

# **H.264 Megapixel IP Camera Hardware manual**

**2012/3/30**

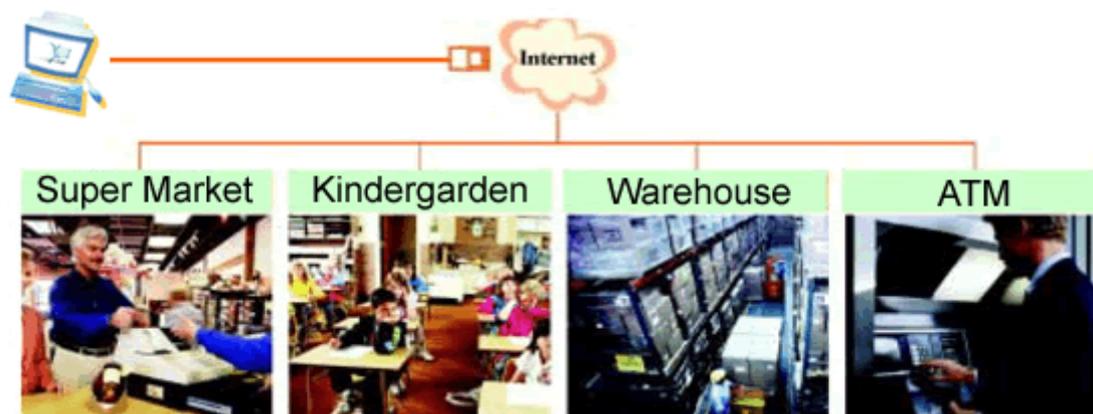
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# 1. Introduction

network camera is based on Hisilicon 3507 network solutions, using the embedded Linux operating system, supporting 720P@25fps HD video, with industry-leading international standard H264 video compression algorithms, H264, MJPEG encoding, can easily achieve high-definition image of low transmission network bandwidth. In addition, it takes the high sensitivity image sensor, we demonstrate sharp and clear HD picture quality

network camera with ease and convenience, using an IP-based video system, you only need a RJ45 network cable to connect to the network, built power-over-Ethernet module allows the power directly from the network, reducing installation wiring, built-in WEB server to support management via internet explore browser and configure the camera, monitor and monitor engineering solutions for a variety of occasions.



	You buy network video camera products should contain the following items in the box, if you find that some of these articles was not found in the product packaging, you can contact your local agent or a product manufacturer.
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Included in the product packaging:

- ✓ IP camera \*1
- ✓ IPCAM CD \*1
- ✓ 12V power adapter \*1
- ✓ screw Kit \*1

	If you purchase a camera with WIFI function, in the product package should be shipped with a WIFI antenna
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## 2. product description

### 2.1. Features

- Megapixels CMOS sensor, integrated low lux function (Aptina 9M034) / integrated WDR function (W series OV10633) / highest resolution reached UXGA 1600 \* 1200 (C series OV2643)
- Real time (MJPEG/H.264) dual-stream encoding
- The use of advanced H264 video compression algorithms, support for the H264 Main Profile@Level3.0 coding, H.264 Baseline Profile@Level3.0 coding and the MJPEG /JPEG the Baseline encoding, you can easily achieve high-resolution images of low-bandwidth transmission
- Embedded Linux-based operating system, built-in WEB server, can be accessed directly via a Web browser, system stability, powerful, secure and reliable
- Standard RTSP stream output, supports VLC streaming
- Integrated ONVIF standard and various brands of camera can easily compatible platform software
- Bi-directional and echo cancellation function, monitoring and real time voice synchronization
- Supports alarm input and output
- Built-in automatic filter switch, can meet the needs of monitoring day and night
- Support POE power supply (optional)
- Support for WIFI, and SD card (optional)

## 2.2. Product specifications

Product Parameters	D series	W series	C series
System	processor: Hisilicon 3507 operating system: embedded Linux		
Sensor	Aptina 9M034	OV 10633	OV 2643
Lens	Customize lens		
Infrared lamp	(bullet)36 LEDs, 25-30m IR irradiation distance (dome)30 LEDs, 15-20m IR irradiation distance		
Video compression format	H.264/MJPEG		
Audio compression format	G.711		
Resolution	Main stream: 1280*720@25fps Minor stream: 352*288@30fps 176*144@30fps 320*240@30fps	Main stream: 1280*720@25fps Minor stream: 352*288@30fps 176*144@30fps 320*240@30fps	Main stream: 1600*1200@15fps 1280*720@25fps Minor stream: 352*288@30fps 176*144@30fps 320*240@30fps
Video bit rate	32Kbps~4Mbps		
Network Protocol	TCP/IP, HTTP, FTP, NTP, RTP, ARP, ICMP, DHCP, SMTP, POP3, DNS and RTCP		
PTZ Protocol	RS485 communication, PTZ Protocol: Pelco-D, Pelco-P, etc. Baud rate: 2,400		
Web browser	Microsoft Internet Explorer 6 or above; safari; Firefox; Chrome		
Alarm	High and low level alarm input, alarm input		
Power consumption	7~9W		
Working temperature	-10℃ ~+ 60℃		
Input voltage	DC12V		
External interface	1 RJ45 network interfaces, one 3.5mm audio output interface, one 3.5mm audio input interface, a pair RS485 line, one power input		
POE	Support (optional)		
WiFi@ SD card	Support (optional)		

### 2.3. product appearance



**Box camera**



**Dome Camera**

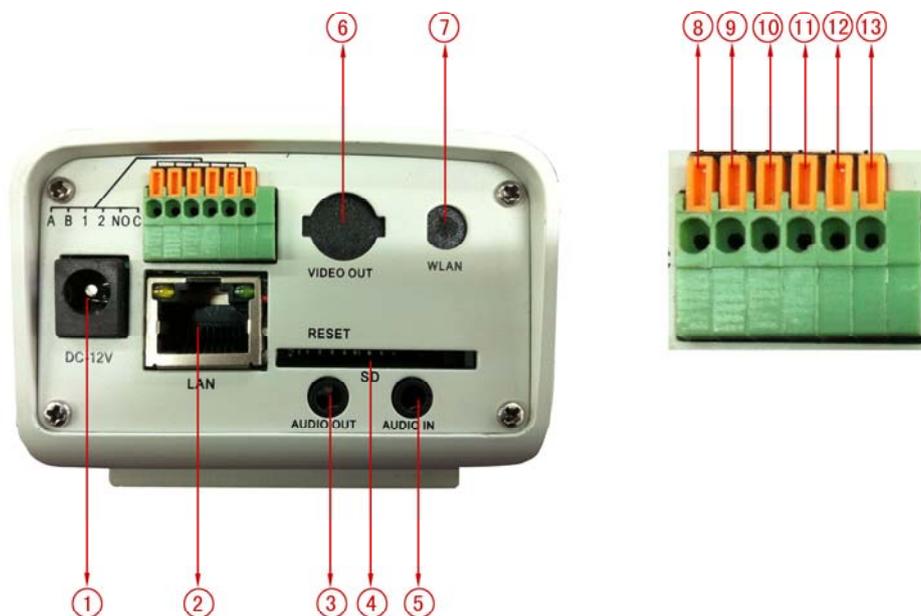


**Bullet Camera**



**Speed Dome Camera**

## 2.4. Interface description



### Tail interface of box cameras

#### (1) Power input

connection power adapter, 12 volt DC voltage/current: 1A

#### (2) RJ45 socket

10/100M adaptive RJ45 network cable interface. Can connect to all network devices, such as switches, routers, and so on

#### (3) Audio output

connection audio output device, such as a stereo, amplifier, speakers

#### (4) SD card slot

Connection SD card, the biggest support 32 G SD card

#### (5) Audio input

connection audio input device, such as a pickup, microphone

#### (6) Video analog signal output interface

This interface to reserve the function, not to use

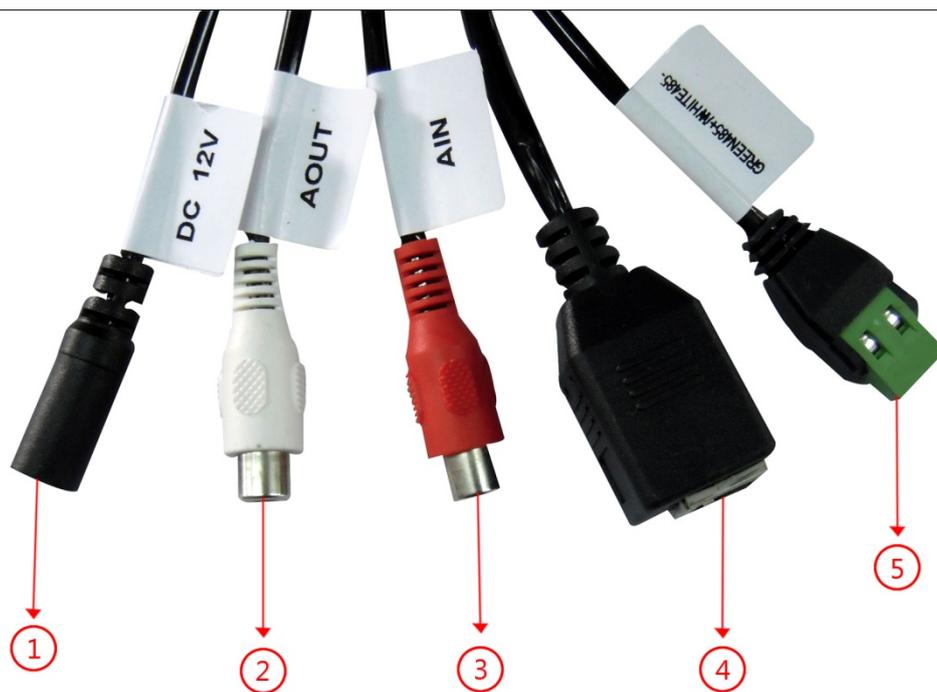
#### (7) WIFI antenna interface

If the camera with WIFI function. The interface would connect WIFI antenna

#### (8) RS485 A / (9) RS485 B

(10) Alarm Input Positive / (11) Alarm Input Negative

(12) Alarm output NO port / (13) Alarm Output COM Port



### External line interface

**(1) Power input**

connection power adapter, 12 volt DC voltage/current: 1A

**(2) Audio output**

connection audio output device, such as a stereo, amplifier, speakers

**(3) Audio input**

connection audio input device, such as a pickup, microphone

**(4) RJ45 socket**

10/100M adaptive RJ45 network cable interface. Can connect to all network devices, such as switches, routers, and so on

**(5) RS485+/RS485-**

connection PTZ devices

## 2.5. Accessories



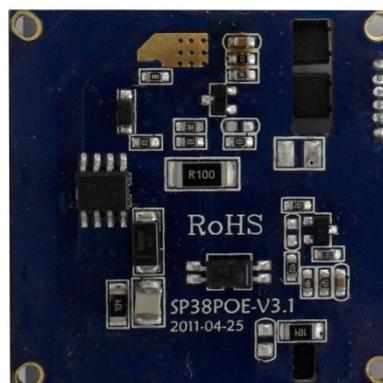
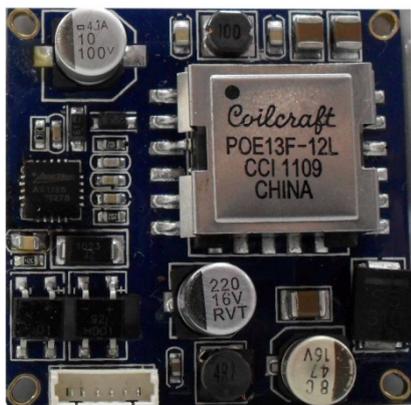
**Power supply adapter**

**Input:** 100~240V / 50~60Hz

**Output:** DC12V / 1A



Select the adapter specifications for your area accordingly  
AU; EU; UK; US Standard optional



**Poe Module**

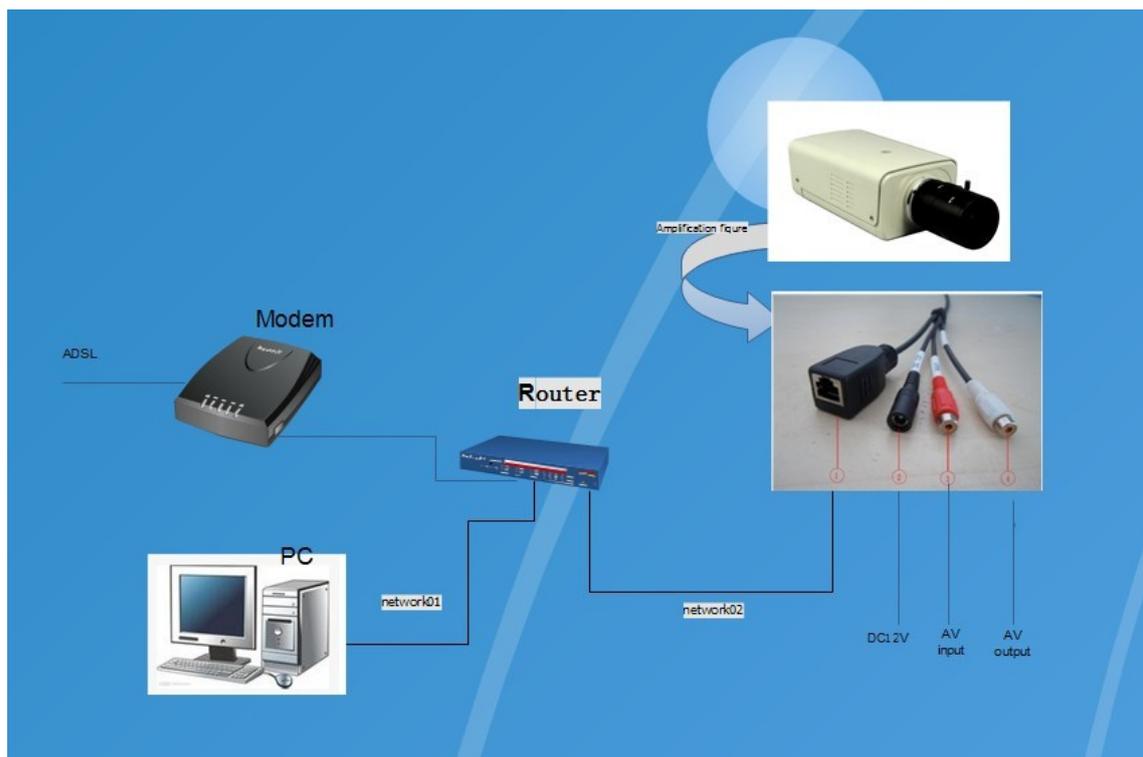
**Features:** webcam after POE module is installed, you can directly through the network cable to provide power to the camera, POE switch (POE powered device)----48V power----POE camera, and transmit data simultaneously, eliminating the arrangement to deploy a wide range of wire and cable, socket circuits limit the advantages of, supply and transfer data both, safe, fast.

POE Protocol: IEEE802.3af standard protocol.

**Power supply input:** DC48V / 0.4A

**Power supply output:** DC12V / 1.25 A

## 3. Product use



### 3.1. Camera installation

#### Pre-installation considerations

1. Please double check when you opened the box, confirm the list of articles and a consistent.
2. Please read this chapter carefully before installation.
3. When you install, be sure to turn off all power related equipment.
4. check the power supply voltage to prevent voltage not worthy cause device damage.
5. installation environment: do not use excessive humidity or high temperature environments, maintaining good ventilation, pay attention to preventing rain; avoid violent vibration environments.
6. If the device is not working properly, please contact your device dealer purchase, do not disassemble or modify the device in any way. Problems caused by the unauthorized modification or repair, at your own responsibility.

#### Installation steps

1. Connect power supply (DC 12V), when the power led is lit, the device starts



### Connect the power adapter

	<b>Products must be used 12V/2A power adapter!</b>
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2.By cable the camera access to your networked or directly connected PC, network network within 5 seconds under normal circumstances led (green) is lit, physical connection of the camera is complete



Connect the RJ45 network cable

**yellow led:** power status led, lit when in power, under normal conditions should stay lit.

**Green led:** communication status indicator, flashes when instructions are for data transfer, under normal circumstances should keep flashing.

## 3.2. Connect camera

### 3.2.1. Change the camera network parameters

Factory default setting network parameters of the camera:

address: 192.168.1.128

Subnet mask: 255.255.255.0

Gateway: 192.168.1.1

HTTP port: 80

RTSP port: 554

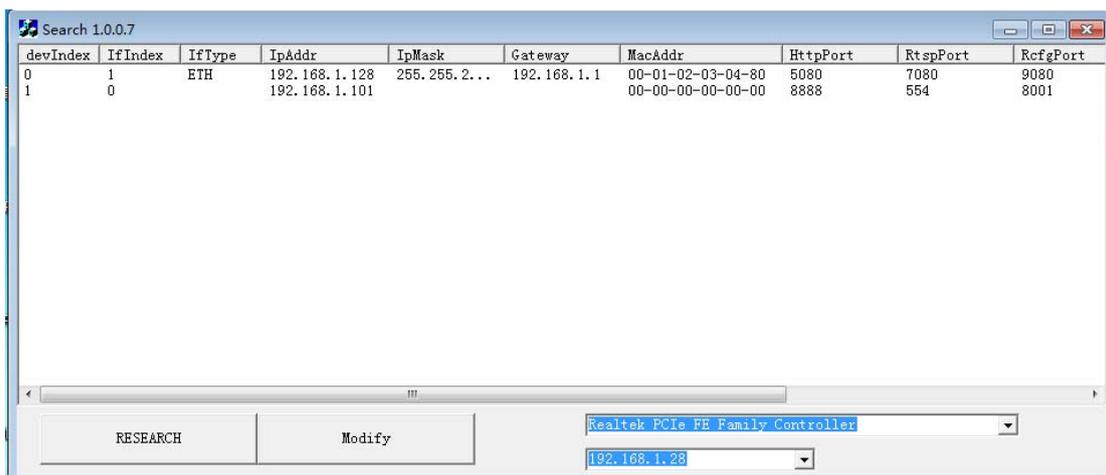
PC network parameters network parameters of the camera and must belong to the same network segment to access the camera, first of all, the gateway and subnet mask should be the same, second IP address is also in the same paragraph, such as:

IP address of the camera is 192.168.1.128

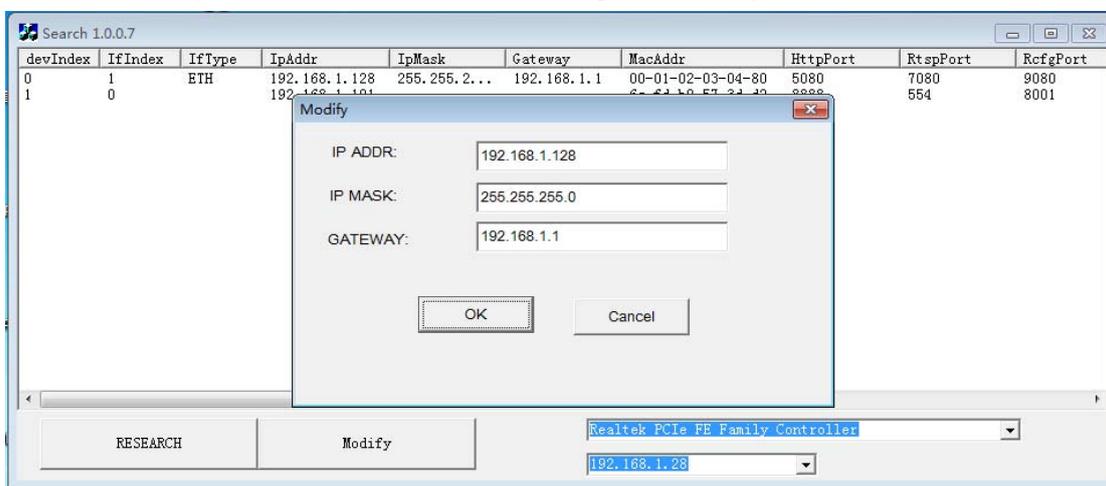
PC's IP address must be in the 192.168.1.1~254 range (except 192.168.1.128)

If the PC's network parameters network parameters and the camera is inconsistent, you need to change the network settings of the camera enables you to access the camera.

Run the DeviceSearch tool search cameras (search tool that comes with the product CD)

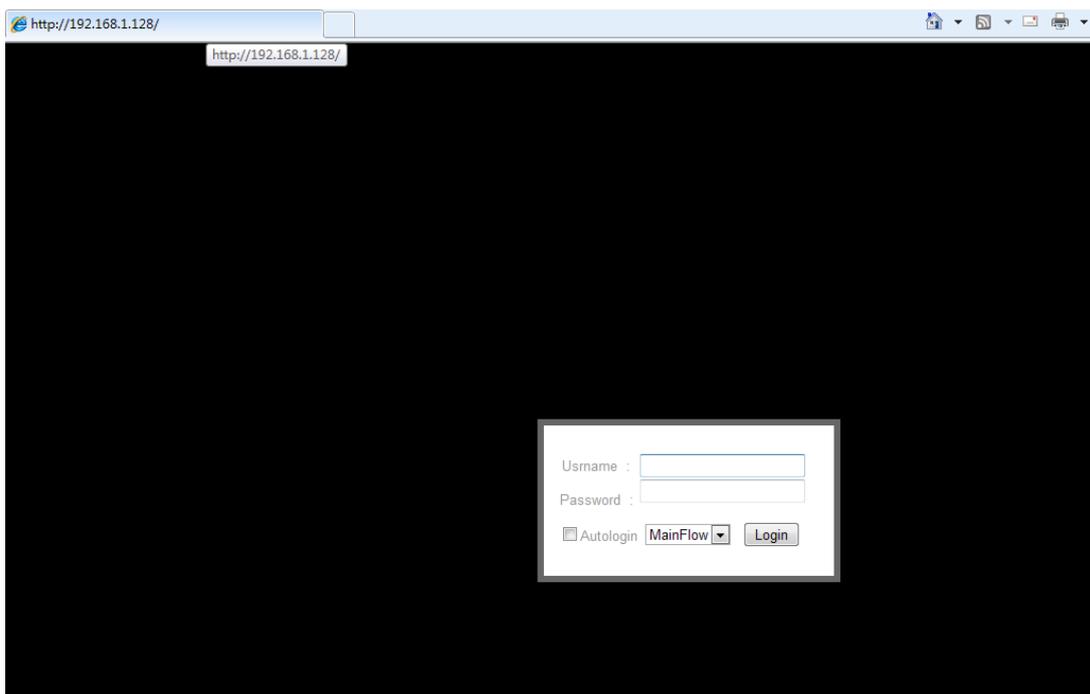


Click Update Ip change camera network settings, after you change the network settings of the camera, search again the camera, the camera will display the change IP address

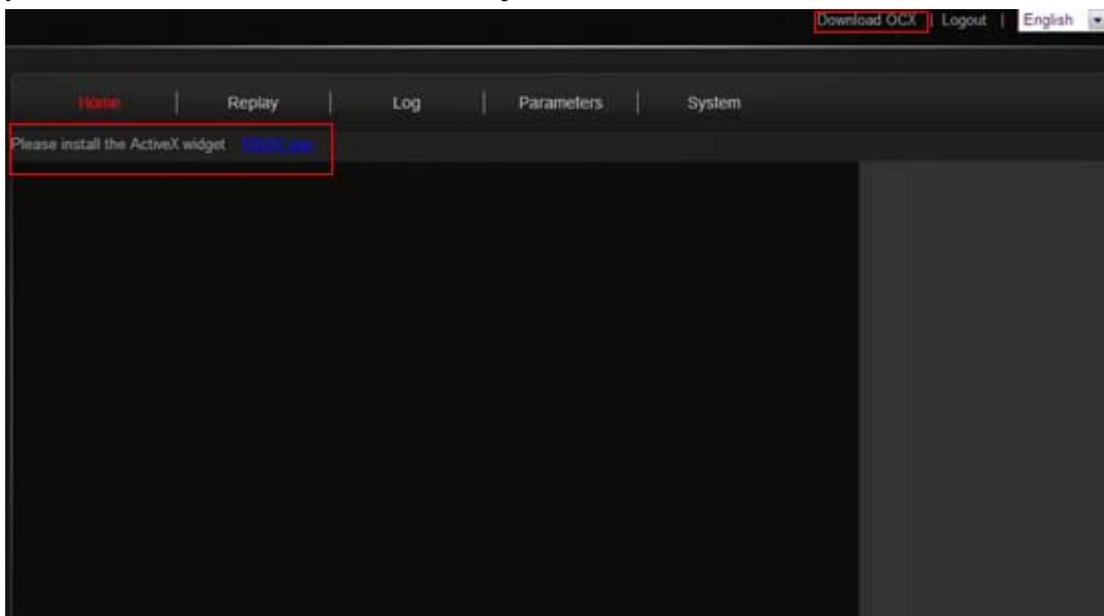


### 3.2.2. Access via IE browser camera

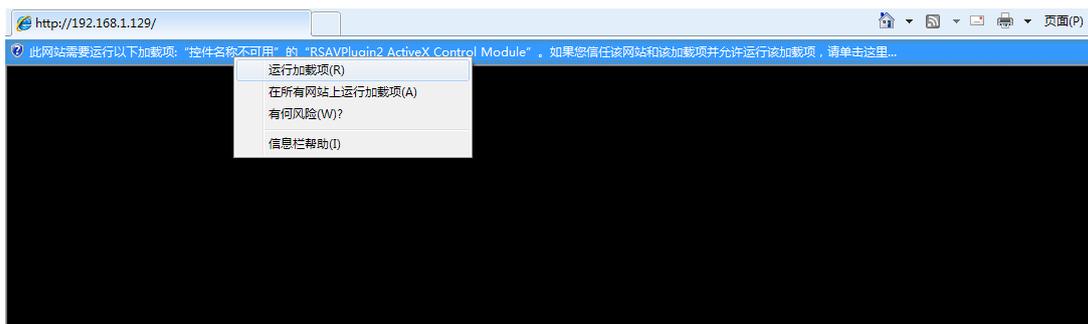
Built-in WEB server of the camera, and through IE browser, direct access to the camera, in the IE address bar, enter the IP address of the camera HTTP ports such as 192.168.1.128:80 land camera, camera default user and password is Admin



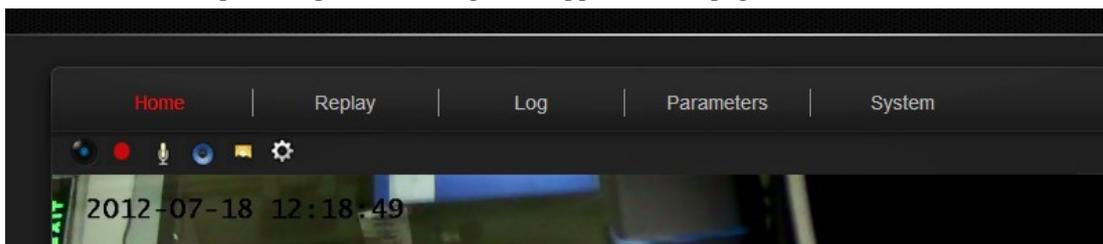
After logging in, you need to install the OCX control to display the camera images, you can click on the lower right corner of the "Download OCX" download the control, or you can click on the RSAV.exe link in the message to download, as well as on the product CD, "IE Plug-in" folder you can also be found in the RSAV.exe Setup



Control (RSAV.exe) after the installation has completed, refresh the page, click on the message at the top of the page select allows you to use Add-ins,



After the Setup is complete, the image will appear on the page.



IE interface operations in detail, read the documentation that comes with the product CD "network camera IE operations manual"

### 3.2.3. Connect to the CMS software

CMS software is that we provide a free monitoring software for camera, cameras and NVR products can connect us, supports up to 64 channel preview and 4-channel playback, supports motion detection, stability is it simple to use and powerful features. CMS software in its product CD install client

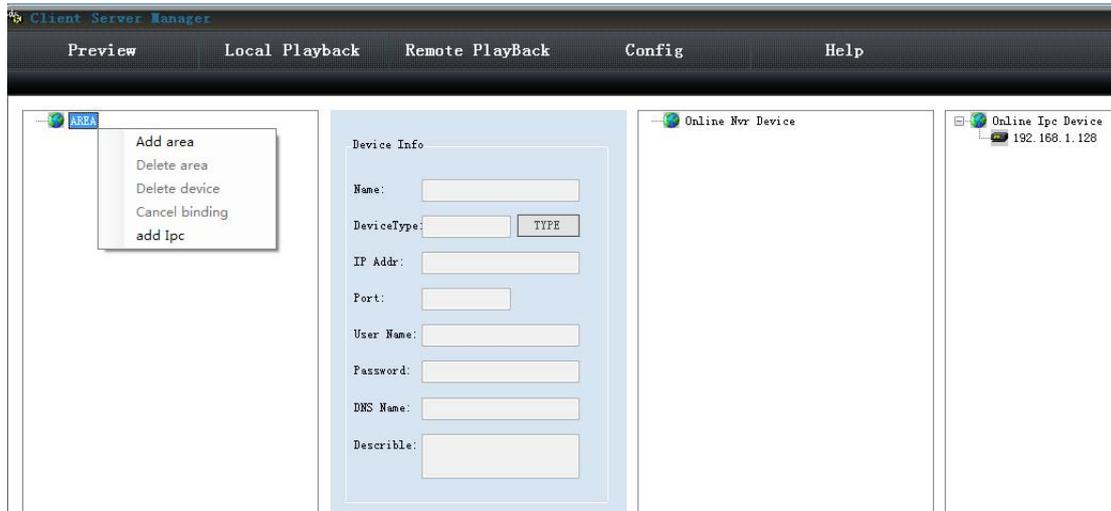
Note: requires Microsoft VC 2008 and CMS software. NET Framework 3.5 supports above, make sure the PC before installing the software has installed these 2 programs, also you can also be found on the product CD in the installation package of these 2 programs.

Adobe Flash Player 11 ActiveX	Adobe Systems Incorporated
CMS version 0.2.1.11	
Intel(R) Graphics Media Accelerator Driver	Intel Corporation
Intel(R) TV Wizard	Intel Corporation
Microsoft .NET Framework 4 Client Profile	Microsoft Corporation
Microsoft .NET Framework 4 Extended	Microsoft Corporation
Microsoft Office Professional Plus 2007	Microsoft Corporation
Microsoft Visual C++ 2005 Redistributable	Microsoft Corporation
Microsoft Visual C++ 2008 Redistributable - x86 9.0.30...	Microsoft Corporation
Nero 9 Essentials	Nero AG
OcxSetup 版本 1.0.2.6	
Realtek Ethernet Controller Driver	Realtek
Realtek High Definition Audio Driver	Realtek Semiconductor Corp.
Security Update for Microsoft Visual Basic for Applicati...	
Skype(TM) 5.5	Skype Technologies S.A.
TeamViewer 7	TeamViewer

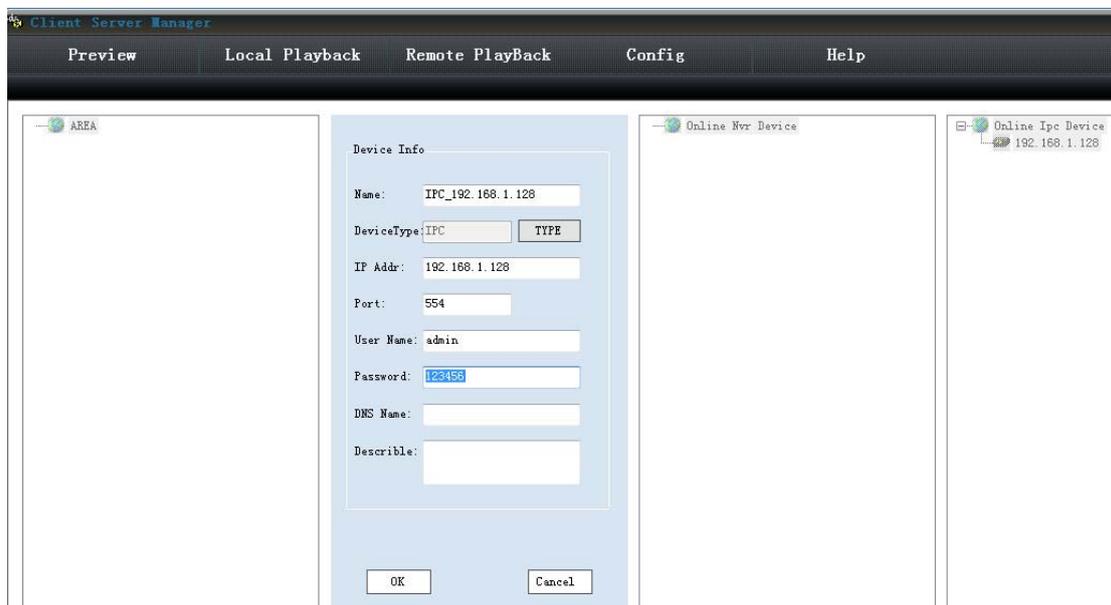
Run the CMS software, your account password is admin/admin



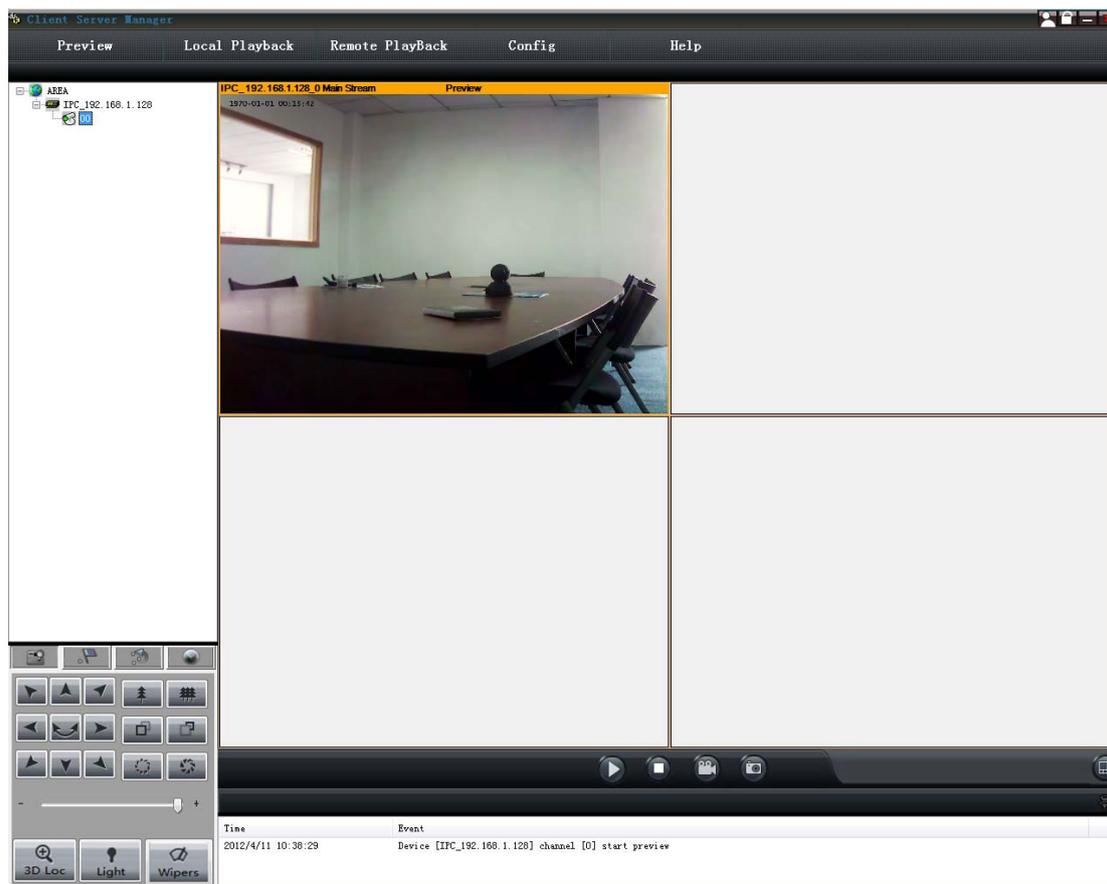
In the software "configuration" page,  [Online Ipc Device](#) search within your LAN into the camera are displayed in the columns, you can click on the  search icon and hold in front of the camera IP address to drag to the location, search to add a camera to monitor regional  [AREA](#), or on the right keys to select "Add ipc" to add cameras.



Add requirement after enter the camera information and information such as user passwords and notes, check and enter the information and click OK.



The camera "Preview" interface, double-click  the camera icon to begin the preview camera images



	<p><b>CMS software detailed operation please read the documentation that comes with the product CD "CMS network video monitoring software manual"</b></p>
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### 3.3. Camera applications

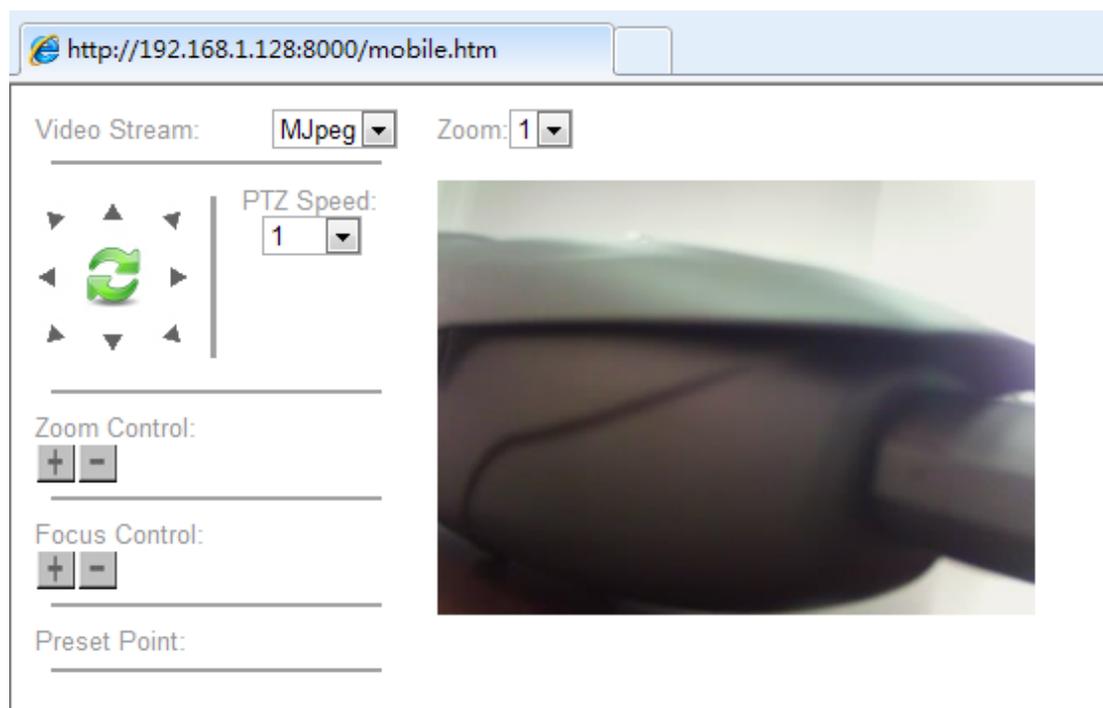
#### 3.3.1. Mjpeg stream

In the browser, enter the address mobile.htm to access the camera MJPEG stream, such as:

<http://192.168.1.128:8000/mobile.htm>

In addition, you can grab the pictures by following command:

[http://192.168.1.128:8000/cgi-bin/net\\_jpeg.cgi?ch=0](http://192.168.1.128:8000/cgi-bin/net_jpeg.cgi?ch=0)



### 3.3.2. RTSP stream

Our camera outputs are standard RTSP stream, you can use VLC Player or any other software connected camera supports RTSP streaming RTSP streaming online viewing.

First of all you want to know the camera's Web URL address, such as 192.168.1.128, RTSP is the IP address of the camera port 554, the we network that corresponds to the URL address of the camera is as follows:

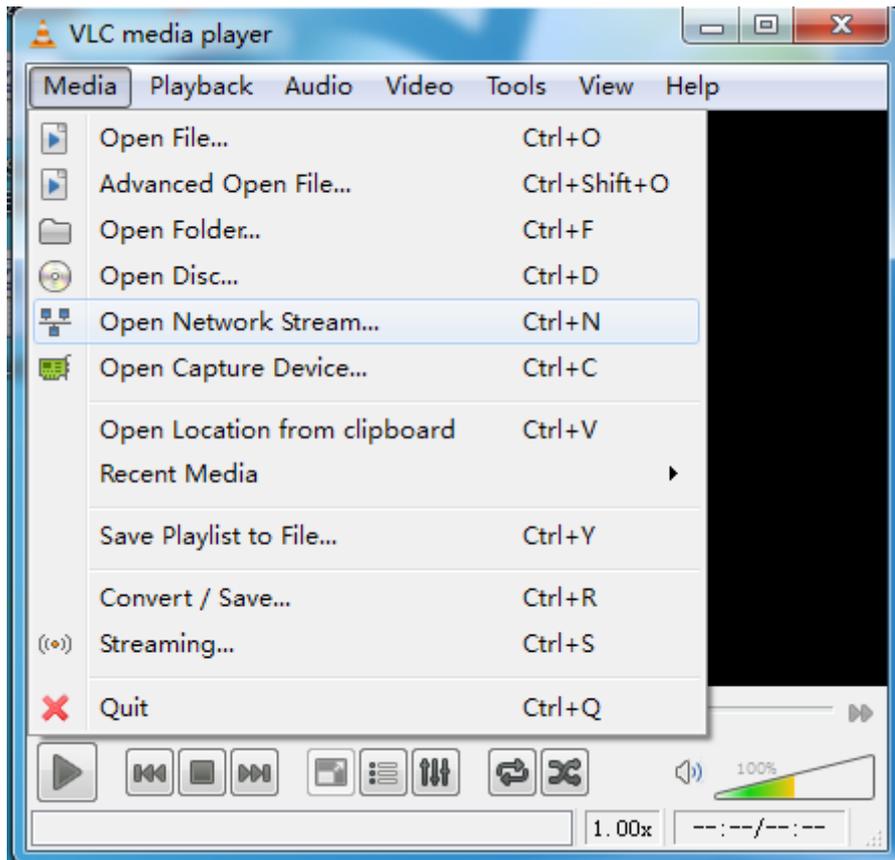
Main stream: `rtsp://192.168.1.128:554/ch0_0.h264`

Minor stream: `rtsp://192.168.1.128:554/ch0_1.h264`

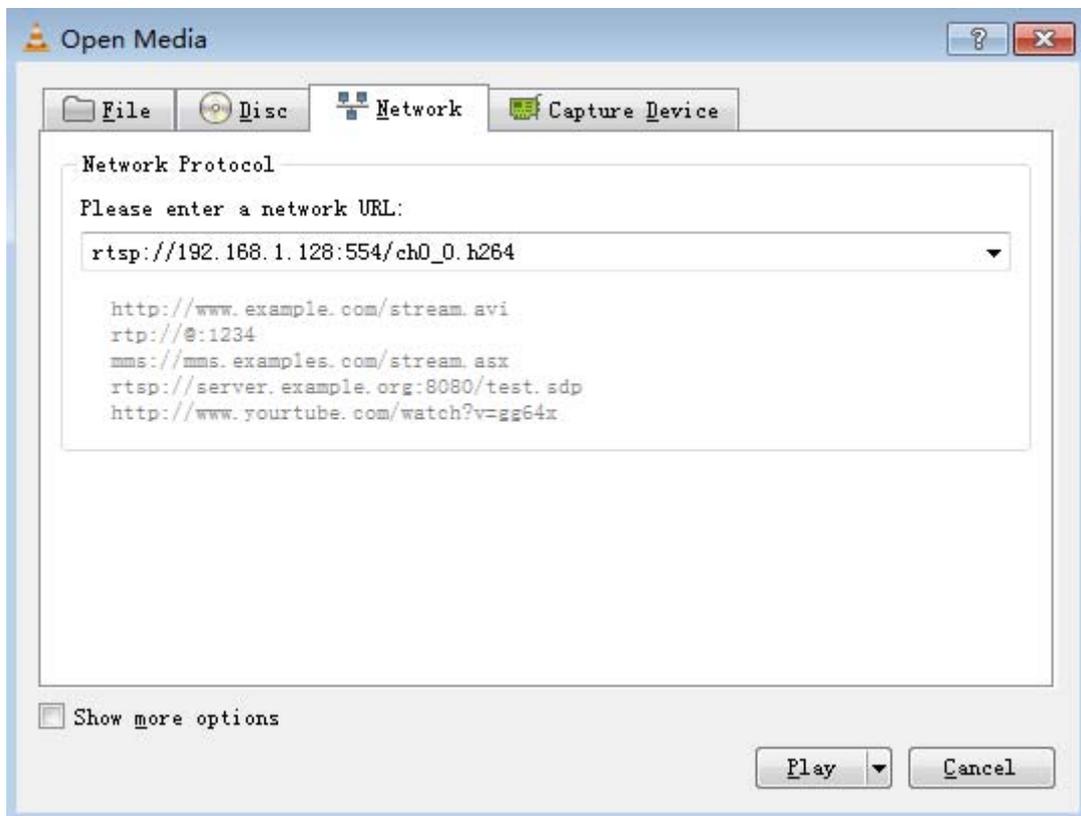
Audio stream: `rtsp://192.168.1.128:554/ch0_3.h264`

Specific steps for connecting camera with VLC:

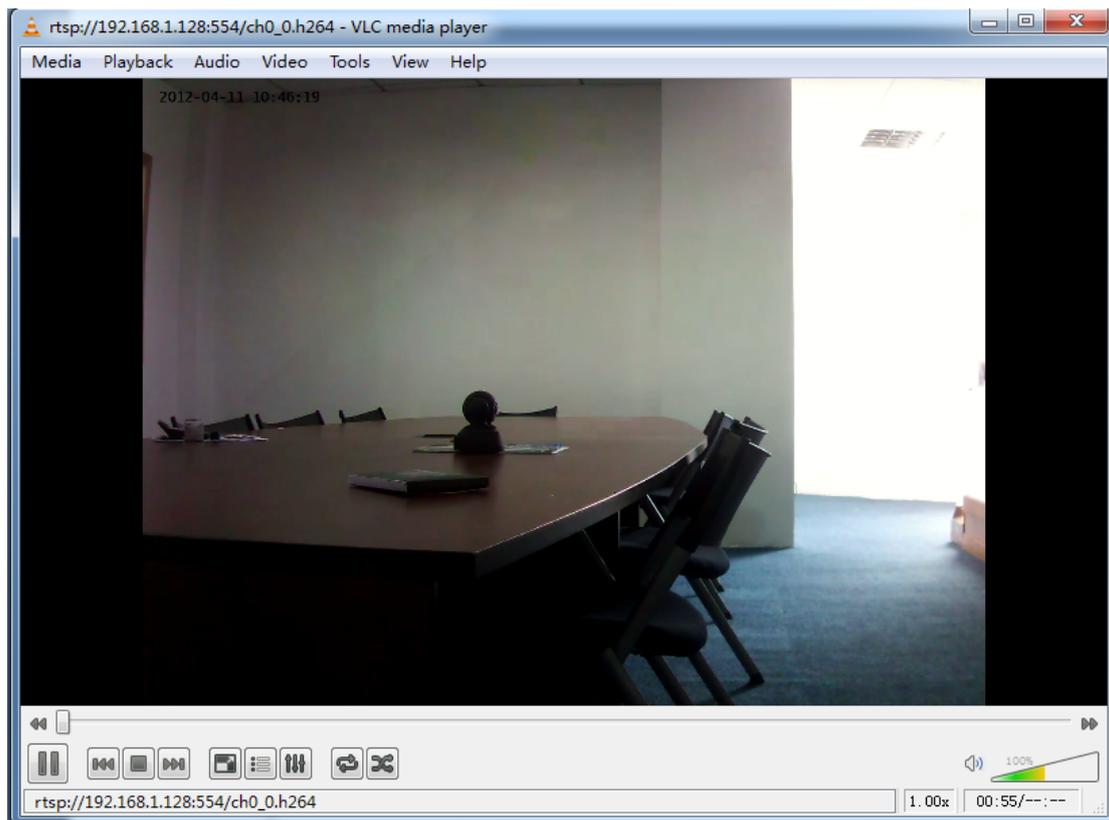
Run VLC and select open network stream



Then enter the Web URL address of the camera, and then play.



Play with VLC Player camera images.



### 3.3.3. ONVIF

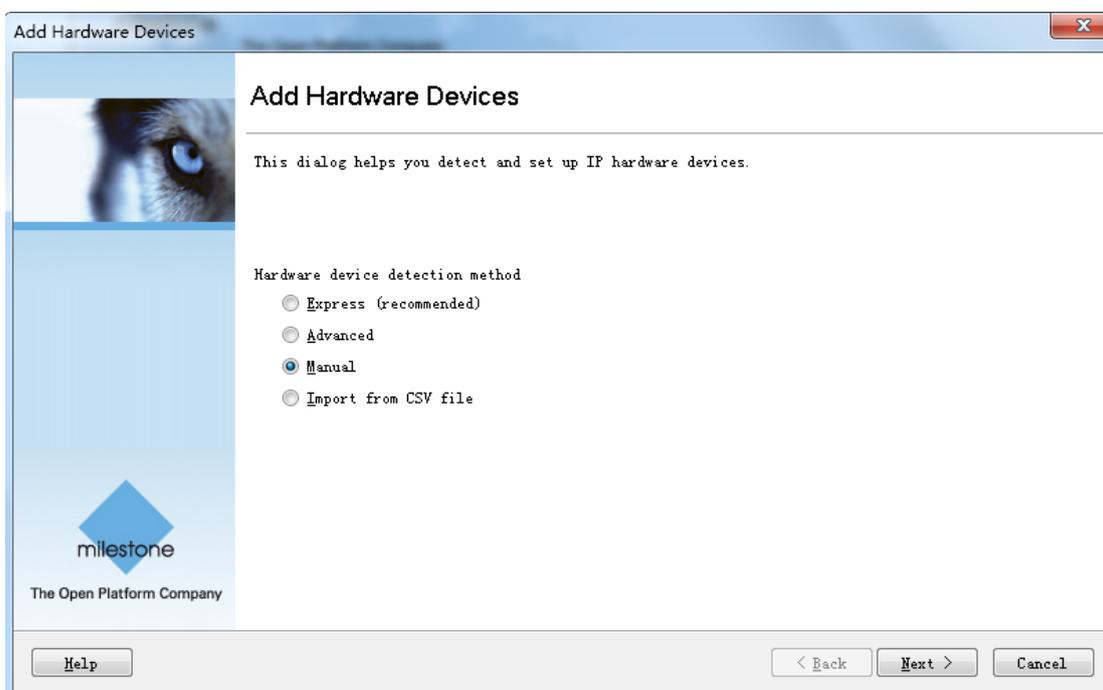
ONVIF is committed to a global open interface standards to advance the application of network video in the security market, this interface standard will ensure that different manufacturers of network video product interoperability.

Our network camera integrated 1.0.2.2 ONVIF core specification, can easily access the camera supports ONVIF for platform software, such as a Milestone, such as Geovision, Axxon, our Milestone below, for example, describes how to connect to other platforms by ONVIF software.

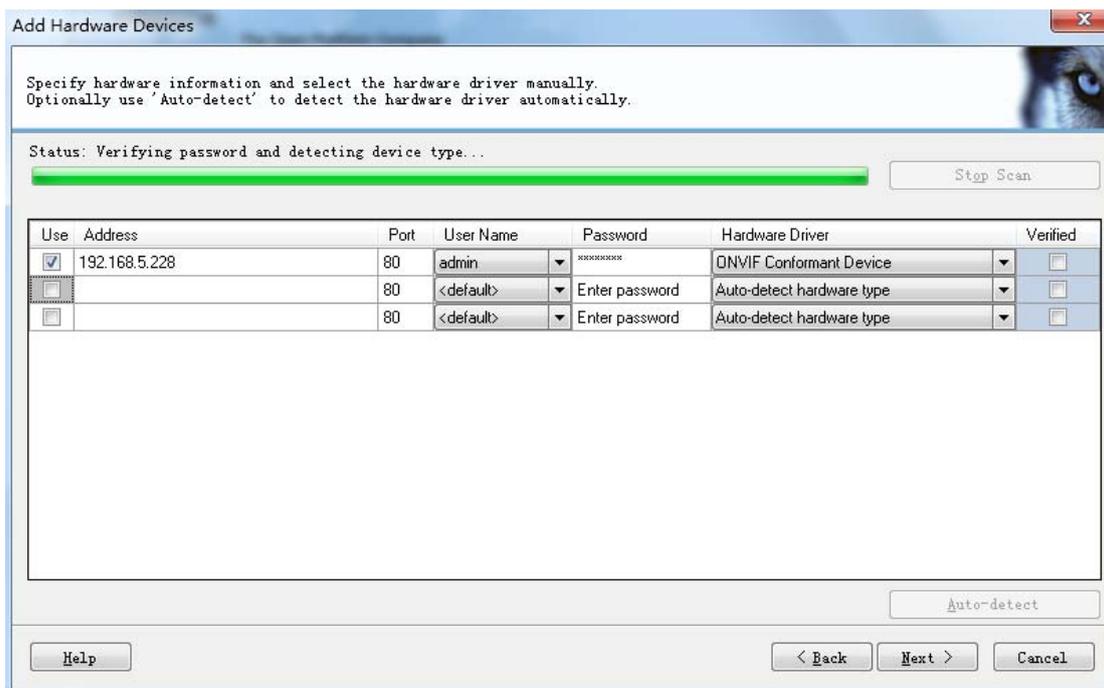
Running Milestone XProtect Go Management Application, in the home screen, select "Add Hardware"



In the "Add Hardware", the device detection method for selecting high-speed, click Next



Milestone will automatically scan and search to the camera, enter the user name and password, and then check the use, and then click Next.



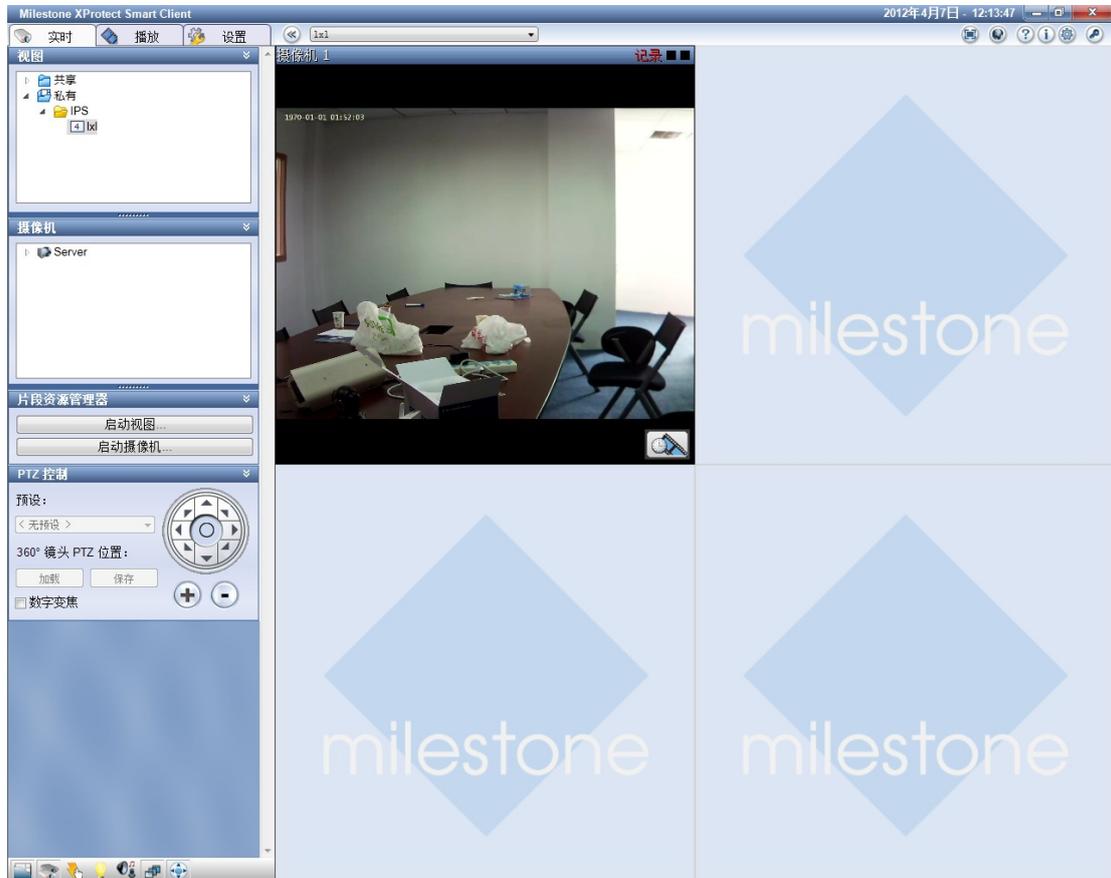
This means that have successfully connected my camera, click Finish to add the camera.



Management in the hardware of the camera, you can view the camera information has been added.



Milestone XProtect Smart Client to watch the cameras.





Detailed connection method and other brands of software compatibility information, please read the product in the CD "ONVIF compatibility testing" document.

## 4. Frequently asked questions

**Q: why can I use the search tool to search the camera IP address, but you cannot use IE to access cameras, software cannot connect camera.**

A: this may be because of where the network and camera nets segment does not belong to the same segment, must use search tool the camera IP address has been changed to and local network belonging to the same segment of the IP address.

**Q: can I do with a browser other than IE to access cameras?**

A: no, our OCX controls inside the camera is based on IE browser kernel, apply only in the browser based on the IE core.

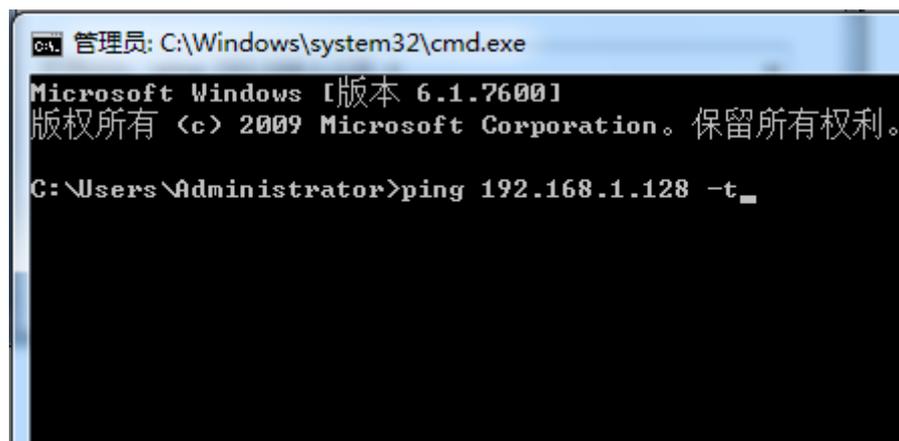
**Q: the camera all the way up to allow several users at the same time through your IE browser to watch?**

A: when watching the camera, mainly using camera CPU resources when the higher the resolution of the camera, camera CPU resources consumed, the larger. Tested when the camera resolution is 2 million, 1~2 users can simultaneously view, when the camera resolution is 1 million, 2~3 users can simultaneously view, when the camera resolution is 4CIF, 3~5 users can simultaneously view, when the camera resolution is when the CIF, 8~12 users can watch

**Q: why the camera can be accessed by IE or connected to the software, but cannot see the image.**

Answer: first of all, make sure to use the correct browser access to the camera, and you successfully install and load the OCX controls (for details, please read the directions 3.2.1. Access camera through IE browser) and, secondly, ensuring smooth and sufficient network bandwidth is, you can use the PING command to view network latency or switch.

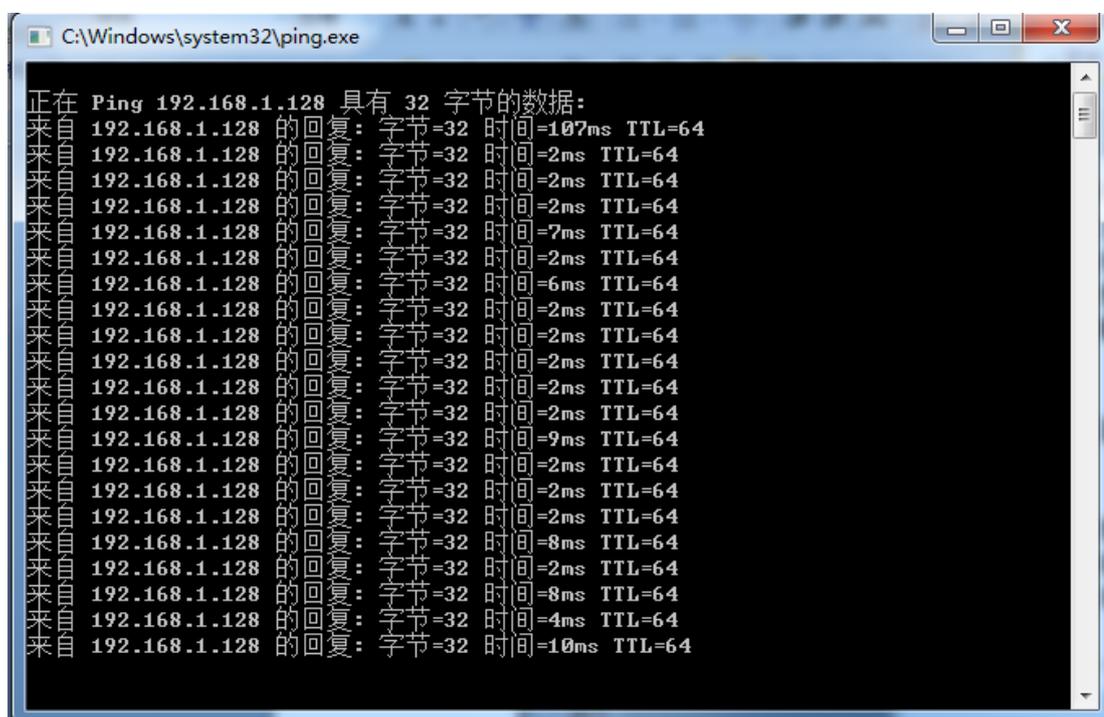
Enter the "ping 192.168.1.128 (IP address of the camera) - t" see network



```
C:\Windows\system32\cmd.exe
Microsoft Windows [版本 6.1.7600]
版权所有 (c) 2009 Microsoft Corporation。保留所有权利。

C:\Users\Administrator>ping 192.168.1.128 -t
```

If the delay is greater than 300ms or there is a long time "no response", it can be difficult to get the camera of high resolution images, so there may be no image, then you can try to change the camera resolution settings, limit the number of bit-rate frames or bit rate, or changed to a lower resolution.



```
C:\Windows\system32\ping.exe
正在 Ping 192.168.1.128 具有 32 字节的数据:
来自 192.168.1.128 的回复: 字节=32 时间=107ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=7ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=6ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=9ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=8ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=2ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=8ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=4ms TTL=64
来自 192.168.1.128 的回复: 字节=32 时间=10ms TTL=64
```

If the above settings or network is normal, but still cannot see the image, it may be a problem with the camera itself, contact the vendor for assistance!

**Q: cannot find the camera IP address, search tools search less.**

**A:** the camera could not be found due to a lot of camera hardware, software, network environment, and so forth will result in camera is not found:

**Search tools:** search tools is by sending broadcast packets searched within the LAN network camera, when you run the network connection between the PC and a webcam software gateway (routers, for example), the gateway to filter broadcast packets, the search tool will not be able to search into the camera.

**PC:** PC does not turn off the firewall, or other security software blocking. Through DHCP

assigned IP address of the PC, but the allocation of IP addresses is not valid.

In the PC and the camera does not belong to a local area network.

**Network:** ageing switch entry needs to restart.

Router IP address filtering or blocking, and so on.

Or cable aging network Crystal head oxidation causes, such as lack of network access.

**Camera:** camera long because some of the causes of internal service is not running or has stopped running, needs power failure restart camera.

Camera does not power on, or power supply problems, camera using POE power supply but POE module is damaged.

Camera has been damaged.

Because there are many causes the camera IP address cannot be found, if the camera appears unable to access, search IP address was not, we propose to do check in this order:

1. using a normal access to other cameras or sound preparations for the PC directly connected cameras.

2. manually specify the IP address of the PC and is and the camera is in the same network segment.

3. use a good network cable directly connecting the camera and PC.

4. camera power connections, and make sure that the camera is powered on (to block infrared light, check the infrared light to judge has power light does not light).

5, use the search tool to search the camera or use IE directly access attempts to connect to the camera. If you follow the above steps are still unable to connect to the camera, it could just be a problem with the camera itself, contact the vendor for assistance!