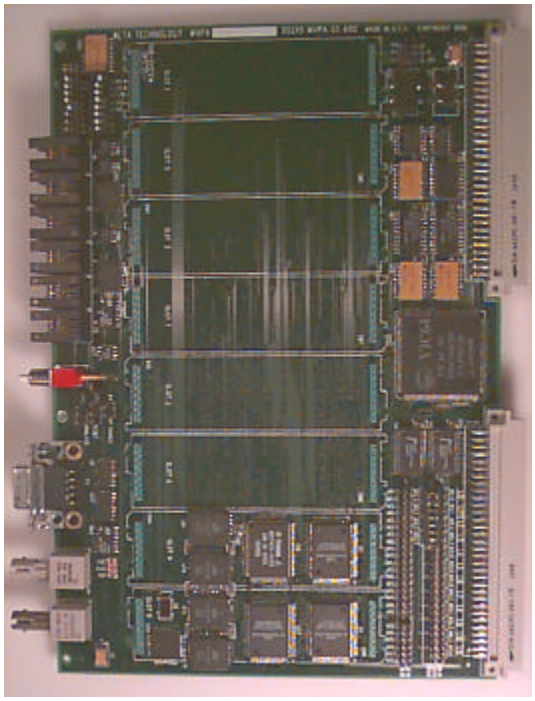
Alta Board-Level Products

HSI/MVPA

VME Host System Interface
with TRAM sites and
Serial Communications



A 6U VME board with eight TRAM sites, TLINKs (differential transputer links) and a Fiber Optic Link that connects to a variety of Transputer-based products either as a dedicated VME interface or part of a scaleable network of processors.

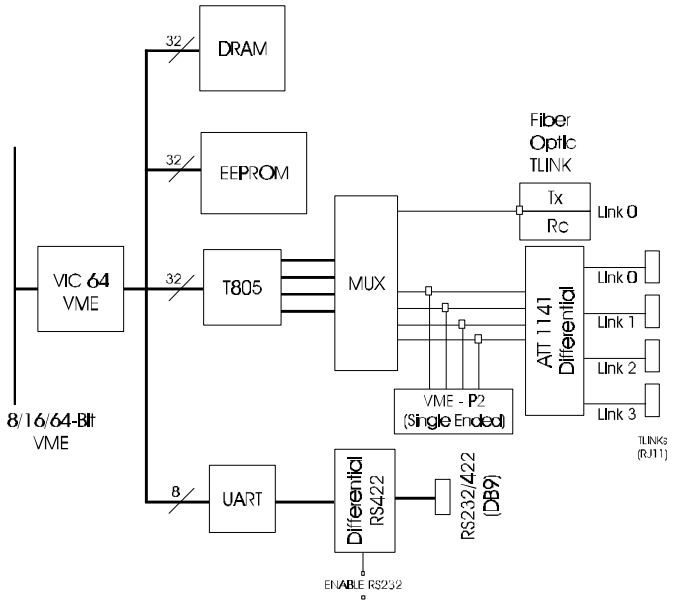
Product Overview

The Alta HSI/MVPA is a single board VME interface for transputers. The board provides a general purpose VME interface, enhancing the functionality of the Inmos B016 and B014 boards with an integrated 64-bit (Vic-64™) VME interface, eight TRAM sites, front-panel or P2 VME link connections, a 20 MBit/Sec Fiber Optic link, a single configurable RS422 serial I/O port, and software compatability through LINK.C software.

The flexibility of the board is demonstrated in the use of the transputer links: the user may select single-ended, differential, or Fiber Optic connections for link traffic. The RS422 serial I/O port may be used as a “fifth link” or it can be programmed for serial I/O through the host or the on-board T425 transputer. The on-board EEPROM allows the board to be programmed as an embedded device for general purpose communications.

In addition to connecting with the TRAM sites, each HSI/MVPA can be attached to other MVPA’s external processors or peripheral devices. This connectivity allows HSI/MVPA boards to be used in a network of processing nodes for scaleable high performance parallel configurations.

ALTA TECHNOLOGY



How does the HSI/MVPA operate?

The HSI/MVPA board contains an embedded T425 transputer which boots from EEPROM. The T425 controls the 64-bit VME interface and the memory mapped RS422/ RS232 serial I/O port. Jumpers select the physical connections of the TLINKs -- as single ended (across the VME bus), differential (front panel RJ11 connectors), or for Link 0, a Hewlett Packard Optical Fiber connection (also on the front panel).

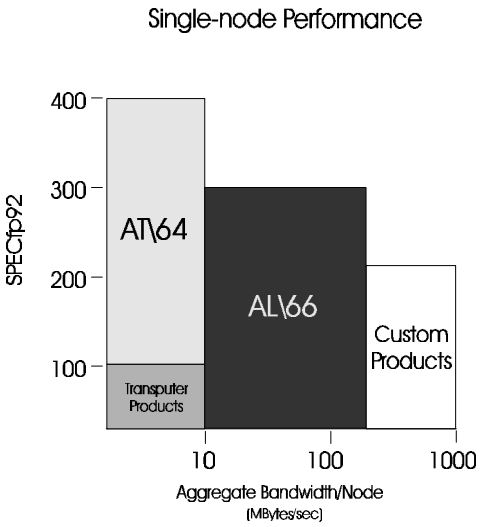
All this plus a serial RS422/RS232 port?

The HSI/MVPA board contains a serial port that is serviced by the on-board T425. All parameters for the RS422/ RS232 UART (such as Baud Rate, Parity, Start/Stop Bits, etc.) are software selectable through the T425. Software is provided to allow the T425 to act only as a link interface, in which case, the Serial Port is identified simply as LINK4 and ChanIn and ChanOut from the VME host is directed to the Serial Port.

Using transputer modules (TRAMs)

The HSI/MVPA contains eight TRAM slots with on-board interconnect for link connections. Pipelines, loops, and mesh topologies are built into the hardwired inteconnect area. The interprocessor links use transputer standards for Size1, Size 2, and Size 4 TRAMs, and are compatible with other boards such as the Inmos B014. With TRAM sites and the VME interface, this board provides a cost effective replacement for both the B014 and the B016.

Who can benefit from HSI/MVPA products?



Alpha processing nodes are specifically targeted for applications with high-communications/medium-computation requirements (see chart at left). Those applications with higher computation requirements should consider AT/64 nodes as an alternative to HSI/MVPAs. Lower-end processors are also available.

HSI/MVPA boards fill the low-compute-low-bandwidth requirements of many applications. They can be combined in the same chassis with Alta's 21066A Alpha processors to provide value added resellers and integrators with a platform for scaleable embedded computation in existing VME systems or as attachments to workstations or network file servers. Room for future expansion is designed into HSI/MVPA systems. As processing requirements grow, additional HSI/MVPA and 21066A Alpha nodes can be added for greater performance. This allows developers to leverage their initial software investment and minimize "time-to-market" for new or future products.

Alta's scaleable Alpha product family balances computation power and configuration flexibility to solve complex problems such as scientific computation, financial modeling, real-time simulation, communications and database applications, among others.

Plug HSI/MVPA processors into your present system!

Alta's HAI (250 MBit Fibre Channel links) and HSI products (with 20 MBit trnasputer links) provide access to industry standard bus archictectures such as EISA, SBus, and PCI. Thus, HAI and HSI products are used to integrate the HSI/MVPA board with a variety of hosts, such as:

- Digital AXP™ and AXPvme™ workstations and VME Single Board Computers
- Sun SPARCstation®
- HP 9000™
- IBM RISC System/6000™
- AT&T® NCR 33xx and 55xx servers
- Silicon Graphics Onyx® and Crimson® workstations
- 386, 486, and Pentium®-based PC Products

Alta Technology offers a wide range of complementary software, support tools and parallel processing hardware for computation, special applications and peripheral interfaces.

Software

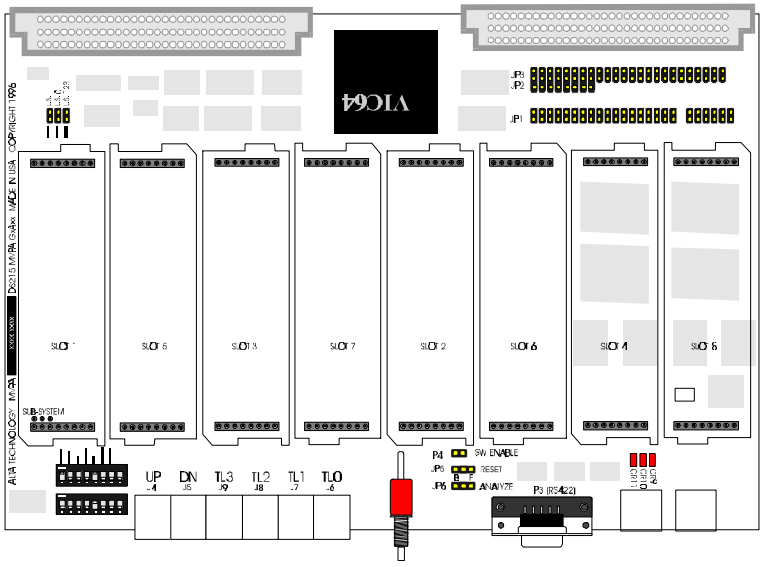
Alta-supplied drivers and transputer codee for embedded applications are supplied with the board. LINK.C compatability provides users with a known software base to work from, and ensures that the HSI/MVPA can be integrated to existing applications with a minimal time investment. Alta's development tools provide consistency across a range of platforms.

Your Guarantee of Quality

Alta's board level products are *quality-built* for lasting value. Alta uses the most current Surface Mount Technology (SMT) for affixing board components with processes being monitored by statistical process control analysis. Milspec thermal screening further enhances Alta's high reliability standards. Supplemental testing and burn-in procedures include functional tests of the on-board memory and I/O and peripheral interfaces. Alta products are completely, 100 percent designed, manufactured and tested in the USA and are covered by a one-year warranty on parts and labor.

Alta Board-Level Products

HSI/MVPA



MVPA jumpers, slots and switches

Specifications

Embedded Processor
IMST425-25 MHz node controller

Memory
8 Mbytes for the Embedded Processor

Performance
Full-speed 8 / 16 / 32/ or 64 Bit Block Move VME Transfers, to 12 MBytes/Sec

Configuration
VME boards
6U (160 x 233 mm)

Available HSI Interfaces
EISA, SBus,PCI, SCSI and others

I/O Communications
TLINK Bandwidth - Full Duplex
20 MBits x 4 TLINKs
MAX: 10 MBytes/Sec aggregate
TYPICAL: 6 MBytes/Sec

Electrical

DC voltage	*5V– 5%*
Power Dissipation	*8W (Min)*
	10W (Typical),
	50W (Max with TRAMs)

Environment

Operating Temp.	*0º - 60º C*

Ordering Information

HSI/MVPA

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