GDP SPACE SYSTEMS

ACROAMATICS
TELEMETRY SYSTEMS

Real-time Mobile TM Data Server & Analyzer
Model 2500AP

Features:

- To three, 72 Mbps TM Stream Processor
- Real-time, WIN OS Independent Telemetry Processing
- Card Level, Micro-coded Software Decommutation
- Powerful third generation card embedded real-time SHARC® Multi-Stream EU Processor
- Full featured local and network Display & Analysis
- Modular and Extendable TM Data Services - per Module
- Real-time Raw and Processed Mission Data Recording
- NEW 8 bps - 72 Mbps Tunable PCM Bit Synchronizers
- NEW 0-72 Mbps PCI Advanced Frame Sync/Decoms
- Multi-Stream Dynamic PCM Simulator/Encoder
- NEW Real-time card level CVSD Voice Processor
- RF Receivers, Analog, DAC, Aircraft Data Buses, Discretes, GPS and more.

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General Description

The Model 2500AP is a third generation portable, low-latency multi-stream telemetry data processing and analysis unit. Based on Intel Core i7 motherboard technology, the 2500AP host PC chassis provides a compact 2u rackmount host to Acroamatics' signature low-latency, card embedded multi-function telemetry processing cardsets. Modular and extendable to suit a variety of manufacture, design lab, and test range decom processing needs, the Model 2500AP provides the same superb set of integrated data decommutation, EU conversion, and data output formatting methods used in our industry leading line of high performance range control center and low-latency range safety telemetry data server lines.

Featuring from one to three of our new Model 1612AP or 1622AP real-time single card telemetry modules, the 2500AP offers rugged design, very light weight, and powerful networking capabilities specifically designed to support long term field and TM data center TM applications. Operating under Windows 7 64-bit system OS, Acroamatics low latency, deterministic card embedded processors guarantee that users will have ample processing potential to meet the most complex display, recording and real-time networked data server client display and analysis demands.

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Overview

The Acroamatics 2500AP Single/Dual Stream Telemetry Data Processor/Server (TDPS) delivers a unique combination of card embedded low-latency dynamic decom and EU processing, with Windows high performance engineering data display and analysis power to meet the most demanding compact data center and lightweight portable telemetry processing applications. The 2500AP delivers real-time mission data display, recording and networked data distribution of virtually any IRIG, CCSDS or packetized PCM formatted telemetry data stream. Stream decommutation, EU conversion, deterministic derived processing, and specific data output formatting (limit setting, alarms and a variety of card embedded processing algorithm and user defined output data format) requirements. The 2500AP 2u rackmount unit is purpose designed to accommodate Acroamatics industry leading, Windows application independent telemetry processing cardsets. The 2500P supports from one to three stream decom/EU applications and a variety of optional input/output cards (optional bit sync, PCI, multi-band ARTM 0/I/II receiver, DAC/A-to-D/Discrete).

System Software

Acroamatics Telemetry Software suite (ATSS) TDP system software includes GUI applications to set up and operate the range of system hardware configurations available. Operators can store and instantly configure the system using project setup libraries managed by ATSS, or alternatively use convenient TMATS, Excel or TDP script file editors to define their own mission TDP configuration and stream data dictionary management schemes. Using ATSS, users can configure and initiate mission support operations from the Mission Console menu, or control individual TDP functions through specific control panel GUI utilities, such as the Data Recording GUI.

PCI Chassis

The standard Model 2500AP is based on a purpose-designed, rugged and lightweight 2u rackmount style chassis, light enough to support portable operations with ease, yet rugged enough to meet rigorous shipboard and filed mobile applications. The 2500AP meets the most demanding integrated telemetry decommutation needs, adding precisely correlated low latency EU, derived, and formatting of user defined data products via local media, display or networked data services. The 2500AP is scalable to support single or dual stream operations, yet lightweight and versatile, with a full array of panel mount rear panel BNC/Triax signal I/O connectors. Model 2500AP standard features include a front panel removable system & data drives, CD/DVD recorder drive, front and rear panel USB (4 ea), SVGA or DVI video monitor, and serial com port. Unit administration and operations are supported by Acroamatics ATSS system software operating under Windows 10 64-bit OS and Intel Core i7 CPU based host processor. For applications requiring just single stream decom only applications, also refer to Acroamatics compact Model 4022-CTS Single-Stream Compact Telemetry System. See product data sheets for more information.

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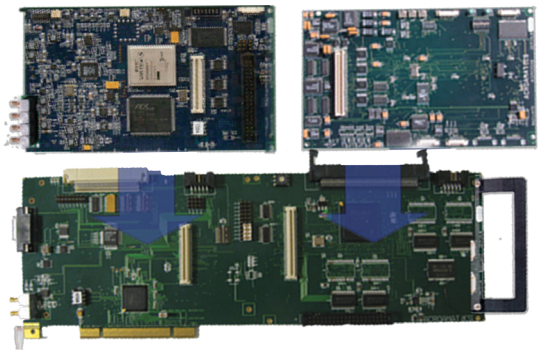
PCI Telemetry Cards



You can select a set of Acroamatics cards to process anything from a single PCM stream to eight streams of complex telemetry data simultaneously in a single TDP chassis. The following brief descriptions of the functions supported by the individual cards is summary in nature only. Please refer to specific module data sheets for complete capabilities descriptions. Please consult with us prior to order placement for assistance in configuring a TDP to best suit your requirements.

NEW Model 1612AP PCI PCM Data System

The new Model 1612P replaces the 1602P. In fact, it's a "Drop-in" replacement. But the 1612 is not just an update, it includes important new functional capabilities and processing power improvements without sacrificing backward compatibility with Acroamatics earlier generation telemetry card and processing systems. The 1612P is a powerful, self contained card level programmable PCM frame synchronizer and data decommutator, delivering gobs of real-time decom, processing, and output formatting power in a true, Windows free real-time card level processing environment. It handles the most complex conditional, format switched, stream embedded, high rate decom and output processing requirements in stride. The Model 1612P utilizes user defined micro-coded "soft-decom" processing techniques run within card resident real-time processors providing six sub-frame decommutators each with dual buffered memories for execution of instructions and data processing algorithms with absolute determinism and timing correlation. We've raised the data rate to 40 Mbps and incorporated our powerful onboard programmable simulator, an 8 channel DAC, and other new capabilities to the 1612P. The 1612P is designed to deliver better performance for a lower price.

NEW Model 1615AP PCI Programmable Data Stream Processor and Data Distribution Module

The Model 1615P is another recently upgraded component of Acroamatics' unique low-latency telemetry processing architecture. The new 1615P allows merging and processing of data from up to eight Model 1612P decom modules, along with reference IRIG timing, external discrete and A/D inputs, HOTLink, PCI and network input data. The 1615P supports low-latency complex data merging and distribution, outputs multiple data products via dedicated card resident network interfaces, and provides low latency / real-time processing of data using its powerful card embedded SHARC DSP. A library of over 300 telemetry algorithms supports deterministic sequential algorithm chaining, derived "if-then-else", to 7th order polynomial calculations, and complex user-defined expression processing and output formatting.

NEW RDM-206 PCI LL/UL/S/C ARTM 0/I/II Receiver Card

Now available as standard options to all Acroamatics TDPS family products is a new off-the-shelf TM receiver from our sister company, GDP Space Systems - a leading vendor of TM receiver products. The RDM-206 delivers ARTM 0/I/II demodulation, pre-detect diversity combining, and a choice of single or multiple RF bands, with the best PCI module telemetry receiver performance and signal processing technology available today - at an affordable price.

NEW Model 474DM 40 MHz Bit Synchronizer Mezzanine

The 474DM PCM Bit Synchronizer is a state-of-the-art Bit Synchronizer featuring tunable data rates from 8 Hz to 40 MHz in ALL codes. The card contains selectable input sources, AGC and DC restoration circuitry, and programmable digital filtering for optimum data recovery. Sophisticated PLL (phase-locked loop) circuitry synchronizes a clock to the incoming signal to extract digital data from input PCM stream data. It provides bit sync performance and noise specifications comparable to full size PCI card and the best range chassis based units, using Acroamatics Advanced Digital elements similar to the high performance Model 1611P, but sized to attach to the new Model 1612P, 1622P, and 1626P modules to deliver single slot TM stream processing solutions.

NEW Model 1611AP PCI 40 MHz Advanced Digital Bit Synchronizer

The 1611P Bit Synchronizer is a state-of-the-art Advanced Digital Bit Synchronizer featuring tunable data rates from 8 Hz to 40 MHz for all codes, supports all IRIG standard and randomized codes, and provides "best-in-class" bit error, jitter, and sync retention performance. Error performance is well below 1 dB of theoretical - typically in the 0.5 to .25 dB range.

NEW Model 470M Time Code Generator/Translator Mezzanine

The Model 470M is a mezzanine card that converts amplitude modulated IRIG time code signals to a digital representation for downstream analysis. It combines time code translation, generation and format simulation on a single plug-on mezzanine companion to the Model 1612P decom (first stream decom in each system, only). IRIG A/B/G & NASA-36 supported.

Model 482M D to A Converter Mezzanine (Companion to Model 1615P PDSP)

Model 482M is a mezzanine card for the PCI-bus Model 1615P. Two configurations of Model 482M are available. Model 482M-8 provides a total of 8 channels of 12-bit D-to-A output. Model 482M-32 provides a total of 32 channels of 12-bit D-to-A output plus 16 channels of 12-bit A-to-D input with a 400KHz sample rate.

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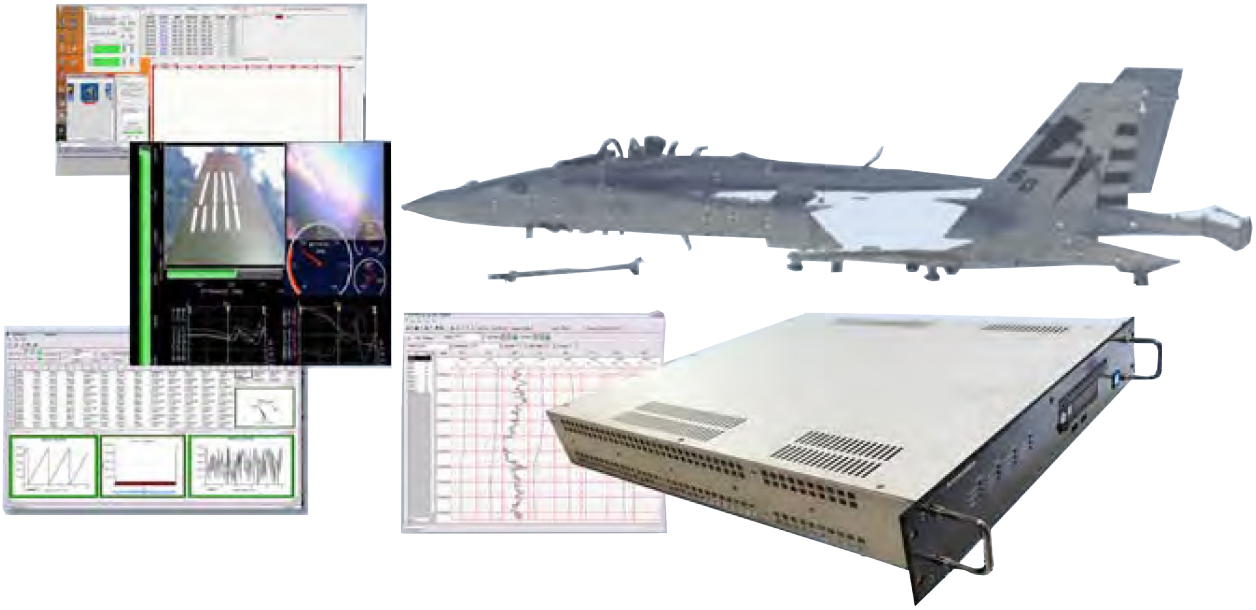
Model 2500P Specifications

Physical	3.48” (8.84cm) H x 19.0” (48.26cm) W x 20.19” (51.28cm) D
Display	External Monitor Out - SVGA (DVI/HDMI option)
Backplane	3x PCI, 1x Mini PCI-E 2.0 Slot
Processor	Intel Core™ i7 fourth gen 3.5 GHz, Quad Core
Networking	Dual Ethernet 10/100/1000
USB	4x USB 2.0 (2 rear panel & 2 front panel mounted)
Memory	8 GB (min) DDR3 SDRAM
Storage	Dual x 3.5” HDD, 1 TB ea, or Flash to 480 GB/drive - Front panel removable
Power	200 W 100-240V 7-63 Hz Power Supply
DVD	Slim slot-loading DVD burner/Slim Blu-ray player indicators
Signal I/O	to 32 each BNC/Triax rear panel mount, to TM cardset requirements
O/S	Windows 7 Pro, 64-Bit
Environmental	Shock 6G, Non-Operating 50G
Vibration	Operating 0.5G, 5 to 2000 Hz, Non-Operating 1.2G, 5 to 500 Hz
Temperature	Operating 0 to +40° C, Non-Operating -40 to +86° C



SOFTWARE INCLUDED

Acroamatics Telemetry Software Suite (ATSS) software set-up and operating environment is provided installed in each TDP system as the integrated operations hub of your new TDP system. ATSS consists of a closely integrated pre-mission TDP system set-up program (TDPSet), TDP Mission Operator Console (MOC) set-up and desktop operations “environment”, and various real-time system editing (e.g. bit sync & decom “tweaking”), control tools (recorder & networking control panel), and various console display editing and system management utilities.

CUSTOM CONFIGURATIONS AND SPECIAL DESIGNS

Acroamatics has the hardware and software expertise necessary to solve even the most complex problems. Our system and card level product capabilities allow us to quickly and effectively design new or modify existing card level modules in response to individual requirements and evolving range and aircraft testing standards. Third party aircraft data buss, receivers, graphics, modules and a wide variety of software application tools are accepted by the Model 2900AP with no special modifications. Acroamatics is an experienced integrator of large multi-vendor systems, with facilities and expertise to assembly, test, and deliver solutions specifically tailored to your needs.

CUSTOMER SERVICE

When you call Acroamatics for support you won’t have to work your way through an automated system or an anonymous help desk. You’ll be connected directly to the engineers and programmers who designed your system to quickly resolve problems.

WHY ACROAMATICS

Over thirty years of experience, far-ranging expertise, excellent products, and outstanding support make Acroamatics not just a telemetry system supplier, but a partner you can rely on to meet your needs.

Specifications subject to change without notice.

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