Alta Communications Products

pvmax/GP
General Purpose VME Boardwith Programmable D/A, A/D and DIO

Features

3 T805 RISC-based processor, 25 MHz with 4 or 16 MBytes of memory, also addressable through VME space

3 VIC64™ VME interface with support for D8/D16/D32, A32/D64 and block transfers

3 Six independent channels, 12-bit, A/D converters, 1 µsec conversion

3 Six independent channels, 12-bit, D/A converters, 3 µsec conversion

3 Fully independent D/A and A/Ds eliminate skew between sequential D/A and A/D operations

3 32 bit Digital I/O (DIO), where each bit can be individually configured as input or output

3 Digital inputs can initiate processor interrupt for state change on inputs

3 External sync pulse allows several pvmax/GPs to be daisy-chained together

3 On-board clock and FIFO can be used to create digital pulse trains from digital output

3 8-bit WatchDog Timer with a selectable countdown rate

3 Counter and sync can be used to establish the time relationship between analog and digital signals

3 Four external differentially driven links allow larger, scalable, parallel processing systems to be created

3 Software development tools available for porting user applications to parallel environment

3 1 year warranty on parts and labor. Extended warranty available.

Description

Focused on real-time data acquisition and control applications, the **pvmax/GP** is a versatile high-performance interface, providing A/D, D/A, and digital I/O capability on a 6U VME board. All I/O functions have non-simultaneous access to the IMST805 or VME interface. The T805 processor enhances the functionality of the **pvmax/GP** by allowing parallel environments to be easily created. Alternately, the **pvmax/GP** can be used as a stand-alone VME real-time data acquisition and control board.

Connect with a REAL world !

Six independent D/A and six independent A/D converters perform high-performance bipolar conversion. Each converter has 12-bit resolution, and since the system I/O bus is 32-bits wide, two converters can be written to or read from at the same time. In addition, converter independence eliminates the skew that occurs between sequential input and output operations.

D/A conversion takes place by a write operation to the converter itself; no additional triggering is necessary. A/D conversion occurs via a write operation to a specific memory-mapped address, either by the T805 processor or an external sync. In this manner, multiple **pvmax/GP**s can be used together to create larger data acquisition systems while maintaining tight synchronization between boards.

32 user-defined, general purpose, digital I/O bits are available via a high-density, 60 pin, front panel connector. (Ground signals on the 60 pin connector are interspersed with the DIOs to provide noise immunity.) When a bit is configured as an output, data can be written either directly from the internal bus or automaticallytransferred from the 32 bit x 256 FIFO at one of eight specified rates, 2.5 MHz, 1.25 MHz, 625 KHz,313 KHz, 156 KHz, 78 KHz, 39 KHz or 19.5 KHz, which can be used

pvmax/GP

General Purpose VME Board
with Programmable D/A, A/D and DIO

to create digital pulse trains.

The selectable FIFO clock also drives the 8-bit watchdog timer which will reset the system if the countdown value is not updated. (The watchdog timer powers-up in a disabled state.)

Light up your application

Eight general purpose, user-defined, LEDs are visible from the front panel and are accessible through a single memory-mapped location. In addition, three on-board LEDs , not visible from the front panel, are available as a status indicator.

User-defined DIP switches

There are a total of 16 switches, 11 of which are general purpose and user-defined. One bank of eight switches is accessible via the front panel, allowing the operator to change switch settings without having to remove the **pvmax/GP** from the VME system. Three additional general purpose switches are available on-board for static user-defined functions.

sync $\Rightarrow$ 0, 1, 2, 3 ... 65535

A memory-mapped, 5 MHz, 16-bit, counter is available and is reset by either a memory-mapped address or the sync-in signal. (The source of the counter reset (system sync) is determined via a hard-wired

jumper.) Thus, the counter can be used to determine an offset of a (user-defined) digital input pin from the system sync

Scalable Applications

Scalable acquisition and control systems can be easily created by interfacing one or more external transputer boards through the four external differentially driven links. Additional transputer boards may be located in the same enclosure or separated by long distances. The differential links use AT&T® series-41 technology to provide excellent noise immunity across cable lengths over 50 feet at 20 Mbits/sec. Custom cables are available from a variety of sources, including Alta.

The **pvmax/GP** product includes the VME board, demonstration software, and diagnostics. Included documentation describes configuration, installation, testing, link connection and uses with other VME and transputer products.

Alta Technology also offers a wide range of complementary software, support tools and hardware, including TRAMs (transputer modules) for computation, special applications and peripheral interfaces, featuring from 1 to 32 MBytes of local memory.

Software Support

Compiler toolsets, debuggers, servers and loaders are available from Alta, inmos™, Logical Systems, 3L, and other third party suppliers of transputer software. These software packages allow data acquisition and control applications to be developed on one or more transputer nodes, including the **pvmax/GP**.

Your Guarantee of Quality

The **pvmax/GP** is *quality-built* for lasting value. It is manufactured using the most current Surface Mount Technology (SMT) for affixing board components. Milspec thermal screening ensures no infant mortality failures. Further testing and run-in procedures include functional tests of the on-board memory, D/A, A/D, DIO, LEDs, DIPs, clock, watchdog timer, transputer, and VME control circuitry prior to shipment.

Alta warrantees this product to be free from defects for 1 year from date of purchase. Alta will repair or replace any defective product when returned within 1 year of purchase.

Specifications

Processor
IMST805 Transputer 25 MHz.

Memory
4 or 16 MBytes of zero w.s. DRAM

Electrical

Operating Voltage	5 ± 0.25 V
	12 ± 0.25 V
	-12 ± 0.25 V
Operating Current (typ.)	2.25 A
Power Consumption (typ.)	11.25 W

Environmental

Temperature	$0°$ to $60°$ C.
Relative Humidity	10% to 90% non-condensing

Dimensions
160 mm. X 233 mm. (6U VME, 4HP)

Performance

A/D 12-bit Converters	1 msec
D/A 12-bit Converters	3 msec
Transputer links	10/20 MB/sec

Ordering Information

To purchase:	Please Order:
pvmax with 4 MBytes	**pvmax/GP-4**
with 16 MBytes	**pvmax/GP-16**

Corporate Offices
9500 South 500 West, Suite 212
Sandy, Utah 84070-6655 USA
Phone (801) 562-1010
Fax (801) 254-2020
email: sales@altatech.com