

# WAT-933&WAT-2400S

## User's Manual

Rev. 1.03

**Watec Co., Ltd.**

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## Revision Record

Rev.	Date	Changes	Remarks
1.00	November 15, 2017	-	-
1.01	January 25, 2018	• New function added.	-
1.02	April 10, 2018	• Specification changed.	-
1.03	June 11, 2018	• New function added.	-

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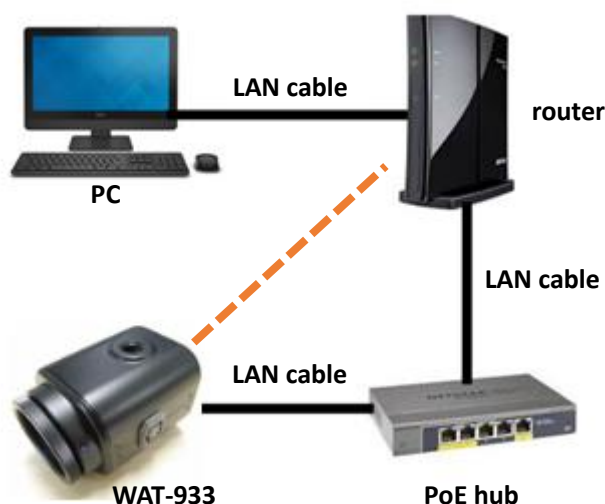
## 1. Network connection and power activation of the camera

The WAT-933 & WAT-2400S has two power supply systems. The one is powered by +12VDC input plug on back panel of the camera, and the other is powered by PoE using a LAN connector.

※simply called “WAT-933” from now on if there is no difference in the function “WAT-933” and “WAT-2400S”

Please supply power by the one or the other of the way above and do not supply the both power systems simultaneously.

The below figure is a connection example of the power supply by PoE hub. In addition, you need to have the power individually to the router and the PoE hub.



Connect the LAN cable of camera side to a PoE port of the PoE hub and connect the LAN cable of the router side to a normal LAN port.

If you want to power the camera using the AC power supplies, connect the camera and the router directly with exception of the PoE hub from the above. In a closed network configuration, the DHCP protocol and the router are not required. In that case, connect the PC and the camera directly in LAN cable.

It takes about 20 seconds to fully boot the WAT-933 from the power supply start.

## 2. Network settings

### 2.1. WAT-933 network settings

The network default setting of the WAT-933 is as follows.

IP Address:	192.168.1.250 (static)
Netmask:	255.255.255.0
Gateway:	192.168.1.1

The network settings of the WAT-933 can be changed in the setting change by the Web browser which will be described later.

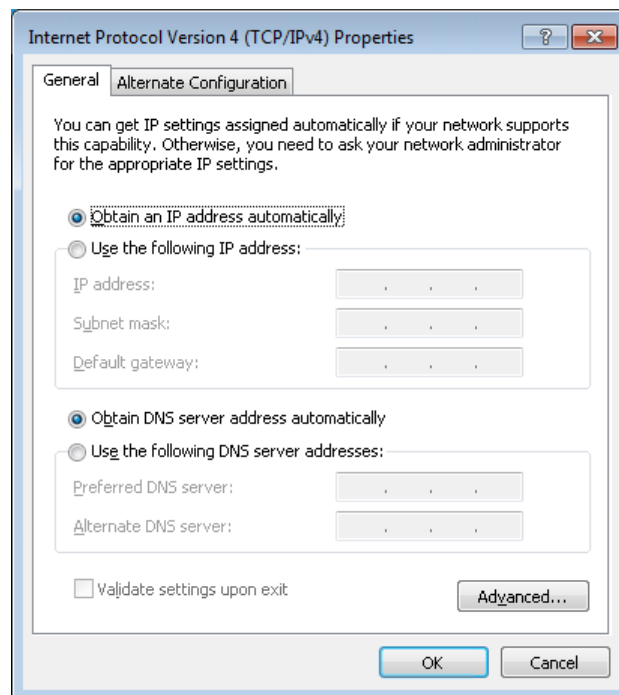
## 2.2. PC network settings

Set the PC network settings in order to accommodate WAT-933's requirement.

PC network settings for a local area connection in Windows7 as follows.

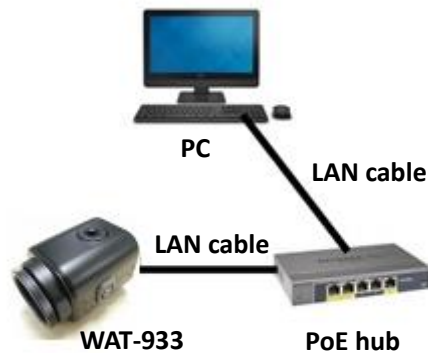
Control Panel>>Network and Internet>>Network and Sharing Center

>>Local Area Connection >>Properties>>Internet Protocol Version 4(TCP/IPv4) Properties

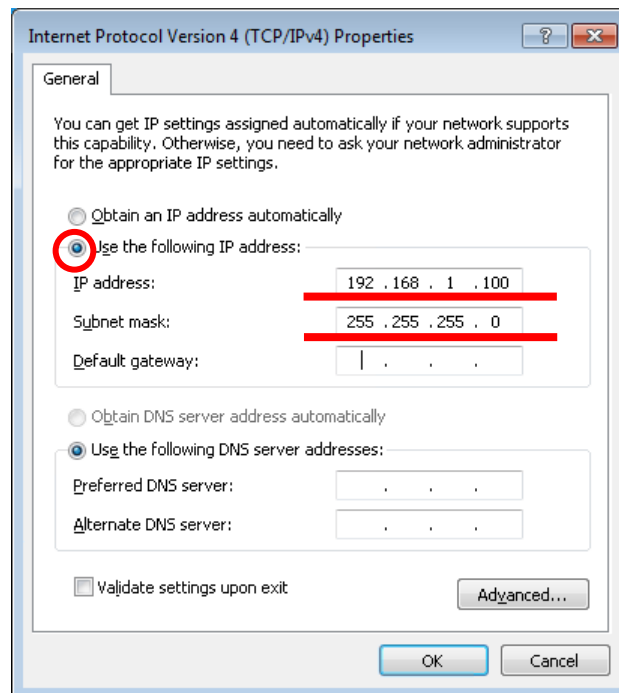


An example of PC network settings

Connect the WAT-933 and your PC as shown in the below figure. And if the network setting of the camera is in default configuration (IP Address: 192.168.1.250 (static)), go through the following steps to set up the PC network settings.



Input the values as follow, press the “OK” and close the property.

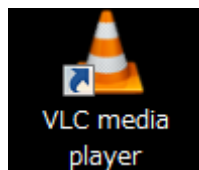


### 3. Checking the image from the camera

You could check the video image after the network settings are completed. This section describes the method in the case of viewing the image from the camera using the VLC media player.

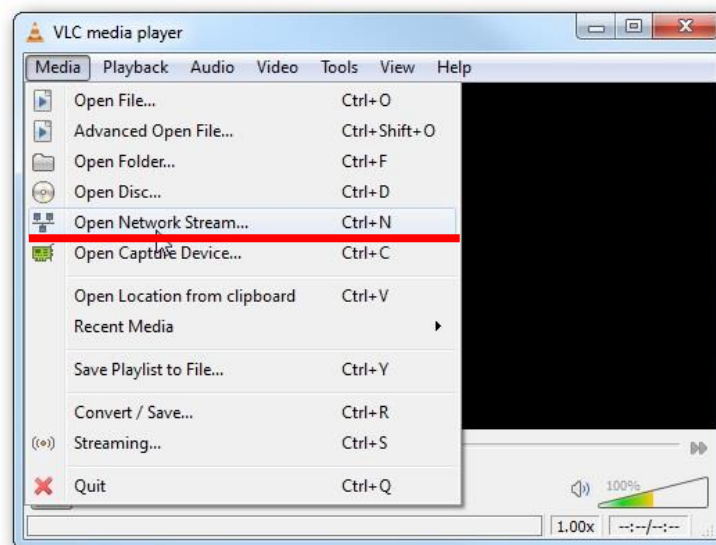
#### A case of VLC media player

Download the appropriate VLC which meets your PC from VideoLAN official download page (<https://www.videolan.org/vlc/index.html>) and install.



Open the VLC media player when the installation is complete.

Click on **Media <Open Network Stream** from the menu.



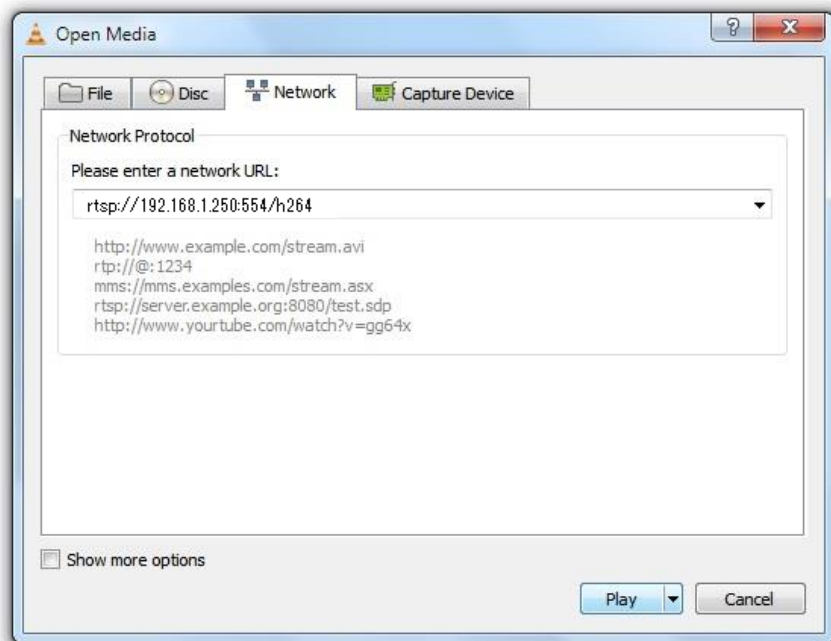
Paste your copied URL in the 'Network Protocol' box and click the play button. Wait till the video start streaming in your VLC.

H264 :           rtsp:// "WAT-933 IP Address":554/h264

MJPEG :       rtsp:// "WAT-933 IP Address":554/jpeg

(Example: rtsp://192.168.1.250:554/h264)





The network connections and settings work properly, video starts to stream. Please check again the network settings if it does not start.



The screen might become grey during the viewing, in that case, please click the stop button in the lower left and click the play button again.

## 4. Changing the camera settings

### 4.1. Configuration changes from the Web browser (WAT-933 System configuration)

The network settings of the WAT-933 can be changed in the setting change by the Web browser. The Web browser must correspond to html5 and recommended web browser is Internet Explorer 11.

#### 4.1.1. WAT-933 System Configuration: Overview (top page)

Open your web browser and go to following address page.

<http://WAT-933 IP Address/>  
(Example: <http://192.168.1.250/>)

At the first time connection, the authentication window will open such as shown in the below figure.



User name: root

Password: 1234

Enter the above and click the "OK" button.

”WAT-933 MENU” will be displayed as shown in the below figure. This page is the top page.

WAT-933 MENU

SYSTEM SETUP

User

Date & Time

Update

Setting File

Reset

IMAGE SETUP

IRIS

Exposure

Backlight

Picture

Motion

Output Set

System

VIDEO SETUP

Video

H264 View

JPEG View

NETWORK SETUP

Ethernet


UPnP

SD CARD SETUP

Info

Overview

IP Address	192.168.1.250
MAC Address	C4:7C:8D:3F:F0:1F
Host Name	WAT-933_3FF01F
SD Card Size	7265MB / 7647MB (4% Free)
Firmware Version	0.1.9



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## Network Settings

Click on “**Ethernet**” from the menu.

”Network Information” will be displayed as shown in the below figure.

The screenshot shows the 'WAT-933 MENU' interface. On the left is a blue sidebar menu with categories: SYSTEM SETUP (User, Date & Time, Update, Setting File, Reset), IMAGE SETUP (IRIS, Exposure, Backlight, Picture, Motion, Output Set, System), VIDEO SETUP (Video, HQ64 View, JPEG View), NETWORK SETUP (Ethernet, Wi-Fi), and SD CARD SETUP (Info). The 'Ethernet' option is selected. The main area is titled 'Network Information' and contains the following fields: IP Address (192.168.1.250), Subnet Mask (255.255.255.0), Default Gateway (192.168.1.1), Primary DNS Server (8.8.8.8), and Secondary DNS Server (8.8.4.4). Below these is a radio button group for 'Use DHCP Server' with 'UNUSE' selected. A 'submit' button is in the top right. On the right side of the main area is a video player showing a 'Watec' logo and 'MADE IN JAPAN' text. The bottom right corner of the interface says 'Watec Co., Ltd.'

At this page, you can change the following network settings;

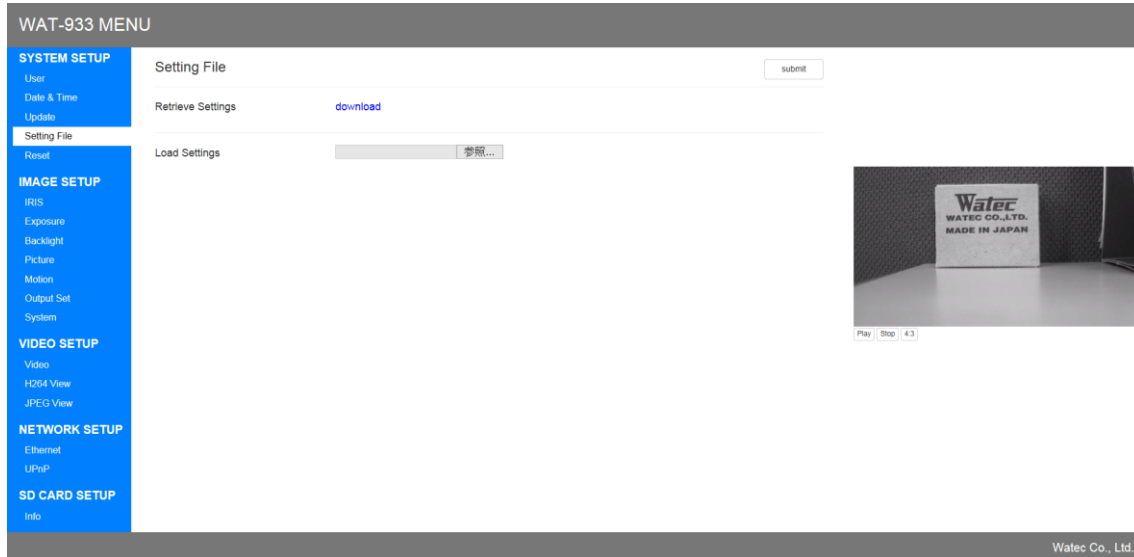
- Switching of AUTO IP (DHCP) and STATIC IP
- Advanced settings for STATIC IP

Enter the each item and click the “Submit” button then network settings will be changed.

## 5. Setting file Retrieve & Load

The present setting can be downloaded.

In addition, you can reflect the downloaded setting file on your setting by uploading.



### 5.1. Retrieve Settings

Click on the download link to download the file "setting.w933".

### 5.2. Load Settings

Click the "Brows" button to display the file selection dialog and select "setting.w933".

When a message appears asking you to restart "WAT-933", click "OK".

## 6. SD Card Information

This screen is used to make settings related to the SD card.

WAT-933 MENU

**SYSTEM SETUP**

- User
- Date & Time
- Update
- Setting File
- Reset

**IMAGE SETUP**

- IRIS
- Exposure
- Backlight
- Picture
- Motion
- Output Set
- System

**VIDEO SETUP**

- Video
- H264 View
- JPEG View

**NETWORK SETUP**

- Ethernet
- UDP

**SD CARD SETUP**

- Info

**SD Card Information**

Total Size 7647MB

Used Size 7262MB

Free Size 384MB

Free Percentage 5%

Continuous Recording ☒ ON ☐ OFF

Format

Video & Snapshot Files

Play Stop 4.3

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### 6.1. Continuous Recording

"Continuous Recording" function can be arbitrarily turned ON/OFF.

"Video&Snapshot Files" described later can be used only when "Continuous Recording" is off.

### 6.2. Format

Format the SD card.

### 6.3. Video & Snapshot Files

You can see the contents of the SD card.

It can be used only when "Continuous Recording" function is off.

Click the file to download it.

## 7. FTP Access

You can access internal storage by using FTP.

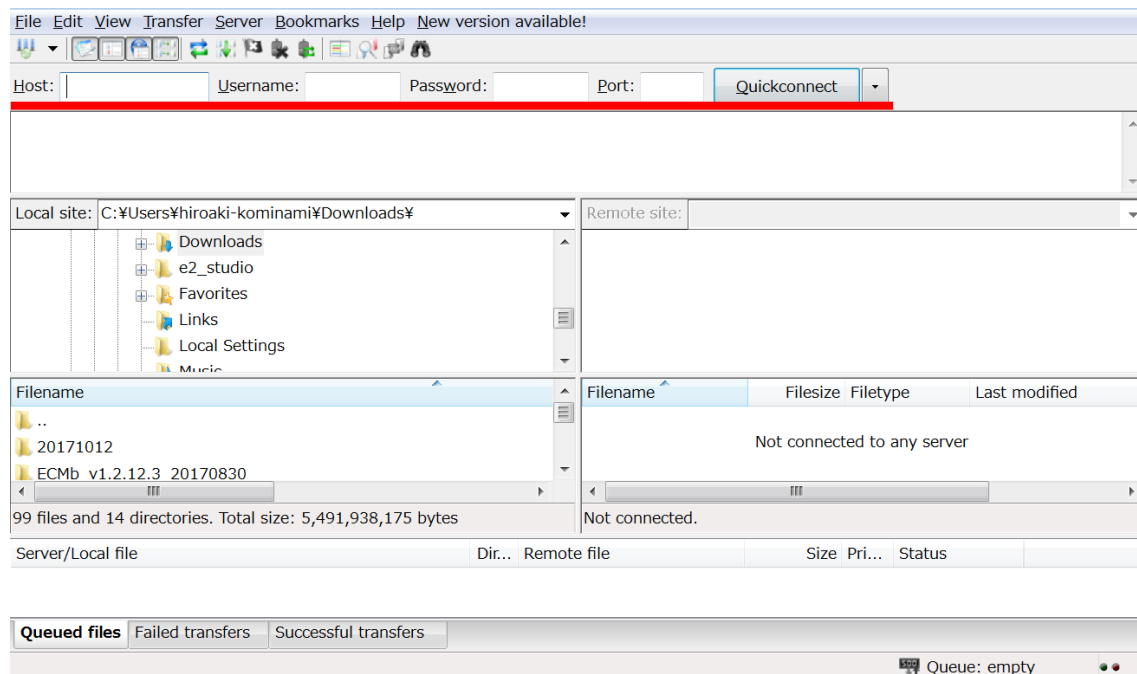
This section explains the connection method of using "FileZilla".

### 7.1. A case of FileZilla

Download the appropriate Installer which meets your PC from FileZilla official download page (<https://filezilla-project.org/>) and install it.



Open the FileZilla when the installation is completed.



Enter the following in the red line above.

Host : 192.168.1.250

Username : root

Password : 1234

Port : (Blank)

Click "Quickconnect" to access internal storage.

## 8. Selection of Streaming to Record

You can select video streaming to be recorded on the SD card.

Switch the h264 Main / Sub with the red line "Select Recording" shown below.

WAT-933 MENU

SYSTEM SETUP

User

Date & Time

Update

Setting File

Reset

IMAGE SETUP

IRIS

Exposure

Backlight

Picture

Motion

Output Set

System

VIDEO SETUP

Video

H264 View

JPEG View

NETWORK SETUP

Ethernet

UPnP

SD CARD SETUP

Info

Video Information

submit

Max Resolution1920 X 1080

Max FPS30FPS

Output Mode30FPS Normal

RTSP Port554 [1~65535]

Select RecordingH264 MAIN H264 SUB

Timestamp DisplayON OFF

Mix Audio with Streaming & RecordingON OFF

Select AudioINTERNAL MICROPHONE EXTERNAL AUDIO MIX BOTH

Play Stop 4.3

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H.264 Main

H.264 ProfilesBaseline

H.264 Resolution1920x1080

H.264 Quality50 [10~51]

H.264 GOP(IDR)30 [1~150]

H.264 FPS30fps

Bitrate ControlOFF VBR CBR

H.264 Bitrate10Mbit

Main Settings

H.264 Sub

H.264 Sub ProfilesBaseline

H.264 Sub Resolution640x360

H.264 Sub Quality50 [10~51]

H.264 Sub GOP(IDR)30 [1~150]

H.264 Sub FPS30fps

Bitrate ControlOFF VBR CBR

H.264 Sub Bitrate2Mbit

Sub Settings



## 9. Display / hide timestamp

You can choose to show / hide the timestamp of the image.

Toggle display / non-display on "Timestamp Display" in the figure below.

WAT-933 MENU

SYSTEM SETUP

User

Date & Time

Update

Setting File

Reset

IMAGE SETUP

IRIS

Exposure

Backlight

Picture

Motion

Output Set

System

VIDEO SETUP

Video

H264 View

JPEG View

NETWORK SETUP

Ethernet

UPnP

SD CARD SETUP

Info

Video Information

submit

Max Resolution1920 X 1080

Max FPS30FPS

Output Mode30FPS Normal

RTSP Port554[1~65535]

Select RecordingH264 MAIN H264 SUB

Timestamp DisplayON OFF

Mix Audio with Streaming & RecodingON OFF

Select AudioINTERNAL MICROPHONE EXTERNAL AUDIO MIX BOTH

H.264 Main

H.264 ProfilesBaseline

H.264 Resolution1920x1080

H.264 Quality50[10~51]

H.264 GOP(IDR)30[1~150]

H.264 FPS30fps

Bitrate ControlOFF VBR CBR

H.264 Bitrate10Mbit

H.264 Sub

H.264 Sub ProfilesBaseline

H.264 Sub Resolution640x360

H.264 Sub Quality50[10~51]

H.264 Sub GOP(IDR)30[1~150]

H.264 Sub FPS30fps

Bitrate ControlOFF VBR CBR

H.264 Sub Bitrate2Mbit

Play Stop 4.3

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## 10. Selection of Audio Input

You can select audio input.

Select from "INTERNAL MICROPHONE", "EXTERNAL AUDIO" or "MIX BOTH" with the red line "Select Audio" shown below.

WAT-933 MENU

SYSTEM SETUP

User

Date & Time

Update

Setting File

Reset

IMAGE SETUP

IRIS

Exposure

Backlight

Picture

Motion

Output Set

System

VIDEO SETUP

Video

H264 View

JPEG View

NETWORK SETUP

Ethernet

UPnP

SD CARD SETUP

Info

Video Information

submit

Max Resolution1920 X 1080

Max FPS30FPS

Output Mode30FPS Normal

RTSP Port554 [1~65535]

Select Recording☒ H264 MAIN ☐ H264 SUB

Timestamp Display☒ ON ☐ OFF

Mix Audio with Streaming & Recoding☒ ON ☐ OFF

Select Audio☒ INTERNAL MICROPHONE ☐ EXTERNAL AUDIO ☐ MIX BOTH

H.264 Main

H.264 ProfilesBaseline ▾

H264 Resolution1920x1080 ▾

H.264 Quality50 [10~51]

H.264 GOP(IDR)30 [1~150]

H.264 FPS30fps ▾

Bitrate Control☐ OFF ☐ VBR ☒ CBR

H.264 Bitrate10Mbit ▾

H.264 Sub

H.264 Sub ProfilesBaseline ▾

H.264 Sub Resolution640x360 ▾

H.264 Sub Quality50 [10~51]

H.264 Sub GOP(IDR)30 [1~150]

H.264 Sub FPS30fps ▾

Bitrate Control☐ OFF ☐ VBR ☒ CBR

H.264 Sub Bitrate2Mbit ▾

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Play | Stop | 4.3

## 11. ONVIF

You can use the ONVIF Profile S.

This section explains the display method of using "ONVIF Device Manager".

### 11.1. A case of ONVIF Device Manager

Download the appropriate Installer which meets your PC from "ONVIF Device Manager" official download page (<https://sourceforge.net/p/onvifdm/wiki/Home/>) and install it.



Open the "ONVIF Device Manager" when the installation is completed.

### 11.2. Login

Enter the following in the red line below.

Name : root

Password : 1234

Click "Log in" to access camera device.



### 11.3. Live video

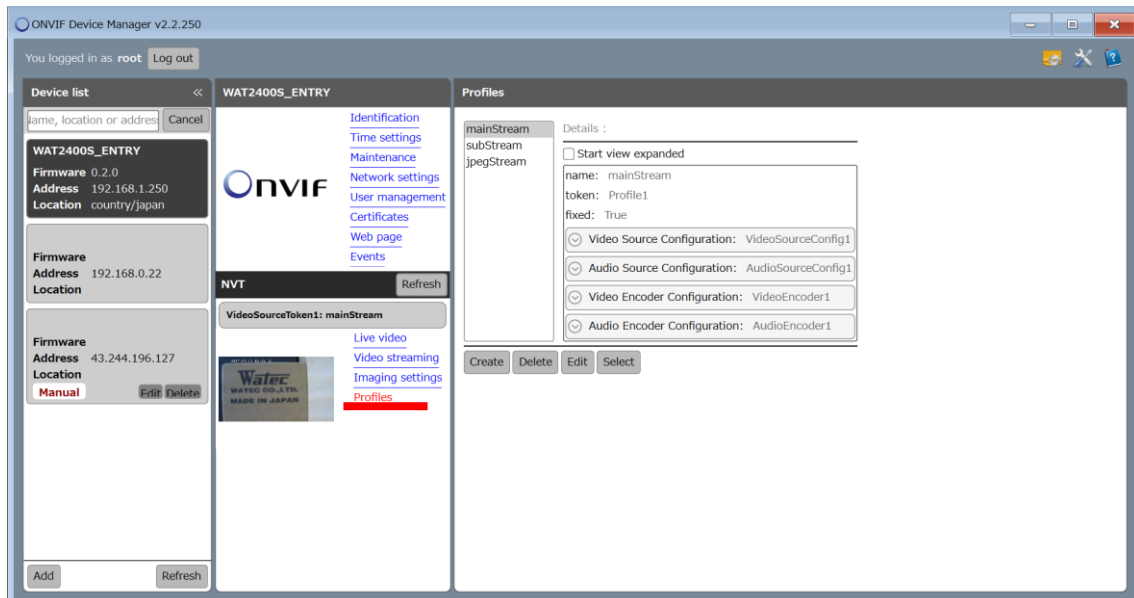
Click the red line part "Live video" in the figure below to enable live viewing.



### 11.4. Stream switching

Although it is streaming "H264 Main" in the initial state, you can switch to "H264 Sub" and "MJPEG".

Click the red line part "Profiles" in the figure below to display the Profiles setting screen.



Select "subStream" for H264 Sub streaming, "jpegStream" for MJPEG streaming, and click "Select".