

TuffServ® Recorder/Server-X (TRS-X) Collect Multiple 100 Gb/s Streams



FEATURES

- Supports 100 Gb/s Ethernet
- Virtually Unlimited Storage/Capacity
- QSFP Optical Interfaces
- Multiple Expansion sites for additional I/O
- Standards Based: Industry Standard Architectures and commodity SSDs
- Internal Architecture provides 64GB/s bandwidth per RST
- Built for Rugged, MIL-STD-810H environments

GENERAL DESCRIPTION

The TRS-X was developed under a SBIR for an urgent need within the Intelligence Community of being able to collect large volumes of sensor network data over multiple channels, each at 100Gb/s. We found that this is highly desirable for mobile, semi-mobile, and fixed EW/ISR environments. Designed with scalable architecture, the TRS-X supports a range of applications within the ground, sea, and air domains.

DESIGNED FOR SPEED

Uncompromising performance, unmatched expandability: the TRS-X delivers up to 100 Gb/s of data collection per channel, and two channels per chassis. One TRS-X system can collect multiple channels of 100GbE network data by ganging together processing chassis and storage capacity.

DESIGNED FOR CAPACITY

Writing data at 100 Gb/s requires vast amounts of storage: a two channel system collects up to 90 TB per hour while a 4-channel system collects twice that. The TRS-X has a high capacity, high-speed Removable Storage Tray (RST) that can handle two 100GbE channels and that comfortably supports over 180TB of storage, and which may be daisy-chained to secondary RSTs for addition capacity. Four channel systems will need to have dual chassis and dual RSTs (each of which supports daisy-chaining) due to the rate and amount of storage required.

DESIGNED FOR GROWTH

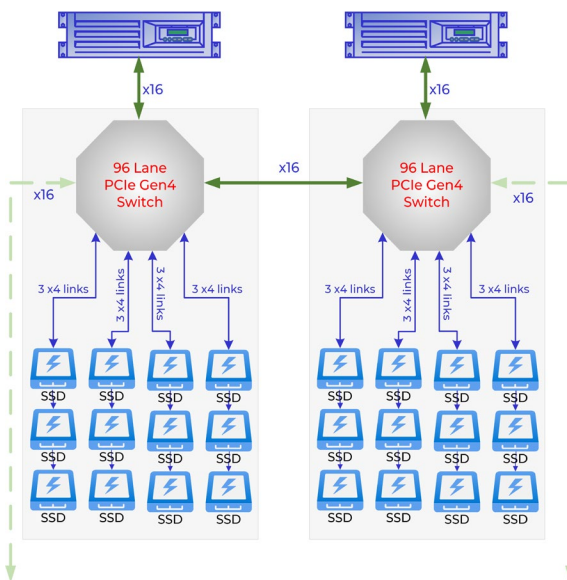
Everything in the TRS-X has been designed to provide a flexible platform for current and future requirements. A standard dual channel TRS-X system comes with a 2U server chassis and one 1U RST. You can scale up to more channels by adding additional processing and storage (RST) subsystems.

DESIGNED FOR USE

The TRS-X is a truly open system, running mainstream COTS software (Red Hat Enterprise Linux), including the Ampex TuffServ recording application (ACCE). This architecture delivers a solution that is accessible to third-party developers, so that application-specific software can be added to the system by integrators and/or end users.

Information assurance and cyber threat prevention strategies are available on the TuffServ platform, facilitating its acceptance in critical or sensitive environments.

TRS-X BLOCK DIAGRAM



SWAP-C RUGGEDIZED VARIANT (UNDER DEVELOPMENT)

For more rugged applications (such as for use in pods or similar space-constrained environments), the TRS-X offers a direct migration path to a TuffServ device supporting the same hardware and software interfaces and using the same modularity.

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AMPEX

TECHNICAL SPECIFICATIONS¹

SYSTEM

CPU Subsystem:	Dual Intel 3rd Generation Xeon Scalable Processors (“Ice Lake”)
Memory:	Up to 1.5TB DDR4-3200 ECC RDIMM
Network Interfaces:	Each 100GbE channel has either an NVIDIA CX-5 or an FPGA-based accelerator 2x 1000Base-T Gigabit Ethernet (1 Shared with IPMI)
I/O Expansion:	6x PCIe Gen4 x16 slots
Other Interfaces:	1x Serial port (RS-232/RS-422), 4x USB 3.0, 1x VGA
Removable Storage:	Each RST can hold up to 187 TB of data
Network Protocols:	NFSv4, NFSv3, CIFS/SMB, PCAP, FTP, TCP, UDP, IP
Operating System:	Red Hat Enterprise Linux (RHEL)

POWER

Power:	115VAC/220VAC (1900W)
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MECHANICAL

Dimensions (Chassis):	19" W x 3.5" H x 20" D (483mm x 89mm x 508mm)
Dimensions (RST):	19" W x 1.75" H x 22" D (483mm x 45mm x 559mm)
Weight (System):	40lbs

ENVIRONMENTAL

Temperature:	Operating: 0°C to 50°C
Humidity:	5% to 95% non-condensing
Vibration:	4.76 grms

¹Specifications subject to change without notice

²Custom options can be requested through Ampex Contracts Department

³Contact Ampex for option availability

Ampex Data Systems Corporation is AS 9100C / ISO 9001:2008 Certified