








TruVision DVR 12 User Manual

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Chapter 1

Product introduction

Product overview

The recorder is a versatile, user-friendly embedded digital video recorder (DVR). It allows end-users to record 4, 8, or 16 analog cameras at CIF in real time (25/30 fps), while providing integration with the UTC portfolio of security solutions, and offering a seamless product experience within the TruVision brand.

The dual streaming functionality allows the user to set up different settings for recording and streaming video in live view mode.

The recorder can fully integrate with the license-free TruVision Navigator software, which is ideal for the most commercial applications. Its easy and intuitive-to-use web browser interface enables remote configuration and secure viewing, searching, and playing back of video from computers connected via the Internet.

Note: Models are shipped with the power cords for their region.

Default settings to access the device

Default user names and passwords

See Table 1 on page 6 for the list of default user names and passwords. Go to Chapter 15 “User management” on page 111 for further information.

Table 1: Default user names and passwords

User	Description
Administrator	There can only be one administrator. The user name is admin. The name cannot be modified. The default password is 1234.
Operator	The default user name is "operator". The default password is 2222.
Guest	The default user name is "guest". The default password is 3333.

Note: The default passwords should be changed for security reasons.

Default network settings

The default values for TVR 12 network settings are:

- IP address - 192.168.1.82
- Subnet mask - 255.255.255.0
- Gateway address - 192.168.1.1
- Ports:

When using the browser:

RTSP port: 554

HTTP port: 80

When using TruNav:

RTSP port: 554

Server/Client software port: 8000

Go to Chapter 16 "Using the web browser" on page 116 for further information.

Chapter 2

Installation

This section describes how to install the recorder.

Installation environment

When installing your product, consider these factors:

- Ventilation
- Temperature
- Moisture
- Chassis load

Ventilation: Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Ensure that the location planned for the installation of the unit is well ventilated.

Temperature: Consider the unit's operating temperature (-10 to +55 °C, 14 to 131 °F) and noncondensing humidity specifications (10 to 90%) before choosing an installation location. Extremes of heat or cold beyond the specified operating temperature limits may reduce the life expectancy of the recorder. Do not install the unit on top of other hot equipment. Leave 44 mm (1.75 in.) of space between rack-mounted recorders.

Moisture: Do not use the unit near water. Moisture can damage the internal components. To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

Chassis: Equipment weighing less than 15.9 kg (35 lb.) may be placed on top of the unit.

Unpacking the recorder and its accessories

When you receive the product, check the package and contents for damage, and verify that all items are included. There is an item list included in the package. If any of the items are damaged or missing, please contact your local supplier.

Items shipped with the product include:

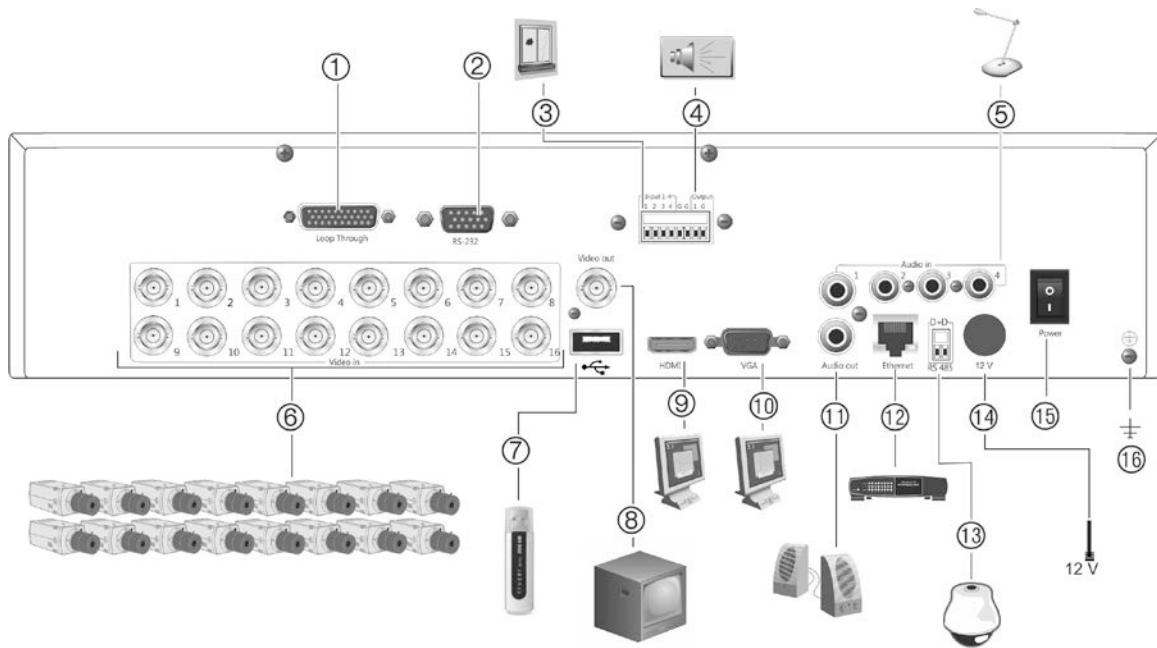
- IR (infrared) remote control
- Two AAA batteries for the remote control
- AC power cords
- 12 VDC PSU
- USB mouse
- TVR 12
- Video loop through cable
- CD with software and manuals
- *TruVision DVR 12 Quick Start Guide*
- *TruVision DVR 12 User Manual* (on CD)
- *TruVision Recorder Operator Guide* (on CD)

Back panel

The figures on the next page show the back panel connections and describe each connector on typical TVR 12 digital video recorder. Details may vary for specific models.

Before powering up the recorder, connect the cameras and a main monitor for basic operation. Once all required connections are done, enter the relevant data in the setup wizard (see page 18).

Figure 1: TVR 12 back panel connections (16-channel model shown)



- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Loop through for up to 16 analog cameras (depends on recorder model). 2. Connect to a RS-232 device. 3. Connect up to four alarm inputs. 4. Connect one alarm relay output. 5. Connect four audio inputs to RCA connectors. 6. Connect up to 16 analog cameras to BNC connectors (depends on the recorder model). 7. Connect to an optional USB device such as a mouse, CD/DVD burner or HDD. The recorder supports both a USB DVD and a USB HD on the front and rear USB ports. | <ol style="list-style-type: none"> 8. Connect one CCTV monitor (BNC-type connector). 9. Connect to a HDTV. The HDMI connection supports both digital audio and video. 10. Connect to a VGA monitor. 11. Connect to speakers for audio output. 12. Connect to a network. 13. Connect to a RS-485 device such as a PTZ camera or a keypad. 14. Connect to the 12 VDC PSU (enclosed).. 15. Power switch (on/off). 16. Connect to ground. |
|---|--|

Monitor connections

Connect a monitor to one of the recorder's outputs (BNC/VGA/HDMI). The recorder provides a 1 Vp-p CVBS signal. See Figure 1 above for connecting a monitor to a recorder.

The recorder supports up to 1920 × 1080 / 60 Hz resolution in VGA. The monitor resolution should be at least 1024 × 768. Adjust your monitor accordingly to this resolution.

Audio inputs and output

The unit is equipped with four audio inputs and one audio output. Both the audio output and the audio inputs are line-level.

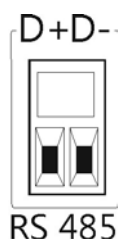
Audio input	RCA jack, 315 mV, 40 kohms. Unbalanced
Audio output	RCA jack, 315mV, 600 ohms. Unbalanced

Note: Line-level audio requires amplification.

RS-485 port

There is one RS-485 port on the back panel of the recorder to connect a PTZ dome camera or keypad. See Figure 3 for the serial pin outs.

Figure 2: RS-485 pin outs



D+: Connect to the RS-485 A connection on the dome camera or keypad.

D-: Connect to the RS-485 B connection on the dome camera or keypad.

RS-232 port

Use the RS-232 port to connect CBR-PB3-POS (point-of-sale) and ATM devices to the recorder such as the UTC ProBridge accessory. See “Configuring the RS-232 port” on page 102 for more information.

PTZ dome camera set up

Use the USB mouse provided or the optional keypad for local telemetry control. If using the recorder over a network, use the web browser to control the PTZ dome cameras or TruVision Navigator.

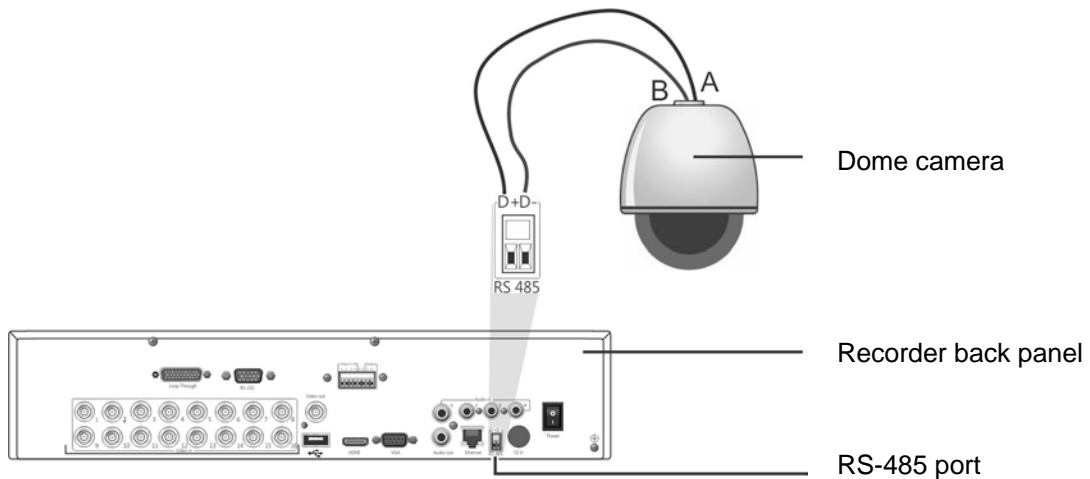
See Appendix B on page 130 for the supported protocols, and Appendix F on page 143 for the PTZ commands supported by each protocol.

Each PTZ camera must be set up individually. For information on configuring PTZ dome camera settings, see Chapter 10, “Controlling a PTZ camera” on page 79.

Connecting a PTZ dome camera

See Figure 4 below for how to connect a PTZ camera to the recorder. Any PTZ dome camera can be controlled as the recorder is doing the PTZ protocol translation. However, this setup provides only limited dome configuration (see Appendix B on page 130 for the list of approved PTZ protocols).

Figure 3: Connecting a PTZ dome camera to the recorder for control over the network



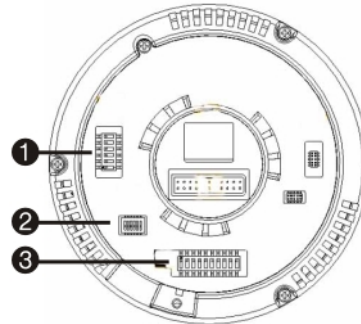
Configuring the PTZ protocols for Interlogix cameras

Before the PTZ dome cameras are assembled in their housings, set their protocol and address DIP switches for the recorder. See Table 3 on page 12 for different Interlogix PTZ dome camera settings.

If you are using PTZ dome cameras from another company, please refer to their configuration instructions.

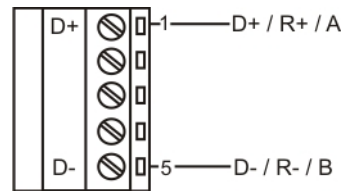
Table 2: PTZ protocols for Interlogix cameras

Camera	Switch setting	
TruVision Mini PTZ 12X: Indoor Dome	Protocol DIP switches:	
	<ul style="list-style-type: none"> • RS-485 (on recorder): 000000 • RS-422 (on I/O box): 100000 	
	RS-485 communication DIP switches:	110000
	Camera ID DIP switches:	Select the camera ID DIP switch address as required

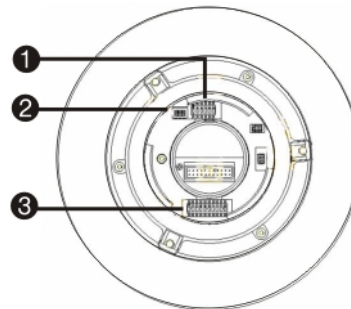


1. Protocol DIP switches
2. RS-485 communication DIP switches
3. Camera ID DIP switches

RS-422/RS-485 data connector:

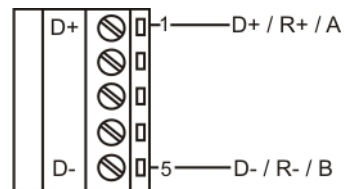


TruVision Mini PTZ 12X: Outdoor Dome	Protocol DIP switches:	
	<ul style="list-style-type: none"> • RS-485 (on recorder): 000000 • RS-422 (on I/O box): 100000 	
	RS-485 communication DIP switches:	110000
	Camera ID DIP switches:	Select the camera ID DIP switch address as required.

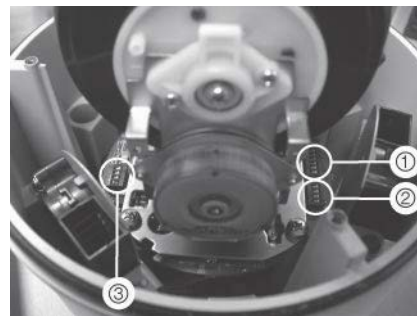


1. Protocol DIP switches
2. RS-485 communication DIP switches
3. Camera ID DIP switches

RS-422/RS-485 data connector:

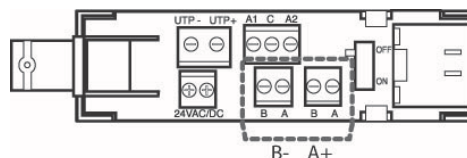


Camera	Switch setting
TruVision Dome 16X PTZ	<p>Protocol switches: 0111</p> <ul style="list-style-type: none"> • RS-485 (on recorder): • RS-422 (on I/O box): 1111 <hr/> <p>Address switches: Select the camera ID DIP switch address as required.</p> <hr/> <p>Baud rate: 0000 = 9600 bps 0011 = 4800 bps</p>



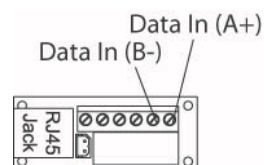
1. Address switches; 2. Baud switches; 3. Protocol switches

RS-422/RS-485 data connector:

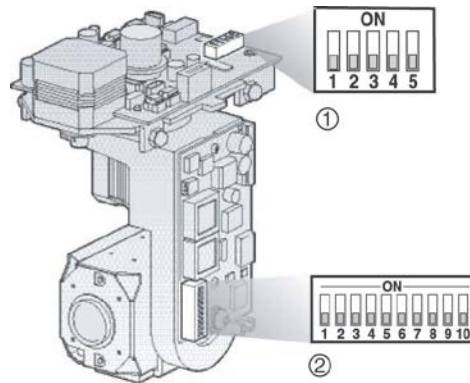


CyberDome	<p>Protocol switches: NA</p> <hr/> <p>Address switches: Select the camera ID DIP switch address as required.</p>	
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RS-485 data connector:

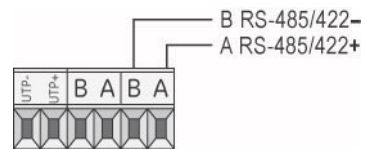


Camera	Switch setting
UltraView PTZ	<p>Protocol switches:</p> <ul style="list-style-type: none"> • RS-485 (on recorder): 01000 • RS-422 (on I/O box): 10000 <p>Address switches: Select the address switch address as required.</p>

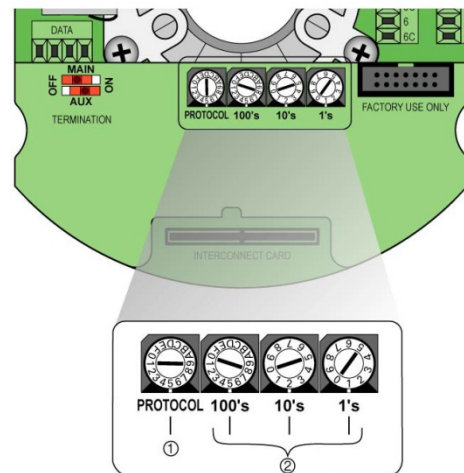


1. Protocol switches;
2. Address switches

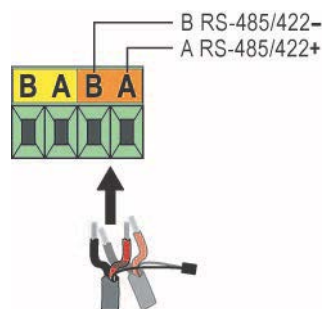
RS-422/RS-485 data connector:



Legend	<p>Protocol switches: 1</p> <ul style="list-style-type: none"> • RS-485 on recorder): • RS-422 (on I/O box): 0 <p>Address switches: Select the camera ID DIP switch address as required.</p>
--------	--



RS-422/RS-485 data connector:



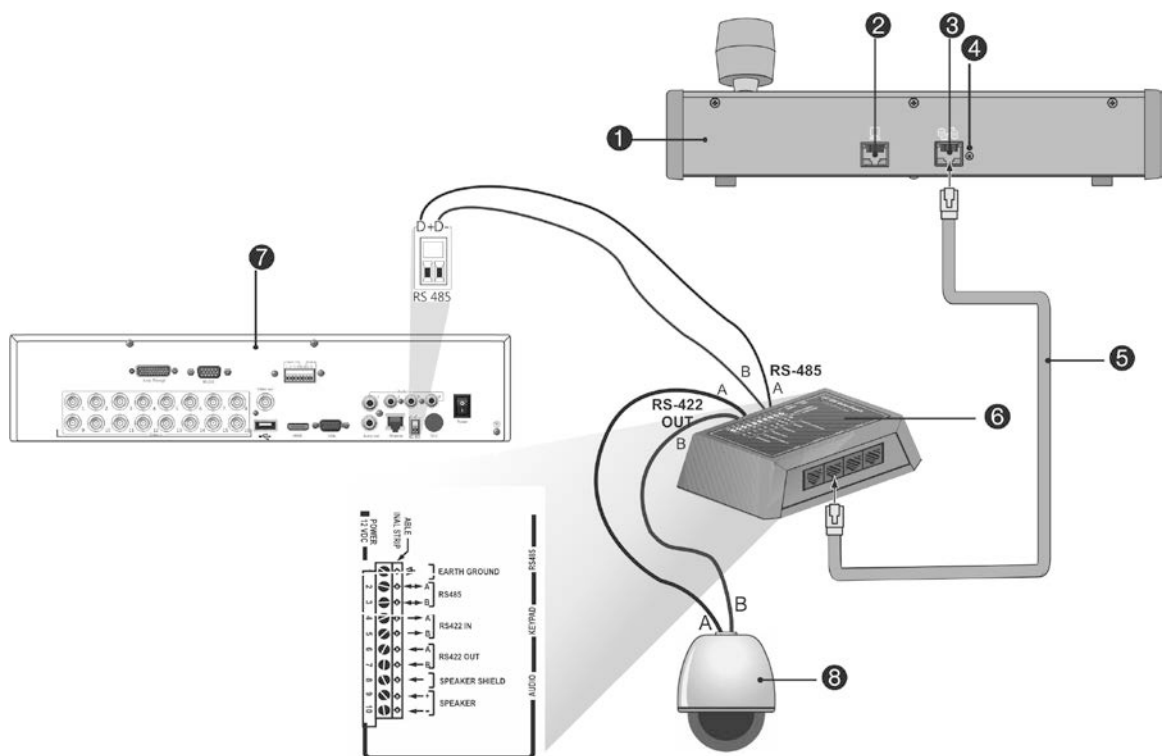
Connecting a KTD-405 keypad and dome camera to the recorder

Use the input/output box that is supplied with the keypad to connect the KTD-405 keypad to the recorder. See Appendix D “KTD-405 keypad” on page 133 for more information on wiring and using the KTD-405 keypad.

As the KTD-405 keypad uses full duplex data communication, you cannot connect the both keypad and a dome camera directly to the recorder from the RS-485 port as this could cause problems on the bus. If both devices are required, it is recommended that you use the keypad’s RS-422 connection to connect the dome camera and the keypad’s RS-485 connection to connect the recorder. See Figure 5 as well as Table 4 and Table 5 below.

Note: These connections only work with UTC PTZ protocols (see Appendix B on page 130). If you are using another manufacturer’s PTZ protocol, it is not possible to connect both a keypad and dome camera to the recorder.

Figure 4: Connecting a PTZ dome camera and KTD-405 keypad to the recorder



- | | |
|------------------------------|---|
| 1. KTD-405 keypad | 5. RJ45 cable control (use the cable provided with the equipment) |
| 2. RS-232 programming port | 6. I/O box |
| 3. RS-485 and RS-422 in/out | 7. Recorder back panel |
| 4. RS-485 termination switch | 8. Dome camera |

Table 3: UTC PTZ protocol settings

Dome: RS-422 protocol	TVR 12: Interlogix RS-485
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See Table 5 below for the bus addresses to consider when connecting a both keypad and dome camera to the recorder.

Table 4: Bus addresses

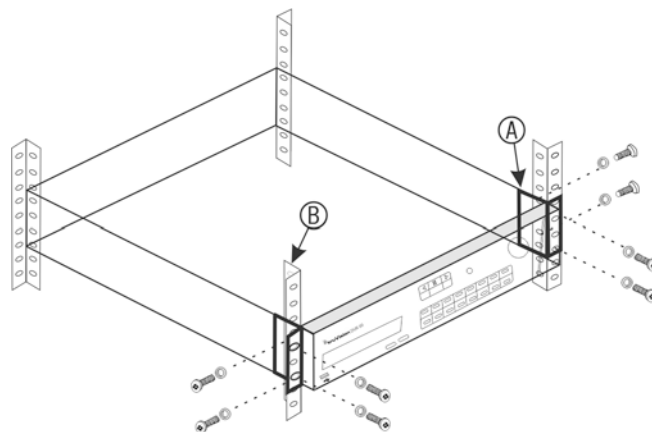
Recorder bus address	Recorder video inputs	PTZ address range
1	1-32	00-31
2	1-32	32-63
3	1-32	64-95
4	1-32	96-127
5	1-32	128-159
6	1-32	160-191
7	1-32	192-223
8	1-32	224-255

Brackets

The recorder is easily rack-mountable. It has a 1.5U chassis.

See Figure 6 below.

Figure 5: Rack-mount installation



To install the racks:

1. Attach the two small front-rack mount ears (A) to the recorder (screws are supplied).
2. Attach the recorder to the front rails (B) (screws are not supplied).

Chapter 3

Getting started

Turning on and off the recorder

Before starting the power up process, connect at least one monitor to the video out or the VGA interface. Otherwise, you will not be able to see the user interface and operate the device. Also connect at least one camera.

The recorder auto-detects the video mode (PAL or NTSC) on startup.

It comes equipped with a universal power supply that will auto-sense 110/240 V, 60/50 Hz.

Note: It is recommended that an uninterruptible power supply (UPS) is used in conjunction with the device.

To turn on the recorder:

Turn on the recorder using the power switch on the back panel. Once it is powered up, the status LEDs on the front panel will light up. All connected cameras are displayed on-screen. The recorder automatically begins recording.

To turn off the recorder:

1. In live view mode, right-click the mouse and click **Menu**. The main menu window appears.
2. Select the **Power Manager** icon.
3. In the Shutdown popup menu, select **Shutdown**. Click **Yes** to confirm shutdown.

To reboot the recorder:

1. In live view mode, right-click the mouse and click **Menu**. The main menu window appears.
2. Select the **Power Manager** icon.
3. In the Shutdown popup menu, select **Reboot**. Click **Yes** to confirm shutdown.

Using the setup wizard

The TVR 12 has an express installation wizard that lets you easily configure basic recorder settings when first used. It configures all cameras simultaneously. The configuration can then be customized as required.

By default the setup wizard will start once the recorder has loaded. It will walk you through some of the more important settings of your recorder.

Any changes you make to a setup configuration page are saved when you exit the page and return to the main wizard page.

Note: If you want to set up the recorder with default settings only, click **Next** in each screen until the end.

To quickly set up the recorder:

1. Connect all the devices required to the back panel of the recorder. See Figure 1 on page 9.
2. Turn on the unit using the power switch on the front panel. After the boot up screen, the recorder displays video images on screen.
3. Select the preferred language for the system from the dropdown list and then click **Next**.
4. Enable or disable the option to start the wizard automatically when the recorder is turned on. Click **Next**.

5. Administrator configuration:

Navigate to the Admin Password edit box and click the edit box with the mouse, or press Enter on the front panel or remote control, to display the virtual keyboard. Enter the default admin password, 1234.

Note: You must enter an admin password. To change the Admin password, check **New Admin password** and enter the new password and confirm it.

Caution: It is strongly recommended that you change the password of the administrator. Do not leave 1234 as the default password. Write it down in a safe place so that you do not forget it.

If you should forget the password to your recorder, contact your supplier with the serial number of your recorder to obtain a secure code to reset it.

Click **Next**.

6. Time and date configuration:

Select the desired time zone, date format, system time, and system date.

Note: Daylight saving time (DST) cannot be configured from the Wizard. See “Configuring time and date” on page 74 for more information on DST.

Time Zone	(GMT-08:00) Pacific Time(U.S. & Canada)				
Date Format	MM-DD-YYYY				
Time Format	24-hour				
System Date	04-09-2014				
System Time	23:49:40				
Enable DST	<input type="checkbox"/>				
From	Apr	1st	Sun	2	: 00
To	Oct	last	Sun	2	: 00
DST Bias	60 Minutes				
Apply					
Previous		Next		Cancel	

Note: The system time and date are visible on screen. However, they do not appear in recordings.

Click **Next** to move to the next page, or **Previous** to return to the previous page.

7. Network configuration:

Configure your network settings such as the NIC type, IP address, subnet mask, UPnP, and default gateway. Enter the preferred DNS server address as well as the alternate one to use.

NIC Type	10M/100M Self-adaptive				
Enable DHCP	<input type="checkbox"/>				
IPv4 Address	192	.168	.1	.82	
IPv4 Subnet Mask	255	.255	.255	.0	
IPv4 Default Gateway					
Preferred DNS Server					
Alternate DNS Server					
UPnP Previous Next Cancel					

Click the UPnP button and enter the required values to set up UPnP (Universal Plug and Play).

Click **Next** to move to the next page, or **Previous** to return to the previous page.

8. HDD management:

Configure your HDD settings as required.

After configuring your HDD settings, click **Initialize** to initialize the HDD and **Next** to move to the next page, or **Previous** to return to the previous page.

9. Recording configuration:

Configure your recording settings as required. The settings apply to all cameras connected to the recorder. The window for “Advanced Record Settings” is shown below:



Check the **Constant Recording** checkbox for the recorder to record continuously all day. If left unchecked, the recorder will not record.

Check the **TL-Hi** check box and select its image resolution and frame rate.

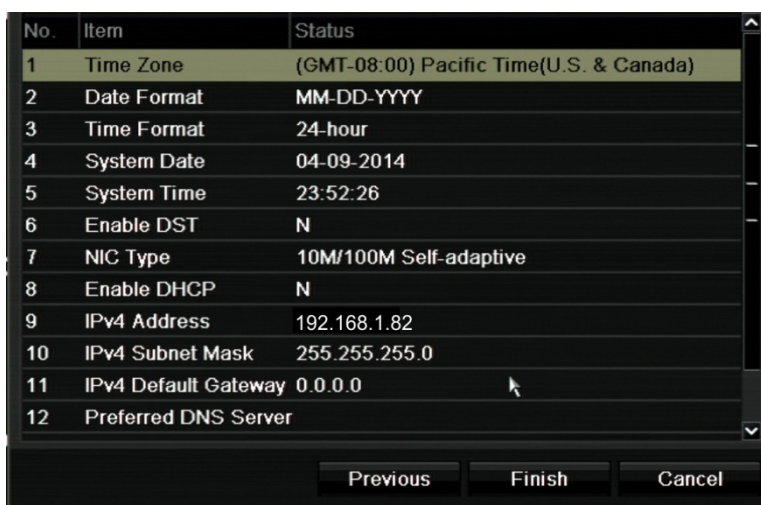
Check the **TL-Lo** check box and select its image resolution and frame rate.

To record motion detection events, check **Event (Motion)** and select the image resolution and frame rate.

To record alarm events, check **Alarm** and select the image resolution and frame rate.

Click **Camera name** to enter the camera name. A soft keyboard will appear to enter the characters.

10. When all the required changes have been entered, a page appears showing all the settings.



Click **Finish** to exit the Wizard. The recorder is now ready to use.

For a description of the recorder main menu, see “Menu overview” on page 62.

Chapter 4

Recording

This chapter provides instructions on how to define the recording settings of your recorder. This chapter covers how you can configure your initial recording settings, schedule recordings, and protect your recorded files.

Enter menu mode by pressing the Menu button on the front panel or use the mouse menu to select Menu (see “Controlling live view” on page 66 for further information). See Menu overview on page 62 for a list of the menu icons.

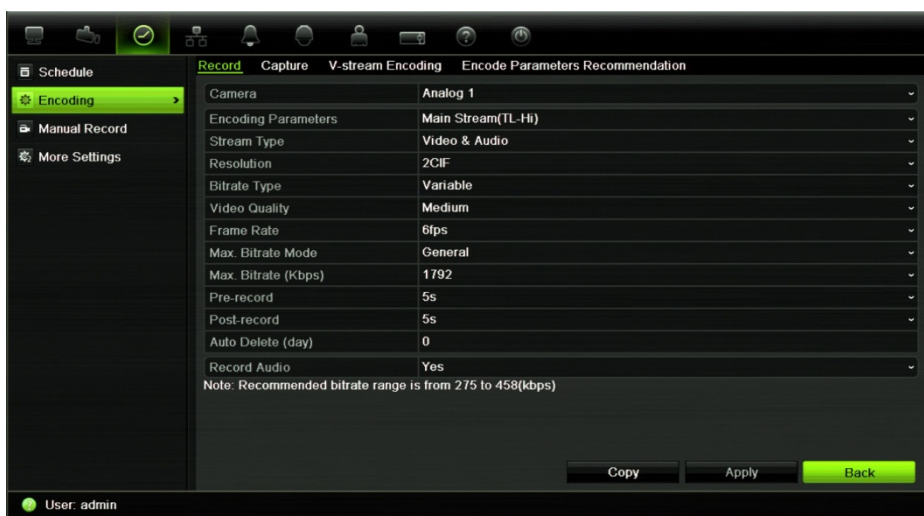
Initializing the recording settings

Before you can set up your recorder to begin recording, you must first configure general recording settings for the analog cameras.

Ensure that the HDD has been installed and initialized before configuring the recording settings. See Chapter 7 “HDD management” on page 49 for more information.

To configure recording settings:

1. From the menu toolbar, click **Video Schedule > Encoding > Record**.



2. Select the camera you want to configure.

3. Configure the following recording settings:

- **Encoding parameters:** Select one of the stream types: Main stream (TL-Hi), Main stream (TL-Lo), Main stream (Event), Main stream (Alarm), or Substream.
- **Stream type:** Select the type of stream to record, either video or video and audio.
- **Resolution:** Select the resolution of the recording. Options include: 4CIF, 2CIF, CIF, QCIF and 960H.
- **Bit rate type:** Select Constant or Variable.
- **Video quality:** Select the quality at which to record. If “Constant” was selected as the bit rate type, this option is unavailable.
- **Frame rate:** Select the recording frame rate. The options available depend on the resolution selected.
- **Max bit rate mode:** Select the general default or customized option.
- **Max bit rate (kbps):** If the customized maximum bit rate mode was selected, enter the value here. It must be between 32 and 3172 kbps. It is calculated from the frame rate and time required.
- **Pre-record:** This is the time the camera starts recording before the event. Select the time in seconds to start pre-recording before the event.

The maximum pre-recording times available depend on the constant bit rate. See “Maximum pre-recording times” on page 141 for more information.
- **Post-record:** This is the time the camera continues to record after the event. Select the time in seconds to stop post-recording after the event.
- **Auto-delete (day):** Select the number of days after which recorded video from the specified camera is permanently deleted from the HDD. A “day” is defined as the 24-hour period from when the auto delete mode (ADM) was set.

The maximum number of days that can be set is 60. However, the actual number of days permitted depends on the HDD capacity. If the value is set to ‘0’, the option is disabled.
- **Record audio:** Select **Yes** to record sound with the images.

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

5. If you want to save these parameters to another camera, click **Copy** and select the camera in the pop-up window that appears. Click **OK** and return to the main window.

6. Click the **Capture** tab and configure the settings for captured image, such as resolution. Click **Apply** to save the settings.

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

Configuring overwrite

You can select how the recorder responds when the HDDs become full and there is no longer sufficient space to save new data.

To configure for overwrite when the HDDs are full:

1. From the menu toolbar, click **Video Schedule > More Settings**.
2. Under **Overwrite**, select **Yes**.

Prioritizing events

You can define the priority between text insertion event and motion alarm if both are triggered at the same time. Default is motion alarm has priority (Text In < Motion).

To prioritize events:

1. From the menu toolbar, click **Video Schedule > More Settings**.
2. Under **Event priority**, select **Text In > Motion** or **Text In < Motion** (default).

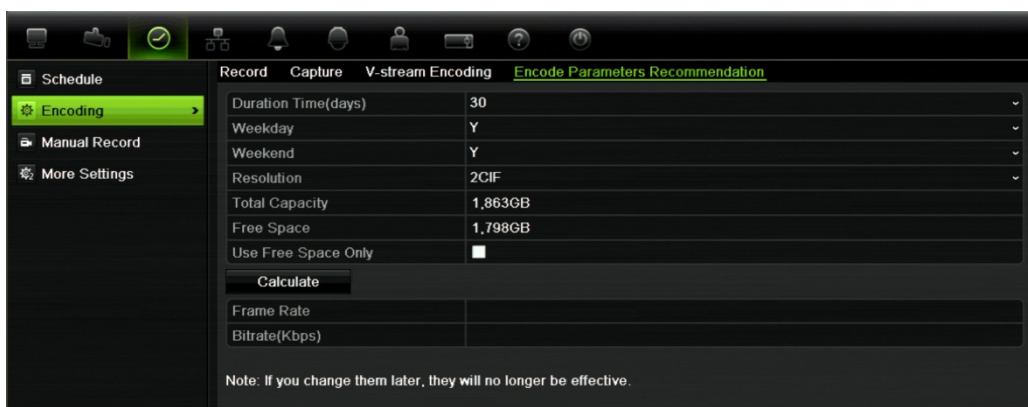
Calculating the maximum permitted frame rates and bit rates

You can easily calculate the correct frame rates, bit rates, and HDD free space required for your system.

Note: If you should later change any recording parameters, the calculated values will no longer apply.

To configure recording settings:

1. From the menu toolbar, click **Video Schedule > Encoding > Encode Parameters Recommendation**.



2. Enter the number of days to be recorded and the resolution. Also specify whether the recording period will include weekdays and weekends.
3. Click **Calculate**. The recommended maximum values for the frame rate, bit rate, and HDD free space are then displayed.

Use this information when setting the recording parameters.

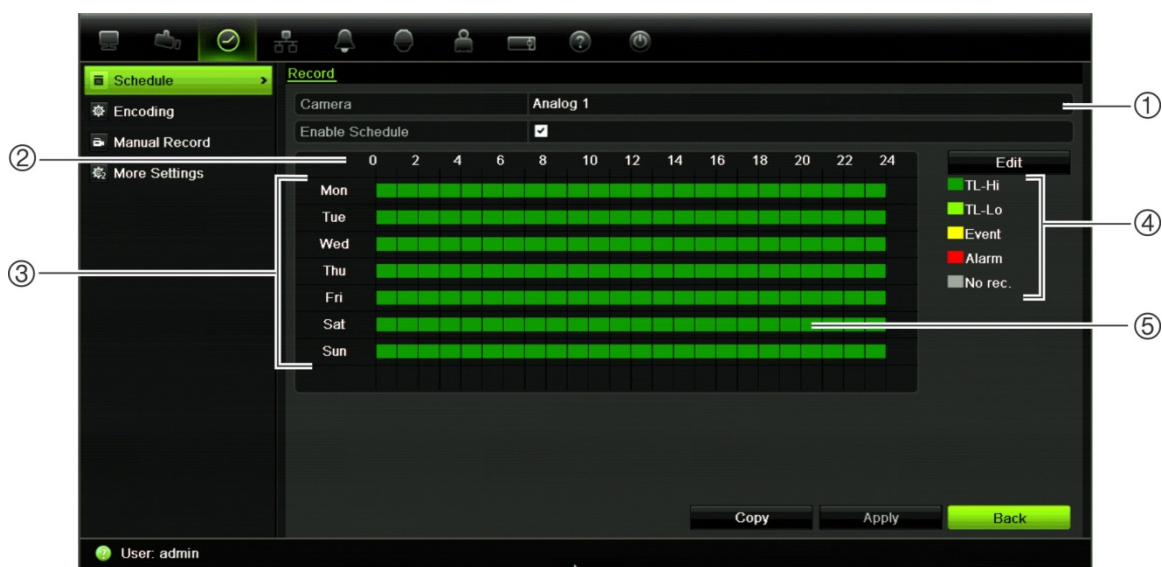
Note: This option is not available via the browser.

Defining a recording schedule

Defining a recording schedule lets you specify when the recorder records video and under what circumstances. Each camera can be configured to have its own recording schedule.

The schedules are visually presented on a map for easy reference. See Figure 6 below for an example.

Figure 6: Description of the schedule window

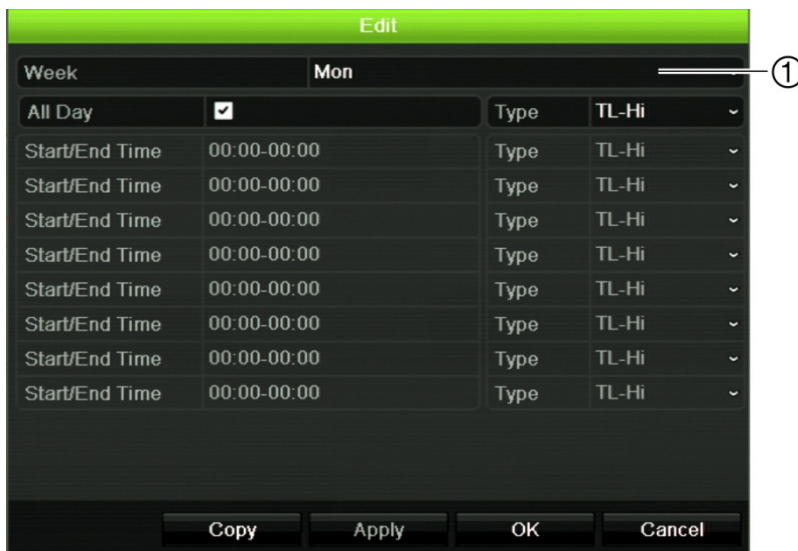


1. **Camera.** Select a camera.
2. **Schedule time.** Represents the 24-hour cycle during which a schedule is selected.
3. **Schedule day.** There are eight days to select: Sunday (Sun), Monday (Mon), Tuesday (Tue), Wednesday (Wed), Thursday, (Thu), Friday (Fri), Saturday (Sat) and Holiday (if Holiday has been enabled).
4. **Recording type.** There are five recording types to select, which are color-coded:
 - TL Time lapse (Green squares): Record of a specific day. Each green square in the timeline represents an hour in the 24-hour period.
 - TL-Hi (Dark green): High quality time lapse. Records high quality video.
 - TL-Lo (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 and POS/ATM text insertion.
 - Alarm (Red): Records only alarms.
 - None (Grey): No recording during this period.
5. **Timeline.** There is a 24-hour time line for each day. Up to eight recording periods can be scheduled during the 24-hour period.

Daily schedules

To set up a daily recording schedule:

1. From the menu toolbar, click **Video Schedule > Schedule**.
2. Select a camera.
3. Check the **Enable Schedule** box.
4. Click **Edit**. The following window is displayed:



5. Select the day of the week (①) for which you want to set up the schedule.

You can define a different schedule for each day of the week.

Check **All Day** to select the whole week.

6. Set the start and end time for recording.

Define a time period by entering a start (left column) and end (right column) time. You can schedule up to eight time periods. Click **All Day** to record all day.

Note: Time periods defined cannot overlap.

7. Select a recording type.

This setting instructs the recorder to begin recording when an alarm is triggered. The recording type can be based on time and triggered by motion detection and/or an alarm. If set to TimeLapse (TL-Hi or TL-Lo), the recorder records continuously.

8. Click **Apply** to save settings

9. Repeat steps 4 to 8 for other days of the week or to copy the schedule settings to another day.

To copy the current schedule settings to another day of the week, click **Copy**. Select the number of the day of the week to which to copy the schedule. Click **OK** to save changes and return to the Edit window.

10. Repeat steps 4 to 9 for other cameras.
11. Click **Apply** to save the settings and then **OK** to return to the schedule window.

Holiday schedules

As well as being able to schedule when recordings occur during the week, you can also schedule them for specific holidays in the year such as the first of January, or the second Wednesday of every month, for example. You can schedule up to 32 holiday periods.

A holiday period can be scheduled for a particular day or as a block of days.

To set up a holiday recording schedule:

1. From the menu toolbar, click **Display Settings > Holiday**.
2. Select a holiday period from the list and click **Edit** to modify the settings. The Edit window appears.
3. Enter the name of the holiday period and click **Enable**.
4. Select whether the holiday period will be categorized by date, week, or month and then enter the start and end dates.
5. Click **Apply** to save the settings and then **OK** to return to the Edit window.
6. Repeat steps 2 to 5 for other holiday periods.
7. Click **Back** to return to live view.

Motion detection schedules

You can set up both the schedule and areas sensitive to motion detection for each camera individually or easily copy the settings of one camera to other cameras.

For information on scheduling motion detections, see “Motion detection set up” on page 32.

External alarm schedules

The recorder can be scheduled to record when an alarm is triggered by an external alarm device such as a PIR detector or dry contacts. For information on scheduling external alarms, see “Triggering or clearing alarm outputs manually” on page 36.

Protecting recorded files

There are two methods to prevent recorded files from being inadvertently overwritten or deleted off the HDD. We highly recommend that important recorded events be protected from deletion. Recorded files can either be *locked* or the HDD that the files reside on can be set to *read only*.

Locking and unlocking recorded files

Lock files to protect them against being overwritten or deleted.

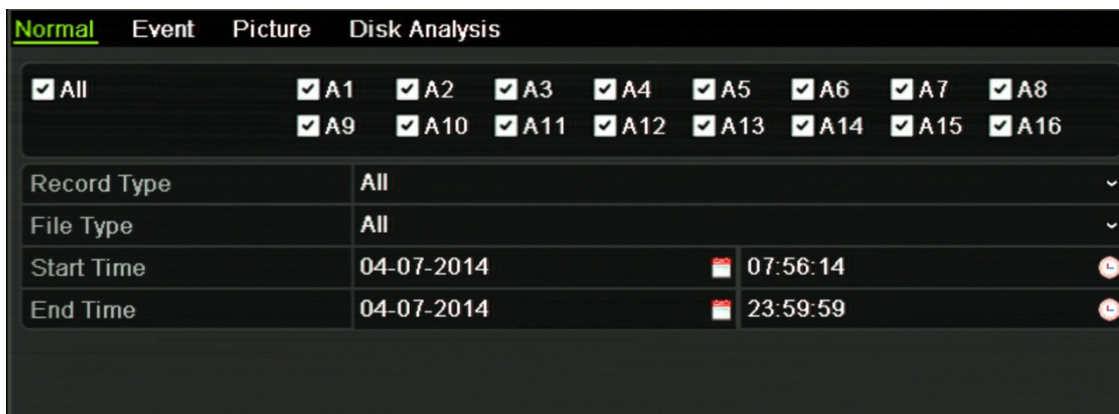
To lock or unlock a recorded file:

1. In live view enter the video search window by pressing the **Search** button on the front panel or remote control, and then enter Advanced Search.

— Or —

In live view, right-click the mouse to display the pop-up menu and select **Advanced Search**.

The Search window appears by default for the Normal tab.

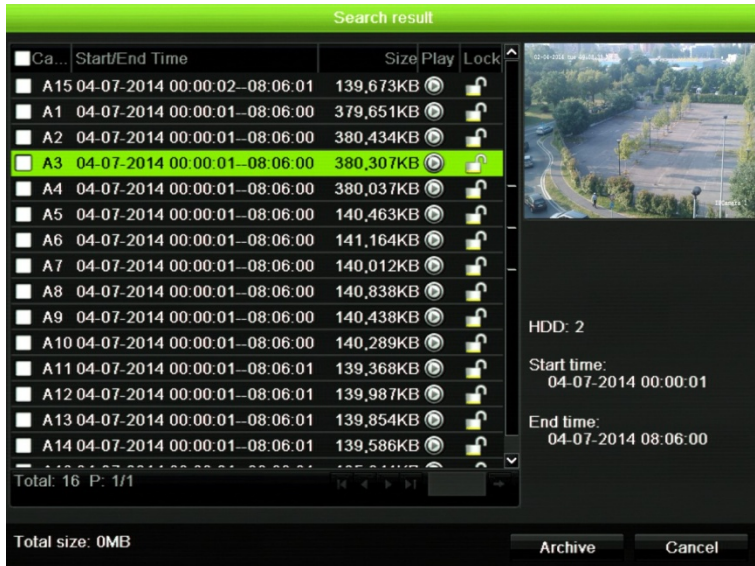



2. Search for the desired recording by entering the search parameters, which include the camera number, record type, file type, and start time and end time.
3. Click **Search**.

A list of recordings, similar to the figure below, matching the search parameters is displayed.

4. Select the file you want to lock/unlock.

The Locked column indicates whether a file is locked or not.



5. Click  to lock a file. Click again to unlock.
6. Click **Cancel** to return to live view.

Setting the HDD to read-only

When you set an HDD to *read-only*, recorded video files cannot be written to the HDD. If multiple HDDs are used, the recorder automatically records to the next HDD not set to *read-only*.

To set an HDD to read-only:

1. From the menu toolbar, click **System Setting > Hard Disk**.
2. Select the HDD you want to set to read-only.
3. Click **Edit** and check **Read only**.
4. Click **Apply** to save the settings. The HDD is now read-only.

Note: In order to enable recordings on that particular HDD again, you must set the HDD status back to R/W (Read/ Write).

Manual recording

The recorder lets you manually record video during live view. This can be useful if you know that the recorder is not currently recording and you see something of interest on a camera screen that should be recorded.

Once a manual recording is started, the recording continues until it is manually stopped. If an alarm occurs during a manual recording, the alarm recording has priority over the manual recording. If a scheduled recording is already in progress when a manual recording is started, it continues to record as scheduled.

During manual recording, the manual recording status icon appears on screen (see “Status information” on page 65). You can also check to see if a camera is

recording manually by checking the icon on the quick access toolbar. The icon is red when manually recording. Default is off.

Manually recorded video is identified in the color-coded timeline shown in playback (see “Searching recorded video” on page 90).

There are two ways to start and stop a manual recording:

- **Use the quick access toolbar**

You can start/stop manual recording for each camera individually. Position the cursor over a camera image and left- click the mouse to display the quick access toolbar. Click the manual record icon to start or stop manual recording. The icon is red when recording.

- **Use the configuration menu**

This option lets you select more than one camera at a time. Go to **Video Schedule > Manual Record** to access the manual recording menu and check the boxes of the cameras to start or stop manual recording.

Capturing text insertions

The recorder supports Point-of-Sale (POS) and ATM text insertion via the UTC ProBridge accessory connected to the RS-232 port on the recorder.

The feature is currently only available via the browser (see “Capturing text insertions” on page 125).

Chapter 5

Alarm settings

This chapter describes setting up how the system will respond when an alarm is triggered.

Enter menu mode by pressing the Menu button on the front panel or use the mouse menu to select Menu (see “Controlling live view” on page 66 for further information). See Menu overview on page 62 for a list of the menu icons.

Description of alarm notification types

When setting up the rules for alarm detection, you can specify how you want the recorder to notify you about an alarm. You can select more than one notification type. Not all notification types are available for all types of alarms.

The alarm notification types are:

- **Full-Screen Monitoring:** Triggers the camera image in alarm to appear as full-screen view.
- **Audible Warning:** Triggers an audible *beep* when a notification or alarm is detected.
- **Notify Alarm Recipient:** Sends a signal to TruVision Navigator or other software applications when an alarm or notification is detected.
- **Send Email:** Sends an email when an alarm or notification is detected. See “Configuring email” on page 43 for information on how to configure the recorder to send an email.
- **Upload Captured Pictures to FTP:** Sends snapshots to a designated FTP site. See “Configuring an FTP server to store snapshots” on page 45 for more information.
- **Trigger Alarm Output:** Triggers an alarm output or multiple alarm outputs when a notification is detected for an external alarm. See “Setting up external alarms” on page 34 for information on configuring an alarm output.

Modifying the warning buzzer

When an alarm is triggered by the system or a camera, the recorder can be set up to respond with a warning buzzer. You can modify the time during which the warning buzzer sounds for both system and camera alarm. Select **Alarm > Advanced Settings** and select a buzzer time limit for the system and camera alarms. Default is mute.

Setting up motion detection

Motion detection is one of the most important features of a recorder. With it there is no need to manually search through hours of video recordings to find an event. The recorder can be set up to trigger an alarm if it detects motion and to record it. You can then search these recorded motion activities for specific incidents. If enabled, motion detection recording can help increase the number of days your recorder can record.

You can mask out any areas of motion on an analog camera display that you do not want to trigger a recording such as a flag on a pole or a moving tree.

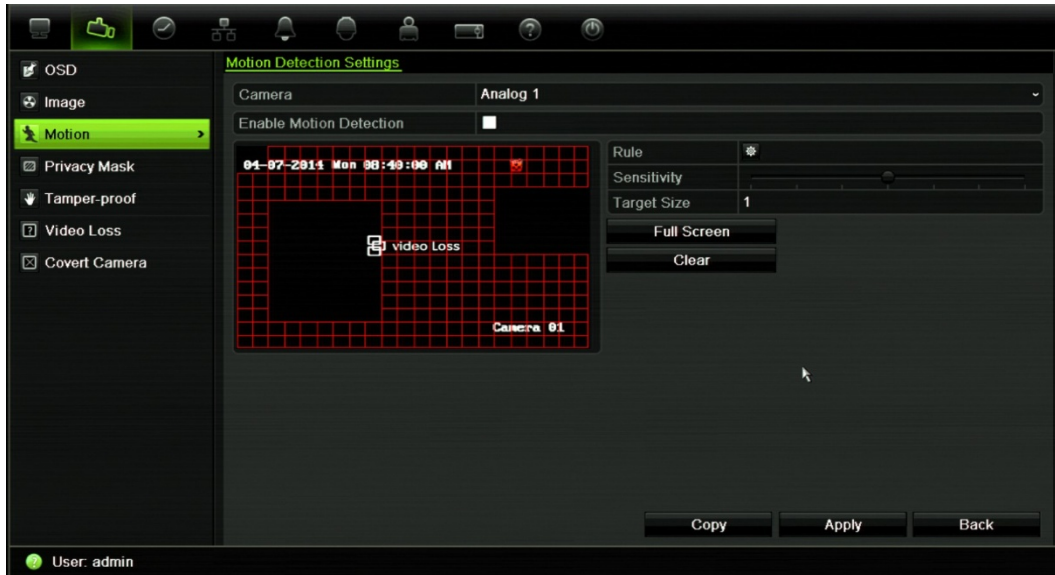
Select the level of sensitivity to motion as well the target size so that only objects that could be of interest can trigger a motion recording. For example, recording is triggered by the movement of a person but not that of a cat.

You can set up both the schedule and areas sensitive to motion detection for each camera individually or easily copy the settings of one camera to other cameras.

Motion detection set up

To set up motion detection:

1. From the menu toolbar, click **Camera Management > Motion**.
Areas covered by the red grid are sensitive to motion detection.
2. Select the analog camera to detect motion. Each camera must be set up individually.
3. Check **Enable Motion Detection**.
4. Select the areas on-screen to be sensitive to motion.
Click and drag the mouse cursor across the window to deselect areas sensitive to motion detection.



Click **Full screen** to activate the whole screen or **Clear** to clear the screen.

5. Set the sensitivity level.

Drag the Sensitivity scroll bar to the desired sensitivity level. The highest value is on the right of the bar.

6. Specify the target size.

In the Target size option, specify how many grid squares must be activated before motion is detected. Enter a value between 0 and 255 squares.

7. Select the cameras that will record the motion detected.

Click **Rule**. The Rule window appears. Click the **Trigger Channel** tab and select the cameras that will record when a motion alarm is triggered. Click **Apply** to save the settings.

8. Select the recording schedules for motion detection.

In the Rule window, click the **Arming schedule** tab and select the day of the week and the time periods during the day when motion can be recorded. You can schedule up to eight time periods in a day. Default is 24 hours.

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

Note: Time periods defined cannot overlap.

9. Select the response method to motion detection.

In the Rule window, click the Rule tab to define the method by which you want the recorder to notify you of the alarm (see page 31 for the list of alarm notification types). Click **Apply** to save settings.

10. Click **OK** to return to the motion detection settings window.

11. Click **Back** to return to live view.

To trigger the front panel alarm LED:

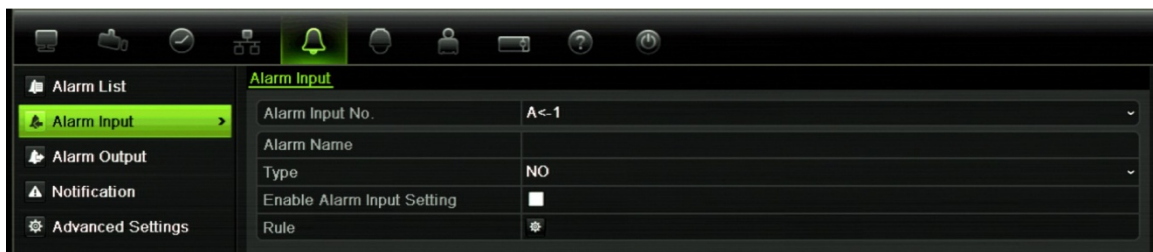
1. Click the **Display Settings** icon in the menu toolbar and select **Monitor>More Settings**.
2. Check both the **Other Notification: Panel Alarm LED** and **Motion Alarm** boxes.

Setting up external alarms

The recorder can be configured to record when an alarm is triggered by an external alarm device (for example, PIR detector, dry contacts...).

To set up external alarms:

1. From the menu toolbar, click **Alarm Settings > Alarm Input**.



2. Select the alarm input number of a camera and enter the name of the input, if required.
3. Select the alarm input type, NO or NC.
4. Check the Setting box to enable the function and click **Rule** to set up the rules for the cameras to be triggered, their alarm schedules, method of alarm notification and PTZ function.
5. Select the cameras to be triggered when an external alarm is detected.

In the Rule window, click **Trigger channel** and select the cameras to be triggered for recording when an alarm is detected. Only analog cameras can be selected. Click **Apply** to save the settings.

6. Select the recording schedules for the external alarm.

Click the **Arming schedule** tab and select the day of the week and the time periods during the day when motion can be recorded. You can schedule up to eight time periods in a day. Default is 24 hours.

Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week and holiday period.

Note: The time periods defined cannot overlap.

7. Select the response method to an external alarm.

Click the Rule tab to define the method by which you want the recorder to notify you of the alarm. Click **Apply** to save settings.

8. Select the PTZ camera function required in response to an external alarm.
Click the PTZ Linking tab and select the PTZ camera as well as the preset, preset tour or shadow tour that is triggered when the alarm is detected.



Click **Apply** to save the settings. Click **Copy** to copy the settings to other cameras, if required.

9. Click **OK** to return to the alarm input window.
10. Click **Back** to return to live view.

To set up an alarm output:

1. From the menu toolbar, click **Alarm Settings > Alarm Output**.
2. Select the alarm output.
3. Select a timeout option.

The timeout setting lets you define how long a signal remains active after the alarm has ended. If you select **Manually Clear**, the signal remains active until it is manually acknowledged by pressing the alarm button on the front panel or remote control (see “Triggering or clearing alarm outputs manually” on page 36).

4. Select the recording schedules for the alarm output.

Click **Rule** and select the day of the week and the time periods during the day when motion can be recorded. You can schedule up to eight time periods in a day. Default is 24 hours.

Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week and holiday period.

Note: The time periods defined cannot overlap.

5. Click **OK** to return to the alarm output window.
6. Click **Back** to return to live view.

Triggering or clearing alarm outputs manually

When an alarm is activated, the recorder can be set up so that the alarm must be manually acknowledged in order to be silenced. See “Setting up external alarms” on page 34 for information on setting up an alarm to be manually cleared.

All user levels (administrator, manager, and operator) can manually acknowledge an alarm.

To trigger or clear alarm outputs manually:

1. From the menu toolbar, click **Alarm Settings** > Alarm Output.
2. Click the **Manual Alarm** tab.
3. Select the desired alarm output and click one of the following buttons:
 - **Trigger / Clear:** Trigger an alarm output or stop an alarm output.
 - **Trigger All:** Trigger all alarm outputs at once. This action could be done, for example, when you need to test them.
 - **Clear All:** Stop all alarm outputs at once.
4. Click **Back** to return to live view. The alarm is silenced.

- Or -

1. Press the **Alarm** button on the front panel or remote control. The alarm is silenced.

Setting up system notifications

Setting up system notifications instructs the recorder to alert you when irregular events occur and how to alert you to the event.

You can quickly check the system status by looking at the status LEDs on the front panel. When there is an irregular event with the system, an icon appears on screen to also alert you. See “Status information” on page 65 for further information.

The types of system notifications include:

- **HDD Full:** An installed HDD is full (overwrite option is disabled).
- **HDD Error:** Errors occurred while files were being written to the HDD, no HDD installed or HDD had failed to initialize.
- **Network Disconnected:** Disconnected network cable.
- **IP Conflicted:** Conflict in IP address setting.
- **Illegal Login:** Wrong user ID or password used.
- **Input/output Video Standards Mismatch:** I/O video standards do not match.

- **Abnormal Record:** Recording failed due to encoder or hard disk problems. See “Description of alarm notification types” on page 31 for information on the different alarm notification types available.

To set up system notifications:

1. From the menu toolbar, click **Alarm Settings > Notification**.
2. Select a notification type.
3. Check one or more response options: Audible warning, notify surveillance center, send email, and trigger alarm output.
4. Repeat steps 2 and 3 for other notification types.
5. Click **Apply** to save the settings.

Detecting video loss

Video may be lost if the video cable or camera develop a fault or are damaged. You can set up the recorder to detect video loss and trigger a system notification.

To setup video loss detection:

1. From the menu toolbar, click **Camera Management > Video Loss**.
2. Select a camera to configure for video loss detection.
3. Check the **Enable Video Loss Alarm** box to enable the feature.
4. Click **Rules** next to the Video Loss Detection box to enter the Rules window.
5. Click the **Rule** tab and select how you want the recorder to notify you of video loss (see page 31 for the list of options). Click **Apply** to save the settings and then click **OK** to return to the previous window.
6. Click the **Arming Schedule** tab and select the schedule of when you want video loss detection to be enabled. Schedule can be set for all week or any day of the week with up to 8 time periods per day.
7. Click the **Apply** button to save settings.
8. Click **Copy** to copy these settings to other cameras.
9. Click **Back** to return to live view.

Detecting video tampering

You can setup the recorder to alert you when the camera view has changed such as when someone has deliberately blocked the camera view by spraying paint on the lens or by moving the camera. You can set it up so that a specific part of the screen can detect a tamper and thereby trigger an action on the recorder.

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

To set up video tampering detection:

1. From the menu toolbar, click **Camera Management > Tamper-Proof** .
2. Select a camera to configure for tamper-proof.
3. Check the **Enable Tamper-proof** box to enable the feature.
4. Define a tampering area.

The tamper detection area setup interface lets you define an area on screen where you want camera tampering to be detected. Click and drag the mouse across an area to mark that area for video tampering. You can only set one tampering area with the full screen being the maximum area. Click **Clear** to clear the window.

5. Select the tamper detection sensitivity level by clicking the sensitivity scroll bar. Higher sensitivity is to the right of the bar.
6. Select the recording schedules for the tamper.

Click **Rule** and then select the **Arming schedule** tab to select the day of the week and the time periods during which tamper can be detected. You can schedule up to eight time periods in a day. Default is 24 hours.

Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week and holiday period.

Note: The time periods defined cannot overlap.

7. Select the response method to an external alarm.

Click **Rule** and then select the **Rule** tab to select the method by which you want the recorder to notify you of the alarm. Click **Apply** to save settings and then **OK** to return to the previous window.

8. Click **Back** to return to live view.

Chapter 6

Network settings

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

The recorder must have access to the internet when configuring the network settings.

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

Configuring general network settings

To configure general network settings:

1. Click the **Network Settings** icon in the menu toolbar to display its window.



2. Click **General** and enter the required settings:

Option	Description
NIC type	Network interface card (NIC) is a device used to connect the recorder to a network. Select the NIC type used from the drop-down list. Default value is 10/100M self-adaptive.

Option	Description
Enable DHCP	Check this box if you have a DHCP server running and want your recorder to automatically obtain an IP address and other network settings from that server. Default value is Disable.
IPv4 address	Enter the IP address for the recorder. Default value is 192.168.1.82
IPv4 subnet mask	Enter the subnet mask for your network so the recorder will be recognized within the network. Default value is 255.255.255.0
IPv4 default gateway	Enter the IP address of your network gateway so the recorder will be recognized within the network. This is typically the IP address of your router. Default value is 192.168.1.1
IPv6 address 1	Enter the IPv6 address for the recorder. Default value is: It depends.
IPv6 address 2	Enter the IPv6 address for the recorder.
IPv6 default gateway	Enter the IPv6 address of your network gateway so the recorder will be recognized within the network. This is typically the IP address of your router.
MAC address	Enter the MC address.
MTU (bytes)	Enter a value between 500 and 1500. Default is 1500.
Preferred DNS server	Enter the preferred domain name server to use with the recorder.
Alternate DNS server	Enter the alternate domain name server to use with the recorder.

3. Click **Apply** to save the settings.
4. Click **Back** to return to live view or to continue to configure.

Configuring PPPoE

You can connect the recorder 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.

To configure general network settings:

1. From the menu toolbar, click **Network Settings > PPPoE**.
2. Check the enable PPPoE box.
3. Enter your user name and password and confirm the password.
4. Click **Apply** to save the settings.
5. Click **Back** to return to live view or to continue to configure.

Configuring DDNS

A static IP address never changes so you can enter it into the browser or CMS and the recorder network connection will always work with it.

However, if you have a dynamic IP address for your public IP address, it will change every time you connect to the network. Under such situations, you can set up a dynamic domain name system (DDNS) that will link your public IP address to a host name so that you can connect to the recorder with the host name.

Note: If you are not seeing video over your cellular network, some cellular providers block port 554 so you may need to change it to another value. See Appendix C “Port forwarding information” on page 131 for more information.

There are two ways to set up a DDNS:

- **DynDNS:** Manually create your own host name. You will first need to create a user account using the hosting web site, DynDDNS.org.
- **ezDDNS:** Activate the DDNS auto-detection function to set up a dynamic IP address. The server is set up to assign an available host name to your recorder.

Figure 7: ezDDNS setup window



Note: You cannot have two recorders with the same host name.

To set up DDNS:

1. From the menu toolbar, click **Network Settings > DDNS**.
2. Check the **Enable DDNS** box to enable this feature.
3. Select one of the DDNS types listed:

DynDNS: Select **DynDNS** and enter the server address for DynDNS (members.dyndns.org). In the recorder domain name field, enter the domain name obtained from the DynDNS web site. Then enter your user name and password registered in the DynDNS network.

For example:

Server address: members.dyndns.org
Domain: mycompanydvr.dyndns.org
User name: myname
Password: mypassword

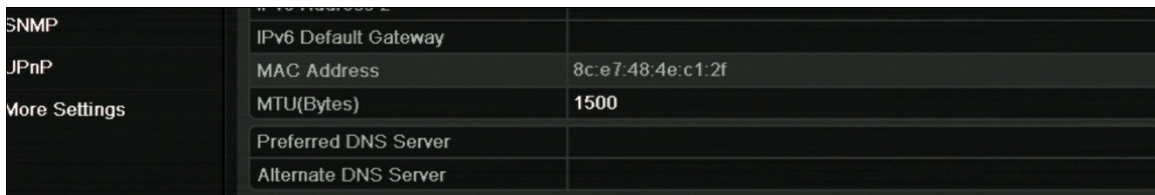
- Or -

ezDDNS: Click the **Get URL** button. The URL address to access the unit is displayed. If no host name is specified, the DDNS will allocate one automatically.

The maximum length for the host name field is 64 characters. This limit does not include tvn-ddns.net. An example of a host name could be max64chars.tvr-ddns.net.

4. Ask your ISP service provider for your DNS server address.

Go to **Network Settings > General** and enter the preferred and alternate DNS server addresses.



SNMP	IPv6 Default Gateway	
JPnP	MAC Address	8c:e7:48:4e:c1:2f
More Settings	MTU(Bytes)	1500
	Preferred DNS Server	
	Alternate DNS Server	

5. Click **Apply** to save the settings.
6. Click **Back** to return to live view or to continue to configure.

Configuring an NTP server

A Network Time Protocol (NTP) server can also be configured on your recorder 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 setup 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 **Network Settings > NTP**.
2. Check the NTP box to enable feature. It is enabled by default.
3. Enter the NTP settings:
 - **Interval:** 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.
 - **NTP port:** Port of the NTP server.
4. Click **Apply** to save the settings.
5. Click **Back** to return to live view or to continue to configure.

Configuring email

Your recorder 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 **Network Settings > Email**.
2. Enter the required settings.

Option	Description
Enable Server Authentication	Check the box if your mail server requires authentication and enter the login user name and password.
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	Check the box to enable SSL if it is required by the SMTP server. This feature is optional.
Sender	Enter the name of the sender of the email.
Sender's Address	Enter the sender's email address.
Select Receivers	Select an email recipient. Up to three receivers can be selected.
Receiver	Enter the name of the receiver of the email.
Receiver's Address	Enter the email address of the receiver.
Enable Attached Snapshot	Check the Attach JPEG File box if you want to send an email with attached alarm images.
Interval	Select an interval range in the Interval box. The interval range represents the time range in between the alarm images being sent. For example, if you set the interval range at two seconds, the second alarm image will be sent two seconds after the first alarm image

3. Click **Test** to the test email settings.
4. Click **Apply** to save the settings.
5. Click **Back** to return to live view or to continue to configure.

Configuring UPnP

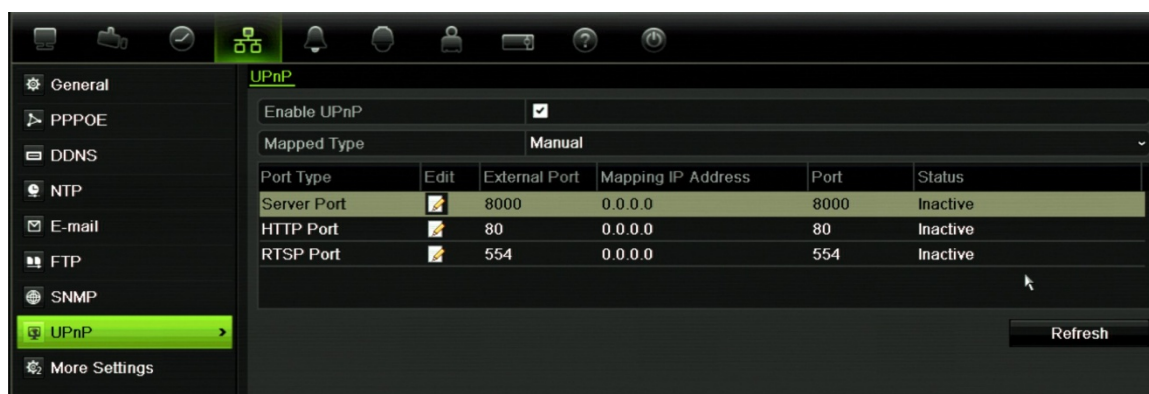
The recorder supports UPnP (Universal Plug and Play). This feature lets the recorder automatically configure its own port forwarding, if this feature is also enabled in the router.

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

Automatic mapped type: The recorder 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 (see Figure 8 below).

Figure 8: UPnP manual configuration screen



To enable UPnP:

1. Connect the recorder to the router.
 - Note:** The router must support UPnP and this option must be enabled.
2. From the menu toolbar, click **Network Settings > UPnP**.
3. Enable the option.
4. From **Mapped Type**, select Auto or Manual.
 - If Manual is selected, enter the external ports and IP addresses required.
5. Click **Apply**.

Configuring SNMP

SNMP is a protocol for managing devices on networks. When you enable SNMP in the menu, network management systems can retrieve recorder status information from the recorder via SNMP.

When you set the trap address and trap port in the recorder menu to the network management system's IP address and port number, and set up the network management system as trap receiver, trap notifications (such as startup) are sent from the recorder to the network management system.

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

To configure SNMP protocol settings:

1. From the menu toolbar, click **Network Settings > SNMP**.
2. Enter the required settings.
3. Click **Apply** to save the settings.

Configuring an FTP server to store snapshots

You can upload your snapshots to an FTP server for storage.

Note: It is not possible to stream video to an FTP site.

To configure the FTP server settings:

1. From the menu toolbar, click **Network Settings > FTP**.
2. Check the **Enable FTP** box.
3. Enter the FTP server information.
4. Select the desired directory. The root directory is default.
5. Click **Apply**.

Configuring a remote alarm host

If a remote alarm host set, the recorder 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 **Network Settings > More Settings**.
2. Enter Alarm Host IP and Alarm Host Port.

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 **Apply** to save the settings.

Configuring multicast

Setting up multicasting resolves limitation issues when streaming videos through a network access device. A multicast address spans the Class-D IP range of 224.0.0.0 to 239.255.255.255. We recommend that the IP address range of 239.252.0.0 to 239.255.255.255 be used.

To set up multicasting:

1. From the menu toolbar, click **Network Settings > More Settings**.
2. Enter a Multicast IP address.

Note: When adding a device to the Network Video Surveillance software, the multicast address must be the same as the recorder's multicast IP.

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

Configuring the server and HTTP ports

You can change the server and HTTP ports from the default settings in the Network Settings window. The default server port is 8000 while that of the default HTTP port is 80.

Note: The server port has a port range of 2000 to 65535 and is used for remote client software access. The HTTP port is used for remote internet browser access.

To change the default ports:

1. From the menu toolbar, click **Network Settings > More Settings**.
2. Enter the new Server Port and HTTP Port values.

Configuring the 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.

To configure RTSP service port:

1. From the menu toolbar, click **Network Settings > More Settings**.
2. Enter the RTSP port value. The default value 554.
3. Click **Apply** to save the settings.

Telnet setup

For Technical Support only.

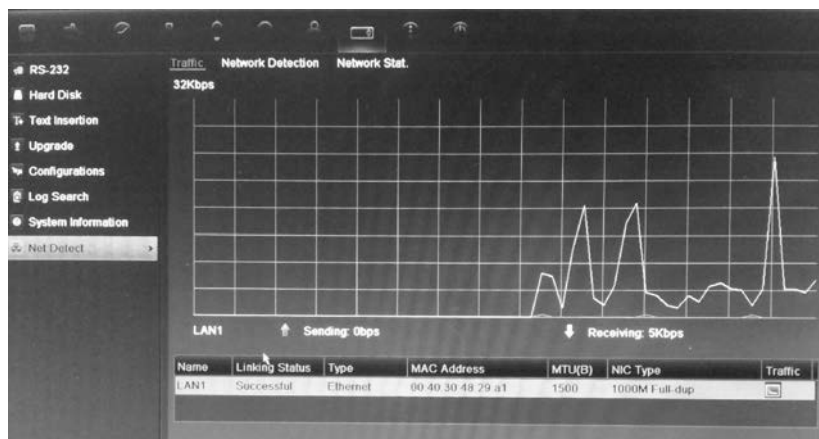
Checking network status

You can easily check network traffic in order to obtain information about the recorder such as its linking status, MTU, sending/receiving rate, MAC address, and NIC type. You can save then this information to a storage device.

You can also check the network connection status by testing its delay and packet loss.

To check network traffic:

1. From the menu toolbar, click **System Settings > Net Detect > Traffic**. The Traffic window appears. The information displayed is refreshed once a second.



To check network delay and packet loss:

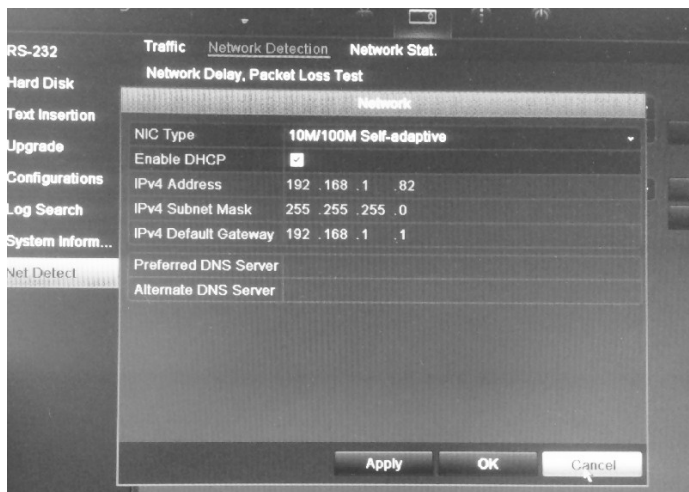
1. From the menu toolbar, click **Network Settings > Net Detect > Network Detection**.
2. Under the section “Network Delay, Packet Loss Test”, enter the destination address and click **Test**.

The test result appears in a pop-up window.

3. To save the results, insert your storage device, such as a flash drive, in the recorder. Under “Network Packet Export”, click **Refresh** for the device to be listed in the drop-down list.

Select the storage device from the drop-down list and click **Export** to export the result file to the device.

4. If you need to check the current network parameters, click the **Network** button to get an overview.



The NIC type and Enable DHCP options can be changed. Click **Apply** to save any changes made.

To check network statistics:

1. From the menu toolbar, click **System Settings > Net Detect**.
2. The latest information is displayed on the bandwidth used by remote live and playback as well by Net Receive Idle and Net Send Idle. Click **Refresh** to update the information.

Exporting network packet data

When the recorder is connected to a network, you can export the captured data packet to a, USB-flash drive, SATA/eSATA CD-RW and other local backup devices.

To export network packet data:

1. From the menu toolbar, click **System Settings > Net Detect > Network Detection**.
2. Under the section “Network packet export”, click **Refresh** to get a list of the local backup devices available. Select one from the list.
3. Click **Export**. Up to 1M of data can be exported at a time.

Chapter 7

HDD management

Initializing HDDs

The in-built HDD must be initialized before it can be used. You can also re-initialize the HDD. However, all data on the HDD will be destroyed.

To initialize an HDD:

1. From the menu toolbar, click **System Settings > Hard Disk**.
2. Under the HDD Information tab, select the HDD to be initialized.



3. Click the **Initialize** button to begin initialization.

After the HDD has been initialized, the status of the HDD changes from Abnormal to Normal.

Setting the HDD quota

You can allocate on an HDD the maximum permitted storage and snapshot picture capacities from each camera.

To set the HDD quota:

1. From the menu toolbar, click **System Settings** > **Hard Disk**.
2. Click the **Storage** mode tab.
3. Under the Mode option, select **Quota**.
4. Select a camera whose storage capacity you want to change and enter the values in GB for maximum record capacity and maximum picture capacity. The maximum storage capacity of the HDD is listed.
5. Click **Apply** to save the settings.
6. If you want to copy these values to other cameras, click **Copy** and select the cameras. Click **OK**. Click **Apply** to save the settings.


Setting the HDD property

You can change the behavior of your HDD by changing its property. It can be set to read-only or read/write (R/W).

An HDD can be set to read-only to avoid important recorded files from being overwritten when the HDD becomes full.

Note: Ensure that the HDD storage mode is “Group” before setting the HDD to read-only.

To change an HDD status property:

1. From the menu toolbar, click **System Settings** > **Hard Disk**.
2. Click the **HDD Information** tab.
3. Select the HDD whose property you want to change.
4. Click the **Edit** icon . The Local HDD Settings window appears.
5. Click the desired HDD property for the selected HDD.
6. Click the group number for this HDD.
7. Click **Apply** to save and exit the window.

Note: Once set to read-only, the HDD cannot be used to save recorded files until it is set back to read/write (R/W). If the HDD that is currently being written to is set to read-only, the data is then recorded to the next HDD. If there is only one HDD present, setting it to read-only means the recorder cannot record.

Checking HDD status

You can check the status of any of the installed HDDs on the recorder at anytime.

To check the status of an HDD:

1. From the menu toolbar, click **System Settings > Hard Disk**.
2. Note the status of the HDDs listed under the Status column.

If the status is listed as Normal or Sleeping, the HDD is in working order. If it is listed as Abnormal and has already been initialized, the HDD needs to be replaced. If the HDD is Uninitialized, you need to initialize it before it can be used in the recorder. Refer to “Initializing HDDs” on page 49 for more information.

Note: This information is also available under **System Settings > System Information > HDD** window.

Configuring HDD alarms

HDD alarms can be set to trigger when an HDD is uninitialized or in an abnormal state.

To set HDD alarms:

1. From the menu toolbar, click **Alarm Settings > Notification**.
2. Select the notification event to configure under Notification Type box.
3. Select **HDD Full** and check the desired notification method. See “Setting up system notifications” on page 36 for more information.
Select **HDD Error** and check the desired notification method.
4. Click **Apply** to save the settings.

Checking the S.M.A.R.T. information

S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) reports on a variety of hard drive attributes. It helps ensure that the HDD is functioning properly at all times while protecting video stored on the hard drive.

To view the S.M.A.R.T. information of an HDD:

1. From the menu toolbar, click **System Settings > Hard Disk**.
2. Select the **S.M.A.R.T. Settings** tab to display its window.
3. Select the HDD whose data you want to see. A detail listing of S.M.A.R.T. information is displayed.



4. If you want to continue to use an HDD when the S.M.A.R.T. test has failed, check the box **Use when the disk has failed to self-evaluate**. Click **Apply** to save the settings.

Searching video using disk analysis

The recorder can run a disk analysis to get a broader sense of the video data stored on the HDD. This video data can include alarms, events, video Loss, and more.

The disk analysis screen provides a graphical view of the all video stored on the HDD for each camera. The scale is determined dynamically. The timeline flows from left (oldest) to right (newest) video. See Figure 9 on page 53.

Figure 9: Disk analysis screen



1. **Zoom level:** This is the zoom level displayed.
2. **Time/date marker:** This is the date and time of the marker position.
3. **Time window:** This represents the time period of the selected zoom level for all the cameras. Events that occurred during this period are indicated on the time bar for each camera. The type of event recorded is color coded.
4. **Change zoom level:** Click the in or out buttons to zoom the analysis view in and out between five levels. The levels are:
 - Level 1: Year view
 - Level 2: Month view
 - Level 3: Day view
 - Level 4: Six-hour view
 - Level 5: One-hour view
5. **Type of recording:** Up to five types of event recordings can be displayed: Constant, motion, alarm, manual, and text insertion. Black is no recording.

To search recorded video using disk analysis

1. In live view, right-click the mouse and in the mouse menu select **Advanced Search > Disk Analysis**.
3. From the list shown, click the HDD to analyze and then the **Analyze** button. The disk analysis screen appears.
4. Move the time/date marker to the time period of interest. Click the zoom in and out buttons to focus in and out of the time period for viewing.

Note: The playback option is not available.

Configuring redundant recording

Setting up HDD redundancy lets your recorder redundantly record a copy of the videos onto multiple drives as a safeguard against losing all your files in case of disk failures. This process is also known as *mirroring*. You must have more than one HDD in your recorder to set up HDD redundancy.

Redundancy significantly reduces the storage capability of the HDDs. As a result you need to double your capacity to record video over a given time.

Note: You must set the storage mode of the HDD to Group before configuring the redundancy. See “Setting up HDD groups” below for more information.

To set up HDD redundancy:

1. Click the **System Settings** icon in the menu toolbar and select **Hard Disk**.
2. Click the **HDD Information** tab and select the HDD to be used for redundancy and click **Edit**.



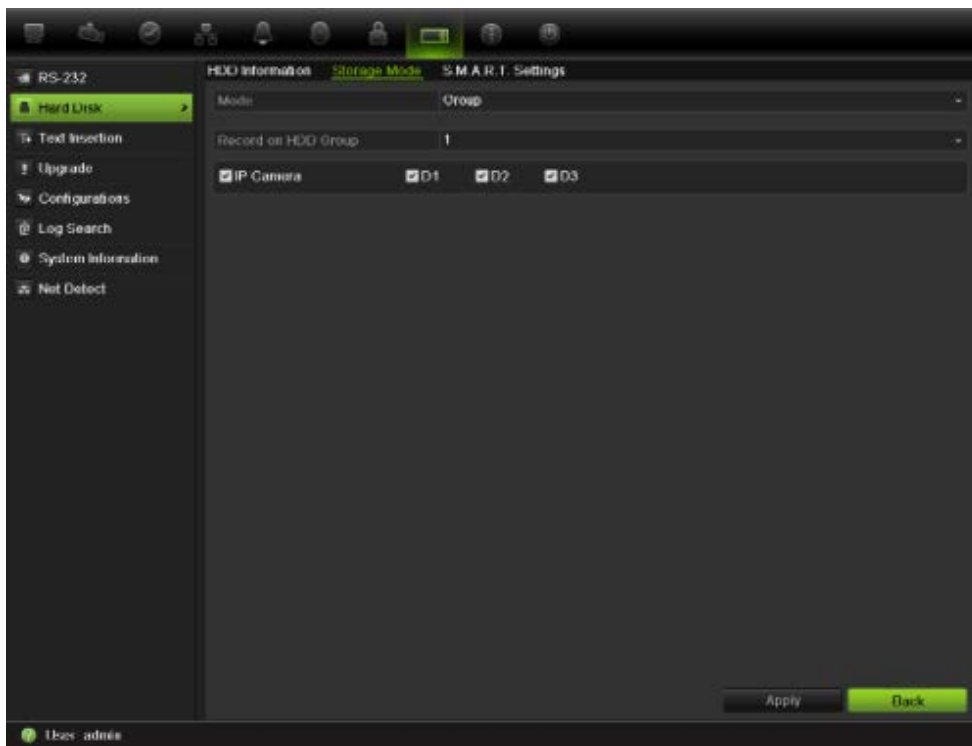
3. In the Local HDD Settings screen, select **Redundancy**.
Verify at least one other HDD is set to R/W (read/write).
4. Click **Apply** to save the settings and then **OK** return to the previous screen.
5. In the menu toolbar, click the **Video Schedule > Encoding**.
6. Select the camera to be used for redundancy.
7. Check **Redundant Record/Capture** and select **Yes** from the drop-down list.
8. Click **Apply** to save the settings.
9. Repeat steps 6 to 8 for other cameras whose files you would like to be redundantly recorded.
10. Click **Back** to return to live view.

Setting up HDD groups

Your NVR can organize multiple HDDs into groups. Videos from specified channels can be set to be recorded onto a particular HDD group. You could, for example, save the records from a couple of high priority cameras to one HDD, and save the recordings from all the other cameras to another HDD.

To set up an HDD group:

1. From the menu toolbar, click **System Settings > Hard Disk**.
2. Select the **Storage Mode** tab.



3. Under **Mode**, select **Group**.
4. Under **Record on HDD Group**, select the HDD group number.
5. Check the channels to be added to this group.
Note: By default, all channels belong to HDD group 1.
6. Click **Apply** to save the settings.

Chapter 8

Operating instructions

Controlling the recorder

There are several ways to control the recorder:

- Front panel control
- Mouse control
- IR remote control
- KTD-405 keypad control (see Appendix D “KTD-405 keypad” on page 133)
- Web browser control

You can use your preferred control method for any procedure, but in most cases we describe procedures using mouse terminology. Optional control methods are given only when they differ substantially from mouse control methods.

Using the front panel




The function buttons on the front panel control can be used to operate many, but not all, of the main functions of the recorder. The LED indicators light up to alert you of various conditions. The functions available can be limited by setting passwords. See Figure 9 on page 57 for more information.

Figure 10: TVR 12 front panel (4-ch model shown)



The controls on the front panel include:

Item	Name	Description
1.	USB port	The recorder supports additional devices such as a USB mouse, CD/DVD burner, and a USB HDD on the front and rear USB ports.
2.	CD/DVD burner	Insert CD or DVD disc. The CD/DVD burner is not present on all TVR 12 models. Not all buttons are available on models without a burner.
3.	Eject button	Ejects CD/DVD disc. This is only present on models with a CD/DVD burner.
4.	Archive button	Press once to enter quick archive mode. Press twice to start archiving.
5.	Display and Seq buttons	Live view mode: Press Display to toggle through the various views (full, quad, 1+5, 1+7, 9, and 16). Press Seq to start/stop sequencing in live view mode. PTZ mode: Press to delete a selected key point. Menu mode: Press Enter to select a menu window and then Seq to toggle through the tabs along the top of a menu window.
6.	Channel buttons	Switch between different cameras in live view, PTZ control or playback modes. Use the soft keyboard to enter numerals 0 to 9.
7.	Live, Menu and Search buttons	Live: Switch to live view mode. Menu: Enter/exit the main menu. Search: In live mode, enter the advanced search menu.

Item	Name	Description
8.	Status LEDs	<p>HDD: A steady green light indicates that the recorder is accessing the HDD in read or write mode. A steady red indicates an HDD failure.</p> <p>Network: A steady green light indicates that the recorder is currently connected to a network. No light indicates that it is not connected to a network.</p> <p>Internal: A steady green light indicates that the recorder is recording video or audio. No light means that it is not recording. A steady red light means that there has been an internal health failure.</p> <p>Alarm: A steady red light indicates that there is a sensor Alarm In or other alarm such as motion detection or tampering. A steady green light means there is no alarm.</p>
9.	Alarm button	Use to manually acknowledge an alarm. In live view mode, use it to call the alarm recipient.
10.	Enter and arrows button	<p>Use to select options in a menu and to control playback. Press for Enter.</p> <p>Live view mode: Press Enter to enter/exit PTZ mode. Press the left/right arrow buttons to scroll between the cameras.</p> <p>Menu mode: To enter the menu toolbar, keep pressing the left arrow button until the first menu icon is selected. Then press the left/right arrow buttons to select a menu icon. To select a menu option in the submenu panel or setup menu, press the arrow buttons left/right and up/down to position cursor in the menu window. Press for Enter. See Figure 12 on page 62.</p> <p>Playback mode: Press the left/right arrow buttons to slow down or speed up playback. Press the up/down arrow buttons to jump forwards or backwards by 30 seconds. Press Enter to stop/start playback.</p> <p>PTZ mode: Press the arrow buttons to control the movement of the PTZ dome camera.</p>
11.	IR receiver	Receiver for IR remote.
12.	Playback buttons	<p> Reverse: In live view mode, press to jump back to the oldest available video and start play back. In playback mode, press to play back video in reverse. In snapshot playback mode, view snapshots in the reverse direction..</p> <p> Pause: In live view mode, freeze the last image of the live video. In playback mode, pause playback.</p> <p> Forward: In live view mode, press to start all-day playback of the currently selected camera. If you are in multiview format, only the camera shown in the top-left corner of the multiview is played back.</p>

Using the mouse

The USB mouse provided with the recorder can be used to operate all the functions of the recorder, unlike the front panel which has limited functionality. The USB mouse lets you navigate and make changes to settings in the user interface.

Connect the mouse to the recorder by plugging the mouse USB connector into the USB port on the back panel or the front panel. The mouse is immediately operational and the pointer should appear.

Note: Use a USB 2.0 or higher mouse.

Move the pointer to a command, option, or button on a window. Click the left mouse button to enter or confirm a selection.

You can purchase a spare mouse by ordering part number TVR-MOUSE-1.

See Table 5 below for a description of the mouse buttons.

Table 5: Mouse buttons

Item	Description	
Left button	Single-Click	Live view: Select a camera to display the quick access toolbar (see "Accessing frequently used commands" on page 69). Menu: Select a component of a menu, such as a button or an input field. This is similar to pressing the Enter button on the remote/front panel controls.
	Double-Click	Live view: Switch between single screen and multi-screen mode in live/ playback mode.
	Click and Drag	Live view: Drag channel/time bar. PTZ control: Adjust pan, tilt and zoom. Tamper-proof, privacy masking and motion detection functions: Select the target area. Digital zoom-in: Drag and select target area.
Right button	Single-Click	Live view: Display menu. Menu: Exit the current menu and return to higher level.
Scroll-wheel	Scroll Up	Live view: Return to the previous window. Menu: Move the selection to the previous item.
	Scroll Down	Live view: Move to the next window. Menu: Move the selection to the next item.

Using the IR remote control

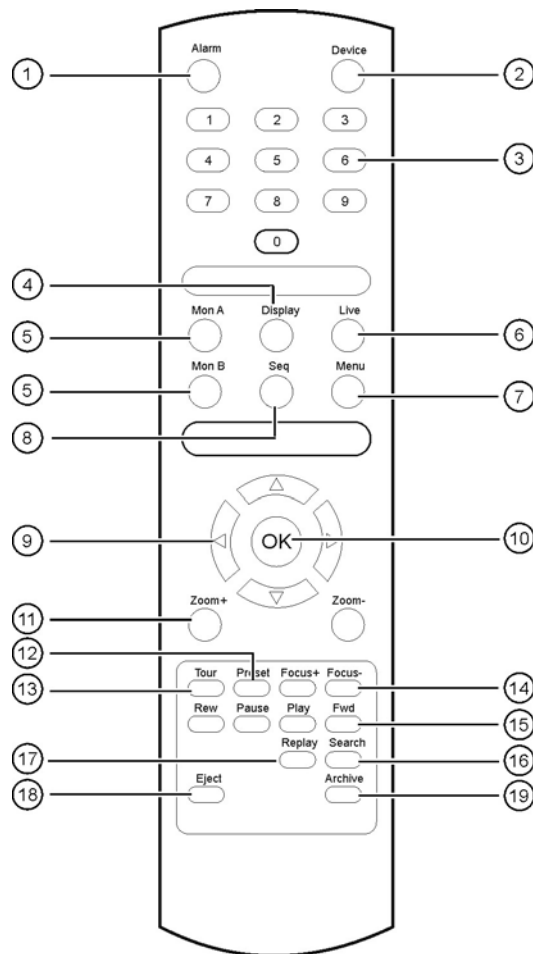
The recorder is supplied with an infra red (IR) remote control unit. Like the mouse, it can be used to operate all of the main functions of the unit.

The IR remote control can be programmed with a unique device ID address so that the controller will only be able to communicate with recorders with that address. No programming is necessary if using a single recorder.

The device ID address only applies when using a remote control and not when using a keypad.

You can purchase a remote control by ordering part number TVR-REMOTE-1.

Figure 11: IR remote control



Item	Description
1. Alarm	Acknowledge an alarm.
2. Device	Enable/disable the IR remote control to control the recorder.
3. Numeric buttons	Select a camera, and enter a number in a menu option.
4. Display	Switch between the different multiview formats.
5. Mon A and Mon B	Switch between monitors A and B.
6. Live	Return to live view mode.
7. Menu	Activate the main menu.
8. Seq	Start /stop sequencing.

Item	Description
9. <, >, ^, v	In Menu mode: Use left or right arrow buttons to select and up or down arrow buttons to edit entry. In PTZ mode: Use to control PTZ. In Playback mode: Use to control playback speed.
10. OK	Confirm selection.
11. Zoom + and -	Use to control zoom of camera lens.
12. Preset	Press Preset and a numeric button to call the specified preset.
13. Tour	Press Tour and a numeric button to call the specified tour.
14. Focus + and -	Use to control focus of camera lens.
15. Playback control	Use to control playback (Rewind, Pause, Play, and Fast Forward).
16. Search	Open the Search menu.
17. Replay	Replay the selected file from the beginning.
18. Eject	Eject the CD or DVD disk.
19. Archive	Press once to enter quick archive mode. Press twice to start archiving.

Aim the remote control at the IR receiver located at the front of the unit to test operation.

To connect the remote control to the recorder:

1. Press the **Menu** button on the front panel or right-click the mouse and select the **Menu** button. The main menu window appears.
2. Click **Display Mode Settings > Monitor**.
3. Check the device address value. The default value is 255. This device address is valid for all IR controls.
Note: The recorder will respond to any remote control that has an address between 1 and 255.
4. On the remote control press the **Device** button.
5. Enter the device address value. It must be the same as that on the recorder.
6. Press the **OK** button on the remote control.

To place batteries into the IR remote control:

1. Remove the battery cover.
2. Insert the batteries. Make sure that the positive (+) and negative (-) poles are correctly placed.
3. Replace the battery cover.

Troubleshooting the remote control:

If the IR remote control is not functioning properly, perform the following tests:

- Check the battery polarity.
- Check the remaining charge in the batteries.
- Check that the IR remote control sensor is not masked.

If the problem still exists, please contact your administrator.

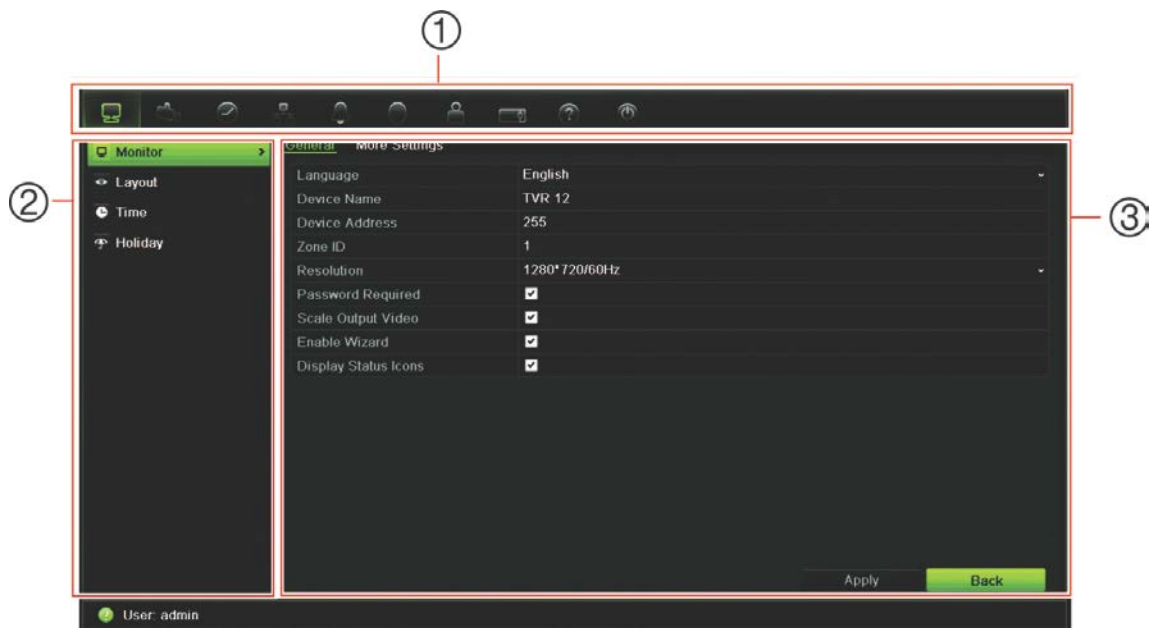
Menu overview

The recorder has an icon-driven menu structure that allows you to configure the unit's parameters. Each command icon displays a window that lets you edit a group of settings. Most menus are available only to system administrators.

The window is divided into three sections. The currently selected command icon and submenu item are highlighted in green. See Figure 12 below.

You must be in live view mode to access the main menu.

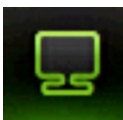





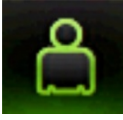



Figure 12: Menu structure



1. **Menu toolbar:** Setup options available for the selected menu function. Move the mouse over a command icon and click to select it. See Table 7 below for a description of the icons.
2. **Submenu panel:** Submenus for the selected menu function are displayed. Click an item to select it.
3. **Setup menu:** All the details for the selected submenu are displayed. Click a field to make changes.

Note: See Figure 9 on page 57 for the description on how to access the menu options using the front panel.

Table 6: Description of the menu toolbar icons

Icon	Name	Description
	Display Settings	Configures display settings including dwell time, schedule, language, system date and time, audio output, device name, and display formats. See “Configuring live view” on page 71 and “Holiday schedules” on page 27.
	Camera Management	Configures camera settings including motion detection, video image adjustments, camera title, privacy mask, tamper-proof, video loss, restricted access camera, and copy settings to other cameras. See “Camera settings” on page 102.
	Video Schedule	Configures recording settings including recording schedules, record quality, auto delete mode, manual record, overwrite, and recording mode. See Chapter 4 “Recording” on page 22.
	Network Settings	Configures standard network settings including IP address, email notifications, DDNS setup, PPPoE, SNMP, FTP, UpnP, and advanced network settings. See Chapter 6 “Network settings” on page 39.
	Alarm Settings	Configures alarm settings including alarm input, relay output, video loss, remote alert, pre-alarm, post-alarm seconds, and buzzer time. See Chapter 5 “Alarm settings” on page 31.
	PTZ Settings	Configures PTZ settings. See Chapter 10 “Controlling a PTZ camera” on page 79.
	User Management	Configures users, passwords, and access privileges. See Chapter 15 “User management” on page 111.
	System Settings	Configures system settings including system date and time, audio output, device name, RS-485 settings, RS-232 settings, firmware upgrade, hard drive settings, boot log, default settings, import/export configuration file, and shutdown. See Chapter 7 “HDD management” on page 49 and Chapter 13 “Recorder management” on page 102.
	Help Information	Provides reference information to the various toolbars, menus, and keys within the interface.
	Power Manager	Provides access to logout, reboot, and shutdown options. See “Turning on and off the recorder” on page 17.

To access the main menu:

1. In live view press the **Menu** button on the remote control or front panel.
- Or -
Right-click the mouse and select **Menu** from the pop-up menu.

The main menu window appears. The Display window appears by default.

2. Click the required menu icon to display its submenu options. Modify the configuration parameters as required.
3. Click **Apply** to save the settings.
4. Click **Back** to return to live view.

Using the soft keyboard

A keyboard will appear on-screen when you need to enter characters in a window option. Click a key to input that character.

Figure 13: The soft keyboard



Description of the keys in the virtual keyboard:

	Switch to lowercase/uppercase
	Space
	Exit the soft keyboard
	Alphanumeric characters
	Backspace
	Confirm selection

Exiting the main menu

Press the **Menu** button on the front panel to exit the current menu window and return to live view, or click **Back** in a main menu.

Chapter 9

Live view




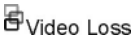


Description of live view

Live view mode is the normal operating mode of the unit where you watch live images from the cameras. The recorder automatically enters into live view mode once powered up. On the viewer you can see whether a recording is in progress and, if set up to do so, the current date and time, as well as the camera name.

Status information

Information on the system and camera status is displayed as icons on the main and auxiliary monitors. The camera status icons are shown for each camera. Each icon represents information on a specific item. These icons include:

Table 7: Description of the on-screen status icons

Icon	Description
	Indicates a sensor alarm.
	Indicates recording (such as recording, motion detection, or alarm-triggered recording).
	Indicates a motion detection event.
 Video Loss	Indicates a video loss event.
	Indicates alarm and system notifications. Clicking the icon opens a window that lists the alarms and notifications.
	Indicates manual recording.

The recorder can display more than one icon at the same time. See “General settings” on page 75 to display or hide these icons.

The system status is displayed on the front panel by the status LEDs.

Video output

The recorder automatically checks the monitor outputs used. If more than one monitor is connected, it then defines which monitor is the main one and which is the event one. The event monitor is used to display detected events such as motion. Only one monitor can be controlled at a time.

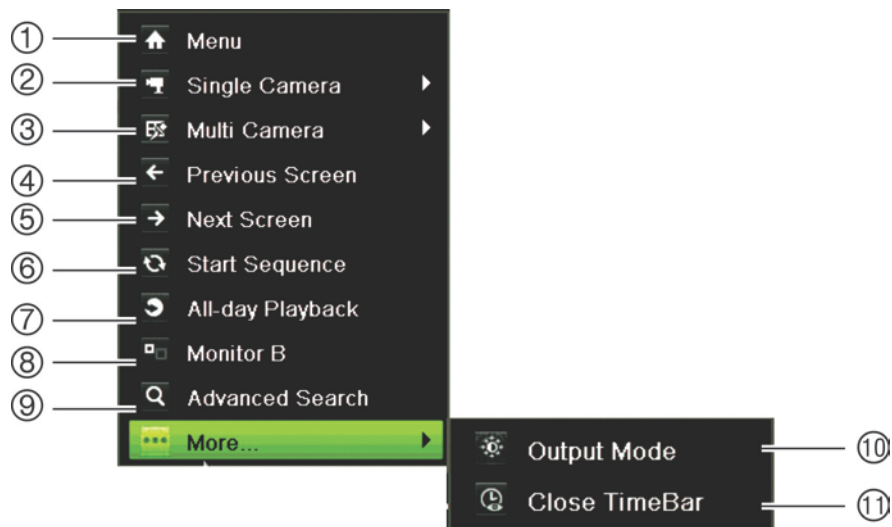
If a HDMI monitor is used, it will be the main output. If HDMI and VGA monitors are both connected to the recorder, both will be main monitors; they will both show the same view. However, you will not be able to control each individually.

See “Controlling live view” on page 66 for more information on setting up the monitors.

Controlling live view

Many features of live view can be quickly accessed by placing the cursor on a live image and clicking the right-button of the mouse. The mouse menu appears (see Figure 14 below).

Figure 14: The mouse menu for the main monitor



The list of commands available depends on which monitor is active; main or auxiliary (monitor B). See Table 8 on page 67. The default settings of these commands are provided in Appendix G, “Default menu settings” on page 143.

Table 8: Mouse menu for monitor A (main monitor)

Item	Name	Description
1.	Menu	Enter the Main menu. This option is not available from monitor B.
2.	Single Camera	Switch to a full-screen view for the selected camera from the dropdown list.
3.	Multi Camera	Switch between the different multiview options from the dropdown list.
4.	Previous Screen	In single-camera mode, display the previous camera. In multi-camera mode, display the previous screen cameras.
5.	Next Screen	In single-camera mode, display the next camera. In multi-camera mode, display the next screen cameras.
6.	Start Sequence	Turn on sequence mode. The window automatically sequences between cameras. See "Multiview" on page 68. Go to Menu > Display Mode Settings > Layout > Dwell Time to set up.
7.	All-day Playback	Playback the recorded video of the selected day from the selected camera. The current day is selected by default. See "All-day playback" on page 89 for more information.
8.	Monitor B	Switch between monitors A (main) and B (event).
9.	Advanced Search	Enter the advanced video search menu. See "Searching recorded video" on page 90 for more information.
10.	Output Mode	Select Standard, Bright, Soft, or Vivid mode to display.
11.	Close Tme Bar	Open/close the time bar.

Table 9: Mouse menu for monitor B (event monitor)

Item	Name	Description
1.	Single Camera	Switch to a full-screen view for the selected camera from the dropdown list.
2.	Multi Camera	Switch between the different multiview options from the dropdown list.
3.	Previous Screen	In single-camera mode, display the previous camera. In multi-camera mode, display the previous screen cameras.
4.	Next Screen	In single-camera mode, display the next camera. In multi-camera mode, display the next screen cameras.
5.	All-day Playback	Playback the recorded video of the selected day from the selected camera. The current day is selected by default. See "All-day playback" on page 89 for more information.
6.	Monitor A	Switch between monitors A (main) and B (event).

Single and multiview display formats

The recorder has single-view display format as well as four multiview formats.

Single view display format

Press the numeric button on the front panel to switch to the corresponding camera display. For example, press button 10 to view camera 10.

Right-click the mouse and select **Single Camera** from the menu. Select the camera required from the list.

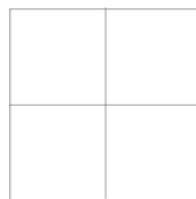
Multiview display format

A video tile is any cell in a multiview display. A camera image can only be shown in one video tile at a time. The number of multiview display formats available depends on the recorder model. See Figure 15 below.

To change the multiview display that appears by default, go to the Display menu. See “Changing the camera sequence” on page 73 for more information.

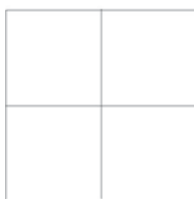
Figure 15: TVR 12 multiview display formats

4-channel recorder:

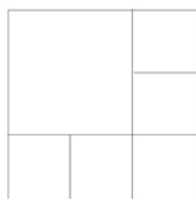


2 x 2

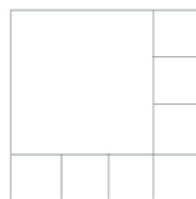
8/16-channel recorder:



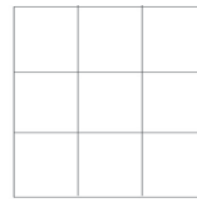
2 x 2



1 + 5



1 + 7



3 x 3

To select a multiview display format:

1. Press the **Display** button on the front panel to cycle through different display formats.

You can also right-click the mouse and select **Multi Camera** from the menu. Select the desired multiview display layout.

Sequencing cameras

The sequencing feature allows a camera to be displayed briefly on screen, before advancing to the next camera in the sequence list. Sequencing can only be done in single-view display mode.

The default sequence displays each camera in numerical order. However, each camera on the main and auxiliary monitors can have a pre-programmed sequence order. See “Changing the camera sequence” on page 73 for more information.

Note: Dwell time must not be set to zero for sequencing to function.

Sequencing live view mode using the front panel:

1. Select the camera where you want to start sequencing.
2. Press the **Seq** button on the front panel to start sequencing.
3. Press the **Seq** button again to stop the sequencing.

Sequencing live view mode using the mouse:

1. Select the camera where you want to start sequencing.
2. Right-click the mouse and select **Start Sequence** to start the sequencing.
3. Right-click the mouse and select **Stop Sequence** to stop the sequencing.

Accessing frequently used commands

The quick access toolbar in live view lets you quickly access regularly used commands. Position the cursor over a video image and left-click the mouse. The toolbar appears (see Figure 16 on page 70).

Figure 16: Quick access toolbar



Table 10: Description of the quick access toolbar icons

Icon	Description
	Freeze: Freeze the live image of the selected camera. Although the image pauses, time and date information does not. The system clock continues to run.
	Manual Recording: Start/stop manual recording. The icon is red when manual recording is enabled. See “Manual recording” on page 29 for information on setting up this function.
	Instant playback: Playback the recorded video from the last five minutes. If no recording is found, then there was no recording made in the last five minutes. Click the icon and select the desired camera. Click OK. See “Instant playback” on page 88 for more information.
	Audio: Enable/Disable audio output. The audio option must already have been setup in the Display menu.
	Quick snapshot: Capture a snapshot of a video image. The image is saved on the unit. See “Slideshow of snapshots” on page 93 for more information.
	PTZ control: Enter PTZ control mode. See “Configuring PTZ settings” on page 79 for more information.
	Digital zoom: Enter digital zoom. See “Digital zoom” on page 71 for further information.
	Image settings: Enter the image settings menu to modify the image lighting levels. There are two options: Preset Mode: These are preconfigured image lighting levels. Select one of the four options depending on current lighting conditions: <ul style="list-style-type: none"> - <i>Standard:</i> Use in standard lighting situations. - <i>Indoor:</i> Use indoors. - <i>Dim Light:</i> Use when the light level is low. - <i>Outdoor:</i> Use when outdoors. The contrast and saturation values are high. Customize: Modify brightness, contrast, saturation, and hue values. Click Restore to restore image settings to previous values. Click Restore to restore image settings to previous values. Click Default to return to default values. These settings can also be modified from the Camera>Image menu (see page “Adjusting video image settings” on page 109.
	Show text: Display inserted text on screen. The color of the text can be changed: Black, white, or pink.
	Close toolbar: Close the shortcut toolbar.

Digital zoom

You can easily zoom in or out of a camera image in live view mode and playback using the digital zoom command. The zoom command magnifies the camera image four times. See Figure 17 below.

Figure 17: Digital zoom window



To quickly zoom in/out on a camera image:

1. Left-click the mouse on the desired camera. The quick access toolbar appears.
2. Click the digital-zoom icon. The digital view window appears.
3. Left-click the mouse and drag the red square to the area of interest, or press the arrow buttons on the front panel to position the red square. The selected area is magnified.
4. To exit digital zoom, right-click the mouse.

Configuring live view

The setup of live view can be modified from the main menu to suit different needs, such as the different monitors, multiview layout, and dwell time options. You can also enable audio output.

In the Layout menu use the *Video Output Interface*, *Window Segmentation*, *Dwell Time*, and *Enable Audio Output* settings to configure the main monitor. Use *Event Output* as well as *Event and Alarm Full Screen Monitoring Dwell Time* settings to configure the event monitor.

Figure 18: Layout window (General tab)

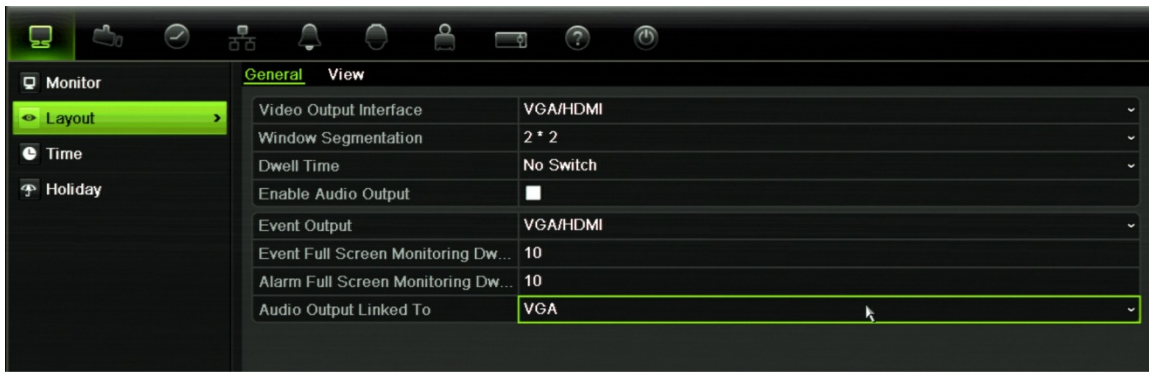


Table 11: Description of the Layout window

Submenu name	Description
Video Output Interface	Select which monitor will be the main monitor: HDMI/VGA, or main CVBS. Default is HDMI/VGA, if connected.
Window Segmentation	Select which multiview layout will be default in live view mode. The factory default multiview format displays all channels (2x2 layout for the 4-channel TVR 12, 3x3 layout for the 8-channel TVR 12, and 4x4 for the 16-channel TVR 12).
Dwell Time	Set the length of time for which a camera image is displayed on the selected monitor before moving to the next camera during sequencing. Default is off (“No switch”).
Enable Output	You can hear audio from cameras in both live and playback mode. However, in order to be able to hear audio in playback you must enable the audio output setting. Check the box to enable/disable audio output.
Event Output	Select which monitor will be the event monitor: HDMI/VGA, or main CVBS. Default is Main CVBS.
Event Full Screen Monitoring Dwell Time(s)	Set the length of time for which an event appears on the event (B) monitor before moving to the next camera during sequencing. Default is 10 seconds.
Alarm Full Screen Monitoring Dwell Time(s)	Set the length of time for which an alarm event appears on the event (B) monitor before moving to the next camera during sequencing. Default is 10 seconds.
Audio Output Linked To	Select from which monitor (Main CVBS or VGA) audio can be heard.

To set up the display options:

1. Click the **Display Mode Settings** icon in the menu toolbar.
2. Select **Layout > General**.
3. Specify the desired settings for each of the menu options.
4. Click **Apply** to save the settings.
5. Click **Back** to return to live view.

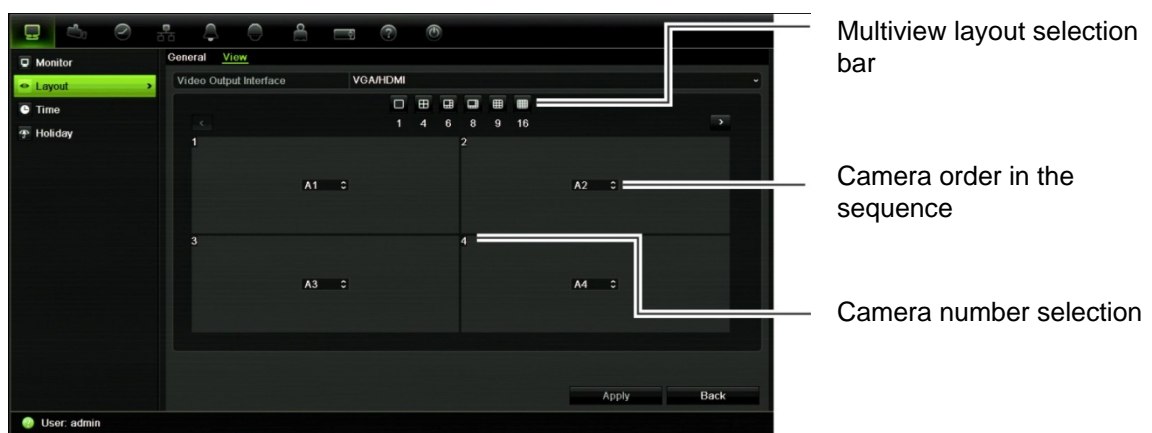
Changing the camera sequence

The cameras are sequenced in numeric order by default. You can change the sequence order of the cameras for all monitors.

You can switch the channel of a camera with that of another camera in the system. This lets you, for example, have the images of camera 1 appear on channel 10, and the images of camera 10 appear on channel 1. This feature is useful when you want to watch the sequence of images from specific cameras so that they are next to each other on-screen.

See Figure 19 below. Each video tile displays both the order of the camera in the sequence and the camera number.

Figure 19: Camera layout and sequence window



To set the camera sequencing:

1. Click the **Display Mode Settings** icon in the menu toolbar.
2. Select **Layout > View**.
3. From **Video Output Interface**, select the desired monitor from the drop-down list.
4. From the multiview layout selection bar, select the desired multiview layout.
5. Select the video tile of the camera whose order you want to change. The selected tile is highlighted green.
6. In the selected tile, select the new camera sequence order by scrolling through the list of available camera numbers.
Note: "X" means that the camera is not displayed.
7. Click **Apply** to save the settings.
8. Click **Back** to return to live view.

Configuring time and date

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 20 below for the Time settings screen.

Figure 20: Time and date settings window



Table 12: Description of the Time and Date settings window

Option	Description
1. Time Zone	Select the time zone of the recorder from the drop-down list.
2. Date Format	Select the date format from the drop-down list. Default format is MM-DD-YYYY.
3. Time Format	Select the time format from the drop-down list. Default format is 12-hour format.
4. Display Week	Display the day of the week in the monitor time bar. Check the box to enable/disable. Default format is Enable.
5. System Date	Define the system date. Default date is the current date.
6. System Time	Define the system time. Default time is the current time.
7. Auto DST Adjustment	Define DST is automatically. It depends on the time zone selected. Default format is Disable

Option	Description
8. Enable DST	Manually define DST. If this option is selected, the <i>Auto DST adjustment</i> option is disabled. Default format is Disable. Click the check box to enable or disable daylight savings time (DST).
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 set up the system time and date:

1. Click the Display Mode Settings icon in the menu toolbar.
2. Select Time. Modify the required settings.
3. Click the Apply button to immediately implement the changes.

General settings

Use the Display settings menu to configure general recorder options on how information is displayed and accessed such as:

- Change GUI language
- Change the recorder name and address
- Define the monitor resolution
- Enable/disable the login password requirement
- Enable/disable the Wizard
- Manually change the video output format (PAL/NTSC)
- Change the time out period after which the display reverts to showing live view
- Enable/disable the transparency of the menus on screen
- Enable/disable whether the status icons appear on screen

See Figure 21 and Table 13 on page 76 for the general options available, and Figure 22 and Table 14 on page 77 for further options.

The changes are immediately implemented once Apply is clicked to save the settings.

Figure 21: Monitor setup window: General settings



Table 13: Description of the Monitor setup window: General settings

Option	Description
1. Language	Define the language of the system. Select the desired language from the drop-down list and click Apply . The language displayed changes immediately.
2. Device Name	Define the recorder name. The default name is TVR 12. Click the edit box and enter the new name from the soft keyboard.
3. Device Address	The device number to use for the recorder when programming the remote control or keypad. The default value is 255.
4. Zone ID	Each recorder in a daisy chain must have a unique zone ID so that it can be controlled by a KTD-405 keypad. The default value is 1.
5. Resolution	Define the resolution of the selected monitor. Select one of the options from the drop-down list and click Apply . The selected resolution must be the same as that of the monitor.
6. Password Required	Define whether a login password is required. Check the box to enable/disable, and click Apply .
7. Scaling Output Video	Enable/disable the monitor display of the main and auxiliary monitor size to accommodate for differently sized monitors. Check the box to enable/disable, and click Apply .
8. Enable Wizard	Define whether the wizard tool starts when the recorder is turned on. Check the box to enable/disable, and click Apply .
9. Display Status Icons	Define whether the status icons are displayed.

Figure 22: Monitor setup window: More settings



Table 14: Description of the Monitor setup window: More settings

Option	Description
1. Monitor Standard	The recorder can support NTSC or PAL video output. The video standard used is auto detected but can be manually changed. Modify the video standard used to PAL or NTSC, and click Apply .
2. Output Mode	Define the desired output mode. Select one of the options from the drop-down list: Standard, Bright, Gentle, or Vivid, and click Apply .
3. Monitor Brightness	Modify the video output brightness. Adjust the scroll bar point to the desired level and click Apply .
4. Event Hint	Define whether the status icons appear on screen. See “Status information” on page 65 for more information. Check the box to enable/disable, and click Apply .
5. Timebar Transparent	Define the transparency of the monitor output time bar on screen relative to the background to make the time bar easier to read. Check the box to enable/disable, and click Apply .
6. Enable Timebar	Define whether the monitor output time bar appears on screen. Check the box to enable/disable, and click Apply .
7. Menu Timeout	Define the time in minutes after which the menu window reverts to live view mode. Select a time from the drop-down list, and click Apply .
8. Mouse Pointer Speed	Modify the speed of the mouse pointer. Adjust the scroll bar point to the desired level, and click Apply .
9. Instant Playback Time	Modify the instant playback replay period. The time options are between five to 30 minutes from actual time. Default is five minutes
10. Enable Front Panel Lock	When the system logs out, the front panel is automatically locked. To unlock the front panel, press the Live button for 5 seconds.


Option	Description
11. Disable Network Disconnect Alarm	Define whether there is an alarm notification if the network connection is disconnected. Default is an alarm notification. The alarm on-screen status icon appears. Check the box to disable the alarm notification.

V-stream encoding

If the available bandwidth is limited, you can remotely view several channels in real time with one stream over the web browser or CMS (Client Management System), such as TruVision navigator, using the V-stream encoding option (“V” stands for “virtual”). When enabled, you can see the output from the cameras on a remote client monitor in one stream.

Note: It is not recommended to use the V-stream feature when a CVBS monitor is used as a main monitor because the CVBS main monitor and the V-stream use the same output.

To enable V-streaming:

1. Click the **Video Schedule** icon  in the menu toolbar.
2. Select **Encoding > V-stream Encoding**.
3. Check **Enable V-stream Encoding**.
4. Select the desired settings for frame rate and maximum bit rate (Kbps).
5. Click **Apply** to save the settings.

Chapter 10

Controlling a PTZ camera

You can control PTZ dome cameras using the buttons on the front panel, the keypad, and IR remote control as well as using the PTZ control panel accessed with the mouse. Access to PTZ commands may require a password.

A detailed list of the PTZ commands available for many different camera protocols is available in Appendix F on page 143.

Configuring PTZ settings

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

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 recorder, check the parameters entered.

To configure PTZ dome camera settings:

1. Click the **PTZ Control** icon on the quick access toolbar.

– Or –

Click the **PTZ Settings** icon in the menu toolbar.

2. Under the **General** tab, select the PTZ dome camera to be configured from the drop-down camera list.
3. Select the baud rate, data bit, stop bit, parity, flow control, PTZ protocol and address for the camera. See Appendix G, “Default menu settings”, on page 143 for the default values.


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

4. Click **Copy** to copy the settings to another camera, if required, and select the cameras.

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

Calling up presets, preset tours and shadow tours

When in live view you can quickly call up the list of existing presets, preset tours and shadow tours by using the front panel, remote control, mouse and keypad.

Front panel	Press Enter . PTZ control panel appears.
Mouse	Right-click the mouse on the desired camera image. The quick access toolbar appears. Click the PTZ control icon to enter PTZ mode. The PTZ control panel appears.
Remote control	Press the OK button. The PTZ control panel appears.
Keypad	Press the Enter  button on the keypad. For further information, see KTD-405 keypad on page 133.

If the display was in multiview format, it changes to full-screen format for the selected camera. See Figure 23 below for a description of the PTZ control panel.

Figure 23: PTZ control panel

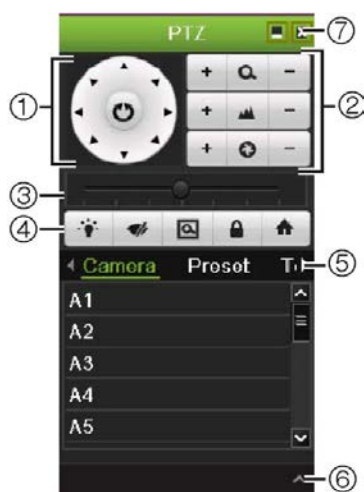







Table 15: Description of the PTZ control panel

Item	Name	Description
1.	Directional pad/auto-scan buttons	Controls the movements and directions of the PTZ. 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	Adjusts the speed of PTZ movement.
4.	Toolbar	 Turns on/off camera light.
		 Turns on/off camera wiper.
		 Zoom area.

Item	Name	Description
		 Centers the PTZ dome camera image. This command is not supported on all PTZ dome cameras.
		 Jumps to the home position.
5.	Select PTZ command	Displays the desired function from the scroll bar: camera, preset, preset tour or shadow tour.
6.	Open/close menu	Opens/closes the PTZ command section of the PTZ control panel.
7.	Exit	Exits the PTZ control panel.

Setting and calling up presets


Presets are previously defined locations of a PTZ dome camera. It allows you to quickly move the PTZ dome camera to a desired position. They are configured and modified from the PTZ configuration window (see Figure 24 below).










Note: The PTZ dome camera used must be able to support a preset command. See Appendix F on page 143 for the complete list of PTZ commands available by camera protocol.

Figure 24: PTZ configuration window



Table 16: Description of the PTZ configuration window

Item	Name	Description
1.	Save preset	Saves preset.
2.	Call preset	Calls up pre-existing preset.
3.	Shadow tour toolbar	 Starts recording the shadow tour.

Item	Name	Description
		 Saves the shadow tour.
		 Starts the selected shadow tour.
		 Stops the selected shadow tour.
4.	Preset tour toolbar	 Adds a step to a selected preset tour.
		 Starts the selected preset tour.
		 Stops the selected preset tour.
		 Deletes all the preset tour steps.
		 Scroll up the list.
		 Scroll down the list.

To set up a preset:

1. From the menu toolbar, click **PTZ Settings > More Settings**.
2. Use the directional, zoom, focus and iris buttons to position the camera in the desired preset location.
3. Check **Save Preset** and enter a preset number. The preset is enabled and stored in the camera.

If the desired preset number is larger than the 17 numbers listed, click [...]. The Preset window appears. Select a preset number from the dropdown list and click the **OK** button to save changes.

Note: Presets can be overwritten.

4. Click **Back** to return to live view.

To call up a preset:

- **PTZ control panel:**

1. In live view left-click the mouse and select the PTZ control icon in the quick access toolbar. The PTZ control panel appears. Select the desired camera from the toolbar.

– Or –

On the front panel, select the desired camera and press **Enter** to call up the quick access toolbar. The PTZ control panel appears.

2. Scroll the toolbar to **Preset** and double-click the desired preset from the list. The camera immediately jumps to the preset position.

- **Menu toolbar:**

1. From the menu toolbar, click **PTZ Settings > More Settings**.
2. Check **Call Preset** and enter the preset number to call up. The camera immediately moves to that preset position.
3. Click **Back** to return to live view.

Setting and calling up preset tours


Preset tours move a PTZ dome camera to different steps (called “Keypoint” in the interface). The camera stays at a step for a set dwell time before moving on to the next step. The steps are defined by presets (see “Setting and calling up presets” on page 81.)

Each preset tour consists of steps. A step consists of a step number, a dwell time, and a speed.

The step number is the order the camera will follow while cycling through the preset tour. The dwell time is the length of time for which a camera stays at a step before moving to the next one. The speed is the rate at which the camera will move from one key point to the next.

Note: The PTZ dome camera used must be able to support a preset tour command. See Appendix F on page 143 for the complete list of PTZ commands available by camera protocol.

To set up a preset tour:


1. From the menu toolbar, click **PTZ Settings > More Settings**.
2. Select the preset tour number.
3. In the preset tour toolbar, click  to add a step to the preset tour. The Keypoint window appears. Select the preset number, dwell time and speed of the step. Click **OK** to save the settings.




Note: A preset tour should have at least two presets.

4. Repeat step 3 to configure other steps in the preset tour.




5. In the preset tour toolbar, click  to call up the preset tour.
6. Click **Back** to return to live view.

To delete a preset tour:

1. From the menu toolbar, click **PTZ Settings > More Settings**.
2. From the preset list, select a tour number and click  to delete the selected preset tour.

– Or –

In the preset tour toolbar, click  to delete all the preset tours for the selected tour.

3. Click **Back** to return to live view.

To call up a preset tour:

- **PTZ control panel:**



1. In live view left-click the mouse and select the PTZ control icon in the quick access toolbar. The PTZ control panel appears. Select the desired camera from the toolbar.

– Or –

On the front panel, select the desired camera and press **Enter** to call up the quick access toolbar. The PTZ control panel appears.

2. Scroll the toolbar to **Tour** and double-click the desired preset tour from the list. The camera immediately carries out the preset tour movement.

- **Menu toolbar:**



1. From the menu toolbar, click **PTZ Settings > More Settings**.
2. Select the desired preset tour from the list and click  to start the tour. Click  to stop the preset tour.
3. Click **Back** to return to live view.

Setting and calling up a shadow tour

The shadow tour command remembers the manually-controlled PTZ dome camera movement track. One shadow tour can be set up.

Note: The PTZ dome camera used must be able to support a shadow tour command. See Appendix F on page 143 for the complete list of PTZ commands available by camera protocol.

To set up a shadow tour:

1. From the menu toolbar, click **PTZ Settings > More Settings**.
2. Select the shadow tour from the list.
3. To record a new shadow tour, click  and use the directional buttons on the PTZ control panel to move the camera along the desired path.
4. Click  to save the shadow tour.

Note: The shadow tour can be overwritten.

5. Click **Back** to return to live view.

To call up a shadow tour:

- **PTZ control panel:**



1. In live view left-click the mouse and select the PTZ Control icon in the quick access toolbar. The PTZ control panel appears. Select the desired camera from the toolbar.

– Or –

On the front panel, select the desired camera and press **Enter** to call up the quick access toolbar. The PTZ control panel appears.

2. Scroll the toolbar to **Shadow Tour** and double-click the shadow tour from the list. The camera immediately carries out the shadow tour movement.

- **Menu toolbar:**

1. From the menu toolbar, click **PTZ Settings > More Settings**.
2. Select the shadow tour from the list and click  to start the shadow tour. Click  to stop the shadow tour.
3. Click **Back** to return to live view.

Chapter 11

Playing back a recording

The recorder lets you to quickly locate and play back recorded video. There are four ways to play back video:

- Instant playback of the most recently recorded video
- All-day playback of the day's recorded video
- Search the video archives by specific time, date, snapshot, or event
- Search the system log

The recorder continues to record the live view from a camera while simultaneously playing back video on that camera display. You must have the access privilege to play back recordings (see “Customizing a user’s access privileges” on page 112 for more information).

Cameras in multiview mode play back simultaneously. This means, for example, that it is easy to follow the path of an intruder who has passed in front of several cameras.

You must be in live view to play back video.

Overview of the playback window

It is easy to manage playback from the playback window.

The camera can be setup to display a time/date stamp during recording. The playback video can be set up to display a time/date stamp for evidentiary purposes (see Configuring the OSD settings on page 107).

Figure 25: Playback window (All-day playback shown)



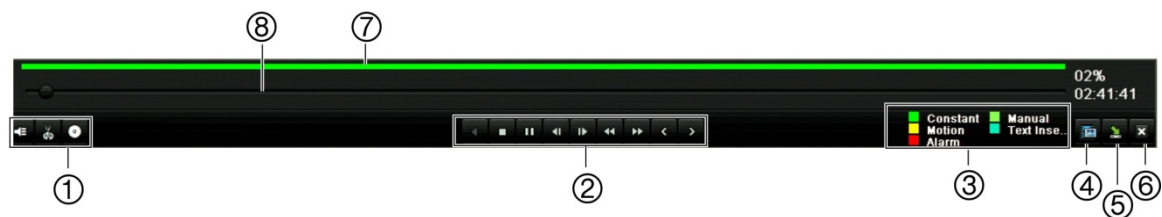
1. Playback viewer.
2. Camera panel. Select the cameras for playback. Move the mouse over the area to display the list of cameras available.
3. Calendar panel.
Blue: Current date
Green/Yellow/Red: Recordings available on the recorder.
4. Playback control toolbar. See Figure 26 below.
5. Time bar: Time of actual playback. This is only displayed in all-day playback.
6. All-day playback progress bar: This bar displays how much of the all-day period has been recorded.

The playback control toolbar

It is easy to manually control playback using the playback control toolbar. See Figure 26 below.

Note: The control toolbar does not appear for instant playback.

Figure 26: Playback control toolbar (search playback example shown)



Description









1. **Audio and video control toolbar:**



Audio on/off.




Start/stop a video clip during playback. Sections of a recording can be saved to an external storage device.

Description	
	Archive files
2. Playback control toolbar:	
	Reverse play the recording. Click again to pause.
	Stop playback. Timeline jumps back to 00:00 time (midnight).
	Play recording. Click again to pause.
	Forward skip by 30 seconds.
	Reverse skip by 30 seconds.
	Decrease playback speed: Options available are: single frame, 1/8 speed, 1/4 speed, 1/2 speed, normal, X2 speed, X4 speed, X8 speed, maximum speed.
	Increase playback speed. Options available are: single frame, 1/8 speed, 1/4 speed, 1/2 speed, normal, X2 speed, X4 speed, X8 speed, maximum speed.
3. Recording type: Description of the color coding of recording types that appear in the playback progress bar. Green indicates continuous recording. Red indicates alarm recording. Yellow indicates motion recording.	
4. Video search: This icon is only displayed when you playback the result of a search or for all-day playback. It does not appear for all-day playback. Click it to return to the Search window and reselect the search criteria.	
5. Hide toolbar: Hide the playback control toolbar.	
6. Quit playback: For all-day playback mode, quit playback and return to live view. For playback from search mode, quit playback and return to the search results window.	
7. Playback progress bar: This bar displays how far playback of the recording has progressed. It also indicates the type of recording using color.	
8. Timeline: Allows you to jump forwards or backwards in time. The timeline moves left (oldest video) to right (newest video). Click a location on it for where you want playback to start. In all-day playback the cursor shows the actual time. In search playback, the cursor is a ball. Time bar: Time of actual playback. This is only displayed in all-day playback.	

Instant playback




Use the quick access toolbar to quickly replay recorded video from a programmed period (the default period is five minutes). This can be useful to review an event that has just happened. Only one camera at a time can be selected. You can change the programmed period from the Display Settings > Monitor > More Settings page.

To instantly replay recorded video:

1. In live view left-click the mouse on the desired camera image. The quick access toolbar appears. Click **Instant Playback** .
2. Select the desired camera from the drop-down list and click **OK**.

Playback starts immediately. The Instant Playback scroll bar appears under the selected camera.



3. Click **Pause**  on the toolbar to pause playback. Click **Play**  to restart playback. Click  to stop playback and return to live view.

All-day playback

Use this option to play back recorded video from the last day. Playback starts at midnight and runs for the 24-hour period. All-day playback is shown in full-screen view. See Figure 26 on page 87 for a description of the playback control toolbar.

To start all-day playback using the front panel:

1. In live view click the All-day playback button . Play back starts.

To start all-day playback using the mouse:


1. In live view right-click the mouse on the desired camera image. In the mouse toolbar that appears, click **All-day Playback**.

The playback window appears. By default, the camera is in full-screen mode.

2. To select more than one camera for multiview playback or to select playback from a different day, move the mouse to the right edge of the window. The camera list and calendar appear. Check the desired cameras and/or another day. Up to 16 cameras can be selected depending on the recorder model.

Playback starts immediately.

Note: A message appears if there are no recordings found during this period.

3. Use the playback control toolbar to manually control playback.
4. Click **Exit**  to return to live view.

– Or –

Right-click the mouse and click **Exit** from the mouse menu to return to the previous window.

Searching recorded video

You can easily search and play back recorded videos by camera, recording type, time period, events, snapshots, and disk analysis.

The Search window has four submenus that allow you to carry out different searches by theme:

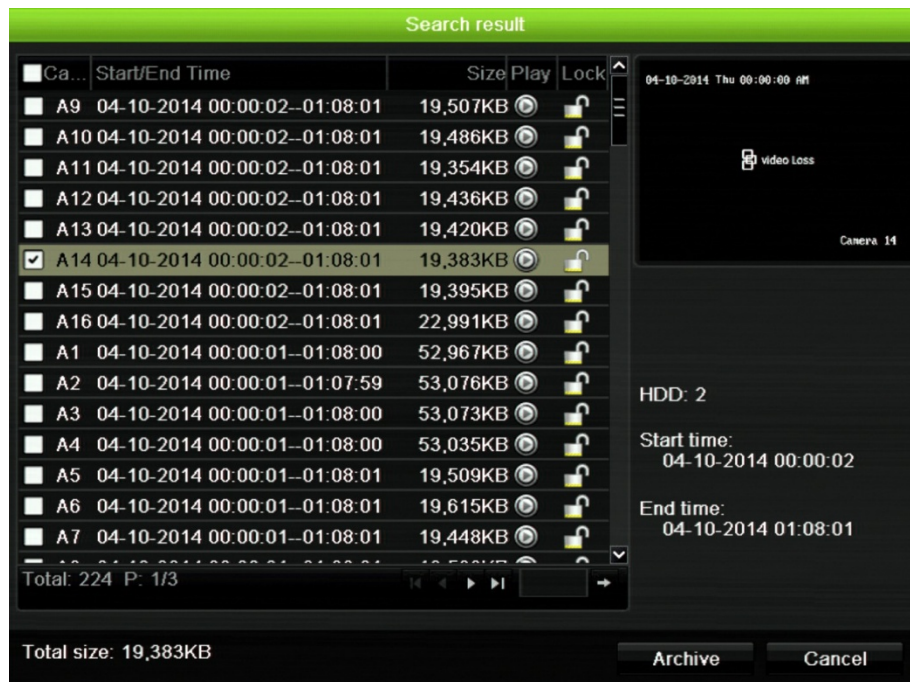
Search type	Description
Normal	Search all recorded video by cameras, recording type, type of file protection (locked or unlocked) and time period.
Event	Search only event recorded files. Files can be searched by alarm inputs, motion detection, or POS/ATM text insertion. Note: Only motion detection and POS/ATM text insertion that have been recorded as events will be listed in this search. Motion and text insertion that is recorded as a non-event can be searched under the Normal menu.
Picture	Search only recorded files with snapshots.
Disk analysis	The recorder can run a disk analysis to get a broader sense of the video data stored on the HDD. This video data can include alarms, events, video Loss, and more. See “Searching video using disk analysis” on page 52 for more information.

Search results

A search will usually produce a list of files, which may extend to several pages. The files are listed by camera, and then for each camera by date and time. The oldest file is listed first. See Figure 27 on page 91 for an example of the results from a search.

Only one file can be played back at a time.



Figure 27: Example of a search result list



Playing back recordings by time and video type

You can search recorded video by time and video type, such as continuous recordings, motion, text insertion, alarm and all recordings. Video can be played back simultaneously across several cameras.

To play back search results:



1. In live view mode right-click the mouse and in the mouse menu select **Advanced Search > Normal**.
2. Click the Channel icon and select the desired cameras, record type, file type as well as start and end time of the recording.
3. Click **Search**. The list of search results appears.
4. Play back the search results:
 - If there is only one camera in the search result, click its playback  button. Playback starts.
 - If there is more than one camera listed, click the playback  button of one of the cameras. In the window that appears, select the cameras you want to play back simultaneously and click **OK**. Playback starts.
5. To hide the playback control toolbar during play back, right-click the mouse and select the **Control Panel** button in the playback control toolbar. Click again for the panel to reappear.
6. Use the playback control toolbar to manually control playback.

7. To play back another camera, move the cursor to the right edge of the window to display the list of cameras and select the desired camera.
8. To do another search:
Click the **Video Search** icon in bottom right of the playback control toolbar or right-click the mouse and select **Event Search** from the list.
The search window reappears. Reselect the search criteria.

Playing back recordings by event

You can search recorded video by event type: alarm inputs, motion detection and POS/ATM text insertion. Video can be played back simultaneously across several cameras.


To play back search results by event:

1. In live view mode right-click the mouse and in the mouse menu select **Advanced Search > Event**.
2. Select the desired event type from the drop-down list (Alarm input, Motion or Text insertion) as well as the start and end time of the recording.
3. Select the desired alarm inputs.
If you selected "Motion" as the event type, select the required cameras. If you selected "Text insertion", select the required cameras and enter the desired keywords.
4. Click **Search**. The list of search results appears.
5. Play back the search results:
If there is only one camera in the search result, click its playback  button. Playback starts.
If there is more than one camera listed, click the playback  button of one of the cameras. In the window that appears, select the cameras you want to play back simultaneously and click **OK**. Playback starts.
6. To hide the playback control toolbar during playback, right-click the mouse and select the **Control Panel** button in the mouse menu. Click again for the panel to reappear.
7. Use the playback control toolbar to manually control playback.
8. To play back another camera, move the cursor to the right edge of the window to display the list of cameras and select the desired camera.
9. To do another search:
Click the **Event Search icon** in bottom right of the playback control toolbar or right-click the mouse and select **Event Search** from the list.
The search window reappears. Reselect the search criteria.

Slideshow of snapshots

You can search captured snapshots and play them back in sequence as a slideshow. See “Accessing frequently used commands” on page 69 on how to create snapshots.

To play back search results:

1. In live view mode right-click the mouse and in the pop-up menu select **Advanced Search > Picture**.
2. Select the desired cameras as well as start and end time of the recording to be searched.
3. Click **Search**. The list of snapshots appears.
4. Select a snapshot to see it in the thumbnail window. Click its **Play**  button to see it in full-screen mode.
5. When in full-screen mode, move the cursor to the right edge of the window to see the complete list of snapshots found in the search. Click their Play buttons to see them in full-screen mode.
6. To see a slideshow of all the snapshots found, click the ► or ◀ buttons on the snapshot toolbar to sequence forwards or backwards through the shots.
7. To do another search:

Click the **Picture Search icon** in bottom right of the playback control toolbar or right-click the mouse and select **Picture Search** from the list.

The search window reappears. Reselect the search criteria.

Playing back recordings from the system log

You can also playback recordings from the system log. The system log provides a much wider range of options for playback than Advanced Search, which deals with video detection and alarms only.

You can search the recorded logs by:

- **Date and time.** Logs can be searched by date as well as start and end recording times.
- **Major record types.** There are five main types: All, Alarm, Notification, Operation and Information.
- **Minor record types.** The major record types can be searched by sub categories (minor record type). The selection of minor record types available depends on the major type selected. See Table 17 on page 94 for the list.

Table 17: Main and minor record types

Major types	Minor types
All	All
Alarm	All, Alarm input, Alarm output, Start motion detection, Stop motion detection, Start tamper-proof, Stop tamper-proof
Notification	All, Video loss alarm, Abnormal video signal, Illegal login, HDD full, HDD error, IP conflicted, Network disconnected, Abnormal record, Input/output video standard mismatch
Operation	All, Power up, Local operation shutdown, Abnormal shutdown, Local operation restart, Local operation login, Local operation logout, Local operation configure parameters, Local operation upgrade, Local operation PTZ control
Information	All, Local HDD information, HDD S.M.A.R.T., Start recording, Stop recording, Delete expired record

Figure 28: View log window



To play back video from the system log:

1. Click **System Settings > Log Search** in the menu toolbar.
2. Select the search start and end times.
3. Under **Major Type** and **Minor Type**, select an option from the drop-down list. The minor type list of options available depends on the option selected under major type.
4. Click the **Search** button. A list of results appears.
5. 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 information, camera number, and gives

a description on the types of events recorded and when record time was stopped.

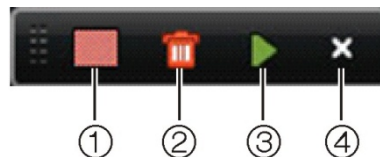
- **Play:** Click to start playback of the selected recording.
- **Export:** Click to archive the selected file to a USB device. The export window appears.
- **Back:** Click to return to the previous window.

Motion search

You can quickly and easily search playback recording for incidents of motion detection. Motion can be searched over the whole playback window or just for specific areas on it. This allows you to search, for example, whether any motion was detected a few days ago near a particular door.

The option is not available in instant playback.

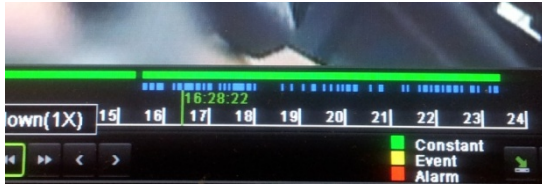
Figure 29: Motion search toolbar



1. **Full screen detection:** The motion-sensitive red grid automatically appears over the whole window.
2. **Delete all:** Delete the motion grid.
3. **Search:** Search the playback recording for motion detection.
4. **Exit:** Quit motion search mode and return to play back.

To search for motion in playback:

1. In playback mode right-click the mouse and click **Motion Search** on the mouse menu. The motion search toolbar appears and the playback control toolbar disappears.
2. Select an area of the window to be searched:
Drag the mouse over the desired area. A red grid appears. More than one area can be selected.
- Or -
Click the full-screen detection icon in the toolbar. The whole window is covered in the red grid.
3. Click the **Search** icon in the toolbar to see the results.
Motion appears as blue lines below the green playback progress bar (see below). If motion had been recorded as an event, it appears as yellow on the progress bar.





Click the **zoom-in** button to see the progress bar in closer detail.

Playing back frame-by-frame


You can easily play back a selected video at different speeds. This allows you to carefully examine an event frame-by-frame as it happens.

To play back frame-by-frame:

• Using a mouse:

1. In playback mode click the **Speed Down**  button in the playback control toolbar until the speed changes to single frame.
2. Click the **Pause** button  to advance the video frame by frame.

• Using the front panel:

1. In playback mode press the left arrow buttons to scroll down through the speed changes until single frame.
2. Press **Enter** to advance the video frame by frame.
3. Press the **Playback** button  to continue playback at normal speed.

Digital zoom in playback

You can easily zoom in on an image during playback to see it in greater detail.

To digitally zoom-in during playback:

1. In playback mode right-click the mouse and click **Digital Zoom** in the pop-up menu. The playback control toolbar disappears.

2. Click the window with the cursor.

The image zooms in and the digital view window appears.

3. Left-click the mouse and drag the red square to the area of interest, or press the arrow buttons on the front panel to position the red square. The selected area is magnified. The size of the red square cannot be changed using the front panel.
4. Right-click the mouse to quit digital zoom and to return to full-screen playback mode. The playback control toolbar reappears.

Chapter 12

Archiving recorded files

Archive recorded files on an external device such as a USB flash drives, USB HDDs or a DVD writer. You must be in live view to archive video. Access to archive commands may require a password.

Before starting to archive files, ensure that you have the backup device connected to the recorder. It can be detected automatically by the recorder.

Note: The recorder supports USB DVD and USB HD on the front and back USB ports.

Archiving files

There are two ways to archive files:

Quick Archive button: Quick archive lets you archive recorded files quickly by using the Archive button on the front panel. The recorder then downloads all the recorded files on the unit to fill the available memory space on the media. This option is not available via the mouse.

Advanced Search window: Use the Export command in the Advanced Search window to specify archiving settings such as a specific time and date period as well as cameras.

Using Quick Archive

To archive recorded video using Quick Archive:

1. Insert the backup device into the recorder.

If using a USB memory drive, insert the device into the USB port on the front panel. If using a digital video disk (DVD), insert the disc into the DVD drive. If more than one media type is found, the USB device takes precedence over the others.

2. Press **Archive** on the front panel or remote control to open the quick archive window.

- Click **Start** or press **Archive** on the front panel again. The unit starts to download all the files listed.

Note: If there is a capacity limitation on the backup device, only the most recent files will be backed up.

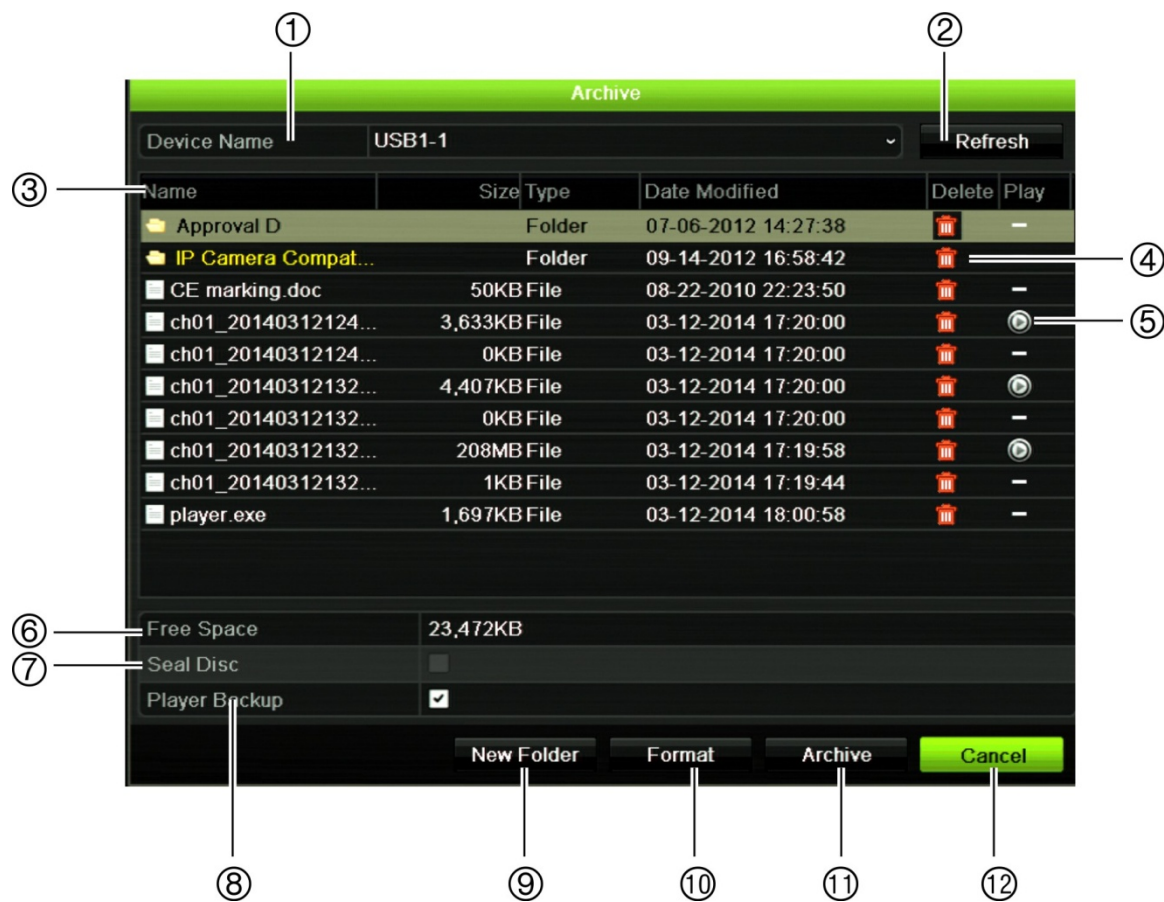
A message will appear to confirm when the download is complete.

Exporting recorded files to a backup device

You can insert a mini-USB hub to the USB port to attach a mouse for navigation or a USB drive for archiving. However, the unit may not support all types of USB hubs.

The Archive options available may depend on the type of backup device selected.

Figure 30: Example of an archive window



Function	Description
1. Device name	Select one of the storage media for archiving. If the backup device is not recognized: <ul style="list-style-type: none"> Click the Refresh button Reconnect device Check for compatibility from vendor

	Function	Description
2.	Refresh	Refresh the search results if any parameters have been modified.
3.	Name	Files found on the backup device are listed.
4.	Delete	Click to delete a selected file from the backup device.
5.	Play	Click to play selected file.
6.	Free space	Free space available on the backup device is displayed.
7.	Seal disc	Select to prevent other files being recorded onto the disc.
8.	Include Player	Select to automatically include the Player tool when archiving files.
9.	New folder	Create a new folder on the backup device. Files from the recorder can be archived to a specific folder.
10.	Format	Format the USB/eSATA drive.
11.	Archive	Start downloading selected files onto the backup device.
12.	Cancel	Cancel search and return to previous menu.

To export recorded files to a backup device:

1. Connect the backup device to the recorder.

If using a USB memory drive, insert the device into the USB port on the front panel. If using a digital video disk (DVD) or eSATA drive, insert the disc into the DVD drive. If both media are found in the recorder, the USB device takes precedence over the DVD.

2. In live view mode press the **Search** button on the front panel or remote control.

- Or -

Right-click the mouse and select **Advanced Search**.

The Advanced Search window appears.

3. Select the cameras and search parameters required.
4. Click **Search**. The list of results appears.
5. Select the files to export.

Note: You can click the Play button to verify that the selected files are the files to export.

6. Click **Archive**. The Archive window appears.
7. Select the storage medium to export to from the drop-down list.
8. Click **Archive** to begin the backup process.



Creating and archiving video clips

You can save important scenes in a recorded file for later reference by creating video clips of selected portions of the file during playback. When an intruder, for example, crosses in front of several cameras you can save the video clip of the intruder's path across these cameras in a single file.

Up to 30 video clips can be made from a recording.

Note: This feature is only available using the mouse.

To export video clips during playback:

1. Connect the backup device to the recorder.
2. Search for the required files to play back. See "Searching recorded video" on page 90.
3. Select the file or files to play back and click **Play**. Playback starts immediately.
4. Click the playback timeline where you want the video clip to start and click the **Start Clipping**  button.
5. Click the playback timeline where you want the video clip to stop and click the **End Clipping**  button.
6. Repeat for additional clips.
7. Exit playback mode. A message appears asking if you want to save the video clips.
8. Click **Yes** to archive the clips. The Archive window appears.
Click **No** to exit and return to the search results window. The clips are not saved.
9. In the Archive window select from the drop-down list the backup device to be used.
10. Click **Archive**. File downloading starts.

Note: You can create a new folder for the video clips. Press the **New Folder** button and enter the folder name.

Archiving snapshots

You can save all the video snapshots recorded to a backup device.

To archive snapshots:

1. Connect the backup device to the recorder.
2. Search for the required snapshot files to play back. See "Slideshow of snapshots" on page 93. The list of snapshots appears.
3. Select the snapshots to backup.

4. Click **Archive**. Select the archiving device, if different from that listed.
5. Click **Archive**. Export starts immediately.
6. When completed, click **OK**. Click **Cancel** to return to the previous window.

Managing backup devices

You can manage backup devices from the Archive window (see Figure 30 on page 98.)

The Archive window allows you to:

- **Create New Folder:** Create a new folder on the backup device.
- **Delete:** Delete a file or folder from the backup device.
- **Play:** Play the selected video file from the backup device.
- **Format:** Format the backup device.
- **Erase:** Erase files from a re-writable CD/DVD.

Playing back archived files on a PC

Use the standard file player software to play back the archived video on your PC. It is downloaded automatically from the recorder when archiving files onto a backup device.

Chapter 13

Recorder management

This chapter describes:

- Configuring the RS-232 port
- Updating system firmware
- Restoring default settings
- Viewing system information
- Viewing system logs

Configuring the RS-232 port

Use the System Settings menu to configure the RS-232 parameters such as baud rate, data bit, stop bit, parity, flow control, and usage.

Figure 31: RS-232 setup window



There are three ways the RS-232 port can be used:

- **ProBridge:** POS and ATM text insertion supported via the ProBridge accessory connected to the RS-232 port. See “Capturing text insertions” on page 125 for more information.
- **ATS/Challenger:** NTP time sync supported to foreign device over the RS-232 port.

- **Technical support:** Console mode.

Updating system firmware

The firmware on the recorder can be updated using four methods:

- Via an USB device
- Over the network via an FTP server
- Via the recorder web browser
- Using TruVision Navigator. For further information, refer to the TruVision Navigator user manual.

The firmware upgrade file is labeled *TVR12.dav*.

To update the system firmware using a USB device:

1. Download on to a USB the latest firmware from our web site at:
www.interlogix.com
- Or -
www.utcssecurityproductspages.eu/videoupgrades
2. Connect the USB device to the recorder.
3. Click the **System Settings** icon in the menu toolbar.
4. Select **Upgrade > Local Upgrade**. The list of files on the USB is displayed.
5. Select the file and click **Upgrade**. Click **Yes** to begin the upgrade process.
6. When the upgrade process is completed, the recorder will reboot automatically.

To update the system firmware via a FTP server:

For engineering purposes only.

Restoring default settings

To restore the default factory settings of the recorder:

1. From the menu toolbar, click **System Settings > Configuration**.
2. Click the **Default** tab. Click **OK** to confirm you want to restore default settings.
Note: Network information such as IP address, subnet mask, gateway, MTU, NIC working mode, server port, and default route are not restored to factory default settings.
3. 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 –

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.

Note: Network information, such as IP address, subnet mask, gateway, MTU, NIC working mode, server port, and default route, is not restored to factory default settings if Restore is selected.

Viewing system information

To view system information:

1. From the menu toolbar, click **System Settings > System Information**.
2. To view device information, click the **Device Info** tab.



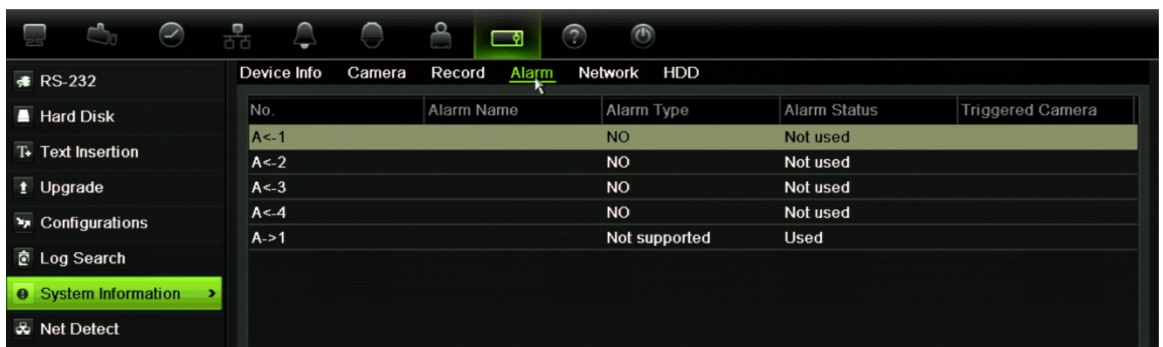
3. To view camera information, click the **camera** tab.



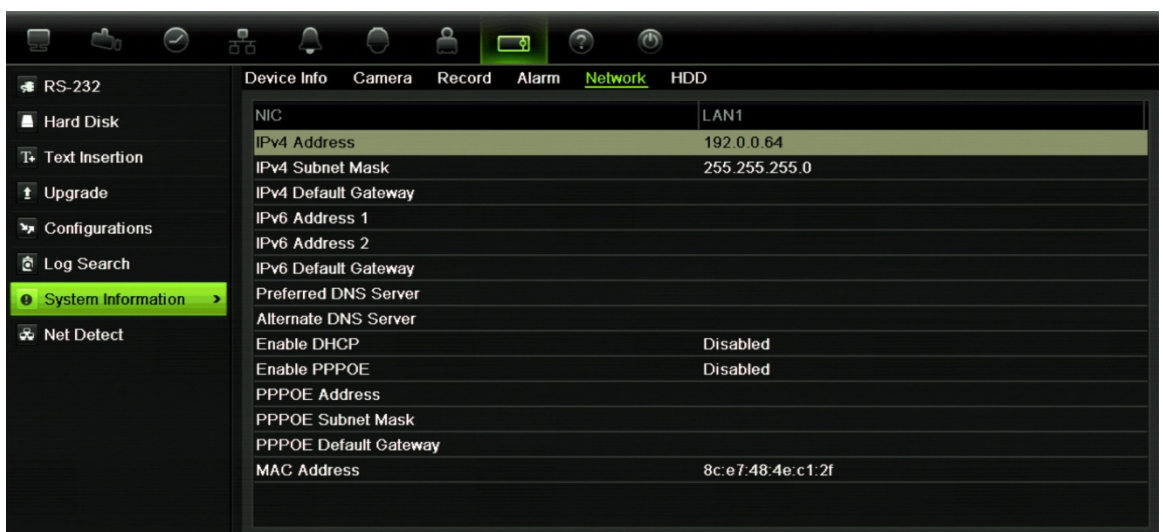
- To view record information, click the **Record** tab.



- To view alarm information, click the **Alarm** tab.



- To view network information, click the **Network** tab.



- To view HDD information, click the **HDD** tab.



8. Click **Back** to return to live view.

Searching system logs for events


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

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: *20130729124841logBack.txt*.

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

To search and export log files:

1. From the menu toolbar, click **System Settings > Log search**.
2. Enter the search parameters and click **Search** to begin the search. The logs matching the search criteria are displayed.
3. To view more detail information about a particular log entry, select the entry and click or double-click the log entry.
4. If available, you can also view the associated video to the selected log entry by clicking its play button .
5. To export log entries, select the logs and click **Export**.
6. Click **Back** to return to live view.

Chapter 14

Camera settings

The TVR 12 can support up to 16 analog cameras depending on the model.

Configuring the OSD settings

The recorder lets you configure which information is displayed on-screen for analog cameras only.

The on-screen display (OSD) settings appear in live view mode and include the camera name, time and date. They also are included in recordings.

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 **Camera Management > OSD**.



2. Enter a name for the camera, if required.
3. Check the Display Name, Display Date, and Display Week boxes to display the camera name, date, and week.
4. Select a date format and a time format.

5. Select how you want the camera information displayed.
Select one of the options from the drop-down list. Default is non-transparent/non-flashing.
 - Transparent & flashing
 - Transparent & not flashing
 - Non-transparent & flashing
 - Non-transparent & non-flashing
6. There are two red text boxes in the camera view window; one for the camera name and the other for the date/time. Using the mouse, click and drag a text box to the desired position.
7. To copy the settings to other cameras, click **Copy** and select the desired cameras. Click **OK**.
8. Click **Apply** to save the settings and then **Back** to return to live view.

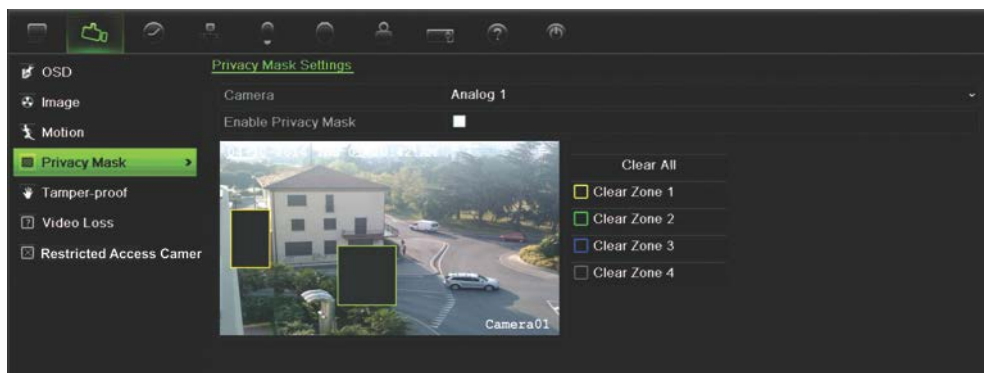
Setting up privacy masking

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 black area on the video image.

To setup a privacy mask:

1. From the menu toolbar, click **Camera Management > Privacy Mask**.
2. Select the camera for which to set up privacy masking.
3. Check the **Enable Privacy Mask** box to enable the feature.
4. Set up the mask area. Up to four areas can be set.

Using the mouse, click and drag a privacy-mask box in the camera view window over the desired area. You can set up to four areas for privacy masking. Masked areas are dimmed and outlined in four different colors. Click **Apply** to save settings.



To delete a mask, check the desired mask and click **Clear** for that color mask.

5. To copy the settings to other cameras, click **Copy** and select the desired cameras. Click **OK**.
6. Click **Apply** to save the settings and then click **Back** to return to live view.

Adjusting video image settings

You may need to adjust the camera image depending on the location background in order to get the best image quality.

The system has four preset mode settings for frequently encountered lighting conditions; Standard, Indoor, Low light and Outdoor. However, you can also manually adjust the brightness, saturation, contrast, and hue values using the Customize option. Adjustments to the settings affect both live view and recorded images.

Note: These options can also be modified from the image settings button on the live view quick access toolbar (see “Accessing frequently used commands” on page 69.)

To adjust display settings:

1. From the menu toolbar, click **Camera Management > Image**.
2. Select the camera for which to adjust the video image settings.
3. Select the desired mode value. Changes are seen immediately on screen.
If “Customize” is selected, adjust the brightness, saturation, contrast, and hue values by dragging each scroll bar.
4. Click **Apply** to save the settings and then click **Back** to return to live view.

Watermarking

You can overlay digital watermarking to authenticate images and protect them from alterations. Watermarking on an image is only visible during playback of exported video.

The recorder supports watermarking from TruVision cameras and encoders.

Use the playback application, Player, to reveal the watermarking on archived video. Enable the Watermarking option in Player.

Hiding a camera image from view

There may be occasions when you want to control who can see a camera image on a local monitor, such as if there is a camera located in a changing room. The recorder lets you select which camera (or cameras) is not displayed on the local

monitor unless the user is logged in and has permission to view the camera images. A restricted access camera is not displayed on screen when no user is logged in. Instead a person walking by sees a black screen with the Interlogix logo. See Figure 32 below.

Figure 32: Example of a restricted access camera image



To set up a camera for restricted access view:

1. From the menu toolbar, click **Camera Management > Restricted Access Camera**.
2. Check which camera or cameras you want to be restricted and click **Apply**.

Chapter 15

User management

By default the recorder comes with three user accounts: an Administrator account, an Operator account and a Guest account. These accounts provide multiple levels of access and functionality. See Table 19 below for a description of the different user accounts.

Table 18: User accounts

User	Description
Administrator	The administrator account includes extended menu with full access to all settings. The Administrator has the authority to add, delete or configure parameters for many of the system functions. There can only be one administrator. The user name is admin. The name cannot be modified. The default password is 1234.
Operator	The operator account includes reduced menu access to Video settings (inaccessible features are not visible). The default user name is "operator". The default password is 2222.
Guest	The guest account includes menu access with no programming possibilities (inaccessible features are not visible). The default user name is "guest". The default password is 3333.

Note: The default passwords should be changed for security reasons.


Adding a new user

Only a system administrator can create a user. You can add up to 16 new users. The access privileges of Operator and Guest users are predefined and can be modified by the administrator.

To add new users:

1. From the menu toolbar, click **User Management > Add**.

2. Enter the new user's name and password. Both the user name and password can have up to 16 alphanumeric characters.
3. Select the new user's access level: Operator or Guest.
4. Enter the user's MAC address to let the user access the recorder from a remote computer with this MAC address.
5. Click **Apply** to save the settings and **OK** to return to the previous window.
6. Define the user's permissions.

Click the Permission button  for the new user. In the Permissions pop-up window check the required access privileges for local, remote and camera configuration. See "Customizing a user's access privileges" below for the permission descriptions for each group.

Click **Apply** to save the settings and **OK** to return to the previous window.

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

Customizing a user's access privileges

Only an administrator can allocate access privileges to Operator and Guest users. The access privileges can be customized for each user's needs. The administrator's access privileges cannot be changed.

There are three types of privilege settings: Local Configuration, Remote Configuration, and Camera Configuration.

Note: Only the administrator can restore factory default settings and export configuration files.

Local configuration settings

- **Local Information (Log) Management:** Search and view logs of the recorder.
- **Local Parameter Settings:** Configure parameters and import the configuration from the recorder.
- **Local Advanced Operation:** Access HDD management (including the initialization and modification of disk properties). Update system firmware as well as stop the I/O alarm output.
- **Local Shutdown/Reboot:** Shutdown or reboot the recorder.

Remote configuration settings


- **Remote Log Search:** Remotely view logs that are saved on the recorder.
- **Remote Parameter Settings:** Remotely configure parameters and import configuration.
- **Remote Serial Port Control:** For future use.
- **Remote Video Output Control:** For future use.
- **Two-Way Audio:** Use two-way audio between the remote client and the recorder.
- **Remote Alarm Control:** Remotely alert or control the relay output of the recorder. Alarm and notification settings must be configured properly to upload to host.
- **Remote Advanced Operation:** Remotely manage HDDs (initializing and setting properties for HDDs) as well as remotely update system firmware and clear the I/O alarm output.
- **Remote Shutdown/Reboot:** Remotely shutdown or reboot the recorder.
- **V-stream:** Remotely configure v-stream.

Camera configuration settings

By default, all analog cameras are enabled for operators for each of these settings and none for guests.

- **Camera Permission:** Select the cameras that can be accessed by the user.
- **Local Live View:** Select and view live video locally on the recorder.
- **Local Playback:** Locally play recorded files that are on the recorder.
- **Local Manual Operation:** Locally start/stop manual recording on any of the channels, snapshots and video clips.
- **Local PTZ Control:** Locally control PTZ dome cameras.
- **Local Video Export:** Locally back up recorded files from any of the channels.
- **Remote Live View:** Select and view live video over the network.
- **Remote Playback:** Remotely play and download recorded files that are on the recorder.
- **Remote Manual Operation:** Remotely start/stop manual recording on any of the channels, snapshots and video clips.
- **Remote PTZ Control:** Remotely control PTZ dome cameras.
- **Remote Video Export:** Remotely back up recorded files from any of the channels.


To customize a user's access privileges:

1. Click the **User Management** icon in the menu toolbar to display its window.
2. Click the Permission button  for the user whose access privileges need to be changed. The Permissions pop-up window appears.
3. Select the desired access privileges from the three tabs: Local Configuration, Remote Configuration, and Camera Configuration.
4. Click **Apply** to save the settings.
5. Click the **OK** button to return to the previous window.
6. Click **Back** to return to live view.

Deleting a user

Only a system administrator can delete a user.


To delete a user from the recorder:

1. Click the **User Management** icon in the menu toolbar to display its window.
2. Click the **Delete** button  for the user to be deleted.
3. Click **Yes** in the pop-up window to confirm deletion. The user is immediately deleted.
4. Click **Back** to return to live view.

Modifying a user

A user's name, password, access level and MAC address can be changed. Only a system administrator can modify a user.

To modify a user:

1. Click the **User Management** icon in the menu toolbar to display its window.
2. Click the Edit button  for the user whose access privileges need to be changed. The Edit User pop-up window appears.
3. Edit the user information and click **Apply** to save the settings.
4. Click the **OK** button to return to the previous window.
5. Click **Back** to return to live view.

Changing the Admin password

The administrator's password can be changed in the **User Management** menu. Click the **Change Password** tab and enter the new information. The

administrator's MAC address can be changed here too. Once completed, click **Apply** to save the settings.

Chapter 16

Using the web browser

This chapter describes how you can use the web browser interface to configure the device, play back recorded video, search through event logs, and control a PTZ dome camera. You can also specify settings on the web browser interface to optimize video playback and recording performance when operating in a low or limited bandwidth environment. Many of the browser configurations are similar to those done locally.

Windows Vista and 7 users

Internet Explorer for Windows Vista and Windows 7 operating systems have increased security measures to protect your PC from any malicious software being installed. When using the recorder web browser interface, you can install ActiveX controls to connect and view video using Internet Explorer.

To have complete functionality of the web browser interface and the recorder player with Windows Vista and Windows 7, do the following:

- Run the Browser interface and the recorder player application as an administrator in your workstation
- Add the recorder's IP address to your browser's list of trusted sites

To add the recorder's IP address to Internet Explorer's list of trusted sites:

1. Open Internet Explorer.
2. Click **Tools**, and then **Internet Options**.
3. Click the Security tab, and then select the Trusted Sites icon.
4. Click **Sites**.
5. Clear the "Require server verification (https:) for all sites in this zone" box.
6. Enter the IP address or DDNS name in the "Add this website to the zone" field.
7. Click **Add**, and then click **Close**.
8. Click **OK** in the Internet Options dialog box.

9. Connect to the recorder for full browser functionality.

Accessing the web browser

To access the recorder, open the Microsoft Internet Explorer web browser and enter the IP address assigned to the recorder, as a web address. On the logon window, enter the default user ID and password.

Note: Only one recorder can be viewed per browser.

User ID: admin

Password: 1234

The default values for recorder network settings are:

- IP address - 192.168.1.82
- Subnet mask - 255.255.255.0
- Gateway address - 192.168.1.1
- Server port: 8000
- Ports:

When using the browser:

RTSP port: 554

HTTP port: 80

When using TruNav:

RTSP port: 554

Server/Client software port: 8000

For more information on port forwarding, see Appendix C “Port forwarding information” on page 131.

Web browser overview

The recorder web browser lets you view, record, and play back videos as well as manage all aspects of the recorder from any PC with Internet access. The browser’s easy-to-use controls give you quick access to all the recorder functions. See Figure 33 on page 118.

Figure 33: Live view in the web browser interface

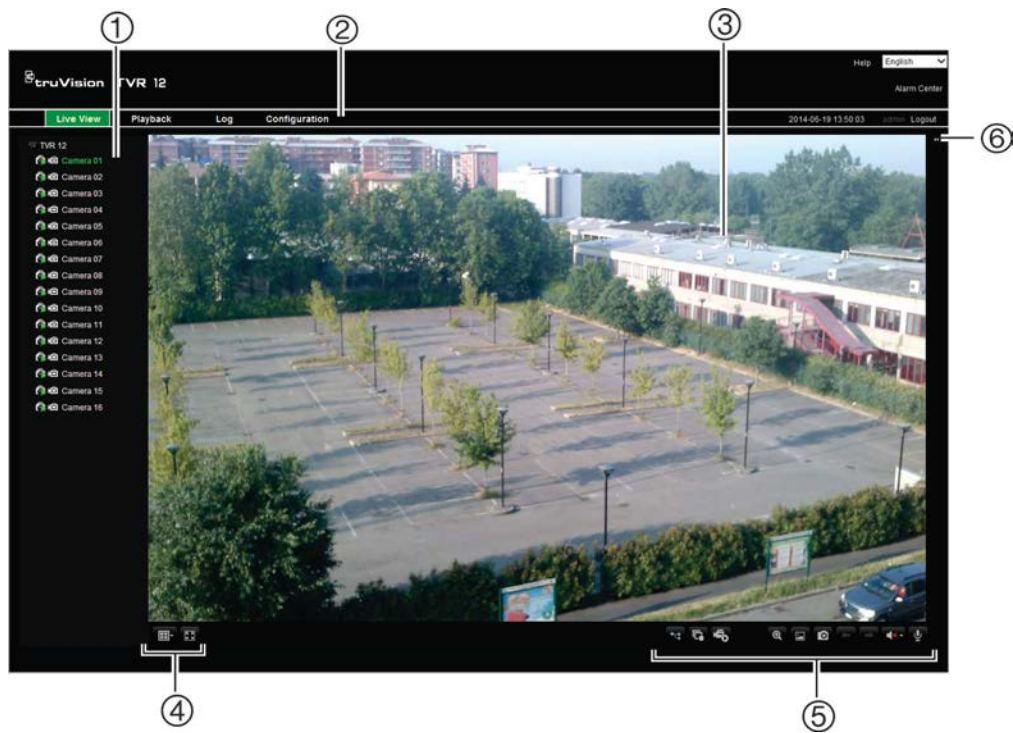












Table 19: Description of live view in the web browser

Item	Name	Description
1.	Camera	Select the camera.
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 Log out of the interface
3.	Viewer	View live or playback video.
4.	Display format	Define how you want video to be displayed in the viewer: Multiview or full-screen.
5.	Video function toolbar	Lets you do the following in live view: <ul style="list-style-type: none">  Switch between mainstream and substream.  Start/stop all streaming from selected cameras.  Start recording from selected cameras.  Digital zoom.  Turn POS/ATM text insertion on/off.  Take a video snapshot.

Item	Name	Description
		 View previous camera: If viewing in multiview format, live view moves to the previous group of cameras for the selected number of video tiles.
		 View next camera: If viewing in multiview format, live view moves to the next group of cameras for the selected number of video tiles.
		 Turn audio on/off.
		 Open/stop bi-directional audio.
6.	PTZ panel	Hide/display the PTZ panel.

Using the web browser to configure the device

Click **Configuration** on the menu bar to display the configuration window. There are two ways to configure the recorder: Local and Remote.

Local configuration

Local configuration lets you define communication and network parameters such as protocol type, maximum file size, stream type and network transmission settings. You can also specify the directory locations for saving recorded and playback video, snapshots, and downloaded files.

Remote configuration

See Table 20 on page 120 for an overview of the remote configuration menu functions. Please refer to the specific sections on the OSD menu functions for more information on configuring these functions.

Note: The configuration settings defined remotely are different from those that can be defined locally.

Figure 34: Remote browser configuration window (Display Settings window shown)

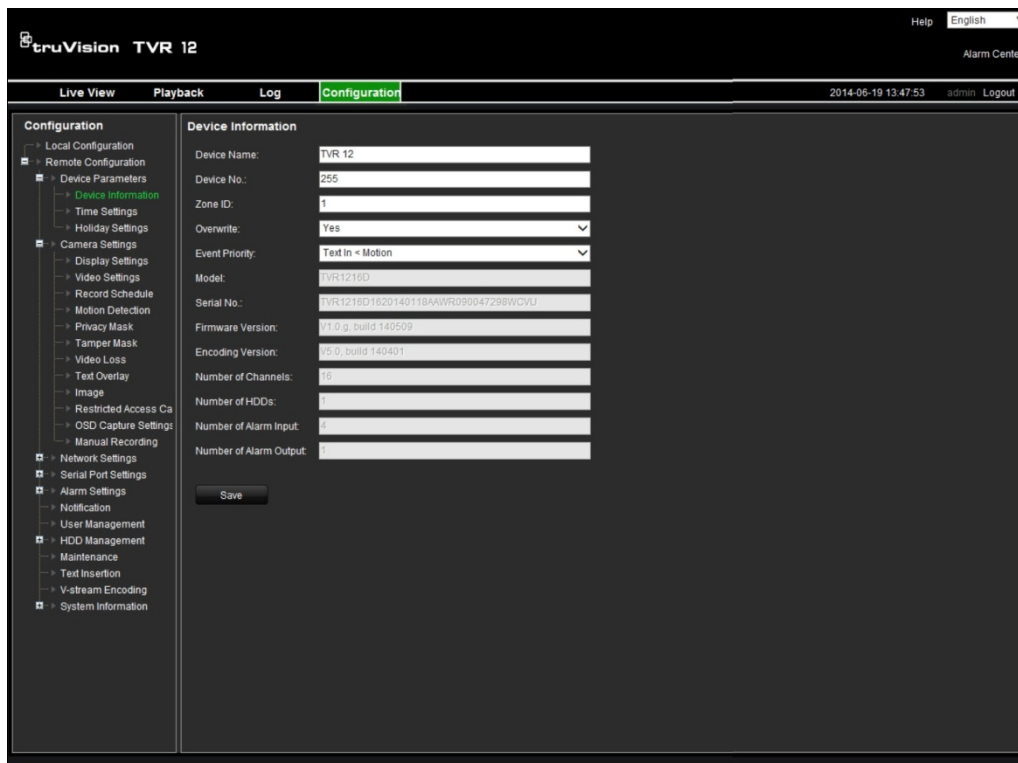


Table 20: Description of remote configuration menus

Menu	Function	Description
Device Parameters	Device Information	<p>Device name: Define the DVR name. The default name is TVR 42.</p> <p>Device number: The device number to use for the DVR when programming the remote control. The default value is 255.</p> <p>Zone ID: Each DVR in a daisy chain must have a unique zone ID so that it can be controlled by a KTD-405. The default value is 1.</p> <p>Overwrite: Enable or disable. Enabling this setting causes recorded files to be overwritten once the HDD is full. See for “Configuring overwrite” on page 24 more information.</p> <p>Event priority: Define the priority between text insertion event and motion alarm if both are triggered at the same time. Default is Motion alarm (Text In < Motion). See for more information.</p>
	Time Settings	Define time and date. See “Configuring time and date” on page 74 for more information. See “Configuring an NTP server” on page 42 for information on setting up NTP time settings.
	Holiday Settings	Define how recordings occur during holiday periods. See “Holiday schedules” on page 27 for more information.
Camera Settings	Display Settings	Define which information is displayed on-screen. See “Configuring the OSD settings” on page 107 for more

Menu	Function	Description
		information.
	Video Settings	Define general recording settings. See “Defining a recording schedule” on page 25 for more information.
	Record Schedule	Define the recording schedules. See “Defining a recording schedule” on page 25 for more information.
	Motion Detection	Define motion detection parameters. See “Setting up motion detection” on page 32 for more information.
	Privacy Mask	Define the on-screen privacy mask areas. See “Setting up privacy masking” on page 108 for more information.
	Tamper Mask	Define the video tampering detection settings. See “Detecting video tampering” on page 38 for more information.
	Video Loss	Define the video loss detection settings. See “Detecting video loss” on page 37 for more information.
	Text Overlay	Add extra lines of text on screen. See “Text overlay” on page 125.
	Restricted Access Camera	Define the cameras whose images cannot be displayed by those not logged in. See “Hiding a camera image from view” on page 109 for more information.
	Capture Settings	Define the resolution and image quality of snapshots.
	Manual Record	Define which cameras can manually record. See “Manual recording” on page 29 for more information.
Network Settings	General	Define the general network settings. See “Configuring general network settings” on page 39 for more information.
	PPPoE	Define the PPPoE settings. See “Configuring PPPoE” on page 40 for more information.
	DDNS	Define the DDNS settings. See “Configuring DDNS” on page 41 for more information.
	Email	Define the settings to send an email. See “Configuring email” on page 43 for more information.
	UPnP	Enable this function so that the NVR can automatically configure its own port forwarding. See “Configuring UPnP” on page 44 for more information.
	SNMP	Define the SNMP settings. See “Configuring SNMP” on page 45 for more information.
	FTP	Define the FTP settings. See “Configuring an FTP server to store snapshots” on page 45 for more information.
	More Settings	Define a remote alarm host, multicast IP as well as the server, HTTP, and RTSP ports. See page 46 for more information.
Alarm Settings	Alarm Input	Define the alarm input parameters for when an external alarm is triggered. See “Setting up external alarms” on page 34 for more information.

Menu	Function	Description
	Alarm Output	Define the response when an external alarm is triggered. See “Setting up external alarms” on page 34 for more information.
	Advanced Settings	Define the warning buzzer time. See “Modifying the warning buzzer” on page 32 for more information.
Notification		Define the notification parameters when irregular events occur such as HDD full. See “Description of alarm notification types” on page 31 and “Setting up system notifications” on page 36.
User Management		Define, modify, and delete users. See Chapter 15 “User management” on page 111 for more information.
HDD Management	Basic Settings	Define the HDD basic settings and Initialize the HDD. See “Initializing HDDs” on page 49 for more information.
	S.M.A.R.T. Settings	List the S.M.A.R.T. information on the HDD. See “Checking the S.M.A.R.T. information” on page 51 for more information.
Maintenance		Remotely update the recorder firmware, restore default factory settings, restart the recorder, and import/export parameters remotely. See Chapter 13 “Recorder management” on page 102 for more information.
System Information	Camera, Record, Alarm, and Network	Review the status of the cameras, recordings, alarms, and network. See “Viewing system information” on page 104 for more information.










Searching and playing back recorded video





To search and play back recorded video, click Playback on the menu bar to display the Playback page shown in Figure 35 on page 123.

Figure 35: Browser playback window



Description

1. Selected camera.
2. **Calendar:** Selected day is highlighted.
3. **Search:** Click to start searching recorded files for the selected camera.
4. **Display format:** Click to change the display format: single view or multiview display.
5. **Timeline:** The timeline moves left (oldest video) to right (newest video). Click a location on the timeline to move the cursor to where you want playback to start.
6. **Playback control toolbar:**
 -  **Reverse:** Click to reverse playback.
 -  **Play/Pause:** Play or pause playback.
 -  **Stop playback.** Playback is stopped and the window changes to black.
 -  **Speed down:** Click to scroll through the different speeds available: single frame, 1/8 speed, 1/4 speed, 1/2 speed, normal, X2 speed, X4 speed, X8 speed, maximum speed. Current speed is displayed under the camera name on top right of window.
 -  **Speed up:** Click to scroll through the different speeds available: single frame, 1/8 speed, 1/4 speed, 1/2 speed, normal, X2 speed, X4 speed, X8 speed, maximum speed. Current speed is displayed under the camera name on top right of window.
 -  **Single frame:** Click to play back one frame at a time.
7. **Stop streaming:** Stop streaming from all cameras.
8. **Audio and video control toolbar:**
 -  **Digital zoom:** Click to enter digital zoom. See “Digital zoom” on page 71 for further information.
 -  **Text insertion:** Click to enable/disable POS/ATM text display in playback.
 -  **Snapshot:** Capture a snapshot of the video.

Description	
	Video clips: Start/stop video clip during playback. Sections of a recording can be saved to an external storage device.
	Download: Download video clips.
	Backup: Click to make back up of recorded files to save locally on the recorder. A list of the recorded files appears
	Audio: Click to enable/disable audio.
9.	<p>Type of recording:</p> <p>Green: Indicates video recording based on the defined recording schedule.</p> <p>Red: Indicates video recording triggered by an alarm event.</p> <p>Yellow: Indicates video recording triggered by motion detection.</p> <p>Blue: Indicates video recording triggered by a POS/ATM text recording.</p> <p>Light green: Indicates manual recording.</p>
10.	Jump start: Enter a precise time in the box and click the Go To button to jump start the playback at this selected time.
11.	By text: Check to search text insertion when playing back a recorder video. Enter the keyword to search for in the text box that appears.
12.	Player Download: Click to download the Player application required to play back recordings on your computer.

Select a camera and a day to search from on the calendar displayed, and then click Search. The timeline below the page indicates video recorded for the specified day. The timeline also classifies by color the type of recording with each type.

Click and drag the marker across the timeline on where you want video playback to begin, and then click Play on the playback control toolbar. You can capture a snapshot of a video image, save the video playback, or download the recorded video.

Searching for event logs

The recorder compiles a log of events, such as the start or end of video recording, recorder notifications, and alarms, through which you can easily search. Logs are categorized by the following types:

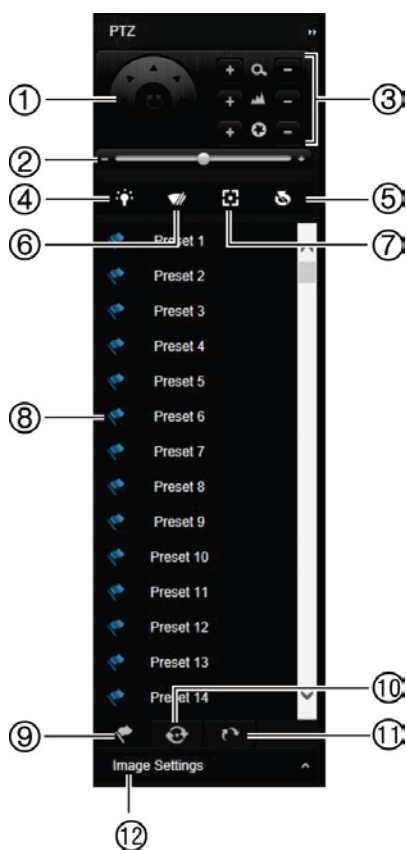
- **Alarm:** Includes motion detection, tamper mask and other alarm events
- **Notifications:** Includes system notifications such as video loss, HDD failures, and other system-related events
- **Operations:** Includes users access to the web interfaces and other operational events
- **Information:** Includes general information on the recorder actions, such as the start and end of video recording, etc.

To search for logs, click **Log** on the menu bar, select a log type, specify a date and time range, and then click Search.

Controlling a PTZ dome camera in the web browser

The web browser interface lets you control the PTZ functions of a dome camera. Click a PTZ dome camera and use the PTZ controls on the interface to control the PTZ functions. See Figure 36 below.

Figure 36: PTZ controls



1. Directional pad/auto-scan buttons: Controls the movements and directions of the PTZ. Center button is used to start auto-pan by the PTZ dome camera.
2. Adjust speed of PTZ dome camera.
3. Adjust zoom, focus, and iris.
4. Turn on or off the camera light (if available on the camera).
5. 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 prolonged periods of time.
6. Start or stop camera wiper (if available on the camera).
7. Auxiliary focus: Automatically focus the camera lens for the sharpest picture.
8. Start selected preset/tour/shadow tour (depending on function selected).
9. List presets available.
10. List preset tours available.
11. List shadow tours available.
12. Modify brightness, contrast, saturation, and hue values.

Text overlay

You can add up to four lines of text on-screen via the browser. This option can be used, for example, to display emergency contact details. By default these lines of text are positioned along the top of the window. The strings follow each other consecutively.

Note: This option is not available via the recorder.

To add on-screen overlay text:

1. In the browser toolbar, click the **Configuration > Camera Settings > Text Overlay**.
2. Select the desired camera.
3. Check the string box **1** for the first line of text.
4. Enter the text for string 1 in the column alongside. Up to 44 alphanumeric characters can be used.
5. Repeat steps 3 and 4 for each extra line of text, selecting the next string number.
6. Click **Save**.

Capturing text insertions

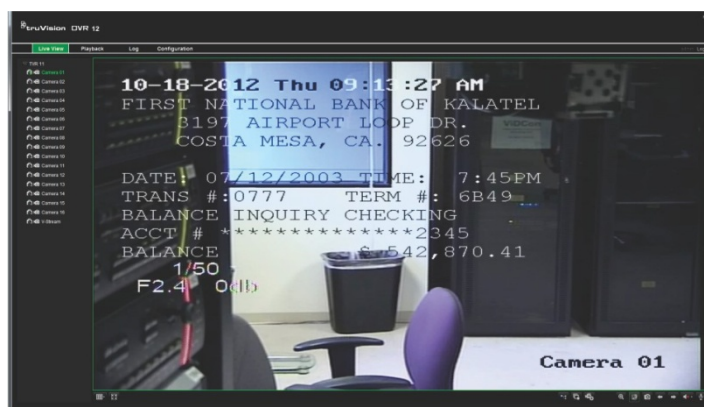
Text insertion lets you insert or display text from a point-of-sale (POS) system on the video display of the recorder. The text is saved and time-stamped together with the video. You can then search the text for specific video clips. The text is displayed during playback.

The recorder supports POS and ATM text insertion via the UTC ProBridge accessory connected to the RS-232 port on the recorder. This feature is currently only available using the browser.

Playback from the camera set up for text insertion will display the video with the POS text overlay. However, in live mode text insertion is for reference only as not all the inserted text may be visible on-screen.

See Figure 37 below for an example of a video image in live view with text insertion.

Figure 37: Example of a video image with text insertion

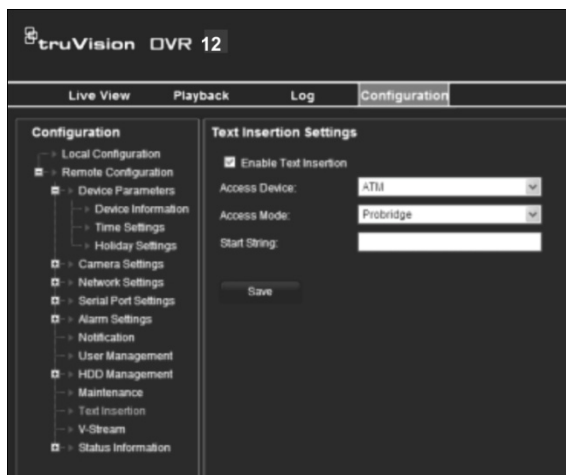


To set up text insertion:

1. Click the **Configuration** tab in the browser toolbar and then select **232 Serial Port**.



2. Under **Usage**, select **ProBridge**.
3. Select **Text Insertion**.



4. Check **Enable Text Insertion**.
5. Select the access device from the drop-down list.
6. Under "Start String", enter the desired transaction text such as an ATM transaction number.
7. Click **Apply** to save the settings.

Appendix A

Specifications

	TVR 1204c	TVR 1204	TVR 1208	TVR 1216
Video & audio input				
Video compression	H.264			
Analog video input	4-ch, BNC (1.0 Vp-p, 75 Ω), PAL /NTSC self-adaptive	4-ch, BNC (1.0 Vp-p, 75 Ω), PAL /NTSC self-adaptive	8-ch, BNC (1.0 Vp-p, 75 Ω), PAL /NTSC self-adaptive	16-ch, BNC (1.0 Vp-p, 75 Ω), PAL /NTSC self-adaptive
Audio compression	G711			G722
Audio input	2-ch, RCA (2.0 Vp-p, 1 kΩ)	4-ch, RCA (2.0 Vp-p, 1 kΩ)		
Two-way audio	1-ch (reduplicated with audio input 1), RCA (2.0 Vp-p, 1 kΩ)			
Video & audio output				
HDMI output	1-ch, Resolution: 1920 × 1080P / 60 Hz, 1600 × 1200 / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz			
VGA output	1-ch, Resolution: 1920 × 1080P / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz			
Analog output	1-ch, BNC (1.0 Vp-p, 75 Ω), Resolution: PAL: 704 × 576; NTSC: 704 × 480			
Video loop output	2-ch	4-ch	8-ch	16-ch
Encoding resolution	4CIF / 2CIF / CIF / QCIF / 960H			
Video bit rate	32 to 3072 Kbps, or user defined (max. 3072 Kbps)			
Audio output	1-ch, RCA			
Audio bit rate	64 Kbps			
Dual-stream	Support (Sub-stream at CIF/QCIF: 25 fps (PAL) / 30 fps (NTSC))			
Stream type	Video, Video & Audio			
Playback resolution	4CIF / 2CIF / CIF / QCIF / 960H			

	TVR 1204c	TVR 1204	TVR 1208	TVR 1216
Synchronous playback	2-ch	4-ch	8-ch	16-ch
Hard disk				
SATA	1 or 2 SATA interfaces			
Capacity	Models without CD/DVD burner: 1 or 2 HDDs. Up to 2TB capacity for each disk Models with CD/DVD burner: 1 HDD. Up to 2TB capacity			
External interface				
Network interface	1 RJ45 10M / 100M Ethernet interface			
Serial interface	1 RS-232 interface (for ProBridge, Challenger, Technical Support); 1 RS-485 interface (for PTZ control or KTD405 keyboard control)			
USB interface	2, USB 2.0			
Alarm in	4			
Alarm out	1			
Miscellaneous				
Power supply	12 VDC			
Power consumption (without HDD or DVD-R/W)	≤ 15 W	≤ 15 W	≤ 20 W	≤ 30 W
Operating temperature	-10 to +55 °C (14 to 131 °F)			
Relative humidity	10 to 90%			
Chassis	1U or 1.5U chassis			
Dimensions (W x H x D)	314 x 222 x 53 mm (12.3 x 8.74 x 2.1 in.)	362 x 330 x 78 mm (14.25 x 13.0 x 3.07 in.)		
Weight	≤ 2 kg (4.4 lb.)	≤ 3 kg (6.6 lb.) (without HDD or DVD-R/W)		

Appendix B

PTZ protocols

Interlogix-485	PELCO-P
Interlogix-422	PHILIPS
GE-RS485-ASCII	PHILIPS-3
Kalatel	SAE
DSCP	Samsung
HIKVISION	Siemens
Honeywell	SONY-EVI-D30/31
INFINOVA	SONY-EVI-D70
KTD-348	SONY-EVI-D100/P
LG MULTIX	TECHWIN
LILIN	VICON
PANASONIC_CS850	YOULI
PELCO-D	

Appendix C

Port forwarding information

A router is a device that lets you share your internet connection between multiple computers. Most routers will not allow incoming traffic to the device unless you have configured them to forward the necessary ports to that device. By default our software and devices (DVRs and NVRs) require the following ports to be forwarded:

Note: Port forwarding may reduce the security of the computers on your network. Please contact your network administrator or a qualified network technician for further information.

Port: 80	HTTP protocol	Used to connect via IE browser.
Port: 8000	Client Software Port	Used to connect to video streams.
Port: 554	RTSP Port	Real time streaming protocol. Used to record video remotely.
Port: 1024	RTSP Port for 3G/4G	Use with mobile apps. Used for 3G/4G connection.

Note: It is recommended that the RTSP port 1024 should only be used when experiencing connection issues over a 3G/4G connection.

For example: If the client port is changed to 9000 then the +200 port will be 9200. Using the default client port 8000 then the +200 port will be 8200.

Seeking further assistance

Third-party assistance on configuring popular routers can be found at:

<http://www.portforward.com/>

<http://canyouseeme.org/>

<http://yougetsignal.com>

Note: These links are not affiliated with nor supported by Interlogix technical support.

Many router manufacturers also offer guides on their websites as well as including documentation with the product.

On most routers the brand and model number is located on or near the serial number sticker on the bottom of the device.

If you cannot find any information for your particular router, please contact your router manufacturer or internet service provider for further assistance.

Appendix D

KTD-405 keypad

Supported firmware

TVR 12XX-YYY firmware	1.0i or higher
KTD-405U (-2DU) keypad firmware:	1.4.00

Note: XXX represents the number of video channels.

YYY represents the recorder storage configuration such as 1T = 1 TB, etc.

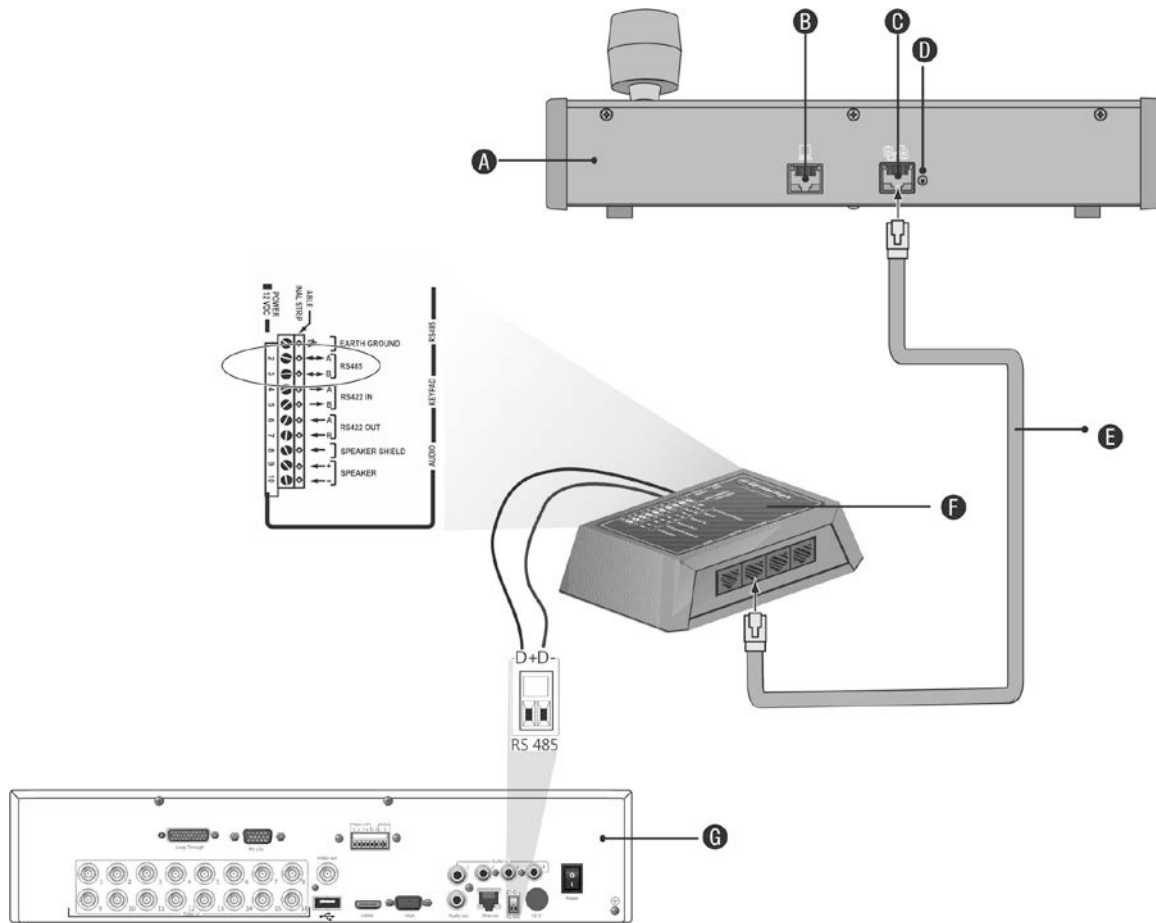
Wiring the keypad

Connect the RS-485 bus of the KTD-405 I/O box to the recorder keypad terminal port.

Table 21: Keypad and recorder connections

KTD-405 I/O box	TVR 12 connection
RS-485 A	D+
RS-485 B	D-

Figure 38: Keypad and recorder connections



- | | |
|------------------------------|---|
| A. KTD-405 keypad | E. RJ45 cable control (use the cable provided with the equipment) |
| B. RS-232 programming port | F. I/O box |
| C. RS-485 and RS-422 in/out | G. Recorder back panel |
| D. RS-485 termination switch | |

See “Connecting a KTD-405 keypad and dome camera to the recorder” on page 15 for information on how to connect both a keypad and dome camera to the recorder.

Setting the keypad to work with the recorder

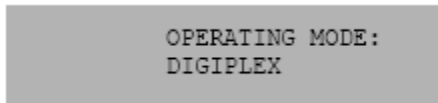
The keypad must be in zone mode to connect correctly with the recorder.

Further information on connecting and programming the KTD-405 keypad can be found in the user manual.

To set the keypad in zone mode:

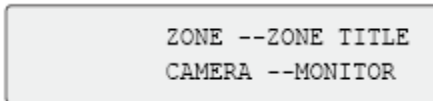
1. Log into the keypad using the Admin password. Hold down the Enter button (↵) until a beep sounds and then enter the following code: 1 4 7 6. Push the **seq** button to confirm.

2. Scroll through the menus with the **▶** button until this menu appears:



```
OPERATING MODE:
DIGIPLEX
```

3. Change *Operating Mode* to *Zone* by moving the joystick down.
4. Quit the menu by pressing the **seq** button. The display will show, for example:



```
ZONE --ZONE TITLE
CAMERA --MONITOR
```

5. To connect it to the recorder, press the **zone** button and enter the ID number of the recorder. The default value is “1”.
6. To configure the recorder zone ID number, at the recorder enter the Monitor screen by selecting **Display Mode Settings** in the main menu and select Monitor. Under Zone ID, enter the zone ID value. The default value is “1”.

Note: The zone ID value must be identical for the recorder and keypad.

The recorder is now connected to the KTD-405 keypad.

Recorder and keypad functions

The KTD-405U acts as a recorder control keypad when connected to the recorder. The keypad mimics many of the functions available from the front panel of the recorder.

Unavailable recorder functions

The following TVR 12 functions are unavailable when using the keypad to control the recorder:

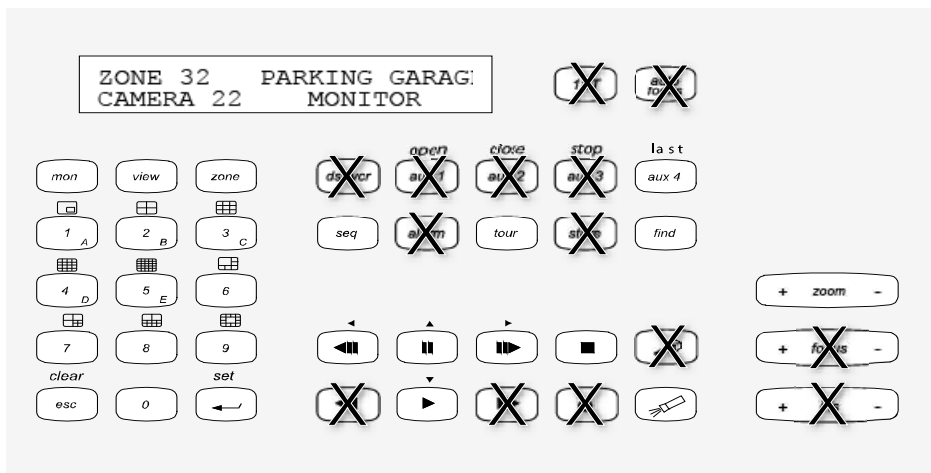
- Export video
- Shadow tour
- Select motion detection or tampering zones
- Archive records
- Capture video

If these functions are required, it is recommended to use a mouse in conjunction with the keypad as all recorder functions will then be available.

Unavailable keypad functions

The following keypad buttons are unavailable when using the keypad to control the recorder:

Figure 39: Unavailable keypad buttons



DSC/VCR	Autofocus	● (Record mode)
Aux 1	Alarm	Store
Aux 2	Iris +/-	▶▶ Fast forward
Aux 3	Focus +/-	◀◀ Fast backward
Aux 4	🔍 (Magnification)	
Ist		

Operating the keypad

You can navigate the recorder menus using the keypad buttons and joystick. However, not all maneuvers are available using the joystick.


See Table 22 on page 137 for the description of the recorder keypad mapping when using the KTD-405 keypad series. See Figure 38 above for a list of the keypad functions that are unavailable when connected to the recorder.

Example 1: To enter your password in the login window using the keypad

1. In live view mode, press **esc** to activate the Login window.
2. Press and hold **esc** and then press the arrow buttons (⏵ **down**, ⏶ **up**, ⏴ **left**, ⏴ **right**) to move the cursor to the Password edit box. Once in the password box, release **esc**.
3. Press **Enter** (↵) to activate the soft keyboard.
4. Press and hold **esc** and then press the arrow buttons to reach the first digit of the password. Release **esc** and press **Enter** (↵) to select the digit.
Or move the joystick to the first digit of the password and press **Enter** (↵).
5. Repeat steps 2 to 4 for each digit of the password.
6. Move the cursor to the Enter button on the soft keyboard and press **Enter** (↵) on the KTD-405 keypad to quit the soft keyboard.

7. Press and hold **esc** and then press the arrow buttons to navigate the cursor to activate OK button on the Login screen.
8. Press **↵**. The main menu appears.









Example 2: To modify a menu option using the keypad







1. In the main menu press and hold **esc** and then press the arrow buttons to navigate to the desired menu icon (for example, Display Mode Settings).
2. Press **esc** and  to go to **Display Mode Settings** menu.
3. Press **Zoom +** or **Zoom -** to scroll to the menu tab, **More Settings**.
4. When in the desired menu window, press and hold **esc** and then press the arrow buttons to navigate the cursor to the option, **Menu Timeout**.
5. Press **↵** to activate the dropdown menu.
6. Press and hold **esc** and then press the up/down arrow buttons to navigate to the desired option.
7. Press **↵** to select the option.
8. Press and hold **esc** and then press the up/down arrow buttons to navigate to **Apply**. Press **↵** to select it. Then navigate to **Back** to return to live view.

Instead of the arrow buttons, you can also use the joystick on the keyboard.

TVR 12/TVR 12c mapping to the KTD-405 keypad

Table 22: Recorder mapping to the KTD-405 keypad

Task	Keypad action	Further information
• Menu mode		
Call up or exit menu	In live view, press esc .	To log out the menu: go to the Power Manager menu and select Logout.
Move through the menus	Press and hold esc and then press the arrow buttons or use the joystick.	 Down ,  Up ,  Left ,  Right
Move between menu tabs	Press seq to switch between menu tabs.	
Navigate to a menu option	Press and hold esc and then press the arrow buttons or use the joystick.	 Down ,  Up ,  Left ,  Right
Select a character or menu option	Press Enter (↵).	Note. If you press esc before pressing Enter , you quit the menu without saving any changes. It is the same as Cancel.
Select the zone ID	Press zone to connect the keypad to the recorder.	

Task	Keypad action	Further information
• Live view mode		
Call up a single camera	Press 0 to 9 and then press Enter (↵).	Using the numeric buttons 0 to 9 , enter the number of the camera and then press Enter (↵).
Call up multiview screens	Press view and then press button 5 to scroll through the next available multiview screen.	
Sequence through cameras	Press the seq button to scroll through the cameras in full screen.	
Switch to next/previous camera	Move the joystick to the right (= next camera), or the left (=previous camera).	
Switch between monitor A and monitor B	Press the mon button and button 1 to switch to monitor A. Press the mon button and button 2 to switch to monitor B.	
Manually acknowledge an alarm	Press Alarm .	
• PTZ functions		
Enter PTZ mode	In live view mode, press Enter (↵).	It is possible that you first need to login before you can access the PTZ mode.
PTZ functions (Up, Down, Left, Right, Zoom in, Zoom out)	Move the joystick to move the dome up, down, left and right Press zoom+ and zoom- .	KTD-405U : Turn the knob on the joystick to zoom in/zoom out. KTD-405-2DU : Press the zoom+ and zoom- buttons.
Leave PTZ mode	Press esc .	
• Playback functions		
Search for recorded video	Press  .	Once password is entered, the Advanced Search menu appears.
All-day playback	Press  when in full screen.	All-day playback of the currently selected camera.
Stop playback	Press  to stop playback and return to live view mode.	
Pause playback	Press  to pause playback. Press  to restart.	
Select one of the files in the search result screen	Press enter (↵) and move the joystick to the desired file. Press  to start playback.	

Task	Keypad action	Further information
Change playback speed	Press and hold esc and then press the left/right arrow buttons or move the joystick to the left/right.	
Jump 30 seconds forwards or backwards during playback	Press and hold esc and then press the up/down arrow buttons or move the joystick to the left/right.	

Controlling a camera

When setting up and controlling your cameras in zone mode, refer to Table 23 below for the list of default PTZ addresses associated with a zone ID. This value is automatically populated in the system. You can modify the PTZ address in the PTZ menu to meet customer requirements (see “Configuring PTZ settings” on page 79).

Table 23: Default PTZ camera addresses by zone ID

Camera input	Zone ID of TVR 12															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	0	32	64	96	128	160	192	224	256	288	320	352	384	416	448	480
2	1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481
3	2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482
4	3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483
5	4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484
6	5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485
7	6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486
8	7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487
9	8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488
10	9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489
11	10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490
12	11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491
13	12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492
14	13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493
15	14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494
16	15	447	79	111	143	175	207	239	271	303	335	367	399	431	463	495
17	16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496
18	17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497
19	18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498
20	19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499

Camera input	Zone ID of TVR 12															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
21	20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500
22	21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501
23	22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502
24	23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503
25	24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504
26	25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505
27	26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506
28	27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507
29	28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508
30	29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509
31	30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510
32	31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511

Appendix E

Maximum pre-recording times

The maximum pre-recording time that can be selected depends on the bit rate. Frame rate, resolution and image quality do not impact time.

Note: This information only applies when the bit rate is set to Constant (see “Initializing the recording settings” on page 22 for more information).

Constant bit rate	Maximum pre-recording time (seconds)
32	30
48	30
64	30
80	30
96	30
128	30
160	30
192	30
224	30
256	30
320	30
384	30
448	30
512	30
640	30
768	30
896	30
1024	30
1280	25
1536	20

Constant bit rate	Maximum pre-recording time (seconds)
1792	15
2048	15
3072	10

Appendix F

Supported PTZ commands

Table 24: Supported PTZ commands by camera protocols (Part 1)

Protocol	PTZ command												
	Tilt up	Tilt down	Pan left	Pan right	Left up	Left down	Right up	Right down	Auto pan	Zoom +	Zoom -	Focus +	Focus -
Interlogix-485	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
Interlogix-422	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
GE-RS485-ASCII	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
KALATEL	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
DSCP	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
HIKVISION	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Honeywell	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
INFINOVA	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
KTD-348	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
LG MULTIX	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
LILIN	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
PANASONIC_CS850	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
PELCO-D	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y
PELCO-P	Y	Y	Y	Y	Y*	Y*	Y*	Y*	Y	Y	Y	Y	Y
PHILIPS	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
PHILIPS-3	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
SAE	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
Samsung	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
Siemens	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
SONY-EVI-D30/31	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N
SONY-EVI-D70	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N
SONY-EVI-D100/P	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N

Protocol	PTZ command												
	Tilt up	Tilt down	Pan left	Pan right	Left up	Left down	Right up	Right down	Auto pan	Zoom +	Zoom -	Focus +	Focus -
TECHWIN	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N
VICON	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y
YOULI	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y	Y

*: Hikvision only.

Table 25: Supported PTZ commands by camera protocols (Part 2)

Protocol	PTZ command										
	Iris+	Iris-	Light	Wiper	Zoom area	Center	Menu	Preset	Tour	Shadow tour	
Interlogix-485	Y	Y	N	N	N	N	N	Y	N	Y	
Interlogix-422	Y	Y	N	N	N	N	N	Y	N	Y	
KALATEL	Y	Y	N	N	N	N	N	Y	N	Y	
DSCP	Y	Y	N	N	N	N	N	Y	N	Y	
HIKVISION	Y	Y	N	N	Y	Y	Y	Y	Y	Y	
Honeywell	Y	Y	N	N	N	N	N	N	N	N	
INFINOVA	Y	Y	N	N	N	N	N	Y	N	Y	
KTD-348	Y	Y	N	N	N	N	N	Y	N	Y	
LG MULTIX	Y	Y	N	N	N	N	N	Y	Y	Y	
LILIN	Y	Y	N	N	N	N	N	N	N	N	
PANASONIC_CS850	Y	Y	N	N	N	N	N	Y	N	Y	
PELCO-D	Y	Y	Y**	Y#	N	N	N	Y	Y	Y	
PELCO-P	Y	Y	N	N	N	N	N	Y	Y	Y	
PHILIPS	Y	Y	N	N	N	N	N	N	N	N	
PHILIPS-3	Y	Y	N	N	N	N	N	N	N	N	
SAE	Y	Y	N	N	N	N	N	Y	Y	Y	
Samsung	Y	Y	N	N	N	N	N	Y	N	Y	
Siemens	Y	Y	N	N	N	N	N	Y	N	Y	
SONY-EVI-D30/31	N	N	N	N	N	N	N	N	N	N	
SONY-EVI-D70	N	N	N	N	N	N	N	N	N	N	
SONY-EVI-D100/P	N	N	N	N	N	N	N	N	N	N	
TECHWIN	Y	Y	N	N	N	N	N	Y	N	N	
VICON	Y	Y	N	N	N	N	N	N	N	N	
YOULI	Y	Y	N	N	N	N	N	Y	N	N	

** : Aux. 2

: Aux. 1

Appendix G

Default menu settings

Display mode setting	
Monitor	
	General
	Language: English
	Device Name: TVR 12
	Device Address: 255
	Zone ID: 1
	Resolution: 1024*768 / 60HZ
	Password Required : Yes
	Scale Output Video: Yes
	Enable Wizard: Yes
	Display Status Icons: Yes
	More Settings
	Monitor Standard: NTSC/PAL. Auto detect at booting.
	Output Mode: Standard
	Monitor Brightness: 5
	Event Hint: Yes
	Timebar Transparent: Yes
	Enable Timebar: Yes
	Menu Timeout: 5 minutes
	Mouse Pointer Speed: Lower
	Instant Playback Time: 5 minutes
	Enable Front Panel Lock: No
Layout	
	General
	Video Output Interface: VGA/HDMI
	Window Segmentation: 2*2 (for 4-ch models), 3*3 (for 8-ch models), and 4*4 (16-ch models)

Dwell Time: No switch
Enable Audio Output: No
Event Output: VGA/HDMI
Event Full Screen Monitoring Dwell Time: 10
Alarm Full Screen Monitoring Dwell Time: 10
Audio Output Linked To: VGA

View
Video Output Interface: VGA/HDMI
16-chan: 4*4 -A1 to A16
8-chan: 3*3 - A1 to A8+1 black screen
4-chan: 2*2 - A1 to A4

Time
Time Settings
Time Zone: (GMT-08:00) Pacific Time(U.S. & Canada)
Date Format: MM-DD-YYYY
Time Format: 12-hour
Display Week: No
System time: Current system time
System Date: Current system date
Auto DST Adjustment: No
Enable DST: No
From: Apr 1st Sun 2:00
To: Oct last Sun 2:00
DST bias: 60 min

Holiday
Holiday Settings
Status: All disable; Start Date: 1st. Jan; End Date: 1st Jan

Camera management
OSD
OSD Settings
Camera: Analog 1
Camera Name: Camera 01
Display Name: Yes
Display Date: Yes
Display Week: Yes
Date Format: MM-DD-YYYY
Time Format: 12-hour

	Display Mode: Non-transparent & Not Flashing
Image	
	Image Settings
	Camera: Analog 1
	Mode: Standard
Motion	
	Motion Detection Settings
	Camera: Analog 1
	Enable Motion Detection: No
	Rule: Trigger channel [camera-self]; Alarm schedule - All day for whole week; Rule: (Null)
	Sensitivity: 3
	Target size: 1
	Zone: Full screen
Privacy Mask	
	Privacy Mask Settings
	Camera: Analog 1
	Enable Privacy Mask: No
	Zone: (Null)
Tamper-proof	
	Tamper-proof Settings
	Camera: Analog 1
	Enable Tamper proof: No
	Rule: Alarm schedule - All day for whole week; Rule: (Null)
	Sensitivity: Low
Video Loss	
	Video Loss Settings
	Camera: Analog 1
	Enable Video Loss Alarm: Disable
	Rule: Alarm schedule - All day for whole week; Rule: (Null)
Restricted Access Camera	
	Restricted Access Camera Settings
	Cameras: (Null)

Video Schedule	
Schedule	
	Record
	Camera: All
	Enable Schedule: Enabled
	Schedule: All day for whole week TL-Hi
Encoding	
	Record
	Camera: All
	Encoding Parameters: Main Stream (TL-Hi)
	Stream Type: Video & Audio
	Resolution: 2CIF
	Bit Rate Type: Variable
	Video Quality: Medium
	Frame Rate: 6 fps
	Max. Bit Rate Mode: General
	Max. Bit Rate (Kbps): 1792
	Pre-record: 5 s
	Post-record: 5 s
	Auto Delete: 0
	Record Audio: Yes
	Capture
	Camera: Analog 1
	Resolution: 960*480 (960H)
	Image Quality: Medium
	V-stream Encoding
	Enable V-stream Encoding: No
	Frame Rate : 12 fps
	Max. Bit rate mode: General
	Max. bit Rate (Kbps): 1024
	Encode Parameters Recommendation
	Duration Time (days): 30
	Weekday: Yes
	Weekend: Yes
	Resolution: 2CIF
	Total capacity: It depends
	Free Space: It depends
	Use Free Space Only: No

		Frame Rate: (Null)
		Bit Rate (Kbps): (Null)
Manual Record		
	Cameras: Off	
More settings		
	More settings	
		Event Priority: Text In < Motion
		Overwrite: Yes
Networking Settings		
General		
	General	
		NIC Type: 10/100/1000M self-adaptive
		Enable DHCP: Disable
		IPv4 Address: 192.168.1.82
		IPv4 Subnet Mask: 255.255.255.0
		IPv4 Default Gateway: 192.168.1.1
		IPv6 Address1: It depends
		IPv6 Address2: (Null)
		IPv6 Address Gateday: (Null)
		MAC Address: (It depends)
		MTU: 1500
		Preferred DNS Server: (Null)
		Alternate DNS Server: (Null)
PPPoE		
	PPPoE	
		Enable PPPoE: Disable
		User Name: (Null)
		Password: (Null)
		Confirm: (Null)
DDNS		
	DDNS	
		DDNS: Disable
		DDNS Type: ezDDNS
		Server Address: www.tvr-ddns.net
		Host Name: (Null)

NTP	
NTP	
	Enable NTP: Disable
	Interval:60min
	NTP Server: time.nist.gov
	NTP Port:123
Email	
Email	
	Enable Server Authentication: No
	User Name: (Null)
	Password: (Null)
	SMTP Server: (Null)
	SMTP Port: 25
	Enable SSL: No
	Sender: (Null)
	Sender's Address: (Null)
	Select Receiver: Receiver 1
	Receiver Name: (Null)
	Receiver's Address: (Null)
	Enable Attached Snapshot: No
	Interval: 2 s
FTP	
FTP	
	Enable FTP: No
SNMP	
SNMP	
	(Null)
UPnP	
UPnP	
	(Null)
More Settings	
More Settings	
	Alarm Host 1 IP: (Null)
	Alarm Host 1 Port: 5001
	Alarm Host 2 IP: (Null)
	Alarm Host 2 Port: 5002
	Alarm Host 3 IP: (Null)
	Alarm Host 3 Port: 5003

Server Port: 8000
HTTP Port: 80
Multicast IP: (Null)
RTSP Port: 554
Enable Telnet: No

Alarm Settings

Alarm List

Alarm Inputs

Alarm Input No.; Alarm Name; Alarm Type

Alarm Outputs

Alarm Output No.; Alarm Name; Time Out

Alarm Input

Alarm Input

Alarm Input No.: All

Alarm Name: (Null)

Type: NO

Setting: Enable Alarm Input Setting

Rule: Trigger channel - No; Alarm schedule - All day for whole week; Rule (Null); PTZ link: (Null)

Alarm Output

Alarm Output

Alarm Output No.: All

Alarm Name: (Null)

Time Out: 5 s

Rule: All day for whole week

Manual Alarm

Trigger none

Notification

Notification

Notification Type

HDD Full: (Null)

HDD Error: Audio warning

Network Disconnected: (Null)

IP Conflicted: (Null)

Illegal Login: (Null)

Abnormal video signal:
Input/Output Video Standard Mismatch.

Audible Warning: No
Notify Alarm Recipient: No
Send Email: No
Trigger Alarm Output: No

Advanced Settings
System Buzzer Time: Constant
Camera Buzzer Time: Constant

PTZ Settings

General
General
Camera: Analog 1
Baud Rate: 9600
Date Bit: 8
Stop Bit: 1
Parity: None
Flow Ctrl: None
PTZ Protocol: Interlogix-485
Address: 0 to 15 for camera 1 to 16

More Settings
Camera: Analog 1; Save Preset: (Null); Call Preset: (Null); Shadow Tour: (Null); Preset Tour: (Null)

User Settings

User
User Management
Admin:1234
Operator: 4321
Guest: (Null)
Change Password
(Null)

System Settings

RS-232
RS-232 setting
Baud rate: 115200
Date bit: 8
Stop bit: 1
Parity: None
Flow Ctrl: None
Usage: ProBridge

Hard Disk	
	HDD Information: (Null)
	Storage Mode: Mode: Quota; Camera: Analog 1; Used Record Capacity; Used Snapshot Capacity;; HDD Capacity (GB);; Max Record Capacity (GB);; Max Snapshot Capacity (GB)
	S.M.A.R.T. Settings: HDD No.; Capacity; Model; Serial No.; Serial No.; Temperature (°C); Power Up (days); Self-evaluation; All-evaluation
Text insertion	
	Text Insertion
	Enable text insertion: Disable
	(Null)
Upgrade	Local Upgrade; FTP
Configuration	Import/Export Config File; Default
Log search	
	Log search
	Current whole day, all types
System Information	
	Device Information: Device name; Model; Serial No.; Firmware Version; Encoding Version; Panel Version
	Camera: Calera; Camera Name; Status; Motion Detection; Tamper-proof; Video Loss; Video Notification; Preview Link Sum
	Record: Camera; Recording Status; Stream Type; Frame Rate; Bitrate (Kbps); Resolution; Record Type; Encoding Parameters; Redundant Record
	Alarm: No.; Alarm Name; Alarm Type; Alarm Status; Triggered Camera
	Network: NIC; LAN1
	HDD: Level; Status; Capacity; Free Space; Property; Type; Group
Net Detect	
	Traffic; Network Detection; Network Stat.

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