

MK / MH-SERIES CLOUD-MANAGED NETWORK SERVERS

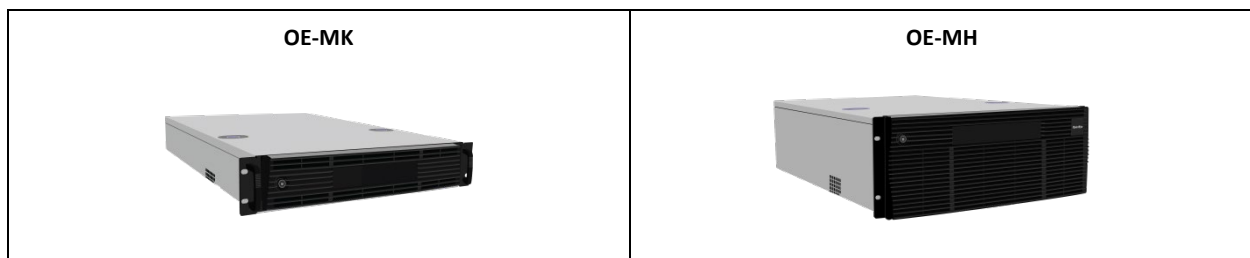
General Information:

Product Manager: S. McCall

Launch Date: July 1st 2016

INTRODUCTION

The OpenEye MK-Series and MH-Series recorders are designed to offer maximum performance and reliability, paired with full integration with OpenEye Web Services (OWS). Complete network setup is fast and easy using Web Connect, and eliminates the need for port forwarding using OWS. These recorders have RAID storage and redundant OS drive options which ensure you get the most operational up-time possible. The solid state OS drives also improve reliability and provide faster boot times. With up to 192TB of on-board storage and removable front drive bays, you have convenient and expandable storage capabilities. The MK-Series and MH-Series recorders come preloaded with Apex Traverse or Professional.



Value Proposition

The OpenEye MK-Series and MH-Series servers are designed for enterprise level HD IP recording solutions. Every MK and MH series model is capable of supporting up to 128 channels of Ultra HD IP video. Customizable to support up to 192TB in JBOD or 160TB RAID configurations, the MK and MH were designed to meet the increasingly large storage capacity demands of enterprise level IP installations. The 8-bay MK and the 16-bay MH are the most reliable and best performing recorders in the OpenEye Web Services (OWS) product lineup.

END USER BENEFITS

Fully Integrated with OWS

- Complete remote operation and administration with Web Connect
- Account Single-Sign-On
- Online User Management via OWS
- Cloud video export and sharing
- Cloud-based health monitoring and reporting with real time alerts
- Remote software updates with no need to be on-site
- Advanced cyber security including multi-factor authentication for remote access

Enterprise Class Hardware

The MK and MH enterprise hardware design provides 'always online' storage availability while protecting critical data and meeting the performance demands of Ultra HD IP recording.

- JBOD – With a single OS SSD for reliability/rapid boot times and up to 192TB of storage capacity (using the highest grade surveillance series hard drive), JBOD models provide a cost effective alternative to RAID models.
- RAID – With a dual OS SSD RAID 1 configuration for maximum reliability and rapid boot times, up to 160TB (150TB usable) of fault-tolerant RAID5 storage (using the highest grade RAID series hard drive), RAID models provide the most operational up-time and best protection of critical data.
- The MK and MH are both built in a high storage density server chassis with an excellent server grade cooling design that provides maximum cooling and significantly increases product reliability.

Higher Data Throughput and Expanded Storage Capabilities

- A significant increase in data throughput means more cameras recording at higher HD data rates. The MK and MH meet the growing industry demand for higher data throughput by providing up to 400 Mbps.
- The MK provides a large increase in storage capacity over the previous generation N2. The MK has 8 drive bays and supports up to 96TB in a JBOD configuration or 80TB (70TB usable) RAID5. The previous generation N2 was limited to 6 drive bays and up to 36TB.
- The MH can support up to 192TB JBOD or 160TB (150TB usable) RAID5. With 16 front removable hard drive bays the MH provides the flexibility to expand storage as needed. JBOD and RAID both provide always online storage which means there is no operational down time when adding or replacing hard drives.

Customer Need, Feature Function, Value vs. Alternative

Customer Need	Feature / Function	MK/MH Value vs. Alternative
<ul style="list-style-type: none"> • Online user management • Online export and sharing • Remote software updates • Multi-factor authentication for remote access • Live, Search and Setup on all major browsers with no additional plug-ins. 	<ul style="list-style-type: none"> • OpenEye Web Services enabled 	<p>Mk/MH Value: Improves operational efficiencies and drives value across an entire organization by simplifying user management and improving security.</p> <p>Alternative: Does not offer the ease of use and accessibility of cloud management</p>
<ul style="list-style-type: none"> • Increased Storage capacities • Easy expansion of storage 	<ul style="list-style-type: none"> • Up to 96TB (JBOD) on the Mk and up to 192TB (JBOD) on the MH • Easily accessible front removable drive bays 	<p>Mk/MH Value: Higher storage capacities provide the ability to record higher HD IP data rates with longer storage retention</p> <p>Alternative: N2 only provided 36TB and N4 only provided 64TB</p>
<ul style="list-style-type: none"> • Maximum up-time • System Reliability • Rapid boot times 	<ul style="list-style-type: none"> • RAID models allow for redundant OS and Storage drives and provides uninterrupted recording • Enterprise class hardware and server grade cooling designs allow for increased product reliability. • Standard OS SSD boot drives for JBOD and RAID allow for significantly increased boot times from the previous generation. 	<p>Mk/MH Value: Boot time is cut in half with the MK/MH SSD boot drives. Systems are up and running quicker with improved UI responsiveness.</p> <p>Alternative: The SSD boot drive in Generation 6 is only an optional upgrade.</p>
<ul style="list-style-type: none"> • Increased data throughput for enterprise level HD IP installations 	<ul style="list-style-type: none"> • MK/MH JBOD data throughout increased from 90Mbps to 300Mbps over the last generation hardware. • MK/MH RAID data throughput increased from 250Mbps to 400Mbps over the last generation hardware. 	<p>Mk/MH Value: The MK and MH meet the growing industry demand by providing enterprise level data throughput speeds.</p> <p>Alternative: Last generation hardware provided only half of the data throughout that the MK/MH provide.</p>

Alternative Comparison Chart

N2/N4 to MK/MH Feature Comparison

Features	N2	MK	N4	MH
OWS Enabled	Upgradeable	Standard	Upgradeable	Standard
Hard Drive Bays	6 Removable	8 Removable	16 Removable	16 Removable
Storage Capacity	36TB	96TB	192TB	192TB
RAID/JBOD	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
SSD Boot Drive	Optional	JBOD – Single SSD RAID – Dual SSD	Optional	JBOD – Single SSD RAID – Dual SSD
Recording Rate JBOD / RAID	90Mbps / 250Mbps	300Mbps / 400Mbps	90Mbps / 250Mbps	300Mbps / 400Mbps
Network Ports Standard	2 GbE	2 GbE	2 GbE	2 GbE
Monitor Outputs	HDMI, DVI-D, VGA	DVI-D, DVI-I, 2x HDMI	HDMI, DVI-D, VGA	DVI-D, DVI-I, 2x HDMI
Base System Memory	4GB (>65CH - 16GB)	8G (>65CH - 16GB)	4GB (>65CH - 16GB)	16GB
Base model storage	2TB	8TB	16TB	24TB
Command Station	No	Yes	No	Yes
Operating System	Windows® 10 Embedded		Windows® 10 Embedded	
Max IP channels	64CH	128CH	64CH	128CH

Specifications

	OE-MK	OE-MH
Max IP Channels	128*	
Max IPS Per Channel	30IPS (dependent on IP camera settings)	
Recording Rate	JBOD: 300 Mbps RAID: 400 Mbps	
Image Compression	H.264 / H.264+	
Live Display Rate	Up to 16 channels (dependent on IP camera settings)	
Video Outputs	1 x DVI-D / 1 x DVI-I / 2 x HDMI	
Alarm Sensor Inputs	4 x Form A contacts (Optional)	
Digital Relay Outputs	4 x Form A contacts (Optional)	
USB Ports	Front: 2 x USB 2.0 Rear: 2 x USB 2.0 / 4 x USB 3.0	
Video Signal Loss Detection	Yes	
Motion Detection	Server Side (Adjustable Sensitivity, Custom Grid)	
Remote Operation	Command Station (desktop VMS client) / Thin Client / Mobile Apps	
User Management	Local or web based user permissions and account management	
Recording Mode	Continuous / Motion / Continuous + Motion	
Playback Search	Multiple enhanced search capabilities	
Clip Backup	DVD-RW / Network / USB 2.0 / USB 3.0 / Cloud (OWS)	
Digital Signature Support	AVI / JPG	
NAT Traversal	Yes	
Operating System	Microsoft Windows 10 embedded (64-bit)	
Network	Dual GbE NICs	
Keyboard and Mouse	Included	
DVD Drive	Yes	
Power Supply Rating	650W	
OS Drive Configuration	JBOD: Single SSD RAID: Dual SSD RAID1	
Storage Configuration	JBOD: 96TB RAID: 80TB	JBOD: 192TB RAID: 160TB
Dimensions	W: 17.2 x H: 3.5 x D: 26in (438 x 88 x 660mm)	W: 17.2 x H: 5.2 x D: 26in (438x132x60mm)
Rack Mount	Rack mount installation kit included	
Certification	ETL	

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PART NUMBER BREAKDOWN

PRODUCT	DESCRIPTION				
OE-MK16(P/T)xx(R)	OE-M_XX(P/T)XX(R)				
OE-MK24(P/T)xx(R)	OE-M_	XX	(P/T)	XX	(R)
OE-MK32(P/T)xx(R)	↓	↓	↓	↓	↓
OE-MK64(P/T)xx(R)					
OE-MH16(P/T)xx(R)					
OE-MH24(P/T)xx(R)	MK / MH-Series	Recording Channel Count	Professional or Traverse Apex software	TB storage configuration	RAID configuration
OE-MH32(P/T)xx(R)					
OE-MH64(P/T)xx(R)					

ADDITIONAL MATERIALS

Dual Redundant Power Supply

820W Dual Redundant Power Supply – OE-ZDRPSU820

(Optional Factory Upgrade)

M-Series System Memory Upgrade – (required for systems running more than 64 channels)

OE-ZPERFUPRAM-8 (MK Only)

Recording Channel Upgrades - (Sold per channel)

M-Series Apex Traverse 1 Channel Rec License - OE-ASTM1

M-Series Apex Professional IP License - OE-ASPM1

M-Series Apex Professional Software Upgrade - OE-ASU1T2P

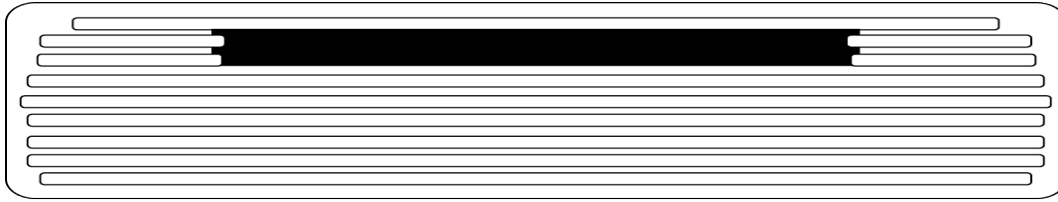
OWS Subscription Extensions

OWS 1 Ch License Extension (1yr) - OE-OWSM1Y01/08/16/32/64

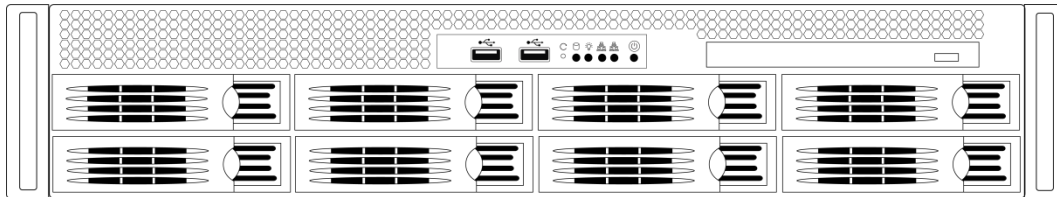
(5 years included standard on every recorder)

LINE DRAWINGS

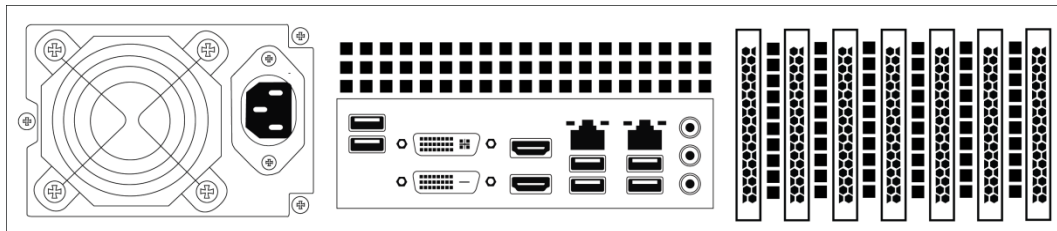
MK-Series Front Panel with Bezel



MK-Series Front Panel without Bezel



MK-Series Rear Panel



MH-Series Front Panel with Bezel

MH-Series Front Panel with Bezel

MH-Series Rear Panel

DOCUMENTATION

Specifications Sheet:

http://files.openeye.net/documents/ows/34871AC_MK_MH_specsheet.pdf

Hardware Manual:

http://files.openeye.net/documents/ows/34954AA_OE-MK_MH_Hardware_Manual.pdf

Quick Start Guide:

http://files.openeye.net/documents/ows/35086AA_MK_MH_Apex_QSG.pdf

Apex Software Manual

http://files.openeye.net/documents/ows/34898AA_OpenEye_Apex_1.0_Software_Manual.pdf