

Model 3022AP



REAL-TIME TELEMETRY DATA SERVER & ANALYZER



ACROAMATICS
TELEMETRY SYSTEMS

DATA PROCESSING

KEY FEATURES

- 2 - 6 PCM Stream Chapter 4 and IRIG 218-20 TM Processing
- Real-time OS Independent Card Embedded Dynamic Software Decom and EU Processing
- 4th Gen MD1632AP Dual Stream 50 + Mbps PCIe "all-in-one" Telemetry Processor Card
- 4th Gen MD1635AP PCIe real-time SHARC® Multi-Stream EU Processor - to 6 MS/Sec rates
- ARTM TIER 0/I/II Multi-Band RF/IF RDM207 Receiver Card
- Full featured local & network ADAT Display & Analysis Tool
- Modular and extendable TM Data Services - per decom module
- Real-time Raw and Processed Mission Data Recording,
- CH 10/11 format Compliant Data Products, and direct UDP Input
- World Class 8 bps - 40 Mbps Bit Synchronizers
- Multi-Stream Dynamic 64 Mbps PCM Simulator / Encoder
- Card embedded Windows Independent low latency CVSD
- Supports Multiple Ext Monitors

GENERAL DESCRIPTION

The Model 3022AP is a third generation portable, low-latency multi-stream telemetry data processing and analysis unit. Based on Intel Core i7 motherboard technology, its PC chassis provides the ideal platform with which to host Acroamatics' signature low-latency, card embedded multi-function telemetry processing cardsets.

Modular and extendable to suit a variety of project or matrixed organization telemetry processing needs, the Model 3022AP provides the same set of integrated data decommutation, EU conversion, and data output formatting methods used in Acroamatics' line of high performance range control center and low-latency range safety telemetry data server lines.

Featuring from one to three of Model 1632AP real-time single card telemetry modules, the 3022AP offers rugged design, very light weight, and a 17" 1920-1080 high resolution display specifically designed to support long-term field and lab portable test applications. Operating under Windows 10 64-bit or Linux system OS, the card embedded Model 3022AP telemetry processing card suite guarantees that users will have ample processing potential to meet most complex display, recording, and networked data services display and analysis demands.



OVERVIEW

The 3022AP portable Telemetry Data Acquisition and Processing Platform (TDP) delivers ample processing power to meet the most demanding portable system real-time mission data display, recording and networked data distribution requirements. Each unit is built specifically to accommodate Acroamatics' Windows application independent telemetry processing card-set solutions. It meets requirements ranging from single stream instrumentation engineering lab to multi stream range data center telemetry server configurations. System configurations are scalable to accommodate applications ranging from the simple quick-look to the most extreme conditional format switch and frame embedded processing and data reformatting situations. The base functional capabilities of the Model 3022AP include low latency IRIG Class I & II PCM decommutation, integrated card embedded low-latency EU processing, recording, display and quick-look analysis, and networked data services.

SYSTEM SOFTWARE

Acroamatics Telemetry Suite (ATSS) TDP system software and industry leading ADAT display and analysis software include 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, manage, and update their own telemetry acquisition and post mission processing operations. Acroamatics Display and Analysis software enables users to create & optimize dynamic, data driven real-time & file driven post mission analysis environments.

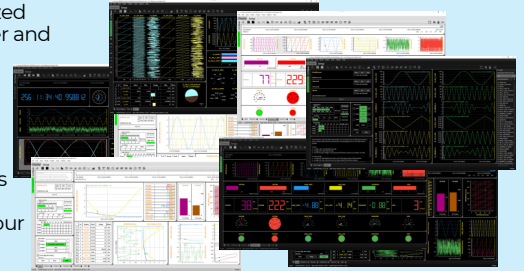
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ADAT DISPLAY, ANALYSIS, & OPERATIONS SOFTWARE

ADAT is a virtual TM processing platform console program that allows users to create customized control, status, and data display layout pages using widget based set-up tools. Simple to master and powerful to use, ADAT serves as a superior display and analysis environment and an effective TM front-end operations console.

ADAT supports Acroamatics' TM card direct mission recording, playback, and analysis of measurement data with an assortment of user control, status, and configurable display types. ADAT setup and display development can be done without hardware on any computer platform, as can playback and analysis of recorded mission data files. Most importantly, ADAT is fully integrated with all Acroamatics hardware telemetry processing products. ADAT supports operation in both Windows 10 and Linux RHEL7 environments and is the ideal complement to our data processing card and system products hosted by either of those common operating systems.



PCIE CHASSIS

The Model 3022AP is based on a purpose-designed, rugged and lightweight "lunch-box" style portable "all-in-one" PCI/PCle compatible backplane chassis configured to specifically meet the demands of rigorous T&E TM ground station & portable control room applications. Lightweight and shock resistant, the Model 3022P features lightweight and corrosion resistant all metal construction. Its standard features include a large 17.1" built-in high resolution/brightness display panel, integral full size keyboard, removable SSD, a rugged internal card cage, and enhanced thermal management. Standard system options include a wide variety of disk storage configurations, RAM configuration, and standard high performance i7 Core ATX processing card.

See product data sheets for more information.

PCIE TELEMETRY CARDS

Acroamatics cards can process anything from a single PCM stream to sixteen streams of complex telemetry data simultaneously in a single chassis, and now include the option of a new generation integrated high performance RF receiver/demod PCI module. The following descriptions of the functions supported by the individual cards is summary in nature only.

Refer to specific module data sheets for complete capabilities descriptions. Assistance prior to ordering is recommended to ensure proper configuration.

1632AP-2 PCIE PCM DECOM

The dual stream 1632AP-2 PCie multi-function PCM co-processor card serves as the multi-channel decommutator "backbone" of Acroamatics multi-channel and card level telemetry product lines. The 1632AP-2 is a powerful 4th generation processing card that features several new functional capabilities, dynamic program driven embedded processing, and enhanced processor speed which is unmatched in the industry. The 1632AP is a multi-function program driven processor card that operates both as a stand alone dual stream decom/simulator/time/bit sync and output data formatter & distribution device and as an integrated element in a high channel count telemetry processing and data server system. The 1632AP card serves as a dynamic PCM frame synchronizer and data decommutator, delivering high rate signal processing performance in a Windows application free real-time processing environment. It handles the most complex conditional, format switched, stream embedded capable high rate decom and output processing requirements. It utilizes user defined micro-coded "soft-decom" processing techniques that runs within its card resident telemetry co-processors with absolute determinism, producing precisely correlated and repeatable data/time output data products. Model 1632AP processing and input data rates have increased to well over 40 Mbps, with a powerful integrated programmable simulator for each stream to match.

1635AP PCIE PROGRAMMABLE DATA STREAM PROCESSOR AND DATA DISTRIBUTOR

Another recently upgraded component of Acroamatics' low-latency telemetry processing architecture is the recently re-designed Model 1635AP card. Installed in a system in a single or dual card EU and data distribution arrangement, these new cards allow merging and processing of data from up to eight Dual1632AP decom modules (16 independent streams) supporting deterministic IRIG time tagging, multi-format CVT and RMA driven data recording and networked data distribution, with multiple on-the-fly data reformatting and select data output options. The 1635AP supports low-latency complex data merging and distribution, outputs multiple data products via dedicated card resident network interfaces, and effortlessly produces low latency / real-time processed data output products using its unique on-board SHARC® DSP embedded processor and 300 telemetry algorithm library. Sequential algorithm chaining and derived "if-then-else" processing is supported, as is the generation of unique user-defined logical data expressions. See the Model 1635AP PCie product data sheet or request supporting technical literature for more details.

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674DM DUAL 40 MBPS BIT SYNCHRONIZER MEZZANINE

The 674DM PCM Bit Synchronizers include state-of-the-art features, including tunable data rates from 8 Hz to 40 MHz in ALL codes, integral randomization, encoders, BERT, multiple 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. They provide bit sync performance and noise specifications comparable to full size PCI and PCIe card devices and top ranked chassis based instruments.

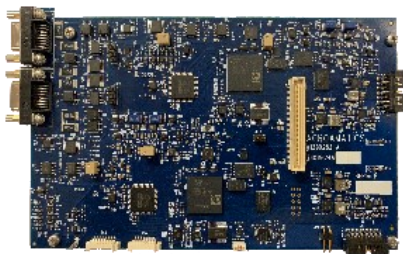
MODEL 682M D TO A CONVERTER MEZZANINE (COMPANION TO MODEL 1635AP PDSP)

The Model 682M is a mezzanine daughter card designed to mate to and work in conjunction with the Model 1635AP PCI PDSP card. Two configurations are available. Model 682M-16 provides a total of 16 channels of 12-bit D-to-A output and the model 682M-32 provides a total of 32 channels of 12-bit D to A output, plus 16 discrete outputs and 16 channels of deterministic 12-bit A-to-D input to accommodate the merging of local analog measurement data with real-time telemetry stream inputted data results.

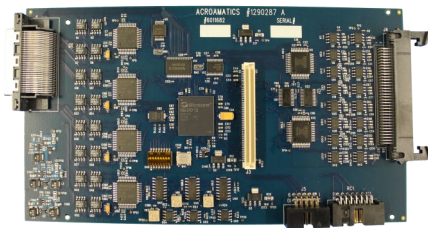
See the product data sheet for more information.

MODEL RDM-207 LL/UL/S/C & IF BAND RECEIVER/DEMODULATOR/BIT SYNC MODULE

Now available within most TDP family products is a new, affordable, off-the-shelf PCI card based line of integrated RF Receiver/Demod from our GDP Space sister division. Based on over two decades of experience in the satellite receiver marketplace, the RDM207 supports L/S/C band acquisition and IRIG Tier O/I/II, FM/FM, PCM/FM, & most IRIG approved code demodulation and bit synchronization- delivering best-in-class performance available today in a modular, single card PCI format solution. The RDM207 is unique in that it simultaneously supports IF and video analog outputs as well as bit sync'd clk/data PCM and TMOIP (218-20) or Chpt 10 UDP networked data outputs.



674DM



682M



RDM-207



3022AP-L3 Integrated Single, Dual or Triple 24inch Display



Model 5230-3022 BNC break-out panel



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SPECIFICATIONS

Physical	14.05" x 16.46" x 6.96" (H x W x D) / and under 22 Lbs., with cards
Display	17.3", 16:9 Display, 1920 x 1080 Resolution, 300 cd/m2 Brightness
Backplane	4 each PCI, PCI-e, or mixed card slot combinations
Processor	Intel Core™ i7- G12 4 GHz
Networking	Dual Ethernet 10/100/1000/2500 BT
USB	10x USB 3.0 (6 rear panel & 4 internal header mounted)
Memory	64 GB DDR3 SDRAM
Storage	Dual removable 1TB SSD SATA 3 with accommodations for four total drives, side mount carrier.
Power	100-240 VAC, 47-63 Hz Power, Battery (Optional) to support 2 Hr standalone operations.
DVD	Slim slot-loading DVD burner/Slim Blu-ray player indicators
Signal I/O	Multi-pin mini-D, with BNC female conversion cables provided (standard 10" length)
O/S	Windows 11 Pro 64-Bit, with DOD SHB STIG configuration compliance - RHEL 8 & LTSC options.
Environmental	Shock 6G, Non-operating 50G Vibration Operating 0.5G, 5 to 2000 Hz, Non-Operating 1.2G, 5 to 500 Hz Operating 0 to 40 C° Non-Operating -40 to 86° C
Temperature	

SOFTWARE INCLUDED

Acroamatics Telemetry Software Suite (ATSS) featuring new Acroamatics Display and Analysis Tool (ADAT) operating environment is 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), ADAT widget based customizable display and operations desktop, and various real-time system editing (e.g. bit sync & decom "tweaking"), control tools (recorder & networking controls), 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 3022AP with no special modifications. Acroamatics is an experienced systems integrator, 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 fifty 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 both present and future needs as they arise.



[Inquire today to learn more](#)

