

CNS4

Rugged Data Recorder

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Key Features

- Flexible I/O
- Scalable storage
- Encryption option
- Data capture and time stamp

Applications

- Sensor data recording
- Mission data recording

Overview

The Compact Network Storage 4-slot (CNS4) is a conduction-cooled, high-performance data recorder with scalable storage and encryption options making it ideal for capturing critical data in a harsh environment. Curtiss-Wright's Rugged Universal Capture Card (RUCC) provides data recording capabilities for a wide range of protocols such as Serial FPDP (sFPDP), GbE and 10 GbE. The CNS4 can support up to 8 TB of removable solid state storage. The modular design consists of a full ATR Chassis and up to four Flash Storage Modules (FSM-C). These FSM-C modules plug into the CNS4 backplane and are housed behind an easy-to-open access door and are easily removable with tool-less wedgelocks. This rugged data recorder is designed for use in a broad range of both manned and unmanned ground, air, and sea vehicles.

Flexible I/O

1 GbE / 10 GbE / sFPDP

The CNS4 has been designed from the ground up to support a wide range of I/O inputs such as sFPDP, GbE, 10 GbE and other legacy protocols.

Incorporating Curtiss-Wright's RUCC the CNS4 can be used to capture and record sFPDP data, GbE and 10 GbE. With four ports, the RUCC can capture sFPDP, GbE, and 10 GbE from sensors like radars, sonars, and FLIR. The RUCC also time-stamps each packet of data for later analysis or playback.

CNS4 also has a 3U VPX™ slot for additional I/O, allowing any type of XMC I/O card can be integrated in the CNS4.



Figure 1: CNS4 sFPDP Data Recorder

Features

28 VDC power input
 Convection-cooled
 Command Line Interface (CLI)
 Built-in Self Test (BIST)
 100,000 insertion cycle connectors

Benefits

>> *Ready for mobile vehicles*
 >> *High MTBF / low maintenance*
 >> *Full client control*
 >> *Full status reporting*
 >> *Long mission life*

Unique Data Capture and Time-stamping

The CNS4 utilizes the specialized Rugged Universal Capture Card (RUCC) for data capture. This hardware allows the data recorder to capture incoming sFPDP, Ethernet and 10 GbE data frames time-stamping each frame at full (sFPDP, Ethernet) or near full (10 GbE) line rate. With extremely accurate time-stamping prior to storage, your data can later be played back via the channels just like it was recorded. The RUCC time-stamping also gives you the accuracy needed for detailed post-analysis of your valuable data.

The data capture hardware is available for use in applications where data is being gathered in extreme temperature, shock, vibration and high endurance environments. The rugged data capture hardware supports the recording of high-speed data in harsh environments.

Scalable Storage Up To 8 TB

The CNS4 chassis is designed to accept four memory modules. The FSM-C memory module has a current capacity of 2 TB each. Thus the total CNS4 storage capacity is 8 TB. The NAND Flash density is ever increasing. As the density of these drives increase the total capacity of the CNS4 will also. NAND Flash density will double every 18 to 24 months. So 16 TB total capacity will be achieved in 2016.

The CNS and FSM connectors are blind-mate style and designed for 100,000 insertion cycles. This feature is critical for applications where the memory cartridge will be moved frequently from ground station to mobile vehicle and back to ground station. Compare 100,000 insertions to standard SATA connectors which are good for 50 insertions.



Figure 2: Flexible I/O and Type 1 Encryption

Data Protection

Type 1 Encryption

In addition to the VPX I/O slot, the CNS4 chassis can accommodate one 3U VPX inline media encryptor (IME) certified for Secret and Below Information (SABI) in attended systems. A Crypto Ignition Key (CIK) is mounted on the CNS4 front panel when this IME is used. By the end of 2014, the IME is expected to support Pre-placed Keys (PPK) and four SATA lanes. So the IME can be left in place and only the FSM storage module need to be moved from ground station to mobile vehicle.

Keys can be cleared (or zeroized) by pressing the front panel pushbutton, sending a command, or using the discreet input. The discreet input is often connected to a panic button (along with other critical devices).

Specifications

Physical

- Dimensions (W x H x L)
 - + 10" x 7.62" x 12.5" (254 x 193.55 x 317.5mm)
- Weight: 39 lbs (17.69 kg)
- Power: 28 VDC, 150W
- I/O ports
 - + 4 x 1 GbE
 - + 1 x RS-232
 - + 1 x 10GbE
 - + 4 x sFPDP
 - + Others, consult factory
- Type 1 Encryption
 - + SABI optional
 - + CIK interface optional
 - + DS101 optional
- Storage
 - + 4-slot
 - + 4 x 2 TB = 8 TB
 - + Removable with tool-less wedge-locks

When Your Data Counts... Count On Recorders and Storage

The experts at Curtiss-Wright offer rugged data storage solutions that provide secure storage capabilities for today's data intensive applications. Our rugged data storage products support Direct Attached Storage, Storage Area Network and Network Attached Storage. Capitalize on Curtiss-Wright's rugged data storage expertise to make your job easier.

Curtiss-Wright's rugged data storage experts provide products that are scalable, enabling storage of critical data from multiple Gigabytes to Terabytes. The COTS versions of our rugged storage products are designed to handle a wide range of applications. In addition, the rugged packaging of these storage products can be tailored to the application's Size, Weight, Power and Cost (SWaP-C) requirements. They feature encryption and sanitization capabilities allowing the information to remain secure. Curtiss-Wright leverages a vast inventory of existing IP and product solutions, coupled with unparalleled technical expertise, to address customer requirements. Our rugged data storage experts will work to reduce your program risk and allow a much shorter time to market.

Ordering Information

Please contact Curtiss-Wright Defense Solutions.