OE-MH GEN 3 A&E SPECIFICATIONS  
OPENEYE NVR CLOUD-MANAGED SERVER  
[www.openeye.net](http://www.openeye.net)

**DIVISION 28 -** ELECTRONIC SAFETY AND SECURITY

**Section 28 00 00** Electronic Safety and Security

**Section 28 20 00** Video Surveillance

**Section 28 05 19** Storage Appliances for Electronic Safety and Security

**Section 28 23 00** Video Management System

**PART 1 GENERAL**

* 1. SUMMARY

1. This section includes the minimum requirements for Cloud-Managed NVR as a Service platform comprised of, but not limited to, the following components:
   1. Network Video Recorder Hardware
   2. Network Video Management Software
   3. Online Web Services
2. References

28 05 00 Common Work Results for Electronic Safety and Security

28 05 25 Cloud Based Storage for Electronic Safety and Security

28 05 19.11 Digital Video Recorders

28 05 19.13 Hybrid Digital Video Recorders

28 05 19.15 Network Video Recorders

28 23 13 Video Management System Interfaces

* 1. SUBMITTALS

1. Manufacturer’s data sheets in digital or printed form.
2. Manufacturer’s installation and operations manuals in digital or printed form.
   1. QUALIFICATIONS
3. Manufacturer
   1. Manufacturer shall have been in business for more than 10 years.
4. Installer
   1. All installation, configuration, setup, and related work shall be performed by an authorized technician certified by the manufacturer.
   2. All installation shall be performed by a technician licensed to install and service video surveillance and security equipment as mandated by the authority having jurisdiction.
   3. WARRANTY & SUPPORT
5. The Network Video Recorder shall come with a minimum 3-year manufacturer’s warranty with the 1st year including advance replacement service.
6. The Network Video Recorder shall come with a heroic customer service support structure, including a 1-888 number for technical service, pre and post sales assistance, and full access to online technical support as well as online sales support.
7. Technical support shall be available for 24 hours per day 7 days per week to all integrators and dealers free of charge.
8. System updates and patches shall be available free of charge.

- END OF SECTION -

PART 2 PRODUCTS

* 1. DOCUMENT SUMMARY

1. This document specifies the minimum criteria for the design and performance of the OE-MH Gen 3 Cloud-Managed Server.
   1. STANDARDS
2. The Network Video Recorder meets or exceeds the following requirements of the following publications and organizations.
   1. Joint Photographic Experts Group (JPEG)
   2. Moving Picture Experts Group (MPEG) (H.264/MPEG-4 Part 10 AVC)
   3. National Television System Committee (NTSC)
   4. SYSTEM DESCRIPTION
3. The Network Video Recorder shall offer the latest in digital recording technology, product reliability, security, ease of use, and customer support structure.
4. The Network Video Recorder shall be offered in configurations up to 128 channels with a system wide recording bitrate of up to 400Mbps.
   1. OPERATING SPECIFICATIONS
5. Environmental Conditions: the Network Video Recorder shall be designed to operate under the following environmental specifications:
   1. Maximum Operating Temperature: 104°F (40°C).
6. Power Requirements: Recorder shall have the following electrical specifications:

A. Power Requirement: 100 – 240 VAC

1. Max Power Consumption: JBOD: 432W | RAID: 450W
2. Product Label Requirements:
   1. The Network Video Recorder shall have the ETL certification clearly marked on the product and box label.
      1. Dimensions: W: 17.25 x H: 5.2 x D: 26in (438 x 132 x 660mm).
      2. Weight: 77lbs (34.9kg)
   2. OPERATIONAL REQUIREMENTS
3. NVR Cloud-Managed Server – The network video recorder shall include, as a minimum, the following features/functions/specifications. The network video recorder shall:
   * + 1. Be assembled in the U.S.A.
       2. Include an Intel i7 processor.
       3. Include 32 Gigabytes of DDR4 system memory.
       4. Include one 2.5 Gbps/1 Gbps/100 Mbps Network Interface connection and one 1 Gbps/100 Mbps Network Interface connection.
       5. Provide one dedicated Intel GbE network port for Client Networks and one dedicated Intel 2.5 GbE network port for Camera Networks.
       6. Be optimized for and support the Windows Embedded Operating System, and with an optional upgrade, the Linux Operating System.
       7. Provide recording support for high resolution Megapixel HD IP video.
       8. Include remote capabilities including free VMS and mobile applications for Apple and Android devices.
       9. Include the ability to unlock additional IP camera licenses offering up to a combined total of 128 IP cameras per NVR with a maximum recording throughput of 400Mbps on RAID models and 300Mbps on JBOD models.
       10. Support static IP and DHCP IP addressing through user configurable TCP/IP settings.
       11. Be capable of recording up to 30 IPS on a single channel in an environment where all channels are being utilized.
       12. Come standard with a single Solid State Drive (SSD) on the JBOD model exclusively dedicated to the Operating System. No Video will be allocated to the SSDs for the purposes of video storage or archiving.
       13. Come standard with dual Solid State Drives (SSD) configured in a RAID 1 array on the RAID model exclusively dedicated to the Operating System. No Video will be allocated to the SSDs for the purposes of video storage or archiving.
       14. Offer the following on-board hard drive capacity options with up to sixteen internally installed, front removable hard drive bays in a JBOD configuration:
           1. 96.0 Terabytes
           2. 128.0 Terabytes
           3. 160.0 Terabytes
           4. 192.0 Terabytes
           5. 256.0 Terabytes
       15. Offer the following on-board hard drive capacity options with up to sixteen internally installed, front removable hard drive bays in a RAID configuration:
           1. 96.0 Terabytes
           2. 120.0 Terabytes
           3. 144.0 Terabytes
           4. 168.0 Terabytes
           5. 192.0 Terabytes
       16. Provide a server grade cooling design that allows maximum internal cooling through five high output 80mm fans mounted in the center of the chassis.
       17. Include a separate dedicated RAID controller Card configured exclusively for video recording on the NVR RAID models. All RAID resource load shall be handled on the RAID card exclusively and shall not utilize resources from the motherboard’s on-board processor. RAID management software will be included with every NVR RAID model.
       18. Only use high performance Video Surveillance rated hard drives engineered for reliability and 24x7 “always on” environments for the NVR JBOD models.
       19. Only use high performance Enterprise rated hard drives engineered for reliability and 24x7 “always on” “RAID” environments.
       20. Be housed in a rackmount 3U 16-Bay server chassis designed to fit into a 19” EIA rack.
       21. Allow for connection with OpenEye or ONVIF cameras.
       22. Provide a full auto-switching power supply rated at 650W
       23. Support up to 4K maximum display resolution
       24. Have the ability to easily backup important video to an external cloud-managed location, or a USB device. The recorder must not stop recording during the backup process. To ensure the integrity of data, the cloud-managed appliance shall use a proprietary viewer that can detect image tampering.
       25. Include a minimum of the following front panel controls:
           1. Two 3.0 USB ports
       26. Include a minimum of the following rear-panel connectors:
           1. One Power input
           2. One USB Type-C (with USB 3.2 Gen 2 support)
           3. Three USB 3.2 Gen 1
           4. Two USB 2.0 inputs
           5. One HDMI connector with a maximum 4K display resolution
           6. One D-Sub connector with a maximum 1080P display resolution
           7. Two DisplayPort connectors with a maximum display resolution of 4096x2160
           8. One 10/100/1000 RJ-45 Network Port
           9. One 100/1000/2500 RJ-45 Network Port
       27. Include the following components:
           1. USB Mouse
           2. Power Cord
           3. Rack Mount Rail Kit
           4. OpenEye branded front locking bezel
       28. Include the following upgrades:
           1. OE-ZCONVW2L
           2. OE-ZCONVW2L-FLD
           3. OE-ZDRPSU820
           4. OE-ZRAID5-MH
           5. OE-ZIOMH
4. LIST OF SUPPORTED MODELS
   1. The Network Video Recorder shall be one of the following models or an approved equivalent:

|  |  |
| --- | --- |
| OE-MHX96\* | 3U Server, Windows, 96TB |
| OE-MHX128\* | 3U Server, Windows, 128TB |
| OE-MHX160\* | 3U Server, Windows, 160TB |
| OE-MHX192\* | 3U Server, Windows, 192TB |
| OE-MHX256\* | 3U Server, Windows, 256TB |
| OE-MHX96R\* | 3U Server, Windows, 96TB RAID 6 (72TB Usable) |
| OE-MHX120R\* | 3U Server, Windows, 120TB RAID 6 (96TB Usable) |
| OE-MHX144R\* | 3U Server, Windows, 144TB RAID 6 (120TB Usable) |
| OE-MHX168R\* | 3U Server, Windows, 168TB RAID 6 (144TB Usable) |
| OE-MHX192R\* | 3U Server, Windows, 192TB RAID 6 (168TB Usable) |

\* (Software and OWS Licensing Sold Separately)

**PART 3 EXECUTION**

* 1. INSTALLATION

1. Installer shall comply with all instructions and best practices specified by the hardware and software manufacturer.
2. Installer shall comply with all applicable state and local regulatory requirements.
   1. STORAGE
3. Equipment shall be stored in environmental conditions within the stated temperature and humidity ranges specified by the hardware manufacturer.
   1. COMISSIONING
4. The manufacturer shall offer the option for factory pre-configuration of all hardware and software purchased from the manufacturer as an additional paid service.
5. The manufacturer shall offer the option for remote or in person system commissioning as an additional paid service.

- END OF SECTION -

END OF DOCUMENT