Telemetry Data Processing & Simulation Systems

- RECEIVER / BIT SYNC / FRAME SYNC
- DECOMMISSION
- ENGINEERING UNIT CONVERSION
- DERIVED MEASUREMENT PROCESSING
- RECORDING / PLAYBACK
- REAL-TIME QUICK-LOOK DISPLAY
- POST TEST ANALYSIS
- SIMULATION
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. Decommutated 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 offers superior data imaging, analysis, and system operations tools. This powerful operating system independent software package provides an extensible environment for setup and control of the TDPSS as well as recording, playback, real-time quick-look display, and precise post system analysis of the acquired telemetry measurement data.

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.

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

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

File playback mode– speed-up/down, loop, time search/scroll slider, etc.
RANGE TELEMETRY DATA SERVER PLATFORM

Model 2900AP

Optional Inputs:
- Serial Bus
- 232/422/585
- 1553/429
- Aircraft Bus

Intel i7 Single Board Computer

Acroamatics Telemetry Software Suite (ATSS)

Windows/Linux Operating System

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 Inputs:
- Serial Bus Interface Cards

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

Model 2900 AP

Telemetry Data Processor / Server

PCIe Bus

Model 1632AP
- Dual PCM Decom Processor
- 674M Bit Sync

Model RDM207
- Multi-band Receiver (optional)

Model 1635AP
- Programmable Data Distribution & EU Processor PDSP

Model RDM207 Multi-band Receiver (optional)

ATSS Client Workstations

I-Bus

Real-time Decom / PDSP Data Flow

(64 Bit)