AP Labs

Real-Time Systems for
PCM TELEMETRY & AVIONICS TEST

Product Overview - VMEwindow

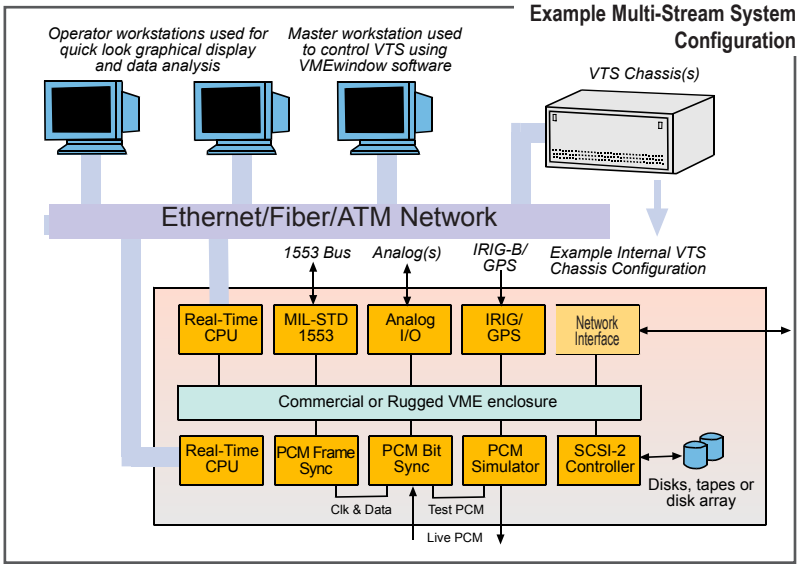
VMEwindow-based systems allow the user to implement high-performance real-time data systems with a graphical "point and click" interface. VMEwindow systems are available as turnkey binary solutions or with full VMEwindow source code for customer-specific modifications and enhancements. Applications include PCM Telemetry, Avionics Test, and Data Acquisition.

VMEwindow offers the optimal combination of standard off-the-shelf VME-based hardware and software for VME-based analog & digital data acquisition, PCM Telemetry, and Avionics Test applications. A key differentiator for VMEwindow is the ability to cost-effectively tailor the system to handle almost any custom interface requirement.

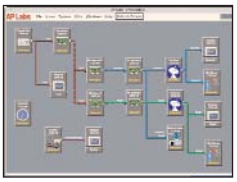
An Icon-based interface on a standard host workstation defines data flow and display, while a VME-based real-time system utilizes the industry-leading VxWorks operating system to ensure deterministic performance.

Check out our web site for the data sheets and application notes listed below (pdf format).

Example Multi-Stream System Configuration



VMEwindow for IRIG-106 PCM Telemetry



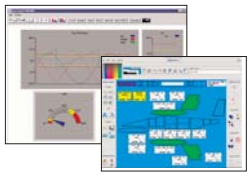
PCM Telemetry systems applications require standard features for easy frame setup, real-time EUC processing and data archival, and open interfaces for data distribution and post-processing tasks. The AP Labs VMEwindow Telemetry System (VTS) delivers that and more.

Standard IRIG-106 functions are supported and - when program requirements include the need for custom or unusual interfaces, the standards-based VTS can accommodate almost any I/O requirement. With the availability of source-code and industry-standard development tools, inclusion of custom hardware or software features can be contracted to AP Labs or performed by the customer's engineering organization.

VMEwindow for MIL-STD-1553

Monitoring and test of complex avionics MIL-STD-1553 based busses requires flexible real-time monitoring capabilities. The AP Labs VMEwindow system with MIL-STD 1553 support provides a reliable frame work for lab testing of such busses. GUI support includes Bus Monitor (BM), Bus Controller (BC), and Remote Terminal (RT) support.

VMEwindow Companion Products



Observer
DataRaptor
Real-Time data visualization with complex graphics

Profiler
Real-Time Test Control

Postgen
Post Processing Interface

Figure 1. Importing data into PostGen

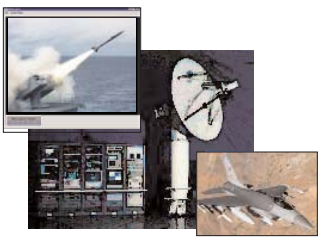
Example Applications

RANGE TRAINING:
The VTDS (Video Telemetry Data System) is the data link between "test players" (instrumented vehicles, personnel, and weapons systems) in a range training environment. The system acquires, records, distributes, and displays multi-source real-time data.

SPACE VEHICLE LAUNCH CHECKOUT:
The Space Shuttle RPS ("Record and Playback Subsystem") utilizes VMEwindow for the pre-launch check-out of the Space Shuttle data acquired via telemetry links from the vehicle. Up to 55 real-time VME-based systems are controlled and monitored during the ground test and launch phase processing.

AVIONICS BUS TESTING:
Aircraft development requires extensive testing of avionics bus interfaces (MIL-STD 1553) to validate hardware and software. The VMEwindow-based system shown includes real-time full Bus Monitoring on 10 channels of 1553, plus synchronized analog data acquisition and replicated memory networked data distribution.

FLIGHT TEST:
AP Labs has supplied several flight test ground stations for aircraft and missile flight test applications, both domestically and Internationally. As a turnkey system with guaranteed future expandibility, these VMEwindow systems offer a rich feature set and low risk.



Packaging Options

All of the real-time systems depicted in this brochure can be supplied in packaging tailored to the needs of the target environment, whether that is laboratory, rugged airborne, ship-board, or ground mobile.

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