

# *OpenEye*<sup>®</sup>

The Cloud Video Platform

## **MV – SERIES CLOUD-MANAGED APPLIANCE**

HARDWARE MANUAL



OpenEye MV-Series Cloud-Managed Appliance  
Hardware Manual

Manual Edition 37664AA – May 2021

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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.

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## IMPORTANT SAFEGUARDS

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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 appliance, 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. **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.
12. **Replaceable Batteries** – CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.
13. **Grounded Outlet** – This equipment shall be connected to a properly grounded outlet.
14. **Outlet Location** – This equipment must be installed within six feet of an easily accessible outlet.
15. **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.

16. **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.
17. **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.
18. **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.

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## NOTES ON HANDLING

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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.

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## NOTES ON LOCATING

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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 appliance away from the TV, radio, or VCR.

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## NOTES ON CLEANING

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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 appliance.

If using a chemical saturated cloth to clean the unit, follow that product's instructions.

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## NOTES ON MAINTENANCE

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

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## NOTES ON MOISTURE CONDENSATION

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Moisture condensation could damage the appliance. 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 appliance when moisture condensation may occur.**

If the appliance is used in such a situation, it may damage discs and internal parts. Remove any CD discs, connect the power cord of the appliance to the wall outlet, turn on the appliance, and leave it for two to three hours. After two to three hours, the appliance will warm up and evaporate any moisture. Keep the appliance connected to the wall outlet and moisture will seldom occur.

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## WARNING

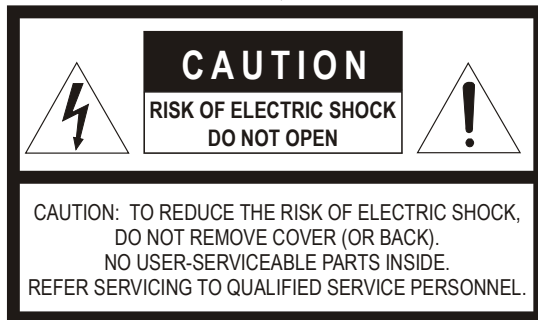
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TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE.

DO NOT OPEN THE CABINET.

REFER SERVICING TO QUALIFIED PERSONNEL ONLY.



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## EXPLANATION OF GRAPHICAL SYMBOLS

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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.

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## FCC STATEMENT

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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.

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## EN 55022 Class A Notice

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### 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.

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## Standard Warranty

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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:

1. Three years on all Digital Appliances
2. 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](http://openeye.net).

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# INTRODUCTION

## PRODUCT DESCRIPTION

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The OpenEye MV-Series is a compact and cost-effective cloud-managed video recording appliance with an optional integrated PoE switch for single cable, plug-n-play, IP camera installation. MV-Series appliances support up to a maximum of 24 recording channels per appliance, and a maximum 100Mbps of recording throughput. Models are available with 8 or 16 integrated PoE ports, or customers can choose their own switch hardware and select the non-PoE model with dedicated camera NIC. The MV-Series is ideal for installations where users want an added layer of security, or want to limit the impact of IP video bandwidth on their primary network by isolating cameras to the integrated PoE switch or dedicated camera NIC on non-PoE models. MV-Series appliances with integrated PoE ports allow users to view per port diagnostics and power consumption, as well as power cycle ports for remote troubleshooting before a site visit. NDAA compliant with up to 20TB of internal storage, the MV-Series features a sleek, low profile 1U chassis with optional rack mounts, and is capable of supporting up to 24 channels of recorded video per system.

To learn more about the MV-Series appliance or the rest of OpenEye's M-Series appliance lineup visit [openeye.net](http://openeye.net).

## FEATURES

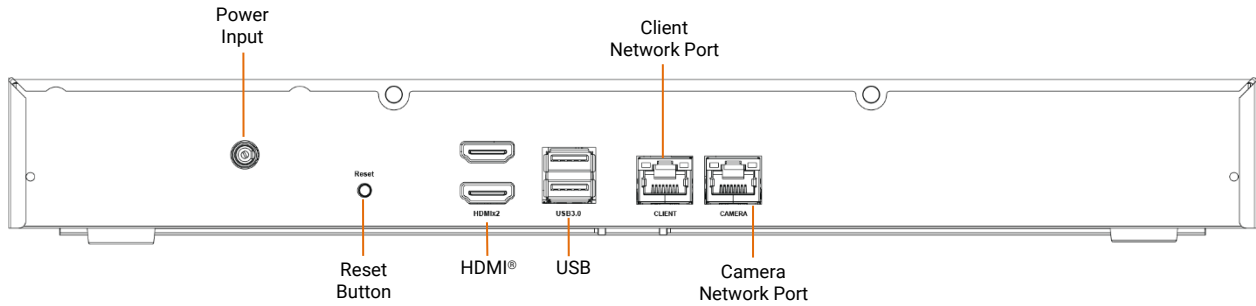
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OpenEye MV-Series appliances include the following features:

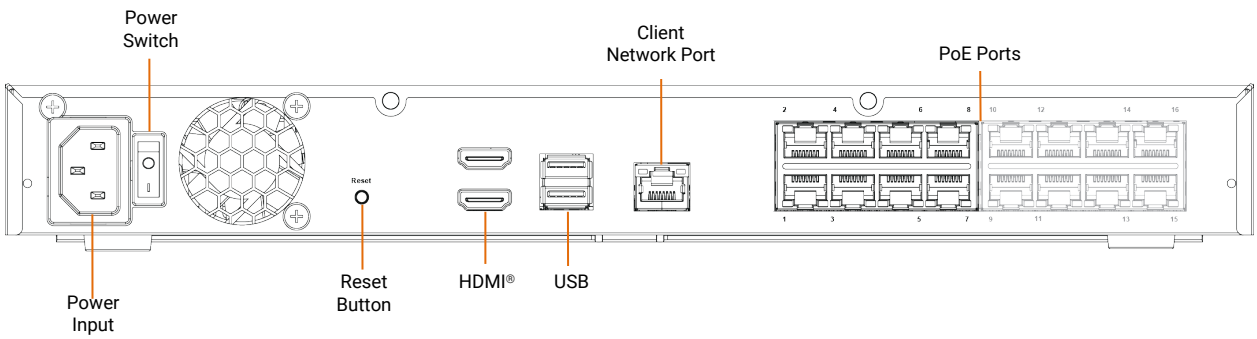
- Optional Built-in PoE switch
- Plug n' Play Installation
- Compact Chassis
- Dedicated OS Drive
- 2-Drive Capacity up to 20TB
- Recording rate up to 100Mbps
- Quiet Operation Suitable for Office Installations
- Rack Mountable
- NDAA Compliant

# CONTROLS AND CONNECTIONS

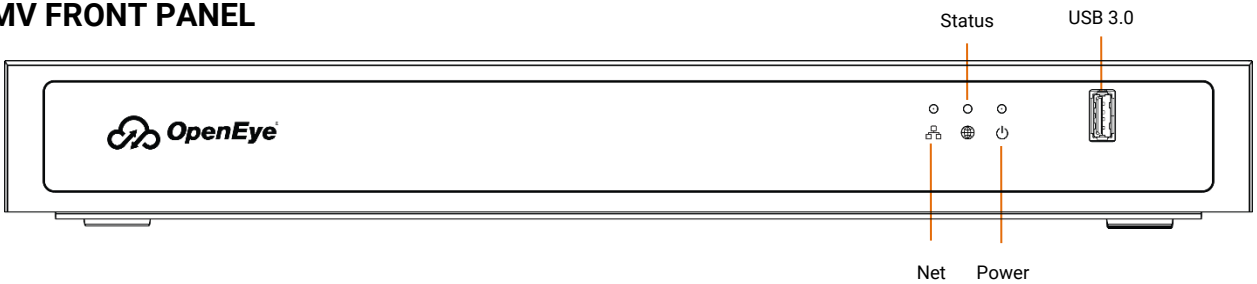
## MVX-SERIES REAR PANEL



## MVX08/16-SERIES REAR PANEL








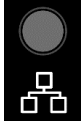

## MV FRONT PANEL



## POWER, STATUS AND NETWORK LIGHTS

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When properly connected to a power source, the LED lights indicate the state of the appliance:

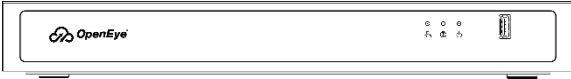



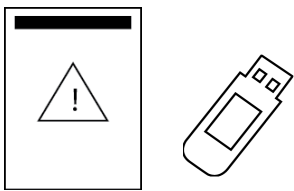
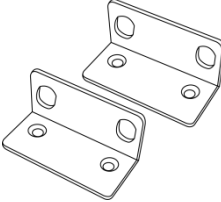
	<b>Power LED Status:</b> Off <b>System Status:</b> Booting or Powered OFF
	<b>Power LED Status:</b> Solid Green <b>System Status:</b> Powered On
	<b>Status LED Status:</b> Off <b>System Status:</b> Local Network Connection not detected
	<b>Status LED Status:</b> Blinking Red <b>System Status:</b> Local Network Connection detected but unable to reach OWS
	<b>Status LED Status:</b> Solid Green <b>System Status:</b> Successfully connected to OWS
	<b>Network LED Status:</b> Off <b>System Status:</b> Client Uplink Inactive
	<b>Network LED Status:</b> Blinking Green <b>System Status:</b> Client Uplink Active

# GETTING STARTED

## BOX CONTENTS

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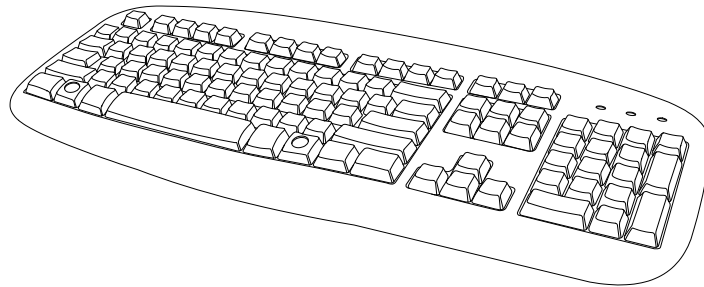
OpenEye MV-Series appliances come with a power cord, keyboard, mouse, and a recovery USB. A Quick Start Guide and other necessary documentation is also included. Identify the following components to make sure everything has been properly included with your new appliance. If any of the following items are missing, contact the dealer to arrange a replacement.

 <p><b>MV-Series Appliance</b></p>	 <p><b>Power Cord</b></p>
 <p><b>Keyboard and Mouse</b></p>	 <p><b>Quick Start Guide</b></p>
 <p><b>Recovery USB with Instructions</b></p>	 <p><b>Rack Mount Installation Kit</b></p>

## KEYBOARD SETUP

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To attach the keyboard, connect the keyboard to a USB port located on the back of the appliance.



## MOUSE SETUP

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To attach the mouse to your appliance, connect the mouse to a USB port.

In this manual:

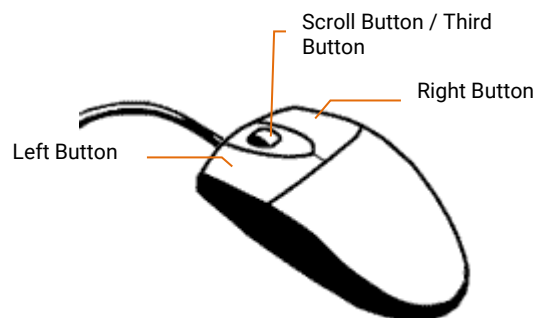
**Click** means to position the mouse cursor over an item and to single click the left button.

**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.

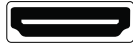
The scroll wheel in between the two buttons is used for added navigation functionality. By moving the wheel with index finger (scrolling), quickly move through multiple pages, lines, or windows. The wheel may also function as a third button allowing the user to quickly click or double-click an icon or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



## MONITOR SETUP

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These connections are available to connect a monitor:



**HDMI® Output**

To TV / Digital Display



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

## CONNECTING CAMERAS THROUGH THE CAMERA NETWORK

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Apex automatically detects ONVIF Profile S compliant IP cameras if:

1. **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 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

2. **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.



## SETTING UP THE APPLIANCE FOR THE FIRST TIME

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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® output.
4. Connect the cameras to PoE ports, or the external camera network.
5. Plug the supplied **power cord** into the appliance and connect it to a power source.

## DEFAULT USERNAME & PASSWORD

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### **APEX LOGIN:**

Log in to the Apex Server using the default credentials:

**Username:** admin

**Password:** 1234

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

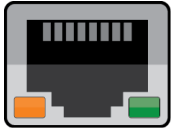
## CONNECTING A CAMERA USING A BUILT-IN POE PORT

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The MV08-Series and MV16-Series appliances are equipped with on-board Power over Ethernet (PoE) switches for use with PoE IP cameras. OpenEye and other ONVIF Profile S IP cameras can be connected to the appliance using the PoE switch and begin displaying video immediately (some additional configuration may be necessary).

Connect one end of the camera and the other end of the cable to the network switch or appliance.

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.

# OPERATING YOUR APPLIANCE

## TURNING OFF THE APPLIANCE

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

## REIMAGING YOUR APEX APPLIANCE

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<https://www.openeye.net/support/faqs/apex-system-recovery-instructions>



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

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