



The Open Architecture Approach to Real-Time Computing

The AP Labs VMEstation® is an open architecture, commercial off-the-shelf family of fully-integrated VME-based real-time platforms with optional development capability.

Various VME UNIX host and target CPU architectures are supported in single or multiprocessor configurations, along with an extensive range of third-party VME and IP Module I/O choices. VxWorks device driver software and the AP Labs Asynchronous I/O (AIO) common Application Programming Interface simplify application software development while lowering your project cost, schedule, and risk.

Packaging options include desktop, rackmount, and ruggedized enclosures for laboratory, airborne, shipboard, and ground-mobile environments. Software options include the AP Labs VMEwindow® Motif-based graphical control package, enabling full point-and-click control of the VME I/O functions with compromising real-time performance.

Typical VMEstation configurations include:

- the **VMEstation Host**, providing VME-based UNIX capability,
- the **VMEstation Target**, a VxWorks-based real-time system utilizing 68K, PowerPC, SPARC, MIPS, Alpha CPUs.
- the **VMEstation Host & Target**, supporting both the UNIX and VxWorks environments on the same VME backplane.

AP Labs integrates systems based on the optimal mix of commercially available hardware and software products - this results in an *independent* selection that best matches *your* requirements, rather than a single vendor's selection of their own products.

Standard System Architecture:

*COTS 6U VME products
UNIX Host Environment
VxWorks Target Environment*

Flexibility:

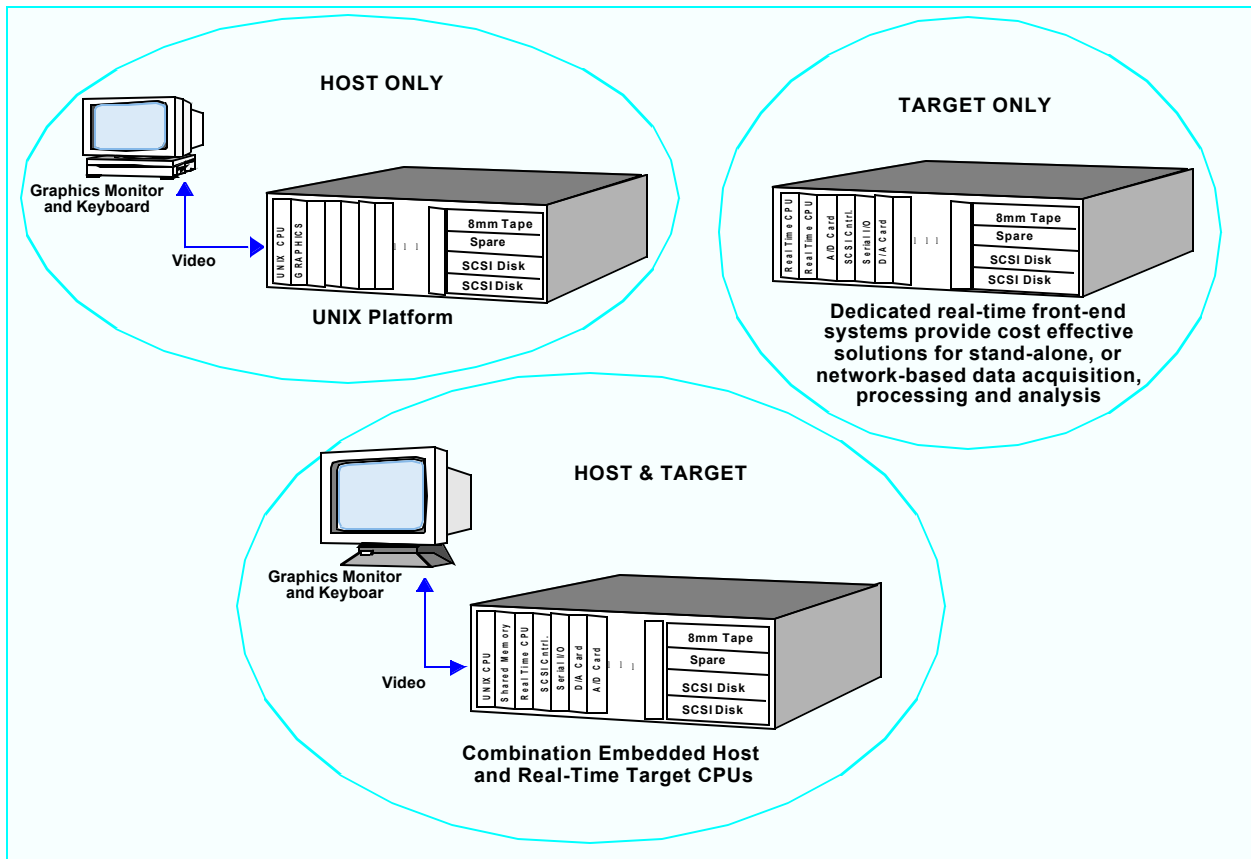
*Host Only, Target Only, or combined
Host & Target configurations, in single
or multi-CPU configurations
Various VxWorks Target CPU choices:
68K, PowerPC, SPARC, MIPS, Alpha
VxWorks Driver Support for over 50
Third Party VME cards and IP Modules*

Packaging Options:

*Standard best-commercial-grade
desktop/rackmount 12/20 slot VME
Options for other rackmount, ATR, and
custom requirements
Ruggedization options for shock/
vibration, EMI/RFI, and extended
temperature environments.*

Full Range of Optional Services:

*Systems Integration
Documentation
Installation/Training
Hardware & Software Support
Custom Software Development*



Some sample VMEstation configurations are shown above. Our wide-ranging support for third-party VME and IndustryPack (IP Module) solutions is illustrated below. Device driver software for each VME card is included, based on the AP Labs Asynchronous I/O or standard VxWorks I/O subsystem model. The capability of the VMEstation is constantly growing as a result of new developments in the VME marketplace, AP Labs own research and development, and customer-driven enhancements. If your particular requirement does not appear to be directly satisfied by the list of features shown, please call to discuss with our application engineering staff.

VME I/O Options

Analog:

- Analog-to-Digital, 12 & 16-bit
- Digital to Analog, 12 & 16-bit

Digital:

- TTL
- Differential
- Opto-isolated
- Change-of-state interrupts

Serial:

- RS-232/422/485
- Low speed & high speed options
- Async, HDLC, SDLC support

SCSI:

- SCSI-2 Narrow/Fast & Fast/Wide
- Standard SCSI-2 fixed and removable hard disks
- 8mm and 4mm tape
- RAID-3 disk arrays

Network:

- Ethernet
- FDDI
- ATM
- FTP, NFS, RPC, TCP/IP, UDP/IP protocols

PCM Telemetry:

- Bit synchronizer
- Decommutator
- Simulator
- Viterbi/ Reed-Solomon encode/decode

Avionics Test:

- Single & Dual Channel MIL-STD-1553
- ARINC-429

Timers:

- IRIG-B Reader/Generator
- GPS front-end for IRIG timing
- Digital Counter/Timers with interrupts

Other Bus Interfaces:

- DR11W
- GPIB (IEEE-488)
- NTDS (MIL-STD-1397)

Chassis-to-Chassis:

- VME-VME Bus Adaptors
- VME-VME Bus Repeaters
- Reflectiv/Replicated Memory
- SBus-VME

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