Instruction Manual
FLIR IP Series

Firmware v2.210

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1 Overview

This manual covers the following topics related to your FLIR IP Series camera:

- **Web browser configuration interface:** See 2 *Web Configuration Setup*, page 2.
- **Firmware upgrade tool:** See 6 *Firmware Upgrade Tool*, page 55.
- **Central Management Software for PC / Mac:** See 7 *Connecting to Cameras with FLIR Cloud™ CMS*, page 58.
- **Smartphone / tablet apps:** See 9 *Smartphone and Tablet Apps*, page 89.

Note

- For physical installation instructions, please refer to the Quick Connection Guide for your camera model.
- Some settings described in this manual may not be available depending on the features supported by your camera model.
- The following models have a different web interface and supporting software: DND13TL2, DNB14L2, DNB13TL2, DNV14TL2, DNE14TL2, DNV14UX2, DNB14UX2. For instructions, please refer to the respective manual for these cameras.

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2 Web Configuration Setup

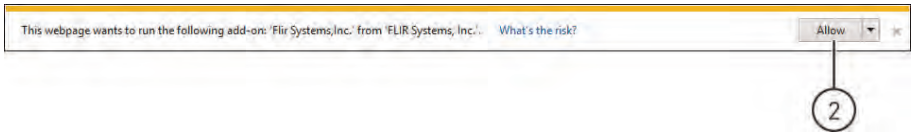
The camera includes a built-in web interface that can be accessed using a web browser.

2.1 Supported Browsers

- Google Chrome™, Mozilla Firefox®, and Apple Safari® (via Webplugin)
- Microsoft Internet Explorer® 8.0 or later, 32-bit version (via ActiveX®)

2.2 Internet Explorer Setup

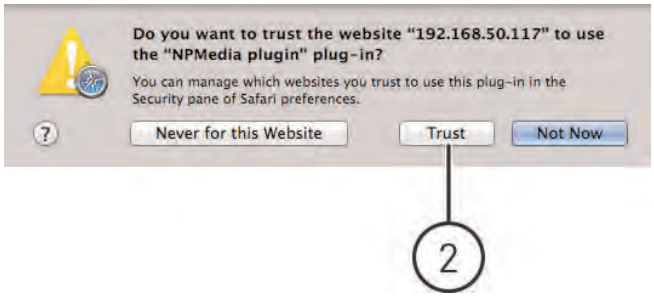
1. Open Internet Explorer® and enter the camera's IP address in the address bar in the following format: **http://IP address:HTTP Port**.
   - For example: **http://192.168.0.100:80**
2. A notification bar appears asking if you would like to install ActiveX® plugins. Click **Install** or **Allow** to install the plugins.



3. Enter the camera user name (default: **admin**) and password (default: **admin**) and click **Login**.

2.3 Safari Setup

1. Open Safari® and enter the camera's IP address in the address bar in the following format: **http://IP address:HTTP Port**.
   - For example: **http://192.168.0.100:80**
2. A notification appears asking if you want to use the NPMedia plug-in. Click **Trust** to use the plug-in.



3. Enter the camera user name (default: **admin**) and password (default: **admin**) and click **Login**.

Note
If video from the camera does not appear after installation, quit Safari® by right-clicking on the Safari® icon in the dock and then selecting **Quit**. Then restart Safari® and log back into your camera.

2.4 Firefox Setup

1. Open Firefox® and enter the camera's IP address in the address bar in the following format: **http://IP address:HTTP Port**.
   - For example: **http://192.168.0.100:80**
2. A notification appears asking if you want to use the MMX plug-in. Click **Allow...** to use the plug-in.

3. Enter the camera user name (default: **admin**) and password (default: **admin**) and click **Login**.

Note
If video from the camera does not appear after installation, quit Firefox® by closing the browser window. Then restart Firefox® and log back into your camera.

2.5 Google Chrome Setup

1. Open Chrome™ and enter the camera's IP address in the address bar in the following format: **http://IP address:HTTP Port**.
   - For example: **http://192.168.0.100:80**

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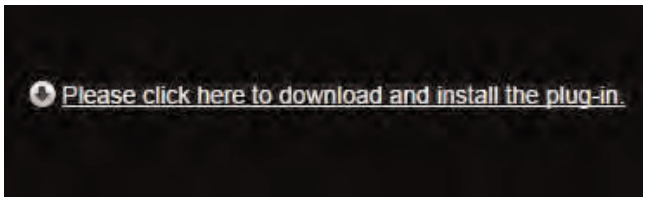
2. Click **Please click here to download and install the plug-in**.



3. The plug-in downloads automatically. When finished, double-click the plug-in in the downloads bar at the bottom of the browser window.

4. Enter the camera user name (default: **admin**) and password (default: **admin**) and click **Login**.

Note
If video from the camera does not appear after installation, quit Chrome™ by closing the browser window. Then restart Chrome™ and log back into your camera.

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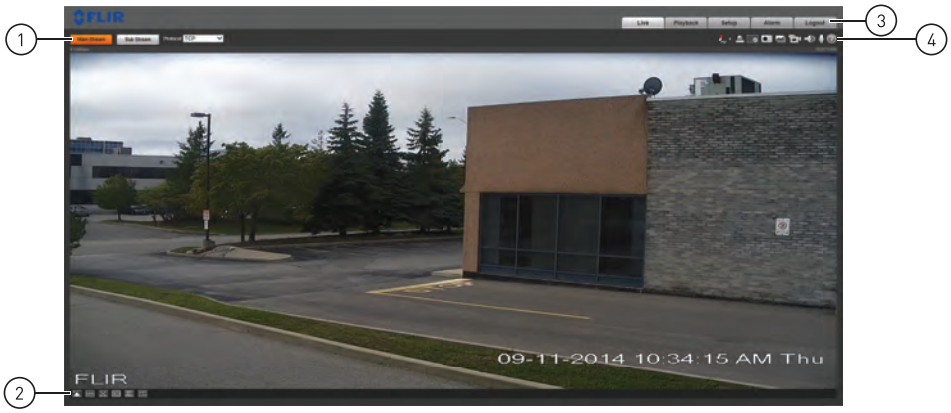
3 Live View

Upon login, the web interface opens to the Live View.



Note
Some functions are not available on all IP camera models, based on the features available.

1. **Stream/Protocol Select:** Allows you to select the video stream and protocol used in Live View.
   - **Main Stream:** Click to view the Main Stream. The Main Stream provides better picture quality and resolution, but requires higher bandwidth.
   - **Sub Stream:** Click to view the Sub Stream. The Sub Stream is recommended for better performance when viewing the camera over the Internet.
   - **Protocol:** Select the protocol that will be used to stream video: **TCP** or **UDP**.

   Note
   Multicast is not supported.

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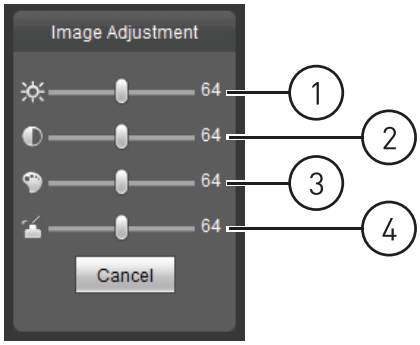
2. **Video Display Controls** ( )
   - **Color Settings:** Click to open color settings.



1. Brightness; 2. Contrast; 3. Hue; 4. Saturation

   - **Original Size:** Click to view the video in its original size. This depends on the resolution and if you are viewing the Main Stream or Sub Stream.
   - **Full Screen:** Click to view the video in full screen. Double-click or press **ESC** to exit full screen mode.
   - **Width / Height Ratio:** Click select **Original** to use the original proportions of the image or **Adaptive** to adapt the image proportions to the size of the screen.
   - **Realtime / Fluency:** Click to select **Realtime**, **Normal**, or **Fluency**.
   - **PTZ Controls (PTZ cameras only):** Click to hide/show PTZ camera controls. For details, see 3.1 *PTZ Control Panel (PTZ Cameras Only)*, page 7.

3. **Menu Tabs**
   - **Live:** Click to access Live View.
   - **PTZ:** On micro PT cameras, the PTZ Control Panel is opened using the PTZ tab, which replaces the button on the Video Display Controls panel.
   - **Playback:** Click to playback video from the camera's microSD card (cameras that support microSD only).
   - **Setup:** Click to setup camera functions.
   - **Alarm:** Click to configure alarms.
   - **Logout:** Log out of the camera.

4. **Live View Functions** ( )

- **Pen:** Click the pen icon to activate the pen. Then, click-and-drag to draw lines overtop of the video display. Click the arrow beside the pen icon to select the pen color ( ).
- **Alarm Output:** Click to activate an alarm output device connected to the camera (cameras with alarm I/O only).
- **Digital Zoom:** Click to activate digital zoom mode. Then, click-and-drag in the video area to select an area to zoom in.
- **Snapshot:** Click to save a snapshot from the camera to your computer hard drive. To configure the folder where snapshots are saved, see 5.1.8 *Path*, page 22.

Note
Depending on your computer's security settings, you may need to run your browser as administrator to save snapshots or manual recordings.

- **Triple Snapshot:** Save the next three frames from the camera as snapshots.
- **Manual Record**: Click to start manually recording live video to your computer hard drive. Click again to stop recording. To configure the folder where manual recordings are saved, see 5.1.8 *Path*, page 22.
- **Manual Focus (motorized lens cameras only):** Click to display the AF Peak and AF Max parameters for auto focus. The closer AF Peak and AF Max are, the better the focus effect is. To configure auto focus, see 5.1.3 *Zoom and Focus (Motorized Lens Cameras Only)*, page 18.
- **Audio Output:** Click to mute / un-mute audio coming from the camera (audio-enabled cameras only; must have self-powered microphone connected to the camera).
- **Intercom:** Click to activate the intercom to the camera (audio-enabled cameras only; must have amplifier or speakers connected to the camera.
- **Help:** Click to access the built-in help file.

3.1 PTZ Control Panel (PTZ Cameras Only)

From Live View, click PTZ to open the PTZ control panel.

Note
The PTZ control panel only allows you to call pre-configured actions. To configure PTZ actions such as preset locations and tours, see 5.3 *PTZ*, page 29.

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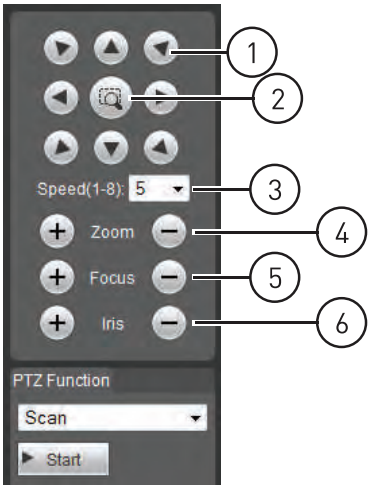
3.1.1 PTZ Controls



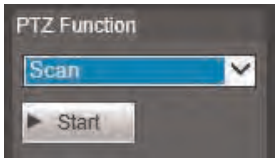
1. Click the arrows to move the camera
2. Click middle button and then click and drag on the video to move the camera
3. Adjust the camera speed
4. Adjust the zoom
5. Adjust the focus
6. Adjust the iris

3.1.2 Scan

You can use the Scan function to have the camera move automatically between two points.

To configure scan function:

1. Select **Scan** from the dropdown menu under **PTZ Function**.



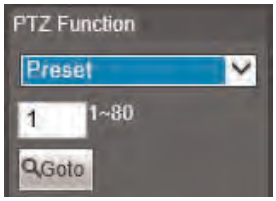
2. Click **Start** to begin the scan.

3.1.3 Preset

You can save preset positions in the camera to recall them later.

To go to a preset location:

1. Select **Preset** from the dropdown menu under **PTZ Function**.



2. Enter the number of the preset you would like to move the camera to.

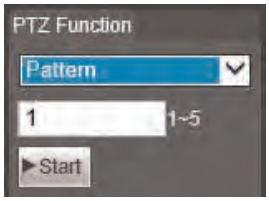
3. Click **Goto** to move the camera to the preset location.

3.1.4 Pattern

You can use the pattern function to record a series of camera movements to recall later.

To run a pattern:

1. Select **Pattern** from the dropdown menu under **PTZ Function**.



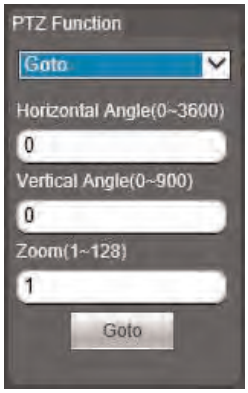
2. Enter the number of the pattern you would like to move the camera to between 1~5.
3. Click **Start** to run the pattern.

3.1.5 Goto

The Goto function allows you to move the camera to a position with specified parameters.

To move the camera to a specified position:

1. Select **Goto** from the dropdown menu under **PTZ Function**.



2. Enter the **Horizontal Angle** you would like to move the camera to between 0~3600.
3. Enter the **Vertical Angle** you would like to move the camera to between 0~900.
4. Enter the **Zoom** level between 1~128.
5. Click **Goto** to go to the specified position.

3.1.6 Pan

You can use pan to have the camera move horizontally between two positions.

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To start a pan:

1. Select **Pan** from the dropdown menu under **PTZ Function**.

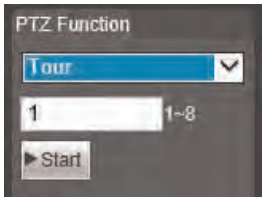
2. Click **Start** to begin panning.

3.1.7 Tour

Use tours to have the PTZ camera move automatically to several preset locations in a cycle.

To start a tour:

1. Select **Tour** from the dropdown menu under **PTZ Function**.



2. Enter the number of the tour you would like to move the camera to between 1~8.
3. Click **Start** to begin the tour.

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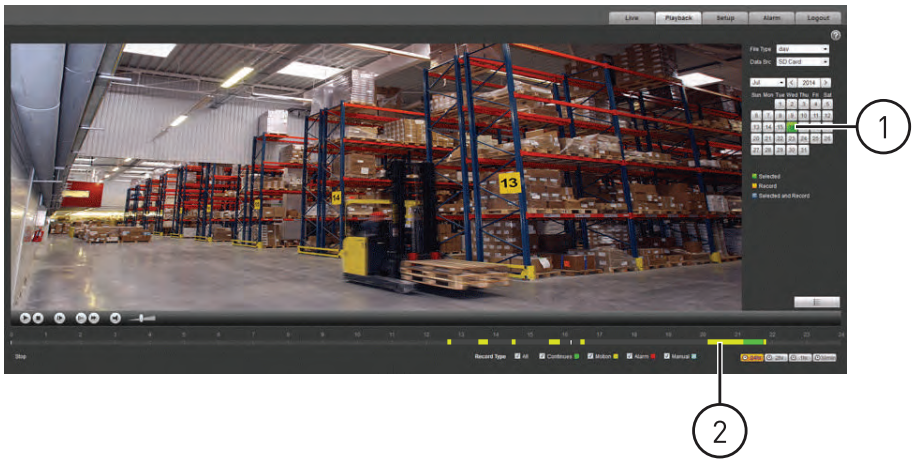
4 Playback (Cameras with microSD only)

Playback mode allows you to playback video from the camera's SD / microSD card.

Note
Playback is only available if your camera supports on-board recording using an SD / microSD card.

To playback video from the microSD card:

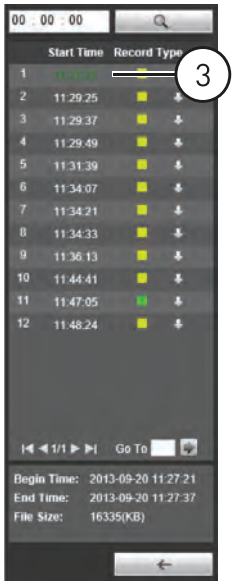
1. Use the calendar to select a day to search for video. The bar on the bottom populates with video recorded on that day.
2. Click in the time bar to start playback.



OR

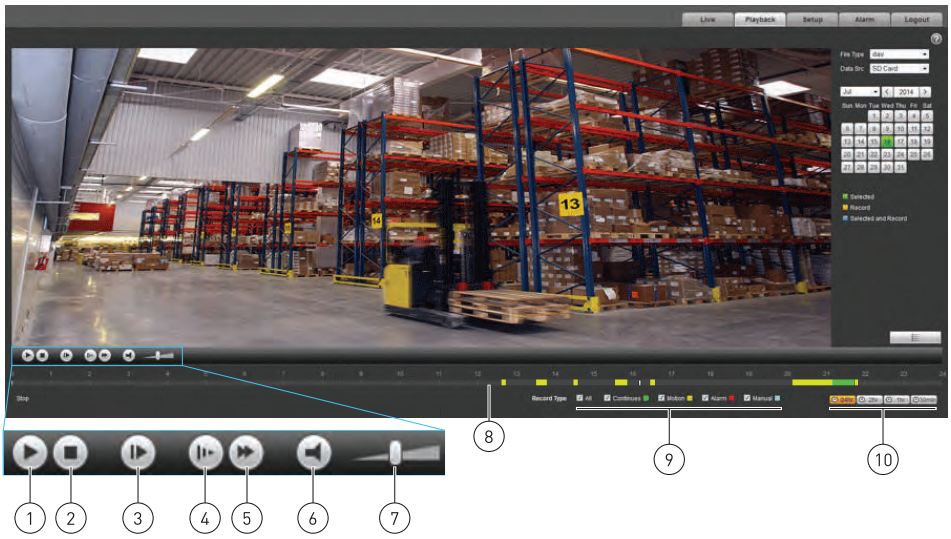
1. Click in the calendar to select a day to search for video.
2. Click . A list appears with video files from the selected day.

3. Click a time to select it.



4. Click then to start playback.

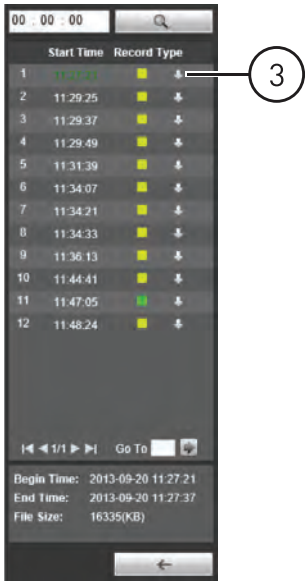
4.1 Playback Controls



1. Play
2. Stop
3. Next frame
4. Slow
5. Fast
6. Mute
7. Volume
8. Select playback time
9. Show / hide recording type in time bar
10. Zoom into time bar

To backup video files:

1. Click in the calendar to select a day to search for video.
2. Click . A list appears with video files from the selected day.
3. Click next to the video file you would like to download to your computer's hard drive.



5 Setup

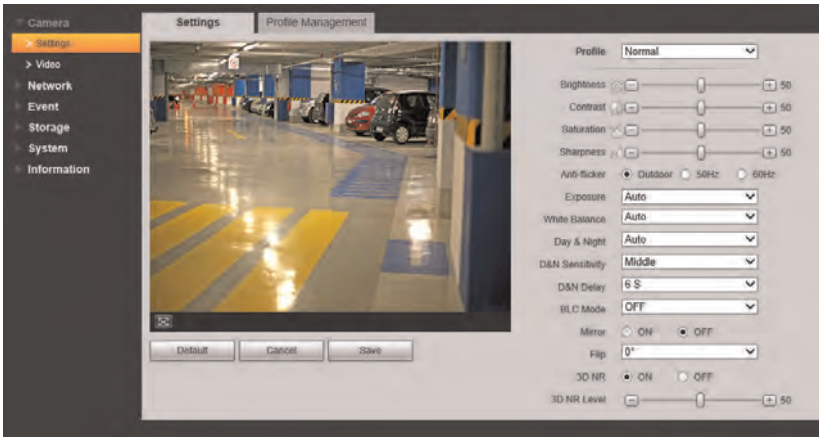
The Setup menus allow you to configure camera settings.

5.1 Camera

The Camera tab allows you to set the camera's video and image settings.

5.1.1 Settings

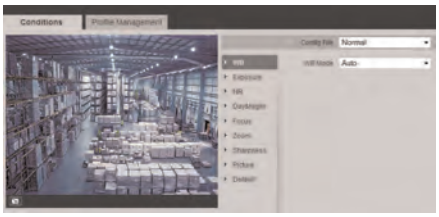
The Settings menu allows you to configure the image sensor settings for the camera. As you make adjustments, the effects will be shown in the video display.



Note

CAUTION

Some camera models use a different interface to configure the image sensor settings (shown on the right). If the image sensor setting menu on your camera appears this way, see 10 *Appendix A — Camera Conditions (Select models only)*, page 126 for instructions on using this interface.



To configure the image sensor settings:

1. Under **Profile**, select **Day**, **Night**, or **Normal**. You can configure the image sensor settings differently for each profile, allowing you to quickly apply different settings if required.

2. Configure the following:

   - **Brightness:** Adjust the brightness of the image between **0** and **100**.
   - **Contrast:** Adjust the contrast of the image between **0** and **100**.
   - **Saturation:** Adjust the color saturation of the image between **0** and **100**.
   - **Sharpness:** Adjust the sharpness of the image between **0** and **100**. Higher sharpness will make edges in the image clearer, but may increase noise in the picture.
   - **Gamma:** Adjust the gamma level of the image between **0** and **100**. The gamma level controls the balance between dark and bright parts of the camera image. It is recommended to keep this value near the mid-point as a low gamma level can produce a washed-out image, and high gamma can create a dark, oversaturated image.
   - **Anti-flicker:** Select the anti-flicker mode depending on the environment:
     - **Outdoor:** The system will use the exposure mode to adjust for lighting.
     - **50Hz:** The system will compensate for lighting using 50Hz AC power (i.e. for Europe).
     - **60Hz:** The system will compensate for lighting using 60Hz AC power (i.e. for North America).
   - **Exposure:** Select the exposure mode.
     - **Auto:** The system will automatically adjust the brightness and exposure based on the environment.
     - **Low Noise:** The system will automatically adjust the gain to reduce the amount of noise in the image. Set the minimum and maximum **Gain Scope**. Increasing the max gain will increase the noise reduction.
     - **Low Motion Blur:** The system will automatically adjust the shutter to reduce motion trails in the image. Set the minimum and maximum **Shutter Scope**.
     - **Manual:** Configure manual exposure settings. Configure the **Shutter Regulate** and **Gain Scope**.
   - **White Balance:** Select the white balance mode.
     - **Auto:** Automatic white balance.
     - **Sunny:** White balance mode for daylight.
     - **Night:** White balance mode for night time.
     - **Customized:** Manual white balance. Use the sliders to configure the **Red Control** and **Blue Control**.
   - **Auto Iris (auto iris cameras only):** Select **ON** to enable auto iris or **OFF** to disable auto iris. If your camera supports the auto iris feature and is installed outdoors, it is recommended to select **OUTDOOR**.
   - **Day & Night:** Select one of the following day / night modes.
     - **Auto:** Camera will automatically change between day and night mode based on the lighting (recommended).
     - **Color:** Camera will be in day mode at all times.
     - **B/W:** Camera will be in black and white at all times.
   - **BLC Mode:** Select one of the following modes.
     - **BLC (Backlight Compensation):**The camera automatically adjusts the exposure for a clearer image in the darkest areas of the video. Click **Default** to use default settings or Customized to adjust the BLC area. The darker the area you select, the brighter the image will be.

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Example image for BLC setting

- **WDR (Wide Dynamic Range):**The camera compensates for changes in brightness across the image to enhance the picture quality of both light and dark areas. Adjust the WDR level between **1** and **100**.

Example image for WDR setting

- **HLC (Highlight Compensation):**The camera dims the brightest areas of the image to make them clearer. Adjust the HLC level between **1** and **100**.

Example image for HLC setting

  - **Off:** Disable this function.

- **Mirror:** Select **ON** to flip the camera left and right.
- **Flip:** Select one of the options to flip the image or **0**° to disable. Note that 90° rotations are not supported if the Main Stream is set above 720p resolution.

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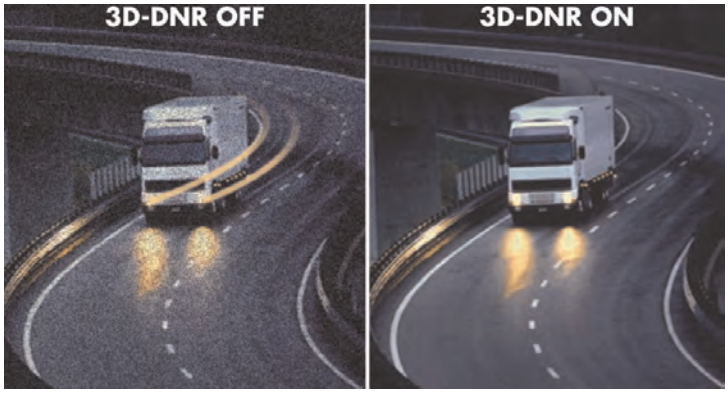
- **3D NR:** Select **ON** to enable 3D spatial noise reduction. Under **3D NR Level**, click **+** / **-** or use the slider to set the noise reduction value. The higher the value, the greater the noise reduction. 3D noise reduction accomplishes the same process for moving objects as well, providing clearer images in low light conditions. Removing noise from the camera image reduces your recording file size and makes videos clearer and more detailed.



Example image for 3D NR setting

5.1.2 Profile Management

The Profile Management tab allows you to set which Profile to use at what times. Choose to use a single profile at all times, or set a schedule for the camera to switch back and forth between Day and Night profiles. In order to get the full benefit of this feature, ensure you have configured the Normal, Day and Night profiles in the Settings submenu. See 5.1.1 *Settings*, page 14 for details.

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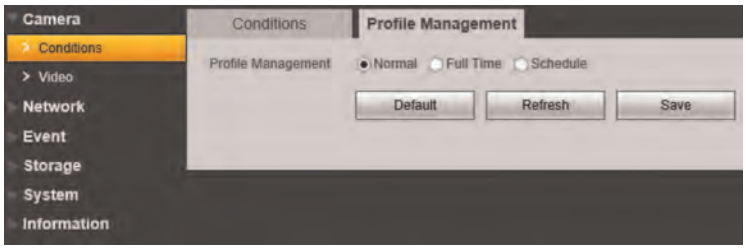
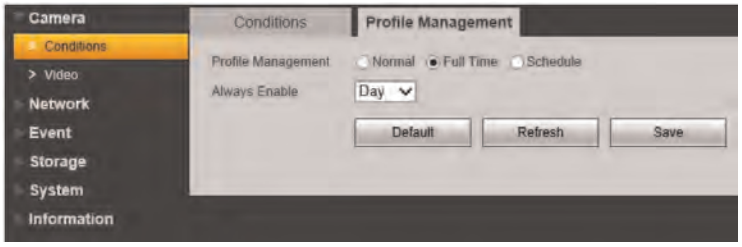
To configure the condition profile:

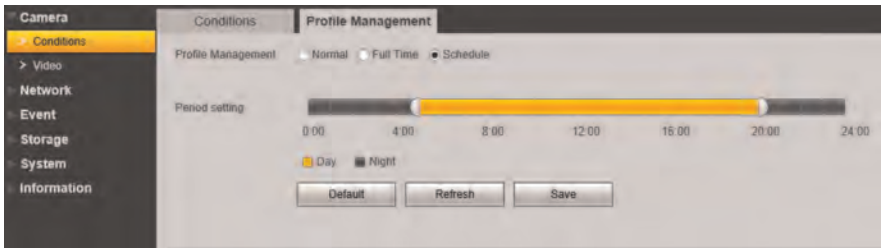
1. Select one of the following options:
   - **Normal:** Camera will use the Normal profile at all times.



   - **Full Time:** Select the profile the camera will use at all times.



   - **Schedule:** Configure a schedule that the camera will use for Day (yellow) and Night (black) profiles. Click and drag in the time bar to set the schedule.



5.1.3 Zoom and Focus (Motorized Lens Cameras Only)

For motorized lens cameras, you can use the Zoom and Focus tab to adjust the lens.

Note
This setting is only available on cameras with a motorized lens. Check the technical specifications for your camera.

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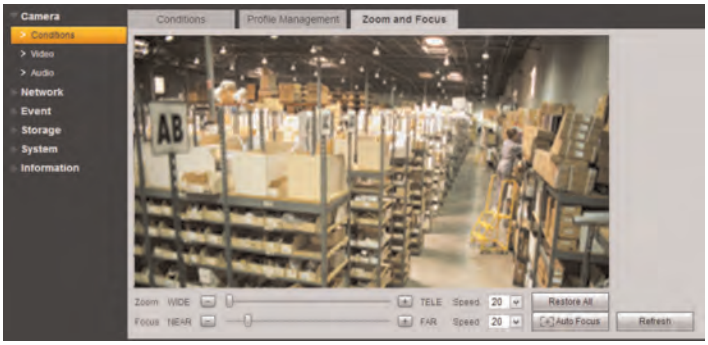
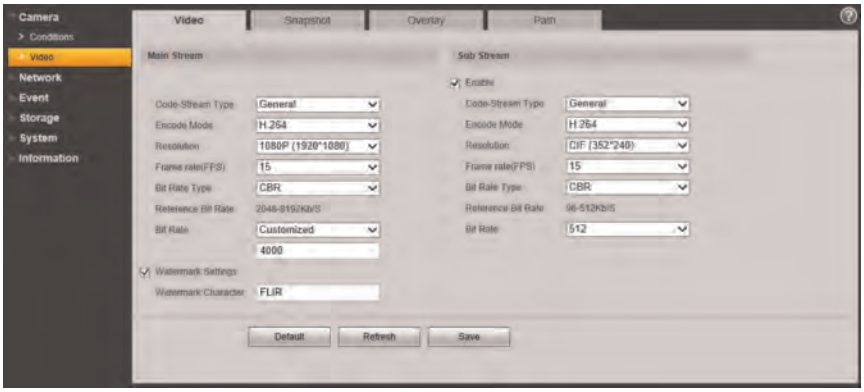


- **Zoom:** Click **+** / **-** or use the slider to adjust the zoom level.
- **Focus:** Click **+** / **-** or use the slider to adjust the focus.
- **Auto Focus:** Click to have the camera automatically adjust the focus to the currently selected zoom level.

Note
Adjustments in this menu are automatically saved.

5.1.4 Video

The Video tab allows you to configure the encoding settings for the camera. Video settings are divided into Main Stream and Sub Stream.



To configure video quality settings:

1. Check **Enable** under Sub Stream to enable the sub stream or uncheck to disable.

2. For the Main Stream and Sub Stream, configure the following:
   - **Code Stream Type:** For the Main Stream, select **General** to configure settings when motion is not detected or **Motion** to configure settings when motion is detected.
   - **Encode Mode:** Select the encoding type: **H.264** (Main H.264 profile), **H.264H** (High Profile H.264), **H.264B** (Baseline H.264 profile), **MJPEG**.

     Note
     A much higher bitrate and faster connection is required to maintain image quality using MJPEG. It is recommended to use H.264 unless you have special requirements.

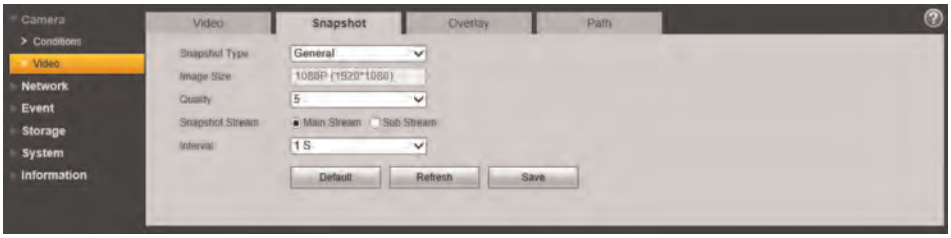
   - **Resolution:** Select the desired resolution for the video stream. There is a different recommended bit rate depending on the resolution selected.

     Note
     You may not set the resolution above 720p if the Flip function is activated.

   - **Frame Rate (FPS):** Select the desired frame rate for the video stream between **1** and **30** FPS.
   - **Bit Rate Type:** Select **CBR** (Constant Bit Rate) or **VBR** (Variable Bit Rate). If you select VBR, you can select the **Video Quality** between **1** (lowest) and **6** (best).
   - **Reference Bit Rate:** Recommended bit rate range based on the resolution and frame rate settings you have selected.
   - **Bit Rate:** Select the desired bit rate for each video stream or select **Customized** and enter the bit rate in Kbps.
   - **I Frame:** Select the interval for I frames. It is recommended to select 2 unless you have special requirements.
3. Under **Watermark Settings**, check to enable watermark to protect against video tampering.
4. Under **Watermark Character**, enter the desired watermark text.
5. Click **Save** to save changes.

5.1.5 Snapshot

The Snapshot menu allows you to configure images quality settings for snapshots.

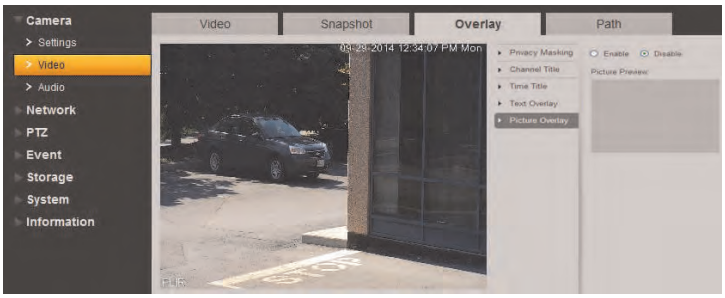


To configure snapshots:

1. Configure the following:
   - **Snapshot Type:** Select **General** to configure snapshots taken using scheduled recording. Select **Event** to configure snapshots activated by alarms.
   - **Image Size:** The image size of snapshots is the same as the resolution for the stream selected.
   - **Quality:** Select the image quality for snapshots between **1** (lowest) and **6** (highest).
   - **Snapshot Stream:** Select **Main Stream** to take snapshots from the Main Stream or **Sub Stream** to take snapshots from the Sub Stream.
   - **Interval:** Select the interval between snapshots between **1** and **7** seconds.
2. Click **Save** to save changes.

5.1.6 Overlay

The Overlay tab allows you to configure the text and information that appears overtop of the camera image, such as time and date display.



To configure video overlay:

1. Under **Channel Title**, click **Enable** to show the name of the channel on screen. Under **Input channel title**, enter a personalized channel name.
2. Under **Time Title**, check to show the time. Check **Week Display** to show the day of the week.
3. Under **Text Overlay**, click **Enable** beside the PTZ functions (for example, tours and preset locations) you want to display on screen (PTZ cameras only). Under **Input location**, enter a custom message up to 5 lines.

Example image of Preset text overlay

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4. Click **Save** to save changes.

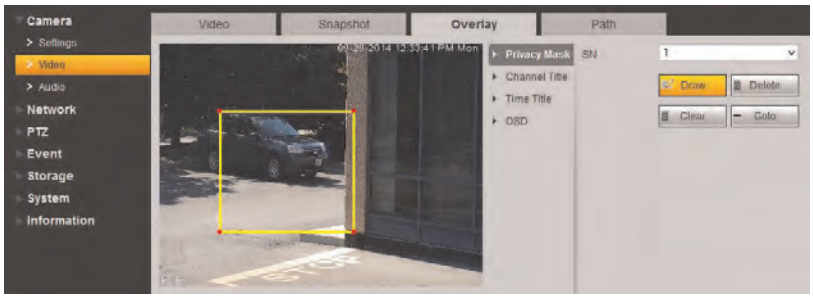
5.1.7 Privacy Masking

Configure privacy masks to hide certain parts of the camera image in video recordings.

⚠ CAUTION
Privacy masks block out parts of the camera image entirely and appear as black boxes in recordings.

To configure video overlay:

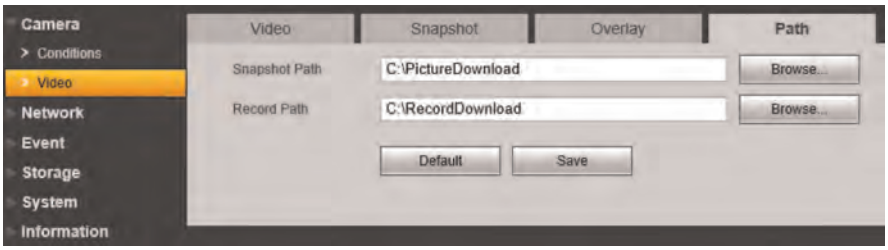
1. Under **Privacy Masking**, select a number from the **SN** dropdown. Click **Draw** to create a new privacy mask. You can create up to 24 privacy masks.



- Click the corners of a privacy area to adjust the size of the privacy area.
- Right-click to delete the currently selected privacy area.
- Click-and-drag outside of the privacy areas to create a new privacy area.
- Click **Save** to save changes.

5.1.8 Path

The Path tab allows you to configure the folder where snapshots and manual recordings are saved to.



To configure the recording and snapshot folder:

1. Configure the following:
   - **Snapshot Path:** The folder on your hard drive where snapshots are stored. Click **Browse** to select a different folder.
   - **Record Path:** The folder on your hard drive where manual recordings are stored. Click **Browse** to select a different folder.
2. Click **Save** to save changes.

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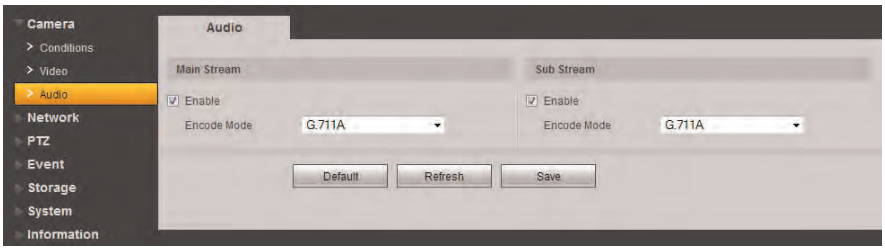
5.1.9 Audio

The Audio tab allows you to enable / disable camera audio as well as choose the audio encoding type. The settings in this menu will affect both one-directional and bidirectional audio for the camera.

Note
This setting is only available on cameras with a microphone. Check the technical specifications for your camera.



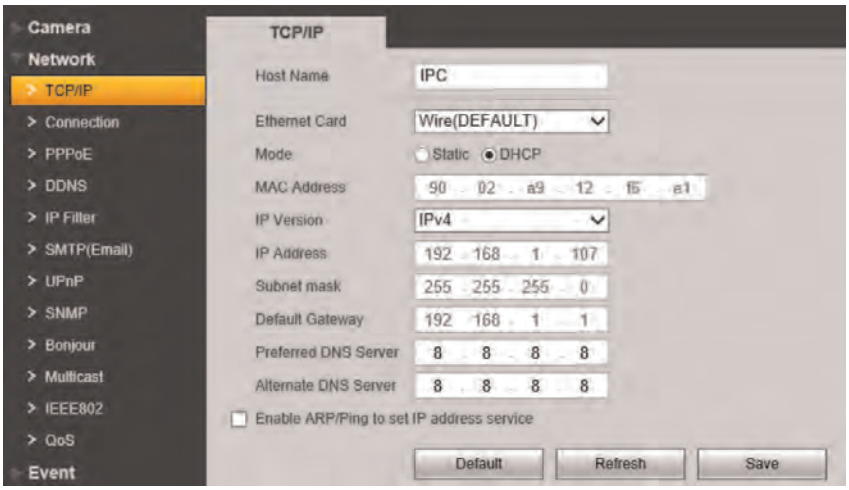
To configure audio settings:

1. Check **Enable** under Main Stream, Sub Stream, or both to enable audio.
2. Under **Encode Mode**, select an encoding mode from **PCM**, **G.711A** and **G.711Mu**.
3. Click **Save** to save changes.

5.2 Network

5.2.1 TCP-IP

The TCP-IP menu allows you to configure the camera for DHCP or Static IP addressing.



To configure IP address settings:

1. Under **Host Name**, enter the Host Name for the camera up to 32 characters.
2. Under **IP Version**, select **IPV4** or **IPV6**.
3. Under **Mode**, select **Static** or **DHCP**. If you select **Static**, configure the **IP Address**, **Subnet**, **Mask**, **Default Gateway**, **Preferred DNS Server**, and **Alternate DNS Server**.
4. Click **Save** to save changes.

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5.2.2 Connection

The Connection menu allows you to configure the camera ports and maximum connections to the camera. You must port forward the HTTP (default: **80**) and TCP (default: **35000**) port numbers on your router to enable remote connection to your camera.

Note
If you are not using an NVR and are setting up multiple cameras in the same network for remote access, you must assign unique TCP and HTTP ports for each camera. Two cameras cannot share the same port number.

To configure connection settings and ports:

1. Under **Max Connection**, enter the maximum number of devices that can connect to the camera at the same time between **1** and **20**.
2. Configure the following port settings:
   - **TCP Port:** Enter the TCP (Client) Port number (default: **35000**). The TCP port is used to stream video to remote computers or mobile devices. The TCP Port must be port forwarded to enable remote connection to your camera.
   - **UDP Port:** Enter the UDP Port number (default: **37778**). The UDP Port is used for special applications only.
   - **HTTP Port:** Enter the HTTP Port (default: **80**). The HTTP Port is used to access the camera's web interface. The HTTP Port must be port forwarded to enable remote access.

     Note
     If you change the HTTP Port to anything other than 80, you must enter colon (:) and the HTTP port in your web browser to access the camera (e.g. http://tomsmith.myddns-flir.com:85).

   - **RTSP Port:** Enter the RTSP Port (default: **554**). The RTSP Port is used for special applications. For details on supported applications, see 5.2.13 *RTSP Streaming (Advanced)*, page 28.
3. (Optional) To enable HTTPS, check **HTTPs On**. To connect to the camera using HTTPS, you must forward the HTTPS port (default: 443) on your router. You must also connect to the camera using the following format:
   - https://IP or DDNS address:HTTPS Port
   - **For example:** https://tomsmith.myddns-flir.com:443
4. (Optional) To configure the HTTPS port, enter the custom port number under HTTPS Port (default: **443**).
5. Click **Save** to save changes.

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5.2.3 PPPoE (Unsupported)

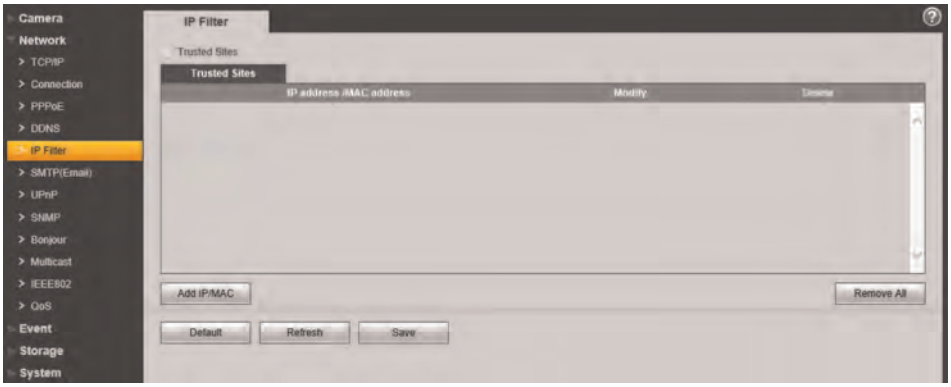
To configure DDNS:

1. Under **Server Type**, check the checkbox and select **FlirDDNS**.
2. Under **Domain Name**, enter the Domain Name from the confirmation email you received after registering for DDNS.
3. Under **Username**, enter the User Name from the confirmation email.
4. Under **Password**, enter the Password from the confirmation email.
5. Click **Save**.

> **Note**
> It may take between 10~15 minutes for the DDNS server to update with your new DDNS address.

5.2.5 IP Filter

The IP Filter allows you to create a white list of device MAC or IP addresses that can access the camera. If you use the IP filter menu, devices that are not on the white list will not be able to remotely connect to the camera.



> **Note**
> If you enable the IP filter the camera will block any device that is not listed. Make sure the correct devices are added to the list, or you may not be able to access the camera.

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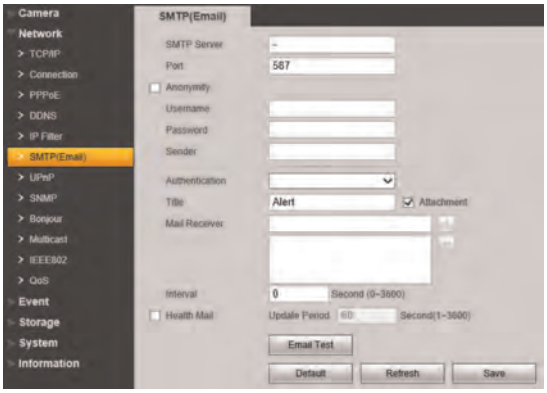
To filter connections based on IP or MAC addresses:

1. Click **Add IP/MAC**.
2. Select **IP Address** or **MAC Address** and then enter the address of the device you would like to add to the white list.
3. Click **Save**.
4. Check **Trusted Sites**.
5. Click **Save** to save changes.

5.2.6 SMTP (Email)

The SMTP menu allows you to set up email alerts for motion or alarms.



To configure SMTP Settings:

1. Under **SMTP Server**, enter the SMTP server address.
2. Under **Port**, enter the Port used by the server.
3. Check **Anonymity** if the server allows anonymous logins or uncheck to enter credentials to access the server.
4. Under **Username**, enter the user name of the sender's account.
5. Under **Password**, enter the password of the sender's account.
6. Under **Sender**, enter the sender's email account.
7. If the server uses encryption, select **SSL** or **TLS** under **Authentication**.
8. Under **Interval**, select the interval for sending email alerts. The system will only send email alerts after this interval has passed.
9. Check **Health Mail** to enable the camera to send health alerts. If you enable health alerts, enter the interval in seconds under **Update Period**.
10. Click **Email Test** to send a test email using the settings you have entered.
11. Click **Save** to save changes.

5.2.7 UPnP

UPnP allows you to map port numbers between the LAN and the Internet. Depending on your router version, you may need to disable UPnP function.

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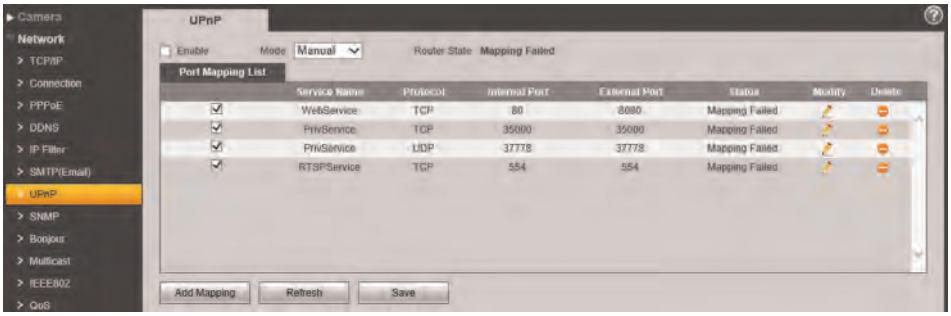
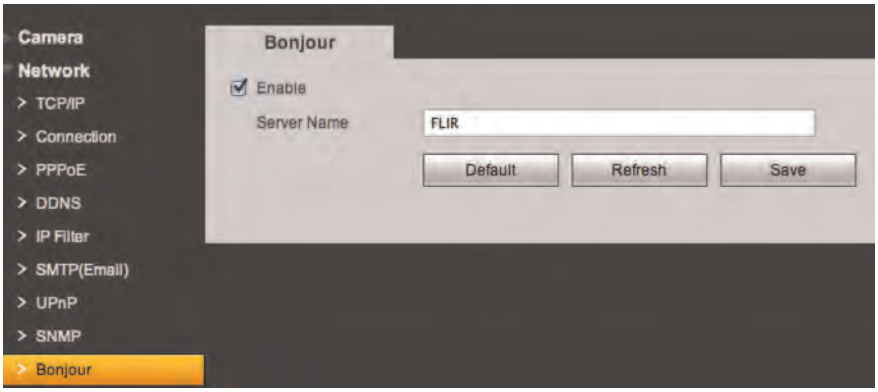


5.2.8 Bonjour

The Bonjour menu allows you to enable the Bonjour service to easily detect the camera on a local network when using a Mac.

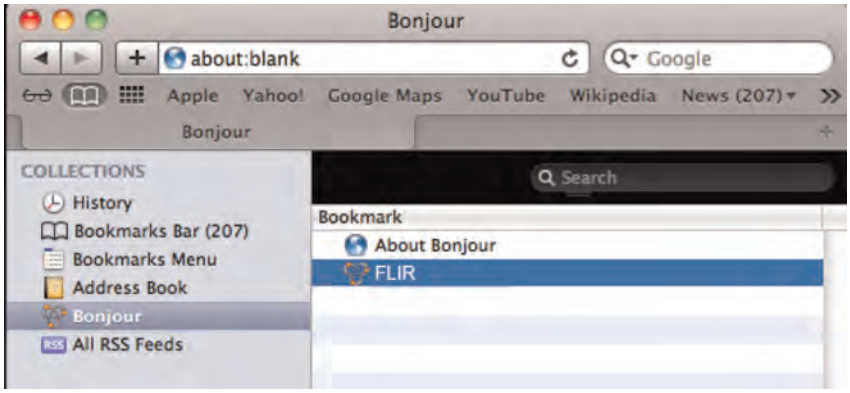


To enable / disable the Bonjour service:

1. Check **Enable** to enable Bonjour or uncheck to disable.
2. Under **Server Name**, enter the name of the camera that will show up when accessing the camera through Bonjour in Safari.
3. Click **Save** to save changes.

To access the camera through Bonjour:

1. In Safari, click to open the Bookmarks menu.
2. Click **Bonjour**, the IP Camera will appear in the list.



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3. Double-click the IP camera to open it in a browser tab.

5.2.9 SNMP (Unsupported)

5.2.10 Multicast (Unsupported)

5.2.11 802.1x (Unsupported)

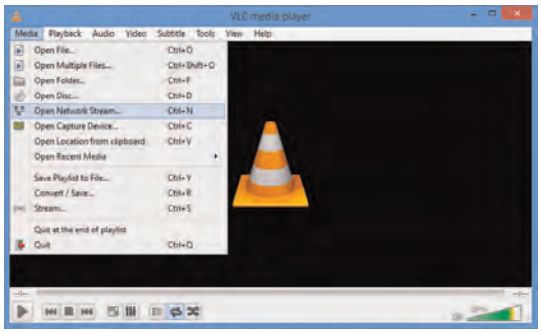
5.2.12 QoS (Unsupported)

5.2.13 RTSP Streaming (Advanced)

RTSP streaming allows you to stream video from a specific camera using a web address. It is an optional connectivity method used by 3rd party software applications.

To connect to the video stream using VLC Media Player:

1. Open VLC Media Player.
2. Click **Media>Open Network Stream**.



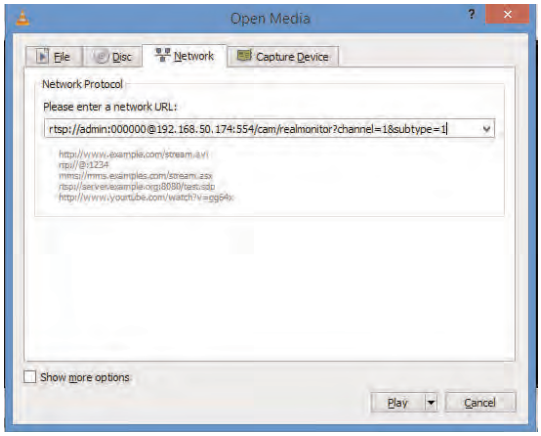
3. Enter the RTSP address in the following format:

   - rtsp://<*username*>:<*password*>@<*IP address*>:<*port*>/cam/realmonitor?channel=<*channelNo*>&subtype=<*typeNo*>
   - **<username>**: The user name of the IP camera (default: admin).
   - **<password>**: The password for the IP camera (default: admin).
   - **<IP address>**: The IP address of the IP camera.

     Note
     In order to view the RTSP stream over the Internet, you must port forward the RTSP port (default: 554) on your router to the camera's IP address.

   - **<Port>**: The RTSP port (default: 554) of the IP camera.
   - **<channelNo>**: Enter **1**.
   - **<typeNo>**: Enter **1** for the Sub Stream of the camera or **0** for the Main Stream. It is recommended to use the Sub Stream if connecting over the Internet.

   The example below shows the correct format to connect to the Sub Stream on an IP camera



4. Click **Play**. The video stream will open in VLC Media Player.

If it does not connect, check the following:

- Check that the syntax on the RTSP address is correct.
- Make sure the IP camera is connected to the network.
- If connecting over the Internet, make sure to use the remote IP address of the camera and that the RTSP port is open.

5.3 PTZ

The PTZ submenu allows you to configure preset locations, patterns and tours for retrieval at any time.

5.3.1 Preset

Presets will save a camera position for quick retrieval.

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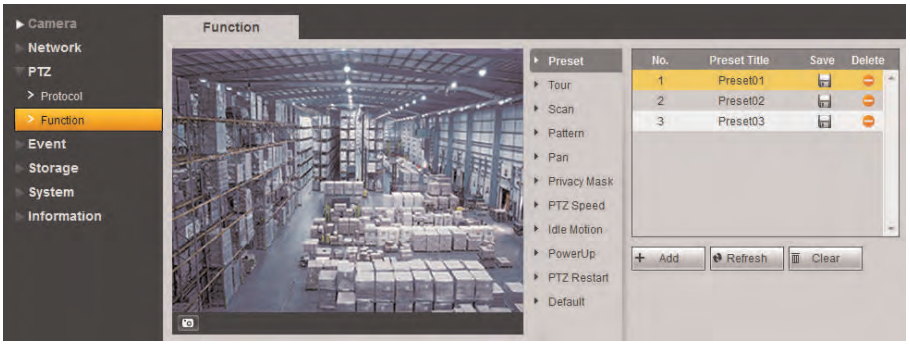

To add presets:

1. Under **PTZ > Function**, click **Preset**.
2. Use the PTZ controls below the camera image to move the camera to the desired location.
3. Click **Add** to add the current location to the list of presets.
4. Click next to the preset title that was just added to save the preset. You can now call the preset location from the Live View tab using the PTZ control panel.

To delete presets:

- Click next to the preset title you want to delete to remove it from the list.

5.3.2 Tour

Tours will cycle through a set of presets.

To add a tour:

1. Under **PTZ > Function**, click **Tour**.
2. Click **Add** beneath the tour list to add a new tour.
3. (Optional) Double-click the tour name to enter a personalized name for the tour.
4. Click **Add** beneath the preset list to add a location to the tour. By default, the newly added location will show the number “1” under the Preset column.
5. Double-click the number “1” under Preset to open a dropdown menu with all of your saved preset locations. Select the preset number you want to use as the first location in the tour.

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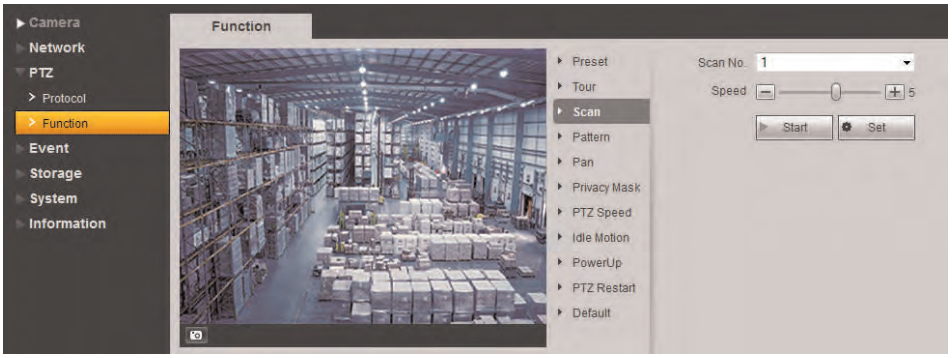
6. Repeat steps 4 & 5 for as many preset locations as you would like in the tour. When finished, press **Save** to save the tour.
   You can press the **Start** button to test the tour, then **Stop** to stop the test.

To delete a tour:

- Click next to the tour you want to delete to remove it from the list.

5.3.3 Scan

An auto scan automatically cycles between a set left and right limit.

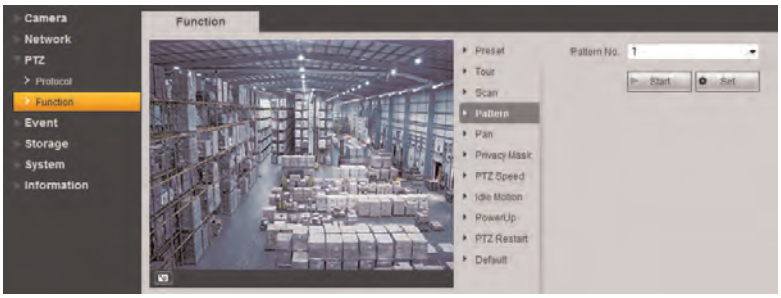


To add a scan cycle:

1. Under **PTZ > Function**, click **Scan**.
2. Under **Scan No.**, select the scan cycle you would like to configure.
3. Click **Set**.
4. Using the PTZ controls, move the camera to the leftmost point of the scan pattern you want to set and click **Left Limit**.
5. Move the camera to the rightmost point of the scan pattern you want to set and click **Right Limit**.
6. Under **Speed**, click **-** / **+** or use the slider to set the speed of the scan cycle. Setting a higher number means the camera will move faster between the left and right limits.
7. Press the **Start** button to test the scan cycle, then **Stop** to stop the test.

5.3.4 Pattern

You can use the pattern function to record a series of camera movements to recall later.



To save a pattern:

1. Under **PTZ > Function**, click **Pattern**.
2. Under **Pattern No.**, select the pattern cycle you would like to configure.
3. Click **Set**.

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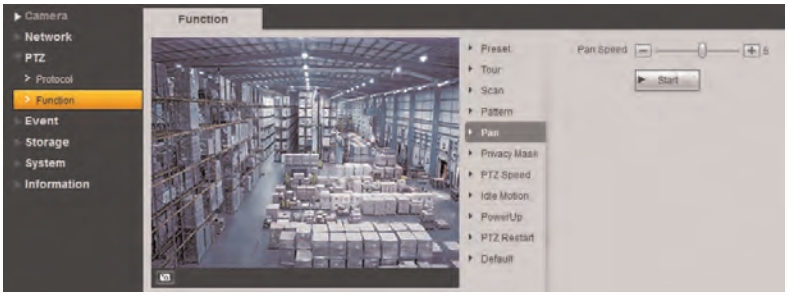
4. Press **Start Record** to start recording a pattern. Move the camera in the desired pattern using the PTZ controls. When finished, press **Stop Record**.
5. Press the **Start** button to test the pattern, then **Stop** to stop the test.

5.3.5 Pan

Set the camera to pan continuously at a set speed.



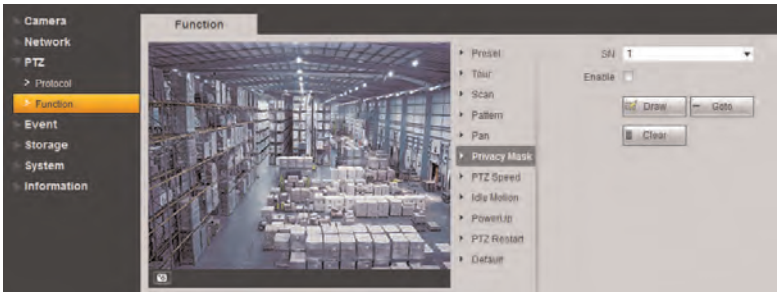
To setup auto-pan:

1. Under **PTZ > Function**, click **Pan**.
2. Under **Pan Speed**, click **-** / **+** or use the slider to set the panning speed.
3. Press the **Start** button to test the auto-pan, then **Stop** to stop the test.

5.3.6 Privacy Mask

Configure privacy masks to hide certain parts of the camera image in video recordings.

⚠ CAUTION
Privacy masks block out parts of the camera image entirely and appear as black boxes in recordings.



To add a privacy mask:

1. Under **PTZ > Function**, click **Privacy Mask**.
2. Under **SN**, select a number for the privacy mask you wish to setup. You can configure up to 24 privacy masks.
3. Check **Enable**.
4. Click **Draw**. Click-and-drag on the camera image to draw the privacy mask over the area you wish to hide.

To remove a privacy mask:

1. Under **SN**, select the number of the privacy mask you wish to remove.
2. Uncheck **Enable** to disable the privacy mask, or press **Clear** to delete.

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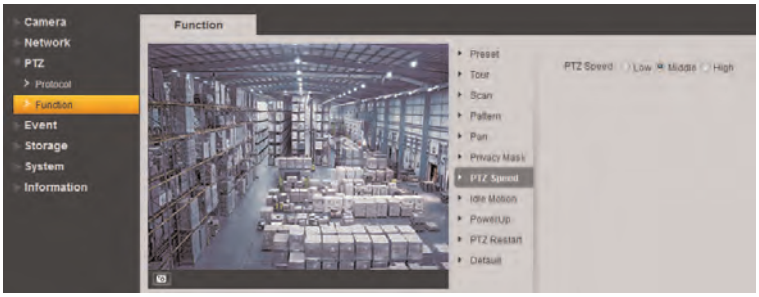
5.3.7 PTZ Speed

Set the speed for the camera's Pan-Tilt-Zoom functions.

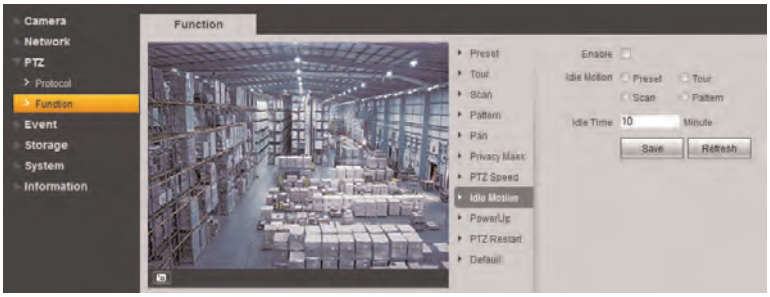


To set PTZ speed:

1. Under **PTZ > Function**, click **PTZ Speed**.
2. Click either **Low**, **Middle**, or **High** to set the speed of PTZ functions.

5.3.8 Idle Motion

You can set the camera to perform a certain action when it is left idle for a set period of time.



To configure idle motion:

1. Under **PTZ > Function**, click **Idle Motion**.
2. Check **Enable** to enable the idle motion feature.
3. Select an idle motion for the camera. You can choose from **Preset**, **Tour**, **Scan**, or **Pattern**.

> **Note**
> You must setup at least one of the corresponding functions to set it as the idle motion. For example, you must setup at least one tour to select **Tour** as the **Idle Motion**.

4. Under **Idle Time**, set the time in minutes before the idle camera performs the set idle motion.
5. Press the **Start** button to test the tour, then **Stop** to stop the test.

5.3.9 Power Up

Choose an action for the PTZ camera to perform when it first powers up.

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To configure the power up function:

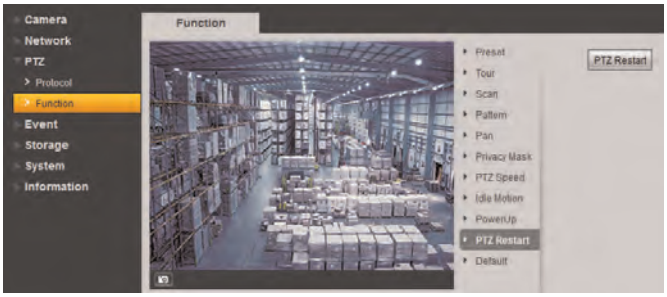
1. Under **PTZ > Function**, click **PowerUp**.
2. Check **Enable** to enable the power up feature.
3. Select a power up function for the camera. You can choose from **Preset**, **Tour**, **Scan**, **Pattern**, or select **Auto** to perform the default PTZ diagnostic check on startup.

> **Note**
> For all options except **Auto**, you must setup at least one of the corresponding functions to set it as the power up function. For example, you must setup at least one tour to select **Tour** as the power up function.

4. Click **Save** to save your settings.

5.3.10 PTZ Restart

Restart the PTZ camera.



To restart the PTZ camera:

1. Under **PTZ > Function**, click **PTZ Restart**.
2. Click **PTZ Restart**.

5.3.11 Default

Set all PTZ functions back to the default settings.

⚠ **CAUTION**
Resetting to defaults will erase any custom PTZ functions you have created — this step cannot be undone.

To reset PTZ defaults:

1. Under **PTZ > Function**, click **Default**.
2. Click **Default**.

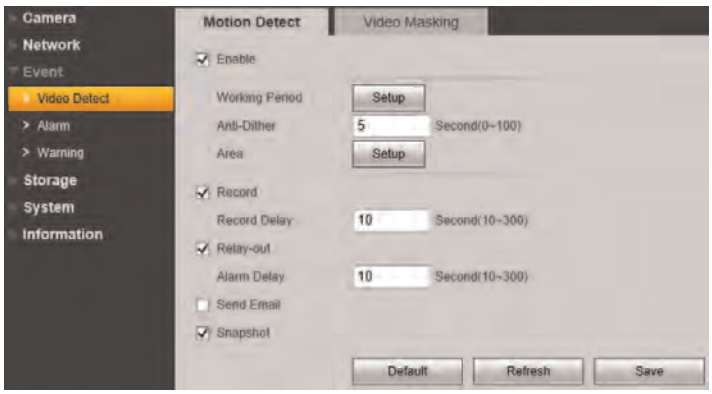
⚠ CAUTION
Resetting to defaults will erase any custom PTZ functions you have created — this step cannot be undone.

5.4 Event

5.4.1 Motion Detect

The Video Detect menu allows you to set up motion detection and recording.

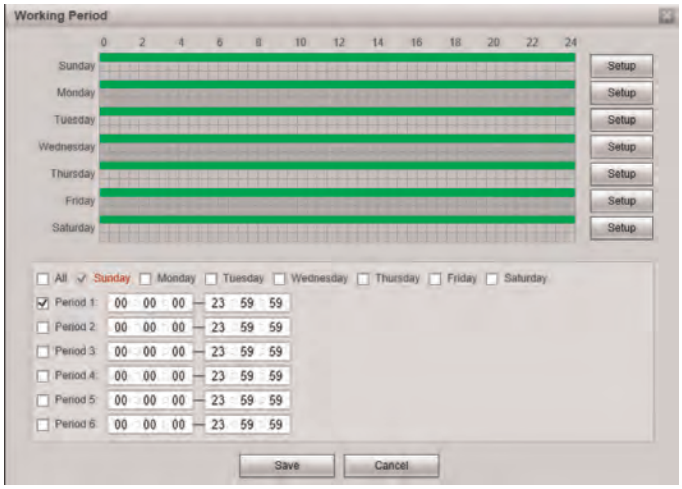
Note
Recording functions require an FTP server or an on-board microSD card. Some camera models do not support these recording features.



To set up motion detection settings:

1. Check **Enable** to enable motion detection.

2. To configure a schedule when motion detection will be activated, click **Setup** next to **Working Protocol**.



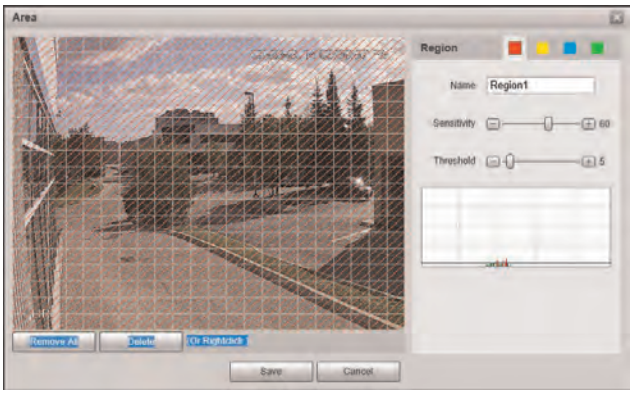
   - Select the day you would like to configure by clicking the **Setup** buttons. You can apply the same schedule to multiple days using the checkboxes.
   - Configure up to 6 time periods when motion detection will be activated.
   - Click **Save**. Repeat the steps above if you would like to apply a different schedule to different

3. Under **Anti-dither**, enter the anti-dither time. After a motion event occurs and motion stops, if motion is detected within the anti-dither time, the system continues the motion event and includes the new motion within the first event, rather than creating a new motion event.

4. To configure the motion grid, click **Setup** next to **Area**.
   - Click squares on the grid to create motion detection areas. Click on the different colors to set 4 different areas.
   - To move an area, click inside and drag.
   - Right-click to delete the selected area.
   - Click-and-drag outside of all areas to draw a new area. You may have up to 4 motion areas.
   - Use the sliders to adjust the **Sensitivity** and **Threshold** for motion detection.

⚠ **CAUTION**
It is recommended to have someone moving in areas of interest on the camera image during setup.

   - The **Sensitivity** determines how sensitive the camera is to motion. For example, if the sensitivity is high, small amounts of motion will score higher on the graph. It is recommended to select a Sensitivity between 30~70.
   - The **Threshold** determines how much motion is required to trigger an alarm or recording. It is represented by the horizontal line on the graph. If the amount of motion in the area exceeds this line, it will trigger an alert. It is recommended to select a Threshold between 10~50.
   - Each motion area can have a separate Sensitivity and Threshold value.
   - Click **Save**.

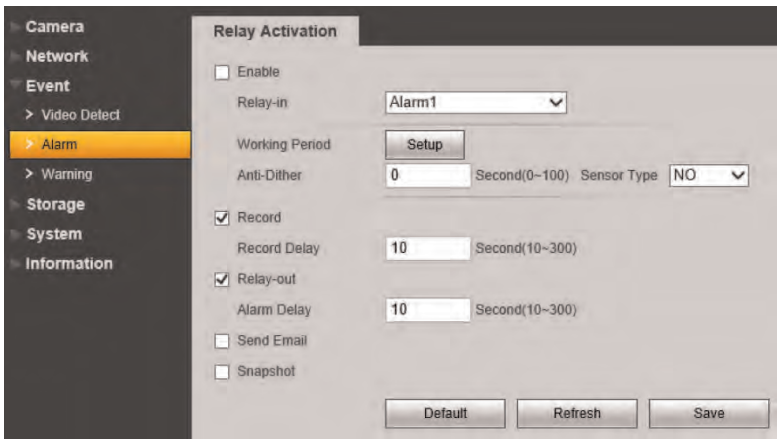


5. Check **Record** to record when motion is detected. microSD or FTP recording must be configured to use this function.
6. Enter the number of seconds the camera will record after motion is detected under **Record Delay**.
7. Check **Relay Out** to trigger an external alarm device when the camera detects motion. The camera must have an Alarm Output to use this function.
8. Enter the number of seconds before the camera will trigger the external device under **Alarm Delay**.
9. Check **Send Email** for the camera to send an email alert when motion is detected. Email settings must be configured to receive email alerts.
10. Check **Snapshot** for the camera to save a snapshot when motion is detected. microSD or FTP recording must be configured to use this function.
11. Click **Save** to save changes.

5.4.2 Video Masking (Unsupported)

5.4.3 Relay Activation (Cameras with Alarm I/O Only)

The Alarm menu allows you to configure settings for alarm devices. Your camera must have an alarm I/O connector to use alarm devices.



To configure alarm device settings:

1. Configure the following:
   - Under **Relay-In**, select the alarm device you would like to configure.
   - Check **Enable** to enable the selected alarm In device.
   - Click **Setup** next to Working Period to set a schedule for alarm device activation.
   - Under **Anti-Dither**, enter the latch time in seconds.
   - Under **Sensor Type**, select **NO** (Normally Open) or **NC** (Normally Closed) depending on the type of sensor used.
   - Check **Record** to record when a sensor device is triggered.
   - Under **Record Delay**, enter the amount of time the system will record when a sensor device is triggered.
   - Check **Relay-out** to activate an alarm output device (e.g. strobe light) when the sensor device is triggered. The camera must have an alarm output to use this feature.
   - Check **Send Email** for the camera to send out an alert email when the sensor device is triggered.
   - Check **Snapshot** for the camera to save a snapshot to FTP or microSD when the sensor device is triggered.
2. Click **Save** to save changes.

5.4.4 No SD Card

A No SD Card error occurs if recording is set in the camera, but there is no SD / microSD card installed.

Note
The No SD Card warning is only available on cameras that support SD / microSD cards. Check the technical specifications for your camera.

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To configure No SD Card errors:

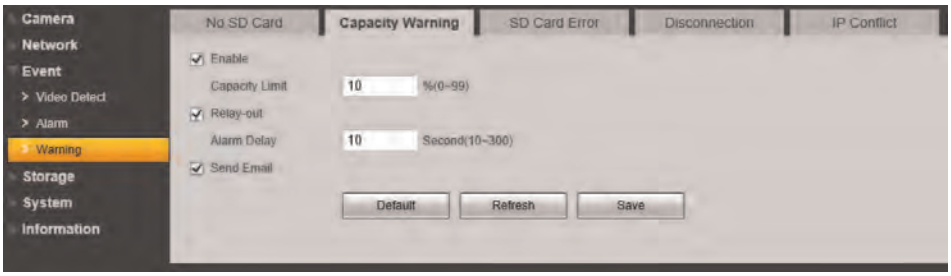
1. Check **Enable** to enable No SD Card errors.
2. Check **Relay-out** to trigger an alarm out device when No SD Card errors occur. Under **Alarm Delay**, enter the number of seconds before the alarm out device will be activated.

> **Note**
> Relay-out is only available if your camera supports alarm output. Check the technical specifications for your camera.

3. Check **Send Email** to send an email alert when No SD Card errors occur.

5.4.5 Capacity Warning

A Capacity Warning occurs when the recording destination (microSD / SD card or FTP server) reaches capacity.



To configure Capacity Warnings:

1. Check **Enable** to enable Capacity Warnings.
2. Under **Capacity Limit**, set the percentage of free space on the recording destination that will trigger a Capacity Warning. For example, if you enter 10% and your microSD card is 1GB, a warning will occur when there is only 100MB of free space remaining.
3. Check **Relay-out** to trigger an alarm out device when Capacity Warnings occur. Under **Alarm Delay**, enter the number of seconds before the alarm out device will be activated.

> **Note**
> Relay-out is only available if your camera supports alarm output. Check the technical specifications for your camera.

4. Check **Send Email** to send an email alert when Capacity Warnings occur.
5. Click **Save** to save changes.

5.4.6 SD Card Error

An SD Card Error occurs if an error occurs recording to the SD / microSD card (for example, if the card is damaged or is using the wrong file system).

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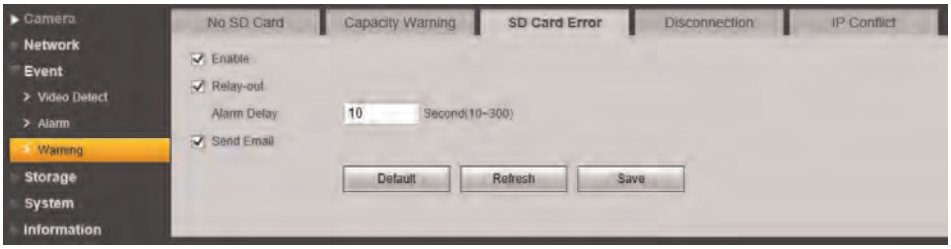
Note
The SD Card Error warning is only available on cameras that support SD / microSD cards. Check the technical specifications for your camera.



To configure SD Card Errors:

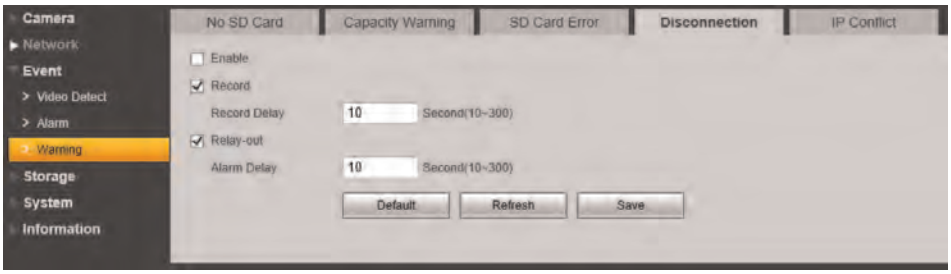
1. Check **Enable** to enable SD Card Errors.
2. Check **Relay-out** to trigger an alarm out device when SD Card Errors occur. Under **Alarm Delay**, enter the number of seconds before the alarm out device will be activated.

   Note
   Relay-out is only available if your camera supports alarm output. Check the technical specifications for your camera.

3. Check **Send Email** to send an email alert when SD Card Errors occur.
4. Click **Save** to save changes.

5.4.7 Disconnection

A Disconnection error occurs if the camera is disconnected from the network.



To configure Disconnection Errors:

1. Check **Enable** to enable Disconnection errors.
2. Check **Record** to record to the microSD / SD card when Disconnection errors occur.

   Note
   The camera must support microSD / SD card recording to use this function. Check the technical specifications for your camera.

3. Under **Record Delay**, enter the number of seconds the camera will record after a Disconnection error.

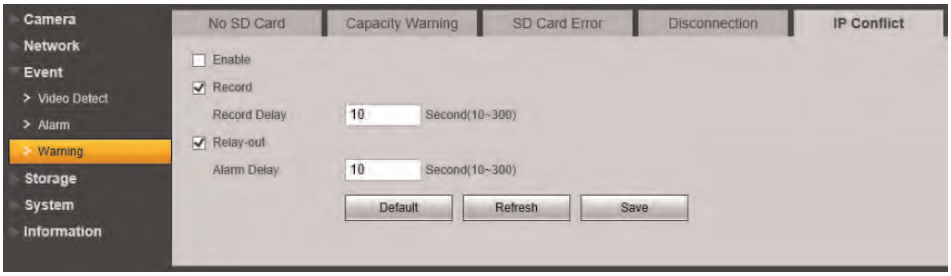
4. Check **Relay-out** to trigger an alarm out device when Disconnection errors occur. Under **Alarm Delay**, enter the number of seconds before the alarm out device will be activated.

> **Note**
> Relay-out is only available if your camera supports alarm output. Check the technical specifications for your camera.

5. Check **Send Email** to send an email alert when Disconnection errors occur.
6. Click **Save** to save changes.

5.4.8 IP Conflict

An IP Conflict error occurs if another device is assigned the same IP address as the IP camera.



To configure IP Conflict errors:

1. Check **Enable** to enable IP Conflict errors.
2. Check **Record** to record to the microSD / SD card when IP Conflict errors occur.

> **Note**
> The camera must support microSD / SD card recording to use this function. Check the technical specifications for your camera.

3. Under **Record Delay**, enter the number of seconds the camera will record after an IP Conflict
4. Check **Relay-out** to trigger an alarm out device when IP Conflict errors occur. Under **Alarm Delay**, enter the number of seconds before the alarm out device will be activated.

> **Note**
> Relay-out is only available if your camera supports alarm output. Check the technical specifications for your camera.

5. Check **Send Email** to send an email alert when IP Conflict errors occur.
6. Click **Save** to save changes.

5.4.9 Network

Some cameras group the IP Conflict and Disconnection warnings into a single Network warning tab.

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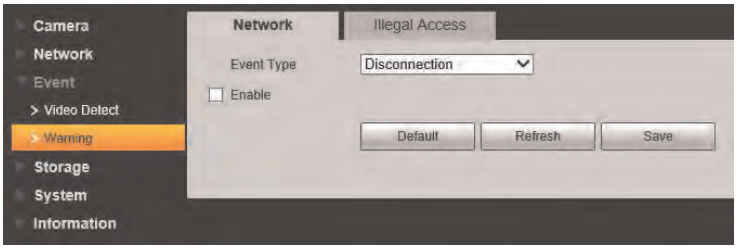


To enable IP Conflict / Disconnection errors:

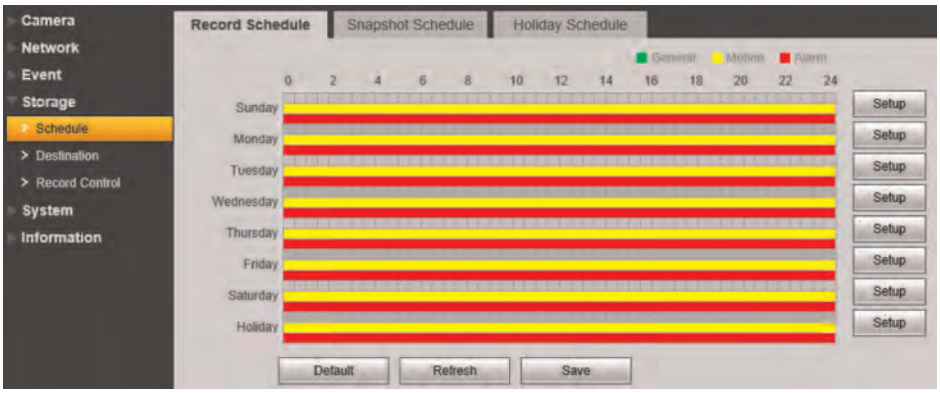
1. Under **Event Type**, select **Disconnection** or **IP Conflict**.
2. Check **Enable** to enable the selected warning type.

5.5 Storage

The Storage menu allows you to configure recording settings.

5.5.1 Record Schedule

The Record Schedule determines the schedule for video recording to SD / microSD card or FTP.



To configure the recording schedule:

1. Click **Setup** next to the day you would like to configure.
2. Use the checkboxes if you want to copy the schedule to other days.

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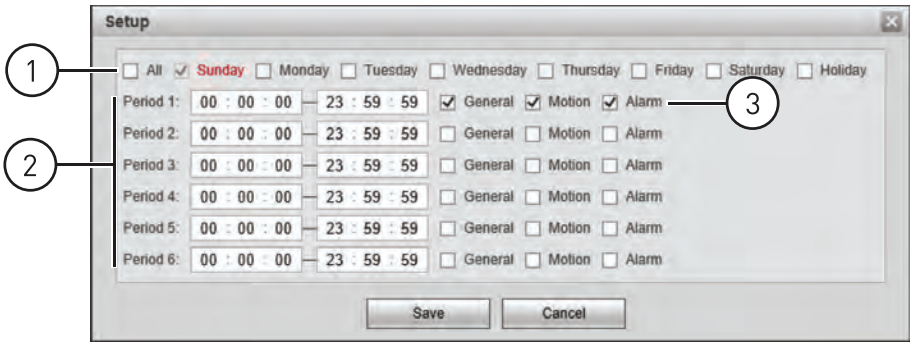
3. Configure up to 6 time periods for recording. For each period, enter a time range and check the recording types you would like to enable during that period:
   - **General:** Continuous recording.
   - **Motion:** Motion activated recording.
   - **Alarm:** Alarm activated recording.

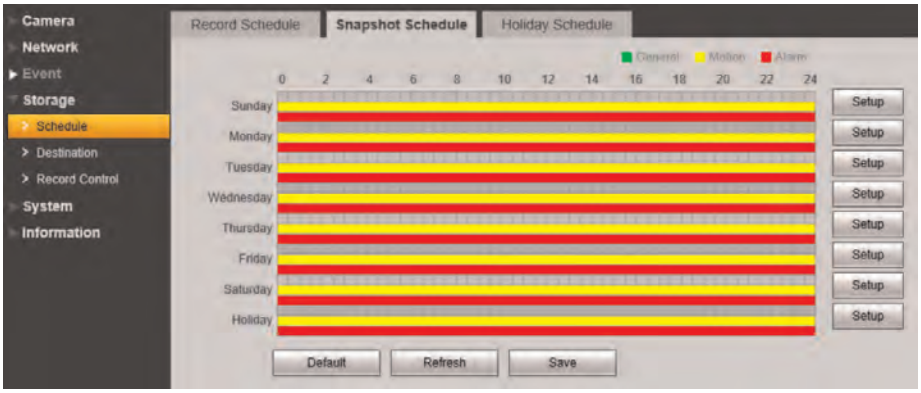


   3.1. Check to copy schedule
   3.2. Configure up to 6 periods
   3.3. Enable recording types

4. Click **Save**.

5.5.2 Snapshot Schedule

The Snapshot schedule determines the schedule for snapshot recording.



To configure the snapshot schedule:

1. Click **Setup** next to the day you would like to configure.
2. Use the checkboxes if you want to copy the schedule to other days.

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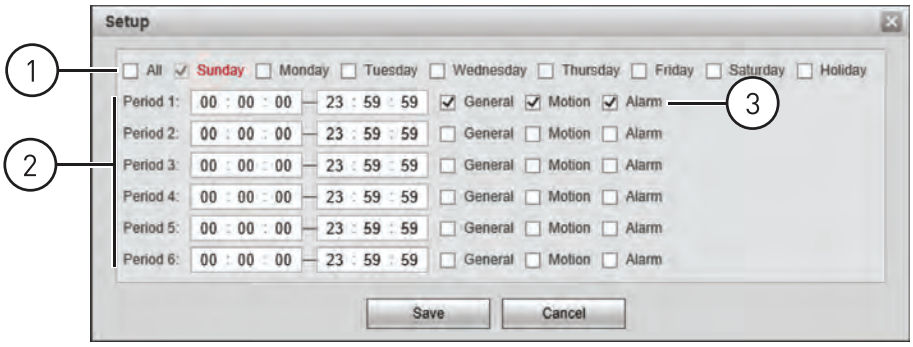
3. Configure up to 6 time periods for recording. For each period, enter a time range and check the recording types you would like to enable during that period:
   - **General:** Continuous recording.
   - **Motion:** Motion activated recording.
   - **Alarm:** Alarm activated recording.

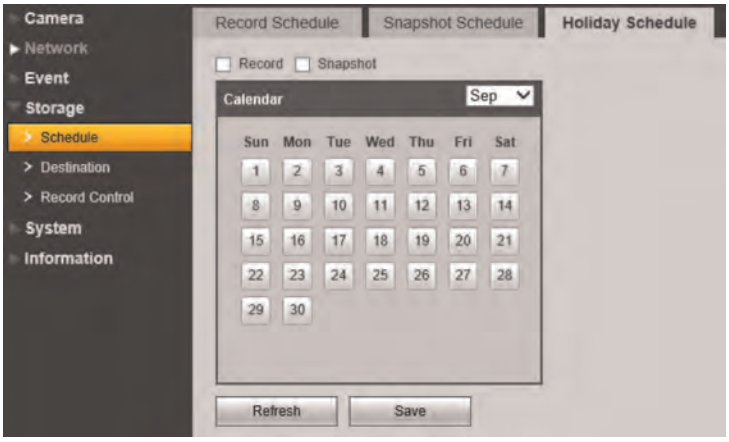


   3.1. Check to copy schedule
   3.2. Configure up to 6 periods
   3.3. Enable recording types

4. Click **Save**.

5.5.3 Holiday Schedule

The Holiday Schedule allows you to set certain days of the year as holidays.



To configure the holiday schedule:

1. Check **Record** or **Snapshot** to enable holidays for that recording type.
2. Use the calendar to select which days are holidays.
3. Click **Save**.

5.5.4 Path

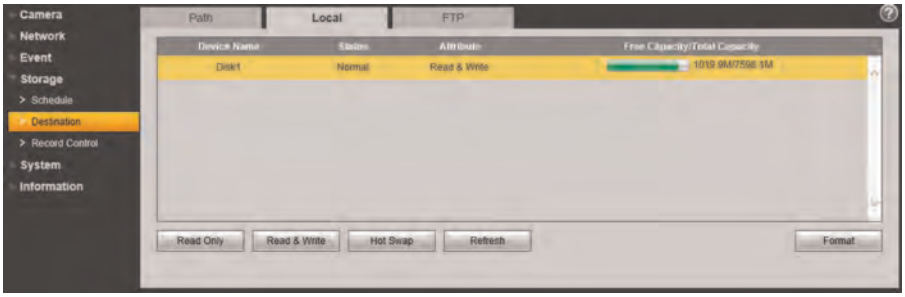
The Path tab allows you to select if the camera records to microSD or FTP.

To select the recording destination:

1. Under **Record** or **Snapshot**, check **Local** to record to the microSD card, or check **FTP** to record to FTP. For video recording or snapshot recording, you cannot record to both microSD and FTP.
2. Click **Save**.

5.5.5 Local

The Local tab allows you to format or configure the microSD card installed in the camera.



- Click **Read Only** to set the microSD card on read only mode. This disables microSD recording.
- Click **Read & Write** to enable recording on the microSD card.
- Click **Hot Swap** to unmount the microSD card if you would like to eject it from the camera.
- Click **Format** and then click **Yes** to format the microSD card. The camera will reboot once the format is completed.

5.5.6 FTP

The FTP tab allows you to set up settings for recording to an FTP server.

To set up FTP settings:

1. Check **Enable** to enable recording to FTP.

2. Configure the following:
   - **Server Address:** Enter the IP address or DNS address of the FTP server.
   - **Port:** Enter the FTP server port number.
   - **User Name:** Enter the user name for the FTP server.
   - **Password:** Enter the password for the FTP server.
   - **Remote directory:** Enter the recording directory on the FTP server (e.g. share).

   Note
   The recording directory must be located one level below the root directory. For example, share is acceptable, but not share/recordings.

   - Check **Emergency (Local)** to enable microSD recording if the FTP server cannot be reached.
3. Click **Save** to save changes.

5.5.7 Record Control

The Record Control menu allows you to configure recording parameters for the camera.

To configure recording parameters:

1. Under **Pack Duration**, enter the duration in minutes that the camera will use to pack video
2. Under **Pre-event Record**, enter the duration in seconds that the camera will pre-record before motion events.
3. Under **Disk Full**, select **Overwrite** to overwrite recordings when the recording medium is full or select **Stop** to stop recording when the recording medium is full.
   - Under **Record Mode**, select **Auto** to record according to the schedule, select **Manual** to record continuously, or select Off to disable recording.
4. Under **Record Stream**, select **Main Stream** to record using the Main Stream settings, or select **Substream** to record the substream.
5. Click **Save** to save changes.

5.6 System

5.6.1 General

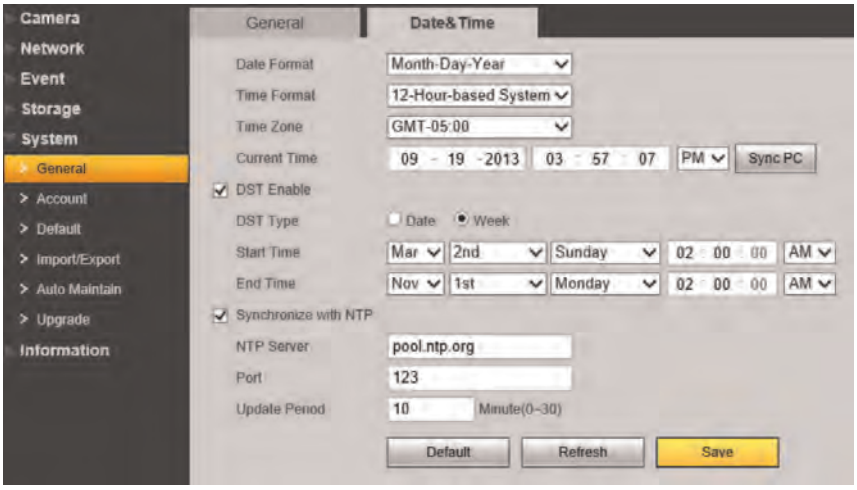
The General menu allows you to configure general camera settings.

To configure general camera settings:

1. Under **Device Name**, enter a name for the camera.
2. Under **Language**, select the language that will be used for the web browser interface.
3. Under **Video Standard**, select **NTSC** (North America) or **PAL** (Europe).
4. Click **Save**.

5.6.2 Date & Time

The Date & Time tab allows you to set up date and time settings for the IP camera.



To configure date & time settings:

1. Configure the following:
   - **Date Format:** Select the date format.
   - **Time Format:** Select the time format (12 hour or 24 hour).
   - **Time Zone:** Select your time zone.
   - **Current Time:** Enter the current time or click **Sync PC** to sync your IP camera to your PC's clock.
2. If your area uses Daylight Savings Time (DST) check **DST Enable**. If you enable DST, configure the following:
   - **DST Type:** Select **Date** to select a date for the time change or select **Week** to select the week and day for the time change.
   - **Start Time** and **End Time:** Enter the start and end times for Daylight Savings.
3. Check **Synchronize with NTP** to synchronize the camera clock with an NTP time server. A constant Internet connection is required to use NTP. If you enable NTP, configure the following:
   - **NTP Server:** Enter the NTP server address.
   - **Port:** Enter the port for the NTP server.
   - **Update Period:** Enter the interval the camera will use to update the time.

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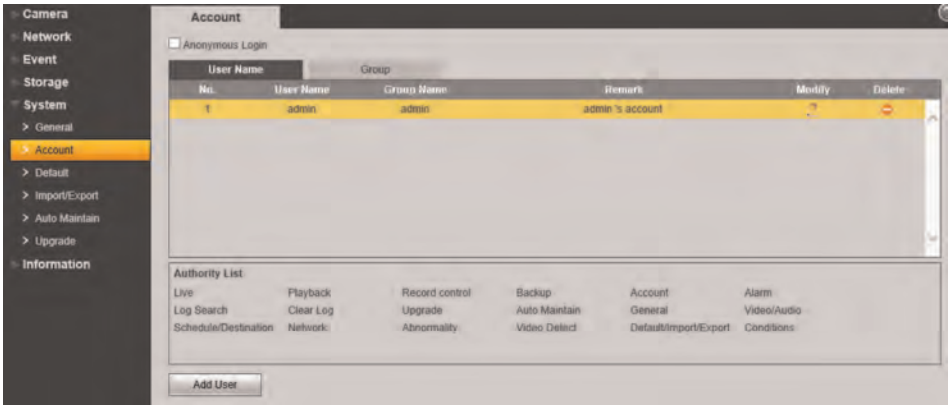
4. Click **Save**.

5.6.3 Account

The Account menu allows you to configure user accounts and user groups. The camera can support up to 18 user accounts and up to 8 groups. User accounts must be assigned to a group and inherit permissions from user groups, but an individual user account can be given less permissions than the group.

The camera includes a unique admin account that cannot be deleted. The admin account is the only one that can change permissions assigned to user accounts. Accounts given permission to access the Account menu may change the password for other accounts. Accounts not given permission to access the Account menu may not change any account passwords, including their own. It is essential to change the password of the admin account from the default to prevent unauthorized access to your camera.

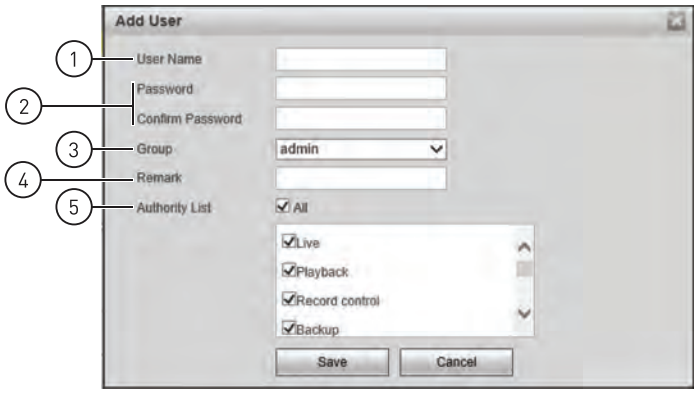
You may also check **Anonymous Login** to allow users to connect to the camera without entering a user name or password. Users connecting anonymously are given limited access to the camera: they may only view live video and the Alarm list.



To create a user account:

1. Click **Add User**.

2. Configure the following:



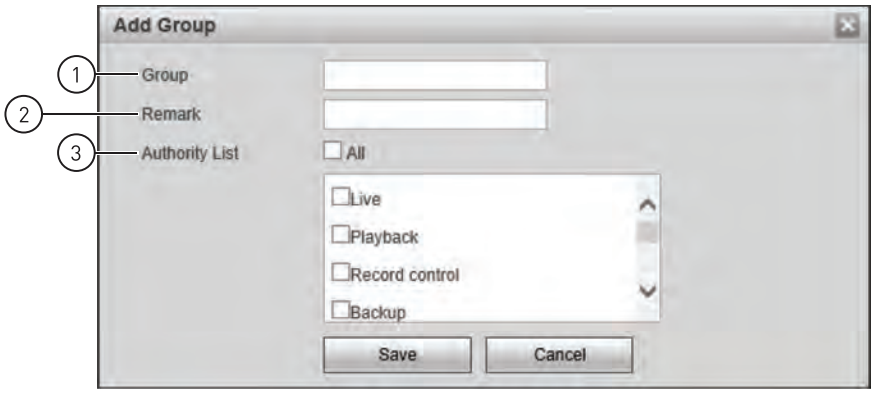
2.1. **User Name:** Enter a user name for the user. The user name can be up to 15 characters including letters, numbers, and underscores.
2.2. **Password:** Enter a password for the user account. Re-enter the password under **Confirm Password**.
2.3. **Group:** Assign the user account to a group. The user account will inherit permissions from the group, which will be updated under Authority List.
2.4. **Remark:** (Optional) Enter a description for the user account.
2.5. **Authority List:** Use the checkboxes to assign permissions to the user account.

3. Click **Save**.

To create a user group:

1. Click the **Group** tab.
2. Click **Add Group**.

3. Configure the following:



3.1. **Group:** Enter a name for the group.
3.2. **Remark:** (Optional) Enter a description for the group.
3.3. **Authority List:** Use the checkboxes to assign the default permissions for user accounts added to this group.

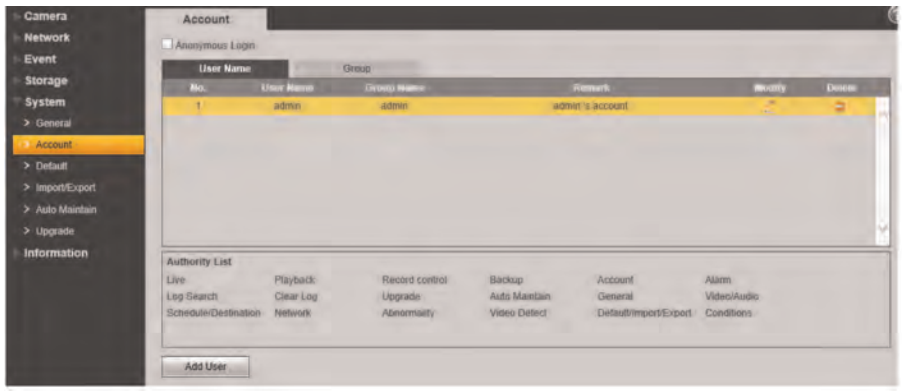
4. Click **Save**.

To modify a user account or group:

1. Select the **User** or **Group** tab.
2. Click next to the account or group you would like to delete.
3. Edit the account or group details and then click **Save**.

To delete a user account or group:

1. Select the **User** or **Group** tab.
2. Click next to the account or group you would like to delete.



3. Click **OK**.

5.6.4 PTZ Settings

When connected to a FLIR NVR, FLIR IP PTZ cameras support camera control over Ethernet cable, which means that setting up PTZ protocol information is not a requirement.

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If using a third-party IP PTZ solution that supports camera control through RS-485 wires, use the PTZ Settings menu to configure the PTZ protocol information.

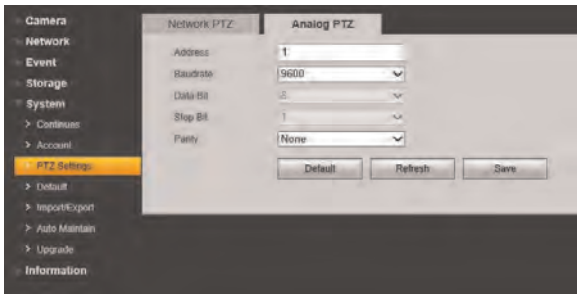
Step 1 — Choose the PTZ protocol:

1. Click the **Network PTZ** tab to choose the PTZ protocol.

2. Under **Protocol**, select the protocol being used by your PTZ camera from **DH-SD1**, **PELCOD**, **PELCOD1**, **PELCOP**, or **NONE**.
3. Click **Save** to save your settings.

Step 2 — Configure protocol information:

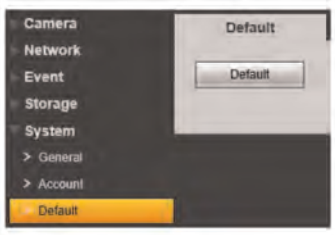
1. Click the **Analog PTZ** tab to configure the protocol information.



2. Under **Address**, enter the address of the PTZ camera.
3. Under **Baudrate**, select the baud rate from the available options.
4. Under **Parity**, select the correct parity from the available options.
5. Click **Save** to save your settings.

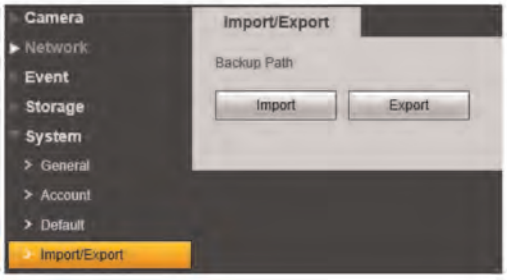
5.6.5 Default

Click the **Default** button and then click **OK** to reset the camera to default settings. The camera will reboot.



5.6.6 Import / Export

The Import/Export menu allows you to export your camera's configuration or import a saved configuration.



To export the camera's configuration:

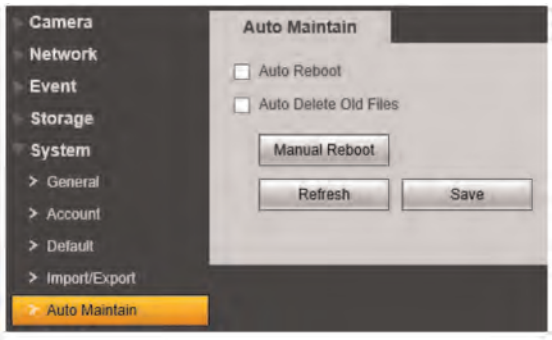
1. Click **Export**.
2. Select a location on your computer and then click **Save**.

To import the camera's configuration:

1. Click **Import**.
2. Select the configuration file you would like to backup and then click **Open**.

5.6.7 Auto Maintain

The Auto Maintain menu allows you to reboot the camera manually or on a automatic schedule. Rebooting the camera regularly ensures system stability. It also allows you to automatically delete old video files.



To manually reboot the camera:

- Click **Manual Reboot** and then click **OK** to reboot the camera.

To configure auto reboot:

1. Check **Auto Reboot** to set the camera to reboot automatically on schedule.
2. Select the day and time for the camera to reboot.
3. Click **Save**.

To configure auto delete:

1. Check **Auto Delete Old Files**.
2. Enter the number of days the camera will retain video files.
3. Click **Save**.

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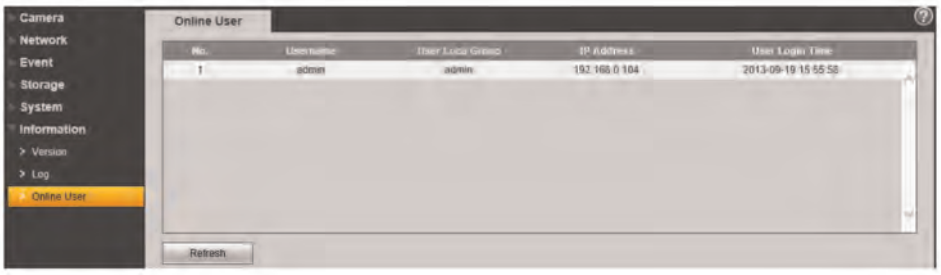


5.7.1 Version

The Version menu shows you information related to the product and firmware version.

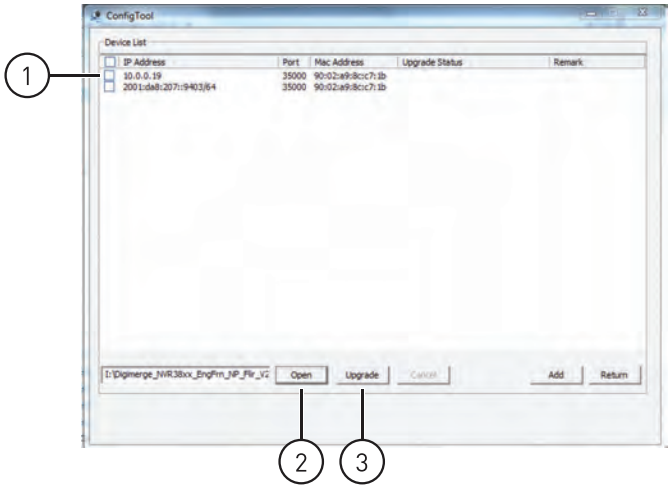
5.7.2 Log

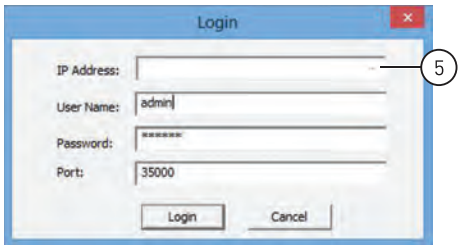
The Log menu allows you to view system logs for the camera.

To view system logs:

1. Under **Start Time** and **End Time**, enter the start time and end time for your search.
2. Under **Type**, select the type of log you would like to search for: **All**, **Setting**, **Data**, **Event**, **Record**, **Account**, and **Clear Log**.
3. Click **Search**.
   - (Optional) Click **Backup** to save logs to your computer hard drive.
   - (Optional) Click **Clear** to delete all system logs.

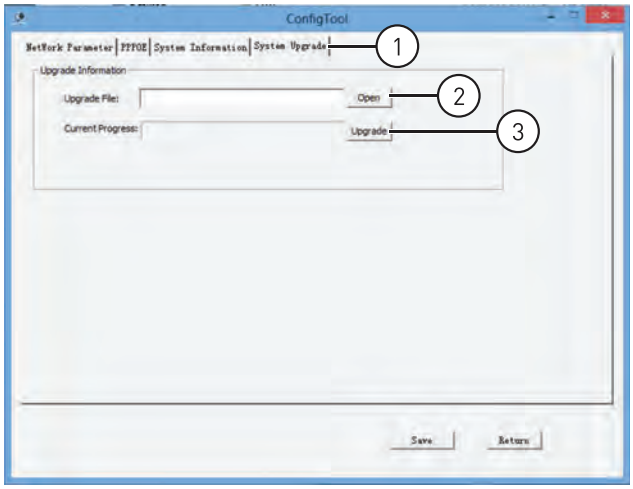
7. Click **Upgrade**. Wait for the upgrade to complete. **Do not power off the system or disconnect the power cable during upgrade.** The system will restart when the upgrade is complete.





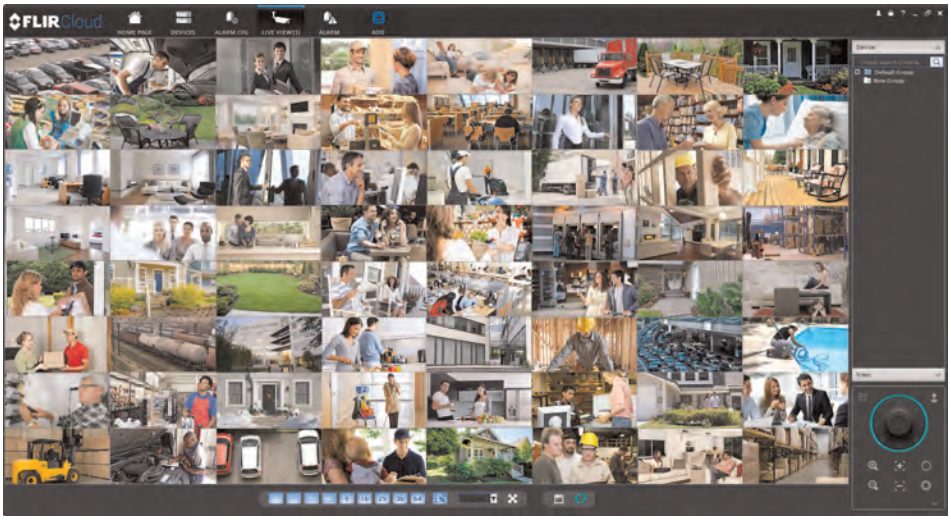
6. Click **Login**. The Config Tool logs in to the IP camera.
7. Click **System Upgrade**.
8. Click **Open**. Select the firmware file (.bin).

9. Click **Upgrade**. Wait for the upgrade to complete. **Do not power off the system or disconnect the power cable during upgrade.** The system will restart when the upgrade is complete.



9.1. Click **System Upgrade**
9.2. Click **Open** and select the firmware file
9.3. Click **Upgrade**

7 Connecting to Cameras with FLIR Cloud™ CMS



FLIR Cloud™ Client is a central management software that allows you to view and manage multiple FLIR security systems on a PC or Mac. It includes support for FLIR Cloud™ Services, allowing a simple, secure connection to compatible systems over the Internet with no network configuration required.

7.1 System Requirements

Your system must meet the system requirements below:

Description	Requirement
CPU	Core 2 Duo 3.0GHz
Operating System	Windows™ 8/7/Vista Mac OSX 10.7 and above
Memory	2GB
Video	512 MB of video memory and above
Network (LAN)	10/100 BaseT Network
Network (WAN)	1 Mbps upstream High-speed Internet service is required to remotely connect to your system.

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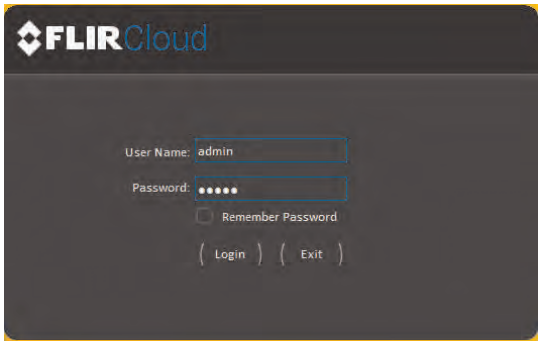
3. Log into the Client Software using the Client Software user name (default: **admin**) and password (default: **admin**) and then click **Login**.



7.3 Adding a Camera over the Local Network (LAN)

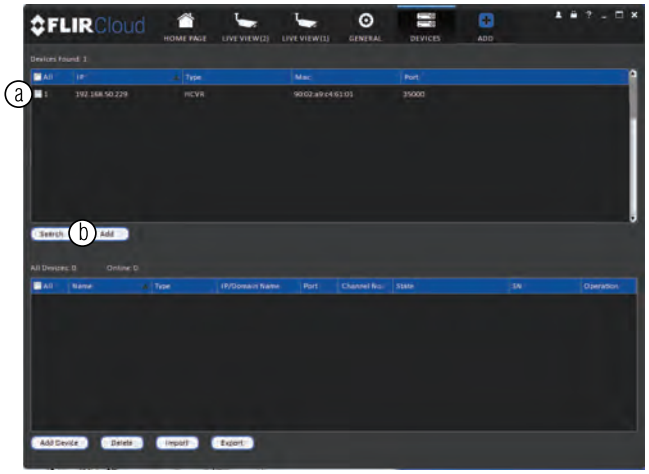
You can add cameras over a local network (LAN). The software will automatically scan the network for compatible cameras.

Prerequisites:

- Connect the IP camera to a router or switch on the network.
- Install FLIR Cloud™ Client on a computer in the same network as the IP camera.

To add a camera over the LAN:

1. Click and then click .
2. The client scans your LAN for connected cameras. Check your camera (a) and click **Add** (b).



3. Enter the password for your system (default: **admin**) and click **OK**.
4. Click then .

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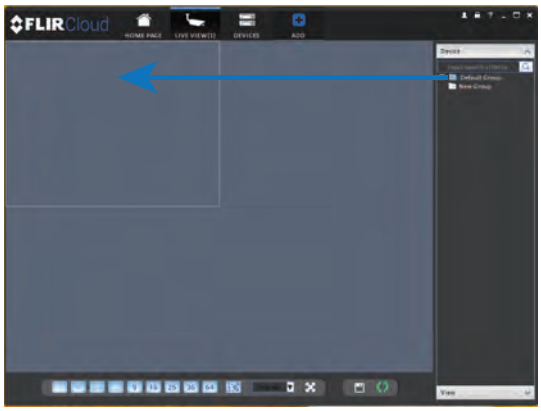
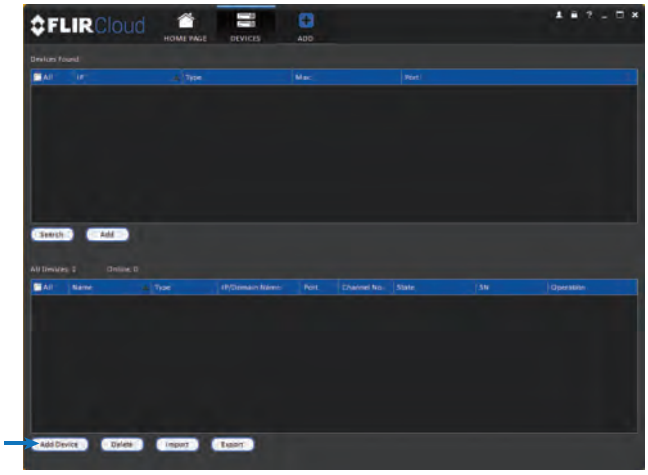
5. Click-and-drag **Default Group** to the display window to open your camera in live view.

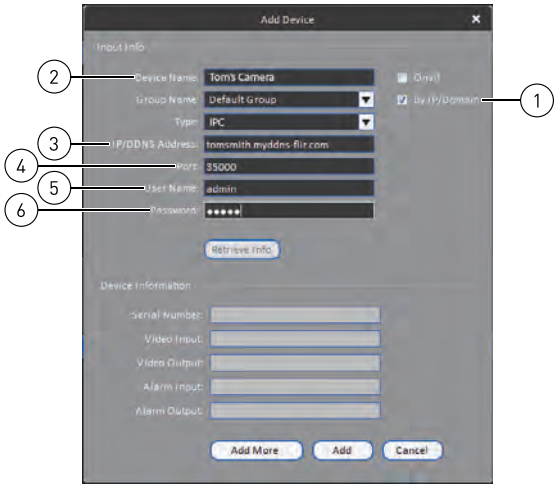


Result

2. Click **Add Device**.



3. Enter the following:



3.1. Check **By IP/Domain** to add a camera using the DDNS address.
3.2. **Device Name**: Choose a name for your camera of your choice.
3.3. **IP/DDNS Address**: Enter the Domain Name/URL Request you received in the email when you registered for DDNS followed by **.myddns-flir.com**.

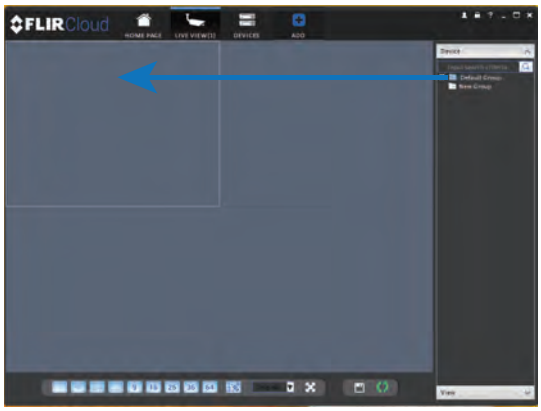
> **Note**
> For example, if your Domain Name/URL Request is tomsmith, enter *tomsmith.myddns-flir.com*

3.4. **Client Port**: Enter the camera's Client Port.
3.5. **User Name**: Enter the camera's User Name (default: **admin**).
3.6. **Password**: Enter the system's Password (default: **admin**).

4. Click **Add**.

5. Click then .

6. Click-and-drag **Default Group** to the display window to open your camera in live view.



Congratulations! You can now connect over the Internet to view and playback video on your computer.

Result

8 Using FLIR Cloud™ Client for PC or Mac

FLIR Cloud™ Client allows you to connect to multiple systems from a PC or Mac.

8.1 Home Page

The Home Page allows you to access all the tabs within the software. Each tab allows you to access different features.

To open tabs:

Click a tab from the Home Page to open it or click the button at the top of the screen from within any tab to open a new tab.

8.2 Live View

The Live View tab is where you can view live video from connected systems.

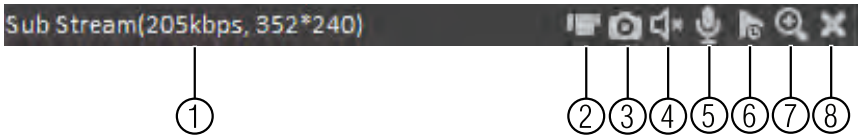
To view live video from a system:

1. Click and then click to create a Live View tab.
2. Click and drag a DVR, NVR, group, or individual camera to open live video. To access individual cameras, you can click **+** to expand groups or systems.

8.2.1 Live View Controls

1. **Live display**: Double-click to expand the area. Right-click to access additional options. Hold the mouse over the display area to access the camera toolbar.

   Camera toolbar:



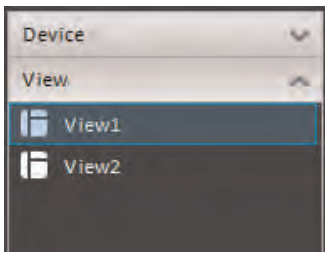
   1.1. **Streaming quality**: Shows the bitrate and resolution for the stream, and shows if display is showing the Sub Stream or Main Stream.
   1.2. **Manual recording**: Click to start/stop manual recording.
   1.3. **Snapshot**: Click to save a snapshot.
   1.4. **Mute/unmute**: Click to mute/unmute audio (audio camera required).
   1.5. **Not supported.**
   1.6. **Instant playback**: Plays back the most recently recorded video from the camera. By default, it will play back the last 5 minutes of recorded video from the camera.
   1.7. **Digital zoom**: Click to enable digital zoom mode. Click and drag over the display area to zoom on the camera. Then click and drag to pan. Click the icon again to zoom out.
   1.8. **Disconnect.**

2. **Split-screen mode**: Click to select split-screen layout.

3. **Aspect ratio**: Use the drop down menu to select the aspect ratio for the selected camera. **Original** uses the actual aspect ratio of the image. **Full-win** stretches the image to fill up the entire display area.

4. **Full-screen**: Click to open full-screen mode. Press **ESC** to exit full-screen mode.

5. **Save view**: Click to save the current display layout and open cameras as a view. Then enter a name for the view.
6. **Start/stop tour**: Click to start the tour. During the tour the client will cycle through all saved views every few seconds. Click again to stop the tour.
7. **PTZ Controls**: Controls for PTZ cameras (not included). See 8.3 *Controlling PTZ Cameras*, page 66 for details.
8. **View**: Click **View** to access view menu. Then double-click on a view to open it in the display area.



9. **Devices**: Shows a list of groups, cameras, and systems connected to the client. Drag items to the display area to open live video. Right-click to view additional options.

8.2.2 Opening Live View in Multiple Monitors

If your computer has multiple monitors, you can open more than one Live View tab and move them to secondary monitors. This allows you to monitor cameras on multiple monitors at the same time.

Note
Using multiple monitors significantly increases the amount of computing resources necessary to run the application and may affect performance.

To open Live View in multiple monitors:

1. Click and then click to create a Live View tab.

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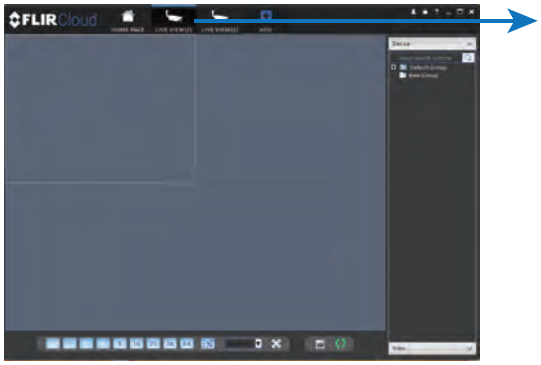
2. Click and drag the tab outside of the client window to create a new window. You can drag the window to one of the secondary monitors.



Result

8.3 Controlling PTZ Cameras

If you have PTZ cameras (not included), you can control them using the client.

Note
You must ensure the PTZ camera is properly connected to your system and your system is configured to detect it before you can control them using the client.

To control PTZ cameras:

- Click the display area with the PTZ cameras and use the on-screen PTZ controls.

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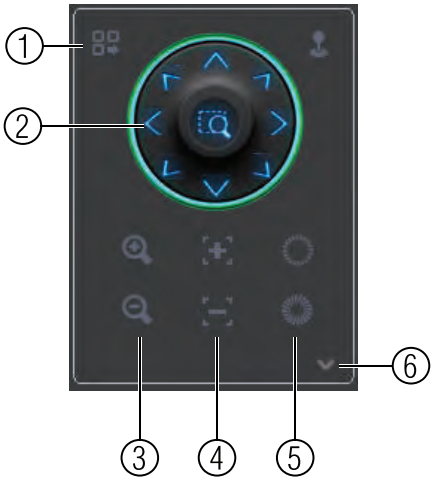
PTZ controls:



1. **Open menu**: Click to open camera OSD menu controls. This feature may not be supported for all camera models.
2. **Move camera**: Click the arrows to move the camera.
   Click to open dynamic zoom mode. Then click and drag in the video area to zoom in the camera on an area.
3. **Zoom +/-**: Click to zoom the camera in and out.
4. **Focus +/-**: Click to increase/decrease the focus.
5. **Iris +/-**: Click to increase/decrease the iris.
6. **Advanced**: Click to access advanced PTZ controls.

8.3.1 PTZ Presets

Presets will save a camera position for quick retrieval.

To add presets:

1. Click to open the Advanced controls. Select **Preset**.
2. Click .

3. Select the number of the preset you would like to add.

4. Move the camera to the desired position.
5. Click to save the current position as a preset.

To go to a saved preset:

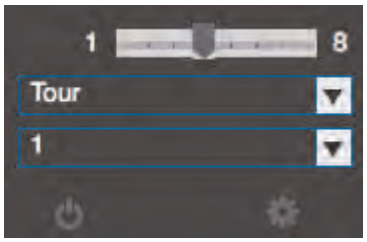
1. Select the preset number from the list or click to go to the currently selected preset.

8.3.2 PTZ Tours

Tours will cycle through a set of presets.

To configure a PTZ tour:

1. Click to open the Advanced controls. Select **Tour**.
2. Click .



3. Under **Cruise ID**, select the number of the tour you would like to configure.
4. (Optional) Under **Cruise Name**, enter a name for the tour.

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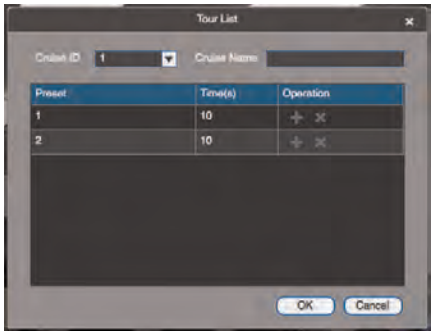
5. Use the chart to select which presets you would like to include in the tour and the order of presets.



- **Preset**: Select the preset number.
- **Time(s)**: Enter the time in seconds the camera will remain on the selected preset.
- **Operation**: Click to add a preset to the tour. Click to delete a preset from the tour.

6. Click **OK** to save changes.

To run a PTZ tour:

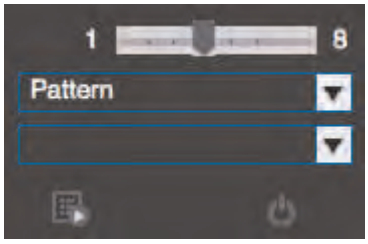
1. Select the tour number and click .

8.3.3 PTZ Pattern

Patterns automatically cycle the camera between two positions.

To create a pattern:

1. Click to open the Advanced controls. Select **Pattern**.
2. Select the number of the pattern you would like to set up.



3. Move the camera into the desired start position.
4. Click to start recording the pattern.
5. Move the camera to the desired end position. Then, click to stop recording the pattern.

To run a pattern:

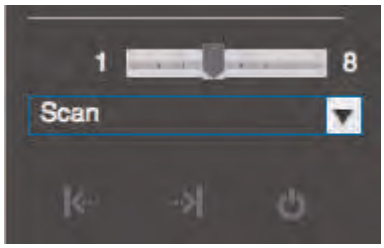
1. Select the pattern number and click .

8.3.4 PTZ Scan

Scan automatically cycles between a left and right point.

To set up scan mode:

1. Click to open the Advanced controls. Select **Scan**.



2. Move the camera to the desired left position and click .
3. Move the camera to the desired right position and click .

To run scan mode:

1. Click .

8.3.5 PTZ Pan

Pan makes the camera continuously pan 360°.

To run Pan mode:

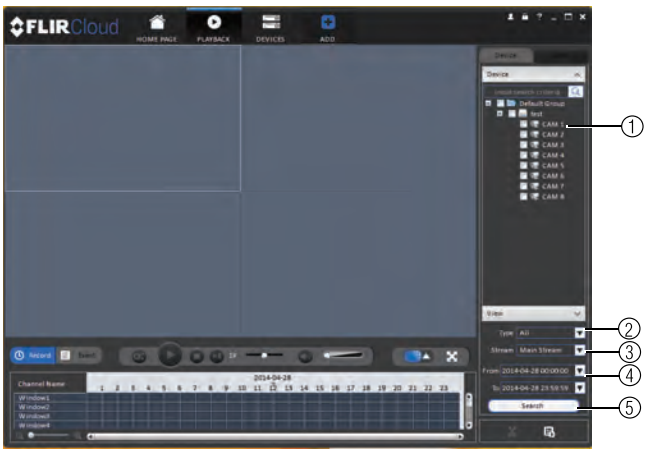
1. Click to open the Advanced controls. Select **Pan**.
2. Click .

8.4 Playback

You can use Playback mode to playback video saved on systems connected to the client.

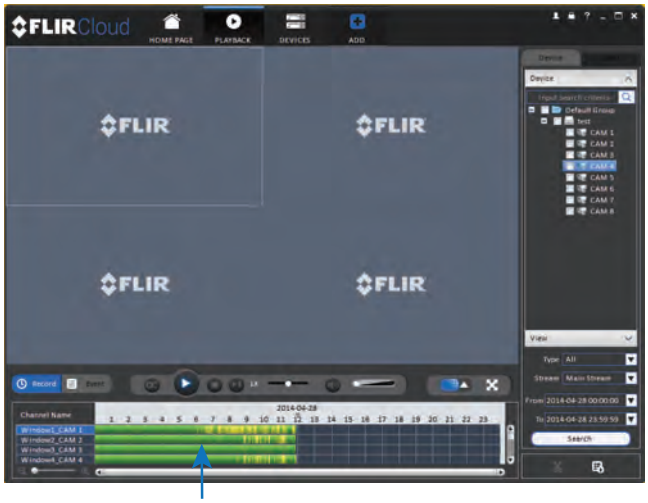
To access Playback mode:

- Click and then click to create a Playback tab.

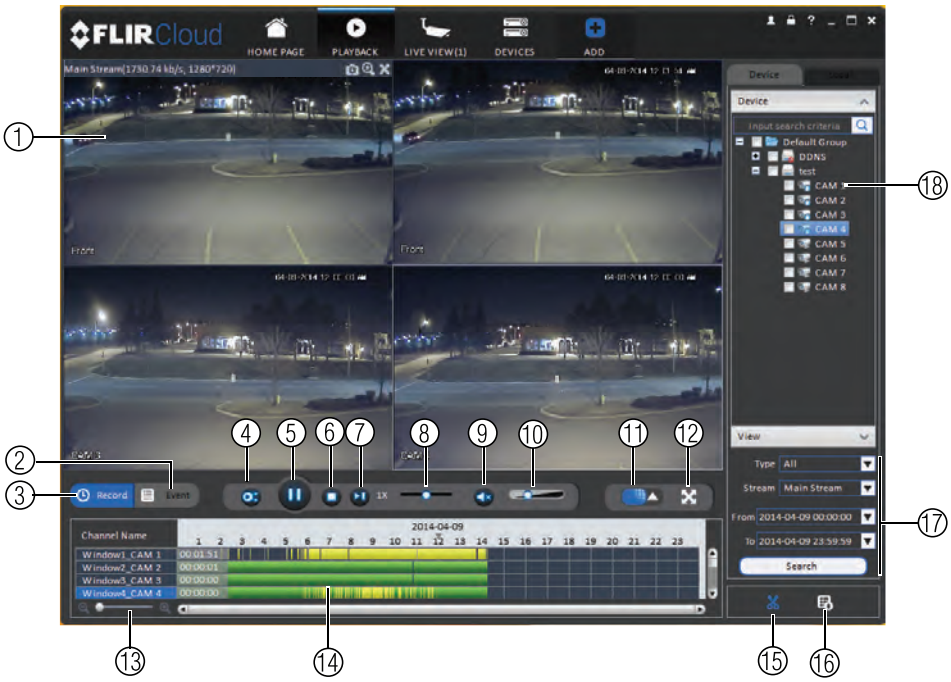


To playback video:

1. Check the channels you would like to play back from in the Device List.
2. Under **Type**, check the file types you would like to search for.
   - **All**: All recordings.
   - **General**: Continuous recordings.
   - **MD**: Motion recordings.
   - **Alarm**: Alarm recordings. Your system must support alarm devices (not included) to use this feature.
3. Under **Stream**, select **Main Stream** to search for Main Stream recordings (high quality) or **Sub Stream** to search for Sub Stream recordings (smaller file size).
4. Select the start time and end time for your search under **From** and **To**. You may not search more than 24 hours of video.
5. Click **Search**. Wait for the client to find video saved to the system.
6. Click inside the play back bar to start playback.



8.5 Playback Controls



1. **Display area**: Double-click to expand/return to split-screen mode. Hold the mouse over the display area to open the camera toolbar.

   - **Snapshot**: Click to save a snapshot.
   - **Digital zoom**: Click to enable digital zoom mode. Then, click and drag to zoom in. Click and drag to pan the camera. Click again to zoom out.

2. **Event**: Click to view recordings based on a list of events and files.
3. **Record**: Click to view recordings on a timeline.
4. **Sync**: Click to sync playback between channels. This forces all channels to playback from the same time.
5. **Pause/play.**
6. **Stop.**
7. **Frame-by-frame**: Click to advance the video by a single frame.
8. **Playback speed**: Use the slider to adjust the playback speed.
9. **Mute.**
10. **Volume.**
11. **Split-screen**: Select split screen configuration.
12. **Full-screen**: Click to open playback in full-screen. Press **ESC** to exit full-screen.
13. **Timeline zoom**: Use the slider to zoom in/out on the timeline.
14. **Playback timeline**: Shows recordings from the selected channels on a timeline. Click inside the timeline to start playback or select a playback time. Each type of recordings is shown in a different color. Continuous recordings are green, motion recordings are yellow, and alarm recordings are red.
15. **Video clip**: Click to start a video clip. You can download video clips to your hard drive.

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16. **Download list**: Click to see a list of files you have downloaded and the progress of files that are currently downloading.
17. **Search**: Search for video on the selected channels based on the search parameters you set.
18. **Device list**: Select the channels you would like to search or playback video from.

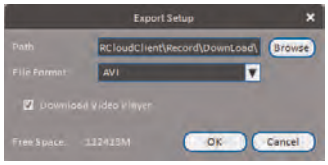
8.6 Downloading Video to your Computer Hard Drive

You can download video to your computer hard drive to save important events or share them. It is recommended to download video of important events as soon as possible to ensure they are not overwritten by new recordings.

Note
PC Users: You may need to run FLIR Cloud™ Client as an administrator to download files to your hard drive.

To download video files:

1. Start playing back video using the steps in 8.4 *Playback*, page 70.
2. Click to start a video clip at the current playback time. Click to stop the video clip.
3. Configure the following save options:



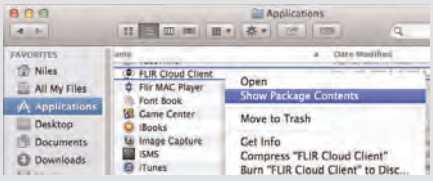
   - **Path**: Use the default save folder or click **Browse** to select a different folder.
   - **File Format**: Select **Original Format** to save to .dav format (requires the video player). Select **AVI** to save files to .avi format (can be played in VLC Media Player).

     Note
     The Mac version only supports downloading video to .dav format.

   - **Download Video Player**: Check to save a copy of the video player with the downloaded file.
4. Click **OK** to start the download. A status screen will pop up to show progress on downloaded files.

Note
To retrieve downloaded video files:

- **PC Users**: Browse to the folders listed in **General>File**.
- **Mac Users**: Browse to the folders listed in **General>File**. To get to the default location, open Applications in Finder, right click on **FLIR Cloud Client** and select **Show Package Contents**. Then, navigate to the desired folder.



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8.7 Alarm

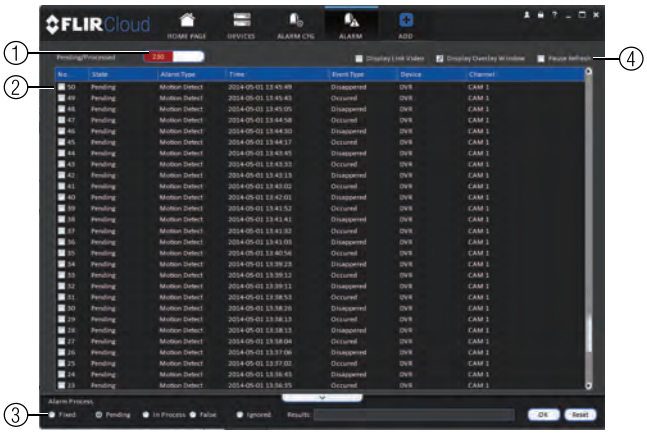
The Alarm menu allows you to view a list of alarms received by the client software.

Note
You must set up alarms in the Alarm CFG menu before they will appear in this list. See 8.12 *Alarm CFG*, page 79 for more details.

To access Alarms:

- Click and then click .

Alarm menu overview:



1. **Number of alarms**: Shows the number of open alarms.
2. **Alarm list**: Shows the list of alarms and information on when they occurred and which systems and channels triggered them.
3. **Alarm Process**: You can close alarms by selecting one of the options and clicking **OK**.
4. **Options**: Check to enable the following:
   - **Display Link Video**: Open live video to monitor alarms on a continuous basis.
   - **Display Overlay Window**: Show the overlay controls. They allow you to enable/disable sound alerts and quickly jump back to the Alarm menu from another tab.

   - **Pause Refresh**: Stop refreshing the live video in the video popup.

8.8 Log

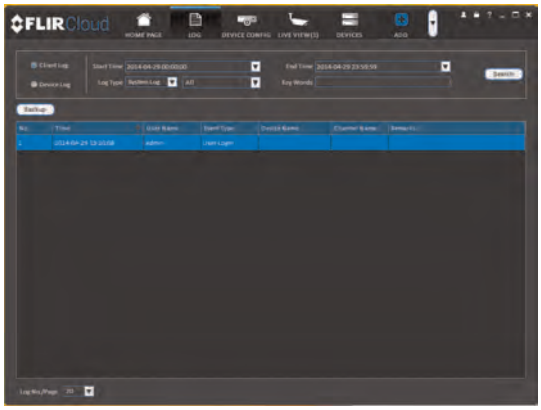
The Log menu allows you to view logs for the client software or to view logs for connected systems.

To access logs:

- Click and then click .

To view client logs:

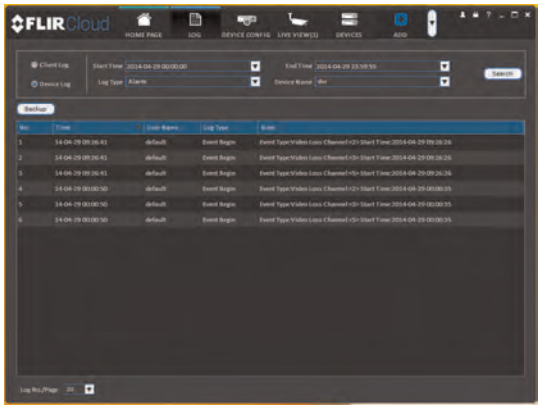
1. Click **Client Log** to view logs for the client software.



2. Configure the following:
   - **Start Time/End Time**: Select the start and end times to search for logs.
   - **Log Type**: Select the type of logs to search for.
3. Click **Search**.

To view logs from connected systems:

1. Click **Device Log** to view logs from connected systems.



2. Configure the following:
   - **Start Time/End Time**: Select the start and end times to search for logs.
   - **Log Type**: Select the type of logs to search for.
   - **Device Name**: Select the system you would like to view logs from.
3. Click **Search**.

8.9 E-map

E-Map allows you to place cameras over a still image. For example, you can use the E-Map to create a virtual map of your cameras over a floor plan of your home or business.

To create an E-map:

1. Click and then click .

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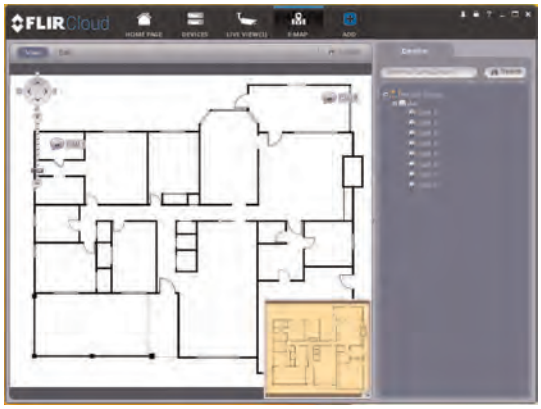
2. Click **Add Map**.

3. Configure the following:

- **Name**: Enter a name for your e-map of your choice.
- **Picture**: Click **File** and then select a .png, .bmp, or .jpg image on your computer to use as the e-map.
- **Describe (optional)**: Enter a text description of the e-map.

4. Click **Save**.
5. Click **Edit** to edit the e-map.



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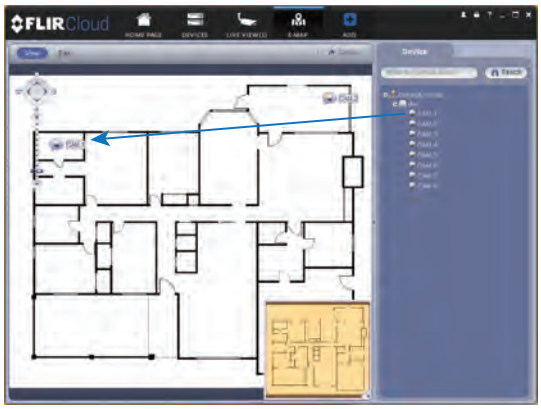
6. Click and drag cameras from the device list to place them on the map.



To open cameras from the e-map:

1. Click **View**.
2. Double-click cameras on the map to open live video.

8.10 Devices

The Devices menu is where you can manage systems connected to the client software.

To access the Devices menu:

- Click and then click .

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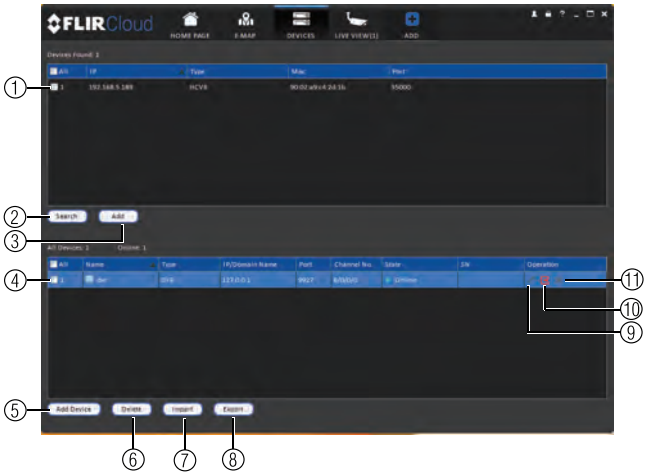
Devices overview:



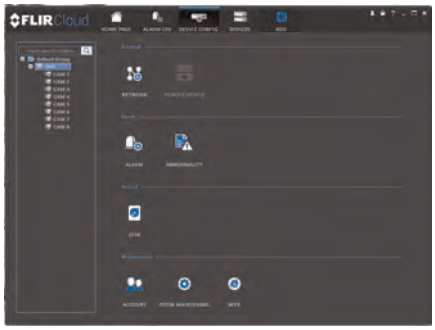
1. **Devices Found**: Shows systems that are connected to the same network as the computer where the client is installed. Once you connect to the system, it moves to the bottom of the screen.
2. **Search**: Refresh the list of systems connected to the network.
3. **Add**: Add checked systems to the client software.
4. **Device list**: Shows a list of systems connected to the client software, and shows which systems are online.
5. **Add Device**: Add a remote system using a Device ID or IP/DDNS address.
6. **Delete**: Delete the selected system.
7. **Import**: Import a list of systems from a saved .xml file.
8. **Export**: Export a list of currently connected systems to an .xml file. This is useful if you need to re-install the software or if you want to open the same list of systems on a different computer.
9. **Delete**: Delete system.
10. **Manual connect/disconnect**: Manually connect/disconnect the system.
11. **Edit**: Edit the connection details for the system.

8.11 Device Config

The Device Config menu allows you to remotely configure settings for connected systems.

To access the Device Config menu:

- Click and then click .
- Click on a system in the device list to see the settings available for that system and then configure settings as needed.



Note
The settings available depend on the model of system you have.

8.12 Alarm CFG

The Alarm CFG menu allows you to configure alarms for the client software. The client software will alert you by popping up live video and playing sound alerts.

Note
Alarm upload must be enabled on the system in order for it to send the alarm to the client software.

To create alarms:

1. Click and then click .
2. Click **Add** to create a new alarm.

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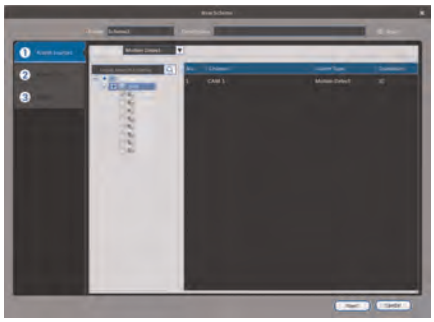
3. In the **Alarm sources** menu, you set up the parameters that trigger the alarm.



- Under **Alarm Type**, select the alarm type that will trigger an alarm. For example, you can select Motion Detect for the alarm to be triggered by motion.
- Select the systems or channels you would like to trigger an alarm. Continuing the example, if CAM 1 is selected, the alarm will be triggered if there is motion on CAM 1.
- Click **Next**.

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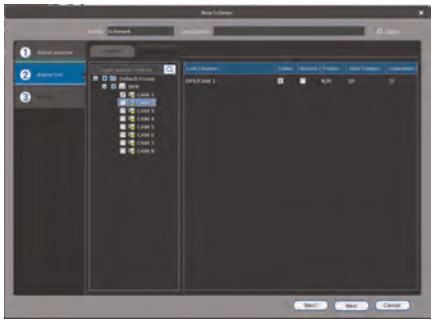
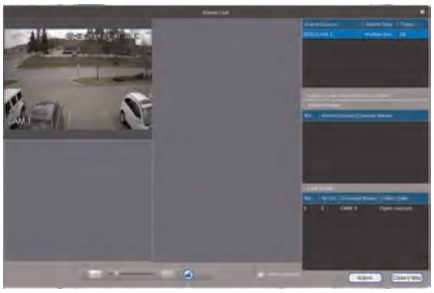
4. In the **Alarm link** menu, you set up the responses to alarms. Select the channels that will pop up or alarm out devices (not included; not all systems support alarm out devices) that will be triggered by an alarm.
   For each channel selected, configure the following:



   - **Video**: Pop up a window with live video from the selected channel, like the one below.



   - **Record**: Record video from the selected channel.

> **Note**
> **PC Users**: You may need to run the client software as admin to record.

   - **Preset**: If you select a PTZ camera, you can select the preset that will be activated when an alarm occurs.
   - **Stay Time**: Enter how many seconds the video window will stay open or record when an alarm occurs.

5. Click **Next**.
6. In the **Period** window, configure times the alarm will be activated.

7. Click **Confirm** to save the alarm.

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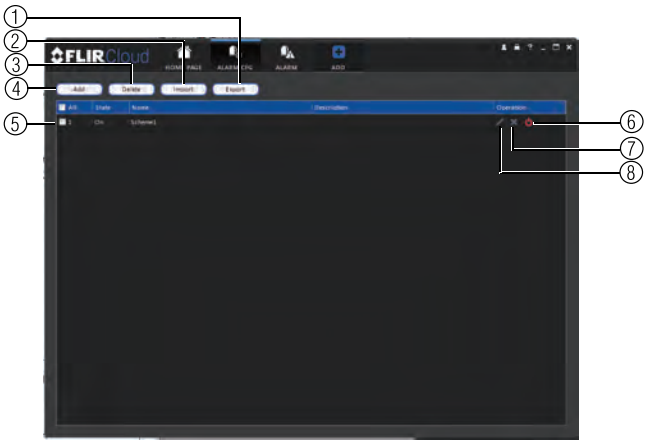
To manage alarms:



1. **Export**: Export current list of alarms as an xml file.
2. **Import**: Import list of alarms.
3. **Delete**: Delete selected alarm.
4. **Add**: Add new alarm.
5. **Alarms.**
6. **On/off**: Click to enable/disable alarm.
7. **Delete**: Click to delete alarm.
8. **Edit**: Click to edit alarm settings.

8.13 Tour & Task

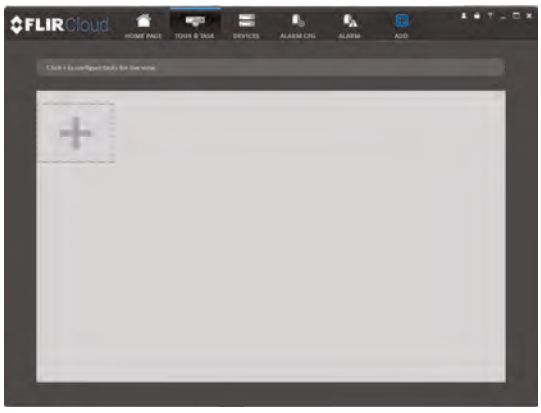
The Tour & Task menu is where you can set up custom views for the system. You can also set up tours, which sets the client to automatically cycle through views.

To start a tour:

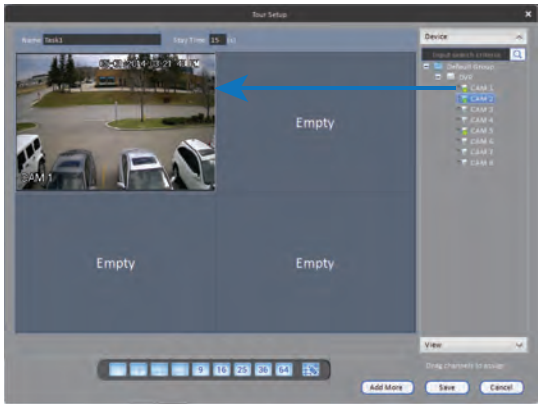
- Click in Live View to start a tour. The live view will automatically cycle through all views you have set up in the Tour & Task menu. Click again to stop the tour.

To add views:

1. Click and then click .
2. Click **+** to create a new view.



3. Under **Name**, enter a name for your view.
4. Under **Stay Time**, enter the number of seconds the view will be shown before the client switches to the next view.
5. Select the split-screen mode you would like to use for the view and then click and drag channels to the empty grid areas to select channels to be shown in the view.



6. Click **Save** to save the view. Or click **Add More** to save the view and create another view.

8.14 Account

The Account menu is where you can set up user accounts and passwords for the client software. To simplify management, you can group user accounts according to role. A role determines the permissions an individual user account can have.

To access the account menu:

- Click and then click .

8.14.1 Managing User Accounts

By default, the client software includes an admin account that has full access to all features of the software and all connected systems. You can add user accounts with customized levels of access.

Note
The admin account cannot be deleted. The default user name for the admin account is **admin** and the default password is **admin**.

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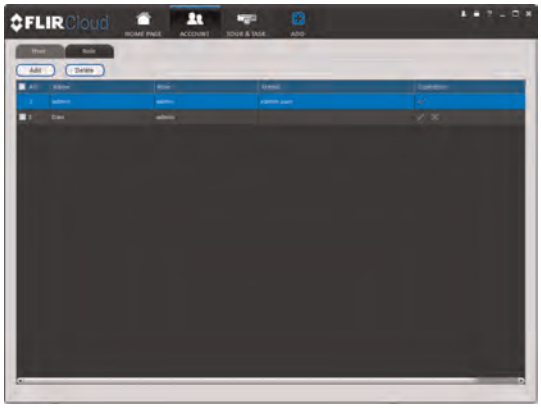
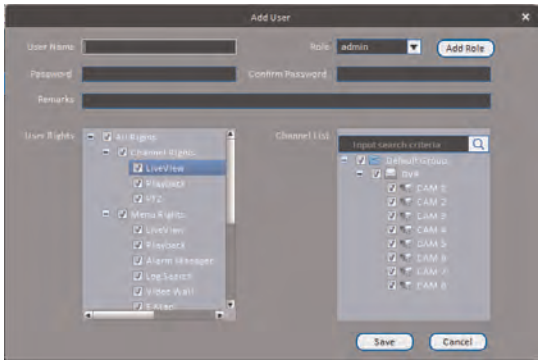
To create a user account:

1. Click **Add**.



2. Configure the following settings for the user account:



- **User Name**: Enter a user name for the account.
- **Role**: Select the role for the user account. By default, the user account gains all the permissions of the role selected, but you can deactivate permissions as needed.
- **Password/Confirm Password**: Enter the password for the user account.
- **Remarks (Optional)**: Enter a text description of the user account.
- **User Rights**: Check the permissions that will apply to the user account. If you click on LiveView, Playback, and PTZ, you can select which channels the user account can access in the Channel List section.

3. Click **Save** to create the account.

To switch between user accounts:

- Click .

To modify a user account:

Note
Admin accounts with Account Setup permissions can change account passwords. A user cannot change his own password.

- Click next to the user account you would like to modify. Edit the user account details and click **Save**.

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To delete a user account:

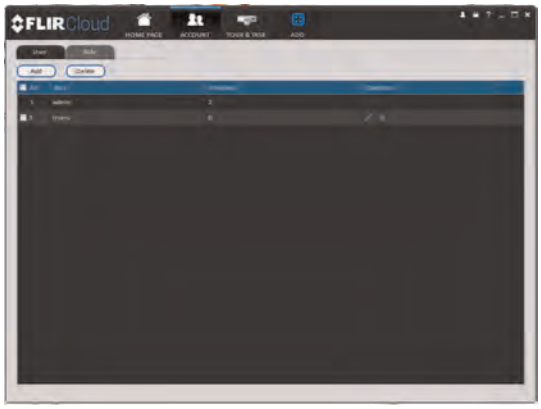
1. Click next to the user account you would like to delete. Click **OK** to confirm.

8.14.2 Managing Roles

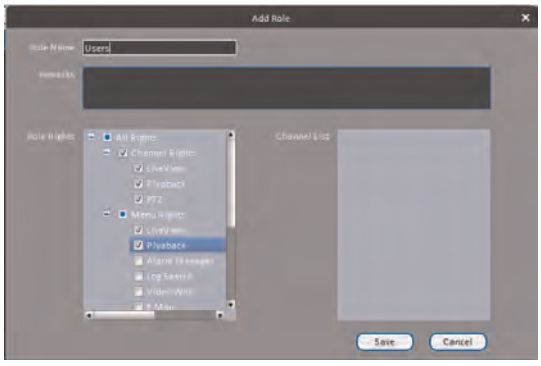
Roles make it easier to manage user accounts by determining the permissions an individual user account can have. By default, a new user account is given all the permissions of the role they are assigned to.

To create a role:

1. Click the **Role** tab.
2. Click **Add**.



3. Configure the following settings for the role:



- **Role Name**: Enter a name for the role.
- **Remarks (Optional)**: Enter a text description of the role.
- **Role Rights**: Check the permissions that will apply to user accounts assigned this role. If you click on LiveView, Playback, and PTZ, you can select which channels may be accessed in the Channel List section.

4. Click **Save**.

To modify a role:

- Click next to the role you would like to modify. Edit the role details and click **Save**.

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To delete a user account:

1. Click next to the role you would like to delete. Click **OK** to confirm.

8.15 General

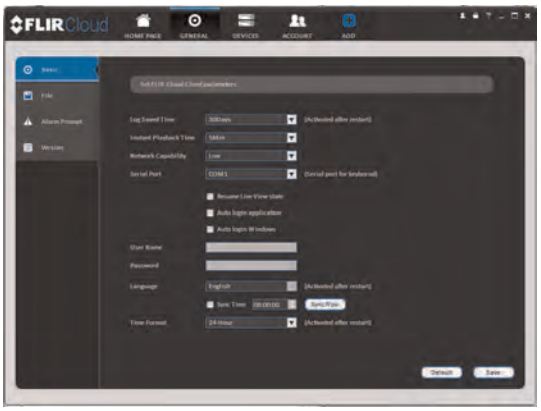
The General menu is where you can configure application settings for the client software.

To access the General menu:

- Click and then click .

8.15.1 Basic

The Basic menu contains general settings for the client software.



The Basic menu contains the following settings:

- **Log Saved Time**: Select the number of days you would like the client to save log entries.
- **Instant Playback Time**: Select the number of minutes the system will go back when you start an instant playback.
- **Network Capability**: Select the speed of your computer's network connection.
- **Resume Live View State**: Check for the client to resume live view when it starts up. The live view will open to the last view that you had open.
- **Auto login application**: Check for the client to automatically login when it starts up without entering a user name or password.
- **Auto Login Windows**: Not supported.
- **Language**: Select the language for the client software.
- **Sync Time**: Check to have the client software sync time with your computer's system time. Select the time the software will sync the time. Click **Sync Now** to manually sync the time.
- **Time Format**: Select **12–Hour** or **24–Hour** time format. You must close the client and restart it to apply this setting.

Note
Click **Save** to save setting changes.

8.15.2 File

The File menu allows you to select the folders where the client software will save downloaded video files and snapshots.

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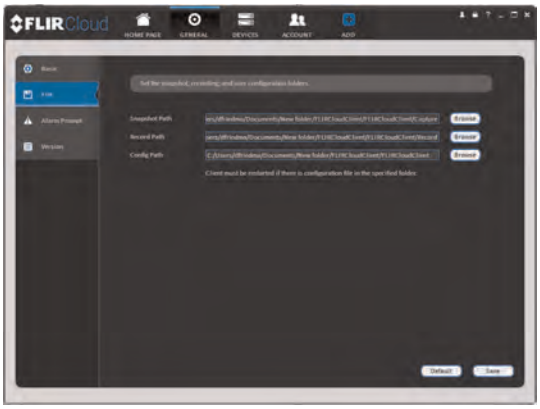


The File menu contains the following options:

- **Snapshot Path**: Click **Browse** to select the default folder to save snapshots.
- **Record Path**: Click **Browse** to select the default folder to save video recordings.
- **Config Path**: Click **Browse** to select the folder where the client will save software config files.

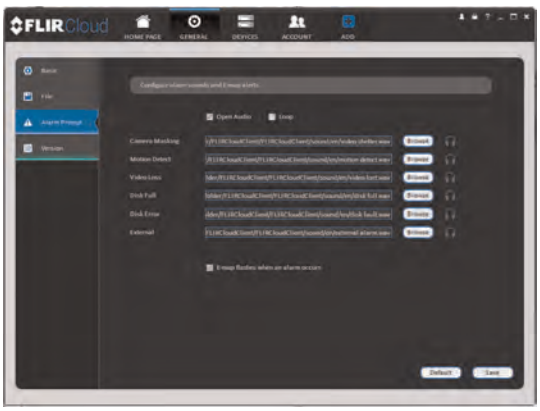
Note
Click **Save** to save setting changes.

PC Users: You may need to run the client software as admin to save files to enable snapshot or video recording.

8.15.3 Alarm Prompt

The Alarm Prompt menu allows you to configure audio alerts. The client will play audio alerts when events occur. You can replace the default sounds with any .wav file.

Note
You must configure alarms in the Alarm CFG menu before the client will play alarm sounds.



The Alarm Prompt menu has the following options:

- **Open Audio**: Check to enable audio alerts.
- **Loop**: Check to repeat audio alerts until acknowledged.
- **Camera Masking**: Select or preview the sound that will play for camera masking alarms.
- **Motion Detect**: Select or preview the sound that will play for motion detection.

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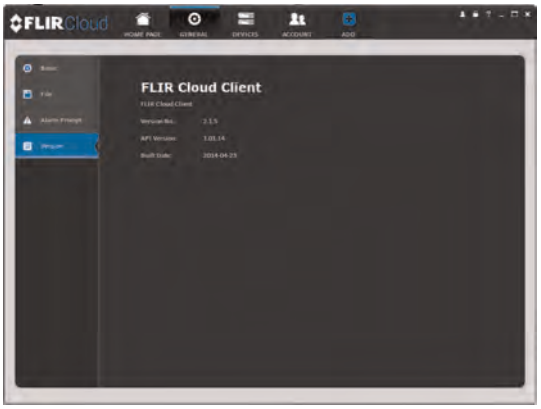
- **Video Loss**: Select or preview the sound that will play for video loss alarms.
- **Disk Full**: Select or preview the sound that will play for disk full alarms.
- **Disk Error**: Select or preview the sound that will play for disk errors.
- **External**: Select or preview the sound that will play for external alarms (triggered by sensor devices, which may not be supported on all systems).
- **E-map flashes when alarm occurs**: If the camera has alarms enabled and is added to an e-map, a appears on the e-map when an event occurs.

Note
Click **Save** to save changes.

8.15.4 Version



9 Smartphone and Tablet Apps

FLIR Cloud is a free mobile app that is compatible with iPhone, iPad and Android devices.

Platform	Supported Versions and Devices	App Name	Get App From
iOS	iPhone/iPad	FLIR Cloud™	Apple App Store
Android	Android	FLIR Cloud™	Google Play Store

9.1 iPhone

FLIR Cloud is an iPhone app that allows you to remotely view your IP camera.

9.1.1 Prerequisites

- Port **80** and **35000** (or your HTTP and Client Ports, if you have changed them) must be port forwarded on your router to your camera's IP address.
- You must create a DDNS account, and have the DDNS settings configured in your IP camera.
- The IP camera must have Internet access.
- You must have a DDNS address to log in remotely.
- An iTunes account.

Note
You will need to create an iTunes account before you can download the app. An iTunes store account requires a valid credit card number. The app is free of charge.

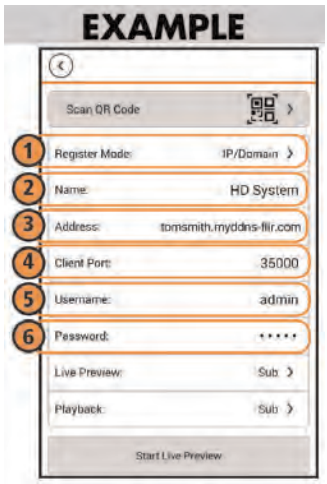
9.1.2 Connecting to your IP camera on an iPhone

1. Download **FLIR Cloud™** for free from the App Store.
2. Tap on the **FLIR Cloud™** icon ( ) to start the app.

Note
The first time it opens, the app will ask for permission to send push notifications and to access Photos. It will only send notifications if you enable motion-activated push notifications in the Push Config menu. It needs access to Photos to save snapshots and video clips to the local storage on your mobile device.

3. Tap then .

4. Configure the following:



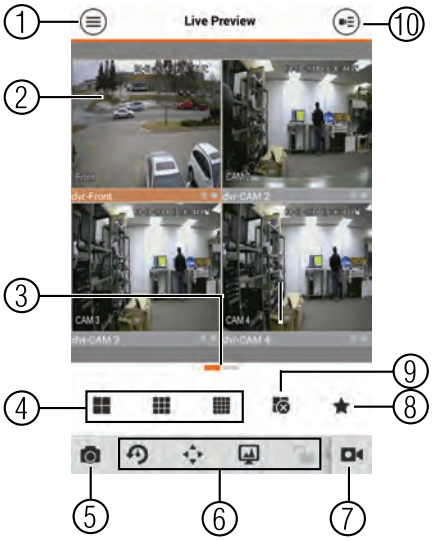
4.1. **Register Mode:** Select **IP/Domain**.
4.2. **Name:** Choose a name for your IP camera of your choice.
4.3. **Address:** Enter the IP address or DDNS address of your IP camera. (e.g. tom-smith.myddns-flir.com).
4.4. **Client Port:** Enter the Client Port (default: **35000**).
4.5. **Username:** Enter the IP camera's User Name (default: **admin**).
4.6. **Password:** Enter the IP camera's Password (default: **admin**).

5. Tap **Start Live Preview**.
6. The app opens in Live View and streams video from your camera.

9.1.3 Live View Interface

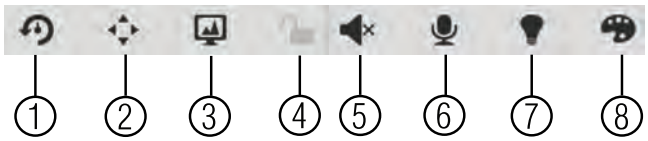
You can use FLIR Cloud™ in portrait and landscape mode.

Live View Overview



1. **Menu**: Tap to bring up the Menu.

2. **Display Area**: Double-tap to open a channel in full screen. Swipe left or right to select a different page of channels.
3. **Pages**: Shows the number of pages available and highlights the currently selected page.
4. **Split**: Select the split-screen layout.
5. **Snapshot**: Tap to take a snapshot from the currently selected channel.
6. **Control Bar**: Contains the following options. Swipe left or right to access more options.



   6.1. **Quick Playback**: Tap to start/stop quick playback.
   6.2. **PTZ Controls**: Open/close PTZ controls. PTZ camera required.
   6.3. **Streaming Quality**: Open/close streaming quality panel.
   6.4. **Not supported.**
   6.5. **Not supported.**
   6.6. **Not supported.**
   6.7. **Not supported.**
   6.8. **Color Settings**: Tap to access color controls for the currently selected camera.

7. **Manual record**: Tap to start/stop manual recording.
8. **Connect/disconnect all**: Connect to/disconnect from all previously added cameras.
9. **Access Favorites.**
10. **Device List**: Tap to open a list of devices. You can use the Device List to open multiple systems or cameras at once.

9.1.4 Controlling PTZ Cameras

If you have PTZ cameras, you can control them from the app.

To control PTZ cameras:

1. Tap the display area the PTZ camera is connected to.
2. Tap to open PTZ controls.

PTZ Controls

1. **Live Display**: Swipe to move the camera. Pinch to zoom in/out.
2. **Iris**: Tap to show iris controls.
3. **Focus**: Tap to show focus controls.
4. **Zoom**: Tap to show zoom controls.
5. **PTZ/EPTZ**: Tap to switch between PTZ and EPTZ mode. Use PTZ mode to control PTZ cameras. Use EPTZ mode to activate digital zoom mode on non-PTZ cameras.
6. **Goto preset**: Tap to access preset controls. Then use the sliders to select a preset and then tap the checkmark to goto the preset.

> **Note**
> You must set presets for the camera using the system's local menus before you can use this feature.

9.1.5 Viewing Snapshots and Videos with Local Files

If you have saved snapshots or videos using the app, you may open them with Local Files.

To access Local Files:

- Tap to access the Menu, and then tap **Local Files**.

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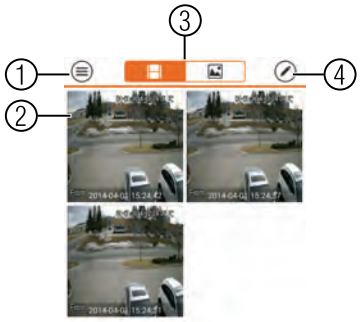
Local Files Overview



1. **Menu**: Return to Menu.
2. **Files**: Tap to open files.
3. **File Type**: Tap the options to select video files or snapshots.
4. **Options:** Tap to delete or export files to your device's local storage.

> **Note**
> Exported snapshots and video files are saved to the Photos app. Video files are saved to MP4 format.

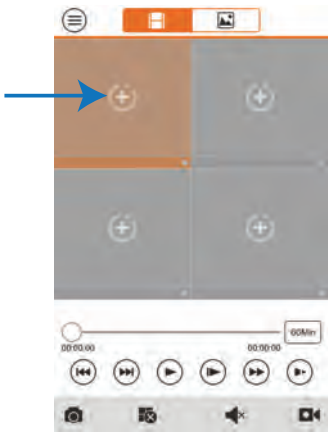
9.1.6 Using Playback Mode on iPhone

You can access recorded video on your system using your iPhone.

> **Note**
> You must enable Sub Stream Recording to use playback mode on mobile devices.

To use Playback Mode:

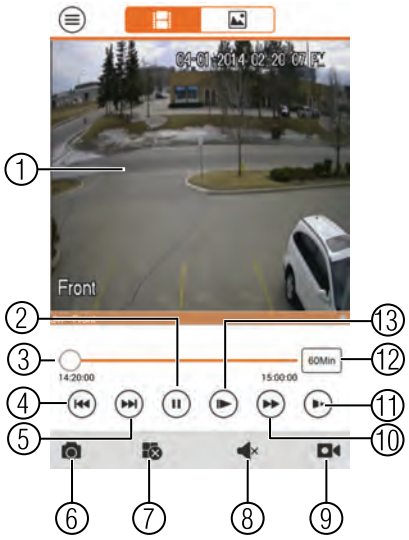
1. Tap to access the Menu, and then tap **Video Playback**.
2. Tap **+** and select a channel to playback.



3. Select the date then the start and end times to playback.

4. Use the on-screen controls to control playback.

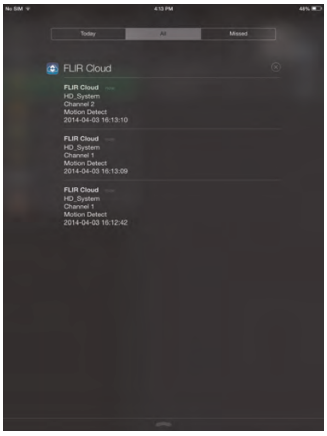
Playback Controls



4.1. **Display Area**: Double-tap to open in full-screen.
4.2. **Play/pause.**
4.3. **Time Bar**: Tap inside the bar to fast forward or rewind.
4.4. **Previous**: Select previous video file.
4.5. **Next**: Select next video file.
4.6. **Snapshot**: Tap to take a snapshot from the selected camera.
4.7. **Stop All**: Stop playback on all channels.
4.8. **Not supported.**
4.9. **Manual Record**: Tap to start/stop recording to your mobile device's local storage.
4.10. **Fast.**
4.11. **Slow.**
4.12. **Time Range**: Tap to change the range of time shown in the time bar.
4.13. **Next frame.**

9.1.7 Enabling Push Notifications

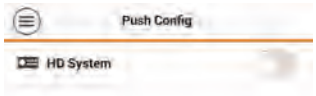
You can have the app send push notifications to the notifications area on your device when one of your cameras detects motion. Once you have received a push notification, you can select it to open live video or a snapshot attachment from the camera that detected motion.



Note
Your cameras must have motion detection activated to receive push notifications.

To enable Push Notifications:

1. Tap to access the Menu, and then tap **Push Config**.
2. Tap the system you would like to configure.



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3. Tap **Motion Detect** and then check each channel you would like to receive push notifications from.

4. Tap to save changes. You will now receive a notification when one of the selected cameras detect motion.

9.1.8 Using the Event List

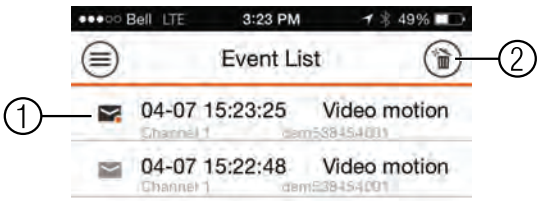
The Event List menu shows a list of events that were sent to your device via push notifications.

Note
You must configure push notifications before you can use the Event List.

To access the Event List:

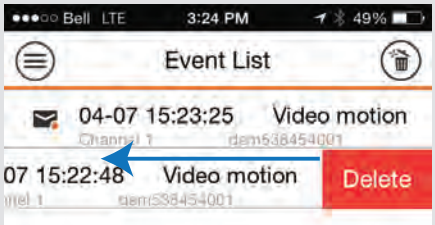
- Tap to access the Menu, and then tap **Event List**.

Event List Overview



1. **Events**: Shows the details of each motion detection event. Tap the event to view the video or snapshot.
2. **Delete All**: Tap to delete all events in the Event List.

Note
To delete a single event, swipe it to the left and then tap **Delete**.



9.1.9 Using Favorites

Favorites allows you to select a group of cameras as a favorite. You can then quickly bring up the group of cameras in Live View without having to individually select each camera.

To use Favorites:

1. Tap to access the Menu, and then tap **Favorites**.
2. Tap a group to configure an existing group.

Note

Tap to create a new group and then enter a name for the new group.

3. To add cameras to the group, tap .
4. Select the cameras you would like to add to the group. Tap to save changes.

Note

To delete cameras that have been added to the group, select the group in the group list. Then, press and hold to delete cameras from the group.

To open Favorites in Live View:

1. Tap to access the Menu, and then tap **Live Preview**.

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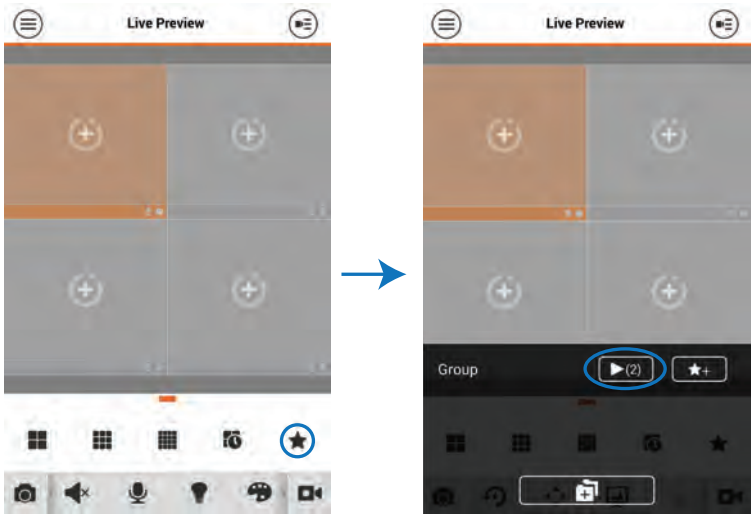
2. Tap ★, and then tap ▶ to open the group.



9.1.10 Using the E-Map

E-Map allows you to place cameras over a still image. For example, you can use the E-Map to create a virtual map of your cameras over a floor plan of your home or business.

To add an E-Map:

1. Tap ☰ to access the Menu, and then tap **E-Map**.
2. Tap ⊕.

3. Select a .jpg image on your mobile device.

4. Press and select a camera. Drag the camera on the screen to place it on the map. Repeat to add additional cameras.

5. Click . Choose a name for your E-Map and then tap **OK**.

To open cameras from an E-Map:

1. Tap in Live View.
2. Select the E-Map in the Device List.

3. Tap the camera or cameras to select and then tap **Start Live Preview** to open the cameras.

9.1.11 Device Manager

You can use Device List to add, delete, or edit your systems.

To access Device Manager:

- Tap to access the Menu, and then tap **Device Manager**.

To edit a system:

1. Tap the system in Device Manager. Tap .

2. Edit the connection details as needed.
3. Tap **Start Live Preview** to save changes and connect to the system.

To delete a system:

1. Tap the system you would like to delete.

2. Tap . Tap **OK** to confirm.

9.2 iPad

FLIR Cloud™ is an iPad app that allows you to remotely view your system.

9.2.1 Prerequisites

- Port **80** and **35000** (or your HTTP and Client Ports, if you have changed them) must be port forwarded on your router to your camera's IP address.
- You must create a DDNS account, and have the DDNS settings configured in your IP camera.
- The IP camera must have Internet access.
- You must have a DDNS address to log in remotely.
- An iTunes account.

Note
You will need to create an iTunes account before you can download the app. An iTunes store account requires a valid credit card number. The app is free of charge.

9.2.2 Connecting to your IP Camera on an iPad

1. Install FLIR Cloud™ for free from the App Store.
2. Tap on the FLIR Cloud™ icon ( ) to start the app.

Note
The first time it opens, the app will ask for permission to send push notifications and to access Photos. It will only send notifications if you enable motion-activated push notifications in the Push Config menu. It needs access to Photos to save snapshots and video flips to the local storage on your mobile device.

3. Tap then .
4. Tap **Device Manager**.

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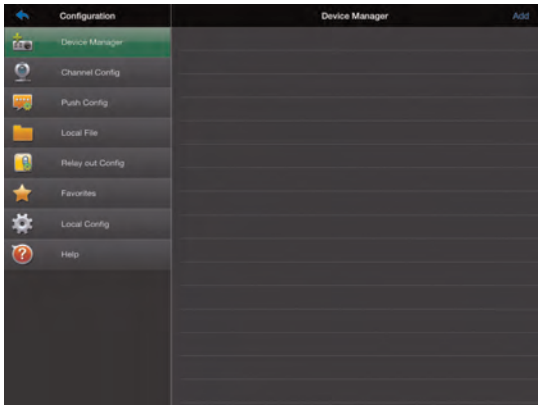
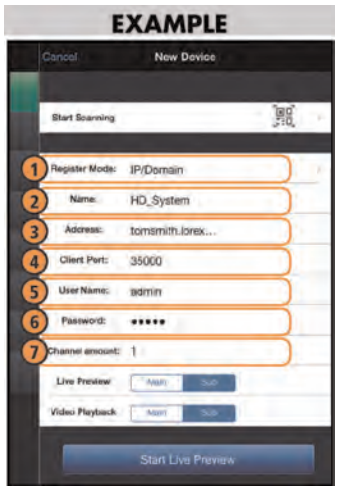
5. Tap **Add**.



6. Configure the following:



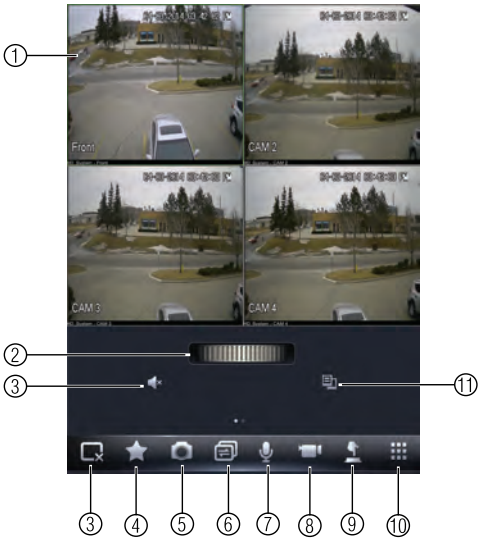
6.1. **Register Mode**: Select **IP/Domain**.
6.2. **Name**: Choose a name for your IP camera of your choice.
6.3. **Address**: Enter the IP address or DDNS address of your IP camera. (e.g. tom-smith.myddns-flir.com).
6.4. **Client Port**: Enter the Client Port (default: **35000**).
6.5. **User Name**: Enter the IP camera's User Name (default: **admin**).
6.6. **Password**: Enter the IP camera's Password (default: **admin**)
6.7. **Channel Amount**: Enter **1**.

7. Tap **Start Live Preview**.
8. The app opens in Live View and streams video from all connected cameras.

9.2.3 Live View Interface

You can use FLIR Cloud™ in landscape or portrait mode.

Live View Overview



1. **Display area**: Double-tap to open camera in full screen.
2. **Favorites**: Slide to select favorites.
3. **Disconnect all**: Disconnect all cameras.
4. **Add to favorites**: Add the current view to favorites.
5. **Shapshot**: Tap to take a snapshot from the currently selected channel.

> **Note**
> You can view or share snapshots using the Photos app.

6. **Change display view.**
7. **Not supported.**
8. **Manual record**: Tap to start/stop manual recording from this channel.
9. **Not supported.**
10. **Open menus.**
11. **Select different camera.**

9.2.4 Controlling PTZ Cameras

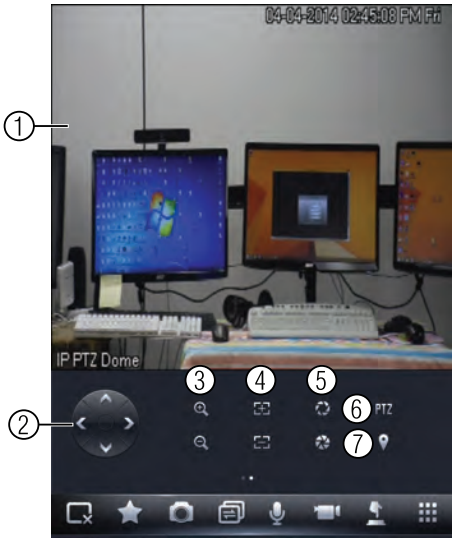
If you have PTZ cameras, you can control them using the app.

To control PTZ cameras:

1. In Live View, tap the window the PTZ camera is connected to.

2. Slide the middle controls to the right to access PTZ controls.

PTZ Controls



1. **Live display**: Swipe to move the camera. Pinch to zoom in/out.
2. **Direction buttons**: Tap to move the camera.
3. **Zoom**: Tap to zoom the camera in/out.
4. **Focus**: Tap **+/-** to adjust the focus.
5. **Iris**: Tap **+/-** to adjust the iris.
6. **PTZ/EPTZ**: Tap to switch between PTZ and EPTZ mode. Use PTZ mode to control PTZ cameras. Use EPTZ mode to activate digital zoom mode on non-PTZ cameras.
7. **Goto preset**: Tap to goto a camera preset.

Note
You must set presets for the camera using the system's local menus before you can use this feature.

9.2.5 Using Playback Mode on iPad

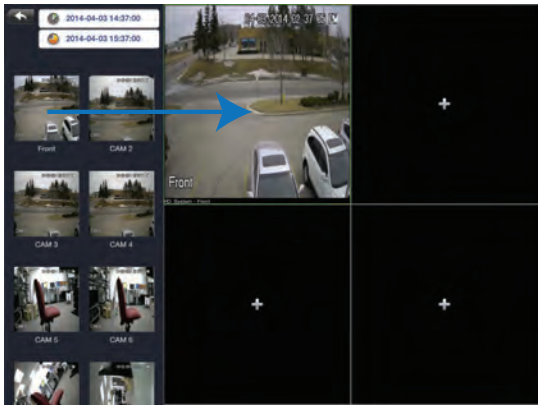
You can access recorded video on your system using your iPad.

Note
You must enable Substream Recording to use playback mode on mobile devices.

To use Playback Mode:

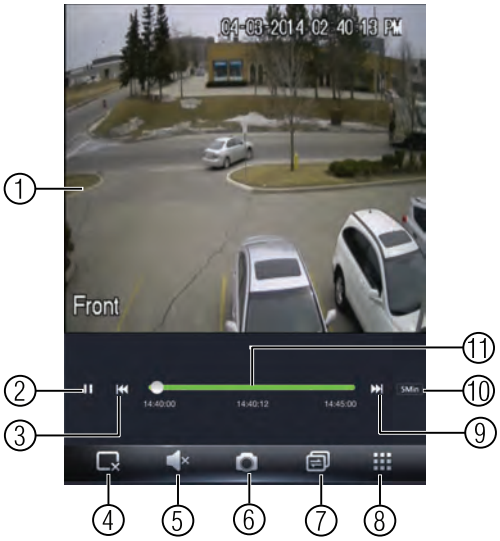
1. From Live View tap then .
2. In Portrait Mode: Tap **+**, select the start time and end time for your search, and select the camera you would like to playback.
   OR

   In Landscape Mode: Select the start time and end time for your search, and drag the camera you would like to playback to the display area.



3. Use the playback controls.

Playback Controls



1. **Display area**: Double-tap to open camera in full screen.
2. **Play/pause.**
3. **Previous file.**
4. **Disconnect**: Disconnect the currently selected camera.
5. **Not supported.**
6. **Snapshot**: Tap to take a snapshot from the currently selected camera.
7. **Change display view.**
8. **Menu.**
9. **Next file.**
10. **Time range**: Tap to change the range of time shown in the time bar.
11. **Time Bar**: Tap inside the bar to fast forward or rewind.

Note
Playback controls are only shown in portrait mode.

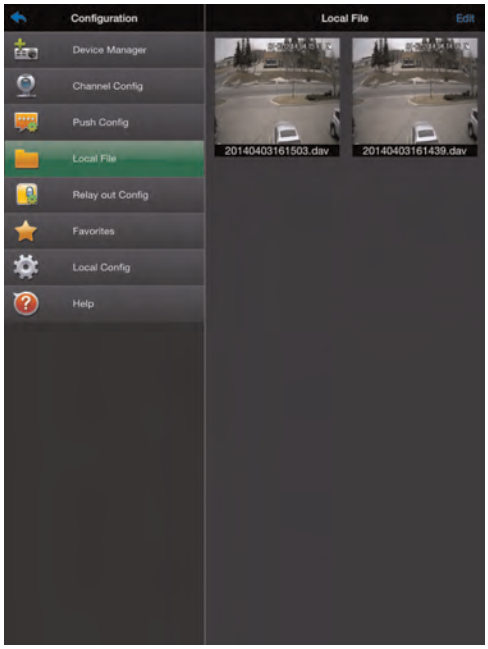
9.2.6 Using Local File to View Manual Recordings

You can view manual recordings saved to your mobile device using the Local File menu.

To view manual recordings:

1. From live view, tap then .
2. Tap **Local File**.

3. Tap a video file to open it.

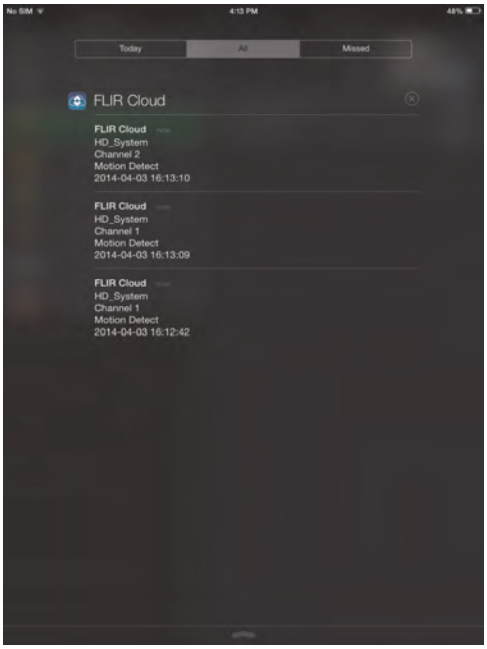


To delete videos:

1. Tap **Edit**.
2. Select the videos you would like to delete and tap .

9.2.7 Enabling Push Notifications

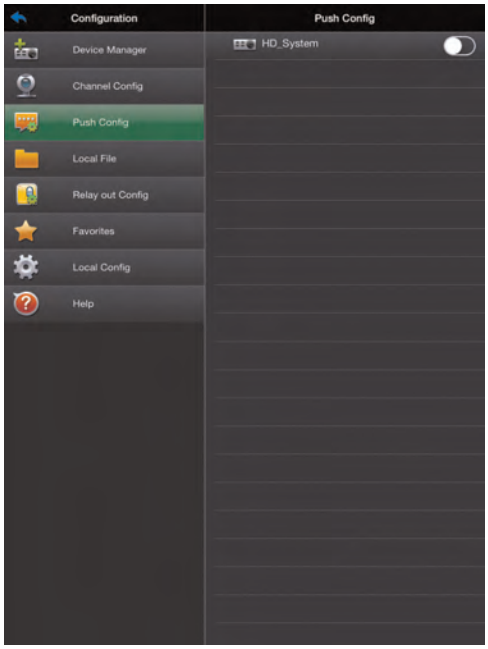
You can have the app send push notifications to the notifications area on your device when one of your cameras detects motion. Once you have received a push notification, you can select it to open video or an image from the camera that detected motion.



Note
Your cameras must have motion detection activated to receive push notifications.

To enable Push Notifications:

1. From live view, tap then .
2. Tap **Push Config**.
3. Tap the slider for the system you would like to configure.



4. Tap **Motion Detect** then check each channel you would like to receive push notifications from.

5. Under **Type**, select Playback to attach a video file with each push notification. Or, select **Picture** to attach a still image of the camera that detected motion.
6. Tap **OK** to save change. Whenever the selected cameras detect motion, you will receive a notification.

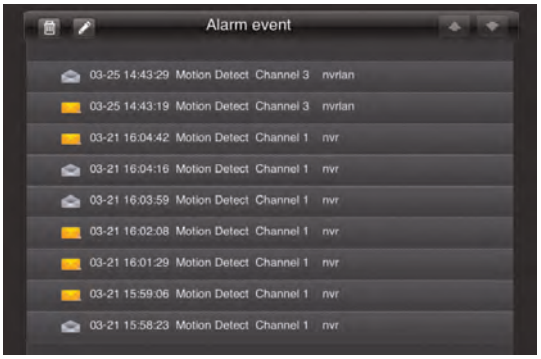
9.2.8 Using the Event List

The Event List menu shows a list of events that were sent to your device via push notifications.

Note
You must configure push notifications before you can use the Event List.

To access the Event List:

1. From live view, tap then .



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9.2.9 Using Favorites

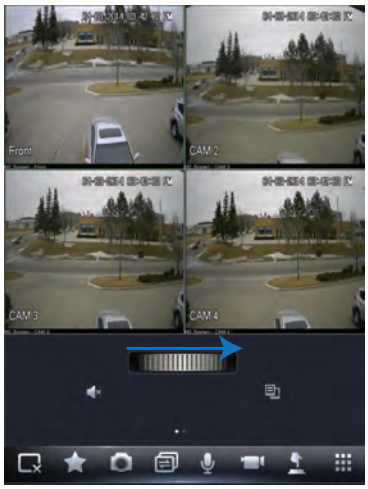
Favorites allows you to select a group of cameras as a favorite. You can then quickly bring up the group of cameras in Live View without having to individually select each camera.

To create favorites:

1. In Live View, tap to save the cameras that are currently open as a favorite.
2. Enter a name for the favorite and tap **OK**.

To open favorites in Live View:

- In Live View, slide the dial to cycle through favorites.



To edit favorites:

1. From live view, tap then .
2. Tap **Favorites**.
3. Tap the favorite you would like to edit.

4. Tap **Edit**.
5. Select the cameras you would like to include in the favorite and then tap **Save**.

9.2.10 Using the E-Map

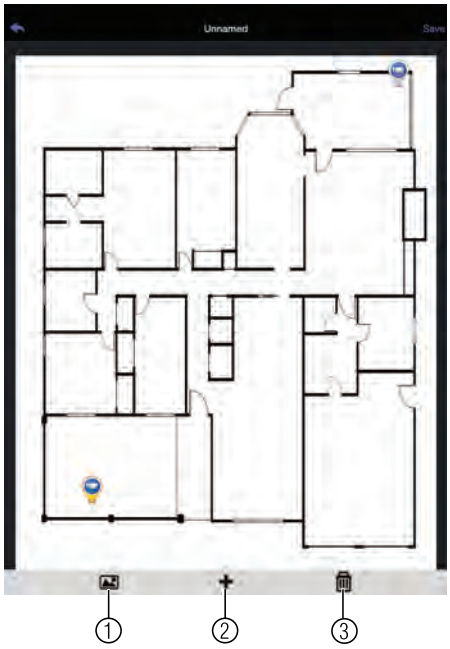
E-Map allows you to place cameras over a still image. For example, you can use the E-Map to create a virtual map of your cameras over a floor plan of your home or business.

To add an E-Map:

1. From live view, tap then .
2. Tap **Add**.

3. Select a .jpg image file on your mobile device.

4. To edit the E-map:

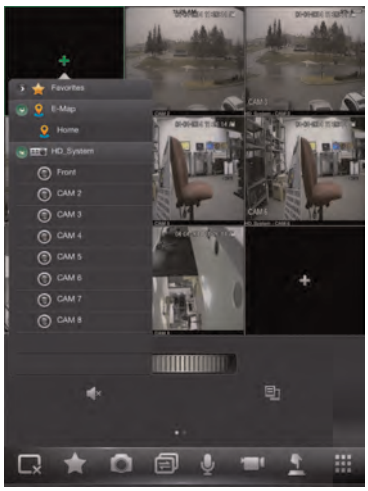


   4.1. **Select Image**: Select different image file to use for your E-Map.
   4.2. **Add Camera**: Tap **+** to select cameras to add to your E-Map. Then drag the camera to place it on the E-Map.
   4.3. **Delete E-Map.**

5. When you are finished editing the E-Map, tap **Save** and enter a name for the E-Map to save changes.

To open cameras using the E-Map:

1. In live view, tap **+** on an empty display window and select the E-Map.



2. Tap a camera from the E-map to open.

9.2.11 Using the Device Manager

Device Manager allows you to manage your systems.

To access Device Manager:

1. From live view, tap then .
2. Tap **Device Manager**.

To delete a system:

1. Tap the system to select it.
2. Tap . Tap **Yes** to confirm.

To modify a system:

1. Tap a system to select.
2. Tap the system again to open the edit screen.
3. Update the connection details as needed and then tap **Save**.

9.3 Android

FLIR Cloud is an Android app that allows you to remotely view your IP camera.

9.3.1 Prerequisites

- Port **80** and **35000** (or your HTTP and Client Ports, if you have changed them) must be port forwarded on your router to your camera's IP address.

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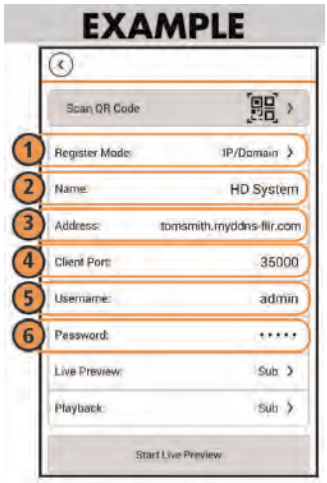
- You must create a DDNS account, and have the DDNS settings configured in your IP camera.
- The IP camera must have Internet access.
- You must have a DDNS address to log in remotely.
- A Google Play account.

9.3.2 Connecting to your IP camera on Android

1. Download **FLIR Cloud™** for free from the App Store.
2. Tap on the **FLIR Cloud™** icon ( ) to start the app.
3. Tap then .

4. Configure the following:



   4.1. **Register Mode:** Select **IP/Domain**.
   4.2. **Name:** Choose a name for your IP camera of your choice.
   4.3. **Address:** Enter the IP address or DDNS address of your IP camera. (e.g. tom-smith.myddns-flir.com).
   4.4. **Client Port:** Enter the Client Port (default: **35000**).
   4.5. **Username:** Enter the IP camera's User Name (default: **admin**).
   4.6. **Password:** Enter the IP camera's Password (default: **admin**).

5. Tap **Start Live Preview**.
6. The app opens in Live View and streams video from your cameras.

9.3.3 Live View Interface

You can use FLIR Cloud™ in portrait and landscape mode.

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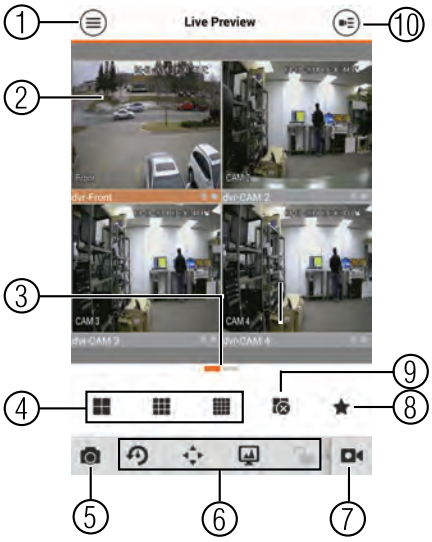
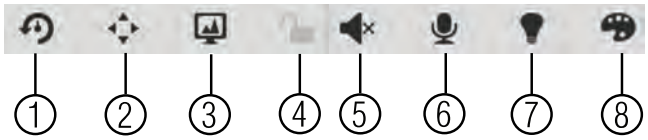
Live View Overview



1. **Menu**: Tap to bring up the Menu.
2. **Display Area**: Double-tap to open a channel in full screen. Swipe left or right to select a different page of channels.
3. **Pages**: Shows the number of pages available and highlights the currently selected page.
4. **Split**: Select the split-screen layout.
5. **Snapshot**: Tap to take a snapshot from the currently selected channel.
6. **Control Bar**: Contains the following options. Swipe left or right to access more options.



   6.1. **Quick Playback**: Tap to start/stop quick playback.
   6.2. **PTZ Controls**: Open/close PTZ controls. PTZ camera required.
   6.3. **Streaming Quality**: Open/close streaming quality panel.
   6.4. **Not supported.**
   6.5. **Not supported.**
   6.6. **Not supported.**
   6.7. **Not supported.**
   6.8. **Color Settings**: Tap to access color controls for the currently selected camera.

7. **Manual record**: Tap to start/stop manual recording.
8. **Connect/disconnect all**: Connect to/disconnect from all previously added cameras.
9. **Access Favorites.**
10. **Device List**: Tap to open a list of devices. You can use the Device List to open multiple systems or cameras at once.

9.3.4 Controlling PTZ Cameras

If you have PTZ cameras, you can control them from the app.

To control PTZ cameras:

1. Tap the display area the PTZ camera is connected to.

2. Tap to open PTZ controls.

PTZ Controls

1. **Live Display**: Swipe to move the camera. Pinch to zoom in/out.
2. **Iris**: Tap to show iris controls.
3. **Focus**: Tap to show focus controls.
4. **Zoom**: Tap to show zoom controls.
5. **PTZ/EPTZ**: Tap to switch between PTZ and EPTZ mode. Use PTZ mode to control PTZ cameras. Use EPTZ mode to activate digital zoom mode on non-PTZ cameras.
6. **Goto preset**: Tap to access preset controls. Then use the sliders to select a preset and then tap the checkmark to goto the preset.

> **Note**
> You must set presets for the camera using the system's local menus before you can use this feature.

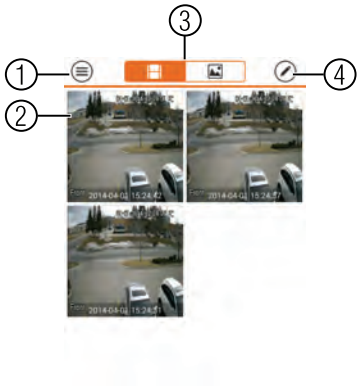
9.3.5 Viewing Snapshots and Videos with Local Files

If you have saved snapshots or videos using the app, you may open them with Local Files.

To access Local Files:

- Tap to access the Menu, and then tap **Local Files**.

Local Files Overview



1. **Menu**: Return to Menu.
2. **Files**: Tap to open files.
3. **File Type**: Tap the options to select video files or snapshots.
4. **Options:** Tap to delete or export files to your device's local storage.

> **Note**
> Exported snapshots and video files are saved to the Photos app. Video files are saved to MP4 format.

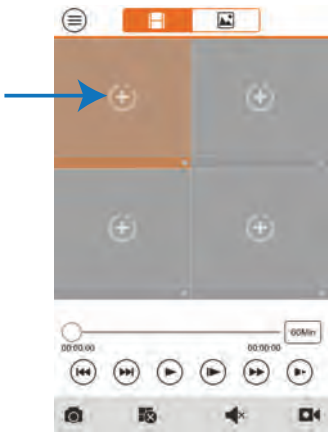
9.3.6 Using Playback Mode on iPhone

You can access recorded video on your system using your iPhone.

> **Note**
> You must enable Sub Stream Recording to use playback mode on mobile devices.

To use Playback Mode:

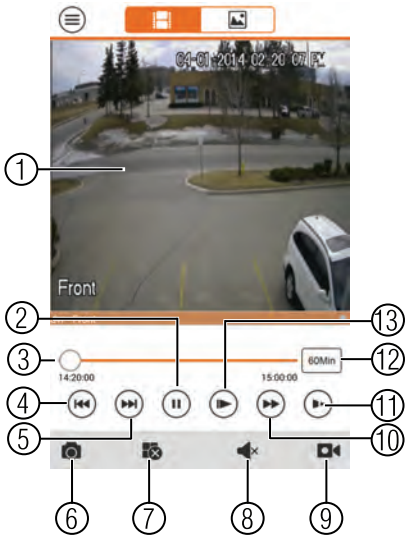
1. Tap to access the Menu, and then tap **Video Playback**.
2. Tap **+** and select a channel to playback.



3. Select the date then the start and end times to playback.

4. Use the on-screen controls to control playback.

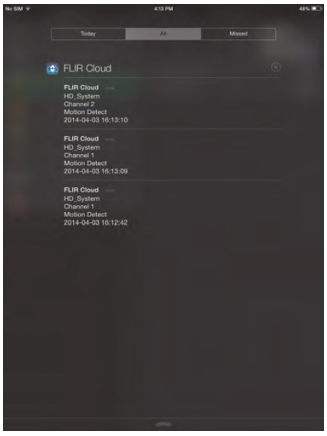
Playback Controls



4.1. **Display Area**: Double-tap to open in full-screen.
4.2. **Play/pause.**
4.3. **Time Bar**: Tap inside the bar to fast forward or rewind.
4.4. **Previous**: Select previous video file.
4.5. **Next**: Select next video file.
4.6. **Snapshot**: Tap to take a snapshot from the selected camera.
4.7. **Stop All**: Stop playback on all channels.
4.8. **Not supported.**
4.9. **Manual Record**: Tap to start/stop recording to your mobile device's local storage.
4.10. **Fast.**
4.11. **Slow.**
4.12. **Time Range**: Tap to change the range of time shown in the time bar.
4.13. **Next frame.**

9.3.7 Enabling Push Notifications

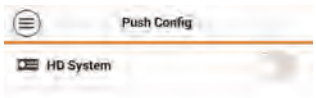
You can have the app send push notifications to the notifications area on your device when one of your cameras detects motion. Once you have received a push notification, you can select it to open live video or a snapshot attachment from the camera that detected motion.



Note
Your cameras must have motion detection activated to receive push notifications.

To enable Push Notifications:

1. Tap to access the Menu, and then tap **Push Config**.
2. Tap the system you would like to configure.



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3. Tap **Motion Detect** and then check each channel you would like to receive push notifications from.

4. Tap to save changes. You will now receive a notification when one of the selected cameras detect motion.

9.3.8 Using the Event List

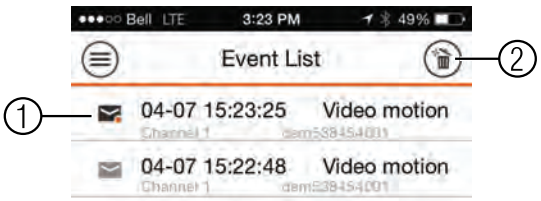
The Event List menu shows a list of events that were sent to your device via push notifications.

Note
You must configure push notifications before you can use the Event List.

To access the Event List:

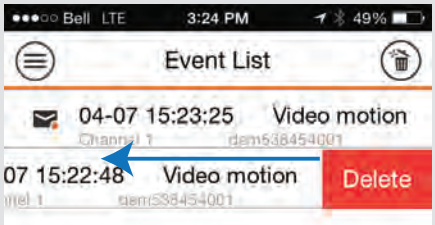
- Tap to access the Menu, and then tap **Event List**.

Event List Overview



1. **Events**: Shows the details of each motion detection event. Tap the event to view the video or snapshot.
2. **Delete All**: Tap to delete all events in the Event List.

Note
To delete a single event, swipe it to the left and then tap **Delete**.



9.3.9 Using Favorites

Favorites allows you to select a group of cameras as a favorite. You can then quickly bring up the group of cameras in Live View without having to individually select each camera.

To use Favorites:

1. Tap to access the Menu, and then tap **Favorites**.
2. Tap a group to configure an existing group.

> **Note**
> Tap to create a new group and then enter a name for the new group.

3. To add cameras to the group, tap .
4. Select the cameras you would like to add to the group. Tap to save changes.

> **Note**
> To delete cameras that have been added to the group, select the group in the group list. Then, press and hold to delete cameras from the group.

To open Favorites in Live View:

1. Tap to access the Menu, and then tap **Live Preview**.

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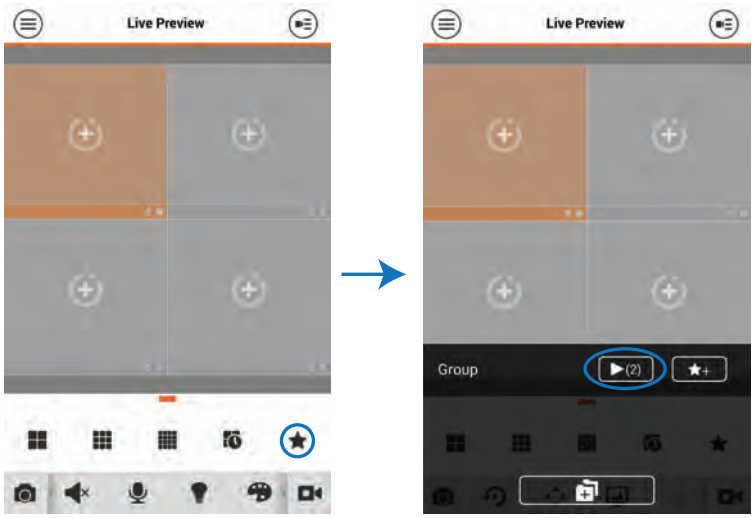
2. Tap ★, and then tap ▶ to open the group.



9.3.10 Using the E-Map

E-Map allows you to place cameras over a still image. For example, you can use the E-Map to create a virtual map of your cameras over a floor plan of your home or business.

To add an E-Map:

1. Tap ☰ to access the Menu, and then tap **E-Map**.
2. Tap ⊕.

3. Select a .jpg image on your mobile device.

4. Press and select a camera. Drag the camera on the screen to place it on the map. Repeat to add additional cameras.

5. Click . Choose a name for your E-Map and then tap **OK**.

To open cameras from an E-Map:

1. Tap in Live View.
2. Select the E-Map in the Device List.

3. Tap the camera or cameras to select and then tap **Start Live Preview** to open the cameras.

9.3.11 Device Manager

You can use Device List to add, delete, or edit your systems.

To access Device Manager:

- Tap to access the Menu, and then tap **Device Manager**.

To edit a system:

1. Tap the system in Device Manager. Tap .

2. Edit the connection details as needed.
3. Tap **Start Live Preview** to save changes and connect to the system.

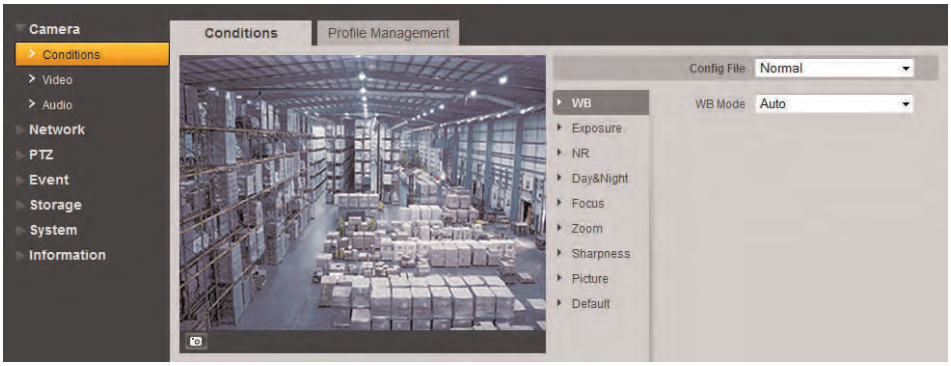
To delete a system:

1. Tap the system you would like to delete.

Appendix A — Camera Conditions (Select models only)

The Conditions menu allows you to configure the image sensor settings for the camera. As you make adjustments, the effects will be shown in the video display.

Note
This section provides instructions for using the Camera Conditions menu, which is used only on certain camera models to configure image sensor settings. For instructions on configuring standard image sensor settings, see 5.1.1 *Settings*, page 14.



10.1 Image Sensor Setting

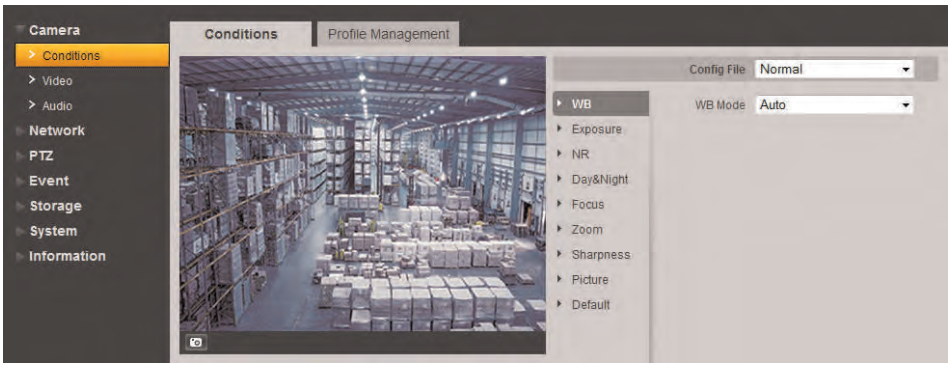
Select the camera configuration profile. Configure camera settings within each profile to easily switch back and forth between different condition profiles.

To configure the image sensor settings:

1. Under **Config File**, select **Normal**, **Day** or **Night**. You can configure the image sensor settings differently for each profile, allowing you to quickly apply different settings if required.
   - **Normal:** Set based on normal camera conditions and environment.
   - **Day:** Set to optimize for daytime surveillance.
   - **Night:** Set to optimize for nighttime surveillance.
2.

10.2 White Balance Setting

Set the white balance mode for the camera.

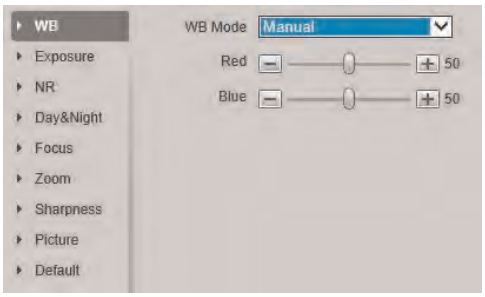


To configure the white balance settings:

1. Click **WB** to enter the white balance submenu.

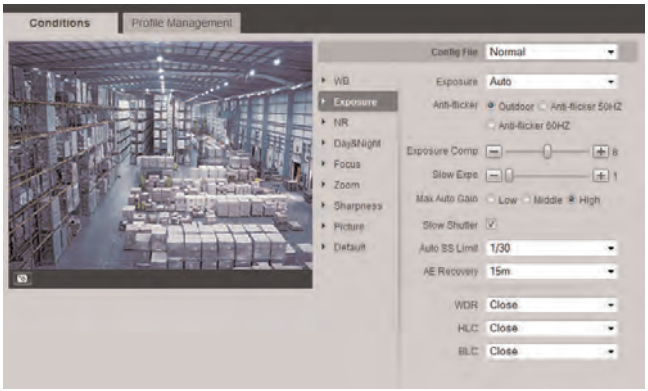
2. Under **WB Mode**, select one of the following:

- **Auto:** The camera adjusts white balance automatically.
- **ATW:** The camera adjusts white balance automatically for various color temperatures.
- **Indoor:** Recommended for most indoor installations.
- **Outdoor:** Recommended for outdoor installations.
- **Outdoor Auto:** Recommended for outdoor installations — white balance is adjusted automatically for outdoor lighting conditions.
- **Sodium Light:** Recommended for environments with natural lighting.
- **Sodium Light Auto:** Recommended for environments with natural lighting — white balance is adjusted automatically for natural lighting conditions.
- **Manual:** This mode allows you to configure the **R GAIN** (red) and **B GAIN** (blue) values to achieve proper white balance.



10.3 Exposure Setting

Select the camera's exposure mode — different exposure modes allow you to configure different sets of attributes.



To select an exposure mode:

1. Click **Exposure** to enter the exposure setting submenu.
2. Under **Exposure**, select one of the following exposure modes:

- **Auto:** The settings for gain, iris, and shutter are determined automatically by the software.
- **Aperture Priority:** Configure iris settings — gain and shutter settings are determined automatically by the software.
- **Shutter Priority:** Configure shutter settings — gain and iris settings are determined automatically by the software.
- **Manual:** Advanced users only — this mode requires you to configure the settings for gain, iris, and shutter to achieve proper exposure.

To configure exposure mode:

1. Under **Anti-flicker**, choose from one of the following:
   - **Outdoor:** The system will use the exposure mode to adjust for lighting.
   - **Anti–flicker 50Hz:** The system will compensate for lighting using 50Hz AC power (i. e. for Europe).
   - **Anti–flicker 60Hz:** The system will compensate for lighting using 60Hz AC power (i. e. for North America).

   Note
   Anti-flicker is only required if experiencing color rolling while the camera is connected to AC power. If your camera model is connected to DC power or to an NVR for PoE use, it is recommended to set this item to **Outdoor**.

2. (Aperture priority mode only) Under **Iris**, click **+** / **-** or use the slider to adjust the iris. Setting the iris manually determines how much light comes through the lens.
3. (Shutter priority mode only) Under **Shutter**, click **+** / **-** or use the slider to adjust the shutter speed. Setting the shutter speed manually determines how long the camera shutter remains open when capturing an image.
4. (Manual exposure mode only) Under **Gain Level**, click **+** / **-** or use the slider to set a gain value. Setting the gain manually allows you to artificially create a brighter or darker image.
5. Under **Exposure Comp**, click **+** / **-** or use the slider to set an exposure compensation value. You can use exposure compensation with automatic exposure to brighten or darken an image to your preference.
6. Under **Slow Expo**, click **+** / **-** or use the slider to set a slow exposure value. Slow exposure ensures stable video in environments with greatly varying brightness. It is recommended to use a higher setting for dark environments.
7. Under **Max Auto Gain**, choose from **Low**, **Middle**, or **High**. This setting determines the high limit for the camera's automatic gain control.
8. Check **Slow Shutter** to enable slow shutter. Slow shutter is used to allow extra light into the camera thereby providing brighter images in low light conditions.
9. Under **Auto SS Limit**, choose a slow shutter limit (**1/1 – 1/30**).
10. Under **AE Recovery**, select an auto exposure recovery time. Changing the camera's iris setting through the NVR takes priority over the exposure settings in the web interface. Auto Exposure Recovery resets the camera's iris to the setting specified in the web interface after a period of time.
11. Under **WDR**, select **Open** or **Close** to enable / disable wide dynamic range (WDR). Turning WDR on fixes harsh contrast between bright and dark sections of the camera image.

Example image for WDR setting

12. Under **HLC**, select **High**, **Low** or **Close** to enable / disable high light compensation (HLC). Turning HLC on darkens extremely bright spots of the camera images to ensure a clear camera image.

Example image for HLC setting

13. Under **BLC**, select **Open** or **Close** to enable / disable back light compensation (BLC). Turning BLC on fixes harsh contrast between bright and dark sections of the camera image in backlit conditions.

Example image for BLC setting

Note
You can only configure one of the following features: **WDR**, **HLC**, **BLC**. If you attempt to configure 2 of these settings, the first one you configured will automatically be set to **Close**.

10.4 Noise Reduction Setting

Set the camera's noise reduction levels — you can set 2 types of noise reduction: 2D temporal noise reduction (**2D NR**) and 3D spatial noise reduction (**3D NR**). The higher the value, the greater the noise reduction.

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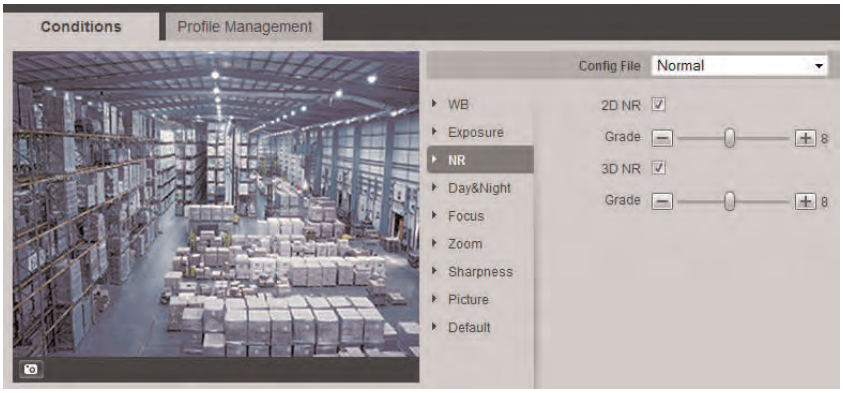
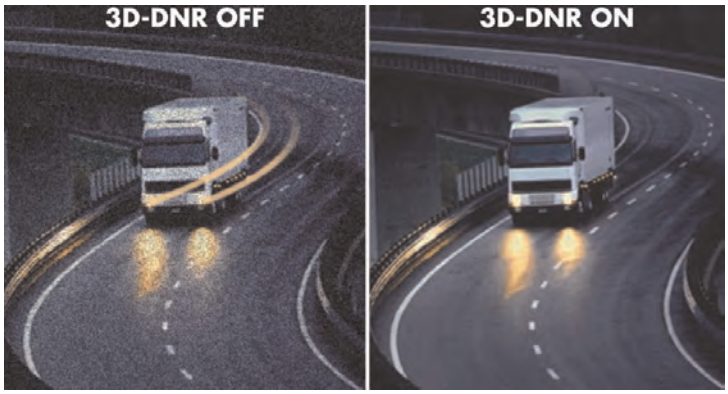


2D noise reduction helps to limit the appearance of noise (graininess in the camera image) around stationary objects. **3D noise reduction** accomplishes the same process for moving objects as well, providing clearer images in low light conditions. Removing noise from the camera image reduces your recording file size and makes videos clearer and more detailed.



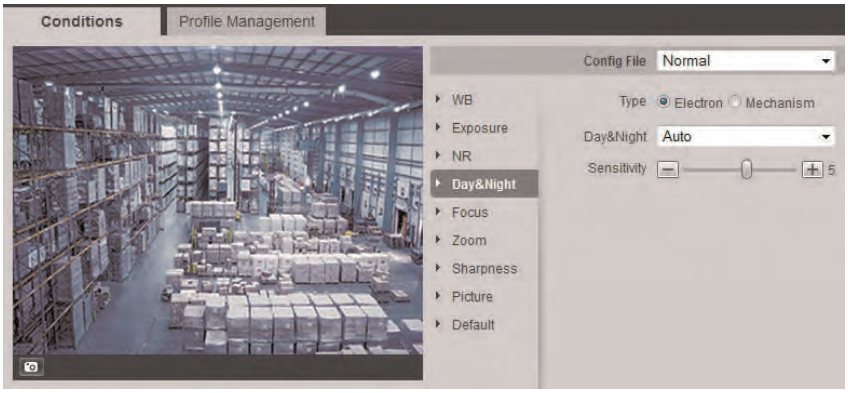
Example image for 3D NR setting

To configure the noise reduction settings:

1. Click **NR** to enter the noise reduction setting submenu.
2. Check **2D NR** to enable 2D temporal noise reduction, then click **+** / **-** or use the slider under **Grade** to set the noise reduction value. The higher the value, the greater the noise reduction.
3. Check **3D NR** to enable 3D spatial noise reduction, then click **+** / **-** or use the slider under **Grade** to set the noise reduction value. The higher the value, the greater the noise reduction.

10.5 Day / Night Setting

Configure how the camera switches between day / night modes.



To configure day / night settings:

1. Click **Day / Night** to enter the day / night submenu..
2. Under **Type**, select how the camera switches between day and night modes:
   - **Electron:** Day / night switch-over is determined by camera software. This is recommended if the camera switches its viewing mode at around the same time every day (for example, sunset or sunrise in an outdoor location).
   - **Mechanism:** Day / night switch-over is determined by a light filter. This is recommended if the camera is in a location with fluctuating light conditions (for example, indoors with lights turning on and off throughout the day).
3. Under **Day & Night**, select one of the following options:
   - **Auto:** The camera switches between day and night mode automatically with changing light conditions (recommended).
   - **Color:** The camera remains in full color. This setting is not recommended unless the camera is in an area with constant lighting.
   - **B&W:** The camera remains in black & white. This setting is not recommended unless the camera is in a constantly dark environment.
4. Under **Sensitivity**, click **+** / **-** or use the slider to set the sensitivity for day / night switch-over. Setting a lower value means that the camera's day / night switch-over will happen in brighter conditions, while a higher value means the switch-over will happen in darker conditions.

> **Note**
> **Day & Night** must be set to **Auto** to configure this menu item.

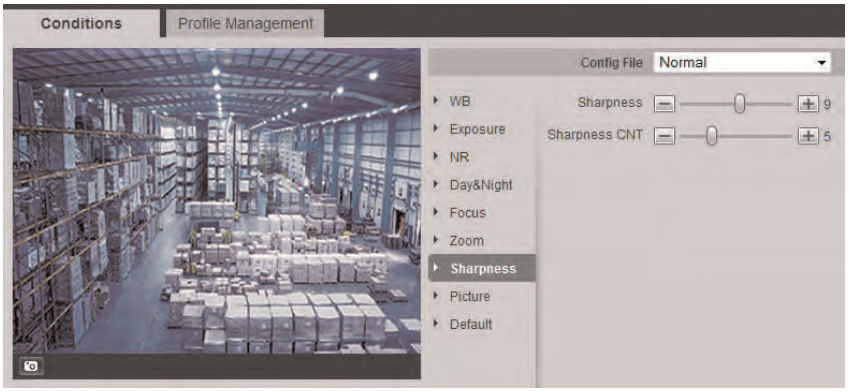
10.6 Focus Setting

Configure how the camera focuses on objects in the image.

3. Under **Zoom Speed**, click **+** / **-** or use the slider to set the speed of optical zoom functions.

10.8 Sharpness Setting

Configure image sharpness settings.

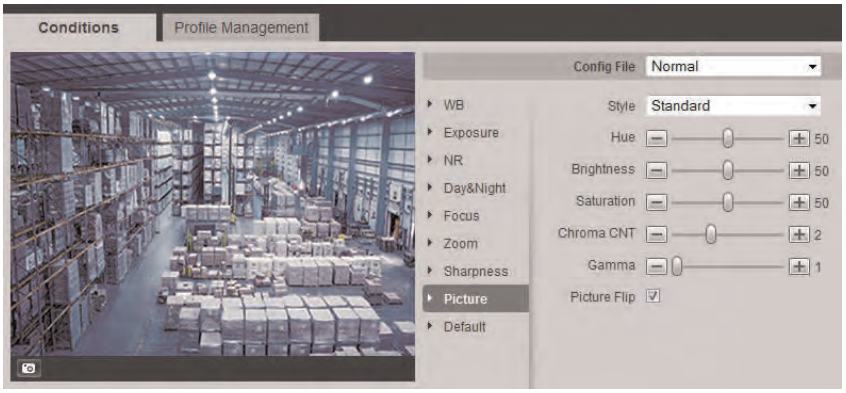


To configure sharpness settings:

1. Click **Sharpness** to enter the sharpness setting submenu.
2. Under **Sharpness**, click **+** / **-** or use the slider to set the sharpness of the camera image. The higher the value, the more clear the image becomes. Object edges also become sharper when a higher value is set.
3. Under **Sharpness CNT**, click **+** / **-** or use the slider to set the sharpness control level.

10.9 Picture Setting

Configure the color and appearance of the camera image.



To configure picture settings:

1. Click **Picture** to enter the picture setting submenu.
2. Under **Style**, select one of the following options:
   - **Standard:** Default image style. Sharp, saturated image with vivid colors.
   - **Soft:** Lowers image detail to create a softer image.
   - **Flamboyant:** High saturation with lower sharpness. Designed to reduce eye strain.
3. Under **Hue**, click the left / right arrow keys to select a hue value for the camera image (**1–100**).

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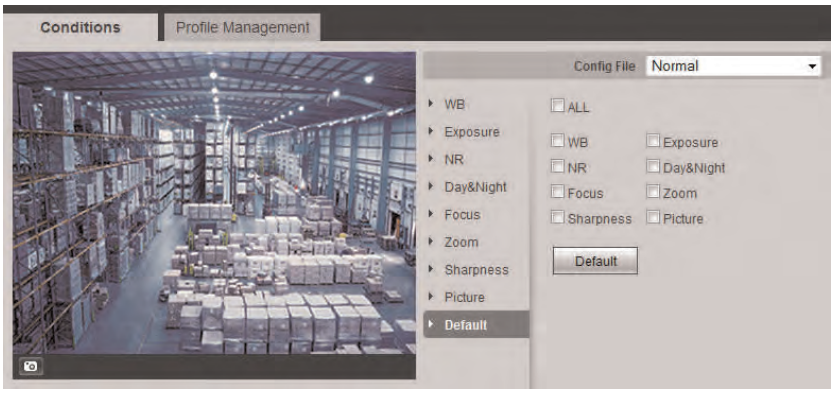
4. Under **Brightness**, click the left / right arrow keys to select a brightness value for the camera image (**1–100**).
5. Under **Saturation**, click the left / right arrow keys to select a saturation value for the camera image (**1–100**).
6. Under **Chroma CNT**, click the left / right arrow keys to select a chroma suppression value for the camera image (**1–4**).
7. Under **Gamma**, click the left / right arrow keys to select a gamma value for the camera image (**1–16**).
8. Check **Picture Flip** to manually rotate the camera image by 180°.

10.10 Restore Default Settings

Restore the default settings for menu items in the camera conditions menu. You can choose to reset a selection of submenus from the camera conditions, or reset all values at the same time.



To restore default settings:

1. Click **Default** to enter the factory default submenu.
2. Check the submenus you would like to restore to default settings, or check **ALL** to reset all camera conditions to defaults.
3. Click **Default** to reset the checked submenus.

> **Note**
> This step cannot be undone.