



**Mini Maxx NVRs**

**R3 Firmware**

**IP Cameras**

**R6 Firmware**

# **Interface Manual**

# Introduction

This manual covers the VI-M series of cameras and NVRs.

The main difference between the camera interface and the NVR interface is that the NVR interface allows—and often requires—the user to choose one particular camera (channel) for any commands or operation.

In addition, there are some commands that are exclusive to PTZ cameras or non-PTZ cameras. These exceptions are noted in the headings used in the text.

There are also slight variations between the interfaces seen on different devices. These variations are due to the different capabilities of the equipment. This manual strives to be as comprehensive as possible; capabilities that your equipment lacks may not appear as options on your interface, or may be disabled.

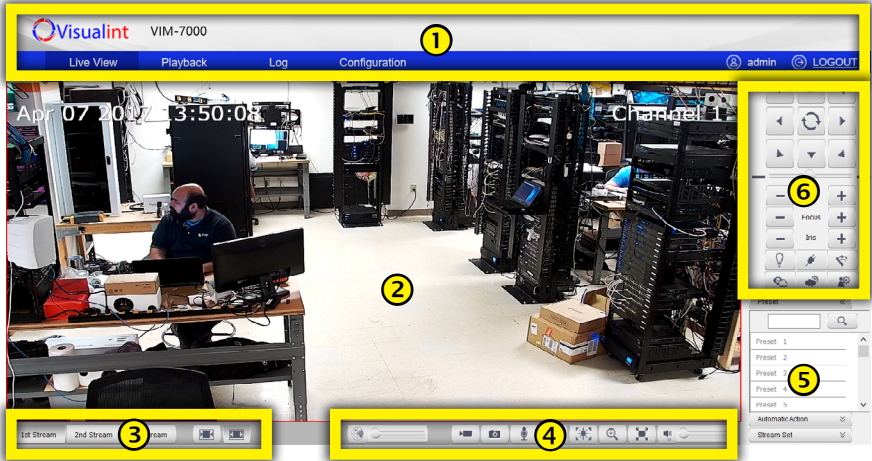
## Contents

Live View Page .....	3
Playback Page .....	7
Log Page.....	10
Configuration Page .....	12
Audio Video Set .....	13
Camera Set ( <i>Static</i> )   Dome Set ( <i>PTZ</i> )   Image Setting ( <i>NVR</i> ).....	16
VCA .....	22
OSD .....	26
Storage Management .....	27
Network Management.....	29
User Management .....	31
Alarm Management.....	32
Advance Set.....	34

# Live View Page

Once you have logged in to your system, the live view page is where you'll spend most of your time. It has all of the controls you'll need for day-to-day operations.

The groups of controls are described below.



① Header & Menu

② Camera View Area

③ Live View Parameters

④ Tool Bar

⑤ Video Parameters

⑥ PTZ and Preset Controls

## Header & Menu

At the top, the header area gives you the SKU of the system that you are using.

The left end of the blue bar has the four major tabs for navigating the interface and accessing the various tools. Each of these tabs leads to a separate page; to review the contents of these pages, use the hotlinks below.

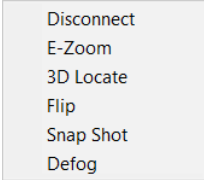
- Live View: This button returns you here from other pages.
- “Playback Page” on page 8.
- “Log Page” on page 11.
- “Configuration Page” on page 13.

At the right end is the account name under which you are logged in, as well as a button to log out.

## Camera View Area

The camera view dominates the area. At the far right is an right-arrow button next to the PTZ controls. Click this to collapse (or reopen) the PTZ controls.

If you right-click in the camera view area, you get the small pop-up menu with the following commands:



**Disconnect:** Terminate the currently connected video stream from the live view.

**E-zoom:** Click and drag across the video screen to select an area. The camera then creates a floating window that shows a digital zoom of the selected area. Note that if the aspect ratio of this area differs from that of the camera, the image will be distorted. You can close the digital zoom window by clicking the X in the upper right corner. If you need to preserve the aspect ratio, use the optical zoom buttons described in the **PTZ and Preset Controls**.

**3D locate:** Click and drag across the video screen to select an area. The camera then pans and zooms to show that area in detail.

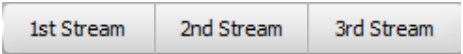
**Flip:** Rotate the video image 180° (upside-down).

**Snap Shot:** Copies the full screen of the live view window and saves it as an image onto the camera's SD card. This action has no effect if your camera has no SD card installed.



**Defog:** Starts the automatic defogging algorithm. When complete, the function closes down; this is not a toggle switch.

## Live View Parameters

In this area, you determine how to handle the video stream.




The first group of buttons determines which of the three video streams you wish to view. These streams are configured separately under Audio Video Set > Stream Set (see "Stream Set" on page 14).


The second pair of buttons determines whether you want to  **lock** the viewing screen to its current resolution (which may distort the video feed), or  **adapt** the screen to the video resolution.



## Tool Bar


The tool bar allows you to interact with the camera and its accessories.


The manual tracking slider  lets you override the auto-tracking feature (cameras with auto-tracking only). When activated, click anywhere on the screen to track that object. The slider acts as a zoom control. The camera must have the auto-tracking feature, and this will not work unless you have configured Linkage Tracking and Intelligent Tracking under VCA.


The next two buttons let you manually  **record** or  **take a snapshot** of the screen. These are saved to the camera's SD card.

The  button activates the Talkback feature, allowing you to speak through your microphone to whatever speaker is attached to the audio output of the camera. Note that some models have a built-in speaker. Talkback only supports one user at a time, so switch this off when finished to avoid inadvertently blocking other users.

You can adjust the view based on a key area of the screen. You can set the  **focus** and the  **exposure** button. Click the button to activate it, then click and drag your mouse across the screen to highlight your area of interest. The camera focuses on that area, and adjusts its exposure to set that area in the middle of the spectrum (that is, if the area is dark, it brightens the whole view screen, and if it's bright, it darkens the whole screen. Click the button again to deactivate this capability.

Press  to activate digital zoom. Click and drag across the video screen to select an area. The camera creates a floating window that shows a digital zoom of the selected area. Note that if the aspect ratio of this area differs from that of the camera, the image will be distorted. You can close the digital zoom window by clicking the X in the upper right corner. If you need to preserve the aspect ratio, use the optical zoom buttons described in the **PTZ and Preset Controls**.


The  button shifts to full-screen mode. Double-click the image or press **Esc** to exit full-screen mode.




The volume slider  adjusts the computer speaker to hear the signal from the camera's microphone.

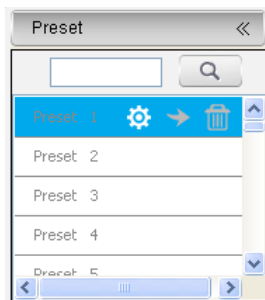
## Video Parameters

This is a set of three dropdown dialogs. One dialog is always open; clicking on a title bar opens the dialog and closes the other two.

For each, pressing **Call** begins the activity, while pressing **Set** give you a special submenu that you can use to edit the action.

The **Preset** dropdown allows you to save and load a specific orientation for the PTZ camera. You can have up to 256 presets. Each preset specifies the camera's pan position, tilt, zoom, focus, etc., for future use. Press  Search the target preset number. Note that empty preset slots have gray text; existing presets have black text.

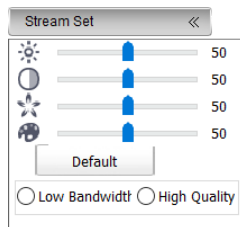
When you click on a preset, several buttons appear.  Save the camera's current orientation for that preset.  Call that preset position.  Delete that preset position.



The **Automatic Action** dropdown lets you put the camera into auto cruise mode (moves the camera through a series of preset positions), auto scan mode (moves the camera through a selected routine that has been preconfigured at the factory), or pattern mode (the camera runs through a set of movements that you recorded, sort of like a macro). You can have eight (each) cruises, scans, and patterns; use the dropdown to call whichever one you desire.

The **Stream Set** dropdown lets you adjust the way the camera presents the current stream.

The four sliders allow you to adjust the ☀ brightness, 🗨 contrast, ✨ saturation, and 🌈 hue of the camera image.



Press **Default** to remove all adjustments made in this dialog from the camera.

Finally, the radio buttons at the bottom let you decide what level of quality you want to view.


## PTZ and Preset Controls Panel

The PTZ control panel gives you total control of the orientation of your camera.

This panel is a flyout panel; you can open it by clicking on the arrow just to the right of the live view area. When the panel is open, you can close it by clicking on the small arrow at the left edge of the panel.







At the top is the navigation area. Clicking and holding any of the arrow buttons moves your camera in the indicated direction. Clicking the button in the center moves your camera back to its default position, with all coordinates (zoom, pan, focus, etc.) set to zero.

Below that is the **speed slider** . Adjusting this increases or decreases the speed at which the camera moves.

Below that, a set of three rocker buttons allows you to adjust the camera's **Zoom**, **focus**, and **lens iris**.

The set of six icon buttons control various capabilities of the camera.

The light and power buttons   have no function at the moment. They are reserved for future compatibility.

The other buttons activate the wiper , the defog capability , highlight enhancement , and wide dynamic range . These buttons (with the exception of the wiper button) are toggles; click turn them on or off.

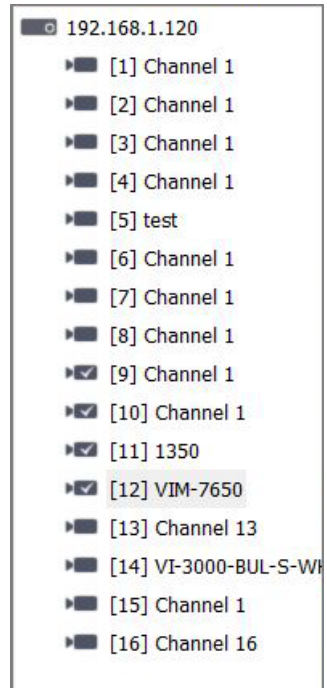
## Channels Panel (NVRs)

The channels panel lets you arrange your cameras in the NVR grid view.

This panel is a flyout panel; you can open it by clicking on the arrow just to the left of the live view area. When the panel is open, you can close it by clicking on the small arrow at the right edge of the panel.

To arrange your camera channels in the live view, first click on a camera window. The channel gets a red outline to show that it is selected.

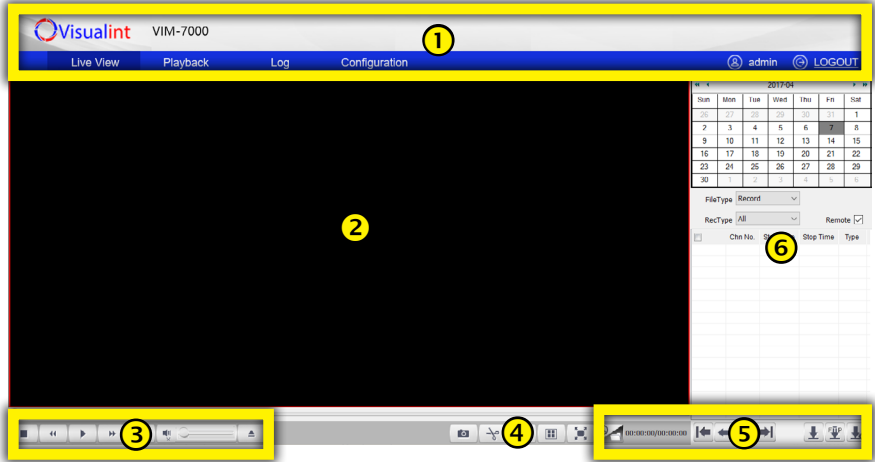
Then click on a camera in the channel list. That camera gets a checkmark in its icon in the list, and it becomes the active camera in that frame. You can click on the camera to deactivate it in that channel.



# Playback Page

On the playback interface, you can review video recordings, take snapshots from the recording, extract clips, etc.

The groups of controls are described below.



① Header & Menu

② Playback Area

③ Playback Controls

④ Tool Bar

⑤ Event Search Controls

⑥ Calendar and File Area

## Header & Menu

At the top, the header area gives you the SKU of the system that you are using.

The left end of the blue bar has the four major tabs for navigating the interface and accessing the various tools. Each of these tabs leads to a separate page; to review the contents of these pages, use the hotlinks below.

- “Live View Page” on page 3.
- Playback Page: This button returns you here from other pages.
- “Log Page” on page 11.
- “Configuration Page” on page 13.

At the right end is the account name under which you are logged in, as well as a button to log out.

## Playback Area







This displays the video being played. Double-click the screen to enter or exit full-screen mode.










At the bottom is a standard scrub bar that you can use to move the playback to your preferred time.

## Playback Controls

These generally match the standard controls on most video players:



-  Stops the playback.
-  Slows the playback to 1/2x. Subsequent clicks further reduce the speed to 1/4x, 1/6x, and 1/8x.
-  Play/pause.
-  Speeds the playback to 2x. Subsequent clicks further increase the speed to 4x, 6x, and 8x.
-  Advances the playback by one frame, then pauses.
-  Volume control.

## Tool Bar

-  Click browse to search for previously saved videos and view them.
-  Take a snapshot of the current frame. You can select where it is stored under Advance Set > File Locations. See “File Locations” on page 36.
-  Use this button to download a section of the video being played. Click this button, then click on the desired start and end points of the extract. You can select where it is stored under Advance Set > File Locations. See “File Locations” on page 36.
-  Display just the current channel (recorder only).
-  Play 4 channel on the screen simultaneously (recorder only).
-  Enter full-screen mode. You can double-click the screen or press **Esc** to quit full screen mode.
-  File mode toggle (see below).

## Calendar and File Area





Click the date in calendar to choose the files according to conditions

**Mode switching:** You can review files in either of two modes. The button looks like  in table mode, where files are listed in a spreadsheet with date and time; pressing the button toggles it to  and opens a timeline along the bottom of the window, where the recordings are shown graphically.




In timeline mode, click and drag on the timeline to move it to the time of interest. The + and - buttons in the top right of the timeline change its magnification. Click a recording to begin playback.

In table mode, you can filter by recording type and whether or not the file was created manually (using the Remote checkbox).

These buttons navigate the files.

-  Jump to the first page.
-  Jump to the previous page.
-  Jump to the next page.
-  Jump to the last page.

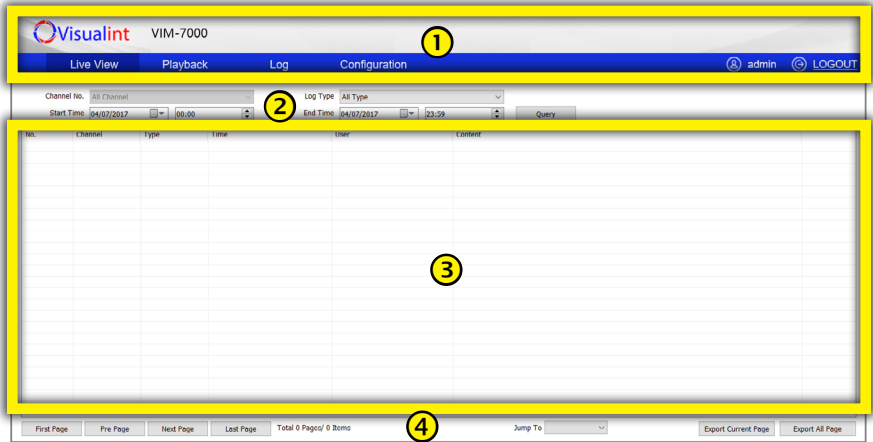
Finally, these three buttons help handle your downloads.

-  Download to your computer.
-  Download to an FTP server.
-  Manage ongoing downloads.

# Log Page

On the playback interface, you can review video recordings, take snapshots from the recording, extract clips, etc.

The groups of controls are described below.



① Header & Menus

② Filter Query Area

③ Log List

④ Navigation Tools

## Header & Menus

At the top, the header area gives you the SKU of the system that you are using.

The left end of the blue bar has the four major tabs for navigating the interface and accessing the various tools. Each of these tabs leads to a separate page; to review the contents of these pages, use the hotlinks below.

- “Live View Page” on page 3.
- “Playback Page” on page 8.
- Log Page: This button returns you here from other pages.
- “Configuration Page” on page 13.

At the right end is the account name under which you are logged in, as well as a button to log out.

## Filter Query Area

Here you set the parameters for the log events you want shown in the list area.

**Channel No.** only applies to the NVR interface, and lets you select a specific camera to search for.

**Log Type** lets you search for specific types of events.

**Start Time** and **End Time** allow you to set the specific time frame to search within.

Once you have set your search parameters, press the **Query** button top execute your search and fill the log list with the events that fit the filter.

## ***Log List***

This area has the list of events that fit the filters from your most recent search query.

## ***Navigation Tools***

The buttons across the bottom help you move through the events list if you have more than one page of results.

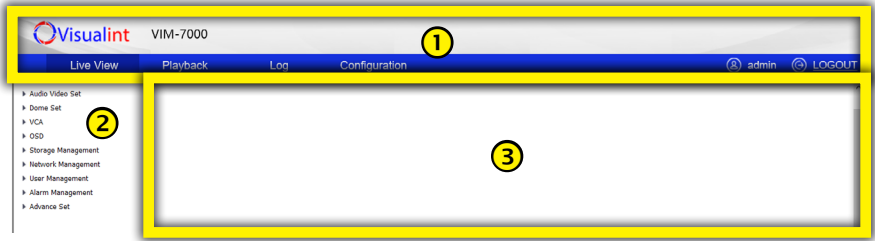
The buttons in the lower left move you throughout the list. You can also use the **Jump To** dropdown to go to a specific page.

You can press **Export Current Page** or **Export All Page** to download a \*.log file to your computer.

# Configuration Page

On the playback interface, you can review video recordings, take snapshots from the recording, extract clips, etc.

The groups of controls are described below.



① Header & Menus

② Menu

③ Configuration Tools

## Header & Menus

At the top, the header area gives you the SKU of the system that you are using.

The left end of the blue bar has the four major tabs for navigating the interface and accessing the various tools. Each of these tabs leads to a separate page; to review the contents of these pages, use the hotlinks below.

- “Live View Page” on page 3.
- “Playback Page” on page 8.
- “Log Page” on page 11.
- Configuration Page: This button returns you here from other pages.

To the right is your account name, as well as a button to log out.

## Menu

This area lists the various pages for customization, grouped by category. Click on a category to view the pages associated with it; click on a page to go to it.

## Configuration Tools

This area has the specific tools based on which menu item you have chosen. The options are described in the following pages (all hotlinked).

“Audio Video Set” on page 14

“Camera Set (*Static*) | Dome Set (*PTZ*) | Image Setting (*NVR*)” on page 17

“Channels (*NVR*)” on page 23

“OSD” on page 28

“Storage Management” on page 29

“Network Management” on page 31

“User Management” on page 33

“Alarm Management” on page 34

“Advance Set” on page 36

# Audio Video Set

This section lets you edit the audio and video streams, plus select key areas of the screen to focus on.

## Stream Set

Here you can set the parameters for the various streams from the camera(s).

The screenshot shows a configuration window titled "Stream Set". At the top, there is a dropdown menu for "Stream" set to "1st Stream". Below this is a section titled "General Set" with a dropdown arrow. The parameters in this section are: "Stream Type" (Pure Video), "Resolution" (1440P(2560x1440)), "Bit Rate" (4096), "Frame Rate" (25), "Priority" (Frame Rate), "Video Quality" (Good), "I-Frame Interval" (50), and "Encoding Mode" (Constant Bit Rate). Below the "General Set" section is a "Smooth Video Streaming" slider set to 50, with a label "[Clarity<->Smooth]". At the bottom is a section titled "Advanced Set" with a dropdown arrow. At the very bottom of the window are three buttons: "Save", "Import", and "Export".

Under the **General Set** section, you can set the stream type (whether or not it has audio), resolution, bitrate, frame rate, NP mode (select NTSC for North America), priority (choosing Quality preserves the image, while choosing Frame Rate preserved the fluidity of the stream), video quality (adjustable if you select Variable under encoding mode, below), I-frame interval, encoding method (use Constant for a stable data rate, or Variable to preserve data), and stream smoothing for each of the streams. The other items within the section are determined by the camera's specifications.

**Stream Set**

Stream

General Set \_\_\_\_\_

**Advanced Set** \_\_\_\_\_

Portrait Mode

Video Encoding

Extended Code

Channel Type

Encrypt Type

Encrypt Password

Password Confirm

Electronic Image Stabilization

SVC

Under the **Advanced Set** section, you select video encoding (H264, H265, MotionJPEG), extended code (If H.264 is selected, choose high profile, main profile, or baseline), channel type (fixed to local for cameras), encryption type (that is, whether or not to require a password) and password, electronic image stabilization, and SVC (scalable video coding).

Save activates the new settings. You can also Import and Export the settings as a \*.dat file.

## Audio Set

This page controls the audio stream.

Choose the audio encoding format (G.711A, G.711U, ADPCM\_D, AAC\_LC), as well as the audio sample rate (8k, 32k, 48k).

If your camera has an associated microphone, select it under audio control type (MicIn for a built-in microphone, LineIn if the camera has a separate attached microphone), and set its volume value and opt whether or not to use audio denoising (larger numbers increase denoising; 0 disables it).

If your camera has an associated speaker, select it under audio output type (built-in speaker, external audio course for a separate speaker, or off) and set its volume value.

Press **Save** to keep all changes. This may cause the camera to reboot.

## **Key Region**

To improve the image quality where you need it, use the key region capability. This adjusts the video for up to seven unique areas. Other parts of the screen may lose image quality as the camera preserve these key regions as best it can.

This option is only affects the camera's first and second video streams.

Use the type selection dropbox to choose whether to use a fixed area or dynamic tracking.

With dynamic tracking, check the enable box. Also, set the upgrade level, which determines how much the camera adjusts the video feed as it tracks.

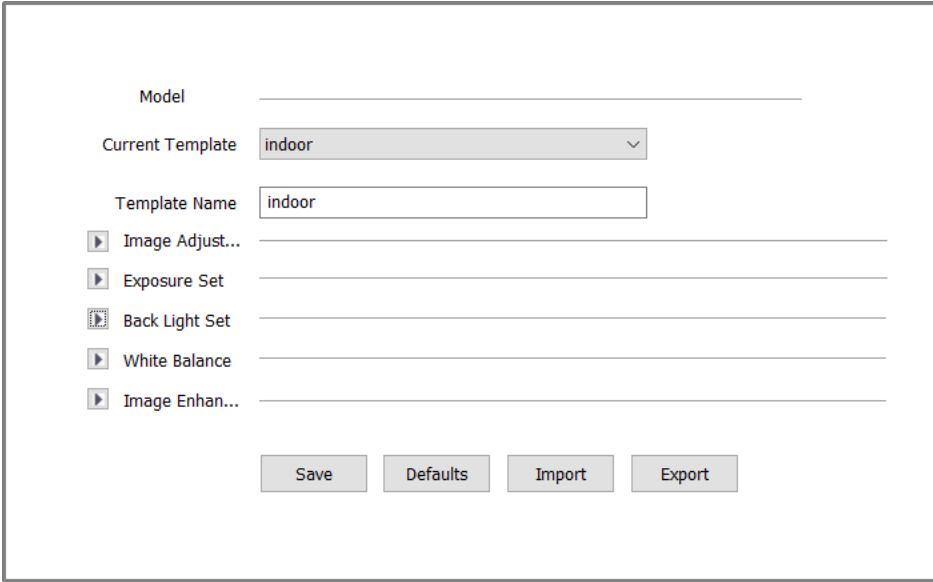
With fixed area, you can create up to 7 areas to include in the calculation by using the Start to Draw button, then clicking and dragging your mouse in the camera view.



# Camera Set (Static) | Dome Set (PTZ) | Image Setting (NVR)

This is where you set up the camera's basic parameters.

## Image Set



The screenshot shows a web-based configuration interface for camera image settings. It features several input fields and a list of submenus. At the top, there is a 'Model' field with a horizontal line. Below it is a 'Current Template' dropdown menu with 'indoor' selected. Underneath is a 'Template Name' text input field containing 'indoor'. A list of submenus follows, each with a small icon and a right-pointing arrow: 'Image Adjust...', 'Exposure Set', 'Back Light Set', 'White Balance', and 'Image Enhanc...'. At the bottom of the interface are four buttons: 'Save', 'Defaults', 'Import', and 'Export'.

At the top, you can select which of the eight camera modes to adjust, and give it a custom name.

Below are a series of submenus. Click the drop arrow to open that submenu. These adjustments only affect the selected camera mode.

**Image Adjustment:** Set the camera's brightness, contrast, saturation, hue, and sharpness.

**Exposure Set:** Here you control the camera's shutter speed and aperture, as well as the brightness that your camera attempts to achieve.

**Focus Set:** Set the camera's behavior when focusing the lens. In semi-auto mode, the lens only refocuses when a PTZ event is called; it does not adjust after that.

**Day/Night Switch:** In this page, you set the camera's behavior regarding low-light conditions. Set IR use, when the camera switches to night mode, and how easily it reacts to changes in lighting.

**Back Light Set:** Adjust the camera settings for wide dynamic range and highlight compensation.

**White Balance:** Here you set the ambient light situation, which the camera uses to adjust coloration automatically.

**Image Enhancement:** Choose the style of image you want, specify whether the camera's view is inside or outside, and decide whether or not to use defog.

For digital denoising, either select Close to keep it off, or choose your style. In expert mode, space-domain has the camera reference the entire image for denoising calculation, while time-domain watches individual pixels' behavior frame to frame. Note that in any setting, high denoising levels can cause "tails" to appear on moving objects.

At the bottom, you have buttons to save the settings, restore all settings to their factory defaults, or import/export a \*.dat file of the settings.

## Schedule

This lets you adjust your camera's video-settings behavior throughout the day, switching modes as needed based on the time and expected lighting.

At the top, select **Time Range** to give your camera a rigid schedule that depends on the clock, or **Day/Night status** to have your camera switch behavior based on the level of illumination it detects.

If you choose time range, you are given a table of time slots. Activate a slot by clicking its checkbox. The system automatically provides a time bracket for that slot; you can adjust the time by clicking and dragging the dividers in the graphical timeline at the bottom of the window (note that the up/down arrows in the time boxes don't work in this interface). Then, for each slot, use its corresponding dropdown to pick the camera's activity.

If you choose day/night status, use the dropdowns to select the camera's behaviors during daytime and nighttime.

At the bottom, buttons allow you to save your changes, restore system defaults, or import or export a custom schedule file.

## D/N Set (Static only)

This section tells your camera when to switch from daytime mode (color) to nighttime mode (black and white).

At the top, the **Realtime Brightness** entry tells you, on a scale of 1–100, how bright the camera thinks its view is. This number can help you calibrate the switch.

**Color to B/W Type** is a dropdown menu that lets you select which method you want the camera to use when switching from daytime mode to nighttime, and vice versa.

## Auto (inside)

Use this for cameras installed indoors, if you want them to change modes based on the ambient light.

**Day Range:** Brightness of this level or higher is always treated as daytime and recorded in color. Lighting between this setting and the Night Range setting may be recorded in either mode.

**Night Range:** Brightness of this level or lower is always treated as nighttime and recorded in black and white. Lighting between this setting and the Day Range setting may be recorded in either mode.

**Delay:** You can set a delay for how rapidly a camera switches between day mode and night mode, and vice versa. This keeps the camera from flipping back and forth between modes.

**Infrared Lamp Power:** Use this to set the brightness of the camera's IR lamp.

### *B/W*

Use this to force the camera to record in black and white at all times.

**Infrared Lamp Power:** Use this to set the brightness of the camera's IR lamp.

### *Color*

Use this to force the camera to record in color at all times.

### *Auto (outside)*

Use this for cameras installed out of doors, if you want them to change modes based on the ambient light.

The controls are identical to the Auto (inside) controls, described on the previous page.

### *Schedule*

Use this to force the camera to switch modes at specific times of day. This is most useful in an environment where the lighting also changes on a set schedule.

**Sunrise Time:** When the camera switches from black and white to color.

**Sunset Time:** When the camera switches from color to black and white.

**Infrared Lamp Power:** Use this to set the brightness of the camera's IR lamp.

## *Basic Set (PTZ only)*

This section adjusts the physical parameters of the camera's operation.

### *Basic Information*

**Auto Flip Enable:** This auto-rotates the picture when it tilts past 90°.

**Preset Freeze Enable:** If this is on when the camera moves to a new preset, it won't update the video image until the camera is at the new preset.

**Enable Digital Zoom:** Without this, cameras cannot move beyond the mechanical limitation on their zoom level. When this is enabled, using the Zoom + button beyond the camera's mechanical limitation causes the

camera to switch automatically to digital zoom. However, digital zoom may cause a grainy image.

**Enable Preset Snapshots:** Automatically saves a snapshot to the camera's SD card when a new preset is called.

**Enable Proportion Zooming:** This moderates the camera's pan speed in proportion to its zoom value, so that panning at high zoom is not just a blur.

**Enable Scan Record:** When enabled, the camera records while scanning, and saves it to the camera's SD card.

**Enable Mode Record:** When enabled, the camera records while in pattern mode, and saves it to the camera's SD card.

**Tilt Angle Adjustment:** The camera's nominal zero point may still leave mechanical space that the lens can move upward. This allows you to re-zero the camera and use that space.

**Control Speed:** Sets the maximum control speed.

**Zoom Speed Level:** Sets the maximum zoom speed.

**Temperature Control Mode:** Decides how your camera handle temperature.

**Auto Stop-time(s):** For cameras with auto-tracking, this sets the time for the camera to stop PTZ movement since the last manual operation.

**Preset Speed:** Sets the speed at which the camera moves to a new preset.

**Standby Action:** This is what the camera does when it is otherwise idle.

**Standby Time(s):** How long the camera must remain idle before it takes the standby action.

**Power-lost Memory Mode:** When enabled, this saves the time and PTZ settings when power is lost.

## **Title**

You can specify a title for each of the scans, cruises, patterns, presets, and zones. Enter the desired text in the Title Name text box.

The **Dwell Time** determines how long the OSD remains on screen, measured from when it is first called. Select **Close** to disable the OSD.

**Display Coordinate Direction:** Adds the camera's orientation to the OSD.

**Display Title Background:** Places a contrasting highlight behind your OSD.

## **PTZ Control (PTZ only)**

This page lets you control the camera's PTZ behavior. This page, in large part, duplicates the PTZ controls from the live view page.

The **Set Origin** and **Set North** buttons define the camera's current position to be its default orientation; henceforth defining all measurements by this position.

Below the camera view, you can control the camera using the same control rosette and zoom/focus/iris buttons as appear on the live view page.

To the right, you can call, set, and adjust settings for presets, cruises, scans, and modes. Each one has an associated **Call** and **Delete** button.

A **preset** is a stationary configuration for the camera, defined by its angle, aim, and zoom level. Presets are numbered 1–64, and 100–500. Choose a preset slot, maneuver the camera into position, choose the focus mode, and press **Set**.

A **cruise** is a programmed sequence of presets. Select a preset to add to the cruise, choose a duration for it to remain at that position (up to 60 seconds) and press **Add** to add it to the end of the cruise sequence. Choose a preset and click **Delete** to remove the last entry from the sequence.

A **scan** is an automated motion routine. Pan scans go left and right, tilt scans go up and down, etc. Set a border (a place where the camera stops panning and goes in the other direction) by using the PTZ controls to align the camera where you want it to stop and press one of the border buttons.

**Mode** is where you program your own custom behavior, sort of like recording a macro on your keyboard. To do so, click **Record**, then use the PTZ controls to move your camera through your desired motions. Watch the **Used(%)** marker to track how much of the available process you have consumed, and the **Left Time(s)** to see how much time is still available (expressed in seconds).

**Limit** sets hard boundaries for the camera's motion. These limits apply to all PTZ functions, including automated motion as well as manual manipulation.

Once you enable limits, use the PTZ controls to move the camera to the leftmost position allowed. Click the **Set** button, and **Iris +** to confirm. Do the same to set the right limit, the upper limit, and the lower limit.

Clicking **Delete** removes your border settings.

## **Motion Schedule** (PTZ only)

This lets you adjust your camera's PTZ behavior throughout the day, switching behavior as needed based on the time of day.

At the top, select the day's schedule to edit, and check **enable**.

There are eight different time slots available to edit. You can directly edit an hour or minute by clicking and entering a number, or use the up and down arrows to adjust to time. Then, for each active slot, select the specific camera action. A camera cannot have two actions marked for the same time.

Once you've completed a schedule for a day, select which days (or all) to which to copy this schedule, and click **Apply**.

Be sure to click **Save** before exiting.

## **Fill Light Set** (PTZ only)

Here you control the behavior of the infrared light and the white LED lamp on the camera. These settings start disabled by default; to edit them, go to Dome Set > Schedule and switch the method from day/night to time range.

You can choose whether to make the light control automatic, or manually control when the light turns on or off.

Zoom match adjusts the light brightness to the zoom level for better picture quality. If you disable zoom match, you can manually set the lamp brightness for low zoom levels (near) or high zoom (far).

Note that the white LED lamp has an effective range of 30 meters; use being that range is not recommended. Also, if there is a large reflective object near the camera (within roughly ten feet), use of the LED lamp may cause the camera to flip the light on and off repeatedly as the reflected illumination gives the camera a false reading for ambient light.

## **Status Info** (PTZ only)

This provides the firmware release date, physical capabilities, and temperature of the camera.

## Channels (NVR)

Here you wrangle the various cameras on your system.

### *Channel Management*

The chart at the top is a search tool. It displays the IP address, type, protocol, and channel of every device the NVR can locate on the network. Click Edit to adjust settings as needed to allow you to add the device.

The **Search** button refreshes the page.

**Add** connects the selected device(s) to the NVR.

**Manual Add** lets you adjust settings to add the selected device(s).

**Adv Search** gives you extra tools to refine your search on a large network.

The bottom chart lists all the devices currently attached to the NVR. Those physically connected all have IP addresses that begin with 192.168.3. Devices with other IP addresses are connected digitally.

Select the checkboxes of the cameras you wish to edit.

**Modify** lets you adjust the camera's settings.

**Delete** removes a digitally attached camera from the list.

If a camera is not automatically enabled when connected, click the **Enable** button. Disable a camera by click the **Forbidden** button.

**Restart IPC** reboots the camera.

### *POE Power Information*

This chart is not editable; it provides data on PoE use by the cameras attached to your NVR.

The table at the top lists all the cameras attached and their individual power draw. Below that, a bar graph shows how much of the total PoE capacity is used, and how much excess is available.

# VCA

VCA stands for video content analytics. This is where you control the camera's intelligent analysis of the video stream.

## Alarm Info

This page lists all alerts that fit the filters you set at the top of the page. If there is an associated image, double-click on the image name to view that image. Pressing **Reset** clears all entries listed for that rule, while pressing **Clear** removes all alarm information in the list.

## VCA Wizard

This highly interactive setup wizard guides you through creating your own Video Content Analytics (VCA). The potential branches in the wizard are so extreme in number that documenting them all is impractical; just follow the prompts as they are presented, and you should be pleased with the result.

## Create Rule (Static only)

This lets you implement your desired video content analytics. Note that VCA is disabled while you are on this page.

**Create Rule**

Mar 03 2016 10:34:05 Channel 1

Start to Draw Line Clear

*The green and blue manikins give an estimate of the minimum and maximum sizes that trigger events.*

Please active VCA and Rule ID first!

VCA: Enable

Enable Arithmetic:  Behavior Analysis

Video Detection  Audio Detection

Save

Arithmetic: Behavior Analysis

Rule ID: 1  Valid

Rule Name:  Rule Clear

Event Set: Tripwire

Alarm Color: Red

No Alarm Color: Green

Min. Percentage: 19

Max. Percentage: 55

Show Alarm Count

Show Alarm Rule

Two-way Alarm

Display Target

Save Next

**Prior to editing, you must enable VCA using the dropdown, select Behavior Analysis, and click Save. This activates the analytics engine and makes all the other controls appear.**

First, select Behavior Analysis for the type of analysis. (Video and Audio Detection are used only for remote diagnostics, and are not intended to be used by the installer.)



For Behavior Analysis, you can create up to 8 different rules. Select each rule using the dropdown. All rules apply simultaneously.

Name the rule if you wish, select what type of analytic event you want to use, and choose the alarm/no-alarm colors.

The percentage sliders set the minimum and maximum size of the objects that can activate the alarm. Blue and green humanoid icons to help you visualize and the effects of the settings.

Four checkboxes adjust the on-screen alarm display. **Show Alarm Count** shows the total number of triggers since VCA was activated. **Show Alarm Rule** shows the defined tripwire or perimeter. **Two-Way Alarm** makes the alarm bidirectional (this option is only available for tripwire and double tripwire events). **Display Target** displays a bracketing frame around the detected target.

### *Using Tripwire*

This alerts you when the majority of a tracked object moves across a line.

Click the **Start to Draw** button to create the line in the camera view.

### *Using Double Tripwire*

As tripwire, but you can also set the minimum and maximum times it requires for something to cross both lines before the activity trips an alarm.

### *Using Perimeter*

As tripwire, but you can select for people entering and/or leaving the area. Intrusion is used for objects completely entering the designated zone.

In addition, invasion time is the duration in seconds that the target must remain inside the perimeter before it triggers an alarm.

Click the **Start to Draw** button to create the area in the camera view.

### *Using Object Abandoned / Missing Object Detection*

As perimeter, plus you can set how long something must be left stationary or be missing.

You must draw an area for the camera to analyze. Left-click to add a corner to the perimeter line, or double-click to end the drawing.

### *Using Loiter*

As perimeter, except this analytic does not use minimum and maximum sizes. Instead, you can set the minimum area (if the target's movement becomes limited to this amount, the alarm is triggered), how long something must remain relatively stationary, and how sensitive the camera is to minor motions.

## **Scene Set (PTZ only)**

A scene for a PTZ is the pairing of a specific preset and the video content analytics that go with it. Note that VCA is disabled while you are on this page.

Prior to editing, you must enable VCA and select an existing Scene number in the top two menus. Name the VCA rule, and press the Save Scene button to activate the rule with its current settings.

Selecting Linkage Tracking allows Tripwire and Perimeter alarms to activate auto-tracking (if your camera is capable).

Aside from the above, the controls are just like those for Create Rule (above).

### *Linkage Tracking*

**Note: Auto tracking is only available on the 7150 and 7230 models!**

This is available when you select Arithmetic: Intelligent Tracking.

**Longest Track Time sets** how many seconds the PTZ tracks an individual target before returning to its default operation.

**Speed Dome** sets the maximum speed that the PTZ uses.

**Static Tracking** is how long the camera continuous to follow a target if it temporarily stops moving.

**Limit** allows you to restrict the movement of the PTZ by using the Set button

**Anti-Blocking** allows the PTZ to follow a target as it moves behind an obstruction.

**Display Target** places a bracket around the object being tracked.

Click **Save** to keep your work, and **Next** to advance to the VCA Schedule page.

### *VCA Schedule*

Here you determine when analytics will be active. Each scene and rule can have its own schedule. The grayed-out checkboxes show the current status of the channel and scene.

Select a scene and rule. The system loads the rule, its name, and event list. Check Enable (next to Event) to schedule that analytic.

Schedule up to four separate times each day. Enable a time slot, then use the arrows or just type the numbers to set the start and stop times for each segment.

Once you've completed a schedule for a day, select which days (or all) to which to copy this schedule, and click **Apply**.

Below this, you can select any or all of the link types and assign which ports they alert when an alarm is raised.

## **Cruise Set** (PTZ only)

**Note: Auto tracking is only available on the 7150 and 7230 models!**

This area is where you get the VCA and Auto Tracking to work. If you don't set a cruise, then auto tracking with VCA will not be activated.

Click **Add** to append a scene to the cruise. Select the scene by its number. You can also click **Delete** to remove the last scene from the cruise.

Timed Cruise switches the camera between different defined VCA functions every 30–3600 seconds.

Schedule Cruise sets specific time periods for each defined VCA functions.

## **Advanced**

Under Scene Parameter, the Resume Timer control allows the system to resume automatic action after a user has manually controlled the PTZ function. Choose the time, in seconds, that a manually controlled camera sits idle before resuming its normal scheduled activity.

Under Object Set, you control what the system considers to be an object. You can set the minimum and maximum target sizes to exclude small or overlarge objects. Finally, you can set the size of the frame that appears around a confirmed target.

Settings made here override the predefined settings from Scene Set for a specific scene number.

## OSD

This section customizes the extra data that appears on your video streams.

### OSD

Here you set titles and other information that shows on your screen. You can set separate OSDs for the first and second stream for the camera.

Enter the camera's title in the box provided. To reposition the appearance of the title on the screen, click **Customize Location**, then click your mouse on the camera view to set the upper left corner of the title. Use the dropdown to change its color if desired.

Similarly, you can select the format for the time and date, including whether or not to include the day of the week.

You can add up to five sets of additional text. Changes made to this text may not update until you relocate it on the video screen.

Finally, you specify the size of the text, or to let the system adapt it to current use; as well as choose to use a lattice or vector font.

### Logo

Use this page to add a logo or watermark to the screen.

The illustration must be in bitmap (.bmp) format, no larger than 200 pixels in any dimension, and both the height and width should be divisible by four.

Click **Browse** to locate the file, then click **Upload**. The camera restarts after the upload is complete.

After restart, click **Enable** to display the logo. To reposition it, select **Customized Location** and click on the video screen to set the top left corner of the logo at that position.

### Privacy Mask

Here you can go up to 24 privacy areas on the screen.

Click and drag in the video screen to create an area. You can click and drag in the center of the area to move it around, click and drag a corner point to move it around, or double-click a line to create a new corner in that segment.

Once an area is sized and arranged to your satisfaction, click **Add Area**. Once it's added, you can edit it.

In the **Shielding Factor**, you choose a magnification value. The privacy block only shows if the camera's zoom factor equals or exceeds the shielding factor. At lower zoom levels, the privacy mask does not appear. Press **Save** to accept and enable all edits.

To delete a mask, select its checkbox and click **Delete Area**.

# Storage Management

Note that Visualint cameras do not support hot plugging. If you add or remove an SD card, you must reboot the camera for it to acknowledge the change.

## **Record Policy**

Here you determine when recording is active. Each type of recording can have its own schedule.

The grayed-out box at the top shows the current status of recording.

Click the checkboxes to enable manual recording, recording when an alarm is triggered, and continuous recording. You can also adjust settings for continuous recording.

Select the recordings for which you wish to set the schedule. You can schedule up to four separate times each day. Enable a time slot, then use the arrows or just type the numbers to set the start and stop times for each segment.

Once you've completed a schedule for a day, select which days (or all) to which to copy this schedule, and click **Apply**.

Enabling offline video recording allows your camera to record to its SDS card if it cannot detect a network (for example, your if your router is down).

## **Pre-Alarm Recording**

Your camera can keep a constantly churning cache of video that it can append to the start of any recording. Here you can enable that, and set the length of extra video you want appended to the start and end of any video recorded due to an alarm.

## **Storage Set**

When using a camera, this shows the space left on the camera's SD card. When using an NVR, this shows the hard disk space available.

Select how to handle the record files when the disk is full. You can either stop recording new files, overwrite the oldest recordings as needed, or overwrite the oldest non-alarm recordings as needed.

## **Snapshot Set**

This configures the jpeg images that the system creates when for an alert, and are either sent by email or uploaded to an FTP.

Select the dimensions of the snapshots the camera takes.

If you enabled timed capture, also select the interval between shots.

You can also choose to send the snapshot to the FTP site (defined under "Visualint" on page 31) or an email address.

Hold Time sets the minimum gap in seconds between consecutive alerts. This prevents hundreds of alerts being sent over the course of a few seconds.

Delay Time is the delay in seconds that the system waits before sending an alert. This allows the user to disable the alarm before sending an alert.

## ***Disk Management***

This lists all hard drives your system can access, and their status reports.

You can also initialize a drive from this page; doing so wipes all information from that disc.

## ***Net Storage***

Here you can set up and connect to network disc drives.

Select a disk number and enter that disc's IP address and the path to which you want surveillance files saved.

Once the disc is located, you can also edit its status and what it is used for, as well as check its available space.

# Network Management

This is where you set the network parameters.

## TCP/IP Set

If you enable DHCP, the server automatically allocates IP addresses for all devices. Otherwise, you can edit the IPv4 addresses.

With the MTU entry, you can set the Maximum Transmission Units, which can be set from 500–1500 bytes.

## Network Service

This is your primary network management page.

### DDNS

This section allows you to connect to your surveillance system from anywhere, via the Internet, using a web address that's easy to remember.

You can choose any available name for your URL. This creates a personalized server address of YourCustomDomain.visualint.systems.

*Example: If you choose the domain myhome, your system's URL would be myhome.visualint.systems.*

When you are ready to set up a DDNS address, contact your Virtual Technician.

### Visualint

This is where you configure the FTP site that you wish to use for alert uploads. Download is the only option available at this time.

Enter the FTP URL, port, file path, and login information.

### PPPoE

If you wish to enable point-to-point protocol over Ethernet, click Enable. Enter the password information if you plan on using.

### NTP

With NTP, your network pings a server every so often to maintain proper time. The NTP server synchronizes all participating systems to within a few milliseconds of Coordinated Universal Time. This provides you with your most accurate time stamping. Using NTP requires Internet access. You can find a list of available servers at <http://tf.nist.gov/tf-cgi/servers.cgi>.

Server Address: This is the site that your recorder pings for time stamps.

NTP Port: This port communicates with the time server.

Interval: This shows how often your system checks for an update.

## *Other*

This handles a few miscellaneous settings for advanced users.

Clicking UPnP Enable allows the system to connect to your UPnP router and auto-configure port forwarding for your system. We recommend that you do not enable UPnP.

This stands for simple network management protocol. If you need SNMP functionality, contact your IT admin. We recommend that you leave this function disabled.



# User Management

Here you control whom has access to the system.

Click **Add** to create a new account, or select an account and change its password or delete it.

When you add a user, create the account name and password, and choose one of the following permission levels:

- Browse: Can only watch videos.
- Browse + Control: Watch video and use PTZ controls.
- Browse + Control + Set: All operations except user management.
- Admin: All operations.

# Alarm Management

This is where you set up how the system handles alerts.

## Visualint Event Output

With this page, you can use your system to send HTTP commands camera-to-camera.

The chart at the top lets you review the existing commands, and select them for modification or deletion. Alternatively, press **New** to create a new command.

Enter a name of up to 30 characters. This name appears when you choose HTTP commands under VCA link type. The description can hold a helpful reminder for personal use.

Address and port refer to those of the target camera. Account and password are the login credentials of that camera's admin account.

Enter the HTTP command itself into the box labeled Message.

## Alarm Input

To set up the system's reaction to an incoming alarm, choose an alarm channel to set operation for, then click the **Enable** checkbox.

Under Mode Set: Use ON for a when a normally open alarm (when it closes, it turns on), or OFF for a normally closed circuit alarm (it turns off when opened).

Under Link Type:

- Alarm Output activates an alarm device attached to the output port.
- Link Snap makes the camera take a snapshot at that exact moment.
- Visualint Event executes the command created in Visualint Event Output, above.

Once you have an alarm input customized, remember to save it. You can also copy it to other cameras.

## Alarm Output

This section sets up the system's reaction when it creates an alarm.

Under Mode Set: Use ON for a when a normally open alarm (when it closes, it turns on), or OFF for a normally closed circuit alarm (it turns off when opened).

Delay Time is the delay in seconds to allow a person to disable the alarm (by entering a security code, e.g.).

## Mask Alarm

This creates an alarm when camera lens is covered or obscured.

When you enable this, set the sensitivity (higher sensitivity means the camera reacts less of the lens is obscured)

If you don't want it active 24/7, you can set a schedule of up to four time slots.

When the camera's obscured, you can choose to activate a PTZ call (in an attempt to remove a mechanical obstruction, activate an alarm, or take a snapshot).

## **Email Alarm**

This section sets the recorder up to send email alerts when desired. Note that these settings may not be enough: you may need to change your email security settings to allow your recorder to send email alerts. Refer to the documentation from your email provider for further information.

Check **Email Alarm Enable** to enable sending emails when an alarm is triggered.

As of firmware version R6, you can set up two separate email servers. This allows the use of email notifications while also using a remote monitoring service. Use the dropdown at the top to select which server you are setting up.

Enter the SMTP server and port at the top of the page. Below that, enter the user name and password for the email account that will be used to send the alerts. This is needed to log in to the outgoing email server. You can also set the email mode and what level of encryption you want to use.

For the email's subject line, use something that indicates which camera is sending the alert.

The Main Email Address box lets you edit whom the message appears to be from. The sender's email address could be a third party to whom you wish to respond when such an alert arrives.

You can define up to three people (or distribution lists) to receive these email alerts by entering that email address in the fields at the bottom. You cannot enter more than one email address in each of these boxes.

Press **Test** to ensure the email alerts work, and click **Save** when the test is successful.

## Advance Set

This section defines how the system interacts with outside platforms.

### File Locations

Choose a stream to edit, then decide whether you want the frame rate and bitrate displayed on the recording.

You can then edit the save-file locations for various data pulled from this stream.

Below that, three dropdowns define how the system handles playback.

### System Set

This page is divided into system information, version information, and language and time.

At the top, System Information provides a real-time display of how much CPU, Memory and FLASH are currently being used by the system.

Under Version Information displays the unit's ID number, as well as the version numbers of all of its software and firmware.

Language and Time is where you set the date, time, time zone, and DST options. If you are using NTP, simply select your time zone and press **Synchronize**.

To employ daylight saving time, click the **Enable** checkbox. This works with both NTP and manual time settings.

The Start Time and End Time boxes let you set the month, week, day, and hour (in 24-hour time) that daylight saving time starts and ends. The DST Offset box sets the amount that the time changes.

As of 2017 in the most of the US and Canada, daylight saving time starts on the second Sunday in March and ends on the first Sunday in November. The switch takes place at 2:00 a.m. local time, and the offset is 60 minutes.

Places that do not observe daylight saving time include Arizona (outside of Navajo territory), Hawaii, Saskatchewan, and a number of local exceptions across Canada. For Arizona and Hawaii, just disable DST. For Saskatchewan, disable DST and set your system to Central Time (at the top of the window). For other exceptions, check local regulations; there is ongoing legislation that seeks to change is one way or another in a number of locations.

### System Maintenance

This is the troubleshooting section. It's divided into Device Control, Firmware Upgrade, Configuration In/Out, and Auto Maintenance.

#### Device Control

Click the buttons to perform maintenance.

**Factory Default:** Restores the system to its original factory condition, wiping out all customization.

**Reboot:** Restarts the system.

**Lens Reset:** This diagnostic tool zooms to maximum, focuses, then zooms to minimum and focuses again.

**Open [Close] Remote Service:** This is for developer diagnostics only. It is not to be used by an installer.

### *Firmware Upgrade*

Use the Browse button to locate the new firmware file, then, once you've located it, click Upgrade. The process takes several minutes, and the camera reboots when finished.

### *Configuration In/Out*

This section lets you import or export the alarm, VCA, and system setting parameters as a \*.box file. This makes it easy to transfer configurations from one camera to another.

The system automatically restarts after successfully importing a config file.

### *Auto Maintenance*

Here you can set the camera to reboot on a specific day (or every day) at a specific hour of the day. Regular reboots help keep equipment running smoothly.

### *Access Platform*

Here you can enable your system to operate over a platform. Choose the protocol used by your control system, and click **Enable**.