

New Products

Editors: Carl Machover and John C. Dill

HARDWARE

Desk-side image computer works at high speed

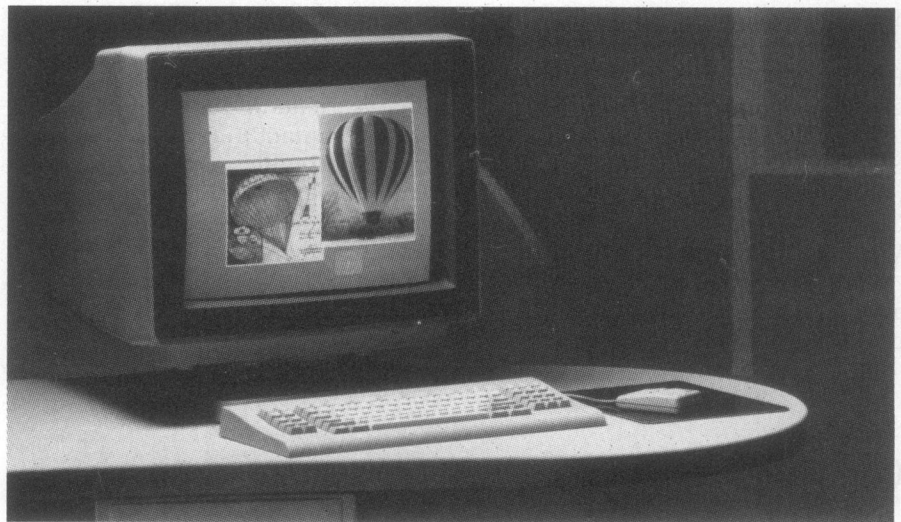
Visual Information Technologies' VITec Image Computing System is an image computer in an integrated desk-side unit. It allows users to manipulate photographic-quality images and combine them with text and graphics generated by the computer or taken from a database.

Users can scale, rotate, zoom, color modify, and airbrush images in real time on the computer screen. The resulting images can be stored electronically or sent to a printer, film recorder, or other output device.

According to the manufacturer, the computer's architecture, with four custom VLSI chips, enables it to reach speeds of 122 or 160 MIPS (depending on the model). Its open system is built around the VMEbus, and an Ethernet interface is included as standard equipment.

The computer's windowing environment is compatible with DEC and Hewlett-Packard graphics software development tools for the X windowing system. The computer also supports the Unix operating system and C.

Two models are available. Both models come in gray-scale/pseudocolor and true color versions and include a color monitor, 140M-byte hard disk, streaming tape capability, keyboard, and mouse. The VITec-100



The VITec Image Computer System is available in two models: one with a 13" monitor and 122 MIPS performance, the other with a 19" monitor and 160 MIPS performance.

provides 6M bytes of image memory, 640×480 display resolution, 122 MIPS, and 4M bytes of application memory. It costs \$68,000. The VITec-120 offers 10M bytes of

image memory, 160 MIPS, 1280×1024 display resolution, and 4M bytes of application memory. It costs \$88,000.

Reader Service Number 20

High-resolution system does fast vector drawing

Chromatics' Le Mans Colorgraphic Display System offers fast vector drawing and a microcoded implementation of GKS.

According to the manufacturer, the system can draw one million fully transformed 2D vectors per second and 250,000 fully transformed 3D vectors per second. It can generate 25,000 smooth-shaded polygons per second using the Gouraud algorithm with hidden-surface removal in

3D applications.

The system's graphics engine is based on multiple processors arrayed in a 32-bit pipelined architecture. The graphics engine can hold as many as 32M bytes of display-list memory and as many as 24 double-buffered bitmapped memory planes. The monitor has 1280×1024 resolution, noninterlaced.

The system is interconnected by Moto-

rola's standard 32-bit VMEbus for an open architecture. It supports application development in GKS software, is software compatible with the Chromatics CX series, and can be interfaced to DEC VAX or Sun host computers.

The basic configuration costs less than \$25,000.

Reader Service Number 21

Touch monitors and touch-monitor kits for the IBM PS/2

MicroTouch has introduced a line of touch-screen products for the IBM Personal System/2 computers. Included in the line are PS Touch Monitors based on the four IBM displays in the PS/2 series, a touch monitor based on a Magnavox monitor, four touch-screen kits that can be retrofitted onto the IBM PS/2 displays, and HighPoint GX, a software development system.

The PS Touch Monitors are based on the following IBM models: the 8503, a 12" monochrome monitor; the 8512, a 14" color monitor; the 8513, a higher resolution 12" color monitor; and the 8514, a 16" color monitor with a maximum resolution of 1024x768.

Each touch monitor has an integral analog capacitive touch screen with a resolution of 1024x1024 touch points and an intelligent RS-232 controller mounted inside the monitor. The controller permits a range of baud rates, data formats, communication parameters, and operating modes to be selected under software control. The monitors use an RGB analog video input and can be used with any of the PS/2 computers.

The company also offers the PS/M Touch Monitor based on the Magnavox monitor Model 8CM643. Compatible with both the PC CGA and EGA graphics standards, the lower cost unit provides the additional colors offered by the MCGA standard, but not the higher resolution of VGA.

The touch-screen kits consist of a screen in one of four sizes, a controller, and appropriate cables.



MicroTouch's line of touch-screen products for the IBM PS/2 consists of touch monitors based on IBM and Magnavox monitors, touch-screen kits, and a software development system.

The software development system facilitates the creation of touch-screen-based applications running on the PS/2 in either the VGA or MCGA mode. The package is a windowing system with four major modules: an interactive screen editor, a screen

grabber, a utility library, and a demo maker.

Prices for the touch monitors start at \$995; the kits cost \$350 (OEM quantities). The software costs \$1175.

Reader Service Number 22

Raster display system has two color/resolution modes

Seiko Instruments has introduced two raster display systems offering fast drawing speeds and a dual-resolution color capability. According to the company, the GR-4406 performs 2D wireframe transformations at 300,000 vectors per second, and the GR-4416 performs 3D wireframe transformations at 400,000 vectors per second.

In its normal mode, the dual-resolution capability provides a resolution of 1280x1024 pixels and displays 1024 colors from a palette of 16 million. In full-color mode, standard memory planes are divided and stacked to produce 640x512-pixel resolution and 16 million displayed colors. Thus the user can generate a wireframe image at high resolution

and then switch to full color for polygon shading.

The controller unit, based on a 32-bit MC68000 microprocessor and 12 custom-designed VLSI and gate-array chips, handles the display and manipulation of the design object, freeing the host computer for logical design processing. Local viewing control of an object includes zooming, panning, and parallel or perspective 3D projection.

The basic system, with a 0.5M-byte display-list memory and four image memory planes, can be upgraded in increments of 2M bytes and four or six planes. Mass storage of 1M byte on a floppy-disk drive can be expanded with an additional floppy

or a 20M-byte hard disk.

Interfaces supported include Ethernet (IEEE 802.3) and Thin Ethernet; such 16-bit parallel interfaces as DEC's DR-11W and DRV-11WA; and conventional RS-232 and RS-449 asynchronous protocols.

The system's 19" 60-Hz noninterlaced monitor has a Sony Trinitron CRT. An independent DEC VT100 console screen is also available.

Input device options include control dials, joystick, function keyboard, mouse, and digitizing tablets and tables. Subroutine packages are available to help the user develop applications software.

Prices range from \$20,950 to \$52,000.

Reader Service Number 23

Workstation integrates CAD with database and project management

ISICAD (formerly the CalComp Systems Division) has introduced Prisma, a CAD workstation said to offer a system of multidiscipline software and high-performance hardware for fully functional CAD at a low cost per seat. Applications processing takes place at the workstation, with host intervention required only for data storage and peripherals access.

Software modules are available for architecture, engineering, and facilities man-

agement. An information management system designed around the Unify relational database ties the packages together.

The workstation applications processor has a Motorola MC68020, an MC68881 floating-point processor, 4M bytes of memory (expandable to 8M bytes), and 128K bytes of cache memory to eliminate processor idle time. The workstation communicates with the host through Ethernet cabling using OSI protocol.

The minimum configuration consists of a small-profile electronics cabinet with an interactive applications processor and a joystick. A fully bundled workstation includes a graphics screen, an alphanumeric terminal with keyboard, a digitizing tablet, and applications software modules.

The workstation connects to a host computer that acts as a file server and storage device. As many as 16 workstations can be connected to one host. Prices not provided.

Reader Service Number 24

Subsystem enhances CAD on PC AT

GalaGraph Enterprises (formerly TAT Graphics) has announced a single-screen integrated graphics subsystem that permits an IBM PC AT (or compatible) to be used as a multipurpose graphics workstation. The Sextant 1014s includes a high-resolution monitor, controller board, and software, and brings CAD packages up to the 1K level, according to the manufacturer.

The screen can be switched between the IBM EGA or CGA text display and the subsystem's high-resolution display. Users can switch quickly from standard software such as word processing to a CAD software package.

The subsystem is compatible with AutoCAD, CADAM, PCAD, and packages written to GSS VDI standards. The 13" noninterlaced monitor displays 16 colors simultaneously in the graphics mode.

With a monitor, a Galaxy graphics controller board with cable, interfaces to CGA or EGA, and a driver for AutoCAD, the

subsystem costs \$1795. The subsystem without monitor costs \$995.

Reader Service Number 25

Film recorder images in 35-mm and 8" x 10" formats

Genigraphics has introduced the Masterpiece 8740 film recorder, which allows users to image artwork onto 35-mm film and 8" x 10" sheet film at either 2048 or 4096 lines of resolution. Vector and paint (pixel) artwork can be recorded with 16.7 million colors.

The film recorder is compatible with the company's 100 Series, SG Series, and PGP workstations. It is available as part of an artist design system or as a stand-alone

configuration for dedicated film recording.

The 35-mm camera is pin registered and bulk loaded. It has a frame counter and film marker. The large-format sheet-film adapter included with the unit handles 8" x 10" transparencies.

The software interface has built-in troubleshooting diagnostics and an automatic brightness control.

Price not provided.

Reader Service Number 26

SOFTWARE

Low-cost solid modeling from Generic Software

Generic Software has announced a polygon-based 3D solid modeling program with wireframe display for \$199.95. The 3-D Rendering Module, an option, costs \$149.95.

The basic Generic 3-D package allows users to construct 3D solid model representations of objects in a wireframe display. Principal features of the package are a 3D cursor, construction planes, multiple windows, automatic sectioning, extrusions, interference checking, and surfaces of revolution. Other features include

perspective, object/group duplication, isometric views, and other views.

The optional 3-D Rendering Module allows the user to shade or fill in the model. Features of the package are Graphics Manipulation Language, backplane removal, rendering with point light source, image save and retrieval, and hidden-line removal.

Reader Service Number 30

Smalltalk available on HP 9000 workstations

Hewlett-Packard and ParcPlace Systems have announced an agreement to make the full line of Smalltalk-80 software development systems available on the HP 9000 series of technical workstations.

The Smalltalk system developed at Xerox's Palo Alto Research Center can manage software projects, prototype new products, and integrate applications. It offers object-oriented programming and a comprehensive set of interactive graphical development tools. Price not provided.

Reader Service Number 31

Mapping system is address specific

MapInfo's Map Information Display and Analysis System is PC-based software that sorts and displays geographically distributed data on computerized street maps.

MapInfo supplies digital maps for more than 300 metropolitan areas across the US. The maps include names for streets, rivers, and bridges, as well as address number ranges for blocks and sides of the streets. Users can create their own maps using the keyboard, a mouse, or a digitizer.

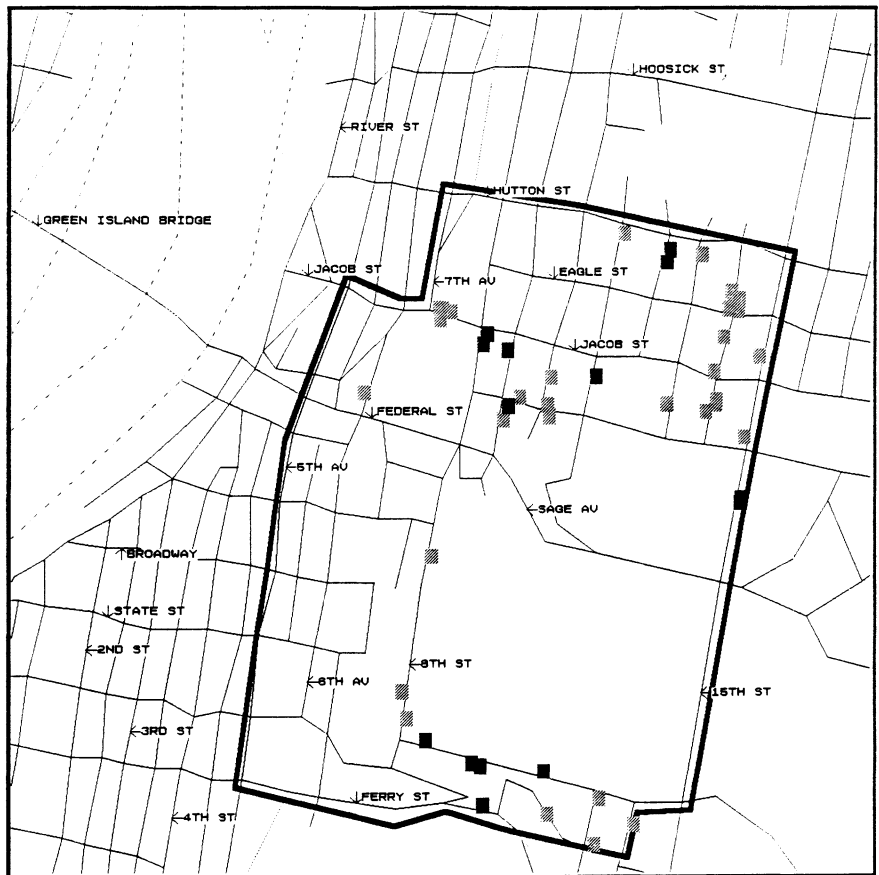
Locations can be identified by either street address or map coordinates. Users enter data into the system from databases with address-associated information (for example, crime incidents, houses for sale, customer addresses).

Differently coded and shaped "pins" can be assigned to points on the map to represent different types of data. With one command, information associated with each pin can be displayed. With other commands, the user can sort the information in a new way, display a subgroup, or overlay new data on the map.

The metropolitan maps available from the company have major boundaries such as city, town, and county borders. Users can designate boundaries of their own, search for data points within a designated boundary, determine what boundaries a given point lies within, or overlay different boundaries.

A selection of symbols, colors, line types, and other illustrative devices is provided. Zoom-in and zoom-out functions enable users to change the map scale.

The software runs on IBM PC XTs, ATs, and completely compatible micros with 640K bytes of memory and a hard disk drive. The software works best with color graphics monitors and color plotters, but will work with monochrome adapters like



MapInfo's Map Information Display and Analysis System provides a selection of map symbols (see the two different squares in this laser print) for differentiating data. Users can draw boundaries for such applications as designating service or sales territories and creating districts.

the Hercules Monochrome Graphics card and with most printers and plotters. DOS 2.0 or higher is required and dBase III plus or a similar database program is recommended.

The software costs \$750. Digitized metropolitan area maps cost between \$300 and \$2000, depending on the size of the area.

Reader Service Number 32

Personal Designer upgraded

Computervision has announced Version 3.0 of Personal Designer, a PC-based CAD/CAM system providing 3D mechanical design, analysis, surfacing, shading, and drafting capabilities. Among the new capabilities in the updated version are multiple views, improved dimensioning, and an undo function.

The multiple-view capability has been added to one of the system's primary modules, microCADDs geometric construction and detailing. This module is a design and drafting package allowing users to create 3D models of complex geometry and 2D engineering drawings and layouts. Users can display simultaneous multiple

views of a microCADDs part. Changes made in one view are also made in the other views.

Improved dimensioning features in microCADDs include the ability to associate dimensions with geometry so that dimension values are updated automatically when geometry is moved, stretched, or changed in other specific ways. Features have been added to simplify compliance with international drafting standards (ANSI, ISO, DIN, and JIS).

The undo capability allows the user to cancel one or more previously executed commands. For example, if earlier commands have deleted some geometry, the

undo feature will recover the lost work.

A new version of the user programming language allows users to customize the software. The language offers a library of intrinsic routines for database access and manipulation, graphics control, and access to operating systems.

The microCADDs geometric construction and detailing package costs \$5800. Shipments of the package that were made after March 21, 1987, will be upgraded to Version 3.0 at no cost. For shipments before that date, the upgrade charge is \$750. The user programming language costs \$500.

Reader Service Number 33

CAD/CAM program for the Macintosh II

Machinery Alternative's MGM-Station CAD/CAM is now available for the Apple Macintosh II as well as for other models in the Macintosh line.

The CAD/CAM software has user-definable libraries for template storage, layering, and such geometric calculations as area, perimeter, center of gravity, and moments of inertia. It also has an IGES translator, allowing the exchange of files with other mainframe-, mini-, and PC-based systems.

The CAM functions include auto speeds and feeds, roughing cycles, complex milling routines, and hand moves. Two-, two-

and-one-half, and three-axis output for mills, lathes, EDM, flame cutters, and lasers is provided.

Another feature permits 3D simulation and interactive editing so the machinist can monitor the cutter path in any of nine perspective views. Changes to the program are animated in the simulator.

The complete CAD/CAM software package costs \$7000. The CAD portion alone costs \$799. Turnkey systems with Macintosh Plus, Macintosh SE, and Macintosh II micros are available.

Reader Service Number 34

Package links DEC systems and IBM PCs

Digital Equipment Corporation's IBM PC Network Integration Package allows users of IBM PCs, XT's, and AT's to participate in LANs using VAX/VMS Services for MS-DOS software.

With VAX/VMS Services for MS-DOS software, VAX, MicroVAX, and VAXmate computers can act as application, data, and resource servers to groups of VAXmate and IBM personal computers. Personal computers use the servers to share applications, data, and resources; to access information from remote systems on the network; and to apply that information in

standard applications.

The IBM PC Network Integration Package is available in two configurations. The full package includes DEC's Ethernet controller module, a dual-mode (IBM and DEC) LK250 keyboard, a mouse, MS Windows, and VT220 terminal emulation. A partial package provides networking functionality, but does not include the mouse, keyboard, and VT220 emulation.

The full package costs \$1195; the partial package costs \$895.

Reader Service Number 35

Motorola adopts GKS

Motorola's Microcomputer Division has adopted the Concept/GKS graphics applications interface for use with its MVME390A graphics interface module for VMEbus users.

Concept/GKS is an implementation (by Larson Software Technology) of the ANSI and ISO Graphical Kernel System standard. It is supported under Motorola's Sys-

tem V/68 and VERSAdos operating systems, and bindings are available to Fortran-77 and C.

The software is supported by A.T. Barrett and Associates, the master distributor, with a 90-day warranty and 90-day period of telephone support. The single-unit binary license price of the Concept/GKS library and one device driver is \$1750.

Reader Service Number 36

GRAPHICS BOARDS

Graphics adapter offers 2K×2K resolution

QDP Computer Systems' Viva 2000 color graphics adapter is said to provide 2048×2048 virtual screen resolution and 1280×1024 display resolution.

The board has hardware windowing. Users can pan around the entire drawing in the 2048×2048 frame buffer in real time. The window can be resized and relocated on the screen, hidden, or retrieved.

Provided AutoCAD, VersaCAD, and CADvance drivers have hardware pan and zoom, "PanFreeze" for digitizer users, and user-selectable cursors and colors.

The board costs \$2200.

Reader Service Number 40

Hercules releases board for IBM PS/2

Hercules' new board, the Hercules PS/2 Card, is designed to add Hercules 720×348 graphics compatibility and RamFont to IBM Personal System/2 models 50, 60, and 80 without interfering with the graphics included on the motherboard. The Hercules board will drive either analog color or monochrome monitors through the PS/2's built-in video graphics array (VGA).

According to the manufacturer, the board gives PS/2 users access to Hercules-compatible graphics software and allows networking or the movement of software between PCs and the PS/2. RamFont enables PS/2 users to improve the performance and display capabilities of spreadsheet and word-processing programs such as Microsoft Word and Multiplan, Lotus 1-2-3, Lotus Manuscript, and Broderbund ForComment.

Price not provided.

Reader Service Number 41

INFORMATION SOURCES

Book explains how to customize AutoCAD

New Riders Publishing has announced *Customizing AutoCAD*, written by Rusty Gesner and Joseph Smith.

According to the publisher, the book shows how to use AutoLISP to control the AutoCAD drawing editor, enhance it, and place personal commands on line. It

explains how to use AutoLISP for access to an AutoCAD drawing database, and how to develop advanced AutoLISP tools to build upon AutoCAD's 3D commands.

The book also covers integrating AutoCAD with external programs, utilities, and DOS commands. Database topics

include DXF file processing, attribute extraction, importing database information, external manipulations, and reporting with Lotus 1-2-3 and dBase.

The book is supported by a disk set. The softbound book, with 380 pages and more than 180 illustrations, costs \$34.95.

Reader Service Number 50