TruVision DVR 41 User Manual
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Certification

FCC compliance
Class B: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

European Union directives
12004/108/EC (EMC directive): Hereby, UTC Fire & Security declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.

2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Contact information
For contact information, see www.utcfireandsecurity.com or www.utcfsssecurityproducts.eu
Content

Chapter 1  Product introduction  1
    Product overview  1

Chapter 2  Installation  3
    Installation environment  3
    Unpacking the TVR 41 and its accessories  3
    Back panel  4
    PTZ dome camera set up  5
    Wiring the keypad  10
    RS-485 ports  12
    RS-232 port  13
    Monitor connections  13
    Loop through  13
    Audio inputs and output  13
    Brackets  14

Chapter 3  Getting started  15
    Turning on and off the DVR  15
    Using the setup wizard  16

Chapter 4  Operating instructions  19
    Controlling the TVR 41  19
    Using the front panel  19
    Using the mouse  21
    Using the IR remote control  22
    Menu overview  25

Chapter 5  Live view  29
    Description of live view  29
    Video output  29
    Audio output  30
    Controlling live view  30
    Multiview format  32
    Sequencing cameras  33
    Accessing frequently used commands  34
    Configuring live view  35
    Configuring time and date  38
    General settings  39
    V-stream encoding  42

Chapter 6  Controlling a PTZ camera  43
    Configuring PTZ settings  43
    Calling up presets, tours and shadow tours  44
    Setting and calling up presets  45
Setting and calling up preset tours  47
Setting and calling up a shadow tour  48

Chapter 7  Playing back a recording  51
Overview of the playback window  51
Playback pop-up menu  54
Instant playback  54
All-day playback  55
Searching recorded video  56
Playing back recordings by time and video type  57
Playing back recordings by event  58
Creating and playing back bookmarked recordings  59
Slideshow of snapshots  60
Playing back recordings from the system log  60
Playback skip time  61
Motion search  62
Playing back frame-by-frame  62
Digital zoom in playback  63

Chapter 8  Archiving recorded files  65
Archiving files  65
Auto archiving  68
Creating and archiving video clips  69
Archiving snapshots  69
Managing backup devices  70
Playing back archived files on a PC  70

Chapter 9  Using the web browser  71
Windows Vista and 7 users  71
Accessing the web browser  72
Web browser overview  72
Using the web browser to configure the device  74
Searching and playing back recorded video  77
Searching for event logs  79
Dual streaming  80
Controlling a PTZ dome camera in the web browser  81
Capturing text insertions  81
Text overlay  83
Using a network storage system  84

Chapter 10  Recording  87
Initializing recording settings  87
Defining a recording schedule  90
Daily schedules  91
Holiday schedules  92
Manual recording  93
Motion detection schedules  93
External alarm schedules  93
Chapter 11  Alarm settings  97
Description of alarm notification types  97
Setting up motion detection  100
Setting up external alarms  102
Triggering or clearing alarm outputs manually  104
Setting up system notifications  105
Detecting video loss  105
Detecting video tampering  106

Chapter 12  Network settings  109
Configuring general network settings  109
Configuring PPPoE  110
Configuring DDNS  111
Configuring an NTP server  112
Configuring e-mail  112
Configuring UPnPTM  113
Configuring SNMP  115
Configuring an FTP server to store snapshots  115
Configuring a remote alarm host  115
Configuring multicast  116
Configuring the server and HTTP ports  116
Configuring the RTSP service port  116
Checking network status  117
Exporting network packet data  118
Bandwidth throttle management  118

Chapter 13  HDD management  121
Initializing HDDs  121
Controlling disk space on the HDD  121
Setting up HDD groups  122
Recording dual streaming  123
Setting the HDD property  123
Checking HDD status  124
Configuring HDD alarms  124
Managing eSATA  125
Checking the S.M.A.R.T. information  125
Searching video using disk analysis  126

Chapter 14  Camera settings  129
Configuring the camera OSD settings  129
Setting up privacy masking  130
Adjusting camera image settings  131
Hiding a camera image from view  131

Protecting recorded files  94
HDD redundancy  95
Chapter 15  DVR management  133
Configuring the RS-232 port  133
Updating system firmware  134
Restoring default settings  135
Viewing system information  136
Searching system logs for events  137
Importing and exporting configuration settings  138

Chapter 16  User management  139
Adding a new user  139
Customizing a user’s access privileges  140
Deleting a user  141
Modifying a user  142
Changing the Admin password  142

Chapter 17  iTVRmobile  143
Setup and login  143
Live view  144
Controlling a PTZ camera  145
Device management  146
Favorites  147
Local configuration  148
Change passwords  148
Snapshots  148

Appendix A  Specifications  149
Appendix B  PTZ protocols  151
Appendix C  Port forwarding information  153
Appendix D  KTD-405 keypad  155
Supported firmware  155
Wiring the keypad  155
Setting up the keypad to work with the TVR 41  156
Operating the keypad  158
Appendix E  Maximum pre-recording times  163
Appendix F  Supported PTZ commands  165
Appendix G  Default menu settings  167
Index  177
Chapter 1
Product introduction

Product overview

This is the TruVision DVR 41 (TVR 41) User Manual for models:

<table>
<thead>
<tr>
<th>Americas</th>
<th>EMEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVR-4108-2T</td>
<td>TVR-4104-1TEA</td>
</tr>
<tr>
<td>TVR-4108-4T</td>
<td>TVR-4104-2TEA</td>
</tr>
<tr>
<td>TVR-4116-2T</td>
<td>TVR-4108-2TEA</td>
</tr>
<tr>
<td>TVR-4116-4T</td>
<td>TVR-4108-4TEA</td>
</tr>
<tr>
<td>TVR-4116-8T</td>
<td>TVR-4116-2TEA</td>
</tr>
<tr>
<td>TVR-4116-12T</td>
<td>TVR-4116-4TEA</td>
</tr>
<tr>
<td></td>
<td>TVR-4116-8TEA</td>
</tr>
<tr>
<td></td>
<td>TVR-4116-12TEA</td>
</tr>
</tbody>
</table>

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

For regions not listed in Table 1 above, please contact your local supplier.

The TruVision™ DVR 41 (TVR 41) is a versatile, user-friendly embedded digital video recorder (DVR) allowing end-users to record 4, 8, or 16 analog cameras at 4 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.

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

TruVision DVR 41 can fully integrate with the license-free TruVision Navigator software, which is ideal for the most commercial applications. TVR 41’s 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.
Chapter 2
Installation

This section describes how to install the TVR 41 unit.

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 DVR. Do not install the unit on top of other hot equipment. Leave 44 mm (1.75 in.) of space between rack-mounted TruVision DVR 41 units.

**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 TVR 41 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 (US, Europe, UK)
- USB mouse
- DVR
- Video loop through cable
- CD with software and manuals
- *TruVision DVR 41 Quick Start Guide*
- *TruVision DVR 41 User Manual* (on CD)

**Back panel**

Figure 1 on page 5 shows the back panel connections and describes each connector on a typical TVR 41 digital video recorder. Details may vary for specific models.

Before powering up the DVR, connect the cameras and a main monitor for basic operation.
1. Connect up to 16 analog cameras to BNC connectors.
2. Connect audio inputs (available for each camera) to RCA connectors.
3. Connect up to two CCTV monitors (BNC-type connectors):
   - Spot monitor
   - Main monitor
4. Connect to speakers for audio output.
5. Connect RCA connector to a microphone.
6. Connect to a RS-232 device.
7. Connect to a VGA monitor.
8. Connect to an optional eSATA device such as SATA HDD, CD/DVD-RM.
9. Connect to a HDTV. The HDMI connection supports both digital audio and video.
10. Connect to an optional USB device such as a mouse, CD/DVD burner or HDD. The DVR supports both a USB DVD and a USB HD on the front and back USB ports.
11. Connect to a network.
12. Terminate the line to the dome cameras using this RS-485 switch. Default is Off.
13. Connect to a PTZ control.
14. Connect to a keyboard (KTD-405 shown)
15. Connect up to 16 alarm input cables to relay outputs.
16. Connect up to four alarm relay outputs.
17. Connect to ground.
18. Connect to a power supply.
19. Loop through for up to 16 analog cameras (see item 1).

PTZ dome camera set up

Use the USB mouse provided or the optional keypad for local telemetry control. If using the TVR 41 over a network, use the web browser to control the PTZ dome cameras or TruVision Navigator.

See Appendix B on page 151 for the supported protocols and Appendix F on page 165 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 6, “Controlling a PTZ camera” on page 43.

Connecting a TVR 41 to a PTZ dome camera and a keypad

Use the input/output box that is supplied with the keypad to connect a keypad to the TVR 41. The keypad can be connected to a PTZ camera for local control or for control over the network.

See Figure 2 below for the preferred setup. Any PTZ dome camera can be controlled as the DVR is doing the PTZ protocol translation. However, this setup provides only limited dome configuration.

Figure 2: Connecting a keypad to the TVR 41 for control of a PTZ dome camera 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 TVR 41. See Table 2 on page 7 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

<table>
<thead>
<tr>
<th>Camera</th>
<th>Switch setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>TruVision Mini PTZ 12X: Indoor Dome</td>
<td>Protocol DIP switches: 000000</td>
</tr>
<tr>
<td></td>
<td>RS-485 communication DIP switches: 0000000000</td>
</tr>
<tr>
<td></td>
<td>Camera ID DIP switches: Select the camera ID DIP switch address as required</td>
</tr>
<tr>
<td></td>
<td>RS-485 data connector:</td>
</tr>
</tbody>
</table>

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

TruVision Mini PTZ 12X: Outdoor Dome

<table>
<thead>
<tr>
<th>Camera</th>
<th>Switch setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Protocol DIP switches: 000000</td>
</tr>
<tr>
<td></td>
<td>RS-485 communication DIP switches: 0000000000</td>
</tr>
<tr>
<td></td>
<td>Camera ID DIP switches: Select the camera ID DIP switch address as required</td>
</tr>
<tr>
<td></td>
<td>RS-485 data connector:</td>
</tr>
</tbody>
</table>

- 1. Protocol DIP switches
- 2. RS-485 communication DIP switches
- 3. Camera ID DIP switches
<table>
<thead>
<tr>
<th>Camera</th>
<th>Switch setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>TruVision Dome 16X PTZ</td>
<td>Protocol switches: 0111</td>
</tr>
<tr>
<td></td>
<td>Address switches: Select the camera ID DIP switch address as required.</td>
</tr>
<tr>
<td></td>
<td>Baud rate: 0000</td>
</tr>
<tr>
<td></td>
<td>1. Address switches; 2. Baud switches; 3. Protocol switches</td>
</tr>
<tr>
<td></td>
<td>RS-485 data connector:</td>
</tr>
<tr>
<td>CyberDome</td>
<td>Protocol switches: NA</td>
</tr>
<tr>
<td></td>
<td>Address switches: Select the camera ID DIP switch address as required.</td>
</tr>
<tr>
<td></td>
<td>RS-485 data connector:</td>
</tr>
</tbody>
</table>
## Camera Switch Setting

<table>
<thead>
<tr>
<th>Camera</th>
<th>Switch Setting</th>
<th>Protocol switches: 01000</th>
</tr>
</thead>
<tbody>
<tr>
<td>UltraView PTZ</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Protocol switches: 01000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Address switches: Select the switch address as required.</td>
<td></td>
</tr>
</tbody>
</table>

1. Protocol switches;
2. Address switches

**RS-485 data connector:**

### Legend

<table>
<thead>
<tr>
<th>Protocol switches: 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address switches: Select the camera ID DIP switch address as required.</td>
</tr>
</tbody>
</table>

**RS-485 data connector:**
Wiring the keypad

The keypad uses RS-485 simplex wiring. The signal is transferred by a single twisted pair line. A shielded STP CAT5 network cable is recommended. Ground one end of the cable, either the first or last device on the RS-485 line.

The maximum number of devices that can be installed in one bus is 255, with a maximum cable length of 1200 m. The cable length can be expanded using a signal distributor.

Both the first and the last device in series should be terminated with 120 Ohm resistance to minimize line reflections. See Figure 3 below.

Figure 3: RS-485 bus serial wiring (KTD-405 keypad shown)

Use an RS-485 signal distributor for a star wiring configuration. See Figure 4 on page 11.
Use an RS-485 signal distributor to increase the maximum number of devices on the bus as well as the total range. Each distributor output provides another RS-485 bus, extending the output an additional 1200 m. Up to 31 TVR 41s can be connected to each output. See Figure 5 on page 12.
Figure 5: Expanding the system with an RS-485 signal distributor

Caution: Most signal distributors are unidirectional. This means that the signal only flows from the input towards the outputs. Consequently it is not possible to connect several keypads.

See section “RS-485 ports” below to configure the RS-485 port communication settings.

RS-485 ports

There are two RS-485 ports on the back panel of the DVR. See Figure 6 on page 13 for the serial pin outs.

- **Dome RS-485:**
  - A and B: Connect pan, tilt, zoom control of PTZ dome cameras. A = +, B = -
  - C and D: Not used
  - G: Ground of dome camera
  - G: Ground of keypad
- **Keyb:** Connect the keypad.
RS-232 port

Use the RS-232 port to connect CBR-PB3-POS (point-of-sale) and ATM devices to the DVR. See “Configuring the RS-232 port” on page 133 to configure the port.

Monitor connections

Connect the monitors to the DVR outputs (BNC/VGA/HDMI). The unit provides a 1 Vp-p CVBS signal. See Figure 1 on page 5 for connecting a monitor to a TVR 41.

The TVR 41 supports up to 1280 × 1024 / 60 Hz resolution in VGA. The monitor resolution should be at least 800 × 600. Adjust your monitor accordingly to this resolution.

Loop through

You can loop through the cameras to equipment such as a matrix, monitors or a second DVR. There are 16 numbered loop-through BNC outputs. See Figure 1 on page 5.

Audio inputs and output

The unit is equipped with 16 audio inputs and two audio outputs. Both the audio output and the audio inputs are line-level. Each 16 audio input is associated with one of the 16 cameras.

<table>
<thead>
<tr>
<th>Audio input</th>
<th>RCA jack, 315 mV, 40 kohms. Unbalanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio output</td>
<td>RCA jack, 315mV, 600 ohms. Unbalanced</td>
</tr>
</tbody>
</table>

**Note:** Line-level audio requires amplification.
Brackets

The DVR is easily rack-mountable with the purchase of the TVR-RK-1 rack-mount kit. See Figure 7 below. Contact your local supplier to order it.

Figure 7: Rack-mount installation

Attach the small front rack ears to the unit (screws supplied)  
Attach the DVR to the front rails (screws not included)

To install the racks:

1. Attach the two small front-rack mount ears to the DVR (screws supplied).
2. Attach the two large rear support brackets (not supplied) to the rear rails.
3. Attach the DVR to the front rails (screws not supplied).

Caution:
Do not rack-mount the TVR 41 without the rear rails installed. Failure to install the rear rails can damage the DVR.
Chapter 3
Getting started

Turning on and off the DVR

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

It is 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 DVR:

Turn on the DVR using the power switch on the back panel. A splash screen appears on screen.

Once the TVR 41 is powered up, the indicator bar on the front panel will light up green. All connected cameras are displayed on-screen. The TVR 41 automatically begins recording.

To turn off the DVR:

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

To reboot the DVR:

1. In live view mode, right-click the mouse and click Menu. The main menu screen 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 41 has an express installation wizard that lets you easily configure basic DVR 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 DVR has loaded. It will walk you through some of the more important settings of your DVR.

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 DVR with default settings only, click Next in each screen until the end.

**To quickly set up the TVR 41:**

1. Connect all the devices required to the back panel of the DVR. See Figure 1 on page 5.

2. Turn on the unit using the power switch on the front panel. After the boot up screen, the DVR 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 DVR 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 DVR, contact your supplier with the serial number of your DVR to obtain a secure code to reset your DVR.

   Click Next.

6. **Time and date configuration:**

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

   **Note:** Daylight savings time (DST) cannot be configured from the wizard. See “Configuring time and date” on page 38 for more information on DST.
7. **Network configuration:**

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

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.

You can group HDDs and assign cameras to a group. See “Setting up HDD groups” on page 122 for further information. You can also set up a drive for redundant recording. See “HDD redundancy” on page 95.

After configuring your HDD settings, click Initialize 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 DVR.
Check the **Constant Recording** checkbox for the DVR to record continuously all day. If left unchecked, the DVR 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.

Under **Camera name** 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 TVR 41 is now ready to use.
Chapter 4
Operating instructions

Controlling the TVR 41
There are several ways to control the DVR:
• Front panel control
• Mouse control
• IR remote control
• KTD-405 keypad control (see Appendix)
• 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 DVR. The LED indicators light up to alert you of various conditions. The functions available can be limited by setting passwords. See Figure 8 on page 20 for more information.
The controls on the front panel include:

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>USB port</td>
<td>Universal serial bus (USB) port for additional devices such as USB mouse and USB hard disk drive (HDD).</td>
</tr>
<tr>
<td>2.</td>
<td>Eject button</td>
<td>Ejects CD/DVD disc.</td>
</tr>
<tr>
<td>3.</td>
<td>Archive button</td>
<td>Press once to enter quick archive mode. Press twice to start archiving.</td>
</tr>
<tr>
<td>4.</td>
<td>CD/DVD slot</td>
<td>Insert a CD or DVD disc.</td>
</tr>
</tbody>
</table>
| 5.   | Display buttons| **Display**: Toggles through the various multiviews: full, quad, 1+5, 1+7, 9, and 16.  
            | **Sequence**: Starts/stops sequencing in live view mode.                  |
|      |               | **A**: Selects the main monitor.                                            |
|      |               | **B**: Selects the spot monitor (in live view).                             |
|      |               | **F1**: In all-day playback, click to start and stop video clipping.      |
|      |               | **F2**: In live view mode, click to display/hide the time bar.            |
|      |               | In all-day playback, click to hide/display the playback control toolbar.  |
| 6.   | IR receiver   | Receiver for IR remote.                                                    |
| 7.   | Numeric buttons| Switch between different cameras in live, PTZ control or playback modes. |
| 8.   | Status LEDs   | **HDD**: Green indicates the DVR is working correctly. Red indicates a fault.  
            | **Network**: Green indicates the network is working correctly. Red indicates a fault or no network connection.  
            | **Internal**: Green indicates the Watchdog is working correctly. Red indicates that the Watchdog is reporting a fault.  
            | **Alarm**: Green indicates no external alarm. Red indicates an external alarm status or motion.  |
| 9.   | Alarm button  | Use to manually acknowledge an alarm.                                      |
| 10.  | Alarm indicator bar | Blinking red indicates that there is an alarm.                          |
Chapter 4: Operating instructions

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| 11.  | Joystick              | Use to select options in a menu and to control playback. Press for Enter. The LED arrows are lit when the jog is active.  
**Live view mode**: Press Enter to enter/exit PTZ mode.  
**Menu mode**: Move the joystick left/right and up/down to position cursor in menu screen. Press for Enter.  
**Playback mode**: Move the joystick left/right to slow down or speed up playback. Move it up/down to jump forwards or backwards by 30 seconds. Press Enter to stop/start playback.  
**PTZ mode**: Move the joystick to control the movement of the PTZ dome camera. Move the joystick left/right to slow down or speed up PTZ. Move it up/down to jump forwards or backwards by 30 seconds. |
| 12.  | PTZ buttons           |  
**Zoom**: Use + and – for digital zoom.  
**Preset**: Call up preprogrammed preset positions.  
**Tour**: Call up preprogrammed shadow tours. |
| 13.  | Playback buttons      |  
◊: Jump back to the oldest available video and starts the playback.  
\[\]: Pause playback.  
\[\[\]: Instantly playback the currently selected file. Default time is 1 minute.  
**Live**: Switch to live view mode.  
**Replay**: Replay the current file in playback Starts at the beginning of the file. |
| 14.  | Menu and Search buttons |  
**Menu**: Enter/exit the main menu.  
**Search**: Enter the advanced search menu. |

Using the mouse

The USB mouse provided with the TVR 41 can be used to operate all the functions of the DVR, 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 TVR 41 by plugging the mouse USB connector into the USB port on the back or front panel. The mouse is immediately operational and the pointer should appear.

**Note**: Use a USB 1.1 or higher mouse.

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

You can purchase a spare mouse by ordering part number TVR-MOUSE-1 TruVision™ DVR Model 40/41/60 Mouse.
See Table 3 below for a description of the mouse buttons.

### Table 3: Mouse buttons

<table>
<thead>
<tr>
<th>Item</th>
<th>Single-Click</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left button</td>
<td></td>
<td><strong>Live view</strong>: Select a camera to display the quick access toolbar (see “Accessing frequently used commands” on page 34).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Menu</strong>: 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.</td>
</tr>
<tr>
<td>Right button</td>
<td></td>
<td><strong>Live view</strong>: Display menu.</td>
</tr>
<tr>
<td>Scroll-wheel</td>
<td></td>
<td><strong>Live view</strong>: Return to the previous screen.</td>
</tr>
<tr>
<td>Scroll Down</td>
<td></td>
<td><strong>Live view</strong>: Move to the next screen.</td>
</tr>
</tbody>
</table>

#### Using the IR remote control

The TVR 41 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 TVR 41.

The IR remote control can be programmed with a unique device ID address so that the controller will only be able to communicate with DVRs with that address. No programming is necessary if using a single TVR 41.

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 TruVision™ DVR Model 40/41/60 IR Remote Control.
Figure 9: IR remote control

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Alarm, Acknowledge an alarm.</td>
</tr>
<tr>
<td>2.</td>
<td>Device, Enable/disable the IR remote control to control the TVR 41.</td>
</tr>
<tr>
<td>3.</td>
<td>Numeric buttons, Select a camera, and enter a number in a menu option.</td>
</tr>
<tr>
<td>4.</td>
<td>Display, Switch between the different multiviews.</td>
</tr>
<tr>
<td>5.</td>
<td>Mon A and Mon B, Switch between monitors A and B.</td>
</tr>
<tr>
<td>7.</td>
<td>Menu, Activate the main menu.</td>
</tr>
<tr>
<td>8.</td>
<td>Seq, Start /stop sequencing.</td>
</tr>
<tr>
<td>9.</td>
<td><code>&lt;</code>, <code>&gt;</code>, <code>▲</code>, <code>▼</code> 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.</td>
</tr>
<tr>
<td>10.</td>
<td>OK, Confirm selection.</td>
</tr>
<tr>
<td>11.</td>
<td>Zoom + and -, Use to control zoom of camera lens.</td>
</tr>
<tr>
<td>12.</td>
<td>Preset, Enter preprogrammed three-digit code to call up a preset.</td>
</tr>
<tr>
<td>13.</td>
<td>Tour, Enter preprogrammed three-digit code to call up shadow tour.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>14.</td>
<td>Focus + and -</td>
</tr>
<tr>
<td>15.</td>
<td>Playback control</td>
</tr>
<tr>
<td>16.</td>
<td>Search</td>
</tr>
<tr>
<td>17.</td>
<td>Replay</td>
</tr>
<tr>
<td>18.</td>
<td>Eject</td>
</tr>
<tr>
<td>19.</td>
<td>Archive</td>
</tr>
</tbody>
</table>

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 TVR 41:**

1. Press the **Menu** button on the front panel or right-click the mouse and select the **Menu** button. The main menu screen 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.
4. On the remote control press the **Device** button.
5. Enter the device address value. It must be the same as that on the TVR 41.
6. Press **OK** 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 TVR 41 has an icon-driven menu structure that allows you to configure the unit’s parameters. Each command icon displays a dialog screen that lets you edit a group of settings. Most menus are available only to system administrators.

The configuration screen is divided into three sections. The currently selected command icon and submenu item are highlighted in green. See Figure 10 below.

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

Figure 10: Menu structure

1. **Menu toolbar**: Setup options available for the selected configuration menu function. Move the mouse over a command icon and click to select it. See Table 4 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.

Table 4: Description of the menu toolbar icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Display mode settings" /></td>
<td>Display mode settings</td>
<td>Configures display settings including dwell time, schedule, language and display formats. See “Configuring live view” on page 35 and “Holiday schedules” on page 92.</td>
</tr>
<tr>
<td><img src="image" alt="Camera management" /></td>
<td>Camera management</td>
<td>Configures camera settings including <strong>OSD display</strong>, motion detection, video image adjustments, and copy settings to other cameras. See Chapter 14 “Camera settings” on page 129.</td>
</tr>
<tr>
<td><img src="image" alt="Video schedule" /></td>
<td>Video schedule</td>
<td>Configures recording settings including recording schedules, record quality, auto delete mode, and recording mode. See Chapter 10 “Recording” on page 87.</td>
</tr>
</tbody>
</table>
## Network settings
Configures standard network settings including IP address, e-mail notifications, DDNS setup, and advanced network settings. See Chapter 12 “Network settings” on page 109.

## Alarm settings
Configures alarm settings including alarm input, relay output, video loss, remote alert, pre-alarm and post-alarm seconds. See Chapter 11 “Alarm settings” on page 97.

## PTZ settings
Configures PTZ settings. See Chapter 6 “Controlling a PTZ camera” on page 43.

## User management
Configures users, passwords, and access privileges. See Chapter 16 “User management” on page 139.

## 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, and shutdown. See Chapter 13 “HDD management” on page 121 and Chapter 15 “DVR management” on page 133.

## 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 DVR” on page 15.

### 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 screen appears. The Display screen 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 screen option. Click a key to input that character.
Exiting the main menu
Press the Menu button on the front panel to exit the current menu screen and return to live view or click Back in a main menu.
Chapter 5
Live view

Description of live view
Live view is the normal operating mode of the unit where you watch live images from the cameras. The TVR 41 automatically enters into live view once powered up. On the viewer, you can see the current date and time, camera name, and whether a recording is in progress.

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

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Sensor Alarm" /></td>
<td>Indicates a sensor alarm.</td>
</tr>
<tr>
<td><img src="image" alt="Recording" /></td>
<td>Indicates recording (such as manual recording, motion detection or alarm-triggered recording).</td>
</tr>
<tr>
<td><img src="image" alt="Motion Detection" /></td>
<td>Indicates a motion detection event.</td>
</tr>
<tr>
<td><img src="image" alt="Video Loss" /></td>
<td>Indicates a video loss event.</td>
</tr>
<tr>
<td><img src="image" alt="Alarm and System Notifications" /></td>
<td>Indicates alarm and system notifications. Clicking the icon opens a screen that lists the alarms and notifications.</td>
</tr>
</tbody>
</table>

More than one icon can be displayed at the same time.
The system status is displayed on the front panel by the status LEDs.

Video output
The TVR 41 can be connected to up to two monitors. However, only one monitor can be controlled at a time.
The DVR 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 auxiliary. The priority level for main and spot outputs is HDMI > VGA > CVBS. See Table 6 below.

Table 6: Monitor output priority level

<table>
<thead>
<tr>
<th>Monitor output in use</th>
<th>Priority level</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI</td>
<td>VGA</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To select the video output of the main monitor:
1. Click the Display Mode Settings icon in the menu toolbar.
2. Select Layout > General.
3. From Video Output Interface, select which monitor will be the main monitor: HDMI (depends on DVR model), VGA, main CVBS, or spot output. VGA is default, if connected.

To control a monitor:
On the front panel, press button A to select the main monitor. Press button B to select the spot monitor.

Audio output
The HDMI monitor connector on the back panel outputs both video and audio signals. There are audio outputs on the back panel for speakers.

Controlling live view
Many features of the 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 12 on page 31).
The list of commands available depends on which monitor is active; main or spot (monitor B). See Table 7 below. The default settings of these commands are provided in Appendix G, “Default menu settings” on page 165.

Table 7: Mouse menu for monitor A (main monitor)

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Menu</td>
<td>Enter the Main menu. This option is not available from monitor B.</td>
</tr>
<tr>
<td>2.</td>
<td>Single camera</td>
<td>Switch to a full-screen view for the selected camera from the dropdown list.</td>
</tr>
<tr>
<td>3.</td>
<td>Multi camera</td>
<td>Switch between the different multiview options from the dropdown list.</td>
</tr>
<tr>
<td>4.</td>
<td>Previous screen</td>
<td>Display the previous camera.</td>
</tr>
<tr>
<td>5.</td>
<td>Next screen</td>
<td>Display the next camera.</td>
</tr>
<tr>
<td>6.</td>
<td>Start auto-switch</td>
<td>Turn on sequence mode. The screen automatically sequences between cameras.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See “Viewing in multiview” on page 32.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Go to Menu &gt; Display Mode Settings &gt; Layout &gt; General &gt; Dwell Time to set up.</td>
</tr>
<tr>
<td>7.</td>
<td>All-day playback</td>
<td>Playback the recorded video of the selected day from the selected camera.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The current day is selected by default.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See “All-day playback” on page 55 for more information.</td>
</tr>
<tr>
<td>8.</td>
<td>Monitor B</td>
<td>Switch between monitors A (main) and B (spot).</td>
</tr>
<tr>
<td>9.</td>
<td>Advanced search</td>
<td>Enter the advanced video search menu. See “Searching recorded video” on page 56 for more information.</td>
</tr>
<tr>
<td>11.</td>
<td>Close timebar</td>
<td>Open/close the time bar.</td>
</tr>
</tbody>
</table>
Note: When the monitor B is active, the main monitor commands are unavailable.

Table 8: Mouse menu for monitor B (spot monitor)

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Single camera</td>
<td>Switch to a full-screen view for the selected camera from the dropdown list.</td>
</tr>
<tr>
<td>2.</td>
<td>Multi camera</td>
<td>Switch between the different multiview options from the dropdown list.</td>
</tr>
<tr>
<td>3.</td>
<td>Previous screen</td>
<td>Displays the previous camera.</td>
</tr>
<tr>
<td>4.</td>
<td>Next Screen</td>
<td>Displays the next camera.</td>
</tr>
<tr>
<td>5.</td>
<td>All-day playback</td>
<td>Playback the recorded video of the selected day from selected cameras. See “All-day playback” on page 55 for more information.</td>
</tr>
<tr>
<td>6.</td>
<td>Monitor A</td>
<td>Switch between monitors A (main) and B (spot).</td>
</tr>
</tbody>
</table>

Multiview format

The DVR has full screen display format as well as five multiview formats.

Viewing in full screen

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.

Viewing in multiview

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 TVR 41 has five multiview display formats available as well as full screen. See Figure 13 below.

To change the multiview display that appears by default, go to the Display menu. See “Changing the camera sequence” on page 37 for more information.
To select a multiview 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 full screen mode.

The default sequence displays each camera in numerical order. However, each camera on the main and spot monitors can have a pre-programmed dwell time and sequence order. See “Changing the camera sequence” on page 37 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 auto-switch** to start the sequencing.
3. Right-click the mouse and select **Stop auto-switch** 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 14 below).

Figure 14: Quick access toolbar

Table 9: Description of the quick access toolbar icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Freeze icon" /></td>
<td><strong>Freeze</strong>: Freeze the live image of the selected camera. Although the image pauses, time and date information does not. The system clock continues to run.</td>
</tr>
<tr>
<td><img src="image" alt="Manual record icon" /></td>
<td><strong>Manual record</strong>: Start/stop manual recording. The icon is red when manual recording is enabled. See “Manual recording” on page 93 for information on setting up this function.</td>
</tr>
<tr>
<td><img src="image" alt="Instant playback icon" /></td>
<td><strong>Instant playback</strong>: Play back the recorded video from the last five minutes (default time). If no recording is found, then there was no recording made. Click the icon and select the desired camera. Click OK. See “Instant playback” on page 54 for information on changing this time.</td>
</tr>
<tr>
<td><img src="image" alt="Audio icon" /></td>
<td><strong>Audio</strong>: Enable/Disable audio output. The audio option must already have been setup in the Display menu.</td>
</tr>
<tr>
<td><img src="image" alt="Quick snapshot icon" /></td>
<td><strong>Quick snapshot</strong>: Capture a snapshot of a video image. The image is saved on the unit.</td>
</tr>
<tr>
<td><img src="image" alt="PTZ control icon" /></td>
<td><strong>PTZ control</strong>: Enter PTZ control mode.</td>
</tr>
<tr>
<td><img src="image" alt="Digital zoom icon" /></td>
<td><strong>Digital zoom</strong>: Enter digital zoom. See “Digital zoom” below for further information.</td>
</tr>
</tbody>
</table>
| ![Image settings icon](image) | **Image settings**: Enter the image settings menu to modify the image lighting levels. There are three options:  
  - **Preset Mode**: These are preconfigured image lighting levels. Select one of the four options depending on current lighting conditions:  
    - **Standard**: Use in standard lighting situations.  
    - **Indoor**: Use indoors.  
    - **Dim Light**: Use when the light level is low.  
    - **Outdoor**: Use when outdoors. The contrast and saturation values are high.  
  - **Customize**: Modify brightness, contrast, saturation, and hue values.  
  - **Restore**: Restore image settings to previous values.  
These settings can also be modified from the Camera>Image menu (see page “Adjusting camera image settings” on page 131.)
### Text show
Display inserted text on screen. 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 and play back using the digital zoom command. The zoom command magnifies the camera image four times. See Figure 15 on page 35.

### Figure 15: Digital zoom screen

To quickly zoom in/out on a camera image:

1. Select the camera you wish to use.
2. Left-click the mouse and select the digital zoom icon, or on the front panel press the **Zoom+** button. The digital view screen appears.
3. Left-click the mouse and drag the red square to the area of interest, or move the joystick on the front panel to position the red square. The selected area is magnified.
4. To exit digital zoom right-click the mouse or press the **Zoom-** button on the front panel.

## 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.
Table 10: Description of the layout screen

<table>
<thead>
<tr>
<th>Submenu name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General tab</strong></td>
<td></td>
</tr>
<tr>
<td>Video output interface</td>
<td>Select which monitor will be the main monitor: HDMI (depends on DVR model), VGA, main CVBS or spot output. Default is VGA, if connected.</td>
</tr>
<tr>
<td>Live view mode</td>
<td>Select which multiview layout will be default in live view mode. Default is 4x4 multiview layout.</td>
</tr>
<tr>
<td>Dwell time</td>
<td>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”).</td>
</tr>
<tr>
<td>Enable audio output</td>
<td>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.</td>
</tr>
<tr>
<td>Event output</td>
<td>Select which monitor will be the spot monitor. Default is the spot monitor (Spot output 1).</td>
</tr>
<tr>
<td>Event full screen monitoring dwell time</td>
<td>Set the length of time for which a camera that has an event or alarm appears on the selected monitor before moving to the next camera during sequencing. Default is 10 seconds.</td>
</tr>
<tr>
<td>Alarm full screen monitoring dwell time</td>
<td>Set the length of time for which a camera that has an alarm appears on the selected monitor before moving to the next camera during sequencing. Default is 10 seconds.</td>
</tr>
</tbody>
</table>

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 17 below. Each video tile displays both the order of the camera in the sequence and the camera number.

![Figure 17: Camera layout and sequence screen](image)

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.

Camera sequencing for alarms and events

You can select which monitor is used to sequence alarm and event cameras in full screen mode. Normally this is the spot monitor. When an alarm or event occurs, the selected monitor will sequence through the alarm/event cameras.
depending on the dwell time set up. You can set up different dwell time for alarms and events.

**To set the camera sequencing for alarms and events:**
1. Click the Display Mode Settings icon in the menu toolbar.
2. Select Layout > General.
3. From Event Output, select the desired monitor from the drop-down list. Default is VGA, if connected
4. Select the dwell times for the alarm and event cameras. Default is 10 seconds. The dwell time can range between 10 and 300 seconds.
5. Click Apply.

**Configuring time and date**

You can set up the date and time that will appear on-screen. It is not included in recordings. This time and date display is separate from the embedded one that appears for each camera (see “Configuring the camera OSD settings” on page 129 for more information on embedded camera time and date).

The start and end time of daylight savings time (DST) in the year can also be set. DST is deactivated by default. See Figure 18 below for the Time settings screen.

**Figure 18: Time and date settings screen**
Table 11: Description of the time and date settings screen

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time zone</td>
<td>Select the time zone of the DVR from the drop-down list.</td>
</tr>
<tr>
<td>Date format</td>
<td>Select the date format from the drop-down list. Default format is DD-MM-YYYY.</td>
</tr>
<tr>
<td>Time format</td>
<td>Select the time format from the drop-down list. Default format is 24-hour format.</td>
</tr>
<tr>
<td>Display week</td>
<td>Display the day of the week in the monitor time bar. Check the box to enable/disable. Default format is Disable.</td>
</tr>
<tr>
<td>System date</td>
<td>Define the system date. Default date is the current date.</td>
</tr>
<tr>
<td>System time</td>
<td>Define the system time. Default time is the current time.</td>
</tr>
<tr>
<td>Auto DST adjustment</td>
<td>Define DST is automatically. It depends on the time zone selected. Default format is Disable.</td>
</tr>
<tr>
<td>Enable DST</td>
<td>Manually define DST. If this option is selected, the Auto DST adjustment option is disabled. Default format is Disable. Click the check box to enable or disable daylight savings time (DST).</td>
</tr>
<tr>
<td>From</td>
<td>Enter the start date and time for daylight savings.</td>
</tr>
<tr>
<td>To</td>
<td>Enter the end date and time for daylight savings.</td>
</tr>
<tr>
<td>DST bias</td>
<td>Set the amount of time to move DST forward from the standard time. Default is 60 minutes.</td>
</tr>
</tbody>
</table>

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 mode settings menu to configure general DVR options on how information is displayed and accessed such as:

- Change GUI language
- Change the DVR 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 19 below and Figure 20 on page 41.

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

**Figure 19: Monitor setup screen: General Settings**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Change the language of the system. Select the desired language from the drop-down list and click <strong>Apply</strong>. The language displayed changes immediately.</td>
</tr>
<tr>
<td>Device name</td>
<td>Define the DVR name. The default name is TVR 41. Click the edit box and enter the new name from the soft keyboard.</td>
</tr>
<tr>
<td>Device address</td>
<td>The device number to use for the DVR when programming the remote control. The default value is 255.</td>
</tr>
<tr>
<td>Zone ID</td>
<td>Each DVR 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.</td>
</tr>
<tr>
<td>VGA resolution</td>
<td>Define the VGA resolution. Select one of the options from the drop-down list and click <strong>Apply</strong>. The selected resolution must be the same as that of the monitor.</td>
</tr>
<tr>
<td>HDMI resolution</td>
<td>Define the HDMI resolution. Select one of the options from the drop-down list and click <strong>Apply</strong>. The selected resolution must be the same as that of the monitor.</td>
</tr>
<tr>
<td>Password required</td>
<td>Define whether a login password is required. Check the box to enable/disable and click <strong>Apply</strong>.</td>
</tr>
<tr>
<td>Scaling output video</td>
<td>Enable/disable the monitor display of the main and spot monitor size to accommodate for differently sized monitors. Check the box to enable/disable and click <strong>Apply</strong>.</td>
</tr>
</tbody>
</table>
**Enable wizard**
Define whether the wizard tool starts when the DVR is turned on. Check the box to enable/disable and click **Apply**.

---

**Figure 20: Monitor setup screen: More Settings**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor standard</td>
<td>The video standard used is auto detected but can be manually changed.</td>
</tr>
<tr>
<td></td>
<td>Modify the video standard used to PAL or NTSC and click <strong>Apply</strong>.</td>
</tr>
<tr>
<td>Output mode</td>
<td>Define the desired output mode.</td>
</tr>
<tr>
<td></td>
<td>Select one of the options from the drop-down list: Standard, Bright, Gentle,</td>
</tr>
<tr>
<td></td>
<td>or Vivid.</td>
</tr>
<tr>
<td>Monitor brightness</td>
<td>Modify the video output brightness.</td>
</tr>
<tr>
<td></td>
<td>Adjust the scroll bar point to the desired level and click <strong>Apply</strong>.</td>
</tr>
<tr>
<td>Event hint</td>
<td>Define whether the status icons appear on screen. See “Status information”</td>
</tr>
<tr>
<td></td>
<td>on page 29 for more information.</td>
</tr>
<tr>
<td>Timebar transparent</td>
<td>Modify the transparency of the menus on-screen relative to the background</td>
</tr>
<tr>
<td></td>
<td>to make the menu screens easier to read or less prominent on-screen.</td>
</tr>
<tr>
<td></td>
<td>Default is non-transparent.</td>
</tr>
<tr>
<td></td>
<td>Select one of the options from the drop-down list.</td>
</tr>
<tr>
<td>Menu timeout</td>
<td>Define the time in minutes after which the menu screen reverts to live view</td>
</tr>
<tr>
<td></td>
<td>mode.</td>
</tr>
<tr>
<td></td>
<td>Select a time from the drop-down list and click <strong>Apply</strong>.</td>
</tr>
<tr>
<td>Mouse pointer speed</td>
<td>Modify the speed of the mouse pointer.</td>
</tr>
<tr>
<td></td>
<td>Adjust the scroll bar point to the desired level and click <strong>Apply</strong>.</td>
</tr>
<tr>
<td>Other notification:</td>
<td>Check to enable the Motion alarm option.</td>
</tr>
<tr>
<td>Panel alarm LED</td>
<td>Check to enable the Motion alarm option.</td>
</tr>
<tr>
<td>Motion alarm</td>
<td>Define whether the status LEDs on the front panel start flashing when</td>
</tr>
<tr>
<td></td>
<td>motion is detected.</td>
</tr>
<tr>
<td></td>
<td>Check the box to enable/disable and click <strong>Apply</strong>.</td>
</tr>
</tbody>
</table>
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 CVBS spot monitor in one stream.

Note: It is not recommended to use the V-stream feature when using a CVBS monitor as main monitor as both 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 6
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 165.

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 DVR, check the parameters entered.

To configure PTZ dome camera settings:
1. Click the PTZ Settings icon in the menu toolbar.
2. Click General and 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 165 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.
5. Click Apply to save the settings.
Calling up presets, 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.

<table>
<thead>
<tr>
<th>Front panel</th>
<th>Press the joystick to Enter. PTZ control panel appears.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse</td>
<td>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.</td>
</tr>
<tr>
<td>Remote control</td>
<td>Press the OK button. The PTZ control panel appears.</td>
</tr>
<tr>
<td>Keypad</td>
<td>Press the Enter button on the keypad. For further information, see Appendix D “KTD-405 keypad” on page 155.</td>
</tr>
</tbody>
</table>

If the display was in multiview format, it changes to full screen format for the selected camera. See Figure 21 below for a description of the PTZ control panel.

Figure 21: PTZ control panel

Table 14: Description of the PTZ control panel

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Directional pad/auto-scan buttons</td>
<td>Controls the movements and directions of the PTZ. Center button is used to start auto-pan by the PTZ dome camera.</td>
</tr>
<tr>
<td>2</td>
<td>Zoom, focus and iris</td>
<td>Adjusts zoom, focus and iris.</td>
</tr>
<tr>
<td>3</td>
<td>PTZ movement</td>
<td>Adjusts the speed of PTZ movement.</td>
</tr>
<tr>
<td>4</td>
<td>Toolbar</td>
<td>☀ Turns on/off camera light.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>🚪 Turns on/off camera wiper.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>🔍 Zoom area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>⚒ Centers the PTZ dome camera image. This command is not supported on all PTZ dome cameras.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>🔔 Jumps to the home position.</td>
</tr>
</tbody>
</table>
### Item Name Description

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 22 below).

**Note:** The PTZ dome camera used must be able to support a preset command. See Appendix F on page 165 for the complete list of PTZ commands available by camera protocol.

![Figure 22: PTZ configuration window](image)

### Table 15: Description of the PTZ configuration window

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Save preset</td>
<td>Saves preset.</td>
</tr>
<tr>
<td>2.</td>
<td>Call preset</td>
<td>Calls up pre-existing preset.</td>
</tr>
<tr>
<td>3.</td>
<td>Shadow tour toolbar</td>
<td><img src="image" alt="Icon" /> Starts recording the shadow tour.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Icon" /> Saves the shadow tour.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Icon" /> Starts the selected shadow tour.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Icon" /> Deletes the selected shadow tour.</td>
</tr>
<tr>
<td>Item</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>4.</td>
<td>Preset tour toolbar</td>
<td><img src="image" alt="Add step to a selected preset tour." /></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Starts the selected preset tour." /></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Stops the selected preset tour." /></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Deletes all the preset tour steps." /></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Scroll up the list." /></td>
</tr>
<tr>
<td></td>
<td></td>
<td><img src="image" alt="Scroll down the list." /></td>
</tr>
</tbody>
</table>

To set up a preset:
1. Click the PTZ Settings icon on the menu toolbar and select 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 screen 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 on the joystick 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. Click the PTZ Settings icon on the menu toolbar and select More Settings. The PTZ configuration window appears.
  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 45.)

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 165 for the complete list of PTZ commands available by camera protocol.

To set up a preset tour:

1. Click the PTZ Settings icon on the menu toolbar and select 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 (“Keypoints”) 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. Click the PTZ Settings icon on the menu toolbar and select 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.
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 on the joystick 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. Click the PTZ Settings icon on the menu toolbar and select 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 165 for the complete list of PTZ commands available by camera protocol.

To set up a shadow tour:
1. Click the PTZ Settings icon on the menu toolbar and select 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 on the joystick 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. Click the **PTZ Settings** icon on the menu toolbar and select **More Settings**.

  2. Select the shadow tour from the list and click to start the tour. Click to stop the shadow tour.

  3. Click Back to return to live view.
Chapter 7
Playing back a recording

The TVR 41 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, bookmark, snapshot, or event
- Search the system log

The DVR 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 140 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 mode to play back video.

Overview of the playback window

It is easy to manage playback from the playback window.

The playback video can be set up to display a time/date stamp for evidentiary purposes (see “Configuring the camera OSD settings” on page 129).
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
   - Yellow: Recordings available on the DVR.
4. Playback control toolbar. See Figure 24.

The playback control toolbar

It is easy to manually control playback using the playback control toolbar. See Figure 24 below.

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Audio and video control toolbar:</strong></td>
</tr>
<tr>
<td><img src="image" alt="Audio on/off" /></td>
<td>Audio on/off.</td>
</tr>
<tr>
<td><img src="image" alt="Start/stop a video clip" /></td>
<td>Start/stop a video clip during playback. Sections of a recording can be saved to an external storage device.</td>
</tr>
<tr>
<td><img src="image" alt="Add default bookmark" /></td>
<td>Add default bookmark</td>
</tr>
<tr>
<td><img src="image" alt="Add customized bookmark" /></td>
<td>Add customized bookmark</td>
</tr>
<tr>
<td><img src="image" alt="Bookmark management" /></td>
<td>Bookmark management. Click to see the list of bookmarks and their times.</td>
</tr>
</tbody>
</table>
### Item Description

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Archive files</td>
</tr>
<tr>
<td>2.</td>
<td><strong>Zoom control</strong>: Zoom in and out of the timeline to show the progress bar in greater or lesser detail.</td>
</tr>
</tbody>
</table>
| 3. | **Playback control toolbar**:  
  - Reverse play the recording. Click again to pause.  
  - Stop playback. Timeline jumps back to 00:00 time (midnight).  
  - Play recording.  
  - Forward skip playback. Default skip time is 30 seconds.  
  - Reverse skip playback. Default skip time is 30 seconds.  
  - Decrease playback speed: Options available are: single frame, 1/8 speed, ¼ speed, ½ speed, normal, X2 speed, X4 speed, X8 speed, maximum speed.  
  - Increase playback speed. Options available are: single frame, 1/8 speed, ¼ speed, ½ speed, normal, X2 speed, X4 speed, X8 speed, maximum speed.  
  - Previous file/day/event recording.  
  - Play next file/day recording in the search result. |
| 4. | **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. |
| 5. | **Time bar**: Time of actual playback. This is only displayed in all-day playback. |
| 6. | **Playback progress bar**: This bar displays how far playback of the recording has progressed. It also indicates the type of recording. |
| 7. | **Recording type**: Description of the color coding of recording types that appear in the playback progress bar.  
- Dark green indicates continuous recording  
- Red indicates alarm/event recording  
- Yellow indicates motion recording  
- Light green indicates manual recording  
- Pale blue indicates text insertion recording |
| 8. | Hide the playback control toolbar. |
| 9. | **Video search**: Search for recordings. See “Searching recorded video” on page 56 for more information. |
| 10. | For all-day playback mode, quit playback and return to live view.  
For playback from search mode, quit playback and return to the search screen. |
Playback pop-up menu

You can quickly access many playback functions by placing the cursor on a playback image on screen and clicking the right-button of the mouse. The playback pop-up menu appears (see Figure 12 below).

Figure 25: The playback pop-up menu

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Camera</td>
<td>Select a camera for playback.</td>
</tr>
<tr>
<td>2</td>
<td>Digital zoom</td>
<td>Enter the digital zoom function for the selected camera.</td>
</tr>
<tr>
<td>3</td>
<td>Motion search</td>
<td>Call up the motion search toolbar to search playback recording for incidents of motion detection. See “Motion search” on page 62 for more information.</td>
</tr>
<tr>
<td>4</td>
<td>Text show</td>
<td>Display inserted text on screen.</td>
</tr>
<tr>
<td>5</td>
<td>Skip time</td>
<td>Modify the playback skip time. See “Playback skip time” on page 61 for more information.</td>
</tr>
<tr>
<td>6</td>
<td>Control panel</td>
<td>Hide the playback control toolbar.</td>
</tr>
<tr>
<td>7</td>
<td>Exit</td>
<td>Return to live view.</td>
</tr>
</tbody>
</table>

Instant playback

Use the quick access toolbar to quickly replay recorded video for a preprogrammed time period. This can be useful to review an event that has just happened. Only one camera at a time can be selected. The default playback period is 5 minutes.

To instantly replay recorded video:

1. In live view mode 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 Stop  to stop playback and return to live view.

**To change the instant playback time period:**

1. Click Display > Monitor > More Settings in the menu toolbar.

2. Select the desired instant playback time: 5, 10, 20, or 30 minutes. The default time is 5 minutes.

3. Click Apply.

---

**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 24 on page 52 for a description of the playback control toolbar.

**Using the mouse:**

1. In live view mode right-click the mouse on the desired camera image. In the mouse toolbar click All-day Playback.

   The playback screen 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 screen. The camera list and calendar appear. Check the desired cameras and/or another day. Up to 16 cameras can be selected.

   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 screen.

**Using the front panel:**

1. Select the camera for play back and press the Replay button. Playback from the selected camera starts immediately.

   **Note:** Multiview playback is only available using the mouse. If live view was showing multiview, only the camera in the top-left channel on screen will be played back.

2. To select a different camera for play back, press the numerical button of the desired camera.

3. Click Live to return to live view.

### Searching recorded video

You can easily search and play back recorded videos by time, events, bookmarks, and snapshots.

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

<table>
<thead>
<tr>
<th>Search type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Search all recorded video by cameras, recording type, type of file protection (locked or unlocked), and time period.</td>
</tr>
</tbody>
</table>
| 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. |
| Bookmark    | Search only recorded files with bookmarks. |
| Snapshot    | Search only recorded files with snapshots. |

### 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 26 on page 57 for an example of a search.

Only one file can be played back at a time.
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. 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 screen to display the list of cameras and select the desired camera.
8. To do another search:
   - Click Exit in the playback control toolbar to return to the search results screen.
- Or -
Right-click the mouse and select Exit from the list to return to the search results screen.
- Or -
Right-click the mouse and select Video Search from the list to return to the search screen.

Playing back recordings by event

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

To play back search results:
1. In live view mode, right-click the mouse and select Advanced Search > Event.
2. Select the desired event type as well as start and end time of the recording.
3. Select the desired alarm inputs.
   If you selected “Motion” as the event type, select the required alarm inputs. If you selected “Text insertion”, select the required alarm inputs 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 play back, right-click the mouse and select the Control Panel button in the playback control toolbar. 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 screen to display the list of cameras and select the desired camera.
9. To do another search:
   Click Exit in the playback control toolbar to return to the search results screen.
   - Or -
Right-click the mouse and select Exit from the list to return to the search results screen.

- Or -

Right-click the mouse and select Video Search from the list to return to the search screen.

Creating and playing back bookmarked recordings

You can bookmark the important scenes in a recorded file for later reference. Bookmarks flag the start of a scene. Up to 64 bookmarks can be saved in a video file. There are two types of bookmarks:

- Default bookmark: All default bookmarks have the same generic name, “Bookmark”.
- Customized bookmark: The bookmark is given a name for easy identification. The same name can be used for several bookmarks.

Both types can be searched.

To create a bookmark:

1. Open an all-day playback screen or the playback screen from a search result.
2. In the all-day playback recording, click the timeline bar where you want the bookmark to be. The green time line jumps to this position. Click the button for the type of bookmark you want, and enter the bookmark name if required.
   In the playback recording from a search, click the scroll bar where you want the bookmark to be. The scroll bar ball jumps to this position. Click the button for the type of bookmark you want, and enter the bookmark name if required. The bookmark is saved.
3. Click the bookmark management button to see the list of bookmarks saved. The name of a bookmark can be edited. The bookmark can also be deleted.

To play back a bookmark:

1. In live view mode right-click the mouse and select Advanced Search > Bookmark in the mouse menu.
2. Select the desired cameras as well as start and end time of the recording to be searched. Also select the type of bookmark to be searched.
   If searching for customized bookmarks, enter a keyword from the bookmark name.
   Click Search. The list of bookmarks appears.
3. Select a bookmark and do one of the following:
Click the **Edit** button to edit a bookmark’s name.

Click the **Delete** button to delete a bookmark.

- Or -

Click the **Play** button to play back a bookmark.

4. When finished, click **Exit**.

### Slideshow of snapshots

You can search recorded for video snapshots. See “Accessing frequently used commands” on page 34 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 > Snapshot**.

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 screen 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 **Exit** ❌ in the snapshot toolbar to return to the search results screen.

   - Or -

   Right-click the mouse and select **Exit** from the list to return to the search results screen.

   - Or -

   Right-click the mouse and select **Snapshot Search** from the list to return to the search screen.

### 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.
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 screen appears.
   - Back: Click to return to the previous screen.

Playback skip time
By moving the joystick up and down during playback, you can jump forwards or backwards by a defined skip time period.

To change the playback skip time:
1. In playback mode, right-click the mouse and click Skip Time on the pop-up menu. The Skip Time menu appears.
2. Select a skip time between 10 and 300 seconds. The default skip time is 30 seconds.
Motion search

You can quickly and easily search playback recording for incidents of motion detection. Motion can be searched over the whole playback screen 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 28: Motion search toolbar

1. **Full screen detection**: The motion-sensitive red grid automatically appears over the whole screen.

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 screen 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 screen is covered in the red grid.

3. Click the **Search** icon to see the results.
   - Motion appears as blue lines below the green playback progress bar. 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.
The current frame rate is shown on the right of the playback control toolbar.

**To play back frame-by-frame:**

- **Using a mouse:**
  1. In playback mode click the Speed Down \(\text{Θ}\) and Speed up \(\text{Θ}\) buttons 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 move the joystick to left and right to scroll down and up through the speed changes until single frame.
  2. Press Enter with the joystick 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 screen with the cursor.

   The image zooms in and the digital view screen appears.

3. Left-click the mouse and drag the red square to the area of interest, or move the joystick on the front panel to position the red square. The selected area is magnified.

4. Right-click the mouse to quit the digital zoom mode and to return to full-screen playback mode. The playback control toolbar reappears.
Chapter 7: Playing back a recording
Chapter 8
Archiving recorded files

Archive recorded files on an external device such as a USB flash drives, USB HDDs, eSATA HDD or a DVD writer. You must be in live view mode 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 DVR. It can be detected automatically by the DVR.

Note: The USB port on the back panel does not support USB CD/DVD burners or USB HDDs.

Archiving files

There are three ways to archive files from live view:

Quick Archive: Quick archive lets you archive recorded files quickly by using the Archive button on the front panel. The TVR 41 then downloads all the recorded files on the unit to fill the available memory space on the storage media. This option is not available via the mouse.

Advanced Search screen: Use this screen to specify archiving settings such as a specific time and date period, recording type, start and end times, as well as cameras.

Auto archive: You can schedule when to automatically archive recorded files.

Using Quick Archive

To archive recorded video using Quick Archive:

1. Insert the backup device into the TVR 41.
   
   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 more than one media type is found in the TVR 41, the USB device takes precedence over the others.

2. Press Archive on the front panel or remote control to open the quick archive screen.
3. From the list of files displayed, select the files you want to archive.
4. Click Start. 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**

There are two ways to archive files to a backup device. You can manually select the files to back up or you can schedule when the DVR will automatically archive.

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 29: Example of an archive**

<table>
<thead>
<tr>
<th>Item</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1.   | Device name | Select one of the storage media for archiving. If the backup device is not recognized:  
ullothe Refresh button  
ullothe Reconnect device  
ullothe Check for compatibility from vendor |
| 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. |
To manually export recorded files to a backup device:

1. Connect the backup device to the DVR.
   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 TVR 41, 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 screen appears.

3. Select the cameras and search parameters required:
   - **Record type:** All, constant, motion, text insertion, alarm, or manual.
   - **File type:** All, locked, or unlocked.

4. Select the start and end dates and times to archive recordings.
   **Note:** You can click the Quick Playback button to verify that the selected files are the files to export. Right-click the mouse and click Exit to return to the Advanced Search screen.

5. Click Search. The list of results appears.

6. Select the files to export.

7. Click Archive. The Archive screen appears.

8. Select the storage medium to export to from the drop-down list.

9. Click Archive to begin the backup process.

10. Click OK when archiving is completed. Click Cancel until you return to live view.
Auto archiving

You can schedule the DVR to automatically archive recordings at set interval times to an external storage device. You can also select the cameras and recording types to auto archive as well as define how the system responds when the HDD becomes full.

It is easy to see the time of the most recent and next archive recording. Simply select the Archive Status tab and the information is displayed.

To schedule automatic archiving:

1. Connect the backup device to the DVR.
2. In the configuration menu, click Video Schedule > Auto Archive > Archive Settings.

![Archive Settings Menu](image)

3. Check Enable Auto Archive.
4. Select the start and end date and time periods during which archiving can occur automatically.
5. Under Interval Time, select the desired interval time for archiving.
   - The interval time options available are: 1 hour, 2 hours, 4 hours, 8 hours, 24 hours, or once only. Default is 1 hour.
6. Click Archive file. In the screen that appears, select the cameras and search parameters required:
   - Record Type: All, constant, motion, text insertion, alarm, or manual.
   - File Type: All, locked, or unlocked.
   - Note: You can copy these selected parameters to other cameras. Click Copy and select the desired cameras.
   - Click OK and Apply to save, and return to the Archive Settings screen.
7. Select how the DVR responds if the backup device becomes full. There are two options: Stop Recording or Overwrite.
   - If overwrite is selected, the oldest files are overwritten.
Chapter 9: Archiving recorded files

8. Under Device Select, select the backup device used.
9. If you change any options, click Refresh.
10. Click Apply.

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 manually export video clips during playback:
1. Connect the backup device to the DVR.
2. Search for the required files to play back. See “Searching recorded video” on page 56.
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 Clip button.
5. Click the playback timeline where you want the video clip to stop and click the End Clip 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 Export screen appears.
   Click No to exit and return to the search results screen. The clips are not saved.
9. In the Export screen select from the drop-down list the backup device to be used.
10. Click Start. 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 manually archive snapshots:
1. Connect the backup device to the DVR.
2. Search for the required snapshot files to play back. See “Slideshow of snapshots” on page 60. 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 screen.

Managing backup devices
You can manage backup devices from the Export screen (see Figure 29 on page 66.)
The Export screen 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 TVR 41 when archiving files onto a backup device.
Chapter 9
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.

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 TVR 41 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 DVR player with Windows Vista and Windows 7, do the following:

• Run the browser interface and the DVR player application as an administrator in your workstation
• Add the DVR’s IP address to your browser’s list of trusted sites

To add the DVR’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 screen.
9. Connect to the TVR 41 for full browser functionality.
Accessing the web browser

To access the TVR 41, open a web browser and enter the IP address assigned to the DVR as a web address. On the logon screen, enter the default user ID and password.

Note: Only one DVR can be viewed per browser.

User ID: admin

Password: 1234

The default values for TVR 41 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

For more information on port forwarding, see Appendix C “Port forwarding information” on page 153.

Web browser overview

The TVR 41 web browser lets you view, record, and play back videos as well as manage all aspects of the DVR from any PC with Internet access. The browser’s easy-to-use controls give you quick access to all TVR 41 functions. See Figure 30 below.
Figure 30: Live view in the web browser interface

Table 16: Description of live view in the web browser

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Camera</td>
<td>View video and record video from the selected camera.</td>
</tr>
<tr>
<td>2.</td>
<td>Menu toolbar</td>
<td>Lets you do the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• View live video</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Play back video</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Search for event logs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Configure settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Log out of the interface</td>
</tr>
<tr>
<td>3.</td>
<td>Viewer</td>
<td>View live or playback video.</td>
</tr>
<tr>
<td>4.</td>
<td>Display format</td>
<td>Define how you want video to be displayed in the viewer:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multiview or full screen</td>
</tr>
<tr>
<td>5.</td>
<td>Video function toolbar</td>
<td>Lets you do the following in live view:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Switch between main stream and substream.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Start/stop all streaming from selected cameras.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Start recording from selected cameras.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Access digital zoom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Turn POS/ATM text insertion on/off.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Take a video snapshot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• View previous and next camera respectively.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If viewing in multiview format, live view moves to the next group of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cameras for the selected number of video tiles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Turn audio on/off</td>
</tr>
</tbody>
</table>
8B Chapter 9: Using the web browser

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>PTZ panel</td>
<td>Hide/display the PTZ panel.</td>
</tr>
<tr>
<td>7.</td>
<td>Alarm center</td>
<td>Display a log of unacknowledged alarms.</td>
</tr>
</tbody>
</table>

Using the web browser to configure the device

Click **Configuration** on the browser menu bar to display the configuration screen. There are two ways to configure the DVR: 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, captured images, and downloaded files.

Remote configuration

See Figure 31 below for an example of the Configuration screen. See Table 16 on page 73 for an overview of the different browser 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 31: Remote browser configuration (System information - HDD screen shown)
<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device parameters</td>
<td>Device information</td>
<td><strong>Device name</strong>: Define the DVR name. The default name is TVR 41. <strong>Device number</strong>: The device number to use for the DVR when programming the remote control. The default value is 255. 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. Overwrite: Enable or disable. Enabling this setting causes recorded files to be overwritten once the HDD is full. eSATA: Define how an external recording device saves records. See “Using an external recording device” on page 89 for more information. 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 &lt; Motion).</td>
</tr>
<tr>
<td>Time settings</td>
<td></td>
<td>Define time and date. See “Configuring time and date” on page 38 for more information. See “Configuring an NTP server” on page 112 for information on setting up NTP time settings.</td>
</tr>
<tr>
<td>Holiday settings</td>
<td></td>
<td>Define when recordings occur during holiday periods. See “Holiday schedules” on page 92 for more information.</td>
</tr>
<tr>
<td>Camera settings</td>
<td>Display settings</td>
<td>Define which information is displayed on-screen. See “Configuring the camera OSD settings” on page 129 for more information.</td>
</tr>
<tr>
<td></td>
<td>Video settings</td>
<td>Define general recording settings. See “Defining a recording schedule” on page 90 for more information.</td>
</tr>
<tr>
<td></td>
<td>Recording schedule</td>
<td>Define the recording schedules. See “Defining a recording schedule” on page 90 for more information.</td>
</tr>
<tr>
<td></td>
<td>Motion detection</td>
<td>Define motion detection parameters. See “Setting up motion detection” on page 100 for more information.</td>
</tr>
<tr>
<td></td>
<td>Privacy mask</td>
<td>Define the on-screen privacy mask areas. See “Setting up privacy masking” on page 130 for more information.</td>
</tr>
<tr>
<td></td>
<td>Tamper-proof</td>
<td>Define the video tampering detection settings. See “Detecting video tampering” on page 106 for more information.</td>
</tr>
<tr>
<td></td>
<td>Video loss</td>
<td>Define the video loss detection settings. See “Detecting video loss” on page 105 for more information.</td>
</tr>
<tr>
<td></td>
<td>Text overlay</td>
<td>Add extra lines of text on screen. See “Text overlay” on page 83.</td>
</tr>
<tr>
<td>Menu</td>
<td>Function</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Image</td>
<td>Adjust image quality on screen. See “Adjusting camera image settings” on page 131 for more information.</td>
</tr>
<tr>
<td></td>
<td>Covert camera</td>
<td>Define the cameras whose images cannot be displayed by those not logged in. See “Hiding a camera image from view” on page 131 for more information.</td>
</tr>
<tr>
<td></td>
<td>Capture settings</td>
<td>Define the image quality of snapshots.</td>
</tr>
<tr>
<td></td>
<td>Manual record</td>
<td>Define which cameras can manually record. See “Manual recording” on page 93 for more information.</td>
</tr>
<tr>
<td></td>
<td>Network settings</td>
<td>General Define the general network settings. See “Configuring general network settings” on page 109 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PPPoE Define the PPPoE settings. See “Configuring PPPoE” on page 110 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DDNS Define the DDNS settings. See “Configuring DDNS” on page 111 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Email Define the settings to send an e-mail. See “Configuring e-mail” on page 112 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NetHDD Define the remote storage system for DVR recordings. See “Using a network storage system” on page 84 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UPnP™ Enable this function so that the DVR can automatically configure its own port forwarding. See “Configuring UPnP™” on page 113 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SNMP Define the SNMP settings. See “Configuring SNMP” on page 115 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FTP Define the FTP settings. See “Configuring PPPoE” on page 110 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More settings Define a remote alarm host, multicast IP as well as the server, HTTP and RTSP ports. See page 115 for more information.</td>
</tr>
<tr>
<td></td>
<td>Serial port settings</td>
<td>232 serial port Define the RS-232 parameters. See “Configuring the RS-232 port” on page 133 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>485 serial port Define the RS-485 parameters.</td>
</tr>
<tr>
<td></td>
<td>Alarm settings</td>
<td>Alarm input Define the alarm input parameters for when an external alarm is triggered. See “Setting up external alarms” on page 102 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alarm output Define the response when an external alarm is triggered. See “Setting up external alarms” on page 102 for more information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alarm audio Define the parameters to import an alarm audio file. See “Alarm audio messages” on page 98.</td>
</tr>
</tbody>
</table>
### Menu Function Description

<table>
<thead>
<tr>
<th>Menu</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio output</td>
<td>Define the parameters to import an alarm audio file. See “Alarm audio messages” on page 98.</td>
<td></td>
</tr>
<tr>
<td>Advanced settings</td>
<td>Define the warning buzzer time. See “Modifying the warning buzzer” on page 100 for more information.</td>
<td></td>
</tr>
<tr>
<td>Notification</td>
<td>Define the notification parameters when irregular events occur such as HDD full. See “Description of alarm notification types” on page 97 and “Setting up system notifications” on page 105.</td>
<td></td>
</tr>
<tr>
<td>User management</td>
<td>Define, modify, and delete users. See Chapter 16 “User management” on page 139 for more information.</td>
<td></td>
</tr>
<tr>
<td>HDD management</td>
<td>Basic settings</td>
<td>Initialize the HDD. See “Initializing HDDs” on page 121 for more information.</td>
</tr>
<tr>
<td>Storage settings</td>
<td>Define the storage capacity of the HDD. See “Controlling disk space on the HDD” on page 121 for more information.</td>
<td></td>
</tr>
<tr>
<td>Auto archive</td>
<td>Archive settings</td>
<td>Define archive scheduling as well as camera and recording type selection. See “Auto archiving” on page 68 for more information.</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Remotely update the DVR firmware, restore default factory settings, restart the DVR, and import parameters remotely. See Chapter 15 “DVR management” on page 133 for more information.</td>
</tr>
<tr>
<td>Text insertion</td>
<td>Define access device, access mode, and start string. See “Capturing text insertions” on page 81.</td>
<td></td>
</tr>
<tr>
<td>V-stream encoding</td>
<td></td>
<td>Define the maximum bit rate and frame rate. See “V-stream encoding” on page 42 for more information.</td>
</tr>
<tr>
<td>System information</td>
<td>Camera, Record, Alarm, Network, and HDD</td>
<td>Review the status of the cameras, recordings, alarms, network, and HDDs. See “Viewing system information” on page 136 for more information.</td>
</tr>
</tbody>
</table>

### 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 32 on page 78.
Chapter 9: Using the web browser

Figure 32: Browser playback page

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Selected camera.</td>
</tr>
<tr>
<td>2.</td>
<td>Calendar: Selected day is highlighted.</td>
</tr>
<tr>
<td>3.</td>
<td>Search: Click to start searching recorded files for the selected camera.</td>
</tr>
<tr>
<td>4.</td>
<td>Dual stream: Select desired dual stream mode: Normal record, thin record, or picture. Default is Normal record.</td>
</tr>
<tr>
<td>5.</td>
<td>Text search: Check and then enter the text to search.</td>
</tr>
<tr>
<td>6.</td>
<td>Display format: Click to change the display format: full screen or multiview display.</td>
</tr>
<tr>
<td>7.</td>
<td>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.</td>
</tr>
<tr>
<td>8.</td>
<td>Playback control toolbar:</td>
</tr>
<tr>
<td></td>
<td>Reverse: Click to reverse playback.</td>
</tr>
<tr>
<td></td>
<td>Start/stop: Start or stop playback.</td>
</tr>
<tr>
<td></td>
<td>Stop playback: Timeline jumps back to 00:00:00 time (midnight) of the previous day.</td>
</tr>
<tr>
<td></td>
<td>Playback slow forward: Click to scroll through the different speeds available: single frame, 1/8 speed, ¼ speed, ½ speed, normal, X2 speed, X4 speed, X8 speed, maximum speed. Current speed is displayed under the camera name on top right of window.</td>
</tr>
<tr>
<td></td>
<td>Playback fast forward: Click to scroll through the different speeds available: single frame, 1/8 speed, ¼ speed, ½ speed, normal, X2 speed, X4 speed, X8 speed, maximum speed. Current speed is displayed under the camera name on top right of window.</td>
</tr>
<tr>
<td></td>
<td>Single frame: Click to play back one frame at a time.</td>
</tr>
<tr>
<td>9.</td>
<td>Stop streaming: Stop streaming from all cameras.</td>
</tr>
<tr>
<td>10.</td>
<td>Audio and video control toolbar:</td>
</tr>
</tbody>
</table>
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 DVR compiles a log of events, such as the start or end of video recording, DVR notifications, and alarms, through which you can easily search. Logs are categorized by the following types:

- **Alarm**: Includes motion detection, tamper detection, video tampering, 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 DVR actions, such as the start and end of video recording, etc.

To search for logs, click the Log tab in the browser toolbar, select a log type, specify a date and time range, and then click Search.
Dual streaming

The DVR allows you to view from up to 16 cameras over a network. Dual streaming allows high quality video to be viewed in one stream (Normal stream) and lower quality video to be viewed in another stream (Stream B) that can be easily streamed through a narrow bandwidth.

The normal stream has the frame rate, quality, and resolution as configured in the encoding menu. However, in a thin stream data thinning has been carried out so that it has a lower frame rate, quality, and resolution. This allows more video to be recorded on the HDD.

Dual streaming is available in both live and recording modes.

To play back dual streaming:

![Select streaming option here]

To record dual streaming:

1. Click the Configuration tab in the browser toolbar and then select HDD management > Storage Mode.

![Configuration menu]

2. Specify which percentage of the HDD should be used to store normal streams (Normal Record), thin streams (Thin Record), and snapshots (Pictures).
Using the mouse, drag the markers between the colored sections to the desired values. The minimum and maximum values for each recording type are:

- Normal record: 20 to 50%
- Thin record: 0 to 80%
- Picture: 0 to 20%

3. Click Save to save the settings.

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.

Figure 33: 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 zoom, focus, and iris.
3. Adjust speed of PTZ dome camera.
4. Start selected preset.

Capturing text insertions

Text insertion lets you insert or display text from a point-of-sale (POS) system on the video display of the DVR. 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 DVR supports POS and ATM text insertion via the UTC ProBridge accessory connected to the RS-232 port on the DVR. This feature is currently only available using the browser.

In both live view and playback, a camera set up for text insertion will display the video with the POS text overlay.

See Figure 34 below for an example of a video image in live view with text insertion.

Figure 34: 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. In the submenu panel, select Text Insertion.
4. Check Enable text insertion.
5. Select the access device from the drop-down list.
6. Select the access mode. Only “ProBridge” is listed.
7. Under Start String, enter the desired transaction text, such as an ATM transaction number.
8. Click Apply to save the settings.

**To search text insertion in recorded video:**
1. In live view, check the By text check box.

2. In the keyword text box that appears, enter the text for which you want to search.

**Text overlay**

You can add up to eight 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 screen. The strings follow each other consecutively.
**Note:** This option is not available via the DVR.

**To add on-screen overlay text:**

1. Click the Configuration tab in the browser toolbar and then select 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 22 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.

**Using a network storage system**

You can use a network storage system (NAS) or storage area network (SAN) to remotely store DVR recordings.

**To set up a network storage system:**

1. Click the Configuration tab in the browser toolbar and then select Network Settings > NetHDD.
2. On the first line of HDD No., enter the IP address of the desired remote storage system.

3. Enter the file path name to define where on the remote storage system you want to store the files.

4. Under Type, select type of storage system to be used: NAS or SAN. Default is NAS.

5. Up to eight remote storage systems can be set up.

6. Click Save.
Chapter 10
Recording

This chapter provides instructions on how to define the recording settings of your DVR. This chapter covers how you can configure your initial recording settings, schedule recordings, protect your recorded files, and set up your HDD for redundancy.

Initializing recording settings

Before you can set up your DVR 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 13 “HDD management” on page 121 for more information.

See “Calculating the maximum permitted frame rates and bit rates" on page 89 to calculate the maximum frame and bit rates.

To configure recording settings:

1. Click the Video Schedule icon in the menu toolbar.
2. Select Encoding > Record.
3. Select the camera you want to configure.
4. Configure the following recording settings:
   - **Encoding parameters**: Select one of the stream types: Mainstream (TL-Hi), Mainstream (TL-Lo), Mainstream (Event), Mainstream (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, and QCIF.
   - **Bit rate type**: Select Constant or Variable.
   - **Video quality**: Select the quality at which to record. If “Variable” was selected as the bit rate type, this option is unavailable.
   - **Frame rate**: Select the recording frame rate. 25 PAL (30 NTSC), 20, 18, 16, 15, 12, 10, 8, 6 (default), 4, 2, 1, 1/2, 1/4, 1/8, 1/16. Default is 25 (30).
   - **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 4096 kbps. It is calculated from the frame rate and time required.
   - **Pre-record**: This is the time the camera starts recording before the scheduled time or event. Select the time in seconds to start pre-recording before the scheduled time or event.
     The maximum pre-recording times available depend on the constant bit rate. See “Maximum pre-recording times” on page 163 for more information.
   - **Post-record**: This is the time the camera continues to record after the scheduled time or event. Select the time in seconds to stop post-recording after the scheduled time or 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.

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

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

7. Click the **Capture** tab and configure the settings for captured video, such as snapshots. Click **Apply** to save the settings.
8. Click Back to return to live view.

**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. Click the Video Schedule icon in the menu toolbar.
2. Select Encoding > Encode parameters suggestion.
3. Enter the number of days to be recorded and the resolution. Also specify whether the recording period will include weekdays and weekends.
4. 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.

**Using an external recording device**

You can use an external storage device, such as an eSATA HDD, to backup video or to add its recording capacity to that of the DVR itself. If you change this option, you must reboot the DVR to implement the change.

**To configure an external recording device:**

1. Click the Video Schedule icon in the menu toolbar.
2. Select More Settings.
3. Select one of the two options:

- **Record and Capture**: Extend the recording capacity of the DVR.
- **Export**: Backup data onto an eSATA backup device.

**Note**: If the external storage device is part of the total internal capacity of the DVR, then it is no longer available for backing up video.

4. Click Apply.

**Configuring overwrite**

You can select how the DVR 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. Click the Video Schedule icon in the menu toolbar.
2. Select More Settings.
3. Under Overwrite, select Yes.

**Defining a recording schedule**

Defining a recording schedule lets you specify when the DVR 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 35 below for an example.

**Figure 35: Description of the Schedule screen**

1. **Camera**. Select a camera.
2. **Schedule time**. Represents the 24-hour cycle during which a schedule is selected.
3. **Schedule day**. There are seven days to select: Sunday (Sun), Monday (Mon), Tuesday (Tue), Wednesday (Wed), Thursday (Thu), Friday (Fri), and Saturday (Sat).
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. Click the Video Schedule icon in the menu toolbar and select Schedule.
2. Select a camera.
3. Check the Enable Schedule box.
4. Click Edit. The following screen is displayed:

5. Select the day of the week for which you want to set up the schedule. You can define a 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:** The time periods defined cannot overlap.

7. Select a recording type.

   This setting instructs the DVR 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 DVR records continuously.

8. Click Apply to save settings.
9. Repeat steps 3 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 and click OK to save changes and return to the Edit screen.

10. Repeat steps 3 to 9 for other cameras.

11. Click Apply to save the settings, and then OK to return to the schedule screen.

**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, for example, the first of January, or the second Wednesday of every month. 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. Click the Display Mode Settings icon in the menu toolbar, and select Holidays.

2. Select a holiday period from the list, and click Edit to modify the settings. The Edit screen 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 screen.

6. Repeat steps 2 to 5 for other holiday periods.

7. Click Back to return to live view.
Manual recording

The DVR lets you manually record video during live view. This can be useful if you know that the DVR 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.

You can check to see if a camera is recording manually by looking at the icon on the quick access toolbar. The icon is red when manually recording. Default is off.

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.

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 100.

External alarm schedules

The DVR 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 104.

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 screen 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 screen appears.

   ![Search screen](image)

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.

5. Click 🔒 to lock a file. Click again to unlock.

   The Locked column indicates whether a file is locked or not. Closed lock icons indicate locked files while opened lock icons indicate unlocked files. The Lock button toggles between Lock and Unlock, depending on the file.

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 DVR automatically records to the next HDD not set to *read-only*.

**To set a HDD to read-only:**

1. Click the **System Setting** icon in the menu toolbar.
2. Click **Hard Disk** to set up the HDD parameters.
3. Select the HDD you want to set to read-only.
4. Check **Read only**.
5. 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).

**HDD redundancy**

Setting up HDD redundancy lets your DVR 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 DVR 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” on page 122 for more information.

To set up HDD redundancy:

1. Click the System Setting 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.

![HDD Information Window]

3. In the Local HDD Settings window, 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.
8. Click Apply to save the settings.
9. Repeat steps 7 to 9 for other cameras whose files you would like to be redundantly recorded.
10. Click Back to return to live view.

Note: The HDD set to redundancy stores an extra copy of the recording. When an HDD is set to redundancy, at least one other HDD must be set to the R/W status.
Chapter 11
Alarm settings

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

Description of alarm notification types

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

Figure 36: Alarm notification types (‘Play audio file’ option is shown)

The alarm notification types are:

- **Full screen monitoring**: When an alarm is triggered, the local spot monitor (VGA or BNC monitor) displays an image in live view mode. For alarms that are triggered simultaneously, images display one at a time every 10 seconds (default dwell time). You can set a different dwell time using the Dwell Time setting under the Display Settings>Layout screen. When the alarm stops, cycling of the images stops and you return to live view mode. This alarm option must be selected for each channel where it is required.
• **Audible warning**: Triggers a warning buzzer when an event or alarm is detected by the system or a camera. See “Modifying the warning buzzer” on page 100 for more information.

• **Notify surveillance center**: Sends a signal to TruVision Navigator or other software applications when an alarm or notification is detected.

• **Send e-mail**: Sends an e-mail when an alarm or notification is detected. The e-mail includes an HTML link. Click the link to play the video file showing the alarm or notification. See “Configuring e-mail” on page 112 for information on how to configure the DVR to send an e-mail.

• **Upload captured pictures to FTP**: Sends snapshots to a designated FTP site. See “Configuring an FTP server” on page 115 for more information.

• **Play audio file**: Plays a pre-recorded audio message when an alarm or event is triggered. See “Alarm audio messages” below for more information.

• **Trigger alarm output**: Triggers an alarm output when a notification is detected for an external alarm. See “Setting up external alarms” on page 102 for information on configuring an alarm output.

  This alarm notification is not available for system alarms.

• **Panel alarm LED**: Triggers the alarm indicator bar on the front panel to flash on and off when a motion detection alarm is detected. This configuration is located under Display > Monitor > More settings.

**Alarm audio messages**

You can record customized audio messages and upload them onto the DVR to be played back when an alarm is triggered. Up to 5 audio files can be stored on the DVR. The message can be up to 20 seconds long and up to 60 kb in file size. Preferred audio file types are MP3 and WAV.

The administrator uploads the audio files onto the DVR using a web browser or an application supported by the SDK. There are sample audio files provided in English:

• An alarm has been triggered. Please leave the premises immediately.
• An alarm has been triggered. The police have been notified.
• These premises are monitored by video surveillance.
• You have entered a restricted area. Please exit this area immediately.

You can use the Player application to convert an MP3 audio to the audio format supported by TVR41. Once converted, you can then upload the file via the browser.
To import an alarm audio file:
1. Insert the storage device with the alarm audio file in the DVR.
2. Click the Alarm icon in the menu toolbar and select Alarm Audio.

![Alarm Audio Screen](image)

**Note:** To modify the name of an audio file, click Edit for the desired file and enter the new file name.

3. Click Import to import a file. The following screen appears:

![Import Screen](image)

4. Under Device Name, select the storage device.
5. Under Import to, select the audio file number, and then click Import to return to the Alarm Audio screen.
6. Click the Audio Output tab and select the desired audio output: HDMI, Audio output1 or Audio output2.
7. Click Import.
   
   **Note:** Up to 5 audio files can be imported.

To delete an alarm audio file:
1. Click the Alarm icon in the menu toolbar, and select Alarm Audio.
2. Select the file to be deleted, and click Delete.

   **Note:** There will always be a minimum of five audio files listed.
Modifying the warning buzzer

When an alarm is triggered by the system or a camera, the DVR 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 DVR. With it there is no need to manually search through hours of video recordings to find an event. The TVR 41 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 DVR can record.

You can mask out any areas of motion on a 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. You can also select a specific audio alarm file to play for a camera or group of cameras.

Motion detection set up

To set up motion detection:

1. Click the Camera Management icon in the menu toolbar and select Motion.
2. Select the camera to detect motion. Each camera must be set up individually.
3. Check Enable Motion Detection.
4. Select the areas sensitive to motion.
Click and drag the mouse cursor across the screen. The area selected appears as a red grid. Areas covered by the red grid are sensitive to motion detection.

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

**Note:** The motion grid is sensitive to motion during configuration. The grid blocks become red when motion is detected. This real time feedback is available in the OSD, browser, and via the SDK.

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 screen 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.

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.

Click the **Rule** tab to define the method by which you want the DVR to notify you of the alarm. More than one notification type can be selected.
If you want one of the pre-recorded audio messages to play when an alarm or event is triggered, check **Play audio file** and select the desired audio file from the drop-down list. Click the siren button to confirm that you have selected the correct audio file.

Click **Apply** to save settings.

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

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 DVR 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. Click the **Alarm settings** icon in the menu toolbar and select **Alarm Input**.

2. Select the alarm input number of a camera, and enter the input name, if required.

3. Select the alarm input type, NO or NC.
4. Check the **Enable Alarm Input** box to enable the function. 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 DVR to notify you of the alarm. Click **Apply** to save settings.

8. Select the PTZ camera function required in response to an external alarm.

   Select the PTZ camera and 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 screen.

10. Click **Back** to return to live view.
To set up an alarm output:

1. Click the Alarm Settings icon in the menu toolbar and select 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” below).
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 screen.
6. Click Back to return to live view.

### Triggering or clearing alarm outputs manually

When an alarm is activated, the DVR can be set up so that the alarm must be manually acknowledged in order to be silenced. See “Setting up external alarms” on page 102 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. Click the Alarm settings icon in the menu toolbar and select Alarm Output.
2. Click the Manual Alarm tab.
3. Select the desired alarm output and click one of the following buttons:
   - **Clear:** Clear to stop 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 DVR 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 29 for further information.

The system notifications include:

- **HDD Full**: All installed HDDs are 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.
- **Abnormal Video Signal**: Unstable video signal or video loss detected.
- **Input/output Video Standards Mismatch**: I/O video standards do not match.
- **Abnormal Record**: Recording failed due to encoder or HDD problems.

See “Description of alarm notification types” on page 97 for information on the different alarm notification types available.

To set up system notifications:

1. Click the Alarm settings icon in the menu toolbar and select Notification.
2. Select a notification type. See “Description of alarm notification types” on page 97 for more information.
3. Check one or more response options: Full screen monitoring, audible warning, notify surveillance center, send e-mail, upload captured pictures to FTP, play audio file, and trigger alarm output.
4. 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 DVR to detect video loss and trigger a system notification.
To setup video loss detection:

1. Click the Camera management icon in the menu toolbar and select 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 screen.
5. Click the Rule tab and select how you want the DVR to notify you of video loss. Click Apply to save the settings and then clock OK to return to the previous screen.
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

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

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

To set up video tampering detection:

1. Click the Camera management icon in the menu toolbar and select Tamper-Proof to display the tamper-proof settings screen.
2. Select a camera to configure for video loss detection.
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 screen.
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 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 Rule and then select the Rule tab to select the method by which you want the DVR to notify you of the alarm. Click Apply to save settings and then OK to return to the previous screen.

8. Click Back to return to live view.
Chapter 12
Network settings

You must configure your DVR’s network settings before using it over the network. The DVR 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 DVR 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 screen.

2. Click General and enter the required settings:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIC type</td>
<td>Network interface card (NIC) is a device used to connect the DVR to a network. Select the NIC type used from the drop-down list. Default value is 10/100/1000M self-adaptive.</td>
</tr>
</tbody>
</table>
### Chapter 12: Network settings

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable DHCP</td>
<td>Check this box if you have a DHCP server running and want your DVR to automatically obtain an IP address and other network settings from that server. Default value is Enable.</td>
</tr>
<tr>
<td>IPv4 address</td>
<td>Enter the IP address for the DVR. Default value is 192.168.1.82.</td>
</tr>
<tr>
<td>IPv4 subnet mask</td>
<td>Enter the subnet mask for your network so the DVR will be recognized within the network. Default value is 255.255.255.0</td>
</tr>
<tr>
<td>IPv4 default gateway</td>
<td>Enter the IP address of your network gateway so the DVR will be recognized within the network. This is typically the IP address of your router. Default value is 192.168.1.1</td>
</tr>
<tr>
<td>IPv6 address 1</td>
<td>Enter the IPv6 address for the DVR. Default value is fe80::240:3dff:fe7e:926f/64.</td>
</tr>
<tr>
<td>IPv6 address 2</td>
<td>Enter the IPv6 address for the DVR.</td>
</tr>
<tr>
<td>IPv6 default gateway</td>
<td>Enter the IPv6 address of your network gateway so the DVR will be recognized within the network. This is typically the IP address of your router.</td>
</tr>
<tr>
<td>MAC address</td>
<td>Enter the MAC address.</td>
</tr>
<tr>
<td>MTU (bytes)</td>
<td>Enter a value between 500 and 9676. Default is 1500.</td>
</tr>
<tr>
<td>Preferred DNS server</td>
<td>Enter the preferred domain name server to use with the DVR.</td>
</tr>
<tr>
<td>Alternate DNS server</td>
<td>Enter the alternate domain name server to use with the DVR.</td>
</tr>
</tbody>
</table>

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

### Configuring PPPoE

You can connect the DVR 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. Click the **Network settings** icon in the menu toolbar to display its screen.
2. Click **PPPoE** and check the enable PPPoE box.
3. Enter your user name and password, and confirm the password.
4. Click **Apply** to save the settings.
Configuring DDNS

A static IP address never changes so you can enter it into the browser or CMS and the DVR 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 DVR with the host name.

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 DVR.

**Figure 37: ezDDNS setup window**

To set up DDNS:

1. Click the Network settings icon in the menu toolbar.
2. Click DDNS to display its screen.
3. Check the Enable DDNS box to enable the feature.
4. From DDNS type, select one of the DDNS types listed:
   - **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.
   - **DynDNS:** Enter the server address for DynDNS (i.e. members.dyndns.org). In the DVR domain name field, enter the domain obtained from the DynDNS web site. Then enter the user name and password registered in the DynDNS network.
5. Click Apply to save the settings.
Configuring an NTP server

A Network Time Protocol (NTP) server can also be configured on your DVR 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. Click the Network settings icon in the menu toolbar.
2. Click NTP to display its screen.
3. Check the NTP box to enable feature. It is enabled by default.
4. 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.
5. Click Apply to save the settings.

Configuring e-mail

Your DVR can send e-mail notifications of alarms or notifications through the network. The e-mail includes an HTML link. Click the link to play the video file showing the alarm or notification.

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

To configure e-mail settings:

1. Click the Network Settings icon in the menu toolbar.
2. Click E-mail and enter the required settings.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable server authentication</td>
<td>Check the box if your mail server requires authentication, and enter the login user name and password.</td>
</tr>
<tr>
<td>SMTP server</td>
<td>Enter the SMTP server's IP address.</td>
</tr>
<tr>
<td>SMTP port</td>
<td>Enter the SMTP port. The default TCP/IP port for SMTP is 25.</td>
</tr>
<tr>
<td>Enable SSL</td>
<td>Check the box to enable SSL if it is required by the SMTP server. This feature is optional.</td>
</tr>
<tr>
<td>Sender</td>
<td>Enter the name of the sender of the e-mail.</td>
</tr>
<tr>
<td>Sender's address</td>
<td>Enter the sender's e-mail address.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Select receivers</td>
<td>Select an e-mail recipient. Up to three receivers can be selected.</td>
</tr>
<tr>
<td>Receiver</td>
<td>Enter the name of the receiver of the e-mail.</td>
</tr>
<tr>
<td>Receiver’s address</td>
<td>Enter the e-mail address of the receiver.</td>
</tr>
<tr>
<td>Enable attached snapshot</td>
<td>Check the Attach JPEG File box if you want to send an e-mail with attached alarm images.</td>
</tr>
<tr>
<td>Interval</td>
<td>Select an interval range in the Interval box.</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
</tbody>
</table>

3. Click **Test** to test e-mail settings.

   **Note:** We recommend that you test the e-mail settings after entering values in the e-mail window.

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

**Configuring UPnP™**

The DVR supports UPnP™ (Universal Plug and Play). This feature lets the DVR 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 DVR 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 38 on page 114).
To enable UPnP:
1. Connect the DVR to the router.  
   **Note:** The router must support UPnP and this option must be enabled.
2. Click the **Network settings** icon in the menu toolbar.
3. Click **UPnP** and 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 DVR status information from the DVR via SNMP.

When you set the trap address and trap port in the DVR menu to the network management system’s IP address and port number and setup the network management system as trap receiver, trap notifications (such as startup) will be sent from the DVR to the network management system.

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

To configure SNMP protocol settings:
1. Click the Network settings icon in the menu toolbar.
2. Click SNMP and 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. Click the Network settings icon in the menu toolbar.
2. Click FTP and check the Enable FTP box.
3. Enter the FTP server information.
4. Click Apply.

Configuring a remote alarm host

If a remote alarm host set, the DVR 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. Click the Network Settings icon in the menu toolbar.
2. Click More Settings.
3. 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. Default port is 7200.

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. Click Network Settings icon in the menu toolbar and then click 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 DVR’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 screen. 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. Click the Network Settings icon in the menu toolbar and then click More Settings.
2. Enter the new Com 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. Click the Network Settings icon in the menu toolbar and then click More Settings.
2. Enter the RSTP port value. The default value is 554.

Checking network status
You can easily check network traffic in order to obtain information about the DVR such as its linking status, MTU, sending/receiving rate, MAC address, and NIC type.
You can also check the network connection status by testing its delay and packet loss.

To check network traffic:
1. Click the System Settings icon in the menu toolbar and then click Net detect to display the Traffic screen. The information displayed is refreshed once a second.

To check network delay and packet loss:
1. Click the System Settings icon in the menu toolbar and then click Net detect.
2. Select the Network Detection tab.
3. Under the section “Network delay, Packet loss test”, enter the destination address and click Test.
   The test result appears in a pop-up screen.
4. If you need to check the current network parameters, click the Network button to get an overview.

To check network statistics:
1. Click the System settings icon in the menu toolbar and then click Net detect.
2. Select the Network Stat. tab.

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

To export network packet data:

1. Click the System Settings icon in the menu toolbar and then click Net detect.
2. Select the Network Detection tab.
3. Under the section "Network packet export", click Refresh to get a list of the local backup devices available. Select one from the list.
4. Click Export. Up to 1M of data can be exported at a time.

## Bandwidth throttle management

The Bandwidth Throttle Management function lets you throttle the amount of network data sent from the DVR to a client. This function is helpful for networks that have predefined bandwidth limits. This feature lets you control the DVR in a network-sensitive environment and prohibits the DVR from sending a large amount of network data that can potentially disrupt the network.

Both live dual streaming and bandwidth throttle management can be used simultaneously or individually. For example, if you display live video in the web browser with the bandwidth throttle management feature enabled, the video update rate is lower, as network video data is sent in shorter, controlled amounts. However, if live dual streaming is enabled, then the video quality increases, since the second stream can be reduced to meet the bandwidth throttle settings, which results in a higher video update rate.

Only the administrator can modify this function.

To modify the network throttle:

1. Click the System Settings icon in the menu toolbar and then click Net detect.
2. Select the Network Stat tab.
3. Under **Net total limit**, enter a bandwidth limit value. The value can be between 128 Kbps and 80 Mbps, in 1 Kbps increments.

4. Click **Refresh**.
Chapter 13
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 a HDD:
1. Click the System Settings icon in the menu toolbar and then click Hard Disk to display its screen.
2. 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.

Controlling disk space on the HDD
You can allocate the maximum permitted storage and snapshot picture capacities from each camera on a HDD.

1. Click the System Settings icon in the menu toolbar and select 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 up HDD groups

Your DVR 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 a HDD group:**

1. Click the **System Settings** icon in the menu toolbar and select **Hard Disk**.
2. Select the **Storage Mode** tab.

![Image of HDD settings interface]

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.
Recording dual streaming

Dual streaming allows high quality video to be recorded in one stream (Normal stream) and lower quality video to be recorded in another stream (Thin stream) that can be easily streamed through a narrow bandwidth.

The normal stream has the frame rate, quality, and resolution as configured in the encoding menu. However, in a thin stream data thinning has been carried out so that it has a lower quality and storage requirements. This allows more video to be recorded on the HDD.

To record dual streaming:
1. Click the System icon in the menu toolbar and select Hard Disk.
2. Select the Storage Mode tab.
3. Under Mode, select Dual Streaming.
4. Drag the markers to specify the percentage of the HDD that should be used to store normal recordings (green), thin recordings (blue), and snapshots (pink).
5. 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 redundancy, read-only, or read/write (R/W).

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

Before changing the HDD property to “Redundancy”, there must be at least two HDDs installed in the DVR, you need to set the storage mode to “Group” and one of the other HDDs must be set to R/W. See “Setting up HDD groups” on page 122 for more information.

To change a HDD status property:
1. Click the System Settings icon in the menu toolbar, and then click 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 screen 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 screen.

**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 DVR cannot record.

### Checking HDD status

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

**To check the status of a HDD:**

1. Click the System Settings icon in the menu toolbar and then click 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 DVR. Refer to “Initializing HDDs” on page 121 for more information.

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

### 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. Click the Alarm settings icon in the menu toolbar and select Notification.
2. Select the notification event to configure under Notification Type box.
3. Select HDD Full and check the desired notification method. See “Description of alarm notification types” on page 97 for more information.
   
   Select HDD Error and check the desired notification method.
4. Click Apply to save the settings.
Managing eSATA

If you are using an external e-SATA device connected to the DVR, you can configure the e-SATA to record/capture or export video.

Select the Export option when using the eSATA as a backup. See “Using Quick Archive” on page 65 for further information.

Select the Record/Capture option to record and capture video. Information on the eSATA for this purpose can be seen under System settings > Hard Drive > HDD Information.

To set up the e-SATA device:
1. Click the Video Schedule icon in the menu toolbar and select More Settings.
2. Under eSATA, select the desired option: Record/Capture or Export.
3. 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 a HDD:
1. Click the System Settings icon in the menu toolbar and then click Hard Disk.
2. Select the S.M.A.R.T. tab to display its screen.
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 a 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 DVR 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 39 below.

Figure 39: Disk analysis screen

1. **Zoom level**: This is the zoom level displayed.
2. **Time/date marker**: This is the date and time of the selected .
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 event**: 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**.
2. 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 and out buttons to focus in on the time period for viewing.

**Note**: The playback option is not available.
Chapter 14
Camera settings

The TVR 41 can support up to 16 analog cameras.

Configuring the camera OSD settings

The DVR lets you configure which information is displayed on-screen for each camera. 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. Click the Camera Management settings icon in the menu toolbar and select 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.
   - Transparent & flashing
   - Transparent & not flashing
• Non-transparent & flashing
• Non-transparent & non-flashing

6. There are two text boxes in the camera view screen; one for the camera name (yellow box) and the other for the date/time (red box). 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 blank area on the video image.

To setup a privacy mask:
1. Click the Camera Management icon in the menu toolbar and select 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 screen 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 camera 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 34.)

To adjust display settings:
1. Click the Camera Management icon in the menu toolbar and select 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.

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 DVR 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 covert 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 40 below.

**Figure 40: Example of a covert camera image**
To set up a camera for covert view:

1. Click the Camera Management icon in the menu toolbar and select Covert camera.
2. Check which camera or cameras you want to be covert and click Apply.
Chapter 15
DVR 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 41: 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 81 for more information.
• **ATS/Challenger**: NTP time sync supported to foreign device over the RS-232 port.
Updating system firmware

The firmware on the DVR can be updated using five methods:

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

The firmware upgrade file is labeled TVR41.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.gesecurityproducts.eu/videoupgrades
   - Or -
   - www.utcfsssecurityproductspages.eu/videoupgrades
2. Connect the USB device to the DVR.
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, reboot the DVR.

To update the system firmware via the web browser:

1. Click the Configuration tab in the browser toolbar and then select Maintenance.
2. For the latest firmware from our web site, download the file at:
   http://www.interlogix.com/library
   - Or -
   www.utcfssecurityproductspages.eu/videoupgrades
3. Click Upgrade.

   **Note:** The upgrade process may take up to 10 minutes. The system will automatically reboot once the upgrade is completed.

To update the system firmware via a FTP server:
For engineering purposes only.

## Restoring default settings

**To restore the default factory settings of the DVR:**

1. Click the System Settings icon in the menu toolbar and select Configuration.
2. Click the Default tab.
3. Select one of the following options:
   - **Default:** Reset all parameters to the factory default settings.
   - **Restore:** Reset all parameters, except the network information settings, to the factory default settings. Network information includes the IP address, subnet mask, gateway, MTU, NIC working mode, server port and default route.
4. The system immediately starts to restore the settings.
## Viewing system information

**To view system information:**

1. Click the **System Settings** icon in the menu toolbar and select **System Information**.
2. To view device information, click the **Device Info** tab.
3. To view camera information, click the **camera** tab.
4. To view record information, click the **Record** tab.
5. To view alarm information, click the **Alarm** tab.
6. To view network information, click the **Network** tab.
7. 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 DVR, 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: 20120729124841logBack.txt.

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

**To search and export log files:**

1. Click the System Settings icon in the menu toolbar and select 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. Click Back to return to live view.
Importing and exporting configuration settings

You can export and import configuration settings from a TVR 41. This is useful if you want to copy the configuration settings to another TVR 41, or if you want to make a back up of the settings.

Insert a USB flash drive in the DVR. Use the System Settings > Configuration screen to import or export configuration settings. Click Export Config to export the DVR’s configuration settings into a configuration file. Click Import Config to import configuration settings.
By default the DVR 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 18 below for a description of the different user accounts.

Table 18: User accounts

<table>
<thead>
<tr>
<th>User</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>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.</td>
</tr>
<tr>
<td>Operator</td>
<td>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.</td>
</tr>
<tr>
<td>Guest</td>
<td>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.</td>
</tr>
</tbody>
</table>

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 31 new users. The access privileges of Operator and Guest users are predefined and cannot be modified.
To add new users:
1. Click the **User Management** icon in the menu toolbar to display its screen.
2. Click **Add** to enter the Add User screen.
3. Enter the new user’s name and password. Both the user name and password can have up to 16 alphanumeric characters.
4. Select the new user’s access level: Operator or Guest.
5. Enter the user’s MAC address to let the user access the DVR from a remote computer with this MAC address.
6. Click **Apply** to save the settings and **OK** to return to the previous screen.
7. Define the user’s permissions.
   - Click the Permission button for the new user. In the Permissions pop-up screen 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 screen.
8. 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.

Local configuration settings:
- **Local Log Search**: Search and view logs of the DVR.
- **Local Parameter Settings**: Configure parameters. You can also import/export the configuration from the DVR.
- **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 DVR.
Remote configuration settings:

- **Remote Log Search**: Remotely view logs that are saved on the DVR.
- **Remote Parameter Settings**: Remotely configure parameters and import/export configuration.
- **Remote Camera Management**: Remotely enable and disable channels.
- **Remote Serial Port Control**: For future use.
- **Two-Way Audio**: Use two-way radio between the remote client and the DVR.
- **Remote Alarm Control**: Remotely alert or control the relay output of the DVR. 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 DVR.

Camera configuration settings:

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

- **Remote Live View**: Select and view live video over the network.
- **Local Manual Operation**: Locally start/stop manual recording on any of the channels, snapshots and video clips.
- **Local Playback**: Locally play recorded files that are on the DVR.
- **Remote Playback**: Remotely play and download recorded files that are on the DVR.
- **Remote PTZ Control**: Remotely control PTZ dome cameras.
- **Local Backup**: Locally 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 screen.
2. Click the Permission button for the user whose access privileges need to be changed. The Permissions pop-up screen appears.
3. Click Apply to save the settings.
4. Click the OK button to return to the previous screen.
8. Click Back to return to live view.

Deleting a user

Only a system administrator can delete a user.
To delete a user from the DVR:
1. Click the User Management icon in the menu toolbar to display its screen.
2. Click the Delete button for the user to be deleted.
3. Click Yes in the pop-up screen 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 screen.
2. Click the Edit button for the user whose access privileges need to be changed. The Edit User pop-up screen appears.
3. Edit the user information and click Apply to save the settings.
4. Click the OK button to return to the previous screen.
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 17

iTVRmobile

You can easily log on to the TVR 41 using the TruVision iTVRmobile application. Once installed on your iPhone, it can be used over a wireless network to remotely view live video from DVRs, PTZ cameras and DVSs. It can also be used to control PTZ cameras.

For detailed information on setting up and using the iTVRmobile application, please refer to the iTVRmobile user manual.

Setup and login

Download the TruVision TVRmobile application from the iTunes Store to your iPhone. The iTVRmobile appears on the iPhone home page:

Figure 42: iTVRmobile application icon

You need to register an administrator when using this application for the first time. Enter the user name and password in the register interface and click Register to complete user registration.

The next time the application is used, the user name of the last user is displayed by default. When logging in, you also can enable Auto Login so that the application will automatically login next time.

Once logged in, the iTVRmobile main menu appears. See Figure 43 below for further information.
Figure 43: Main menu description

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live</td>
<td>Live view mode and PTZ control.</td>
</tr>
<tr>
<td>Devices</td>
<td>Manage devices such as add a new device, delete a device, display information about the device.</td>
</tr>
<tr>
<td>Favorites</td>
<td>Define specific cameras as your favorites so that you can quickly jump to them.</td>
</tr>
<tr>
<td>Local Config</td>
<td>Configure the speed of PTZ control and auto login setup.</td>
</tr>
<tr>
<td>Account Setting</td>
<td>Password modification.</td>
</tr>
<tr>
<td>Help</td>
<td>Help information.</td>
</tr>
<tr>
<td>About</td>
<td>Software version.</td>
</tr>
</tbody>
</table>

Live view

Tap the iTVRmobile icon on the iPhone home page to open the application. Enter your user password, if requested. See Figure 44 for a description of the live view interface.

Figure 44: Live view and toolbar icons

The selected video tile is highlighted by a green frame.

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live</td>
<td>Tap to return to the main menu.</td>
</tr>
<tr>
<td>Devices</td>
<td>Tap to change the camera in the selected video tile. If there are already four video tiles open in multiview, the next camera selected will replace the camera that was first opened.</td>
</tr>
<tr>
<td>Note: This option is only available when in the iPhone is held in portrait orientation.</td>
<td></td>
</tr>
<tr>
<td>Local Config</td>
<td>Tap to select the camera for live view from the list of devices.</td>
</tr>
<tr>
<td>Stop</td>
<td>Tap to stop live streaming of video from the selected camera.</td>
</tr>
<tr>
<td>Select Channel</td>
<td>This icon appears when there is no camera connected. Tap the cross to obtain the Select Channel screen and select a camera for live view from the list of devices.</td>
</tr>
<tr>
<td>Help</td>
<td></td>
</tr>
</tbody>
</table>
### Button Description

- **Bookmark**: Tap to create bookmarks. Bookmarks are groups of cameras that can be accessed together.
- **Snapshot**: Tap to take a snapshot of the live view images.
- **PTZ control**: Tap to call up the PTZ control arrows on-screen for PTZ control.

### To access live view:

1. In the main menu, tap **Live** to access live view. Live view is in 2X2 multiview mode by default. The selected video tile has a green frame.

2. Double-tap 📷 or 🎥 to open the list of devices, bookmarks and favorites available and select the desired camera.

3. Tap the desired device, such as a DVR. All cameras listed under this device are shown.

4. Tap the desired camera in the list. The live view immediately appears on-screen. By default it occupies one of the four video tiles.

5. To display another camera in live view, double-tap 📷 or 🎥 again and select the desired camera from the list. Repeat for the other two video tiles, if required.

6. To stop live view for a selected camera, select a camera. The selected camera has a green frame. Tap 🟢. A green cross appears in the video tile.

7. To return to the main menu, tap iTVRmobile.

Live view from the camera is not disconnected. You can, for example, change configuration settings and then return to live view by tapping 🎥 again. The application returns to the live view of the selected camera.

### Controlling a PTZ camera

The application supports main and substream in live view. Substream is default. When selecting the main stream option in live view, please refer to the table below for the recommended parameter settings:

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Frame rate</th>
<th>Bit rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>XVGA</td>
<td>1 fps</td>
<td>320 Kbps</td>
</tr>
<tr>
<td>HD900</td>
<td>1 fps</td>
<td>320 Kbps</td>
</tr>
<tr>
<td>720P</td>
<td>1 fps</td>
<td>320 Kbps</td>
</tr>
</tbody>
</table>
### Resolution Frame rate Bit rate

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Frame rate</th>
<th>Bit rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>UXGA</td>
<td>1 fps</td>
<td>320 Kbps</td>
</tr>
<tr>
<td>1080P</td>
<td>1 fps</td>
<td>320 Kbps</td>
</tr>
<tr>
<td>SVGA</td>
<td>4 fps</td>
<td>320 Kbps</td>
</tr>
<tr>
<td>VGA</td>
<td>4 fps</td>
<td>320 Kbps</td>
</tr>
<tr>
<td>4CIF</td>
<td>6 fps</td>
<td>512 Kbps</td>
</tr>
<tr>
<td>CIF</td>
<td>Max.</td>
<td>320 Kbps</td>
</tr>
<tr>
<td>DCIF</td>
<td>15 fps</td>
<td>512 Kbps</td>
</tr>
<tr>
<td>2CIF</td>
<td>Max.</td>
<td>512 Kbps</td>
</tr>
<tr>
<td>QCIF</td>
<td>Max.</td>
<td>320 Kbps</td>
</tr>
</tbody>
</table>

**To control a PTZ camera:**

1. In the main menu, tap **Live** to access live view.
2. Tap ☰ to call up the PTZ toolbar and on-screen arrows.
3. Drag your finger across the on-screen arrows to carefully position the camera in the desired preset location.

   ▲ PTZ up    ▼ PTZ down   ◀ PTZ left   ◁ PTZ right

4. To call up a preset position, tap ☰ to bring up the Call/Set screen. Enter a preset number and tap **Call**. The camera moves to the preprogrammed position. Tap ☰ again to exit the preset configuration screen.
5. To zoom in and out of the selected camera image, pinch the screen to zoom in or out. This option is only available for PTZ cameras.
6. To adjust the brightness of the camera image, tap the iris icon ☼ to open the iris scrubber bar. Drag the playhead along the scrubber bar to adjust the image brightness.

### Device management

The device list is empty by default. You must first add the required devices to the iTVRmobile device list before you can access them.
Note: Up to 16 devices can be added to the application.

To add a new device:
1. In the main menu, tap Devices. The Devices page appears. All devices already added to the app are listed.
3. Enter the following information:
   - **Device name:** Enter the name of the device to be linked, such as a TruVision DVR or TruVision cameras. The name can have up to 16 alphanumeric characters.
   - **Register mode:** Select either IP or DDNS. Use DDNS when there is no fixed IP address available.
   - **Address:** Enter the IP or dynamic name address of the device.
   - **Port:** Enter the com port address of the device. For example, 8000 (default).
   - **User name:** Enter the device’s user name. It can have up to 16 alphanumeric characters.
   - **Password:** Enter the device’s password.
   - **Chan. no.:** Enter the number of cameras to be linked.
4. Tap Save to save the settings. The device is added to the device list.
5. In the Device page, tap Add again to add another device to the application or tap iTVRmobile to exit and return to the main menu.

To modify or delete a device:
1. In the main menu, tap Devices. The Devices page appears. All devices already added to the app are listed.
2. To modify the parameters of a device: Tap 📊 next to the selected device to be modified. The list of parameters that can be modified appears. Tap Edit. Tap the parameter to be modified and enter the new value using the keypad. Tap Done and then Save to save the changes or Cancel to abort and return to the Devices Detail screen.
3. To delete a device: Swipe your finger across the device to be deleted in the list. The Delete button appears. Tap Delete.
4. Tap iTVRmobile to exit and return to the main menu.

Favorites
Use the Favorites menu to manage frequently used cameras and bookmarks in live view.
Tap and navigate to 'Channels'->'MENU'->'ADD' to go to the Favorites interface. Tap the device to display the cameras list. Select any camera to add to your favorites list by selecting it.

To delete an item in Favorites, in the main menu tap and navigate to 'Bookmarks' or 'Channels'. The list of cameras or bookmarks appears. Tap the "Delete" button to delete it.

**Local configuration**

Use the Local Config menu to modify the speed of the pan and tilt movement of PTZ cameras as well as to enable/disable automatic login using the current user next time the application is used.

**Change passwords**

Use the Account Setting menu to modify your current password. Enter the old password, the new password and then confirm new password to complete the change.

**Snapshots**

The snapshot pictures are automatically saved in the Photos application.
## Appendix A
### Specifications

<table>
<thead>
<tr>
<th></th>
<th>TVR 4104</th>
<th>TVR 4108</th>
<th>TVR 4116</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Video &amp; audio input</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video compression</strong></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Analog video input</strong></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td><strong>Audio compression</strong></td>
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<tr>
<td><strong>Audio input</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Two-way audio</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video &amp; audio output</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HDMI output</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
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<tr>
<td><strong>VGA output</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>CVBS output</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video spot output</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video loop output</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Encoding resolution</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Frame rate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video bit rate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Audio output</strong></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Audio bit rate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Video & audio input:**
  - **Video compression:** H.264
  - **Audio compression:** OggVorbis

- **Audio input:**
  - **Analog video input:**
    - 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 input:**
  - **Analog video input:**
    - 4-ch, BNC (2.0 Vp-p, 75 Ω)
    - 8-ch, BNC (2.0 Vp-p, 75 Ω)
    - 16-ch, BNC (2.0 Vp-p, 75 Ω)

- **Two-way audio:**
  - 1-ch, BNC (2.0 Vp-p, 1 kΩ)

- **Video & audio output:**
  - **HDMI output:**
    - 1-ch, Resolution: 1920 × 1080P / 60 Hz, 1920 × 1080P / 50 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, 1600 × 1200 / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz

- **CVBS output:**
  - 1-ch, BNC (1.0 Vp-p, 75 Ω), Resolution: PAL: 704 × 576; NTSC: 704 × 480

- **Video spot output:**
  - 1-ch, BNC (1.0 Vp-p, 75 Ω), Resolution: PAL: 704 × 576; NTSC: 704 × 480

- **Video loop output:**
  - 4-ch, 8-ch, 16-ch

- **Encoding resolution:**
  - 4CIF / 2CIF / CIF / QCIF

- **Frame rate:**
  - 25 fps (PAL) / 30 fps (NTSC)

- **Video bit rate:**
  - 32 to 4096 Kbps, or user defined (max. 4096 Kbps)

- **Audio output:**
  - 2-ch, BNC (Linear, 600 Ω)

- **Audio bit rate:**
  - 16 Kbps
<table>
<thead>
<tr>
<th></th>
<th>TVR 4104</th>
<th>TVR 4108</th>
<th>TVR 4116</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual-stream Support</td>
<td></td>
<td></td>
<td>(Sub-stream at CIF/QCIF: 25 fps (PAL) / 30 fps (NTSC))</td>
</tr>
<tr>
<td>Stream type</td>
<td>Video, Video &amp; Audio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playback resolution</td>
<td>4CIF / 2CIF / CIF / QCIF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Synchronous playback</td>
<td>4-ch</td>
<td>8-ch</td>
<td>16-ch</td>
</tr>
<tr>
<td><strong>Hard disk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SATA</td>
<td>6 SATA interfaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e-SATA</td>
<td>1 e-SATA interface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
<td>Up to 2TB capacity for each disk</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>External interface</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network interface</td>
<td>1 RJ45 10M / 100M / 1000M Ethernet interface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial interface</td>
<td>1 RS-232 interface (for ProBridge, Challenger, Technical Support); 1 RS-485 interface (for PTZ control); 1 RS-485 keyboard interface (for KTD405 keyboard control)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB interface</td>
<td>2, USB 2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm in</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Alarm out</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>100 to 240 VAC, 6.3 A, 50 to 60 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption (without HDD or DVD-R/W)</td>
<td>≤ 35 W</td>
<td>≤ 40 W</td>
<td>≤ 45 W</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-10 to +55 °C (14 to 131 °F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative humidity</td>
<td>10 to 90%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chassis</td>
<td>19-inch rack-mounted 2U chassis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>445 × 470 × 90 mm (17.5 × 18.5 × 3.5 in.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>≤ 8 kg (17.6 lb.) (without HDD or DVD-R/W)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B
PTZ protocols

<table>
<thead>
<tr>
<th>Brand</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interlogix-485</td>
<td>PHILIPS</td>
</tr>
<tr>
<td>Interlogix-422</td>
<td>PHILIPS-3</td>
</tr>
<tr>
<td>Kalatel</td>
<td>SAE</td>
</tr>
<tr>
<td>DSCP</td>
<td>Samsung</td>
</tr>
<tr>
<td>HIKVISION</td>
<td>Siemens</td>
</tr>
<tr>
<td>Honeywell</td>
<td>SONY-EVI-D30/31</td>
</tr>
<tr>
<td>INFINOVA</td>
<td>SONY-EVI-D70</td>
</tr>
<tr>
<td>KTD-348</td>
<td>SONY-EVI-D100/P</td>
</tr>
<tr>
<td>LG MULTIX</td>
<td>TECHWIN</td>
</tr>
<tr>
<td>LILIN</td>
<td>VICON</td>
</tr>
<tr>
<td>PANASONIC_CS850</td>
<td>YOULI</td>
</tr>
<tr>
<td>PELCO-D</td>
<td></td>
</tr>
<tr>
<td>PELCO-P</td>
<td></td>
</tr>
</tbody>
</table>
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.

Table 20: Description of the ports

<table>
<thead>
<tr>
<th>Port</th>
<th>Port name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>HTTP protocol</td>
<td>Used to connect via IE browser.</td>
</tr>
<tr>
<td>8000</td>
<td>Client Software Port</td>
<td>Used to connect to video streams.</td>
</tr>
<tr>
<td>554</td>
<td>RTSP Port</td>
<td>Real time streaming protocol.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used to record video remotely.</td>
</tr>
<tr>
<td>1024</td>
<td>RTSP Port for 3G/4G</td>
<td>Use with mobile apps.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used for 3G/4G connection.</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>TVR 41XX-YYY firmware</th>
<th>2.0.d or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>KTD-405U (-2DU) keypad firmware:</td>
<td>1.4.00</td>
</tr>
</tbody>
</table>

Note: XX represents the number of video channels
YYY represents the DVR 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 TVR 41 Keypab A/B screw terminal port.

Table 21: Keypad and DVR connections

<table>
<thead>
<tr>
<th>KTD-405 I/O box</th>
<th>TVR 41 connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-485 A</td>
<td>Keyb A</td>
</tr>
<tr>
<td>RS-485 B</td>
<td>Keyb B</td>
</tr>
</tbody>
</table>
Setting up the keypad to work with the TVR 41

The keypad must be in zone mode to connect correctly with the TVR 41.

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: DIGIFLEX

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:
5. To connect it to the DVR, press the zone button and enter the ID number of the TVR 41. The default value is “1”.

6. To configure the DVR zone ID number, at the DVR enter the Monitor screen by selecting Display Mode Settings in the main menu, and then 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 DVR and keypad.

The TVR 41 is now connected to the KTD-405 keypad.

**TVR 41 and keypad functions**

The KTD-405U acts as a DVR control keypad when connected to the TVR 41. The keypad mimics many of the functions available from the front panel of the TVR 41.

**Unavailable TVR 41 functions**

The following TVR 41 functions are unavailable when using the keypad to control the TVR 41:

- 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 TVR 41 functions will then be available.

**Unavailable keypad functions**

The following keypad buttons are unavailable when using the keypad to control the TVR 41:

![Figure 46: Unavailable keypad buttons](image)
Appendix D: TVK-505U keypad

### Operating the keypad

You can navigate the TVR 41 menus using the keypad buttons and joystick. However, not all maneuvers are available using the joystick.

See Table 22 on page 159 for the description of the DVR keypad mapping when using the KTD-405 keypad series. See Figure 46 above for a list of the keypad functions that are unavailable when connected to the TVR 41

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

1. In live view mode, press `esc` to activate the Login screen.

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 virtual 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 virtual keyboard and press `esc` on the KTD-405 keypad to enter the password.

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 `←` to enter Display Mode Settings menu.

3. Press `Zoom +` or `Zoom -` to scroll to the menu tab, More Settings.

4. When in the desired menu screen, press and hold `esc` and then press the arrow buttons (up, down) 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 keypad.

**TVR 41 mapping to the KTD-405 keypad**

<table>
<thead>
<tr>
<th>Task</th>
<th>Keypad action</th>
<th>Further information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• Menu mode</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call up or exit menu</td>
<td>In live view, press esc.</td>
<td>To logout of the menu: go to the Power Manager menu and select Logout.</td>
</tr>
<tr>
<td>Move through the menus</td>
<td>Press and hold esc and then press the arrow buttons or use the joystick.</td>
<td>Down, Up, Left, Right</td>
</tr>
<tr>
<td>Move between menu tabs</td>
<td>Press Zoom + or Zoom - to switch between menu tabs.</td>
<td></td>
</tr>
<tr>
<td>Navigate to a menu option</td>
<td>Press and hold esc and then press the arrow buttons.</td>
<td>Down, Up, Left, Right</td>
</tr>
<tr>
<td>Select a character or menu option</td>
<td>Press Enter (←→).</td>
<td><strong>Note.</strong> If you press esc before pressing Enter, you quit the menu without saving any changes. It is the same as cancel.</td>
</tr>
<tr>
<td>Select the zone ID</td>
<td>Press zone to connect the keypad to the DVR.</td>
<td></td>
</tr>
<tr>
<td><strong>• Live view mode</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call up a single camera</td>
<td>Press 0 to 9 and then press Enter (←→).</td>
<td>Using the numeric buttons 0 to 9, enter the number of the camera and then press Enter (←→).</td>
</tr>
<tr>
<td>Call up multiview screens</td>
<td>Press view and then continue to press button 5 to scroll through the options available.</td>
<td></td>
</tr>
<tr>
<td>Sequence through cameras</td>
<td>Press the seq button to scroll through the cameras in full screen.</td>
<td></td>
</tr>
<tr>
<td>Switch to next/previous camera</td>
<td>Move the joystick to the right (= next camera), or the left (= previous camera)</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D: TVK-505U keypad

<table>
<thead>
<tr>
<th>Task</th>
<th>Keypad action</th>
<th>Further information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch between monitor A and monitor B</td>
<td>Press the mon button and button 1 to switch to monitor A.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Press the mon button and button 2 to switch to monitor B.</td>
<td></td>
</tr>
<tr>
<td>Manually acknowledge an alarm</td>
<td>Press Alarm.</td>
<td></td>
</tr>
<tr>
<td>• PTZ functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enter PTZ mode</td>
<td>In live view mode, press Enter (↑).</td>
<td>It is possible that you first need to login before you can access the PTZ mode.</td>
</tr>
<tr>
<td>PTZ functions (Up, Down, Left, Right, Zoom in, Zoom out)</td>
<td>Move the joystick to move the dome up, down, left and right</td>
<td><strong>KTD-405U</strong>: Turn the knob on the joystick to zoom in/zoom out. <strong>KTD-405-2DU</strong>: Press the zoom+ and zoom- buttons.</td>
</tr>
<tr>
<td></td>
<td>Press zoom+ and zoom-.</td>
<td></td>
</tr>
<tr>
<td>Leave PTZ mode</td>
<td>Press esc.</td>
<td></td>
</tr>
<tr>
<td>• Playback functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Search for recorded video</td>
<td>Press 🎥.</td>
<td>Once password is entered, the Advanced Search menu appears.</td>
</tr>
<tr>
<td>Instant playback</td>
<td>Press ▶ when in full screen.</td>
<td>Instant playback of the currently selected camera. Default time is 5 minutes. Other cameras listed on-screen can only be accessed using the mouse.</td>
</tr>
<tr>
<td>Stop playback</td>
<td>Press ■ to stop playback and return to live view mode.</td>
<td></td>
</tr>
<tr>
<td>Pause playback</td>
<td>Press ▶ to pause playback. Press ▶ to restart.</td>
<td></td>
</tr>
<tr>
<td>Replay the current file.</td>
<td>Press aux4 to replay the current file.</td>
<td>Starts at the beginning of the file.</td>
</tr>
<tr>
<td>Change playback speed</td>
<td>Press and hold esc and then press the left/right arrow buttons or move the joystick to the left/right.</td>
<td></td>
</tr>
<tr>
<td>Jump 30 seconds forwards or backwards during playback</td>
<td>Press and hold esc and then press the up/down arrow buttons or move the joystick to the left/right.</td>
<td></td>
</tr>
</tbody>
</table>
Selecting a camera using the keypad

The TVR 41 can support up to 16 analog cameras. To be able to control up to 16 cameras using the keypad, you may need to change the number of TVR 41 camera inputs controlled by the keypad. The default number of TVR 41 camera inputs controlled by the keypad is 16.

To change the number of TVR 41 camera inputs controlled by the keypad:

1. 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:

```
ENTER ZONE ADDRESS: 01
(01–32) NEXT
```

3. Enter the DVR address to be configured and press .
4. Scroll through the menus with the button until this menu appears:

```
ZONE 01 HUB: DVR32_DUP
(?,↓)=SELECT NEXT
```

5. Press the up/down arrow buttons to navigate to SYM DVR.
6. Scroll through the menus with the button until this menu appears:

```
ZONE 01 CAM. INPUTS 16
(?,↓)=SELECT NEXT
```

7. Press the up/down arrow buttons to navigate to 32.
8. Repeat steps 3 to 7 for each DVR address in the keypad.

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 43).

<table>
<thead>
<tr>
<th>Camera input</th>
<th>Zone ID of TVR 41</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 32 64 96 128 160 192 224 256 288 320 352 384 416 448 480</td>
</tr>
<tr>
<td>2</td>
<td>1 33 65 97 129 161 193 225 257 289 321 353 385 417 449 481</td>
</tr>
<tr>
<td>3</td>
<td>2 34 66 98 130 162 194 226 258 290 322 354 386 418 450 482</td>
</tr>
<tr>
<td>4</td>
<td>3 35 67 99 131 163 195 227 259 291 323 355 387 419 451 483</td>
</tr>
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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 recording settings” on page 87 for more information).

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### Appendix F

**Supported PTZ commands**

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

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<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
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<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Siemens</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>SONY-EVI-D30/31</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
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</tr>
<tr>
<td>SONY-EVI-D70</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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<td>N</td>
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<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>SONY-EVI-D100/P</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>TECHWIN</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>VICON</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
### Table 25: Supported PTZ commands by camera protocols (Part 2)

<table>
<thead>
<tr>
<th>Protocol</th>
<th>PTZ command</th>
<th>Protocol</th>
<th>PTZ command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interlogix-485</td>
<td>Y</td>
<td>Interlogix-485</td>
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<tr>
<td>Intralogix-422</td>
<td>Y</td>
<td>Interlogix-422</td>
<td>Y</td>
</tr>
<tr>
<td>KALATEL</td>
<td>Y</td>
<td>KALATEL</td>
<td>Y</td>
</tr>
<tr>
<td>DSCP</td>
<td>Y</td>
<td>DSCP</td>
<td>Y</td>
</tr>
<tr>
<td>HIKVISION</td>
<td>Y</td>
<td>HIKVISION</td>
<td>Y</td>
</tr>
<tr>
<td>Honeywell</td>
<td>Y</td>
<td>Honeywell</td>
<td>Y</td>
</tr>
<tr>
<td>INFNOVA</td>
<td>Y</td>
<td>INFNOVA</td>
<td>Y</td>
</tr>
<tr>
<td>KTD-348</td>
<td>Y</td>
<td>KTD-348</td>
<td>Y</td>
</tr>
<tr>
<td>LG MULTIX</td>
<td>Y</td>
<td>LG MULTIX</td>
<td>Y</td>
</tr>
<tr>
<td>LILIN</td>
<td>Y</td>
<td>LILIN</td>
<td>Y</td>
</tr>
<tr>
<td>PANASONIC_ CS850</td>
<td>Y</td>
<td>PANASONIC_ CS850</td>
<td>Y</td>
</tr>
<tr>
<td>PELCO-D</td>
<td>Y</td>
<td>PELCO-D</td>
<td>Y</td>
</tr>
<tr>
<td>PELCO-P</td>
<td>Y</td>
<td>PELCO-P</td>
<td>Y</td>
</tr>
<tr>
<td>PHILIPS</td>
<td>Y</td>
<td>PHILIPS</td>
<td>Y</td>
</tr>
<tr>
<td>PHILPS-3</td>
<td>Y</td>
<td>PHILPS-3</td>
<td>Y</td>
</tr>
<tr>
<td>SAE</td>
<td>Y</td>
<td>SAE</td>
<td>Y</td>
</tr>
<tr>
<td>Samsung</td>
<td>Y</td>
<td>Samsung</td>
<td>Y</td>
</tr>
<tr>
<td>Siemens</td>
<td>Y</td>
<td>Siemens</td>
<td>Y</td>
</tr>
<tr>
<td>SONY-EVI-D30/31</td>
<td>N</td>
<td>SONY-EVI-D30/31</td>
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</tr>
<tr>
<td>SONY-EVI-D70</td>
<td>N</td>
<td>SONY-EVI-D70</td>
<td>N</td>
</tr>
<tr>
<td>SONY-EVI-D100/P</td>
<td>N</td>
<td>SONY-EVI-D100/P</td>
<td>N</td>
</tr>
<tr>
<td>TECHWIN</td>
<td>Y</td>
<td>TECHWIN</td>
<td>Y</td>
</tr>
<tr>
<td>VICON</td>
<td>Y</td>
<td>VICON</td>
<td>Y</td>
</tr>
<tr>
<td>YOULI</td>
<td>Y</td>
<td>YOULI</td>
<td>Y</td>
</tr>
</tbody>
</table>

*: Hikvision only.

** : Aux. 2

# : Aux. 1
## Appendix G
### Default menu settings

<table>
<thead>
<tr>
<th>Display mode setting</th>
<th>Monitor</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Language: English</td>
<td>Language: English</td>
</tr>
<tr>
<td></td>
<td>Device name: TVR 41</td>
<td>Device name: TVR 41</td>
</tr>
<tr>
<td></td>
<td>Device address: 255</td>
<td>Device address: 255</td>
</tr>
<tr>
<td></td>
<td>Zone ID: 1</td>
<td>Zone ID: 1</td>
</tr>
<tr>
<td></td>
<td>VGA resolution: 1280*1024/60HZ</td>
<td>VGA resolution: 1280*1024/60HZ</td>
</tr>
<tr>
<td></td>
<td>HDMI resolution: 1920*1080/60HZ(1080P)</td>
<td>HDMI resolution: 1920*1080/60HZ(1080P)</td>
</tr>
<tr>
<td></td>
<td>Password required: Yes</td>
<td>Password required: Yes</td>
</tr>
<tr>
<td></td>
<td>Scale output video: Yes</td>
<td>Scale output video: Yes</td>
</tr>
<tr>
<td></td>
<td>Enable wizard: Yes</td>
<td>Enable wizard: Yes</td>
</tr>
</tbody>
</table>

**More settings**

|                      | Monitor standard: NTSC/PAL. Auto detect at booting. |
|                      | Output mode: Standard |
|                      | Monitor brightness: 5 |
|                      | Event hint: Yes |
|                      | Time bar transparent: Yes |
|                      | Enable timebar: Yes |
|                      | Menu timeout: 5 min |
|                      | Mouse pointer speed: Lower |

<table>
<thead>
<tr>
<th>Layout</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Video output interface: VGA</td>
</tr>
<tr>
<td></td>
<td>Live view mode: 3*3</td>
</tr>
<tr>
<td></td>
<td>Dwell time: No switch</td>
</tr>
<tr>
<td></td>
<td>Enable audio output: No</td>
</tr>
<tr>
<td></td>
<td>Event output: HDMI</td>
</tr>
</tbody>
</table>
### Event full screen monitoring dwell time
- 10 s

### Alarm full screen monitoring dwell time
- 10 s

### View
- Video output interface: VGA
- 16 chan: 4*4 - A1 to A16
- 8 chan: 3*3 - A1 to A8 + 1 black screen
- 4 chan: 2*2 - A1 to A4 (Different with PRD-5.1-138)

### Time

#### Time settings
- Time Zone: GMT -8
- Date Format: MM-DD-YYYY
- Time format: 24 hr
- Display week: No
- System date: Current system date
- System time: Current system time
- 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: Not 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 1]; Arming schedule: All day for whole week; Rule: (Null)
- Sensitivity: Middle
- 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
- Zone: (Null)

### Video loss

**Video loss settings**
- Camera: Analog 1
- Enable video loss Alarm: Disable
- Rule: Alarm schedule all day for whole week; Rule: (Null)

### Covert camera

**Covert camera settings**
- Camera: (Null)
### Video Schedule

#### Schedule

- **Camera**: Analog 1
- **Enable Schedule**: Yes
- **Schedule**: All day for whole week TL-Hi

#### Record

- **Camera**: Analog 1
- **Encoding parameters**: Mainstream (TL-Hi)
  - **Stream type**: Video-Audio
  - **Resolution**: 2CIF
  - **Bit rate type**: Variable
  - **Video quality**: Medium
  - **Frame rate**: 4 fps
  - **Max. bit rate mode**: General
  - **Max. bit rate**: 1792
  - **Pre-record**: 5 s
  - **Post-record**: 5 s
  - **Auto delete**: 0
  - **Record audio**: Yes

#### Capture

- **Camera**: Analog 1
- **Resolution**: 4 CIF
- **Picture quality**: Medium

#### V-stream encoding

- **Enable V-stream encoding**: No
- **Frame rate**: 25 fps
- **Max. bit rate**: 1792

#### Encode parameters suggestion

- **Duration time (days)**: 30
- **Weekday**: Yes
- **Weekend**: Yes
- **Resolution**: 2CIF
- **Calculate**: (Null)
### Auto archive

#### Archive settings
- **Enable auto archive**: No
- **Start time**: 
- **End time**: 
- **Interval time**: 1 hr
- **Dev full handle**: Stop archiving
- **Device select**: SATA1 CD/DVD-RW

#### Archive status
- (Null)

#### Manual record
- **Cameras**: All off

### More settings

#### More settings
- **Event priority**: Text In < Motion
- **Overwrite**: Yes
- **eSATA**: Record/Capture

### Network settings

#### General
**NIC Type**: 10/100/1000M self-adaptive
- **Enable DHCP**: Enable
- **IPv4 address**: 192.168.1.82
- **IPv4 subnet mask**: 255.255.255.0
- **IPv4 default gateway**: 192.168.1.1
- **IPv6 address1**: fe80::240:3dff:fe7e:926f/64
- **IPv6 address2**: (Null)
- **IPv6 address gateday**: (Null)
- **Mac address**: (It depends)
- **MTU**: 1500
- **Preferred DNS server**: (Null)
- **Alternate DNS server**: (Null)

#### PPPoE
- **Enable PPPoE**: Disable
- **User name**: (Null)
- **Password**: (Null)
- **Confirm**: (Null)
### DDNS

- **DDNS**: No
- **DDNS type**: ezDDNS
- **Server address**: www.tvr-ddns.net
- **Host Name**: (Null)

### NTP

- **Enable NTP**: No
- **Interval**: 60min
- **NTP server**: time.nist.gov
- **NTP Port**: 123

### Email

- **Email server authentication**: No
- **User name**: (Null)
- **Password**: (Null)
- **SMTP server**: (Null)
- **SMTP port**: 25
- **Enable SSL**: No
- **Sender**: (Null)
- **Sender's address**: (Null)
- **Select receivers**: Receiver 1
- **Receiver**: (Null)
- **Receiver's address**: (Null)
- **Enable attached picture**: No
- **Interval**: 2s

### FTP

- **Enable FTP**: No
- **FTP server**: (Null)
- **FTP port**: (Null)
- **User name**: (Null)
- **Password**: (Null)
- **Directory**: Use root directory
- **Parent directory**: (Null)
- **Secondary directory**: (Null)
### SNMP

Enable SNMP: No  
SNMP version: V2  
SNMP port: 161  
Read community: Public  
Write community: Private  
Trap address: (Null)  
Trap port: 162

### UPnP

Enable UPnP: No  
Mapped type: Auto

### More settings

Alarm host IP: (Null)  
Alarm host port: 0  
Server port: 8000  
HTTP port: 80  
Multicast IP: (Null)  
RTSP server port: 554

### Alarm settings

#### Alarm list

##### Alarm Inputs

No.: (Null)  
Alarm name: (Null)  
Alarm type: NO

##### Alarm Outputs

No.: (Null)  
Alarm name: (Null)  
Time out: 5 s

#### Alarm Input

##### Alarm Input

Alarm input no.: A<1  
Alarm name: (Null)  
Type: NO  
Enable alarm input: No  
Rule: Trigger channel (None); Arming schedule (All)
### Alarm Output

- **Alarm output no.:** A>1
- **Alarm name:** (Null)
- **Time out:** 5 s
- **Rule:** All day for whole week

### Manual Alarm

- **Trigger none**

### Alarm audio

- **(Null)**

### Notification

- **Notification type:** HDD full
- **Audible warning:** No
- **Notify surveillance center:** No
- **Send email:** No
- **Trigger alarm output:** No

### Advanced settings

- **System buzzer time:** Constant
- **Camera buzzer time:** Constant

### PTZ setting

#### General

- **Camera:** Analog 1
- **Baud rate:** 9600
- **Data bit:** 8
- **Stop bit:** 1
- **Parity:** None
- **Flow ctrl:** None
- **PTZ protocol:** Interlogix 485
- **Address:** 0

### More settings

- **(Null)**

### User management

#### User

- **User management**
### Appendix G: Default menu settings

| admin: (Null) |
| operate: (Null) |
| guest: (Null) |

#### Change password

(Null)

<table>
<thead>
<tr>
<th>System settings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RS-232</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RS-232 setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baud rate: 115200</td>
</tr>
<tr>
<td>Data bit: 8</td>
</tr>
<tr>
<td>Stop bit: 1</td>
</tr>
<tr>
<td>Parity: None</td>
</tr>
<tr>
<td>Flow ctrl: None</td>
</tr>
<tr>
<td>Usage: ProBridge</td>
</tr>
</tbody>
</table>

#### Hard disk

(Null)

#### Text insertion

<table>
<thead>
<tr>
<th>Text insertion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable text insertion: No</td>
</tr>
<tr>
<td>Access device: (Null)</td>
</tr>
<tr>
<td>Access mode: (Null)</td>
</tr>
<tr>
<td>Start setting: (Null)</td>
</tr>
</tbody>
</table>

#### Upgrade

<table>
<thead>
<tr>
<th>Upgrade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locall upgrade</td>
</tr>
</tbody>
</table>

| Device name: SATA1 CD/DVD-R/W |
| FTP: (Null) |

#### Configuration

<table>
<thead>
<tr>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import/export config file</td>
</tr>
</tbody>
</table>

| Device name: SATA1 CD/DVD-R/W |
| Default : (Null) |

#### Log search

<table>
<thead>
<tr>
<th>Log search</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current whole day, all day, all type</td>
</tr>
</tbody>
</table>

#### System information

<table>
<thead>
<tr>
<th>System information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device information</td>
</tr>
</tbody>
</table>

| Device name: TVR41 |
| Model: [model number] |
| Serial no.: [serial number] |
### Appendix G: Default menu settings

<table>
<thead>
<tr>
<th>Firmware version: [firmware version number]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encoding version: [encoding version number]</td>
</tr>
<tr>
<td>Panel version: [panel version number]</td>
</tr>
<tr>
<td>Net detect: (Null)</td>
</tr>
</tbody>
</table>

#### Net detect

<table>
<thead>
<tr>
<th>Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network detection</td>
</tr>
<tr>
<td>Select NIC: LAN1</td>
</tr>
<tr>
<td>Destination address: (Null)</td>
</tr>
<tr>
<td>Device name: SATA1 CD/DVD-R/W</td>
</tr>
</tbody>
</table>

#### Network stat.

<table>
<thead>
<tr>
<th>Remote live view: 0 bps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote playback: 0 bps</td>
</tr>
<tr>
<td>Net total idle: 80 Mbps</td>
</tr>
<tr>
<td>Net total limit: 80 Mbps</td>
</tr>
</tbody>
</table>
Index

A
Active X, 71
Alarm audio messages, 98
Alarm notifications
  alarm audio messages, 98
  external alarms, 102
  modifying the warning buzzer, 100
  types, 97
  video loss, 105
  video tampering, 106
Alarm outputs
  manually acknowledging, 104
Alarm/event sequencing, 37
Archiving
  manually exporting files to a backup device, 66
  quick archive, 65
  schedule automatic archiving, 68
  snapshots, 69
  video clips, 69
Audio
  connecting audio inputs and outputs, 13
Audio enable/disable
  quick access, 34
Automatically archiving files, 68

B
Back panel description, 4
Backup devices
  managing, 70
Bandwidth throttle
  configuring, 118
Bookmarks
  playback, 59
  saving, 59
  types, 59
Brightness, contrast and saturation
  modifying, 131

C
Cameras
  configuring PTZ dome cameras, 43
  connecting analog cameras using loop-through, 13
  privacy masking, 130
  setting up alarm/event sequencing, 37
  setting up sequencing, 37
  Covert cameras, 131

D
Daily schedules
  recording, 91
Date
  configuring display, 38
DDNS settings, 111
Default menu settings, 167
Digital zoom
  description, 35
  quick access, 34
  quick access, 54
Digital zoom in playback, 63
Disk analysis
  searching recorded video, 126
DST
  set up, 38
Dual streaming
  browser, 80
  recording, 123
Dwell time, 35
  alarms and events, 35

E
E-mail notifications
  set up, 112
eSATA, 125
Event logs
  searching remotely, 79
Export configuration settings, 138
Export files, 70
External alarm
  setting up to record when triggered, 102
External alarm schedules
  recording, 93

F
Factory default settings
  restore, 135
Firmware
  updating, 134
Index

Frame-by-frame playback, 62
Front panel description, 20
FTP server settings, 115
Full screen viewing, 32

H
HDD
  checking status, 124
  grouping, 122
  initializing, 121
  properties, 123
  quota, 121
  redundancy, 95
  set to read only, 95
  setting up HDD alarms, 124
Holiday schedules
  recording, 92
HTTP port settings, 116

I
Image settings
  quick access, 34
Import configuration settings, 138
Instant playback, 54
  change default time, 54
  quick access, 34
IP devices supported, 150
iTVRmobile
  device management, 146
  favorites, 147
  live view, 144
  login, 143
  PTZ camera control, 145

K
Keypad
  connecting dome cameras to the DVR, 6
  connecting to RS-485 port, 12
  wiring to DVR, 10
KTD-405
  changing the camera inputs controlled by the keypad, 161
KTD-405 keypad
  accessing DVR functions, 158
  controlling a camera, 161
  firmware supported, 155
  set up in zone mode, 156
  set up TVR 41 device address, 156
  wiring, 155

L
Live view mode
  digital zoom, 35
  full screen view, 32
  multiview, 32
  sequencing cameras, 33
  time and date display, 38
Lock/unlock recorded files, 94
Logs
  view system log, 137

M
Main menu
  accessing, 25
  description, 25
  icon descriptions, 25
Manual recording, 93
  quick access, 34
Manually archiving files, 66
Monitors
  audio output, 29
  connecting, 13
  priority level, 29
  select main and spot monitors, 35
  video output, 29
Motion detection, 100
  defining motion detection area, 100
  setting the sensitivity level, 100
  setting the target size, 100
Motion search
  playback, 62
Motion search toolbar
  quick access, 54
Mouse pop-up menu, 30
Multicast settings, 116
Multiview, 32

N
NAS, 84
Network packet data
  exporting, 118
Network settings
  general set up, 109
Network status, 117
Network storage system
  set up, 84
Network traffic
  checking, 117
Notifications
  external alarms, 102
  system event types, 105
NTP server, 112

O
OSD settings, 129
Overwriting
  Protecting recorded files, 94

P
Password
  changing user password, 142
  default user passwords, 139
Playback
bookmarks, 59
changing playback speed, 62
instant playback, 54
interface overview, 51
motion search, 62
playing back archived files, 70
pop-up menu description, 54
search by event, 58
search by time, 57
search by video type, 57
search results, 56
set up for text insertion, 58
skip time, 61
snapshots, 60
system log, 60
using digital zoom, 63
using the web browser, 77
Playback control toolbar
description, 52
quick access, 54
Player
using for playback, 70
Port forwarding, 72, 153
Power up and down DVR, 15
PPPoE settings, 110
Pre-recording times
maximum times, 163
Preset tours
calling up, 47
quick access, 44
setting up, 47
Presets
calling up, 46
quick access, 44
selecting, setting up and deleting, 45
Privacy masking, 130
Protecting recorded files, 94
PTZ control panel
description, 44
quick access, 34
PTZ dome cameras
assigning protocols, 43
configuring, 43
connecting dome cameras to the DVR, 6
connecting to RS-485 port, 12
controlling remotely, 81
set up, 5
PTZ protocols, 151
assigning, 43
configuring Interlogix cameras, 6
PTZ commands supported, 165
R
Recorded files
lock/unlock, 94
Protect HDD, 95
Recording
configuring settings, 87
protecting against overwriting, 94
recording schedules, 90
setting up HDD redundancy, 95
Recording schedules
daily, 91, 92
defining, 90
external alarms, 93
Remote alarm host settings, 115
Remote control
connect to the DVR, 24
description, 22
RS-232 port
configuring, 133
RTSP service port, 116
S
S.M.A.R.T. information on a HDD, 125
SAN, 84
Sequencing cameras, 33, 37
dwell time, 35
Setup wizard
using, 16
Shadow tours
quick access, 44
setting up, 48
Skip time
playback, 61
quick access, 54
Snapshots
archiving, 69
capture remotely, 77
capturing, 34
playback, 60
upload to FTP server, 115
SNMP protocol settings, 115
Soft keyboard, 26
System information
view, 136
System logs
playback, 60
view, 137
System notifications
event types, 105
T
Text insertion
quick access to display, 54
search recorded video, 81
set up, 81
Text overlay
browser, 83
Time
configuring display, 38
U
User privileges
camera configuration, 141
descriptions, 140
local configuration, 140
remote configuration, 141

Users
  adding a new user, 139
  customizing user privileges, 140
  deleting a user, 141
  managing, 139
  modifying user information, 142
  user levels, 139

V
  Video format
    PAL/NTSC, 15
  Video loss
    setting up detection, 105
  Video tampering
    setting up to detect, 106
  View system log, 137

V-stream encoding, 42

W
  Warning buzzer
    modifying, 100
  Web browser
    accessing, 72
    dual streaming, 80
    installing Active X, 71
    local configuration of DVR, 74
    ports, 72
    remote configuration of DVR, 75
    searching and playing back recorded video, 77
    searching for event logs, 79
    text insertion, 81
    text overlay, 83
    video snapshot, 77