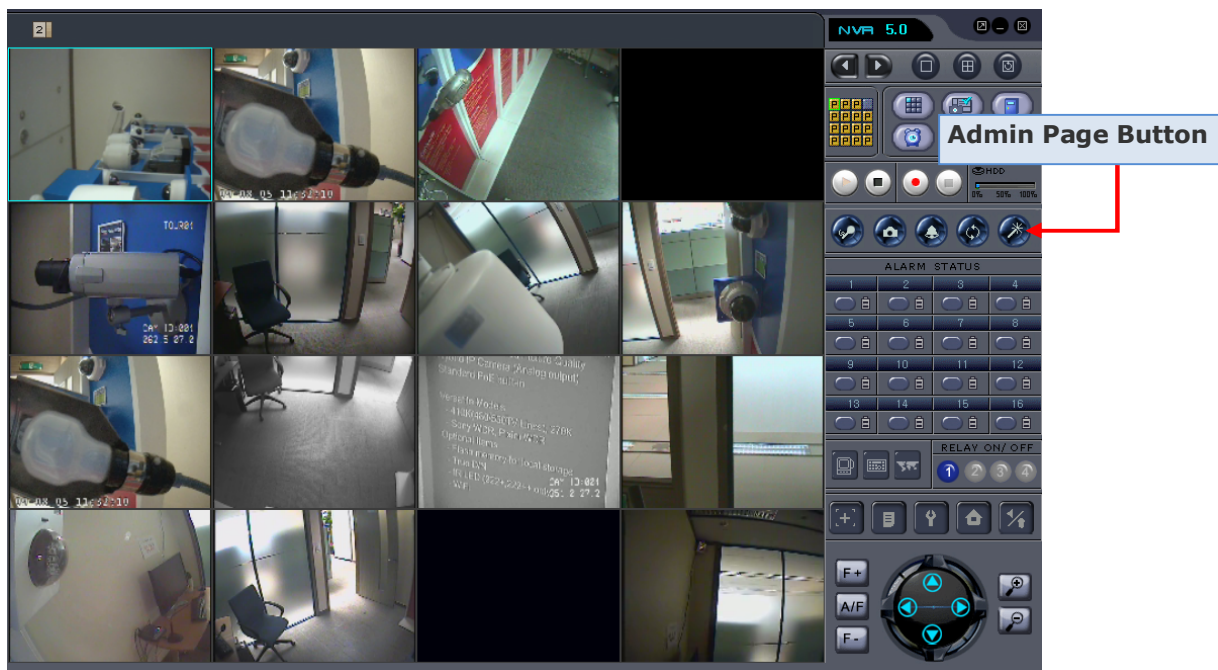


Figure 4-3. NVR-Pro

4. Additional settings through connection to the Admin Page

All the parameters of new IP camera follows factory default values. For more sophisticated target application it is needed to change parameters. The admin page can be connected through

["http://IP_Address:Port_Number/admin.htm"](http://IP_Address:Port_Number/admin.htm)

It is needed to enter ID and password of the administrator. Default ID and password are **"root"**, **"admin"**.

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 "User manual_Eng_Rev.1.0" 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.

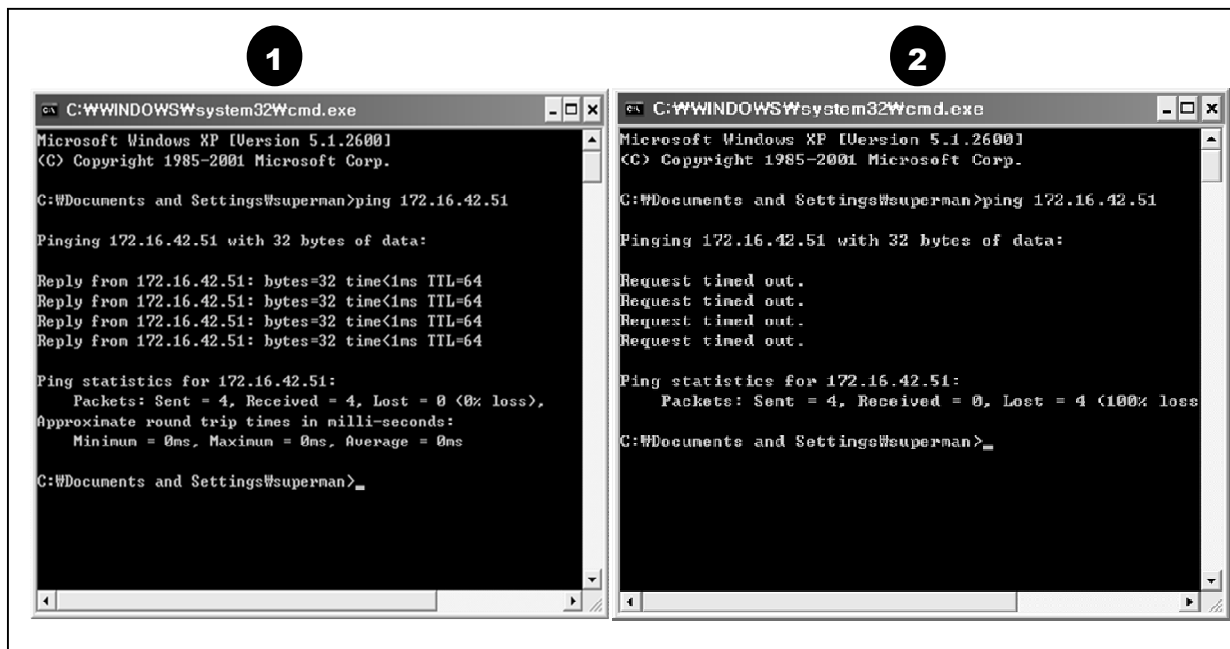
It is recommended to use DC adaptor supplied by CNB for the feeding of the power. In case of replacing the DC power supply, make sure that the power supply meets with the power requirement of the IP camera to prevent damage or malfunction.

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.



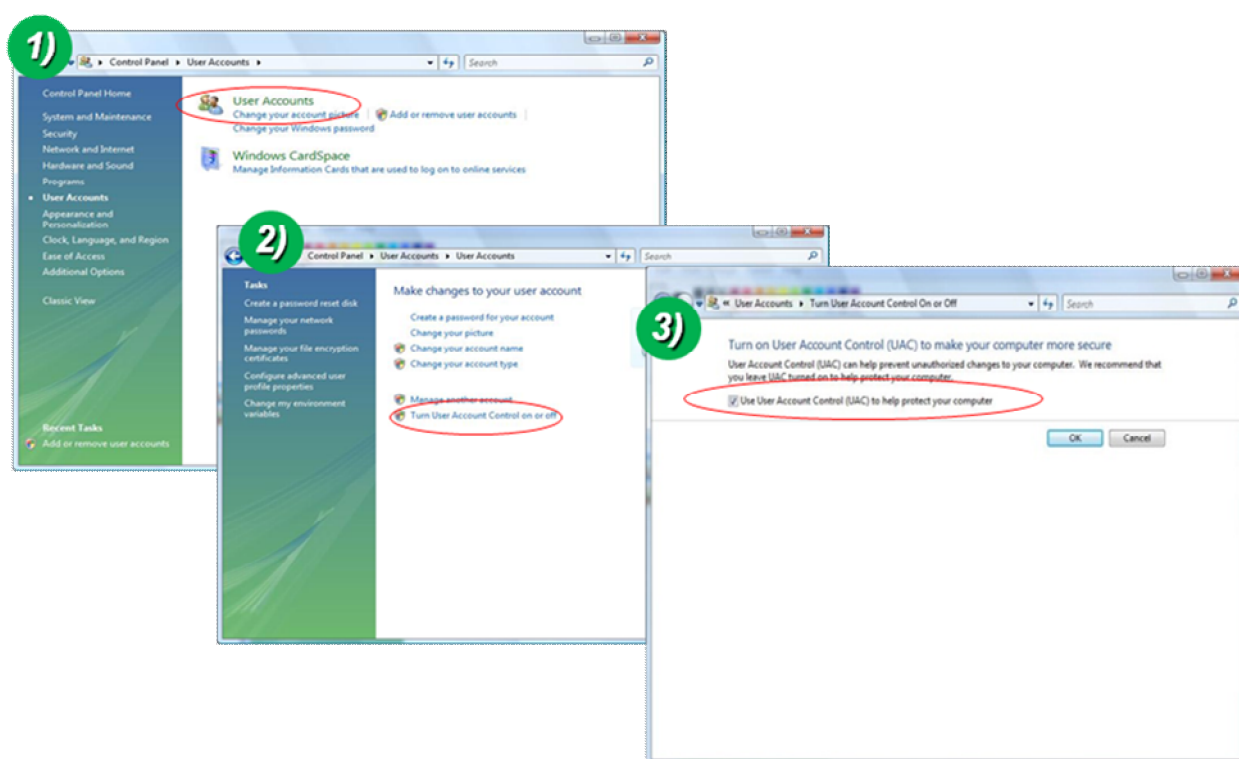
5.3. Windows Vista or Windows 7

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

<Windows Vista>

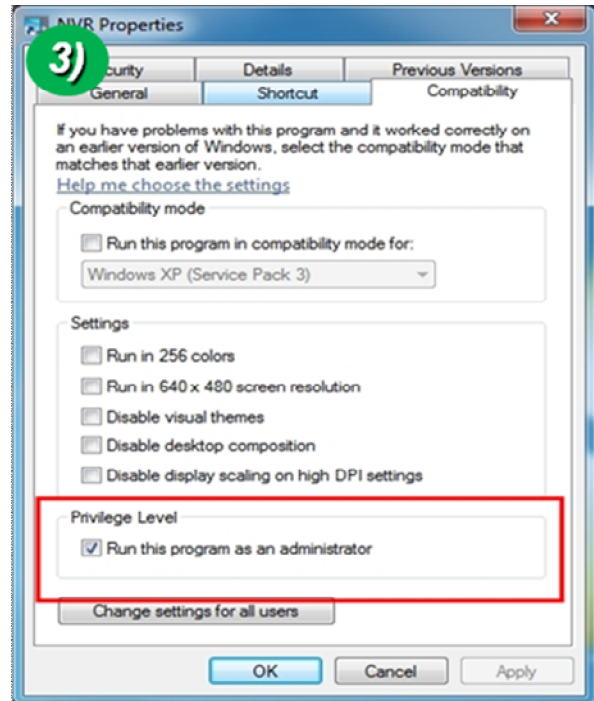
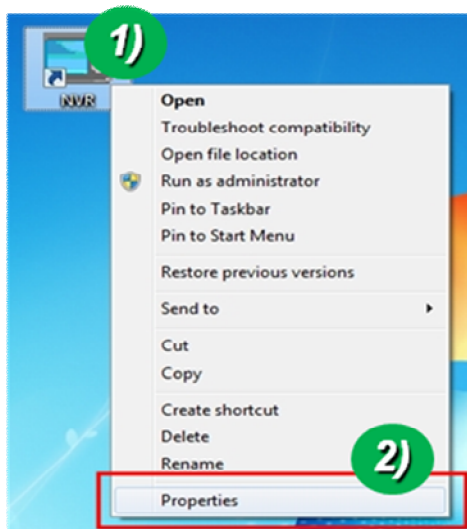
1. UAC (User Access Control) configuration

- 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

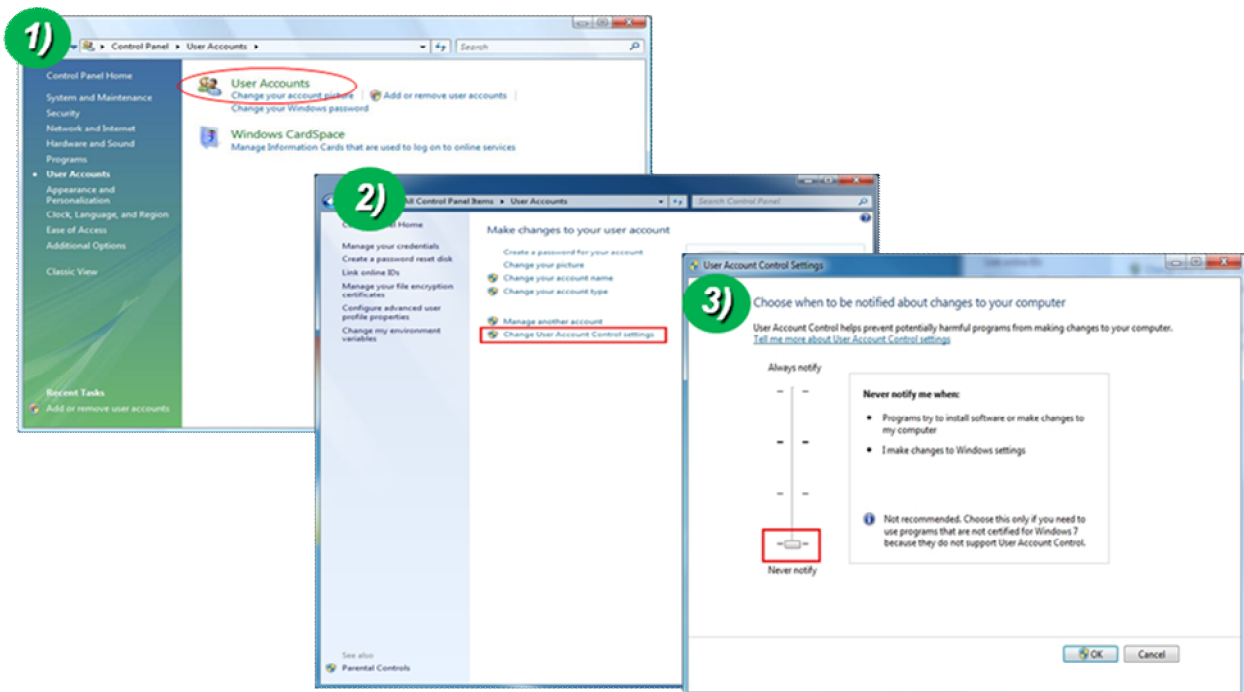
- 1) Select "NVR" icon on the desktop
- 2) Click right mouse button and select "Properties"
- 3) Check "Privilege Level" in "Compatibility" tab



<Windows 7>

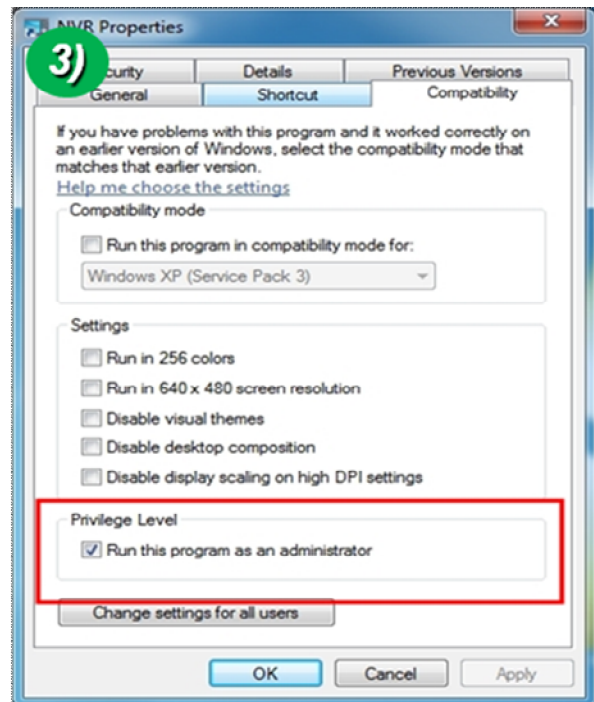
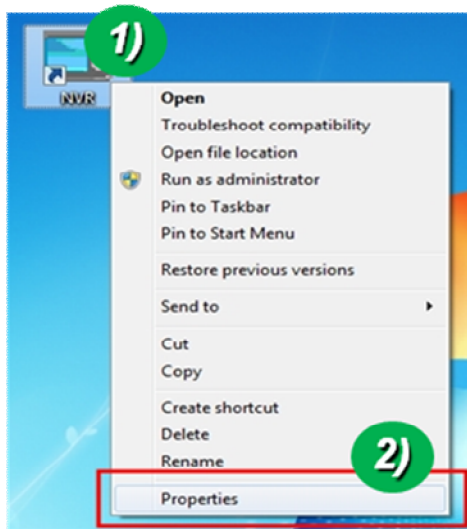
1. UAC (User Access Control) configuration

- 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**