NEW PRODUCTS

HIGH-RESOLUTION BOARD BOWS FOR VMEBUS SYSTEMS

IMAGRAPH'S CARD SETS UP A WINDOW OF 1,280 BY 1-K BY 4 BITS

Imagraph Corp. has developed a high-resolution VMEbus graphics board for work stations by extending the capabilities of an industry-standard controller chip beyond its typical range. Called the VME-1280-4, the color graphics board provides a display window of 1,280 by 1-K by 4 bits per pixel, with an addressable window area of 2-K by 1-K by 4 bits.

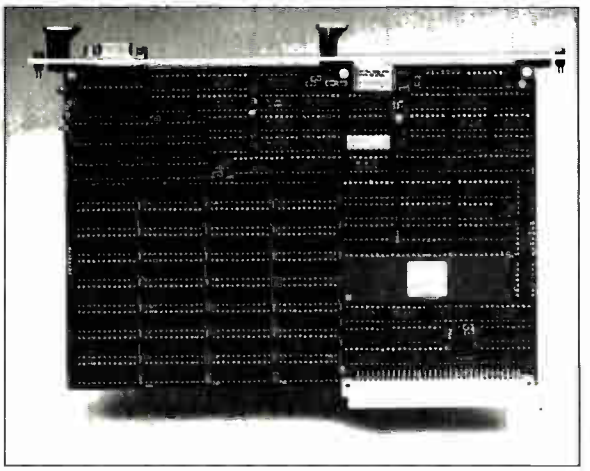
The dual-port memory-mapped card allows the simultaneous display of 16 colors or gray shades from a programmable palette of 4,096. Flicker-free display is possible on most CRTs because the board's video refresh rate is 60 Hz noninterlaced. The double-width Eurocard measures 233 by 160 mm and fits in a single VMEbus slot. It has 1 megabyte of on-board display memory and a 106-MHz pixel clock, required to achieve the high resolution.

PRIMITIVES APLENTY. The heart of the VME-1280-4 is Hitachi Ltd.'s HD-63484 advanced CRT controller. Imagraph selected the chip because it has the fullest set of graphics primitives, explains president Robert Wang. It also has an intelligent processor that can accept graphic commands directly from the VMEbus processor through memory-mapped I/O registers and boasts a drawing speed of 1.3 million pixels/s. The Hitachi controller will support up to 8-MHz clock speed.

To get the performance it wanted, however, Imagraph had to overcome some limitations inherent in the Hitachi chip. A major obstacle in designing the VME-1280-4, says Wang, was the instability of the Hitachi chip's video synchronization generation circuits. "We just bypass that by creating our own stable video-tuning signal."

Users of the new board will experience no waiting time for horizontal or vertical retrace when drawing pixels. And Imagraph says no pixel-update flash or flicker will show up, even when a 1,280-by-1,024-pixel screen is refreshed at 60 Hz using the 106-MHz pixel clock rate.

The VME-1280-4 memory supports independent access by the Hitachi chip or the host processor. Display memory can be mapped in 8 pages of 128-K bytes or as 1 megabyte of continuous memory in the 16-megabyte address range.



MEMORY RICH. Imagraph's double-wide VMEbus color graphics controller holds 1 megabyte of memory on board.

Data transfer to and from the board is done with 16-bit words—equivalent to four horizontal pixels four bits deep—at 600 ns per word or 6 million pixels per second. The VME-1280-4 also supports external direct memory access to and from its display memory. Burst-mode DMA can run at a 1.6 million words/s rate.

Imagraph had to design its own video RAM control circuits because the new board uses dual-port 256-K video RAMs. The year-old company decided to use video RAMs from NEC Corp. rather than conventional dynamic RAMs for the board for higher speed, according to Wang.

The color graphics controller has three 16-by-4-bit wide high-speed RAMs for its lookup tables. Each RAM drives one gun of the color CRT.

Designed for applications such as computer-aided design and engineering and graphic-arts work stations, the VME-1280-4 is base priced at $3,495, with discounts available to original-equipment manufacturers. It is also available in a lower-resolution 1-K-by-768-by-4-bit model for $2,495. Both graphics controllers are available in 30 days. *–Craig D. Rose*

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CONTROLLER QUADRUPLES PC STORAGE CAPACITY

A floppy-disk-drive controller board for IBM Corp. Personal Computers, PC/XTs, and PC ATs supports both 360-K-byte and 1.2-megabyte floppy-disk drives at the same time. Because PCs and PC/XTs have 360-K-byte drives, a user can nearly quadruple the storage capacity of the basic PC by using the board to add one higher-capacity drive. Capacity increases even more when more than one drive is added.

Computer Peripherals Inc.'s Drivemaster can also streamline operations in offices where standard PCs and PC/XTs work alongside PC ATs, which use 1.2-megabyte drives. Adding the boards and 1.2-megabyte drives to the PCs and PC/XTs makes it possible to pass data or programs stored on AT disks to those machines without first converting to the 360-K-byte disk format.

The board controls any combination of up to four internal or external 5¼- or 3½-in. floppy-disk drives. It can support 48-, 96-, and 160-track/in. formats; its built-in buffer stores data temporarily when media of different storage capacities are used at the same time.

Most PC application programs can take advantage of the extra storage of