



LOREX[®]
VIEW YOUR WORLD™

DIGITAL VIDEO SURVEILLANCE RECORDER

Instruction Manual

English Version 1.0



RETAIL



INDUSTRY



BUSINESS



HOME



OUTDOOR

www.lorextechnology.com

Copyright © 2012 Lorex Technology Inc.

VANTAGE

LHD100 SERIES

Thank you for purchasing the LHD100 Series High Definition Digital Video Surveillance Recorder.

This manual refers to the following models:

- LHD104 (4-channel)

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



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER. NO USER SERVICABLE 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 products' 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.



NEED HELP? **CONTACT US FIRST**

DO NOT RETURN THIS PRODUCT TO THE STORE

Please make sure to register your product at www.lorextechnology.com to receive product updates and technical support.

2 Easy Ways to Contact Us



Online:

Product Support is available 24/7 including product information, user manuals, quick start up guides and FAQ's at
www.lorextechnology.com/support

For all other matters, visit **www.lorextechnology.com**



By Phone:

North America:

Customer Service (for warranty matters): **1-888-425-6739** (1-888-42-LOREX)

Tech Support (for technical/installation issues): **1-877-755-6739** (1-877-75-LOREX)

Mexico: **001-800-514-6739**

International: **+800-425-6739-0** (Example: From the UK, dial 00 instead of +)



NECESITA AYUDA

COMUNÍQUESE PRIMERO CON NOSOTROS

NO DEVUELVA ESTE PRODUCTO A LA TIENDA

Cerciórese de por favor colocar su producto en www.lorexctv.com/registration para recibir actualizaciones y la información del producto

**2 maneras sencillas de comunicarse
con nosotros:**

En Línea:

Apoyo al producto disponible 24/7 incluyendo información del producto, manuales para el usuario, guías de inicio rápido y preguntas más frecuentes en

www.lorextechnology.com/support

Para todo lo demás, visite

www.lorextechnology.com

Por Teléfono:

Norte América:

Atención al cliente (en materia de garantía):

1-888-425-6739 (1-888-42-LOREX)

Soporte técnico (para asuntos técnicos/la instalación):

1-877-755-6739 (1-877-75-LOREX)

Mexico: **001-800-514-6739**

Internacional: **+800-425-6739-0**

(Ejemplo: Desde el Reino Unido, marque el 00 en lugar del +)

VOUS AVEZ BESOIN D'AIDE?

CONTACTEZ-NOUS D'ABORD

NE RETOURNEZ PAS CE PRODUIT AU MAGASIN

Veuillez veiller à enregistrer votre produit à www.lorexctv.com/registration pour recevoir des mises à jour et l'information de produit

2 façons faciles de nous contacter:

En Ligne:

Le support des produits est disponible 24 heures sur 24, 7 jours sur 7, y compris les informations sur les produits, les guides de l'utilisateur, les guides de démarrage rapide et les foires à questions

www.lorextechnology.com/support

Pour toutes les autres questions, visitez

www.lorextechnology.com

Par Téléphone:

L'Amérique du Nord:

Service à la clientèle (pour les questions de garantie):

1-888-425-6739 (1-888-42-LOREX)

Support technique (pour les questions techniques et l'installation):

1-877-755-6739 (1-877-75-LOREX)

Mexico: **001-800-514-6739**

International: **+800-425-6739-0**

(Exemple: À partir du Royaume-Uni, composez 00 au lieu de +)

BEFORE YOU START

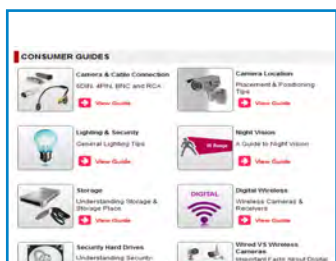
Please make sure to register your product at www.lorextechnology.com to receive product updates and technical support

THIS PRODUCT MAY REQUIRE PROFESSIONAL INSTALLATION

LOREX IS COMMITTED TO FULFILLING YOUR SECURITY NEEDS



- We have developed user friendly products and documentation. Please read the Quick Start Guide and User Manual before you install this product.



- Consumer Guides and Video Tutorials are available on our web site at www.lorextechnology.com/support



- If you require further installation assistance, please visit www.lorextechnology.com/installation or contact a professional installer.



- Please note that once the components of this product have been unsealed, you cannot return this product directly to the store without the original packaging.



AVANT DE COMMENCER

Veuillez veiller à enregistrer votre produit à www.lorexcctv.com/registration pour recevoir des mises à jour et l'information de produit et le support technique

CE PRODUIT POURRAIT EXIGER UNE INSTALLATION PROFESSIONNELLE

LOREX S'ENGAGE À SATISFAIRE VOS BESOINS SÉCURITAIRES

- Veuillez lire le guide de démarrage rapide et le mode d'emploi avant d'installer ce produit
- Les guides du consommateur et les séances de tutorat vidéo sont disponibles sur l'Internet en visitant www.lorextechnology.com/support
- Si vous avez besoin de l'aide pour l'installation, veuillez visiter www.lorextechnology.com/installation ou contactez un spécialiste en installation
- Veuillez constater qu'une fois que les composantes de ce produit ont été retirées de l'emballage, vous ne pourrez plus retourner ce produit directement au magasin

ANTES DE EMPEZAR

Cerciórese de por favor colocar su producto en www.lorexcctv.com/registration para recibir actualizaciones y la información del producto y soporte técnico

ESTE PRODUCTO PUEDE EXIGIR UNA INSTALACIÓN PROFESIONAL

LOREX SE COMPROMETE A SATISFACER SUS NECESIDADES EN SEGURIDAD

- Favor de leer la guía de instalación rápida y la guía del usuario antes de instalar este product.
- Puede conseguir las guías del consumidor y los cursos en enseñanza video sobre el Internet visitando www.lorexcctv.com/support
- Si necesita ayuda para la instalación, visite www.lorextechnology.com/installation o contacte un especialista en instalaciones
- Favor de notar que una vez que los componentes de este producto han sido removidos del embalaje, no podrá devolver este producto directamente a la tienda



www.lorextechnology.com



LOREX[®]

VIEW YOUR WORLD™
VOIR VOTRE MONDE™
VER SUMUNDO™

VANTAGE

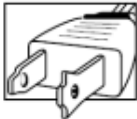
Important Safeguards

In addition to the careful attention devoted to quality standards in the manufacture 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.

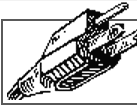
General Precautions

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.

Installation

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


A polarized plug has two blades with one wider than the other.



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

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

If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
5. **Power Sources** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your location, consult your video dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

6. **Overloading** - Do not overload wall outlets or extension cords as this can result in the risk of fire or electric shock. Overloaded AC outlets, extension cords, frayed power cords, damaged or cracked wire insulation, and broken plugs are dangerous. They may result in a shock or fire hazard. Periodically examine the cord, and if its appearance indicates damage or deteriorated insulation, have it replaced by your service technician.
7. **Power-Cord Protection** - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
8. **Surge Protectors** - It is highly recommended that the product be connected to a surge protector. Doing so will protect the product from damage caused by power surges. Surge protectors should bear the UL listing mark or CSA certification mark.
9. **Uninterruptible Power Supplies (UPS)** - Because this product is designed for continuous, 24/7 operation, it is recommended that you connect the product to an uninterruptible power supply. An uninterruptible power supply has an internal battery that will keep the product running in the event of a power outage. Uninterruptible power supplies should bear the UL listing mark or CSA certification mark.

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.

Installation (Continued)

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.



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:
 - A. When the power supply cord or plug is damaged.
 - B. If liquid has been spilled or objects have fallen into the product.
 - C. If the product has been exposed to rain or water.
 - D. If the product has been dropped or the cabinet has been damaged.
 - E. 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.
 - F. When the product exhibits a distinct change in performance. This indicates a need for service.
7. **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.
8. **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.

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.

NOTICES

FCC/IC Notice:

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

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment on and off), the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio or television technician for assistance

Modification:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the device.

Toute modification non approuvée explicitement par le fournisseur de licence de l'appareil peut entraîner l'annulation du droit de l'utilisateur à utiliser l'appareil.

RoHS:

This product is fully compliant with the European Union Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment ("RoHS") Directive (2002/95/EC). The RoHS directive prohibits the sale of electronic equipment containing certain hazardous substances such as lead, cadmium, mercury, and hexavalent chromium, PBB, and PBDE in the European Union.

This product has been certified and found to comply with the limits regulated by FCC, EMC, and LVD. Therefore, it is designated to provide reasonable protection against interference and will not cause interference with other appliance usage.

However, it is imperative that the user follows the guidelines in this manual to avoid improper usage, which may result in damage to the product, electrical shock and fire hazard injury.

In order to improve the features, functions, and quality of this product, the specifications are subject to change without notice from time to time.



	Product Information		Specification Sheets
	User Manuals		Software Upgrades
	Quick Start Guides		Firmware Upgrades

Features



Digital Video Recorder Features

- HD-SDI supporting 1080p & 720p recording¹
- Digital Zoom in live view & playback
- Advanced search & playback: Panorama and Multi-time
- Smart Search for fast review of motion events in sequence
- Pentaplex operation - View, Record, Playback, Backup & Remotely control the system simultaneously
- 24x7 100% duty cycle hard drive preinstalled. Supports 2 hard drives (expandable up to 4TB)
- Variable frame rate for higher recording speed during events
- HDMI Outputs for convenient connection to HDTVs or monitors
- eSATA output for faster large capacity backup

Connectivity Features

- Remote Viewing on PC, Mac, smartphone & tablet²
- Exclusive LOREX Easy Connect Internet Set-up Wizard³
- Dual streaming to conserve bandwidth⁴
- Free LOREX DDNS (Dynamic Domain Name Service) for reliable connectivity
- Instant e-mail alerts with snap shot attachments and web link

1. High-Definition Serial Digital Interface (HD-SDI) uncompressed high definition broadcast-grade video over standard coax cable. Recording speed: 5fps @ 1080p (1920x1080 pixels)/ 10fps @ 720p (1280x720 pixels). Recording time may vary based on recording resolution, quality, lighting conditions and movement in the scene.

2. Smartphone & Tablet Compatibility: iPad™, iPhone™, Android (version 2.3 & above). Data plan is required (not included). Router port forwarding required. For the latest smart phone compatibility list check www.lorextechnology.com as new smartphones and tablets become available in the market.

3. Requires a high speed internet connection and a router (not included).

4. HD video streaming locally to the DVR. Optimized lower resolution steaming for mobile devices. Mobile connectivity is dependent on bandwidth and resolution of the mobile device.

All trademarks belong to their respective owners. No claim is made to the exclusive right to use the trademarks listed, other than the trademarks owned by Lorex Technology Inc. We reserve the right to change models, configurations or specifications without notice or liability. Product may not be exactly as shown.

TABLE OF CONTENTS

Getting Started	1
Front Panel	2
Rear Panel	4
Basic Setup	5
Step 1: Connect the Cameras	5
Step 2: Connect the Mouse	5
Step 3: Connect the Ethernet Cable	6
Step 4: Connect the Monitor	6
Step 5: Connect the Power Adapter and Power on the DVR	7
Step 6: Verify Camera Image	7
Step 7: Set the Time	7
Default System Password & Port Numbers	8
Quick Access to System Information	8
Connecting Cameras	9
About HD-SDI	9
Installation Warnings	9
Installation Tips	9
Installing Cameras	9
Connecting HD-SDI Cameras to your DVR	10
Camera Connection Diagram	10
Connecting and Removing BNC Cables	11
Using the CVBS OUT Connector for a Secondary Monitor or DVR (Optional)	11
Mouse Control	12
Remote Control	13
Using the On-Screen Display	14
Using the Virtual Keyboard	15
Using Zoom Mode	16
Setting the Date and Time	17
Configuring Daylight Savings Time (DST)	18
Using a NTP Server to set your System Time	19
Recording and Events	20
Playback	21
Playback Toolbar	21
Playback Sub-Menu	22
Smart Search	22

Panorama Playback	23
Multi-Time Playback	24
Multi-Day Playback	25
Event Playback	26
Using the Main Menu	27
Setup	28
Time	28
Changing the Date Format	28
Enabling Auto Reboot	28
Camera	29
Disconnecting/Connecting Cameras	29
Creating Custom Camera Titles	30
Enabling Covert Recording	30
Setting Motion Detection Sensitivity and Sensitivity for Audio Events	31
Configuring Motion Detection Areas	31
Recording	32
Enabling Motion Detection/Motion Events	33
Configuring the DVR for Motion Recording Only	33
Enabling Sensor Events	35
Enabling Audio Events	35
Changing the Recording Resolution and Quality	36
Changing the Recording Frame Rate	36
Enabling the Event Buzzer	37
Enabling Full-screen Popup on Events	38
Configuring Alarm Durations	38
Enabling/Disabling Event Logs	39
Schedule	40
Setting the Schedule	40
Selecting Holidays	41
Storage	42
Disabling/Enabling Overwrite	42
Formatting a Hard Drive	43
Formatting a USB Thumb Drive	44
Enabling Private Recording	44
Network	45
Configuring Network Type: DHCP or Static IP	45
Enabling DDNS	46
Changing the Web and Client Ports	47
Enabling Auto Port Forwarding	47
Enabling Email Notifications	48
Configuring Bandwidth (Dual Streaming) Settings	50
System	51
Upgrading Firmware	51
Resetting to Factory Default Settings	52
Changing the System Language	53
Configuring the Menu Time Out Duration	53
Changing the DVR Name	54

Configuring Error Notifications	54
Search	56
Calendar Search	57
Backup	58
Backup Window	59
Backup Files	59
Playing Backup Files on PC	60
Taking Screen Captures (Screenshots)	64
Using Screen Captures	64
Log Backup	65
Setup Backup	66
Backing up your DVR Settings	66
Restoring DVR Settings from a Backup File	66
Miscellaneous	67
Log Viewer	67
Misc. Control	68
Selecting/Muting the Audio Channel	68
Using Relay Controls	69
Display Setting	69
Configuring the Screen Saver	69
Changing the Sequence View Settings	70
Managing User Accounts and Passwords	73
Enabling Passwords	73
Managing User Accounts	74
Setting up your DVR for Remote Connectivity.....	77
System Requirements	77
Accessing your DVR Within a Local Network (LAN)	78
Step 1 of 3: Connect your DVR to the Local Area Network	78
Step 2 of 3: Obtain the DVR's Local IP Address and Ports	78
Step 3 of 3: Enter the DVR's Local IP Address into Internet Explorer	79
Accessing your DVR Remotely over the Internet	81
Step 1 of 4: Port Forwarding	81
Step 2 of 4: Create a DDNS Account	81
Step 3 of 4: Return to the DVR and Enable DDNS	85
Step 4 of 4: Enter the DDNS Address into Internet Explorer	86
Remote Viewing Using Internet Explorer	87
Remote Playback & Backup	89
Remote Playback	89
Remote Backup	90
Remote Setup	92
Network Upgrade	94
DVR Setup Manager	94
Record Tab	94

Event Tab	95
Alarm Tab	97
System Tab	98
Storage Tab	98
PTZ Tab	99
Time Tab	100
Network Tab	101
Port Tab	101
DDNS Tab	102
Bandwidth Tab (Dual Streaming Settings)	103
Schedule Tab	103
Email Tab	104
Log Event Tab	106
Remote Viewing Using Client Software (PC)	107
Installing Client Software for PC	107
Connecting to your DVR	107
Site List	109
Add a DVR	109
Delete a DVR	110
Modify a DVR	110
Smartphone and Tablet Apps	111
Compatible Devices and Platforms	111
Before you Begin	111
iPhone / iPad	112
Step 1 of 2: Downloading the App	112
Step 2 of 2: Connecting to your DVR	112
Using Lorex Mobile HD for iPhone/iPad	114
Using Playback	114
Site List	115
Android	116
Step 1 of 2: Downloading the App	116
Step 2 of 2: Connecting to your DVR	116
Using Lorex Mobile HD for Android	118
Using Playback	118
Site List	119
Appendix A: System Specifications	120
Appendix B: Networking Checklist	121
Appendix C: How do I find my IP & MAC address?	123
Appendix D: What is Port Forwarding And Other Frequently Asked Net- working Questions	124
How Can I Port Forward my Gateway or Router?	125
How Can I Test my Port Forwarding Configuration?	125
What is the Difference Between Internal and External IP Addresses?	125
How can I Find my External IP Address?	126

What is the difference between Static and Dynamic IP Addresses?	126
Appendix E: Internet Setup Wizard (PC only)	127
Installation	127
Configuration	129
Configuring Multiple Routers	131
Appendix F: Assigning A Fixed IP To Your DVR.	134
What's the difference between DHCP and Static IPs?	134
Setting up a Fixed IP	135
Scenario Example	135
Appendix G: Connecting a PTZ Camera	137
Configuring PTZ Settings	137
PTZ Controls	138
Advanced PTZ Controls	138
PTZ Presets	139
PTZ Tours	140
Appendix H: Recording Audio	142
Appendix I: Full Connectivity Diagram.	143
Appendix J: Hard Drive Installation	144
Installing a Hard Drive	144
Removing a Hard Drive	147
Formatting the Hard Drive	150
Formatting a Hard Drive as a Recording Hard Drive	150
Formatting a Hard Drive as a Backup Hard Drive	150
Appendix K: Daylight Saving Time on your DVR	151
Why is the DVR Timestamp Important?	151
Troubleshooting	152
Troubleshooting (Continued)	153
Troubleshooting Remote Connections	154

Getting Started

The system comes with the following components:



DVR (DIGITAL VIDEO RECORDER)



REMOTE CONTROL
(may not be exactly as shown)



USB MOUSE



12V DC POWER SUPPLY



HDMI CABLE



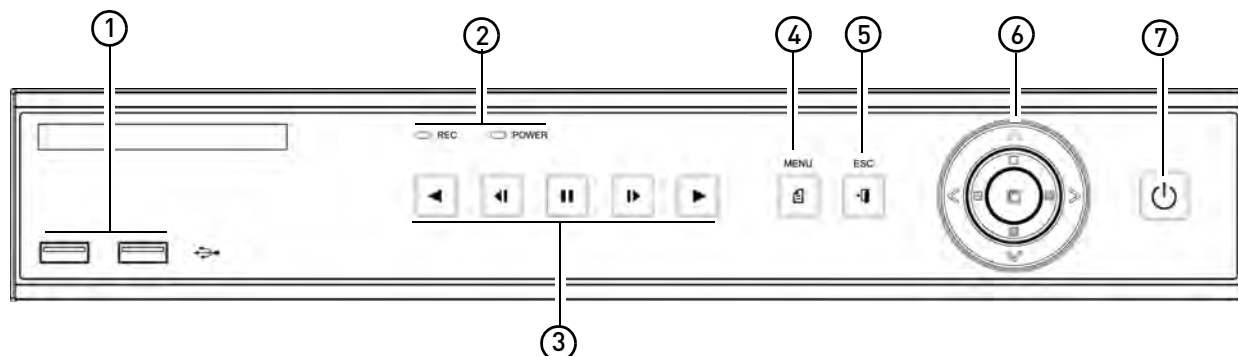
ETHERNET CABLE



**INSTRUCTION MANUAL
QUICKSTART GUIDE
DOCUMENTATION CD**

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.

Front Panel



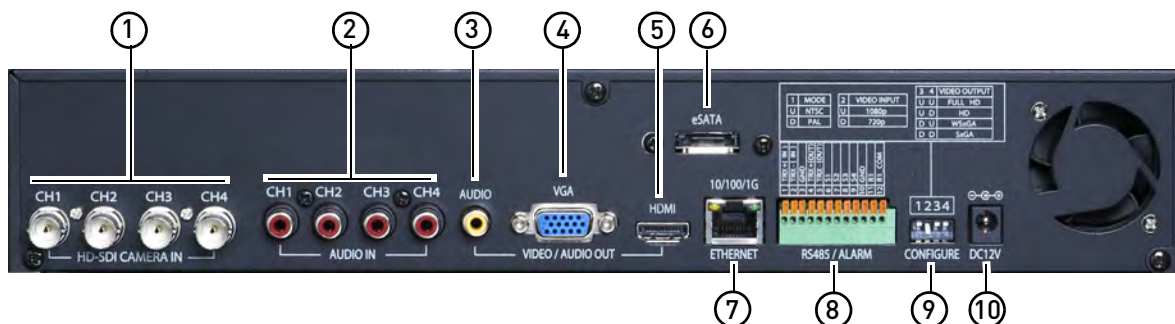
- 1 USB Ports:** Connect a USB mouse (included) or USB thumb drive (not included) for backup or firmware upgrades.
- 2 LED Indicators:**
 - **REC:** Flashes when DVR is recording.
 - **POWER:** Glows when DVR is on.
- 3 Playback Buttons:**
 - **◀ / Rewind:** In Playback mode, press to rewind. Press repeatedly to increase rewind speed.
 - In Live Viewing mode, press to open the relay out control menu.
 - **◀◀ / Info:** In Playback mode, press to reverse video frame-by-frame.
 - In Live Viewing mode, press to open the system information window.
 - **|| / Lock:** In Playback mode, press to pause playback.
 - In Live Viewing mode, press to Lock/Unlock the system controls.
 - **▶▶ / Log:** In Playback mode, press to advance video frame-by-frame.
 - In Live Viewing mode, press to open the Log Viewer
 - **▶ / Play / Fast Forward:** In Playback mode, press to start playback. Press repeatedly to fast forward.
 - In Live Viewing mode, press to open Playback mode.
- 4 MENU Button:** Press to access Main Menu.
- 5 ESC Button:** Press to exit menus or Playback mode.

6 Navigation Buttons:

- : Press to confirm menu selections.
 - In Full-screen Live Viewing mode, press to start Sequence view. In Sequence view, the DVR changes channels in full-screen every few seconds. If the DVR is in split-screen mode, press  /  then  to start Sequence view.
 - Press again to end Sequence view.
-  / : Press to scroll up in menus.
 - In Live Viewing mode, press to select Full-screen mode. Press repeatedly to change channels.
-  / : Press to scroll left in menus.
 - In Live Viewing mode, press to select Quad (4-way Split-screen) mode.
- : Press to scroll down in menus.
- : Press to scroll right in menus.

7 Power Button: Press to power the DVR on/off. Admin password required to power off.

Rear Panel



- 1 HD-SDI CAMERA IN:** Connect up to 4 HD-SDI cameras using BNC cables.
- 2 AUDIO IN:** RCA audio inputs for up to 4 channels.
- 3 AUDIO OUT:** RCA audio output for 1 output channel (e.g. speakers).
- 4 VGA:** Connect a VGA monitor to view the system interface. Note that the DVR cannot use a VGA and HDMI monitor at the same time.
- 5 HDMI:** Connect an HDMI TV/monitor (recommended) to view the system interface. Note that the DVR cannot use a VGA and HDMI monitor at the same time.
- 6 eSATA:** Connect an external hard drive using an eSATA cable.
- 7 ETHERNET:** Connect a CAT 5 RJ45 Ethernet cable for local and remote connectivity.
- 8 RS485/ALARM:** Connect compatible PTZ cameras (not included) or alarm sensor devices (not included).
- 9 INPUT/OUTPUT Switches:** U for up position; D for down position. You must restart the DVR to make changes using the INPUT/OUTPUT switches.

NOTE: It is recommended to set all INPUT/OUTPUT switches to the up (U) position for full HD (1080P) input and output.

- **1 (NTSC/PAL):** Select U for NTSC (for North America, recommended) or D for PAL (for Europe).
- **2 (Video Input):** Select U if you have 1080p cameras or D if you have 720p cameras. **You cannot mix 1080p and 720p cameras.**
- **3 & 4 (Video Output):** Select the correct video output resolution for your monitor using the table below.

3	4	Output Resolution
U	U	Full HD (1920x1080) - recommended for 1080p HDTVs/HDMI monitors
U	D	HD (1280x720) - recommended for 720p HDTVs/HDMI monitors
D	U	WSXGA+ (1680x1050)
D	D	SXGA (1280x1024) - recommended for VGA monitors

- 10 DC12V:** Connect the included AC power adapter.

Basic Setup

Step 1: Connect the Cameras

- Connect the HD-SDI cameras to the **HD-SDI CAMERA IN** ports on the rear panel of the DVR, using the black HD-SDI OUT cable on the cameras. For details, see “Connecting Cameras” on page 9.



Push and twist the BNC connector clockwise to secure it to the BNC port. Use the black HD-SDI OUT cable to connect cameras to your DVR or extension cables.

Step 2: Connect the Mouse

- Connect a USB mouse (included) to one of the **USB** ports on the front panel of the DVR.

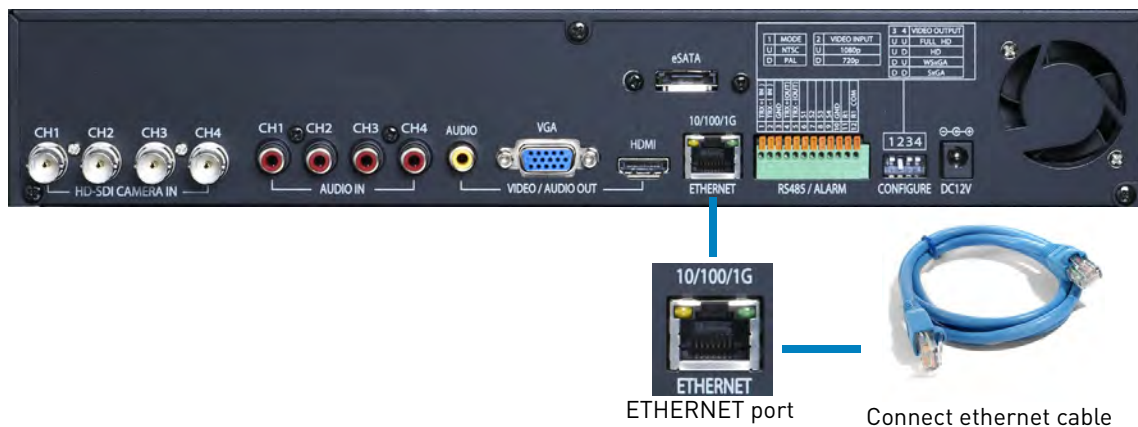


USB ports



Step 3: Connect the Ethernet Cable

- Connect an ethernet cable (included) to the **ETHERNET** port on the rear panel of the DVR. Connect the other end of the ethernet cable to a router on your network.

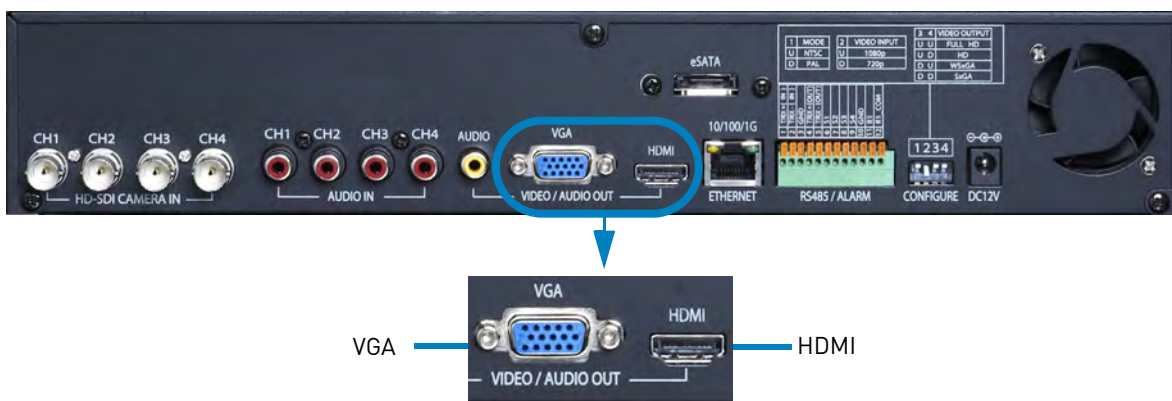


Step 4: Connect the Monitor

- Connect a HDMI cable (included) from the **HDMI** port to the TV or monitor (recommended) **OR**;
- Connect a VGA cable (not included) from the **VGA** port to the monitor.

NOTE: The DVR cannot use an HDMI and VGA monitor at the same time.

NOTE: If you have a monitor with a DVI input, you must use an HDMI to DVI adapter (not included). You cannot use an DVI to VGA adapter.



Step 5: Connect the Power Adapter and Power on the DVR

- 1 Connect the included power adapter to the **DC12V** port. Connect the end of the power adapter to a wall socket or a surge protector.



- 2 Press the power button on the front panel to power on the DVR.



NOTE: If there is no picture on the TV/monitor after the DVR starts up, or if the picture does not fit on the screen, check that the #3 & 4 INPUT/OUTPUT switches on the rear panel are set correctly for your monitor's resolution (see page 4 for details). You must power off your DVR before changes using the INPUT/OUTPUT switches. Changes will take effect when your DVR is powered back on.

Step 6: 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 environmental rating of cameras before installing in a permanent location.

Step 7: Set the Time

- Set the system date and time for accurate video time stamps. Videos with inaccurate times may not be valid as surveillance evidence.
- For details on setting the system time, see "Setting the Date and Time" on page 17.

Default System Password & Port Numbers



By default, the system user name is **admin** and the password is **00000**. Passwords are disabled by default, but are required to access certain system functions. It is recommended that you enable passwords and create your own password. For details, see “Managing User Accounts and Passwords” on page 73.

ALL the system port numbers below must be port forwarded on your router to log in to your system over the Internet or an internal network (LAN).

DVR user name and password:

- User name: **admin** / Password: **00000**

DVR user name and password for remote connection using a computer:

- User name: **admin** / Password: no password; not required

DVR user name and password for remote connection using a Smartphone or Tablet:

- User name: **admin** / Password: **00000**

Default ports for remote access:

- Port **80** (Web port)
- Port **3000** (Client port)

Quick Access to System Information

- To quickly open a window that displays vital system information, press ◀ on the front panel or remote control.



Connecting Cameras

ATTENTION: This DVR is only compatible with HD-SDI cameras; regular BNC cameras will not work. Cameras differ in terms of installation or mounting instructions. Please see the documentation that came with your camera(s) for specific installation instructions.

About HD-SDI

HD-SDI is a standard for transmitting uncompressed, high definition video along high-grade coaxial cables (such as RG59). It uses digital signals that carry large amounts of information (over 1Gbit/second).

Because HD-SDI video systems use digital signals, they are incompatible with traditional cameras and DVRs, which transmit video using analog signals, that are commonly used in video surveillance applications. This means that you cannot use non-HD-SDI security cameras with an HD-SDI DVR, and you cannot use HD-SDI cameras with a non-HD-SDI DVR.

Installation Warnings

- Use the included extension cables or visit www.lorextechnology.com for compatible RG59 extension cables.
- The extension cable must be a single stretch of cable between the DVR and camera. You cannot connect multiple extension cables to each other.
- You cannot mix 1080p and 720p HD-SDI cameras. All cameras connected to the system must be either 1080p or 720p.

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.

Installing Cameras

Test the cameras before permanent installation. Plan where you will route the wiring for the camera and where you will aim the camera.

To install cameras:

- 1 Mount the camera(s) to the desired mounting surface according to the instructions that came with the camera(s). Choose a firm mounting surface.

NOTE: If you wish to mount cameras to drywall, it is recommended to use drywall plugs (not included).

- 2 Adjust the camera stand to ensure that the camera has a satisfactory view of the area you would like to monitor. Stand configuration depends on the mounting surface you have chosen (see below for suggested stand configurations).



Table Mount



Wall Mount



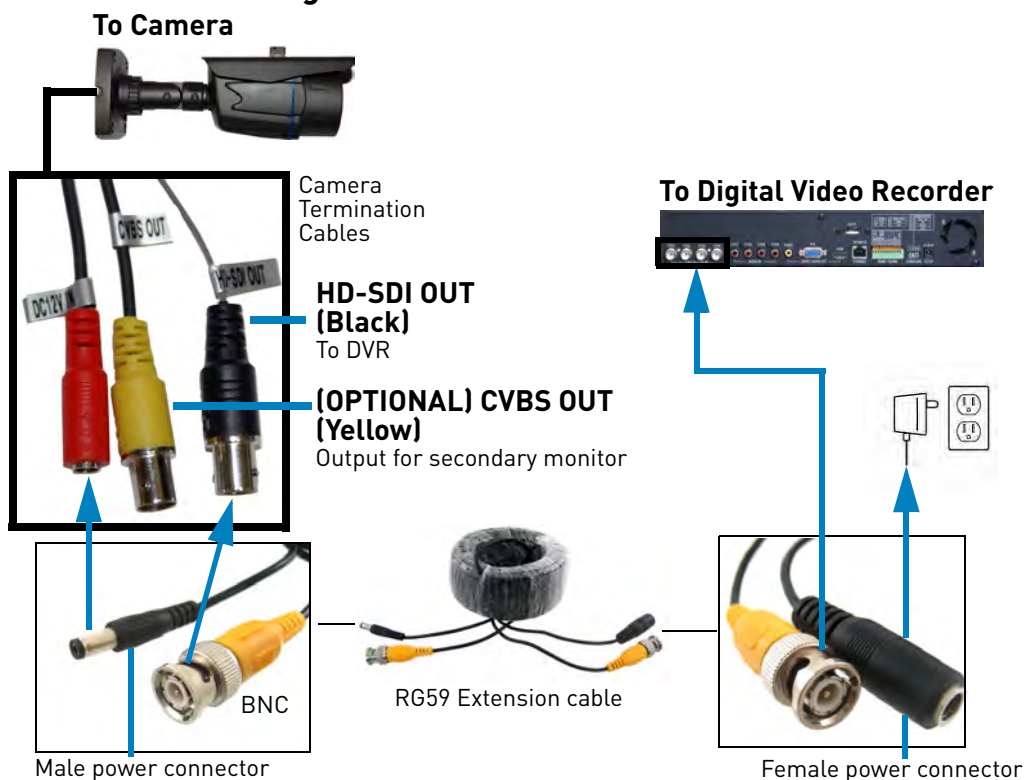
Ceiling Mount

Camera model not be exactly as shown

Connecting HD-SDI Cameras to your DVR

- 1 Connect the black **HD-SDI OUT BNC** connector on the camera to the RG59 extension cable.
- NOTE:** The yellow CVBS OUT BNC connector is not compatible with the DVR. For details, see “Using the CVBS OUT Connector for a Secondary Monitor or DVR (Optional)” on page 11.
- 2 Connect the male power connector on the RG59 extension cable to the female power connector on the camera.
 - 3 Connect the BNC connector on the other end of the RG59 extension cable to one of the **HD-SDI CAMERA IN** ports on the rear panel of the DVR.
 - 4 Connect the female power connector on the RG59 extension cable to the power adapter.
 - 5 Plug the camera power adapter to a power outlet.

Camera Connection Diagram



Connecting and Removing BNC Cables

BNC (Bayonet Nut Connector) is a special connector that locks on to the system port and cannot be accidentally removed.

To connect or remove a BNC connector:

- Push the BNC connector firmly into the BNC port and simultaneously twist the connector clockwise to tighten.
- To remove a BNC connector from a BNC port, push and simultaneously twist the connector counter-clockwise to loosen the BNC connector.

Using the CVBS OUT Connector for a Secondary Monitor or DVR (Optional)

The yellow CVBS OUT connector is an optional analog output for the camera(s). **It is incompatible with the HD-SDI DVR.** This connector can be used to connect the camera to a secondary CCTV monitor, TV (using a BNC to RCA adapter (not included), or analog non-HD-SDI DVR via BNC. The output from the CVBS OUT connector will not be shown in high definition.

Example scenarios using the CVBS OUT connector:

- CVBS OUT connector used to test the camera image during installation using a secondary BNC monitor.
- CVBS OUT connector used to connect the camera to a secondary TV or CCTV monitor used for public display in a retail environment. HD-SDI OUT connector used to connect the camera to DVR for recording. The output will not be in HD and will be limited to one camera.
- CVBS OUT connector used to connect the camera to a secondary analog DVR for backup recording. HD-SDI OUT connector used to connect the camera to DVR for primary recording.

Mouse Control

The DVR is designed for mouse navigation. To use a USB mouse (included), connect the mouse to a **USB** port on the rear panel of the DVR.



Use the mouse buttons to perform the following:

1 Left-Button:

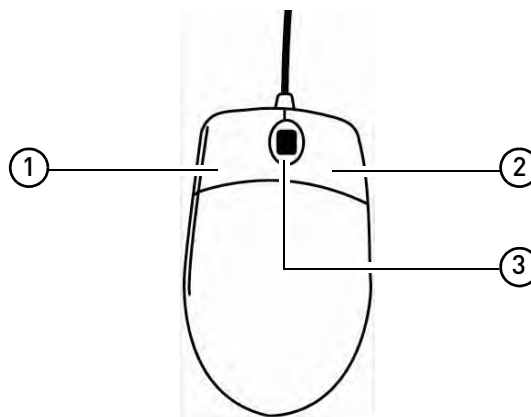
- Click to select a menu option. In Split-screen view, double-click on a channel to view the selected channel in full-screen; double-click the channel again to return to Split-screen view.

2 Right-Button:

- In Live Viewing mode, click to open the Main Menu (see "Using the Main Menu" on page 27).
- In Playback mode, click to open the Playback sub-menu (see "Playback Sub-Menu" on page 22).

3 Scroll-Wheel:

- In Zoom mode, scroll up/down to adjust the zoom level. For details, see "Using Zoom Mode" on page 16.



Remote Control

You can also control the DVR using the included remote control.

1 POWER: Press to power the DVR on / off. Admin password required to power the DVR off.

2 MODE: No function.

3 Navigation Buttons / View Selectors: In menus, press the outside buttons to move the cursor.

- : In menus, press to confirm menu selections.
 - In Full-screen live viewing mode, press to start Sequence view. In Sequence view, the DVR changes channels in full-screen every few seconds. When Split-screen live viewing mode is selected, press  then  to start Sequence view.
 - Press again to end Sequence view.

- : In Viewing mode, press to open Quad (4-way split-screen) mode.
- : In Viewing mode, press to open Full-screen view.

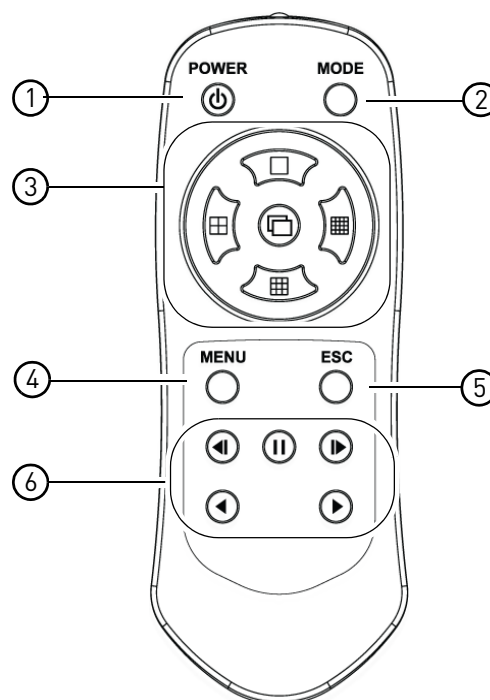
4 MENU: Press to open the Main Menu or Playback sub-menu.

5 ESC: Press to exit menus.

- Press to exit Playback mode and return to Live Viewing mode.

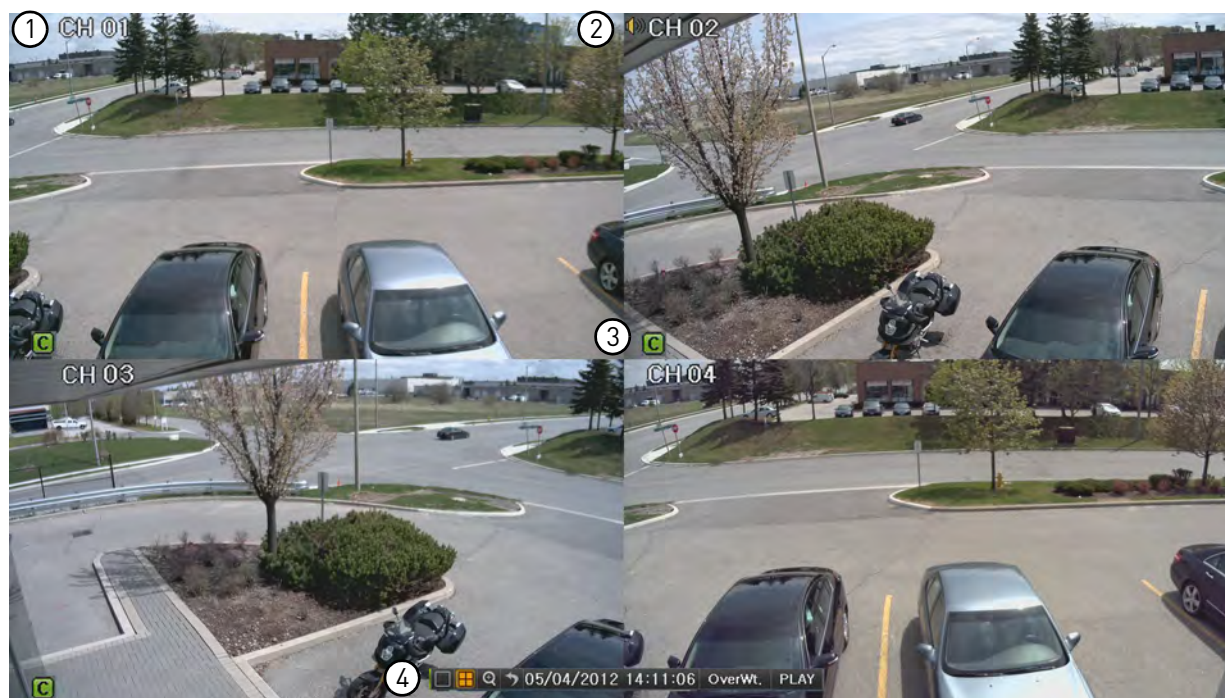
6 Playback Controls:

-  / **Rewind:** In Playback mode, press to rewind. Press repeatedly to increase rewind speed.
 - In Live Viewing mode, press to open the relay out control menu.
-  / **Info:** In Playback mode, press to reverse video frame-by-frame.
 - In Live Viewing mode, press to open the system information window.
-  / **Lock:** In Playback mode, press to pause playback.
 - In Live Viewing mode, press to Lock/Unlock the system controls.
-  / **Log:** In Playback mode, press to advance video frame-by-frame.
 - In Live Viewing mode, press to open the Log Viewer.
-  / **Play / Fast Forward:** In Playback mode, press to start playback. Press repeatedly to fast forward.
 - In Live Viewing mode, press to open Playback mode.



Using the On-Screen Display

Use the system's graphical on-screen display to navigate Live Viewing mode.

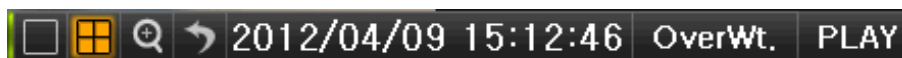


1 Channel Number/Name

2 Audio Indicator: Shows the channel that the DVR is currently playing audio from. Audio-enabled cameras (not included) or self-powered microphones (not included) are required for audio. For more information on audio, see "Appendix H: Recording Audio" on page 142.

3 Recording Icons: Shows the recording status for the channel. For details, see "Recording and Events" on page 20.

4 Live Viewing Toolbar:



- : Click once to select Full-screen view. Click repeatedly to change channels.
- : Click to select Quad (4-way-split-screen) mode.
- : Click to enter Zoom mode. For details, see "Using Zoom Mode" on page 16.

- : When in Full-screen view, click to begin Sequence view. In Sequence view the DVR switches channels every few seconds. If the DVR is in Split-screen view, click  then  to start Sequence view.
 - Click  again to exit Sequence view.
- **Date and Time:** Displays the system date and time. Time is shown in 24hr. format.
- **Hard Drive Status:** Shows the hard drive status. Shows OverWt. if overwrite is enabled. Shows the remaining free hard drive space if overwrite is disabled.
- **PLAY:** Click to enter Playback mode.

Using the Virtual Keyboard

You can input numeric or text values using the on-screen virtual keyboard. For example, the virtual keyboard is used when creating custom names for cameras or the DVR.



To use the Virtual Keyboard:

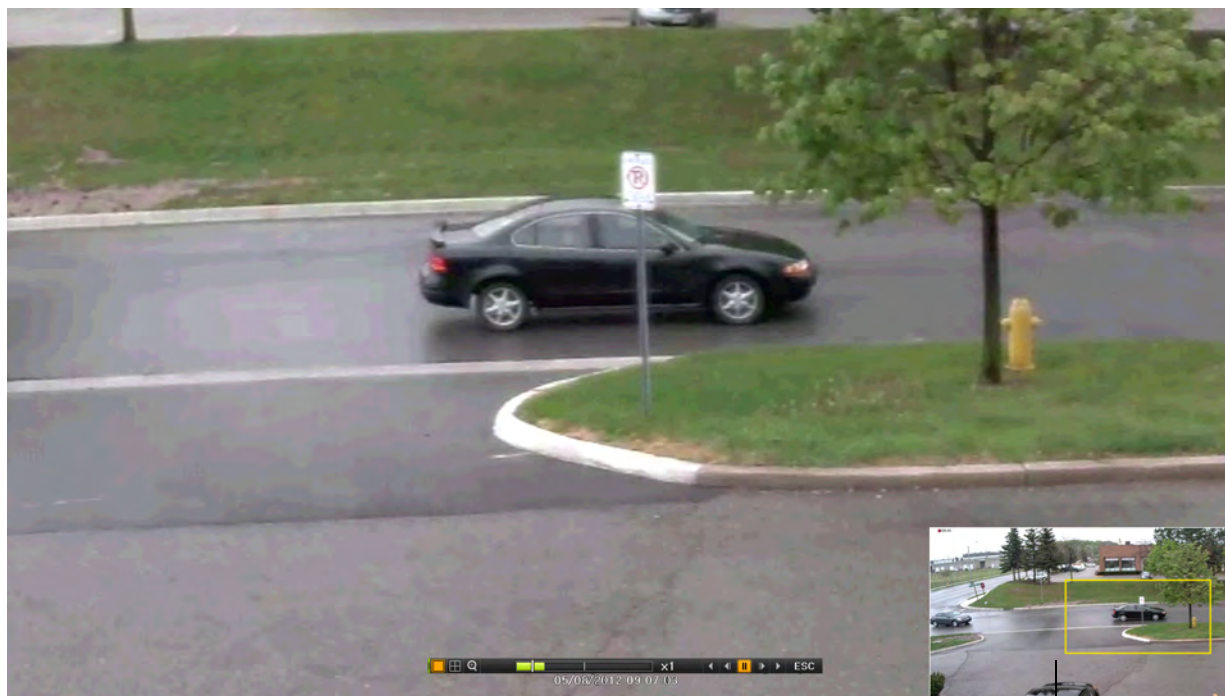
- 1 In menus, click or double-click on a field.
 - The Virtual Keyboard opens.
 - Click **Caps Lock** to switch between upper case and lower case letters.
 - Click  to delete a character.
 - Click **Space** to create a space.
 - Click **Cancel** to exit the Virtual Keyboard without changing the selected field.
 - Click **Save & Exit** to change the selected field.

Using Zoom Mode

Zoom mode allows you to zoom in on an image while viewing your cameras live or playing back recorded video. This can be useful if you want to get a closer look at a situation.

To use the Zoom mode:

- 1 In Live viewing or Playback mode, click  to enter Zoom mode.



Click inside the box to change the zoom area.
Use the mouse wheel to zoom in and out.

- 2 Click the channel you would like to zoom in on. The channel opens in Full-screen view and the DVR zooms in on the image. A box on the bottom-right of the screen opens to show the entire image, with the zoomed in area highlighted with a yellow box.
 - Click inside the box on the bottom-right to change the zoom area. Use the scroll wheel or double-click inside the box to zoom in and out.
- 3 Right-click or click **ESC** to exit Zoom mode and return to Live viewing mode or Playback mode.

Setting the Date and Time

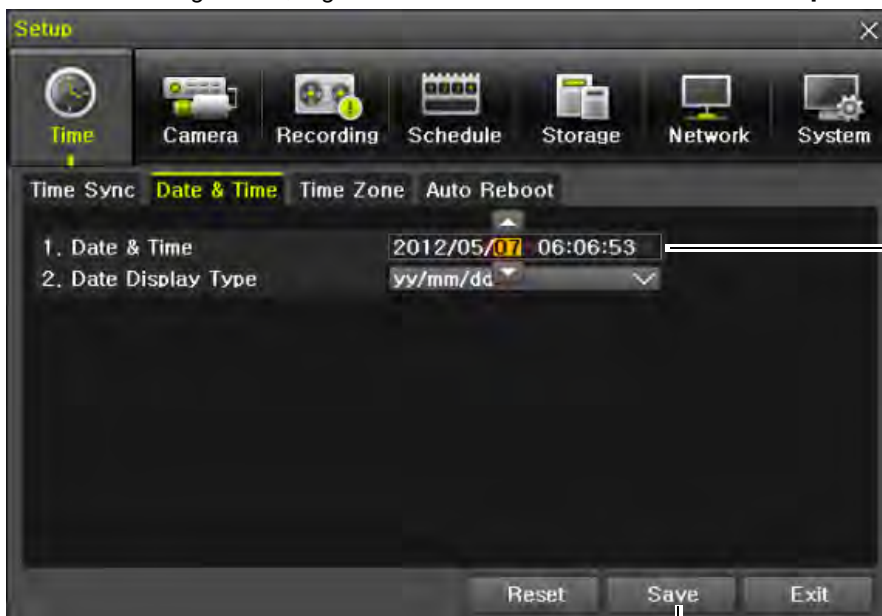


It is highly recommended to set the date and time when first setting up your system.

Inaccurate time stamps may render your footage unusable for court evidence.

To set the date and time:

- 1 In Live Viewing mode, right-click on the screen and click **Setup**. Select the **Date & Time** tab.



Double-click the sections of the date and time you would like to change. Click the up and down arrows to set the date and time.

Click Save

- 2 Under **Date & Time**, double-click the sections of the date or time you would like to change, and then click the up and down arrows to set the date and time.

NOTE: Time is displayed in 24-hour format.

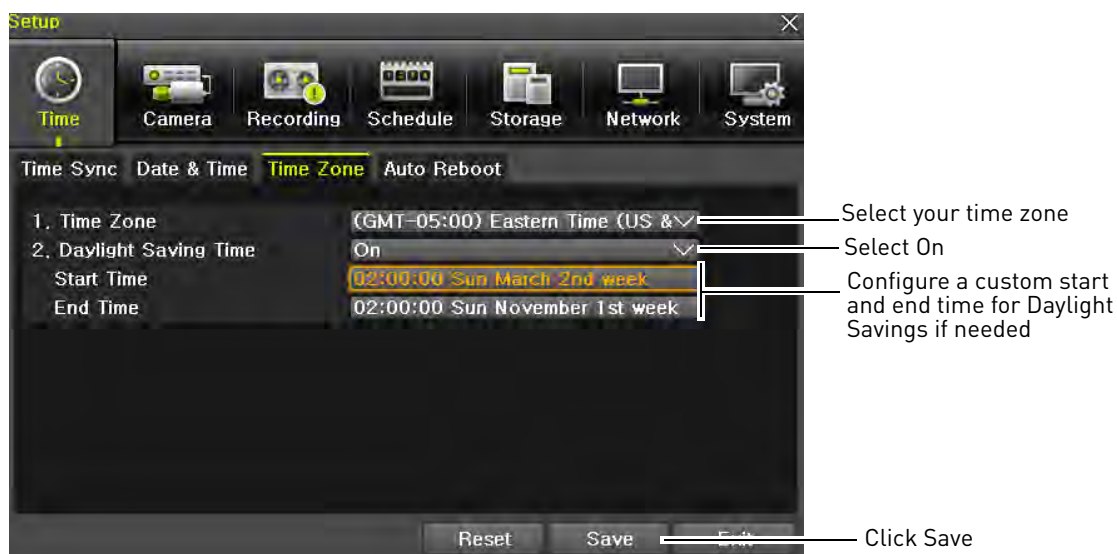
- 3 Click **Save** to save your changes. Click **Exit** to return to Live Viewing mode.

Configuring Daylight Savings Time (DST)

If your region observes Daylight Savings Time (DST), follow the instructions below to configure your DVR to automatically update the time when the clock updates.

To enable automatic DST adjustments:

- 1 In Live Viewing mode, right-click on the screen and click **Setup**.



- 2 Click **Time** and select the **Time Zone** tab.
- 3 Click the field next to **Time Zone** and select your time zone.
- 4 Click the field next to **Daylight Saving Time** and select **On**.
 - If you need to change the date and time that Daylight Savings starts and ends, click the fields next to **Start Time** and **End Time**. Make any required changes and click **Save**.
- 5 Click **Save** to save your changes and click **Exit** return to Live Viewing mode.

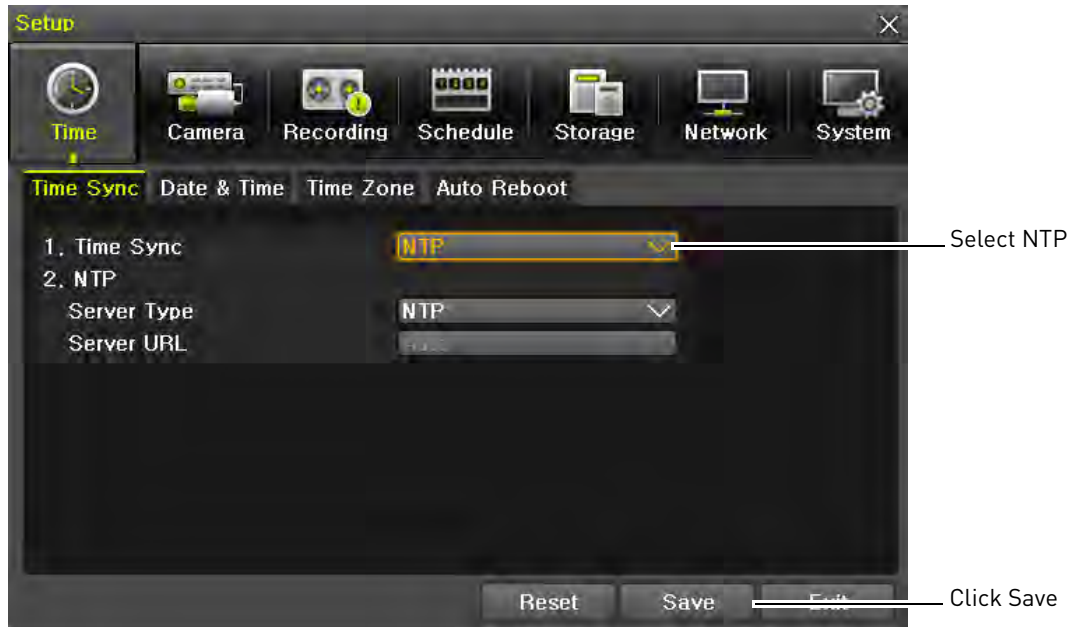
Using a NTP Server to set your System Time

A NTP (Network Time Protocol) server syncs your system time with an online time server.

NOTE: A constant Internet connection is required to use the NTP feature.

To enable NTP:

- 1 Right-click to open the Main Menu. Click **Setup** then **Time**. Select the **Time Sync** tab.



- 2 Under **Time Sync**, select **NTP**.
- 3 Click **Save**. Wait for the system time to update. Click **Ok** then **Exit** to return to Live Viewing mode.

Recording and Events

By default, the system is set to immediately record video from connected cameras in Continuous Recording mode. The DVR supports the following recording types, which are represented by icons in the On-screen Display when enabled or activated.



- **C — Continuous Recording:** The DVR records all video. The icon shown is green if the DVR is recording or white if the DVR is not recording.
- **M — Motion Event Recording:** The DVR records when motion is detected. The icon shown will be white if motion detection is enabled, and red when motion recording is triggered.
- **S — Sensor Event Recording:** The DVR records when triggered by an external alarm or sensor device (not included). The icon shown will be white if sensor recording is enabled, and red when sensor recording is triggered.
- **A — Audio Event Recording:** The DVR records when audio is detected. Audio-enabled cameras (not included) or self-powered microphones (not included) must be connected to use audio recording. The icon shown will be white if audio event recording is enabled, and red when audio events are triggered.

Events are created when Motion Event, Sensor Event, and Audio Event Recording are triggered. Events allow you to quickly find relevant footage.

- See “Event Playback” on page 26.
- See “Search” on page 56.

You can create a custom recording schedule that enables different recording types at different times (for example, that records continuously during business hours but only records when motion is detected outside of business hours).

- See “Recording” on page 32.
- See “Schedule” on page 40.

Playback

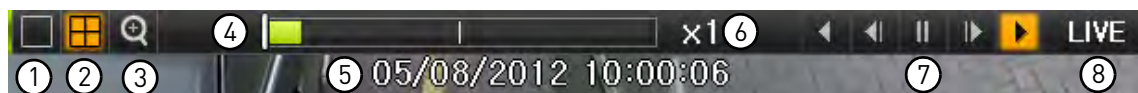
You can view recorded video on the system using Playback mode. You can access Playback mode from Live Viewing mode, or use the Search options or Log Viewer to select video from a certain time or event.

To access Playback mode from Live viewing mode:

- Click **PLAY** on the Live Viewing toolbar. Playback mode opens.



Playback Toolbar



- 1 : Click to select Full-screen view. Click repeatedly to change channels.
- 2 : Click to select Quad (4-way-split-screen) mode.
- 3 : Click to enter Zoom mode. For details, see "Using Zoom Mode" on page 16.
- 4 **Playback Bar:** Shows times that the DVR has recorded video on the channel or channels in green. Click inside the bar to change the playback time.
- 5 **Date and Time:** Shows the time of the video currently being played.

6 Playback Speed: Shows the playback speed selected.

7 Playback Controls:

- ◀ : Click to rewind. Click repeatedly to increase rewind speed.
- ◀◀ : Click to reverse video frame-by-frame.
- || : Click to pause.
- ▶▶ : Click to advance video frame-by-frame.
- ▶ : Click to play. Click repeatedly to fast forward.

8 LIVE: Click to return to Live Viewing mode.

Playback Sub-Menu

During Playback mode, right-click on the screen to access the Playback sub-menu. From the Playback sub-menu, you can access playback modes and Calendar Search.



The Playback sub-menu has the following options:

- **Smart Search:** Searches the selected hour of video for footage that has movement.
- **Panorama Playback:** Plays back multiple video frames from the selected channel at the same time in split-screen.
- **Calendar Search:** Search for recorded video from a specific date and time. See “Search” on page 56.
- **Multi Time:** Plays back available video from previous hours at the same time in split-screen.
- **Multi Day:** Plays back available video from previous days in split-screen, using footage recorded at the same time of day.
- **Multi Channel:** From Multi Time and Multi Day Playback modes, return to the default playback mode, which shows video from multiple channels in split-screen.
- **Event Playback:** Plays footage recorded during events of the selected type.
- **Backup:** Click Backup to open the backup menu. Click Capture to take a screen shot. For details, see “Backup” on page 58.
- **Zoom:** See “Using Zoom Mode” on page 16.

Smart Search

Smart Search searches the selected hour of video for footage that has movement. This is useful if you want to search large amounts of video and only show footage when something is happening.

To perform a Smart Search:

- 1 From Playback mode, right-click on the screen and select **Smart Search**. Select the channel you want to search (in Full-screen view, the DVR searches the full-screen channel). The DVR performs a search on the hour of video selected.

NOTE: Use the Calendar Search option to select a different date or time to Smart Search.

- 2 Press ► to start playback. Playback shows video with movement only and skips segments with no movement.



Playback Toolbar in Smart Search — Times where there is movement are shown in green; times without movement are shown in black

- To exit Smart Search, click **ESC** on the Playback toolbar.

Panorama Playback

Panorama Playback allows you to view multiple frames from a recorded video at the same time in split-screen. This can help you get a closer look at a sequence of events.



Panorama Playback — Plays back multiple frames from the same video

To use Panorama Playback:

- 1 From Playback mode, right-click on the screen and select **Panorama Playback**. Select the channel you want to Playback (in Full-screen view, the DVR plays back from the full-screen channel).
 - Playback begins in slow motion and shows a different frame from the video in each section of the screen.
- 2 To exit Panorama Playback, click **ESC** on the Playback toolbar.

Multi-Time Playback

Multi-Time Playback plays video from previous hours simultaneously. The video shown is from the same time for each hour (for example, if you are playing back a video recorded at 8:30, the DVR will play video from 8:30, 7:30, 6:30, etc.).



Multi-Time Playback — Plays back video from previous hours simultaneously

To use Multi-Time Playback:

- 1 From Playback mode, right-click on the screen and select **Multi Time**. Select the channel you want to Playback.
 - Playback begins showing footage from previous hours on screen. To change the date or time for playback, right-click and select Calendar Search.
- 2 To exit Multi-Time Playback, click **ESC** on the Playback Toolbar.

Multi-Day Playback

Multi-Day Playback plays video from the previous day simultaneously. The video shown is from the same time for each day (for example, if you are playing back a video recorded at 8:30 on May 5, the DVR will play video from 8:30 on May 5, May 4, May 3, etc.).



Multi-Day Playback — Plays back video from previous days simultaneously

To use Multi-Day Playback:

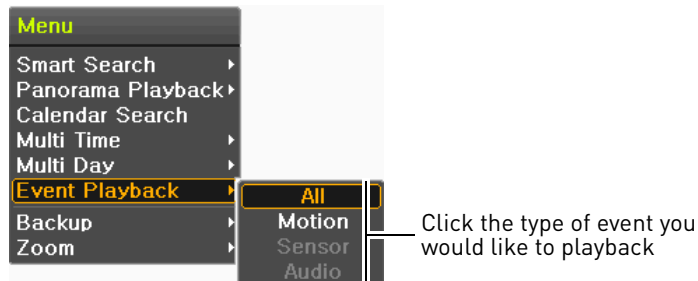
- 1 From Playback mode, right-click on the screen and select **Multi Day**. Select the channel you want to Playback.
 - Playback begins showing footage from previous days on screen. To change the date or time for playback, right-click and select **Calendar Search**.
- 2 To exit Multi-Time Playback, click **ESC** on the Playback Toolbar.

Event Playback

Event Playback plays back video of the chosen event type (Motion, Sensor, or Audio) only.

To use Event Playback:

- 1 From Playback mode, right-click on the screen and select **Event Playback**. Click the type of event (**Motion**, **Sensor**, or **Audio**) you want to playback.



- The DVR plays back footage from the selected event type only. The Playback toolbar shows times with events of the selected type in green. Times are highlighted for all channels shown in split-screen, or for the single channel shown in full-screen.



Event Playback Toolbar — Times with footage of the selected event type are shown in green.

- 2 To exit Event Playback, right-click on the screen, select **Event Playback**, and click **All**.

Using the Main Menu

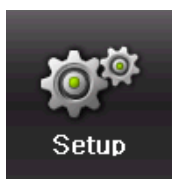
To open the Main Menu:

- From Live Viewing mode, right-click or press the **MENU** button on the front panel or remote control to open the Main Menu.

NOTE: If passwords are enabled on the system, you must enter the appropriate password to open the Main Menu.



- 1 Log-in / Log-out:** Log-in to the DVR using your user name and password or log-out of the DVR (only shown when passwords are enabled).
- 2 Setup:** Configure the DVR date and time, camera settings, recording parameters, recording schedule, network settings, user accounts, and system settings. Format hard drives and flash drives for recording and backup. Install firmware updates and restore to factory defaults.
- 3 Search:** Search for recorded video on the DVR.
- 4 Backup:** Backup recorded video or take screen captures (screenshots).
- 5 PTZ Control:** Controls for PTZ cameras (not included). See “Appendix G: Connecting a PTZ Camera” on page 137.
- 6 Zoom:** Opens Zoom mode. For details, see “Using Zoom Mode” on page 16.
- 7 Miscellaneous:** Access System Information window, Log Viewer, and miscellaneous controls. Configure interface settings. Shutdown the DVR.



Setup

Configure the DVR date and time, camera settings, recording parameters, recording schedule, network settings, user accounts, and system settings. Format hard drives and flash drives for recording and backup. Install firmware updates and restore to factory defaults.

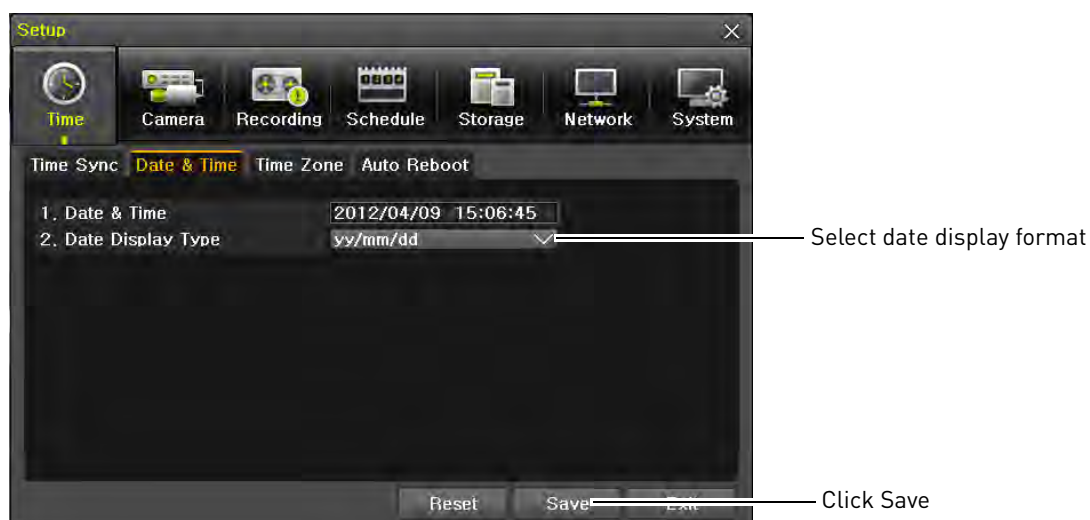
Time

Set DVR date and time, change the Date Display format, enable/disable Auto Reboot.

- To set the date and time, see “Setting the Date and Time” on page 17.

Changing the Date Format

- 1 Right-click to open the Main Menu, click **Setup** then **Time**. Select the **Date & Time** tab.
- 2 Click the **Date Display Type** drop-down and select the desired date format (**dd/mm/yy**, **mm/dd/yy**, **yy/mm/dd**).



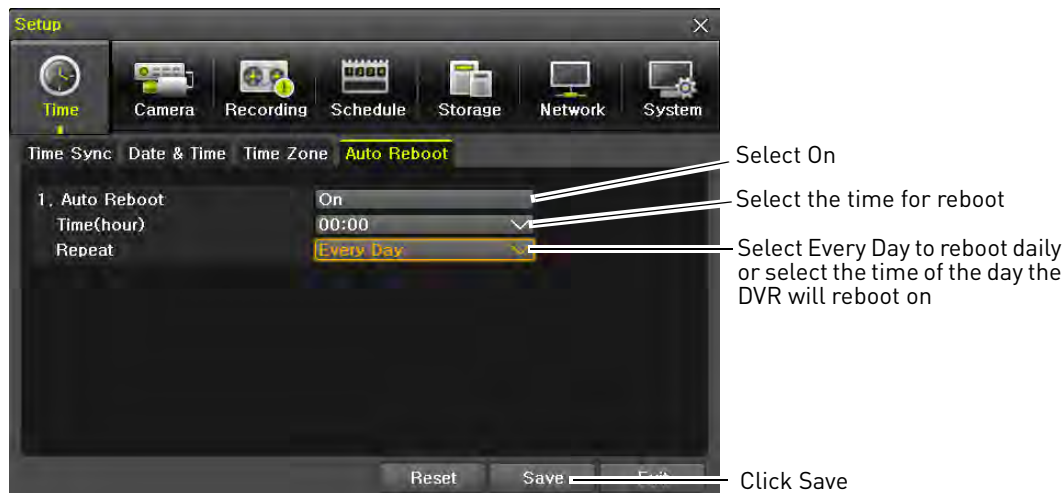
- 3 Click **Save** to save your changes. Click **Exit** to return to Live Viewing mode.

Enabling Auto Reboot

Auto Reboot automatically restarts the DVR off and on daily or weekly. Restarting the system every so often ensures system stability.

To enable Auto Reboot:

- 1 Right-click to open the Main Menu, click **Setup** then **Time**. Select the **Auto Reboot** tab.



- 2 Under **Auto Reboot**, select **On** to turn on Auto Reboot.
- 3 Under **Time**, select the hour you would like the DVR to restart at.
- 4 Under **Repeat**, select Every Day to have the DVR restart daily, or select which day of the week you would like the DVR to restart on.
- 5 Click **Save** to save your changes. Click **Exit** to return to Live Viewing mode.

Camera

Configure camera titles and settings.

To configure PTZ cameras (not included), see “Appendix G: Connecting a PTZ Camera” on page 137.

Disconnecting/Connecting Cameras

When cameras are connected to the HD-SDI CAMERA IN ports on the rear panel of the DVR, they are automatically connected to the system. When cameras cables are disconnected, a Video Loss icon is shown. To hide the Video Loss icon, you must disconnect the cameras in the Camera tab.

If a connected camera is not appearing on screen, check the Camera tab to ensure that it is connected. Also check under Live Covert and ensure it is set to Off.

To disconnect/connect cameras:

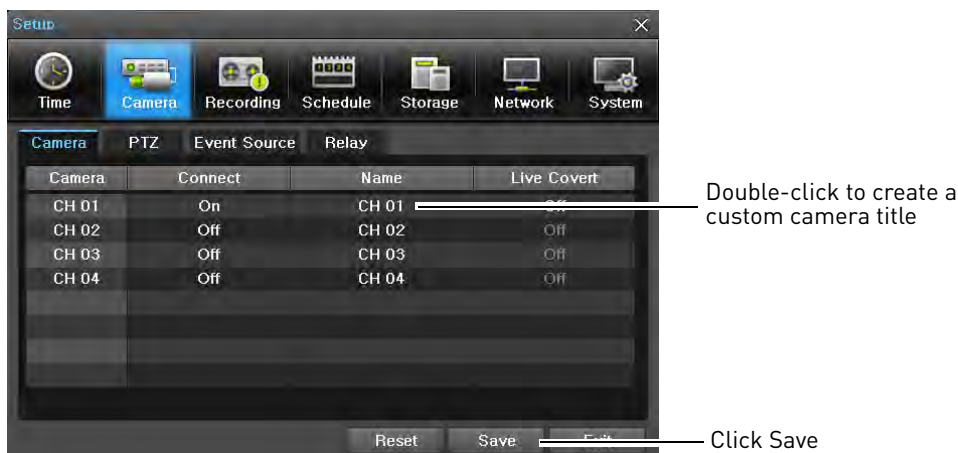
- 1 Right-click to open the Main Menu, and click **Setup** then **Camera**.
- 2 Select the **Camera** tab.
- 3 Under **Connect** next to the channel you want to configure, select **Off** to disconnect the camera or **On** to connect the camera.
- 4 Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Creating Custom Camera Titles

You can rename your cameras with custom titles.

To create custom camera titles:

- 1 Right-click to open the Main Menu, and click **Setup** then **Camera**.
- 2 Select the **Camera** tab.



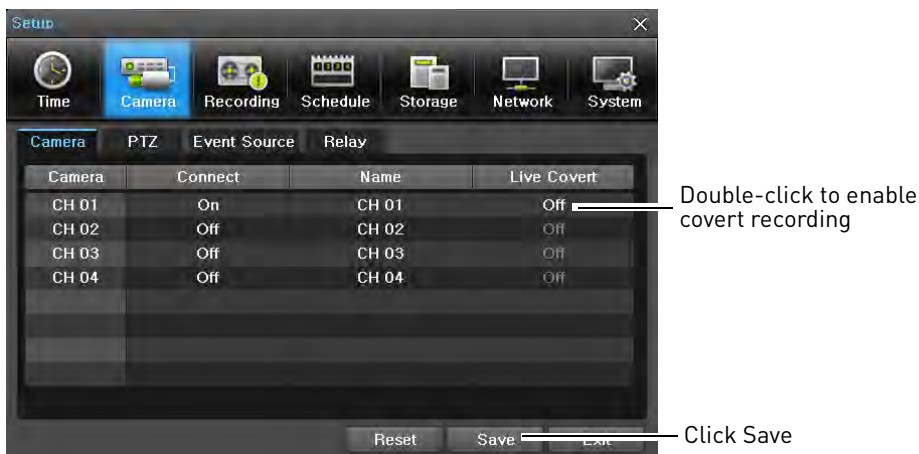
- 3 Double-click under **Name** next to the channel you want to configure, and use the on-screen keyboard to enter a title for the channel. Click **Save & Exit** when finished.
- 4 Click **Save** to save your changes. Click **Exit** to return to Live Viewing mode.

Enabling Covert Recording

Covert recording hides individual channels so that it seems like the DVR is not recording. Covert channels are only visible when the admin account is logged in to the DVR through a remote connection (i.e. over the Internet or a LAN).

To enable covert recording:

- 1 Right-click to open the Main Menu, and then click **Setup**.
- 2 Select the **Camera** tab.



- 3 Double-click under **Live Covert** for the channel you want to hide and select **On**.

- 4 Click **Save** to save your changes then click **Exit** to return to Live Viewing.

Setting Motion Detection Sensitivity and Sensitivity for Audio Events

Motion Sensitivity determines how easily motion detection events are triggered. Higher Motion Sensitivity means that less motion is required to trigger a motion event.

Sound Sensitivity determines how easily audio events are triggered. Higher Sound Sensitivity means quieter sounds will trigger audio events.

Motion Sensitivity and Sound Sensitivity must be configured for each camera, and motion events and audio events must be enabled in the Recording Menu before the DVR will record for these events.

To change Motion Sensitivity or Sound Sensitivity:

- 1 From Live Viewing mode, right-click to enter the Main Menu and select **Setup**. Click **Camera** and select the **Event Source** tab.

The screenshot shows the 'Setup' window with the 'Camera' menu selected and the 'Event Source' tab active. A table lists settings for four channels (CH 01 to CH 04). Annotations indicate that double-clicking the 'Motion Sensitivity' or 'Sound Sensitivity' columns allows for changes.

Channel	Motion Area	Motion Sensitivity	Sensor Type	Sound Sensitivity
CH 01	330	Highest	NO	Medium
CH 02	330	Highest	NO	Medium
CH 03	330	Highest	NO	Medium
CH 04	330	Highest	NO	Medium

- 2 Double-click under **Motion Sensitivity** for each camera to set the motion detection sensitivity. Double-click under **Sound Sensitivity** to set the sensitivity for audio events.
- 3 Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Configuring Motion Detection Areas

Motion Detection Areas allow you to enable or disable motion detection in certain areas. For example, you can disable motion detection where your camera overlooks a public street and enable motion detection to trigger when someone enters your driveway.

You must enable Motion Events in the Recording Menu to enable motion recording.

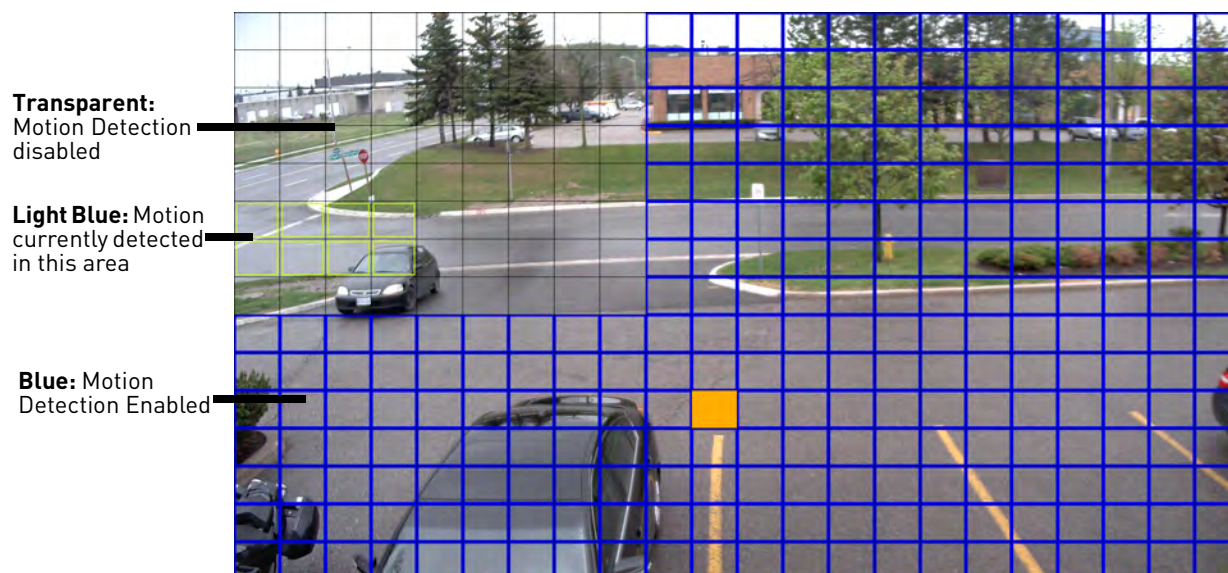
To configure Motion Detection Areas:

- 1 From Live Viewing mode, right-click to enter the Main Menu and click **Setup**.
- 2 Click **Camera** and select the **Event Source** tab.

- Double-click under **Motion Area** for the channel you want to configure. The Motion Area configuration screen appears.



- Click and drag inside the grid to configure Motion Areas. Areas where motion detection is enabled are highlighted in blue. Areas where motion detection is enabled are transparent. A light blue outline appears in areas where motion is currently detected.



- When finished, right-click and select **Exit** to return to the Event Source tab. Click **Save** to save your changes and then click **Exit** to return to Live Viewing mode.

Recording

Configure recording settings and enable motion, sensor, and audio events.

Settings in the Recording menu are divided into recording schedules to enable the DVR to automatically change the recording settings at different times. By default, Schedule1 is enabled 24/7. For instructions on how to select when schedules are used, see "Schedule"

on page 40.



Recording schedules
By default, Schedule1 is enabled 24/7

Click the schedule to configure recording settings for that schedule.

Enabling Motion Detection/Motion Events

You must enable motion detection on each channel before the DVR will save motion events.

To enable motion detection/motion events:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- 2 Select the **Event** tab.



Double-click to
select On to turn on
motion detection.

Click Save

- 3 Under the channels you want to enable motion detection on, double click under **Motion** and select **On** to turn on motion detection.
- 4 Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Configuring the DVR for Motion Recording Only

You can configure the DVR to record only when motion is detected. This allows you to extend the amount of recording time by stopping recording when there is nothing happening.

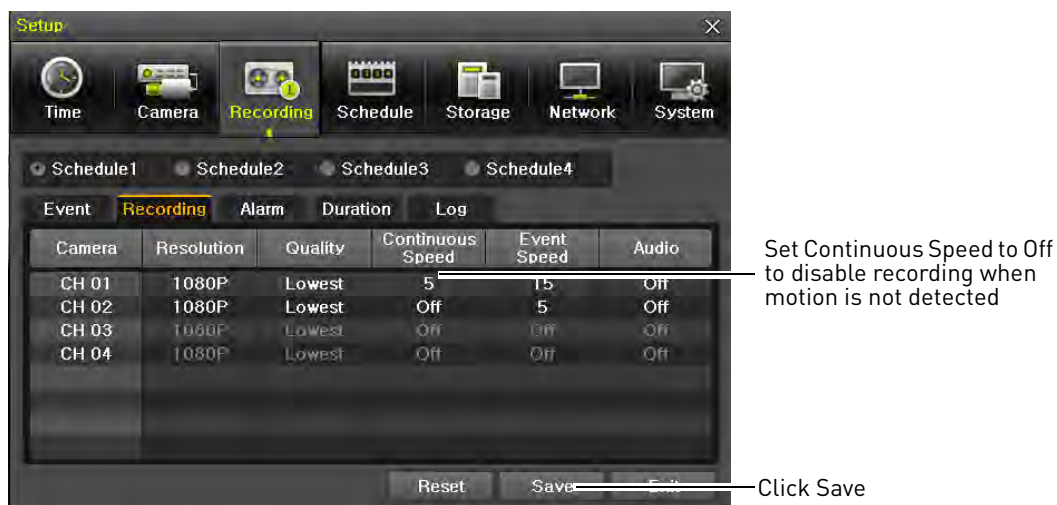
To configure the DVR for motion recording only:

NOTE: This method assumes that Schedule1 is enabled 24/7, which is the default setting. For more information, see "Schedule" on page 40.

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then recording.
- 2 Select the **Recording** tab.
- 3 Under all connected channels, double click under **Motion** and select **On** to turn on motion detection.



- 4 Click **Save** to save your changes.
- 5 Select the **Recording** tab.
- 6 Under **Continuous Speed** for all connected channels, select **Off**. This disables continuous recording so the DVR will only record when motion is detected (or for other event types if they are enabled).



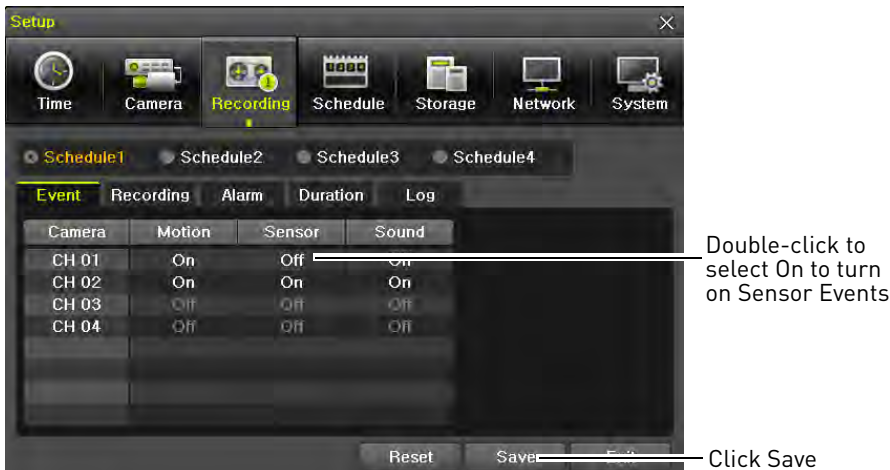
- 7 Click **Save** to save your changes. Click **Exit** to return to Live Viewing mode.

Enabling Sensor Events

Sensor Events trigger recording when an external sensor device (not included) is triggered.

To enable sensor events:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- 2 Select the **Event** tab.



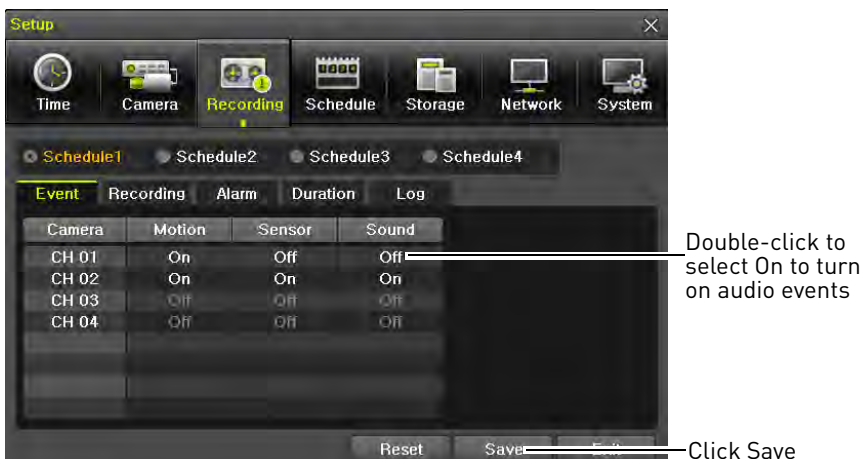
- 3 Under the channel you want to enable motion detection on, double click under **Sensor** and select **On** to turn on Sensor Events.
Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Enabling Audio Events

You must enable audio events for each channel before the DVR will save audio events. Audio-enabled cameras or self-powered microphones are required to use Audio Events

To enable audio events:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- 2 Select the **Event** tab.



- 3 Under the channel you want to enable audio events on, double click under **Audio** and select **On** to turn on audio events.

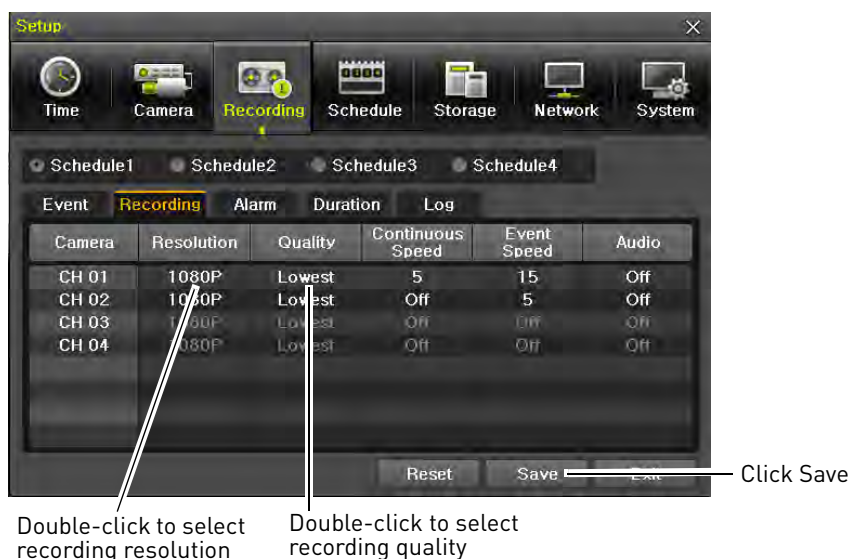
- 4 Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Changing the Recording Resolution and Quality

The recording resolution and quality affects the quality and frame rate of recorded images. Increasing the resolution or quality will provide a better image, but will reduce the maximum frame rate available.

To change the recording resolution and quality:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- 2 Select the **Recording** tab.



- 3 Double-click under **Resolution** for the channel you want to change and select **1080p** (high) or **720p**.
- 4 Double-click under **Quality** for the channel you want to change select the recording quality.
- 5 Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

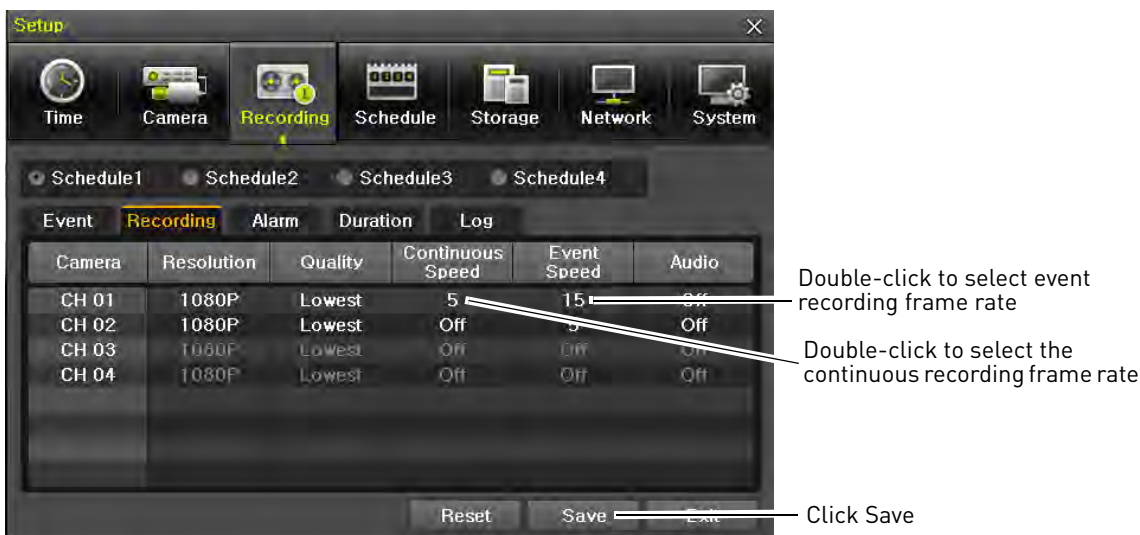
Changing the Recording Frame Rate

You can set a separate recording frame rate for Continuous Recording or Event Recording. This is useful, for example, if you want the frame rate to increase when motion is detected.

To change the recording frame rate:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.

- 2 Select the **Recording** tab.



- 3 Double-click under **Continuous Speed** for the channel you want to change and select the frame rate for continuous recording. Select **Off** to disable continuous recording.
- 4 Double-click under **Event Speed** for the channel you want to change and select the frame rate for event recording. Select **Off** to disable event recording.

NOTE: The overall frame rate for recording is limited. If you exceed the available frame rate, the DVR will automatically adjust the frame rate for other channels.

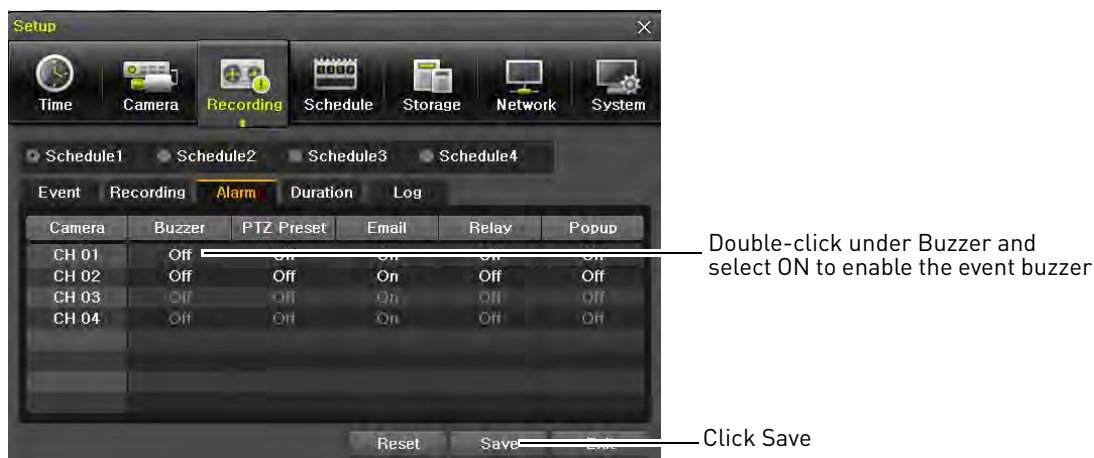
- 5 Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Enabling the Event Buzzer

When the Event Buzzer is enabled, the DVR will beep when events occur.

To enable the Event Buzzer:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- 2 Select the **Alarm** tab.



- 3 Double-click under **Buzzer** for the channel you want to change and select **On** to enable the Event Buzzer.

- Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Enabling Full-screen Popup on Events

When Full-screen Popup is enabled, channels will popup in full-screen when events occur.

To enable Full-screen Popup:

- From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- Select the **Alarm** tab.



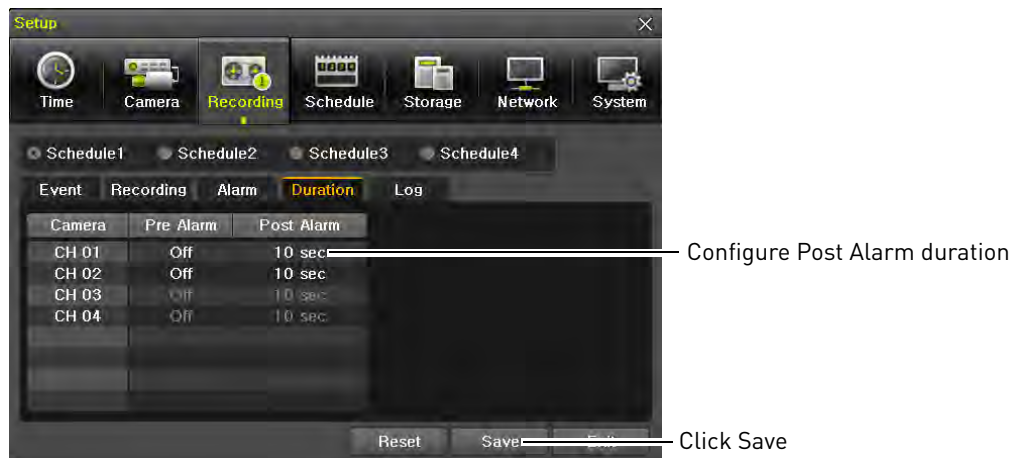
- Double-click under **Popup** on the channel you would like to change and select **On** to enable Full-screen Popup.
- Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Configuring Alarm Durations

The Post Alarm duration determines the amount of time the DVR records after events occur. The Pre Alarm setting enables the DVR to save footage for a short duration before the event occurs.

To configure the Post Alarm duration:

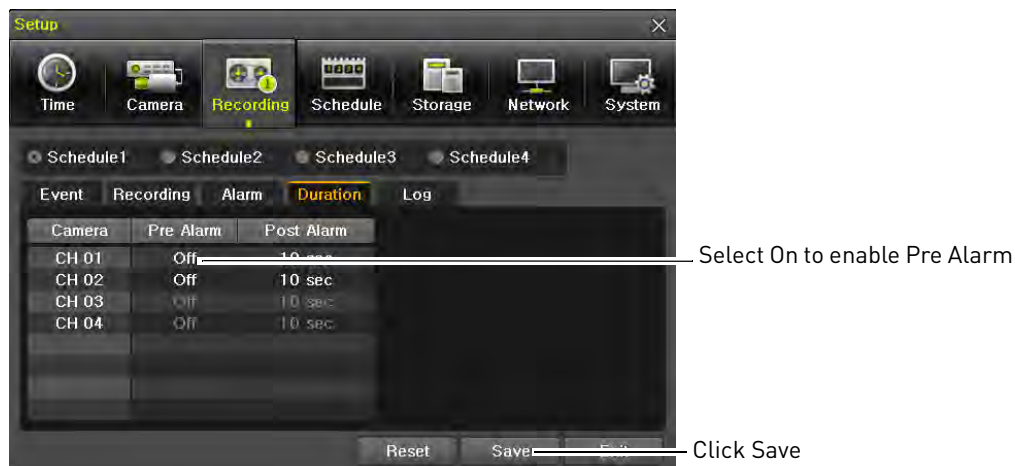
- From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- Select the **Duration** tab.



- 3 Under **Post Alarm**, double-click the channel you want to change and select the amount of time the DVR will record after events occur.
- 4 Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

To enable Pre Alarm:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- 2 Select the **Duration** tab.



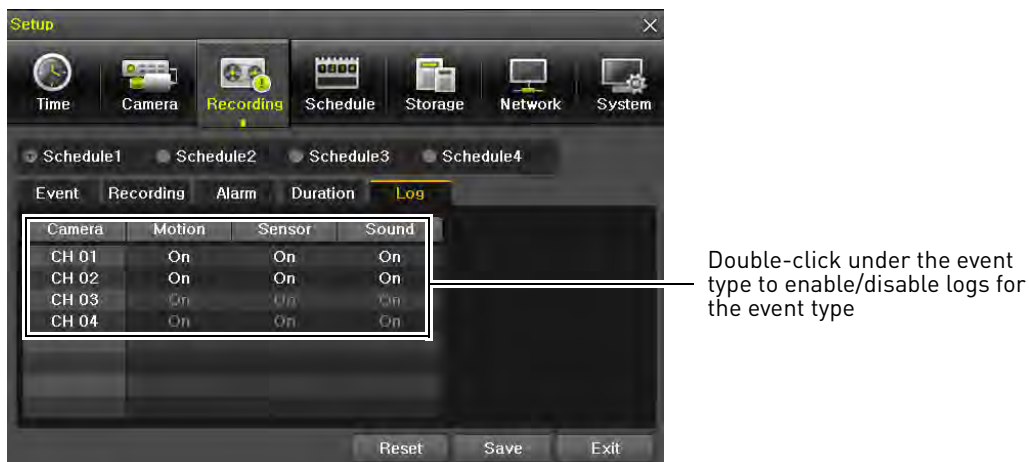
- 3 Under **Pre Alarm**, double-click under the channel you want to change and select **On** to enable Pre Alarm.
- 4 Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Enabling/Disabling Event Logs

By default, the DVR creates a log entry when events occur. You can enable or disable event logs for each event type and each channel.

To enable/disable event logs:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- 2 Select the **Log** tab.



- 3 Double-click under **Motion**, **Sensor**, and **Sound** for each channel you want to change and select **On** to enable logs for that event type or **Off** to disable logs for that event type.
- 4 Click **Save** to save your changes and click **Exit** to return to Live Viewing mode.

Schedule

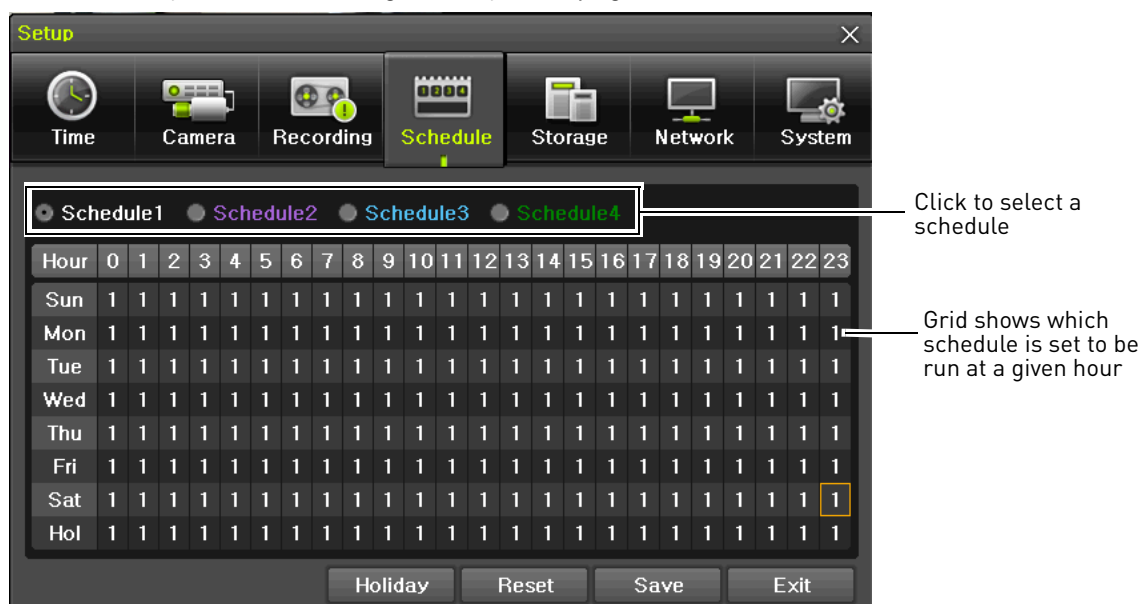
The Schedule menu allows you to determine which recording schedules are used at which times. Each schedule has different recording settings that are set in the Recording tab.

By default, Schedule1 is set to run 24/7.

Setting the Schedule

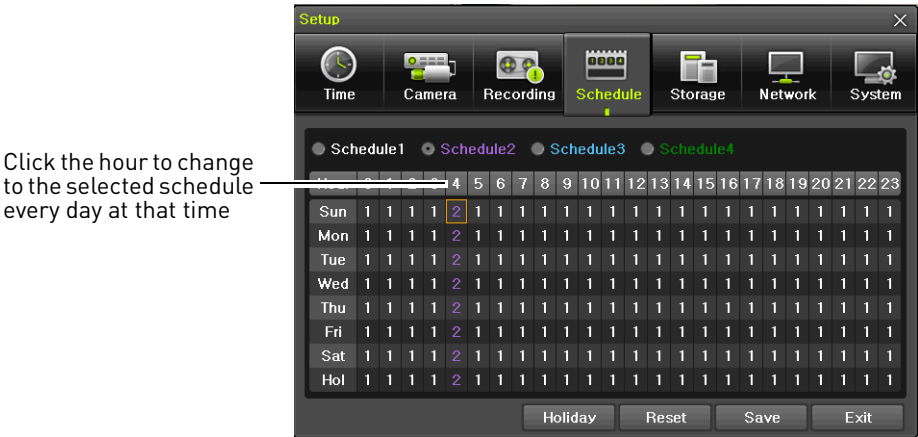
- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Schedule**. The Schedule window opens.
 - The Schedule window shows when each schedule is set to run. The grid in the Schedule window divides each day of the week into hour-long recording blocks. The schedule set to run in a given hour is represented by the schedule number. Only one schedule can be run at the same time.

NOTE: Hol is used to configure the schedule for holidays. For instructions on how to create holidays, see "Selecting Holidays" on page 41.

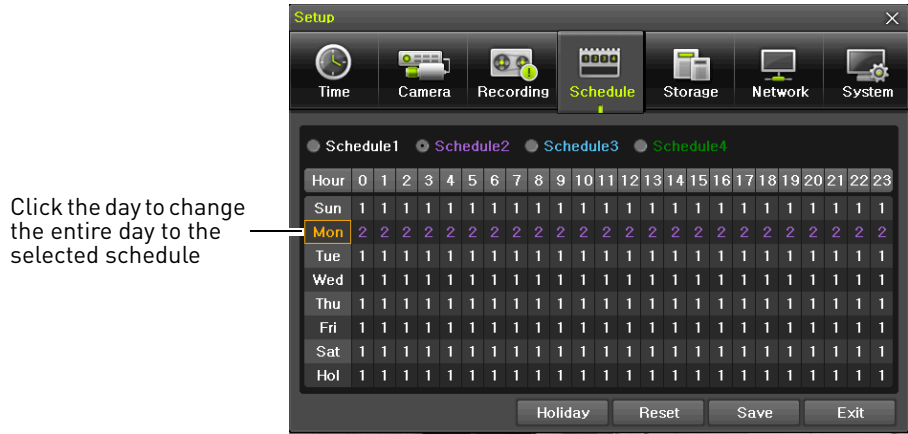


- 2 Click the schedule you would like to select at the top of the screen.
- 3 Click inside the grid to change a time to the selected schedule.

- Click an hour at the top of the grid to change the time to the selected schedule for every day of the week.



- Click a day on the left side of the grid to change the entire day to the selected schedule.

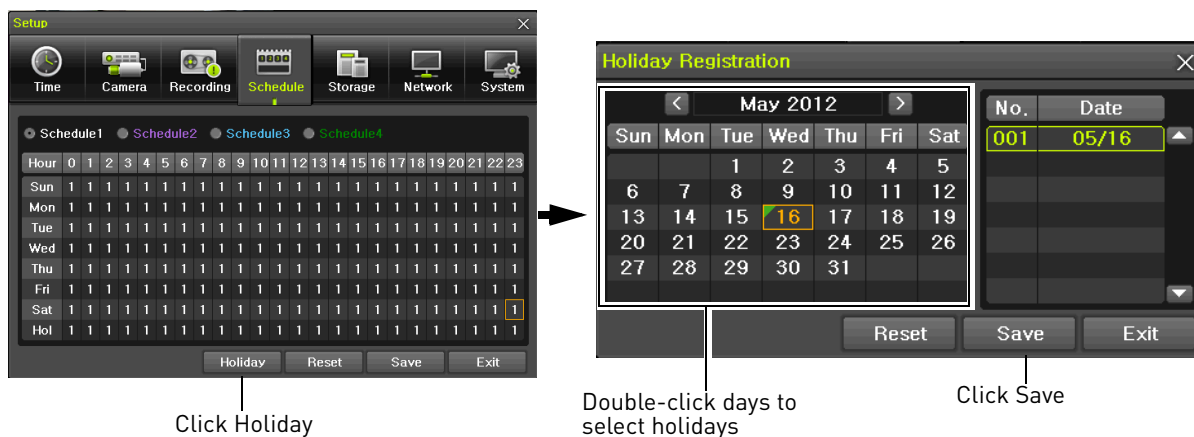


Selecting Holidays

Holidays can be selected to provide a custom recording schedule on specific days of the year. Holidays follow the Hol schedule.

To select holidays:

- 1 From the Schedule Menu, click **Holiday**.



- 2 Double-click days on the on-screen calendar to select them as holidays.
 - Double-click again on the on-screen calendar to de-select days.
- 3 Click **Save** to save your changes and return to the schedule menu.

Storage

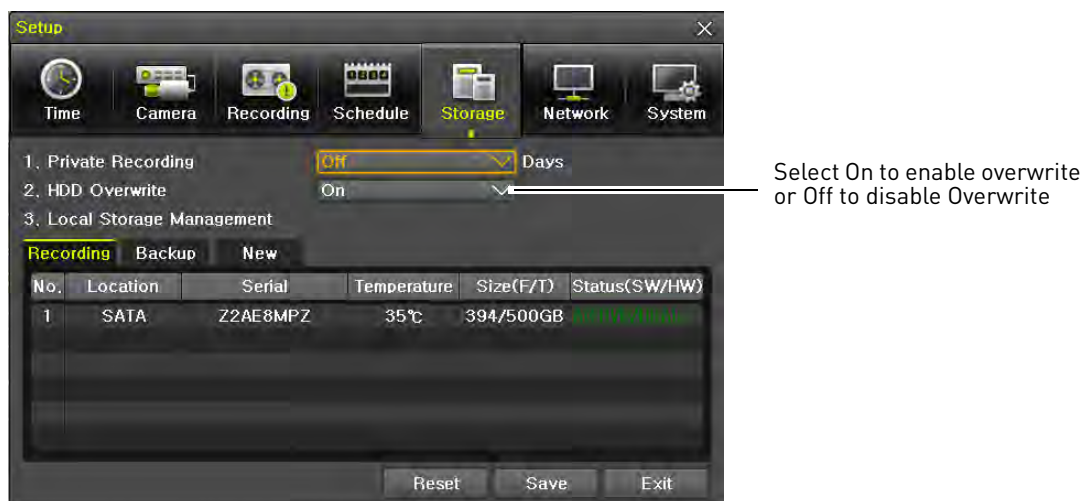
Allows you to configure hard drive settings and format a hard drive or USB thumb drive.

Disabling/Enabling Overwrite

By default, the DVR is set to overwrite the oldest recordings when the hard drive is full. If Overwrite is disabled, the DVR will stop recording when the hard drive is full.

To disable/enable overwrite:

- 1 Right-click to open the Main Menu, click **Setup** then **Storage**.



- 2 Under **HDD Overwrite**, select **Off** to disable Overwrite, or **On** to enable.
- 3 Click **Save** to save your changes. Click **Exit** to return to Live Viewing mode.

Formatting a Hard Drive

ATTENTION: Formatting a hard drive will erase all data on the drive.

The DVR can format installed or external hard drives as backup or recording hard drives. When replacing the hard drive, you must format the new hard drive as a recording hard drive using the DVR before the DVR will record.

To save backups on an external or installed hard drive, you must format the drive as a backup hard drive using the DVR.

Formatting a Hard Drive as a Recording Hard Drive

- 1 Right-click to open the **Main Menu**. Click **Setup** then **Storage**.
- 2 Select the **New** tab. A list appears with un-formatted USB drives and hard drives.
- 3 Double-click the hard drive you would like to format and select **Recording-Format** to use the hard drive as a recording hard drive. Click **Yes** to confirm. Wait for the hard drive to format.



Formatting a Hard Drive as a Backup Hard Drive

- 1 Right-click to open the Main Menu. Click **Setup** then **Storage**.
- 2 Select the **New** tab.
- 3 Double-click the hard drive you would like to format and select **Backup-Format** to use the hard drive as a recording hard drive. Click **Yes** to confirm. Wait for the hard drive to format.

To format an existing hard drive:

- 1 Right-click to open the **Main Menu**. Click **Setup** then **Storage**.
- 2 Select the **Recording** or **Backup** tab. The DVR shows a list of connected hard drives.
- 3 Double-click the hard drive you would like to format and click **Backup-Format** then click **Yes** to confirm. Wait for the hard drive to format.

Formatting a USB Thumb Drive

You must format a USB thumb drive (not included) with the DVR before it can be used to make backups.

ATTENTION: Formatting a USB thumb drive will erase all data on the drive.

To format a USB thumb drive:

- 1 Insert a USB thumb drive (not included) into the DVR.
- 2 Right-click to open the Main Menu. Click **Setup** then **Storage**.
- 3 Select the **New** tab. A list appears with the USB thumb drive in it.
- 4 Double-click the USB drive. Click **Backup-Format** then click **Yes** to confirm. Wait for the USB thumb drive to be formatted.



Enabling Private Recording

If Private Recording is enabled, the DVR will automatically delete recordings after the number of days specified.

NOTE: You must have sufficient hard drive space to save the full number of days specified by Private recording.

To enable Private Recording:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Storage**.

- Under **Private Recording**, select the number of days you would like the DVR to save. Select **Off** to disable Private Recording.



Select number of days for private recording or select Off to disable private recording

NOTE: To select a custom number of days between 1~99, click **Custom**. Then use the on-screen keyboard to select the number of days and click **Save & Exit**.

- Click **Save** to save your changes and click **Exit** to turn to Live Viewing mode.

Network

Configure networking settings and set up email alerts.

Configuring Network Type: DHCP or Static IP

The system has the ability to operate in DHCP mode and Static IP mode. DHCP allows the router to assign an IP to the DVR. Static IP mode fixes the IP of the DVR. Fixing an IP of the DVR ensures that the IP will not change.

NOTE: You may need to perform additional configuration on your router to set a Static IP address, see your router's instruction manual for details.

To select DHCP or Static IP:

- From Live Viewing mode, right-click to open the Main Menu. Select **Setup** then **Network**.
- Select the **Ethernet** tab.



Select Static or DHCP

If Static, configure IP address, Subnet Mask, Default Gateway, and DNS

- 3 Under **Ethernet Type**, select **DHCP** or **Static**. If you select Static, configure the following:
 - **IP Address:** Enter the desired IP address. Make sure that the IP address chosen not being used by another device.
 - **Subnet Mask:** Enter the subnet mask.
 - **Default Gateway:** Enter the gateway address.
 - **Primary DNS:** Enter the primary DNS server address.
 - **Secondary DNS:** Enter the secondary DNS server address
- 4 Click **Save** to save changes. Click **Exit** to return to Live Viewing.
- 5 Restart the DVR using the power button. You will need to enter the admin password (default: **00000**).

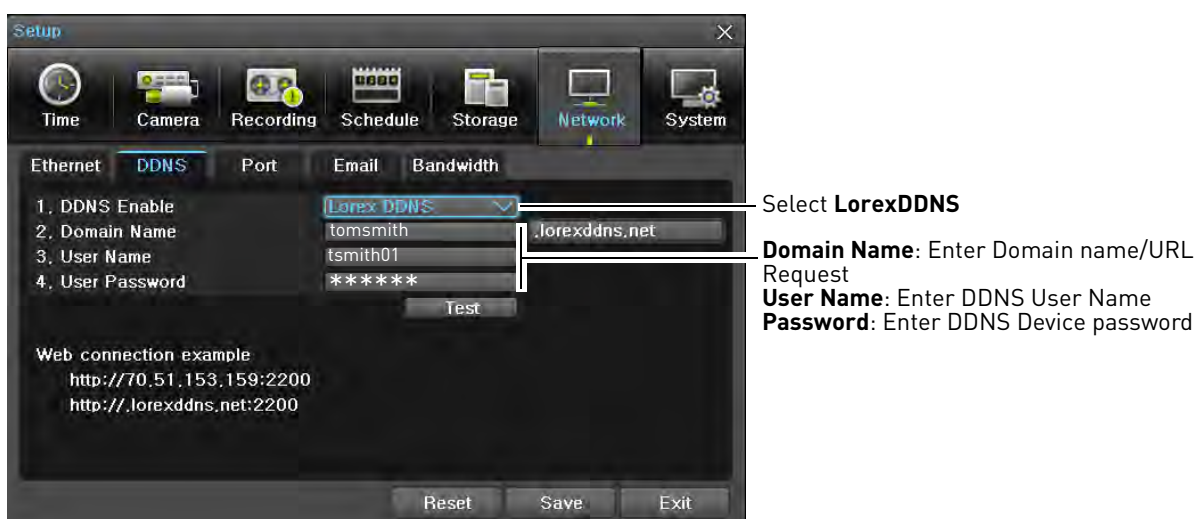
Enabling DDNS

DDNS allows you to remotely connect to your system remotely. You must create a DDNS account, and enter your DDNS settings into the system before you can remotely view your system.

For details on creating a DDNS account, see “Step 2 of 4: Create a DDNS Account” on page 81.

To enable DDNS:

- 1 Right-click to open the Main Menu and click **Setup**.
- 2 Click **Network** and select the **DDNS** tab.
- 3 Under **DDNS Enable**, select **LorexDDNS**.
- 4 Under Domain Name, enter your **Domain name/URL Request** from the confirmation email that was sent after you created your DDNS account. Click **Save & Exit** to confirm.



Example of entering DDNS information in the DDNS tab

NOTE: If the Domain name/URL request is *tomsmith*, the address to access your video will be *http://tomsmith.lorexddns.net*. See Web connection example for the DDNS address used to connect to your system using Internet Explorer.

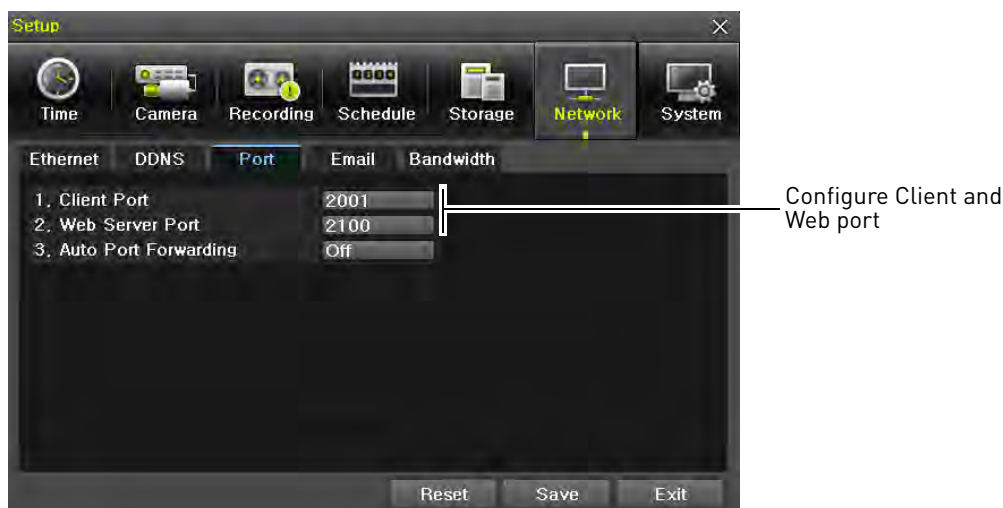
- 5 Under User Name, enter your **DDNS User Name** that was emailed to you after DDNS registration. Click **Save & Exit** to confirm.
- 6 Under User Password, enter your **DDNS Device password** that was emailed to you after DDNS registration. Click **Save & Exit** to confirm.
Click **Save**. Click **Exit** to return to Live Viewing.

Changing the Web and Client Ports

The DVR's default Client port is **3000**. The default Web port is **80**. You must forward both the Client and Web port to access your DVR remotely over the Internet.

To change the Web and Client ports:

- 1 From Live Viewing mode, right-click to enter the Main Menu. Click **Setup** then **Network**.
- 2 Select the **Port** tab.



- 3 Click **Client Port** and **Web Server Port**, enter the port number, and click **Save & Exit** to confirm.
NOTE: You may only select port 80 or ports greater than 2000.
- 4 Click **Save** to save your changes. Click **Exit** to return to Live Viewing mode.

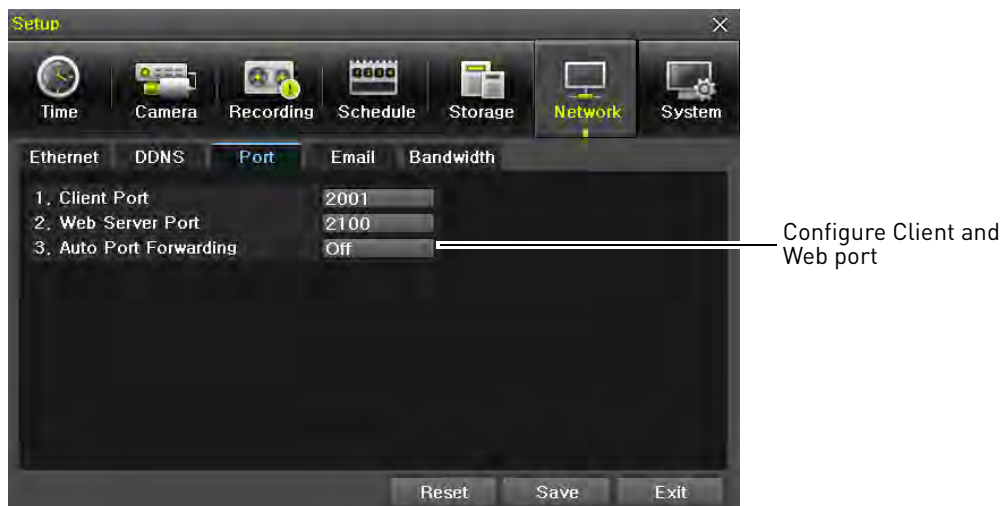
Enabling Auto Port Forwarding

Auto Port Forwarding allows the DVR to open the required port on your router. Note that this may not work with your router. If the Auto Port Forwarding feature does not work on your router, use the Auto Port Forwarding Wizard, located on the software CD, or manually forward the required ports on your router to your DVR's IP address.

To enable Auto Port Forwarding:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Network**.

- 2 Select the **Port** tab.



- 3 Under **Auto Port Forwarding**, select **On**.
- 4 Click **Save** to save changes. Click **Exit** to return to Live Viewing.

Enabling Email Notifications

The system can send email notifications when it detects motion, or when a sensor or audio event occurs. Email notifications can be sent using Lorex's email server (recommended), using a Gmail, Yahoo, or Hotmail account, or using a custom email server.

NOTE: You must enable events to receive email notifications. For details, see "Enabling Motion Detection/Motion Events" on page 33, "Enabling Sensor Events" on page 35, or "Enabling Audio Events" on page 35.

To enable email notifications:

- 1 From Live Viewing mode, right-click to enter the Main Menu. Click **Setup** then **Recording**.
- 2 Select the **Alarm** tab.



- 3 Under **Email**, select **On** for any channels you would like to enable Email alerts for. This means that email notifications will be sent when events (such as motion events) occur on those channels.
- 4 Click **Save**.
- 5 Click **Network** then select the **Email** tab.



- 6 Under **Email Enable**, select **On**.
- 7 Check **Still Image Attachment** to include a snapshot of the camera when the event occurs with email notifications.
- 8 Under **Relay SMTP**, select **Default** to use Lorex's email server (recommended); **Gmail**, **Yahoo**, **Hotmail**; or **Custom** to use a custom email server. Follow the instructions below based on your selection.

To use Lorex's email server (Default; recommended):

- 1 Configure the following:
 - **Sender Email:** Enter the sender email address. This can be any address of your choice.
 - **Receiver Email:** Enter up to 5 email addresses to receive email notifications. Check **Receiver Email** next to any receiver addresses you want to enable.
 - **Interval:** Enter the interval the DVR waits before sending a new email notification.

NOTE: The DVR will only send 1 email attachment per event, and the interval is only reset when the event ends.

- 2 Click **Save** to save your changes. Click **Exit** to return to Live Viewing.

To use a Gmail, Yahoo, or Hotmail account:

- 1 Configure the following:
 - **Sender Email:** Enter the sender email address. Note that you only enter the account name here, not the email domain. For example, if your email account is *tomsmith@gmail.com*, just enter *tomsmith*.
 - **Sender Password:** Enter the password for the sender email account.
 - **Receiver Email:** Enter up to 5 email addresses to receive email notifications. Check **Receiver Email** next to any receiver addresses you want to enable.

- **Interval:** Enter the interval the DVR waits before sending a new email notification.

NOTE: The DVR will only send 1 email attachment per event, and the interval is only reset when the event ends.

- 2 Click **Save** to save your changes. Click **Exit** to return to Live Viewing.

To use a custom email server:

- 1 Click **Relay SMTP** and select **Custom**. Enter the **server address** and click **Save & Exit** to confirm.
- 2 Under **SMTP Port**, enter the **server SMTP port number** and click **Save & Exit** to confirm.
- 3 Configure the following:
 - **Sender Email:** Enter the sender email address.
 - **Sender Password:** Enter the password for the sender email account.
 - **Receiver Email:** Enter up to 5 email addresses to receive email notifications. Check **Receiver Email** next to any receiver addresses you want to enable.
 - **Interval:** Enter the interval the DVR waits before sending a new email notification.

NOTE: The DVR will only send 1 email attachment per event, and the interval is only reset when the event ends.

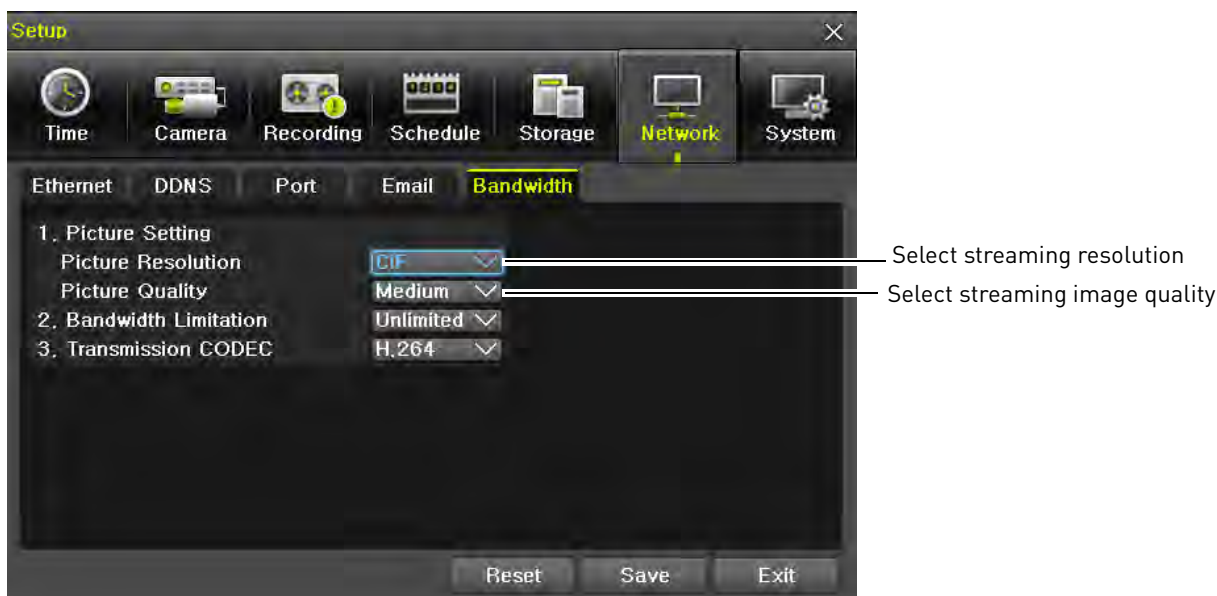
- 4 Click **Save** to save your changes. Click **Exit** to return to Live Viewing.

Configuring Bandwidth (Dual Streaming) Settings

Bandwidth settings allow you to configure the video streaming quality and bandwidth settings for connections over a local area network or the Internet.

To configure bandwidth settings:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Network**.
- 2 Select the **Bandwidth** tab.



- 3 Under **Picture Resolution**, select the resolution that will be used for streaming: **CIF** (lowest), **2CIF**, **4CIF**, or **720P** (highest).

NOTE: Increasing the resolution will increase the amount of upload bandwidth required. This may affect performance if you do not have sufficient bandwidth.

- 4 Under **Picture Quality**, select the image quality of the video stream: **Low**, **Medium**, or **High**.
- 5 Under **Bandwidth Limitation**, select **Unlimited** (recommended) or select the maximum transmission speed for the DVR.
- 6 Under **Transmission CODEC**, select **H.264** (recommended) or **JPG**.
- 7 Click **Save** to save changes. Click **Exit** to return to Live Viewing mode.

System

Perform firmware upgrades and reset DVR to factory default settings. Configure other system settings.

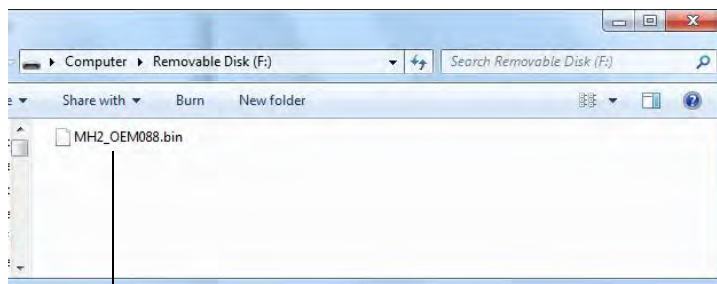
- To manage user accounts and passwords, see “Managing User Accounts and Passwords” on page 73.

Upgrading Firmware

Firmware upgrades can provide improved functionality to the DVR. When firmware upgrades become available, you can download them for free from www.lorextechnology.com

To upgrade the system firmware:

- 1 Format a USB thumb drive (not included) using the DVR. For details, see “Formatting a USB Thumb Drive” on page 44. Connect the USB thumb drive to your computer.
- 2 Download the free firmware upgrade from the product page for your DVR model at www.lorextechnology.com
- 3 Unzip the firmware (.bin) file and copy it to the USB thumb drive. Do not save it inside a folder.



Example of firmware file on USB thumb drive

- 4 Eject the USB thumb drive from your computer and connect it to the DVR.
- 5 From Live Viewing mode, right-click to access the Main Menu. Click **Setup** then **System**.

- 6 Next to Upgrade, click the **Firmware** button. A screen appears showing you information about the firmware.



- 7 Click the firmware under **File Name**. A confirmation screen appears. Click **Yes** to upgrade the firmware.



- 8 Wait for the firmware upgrade to complete. **Do not turn off your DVR or disconnect the power during the firmware upgrade.** The DVR will restart when the firmware upgrade is complete.

Resetting to Factory Default Settings

Resetting the DVR to factory default reverts any changes you have made the DVR settings. It does not affect any recordings saved on the system.

To reset the DVR to factory default settings:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **System**.



- Click **Reset** next to Factory Setup and click **Yes** to confirm. Wait for the DVR to revert to factory default settings.

Changing the System Language

- From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **System**.



- Under **Language**, select the desired language.
- Click **Save** to save your changes. The DVR menus update to the newly selected language.

Configuring the Menu Time Out Duration

Menus close automatically after the Menu Time Out duration if no actions are performed.

To configure the Menu Time Out duration:

- From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **System**.



- Under **Menu Time Out**, select the Menu Time Out duration.

NOTE: To create a custom Menu Time Out duration (between 1~60 minutes), click **Custom**. Then use the on-screen keyboard to select a time and click **Save & Exit**.

- Click **Save** to save your changes, and click **Exit** to return to Live Viewing mode.

Changing the DVR Name

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **System**.



- 2 Click **DVR Name**. Use the on-screen keyboard to create a DVR name and click **Save & Exit**.
- 3 Click **Save** to save your changes. Click **Exit** to return to Live Viewing mode.

Configuring Error Notifications

Error Notifications (such as the system buzzer or email alerts) can be configured for system errors. System errors include the following conditions:

- **HDD Full:** The hard drive becomes full and overwrite is not enabled, so the DVR can no longer record. Enable overwrite (see “Disabling/Enabling Overwrite” on page 42), replace the hard drive, or install an additional hard drive (see “Appendix J: Hard Drive Installation” on page 144).
- **Video Loss:** A camera has suffered video loss. This may occur if the camera loses power, the extension cable is cut, or the camera is disabled by a vandal.
- **Fan Failed:** The internal fan has failed. Contact Lorex Technical support.
- **Storage Failure:** A hard drive has failed. Replace the hard drive (see “Appendix J: Hard Drive Installation” on page 144).
- **Storage Warning:** The hard drive is about to fail. Replace the hard drive (see “Appendix J: Hard Drive Installation” on page 144). You can backup the data on the hard drive before replacing (see “Backup” on page 58).

To configure Error Notifications:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **System**.
- 2 Click **Error Notification Action** and click the following options to enable one or more actions that will occur when a system error occurs.

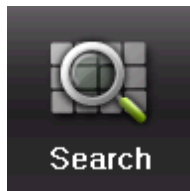


- **Buzzer:** The DVR buzzer is activated when system errors occur.
- **Email:** A notification email is sent when system errors occur. Email settings must be configured before email notifications can be sent. For details, see “Enabling Email Notifications” on page 48.
- **Relay:** Perform a Relay Out when system errors occur.
- **Popup Window:** Display a popup warning when system errors occur.



Error Notification Popup Window

- 3 Under **Error Notification Duration**, select **Latch** (actions will be performed until a button on the front panel is pushed) or select the duration of actions.
- 4 Click **Save** to save changes. Click **Exit** to return to Live Viewing mode.



Search

Search for recorded video on the DVR.

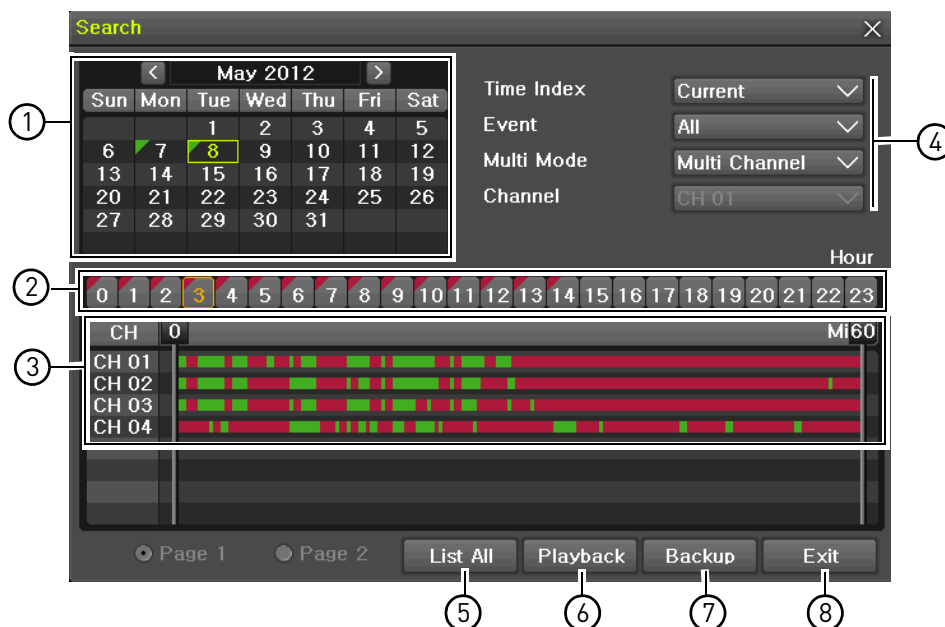


The Search Menu includes the following options:

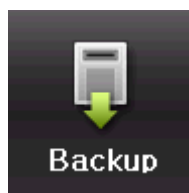
- **Calendar Search:** Select recorded video using an on-screen calendar.
- **Go To The Last:** Opens the most recently recorded video on the DVR for playback.
- **Go To The First:** Opens the earliest recorded video on the DVR for playback.
- **Go To The Last Play Time:** Opens the last time that was open in Playback mode.

Calendar Search

Calendar Search allows you to select recorded video based on the date and time.



- 1 Calendar:** Click the arrows to select a month. Double-click dates to select the date. Dates with recorded video have a green corner.
- 2 Hour:** Double-click hours to select them. Hours with continuously recorded video have a green corner. Hours where events occurred have colors based on the event type.
- 3 Recording Grid:** Left column shows channels, hours, or days based on the Multi Mode selected. Grid shows if video is available for minutes in the selected hour or hours.
 - Click inside the recording grid to change the playback time. Double-click to start playback.
- 4 Search Options:**
 - **Time Index:** Only applies if the time has been changed. When the time is changed, all videos saved up until the change occurs are saved in a folder according to an old time index. Click to select the Current time index or an old time index.
 - **Event:** Select an event type (**Motion**, **Sensor**, or **Audio**) to display on the grid, or select **All** to show all recordings on the grid.
 - **Multi-Mode:** Select the grid display mode. **Multi Channel** (default) shows video from multiple-channels in the grid. **Multi Time** shows video from the same channel from different hours in the grid.
 - **Channel:** Select the channel when **Multi Time** or **Multi Day** is selected.
- 5 List All:** Lists all videos saved on the DVR by hour.
- 6 Playback:** Start playback at the selected time, using the search options chosen.
- 7 Backup:** Opens the Backup window. See "Backup" on page 58.
- 8 Exit:** Close the Calendar Search window.



Backup

Backup video stored on the DVR or take a screenshot during Live Viewing or Playback to a USB thumb drive (not included), external hard drive (not included), or an internal secondary hard drive (not included). Backup DVR logs or configuration.

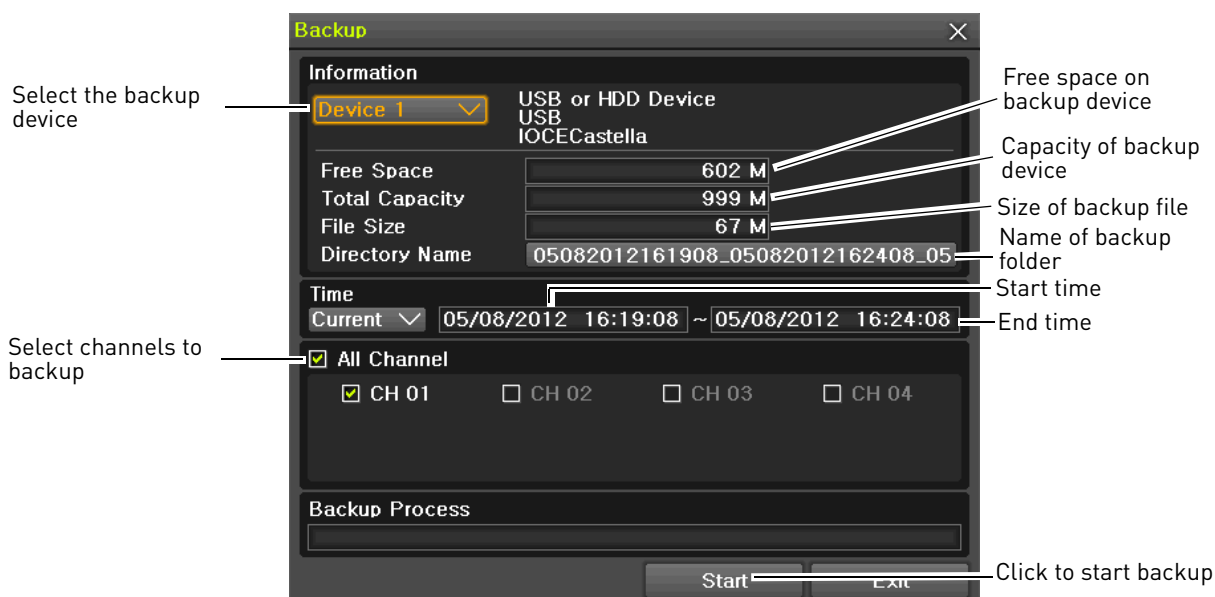
NOTE: You must format the hard drive or USB thumb drive as a Backup drive before you can create backups. For details, see “Formatting a USB Thumb Drive” on page 44 or see “Formatting a Hard Drive as a Backup Hard Drive” on page 43.



- **Backup:** Opens the Backup window to create video backups and set backup parameters.
- **Capture:** Create a screen capture (screenshot) of the display during Live Viewing or Backup. USB flash drive (not included) or backup hard drive (not included) must be connected.
- **Log Backup:** Create a backup of system logs.
- **Setup Backup:** Create a backup of DVR configuration.

Backup Window

The Backup window allows you to create video backups and set backup parameters.



To create a backup:

- 1 Ensure your backup USB thumb drive (not included) or hard drive (not included) is connected to the DVR and formatted as a backup drive.
- 2 Click the drop-down under **Information** and select the backup device. The fields below update with information about the selected device.
- 3 Under **Time**, double click in the fields to set the start time and the end time. Use the arrows to change the date and time as needed. The File Size field automatically updates to show the amount of disk space the backup will require.
- 4 Check **All Channel** to create a backup using every channel with recordings available for the selected time, or use the checkboxes to select the channels you would like to backup.
- 5 Click **Start** to create the backup and click **Yes** to confirm. Wait for the backup to complete.

Backup Files

The DVR saves backup video files in a proprietary format.

Backup files are saved on your USB thumb drive (not included) or backup hard drive (not included) in a folder for each backup created. There is a separate file included for each channel that backed up.

The name of the folder is the start time and end time of the backup created. For example, the backup folder *05082012163319_05082012163819_03* refers to the following start and end times:

- **Start Date (05082012163319):** May 8, 2012 4:33pm
- **End Date (05082012163819):** May 8, 2012 4:38pm

Playing Backup Files on PC

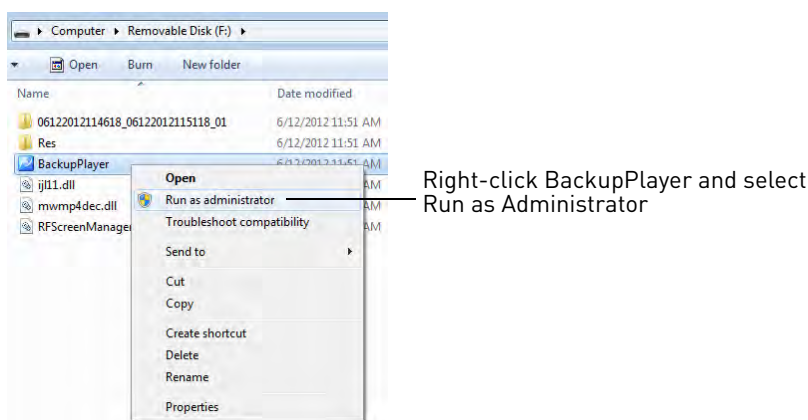
NOTE: For information on playing backup files on Mac, visit www.lorextechnology.com

When the backup USB thumb drive or external hard drive is formatted, a Backup Player software is saved to the main folder of the USB thumb drive or external hard drive.

NOTE: For formatting instructions, see “Formatting a Hard Drive as a Backup Hard Drive” on page 43 or see “Formatting a USB Thumb Drive” on page 44.

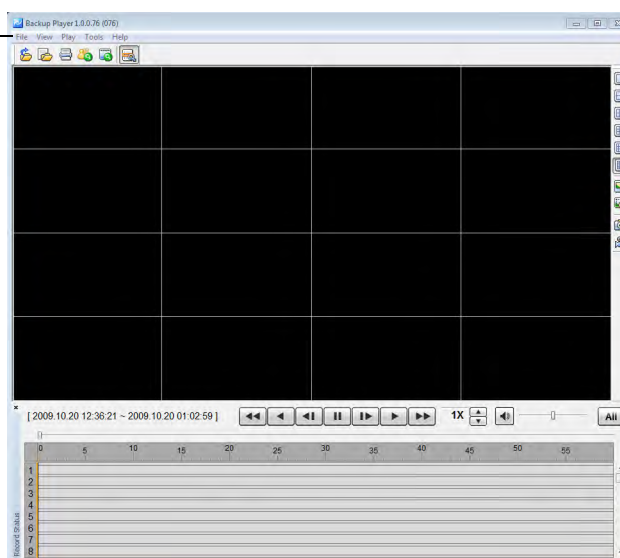
To access the Backup Player software:

- 1 Connect the USB thumb drive or external hard drive to your computer and open it in Windows Explorer.
- 2 Right-click **BackupPlayer** and select **Run as Administrator**. The Backup Player opens.



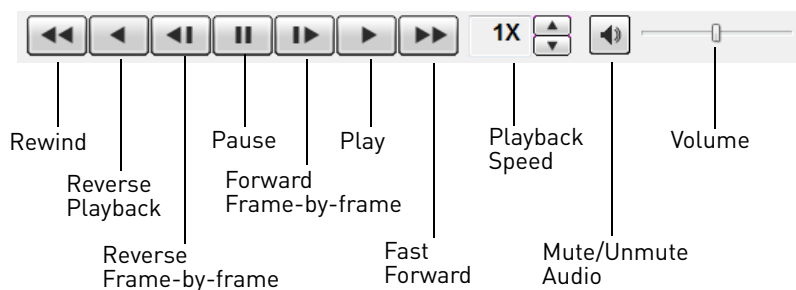
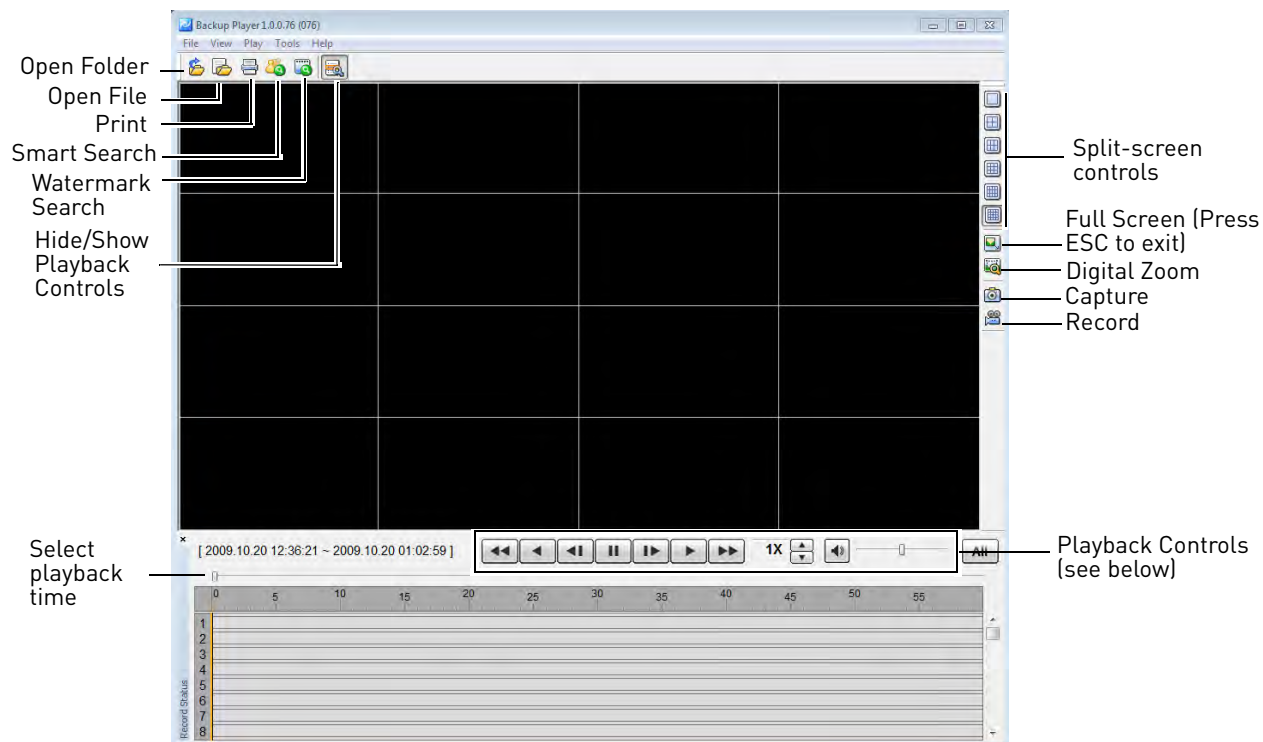
- 3 Click **File** and select **Open Folder** to open a backup file.

Click File and select Open Folder



- 4 Select the folder with the backup file and click **Ok**.
- 5 Click ► to begin playing.

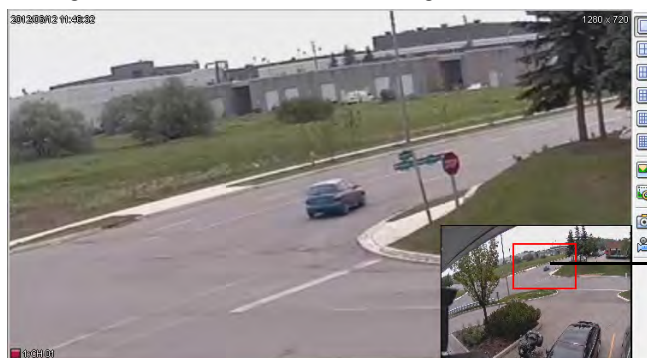
Backup Player Overview



Using Digital Zoom in BackupPlayer

- 1 Open a backup file or folder, click the desired video to select it, and click  to open the video in single-channel view.
- 2 Click  and select the desired zoom level to zoom in.

- 3 Click and drag inside the red box to change the zoom area.



Click and drag inside the box to change the zoom area

- 4 To exit digital zoom, click  and select **100%**.

Taking Screen Captures (Screenshots) in the Backup Player

- While watching a backed up video, click . Select a save location, enter a filename, and click **Save**.

Shortening Backup Video Files Using the Backup Player Record Function

You can use the Record function to create shorter recordings from your backed up video files.

To use the Record function:

- While watching a backed up video, click . Click  again to stop recording. A folder containing your shortened recording is saved to the folder where your back up folder is located. For example, if the backup video folder you have opened is located in *C:\Backup*, a new folder will be saved to *C:\Backup* containing the shortened recording.

Using Smart Search in the Backup Player

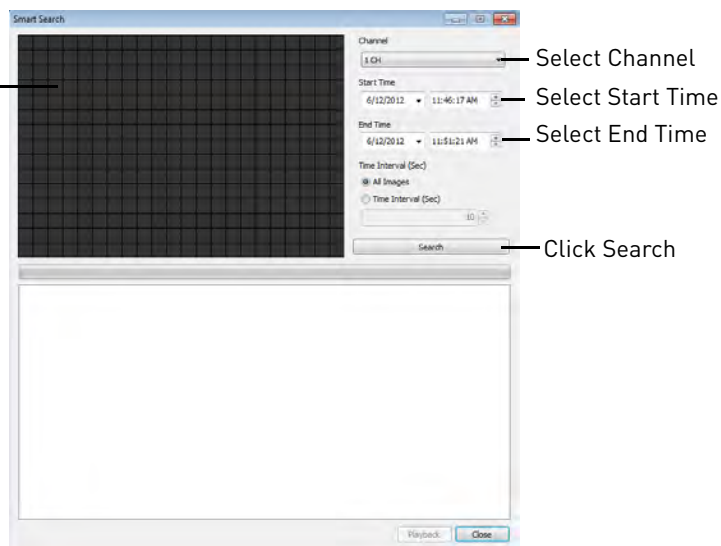
Smart Search in the Backup Player can be used to search specific areas of your backed up video for motion. This is useful if you know an event occurred in a specific area, but do not know the exact time.

To use Smart Search in the Backup Player:

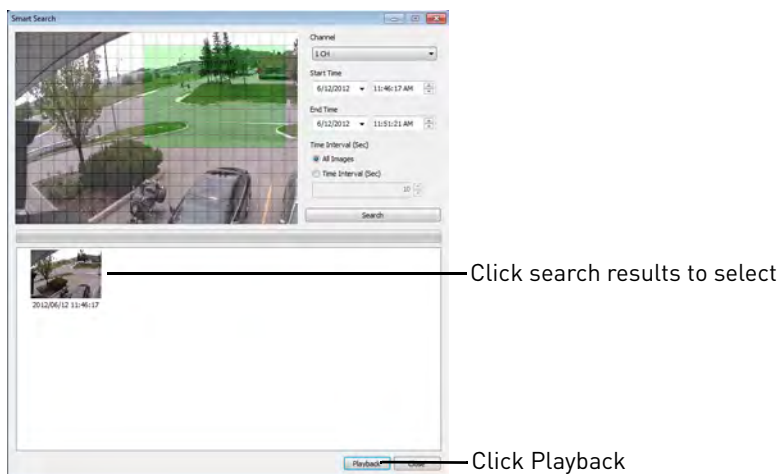
- 1 Open a backup folder or file.

- 2 Click  to open Smart Search.

Click and drag to select areas to search



- 3 Under **Channel**, select the channel you would like to search.
- 4 Under **Start Time** and **End Time**, select the starting and ending time for your search. Note that you cannot search times outside the scope of your backup video file.
- 5 Click and drag inside the grid to select areas to search for motion. Selected areas are shown in green.
- 6 Click **Search**. A thumbnail appears for each time Smart Search finds motion in the selected areas.



- 7 To playback video from one of the results. Click the result's thumbnail to select it and click **Playback**. Click ► to start playback.

Taking Screen Captures (Screenshots)

NOTE: Video footage is preferable to screen captures when submitting surveillance evidence to the police or in court.

You can save a screen capture (screenshot) of the display during Live Viewing or Playback to a backup hard drive or USB thumb drive. Screen captures are saved as .jpg files.

To take a screen capture:

- 1 Ensure your backup USB thumb drive (not included) or hard drive (not included) is connected to the DVR and formatted as a backup drive.
- 2 In Live Viewing or Playback mode, right-click on the screen to select **Backup** then click **Capture**. A screen appears asking you to select the backup device.



Click your backup device

- 3 Click your backup device to save the screen capture.

Using Screen Captures

Once you have taken screenshots, connect the USB flash drive (not included) or backup hard drive (not included) to a computer to view, print, or archive the images.

To use screenshots (Windows):

- 1 Connect the USB flash drive (not included) or backup hard drive (not included) to your computer. In the AutoPlay window, select **Open folder to view files**.



Open folder to view files

NOTE: If AutoPlay does not start, search your computer for a Removable Disk or Local Disk.

- 2 Screen captures are saved onto the main folder of the USB flash drive or backup hard drive. Perform one of the following:

- **View:** Double-click the screenshot to view it in an image viewing or editing program, such as Windows Picture Viewer or Adobe® Photoshop™
- **Archive:** Copy the images to a folder on your computer
- **Print:** Right-click the image and select **Print** to print it directly from Windows Explorer, or print the screenshot from an image viewing or editing program.

To use screenshots (Mac OS):

- 1 Connect the USB flash drive (not included) or backup hard drive (not included) to your computer. It will appear on your Desktop.

NOTE: If the drive does not appear, open Finder and locate the USB flash drive or backup hard drive under Devices.

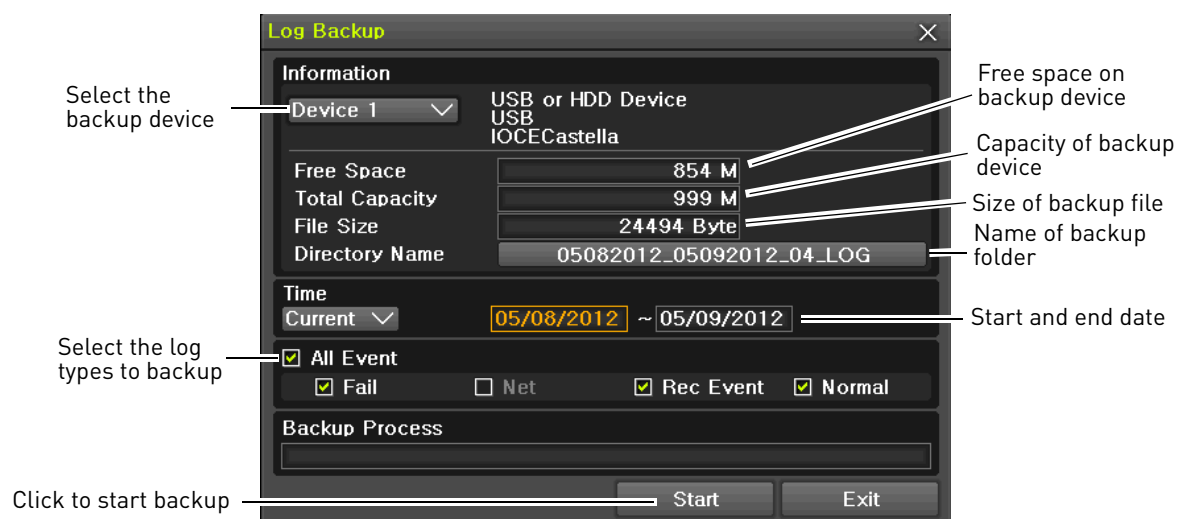
- 2 Double-click the USB flash drive. Screen captures are saved to the main folder of the USB flash drive or backup hard drive.
- 3 Perform one of the following:
 - **View:** Double-click the screenshot to view it in an image viewing or editing program, such as Preview or Adobe® Photoshop™
 - **Archive:** Copy the images to a folder on your computer.
 - **Print:** Print the screenshot from an image viewing or editing program.

Log Backup

You can create a backup of system logs. Logs are saved as a text file on a folder ending in LOG on the USB thumb drive (not included) or backup hard drive (not included).

To create a log backup:

- 1 Ensure your backup USB thumb drive (not included) or hard drive (not included) is connected to the DVR and formatted as a backup drive.
- 2 From Live Viewing mode, right-click to access the Main Menu. Click **Backup** then **Log Backup**. The Log Backup window opens.



- 3 In the field under **Information**, click and select the backup device.
- 4 Under **Time**, set the start date and end date to back up logs from.
- 5 Check **All Event** to backup all available system logs. Check or uncheck the log types to select or deselect logs of that type.
- 6 Click **Start** to begin the backup. Click **Ok** to confirm.

Setup Backup

You can backup your DVR settings and restore them at a later date.

Backing up your DVR Settings

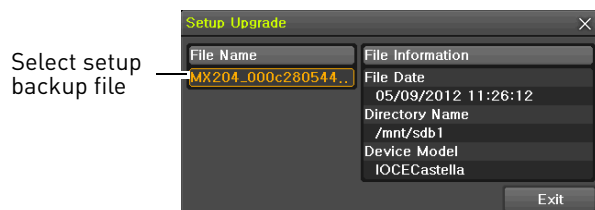
- 1 Ensure your backup USB thumb drive (not included) or hard drive (not included) is connected to the DVR and formatted as a backup drive.
- 2 From Live Viewing mode, right-click to enter the Main Menu. Click **Backup** then **Setup Backup**.
- 3 Click the name of the backup device. Wait for the backup to be completed.

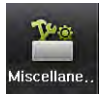
Restoring DVR Settings from a Backup File

- 1 Connect a USB thumb drive (not included) or backup hard drive (not included) with the saved backup to the DVR.
- 2 From Live Viewing mode, right-click to enter the Main Menu. Click **Setup** then **System**.
- 3 Under **Upgrade**, click **Setup**.



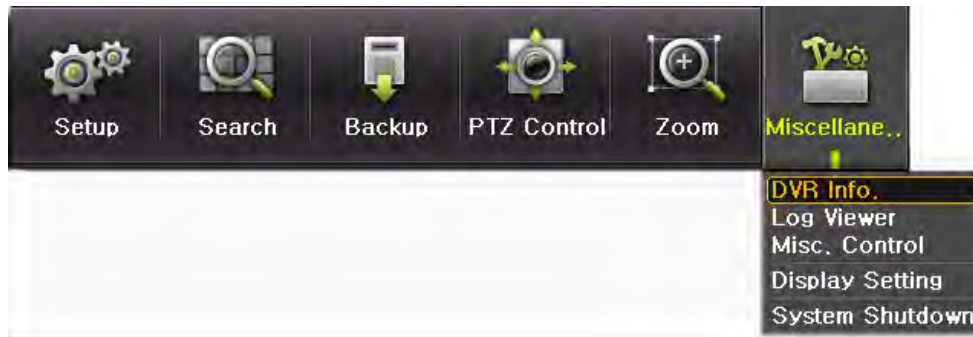
- 4 Click the setup backup file you want to load.





Miscellaneous

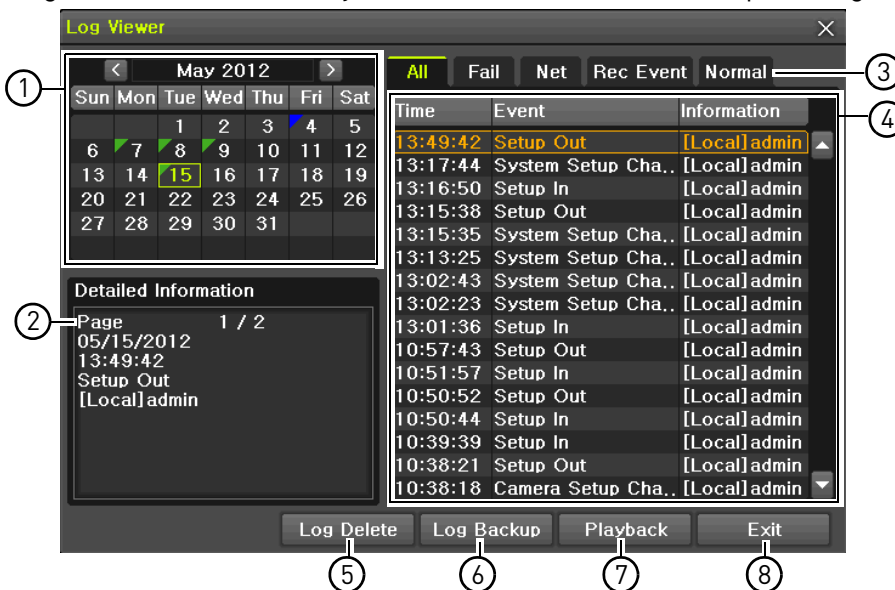
Access System Information window, Log Viewer, and miscellaneous controls. Configure interface settings. Shutdown the DVR.



- 1 **DVR Info:** Opens the System Information window.
- 2 **Log Viewer:** Opens the Log Viewer, where you can view system logs.
- 3 **Misc. Control:** Select and mute audio channel. Access Relay Controls.
- 4 **Display Setting:** Customize the on-screen display. Enable screen saver and change sequence dwell time.
- 5 **System Shutdown:** Shuts down the DVR. Requires admin password (default: **00000**).

Log Viewer

The Log Viewer allows you to view and backup system logs. System logs are saved for recording, network, and other system events, such as the DVR powering off.



- 1 **Calendar:** Double-click on a date to view logs from that date. Use the arrows to select different months.
- 2 **Detailed Information:** Displays information for the log record selected.
- 3 **Log Tabs:** Filter logs by type:
 - **All:** Show all logs.
 - **Fail:** Show logs for failure events, such as a failed backup or loss of video on a connected channel.
 - **Net:** Show network logs.
 - **Rec Event:** Show logs for recording events.
 - **Normal:** Show logs for normal events on the system, such as user actions.
- 4 **Logs:** Shows logs from the selected day.
- 5 **Log Delete:** No function.
- 6 **Log Backup:** Opens the Log Backup window. For details, see “Log Backup” on page 65.
- 7 **Playback:** Playback video at the time of the selected log.
- 8 **Exit:** Exit the Log Viewer and return to Live Viewing mode.

Misc. Control

Select and mute audio channel. Access Relay Controls.

Selecting/Muting the Audio Channel

The audio channel selected determines which channel the DVR will play audio from in Live Viewing mode.

To select or mute the audio channel:

- 1 In Live Viewing mode, right-click to open the Main Menu. Click **Miscellaneous** then **Misc. Control**.
- 2 Select the **Audio** tab.



- 3 Click the channel you would like the DVR to play audio from. The selected channel appears with an  icon.
 - To mute audio, click the **Mute** checkbox. The audio icon changes to  when audio is muted.
- 4 Click **Exit** to return to Live Viewing mode.

Using Relay Controls

Relay Controls allow you to send a release signal to an external alarm device (not included) such as a door lock controller.

To use Relay Controls:

- 1 In Live Viewing mode, right-click to open the Main Menu. Click **Miscellaneous** then **Misc. Control**.
- 2 Select the **Relay** tab.
- 3 Check the number of the Relay you want to release.
- 4 Click **Release** to release.

Display Setting

The Display Setting menu allows you to customize the look and feel of the on-screen display, enable a screensaver or change settings for Sequence mode.



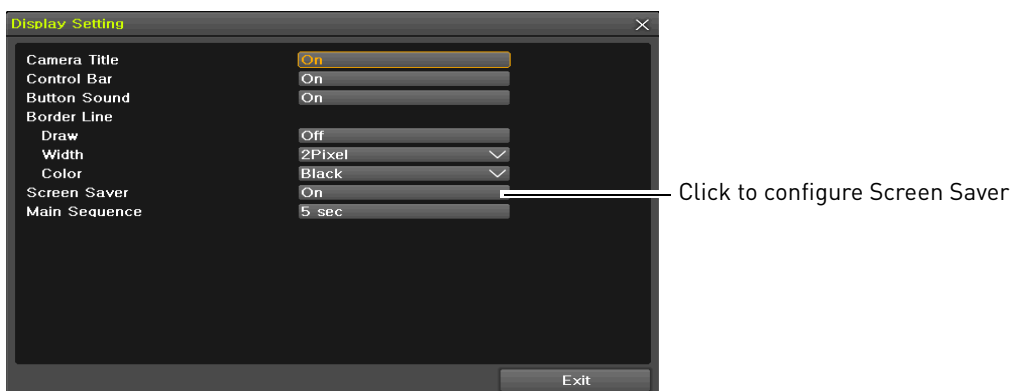
- **Camera Title:** Click to select **On** to show camera titles or **Off** to hide camera titles. Hiding camera titles also hides the recording icons.
- **Control Bar:** Click to select **On** to always show the control toolbar during Live Viewing and Playback mode. Select **Off** to hide the control toolbar. When the control toolbar is hidden, move the mouse to the bottom of the screen to access the control toolbar.
- **Button Sound:** Click to select **On** to enable the DVR to beep when the front panel buttons are pressed or select **Off** to disable the beep when front panel buttons are pressed.
- **Border Line:** Configure borders around the camera channels.
 - **Draw:** Click to select **On** to enable borders or **Off** to disable borders.
 - **Width:** Select a **2Pixel** or **4Pixel** border width.
 - **Color:** Select the border color.

Configuring the Screen Saver

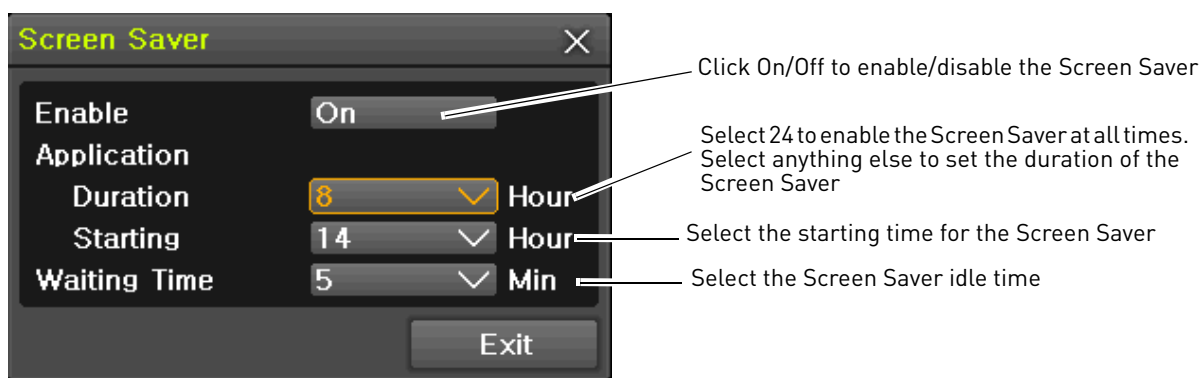
The Screen Saver will turn off the screen automatically at certain times during the day or when the system is idle. When the Screen Saver is activated, move the mouse or press one of the front panel buttons to turn the screen back on.

To configure the screensaver:

- 1 From Live Viewing mode, right-click to access the Main Menu. Click **Miscellaneous** then **Display Setting**.
- 2 Click the button next to **Screen Saver** to open the Screen Saver Menu.



- 3 Under **Enable** click to select **On** to enable the Screen Saver or **Off** to disable.



Example: Screen Saver starting at 14:00 (2:00PM), ending 8 hours later at 22:00 (10PM).

- 4 Under **Duration**, select **24** to enable the Screen Saver at all times or select the duration the Screen Saver will be active for.
 - If Duration is lower than 24, under **Starting**, select the time you would like the Screen Saver to start each day.
- 5 Under **Waiting Time**, select the idle time the DVR will wait before activating the Screen Saver.

NOTE: If the Duration is set to 24, the DVR will wait for the Waiting Time before activating the Screen Saver. If the Duration is lower than 24, the Waiting Time applies when the screen is activated during the hours the Screen Saver is on.
- 6 Click **Exit** to return to the Display Setting Menu. Click **Exit** again to return to Live Viewing mode.

Changing the Sequence View Settings

Configure the Sequence Dwell Time and order of channels when Sequence view is enabled through the Main Sequence menu. When activated, Sequence view automatically switches

between channels every few seconds.

To enter/exit Sequence view:

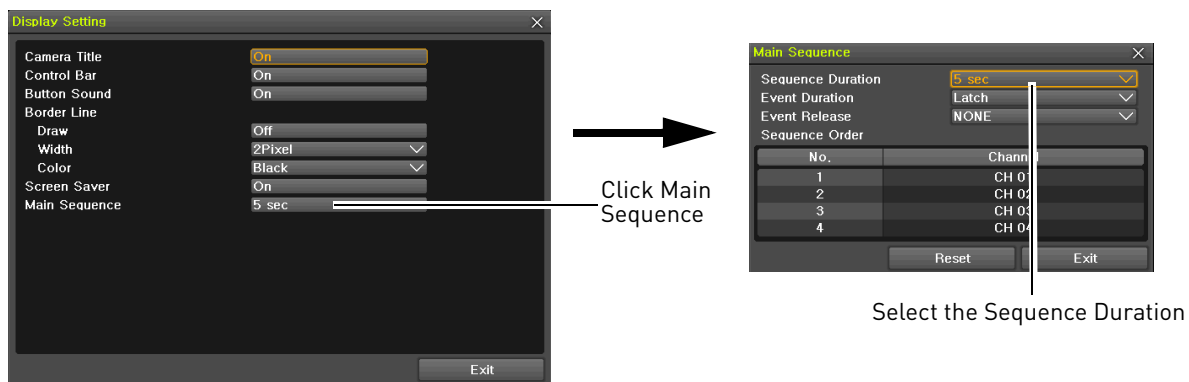
- When in Full-screen view, click  to begin Sequence view. In Sequence view, the DVR switches channels every few seconds. If the DVR is in Split-screen view, click  then  to start Sequence view.
- Click  again to exit Sequence view.

Changing the Sequence Duration (Dwell Time)

The Sequence Duration determines the amount of time channels are shown before switching when the DVR is in Sequence view.

To change the Sequence Duration:

- 1 From the Main Viewing mode, right-click to access the Main Menu. Click **Miscellaneous** then **Display Setting**.
- 2 Click next to **Main Sequence** to open the Main Sequence menu.



- 3 Under **Sequence Duration**, select the number of seconds that channels will be shown before switching.
- 4 Click **Exit** then click **Exit** again to return to Live Viewing mode.

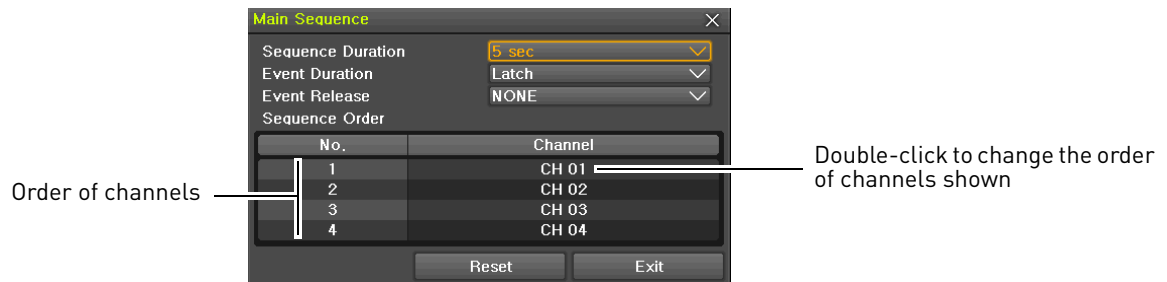
Changing the Sequence Order

The Sequence Order determines the order of channels that appear during Sequence view. You can choose a Sequence Order that repeats or hides certain channels.

To change the Sequence Order:

- 1 From the Main Viewing mode, right-click to access the Main Menu. Click **Miscellaneous** then **Display Setting**.

- 2 Click next to **Main Sequence** to open the Main Sequence Menu.



- 3 Double-click under **Channel** to change the channel that is shown in that place in the Sequence Order and select the desired channel.
- 4 Click **Exit** then click **Exit** again to return to Live Viewing mode.

Managing User Accounts and Passwords

ATTENTION: By default, the system user name is **admin** and the password is **00000**. Passwords are disabled by default and are not required to access the Main Menu. However, a password is required to connect to the DVR using a smartphone or tablet.

User accounts and passwords are managed using the Setup Menu under System. The system supports the following user account types:

- **Admin:** System administrator account with full access to all system functions. You may only have 1 administrator account.
- **User:** User accounts have limited access to system functions. You may have up to 14 user accounts.

Enabling Passwords

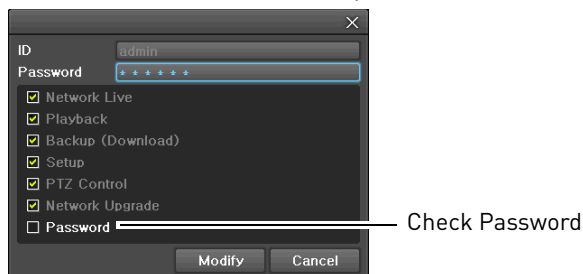
Passwords are disabled by default and are not required to access system functions. If passwords are enabled, the DVR will ask users to login when accessing menus or Playback mode, and a password will be required for the admin account to login.

To enable passwords:

- 1 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **System**.
- 2 Click **Modify** next to Users and select **admin**.



- 3 Check **Password** to enable passwords.



- 4 Click **Modify**. Click **Save**. Then click **Exit** to return to Live Viewing mode.

Managing User Accounts

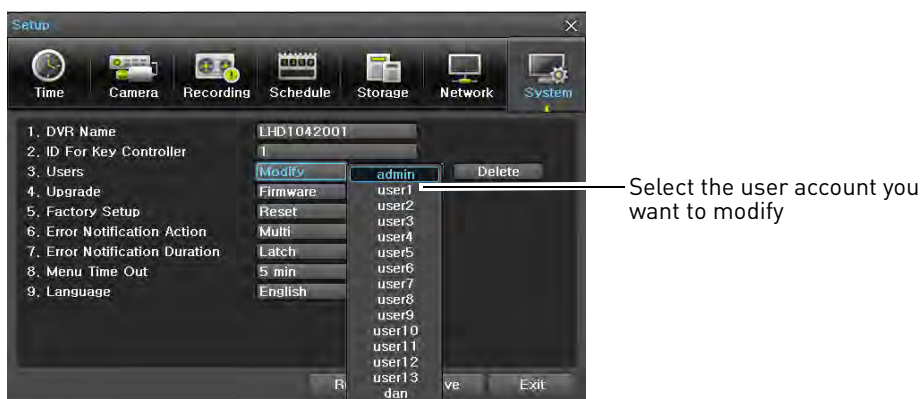
You can allow multiple users to log in to the system. When adding different users, you can assign what menus they have access to. For example, you may want your friend to monitor your system while you are away, while not giving full access to your system.

Modifying User Accounts and Privileges

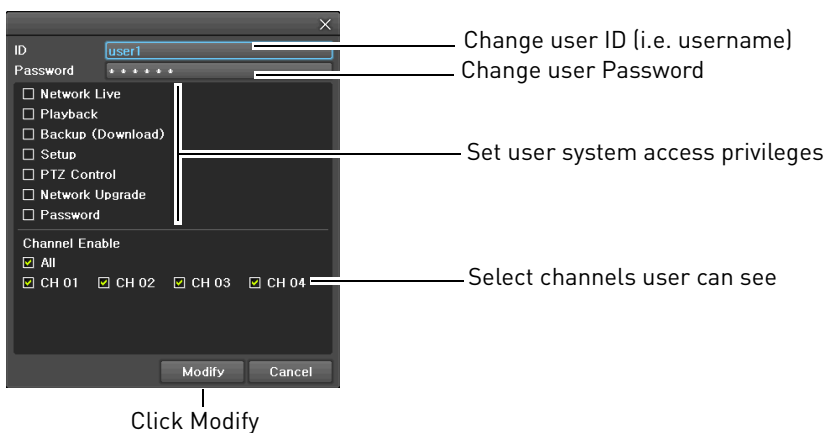
You must modify existing user accounts to activate them on the system. Only the admin can modify user account IDs and privileges. Users can change their password.

To modify an existing user account:

- 1 From Live Viewing mode, right-click to access the Main Menu. Click **Setup** then **System**.
- 2 Click **Modify** next to users and select the user account you want to modify.



- 3 Click **ID** and use the on-screen keyboard to change the account ID (i.e. username). Click **Save & Exit** when finished.



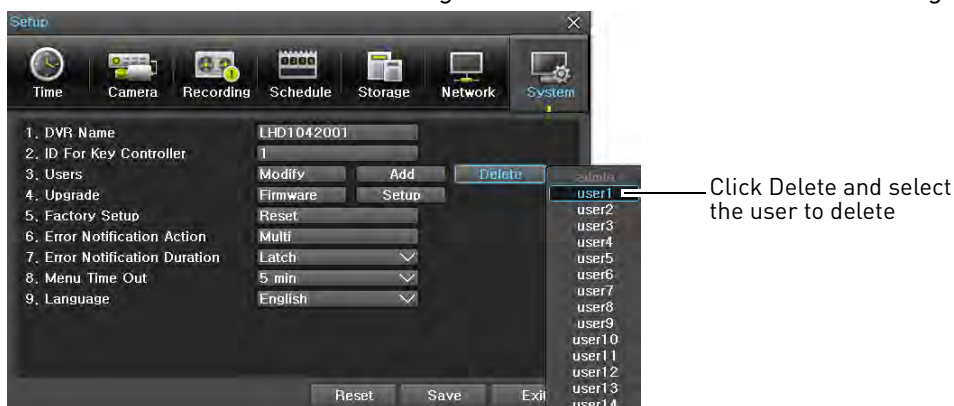
- 4 Click **Password** and use the on-screen keyboard to change the account password. Click **Save & Exit** when finished.
- 5 Click the checkboxes to select which system functions the user can access.
 - **Network Live:** Access live video through a remote connection over the Internet or a local area network (LAN).
 - **Playback:** Access Playback mode.
 - **Backup (Download):** Access Backup functions.

- **Setup:** Access the Setup menu.
- **PTZ Control:** Access PTZ camera controls. PTZ camera (not included) required.
- **Network Upgrade:** Upgrade the system firmware over a remote connection.
- **Password:** Check to require a password to login to this user account.
- **Channel Enable:** Check which channels are visible to this user or click **All** to allow the user to view all channels. If a channel is disabled for any user accounts, it will be hidden until a user with permission to view it logs in.

- 6 Click **Modify** to save changes and click **Save** to return to save your changes.

Deleting Users

- 1 From Live Viewing mode, right-click to access the Main Menu. Click **Setup** then **System**.
- 2 Click **Delete** next to Users and select the user account you want to delete. Click **Yes** to confirm. Click **Save** to save changes. Click **Exit** to return to Live Viewing.

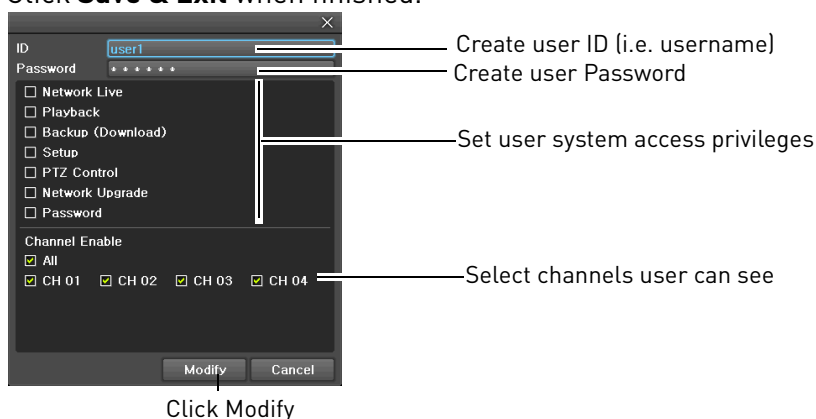


Adding Users

You can only add users if you have deleted one of the existing user accounts.

To add a user account:

- 1 From Live Viewing mode, right-click to access the Main Menu. Click **Setup** then **System**.
- 2 Click **Add** next to Users.
- 3 Click **ID**, and use the on-screen keyboard to create an ID (i.e. username) for the user account. Click **Save & Exit** when finished.



- 4 Click **Password**, and use the on-screen keyboard to create a password for the user account. Click **Save & Exit** when finished. Below, check **Password** to require a password for this user account to login.
- 5 Click the checkboxes to select which system functions the user can access. See above for details.
- 6 Click **Add** to create the user account. Click **Save** to save changes. Click **Exit** to return to Live Viewing.

Setting up your DVR for Remote Connectivity

The system features a built-in browser-based software that allows you to access your system remotely over your local area network (LAN) or over the Internet using Internet Explorer® (PC). A Client Software for PC is also available. Follow the steps below to configure your system for remote connection.

NOTE: For Mac remote connectivity, visit www.lorextechnology.com for details.

System Requirements

Prior to using the Web Client or Client Software, make sure your system meets or exceeds the following system requirements:

Description	Minimum Requirements	Recommended
CPU	Intel Core2 Duo® 2.0GHz	Intel Core2 Quad® 2.66GHz or above
Memory	2 GB RAM	4 GB RAM and above
Video	128 MB of video memory	512 MB of video memory and above
Operating System*	Windows XP SP2 or above (Direct X 9.0 and above) Windows Vista/7 (Direct X 9.0 and above) Mac OSX 10.7 and above (Intel processors only)	
Network (WAN)	384 Kbps upstream High-speed Internet service is recommended to remotely connect to your DVR.	
Network (LAN)	10/100 BaseT Network	
Hard Drive Space	at least 1 GB of free hard drive space	

NOTE: When connecting remotely, Live Viewing resolution is limited to CIF (352 x 240) to conserve bandwidth. Playback resolution is equal to your high definition recording resolution. Because of this, playback may perform slowly over the Internet due to bandwidth constraints.

NOTE: If a user connects to the system remotely, there may be slow performance when accessing the system locally. This is normal, and not a malfunction.

* For the latest compatibility list, check www.lorextechnology.com, as new software versions are released to the market.

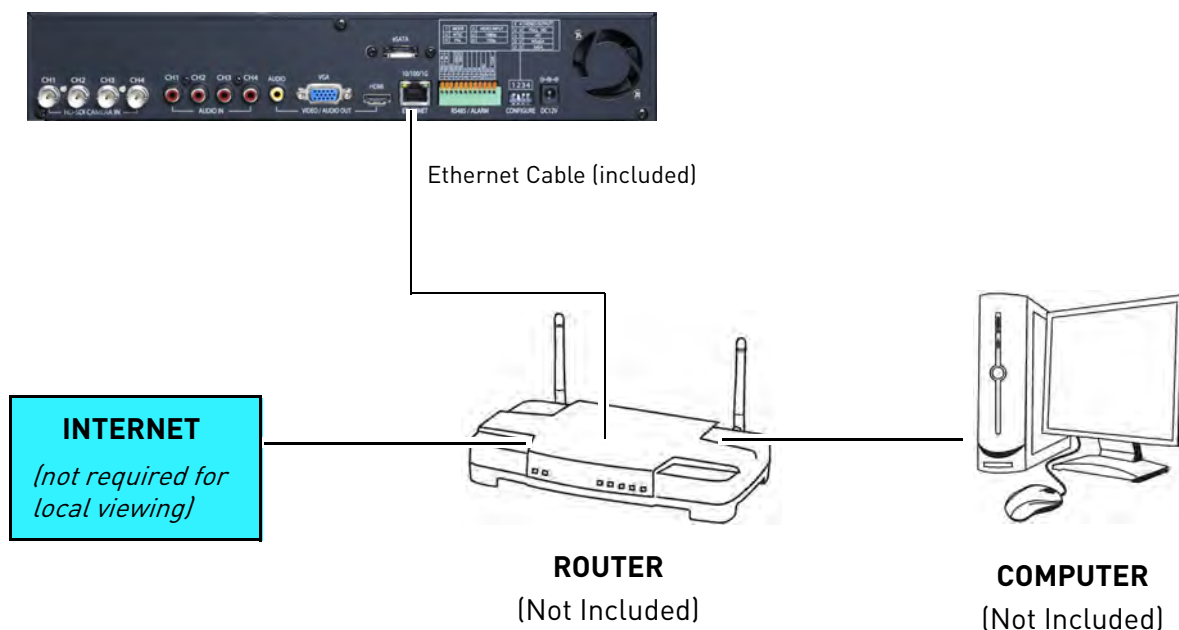
Accessing your DVR Within a Local Network (LAN)

You can connect to your DVR through Internet Explorer through the local area network (LAN). It is recommended to confirm connectivity over a local network before setting up your DVR for Internet connectivity.

NOTE: To complete the steps below, your computer must be on the same network as your DVR.

Step 1 of 3: Connect your DVR to the Local Area Network

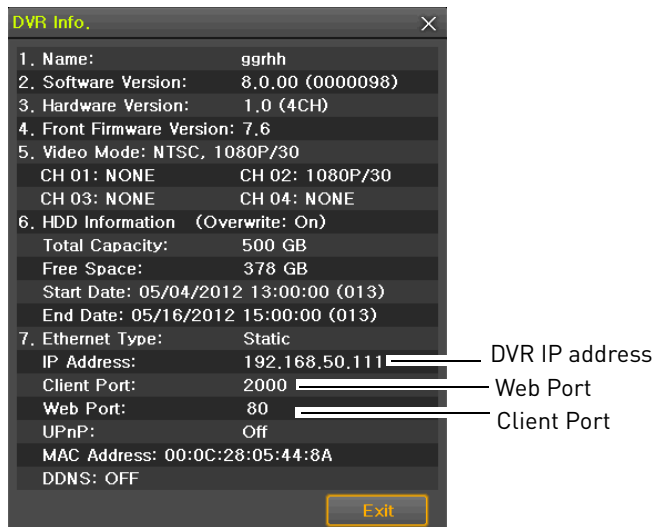
- 1 Power off your DVR by disconnecting the power cable.
- 2 Connect an Ethernet cable (included) to the **ETHERNET** port on the rear panel of the DVR. Connect the other end of the Ethernet cable to an empty LAN port (usually numbered 1~4) on your router.
- 3 Reconnect the power cable to power the DVR back on.



Step 2 of 3: Obtain the DVR's Local IP Address and Ports

- 1 Press the ◀ button on the front panel of the DVR to open the System Information window.

2 Write down the **IP Address**, **Web Port**, and **Client Port** number of the DVR.



- A local IP looks something like this: *192.168.50.219*.
- Write down the port number beside **Web Port** and **Client Port**.

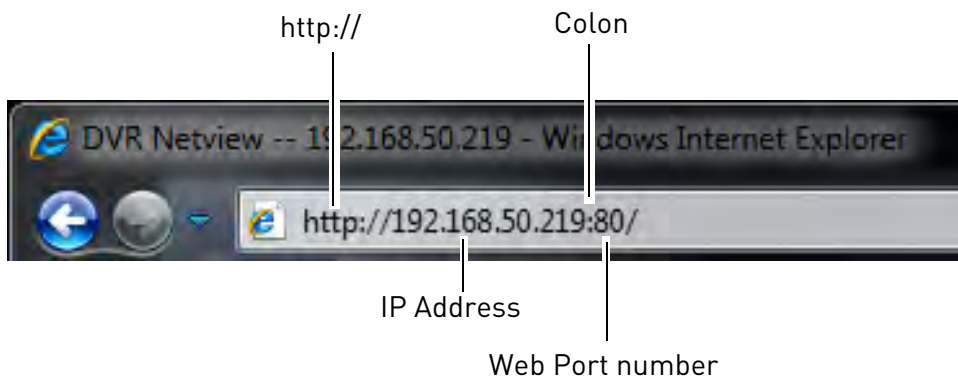
Step 3 of 3: Enter the DVR's Local IP Address into Internet Explorer

Follow the steps below to confirm connectivity over a local network on a PC.

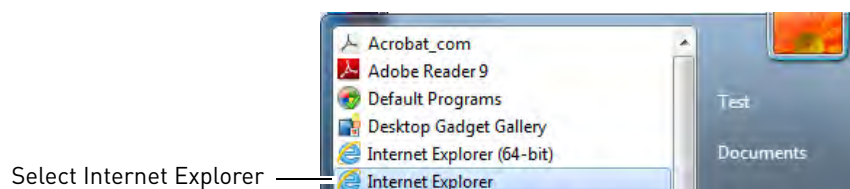
To connect using the DVR's local IP address on a PC:

- 1 Open Internet Explorer and enter **http://**, the **DVR's IP address**, followed by **colon (:)** and the **Web Port** into the address bar [e.g. *http://192.168.50.219:80*].

Example (Connecting to a local IP address using Internet Explorer)



NOTE: Make sure you do not select the 64-bit version of Internet Explorer.



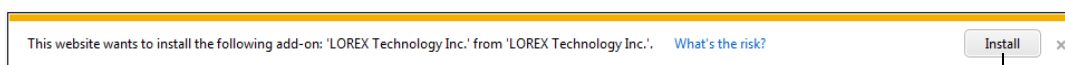
- An attention bar prompts you to install ActiveX® plug-ins. You must install the ActiveX® plug-in to connect to your DVR. Click inside the attention bar, and select **Install this Add-on for All Users on This Computer** and follow the prompts to install the plug-in.



Click inside the attention bar

Select Install this Add-on for All Users on This Computer

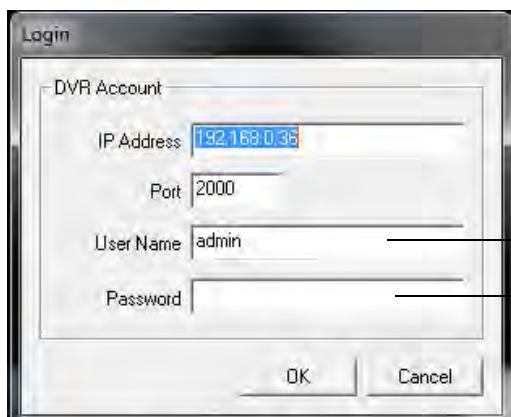
- If you are connecting using Internet Explorer 9, the attention bar appears on the bottom of the screen. Click **Install** and follow the prompts to install the plug-in.



Attention Bar in Internet Explorer 9

Click Install

- The DVR login screen appears. Enter the DVR's user name and password and click **OK** to login. By default the user name is **admin** and the password is **left blank**. Internet Explorer connects to your DVR and streams live video from your cameras.



Default User Name and Password:

admin

left blank

NOTE: If your Client Port is anything other than 3000, you must enter it under Port.

NOTE: If you have entered the password incorrectly, click **Connect** to return to the login screen.



If you enter your password incorrectly, Click Connect to return to Login screen

Accessing your DVR Remotely over the Internet

Setting up remote connectivity allows you to view your DVR from any computer with Internet access, and your mobile device.

To set up remote connectivity with your DVR, you must:

- 1 Port forward the Web and Client ports (default: **80, 3000**) on your router.
- 2 Create a DDNS account.
- 3 Enable DDNS on the DVR.
- 4 Test the remote connection by entering your DDNS address in a web browser.

Step 1 of 4: Port Forwarding

You **must** port forward the Web and Client ports (default: **80, 3000**) on your router before you can remotely connect to your system. There are several methods to port forward your router:

- Use the **Lorex Auto Port Forwarding Wizard** (PC only) to port forward the required ports (see CD for details). For instructions on how to use the Auto Port Forwarding Wizard, see “Appendix E: Internet Setup Wizard (PC only)” on page 127.
- Manually port forward the required ports on your router to your DVR’s IP address by following your router manufacturer’s instructions. For more information on port forwarding, see “Appendix D: What is Port Forwarding And Other Frequently Asked Networking Questions” on page 124.

NOTE: If the above ports are not forwarded on your router, you will not be able to access your system remotely.

NOTE: Certain ISPs (Internet Service Providers) block port 80. If you are unable to connect, check with your ISP and change the Web port (see “Changing the Web and Client Ports” on page 47). Make sure to port forward your revised web port.

Step 2 of 4: Create a DDNS Account

Lorex offers a free DDNS service for use with your system. A DDNS account allows you to set up a web site address that points back to your local network. This allows you to connect to your system remotely. **You must create a DDNS account in the same network as your DVR.**

To setup your free Lorex DDNS account:

- 1 In your browser, go to <http://www.lorexddns.net> and click **Step 1**.

Lorex DDNS - Remote Viewing Setup

A Lorex DDNS account allows you to connect to your Lorex system from anywhere in the world using an easy-to-remember web site address that is available 24/7. This is perfect whether you have a Static or Dynamic IP address - no matter how often your Internet Service Provider changes your IP address, Lorex's exclusive DDNS service will keep you connected to the things that matter to you most.

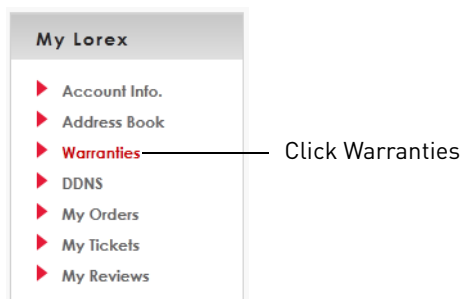
To set up Lorex DDNS:



- The My Lorex account login screen opens (if you are already logged in, skip to step 4). Create a new account or log into an existing account. To create a new account, fill in the required fields on the right and click **Create Account**.

The screenshot displays two side-by-side panels. The left panel, titled 'Log in to your Account', contains fields for 'Email Address *' and 'Password *', a 'Password Reset' link, a list of 'Benefits of a Lorex account' (Easy and quick checkout, Products and support information tailored to you, Enhanced Online Support for products, Free Technical Support, Full One Year Warranty, Online ticketing system), a 'Remember me' checkbox, and a red 'Log In' button. The right panel, titled 'Create an Account', contains fields for 'First Name *', 'Last Name *', 'Email / Log in *', 'Password *', and 'Confirm Password *', a checkbox for receiving information from Lorex Technologies, and a red 'Create Account' button. Annotations with arrows point to the 'Email / Log in' field and the 'Create Account' button, with the text 'Enter your account Information and click Create Account' and 'Click Create Account' respectively.

- Click **Warranties** to register your product for warranty.



NOTE: Warranty registration is required to register for DDNS.

- The Warranty page opens. Click **Activate Warranty** to register your product for warranty.

- 5 Under Your Address, select an address or click **Enter a New Address** to create a new address. Fill in your address information and click **Create Address**.

Activate Warranty

Thank you for your recent purchase. Please take a moment to activate your 1 year warranty. This information will be used for verification when you call or email Lorex support.

Your Address* * Required information
 Select Your Address Enter a new address

Product Model Number*

Serial Number

Date of Purchase*

Place of Purchase*
 Lorex Web Store

☐ Yes, I would like to receive information from Lorex Technologies on products, services and special offers that may be of interest to me.

[Cancel](#) **Save Warranty**

Add an address * Required information

First Name *
 Tom

Last Name *
 Smith

Address (Line 1) *
 123 Your Street

Address (Line 2)

City *
 Your City

Country *
 United States

State (Province) *
 Maryland

ZIP (Postal Code) *
 12345

Phone Number *
 555-555-5555

Fax Number

[Cancel](#) **Create Address**

Enter your address information

Click Create Address

- 6 Fill in the warranty registration form with your product and purchase details. Check the sticker underneath your DVR for the Product Model Number and Serial Number. Click **Save Warranty**.

Activate Warranty

Thank you for your recent purchase. Please take a moment to activate your 1 year warranty. This information will be used for verification when you call or email Lorex support.

Your Address* * Required information
 123 Your Street Enter a new address

Product Model Number*
 LH338501

Serial Number
 DK01101201029

Date of Purchase*
 04/21/2012

Place of Purchase*
 Lorex Web Store

☐ Yes, I would like to receive information from Lorex Technologies on products, services and special offers that may be of interest to me.

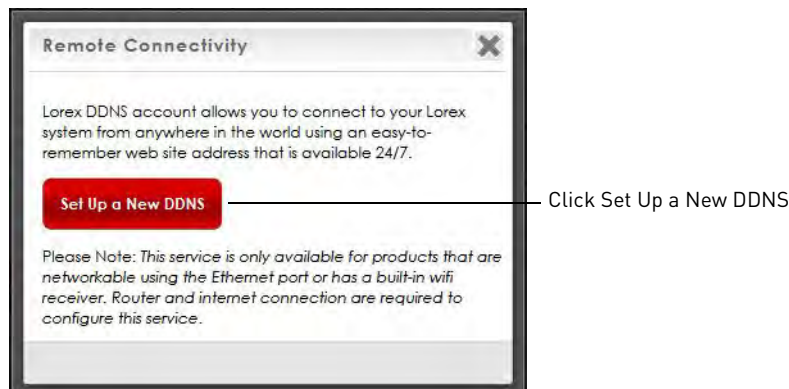
[Cancel](#) **Save Warranty**

Select your address or enter a new address

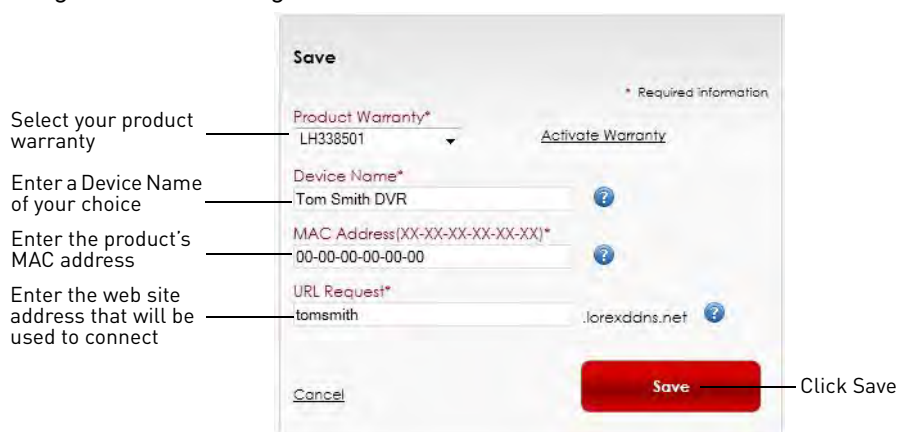
Enter your product and purchase details

Click Save Warranty

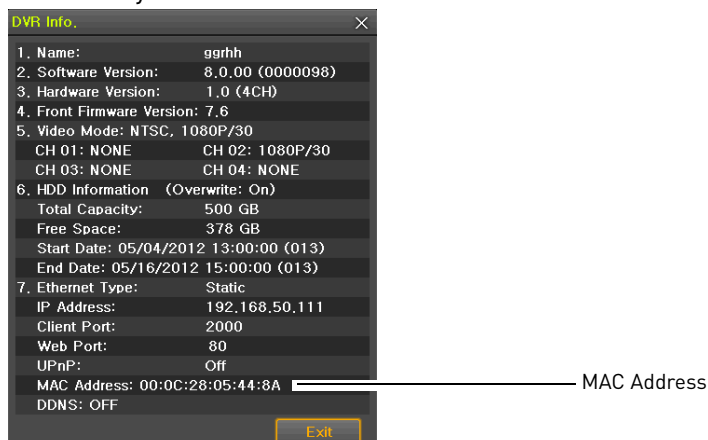
- 7 A page pops up to prompt you to register your product for Lorex DDNS. Click **Set Up a New DDNS**.



- 8 Configure the following:



- **Product Warranty:** Select the product warranty you created in the previous steps.
- **Device Name:** Enter a name for your device. You can enter your name, business name, or anything of your choice. This is used to identify this device in your list of activated DDNS accounts that appears anytime you visit the DDNS page.
- **MAC Address:** Enter the MAC address of your Lorex product. Press the ◀ button on the front panel to find your MAC address. A MAC address is a permanent, unique 12-digit address used to identify a device on a network.



- **URL Request:** Enter the web site address that will be used to connect to your Lorex product. For example, if you enter *tomsmith*, the address to access your video will be *http://tomsmith.lorexddns.net*.

- 9 Click **Save** to register your product for DDNS. A confirmation email will be sent to the email address used to register for My Lorex.

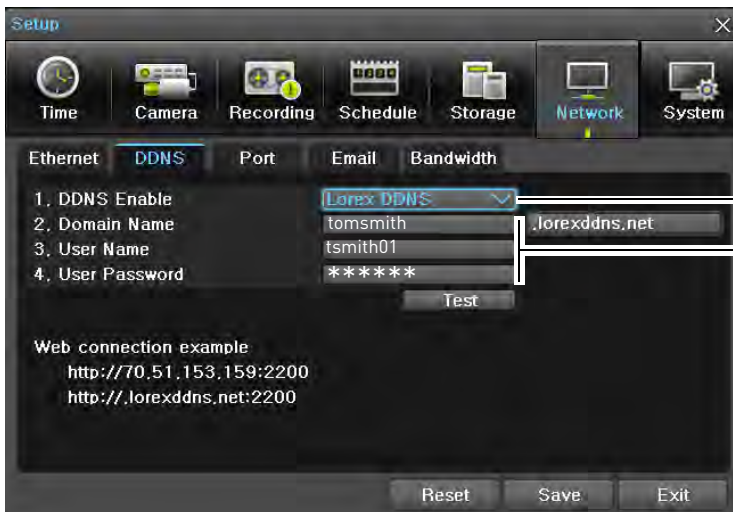
You will need this information to enable remote access to your system. Record your information below:

Domain name/URL Request: _ _ _ _ _
 DDNS User Name: _ _ _ _ _
 Device DDNS password: _ _ _ _ _

Step 3 of 4: Return to the DVR and Enable DDNS

To enable DDNS in your DVR:

- 1 Right-click to open the Main Menu and click **Setup**.
- 2 Click **Network** and select the **DDNS** tab.
- 3 Under **DDNS Enable**, select **LorexDDNS**.
- 4 Under **Domain Name**, enter your **Domain name/URL Request** from the confirmation email that was sent after you created your DDNS account. Click **Save & Exit** to confirm.



Select **LorexDDNS**

Domain Name: Enter Domain name/URL Request

User Name: Enter DDNS User Name

User Password: Enter DDNS Device password

Example of entering DDNS information in the DDNS tab

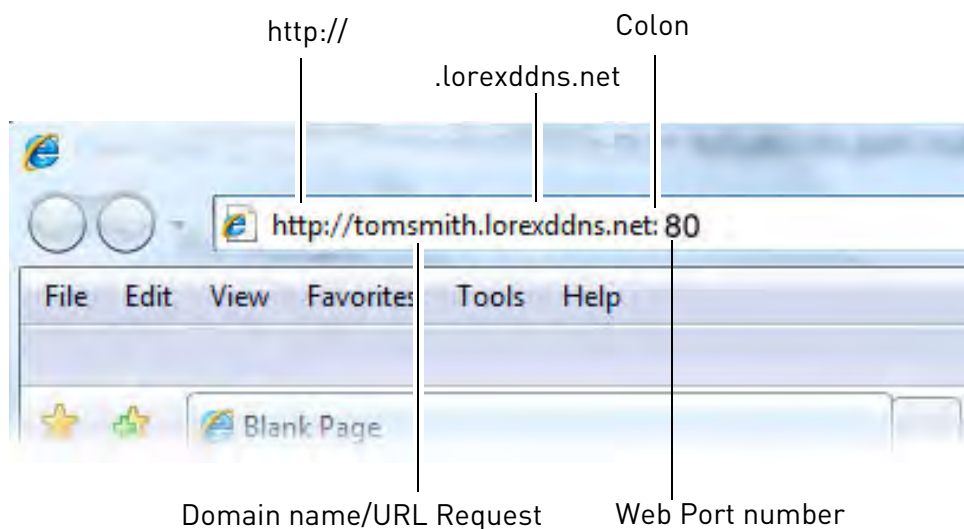
- 5 Under **User Name**, enter your **DDNS User Name** that was emailed to you after DDNS registration. Click **Save & Exit** to confirm.
- 6 Under **User Password**, enter your **DDNS Device password** that was emailed to you after DDNS registration. Click **Save & Exit** to confirm.
- 7 Click **Save**. Click **Exit** to return to Live Viewing.

Step 4 of 4: Enter the DDNS Address into Internet Explorer

NOTE: Please allow 10~15 minutes for the DDNS servers to update with your new DDNS address before attempting to connect.

To access your DVR remotely on PC, enter the DDNS address that you created earlier into Internet Explorer. The DDNS address must include **http://**, the name of your DDNS URL, followed by **.lorexddns.net**, a **colon**, and then the **Web Port number of your DVR**.

For example:



Example of a DDNS address

http://tomsmith.lorexddns.net:80

DDNS name created by you

Colon

Web Port number

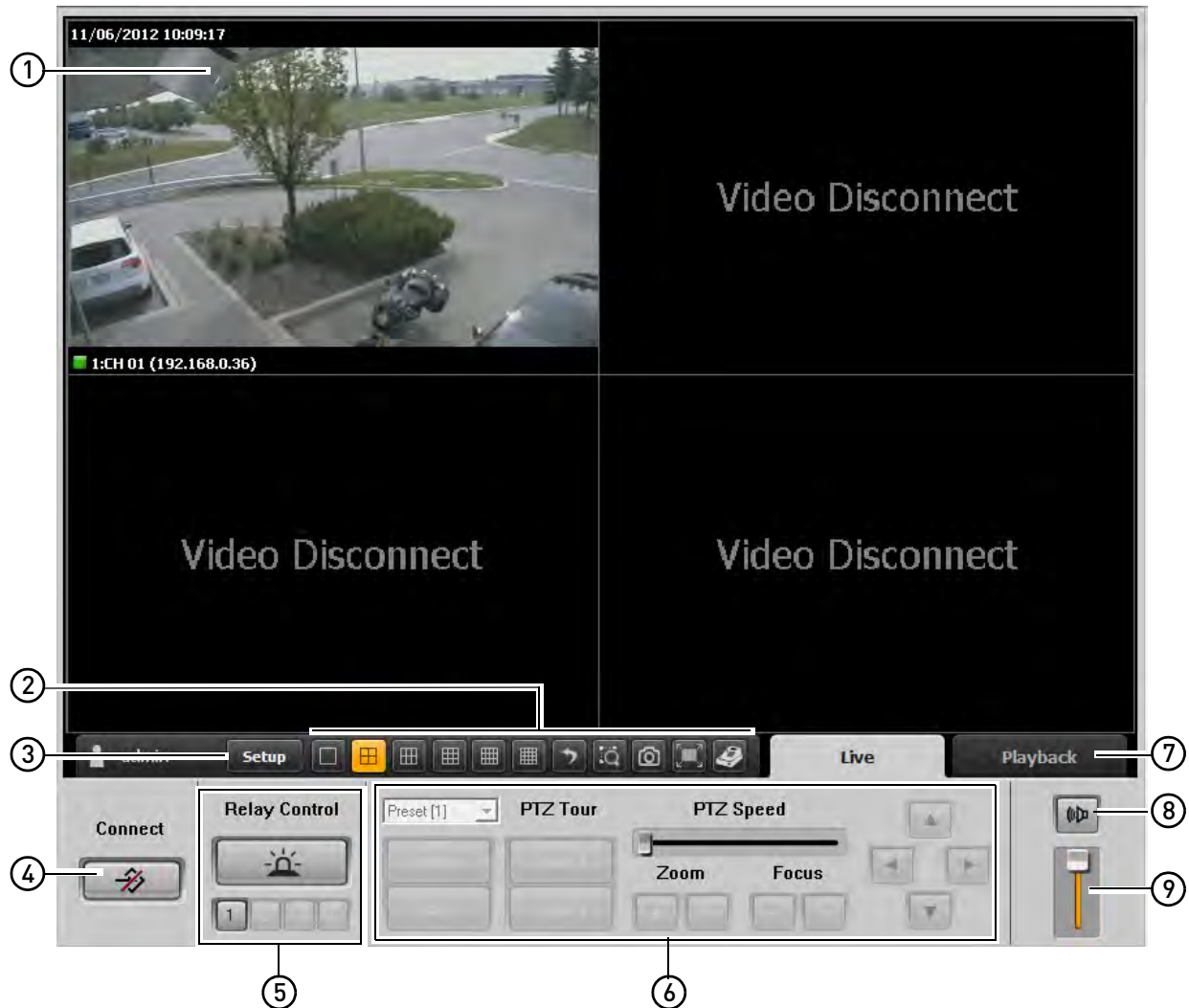
Once you have entered your DDNS address into Internet Explorer, enter your DVR user name and password at the login screen and click **OK**.

NOTE: To log in remotely, the default user name is **admin**. The password is left blank.

NOTE: You must install ActiveX® controls to connect to the DVR.

Remote Viewing Using Internet Explorer

Upon login, the remote surveillance screen appears in your browser.



1 Display Area: Shows live video from your cameras.

2 Live Viewing Controls  :

-  Split Screen Controls: Click to select different split-screen configurations. Split-screen configurations are limited by the number of channels your DVR model has.
-  : Click to start Sequence view (switches through connected cameras every few seconds). Click to end Sequence view). Sequence view is only available in single-channel () view.

- : Click and select a zoom level to access digital zoom. When digital zoom is activated, click and drag the red box to change the zoom area. Click X to exit digital zoom.



- : Click to take a screen capture (screenshot). Note that this will capture the entire display area. Click **Save as** to save the screen capture to your computer or click **Print** to print the screen capture.
- : Click for full screen. Press **ESC** to exit full screen.

3 Setup: Click to access remote setup functions.

4 Connect: Click to disconnect from/reconnect to the DVR.

5 Relay Control: Click  then click **1~4** to release the relay.

6 PTZ Controls: Controls for compatible PTZ cameras (not included). PTZ cameras must be connected to the system. See "Appendix G: Connecting a PTZ Camera" on page 137.

7 Live & Playback Tabs: Click Playback to playback and backup recorded video. Click Live to view live video.

8 Mute Button: Click to mute/unmute audio.

9 Volume Control

Remote Playback & Backup

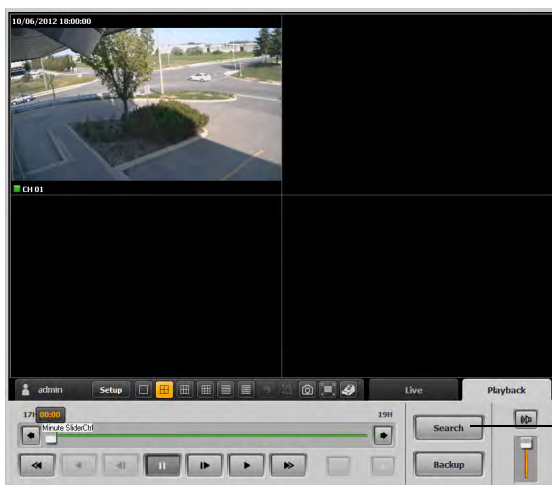
Click the **Playback** tab to remotely playback or backup video recorded on your DVR.

Remote Playback

NOTE: Playback resolution is equal to your high definition recording resolution. Because of this, playback may perform slowly over the Internet due to bandwidth constraints. You can also use the Remote Backup feature to download recorded video to your hard drive for playback.

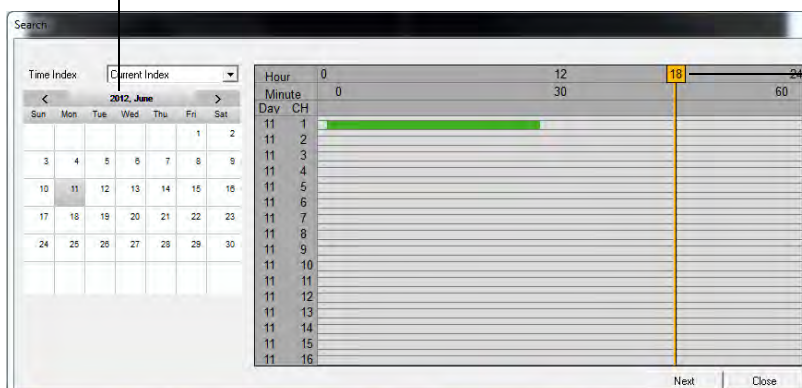
To remotely Playback video recorded on the DVR:

- 1 From the Live tab, click the **Playback** tab.
- 2 Click **Search**.



- 3 Use the on-screen calendar to select a date to Playback.

Use the on-screen calendar to select a date



Use the slider to select an hour and click Next. Use the slider again to select a minute and click Playback

- 4 Use the slider to select an hour to Playback. Click **Next**.
- 5 Use the slider to select a minute to Playback. Click **Playback**. Playback starts. Use the Playback Controls to control playback.

Playback Controls

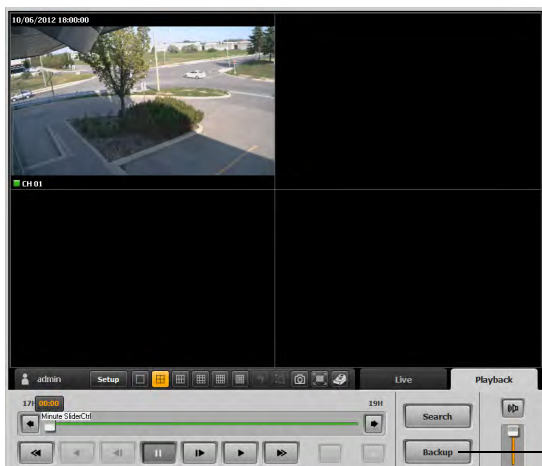


Remote Backup

You can download/backup saved video from your DVR onto your computer hard drive.

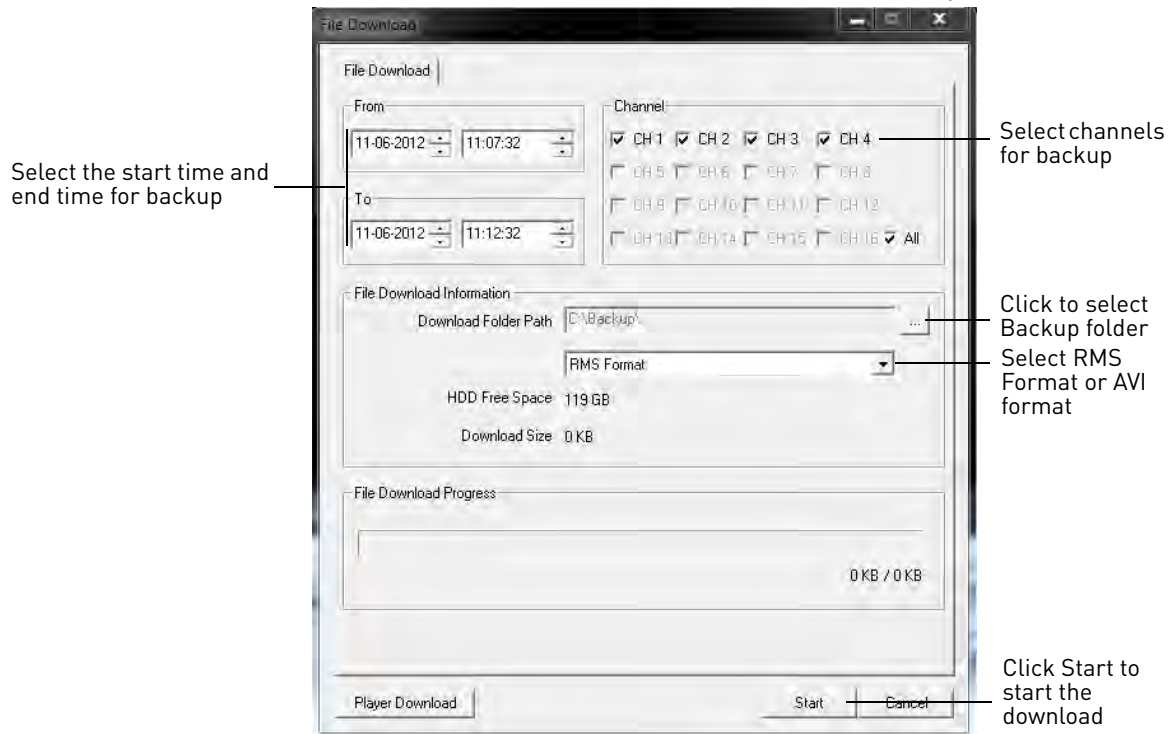
To perform a remote backup:

- 1 From the Live tab, click **Playback**. Click **Backup**.



- 2 Under **From** and **To**, select the start and end time for backup.

- 3 Under **Channel**, check the channels you would like to backup.
- 4 Click ... next to **Download Folder Path** to select a folder to save the backup video files.



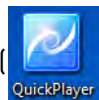
- 5 Click in the next drop-down to select either **RMS format** (requires Quick Player, see "Quick Player" on page 91) or **AVI format** (can be played using Windows Media Player).
- 6 Click **Start** to create the backup.

Quick Player

You can download a Quick Player from the software to playback RMS format backup files.

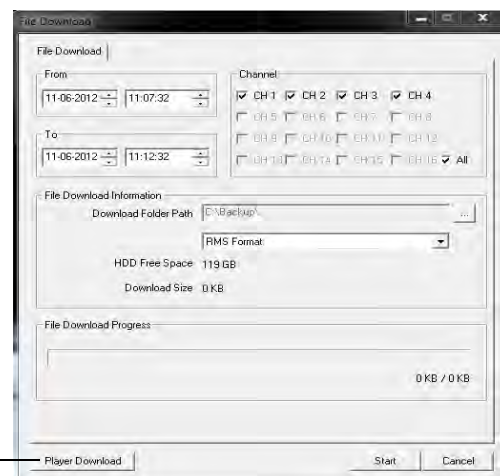
To download Quick Player:

- 1 From the Live tab, click **Playback** then **Backup**.
- 2 Click **Player Download**. Select a folder and click **OK**. A Quick Player



() icon appears in the selected folder.

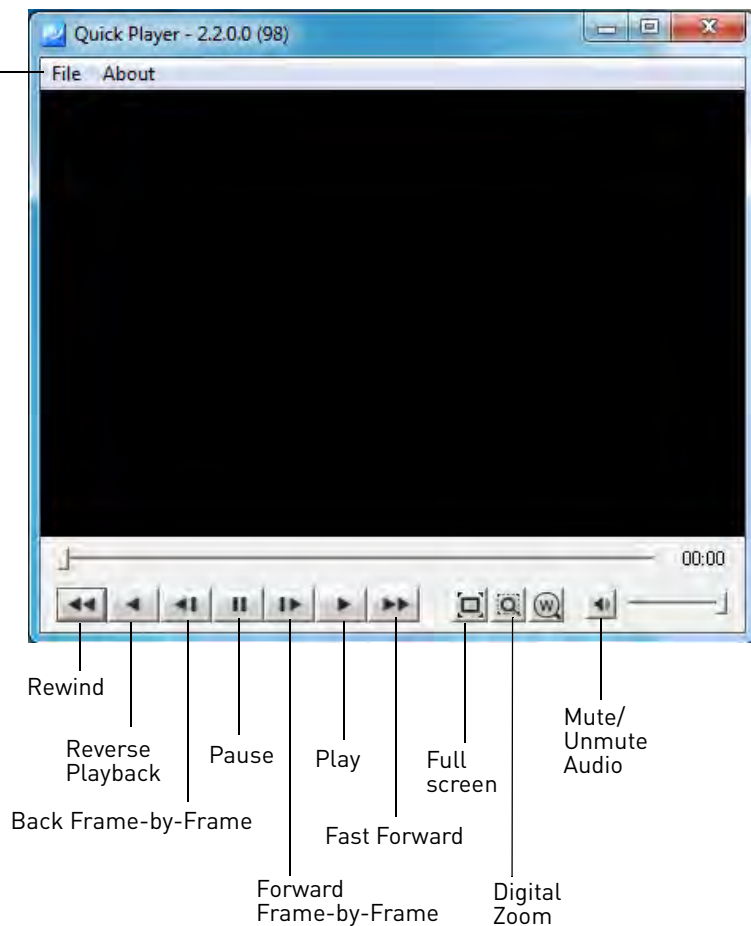
Click Player Download



- 3 Double-click the Quick Player icon () to open the Quick Player.

- 4 Click **File→Open**, select a file for playback and click ► to begin playback. Use the Playback controls to control playback.

Click File→Open to
select a file to Playback



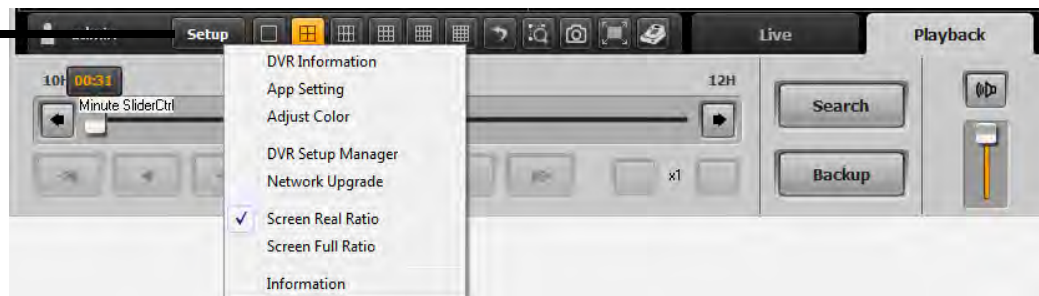
Remote Setup

You can use the Setup menu to configure settings for the DVR and remote viewing software.

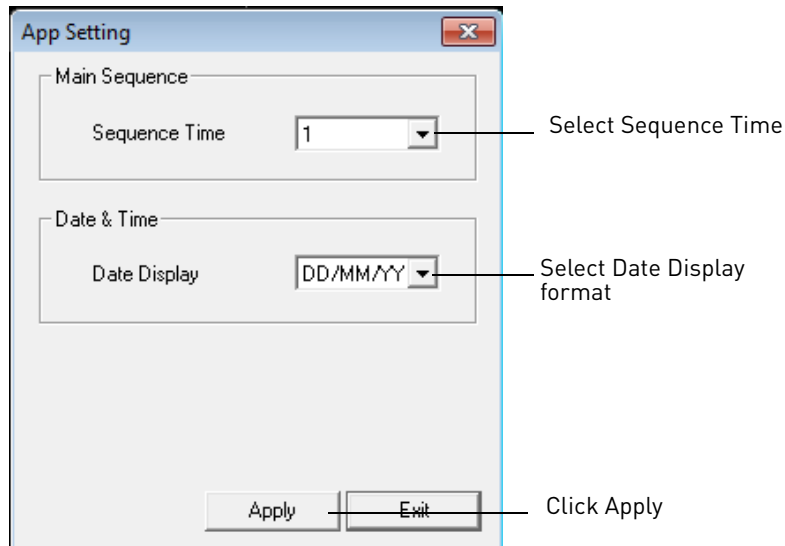
To access Remote Setup:

- 1 From the Live or Playback tab, click **Setup**. Select one of the following:

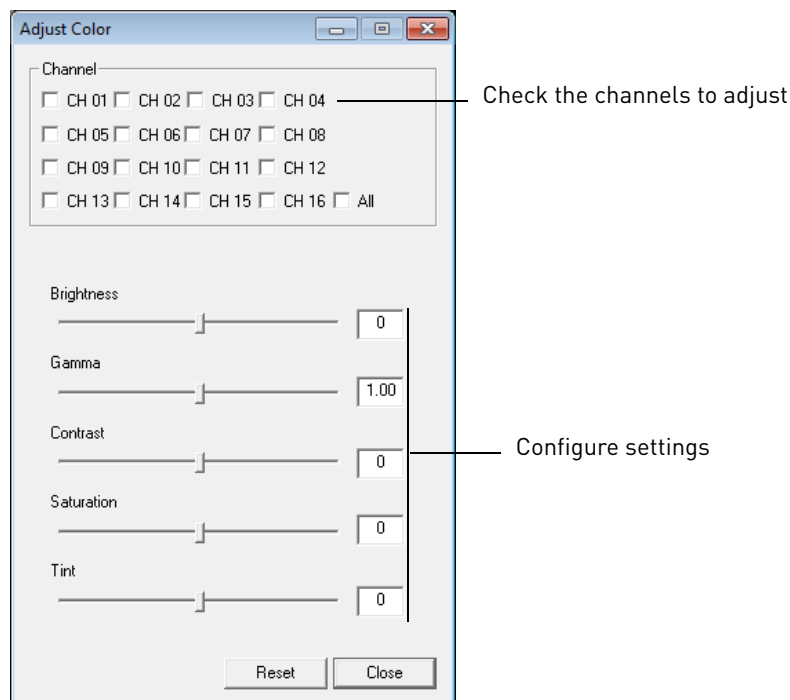
Click Setup



- **DVR Information:** View information about the DVR.
- **App Setting:** Select the **Sequence Time** and **Date Display** for the remote viewing software. Click **Apply** to save changes.



- **Adjust Color:** Adjust the camera color settings for the remote viewing software (does not affect local DVR settings). Check channels you would like to adjust and adjust the settings as needed. Click **Close** to return to the Live tab or **Reset** to revert to default values.



- **DVR Setup Manager:** Configure DVR settings.
- **Network Upgrade:** Update DVR firmware over the network. See below for details.
- **Screen Real Ratio:** Show video using the actual aspect ratio of the picture. You may see black bars around the video.
- **Screen Full Ratio:** Stretch video to fill up the video area.

- **Information:** View information about the remote software.

Network Upgrade

Network Upgrade allows you to upgrade the DVR firmware over the network. When firmware upgrades are released, they are available as a free download from www.lorextechnology.com



Only perform a Network Upgrade over a Local Area Network (LAN), when the computer is connected using an Ethernet cable. Firmware upgrade may fail and cause damage to the DVR if done over the Internet or a Wi-Fi network.

To upgrade firmware over the network:

- 1 Click **Setup** and select **Network Upgrade**.

Labels pointing to the screenshot:

- DVR IP address
- Client Port (Default: 3000)
- User Name (Default: admin)
- Password (Default: 00000)
- Select firmware file
- Click Upgrade

- 2 Under **IP Address**, enter the **DVR's IP address**.
- 3 Under **Port**, enter the Client Port (default: **3000**).
- 4 Under **User ID**, enter the User Name (default: **admin**).
- 5 Under **Password**, enter the Password (default: **00000**). A password is required to perform upgrades.
- 6 Click ... next to **Upgrade File Path** and select the firmware file.
- 7 Click **Upgrade** to begin the firmware upgrade. **Do not power off the DVR or remove the power cable while the upgrade is in progress.**

NOTE: The connection will end when the firmware upgrade begins. The DVR will restart when the firmware upgrade is complete.

DVR Setup Manager

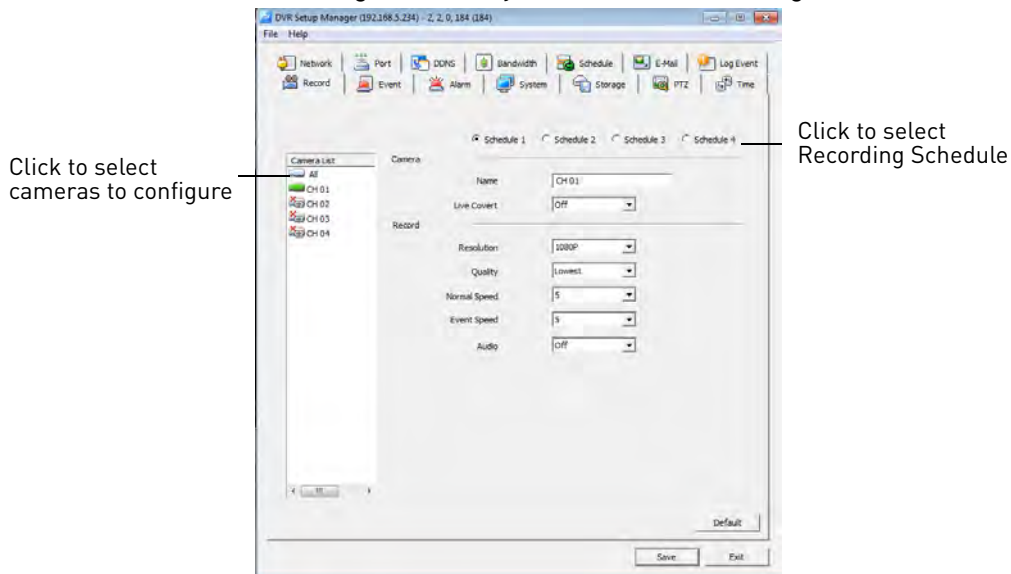
You can remotely configure DVR settings using the DVR Setup Manager.

Record Tab

Use the record tab to configure recording settings for your cameras.

To configure recording settings:

- 1 Click the channel you would like to configure on the left side or click **All** to configure all cameras. Click the Recording Schedule you would like to configure.



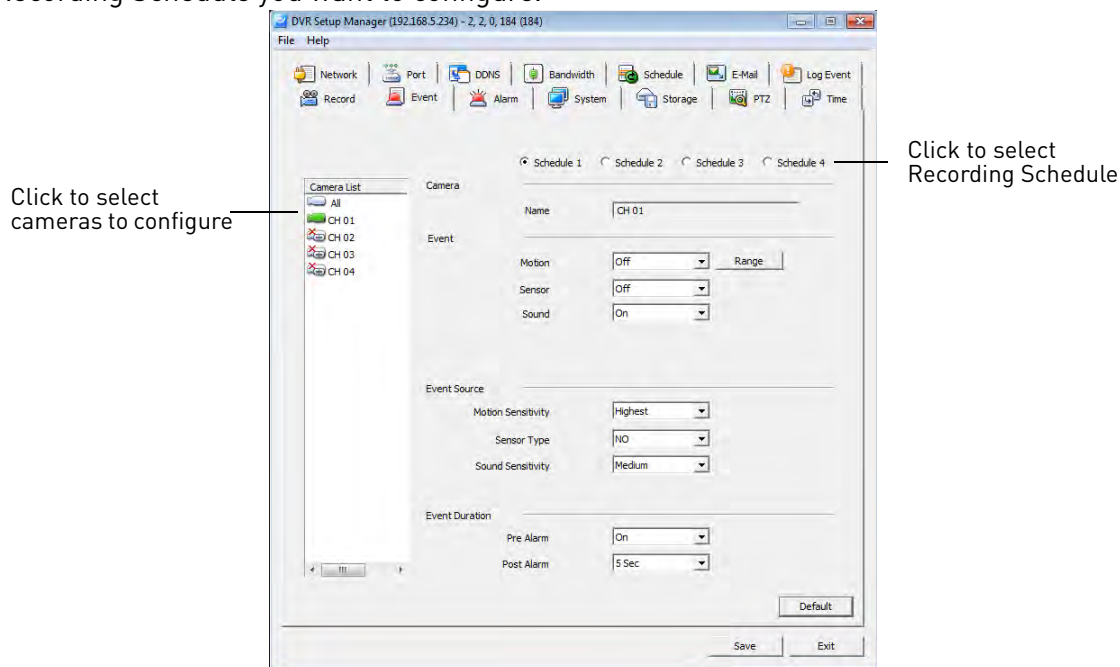
- 2 Configure the following:
 - **Name:** Enter a custom name for the camera.
 - **Live Covert:** Select **On** to hide the channel from showing on the local DVR. The channel will still record and be shown when you connect remotely.
 - **Resolution:** Select the recording resolution.
 - **Quality:** Select the image quality for recordings.
 - **Normal Speed:** Select the frame rate (in Frames per Second) for continuous recording.
 - **Event Speed:** Select the frame rate (in Frames per Second) for event recording.
 - **Audio:** Select **Off** to disable audio or **On** to enable.
- 3 Click **Save**.

Event Tab

Enable events and configure event settings.

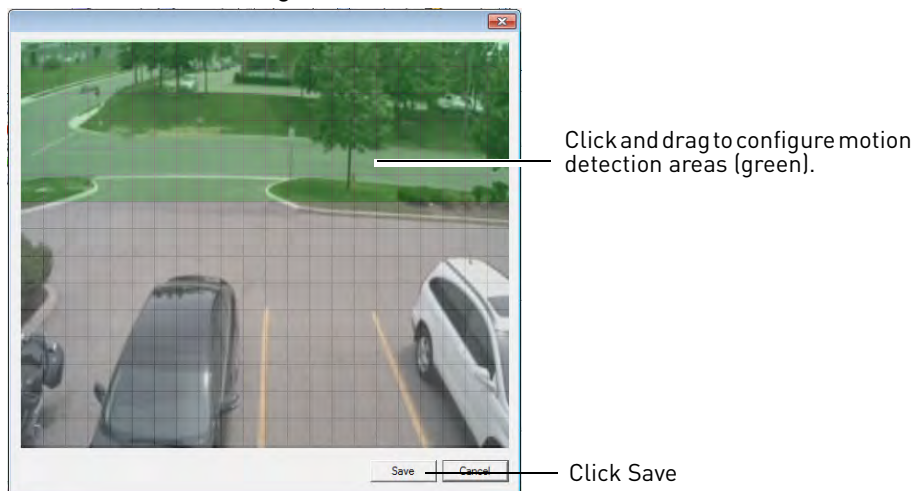
To configure Event settings:

- 1 Click the channel you want to configure or click **All** to configure all channels. Click the Recording Schedule you want to configure.



- 2 Configure the following:

- **Motion:** Select **On** to enable motion detection events or **Off** to disable. Click **Range** to configure motion areas. Click and drag inside the grid to select motion detection areas. Areas enabled for motion detection are in green. Click **Save** when finished.



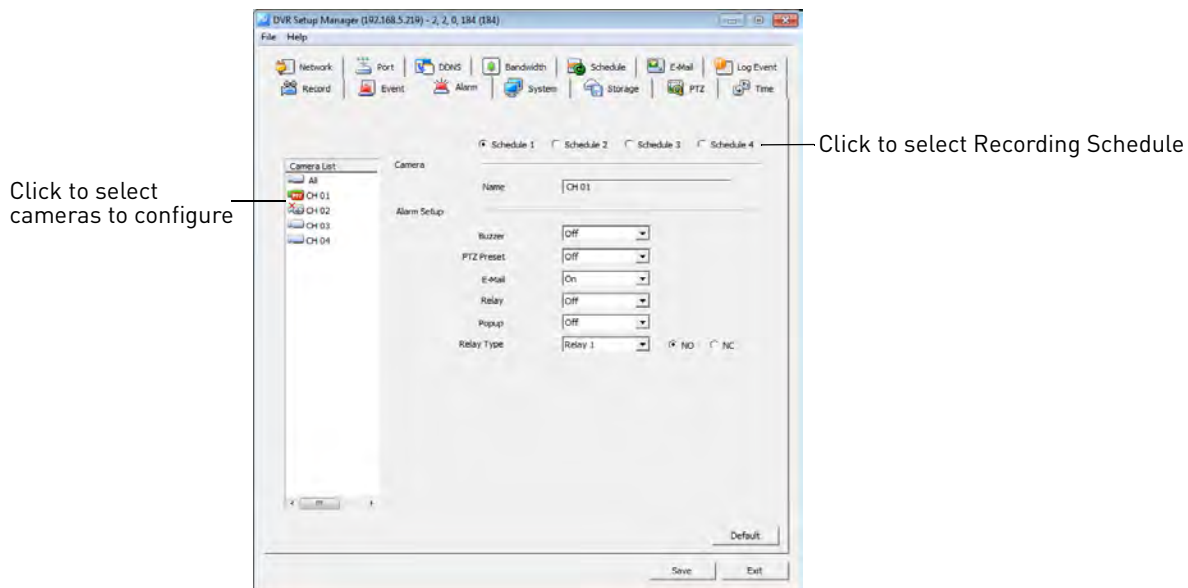
- **Sensor:** Select **On** to enable sensor events or **Off** to disable sensor events. Sensor alarms require sensor devices (not included) be connected to the DVR.
- **Sound:** Select **On** to enable audio events or **Off** to disable audio events. Audio events require audio-enabled cameras (not included) or self-powered microphones (not included) be connected to the DVR.
- **Motion Sensitivity:** Select the sensitivity for motion detection events.

- **Sensor Type:** Select **NO** (normally open) or **NC** (normally closed), depending on the type of your sensor device.
- **Sound Sensitivity:** Select the sensitivity for audio events.
- **Pre Alarm:** Select **On** to enable the Pre Alarm or **Off** to disable the Pre Alarm. The Pre Alarm setting enables the DVR to save footage for a short duration before the event occurs.
- **Post Alarm:** Select the duration the DVR will record after an event occurs.

3 Click **Save** to save your changes.

Alarm Tab

Configure Alarm output settings for when events occur.



To configure alarm output settings:

- 1 Click the channel you would like to configure on the left or click **All** to configure all channels. Click the Recording Schedule you would like to configure.
- 2 Configure the following:
 - **Buzzer:** Select **On** to enable the system buzzer during events or **Off** to disable.
 - **PTZ Preset:** Select a preset number to have the camera go to that preset during events or select **Off** to disable. PTZ camera (not included) must be connected and configured.
 - **Email:** Select **On** to enable email notifications for events or **Off** to disable email notifications. Email settings must be configured in the Email tab to receive notifications.
 - **Relay:** Select **On** to enable Relay Out for events or **Off** to disable. Relay Out triggers an external alarm device (not included), such as a strobe light or siren.
 - **Popup:** Select **On** to enable full-screen popup for events.
- 3 **Relay Type:** If Relay is turned On, Select the relay number and select **NO** (Normally Open) or **NC** (Normally Closed) depending on the type of your alarm device.
- 4 Click **Save** to save changes.

System Tab

Configure system settings.



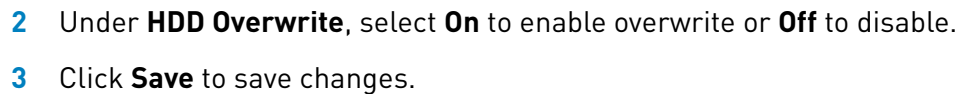
To configure system settings:

- 1 Configure the following:
 - **DVR Name:** Configure a name for your DVR.
 - **Admin Password:** Create a new admin password.
 - **Confirm:** Confirm new admin password.
 - **Menu Time Out:** Select a menu time out duration or select **Manual** to create a custom menu time out duration.
 - **Error Alarm Action:** Select actions to be performed when a system error is encountered.
 - **Error Alarm Duration:** Select the duration of system error actions.
 - **Time Display Type:** Select the date display format.
 - **ID for Key Controller:** No function.
 - **Users:** Click **Modify** and select a user account to modify. Click **Delete** and select a user account to delete. Click **Add** to add a new user account.
- 2 Click **Save** to save changes.

Storage Tab

Configure overwrite and private recording settings.

- 1 Under **Private Recording**, select **On** to enable Private recording and enter the number of days you would like the DVR to save. The DVR will delete recordings older than the number of days entered. Select **Off** to disable Private Recording.



Configure PTZ camera settings. Compatible PTZ camera (not included) required.



- **Camera ID:** Enter the camera ID.
- **Baud Rate:** Select the camera Baud Rate.
- **Duration:** Select the amount of time the camera will remain on presets during Tours before switching to the next preset.

- 3 Under **Tour Setup**, select the order of presets that will be used for Tour 1 and Tour 2.
- 4 Click **Save** to save changes.

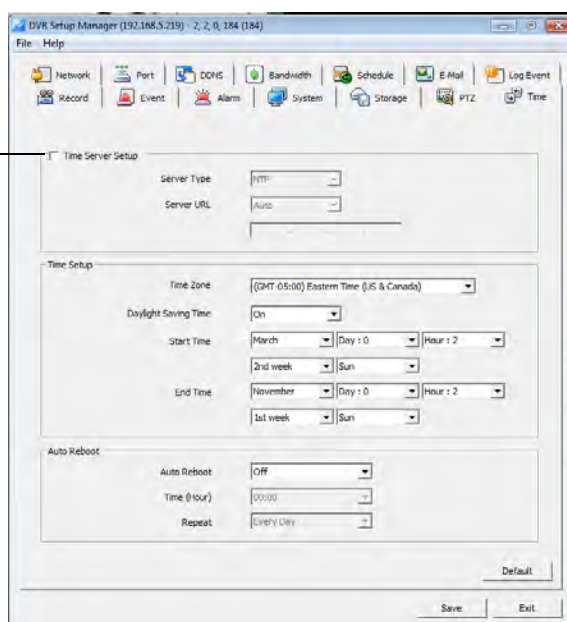
Time Tab

Configure NTP, Daylight Savings Time (DST), and Auto Reboot settings for the DVR.

To configure NTP:

- 1 Check **Time Server Setup** to enable NTP.

Check Time Server Setup to enable NTP



- 2 Under **Server Type**, select **NTP** (default).
- 3 Click **Save**.

To configure Daylight Saving Time settings:

- 1 Configure the following:
 - **Time Zone:** Select your time zone.
 - **Daylight Saving Time:** Select **On** to enable or **Off** to disable.
 - **Start Time:** Select the starting time for Daylight Savings Time.
 - **End Time:** Select the ending time for Daylight Savings Time.
- 2 Click **Save** to save your changes.

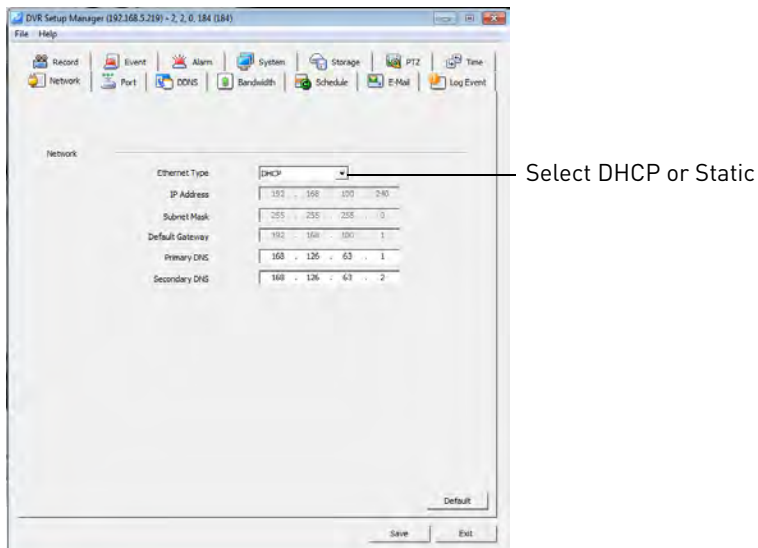
To configure Auto Reboot settings:

- 1 Under **Auto Reboot**, select **On** to enable or **Off** to disable.
- 2 If you select **On**, select the time you would like the Auto Reboot to occur under **Time (Hour)** and the day you would like the Auto Reboot to occur under **Repeat**.

- 3 Click **Save** to save changes.

Network Tab

Select Static IP or DHCP. Please note that you may need to configure your router to set a static IP address. See your router's instruction manual for details.



To select Static IP or DHCP:

- 1 Under **Ethernet Type**, select **DHCP** or **Static**. If you select Static, configure the following:
 - **IP Address:** Enter the desired IP address. Make sure that the IP address chosen is available on your network.
 - **Subnet Mask:** Enter the subnet mask.
 - **Default Gateway:** Enter the gateway address.
 - **Primary DNS:** Enter the primary DNS server address.
 - **Secondary DNS:** Enter the secondary DNS server address
- 2 Click **Save** to save changes.

NOTE: You may need to restart the DVR before it receives the new IP address. Disconnect and reconnect the power cable to restart the DVR.

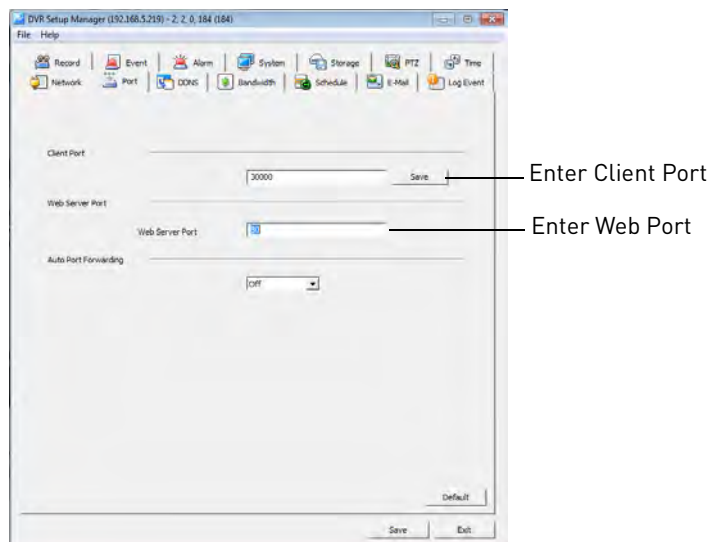
Port Tab

Configure your Client Port (default: **3000**) and Web Port (default: **80**).

Configure the following:

- 1 Under **Client Port**, enter the desired Client Port.
- 2 Under **Web Server Port**, enter the desired Web Port.

- 3 Under **Auto Port Forwarding**, select **On** to enable or **Off** to disable. Please note that this feature may not work with your router.



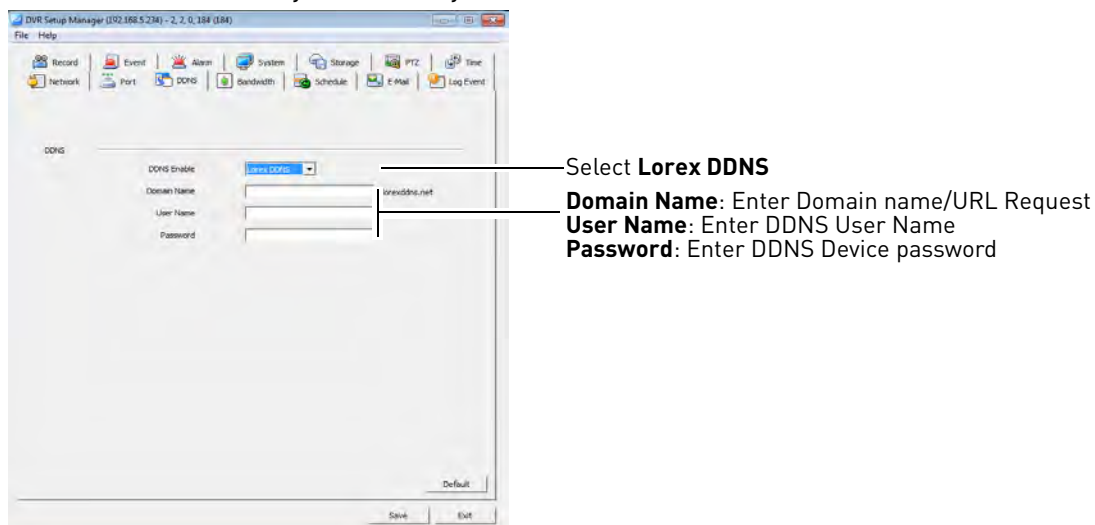
- 4 Click **Save**. Please note that the address or connection information to connect to your DVR is changed when ports are reassigned.

DDNS Tab

Configure DDNS settings. You must create a DDNS account before you can configure DDNS settings. See "Step 2 of 4: Create a DDNS Account" on page 81.

To configure DDNS settings:

- 1 Under **DDNS Enable**, select **Lorex DDNS**.
- 2 Under Domain Name, enter your **Domain name/URL Request** from the confirmation email that was sent after you created your DDNS account. Click **Save & Exit** to confirm.

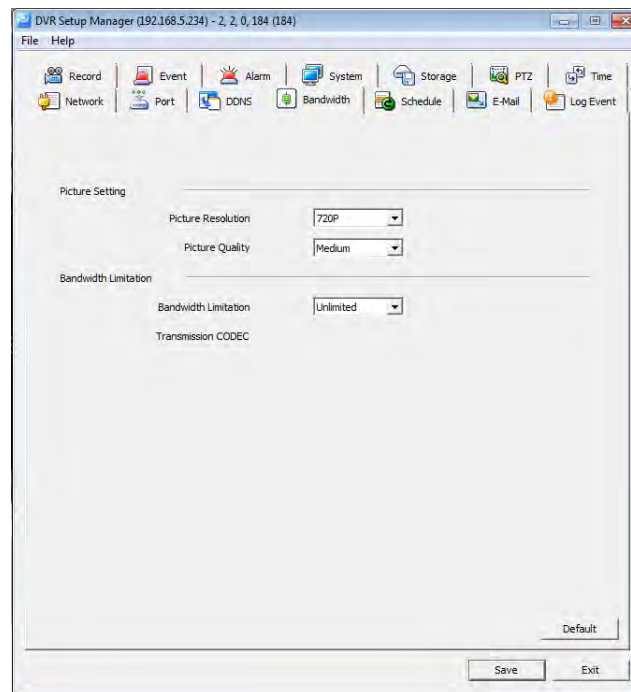


NOTE: If the Domain name/URL request is *tomsmith*, the address to access your video will be *http://tomsmith.lorexddns.net*.

- 3 Under User Name, enter your **DDNS User Name** that was emailed to you after DDNS registration. Click **Save & Exit** to confirm.
- 4 Under User Password, enter your **DDNS Device password** that was emailed to you after DDNS registration. Click **Save & Exit** to confirm.
- 5 Click **Save**.

Bandwidth Tab (Dual Streaming Settings)

Configure bandwidth settings for video streaming.



To configure bandwidth settings for video streaming:

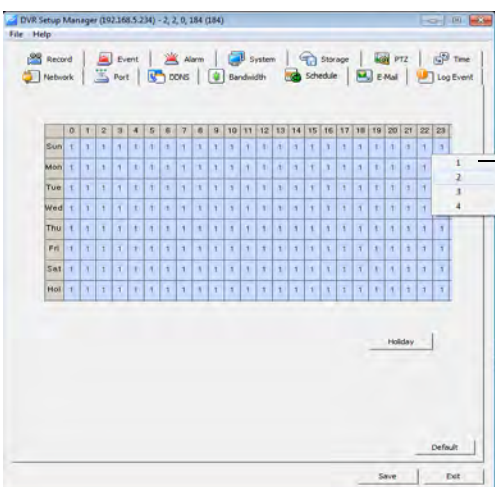
- 1 Under **Picture Resolution**, select the resolution that will be used for streaming: **CIF** (lowest), **2CIF**, **4CIF**, or **720P** (highest).
NOTE: Increasing the resolution will increase the amount of upload bandwidth required. This may create performance issues if you do not have sufficient upload bandwidth.
- 2 Under **Picture Quality**, select the image quality of the video stream: **Low**, **Medium**, or **High**.
- 3 Under **Bandwidth Limitation**, select **Unlimited** (recommended) or select the maximum transmission speed for the DVR.
- 4 Under **Transmission CODEC**, select **H.264** (recommended) or **JPG**.
- 5 Click **Save** to save changes.

Schedule Tab

Configure the weekly recording schedule.

To configure the weekly recording schedule:

- 1 Right-click and select the schedule to configure a single hour. Click and drag, then right-click to select the schedule for multiple hours.



Right-click and select schedule
Click and drag, then right-click to
select schedule for multiple hours

- 2 Click **Save**.

Email Tab

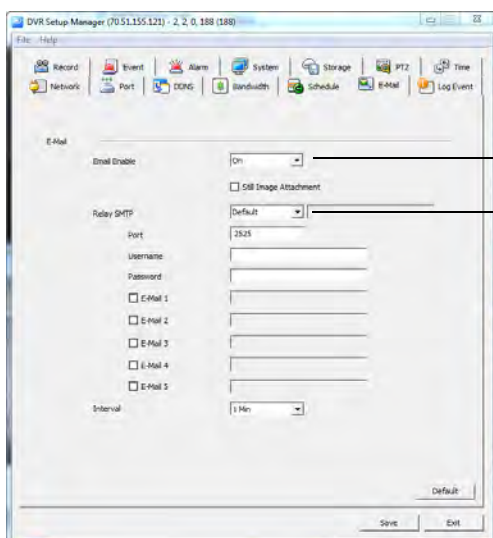
Configure Email notifications.

The system can send email notifications when it detects motion, or when a sensor or audio event occurs. Email notifications can be sent using Lorex's email server (recommended); using a Gmail, Yahoo, or Hotmail account; or using a custom email server.

NOTE: You must enable events to receive email notifications. For details, see "Enabling Motion Detection/Motion Events" on page 33, "Enabling Sensor Events" on page 35, or "Enabling Audio Events" on page 35.

To enable email notifications:

- 1 Under **Email Enable**, select **On**.



Select On to enable email notifications

Select Default to use Lorex's email
server (recommended)

- 2 Check **Still Image Attachment** to include a snapshot of the camera with email notifications.

- 3** Under **Relay SMTP**, select **Default** to use Lorex's email server (recommended), **Gmail**, **Yahoo**, **Hotmail**, or **Custom** to use a custom email server. Follow the instructions below based on your selection.

To use Lorex's email server (Default; recommended):

- 1** Configure the following:
- **Username:** Enter the sender email address. This can be any address of your choice.
 - **Email:** Check **E-mail** to enable receiver addresses. Enter up to 5 email addresses to receive email notifications.
 - **Interval:** Enter the interval the DVR waits before sending a new email notification.
- NOTE:** The DVR will only send 1 email attachment per event, and the interval is only reset when the event ends.
- 2** Click **Save** to save your changes.

To use a Gmail, Yahoo, or Hotmail account:

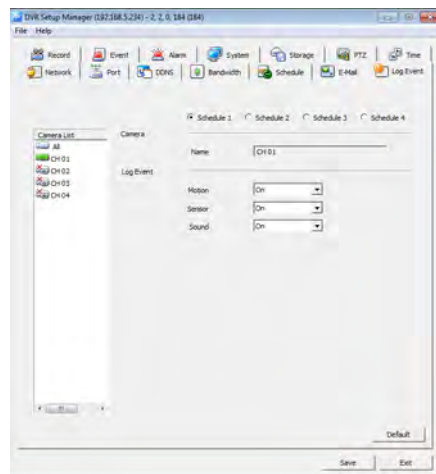
- 1** Configure the following:
- **Username:** Enter the sender email address. Note that you only enter the account user name here, not the email domain. For example, if your email account is *tomsmith@gmail.com*, just enter *tomsmith*.
 - **Password:** Enter the password for the sender email account.
 - **Email:** Check **E-mail** to enable receiver addresses. Enter up to 5 email addresses to receive email notifications.
 - **Interval:** Enter the interval the DVR waits before sending a new email notification.
- NOTE:** The DVR will only send 1 email attachment per event, and the interval is only reset when the event ends.
- 2** Click **Save** to save your changes.

To use a custom email server:

- 1** Click **Relay SMTP** and select **Custom**. Enter the **server address** in the next field and click **Save & Exit** to confirm.
- 2** Under **SMTP Port**, enter the **server SMTP port number** and click **Save & Exit** to confirm.
- 3** Configure the following:
- **Username:** Enter the sender email address.
 - **Password:** Enter the password for the sender email account.
 - **Email:** Check **E-mail** to enable receiver addresses. Enter up to 5 email addresses to receive email notifications.
 - **Interval:** Enter the interval the DVR waits before sending a new email notification.
- NOTE:** The DVR will only send 1 email attachment per event, and the interval is only reset when the event ends.
- Click **Save** to save your changes.

Log Event Tab

Enable or disable log entries for events.



To enable or disable log entries for events:

- 1 On the left side, select the camera you would like to configure or select **All**.
- 2 Select the schedule you would like to configure.
- 3 Under **Motion**, **Sensor**, and **Sound**, select **On** to enable logs for that event type or **Off** to disable logs for that event type.
- 4 Click **Save** to save your changes.

Remote Viewing Using Client Software (PC)

NOTE: Visit www.lorextechnology.com to download the Client Software for Mac and for instructions.

Client Software for PC is available on the software CD or as a free download from www.lorextechnology.com, under the Downloads tab for your DVR model.

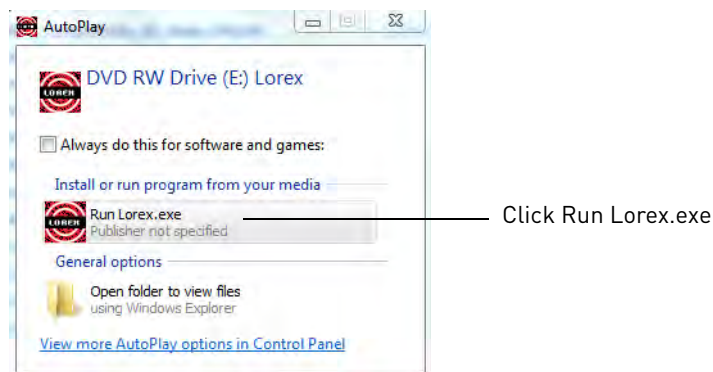
Installing Client Software for PC

You can install the Client Software from the software CD or by downloading it from www.lorextechnology.com.

NOTE: Check www.lorextechnology.com to get the latest software updates.

To install Client Software from CD:

- 1 Insert the software CD into your computer. An Autorun window appears.
- 2 Click **Run Lorex.exe**.



- 3 Click **DVR Software**. Then click **Client Software for PC**.

- 4 Follow the on-screen instructions to install. A Lorex HD Client icon () appears on the desktop.

Connecting to your DVR

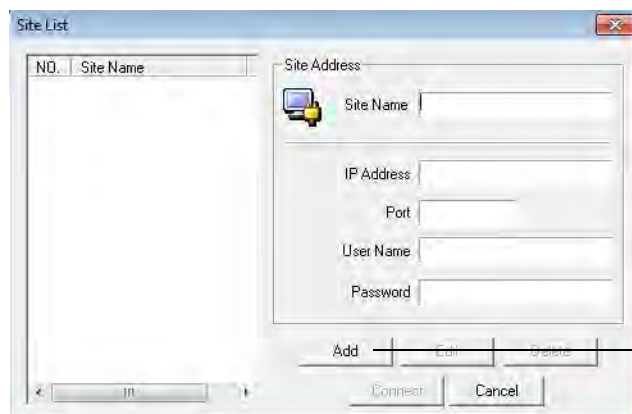
- 1 Double-click the Lorex HD Client icon () on the desktop.

- 2 Click **Site**. The Site List opens.



Click Site to open the Site List

- 3 Click **Add**.



Click Add

- 4 Enter the following:
 - **Site Name:** Enter a name for your DVR. This can be anything of your choice.
 - **IP Address:** Enter the **DVR's DDNS address DVR's or IP address.**
 - **Port:** Enter the DVR's Client Port (default: **3000**).
 - **User Name:** Enter the DVR's User Name (default: **admin**).
 - **Password:** Enter the DVR's Password. By default the Password field is left blank.
- 5 Click **Add**.
- 6 Click **Connect**. The Client Software connects and streams live video from your cameras. The Client Software for PC is identical to the Internet Explorer software, with the exception of the Site List, which allows you to save the information for multiple compatible DVRs. For instructions on navigating the interface, see "Remote Viewing Using Internet Explorer" on page 87.

Site List

Use the Site List to save connection information for multiple compatible DVRs.

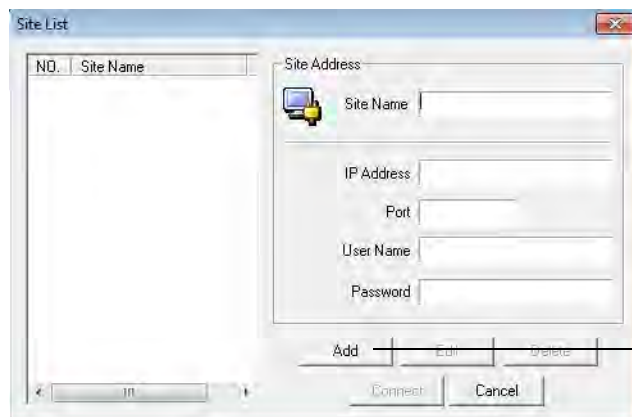
Add a DVR

- 1 Click **Site**. The Site List opens.



Click Site to open the Site List

- 2 Click **Add**.



Click Add

- 3 Enter the following:
 - **Site Name:** Enter a name for your DVR. This can be anything of your choice.
 - **IP Address:** Enter the **DVR's IP address or DDNS address.**
 - **Port:** Enter the DVR's Client Port (default: **3000**).
 - **User Name:** Enter the DVR's User Name (default: **admin**).
 - **Password:** Enter the DVR's Password. By default the Password field is left blank.
- 4 Click **Add**.
- 5 Click **Connect**. The Client Software connects and streams live video from your cameras.

Delete a DVR

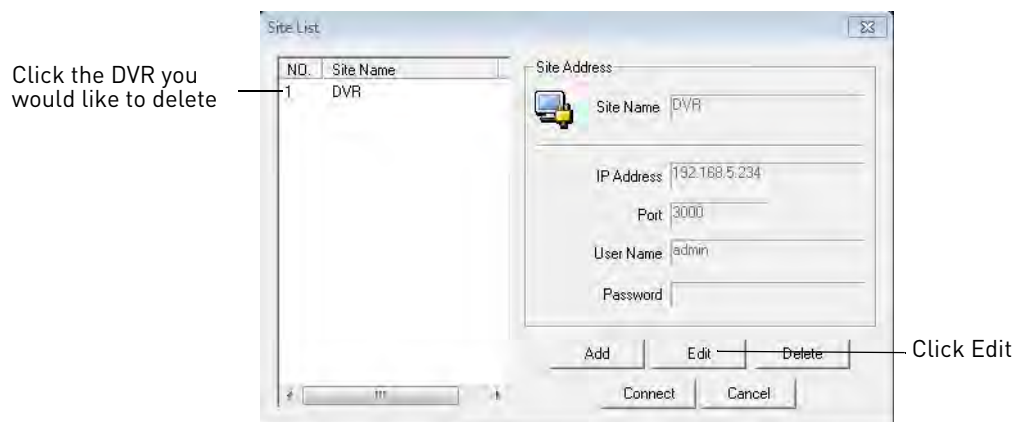
- 1 Click **Site**. The Site List opens.
- 2 Click the name of the DVR you would like to delete in the Site List.



- 3 Click **Delete**. Click **Ok**.

Modify a DVR

- 1 Click **Site**, the Site List opens.
- 2 Click the name of the DVR you would like to modify in the Site List.



- 3 Click **Edit**.
- 4 Change the configuration details as needed.
- 5 Click **Edit** again.

Smartphone and Tablet Apps

You can remotely view camera streams from your DVR on compatible smartphones and tablets.

NOTE: Port forwarding is required before you can connect to your DVR using a smartphone or tablet. Different features are available on each mobile viewing device and application.

Compatible Devices and Platforms

Platform	Supported Versions and Devices	App Name	Get App From
iPhone/ iPad	iOS v. 4.0 and higher iPhone/iPod Touch iPad (1st generation and above)	Lorex Mobile HD	Apple App Store
Android	Android v. 2.3 and above	Lorex Mobile HD	Google Play Store

For the latest device compatibility list, visit www.lorextechnology.com

Before you Begin

You will need the following before you can start viewing on your mobile device:

- **Your DVR's DDNS address:**

Before you can connect with a smartphone or tablet, you must complete the setup process for remote viewing to obtain your DDNS address and enable DDNS on your DVR. Complete all the steps under "Setting up your DVR for Remote Connectivity" on page 77.

- **The Client Port Number of your DVR:**

The Client Port (default: **3000**) must be port forwarded before you can connect using a mobile device. For details on port forwarding, see "Appendix E: Internet Setup Wizard (PC only)" on page 127. To find your Client Port, press ◀ on the front panel of the DVR to open the System Information window and look under **Client Port**.

- **The User Name and Password of your DVR:**

See the table on the right for the default User Name and Password. **A password is required to log in using a smartphone or tablet.**

Default User Name / Password

User Name	Password
admin	00000

iPhone / iPad

Use the Lorex Mobile HD app to connect with your iPhone or iPad.

System requirements

- iOS version 4.0 and above.

NOTE: For the latest device compatibility list, visit www.lorextechnology.com

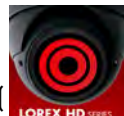
Prerequisites

- An iTunes account (requires valid credit card number).

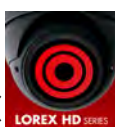
NOTE: Your credit card will not be billed when downloading the Lorex Mobile HD App.

Step 1 of 2: Downloading the App

- 1 In the App Store, search for Lorex Mobile HD.
- 2 Touch the **Free** button (iPhone) or **Install** button (iPad), and then touch **Install** to download the app.
 - Enter your App Store password if required.

- The app installs to your device, and the Lorex Mobile HD app icon () appears in the applications list.

Step 2 of 2: Connecting to your DVR

- 1 Touch the Lorex Mobile HD icon () from your app list.
- 2 Touch +.



! You must port forward the **Client Port (default: 3000)** on your router before you can connect to your system using a mobile device (e.g. iPhone, iPad)

3 Enter the following:

- **Site Name:** Enter a name for your DVR of your choice.
- **IP/Host:** Enter the DDNS address of the DVR (e.g. *tomsmith.lorexddns.net*)¹.
- **Port:** Enter the DVR's Client Port number (default: **3000**).
- **User Name:** Enter the DVR's User Name (default: **admin**).
- **Password:** Enter the DVR's Password (default: **00000**).

4 Press **Done**. Press **Done** again.

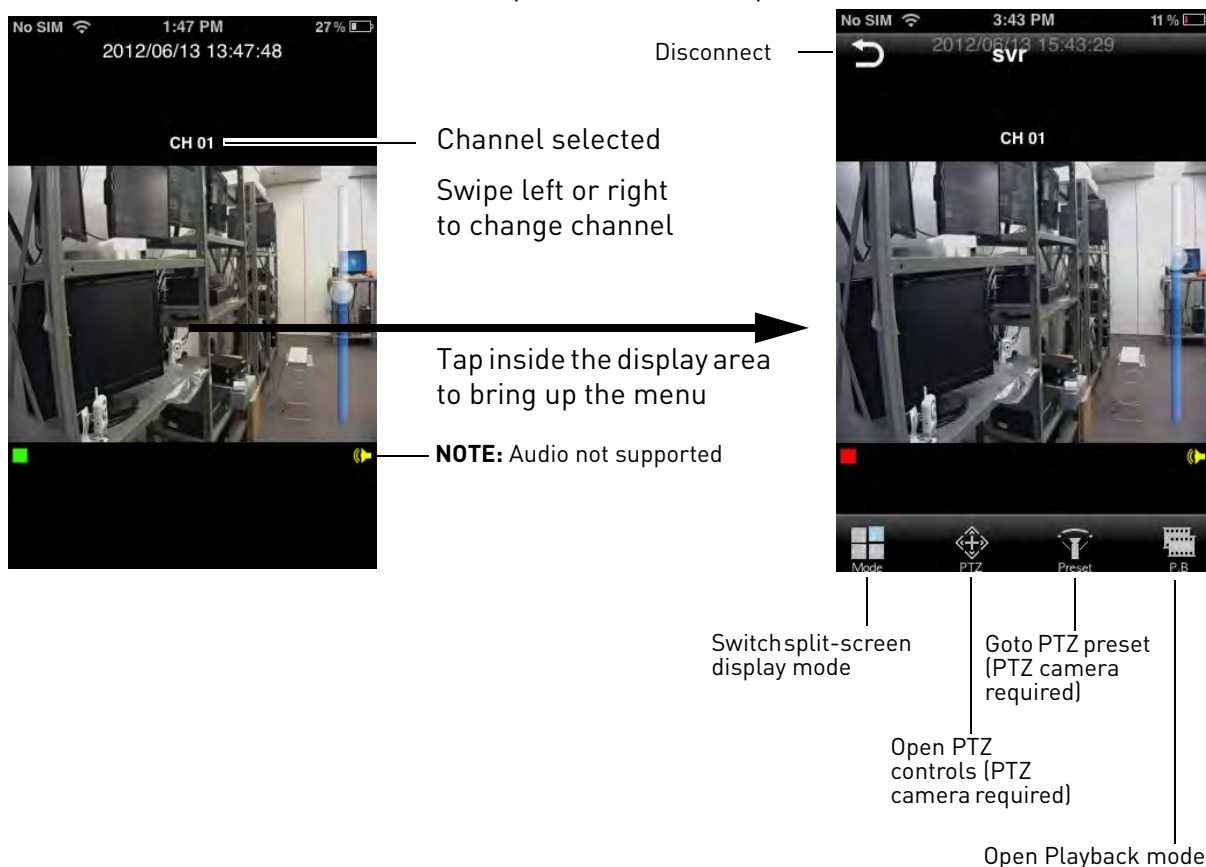
5 Touch the name of your DVR in Site List to connect. The app connects and streams live video from your cameras.



1. Some routers may prevent you from connecting to your DVR using a DDNS address on a local network. If you are unable to connect, try disabling WiFi on your mobile device and attempt to connect using the 3G or mobile network. If you need to use WiFi, use the DVR's internal IP address to connect.

Using Lorex Mobile HD for iPhone/iPad

You can use Lorex Mobile HD in either portrait or landscape mode.



NOTE: Remote viewing resolution is set to CIF (352 x 240) by default. It is selectable in the Bandwidth tab up to 720p (1280x720), however increasing the resolution will increase the amount of bandwidth required for remote viewing and may affect performance due to bandwidth constraints.

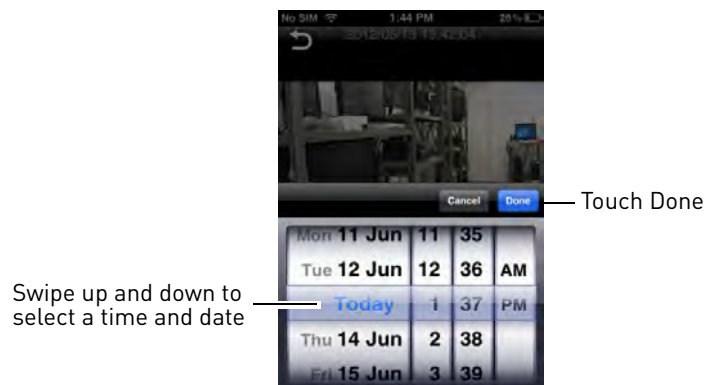
Using Playback

NOTE: Using Playback requires you to download video from the DVR at the full high definition recording resolution. This may require large amounts of data. If using over a 3G or mobile network, charges may vary based on provider.

- 1 Touch the screen to bring up the menu, and press .
- 2 Touch a channel to playback then touch **Goto**.



- 3 Swipe up and down to select a time and date to playback and touch **Done**. The app downloads the recorded video from the DVR.



- 4 Touch ► to start playback. Use the playback controls to control playback.



- 5 To exit Playback, press ⏮. If ⏮ is now shown, tap the screen first.

Site List

Use the Site List to manage connection information for your DVR or multiple DVRs.

Modify a DVR

- 1 Touch ➡.



- 2 Edit the DVR connection information as needed and touch **Done**.

Delete a DVR

- 1 Touch **Edit**.



- 2 Touch -, and then touch **Delete**.



Android

Use the Lorex Mobile HD app to connect with your Android phone or tablet.

NOTE: The instructions below may differ depending on the model of your Android device.

System requirements

- Android version 2.3 and above.

NOTE: For the latest device compatibility list, visit www.lorextechnology.com

Step 1 of 2: Downloading the App

NOTE: For support on downloading or installing Android apps, consult your Android device's instruction manual or the manufacturer's support site.

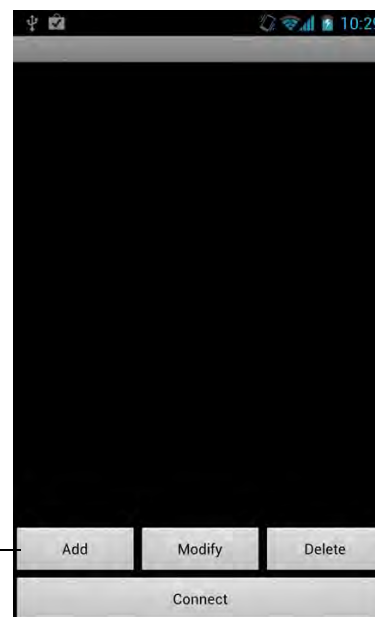
- 1 Touch the Google Play Store icon () in your application list.
- 2 Press the search button ().
- 3 Enter **Lorex Mobile HD** and press the search button () again.
- 4 Touch **Lorex Mobile HD**, touch **Download** or **Install**, and then touch **Accept & download** to install the app. Wait for the app to install.

Step 2 of 2: Connecting to your DVR

- 1 Open **Lorex Mobile HD** () from the application list.
- 2 Touch **Add**. The Add Site page opens.

! You must port forward the **Client Port (default: 3000)** on your router before you can connect to your system using a mobile device (e.g. Samsung Galaxy S, HTC Incredible S)

Touch Add



3 Configure the following:

- **Site Name:** Enter a name for your DVR of your choice.
- **IP/Host:** Enter the DDNS address of the DVR (e.g. *tomsmith.lorexddns.net*)¹.
- **Port:** Enter the DVR's Client Port number (default: **3000**).
- **User Name:** Enter the DVR's User Name (default: **admin**).
- **Password:** Enter the DVR's Password (default: **00000**).

Add Site

DVR Information

Site Name: Tom's dvr — Enter a name for your DVR

IP/Host: tomsmith.lorexddns.net — DVR's DDNS address

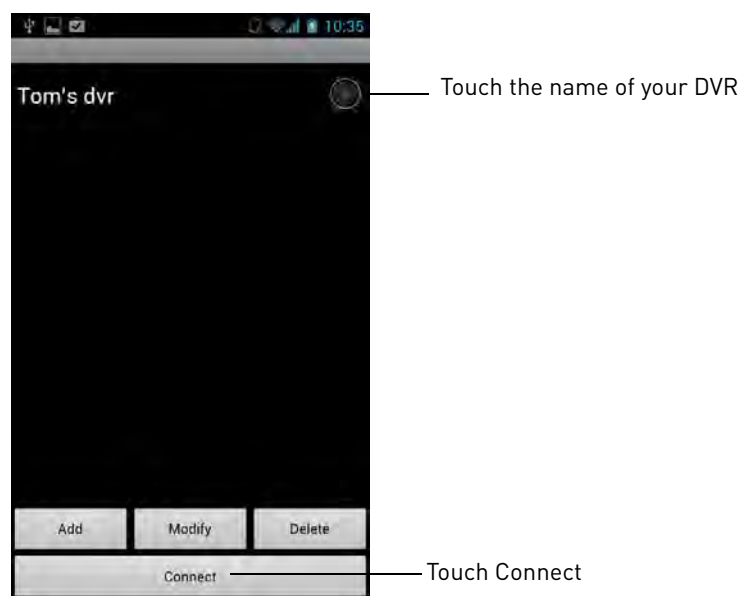
Port: 3000 — Client Port (default: 3000)

User Information

User Name: admin — User Name (default: admin)

Password: — Password (default: 00000)

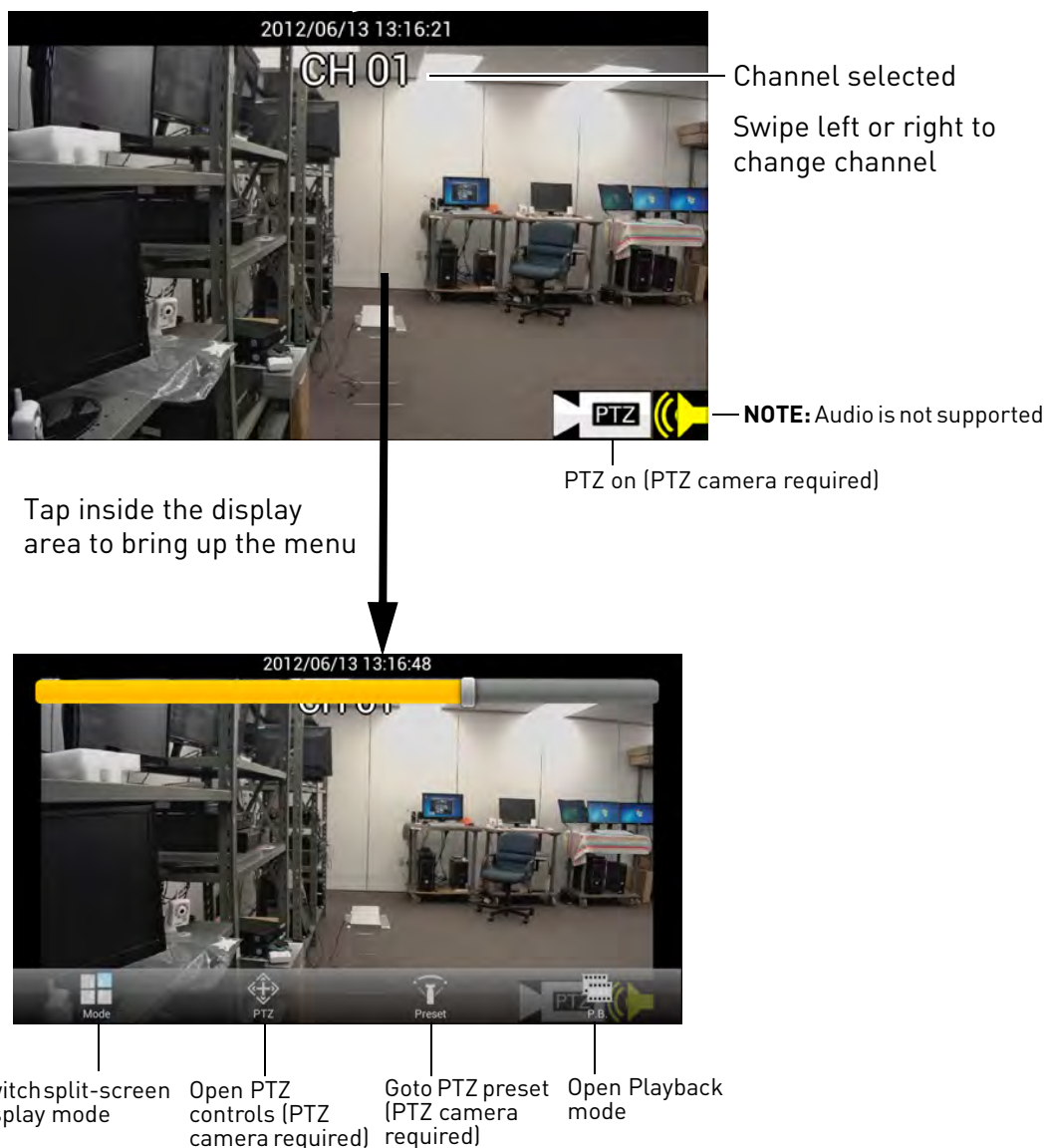
OK

4 Click **OK**. Your DVR appears in your Site List.**5** Touch the name of your DVR and touch **Connect** to connect. The app connects to your DVR and streams live video from the cameras.

1. Some routers may prevent you from connecting to your DVR using a DDNS address on a local network. If you are unable to connect, try disabling WiFi on your mobile device and attempt to connect using the 3G or mobile network. If you need to use WiFi, use the DVR's internal IP address to connect.

Using Lorex Mobile HD for Android

You can use the app in portrait mode or landscape mode.



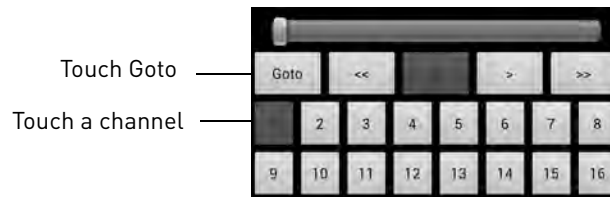
NOTE: Remote viewing resolution is set to CIF (352 x 240) by default. It is selectable in the Bandwidth tab up to 720p (1280x720), however increasing the resolution will increase the amount of bandwidth required for remote viewing and may affect performance due to bandwidth constraints.

Using Playback

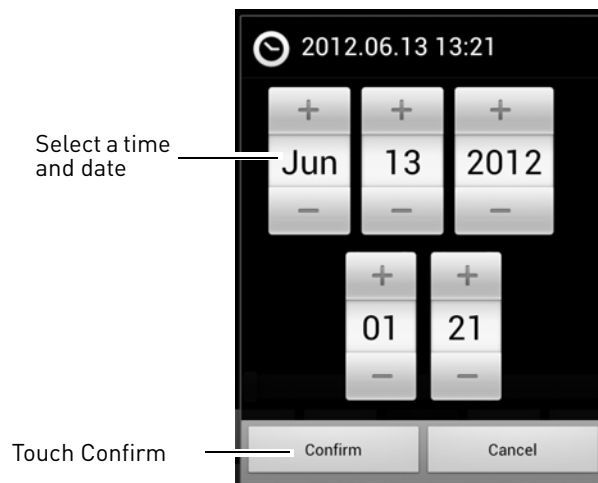
NOTE: Using Playback requires you to download video from the DVR at the full high definition recording resolution. This may require large amounts of data. If using over a 3G or mobile network, charges may vary based on provider.

- 1 Touch the screen to bring up the menu, and press .

- 2 Touch a channel to playback then touch **Goto**.



- 3 Select a time and date to playback and touch **Confirm**. The app downloads the recorded video from the DVR.



- 4 Touch ► to start playback. Use the playback controls to control playback.



Site List

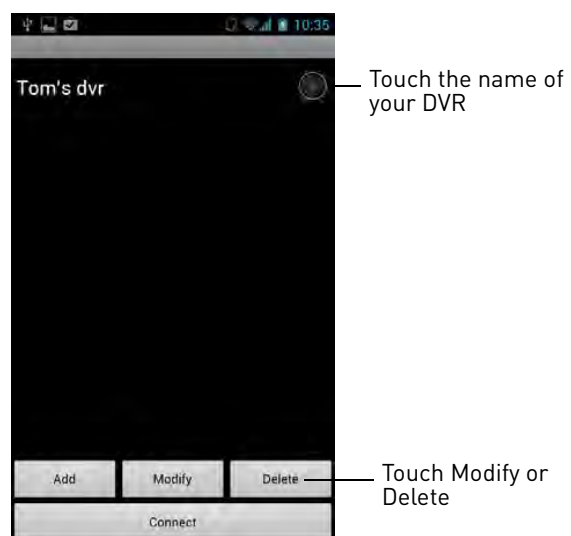
Use the Site List to manage connection information for your DVR or multiple DVRs.

Modify a DVR

- 1 Select the DVR in the Site List and touch **Modify**.
- 2 Configure the DVR information as needed and Touch **OK**.

Delete a DVR

- Select a DVR in the Site List and touch **Delete**. Touch **Yes** to confirm.



Appendix A: System Specifications

SYSTEM		S.M.A.R.T Alarm	HDD Health check
Operating System	Linux (embedded)	Reliability	Watch-Dog, Autorecovery after power failure
Pentaplex	Simultaneous View, Record, Playback, Backup & Remote Monitoring	Covert Video	Yes
Number of Channels	4 Channels	PLAYBACK	
INPUTS/OUTPUTS		4 Channel	1,4 (4ch)
Video IN	4 x 800m Vp-p, 75ohms, HD-SDI BNC	Instant Playback	Instant playback mode for quick review of log events
VGA Out	Yes (not simultaneous with HDMI)	Playback Speed	Variable playback (Max. 300x)
HDMI Out	Video & Audio (not simultaneous with VGA)	SEARCH	
Audio IN	4 Line in(RCA), CODEC:G.711U	Calendar Search	Search by time
Audio Out	1 line out(RCA), CODEC:G.711U	Event Search	Search by event
USB Port	2 (front)	Panorama Search	Frame by Frame
eSata	Yes (high capacity backup)	Multi time Search	Multi Day / Hour
Alarm IN	4 x TTL, programmable as NC/NO	Log Search	Up to Unlimited for user login/out, configuration changes, remote access, connects/disconnects
Alarm Out	1 x Relay with NO/NC contact; 12VDC/1A, 110VAC/0.5A resistive	Audio Play	Single camera in full screen mode
PTZ control	RS485	STORAGE & ARCHIVE	
DISPLAY		Storage	Up to x 2 HDD's (SATA)
Live Display	1 or 4	Maximum Capacity	Up to 4TB
Live Display Speed	120/120 fps (4 ch)	Backup Media	USB (flash drive & HDD) & eSATA
OSD	ON/OFF	Backup File Format	Manufacturer's format file (Codec: included)
Border Color	Selectable	Watermark	Watermarked video & audio for security
Digital Zoom	Up to 16 (4 ch)	CONNECTIVITY	
Motion Area Setting	Adjustable grid (NTSC; 22 x15, PAL;22x18)	Easy Connect	1. Lorex Auto Port Forward Wizard 2. Built-in Auto Port Forwarding (UPnP router required)
Sensitivity levels	5 levels	Software	Web browser/ Client Software
System Navigation	USB Mouse, IR Remote Controller, Front Panel	Supported Operating Systems	Windows™, Mac
Firmware Upgrade	Via USB device	Browsers	Internet Explorer only
Software Upgrade	Via USB device	Email notification	Text with shot attachment
User Authority	1 x Admin / 14 x Users	MOBILE CONNECTIVITY	
Time Synchronization	Auto time sync by NTP server	iPhone™ / iPad™	Free App download from App store
RECORDING		Android	2.3 and above
Video Compression	H.264	DDNS	Free Lorex DDNS
Audio Compression	G.711U	System Configuration	Full setup configuration over network
Recording Resolution	1080p (1920 x 1080) / 1920 x 1080 (NTSC/PAL) @ 5fps W per camera 720p (1280 x 720) / 1280 x 720 (NTSC/PAL) @ 10fps / @ 8 fps per camera	Ports	Web:80, Client:2000
Recording Speed	1080p: 20/20 fps (NTSC/PAL) 720p: 45/45 fps (NTSC/PAL)	Network Protocol	LAN, DHCP, Dynamic IP, DDNS
Recording Resolution Setting	Per camera & resolution setting (1080p/720p)	Network Interface	10/100/1000Base-T, RJ-45
Recording Quality Control	5 levels (Lowest/low/Medium/high/highest)	Network Speed Control	7 levels (56Kb ~ 4MB/sec (56Kb/128Kb/256Kb/512Kb/1Mb/2Mb/ 4Mb)
Recording Schedule	By hour, by day, by recording mode, by alarm, by Ch	GENERAL	
Pre Recording	Max. 5 seconds	Power Consumption	Approx. 40 watts
Post Recording	Max. 300 seconds	Supply Voltage	100VAC-240VAC, 12VDC, 5A, 50/60Hz
Alarm Recording	Programmable per camera	Unit Dimensions (W x D x H)	13.38" / 340mm X 11.81" / 300mm X 2.32" / 59mm with stand
		Unit Weight (KGs)	3.13 kg/6.9 lbs
		Operating temperature	-15°~104° F / 5° ~ 40° C
		Humidity	10 ~ 80% NC

As our products are subject to continuous improvement, Lorex Technology Inc. and its subsidiaries reserve the right to modify product design, specifications, and prices without notice and without incurring any obligation. *E&OE*

Appendix B: Networking Checklist

Use this checklist to confirm you have completed all the steps of the Network Setup.

I have the following:

- High-Speed Internet
- Router
- Ethernet cable (included with the system)
- Computer

I have turned off the system and performed the following:

- Connected the Ethernet cable to the Ethernet (RJ45) port on the rear panel of the system
- Connected the other end of the Ethernet cable to my router

NOTE: Network Setup will not work if you do not have a router.

I have found my System Information:

- Press the ◀ button on the front panel of your system

My IP Address is: _____

My MAC Address is: _____

My Web Port is: _____

My Client Port is: _____

I have enabled Port Forwarding on my router:

- **Web Port (default: 80)**
- **Client Port (default: 3000)**

NOTE: For added security, we strongly recommend changing Web port 80 on the system to *any desired port*—the port must not be blocked by your Internet service provider (ISP).

NOTE: Certain ISPs (Internet Service Providers) block port 80. If you are unable to connect, check with your ISP and change the Web port (see “Changing the Web and Client Ports” on page 47). Make sure to port forward your revised web port.

NOTE: Each router is different, so port forwarding settings vary by model. If your router is not supported by the Auto Port Forward Wizard (available on the CD or on www.lorextechnology.com; PC only), please refer to your router's manual or contact your router's manufacturer for assistance.

I have configured DDNS for remote access to my system:

Go to <http://www.lorexddns.net> and Click Step 1 to create a free Lorex DDNS account. See "Step 2 of 4: Create a DDNS Account" on page 81. Fill in the information below from the confirmation email you receive after creating your account:

Domain name/URL Request: _ _ _ _ _
DDNS User Name: _ _ _ _ _
Device DDNS password: _ _ _ _ _

I have configured my system to connect to the DDNS server:

ATTENTION: You *MUST* enter your DDNS information *LOCALLY* on the DVR before attempting remote access.

To enable DDNS on your system:

- 1 Right-click to open the Main Menu and click **Setup**.
- 2 Click **Network** and select the **DDNS** tab.
- 3 Under **DDNS Enable**, select **LorexDDNS**.
- 4 Under **Domain Name**, enter your **Domain name/URL Request** from the confirmation email that was sent after you created your DDNS account. Click **Save & Exit** to confirm.
- 5 Under **User Name**, enter your **DDNS User Name** that was emailed to you after DDNS registration. Click **Save & Exit** to confirm.
- 6 Under **User Password**, enter your **DDNS Device password** that was emailed to you after DDNS registration. Click **Save & Exit** to confirm.
- 7 Click **Save**. Click **Exit** to return to Live Viewing.

NOTE: Please allow 10~15 minutes for the DDNS servers to update with your new DDNS address. This is normal for the DDNS system.

I can access my system from a remote Computer:**To access your system remotely:**

- 1 Open Internet Explorer and enter **http://**, your **Domain name/URL Request** from the confirmation email, followed by **.lorexddns.net**, **colon**, and the **Web port**. For example, *http://tomsmith.lorexddns.net:80*.
- 2 Enter the **User Name** and **Password** and click **Ok**.

NOTE: By default, the User Name is admin, and the Password is left blank.

NOTE: You must install plug-ins to access the system.

Appendix C: How do I find my IP & MAC address?

The IP and MAC address of your system are necessary for DDNS setup. DDNS allows you to view and control your system from a remote location.

NOTE: Make sure you have connected the DVR to your local or wide area network via the LAN port on the rear panel of the system, and then restart the DVR using the power switch.

To find your IP address and MAC address:

- 1 Press the ◀ button on the front panel of the system.



- 2 Press the **Exit** button to close the menu.

Finding Your External IP Address

If you wish to find your external IP address, you can use a third-party website such as www.showmyip.com. Your external IP address can also be found within your Router settings. Refer to your router's instruction manual for further details.

Appendix D: What is Port Forwarding And Other Frequently Asked Networking Questions

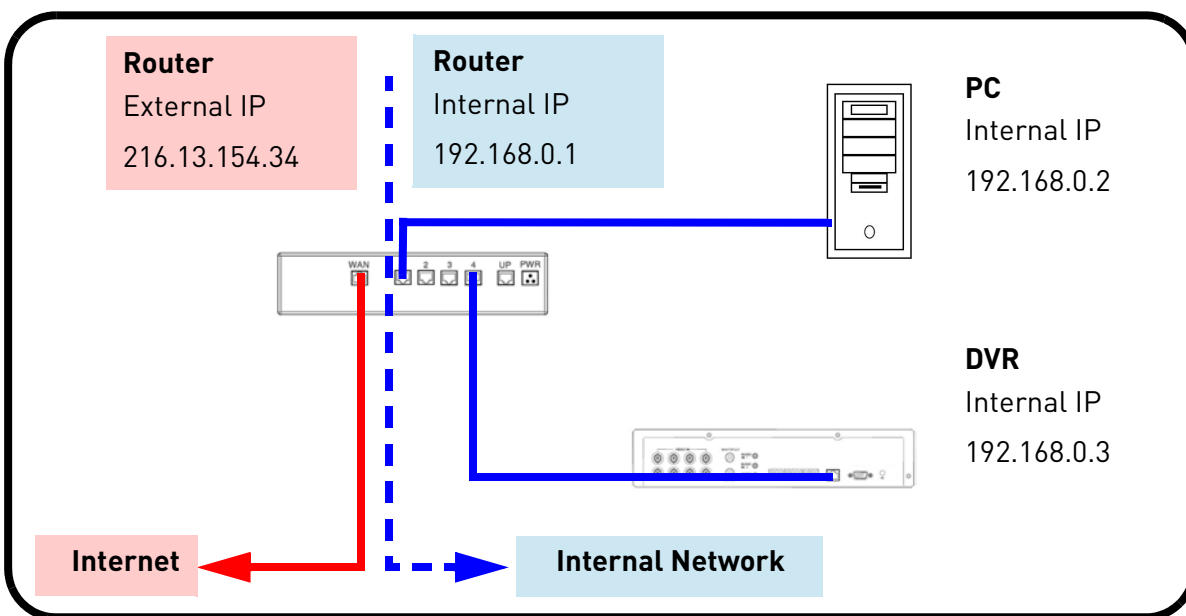
You need to enable port forwarding on your router to allow for external communications with your system for **all** of the following ports. Ports must be forwarded to your DVR's IP address.

- **80** (Web Port)
- **3000** (Client Port)

NOTE: For added security, we strongly recommend changing HTTP port 80 on the system to *any desired port*—the port must not be blocked by your Internet service provider (ISP).

Computers, DVRs, and other devices inside your network can only communicate directly with each other within the internal network. Computers and systems outside your network cannot directly communicate with these devices. When a system on the internal network needs to send or receive information from a system outside the network (i.e. from the Internet), the information is sent to the router.

NETWORK EXAMPLE



When a computer on the Internet needs to send data to your internal network, it sends this data to the external IP address of the router. The router then needs to decide where this data is to be sent to. This is where setting up Port Forwarding becomes important.

Port Forwarding tells the router which device on the internal network to send the data to. When you set up port forwarding on your router, it takes the data from the "**external IP address:port number**" and sends that data to an "**internal IP address:port number**" (e.g. Router External IP 216.13.154.34 to DVR Internal IP **192.168.0.3:80**).

How Can I Port Forward my Gateway or Router?

This question depends on the particular model of router you have. Nearly all models support some form of inbound TCP/IP routing, or port forwarding, and there are many resources to help you to forward an incoming connection to your video device. We provide an Auto Port Forwarding Wizard (for PC only), technical support information, and consumer guides on the CD and online at www.lorextechnology.com. You can also refer to www.portforward.com for details on a large variety of routers.

NOTE: The information on www.portforward.com is not maintained or supported by Lorex. Please check the instruction manual for your product to determine which ports must be configured to enable a remote connection.

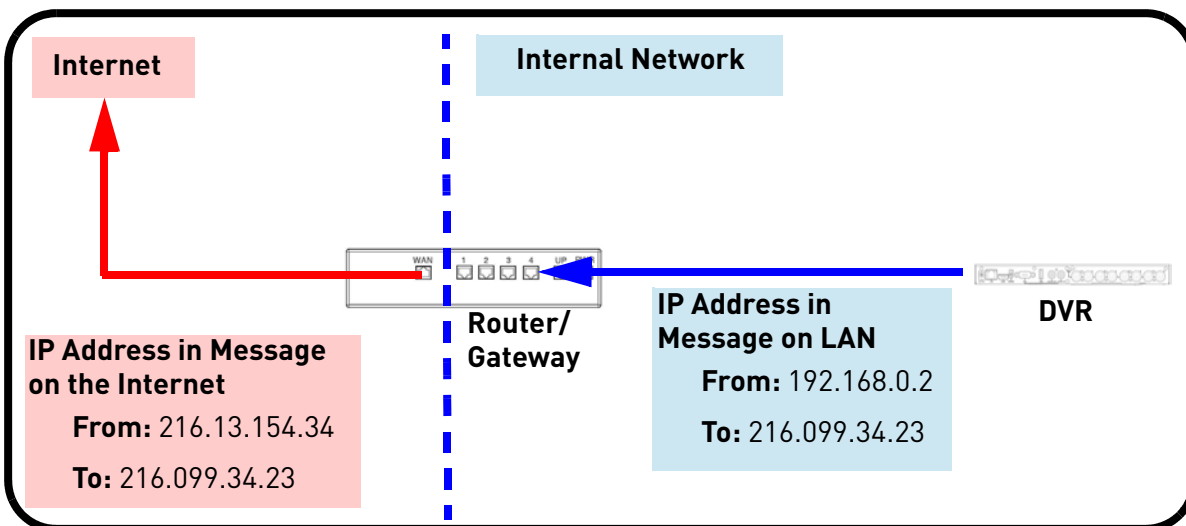
How Can I Test my Port Forwarding Configuration?

There are third-party websites that provide free port forwarding testers, such as <http://canyouseeme.org/> and the Port Forwarding Tester at <http://www.yougetsignal.com/>. These websites will find your external IP address and test if specified ports are open at that address.

NOTE: These websites are not supported by Lorex.

What is the Difference Between Internal and External IP Addresses?

Every device that communicates over the Internet must have a unique IP Address. These are called **external IP addresses** (sometimes referred to as public IP addresses). However, there are ranges of IP addresses that are excluded from this address space, so that they can be used internally by devices connected to Local Area Networks (LANs). These are **internal IP addresses** (sometimes referred to as private IP addresses). If devices that are using internal addresses wish to communicate with devices on the Internet, they must pass their messages through a network gateway, which will map the internal IP Addresses into a valid external IP address. This is called Network Address Translation (NAT), as shown in the following figure.



Example of Network Address Translation

How can I Find my External IP Address?

If you wish to find your external IP address, you can use a third-party website such as www.showmyip.com. Your external IP address can also be found within your Router settings. Refer to your router's user guide for further details.

What is the difference between Static and Dynamic IP Addresses?

IP Addresses are the numbers used by the Internet Protocol (IP) to identify your computer or device. Every computer or device that wants to communicate over the Internet must have an address, unique to that computer or device.

Internet Service Providers (ISPs) can issue IP Addresses in two ways:

- **Static assignment:** The ISP issues a permanent, non-changing address that must be manually entered into the computer or device. This number cannot be used by any other device.
- **Dynamic assignment:** The ISP uses a protocol called Dynamic Host Configuration Protocol (DHCP) that generates an IP Address and leases (i.e. provides) it to your computer or device for a predetermined length of time. After that time expires, your computer or device must request a new IP address. This means that your external IP address will change occasionally. Most residential Internet service packages use dynamic assignment.

Lorex provides a free Dynamic Domain Name Service (DDNS) for use with your system. DDNS allows you to set up a web site address that points back to your local network. This means that even if your external IP address changes, the web site address of your device will not change. Please visit <http://www.lorexddns.net> to sign up for your free DDNS account.

You must create a DDNS account in the same network as your DVR.

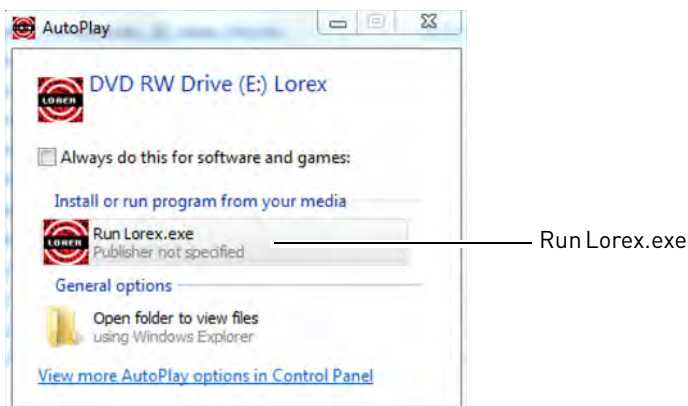
Appendix E: Internet Setup Wizard (PC only)

The Lorex Auto Port Forwarding Wizard is an exclusive software that easily automates router port forwarding. Before setting up a DDNS account, it is recommended to run the Auto Port Forwarding Wizard to port forward the required ports.

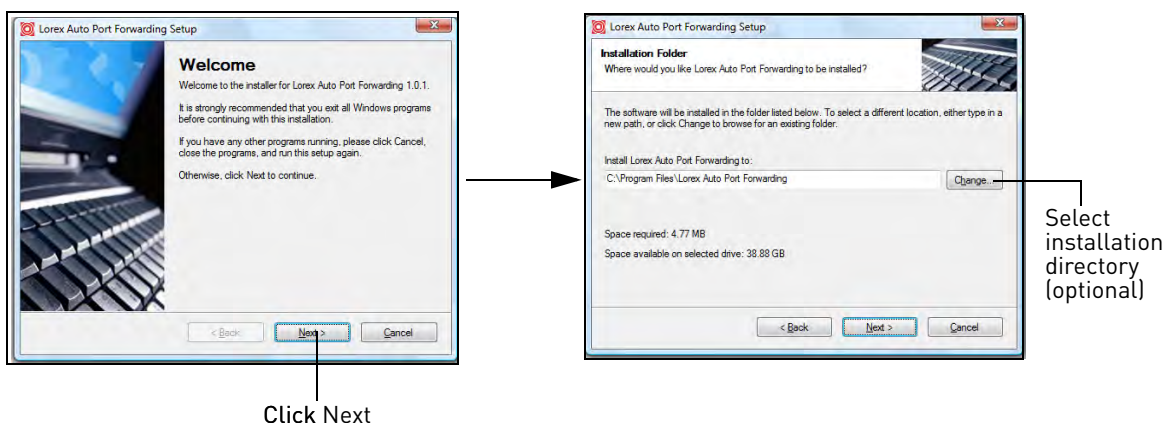
Installation

To install the Lorex Auto Port Forwarding Wizard:

- 1 Insert the system's software CD. An Autorun window appears.
- 2 Click **Run Lorex.exe**.



- 3 Click **Lorex Easy Connect**. Then click **Lorex Easy Connect Wizard**.
 - The installation window opens.
- 4 Click **Next** to continue.



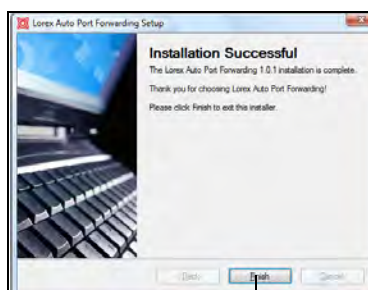
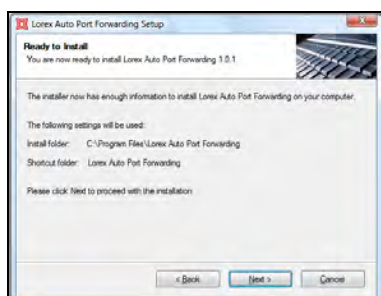
- 5 Click the **Change** button to change the default installation directory (optional). Click the **Next** button to continue.

- 6 Select the users who can see the Auto Port Forwarding shortcut (optional). Click the **Next** button to continue.



Select the users who can see the software shortcut (optional)

- 7 Click the **Next** button and then click **Finish** to complete the software installation.



Finish button

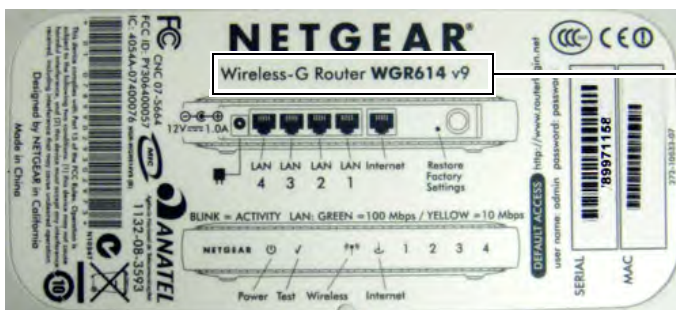


- 8 Double-click the Lorex Auto Port Forwarding shortcut () from your desktop to start the program.

Obtaining Your Router Model Number and Version

On most routers, the model and version number can be found underneath the router, printed on a sticker.

Example



Wireless-G Router WGR614 v9

- WGR614 refers to the model number
- v9 refers to the version number

Configuration

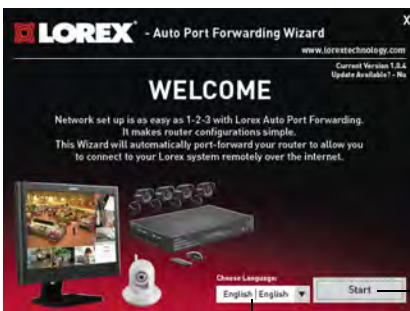


You must have the following before you configure the software:

1. Your router's model number and version number
2. Your router's user name and password
3. Your Lorex device's IP address
4. Your Lorex device's port numbers that require port forwarding

Initial Startup: Select language

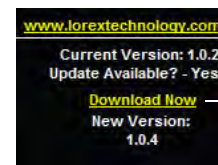
- 5 Check the top-right corner of the screen to see if software updates are available. If updates are available click **Download Now**.
 - Run the update file and install the latest version of the software.
- 6 Click the Language drop-down menu and select a language (English, French, Spanish). Click the **Start** button to continue.



Software update section

Start button

Language drop-down menu



Download Now button

A software update includes an updated list of routers compatible with the Auto Port forwarding Wizard

Step 1: Populate the router database

The Auto Port Forwarding Wizard automatically populates a list of current routers, and detects the number of connected routers.

- Click the **Next** button after the software detects your router configuration.



Click to update router database

Click to check for multiple routers



If more than one router is detected, you may need to contact your ISP (Internet Service Provider) to port forward.

For details on configuring multiple routers, see "Configuring Multiple Routers" on page 131.

Step 2: Enter your router settings

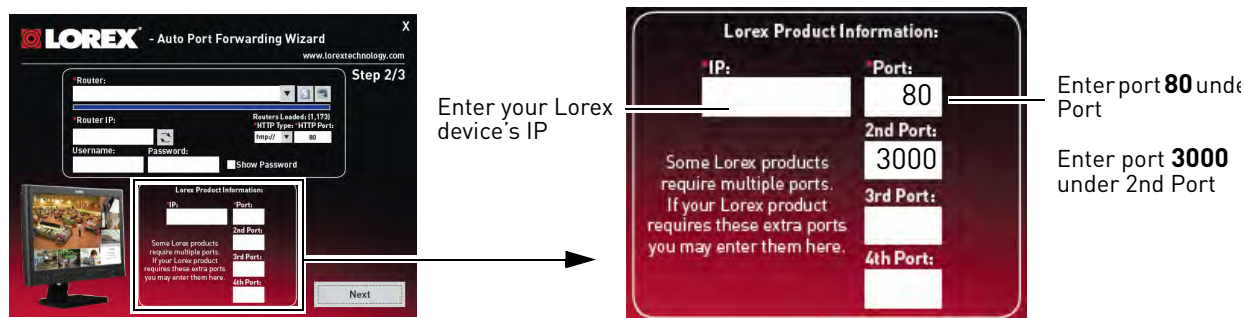
- Under the Router drop-down list, select the model of your router. **OR**

- Click the **Search** button () to enter the name of your router model.

NOTE: Click the **Auto Detect** button () if you have a Linksys or Netgear router (works with most Linksys or Netgear models).



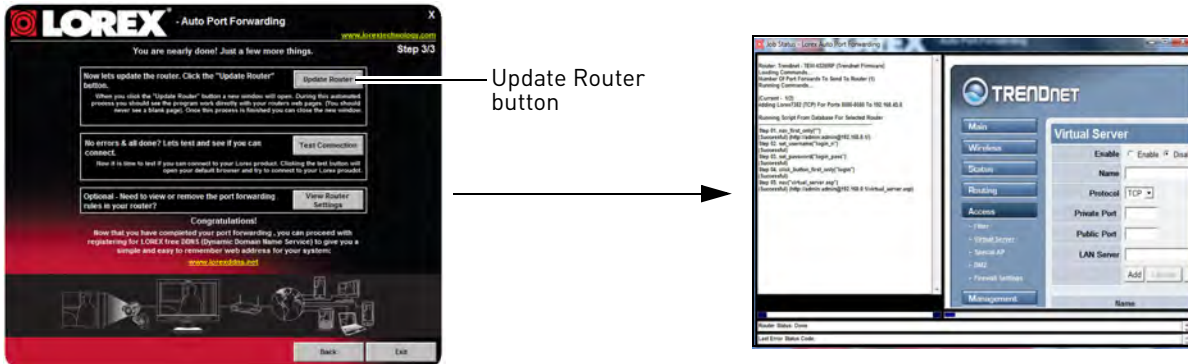
- Under Router IP, click the **Detect Router IP** button ().
 - The router's IP populates in the blank field. Click **OK** to exit the prompt.
- Under Username and Password, enter **the router's** username and password.
 - Optional: Under HTTP Type (default http://) and HTTP Port (default, 80), you may have to change the values depending on your router model. Consult your router manual for details.



- Under **IP**, enter the IP address of your Lorex device.
 - To find your system IP, exit to the main viewing mode, and then press  button on the front panel of the DVR.
- Under **Port**, enter the Web Port (default: 80). Under **2nd Port**, enter the Client Port (default: 3000).
- Click **Next** to continue.

Step 3: Update the router settings

- 1 Click the **Update Router** button.
 - You will see your router window open. The Auto Port Forwarding Wizard automatically populates your router with the relevant information. This will take a few moments.



- 2 Close the update window when the update finishes.

Step 4: Test your connection

- 1 Click the **Test Your Connection** button.
 - Your system's default browser opens and connects to your **Lorex device**.

NOTE: Ensure that Internet Explorer is your system's default Internet browser.

NOTE: A window opens that prompts you to enter in your **DVR's** user name and password (do not enter your DDNS log in information).

NOTE: ActiveX warnings may appear. Accept all ActiveX installation warnings to connect to your system.

Configuring Multiple Routers

Your network may have two or more connected routers. During the initial launch of the Auto Port Forwarding Wizard, the program scans the network to detect the number of connected routers.

To check for multiple routers:

- 1 Click the **Detect Multiple Routers** button ().
 - A list of connected router populates in the window.



- The "Possible 1st Router" refers to the router directly connected to your system. This is the router that requires the port forward information.

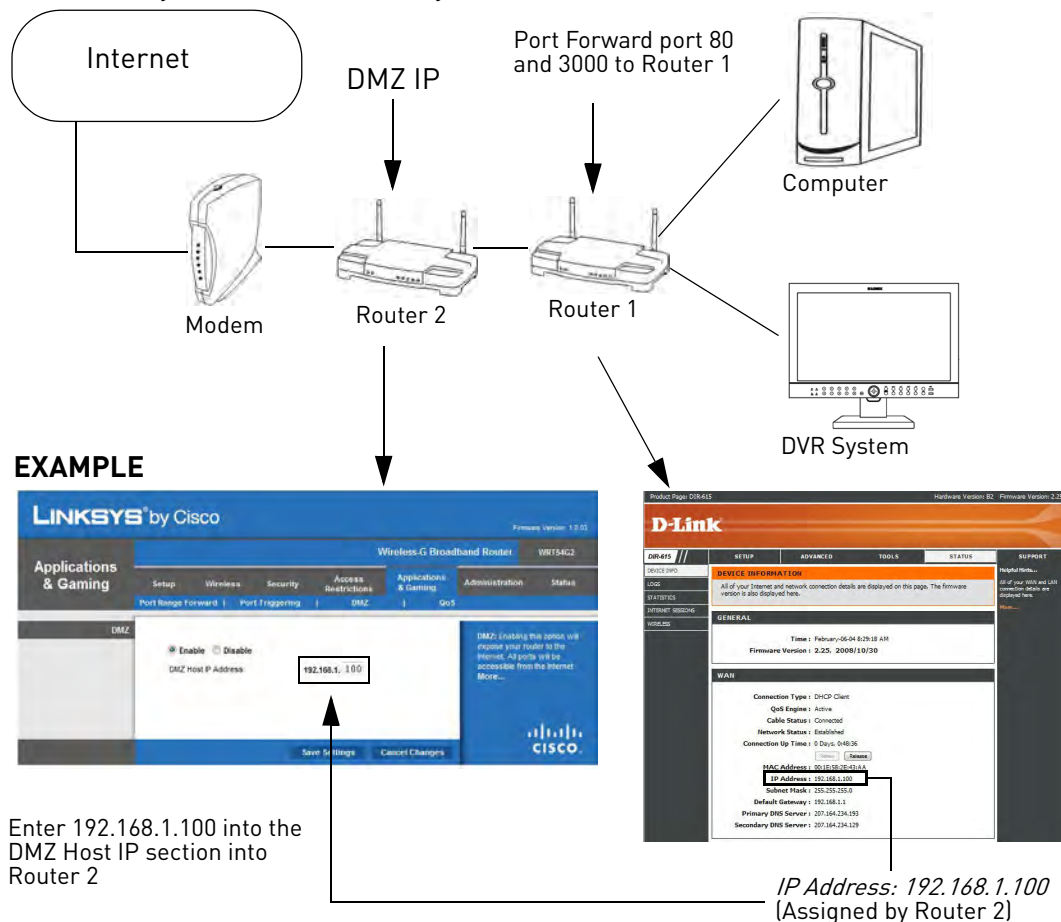
- The "Possible 2nd Router" refers to the router immediate to the Internet connection. This is the router that requires you to configure a DMZ host connection.

Scenario A: Router/Modem combination + Router

- You may have a router/modem combination, with a second router in your network.

Scenario B: Multiple Routers

- You may have two routers in your network.



In both scenarios, the router that is immediate to the internet connection (Router 2 in illustration) must act as a "bridge" to another router (Router 1 in illustration). The Auto Port Forwarding Wizard must connect to Router 1.

A proper DMZ configuration in Router 2 allows all incoming traffic going through Router 2 to automatically pass to Router 1. Router 2 acts as a "dummy" router and passes all the incoming data onto Router 1. Router 1 is the router that needs the port forwarding information.

Configuring a DMZ host connection

- Connect to "Router 1" on your network (referred to as "Possible 1st Router" in the Auto Port Forwarding Wizard). Obtain the IP address of Router 1. Usually this can be found in the "Status" section of your router menu. The IP should begin with "192.168....". This IP address is your DMZ IP.
- Enter the IP address obtained from Router 1 into the DMZ section of Router 2.
- Once you have configured Router 2 with a DMZ connection, run the Auto Port Forwarding Wizard to begin auto port forwarding to Router 1.
- Consult your router's owner's manual for details on configuring DMZ settings.

Example

DMZ stands for Demilitarized Zone. Enabling a DMZ IP on your router enables one of the routers to pass information onto the second router.

DMZ IP address assigned by a secondary router

Locating your Router IP - The Status Page

The "Status Page" of a router normally includes the router's vital information such as the IP address.

EXAMPLE

The IP information is normally under a header called "WAN" or "Internet Port". Each router has different terminology.

Router IP assigned by the main router. Enter this IP into the DMZ section of the primary router.

Appendix F: Assigning A Fixed IP To Your DVR

When connecting to your DVR through a local area network (LAN), you have the option of connecting to your system by entering the local IP of the DVR in a web browser. The local IP of your DVR is like your home's address. If someone wants to visit you, they need to know your home address. Similarly, the local IP of your DVR is your DVR's address.

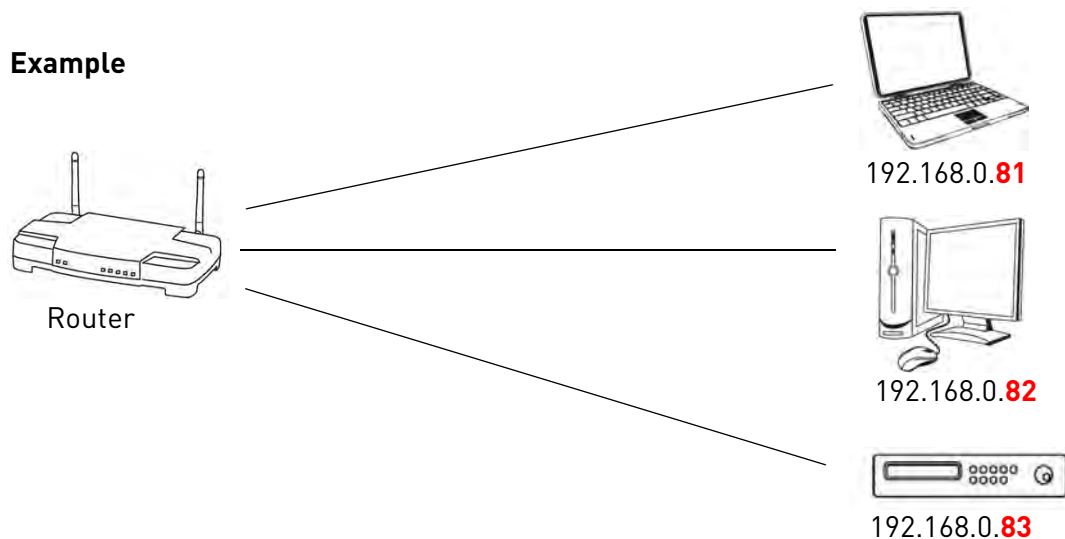
The problem arises when the local IP address of the DVR changes. Imagine moving every three months—nobody would ever be able to find you. To solve this problem, we can assign a fixed IP address—also known as a static IP address—so that the local IP of your DVR will never change.

What's the difference between DHCP and Static IPs?

DHCP

DHCP (Dynamic Host Configuration Protocol) allows your router to automatically assign an IP address to devices that are connected to it. DHCP is a convenient method for connected devices on your router to have an IP address immediately. This allows devices connected to your router to work right away on the network.

For example, your router assigns an IP address to your laptop, your desktop, and your DVR.



Each time the router restarts (due to power failure, etc.), there is no guarantee that the router will assign the same IP address to your laptop, desktop or your DVR. The router may assign a new IP address to all of the devices connected to it. This can be a problem if you want to connect to your DVR locally, since the IP address of the DVR has changed.

Fixed IPs

Setting a static IP on the router tells the router to reserve an IP address to a particular device. The static IP number is saved onto the router, and remains saved even if the router

is powered off. Likewise, a fixed IP address must also be specified in your DVR so that even if your DVR turns off, the IP address of the DVR remains the same. The fixed IP address must be assigned in the router and DVR. The end result is that you can power on and off the router and DVR, and the router will always assign the same IP address to the DVR.

Setting up a Fixed IP

Creating a fixed IP must be done on both the router and DVR.

NOTE: These are guidelines on how to create a static IP. Refer to the DVR & Router's owner's manual for details.

To create a fixed IP on the DVR:

- 1 Disable DHCP on the DVR.
- 2 Assign the designated local IP address of the DVR.

To create a fixed IP on the router:

- 1 Write down the MAC address of your DVR.
- 2 In the "DHCP Reservation List", enter the DVR's MAC address, and the desired IP that you wish to reserve.

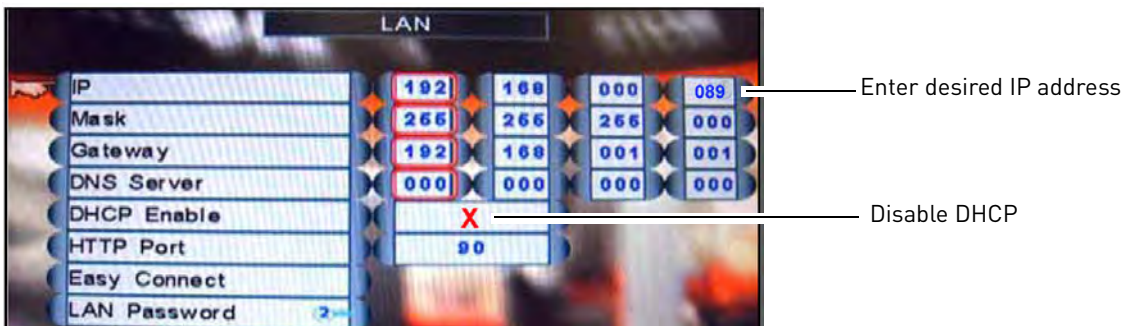
NOTE: The terminology varies between routers. "DHCP Reservation List" is an example only. Consult your router's user's manual for details.

Scenario Example

NOTE: The following scenario example is based on the Lorex Edge series (LH300 series) DVR, and the Trendnet TEW-652BRP router. The instructions below are for reference only.

Step 1 of 2: Enter the desired static IP address in the DVR

- 1 Open the LAN menu (Main Menu → LAN).
- 2 Beside **IP**, Enter the desired IP address. This IP address must be in the range specified by your router.
- 3 Beside **DHCP Enable**, Disable DHCP. Right-click to save your settings.



About IP Ranges

It is recommended to set the static IP address below the scope of your router. For example, if the router assigns an address ending between 100-254, choose an address ending between 2-99.

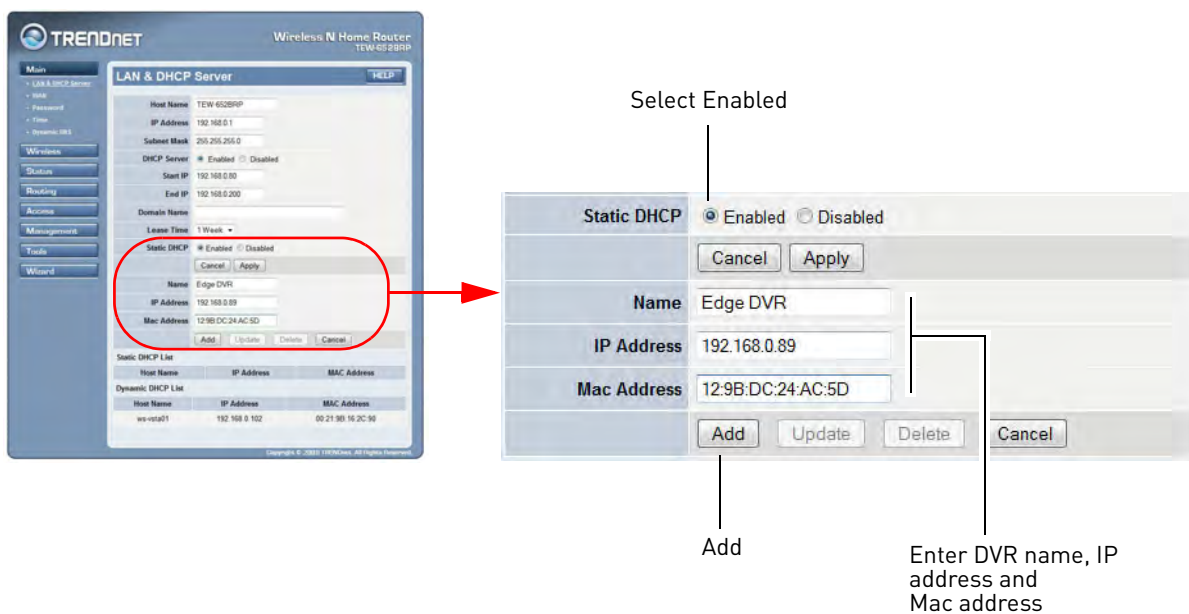
Step 2 of 2: Enter the desired static IP address in the router

Prerequisites:

- Obtain the DVR's MAC address

To enter a static IP into the router:

- 1 Under the main menu, click on **LAN & DHCP Server**.
- 2 Configure the following:
 - **Static DHCP:** Select **Enabled** and then click **Apply**.
 - **Name:** Enter the desired name of your device
 - **IP Address:** Enter the IP address that you wish to make static. This IP address must be the same address specified in the DVR.
 - **MAC Address:** Enter the MAC address of your DVR.



- 3 Click **Add**.
 - The DVR info appears in the Static DHCP list.

Static DHCP List		
Host Name	IP Address	MAC Address
Edge DVR	192.168.0.89	12:9B:DC:24:AC:5D

Once the DVR has been added to the Static DHCP list, you have successfully created a static IP address for your system.

Appendix G: Connecting a PTZ Camera

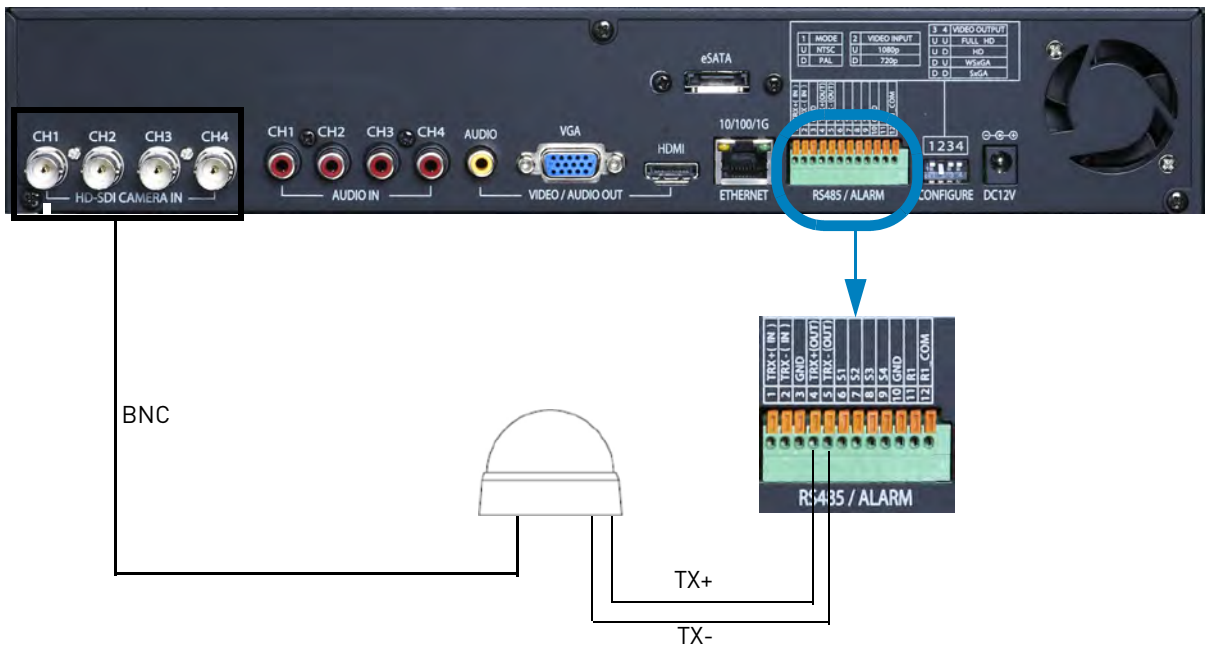
You can connect HD-SDI RS-485 PTZ cameras (not included) to the RS485 ports on the rear panel.



HD-SDI PTZ cameras are required to use PTZ functions. Regular BNC PTZ cameras are not compatible with the DVR.

To connect a PTZ camera to the system:

- 1 Connect the Transmit+ (TX+) Cable to **TRX+ (OUT)** on the **RS485 / Alarm** port on the rear panel.
- 2 Connect the Transmit- (TX-) Cable to **TRX- (OUT)** on the **RS485 / Alarm** port on the rear panel.
- 3 Connect the video cable to a BNC port.



Configuring PTZ Settings

Before you can use the PTZ controls, you must enter your camera's PTZ protocol details into the DVR.

Prerequisite:

- Obtain the PTZ protocol details for your camera. Check your camera's instruction manual for details.

To enter PTZ camera settings in the DVR:

- 1 Right-click to open the Main Menu. Click **Setup**→**Camera**→**PTZ**.
- 2 Under the channel that the PTZ camera is connected to, configure the following:



Select the Protocol, Camera ID, and Baud Rate. Check the instruction manual for your PTZ camera for details.

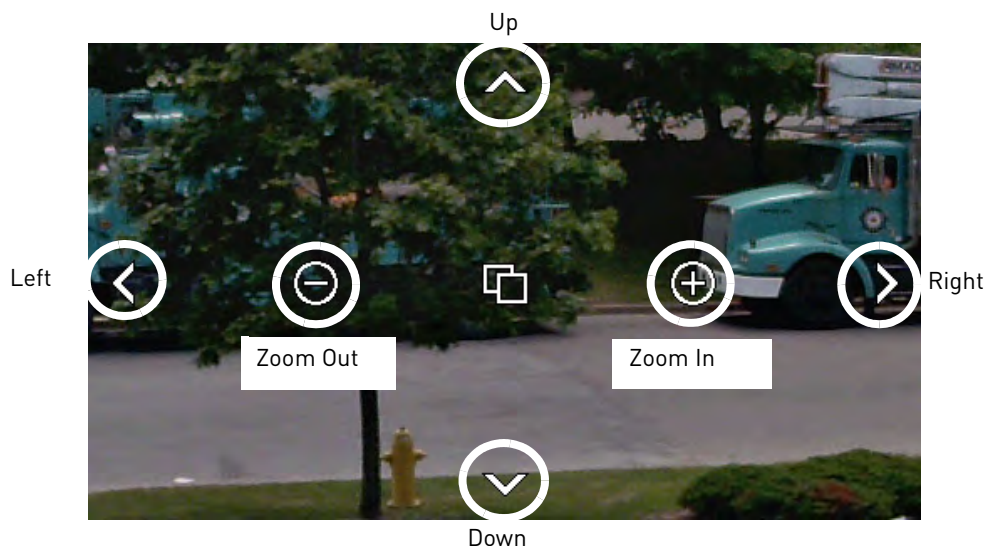
- **Protocol:** Double-click and select the protocol used by the camera.
- **Camera ID:** Double-click and select the camera ID.
- **Baud Rate:** Double-click and select the camera baud rate.

- 3 Click **Save**. Click **Exit** to return to Live Viewing mode.

PTZ Controls

To access PTZ controls:

- 1 Right-click to open the Main Menu and select **PTZ Control**.



- 2 Right-click again to access advanced PTZ controls.

Advanced PTZ Controls

Use the Advanced PTZ controls to configure PTZ presets, adjust the camera speed and

start PTZ tours.



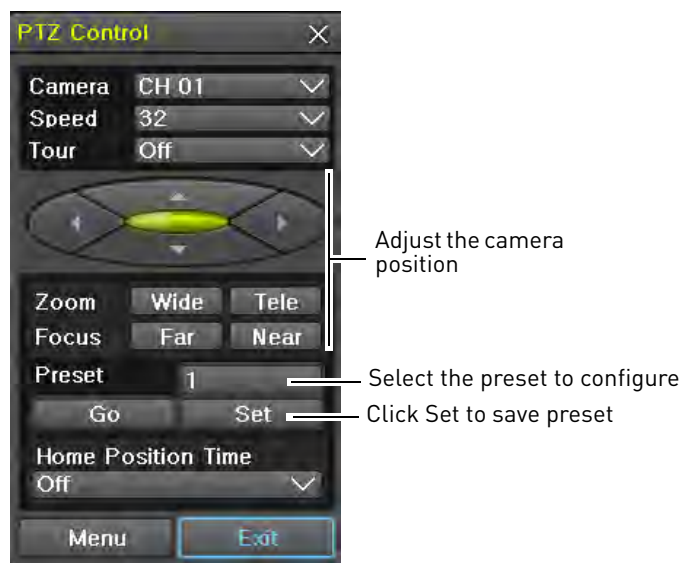
PTZ Presets

You can configure up to 15 presets for the camera. Presets can be used to configure customized PTZ tours, which allow the camera to automatically switch between presets every few seconds. The camera can also be set to go to a preset when an alarm occurs (e.g. when the camera detects motion).

You cannot delete presets; you must overwrite the preset with new settings to delete it.

Creating PTZ Presets

- 1 In the Advanced PTZ Controls, click **Preset** and select the number of the preset to configure. Click **Save & Exit** to confirm selection.



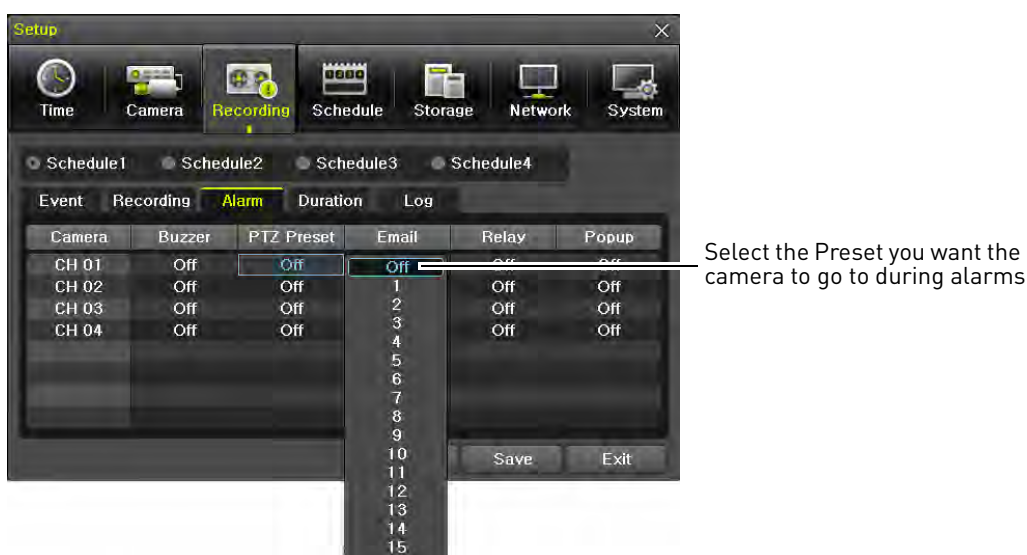
- 2 Use the direction and Zoom/Focus controls to move the camera into the desired position.
- 3 Click **Set** to save the preset.

Go to Preset

- 1 Click **Preset** and select a preset number. Click **Save & Exit** to confirm.
- 2 Click **Go** to have the camera move to that preset position.

Configuring the Camera to Go to Preset during Alarms

- 1 Right-click to open the Main Menu. Click **Setup→Recording→Alarm**.
- 2 Double-click under **PTZ Preset** for your PTZ camera, and select the Preset the camera will Go to during alarms.



- 3 Click **Save**. Click **Exit** to return to Live Viewing mode.

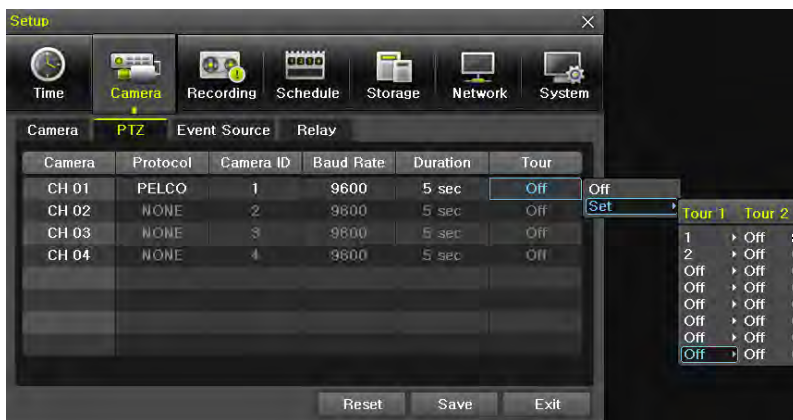
PTZ Tours

PTZ Tours allow you to configure the camera to switch between presets every few seconds. You can configure up to 2 tours with up to 8 presets each.

To create a PTZ tour:

- 1 From Live Viewing mode, right-click to enter the Main Menu. Click **Setup→Camera→PTZ**.
- 2 Double-click **Duration** and select the duration you would like the camera to stay on a preset before switching to the next one.
- 3 Double-click **Tour** under the PTZ camera, click **Set**.

- 4 Click inside **Tour 1** or **Tour 2** to configure the order of presets. If a Tour has any presets configured, it will be available when starting a tour.



Click inside Tour 1 or Tour 2 to configure the order of presets.

In this example, Tour 1 has Preset 1 selected as the first preset and Preset 2 selected as the second preset. Tour 2 is off.

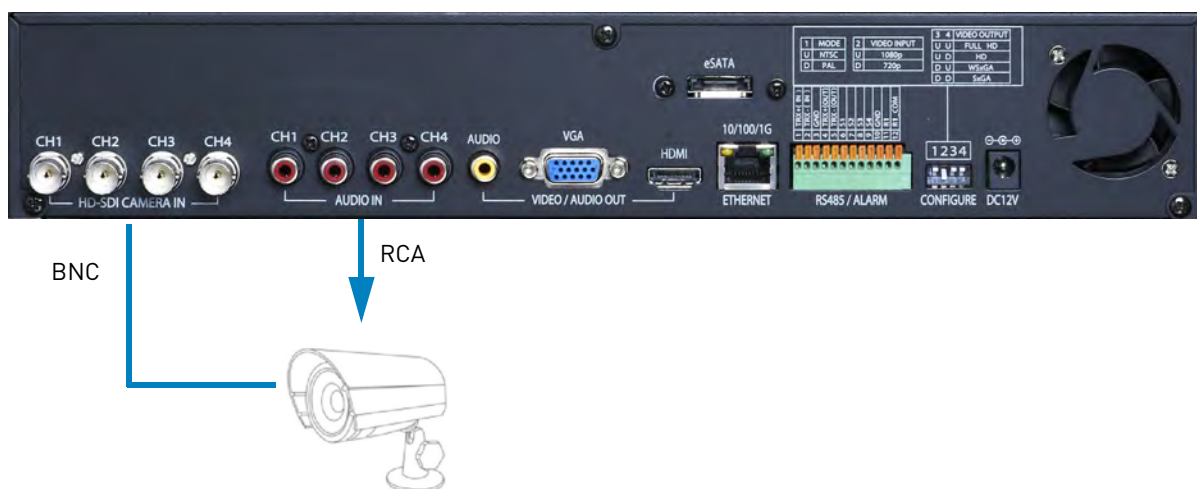
- 5 When you are finished, click **Save**.

To start a tour:

- 1 From Live Viewing mode, right-click to open the Main Menu and select **PTZ Control**.
- 2 Right-click again to open the Advanced PTZ Controls.
- 3 Click **Tour** and select the Tour you would like to start.
- 4 Click **Exit**.

Appendix H: Recording Audio

The system can also record audio for up to 4 channels. You must have audio-capable cameras (not included) or self-powered microphones (not included) in order to record audio on the system.



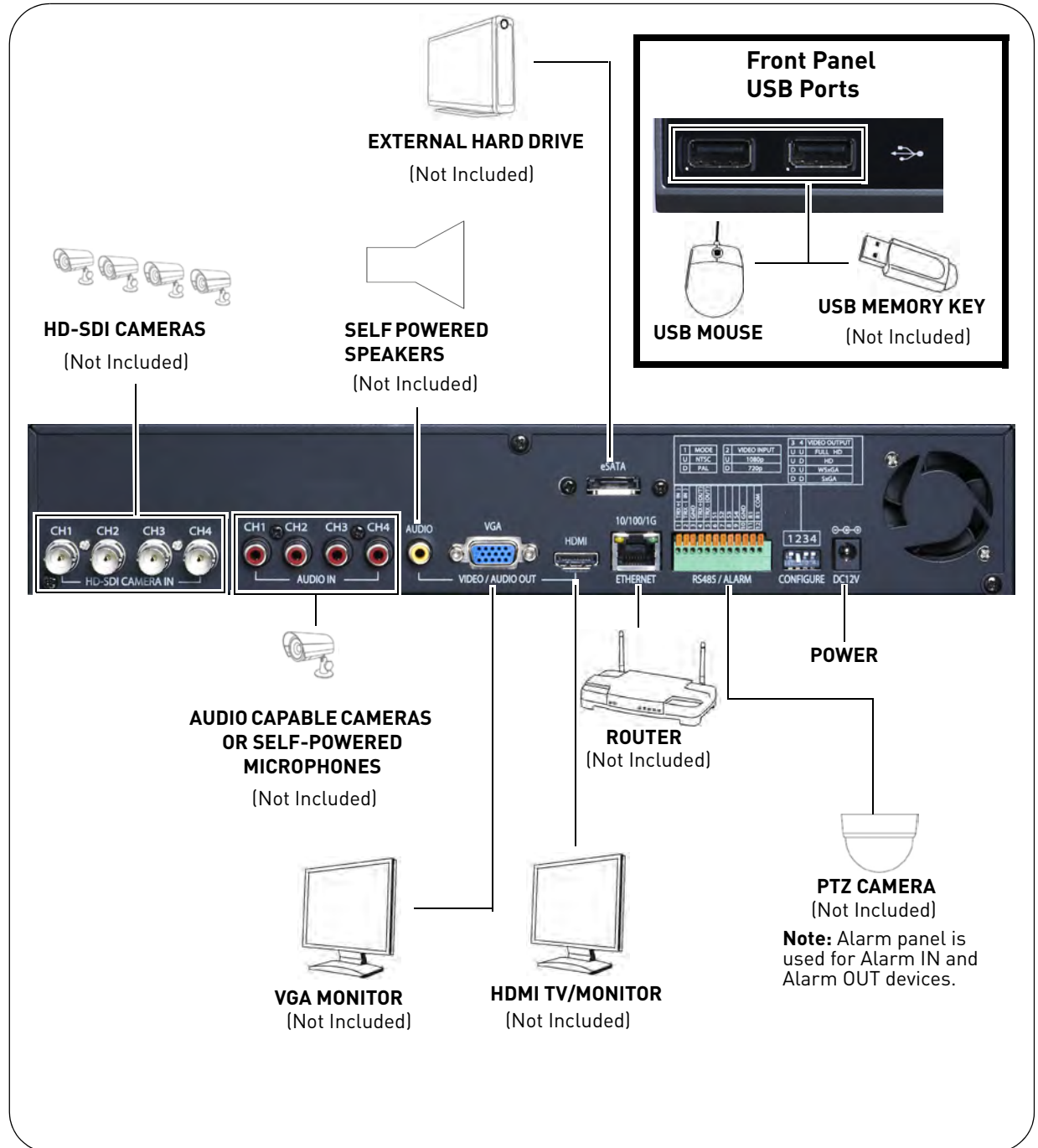
Connect an RCA audio cable from the camera into the corresponding Audio IN port

To enable audio recording:

- 1 Connect the BNC video cable from the camera to one of the **HD-SDI CAMERA IN** ports on the rear panel of the DVR. For example, connect the camera to Video INPUT port 1.
- 2 Connect the RCA audio cable from the camera to the corresponding **Audio IN**. Following the example in step 1, you would connect the cable to Audio IN port 1.
- 3 From Live Viewing mode, right-click to open the Main Menu. Click **Setup** then **Recording**.
- 4 Select the **Recording** tab.
- 5 Double-click under **Audio** for the channel you connected in step 1 and 2 and select **On** to enable audio recording.
- 6 Click **Save** to save your changes. Click **Exit** to return to Live Viewing mode.

Appendix I: Full Connectivity Diagram

The following diagram outlines a general set of connections available with the system.



Appendix J: Hard Drive Installation

The system comes with a pre-installed 3.5" SATA hard drive. It can support up to 2 x 2TB hard drives, for a total storage capacity of 4TB.

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

Installing a Hard Drive

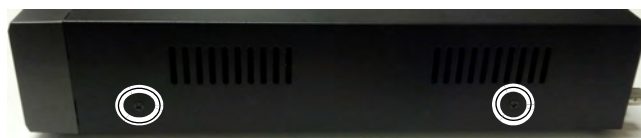


Make sure that the power cable has been disconnected before installing a hard drive.

NOTE: Screws to install a second hard drive are not provided.

To install a hard drive:

- 1 Remove the 2 screws from each side panel.



Side panel screws

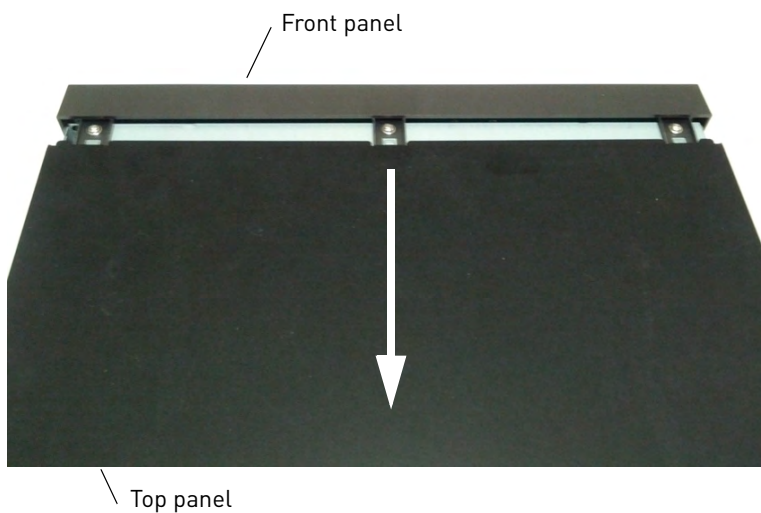
- 2 Remove the 3 screws from the back panel.



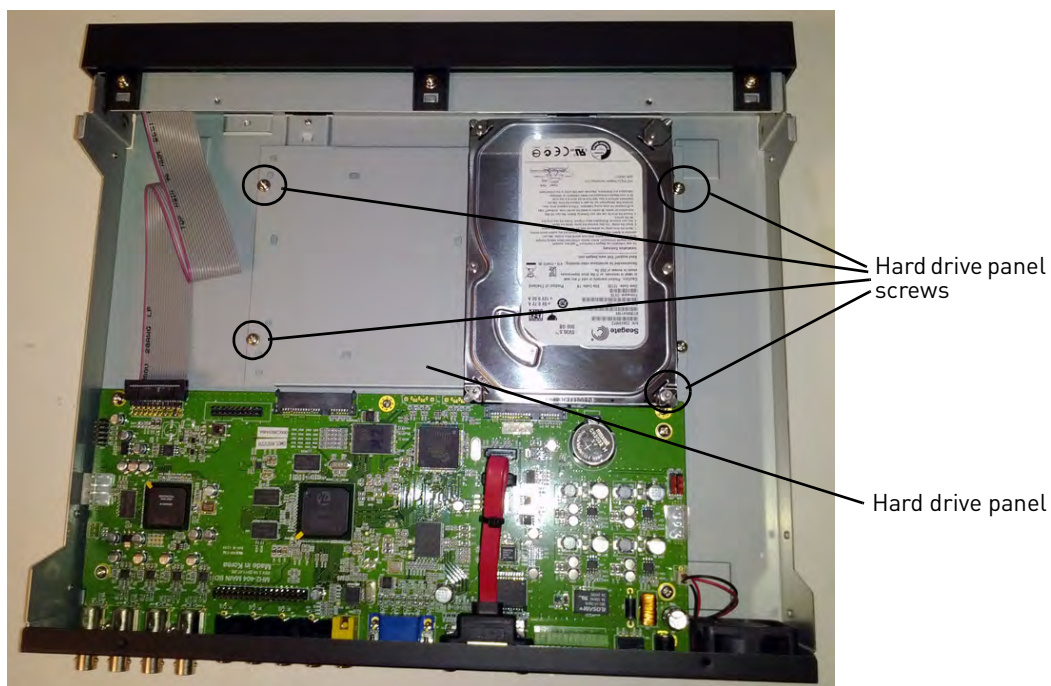
Back panel screws

- 3 Slide the top panel of the DVR away from the front panel and lift it up to remove it from the DVR.

NOTE: Be careful of sharp edges.



- 4 Remove the 4 screws connecting the hard drive panel to the DVR.



- 5 Carefully slide the hard drive panel straight back until it is clear of the DVR SATA connector(s) and lift it out of the DVR.



DVR SATA connector

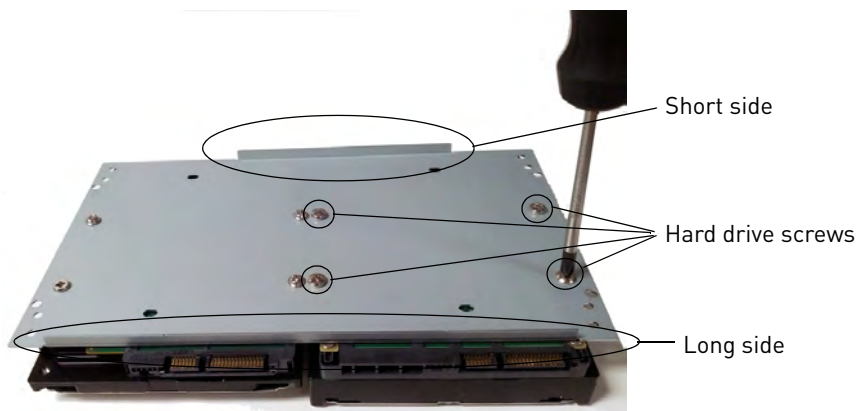
- 6 Turn the hard drive you want to install upside down, so that the SATA and power connectors are facing up.



HDD power and
SATA connector

- 7 Turn the hard drive panel over on top of the hard drive with the long side facing the SATA connectors (see illustration below). Insert 4 screws to secure the hard drive to the hard drive panel.

NOTE: Screws to install a second hard drive are not provided.



- 8 Turn the hard drive panel back over and place it inside the DVR with the hard drive(s) SATA and power connectors aligned with the DVR SATA connector(s). Slide the hard drive(s) into the SATA connector(s).



DVR SATA connector

- 9 Replace the 4 hard drive panel screws to secure the hard drive panel to the DVR.
- 10 Replace the top panel of the DVR by lowering it over the DVR and sliding forward. Make sure to align the lip on the top panel so it slides under the front panel of the DVR.



- 11 Replace the 2 screws from each side panel and 3 screws from the back panel.



You must format the hard drive before it can be used for recording.
See "Formatting the Hard Drive" on page 150.

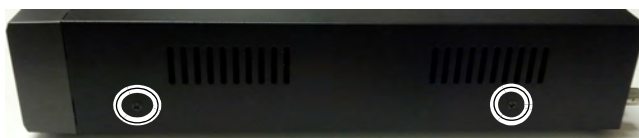
Removing a Hard Drive



Make sure that the power cable has been disconnected before removing the hard drive.

To remove a hard drive:

- 1 Remove the 2 screws from each side panel.



Side panel screws

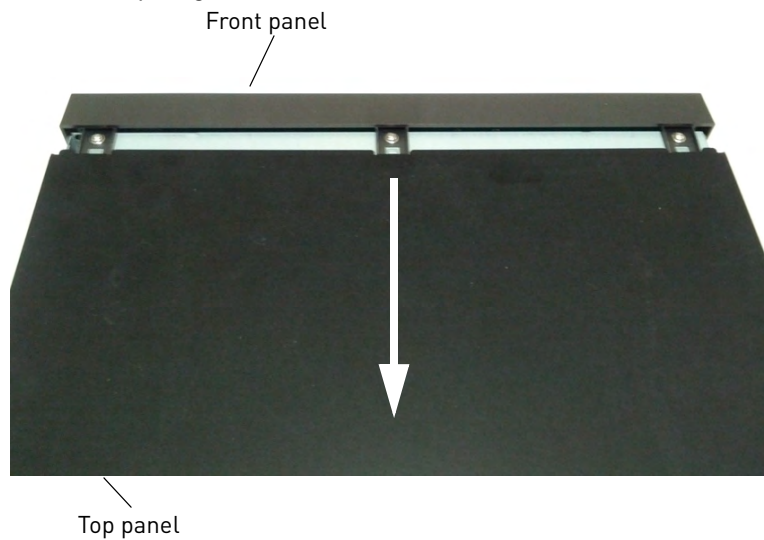
- 2 Remove the 3 screws from the back panel.



Back panel screws

- 3 Slide the top panel of the DVR away from the front panel and lift it up to remove it from the DVR.

NOTE: Be careful of sharp edges.



- 4 Remove the 4 screws connecting the hard drive panel to the DVR.

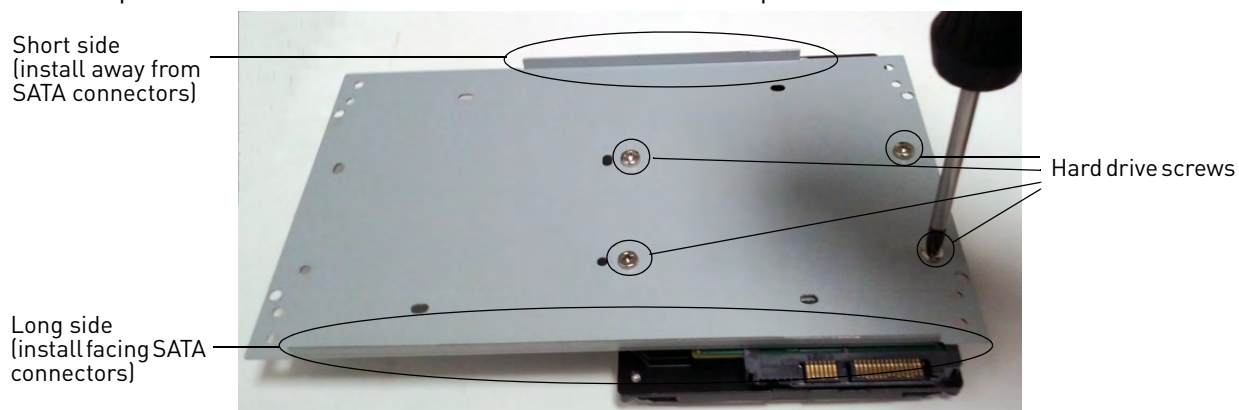


- 5 Carefully slide the hard drive panel straight back until it is clear of the SATA connector(s) and lift it out of the DVR.



SATA connector

- 6 Turn the hard drive panel over and remove the 4 screws connecting the hard drive to the hard drive panel. Remove the hard drive from the hard drive panel.



- 7 Turn the hard drive panel back over and place it back inside the DVR with the long side (see above) facing the DVR SATA connectors. Replace the 4 hard drive panel screws.

NOTE: If there is a hard drive still installed, make sure to align the hard drive SATA and power connectors with the DVR SATA connector and slide the hard drive onto the DVR SATA connector.

- 8 Replace the top panel of the DVR by lowering it over the DVR and sliding forward. Make sure to align the lip on the top panel so it slides under the front panel of the DVR.



- 9 Replace the 2 screws from each side panel and 3 screws from the back panel.

Formatting the Hard Drive

If you install a new hard drive or replace the original pre-inserted hard drive, it *must* be formatted in order to function properly with the system.

Hard drives may be formatted as recording drives, which save recordings saved by the system, or backup drives, which can be used to backup saved recordings or save screen captures. **At least 1 recording drive is required to use the system.**

Formatting a Hard Drive as a Recording Hard Drive

ATTENTION: Formatting the HDD erases **all data** on the hard disk.
This step cannot be undone.

- 1 Right-click to open the **Main Menu**. Click **Setup** then **Storage**.
- 2 Select the **New** tab. A list appears with un-formatted hard drives and USB drives.
- 3 Double-click the hard drive you would like to format and select **Recording-Format** to use the hard drive as a recording hard drive. Click **Yes** to confirm. Wait for the hard drive to format.



Formatting a Hard Drive as a Backup Hard Drive

ATTENTION: Formatting the HDD erases **all data** on the hard disk.
This step cannot be undone.

- 1 Right-click to open the Main Menu. Click **Setup** then **Storage**.
- 2 Select the **New** tab.
- 3 Double-click the hard drive you would like to format and select **Backup-Format** to use the hard drive as a recording hard drive. Click **Yes** to confirm. Wait for the hard drive to format.

Appendix K: Daylight Saving Time on your DVR

This DVR supports automatic Daylight Savings Time adjustments and Network Time Protocol (NTP), which allows you to sync your DVR's time with a online time server. For details, see "Configuring Daylight Savings Time (DST)" on page 18 or see "Using a NTP Server to set your System Time" on page 19.

NOTE: You must configure and enable automatic DST on your DVR even to use this feature.

Why is the DVR Timestamp Important?

Your DVR's time stamp is crucial when submitting surveillance video as court evidence. It is highly recommended to double-check that your system has the proper time, even if your system supports automatic DST adjustments.

When should I adjust my system clock?

In North America, most cities observe DST.

- **In March:** the clock moves one hour **forward**
- **In November:** the clock moves one hour **backward**

The specific date in the month where DST starts and ends varies each year. **The table below applies to North America only.**

Year	DST Begins 2:00am (+ 1hr)	DST Ends 2:00am (- 1hr)
2012	March 11	November 4
2013	March 10	November 3
2014	March 9	November 2
2015	March 8	November 1

Source: NASA (2010).

Retrieved online: <http://eclipse.gsfc.nasa.gov/SEhelp/daylightsaving.html>

Troubleshooting

When a malfunction occurs, it may not be serious and can be corrected easily. The following describes the most common problems and solutions. Please refer to the following before calling Lorex Technical Support:

Error	Possible Causes	Solutions
System is not receiving power, or is not powering up	Cable from power adapter is loose or is unplugged	- Confirm that all cables are connected correctly - Confirm that the power adapter is securely connected to the back of the unit
	Cables are connected, but system is not receiving sufficient power	- 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)
	System has been shutdown using power button or menu	Press the power button on the front panel of the DVR
Remote control is not detected by the system	Battery in the remote control is drained	Install two fresh AAA alkaline batteries in the remote control
	There are no batteries in the remote control	
Hard drive is not detected by the system	Hard drive connectors are loose or not properly connected	Remove the housing and check that hard drive connectors are firmly connected. To avoid damage to the system, hard drives should be firmly connected to the hard drive panel and the hard drive panel should be firmly connected to the DVR using screws
	There is no hard drive in the system	Open the housing and install a 3.5" SATA hard drive. Make sure to format the drive for recording after installing. For details, see "Formatting a Hard Drive" on page 43.
Hard drive is full and the unit is no longer recording	Overwrite is not enabled	From the Main Menu, select SETUP→STORAGE and select On under HDD Overwrite

Troubleshooting (Continued)

Error	Possible Causes	Solutions
There is no picture on monitor/TV after connecting it to the DVR	Monitor/TV not detected by DVR	Power off the monitor/TV and DVR. Power on the monitor/TV, and then power on the DVR
	Input channel for DVR not selected on monitor/TV	On the monitor/TV, select the input channel the DVR is connected to
	Video cable is loose or has become disconnected	Check the video cable connection to the DVR and monitor/TV
	Video-out resolution has been set to the incorrect setting	Ensure the Input/Output switches on the back panel are set to the correct resolution settings for your monitor. See page 4 for details
	HDMI and VGA TVs/monitors connected at the same time	The DVR can only use a single monitor connected using either VGA or HDMI. Disconnect one of the monitors and restart the DVR using the power cable
Mouse not detected by system	Mouse cable is not firmly connected to the system	Firmly connect the mouse cable to a USB port on the front panel
	Mouse is not connected to the system	
	System needs to be reset	Power off the system (disconnect power cable). Firmly connect a USB mouse to the USB Mouse port on the front panel of the system. Reconnect the power cable to the DC 12V 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
	There is an issue with the extension cable	- Ensure you are using high-grade RG59 extension cables - Ensure you are only running one cable for the entire run between the camera and the DVR - Ensure the extension cable is no longer than 300ft
	Cameras are incompatible with the DVR (Non-HD-SDI cameras)	HD-SDI cameras are required for use with this DVR. Regular BNC cameras cannot be used
	Camera input resolution is set incorrectly	Make sure that the #2 Input/Output switch on the back panel is set to U for 1080p cameras or D for 720p cameras. You cannot use a mix of 720p and 1080p cameras
The image on the DVR appears, but does not have sound	No audio device connected	Audio-capable cameras (not-included) or self-powered microphones (not-included) are required for audio
	Audio has not been enabled	See "Appendix H: Recording Audio" on page 142.

	• Audio cables are loose or have been disconnected	• Check the AUDIO Input connections to the DVR
	• Volume on external speakers (not included) is low or off	• Increase volume on external speakers (not included)
• The system beeps at startup		• The beep at startup is normal
• The system beeps during motion detection	• Motion detection is enabled and the alarm buzzer is activated	• From the Main Menu, click Setup→Recording→Alarm. Select Off under Buzzer for channels with motion detection enabled
• I am not receiving email notifications	• Email notification is disabled	• Ensure you have configured email notification. For details, see "Enabling Email Notifications" on page 48

Troubleshooting Remote Connections

Error	Possible Causes	Solutions
• Cannot connect to the DVR on a local network	• DVR not connected to router	• Connect an Ethernet cable from the DVR Ethernet port to your router, and then reset the DVR by disconnecting and reconnecting the power cable
	• DVR and computer not on same network	• Ensure your DVR and computer are connected to the same router • If your computer is using a WiFi network, try connecting it to the router using an Ethernet cable
• Cannot connect to the DVR over the Internet	• Ports not forwarded	• Port Forward the Web port (default: 80) and Client Port (default: 3000) on your router. For details, see "Appendix E: Internet Setup Wizard (PC only)" on page 127 or see "Appendix D: What is Port Forwarding And Other Frequently Asked Networking Questions" on page 124
	• DDNS account not created	• Follow the instructions under "Step 2 of 4: Create a DDNS Account" on page 81
	• DDNS not enabled on DVR	• Follow the instructions under "Step 3 of 4: Return to the DVR and Enable DDNS" on page 85
	• DDNS address not entered correctly	• In Internet Explorer, enter http://, the Domain name/URL Request from the confirmation email, followed by .lorexddns.net, then colon, and the Web port (for example, <i>http://tomsmith.lorexddns.net:80</i>)
• Cannot connect to the DVR using a mobile device	• DVR has not been configured for Internet connection	• Ensure you have followed all the steps in "Setting up your DVR for Remote Connectivity" on page 77. See above to troubleshoot remote connections
	• IP address used from outside internal network	• Use the DDNS address to connect to the DVR using a mobile application
	• Router is blocking DDNS connection from internal network	• Turn off WiFi connection and attempt to connect using 3G or mobile network

EXPAND AND CUSTOMIZE YOUR SYSTEM WITH A FULL RANGE OF CAMERAS & ACCESSORIES



Specialty Cameras



Wireless Cameras



Dome Cameras



Digital Video Recorders



Monitors



Simulated Cameras



Security Hard Disc Drives



Extension Cables



Accessories

www.lorextechnology.com

1-888-42-LOREX (1-888-425-6739)