

## Endace DAG 9.2SX2

Endace's DAG™ 9.2SX2 is our most fully-featured, high-performance data capture card. It has become the gold standard for use in appliances for monitoring and capturing network traffic at high-speed in SONET/SDH, PoS, ATM and 10GbE environments.

The DAG 9.2SX2 is ideal for network performance monitoring, security analytics, data archival and latency measurement applications where 100% accurate packet capture is critical.

### Power and Flexibility

Based on PCI Express (PCIe) 2.0 x8, the DAG 9.2SX2 delivers full line rate data capture for both ports, regardless of packet size, with captured packets transferred direct to host memory via direct memory access (DMA). This removes interrupt overhead from the host CPU, freeing it up for analysis or other tasks.

In addition to interrupt free and zero copy packet capture, the DAG 9.2SX2 provides extremely flexible memory allocation and powerful on-card, rule-based filtering, duplication and steering (directing packets to specific streams). This makes analyzing captured traffic simpler and quicker, enabling more powerful analysis and further reducing load on the host CPU.

Captured traffic is available in industry-standard packet capture formats (PCAP) making it easy to use in the applications you choose for monitoring and analysis.

### Unparalleled SONET/SDH functionality

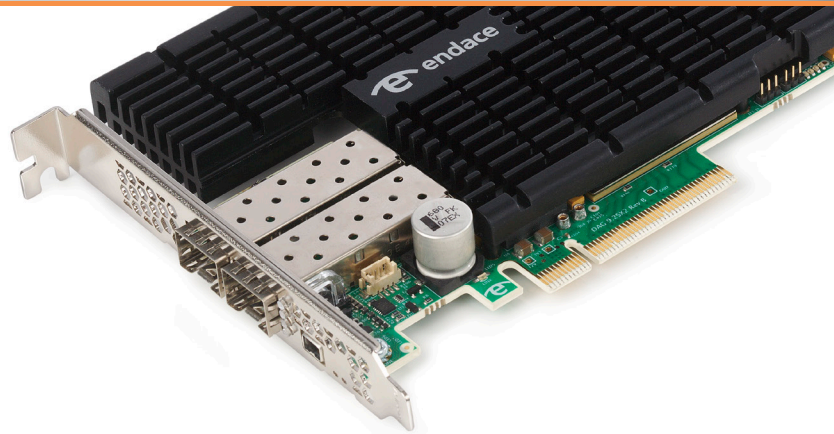
The DAG 9.2SX2 excels in a SONET/SDH environment. It supports sophisticated de-channelization of SONET OC192 and SDH STM64 down to OC3/STM1 in any channelization hierarchy while extracting PoS and ATM mapping or just the raw payload. It provides complete capture of SONET/SDH overhead fields and can capture up to 128 channels of payload and overhead data simultaneously. The DAG 9.2SX2 offers the perfect solution for processing highly complex, channelized telecom links at full speed.

The DAG 9.2SX2 also supports various bit and byte level capture and replay modes where data is captured "as is" at a user specified link frequency. This unique feature enables deep level analysis of links for troubleshooting and other forensic needs.

### Compact, cost-effective and reliable

The DAG 9.2SX2 provides an exceptionally compact monitoring solution for high-speed SONET/SDH and 10GbE links. Multiple DAG 9.2SX2 cards can be combined in a single appliance, enabling high-density deployment. The DAG 9.2SX2's powerful SONET/SDH functionality also removes the need for a raft of other SONET ADMs and SONET capture devices - saving on power, cooling and rack space and dramatically reducing OPEX and CAPEX.

Endace's DAG cards are engineered to ensure long life and reliability. They are trusted by customers around the world to deliver proven 100% accurate capture and low cost-of-ownership with best-in-class performance.



### DAG 9.2SX2 AT A GLANCE

- The complete capture card for SONET OC192, SDH STM64 clear channel or channelised to OC3/STM-1 and 10GbE Ethernet links,
- Full capture of all SONET/SDH overhead bytes, up to 128 simultaneous channels of payload and overhead
- ATM, POS or Ethernet framing
- 10GbE LAN or WAN PHY links
- Link level bit stream capture and replay from 100Mbps to 10.2 Gbps
- Hardware time-stamping with synchronization from host or external time reference
- 2x SFP+ monitoring ports
- PCIe 2.0 x8 based card
- Linux and FreeBSD drivers

### BENEFITS

#### Accurate

- 100% packet capture at full line rate for all packet sizes from 64 Bytes to 9600 Bytes
- Nanosecond-level time-stamping accuracy

#### Powerful

- Unrivaled SONET/SDH functionality
- Eliminates the need for multiple additional SONET ADM and capture devices, saving rackspace and substantially reducing CAPEX and OPEX
- Supports up to 64 classification rules for onboard filtering, duplication and steering of captured traffic in hardware at full line rate
- Relative timed replay enables precise reproduction of traffic as captured for testing, performance measurement and other purposes

#### Flexible

- Supports up to 32 capture streams with configurable memory allocation per stream (up to 2GB per stream) for load balancing in multi-core host architecture
- Compatible with standard server architecture using PCIe 2.0 x8 bus technology

#### Reliable

- Engineered for high-reliability and extended mean time between failure (MTBF) rates
- Zero-fan cooling reduces failure points

## DAG 9.2SX2 – Technical Specifications

Monitoring interfaces	2x SFP+ transceivers
Network type	IEEE 802.3ae LAN IEEE 802.3ae WAN SONET OC192c SDH STM64 VC4-64c
Packet encapsulations	SONET (SDH) OC-192c SR-1 (STM I-64.1)
Hardware packet processing	Enhanced Packet Processing v2
Time synchronization	External: IEEE-1394 connector for RS-422 PPS and IRIG-B signal from GPS, CDMA or TDS (using adapter) Internal: Host PC clock Other DAG cards
Packet timestamping	7.5ns
PCI interface	x8 lane PCIe 2.0
Operating system supported	Endace software is supported on Linux and FreeBSD
Power requirements	30W
Operating temperature	0 to 50°C (32 to 122°F)
Airflow requirements	200 LFM (@50°C Ambient)
Operating humidity	5 to 95% non condensing
Physical dimensions	Full Height, Half Length Height 106.7mm 4.2" (4.2") Length 167.5mm 6.6" (6.6")

## Companion Products

### Transceivers

10GBase-SR optical SFP+ transceiver 850nm, Multi-mode with LC connectors	TXR-10G-850-MM-SFP+
10GBase-LR optical SFP+ transceiver 1310nm, Single-mode with LC connectors	TXR-10G-1310-SM-SFP+
10GBase-ER optical SFP+ transceiver 1550nm, Single-mode with LC connectors	TXR-10G-1550-SM-SFP+
10GBase-ZR optical SFP+ transceiver 1550nm, Single-mode with LC connectors	TXR-10G-1550-SM-HS-SFP+

### Time Measurement Accessories

Trimble Acutime™ Gold GPS receiver	GPS-2
Endace 2-port Time Distribution Server, accepts serial input from GPS/CDMA sources	TDS-2
Endace 6-port expansion module for TDS-2, shares common reference time source	TDS-6
Endace 24-port Time Distribution Server, accepts serial input from GPS/CDMA sources	TDS-24



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the Federal Communications Commission [FCC] Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction document, may cause harmful interference to radio communications.

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