OpenEye®

ML – SERIES CLOUD MANAGED SERVER

HARDWARE MANUAL

OpenEye ML-Series Recorders
Hardware Manual

Manual Edition 37365AB – March 2020

The following words and symbols mark special messages throughout this guide:

	Note	Text set off in this manner indicates information that is necessary for proper operation of the product.

OPENEYE
Liberty Lake, WA ● U.S.A.

IMPORTANT SAFEGUARDS

1. **Read Owner's Manual** – After unpacking this product, read the owner's manual carefully, and follow all the operating and other instructions.

2. **Power Sources** – This product should be operated only from the type of power source indicated on the label. If not sure of the type of power supply to your home or business, consult product dealer or local power company.

3. **Ventilation** – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or OpenEye's instructions have been adhered to.

4. **Heat** – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products that produce heat.

5. **Water and Moisture** – Do not use this product near water. Do not exceed the humidity specifications for the product as detailed in the Appendix section in this manual.

6. **Cleaning** – Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

7. **Power Cord Protection** – Power-supply cords should not be routed so that they are likely to be walked on or pinched by items placed against them, paying particular attention to cords at plugs, receptacles, and the point where they exit the product.

8. **Overloading** – Do not overload wall outlets; extension cords, or integral convenience receptacles as this can result in a risk of fire or electrical shock.

9. **Object and Liquid Entry Points** – Never insert foreign objects into the recorder, other than the media types approved by OpenEye, as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the product.

10. **Accessories** – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious personal injury and serious damage to the product.

11. **Disc Tray** – Keep fingers well clear of the disc tray as it is closing. Neglecting to do so may cause serious personal injury.

12. **Burden** – Do not place a heavy object on or step on the product. The object may fall, causing serious personal injury and serious damage to the product.

13. **Disc** – Do not use a cracked, deformed, or repaired disc. These discs are easily broken and may cause serious personal injury and product malfunction.

14. **Replaceable Batteries** – CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

15. **Grounded Outlet** – This equipment shall be connected to a properly grounded outlet.

16. **Outlet Location** – This equipment must be installed within six feet of an easily accessible outlet.

17. **Damage Requiring Service** – Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:

   - When the power-supply cord or plug is damaged.

   - If liquid has been spilled, or objects have fallen into the unit.

   - If the unit has been exposed to rain or water.

   - If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation

   - If the unit has been dropped or the enclosure has been damaged.

   - When the unit exhibits a distinct change in performance - this indicates a need for service.

18. **Servicing** – Do not attempt to service this product unless instructed to by an OpenEye engineer. Opening or removing covers may expose the user to dangerous voltage or other hazards. Refer all servicing to qualified personnel.

19. **Replacement Parts** – When replacement parts are required, be sure the service technician has used replacement parts specified by OpenEye or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

20. **Safety Check** – Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

NOTES ON HANDLING

Please retain the original shipping carton and/or packing materials supplied with this product. To ensure the integrity of this product when shipping or moving, repackage the unit as it was originally received from OpenEye.
Do not use volatile liquids, such as aerosol spray, near this product. Do not leave rubber or plastic objects in contact with this product for long periods of time. They will leave marks on the finish.
The top and rear panels of the unit may become warm after long periods of use. This is not a malfunction.

NOTES ON LOCATING

Place the unit on a level surface. Do not use it on a shaky or unstable surface such as a wobbling table or inclined stand.
If this unit is placed next to a TV, radio, or VCR, the playback picture may become poor and the sound may be distorted. If this happens, place the recorder away from the TV, radio, or VCR.

NOTES ON CLEANING

Use a soft dry cloth for cleaning.
For stubborn dirt, soak the cloth in a weak detergent solution, wring well and wipe. Use a dry cloth to wipe it dry. Do not use any type of solvent, such as thinner and benzene, as they may damage the surface of the recorder.
If using a chemical saturated cloth to clean the unit, follow that product's instructions.

NOTES ON MAINTENANCE

This recorder is designed to last for long periods of time. To keep the recorder always operational we recommend regular inspection maintenance (cleaning parts or replacement). For details contact the nearest dealer.

NOTES ON MOISTURE CONDENSATION

Moisture condensation could damage the recorder. Read the following information carefully.
Moisture condensation might occur under the following circumstances:

- When this product is brought directly from a cool location to a warm location.

- When this product is moved to a hot and humid location from a cool location.

- When this product is moved to a cool and humid location from a warm location.

- When this product is used in a room where the temperature fluctuates.

- When this product is used near an air-conditioning unit vent.

- When this product is used in a humid place.

Do not use the recorder when moisture condensation may occur.
If the recorder is used in such a situation, it may damage discs and internal parts. Remove any CD discs, connect the power cord of the recorder to the wall outlet, turn on the recorder, and leave it for two to three hours. After two to three hours, the recorder will warm up and evaporate any moisture. Keep the recorder connected to the wall outlet and moisture will seldom occur.

WARNING

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE.
DO NOT OPEN THE CABINET.
REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

EXPLANATION OF GRAPHICAL SYMBOLS

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

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

EN 55022 Class A Notice

WARNING
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Standard Warranty

OpenEye warrants all new products, purchased through authorized OpenEye resellers & Distributors, to be free from defects in workmanship and material under normal use for a **period of two years** after the date of purchase. Any defective product that falls under this warranty will, at OpenEye's discretion, be repaired or replaced at no additional charge. OpenEye may elect to replace defective products with new or factory reconditioned products of equal or greater value. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.
Exceptions to this are listed below:

- Three years on all Digital Recorders

- Three years on all analog and IP fixed cameras

All products shall be covered by a one year advance replacement warranty*.
OpenEye will warrant all otherwise out of warranty replacement parts and repairs for 90 days from the date of OpenEye shipment.
The above warranty is the sole warranty made by OpenEye and is in lieu of all other warranties by OpenEye express and implied, including without limitation the warranties of merchantability and fitness for a particular purpose. Under no circumstances will OpenEye be liable for any consequential, incidental, special or exemplary damages arising out of or connected with the sale, delivery, use or performance of the product, even if OpenEye is apprised of the likelihood of such damages occurring. In no event shall OpenEye liability exceed the purchase price of the product.
This warranty gives you specific legal rights and you may also have other rights which vary from state to state or country to country.
This warranty does not apply to products purchased through unauthorized sales channels.
Requires corresponding security deposit. Advanced Replacement limited to components only outside of the USA and Canada.

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For the most up to date information visit openeye.net.

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INTRODUCTION

PRODUCT DESCRIPTION

The OpenEye ML-Series is designed to offer customers a cost-effective, plug n' play, all-in-one IP recording solution. The compact 2U chassis is well-suited for installation in a variety of environments and includes hardware for rack mounting. With a built-in 16 or 24-port PoE switch, the ML-Series cloud-managed recorder features dual network ports, relay-sensor connections, and a secure Linux operating system with the option to upgrade to Windows. A dedicated solid-state OS drive comes standard to improve reliability and provide faster boot times. Single-cable connection for PoE cameras and a built-in configuration wizard for Apex server software create a hassle-free setup.

Fully integrated with OpenEye Web Services, ML-Series recorders offer centralized user management, single sign-on convenience, mobile apps, and a web client that allows for easy remote connection to your recorders. Network setup is simplified thanks to OpenEye's Web Connect technology, which eliminates the need for port forwarding or entering IP settings into remote clients.

To learn more about the ML-Series recorder or the rest of OpenEye's M-Series recorder lineup visit openeye.net.
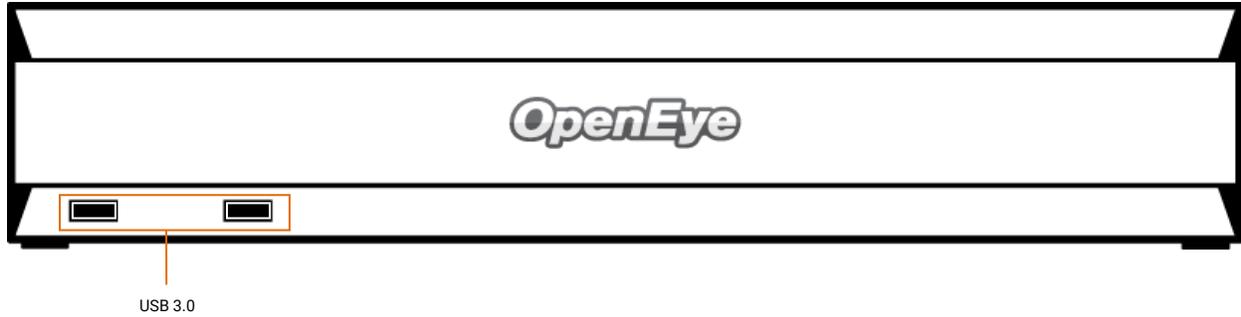
FEATURES

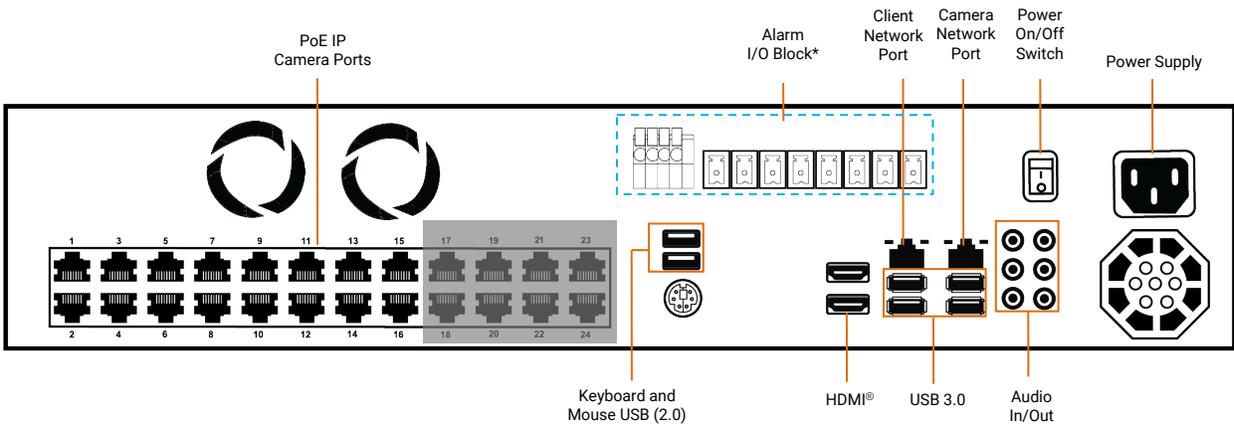OpenEye Apex Server ML-Series recorders include the following features:

- Sensor/Relay I/O
- Dual GbE for Dedicated Client and Camera Networks
- Plug-n-Play operation w/ OpenEye and other ONVIF Profile S compliant IP cameras
- 16 or 24 channel model on-board PoE
- Desktop Form Factor w/ rack mount capability
- Dedicated OS SSD
- Optional Linux or Windows OS
- Support for up to 80 channels*

CONTROLS AND CONNECTIONS

ML-SERIES FRONT PANEL

USB 3.0

ML-SERIES REAR PANEL (16 / 24 CHANNEL)

PoE IP
Camera Ports

Alarm
I/O Block*

Client
Network
Port

Camera
Network
Port

Power
On/Off
Switch

Power Supply
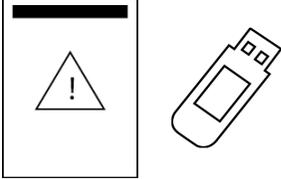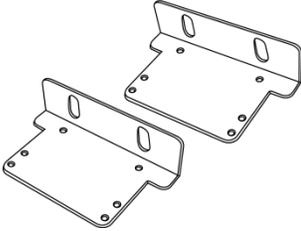
Keyboard and
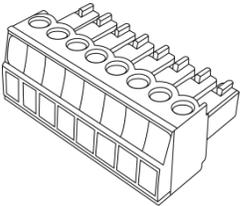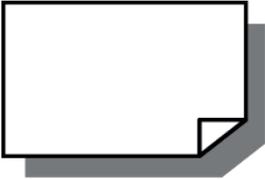Mouse USB (2.0)

HDMI®

USB 3.0

Audio
In/Out

*See Sensor / Relay Card section for more details.

GETTING STARTED

BOX CONTENTS

OpenEye Apex Server ML-Series recorders come with a power cord, keyboard, mouse, rack mount installation kit, alarm I/O block, and a recovery USB. A Quick Start Guide and other necessary documentation are also included. Identify the following components to make sure everything has been properly included with your new recorder. If any of the following items are missing, contact the dealer to arrange a replacement.

OE-ML Apex Recorder	**Power Cord**
Keyboard and Mouse	**Recovery Instructions and Recovery USB**
Rack Mount Installation Kit	**Alarm I/O Block**
Quick Start Guide	

KEYBOARD SETUP

To attach the keyboard, connect the keyboard to a USB port located on the back of the recorder.
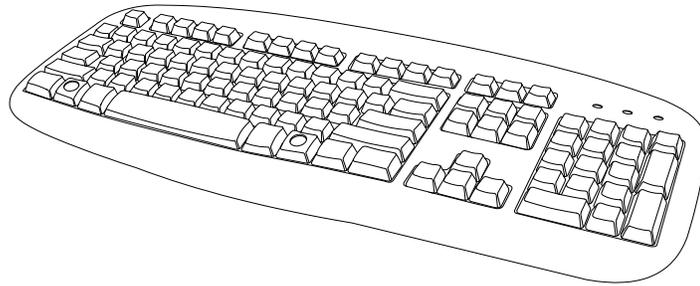
MOUSE SETUP

To attach the mouse to your recorder, connect the mouse to a USB port located on the back of the machine.

In this manual:

Click means to position the mouse cursor over an item and to single click the left button.

Right click means to position the mouse cursor over an item and to single click the right button.

Double-click means to position the mouse cursor over an item and to click the left button twice.

Select means to position the mouse cursor over a radio button, checkbox, or list item and click on it.

The scroll wheel in between the two buttons is used for added navigation functionality. By moving the wheel with index finger (scrolling), quickly move through multiple pages, lines, or windows. The wheel may also function as a third button allowing the user to quickly click or double-click an icon or a selected item.

Scroll Button / Third Button

Right Button

Left Button
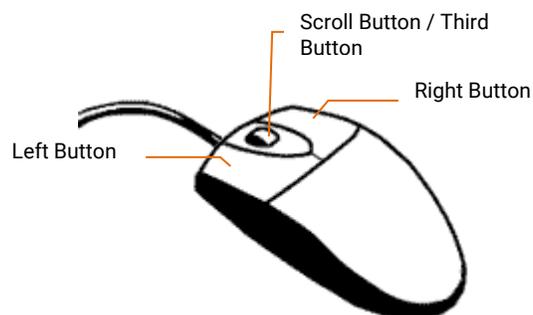
MONITOR SETUP

These connections are available to connect a monitor:

HDMI® **Output**   To TV / Digital Display

Attach the monitor(s) to the rear of the recorder using the cable supplied by the monitor manufacturer. Refer to the monitor manual for detailed information on how to setup and use it.

Note	The monitor must be capable of a minimum screen resolution of 1024x768 and support 32 bit color.

|	
Note	An active HDMI® (Male) to VGA/DVI (Female) adapter is required for analog monitor support.

CONNECTING A CAMERA USING A POE PORT

The ML-Series Apex Server recorder is equipped with an on-board Power over Ethernet (PoE) switch for use with PoE IP cameras. OpenEye PoE cameras are connected to the recorder using the PoE switch and begin displaying video immediately with no manual configuration required.

Connect one end of the network cable to the RJ-45 connector of the camera and the other end of the cable to the network switch or recorder.

Check the status of the link indicator and activity indicator LEDs. If the LEDs are unlit, check the LAN connection.

The Orange activity light flashes to indicate network activity.
The Green link light indicates a good network connection.
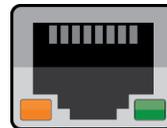
CONNECTING CAMERAS THROUGH THE CAMERA NETWORK

Apex automatically detects ONVIF Profile S compliant IP cameras if:

The cameras are set to a discoverable IP address - 192.168.51.2 – 254

This is easily accomplished using Network Camera Manager:

1. Download NCM from www.openeye.net
2. Connect your PC to the switch with your cameras
3. Enable ONVIF detection for 3rd party cameras
4. Input login credentials in Camera Credentials section

Camera(s) and Camera Network Port are connected to a DHCP network:

If the camera is a 3rd party device it needs to be set to DHCP. If using a DHCP server, the IP address of the Camera Network Port needs to be set to a static IP address within that range.
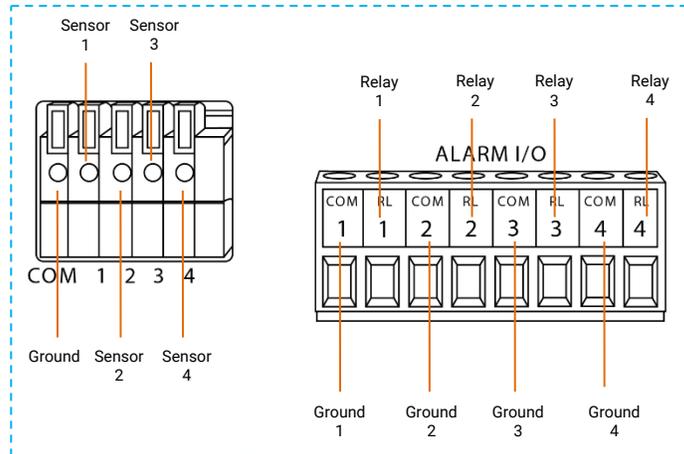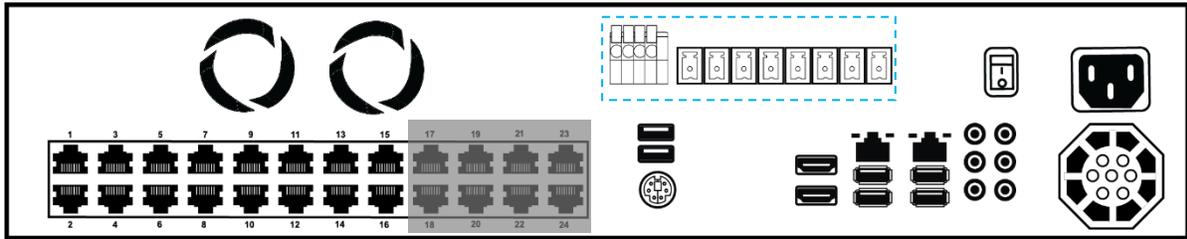
Note	Setting a static IP address on a DHCP network should only be done by a network administrator.

Note	If using both networks, Client and Camera, only the Client network should have a gateway.

SENSOR / RELAY CARD

OPERATING YOUR RECORDER

TURNING ON THE RECORDER

1. Turn on the monitor connected to your recorder.

2. Use the power switch on the rear of the recorder to turn the recorder **On**.

3. The recorder will run a series of self-tests. If asked to respond to any messages, follow the instructions carefully.

Startup is complete when the Apex Server software is finished loading and displays the main login screen.

TURNING OFF THE RECORDER

1. Click **Setup**, and then click **Power Options**.

2. Click **Power Off**.

SETTING UP THE RECORDER FOR THE FIRST TIME

1. Connect the network cable intended for remote connections to the **Client Network Port**.

📝 | **Note** | The Camera Network Port is intended for use with a dedicated camera network.

2. Connect the supplied **keyboard** and **mouse** using the USB ports.
3. Connect a **monitor** using the HDMI® port.
4. Connect the cameras to PoE ports, or the external camera network.
5. Plug the supplied **power cord** into the recorder and connect it to a power source.

DEFAULT USERNAME & PASSWORD

WINDOWS USERS:

NVRAdmin

NVRUser

WINDOWS PASSWORD:

The server serial number is used as the default password for both accounts.

📝 | **Note** | **The serial number can be found on the product label located on the side of the server.**

📝 | **Note** | It is strongly recommended the password is changed during initial setup.

APEX LOGIN:

Log in to the Apex Server recorder using the default credentials:

Username: admin

Password: 1234

Complete the **First Time Wizard** for basic system setup.

CHANGING A WINDOWS USER PASSWORD

1. Press **Ctrl+Alt+Del**
2. Select **Change a password**
3. Enter **Username** for which you want to change the password
4. Enter **Old Password**
5. Enter **New Password**
6. **Confirm** password
7. Click the **Submit arrow**

WINDOWS SECURITY UPDATES

Windows Server Update Services (WSUS) are available on all OpenEye Apex recorders running Windows 10. An OpenEye WSUS utility is included on the desktop of every ML-Series recorder that will allow a user to enable the auto-update service if desired. The WSUS service is configured to only receive, test, and release Critical Security Updates.

ENABLING AUTO-UPDATES

1. Launch the **Windows Update Utility** from the icon on the desktop.
2. Click **Enable**

Note	A reboot is required after changing this setting.
Note	Updates will be automatically downloaded but require user interaction to install them.

Warning **System restarts are frequently required to complete the update process.**

UPDATE ACTIVE HOURS

Use the active hours feature to provide up to a 6-hour window to schedule updates and restarts.

1. Select the **Start button**
2. Select **Settings**
3. Select **Update & security**
4. Select **Windows Update**
5. Select **Change active hours**
6. Choose the **start time** and **end time** for active hours
7. Select **Save**

REIMAGING YOUR APEX SERVER RECORDER

1. Insert the **Recovery USB** drive into an available USB port, and then restart the recorder. For faster completion, it is recommended to insert the USB drive into a USB 3.0 port.

2. If the USB does not auto boot into the Recovery menu, then restart the NVR and immediately press the F12 key on the keyboard until the **Boot Device Menu** appears on the screen. At the password prompt, enter **dvr4321.**

3. Select the **UEFI: USB "device name"** option, and press **Enter**.

4. When the **System Recovery** window appears, click **Continue**, and then click **Ok**.

5. Choose a re-image option. The **Conditional Re-image** will erase the OS and all settings, but retain video data. The **Complete Re-image** will erase all settings and data on the primary drive.

6. Type the **unit serial number** found on the back or side of the unit.

7. Accept the warning message, and then click **Continue**.

8. Upon successful completion, click **Finish,** and wait for the recorder to reach the login screen before removing the USB.

Note	Call OpenEye Support at 888-542-1103, option #2, for more information regarding the re-imaging process.