

HSR10

10 GbE Network Attached Storage, up to 2 Layers of Encryption (Non-Certified)

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Key Features

- 2 ports x 10 GbE (optical)
- Up to two layers of encryption – hardware and software
- Data throughput rate of 1.20 GB/s (Write) & 2.1 GB/s (Read)
- 16 TB removable storage (48 TB & 64 TB future)
- Small profile design at 308 cubic inches
- Support for RAID 0, 1, 5, 6, and 10
- Conduction cooled
- Network attached storage, protocols supported:
 - + Block Storage (iSCSI)
 - + Ethernet recording and packet capture (PCAP)
 - + File serving (NFS, CIFS, FTP, TFTP, HTTP)
 - + Remote boot of network clients (PXE, DHCP)
 - + Video stream capture (RTP)
 - + Network management (SNMP, IPMI)

Applications

- Deployed network-centric systems
- Fixed wing aircraft
- Unmanned vehicles
- Ground vehicles

Overview

Modern military intelligence, surveillance, and reconnaissance (ISR) platforms generate large amounts of highly sensitive data that must be captured and securely stored without impacting performance. System designers need to ensure that data capture systems can handle large amounts of data without interruption. This 10 GbE based Network Attached Storage (NAS) device offers up to two layers of full disk encryption (FDE) in a single device. Both encryption layers are fully operational in a single box which will save time, money and program risk.

The High-Speed Recorder 10 (HSR10) is a commercial off-the-shelf (COTS) high-speed network recorder and network attached storage (NAS) device for use in 10 Gigabit Ethernet (GbE) architectures that demand high data throughput. Network clients can use the HSR10 to store sensor and maintenance data and retrieve mission and digital map data. The network attached storage device allows clients to capture, store securely, and retrieve files at fast throughput rates with two layers of encryption. Supporting industry standard NAS protocols like NFS, CIFS, FTP, TFTP, and HTTP, enables clients to use different operating systems (Linux®, VxWorks®, Windows®, etc.) or central processing units (CPU) (PowerArchitecture®, Intel®, Arm®, etc.), which permits system design flexibility.

The HSR10 provides high-speed data-at-rest (DAR) storage to 10 GbE based networks that demand fast data throughput rates and two layers of encryption.

10 Gigabit Ethernet

The increase in high-performance sensor density forces data capture systems to handle more data at faster and faster rates. The most challenging high-speed networks require 10 GbE to address the increasing amount of data. The HSR10 high-speed recorder takes incoming data through two 10 GbE interfaces.

Fast Data Throughput

The efficient data movement is due to the HSR10 system architecture. The two channels operate at a data throughput rate of 1.2 GB/s (write) or 2.1 GB/s (read) with two layers of encryption. The processor easily absorbs the incoming data and redirects it to the persistent storage media using PCI Express (PCIe). NVMe based storage technology provides superior speed by communicating directly with the system processor.

Drive Technology and Encryption

The HSR10 utilizes the latest solid-state drive technology while providing two layers of full disk encryption. The NVMe protocol can deliver transmission/storage performance improvement of nearly 50% over SATA-based solutions. NVMe based memory reduces latency and increases bandwidth by eliminating storage interface bottlenecks. In addition, the HSR10 will provide up to two independent layers of full disk encryption via software full disk encryption and hardware full disk encryption. The hardware full disk encryption is provided using Self Encrypting Drives (SED).



Figure 1: Front side view



Figure 2: Front view



Figure 3: Back view



Figure 4: Top view

Specifications

Dimensions and Mechanical

- Dimensions: 3.6”H x 8.50”W x 9.25”L (91.44 x 215.9 x 234.95 mm)
- Weight: 22 lbs total (HSR10 is 19.4 lbs + Removable memory module is 2.6 lbs.)

Electrical

- Power: +28 VDC, consumption: ~120 W

Performance

- Data throughput rates:
 - + HWFDE & SWFDE: 1.2 GB/s (Write) / 2.1 GB/s (Read)

Environmental

- Temperature:
 - + Operating: -40 to +55°C
 - + Non-operating: -40° to +71°C

Encryption

- Encryption: 2 layers
 - + SWFDE
 - + HWFDE (Self Encrypting Drives, SED)
- Removable Memory Module
 - + 1 NVMe based memory module (sold separately)
 - + Capacities: 16 TB (48 & 64 TB future)

Ordering Information

- VS-HSR10HW-000 = HSR10, self encrypting drives, up to 2 layers encryption
- VS-RMM016-000 = Removable Memory Module, 16 TB

Contact [Curtiss-Wright](https://www.curtisswright.com) for more information.