

HSR10

10 GbE Network Attached Storage

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Key Features

- Conduction Cooled
- 2 ports x 10 GbE (optical)
- Up to 2.13 GB/s total data throughput
- 16 TB removable storage
- Encryption: 2 layers
 - + Software full disk encryption (SWFDE)
 - + Hardware full disk encryption (HWFDE)
- Small profile design
- Support for RAID 0, 1, 5, 6, and 10

Applications

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

Overview

Modern military intelligence, surveillance, and reconnaissance (ISR) platforms, are generating 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.

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 to retrieve mission and digital map data. The network attached storage device allows clients to securely capture, store, and retrieve files at full line data throughput rates with two layers of encryption. Supporting industry standard NAS protocols like NFS, CIFS, FTP, 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 the fastest data throughput rates and two layers of encryption.

10 Gigabit Ethernet

The increase in high performance sensor density is forcing data capture systems to handle more data at faster and faster rates. The most challenging high-speed networks are requiring 10 GbE to handle the increasing amount of data. The HSR10 high-speed recorder handles incoming data through two 10 GbE interfaces. These two interfaces enable the movement of data at the full line data throughput rates.

Fast Data Throughput – Full Line Rate

The efficient data movement at full line rates is due to the HSR10 system architecture. Two channels operating at up to 1.06 GB/s each, results in a total data throughput rate of up to 2.13 GB/s. 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.



Figure 1: Front side view



Figure 2: Front view

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 two independent layers of full disk encryption via software full disk encryption and hardware full disk encryption using a Self-Encrypting Drive (SED).

Specifications

Dimensions and Mechanical

- Dimensions: 7.5" W x 3.60" H x 9.25" D (190.5 x 91.44 x 234.95 mm)
- Weight: 15 lbs total (HSR10 is 12.4 lbs + Removable memory module is 2.6 lbs.)

Electrical

- Power: +28 VDC, consumption: ~87 W

Performance

- Data throughput rates: Both ports
 - + No Encryption: 1.96 GB/s (Write) / 2.13 GB/s (Read)
 - + HWFDE Only: 1.96 GB/s (Write) / 2.13 GB/s (Read)
 - + HWFDE & SWFDE: 1.20 GB/s (Write) / 2.10 GB/s

Environmental

- Temperature:
 - + Operating: -40 to +55°C
 - + Non-operating: -40° to +71°C
- Altitude: up to 40 K feet (70 K w/conduction)

Encryption

- Encryption: 2 layers
 - + SWFDE
 - + HWFDE (Self Encrypting Drives)
- Removable Memory Module
 - + 1 NVMe based memory module
 - + Capacities: 16 TB

Ordering Information

Contact [Curtiss-Wright](#) for ordering information.

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THE EMBEDDED EDGE

9-37 Currans Road, Cooranbong, NSW 2265
+61 (0)2 4977 3511

unisales@unitronix.com.au www.unitronix.com.au