Ethernet Data Recorder

Features

- Greater than 1GB/s sustained payload recording rate

- Separable Management and Data Network Interfaces

- Standard Dual 10 Gigabit and Dual 1 Gigabit Ethernet Interfaces

- Storage Capacities to 32TB

- AES Encryption *

- Removable Hard Drive *

- IRIG Time *

- Built for High Reliability and Availability 24/7 operation

- Options for Additional I/O

* Option

General Description

The Model 3500 Ethernet Data Recorder is a high data rate, large capacity streaming network recording system.
The Model 3500 utilizes mature and field-proven recording technology from Ampex Data Systems Corp. to deliver consistent, reliable recording and playback of streaming IP telemetry data. The Model 3500 is designed for Telemetry over IP (TMoIP), Voice over IP (VoIP) and Video over IP streaming data recording and reproduction applications. Additional operational modes are available for collecting Ethernet traffic for subsequent analysis by industry-standard tools such as "Wireshark".

Performance and Capacity
The Model 3500 is available in a standard 2U 19 inch rack mount unit. Two 1Gigabit and two 10 Gigabit Ethernet interfaces are included. The two 10 Gigabit Ethernet interfaces are SFP configurable as optical (e.g. 10GBase-SR) or copper (10GBase-T, 10GBase-CX). The two 1Gigabit Ethernet interfaces (1000Base-T) are presented on RJ-45 connectors.
Support is present for network expansion to 40-GigE, 100-GigE and even WiFi networking. Any of the network interfaces can be configured for Management, Record Data, Playback Data or any combination. The unit leverages reliable COTS solid state drive and server technology with over 70 years of Ampex recording experience and expertise, to meet the most challenging requirements. Data storage space is provided for up to 16 high-capacity, high-performance, removable Solid State Devices, with total storage capacity up to 32TB. Greater capacity is possible as drive technology evolves.
The Model 3500 offers raw record and playback performance in excess of 1Gigabyte/second sustained, providing a recording duration of more than eight hours, at the maximum operational rate.

Open System, Trusted Environments
The Model 3500 is integrated into the GDP Telemetry Range Management Software (TRMS) control architecture which provides complete range control of acquisition, distribution, recording and processing functions with an intuitive user interface.
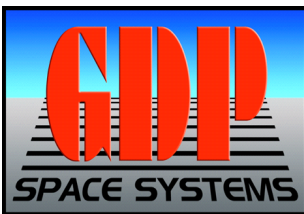
The system runs the approved COTS Red Hat Enterprise Linux operating system. Connectivity with sensitive networks is straightforward. Information assurance and cybersecurity policies are consistent with use in government and aerospace environments.

The Solid-State-Disk optionally supports 256 bit AES encryption. Configurations are optionally available with FIPS 140-2 certification. The system uses components sourced through U.S. supply chains.
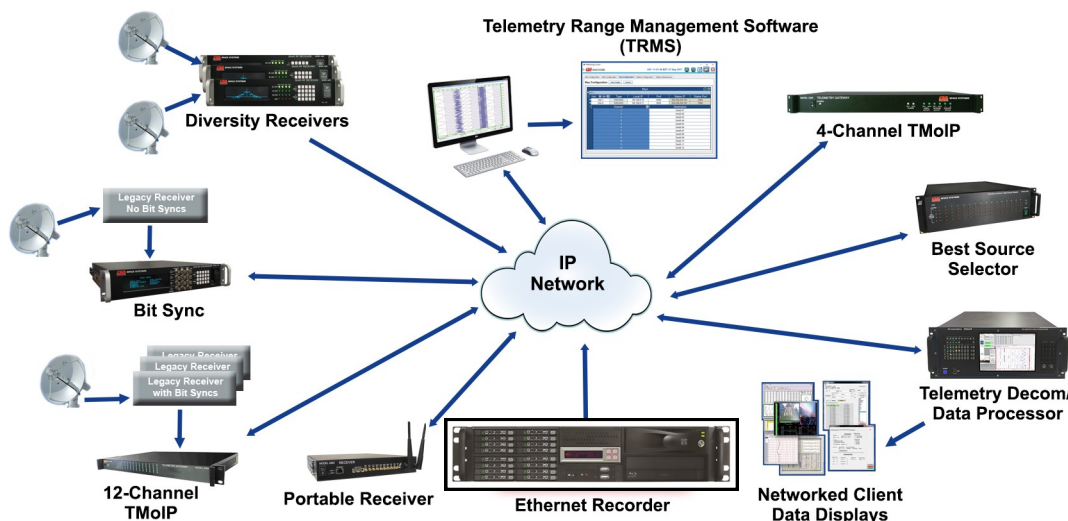
Standards Compliance and Interoperability
In addition to supporting GDP's enhanced protocols, the Model 3500 also supports the standard IRIG 218 TMoIP, IRIG 106 Chapter 10/11, MISB MPEG-2 Transport Stream over UDP and other streaming data protocols. The Model 3500 is designed to be flexible and versatile. Optional post recording file conversion utilities can be used to provide the data file and output stream conversion necessary to support interoperability with legacy or special systems.

Web browser control provides extensive setup, configuration, record and playback control. Integration with the GDP TRMS provides system level integration with other range equipment.

Specifications

CPU Subsystem	8 Core (16 thread) Xeon D-1537, 1.7GHz (2.3GHz boost), 12MB cache, 32GB, 2133MHz DDR4 with ECC, TPM 1.2
Network Interface	Two 10 Gigabit SFP+ Ethernet ports and two 1000Base-T Gigabit Ethernet
Fixed Storage	Separate Firmware/OS Device (can be write-protected) Configuration/Logging Device option.
Removable Storage	16 Removable Solid State Drives (up to 32 TBytes) Optional removable Hard-Drive
Network Protocols	NFSv4, NFSv3, CIFS/SMB, FTP, TCP, UDP
Data Protocols	IRIG 218, IRIG 106 Chapter 10/11, MISB Xon2
Control Protocols	HTTP, Command Line, TRMS, optionally with SSL encryption
Time Input	IRIG B, NTP, PTP
Operating System	Red Hat Enterprise Linux 7 (DISA STIG compliant)
Encryption	Advanced Encryption Standard (AES), 256 bit keys

Performance

Payload Data Rate	1 Gigabyte/sec (sustained)

Power

Voltage	120/240V 50/60 Hz AC
Dissipation (Full Load)	130W

Mechanical

Dimensions	Standard 19 inch 2U Rackmount Chassis, 20.6 inches deep; 1.75" (42.8mm) H x 17.1" (434mm) W x 20.6" (523mm) D
Mounting	Mounting ears, optional chassis slides or tray
Weight (System)	20lbs (9.1Kg)

Environmental

Temperature	Operating 0° C to +45° C
	Non-operating -10° C to +60° C
Relative Humidity	Non Condensing 25% to 95%