

Instruction Manual

LHA4100 / LHA4200 Series



Instruction Manual LHA4100 / LHA4200 Series

Thank you for purchasing this product. Lorex Corporation is committed to providing our customers with a high quality, reliable security solution.

This manual refers to the following models:

LHA4104

LHA4108

LHA4216

For the latest online manual, downloads and product updates, and to learn about our complete line of accessory products, please visit our website at:

www.lorextechnology.com



WARNING

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF THE PLUG TO THE WIDE SLOT AND FULLY INSERT.

Important Safeguards

In addition to the careful attention devoted to quality standards in the manufacturing process of your product, safety is a major factor in the design of every instrument. However, safety is your responsibility too. This sheet lists important information that will help to ensure your enjoyment and proper use of the product and accessory equipment. Please read them carefully before operating and using your product.

1.1 General Precautions

1. All warnings and instructions in this manual should be followed.
2. Remove the plug from the outlet before cleaning. Do not use liquid aerosol detergents. Use a water-dampened cloth for cleaning.
3. Do not use this product in humid or wet places.
4. Keep enough space around the product for ventilation. Slots and openings in the storage cabinet should not be blocked.
5. It is highly recommended to connect the product to a surge protector to protect from damage caused by electrical surges. It is also recommended to connect the product to an uninterruptible power supply (UPS), which has an internal battery that will keep the product running in the event of a power outage.

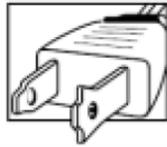


CAUTION

Maintain electrical safety. Power line operated equipment or accessories connected to this product should bear the UL listing mark or CSA certification mark on the accessory itself and should not be modified so as to defeat the safety features. This will help avoid any potential hazard from electrical shock or fire. If in doubt, contact qualified service personnel.

1.2 Installation

1. **Read and Follow Instructions:** All the safety and operating instructions should be read before the product is operated. Follow all operating instructions.
2. **Retain Instructions:** The safety and operating instructions should be retained for future reference.
3. **Heed Warnings:** Comply with all warnings on the product and in the operating instructions.
4. **Polarization:** Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other.



A grounding type plug has two blades and a third grounding prong.



The wide blade or the third prong are provided for your safety.

If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

5. **Power Sources:** This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your location, consult your video dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
6. **Overloading:** Do not overload wall outlets or extension cords as this can result in the risk of fire or electric shock. Overloaded AC outlets, extension cords, frayed power cords, damaged or cracked wire insulation, and broken plugs are dangerous. They may result in a shock or fire hazard. Periodically examine the cord, and if its appearance indicates damage or deteriorated insulation, have it replaced by your service technician.
7. **Power-Cord Protection:** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
8. **Surge Protectors:** It is highly recommended that the product be connected to a surge protector. Doing so will protect the product from damage caused by power surges. Surge protectors should bear the UL listing mark or CSA certification mark.
9. **Uninterruptible Power Supplies (UPS):** Because this product is designed for continuous, 24/7 operation, it is recommended that you connect the product to an uninterruptible power supply. An uninterruptible power supply has an internal battery that will keep the product running in the event of a power outage. Uninterruptible power supplies should bear the UL listing mark or CSA certification mark.
10. **Ventilation:** Slots and openings in the case are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the product manufacturer's instructions have been followed.
11. **Attachments:** Do not use attachments unless recommended by the product manufacturer as they may cause a hazard.
12. **Water and Moisture:** Do not use this product near water — for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, near a swimming pool and the like.
13. **Heat:** The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.
14. **Accessories:** Do not place this product on an unstable cart, stand, tripod, or table. The product may fall, causing serious damage to the product. Use this product only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product. Any mounting of the product should follow the manufacturer's instructions and use a mounting accessory recommended by the manufacturer.



15. **Camera Extension Cables:** Check the rating of your extension cable(s) to verify compliance with your local authority regulations prior to installation.
16. **Mounting:** The cameras provided with this system should be mounted only as instructed in this guide or the instructions that came with your cameras, using the provided mounting brackets.

17. **Camera Installation:** Cameras are not intended for submersion in water. Not all cameras can be installed outdoors. Check your camera environmental rating to confirm if they can be installed outdoors. When installing cameras outdoors, installation in a sheltered area is required.

1.3 Service

1. **Servicing:** Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
2. **Conditions Requiring Service:** Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - When the power supply cord or plug is damaged.
 - If liquid has been spilled or objects have fallen into the product.
 - If the product has been exposed to rain or water.
 - If the product has been dropped or the cabinet has been damaged
 - If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
 - When the product exhibits a distinct change in performance. This indicates a need for service.
3. **Replacement Parts:** When replacement parts are required, have the service technician verify that the replacements used have the same safety characteristics as the original parts. Use of replacements specified by the product manufacturer can prevent fire, electric shock, or other hazards.
4. **Safety Check:** Upon completion of any service or repairs to this product, ask the service technician to perform safety checks recommended by the manufacturer to determine that the product is in safe operating condition.

1.4 Use

1. **Cleaning:** Unplug the product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
2. **Product and Cart Combination:** When product is installed on a cart, product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
3. **Object and Liquid Entry:** Never push objects of any kind into this product through openings as they may touch dangerous voltage points or “short-out” parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
4. **Lightning:** For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power line surges.

2

Package Contents

Your security DVR package includes the following components:

 DVR (Digital Video Recorder)		
 USB Mouse	 Ethernet Cable	 HDMI Cable
 12V DC Power Supply	 Remote Control (may not be exactly as shown)	 Quick Start Guides

Hard drive size, number of channels, and camera configuration may vary by model. Please refer to your package for specific details. Check your package to confirm that you have received the complete system, including all components shown above.

DVR Overview

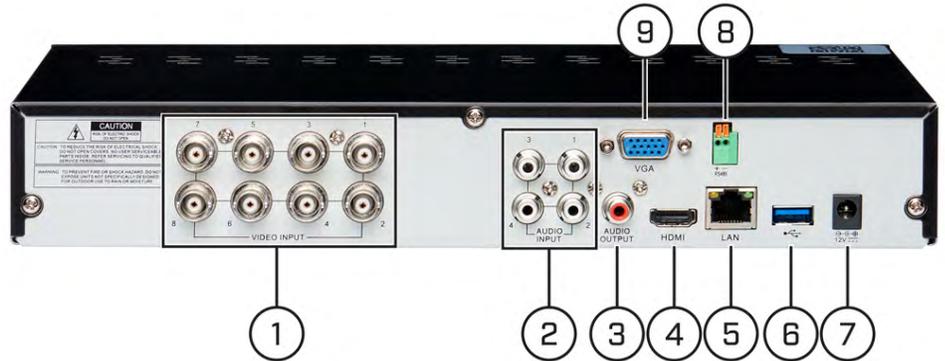
3.1 Front Panel



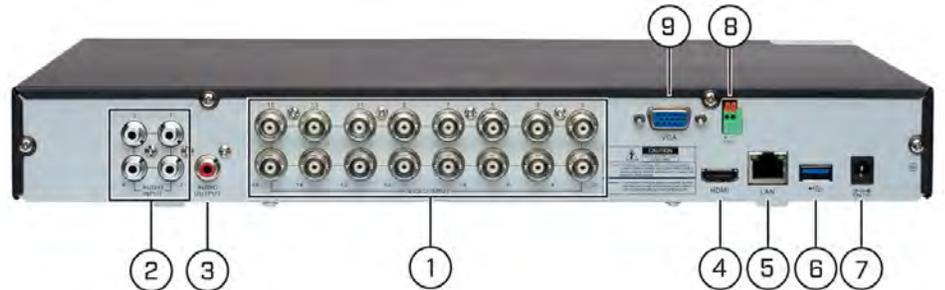
1. **USB Port:** Connect a USB mouse (included) or connect a USB flash drive (not included) for data backup or firmware upgrades.
2. **HDD – LED Indicator:** Glows to indicate hard drive is in normal state. Turns off when there is a hard drive error.
3. **PWR – LED Indicator:** Glows to indicate the system is on.

3.2 Back Panel

8–channel DVR:



16–channel DVR:



1. **Video Input:** Connect Lorex by FLIR wired HD cameras. For a full list of compatible cameras, visit lorextechnology.com/compatibility.

2. **Audio Input:** Connect a self-powered microphone (not included) to the Audio Input ports to record up to 4 channels of audio. To hear and record audio from the cameras, ensure you have enabled audio for both the mainstream and substream. See 12.2.11 *Configuring System Recording Quality (Mainstream and Substream)*, page 60 for full instructions.
3. **Audio Output:** Connect a speaker (not included) to the Audio Output port.
4. **HDMI:** Connect to an HDMI monitor or TV (not included – 4K output supported) to view the system interface.
5. **LAN:** Connect a CAT5 RJ45 Ethernet cable for local and remote connectivity.
6. **USB Port:** Connect a USB mouse (included) or connect a USB flash drive (not included) for data backup or firmware upgrades.
7. **Power (12V):** Connect the included 12V DC power adapter.
8. **RS485:** Connect RS485 cables.

**NOTE**

- For full instructions on connecting PTZ cameras using RS485 cables, see 17 *Connecting PTZ Cameras to the DVR*, page 138.
- Once you have connected the PTZ camera to the DVR, you will need to enter the PTZ camera's information so it can receive commands from the DVR. See 12.4.3 *Configuring PTZ Cameras*, page 75 for details.

9. **VGA:** Connect a VGA monitor (not included) to view the system interface.

Basic Setup

4.1 STEP 1: Connect the BNC cameras

Connect BNC cameras to the **Video Input** ports on the rear panel of the DVR. Push and twist the BNC connector clockwise to secure it to the BNC port.



4.2 STEP 2: Connect the mouse

Connect the included USB mouse to one of the **USB** ports.



4.3 STEP 3: Connect the Ethernet cable

Connect the included Ethernet cable to the **LAN** port on the rear panel of the DVR. Connect the other end of the Ethernet cable to a router on your network.



4.4 STEP 4: Connect the monitor or TV

Connect the included HDMI cable from the **HDMI** port to the TV or monitor (recommended).

OR

Connect a VGA cable (not included) from the **VGA** port to the monitor.



1. VGA cable (not included) — supports up to 1080p output.
2. HDMI cable (included)
 - **4-channel DVRs:** Supports up to 1080p output.
 - **8/16-channel DVRs:** Supports up to 4K output (4K monitor/TV required).

4.5 STEP 5: Connect the power adapter

Connect the included power adapter to the **12V** port. Connect the end of the power adapter to a wall socket or a surge protector. The DVR will power on.



NOTE

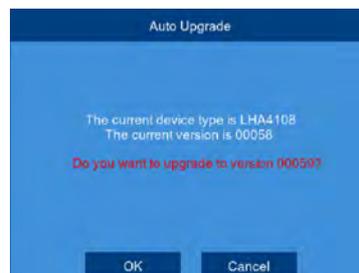
At startup, the system performs a basic system check and runs an initial loading sequence. After a few moments, the system loads a live display view.

4.6 STEP 6: Upgrade firmware to latest version (if available)

If a firmware upgrade is available, you will be asked to install it once the DVR starts up. It is required to upgrade your system firmware and client software / mobile apps to the latest version to enable remote connection to the system.

If a firmware upgrade is available:

1. After startup, a notification will appear asking you to upgrade the firmware. Click **OK** to upgrade.



2. Enter the system user name (default: **admin**) and password (default: **00000000**) and click **OK**. Wait for the firmware update to complete. The system will restart once the firmware has been upgraded.

	CAUTION
DO NOT POWER OFF THE DVR OR DISCONNECT THE POWER CABLE DURING FIRMWARE INSTALLATION	

4.7 STEP 7: Create a secure password

The first time you power up your system, you will be asked to create a new, secure password that is 8–15 characters long.

1. Enter the system user name (default: **admin**) and password (default: **00000000**)
2. You will be asked to create a **new, secure 8–15 character password**. Enter your new password in the **New Password** and **Confirm Password** fields, then press **OK** to confirm.



	NOTE
Your new password will be used to access the system from now on.	

4.8 STEP 8: Complete the Setup Wizard

After setting a secure password, the DVR Setup Wizard launches. The wizard has you set your language, region, and confirm the correct date and time for the system.

1. The setup wizard launches. Click **Next** to begin.



- Click the arrow keys to select your preferred language for the on-screen display. Click **Next** to confirm.



- Click the arrow keys to select your correct region. Click **Next** to confirm.



- Configure all fields related to date and time:



- Click to select the correct date from the calendar.
- Click to enter the correct time.
- Select your preferred date format from the dropdown. This determines how the date will appear in date stamps.
- Select your preferred time format from the dropdown. This determines how the time will appear in time stamps. If you select **12Hour** format, select **AM** or **PM**.
- Click **Next**.

- Review the information on the final screen of the wizard. Click **Accept** to confirm that all information is correct, or click **Previous** to go back to a previous screen in the wizard.



Once you have completed the wizard, the date and time of the system is updated. You can make changes at any time to the date, time or region. See 12.5.1 *Changing the Date and Time*, page 76 for details.

4.9 STEP 9: Verify camera image

- Power on the cameras, and then verify the camera video quality before mounting the cameras to a permanent location.
- Mount the cameras under a sheltered location. Always verify the outdoor rating of your camera before installing it in a permanent location.



CAUTION

Cameras differ in terms of installation or mounting instructions. Please see the documentation that came with your camera(s) for specific installation instructions.

4.9.1 Camera Installation Tips

- Mount the camera where the lens is away from direct and intense sunlight.
- Plan your cable wiring so that it does not interfere with power lines or telephone lines.
- Ensure that the camera wiring is not exposed or easily cut.
- Mount the camera in an area that is visible, but out of reach.
- Avoid pointing the camera at a glass window to see outside, as this may result in a poor image caused by glare from indoor / outdoor lighting conditions.
- Adjust the camera angle so that it covers an area with high traffic.
- In "high-risk" locations, have multiple cameras point in the same area. This provides camera redundancy if a vandal attempts to damage the camera.

4.10 Connecting to Your DVR Over the Internet

The system features FLIR Cloud Services. This is a cloud service that allows you to connect with your system over the Internet via a secure handshake with FLIR servers. This means you can easily connect to your system without requiring any port forwarding or other network configuration.

- For details on connecting to your using a smartphone or tablet, see 14 *FLIR Secure: Connecting to the DVR Using a Mobile Device*, page 124.
- For details on connecting to your using a PC or Mac computer, see 13 *FLIR Client 12 for PC / Mac*, page 91.

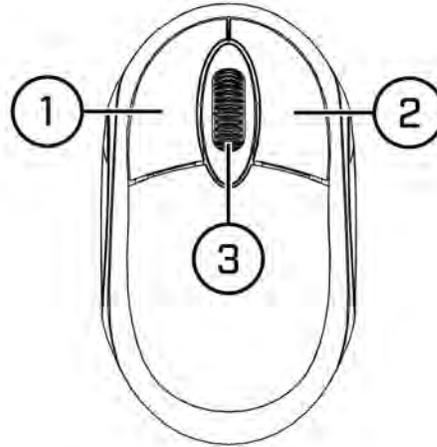
4.11 Quick Access to System Information

To quickly open a window with system information:

- Click  on the DVR's Taskbar.
OR
- Press the  button on the included remote control.

The DVR is designed for mouse navigation. Connect the included mouse to one of the **USB** ports on the DVR.

To use the USB mouse:



1. Left Button:

- Click to select menu options.
- During live viewing in split-screen view, double-click on a channel to view it in full-screen. Double-click the channel again to return to split-screen viewing.

2. Right Button:

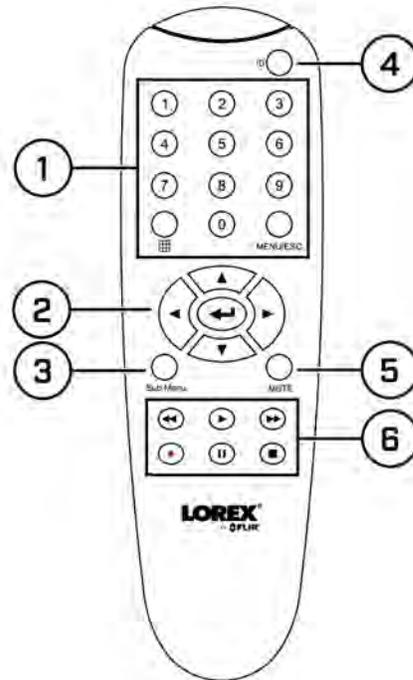
- During live viewing in split-screen view, click to open the Quick Menu (see 7.2 *Using the Quick Menu*, page 16).
- In menus, click to go back / close menus.

3. Scroll Wheel:

- In menus, scroll to move up / down through the menu content.
- While hovering over the volume control wheel, scroll to turn system volume up / down.

You have the option of controlling your security system using the included remote control instead of the included mouse, which is intended as the primary way of controlling the system (for details, see 5 *Using the Mouse*, page 13).

To use the remote control:



1. **Number Keys (1~0):** Press to select the desired channel in Full-screen View.
 - : In Live Viewing Mode, press to open Split-screen View. Press repeatedly to switch between split-screen viewing modes.
 - **MENU/ESC:** Press to open the Main Menu. In menus, press to go back / exit menus.
 - **0:** Press **0** three times set the DVR's video output to the default resolution of 1280×1024.
2. **Navigation Cursors:** Press to navigate menus.
 - : Press to select menu items. In Live Viewing Mode, press to access System Information.
3. **Sub Menu:** Press to open the Menu Bar.
4. **ID:** Used to pair the remote control to a specific DVR. For details, see 12.5.11 *Setting the Remote ID*, page 85.
5. **MUTE:** Press to mute/un-mute audio during Live Viewing and Playback Mode. Audio-capable cameras (not included) are required for audio recording and listen-in audio functionality.

6. Playback Controls:

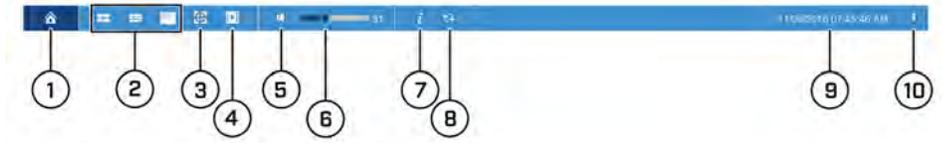
- : In Playback Mode, press to fast forward/increase fast forward speed.
- : In Playback Mode, press to rewind/increase rewind speed.
- : In Live Viewing Mode, press to open the Search Menu to select video for playback.
In Playback Mode, press to play video.
- : In Live Viewing Mode, press to start Sequence Mode.
In Playback Mode, press to pause video. Press repeatedly to step through video frames.
- : Press to stop recording. Password required; does not override scheduled recording.
- : Press to resume recording after recording has been stopped. Password required.

Using the DVR's On-Screen Display

Use the system's graphical on-screen display to navigate menus and configure options and settings.

7.1 Using the Taskbar

The **Taskbar** along the bottom of the DVR's main display allows you to access the Main Menu and control basic functions of the DVR.



1. **Main Menu:** Opens the Main Menu for browsing. For details on Main Menu functions, see 12 *Using the Main Menu*, page 48.
2. **View Options:** Select how many camera channels are shown during live viewing.
3. **Start / Stop SEQ:** Start or stop Sequence Mode. In Sequence Mode, the DVR automatically switches between channels every few seconds.
4. **Playback:** Opens the Playback Menu. This allows you to search for video recordings saved on the DVR's hard drive. For details on using the Playback menu, see 9 *Playback*, page 25.
5. **Mute:** Mute system audio.



NOTE

Muting system audio does not affect audio in recordings (microphone required — see 18 *Recording Audio*, page 139 for details).

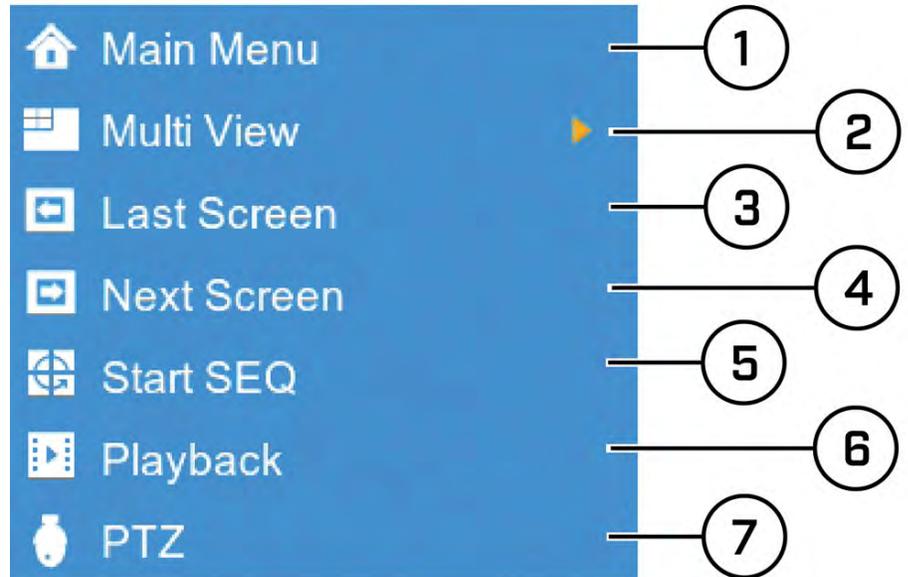
6. **Volume Bar:** Click inside the Volume Bar, or hover over it and use the scroll wheel to change system volume.
7. **System Information:** Displays system information.
8. **Auto Upgrade:** Checks for an available firmware update. For details, see 12.6.6 *Using Automatic Firmware Upgrade*, page 90
9. **System Date & Time:** Shows the date and time of the system.
10. **Pin / Unpin Taskbar:** Choose to always show the Taskbar on screen () or hide it unless the mouse pointer is near the bottom of the screen ().

7.2 Using the Quick Menu

The **Quick Menu** gives you quick access to functions which can also be accessed using the Taskbar.

To use the Quick Menu:

- Right-click on a camera channel in the live viewing screen.
- The Quick Menu appears:



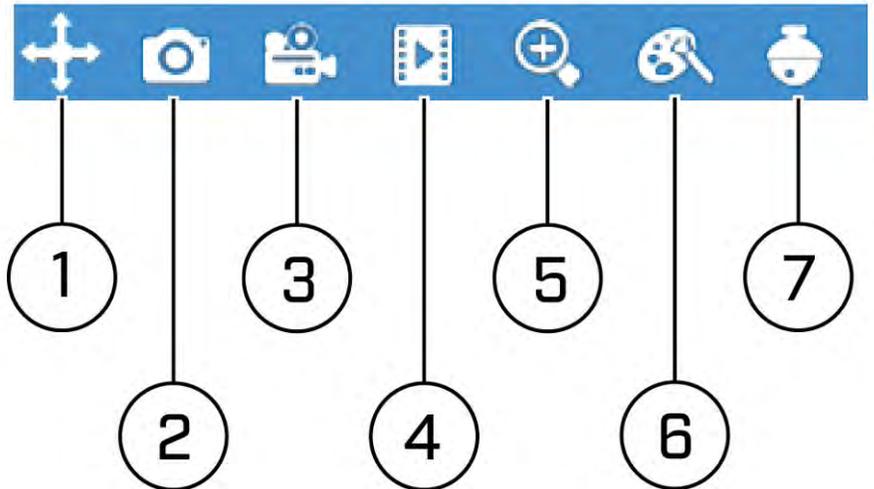
1. **Main Menu:** Open the Main Menu. For details on Main Menu functions, see 12 *Using the Main Menu*, page 48.
2. **Multi View:** Select how many channels appear on the live display at once.
3. **Last Screen:** View the previous channel or page of channels.
4. **Next Screen:** View the next channel or page of channels.
5. **Start SEQ / Stop SEQ:** Start or stop Sequence Mode, which cycles through connected cameras automatically.
6. **Playback:** Search for and play back recorded video. For details on using Playback, see 9 *Playback*, page 25.
7. **PTZ:** Control PTZ cameras. For details, see 7.5 *Using PTZ Controls*, page 20.

7.3 Using the Mini Menu

The **Mini Menu** lets you perform quick functions for a specific channel on the DVR.

To use the Mini Menu:

- Hover the mouse near the top of a channel with a connected camera.
- The Mini Menu opens at the top of the camera's live display:



1. **Move Mini Menu:** Click-and-drag to move the Mini Menu to a different part of the screen.
2. **Manual Capture:** Click to save a snapshot of the current camera image. Manual Capture must be enabled to use this feature. For details on enabling Manual Capture, see 12.2.14 *Enabling Manual Capture*, page 63.
3. **Manual Recording:** Click to manually record video from the selected channel. Password entry required.
4. **Instant Playback:** Plays back up to 5 minutes of the most recently recorded video from the selected channel.
5. **Digital Zoom:** Click, then click-and-drag on an area of the camera image to view it in greater detail. For full instructions, see 7.6 *Using Digital Zoom*, page 22.
6. **Color Adjustments:** Adjust the hue, brightness, contrast and saturation of the camera image. For details, see 12.2.2 *Adjusting Camera Image Color*, page 51.
7. **PTZ Controls:** Click to open PTZ controls. Password entry required. For more details on using PTZ controls, see 7.5 *Using PTZ Controls*, page 20.

7.4 Using the On-Screen Keypads

The **Full Keypad** is used to input alphanumeric characters, such as in user name or password fields. The **Number Keypad** is used to input numeric characters only, such as in the time or date fields.

To use the Full Keypad:

1. Using the mouse, click on a field where alphanumeric characters are entered, such as the user name and password fields.

- The Full Keypad opens:



- Click  to switch between uppercase and lowercase characters.

**NOTE**

Uppercase entry mode also reveals more special characters on the far-right side of the keyboard.

- Click  /  to move the cursor.
- Click  to backspace / delete characters.
- Click  to confirm what you have entered.
- Right-click to close the Full Keypad.

To use the Number Keypad:

1. Using the mouse, click on a field where numeric characters are entered, such as the date or time fields.
 - The Number Keypad opens:



- Click  /  to move the cursor between letters.
- Click  to backspace / delete numbers.
- Click  to confirm what you have entered.
- Right-click to close the Number Keypad.

**NOTE**

You may also enter numerical information using the included remote control. See 6 *Using the Remote Control*, page 14 for details.

7.5 Using PTZ Controls

Controlling Pan-Tilt-Zoom (PTZ) cameras (PTZ cameras sold separately).

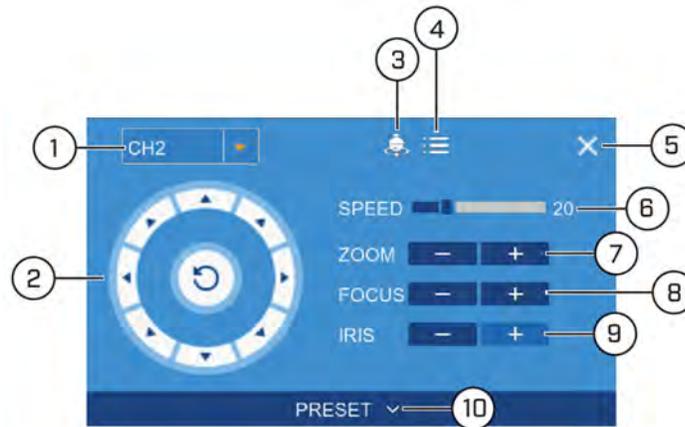
**NOTE**

Ensure you have completed initial setup of your PTZ camera in order to control the camera using the DVR. See 12.4.3 *Configuring PTZ Cameras*, page 75 for more details.

To access the PTZ controls:

- Right-click on the live viewing area for the PTZ camera to open the Quick Menu, then click **PTZ**.
- OR**
- Hover the mouse near the top of the live viewing area for the PTZ camera to reveal the Mini Menu, then click .

To use the PTZ controls:



1. **Channel:** Select the channel of the PTZ camera you want to control.
2. **Navigation Controls:** Click the directional arrows to move the PTZ camera.
3. **Start Cruise:** Cycles between preset viewing points automatically.

**NOTE**

PTZ cruise must be enabled on the DVR. See 12.4.3 *Configuring PTZ Cameras*, page 75 for details.

4. **OSD Menu:** On supporting cameras, access advanced camera settings in the On-Screen Display (OSD) menu.

**NOTE**

You can reset OSD menu settings on supporting cameras by performing a default settings reset on the DVR. See 12.6.2 *Restoring Default Settings*, page 86 for details.

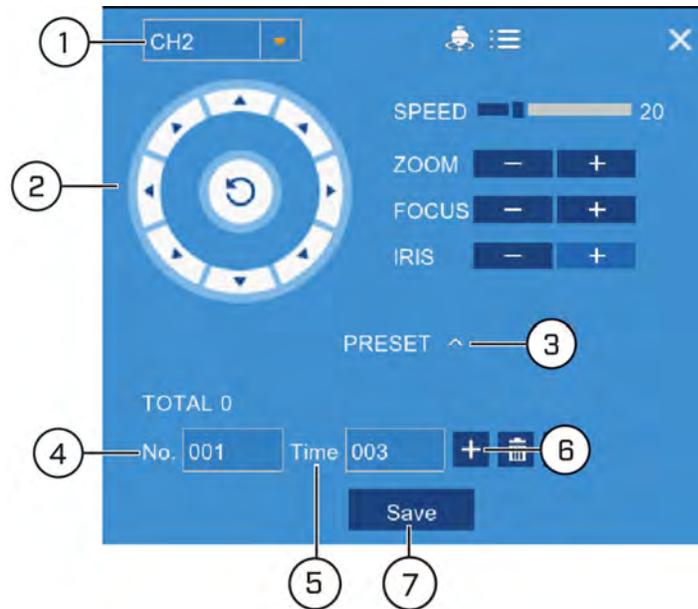
5. **Close PTZ Controls**
6. **Speed:** Set the speed of the PTZ camera's movement.
7. **Zoom:** Click -/+ to zoom in or out.
8. **Focus:** Click -/+ to adjust the focus.
9. **Iris:** Click -/+ to set the iris.
10. **Preset:** Click to access preset settings. For details on setting presets, see 7.5.1 *Setting PTZ Presets*, page 21

7.5.1 Setting PTZ Presets

Access the PTZ control menu to set preset viewing points for the PTZ. This is helpful for saving frequently-monitored areas for quick viewing. Once you have saved a few preset viewing points, you can start a PTZ cruise to switch between preset points automatically

by clicking .

To set PTZ presets:



1. Select the channel for the PTZ camera you want to set presets for.
2. Use the directional arrows to move the PTZ camera to the desired view for the preset.
3. Click the arrow next to **PRESET** to reveal preset controls.
4. In the field next to **No.**, enter an ID number for the current preset viewing point.

**NOTE**

You must enter a unique ID number for each preset viewing area you add to the system. Using the same ID number as an existing preset will result in the old preset being overwritten.

5. In the field next to **Time**, enter an amount of time in seconds. This will determine how long the PTZ camera looks at the preset area before switching to the next preset in a cruise.
6. Click **+** to confirm your preset settings and add it to the system.
7. Configure as many preset points as needed using the steps above, then click **Save**.

**NOTE**

To cycle through preset viewing points automatically, click  to start PTZ Cruise. Ensure you have enabled cruise on the selected PTZ camera (see 12.4.3 *Configuring PTZ Cameras*, page 75 for details).

7.6 Using Digital Zoom

Zoom in on an area of live video to enlarge a part of the image.

**NOTE**

Digital zoom is not the same as optical zoom, which is supported only by PTZ and motorized lens cameras. For details on using optical zoom on supporting cameras, see 7.5 *Using PTZ Controls*, page 20.

To use digital zoom:

1. During live view, hover near the top of the channel to reveal the Mini Menu.

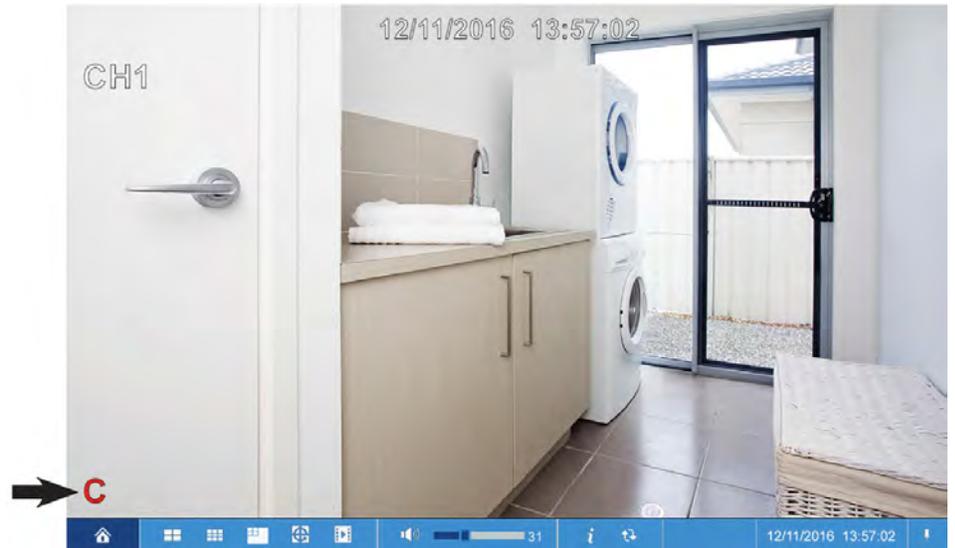
2. Click .
3. Click-and-drag on the video image to select an area to enlarge. The enlarged image is shown in full screen. A Picture-in-Picture view in the bottom-right corner shows the full image with the zoom area highlighted.



4. Right-click to return to live viewing.

By default, the system is set to immediately record video from all connected cameras in both **continuous recording** and **motion recording** modes.

When a camera is recording video, the type of recording is indicated by icons in the bottom-left corner of the camera image.



You may see one of the following icons:

- **C Continuous Recording:** The system is recording video constantly. By default, the system is set to record continuously at all times. You can make a schedule to set when the system records continuous video. See 12.2.10 *Setting the Recording Schedule*, page 59 for details.
- **M Motion Recording:** The system has detected motion and is recording the event.
 - By default, the system is set to record motion events at all times. You can make a schedule to set when the system records motion detection. See 12.2.10 *Setting the Recording Schedule*, page 59 for details.
 - To configure more motion detection options such as detection sensitivity, active areas for motion detection, and warning/buzzer options, see 12.2.20 *Configuring Motion Detection Settings*, page 71.
- **M Motion Detected — No Recording:** The system detected motion, but motion recording is not enabled or a recording schedule has been set to disable motion recording during this time of day.
 - To enable motion detection on the selected channel, see 12.2.20 *Configuring Motion Detection Settings*, page 71.
 - To edit the recording schedule for the selected channel, see 12.2.10 *Setting the Recording Schedule*, page 59.

You can view and back up recorded video on the DVR.

To access playback:

- Click  on the Taskbar
- OR
- Right-click during live view to open the Quick Menu, then click **Playback**.

9.1 Using Playback

Play back video recordings from a specific date and time.

To use video playback:



1. Use the calendar to select a day for playback. Dates with available recordings will be marked with a triangle in the bottom corner ().
 - **Green:** Continuous recording available.
 - **Red:** Motion recording available.
2. Select **Record** from the dropdown next to **Playback Type**.



NOTE

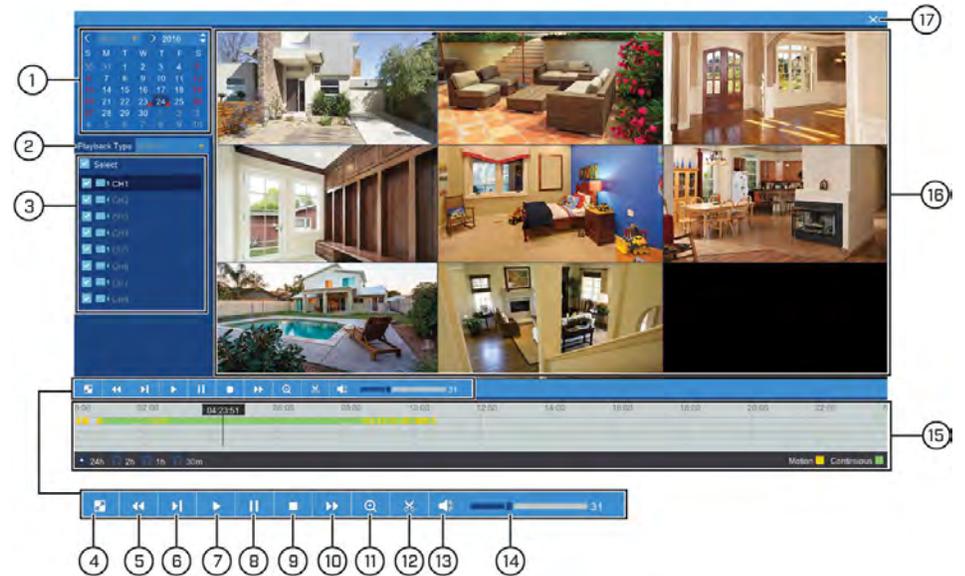
Selecting other options from the **Playback Type** dropdown will change the controls for the playback menu. See below for details on each of the other types of playback:

- **Events:** Search for video recordings with the option to filter by recording type. See 9.3 *Event Playback Controls*, page 27 for details.
- **Pictures:** Search for snapshots taken using Auto and Manual Capture. See 9.4 *Picture Playback Controls*, page 28 for details.
- **Smart Search:** Smart Search allows you to review events intelligently, with the ability to clearly see when there was activity in a specific part of the camera image. See 9.5 *Smart Search Playback Controls*, page 29 for details.

3. Check the channels you would like to play back, or check **Select** to playback all connected cameras.

- Playback of the selected channels begins immediately. The timeline will show **green bars** representing continuous recording, and **yellow bars** representing motion recording. Click on a section of video in the timeline to change playback position. For a full overview of video playback controls, see 9.2 *Video Playback Controls*, page 26.

9.2 Video Playback Controls



- Calendar:** Select a date to search for video recordings from.
- Playback Type:** Select **Record**.



NOTE

This is the default method for searching for video recordings on the system. See below for details on the other types of playback:

- Events:** Search for video recordings with the option to filter by recording type. See 9.3 *Event Playback Controls*, page 27 for details.
- Pictures:** Search for snapshots taken using Auto and Manual Capture. See 9.4 *Picture Playback Controls*, page 28 for details.
- Smart Search:** Smart Search allows you to review events intelligently, with the ability to clearly see when there was activity in a specific part of the camera image. See 9.5 *Smart Search Playback Controls*, page 29 for details.

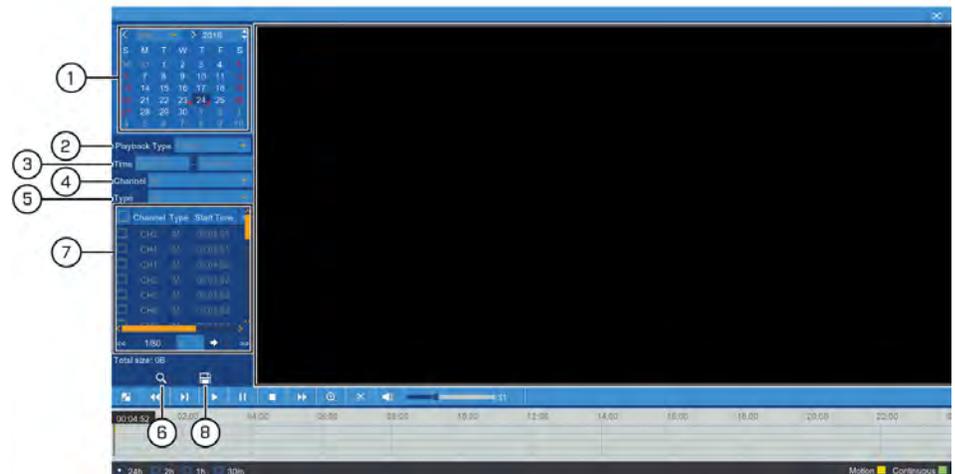
- Channel List:** Check channels you would like to search, or check **Select** to search all connected channels.
- Full Screen**
- Rewind**
- Slow Play:** Click to slow playback by half-speed. Click repeatedly to play as slow as 1/16 of normal speed.
- Play**
- Pause**
- Stop**
- Fast-Forward**



11. **Digital Zoom:** Click , then click-and-drag on a camera image during playback to zoom in on the selected area. Right-click to return to regular playback. For full instructions on using digital zoom, see 9.6 *Using Digital Zoom*, page 30.
12. **Video Clip:** Quickly save a section of video to a USB flash drive (not included). For full instructions on using the Video Clip, see 10.2 *Video Clip Backup*, page 33.
13. **Mute/Unmute Audio:** Mute/unmute audio (audio-enabled cameras required).
14. **Volume Bar:** Control system audio level (audio-enabled cameras required).
15. **Timeline:** Continuous recordings are shown with **green bars**, and motion recording with **yellow bars**. Use the timeframe options in the bottom-left corner of the screen () to view a smaller or larger time period.
16. **Video Playback Area:** Double-click any channel to view in full screen.
17. **Exit Playback:** Return to live viewing mode.

9.3 Event Playback Controls

Under **Playback Type**, select **Events** to search for video recordings with the option to filter by recording type. Videos that match your search criteria will be displayed in list form, summarizing the channel, type of recording, and time of capture. You can also easily back-up events using this menu.



1. **Calendar:** Select a date to search for events from.
2. **Playback Type:** Select **Events**.
3. **Start/End Time:** Next to **Time**, enter the start and end time for your event search.
4. **Search Channels:** Use the dropdown next to **Channel** to select a channel to search for events from, or select **All** to search all channels.
5. **Recording Type:** Use the dropdown next to **Type** to select **Continuous**, **Motion**, or select **All** to search for all types of events.
6. **Search:** Click to search for events based on your search criteria.

7. **Search Results:** Browse search results.

- Use the scroll bars to see all rows and columns of your search results.
- Click  /  near the bottom of the results section to browse through pages of events.
- Check boxes next to any events you would like to backup to a connected USB flash drive (not included).

8. **Backup:** Click to save events to a USB flash drive (not included). Ensure you have checked off at least one event from your search results, and that a USB flash drive is connected to the DVR. For more details on backup options, see 10 *Search & Backup*, page 32.



NOTE

The remainder of the controls for event playback are the same as those used during standard video playback. For details on the rest of the interface, see 9.2 *Video Playback Controls*, page 26

9.4 Picture Playback Controls

Under **Playback Type**, select **Picture** to search for snapshots taken using Auto and Manual Capture.

Prerequisites:

- You must have enabled Auto and/or Manual Capture for there to be snapshots saved to the hard drive.
 - For instructions on setting up Auto Capture, see 12.2.12 *Configuring Auto Capture*, page 61.
 - For instructions on setting up Manual Capture, see 12.2.14 *Enabling Manual Capture*, page 63.



1. **Calendar:** Select a date to search for snapshots from.
2. **Playback Type:** Select **Picture**.
3. **Start/End Time:** Next to **Time**, enter the start and end time for your picture search.

4. **Search Channels:** Use the dropdown next to **Channel** to select a channel to search for snapshots from, or select **All** to search all channels.
5. **Recording Type:** Use the dropdown next to **Type** to select **N (Normal)**, **M (Motion)**, **Manual** to search for only Manual Captures, or select **All** to search for all types of snapshots.
6. **Search:** Click to search for snapshots based on your search criteria.
7. **Search Results:** Browse search results.
 - Use the scroll bars to see all rows and columns of your search results.
 - Click  /  near the bottom of the results section to browse through pages of snapshots.
 - Check boxes next to any snapshots you would like to backup to a connected USB flash drive (not included).
8. **Backup:** Click to save snapshots to a USB flash drive (not included). Ensure you have checked off at least one snapshot from your search results, and that a USB flash drive is connected to the DVR. For more details on backup functions, see 10 *Search & Backup*, page 32.
9. **Backward Play:** Click to display snapshots in descending order, one at a time for a few seconds each. Click again to pause.
10. **Forward Play:** Click to display snapshots in ascending order, one at a time for a few seconds each. Click again to pause.
11. **Stop**
12. **Previous Page:** Click to show the previous page of snapshots. If the page is set to 1x1, the page will only consist of one snapshot. See 14–16 to change page setup.
13. **Next Page:** Click to show the next page of snapshots. If the page is set to 1x1, the page will only consist of one snapshot. See 14–16 to change page setup.
14. **View 1x1 Page:** Click to have each page consist of only one snapshot.
15. **View 2x2 Page:** Click to have each page consist of up to 4 snapshots.
16. **View 3x3 Page:** Click to have each page consist of up to 9 snapshots.

9.5 Smart Search Playback Controls

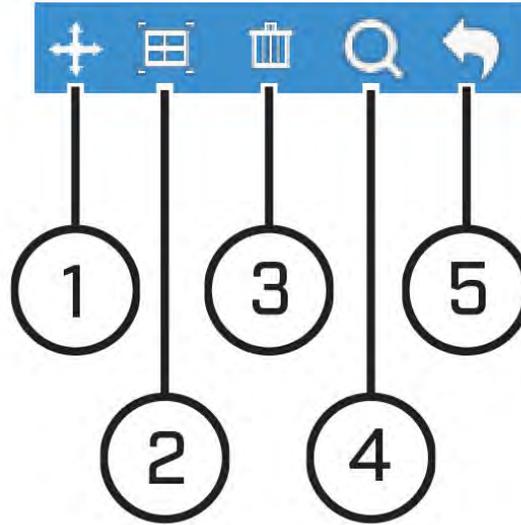
Under **Playback Type**, select **Smart** to use Smart Search. Smart Search allows you to review events intelligently, with the ability to clearly see when there was activity in a specific part of the camera image.

There are 2 methods for reviewing events using Smart Search:

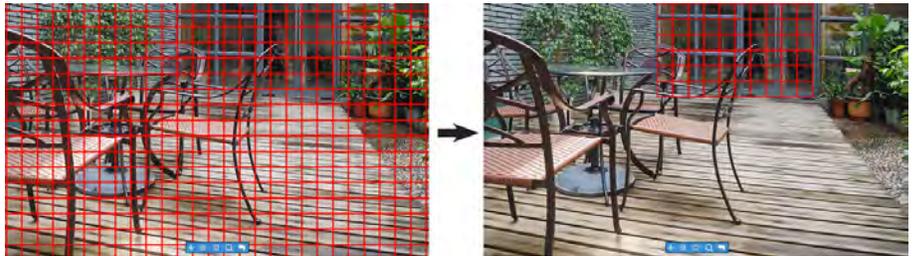


1. **Custom Smart Search:** Enter a start and end time for a Smart Search, then click .
 - If there are smart events to display in the selected time period, playback starts immediately. Smart events are played in succession starting with the earliest event.
 - The Smart Search menu appears at the bottom of the screen. For details, see 9.5.1 *Using the Smart Search Menu*, page 30.
2. **Smart Search Timeline:** Smart events are marked by dark green bars in the timeline, allowing you to see events that interest you at a glance.

9.5.1 Using the Smart Search Menu



1. **Move Menu:** Click-and-drag to move the Smart Search menu.
2. **Configure Active Area:** Click to set an active area for Smart Search. A red grid overlays the camera image. By default, the entire image is included in the active area. Click-and-drag over areas of the image to remove the red grid overlay, which removes that part of the image from the active area.



NOTE

The image on the far-left shows the default active area, covering the entire image. This means that the camera will consider any motion in the image for a potential smart event. In the image on the far-right, only motion occurring in front of the door or inside the house will be considered for smart events, whereas motion near the patio furniture will not.

3. **Reset Active Area:** Reset to the default of using the entire image as the active area for smart events.
4. **Refresh Search:** Search for smart events based on a custom active area.
5. **Return to Playback Menu**

9.6 Using Digital Zoom

Zoom in on an area of playback to enlarge a part of the image.

 **NOTE**

Digital zoom is not the same as optical zoom, which is supported only by PTZ and motorized lens cameras. For details on using optical zoom on supporting cameras, see *7.5 Using PTZ Controls*, page 20.

To use digital zoom:

1. During playback, double-click the channel you would like to zoom in on to view in fullscreen.

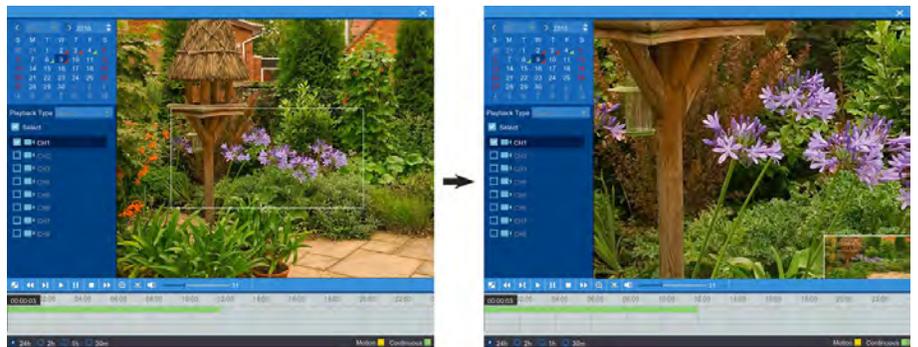
2. Click .

 **NOTE**

You can only use digital zoom on one channel. If you are playing back multiple channels, clicking

 will open the first channel in full screen automatically.

3. Click-and-drag on the video playback to select an area of the image to enlarge. The enlarged image is shown in full screen. A Picture-in-Picture view in the bottom-right corner shows the full image with the zoom area highlighted.

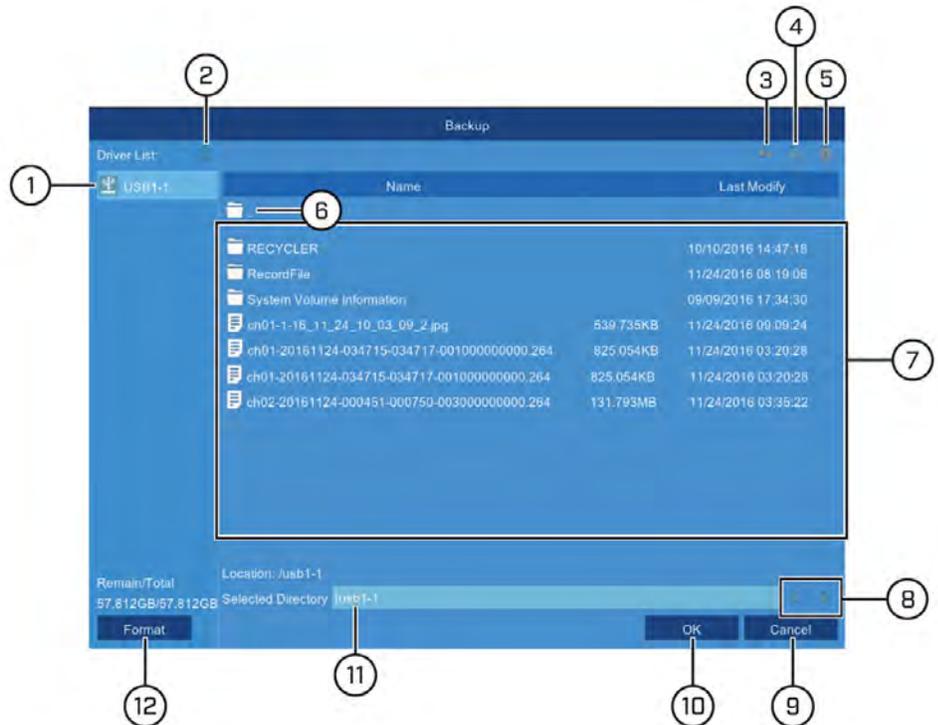


4. Click  again or right-click to return to full playback.

You can back up video recordings and snapshots to a USB flash drive (not included) connected to the DVR.

10.1 Drive Menu Controls

When you perform a backup, the folder structure of the connected USB flash drive (not included) is shown on screen. Use the on-screen controls to browse through and edit the contents of the drive.



1. **Connected Drives:** USB flash drives (not included) connected to the system are shown here. Click to open.
2. **Refresh Contents**
3. **Up One Level:** Click to navigate to the containing folder for your current location. Clicking in the root folder has no effect.
4. **New Directory:** Click to create a new folder at your current location. Enter the name for the new folder under **Directory Name**, then click **OK**.

Directory Name:

5. **Delete:** Delete the selected file or folder.
6. **Up One Level:** Click to navigate to the containing folder for your current location. Clicking in the root folder has no effect.
7. **Browsing Area:** Shows files and folders contained in the selected USB flash drive (not included).
8. **Move Cursor:** Click the arrow keys to move the cursor in the **Selected Directory** field.

9. **Cancel:** Cancel the backup.
10. **OK:** Save backup files to the folder path shown in the **Selected Directory** field.
11. **Selected Directory:** Shows the folder path for the location currently shown in the Browsing Area.
12. **Format:** Click to format the currently selected USB drive. When first connecting a USB flash drive (not included) to the system, it is recommended to format the drive so it is ready for use with the DVR.

	CAUTION
Formatting will erase all data saved to the drive. This cannot be undone.	

10.2 Video Clip Backup

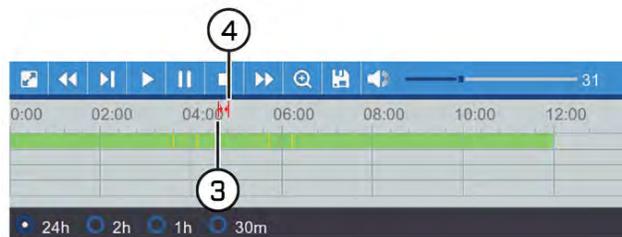
Choose the exact section of video recording you want to backup from Playback mode.

Prerequisites:

- To use video clip backup, you must connect a USB flash drive to one of the DVR's USB ports.

To use video clip backup:

1. Open the Playback menu:
 - Click  on the Taskbar
 - OR**
 - Right-click during live viewing to open the Quick Menu, then click **Playback**.
2. Select a channel you would like to backup a video clip from, and begin playback at the desired start time for the backup file.



3. Click  to begin the video clip at the current playback time. A red arrow on the timeline indicates your start time.

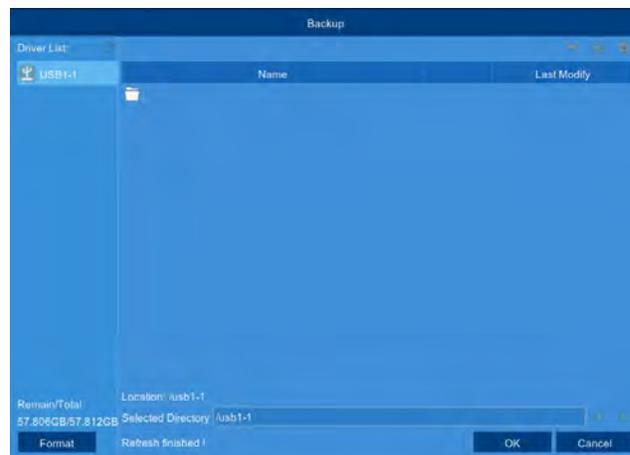
4. Select an ending time for the backup file:

- Let the video play until the desired end time, then click .
- OR
- Click the desired end time on the video timeline, then click .

A second red arrow appears on the timeline to show you the full duration of your backup file.



5. Select a file type for your backup files.
6. Click **Save**.
7. The backup drive menu appears (see 10.1 *Drive Menu Controls*, page 32 for an overview of drive menu controls).



- Navigate to the folder you want the backup files to be saved in.
- Click **OK** to begin.
- The progress bar at the bottom of the window shows you the progress of the backup.



NOTE

- For details on viewing your backup files on a PC or Mac computer, see 15 *Viewing Backed Up Video on PC/Mac*, page 132 .

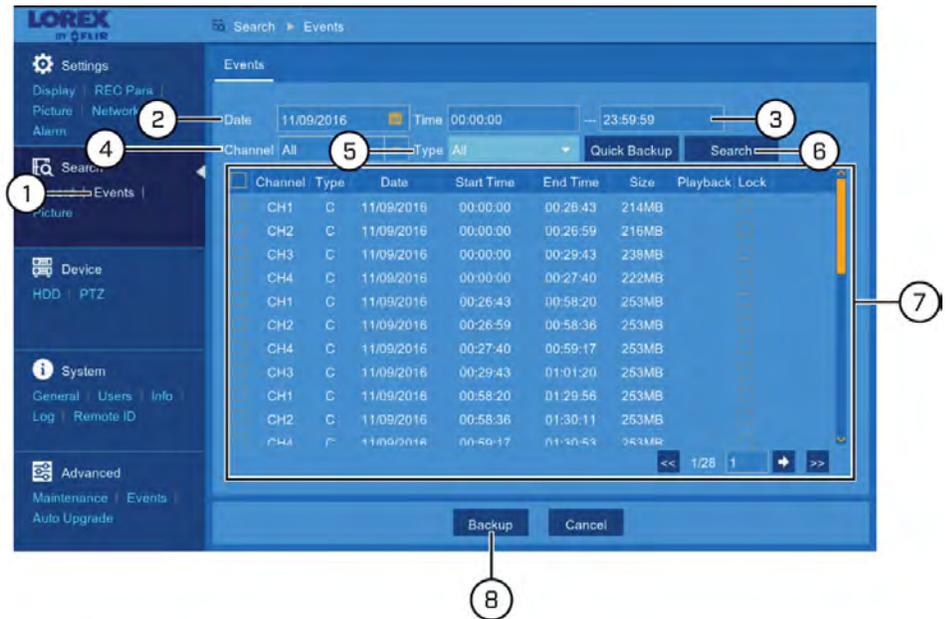
10.3 Event Search — Searching and Backing Up

Event search lets you view a list of video recordings with the channel, start and end time, and recording type conveniently summarized. You can also quickly back up events to a USB flash drive (not included).

Prerequisites:

- To back up events, you must connect a USB flash drive to one of the DVR's USB ports.

To search for and back up events:

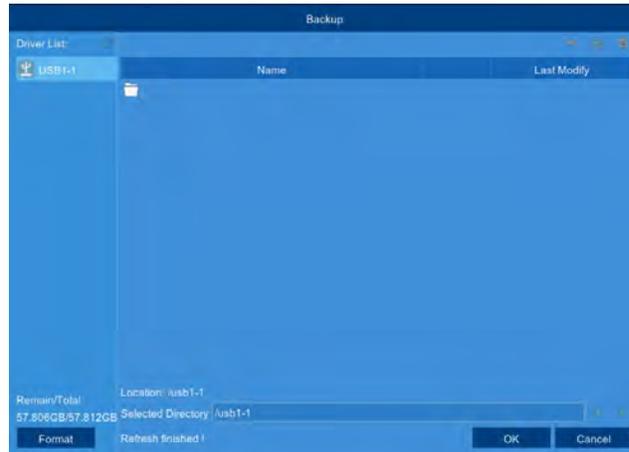


- Under **Search**, click **Events** to open the **Events** tab.
- Click the field next to **Date** to select a date using the on-screen calendar.
- Click the fields next to **Time** to enter a start and end time for your search (24-hour format).
- Use the dropdown next to **Channel** to select a channel to search for video from, or select **All** to search all channels.
- Use the dropdown next to **Type** to select the recording type.
- Click **Search**.
- Events fitting your search criteria are displayed in list form. Check any events you wish to backup to the USB flash drive (not included).
 - Double-click an event to start playback instantly. Right-click to return to your search results.
 - Click **<<** / **>>** in the bottom-right corner of the menu to browse between pages of events.
 - Check the box under the **Lock** column to keep events from being overwritten on the hard drive.
- Click **Backup**.

9. Select a file type for your backup files and click **Save**.



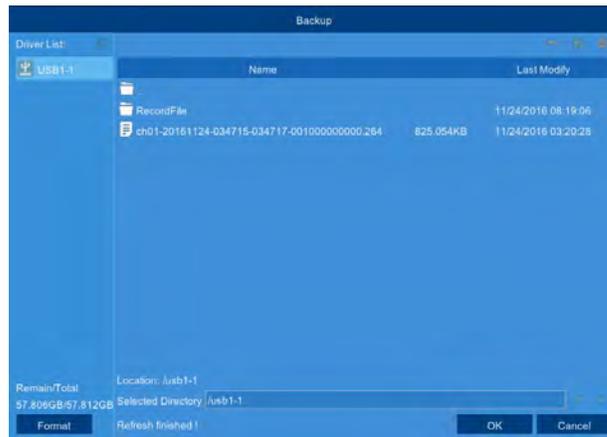
10. The backup drive menu appears (see 10.1 *Drive Menu Controls*, page 32 for an overview of drive menu controls).



- Navigate to the folder you want the backup files to be saved in.
- Click **OK** to begin.
- The progress bar at the bottom of the window shows you the progress of the backup.



- Once complete, your backup files are shown on the drive menu.



NOTE

For details on viewing your backup files on a PC or Mac computer, see 15 *Viewing Backed Up Video on PC/Mac*, page 132 or , page .

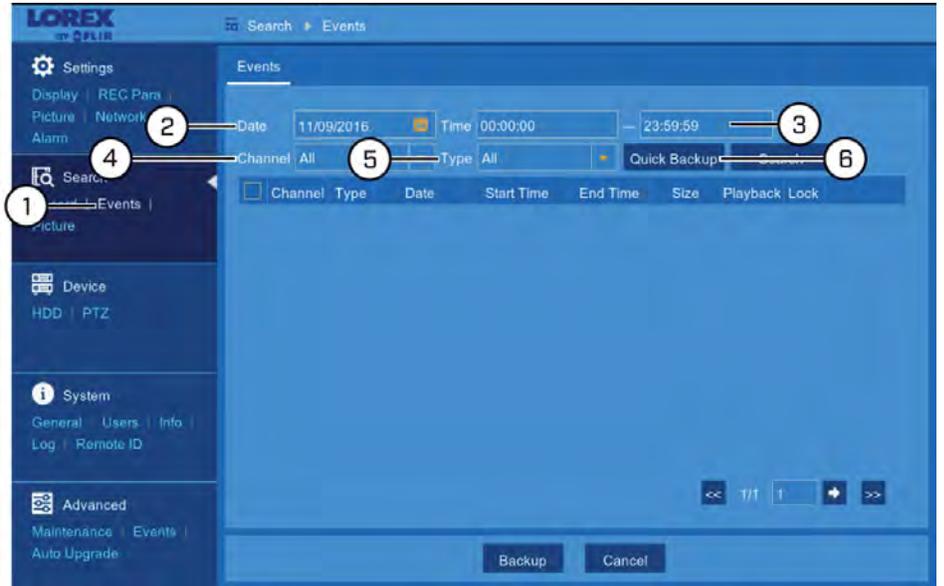
10.4 Event Search — Quick Backup

A Quick Backup lets you save all the events which occurred between a set time period without having to select individual files to back up.

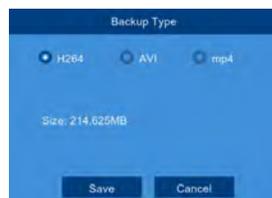
Prerequisites:

- To back up events, you must connect a USB flash drive to one of the DVR's USB ports.

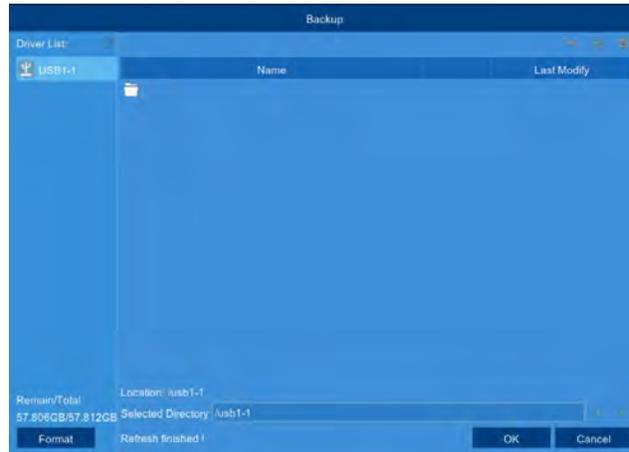
To perform a Quick Backup for events:



1. Under **Search**, click **Events** to open the **Events** tab.
2. Click the field next to **Date** to select a date using the on-screen calendar.
3. Click the fields next to **Time** to enter a start and end time for your search (24-hour format).
4. Use the dropdown next to **Channel** to select a channel to search for video from, or select **All** to search all channels.
5. Use the dropdown next to **Type** to select the recording type.
6. Click **Quick Backup**.
7. Select a file type for your backup files and click **Save**.



8. The backup drive menu appears (see 10.1 *Drive Menu Controls*, page 32 for an overview of drive menu controls).



- Navigate to the folder you want the backup files to be saved in.
- Click **OK** to begin.
- The progress bar at the bottom of the window shows you the progress of the backup.



NOTE

- You should expect for Quick Backups to take significantly longer than other types of backup due to the number of files being saved. Please allow several minutes for Quick Backup to complete.
- For details on viewing your backup files on a PC or Mac computer, see 15 *Viewing Backed Up Video on PC/Mac*, page 132 .

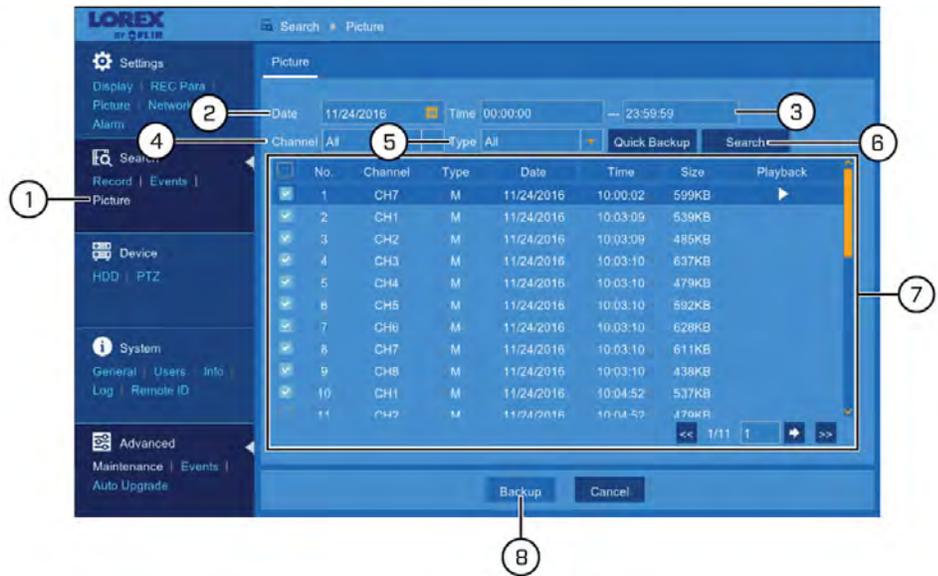
10.5 Picture Search — Searching and Backing Up

Picture search lets you view a list of snapshots taken using Auto or Manual Capture. You can also quickly back up events to a USB flash drive (not included).

Prerequisites:

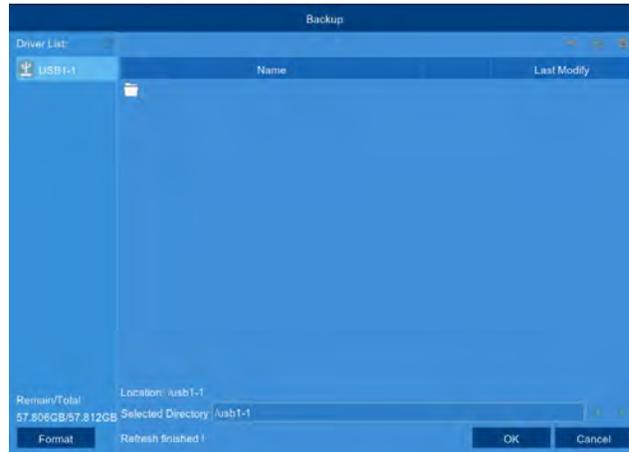
- To back up snapshots, you must connect a USB flash drive to one of the DVR's USB ports.
- You must have enabled Auto or Manual Capture, or the system will not return any snapshot results. To set up Auto Capture, see 12.2.12 *Configuring Auto Capture*, page 61. To set up Manual Capture, see 12.2.14 *Enabling Manual Capture*, page 63

To search for and back up snapshots:



1. Under **Search**, click **Picture** to open the **Picture** tab.
2. Click the field next to **Date** to select a date using the on-screen calendar.
3. Click the fields next to **Time** to enter a start and end time for your search (24-hour format).
4. Use the dropdown next to **Channel** to select a channel to search for snapshots from, or select **All** to search all channels.
5. Use the dropdown next to **Type** to select the snapshot type.
6. Click **Search**.
7. Snapshots fitting your search criteria are displayed in list form. Check the boxes next to any snapshots you wish to save to the USB flash drive (not included).
 - Double-click a snapshot to preview. Right-click to close preview.
 - Click **<<** / **>>** in the bottom-right corner of the menu to browse between pages of snapshots.
8. Click **Backup**.

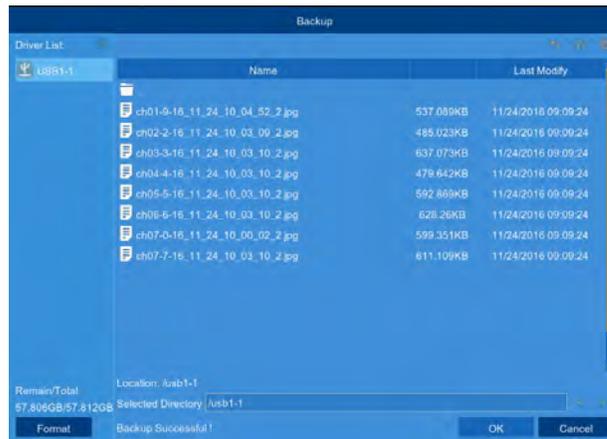
9. The backup drive menu appears (see 10.1 *Drive Menu Controls*, page 32 for an overview of drive menu controls).



- Navigate to the folder you want the backup files to be saved in.
- Click **OK** to begin.
- The progress bar at the bottom of the window shows you the progress of the backup.



- Once complete, your backup files are shown on the drive menu.



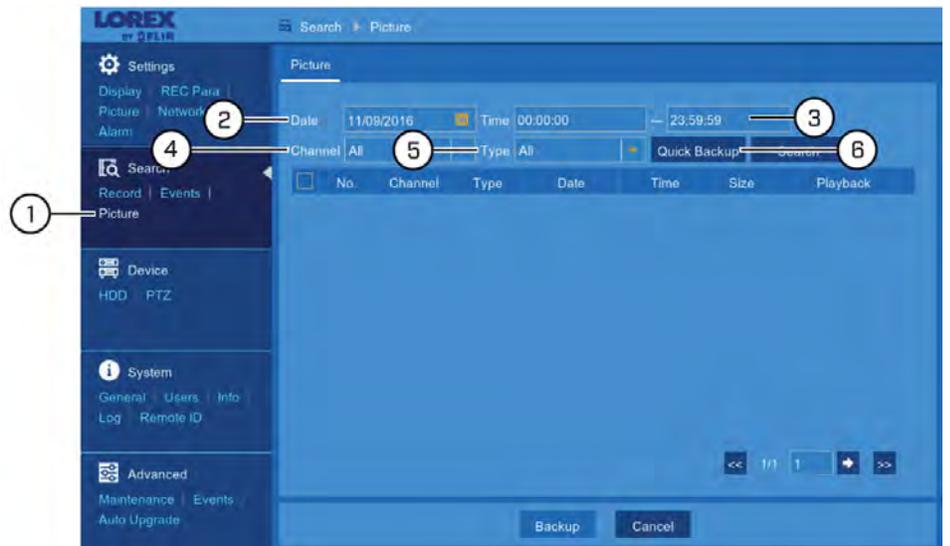
10.6 Picture Search — Quick Backup

A Quick Backup lets you save all the snapshots which were captured in a set time period without having to select individual files to back up.

Prerequisites:

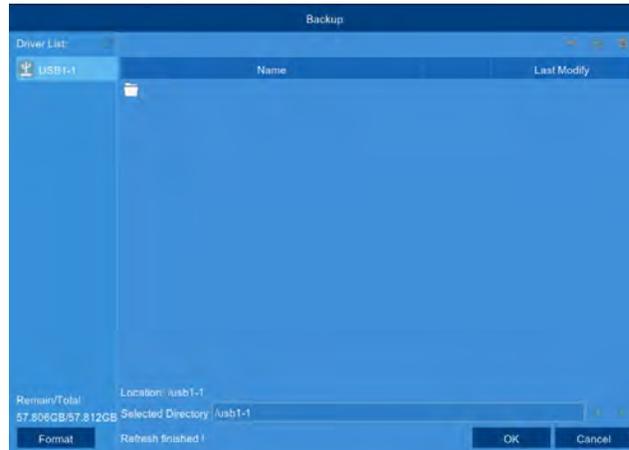
- To back up events, you must connect a USB flash drive to one of the DVR's USB ports.
- You must have enabled Auto or Manual Capture, or the system will not return any snapshot results. To set up Auto Capture, see 12.2.12 *Configuring Auto Capture*, page 61. To set up Manual Capture, see 12.2.14 *Enabling Manual Capture*, page 63

To perform a Quick Backup for snapshots:



1. Under **Search**, click **Picture** to open the **Picture** tab.
2. Click the field next to **Date** to select a date using the on-screen calendar.
3. Click the fields next to **Time** to enter a start and end time for your search (24-hour format).
4. Use the dropdown next to **Channel** to select a channel to search for snapshots from, or select **All** to search all channels.
5. Use the dropdown next to **Type** to select the snapshot type.
6. Click **Quick Backup**.

7. The backup drive menu appears (see 10.1 *Drive Menu Controls*, page 32 for an overview of drive menu controls).



- Navigate to the folder you want the backup files to be saved in.
- Click **OK** to begin.
- The progress bar at the bottom of the window shows you the progress of the backup.

**NOTE**

- You should expect for Quick Backups of snapshots to take significantly longer than regular snapshot backup due to the number of files being saved. Please allow several minutes for Quick Backup to complete.

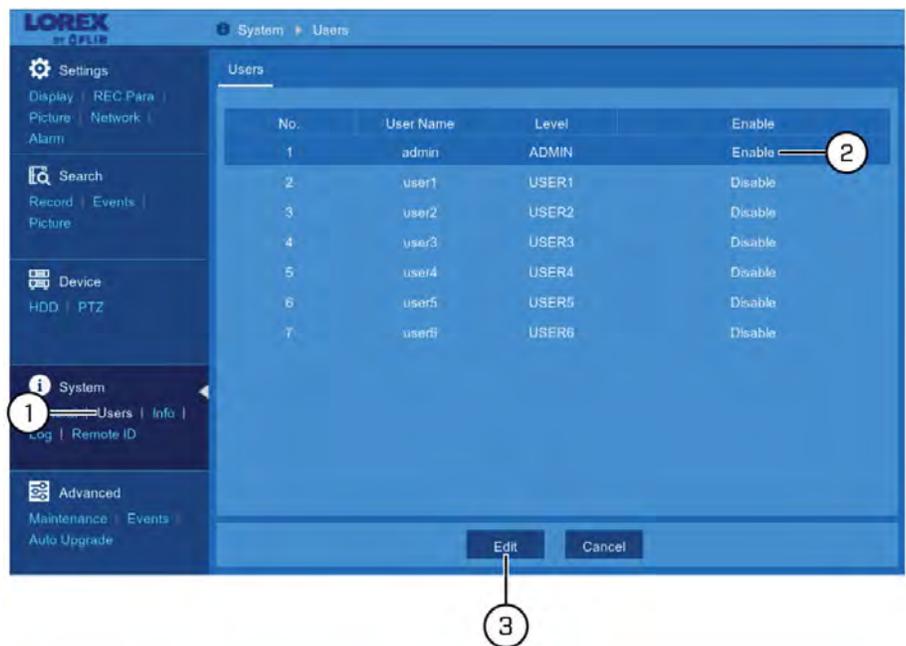
Managing Users, Passwords and Permissions

The system supports the following account types:

- **ADMIN — System Administrator:** The administrator has full control of the system, and can change both administrator and user passwords and enable/disable password protection.
- **USER — Normal User:** Users only have access to live viewing, search, playback, and other functions. You may set up multiple user accounts with varying levels of access to the system.

11.1 Changing Passwords

To change the password for the administrator or user accounts:



1. Enter the main menu. Under **System**, click **Users** to open the **Users** tab.
2. Click the account you want to change the password for.

NOTE

For instructions on enabling user accounts, see 11.2 *Adding a New User*, page 45.

3. Click **Edit**.

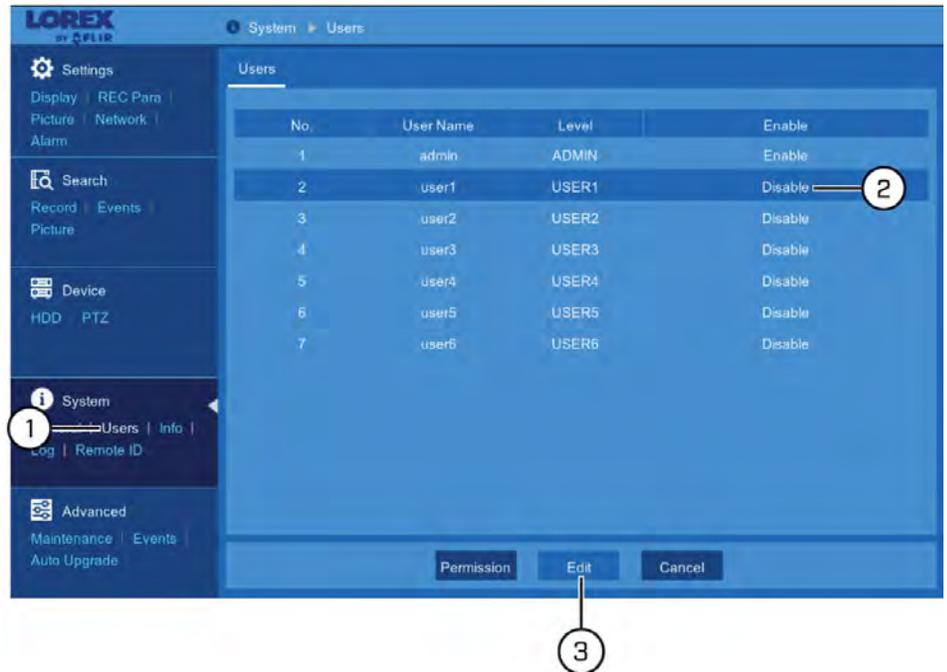


4. Click the field next to **User Name** to change the user name for the selected account.
5. Click the field next to **Password** to enter a new password.

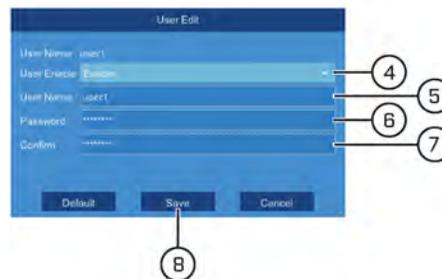
6. Click the field next to **Confirm** to reenter the password.
7. Click **Save**.

11.2 Adding a New User

To enable a new user account:



1. Enter the main menu. Under **System**, click **Users** to open the **Users** tab.
2. Click one of the user accounts that is currently disabled.
3. Click **Edit**.

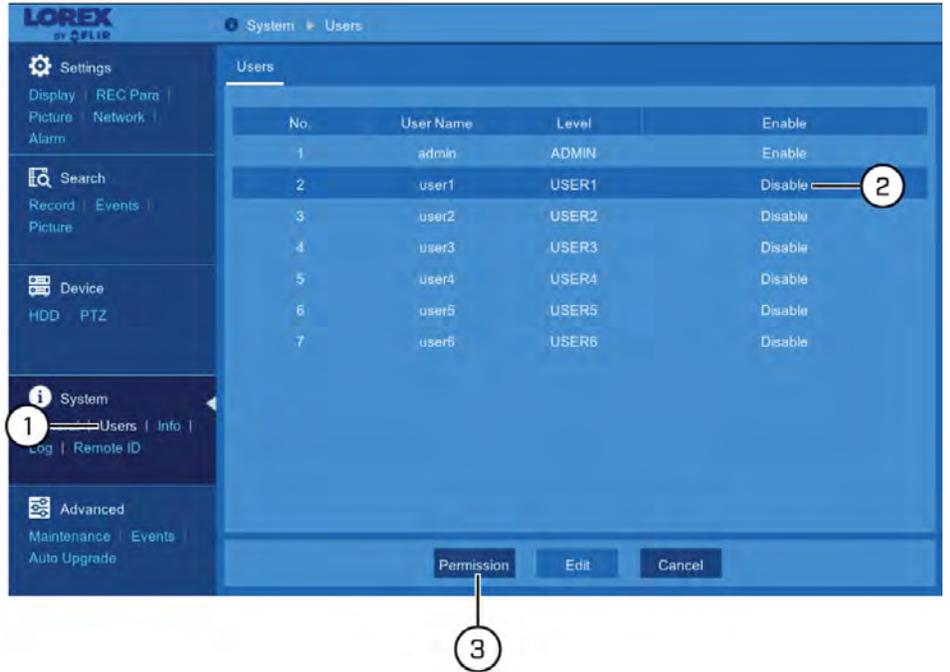


4. Select **Enable** from the dropdown next to **User Enable**.
5. Click the field next to **User Name** to change the user name for the account.
6. Click the field next to **Password** to enter the desired password.
7. Click the field next to **Confirm** to reenter the password.
8. Click **Save**.

11.3 Setting User Permissions

The administrator account is the only account that has full control of all system functions. You can enable or disable access to certain menus and functions of each user account.

To edit user permissions:

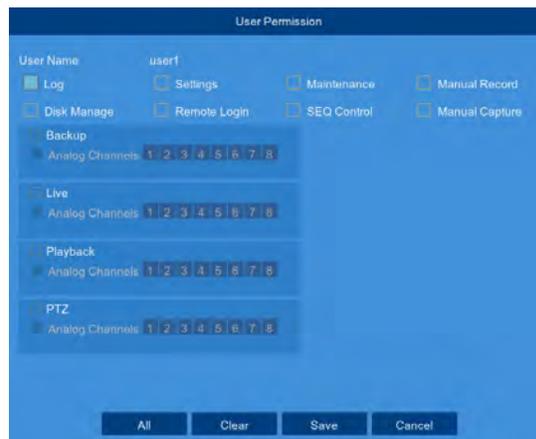


1. Enter the main menu. Under **System**, click **Users** to open the **Users** tab.
2. Click one of the user accounts.

 **NOTE**

For instructions on enabling user accounts, see 11.2 *Adding a New User*.

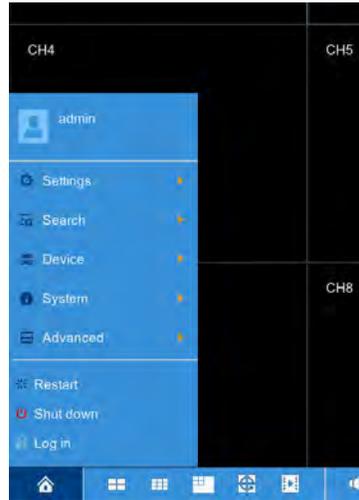
3. Click **Permission**.



4. Edit the user permissions to your preference:
 - Check the boxes next to any system menus or capabilities you would like the user to access.
 - Click **All** to check all boxes.
 - Click **Clear** to check none of the boxes.
5. Click **Save**.

To open the Main Menu:

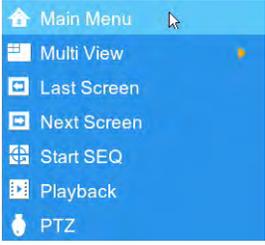
1. Click on the Main Menu button () on the taskbar from the live viewing screen.



2. Hover over one of the options in the menu to browse options in full view. Click to make a selection. If prompted, enter the user name (default: **admin**) and your secure password.

 **NOTE**

You can also access the Main Menu by right-clicking on the live view of any camera to open the Quick Menu, then select **Main Menu**:

A screenshot of a 'Quick Menu' overlay. The menu items are: 'Main Menu' (with a home icon and a mouse cursor hovering over it), 'Multi View', 'Last Screen', 'Next Screen', 'Start SEQ', 'Playback', and 'PTZ' (with a camera icon).

12.1 Main Menu Overview



1. **User name:** Displays the name of the user account that you are currently logged into the system with.
2. **Settings:** Configure options for display, recording parameters, network settings and more. See 12.2 *Settings Menu*, page 50 for full instructions on using the Settings menu.
3. **Search:** Search for video recordings and snapshots. See 12.3 *Search Menu*, page 72 for full instructions on using the Search menu.
4. **Device:** Configure HDD recording mode, format HDD and configure PTZ cameras. See 12.4 *Device Menu*, page 73 for full instructions on using the Device menu.
5. **System:** Configure system date and time, user profiles, and system information including logs. See 12.5 *System Menu*, page 76 for full instructions on using the System menu.
6. **Advanced:** Perform firmware upgrades or configure automatic upgrades. See 12.6 *Advanced Menu*, page 85 for full instructions on using the Advanced menu.
7. **Restart:** Restarts the DVR. You must enter the user name (default: **admin**) and your secure password before the unit restarts.
8. **Shut down:** Shuts down the DVR. You must enter the user name (default: **admin**) and your secure password before the unit shuts down.
9. **Log in / Log out:** Log in or log out of the unit. This is useful for switching between users.

12.1.1 Copying Channel Settings to Another Channel

Many parts of the DVR menu allow you to customize settings for only one channel at a time. In these cases, you can use the **Copy** function to copy your settings for one channel to others or all channels of the DVR.

To copy channel settings to another channel:

1. Set your preferences for one channel and click **Save**.

- Use the dropdown next to **Copy** to select the channel you wish to copy settings from. Use the dropdown next to **To** to select another channel or select **All** to copy to all connected channels, then click **Copy**.



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

12.2 Settings Menu

Configure options for display, recording parameters, network settings, and preferences for snapshots and motion detection.

12.2.1 Changing a Camera's On-Screen Display (OSD)

By default, the channel name, date and time are shown otop of your video recordings.

To change a camera's OSD:



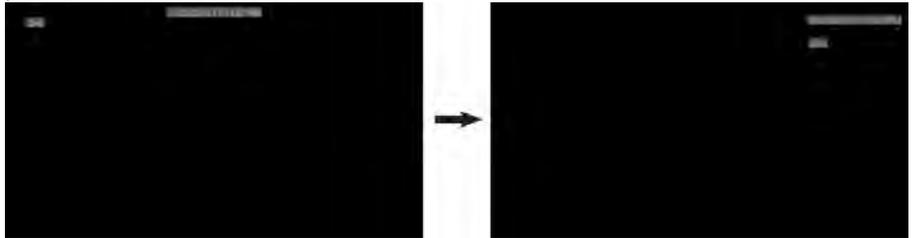
- Under **Settings**, click **Display**, then click on the **Live** tab.
- Use the dropdown next to **Channel** to select the channel you wish to configure the OSD for.
- Click the field next to **Channel Name** to change the name as it appears on the video overlay in live view and recordings.
- Use the dropdown next to **Show Name** to select **Enable** to show the channel name in live view and recordings, or **Disable** to hide it.

- Use the dropdown next to **Record Time** to select **Enable** to show timestamps in recordings, or **Disable** to hide them.

**CAUTION**

By default, the system is set to show timestamps in video recordings. It is **highly recommended** to show timestamps in recordings for legal reasons.

- Click **Setup** next to **OSD Position** to change where the timestamp and channel name appear on screen. Click-and-drag the timestamp and/or channel name to change their position on screen.

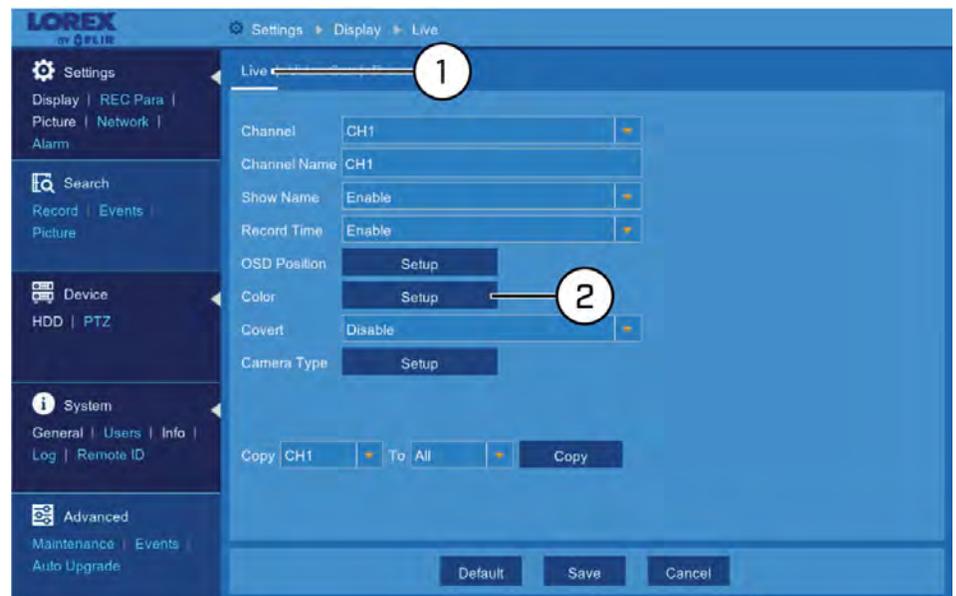


- Click **Save**.
- (OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.2 Adjusting Camera Image Color

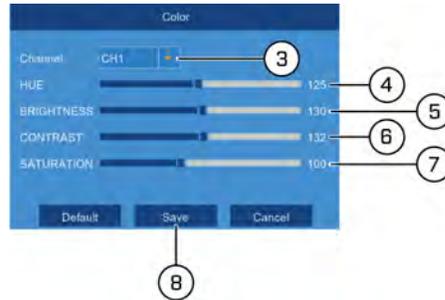
Adjust hue, brightness, contrast and saturation of a camera's image.

To adjust image color:



- Under **Settings**, click **Display**, then click on the **Live** tab.

- Click **Setup** next to **Color**.
The Color menu opens:



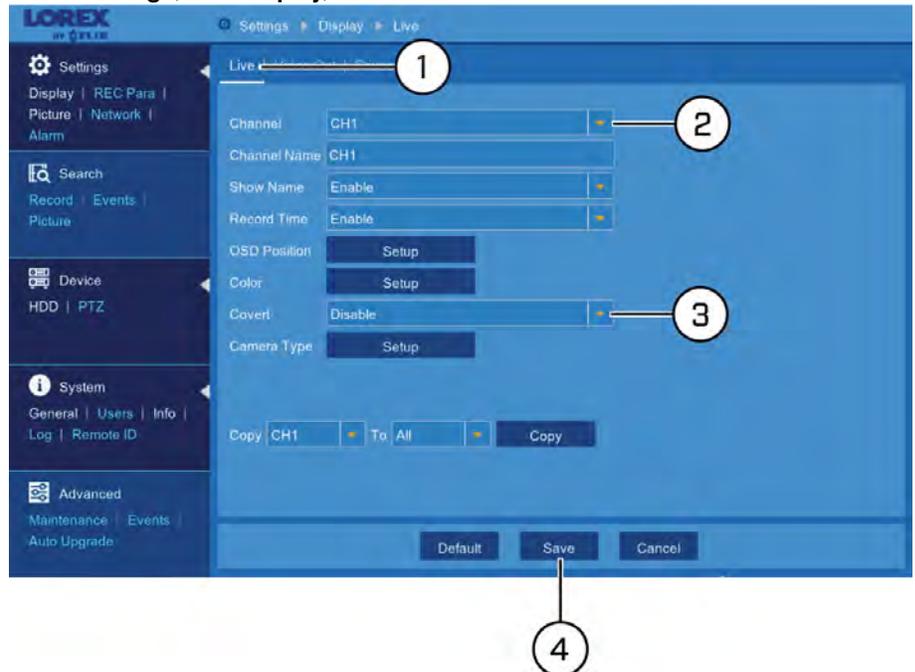
- Use the dropdown next to **Channel** to select the channel you wish to adjust color for.
- Click-and-drag the slider next to **HUE** to change the hue of the image.
- Click-and-drag the slider next to **BRIGHTNESS** to change the brightness of the image.
- Click-and-drag the slider next to **CONTRAST** to change the contrast of the image.
- Click-and-drag the slider next to **SATURATION** to change the saturation of the image.
- Click **Save**.

12.2.3 Setting up Covert Recording

Covert recording allows you to hide channels from the live view of the DVR while continuing to record video. You will also be able to see covert channels when viewing remotely using a computer or mobile app.

To enable Covert recording:

- Under **Settings**, click **Display**, then click on the **Live** tab.



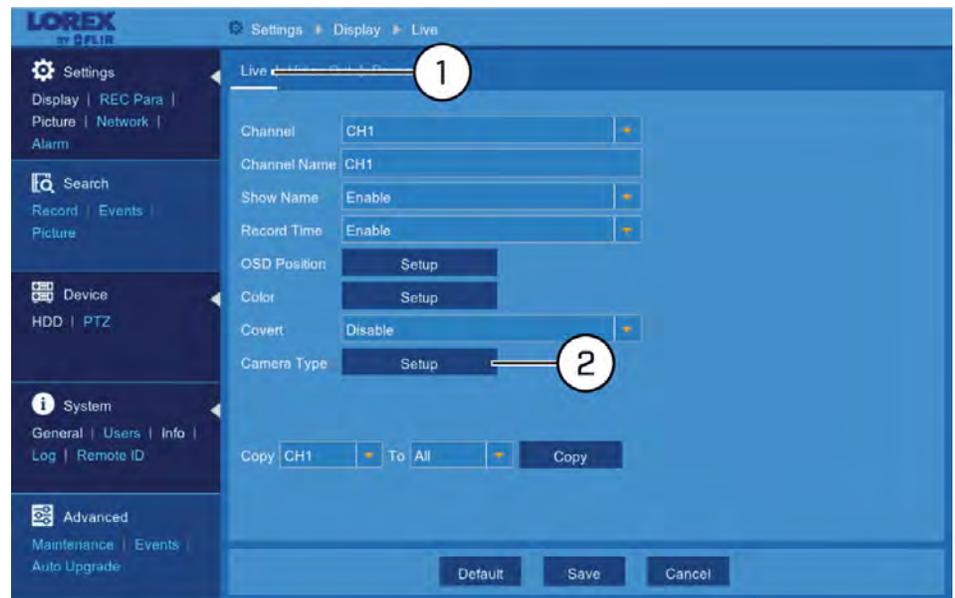
- Use the dropdown next to **Channel** to select a channel to set up covert recording for.
- Use the dropdown next to **Covert** to select **Enable**.

4. Click **Save**. The camera image for the selected channel will appear entirely black with the caption **Privacy Mode** to indicate that covert recording is enabled.
5. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.4 Camera Type

The DVR works with multiple types of HD analog cameras. By default, the system is set to automatically detect the type of camera so it works instantly with the recorder. For a full list of compatible cameras, visit lorextechnology.com/compatibility.

To access the camera type menu:



1. Under **Settings**, click **Display**, then click on the **Live** tab.
2. Click **Setup** next to **Camera Type**.
The Camera Setup menu opens.
3. Ensure channels are set to **AUTO**, which automatically recognizes the camera type for instant viewing:
 - **AUTO**: Automatically detects the camera type.
 - **AHD**: Advanced only (1080p AHD cameras).
 - **AHD-3MP**: Advanced only (3MP AHD cameras).
 - **AHD-4MP**: Advanced only (4MP AHD cameras).
 - **TVI**: Advanced only (HD-TVI cameras).
 - **CVI**: Advanced only (HD-CVI cameras).
4. Click **Save**.

12.2.5 Changing the DVR's Output Resolution

To optimize display, you can change the output resolution of your DVR to match the maximum supported resolution of your monitor.

 **NOTE**

Maximum supported output resolutions:

- Up to 1080p resolution using a VGA cable (not included).
- Up to 4K resolution using the included HDMI cable (4K monitor or TV required — 8/16-channel recorders only, 4-channel recorders support a maximum of 1080p output resolution).

To change the DVR's output resolution:



1. Under **Settings**, click **Display**, then click on the **Video Out** tab.
2. Use the dropdown next to **VGA/HDMI Resolution** to select the resolution of your monitor or TV.
3. **(OPTIONAL)** If you are experiencing cropping of the DVR's display, it is recommended that you check the **Support Overscan** box to optimize your display. This is typically only an issue for those using older Cathode Ray Tube (CRT) monitors.
4. Click **Save**.

12.2.6 Adjusting Menu Transparency

You can increase or decrease the transparency of the on-screen menus and the Taskbar.

To adjust the transparency of on-screen menus:



1. Under **Settings**, click **Display**, then click on the **Video Out** tab.
2. Click-and-drag the slider next to **Transparency** to adjust transparency.
3. Click **Save**.

12.2.7 Configuring Sequence Mode

When Sequence Mode is enabled, the DVR cycles through connected cameras to show during live viewing. You can configure the DVR to cycle through one channel at a time or show a group of channels in one screen, as well as how long each channel or group is shown on screen before changing over.

To enable Sequence Mode:

- Click  on the Taskbar.
- OR
- Right-click in live viewing to open the Quick Menu, then click **Start SEQ.**

To configure Sequence Mode:



1. Under **Settings**, click **Display**, then click on the **Video Out** tab.
2. Use the dropdown next to **SEQ Mode** to set how many channels appear on screen at a time while Sequence Mode is enabled.
3. Click the field next to **SEQ Dwell Time** to enter how many seconds (1–300) each channel or group of channels is shown on screen before cycling to the next channel or group.
4. Click **Save**.

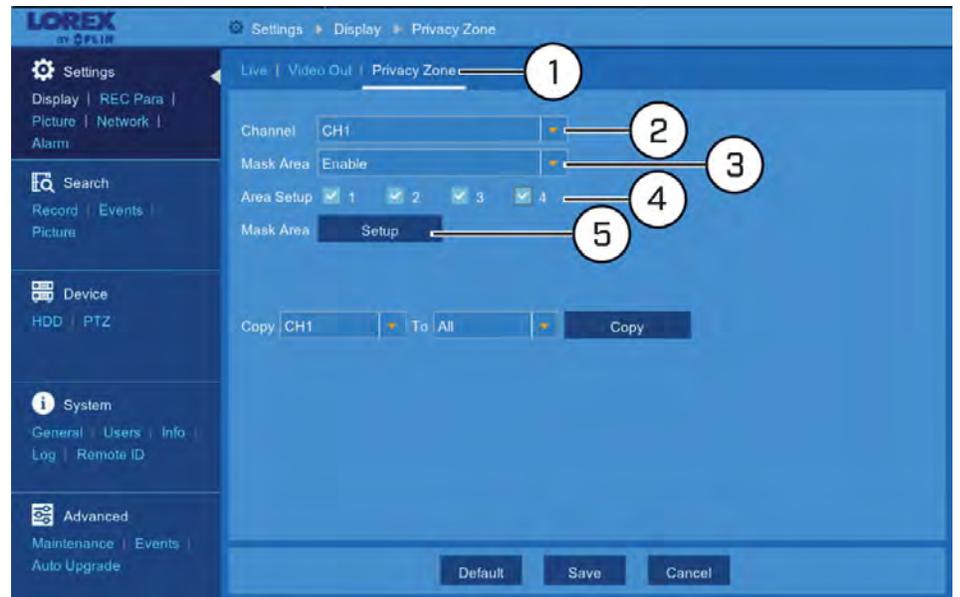
12.2.8 Configuring Privacy Zone(s)

A **privacy zone** blocks out a portion of the camera image with a black box, letting you have privacy in certain parts of a camera image. You can configure up to 4 privacy zones per channel.

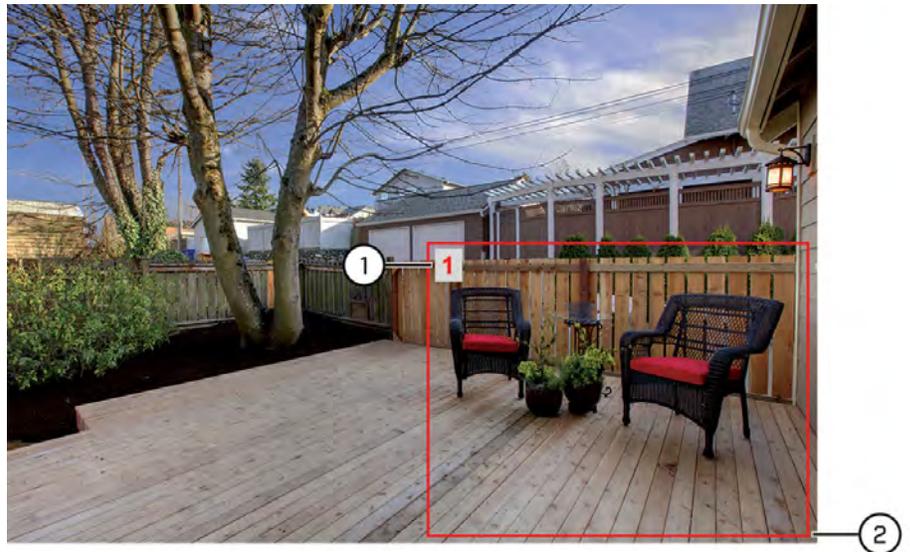
CAUTION

Areas covered by privacy zones will not be visible in video recordings.

To configure privacy zone(s):



1. Under **Settings**, click **Display**, then click on the **Privacy Zone** tab.
2. Use the dropdown next to **Channel** to select a channel to set a privacy zone for.
3. Select **Enable** from the dropdown next to **Mask Area**.
4. Check the boxes next to **Area Setup** for each privacy zone you wish to set for the selected channel. For example, if you wish to set up 4 privacy zones, check all 4 of the boxes.
5. Click **Setup**. The camera image appears in full-screen. Click-and-drag to draw privacy zones on the camera image. Right-click to return to the menu.



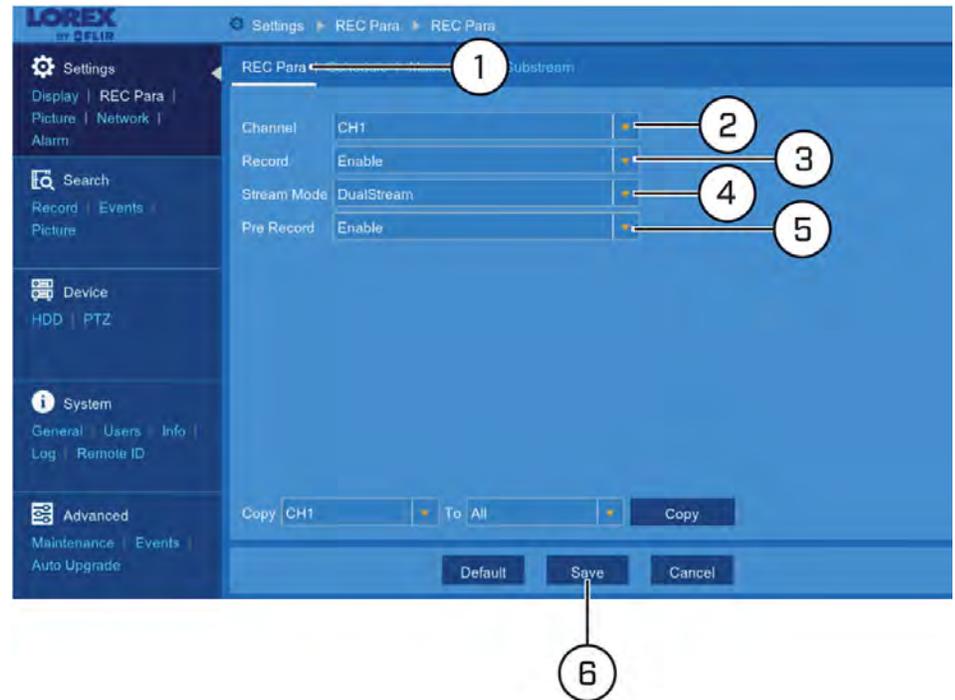
- 5.1. Click the number in the top-left corner of an existing privacy zone to move it to another area of the image.
- 5.2. Click-and-drag to the edge of an existing privacy zone to resize it.
6. Click **Save**.

- (OPTIONAL) Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.9 Configuring Recording Parameters

Configure basic video recording options.

To configure recording parameters:



- Under **Settings**, click **REC Para** to open the **REC Para** tab.
- Use the dropdown next to **Channel** to select a channel to set the recording parameters for.
- Select **Enable** to allow recording on the selected channel.
- Use the dropdown next to **Stream Mode** to configure the recording mode. Select **DualStream** to record using mainstream recording settings while using the substream for remote viewing, or select **MainStream** to use mainstream recording only.



CAUTION

You must set the **Stream Mode** to **DualStream** in order to play back recordings using the FLIR Secure mobile app. Live viewing will not be affected.



NOTE

To configure mainstream and substream settings, see 12.2.11 *Configuring System Recording Quality (Mainstream and Substream)*, page 60.

- Select **Enable** from the dropdown next to **Pre Record** to enable pre-recording for motion events. To setup motion detection preferences, see 12.2.20 *Configuring Motion Detection Settings*, page 71.
- Click **Save**.

- (OPTIONAL) Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

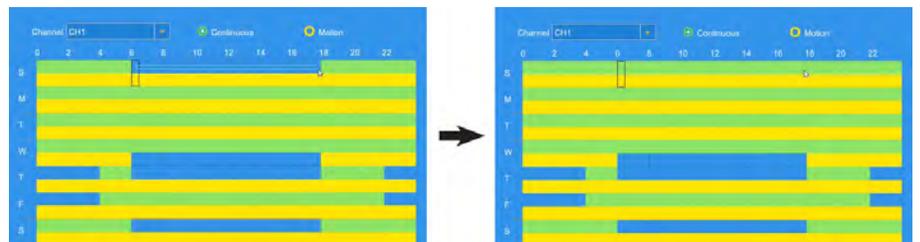
12.2.10 Setting the Recording Schedule

The recording schedule determines the time periods that the system will record video during. You can set separate schedules for continuous and motion recording within the same channel.

To set a recording schedule:



- Under **Settings**, click **REC Para**, then click on the **Schedule** tab.
- Use the dropdown next to **Channel** to select a channel to set the recording schedule for.
- Select **Continuous** to edit the continuous recording schedule (represented by **green** bars), or **Motion** to edit the motion recording schedule (**yellow** bars).
- Click or click-and-drag over existing bars to remove sections from the recording schedule. For blank areas of the schedule, click or click-and-drag to add sections to the recording schedule.



- Click **Save**.
- (OPTIONAL) Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.11 Configuring System Recording Quality (Mainstream and Substream)

The system uses 2 recording streams: the **Mainstream** is the high-quality stream used for live viewing and recording, while the **Substream** is a lower quality stream used for remote viewing and playback. This allows you to record high-quality video locally, as well as re-view video remotely with relatively low bandwidth requirements.

- For instructions on configuring the **mainstream**, see 12.2.11.1 *Configuring the Mainstream*, page 60.
- For instructions on configuring the **substream**, see 12.2.11.2 *Configuring the Substream*, page 61.

12.2.11.1 Configuring the Mainstream



1. Under **Settings**, click **REC Para**, then click on the **Mainstream** tab.
2. Use the dropdown next to **Channel** to select a channel to set mainstream for.
3. Use the dropdown next to **Resolution** to set the recording resolution.
4. Use the dropdown next to **FPS** to set the number of frames per second.
5. Use the dropdown next to **Bitrate Control** to set the control method. Select **CBR** (default) to use a Constant Bit Rate, or **VBR** for a Variable Bit Rate. For **VBR**, use the second dropdown to select a quality level for the video stream.
6. Use the dropdown next to **Bitrate Mode** to set the bitrate mode. Select **Predefined** to select a preset value from the **Bitrate** dropdown, or **User-defined** to enter a custom bitrate.
7. Use the dropdown next to **Bitrate** to set the bitrate mode (predefined bitrate mode), or enter a custom bitrate between 1024-8192Kbps (user-defined bitrate mode).
8. Check **Audio** to enable audio (audio-enabled camera required).
9. Click **Save**.
10. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.11.2 Configuring the Substream

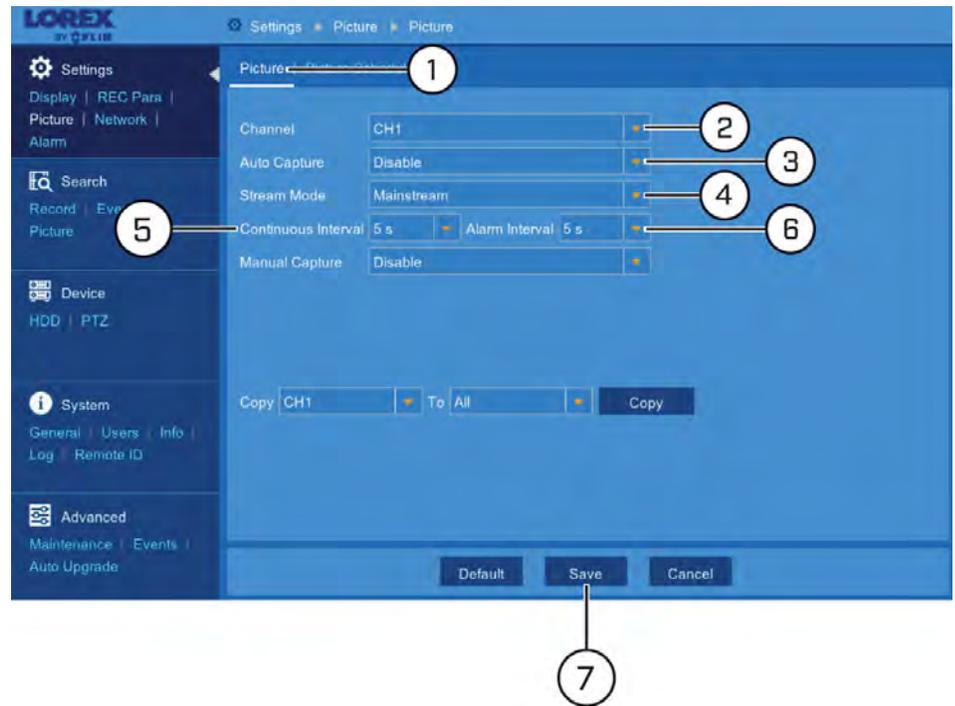


1. Under **Settings**, click **REC Para**, then click on the **Substream** tab.
2. Use the dropdown next to **Channel** to select a channel to set substream for.
3. Use the dropdown next to **Resolution** to set the recording resolution.
4. Use the dropdown next to **FPS** to set the number of frames per second.
5. Use the dropdown next to **Bitrate Control** to set the control method. Select **CBR** (default) to use a **Constant Bit Rate**, or **VBR** for a **Variable Bit Rate**. For **VBR**, use the second dropdown to select a quality level for the video stream.
6. Use the dropdown next to **Bitrate Mode** to set the bitrate mode. Select **Predefined** to select a preset value from the **Bitrate** dropdown, or **User-defined** to enter a custom bitrate.
7. Use the dropdown next to **Bitrate** to set the bitrate mode (predefined bitrate mode), or enter a custom bitrate between 1024-8192Kbps (user-defined bitrate mode).
8. Check **Audio** to enable audio (audio-enabled camera required).
9. Click **Save**.
10. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.12 Configuring Auto Capture

You can use **Auto Capture** to automatically capture snapshots of a camera image at repeating intervals throughout the day or during motion events. Auto Capture can help to conserve hard drive space during times when video recording is not required. By default, Auto Capture is disabled.

To configure Auto Capture:



1. Under **Settings**, click **Picture**, then click on the **Picture** tab.
2. Use the dropdown next to **Channel** to select a channel to configure Auto Capture for.
3. Select **Enable** from the dropdown next to **Auto Capture**.
4. Use the dropdown next to **Stream Mode** to select **Mainstream** or **Substream** for Auto Captures.
5. Select a time period from the dropdown next to **Continuous Interval**. A snapshot will be captured at every continuous interval even if there is no activity in the camera image.
6. Select a time period from the dropdown next to **Alarm Interval**. A snapshot will be captured at every alarm interval while a motion event is occurring.
7. Click **Save**.
8. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.13 Setting a Picture Schedule for Auto Capture

The picture schedule determines the time periods that the system will use Auto Capture during. You can set separate schedules for continuous and motion snapshots within the same channel.

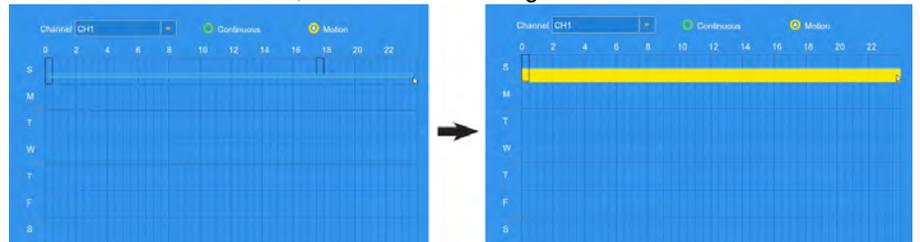
Prerequisites:

- You must have enabled Auto Capture on the selected channel for the picture schedule to take effect. See 12.2.12 *Configuring Auto Capture*, page 61 for details on enabling and configuring Auto Capture.

To set a picture schedule:



1. Under **Settings**, click **Picture**, then click on the **Picture Schedule** tab.
2. Use the dropdown next to **Channel** to select a channel to set the picture schedule for.
3. Select **Continuous** to edit the continuous capture schedule (represented by **green** bars), or **Motion** to edit the motion capture schedule (**yellow** bars).
4. Click or click-and-drag over existing bars to remove sections from the schedule. For blank areas of the schedule, click or click-and-drag to add sections to the schedule.

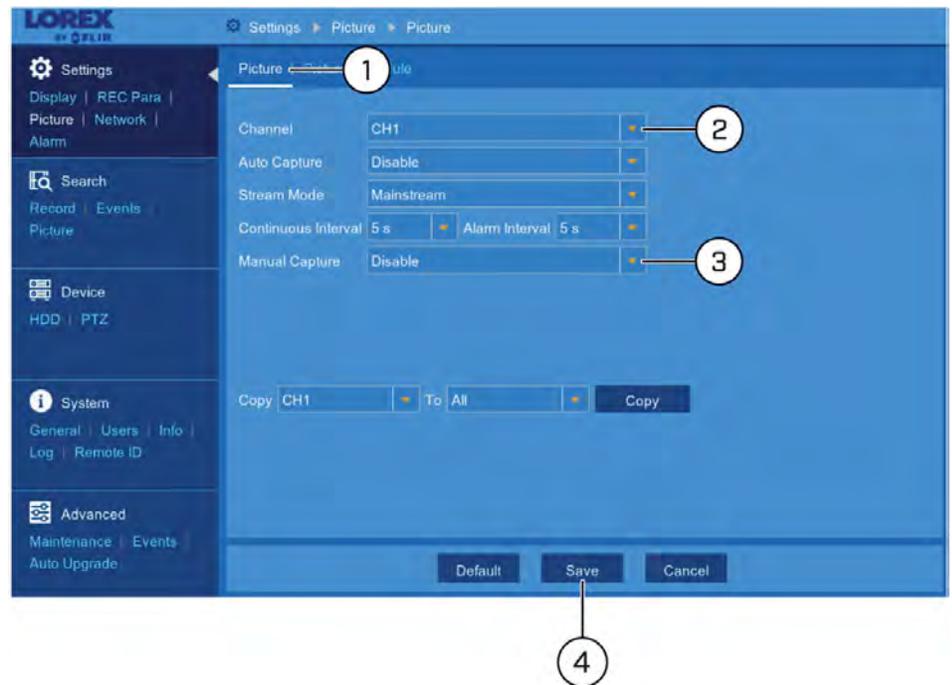


5. Click **Save**.
6. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.14 Enabling Manual Capture

Manual Capture allows you to quickly take snapshots from enabled channels.

To enable Manual Capture:

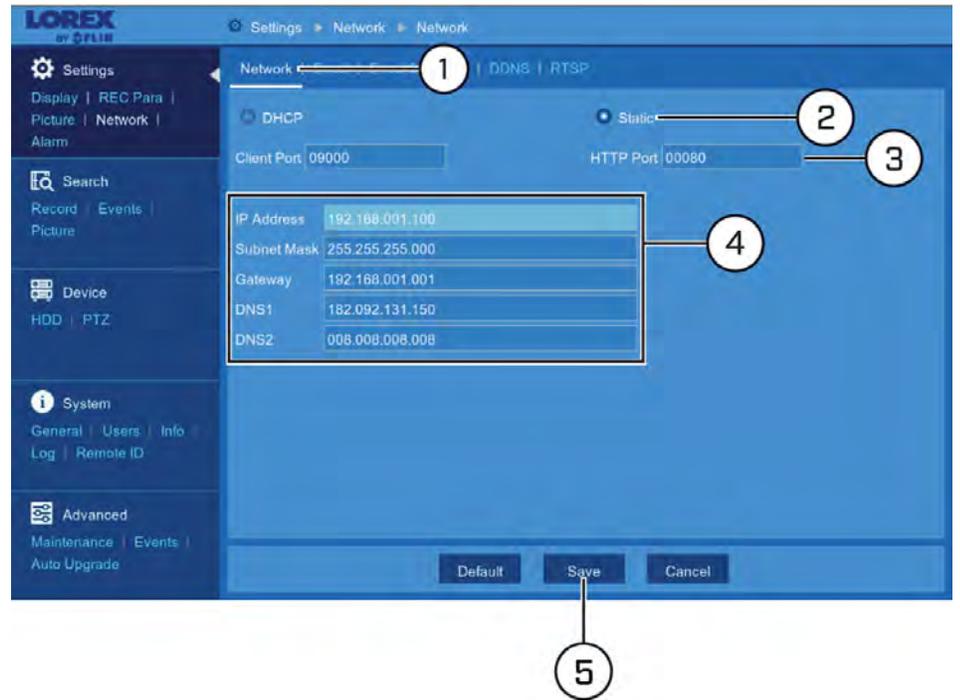


1. Under **Settings**, click **Picture**, then click on the **Picture** tab.
2. Use the dropdown next to **Channel** to select a channel to enable Manual Capture for.
3. Select **Enable** from the dropdown next to **Manual Capture**.
4. Click **Save**.
You can now use Manual Capture on the selected channel using the Mini Menu. For details on using Manual Capture, see 7.3 *Using the Mini Menu*, page 17.
5. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.15 Configuring Basic Network Settings

The basic network menu allows you to change port numbers if needed and configure the network protocol type (**DHCP** or **static**).

To configure basic network settings:



1. Under **Settings**, click **Network** to open the **Schedule** tab.
2. Select **DHCP** (default — recommended) or **Static**.

 NOTE
<p>Selecting Static requires you to edit the IP Address, Subnet Mask, Gateway and DNS settings. It is recommended that only advanced users use this feature.</p>

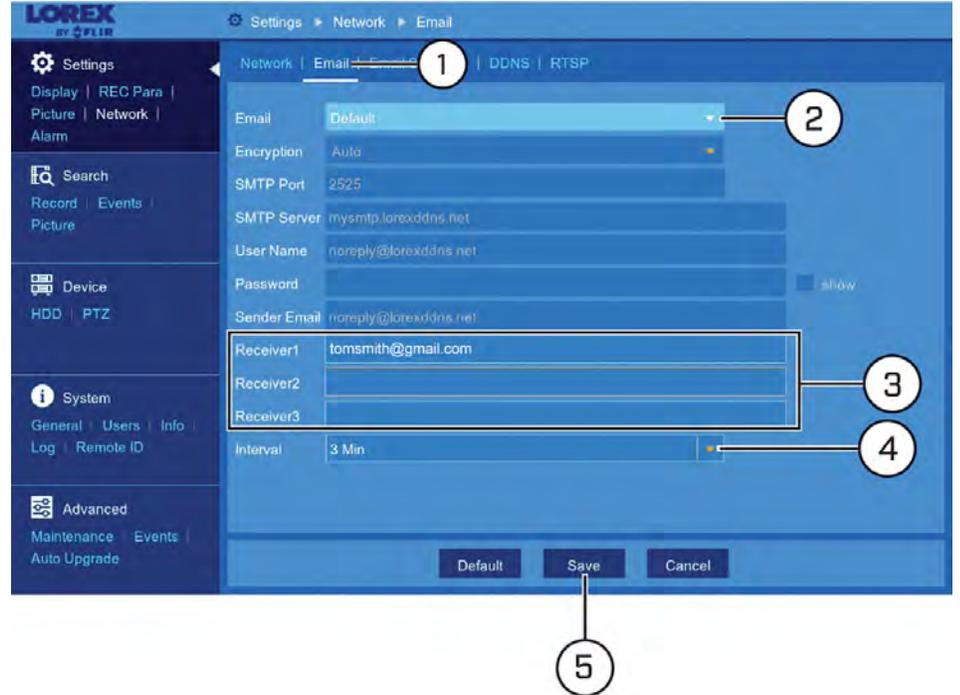
3. Click the fields next to **Client Port** and **HTTP Port** to change port numbers if required.
4. **(FOR STATIC IP ONLY)** Click the fields next to **IP Address**, **Subnet Mask**, **Gateway** and **DNS** to edit as required.
5. Click **Save**.

12.2.16 Setting up Email Notifications

You can configure the system to send email notifications about important activity from your security system. To have the option of using Lorex's free email server (recommended) or using a different one.

- For instructions on enabling email notifications using the Lorex server, see 12.2.16.1 *Email Notifications — Using the Lorex server (recommended)*, page 66.
- For instructions on enabling email notifications using a different mailing server, see 12.2.16.2 *Email Notifications — Using your own server information*, page 67.

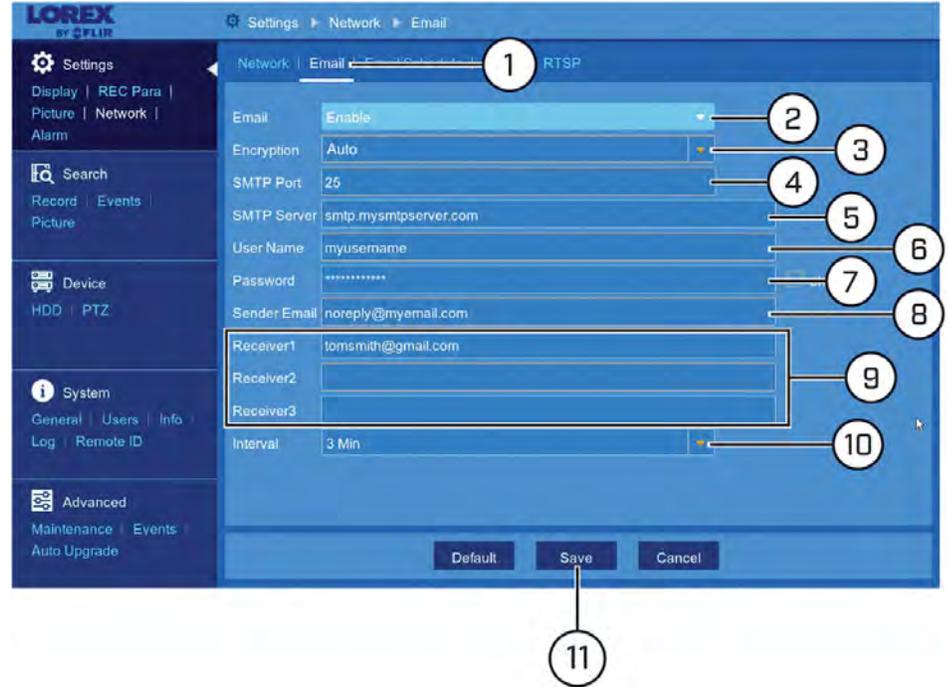
12.2.16.1 Email Notifications — Using the Lorex server (recommended)



1. Under **Settings**, click **Network**, then click on the **Email** tab.
2. Select **Default** from the dropdown next to **Email** to enable the default Lorex mail server.
3. Click to enter up to 3 email addresses that will receive email notifications from the system.
4. Use the dropdown next to **Interval** to set the minimum amount of time between email notifications. This can be used to limit the number of notifications you receive throughout the day.
5. Click **Save**.

Email notifications are now enabled. The default schedule is set to send email notification whenever motion is detected or a system warning occurs. To configure the schedule for email notifications, see 12.2.17 *Setting an Email Schedule*, page 67.

12.2.16.2 Email Notifications — Using your own server information



1. Under **Settings**, click **Network**, then click on the **Email** tab.
2. Select **Enable** from the dropdown next to **Email** to enable email notifications using a custom mail server.
3. Use the dropdown next to **Encryption** to select an encryption type.
4. Click the field next to **SMTP Port** to enter the SMTP port.
5. Click the field next to **SMTP Server** to enter the URL used by your mail server.
6. Click the field next to **User Name** to enter your user name for the mail server.
7. Click the field next to **Password** to enter your password for the mail server.
8. Click the field next to **Sender Email** to enter the sending email address. This can be any email of your choice.
9. Click to enter up to 3 email addresses that will receive email notifications from the system.
10. Use the dropdown next to **Interval** to set the minimum amount of time between email notifications. This can be used to limit the number of notifications you receive throughout the day.
11. Click **Save**.
Email notifications are now enabled. The default schedule is set to send email notification whenever motion is detected or a system warning occurs. To configure the schedule for email notifications, see 12.2.17 *Setting an Email Schedule*, page 67.

12.2.17 Setting an Email Schedule

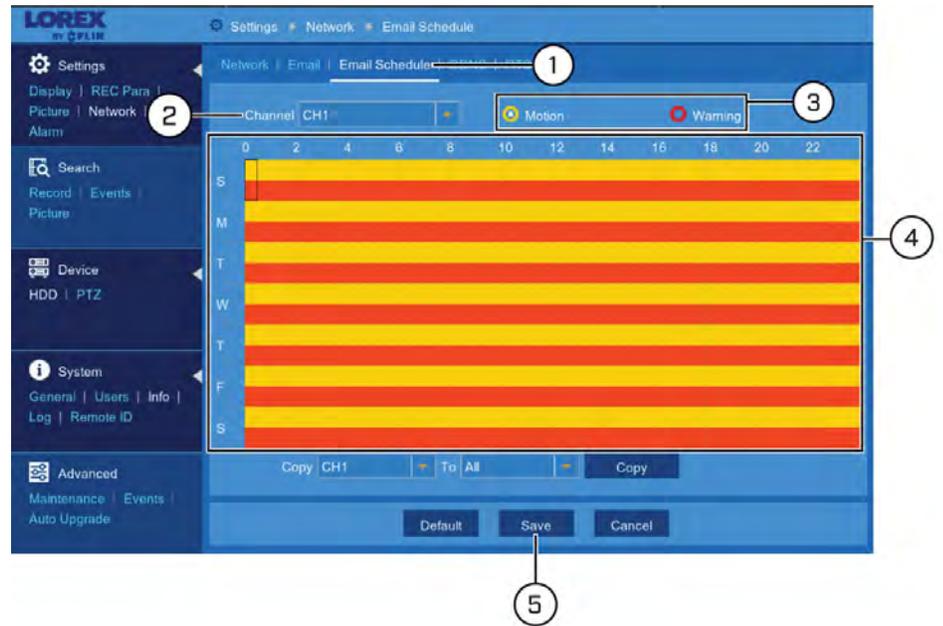
The email schedule determines the time periods that the system will send out email notifications. You can set separate schedules for motion events and system warnings per channel.

Prerequisites:

- You must enable email notifications for the email schedule to take effect.

- To enable email notifications using the default Lorex email server, see 12.2.16.1 *Email Notifications — Using the Lorex server (recommended)*, page 66.
- To enable email notifications using custom mail server information, see 12.2.16.2 *Email Notifications — Using your own server information*, page 67.

To set an email schedule:



1. Under **Settings**, click **Network**, then click on the **Email Schedule** tab.
2. Use the dropdown next to **Channel** to select a channel to set the email schedule for.
3. Select **Motion** to edit the motion notification schedule (represented by **yellow** bars), or **Warning** to edit the system warning notification schedule (**red** bars).
4. Click or click-and-drag over existing bars to remove sections from the recording schedule. For blank areas of the schedule, click or click-and-drag to add sections to the recording schedule.



5. Click **Save**.
6. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.2.18 Configuring DDNS Settings

The primary connectivity option for this DVR uses FLIR Cloud Services to connect to your system over the Internet without requiring port forwarding or DDNS registration.

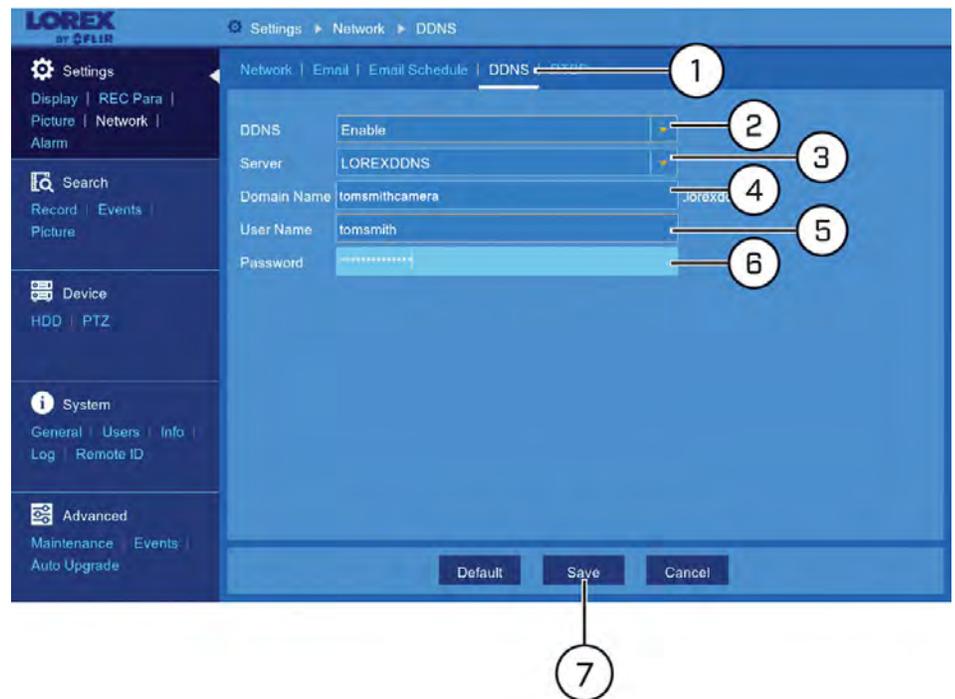
Lorex DDNS is available as an optional connectivity option. See 19 *DDNS Setup (Advanced)*, page 140 for details.

- For details on connecting to your system over the Internet using a smartphone or tablet, see 14 *FLIR Secure: Connecting to the DVR Using a Mobile Device*, page 124.
- For details on connecting to your system over the Internet using a PC or Mac computer, see 13 *FLIR Client 12 for PC / Mac*, page 91.

Prerequisites:

- You must create a free Lorex DDNS account. See 19 *DDNS Setup (Advanced)*, page 140 for full setup instructions.

To configure DDNS settings:



1. Under **Settings**, click **Network**, then click on the **DDNS** tab.
2. Select **Enable** from the dropdown next to **DDNS**.
3. Select **LOREXDDNS** from the dropdown next to **Server**.
4. Click the field next to **Domain Name** to enter the **URL** shown under **My DDNS Devices** in your My Lorex account (for example, <http://www.tomsmith.lorexddns.net>).
5. Click the field next to **User Name** to enter the **Username** shown under **My DDNS Devices** in your My Lorex account
6. Click the field next to **Password** to enter the **Password** shown under **My DDNS Devices** in your My Lorex account
7. Click **Save**.

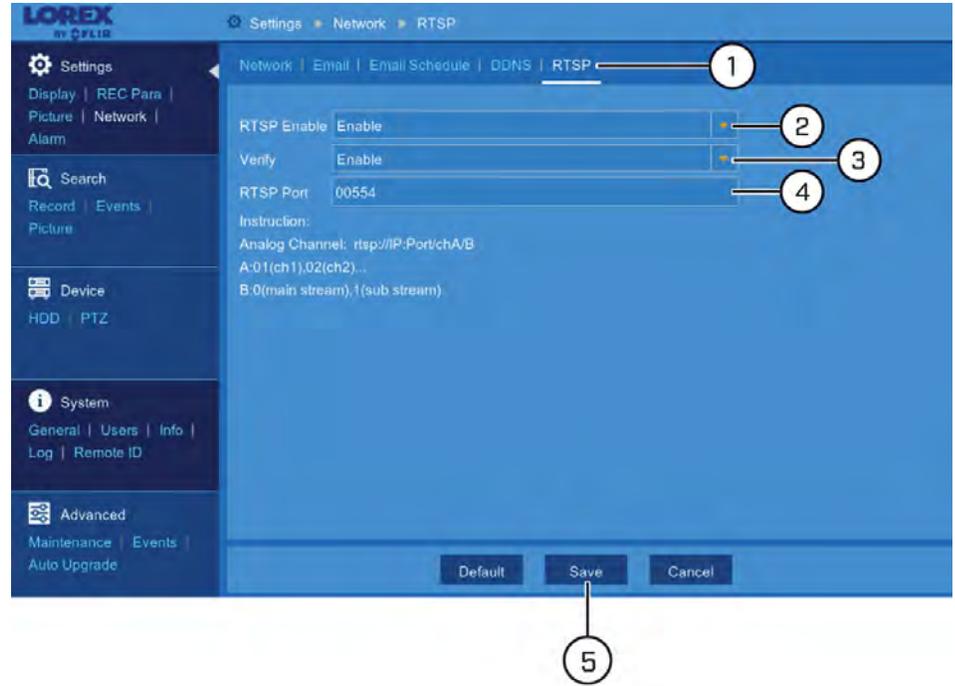
12.2.19 Configuring RTSP Streaming (Advanced)

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

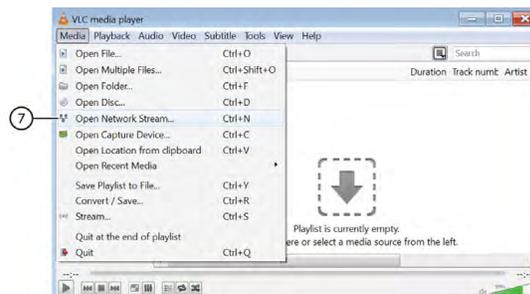
 **NOTE**

The instructions in this section are using VLC Media Player. VLC Media Player is a free software provided at www.videolan.org. FLIR cannot provide support for VLC Media Player or any other 3rd party software. Please contact the software vendor for technical support related to 3rd party software applications.

To connect to the video stream using VLC Media Player:



1. Under **Settings**, click **Network**, then click on the **RTSP** tab.
2. Select **Enable** from the dropdown next to **RTSP Enable**.
3. Select **Enable** from the dropdown next to **Verify**.
4. If needed, click the field next to **RTSP Port** to change the port number.
5. Click **Save**.
6. Open VLC on a computer in the same network as your DVR.
7. Click **Media**, then click **Open Network Stream....**



8. Enter the RTSP address in the following format:
 - **rtsp://[IP address of the DVR]:[RTSP Port]/chA/B**
 - **A** = Channel number (expressed as **01** for channel 1, **02** for channel 2, etc.)
 - **B** = Video stream (**0** for mainstream, **1** for substream)
 - **Example:** *rtsp://192.168.1.128:554/ch01/0* will stream video from channel 1 of the DVR using the mainstream.
9. Click **Play**. The video stream will open in VLC Media Player.
If it does not connect, check the following:
 - Check that the syntax on the RTSP address is correct.
 - Make sure the system is connected to the network.
 - If connecting over the Internet, make sure to use the remote IP address of the system and that the RTSP port is open.

12.2.20 Configuring Motion Detection Settings

The system supports motion detection on any connected camera. You can determine the sensitivity as well as the active area for motion detection per channel.

To enable and configure motion detection:



1. Under **Settings**, click **Alarm** to open the **Motion** tab.
2. Use the dropdown next to **Channel** to select a channel to configure motion detection for.
3. Select **Enable** from the dropdown next to **Enable**.
4. Use the dropdown next to **Buzzer** to select **Enable** if you would like the DVR to make an alarm sound when motion is detected, or select **Disable** to keep the DVR silent during motion events.
5. Use the dropdown next to **Sensitivity** to select a sensitivity level for motion events. The lower the sensitivity value, the more movement is required to trigger motion detection.

6. Click **Setup** to set the active area for motion detection. The camera image appears with a red grid overlay on the entire image, letting you know that motion detection is active for the entire image. Click or click-and-drag to add/remove area from the red grid.

**NOTE**

Motion detection will be **disabled** for areas of the image without red overlay. In the example image above, only motion which occurs close to the lawn chairs will trigger motion detection. Disabling motion detection in certain areas of the image is an effective way to eliminate unwanted recordings and notifications, such as those caused by trees blowing in the wind or street traffic seen through a window.

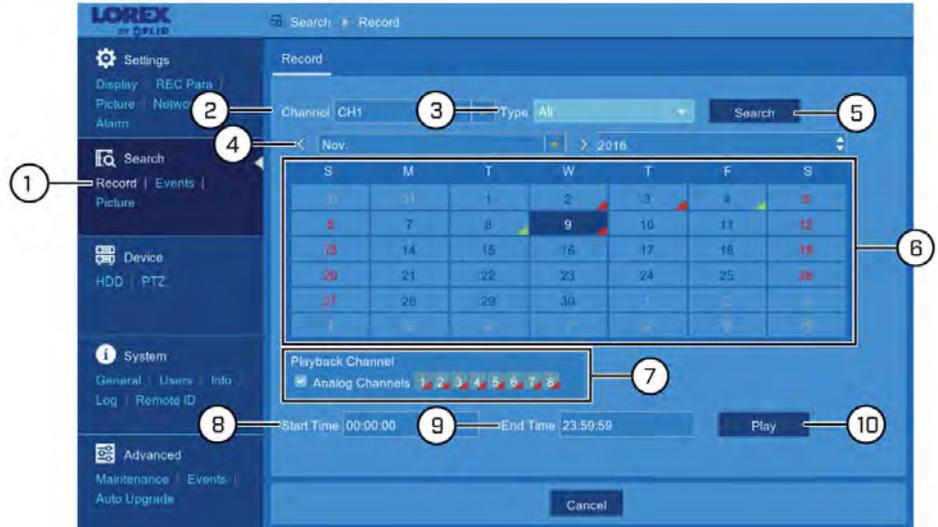
7. Use the dropdown next to **Post Recording** to set the amount of time the system will record video for after motion is detected.
8. Check boxes to your preference:
 - **Show Message:** Check to have a message appear on the system when motion is detected.
 - **Send Email:** Check to receive an email notification when motion is detected. Ensure you have enabled email notifications (see 12.2.16 *Setting up Email Notifications*, page 65 for details).
 - **Full Screen:** Check to have video from the selected channel appear in full screen when motion is detected.
9. Check boxes to your preference:
 - **Record Channel:** Check to record video from the selected channel when motion is detected.
 - **Analog Channels:** Click on the numbered boxes representing channels that should also be recorded when motion is detected on the selected channel. Check the box next to **Analog Channels** to select all.
10. Click **Save**.
11. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

12.3 Search Menu

Search for and play back recordings. The Search menu also allows you to search for events and snapshots, which you can backup to a USB flash drive (not included). For details on searching and backing up events and snapshots, see 10 *Search & Backup*, page 32.

12.3.1 Search for Video Recordings

To search for video recordings:



1. Under **Search**, click **Record** to open the **Record** tab.
2. Use the dropdown next to **Channel** to select a channel to search for video from, or select **All** to search all channels.
3. Use the dropdown next to **Type** to select the recording type.
4. Use the dropdown or arrows to select the month to search for video from.
5. Click **Search**.
6. The calendar view refreshes. Days with recordings are shown using a green arrow for continuous recordings, and a red arrow for motion recordings. Click on the day you would like to play back.
7. Click the numbered boxes representing channels to play back simultaneously, or check the box next to **Analog Channels** to select all
8. Click the field next to **Start Time** to enter the start time (24-hour format).
9. Click the field next to **Start Time** to enter the start time (24-hour format).
10. Click **Play** to start playback.
For details on using video playback, see 9 *Playback*, page 25.

12.3.2 Search for Events

Under **Search**, click **Events** to open the event search menu. For full instructions on searching for and backing up events to a USB flash drive (not included), see 10 *Search & Backup*, page 32.

12.3.3 Search for Snapshots

Under **Search**, click **Picture** to open the snapshot search menu. For full instructions on searching for and backing up snapshots to a USB flash drive (not included), see 10 *Search & Backup*, page 32.

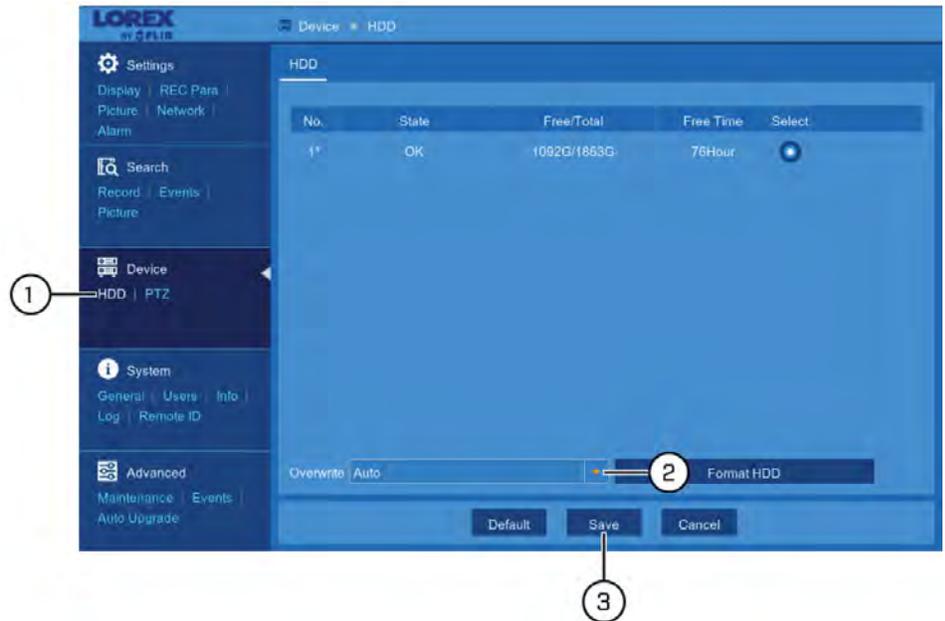
12.4 Device Menu

Configure hard drive and PTZ camera options.

12.4.1 Configuring Hard Drive Overwrite

By default, the hard drive in your DVR is set to overwrite automatically, meaning that the system deletes the oldest footage when the hard drive is full to make way for new recordings. You can also select a number of days or hours the system should retain data for. For example, if you select 30 days, the hard drive will only overwrite recordings that are at least 30 days old.

To configure hard drive overwrite:



- Under **Device**, click **HDD** to open the **HDD** tab.
- Use the dropdown next to **Overwrite** to select the overwrite mode.
 - Auto:** Deletes the oldest saved footage when the hard drive is full.
 - 1–90 Days:** Keeps footage for as long as specified before overwriting. Ensure your hard drive is large enough to retain recordings for as long as you have specified.
 - Off:** No footage will be overwritten.



CAUTION

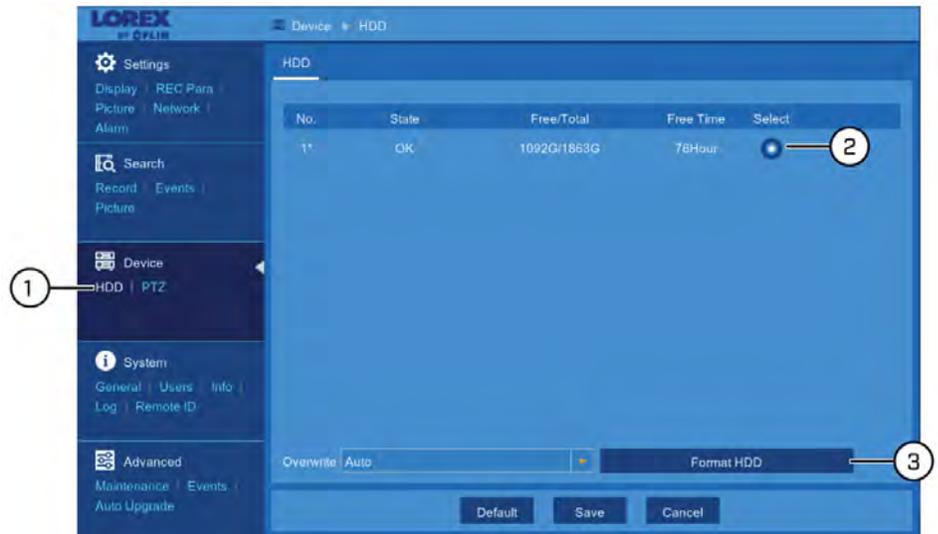
If you turn off overwrite and your hard drive fills up with footage, the system will stop recording.

- Click **Save**.

12.4.2 Formatting the Hard Drive

Formatting the hard drive deletes all saved files from the hard drive. It is recommended to format any newly-installed hard drives before recording.

To format the hard drive:



1. Under **Device**, click **HDD** to open the **HDD** tab.
2. Select the hard drive you would like to format.
3. Click **Format HDD**.
4. Enter your DVR's user name (default: **admin**) and secure password to begin formatting the drive.



CAUTION

Formatting the hard drive deletes all saved files. **This step cannot be undone.**

12.4.3 Configuring PTZ Cameras

For the DVR to communicate with PTZ cameras (sold separately), you must configure them using the main menu. To find the correct values to enter into the menu below, see the instruction manual provided with your PTZ camera.

Prerequisites:

- Connect your PTZ camera to the DVR. For details, see 17 *Connecting PTZ Cameras to the DVR*, page 138.

To configure PTZ cameras:



1. Under **Device**, click **PTZ** to open the **PTZ** tab.
2. Use the dropdown next to **Channel** to select the channel your PTZ camera is connected to.
3. Select the PTZ camera's protocol from the dropdown next to **Protocol**.
4. Select the PTZ camera's baud rate from the dropdown next to **BaudRate**.
5. Select the PTZ camera's data bit from the dropdown next to **DataBit**.
6. Select the PTZ camera's stop bit from the dropdown next to **StopBit**.
7. Select the PTZ camera's parity from the dropdown next to **Parity**.
8. Select **Enable** from the dropdown next to **Cruise**.
9. Enter the PTZ ID number in the field next to **Address**.

 NOTE
If connecting multiple PTZ cameras, you cannot use the same ID number for more than one PTZ camera.

10. Click **Save**. You will now be able to control your PTZ camera using the DVR. For details on using and controlling the PTZ camera, see 7.5 *Using PTZ Controls*, page 20.
11. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 12.1.1 *Copying Channel Settings to Another Channel*, page 49 for details on using the copy function.

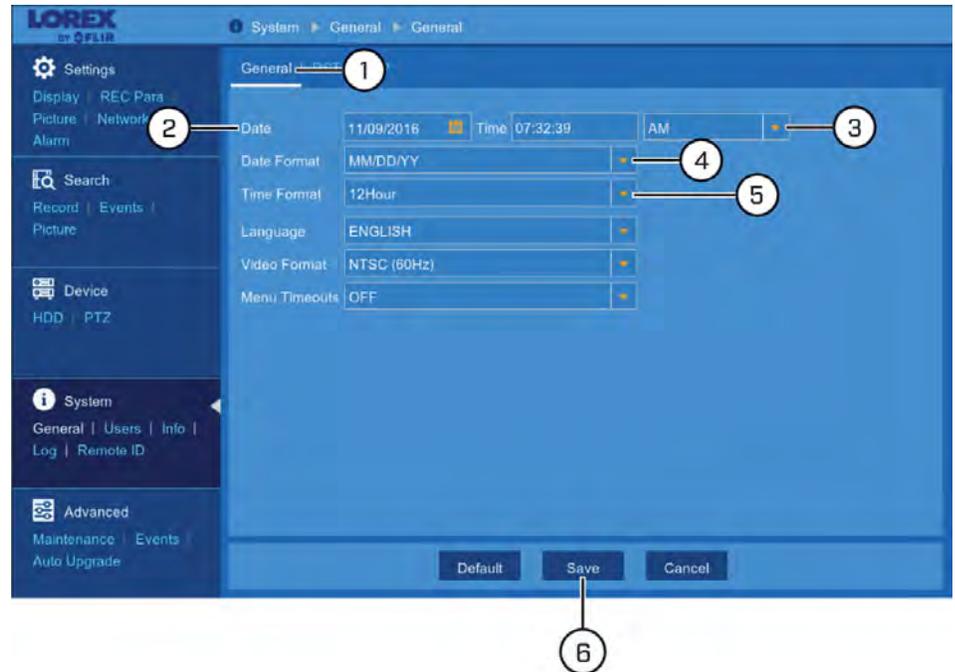
12.5 System Menu

Change general system information such as date, time and region, edit passwords and permissions, and more.

12.5.1 Changing the Date and Time

If you need to change the date and time after completing the setup wizard, follow the steps below.

To change the DVR's date and time:



1. Under **System**, click **General** to open the **General** tab.
2. Click the field next to **Date** to select the correct date from the calendar.
3. Click the field next to **Time** to enter the correct time. Use the dropdown to select **AM** or **PM** if using 12-hour time format.
4. Select how you want the date to appear from the dropdown next to **Date Format**.
5. Select how you want the time to appear from the dropdown next to **Time Format**.
6. Click **Save**.

12.5.2 Changing On-Screen Language

Change the language of on-screen text for the DVR.

To change language:

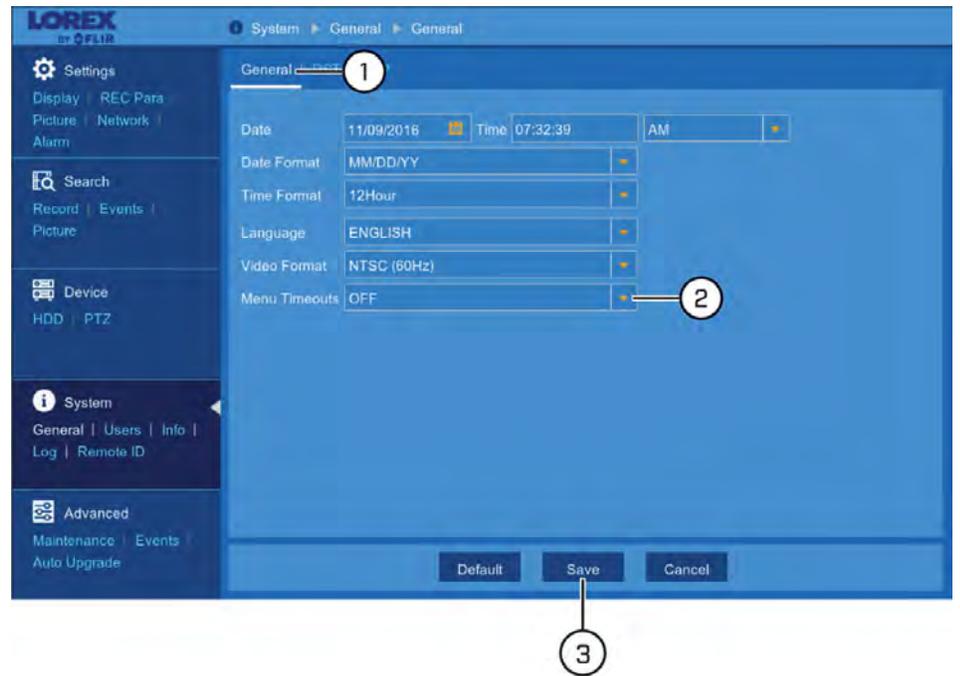


1. Under **System**, click **General** to open the **General** tab.
2. Use the dropdown next to **Language** to set the desired language for the DVR's on-screen display.
3. Click **Save**. The system language will update only once you exit the main menu.

12.5.3 Configuring Menu Time-out Option

By default, system menus are set to time-out after a set time period, taking you back to the main menu if there is no activity.

To configure or disable menu time-out:



1. Under **System**, click **General** to open the **General** tab.
2. Select a time period from the dropdown next to **Menu Timeouts**.
 - **30s–10min**: Menus will disappear after the set time period if there is no activity on the system.
 - **OFF**: Menus will never time-out due to inactivity.
3. Click **Save**.

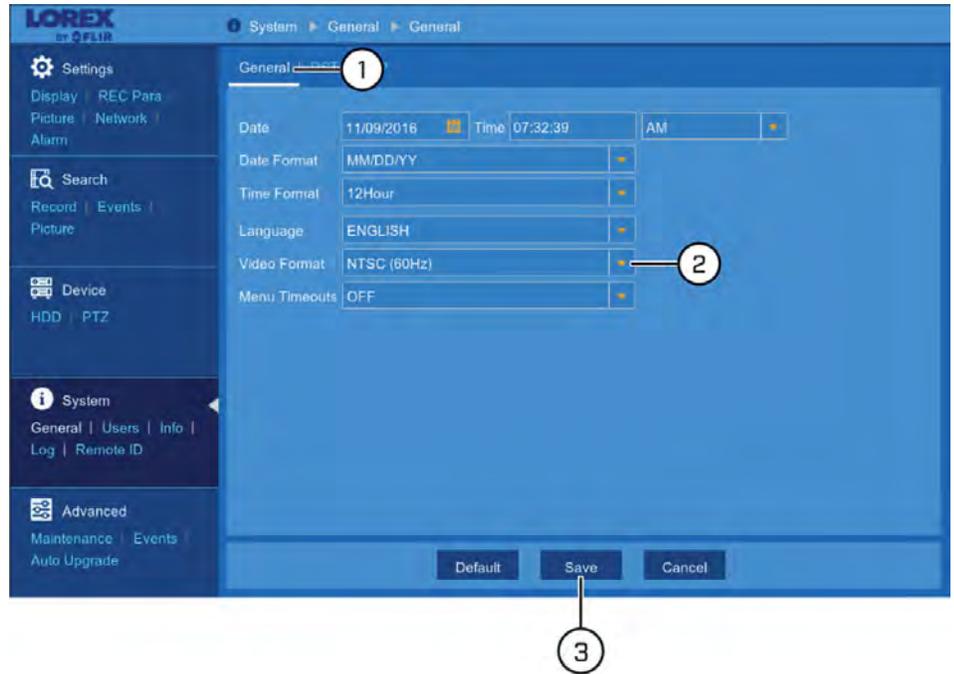
12.5.4 Changing Video Output — NTSC and PAL

Manually switch between NTSC and PAL video output.

NOTE

The video output is determined intelligently based on the region you set during the setup wizard. Ensure your region has been set correctly before manually changing the video output (see 12.5.6 *Configuring NTP*, page 81 for more details on changing the region).

To change the video output:



1. Under **System**, click **General** to open the **General** tab.
2. Use the dropdown next to **Video Format** to select either **NTSC** or **PAL**.
3. Click **Save**. The system will reboot to properly set the new video output mode.

12.5.5 Configuring Daylight Savings Time (DST)

Customize settings for Daylight Savings Time (DST) based on your region or preference.

To configure Daylight Savings Time:



1. Under **System**, click **General**, then click the **DST** tab.
2. Select **Enable** from the dropdown next to **DST**.
3. Select the time difference to use for DST from the dropdown next to **Time Offset**.
4. Use the dropdown next to **Daylight Saving Time** to select a mode of entry for effective dates:
 - Select **Week** to choose DST time changes that are relative to the day of the week (for example, on the second Sunday of March).
 - Select **Date** to choose a specific date and time for each DST time change (for example, on March 13th at 2:00AM).
5. Enter the desired **Start Time** and **End Time** for Daylight Savings Time. System time will move forward an hour at the start time, and back an hour at the end time.
6. Click **Save**.

12.5.6 Configuring NTP

Network Time Protocol (NTP) allows the DVR to sync with an NTP time server to ensure that system time is always accurate.

Prerequisites:

- The DVR must be connected to a router or switch on your network using the included Ethernet cable. A constant connection to the Internet is required to use NTP.

To configure NTP:



1. Under **System**, click **General**, then click the **NTP** tab.
2. Select **Enable** from the dropdown next to **NTP**.
3. Select the desired NTP server from the dropdown next to **Server Address** (we recommend using the default ntp.lorexddns.net).

- If needed, use the dropdown next to **Time Zone** to set the correct region.

 **NOTE**

In most cases, the region should already be correct as it was configured during the DVR setup wizard. In addition to determining the time zone, the selected region is also used by the system to intelligently determine the correct video format (NTSC or PAL) for that region, which may change automatically when changing the region. For example, changing the region from New York to London will also switch the video format of the system from NTSC to PAL.

- Click **Update Now** to sync with the NTP.

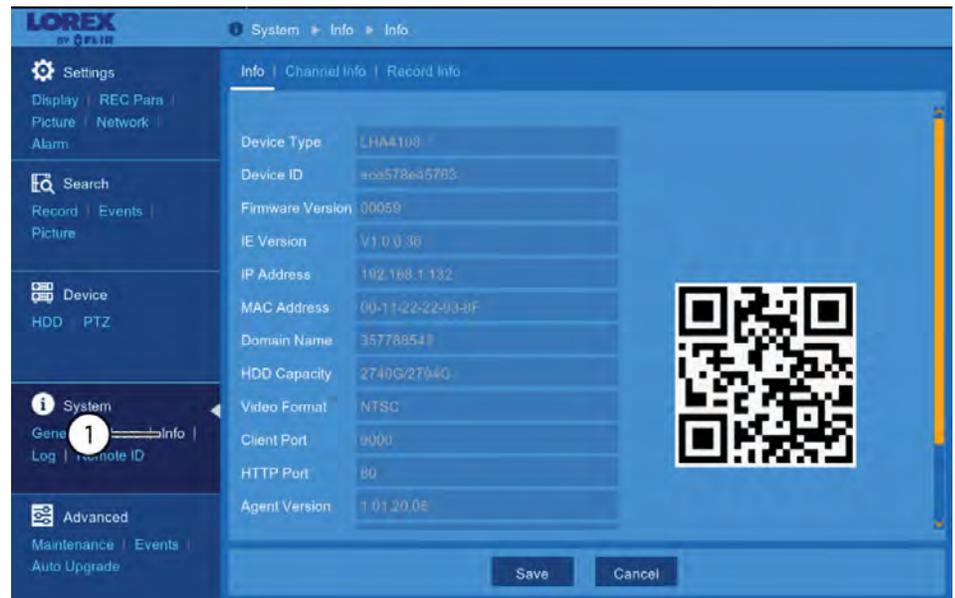
 **NOTE**

If the video format changes between NTSC and PAL based on your new choice of region, the DVR will reboot automatically.

12.5.7 View System Information

View system information such as device ID, IP address, MAC address, model number, firmware version and more.

To view system information:



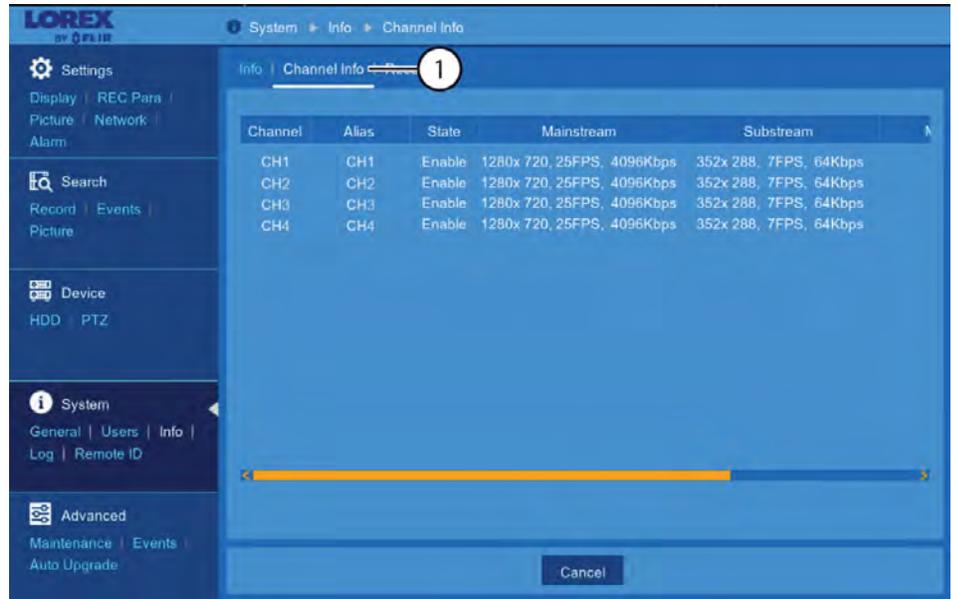
- Under **System**, click **Info** to open the **Info** tab.
OR

From live view, click  on the Taskbar along the bottom of the screen.

12.5.8 View Channel Information

View channel information for each connected camera such as alias, mainstream and sub-stream recording specifications.

To view channel information:

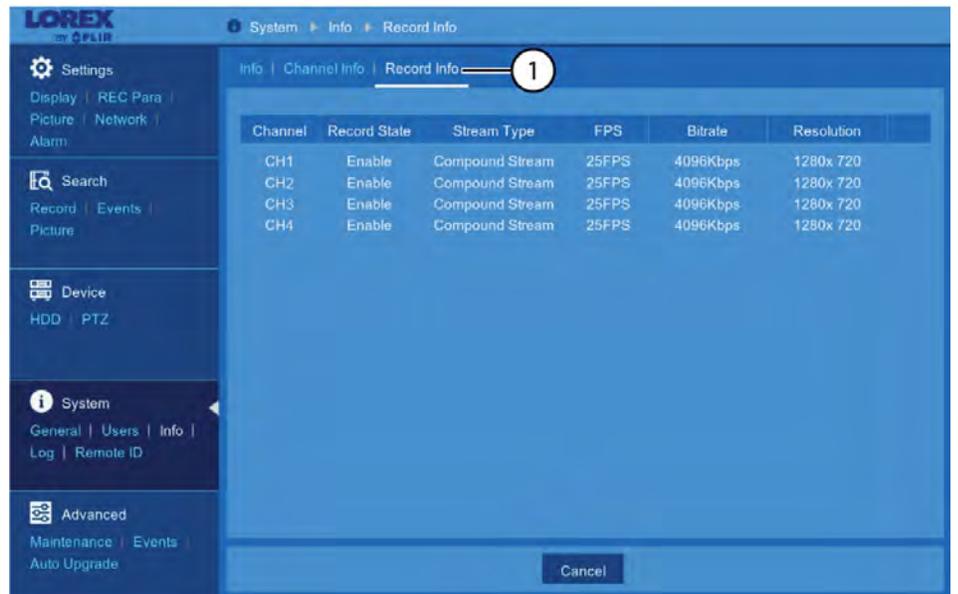


1. Under **System**, click **Info**, then click the **Channel Info** tab.

12.5.9 View Recording Information

View recording information for each connected camera such as bitrate, recording resolution and frames per second (FPS).

To view recording information:



1. Under **System**, click **Info**, then click the **Record Info** tab.

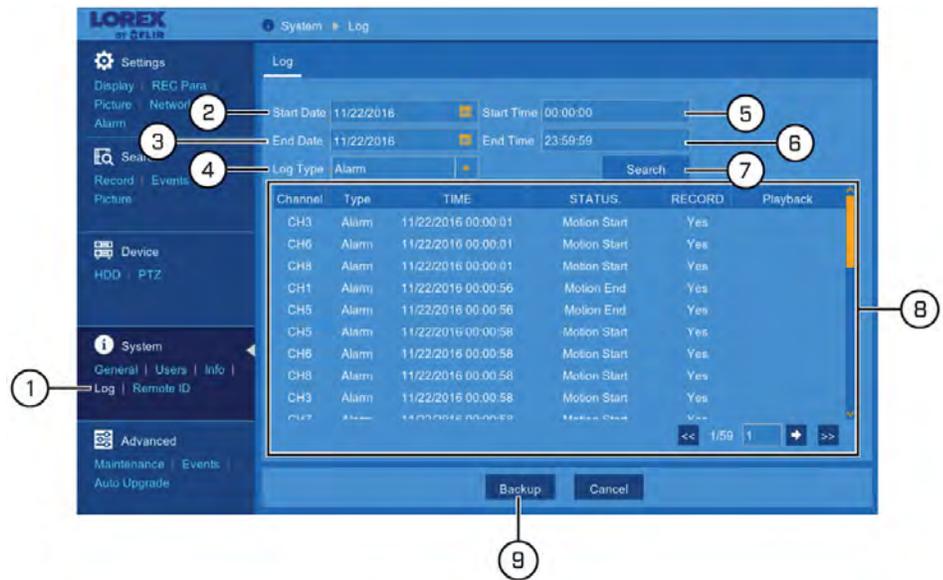
12.5.10 Logs — Searching and Backing Up

The system log shows you important system events, such as motion alarms and system warnings. You can easily create a backup file of the system log for a set time period to a USB flash drive (not included).

Prerequisites:

- To back up system log events, you must connect a USB flash drive to one of the DVR's USB ports.

To search and back up the system log:



- Under **System**, click **Log** to open the **Log** tab.
- Click the field next to **Start Date** to choose the starting date for your search from the on-screen calendar.
- Click the field next to **End Date** to choose the end date for your search from the on-screen calendar.
- Select the type of events you would like to search for from the dropdown next to **Log Type**, or select **All** to see the entire system log for the selected time period.
- Click the field next to **Start Time** to enter the starting time for your search (24-hour format). The search will begin at this time on the start date.
- Click the field next to **End Time** to enter the starting time for your search (24-hour format). The search will end at this time on the end date.
- Click **Search**.
- Browse system log events from your search period:
 - Video events can be played back instantly by clicking in the **Playback** column. Right-click to return to your search results.
 - Use the << / >> buttons in the bottom-right corner of the menu to move between pages of system log events.
- Click **Backup** to create a backup of the system log for your search period.

10. The backup drive menu appears. Navigate to the folder you want the backup file to be saved in, then click **OK** to begin. The progress bar at the bottom of the window shows you the progress of the backup.

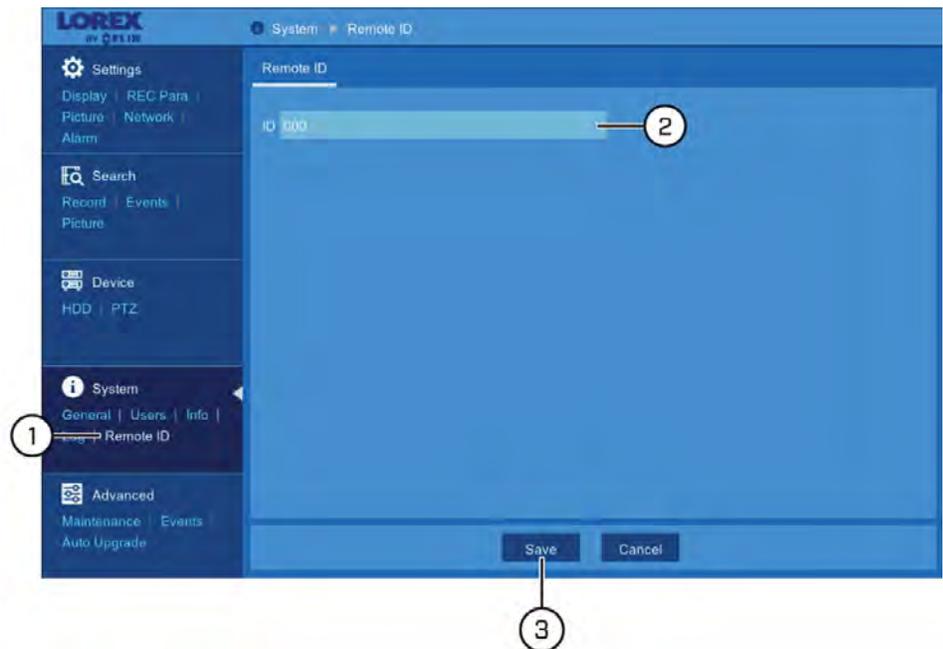


	NOTE
For more details on using the backup drive menu, including a full overview of buttons and their functions, see 10.1 <i>Drive Menu Controls</i> , page 32.	

12.5.11 Setting the Remote ID

If you have more than one DVR, you can use the ID function to pair the included remote control to a specific DVR.

To set the remote ID:



1. Under **System**, click **Remote ID** to open the **Remote ID** tab.
2. Click the field next to **ID** to enter the desired ID number.
3. Click **Save**.
4. Right-click repeatedly to return to live view.
5. On the remote control, press **ID** then enter the ID number you entered in step 2, then press **ENTER** to confirm.

	NOTE
You do not need to enter 0's for unused digits. For example, if the ID is "004", press ID > 4 > ENTER .	

12.6 Advanced Menu

Perform firmware upgrades, manage system events and warnings, load default settings, and save/load current system settings.

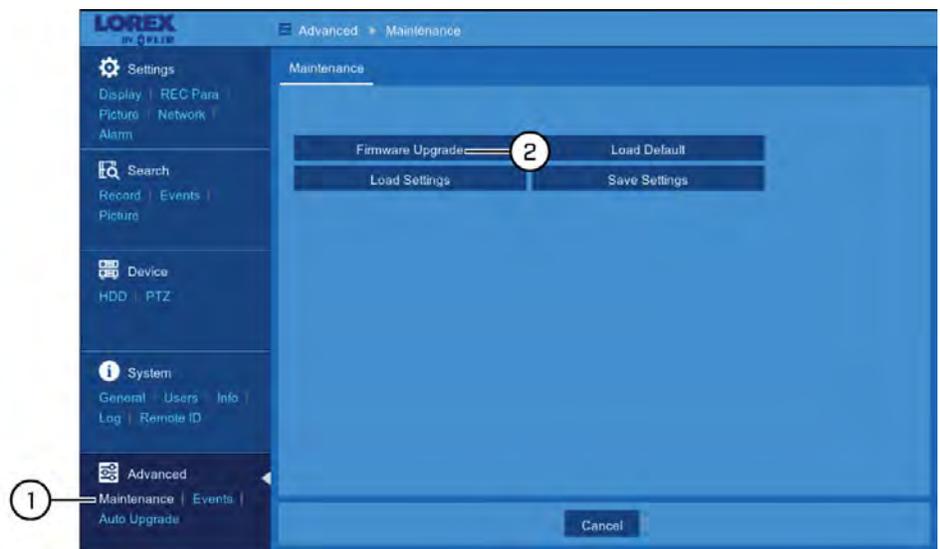
12.6.1 Manual Firmware Upgrade

The system supports automatic firmware upgrades over the network to ensure your unit is always up-to-date. It is recommended to always use automatic upgrade unless directed to perform a manual upgrade by technical support. For details on automatic firmware upgrades, see 12.6.6 *Using Automatic Firmware Upgrade*, page 90.

Prerequisites:

- Save the **.bin** firmware upgrade file in the root folder of a USB flash drive (not included), and connect the drive to one of the USB ports on your DVR.

To manually upgrade the DVR's firmware:



1. Under **Advanced**, click **Maintenance** to open the **Maintenance** tab.
2. Click **Firmware Upgrade**.
3. The drive menu appears. Navigate to and select the **.bin** firmware file, then click **OK**.
4. A confirmation window appears. Click **OK** to confirm.
5. Allow 5-10 minutes for the system to upgrade and reboot.



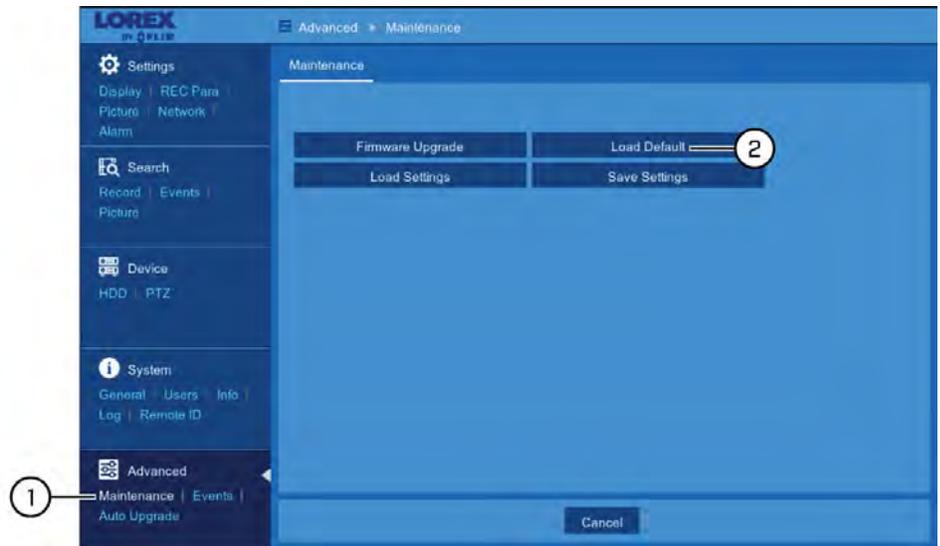
CAUTION

Do not power off the DVR during firmware upgrade.

12.6.2 Restoring Default Settings

Reset the DVR settings to their out-of-box state. You can choose to reset all settings at once, or just settings on specific menus. Restoring default settings will not delete recordings and snapshots saved to the hard drive.

To restore default settings:



1. Under **Advanced**, click **Maintenance** to open the **Maintenance** tab.
2. Click **Load Default**.
3. Select the menus you would like to restore to default settings:



- Click **All** to select all menus.
 - Click **Clear** to deselect all menus.
4. Click **Save** to confirm. The DVR will reboot automatically.

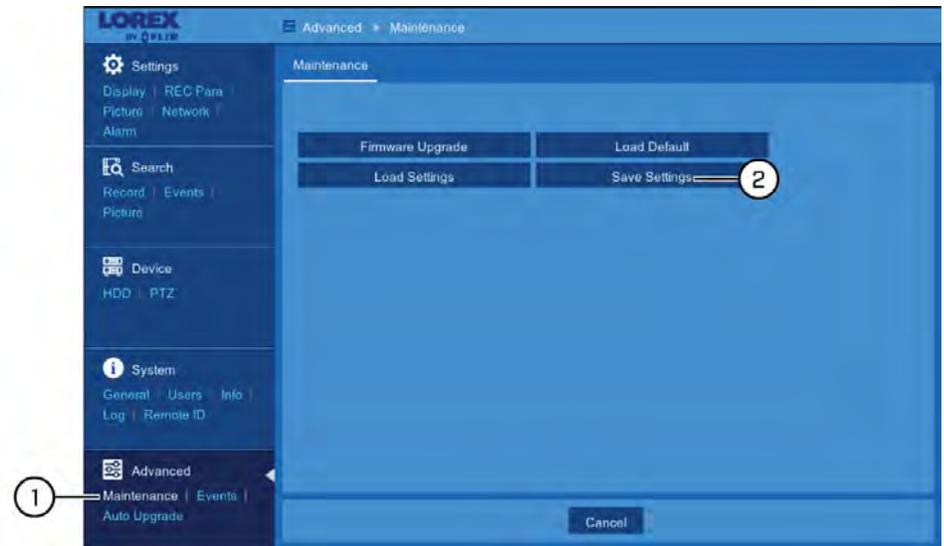
12.6.3 Exporting System Settings

You can export the main menu settings you have configured to a USB flash drive (not included). Exporting system settings lets you to quickly apply your settings to another DVR.

Prerequisites:

- You must connect a USB flash drive to one of the DVR's USB ports..

To export system settings:



1. Under **Advanced**, click **Maintenance** to open the **Maintenance** tab.
2. Click **Save Settings**.
3. The drive menu appears and displays the contents of the USB flash drive. Navigate to the folder you want the system settings file to be saved in, then click **OK** to begin. The progress bar at the bottom of the window shows you the progress of the backup.

1/1 39%

 NOTE
<ul style="list-style-type: none"> • For more details on using the drive menu, including a full overview of buttons and their functions, see 10.1 <i>Drive Menu Controls</i>, page 32. • See 12.6.4 <i>Importing System Settings</i>, page 88 for instructions on importing saved system settings.

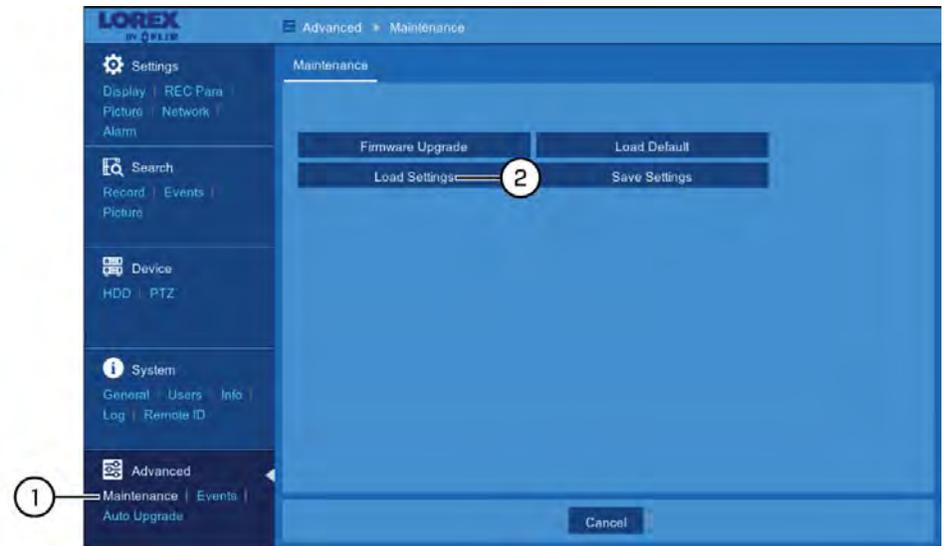
12.6.4 Importing System Settings

Once you have created a system settings export (see 12.6.3 *Exporting System Settings*, page 87 for details), you can import the settings on another DVR.

Prerequisites:

- You must connect a USB flash drive to one of the DVR's USB ports.
- The connected USB flash drive must have a system settings file saved on it. See 12.6.3 *Exporting System Settings*, page 87 for full instructions on saving settings to a USB flash drive.

To import system settings:



1. Under **Advanced**, click **Maintenance** to open the **Maintenance** tab.
2. Click **Load Settings**.
3. The drive menu appears and displays the contents of the USB flash drive.
 - Navigate to the system settings file you want to import, then click **OK** to begin.
 - A warning message appears to inform you the system will reboot in order to properly import your saved settings. Click **OK** to proceed.

 **NOTE**

For more details on using the drive menu, including a full overview of buttons and their functions, see 10.1 *Drive Menu Controls*, page 32.

12.6.5 Configuring System Warning Settings

Set preferences for system warnings including video loss, hard drive errors, and warnings when the hard drive is full.

To configure system warning settings:

1. Under **Advanced**, click **Events** to open the **Events** tab.
2. Use the dropdown next to **Event Type** to select the system warning you would like to configure.
3. Check **Enable** to enable the selected event type.
4. Check **Show Message** to show a message on DVR's the on-screen display.
5. Check **Send Email** to send an email notification.

 **NOTE**

Enabling **Send Email** requires you to set up email notifications. See 12.2.16 *Setting up Email Notifications*, page 65 for full instructions.

6. Use the dropdown next to **Buzzer** to have the DVR make an alarm sound when the selected system warning occurs, or select **OFF** to have the DVR remain silent.
7. Click **Save**.
8. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all system warning types.

12.6.6 Using Automatic Firmware Upgrade

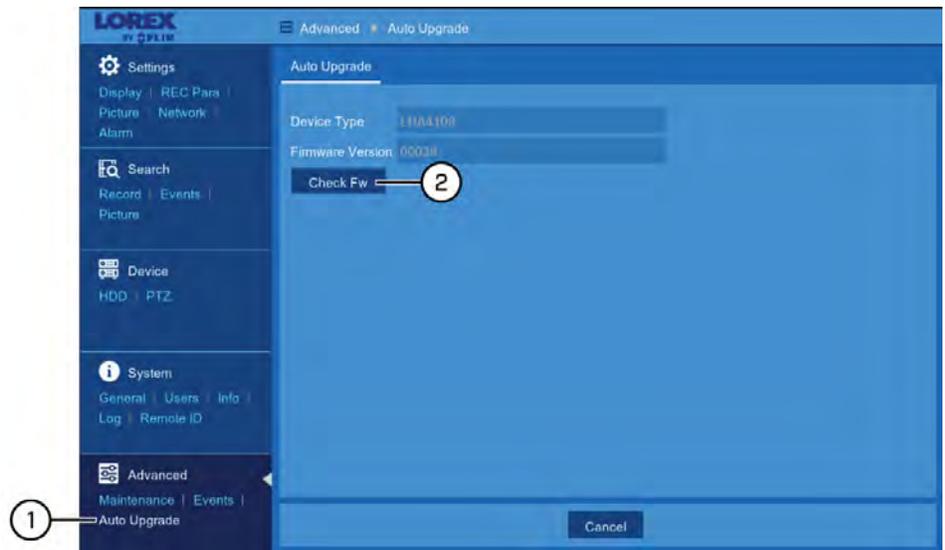
The system supports automatic firmware upgrades when connected to a router or switch on your network using the included Ethernet cable. When a new firmware version becomes available, the system is set to automatically download the firmware file from the Internet and displays a pop-up on the DVR's on-screen display.

If your DVR has been disconnected from the Internet for a while, you can push the system to check for any firmware upgrades it may have missed.

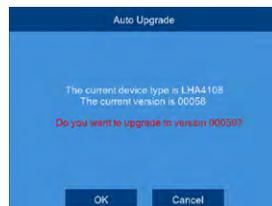
Prerequisites:

- Your DVR must be connected to your router or a switch on your network using the included Ethernet cable so the system can access the Internet.

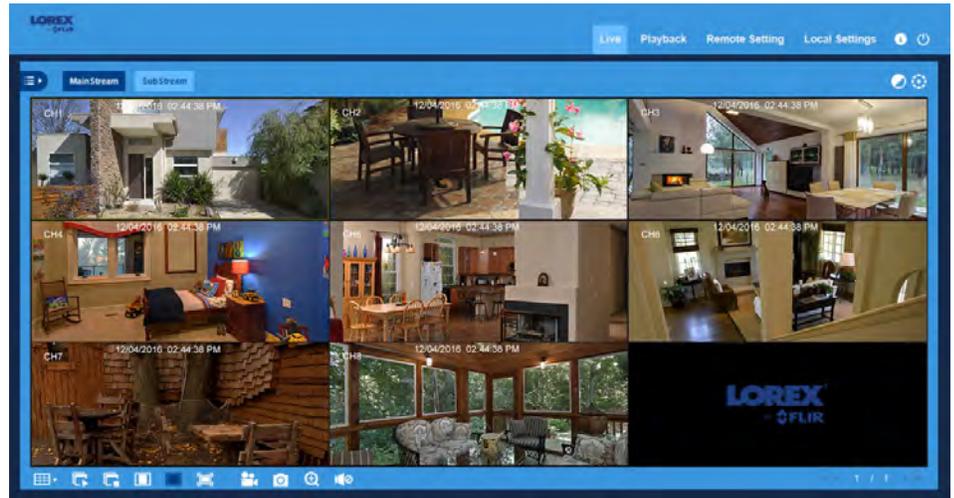
To check for new firmware:



- Under **Advanced**, click **Auto Upgrade** to open the **Auto Upgrade** tab.
- Click **Check FW** to search for newer firmware. If a newer version is available, a notification appears asking if you want to upgrade the firmware.



FLIR Client 12 gives you access to your security system and its settings over the Internet using a PC or Mac computer. The software is available as a free download from the Lorex by FLIR website.



13.1 Minimum System Requirements

Table 13.1 PC Users

Description	Minimum Requirement
CPU	Intel® Core™ i3 CPU
Operating System	Windows 7 or above
Memory	4GB RAM or above
Video	512MB video RAM or above
Network (LAN)	10/100/1000M
Network (WAN)	400Kbps upload speed
Browser	Internet Explorer 11 or above

Table 13.2 Mac Users

Description	Minimum Requirement
CPU	Intel® Core™ i5 CPU
Operating System	Mac OSX 10.12.1 or above
Memory	4GB RAM or above
Video	256MB video RAM or above
Network (LAN)	10/100/1000M
Network (WAN)	400Kbps upload speed
Browser	Safari 10.0.1 or above

13.2 Installation

To download and install FLIR Client 12:

1. Visit www.lorextechnology.com. Search for the model number of your DVR to bring up the product page.

 **NOTE**

You can find your model number by:

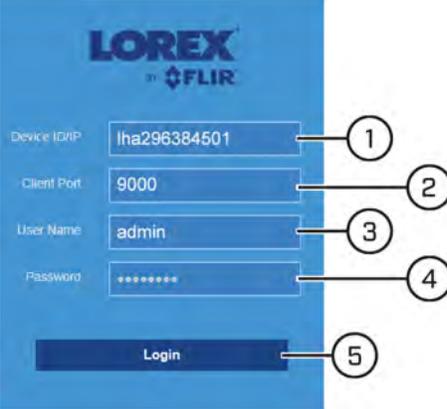
- Looking at the label on the bottom-panel of the DVR.
- Click  on the DVR's Taskbar to open the system information page, which shows the model number.

2. Under the **Downloads** tab:
 - **(PC USERS)** Click **FLIR Client 12 for PC** to download the application.
 - **(MAC USERS)** Click **FLIR Client 12 for Mac** to download the application. Double-click to extract the software, then drag the software to **Applications**.
3. Follow the on-screen instructions to complete installation.
4. Once installation is complete, double-click the FLIR Client 12 icon () on the desktop or Applications list to launch.

13.3 Logging In

When you open FLIR Client 12, you will have to log in using your DVR credentials before accessing the system.

To log into the DVR using FLIR Client 12:



1. Enter the Device ID of the DVR.

 **NOTE**

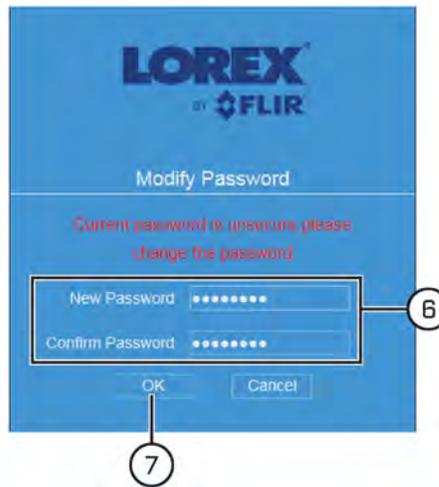
You can get your Device ID from the QR code label on the top panel of your DVR, or by clicking  on the DVR's Taskbar.

2. Enter the Client Port (default: **9000**)
3. Enter the User Name for the account you wish to log in using (default: **admin**).

- Enter the Password for the account you wish to log in using (default: **00000000**).

 NOTE
The default password will only work if you are accessing the DVR for the first time using the FLIR Client 12 software. If you completed initial setup on the DVR, you will have created your own, secure password which should be used to access the system.

- Click **Login**.



- If you are accessing the DVR for the first time from the computer, you will be asked to enter a new password. Enter the password in the **New Password** and **Confirm Password** fields.

 NOTE
Your new, secure password should be used from now on to access your DVR locally, as well as remotely using FLIR Client 12 or the FLIR Secure app for smartphones and tablets.

- Click **OK**.

13.4 FLIR Client 12 Live Viewing Overview

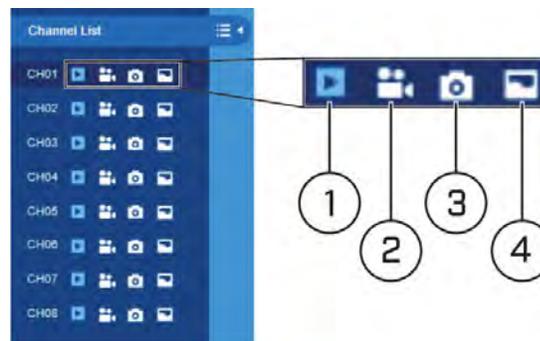
Overview of the controls in FLIR Client 12.



1. **Channel List:** Open the channel list for quick camera functions. For details, see 13.4.1 *Channel List*, page 95.
2. **MainStream:** View live video using high-quality mainstream video settings.
3. **SubStream:** View live video using lower-quality substream video settings to conserve bandwidth.
4. **Live:** View live video from cameras.
5. **Playback:** View recorded video. For details on using Playback with FLIR Client 12, see 13.5 *Playback & Search*, page 96.
6. **Remote Setting:** Access functions of the DVR menu. For details, see 13.6 *Remote Settings Menu — Configure DVR Settings with FLIR Client 12*, page 98.
7. **Local Settings:** Set download locations for recordings and snapshots taken using FLIR Client 12, and choose file type for video files. For details, see 13.7 *Local Settings Menu — Set Download Location and File Type*, page 123.
8. **Information:** Hover over to see system details.
9. **Exit**
10. **Color Controls:** Access controls for changing camera image color. For details, see 13.4.2 *Color Controls*, page 95.
11. **PTZ Controls:** Access controls for using PTZ cameras (not included). For details, see 13.4.3 *PTZ Controls*, page 96.
12. **Navigation:** Shows current page number for the channels shown on screen. Use the arrow keys to switch between pages.
13. **Page View:** Click to select how many channels appear on screen at a time.
14. **Play All**
15. **Stop All**
16. **Original Proportions:** Shows live video at the original proportions of the chosen recording resolution.
17. **Stretch:** Stretch live video to fit the full area for each channel on screen.
18. **Full Screen**

19. **Manual Recording:** Click to start manually recording video. Click again to stop recording. Manual recordings are saved to your computer. To set the location for manual recordings, see 13.7 *Local Settings Menu — Set Download Location and File Type*, page 123.
20. **Snapshot:** Click to save a snapshot of the current live display to your computer. To set the location for snapshots, see 13.7 *Local Settings Menu — Set Download Location and File Type*, page 123.
21. **Digital Zoom:** Click, then click-and-drag over an area of the live image to enlarge. Right-click to return to the full image.
22. **Mute/Unmute:** Requires audio-enabled cameras (not included).

13.4.1 Channel List



1. **Play Channel:** Turn the video stream on/off.
2. **Manual Recording:** Click to start manually recording video. Click again to stop recording. Manual recordings are saved to your computer. To set the location for manual recordings, see 13.7 *Local Settings Menu — Set Download Location and File Type*, page 123.
3. **Snapshot:** Click to save a snapshot of the current live display to your computer. To set the location for snapshots, see 13.7 *Local Settings Menu — Set Download Location and File Type*, page 123.
4. **Bitrate:** Set camera to use mainstream or substream video settings.

13.4.2 Color Controls

	<ol style="list-style-type: none"> 1. Adjust Hue 2. Adjust Brightness 3. Adjust Contrast 4. Adjust Saturation 5. Click Default to reset all sliders to default positions, or click Refresh to see the effects of your changes on the live video.
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13.4.3 PTZ Controls

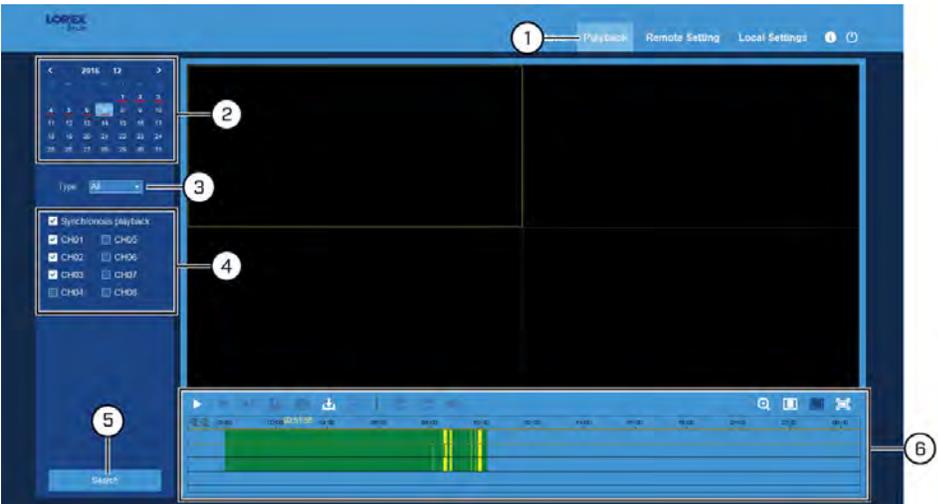
	<ol style="list-style-type: none"> 1. Directional Arrows: Click to move the PTZ camera. 2. PTZ Speed: Click to set the speed of the PTZ camera's movement. 3. Zoom: Click +/- to zoom in or out. 4. Focus: Click +/- to adjust focus. 5. Iris: Click +/- to adjust iris. 6. Presets: Add, remove, or go to presets. For details on setting presets, see 7.5.1 <i>Setting PTZ Presets</i>, page 21. 7. Cruise: Start/stop PTZ cruise.
--	--

13.5 Playback & Search

Search for and play back video recordings using FLIR Client 12.

13.5.1 Search for Recordings

To search for recordings:



1. Click **Playback** in the top-right corner of the window.
2. Select a day on the calendar to search for recordings from. Days with recordings appear with a red underline.
3. Select the recording type to search for from the dropdown next to **Type**, or select **All** to search for all recordings.
4. Check the channels you would like to search for recordings from. Check **Synchronous playback** to play all channels at once.
5. Click **Search**.
6. Recordings that fit your search will be displayed in the timeline, which continuous recording represented by green, and motion by yellow. Click a section of video where you would like to begin playback and click the  button. See 13.5.2 *Playback Controls*, page 97 for a full overview of playback controls in FLIR Client 12.

13.5.2 Playback Controls



1. **Calendar:** Select a day to search for video from.
2. **Type:** Select the type of recording you want to search for, or select **All** to search for all recordings.
3. **Playback Channels:** Check channels you would like to search for video from. Check **Synchronous playback** to play all channels at once.
4. **Search:** Click to search for recordings based on your criteria.
5. **Timeline:** Recordings that fit your search will be displayed in the timeline.
 - Continuous recordings are represented by **green bars**, and motion by **yellow**.
 - Use the  /  buttons to increase or decrease the timeframe of recordings shown on the timeline.
6. **Playback Area:** Double-click a channel to view in full-screen.
7. **Play/Pause Playback**
8. **Stop Playback**
9. **Go Forward One Frame:** Move frame-by-frame through playback when paused.
10. **Record:** Click to start/stop recording. Videos are saved to a folder on your computer that you specify. For details, see 13.7 *Local Settings Menu — Set Download Location and File Type*, page 123.
11. **Capture:** Click to capture a snapshot. Snapshots are saved to a folder on your computer that you specify. For details, see 13.7 *Local Settings Menu — Set Download Location and File Type*, page 123.
12. **Download:** Opens the Download menu, which allows you to download several video recordings at once. For details, see 13.5.3 *Using Video Download*, page 98.
13. **Playback Speed**
14. **Play All Channels**
15. **Stop All Channels**
16. **Mute/Unmute:** Audio-enabled cameras required.
17. **Digital Zoom:** Click-and-drag on a channel to zoom in. Click again to return to normal viewing.

18. **Original Proportions:** Video playback will use the original proportions of its recording resolution.
19. **Stretch:** Video playback will be stretched to fill the full space available for each channel.
20. **Full Screen:** Current playback view is shown in full screen. Press **ESC** on the keyboard to return.

13.5.3 Using Video Download

1. From playback, click .



2. Video files available for download during your current playback period are shown in the pop-up window.
 - Check any video files you would like to download to your computer.
 - You can see the start time, end time and file size of each video before downloading.
3. Use the navigation controls to determine how many files appear on each page and to move between pages of video downloads.
4. Once you have made at least one selection, click **Start Download** to download the file (s) to your computer.



NOTE

- See 13.7 *Local Settings Menu — Set Download Location and File Type* for full instructions on setting download location.
- See 15 *Viewing Backed Up Video on PC/Mac*, page 132 for information on playing video files on your computer.

13.6 Remote Settings Menu — Configure DVR Settings with FLIR Client 12

You can access most of the DVR's functions using FLIR Client 12.

13.6.1 Copying Channel Settings to Another Channel

Some menus allow you to copy one channel's settings over to other channels to save time.

To copy settings to another channel:

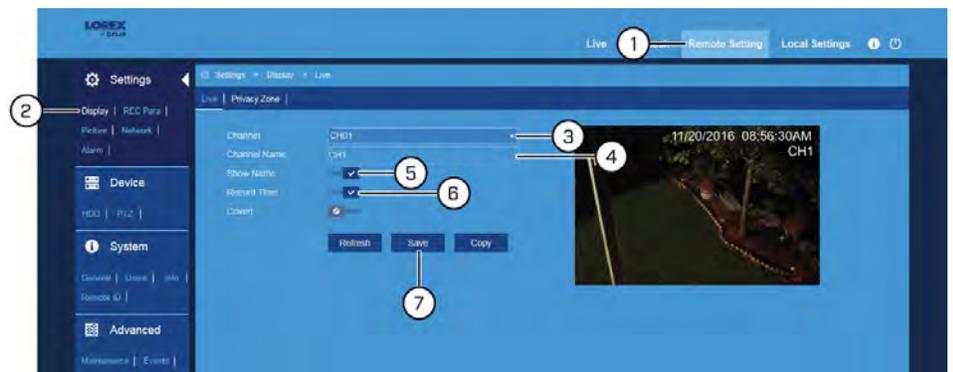


1. Ensure you have saved the settings you would like to copy to another channel.
2. Click **Copy**.
3. Check the channels you would like to copy your settings to, or check all to copy settings to all channels.
4. Click **Save**.

13.6.2 Changing a Camera's On-Screen Display (OSD)

Edit camera channel names and whether or not to include recording time and channel name on the on-screen display.

To change a camera's OSD:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Display** to open the **Live** tab.
3. Select the channel to configure the OSD for from the dropdown next to **Channel**.
4. Click the field next to **Channel Name** to edit the channel name.
5. Click the switch next to **Show Name** to enable () or disable () the channel name shown on-screen in live viewing and recordings.
6. Click the switch next to **Record Time** to enable () or disable () the time-stamp shown on-screen in recordings.



CAUTION

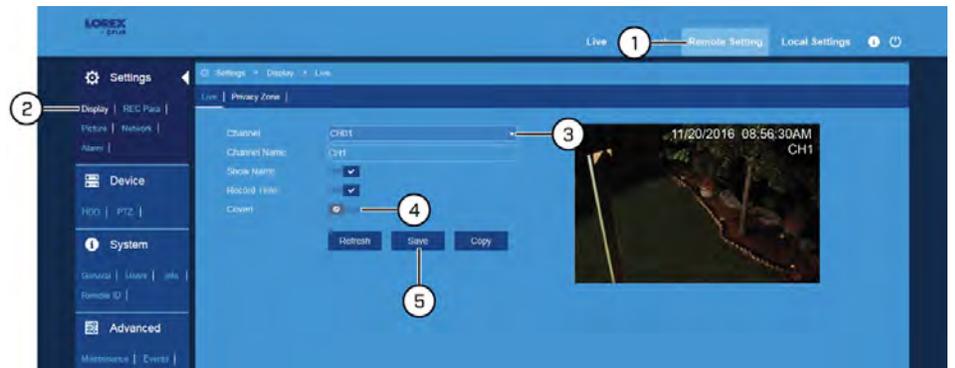
By default, the system is set to show timestamps in video recordings. It is **highly recommended** to show timestamps in recordings for legal reasons.

7. Click **Save**.
8. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 13.6.1 *Copying Channel Settings to Another Channel*, page 98 for details on using the copy function.

13.6.3 Setting up Covert Recording

Covert recording allows you to hide channels from the live view of the DVR while continuing to record video. You will also be able to see covert channels when viewing remotely using a computer or mobile app.

To enable Covert recording:

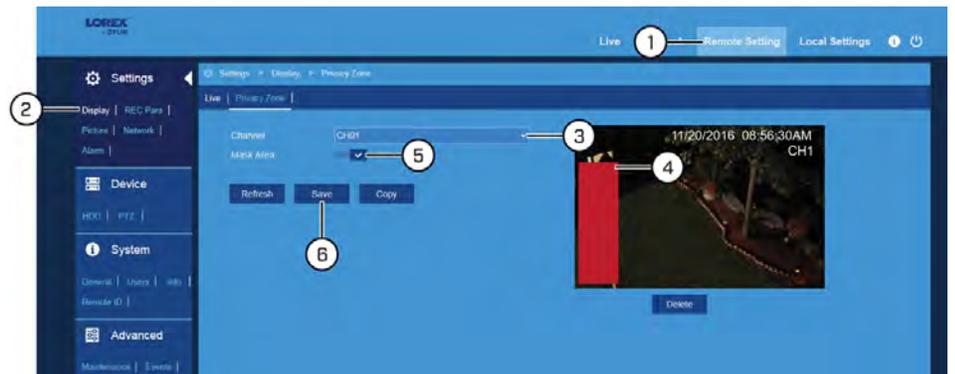


1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Display** to open the **Live** tab.
3. Use the dropdown next to **Channel** to select a channel to set up covert recording for.
4. Click the switch next to **Show Name** to enable () or disable () the channel name shown on-screen in live viewing and recordings.
5. Click **Save**. When viewing on the DVR, the camera image for the selected channel will appear entirely black with the caption **Privacy Mode** to indicate that covert recording is enabled.
6. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 13.6.1 *Copying Channel Settings to Another Channel*, page 98 for details on using the copy function.

13.6.4 Configuring Privacy Zone(s)

A **privacy zone** blocks out a portion of a camera image with a black box, letting you have privacy in certain parts of a camera image. You can configure up to 4 privacy zones per channel.

To configure privacy zone(s):



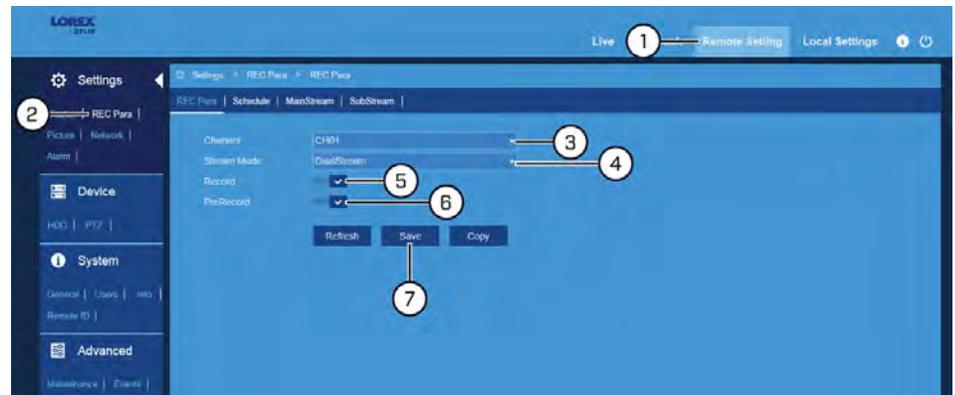
1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Display**, then click the **Privacy Zone** tab.
3. Use the dropdown next to **Channel** to select a channel to set up privacy zone(s) for.

4. Click-and-drag to draw up to 4 privacy zones on the camera image, which appear as red boxes.
 - To move an existing privacy zone, click-and-drag the center of the red box.
 - To resize an existing privacy zone, click-and-drag the edge of the red box.
 - To delete privacy zones, click the red box to select it, then click **Delete**.
5. Click the switch next to **Mask Area** to enable () or disable () the privacy zone.
6. Click **Save**.
7. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 13.6.1 *Copying Channel Settings to Another Channel*, page 98 for details on using the copy function.

13.6.5 Configuring Recording Parameters

Configure basic video recording options.

To configure recording parameters:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **REC Para** to open the **REC Para** tab.
3. Use the dropdown next to **Channel** to select a channel to set recording parameters for.
4. Use the dropdown next to **Stream Mode** to configure the recording mode. Select **DualStream** to record using mainstream recording settings while using the substream for remote viewing, or select **MainStream** to use mainstream recording only. To configure mainstream and substream settings, see 12.2.11 *Configuring System Recording Quality (Mainstream and Substream)*, page 60.



CAUTION

You must set the **Stream Mode** to **DualStream** in order to play back recordings using the FLIR Secure mobile app. Live viewing will not be affected.

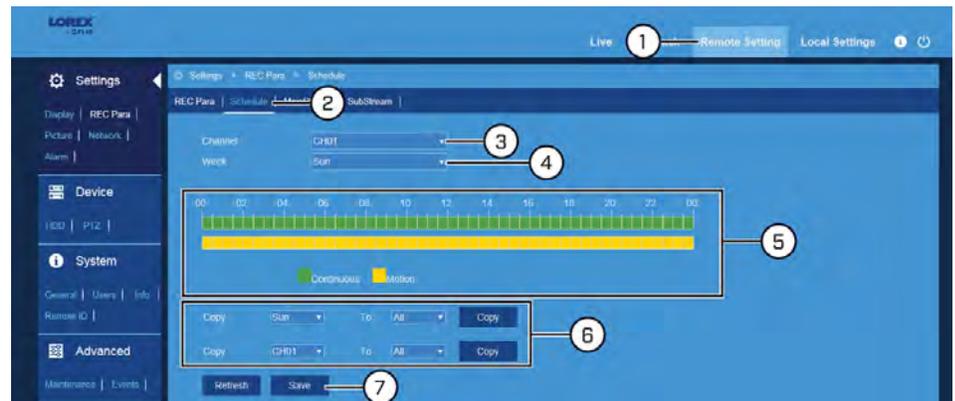
5. Click the switch next to **Record** to enable () or disable () recording.
6. Click the switch next to **Pre Record** to enable () or disable () pre-recording of motion events.
7. Click **Save**.

- (OPTIONAL) Use the **Copy** function to copy your settings to another or all connected cameras. See 13.6.1 *Copying Channel Settings to Another Channel*, page 98 for details on using the copy function.

13.6.6 Setting the Recording Schedule

The recording schedule determines the time periods that the system will record video during. You can set separate schedules for continuous and motion recording for the same channel.

To set a recording schedule:



- Click **Remote Setting** in the top-right corner of the window.
- Under **Settings**, click **REC Para**, then click on the **Schedule** tab.
- Use the dropdown next to **Channel** to select a channel to set the recording schedule for.
- Use the dropdown next to **Week** to select the day of the week you would like to set the schedule for.
- The times of day during which continuous recording is enabled are represented by green bars, and motion by yellow. By default, the system is set the record at all times. Click-and-drag to enable or disable continuous or motion recording during a certain time of day.

NOTE

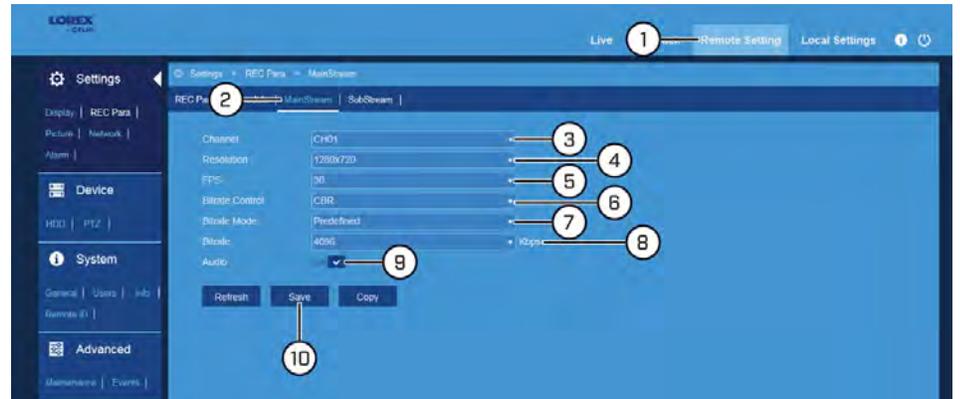
Repeat steps 4 & 5 for as many days of the week as you would like to configure the schedule for.

- If needed, use the **Copy** functions to copy the schedule for one day to other days of the week, or to copy one channel's entire schedule to other channels.
- Click **Save**.

13.6.7 Configuring System Recording Quality (Mainstream and Substream)

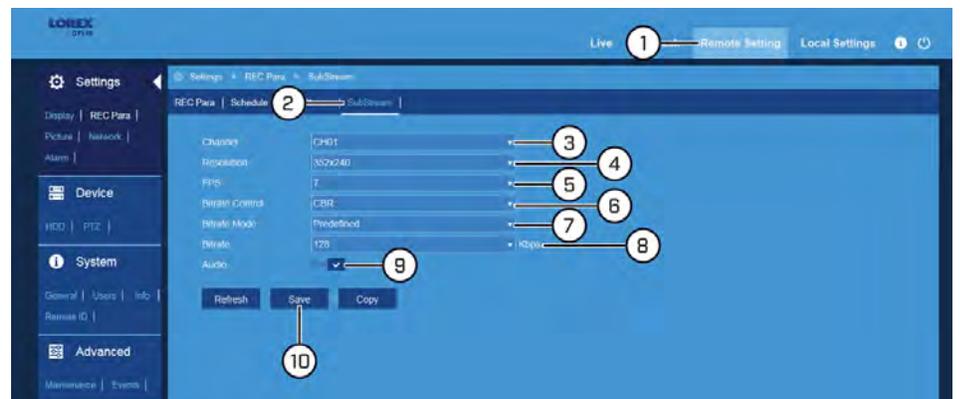
The system uses 2 recording streams: the **Mainstream** is the high-quality stream used for live viewing and recording, while the **Substream** is a lower quality stream used for remote viewing and playback. This allows you to record high-quality video locally, as well as re-view video remotely with relatively low bandwidth requirements.

To configure the Mainstream:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **REC Para**, then click on the **MainStream** tab.
3. Use the dropdown next to **Channel** to select a channel to configure the mainstream for.
4. Use the dropdown next to **Resolution** to set the recording resolution.
5. Use the dropdown next to **FPS** to set the number of frames per second.
6. Use the dropdown next to **Bitrate Control** to set the control method. Select **CBR** (default) to use a Constant Bit Rate, or **VBR** for a Variable Bit Rate. For **VBR**, use the second dropdown to select a quality level for the video stream.
7. Use the dropdown next to **Bitrate Mode** to set the bitrate mode. Select **Predefined** to select a preset value from the **Bitrate** dropdown, or **User-defined** to enter a custom bitrate.
8. Use the dropdown next to **Bitrate** to set the bitrate mode (predefined bitrate mode), or enter a custom bitrate between 1024-8192Kbps (user-defined bitrate mode).
9. Click the switch next to **Audio** to enable () or disable () audio on the selected channel (audio-enabled camera required).
10. Click **Save**.
11. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 13.6.1 *Copying Channel Settings to Another Channel*, page 98 for details on using the copy function.

To configure the Substream:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **REC Para**, then click on the **SubStream** tab.
3. Use the dropdown next to **Channel** to select a channel to configure the substream for.

4. Use the dropdown next to **Resolution** to set the recording resolution.
5. Use the dropdown next to **FPS** to set the number of frames per second.
6. Use the dropdown next to **Bitrate Control** to set the control method. Select **CBR** (default) to use a Constant Bit Rate, or **VBR** for a Variable Bit Rate. For **VBR**, use the second dropdown to select a quality level for the video stream.
7. Use the dropdown next to **Bitrate Mode** to set the bitrate mode. Select **Predefined** to select a preset value from the **Bitrate** dropdown, or **User-defined** to enter a custom bitrate.
8. Use the dropdown next to **Bitrate** to set the bitrate mode (predefined bitrate mode), or enter a custom bitrate between 1024-8192Kbps (user-defined bitrate mode).
9. Click the switch next to **Audio** to enable () or disable () audio on the selected channel (audio-enabled camera required).
10. Click **Save**.
11. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all connected cameras. See 13.6.1 *Copying Channel Settings to Another Channel*, page 98 for details on using the copy function.

13.6.8 Configuring Auto Capture

You can use **Auto Capture** to automatically capture snapshots of a camera image at repeating intervals throughout the day or during motion events. Auto Capture can help to conserve hard drive space during times when video recording is not required. By default, Auto Capture is disabled.

To configure Auto Capture:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Picture** to open the **Picture** tab.
3. Use the dropdown next to **Channel** to select a channel to configure Auto Capture for.
4. Use the dropdown next to **Stream Mode** to select **Main stream** or **Sub stream** for Auto Captures.
5. Select a time period from the dropdown next to **Continuous Interval**. A snapshot will be captured at every continuous interval even if there is no activity in the camera image.
6. Select a time period from the dropdown next to **Alarm Interval**. A snapshot will be captured at every alarm interval while a motion event is occurring.
7. Click the switch next to **Auto Capture** to enable () or disable () Auto Capture for the selected channel.
8. Click **Save**.

- (OPTIONAL) Use the **Copy** function to copy your settings to another or all connected cameras. See 13.6.1 *Copying Channel Settings to Another Channel*, page 98 for details on using the copy function.

13.6.9 Enabling/Disabling Manual Capture

Manual Capture allows you to quickly take snapshots from enabled channels.

NOTE

Enabling or disabling Manual Capture only affects your ability to take manual snapshots from the DVR. You will still be able to capture snapshots using FLIR Client 12.

To enable Manual Capture:



- Click **Remote Setting** in the top-right corner of the window.
- Under **Settings**, click **Picture** to open the **Picture** tab.
- Use the dropdown next to **Channel** to select a channel to enable Manual Capture for.
- Click the switch next to **Manual Capture** to enable () or disable () Manual Capture for the selected channel.
- Click **Save**.
You can now use Manual Capture on the selected channel using the Mini Menu. For details on using Manual Capture, see 7.3 *Using the Mini Menu*, page 17.
- (OPTIONAL) Use the **Copy** function to copy your settings to another or all connected cameras. See 13.6.1 *Copying Channel Settings to Another Channel*, page 98 for details on using the copy function.

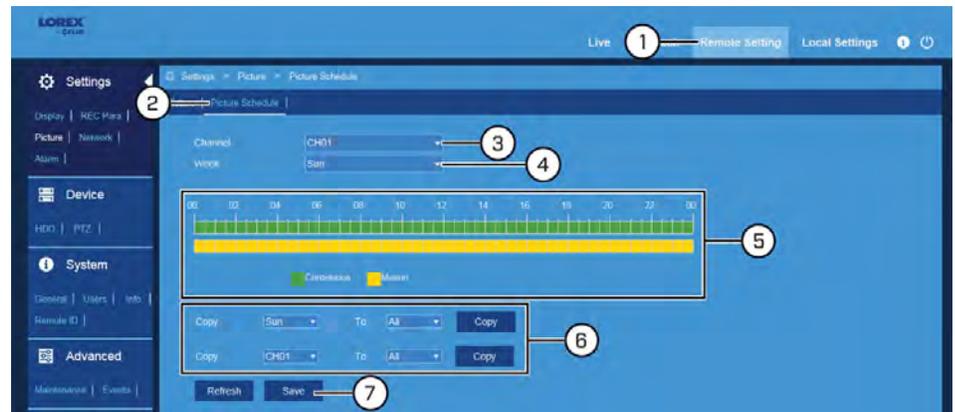
13.6.10 Setting a Picture Schedule for Auto Capture

The picture schedule determines the time periods that the system will use Auto Capture during. You can set separate schedules for continuous and motion recording for the same channel.

Prerequisites:

- You must have enabled Auto Capture on at least one channel to set a picture schedule. See 13.6.8 *Configuring Auto Capture*, page 104 for details on enabling and configuring Auto Capture.

To set a picture schedule:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Picture**, then click the **Picture Schedule** tab.
3. Use the dropdown next to **Channel** to select a channel to set a privacy zone for.
4. Use the dropdown next to **Week** to select the day of the week you would like to set the schedule for.
5. The times of day during which continuous Auto Capture is enabled are represented by green bars, and motion by yellow. Click-and-drag to enable or disable continuous or motion captures during a certain time of day.



NOTE

Repeat steps 4 & 5 for as many days of the week as you would like to configure the schedule for.

6. If needed, use the **Copy** functions to copy the schedule for one day to other days of the week, or to copy one channel's entire schedule to other channels.
7. Click **Save**.

13.6.11 Configuring Basic Network Settings

The basic network menu allows you to configure the network protocol type (**DHCP** or **static**).

To configure basic network settings:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Network** to open the **Network** tab.

3. Select **DHCP** (default — recommended) or **Static**. Selecting **Static** requires you to edit the IP Address, Subnet Mask, Gateway and DNS settings.
4. **(FOR STATIC IP ONLY)** Click the fields next to **IP Address, Subnet Mask, Gateway** and **DNS** to edit as required.
5. Click **Save**.

13.6.12 Setting up Email Notifications

You can configure the system to send email notifications about important activity from your security system. To have the option of using Lorex's free email server (recommended) or using a different one.

To enable email notifications using the Lorex server:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Network**, then click the **Email** tab.
3. Select **Default** from the dropdown next to **Email** to enable the default Lorex mail server.
4. Click to enter up to 3 email addresses that will receive email notifications from the system.
5. Use the dropdown next to **Interval** to set the minimum amount of time between email notifications. This can be used to limit the number of notifications you receive throughout the day.
6. Click **Save**.
Email notifications are now enabled. The default schedule is set to send email notification whenever motion is detected or a system warning occurs. To configure the schedule for email notifications, see 13.6.13 *Setting an Email Schedule*, page 108

To enable email notifications using custom server information:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Network**, then click the **Email** tab.
3. Select **Enable** from the dropdown next to **Email** to enable email notifications using a custom mail server.
4. Use the dropdown next to **Encryption** to select an encryption type.
5. Click the field next to **SMTP Port** to enter the SMTP port.
6. Click the field next to **SMTP Server** to enter the URL used by your mail server.
7. Click the field next to **User Name** to enter your user name for the mail server.
8. Click the field next to **Password** to enter your password for the mail server.
9. Click the field next to **Sender Email** to enter the sending email address. This can be any email of your choice.
10. Click to enter up to 3 email addresses that will receive email notifications from the system.
11. Use the dropdown next to **Interval** to set the minimum amount of time between email notifications. This can be used to limit the number of notifications you receive throughout the day.
12. Click **Save**.

Email notifications are now enabled. The default schedule is set to send email notification whenever motion is detected or a system warning occurs. To configure the schedule for email notifications, see 13.6.13 *Setting an Email Schedule*, page 108.

13.6.13 Setting an Email Schedule

The email schedule determines the time periods that the system will send out email notifications. You can set separate schedules for motion events and system warnings per channel.

Prerequisites:

- You must enable email notifications for the email schedule to take effect. To enable email notifications, see 13.6.12 *Setting up Email Notifications*, page 107.

To set an email schedule:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Network**, then click the **Email Schedule** tab.
3. Use the dropdown next to **Channel** to select a channel to set the email schedule for.
4. Use the dropdown next to **Week** to select the day of the week you would like to set the schedule for.
5. The times of day during which email notifications for motion events are enabled are represented by yellow bars, and system warnings by red. Click-and-drag to enable or disable email notifications during a certain time of day.



NOTE

Repeat steps 4 & 5 for as many days of the week as you would like to configure the schedule for.

6. If needed, use the **Copy** functions to copy the schedule for one day to other days of the week, or to copy one channel's entire schedule to other channels.
7. Click **Save**.

13.6.14 Configuring DDNS Settings

The primary connectivity option uses FLIR Cloud Services to connect to your system over the Internet without requiring port forwarding or DDNS registration. Lorex DDNS is also available as an optional connectivity option.

Prerequisites:

- You must create a free Lorex DDNS account. See 19 *DDNS Setup (Advanced)*, page 140 for full instructions.

To configure DDNS settings:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Network**, then click the **DDNS** tab.
3. Click the switch next to **DDNS** to enable () or disable () DDNS.
4. Select **LOREXDDNS** from the dropdown next to **Server**.
5. Click the field next to **Domain Name** to enter the URL shown in the DDNS tab of your Lorex account.
6. Click the field next to **User Name** to enter the user name shown in the DDNS tab of your Lorex account.
7. Click the field next to **Password** to enter the password shown in the DDNS tab of your Lorex account.
8. Click **Save**.

13.6.15 Configuring RTSP Streaming (Advanced)

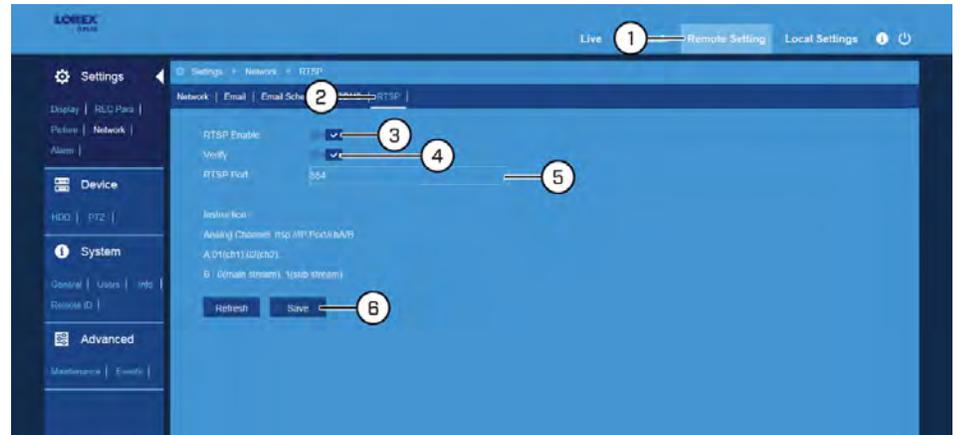
RTSP streaming allows you to stream video from a specific camera using a web address. It is an optional connectivity method used by 3rd party software applications.



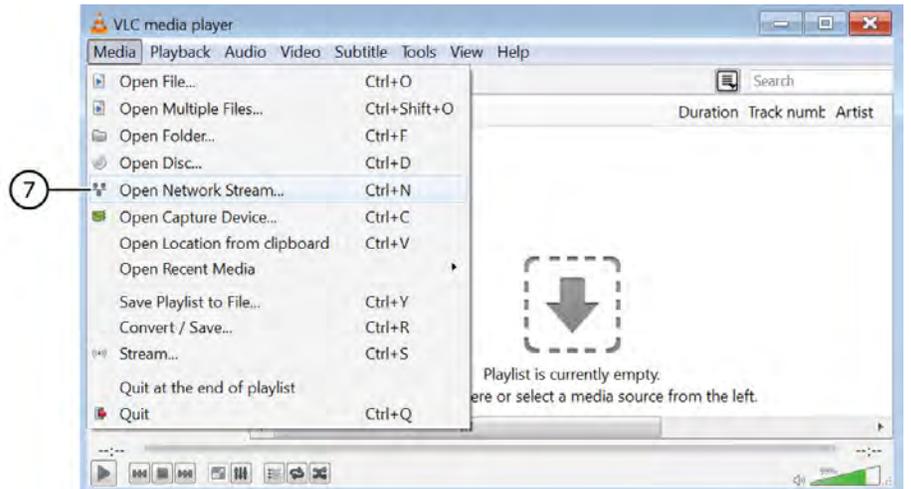
NOTE

The instructions in this section are using VLC Media Player. VLC Media Player is a free software provided at www.videolan.org. FLIR cannot provide support for VLC Media Player or any other 3rd party software. Please contact the software vendor for technical support related to 3rd party software applications.

To connect to the video stream using VLC Media Player:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Network**, then click the **RTSP** tab.
3. Click the switch next to **RTSP Enable** to enable () or disable () RTSP streaming.
4. Click the switch next to **Verify** to enable () verification.
5. If needed, click the field next to **RTSP Port** to change the port number.
6. Click **Save**.
7. Open VLC on a computer in the same network as your DVR. Click **Media**, then click **Open Network Stream...**



8. Enter the RTSP address in the following format:
 - **rtsp://[IP address of the DVR]:[RTSP Port]/chA/B**
 - **A** = Channel number (expressed as **01** for channel 1, **02** for channel 2, etc.)
 - **B** = Video stream (**0** for mainstream, **1** for substream)
 - **Example:** *rtsp://192.168.1.128:554/ch01/0* will stream video from channel 1 of the DVR using the mainstream.

9. Click **Play**. The video stream will open in VLC Media Player.
If it does not connect, check the following:
 - Check that the syntax on the RTSP address is correct.
 - Make sure the system is connected to the network.
 - If connecting over the Internet, make sure to use the remote IP address of the system and that the RTSP port is open.

13.6.16 Configuring Motion Detection Settings

The system supports motion detection on any connected camera. You can determine the sensitivity as well as the active area for motion detection per channel.

To enable and configure motion detection:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Alarm** to open the **Motion** tab.
3. Use the dropdown next to **Channel** to select a channel to configure motion detection for.
4. Click the switch next to **Enable** to enable () or disable () motion detection.
5. Use the dropdown next to **Sensitivity** to select a sensitivity level for motion events. The lower the sensitivity value, the more movement is required to trigger motion detection.
6. Use the dropdown next to **Buzzer** to select whether you would like the DVR to make an alarm sound when motion is detected.
7. Click the switch next to **Full Screen** to enable () or disable () full screen viewing when motion is detected.
8. Use the dropdown next to **Post Recording** to set the amount of time the system will record video for after motion is detected.
9. Click the switch next to **Show Message** to enable () or disable () on-screen messages when motion is detected.

10. Click the switch next to **Send Email** to enable () or disable () email notification when motion is detected.

 **NOTE**

Ensure you have enabled email notifications. See 13.6.12 *Setting up Email Notifications*, page 107 for details.

11. Click the switch next to **Record Channel** to enable () or disable () recording when motion is detected.
12. Click on the numbered boxes representing channels that should also be recorded when motion is detected on the selected channel. Check the box next to **Analog Channels** to select all.
13. The camera image appears with a red grid overlay on the entire image, letting you know that motion detection is active for the entire image. Click or click-and-drag to add/remove area from the red grid.

 **NOTE**

Motion detection will be **disabled** for areas of the image without red overlay. In the example image above, motion events which occur in the garden will not trigger motion detection. Disabling motion detection in certain areas of the image is an effective way to eliminate unwanted recordings and notifications, such as those caused by trees blowing in the wind or street traffic seen through an open window.

14. Click **Save**.

13.6.17 Configuring Hard Drive Overwrite

By default, the hard drive in your unit is set to overwrite automatically, meaning that the system deletes the oldest footage when the hard drive is full to make way for new recordings. You can also select a number of days or hours the system should retain data. For example, if you select 30 days, the hard drive will begin to overwrite itself after 30 days.

To configure hard drive overwrite:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Device**, click **HDD** to open the **HDD** tab.

3. Use the dropdown next to **Overwrite** to select the overwrite mode.
 - **Auto:** Deletes the oldest saved footage when the hard drive is full.
 - **1–90 Days:** Keeps footage for as long as specified before overwriting. Ensure your hard drive is large enough to retain recordings for as long as you have specified.
 - **Off:** No footage will be overwritten.

**CAUTION**

If you turn off overwrite and your hard drive fills up with footage, the system will stop recording.

4. Click **Save**.

13.6.18 Configuring PTZ Cameras

Configure PTZ cameras to be used by the system. This is for initial setup purposes only. For using already configured PTZ cameras using FLIR Client 12, see 13.4.3 *PTZ Controls*, page 96.

**NOTE**

For the correct values to enter into the fields below, consult your PTZ camera instruction manual.

To configure PTZ cameras:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Device**, click **PTZ** to open the **PTZ** tab.
3. Use the dropdown next to **Channel** to select the channel your PTZ camera is connected to.
4. Select the PTZ camera's protocol from the dropdown next to **Protocol**.
5. Select the PTZ camera's baud rate from the dropdown next to **Baudrate**.
6. Select the PTZ camera's data bit from the dropdown next to **DataBit**.
7. Select the PTZ camera's stop bit from the dropdown next to **StopBit**.
8. Select the PTZ camera's parity from the dropdown next to **Parity**.
9. Click the switch next to **Cruise** to enable () or disable () PTZ cruise functionality.

10. Enter the PTZ ID number in the field next to **Address**.

 NOTE
<p>If connecting multiple PTZ cameras, you cannot use the same ID number for more than one PTZ camera.</p>

11. Click **Save**. You will now be able to control your PTZ camera using the DVR.
For details on using and controlling the PTZ camera, see 13.4.3 *PTZ Controls*, page 96.

13.6.19 Changing the Date and Time

If you need to change the date and time after completing the setup wizard, follow the steps below.

To change the DVR's date and time:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **General** to open the **General** tab.
3. Click the field next to **Date** to select the correct date from the calendar.
4. Click to enter the correct time. Use the dropdown to select **AM** or **PM** if using 12-hour time format.
5. Select how you want the date to appear from the dropdown next to **Date Format**.
6. Select how you want the time to appear from the dropdown next to **Time Format**.
7. Click **Save**.

13.6.20 Configuring Menu Time-out Option

By default, system menus are set to time-out after a set time period, taking you back to the main menu if there is no activity.

To configure or disable menu time-out:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **General** to open the **General** tab.
3. Select a time period from the dropdown next to **Menu Timeouts**.
 - **30s–10min**: Menus will disappear after the set time period if there is no activity on the system.
 - **OFF**: Menus will never time-out due to inactivity.
4. Click **Save**.

13.6.21 Configuring Daylight Savings Time (DST)

Customize settings for Daylight Savings Time (DST) based on your region or preference.

To configure Daylight Savings Time:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **General** to open the **General** tab.
3. Select **DST** to show DST options.
4. Click the switch next to **DST** to enable () or disable () DST on the system.

5. Use the dropdown next to **Daylight Saving Time** to select a mode of entry for effective dates:
 - Select **Week** to choose time changes that are relative to the day of the week (for example, on the second Sunday of March).
 - Select **Date** to choose a specific date and time for each time change (for example, on March 13th at 2:00AM).
6. Select the time difference to use for DST from the dropdown next to **Time Offset**.
7. Enter the desired **Start Time** and **End Time** for Daylight Savings Time. System time will move forward an hour at the start time, and back an hour at the end time.
8. Click **Save**.

13.6.22 Configuring NTP

Network Time Protocol (NTP) allows the DVR to sync with an NTP time server to ensure that system time is always accurate.

Prerequisites:

- The DVR must be connected to a router or switch on your network using the included Ethernet cable. A constant connection to the Internet is required to use NTP.

To configure NTP:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **General** to open the **General** tab.
3. Select **NTP** to show NTP options.
4. Click the switch next to **NTP** to enable () or disable () NTP on the system.
5. Select the desired NTP server from the dropdown next to **Server Address** (we recommend using the default ntp.lorexddns.net).
6. If needed, use the dropdown next to **Time Zone** to set the correct region.



NOTE

In most cases, the region should already be correct as it was configured during the DVR setup wizard. The selected region is also used by the system to intelligently determine the correct video format for that region, which may change automatically when changing the region. For example, changing the region from New York to London will also switch the video format of the system from NTSC to PAL.

7. Click **Save** to sync with the NTP.

13.6.23 Managing Users, Passwords and Permissions

Change user passwords, change permissions, or enable/disable user accounts.

NOTE

You must be logged in with the administrator account to manage user settings.

To manage users, passwords and permissions:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **Users** to open the **Users** tab.
3. Click the administrator or user account you would like to edit.
4. Configure the following:
 - **User Name:** Click to edit the username for the selected account.
 - **Password/Password Confirm:** Click to edit and confirm a new password for the selected account.
 - **Enable:** For user accounts, click the switch next to **Enable** to enable () or disable () the user account.
5. (**User accounts only**) Check or uncheck permissions that the selected account should have when using the system. For **Backup, Live, Playback** and **PTZ**, click the numbered squares representing channels the user should have access to. Check the box next to any of these options to allow access on all channels.
6. Click **Save**.

13.6.24 View System Information

View system information such as device ID, IP address, MAC address, model number, firmware version and more.

To view system information:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **Info** to open the **Info** tab. Click **Refresh** to refresh the information.

13.6.25 View Channel Information

View channel information for each connected camera such as alias, motion detection status, mainstream and substream recording specifications.

To view channel information:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **Info**, then click the **Channel Info** tab. Click **Refresh** to refresh the information.

13.6.26 View Recording Information

View recording information for each connected camera such as bitrate, recording resolution and frames per second (FPS).

To view recording information:

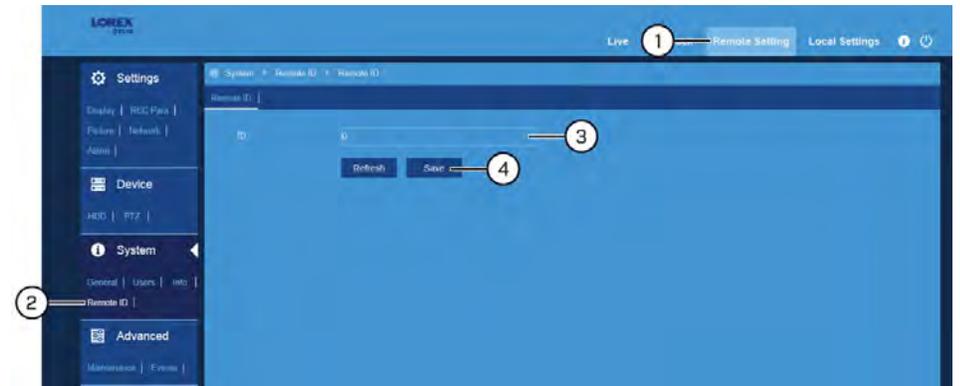


1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **Info**, then click the **Record Info** tab. Click **Refresh** to refresh the information.

13.6.27 Setting the Remote ID

If you have more than one DVR, you can use the ID function to pair the included remote control to a specific DVR.

To set the remote ID:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **Remote ID** to open the **Remote ID** tab.
3. Click the field next to **ID** to enter the desired ID number.
4. Click **Save**.
5. On the remote control, press **ID** then enter the ID number you entered in step 3, then press **ENTER** to confirm.

13.6.28 Manual Firmware Upgrade

The system supports automatic firmware upgrades over the network to ensure your unit is always up-to-date. Your DVR must be connected to a router using the included Ethernet cable to receive automatic firmware upgrade. It is recommended to use automatic upgrade unless directed to perform a manual upgrade by technical support. For details on automatic firmware upgrades, see 12.6.6 *Using Automatic Firmware Upgrade*, page 90.

Prerequisites:

- Save the **.bin** firmware upgrade file on your computer.

To manually upgrade the DVR's firmware:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Advanced**, click **Maintenance** to open the **Firmware Update** tab.
3. Click **Scan** to browse for and select the **.bin** firmware file saved on your computer.
4. Click **Start** to upgrade the firmware. Once the upgrade begins, a progress bar will appear show you how the download is going.



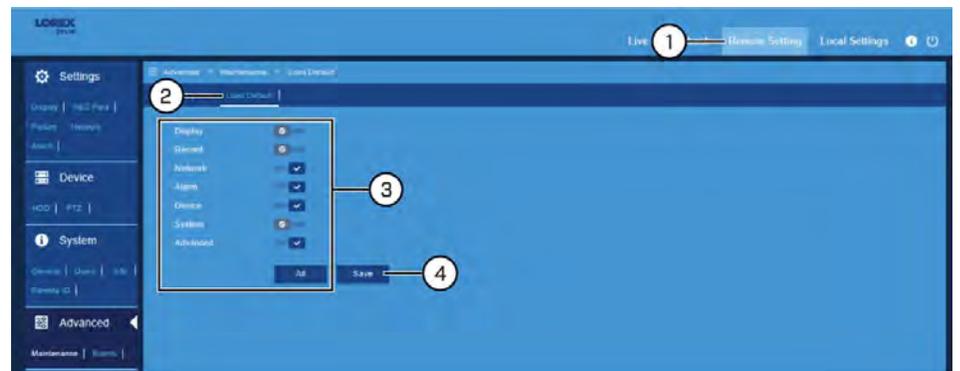
CAUTION

Do not power off the DVR or close FLIR Client 12 during firmware upgrade.

13.6.29 Restoring Default Settings

Reset the DVR settings to their out-of-box state. You can choose to reset all settings at once, or just settings on specific menus. Restoring default settings does not affect recordings and snapshots saved to the hard drive.

To restore default settings:



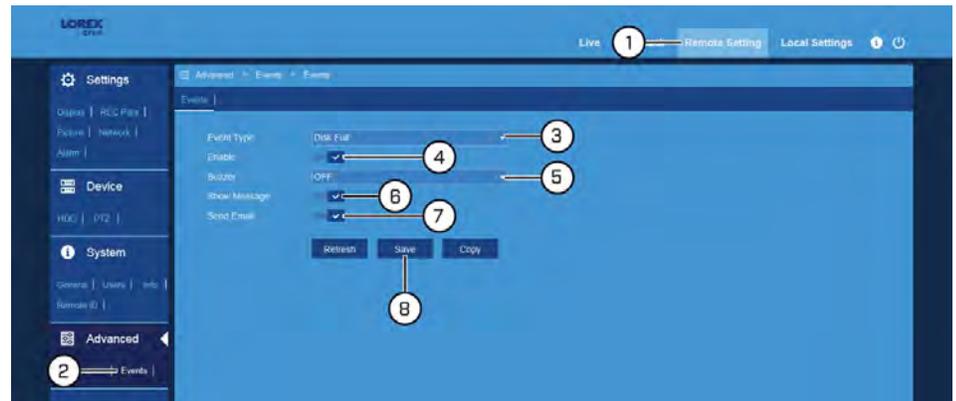
1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Advanced**, click **Maintenance**, then click the **Load Default** tab.

- Click the switches next to the system menus to you would like to include () or discard () from the reset, or click **All** to reset all menus.
- Click **Save** to confirm. The DVR will reboot automatically.

13.6.30 Configuring System Event Settings

Set notification options for HDD events, warnings and video loss.

To configure system event settings:



- Click **Remote Setting** in the top-right corner of the window.
- Under **Advanced**, click **Events** to open the **Events** tab.
- Select the type of event to configure from the dropdown next to **Event Type**.
- Click the switch next to **Enable** to enable () or disable () the selected event type.
- Use the dropdown next to **Buzzer** to select whether you would like the DVR to make an alarm sound if the selected event occurs.
- Click the switch next to **Show Message** to enable () or disable () on-screen messages for the selected event type.
- Click the switch next to **Send Email** to enable () or disable () email notifications for the selected event type.
- Click **Save**.



- (OPTIONAL) Click **Copy** to copy your event settings to another event type.
- (OPTIONAL) Check the event types you would like to copy your settings to, or check **All** to copy to all event types, then click **OK**.
- Click **Save** again.

13.7 Local Settings Menu — Set Download Location and File Type

Set the download location and file type for video recordings and snapshots taken using FLIR Client 12.

To configure download location and file types used by FLIR Client 12:



1. Click **Local Settings** in the top-right corner of the window.
2. Click  next to each of the path fields to browse for and select the folder where you would like video recordings and snapshots taken using FLIR Client 12 to be saved on your computer.
3. Use the dropdown next to **File type** to select a file type for video downloads.
4. Click **Save**.

FLIR Secure: Connecting to the DVR Using a Mobile Device

You can view video from your security cameras on compatible smartphones and tablets from anywhere in the world over the Internet. Our new systems feature remote access with our free FLIR Secure app, which provides hassle-free remote access that is secure, reliable, and easy to set up.

To use the FLIR Secure app:

1. Download and install the free FLIR Secure app from the App Store or Google Play Store.
2. Tap the FLIR Secure icon () to open the app.
3. Tap **SIGN UP**, then enter your email address and password to create a new account.

	NOTE
If you already have an account, enter your email address and password and tap LOG IN .	

4. Tap , then tap **Security System**.
5. Use the camera of your mobile device to scan the QR code on top of your recorder.

	NOTE
If you cannot scan the QR code, tap  and enter the Device ID located under the QR code.	

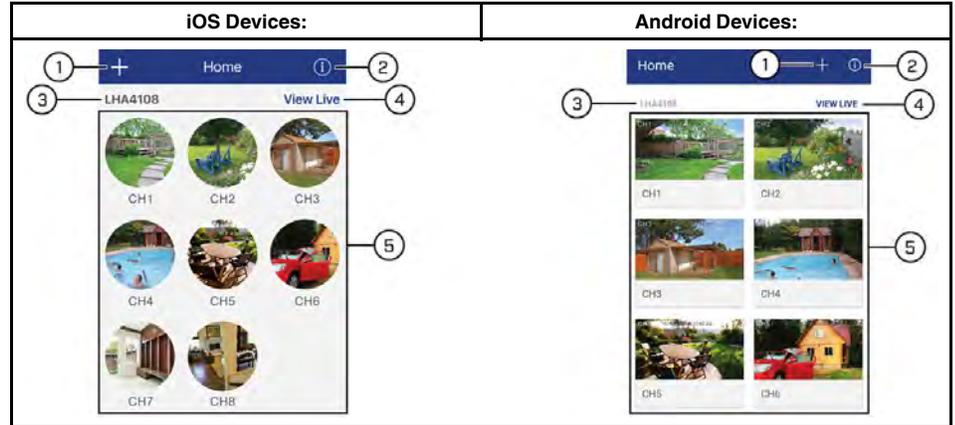
	NOTE
Make sure your DVR is on and connected to the network.	

6. Enter the recorder's user name (default: **admin**), and your secure password. Tap **Done**.
7. The app displays all the cameras that are connected to your recorder on the home screen. Tap any camera to stream live video from it.

	NOTE
If you already have FLIR Secure cameras and recorders associated with your account, you can find them under the Cameras and Security Systems tabs in the FLIR Secure home screen.	

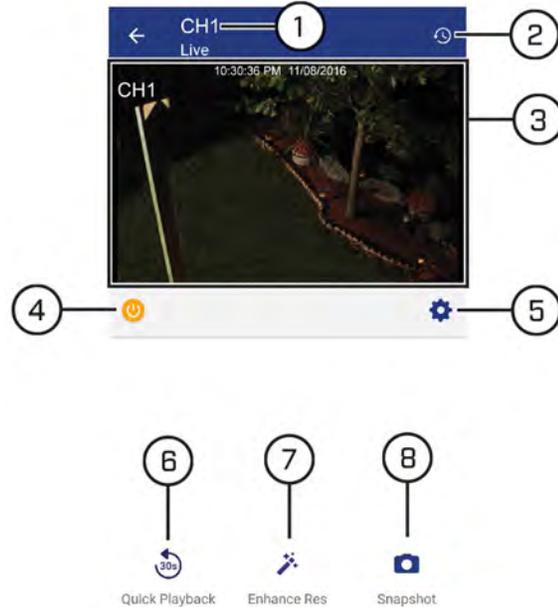
14.1 FLIR Secure Interface

FLIR Secure Home Screen



1.  : Tap to add new devices or create new groups.
2.  : Tap to view the FLIR Secure app information. You can also log out from the FLIR Secure app in this screen by tapping **Log Out**.
3. **Device Name / ID**
4. **View Live**: Tap to stream live video from all connected cameras. Tap (hold for one second) and drag a camera channel to rearrange it.
5. **Camera Channels**

Single-Channel Live View



1. **Channel Number / Name**
2. **History:** Tap to view recorded videos saved on your recorder's hard drive.
3. **Live View:** Double-tap to zoom in. Turn your mobile device sideways to view in landscape mode, or hold upright to view in portrait mode.
4. **Disconnect:** Tap to disable live video, video recording, and push notifications. Tap again to enable the disconnected camera.
5.  : Tap to open channel settings for the selected camera channel. You can change the channel name, enable PTZ controls (for PTZ cameras only), enable camera's microphone (for audio-enabled cameras only), and enable motion detection notification for the selected camera channel. Tap **Save** after you make your changes. On the channel settings screen, swipe to the bottom of the screen and tap **DEVICE SETTINGS** to view your device information. You can also change the device name, enable / disable mobile notifications for your device, enable / disable device error notifications, and check the Cloud subscription plan for your camera channels.
6. **Quick Playback:** Tap to play back video from the last 30 seconds for the camera channel. Tap anywhere on the video to pause / play the playback.
7. **Enhance Resolution:** Tap to enhance the resolution of the camera image.
8. **Snapshot:** During single-channel live view and quick playback mode, tap to take a screenshot of the currently-selected channel. Your mobile device must be in portrait mode.

14.2 Creating Groups

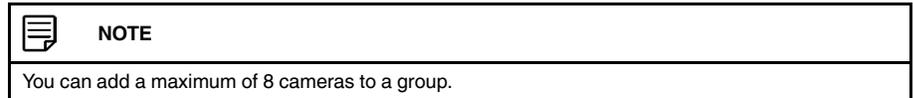
Group multiple cameras from various devices using FLIR Secure. You can then quickly bring up the selected group of cameras in live view without having to select each camera individually.

1. From the home screen, tap .

2. Tap **CREATE GROUP**. The FLIR Secure app displays all cameras that are connected to your FLIR Secure account.



3. Tap the **Name** text box and enter a group name of your choice.
4. Select the cameras you would like to include in the new group and tap .

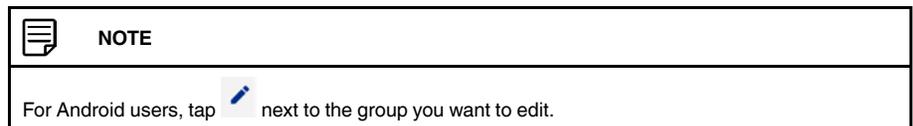


5. On the home screen, you will notice a new tab called **Groups**. Tap to view the new group you created.
6. Tap the group to stream live video from all the cameras in the group.

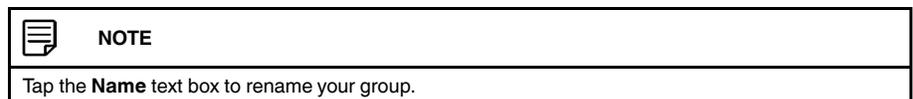
14.2.1 Editing a Group

To edit a group:

1. On the home screen, tap the **Groups** tab.
2. Tap **Edit** next to the group you want to edit. The **Edit Group** screen appears.



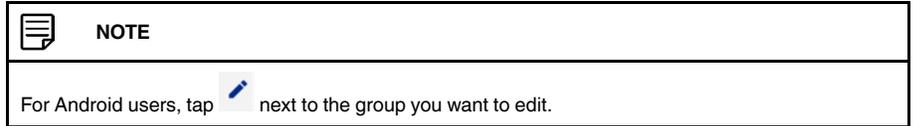
3. Tap **Save** after you make your changes.



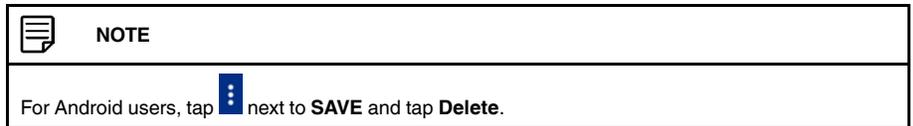
14.2.2 Deleting a Group

To delete a group:

1. On the home screen, tap the **Groups** tab.
2. Tap **Edit** next to the group you want to edit. The **Edit Group** screen appears.



3. Swipe to the bottom of the screen and tap **Delete Group**.



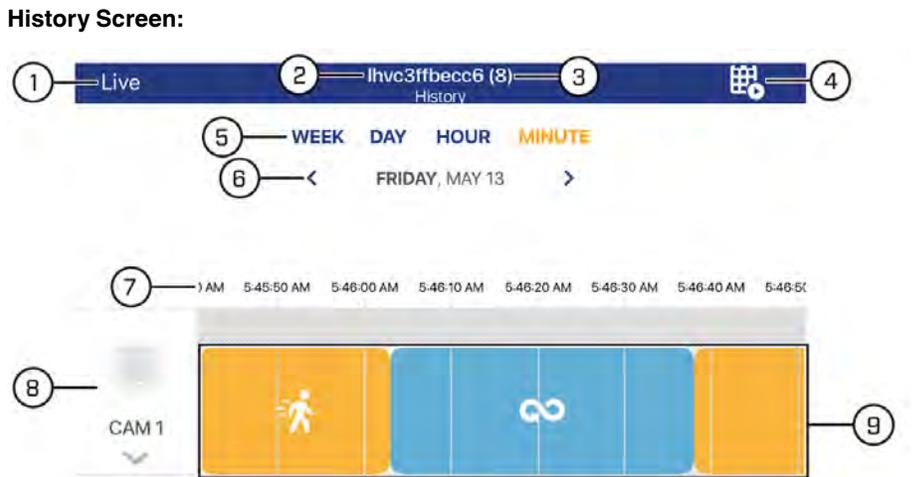
4. A confirmation pop-up appears. Tap **Delete Group** again. Your group is deleted.

14.3 Using History Mode

History mode allows you to view recorded video saved on your recorder's hard drive.

To use History mode:

1. From the Home screen, tap **View Live** next to the device name / device ID of the recorder you would like to play back from. The FLIR Secure app will stream live video from all cameras connected to your recorder.
2. Tap [refresh icon].
3. The **History** screen appears.



- 3.1. Go back to Live View
- 3.2. Device Name / ID of your recorder
- 3.3. Shows the number of cameras connected to your recorder
- 3.4. Play multiple recordings within a desired time frame.
- 3.5. Tap to select a time scale. You can search recordings by week, day, hour, or minute.

- 3.6. Tap the left / right arrow to select the day you would like to play back from.

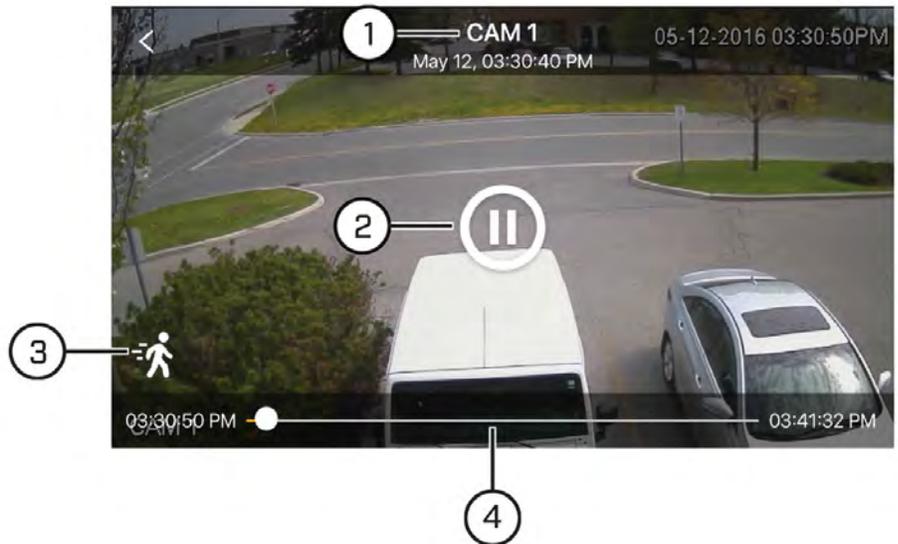
	NOTE
If you select WEEK as the time scale, this becomes a range of dates, for example: May 08 — May 14.	

- 3.7. Changes according to the time scale selected. For example, if you select **DAY** as your time scale, this area shows: 12 AM, 4 AM, 8 AM, etc.
- 3.8. Swipe up / down to select the camera channel you would like to play back from.
- 3.9. Swipe left / right to search for recordings. Tap inside the timeline to select the playback time. Playback starts immediately at the selected time.

	NOTE
	: Motion recording
	: Continuous recording

	NOTE
Recordings are also color-coded: orange for motion recording and blue for continuous recording. No color indicates that no recordings are available.	

Playback Controls:

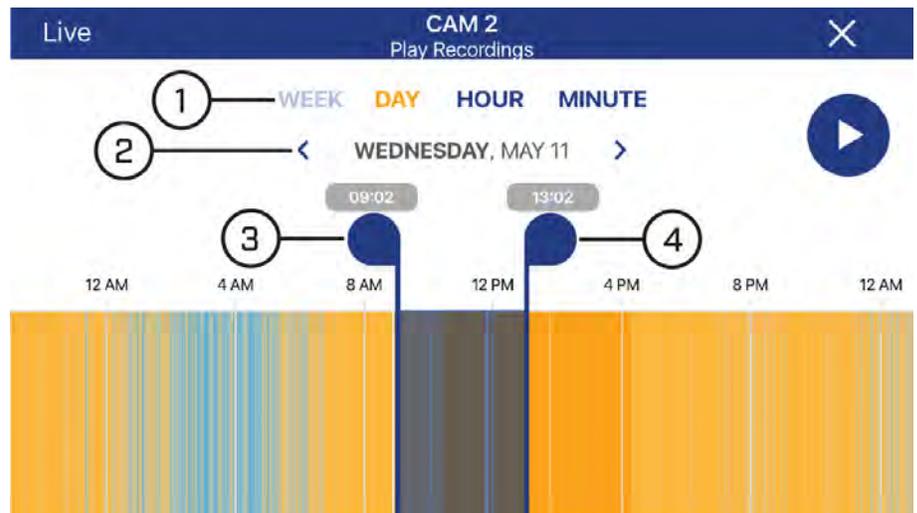


1. Channel, day, and time indicator
2. Tap anywhere in the playback video to pause / play.
3. Indicates the type of recording (for example, motion or continuous event).
4. Shows the length of the recording and how much has been viewed. You can tap and drag inside the time bar to select the time you wish to view.

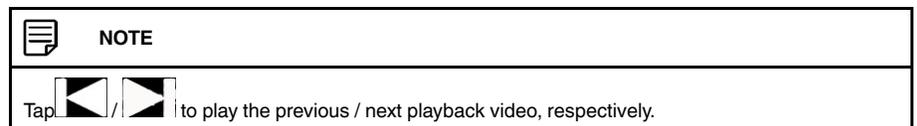
14.3.1 How to Play Multiple Recordings

To play multiple recordings within a desired time frame for a single channel:

1. From the Home screen, tap the camera channel under the recorder you would like to play back from. The FLIR Secure app will stream live video from the selected camera channel.
2. Tap . The **History** screen appears.
3. Tap . The **Play Recordings** screen appears.
4. **Play Recordings Screen**



- 4.1. Select the time scale. You can search recordings by week, day, hour, or minute.
- 4.2. Tap the left / right arrow to select the day you would like to play back from.
- 4.3. Playback start marker.
- 4.4. Playback end marker.
5. Tap and drag the markers to set a time frame for playback. The marker on the left sets the start time for playback and the marker on right sets the end time.
6. Tap  / . Playback will start within the time frame that you selected.



14.4 How to Manage Devices in the FLIR Secure app

You can add, delete, or modify your devices in the FLIR Secure app:

To add devices in the FLIR Secure app, see 14 *FLIR Secure: Connecting to the DVR Using a Mobile Device*, page 124

To modify a device:

1. From the Home screen, tap a camera channel under the recorder you want to modify. The FLIR Secure app will stream live video from the selected camera channel.
2. Tap . The app opens a channel settings screen.
3. Swipe to the bottom of the screen and tap **DEVICE SETTINGS**.

-
4. The **Device Settings** screen appears. You can modify the name of your device, enable / disable mobile and device error notifications.
 5. Tap **Save** after you make your changes.

**NOTE**

You can change the password of your recorder through the FLIR Secure app (for **ADMIN** users only). From the **Device Settings** screen, tap **Update password** and enter a new password for your recorder. Tap **UPDATE**. Your password is updated in the FLIR Secure app and recorder.

To delete a device:

1. From the Home screen, tap a camera channel under the recorder you want to delete. The FLIR Secure app will stream live video from the selected camera channel.
2. Tap . The app opens a channel settings screen.
3. Swipe to the bottom of the screen and tap **DEVICE SETTINGS**.
4. The **Device Settings** screen appears. Swipe to the bottom of the screen and tap **RE-MOVE DEVICE**.
5. A confirmation pop-up appears, tap **OK**.

Viewing Backed Up Video on PC/ Mac

When you perform a video backup, the system allows you to select the file type of the backup file. For Mac users who wish to view backed up video on their computer, it is recommended to select **AVI** or **MP4** file type, which can be played by most video player software.

PC Users have the option of using the Lorex Player 11 software, which is automatically saved to your backup USB flash drive when you perform a video backup. Lorex Player 11 is capable of playing **H264** files.

Minimum System Requirements

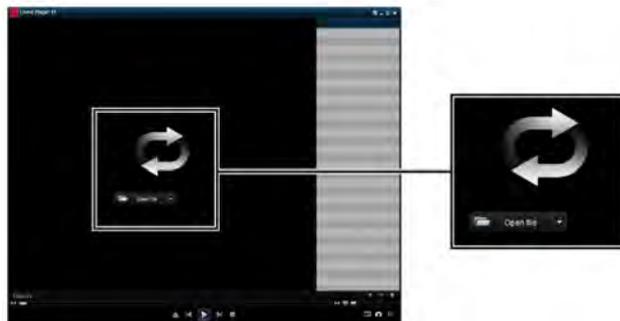
- Intel Pentium 4 or above
- Microsoft Windows XP / Vista / 7 / 8 / 10
- 256MB RAM
- 16MB video memory

Prerequisites

- Connect the USB flash drive (not included) used for DVR backup to your computer. Ensure at least one backed up video file is on the USB drive.
- Back up video files from the DVR to your local hard drive.

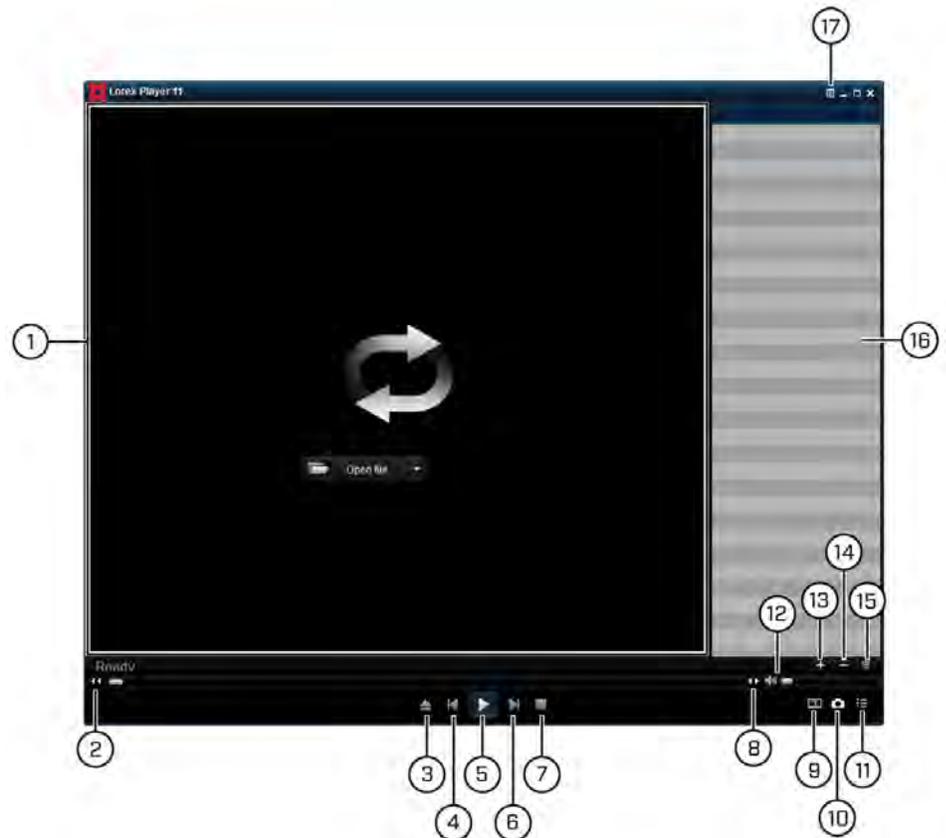
15.1 Running Lorex Player 11

1. Open your USB flash drive in Windows Explorer to view its contents.
2. Double-click the **RecordFile** folder to open it, then double-click **Lorex Player 11**.
3. Double-click **LorexPlayer11.exe** to run the player.
4. Click the **Open File** to load a single video file. Click the  button next to it to load a folder with backed-up videos.



5. Select the file and click **Open**.
 - If you are opening a folder, click **Add**.
6. Double-click the file in the list on the right to begin playback.

15.2 Lorex Player 11 Interface Overview



1. Video Window
2. Rewind
3. Open File
4. Previous File
5. Play
6. Next File
7. Stop
8. Fast Forward
9. Enable/Disable Watermark
10. Take Snapshot
11. Hide/Show Playlist
12. Mute/Unmute and Volume Bar
13. Add File
14. Remove File
15. Delete File
16. Playlist
17. Advanced Menu

15.2.1 About the Advanced Menu

The Advanced Menu allows you to select where the screen captures are stored.

To use the Advanced Menu:

1. Click the  button.



2. Click **Select** to change the snapshot save folder. Then select the folder and click **OK**.
3. Check to enable the watermark.
4. Click **OK** to save changes.

The system comes with a pre-installed SATA hard drive. You can expand the hard drive with a replacement 2.5" or 3.5" SATA hard drive up to 6TB.



NOTE

It is recommended to use surveillance or security-certified hard drives, which are designed to be reliable over long periods of time while recording 24/7. Security-certified hard drives are available at www.lorextechology.com.

16.1 Removing the Hard Drive



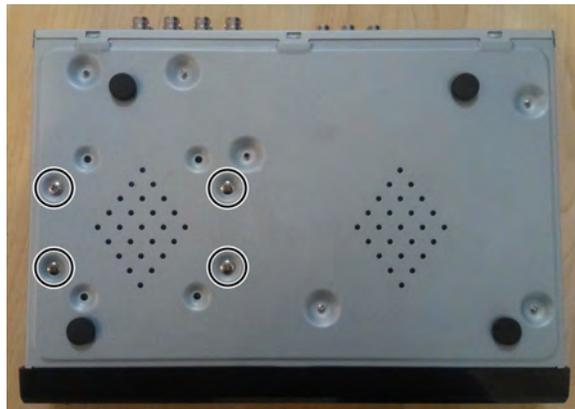
WARNING

Make sure that the power cable has been disconnected from the DVR before changing the hard drive.

1. Remove the screws from the rear panel (x3) and the side panels (x2) of the DVR.



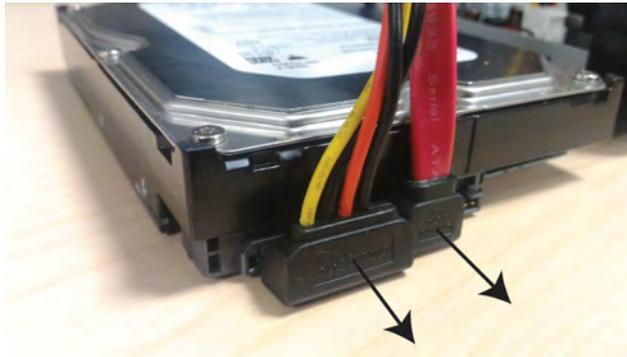
2. Gently slide the cover away from the rear panel and lift off. **Be careful of sharp edges.**
3. Next, you must remove the hard drive from the housing so you can access the data and power cables running to the hard drive.
 - 3.1. Turn the DVR over carefully.
 - 3.2. Hold the hard drive securely in place while removing the hard drive screws (x4) on the bottom panel of the DVR.



- 3.3. Keep holding the hard drive and turn the DVR back over. Remove the hard drive from the DVR.



4. Disconnect the power and data cables.



5. If you are not planning to replace the hard drive immediately, reattach the cover and replace the screws in the side and back panel of the DVR. For full instructions on installing a hard drive, see 16.2 *Installing a Hard Drive*, page 136.

16.2 Installing a Hard Drive

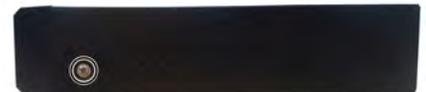


WARNING

Make sure that the power cable has been disconnected from the DVR before changing the hard drive.

Prerequisites:

- There must be no hard drive currently installed in your DVR before using the steps below. For full instructions on removing hard drives, see 16.1 *Removing the Hard Drive*, page 135.
1. Remove the screws from the rear panel (x3) and the side panels (x2) of the DVR.



2. Gently slide the cover away from the rear panel and lift off. **Be careful of sharp edges.**
3. Next, you must install the hard drive:

- 3.1. Connect the power and data cables to the hard drive. When the hard drive is placed in the DVR, the cables should angle up, away from the bottom panel of the DVR.
- 3.2. Position the hard drive over the hard drive screw holes (×4) in the bottom panel of the DVR.

**NOTE**

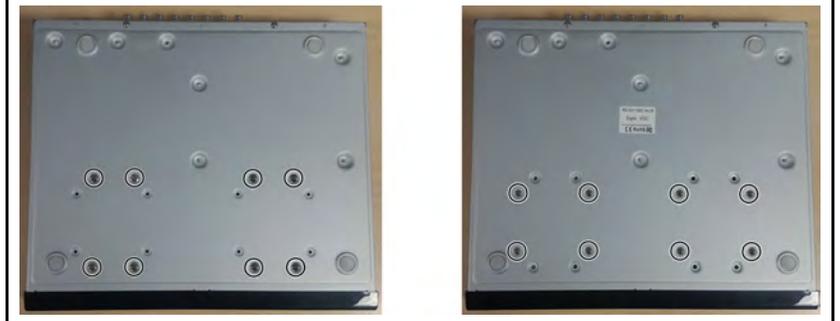
There are 2 sets of hard drive screw holes: one for 3.5" drives, and one for 2.5" drives.

- For 3.5" drives, the power and data cables should point toward the front panel of the DVR.
- For 2.5" drives, the power and data cables should point toward the fan on the side panel of the DVR.

- 3.3. Holding the hard drive securely in place, turn the DVR over. Keep holding the hard drive while inserting the hard drive screws (×4) on the bottom panel of the DVR (use the screw configuration on the left for 3.5" drives, or the one on the right for 2.5" drives).

**NOTE**

16-channel DVRs feature 2 hard drive bays, allowing you to install 2 hard drives up to 6TB each. If you are using 2 hard drives, ensure both hard drives are secured with 4 hard drive screws each (use the screw configuration on the left for 3.5" drives, or the one on the right for 2.5" drives).



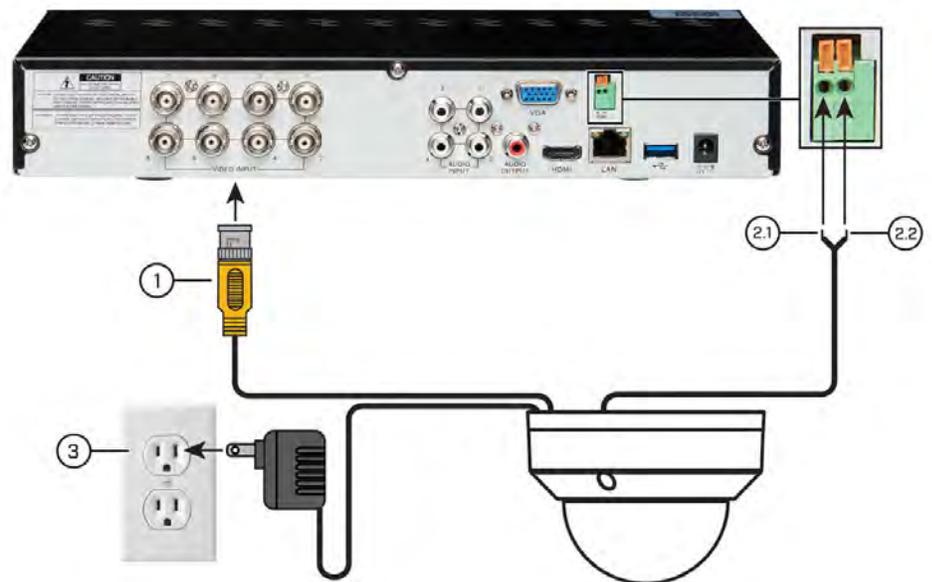
- 3.4. Keep holding the hard drive and turn the DVR back over.
4. Reattach the cover and replace the screws in the side and back panel of the DVR.

NOTE

You must format any newly-installed hard drive in order for it to function properly with the system. For full instructions on formatting the hard drive, see 12.4.2 *Formatting the Hard Drive*, page 74.

Connecting PTZ Cameras to the DVR

To connect a PTZ camera to the system:



1. Connect the BNC video cable to one of the video inputs on the DVR.
2. Connect the RS485 cables:
 - 2.1. Connect the **A (TX+)** cable to the **positive (+)** terminal.
 - 2.2. Connect the **B (TX-)** cable to the **negative (-)** terminal.
3. Connect the PTZ camera's power adapter to a power outlet.



NOTE

Once you have completed physical setup, you must configure the DVR so it can communicate with the PTZ camera. For full instructions, see 12.4.3 *Configuring PTZ Cameras*, page 75. Be sure to have the instruction manual for your PTZ camera on hand.

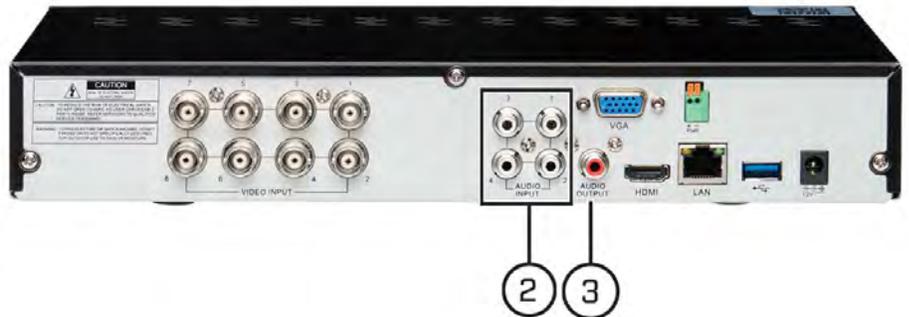
The system supports up to 4 channels of audio recording. You must connect self-powered microphones (not included) to record with audio.



NOTE

Audio recording without consent is illegal in certain jurisdictions. Lorex Corporation assumes no liability for use of its products that does not confirm with local laws.

18.1 STEP 1: Connecting a Self-Powered Microphone



1. Only channels 1–4 can be set to record audio from a self-powered microphone. Connect the camera(s) that will be near the microphone(s) to channels 1–4.
2. Connect the microphone to one of the **AUDIO INPUT** (RCA) ports on the system. Match the **AUDIO INPUT** number with the **VIDEO INPUT** number of the camera you want to record audio on.
3. **(OPTIONAL)** Connect a speaker to the **AUDIO OUTPUT** (RCA) port on the system.



NOTE

If you are using an HDMI TV or monitor with speakers, the HDMI cable will output audio to the speakers on the monitor.

18.2 STEP 2: Configuring Audio Recording

Ensure that you enable audio for any channels that have a microphone connected to the corresponding **AUDIO INPUT** channel. See 12.2.11 *Configuring System Recording Quality (Mainstream and Substream)*, page 60 for full instructions on enabling audio recording.

Setting up DDNS connectivity allows you to view your DVR from any computer or compatible mobile device with Internet access.

NOTE

The primary connectivity option for the DVR uses FLIR Cloud Services to connect to your system over the Internet without the need for port forwarding or DDNS registration.

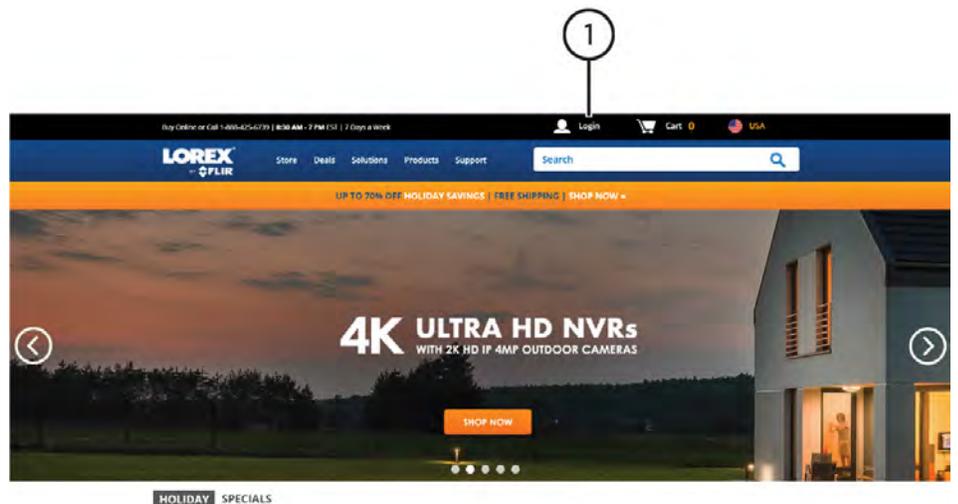
- For instruction on using the FLIR Client 12 software for PC and Mac, see 13 *FLIR Client 12 for PC / Mac*, page 91.
- For instruction on using the FLIR Secure app for smartphones and tablets, see 14 *FLIR Secure: Connecting to the DVR Using a Mobile Device*, page 124.

19.1 STEP 1: Port Forwarding

You **must** port forward the HTTP and Client ports (default: **80** and **9000**) on your router to your DVR's IP address before you can remotely connect to your system. There are several methods to port forward your router:

- Use the **Easy Connect Auto Port Forwarding Wizard** (PC only) to port forward the required ports (see www.lorextchnology.com for details). For instructions on how to use the Easy Connect Wizard, see the Easy Connect manual on www.lorextchnology.com.
- Manually port forward the required ports on your router to your DVR's IP address by following your router manufacturer's instructions. For more information on port forwarding, see the reference guides on www.lorextchnology.com.

19.2 STEP 2: Create a LOREX Account



1. Visit www.lorextechnology.com and click **Login** at the top of the page.

The screenshot shows the LOREX website header with navigation links (Store, Deals, Solutions, Products, Support) and a search bar. Below the header is a 'Login' section with the following text: 'Please select one of the options listed below, as a guest user you will have an opportunity to create an account at the end if one does not exist for you.' There are two radio button options: 'I Have a LOREX Account' and 'Create an Account'. A callout '2' points to the 'Create an Account' option. To the right is a registration form with fields for 'First Name', 'Last Name', 'Email Address', and 'Password'. A callout '3' points to the 'Email Address' field. At the bottom of the form is an orange 'Create an Account' button, with a callout '4' pointing to it.

2. Select **Create an Account**.

 NOTE
<p>If you have already set up an account, select I Have a LOREX Account and log in. Proceed directly to 19.3 STEP 3: Add Your Address, page 141.</p>

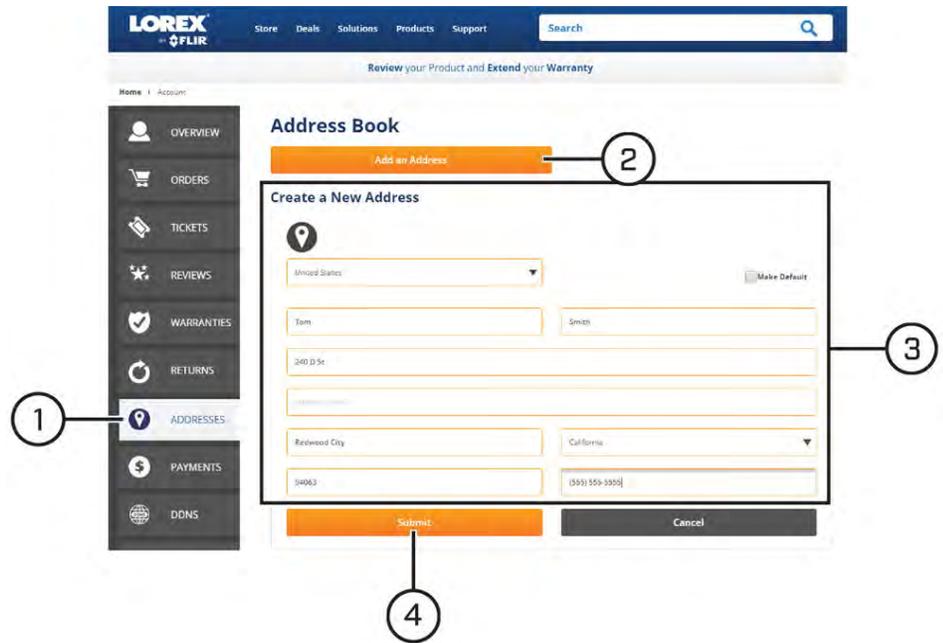
3. Enter basic information for account setup.
4. Click **Create an Account**.

19.3 STEP 3: Add Your Address

Once you have a LOREX account, you must add your address to the account.

Adding an address is required for warranty activation, which is needed before you can sign up for a DDNS account.

To add your address to your LOREX account:



1. From your LOREX account, click the **ADDRESSES** tab.
2. Click **Add an Address**.
3. Enter your address information.
4. Click **Submit**.

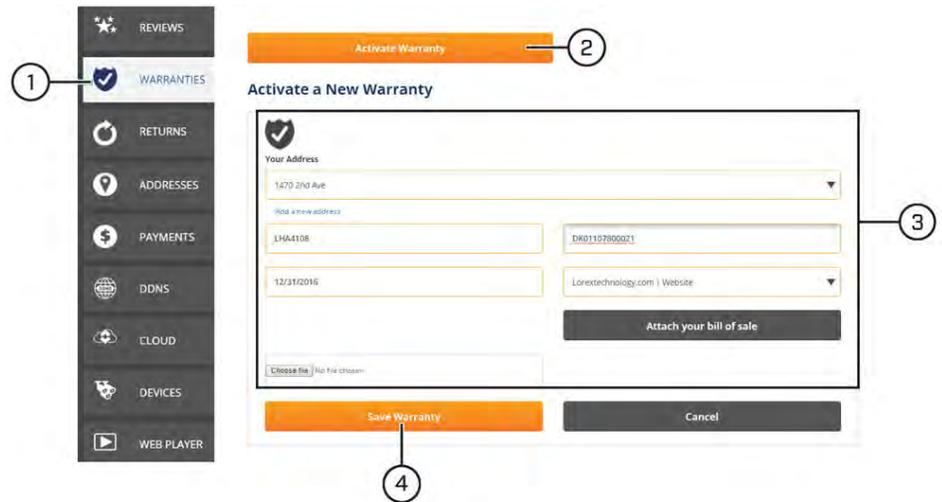
Once submitted, your address information will be summarized under **My Saved Addresses**.



19.4 STEP 4: Activate Your Warranty

Activate the manufacturer's warranty on your DVR.

To activate your product warranty:



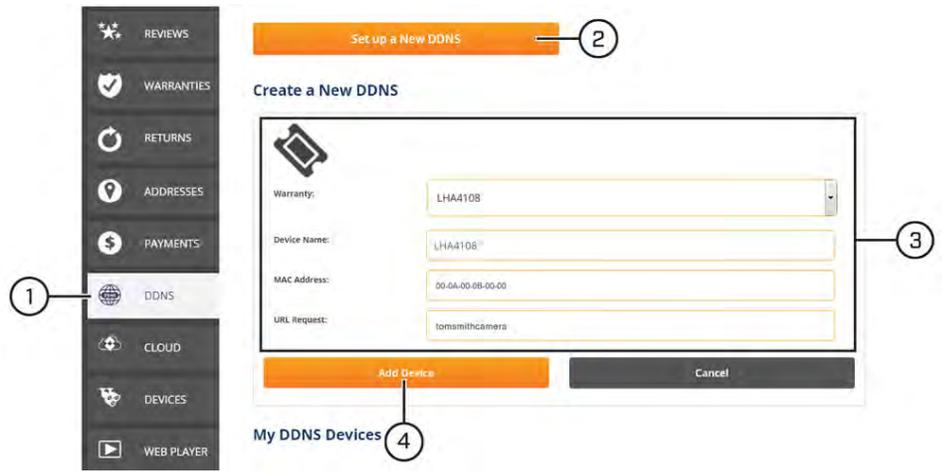
1. From your LOREX account, click the **WARRANTIES** tab.
2. Click **Activate Warranty**.
3. Select your address from the dropdown under **Your Address**. Enter the rest of your product information (attaching bill of sale optional).
4. Click **Save Warranty**.
Once submitted, your warranty information will be summarized under **My Warranties**.



19.5 STEP 5: Sign Up for a DDNS Account

Activate the manufacturer's warranty on your DVR.

To sign up for a DDNS account:



1. From your LOREX account, click the **DDNS** tab.
2. Click **Set up a New DDNS**.
3. Select your DVR warranty from the dropdown next to **Warranty**. Enter the rest of your product information.

NOTE

- The **Device Name** can be any name of your choice (for example, "Store Security System").
- You can find your DVR's **MAC Address** in the system information window on the DVR. Click  on the Taskbar to open the system information window.

4. Click **Add Device**.
Once submitted, your DDNS account information will be summarized under **My DDNS Devices**. Make a note of your DDNS **URL**, **Username** and **Password**, as they will be needed to complete DDNS setup.

My DDNS Devices



Device Name
LHA4108
Dec 12 2016, 14:54:39

MAC Address:
00-0A-07-0B-00-00

Model No:

URL: tosmithcamera.lorexddns.net

IP Address: 0.0.0.0

Username: tosmith

Password: ULCDHUZH

Edit

19.6 STEP 6: Enable DDNS on the DVR

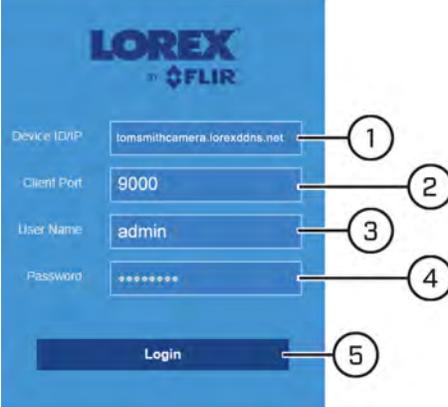
For full instructions, see 12.2.18 *Configuring DDNS Settings*, page 68.

19.7 STEP 7: Connect to the DVR's DDNS Address

Prerequisites:

- Install FLIR Client 12 on a remote computer. See 13 *FLIR Client 12 for PC / Mac*, page 91 for details.

To login using the DDNS address:



The image shows a blue login form for LOREX by FLIR. The form has the following fields and a button:

- Device ID/IP: tomsmithcamera.loreddns.net (Callout 1)
- Client Port: 9000 (Callout 2)
- User Name: admin (Callout 3)
- Password: ***** (Callout 4)
- Login button (Callout 5)

1. Enter the DDNS address of the DVR (for example, *http://tomsmithcamera.loreddns.net*).
2. Enter the Client Port (default: **9000**)
3. Enter the User Name for the account you wish to log in using (default: **admin**).
4. Enter the Password for the account you wish to log in using.
5. Click **Login**.

When a malfunction occurs, it may not be serious or difficult to correct. The following chart contains solutions to most common problems. Please refer to the topics below before calling Lorex Technical Support.

Error	Possible Causes	Solutions
System is not receiving power, or is not powering up.	Cable from power adapter is loose or is unplugged.	<ul style="list-style-type: none"> Confirm that all cables are connected correctly. Confirm that the power adapter is securely connected to the back of the unit.
	Cables are connected, but system is not receiving sufficient power.	<ul style="list-style-type: none"> Confirm that the system is powered on (LED indicators on the front should be ON). If the unit is connected through a power bar or surge protector, try bypassing the bar and connecting the power directly to the wall outlet. Confirm that there is power at the outlet: <ul style="list-style-type: none"> Connect the power cable to another outlet. Test the outlet with another device (such as a lamp or phone charger).
Remote control is not detected by the system.	<ul style="list-style-type: none"> Battery in the remote control is drained. There are no batteries in the remote control. 	Install two fresh AAA alkaline batteries in the remote control.
Hard drive is not detected by the system.	Hard drive cables are loose or not properly connected.	Remove the housing and check that hard drive cables are firmly connected.
	There is no hard drive in the system.	Open the housing and install compatible hard drive. Make sure to format the drive after installing. For details, see 12.4.2 <i>Formatting the Hard Drive</i> , page 74.
Hard drive is full (0%) and the unit is no longer recording.	Overwrite is not enabled.	Enter the main menu. Under Device , click HDD . Select Auto from the dropdown next to Overwrite and click Save . For more details on hard drive overwrite, see 12.4.1 <i>Configuring Hard Drive Overwrite</i> , page 74.
There is no picture on monitor/TV after connecting it to the DVR.	Monitor/TV not detected by DVR.	Power off the monitor/TV and the DVR. Power on the monitor/TV, and then power on the DVR.
	Input channel for DVR not selected on monitor/TV.	Ensure that the monitor/TV is set to the input channel that the DVR is connected to.
	Video cable is loose or has become disconnected.	Check the video cable connection to the DVR and the monitor/TV.
	Video-out resolution has been set to the incorrect setting.	Press 0 on the included remote control 3 times in a row to restore the default resolution.

Error	Possible Causes	Solutions
Mouse not detected by system.	Mouse cable is not firmly connected to the system, or the mouse is not connected to the system.	Firmly connect the mouse cable to one of the USB ports.
	System needs to be reset.	Power off the system (disconnect power cable). Firmly connect a USB mouse to one of the USB ports. Reconnect the power cable to the 12V DC port on the rear panel.
There is no picture on selected channels / camera picture is not being displayed.	Camera cables are loose or have become disconnected.	<ul style="list-style-type: none"> • Check the camera video cable and connections. • Disconnect and reconnect the cable at the system and at the camera. • Try moving the camera to another channel or use another cable.
The edges of the DVR's on-screen display are cut off.	If using an older Cathode Ray Tube (CRT) monitor, you may need to enable overscan support.	See 12.2.5 <i>Changing the DVR's Output Resolution</i> , page 53 for full instructions on enabling overscan support.
The image on the DVR appears, but does not have sound.	Cameras do not feature a microphone for audio recording.	The LHA4100 / LHA4200 Series recorders support audio recording, but require audio-enabled cameras with a built-in microphone.
The image on one or more of my cameras is distorted or discolored.	The region is set incorrectly.	<ul style="list-style-type: none"> • The system uses the region entered in the setup wizard to intelligently determine the video format for your region. • To change the region, enter the main menu. Under System, click General, then click the NTP tab. Use the dropdown next to Time Zone to select the correct region, then click Save. The system takes some time to refresh and reboot.
The system beeps during motion detection.	Motion detection is enabled and the buzzer is activated.	Enter the main menu. Under Settings , click Alarm to open the Motion tab. Use the dropdown next to Buzzer to select Disable for any channels you want to disable the buzzer for, then click Save . For more details on motion detection configuration, see 12.2.20 <i>Configuring Motion Detection Settings</i> , page 71.
I am not receiving email notifications.	Email notification is disabled.	Ensure you have configured email notification. For full instructions, see 12.2.16 <i>Setting up Email Notifications</i> , page 65.

Error	Possible Causes	Solutions
	Email notification is enabled, but you have not entered your own SMTP information.	If you want to use your own SMTP server, you must enter your SMTP server address, SMTP port, username, and password in the appropriate fields. For full instructions, see 12.2.16.2 <i>Email Notifications — Using your own server information</i> , page 67.

LHA4100 / LHA4200 Series Technical Specifications

21.1 System

Operating System	Linux (embedded)
Pentaplex	Simultaneous View, Record, Playback, Backup & Remote Monitoring
Number of Channels	4/8/16 Channels

21.2 Inputs/Outputs

Video IN	4/8/16 Channels
Video OUT	No
VGA OUT	Yes
HDMI	Yes
Audio IN	1 Line IN (RCA)
Audio OUT	1 Line OUT (RCA)
USB Port	1 at the back, 1 at the front
Alarm IN / OUT	No
Video Output Resolution	4ch: 1920×1080, 1440×900, 1280×1024, 1280×720, 1024×768 8/16ch: 3840×2160, 2560×1440, 1900×1200, 1600×1200, 1680×1050, 1920×1080, 1440×900, 1280×1024, 1280×720, 1024×768
PTZ Control	Yes

21.3 Display

Display Split	4ch: 1/4 8ch: 1/4/9 16ch: 1/4/9/16
Live Display Speed	4ch: 240fps @ 1080p, 100fps @ 3MP/4MP 8ch: 240fps @ 1080p/3MP/4MP 16ch: 480fps @ 1080p, 400fps @ 3MP/4MP
OSD	ON/OFF
System Navigation	USB mouse, IR remote control
Motion Area Setting	NTSC: Fixed grid 1320 (44×30) PAL: Fixed grid 1584 (44×36)
Sensitivity Levels	8
Firmware Upgrade	Automatic over the Internet & via USB device and network
User Authority	By user group
Time Synchronization	Auto time sync by NTP server

21.4 Recording

Video Compression	H.264
Audio Compression	G.711
Resolution	4MP / 3MP / 1080p / 720p / 960H

Record Rate	4MP: 15fps per channel 3MP: 20fps per channel 1080p: 30fps per channel (NTSC); 25fps per channel (PAL) 720p: 30fps per channel (NTSC); 25fps per channel (PAL)
Recording Resolution Setting	Per camera for different resolutions
Recording Quality Control	6 levels
Recording Schedule	By hour, by day, by recording mode, by motion, by alarm, by channel
Pre Recording	2 Seconds
Post Recording	Minimum 30 sec; maximum 5 min
Reliability	Watch-Dog, auto-recovery after power failure
Covert Video	Yes

21.5 Playback and Backup

Playback Channel	1/4/8/16
Playback Speed Variable	Variable Max 16x
Playback Players	Backup Player
Search	By time & event
Log Search	Up to 4,000 lines for system configuration changes, motion/alarm detected, account, recording and storage.
Audio Play	Yes (audio camera required)

21.6 Storage & Archive

Storage	4/8ch: Up to 1 HDD (SATA) 16ch: Up to 2 HDDs (SATA)
Maximum Capacity	4/8ch: Up to 1x6TB 16ch: Up to 2x6TB
Backup Media	USB flash drive, HDD and network
Backup File Format	H.264, MP4, or AVI file

21.7 Connectivity

Cloud Connection	FLIR Secure™
Supported Operating Systems	Windows™ Mac OS
Remote Software	Client Software (PC & Mac)
Email Notification	Text with snapshot
Instant Smartphone & Tablet Support	iPad®, iPhone®, Android™
DDNS	Free Lorex DDNS
System Configuration	Full setup configuration over network
Ports	Programmable by user

Network Protocol	HTTP, IPv4, TCP/IP, UPNP, RTSP, UDP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP
Network Interface	10/100/1000M, RJ-45
Network Bit Rate	4ch: Maximum 32Mbps total 8ch: Maximum 64Mbps total 16ch: Maximum 128Mbps total

21.8 General

Power Consumption	4ch: Approx. 4.6W (no HDD installed) 8ch: Approx. 7W (no HDD installed) 16ch: Approx. 12.4W (no HDD installed)
Supply Voltage	4/8ch: 12V DC, 2A 16ch: 12V DC, 5A
Unit Weight (lbs / kg)	4/8ch: 2.7lbs / 1.2kg 16ch: 4.4lbs / 2.0kg
Unit Dimensions (W x H x D)	4/8ch: 11.8 x 8.9 x 2.1" / 300 x 227 x 53mm (1U) 16ch: 14.9 x 13.2 x 2.0" / 378 x 335 x 50mm (1.5U)
Operating Temperature	14° ~ 131°F / -10° ~ 55°C
Humidity	10 ~ 90% RH

21.9 Recording Resolution (Pixels) & Maximum Speed (FPS — Frames per second)

		4MP SuperHD	1080p & 720p
4ch	Total	60/48	120/100
	Per channel	15/12	30/25
8ch	Total	120/96	240/200
	Per channel	15/12	30/25
16ch	Total	240/192	480/400
	Per channel	15/12	30/25

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