

# Model 3500

## ETHERNET DATA RECORDER



### KEY FEATURES

- Separable Management and Data Network Interfaces
- Standard Dual 10 Gigabit and Dual 1 Gigabit Ethernet Interfaces
- Storage Configurations to 53TB
  - Diskless (Network Boot & Storage)
  - 22TB
  - 38TB
  - 53TB
- Hard Drive AES Encryption \*
- Data at Rest Support\*
- Removable Hard Drive \*
- IRIG Time In/Out \*
- PXE Network Boot \*
- iSCSI Access to Remote Drives \*
- 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. and Wideband Systems 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 1U 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 future 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 and 25 years of Wideband Systems recording experience and expertise, to meet the most challenging requirements. Data storage space is provided for up to 8 high-capacity, high-performance, removable Solid State Devices, with total storage capacity up to 53TB. Greater capacity is possible as drive technology evolves. An optional iSCSI interface is available for access to storage on remote drives.

#### Open System, Trusted Environments

The Model 3500 is integrated into the GDP Telemetry Range Management Software (TRMS-RMS) 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-RMS software provides system level integration with other range equipment.

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### TECHNICAL 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)<br>Configuration/Logging Device option.  |
| Removable Storage     | 8 Removable Solid State Drives up to 53 TBytes ; (22TB, 38TB, 53TB & Diskless w/Network Boot & Storage);<br>Optional removable Hard-Drive |
| Network Protocols     | UDP   |
| Data Protocols        | IRIG 218, IRIG 106 Chapter 10/11, MISB Xon2   |
| Control Protocols     | HTTP, Command Line, TRMS-RMS, optionally with SSL encryption  |
| Time Input            | IRIG B, NTP, PTP  |
| Operating System      | Red Hat Enterprise Linux 7 (DISA STIG compliant)  |
| Hard Drive Encryption | Advanced Encryption Standard (AES), 256 bit keys; *<br>Data at Rest Support *   |

#### Performance

Payload Data Rate 200 Mbps (sustained aggregate bit rate)

#### Power

Voltage 120/240V 50/60 Hz AC

Dissipation (Full Load) 130W

#### Mechanical

Dimensions Standard 19 inch 1U 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

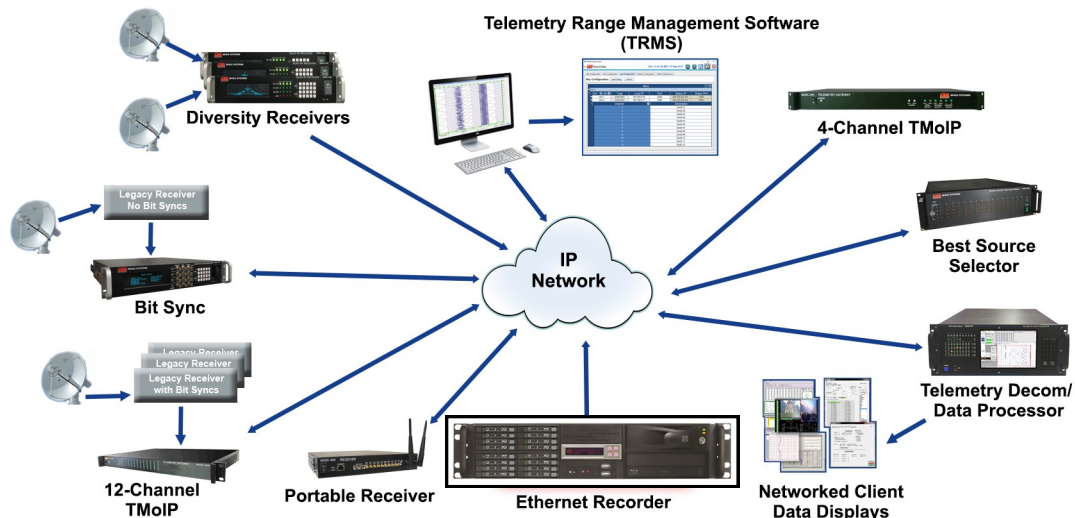
Weight (System) 20lbs (9.1Kg)

#### Environmental

Temperature Operating 0° C to +45° C

Non-operating -10° C to +60° C

Relative Humidity Non Condensing 25% to 95%



\* Recognizing that no standard product can meet all the needs of all users, GDP stands ready to provide units tailored to unique applications.

\* The statements in this data sheet are not intended to create any warranty, expressed or implied. Specifications are subject to change without notice.

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