




A large, solid black square icon with a white square cutout in the center, positioned to the left of the title.

TVE-120-420-820-1620 Encoder User Manual

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Product documentation

Please consult the following web link to retrieve the electronic version of the product documentation. The manuals are available in several languages.



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Important information

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Installation in accordance with this manual, applicable codes, and the instructions of the authority having jurisdiction is mandatory.

While every precaution has been taken during the preparation of this manual to ensure the accuracy of its contents, Carrier assumes no responsibility for errors or omissions.

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THE EQUIPMENT SHOULD ONLY BE OPERATED WITH AN APPROVED POWER ADAPTER WITH INSULATED LIVE PINS.

DO NOT CONNECT TO A RECEPTACLE CONTROLLED BY A SWITCH.

THIS UNIT INCLUDES AN ALARM VERIFICATION FEATURE THAT WILL RESULT IN A DELAY OF THE SYSTEM ALARM SIGNAL FROM THE INDICATED CIRCUITS. THE TOTAL DELAY (CONTROL UNIT PLUS SMOKE DETECTORS) SHALL NOT EXCEED 60 SECONDS. NO OTHER SMOKE DETECTOR SHALL BE CONNECTED TO THESE CIRCUITS UNLESS APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION.

WARNING! The equipment should only be operated with an approved power adapter with insulated live pins.

Caution: Risk of explosion if battery is replaced by an incorrect type. Dispose of batteries according to the instructions. Contact your supplier for replacement batteries.

Warranty Disclaimers

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Intended Use

Use this product only for the purpose it was designed for; refer to the data sheet and user documentation. For the latest product information, contact your local supplier or visit us online at firesecurityproducts.com.

The system should be checked by a qualified technician at least every 3 years and the backup battery replaced as required.

Advisory messages

Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory messages used in this document are shown and described below.

WARNING: Warning messages advise you of hazards that could result in injury or loss of life. They tell you which actions to take or to avoid in order to prevent the injury or loss of life.

Caution: Caution messages advise you of possible equipment damage. They tell you which actions to take or to avoid in order to prevent the damage.

Note: Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

Introduction

The TruVision TVE H.264 IP video encoder converts the analog camera signal to compressed IP video streams. These streams are transited to TruVision network video recorders (NVR) or digital video recorders (DVR) for remote storage, live-view and playback purpose.

This user manual provides basic information on setting up and using the TVE-120, TVE-420, TVE-820 and TVE-1620 models.

The encoder is shipped with web browser menus in 12 languages: English, Simplified Chinese, Dutch, Finnish, French, German, Italian, Polish, Portuguese, Russian, Spanish, and Turkish.

Package contents

The TruVision TVE-xx20 IP video encoder is shipped with the following items:

- TVE encoder
- Power adaptor (8-ch and 16-ch encoder models only)
- Power cable (8-ch and 16-ch encoder models only)
- 19" rack brackets (8-ch and 16-ch encoder models only)
- Quick start guide

The user manual and quick start guide are available from our web sites. They are available in several languages.

Key features

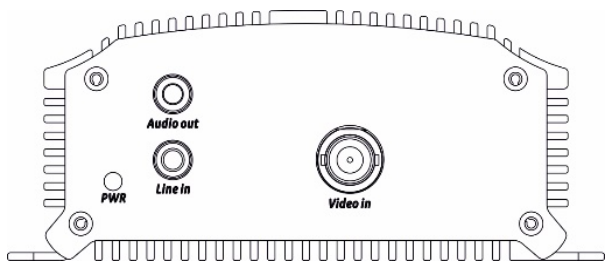
The following key features are supported by TVE encoders:

- 1/4/8/16-channel H.264 encoding with dual stream output
- Multiple resolution options: 960H, 4CIF, 2CIF, CIF and QCIF
- Support audio & video compounded stream
- Device-configurable remote recording on NAS (Network Attached Storage)
- Flexible and powerful recording mechanism when used in combination with a network storage device (NAS): Scheduled, event triggered, alarm triggered, cycle recording, pre and post recording
- Bi-directional audio
- PTZ control via RS-485 port
- Alarm input and output
- Support ONVIF, PSIA and CGI communication
- Discoverable via the TruVision Device Manager Tool

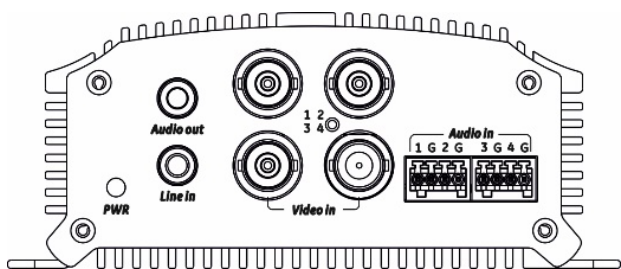
Product description

Figure 1: Front panel

1-channel:



4-channel:



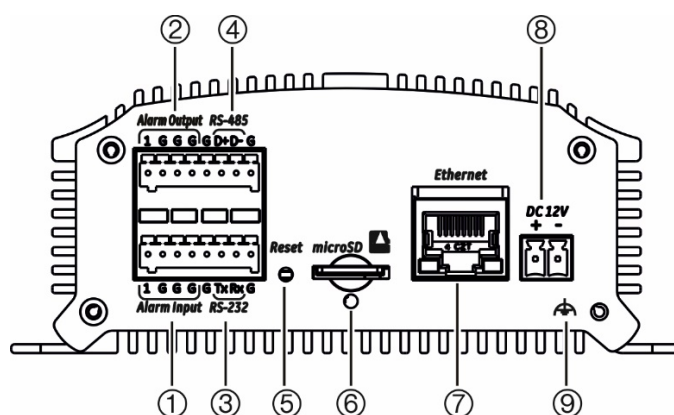
8-channel and 16-channel:



- | | |
|----------|--|
| 1. POWER | The LED lights up RED when the device is working. It is not lit when the device is powered down. |
| 2. TX/RX | The LED is not lit when there is no network connection.
It lights up green and flashes when data is being transmitted/received. |

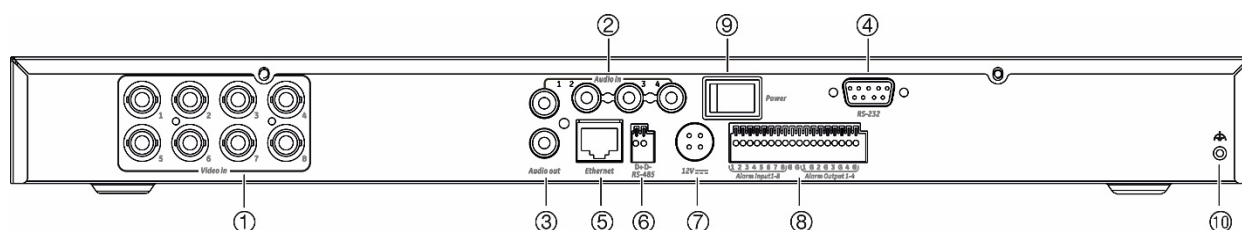
Figure 2: Back panel

1-channel and 4-channel:



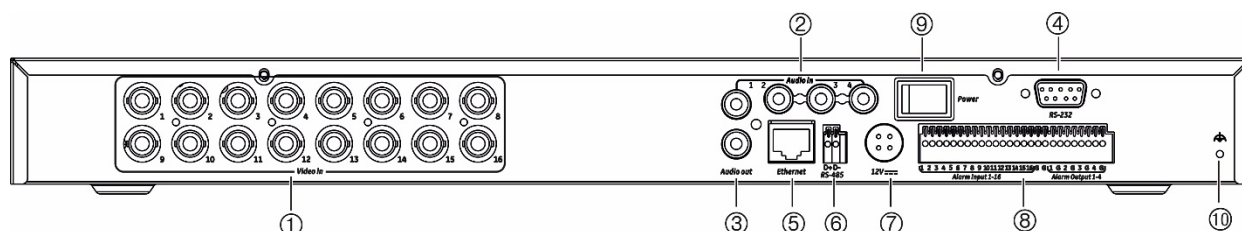
- | | |
|--|--------------------------|
| 1. Alarm In | 5. Reset button |
| 2. Alarm Out / Audio In, RCA connector | 6. Micro SD card slot |
| 3. RS-232 serial interface | 7. LAN network interface |
| 4. RS-485 serial interface | 8. 12 VDC power input |
| | 9. GND |

8-channel:



- | | |
|-----------------------------|----------------------------|
| 1. Video In | 6. RS-485 serial interface |
| 2. Audio In, RCA connector | 7. 12 VDC power input |
| 3. Audio Out, RCA connector | 8. Alarm In/Out |
| 4. RS-232 serial interface | 9. Power switch |
| 5. LAN network interface | 10. GND |

16-channel:



- | | |
|-----------------------------|----------------------------|
| 1. Video In | 6. RS-485 serial interface |
| 2. Audio In, RCA connector | 7. 12 VDC power input |
| 3. Audio Out, RCA connector | 8. Alarm In/Out |
| 4. RS-232 serial interface | 9. Power switch |
| 5. LAN network interface | 10. GND |

Connections

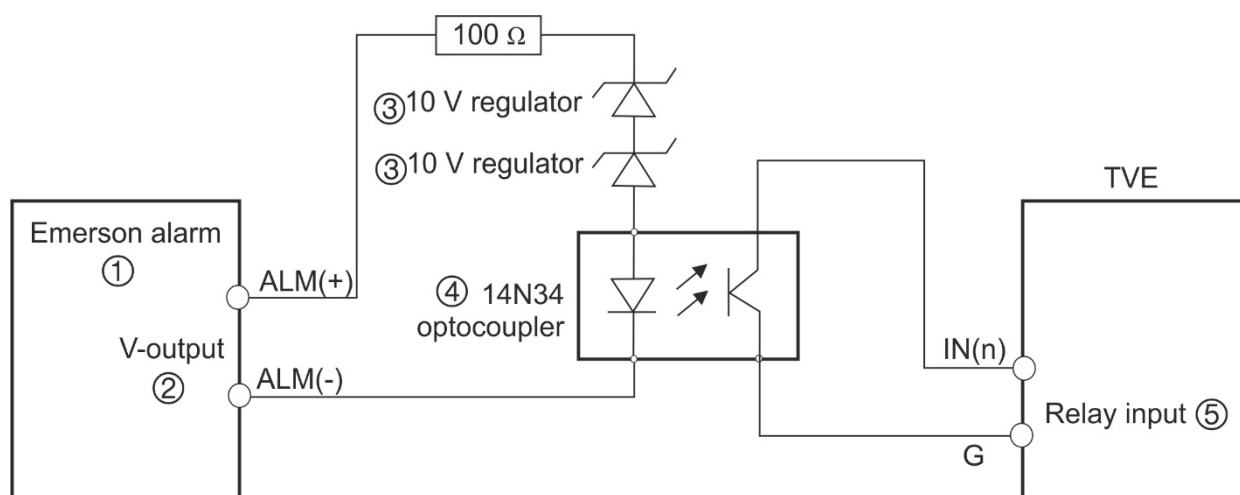
See Figure 2 on page 9 for information on connecting the power, camera, audio, and network cables.

Alarm connections

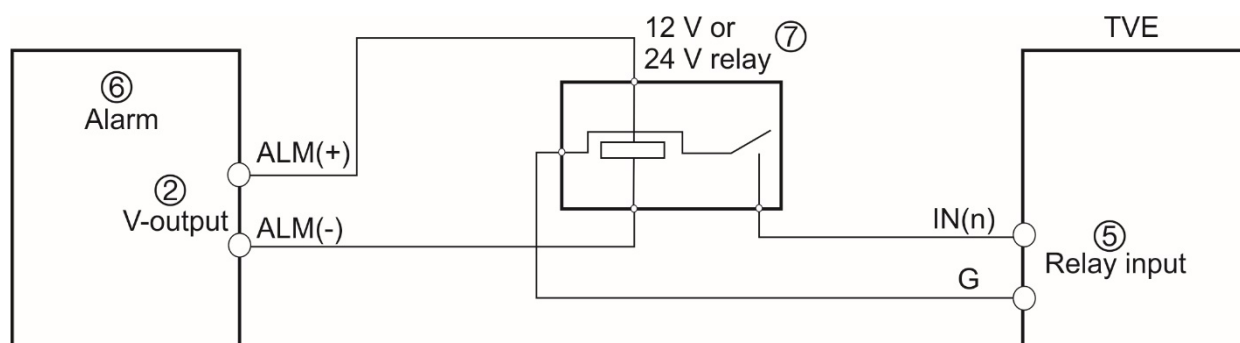
The TVE encoder supports the open/close relay input as the alarm input mode. When the alarm input signal not in open/close relay signal mode, please follow the connections shown below.

Figure 3: Alarm input connections

Alarm input connections for Emerson alarm:



Alarm input connections for normal alarm:



- | | |
|-------------------|-----------------------|
| 1. Emerson alarm | 4. 4N35 optocoupler |
| 2. V output | 5. Relay output |
| 3. 10 V regulator | 6. Normal alarm |
| | 7. 12 V or 24 V relay |

The alarm input can be selected to NO or NC. Different alarm output connection methods are applied to the AC or DC load. See Figure 3.

Getting started

All encoder configuration and control is done via the webpage. Before you start using the encoder, you must first activate the device by setting up a strong password.

Default network settings

The default network settings are:

- IP address - 192.168.1.70
- Subnet mask - 255.255.255.0
- Gateway address - 192.168.1.1
- HTTP port: 80
- Server: 8000

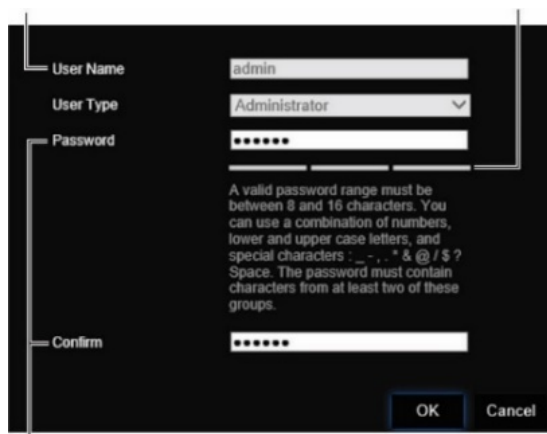
When you first start up the device, the Activation window appears. You must define a high security admin password before you can access the device. There is no default password provided.

Tips on creating a strong password:

- A valid password range must be between 8 and 16 characters. You can use a combination of numbers, lower and upper case letters, and special characters: _ - , * & @ / \$? Space. The password must contain characters from at least two of these groups.
- The password is case-sensitive so use a mixture of upper and lower case letters.
- Do not use personal information or common words as a password

User Name: It is always "admin". It cannot be changed.

The bar showing password strength



The screenshot shows a web-based activation window. It has a dark background with white text and input fields. The fields are: 'User Name' (pre-filled with 'admin'), 'User Type' (a dropdown menu showing 'Administrator'), 'Password' (masked with dots), and 'Confirm' (also masked with dots). To the right of the password field is a horizontal bar representing password strength. Below the password field, there is a block of text providing password requirements: 'A valid password range must be between 8 and 16 characters. You can use a combination of numbers, lower and upper case letters, and special characters: _ - , * & @ / \$? Space. The password must contain characters from at least two of these groups.' At the bottom right, there are 'OK' and 'Cancel' buttons.

Enter the new admin password and confirm it.

Accessing the web browser

The browser menus are available in English and 10 other languages.

To access the web browser: (Internet Explorer only)

1. Open the web browser and select your language.
2. Enter the IP address of the encoder (for example, <http://192.168.1.70>). Press the **Enter** key on the computer. The system displays the login window.
3. Enter the user name (default: admin) and password to log into the system. The encoder's main page appears, which by default is **Live View** (see page 14).

Device manager network settings

Use TruVision Device Manager to find and configure the IP address and other parameters of the device. This tool automatically identifies TruVision devices that support “auto-discovery” anywhere on the network, even in different subnets.

To use the TruVision Device Manager:

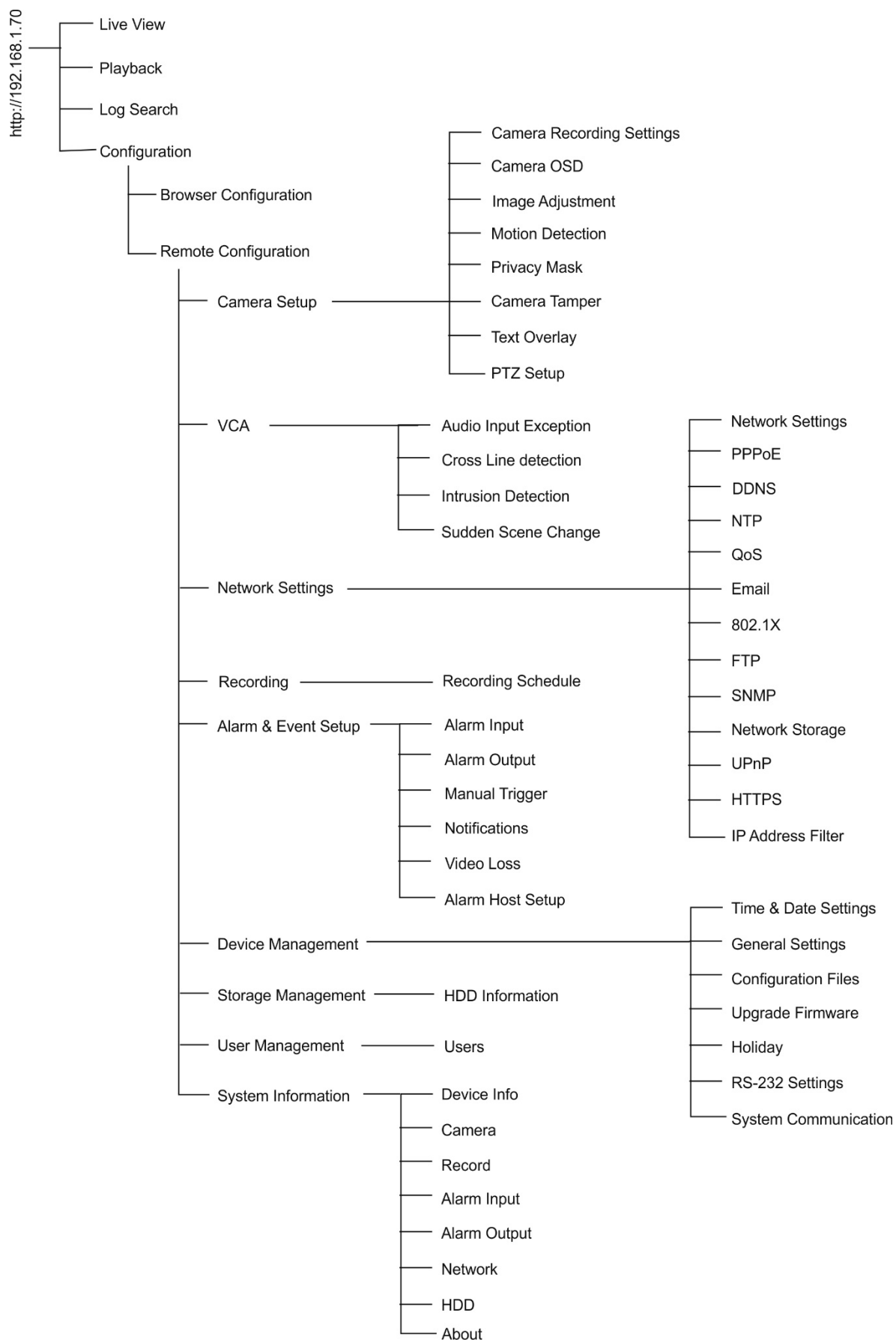
1. Download the tool from our website.
2. Double-click the shortcut icon to open the tool. Click **Device Manager** to begin the discovery process. The list of TruVision devices located on your network appears.

Note: The TruVision Device Manager can only detect devices that are on the same LAN. The tool cannot detect devices placed on a VLAN.

3. Change the device settings as required. Click **X** on the top right corner when completed.

Menu tree

Figure 4: Encoder menu tree



Browser configuration

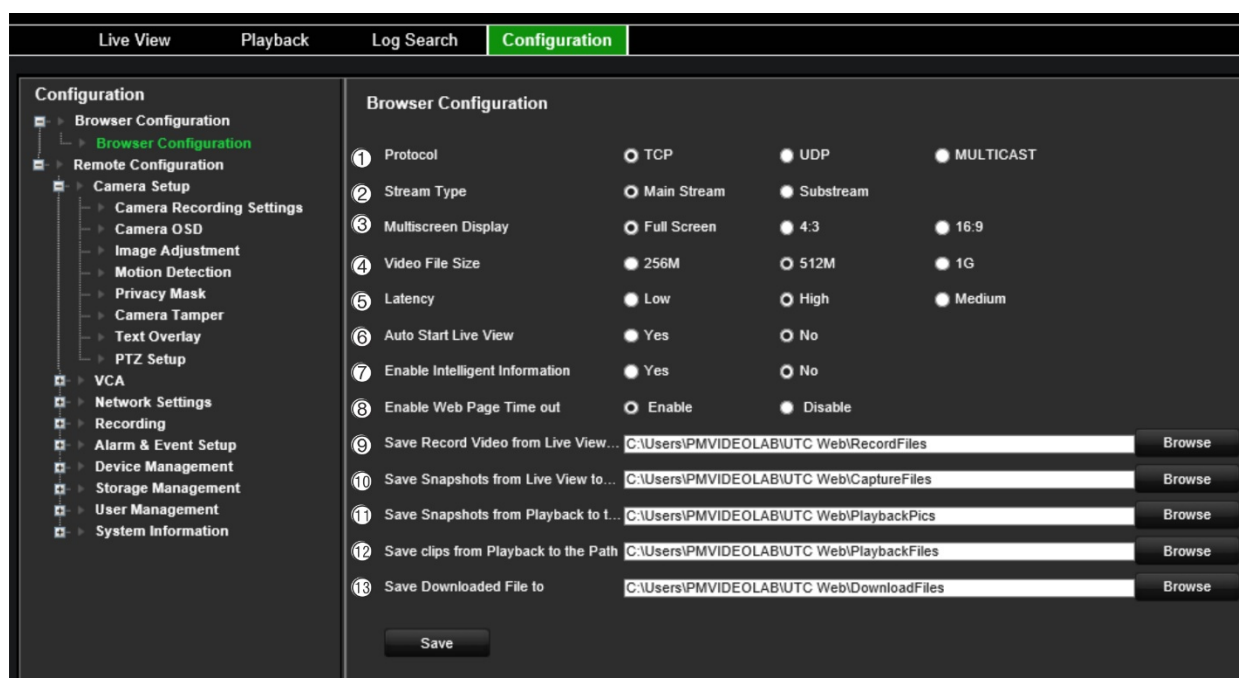
There are two main configuration menus in the in the menu toolbar:

- Browser Configuration
- Remote Configuration

Use the *Browser Configuration* menu to manage the protocol type, live view performance and local storage paths. In the Configuration panel, click **Browser Configuration** to display the browser configuration window. See Figure 5 below for descriptions of the different menu parameters.

Use the *Remote Configuration* menu to configure the camera, VCA, network settings, recording, alarm and events setup, device management, user management, and to see system information. These functions are described in the subsequent chapters.

Figure 5: Browser configuration window



Parameters	Description
Live View Parameters	
1. Protocol	Specify the network protocol used: TCP, UDP or MULTICAST.
2. Stream Type	Select the type of stream: Mainstream or Substream.
3. Multiscreen Display	Select the monitor display: Full screen, 4:3, or 16:9.
4. Video File Size	Specify the maximum file size. Options include: 256 MB, 512 MB and 1G.
5. Latency	Specify the transmission speed. Options include: Shortest Delay, Auto or Fluent.
6. Auto Start Live View	If enabled, automatically start all the live views when the users navigate to Live View tab.

Parameters		Description
7.	Enable Intelligent Information	If enabled, display the rules for VCA features such as lines and areas, in live view.
8.	Enable Web Page Time Out	If enabled, the web page will time out after 5 minutes if the mouse has not been moved for more than 5 minutes, no matter whether user is in live view or playback.
File Saved Location Settings		
9.	Save Record Videos from Live View to the Path	Specify the directory for recorded files.
10.	Save Snapshots From Live View to the Path	Specify the directory for saving snapshots in live view mode.
11.	Save Snapshots from Playback to the Path	Specify the directory for saving snapshots in playback mode.
12.	Save Clips from Playback to the Path	Specify the directory for saving video clips in playback mode.
13.	Save Downloaded Files to	Specify the directory for downloaded files.



Live view












Live view mode is the normal operating mode of the device where you watch live images from the cameras. The encoder automatically enters into live mode once powered up. On the viewer, you can see the current date and time, as well as the camera name.

Description of live view

Figure 6: Live view



Name	Description
1. Device list	Display the encoder and its channels.
2. Menu toolbar	Lets you do the following: <ul style="list-style-type: none"> • View live video • Play back video • Search for event logs • Configure settings • Exit the interface
3. Viewer	View live video.
4. Display format	<div>  Define how you want video to be displayed in the viewer; single screen, 2X2, 3X3 or 4X4. When in multiview mode, double-click a video tile to get full-screen mode. Double-click again to return to multiview mode. </div> <div>  Switch between main stream and substream. </div>

Name	Description
	 Click to switch to full screen mode.
5. Video function toolbar	<div>  Pause </div> <div>  Click to start/stop all viewing. </div> <div>  Click to manually start/stop recording video. The recording is saved on the computer. </div> <div>  Enable e-PTZ (must be supported by the connected camera). </div> <div>  Click to capture a snapshot of a video image. The image is saved on the computer. </div> <div>  Click to display the previous camera view. </div> <div>  Click to display the next camera view. </div> <div>  Click to turn audio on/off. </div> <div>  Start/Stop bi-directional audio. </div>
6. Alarm Trigger Output	 Turn Alarm Output on/off.
7. PTZ control panel	Control PTZ of the currently selected camera, adjust the speed of PTZ movement and turn on/off the camera light and wiper.
8. Preset setup / selection	Set up and select presets.

To see live view:

1. Open the encoder's web browser screen. See Figure 6.
2. Double-click a camera from the device list to select a camera to view.
3. Click the **Display Format** button to view multiple video tiles.

Capture a snapshot

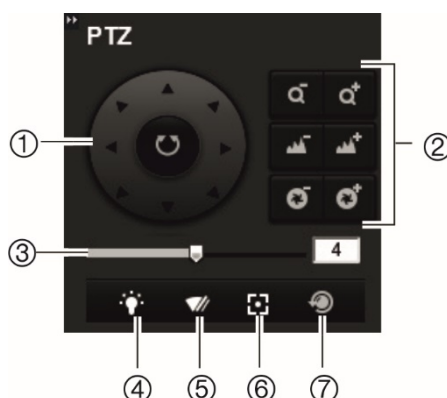
In live view mode, click the snapshot button on the video function toolbar to capture live pictures. A pop-up message will appear on screen to confirm that the capture was successful. The image is saved as a JPEG file on the computer.

Note: Configure where the snapshots are saved on your computer in the *Configuration > Browser Configuration* menu on page 14.

PTZ control

You can control PTZ cameras from the encoder in live view mode.

Figure 7: PTZ control



1.	Directional pad/auto-scan buttons	Controls the movements and directions of the PTZ. The center button is used to start auto-pan by the PTZ dome camera.
2.	Zoom, focus, and iris	Adjusts zoom, focus and iris.
3.	PTZ movement	Adjust the speed of the pan and tilt movement.
4.	Camera light	Turns on/off camera light (when available).
5.	Camera wiper	Turns on/off camera wiper (when available).
6.	Auxiliary focus	Automatically focus the camera lens for the sharpest picture.
7.	Lens initialization	Initialize the lens of a camera with a motorized lens, such as PTZ or IP cameras. This function helps to maintain lens focus accuracy over prolong periods of time.

Connecting the PTZ camera to the encoder

Ensure that the PTZ dome cameras are correctly connected to the RS-485 port on the encoder back panel. Connect the R- and R+ terminals of the PTZ camera or PTZ dome to the RS-485 T- and RS-485 T+ terminals respectively.

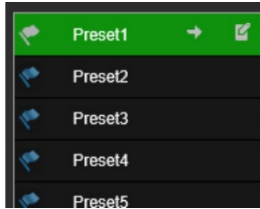
Configure the RS-485 parameters in the **Configuration > Remote Configuration > Serial Port Settings > 485 Serial Port** menu.


Presets

Presets are previously defined locations of a PTZ dome camera. They allow you to quickly move the PTZ dome camera to a desired position. Up to 256 presets can be configured.


To set up a preset:

1. In live view mode, select a preset from the preset list.



2. Use the directional, zoom, focus and iris buttons to position the camera in the desired preset location.
3. Click  to save the position.

To call up a preset:

1. In live view mode, select a camera.
2. Select a preset from the preset list.
3. Click . The camera immediately moves to that preset position.

Playback

This feature is available for the one- and four-channel encoders with SD card as well as encoders with NAS storage set up.

You can easily search and play back recorded video in the playback interface.






Note: You must insert an SD card in the encoder (1 and 4-ch encoders only) or use a NAS to be able to use the playback functions.






To search recorded video stored on the camera's storage device for playback, click **Playback** on the menu toolbar. The Playback window displays. See Figure 8 below.

Note: You must have playback permission to play back recorded images. See “User management” on page 69 for more information.


Figure 8: Playback window



Name	Description
1. Cameras	Available cameras.
2. Playback button	Click to open the Playback window.
3. Search calendar	Click the day required to search.
4. Search	Start search.
5. Set playback time	Input the time and click  to locate the playback point.
6. Control playback	Click to control how the selected file is played back: play, stop, slow and fast forward playback. <ul style="list-style-type: none">  Stop  Speed down  Play  Speed up


Name	Description
	 Playback by frame
7. Archive functions	Click these buttons for the following archive actions:  Capture and download a snapshot image of the playback video.  Start/Stop clipping video files.
8. Digital zoom	Click to enable digital zoom.
9. Audio control	Control level of audio. Drag to adjust the volume.
10. Time moment	Vertical bar shows where you are in the playback recording. The current time and date are also displayed.
11. Timeline bar	The timeline bar displays the 24-hour period of the day being played back. It moves left (oldest) to right (newest). The bar is color-coded to display the type of recording. Click a location on the timeline to move the cursor to where you want playback to start. The timeline can also be scrolled to earlier or later periods for play back. Click  to zoom out/in the timeline bar.
12. Download functions	 Download video files.
13. Recording type	The color code displays the recording type. Recording types are Continuous recording (blue), Alarm recording (red), and manual recording (yellow). The recording type name is also displayed in the current status window.



To play back recordings:

1. Click **Playback** on the menu bar to enter the playback interface.
2. Select the date in the calendar and click **Search**.
3. Click  to play the video files found on this date.

Use the toolbar on the bottom of playback interface to control the playing process. See Figure 8 above for information on what the icons mean.

Note: You can choose the file paths locally for downloaded playback video files and snapshots under *Local Configuration*.

To play back from a specific time, enter the time and click  to locate the playback point.

4. Click a location on the timeline to move the cursor to where you want playback to start. The timeline can also be scrolled to earlier or later periods for play back. Click  to zoom out/in of the timeline bar.
5. To download video files, click .

Camera configuration

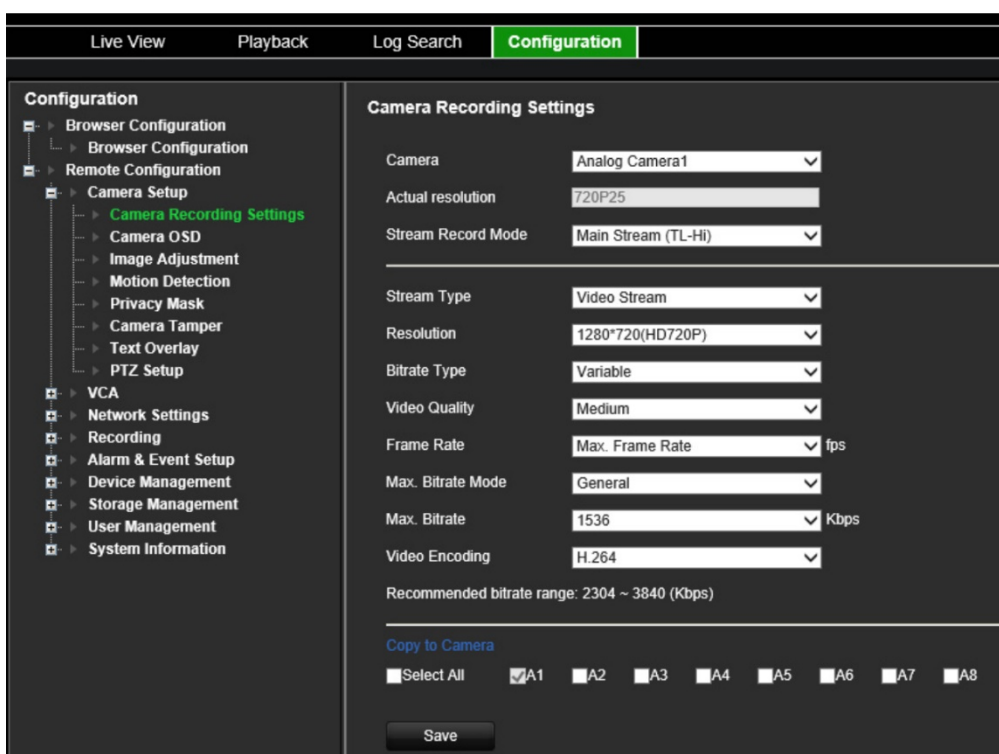
Use the Camera Setup menu under *Remote Configuration* to configure analog cameras. You can also configure the camera OSD, recording settings, image quality, motion detection, privacy masking, camera tampering, text overlay, and PTZ configuration.

Camera recording settings

You can adjust the video streaming parameters to obtain the image quality and file size best suited to your needs.

To configure video settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Camera Setup > Camera Recording Settings**. The *Camera Recording Settings* window appears.



2. Select a camera from the drop-down list.
3. Select the **Stream Record Mode** of the camera: Main Stream (TL-Hi), Main Stream (TL-Lo), Main Stream (Event), Main Stream (Alarm), or Substream.

The main stream is usually for recording and live viewing with good bandwidth, and the substream can be used for live viewing when the bandwidth is low. Refer to “Browser configuration” on page 14 on how to change main stream to substream for live viewing.

4. You can customize the following parameters for the selected Main Stream or Substream:

Stream Type: Select the video type to video stream, or video & audio composite stream. The audio signal will be recorded only when the video type is *Video & Audio*.

Resolution: Select the resolution of the video input.

Bitrate Type: Select the bitrate type to constant or variable. When *Variable* is selected, six levels of video quality can be configured.

Video Quality: Select the video quality level. Default is Medium.

Frame Rate: Select the recording frame rate.

The frame rate used to describe the frequency at which a video stream is updated is measured in frames per second (fps). A higher frame rate is advantageous when there is movement in the video stream, as it maintains image quality throughout.

Max. Bitrate Mode: Select the general (Default) or customized option.

Max. Bitrate: Set the maximum bitrate between 32 and 8192 Kbps.

Video Encoding: Select the video encoding standard to H.264 or H.265.

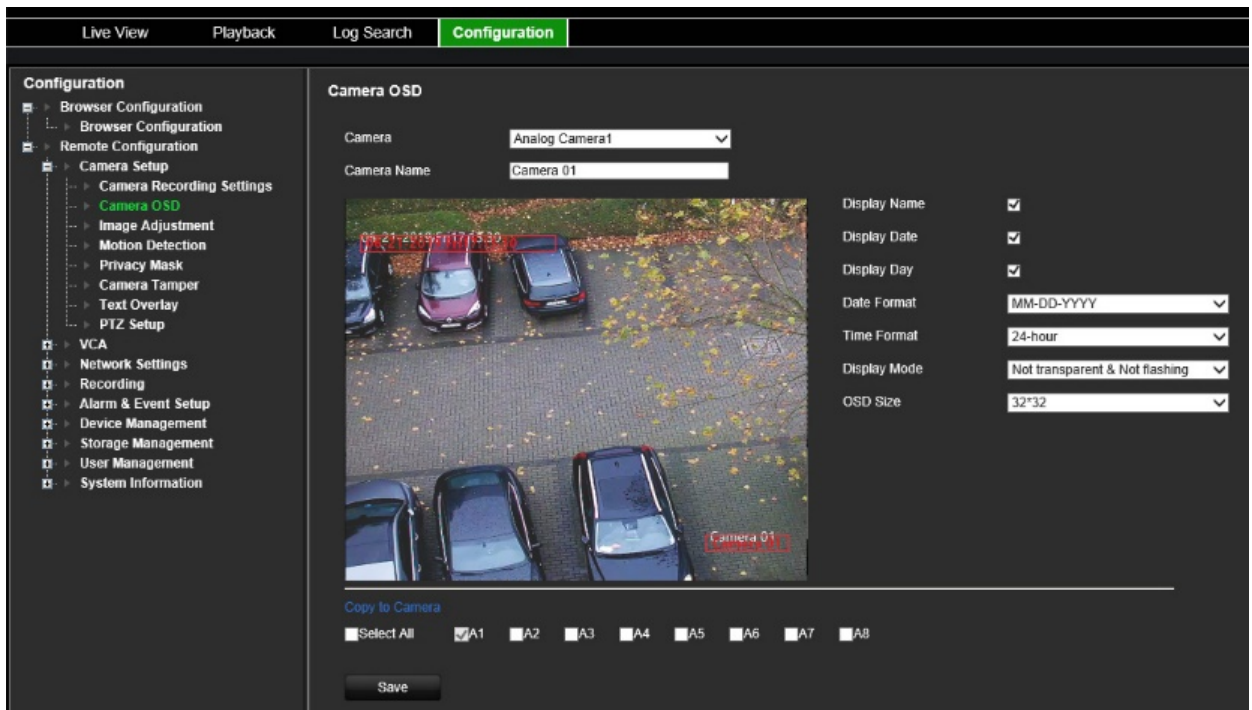
6. If you want to copy the display settings of the current camera to other cameras, go to the **Copy to Camera** panel and select the camera(s) to copy, or click **Select All** to select all cameras.
7. Click **Save** to save the settings.

Camera OSD

You can configure which information is displayed on-screen. The on-screen display (OSD) settings appear in live view and recording modes and include the camera name, time and date. You can also adjust the transparency of the OSD relative to the background so that it is easier to read or is less prominent on screen.

To configure the OSD settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Camera Setup > Camera OSD**. The *Camera OSD* window appears.



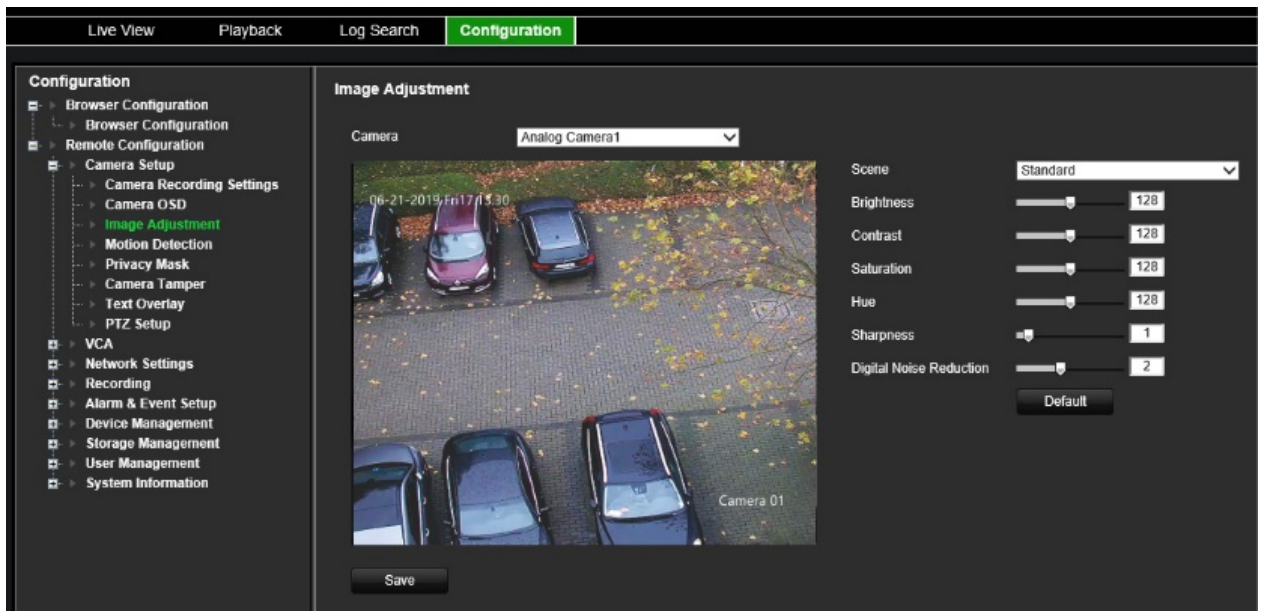
2. Select a camera from the drop-down list.
3. Edit the camera name in **Camera Name**.
4. Select to display the camera name as well as the date and/or day.
5. Select the date format, time format, and OSD display mode. The default OSD display mode is *Not Transparent & Not Flashing*.
6. On the live image, you can adjust the OSD text location on screen by moving the red text frames.
7. If you want to copy the display settings of the current camera to other cameras, go to the **Copy to Camera** panel and select the camera(s) to copy, or click **Select All** to select all cameras.
8. Click **Save** to save the settings.

Image adjustment

You can manually adjust the brightness, contrast, saturation, hue, sharpness and digital noise reduction values of the camera image to get the best image quality.

To configure the image settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Camera Setup > Image Adjustment**. The *Image Adjustment* window appears.
2. Select a camera from the drop-down list.



3. Select the type of scene: Standard, Indoor, Outdoor, or Dim Light.
4. Move the slider to adjust the brightness, contrast, saturation, hue, sharpness, and digital noise reduction.
5. Click **Save** to save the settings.

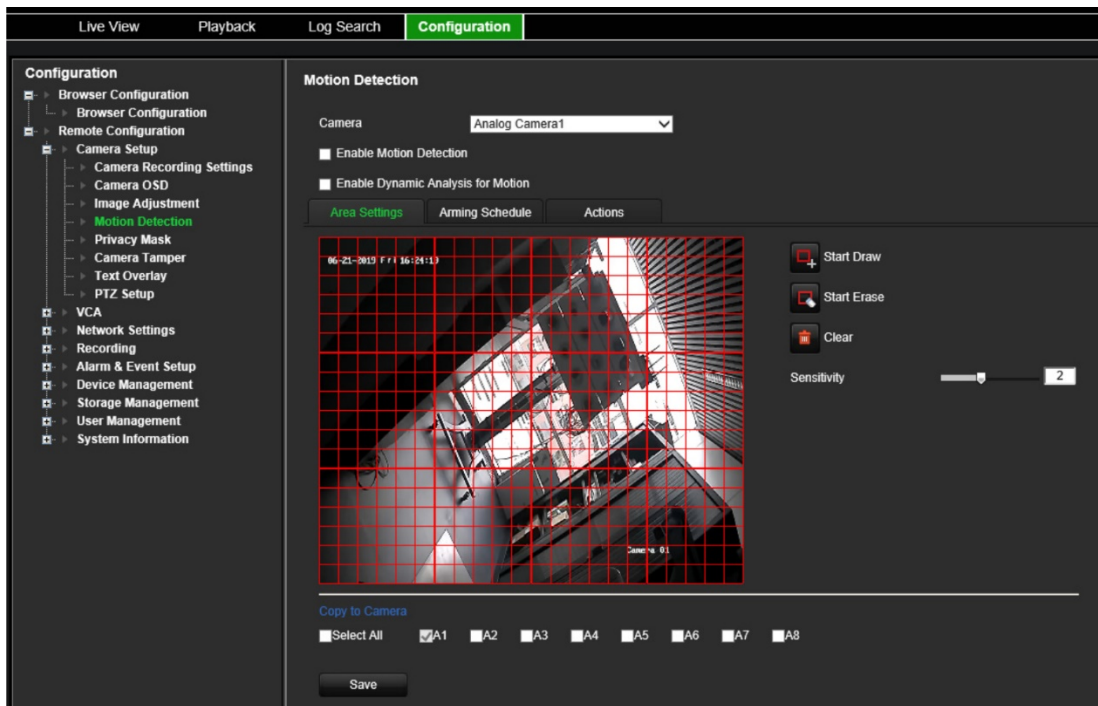
Motion detection

The encoder can be set up to trigger an alarm if it detects motion, which can then be recorded, for example on a network storage device. You can then search these recorded motion activities for specific incidents.

Select the level of sensitivity to motion so that only objects that could be of interest can trigger a motion recording. For example, recording is triggered by the movement of a person but not that of a cat.

To configure motion detection:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Camera Setup > Motion Detection**. The *Motion Detection* window appears.



2. Select a camera from the drop-down list. Each camera must be set up individually.
3. Select **Enable Motion Detection**.
4. Select the **Enable Dynamic Analysis** check box. When enabled, the motion detection triggered frame (green) of the moving targets in the motion detection area will be displayed on the live video.

5. **Select the area sensitive to motion and its sensitivity level.**

Select the **Area Settings** tab. Click **Start Draw**. Click and drag the mouse cursor across the screen. The area selected appears as a red grid. Areas covered by the red grid are sensitive to motion detection. Up to eight areas can be drawn. Click **Stop Draw** when completed. Click **Erase** to deselect an area. Click **Clear** to clear the screen.

Drag the Sensitivity scroll bar to the desired sensitivity level.


Click **Save** to save the settings.

6. If you want to copy the motion detection settings of the current camera to other cameras, under **Copy to Camera** select the camera(s) to copy, or click **Select All** to select all cameras.
7. **Select the recording schedules for motion detection.**
Click the **Arming schedule** tab.

Click the timeline of the desired day. A pop-up appears that lets you enter the start and end times of the arming schedule for that day. Alternatively, you can also manually modify the length of the green timeline to the desired times.

Enter the start time (hour and minutes)

Enter the end time (hour and minutes)

Click  to copy the schedule to other days or to the whole week.

You can schedule only one time period in a day. Default is 24 hours. Note that when motion detection is enabled, motion events will always trigger event recording, regardless of the arming schedule.

8. Select the response method to motion detection.

Click the **Actions** tab.

Under **Alarm Linking**, check one of more of the desired response methods:

- **Enable Alarm Audio:** Enable the buzzer.
- **Notify Alarm Host:** Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software
- **Send Email:** Send an email with alarm information to a user or users when an event occurs.
- **Upload Snapshot to FTP:** Capture the image when an alarm is triggered and upload the picture to a FTP server.

Under **Trigger Alarm Output** select one of more alarm outputs to trigger an external alarm when a motion detection event occurs. See “Alarm output settings” on page 54 on how to set up an external alarm output.

Under **Trigger Channel**, select one or more channels to trigger recording when a motion detection event occurs.

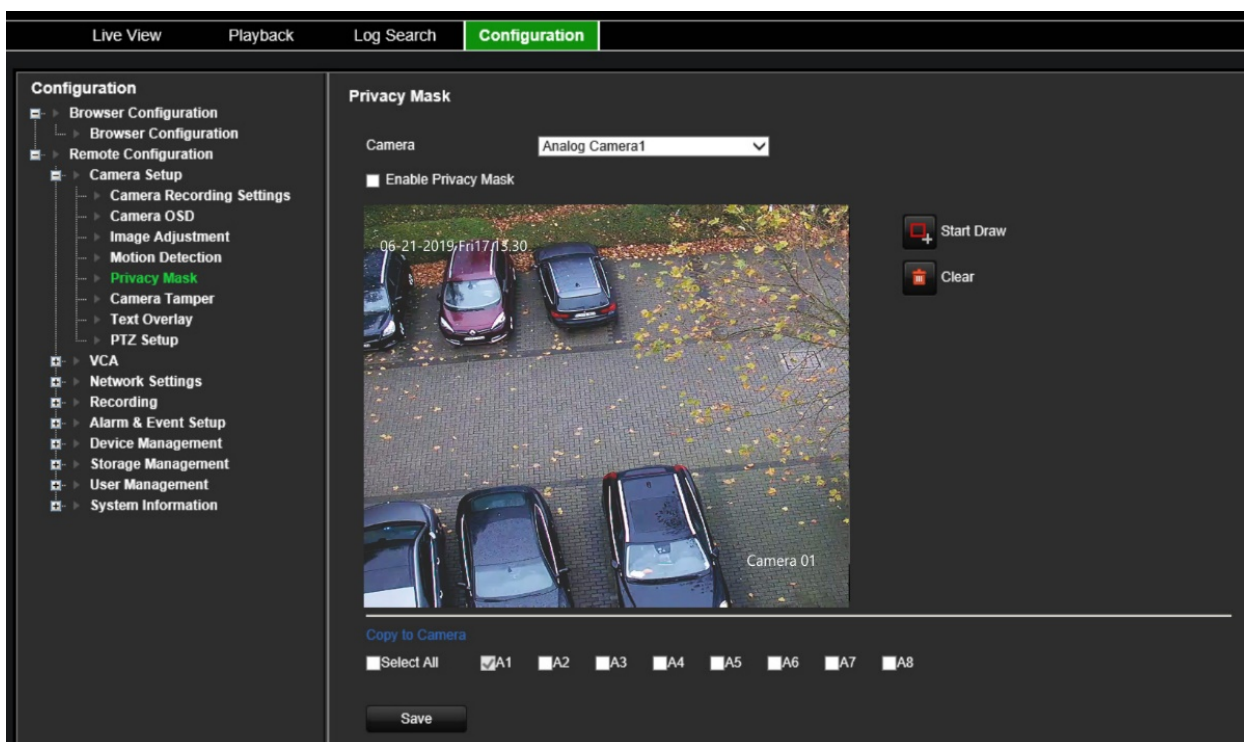
9. If you want to copy the motion detection settings of the current camera to other cameras, under **Copy to Camera** select the camera(s) to copy, or click **Select All** to select all cameras.
10. Click **Save** to save settings.

Privacy masking

You can define an area on screen to remain hidden from view. For example, you can choose to block the view of a camera when overlooking residential premises. This hidden area is referred to as privacy masking. Privacy masking cannot be viewed in live view or recorded mode, and appears as a blank area on the video image.

To configure a privacy mask:

1. From the menu toolbar, click **Configuration** and then **Configuration > Remote Configuration > Camera Setup > Privacy Mask**. The *Privacy Mask* window appears.
2. Select a camera from the drop-down list. Each camera must be set up individually.
3. Select the **Enable Privacy Mask** check box.



4. Click the **Draw Area** button to start drawing a block on an area.
5. Using the mouse, click and drag a privacy-mask box in the camera view screen over the desired area. You can set up to four areas for privacy masking.
6. Click **Stop Draw** when completed. Click **Clear** to clear the screen.
7. If you want to copy the privacy mask settings of the current camera to other cameras, under **Copy to Camera** select the camera(s) to copy, or click **Select All** to select all cameras.
8. Click **Save** to save the settings.

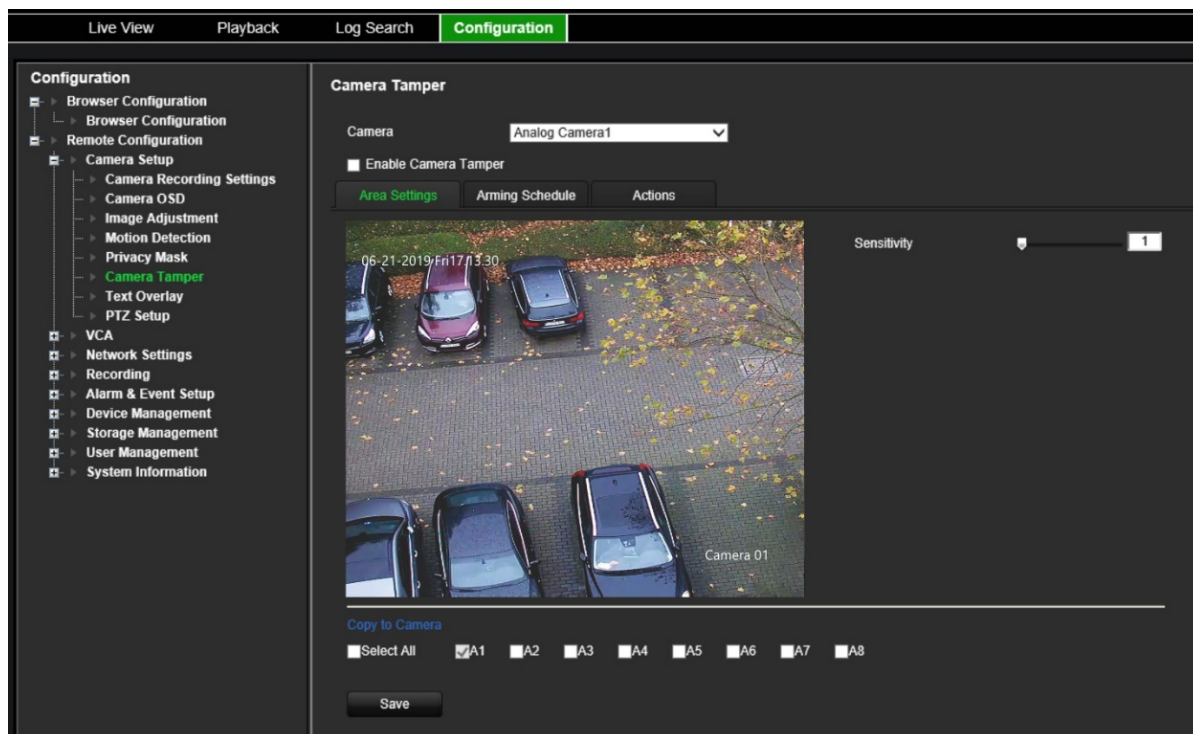
Camera tamper

Video tampering, such as moving a camera to a different position, can also be detected and set to trigger an action on the encoder.

Note: It is strongly recommended not to configure for video tampering when using PTZ dome cameras.

To configure tamper-proof detection:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Camera Setup > Camera Tamper**. The *Camera Tamper* window appears.



2. Select a camera from the drop-down list. Each camera must be set up individually.
3. Select the **Enable Camera Tamper** check box.
4. Under the **Area Settings** tab, the whole screen is set for tamper-proof detection by default. This cannot be changed. Drag the Sensitivity scroll bar to the desired sensitivity level.
5. Select the **Arming Schedule** tab to modify the arming schedule for video loss detection. The configuration is the same as that for motion detection (see “Motion detection” on page 25).

You can schedule only one time period in a day. Default is 24 hours.

6. Click the **Actions** tab.

Under **Alarm Linking**, check one of more of the desired response method:

- **Enable Alarm Audio:** Enable the buzzer.
- **Notify Alarm Host:** Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software
- **Send Email:** Send an email with alarm information to a user or users when an event occurs.

Under **Trigger Alarm Output** select one of more alarm outputs to trigger an external alarm when a motion detection event occurs. See “Alarm output settings” on page 54 on how to set up an external alarm output.

7. If you want to copy the tamper settings of the current camera to other cameras, under **Copy to Camera** select the camera(s) to copy, or click **Select All** to select all cameras.
8. Click **Save** to save the settings.

Text overlay

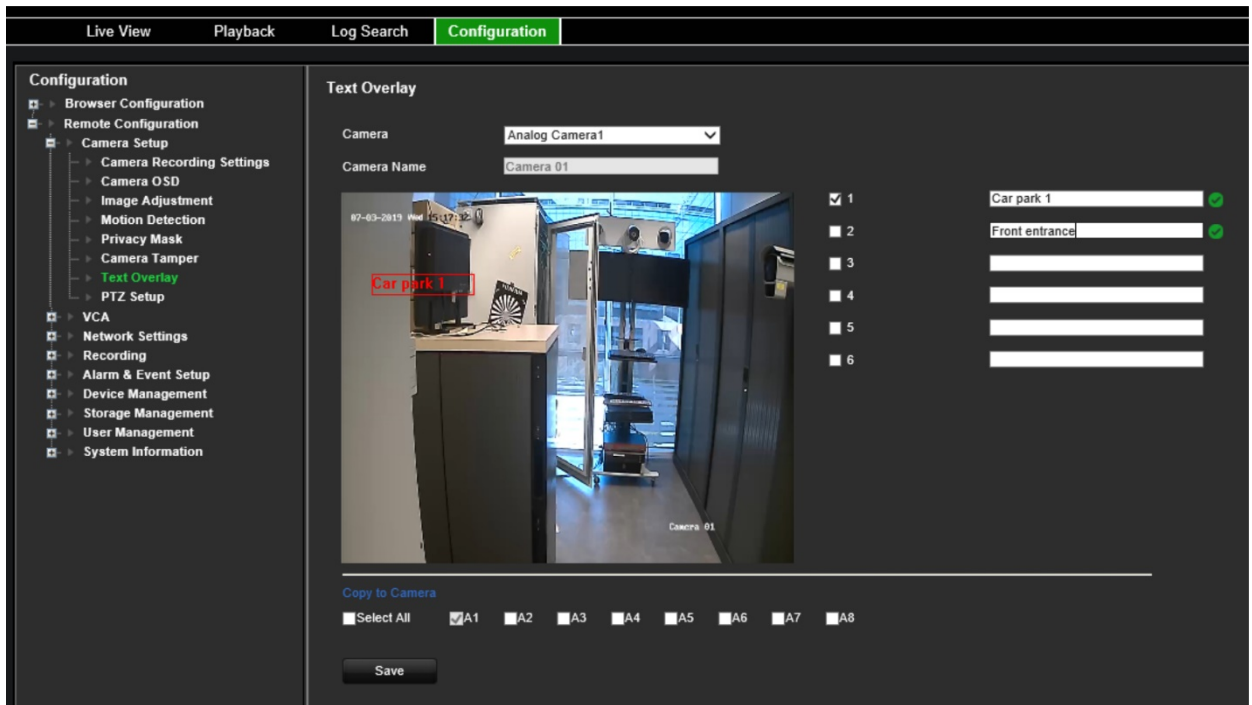
You can add up to eight lines of text on screen. This option can be used, for example, to display emergency contact details.

To add a text overlay:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Camera Setup > Text Overlay**. The *Text Overlay* window appears.
2. Select a camera from the drop-down list.
3. Enter the user-defined text content. Up to six character strings can be edited.

Select the check box alongside a text box for the text to be displayed on screen.

4. In the preview image you can adjust the text location on screen by moving the red text frame.



5. If you want to copy the text overlay settings of the current camera to other cameras, under **Copy to Camera** select the camera(s) to copy, or click **Select All** to select all cameras.
6. Click **Save** to save the settings.

PTZ setup

Use the **PTZ Setup** menu to configure analog PTZ dome cameras. Each camera must be set up individually. The cameras must be configured before they can be used.

HD-TVI PTZ cameras can be controlled over the coax cable.

Ensure that the PTZ dome cameras are correctly connected to the RS-485 port on the back panel.

Note: If a camera does not work correctly after configuring the encoder, confirm the parameters entered.

To configure PTZ dome camera settings:

1. Click the **PTZ Control** icon on the live view toolbar.

— or —

Click **Configuration > Remote Configuration > Camera Setup > PTZ Setup**. The **PTZ Setup** window appears.

2. Select the camera, baud rate, data bit, stop bit, parity, flow control, PTZ protocol and PTZ address for the camera.

Note: It is important to ensure that the settings correspond with those used in the PTZ camera.

3. If you want to copy the PTZ settings of the current camera to other cameras, under **Copy to Camera** select the camera(s) to copy, or click **Select All** to select all cameras.
4. Click **Save** to save the settings.

VCA settings

The configuration of each individual VCA (Video Content Analysis) event is done in the camera browser. Within the encoder, you are able to link actions to a VCA alarm from IP cameras that support this feature.

The encoder can be set up to detect several types of VCA events, which can then trigger a series of linkage methods:

- Audio Input Exception
- Cross Line Detection
- Intrusion Detection
- Sudden Scene Change

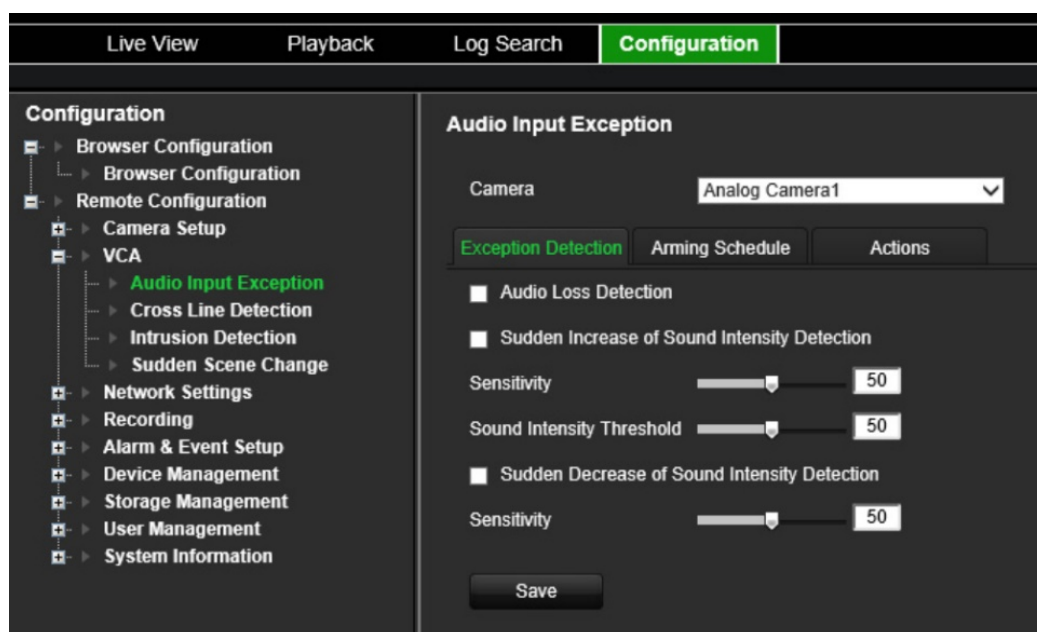
Audio input exception

Audio exception detection detects sounds that are above a selected threshold.

You can set it to detect a sudden rise and/or fall in sound intensity. The smaller the sensitivity level set, the larger the change in sound needs to be to trigger detection. The sound intensity threshold filters the sound in the environment. The louder the environmental sound, the higher the value.

To setup audio input exception actions:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > VCA > Audio Input Exceptions**. The *Audio Input Exceptions* window appears.



2. Select a camera from the drop-down list.
3. Select the type of audio input exception.

Click the **Exception Detection** tab. Select the type of audio input exception to be detected: Audio Loss Detection, Sudden Increase of Sound Intensity, or Sudden Decrease of Sound Intensity.

Drag the *Sensitivity* scroll bar to the desired sensitivity level for *Sudden Increase of Sound Intensity* and *Sudden Decrease of Sound Intensity*.

Drag the *Sound Intensity Threshold* scroll bar to the desired sensitivity level for *Sudden Increase of Sound Intensity*.

4. Select the arming schedules for the VCA event.

Click the **Arming Schedule** tab. Select the day of the week and the time periods during the day when audio can be detected. The configuration is the same as that for motion detection (see “Motion detection” on page 25). You can schedule only one time period in a day. Default is 24 hours.

5. Select the response method to the VCA event.
6. Click the **Actions** tab. Under **Alarm Linking**, check one or more of the desired response method:

- **Enable Alarm Audio:** Enable the buzzer.
- **Notify Alarm Host:** Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software
- **Send Email:** Send an email with alarm information to a user or users when an event occurs.

Under **Trigger Alarm Output** select one or more alarm outputs to trigger an external alarm when a motion detection event occurs. See “Alarm output settings” on page 54 on how to set up an external alarm output.

Under **Trigger Channel**, select one or more channels to trigger recording when a motion detection event occurs.

Select the PTZ control actions to link to the VCA event. Under **PTZ Linking**, select the PTZ camera and enter the preset, preset tour, and/or a shadow tour to be triggered when the alarm is detected. Select **Enable** to activate the option.

7. Click **Save** to save all the settings.

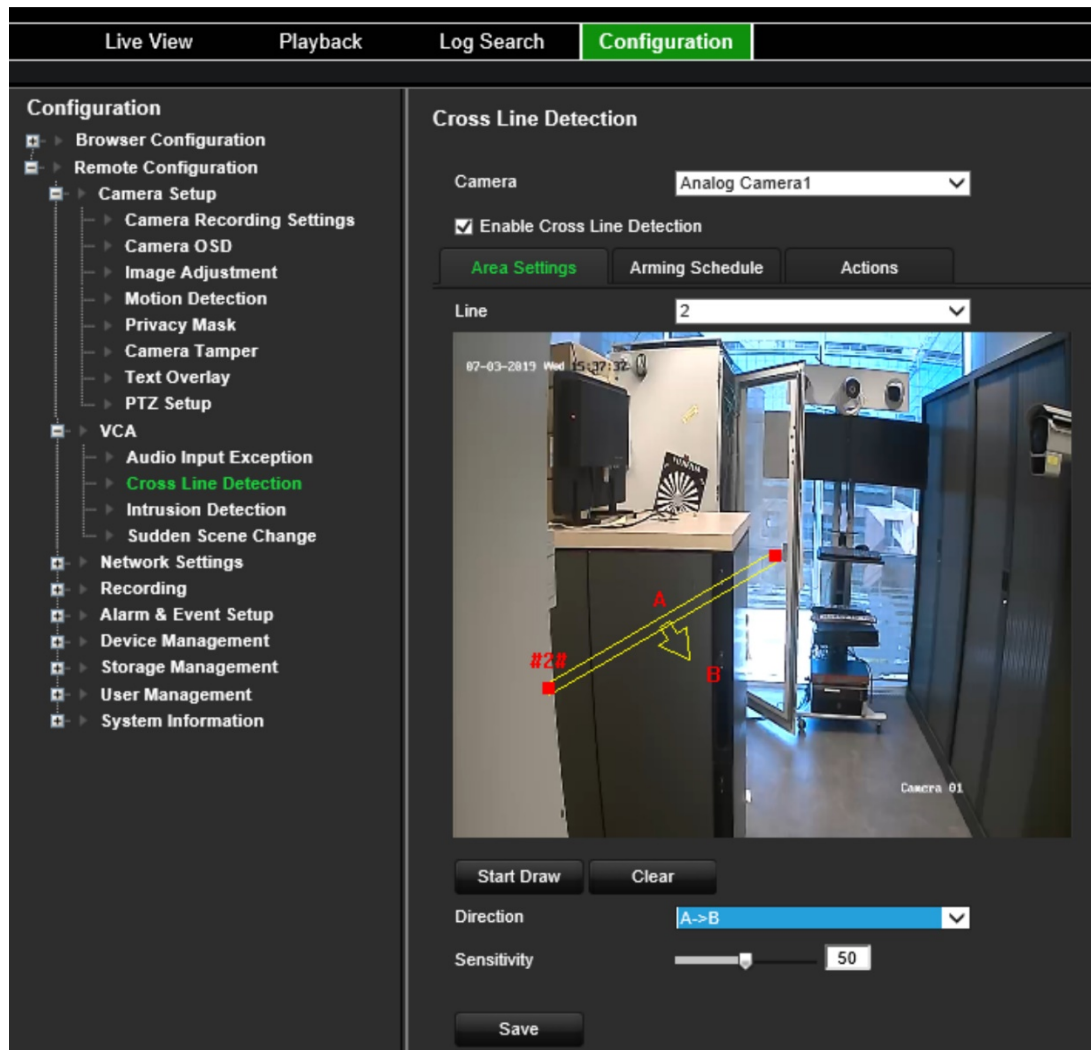
Cross line detection

This function can be used to detect people, vehicles and objects crossing a pre-defined line or an area on-screen. The line crossing direction can be set as unidirectional or bidirectional. Unidirectional is crossing the line from left to right or from right to left. Bidirectional is crossing the line from both directions.

To setup cross line detection actions:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > VCA > Cross Line Detection**. The *Cross Line Detection* window appears.
2. Select a camera from the drop-down list.
3. Enable **Cross Line Detection**.
4. Select the area where you want detection to start.

Click the **Area Settings** tab. Click **Start Draw**. A vertical line appears in the middle of the image, which is bidirectional by default. You can move the line anywhere on screen and change its angle. Up to four lines can be set, each with a different rule. Click **Clear** to clear the line.



Set up a rule to be associated with this line. Under **Line**, select a line number from the drop-down list. Under **Direction**, select the direction rule:

- **A<->B**: Only the arrow on the B side is displayed. When an object moves across the plane in both directions, it is detected and alarms are triggered.
- **A->B**: Only an object crossing the pre-defined line from the A to the B side can be detected and trigger an alarm.
- **B->A**: Only an object crossing the pre-defined line from the B to the A side can be detected and trigger an alarm.

Set the sensitivity level between 1 and 50.

To draw a new line, if required, select another line number from the drop-down list and then draw the line and set its direction rule values. Each line will be automatically numbered.

5. Select the arming schedules for the VCA event.

Click the **Arming Schedule** tab. Select the day of the week and the time periods during the day when cross line can be detected. The configuration is the same as that for motion detection (see “Motion detection” on page 25). You can schedule only one time period in a day. Default is 24 hours. Click **Save** to save the settings. Click **Copy** to copy these settings to other days of the week.

6. Select the response method to the VCA event.

Click the **Actions** tab. Under **Alarm Linking**, check one or more of the desired response method:

- **Enable Alarm Audio**: Enable the buzzer.
- **Notify Alarm Host**: Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software
- **Send Email**: Send an email with alarm information to a user or users when an event occurs.

Under **Trigger Alarm Output** select one or more alarm outputs to trigger an external alarm when a motion detection event occurs. See “Alarm output settings” on page 54 on how to set up an external alarm output.

Under **Trigger Channel**, select one or more channels to trigger recording when a motion detection event occurs.

Select the PTZ control actions to link to the VCA event. Under **PTZ Linking**, select the PTZ camera and enter the preset, preset tour, and/or a shadow tour to be triggered when the alarm is detected. Select **Enable** to activate the option.

7. Click **Save** to save all the settings.

Intrusion detection

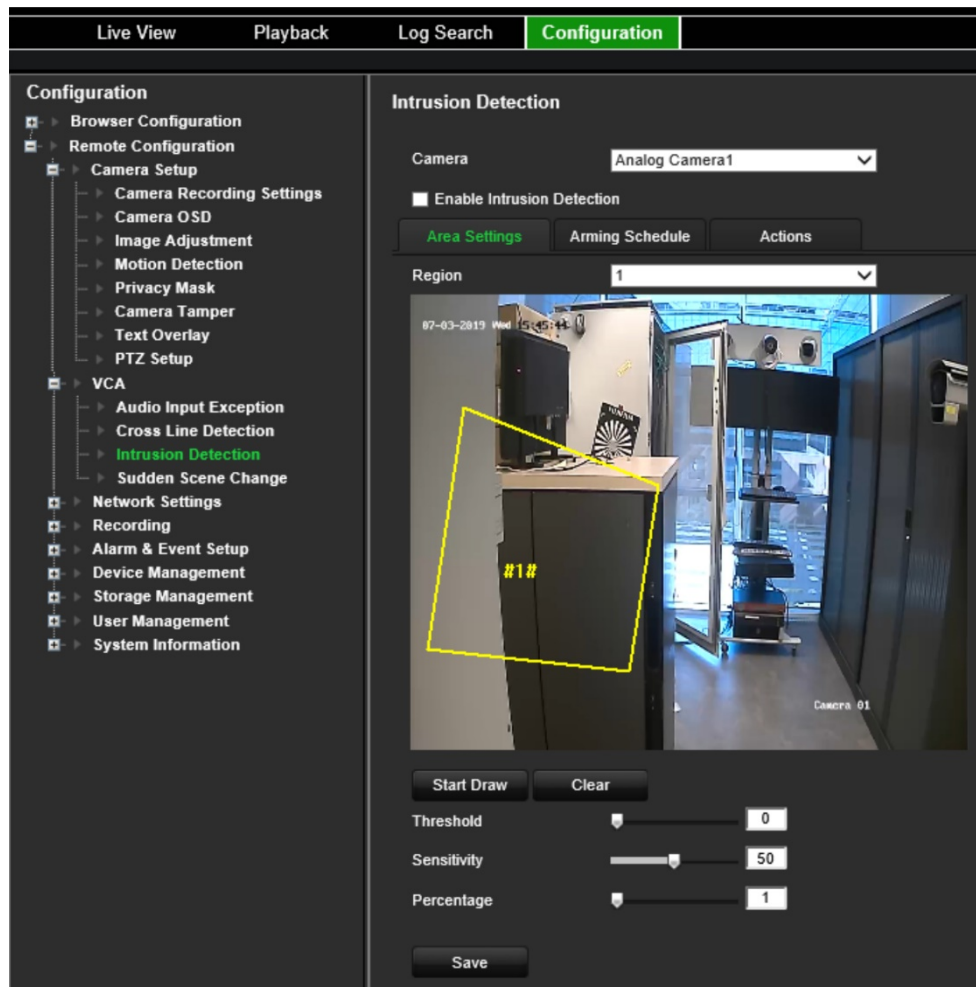
You can set up an area in the surveillance scene to detect when intrusion occurs. If someone enters the area, a set of alarm actions can be triggered.

To setup intrusion detection actions:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > VCA > Sudden Scene Change**. The *Sudden Scene Change* window appears.
2. Select a camera from the drop-down list.
3. Select **Enable Intrusion Detection**.
4. Select the area where you want intrusion detection to start.

Click the **Area Settings** tab. Select the region number to be drawn. Click **Start Draw** and click on the camera image where you want the detection area to start. When you draw the rectangle, all lines should connect end-to-end to each other. Up to four regions are supported, each with a different time threshold and sensitivity. Click **Clear** to clear the rectangles.

Note: The area can only be quadrilateral.



Select the time threshold, sensitivity levels and percentage of the region.

The time threshold is the time that the object remains in the region. If you set the value as 0 s, the alarm is triggered immediately after the object enters the region. The range is between 0 and 2.

The sensitivity value defines the size of the object that can trigger the alarm. When the sensitivity is high, a small object can trigger an alarm. The range is between 1 and 100.

To draw a new rectangle, if required, select another region number from the drop-down list and then draw the region and set its threshold and sensitivity values.

5. Select the arming schedules for the VCA event.

Click the **Arming Schedule** tab. Select the day of the week and the time periods during the day when intrusion can be detected. The configuration is the same as that for motion detection (see “Motion detection” on page 25). You can schedule only one time period in a day. Default is 24 hours. Click **Save** to save the settings. Click **Copy** to copy these settings to other days of the week.

Click **Save** to save the settings. Click **Copy** to copy these settings to other days of the week.

6. Select the response method to the VCA event.

Click the **Actions** tab. Under **Alarm Linking**, check one of more of the desired response method:

- **Enable Alarm Audio:** Record audio with the video.
- **Notify Alarm Host:** Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software
- **Send Email:** Send an email with alarm information to a user or users when an event occurs.

Under **Trigger Alarm Output** select one or more alarm outputs to trigger an external alarm when a motion detection event occurs. See “Alarm output settings” on page 54 on how to set up an external alarm output.

Under **Trigger Channel**, select one or more channels to trigger recording when a motion detection event occurs.

Select the PTZ control actions to link to the VCA event. Under **PTZ Linking**, select the PTZ camera and enter the preset, preset tour, and/or a shadow tour to be triggered when the alarm is detected. Select **Enable** to activate the option.

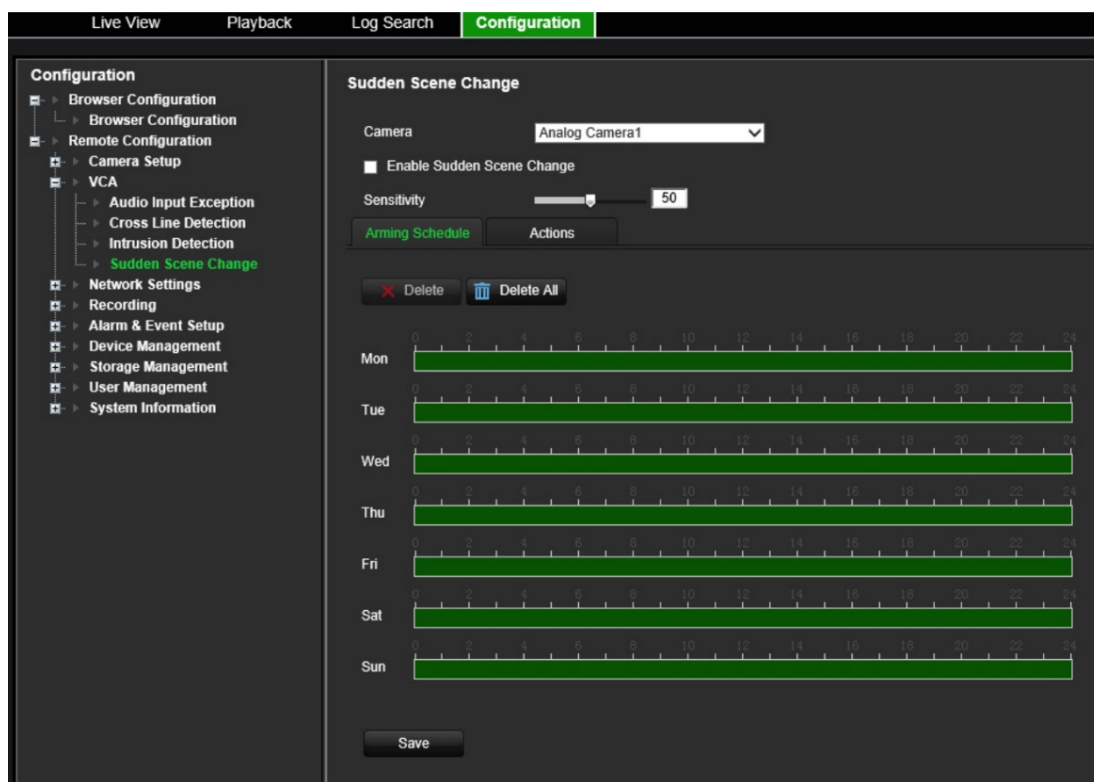
7. Click **Save** to save all the settings.

Sudden scene change

You can configure the camera to trigger an alarm when the camera detects a change in the scene caused by a physical repositioning of the camera.

To setup sudden scene change actions:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > VCA > Sudden Scene Change**. The *Sudden Scene Change* window appears.



2. Select a camera from the drop-down list.

3. Select **Enable Sudden Scene Change**.
4. Select the sensitivity of the change.
5. Select the arming schedules for the VCA event.

Click the **Arming Schedule** tab. Select the day of the week and the time periods during the day when the sudden scene change can be detected. The configuration is the same as that for motion detection (see “Motion detection” on page 25). You can schedule only one time period in a day. Default is 24 hours. Click **Save** to save the settings. Click **Copy** to copy these settings to other days of the week.

Click **Save** to save the settings. Click **Copy** to copy these settings to other days of the week.

6. Select the response method to the VCA event.

Click the **Actions** tab. Under **Alarm Linking**, check one or more of the desired response method:

- **Enable Alarm Audio**: Record audio with the video.
- **Notify Alarm Host**: Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software
- **Send Email**: Send an email with alarm information to a user or users when an event occurs.

Under **Trigger Alarm Output** select one or more alarm outputs to trigger an external alarm when a motion detection event occurs. See “Alarm output settings” on page 54 on how to set up an external alarm output.

Under **Trigger Channel**, select one or more channels to trigger recording when a motion detection event occurs.

Select the PTZ control actions to link to the VCA event. Under **PTZ Linking**, select the PTZ camera and enter the preset, preset tour, and/or a shadow tour to be triggered when the alarm is detected. Select **Enable** to activate the option.

7. Click **Save** to save all the settings.

Network settings

You must configure your encoder's network settings before using it over the network.

Network settings

Note: As every network configuration may differ, please contact your Network Administrator or ISP to see if your encoder requires specific IP addresses or port numbers.

To configure general network settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > Network Settings**. The *Network Settings* window appears.

The screenshot shows the 'Network Settings' configuration window. The left sidebar lists various configuration categories, with 'Network Settings' expanded. The main panel displays settings for the selected network interface (LAN1). The settings are organized into sections: NIC Settings, DNS Server, and Host Name Configuration. Numbered callouts 1 through 19 highlight specific fields and options. A 'Save' button is located at the bottom of the configuration area.

2. Enter the required settings:

Option	Description
1. NIC Type	Network interface card (NIC) is a device used to connect the encoder to a network. Select the NIC type used from the drop-down list.

Option	Description
3. DHCP	DHCP (Dynamic Host Configuration Protocol) is a protocol for assigning an IP address dynamically to a device each time it connects to a network. Select this check box if you have a DHCP server running and want your encoder to automatically obtain an IP address and other network settings from that server. The DHCP server is typically available in your router. Default value is Enabled.
4. IPv4 Address	Enter the IP address for the encoder. This is the LAN IP address of the encoder. Default value is 192.168.1.82.
5. IPv4 Subnet Mask	Enter the subnet mask for your network so the encoder will be recognized within the network. Default value is 255.255.255.0.
6. IPv4 Default Gateway	Enter the IP address of your network gateway so the encoder will be recognized within the network. This is typically the IP address of your router. Consult your router user manual or contact your ISP to get the required information on your gateway. Default value is 192.168.1.1.
7. IPv6 Address	Enter the IPv6 address for the encoder. Default value is fe80::240:30ff:fe48:2975/64.
8. IPv6 Default Gateway	Enter the IPv6 address of your network gateway so the encoder will be recognized within the network. This is typically the IP address of your router.
9. MAC Address	Displays the MAC address. The MAC address is a unique identifier of your encoder and it cannot be changed.
10. MTU (Bytes)	Enter a value between 500 and 9676. Default is 1500.
11. Preferred DNS Server	Enter the preferred domain name server to use with the encoder. It must match the DNS server information of your router. Check your router's browser interface or contact your ISP for the information.
12. Alternate DNS Server	Enter the alternate domain name server to use with the encoder.
13. Enable Dynamic	Select the check box to set up a dynamic IP address. Default value is Disabled.
14. Register DNS Name	Enter the registered DNS name. Request the DNS name from your ISP.
15. Server Port	Use the server port for remote client software access. The port range is between 1024 and 65535. Enter the server port value. The default value is 8000.
16. HTTP Port	The default value is 80.
17. Multicast IP	Enter a D-class IP address between 224.0.0.0 to 239.255.255.255. Only specify this option if you are using the multicast function. Some routers prohibit the use of multicast function in case of a network storm.
18. RTSP Service Port	The RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers. The default value is 554.

Option	Description
19. HTTPS Port	HTTPS (Hypertext Transfer Protocol Secure) is a secure protocol that provides authenticated and encrypted communication. It ensures that there is a secure private channel between the encoder and cameras. The default value is 443.

- Click **Save** to save the settings.

PPPoE settings

Although not usually used, you can connect the encoder directly to a DSL modem. To do this, you need to select the PPPoE option in the network settings. Contact your ISP to get the user name and password.

Note: The encoder will automatically reboot after enabling or disabling the PPPoE function.

To configure PPPoE settings:

- From the menu toolbar, click **Configuration** and **Remote Configuration > Network Settings > PPPoE**. The PPPoE window appears.
- Select **Enable PPPoE**. It is disabled by default.
- Enter the dynamic IP address, your user name and password. Confirm the password.
- Click **Save** to save the settings.

DDNS settings

If the encoder is set up to use PPPoE as its default network connection, configure the Dynamic DNS (DDNS) to be used in conjunction. You need to register with your ISP before configuring your system for use with DDNS.

To set up DDNS:

- From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > DDNS**. The DDNS settings window appears.
- Select **Enable DDNS**.
- Select one of the three DDNS types listed:
 - DynDNS:** Enter the server address for DynDNS (i.e. members.dyndns.org). In the DVR Domain Name field, enter the domain obtained from the DynDNS web site. Then enter the user name and password registered in the DynDNS network.
 - NO-IP server:** Enter the server address for IPServer as well as the host name, user name and password.
 - ezDDNS:** Enter the host name. It will automatically register it online. This is the default option.
- Click **Save** to save the settings.

NTP settings

A Network Time Protocol (NTP) server can also be configured on your encoder to keep the date and time current and accurate.

Note: If the device is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44) or europe.ntp.pool.org. If the device is set up in a more customized network, NTP software can be used to establish a NTP server used for time synchronization.

To set up an NTP server:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > NTP**. The NTP window appears.
2. Select **Enable NTP**. It is disabled by default.
3. Enter the NTP settings:
 - **Interval (min):** Time in minutes to synchronize with the NTP server. The value can be between 1 and 10080 minutes. Default is 60 minutes.
 - **NTP Server:** IP address of the NTP server. Default is *time.nist.gov*.
 - **NTP Port:** Port of the NTP server.
4. Click **Save** to save the settings.

QoS settings

Configure the QoS (Quality of Service) to help solve network delay and network congestion by configuring the priority of data sending. The use of a QoS-aware network can prioritize traffic and thus allow critical flows to be served before flows with lower priority.

To set up QoS settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > QoS**. The QoS window appears.
2. Select **Enable QoS**. It is disabled by default.
3. Enter the DSCP (Differentiated Services Codepoint) value for the video/audio, event/alarm and management traffic. This value is used to mark the traffic's IP header. The DSCP value defines the priority level for the specified type of traffic. For example, how much bandwidth to reserve for it.
4. Click **Save** to save the settings.

Email settings

The encoder can send email notifications of alarms or notifications through the network.

Note: Ensure that the DNS address has been set up correctly beforehand.

To configure email settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > Email**. The Email window appears.
2. Enter the required settings.

Option	Description
Sender	Enter the name of the sender of the email.
Sender's address	Enter the sender's email address.
SMTP server	Enter the SMTP server's IP address.
SMTP port	Enter the SMTP port. The default TCP/IP port for SMTP is 25.
Enable SSL/TLS	Select the check box to enable TLS and encrypt emails. If the destination server does not support TLS, the encoder will default to SSL. If disabled, emails will not be encrypted and will be sent in clear text.
Include Snapshot	Select the check box if you want to send email with attached alarm JPEG images.
Interval	The interval represents the time range in seconds between the alarm images being sent. For example, if you set the interval at two seconds, the second alarm image will be sent two seconds after the first alarm image.
Enable Server Authentication	If your mail server requires authentication, select this check box to use authentication to log in to this server and enter the login User Name and Password.
User Name	If the mail server requires authentication, enter the login user name.
Password	If the mail server requires authentication, enter the login password.
Confirm	Confirm password.
Receiver	Select an email recipient. Up to three receivers can be selected.
Receiver's address	Enter the email address of the receiver.

3. Click **Test** to the test email settings.

Note: We recommend that you test the email settings after entering values in the email window.

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

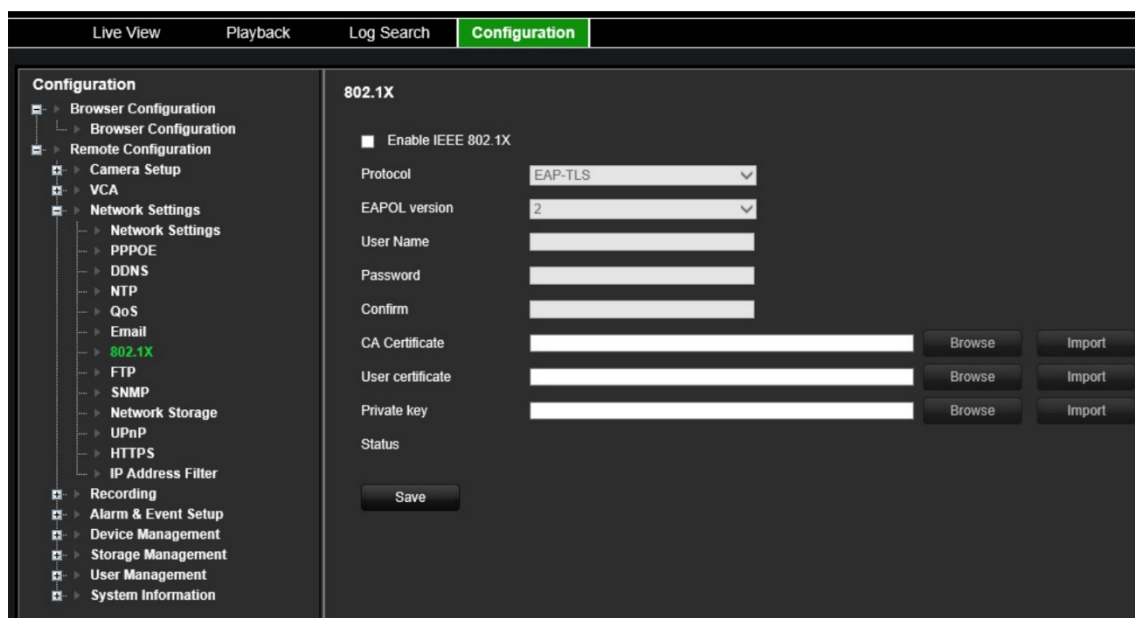
802.1X settings

The IEEE 802.1X standard is supported by the network cameras, and when the feature is enabled, the camera data is secured and user authentication is needed when connecting the camera to the network protected by the IEEE 802.1X.

To use 802.1X with the encoder, the network switch needs to also to support 802.1X.

To configure IEEE 802.1X settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > 802.1X**. The 802.1X window appears.



2. Select **Enable IEEE 802.1X**. It is disabled by default.
3. Configure the 802.1X settings. Select the protocol **EAP-PEAP** or **EAP-TLS**.

EAP-PEAP:

PEAP (Protected Extensible Authentication Protocol) fully encapsulates EAP and is designed to work within a TLS (Transport Layer Security) tunnel that may be encrypted but is authenticated. The primary motivation behind the creation of PEAP was to help correct the deficiencies discovered within EAP since that protocol assumes that the communications channel are protected.

- or -

EAP-TLS:

EAP-TLS (EAP Transport Layer Security) was subsequently defined by IETF RFC 5216. The protocol was created as an open standard leveraging the TLS (Transport Layer Security) protocol and it primarily consists of the original EAP authentication protocol.

4. Configure the remaining 802.1X settings.

Option	Description
EAPOL version	Version 2 is supported. Affects the format of the exchange with the RADIUS server. Note: The EAPOL version must be identical with that of the router or the switch.
User Name	This is a valid user name for the authentication server (usually a RADIUS server).
Password	This is a valid password for the user name specified in the previous field.

Option	Description
CA Certificate	This should be obtained from the network administrator, as network policies may differ.
User Certificate	This should be obtained from the network administrator, as network policies may differ.
Private Key	This should also be requested from the network administrator.

5. Click **Save** to save the settings.

FTP settings

The encoder can upload snapshots of an event or alarm to an FTP server for storage. When enabled, the system sends snapshots every two seconds to the ftp site from each of the triggered cameras for as long as the alarm/event is active.

To configure FTP settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > FTP**. The FTP window appears.
2. Select **Enable FTP**. It is disabled by default.
3. Configure the FTP settings, including FTP server address, port, user name, password, directory, and upload type.

Directory: In the Directory Structure field, you can select the Root Directory, Parent Directory and Child Directory. When the parent directory is selected, you have the option to use the Device Name, Device Number or Device IP for the name of the directory. When the Child Directory is selected, you can use the Camera Name or Camera Number as the name of the directory.

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

SNMP settings

This is an internet-standard protocol for managing devices on IP networks. Configure this protocol to allow information on the encoder status as well as event and alarm notifications to be sent to a surveillance center.

Before configuring this function, you must first install the SNMP software.

To configure SNMP protocol settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > SNMP**. The SNMP window appears.
2. Select **SNMP**. It is disabled by default.
3. Configure the Read SNMP Community (default: public), Write SNMP Community (default: private), Trap Address (default: empty) and Trap Port (default: 162).
4. Click **Save** to save the settings.

Network storage

You can add network-attached hard drives to setup a NAS or IP SAN system.

Note: Ensure that the network storage device is available within the network and is properly connected. Also the network storage device must be configured with NAS or IP SAN mode.

To add network-attached hard drives:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > Network Storage**. The *Network Storage* window appears.

No.	Server IP	File Path	Type	Delete
1			NAS	✗
2			NAS	✗
3			NAS	✗
4			NAS	✗
5			NAS	✗
6			NAS	✗
7			NAS	✗
8			NAS	✗

2. Enter the IP address of the network storage system and file path in the text field.

Note: Under **File Path**, enter the file path name to define where on the remote storage system you want to store the files. If using a NAS storage system, you must add the prefix “/nfs” or “nfs V3” to the NAS path. No credentials are required.

3. Select the network storage type. Select from NAS or IP SAN.

Note: Only NAS with NFS version 3.0 or higher is supported. The NAS must be able to be used without login credentials.

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

UPnP settings

The encoder supports UPnP (Universal Plug and Play). This feature lets the encoder automatically configure its own port forwarding, if this feature is also enabled in the router.

You can select one of two methods to set up UPnP:

Automatic mapped type: The encoder automatically uses the free ports available that were set up in the Network Settings menu.

Manual mapped type: You enter the particular external port settings and IP addresses required to connect to the desired router.

To enable UPnP:

1. Connect the encoder to the router.

Note: The router must support UPnP and this option must be enabled.

2. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > UPnP**. The UPnP window appears.
3. Select **Enable UPnP**. It is disabled by default.
4. From **Mapped Type**, select Auto or Manual.

If **Manual** is selected, enter the external ports and IP addresses required. To change the values, click the current value in the table and enter the new value.

5. Click **Save** to save the settings.

HTTPS settings

HTTPS (Hyper Text Transfer Protocol Secure) ensures the data transferred is encrypted using Secure Socket Layer (SSL) or Transport Layer Security (TLS). HTTPS provides authentication of the web site and associated web server that one is communicating with and create a secure channel over an insecure network.

To configure HTTPS settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > HTTPS**. The HTTPS window appears.
2. Select the desired certificate option:

- Create self-signed certificate

Under **Create Self-signed Certificate** click the **Create** button. Enter the country, host name/IP, validity and other information. Click **OK** to save the settings.

- or -

- A signed certificate is available, start the installation directly

- or -

- Create the certificate request first and continue the installation

3. Click **Save** to save the settings.

IP address filter settings

You can define the list of forbidden or allowed IP camera addresses that can be accessed by the encoder. This lets you select who can access the system, increasing the system's security. The function is disabled by default.

To configure IP Address Filter settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Network Settings > IP Address Filter**. The *IP Address Filter* window appears.
2. Select **Enable IP Address Filter**. It is disabled by default.

3. Select the filter type of IP address: Allowed or Forbidden.
4. Click the **Manual Add** button and in the pop-up box add the IP camera address to be allowed or forbidden. Click **OK**.

Click **Delete** to remove IP addresses from the list.

Note: Up to 256 IP address can be added to the list (allowed/forbidden) by web browser.

5. If required, you can modify a saved IP address. Click **Modify** and enter the changes.
6. Click **Save** to save the settings.

Recording settings

This function is only available in the one-channel and four-channel encoders, which have a SD card.

It is not available in eight-channel and 16-channel encoders.

Defining a recording schedule lets you specify when the encoder records video and which pre-defined settings are used. Each camera can be configured to have its own recording schedule.

The schedules are visually presented on a map for easy reference. See Figure 9 below for a description of the recording schedule window.

Figure 9: Description of the recording schedule window

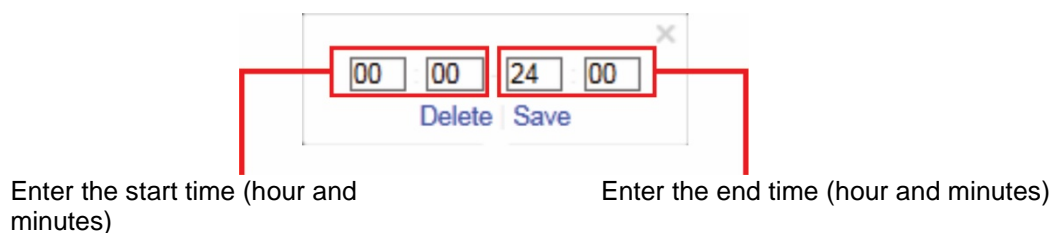



1. **Select the camera.** Select a camera.
2. **Enable recording.** Select to enable the recording function.
3. **Recording type.** There are five types of recording to select, which are color-coded:
 - TL-Hi (Dark green): High quality time lapse. Records high quality video.
 - TL-Low (Bright green): Low quality time lapse. Records low quality video. This could be used, for example, for night recordings when few events or alarms are expected. Saving the video in low quality helps save resources on the HDD.
 - Event (Yellow): Records only events, such as motion detection.
 - Alarm (Red): Records only alarms.
 - None (White): No recording during this period.
4. **Schedule map.** There are eight days to select: Sunday (Sun), Monday (Mon), Tuesday (Tue), Wednesday (Wed), Thursday (Thu), Friday (Fri), Saturday (Sat), and Holiday (if enabled).
5. **Advanced button.** Schedule pre and post recording times, auto delete, and audio recording time.

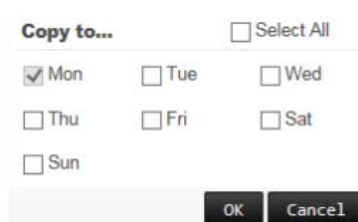
6. **Timeline.** There is a 24-hour time line for each day. Up to eight recording periods can be scheduled during the 24-hour period.
7. **Copy to other cameras.** Click to copy schedules between cameras.

To set up a daily recording schedule:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Recording**. The *Recording* window appears.
2. Select a camera.
3. Select the **Enable Recording** check box to indicate that video from this camera is to be recorded. It is disabled by default.
4. Select the desired recording type from the drop-down list.
5. Click the timeline of the desired day. A pop-up appears that lets you enter the start and end times of the arming schedule for that day. Alternatively, you can also manually modify the length of the green timeline to the desired times.



Click  to copy the schedule to other days or to the whole week.



You can schedule only one time period in a day. Default is 24 hours.

6. Under *Copy to Camera*, select the other cameras to which to copy this schedule.
7. Click **Save** to save the settings.

Alarm and event settings

Alarms are all notifications related to either physical alarm inputs on recorders and cameras or anything that does not work as expected: device errors, network issues, and video loss.

Alarm input settings

The encoder can be configured to record when an alarm is triggered by an external alarm device (for example, PIR detector, dry contacts...). They are the physical inputs on the IP cameras and recorder.


To configure alarm inputs:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Alarm & Event Setup > Alarm Input**. The *Alarm Input* window appears.

The screenshot shows the 'Alarm Input Settings' window. On the left is a 'Configuration' sidebar with a tree view containing: Browser Configuration, Remote Configuration, Camera Setup, VCA, Network Settings, Recording, Alarm & Event Setup (expanded), Alarm Input (selected), Alarm Output, Manual Trigger, Notifications, Video Loss, Alarm Host Setup, Device Management, Storage Management, User Management, and System Information. The main panel is titled 'Alarm Input Settings' and contains: 'Alarm Input No.' dropdown set to 'A<1', 'IP Address' dropdown set to 'Local', 'Alarm Type' dropdown set to 'NO', and an 'Alarm Input Name' text field with '(cannot copy)' placeholder. Below these is an 'Enable Alarm Input' checkbox. There are two tabs: 'Arming Schedule' (active) and 'Actions'. Under 'Arming Schedule' are 'Delete' and 'Delete All' buttons. Below these are seven horizontal timelines for days of the week (Mon-Sun), each with a green bar representing the arming schedule. At the bottom, there is a 'Copy to Alarm' link, a row of checkboxes for 'Select All' and 'A<1' through 'A<8' (with 'A<1' checked), and a 'Save' button.

2. Select the alarm input number.
3. Select the alarm input type, NO or NC.
4. Click the **Arming Schedule** tab and set the arming schedule for the alarm input.

Click the timeline of the desired day. A pop-up appears that lets you enter the start and end times of the arming schedule for that day. Alternatively, you can also manually modify the length of the green timeline to the desired times.

Click  to copy the schedule to other days or to the whole week.

You can schedule only one time period in a day. Default is 24 hours.

5. Select the response method to motion detection.

Click the **Actions** tab. Under **Alarm Linking**, check one or more of the desired response method:

- **Enable Alarm Audio:** Record audio with the video.
- **Notify Alarm Host:** Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software
- **Send Email to FTP:** Send an email with alarm information to a user or users when an event occurs.

Under **Trigger Alarm Output** select one or more alarm outputs to trigger an external alarm when a motion detection event occurs. See “Alarm output settings” below on how to set up an external alarm output.

Under **Trigger Channel**, select one or more channels to trigger recording when a motion detection event occurs.

Select the PTZ control actions to link to the VCA event. Under **PTZ Linking**, select the PTZ camera and enter the preset, preset tour, and/or a shadow tour to be triggered when the alarm is detected. Select **Enable** to activate the option.

6. Under *Copy to Camera*, select the other cameras to which to copy this schedule.
7. Click **Save** to save settings.

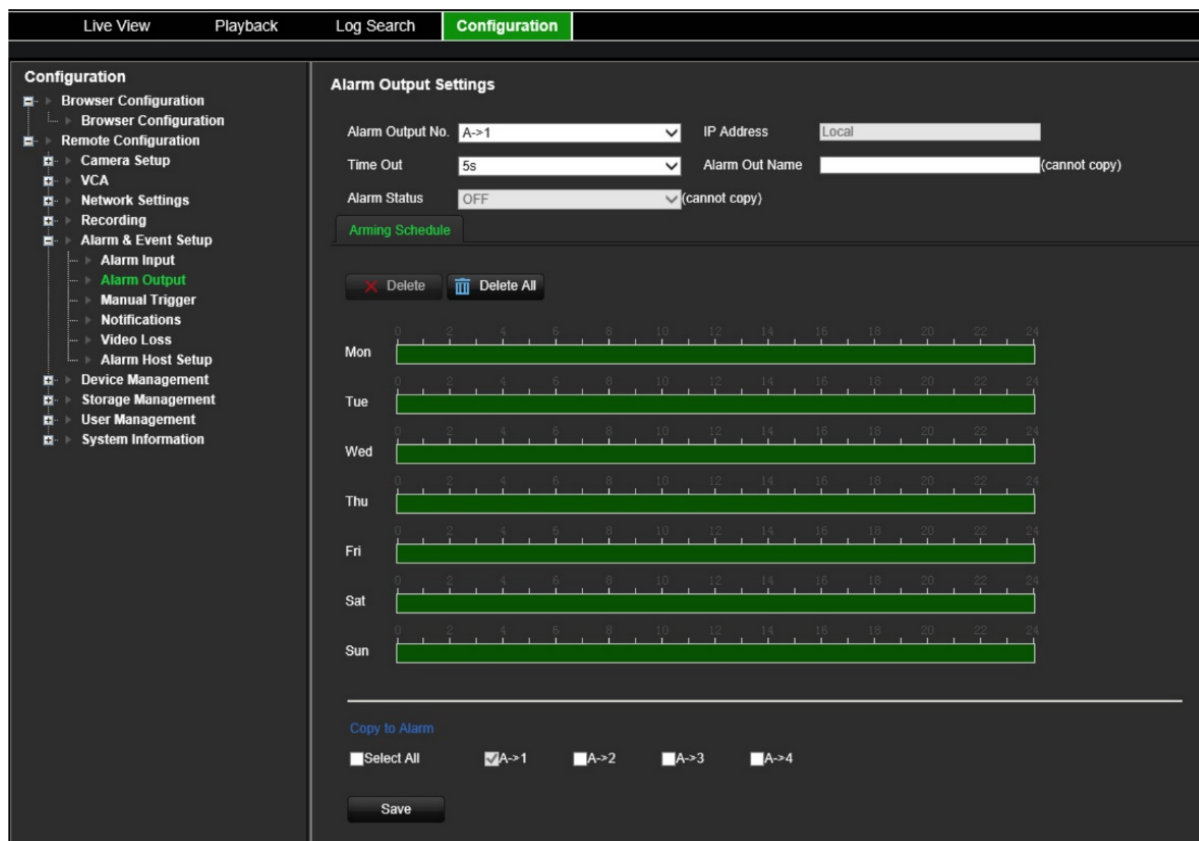
Alarm output settings

You can connect the encoder to an alarm system, such as a siren or intrusion system, which is then activated when an alarm is triggered. You can select how long the alarm signal remains active as well as schedule when alarm outputs can be triggered.

The actual status of the alarm output is shown under Alarm Status. It is either ON or OFF.

To configure an alarm output:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Alarm & Event Setup > Alarm Output**. The *Alarm Output Settings* window appears.




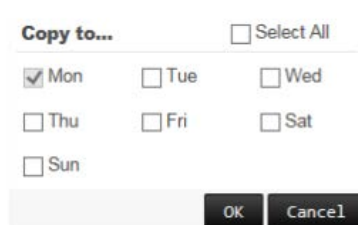
2. Select an alarm output.
3. Select a time out delay.

The *Time Out* setting lets you define how long a signal remains active after the alarm has ended. Select a time out option: 5, 10, and 30 seconds, 1, 2, 5, and 10 minutes, and Manual clear. If “Manual clear” is selected, the alarm output will stop only when the alarm input stops.

4. Click the **Arming Schedule** tab and set the arming schedule for the alarm input.

Click the timeline of the desired day. A pop-up appears that lets you enter the start and end times of the arming schedule for that day. Alternatively, you can also manually modify the length of the green timeline to the desired times.

Click  to copy the schedule to other days or to the whole week.



You can schedule only one time period in a day. Default is 24 hours.

5. Click **Save** to save settings.

Manual trigger

The manual trigger menu allows you to manually trigger outputs of the encoder.

To trigger or clear alarm outputs manually:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Alarm & Event Setup > Manual Trigger**. The *Manual Trigger* window appears.
2. Select the desired alarm output and click the following buttons:

Trigger / Trigger All: Trigger an alarm output or trigger all alarm outputs.

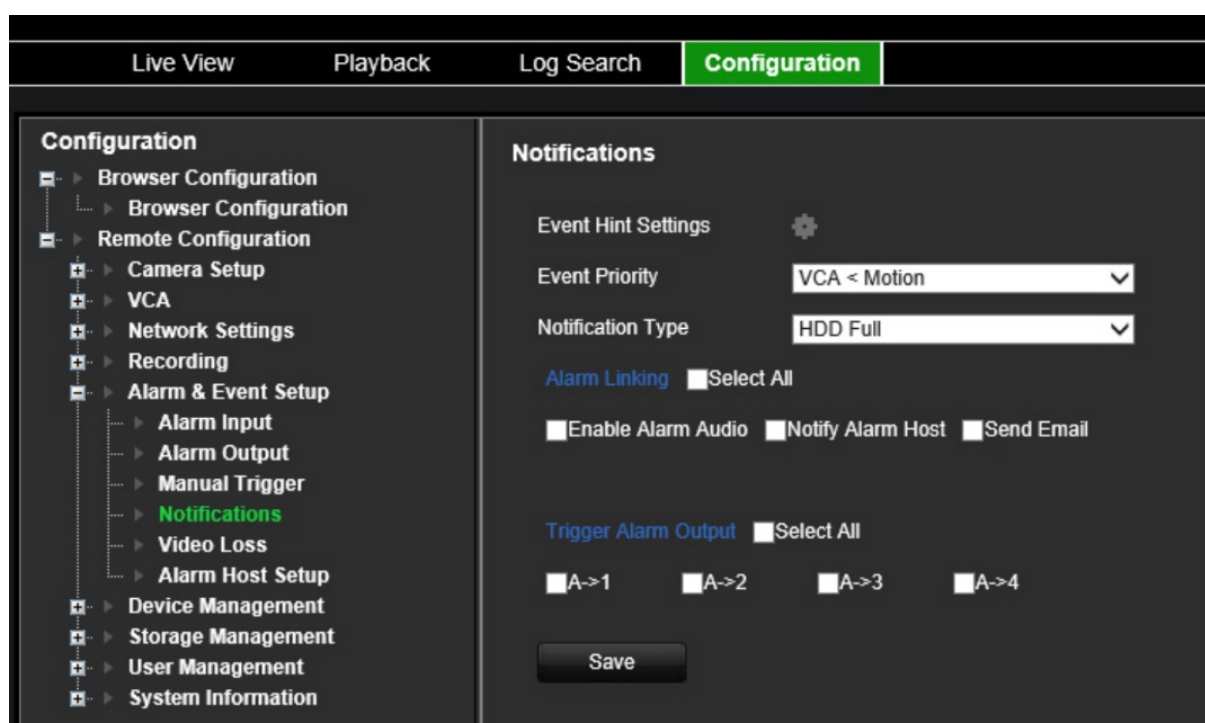
Clear All: Stop all alarm outputs at once.

Notifications

You can select the alarm and event notifications to be included in the event hint icon of the alarm center displayed in live view. Clicking the icon opens the window of the alarm center that lists the detected alarm and event notifications.

To set up event notifications:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Alarm & Event Setup > Notifications**. The *Notifications* window appears.



2. Click the **Event Hint Settings** button. The notifications list appears. Select the desired notifications.
 - **HDD Full:** All installed HDDs are full and will not record any more video.
 - **HDD Error:** Errors occurred while files were being written to the storage, there is no storage, or the storage had failed to initialize.
 - **Network Disconnected:** Disconnected network cable.

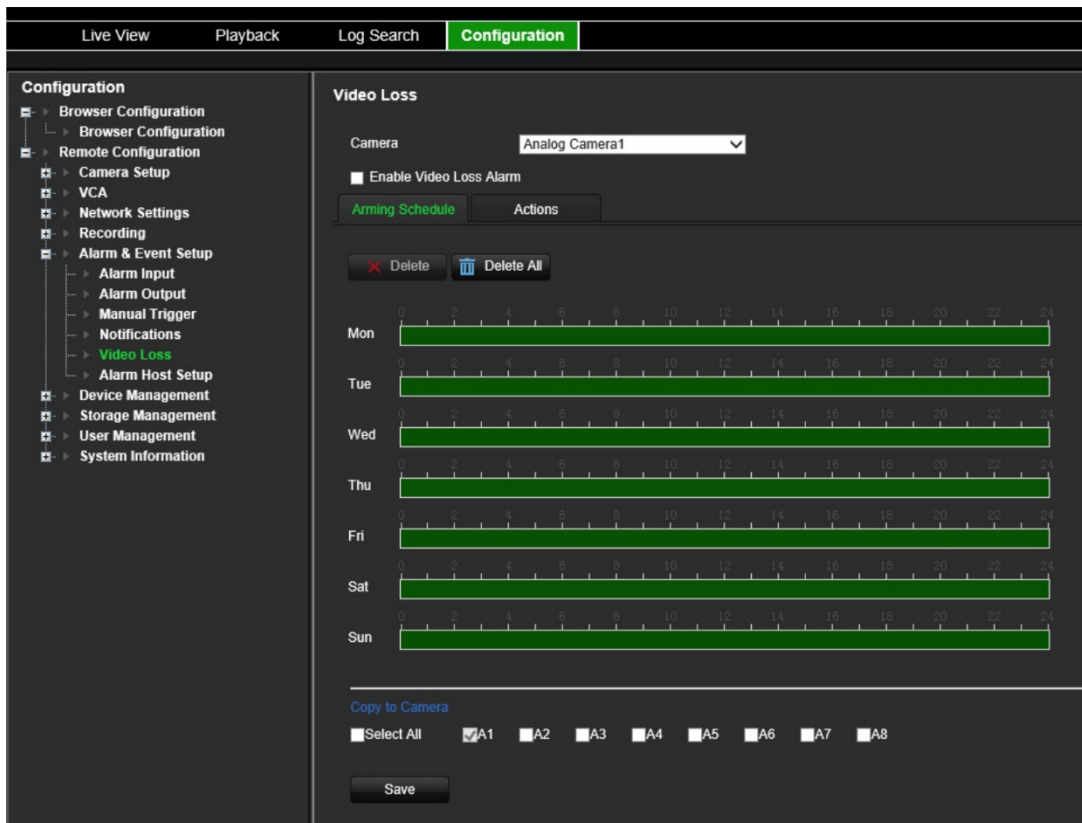
- **Duplicate IP Address Found:** There is an IP address conflict with another system on the network.
 - **Invalid Login:** Wrong user ID or password used.
 - **Video Loss:** The video image is lost. Video may be lost if the camera develops a fault, is disconnected, or is damaged
 - **Alarm Input:** An alarm triggered by an external alarm device (for example, PIR detector, dry contacts...)
 - **Camera Tamper Detection:** Camera tamper is detected.
 - **Motion Detection:** Motion is detected.
 - **Abnormal Record:** Storage cannot record any more files. This could be due to the overwrite option being disabled so recorded files are locked and cannot be deleted.
 - **Intrusion Alarm:** This is an OH event. An intrusion alarm has been triggered by the intrusion panel.
 - **Cross Line Detected:** People, vehicles and objects have been detected crossing a pre-defined line or an area on screen.
 - **Audio Input Exception:** A camera has detected sounds that are above a selected threshold.
 - **Sudden Change of Sound Intensity:** A camera has detected a sudden change in the sound intensity.
 - **Scene Change:** A camera has detected a change in the scene caused by an intentional rotation of the camera.
3. Select the event priority: VCA < Motion or VCA > Motion. Default is VCA < Motion, where motion has priority over VCA.
 4. Select how the recorder should respond to an event notification.
Under **Notification Type**, select the desired notification. Select one or more response methods: Enable Alarm Audio, Notify Alarm Host, and Send Email.
Note: The list of response methods available depends on the notification type selected.
 5. Repeat step 5 for other notification types.
 6. Click **Save** to save the settings.

Video loss

Video may be lost if the video cable or camera develops a fault or is damaged. You can set up your encoder to detect video loss and trigger a system notification.


To configure video loss detection:

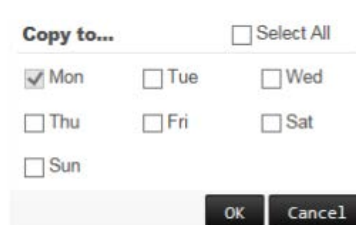
1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Alarm & Event Setup > Video Loss**. The *Video Loss* window appears.



2. Select a camera to configure for video loss detection.
3. Select **Enable Video Loss Detection**. It is disabled by default.
4. **Select the recording schedules.**

Click the **Arming schedule** tab. Click the timeline of the desired day. A pop-up appears that lets you enter the start and end times of the arming schedule for that day. Alternatively, you can also manually modify the length of the green timeline to the desired times.

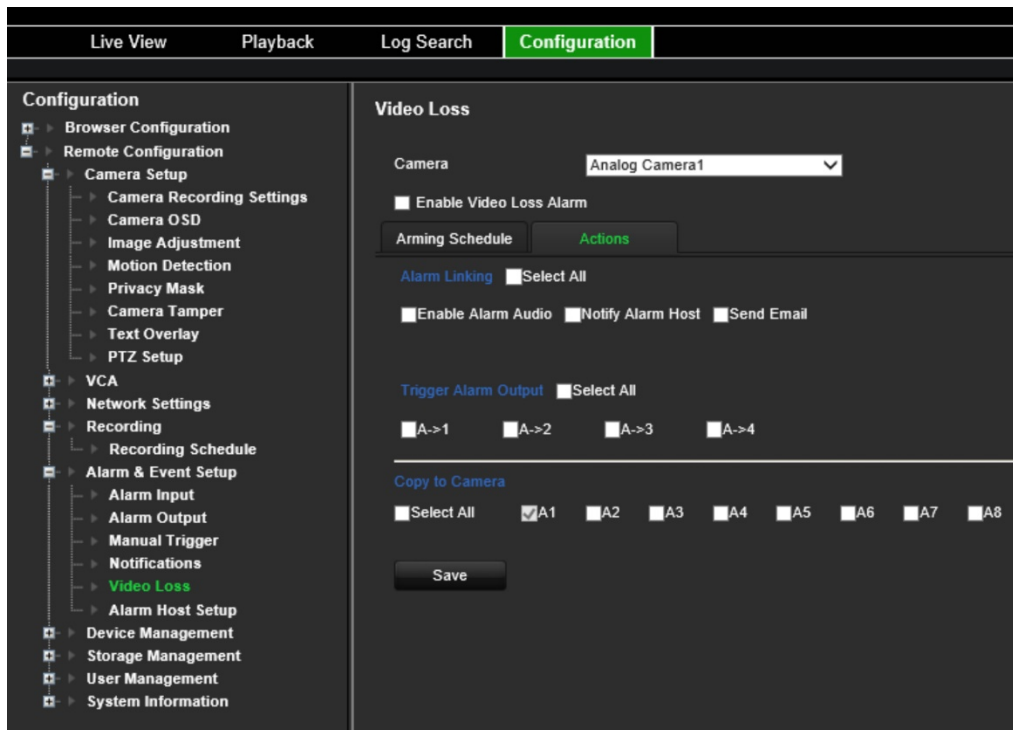
Click  to copy the schedule to other days or to the whole week.



You can schedule only one time period in a day. Default is 24 hours.

5. **Select the response method to motion detection.**

Click the **Actions** tab.



Under **Alarm Linking**, check one of more of the desired response methods:

- **Enable Alarm Audio:** Record audio with the video.
- **Notify Alarm Host:** Send a notification or alarm signal to remote alarm host when an event occurs. The alarm host refers to the computer installed with remote client software
- **Send Email:** Send an email with alarm information to a user or users when an event occurs.

Under **Trigger Alarm Output** select one of more alarm outputs to trigger an external alarm when a motion detection event occurs. See “Alarm output settings” on page 54 on how to set up an external alarm output.

6. Under *Copy to Camera*, select the other cameras to which to copy this schedule.
7. Click **Save** to save the settings.

Alarm host setup

If an alarm host is set, the encoder sends a signal to the host when an alarm is triggered. The remote alarm host must have the TruVision Navigator server software installed.

To set up a remote alarm host:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Alarm & Event Setup > Alarm Host Setup**. The *Alarm Host Setup* window appears.
2. Enter Alarm Host IP and Alarm Host Port values.

Alarm host IP represents the IP of the remote PC where the Network Video Surveillance software installed. The alarm host port value must be the same as

software's alarm monitor port. Up to three alarm hosts can be set. For each alarm host, the default port is 5001, 5002, and 5003.

3. Click **Save** to save the settings.

Device management

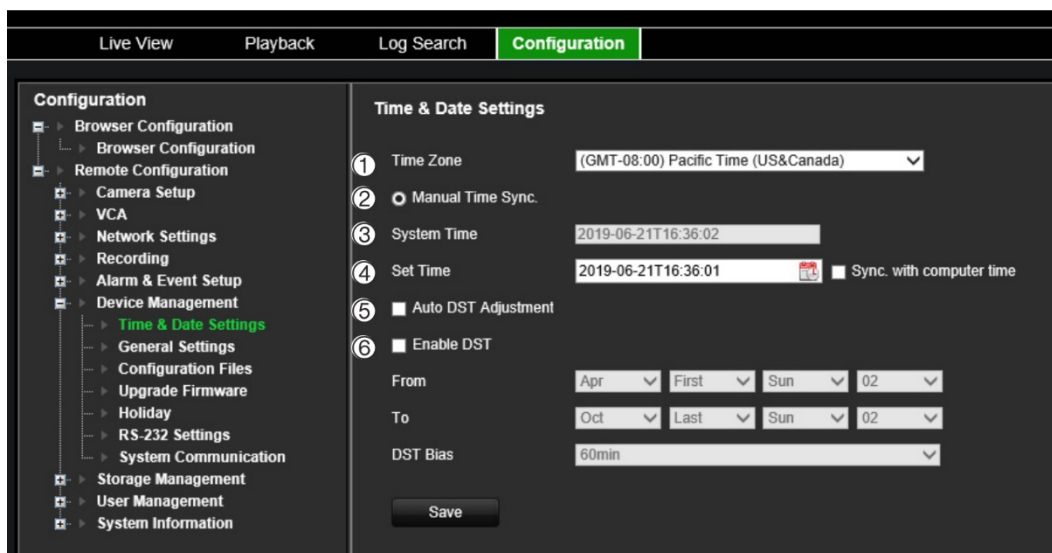
This chapter describes how to:

- Set up the time and date of the recorder
- Select the recorder language and set up general system parameters such as the device name, menu timeout period, and enable/disable password requirement
- Import/export configuration files
- Upgrade the firmware
- Set up holiday periods
- Configure RS-232 settings
- Enable protocols

Time and date settings

You can set up the date and time that will appear on-screen as well as on time stamped recordings. The start and end time of daylight saving time (DST) in the year can also be set. DST is deactivated by default. See Figure 10 below for the Time & Date settings window.

Figure 10: Time and Date Settings window



Option	Description
1. Time Zone	Select a time zone from the list.
2. System Time	Displays the current system date and time.
3. Set Time	Enter the system date and time from the calendar. You can enable "Sync with computer time".
4. Auto DST Adjustment	Enable to activate DST is automatically. It depends on the time zone selected. Default is Disabled.

Option	Description
5. Enable DST	Manually define daylight savings time (DST). If this option is selected, the <i>Auto DST adjustment</i> option is disabled. <i>Enable DST</i> is disabled by default.
From	Enter the start date and time for daylight savings.
To	Enter the end date and time for daylight savings.
DST Bias	Set the amount of time to move DST forward from the standard time. Default is 60 minutes.

To configure time settings:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Device Management > Time & Date Settings**. The *Time & Date Settings* window appears.
2. Select the time zone from the drop-down list that is closest to the device's location.
3. Manually configure the time synchronization method if you do not want to use the system set date.

Click the **Set Time** calendar to set the system time from the pop-up calendar. You can select the **Sync with computer time** check box to synchronize the time with the local PC.
4. Configure the DST settings, if required.

Check the **Auto DST Adjustment** check box to activate DST is automatically.

- or -

Check the **Enable DST** check box to define DST manually. Set the start time and end time of DST period. The end time must be later than the start time. When the DST period ends, the system reverts to the standard local time. Set the DST bias to 30 min, 60 min, 90 min or 120 min.
5. Click **Save** to save the settings.

General settings

Use the *General Settings* menu to configure encoder's name.

To set up the encoder's name:

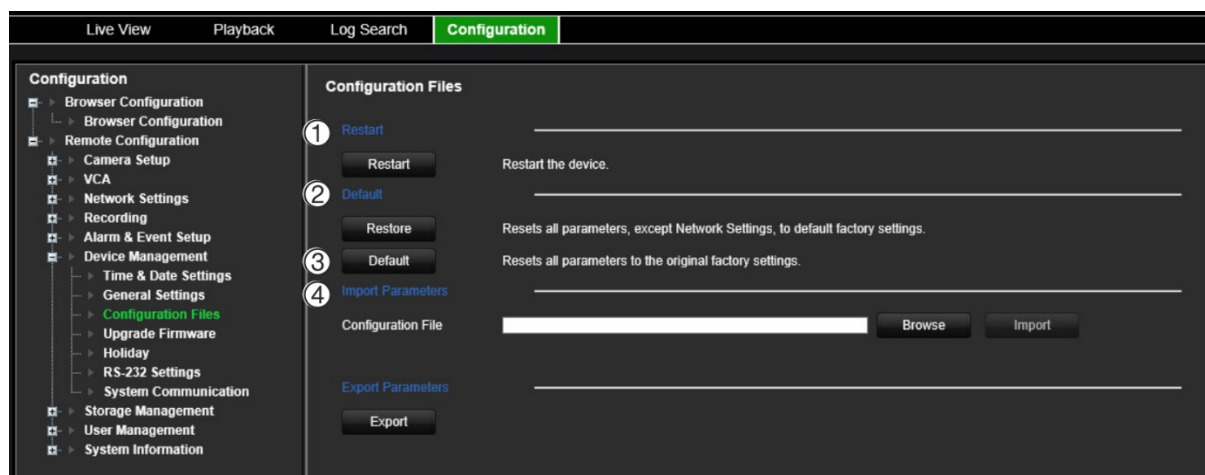
1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Device Management > General Settings**. The *Alarm Host Setup* window appears.
2. Enter encoder's name.
3. Click **Save** to save the settings.

Import/export configuration files, restart device and restore default settings

You can export and import configuration settings from the encoder. This is useful if you want to copy the configuration settings to another device, or if you want to make a backup of the settings.

You cannot import a configuration file if the firmware version of the encoder has in the meantime changed.

Figure 11: Configuration files window



Option	Description
1. Restart	Restart the device.
2. Restore	Restore all the encoder's parameters except network settings to default factory settings. Network information such as IP address, subnet mask, gateway, MTU, NIC working mode, server port, and default router are not restored to factory default settings.
3. Default	Restore all the encoder's parameters to default factory settings.
4. Import and export parameters	Import and export the configuration settings of the encoder. This is useful if you want to copy the configuration settings to another device, or if you want to make a backup of the settings. Note: Only the administrator can import/export configuration files.

To restart the encoder:

- From the menu toolbar, click **Configuration** and then **Remote Configuration > Device Management > Configuration Files**. The *Configuration Files* window appears.
- Click the **Restart** button to reboot the device.
- Click **OK** in the pop-up message box to confirm reboot operation.

The system will automatically restart.

To restore parameters to default factory settings:

1. From the menu toolbar, click **Configuration** and then the **Remote Configuration > Device Management > Configuration Files**. The *Configuration Files* window appears.

Note: Only the administrator can restore the default settings.

2. To restore all parameters to default factory settings:

Click the **Default** button. Enter the Admin password, click **OK**, and then click **Yes** to confirm that you want to restore all parameters to default.

— or —

To restore all parameters, except network settings, to default factory settings:

Click the **Restore** button. Enter the Admin password, click **OK**, and then click **Yes** to confirm that you want to restore all parameters except network settings to default.

The system will automatically restart.

To import/export configuration file

1. Insert an external storage device in the encoder.
2. From the menu toolbar, click **Configuration** and then **Remote Configuration > Device Management > Configuration Files**. The *Configuration Files* window appears.

3. To import a configuration file:

Click **Browse** to select the local configuration file and then click **Import** to start importing configuration file from the external storage device.

— or —

To export a configuration file:

Click **Export** to export the encoder's configuration settings into an external storage device.

Upgrade the system firmware

The firmware on the encoder can be updated using three methods:

- Via a USB device
- Using TruVision Navigator. For further information, refer to the TruVision Navigator user manual.

The firmware upgrade file is labeled *tve-x20.dav*.

To update the system firmware:

1. Download the latest firmware from our web site to your computer or a USD device:

<https://firesecurityproducts.com>

2. Connect the USB device to the recorder if the upgrade firmware file is stored here.
3. From the menu toolbar, click **Configuration** and then **Remote Configuration > Device Management > Configuration Files**. The *Configuration Files* window appears.
4. Click **Browse** to locate the file on your computer or USB device to upload to the encoder.
5. Select the firmware file and click **Upgrade**. Click **Yes** to begin the upgrade process. The encoder will reboot automatically once the firmware is installed.

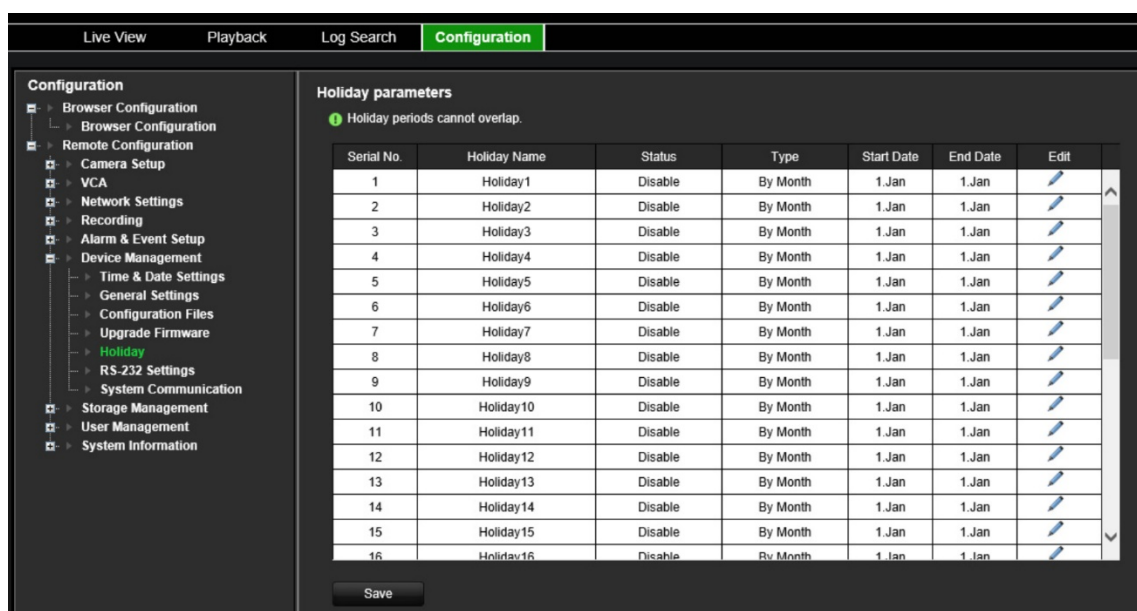
Note: The upgrading process can take between 5 and 10 minutes. Do not turn off the power.

Holiday settings

You can create a separate recording schedule for holidays. Once one or more holidays are created, a separate entry for holiday will be included in the recording schedule (refer to “Recording settings” on page 51)

To set up a holiday recording schedule:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > Device Management > Holiday**. The *Holiday Parameters* window appears.



2. Select a holiday period from the list (such as Holiday1) and click its **Edit** button to modify the settings. The *Edit* window appears.

Enter the name of the holiday period and select **Enable Holiday**. Select whether the holiday period will be categorized by date, week, or month and then enter the start and end dates.

3. Click **OK** save the settings and to return to the Holiday Parameters window.
4. Repeat steps 2 for other holiday periods.
5. Click **Save** to save the settings.

RS-232 settings

Use the **Device Management** menu to configure the RS-232 parameters such as baud rate, data bit, stop bit, parity, flow control, and interface.

Figure 12: RS-232 setup window

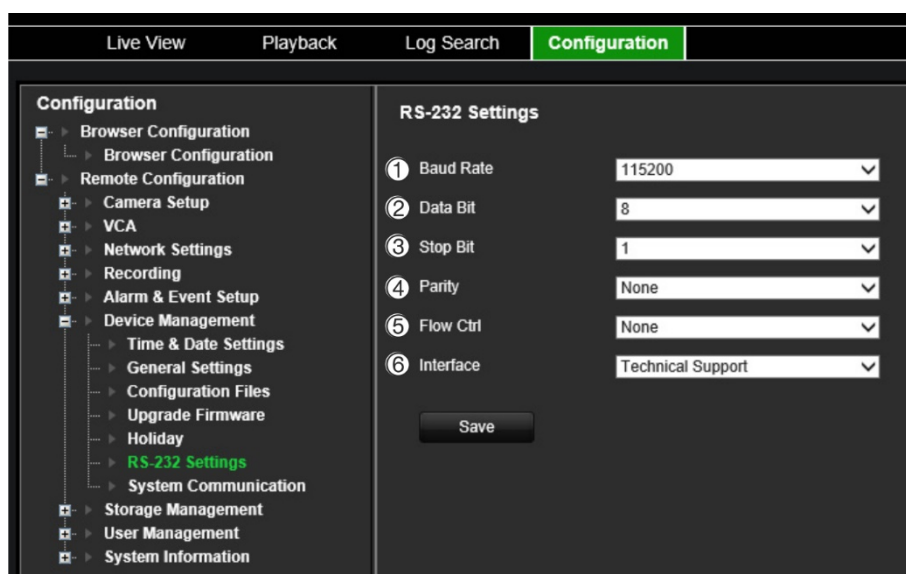


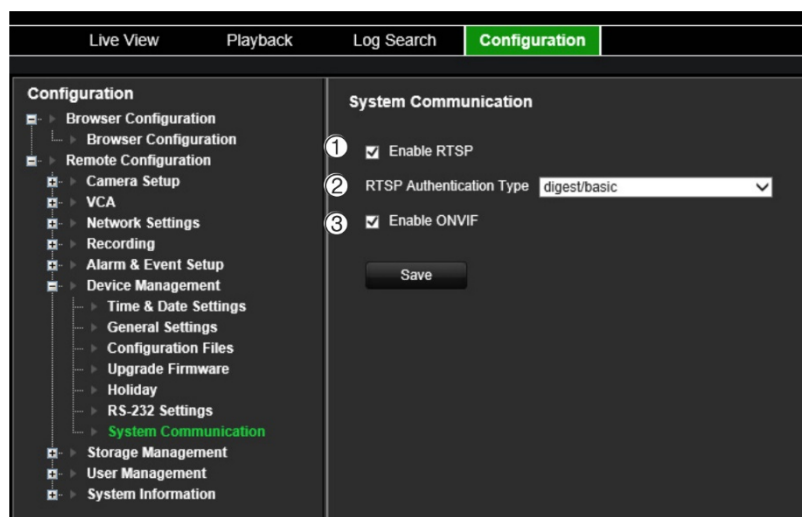
Table 1: Description of the RS-232 settings window

Option	Description
1. Baud Rate	This is a measure of the speed of data transmission. Default is 115200.
2. Data Bit	A bit is the smallest unit of data in a serial communication message. A data bit is the bit carrying the information, as opposed to the start bit and the stop bit. Default is 8.
3. Stop Bit	Stop bits mark the end of a transmission of a serial communication message. Default is 1.
4. Parity	The method used to detect errors in the number of bits being transmitted. Default is None.
5. Flow Ctrl	Flow control is the process by which data transfer is regulated so that it does not arrive too quickly for the receiving process. Default is None.
6. Interface	Only the RS-232 port can be used. Technical Support: Console mode.

System communication

Use the **System Communication** menu to enable/disable the RTSP and ONVIF protocols.

Figure 13: System communication settings window



Option	Description
1. Enable RTSP	<p>TruVision recorders utilize Real Time Streaming Protocol (RTSP) for transmitting live and playback video to users. Disabling this parameter will stop all video streaming from the encoder.</p> <p>This should be left at its default value unless otherwise instructed by the system administrator.</p>
2. RTSP Authentication Type	<p>The administrator can set the authentication for accessing RTSP streams with this dropdown menu.</p> <p>This should be left at its default value unless otherwise instructed by the system administrator, as choosing the wrong value will negatively impact performance.</p>
3. Enable ONVIF	<p>The encoder supports all TruVision cameras and recorders and is compliant with ONVIF profile S cameras.</p> <p>Select this option to enable encoder to respond to any CGI commands.</p>

Storage management

Use this menu to display and initialize SD cards/NAS devices as well as to set/unset storage to Overwrite.

Figure 14: Storage Information window

The screenshot shows a web-based configuration interface with a top navigation bar containing 'Live View', 'Playback', 'Log Search', and 'Configuration' (which is highlighted in green). On the left is a 'Configuration' sidebar with a tree view. The main area is titled 'HDD Information' and contains a table with columns: Label, Capacity, Free space, Status, Type, Property, Edit, and Delete. Below the table, there are sections for 'HDD Initialization' and 'Configuration', each with a horizontal line and an 'Init' button. At the bottom, there is an 'Overwrite' checkbox (checked) and a 'Save' button.

	Label	Capacity	Free space	Status	Type	Property	Edit	Delete
Total Capacity		0.00GB						
Free Space		0.00GB						

HDD Initialization

Configuration

Overwrite ☒

Save

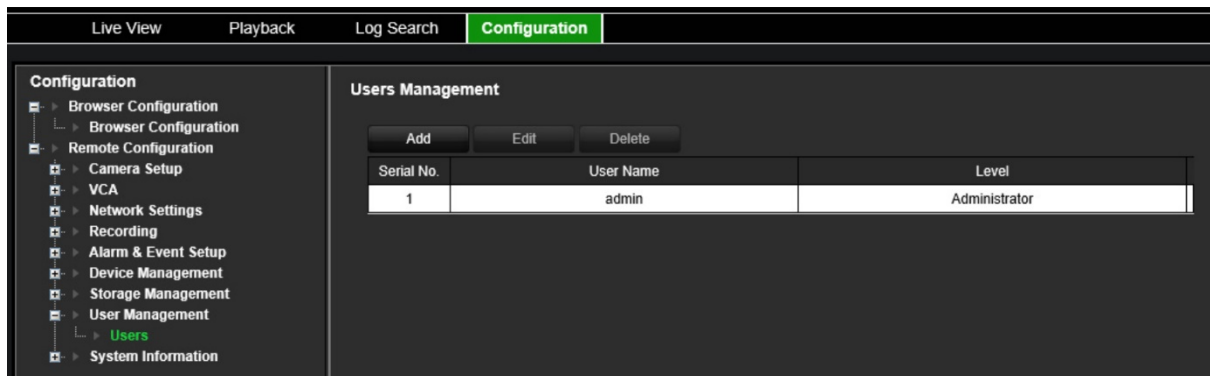
User management

This menu allows you to create extra users and assign user access privileges. The access privileges can be customized for each user's needs.

Only an administrator can create and allocate access privileges to users.

You can have a maximum of 16 users (the administrator as well as operators and guests).

Figure 15: User Management window



To add a new user:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > User Management > Users**. The *User Management* window appears.
2. Click **Add** to enter the *Add User* window.
3. Enter the new user's name and password. Both the user name and password can have up to 16 alphanumeric characters.

Note: There is no default user password provided.

4. Select the new user's access level: Operator or Guest. Default is Operator.
5. Assign the user rights to this user for the operations that they can do remotely. Select one or more of the following rights:

- Select All
- Remote Parameters Settings
- Remote Advanced Operations
- Remote Bi-directional Audio
- Remote Shutdown/Reboot
- Remote Serial Port Control
- Remote: Notify Surveillance Center
- Remote Live View
- Remote Manual Record
- Remote PTZ Control
- Remote Playback
- Remote Video Download

6. Click **OK** to save the settings and return to the previous window.
7. Click **Save** to save the settings.

To modify a user:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > User Management > Users**. The *User Management* window appears.
2. Click the **Edit** button.
3. Make the desired changes, such as change the user rights.
4. Click **Save** to save the settings.

To delete a user:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > User Management > Users**. The *User Management* window appears.
2. Select the desired user and click the **Delete** button.
3. Confirm your choice and click **OK**.
4. Click **Save** to save the settings.

System information

To view device information:

1. From the menu toolbar, click **Configuration** and then **Remote Configuration > System Information**. The *System Information* window appears.
2. To view device information, click **Device Information**.

You can view the device name, model, serial number, firmware version, encoding version, web version, plugin version, number of channels, number of HDDs, number of alarm inputs, and number of alarm outputs.

The screenshot shows the 'Configuration' tab selected in the top toolbar. On the left, a tree view under 'System Information' has 'Device Info' highlighted. The main area, titled 'Device Information', displays the following fields:

Model	TVE-820
Serial No.	TVE-8200820190521CCWR234132746WCV
Firmware Version	V17.0FP1 build 190425
Encoding Version	V5.0 build 190422
Web Version	V4.0.52 build 190419
Plugin Version	V3.0.6.5101
Number of Channels	8
Number of HDDs	0
Number of Alarm Input	8
Number of Alarm Output	4

3. To view camera information, click **Camera**.

You can view the information on each camera: Camera number, camera name, status, motion detection, tamper proof, video loss, preview link sum, and preview link information.

Preview link sum shows the amount of rote applications that are streaming video from this video channel. Preview link information shows you the IP addresses that are currently connected to this channel.

The screenshot shows the 'Configuration' tab with 'Camera' selected in the left tree view. The main area displays a table of camera information with a 'Refresh' button in the top right corner.

No.	Camera Name	Status	Motion Detection	Camera Tamper	Video Loss	Preview Link Sum	Preview Link Info
A1	Camera 01	Enabled	Not used	Not used	Not used	0	
A2	Camera 02	Enabled	Not used	Not used	Not used	0	
A3	Camera 03	Enabled	Not used	Not used	Not used	0	
A4	Camera 04	Enabled	Not used	Not used	Not used	0	
A5	Camera 05	Enabled	Not used	Not used	Not used	0	
A6	Camera 06	Enabled	Not used	Not used	Not used	0	
A7	Camera 07	Enabled	Not used	Not used	Not used	0	
A8	Camera 08	Enabled	Not used	Not used	Not used	0	

4. To view record information, click **Record**.

You can view the camera number, recording status, stream type, frame rate, bit rate (Kbps), resolution, record type, and active encoding parameters.

The screenshot shows the 'Configuration' page with the 'Record' section selected. The left sidebar lists various configuration options, with 'Record' highlighted. The main area displays a table of recording parameters for eight cameras (A1-A8).

No.	Recording Status	Stream Type	Frame Rate	Bitrate (Kbps)	Resolution	Record Type	Active Schedule
A1	Idle	Video	Max. Frame...	1536	1280*720(HD720P)		TL-Hi
A2	Idle	Video	Max. Frame...	2048	1920*1080(1080P)		TL-Hi
A3	Idle	Video	Max. Frame...	1536	1280*720(HD720P)		TL-Hi
A4	Idle	Video	Max. Frame...	2048	1920*1080(1080P)		TL-Hi
A5	Idle	Video	Max. Frame...	2048	1920*1080(1080P)		TL-Hi
A6	Idle	Video	Max. Frame...	2048	1920*1080(1080P)		TL-Hi
A7	Idle	Video	Max. Frame...	2048	1920*1080(1080P)		TL-Hi
A8	Idle	Video	Max. Frame...	2048	1920*1080(1080P)		TL-Hi

5. To view alarm input information, click **Alarm Inputs**.

You can view the alarm input number, alarm name, alarm type, alarm status, and triggered camera.

The screenshot shows the 'Configuration' page with the 'Alarm Inputs' section selected. The left sidebar lists various configuration options, with 'Alarm Input' highlighted. The main area displays a table of alarm input parameters for eight cameras (A<-1 to A<-8).

Alarm No.	Alarm Name	Alarm Type	Status	Triggered Camera
A<-1		NO	Disabled	
A<-2		NO	Disabled	
A<-3		NO	Disabled	
A<-4		NO	Disabled	
A<-5		NO	Disabled	
A<-6		NO	Disabled	
A<-7		NO	Disabled	
A<-8		NO	Disabled	

6. To view alarm output information, click **Alarm Outputs**.

You can view the alarm output number, alarm name, and alarm status.

The screenshot shows the 'Configuration' page with the 'Alarm Outputs' section selected. The left sidebar lists various configuration options, with 'Alarm Output' highlighted. The main area displays a table of alarm output parameters for four cameras (A->1 to A->4).

Alarm No.	Alarm Name	Status
A->1		Enabled
A->2		Enabled
A->3		Enabled
A->4		Enabled

7. To view network information, click **Network**.

You can view the IPv4 address, IPv4 subnet mask, IPv4 default gateway, IPv6 address, IPv6 default gateway, preferred DNS server, alternate DNS server, enable DHCP, MAC address, enable PPPoE, HTTP port, RTSP service port, server port, and multicast IP.

The screenshot shows the 'Configuration' tab selected in the top navigation bar. On the left, a tree view shows 'Network' highlighted under 'System Information'. The main area displays the 'Network' configuration page. It includes a 'Refresh' button and a table with network settings for 'Select NIC' and 'LAN1'.

Select NIC	LAN1
IPv4 Address	10.46.56.180
IPv4 Subnet Mask	255.0.0.0
IPv4 Default Gateway	10.0.0.1
IPv6 Address	fe80::9ef6:1aff:fe8c:9541
IPv6 Default Gateway	
Preferred DNS Server	10.0.0.1
Alternate DNS Server	8.8.8.8
Enable DHCP	Enabled
MAC Address	9c:f6:1a:8c:95:41
Enable PPPoE	Disabled
HTTP Port	80
RTSP Service Port	554
Server Port	8000
Multicast IP	

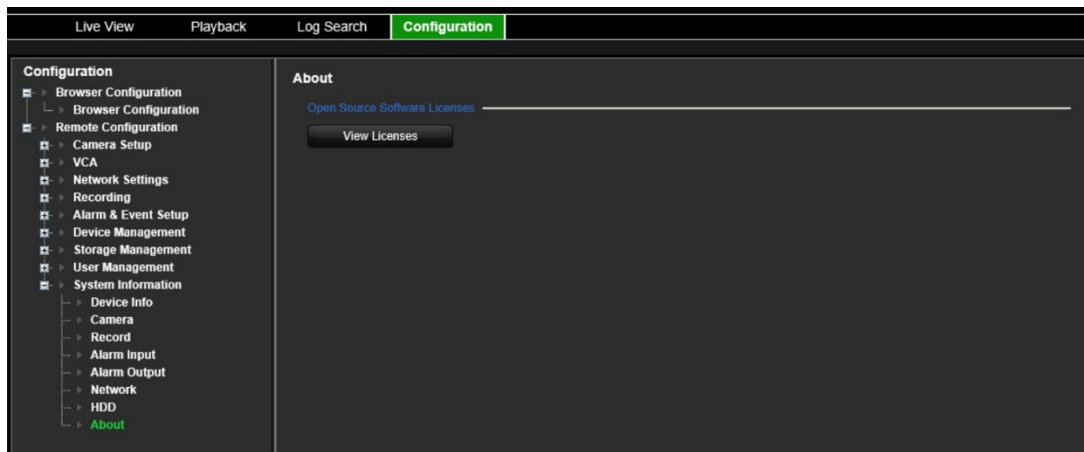
8. To view HDD information, click **HDD**.

You can view the HDD label, status, capacity, free space, status, type, and property. Both total capacity and free space are also displayed. You can also see the recorded time in days.

The screenshot shows the 'Configuration' tab selected in the top navigation bar. On the left, a tree view shows 'HDD' highlighted under 'System Information'. The main area displays the 'HDD Information' page. It includes a 'Refresh' button and a table with HDD information.

Label	Capacity	Free space	Status	Type	Property
Total Capacity	0.00GB				
Free Space	0.00GB				
Recorded Time	0				Day(s)

9. To view the license agreement, click **About > View Licenses**.



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```

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Linux kernel 3.10.0
busybox 1.20.2
u-boot 2010.06
udev 164
iproute2 - Linux Foundation 2.6.23
IPTables 1.4.19.1
NTFS-3G Read/Write Driver 2011.4.12
ppp - Pauls PPP Package 2.4.3
PPPP OE 3.1
open-iscsi 2.0-870

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```

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openal

```

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```

libevent 2.0.16-stable
libxls 1.3.3
libUPnP 1.6.18
xlib 2.3.4

```

System log

Many events of the encoder, such as operation, alarm, and notification, are logged into the system logs. They can be viewed and exported at any time.

The logs can be accessed from the CD card (1- and 4-ch encoders only) as well as the NAS.

Up to 2000 log files can be viewed at once.

Log files can also be exported onto a USB device. The exported file is named according to the time it was exported. For example: 20140729124841logBack.txt.

Note: Connect the backup device, such as a USB flash drive, to the recorder before commencing the log search.

To search video from the system log:

1. Click **Log Search** in the menu bar. The *Log Search* window appears.
2. Select the search start and end date and times.
3. Under **Event**, select an option from the drop-down list: All, Alarm, Notification, Operation, or Information.
4. From the **Type** list, select one of the options:

Event	Type
All	All
Alarm	All Types, Alarm Input, Alarm Output, Start Motion Detection, Stop Motion Detection, Start Camera Tamper, Stop Camera Tamper, Cross Line Alarm Started, Cross Line Alarm Stopped, Audio Exception Alarm Started, Audio Exception Alarm Stopped, Sudden Change of Sound Intensity Alarm Started, Sudden Change of Sound Intensity Alarm Stopped, Sudden Scene Change Alarm Started, Sudden Scene Change Alarm Stopped
Notification	All Types, Video Loss Alarm, Abnormal Video Signal, Illegal Login, HDD Full, HDD Error, Duplicate IP Address Found, Network Disconnected, Abnormal Record
Operation	All Types, Power Up, Abnormal Shutdown, Watchdog Reboot, Remote: Shutdown, Remote: Reboot, Remote: Login, Remote: Logout, Remote: Configure Parameters, Remote: Upgrade, Remote: Start Manual Recording, Remote: Stop Manual Recording, Remote: PTZ Control, Remote: Trigger Alarm Output, Remote: Initialize HDD, Remote: Add IP Camera, Remote: Delete IP Camera, Remote: Playback by File, Remote: Playback by Time, Remote: Download by File, Remote: Download by Time, Remote: Export Config File, Remote: Import Config File, Remote: Remote: Get Parameters, Remote: Get Working Status, Start Bi-directional Audio, Stop Bi-directional Audio, Remote: Alarm Arming, Remote: Alarm Disarming, Remote: Add Network Storage, Remote: Delete Network Storage, Remote: Set Network Storage
Information	All Types, Start Recording, Stop Recording, Network Storage Information, System Running Status

5. Click the **Search** button. A list of results appears.
6. Select a file and click:

- **Details:** Displays information on the log or recording. For a recording, it lists such information as start time, type of event, local user, host IP address, parameter type, camera number, and gives a description on the types of events recorded and when record time was stopped.

- **Play:** Click to start playback of the selected recording.

- **Export:** Click to archive the selected file to a USB device. The Export window appears.

7. Click **Exit** to return to live view.

Specifications

Model	TVE-120	
Video/Audio input	Video compression	Main stream: H.264/H.265 Substream: H.265/H.264/MJEG
	Analog video input	1-ch, BNC connector (1.0 Vp-p, 75 Ω), supporting coaxitron connection
	Audio compression	G.711u
	Bi-directional audio input	1-ch, RCA (2.0 Vp-p, 1 KΩ) (using first audio input)
	Audio input	1-ch, 3.5mm interface (2.0 Vp-p, 1 KΩ) (LINE IN)
	Audio output	1-ch, RCA (Linear, 1 K Ω)
Video/Audio output	Frame rate	Main stream: 5 MP@12 fps / 4 MP@ 15 fps / 3 MP @ 18 fps / 1080p / 720p / WD1 / 4CIF / VGA / CIF @ 25 fps (P) / / 30 fps (N) Substream: WD1 / 4CIG / CIF @ 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps to 10 Mbps
	Audio bit rate	64 Kbps
	Dual stream	Main stream: 5 MP / 4 MP / 3 MP / 1080p / 720p / WD1 / 4CIF / VGA/ CIF
	Synchronous playback	1-ch
External interface	Network interface	1 RJ45 10 M/100 M Ethernet port
	Serial port	1 RS-485 interface, half-duplex 1 RS-232 interface
	Alarm in	1
	Alarm out	1
Others	Protocols	TCP/IP, PPPoE, DHCP, DNS, DDNS, NTP, SADP, SMTP, NFS, UPnP™, HTTPS, ONVIF, profile S
	Consumption	≥15 W
	Power source	12 VDC, PoE
	Built-in storage	Built-in micro SD slot, up to 128 GB
	Operating temperature	-10 to +55 C° (14 to 131 °F)
	Operating humidity	10 to 90%
	Dimensions	162.5 × 114 × 47.5 mm (6.4 × 4.5 × 1.9 in.)
	Weight	1.5 kg (3.3 lb.)

Model	TVE-420	
Video/Audio input	Video compression	Main stream: H.264/H.265 Substream: H.265/H.264/MJEG
	Analog video input	4-ch, BNC connector (1.0 Vp-p, 75 Ω), supporting coaxitron connection
	Audio compression	G.711u
	Bi-directional audio input	1-ch, RCA (2.0 Vp-p, 1 KΩ) (using first audio input)
	Audio input	4-ch, RCA (2.0 Vp-p, 1 KΩ)
	Audio output	1-ch, RCA (Linear, 1 KΩ)
Video/Audio output	Frame rate	Main stream: 5 MP@12 fps / 4 MP@ 15 fps / 3 MP @ 18 fps / 1080p / 720p / WD1 / 4CIF / VGA / CIF @ 25 fps (P) / / 30 fps (N) Substream: WD1 / 4CIF / CIF @ 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps to 10 Mbps
	Audio bit rate	64 Kbps
	Dual stream	Main stream: 5 MP / 4 MP / 3 MP / 1080p / 720p / WD1 / 4CIF / VGA/ CIF
	Synchronous playback	4-ch
External interface	Network interface	1 RJ45 10 M/100 M Ethernet port
	Serial port	1 RS-485 interface, half-duplex 1 RS-232 interface
	Alarm in	4
	Alarm out	2
Others	Protocols	TCP/IP, PPPoE, DHCP, DNS, DDNS, NTP, SADP, SMTP, NFS, UPnP™, HTTPS, ONVIF, profile S
	Consumption	≥15 W
	Power source	12 VDC, PoE
	Built-in storage	Built-in micro SD slot, up to 128 GB
	Operating temperature	-10 to +55 C° (14 to 131 °F)
	Operating humidity	10 to 90%
	Dimensions	162.5 × 114 × 47.5 mm (6.4 × 4.5 × 1.9 in.)
	Weight	1.5 kg (3.3 lb.)

Model	TVE-820	
Video/Audio input	Video compression	Main stream: H.264/H.265 Substream: H.265/H.264/MJEG
	Analog video input	8-ch, BNC connector (1.0 Vp-p, 75 Ω), supporting coaxitron connection
	Audio compression	G.711u
	Bi-directional audio input	1-ch, RCA (2.0 Vp-p, 1 KΩ) (using first audio input)
	Audio input	4-ch, RCA (2.0 Vp-p, 1 KΩ)
	Audio output	1-ch, RCA (Linear, 1 K Ω)
Video/Audio output	Frame rate	Main stream: 5 MP@12 fps / 4 MP@ 15 fps / 3 MP @ 18 fps / 1080p / 720p / WD1 / 4CIF / VGA / CIF @ 25 fps (P) / / 30 fps (N) Substream: WD1 / 4CIF / CIF @ 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps to 10 Mbps
	Audio bit rate	64 Kbps
	Dual stream	Main stream: 5 MP / 4 MP / 3 MP / 1080p / 720p / WD1 / 4CIF / VGA/ CIF
	Synchronous playback	8-ch
External interface	Network interface	1 RJ45 10 M/100 M Ethernet port
	Serial port	1 RS-485 interface, half-duplex 1 RS-232 interface
	Alarm in	8
	Alarm out	4
Others	Protocols	TCP/IP, PPPoE, DHCP, DNS, DDNS, NTP, SADP, SMTP, NFS, UPnP™, HTTPS, ONVIF, profile S
	Consumption	≤ 20 W
	Power source	12 VDC, PoE
	Built-in storage	None
	Operating temperature	-10 to +55 C° (14 to 131 °F)
	Operating humidity	10 to 90%
	Dimensions	380 × 320 × 48 mm (15.0 × 12.65 × 1.9 in.)
	Weight	2 kg (4.4 lb.)

Note: 19" rack brackets are included in the 8-channel model of the encoder.

Model	TVE-1620	
Video/Audio input	Video compression	Main stream: H.264/H.265 Substream: H.265/H.264/MJEG
	Analog video input	16-ch, BNC connector (1.0 Vp-p, 75 Ω), supporting coaxitron connection
	Audio compression	G.711u
	Bi-directional audio input	1-ch, RCA (2.0 Vp-p, 1 KΩ) (using first audio input)
	Audio input	4-ch, RCA (2.0 Vp-p, 1 KΩ)
	Audio output	1-ch, RCA (Linear, 1 KΩ)
Video/Audio output	Frame rate	Main stream: 5 MP@12 fps / 4 MP@ 15 fps / 3 MP @ 18 fps / 1080p / 720p / WD1 / 4CIF / VGA / CIF @ 25 fps (P) / / 30 fps (N) Substream: WD1 / 4CIF / CIF @ 25 fps (P) / 30 fps (N)
	Video bit rate	32 kbps to 10 Mbps
	Audio bit rate	64 Kbps
	Dual stream	Main stream: 5 MP / 4 MP / 3 MP / 1080p / 720p / WD1 / 4CIF / VGA/ CIF
	Synchronous playback	16-ch
External interface	Network interface	1 RJ45 10 M/100 M Ethernet port
	Serial port	1 RS-485 interface, half-duplex 1 RS-232 interface
	Alarm in	16
	Alarm out	4
Others	Protocols	TCP/IP, PPPoE, DHCP, DNS, DDNS, NTP, SADP, SMTP, NFS, UPnP™, HTTPS, ONVIF, profile S
	Consumption	≤ 25 W
	Power source	12 VDC, PoE
	Built-in storage	None
	Operating temperature	-10 to +55 C° (14 to 131 °F)
	Operating humidity	10 to 90%
	Dimensions	380 × 320 × 48 mm (15.0 × 12.65 × 1.9 in.)
	Weight	2 kg (4.4 lb.)

Note: 19" rack brackets are included in the 16-channel model of the encoder.

Appendix: Supported devices

Cameras

TruVision HD-TVI cameras up to 5MPx

Decoders

TVE-DEC12

Recorders

TVN 10 series

TVN 11 series

TVN 21 series

TVN 22 series

TVN 70 series

TVN 71 series