

Instruction Manual

LNK7000 Series



Instruction Manual LNK7000 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:

LNK7108

LNK7216

LNK7232

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.

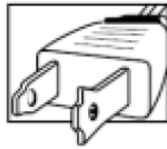


CAUTION

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.

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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.

Package Contents

Your security NVR package includes the following components:

 NVR (Network 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.

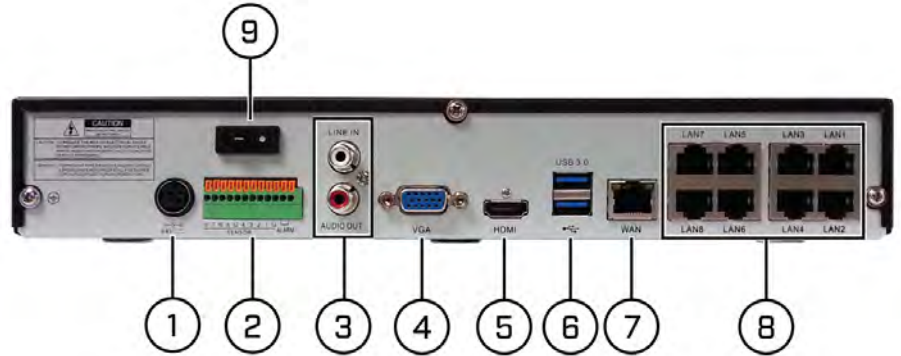
3.1 Front Panel



1. : Rewind during playback.
2. : Play/pause during playback.
3. : Fast-forward during playback.
4. **SEARCH**: Press to enter playback mode. For more details on using video playback, see 9 *Playback*, page 28.
5. **CH+**: View the next channel or page.
6. **CH-**: View the previous channel or page.
7. : Change viewing mode.
8. **MENU/ESC**: Open the main menu.
9. **LED Indicators**:
 - **PWR – LED Indicator**: Glows to indicate the system is on.
 - **HDD – LED Indicator**: Glows to indicate hard drive is in normal state. Turns off when there is a hard drive error.
10. **Directional Arrows**: Press the arrows to move the on-screen cursor.
11. : Press during live view to view system information. Press in menus to confirm selection.
12. **USB Port**: Connect a USB mouse (included) or connect a USB flash drive (not included) for data backup or firmware upgrades.

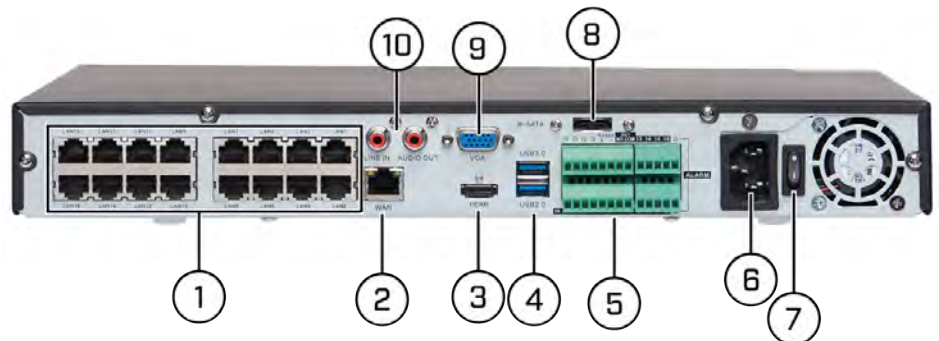
3.2 Back Panel

3.2.1 8-channel NVRs



1. **Power:** Connect the included power cable.
2. **Alarm Block:** Connect alarm/sensor devices (not included). For more details on configuring alarm
3. **Audio:**
 - **Input:** Connect a self-powered microphone (not included) to the **LINE IN** port 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 12.2.13 *Configuring System Recording Quality (Mainstream and Substream)*, page 66 for full instructions.
 - **Output:** Connect a speaker (not included) to the **AUDIO OUT** port.
4. **VGA:** Connect a VGA monitor (not included) to view the system interface.
5. **HDMI:** Connect to an HDMI monitor or TV (not included – 4K output supported) to view the system interface.
6. **USB Ports:** Connect a USB mouse (included) or connect a USB flash drive (not included) for data backup or firmware upgrades.
7. **WAN:** Connect a CAT5 RJ45 Ethernet cable to a router or switch on your network for local and remote connectivity.
8. **Video Input:** Connect Lorex by FLIR IP cameras. For a full list of compatible cameras, visit lorextechnology.com/compatibility
9. **ON/OFF Switch:** Connect the included power cable.

3.2.2 16/32-channel NVRs



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1. **Video Input:** Connect Lorex by FLIR IP cameras. For a full list of compatible cameras, visit lorextechnology.com/compatibility
 2. **WAN:** Connect a CAT5 RJ45 Ethernet cable to a router or switch on your network for local and remote connectivity.
 3. **HDMI:** Connect to an HDMI monitor or TV (not included – 4K output supported) to view the system interface.
 4. **USB Ports:** Connect a USB mouse (included) or connect a USB flash drive (not included) for data backup or firmware upgrades.
 5. **Alarm Block:** Connect alarm/sensor devices (not included). For more details on configuring alarm
 6. **Power:** Connect the included power cable.
 7. **ON/OFF Switch:** Connect the included power cable.
 8. **eSATA:** Connect external eSATA hard drive (not included) for extra storage space.
 9. **VGA:** Connect a VGA monitor (not included) to view the system interface.
 10. **Audio:**
 - **Input:** Connect a self-powered microphone (not included) to the **LINE IN** port 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 12.2.13 *Configuring System Recording Quality (Mainstream and Substream)*, page 66 for full instructions.
 - **Output:** Connect a speaker (not included) to the **AUDIO OUT** port.



NOTE

NVR back panels shown below are representative only. Your NVR model may appear slightly different, with all the same ports in different locations.

4.1 STEP 1: Connect the IP cameras

Connect IP cameras to the **LAN** ports on the rear panel of the NVR.



NOTE

- Lorex **LK Series** IP cameras are fully plug-and-play with no additional configuration required. Connecting Lorex **LNZ Series** PTZ cameras requires you to change the camera protocol to ONVIF. See 12.2.1.2 *Editing IP Cameras*, page 53 for full instructions.
- You may alternatively connect IP cameras to a PoE switch or router on your network instead of directly to the NVR back panel. Power adapters may be required. See 4.12 *Connecting Cameras to the Local Area Network (LAN)*, page 13 for full instructions on adding cameras over the LAN.

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 **WAN** port on the rear panel of the NVR. Connect the other end of the Ethernet cable to a router on your network.

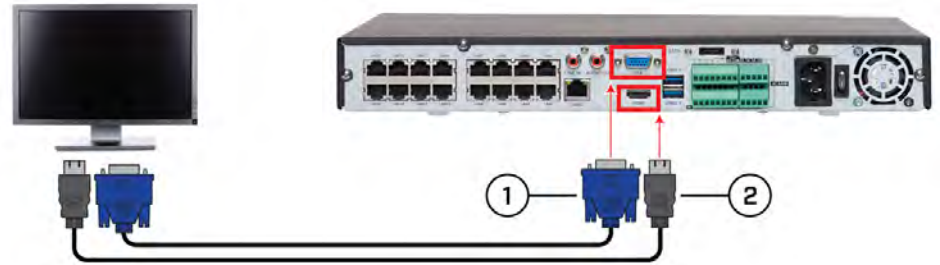


4.4 STEP 4: Connect the monitor or TV

Connect the included HDMI cable to the **HDMI** port, then to a TV or monitor (recommended).

OR

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



1. **VGA cable (not included)** — supports up to 1080p output.
2. **HDMI cable (included)** — supports up to 4K output.

4.5 STEP 5: Connect to power

Connect the included power cord to the rear panel of the NVR. Connect the end of the power cord to a wall socket or surge protector. Flip the ON/OFF switch to the ON position to power up the NVR.



1. Connect the included power cord to the rear panel as shown above.
2. Flip the ON/OFF switch to the ON position to power up the NVR.



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 NVR 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.

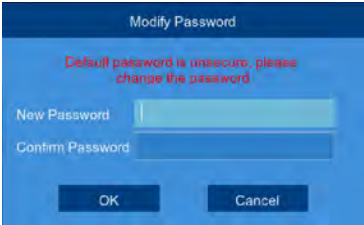
 **CAUTION**

DO NOT POWER OFF THE NVR 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.



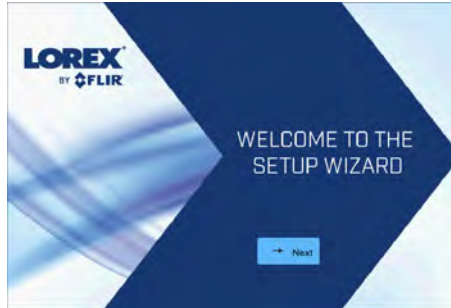
 **NOTE**

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 NVR Setup Wizard launches. The wizard helps you set your language, region, and confirm the correct date and time for the system.

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



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



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



4. Configure all fields related to date and time:



- 4.1. Click to select the correct date from the calendar.
- 4.2. Click to enter the correct time.

- 4.3. Select your preferred date format from the dropdown. This determines how the date will appear in date stamps.
- 4.4. 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**.
- 4.5. Click **Next**.
5. 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 87 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 NVR 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 NVR using a smartphone or tablet, see 14 *FLIR Secure: Connecting to the NVR Using a Mobile Device*, page 142.

- For details on connecting to your NVR using a PC or Mac computer, see 13 *FLIR Client 12 for PC / Mac*, page 104.

4.11 Quick Access to System Information

To quickly open a window with system information:

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



NOTE

The QR code shown in the System Info screen can be scanned during mobile setup to enter the system's Device ID.

4.12 Connecting Cameras to the Local Area Network (LAN)

For flexibility, you may also connect IP cameras to the same Local Area Network (LAN) as the NVR. This is accomplished by connecting the cameras to the same router as the NVR.

For these installations, an external PoE switch (sold separately) or power adapter (sold separately) must be used to provide power to each IP camera. You also must add the cameras on the NVR before they will show a picture on the monitor or be recorded by the NVR.

Follow the steps below to connect the cameras to the NVR over the LAN.

4.12.1 Step 1: Connecting Cameras to your Network

Option A: Connecting Cameras using a PoE Switch

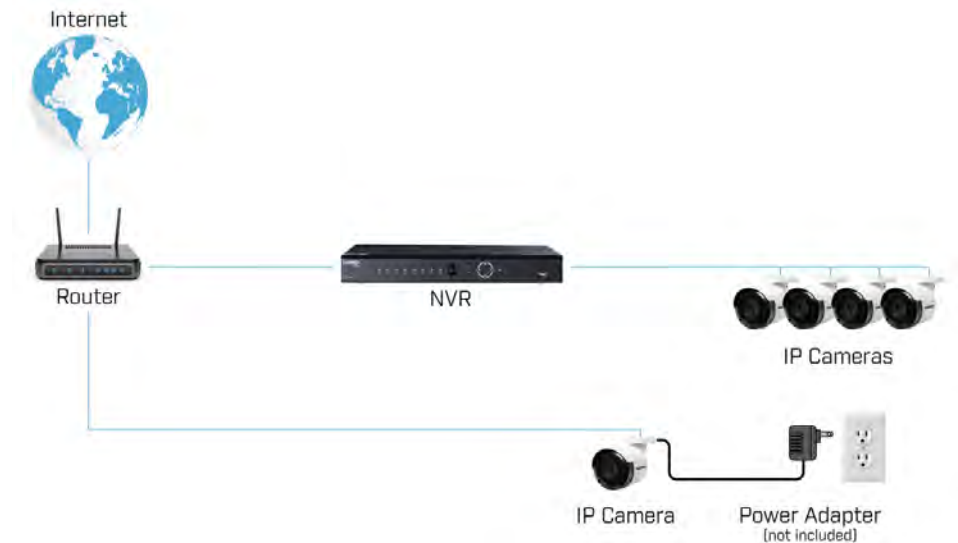


1. Connect an Ethernet cable from the LAN port on an external PoE switch (sold separately on www.lorextechnology.com) to your router using a CAT5e or higher Ethernet cable. Connect the power cable to the PoE switch and to a power outlet or surge protector.

**NOTE**

Terminology may vary depending on the model of PoE switch you have.

2. Connect the IP cameras to the PoE switch using the Ethernet extension cables. The PoE switch will provide power and video transmission the same way as your NVR.

Option B: Connecting Cameras using a Router (Power Adapters Required)

1. Connect each camera to a compatible power adapter (visit www.lorextechnology.com for compatible power adapters for your cameras).
2. Connect the camera to your router using a CAT5e or higher Ethernet cable.

4.12.2 Step 2: Add Cameras to your NVR

1. From live view, hover over a blank channel. Click  in the center of the channel to add an IP camera from the LAN.

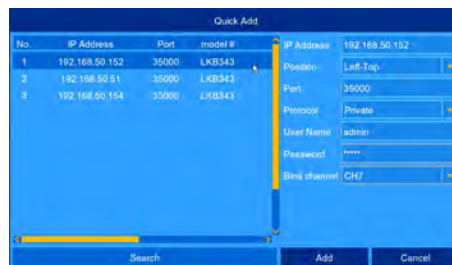
**NOTE**

If prompted, enter the system user name (default: **admin**) and your new, secure password.

- The Quick Add menu opens and scans the network for compatible cameras. Click the camera you would like to add, then click **Add**.

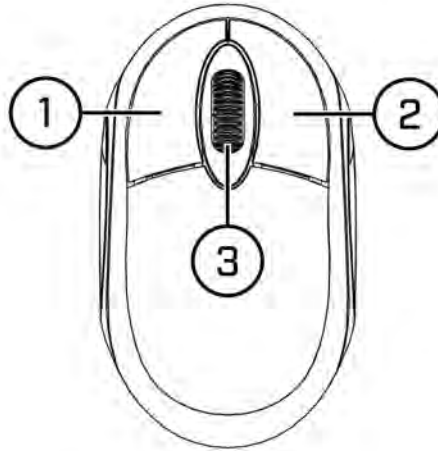
**NOTE**

Lorex **LK Series** IP cameras are fully plug-and-play with no additional configuration required. If you are connecting a Lorex **LNZ Series** PTZ camera, select the camera from the search results, then use the dropdown next to **Protocol** to select **ONVIF**, then click **Add**.



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

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:

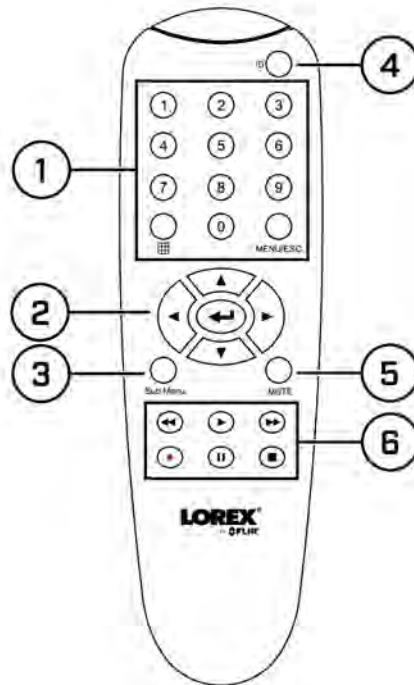
- During live viewing in split-screen view, click to open the Quick Menu (see 7.2 *Using the Quick Menu*, page 19).
- In menus, click to go back / close menus.

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 16).

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 to set the NVR'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 NVR. For details, see 12.5.12 *Setting the Remote ID*, page 96.
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:

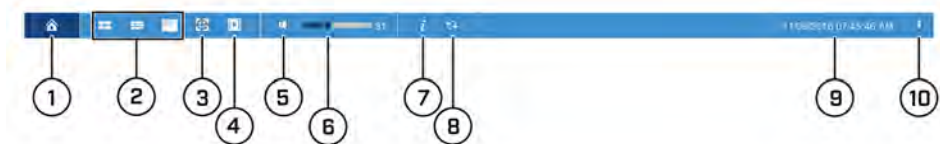
-  : In Playback Mode, press to fast forward/increase fast forward speed.
-  : In Playback Mode, press to rewind/increase rewind speed.
-  : In Live Viewing Mode, press to open the Search Menu to select video for playback.
In Playback Mode, press to play video.
-  : In Live Viewing Mode, press to start 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 NVR'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 NVR's main display allows you to access the Main Menu and control basic functions of the NVR.



1. **Main Menu:** Opens the Main Menu for browsing. For details on Main Menu functions, see 12 *Using the Main Menu*, page 50.
2. **Viewing Options:** Select how many channels are shown on screen during live viewing.
3. **Start / Stop SEQ:** Start or stop Sequence Mode. In Sequence Mode, the NVR automatically switches between channels every few seconds.
4. **Playback:** Opens the Playback Menu. This allows you to search for video recordings saved on the NVR's hard drive. For details on using the Playback menu, see 9 *Playback*, page 28.
5. **Mute:** Mute system audio.



NOTE

Muting system audio does not affect audio in recordings (microphone required — see , page for details).

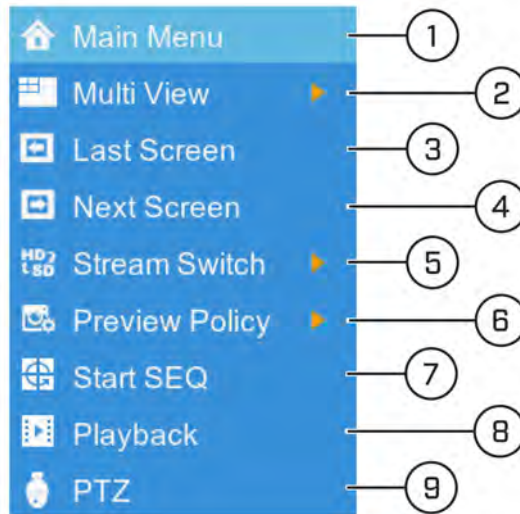
6. **Volume Bar:** Click inside the Volume Bar, or hover over it and use the scroll wheel to change system volume.
7. **System Information:** Displays system information.
8. **Auto Upgrade:** Checks for an available firmware update. For details, see 12.6.8 *Using Automatic Firmware Upgrade*, page 102
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:



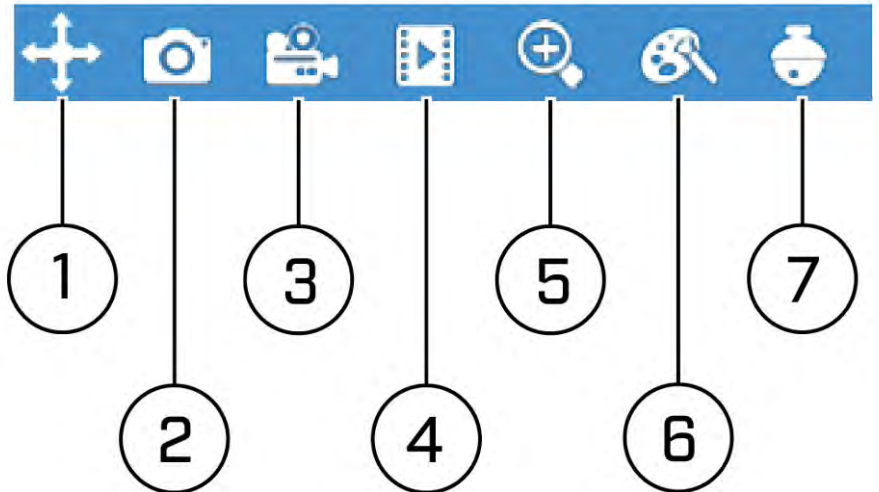
1. **Main Menu:** Open the Main Menu. For details on Main Menu functions, see 12 *Using the Main Menu*, page 50.
2. **Multi View:** Select how many channels appear on the live display at once.
3. **Last Screen:** View the previous channel or page of channels.
4. **Next Screen:** View the next channel or page of channels.
5. **Stream Switch:** Select the video stream by choosing mainstream or substream video settings.
6. **Preview Policy:** Select video quality and smoothness.
7. **Start SEQ / Stop SEQ:** Start or stop Sequence Mode, which cycles through connected cameras automatically.
8. **Playback:** Search for and play back recorded video. For details on using Playback, see 9 *Playback*, page 28.
9. **PTZ:** Control PTZ cameras. For details, see 7.5 *Using PTZ Controls*, page 23.

7.3 Using the Mini Menu

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

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 12.2.16 *Enabling Manual Capture*, page 70.
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 25.
6. **Color Adjustments:** Adjust the hue, brightness, contrast and saturation of the camera image. For details, see 12.2.4 *Adjusting Camera Image Color*, page 56.
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 23.

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:

- 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 17 for details.

7.5 Using PTZ Controls

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

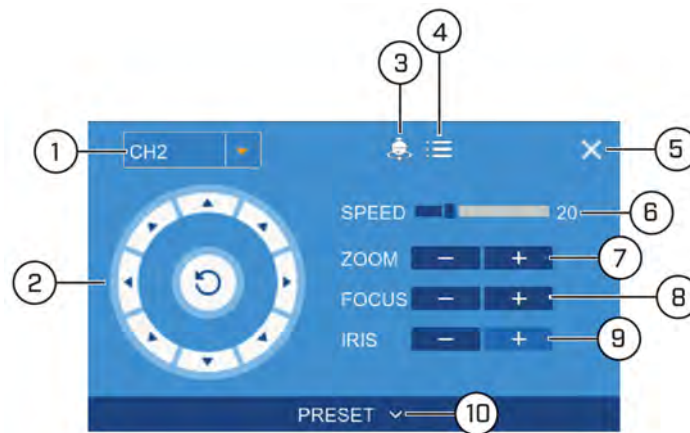
**NOTE**

Ensure you have set the **Protocol** for any Lorex LNZ Series PTZ cameras to **ONVIF** to enable full control over PTZ cameras. For full instructions on editing IP camera protocol, see 12.2.1.2 *Editing IP Cameras*, page 53.

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. Click  to begin autopan (PTZ camera pans around automatically).
3. **Start Cruise:** Cycles between preset viewing points automatically.
4. **OSD Menu:** On supporting cameras, access advanced camera settings in the On-Screen Display (OSD) menu.

**NOTE**

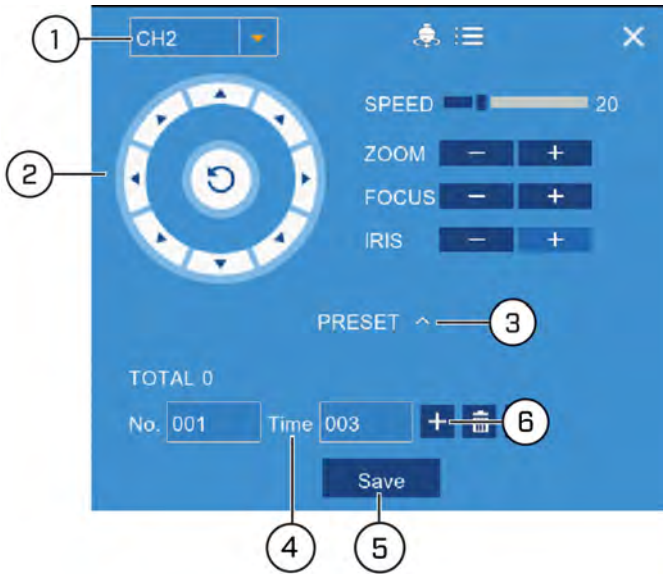
You can reset OSD menu settings on supporting cameras by performing a default settings reset on the NVR. See 12.6.2 *Restoring Default Settings*, page 97 for details.

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 24

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 **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.
5. Click **Save** to confirm the current preset point.
6. Click **+** to move to the next preset number in the **No.** field. Repeat for as many preset points as you wish to add.



NOTE

- Each preset viewing area you add to the system must have a unique ID number (**No.**). Using the same ID number as an existing preset will result in the old preset being overwritten.
- To cycle through preset viewing points automatically, click  to start PTZ Cruise. Ensure you have enabled cruise on the selected PTZ camera (see , page for details).

7.6 Using Digital Zoom

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



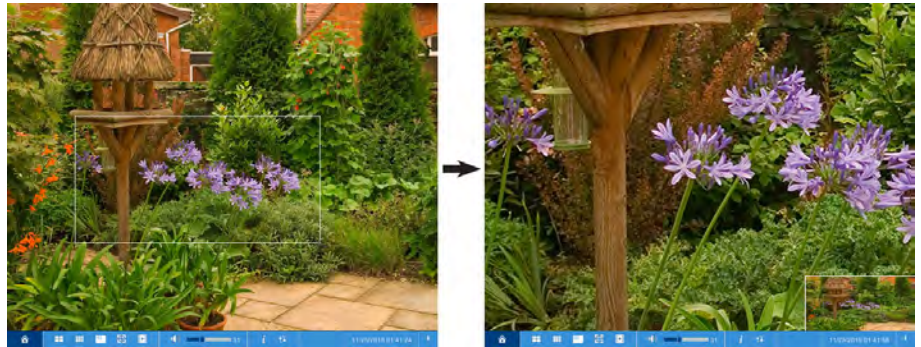
NOTE

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 23.

To use digital zoom:

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

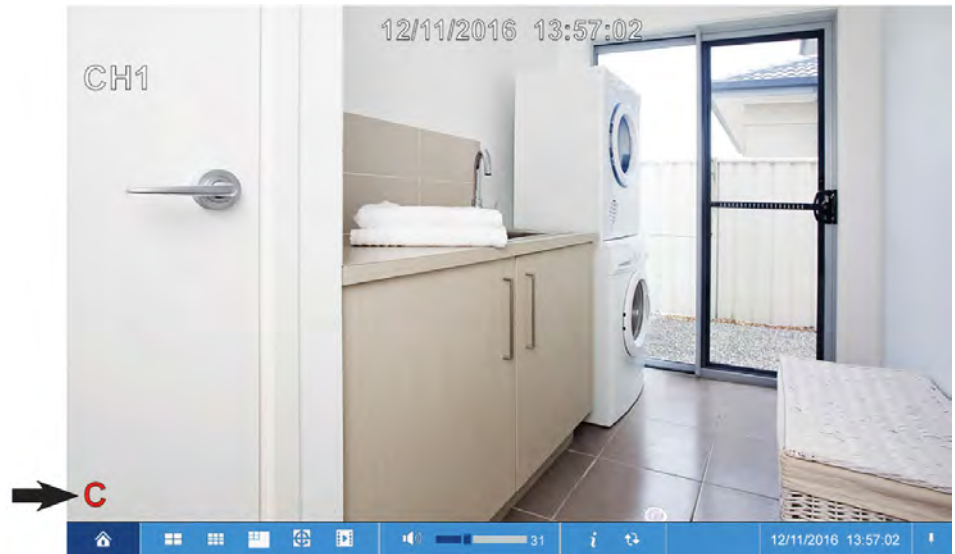
3. Click-and-drag on the video image to select an area to enlarge.
The enlarged image is shown in full screen. A Picture-in-Picture view in the bottom-right corner shows the full image with the zoom area highlighted.



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 12.2.12 *Setting the Recording Schedule*, page 65 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 12.2.12 *Setting the Recording Schedule*, page 65 for details.
 - To configure more motion detection options such as detection sensitivity, active areas for motion detection, and warning/buzzer options, see 12.2.23 *Configuring Motion Detection Settings*, page 79.
- **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 12.2.23 *Configuring Motion Detection Settings*, page 79.
 - To edit the recording schedule for the selected channel, see 12.2.12 *Setting the Recording Schedule*, page 65.

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

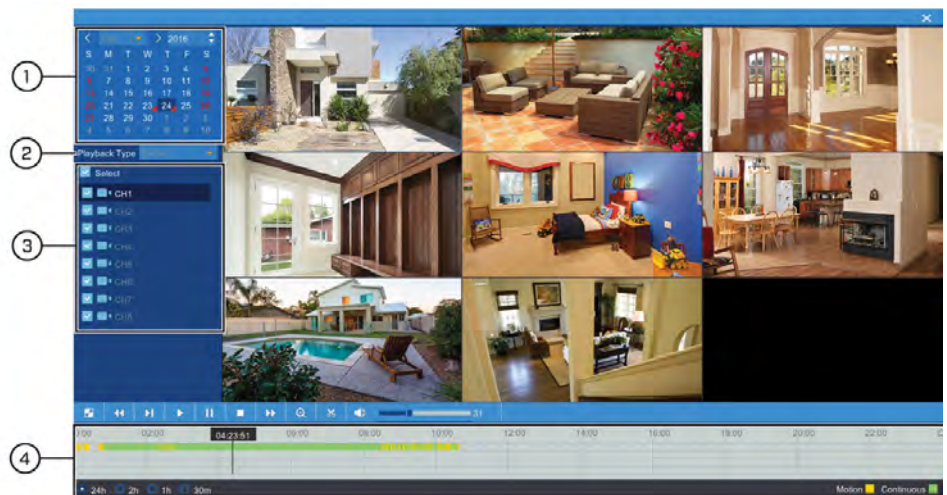
To access playback:

- 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:



- Use the calendar to select a day for playback. Dates with available recordings will be marked with a triangle in the bottom corner ().
- 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 30 for details.
- Pictures:** Search for snapshots taken using Auto and Manual Capture. See 9.4 *Picture Playback Controls*, page 31 for details.

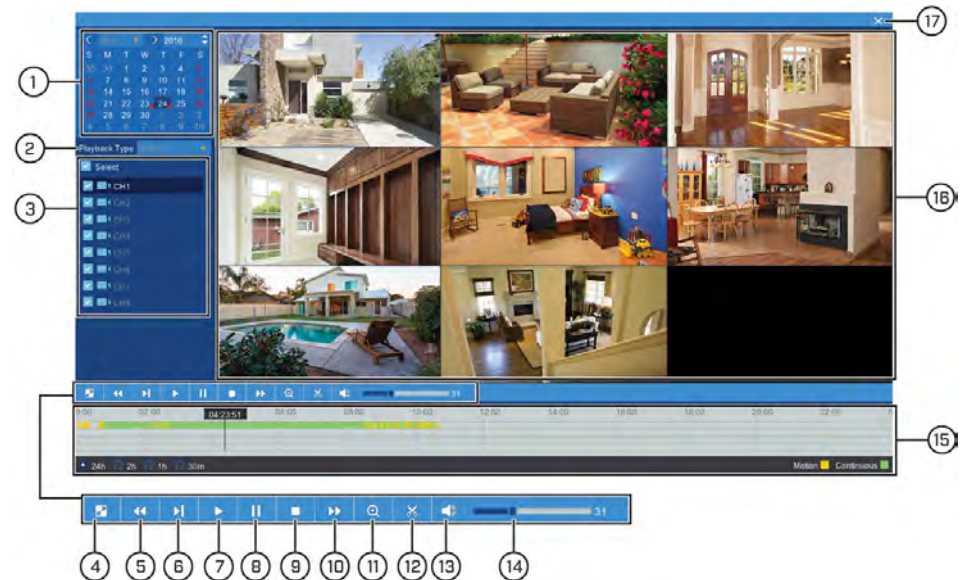
- Check the channels you would like to play back, or check **Select** to playback all connected cameras.

- Playback of the selected channels begins immediately. Click on a section of video in the timeline to change playback position. Different recording types are shown with different colored bars:

- **Green:** Continuous recording available.
- **Yellow:** Motion recording available.
- **Red:** Alarm recording available.
- **Blue:** Alarm + motion recording available.

For a full overview of video playback controls, see 9.2 *Video Playback Controls*, page 29.

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 30 for details.
- **Pictures:** Search for snapshots taken using Auto and Manual Capture. See 9.4 *Picture Playback Controls*, page 31 for details.

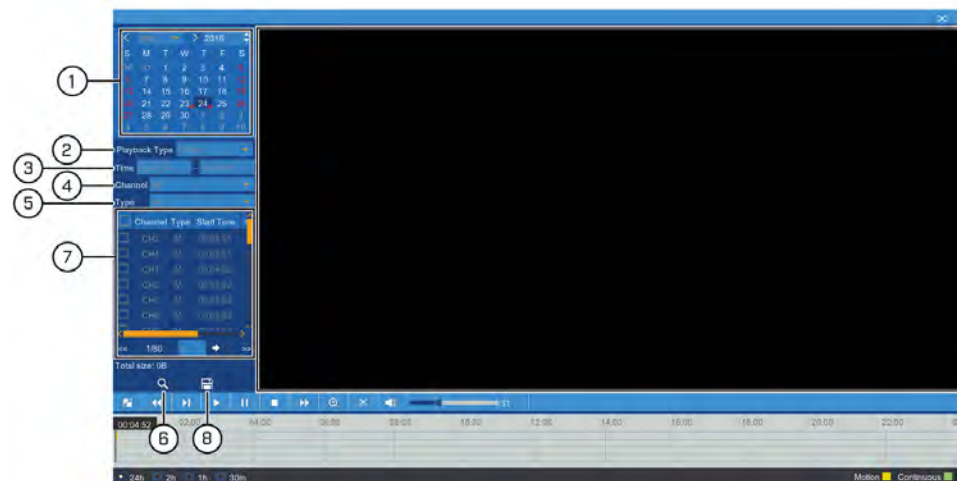
- Channel List:** Check channels you would like to search, or check **Select** to search all connected channels.
- Full Screen**
- Rewind**
- Slow Play:** Click to slow playback by half-speed. Click repeatedly to play as slow as 1/16 of normal speed.
- Play**
- Pause**
- Stop**
- Fast-Forward**



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 9.5 *Using Digital Zoom*, page 32.
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 35.
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 colored bars to represent different types of recording (legend shown in the bottom-right corner of the display). Use the timeframe options in the bottom-left corner () 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 a recording type, 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 NVR. For more details on backup options, see 10 *Search & Backup*, page 34.



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 29

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 12.2.14 *Configuring Auto Capture*, page 68.
 - For instructions on setting up Manual Capture, see 12.2.16 *Enabling Manual Capture*, page 70.



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. **Type:** Use the dropdown next to **Type** to select a type of snapshot to search for, 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 NVR. For more details on backup functions, see 10 *Search & Backup*, page 34.
 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 1×1, 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 1×1, the page will only consist of one snapshot. See 14–16 to change page setup.
 14. **View 1×1 Page:** Click to have each page consist of only one snapshot.
 15. **View 2×2 Page:** Click to have each page consist of up to 4 snapshot.
 16. **View 3×3 Page:** Click to have each page consist of up to 9 snapshots.

9.5 Using Digital Zoom

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

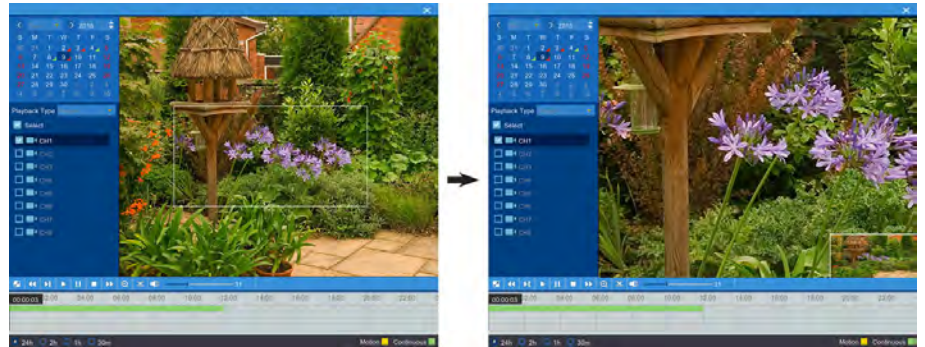
	NOTE
Digital zoom is not the same as optical zoom, which is supported only by PTZ and motorized lens cameras. For details on using optical zoom on supporting cameras, see 7.5 <i>Using PTZ Controls</i> , page 23.	

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.	

- 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.

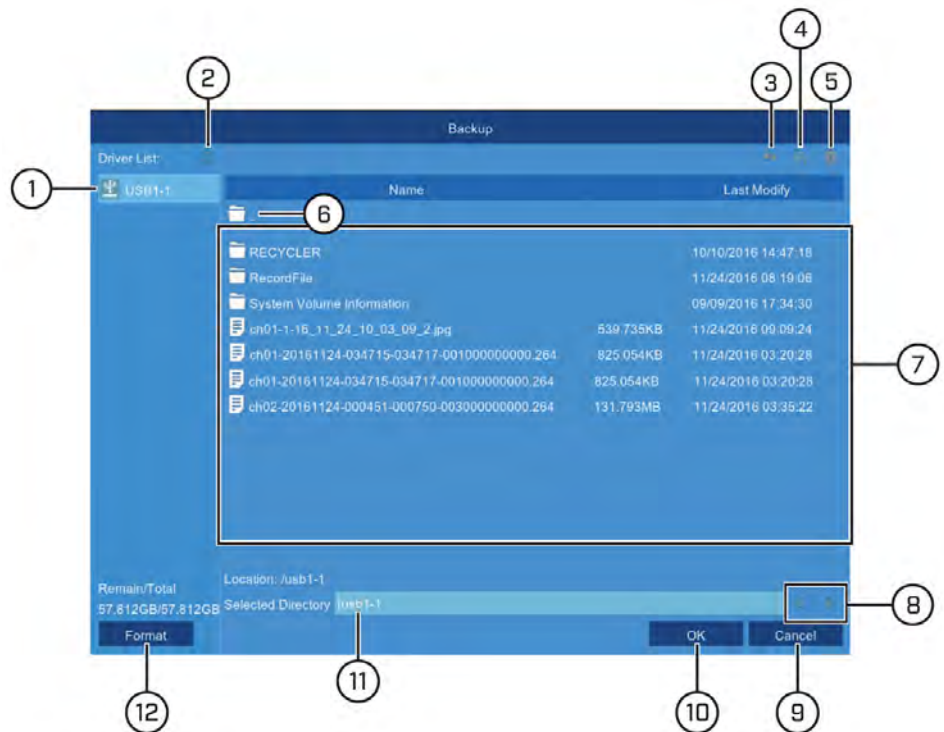


- Click  again or right-click to return to full playback.

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

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:

OK
Cancel

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 NVR.

**CAUTION**

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

10.2 Video Clip Backup

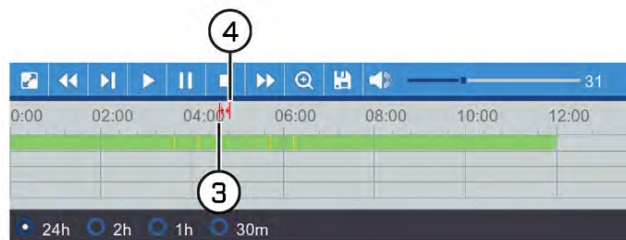
Choose the exact section of video recording you want to backup from Playback mode.

Prerequisites:

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

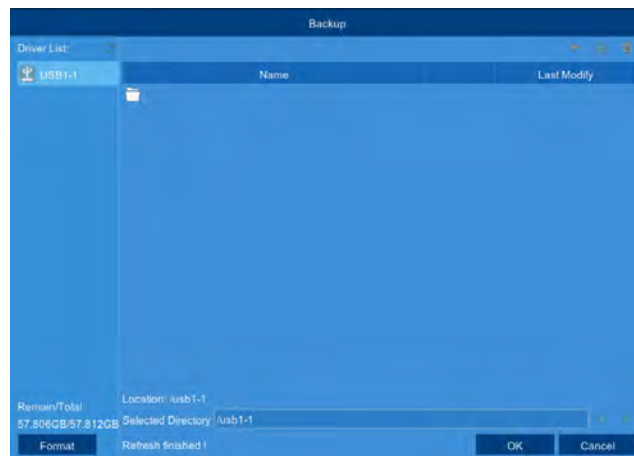
4. Select an ending time for the backup file:

- 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 34 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 150 .

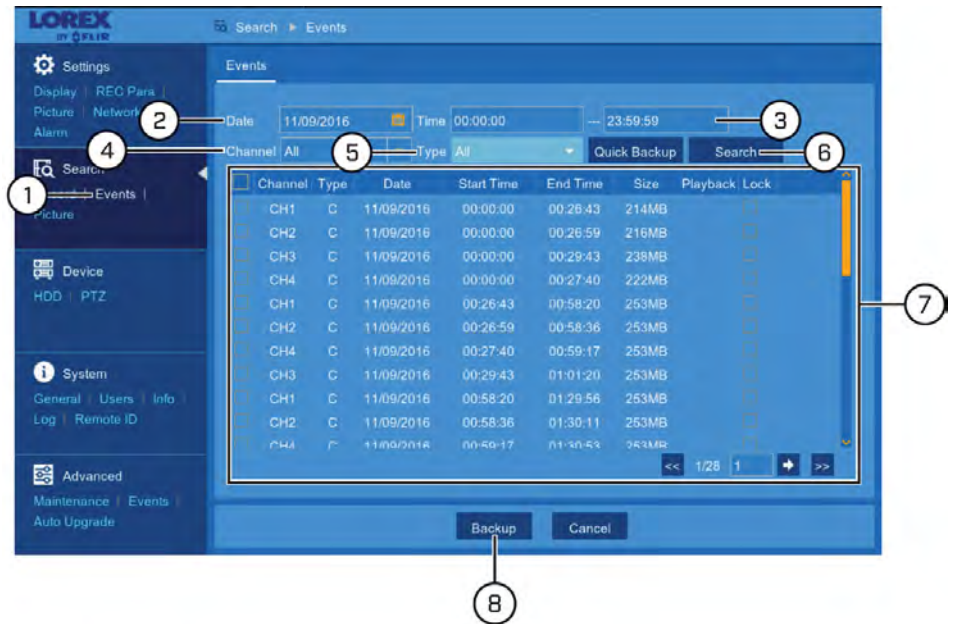
10.3 Event Search — Searching and Backing Up

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:

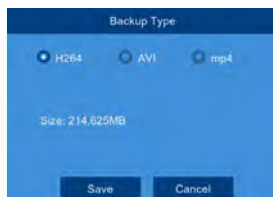
- To back up events, you must connect a USB flash drive to one of the NVR's USB ports.

To search for and back up events:

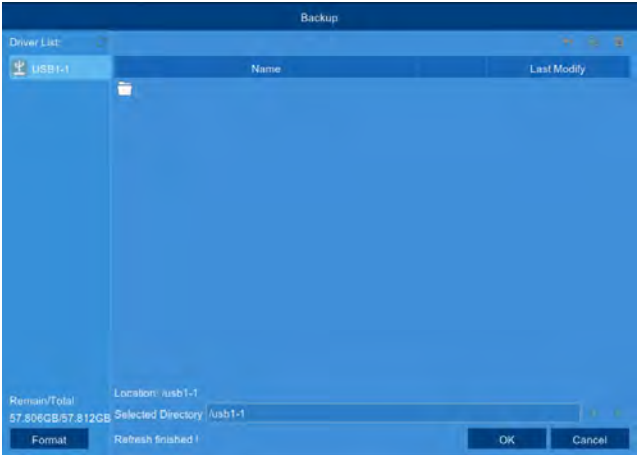


- Under **Search**, click **Events** to open the **Events** tab.
- Click the field next to **Date** to select a date using the on-screen calendar.
- Click the fields next to **Time** to enter a start and end time for your search (24-hour format).
- Use the dropdown next to **Channel** to select a channel 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**.



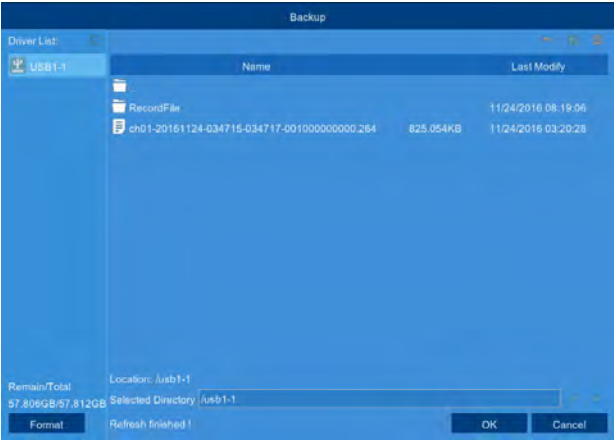
10. The backup drive menu appears (see 10.1 *Drive Menu Controls*, page 34 for an overview of drive menu controls).



- 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 150 or , page .

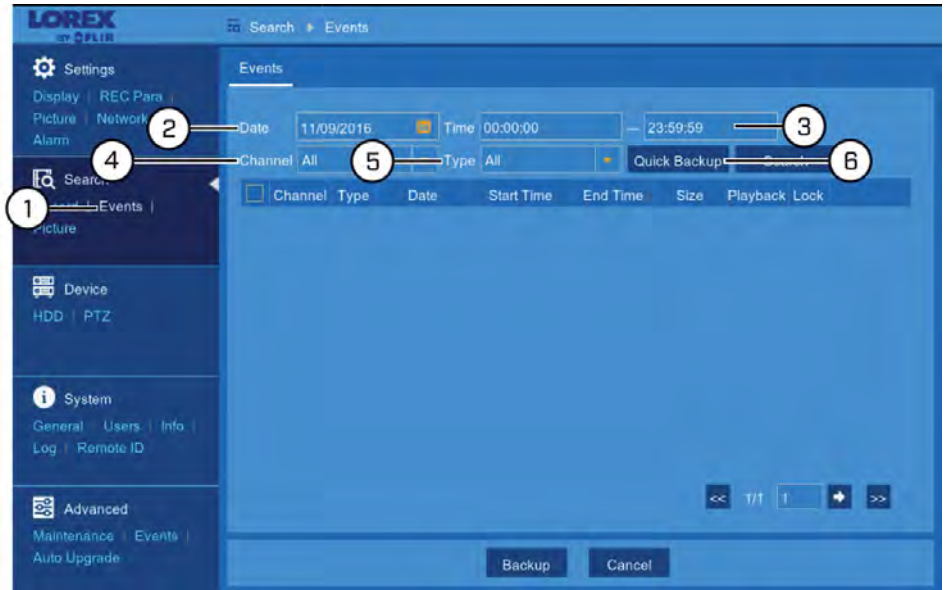
10.4 Event Search — Quick Backup

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.

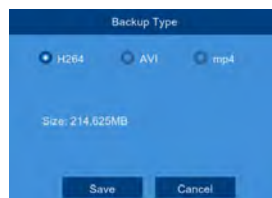
Prerequisites:

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

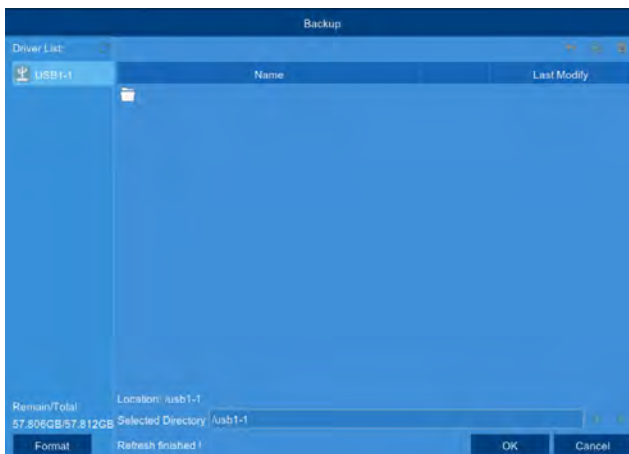
To perform a Quick Backup for events:



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 34 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 150 .

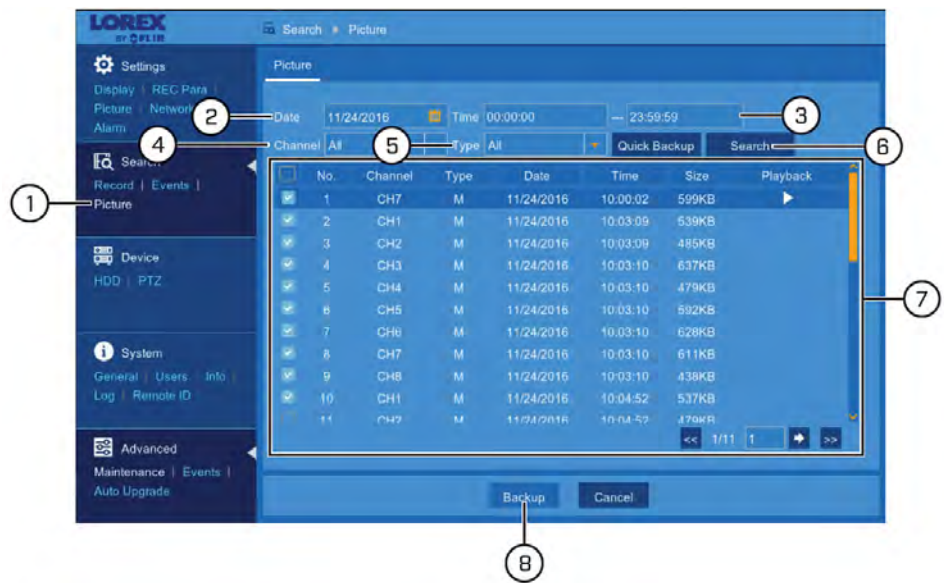
10.5 Picture Search — Searching and Backing Up

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:

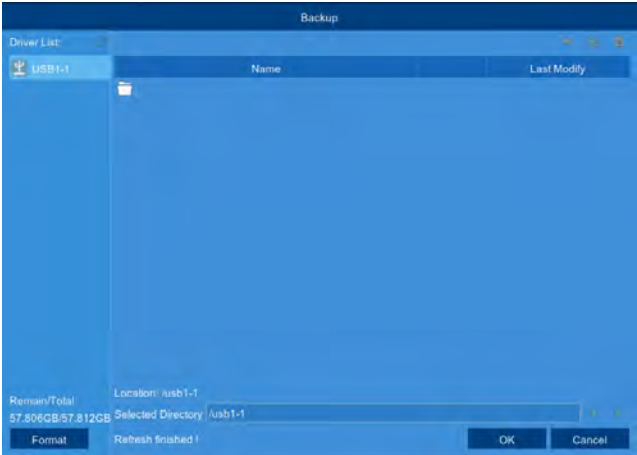
- To back up snapshots, you must connect a USB flash drive to one of the NVR's USB ports.
- You must have enabled Auto or Manual Capture, or the system will not return any snapshot results. To set up Auto Capture, see 12.2.14 *Configuring Auto Capture*, page 68. To set up Manual Capture, see 12.2.16 *Enabling Manual Capture*, page 70

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**.

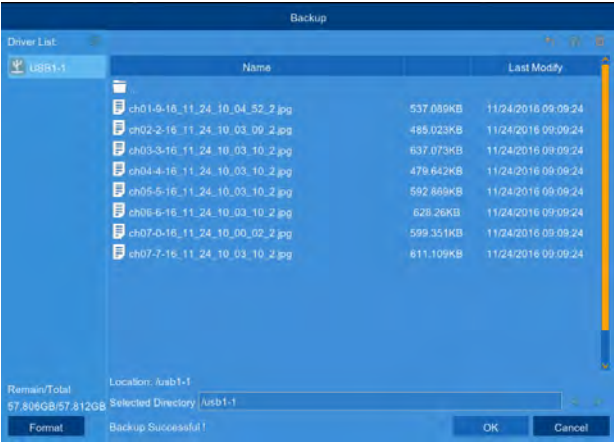
9. The backup drive menu appears (see 10.1 *Drive Menu Controls*, page 34 for an overview of drive menu controls).



- 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.



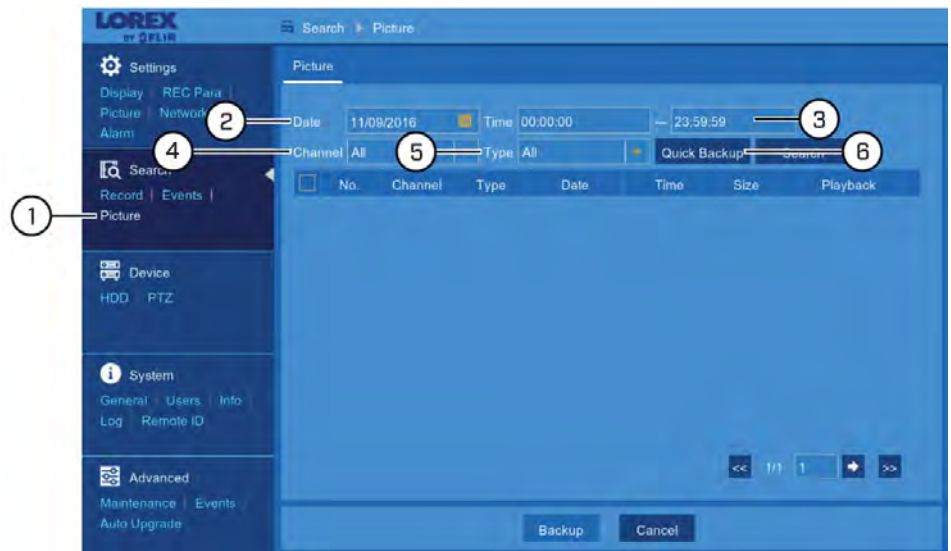
10.6 Picture Search — Quick Backup

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:

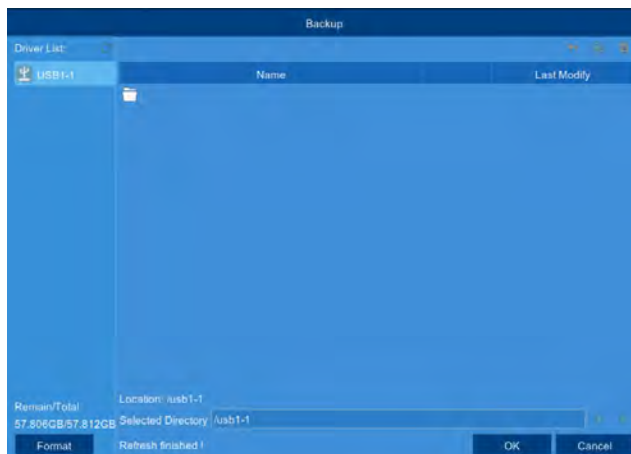
- To back up events, you must connect a USB flash drive to one of the NVR's USB ports.
- You must have enabled Auto or Manual Capture, or the system will not return any snapshot results. To set up Auto Capture, see 12.2.14 *Configuring Auto Capture*, page 68. To set up Manual Capture, see 12.2.16 *Enabling Manual Capture*, page 70

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 34 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.

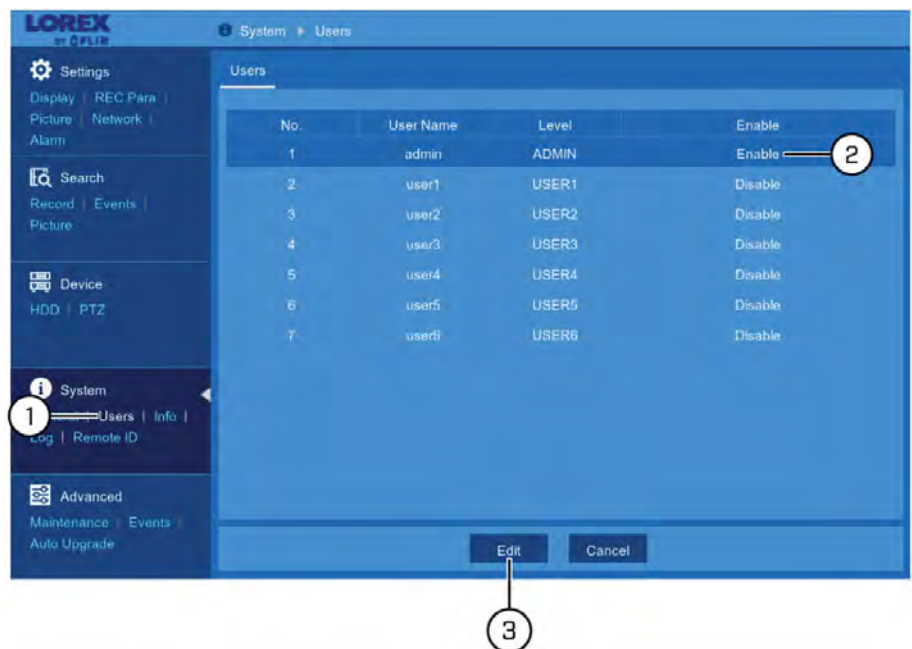
Managing Users, Passwords and Permissions

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 47.

3. Click **Edit**.

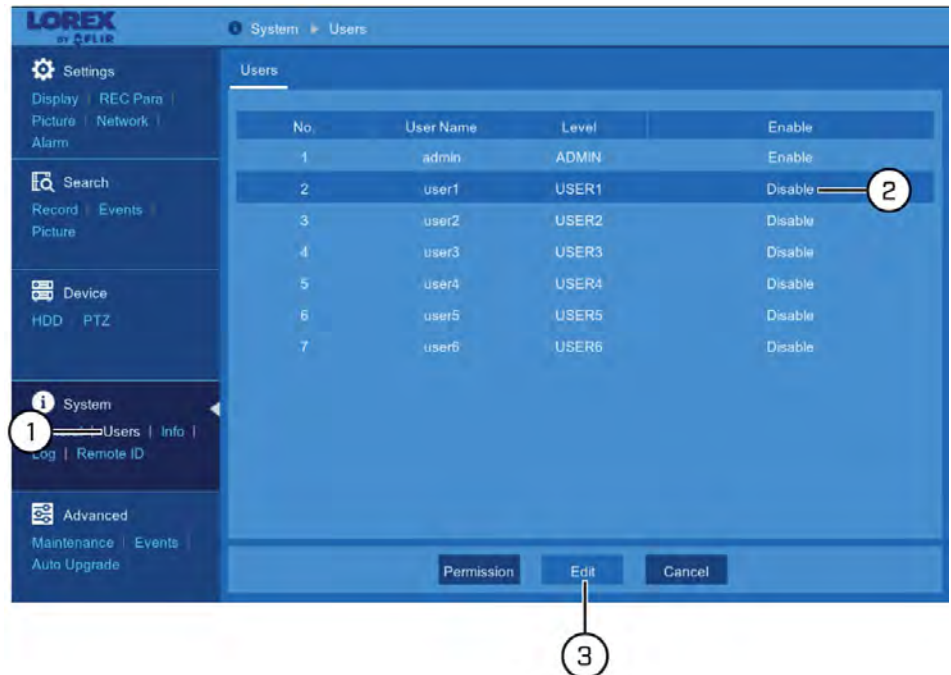


4. Click the field next to **User Name** to change the user name for the selected account.
5. Click the field next to **Password** to enter a new password.

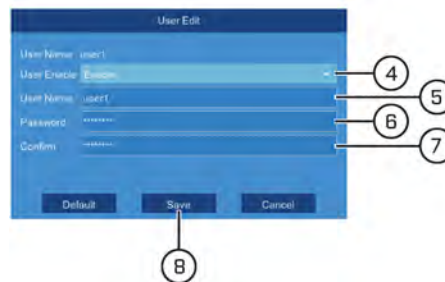
6. Click the field next to **Confirm** to reenter the password.
7. Click **Save**.

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**.

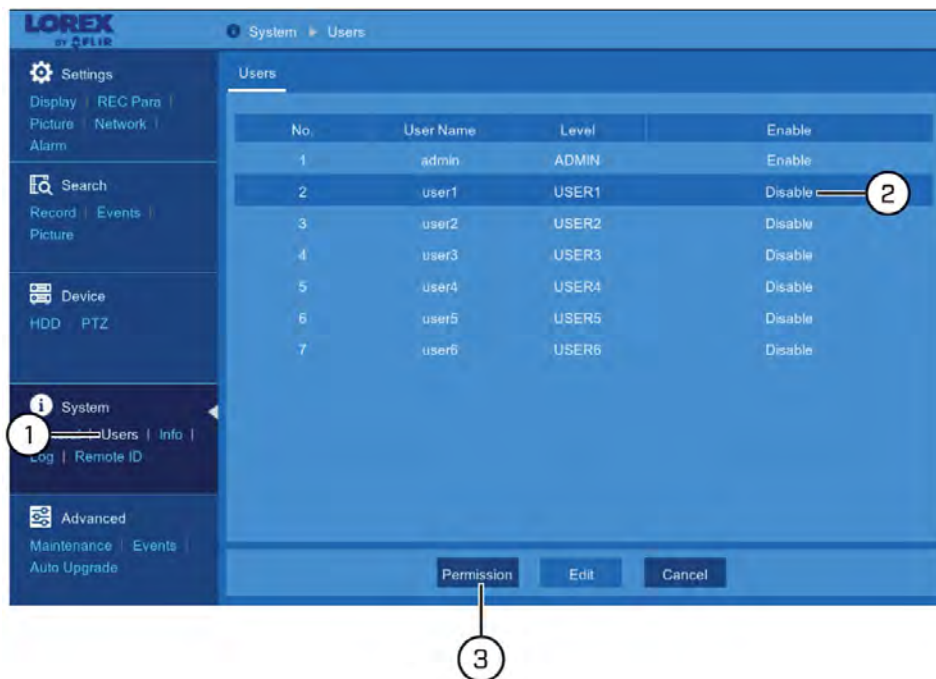


4. Select **Enable** from the dropdown next to **User Enable**.
5. Click the field next to **User Name** to change the user name for the account.
6. Click the field next to **Password** to enter the desired password.
7. Click the field next to **Confirm** to reenter the password.
8. Click **Save**.

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:



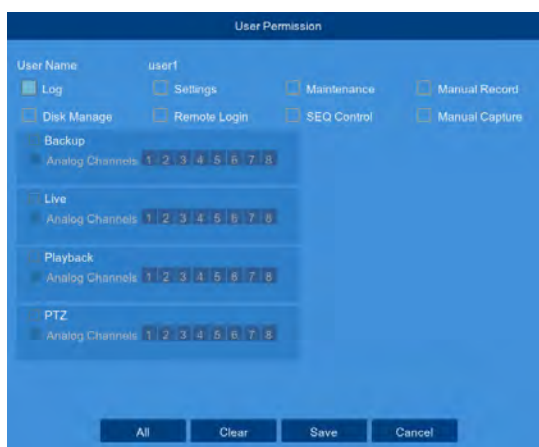
1. Enter the main menu. Under **System**, click **Users** to open the **Users** tab.
2. Click one of the user accounts.



NOTE

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

3. Click **Permission**.



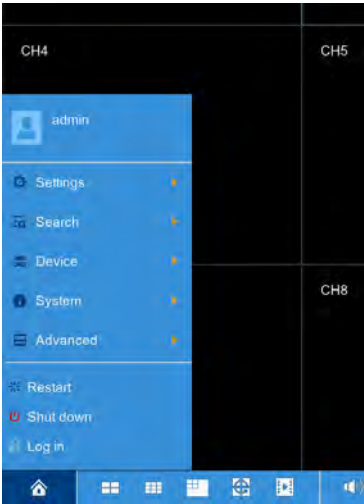
4. Edit the user permissions to your preference:
 - Check the boxes next to any system menus or capabilities you would like the user to access.
 - Click **All** to check all boxes.
 - Click **Clear** to check none of the boxes.
5. Click **Save**.

12

Using the Main Menu

To open the Main Menu:

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

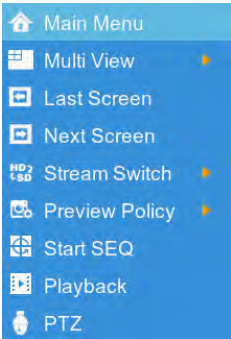


2. Hover over one of the options in the menu to browse options in full view. Click to make a selection. If prompted, enter the user name (default: **admin**) and your secure password.

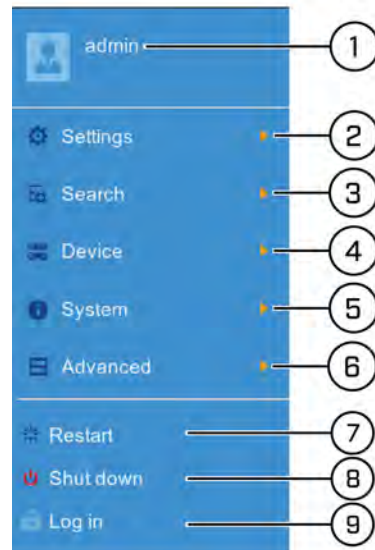


NOTE

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**:



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 52 for full instructions on using the Settings menu.
3. **Search:** Search for video recordings and snapshots. See 12.3 *Search Menu*, page 82 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 83 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 87 for full instructions on using the System menu.
6. **Advanced:** Perform firmware upgrades or configure automatic upgrades. See 12.6 *Advanced Menu*, page 96 for full instructions on using the Advanced menu.
7. **Restart:** Restarts the NVR. You must enter the user name (default: **admin**) and your secure password before the unit restarts.
8. **Shut down:** Shuts down the NVR. 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.

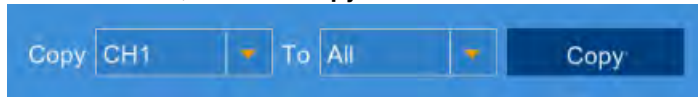
12.1.1 Copying Channel Settings to Another Channel

Many parts of the NVR 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 NVR.

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.

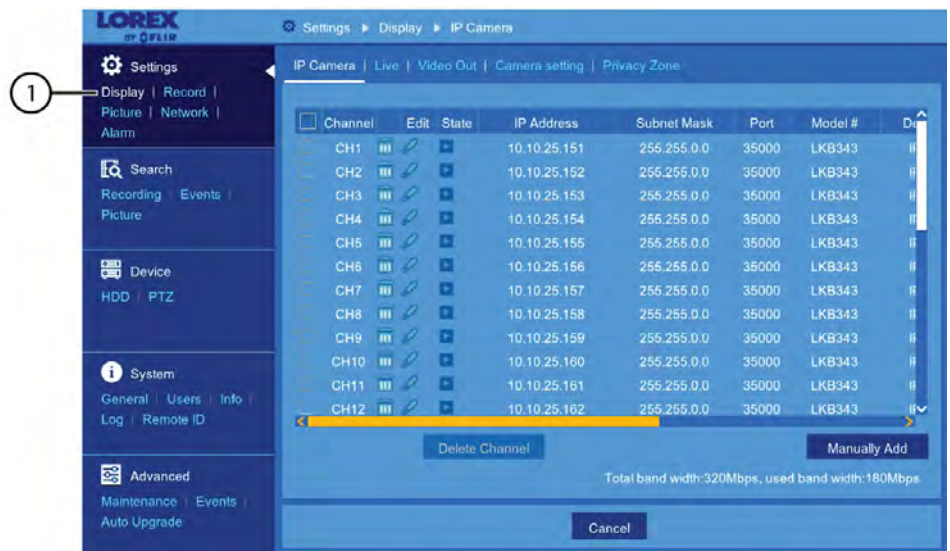
12.2 Settings Menu

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

12.2.1 Managing IP Cameras

Add, edit or remove IP cameras from your NVR system.

To manage IP cameras:



- Under **Settings**, click **Display** to open the **IP Camera** tab.
- Manage IP cameras to your liking:
 - To add IP cameras, see 12.2.1.1 *Adding IP Cameras*, page 52.
 - To edit IP cameras, see 12.2.1.2 *Editing IP Cameras*, page 53.
 - To remove IP cameras, see 12.2.1.3 *Deleting IP Cameras*, page 53.

12.2.1.1 Adding IP Cameras

Add IP cameras from the LAN to your NVR system. IP cameras connected directly to the NVR will appear in the IP Cameras menu automatically.

Prerequisites:

- Connect your IP camera(s) to the same network as your NVR. See 4.12 *Connecting Cameras to the Local Area Network (LAN)*, page 13 for details.

To add IP cameras:

- Click  next to an empty channel to search for and add an IP camera.

OR

- Click **Manually Add** to search for and add multiple IP cameras from the LAN at once. Click **Search**, then check boxes next to the cameras you would like to add, then click **Add Selected**.



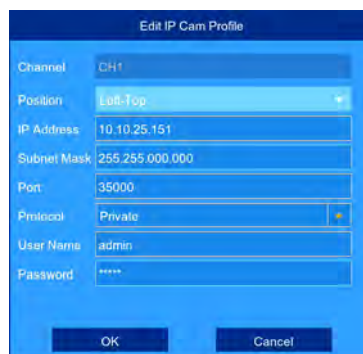
NOTE

The system supports Lorex IP cameras only. Visit lorextechnology.com/compatibility for a complete list of compatible IP cameras.

12.2.1.2 Editing IP Cameras

To edit IP cameras:

- Click  to edit a connected IP camera.
- The camera attributes appear:



- Make edits as needed, then click **OK**.

12.2.1.3 Deleting IP Cameras

To delete IP cameras:

- Click  to delete a connected IP camera.

**NOTE**

- Deleting an IP camera removes it from the channel it is currently connected to. You can add these cameras to the system again at any time.
- You can only delete cameras from the LAN, and not those which are connected directly to the NVR.

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

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

To change a camera's OSD:

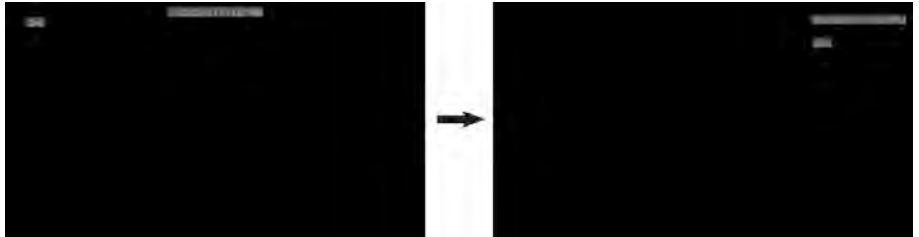


1. Under **Settings**, click **Display**, then click on the **Live** tab.
2. Use the dropdown next to **Channel** to select the channel you wish to configure the OSD for.
3. Click the field next to **Channel Name** to change the name as it appears on the video overlay in live view and recordings.
4. 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.
5. 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 51 for details on using the copy function.

12.2.3 Adjusting Date & Time Format for Cameras

Adjust the appearance of date and time stamps for one IP camera at a time. You can also adjust the format of the system date and time to apply your changes to all connected cameras. For details on adjusting system date and time format, see 12.5.1 *Changing the Date and Time*, page 87.

To adjust camera date and time format:



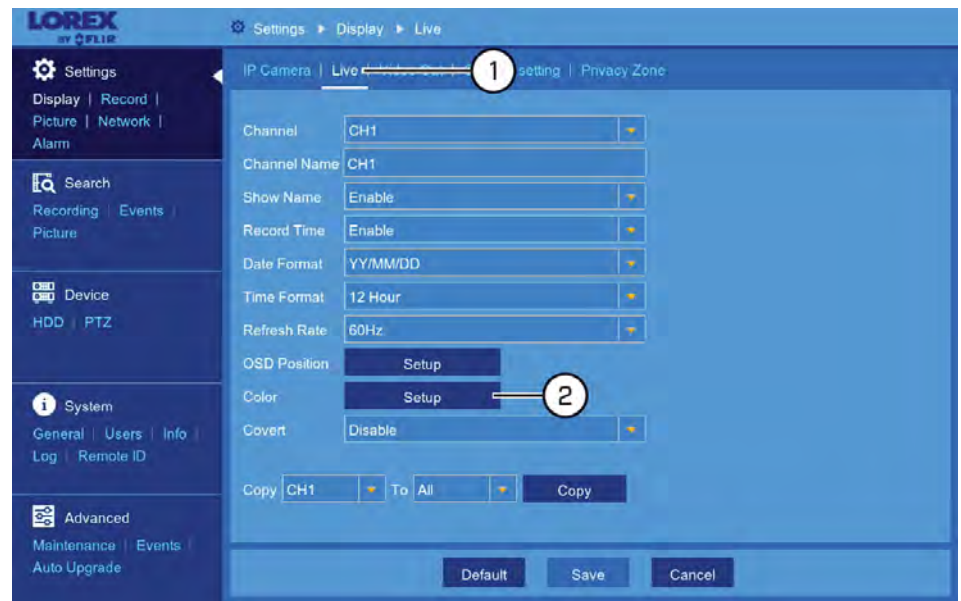
- Under **Settings**, click **Display**, then click on the **Live** tab.
- Use the dropdown next to **Date Format** to select how you would like the date to appear on the camera's on-screen display.
- Use the dropdown next to **Time Format** to select how you would like the time to appear on the camera's on-screen display.
- Click **Save**.

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 51 for details on using the copy function.

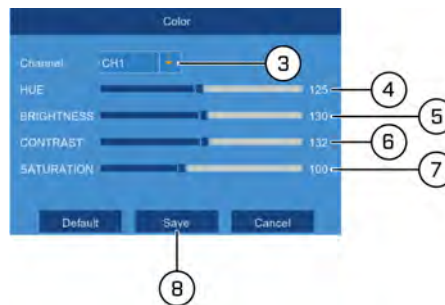
12.2.4 Adjusting Camera Image Color

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

To adjust image color:



1. Under **Settings**, click **Display**, then click on the **Live** tab.
2. Click **Setup** next to **Color**.
The Color menu opens:



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

12.2.5 Setting up Covert Recording

Covert recording allows you to hide channels from the live view of the NVR 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. Under **Settings**, click **Display**, then click on the **Live** tab.
2. Use the dropdown next to **Channel** to select a channel to set up covert recording for.
3. 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 51 for details on using the copy function.

12.2.6 Changing the NVR's Output Resolution

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

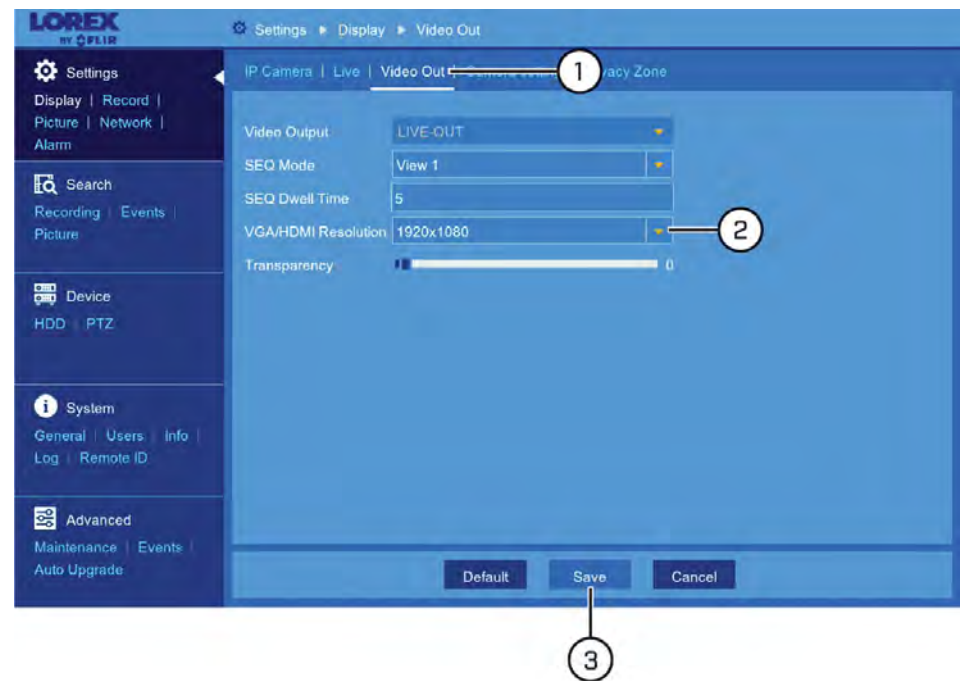


NOTE

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).

To change the NVR's output resolution:

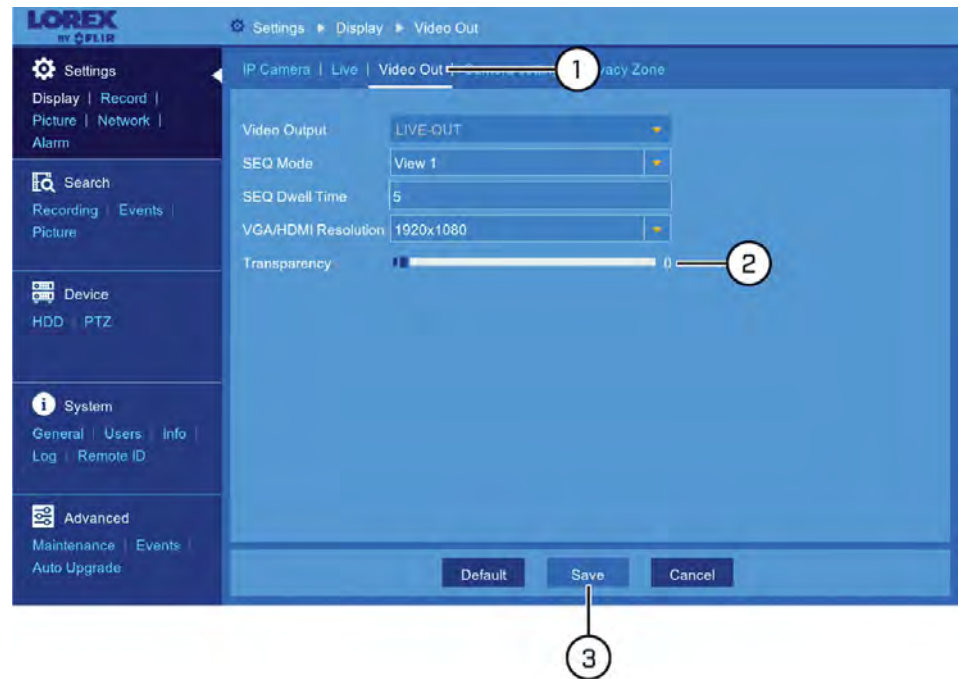


1. Under **Settings**, click **Display**, then click on the **Video Out** tab.
2. Use the dropdown next to **VGA/HDMI Resolution** to select the resolution of your monitor or TV.
3. Click **Save**.

12.2.7 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**.

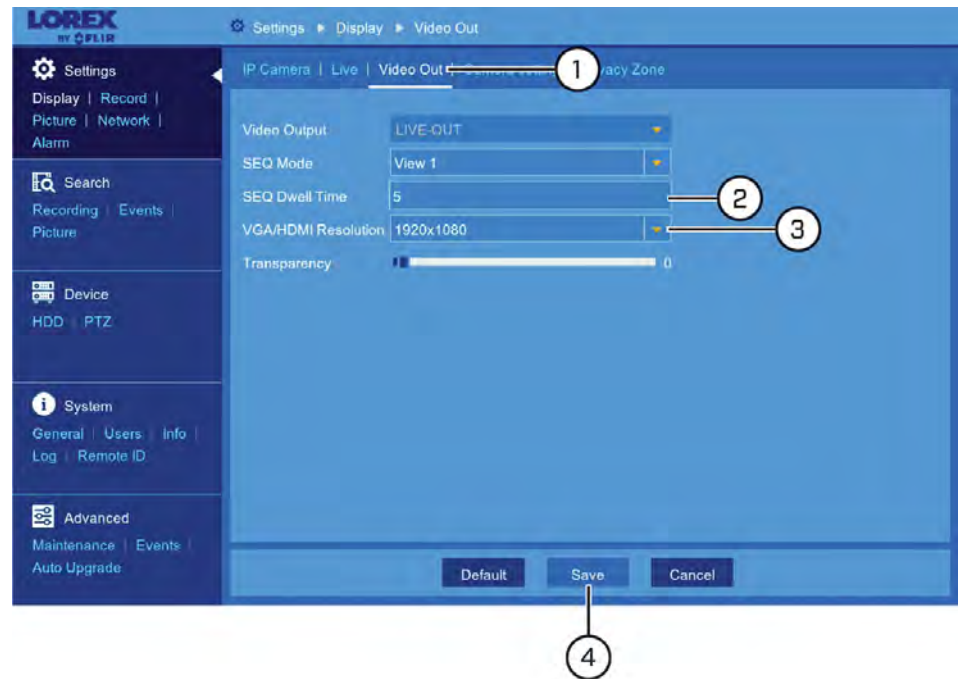
12.2.8 Configuring Sequence Mode

When Sequence Mode is enabled, the NVR cycles through connected cameras to show during live viewing. You can configure the NVR 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:

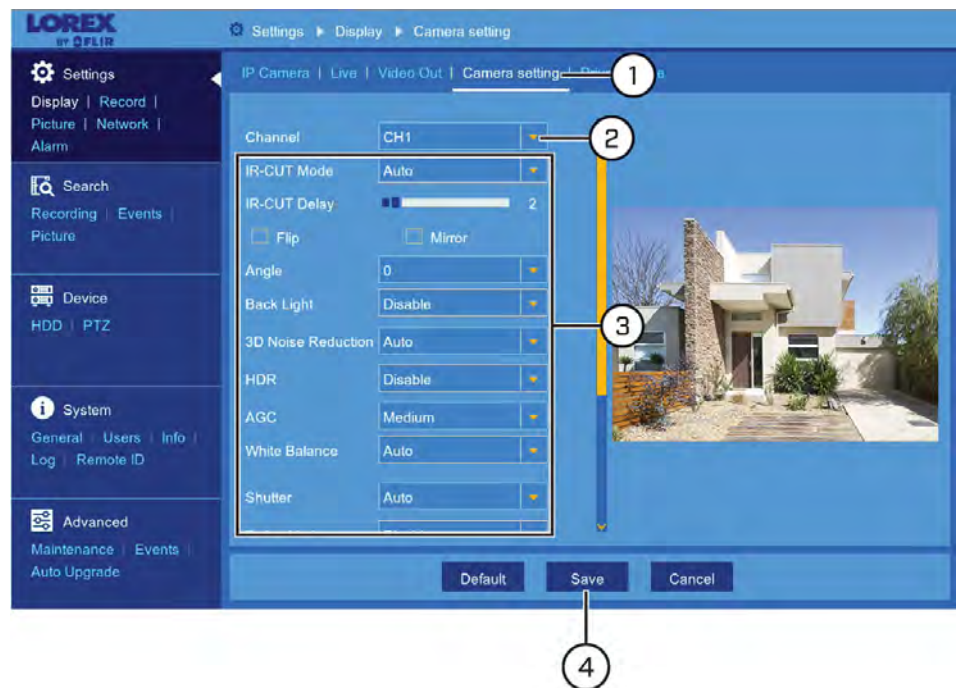


1. Under **Settings**, click **Display**, then click on the **Video Out** tab.
2. Use the dropdown next to **SEQ Mode** to set how many channels appear on screen at a time while Sequence Mode is enabled.
3. Click the field next to **SEQ Dwell Time** to enter how many seconds (1–300) each channel or group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

12.2.9 Configuring Camera Settings

Configure advanced settings related to camera picture quality.

To configure camera settings:



1. Under **Settings**, click **Display**, then click on the **Camera Setting** tab.
2. Use the dropdown next to **Channel** to select a channel to change settings for.

- Configure menu items as needed. The camera image shown on the left-side of the menu shows the effect of your changes. See below for descriptions of each menu item:

	NOTE
- The available options in this menu will depend on which features are supported by your IP camera. - Click Default near the bottom of the menu to return all menu items to their default values.	

- **IR-CUT Mode:** Select **Auto** to have the camera switch between IR night vision and color video automatically as light conditions change. Select **B&W** or **Color** to force the camera to remain in black & white or color respectively.
- **IR-CUT Delay:** Click-and-drag the slider to select the number of seconds it takes before the camera switches between black & white video and color video (**IR-Cut Mode** must be set to **Auto**).
- **Flip / Mirror:** Check **Flip** to invert the video vertically. Check **Mirror** to invert the video horizontally.
- **Angle:** Select an angle from the dropdown to rotate the video.
- **Back Light:** Back Light Compensation (BLC) adjusts the lighting levels in the picture so you can see objects in the foreground if there is a strong light source behind them.
By default, **Back Light** is disabled. Once enabled, select **Low**, **Medium** or **High** from the **BLC Level** dropdown that appears underneath.
- **3D Noise Reduction:** Noise reduction ensures a cleaner image, especially at night, and may reduce the amount of disk space required to store video.
Select **Auto** to enable automatic noise reduction, or select **Manual** to choose the noise reduction level using the **Level** slider that appears underneath.
- **HDR:** High Dynamic Range (HDR) equalizes light levels in images with high-contrast lighting (very bright and very dark areas in the same image).
Select **Enable** to enable HDR, then choose the HDR level using the **Level** slider that appears underneath.
- **AGC:** Automatic Gain Control (AGC) is used to refine the camera image by artificially brightening or darkening the image. Use the dropdown to select a level for AGC, or select **Disable**.
- **White Balance:** Use white balance to correct color appearance in the camera image. Select **Auto** to adjust white balance automatically, Indoor for the indoor conditions preset, or manual to configure the white balance yourself (sliders appear for the amount of **Red**, **Green** and **Blue** in the image).
- **Shutter:** Shutter speed determines how long the camera shutter remains open when capturing an image. It is recommended to leave this item set to **Auto** unless you are an advanced user. Select **Manual** to configure the shutter speed using the **Time Exposure** dropdown that appears underneath.
- **Defog Mode:** Select **Auto** to enable automatic defog mode, or select **Manual** to choose the level using the **Level** slider that appears underneath.

- Click **Save**.

12.2.10 Configuring Privacy Zone(s)

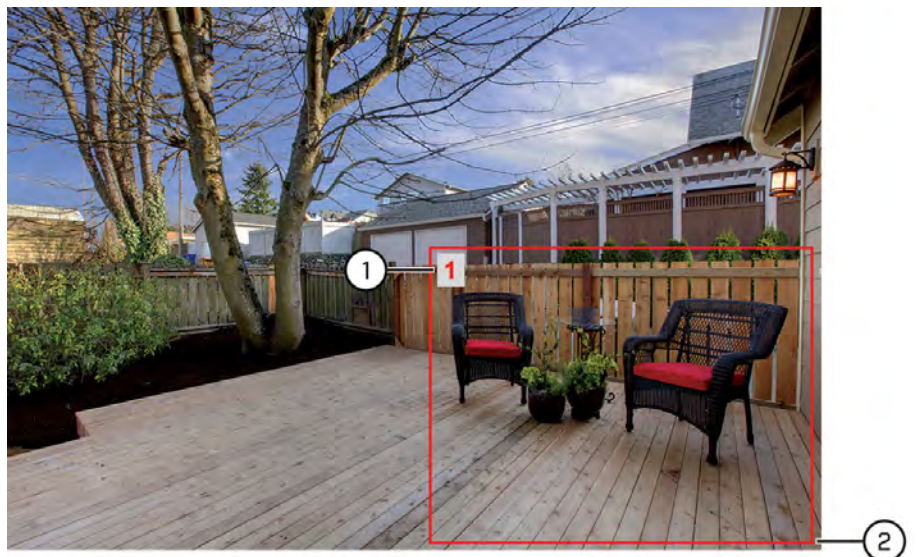
A **privacy zone** blocks out a portion of the camera image with a black box, letting you have privacy in certain parts of a camera image. You can configure up to 4 privacy zones per channel.

**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**.
- 7. **(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 51 for details on using the copy function.

12.2.11 **Configuring Recording Parameters**

Configure basic video recording options.

To configure recording parameters:



- 1. Under **Settings**, click **Record** to open the **Record** tab.
- 2. Use the dropdown next to **Channel** to select a channel to set the recording parameters for.
- 3. Select **Enable** to allow recording on the selected channel.
- 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.

 **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 12.2.13 *Configuring System Recording Quality (Mainstream and Substream)*, page 66.

5. Select **Enable** from the dropdown next to **Pre Record** to enable pre-recording for motion events. To setup motion detection preferences, see 12.2.23 *Configuring Motion Detection Settings*, page 79.
6. Click **Save**.
7. **(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 51 for details on using the copy function.

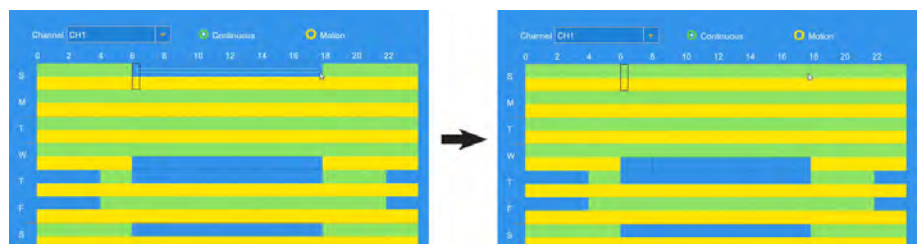
12.2.12 Setting the Recording Schedule

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:



1. Under **Settings**, click **Record**, then click on the **Schedule** tab.
2. Use the dropdown next to **Channel** to select a channel to set the recording schedule for.
3. Select **Continuous** to edit the continuous recording schedule (represented by **green** bars), **Motion** to edit the motion recording schedule (**yellow** bars), or **Alarm** to edit the alarm recording 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 51 for details on using the copy function.

12.2.13 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.

NVR units also support a **Mobilestream**, which you can enable to set a custom video stream for remote viewing purposes.

- For instructions on configuring the **mainstream**, see 12.2.13.1 *Configuring the Mainstream*, page 66.
- For instructions on configuring the **substream**, see 12.2.13.2 *Configuring the Substream*, page 67.
- For instructions on enabling and configuring the **mobilestream**, see 12.2.13.3 *Configuring the Mobilestream*, page 68.

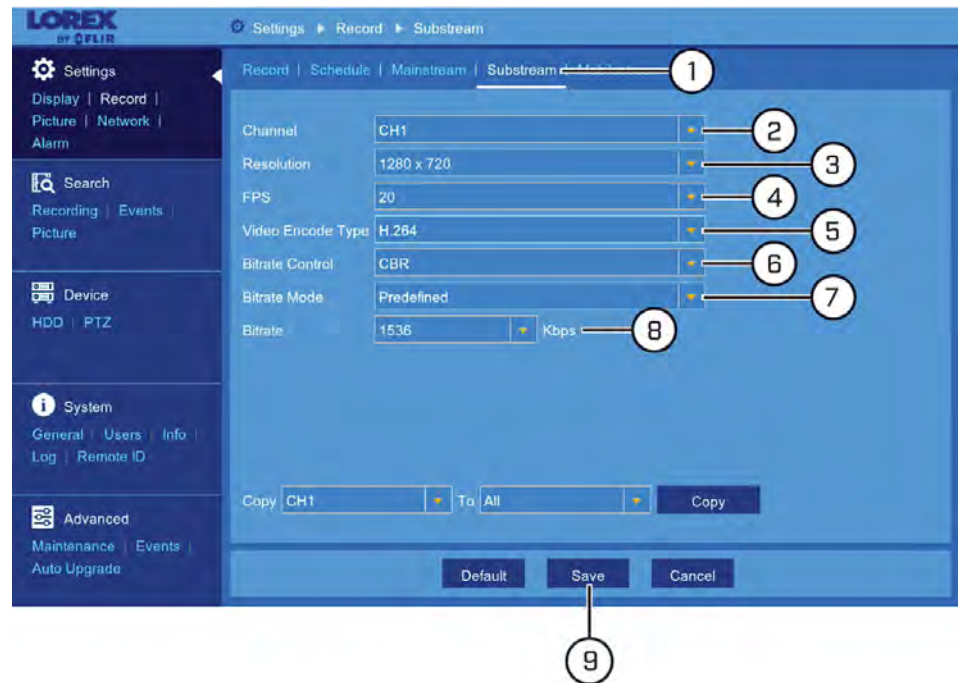
12.2.13.1 Configuring the Mainstream



1. Under **Settings**, click **Record**, 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 **Video Encode Type** to choose **H.265** or **H.264** compression. It is recommended to select **H.265**, as it will have the best performance and use the least amount of disk space.

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 **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 51 for details on using the copy function.

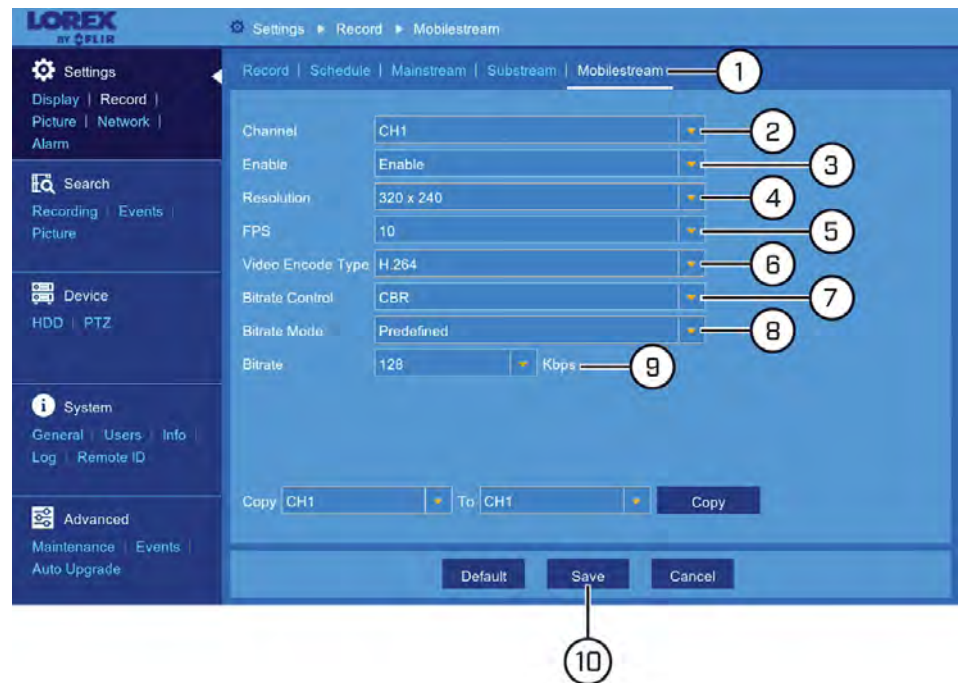
12.2.13.2 Configuring the Substream



1. Under **Settings**, click **Record**, 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 **Video Encode Type** to choose **H.265** or **H.264** compression. It is recommended to select **H.265**, as it will have the best performance and use the least amount of disk space.
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 **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 51 for details on using the copy function.

12.2.13.3 Configuring the Mobilestream



1. Under **Settings**, click **Record**, then click on the **Mobilestream** tab.
2. Select **Enable** from the dropdown.
3. Use the dropdown next to **Channel** to select a channel to set 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 **Video Encode Type** to choose **H.265** or **H.264** compression. It is recommended to select **H.265**, as it will have the best performance and use the least amount of disk space.
7. 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.
8. 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.
9. 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).
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 51 for details on using the copy function.

12.2.14 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 51 for details on using the copy function.

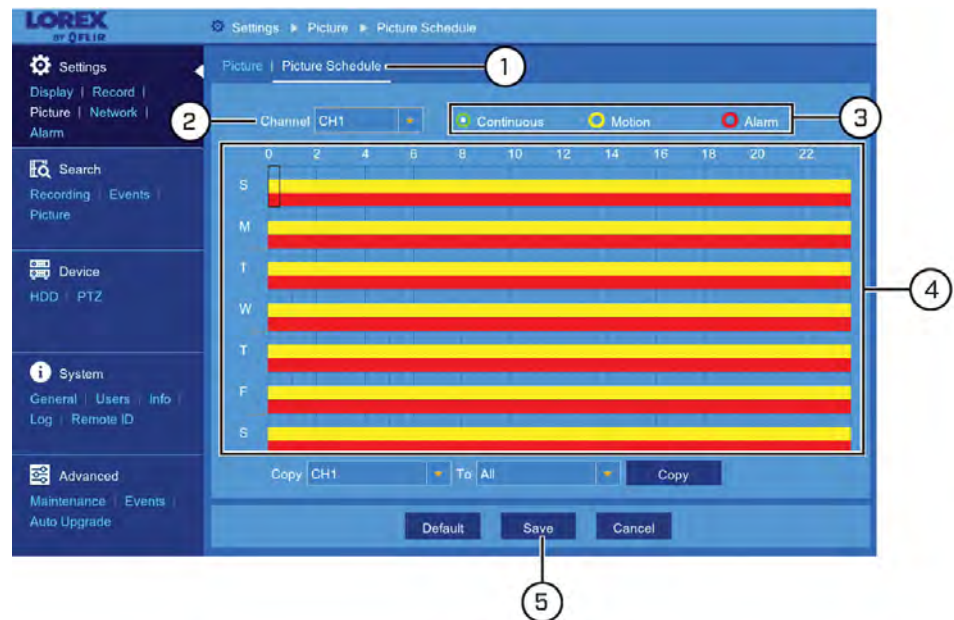
12.2.15 Setting a Picture Schedule for Auto Capture

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 12.2.14 *Configuring Auto Capture*, page 68 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 51 for details on using the copy function.

12.2.16 Enabling Manual Capture

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

To enable Manual Capture:

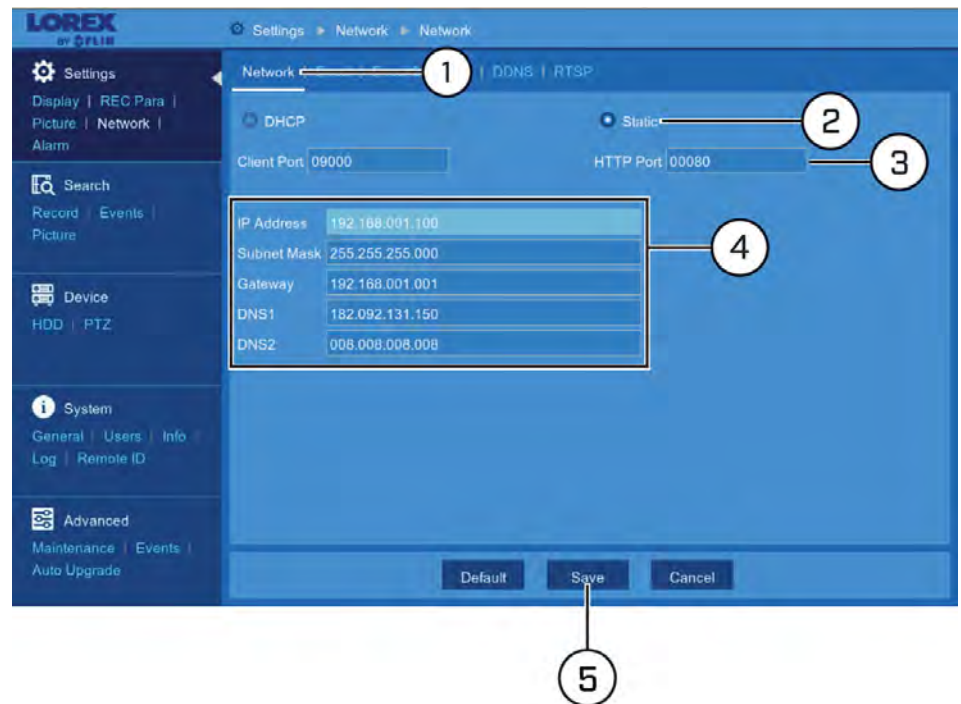


1. Under **Settings**, click **Picture**, then click on the **Picture** tab.
2. Use the dropdown next to **Channel** to select a channel to enable Manual Capture for.
3. Select **Enable** from the dropdown next to **Manual Capture**.
4. Click **Save**.
You can now use Manual Capture on the selected channel using the Mini Menu. For details on using Manual Capture, see 7.3 *Using the Mini Menu*, page 20.
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 51 for details on using the copy function.

12.2.17 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**

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.

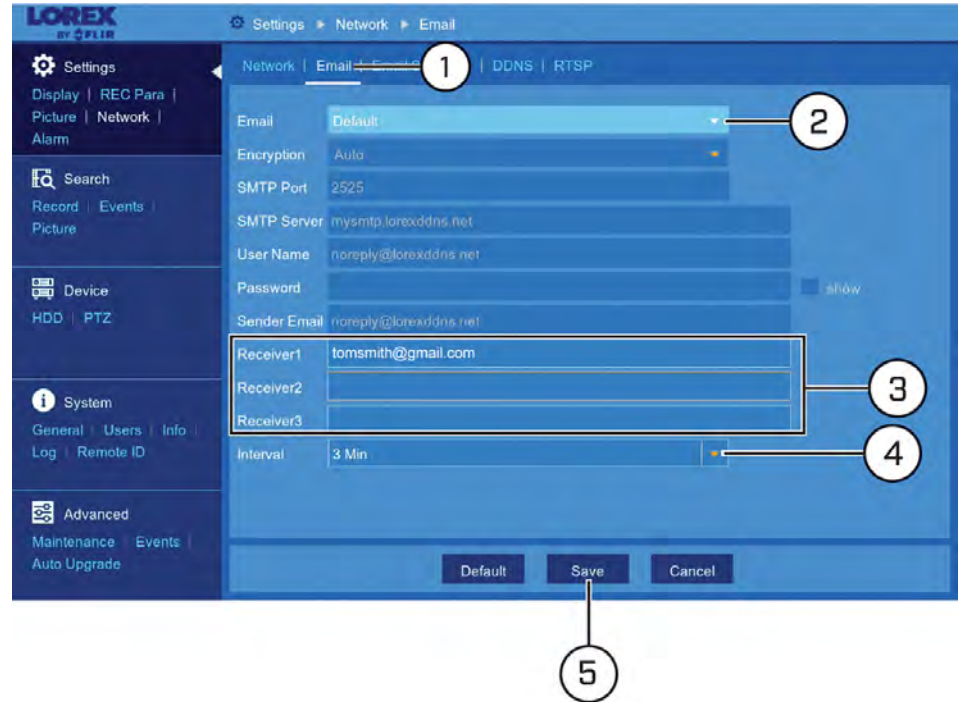
3. Click the fields next to **Client Port** and **HTTP Port** to change port numbers if required.
4. **(FOR STATIC IP ONLY)** Click the fields next to **IP Address**, **Subnet Mask**, **Gateway** and **DNS** to edit as required.
5. Click **Save**.

12.2.18 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.

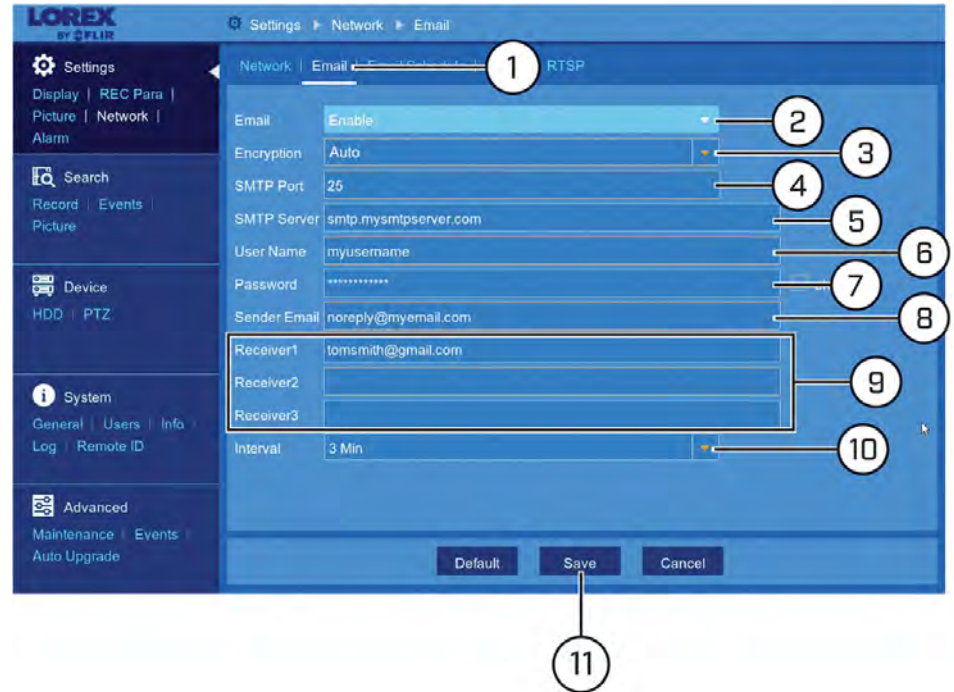
- For instructions on enabling email notifications using the Lorex server, see 12.2.18.1 *Email Notifications — Using the Lorex server (recommended)*, page 73.
- For instructions on enabling email notifications using a different mailing server, see 12.2.18.2 *Email Notifications — Using your own server information*, page 74.

12.2.18.1 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 12.2.19 *Setting an Email Schedule*, page 74.

12.2.18.2 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 12.2.19 *Setting an Email Schedule*, page 74.

12.2.19 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:

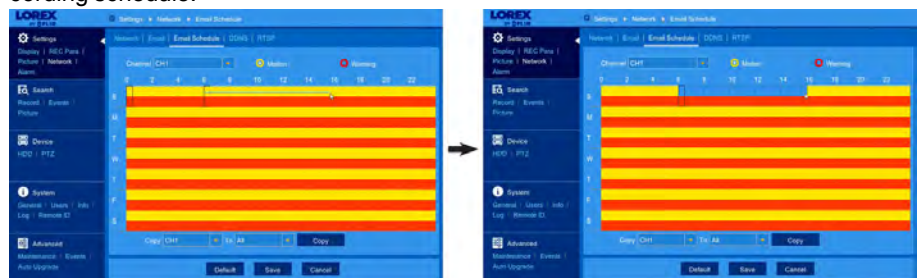
- You must enable email notifications for the email schedule to take effect.

- To enable email notifications using the default Lorex email server, see 12.2.18.1 *Email Notifications — Using the Lorex server (recommended)*, page 73.
- To enable email notifications using custom mail server information, see 12.2.18.2 *Email Notifications — Using your own server information*, page 74.

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 51 for details on using the copy function.

12.2.20 Configuring DDNS Settings

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

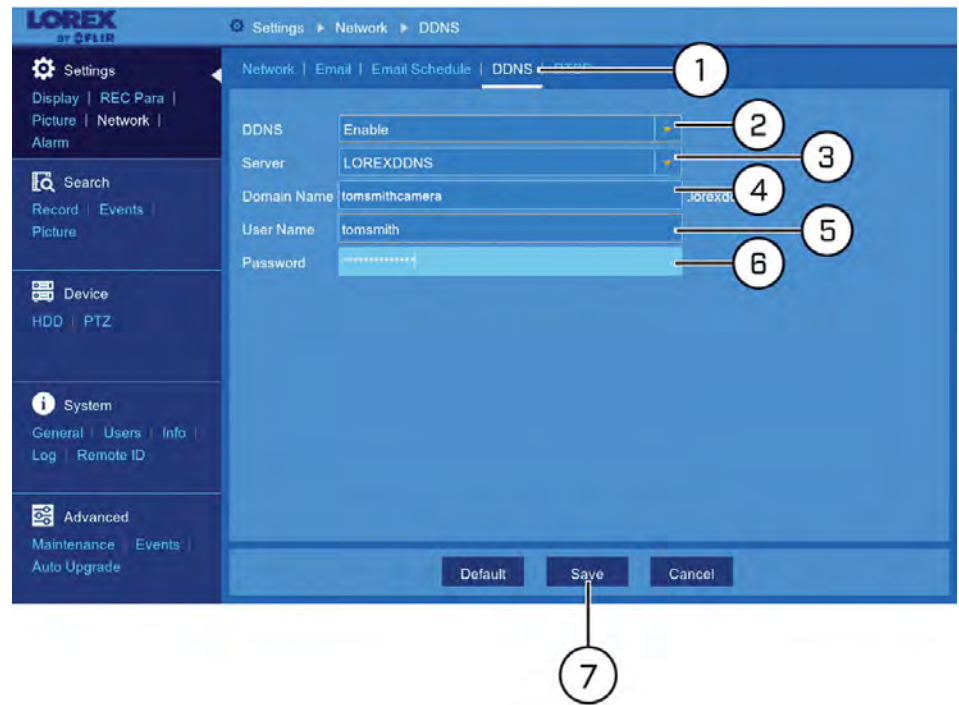
Lorex DDNS is available as an **optional** connectivity option. See 17 *DDNS Setup (Advanced)*, page 158 for details.

- For details on connecting to your system over the Internet using a smartphone or tablet (**no DDNS setup required**), see 14 *FLIR Secure: Connecting to the NVR Using a Mobile Device*, page 142.
- For details on connecting to your system over the Internet using a PC or Mac computer (**no DDNS setup required**), see 13 *FLIR Client 12 for PC / Mac*, page 104.

Prerequisites:

- You must create a free Lorex DDNS account. See 17 *DDNS Setup (Advanced)*, page 158 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 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 Lorex account.
6. Click the field next to **Password** to enter the **Password** shown under **My DDNS Devices** in your Lorex account.
7. Click **Save**.

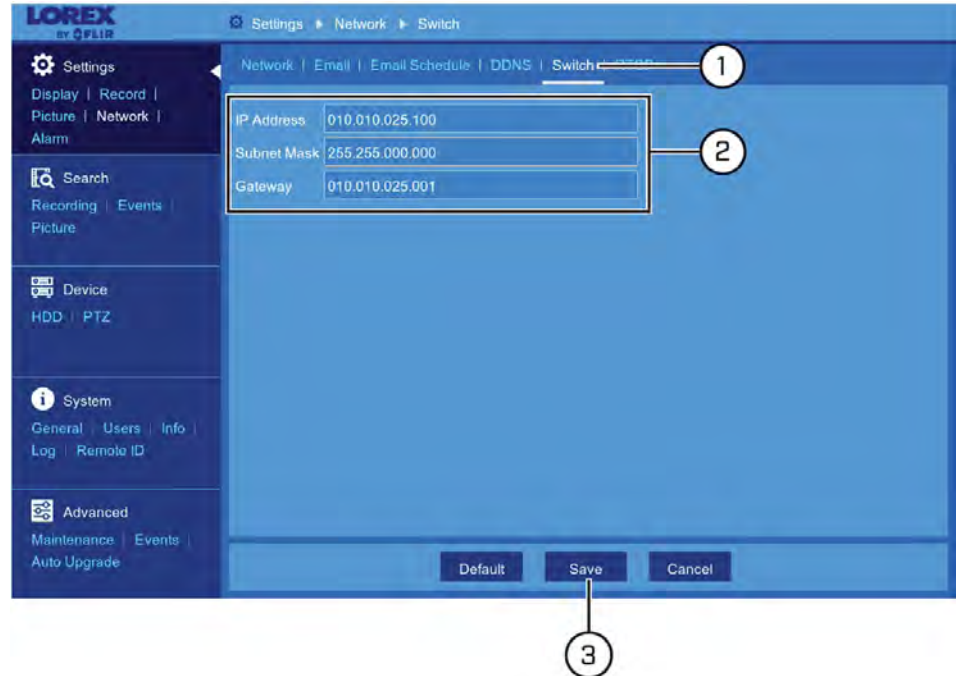
12.2.21 Configuring Switch Settings (Advanced)

You can configure the networking settings for the internal PoE switch.

**CAUTION**

It is recommended to leave this menu on the default settings. Changing the information in this menu may disrupt the connection to the cameras.

To configure switch settings:



1. Under **Settings**, click **Network**, then click on the **Switch** tab.
2. Click the fields next to **IP Address**, **Subnet Mask** and **Gateway** to edit as needed.
3. Click **Save**.

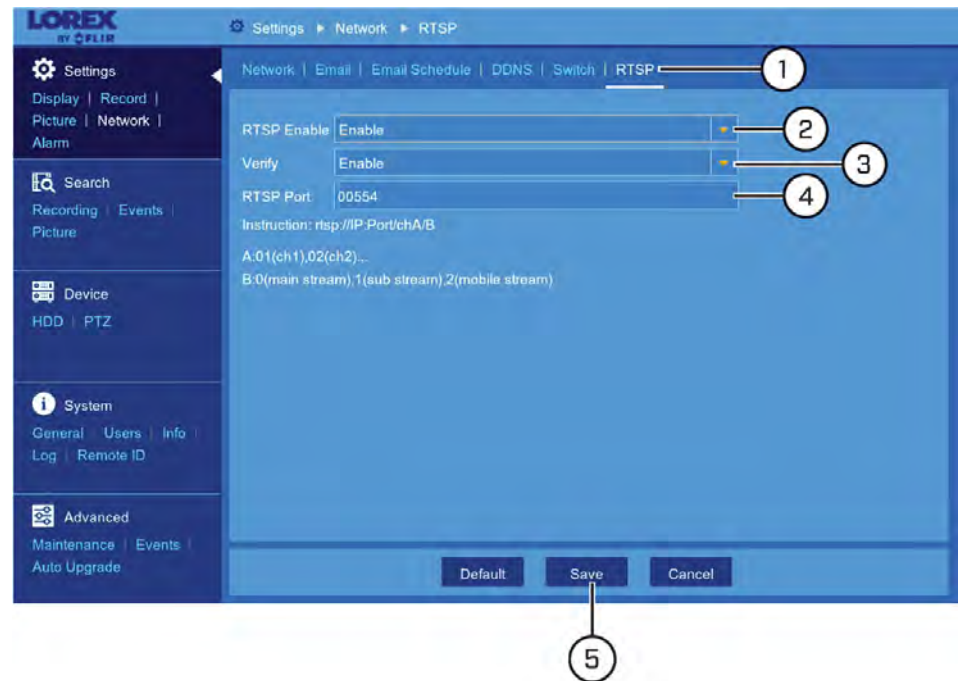
12.2.22 Configuring RTSP Streaming (Advanced)

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.

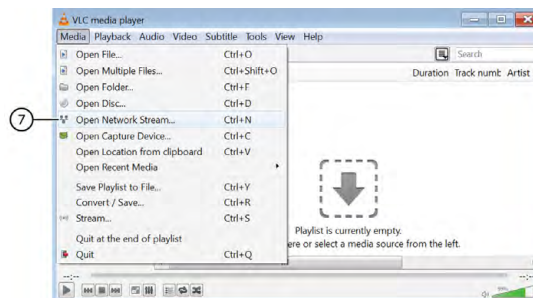
**NOTE**

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 NVR.
7. Click **Media**, then click **Open Network Stream....**



8. Enter the RTSP address in the following format:
 - **rtsp://[IP address of the NVR]:[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, **2** for mobilestream)

**NOTE**

Mobilestream must be enabled to use its settings for RTSP streaming. For full instructions on enabling and configuring the mobilestream, see 12.2.13.3 *Configuring the Mobilestream*, page 68.

- **Example:** `rtsp://192.168.1.128:554/ch01/0` will stream video from channel 1 of the NVR using the mainstream.

- Click **Play**. The video stream will open in VLC Media Player.

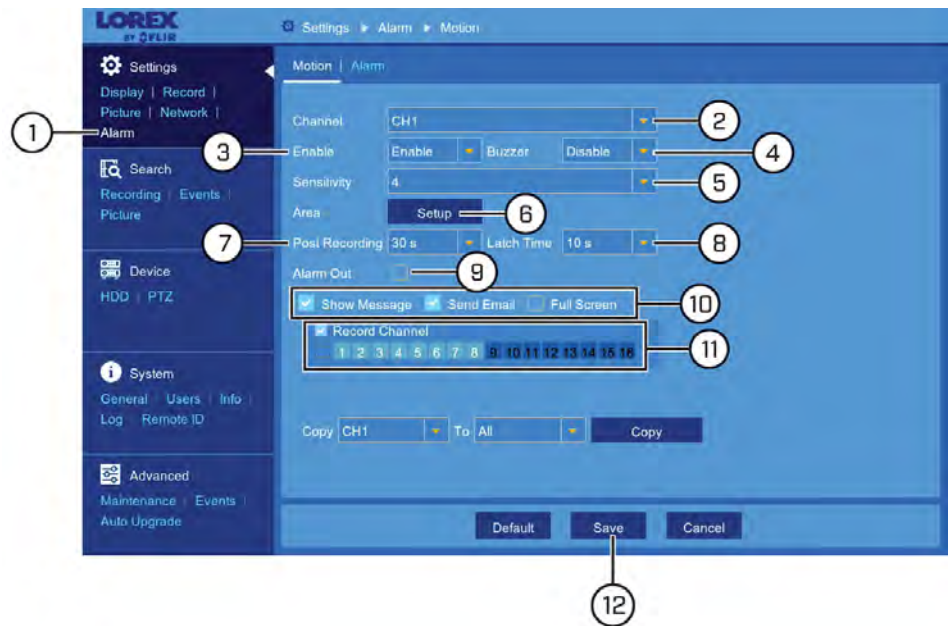
If it does not connect, check the following:

- 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.

12.2.23 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:



- Under **Settings**, click **Alarm** to open the **Motion** tab.
- Use the dropdown next to **Channel** to select a channel to configure motion detection for.
- Select **Enable** from the dropdown next to **Enable**.
- Select a time period from the dropdown next to **Buzzer** to have the NVR make an alarm sound when motion is detected, or select **Disable** to keep the NVR silent.
- 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 how long the system will record video for after motion is detected.
8. Use the dropdown next to **Latch Time** to select the time in seconds that the alarm output device will activate after motion is detected.
9. Check **Alarm Out** to activate the alarm output device when motion is detected.
10. 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 12.2.18 *Setting up Email Notifications*, page 72 for details).
 - **Full Screen:** Check to have video from the selected channel appear in full screen when motion is detected.
11. Check boxes to your preference:
 - **Record Channel:** Check to record video from the selected channel(s) when motion is detected.
 - Click on the numbered boxes representing channels that should also be recorded when motion is detected on the selected channel. Click the checkbox to select all.
12. Click **Save**.
13. **(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 51 for details on using the copy function.

12.2.24 Configuring Alarm Devices

You can connect alarm input devices such as motion sensors (not included) or glass break detectors (not included) to the system. The system can be set to trigger recording or take other actions when these devices are activated.

To configure alarm input devices:



1. Under **Settings**, click **Alarm**, then click the **Alarm** tab.
2. Use the dropdown next to **Alarm In** to select the corresponding channel number for the alarm device.
3. Select **NO** (Normal Open) or **NC** (Normal Close) from the dropdown next to **Alarm Type** depending on the type of alarm input device you are configuring, or select **Disable** to disable the alarm input device for the selected channel.
4. Use the dropdown next to **Latch Time** to select the time in seconds that the alarm output device will activate after the selected alarm input device is triggered.
5. Select a time period from the dropdown next to **Buzzer** to have the NVR make an alarm sound when the selected alarm input device is triggered, or select **Disable** to keep the NVR silent.
6. Use the dropdown next to **Post Recording** to set how long the system will record video for after the alarm device is triggered.
7. Check **Alarm Out** to enable the alarm output device when the selected alarm input device is triggered.
8. Check boxes to your preference:
 - **Show Message:** Check to have a message appear on the system when the alarm device is triggered.
 - **Send Email:** Check to receive an email notification when the alarm device is triggered. Ensure you have enabled email notifications (see 12.2.18 *Setting up Email Notifications*, page 72 for details).
 - **Full Screen:** Check to have video from the selected channel appear in full screen when the alarm device is triggered.

9. Check boxes to your preference:

- **Record Channel:** Check to record video from the selected channel(s) when motion is detected.
- Click on the numbered boxes representing channels that should also be recorded when motion is detected on the selected channel. Click the checkbox to select all.

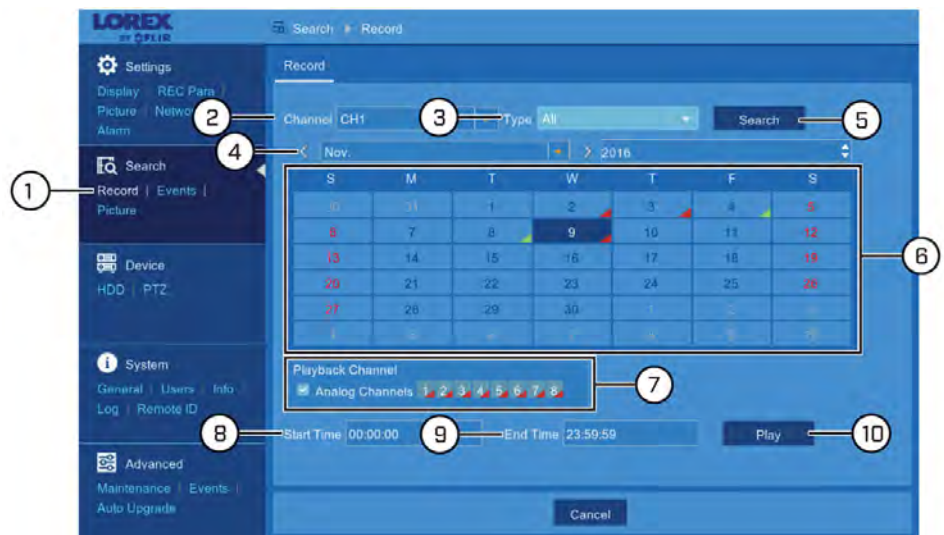
10. Click **Save**.

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 34.

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 **End Time** to enter the end time (24-hour format).
10. Click **Play** to start playback.

For details on using video playback, see 9 *Playback*, page 28.

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 34.

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 34.

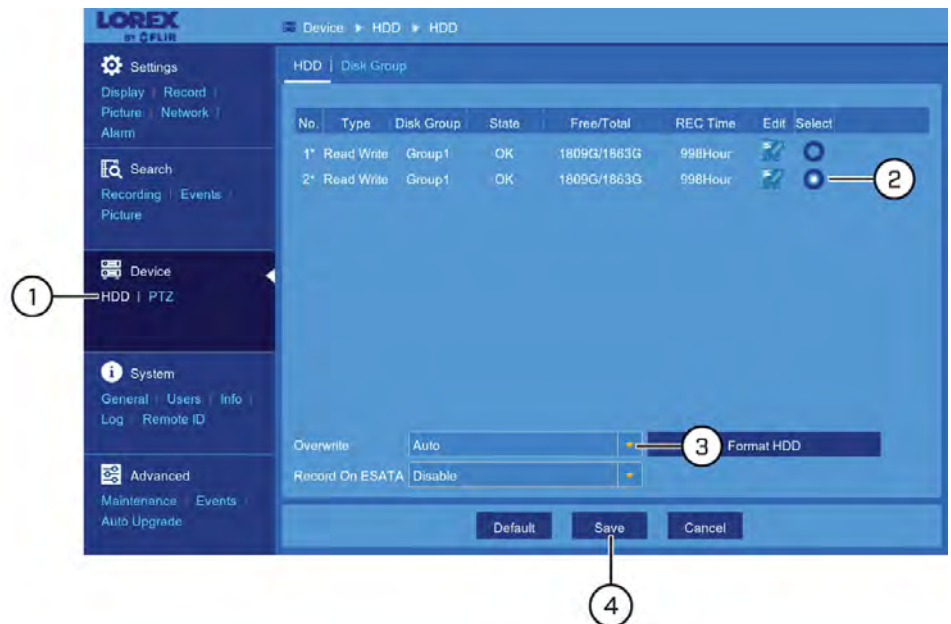
12.4 Device Menu

Configure hard drive and PTZ camera options.

12.4.1 Configuring Hard Drive Overwrite

By default, the hard drive in your NVR 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:



1. Under **Device**, click **HDD** to open the **HDD** tab.
2. **(For units with multiple hard drive bays)** Select the hard drive you would like to configure overwrite for.

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**

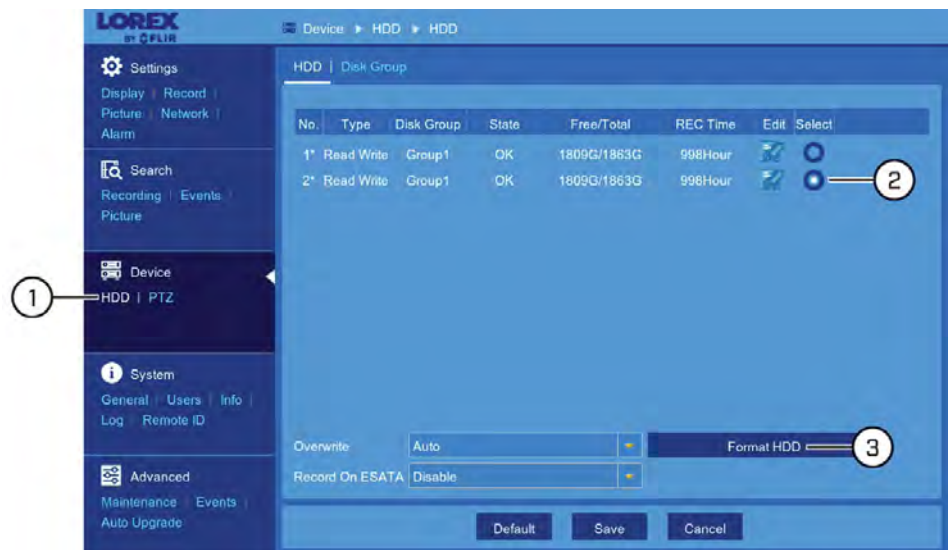
If you turn off overwrite and your hard drive fills up with footage, the system will stop recording.

4. Click **Save**.

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 NVR's user name (default: **admin**) and secure password to begin formatting the drive.

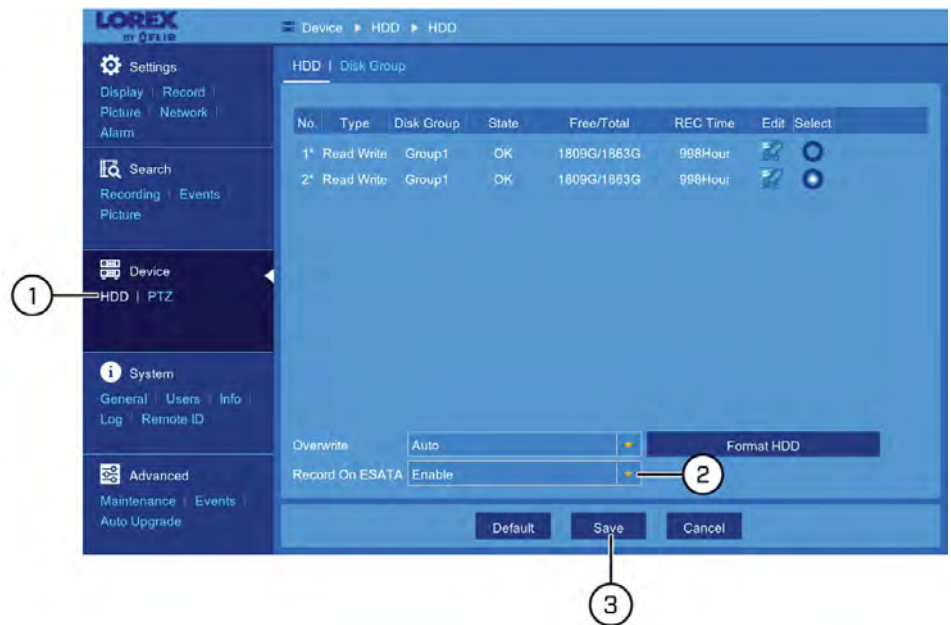
**CAUTION**

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

12.4.3 Enabling eSATA Recording

Enable eSATA recording to use external hard drives for recording video.

To enable eSATA recording:



1. Under **Device**, click **HDD** to open the **HDD** tab.
2. Select **Enable** from the dropdown next to **Record On ESATA**.
3. Click **Save**.

12.4.4 Setting Up Hard Drive Mirroring (Advanced)

A mirror hard drive can be used to automatically backup video footage on the recording (read-write) hard drive. When a mirroring hard drive is installed, the system can be set to record cameras in parallel to both the recording hard drive and the mirror hard drive in case of hard drive failure.



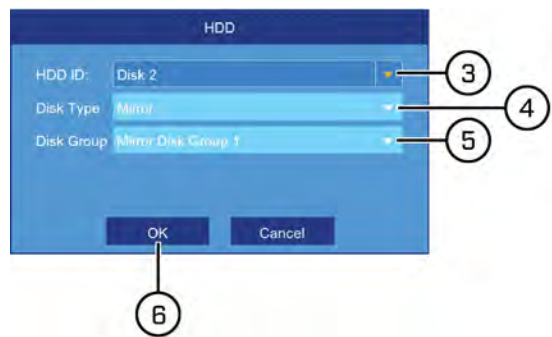
NOTE

- The mirror hard drive must be as large or larger than primary hard drive to backup all recordings.
- Mirroring begins from when mirror hard drive is installed and configured.
- Two hard drives must be installed in the system to use hard drive mirroring. For details on installing hard drives, see 16.2 *Installing a Hard Drive*, page 154.

To set up hard drive mirroring:

1. Under **Device**, click **HDD** to open the **HDD** tab.

2. Click  next to the hard drive you want to set up as the mirror hard drive.



3. Use the dropdown next to **HDD ID** to select the mirror drive.
4. Select **Mirror** from the dropdown next to **Disk Type**.
5. Use the dropdown next to **Disk Group** to select same group number as your primary drive. For example, if your primary drive is part of **Record Drive Group 1**, your mirror hard drive should be part of **Mirror Drive Group 1**.



NOTE

For other options related to disk groups, see 12.4.5 *Configuring Hard Drive Groups (Advanced)*, page 86.

12.4.5 Configuring Hard Drive Groups (Advanced)

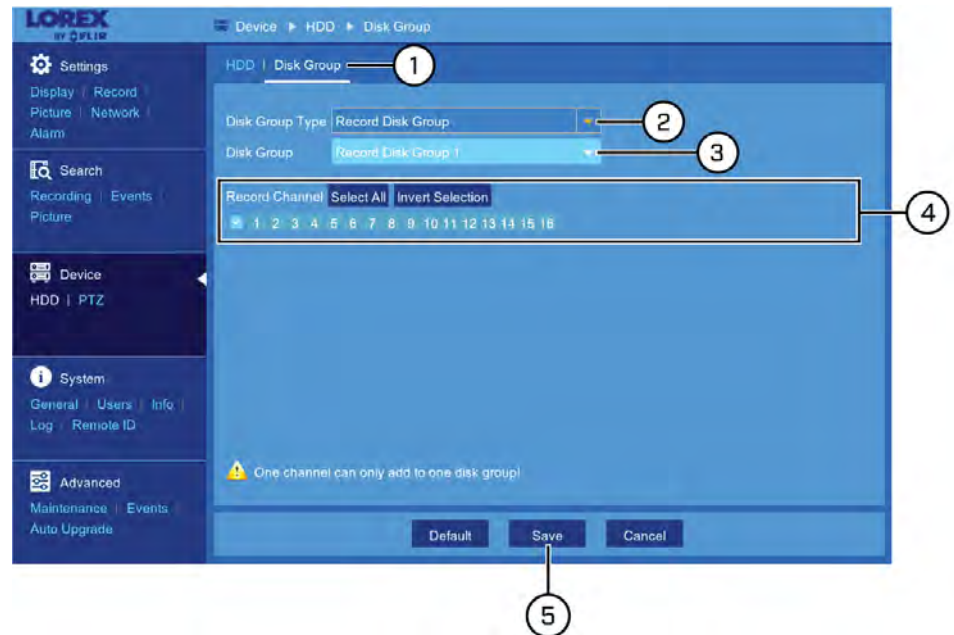
Hard drive groups allow you to balance recordings across multiple hard drives. For example, you can record channels 1~4 to one hard drive and 4~8 to a second hard drive. This can reduce the amount of wear on the hard drives and may extend the life of the hard drives.



NOTE

Two hard drives must be installed in the system to use hard drive groups. For details on installing hard drives, see 16 *Hard Drive Installation*, page 153.

To configure hard drive groups:



1. Under **Device**, click **HDD**, then click the **Disk Group** tab.
2. Use the dropdown next to **Disk Group Type** to select the type of group to configure.
3. Use the dropdown next to **Disk Group** to select the specific group within the selected group type.
4. Click the numbered boxes representing channels to record channels to drives in the selected group.
5. Click **Save**.

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 NVR's date and time:

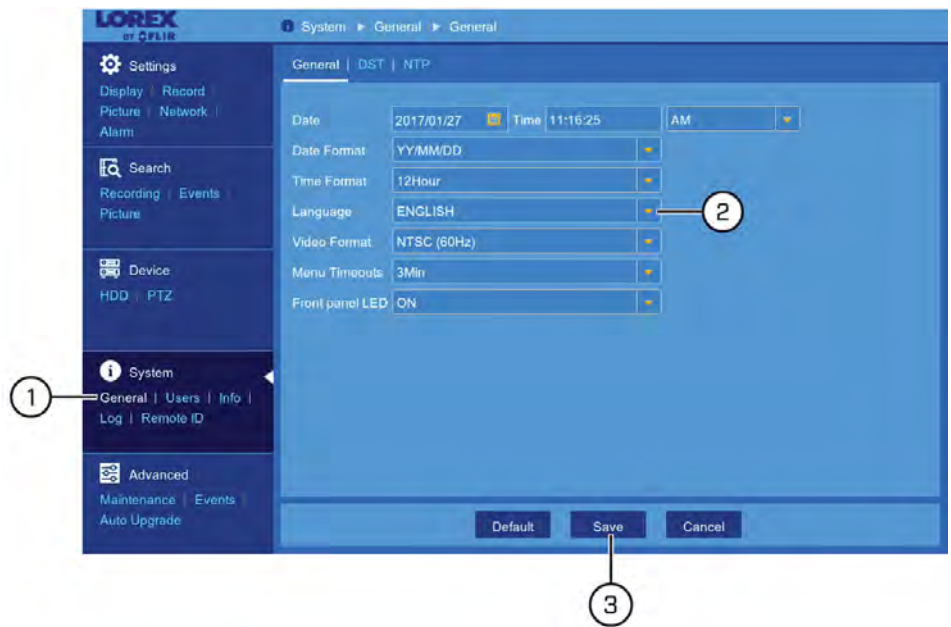


1. Under **System**, click **General** to open the **General** tab.
2. Click the field next to **Date** to select the correct date from the calendar.
3. Click the field next to **Time** to enter the correct time. Use the dropdown to select **AM** or **PM** if using 12-hour time format.
4. Select how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

To change language:

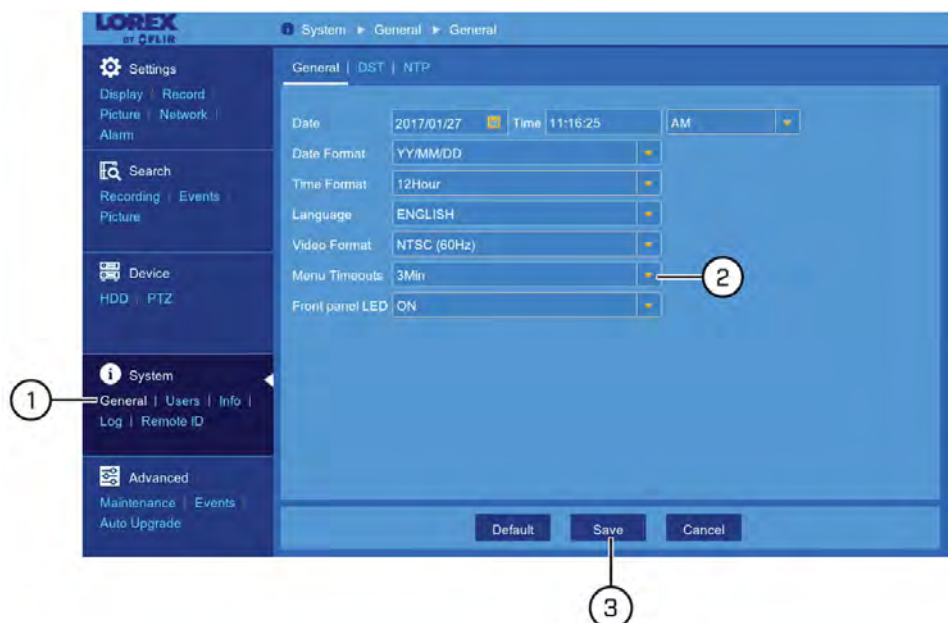


1. Under **System**, click **General** to open the **General** tab.
2. Use the dropdown next to **Language** to set the desired language for the NVR's on-screen display.
3. Click **Save**. The system language will update only once you exit the main menu.

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

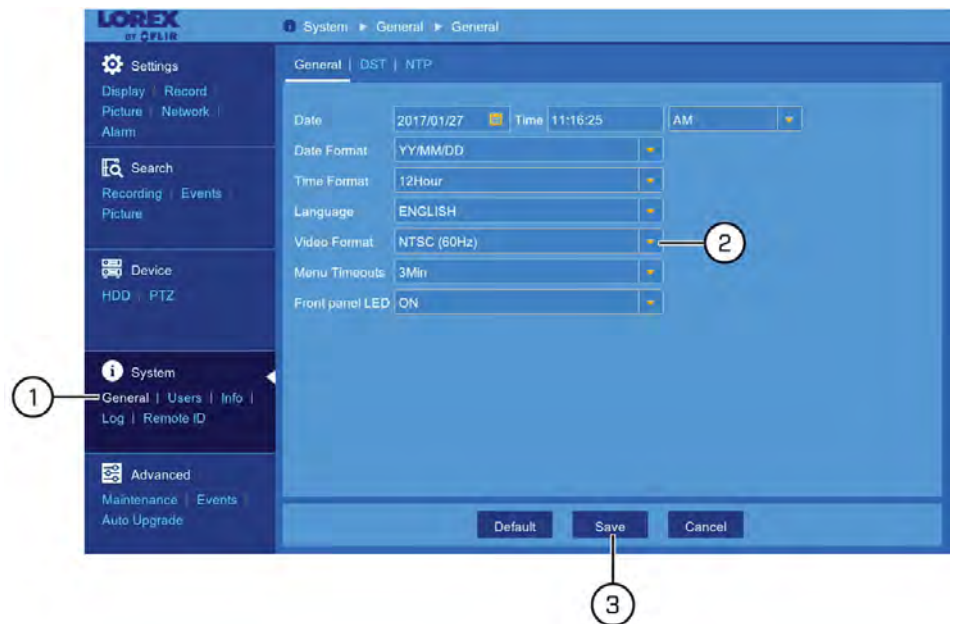
Manually switch between NTSC and PAL video output.



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 12.5.7 *Configuring NTP*, page 92 for more details on changing the region).

To change the video output:

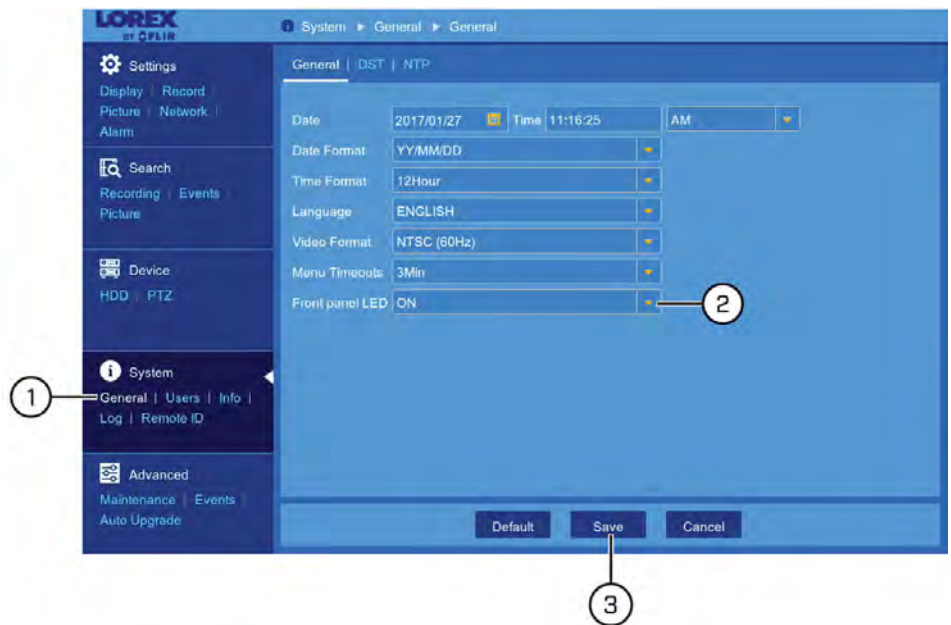


1. Under **System**, click **General** to open the **General** tab.
2. Use the dropdown next to **Video Format** to select either **NTSC** or **PAL**.
3. Click **Save**. The system will reboot to properly set the new video output mode.

12.5.5 Turning Front Panel LEDs ON/OFF

Turn LEDs on the front panel of the NVR on or off.

To turn front panel LEDs on/off:

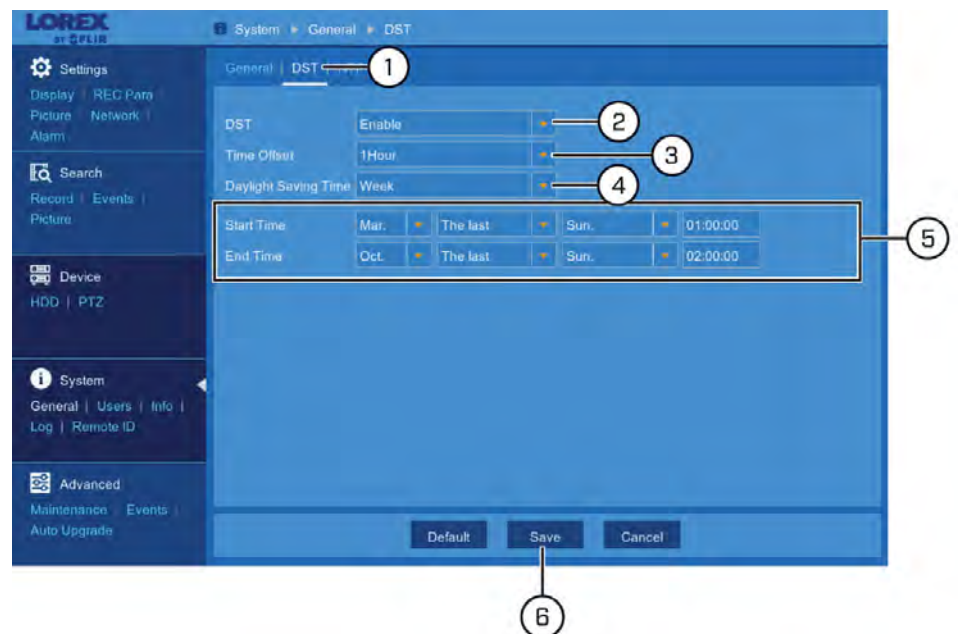


1. Under **System**, click **General** to open the **General** tab.
2. Use the dropdown next to **Front Panel LED** to select either **ON** or **OFF**.
3. Click **Save**.

12.5.6 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**.

12.5.7 Configuring NTP

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

Prerequisites:

- The NVR 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 NVR 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.

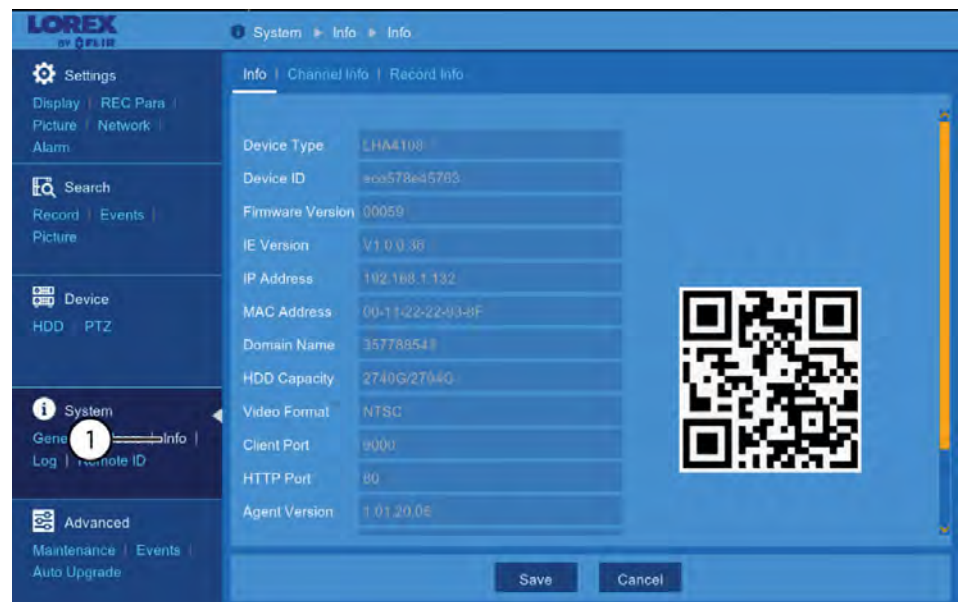
**NOTE**

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

12.5.8 View System Information

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

To view system information:



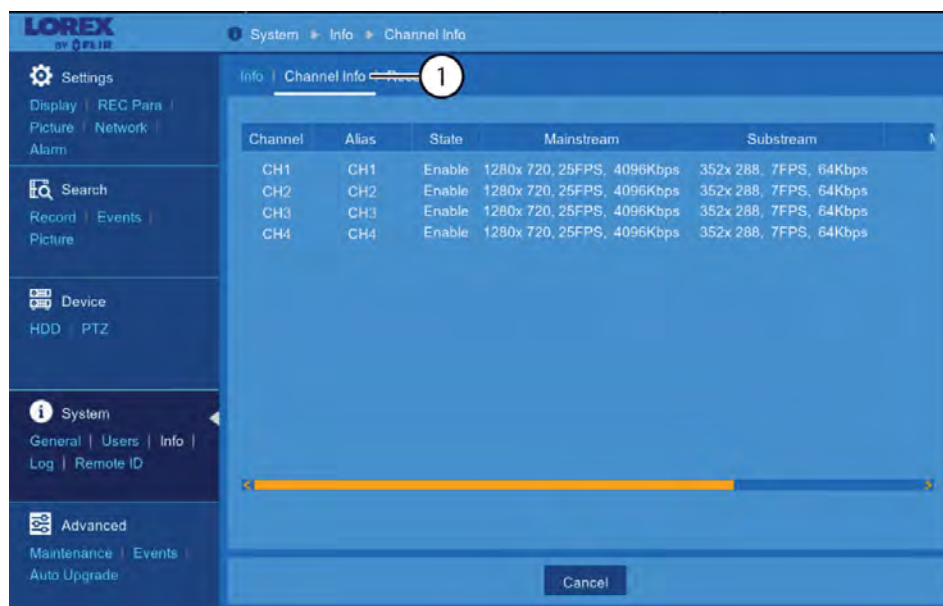
- Under **System**, click **Info** to open the **Info** tab.
OR

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

12.5.9 View Channel Information

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

To view channel information:

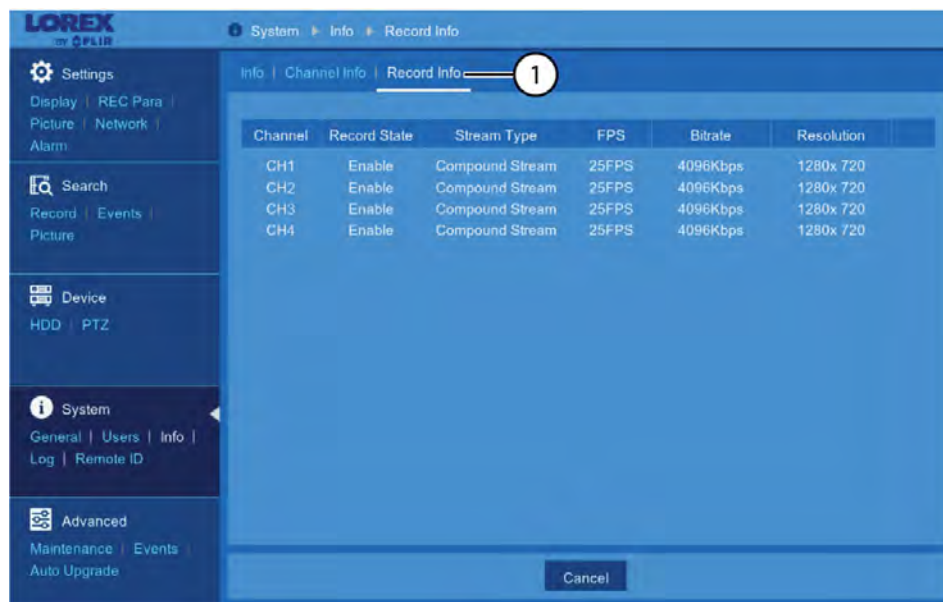


1. Under **System**, click **Info**, then click the **Channel Info** tab.

12.5.10 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.

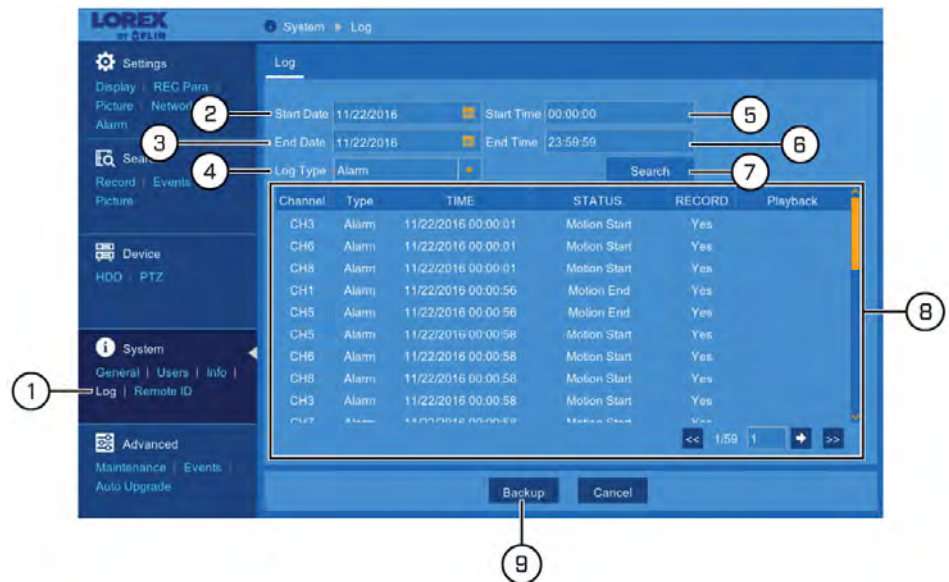
12.5.11 Logs — Searching and Backing Up

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:

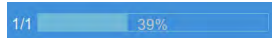
- To back up system log events, you must connect a USB flash drive to one of the NVR's USB ports.

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.

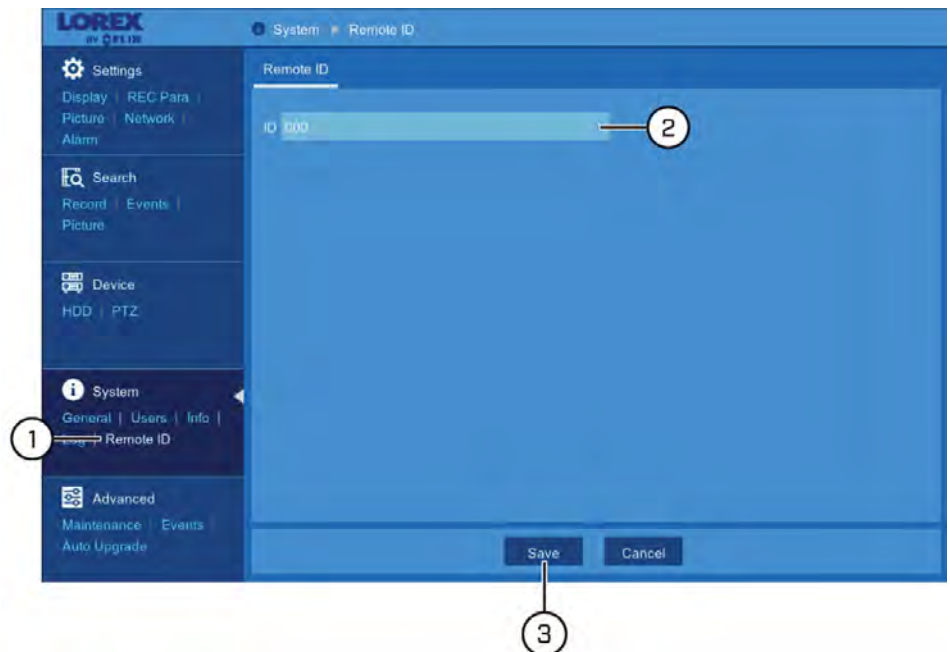
**NOTE**

For more details on using the backup drive menu, including a full overview of buttons and their functions, see 10.1 *Drive Menu Controls*, page 34.

12.5.12 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 NVR.

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.

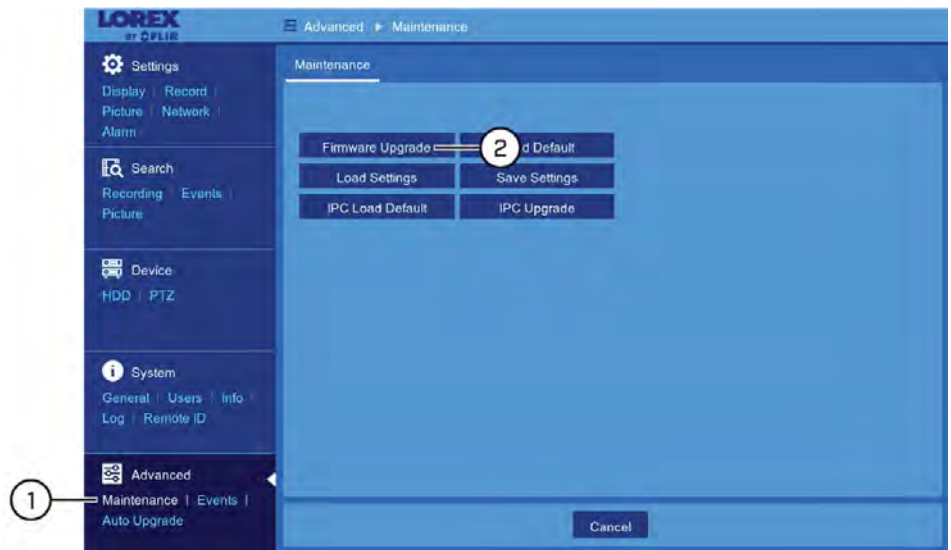
12.6.1 Manual Firmware Upgrade

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 12.6.8 *Using Automatic Firmware Upgrade*, page 102.

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 NVR.

To manually upgrade the NVR'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.



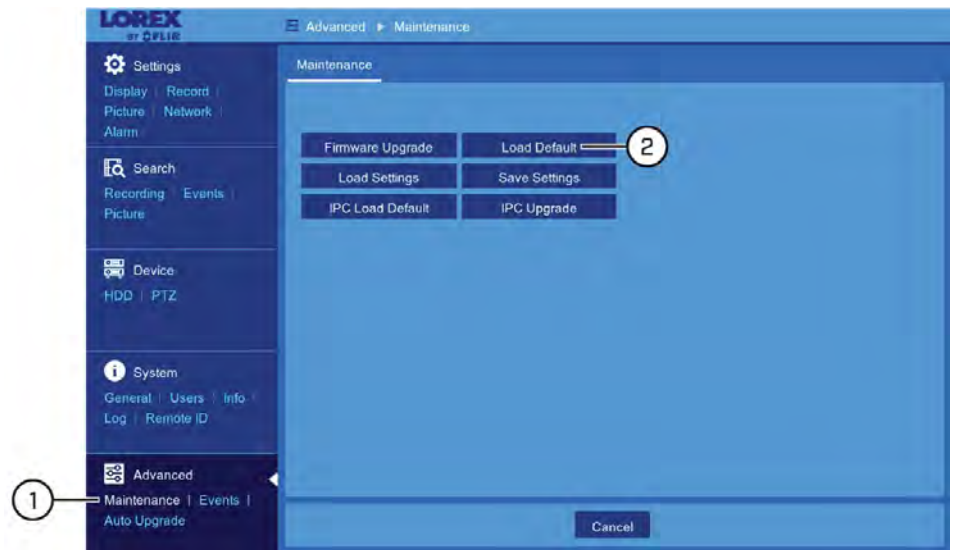
CAUTION

Do not power off the NVR during firmware upgrade.

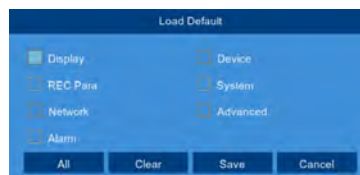
12.6.2 Restoring Default Settings

Reset the NVR 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 NVR will reboot automatically.

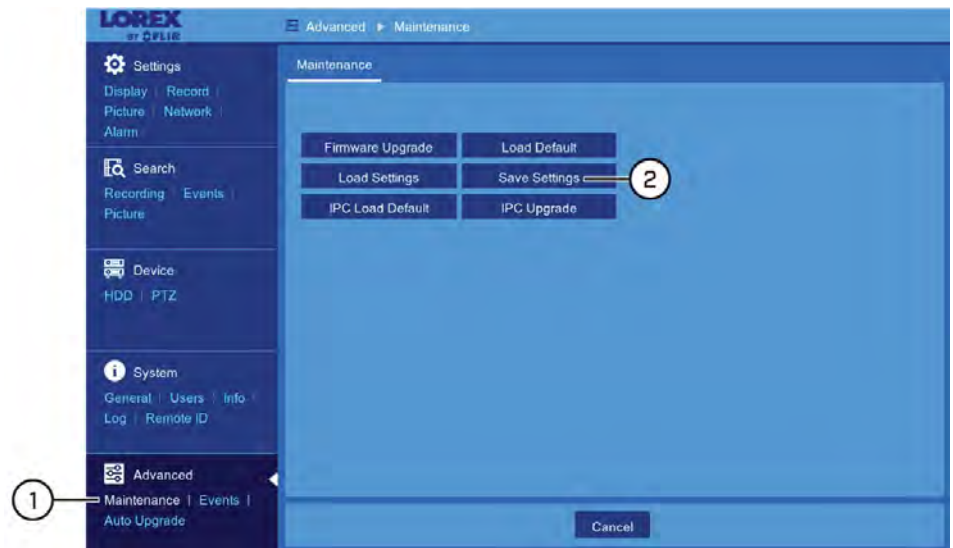
12.6.3 Exporting System Settings

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 NVR.

Prerequisites:

- You must connect a USB flash drive to one of the NVR'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.

**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 34.
- See 12.6.4 *Importing System Settings*, page 99 for instructions on importing saved system settings.

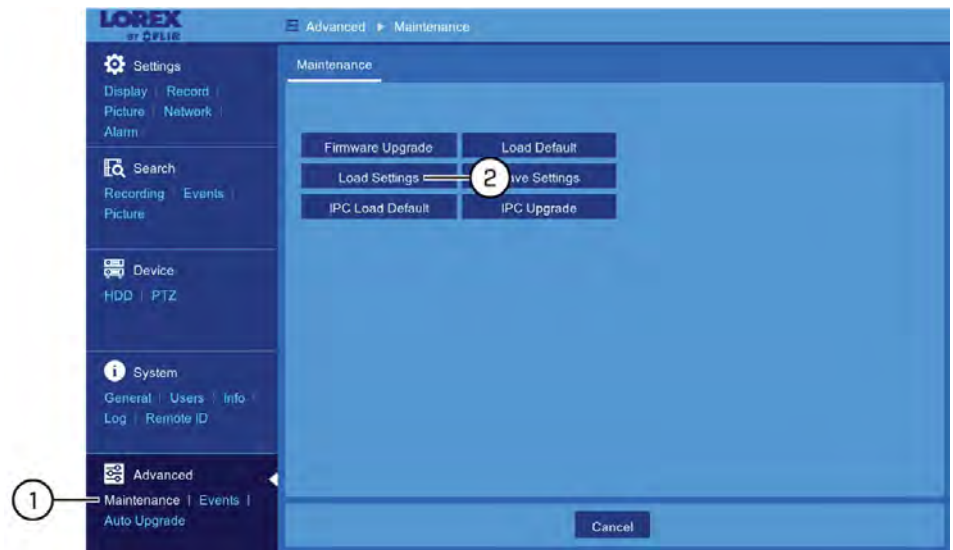
12.6.4 Importing System Settings

Once you have created a system settings export (see 12.6.3 *Exporting System Settings*, page 98 for details), you can import the settings on another NVR.

Prerequisites:

- You must connect a USB flash drive to one of the NVR'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 98 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.

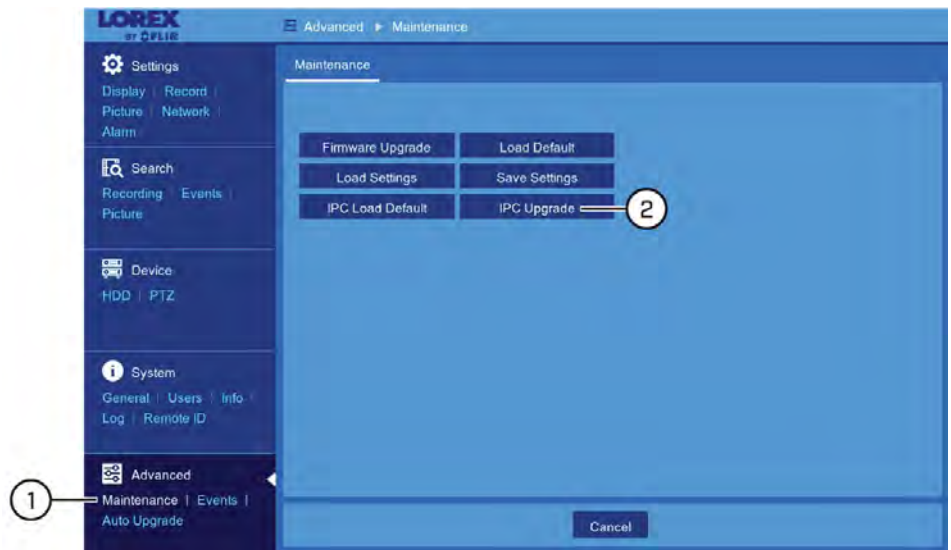
**NOTE**

For more details on using the drive menu, including a full overview of buttons and their functions, see 10.1 *Drive Menu Controls*, page 34.

12.6.5 Upgrading IP Camera Firmware

Manually upgrade IP camera firmware. Typically, this will not be required unless directed to do so by technical support.

To manually upgrade camera firmware:



1. Under **Advanced**, click **Maintenance** to open the **Maintenance** tab.
2. Click **IPC 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 cameras and reboot.

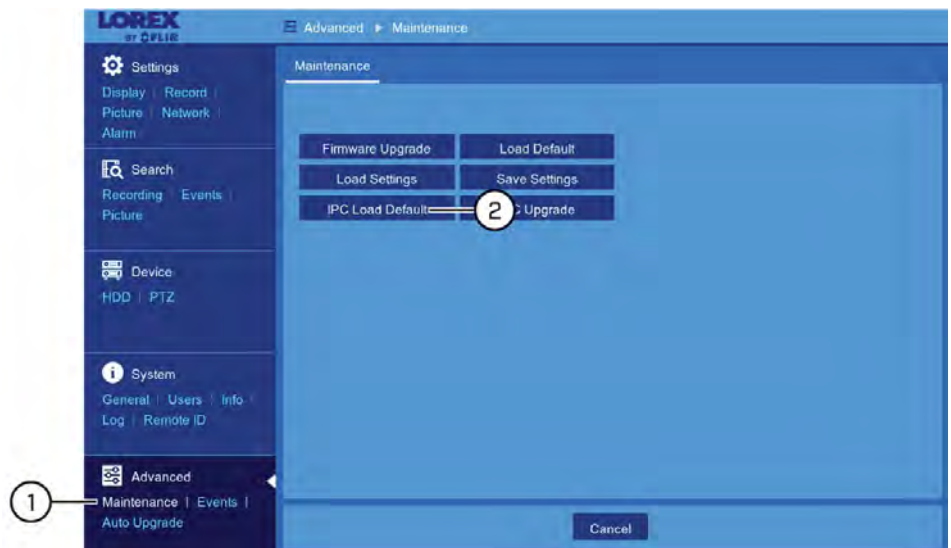
**CAUTION**

Do not power off the NVR or disconnect cameras during firmware upgrade.

12.6.6 Restoring Default IP Camera Settings

Restore default settings for IP cameras.

To restore default camera settings:



1. Under **Advanced**, click **Maintenance** to open the **Maintenance** tab.

2. Click **IPC Load Default**.
3. Check the cameras you would like to restore default settings for and click **OK**.

12.6.7 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 boxes next to features you would like to activate when the selected event occurs.
5. Use the dropdown next to **Latch Time** to determine how long the alarm out device will remain active when the selected event occurs, or select **Disable** to disable the alarm device.
6. Use the dropdown next to **Buzzer** to have the NVR make an alarm sound when the selected system warning occurs, or select **OFF** to have the NVR remain silent.
7. Click **Save**.
8. **(OPTIONAL)** Use the **Copy** function to copy your settings to another or all system warning types.

12.6.8 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 NVR's on-screen display.

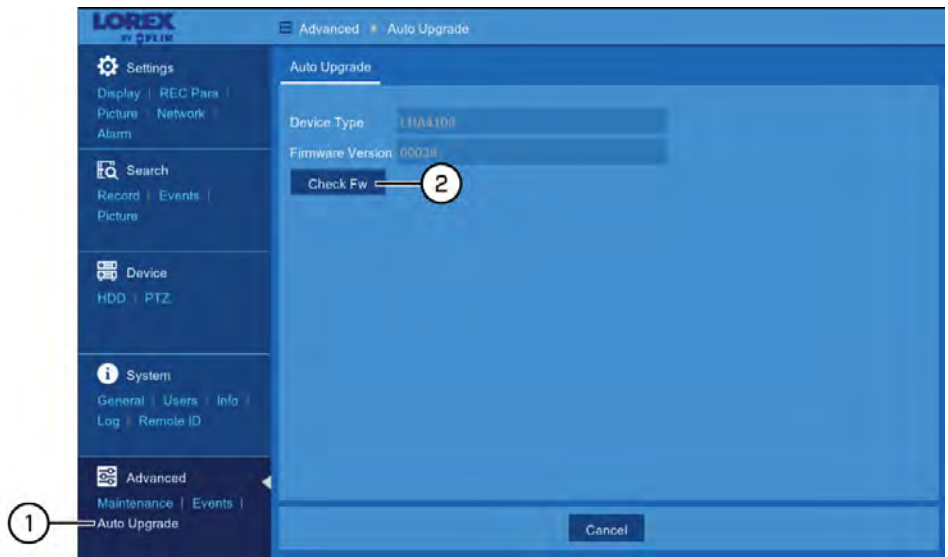
If your NVR has been disconnected from the Internet for a while, you can push the system to check for any firmware upgrades it may have missed.

Prerequisites:

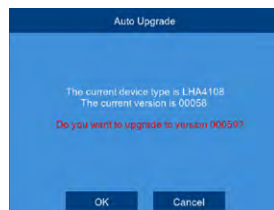
- Your NVR must be connected to your router or a switch on your network using the included Ethernet cable so the system can access the Internet.

To check for new firmware:**NOTE**

The model number shown below is for example purposes only.



1. Under **Advanced**, click **Auto Upgrade** to open the **Auto Upgrade** tab.
2. 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.

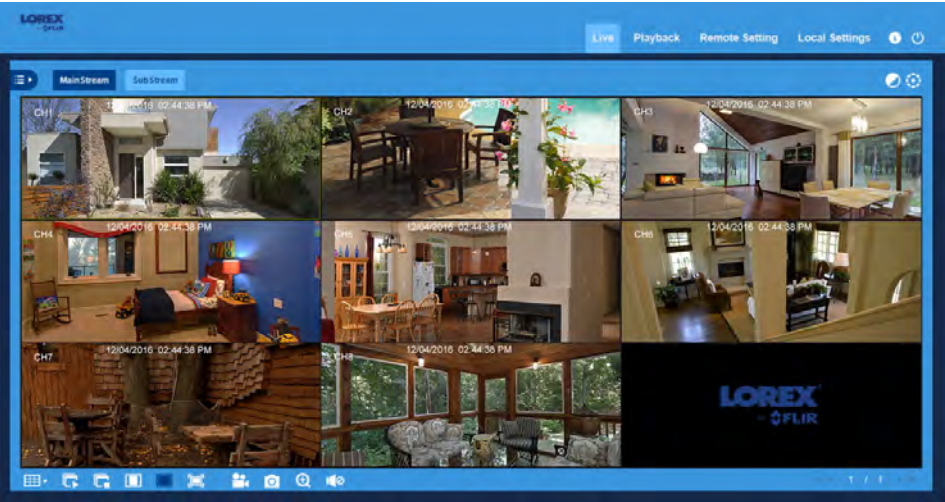


3. Click **OK** to upgrade. The system will restart.

**CAUTION**

DO NOT SHUT DOWN OR UNPLUG THE UNIT DURING FIRMWARE UPGRADE.

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 NVR to bring up the product page.

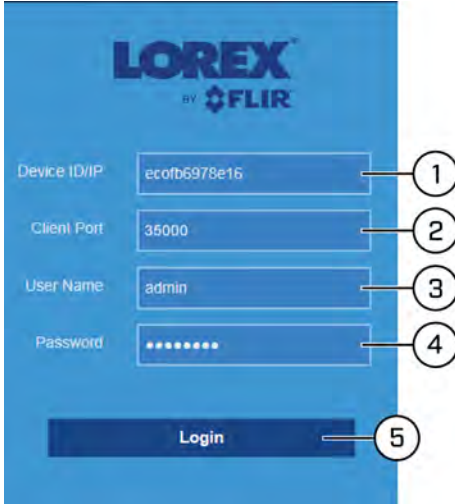
	NOTE
You can find your model number by: • Looking at the label on the bottom-panel of the NVR. • Click  on the NVR's Taskbar to open the system information page, which shows the model number.	

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 NVR credentials before accessing the system.

To log into the NVR using FLIR Client 12:



1. Enter the Device ID of the NVR.

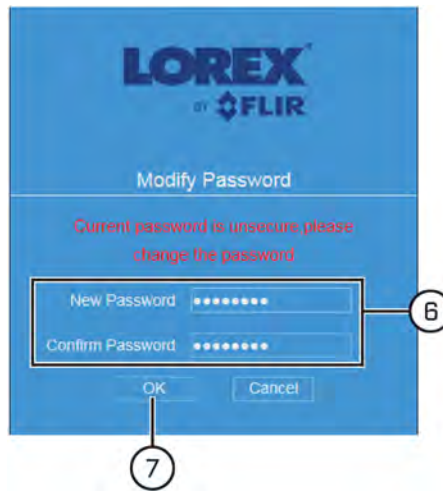
	NOTE
You can get your Device ID from the QR code label on the top panel of your NVR, or by clicking  on the NVR's Taskbar.	

2. Enter the Client Port (default: **35000**)
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 (default: **00000000**).

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

5. Click **Login**.



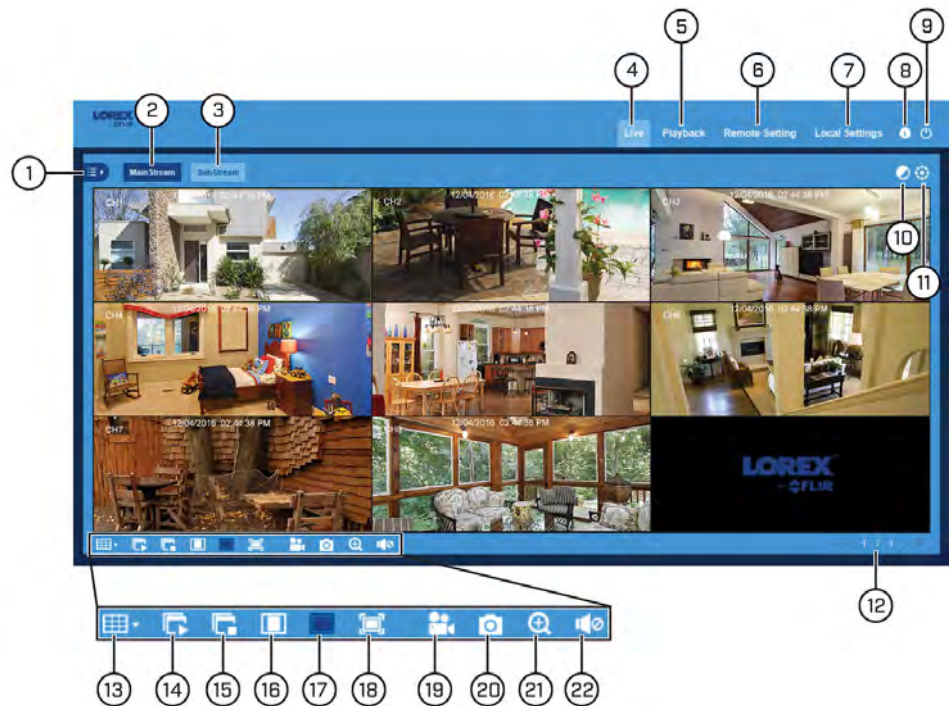
6. If you are accessing the NVR for the first time from the computer, you will be asked to enter a new password. Enter the password in the **New Password** and **Confirm Password** fields.

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

7. Click **OK**.

13.4 FLIR Client 12 Live Viewing Overview

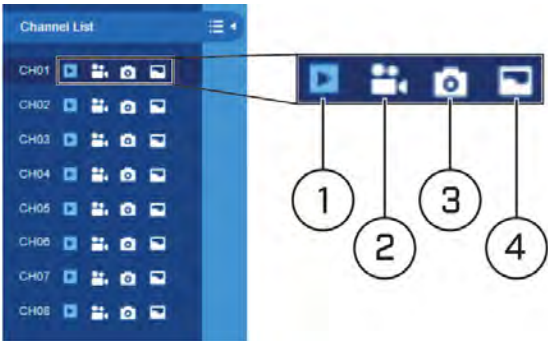
Overview of the controls in FLIR Client 12.



1. **Channel List:** Open the channel list for quick camera functions. For details, see 13.4.1 *Channel List*, page 108.
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 109.
6. **Remote Setting:** Access functions of the NVR menu. For details, see 13.6 *Remote Settings Menu — Configure NVR Settings with FLIR Client 12*, page 111.
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 141.
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 108.
11. **PTZ Controls:** Access controls for using PTZ cameras (not included). For details, see 13.4.3 *PTZ Controls*, page 109.
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 141.
- 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 141.
- 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

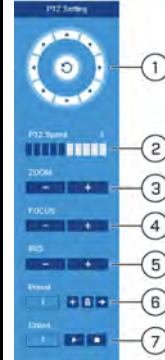


- 1. **Play Channel:** Turn the video stream on/off.
- 2. **Manual Recording:** Click to start manually recording video. Click again to stop recording. Manual recordings are saved to your computer. To set the location for manual recordings, see 13.7 *Local Settings Menu — Set Download Location and File Type*, page 141.
- 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 141.
- 4. **Bitrate:** Set camera to use mainstream or substream video settings.

13.4.2 Color Controls

A screenshot of the 'Color' control panel. It features four horizontal sliders: Hue (set to 120), Brightness (set to 100), Contrast (set to 100), and Saturation (set to 100). Each slider has a circular handle and is labeled with a circled number from 1 to 4. Below the sliders are two buttons: 'Default' and 'Refresh', labeled with a circled number 5.	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.
---	---

13.4.3 PTZ Controls



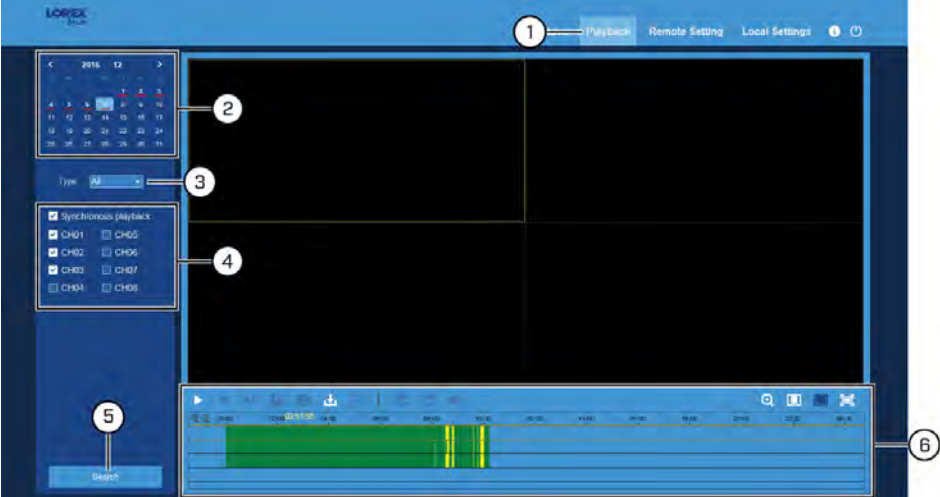
1. **Directional Arrows:** Click to move the PTZ camera.
2. **PTZ Speed:** Click to set the speed of the PTZ camera's movement.
3. **Zoom:** Click +/- to zoom in or out.
4. **Focus:** Click +/- to adjust focus.
5. **Iris:** Click +/- to adjust iris.
6. **Presets:** Add, remove, or go to presets. For details on setting presets, see 7.5.1 *Setting PTZ Presets*, page 24.
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 110 for a full overview of playback controls in FLIR Client 12.

13.5.2 Playback Controls

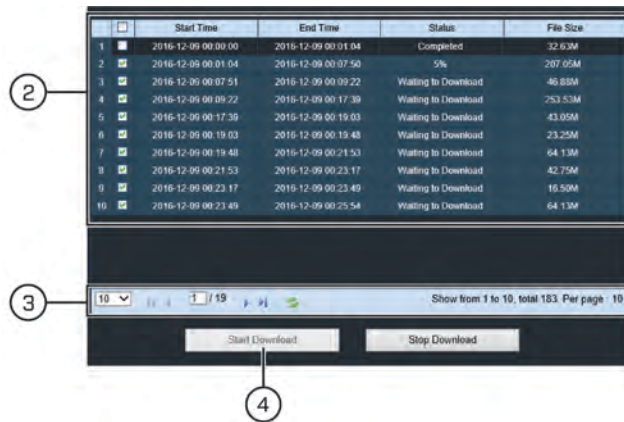


1. **Calendar:** Select a day to search for video from.
2. **Type:** Select the type of recording you want to search for, or select **All** to search for all recordings.
3. **Playback Channels:** Check channels you would like to search for video from. Check **Synchronous playback** to play all channels 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 141.
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 141.
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 111.
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 150 for information on playing video files on your computer.

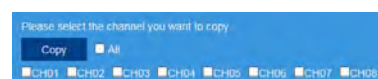
13.6 Remote Settings Menu — Configure NVR Settings with FLIR Client 12

You can access most of the NVR'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:

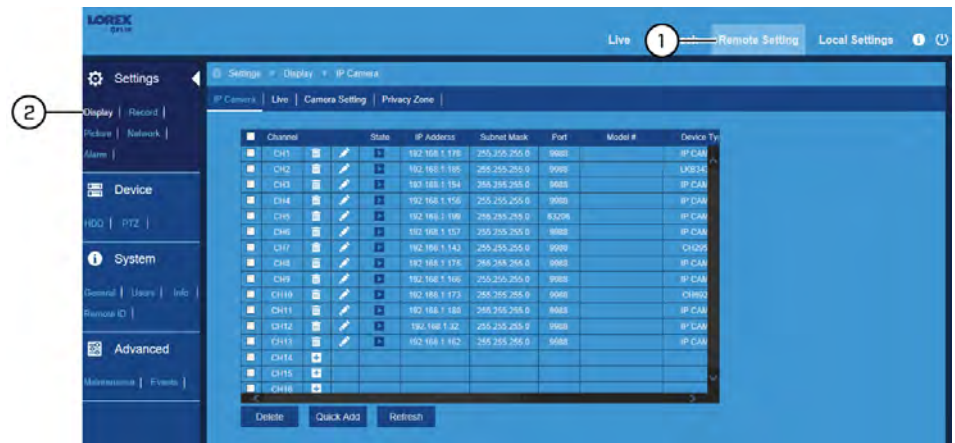


1. Ensure you have saved the settings you would like to copy to another channel.
2. Click **Copy**.
3. Check the channels you would like to copy your settings to, or check all to copy settings to all channels.
4. Click **Save**.

13.6.2 Managing IP Cameras

Add, edit or remove IP cameras from your NVR system.

To manage IP cameras:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Display** to open the **IP Camera** tab.
3. Manage IP cameras to your liking:
 - To add IP cameras, see 13.6.2.1 *Adding IP Cameras*, page 112.
 - To edit IP cameras, see 13.6.2.2 *Editing IP Cameras*, page 113.
 - To remove IP cameras, see 13.6.2.3 *Deleting IP Cameras*, page 113.

13.6.2.1 Adding IP Cameras

Add IP cameras from the LAN to your NVR system. IP cameras connected directly to the NVR will appear in the IP Cameras menu automatically.

Prerequisites:

- Connect your IP camera(s) to the same network as your NVR. See 4.12 *Connecting Cameras to the Local Area Network (LAN)*, page 13 for details.

To add IP cameras:

- Click **Quick Add** to search for and add IP cameras from the LAN.
OR
- Click  next to an empty channel to manually add an IP camera.



NOTE

- The system supports Lorex IP cameras only. Visit lorextechnology.com/compatibility for a complete list of compatible IP cameras.
- When adding Lorex PTZ cameras, ensure that you change the **Protocol** from **Private** to **ONVIF**.

13.6.2.2 Editing IP Cameras

To edit IP cameras:

- Click  to edit a connected IP camera.
- The camera attributes appear:

Channel	CH1
IP Address	192.168.1.178
Subnet Mask	255.255.255.0
Client Port	35000
Protocol	Private
User Name	admin
Password	*****
OK Cancel	

- Make edits as needed, then click **OK**.

13.6.2.3 Deleting IP Cameras

To delete IP cameras:

- Click  to delete a connected IP camera.



NOTE

- Deleting an IP camera removes it from the channel it is currently connected to. You can add these cameras to the system again at any time.
- You can only delete cameras from the LAN, and not those which are connected directly to the NVR.

13.6.3 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:



- Click **Remote Setting** in the top-right corner of the window.
- Under **Settings**, click **Display** to open the **Live** tab.
- Select the channel to configure the OSD for from the dropdown next to **Channel**.
- Click the field next to **Channel Name** to edit the channel name.
- Use the dropdown next to **Date Format** to choose how the date appears on the camera image.

6. Use the dropdown next to **Time Format** to choose how the time appears on the camera image.
7. Click the switch next to **Show Name** to enable (✓) or disable (⊗) the channel name shown on-screen in live viewing and recordings.
8. Click the switch next to **Show Time** to enable (✓) or disable (⊗) the timestamp 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.

9. Click **Save**.
10. **(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 111 for details on using the copy function.

13.6.4 Setting up Covert Recording

Covert recording allows you to hide channels from the live view of the NVR 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:

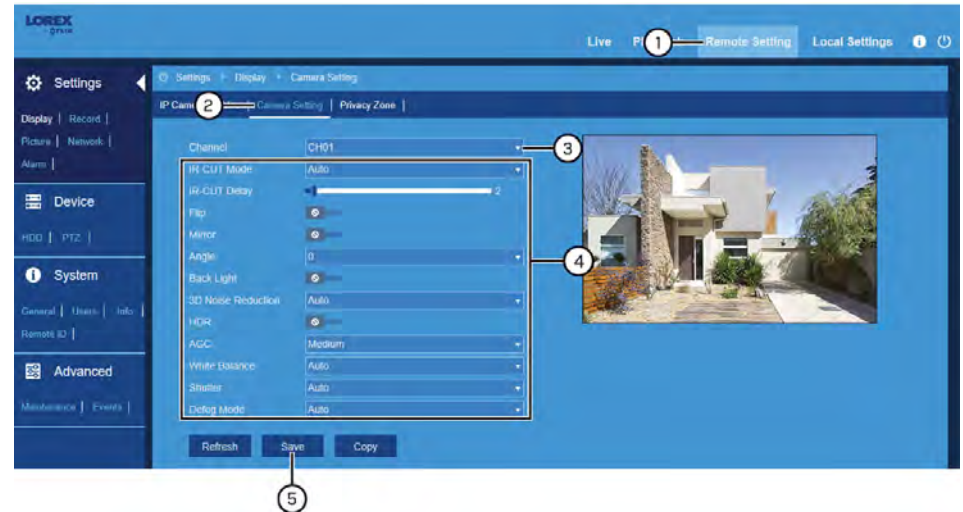


1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Display** to open the **Live** tab.
3. Use the dropdown next to **Channel** to select a channel to set up covert recording for.
4. Click the switch next to **Show Name** to enable (✓) or disable (⊗) the channel name shown on-screen in live viewing and recordings.
5. Click **Save**. When viewing on the NVR, 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 111 for details on using the copy function.

13.6.5 Configuring Camera Settings

Configure advanced settings related to camera picture quality.

To configure camera settings:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Display**, then click on the **Camera Setting** tab.
3. Use the dropdown next to **Channel** to select a channel to change settings for.

4. Configure menu items as needed. The camera image shown on the left-side of the menu shows the effect of your changes. See below for descriptions of each menu item:

**NOTE**

- The available options in this menu will depend on which features are supported by your IP camera.
- Click **Default** near the bottom of the menu to return all menu items to their default values.

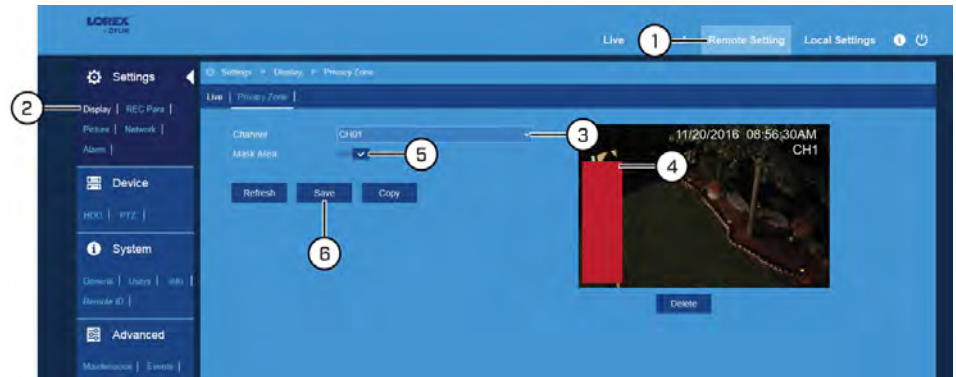
- **IR-CUT Mode:** Select **Auto** to have the camera switch between IR night vision and color video automatically as light conditions change. Select **B&W** or **Color** to force the camera to remain in black & white or color respectively.
- **IR-CUT Delay:** Click-and-drag the slider to select the number of seconds it takes before the camera switches between black & white video and color video (**IR-Cut Mode** must be set to **Auto**).
- **Flip / Mirror:** Click the switches next to **Flip** and **Mirror** to enable () or disable (). **Flip** is used to invert the video vertically, and **Mirror** is used to invert the video horizontally.
- **Angle:** Select an angle from the dropdown to rotate the video.
- **Back Light:** Back Light Compensation (BLC) adjusts the lighting levels in the picture so you can see objects in the foreground if there is a strong light source behind them.
Click the switch next to **Back Light** to enable () or disable (). Once enabled, select **Low**, **Medium** or **High** from the **BLC Level** dropdown that appears underneath.
- **3D Noise Reduction:** Noise reduction ensures a cleaner image, especially at night, and may reduce the amount of disk space required to store video.
Select **Auto** to enable automatic noise reduction, or select **Manual** to choose the noise reduction level using the **Level** slider that appears underneath.
- **HDR:** High Dynamic Range (HDR) equalizes light levels in images with high-contrast lighting (very bright and very dark areas in the same image).
Click the switch next to **HDR** to enable () or disable (), then choose the HDR level using the **Level** slider that appears underneath.
- **AGC:** Automatic Gain Control (AGC) is used to refine the camera image by artificially brightening or darkening the image. Use the dropdown to select a level for AGC, or select **Disable**.
- **White Balance:** Use white balance to correct color appearance in the camera image. Select **Auto** to adjust white balance automatically, Indoor for the indoor conditions preset, or manual to configure the white balance yourself (sliders appear for the amount of **Red**, **Green** and **Blue** in the image).
- **Shutter:** Shutter speed determines how long the camera shutter remains open when capturing an image. It is recommended to leave this item set to **Auto** unless you are an advanced user. Select **Manual** to configure the shutter speed using the **Time Exposure** dropdown that appears underneath.
- **Defog Mode:** Select **Auto** to enable automatic defog mode, or select **Manual** to choose the level using the **Level** slider that appears underneath.

5. Click **Save**.

13.6.6 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):

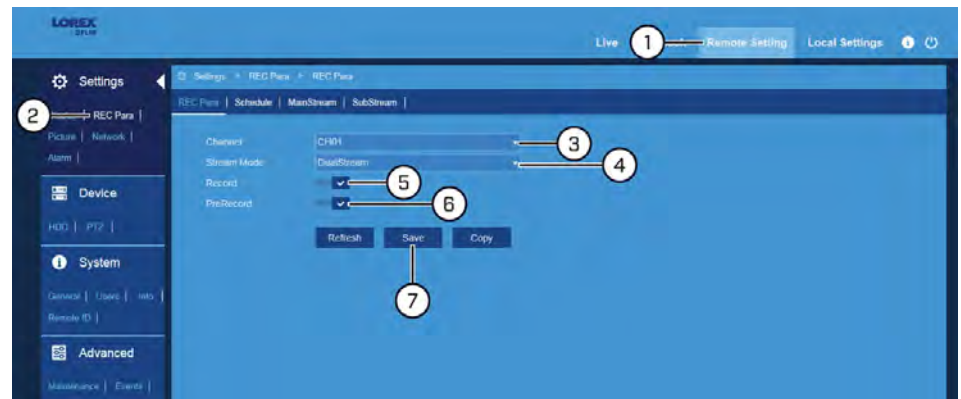


1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Display**, then click the **Privacy Zone** tab.
3. Use the dropdown next to **Channel** to select a channel to set up privacy zone(s) for.
4. Click-and-drag to draw up to 4 privacy zones on the camera image, 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 111 for details on using the copy function.

13.6.7 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 12.2.13 *Configuring System Recording Quality (Mainstream and Substream)*, page 66.



CAUTION

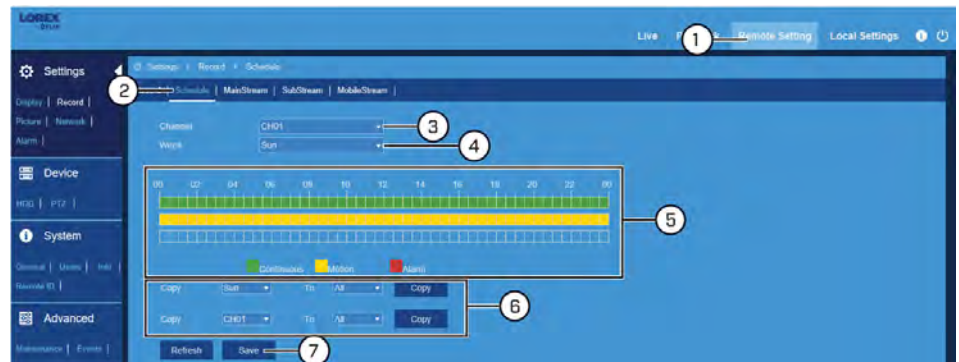
You must set the **Stream Mode** to **DualStream** in order to play back recordings using the FLIR Secure mobile app. Live viewing will not be affected.

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**.
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 111 for details on using the copy function.

13.6.8 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:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **REC Para**, then click on the **Schedule** tab.
3. Use the dropdown next to **Channel** to select a channel to set the recording 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 continuous recording is enabled are represented by **green bars**, motion by **yellow**, and alarm by **red**. 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.

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**.

13.6.9 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.

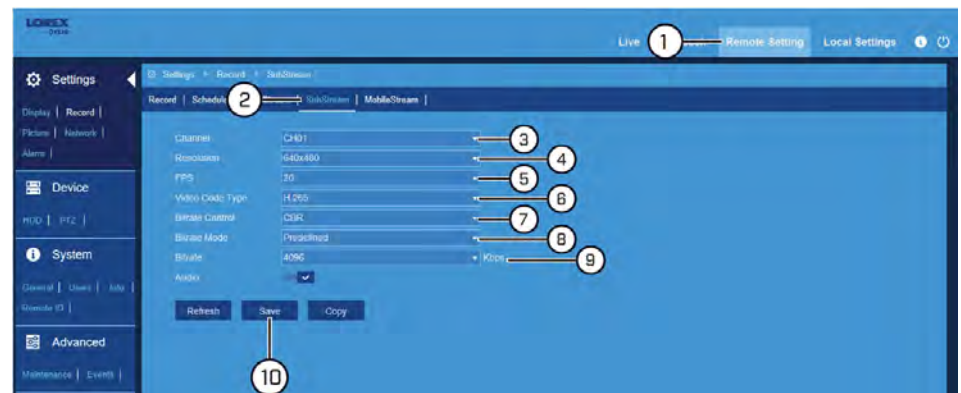
NVR units also support a **Mobilestream** for configuring another video stream used when streaming video over the Internet.

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 **Video Codec Type** to set the compression .
7. 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.
8. 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.
9. 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).
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 111 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 **Video Codec Type** to set the compression .

7. 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.
8. 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.
9. 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).
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 111 for details on using the copy function.

To configure the Mobilestream:



1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Settings**, click **Record**, then click on the **MobileStream** tab.
3. Use the dropdown next to **Channel** to select a channel to configure the substream for.
4. Click the switch next to **Enable** to enable (☒) or disable (☐) the mobilestream.
5. Use the dropdown next to **Resolution** to set the recording resolution.
6. Use the dropdown next to **FPS** to set the number of frames per second.
7. Use the dropdown next to **Video Codec Type** to set the compression.
8. 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.
9. 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.
10. 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).
11. Click **Save**.
12. **(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 111 for details on using the copy function.

13.6.10 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**.
9. **(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 111 for details on using the copy function.

13.6.11 Enabling/Disabling Manual Capture

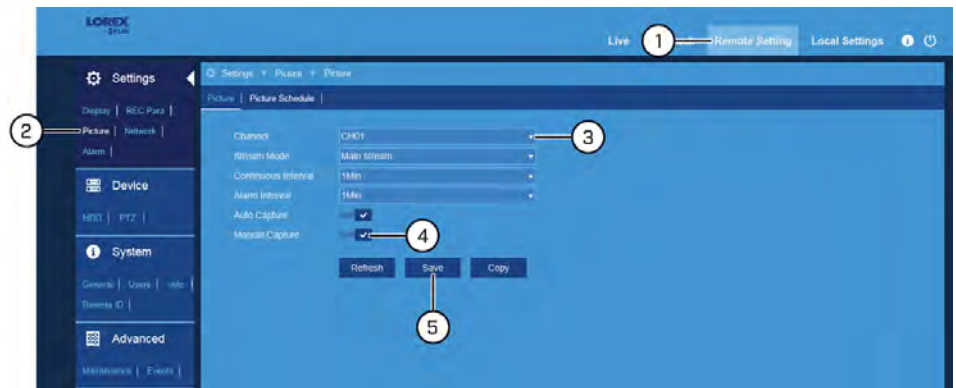
Manual Capture allows you to quickly take snapshots from enabled channels.



NOTE

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

To enable Manual 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 enable Manual Capture for.
4. Click the switch next to **Manual Capture** to enable (☒) or disable (☐) Manual Capture for the selected channel.
5. 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 20.
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 111 for details on using the copy function.

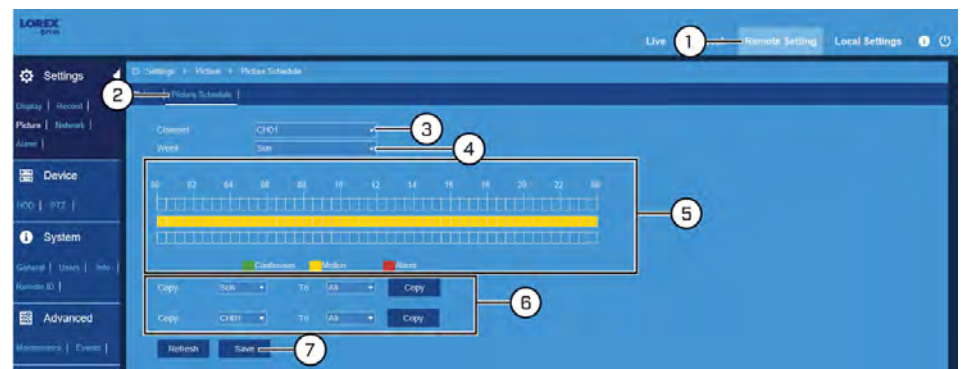
13.6.12 Setting a Picture Schedule for Auto Capture

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 13.6.10 *Configuring Auto Capture*, page 121 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**, the 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**.

13.6.13 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**.

13.6.14 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 13.6.15 *Setting an Email Schedule*, page 126

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 13.6.15 *Setting an Email Schedule*, page 126.

13.6.15 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 13.6.14 *Setting up Email Notifications*, page 124.

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**.

13.6.16 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 17 *DDNS Setup (Advanced)*, page 158 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**.

13.6.17 Configuring RTSP Streaming (Advanced)

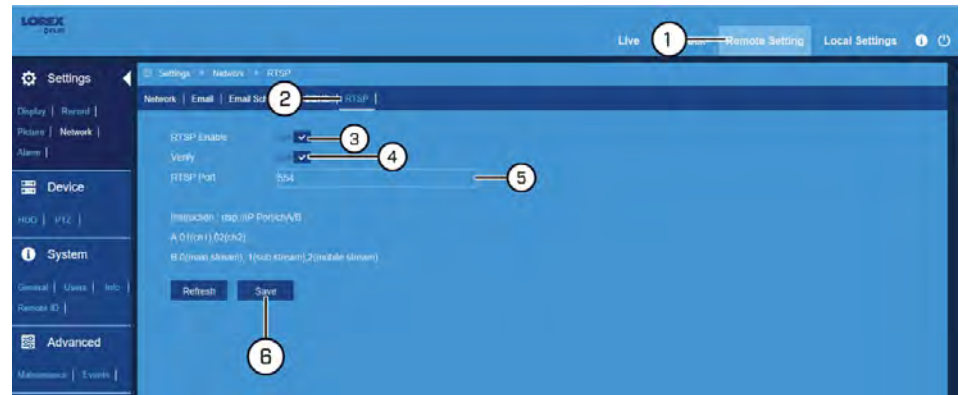
RTSP streaming allows you to stream video from a specific camera using a web address. It is an optional connectivity method used by 3rd party software applications.



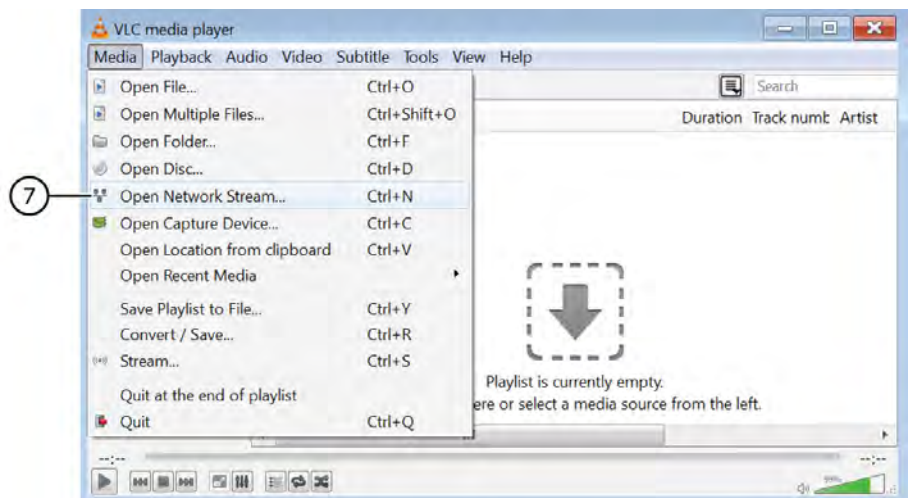
NOTE

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 NVR. Click **Media**, then click **Open Network Stream....**



8. Enter the RTSP address in the following format:
 - **rtsp://[IP address of the NVR]:[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, **2** for mobilestream)
 - **Example:** *rtsp://192.168.1.128:554/ch01/0* will stream video from channel 1 of the NVR 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.

13.6.18 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 **Buzzer** to select whether you would like the NVR to make an alarm sound when motion is detected.
6. 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.
7. Click the switch next to **Alarm Out** to enable (☒) or disable (☐) your alarm out device (not included) when motion is detected.
8. Use the dropdown next to **Latch Time** to set the amount of time the alarm device will remain active for.
9. Use the dropdown next to **Post Recording** to set the amount of time the system will record video for after motion is detected.

10. Click the switches to enable (✓) or disable (✗) the following features when motion is detected:

- **Show Message:** Show an on-screen message.
- **Send Email:** Send an email notification.



NOTE

Ensure you have enabled email notifications. See 13.6.14 *Setting up Email Notifications*, page 124 for details.

- **Full Screen:** Show video in full screen.
- **Enable Record:** Record video of the event.

11. 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 **All** to select all.
12. 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.

13. Click **Save**.

13.6.19 Configuring Alarm Devices

You can connect alarm input devices such as motion sensors (not included) or glass break detectors (not included) to the system. The system can be set to trigger recording or take other actions when these devices are activated.



To configure alarm input devices:

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

3. Use the dropdown next to **Alarm In** to select the corresponding channel number for the alarm device.
4. Select **NO** (Normal Open) or **NC** (Normal Close) from the dropdown next to **Alarm Type** depending on the type of alarm input device you are configuring, or select **Disable** to disable the alarm input device for the selected channel.
5. Select a time period from the dropdown next to **Buzzer** to have the NVR make an alarm sound when the selected alarm input device is triggered, or select **Disable** to keep the NVR silent.
6. Use the dropdown next to **Latch Time** to select the time in seconds that the alarm output device will activate after the selected alarm input device is triggered.
7. Click the switches to enable () or disable () the following features when an alarm is triggered:

- **Show Message:** Show an on-screen message.
- **Send Email:** Send an email notification.



NOTE

Ensure you have enabled email notifications. See 13.6.14 *Setting up Email Notifications*, page 124 for details.

- **Full Screen:** Show video in full screen.
 - **Alarm Out:** Enable alarm out device (not included).
 - **Enable Record:** Record video of the event.
8. Use the dropdown next to **Post Recording** to set how long the system will record video for after the alarm device is triggered.
 9. Click on the numbered boxes representing channels that should also be recorded when the selected alarm in device is triggered. Click the checkbox next to **All** to select all.
 10. Click **Save**.

13.6.20 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**

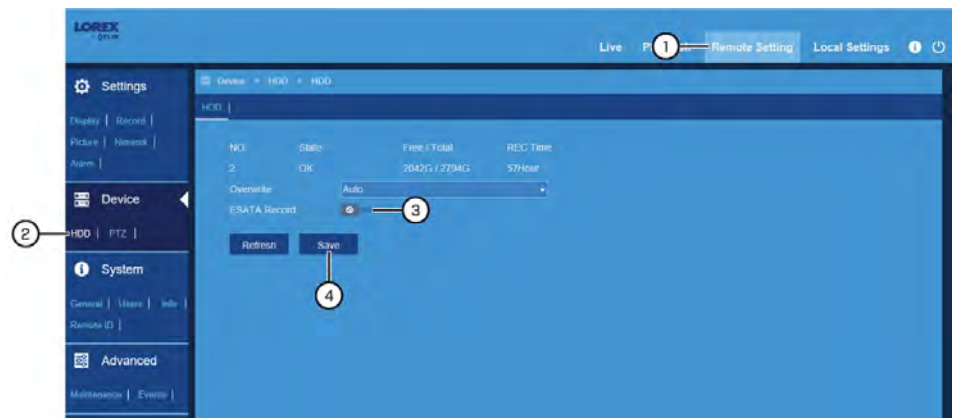
If you turn off overwrite and your hard drive fills up with footage, the system will stop recording.

4. Click **Save**.

13.6.21 Enabling eSATA Recording

Enable eSATA recording to use external hard drives for recording video.

To enable eSATA recording:

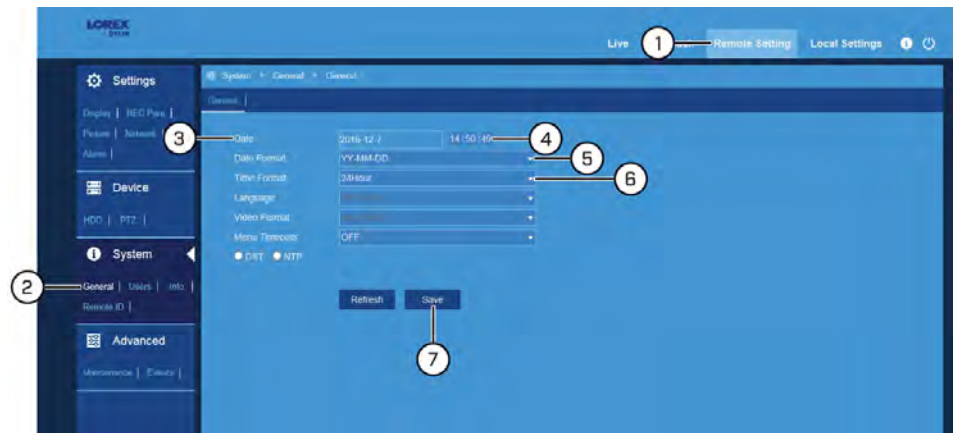


1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Device**, click **HDD** to open the **HDD** tab.
3. Click the switch next to **ESATA Record** to enable () or disable () eSATA recording.
4. Click **Save**.

13.6.22 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 NVR's date and time:

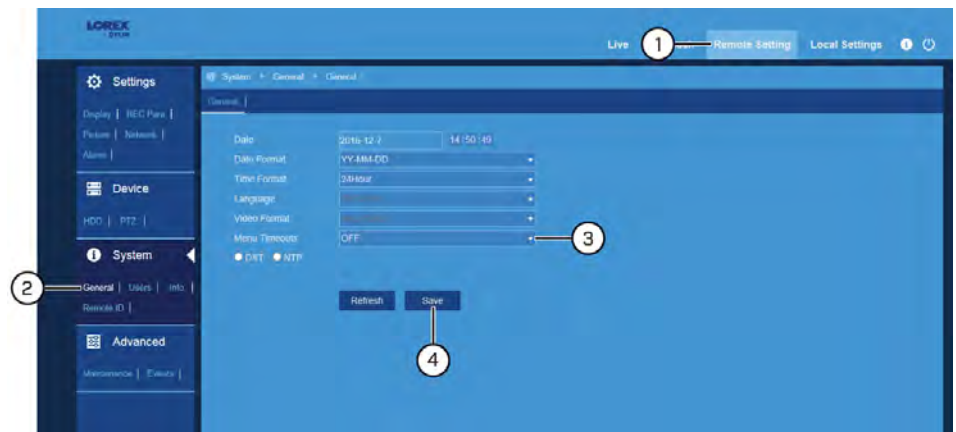


1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **General** to open the **General** tab.
3. Click the field next to **Date** to select the correct date from the calendar.
4. Click to enter the correct time. Use the dropdown to select **AM** or **PM** if using 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**.

13.6.23 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**.

13.6.24 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**.

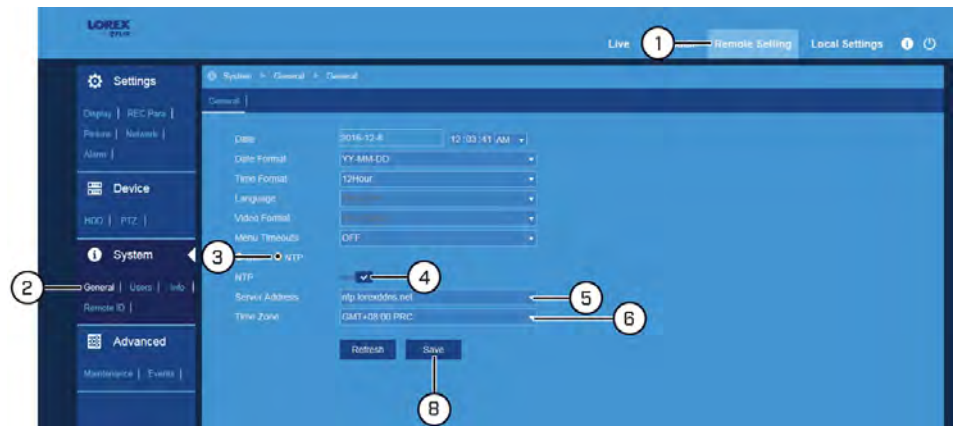
13.6.25 Configuring NTP

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

Prerequisites:

- The NVR 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 NVR 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.

13.6.26 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**.

13.6.27 View System Information

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

To view system information:

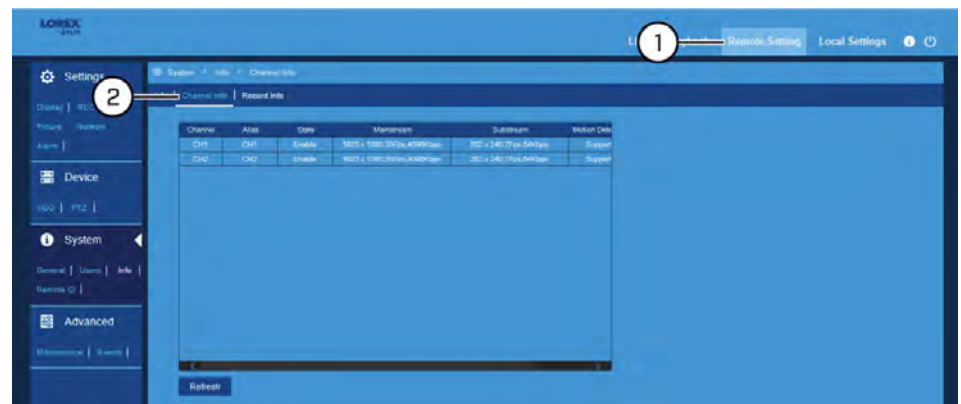


1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **Info** to open the **Info** tab. Click **Refresh** to refresh the information.

13.6.28 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.

13.6.29 View Recording Information

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

To view recording information:

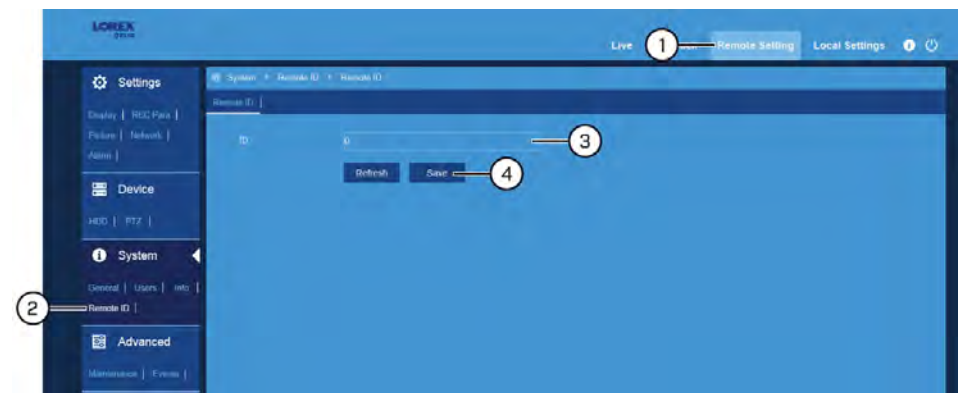


1. Click **Remote Setting** in the top-right corner of the window.
2. Under **System**, click **Info**, then click the **Record Info** tab. Click **Refresh** to refresh the information.

13.6.30 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 NVR.

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.

13.6.31 Manual Firmware Upgrade

The system supports automatic firmware upgrades over the network to ensure your unit is always up-to-date. Your NVR 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 12.6.8 *Using Automatic Firmware Upgrade*, page 102.

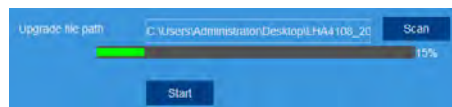
Prerequisites:

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

To manually upgrade the NVR'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.



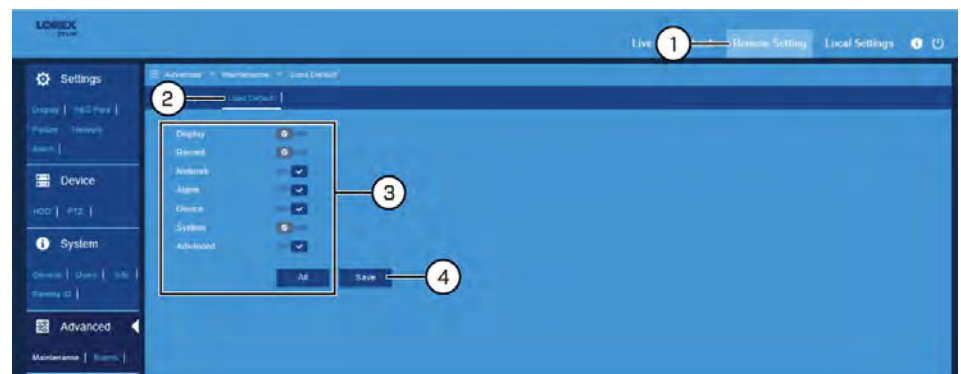
CAUTION

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

13.6.32 Restoring Default Settings

Reset the NVR 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:



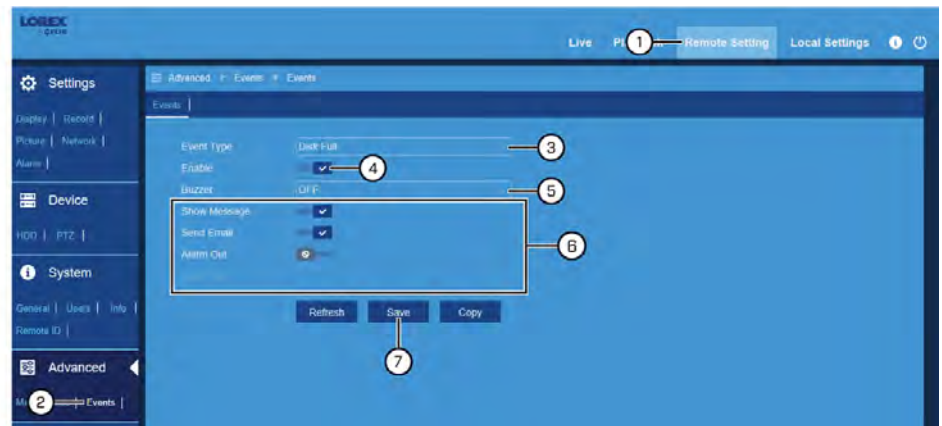
1. Click **Remote Setting** in the top-right corner of the window.
2. Under **Advanced**, click **Maintenance**, then click the **Load Default** tab.

- 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 NVR will reboot automatically.

13.6.33 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 NVR to make an alarm sound if the selected event occurs.
- Click the switches to enable (☒) or disable (☐) the following options for the selected event:
 - Show Message:** Display on-screen message.
 - Send Email:** Send an email notification.



NOTE

Ensure you have enabled email notifications. See 13.6.14 *Setting up Email Notifications*, page 124 for details.

- Alarm Out:** Activate alarm out device (not included).
- Latch Time:** Use the dropdown to select how long the alarm out device remains active.

7. Click **Save**.



8. **(OPTIONAL)** Click **Copy** to copy your event settings to another event type.
 9. **(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**.
 10. 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 NVR 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 NVR 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.

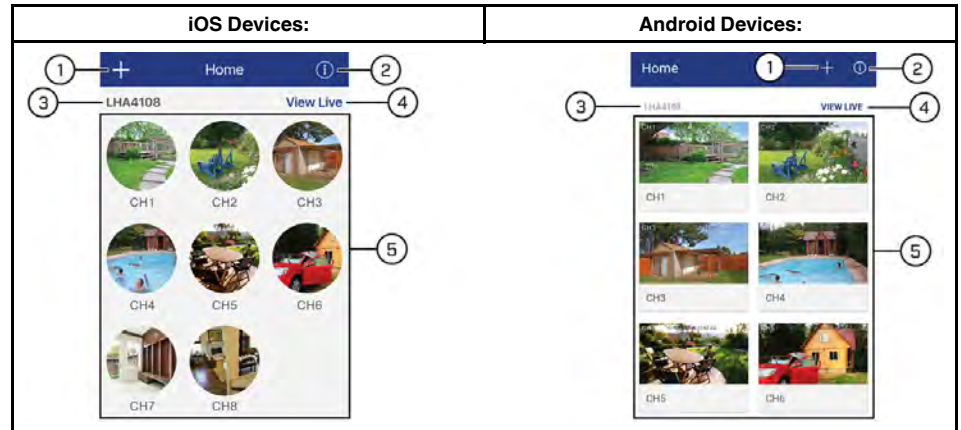


NOTE

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



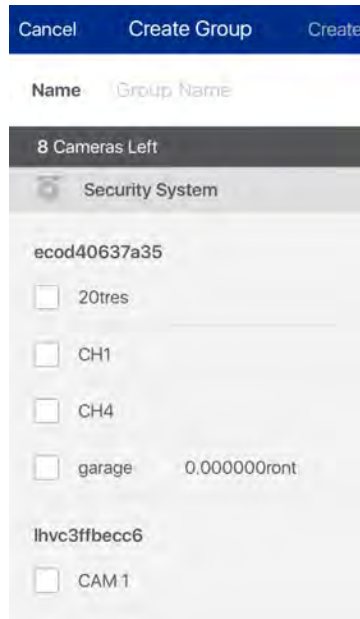
1. **Channel Number / Name**
2. **History:** Tap to view recorded videos saved on your recorder's hard drive.
3. **Live View:** Double-tap to zoom in. Turn your mobile device sideways to view in landscape mode, or hold upright to view in portrait mode.
4. **Disconnect:** Tap to disable live video, video 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 .

	NOTE
You can add a maximum of 8 cameras to a group.	

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.

	NOTE
For Android users, tap  next to the group you want to edit.	

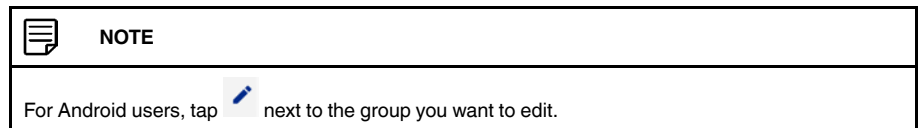
3. Tap **Save** after you make your changes.

	NOTE
Tap the Name text box to rename your group.	

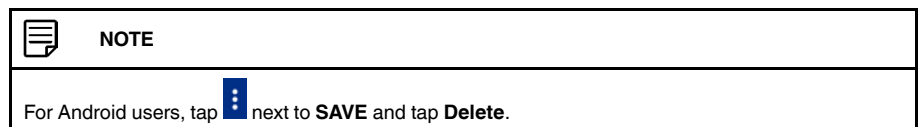
14.2.2 Deleting a Group

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.

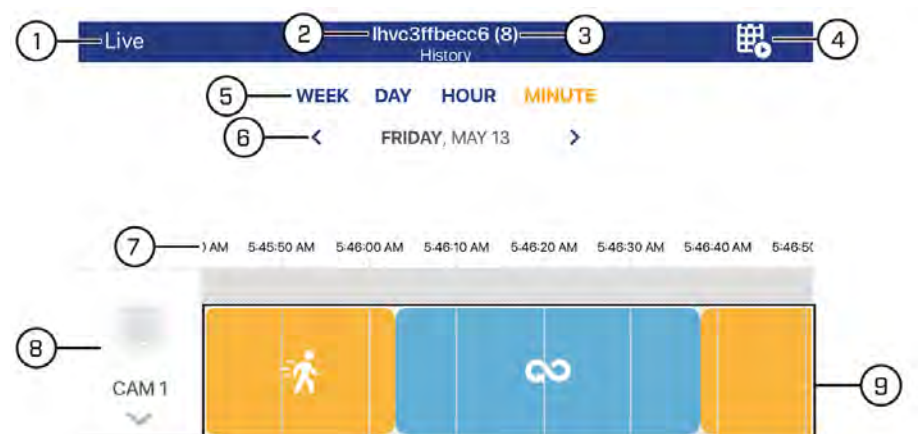
14.3 Using History Mode

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 .
3. The **History** screen appears.

History Screen:



- 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.

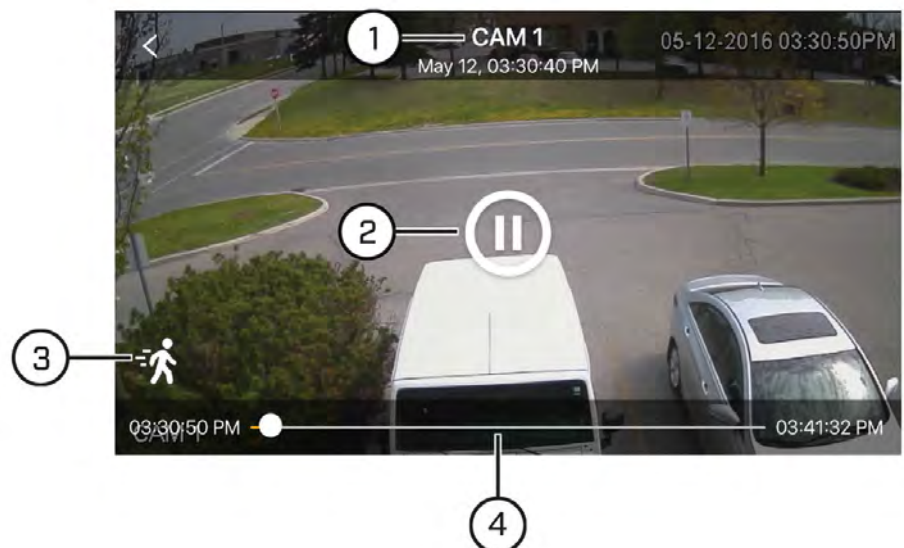
	NOTE
If you select WEEK as the time scale, this becomes a range of dates, for example: May 08 — May 14.	

- 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:

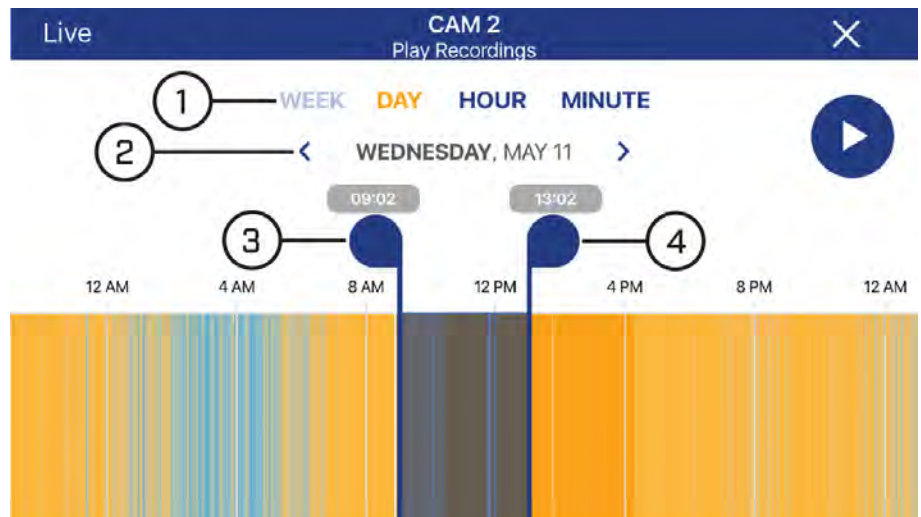


1. Channel, day, and time indicator
2. Tap anywhere in the playback video to pause / play.
3. Indicates the type of recording (for example, motion or continuous event).
4. Shows the length of the recording and how much has been viewed. You can tap and drag inside the time bar to select the time you wish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

	NOTE
Tap  /  to play the previous / next playback video, respectively.	

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 NVR Using a Mobile Device*, page 142

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**.

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

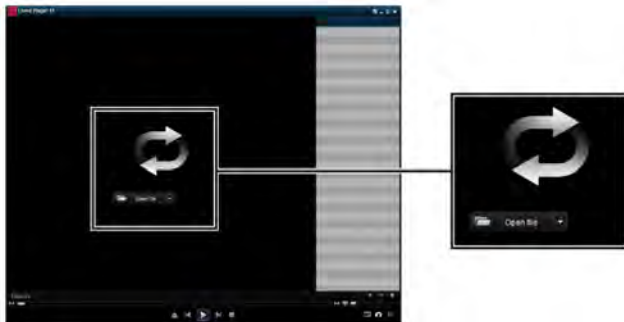
- Intel Pentium 4 or above
- Microsoft Windows XP / Vista / 7 / 8 / 10
- 256MB RAM
- 16MB video memory

Prerequisites

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

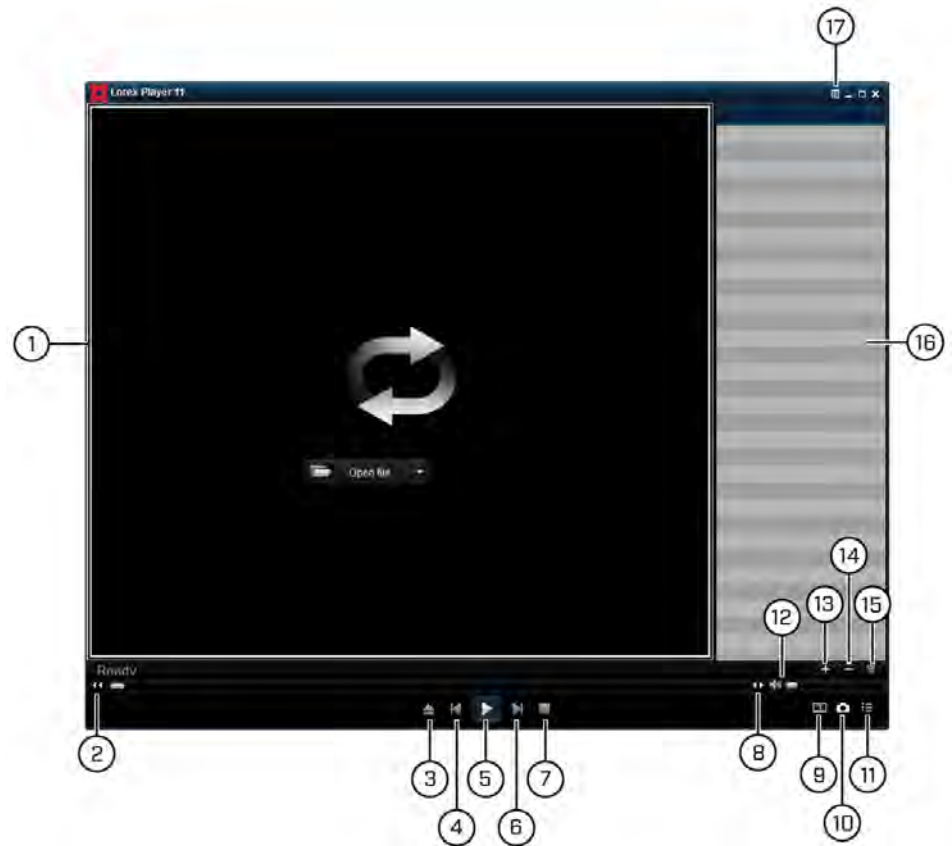
15.1 Running Lorex Player 11

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



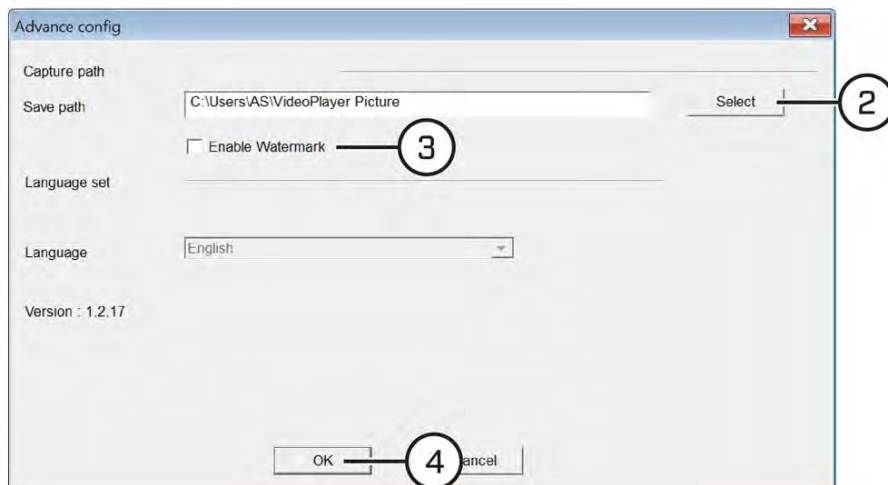
1. Video Window
2. Rewind
3. Open File
4. Previous File
5. Play
6. Next File
7. Stop
8. Fast Forward
9. Enable/Disable Watermark
10. Take Snapshot
11. Hide/Show Playlist
12. Mute/Unmute and Volume Bar
13. Add File
14. Remove File
15. Delete File
16. Playlist
17. Advanced Menu

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 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.lorextechnology.com.

16.1 Removing the Hard Drive



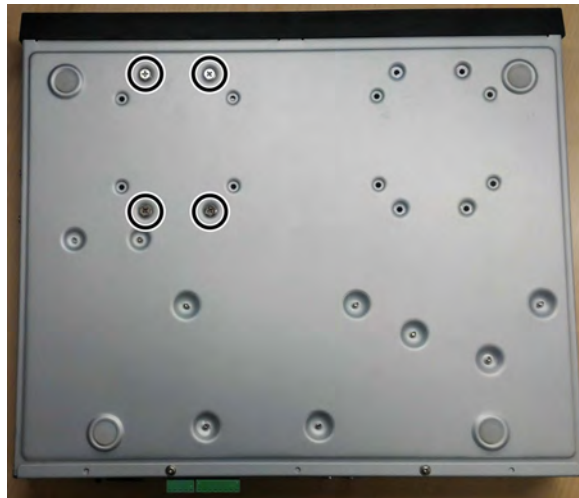
WARNING

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

1. Remove the screws from the rear panel (×4) and the side panels (×2 on each side) of the NVR.



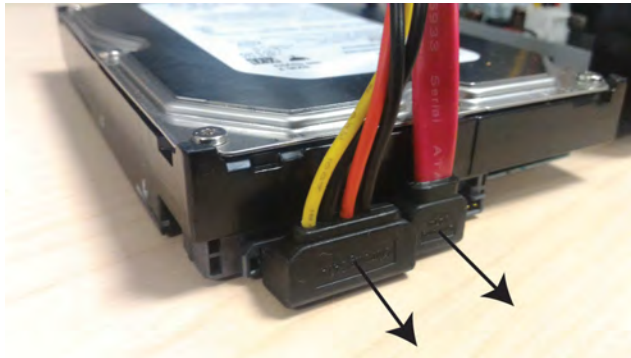
2. Gently slide the cover away from the rear panel and lift off. **Be careful of sharp edges.**
3. Next, you must remove the hard drive from the housing so you can access the data and power cables running to the hard drive.
 - 3.1. Turn the NVR over carefully.
 - 3.2. Hold the hard drive securely in place while removing the hard drive screws (×4) on the bottom panel of the NVR.



- 3.3. Keep holding the hard drive and turn the NVR back over. Lift the hard drive from the NVR.



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 NVR. For full instructions on installing a hard drive, see 16.2 *Installing a Hard Drive*, page 154.

16.2 Installing a Hard Drive



WARNING

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

Prerequisites:

- There must be no hard drive currently installed in your NVR before using the steps below. For full instructions on removing hard drives, see 16.1 *Removing the Hard Drive*, page 153.
1. Remove the screws from the rear panel (×4) and the side panels (×2 on each side) of the NVR.

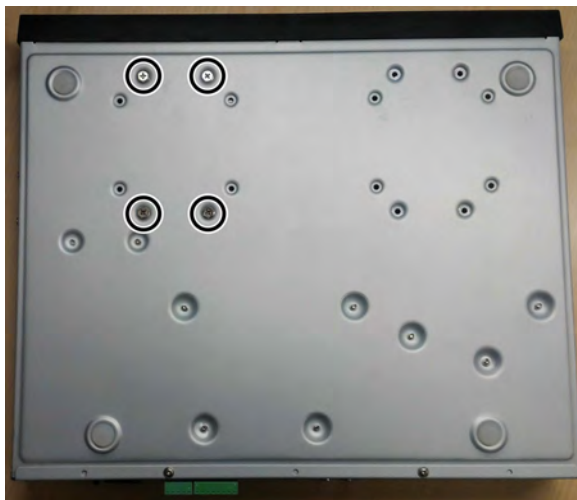


2. Gently slide the cover away from the rear panel and lift off. **Be careful of sharp edges.**
3. Next, you must install the hard drive:
 - 3.1. Connect the power and data cables to the hard drive.

-
- 3.2. Position the hard drive over the hard drive screw holes (x4) in the bottom panel of the NVR. The power and data cables should point toward the middle of the NVR as shown below.



-
- 3.3. Holding the hard drive securely in place, turn the NVR over. Keep holding the hard drive while inserting the hard drive screws (×4) on the bottom panel of the NVR.



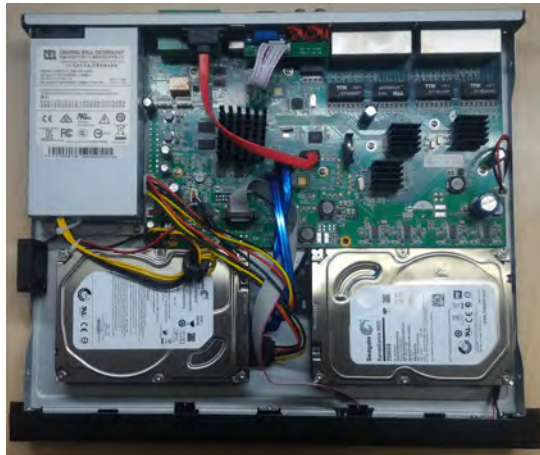
**NOTE**

Some configurations of the NVR 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.



- Ensure the power and data cables for both hard drives point toward the middle of the NVR as shown below.



3.4. Keep holding the hard drive and turn the back over.

4. Reattach the cover and replace the screws in the side and back panel of the NVR.

NOTE

NVR

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 84.

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

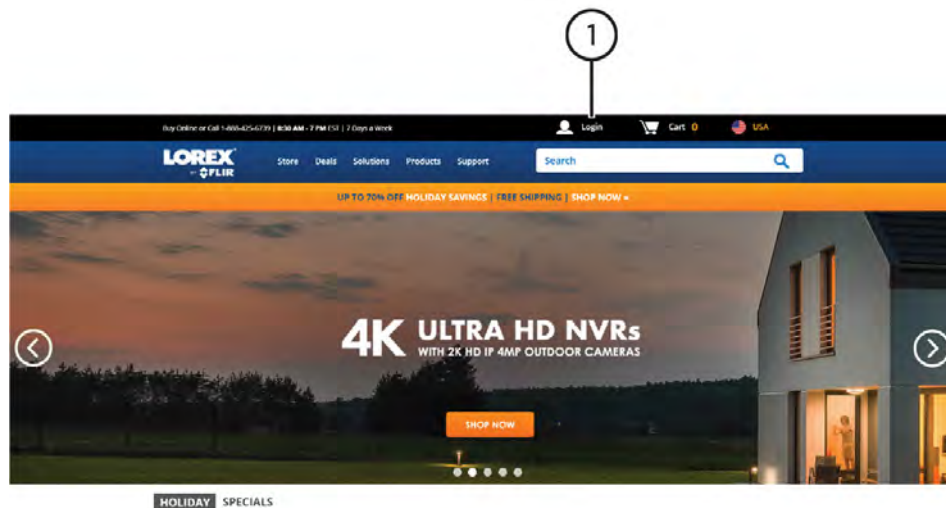
	NOTE The primary connectivity option for the NVR uses FLIR Cloud Services to connect to your system over the Internet without the need for port forwarding or DDNS registration. - For instruction on using the FLIR Client 12 software for PC and Mac, see 13 <i>FLIR Client 12 for PC / Mac</i>, page 104. - For instruction on using the FLIR Secure app for smartphones and tablets, see 14 <i>FLIR Secure: Connecting to the NVR Using a Mobile Device</i>, page 142.
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17.1 STEP 1: Port Forwarding

You **must** port forward the HTTP and Client ports (default: **80** and **9000**) on your router to your NVR'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.lorextechnology.com for details). For instructions on how to use the Easy Connect Wizard, see the Easy Connect manual on www.lorextechnology.com.
- Manually port forward the required ports on your router to your NVR's IP address by following your router manufacturer's instructions. For more information on port forwarding, see the reference guides on www.lorextechnology.com.

17.2 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: Home, Store, Login, Cart, and USA. Below the header is a search bar and a promotional banner. The main content area is titled "Login" and contains two options: "I Have a LOREX Account" (selected) and "Create an Account". A callout "2" points to the "Create an Account" link. To the right is a registration form with fields for First Name, Last Name, Email Address, Password, and Confirm Password. A callout "3" points to the form fields. At the bottom of the form is a "Create an Account" button, with a callout "4" pointing to it.

2. Select **Create an Account**.

	NOTE
If you have already set up an account, select I Have a LOREX Account and log in. Proceed directly to 17.3 STEP 3: Add Your Address, page 159.	

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

17.3 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:

The screenshot shows the LOREX account interface. On the left is a sidebar menu with options: OVERVIEW, ORDERS, TICKETS, REVIEWS, WARRANTIES, RETURNS, ADDRESSES (highlighted with a circled 1), PAYMENTS, and DDNS. The main content area is titled 'Address Book' and features an 'Add an Address' button (circled 2). Below this is a 'Create a New Address' form (circled 3) with fields for:

- Country (dropdown menu, currently 'United States')
- First Name and Last Name (text boxes)
- Address Line 1 (text box)
- Address Line 2 (text box)
- City (text box, currently 'Redwood City')
- State (dropdown menu, currently 'California')
- Zip (text box, currently '94063')
- Phone (text box, currently '(858) 355-1055')

 At the bottom of the form are 'Submit' (circled 4) and 'Cancel' buttons. A 'Make Default' checkbox is located next to the Country field.

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**.

The 'My Saved Addresses' section shows a confirmation message: 'Operation is successfully done'. Below this is a summary card for the saved address:

- Location icon
- First Name: Tami Smith
- Address Line 1: 340 D St
- Address Line 2: Redwood City, CA
- Zip: 94063
- Country: United States
- Phone: (858) 355-1055
- Default: Shipping
- Buttons: Edit, Delete

17.4 STEP 4: Activate Your Warranty

Activate the manufacturer's warranty on your NVR.

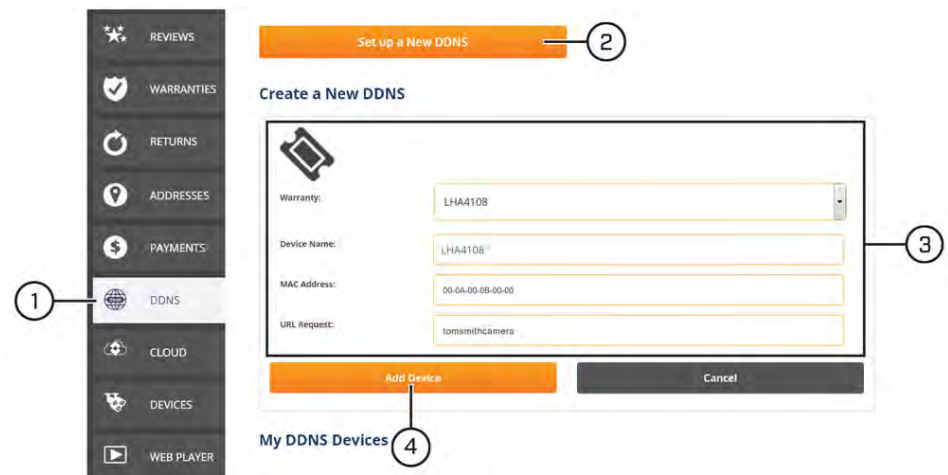
To activate your product warranty:

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**.

17.5 STEP 5: Sign Up for a DDNS Account

Activate the manufacturer's warranty on your NVR.

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 NVR 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 NVR's **MAC Address** in the system information window on the NVR. 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

URL: tomsmithcamera.lorexddns.net
IP Address: 0.0.0.0
Username: tomsmith
Password: ULCDHUZH

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

Model No:

[Edit](#)

17.6 STEP 6: Enable DDNS on the NVR

For full instructions, see 12.2.20 *Configuring DDNS Settings*, page 75.

17.7 STEP 7: Connect to the NVR's DDNS Address

Prerequisites:

- Install FLIR Client 12 on a remote computer. See 13 *FLIR Client 12 for PC / Mac*, page 104 for details.

To login using the DDNS address:

LOREX
by FLIR

Device ID/IP: tomsmithcamera.loreddns.net 1

Client Port: 9000 2

User Name: admin 3

Password: ***** 4

Login 5

1. Enter the DDNS address of the NVR (for example, *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**.

Error	Possible Causes	Solutions
System is not receiving power, or is not powering up.	Cable from power adapter is loose or is unplugged.	- Confirm that all cables are connected correctly. - Confirm that the power adapter is securely connected to the back of the unit.
	Power switch is set to OFF () position.	Confirm that the power switch is in the ON (I) position.
	Cables are connected, but system is not receiving sufficient power.	- 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: - 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.	- 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 84.
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 83.
There is no picture on monitor/TV after connecting it to the NVR.	Monitor/TV not detected by NVR.	Power off the monitor/TV and the NVR. Power on the monitor/TV, and then power on the NVR.
	Input channel for NVR not selected on monitor/TV.	Ensure that the monitor/TV is set to the input channel that the NVR is connected to.
	Video cable is loose or has become disconnected.	Check the video cable connection to the NVR 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.	- 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 image on one or more of my cameras is distorted or discolored.	The region is set incorrectly.	- 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 Camera Setting menu has been configured improperly.	- Enter the main menu. Under Settings, click Display, then click the Camera Setting tab. Click Default to reset camera settings to their out-of-the-box state. - For full details on the Camera Setting menu, see 12.2.9 <i>Configuring Camera Settings</i>, page 60
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 12.2.23 <i>Configuring Motion Detection Settings</i> , page 79.
I am not receiving email notifications.	Email notification is disabled.	Ensure you have configured email notification. For full instructions, see 12.2.18 <i>Setting up Email Notifications</i> , page 72.

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 12.2.18.2 <i>Email Notifications — Using your own server information</i> , page 74.

LNK7000 Series Technical Specifications

19.1 System

Operating System	Linux (embedded)
Pentaplex	Simultaneous View, Record, Playback, Backup & Remote Monitoring
Number of Channels	8/16/32 Channels

19.2 Inputs/Outputs

Video IN	8/16/32 Channels
Video OUT	No
VGA OUT	Yes
HDMI	Yes
Audio IN	1 Line IN (RCA)
Audio OUT	1 Line OUT (RCA)
USB Port	8ch: 1 at the back, 1 at the front 16/32ch: 2 at the back (1× USB2.0, 1× USB3.0), 1 at the front
Alarm IN / OUT	8ch: 4 IN / 1 OUT 16/32ch: 16 IN / 1 OUT
Video Output Resolution	3810×2160, 2560×1440, 1920×1200, 1600×1200, 1680×1050, 1920×1080, 1440×900, 1280×1024, 1280×720, 1024×768
PTZ Control	Yes

19.3 Display

Display Split	8ch: 1/4/9 16ch: 1/4/9/16 32ch: 1/4/9/16/32
Live Display Speed	Real-time (30fps — camera dependent)
OSD	ON/OFF
System Navigation	USB mouse, IR remote control
Motion Area Setting	Fixed grid 1320 (44×30)
Sensitivity Levels	8
Firmware Upgrade	Automatic over the Internet & via USB device
User Authority	By user group
Time Synchronization	Auto time sync by NTP server

19.4 Recording

Video Compression	H.265 / H.264
Audio Compression	G.711
Resolution	8MP (4K) ~ 720p
Record Rate	Real-time (30fps — camera dependent)
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

19.5 Playback and Backup

Playback Channel	8ch: 1/4/8 16/32ch: 1/4/9/16
Playback Speed Variable	Variable Max 16x
Playback Players	Backup Player
Search	By time/date, motion detection & exact search (accurate to the second)
Log Search	Up to 4,000 lines for system configuration changes, motion/alarm detected, account, recording and storage.
Audio Play	Yes (audio camera required)

19.6 Storage & Archive

Storage	8ch: Up to 1 HDD (SATA) 16/32ch: Up to 2 HDDs (SATA)
Maximum Capacity	8ch: Up to 1x6TB 16/32ch: Up to 2x6TB
Backup Media	USB flash drive, HDD and network
Backup File Format	H.265, H.264 or MP4 file

19.7 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	8ch: Maximum 100Mbps total 16/32ch: Maximum 300Mbps total

19.8 General

Power Consumption	8ch: Approx. 4.5W (no HDD installed) 16ch: Approx. 20.5W (no HDD installed) 32ch: Approx. 24W (no HDD installed)
Total PoE Power Output	8ch: 80W (Max 30W per channel) 16/32ch: 130W (Max 30W per channel)
Supply Voltage	8ch: 48V, 2A 16/32ch: 100VAC-240VAC
Unit Weight (lbs / kg)	8ch: 2.4lbs / 1.1kg 16/32ch: 5.7lbs / 2.6kg
Unit Dimensions (W × H × D)	8ch: 11.8 × 8.9 × 2.1" / 300 × 227 × 53mm (1U) 16/32ch: 15.0 × 12.2 × 2.0" / 380 × 310 × 50mm (1.5U)
Operating Temperature	14° ~ 131°F / -10° ~ 55°C
Humidity	10 ~ 90% RH

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Website

www.lorextechnology.com

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