



Telemetry Data Processing & Data Server Systems

RECEIVER / BIT SYNC / FRAME SYNC
DECOMMUTATION
ENGINEERING UNIT CONVERSION
DERIVED MEASUREMENT PROCESSING

RECORDING / PLAYBACK
REAL-TIME QUICK-LOOK DISPLAY
POST-TEST ANALYSIS
SIMULATION

The screenshot displays a comprehensive software interface for telemetry data processing. On the left, there are control panels for 'TDP Init', 'TDP IN RUN', and 'Generate B'. The top section shows a timeline with time markers from 297:08:40:00.00000 to 297:11:26:40.00000. The main area is divided into several panels:

- Waveform Plot:** A large plot showing a sinusoidal wave labeled 'SINO_2HZ|SINO_1OHZ' with a y-axis from 0 to 250 and an x-axis from 297:11:36:05.00000 to 297:11:36:11.00000.
- Parameter Table:** A table listing various telemetry parameters and their values:

CNT100	84	DEC
CNT200	164	DEC
FIXED11	11	HEX
FIXED22	22	HEX
FIXED33	33	HEX
FIXED44	44	HEX
FIXED55	55	HEX
MFSYNC	faf320	HEX
RANDOM	105	DEC
SFID	4	DEC
SINO_2HZ	238	DEC
SINO_1OHZ	19	DEC
- Bar Charts:** Two bar charts for 'CNT100' and 'CNT200' showing values of 84 and 164 respectively.
- Scatter Plot:** A scatter plot for 'CNT200' vs 'CNT100' showing a linear relationship.
- Parameter List Table:** A table listing parameters with their IDs, names, values, and representations:

Id	Name	Value	Rep
1	10	CNT100	84 DEC
2	11	CNT200	164 DEC
3	2	FIXED11	11 HEX
4	3	FIXED22	22 HEX
5	4	FIXED33	33 HEX
6	5	FIXED44	44 HEX
7	6	FIXED55	55 HEX
8	0	MFSYNC	faf320 HEX
9	9	RANDOM	105.00 DEC
10	1	SFID	4.00 DEC
11	8	SINO_2HZ	238.00 DEC
12	7	SINO_1OHZ	19.00 DEC
- Waveform Plots:** Additional plots for 'RANDOM', 'SINO_2HZ|SINO_1OHZ', 'SINO_2HZ', 'RANDOM', 'SINO_1OHZ', and 'CNT100|CNT200'.

At the bottom left, there are status indicators for 'PDSP1' (IDLE), 'PCMD1' (8.92 GB | 817.34 KB/s), and 'PCMD2' (IDLE). A 'RUN' button is visible at the bottom right.



TELEMETRY DATA PROCESSING & SIMULATION SYSTEM

Acroamatics' Telemetry Data Processing and Simulation System (TDPSS) offers a flexible, configurable, and expandable solution for today's telemetry decommutation processing and display requirements. This multifunction system addresses all of the common telemetry range functions in a single integrated system.

The system can be configured with front-end functions such as RF/IF Receivers, Bit Synchronizers, and Frame and Sub-Frame Synchronizers. The heart of the system performs multi-stream data decommutation, providing unique ID tags and time tags for each measurement at ingest. Decommuted data can then be sent to high-performance, real-time processors which perform engineering units conversion, limit checking, derived measurement processing and other functions without bogging down the host central processing unit (CPU). The resulting raw or processed measurements can then be recorded or displayed. Playback of recorded data can be used to regenerate PCM stream for processing by TDPSS decommutators and real-time processors or be analyzed and displayed. Each input PCM stream has an associated simulator/encoder function which can be configured to support multi-stream mission and ground system checkout and set-up validation.

HARDWARE COMPONENTS

Chassis

The TDPSS is available in several form factors; each contains a PCIe backplane, a multi-core Intel I7-based single board computer, and accommodates a mix of TDPSS modules, data storage, and rear panel signal I/O connector options.

- 12-Slot 4U MD2900AP Rackmount (to 16 strm)
- 2-Slot 1U MD2500AP Rackmount (2 strm)
- 3-Slot 2U Rackmount (to 4 stream)
- 4-Slot MD3022AP Lunchbox Portable
- Custom Chassis Option



Modules

The TDPSS is a high-performance, modular hardware-based system. It does not depend on the processing capacity of the host CPU for low latency, real-time processes. The available modules change over time as technology changes, new features are added and new modules are designed. However, the generic modules listed below should give an understanding of the general capability of the system. Pick and choose the module for your application.

- PCM Decommutation / Timecode / Simulation Modules
- Bit Synchronizer Mezzanine Modules
- Programmable Data Processor Modules
- RF / IF Receiver Modules
- Third Party Modules



SOFTWARE COMPONENTS

Acroamatics Telemetry Software Suite

The TDPSS is delivered with Acroamatics Telemetry Software Suite (ATSS) . ATSS features a new widget based data imaging, analysis, and system operations tool - ADAT. ADAT is closely coupled to Acroamatics' dynamic card embedded telemetry processing architecture, providing an extensible environment for setup and control of core TDPSS operations such as real-time display, recording, post mission playback and analysis, networked data communications, and post test data output product generation and distribution.

The ATSS can be delivered for use on either a 64-bit Windows 10 (Secure Host Baseline validated) or Red Hat Enterprise Linux 7 Acroamatics telemetry processing platforms allowing the TDPSS system to be tailored to the customers preferred OS environment. Applicable DISA STIGs are applied and support is available to maintain compliance with the latest cyber security requirements. Acroamatics' high-performance telemetry processing solutions provide users a winning combination of unique architectural and functional advantages.

- Operating System Independence
- Freeform Graphic Desktop
- Widget-based Real-time & Analysis Tools
- Run Time System Control
- Real-Time Status
- Data Record and Playback
- Quick-look and Post-test Data Display
- Configurable Font Size and Color
- Customizable Components
- Multi-page / Instance Display Environment
- Industry Leading Support

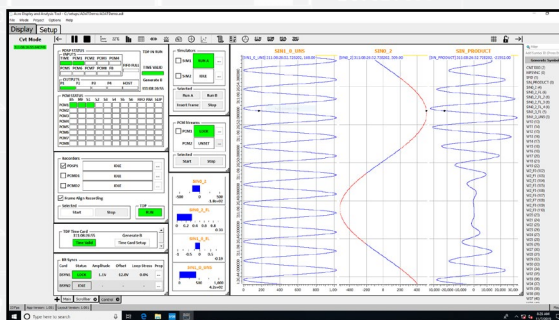


Freeze, zoom (all-points), scroll in real-time & playback.

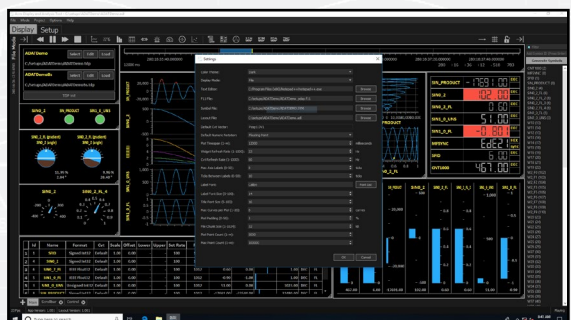


Contemporary user-defined, widget-based display & set-up design.

Stripchart replacement, limits and alarms, auto-scale, status & ops controls.



File playback mode- speed-up/down, loop, time search/scroll slider, etc.

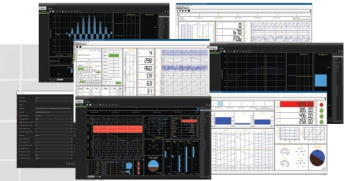
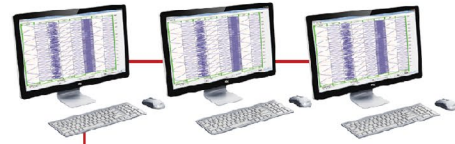


RANGE TELEMETRY DATA SERVER PLATFORM



Model 2900AP

Acroamatics Display and Analysis Tool (ADAT) Client Workstations



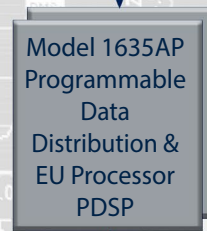
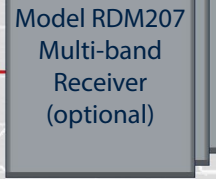
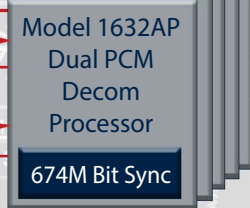
Optional Inputs:

- Serial Bus
- 232/422/585
- 1553/429
- Aircraft Bus



RF In:

- S / C / LL / UL / IF
- PCM Decom
- PCM Sim/Enc
- PCM Bit Sync Out
- PCM Bit Sync In
- IRIG In
- IRIG Out



Optional Outputs:

- PCM Serial Output (up to 2 system)
- PCM Reconstructor
- A/D 16 Ch. Discrete 32 Ch.

