EFN3320 Fisheye Camera

3MP 360° Panoramic View

User's Manual

eZ Tracker

EverFocus®

EverFocus®

About this document

All the safety and operating instructions should be read and followed before the unit is operated. This manual should be retained for future reference. The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without notice.

Regulatory Notices

FCC Notice "Declaration of Conformity Information"

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 an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Warning: Changes or modifications made to this equipment, not expressly approved by EverFocus or parties authorized by EverFocus could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

EverFocus Electronics Corp.

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EFN3320 camera complies with CE and FCC.

Precautions

1. **Do not install the camera near electric or magnetic fields.**
   Install the camera away from TV/radio transmitters, magnets, electric motors, transformers and audio speakers since the electromagnetic fields generated from these devices may distort the video image or otherwise interfere with camera operation.

2. **Never disassemble the camera beyond the recommendations in this manual nor introduce materials other than those recommended herein.**
   Improper disassembly or introduction of corrosive materials may result in equipment failure or other damage.

3. **Try to avoid facing the camera toward the sun.**
   In some circumstances, direct sunlight may cause permanent damage to the sensor and/or internal circuits, as well as creating unbalanced illumination beyond the capability of the camera to compensate.

4. **Keep the power cord away from water and other liquids and never touch the power cord with wet hands.**
   Touching a wet power cord with your hands or touching the power cord with wet hands may result in electric shock.

5. **Never install the camera in areas exposed to oil, gas or solvents.**
   Oil, gas or solvents may result in equipment failure, electric shock or, in extreme cases, fire.

6. **Cleaning**
   For cameras with interchangeable lenses, do not touch the surface of the sensor directly with the hands. Use lens tissue or a cotton tipped applicator and ethanol to clean the sensor and the camera lens. Use a damp soft cloth to remove any dirt from the camera body. Please do not use complex solvents, corrosive or abrasive agents for cleaning of any part of the camera.

7. **Do not operate the camera beyond the specified temperature, humidity or power source ratings.**
   This camera is suitable for outdoor operation only. Use the camera at temperatures within -10°C~50°C/14°F~131°F; this device is not rated as submersible. The input power source is 12 VDC/PoE. Be sure to connect the proper + / - polarity and voltage, as incorrect polarity or too high a voltage will likely cause the camera to fail, and such damage is not covered by the warranty. The use of properly fused or Class 2 power limited type supplies is highly recommended.

8. **Mounting**
   Use care in selecting a solid mounting surface which will support the weight of the camera plus any wind, snow, ice or other loading, and securely attach the camera to the mounting surface using screws and anchors which will properly support the camera. If necessary (e.g. when mounting to drop ceilings) use a safety wire to provide additional support for the camera.

Contents

1. Introduction

The EFN3320 is a 3-megapixel fisheye camera designed to monitor a location with 360° surround view (ceiling / desk mount) and 180° panoramic view (wall mount). The fisheye camera provides up to 8 cropped regions of view with changeable angles, allowing you to monitor all angles of a location simultaneously using just one camera.

The EFN3320 offers various viewing modes, including fisheye view, 9-division, 360° panoramic, dual 180°, wall 180°, quad view and single view. The hemispherical images have been de-warped and converted into the conventional rectilinear projection for viewing. You can also operate the PTZ function on the de-warped view. Besides, the fisheye camera also provides eZ Tracker function, which combines a fisheye and speed dome cameras for easy tracking and smooth PTZ with 360° surround view.

Provided with quad streams from H.264, MPEG4 and M-JPEG, the fisheye camera also features the Wide Dynamic Range (WDR) function, which can provide clear images even under back light circumstances where intensity of illumination can vary excessively. A built-in micro SDHC / SDXC card slot and Power over Ethernet (IEEE802.3af Class 0) features are also provided. You can power the camera over the network or by connecting the camera to a 12 VDC power supply (12 VDC cable optional).

Since the EFN3320 conforms to ONVIF / PSIA for compatibility with other network video devices, it interoperates with a wide variety of hardware and software systems. You can also use EverFocus Mobile Applications to remotely view the live views of the cameras through your handheld devices; or use EverFocus CMS to remotely manage multiple IP devices connected on the network. The fisheye camera can be mounted onto the ceiling, desk or wall. With all the above advantages plus the simple and flat user interface design, the EFN3320 brings out the clarity and usability in your surveillance system.

1.1 Minimum System Requirement

Before installing, please check that your device meets the following requirements.

- Operating System: Microsoft Windows XP / Vista (32-bit) / 7 (32-bit)
- Microsoft Internet Explorer 7 or above

1.2   Features

- 1/3" progressive CMOS image sensor delivers 3-megapixel resolution
- Various view modes provided including fisheye view, 9-division, 360° panoramic, dual 180°, wall 180°, quad view, single view
- Mounting types: ceiling mount, wall mount, desk mount
- Up to 8 cropped regions as independent channels (9-Division)
- Quad streams from H.264, MPEG-4 and M-JPEG
- H.264 up to 15 fps at 1536 x 1536
- Supports eZ Tracker function: combining a fisheye and speed dome cameras for easy tracking and smooth PTZ with 360° surround view (see *6.3 eZ Tracker*)
- Supports digital zoom
- Noise reduction (DNR)
- Wide dynamic range (WDR)
- Supports micro SDHC / SDXC card for edge recording (see *Appendix* for the tested card brands)
- Two-way audio (optional)
- PoE / 12 VDC (optional)
- Multi-languages on Web interface
- ONVIF / PSIA compliant
- Supports EverFocus CMS and Mobile Applications (iOS / Android)
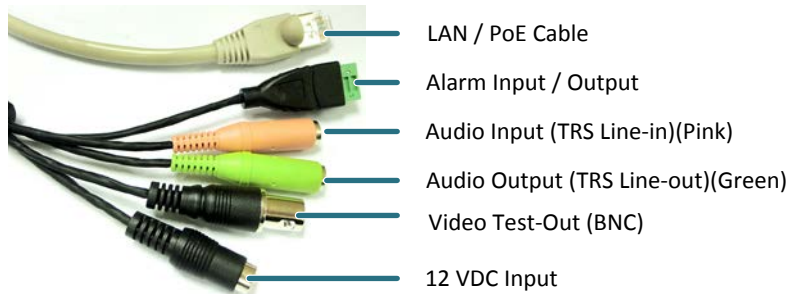
2. Physical Description

Rear View   Front View
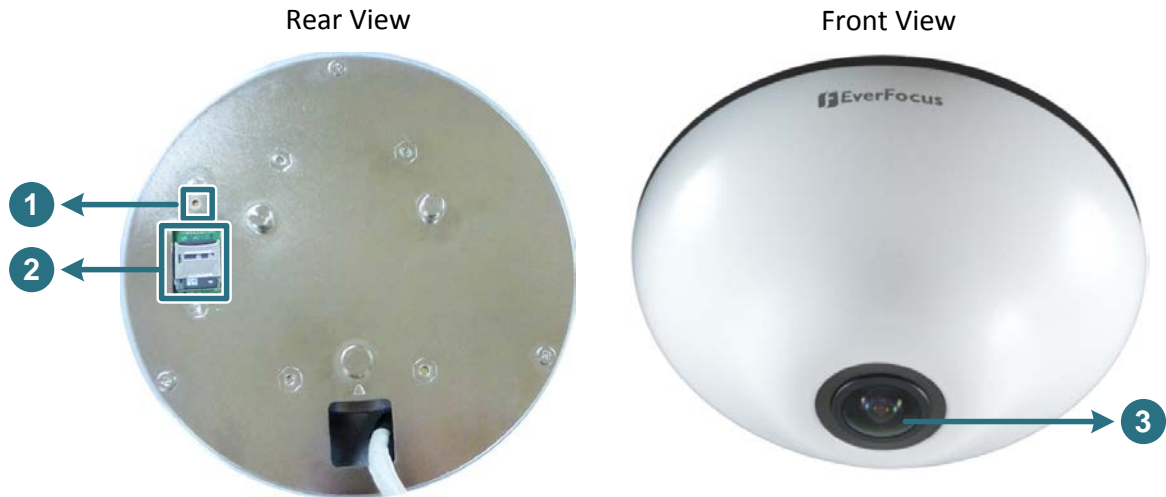
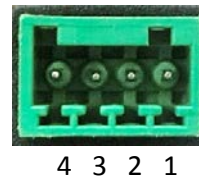| No.	Item Name	Descriptions
1	**Reset Button**	Press the button for 7 seconds to reset all configurations to the factory default settings.
2	**Micro SDHC / SDXC Slot**	For inserting a micro SDHC / SDXC card (see *Appendix* for the tested card brands).
3	**Fisheye Lens**	Fisheye lens with fixed IRIS and IR corrected.

2.1 Dimensions
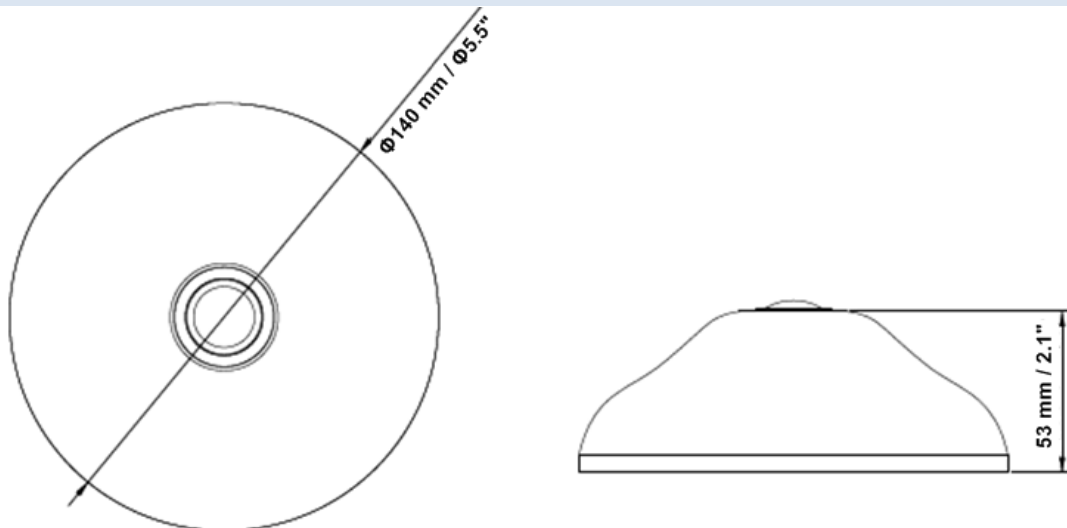
2.2   Cables (BNC, 12 VDC, Audio I/O and Alarm I/O cables are optional)

The Cables provide connections for Network, power, audio input / output, alarm input / output and video test output. Note that the audio line in/out cable features a 3.5mm TRS connector. Be sure to prepare speakers / microphones with TRS connector (see TRS Connector image below). Also, speakers / microphones with a (built-in) amplifier and external power supply are required.

LAN / PoE Cable

Alarm Input / Output

Audio Input (TRS Line-in)(Pink)

Audio Output (TRS Line-out)(Green)

Video Test-Out (BNC)

12 VDC Input

Pin Assignment from Alarm I/O

Pin 1: Alarm In (+)
Pin 2: Alarm GND (-)
Pin 3: Alarm COM (-)
Pin 3: Alarm Out (+)

4 3 2 1

TRS Connector

Ground (Sleeve)
Right Channel (Ring)
Left Channel (Tip)
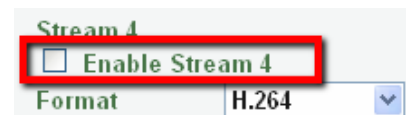
To activate the Audio function, the **Enable Audio** must be checked. See *Audio Settings* in *7.2.1 Streaming and Audio* in the *User's Manual*.

Audio Settings

☑ **Enable Audio**

Input Volume   0 —————————— 10   5
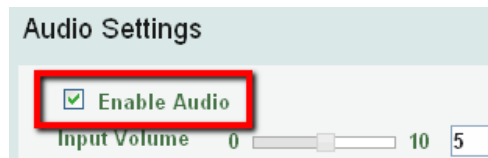
For the Video Test-Out cable to work, the **Stream 4** must be disabled (unchecked), see *Stream Settings* in *7.2.1 Streaming and Audio* in the *User's Manual*.

Stream 4

☐ **Enable Stream 4**

Format   H.264   ▾

3. Installation

This fisheye camera is designed to be mounted on the ceiling, desk or wall. There are two ways to mount the camera to the wall: using the supplied Base Plate or the Tilting Wall Mount Bracket.

Ceiling Mount

Desk Mount

Wall Mount

With Base Plate

Wall Mount

With Tilting Wall Mount Bracket

3.1 Packing List

Please check that there is no missing item in the package before installing.

- Camera x 1
- RJ-45 Connector x 1
- Mounting Template x 1
- Tilting Wall Mount Bracket (15° tilt angle) x 1

- Screw x 3 (with 3 Anchors)
- Spacer x 1
- Software CD x 1
- Quick Installation Guide x 1

Note:

1. Equipment configurations and supplied accessories vary by country. Please consult your local EverFocus office or agents for more information. Please also keep the shipping carton for possible future use.
2. Contact the shipper if any items appear to have been damaged in the shipping process.

3.2 Ceiling / Desk Mount

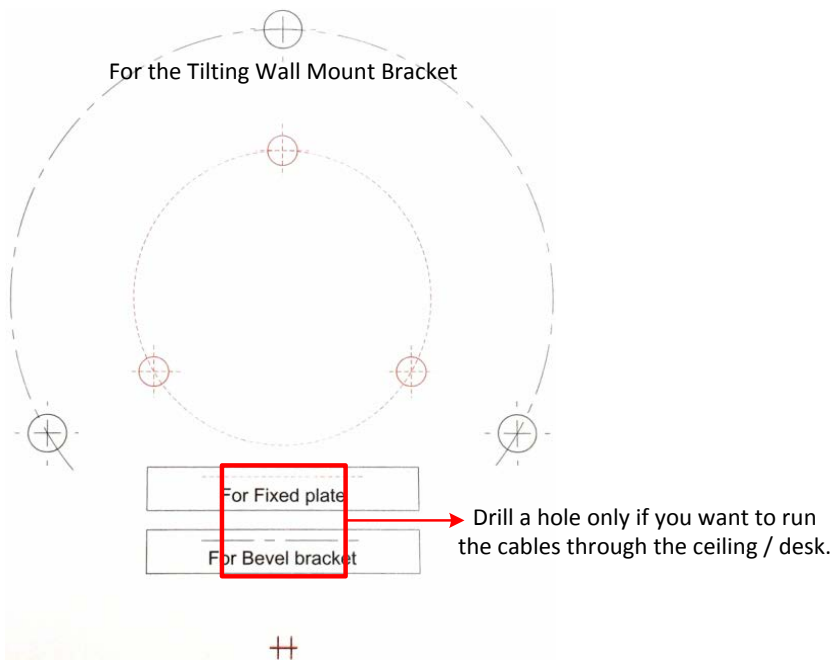Ceiling Mount   Desk Mount

1. Stick the Mounting Template to the ceiling / desk. Drill the three red cross marks on the inner circle, and the square below only if you wish to run the cables through the ceiling / desk. Note that the square below also indicates the cable position. Point the square below to the direction for running the cables.


For the Tilting Wall Mount Bracket

For Fixed plate

For Bevel bracket

→ Drill a hole only if you want to run the cables through the ceiling / desk.

2. Insert the supplied three Anchors into the three holes and then screw the Base Plate to the ceiling / desk using the supplied three Screws.
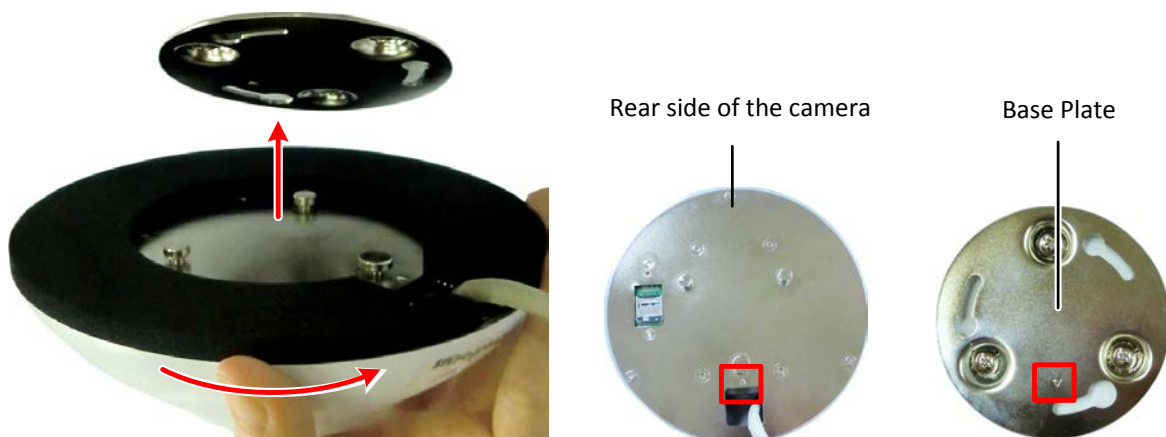

Base Plate

6
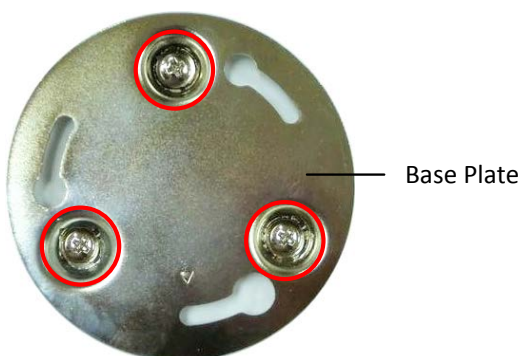
3. Place the Spacer onto the rear side of the camera. Remove the cut-out from the Spacer only if you want to run the cables along the ceiling / desk.
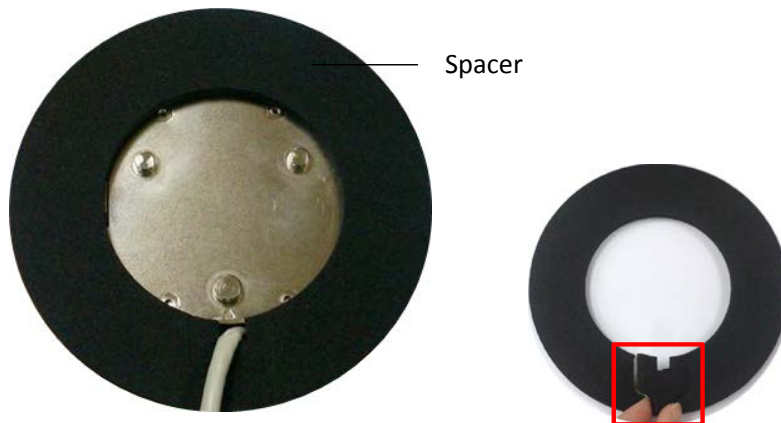
Spacer

4. Optionally insert the micro SDHC / SDXC card to the push-pull type SD card slot on the rear side of the camera. For the tested card brands, please refer to *Appendix*.

Rear side of the camera

Push

Pull
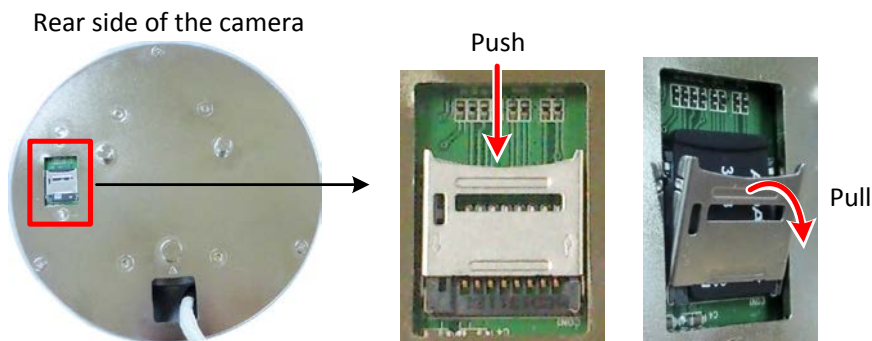
5. Align the three latches on the camera with the three holes on the Base Plate, attach the camera to the Base Plate and then rotate clockwise to secure the camera to the Base Plate. Note that the triangle mark on the rear side of the camera and the Base Plate should point to the same direction.

Rear side of the camera   Base Plate

6. Connect the network or power cable to the camera. The installation is now complete.

3.3   Wall-Mount

You can mount the camera to the wall using the supplied Base Plate or the Tilting Wall Mount Bracket.
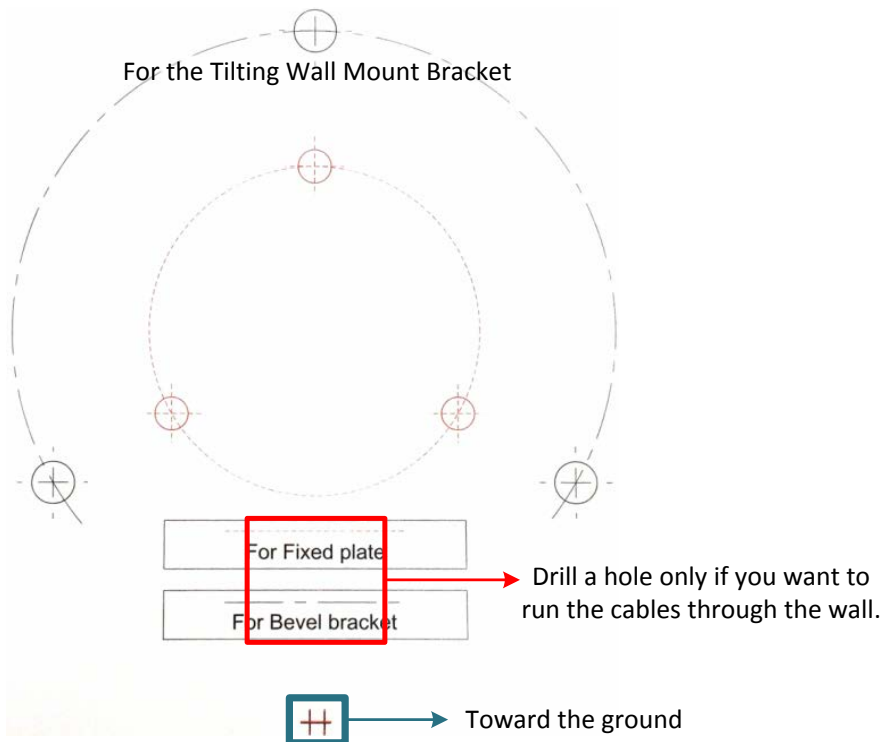

With the Base Plate   With the Tilting Wall Mount Bracket

1. Stick the Mounting Template to the wall. Drill the three red cross marks on the inner circle. If you want to use the supplied Tilting Wall Mount Bracket, drill the three black cross marks on the outer circle. Drill the square below only if you wish to run the cables through the wall. Note that the square below also indicates the cable position. Point the square below to the direction for running the cables.

For the Tilting Wall Mount Bracket

For Fixed plate

For Bevel bracket

Drill a hole only if you want to run the cables through the wall.
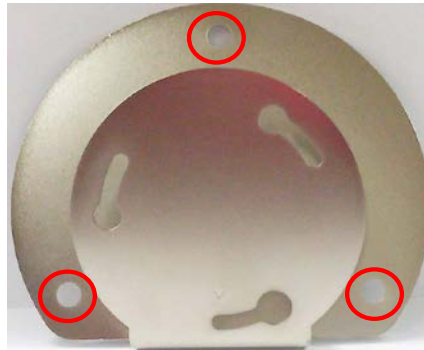
Toward the ground

2. Insert the supplied three Anchors into the three holes and then screw the Base Plate / Tilting Wall Mount Bracket to the wall using the supplied three Screws.
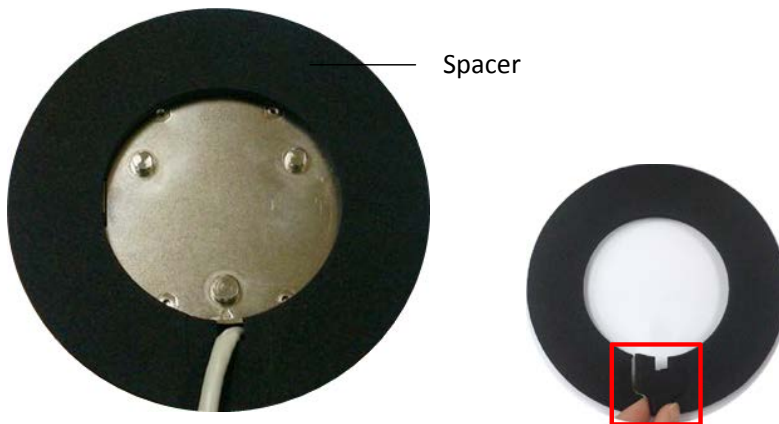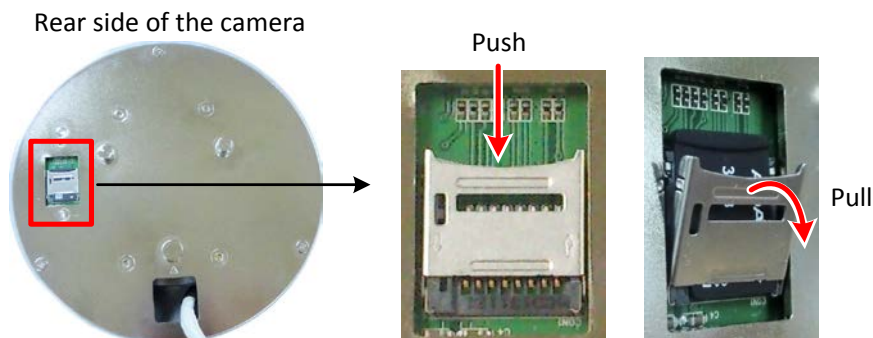

Base Plate   Tilting Wall Mount Bracket

3. If you are using the Base Plate, place the Spacer onto the rear side of the camera. This step is only for the Base Plate mounting. Remove the cut-out from the Spacer only if you want to run the cables along the wall.

Spacer

4. Optionally insert the micro SDHC / SDXC card to the push-pull type SD card slot on the rear side of the camera. For the tested card brands, please refer to *Appendix*.
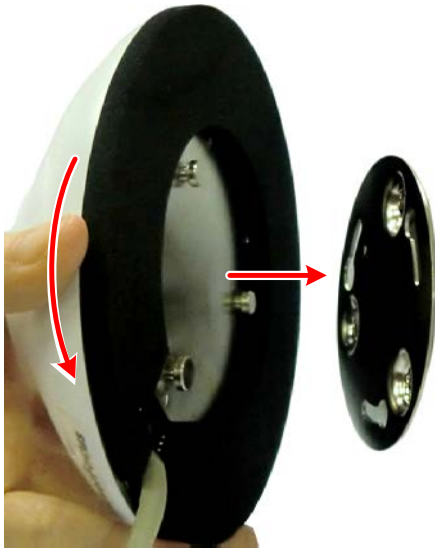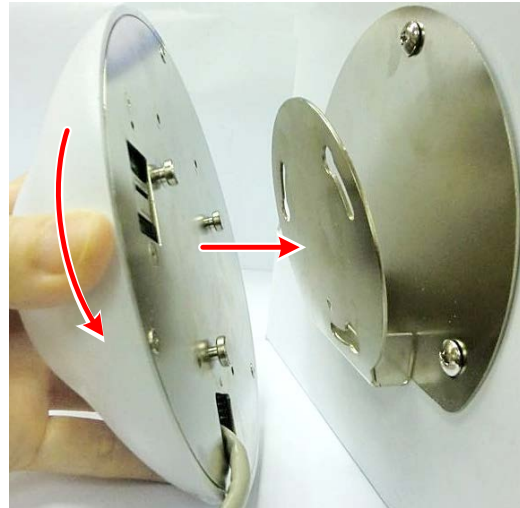
Rear side of the camera

Push

Pull

5. Align the three latches on the camera with the three holes on the Base Plate / Tilting Wall Mount Bracket, attach the camera to the Base Plate / Tilting Wall Mount Bracket and then rotate clockwise to secure the camera to the Base Plate / Tilting Wall Mount Bracket.

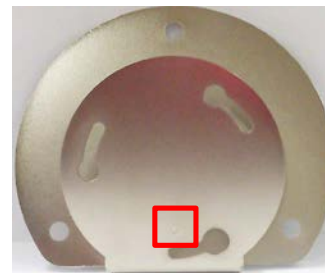With Base Plate   With Tilting Wall Mount Bracket

Note that the triangle mark on the rear side of the camera should point to the same direction with the triangle mark on the Base Plate / Tilting Wall Mount Bracket.

Rear side of the camera   Base Plate   Tilting Wall Mount Bracket

6. Connect the network or power cable to the camera. The installation is now complete.

4. Accessing the User Interface

This section explains how to access the Web interface of the camera for configuration.

4.1 Checking the Dynamic IP Address

You can look up the IP address and access the Web interface of the camera using the **IP Utility (IPU)** software included in the software CD. Please connect the IP camera in the same LAN of your computer.

1. Install and then start the IPU program , the following IPU window appears. The IPU will automatically search the IP devices connected in the LAN.
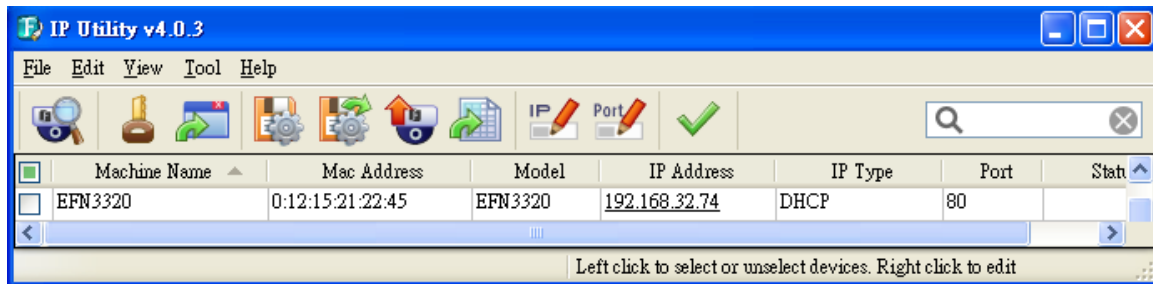

2. Double click the IP address of the desired device, the login window pops up. Type the user ID and password to log in. By default, the user ID is **user1** or **admin** and the password is **11111111**.
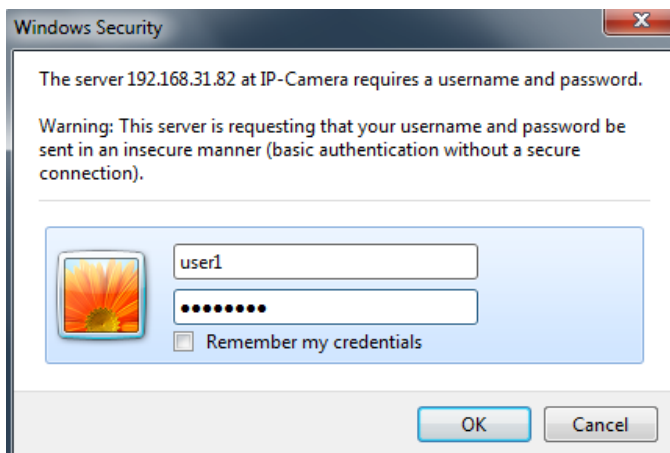
3.   Click **OK**, the Live View window appears.

Note that for the first time user, you will be prompted to choose a desired mounting type of your fisheye camera. Click to select a mounting type, the above live view window appears. To change the mounting type, please refer to *7.2.4 Mount*.
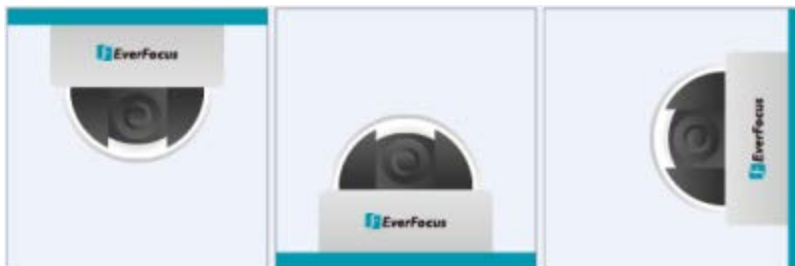
> **Note:**
>
> 1. You might be required to install some add-ons for viewing the camera feed. If asked, click **Run Add-on**.
>
> 2. To enable Remote Live View, Firmware Upgrade and ActiveX Prompt on Internet Explorer, some settings have to be complete. Please refer to *4.2 Settings for Microsoft Internet Explorer* in the *User's Manual*.

4. To optionally configure the Machine Name, IP Address, IP Type or Port Number using the IPU:

    a. Log in the camera by checking the desired model and then click the **Log in** [icon] icon. The Log in dialog box appears.
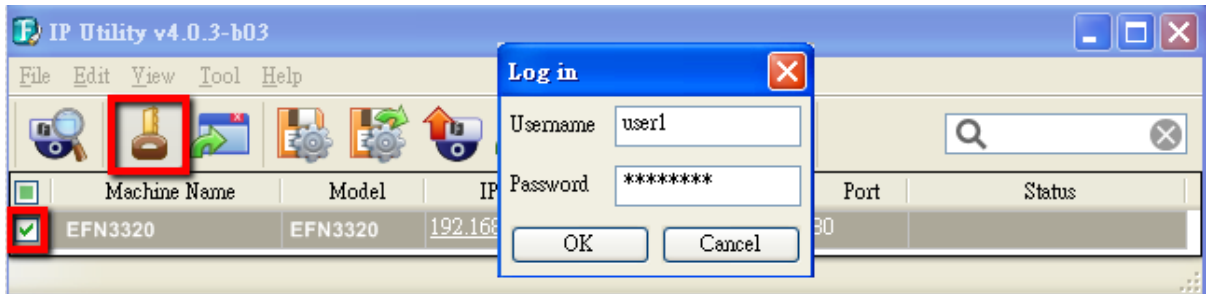

    b. Type the Username and Password. Click the **OK** button, the **Login** status displays.

    > **Note:**
    > 1. The default user ID is **user1** or **admin** and the default password is **11111111**.
    > 2. If you select more than one camera that has the same user ID / password, you will be able to log in several cameras at once.

    c. Right click the column to configure the settings. Click the **Apply Changes** [icon] button to apply and save the settings.
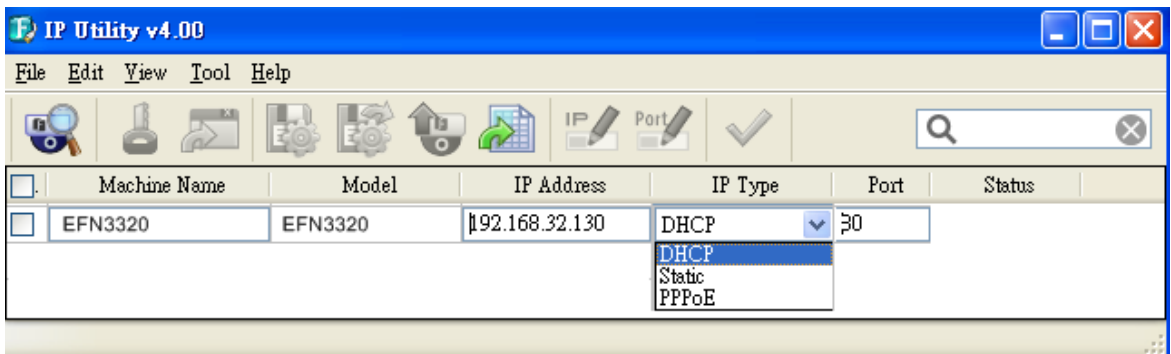

    > **Note:** Most networks uses DHCP to assign IP address, if you are unsure of your network settings, please consult your network administrators for configuration details.

4.2   Settings for Microsoft Internet Explorer

A.   To enable Remote Live View, Firmware Upgrade and ActiveX Prompt on Internet Explorer, some settings have to be complete. Please follow the steps below:

1.   On the computer, click Start > Control Panel > System and Security > Action Center (click Change User Account Control Settings), the **User Account Control Settings** window appears. Adjust the slide bar to **Never Notify** and then click **OK**. Restart your computer if requested.
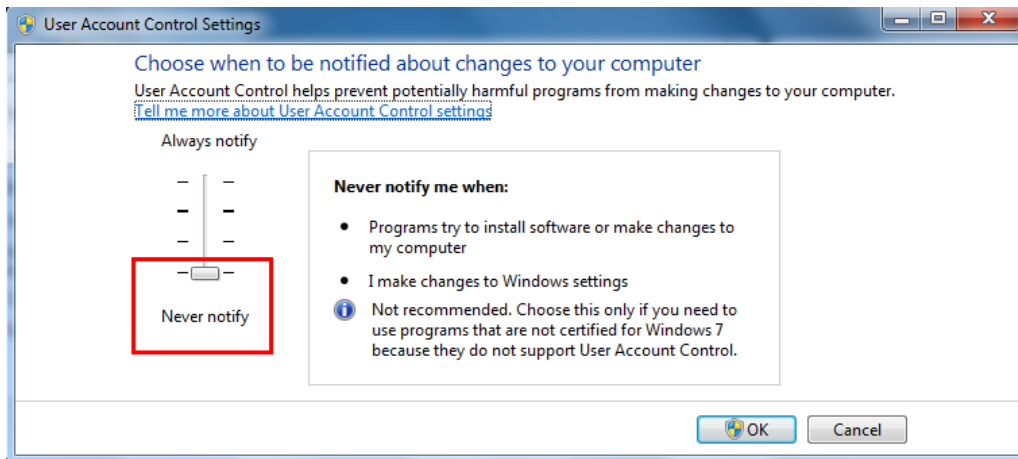
2.   Open the Internet Explore, click Tools > Internet Options > Security Tab > Custom Level, the **Security Settings** windows appears.
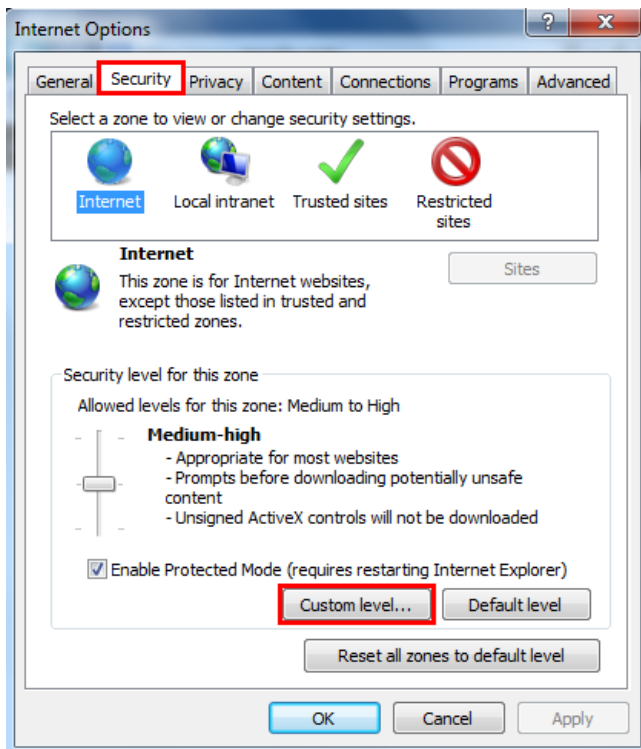
3. In the **Download unsigned ActiveX controls** field, select **Prompt.** In the **Include local directory path when uploading files to a server** field, select **Enable**. Click **OK**.
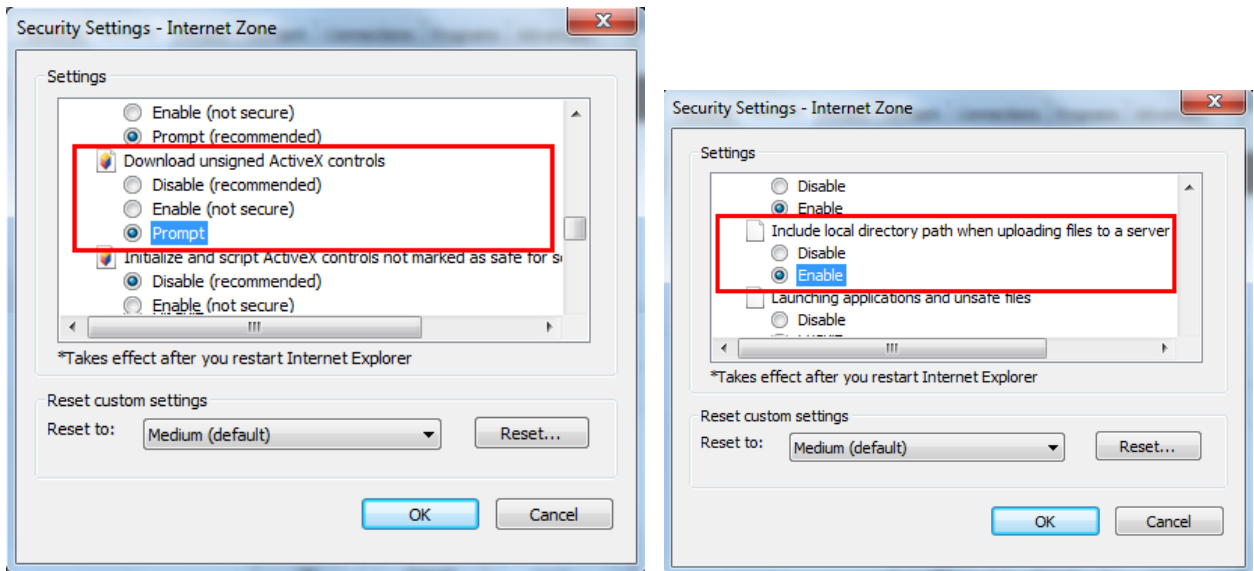
4. In the Internet Options window, click the **Advanced** tab and then disable **Enable memory protection to help mitigate online attacks**. Click **OK**.
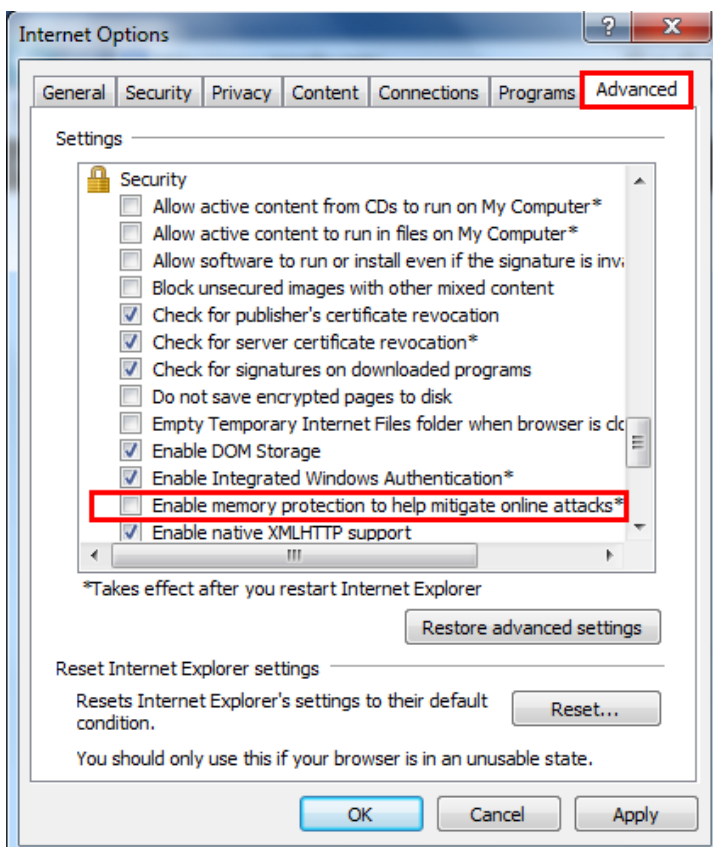
B. For Windows 8 and above systems, to enable the local recording function by clicking the **Recording** button on the Live View window, please select "Run as administrator" on the browser.
Right-click on the IE icon and select **Run as administrator**.

4.3 Connecting the Camera to the Network

There are three methods to connect the IP camera to the network: **Router or LAN Connection**, **Direct High-Speed Connection** and **One-to-One Connection**.
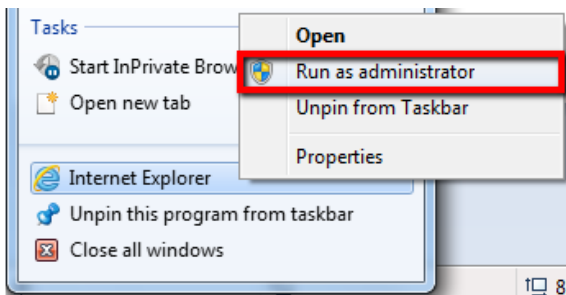
Router or LAN connection

This is the most common connection in which the IP camera is connected to a router and allows multiple users on and off site to see the IP camera on a LAN/WAN (Internet). The camera must be assigned an IP address that is compatible with its LAN. By setting up port forwarding on the router, you can remotely access the cameras from outside of the LAN via the Internet. To remotely access the Web interface of the IP camera, please refer to *7.1.1 Network (DDNS Settings)*. To set up port forwarding, please consult the manual of the router.

Left: Pinout of a straight-through cable.
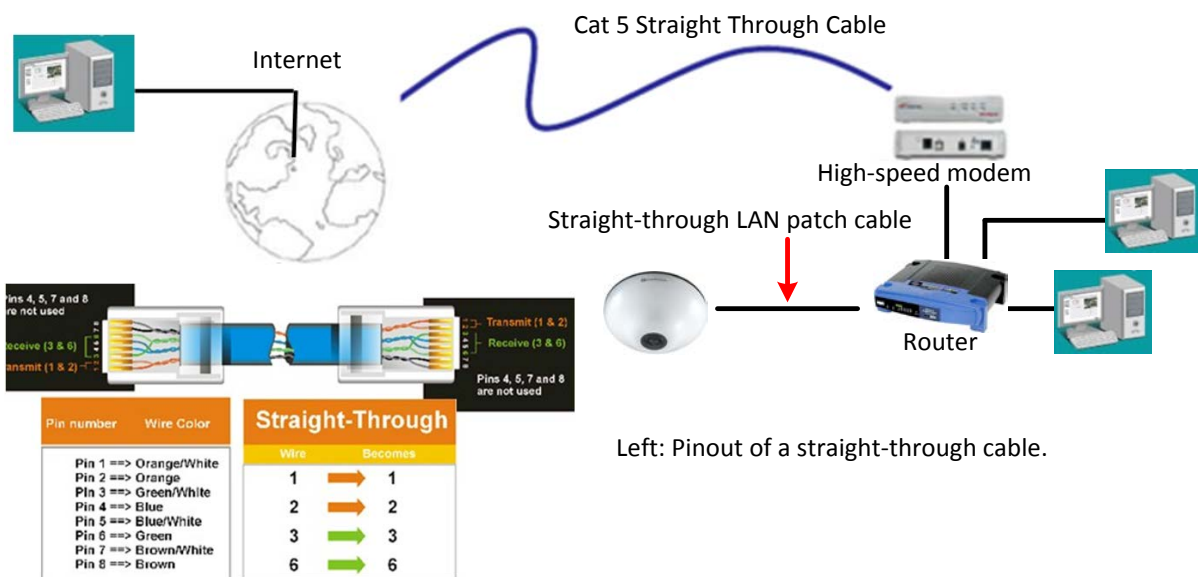
Direct High-Speed Connection

In a Direct High-Speed Connection, the camera connects directly to a modem without the need for a router. You need to set the static or dynamic WAN IP address assigned by your ISP (Internet Service Provider) in the camera's configuration web pages. To access the camera, just type "http://xxx.xxx.xxx.xxx", where xxx.xxx.xxx.xxx is the IP address given by your ISP. If you have a dynamic IP address, this connection may require that you use DDNS for a reliable connection. Please refer to *7.1.1 Network (DDNS Settings)*.
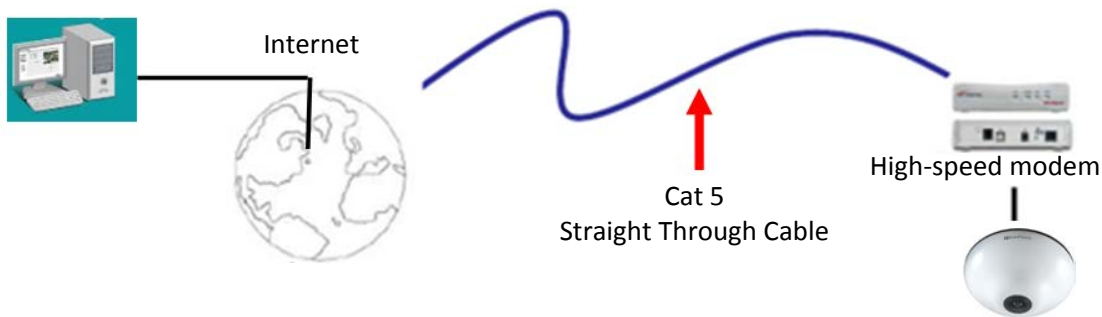
One-to-One Connection (Directly from PC to IP Camera)

You can connect directly without using a switch, router or modem. However, only the PC connected to the camera will be able to view the IP camera. You will also have to manually assign a compatible IP address to both the computer and the IP camera. Unless the PC has another network connection, the IP camera will be the only network device visible to the PC. See the diagram below:
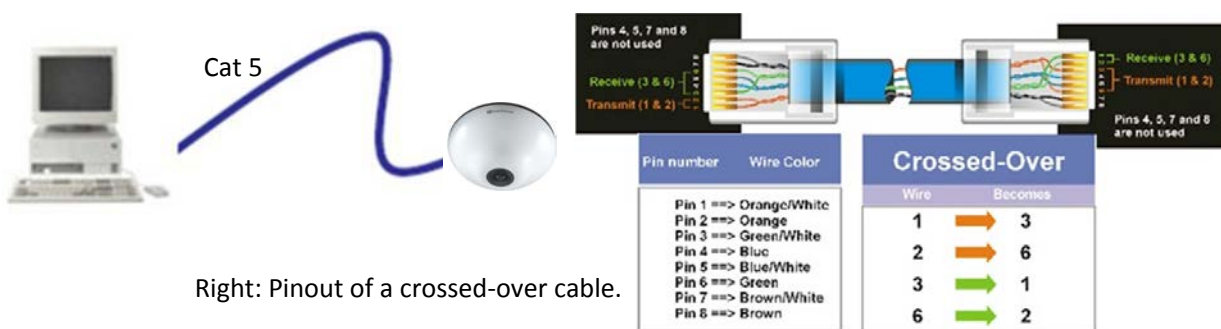
4.4 Live View Window

1. **Live View**

   Click the **Live View** button to display the Live View window. If you experience video feed lag time (if connected via Internet), you can reduce the resolution or limit the number of streams. See *7.2.1 Streaming and Audio*.

2. **Playback**

   Click the **Playback** button to play back the recorded data directly from the on-camera SD / SDHC card. For this function to become active, you have to insert an SD / SDHC card into the SD / SDHC card slot on the camera (see *5.2 Setting up the Playback Function).* For the tested card brands, please refer to *Appendix*.

3. **Fisheye**

   Click the **Fisheye** button to enter the Fisheye setup page. You can configure all the fisheye settings on this page (see *6. Fisheye Settings*).

4. **Snapshot**

   Click the **Snapshot** button to take a snapshot. By default, the snapshot will be saved at C:\EverFocus\. To change the location, see *Record to Local* in *7.1.3 Storage*.
   Note: For Microsoft IE10 and above users, some settings have to be complete to enable this function (see *B. Snapshot/Record error message* in *10. Troubleshooting*).

5. **Record**

Click the **Record** button to start / stop recording the current video stream. By default, this icon is only for one-minute video recording and the recordings will be saved at C:\EverFocus\. To change the recording time, see *File Size* in *7.1.3 Storage*. To change the location, see *Record to Local* in *7.1.3 Storage*. To record long-period recordings, please set up a recording schedule (see *Schedule Settings* in *7.3.2 Event*). To change the source video stream and recording format, se*e Recording and Snapshot Settings* in *7.1.3 Storage*.

Note: For Microsoft IE10 and above users, some settings have to be complete to enable this function (see *B. Snapshot/Record error message* in *10. Troubleshooting*).

6. **Speaker / Microphone**

These buttons are only appeared if your camera features the audio cables. Click the **Speaker** and **Microphone** buttons to switch the sound on/off for the speakers and microphones respectively. To enable the icons, the speakers or microphones should be connected to the camera directly or via the network. To activate the Audio function, the **Enable Audio** must be selected. See *Audio Settings* in *7.2.1 Streaming and Audio*. Note that the camera provides a line in/out 3.5mm jack (TRS), therefore, speakers / microphones with a (built-in) amplifier and external power supply are required.

7. **Setting**

Click the **Setting** button to enter the Settings page (see *7. General Settings)*.

8. **Wizard**

Click the **Wizard** button to enter the Setup Wizard.

9. **Video Stream**

Select the Video Stream (Stream 1, Stream 2, Stream 3 or Stream 4) that will be displayed in the live view window. Stream 2, Stream 3 and Stream 4 are only selectable if you have enabled the stream (see *7.2.1 Streaming and Audio*). The default setting is Stream 1 only.

10. **View Size**

Use this to select the appropriate view size and shape of the video on the live view window. A smaller size might increase transmission speed and video quality.

11. **Language**

Click the Language drop-down list to select the desired language.

12. **Digital Zoom**

Click ![+-] to zoom in / out the camera view up to 10x. Clicking on a magnified image will re-center the image around that point.

13. **One Push**

    The **One Push** button can be displayed on the live view window by enabling the **Show One Push Buttons** function in the Live View Layout Settings (see *7.1.4 Display and Overlay*). For the

    White Balance   button to work, select **One Push** from the White Balance Mode drop-down list (see

    7.2.6 Image). Once this is done, clicking the **White Balance** button on the Live View Window will instruct the camera to adjust the white balance settings, and these settings will be active until the button is pushed again. This is like a "semi-automatic" way to adjust white balance to suit the user, if the Auto or Manual mode does not give the result the user wants.
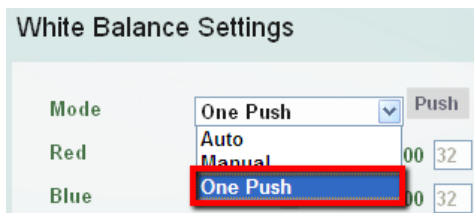
14. **Manual Control**

    Click the   Trigger Event   button to trigger an event directly from the Live View window. If you have

    configured an event (in the Event List) that will trigger a reaction (like a recording) when a *Manual Trigger* event occurs, clicking this button will trigger that reaction. You can select what that reaction will be. You can, for instance, set the camera to record the audio/video feed to the SD card on board the camera. You can then click on the **Playback** button to open the Playback page and search for and play all such recordings that had been stored on the card. Such event actions will be effective once they have been configured in the Event List (see *7.3.2 Event)*.

    Click the   Reset Alarm   button to reset the alarm output remotely. This button is only available if the camera features the alarm I/O cable.

15. **Status Display (info line that can be placed above video box or at bottom of page)**

    This shows the name of the camera that is currently active or being configured, current date/time and current frame rate. You can activate these info displays in the *Overlay Text Settings* (see *7.1.4 Display and Overlay*).

16. **Event signal icons (above video screen)**

    When an alarm or motion event is triggered, a signal icon will appear at the top right of the Live View window to alert the user.

    Alarm event icon 🔲 : When an alarm is triggered, this icon appears.

    Motion detection icons 🔲 🔲 🔲 🔲 : The colors of these motion event icons correspond to the colors of the motion trigger areas you have configured in the Motion Settings (see *7.3.2 Event*).

    Recording icon 🔴 : When the camera is recording to a PC-based folder, this icon appears.
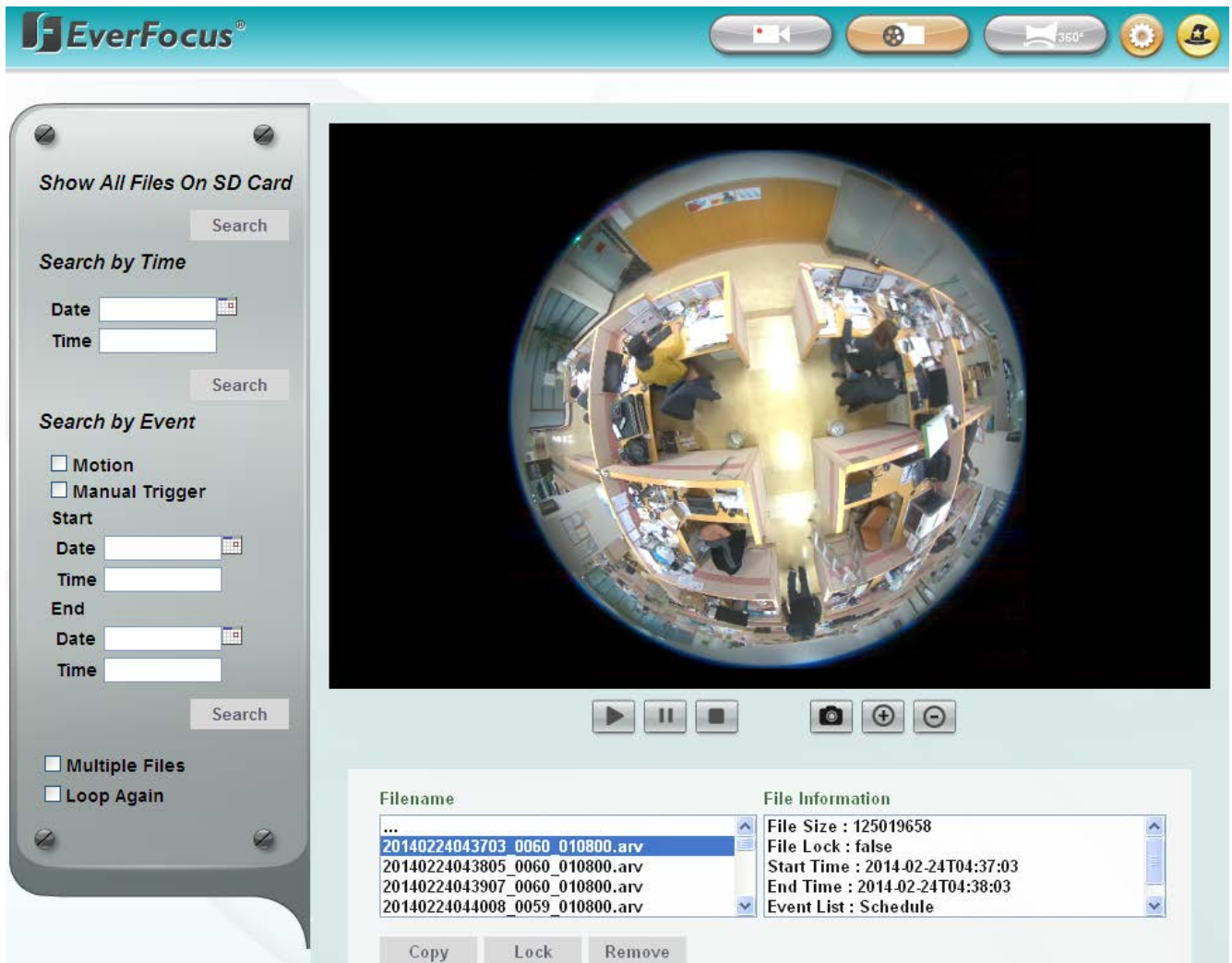
5. Playback

You can remotely play back the recordings stored in the on-camera SD card on the Web interface, or play back the recordings stored in the computer using the **ARV Viewer** included in the software CD.

Playback is designed as a quick way to check recent recordings that were triggered by Events that were configured to "Record to SD Card" in the Event Management (see *7.3.2 Event*).

Note: The Playback page is only accessible once the on-camera SD card is inserted and active. Please refer to *Appendix* for the tested card brands.

5.1　Remote Playback Using Playback Page

On the Live View Window, click the Playback button [icon] to enter the Playback page.

Search by File: Click the **Search** button to search for all recording files on the on-camera SD card. Search results will be displayed in the Filename area.

Search by Time: Click the **Date / Time** column and select the date and time from which you want to search until the present moment. Click **Search** to get your search results, which will be displayed in the Filename area.

Search by Event: Select the type of Event recordings you want to search for (Alarm, Motion, Manual Trigger) and then click the **Start Date / Time**; **End Date / Time** column to select the Start Time date/time and the End Time date/time of your search. Click **Search** to get your search results, which will be displayed in the Filename area.

Multiple Files: Check this box if you want the video player to play all the files in the selected folder. The files will be displayed in the Filename area.

Loop Again: Check this box if you want the video player to play the selected file over and over again.

Play: Once you have opened the file's folder and have clicked on the file to highlight it, its details will be displayed in the File Information area. You can now click **Play** ▶ to play that specific file.

Pause: Click ❚❚ to pause playing back.

Stop: Click ■ to stop playing back.

Snapshot: Click 📷 to take a snapshot.

Zoom In: Click ⊕ to zoom in.

Zoom Out: Click ⊖ to zoom out.

Filename: This area will display a list of search results (recording files and folders). Folders (named with the recorded date) will be displayed first. Click on the folder and click on each subfolder until the recording files (.arv) in that folder is listed.

File Information: Click a file on the Filename list, the selected file information will be listed.

Copy: Click to copy the selected file to the computer-based folder of your choice. A browsing box will open so that you can search for the folder of your choice. You can use the ARV Viewer to play back the recordings recorded in your computer. For details on ARV Viewer, see *5.3 Playing Back Using ARV Viewer*.

Lock: Click to lock the selected file. This will protect that file from being overwritten during any overwrite procedure. The file will thus be saved on the micro SD card indefinitely. However, the file will still be deleted if the micro SD card is ever formatted.

Remove: Click to delete the selected file.

5.2 Setting Up the Playback Function

Note that the Playback function will not be activated until the user has inserted a micro SD card in the camera's micro SD card slot. The card may also have to be formatted in the Secure Digital Card field (see *7.1.3 Storage*). For the tested card brands, please refer to *Appendix*.

Rear side of the camera   Push   Pull
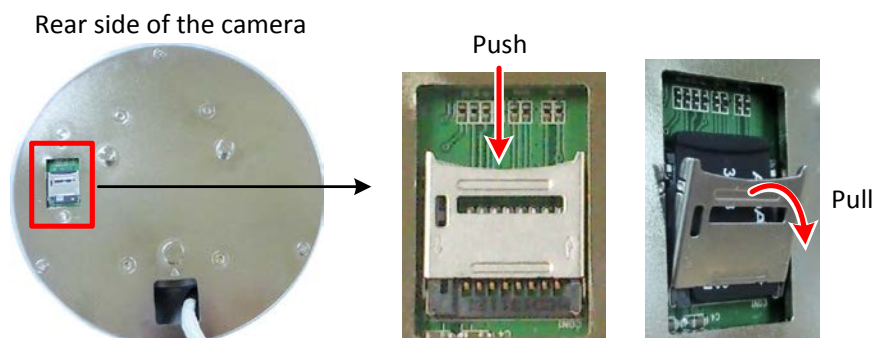
5.2.1 Inserting / Removing the SD Card

1. **To insert the SD card:** Remove the camera cover and insert the SD card into the SD card slot before powering on the camera.

2. **To remove the SD card:** Click the **Remove** button (System Settings > Storage > Secure Digital Card) when the camera is powered on, the SD card information "SD card is not mounted" will display and the Remove button will change to **Attach**, and then you may remove the SD card. If you want to insert the SD card again, insert the SD card and then click the **Attach** button.

After inserting the SD card into the SD card slot, the Playback button on the Live View page should be activated. If not, do the following:

1. Click the **Remove** button, pull the card out and re-insert it.

2. Click the **Format** button to format the card. NOTE: All data on the disk will be deleted if the Format button is clicked.

5.2.2   Testing the Playback Function

1. **To test the Playback function (this is not required),** set up a "Manual Trigger" Recording Event by clicking Event Settings > Event.

2. Give the event a name, like "Test 1".
3. In the "Event Triggered Type" field, click on Manual Trigger.
4. Below this, check "Enable This Event", "Enable Post-trigger Buffer", and "Record to SD Card".
5. To save your settings, click the **Create** button, and the Event will be listed in the Event List.

6. Look at the "Post-trigger Buffer" at the bottom to make sure the buffer time is set to 10 seconds. Click the **Apply** button.

7. Click the **LiveView** button to go back to the Live View page.

8. Get ready to click the **Trigger Event** button on the Live View page. Before you do, see if you can find something in the view screen that will give you a visual time marker. For instance, if you can get your hand in front of the camera's lens, get ready to count down on your fingers.

9. Click the **Trigger Event** button and slowly count down on your fingers in front of the lens (if you are able to do so – if not, try to find visual cues on the view screen that will help you to mark the moment you pushed the trigger). The recording period will be as long as the buffer time you selected – the default period is 10 seconds.

10. Click the **Playback** button to open the Playback page.

11. There are different ways to search for recording files on the camera's micro SD card (i.e. the Playback memory). For a recent recording like your test event, simply click the "Search" button under the "Show All Files on SD Card" header.

12. If the micro SD card is active and formatted correctly, the recording folder's name (the recording day's date) will appear in the Filename area. Click on this folder to open it. If there are sub-folders, click on the bottom one (the most recent would be at the bottom) until you can click on a file that cannot open to another sub-level and shows data in the File Information area to the right. This would be the file of the most recent recording event.

13. To play this file, click the **Play** button below the video box. The test footage you have recorded should start playing. Play time should be 10 seconds if you left the Post-trigger Buffer as 10 seconds.

5.3   Playing Back Using ARV Viewer

You can play back the recordings stored in the computer using the **ARV Viewer** included in the software CD. To store the recordings in the computer, please refer to Copy in *6.1 Remote Playback Using Playback Page*.

No.	Item Name	Descriptions
1	**Snapshot**	Click to take and save a snapshot.
2	**Load File**	Click to load the recordings for playing back.
3	**Convert ARV to AVI**	Convert the recording from ARV format to AVI format.
4	**Playback Time**	Display the playback time.
5	**Total Time of Recording**	Display the total time of the recording.
6	**Stop**	Click to stop playing the recording.
7	**Step Reverse**	Click to display the previous frame.
8	**Play**	Click to play back the recording.
9	**Pause**	Click to pause the recording.
10	**Step Forward**	Click to display the next frame.

6.   Fisheye Settings

You can configure the fisheye settings on this page.

6.1   Fisheye Settings Page

On the Live View Window, click the **Fisheye** button , the Fisheye Settings page appears. To

switch to the Live View Window, click to go to the General Settings page and then click .

The Fisheye Settings page is designed with two styles: **Dark** and **Light**. You can switch between the two styles by clicking the **UI Style Switch** button on the upper-left corner of the Fisheye Settings Page.

Light Style

Dark Style

Icon	Name: Descriptions
	UI Style Switch: Click to switch the user interface style between Dark and Light.
	Snapshot: Click the **Snapshot** button to take a snapshot. By default, the snapshot will be saved at C:\EverFocus\. To change the location, see *Record to Local* in *7.1.3 Storage*. **Note:** For Microsoft IE10 and above users, some settings have to be complete to enable this function (see *B. Snapshot/Record error message* in *10. Troubleshooting*).
	Recording: Click the **Record** button to start / stop recording the current video stream. By default, this icon is only for one-minute video recording and the recordings will be saved at C:\EverFocus\. To change the recording time, see *File Size* in *7.1.3 Storage*. To change the location, see *Record to Local* in *7.1.3 Storage*. To record long-period recordings, please set up a recording schedule (see *Schedule Settings* in *7.3.2 Event*). To change the source video stream and recording format, se*e Recording and Snapshot Settings* in *7.1.3 Storage*. **Note:** For Microsoft IE10 and above users, some settings have to be complete to enable this function (see *B. Snapshot/Record error message* in *10. Troubleshooting*).
	Audio: Click to turn on/off the audio function. This button is only appeared if your camera features the audio-out cable. Click to play the camera audio through the computer's speakers. To activate the Audio function, the **Enable Audio** must be selected. See *Audio Settings* in *7.2.1 Streaming and Audio*. Note that the camera provides a line out 3.5mm jack (TRS), therefore, speakers with a (built-in) amplifier and external power supply are required.
	Microphone: This button is only appeared if your camera features the audio-in cable. Click to switch the sound on/off for the microphones. To enable the icon, the microphones should be connected to the camera directly or via the network. To activate the microphone function, the **Enable Audio** must be selected. See *Audio Settings* in *7.2.1 Streaming and Audio*. Note that the camera provides a line in 3.5mm jack (TRS), therefore, microphones with a (built-in) amplifier and external power supply are required.
	Setting: Click to enter the general settings page (see *7. General Settings*).
	Playback: Click to switch to the Playback window. Please refer to *5.1 Remote Playback Using Playback Page*.
	ePTZ: Click to display the PTZ control panel for operating the fisheye PTZ function (see *6.2 PTZ Settings*).
	eZ Tracker: Click to enter the eZ Tracker Setting page for operating the eZ Tracker function and calibrating the images between the fisheye and speed dome camera (see *6.3 eZ Tracker*).
	View Mode: Click to select a view mode. The options vary among different mounting types (see *6.4 View Mode*).

6.2 ePTZ Settings

You can operate the Preset points, Auto Pan and Sequence functions on this page. Up to 30 preset points can be configured. To enter the PTZ Settings page, on the Fisheye Settings page, click .
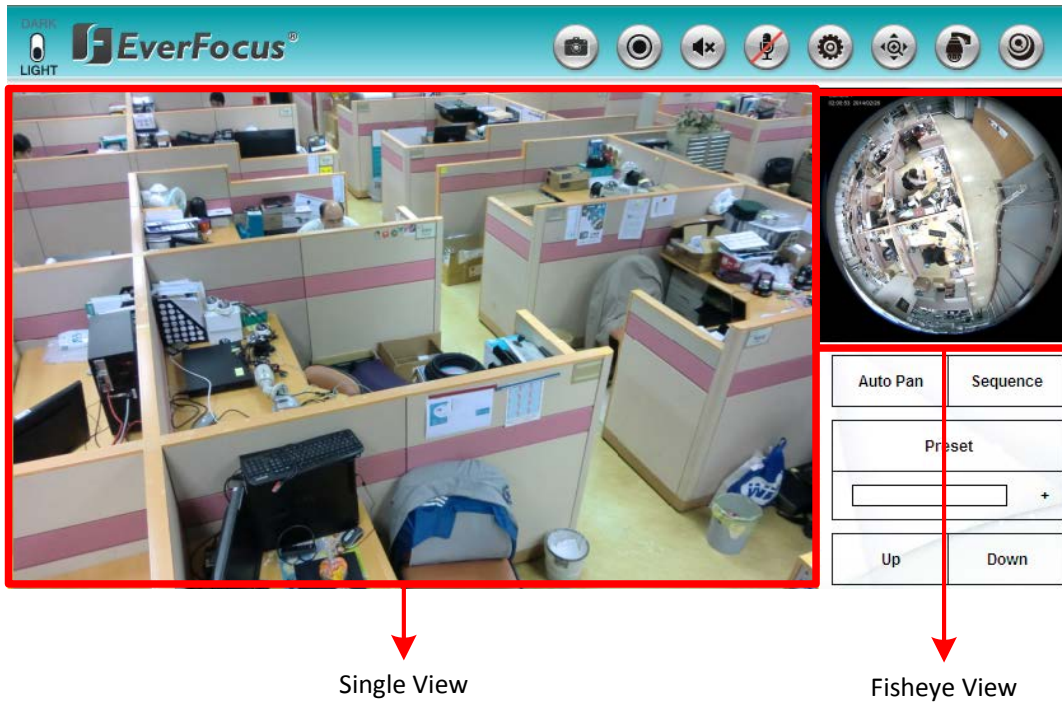

Single View   Fisheye View

You can navigate the camera live view through the **Fisheye View** or **Single View** window. The Fisheye View window displays a 360° surround view; while the Single View window displays the dewarped view, which converts the fisheye view into a conventional rectilinear view.

Fisheye View Window

Move your mouse cursor over the Fisheye View window and then click to force the camera to aim the clicked position as the center of the image. The centered-on image will be displayed on the Single View window. By default, the Single View displays the central position of the Fisheye View. You can also operate the following functions on the Fisheye View window. The corresponding actions will be displayed on the Single View window.

- **Zoom In / Out:** Click to select a position to zoom, and then scroll the mouse up or down. The zoom in / out actions will be displayed on the Single View window.
- **Camera View Navigation:** Click and hold the mouse cursor and then drag the mouse to navigate. The navigation will be displayed on the Single View window.

Single View Window

Click on the Single View window, an orange indicator will be displayed on the Fisheye View window to indicate the position where you click on the Single View window. By default, the Single View displays the central position of the Fisheye View. You can also operate the following functions on the Single View window.

- **Zoom In / Out:** Click to select a position to zoom, and then scroll the mouse up or down. The orange indicator on the Fisheye View will also be enlarged / minimized.
- **Camera View Navigation:** Click and hold the mouse cursor and then drag the mouse to navigate. The orange indicator on the Fisheye View will also be moved to indicate the position where you navigate on the Single View window.

To create the preset points:

1. Select a desired position on the Fisheye View or Single View window.
2. Type a name in the column for the selected position.

3. Click the **+** button, the position (preset point) will be listed.

4. Follow Step 1 to 3 to create multiple preset points. Up to 30 preset points can be created.
5. Click on the created preset points will force the camera to go to the positions.

6. To delete the created preset points, click **X**. To display the upper or lower preset points, click the **up** or **down** button.

To set up the sequence:

The camera can display the selected preset points in a sequence order. Each position is applied with a dwell time of 5 seconds. Click the **Sequence** button to start the function. The button will turn grey when the function is enabled. Click the button again to disable the function. Note that to enable the Sequence function, you have to create the preset points first.

1. Check the boxes to select the positions for setting up the sequence.

Preset	
1	+

up	down	
☑	1	X
☐	2	X
☑	3	X
☐	4	X
☑	5	X

2. Click the **Sequence** button to start the function and the button will turn grey. Click the button again to stop the function.

Auto Pan	Sequence

To start / stop the Auto Pan function:

You can force the camera to pan automatically by clicking the **Auto Pan** button. The button will turn grey when the function is enabled. Click the button again to disable the function. For ceiling mount and desk mount cameras, click the **Auto Pan** button will force the camera to pan 360° endlessly. For wall mount cameras, click the Auto Pan button will force the camera to pan between a left and right positions.
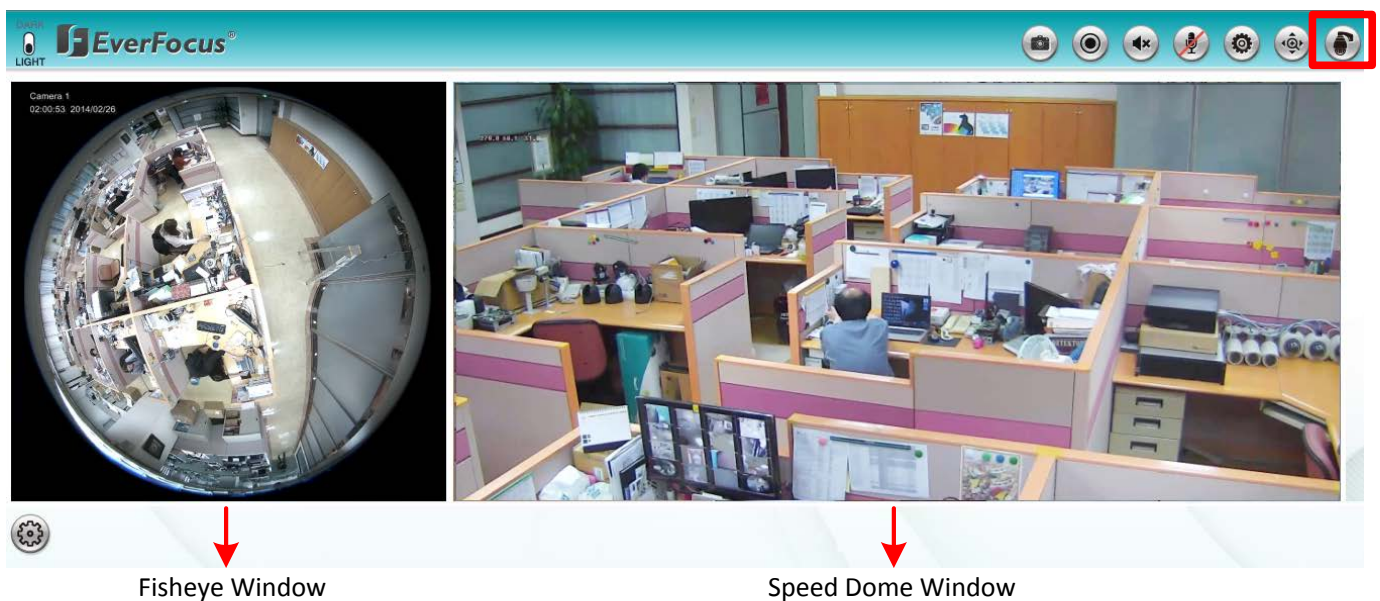
6.3   eZ Tracker

The eZ Tracker is a cutting-edge technology that realizes the synergy of EverFocus network fisheye and speed dome cameras. This technology not only obtains advantages from both types of cameras but also creates new value for wide-area surveillance without compromising the optimal image quality.

The eZ Tracker function allows users to control the speed dome camera through fisheye camera Web UI. This function can be easily operated using a mouse. Click a desired location on the 360° surround view from the fisheye camera and the speed dome camera will be exactly triggered to track the location. You can then utilize the smooth PTZ function on the speed dome camera view to zoom in or focus on a region of interest. Meanwhile, you can monitor all the movements from the 360° surround view.

Note: The supported speed dome cameras for the eZ Tracker function include all EverFocus EPN series.

Fisheye Window   Speed Dome Window

Icon	Name: Descriptions
	Snapshot: Click the **Snapshot** button to take a fisheye snapshot. By default, the snapshot will be saved at C:\EverFocus\. To change the location, see *Record to Local* in *7.1.3 Storage*. **Note:** For Microsoft IE10 and above users, some settings have to be complete to enable this function (see *B. Snapshot/Record error message* in *10. Troubleshooting*).
	Recording: Click the **Record** button to start / stop recording the current fisheye video stream. By default, this icon is only for one-minute video recording and the recordings will be saved at C:\EverFocus\. To change the recording time, see *File Size* in *7.1.3 Storage*. To change the location, see *Record to Local* in *7.1.3 Storage*. To record long-period recordings, please set up a recording schedule (see *Schedule Settings* in *7.3.2 Event*). To change the source video stream and recording format, see *Recording and Snapshot Settings* in *7.1.3 Storage*. **Note:** For Microsoft IE10 and above users, some settings have to be complete to enable this function (see *B. Snapshot/Record error message* in *10. Troubleshooting*).

🔊	**Audio:** Click to turn on/off the audio function. This button is only appeared if your camera features the audio-out cable. Click to play the camera audio through the computer's speakers. To activate the Audio function, the **Enable Audio** must be selected. See *Audio Settings* in *7.2.1 Streaming and Audio*. Note that the camera provides a line out 3.5mm jack (TRS), therefore, speakers with a (built-in) amplifier and external power supply are required.
🎤	**Microphone:** This button is only appeared if your camera features the audio-in cable. Click to switch the sound on/off for the microphones. To enable the icon, the microphones should be connected to the camera directly or via the network. To activate the microphone function, the **Enable Audio** must be selected. See *Audio Settings* in *7.2.1 Streaming and Audio*. Note that the camera provides a line in 3.5mm jack (TRS), therefore, microphones with a (built-in) amplifier and external power supply are required.
⚙	**Setting:** Click to enter the general settings page (see *7. General Settings*).
🎮	**ePTZ:** Click to display the PTZ control panel for operating the fisheye PTZ function (see *6.2 PTZ Settings*).
👆	**eZ Tracker:** Click to enter the eZ Tracker Setting page for operating the eZ Tracker function and calibrating the images between the fisheye and speed dome camera (see *6.3 eZ Tracker*).

6.3.1 Installation Notice

Before using the eZ Tracker function, you have to install the fisheye and speed dome cameras correctly. Ensure the following steps are properly done.

1. The fisheye camera must be installed with Ceiling Mount (see *6.1 Ceiling / Desk Mount*). The eZ Tracker function can only be applied for fisheye cameras mounted onto the Ceiling.
2. The distance between the fisheye and speed dome cameras is suggested to be as close as possible. And the lenses of both cameras should be aligned horizontally (speed dome camera lens face down).

Horizontally align the lenses

Distance as close as possible

6.3.2   Configuration

On the Fisheye Setting page, click the eZ Tracker icon [icon] to enter the eZ Tracker setting page. To enable the eZ Tracker function, you have to connect the speed dome camera to the fisheye camera and then configure the calibration setting. Click the **Calibration Setting** [icon] button, the online setup wizard will display the setup instructions. Follow the on-screen instructions or the below setup steps to complete the calibration setting.
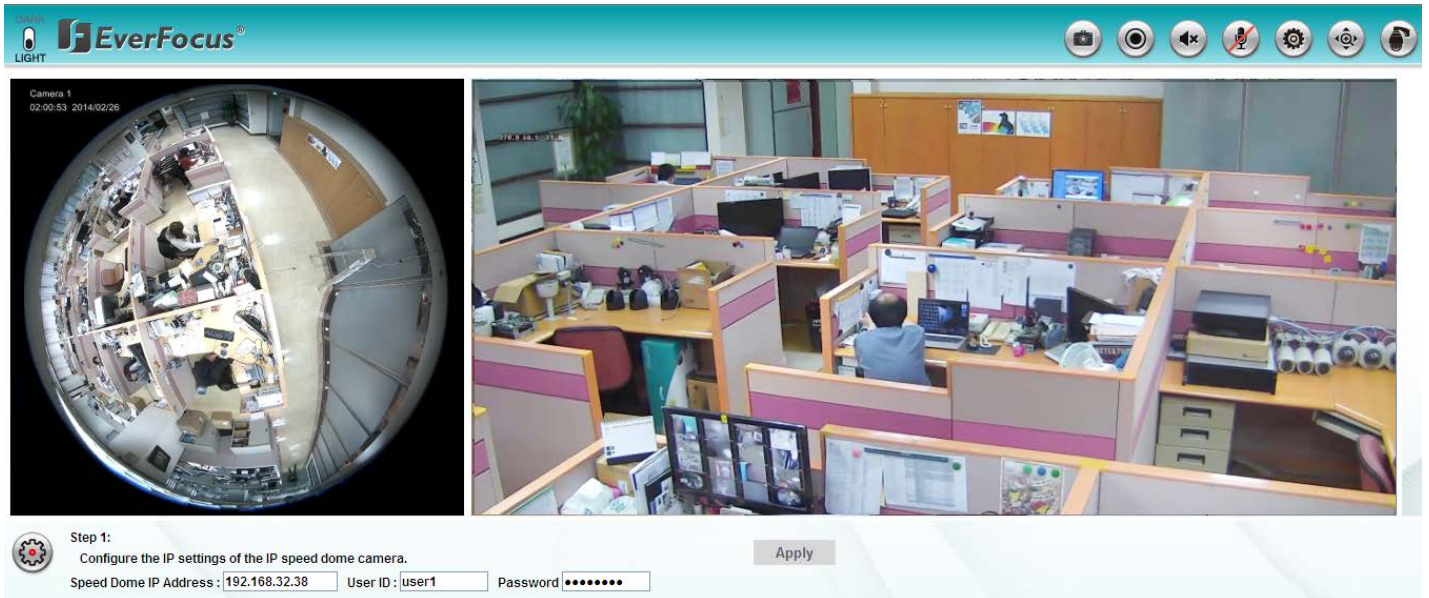

1.   To connect the speed dome camera to the fisheye camera, click the **Calibration Setting** [icon] button, the Step 1 Instruction appears. Type the IP address and user ID / Password of the speed dome camera.

2.   After clicking the **Apply** button, the Step 2 Instruction appears. And the speed dome window will be highlighted with a yellow frame.
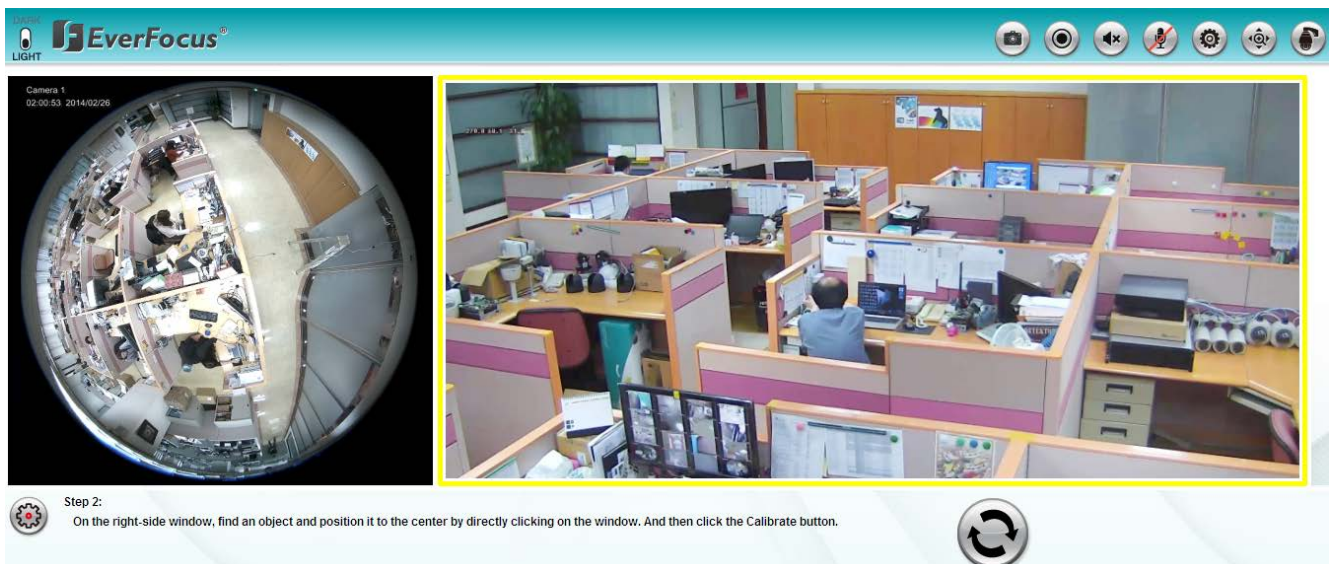
3. Find an object in the speed dome window and position it to the center by directly clicking on the window. You can refer to the image below for moving the speed dome image. For example, if you click on the left-arrow image division, the camera will go left. Repeat this until the target object is adjusted to the center of the window.
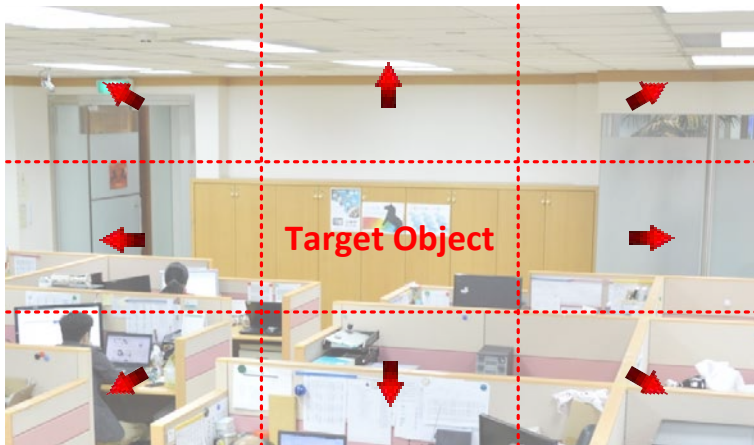
Target Object

4. When the target object is placed to the center window of the speed dome, click the **Calibrate** button, the fisheye window should be highlighted with a yellow frame.

5. On the fisheye window, find the target object you placed in the center of the speed dome window, and then click it.

Click it   Target Object
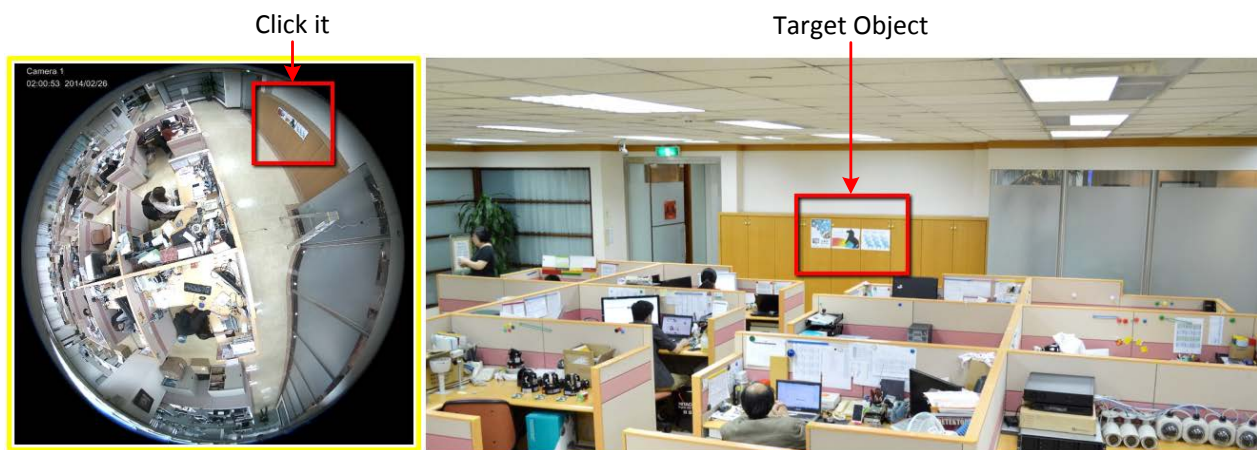
6. Test the calibration result by clicking any location on the fisheye window, and the location should be displayed on the center of the speed dome window.

   a. If the calibration result is ok. Click the **OK** button to complete the setting.

   b. If you want to fine-tune the calibration, click the **Fine Adjustment** button.

   c. If you want to retry the calibration, click the **Retry** button.

7. After clicking the **Fine Adjustment** button, an yellow square should appear on the fisheye window. On the speed dome window, find the object inside the yellow square of the fisheye window, and use the Left or Right Arrow ⬅ ➡ buttons to move the speed dome window in order to make the object place to the center of the window. The system will calibrate the images automatically every time when you click the Arrow buttons.

Click the Left Arrow button to move the speed dome window in order to make this object place to the center of the window.

8. Test the calibration result. Click any position on the fisheye window, and the speed dome camera will track the position and display the field of view.
9. Optionally repeat Step 7 and 8 to fine-tune the calibration.
10. Click the **OK** button to complete the setting.

6.4 View Mode

You can select a mode to display the camera view. Note that the mode options vary among mounting types.
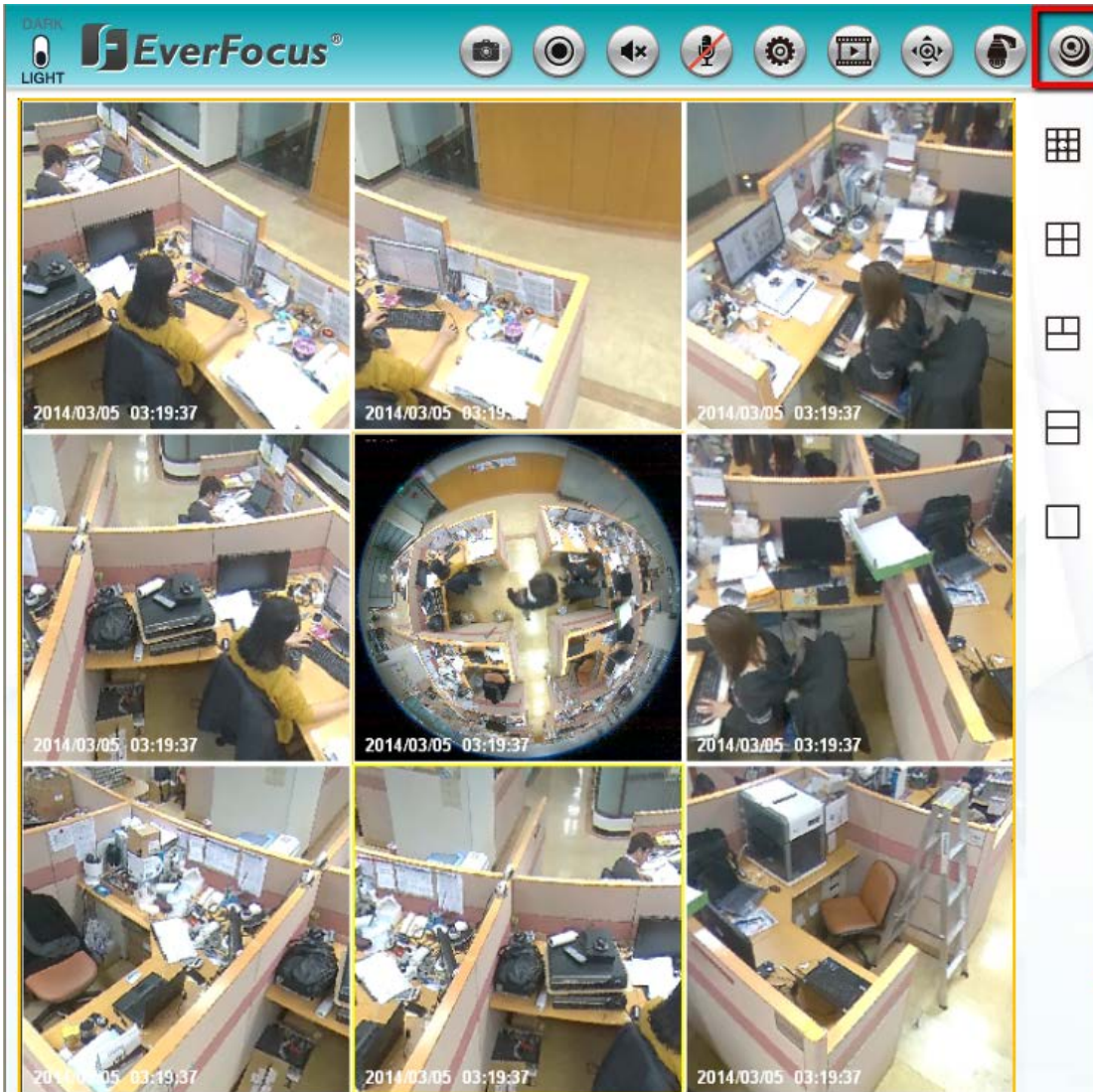
Ceiling Mount

- 9-Division: 1 Fisheye view + 8 dewarped views.
- Quad View: 4 dewarped views.
- 360 Degree: 2 dewarped views + 1 panoramic view (360°).
- Dual 180 Degree: Two 180° views.
- Single View: 1 dewarped view.

Desk Mount

- 9-Division: 1 Fisheye view + 8 dewarped views.
- Fisheye View: 1 fisheye view.
- Dual 180 Degree: Two 180° views.
- Single View: 1 dewarped view.

Wall Mount

- Wall 180 Degree: One 180° view.
- Quad View: 4 dewarped views.
- Single View: 1 dewarped view.

9-Division (only for Ceiling / Desk mount)
1 Fisheye view + 8 dewarped views

The following actions can be operated on this window.

- Click to select a dewarped view, the selected view will be highlighted with a yellow frame, and an orange indicator will be displayed on the fisheye view to indicate the location of the selected dewarped view.
- Change location of the 8 dewarped views:
  a. On the fisheye view, drag the orange indicator and drop it to the desired location.
  b. On the dewarped view:

  Desk Mount: Click and hold the mouse cursor and then drag the mouse to the left / right to select a location.

  Ceiling Mount: Click and hold the mouse cursor and then drag the mouse anywhere to select a location.
- Zoom in / out: Click to select a dewarped view, the selected view will be highlighted with a yellow frame. Click on the dewarped view to select a position, and then scroll the mouse up or down to zoom in / out.

360 Degree (only for Ceiling mount)
2 dewarped views + 1 panoramic view (360°)

The following actions can be operated on this window.

- Change dewarped view location: Click to select a dewarped view, the selected view will be highlighted with a yellow frame. Click and hold the mouse cursor and then drag the mouse to select a location.
- Zoom in / out: Click to select a dewarped view, the selected view will be highlighted with a yellow frame. Click on the dewarped view to select a position, and then scroll the mouse up or down to zoom in / out.
- On the 360° panoramic view: Click and hold the mouse cursor and then drag the mouse to the left / right to select a location.

	Dual 180 Degree (only for Ceiling / Desk mount) Two 180° views

Change 180° view location: Click and hold the mouse cursor on either of the 180° view, and then drag the mouse to the left / right to select a location. The other 180° view will be moved accordingly.

	Wall 180 Degree (only for Wall mount) One 180° view

The Wall 180° Degree is only available for Wall Mount. The angle of view is fixed and cannot be changed. The Zoom function is disabled on this window.

Fisheye View (only for Desk mount)
1 fisheye view

The fisheye view is only available for Desk Mount. The Zoom function is disabled on this window.

Quad View
4 dewarped views

The following actions can be operated on this window.

- Change dewarped view location: Click to select a dewarped view, the selected view will be highlighted with a yellow frame. Click and hold the mouse cursor and then drag the mouse to select a location.

- Zoom in / out: Click to select a dewarped view, the selected view will be highlighted with a yellow frame. Click on the dewarped view to select a position, and then scroll the mouse up or down to zoom in / out.

Single View
1 dewarped view

The following actions can be operated on this window.
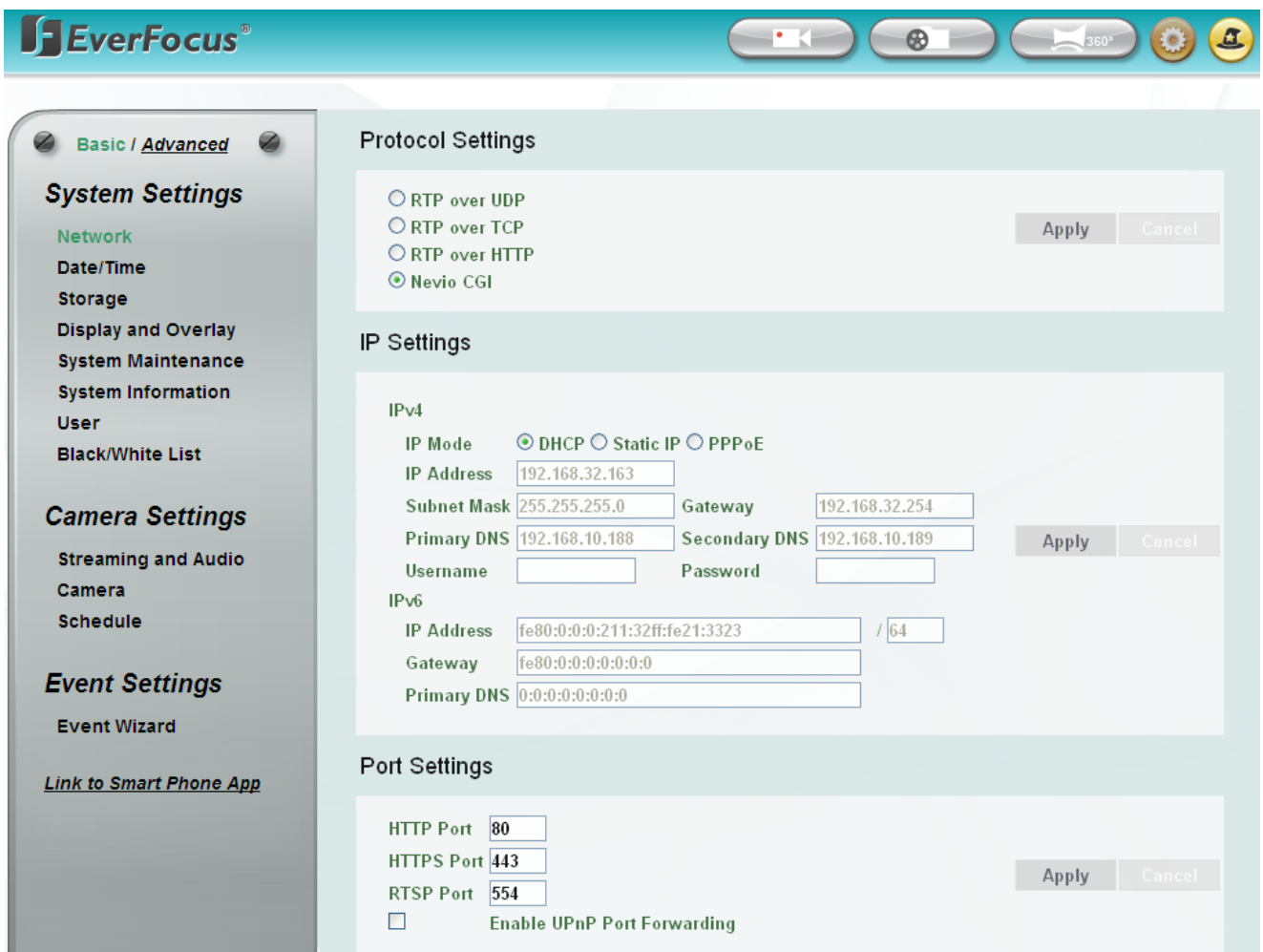
- Change single view location:
  Desk Mount: Click and hold the mouse cursor and then drag the mouse to the left / right to select a location.
  Ceiling / Wall Mount: Click and hold the mouse cursor and then drag the mouse anywhere to select a location.

- Zoom in / out: Click on the single view to select a position, and then scroll the mouse up or down to zoom in / out.

7. General Settings

Click the **Setting** button ⚙ on to enter the general settings page. There are two tabs: Basic and Advanced on the left-side bar. You can set up the basic camera settings in the **Basic** tab. To further set up comprehensive camera settings, click the **Advanced** tab, which includes all the settings to be configured. The chapters below describe the detailed information of the Advanced tab. To go back to the Live View window, click the **Live View** button [▪📹]. To go back to the Fisheye Settings page, click the

Fisheye button [🔲360°].

7.1 System Settings

7.1.1 Network

【**Protocol Settings**】You can transmit the data stream from the IP cameras using the RTSP (Real Time Streaming Protocol) on the network. The RTSP is a protocol that allows you to access video streams by using the compatible media players. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

- **RTP over UDP:** The RTSP protocol uses UDP for camera data stream transmission.
- **RTP over TCP:** The RTSP protocol uses TCP for camera data stream transmission.
- **RTP over HTTP:** The RTSP protocol uses HTTP for camera data stream transmission.
- **Nevio CGI:** This is EverFocus' protocol designed for EverFocus' IP devices. Select this protocol for camera data stream transmission.

【**IP Settings**】Enter the IPv4 / IPv6 details in this area, which applies to your system. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

- **IPv4:**

  IP Mode: Refer to the network administrator for these settings of the server. **Default: DHCP.**

  - **DHCP:** This setting lets the system use an automatically assigned (dynamic) IP address. This address can change under certain circumstances. For instance, when the camera's network switch/hub has to be rebooted. Do not assign to the DHCP server the same IP addresses used for the other network cameras and PCs with unique IP addresses.
  - **Static IP:** The user can manually set the Static IP address. This type of address is stable and cannot change, but the user has to make sure there are no address conflicts with other network-connected devices.
  - **PPPoE:** This is a DSL-connection application. The ISP will ask the user to input a username and password. Contact your ISP for these details.

    Note: If PPPoE is selected as the IP type, the supplied IP Utility program will not be able to detect the device.

  IP address: When DHCP is not used, the user needs to manually enter the IP address of the camera. Do not enter an IP address that is already used for your computer or other network cameras.

  Subnet Mask: This field is used to set the subnet mask for your network, so that the IP camera will be recognized within the network. Example: 255.255.255.0. When DHCP is selected, the DHCP server will assign this value automatically.

  Gateway: This field is used to set the gateway for your network so that the IP camera will be recognized within the network. When DHCP is selected, the DHCP server will assign this value automatically.

  Primary DNS: Enter the IP address of the DNS server if this is provided by an ISP.

  Secondary DNS: If your ISP provided you with a secondary DNS address, please enter it here.

  Username: Enter the account's username (used only for PPPoE).

  Password: Used only for PPPoE.

- **IPv6:** Enter the IPv6 details in this area, if this applies to your system.

【**Port Settings**】 Enter the HTTP, HTTPS and RTSP port numbers. Check the **Enable UPnP Port Forwarding** box to enable the UPnP function. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

Promoted by the UPnP Forum (Universal Plug and Play), the UPnP is a networking architecture providing compatibility among networked devices listed in the networked device table. Enable the UPnP function means you can directly connect the cameras listed in the networked device table by clicking on them.

> **Note:**
> 1.   For the UPnP function to work, an UPnP-enabled router is required.
> 2.   The UPnP function may fail owing to the compatibility between the camera and the router.

【**Multicast Settings**】 This function can only be set up in the **Advanced** tab. Enable if required, fill in the setting options and click **Apply** to save.

【**DDNS Settings**】 This function can only be set up in the **Advanced** tab. DDNS (Dynamic Domain Name System) is a service used to map a domain name to the dynamic IP address of a network device. You can set up the DDNS service for remote access to the IP camera. DDNS assigns a domain name (URL) to the IP camera, so that the user does not need to go through the trouble of checking if the IP address assigned by DHCP Server has changed. Once the IP is changed, the IP camera will automatically update the information to the DDNS to ensure it is always available for remote access. Before enabling the following DDNS function, user should have applied for a host name from the DDS service provider's website. We support these four DDNS server providers: www.everfocusddns.com, www.sitelutions.com, www.dyndns.com, and www.no-ip.com

> **Note:** We highly recommend that you use **xxxx**.**everfocusddns.com** for the simplicity of setting up your IP cameras.

- **Enable** Service **ISP**: Check this box to enable the DDNS function. You can either apply for a host name from **EverFocus** or **other DDNS server providers**.
  - **From EverFocus:** If you choose the EverFocus DDNS server, you can obtain a free host name from EverFocus. To obtain a free host name from EverFocus, type a desired host name in the textbox, click the **Register / Update** button, and then click the **Apply** button.
  - **From other DDNS server providers:** To obtain a domain name from one of the three DDNS server providers, you have to register your name with the provider first, and then select the provider and fill in the required information. Please refer to the specific DDNS company's website for further information.
    Record ID: Type the record ID if provided by the DDNS server provider.
    FQDN: Type the fully qualified domain name applied from the DDNS server provider. For example, xxxx.dyndns.com
    Username / Password: Type the login account of your DDNS server provider.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

> **Note:**
>
> 1. In order to support the full functionality of the camera, you must open the port numbers (80, 554, 443) on the router for remote access to the IP camera. This function is available on most routers in the market and is often known as "Port Forwarding". To set up Port Forwarding, please consult the manual of the router.
>
> 2. In certain router models, it is possible that you will not be able to access the camera using DDNS while inside the router's network. Please try using a PC located outside of your router's network.
>
> **Default Ports on All EverFocus IP Cameras:**
> HTTP: 80
> RTSP: 554
> HTTPS: 443

【**HTTPS Settings**】This function can only be set up in the **Advanced** tab. Hypertext Transfer Protocol Secure (HTTPS) is a combination of the Hypertext Transfer Protocol and the SSL/TLS protocol that provides encrypted communication and secure identification of a network web server. Before using the HTTPS function for communication with the IP camera, a Certificate must be created first. There are two ways to create and install a certificate: **Self-Signed Certificated** and **Certificate Request**.

Self-Signed Certificated

Please note that even though self-signed certificates are free and offer some protection, true security is only implemented after the installation of a signed certificate issued by a certificate authority.
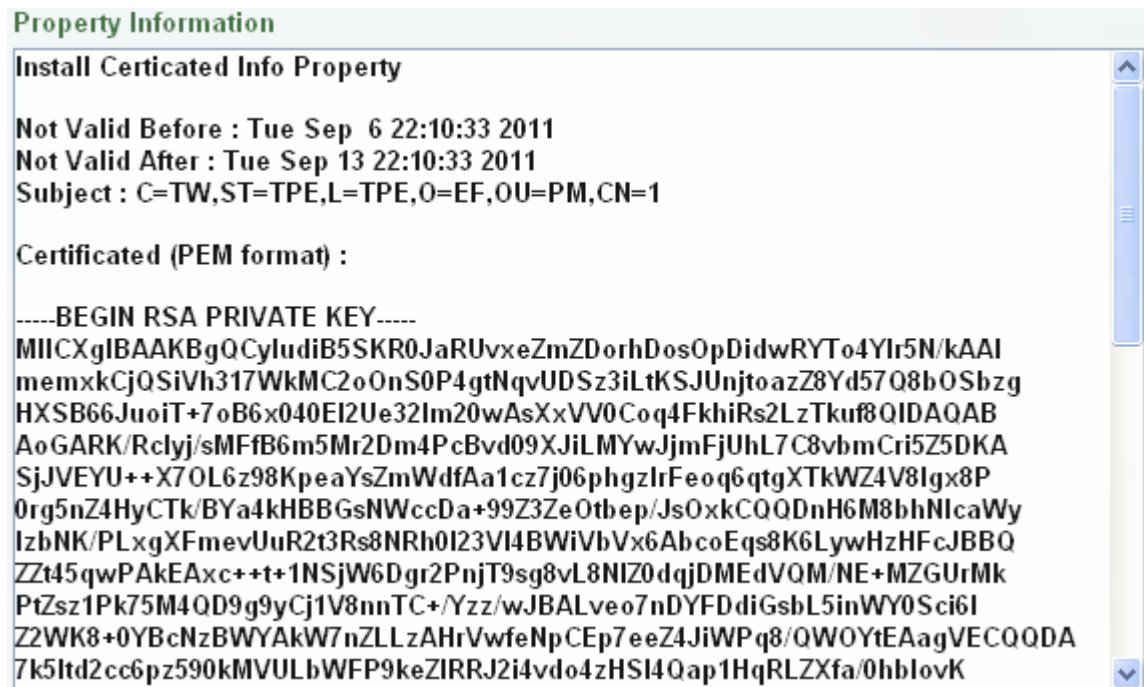
1. Select **Self-Signed Certificated** and fill in the following information.

Create Certicated Mode	⊙ Self-signed Certicated ○ Certificate Request
Country Name	TW
State or Province Name	TPE
Locality Name	TPE
Organization Name	EF
Organization Unit Name	PM
Common Name	1
Email	everfocus@everfocus.c
Validity	7 Day

2. Click the **Apply** button. The subject line will be displayed in the Install Certificated Info field.

| Install Certicated Info | C=TW,ST=TPE,L=TPE,O=EF,OU=PM,CN=1 | Property | Remove |

3. Click the **Property** button, a pop-up window appears to display the details of the certificate.

Property Information

Install Certicated Info Property

Not Valid Before : Tue Sep 6 22:10:33 2011
Not Valid After : Tue Sep 13 22:10:33 2011
Subject : C=TW,ST=TPE,L=TPE,O=EF,OU=PM,CN=1

Certificated (PEM format) :

-----BEGIN RSA PRIVATE KEY-----
MIICXgIBAAKBgQCyludiB5SKR0JaRUvxeZmZDorhDosOpDidwRYTo4YIr5N/kAAI
memxkCjQSiVh317WkMC2oOnS0P4gtNqvUDSz3iLtKSJUnjtoazZ8Yd57Q8bOSbzg
HXSB66JuoiT+7oB6x040EI2Ue32Im20wAsXxVV0Coq4FkhiRs2LzTkuf8QIDAQAB
AoGARK/Rclyj/sMFfB6m5Mr2Dm4PcBvd09XJiLMYwJjmFjUhL7C8vbmCri5Z5DKA
SjJVEYU++X7OL6z98KpeaYsZmWdfAa1cz7j06phgzIrFeoq6qtgXTkWZ4V8Igx8P
0rg5nZ4HyCTk/BYa4kHBBGsNWccDa+99Z3ZeOtbep/JsOxkCQQDnH6M8bhNIcaWy
IzbNK/PLxgXFmevUuR2t3Rs8NRh0I23VI4BWiVbVx6AbcoEqs8K6LywHzHFcJBBQ
ZZt45qwPAkEAxc++t+1NSjW6Dgr2PnjT9sg8vL8NIZ0dqjDMEdVQM/NE+MZGUrMk
PtZsz1Pk75M4QD9g9yCj1V8nnTC+/Yzz/wJBALveo7nDYFDdiGsbL5inWY0Sci6I
Z2WK8+0YBcNzBWYAkW7nZLLzAHrVwfeNpCEp7eeZ4JiWPq8/QWOYtEAagVECQQDA
7k5Itd2cc6pz590kMVULbWFP9keZIRRJ2i4vdo4zHSI4Qap1HqRLZXfa/0hbIovK

4. To optionally create and install other certificates, remove the existing one by clicking the **Remove** button to erase the certificate.
5. On the Web page, change the address from "http://" to https:// in the address bar and press Enter on the keyboard. Some Security Alert dialogs will pop up. Click **OK** or **Yes** to enable HTTPS.

Create Certificate Request
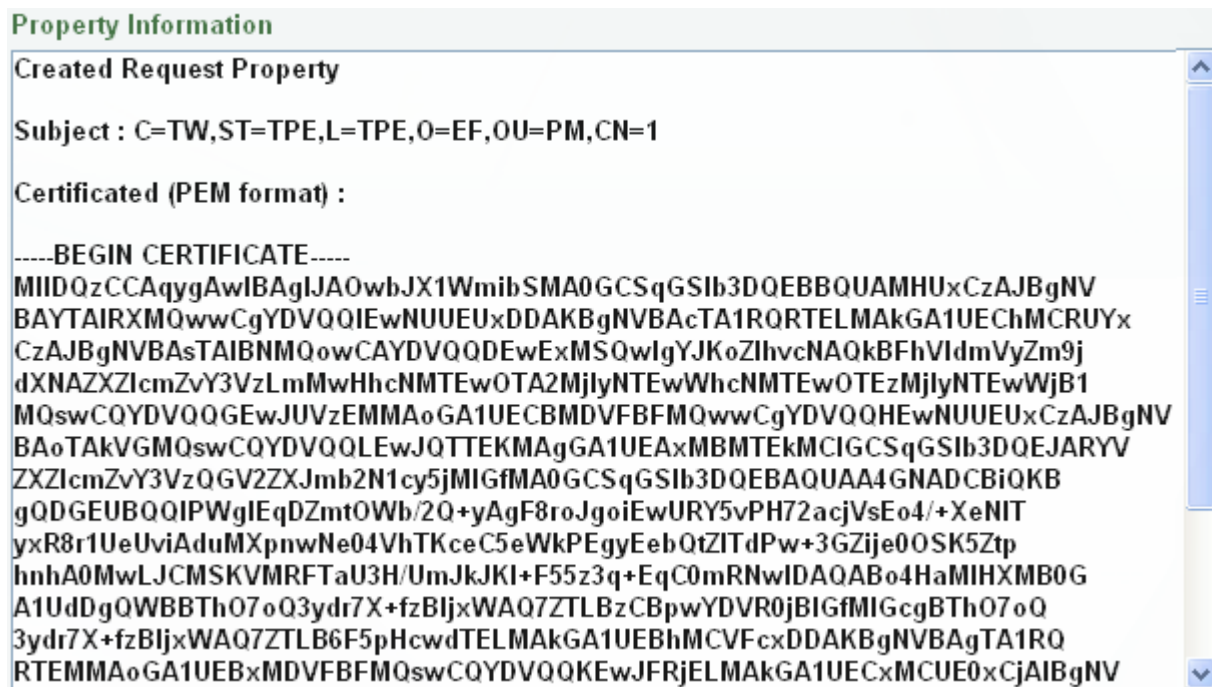You can apply for an official certificate from an issuing Certificate Authority.

1. Select **Certificate Request** and fill in the following information.

Create Certicated Mode	○ Self-signed Certicated ⦿ Certificate Request
Country Name	TW
State or Province Name	TPE
Locality Name	TPE
Organization Name	EF
Organization Unit Name	PM
Common Name	1
Email	everfocus@everfocus.c
Validity	7 Day

2. Type the required Certificate information and then click the **Apply** button. The subject line will be displayed in the Created Request field

| Created Request | C=TW,ST=TPE,L=TPE,O=EF,OU=PM,CN=1 | Property | Remove |

3. Click the **Property** button, a pop-up window appears to display the details of the certificate.

Property Information

Created Request Property

Subject : C=TW,ST=TPE,L=TPE,O=EF,OU=PM,CN=1

Certificated (PEM format) :

-----BEGIN CERTIFICATE-----
MIIDQzCCAqygAwIBAgIJAOwbJX1WmibSMA0GCSqGSIb3DQEBBQUAMHUxCzAJBgNV
BAYTAIRXMQwwCgYDVQQIEwNUUEUxDDAKBgNVBAcTA1RQRTELMAkGA1UEChMCRUYx
CzAJBgNVBAsTAIBNMQowCAYDVQQDEwExMSQwIgYJKoZIhvcNAQkBFhVldmVyZm9j
dXNAZXZlcmZvY3VzLmMwHhcNMTEwOTA2MjlyNTEwWhcNMTEwOTEzMjlyNTEwWjB1
MQswCQYDVQQGEwJUVzEMMAoGA1UECBMDVFBFMQwwCgYDVQQHEwNUUEUxCzAJBgNV
BAoTAkVGMQswCQYDVQQLEwJQTTEKMAgGA1UEAxMBMTEkMCIGCSqGSIb3DQEJARYV
ZXZlcmZvY3VzQGV2ZXJmb2N1cy5jMIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKB
gQDGEUBQQIPWgIEqdZmtOWb/2Q+yAgF8roJgoiEwURY5vPH72acjVsEo4/+XeNIT
yxR8r1UeUviAduMXpnwNe04VhTKceC5eWkPEgyEebQtZITdPw+3GZije0OSK5Ztp
hnhA0MwLJCMSKVMRFTaU3H/UmJkJKI+F55z3q+EqC0mRNwIDAQABo4HaMIHXMB0G
A1UdDgQWBBThO7oQ3ydr7X+fzBljxWAQ7ZTLBzCBpwYDVR0jBIGfMIGcgBThO7oQ
3ydr7X+fzBljxWAQ7ZTLB6F5pHcwdTELMAkGA1UEBhMCVFcxDDAKBgNVBAgTA1RQ
RTEMMAoGA1UEBxMDVFBFMQswCQYDVQQKEwJFRjELMAkGA1UECxMCUE0xCjAIBgNV

4. To optionally create and install other certificates or request, remove the existing one by clicking the **Remove** button to erase the certificate or request.

5. Copy the contents of the Certificate request (in PEM format) and paste it to the certificate request field on the Web page of the 3rd-party certification authority such as Symantec VeriSign. Wait for the certificate authority to issue an SSL/TLS certificate and then download the issued certificate on your computer.

6. In the Install Signed Certificated field, click the **Browse** button to search for the issued certificate, and then click the **Upload** button to import the certificate. Once the certificate has been uploaded, this field will show the subject line of the certificate.

7.1.2 Date / Time

You can set up the system's time on this page.
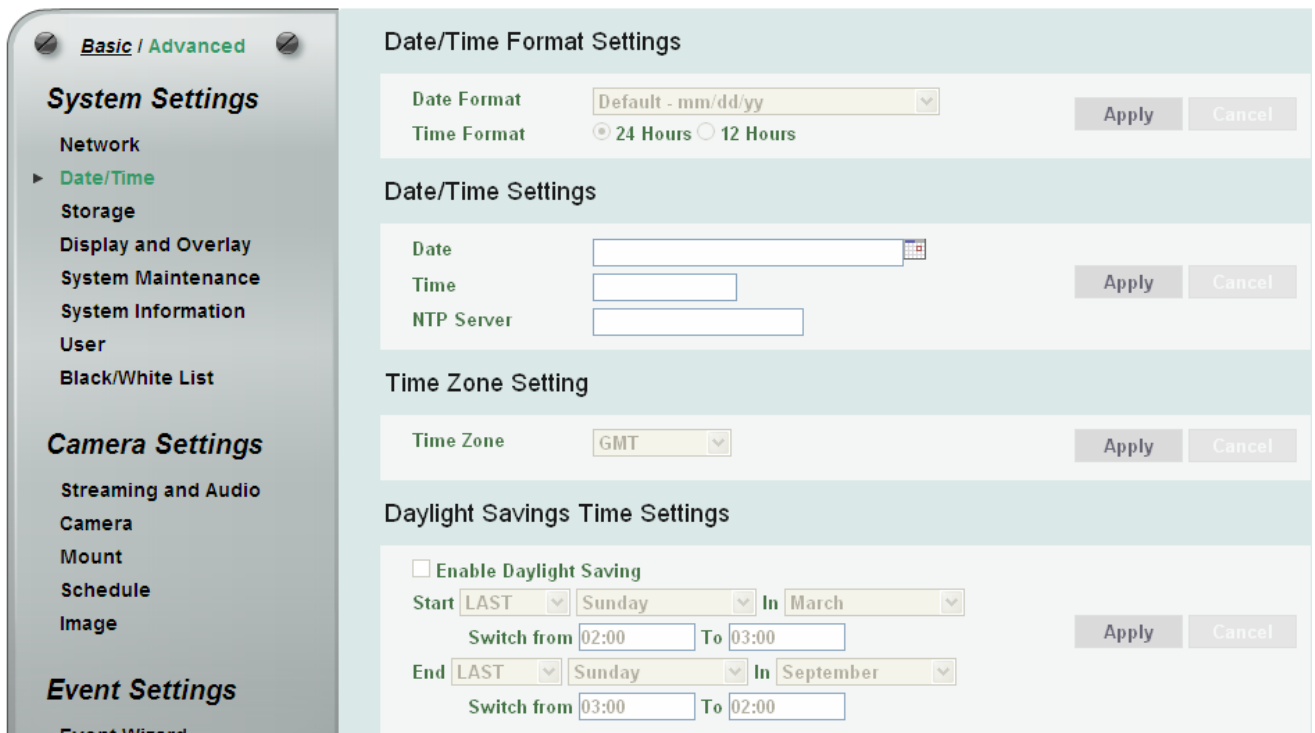
【**Date/Time Format Settings**】Select the desired Date / Time format and then click the **Apply** button. To enable displaying the date and time information on the Live View Window, you have to check the **Date/Time** box in the Overlay Text Settings (see *7.1.4 Display and Overlay*).

【**Date/Time Settings**】
- **Manual**: Set the date/time if you won't be using an NTP server to update the date/time. Click **Apply** to save the setting.
- **NTP**: Enter the Network Time Protocol server, if applicable. The camera's time will be automatically adjusted by synchronizing with the NTP server. Click **Apply** to save the setting.

【**Time Zone Setting**】 Set the time zone of the camera's location. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**Daylight Savings Time Settings**】 Click **Enable Daylight Saving** to enable this schedule, and select the dates when the region's daylight saving period begins and ends. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

7.1.3 Storage

You can configure the recording path / format, source video stream and SD card settings on this page.
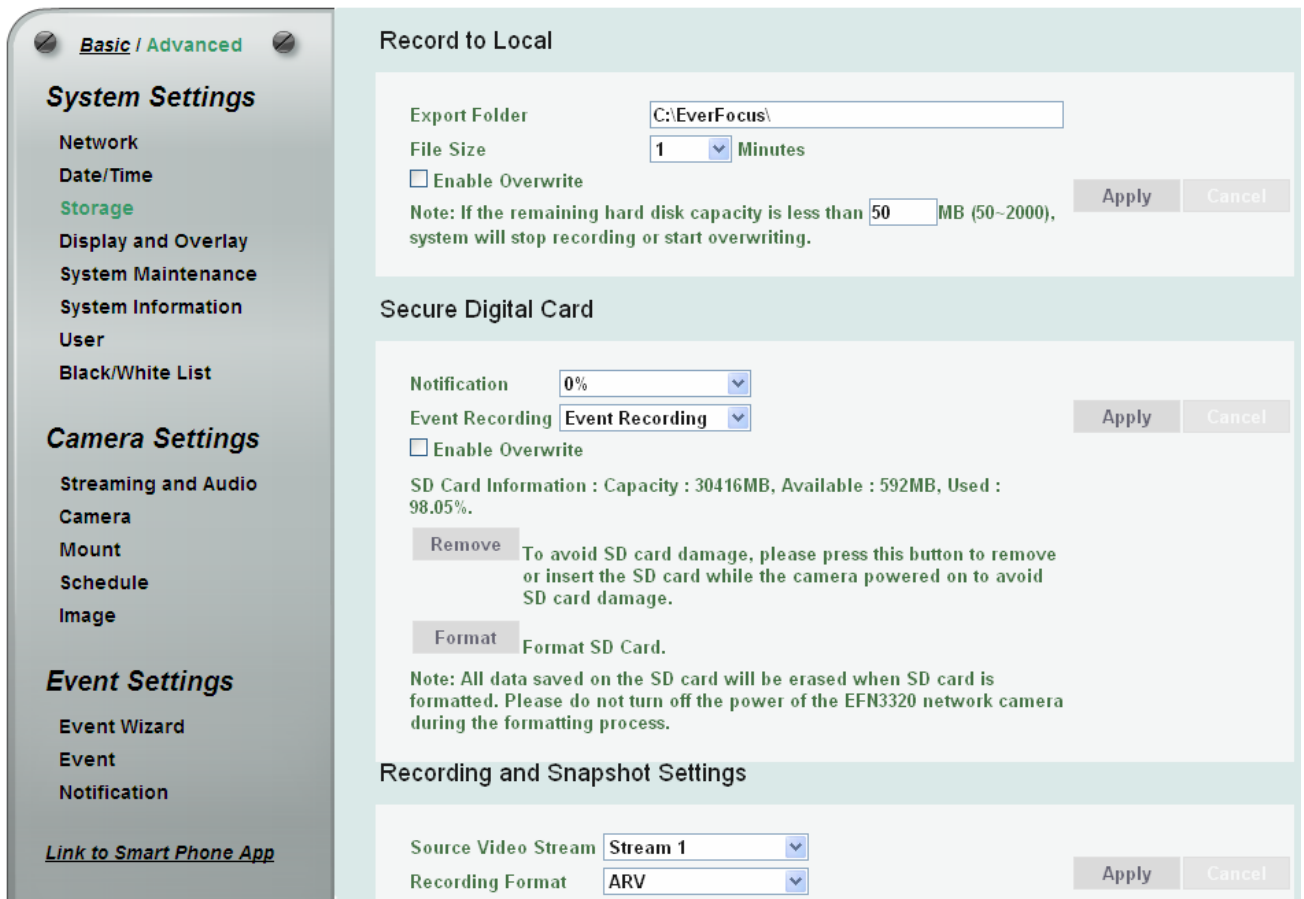
【**Record to Local**】 This function can only be set up in the **Advanced** tab. You can configure the storage path for storing the live stream recordings / snapshot on your PC.

■ **Export Folder:** Type the storage path for storing the recordings / snapshot.

■ **File Size:** The user can limit the size of each recorded file here (in minutes). Once you click the **Record** button on the Live View window, the camera will start recording the live stream to your computer. When a single recording file exceeds the time you set, the system will create a new file to save that data to.

■ **Enable Overwrite:** Check the box for overwriting recording/snapshot file when the disk storage capacity is full. The user can set the storage capacity limitation in the in-sentence box below the Enable Overwrite setting: "If the remaining hard disk capacity is less than ____ MB (50~2000),… "

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**Secure Digital Card**】

■ **Notification:** Select the percentage of storage space that should be left on the card before the camera notifies you of the impending storage shortage or overwrite.

■ **Event Recording:** Select the location where you want the camera to send the impending storage shortage text notification to.

50

- **FTP Back Up Only:** Select to send the impending storage shortage text notification to the FTP server entered in the FTP Repository Settings (see *7.3.3 Notification*).
- **Event Recording:** Select to send the impending storage shortage text notification to the checked locations in the Event Management (see *7.3.2 Event*).

Notification Over
☑ Log
☐ Trigger Alarm Output Duration Time 10   second
☑ Send Mail Notification
☐ Upload to FTP
☐ Record to SD Card
☑ Network Alarm

- **Both:** Select to send the impending storage shortage text notification to the FTP or the selected locations in the Event Management (see *7.3.2 Event*).
- **Enable Overwrite:** Check the box for overwriting files when the SD card is full.
- **SD Card Information:** If an SD card has been inserted to the card slot of the camera, the SD card information will be displayed in this field.
- **Remove:** Click before removing the card from the system (*6.2.1 Inserting / Removing the SD Card)*.
- **Format:** Click to format the card. All data saved on the SD card will be removed if the card is formatted (*6.2.1 Inserting / Removing the SD Card)*.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**Recording and Snapshot Settings**】 Select the desired video stream and recording format. The video stream can be configured in *7.2.1 Streaming and Audio*. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

7.1.4 Display and Overlay

You can configure the recording path / format, source video stream and SD card settings on this page.
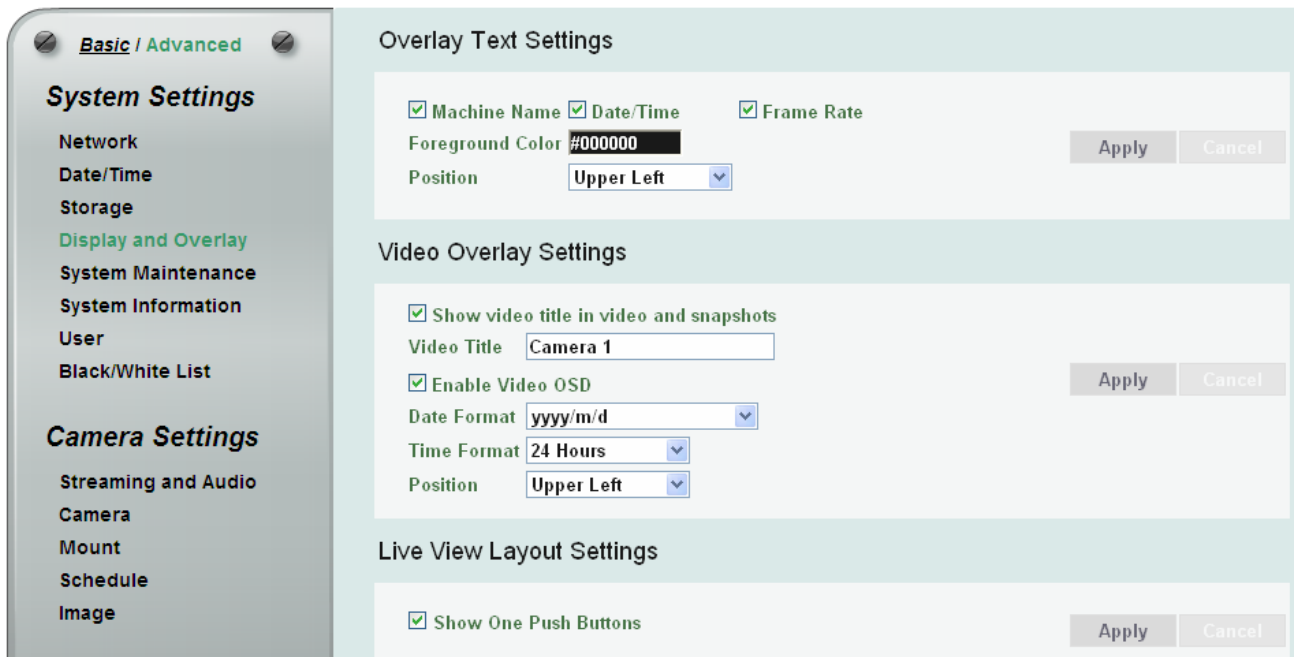
【**Overlay Text Settings**】 Check the boxes to display the information on the Live View Window. The information will only be displayed on the Live View Window and will not be displayed on the live view video images nor snapshots. To change the foreground color of the text, directly click on the box and then select a color. Select a position where you want the information to be displayed on the Live Window. To change the Machine Name, see *Machine Name* in *7.1.5 System Maintenance*. To change the day and time setting, see *7.1.2 Date / Time*. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.
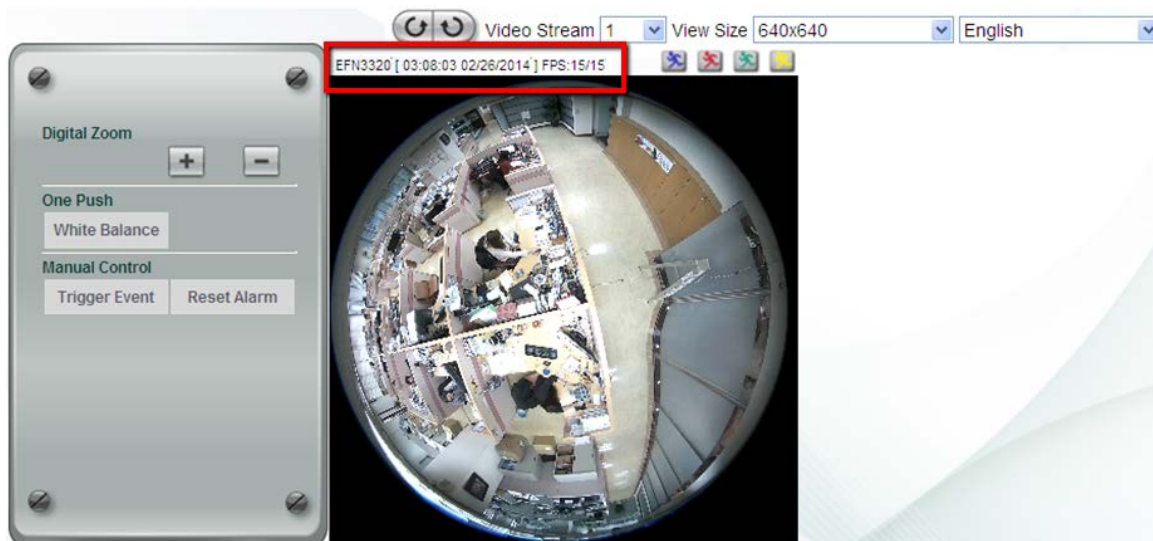
【**Video Overlay Settings**】Check the boxes to enable displaying video title or date/time on the live view video images. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

- **Show video title in video and snapshots:** Check the box to enable displaying video title on the live view video images and snapshots. To change the title, type a name in the **Video Title** column.
- **Enable Video OSD:** Check the box to enable displaying date/time information on the live view video images. Select the desired Date/Time format.
- **Position:** Select a position where you want the video title or date/time information to be displayed on the live view video images.

【**Live View Layout Settings**】 Check the box if you want to show the Lens Control buttons or One Push buttons on the Live View Window. Uncheck this box to hide the buttons. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

7.1.5 System Maintenance

You can configure the recording path / format, source video stream and SD card settings on this page.

【**Machine Name**】If required, enter a new name for the machine. This name will be visible in the Machine Name field of the IP Utility software, which is included in the software CD. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**Language Settings**】Select the language to be displayed on the Web interface of the IP camera. The default language is English.

To add a new language not listed in the current Language list, click the **Browse** button to locate the new language file (.evb) on your computer and then click the **Upload** button. Updated language files might be available on the manufacturer's website. Contact your vendor if required.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

Note: Uploading a new language file will cause the system to reboot automatically. Please create a new network connection to the IP camera when the reboot is complete.

【**Maintenance**】
- **Reboot:** Click to reboot the unit without changing any of the settings. Use this function if the unit is not behaving as expected.
- **Restore:** Click to restart and reset most of the current settings to their factory default values. The only settings that will not be changed to default are: IP Settings and DDNS Settings.
- **Initialize:** This function can only be set up in the **Advanced** tab. This button should be used with caution. Clicking this button will return all of the camera's settings, including the IP address, to the factory default values. The camera will then have to be reconfigured.

【**Save Configuration Server**】
Save: To make a backup file of the machine's current configurations, click this button to save all the configurations to a configuration file. This will enable the user to reload these configuration settings if the settings are changed and there is unexpected behavior.

【**Load Configuration Server**】
Select **Video** to apply only the video parameters from the configuration file to the system. Select **Network** to apply only the network parameters from the configuration file to the system. Select **All** to apply all the parameters from the configuration file to the system.
**Browse:** Click the **Browse** button to locate the saved config. File.
Load: Click the **Load** button to restore the system based on the selected parameters (Video, Network or All).

【**Video Format**】Select NTSC or PAL for your local scanning system. Click **Apply** to save the setting.

【**Upgrade Firmware**】This function can only be set up in the **Advanced** tab. Click the **Browse** button to find a previously prepared firmware upgrade file. Click the **Upload** button to install the new firmware.

Note:

1. Do not disconnect power to the unit during the upgrade sequence. The unit will reboot automatically after the upgrade has completed (1-5 minutes).

2. During the upgrade process, all event recording actions will be stopped. Event recording actions will resume after the camera is rebooted.

3. If the "*File Error, Please re-login!!*" warning message appears when upgrading the firmware, please try the following instructions:

   a. Go to Internet Explorer > Tools > Internet Option > Security > Custom.

   b. Find and enable the **Include local directory path when uploading files to a server.**
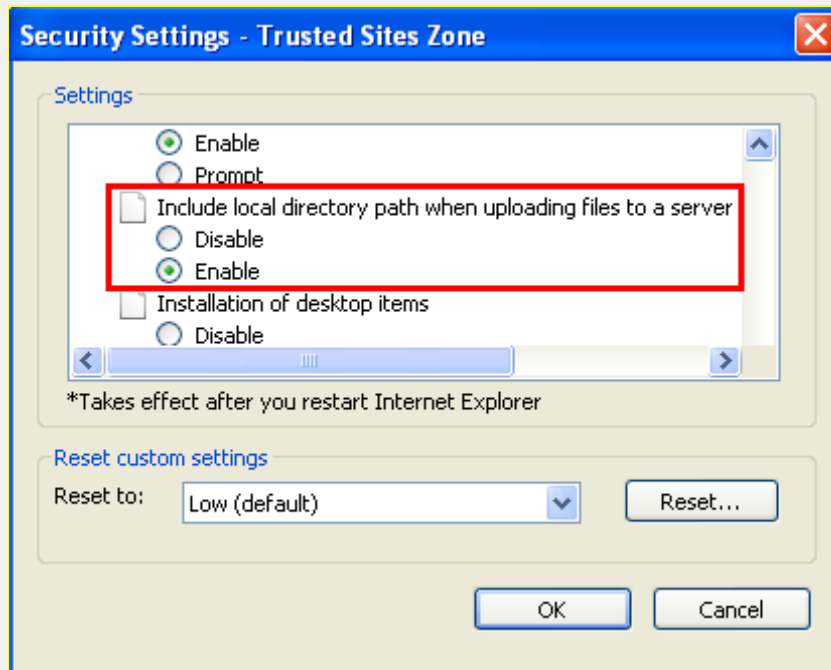
7.1.6   System Information

You can see the system information and log information displayed on this page.

【**System Status**】 Displayed the system information. The values cannot be changed on this page. The Uptime represents the period since the camera has been powered on. For example, up 21:28 represents the camera has been powered on for 21 hours and 28 minutes.

【**System Log**】Displayed the sequence number, date, time and event messages of the log event. The log will display the last 256 log events. Click the **Export Log** button to export the system log event list into a ".txt" file and select the location where the exported log file will be saved to. Click the **Clear Log** to erase all the log data from the camera. The system will be required to reboot after clicking the Clear Log button.

7.1.7 User

The system administrator can create up to ten user accounts on this page.

【**User Management**】The system has automatically created ten user accounts.

To set up an user account:

1. Highlight a user account and its information will be displayed in the field below the account list.
2. Revise the account name, password and description. Select an authority level for the user account.
   - **Supervisor / Administrator:** The only difference between a supervisor and administrator is that a supervisor can edit an administrator's account and password, but an administrator cannot edit the supervisor's account and password. The supervisor and administrators all have unrestricted access to the Setting submenus and can determine the registration of all other users.

- **User:** A user can not only view the live view but also view/configure the below camera settings.

View	Configure
System Settings	
Network	Network > Protocol Settings
Date/Time	Date/Time > Date/Time Format Settings
Storage > Record to Local	Storage > Record to Local
Display and Overlay > Overlay Text Settings	Display and Overlay > Overlay Text Settings
Display and Overlay > Video Overlay Time Stamp Settings	Display and Overlay > Video Overlay Time Stamp Settings
System Maintenance > Language Settings	System Maintenance > Language Settings
System Information	System Information > Export Log
Camera Settings	
Streaming and Audio	-
Camera	-
Schedule	-
Image	-

- **Guest:** The lowest level of access, which only allows the user access to the live view page.

3. Select **Active** or **Disable** to active or disable the user account.

4. Check the Enable SD Card box to allow the user to access the SD card playback function.

5. Click the **Edit** button to save the changes.

[Create]: The button is only activated when the number of list is less than ten. Enter the account information and click the **Create** button, the new account will be listed in the account list.

[Remove]: Highlight an account and then click the **Remove** button to remove the highlighted account.

[Edit]: Highlight an account and enter the account information in the boxes below the account list. Click the **Edit** button and the account will be edited.

[Cancel]: Click the button to cancel the changes and return to the previous settings.

【**Anonymous Settings**】Check the box to allow the unauthorized persons to log in the camera. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

7.1.8   Black/White List

Use this page to specify IP addresses that are allowed / denied to access this camera. By default, any IP address can access the camera.

> **Note:** The Allowed IP addresses only become relevant when the Denied items contain a **Network** or **Range**, and the supervisor wants to allow one or more IP addresses within that excluded range or network. In such a scenario, the user would enter the excluded range or network for the Denied items, and enter the exceptions for the Allowed items.
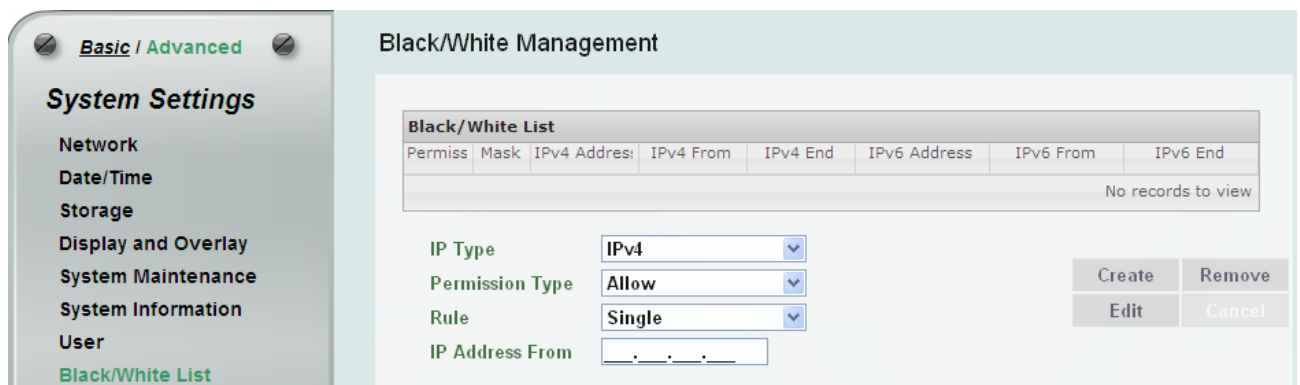
- **IP Type:** Select IPv4 or IPv6 from the drop-down list.
- **Permission Type:** Select **Deny** to deny the IP addresses configured below from accessing the camera. The **Allow** option is only relevant if you've set up at least one Deny item configured with Network or Range network rule from the Rule drop-down list.
- **Rule:** Select a network rule and then fill in the IP information in the below boxes.
  - **Single:** Type a single IP address in the IP Address field below.
  - **Network:** Type the IP address and subnet mask in the field below.
  - **Range:** Type a range for the IP addresses.

Create : Set up the IP information and click the **Create** button, the created IP information will be listed in the Black/White list.

Remove : Highlight an item in the list and then click the **Remove** button to remove the highlighted item.

Edit : Highlight an item in the list and set up the IP information in the boxes below the Black/White list. Click the **Edit** button and the item will be edited.

Cancel : Click the button to cancel the changes and return to the previous settings.

7.2 Camera Settings

You can configure camera related settings, such as video / audio, region of interest and privacy mask.

7.2.1 Streaming and Audio

【**Stream Settings**】This IP camera can output three video streams simultaneously. For each of these streams, the user can set the compression format, resolution, bit rate, and frame rate individually. Stream 1 is always enabled for live view. To enable Stream 2, Stream3 and/or Stream 4, check the **Enable Stream 2** / **Enable Stream 3** / **Enable Stream 4** box. If your camera features the video-test out cable, uncheck Stream 4 for the video-test out cable to work. By default, Stream 4 is unchecked.

> **Note:** If you connect to the camera via the Internet and experience a delay (lag time) in the video feed, try to reduce the number of streams and the quality and resolution of the streams – but keep the frame rate at its maximum.

Format: Select the encoding format – H.264, MJPEG or MPEG4.

Resolution: Select the most suitable resolution for your needs.

Frame Rate: This function can only be set up in the **Advanced** tab. Select from 1 to 15 fps.

Bit Rate: This function can only be set up in the **Advanced** tab. If required, select whether you want the stream to stream a **Constant Bit Rate** or a **Variable Bit Rate**, and set the values of whichever option you choose.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**Region of Interest Settings**】This function can only be set up in the **Advanced** tab. The Region of Interest (ROI) function allows users to set up multiple regions within an image with better quality and less distortion than the rest of the image. You can also use this function together with the Digital Zoom function on the Live View window to get a better image result. Up to eight ROIs can be configured in this field.
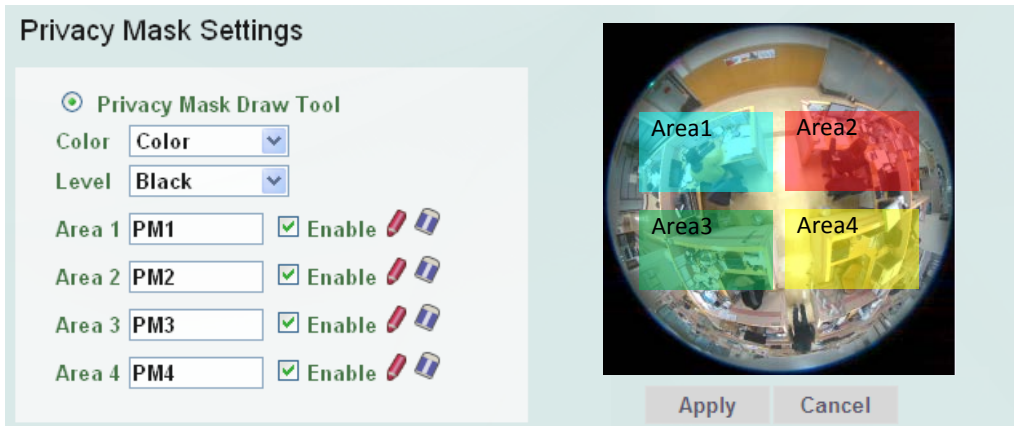

To set up an ROI region:

1. Enabled the **ROI Draw Tool** and click the **Draw** button .
2. On the left-side live image, move the cursor to the position where you want the ROI rectangle to start and then click. Move the cursor to the position (diagonally opposing corner) where you want the ROI rectangle to end and then click.
3. Select a quality value for the ROI from the Quality drop-down list.
4. Click the **Apply** button to apply the settings, or click the **Cancel** button to reset without saving the settings.

【**Privacy Mask Settings**】This function can only be set up in the **Advanced** tab. The Privacy Mask can block out sensitive areas from view, covering the areas with colored or black and white boxes in both live view and recorded clips. This feature is useful when users' don't want the sensitive information visible. Up to four Privacy Masks can be configured.


To set up a Privacy Mask:

1. Enabled the **Privacy Mask Draw Tool.**
2. From the Color drop-down list, select **Color** to make the masks appear as colored rectangles on the screen; or select **B/W** to make the masks appear as gray rectangles on the screen.
3. Select a color if you select **Color** from the color drop-down list. Select a level of grayness if you select B/W from the color drop-down list.
4. Check the **Enable** box to enable the configured privacy mask.
5. Click the **Draw** button 🖊 and move the cursor on the left-side live image.
6. Move the cursor to the position where you want the mask rectangle to start and then click. Move the cursor to the position (diagonally opposing corner) where you want the mask rectangle to end and then click.
7. Click the **Apply** button to apply the settings, or click the **Cancel** button to reset without saving the settings.

【**Audio Settings**】This function is only enabled if your camera features the audio cables. The camera can receive or transmit audio from or to your computer if you have connected an external speaker / microphone (line I/O (TRS) audio device to its audio cables. Check the **Enable Audio** box to enable the camera's audio function and then adjust the audio volume. Note that the camera provides a line I/O 3.5mm jack (TRS), therefore, speakers / microphones with a (built-in) amplifier and external power supply are required.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

7.2.2 Camera
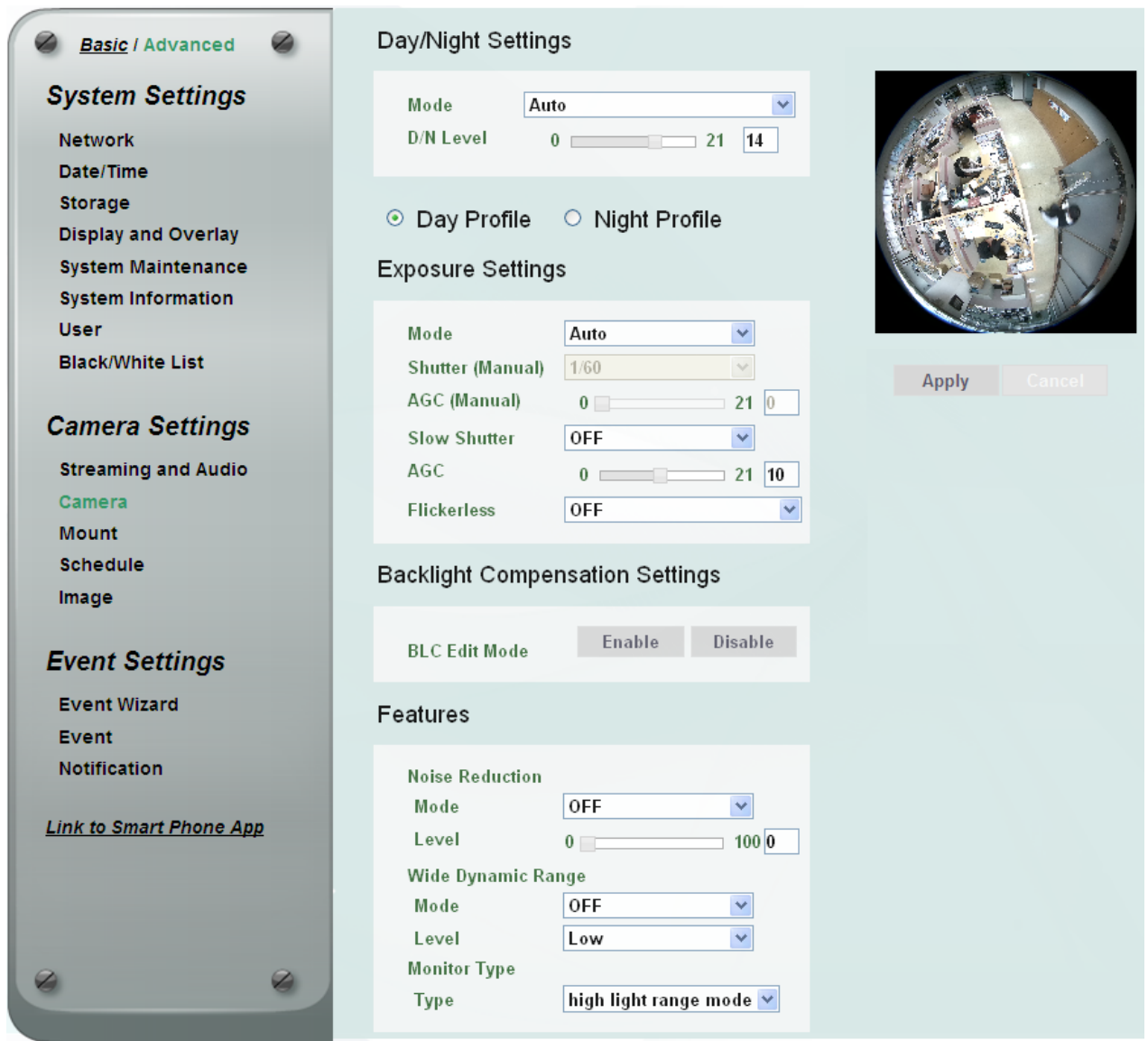
【Day/Night Settings】

- **Mode:** Select a mode from the drop-down list.
  - **Auto**: Select to let the camera automatically switch to Night mode (black and white images with IR LED on) when the light levels fall to a specified level, and back to Day mode (color images) when the light levels rise to a specified level.
  - **Day**: Select to keep the camera in Day mode (color images with IR LED off), even in nighttime.
  - **Night**: Select to keep the camera in Night mode (black and white images with IR LED on), even in daytime.
  - **Schedule**: Select to let the camera to switch to Day mode or Night mode (IR LED on) based on the day and night schedule settings (see *7.2.5 Schedule*).
- **D/N Level:** This function can only be activated if you select **Auto** mode in the Day/Night Settings field. Adjust the level (1-4 lux) for the camera to switch from Day mode to Night mode based on the light level detected by the Light Sensor. The camera will switch back from Night mode to Day mode when the detected light level has reached 2-level higher than the level you have set up.

For example:

If you set up the D/N level to 1 (lux), the camera will automatically switch from:

- Day to Night when the light level is below 1 lux.
- Night to Day when the light level has reached 3 lux.

If you set up the D/N level to 2 (lux), the camera will automatically switch from:

- Day to Night when the light level is below 2 lux.
- Night to Day when the light level has reached 4 lux.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

Day Profile/ Night Profile: Select **Day Profile** to configure the following settings for daytime and select **Night Profile** to configure the following settings for nighttime. Click the **Apply** button to save the settings.

【**Exposure Settings**】This function can only be set up in the **Advanced** tab. This setting is used to adapt to the amount or type of light used by the camera. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

- **Mode:** Select a mode from the drop-down list.
  - **Auto:** Selecting Auto for the camera to automatically adjust the Shutter based on the measured light level.
  - **ALC (Shutter Priority):** Selecting ALC (Automatic Light Control) allows the camera circuitry to either take bright spots more into consideration (peak), bringing out detail in bright areas, or less into consideration (average) bringing out detail in shadows.
  - **Manual:** Select this option to manually set up the IRIS, Shutter (Manual) and AGC (Manual) values.
- **Shutter (Manual):** The function is only activated if you select **ALC** or **Manual** in the Mode field. If enabled, this setting lets you set the shutter speed yourself (measured in fractions of a second).
- **AGC (Manual):** The function is only activated if you select **Manual** in the Mode field. Set the Auto Gain Control limit here. The lower the AGC level, the lower the video signal and the noise.
- **Slow Shutter:** The function is only activated if you select **Auto** in the Mode field.
- **AGC:** The function is only activated if you select **Auto or ALC** in the Mode field. Set the Auto Gain Control limit here. The lower the AGC level, the lower the video signal and the noise.
- **Flickerless:** The function is only activated if you select **Auto** in the Mode field. Choose between OFF, 50HZ, 60HZ, 50HZ (High Luminance) or 60HZ (High Luminance).

【**Backlight Compensation Settings**】 The Backlight Compensation (BLC) function is useful when the background of the subject is very bright and the subject itself is dark. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

BLC Edit Mode: Click the **Enable** button, the BLC grids appear on the image. Click on the grids to enable / disable the BLC function. The selected grids (in green) will be applied with the BLC function.
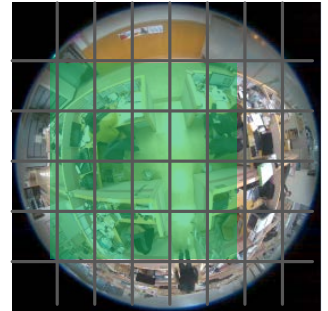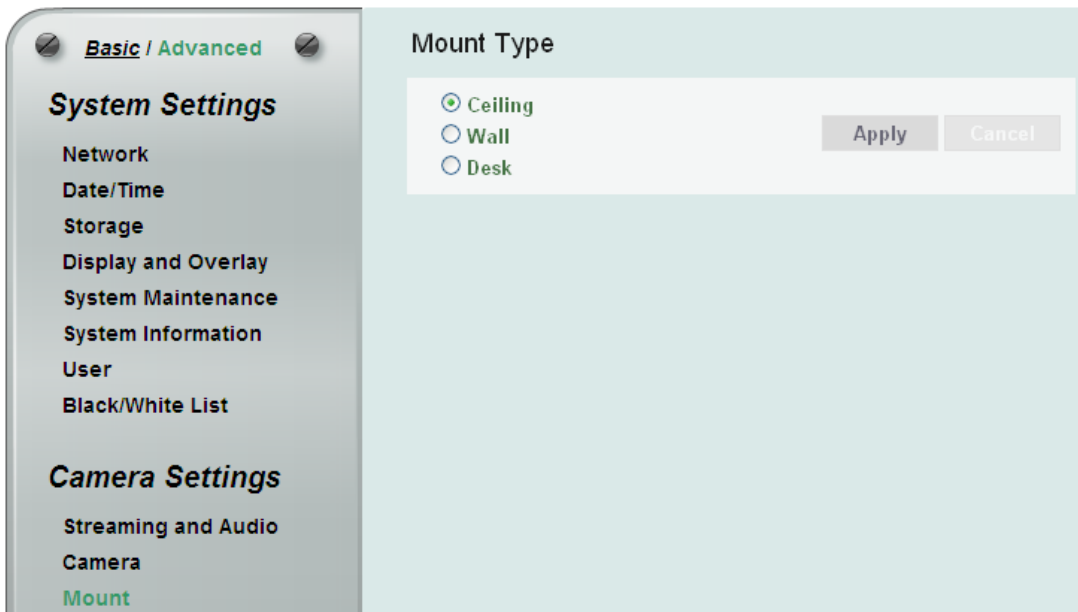

【**Features**】 This function can only be set up in the **Advanced** tab. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

- **Noise Reduction (NR):** This limits the amount of digital "video noise" that is usually found in any video stream, and helps to reduce file size. Select **ON / OFF** to enable / disable the Noise Reduction function. Slide the Level bar to set up the level. The higher the level, the more the reduction.
- **Wide Dynamic Range (WDR):** The WDR function provides clearer images when both of the very bright and dark areas simultaneously appear on the camera view. There are three value options: OFF, ON and Auto. Note that when WDR is ON, some parts of the image may appear solarized. This is normal for WDR, and is not a camera malfunction.
- **Monitor Type:** Users can use this field to optimize video quality of the monitor.
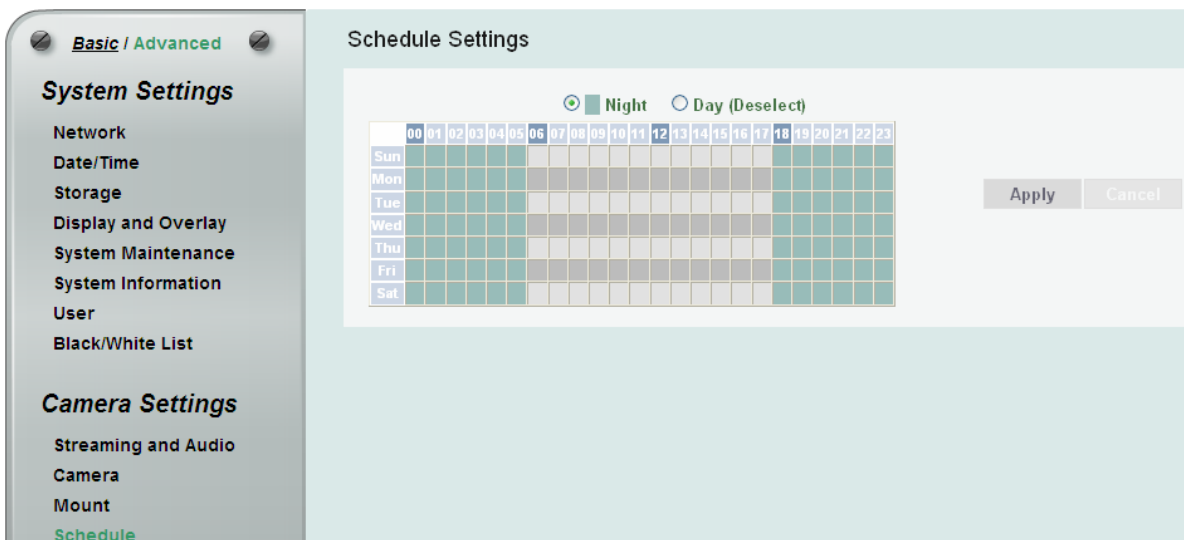
7.2.3 Mount

Select the mounting type of your camera. Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

7.2.4 Schedule

The Schedule setup page is designed for users to configure the daytime and nighttime of each day. The Schedule setting is only functional if you select **Schedule** from the D/N Mode drop-down list on the Camera setup page.


Select **Night** and then move the cursor on the desired time square, click and drag the cursor over the time squares to configure them to the Night mode (green color). Select **Day** and then move the cursor on the desired time square, click on the time squares to configure them to the Day mode (gray color).

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

7.2.5   Image

This function can only be set up in the **Advanced** tab.
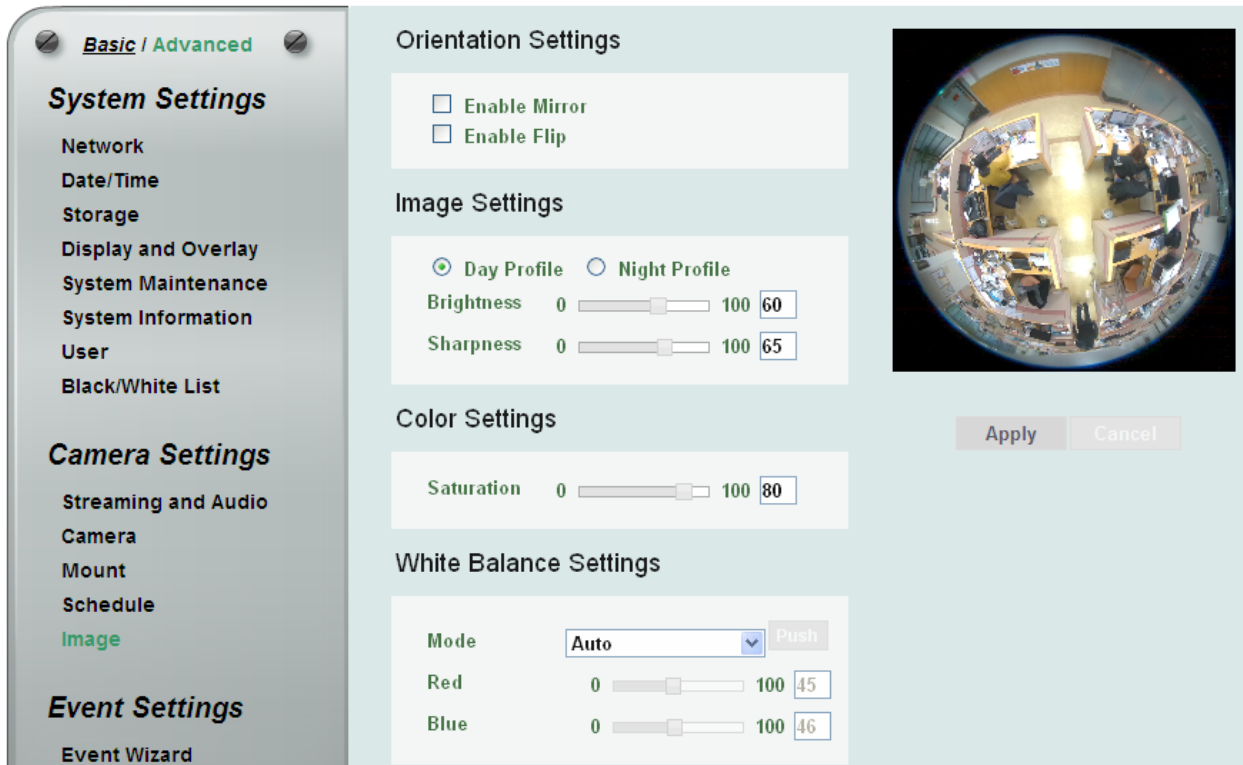
【**Orientation Settings**】

■ **Enable Mirror:** Check the box to enable the mirror function. The image will be rotated horizontally around a vertical axis.

■ **Enable Flip:** Check the box to enable the flip function. The image will be rotated vertically around a horizontal axis.

【**Image Settings**】 Select **Day** or **Night** and then adjust the slide bars below to configure the brightness and sharpness for daytime or nighttime.

【**Color Settings**】 Slide the bar to adjust the saturation.

【**White Balance Settings**】 Select a mode that delivers the best image quality for the camera's light environment.

■ **Auto:** Select to let the camera automatically adjust the White Balance. In the Auto mode the camera computes the white balance value output using color information from the entire screen. It outputs the proper value using the color temperature radiating from a black subject based on a range of value from 3000 to 7500K.

■ **Manual:** Select to adjust the Red and Blue values yourself in the fields below this field.

7.3 Event Settings

You can set up the Motion Detection event or Tampering Detection event to automatically notify the users when an event occurs. You can also set up a schedule to automatically record the videos when an event occurs.

7.3.1 Event Wizard

The Event Wizard allows users to easily configure the event settings. Follow the on-screen instructions to complete the event settings.
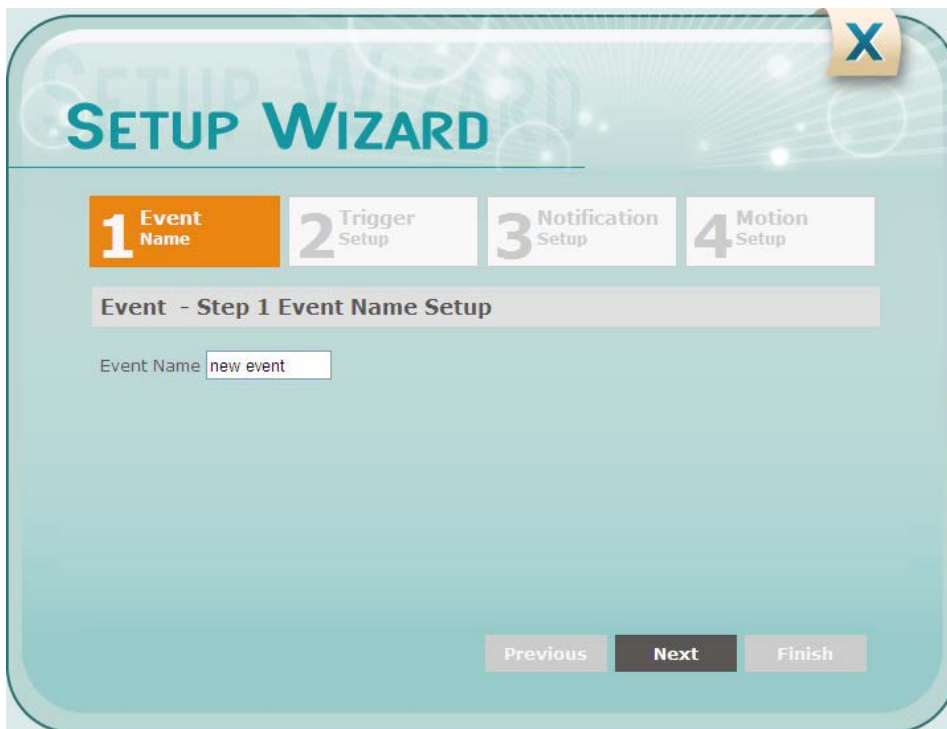
7.3.2 Event

This function can only be set up in the **Advanced** tab. Except the Event Wizard, you can also configure the event settings along with the Recording Schedule on this page.

【**Event Management**】You can set up the events such as Motion Detection or Tampering Detection to automatically notify the users when an event occurs.

Event Name: Type an event name.

- **Event Trigger Type:** Select an event for the to-be-specified-below reaction/s.
  - **Alarm Input:** This option is only available if the camera features the alarm I/O cable. Select this if you want a reaction trigger coming from any external, connected sensor to activate a to-be-specified-below reaction/s via the camera system. Make sure that a suitable device is actually connected to the alarm input relay.
  - **Manual Trigger:** Select this option if you want to manually trigger the alarm by clicking the **Trigger Event** button on the Live View Page.
  - **Motion Detection:** Select this option to trigger the to-be-specified-below reaction/s when motion events occur. You have to pre-configure the Motion Settings for this function to work.
  - **Schedule Recording**: Select this option if you want the Schedule Recording periods configured in the Schedule Settings to activate this event. In this scenario, a preconfigured event reaction like a log entry will list the start and end times of each period. Actual recording will only be triggered if the event is preconfigured to do so.
  - **Tampering Detection:** Select this option if you want the camera's tampering detection sensor to trigger the to-be-specified-below reaction/s. You can set up the tamper duration time in the Event Trigger Settings field below.
- **Enable This Event:** Check the box to activate the event.
- **Enable Re-trigger minimum interval between triggers xx second:** Check the box to set a minimum time after the event is triggered before the event can be triggered again.
- **Enable Pre-trigger Buffer:** Check the box if you want the Event reaction (as selected in the "Notification Over" field below) to be the activation of the video recording function, and if you want the recording to include the video feed from the time period (configurable in the Schedule Settings field) just before the Event trigger occurred.
- **Enable Post-trigger Buffer:** Check the box if you want the Event reaction (as selected in the Notification Over field) to be the activation of the video recording function, and if you want the recording to include the video feed from a time period (configurable in the Schedule Settings field) just after the Event trigger occurred.

Notification Over: Select the desired notification types from the following items.

- **Log:** Check the box if you want the camera to list the event's details in its log if the event is triggered.
- **Trigger Alarm Output:** This function is only available if the camera features the alarm I/O cable. Check if you want the camera to relay the event reaction to a device attached to the alarm relay output wire and then set up the alarm output duration time.
- **Send Mail Notification:** Check the box if you want the camera to send an email text notification and one image file to the email address entered in the SMTP Settings field (see *7.3.3 Notification*).

■ **Upload to FTP:** Check the box if you want the camera to upload the recordings to the FTP server entered in the FTP Repository Settings (see *7.3.3 Notification*).

■ **Record to SD Card:** Check the box if you want the camera to start recording its video feed (when the event occurs) on an on-camera SD Card (if such a card has been inserted).

> **Note:** The recording will only be as long as the combined Pre- and Post-trigger Buffers, so make sure you enable at least one of these buffers, especially the Post-trigger Buffer.

■ **Network Alarm:** Check the box if you want the camera to send a network alarm signal (when the event occurs) to the CMS servers. Note that you have to configure the Network Alarm Settings for this function to work (see *7.3.3 Notification*).

[Create]**:** Set up the Event information and click the **Create** button, the created Event information will be listed in the Event List.

[Remove]**:** Highlight an item in the Event List and then click the **Remove** button to remove the highlighted item.

[Edit]**:** Highlight an item in the Event List and edit the Event information on the left-side. Click the **Edit** button and the item will be edited.

[Cancel]**:** Click the button to cancel the changes and return to the previous settings.

【**Event Trigger Settings**】

■ **Input 1 Trigger Type:** This function is only available if the camera features the alarm I/O cable. Select Normal Open or Normal Close from the drop-down list.

■ **Output 1 Contact Type:** This function is only available if the camera features the alarm I/O cable. Select Normal Open or Normal Close from the drop-down list.

■ **Tamper Duration Time:** Set up a duration time between 10 and 120 seconds. When a tampering event has been detected and the duration reached the setup time, the camera will trigger the event.

【**Trigger Options Settings**】

■ **Pre-trigger Buffer:** Select the duration for the buffer. This will determine the amount of footage (length of time) before the event trigger moment that will be included in an event-triggered video recording, if that buffer and video recording has been enabled in the Event Management field.

   ☑ Enable Pre-trigger Buffer

■ **Post-trigger Buffer:** Select the duration for the buffer. This will determine the amount of footage (length of time) after the event trigger moment that will be included in an event-triggered video recording, if that buffer and video recording has been enabled in the Event Management field.

   ☑ Enable Post-trigger Buffer

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**Schedule Settings**】Users can configure the recording schedule here. Select the desired recording types among the options below. Click and drag the cursor on the time block, which will be applied with the selected recording type.

- **Event Recording (Red):** Select for the camera to activate all the Event Recording set up in the Event Management field (Event Trigger Type), except the Schedule Recording.
- **Schedule Recording (Green):** Select for the camera to activate only the Schedule Recording set up in the Event Management field (Event Trigger Type).
- **Event + Schedule (Yellow):** Select for the camera to active both of the configured Event and Schedule Recordings.
- **Deselect (Grey):** Select for the camera to stop recording.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**Motion Settings**】Use this page to configure up to four areas in which motion will be detected. When a motion is detected by the camera, the motion detection icon 🏃🏃🏃🏃 will appear at the top right corner on the Live page to alert the user. This function can also be linked with correctly configured Events to trigger Event reactions like the activation of video recording periods, snapshots, etc.

To set up the Motion area:

1. Check the **Enable** box to enable the selected area.
2. Select a sensitivity value of the motion detection sensor function.
3. Click the **Draw** button 🖊 and move the cursor on the left-side live image.
4. Move the cursor to the position where you want the motion rectangle to start and then click. Move the cursor to the position (diagonally opposing corner) where you want the motion rectangle to end and then click.
5. Click the **Apply** button to apply the settings, or click the **Cancel** button to reset without saving the settings.

7.3.3 Notification

This function can only be set up in the **Advanced** tab.

【**SMTP (Email) Settings**】 This area is for configuring the mail server that is used to send e-mail text notifications and one image file from the camera to predefined addresses via SMTP. Note that to enable e-mail notification function, you have to check the **Send Mail Notification** box in the Event Management field (see *7.3.2 Event)*.

Notification Over
- ☐ Log
- ☐ Trigger Alarm Output Duration Time 10 second
- ☑ Send Mail Notification

- ■ **SMTP Server**: Enter the IP address or the host name of the SMTP server used to send e-mails.
- ■ **SMTP Port**: Enter the port number for SMTP. The default is 25.
- ■ **Authentication**: Check the box if the SMTP server requires authentication (user/password).
- ■ **Username**: Input the user's login ID if the SMTP server requires authentication.
- ■ **Password**: Input the user's login password if the SMTP server requires authentication.
- ■ **Receiver Address**: Input the e-mail addresses for receiving an e-mail message when events occur. Please use "**;**" to separate multiple addresses.
- ■ **Sender Address**: Input the sender's e-mail address, so that the receiver can recognize the sender when an event message is received.
  - ● **Attach Image**: Check the box if you want to attach an image when events occur.
  - ● **SSL Connection:** Check the box to enable the SSL function. Enable this function means you can access the camera through the SSL protocol that provides communication security over the Internet.
- ■ **Send Test Email**: Click the **Test** button to send a testing email to the assigned address.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**FTP Repository Settings**】 This area is for configuring the FTP server that is used to send alarm recordings from the camera to the preconfigured FTP server. Note that to enable uploading recordings to the FTP server function, you have to check the **Upload to FTP** box in the Event Management field (see *7.3.2 Event)*.

Notification Over
- ☐ Log
- ☐ Trigger Alarm Output Duration Time 10 second
- ☐ Send Mail Notification
- ☑ Upload to FTP

- ■ **FTP Server**: Enter the IP address or the host name of the FTP server.
- ■ **FTP Port:** Enter the port number for the FTP server. Default is 21.
- ■ **Recording Path**: Assign the recording path.
- ■ **Username**: Set FTP User's name.
- ■ **Password**: Set FTP password.
- ■ **PASV mode**: Check the box to enable Passive mode. Passive mode is normally enabled. If a connection cannot be established, uncheck "PASV Mode".
- ■ **Test FTP Server**: Click the **Test** button to send a testing file to the assigned FTP server.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**SNMP Settings**】The default values for SNMP v1/v2/v2c and SNMP v3 are already filled in. Click either of the Enable buttons to enable either of the two. Make your changes as desired. Click on the Trap Address field to enter the digits, if required.

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

【**Network Alarm Settings**】 This function works with EverFocus CMS software. The camera can send a network alarm signal (when the event occurs) to the CMS servers. To establish the connection between the camera and CMS servers, the protocol and port number should match with each other. For more details, please refer to the CMS user's manual. Note that to enable the Network Alarm function, you have to check the **Network Alarm** box in the Event Management field (see *7.3.2 Event).*

Click **Apply** to apply the changes or **Cancel** to cancel the changes and return to the previous settings.

7.4 Link to Smart Phone App

You can access camera live view or take a snapshot via your smart phone. This page is designed for users to download the mobile app to your mobile phone by scanning the QR code.
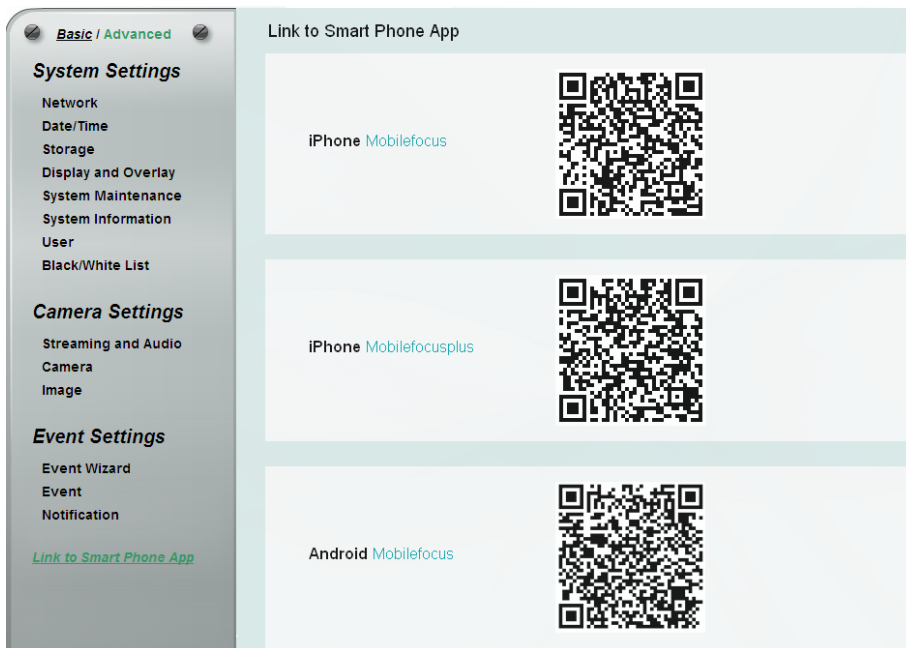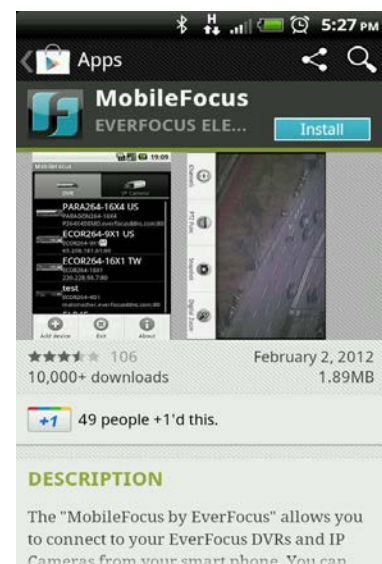

MobileFocus
for **iPhone**

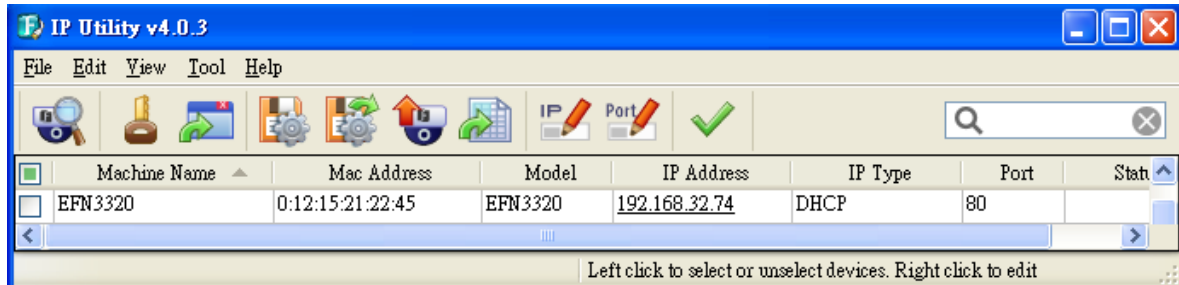**MobileFocusPlus**
for **iPhone**

MobileFocus
for **Android**-based smart phone

8. Upgrading Firmware Using IP Utility

You can upgrade the Firmware using the **IP Utility** software included in the software CD.

1. Install and then start the IPU program [icon], the following IPU window appears. The IPU will automatically search the IP devices connected in the LAN.

2. Log in the camera by checking the desired model and then click the **Log in** [icon] icon. The Log in dialog box appears.
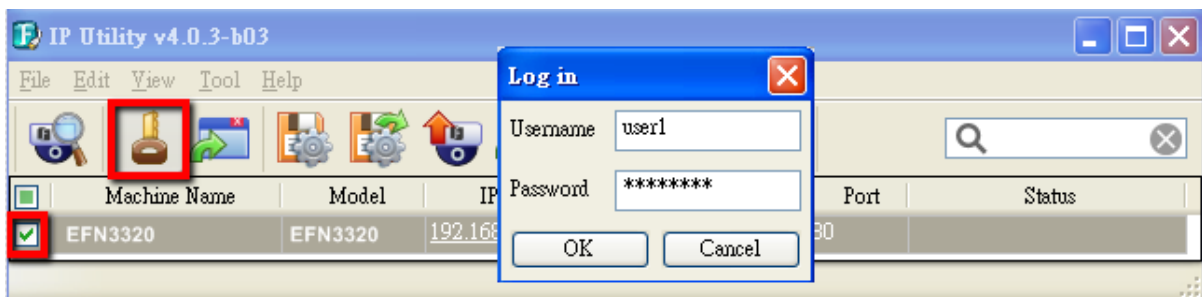
3. Type the Username and Password. Click the **OK** button, the **Login** status will display.

> **Note:**
> 1. The default user ID is **user1** or **admin** and the default password is **11111111**.
> 2. If you select more than one camera that has the same user ID / password, you will be able to log in several cameras at once.
> 3. Up to 10 cameras can be simultaneously upgraded to the latest firmware. If you connect the cameras to a PoE switch, please make sure the Power Consumption of the PoE switch is sufficient.

4. Click the **Upgrade Firmware** button , a browsing window appears.
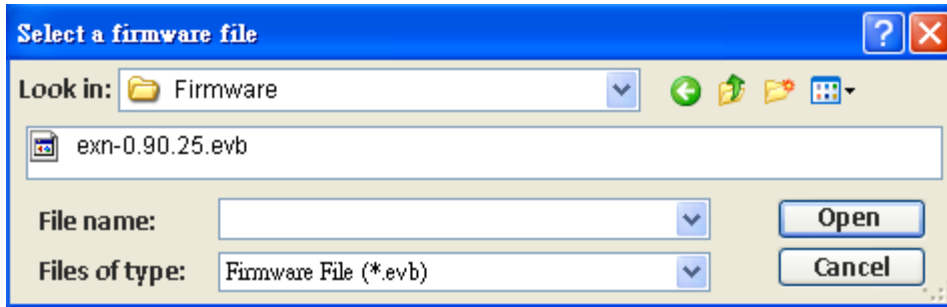
5. Select the **firmware file (.evb)** and then click **Open**. The IPU will automatically upgrade the firmware. The camera will reboot once the upgrade process is complete.

9. Specifications

Model	EFN3320
Camera	
Image Sensor	1/3" progressive CMOS sensor
Megapixel	3 MP
Max. Resolution	1536 x 1536
Min. Illumination	0.5 Lux
Electronic Shutter	4 ~ 1/15,000 sec.
Scanning System	NTSC / PAL
WDR	Yes
AGC	Yes
AWB	Yes
Digital Zoom	10X
Angle of View (Wide)	360° / 180°
Image Settings	Saturation, Mirroring of Images, Flip, Auto white balance, Auto Exposure control, Video overlay
Event Trigger	Motion Detection, Tamper Detection, Manual Trigger
Notification	Email notification, upload video to FTP, record video to (remote) PC
Lens	
Lens	1.19mm fisheye lens with IR corrected, F2.0
IRIS	Fixed IRIS
Day / Night	Electronic Day / Night
Video	
Video Compression	H.264, MPEG4 and MJPEG
Resolution	1536 x 1536, 1280 x 1280, 1056 x 1056, 768 x 768, 640 x 640, 352 x 352, 240 x 240
Frame Rate NTSC	15 fps at all resolution
Frame Rate PAL	15 fps at all resolution
S/N Ratio	> 48dB
Audio	
Audio Capability	Two-way audio
Audio Compression	G.711
Interface	Line in / out 3.5mm stereo TRS (cable optional)

Network	
Interface	10 / 100 Base-T Ethernet, LAN / PoE Cable
Supported Protocols	TCP/IP, IPV6, UDP, ICMP, DHCP, NTP, DNS, DDNS, SMTP, SNMP, FTP, HTTP, HTTPs, PPPoE, UPnP, Bonjour, RTP, RTSP, RTCP, UDP, IGMP,ICMP, ARP, ONVIF, PSIA, QoS
Security	Password protection, IP address filtering, HTTPS encryption, SSL, user privilege
Mechanical	
Memory Card	One built-in micro SDHC / SDXC card slot (see *Appendix* for the tested card brands)
LAN / PoE Cable	RJ-45

Cable (Optional)	Alarm I/O	4-pin terminal block (1 alarm input, 1 alarm output)
	Audio Input	Line-in 3.5mm stereo (TRS) (pink)
	Audio Output	Line-out 3.5mm stereo (TRS) (green)
	TV Output	Test-out cable (BNC)
	Power	12 VDC power input

| **General**	
Power Source	12 VDC / PoE (IEEE802.3af Class 0)
Power Consumption	12 VDC: 3.9 W PoE: 4.5 W
Operating Temperature	-10°C ~ 50°C / 14°F ~ 131°F
Humidity	20% ~ 80% (no condensation)
Safety	CE, FCC
Dimensions (Φ x H)	140 x 50 mm / 5.5" x 1.9"
Weight	558 g / 1.23 lbs
Language	English, French, German, Italian, Japanese, Portuguese, Simplified Chinese, Spanish, Traditional Chinese

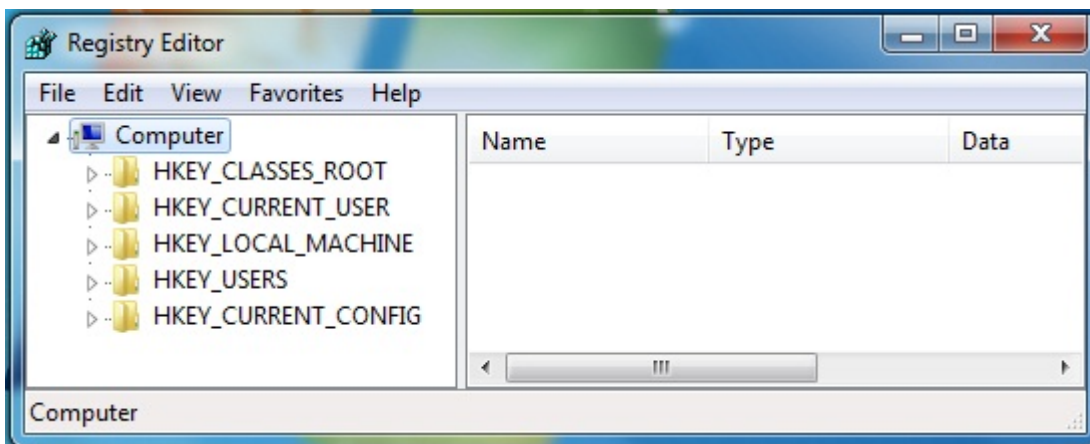## 10. Troubleshooting

Error messages pop up

A. When these error messages pop up, follow the steps below to fix the problem.

1. To enter the Registry Editor of your computer: Click **Start** and type "**regedit**" in the *Search Program and Files* field.
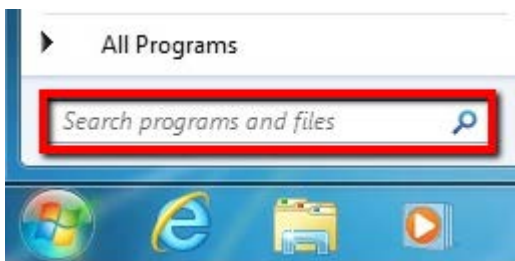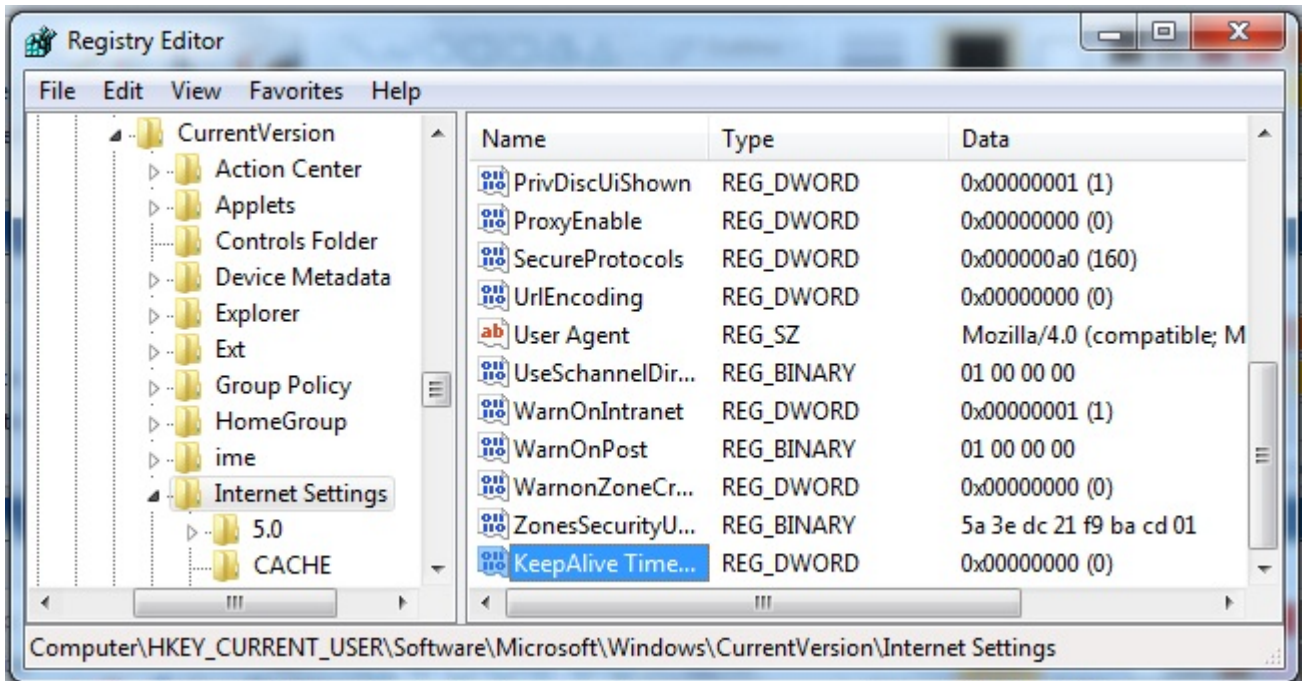

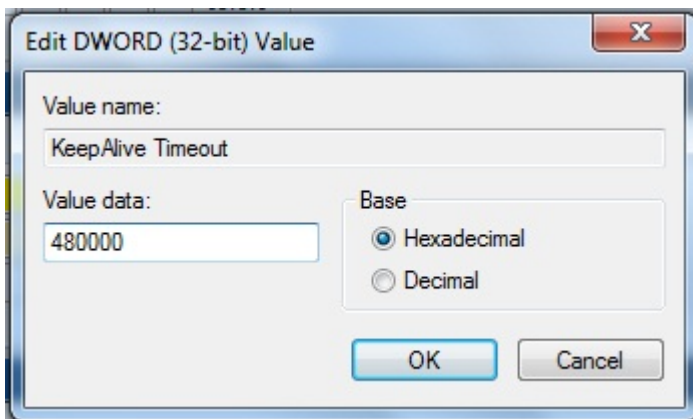2. Click the **Enter** button, the Registry Editor window appears.

3. Find the **KeepAlive Timeout** Dword by following the path:

   \HKEY_CURRENT_USER\Sofware\Microsoft\Windows\CurrentVersion\Internet Settings

4. Double-click **KeepAlive Timeout** and this window appears.

5. Change the Value data to **480000** and click **OK**.

B. Snapshot / Record error message.

For Microsoft IE10 and above users, you may have the above error message pop up when you click the

Snapshot or **Record** button on the Live View window. You can simply solve this problem by

setting up your Microsoft Internet Explorer to **Run as administrator**.
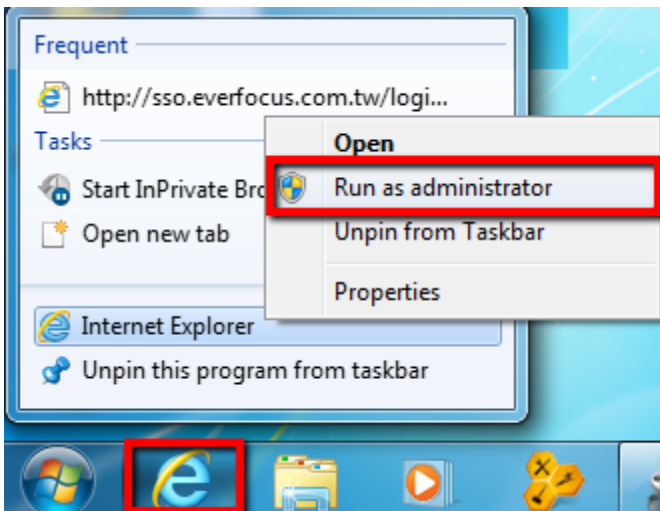
Appendix

This IP Camera supports SDHC / SDXC card up to 64 GB. The following brands of the SD / Micro SD cards have been tested by EverFocus and are recommended to work with EverFocus IP camera.

Brand	ADATA	Kingston	Samsung	SanDisk	Transcend
Card Capacity	64 GB	64 GB	64 GB	64 GB	64 GB
Card Rate Level	Class 10	Class 10	Class 10	Class 10	Class 10

ADATA: Premier microSDHC/SDXC UHS-I Class10

Kingston: MicroSDXC UHS-I Class10 64GB

Samsung: MicroSDXC 64GB UHS-I

SanDisk: Ultra® microSDXC™ UHS-I card

Transcend: MicroSDXC Class 10 UHS-I memory card 300x

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