TEXAS INSTRUMENTS
340 FAMILY THIRD PARTY GUIDE

Advanced Computer Video Hardware and Software
Fourth Edition

Acknowledgment:
The Computer Video Products Department at Texas Instruments would like to thank everyone who contributed to the Fourth Edition of the Third Party Guide, especially the companies who provided photography for this edition's cover: CADKEY, Inc., Cray Research, Digital Research Inc., Megatek and Yale Graphics.

Fourth Edition
June 1990

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Who's who in 340 Family third party support

This fourth edition of the Texas Instruments 340 Family Third Party Guide is designed to satisfy the growing demand for information about third-party 340-based products and services. Industry-wide support for the TIGA interface coupled with the growth of the 340 Processor Family has solidified Texas Instruments as the leader in computer video processor technology. This publication illustrates the TI leadership position with hundreds of hardware and software product descriptions.

Graphics software developers want to know who is developing 340 hardware, while others are interested in who has created software for the 340 that could add value to their systems. There are many categories for 340-based hardware designs. A new matrix is featured in this edition. The matrix summarizes 340-based graphics boards designs. It is organized alphabetically by company name with categories for bus support, resolution and color support, and TIGA support.

The software items listed in this guide are primarily graphics operating environments and tools for application development. There are hundreds of applications developed for the operating environments supported, but these are really beyond the scope of this publication. A separate publication, the TIGA Products Directory, can be obtained by calling the Graphics Hotline. There are, however, some applications listed because they were developed to benefit from the special capabilities of the TIGA-340 Architecture.

How to use this guide.

The Cross Reference Index on the following pages lists a wide variety of hardware and software products as well as services. Under the various categories, you'll find the names and page numbers of the companies producing those products or providing services.

The Next Edition.

If you are a TIGA-340 hardware or software developer and wish to be included in the next Third Party Guide, send product description that follows the format of this guide to:

Graphics Market Communications
Texas Instruments Incorporated
P.O. Box 1443, MS 736
Houston, Texas 77251-1443
FAX: (713) 274-2573

Or call the Graphics Hotline for engineering and marketing support. Phone: (713) 274-2340.

BYTE *editors chose the Texas Instruments Graphics Architecture (TIGA) as one of 1989's ten most technologically advanced products. The magazine concluded TIGA is well on its way to becoming the standard for high resolution graphics applications development.*

Cross Reference Index

CONSULTANTS

TMS340-BASED HARDWARE SYSTEMS

Display Products

Printer Products

FAX/Scanner Products

*Designed to meet tiga system requirements.

Image Processing Products

Mapping/Aerospace Products

Business Graphics

*Designed to meet tiga system requirements.

Computer-Aided Design Products

Publishing Products (Desktop & Electronic Systems)

*Designed to meet tiga system requirements.

Word Processing Products

Debugger Tools

Development Systems/Tools

*Designed to meet tiga system requirements.

UNIX Products

X Windows Terminals

X Windows Server Products

Entertainment Systems

Test Systems

Graphics Boards

ISA/EISA Compatible

*Designed to meet tiga system requirements.

*Designed to meet tiga system requirements.

8-bit PC Compatible

VME Compatible

*Designed to meet tiga system requirements.

TMS340-COMPATIBLE SOFTWARE SYSTEMS

Display Products

Printer Products

FAX/Scanner Products

Image Processing Products

*Designed to meet tiga system requirements.

Mapping/Aerospace Products

Operating Environments

General Business Applications

Computer-Aided Design Products

*Designed to meet tiga system requirements.

Publishing Products (Desktop & Electronic Systems)

Debugger Tools

Development Systems/Tools

UNIX Products

X-Windows Server Products

*Designed to meet tiga system requirements.

340 Board Matrix

Company/Product	BUS	640x480	1024x768	1024x1024	1280x1024	1600x1200	TIGA System
Alacrity							
Exact 2000/8000	16-bit ISA					•	
Analogic CDA							
MDP-6E	VME			•			Yes
Androx Corp.							
Androx 100	VME, 16-bit ISA			•			
Artist Graphics							
XJS	MCA, 16-bit ISA		x8		x4	x4	Yes
TI10	16-bit ISA		x4,8				Yes
TI12	16-bit ISA		x4,8		x4,8		Yes
TI16	MCA, 16-bit ISA					x1,2	Yes
TI20	MCA, 16-bit ISA		x4,8		x4,8	x4,8	
ASCII Corp.							
AGA-10	16-bit ISA	•	•	•			
Aura Systems	EISA, MCA, VME,						
ScuzzyGraph	MAC, Multibus,						
	8- & 16-bit ISA	•	•	•	•	•	Yes
Bell & Howell Quintar							
Graphics Creator	8-bit PC	•					
Cambridge Computer Graphics							
Xcellerator	16-bit ISA		x4,8				
CGA Corp.							
Advanced Hi-Res	16-bit ISA	•*	x4				
Presentation Graphics Design	16-bit ISA			x8			
Chroma ATE							
AGA 1024	8-bit PC, 16-bit ISA		x2,4,8			•*	Yes
Compaq Computer							
Advanced Graphics System	16-bit ISA		x4,8				
Coreco Inc.							
Oculus 500	16-bit ISA	x2,4,8	x2,4,8	x2,4,8	x2,4,8		Yes
COSMO Electronics							
COSMO34010	16-bit ISA	x8	x4				
Current Technology							
DC1024	VME, 16-bit ISA	x2,4,8	x2,4,8				Yes
Daewoo Telecom							
Graphics Imaging System	EISA, MCA				•		
Desktop Computing							
AGA 1024	16-bit ISA	x2,4,8	x2,4,8			x2,4	Yes
UGA 1664	16-bit ISA	x2,4,8			x2,4,8	x8,24	Yes

*Resolution match not exact.

Company/Product	BUS	640x480	1024x768	1024x1024	1280x1024	1600x1200	TIGA System
Dome Imaging							
Dome Rx Series	16-bit ISA		x8,12,16				
DY-4 Systems							
SVME 780	VME				x4		
Electronique Serge Dassault							
GMC	16-bit ISA	x2,4,8			x2,4,8	x2,4,8	
Enertronics Research							
ACER 8221	8-bit PC, 16-bit ISA	•	•				
Aurora 1024	8-bit PC, 16-bit ISA		•				Yes
ELSA America							
Gemini Series 2 GTL	16-bit ISA		x4,8		x4,8	x4,8	Yes
XHR Gemini Series	16-bit ISA		x4,8		x4,8	x4,8	Yes
EMS Systems LTD							
GRAPHMAX 10DP	16-bit ISA					x2	
Engespaco Industria							
SITIM	16-bit ISA	•			x4,8,24		Yes
ERSO/ITRI							
HCGDC	8-bit PC, 16-bit ISA	•*			x8		
GLW							
Dual Video Board	MAC		x8				
GSS							
AT1000 Controller	16-bit ISA		x4,8				
MC1000 Controller	MCA, 16-bit ISA		x4,8				
Graphics Strategies							
VGME-34010	VME	x2,4	x8	•	•		
Hercules Computer Technology							
Hercules Graphics Station 1024	16-bit ISA	x8	x8				Yes
Hewlett Packard							
IGC10	EISA, 16-bit ISA	x4,8	x4,8				Yes
IGC20	EISA, 16-bit ISA		x4,8		x4,8		Yes
Hypergraphics							
Hyper-Graphic I	EISA, 16-bit ISA	x2,4,8	x2,4,8	x2,4,8,16	x2,4,8	x2,4,8	
Hyper-Graphic II	EISA, 16-bit ISA	x2,4,8	x2,4,8	x2,4,8	x2,4,8	x2,4,8	
Imagenex Technology Inc.							
Imagenex System 800		x8					
Image Processing Systems							
IPS-24520	MCA, 16-bit ISA		x24	x24			Yes

*Resolution match not exact.

Company/Product	BUS	640x480	1024x768	1024x1024	1280x1024	1600x1200	TIGA System
Imaging Technolgy Inc.							
Advanced Frame Grabber		•	•	•			Yes
DP-150/151 Display Processor	VME	x2,4,8	x2,4,8	x2,4,8			Yes
Imagraph							
ITX1210	VME	x2,4,8	x2,4,8	x2,4,8			Yes
TI1210	EISA, VME, 16-bit ISA				x2,4,8		Yes
Indchem							
GRAPHMAX	16-bit ISA		x4				
Instituto de Engenharia de Sistemas e Computadores							
Very HI-Res Monochrome	16-bit ISA					•*	
Infograph							
12000S-PDC	16-bit ISA		x2				Yes
Aurealis I	16-bit ISA		x4				Yes
Aurealis II	16-bit ISA		x8				
Infotronic							
Info IGS 1024	16-bit ISA		x4,8				Yes
Info MCH 1024	MCA		x4,8				Yes
Info DTP 1280 & 1600	8-bit ISA				x1	•*	Yes
Info DPX 1280	16-bit ISA				x4,8	x4,8	
Info SGX 1600	16-bit ISA				x4,8	x4,8	Yes
Innovative Concepts, Inc.							
Image Generator Board	16-bit ISA	x2,4,8	•	•			
Janus Systems							
Janus Graphics Adapter	16-bit ISA	x2,4,8	•	•	•	•	Yes
Little Machines							
Versa Graphics Image Processor	Multibus		•				
VME Image Processor	VME		•				
Logitec Company							
Sophia	8-bit PC, 16-bit ISA	•*				•*	
Matrox Electronic Systems							
PG641	8-bit PC	x2,4,8					
PG1024V	16-bit ISA		x2,4,8				
PG1281CV	16-bit ISA		x2,4,8				
PG2-1281	16-bit ISA				x2,4,8		
MG-1281	Multibus				x2,4,8		
MMG-1281	Multibus				x2,4,8		
VG-1281	VME				x2,4,8		
Image Series 1280		x2,4,8			x2,4,8		
Megascan							
FDP-2111	VME, 16-bit ISA					•*	
FDP-3100	VME, 16-bit ISA					•*	

*Resolution match not exact.

Company/Product	BUS	640x480	1024x768	1024x1024	1280x1024	1600x1200	TIGA System
Megatek							
Xcellerator	VME	x2,4,8	•	•	•	•	
Metamorphose Engineering							
ME-512		•*					
Meterquest							
MQ-Magic	16-bit ISA				x2,4,8		Yes
Micro Display Systems	8-bit PC, MCA,						
Genius 1900 Series	16-bit ISA	•	•	•	•	•	Yes
Micro Industries							
MIBII 386/171	Multibus				x2,4,8		
OME 171	Multibus				x2,4,8		
Microkey Limited							
ATS 34010 Series	8-bit PC, 16-bit ISA			x8			
miro datensysteme							
miroGRAPH 700	16-bit ISA				•		Yes
Motorola							
VME 393	VME						
Multisignal Technology Corp.							
MTIG-100	16-bit ISA	•*					
National Design							
NDI 1028	VME, 16-bit ISA	•	x8				Yes
NDI 1289	VME			x8			Yes
NDI 1280	VME			x8			Yes
Nautil Company							
CORAIL	8-bit PC, 16-bit ISA			x8			
NEC Home Electronics							
Multisync	MCA, 16-bit ISA	•	•				Yes
Number Nine Computer Corp.							
Pepper Series	8-bit PC, 16-bit ISA		x2,4,8	x2,4,8	x2,4,8	x2,4,8	Yes
Xcellerator	8-bit PC, 16-bit ISA		x2,4,8	x2,4,8	x2,4,8		Yes
Omnicomp Graphics Corp							
OMNI 8600 GDC	VME					•*	
OMNI 6600 GDC	16-bit ISA					•*	Yes
PC Tech							
Mono II	8-bit PC		x2		x1	•*	Yes
Top Color /8	8-bit PC, 16-bit ISA		x8		x8	x8	Yes
Top Color	8-bit PC, 16-bit ISA				x4		Yes
C34010	8-bit PC		x8				Yes

*Resolution match not exact.

Company/Product	BUS	640x480	1024x768	1024x1024	1280x1024	1600x1200	TIGA System
Performix							
Full-Power Model 100Z	8-bit PC, 16-bit ISA		x8				Yes
Full-Power Model 100V	8-bit PC, 16-bit ISA		x8				Yes
Peritek Corp.							
VCT-Q	Q-bus			x32	x32		
Pixelab							
Laker Graphics Controller	16-bit ISA				x4	•*	Yes
Ramtek							
Ramtek Imaging System	VME				x4		
RasterOps Corp.							
16 PC Graphics Board	16-bit ISA	•*					Yes
Rasterex							
Liberty	16-bit ISA		x4,8		x4,8		Yes
MB2000	16-bit ISA					•*	Yes
Spider	MCA		x4,8		x4,8		
Tracer	16-bit ISA				x2,4,8		
Raster Graphics							
RG-65x	Multibus	x4	x8				
RG-51x	Multibus	x4	x8				
RG-70x	VME	x4	x8				
RG-91x	16-bit ISA				x8		Yes
Renaissance GRX							
Rendition I	16-bit ISA	•	•				Yes
Graphics Vision 1280	16-bit ISA				x4,8		Yes
SCIP							
Millenium	16-bit ISA				x44		Yes
SIGMA Designs, Inc.							
SAGE 1280	16-bit ISA				x1,2,4,8		Yes
L-*VIEW	EISA					•*	Yes
L-*GSP	16-bit ISA					•*	Yes
Color MAX 1280	16-bit ISA				x1,2,4,8		Yes
SOTA Technology							
SOTA View System	8-bit PC, 16-bit ISA					x2	Yes
340I	8-bit PC, 16-bit ISA	x4,8	x4,8				Yes
Spectre							
SP200	8-bit PC, 16-bit ISA	x2,4,8	•	•	•	•	Yes
System Engineering							
TMS34010 SDT	16-bit ISA		•*				

*Resolution match not exact.

Company/Product	BUS	640x480	1024x768	1024x1024	1280x1024	1600x1200	TIGA System
Truevision							
NuVista Videographics	MAC	•*	•	•	•	•	
HR Graphics Cards	MAC	•*	•	•	•	•	
ATVista Graphics Board	16-bit ISA	•*	•	•	•	•	
TARGA Videographics Adapter	16-bit ISA	•*	•	•	•	•	
Unitron							
Pc Palette	16-bit ISA		x2,4,8				Yes
Univision Technologies							
UDC-7000-TI	16-bit ISA	x8,12,16		x4,8,12,	x4,8,12,		Yes
Vectrix Corp.							
VX1280 Graphics Board	EISA, 16-bit ISA	•	•		•		Yes
VX1024	8-bit PC, 16-bit ISA		x4,8				Yes
Presto!	8-bit PC, 16-bit ISA		x4,8		x4,8		Yes
Vermont Microsystems, Inc.							
X Series Graphics Controllers	16-bit ISA				x2,4,8		
Cobra/2 Graphics Controllers	MCA, 16-bit ISA		x2,4,8				
Cobra Plus Graphics Controllers	16-bit ISA		x2,4,8				
Western Digital Imaging Corp.							
Verticom MX-Series	16-bit ISA	x2,4	x2,4,8				

*Resolution match not exact.

Texas Instruments Incorporated
P.O. Box 1443, M/S 736
Houston, TX 77251-1443
(713) 274-3354

TMS34010 Graphics System Processor

First of its kind, the TMS34010 Graphics System Processor is an advanced, high-performance, 32-bit CMOS microprocessor optimized for graphics system applications. Its general-purpose programmability augmented with special graphics operations implemented in hardware give it many advantages over hard-wired graphics controllers and general purpose microprocessors.

The 34010's general-purpose programmability boosts system performance by off-loading the host CPU from the processing burden imposed by advanced drawing algorithms, graphics software operating environments, and the emulation of graphics hardware standards. Also, the 34010's processing power enables it to be programmed in high level languages like "C" making it flexible and easy to use.

With its programmability and graphics enhancements, the TMS34010 can bring new levels of performance to a broad base of applications including:

PC displays	Image processing
Laser printers	Digital copiers
Electronic publishing	Mass storage
Workstations	Robotics
Terminals	Communications
Plotters	Embedded controllers
FAX	Arcade games

Texas Instruments Incorporated (Continued)

TMS34020 Graphics System Processor

The TMS34020 Graphics System Processor (GSP) is a programmable 32-bit general-purpose microprocessor optimized for graphics. This second-generation device offers performance that is up to 50 times faster than that of TI's first-generation GSP, the industry-standard TMS34010.

Upwardly object-code compatible with the 34010, the 34020 preserves the user's 34010 software investment. The 34020 also receives full TMS340 family software and hardware development support.

A closely coupled floating-point processor, TI's TMS34082, has been designed for use with the 34020. The 34082 can perform floating-point operations 10 times faster than coprocessors currently used in PCs.

The TMS44C251 1-MB Video RAM was jointly defined with the 34020 such that systems using the 34020 can take advantage of new VRAM features.

The TMS34020 is the latest in a series of graphics components, software and support tools developed by TI. All are part of TI's integrated system-solution approach to graphics.

The 34020's high performance results from a number of unique graphic management functions:

- 3-operand PixBlts provide pixel-by-pixel control for destination pixels are over-written.
- Used for windowing, pattern fills and half-tone (laser printer) text.
- Enhanced page mode control-enables 142 megabits per second PixBlt operation.
- TMS44C251 Video RAM block write support enables 1.34 billion bits per second fill.
- XY addressing with no pitch restrictions-provides complete programmer control of graphics.
- Faster line draw speed (5 million pixels per second).
- Host port supports random or indexed host access at 20 MBytes/sec.
- 512-byte instruction cache gives 10-MIPS (million instructions per second) peak performance for iterative instruction loops.

Texas Instruments Incorporated (Continued)

TMS34082 Floating-Point Graphics Processor

Many TMS34020 applications require the performance of floating-point operations. The TMS34082 floating-Point Processor is designed to interface directly with the address and data buses of the 34020. It operates at up to 40 million floating-point operations per second (MFLOPS).

The TMS34082, one of the industry's most advanced floating-point units (FPUs), allows the 34020 to perform computation-intensive functions more than 100 times faster than a software implementation. Floating-point techniques provide greater accuracy and can handle a wider range of numeric values than traditional integer arithmetic processing.

In the TMS34082, the floating-point expertise TI developed with single-chip FPUs is combined with special graphics capabilities to provide a unique graphics floating-point processor. It performs single-and double-precision floating-point operations with full IEEE STD-754 compatibility and handles integer arithmetic and logical operations.

In addition to normal FPU operations, the TMS34082 performs complex 2-D and 3-D graphics math operations such as 3 x 3 convolution, 4 x 4 matrix operations and cubic spline. An external high-speed memory interface for user-defined microcode functions and a coprocessor interface for direct connection to the 34020 are also included.

The direct coprocessor interface of the 34082 makes for simple system design that does not require extra logic. This means that systems can be designed to optionally add the 34082 at a later time by just leaving a socket.

The TMS34082 is fully supported by the 34020 development tools, making it easy to integrate floating point into graphics systems.

Availability: 3Q90 (production)

TMS34092 VGA Interface Chip

The TMS34092 VGA Interface Chip is a support integrated circuit which enables the 34010 to be linked to most VGA chips, creating a low-cost TMS34010 graphics display system. It is a standard device which integrates most of the memory control and VGA pass-through logic in 34010-based 1,024 by 768-resolution graphics boards.

The device enables program memory to be reduced by providing address relocation so that "surplus" VRAM display memory is used for the TMS34010 program memory. This design technique keeps the chip count low, reducing the board size by as much as 50 percent and making low-cost boards possible. In addition, the 34092 uses 256K by 4 addressable dynamic RAMs, which also reduces system memory costs.

Another key feature of the 34092 interface is that it supports VGA pass-through for VGA support and downward IBM compatibility.

The TMS34092 is the latest in a series of graphics products being developed for TI's TMS340 Family, which features the 34010 graphics processor of choice for low-cost PC systems requiring higher resolution.

Availability: Samples 2Q90

Texas Instruments Incorporated (Continued)

TMS34010 TIGA Development Board

The TIGA Development Board provides an effective means to evaluate the TMS34010 Graphics System Processor and develop software to operate on 34010-based systems. It directly drives most digital and analog R-G-B raster-scan monitors. On board memory consists of 1 MB DRAM and 1 MB VRAM. The board supports resolutions up to 1024 x 768, 1-, 2-, 4-, and 8-bits per pixel. A serial port mouse interface is also supported on the board.

The board comes with an interactive PC user interface and offers a powerful command set to facilitate software debugging. Its functions include software breakpoints, software single step, and run with count. At the same time, current machine status of the SDB's 34010 is displayed on the top half of the host monitor. The host display and common functions are the same as the user interfaces supplied with Texas Instruments TMS34010 XDS Extended Development System.

Hardware Required: IBM® PC/XT/AT, TI PC and compatibles

Availability: Now

TMS34020 Software Development Board

The TMS34020 Software Development Board (SDB) is a high-performance, AT bus-compatible, single graphics card designed around the IBM PC Bus (ISA). The SDB is a software development tool for programmers writing application software for the TMS34020 graphics system processor. This module demonstrates the simplicity of hardware design using the TMS34020 to develop a high-performance bit-mapped graphics display.

The SDB package includes the board, user's guide, a high-density floppy disk containing demonstration and utility software supplied by Texas Instruments, and a high level language debugger supplied by a third party.

The TMS34020 SDB consists of a 32-MHz TMS34020 graphics processor, a TMS44C521 1Mbyte Video RAM, 1Mbyte zero wait state Dynamic RAM and a 32-bit local data bus. Other features of the TMS34020 SDB include:

- Selectable screen resolution as follows:
  - 640 by 480 pixels, 16 colors
  - 640 by 480 pixels, 256 colors
  - 1024 by 768 pixels, 16 colors
  - 1024 by 768 pixels, 256 colors
- Double buffering support in 4 bits per pixel modes
- TMS34020 emulation support
- TMS34082 floating point co-processor (optional)
- VGA pass through support
- Configurable PC bus transfer width (8- or 16-bit)
- Selectable PC bus interrupt support
- Software-configurable base address, extended 16-MB range

Availability: Now

Texas Instruments Incorporated (Continued)

TMS34010 Emulator

The TMS34010 Emulator provides realtime, in-circuit emulation of the TMS34010 for hardware and software debug. The Emulator may be used in a stand-alone mode through a standard terminal or through a host computer with a powerful user interface. Key features of the XDS are as follows:

- Complete debugging control
- Full (160-ns) in-circuit emulation
- Line assembly and reverse-assembly of all TMS34010 assembly language instructions
- Flexible command sequencing with 10 command-entry buffers
- Screen-oriented machine-state display and manipulation
- Run, stop, and single-step programs
- Set up to 10 software and 4 hardware breakpoints
- Store up to 2047 32-bit trace samples that you can qualify on address, data, memory-access type, etc.
- Map on-board memory
- Save and restore parameters
- Evaluate system performance

Availability: Now

TMS34020 Emulator

The TMS34020 Emulator, based on TI's revolutionary serial scan path technology, provides in-system real-time emulation of the TMS34020 for both hardware and software debug.

TI's serial scan path technology provides a high speed communications path into the device which eliminates timing differences inherent in traditional emulators. This new technology allows you to debug your system without removing the TMS34020, thus providing in-system emulation. All that is required is a 12-pin header installed on your target board. Specifications for the header, design considerations, and mechanical information are included in the TMS34020 User's Guide.

The TMS34020 Emulator is PC based (XT, 286 or 386) and includes an emulation controller that requires 1-1/2 8-bit slots, the emulation cable, and a screen oriented symbolic assembly language debugger.

Key features include:

- Access to emulation commands through user-friendly menus
- Access to CPU registers and memory through commands or directly on screen
- Fast code downlowd
- Symbolic reverse assembler and single line patch assembler
- Breakpoint on instructions
- Multiple execution modes - Run, stop, single step/call step, benchmark
- Program cache status and data visibility
- User definable expressions
- Disconnect feature allows device to execute free of emulation
- Host port activity not affected by emulation state (running or halted)
- Big endian support
- Ability to save and restore emulation setup and device state
- Detailed online help screens

Availability: Now

Part number TMDX3461805-02

Texas Instruments Incorporated (Continued)

TIGA-340 Software Interface

The growing family of PC graphics development tools from Texas Instruments makes it easier than ever to develop software and hardware for TI's graphics system processors.

TIGA-340 (Texas Instruments Graphics Architecture) interface is a software interface standard for the TMS340 family of graphics system processors. It is architected for DOS-based personal computer systems which contain a 8088/86 or 80286/386 host micro-processor and a TI 340 graphics processor. As a standard interface, it optimizes the communications between the 340 processor and the host processor. Thus, programs which write to the TIGA interface will run significantly faster on any TIGA-compatible 340X0-based graphics board/system.

The end result is an operating environment that enables true multiprocessing. The enhanced performance is achieved because the TIGA interface allows the execution of the application to be shared between the host processor and the 340X0 graphics processor.

The TIGA software interface provides a platform on which applications can be developed which significantly outperform other industry solutions, including VGA and 8514/A. For example,TIGA-based 34010 systems demonstrate 16X increase in AutoCAD redraw speed.

In addition, TIGA-340 provides graphics software developers with a common target to write to, resulting in programs capable of running on multiple platforms. Hardware OEMs who incorporate the TIGA firmware into their systems or add-in boards can run the hundreds of TIGA-compatible software applications available today.

The TIGA-340 interface consists of these key elements:

- High-speed command processor
- Standard host/GSP communications functions
- GSP memory management
- Graphics and text primitives
- Board configuration primitives
- Custom function download capability

TMS34010 PC Debugger Development Package

The TMS34010 PC Debugger facilitates development of a custom software debugger for any TMS34010-based hardware. This development package consists of executable object code for the portion of the program that provides the user interface along with customizable driver source code. Two versions are available: TI part number TMDS3440806002 for a developer's internal use and TMDS3440806003 which comes with resale rights.

The Debugger Development Package provides the same feature set as the debugger supplied with the TMS34010 Software Development Board. It provides an interactive PC user interface and offers a powerful command set to facilitate software debugging. Its functions include software breakpoints, software single step, and run with count. At the same time, current machine status of the target system's 34010 is displayed on the top half of the host PC monitor. It is available for MS-DOS 2.11+ operating system.

Hardware Required: IBM, TI, or compatible PC/XT/AT with 512K-bytes memory
Availability: Now

Texas Instruments Incorporated (Continued)

TMS340 Family Code Generation Tools

The TMS340 Family Code Generation Tools are a consolidation of TMS340 microprocessor programming tools. The C Compiler, the assembler and the linker, once sold separately, are now in this one code generation package.

The C Compiler has been upgraded to Revision 4.00. Rev. 4.00 features increased functionality and accommodates both the TMS34010 and the TMS34020 graphics processors. Enhancements include support for the TMS34082 floating point coprocessor and a single-pass optimizer.

The generic C optimizer can significantly increase execution speed while decreasing code size. IEEE floating-point emulation allows code generation tools to be used with devices that require the IEEE format, including the TMS34082. Other enhancements include C Interlist and C Shell Utilities. The C Interlist Utility facilitates debugging by inserting C source code in the assembly language output of the assembler. The C Shell Utility automatically invokes the compiler, assembler and linker for ease-of-use.

A TMS34082 Floating-point Function Library uses all the TMS34082 instructions. The TMS34082 is also supported in the assembler where psuedo-ops are now validated.

The Assembler package translates TMS34010 or TMS34020 assembly source modules into executable object code. It includes the following elements:

Macro-Assembler -	Translates assembly language source modules into a COFF (Common Object File Format) output.
Archiver -	Facilitates management of the COFF modules.
Linker -	Supports global symbol definition at link time, user-definable memory configuration, and address-specific code/symbol binding.
ROM Utility -	Generates code for ROM/PROM/EPROM programming.
Software Simulator -	Emulates TMS34010 and TMS34020 instructions, on-chip cache, host interface functions, and memory control funtions (PC version only.)

The Code Generation Tools are available for PC/MS-DOS, VAX/VMS, VAX/ULTRIX, SUN-3 and SUN-4/O.S, Macintosh/MPW and Apollo/UNIX System V.

TMS340 Graphics Library

The TMS340 Graphics Library accelerates TMS340 application development. The library is supplied as "C" and TMS340 assembly source code. It provides a collection of ready to use software functions to enable programmers to start application development immediately without having to become completely familiar with the TMS34010 or TMS34020 instruction set.

The source code may also be modified to incorporate custom algorithms.

A font library also provides families of characters suitable for body text, headings, math symbology, figure labels, and all other applications of text in graphics systems. Many of the fonts have several sizes of text available for greater consistency throughout text applications.

The font library consists of sets of bit-mapped images representing characters. A 1:1 ratio of pixel width to height was assumed during the design of each font.

Texas Instruments Incorporated (Continued)

TMS34010 Design Workshop

This 4-day workshop from TI Regional Technology Centers will enable you to get the most out of the powerful TMS34010 Graphics System Processor. In addition, the workshop should accelerate the learning curve and expedite design and delivery of a TMS34010-based product. Hands-on exercises and examples throughout the course allow you to learn and practice essential hardware and software design skills. Included are numerous design techniques commonly used in the application of bit-mapped graphics.

Among other items, you will learn how the TMS34010 can be used either alone or as a system building block. With the TMS340 family you can create a unique system to meet your video and graphics system requirements, as well as your performance goals.

Who should attend

This workshop is for hardware and software design engineers who will be designing with and utilizing TI graphics technology. You should have experience with digital design techniques and microprocessor/assembly language programming. You are expected to have previous experience in frame buffer design using Video RAMs (VRAMs) and already understand CRT timing control. These elements are taught in our RTCWS-34061 workshop which is recommended as preparation for this course. The "C" programming language will be used in some labs, but experience with "C" is not required to attend the course. ("C" will not be taught in this course).

What you will learn

- How to design the TMS34010 into a bit-mapped graphics system
- How to implement commonly used graphics functions
- Techniques for advanced screen management using the TMS34010
- Use of development tools including the assembler, linker, "C" compiler, and archiver with the Software Development Board (SDB)
- Learn how to select the appropriate tools to get started with your TMS34010 design

For more information or to register, call 1-800-336-5236 (extension 3904) or (214) 917-3894, outside the U.S. and Canada.

Texas Instruments Incorporated (Continued)

TMS34020 Design Workshop

This 2 1/2 day workshop from the TI Regional Technology Centers will enable you to get the most out of the powerful TMS34020 Graphics System Processor. This workshop is for the experienced 34010 designer who wishes to better understand how to use the added capabilities in this second-generation TMS340 microprocessor.

Hands-on exercises throughout the course allow you to learn and practice essential hardware and software design skills. Included are numerous design techniques commonly used in the application of bit-mapped graphics.

The workshop topics include: an architectural overview; hardware interface to the 34020 (including host, local memory, video, multi-processor, coprocessor); instruction set; software tools.

The 34082 floating-point coprocessor is also covered in this workshop. The 34082 module details the chip's architecture, coprocessor interface, software interface and the software development tools.

Who should attend

This workshop is for hardware and software design engineers who will be designing with and utilizing TI graphics technology. You should have attended the TMS34010 workshop and have experience in frame buffer design using Video RAMs and already understand CRT timing control. These elements are taught in our RTCWS-34061 workshop which is recommended as preparation for the TMS34010 workshop. The "C" programming language will be used in some labs, but experience with "C" is not required to attend the course.

What you will learn

- How to design the TMS34020 into a bit-mapped graphics system
- How to implement commonly used graphics functions
- Techniques for advanced screen management
- Use of the software development tools
- Learn how to select the appropriate tools to get started with your TMS34020 design

Advanced Text Systems Group
4 Cavendish Street
Brighton
Sussex BN2 1RN
United Kingdom
(0273) 672950; FAX (0273) 674984; Telex 877355 SKYCOM G
Paul E. Wynter, Chairman

The ATS 34010 OEM Family

The ATS 34010 range of cards based on the TI 34010 Graphics System Processor is available now from Systems Designers and OEMs to allow enhanced software development on popular PCs while hardware development is underway, or for direct use in current applications. The range of cards runs on PC/XT/AT/386 with versions for VME available first quarter 1989.

Display resolutions of up to 1280 x 1024 with switchable resolutions or synthesized pixel clock (version B). Color RGB analog/TTL outputs, Brooktree color palette allowing 256 colors out of 16 million possible shades. Version B has fully implemented independent access to Video Frame Store through separate connector. Serial Sync/Async Comms IC on board. Two megabytes of 8-bit RAM organized in 1-meg processor and 1-meg VRAM (dual port).

Fully compatible with Texas Instruments Software Tools such as SDB340 Assembler/Debugger and TI "C" Language. The company offers a full set of Primitives and other software support tools for use with 34010-based cards. AutoCAD drivers and others are available.

Advanced Text systems and associate software house, Sidwell Computers, is an established OEM group operating for seven years designing and supplying OEM text and graphics display systems. Original products include Linotype/Mergenthaler "APL" Terminal family with over 6000 systems delivered worldwide.

Hardware Required: IBM PC/XT/AT, most 386 machines

Availability: A series: Now B series: 3rd Q 1988
VME series: 1st Q 1989

AGE
8765 Aero Drive, Suite 266
San Diego, CA 92123
(619) 565-7373; FAX (619) 565-7460
Michael Behnke, Vice President, North American Sales

XoftWare™ TIGA

XoftWare TIGA provides MIT X Window System Release 11 server functionality to any IBM-PC/AT® or compatible that has a TIGA-compliant display controller with the TMS340 graphics processor.

XoftWare TIGA maximizes graphics performance and minimizes memory requirements, while completely embracing the TIGA standard interface. A virtual resource system permits unused pixmaps and fonts to be cached. XoftWare TIGA includes "backing store" and "save unders" as standard features, significantly enhancing the execution of complex application programs. Full resource allocation failure reporting is provided, ensuring total graphics processing integrity and reliability. Fonts and a font compiler are also included with XoftWare TIGA.

XoftWare TIGA is ideal for use in networks that contain both MS-DOS® and UNIX® systems. A DOS PC can interact with multiple UNIX systems on the network; X applications on UNIX systems can make use of the powerful graphics functions of the DOS-based TMS340 server.

Hardware Required: TMS340-based AT bus graphics board; 512K program RAM; Ethernet controller; Microsoft driver compatible mouse

Software Required: DOS 3.0 or higher; TIGA driver

XoftWare™ T10

XoftWare T10 is a full implementation of the MIT X Window System Version 11 server for the TI TMS34010 environment. Porting XoftWare T10 to specific embedded designs is simplified using a range of AGE-developed interface programs. XoftWare is designed to take advantage of the processing features of the TMS34010 graphics processor. The T10 package also allows implementation of more efficient and cost effective hardware designs that reduce system cost without sacrificing performance.

XoftWare T10 includes "backing store" and "save under" functions, which significantly enhance the performance of complex X applications. A virtual resource system permits unused pixmaps and fonts to be cached, thereby reducing working memory requirements. Full resource allocation failure reporting is provided, ensuring total graphics processing integrity and reliability.

XoftWare T10 gives system manufacturers an easy and affordable way to implement a fully functional and compatible X Window system terminal product, requiring a minimum of internal engineering time and effort.

Hardware Required: TMS34010-based design; 512K program RAM

AGE (Continued)

XoftWare™ T20

XoftWare T20 is a full implementation of the MIT X Window System Version 11 server for the TI TMS34020 environment. Porting XoftWare T20 to specific embedded designs is simplified using a range of AGE-developed interface programs. XoftWare is designed to take advantage of the processing features of the TMS34020 graphics processor. The T20 package also allows implementation of more efficient and cost effective hardware designs that reduce system cost without sacrificing performance.

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XoftWare T20 gives system manufacturers an easy and affordable way to implement a fully functional and compatible X Window system terminal product, requiring a minimum of internal engineering time and effort.

Hardware Required: TMS34020-based design; 512K program RAM

AGE is a privately held corporation headquartered in San Diego, California. AGE is quickly becoming recognized as a leading supplier of X Window System and related software products for OEMs and VARs.

AGFA Compugraphic Division
90 Industrial Way, MS: 90-1-3C
Wilmington, MA 01887
(508) 658-5600; FAX (508) 657-5328
Douglas Shaw, National Sales Manager

AGFA COMPUGRAPHIC DIVISION

Intellifont

Intellifont is a font scaling subsystem that generates high-quality character images in a variety of output and graphic transformation formats. The subsystem is a package of callable C language routines, providing definitions of character forms and metrics in various formats, thereby supporting multiple imaging technologies.

Intellifont achieves high-speed bit-map generation for on-the-fly or off-line environments - 74.5 cps, 300 dpi, 10-point, running on a 16 MHz 386 processor with no hardware enhancements. Other features include enhanced screen font technology, printer marking engine technology independence, support of square/non-square resolutions, and font substitution capability. Intellifont also provides character rotation in one-degree increments for 360 degrees, expansion and condensing of character output, pseudo-italicizing/back-slanting to 45 degrees, wrong-reading output, kerning, user-definable character widths, modular design for easy customization, and a line/arc outline processor.

Intellifont is ideally suited for hardware and software products that demand both quality and high performance.

AGFA Compugraphic is one of the world's leading suppliers of electronic pre-press systems, type and font products, phototypesetting materials, and reprographic and processing equipment. Through its other divisions, AGFA Corporation manufactures and markets medical diagnostic imaging and presentation graphics output systems (AGFA Matrix Division), magnetic tape, motion picture film, and consumer and professional products (AGFA Photo Division). AGFA Corporation, in Ridgefield Park, New Jersey, employs nearly 6000 people and has sales of approximately $1 billion.

Airspace Technology Corp.
9 Goodyear
Irvine, CA 92718
(714) 941-4424
Tim Katanik, V. P. of Technical Operations

Airspace Technology CORPORATION

Flat Panel Plasma Display — Model 1024

The Model 1024 is a large screen (19-inch diagonal, 14 x 14-inch square) flat panel AC gas plasma display which provides both standard intelligent terminal emulation and stand-alone operation. It was designed primarily as a military product for Air Traffic Control and Command & Control applications; however, it is suitable for use in commercial or industrial applications requiring high reliability, ruggedization, wide temperature range, and minimum depth. It is particularly suitable for trans-portable vans or shelters where space is at a premium and rough road handling could damage CRT displays. The entire terminal is only five inches deep. Screen resolution is 1024 x 1024 pixels. Larger screen sizes and resolutions are currently under development.

The display includes a graphics control board based on the TI TMS34010 and VRAM to manage all display functions, including a standard graphics library, on-screen soft-keys, and trackball/ cursor. An optional 80186 application processor is available for stand-alone applications. Both boards are contained within the ruggedized display enclosure. Complete software is currently available for Air Traffic Control applications and several popular graphics interfaces will be available soon. The display features multiple bit-planes to allow rapid and independent updating of static and dynamic data, and provides flicker-free images obtainable only from plasma displays for screens this large. Rapid full screen update rates of 25 frames per second make possible smooth cursor and scroll operations as well as dynamic modeling and simulation.

Airspace Technology is a turnkey systems engineering and integration house specializing in customized military and industrial products for Air Traffic Control and Command, Control & Communications applications. The Model 1024 display was developed for a U.S. Air Force Air Traffic Control application.

Alacrity Systems
88 Bartley Square, C-6
Flanders, NJ 07836
(201) 584-0116; FAX (201) 584-3185
Jim Folts, President

Exact Series 2000/8000 PC Imaging Subsystem

The Exact Series are the first business imaging subsystems for PCs. The Exact-2000 comes with a very-high-resolution 1600 x 1200 monitor, and the Exact-8000 offers a unique 300 dpi, 2560 x 3300 monitor. Packaged on a single AT module, the Exact-2000 handles the high-resolution display, image compression and decompression, scanner and printer control functions needed for electronic image retrieval and publishing functions. Fast processing and print times are made possible through an integral image storage and retrieval system which uses high-speed CCITT Group III and Group IV compression/decompression and through instant laser printing at the full rated speed of the LaserJet II. The Exact Series also offers scalable and rotatable Bitstream fonts that can be created on-the-fly to offer greater versatility to the LaserJet II.

The Exact Series single-slot controller module saves valuable card slots by replacing a compression/decompression board, high-resolution graphic controller, scanner interface, laser printer raster image processor and video interface.

Hardware Requirements: 286/386-based computer with ISA bus

Software Included: Windows GDI drivers for both display and printer, font-scaling on-the-fly for display and printer, high-speed CCITT G-III and G-IV for image compression/decompression and background image queuing support

Software Requirements: DOS, MS-Windows

Availability: Now

Alacrity Systems designs, manufactures and markets the Exact Series of business imaging subsystems. The Exact-2000 and the 8000 are the first display and printing subsystems to enable the implementation of both electronic image retrieval and desktop publishing applications on a standard AT bus personal computer. They are the first to combine an ultra-high-resolution display controller into a single, cost-effective AT module. And they are also the first to provide complete implementation of the Microsoft Windows GDI imaging model for both the screen and the printer, delivering the future benefits of Presentation Manager today, under Windows.

Aldus Corporation
411 First Avenue South, Suite 200
Seattle, WA 98104
(206) 622-5500
Michael Sherwood, Product Manager

PageMaker®

PageMaker desktop publishing software integrates text and graphics, allowing PC users to design, edit, and produce high-quality printed communications within an office setting. In combination with a laser printer, PageMaker produces near-typeset quality output at a fraction of the time and expense required by conventional production techniques. Aldus Corporation has designed PageMaker to support the broadest range of hardware and software of any desktop publishing product on the market today. These features benefit users for several reasons: first, PageMaker supports more word processing and graphics packages; second, as the recognized leader in desktop publishing, Aldus Corporation is working with other industry leaders to establish standard file formats and import mechanisms that make other software applications compatible with PageMaker; and third, PageMaker runs under the Microsoft Windows operating environment, the PC standard that allows PageMaker to easily address a wide and growing range of printers, peripherals and other software programs. PageMaker includes a comprehensive selection of industry-leading features that include the user interface, document formatting, page composition, text handling, typography and graphics. The TMS34010 enhances the speed of operation.
Hardware Required: IBM PC/AT and compatibles
Software Required: Microsoft Windows
Availability: Now

Aldus Corporation founder and president Paul Brainerd is credited with coining the term desktop publishing in 1985. Coming from a publishing background, the founders of Aldus desired to bring the ability to combine text and graphics together on microcomputers to produce near-typeset quality communications. PageMaker is considered to have set the standard for desktop publishing software. The Macintosh version of PageMaker shipped in July 1985 and has sold over 50,000 units worldwide in eight languages. The PC version running under Microsoft Windows shipped in January 1987. The International English version shipped in February 1987.

Alldata Corporation
9412 Big Horn Blvd.
Elk Grove, CA 95758
(916) 684-5200
Rod Georgiu, President

ALLDATA CORPORATION

Repair Information Workstation

Alldata has developed a low-cost, integrated workstation for the retrieval of automotive repair information. In addition, Alldata has developed extensive database retrieval software to enable a user to quickly extract the desired information and print it. The company has also developed an authorizing system that enables it to economically scan repair manuals and technical service bulletins, index all information and produce CD-ROM disks.

The workstation consists of:

A 68000-based computer with 2 MB of memory, RS-232, Centronix and a SCSl port capable of interfacing to seven additional devices.

A thermal fixed head printer with 200 DPI resolution. The controller has a TI 34010 processor running at 50 MHz with 1.5 MB of memory. The controller decompresses the stored images from the CD-ROM disk and prints a page of text and graphics in 12 seconds. A 600 MB CD-ROM drive with a SCSl interface. Up to six CD-ROM drives can be installed, providing up to 3600 MB of data on-line.

An optional WORM drive with 400 MB of writable optical storage per side for a total of 800 MB per disk.

Alldata Corporation was incorporated in February 1986. Alldata has 10 software and hardware engineers on its full-time development staff and it has developed unique technology in the CD-ROM storage and retrieval area.

Allied-Signal Aerospace Company Bendix Test Systems Division
Route #46
Teterboro, NJ 07608
(201) 393-2531; FAX (201) 393-6540
Fred Lando, Director of Marketing

Portable Maintenance Aid

The ruggedized 34010-based Portable Maintenance Aid is designed to host maintenance, diagnostics, training, expert systems, and electronic data delivery applications.

Portable Maintenance Aid is designed with a dual 32-bit processor under VME-based architecture. The host processor board is comprised of an MVME147 single board computer, Motorola 68030, 25 MHz, 8 MB DRAM with parity, and math coprocessor. The custom graphics coprocessor board includes TI 34010, 40 MHz, 4 MB DRAM with parity, 64K VRAM, and interface to 640 x 480 flat panel displays (LCD, EL). Portable Maintenance Aid comes with a custom keypad, 3 MB removable memory module, and battery-backed SRAM. I/O features include RS-232, Ethernet, Mil-Std-1553, IEEE-488. Portable Maintenance Aid includes the VxWorks real-time operating system and the X Window server.

Application development tools are also available for Portable Maintenance Aid.

Software Included: VxWorks Operating System; X Windows System Server; Application Development Tools

Bendix Test Systems Division is a major designer and manufacturer of test and diagnostic equipment for the Department of Defense. Bendix's products are utilized for testing of analog, digital, RF, microwave, pneumatic, hydraulic, electro-optical, and laser technologies.

Ameri Corporation
3955 Suffolk
Hoffman Estates, IL 60195
(708) 934-0661; FAX (708) 934-0555

Ameri-Darts

Ameri-Darts is a dart-themed video kit which utilizes the 34010 for graphics. By utilizing the 34010, Ameri was able to achieve a "true" (100% active, no loss-no gain picture) vertical/horizontal video game.

The game features a graphic representation of a dart board in a setting which could be taken for either a tavern or game room. Players aim the darts by use of a track ball. Once the dart is positioned, players then lock their aim via a button and throw by spinning the track ball.

Built into the game's play are an abundance of "sight gags" that reward the less accurate darters with comic relief from their mistakes. The 34010 provides the graphics processing power for such gags as: when a player hits the cheeseburger on a table, the dart will knock the cheese off and a mouse will then scamper to retrieve it.

Availability: Now

Ameri Corp. designs and markets products to the video game market. Ameri-Darts is the company's first offering. Ameri Corp. plans to expand both the player base and location base in the video market with a line of videos currently under development.

Analogic/CDA
8 Centennial Drive
Peabody, MA 01960
(508) 977-3030
Richard Steele

MDP-6E

The 34010-based MDP-6E is a high-performance image processing system that integrates imaging, graphics, text, array processing, and a high resolution display into a compact, fully-compatible SUN-3E based image processing system.

MDP-6E is an array processor plus a SUN-compatible 1152 x 900 color frame buffer that allows the display of multiple images with separate Z mapping and X/Y zooming. Applications execute substantially faster with MDP-6E because of its integrated array processing capability. MDP-6E supports 1024 x 1024 resolution. The image system is configured for three standard 6U-size VME boards.

Software provided with the MDP-6E system includes necessary drivers for SUN-3E, Display Library, and the Axcess object-oriented software environment. MDP-6E imaging software includes TIGA drivers.

Hardware Required: SUN-3E CPU and memory; MDP-6E imaging sub-system required if software is obtained separately

Software Required: SUN OS Release 4.0

The Computer Design and Applications Division of Analogic Corporation, headquartered in Peabody, Massachusetts, manufactures array processors, digital signal processors, and display systems used in imaging, signal processing, and test and measurement applications.

ANDROX Corporation
1515 Hancock St.
Quincy, MA 02169
(617) 770-3450
Wayne Threatt, V. P. Marketing & Sales

ANDROX
THE VISION OF REALITY

Androx 100

The Androx 100 is an image computer subsystem. An image computer integrates both image processing and computer graphics functionality in a single system. In addition, image acquisition and display capability for standard video cameras and monitors are integral features of the subsystem. The Texas Instruments 34010 is the computer graphics engine and display controller for the system and is coupled to a 1024 x 1024 x 8 bit frame buffer. Also coupled to this frame buffer is an image processing engine, a parallel array processor comprising four VLSI DSP chips and associated memory caches and controllers. Androx supplies an extensive library of image processing and computer graphics subroutines.

The architecture of ANDROX image computers offers impressive number crunching performance as well as unmatched programmability and flexibility. However perhaps more important to users of ANDROX technology is that the power of this state-of-the-art hardware has been harnessed by a comprehensive software structure. This structure allows users from the most sophisticated researcher to the first time user of image processing and machine vision to unleash the power of technology. In the context of this structure the parallelism of the processor is transparent to the users since the applications are accomplished using calls to image processing and artificial vision subroutines optimized for the system architecture. The software structure of the EQUUS system is comprised of three layers: image processing and graphics primitives, user interface structures and tools and applications building blocks.

There are over 500 primitives including pixel manipulation, image arithmetic, convolutions, image statistics, FFTs, matrix and vector operations, font generation and draw and fill utilities.

An interactive command language is coupled with a menu-based image processing environment for the IBM PC or alternatively with an X-Window-based menu programming environment for Sun workstations.

Gauging, fiducial alignment and inspection for machine vision are available, as well as image analysis and classification for image processing.

Hardware Required: IBM PC and compatibles or various minicomputers including VAX, SUN and APOLLO

Availability: Now

Androx Corporation, headquartered in Quincy, Massachusetts, is a high technology company engaged in the design, manufacture and sale of image processing subsystems and systems. Androx products serve the needs of customers in machine vision, image processing and artificial intelligence research. The company was founded in 1986 and now has 20 employees.

Antares Technical Services
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(416) 528-0297; FAX (416) 521-1771
Victor Plichota, President

ATS
ANTARES TECHNICAL SERVICES

DL-340/10B

The DL-340/10B is an inexpensive download interface card for 34010-based systems. It is a half-length PCB card that occupies a single slot in the IBM-PC/AT®/XT® or compatible. A set of software drivers/utilities is provided with the card that support RAM uploads/downloads, debugging, and in-situ programming of "Flash" PROM devices using the 12-volt supply available in the PC.

The DL-340 is particularly useful for embedded designs, where the target system does not itself interface to the PC, and/or use of the TI Software Development Board is not convenient or appropriate. A ribbon cable provides the physical link between devices.

Best of all, the design overhead for the target system is minimal, consisting of a single 20-pin header connector and pull-up resistors.

Software included with the DL-340 includes COFF Download, Upload/Dump, and Flash PROM Burn.

Hardware Required: IBM-PC AT/XT or compatible; ISA-8
Software Required: DOS 2.01 or higher; ANSI.SYS; GSP Development Tools

340 VFORTH

340 VFORTH is a 32-bit FORTH language variant for all TI 340-based systems. It provides the power, speed, flexibility and productivity of an interactive high-level language programming environment, for the IBM-PC/AT or compatible.

The system produces ROM-able production code using a nucleus of optimized VFORTH primitives, including floating point operations. Several development utilities, including a high-level symbolic debugger, are provided with the package.

VFORTH departs from more traditional FORTH implementations to increase both machine and human performance, while retaining the syntax and structural precepts FORTH programmers are accustomed to. Practically no re-learning is required to begin coding productively.

340 VFORTH is public domain software, but credit for authorship is mandatory. Consulting services, and/or the delivery of factory-supported warrantied systems are negotiated on an individual basis.

Hardware Required: IBM-PC AT/XT or compatible; ISA-8
Software Required: DOS 2.01 or higher; ANSI.SYS

Antares Technical Services was formed in 1979 to offer multi-disciplinary high technology design and development services for socially conscious products. The company's aim is to provide a wide spectrum of knowledge, skills, and experience-tempered common sense. Antares offers specific consulting services for 340X0 hardware and software development.

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Gale Jacobs, Director of Sales and Marketing

NV1000

NAVision 1000 (NV1000) is a TI 34010-based flight management system for use in general aviation cockpits for navigation. NV1000 receives latitude, longitude, and groundspeed input from a loran (LOng RAnge Navigation) and displays the aircraft's flight path graphically on a 3" x 5" flat panel electroluminescent display.

The NV1000 gives the pilot a TV eye view of airport locations, navigation aids, airways, and airspaces in relation to the aircraft's present position. The NV1000 also provides flight planning, check lists, aircraft performance information, and contains a database of airport/navaid information and runway depictions of all of North America.

All processing and graphics is handled by the TI 34010, and over 2 MB of memory are included in this 48-ounce system.

Hardware Required: Loran input for latitude/longitude position

ARNAV Systems, Inc. has been a leading manufacturer of aviation loran systems since 1982. Over 15,000 ARNAV lorans are installed in general aviation aircraft.

ARTIST® Graphics
A Control Systems Company
2675 Patton Road
St. Paul, MN 55113
(800) 627-8478; FAX (612) 631-8424
Peggy A. Noto, Marketing Communications

ARTIST Graphics

ARTIST XJS™

The ARTIST XJS is an extremely flexible graphic controller for personal computers. Based on the state-of-the-art TI 34020, a 10-MIPS graphics microprocessor, the new controller is ideally suited for anyone looking for a versatile product that will serve all their CAD needs.

Target audiences for the new product include designers, architects and engineers using high level applications such as AutoCAD®.

The ARTIST XJS is optimized for DOS, Extended DOS, Xenix, and OS/2 operating systems. It is configurable to three different resolutions. The base controller has 1 MB of on-board VRAM for the display. It offers a 1280 x 1024 pixel resolution with 16 colors or 1024 x 768 pixel resolution with 256 colors. The addition of the 1 MB VRAM module allows the controller to display 1280 x 1024 pixel resolution with 256 colors and an impressive 1600 x 1200 pixel resolution with 16 colors. A 16.7 million color palette is standard with all versions.

Hardware Requirements: Single slot in IBM AT/compatible; high resolution graphics monitor
Software Requirements: DOS 2.0 or higher; Xenix or OS/2
Availability: Now

ARTIST GT

The ARTIST GT software driver uses advanced display list processing techniques to accelerate normal AutoCAD redraw performance up to 25-times faster (AutoCAD Release 10). Additional user features of the driver include the ARTIST GT Iconic menu, GT Top 10™ menu, Bird's-Eye-View, instant zooming, and transparent/concurrent panning.

Availability: Now

ARTIST VGALink™

The ARTIST VGALink can be used in single-screen or dual-screen systems. Single-screen VGA pass-through can be implemented using the appropriate multiscanning monitor and the ARTIST VGALink. Similar results can be achieved by adding the ARTIST VGA module which snaps on-board for a single slot, single screen solution.

Availability: Now

ARTIST TI10™

The ARTIST TI10 is a TI 34010-based, single board high resolution graphic controller for the IBM-PC/AT® and compatibles. Available in 16 and 256 color versions, ARTIST TI10 supports all TIGA endorsed software. Resolutions supported are 1024 x 768 4/8 bpp and 800 x 600.

ARTIST TI memory modules add up to 2 MB of DRAM; even with this additional memory, ARTIST controllers require only a single slot.

ARTIST TI10 comes with drivers for TIGA, ADI, and MS-Windows®. A complete list of third party software drivers is available from ARTIST Graphics.

Hardware Required: Single slot in IBM-PC/AT or compatible; high resolution graphics monitor
Software Required: DOS 2.0 or higher

ARTIST Graphics (Continued)

ARTIST TI12™

The ARTIST TI12 is a TI 34010-based, single board high resolution graphic controller for the IBM-PC/AT and compatibles.

ARTIST TI12 is suitable for desktop publishing as well as high resolution CAD applications, and is available in 16 and 256 color versions.

ARTIST's GT software driver increases the speed of AutoCAD zooms and redraws, while adding Bird's-Eye-View, pop-up iconic menu, and transparent panning. Addition of the ARTIST VGA module or VGALINK provides full-screen VGA text and graphics on a single display.

Resolutions supported are 1024 x 768 4/8 bpp and 1280 x 1024 4/8 bpp. Software drivers included with ARTIST TI12 are TIGA, ADI, PGL, and MS-Windows. A demo program is also included.

Hardware Required: Single slot in IBM-PC/AT or compatible; high resolution graphics monitor
Software required: DOS 2.0 or higher

ARTIST TI16™

The ARTIST TI16 is a high performance, high resolution monochrome graphic controller for 286, 386, and 486 based PCs. Two additional models are available for the PS/2 Micro Channel Bus.

Resolution is 1600 x 1200, non-interlaced with flicker-free image.

Based on the TI 34010, ARTIST TI16 is specifically designed to convert a standard PC into a high performance workstation. System memory is upgradeable.

ARTIST TI16 includes the TIGA interface, and a complete list of support for third party software applications is available from ARTIST Graphics.

Hardware Required: Single slot in IBM-PC/AT or compatible, or PS/2 Micro Channel Bus

ARTIST TI20™

The ARTIST TI20 Graphics Controller is TI 34020-based and offers 32-bit processing power that has been previously unavailable.

ARTIST TI20 takes advantage of special functions offered in the new generation of video RAMS. These functions allow ARTIST TI20 to execute fills and other drawing operations at much faster speeds than first-generation video RAMS.

By supporting industry standard SIMMs (single in-line memory modules), developers can add up to 4 MB of DRAM (on top of the 1 MB standard). Even with this maximum memory configuration, ARTIST controllers require only a single slot in the PC.

Resolutions supported are 1024 x 768 4/8 bpp; 1280 x 1024 4/8 bpp; and 1600 x 1200 4/8 bpp.

Includes TIGA interface. A complete list of third party software applications is available from ARTIST Graphics.

Hardware Required: Single slot in 286, 386, or 486 PC; high resolution graphics monitor
Software required: MS-DOS, UNIX, or XENIX operating system; OEM-provided application or ARTIST-supplied drivers for individual graphics application

ARTIST Graphics is the industry leader in the design and manufacture of high resolution graphic controllers for PCs. ARTIST clients include professionals in mechanical, architectural, and electrical engineering. ARTIST TI Series graphic controllers are designed to provide speed and flexibility for OEM system designers and system integrators. ARTIST Graphics was founded in 1976 and has 110 employees.

ASCII Corporation
Sumitomo Minami Aoyama Bldg.
5-11-5 Minami Aoyama Minatoku
Tokyo, Japan 107-24
+81-3-498-9938; FAX +81-3-498-3830
Hideki Narui, Manager, System Planning and Sales

ASCII
ASCII CORPORATION

ASCII Graphic Accelerator AGA-10

AGA-10 can accelerate AutoCAD Graphics operations on NEC PC-9801 machines. AGA-10 has TMS34070 (video palette) to display 16 colors from 4096 colors, and includes 24 Dots Kanji-ROM for Japanese text.

AGA-10 has 1 MB program DRAM and 1 MB dual-port VRAM, which provides for high-resolution monitor display (1024 x 768, 1120 x 750 pixel).

Hardware Requirements: High resolution or multi-sync monitor
Software Included: MS-Windows and AutoCAD drivers (on DGIS)
Availability: Now

PS-340

The PS-340 is a printer and scanner interface card for SUN 3 and SUN 4 workstations. PS-340 provides the connectivity 400 dpi "D" size scanner via special parallel video interface, and 400 dpi "D" size page printer via special video interface.

The PS-340 includes 8 MB memory for printer and scanner pixel data buffer and program area.

Hardware Requirements: Page Printer (LBP-20 by Canon) or Scanner (IS-330 by Panasonic)
Software Included: SUN Device driver
Software Requirements: SUN OS 3.X or 4.0
Availability: Now

ASCII started out in publishing and expanded into software development from home entertainment through operating system, hardware development, LSI design and communications networks.

AT&T Graphic Software Labs
3520 Commerce Crossing, Suite 300
Indianapolis, IN 46290
(317) 844-4364; FAX (317) 575-0649
Edward Kopecky, Sales & Marketing Manager

Graphico™

Business graphics for the TARGA® and ATVista™ environment. Choose from over twenty different styles to automatically generate charts and graphs from spreadsheet information, and then merge the charts with scanned or captured images to create professional slides, prints or transparencies.

Styles include flat or extruded bar, line, cylinder, hexagon, star, round pie, oval pie, wall, tape and rod. Output may be oriented horizontally or vertically and stacked on top or side-by-side.

File import and export is flexible. WKS files can be imported. TGA, WIN or RIO™ scene files can be output.

Availability: May, 1990

ImagePaint

ImagePaint processes images with painting and illustrative styles like charcoal pencil, water color or exotic reflective chrome or glass. Processed still images look like hand-drawn renderings. Processed video sequences look like moving paintings. ImagePaint's effects are sure to leave a lasting impression!

ImagePaint provides 64 different presets for the automatic generation of exciting images. For black-and-white or color applications, these presets offer a full range of effects in each of the following categories: paint, water color, ink, pencil, exotic.

ImagePaint supports frame accurate video tape recorders through the Diaquest DQ-422 and DQ-50P VTR controller boards, for single or multiple frame editing to video tape.

Availability: Now

Tempra™

Tempra's unique functionality and powerful special effects make it the perfect paint package for a broad spectrum of users. Tempra's wide variety of drawing tools, like perspective, airbrush and color cycle, let you create stunning graphics with the greatest of ease.

Drawing tools include: freehand, line, rectangular, circle, regular and irregular polygon, curve and text.

Special effects include: airbrush, tint, blend, color cycle, color swap, mask and tile.

Objection manipulations include: perspective, warp, cut and paste, move, rotate, scale, stretch and copy.

Availability: Now

Panorama™ 2.0

Panorama is an electronic slide show software system for the creation of boardroom presentations or video productions. Panorama's high quality results will enhance your professional image while controlling your costs.

Some of Panorama's transition effects are clock left spin and right spin, bottom left/bottom right/top left/top right corner and fan, horizontal and vertical louvers, explode, implode, instantaneous, weave and many others.

Availability: Now

AT&T Graphic Software Labs (Continued)

Logo Editor 4.0

Use Logo Editor to recreate logos or complex shapes with easy-to-use spline and outline functions, and then output vector information in a variety of industry standard file formats. Output formats include: RIO Vector Objects (.OBS), RIO Fonts (.FNT), TOPAS Model File (.MDL), Autodesk Drawing Exchange Format (.DXF), TGA, WIN, PostScript (.EPS), CG Metafile (.CGM).
Availability: Now

RIO VISTA

RIO VISTA is a Resolution-Independent Object-oriented draw and image processing program for applications in Presentation Graphics, Graphics Art Design, Illustration and Slide Production. RIO VISTA significantly cuts down the time and expense involved in producing boardroom-quality, 35mm slides that mix still video images and high-quality text and graphics. RIO VISTA lets a user easily create and manipulate a graphic scene comprised of objects (vector-based text, geometric shapes and video-captured electronic color photos) on a preview display. Simple-to-use special effects such as emboss, drop shadows and translucency can be applied to yield a 3D look. Rendering RIO scenes to the VISTA display offers a quality preview of the image, or users may render up to 4K x 4K resolution files in standard VISTA format or convert rendered scenes into Postscript files. RIO VISTA includes direct support for low-cost digital film recorders, Postscript devices, color thermal transfer and ink jet printers.

TOPAS Pro-Modeler and Animator

TOPAS is a Three-dimensional Object Processing and Animation Software program for applications in creative design, presentation graphics, video production and video animation for the AT&T VISTA videographics board. With TOPAS Pro-Modeler users can create, edit and render beautiful full-color, smooth-shaded 3D solid objects and can map VISTA-captured color video images as textures for the 3D objects. Pro-Modeler can be used to create key frames for use in TOPAS Animator or to create up to 4K x 4K 35mm slides for presentation graphics.

The Animator is a professional keyframe animation program that includes the Pro-Modeler. The Animator provides users with control of all animation aspects of their models such as camera control, lighting and object attributes, and motion path control and also offers a real-time wireframe preview. Support for industry standard videotape controllers coupled with TOPAS's ease-of-use, fast-rendering and low-cost provides a high performance and friendly environment to produce professional video applications.

Hardware Requirements for AT&T GSL Software

IBM AT or compatible with 640K RAM and minimum of 10MB hard disk; TARGA or ATVista or compatible videographics board; 2MB expanded memory

ATC Graphics
24863 Norman Rd. NE
Kingston, WA 98346
(206) 297-4648; FAX (206) 297-4225
Tom Friend, President

ATC
GRAPHICS CO

VersaCAD Support

Device driver support for VersaCAD 286 & 386 versions. Display list option available using local or EMS memory. OEM source code available as well as free maintenance.
Hardware Requirements: TIGA-based Graphics Card; ISA, EISA or MCA compatible
Availability: Now

Generic CADD Support

OEM level source code for device drivers supporting all CAD packages from Generic Software.
Hardware Requirements: TIGA Graphics Card
Availability: Now

CADRA Support

OEM source code for driver support for the CADRA III Drafting Package.
Hardware Requirements: TIGA Graphics Card
Availability: First quarter 1990

The importance of system software has long been ignored by the PC industry. At ATC Graphics, the design of high-performance system software is the only focus. While more recent entries have just discovered device drivers, ATC Graphics has been supplying application and operating system device drivers, diagnostics, utilities and operating system porting services for 5 years.

Company services have been requested by a wide cross section of the hardware industry. Hardware vendors come to ATC Graphics for help, often before the first silicon has been realized. ATC Graphics is the premier developer of device drivers and other system software.

AURA SYSTEMS
P.O. Box 4576
Carlsbad, CA 92008
(619) 438-7730; FAX (619) 447-8982
Don Stevenson, President

AURA SYSTEMS INCORPORATED

ScuzzyGraph™

The ScuzzyGraph™ product family provides high-performance, high-resolution graphics to any computer with the Small Computer System Interface (SCSI). All ScuzzyGraph controllers can be programmed on-line by the host computer to tailor the graphics interface to the machine and application required. The controller can support virtually any graphics standard, including TIGA and X windows. ScuzzyGraph has even been ported to the Macintosh where, for the first time, users have a color controller for the Plus, SE and Portable.

The video control of the ScuzzyGraph controllers allow virtually any monitor to be driven. Current ScuzzyGraph controllers cover a wide range of resolutions, from 640x480 to 1600x1200 in 1, 4 or 8 bits/pixel. Color palettes are standard features. Serial, keyboard and joystick ports are available in addition to the SCSI.

ScuzzyGraph I features a TMS34010 processor operating standalone. ScuzzyGraph II features a TMS34010 for graphics and an MC68000 processor for I/O. ScuzzyGraph III (not yet available) will feature the TMS34020.

Hardware Requirements: SCSI port

Software Included: Drivers for Mac Plus, SE, Portable Quickdraw; IBM PC/XT/AT/PS-2 AutoCAD driver

Software Requirements: SCSI driver

Availability: Now

AURA SYSTEMS was established in Carlsbad, CA, in 1987 to develop, manufacture and market high-resolution graphics controller boards for computers and workstations with SCSI capability.

Autodesk, Inc.
320 Marinship Way
Sausalito, CA 94965
(415) 332-2344
Laura London, Marketing Communications Manager

AutoCAD®

AutoCAD is a general purpose drafting and design software package that runs on most 16-bit, and some 32-bit, desktop computers. AutoCAD has a rich assortment of features that enable architects, engineers and designers to create, edit and plot drawings of unlimited complexity. Its speed is enhanced by using the TMS34010. AutoCAD's open architecture and built-in AutoLISP® programming language allows easy customization, and more than 450 complementary applications have been created by third-party developers. AutoCAD is available in English, French, German, Italian, Japanese, Spanish and Swedish editions.

Hardware Required: IBM PC or other supported computer

Software Required: DGIS ADI driver from GSS

Availability: Now

Autodesk, Inc. develops, markets and supports a line of computer-aided design (CAD) software products for personal computers and 32-bit workstations. Products include AutoCAD®, AutoSketch®, CAD/camera® AutoCAD AEC® and AutoShade™. The company was founded in 1982 and has 325 employees worldwide.

Azure Group
P.O. Box 23035
Santa Barbara, CA 93121
(805) 687-8722
Ken Goldsholl, President

Consulting Services - Software/Hardware

The Azure Group provides custom hardware and software development services for all commercial and industrial applications which utilize the 340X0, or any other processor. Azure can develop a complete product that is ready for manufacturing, design and build test equipment, or assist in debugging a current design.

Bell and Howell Quintar Company
370 Amapola Avenue, Suite 106
Torrance, CA 90501-1475
(213) 320-5700; FAX (213) 618-1282
Craig Douglass, Vice President, Product and Market Development

BELL+HOWELL

Graphics Creator Card

The Graphics Creator card is an OEM controller product which incorporates the TMS34010 for high-performance desktop graphics. The controller provides high-resolution color display for use with popular business graphics packages and background processing to connected hardcopy devices, color printers and file recorders. The card accelerates output, yielding increased productivity for the user. It is fully VGA compatible and comes with an optional VGA daughter card. Resolution supported is 768 x 512 with 256 simultaneous colors from a palette of 16.7 million.

Hardware Requirements: IBM XT/AT, IBM PS/2 Model 30, Compaq 386 and compatibles
Software Included: Business Professional System, Presentation Express
Software Requirements: DOS 3.1 or higher
Availability: Now

Q-Script™

Q-Script is a retail/OEM product which provides PostScript® language compatibility and accelerated PostScript printing to a variety of laser printers. The controller board utilizes the TMS34010 GSP in conjunction with 3 MB of RAM to provide 35 downloadable fonts from Bitstream and additional printer functionality. Q-Script also provides users with HP LaserJet II, IBM Proprinter and Toshiba PL12 and P3215L emulations for use with non-PostScript applications.

Hardware Requirements: IBM XT/AT, IBM PS/2 Model 30, Compaq 386 and compatibles
Software Included: PhoenixPage PostScript emulation software, PCL emulation software, Quintar Printer Operating System and popular printer emulators
Software Requirements: MS-DOS 3.1 or higher
Availability: Now

Bell and Howell Quintar Company has been a leader in the high-resolution controller business since 1983, serving OEMs and retail customers in the desktop presentation, desktop publishing and document storage and retrieval markets.

Binar Graphics
4380 Redwood Hwy., Suite C15
San Rafael, CA 94903
(415) 491-1565; FAX (415) 491-1164

Binar Graphics

Consulting Services - Hardware/Software

Binar Graphics is a consulting company specializing in computer graphics software and hardware product development. The company's software division develops imaging applications, display drivers, firmware and product demonstration programs. Binar's hardware group designs display adapters for OEMs. The company's design services include 34010 and 34020 display adapters, emulation and graphics firmware, TIGA ports, Presentation Manager, Windows 286 and 386, AutoCAD Display List, X Windows, and many other application drivers.

Bitstream Inc.
Athenaeum House
215 First Street
Cambridge, MA 02142
(617) 497-6222
Bill Andrews, Director of Sales

Bitstream®

Fontware™ Installation Kits and the Fontware Library

Fontware is a software program that lets PC users make professional quality type in virtually all sizes for the most popular screen displays and printers, including the HP LaserJet family of printers and PostScript devices. Fontware Installation Kits work with Fontware Typeface packages (sold separately) to provide users with professional typographic quality and variety, flexibility in their choice of point size, and compatibility across a broad range of devices. Fontware uses the same high-quality typeface master as the source for both the screen and the printer fonts, so line endings previewed on screen will correspond to those on the printed page.

Bitstream offers two Fontware Installation Kits, one for Microsoft Window applications (such as Aldus PageMaker) and one for Ventura Publisher. The Fontware Library currently includes 20 typeface packages, each featuring four typeface masters.

Bitstream also licenses Fontware technology to OEMs and software developers for a variety of implementations, such as character quality enhancement in PostScript interpreters, and as a font supply strategy for printers, screen displays, desktop publishing systems and many other applications and environments. These companies will be releasing products that are Fontware-equipped or Fontware-compatible, giving users of those products access to the Fontware Library of typeface packages.

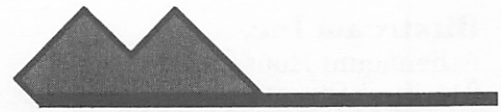
(For Installation Kits)

Hardware Required: IBM PC/AT or compatibles
Software Required: PC-DOS or MS-DOS (version 3.1 or later) and Microsoft Windows (1.03 or later) or Ventura Publisher (1.1)
Availability: Now

Bitstream Inc. is the original independent digital type foundry. Founded in 1981 by a prestigious group of typographic professionals, Bitstream has grown into a team of 85 expert type designers, software engineers, and marketing and support professionals. Bitstream currently supplies digital type and related software to more than 190 major hardware manufacturers and software developers throughout the world, and offers a library of over 750 typefaces, including Kanji and original designs commissioned by Bitstream.

Bitstream supplies digitized fonts in outline and bitmap form for a broad range of industries, and offers full custom editing and custom production services. As digital type has become a key element in a wider range of products, Bitstream has continued its role as an industry leader in typographic quality and innovative technology with the introduction of Fontware for OEMs, software developers and personal computer users.

Blueridge Technologies, Inc.
Flint Hill Square
P.O. Box 430
Flint Hill, VA 22627-0430
(703) 675-3015; FAX (703) 675-3130
Cady A. Soukup, Product Manager



Pixel Perfect

Document management software that offers image scanning, storage, retrieval and printing capabilities for the Apple Macintosh. Allows compression and storage of images in non-proprietary file formats using CCITT Group III, Group IV or LZW compression algorithms. Also provides fully integrated editing capabilities.

Hardware Requirements: Apple Macintosh II
Software Requirements: System 6.0
Availability: Now

Image Processing Board (IPB)

The IPB is a plug-in NuBus board designed to operate in the Apple Macintosh II environment as a raster image processor. Built around the TMS34010 Graphics System Processor, the IPB has space for up to 12 MB of RAM that may be user installed. Software for the IPB may be down-loaded, enabling it to perform rapid, accurate manipulations of raster images such as: image data compression and decompression, image rotation and clean-up, and de-skewing of images.

Hardware Requirements: Apple Macintosh II
Software Requirements: System 6.0
Availability: Now

Small Peripheral Board (SPB)

Similar to the IPB except that the SPB offers 8 MB of user-installable RAM. The SPB provides interfacing to Fujitsu M309x scanners and to the Ricoh LP-4081 laser printer.

Hardware Requirements: Apple Macintosh II
Software Requirements: System 6.0
Availability: Now

Greensheet Interface Board (GIB)

Similar to the boards described above. The GIB offers up to 8 MB of user-installable RAM and provides greensheet interface to Vidar 4200 scanners.

Hardware Requirements: Apple Macintosh II
Software Requirements: System 6.0
Availability: Now

Blueridge Technologies, Inc. specializes in the development and integration of state-of-the-art products for the rapidly growing document management industry. Blueridge products are used as modular building blocks for creating customized document management systems.

Randall S. Brown
7652 Ellis Avenue
Huntington Beach, CA 92648
(714) 842-5238

Consultant in Computer Graphics and TMS34010 Design

An independent hardware, firmware, and software consultant and contractor, Mr. Brown holds degrees in computer engineering, electrical engineering, and computer science. He has a number of years experience in all phases of graphics product development, including several years of TMS34010 design.

The following services are offered to developers of computer graphics products:

- Consultation regarding hardware and software architectures.
- Hardware design of TMS34010 based hardcopy and video controllers.
- Design and programming of device control and graphics rendering software for the TMS34010.

Application Areas

- Personal Computer Graphics
- Presentation Graphics
- Desktop Publishing
- Image Storage and Retrieval
- High Resolution Graphics Displays

Qualifications

Experience with the TMS34010 includes extensive design of both hardware and software:

Hardware Design:

- TMS34010 based laser printer controller/interface boards.
- TMS34010 based color thermal printer controller boards.
- TMS34010 based page scanner controller/interface boards.

Program Design:

- Real-time multitasking of the TMS34010.
- Font caching for fast placement of characters in a bitmap.
- Banding algorithms for hardcopy rasterization.
- Dither generation or hardcopy rasterization.
- Device drivers for control of printer and scanner interface boards.
- Graphics rendering routines for solid color and dithered primitives.
- Some experience with CCITT compression and decompression.

CADKEY, INC.
440 Oakland St.
Manchester, CT 06040
(203) 647-0220; FAX (203) 646-7120
Eric Holtman, Graphics Product Manager

CADKEY 3 Version 3.5

CADKEY 3 is a widely used, fully integrated 2-D and 3-D computer-aided design and drafting system for the personal computer. Features include a true 3-D geometric modeling system with 2-D drafting capabilities, CADL, DXF translator, multiple viewports, unlimited construction planes, conics, 3-D cubic parametric splines, mesh generation and more. Applications include mechanical engineering, tooling, architectural drafting and fabrication in the naval, aerospace and automotive industries.

Hardware Requirements: IBM PC, AT or Compatible, 640K memory, hard disk drive, mouse or tablet

Software Requirements: MS-DOS 2.0 or higher

Availability: Now

DataCAD 3.6

Computer Aided Design software created especially for the architecture, engineering and construction industries. DataCAD offers advanced drafting, design and databasing capabilities for personal computer users. The DataCAD AEC feature offers a sophisticated drawing tool to create windows, walls, floors and ceiling grids, stairs, elevators, bathroom fixtures and more. Other standard features include automatic and associative dimensioning; automatic door, window and wall commands; seamless 2-D/3-D design; hidden line removal; global editing; on-screen template symbols; 3-D symbols; built-in databasing; DXF file transfer; wide selection of fonts and application macros.

Hardware Requirements: IBM PC, AT or Compatible, 640K memory, hard disk drive, mouse or tablet

Software Requirements: MS-DOS 2.0 or higher

Availability: Now

CADKEY, INC. is a worldwide leader in developing, marketing, manufacturing and supporting productivity-enhancing 3-D CAD products in the manufacturing, government, education, UNIX and A/E/C markets.

CADworks Incorporated
222 Third Street
Cambridge, MA 02142
(617)868-6003; FAX (617)354-3057

DRAWBASE®

DRAWBASE is a powerful, affordable, multi-purpose micro-based CAD software product line that integrates 2-D drafting, 3-D design and database management capabilities. Release 106.2 includes a TIGA driver to allow support of all TIGA-compatible PC graphics boards.

DRAWBASE 2000

DRAWBASE 2000 is the CAD software program with drafting capabilities. The 2-D drafting functions contain such powerful features as construction guide lines, associative dimensioning, associative hatching and wall with automatic intersection cleanup.

DRAWBASE 3000

DRAWBASE 3000 includes the 2-D drafting function of DRAWBASE 2000 with 3-D viewing capabilities. The 3-D viewing includes 1-point, 2-point, 3-point, orthographics and axometric options as well as interactive walk-through and fly-around.

DRAWBASE 4000

DRAWBASE 4000 includes the drafting capabilities of DRAWBASE 2000 and a database management system. The database management system can generate reports such as cost estimates, based on graphic objects in the drawing. Changes in the drawing are updated automatically in the database manager.

DRAWBASE 5000

DRAWBASE 5000 is the complete CAD program that integrates each of the features of DRAWBASE 2000, 3000 and 4000 to provide drafting, design and database management capabilities.

DRAWBASE SHADE

DRAWBASE SHADE is the stand-alone software program that can remove hidden lines or shade any 3-D view created by DRAWBASE 5000 or DRAWBASE 3000. Use the palette to change the hue, saturation and intensity of colors used in the shade portion of the program. Any view can be saved as a slide and replayed in a "slide show" for presentations.

CADworks Incorporated (Continued)

DRAWMAC

DRAWMAC is application development software for the DRAWBASE line of CAD products which consists of a library of functions that can be used to create DRAWBASE CAD drawings. Applications that are developed with DRAWMAC are pre- or post-processors that operate independent of DRAWBASE CAD programs. DRAWMAC is intended to be used by those who are familiar with the "C" programming language. Applications that are developed with DRAWMAC can be used by anyone familiar with DRAWBASE.

For all DRAWBASE products

Hardware Requirements: 286- or 386-based computer
Software Included: TIGA Driver
Availability: Now

Cambridge Computer Graphics
33 Clifton Road
Cambridge CB1 4ZN
United Kingdom
(0223) 214444
Ms. Dale Petts, Marketing Director

CAMBRIDGE COMPUTER GRAPHICS

Xcellerator

The new Xcellerator board series provides major productivity advances in areas such as 2D and 3D CAD/CAM, Solid Modelling Simulation, Graphic Arts, Publishing and Technical/Data Analysis. The 20-inch 1024 x 768 high resolution, flicker-free screens give bigger, brighter and sharper images. 16 or 256 colour (from a palette of 16 million) and 8 grey-scale displays give a wide choice of painting and highlighting options. Our own Campaint program is a simple to use painting program offering drawing, brushing, filling text, line, circle and highlighting commands with a variety of output drivers. At the heart of the system is the Xcellerator Graphics incorporating the TMS34010. Built-in dedicated graphics and general purpose instruction sets make the controller a truly intelligent and programmable graphics subsystem. The Cambridge 34010 Programmers Toolkit offers a comprehensive library of Xcellerator Graphics functions together with a de-bugger, loader and executive which allow the development of complex graphics applications such as Image Processing.

Hardware Required: IBM PC/AT/XT or fully compatible
Availability: Now

Founded in 1983, Cambridge Computer Graphics is a fast growing, well established company at the forefront of innovative graphics display technology. Located in Cambridge, England—the heart of the computer graphics industry—the company designs and manufactures a wide range of high resolution colour and monochrome graphics displays, graphics controllers and applications software-all designed with a high level of functionality for CAD/CAM, Engineering, Graphic Arts and Publishing applications.

CGA Corporation
Daitokai Building
3-22-8 Meieki Nakamuraku
Nagoya, Japan 450
052-581-7271
Toshiro Ishihara, President

Advanced High Resolution Graphics Board

This board is configured almost the same as the TMS34010 Software Development Board, but has the following advanced functions for IBM PC/AT and NEC PC-9800.

- High speed spline, Bezier generator
- Overlay (character/graphics) for NEC PC-9800 series
- 1024 x 512 x 4 resolution (adaptable for 640 x 400 monitor)
- 16/4096 color palette (superimpose feature)

Availability: Now

Presentation Graphics Design Engine

This product offers the following features

- 1024 x 1024 x 8 resolution, 256/16.7M color palette
- Weitek floating-point processor (64 bit/20M FLOPS)
- Powerful commands for graphic design
- 3DPER (3-D perspective view)
- 3D perspective translation by viewpoint and direction parameters
- TEXTURE (texture mapping)
- High speed mapping to 3D modeling area
- Shading commands

Availability: Now

CGA Corporation is vigorously involved in the development of superior computer hardware and software. The staff includes the most highly qualified and experienced experts in the field of computer graphics and CAD/CAM. Among its products are graphics engines, utilizing digital signal processors implemented on PC add-on board systems. CGA has also produced graphics applications for the garment industry, automotive sewing and embroidery processes, as well as presentation graphics and image processing systems. CGA Corporation was founded in 1985.

Chroma ATE, Inc.
9F,88, Chienkwo N. Rd., Sec. 2
Taipei, Taiwan, R.O.C.
(02) 505-7055; FAX (02) 505-2276
Warren Chen, President

Chroma

AGA1024 Advanced Graphics Accelerator

The AGA1024 provides all PC users—whether XT, AT or 386 machines—with high-performance, high-resolution graphics capability beyond VGA cards or IBM 8514/A for CAD/CAM and other demanding graphics applications.

The AGA1024 offers a resolution of 1024 x 768 pixels with 256 colors out of a 16.7 million color palette, and supports both non-interlaced and interlaced monitors. Through the graphics interface AI and TIGA-340, it can support all major software packages.

Hardware Requirements: PC XT or AT 286/386 or compatible, interlaced or non-interlaced monitor with 1024 x 768 resolution

Software Included: Adapter Interface, TIGA-340 driver

Availability: Now

Chroma 2000 Programmable Graphics Generator

The Chroma 2000 is a video timing and graphics format programmable single source, designed to aid computer display monitor engineers in developing, evaluating, producing and inspecting CRT display devices. The Chroma 2000 offers a wide variety of display formats required by display monitor engineers. Features include: maximum display area of 2048 x 2048 x 8 planes, 256 colors at a pixel rate from 12.5 MHz to 200 MHz for all types of video output, horizontal sync signal ranges from 3 kHz to 100 kHz, vertical sync signal ranges from 1 Hz to 16 Hz. The Chroma 2000 comes as a stand-alone unit and also provides IEEE-488 and RS-232 bus for system integration.

Software Included: Dedicated software

Availability: Now

Chroma ATE was founded in 1980 in Taipei and is a test equipment and PC graphics board manufacturer.

Codonics, Inc.
17991 Englewood Drive
Middleburg Heights, OH 44130
(800) 444-1198 or (216) 243-1198
Michael Kolberg, Marketing Director

CODONICS
We bring the Future into Focus

Codonics 4096 Graphics Terminal

The Codonics 4096 monographic graphics terminal is the first DEC VT320/220/100, Tektronix 4010/ 4014 compatible terminal to produce lines without jaggies. The terminal has the ability to display a graphics image with an effective resolution of 16,000 x 12,000. Essentially, the terminal creates lines of the same width as those created by a 1024 x 1024 display, but it does so using multiple pixels of varying sizes. The result is that circular and diagonal lines can be drawn without any jagged edges. As an added benefit, the addressability of the Codonics 4096 is an actual 4096 x 4096. Endpoints can be positioned anywhere on the screen to within 1/4096 of the screen size in both axes. The increased accuracy is extremely apparent when drawing fonts and small details. Now lines can be positioned precisely where the application software intended them to be.

The Codonics 4096 communications interface is the most complete in its class. Standard features include: three bidirectional RS-232 serial ports, current loop, RS-422 and a Centronics compatible parallel printer port. Optional ports include a video interface, lightpen, and Ethernet interface with TCP/IP protocol.

Compaq Computer Corporation
20555 FM 149
Houston, TX 77070
(713) 370-0670; FAX (713) 374-2890

COMPAQ ADVANCED GRAPHICS SYSTEM

The COMPAQ ADVANCED GRAPHICS 1024 BOARD and the COMPAQ ADVANCED GRAPHICS COLOR MONITOR is a system primarily designed to meet the increasing needs of those computer-aided design/engineering (CAD/CAE) users who need higher screen resolution than VGA and improved performance.

The COMPAQ ADVANCED GRAPHICS SYSTEM provides high performance and enhanced graphics and text resolution for CAD/CAE, presentation graphics and business graphics, within the industry standard. The COMPAQ ADVANCED GRAPHICS SYSTEM, when configured with the DESKPRO 386/25 personal computer, is the fastest PC-based CAD system available from a single PC vendor.

The COMPAQ ADVANCED GRAPHICS 1024 BOARD provides five times the performance of 8514 and 16-bit VGA for faster AutoCAD pans, zooms, and redraws. The board utilizes the Texas Instruments 34010 Graphics Processor for faster screen updates, reduced wait time and increased productivity.

The standard COMPAQ ADVANCED GRAPHICS 1024 BOARD features 1024 by 768 resolution with 16 colors out of 16.7-million-color palette. The optional COMPAQ ADVANCED GRAPHICS MEMORY BOARD provides 256 simultaneous on-screen colors at 1024 by 768 resolution for display of shaded 3-D renderings and images.

The COMPAQ ADVANCED GRAPHICS 1024 BOARD and the COMPAQ ADVANCED GRAPHICS COLOR MONITOR are available through Authorized COMPAQ Computer Dealers.

Hardware Required: COMPAQ DESKPRO 386/25™, COMPAQ DESKPRO 386/20e™, COMPAQ DESKPRO 386/20®, COMPAQ DESKPRO 386s™, COMPAQ DESKPRO 386®, COMPAQ PORTABLE 386®, COMPAQ DESKPRO 286, COMPAQ PORTABLE III® or COMPAQ SLT/286™

Availability: Now

Composition Technology International
8618 OSO Ave.
Winnetka, CA 91306
(818) 700-8415
Ron Mintle, Owner

Geometric Primitive Algorithm (GPA)

A new high-level text definition language for generating bit-mapped type characters faster, with less disk storage and with high type quality has been developed in association with Composition Technology International. The new language generator is a significant advancement over outline to bit-map conversion routines. It resulted from more than five years of development to produce an efficient general purpose character generator that would provide typeset quality characters to the WSIWYG application area of the Desktop Publishing and Office Automation markets.

The Geometric Primitive Algorithm (GPA) character generator passes a stack of instructions to the generating algorithm through an off-line Font Compiler to produce characters of any size, shape or resolution in real time. GPA is a substitute for high level font descriptions, required for the creation of bit-mapped fonts by most digital typesetters and laser printers. Because GPA produces high quality fonts without stored bit-maps, text and graphics can be produced faster than conventional bit-mapped characters. This new technique also reduces disk space storage requirements. When loaded into a graphic controller, matrix printer or laser printer, the application program activates GPA with a parameter list indicating font height (point size), width (set width), weight and a host of other options, and the GPA returns a pointer to a bit-map of the desired character. Written in "C" programming language, GPA is available either as an object module, or on a co-processor board (with or without a Raster Image Processor, RIP). ROMs for a TI34010 chip will soon be available.

GPA is an alternative for WYSIWYG applications because it surmounts many of the disadvantages of stored bit-map generators. In addition to high speed font generation with high quality, GPA has no limits on the number of font styles or sizes it can generate and GPA takes very little storage space by comparison.

GPA can also modify font widths to emulate the fonts of other devices, GPA produces characters very fast and GPA cuts the cost of font royalties. Since GPA was designed to be incorporated into a variety of RIPs which can drive any number of devices with various resolutions without distortion, GPA is an attractive program for printer controllers, printers, engineering workstations, and systems serving the office automation and Desktop Publishing markets.

Hardware Required: TMS34010-based system
Availability: Now

CTI has been developing computer technology for the graphic arts and typesetting industries since 1984.

Compu-Tech Designs
15701 E. 1st Ave., Suite 206
Aurora, CO 80011
(303) 367-1963; FAX (303) 367-1968
Larry Heyl, President

Consulting Services - Hardware/Software

Compu-Tech Designs is a complete contract electronic product development service. Design capabilities include analog and digital circuit design, software development, printed circuit board design, and enclosure design.

Products developed for clients include a variable frequency frame capture and display board for the Amiga 2000 with "true color" capabilities at 8/16/32 bits per pixel. Compu-Tech also designed a custom low-end workstation to client specifications with the TMS34010 as the host processor. The workstation is used for intensive monochrome graphic displays and can also be used to perform database updates and maintenance.

Computer Presentations, Inc.
1117 Cypress Street
Cincinnati, OH 45206
(513) 281-3222; FAX (513) 281-3307

ColorLab 300/450™ Version 1.0

Windows ColorLab 300/450™ is a 1- to 24- bit scanning and image processing program designed specifically for the Sharp JX-300 and JX-450 color scanners on IBM AT, PS/2, and 100% compatibles. Operating under Microsoft® Windows™, ColorLab 300/450 gives you intuitive control over the scanning process with easy-to-use pull-down menus and commands for image acquisition, processing, and file output.

More importantly, ColorLab 300/450 overcomes the barrier between low-cost display devices and high-end color imaging with its proprietary Intelligent Color Emulation (I.C.E.™) display technology. I.C.E. provides a quality representation of true-color 24-bit images on standard VGA and supported EVGA display systems.

With ColorLab's state-of-the-art Optimized Palette Reduction (OPR™), you can creatively manage your images for final output, display, or inclusion in other application packages.

Hardware Requirements: IBM AT, PS/2 or 100% compatibles, 640K RAM, and mouse

Software Requirements: DOS 3.3 or higher, Microsoft Windows/286 (v2.1 or higher), and AT-GPIB or MC-GPIB interface

ColorLab ImagePrep Version 1.0

ColorLab ImagePrep™ is a stand-alone 1- to 24-bit image import, conversion and manipulation program for IBM AT, PS/2 and compatibles. ImagePrep runs under Microsoft Windows with powerful and easy-to-use software tools for: image import, image display, image conversion, image export and screen image capture.

With ImagePrep, you can import 1- to 24-bit images in a wide range of industry standard graphics file formats or capture images from the screen. Images acquired in either way can then be converted and/or processed to lower resolutions with ColorLab's OPR™ processing and prepared for display. ImagePrep supports VGA, EVGA, and 8514/A video displays. This allows virtually any IBM PC user to import, process and output high quality full color imagery.

Additionally, ImagePrep's bidirectional file support provides various options for importing and saving image files in a wide variety of industry standard file formats for export to other software applications and output devices.

Hardware Requirements: IBM AT, PS/2 or 100% compatible, 20 MB fixed disk, 640K RAM, and mouse

Software Requirements: DOS 3.3 or higher, Microsoft Windows/286 (v2.1 or higher)

Computervision, A Prime Company
Personal CAD/CAM Business Unit
100 Crosby Drive
Bedford, MA 01730
(617) 275-1800; FAX (617) 275-1800 ext. 4525
Nancy Middleton, Senior Product Specialist

COMPUTERVISION
A Prime Company

Personal Designer Version 3.2 and 4.0

Personal Designer is a sophisticated and comprehensive micro-based system for mechanical design, drafting and analysis. Personal Designer allows users to create engineering drawings, 3-D wire-frame and Bezier surface models, smooth high-resolution shading and finite element models. Personal Designer Revision 4, DOS-Extended Edition includes a new multiview capability which enables users to define and manipulate 2-D views of 3-D models. Revision 4 also introduced Model/Draw functions which enable the user to construct geometry and text as either model or draw entities.

Hardware Requirements: 80286 or 80386 CPU, 80287 or 80387 math co-processor, 20 MB hard drive

Software Requirements: DOS 3.x

Availability: Now

Computervision, A Prime Company, is a recognized world leader in the CAD/CAM industry. We provide CAD/CAM solutions for mechanical design, manufacturing, electronics and A/E/C applications on a variety of industry-standard hardware platforms ranging from PCs to workstations and mainframes. Our customer list includes some of the world's largest and most respected companies.

Coreco Inc.
6969 Trans Canada Hwy., Suite 113
St. Laurent, Quebec, Canada H4T 1V8
(514) 333-1301; FAX (514) 333-1388
Keith Ruben, Vice President, Engineering

COMPUTER-VISION
PRODUCTS AND SUPPORT

Oculus 500 Version 1.0

The Oculus 500 is a high-resolution image processor. Based on the TMS34010, the board is directed at the medical and high-end machine markets. Some of its main features include: programmable display 1280 x 1024, 60 Hz non-interlaced; 4 MB of frame buffer memory; four graphic overlay planes; 16-bit ALU for fast board processing; a flexible input processor for line scan, slow scan and standard video cameras; TMS34010 and 1 MB user memory; TIGA support. Resolutions supported include: 512 x 512, 640 x 480 x 2/4/8bpp, 1024 x 768 x 2/4/8bpp, 1024 x 1024 x 2/4/8bpp, and 1280 x 1024 x 2/4/8bpp.

Hardware Requirements: IBM AT or 386 compatible, video camera, high-resolution monitor
Software Included: Oculus 500 Driver OD5, TIGA driver source
Software Requirements: DOS 3.0 or higher
Availability: Now

Coreco was founded in 1979. The company is engaged in the design, manufacture and marketing of board level imaging products. Its products cover the spectrum from low-resolution DTP to high-resolution medical imaging products.

COSMO ELECTRONICS Co., Ltd.
1520 Kozukue-Chou Kouhoku-Ku
Yokohama, Japan
(045) 473-5112
Shouku Yanasawa, President

COSMOS34010 Graphics Board

COSMOS34010 graphics board is specially designed for use in NEC PC-9801 expansion slot. It offers resolution of maximum 1120 x 750 x 4 (16 colors selected from a 4096-color palette) and compatible with PC-9801XLs high resolution mode. It also supports 1024 x 768 or 640 x 400 pixel display with 256 colors selected from 262,144 total colors.

The COSMOS34010 board is an ideal OEM board for developing CAD/CAM, high-resolution real-time animation computer graphics, desktop publishing, laser printer, and digital copy applications.

COSMOS34010 graphics board uses 50 MHz clock for TMS34010 and has 768K bytes VRAM (1024 x 768 x 8 or 2048 x 768 x 4) and 1M bytes DRAM. It also includes a debugger, and source code demonstration software. Application software support includes AUTOCAD EX-II, and HOOPS (Ithaca software). The board also supports the MS-C and Lattice-C graphics libraries.

Hardware Required: NEC PC-9801 VM/VX, XL/XL2
Availability: Now

COSMO ELECTRONICS was founded in 1982 and has 30 engineers.

Creative Computing, Inc.
1269 Mossy Oaks Court
Virginia Beach, VA 23454
(804) 481-0886
James A. MacDonald, President

TI 340x0 Development Services

With over twenty years experience in a wide range of computer systems and applications, Creative Computing, Inc. offers the expertise necessary to meet demanding design schedules.

Project experience includes:

- Experienced in TI 340x0 including TI 34010 SDB, device drivers, hardware/software interfaces, imaging, graphics, frame grabbers and video.
- Extensive experience in microcomputer systems including IBM PC, MAC, 80x86 and 680x0.
- Experienced in languages and operating systems including C, assembly, DOS, Windows and UNIX.
- Experienced in software development methodologies including commercial, DOD-STD, NASA and CASE.
- Experienced in applications including microcontroller, realtime, simulation, optical disk, data acquisition and control.

Current Technology
99 Madbury Road
Durham, NH 03824
(603) 868-2270; FAX (603) 868-1352
D.C. Current, President
Mark Ellsworth, Sales Manager

DC 1024 VME Bus Graphics Controller

The DC 1024 is a VME Bus TMS34010 color graphics controller. The DC 1024 comes in a 6U form factor design and features a 60 MHz TMS34010 processor. Other features include: support for up to 1024 x 768 resolution, 768K VRAM, 2 MB DRAM with an additional 2 MB on-board (4 MB total), mono through 256 color support, P1 and P2 connectors, IBM-style keyboard interface and RS-232 serial port.

Hardware Requirements: VME Bus host

Software Included: X.11 and UNIX drivers, TI development tools and TIGA driver available as options

Availability: June 1990

Current Technology specializes in providing graphics co-processor solutions for the VME marketplace. Many companies offer a high-performance VME Bus graphics card, but with a very expensive price tag. Current Technology offers a high-performance VME Bus TMS34010-based graphic controller at an affordable price.

Daewoo Telecom Co., Ltd.
Inchon Sau-Gu Ga Jwa-Dong 531-1
Inchon, Korea
(02) 771-35; FAX (02) 756-1225
Sung Kyou Park, President

High-Performance Graphics and Imaging System

The High-Performance Graphics and Imaging System is designed to be implemented on the NeXT computer system or the MCA/EISA-based personal computer. The system board set and software libraries will transform these computers into an inexpensive imaging and graphics workstation with processing performance currently available only in much higher-priced workstations. The High-Performance Graphics and Imaging System with all four co-processors increases processing power. Target applications include telecommunications, office automation, medical applications, scientific applications and visualization in scientific computing, military applications and graphics applications. Resolution is available at 1280 x 1024 x 32/24bpp.

Hardware Requirements: NeXT computer or MCA/EISA-based personal computer

Software Included: Communication drivers and a software library including graphics primitives and image processing primitives

Availability: December, 1990

DT-9420 Color Graphics Terminal

The DT-9420 Color Graphics Terminal offers DEC, DEC ReGIS and Tektronix 4010/4014 emulations with enhanced performance. Operating at a resolution of 800 x 500 x 4bpp, the DT-9420 offers VT340 compatible alphanumeric features and was designed to dramatically increase the throughput by multi-processor architecture. The DT-9420 offers complete communications interface and includes two bi-directional RS-232 serial ports and a 20mA current loop. Tablet and mouse input devices are optionally available.

Availability: Now

Daewoo Telecom Co., Ltd produces computers, telecommunication devices, switching systems, carrier systems, optical fibers, telephone sets, O/A products and semiconductors. Daewoo Telecom is a member of the Daewoo Group.

DeLorme Mapping Systems
P.O. Box 298, Lower Main St.
Freeport, ME 04032
(207) 865-4171
Carey Gersten, Director of Marketing

DELORME
Mapping Systems

DeLorme Real-Time Mapping System

The "DeLorme Real-Time Mapping System" is a sophisticated, microcomputer based, spatial data management and display system that uses the TMS34010 Graphics System Processor for fast display capability.

Users can view map information from any part of the worldwide database graphically on a monitor by either entering latitude/longitude coordinates and a level of zoom (or scale) on the keyboard or by "flying" to that location in the "step-zoom" mode using consecutive clicks of the mouse. Once a location has been chosen, DMS software determines the necessary data needed to fill the entire view window and draws the map information on the monitor. The speed of this entire process is achieved through an extremely efficient spatial database manager and data structure. Additional speed is accomplished through the use of a state-of-the-art graphics controller board.

Map editing software allows for changes and updates to be made easily on magnetic media. Vectors, symbols and text may be entered in a number of orientations, sizes, and colors. A high resolution color raster output device can be added to the system for hardcopy at any scale with an optional grid overlay. A device independent data structure allows for flexibility in both hardware and software upgrades.

Hardware Required: IBM AT; 386; IBM Model 80 with 1 MB RAM; High resolution (at least 640 x 480) color monitor; Graphics Controller Board; 30 MB Hard drive; Mouse; CD-ROM or WORM drive

Software Required: DeLorme's Digital World Atlas on CD-ROM; Proprietary DeLorme Mapping Systems Software

Availability: Now

DeLorme Mapping Systems is the publisher of the first digital World Atlas on a compact disc and produces vector and raster based geographic databases drawn from its extensive worldwide database. DeLorme offers a complete range of mapping services and systems for government and business applications, with emphasis on high-speed map display and editing systems that are tailored to user specifications and operate on microcomputers. DeLorme was founded in 1976 and has 110 employees.

Design Computation, Inc.
Rt. 33, Sherman Square
Farmingdale, NJ 07727
(201) 938-6661; FAX (201) 938-6662
Charlene Hamami, Vice President, Sales

DESIGN COMPUTATION

DC/CAD

DC/CAD is an end-to-end CAD package for printed circuit board design. The package includes schematic capture, PCB layout with parts autoplacement, 1-mil, diagonal autorouter with ripup and retry, rat's nest and netlist generators, extensive component library, 2-way DXF support and 2-way GERBER support. Supports single, double and multilayer designs with both surface mount and through-hole technologies. Also has EMS support. DC/CAD enhancements include auto-ground plane support, enhanced speed and 386 in supported mode. Options include foreign netlist converters (i.e. OrCAD, Calay and more), simulation programs and interfaces and printing programs. 24-hour-a-day, 7-day-a-week, electronic bulletin board is available to all users.

Hardware Requirements: IBM PC or compatible, 1 hard disk and 1 floppy drive, video graphics capability, 1 parallel printer port, 1 serial port if plotter is to be used, 640K memory, numeric co-processor recommended

Software Included: TIGA driver sources

Software Requirements: MS-DOS

Availability: Now

Design Computations, Inc. develops and markets high-performance, PC-based CAE/CAD/CAM software used for design and layout of printed circuit boards. Customers range from leading electronics firms to small service bureaus throughout the world.

Desktop Computing, Inc.
2635 North First Street, Suite 203
San Jose, CA 95134
(408) 943-9409; FAX (408) 943-8221
K. Clive Lui, President

AGA 1024™ 16-bit ISA PC Graphics Board

AGA 1024, an 8514/A, TIGA and DGIS compatible high-resolution PC graphics board for ISA bus, offers a very fast Windows 286/386 environment and supports Display List Processing for use with the AutoCAD and other CAD/CAM applications. The AGA 1024 comes standard with a full megabyte of high speed video RAM, 256K of DRAM, and the TMS34010 Graphics Processor. It displays 256 colors out of a 16.7 M palette at 1024 x 768, both interlaced and non-interlaced. A version of the AGA 1024 refreshed at 70 Hz frame rate, non-interlaced, is also available. The AGA 1024 has a VGA pass-through connector and allows maximum choices of monitors suitable for your budget.

Hardware Requirements: IBM PC/XT/AT or compatible machines; 386/486 ISA machines. Monitor: IBM 8514, 8507, 8512, 8513 monitors and compatibles; all NEC, Nanao, Mitsubishi etc. fixed, dual or multi-sync monitors capable of 31-49 kHz analog.

Software Included: 8514 AI, TIGA, DGIS interface software; AutoCAD display list driver; Windows 286, 386, Ventura/GEM and GSS*CGI drivers

Software Requirements: MS-DOS version 2.0 or higher

Availability: Now

Ultimate Graphics Accelerator (UGA 1664™)

The UGA product line provides very-high-resolution video display accelerators for professional graphics users. It offers the maximum range of adaptability for different features and price requirements. The board is based on the 60 MHz TMS34010 with a modular program memory for different needs (512K - 2 MB). The resolution ranges from 1664 x 1280, 1280 x 1024 to 640 x 480 with 2, 4, 8 or 24 bits per pixel.

Hardware Requirements: IBM PC/XT/AT or compatible machines; 386/486 ISA machines

Software Included: 8514 AI, TIGA, DGIS interface software; AutoCAD display list driver; Windows 286, 386, Ventura/GEM and GSS*CGI drivers

Software Requirements: MS-DOS version 2.0 or higher

Availability: Second quarter 1990

Desktop Computing, Inc. (Continued)

Desktop Studio™

Desktop Studio is an image editing and business art program designed to work with the popular AGA 1024 high resolution PC graphics board. The program is of interest to artists, graphic designers and other business professionals who require sophisticated graphic and artistic images and designs from their PC.

The user can select up to 256 colors from the available 16.7 million for each painting. Because of the high resolution of the AGA 1024 board, the artist can generate studio quality artwork by controlling his design in a pixel to pixel process.

Hardware Requirements: IBM PC/XT/AT or compatible machines; 386/486 ISA machines.
Monitor: IBM 8514, 8507, 8503, 8512, 8513 monitors and compatibles; all NEC, Nanao, Mitsubishi etc. fixed, dual or multi-sync monitors capable of 31-49 kHz analog.

Software Included: TIGA driver

Software Requirements: MS-DOS version 2.0 or higher

Availability: First quarter 1990

Hummingbird™

Hummingbird, the smallest, RAM resident, full-featured database program that is 100% compatible with dBASE, is very user-friendly and manages graphics data. Hummingbird makes creating, finding, displaying and editing dBASE data fast and easy. It also allows for creating, maintaining, storing and retrieving all kinds of graphical data. With Hummingbird, users can incorporate any information such as personal notes, business cards, memos, faxes, reference materials, documents, engineering drawings etc, whether they are on paper or as computer files into the database.

Hardware Requirements: IBM PC/XT/AT or compatible machines; 386/486 ISA machines.
Monitor: monochrome, CGA, EGA, VGA and multi-sync monitors.

Software Included: Hercules, CGA, EGA, VGA, 8514/A, TIGA, DGIS drivers

Software Requirements: MS-DOS version 2.0 or higher

Availability: Second quarter 1990

Desktop Computing, Inc.—the graphics solution company—designs, develops and markets a family of advanced graphics accelerators and a series of image database systems for graphics demanding users. The company distributes its products through major OEM agreements, and authorized distributors and dealers internationally.

Digital Equipment Corporation
Maynard, MA 01754-2571
1-800-DIGITAL

VT1000

The VT1000 X windowing terminal completes the Digital Equipment line of desktop, windowing computing solutions. The VT1000 terminal is based on the TI TMS34010 50-MHz CPU and is Digital's lowest cost video display supporting both DECwindows and X Window applications. It is a monochrome, multiwindowing, X windowing terminal that brings workstation presentation features and standard user interface capabilities to user desktops at a low cost.

With the VT1000, the user can concurrently work with both windows-based applications and text-oriented applications in the terminal display windows. Window sessions can communicate with VMS-, ULTRIX- and UNIX-based host systems over LAT and/or TCP/IP network transports, supporting multiple networking standards and open systems computing.

The VT1000 screen resolution is 1024 X 864 pixels, supporting the display of DECwindows, OSF/Motif, and "X" window applications. Local VT320 terminal extended functionality and a window manager provide full visual integration of existing text applications without the need for host resident client software or changes to existing text applications.

Monitor support includes monochrome 15" and 19" diagonal sizes, as well as Digital's exclusive flat panel 19" monitor based on electroluminescent technology.

Digital Equipment Corporation, headquartered in Maynard, Massachusetts, is the leading worldwide supplier for networked computer systems and services. Digital offers a full range of computing solutions and systems integration for the entire enterprise — from the desktop to the data center.

Digital Research Inc.
70 Garden Court, Box DRI
Monterey, CA 93942
(408) 649-3896; FAX (408) 646-6248
Mary Looram, Public Relations Coordinator

DIGITAL RESEARCH®

GEM Desktop Publisher

GEM Desktop Publisher is an easy-to-use page composition application that's ideal for producing a wide variety of professional-quality publications. GEM Desktop Publisher allows users to create brochures, custom forms and reports without the tedious task of cutting and pasting or the expense of typesetting.

Hardware Requirements: IBM PC/XT/AT/PS2 or compatible with 640K memory and hard disk; EGA, VGA, Hercules, TIGA-340 and many other graphics hardware screens

Software Included: Driver pack available on update pack, call toll free (800) 443-4200. Source code available through license agreements.

Software Requirements: PC DOS, MS-DOS version 3.1 or higher, DR DOS, Concurrent DOS

Availability: Now

Draw Plus 2.0

Draw Plus is a fast and easy drawing solution for producing a wide range of diagrams, charts and forms from simple schematics to complex architectural drawings. An element-based graphics drawing program, Draw Plus allows the user to transform ideas into creative, colorful illustrations with ease.

Hardware Requirements: IBM PC/XT/AT/PS2 or compatibles, 640K memory, hard disk

Software Included: Driver pack available on update disk, call toll free (800) 443-4200. Source code available under license agreement.

Software Requirements: PC DOS, MS-DOS 3.1 or higher, DR DOS 3.x or higher, concurrent DOS

Availability: Now

Artline Version 1.0

Artline is a full-featured illustration package that allows business and graphics professionals to create or enhance documents, presentations or graphics designs. Artline is ideal for a wide variety of graphics artists such as magazine and book illustrators, cartoonists and technical illustrators. All the tools needed to create sophisticated graphics easily, quickly and intuitively can be found in Artline.

Hardware Requirements: IBM PC/XT/AT/PS2 or compatibles, 640K memory, hard disk

Software Included: Driver pack available on update disk, call toll free (800) 443-4200. Source code available under license agreement.

Software Requirements: PC DOS, MS-DOS 3.1 or higher, DR DOS 3.x or higher, Concurrent DOS

Availability: Now

Digital Research Inc. (Continued)

Presentation Team 1.1

Presentation Team is the complete solution for managing, creating and producing high-quality presentations on 35mm slides, overhead transparencies, screen shows or printed copy. Users can choose from many professional pre-designed wordchart templates, graph styles and clip art to increase their productivity in creating great looking presentations. Presentation Team offers all the tools needed to easily combine text charts, graphs and drawings with professional results.

Hardware Requirements: IBM PC/XT/AT/PS2 or compatibles, 640K memory, hard disk

Software Included: Driver pack available on update disk, call toll free (800)443-4200. Source code available under license agreement.

Software Requirements: PC DOS, MS-DOS 3.1 or higher, DR DOS 3.x or higher, Concurrent DOS

Availability: Now

ScanXpress version 1.0

ScanXpress is a user-friendly utility program that simplifies user access to all the features of the latest color, gray-style, and black and white scanners. Custom menus highlight the unique capabilities of each scanner through an extensible graphical interface. ScanXpress provides high-performing and accurate scanning capabilities, key image-editing features, and the ability to print images or save them in .TIFF, .PCX or .IMG formats. This feature allows users to incorporate scanned images in documents and presentations available in leading desktop publishing and graphics products. Images can be further manipulated in full-featured paint and image-editing packages.

Hardware Requirements: IBM PC/XT/AT/PS2 or compatible with 640K memory and hard disk; EGA, VGA, Hercules, TIGA-340 and many other graphics hardware screens

Software Included: Driver pack available on update pack, call toll free (800) 443-4200. Source code available through license agreements.

Software Requirements: PC DOS, MS-DOS version 3.1 or higher, DR DOS 3.x or higher, Concurrent DOS

Availability: Now

Digital Research Inc. is a leading software company headquartered in Monterey, California. The company provides system software and graphics applications for business, commercial and industrial microcomputer use. Digital Research provides graphics applications and graphic extensions to both industry standard and alternative microcomputer operating systems.

Digital Resources
6218 Quartz Ave.
Alta Loma, CA 91701
(714) 980-9473; FAX (714) 987-8099
Steve Blair

DIGITAL RESOURCES

Software, Circuit and Systems Design

Consulting Services-Hardware

Digital Resources provides engineering services to companies engaged in product development of microcomputer related products. Areas of expertise encompass PC/AT and PS/2 architecture, TMS34010, TIGA-340, DGIS, IBM 8514/A, VGA and other video-related subjects.

DIPIX Technologies Inc.
1050 Baxter Rd.
Ottawa, Ontario, Canada K2C 3P1
(613) 596-4942; FAX (613) 596-4914
R.G. Dixon, Manager, Canadian Sales and Marketing

Aries 4000 Turnkey Imaging System

The Aries 4000 is a complete hardware and software package for image processing. The system is a display subsystem that includes: bulk memory architecture (up to 512 M) with no bit planes, 1280 x 1024 resolution on monitor, floating point processing, 24-bit color images plus 8-bit graphic overlays, raster and vector data handling, roam and zoom of any image in any selected window, full remote sensing image processing software integrated with a GIS, programming in "C", UNIX and XWindow compatability, AT and VME Bus compatibility. The Aries 4000 allows images greater than 1280 x 1024 x 8 bits per RGB channel to be displayed without decimation.

Hardware Requirements: IBM PC/XT/AT/PS2 or compatible, SUN VME

Software Included: Various image processing tasks more specifically oriented to remote sensing and GIS data. Software to support various input devices such as tablet and photo digitizers and to support various output devices such as film recorders and electrostatic plotters.

Software Requirements: UNIX, X Windows

Availability: October, 1990 to March, 1991

DIPIX specializes in advanced display and processing technology for image analysis. The company manufactures an innovative line of electronic display systems and image analysis systems, together with an extensive library of software packages which support both image processing and a wide array of applications.

Doctor Design, Inc.
5415 Oberlin Drive
San Diego, CA 92129
(619) 457-4545; FAX (619) 457-1168
Craig A. Schmidt, VP Business Development

DOCTOR DESIGN
Electronic Design Solutions

Consulting Services - Hardware and Software

Doctor Design is an industry recognized high technology design and development organization with primary focus in graphics controllers (displays, terminals and page printers), high-speed microprocessors and memory systems (RISC, CISC, DRAM and Cache), and communications products (datacomm, telecomm, infra-red, SCA and FDDI). DDI specializes in providing the timely integration of advanced electronics into reliable, high-performance customer solutions. In addition, DDI provides supporting services including Application Specific I/C (ASIC) design and development and manufacturing services. The company offers three unique business/financial relationships including "leveraged N.R.E." contracts reducing the customer's development fees. Since their conception in 1984, DDI has successfully completed over 200 programs. Areas of expertise include complete 34010 graphics hardware and software programs on very aggressive schedules with price and schedule guarantees.

DOME Imaging Systems
20 Powdermill Road
Maynard, MA 01754
(508) 897-3144; FAX (508) 897-1788

DOME Software Library

DOME Software Library provides a clean, efficient, and flexible environment, designed to aid in creating new software applications for the Rx hardware and importing existing products to the boards.

The DOME Software Library consists of a set of C and Pascal-callable routines, designed to help programmers get their software packages up and running as quickly as possible, while providing complete access to the hardware's capabilities. Much of the code runs on the Rx's on-board Texas Instruments 34010 graphics processor, providing a wide variety of high speed graphics primitives, cursor and font handling routines, and palette and memory management functions.

In addition, it allows software developers to write applications-specific TI 34010 functions, load them to the Rx board's instruction memory, and run them with the DOME Software Library routines.

The DOME software comes with an extensive set of sample software, and custom software services for OEM customers are also available.

DOME Rx Series

The DOME Rx Series of gray scale and color imaging adapters is designed for IBM PC/ATs & compatibles, with advanced features that make them ideal for medical imaging and other demanding image processing applications.

The Rx boards feature the TI 34010 graphics system processor, with up to four megabytes of on-board instruction memory. They support resolutions of 1280 by 1024 (landscape) and 1024 by 1280 (portrait) pixels at 8, 12, or 16 bits per pixel.

Other features include: 5 independent gray scale look-up tables, fast image download capabilities, up to 5-bit overlay and an extremely flexible hardware design for OEM customizations.

Hardware requirements: IBM PC, AT compatibles

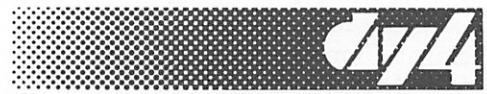
DOME Imaging Systems is a privately held corporation in Maynard, MA. DOME was incorporated in 1989 and is committed to providing superior graphics platforms through its extensive hardware and software expertise.

DWB Associates, Inc.
14968 N.W. Greenbreir Parkway
Beaverton, OR 97006-5733
(503) 629-0652; FAX (503) 629-0654
Jeff Erwin, President
Pete Grillo, Vice President, Engineering

Consulting Services - Software

DWB Associates is an engineering consulting firm specializing in leading-edge software development. The organization has been providing programming, design and project management services to national and international companies since January, 1982. Skills and services cover most aspects of graphics programming and driver development for a wide variety of hardware and software products such as: TMS34010 assembly; DGIS, GSS*CGI and other graphics programming; Apple Macintosh/QuickDraw printer drivers; Intel 80960 KB and MC embedded graphics print engine; Microsoft Windows and Presentation Manager; "C", ASM86/286/386, PLM86/286; OS/2 and IBM PC/MS-DOS programming and device drivers, LAN device drivers and protocol implementation, UNIX programming, real-time process control using RMK & VRTX, systems and software design, ports, evaluation and testing. DWB Associates has made professional, top-quality work, accurate documentation and dependable scheduling commitments its trademarks.

DY-4 Systems Inc.
21 Credit
Nepean, Ontario, Canada K2H 9G1
(613) 596-9911
Mark Deley



SVME 780

The SVME 780 is an intelligent, high-resolution VMEbus graphics display controller based on the TMS34010 Graphics System Processor. Its on-screen memory is organized as 1280 x 1024 x 8 driving the display at 60 Hz, non-interlaced. Up to 256 colors can be displayed simultaneously from a palette of 4096. The video output is RS-343A compatible.

The board has 512 KB of local DRAM for program storage with 128 KB (256 KB paged) of local nonvolatile EPROM memory. The SVME 780 has its own self-test diagnostics, BITE (Built-in-Test Equipment). There is also a RS-232/422 serial port supported on-board. The SVME 780 supports the following VMEbus features:

VMEbus slave interface (A16, D16, D08)
Location Monitor
BI-Mode (Board Isolation Mode)
VMEbus Interrupter
VSB Interface

Hardware/Software Required: VME Bus, P1014 Compatible
Available: Now

DY-4 Systems Inc. was founded in 1979. The company is engaged in the design, manufacture and marketing of board level products and systems compatible with the 32-bit industry standard, VMEbus open systems architecture. DY-4 is headquartered in Nepean, Ontario, Canada with sales offices in Campbell, CA, Westford, MA and Hammel, Denmark.

Electronique Serge Dassault
55 Quai Marcel DASSAULT
Saint Cloud, France 92214
(1) 34 81 50 21; FAX (1) 30 54 76 01
Mr. Rousselot or Mr. Borel

Graphics Multicompatible (GMC) Board

The GMC board is an intelligent video display controller that offers both very-high-resolution (up to 1600 x 1280) and full VGA compatability. The GMC board supports a large selection of monitors and the on-board Paradise PVGA1 offers compatability with a bysync monitor, allowing the user to run the wide array of software written for the IBM PC/AT. Two processors, the Intel 80C186 and the TMS34010, work together on the GMC board, boosting the system performance by freeing the host CPU from graphics processing tasks.

Hardware Requirements: IBM PC/AT or compatible or any UNIX system with an AT bus

Software Included: Drivers for DOS: DGIS 2.01, MS-Windows 286/386, GEM, Ventura Publisher and AutoCAD 10, UNIX: X Windows and CGI

Software Requirements: MS-DOS 3.XX or higher or UNIX V.3 or higher

Availability: Now

Electronique Serge Dassault specializes in the manufacture of high technology equipment for defense applications and has been active for more than ten years in the field of graphics workstations.

Electroteq Corporation
2955 Golfside Drive
Ypsilanti, MI 48197
(408) 453-1640
Mark Novak, President
Diana Lowe, Marketing Manager

ELECTROteq corporation

Electroteq offers hardware and software design services based on the TMS34010. Electroteq is well qualified to perform these services as Electroteq personnel are named on more than a dozen patents on the TMS34010, TMS34061, and the TMS4161 Video RAM. In addition, Electroteq has several years of graphics programming experience at the graphics interface level. Electroteq offers a complete computer graphics product development service under a single roof. The company can take a design from concept to a complete product in production with all the software and documentation necessary.

Computer Graphics

Development of computer graphics architectures
Design of computer graphics integrated circuits
Design of computer graphics hardware
Programming of computer graphics systems
General consulting in the computer graphics field
Specific Projects include:
- Design of several TMS34010 based high resolution graphics boards
- Development of the internal microcode for a state of the art custom graphics chip
- Development of the algorithms used by the 34010 to draw lines and arcs

Digital Hardware Designs

Design of several VME, Multibus II, and IBM PC/AT boards
Design of a TMS34010 based system for displaying real time processed images
Design of a semi-custom chip to emulate most of the integrated circuits on an IBM PC Monochrome Adapter Card

Software, Contracting

Development of the Graphics Function Interface, a graphics interface program for the TMS34010, and writing of a function level simulator.

ELSA America, Inc.
400 Oyster Point Blvd., Suite 109
South San Francisco, CA 94080
(415) 588-6285; Outside California (800) 272-ELSA
FAX (415) 588-0113; Bulletin Board (415) 588-6286
Walter Haefeker, President

XHR Gemini Graphics Controller Software

Combined with one of the Gemini graphics boards listed below, the XHR Gemini is a complete graphics enhancement system. The performance of XHR Gemini is achieved by a dedicated high-speed TI graphics processor to relieve the host CPU of time consuming graphics tasks. The 34010 Graphics Processor from TI provides 6 MIPS graphics throughput for vector drawing and on-board display list processing. The highly integrated hardware and software of the XHR Gemini provide the maximum balance of processing power between both processors. ELSA XHR Gemini features up to 4.5 MB on-board 32-bit display list memory in MegaBit technology, eliminating the need for time-consuming access of the PC's main memory.

Gemini Series 2 GTL Graphics Board

Built around the TMS34020, the Gemini GTL is ELSA's top-of-the-line PC graphics board. It offers resolution of 1024 x 768 x 4/8bpp, 1280 x 1024 x 4/8bpp and 1600 x 1200 x 4/8bpp.
Availability: April 1990

XHR Gemini 174 Graphics Board

The Gemini 174 offers resolution of 1600 x 1200 x 4bpp, allows 16 colors out of a possible 4,096 and provides 12 MBit/1.5 MB frame buffering.
Availability: Now

XHR Gemini 118 Graphics Board

The Gemini 118 offers resolution of 1280 x 1024 x 8bpp, allows 256 simultaneous colors out of 4096 and provides 12 MBit/1.5 MB frame buffering.
Availability: Now

XHR Gemini 114 Graphics Board

The Gemini 114 offers resolution of 1280 x 1024, allows 16 colors out of a possible 4,096 and provides 8 MBit/1.5 MB frame buffering.
Availability: Now

ELSA America, Inc. (Continued)

XHR Gemini 644 Graphics Board

The Gemini 644 offers resolution of 1024 x 768 x 4bpp, allows 16 colors out of a possible 262,144 and provides 4 MBit/512K frame buffering.

Availability: Now

For all XHR Gemini Graphics Boards

Hardware Requirements: IBM PC/XT/AT/PS2 or compatibles

Software Included: Drivers for several applications including AutoCAD, P-CAD, CADKEY, CASE, CADDY, ComputerVision, DGIS, TIGA and VersaCAD are available

Software Requirements: IBM PC DOS or MS-DOS 2.1 or higher

ELSA GmbH is a privately held communications and graphics company in Aachen, West Germany. They have doubled in sales and revenues each year since 1985. ELSA America was opened to address the U.S. demand for higher performance graphics capability.

EMS Systems Ltd. (ACS Division)
1325 Capital Parkway
Carrollton, TX 75006
(214) 446-2900 or (214) 242-0884; FAX (214) 245-1559
Kris Murthy, Vice President

GRAPHMAX 10DP Hires Graphics Controller Card

The GRAPHMAX 10DP has the unique combination of three important features: 1664 x 1200 resolution, four shades of gray and the abundant power of the TMS34010 Graphics Processor. These features allow true WYSIWYG display of documents with even the tiniest print clearly readable, making it ideal for desktop publishing. It is supplied with a DGIS Driver which provides a direct path to the Graphics Processor for hundreds of applications based on numerous graphics software environments. Applications supported include: Windows, GEM, Pagemaker, Ventura etc. Important features include: I/O device address allowing coexistence with EGA/VGA cards, 640K video memory up to 1 MB DRAM for program/data storage, ECL output with analog option due in June of 1990 and 60 Hz vertical/75 kHz horizontal frequency with an optional 70 Hz/87 kHz.

Hardware Requirements: PC/AT Bus standard systems

Software Included: Drivers for DGIS, Windows, GEM and supports all DGIS compatible software

Software Requirements: MS-DOS

Availability: April 1990

EMS Systems Ltd. (ACS/DSP/EMS Division) designs and manufactures high-performance PC, Datacom and VME products such as PC motherboards, graphics controller cards, 55/64 kbps "Speedlinx" communications subsystems for wide area digital connectivity applications for PCs and VME bus interface controller chips and CPU boards.

Enertronics Research, Inc.
#5 Station Plaza
1910 Pine Street
St. Louis, MO 63103
(314) 421-2771
Steve Andes, President

ENERTRONICS

ACER 8221

ACER 8221 is a high performance add-on card graphic CRT controller. It may be used in the IBM PC/XT, PC AT, ACER 710, 900, 910, 1100 and compatible personal computers. Functionally, ACER 8221 is compatible with the IBM Personal System/2 Display Adapter 8514/A. ACER 8221 also provides IBM Adapter Interface (AI) compatible software on-board and other high performance graphic operations.

The ACER 8221 with the TMS34010 provides a resolution of 1024 x 768 (or 640 x 480) and provides 256 colors from a palette of 256K. The ACER 8221 can drive any new IBM analog monitor or a TTL RGB monitor.

AI/TMS34010

This firmware product interfaces to the TMS34010 graphics processor to emulate all of the functions of the IBM 8514/A graphics adaptor board. The Enertronics firmware with the TMS34010 provides full compatibility with the 8514/A graphics board giving a screen resolution of 1024 x 768 (or 640 x 480) with 256 colors from a palette of 256K. Support for all 59 graphic functions such as line segment, fill, marker, bitblt, text, etc., is provided. Also, the AI/TMS34010 product provides a number of features not available with the 8514/A. First, it can be designed as an add-on board for both the PC/XT/AT and for the Personal System/2 whereas the 8514/A can't be used with the PC/XT/AT. Also, special graphic entities such as circle, thick line, and true vector fonts are just some of the features provided exclusively by the Enertronics AI/TMS34010 product. These additional features enhance the utility of the product for applications such as Desktop Publishing, Presentation Graphics and CAD.

Enertronics has ported its AI product to two boards, one manufactured by Multitech Industrial Corp. and the other by Trident Micro Systems. Both boards use the TMS34010 graphics processor. Other OEM board manufacturers for the AI firmware product to emulate the 8514/A are being sought.

Aurora 1024 Graphics Board

The Aurora 1024 is designed as an add-on board for PC XT and AT IBM compatible computers.

A low cost, high performance graphics board, the Aurora 1024 puts applications of Desktop Publishing, CAD/CAM, Image Processing and Presentation Graphics into the hands of the everyday PC user.

That's because Enertronics uses a wide range of graphics drivers including 8514/A Adapter Interface, Windows 286, AutoCAD ADI and TIGA. These drivers provide hundreds of software titles that are currently compatible with the Aurora 1024 board.

The Aurora 1024 also comes in a non-interlaced version and both boards employ a pass-through feature connector for interfacing to standard VGA boards.

Hardware Requirements: IBM XT and AT compatible
Software Drivers Provided: TIGA, Windows 286, AutoCAD ADI, 8514/A AI
Availability: Now

Engespaco Industria e Comercio Ltda.
Rua Letonia, 733 - Vila Letonia
Sao Jose Dos Campos SP, Brazil
0123-22.2499
Ubirajara Moura De Freitas, Technical Manager

SITIM

SITIM is an imaging station based on a 286/386 PC, a TMS34010, a TMS320C25 and peripherals (CCT tapes, streamer tapes, digitizer tablets and plotters). The SITIM graphics system provides resolutions of 1024 x 768, 600 x 800 or 640 x 480 interlaced or non-interlaced; with 8/24 bits plus 4 bits overlay per pixel. It also provides of color palette of 16 million and program and data memory up to 16 MB. SITIM provides complete application software support for remote sensing, including a geographical information system.

Hardware Requirements: 286- or 386-based computer with a minimum of 640K
Software Included: Imaging system software, TIGA driver
Software Requirements: MS-DOS
Availability: Now

Engespaco produces systems for receiving and processing satellite data for applications on remote sensing, meteorology and ambiental data acquisition.

Entire, Inc.®
445 West Commercial Street
East Rochester, NY 14445
(716) 381-7500
Jed Deyoung, Sales

ENTIRE

FIBRE™ 2000

The FIBRE 2000 is an advanced image management platform with integrated shared resources and connectivity between multiple protocols. It may be configured as a document processor, multi-function host server, communications center, and/or electronic filing system.

The FIBRE 2000 offers a complete array of fully integrated peripherals and system software. The unit includes a laser printer, digital facsimile, a document scanner, communications and network interfaces.

FIBRE's central processor is an Intel 80386 and supports 64K bytes of cache memory and up to 24 megabytes of RAM. The basic operating system is AT&T's Unix V supporting multiple MS-DOS sessions. A typical platform could have 2.4 gigabytes of WORM optical disk storage and 630 megabytes of conventional magnetic hard disk memory.

The scan/print board uses a TI 34010 graphics processor working with an Intel 80186. The board is capable of processing HP LaserJET™, PostScript™, HPGL™, and other file formats. The FIBRE 2000's integral image scanner is a 300 dot per inch (dpi) unit capable of scanning a 8.5 x 11 inch document in just under 10 seconds. The 300 dpi laser printer operates at a speed of 11 pages per minute.

The Integrated Utilities package provides a custom user interface to the software that controls the printer and scanner. Besides simple file printing and document scanning tasks, it gives users access to intelligent character recognition software, file converters, and FAX functions.

Availability: Now

ERSO/ITRI
195-4-X100, Sec. 4 Chung-HSing Rd.
Chu-Tung HSin-Chu 31015, Taiwan, R.O.C.
(035) 966100, Ext. 7385
Shan-whei Tsai, Hardware Engineer

電子工業研究所

High-resolution Chinese Graphics Display Controller

The High-resolution Chinese Graphics Display Controller (HCGDC) is a powerful graphics product from the Section Group II of ERSOs Microcomputer System Dept.

The HCGDC provides 1280 x 1024 high resolution display with 8 bit plane, and 4096 or 16 million color palette is supported. The HCGDC is designed for ERSO PC-400, IBM PC/XT/AT and 100%-compatible computer. Selectable 1 megabyte memory is provided as expanded memory compatible with the Lotus/Intel/Microsoft Expanded Memory Specification Ver. 3.0 (EMS). This memory can be used to store Chinese character fonts to display Chinese characters on the screen. One of the EMS and Chinese character functions is configured by a DIP switch.

Includes Video Converter circuits to accept the video signal coming from the EGA output connecter and display the video signal on the monitor with 1280 x 1024 resolution. High function mode (1280 x 1024), EGA mode (640 x350), CGA mode (640 x 200) and Monochrome Mode (720 x 48) is supported.

The organization has also developed a PDL (Page Description Language) Laser Printer Controller using the TMS34010.

Hardware Required: IBM PC/XT/AT, ERSO PC-400 or 100% compatible computer
Availability: Now

The Electronics Research and Service Organization (ERSO) of the Industrial Technology Research Institute (ITRI) was founded in September 1984. It has developed capabilities in integrated circuits, computers, microwave, precision parts and quality assurance. Furthermore, ERSO is building up an initial momentum to integrate those technologies.

ERSO's demonstration plant has not only been a testing ground for these technologies but has also been a testing ground for new manufacturing technology in Taiwan. These technical and manufacturing capabilities have combined to allow ERSO to develop technology appropriate for Taiwan's industry and to provide tested manufacturing skills for producing high-technology items. The ability to do this has reduced the time necessary to transfer urgently needed technology to private industry and reduced the risk in developing innovative new product.

Etymonic Design Incorporated
41 Byron Avenue
Dorchester, Ontario N0L 1G0
(519) 268-3313
J. A. Jonkman, Design Engineer

Etymonic Design Incorporated
Applied Microelectronics

AUDIOSCAN™

The Audioscan is a portable Real Ear Measurement system. It allows the professional hearing instrument dispenser to objectively measure the in-situ performance of a hearing aid. A controlled sound source provides the exitation and a probe tube measures the sound pressure level in the ear canal. The resulting transfer functions are plotted on an LCD screen and can be subsequently printed with built-in thermal printer. In addition, the unit can test hearing aids according to ANSI standards.

The instrument is fundamentally an audio spectrum analyzer and the 34010 handles all processing functions-including real time control. Specifically, it scans the keyboard, controls the level and frequency of the waveform generator signal, sets the gain and center frequency of the signal conditioner, drives a dumb printer, and acts as an LCD controller. The software was implemented using VFORTH, a FORTH derivative developed by Antares Technical Services.

Incorporated in 1983, Etymonic Design develops and manufactures instrumentation and also does contracted product development of micropower analog circuits.

Evolution Computing
437 South 48th Street, Suite 106
Tempe, AZ 85281
(602) 967-8633
Elena Bullard, Strategic Planner

FastCAD™

FastCAD™ Package

FastCAD is a full featured CAD package for the IBM PC/AT/XT 386 or compatibles. Written in assembly language for blazing speed, FastCAD offers up to 4 simultaneously active drawing windows. The interactive drawing windows allow an increase in design power by providing up to four views of the same drawing on the screen at the same time. FastCADs unique icon commands are available during drawing and editing to zoom, pan, change line styles, colors and layers in the middle of the command. FastCAD features floating point accuracy, with near infinite zoom, associative dimensioning, customizable menus and macro programming. FastCAD includes bidirectional conversion programs with EasyCAD™, and AutoCAD®. The speed of FastCAD is enhanced by using the TMS34010.

Hardware Required: IBM PC/XT/AT 386 or compatible 512K RAM, math co-processor, graphics board

Availability: Now

EASY CAD

EasyCAD™ Package

EasyCAD is an entry level CAD program for the IBM PC/AT/XT, 386 and compatibles. EasyCAD is designed for the customers who are looking for their first CAD program, who need a low-cost program, or who don't need all the features of a high-end program. EasyCAD is easy to use with pull down menus and dialog boxes, yet features floating point accuracy with near infinite zoom, associative dimensioning, customizable menus, and macro programming. EasyCAD runs on inexpensive hardware (256K) yet supports professional E size plotters and 1280 x 1024 displays. EasyCAD is an established product with national recognition, and bidirectional conversion programs with FastCAD™, AutoCAD® and VersaCAD®.

Hardware Required: IBM PC/XT/AT 386 or compatible, 256K, graphics board

Availability: Now

Evolution Computing was founded in 1979 by Mike Riddle to write CAD software for microcomputers. EasyCAD™ and FastCAD™ are the works of a single programmer, Mike Riddle. As the owner of Evolution Computing, Mike has been writing CAD systems since 1979. FastCAD is his fifth product. EasyCAD was released as an introductory package and is now available through Evolution Computing. FastCAD, a truly new-generation CAD package, was introduced at COMDEX in November 1986.

Evolution Computing's staff handles the development, support, production and distribution of its CAD software. Evolution Computing is dedicated to the continued leading edge development of CAD and graphics systems. The company was founded in 1979.

Flanders Research Incorporated
88 Bartley Square C-6
Flanders, NJ 07836
James R. Folts, President

FRI Flanders Research Incorporated

Exact-8000 Display and Printing Subsystem

The Exact-8000 utilizes the TMS34010 to provide more than a 10 to 1 improvement in both print speed and display resolution in electronic publishing and image filing applications. It provides a display with resolution of 2550 by 3300 pixels to show a full 8 1/2" x 11" page at the 300 dot per inch resolution of today's laser printers. The Exact-8000 screen is the first true "what you see is what you get" display, offering more than 10 times the resolution of today's best workstation displays. Because the Exact-8000 display is identical to the laser printed page in resolution, pitch and aspect ratio, anything that can be printed on a laser printer can be shown on the screen at the graphic quality. And, the Exact-8000 can print even the most complex page in less than 10 seconds, compared to the several minutes required by today's systems.

ln addition, medical and military imaging users are particularly interested in the monitor portion of the subsystem which can provide simultaneous display of over 8 million pixels of information, each with 256 levels of gray scale information, yielding a film quality image on the screen.

Hardware Required: Any 286 or 386 personal computer with an AT bus

Forward Technologies, Inc.
55 Jacobs Avenue
South Kearny, NJ 07032

SYM340

SYM340 is a symbolic debugger designed to facilitate testing application code written for the TMS34010 microprocessor.

A complete disassembler and inline assembler are standard features of the SYM340 debugger. Up to ten user breakpoints may be set and complete trace with or without passthrough options are provided. Fill, display, and enter data into the 34010 memory using bit fields from 1 to 32 bits in width.

Sophisticated TMS34010 applications require communications with software running concurrently on the host processor. SYM340 enables the programmer to debug these types of applications by operating in a background mode within the host. It multitasks itself with DOS and the currently running PC application while maintaining control of the code that is being debugged in the TMS34010 environment.

SYM340 is delivered configured for the Texas Instruments software development board (SDB). Alternatively, SYM340 may be configured by the user for any particular hardware configuration. This requires the user to write a set of simple low-level routines for assembly and linking with SYM340 object code.

FTG Data Systems
10801 Dale Street, Suite M-2
Stanton, CA 90680
(714) 995-3900; FAX (714) 995-3989
Brian Bates, Product Manager

FTG DATA SYSTEMS

EMU-TEK® Tektronix Color Graphics Terminal Emulator

A price-effective alternative to Tektronix terminals, the EMU-TEK enables and IBM PC/XT/AT or PS/2 to access graphical data on a host computer. EMU-TEK functions just as a Tektronix terminal would when running host-based applications such as ANSYS, ARC/INFO, DISSPLA, TEKNICAD, SAS/GRAPH, GDS, DI3000 and IDEAS. EMU-TEK also adds additional features such as file transfer, local redisplay, zoom and pan from captured graphics files, extensive on-line help and mouse support.

EMU-TEK Five Plus™

The EMU-TEK Five Plus emulates the Tektronix 4105 color graphics terminal and DEC VT100 text terminal. It supports EGA and VGA as well as DGIS and TIGA-340 high-performance software interfaces on 340X0-based graphics adapters and others. Five Plus connects to a host through local area networks.
Hardware Requirements: IBM PC/XT/AT or PS/2 and compatibles, compatible graphics adapter
Availability: Now

EMU-TEK Seven Plus™

Emulates the 16-color Tektronix 4107/4109 terminal and DEC VT100. EMU-TEK Seven Plus supports DGIS as well as EGA, VGA and other graphics adapters. It includes such 4107 functions as segment operations, enhanced GIN, surfaces, zoom and pan.
Hardware Requirements: IBM PC/XT/AT or PS/2 and compatibles, compatible graphics adapter
Availability: Now

EMU-TEK 4200 Plus™

The EMU-TEK 4200 Plus turns a PC or PS/2 into a 4208 terminal, one of Tektronix's latest color graphics terminals. DEC's VT220 text terminal is also emulated. Supports EGA and VGA, as well as DGIS and TIGA-340 high-performance software interfaces on 340X0 and other graphics adapters. 4200 Plus can connect to a host through a LANs and direct serial interfaces. It can utilize expanded memory if installed.
Hardware Requirements: IBM PC/XT/AT or PS/2 and compatibles, compatible graphics adapter
Availability: Now

FTG Data Systems develops and markets terminal emulation software and light pen systems for IBM PCs, PS/2s and compatibles. FTG has served the IBM PC market for over 14 years.

GLH Ltd.
29 Clarence Square
Brighton, UK BN1 2ED
+44 (273) 28289; FAX +44 (273) 203113
Richard Aras, Managing Director

Consulting Services - Software

GLH is a design and consultancy house specializing in graphics and system integration. With over three years experience in both software and hardware for 340 systems, GLH is one of the longest established developers and ISVs in Europe. GLH designs can be found in CAD sytems, industrial controllers, worldwide financial markets and more.

GLH software products division is active in the X Window Systems, TIGA and Acad10 domains. Hardware independent programs are available for license to board manufacturers, terminal makers, OEMs and for embedded applications. Demonstration disks are available on request. A version of X11.4 running with TIGA forms the flagship GLH software product.

GLH's software tools (including GCC-based 340 compilers) run on Unix workstations and facilitate quality software production with fast and efficient development cycles and a high level of support. Specialties include definition and implementation of X11 protocol extensions.

GLH's commitment to support, client liaison, and a liberal policy on source licensing is designed to give customers confidence from the first sight onwards. TI has chosen GLH to be a member of its Consultant Programme in the UK.

GLW Incorporated
437 Atlas Drive
Nashville, TN 37211
(615) 331-8800; FAX (615) 331-8883
Stephen Piper, Engineering Manager
Tom Irby, V.P./General Manager

Dual Video Board

The Dual Video Board is based around the TMS34020 GSP with 2 MB video RAM and 512K available as system memory and/or BITBLT storage. The board can operate as a NuBus master or slave using TI's NuBus chipset. Features of the board include: 40 MHz TMS34082 FPU with 2K x 32 high-speed static RAM, two independent 1024 x 768 x 8bpp video outputs, 256 colors out of a possible 16 million, two high-speed serial lines. It can be configured as a dual frame buffer, single output card for 3D stereo applications and can also be used by the Macintosh as a normal video card. TMS34020 drivers for some of the QuickDraw graphics routines are incorporated in order to generically accelerate Macintosh II applications.

Hardware Requirements: Macintosh II or higher

Software Included: Board configuration ROM, applications interface drivers, standard QuickDraw drivers

Software Requirements: System 6.0 or higher

Availability: August 1990

GLW designs and manufactures consoles for the recording, broadcast and film industries. GLW's premier console features total dynamic automation of all functions and video display of all control settings.

GRAFPOINT
1485 Saratoga Avenue
San Jose, CA 95117
(800) 426-2230
in California (408) 446-1919
Brad Sharp, Director of Sales

GRAFPOINT

TGRAF—Tektronix Graphics Terminal Emulation Software

The following Tektronix emulation software packages are available.

TGRAF-05 turns PCs into Tektronix 4105 Graphics Terminals. PC-based graphics terminals have benefits of additional functions such as local storage and retrieval of graphics images, file transfer, and comprehensive keyboard reprogrammability.

TGRAF-05 is a complete terminal emulation product providing graphics and alphanumeric support by emulating Tektronix 4010/4014 and VT52/VT100 alphanumeric terminals in addition to Tektronix 4105 emulation.

TGRAF-07 has all the features of TGRAF-05, plus the enhanced graphics features of the Tektronix 4107 Terminal.

TGRAF-15LR and TGRAF-15 have all of the enhanced graphics features found on a Tektronix 4115 Terminal. TGRAF-15LR is a low-resolution version of Grafpoint's 4115 terminal emulation software that runs on an EGA board.

TNET

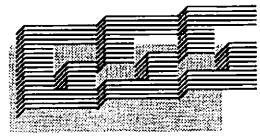
TNET is Grafpoint's high-performance software emulator of Tektronix's graphics terminals that connects PCs and mainframes to Local Area Networks (LAN). Versions of TNET are available to emulate Tektronix 4105, 4107, and 4115 Graphics Terminals.

TPORT

TPORT is a systems-level software package which allows mainframe and minicomputer graphics software applications to be ported onto personal computers. TPORT can also be used to write custom host interfaces using the emulation as the base function and additional functionality.
Hardware Required: IBM PC, IBM XT, IBM AT, IBM PS/2, or equivalent.
Availability: Now

Grafpoint is a leader in the development of high-performance graphics terminal emulation software. Grafpoint was the first to produce a software package that emulates the Tektronix 4105 graphics terminal, the acknowledged industry standard. As an extension of its early development efforts, Grafpoint now offers Tektronix 4107 and 4115 emulation, in addition to 4105 emulation.

Graphic Software Systems, Inc. (GSS)
9590 SW Gemini Drive, P.O. Box 4900
Beaverton, OR 97005
(503) 641-2200; FAX (503) 643-8642
James Cochell, Director of New Products



DGIS 2.0

The Direct Graphics Interface Standard (DGIS) is the industry standard board-level interface to graphics co-processors distributed to graphics hardware manufacturers. DGIS 2.0 is optimized for the TMS34010 and resides in the local memory of intelligent graphics controllers.

DGIS 2.0 includes new, highly optimized device drivers for Windows 3.0, AutoCAD 10 (with display support), Ventura Publisher, GEM and GSS*CGI. Additional DGIS device drivers are available with numerous applications such as Harvard Graphics, VeraCAD, WordPerfect 5.0, Microstation and many more.

DGIS was introduced in 1986 by GSS and nine leading chip, display controller and application companies. DGIS was designed to provide a common application software interface to high performance display controllers. A single DGIS device driver enables an application to support all DGIS-compatible display boards.

Hardware Requirements: TI 34010 graphics hardware
Availability: Now

AT1000 Display Controller

The AT1000 display controller is a unique system approach to graphics acceleration for AT bus architecture. AT1000 includes custom-designed hardware, firmware and device drivers for maximum graphics performance in DOS, OS/2 and UNIX. GSS's pixel fill multiplier (PFM) circuitry assists the TI graphics system processor, enabling the controllers to accelerate applications up to six times faster than is otherwise possible. The AT1000 also includes custom-designed bus master circuitry to break through memory and bus bandwidth bottlenecks.

Hardware Requirements: AT bus compatibility
Software Included: CGI, DGIS, Presentation Manager
Software Requirements: Compatible with all CGA, VGA and EGA software
Availability: Now

MC1000 Display Controller

The MC1000 display controller performs the same functions as the AT1000 but in a MicroChannel bus architecture environment.

Hardware Requirements: MicroChannel bus compatibility
Software Included: CGI, DGIS, Presentation Manager drivers
Software Requirements: Compatible with all CGA, VGA and EGA software
Availablity: Now

GSS is a leading supplier of graphics technology products. GSS software tools, firmware and hardware are designed for use with design computers. The company has been developing, marketing and supporting high-quality graphics technology products since 1981.

Graphics Resource Group
987 Canyon View Drive
Laguna Beach, CA 92651
(714) 497-3835
William H. Ewer, President

Printer Controllers

Single card controllers for private label use. Controllers are designed to function with a wide range of printers and are for internal installation in the printer.

Controller can be configured to accept a wide range of graphic protocols, including: CGI, DGIS, Plot 10, HPGL, PostScript, QuickDraw. Grayscale and extended color palette are supported. Communications is via RS-232, Centronics and SCSI.

Software Required: CGI, DGIS, Plot 10, HPGL, PostScript, QuickDraw compatible applications
Availability: Now

Graphics Resource Group is a full service computer graphics and electronic publishing consulting company. Expertise is focused around custom product design of hardware and software, marketing and financial planning, product development, distribution planning, systems implementation, pre-press integration program planning. The company was founded in 1986, has five principals and 65 associate subcontractors.

Graphics Strategies, Inc.
549 Weddell Drive
Sunnyvale, CA 94086
(408) 745-6500; Outside California (800) 336-2733; FAX (408) 744-0235
Gerald B. Dixon, Director of Sales and Marketing

Graphic Strategies, Inc.

VGME-34010 VME Graphics Board

The VGME-34010 is the latest in a complete line of high-performance graphics controllers offered by Graphics Strategies, Inc. The board utilizes the TMS34010 along with other proprietary circuitry to attain high-speed drawing, direct image access, block transfer, pan, etc., in one standard 160mm x 233mm form factor board.

The VGME-34010 plugs into any standard VME bus card cage and will drive most analog RGB raster-scan monitors. The board package also offers software configuration tables for various resolution outputs.

Key features include: 1280 x 1024 x 8bpp resolution, 256 colors from a palette of 16.7 million, 2 MB display memory, a hardware cursor and two RS-232C full duplex serial channels.

Hardware Requirements: VME bus host computer
Software Included: High-level graphics, primitives and X Windows for UNIX, OS-9 and SUN OS
Software Required: Graphics primitives and drivers available from Graphic Strategies, Inc.
Availability: Thirty days after receipt of order

Graphics Primitives Support Package

The GPS package offers X Windows software support for the VGME-34010 graphics controller. The X Window server is an implementation of the X11.3 Window System developed by MIT. Drawing primitives in the VGME-34010 software libraries include draw points, lines, text and circles. Other routines to set foreground color, text scale, zoom factor, etc., are included to make programming easy. The package runs under several popular operating systems and provides an efficient interface between the application or graphics support package and the VGME-34010 hardware. The GPS package is also downward compatible with software written for other GSI products.

Hardware Requirements: VME bus host computer
Availability: Five days after receipt of order

Graphics Strategies, Inc. (GSI) is the leading U.S. manufacturer of VME bus graphics controllers. Founded in 1981, GSI specializes in the design and manufacture of VME bus graphics boards and offers the most comprehensive graphics controller product line in the industry. GSI's complete line of controllers features designs utilizing the TMS34010 and other graphics chips. GSI provides comprehensive technical support and software operating system interfaces for UNIX, VERSAdos, PDOS and UNOS. The company also designs custom graphics controller boards for specific customer applications.

GraphOn Corporation
1980 Concourse Drive
San Jose, CA 95131-1719
(408) 435-8400
Kathleen A. Peter, Marketing Coordinator

GraphOn

GO-400 Color Graphics Terminals

The GO-400 family of color graphics terminals are the first to use Texas Instruments TMS34010 Graphics Systems Processor. The advanced TMS34010 handles graphics operations from line drawing to windowing. Communications rates up to 57.6 kbps support this powerful graphics engine to yield terminals that take the waiting out of working.

Each GO-400 Series terminal emulates industry standard interfaces from both Tektronix (4100/4200) and DEC (VT 220/241). No other color graphics terminal offers as much integration in a single terminal. In addition, the new GO-400 Series uses the new high-resolution Trinitron CRT for high-quality graphics displays and easy-to-read text.

Compact packaging provides a small footprint (12"x12") with built-in tilt and swivel for the 14" monitor.

Three models will be available, the GO-405, GO-407 and GO-411. The GO-405 and GO-407 models are upgradeable. Options offered on all models are: a mouse-pointing device, one megabyte RAM upgrade, and video output.

Hardware Required: Compatible with DEC and Tektronix communications interfaces.
Availability: Now

Hercules Computer Technology, Inc.
921 Parker Street
Berkeley, CA 94710
(415) 540-6000; FAX (415) 540-6621
Andrew Fischer, Vice President of Product Management

Hercules Graphics Station Card Model GB1024

The Hercules Graphics Station Card combines three distinct "personalities" to provide the best of both mainstream and high-performance graphics on a single card. The Graphics Station features built-in VGA for compatibility with all standard applications and environments, a 60 MHz TMS34010 for speed and resolution beyond VGA, and high-definition 16- and 24-bit color modes for photo-realistic images on standard analog VGA monitors. Included in the standard configuration is 1 MB of video RAM, the Graphics Station will also support 2 MB of DRAM for the 34010.

Hardware Requirements: IBM AT or compatible computer

Software Included: Drivers for Windows 286, TIGA, ADI version 4.0 and an installation utility

Availability: March 1990

Hercules Computer Technology is a leading developer of display adaptors for IBM PC and compatible computers.

Hewlett Packard
3000 Hanover Street
Palo Alto, CA 94304
1-800-752-0900

HP Intelligent Graphics Controller (IGC) Series

Designed for both industry-standard architecture (ISA) and extended industry-standard architecture (EISA) based PCs and targeted at users of CAD and graphical user interfaces, the HP IGC Series employs an optimized version of TIGA-340 and DGIS (direct graphics interface standard) to provide high-resolution graphics compatibility with hundreds of current and future applications.

More than 300 applications including AutoCAD™, AutoSHADE, CADkey, GEM, HP AXDS/PC, HP ME10d, MicroCADAM, MS® Windows, and VersaCAD are supported via compatibility with TIGA-340 and DGIS. The HP ICG Series also gives users access to VGA applications with analog VGA pass through.

HP Intelligent Graphics Controller (IGC) 10

The HP IGC 10 provides up to five times the graphics performance of conventional VGA cards. The HP IGC 10 uses a 5-MHz TMS34010 graphics processor, and can display applications at 640 by 480, 800 by 600 or 1024 by 768 resolutions in 16 or 256 colors from a palette of 256,000.

HP Intelligent Graphics Controller (IGC) 20

The HP IGC 20, based on the 10-MIPS, 32-MHz TMS34020, offers up to 15 times the performance of conventional VGA cards, 1024 by 768 or 1280 by 1024 resolutions, and 16 to 256 colors from a palette of 16.7 million. Its performance provides instant screen response for improved productivity at a competitive price for the most demanding PC graphics applications.

IGC Series Hardware Requirements: PCs from AST, Compaq, HP, IBM, NEC, Zenith, and compatibles; Monitors from HP, Hitachi, Mitsubishi, Nanao, NEC, and compatibles

IGC Series Software drivers: TIGA, DGIS, MS Windows

Hewlett Packard (Continued)

HP 700/X

The HP 700/X family consists of a comprehensive set of color and monochrome network-based graphics terminals based on the industry-standard X Window System from the Massachusetts Institute of Technology.

Available for nearly half the price of an HP diskless workstation, the HP 700/X terminals reduce the overall cost-per-user-seat when configured as components of a total system solution.

The HP 700/X terminals are designed to operate in multivendor networked environments and provide equivalent graphics and LAN performance of an entry-level workstation configured as a X-server.

The HP 700/X terminals are based on the X Window System Version 11 Release 3. They come standard with 1MB of DRAM expandable up to 4MB, and support 16 colors from a palette of 4096 or up to 16 levels of gray-scale.

The terminals deliver high-speed graphics throughput by utilizing a 50-MHz Texas Instruments TMS34010 graphics chip to execute X Window server instructions.

The HP 700/X terminals are designed to operate in multivendor networked environments consisting of workstations from HP, Apollo, SUN Microsystems, Digital Equipment Corporation and others.

The HP 700/X terminals are available in bundled configurations to simplify ordering and to address multiple-user application needs.

Hewlett-Packard Company is an international manufacturer of measurement and computation products and systems recognized for excellence in quality and support. The company's products and services are used in industry, business, engineering, science, medicine and education in approximately 100 countries. Founded in 1939, the company has 95,000 employees and had revenues of $9.8 billion in its 1988 fiscal year.

Human Designed Systems
421 Feheley Drive Unit E
King of Prussia, PA 19406
(215) 277-8300; FAX (215) 275-5739

HDS ViewStation

The HDS ViewStation is a powerful X terminal built in a modular design to offer power and adaptability. The ViewStation is available with monochrome, gray-scale, or color monitors in 14-inch, 15-inch, 16-inch, 17-inch or 21-inch sizes with pixel resolutions from 640 x 480 up to 1280 x 1024. Memory configurations vary from 0.5 MB up to 9 MB of local or server memory. The ViewStation also supports either ThickWire or ThinWire Ethernet connections.

The ViewStation is an X11 server implementation running from its own ROM firmware, including local Setup Mode and Telnet clients. It can also run from its local memory from downloaded server code.

The HDS ViewStation is built around a high performance architecture that includes a 10-MHz Intel 80186 for communications and processing, and a TI 34010 controller for graphics processing and display. This flexible architecture allows the HDS ViewStation to support up to 9 MB of local memory for X-based applications. Two standard serial ports support communications at speeds up to 57.6K baud.

Plug-in adaptor boards allow TCP/IP and DECnet connectivity over Ethernet with 10 Mbit per second communication speeds, as well as up to three additional serial or parallel ports. Display adaptor boards support monochrome and color displays, with resolutions of 640 x 480, 1024 x 768, 1024 x 1024, and 1280 x 1024 pixels. Both an IBM style 101-key keyboard and a DEC VT300 style keyboard are available. A dedicated mouse port supports a two- or three-button mouse.

The HDS ViewStation runs applications designed for X-window and DECwindow environments. Terminal emulation software allows the HDS ViewStation to emulate DEC VT300, Tektronix and ReGIS terminals to run applications that require those emulations.

Human Designed Systems is a Philadelphia-based terminal manufacturer of X Windows and DEC-compatible terminals. HDS has been building advanced alphanumeric and graphics terminals for 12 years and received the DIGITAL REVIEW TARGET AWARD in 1989 for the best graphics terminal.

HyperGraphics, Inc.
3155 Knoll Drive
Gahanna, OH 43230
(614) 476-0056
Mike Kaiser, Vice President, Engineering

Hyper-Graphic I

The Hyper-Graphic I is an IBM PC/AT format board built around the TMS34010. The board can support up to 4 MB of VRAM and DRAM on board and displays 4096 simultaneous colors from a palette of 16.8 million. The Hyper-Graphic I also provides VGA pass-through. Resolutions supported include 640 x 480 x 2/4/8bpp, 1024 x 768 x 2/4/8bpp, 1024 x 1024 x 2/4/8bpp, 1280 x 1024 x 2/4/8bpp and 1600 x 1200 x 2/4/8bpp.

Hardware Requirements: IBM PC/AT or compatible computer

Software Included: Drivers for AutoCAD, PCAD, VersaCAD, Personal Designer, Arris, CADKEY and X Windows

Availability: June, 1990

Hyper-Graphic II

The Hyper-Graphic II is an IBM PC/AT format board built around the TMS34020. The board supports 2 MB or VRAM and 8 MB DRAM on board. There is an optional memory board for VRAM and DRAM expansion. The Hyper-Graphic II can display up to 256 colors from a palette of 16.8 million and offers VGA pass-through. Resolutions supported are the same as for the Hyper-Graphic I.

Hardware Requirements: IBM PC/AT or compatible computer

Software Included: Drivers for AutoCAD, PCAD, VersaCAD, Personal Designer, Arris, CADKEY and X Windows

Availability: September, 1990

HyperGraphics specializes in producing graphic boards for low-resolution to high-resolution graphics using the TI graphics processor.

IBM
Dallas Manufacturing
Branch 120
1603 LBJ Freeway, 4th Floor
Dallas, TX 75234
(800) IBM-For U

IBM Xstation 120

The IBM Xstation 120 is an X Windows terminal which utilizes the TMS34010 for graphics processing.

The design of the IBM Xstation 120 makes it suitable for use in a broad array of customer environments and flexible enough to suit many diverse requirements. It supports a range of monitors from low-cost, monochrome monitors to high-resolution, full-color monitors. This unique capability allows the user to configure the screen size, screen resolution, color capability, and cost to meet the user's particular requirements. It attaches to the IBM RT or RISC System/6000™ workstations through both token-ring and ethernet LANs. In addition, after completion of the boot process, it can display applications from any non-IBM host running an X Windows System-compliant application.

A TMS34010-50 graphics processor controls the IBM Xstation video subsystem. This processor was chosen for its speed, high degree of programmability, and efficient manipulation of pixels and two-dimensional arrays. The IBM display-server code executed by the 34010 processor is an implementation of the X Window System Version 11, Release 3. The display code resides entirely in the 34010 processor environment. The mouse, keyboard, and communications with the network are handled by an Intel 80186 processor.

The Xstation provides the capability to support local serial or parallel printing in the X Window System environment. The host can send print files to the Xstation, which passes the data to a printer connected to the serial or parallel printer port.

Imagenex Technology Corp.
27005 116th Ave.
Maple Ridge, B.C., Canada V2X 8X8
(604) 462-9051
Alan Mulvenna, Marketing Manager

IMAGENEX

Imagenex System 800 Profiling Totaliser

The Imagenex System 800 is an industrial instrument designed to measure the cross sectional area of material on a moving conveyor belt using eight narrow ultrasonic sensors. This product represents a new kind of sensor system.

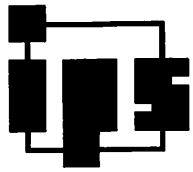
A powerful processor controls a complex measurement process and filters the resulting noisy data to produce reliable measurements. Utilizing the TMS34010 GSP, the chip serves as a very capable general purpose processor for performing measurement, filtering and diagnostic functions. The system generates a high-resolution color display which allows the user to assess the quality of raw measurements and filtered data.

The Imagenex 800 can be directly interfaced with process control systems and nuclear moisture gauges. A built-in telemetry system permits a 1000 m (3000 ft) separation between the transducer package and the display.

A high resolution color video output provides an intuitive overview of the complex measurement process and supports a high level of confidence in the data.

Imagenex Technology Corp. creates, manufactures and markets specialized industrial instruments. The company designs its own hardware, from the chip level, and develops the supporting firmware. Microprocessors, graphics system processors, digital signal processors, and analog electronics are combined into unique new products.

Image Processing Systems Inc.
2650 John Street
Markham, Ontario, Canada L3R 2W6
(416) 940-0300; FAX (416) 940-0301
Eric Buckley, President



IPS-24520 IBM PC/AT Graphics Controller

The IPS-24520 is a high-performance, 24-bit "true color" graphics controller for the IBM PC/AT 286/386, PS/2 Models 25, 20 and compatibles. Incorporating the TMS34020, the IPS is designed for performance driven scientific imaging and graphics arts applications.

The display resolution of the IPS-24520 may be configured as either 1024 x 768 or 1024 x 1024 at 24 bits/pixel, with double buffering optional. A 5-bit overlay plane is also provided allowing 32 color (from a palette of 16.7 million) independent text/graphic overlay. RGB outputs and programmable sync allow interface to all 48 kHz and 64 kHz industry standard, 20" high-resolution color monitors. 1, 2, 4 or 8 MB of additional processor RAM for programming memory or Z buffering is available as an option.

Hardware Requirements: IBM PC/AT 286/386, IBM PS/2 Models 25 and 30 or compatibles
Software Included: TIGA driver
Software Requirements: DOS 2.0 or higher
Availability: Now

Image Processing Systems Inc. specializes in the development of high-performance, high-resolution graphics and image capture/processing cards for the IBM PC/AT and VME based computers. Products range from a TI34061-based VME capture board to a TI 34020/34082-based PC/AT 24-bit color graphics card.

IMAGEsystems, Inc.
7504 134th Ave. S.E.
Renton, WA 98056
(206) 255-0899
Alan Steiner, President

IMAGEsystems

DIAS and IS-1000

The Digital Image Analysis System (DIAS) is the first PC/AT-based integrated imaging system to offer powerful and expandable image processing capabilities in a multitasking, windowed environment. DIAS consists of a set of image processing, graphics and system management software libraries running under IWINDOWS, a multitasking window manager and executive specifically developed for imaging systems, coupled with the IS-1000 image display and processing board. It uses a standard IBM PC/AT compatible as host, with the IS-1000 board occupying a single expansion slot and maintaining its own high resolution display.

IWINDOWS contains a sophisticated window manager using a novel arrangement of planes and viewports to organize a variety of image, text and graphics windows. The IS-1000 image processing hardware is optimized for highly interactive windowing environments. Incorporating both the TMS34010 graphics system processor and the TMS320C25 digital signal processor, it supplies nearly 10 MIPS of processing power to tackle computationally demanding image enhancement and analysis algorithms.

Hardware Required: PC/AT or compatible

Availability: Now

Imaging Technology Incorporated
600 W. Cummings Park
Woburn, MA 01801
(617) 938-8444; FAX (617) 938-1757
Dave Messuri, Sales Coordinator

IMAGING
Technology Inc.

Advanced Frame Grabber

The Advanced Frame Grabber (AFG) combines all the essential elements for advanced image processing applications: variable scan, high-resolution input; on-board programmable graphics processor; extensive real-time processing; flicker-free, high-resolution display; and optional support for single monitor systems. Features include input and display resolutions up to 1024 x 1024; the "C" programmable TMS34010 GSP; 2 MB of on-board memory; 16-bit ALU; 12-bit output look-up tables; and a 12-bit digital input port. Support for single monitor systems is possible with an optional card that mixes, on a pixel-by-pixel basis, the output from a user's VGA card with the AFG image. The combined output is then displayed on a VGA-compatible monitor.

Hardware Requirements: IBM PC/AT or compatible, 2 slots

Software Included: Software available, see below.

Availability: Now

ITEX-AFG

ITEX-AFG features a software library of subroutines that is integrated with TIGA, making the AFG the first image processor to support this emerging standard. The subroutines provide a broad range of image processing functions, including convolutions, histograms, geometric transformations and graphics. A development toolkit for the 34010 includes a "C" compiler, linker and assembler for custom application development.

Hardware Requirements: Advanced Frame Grabber

Software Requirements: MS-DOS

Availability: Now

DP-150/151 Display Processor

The DP-150/151 is a high-resolution display and graphics processor that displays images as large as 1024 x 1024 x 12bpp at a 60 Hz non-interlaced refresh rate. A separate 1024 x 1024 4-bit overlay memory enables non-destructive overlays such as menus and text. An on-board TMS34010 off-loads the host from performing such functions as cursor control and text generation. The DP-150/151 supports a live video window via specialized scan rate conversion logic. The DP-150/151 is part of the Series 150/151 real-time image processing subsystem which contains over 15 modules for real-time acquisition, processing, storage and display. The Series 150/151 is used in industrial and scientific vision applications where high performance is required.

Hardware Requirements: VME bus with P2 interface, requires one 6U slot

Software Included: Optional ITEX-DP Image Processing Library provides TIGA interface, math/graphics and image processing functions callable from C. Supported under MS-DOS and SunOS. Source available.

Software Requirements: "C" compiler

Availability: Now

Founded in 1982, Imaging Technology Incorporated is the world's largest supplier of real-time imaging processing boards, subsystems and software. The company's products are used by OEMs, system integrators, leading research and development centers, and universities in scientific and industrial applications.

IMAGRAPH Corporation
11 Elizabeth Drive
Chelmsford, MA 01824
(508) 256-4624; FAX (508) 250-9155
Martin Oakes, Director of Marketing

IMAGRAPH

ITX1210 Graphics Board

IMAGRAPH's ITX Series has been carefully engineered to provide a high-performance basic engine for both imaging and graphics applications. The ITX1210 provides imaging capabilities which include: hardware zoom, pan and scroll; optional video bus; high-speed host access; and FPU with its convolution and matrix operations. These features offer a high-performance imaging environment and the ability for users to program their own imaging applications. Graphics capabilities include 12-Mips 34020; hardware "X" and "CAD" cursors, programmable memory expandable to 120 MB and optional overlay (2 or 4 bits). The ITX1210 provides a flexible, high-performance graphics environment for very-high-speed graphics without the use of custom ASICs.
Hardware Requirements: AT or VME Bus compatible systems
Software Included: TIGA drivers for DOS and UNIX and X.11 driver
Software Requirements: DOS or UNIX
Availability: Now

TI1210 Graphics Board

IMAGRAPH's very-high-resolution TI Series graphics controllers provide the perfect complement for your high-performance workstation. Built around the TMS340X0 graphics co-processor family, the IMAGRAPH TI Series offers graphics performance and functionality that, until now, could only be found in high-end workstations. The TI Series, with its expandable hardware architecture and extensive support of industry software, is designed for the system integrator. As application requirements become more complex in future product generations, the user can increase board memory and create software extensions to take advantage of the TMS340X0's local processing power.
Hardware Requirements: AT Bus system
Software Included: TIGA drivers for DOS and UNIX and X.11driver
Software Requirements: DOS or UNIX
Availability: Now

IMAGRAPH is a manufacturer of very-high-resolution (1280 x 1024) PC-based imaging and graphics controller boards, and high-definition video frame grabbers. IMAGRAPH products serve a variety of application areas including remote sensing, visual inspection, medical imaging, mapping, geophysical and seismic analysis, presentation graphics and CAD/CAM/CAE.

Indchem Electronics, LTD.
San Francisco Office:
825 San Antonio Rd., Suite 201
Palo Alto, CA 94303
(415) 857-1205; FAX (415) 857-1634
J. Balaraman

Graphmax Graphics Board

Graphmax is a PC/AT compatible add-on graphics card with resolutions up to 1024 x 768 x 8bpp (interlaced), supporting 256 simultaneous colors from a 256K palette. Graphmax, designed to be TI-SDB compatible, includes hardware zoom and pan, 512K program memory extendable to 2 MB and 768K of screen memory.

Hardware Requirements: IBM PC/AT with 640K

Software Included: Drivers for AutoCAD Releases 9 and 10, and PCAD release 2.0; language binding libraries for Turbo C version 2.0, Microsoft C version 5.0, Turbo Pascal verion 4.0 and RM/FORTRAN version 2.42

Software Requirements: MS-DOS 2.0 or higher

Availability: Now

Established in 1978, Indchem is involved in medical imaging, computers and peripherals, industrial automation and telecommunications. Indchem has been exporting a wide range of these products to the USSR and Eastern Europe and has recently opened an office in San Francisco to seek tie-ups for design services/design transfers to U.S. corporations.

Instituto de Engenharia de Sistemas e Computadores (INESC)
Largo de Mompilher, no/. 22, 4000 Porto, Portugal
Tel.: (351) (02) 321006; Fax: (351) (02) 318692; Telex: 23023 INESC P
F. Nunes Ferreira, Professor

Very High Resolution Monochromatic Graphics Board

The INESC TMS34010 based single slot graphics board is an advanced IBM PC XT/AT or compatibles graphics board, featuring:

- a maximum resolution of 2560 lines by 2048 columns, 1 bit/pixel, interlaced;
- 8 or 16 bit data transfer support on PC 10 bus;
- 640 Kbytes screen memory (VRAM);
- 512 Kbytes screen memory (DRAM, expandable);
- capable of displaying A4 sized documents at a resolution of 8 points/millimeter (better than 200 points/inch), real size (display resolution of 2400 lines by 1700 columns);
- fully optimized graphics kernel (pan, scroll, zoom, text, fill, lines, ellipses, etc.);
- high performance routines for compression/expansion of two-tone bit-mapped images, according to CCITT recommendation T6.

Although oriented for the desktop publishing industry, several other possible application domains can be found for this product, such as electronic archive, CAD, etc., and including facilities like FAX, image compression and so on.

Also available with this product are a MS-DOS BIOS video driver emulator, a set of graphics commands for use of the processor's graphics kernel (using mouse, if installed), and a monitor program for hardware and custom application software developing.

Drivers for industry graphics packages are easily available.

Hardware Required: IBM PC XT/AT or compatible, high resolution VDU (high persistence phosphor recommended, 150 MHz bandwidth minimum).

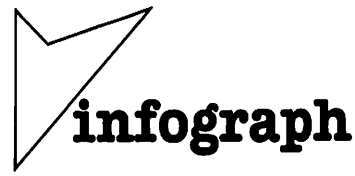
Software Required: None (all source code provided).

Availability: Now

INESC is a private non-profit distributing association, dedicated to research, development and training in advanced technological areas. It was created in 1980, and founding members were Correios e Telecomunicacoes de Portugal (CTT), Telefones de Lisboa e Porto (TLP), the Instituto Superior Tecnico (IST) and the Universidade Tecnica de Lisboa (UTL). In 1984, the Companhia Portuguesa Radio Marconi (CPRM) and the Universidade do Porto (UP) became members, just like Universidade de Aveiro (UA) in 1987.

In the beginning of 1988, there were about 670 people working at INESC, of which 95% were actively involved in research (55 Ph. D.s, 250 graduate students in Ms.Sc. or Ph. D. programs and 325 senior undergraduates).

INFOGRAPH Inc.
2257 South 1100 East
Salt Lake City, UT 84106
(801) 486-8770; FAX (801) 486-9739
J. Whitely, Vice President



12000S-PDC Plasma Display Controller

The 12000S-PDC is a TMS34010 based graphics controller for the Fujitsu 120000S plasma panel. The Fujitsu 12000S is a 1024 x 768 plasma display with a 15" viewing diagonal and a small footprint and compact case. The 12000S offers resolution of 1024 x 768 with full TIGA and X Windows support, an ideal product for developers providing applications for sensitive environments.

Hardware Requirements: Fujitsu 12000S Plasma Panel, 16-bit ISA

Software Included: TIGA driver. X Windows support is available as an option. Custom software is available.

Software Requirements: DOS or UNIX

Availability: Now

Aurealis I Controller

The Aurealis I is a graphics conroller based on the TMS34010 that offers the flexibility of TIGA and X Windows driver support. Aurealis I provides various resolutions up to 1024 x 768 x 4bpp and 16 colors from a palette of 4096. Aurealis I is designed to work with 286 and 386 systems in two-monitor configurations.

Hardware Requirements: 16-bit ISA, separate DOS monitor, hard disk recommended.

Software Included: TIGA driver. X Windows driver is available as an option. Custom software is available.

Software Requirements: DOS or UNIX

Availability: Now

Aurealis II Controller

Aurealis II is a high-performance TMS34010-based controller designed for AT bus 286 and 386 systems. Support for both TIGA and X Windows makes this an attractive product for applications that require communication between DOS and UNIX operating systems. Aurealis II offers resolution at 1024 x 768 x 8bpp and provides 256 simultaneous colors from a palette of 16.7 million. VGA support (pass-through) is standard.

Hardware Requirements: 16-bit ISA

Software Included: TIGA driver. X Windows support is available as an option. Custom software is available.

Software Requirements: DOS or UNIX

Availability: Now

INFOGRAPH is an engineering company providing expertise in graphics controller technology for AC Plasma panels and high-resolution CRTs. INFOGRAPH develops its own PC-based products with other companies for the design and manufacture of custom graphics products.

INFOTRONIC S.p.A.
Viale Berbera 49
20162 MILAN-Italy
(02) 64.72.441; FAX 02-64.72.445
Dr. Irene Pfenninger

INFO IGS 1024

INFO IGS 1024 offers with its particular structure a low level entry at an excellent price/feature ratio but gives the possibility to be upgraded up to 4 MB program/data memory. For powerful display list processing. INFO IGS 1024 has VGA passthrough option and offers the 8514a emulation.

INFO IGS 1288

INFO IGS 1288 has a resolution of 1280 x 1024 and is available with 4 or 8 bit. FIFO memories and EPROM space for dedicated firmware can be required.

INFO SGX 1600

INFO SGX 1600 is the second generation resolution graphics card of INFOTRONIC based on TMS 34020. All INFO SGX versions—with resolution of 1600 x 1280 and 1280 x 1024—are using the AT bus but have been conceived in the XT format.

INFO SGX is available in a 4 or 8 bit version and a program/data memory of up to 4 MB can be requested. A VGA passthrough feature and the software emulation 8514A are available.

INFO DPX 1280

INFO DPX 1280 have been developed for the professional DTP market and offer 4 or 8 bit planes and are available in three versions: 768 x 1024, 1280 x 1024 and 1600 x 1280.

INFO DPX offer an on board CGA emulation, VGA passthrough and as an optional even a VGA piggyback module.

INFO DPX make available the useful serial ports (RS 232) and a PAL/NTSC encoder and Genlock.

INFO DTP 1280

INFO DTP 1280 features a resolution of 1280 x 1024 with vertical frequency of over 70 Hz and offers an excellent price/performance ratio for the professional DTP user.

MS DOS, UNIX and OS/2 are supported by all INFOTRONIC boards.

Innovative Concepts, Inc. (ICI)
8200 Greensboro Drive, Suite 801
McLean, VA 22102
(703) 893-2007; FAX (703) 893-5890
Gregory Smith, Senior Engineer

Image Generator Board

The ICI Image Generator Board (IGB) is a TMS34010-based single-slot card for the IBM PC/AT and compatibles. The IGB supports several resolutions (640 x 480 x 2/4/8bpp, 1024 x 768 x 2/4/8bpp and 1024 x 1024 x 2/4/8bpp) and offers real-time frame capture from a video source or via a parallel port. Simultaneous display on RGB and RS-170 monitors with pixel clock rate of 28.6 MHz is supported.

Dual-port video memory provides four 1K x 512 8-bit pixel banks which can be combined for higher resolutions. Other features include 16.8 million color palettes with separate video outputs, genlock via RS-170 or V and H signals, hardware programmable pattern cursor and hardware zoom.

Hardware Requirements: IBM PC/AT or compatible

Software Included: Diagnostics, demonstration, and custom hardware dependent procedures for the TI Math/Graphics Function Library are provided.

Software Requirements: PC DOS version 3.30 or higher

Availablity: Now

Innovative Concepts, Inc. (ICI) is a communications engineering business which specializes in the application of state-of-the-art solutions to both governmental and commercial needs. Areas of expertise include graphics processing, signal processing and communications systems.

Innovative Imaging Systems
151 Pineview Ave.
Irvine, CA 92720
(714) 731-3961
Ali Ghazvini, Chief Engineer

Innovative Imaging Systems

Consulting Services - Hardware/Software

Innovative Imaging Systems is a Southern California based imaging firm that offers TMS34020/10 hardware/software design solutions to significantly shorten the new product development cycle. The company has a long history of design expertise with the development of high-performance imaging/graphics systems and displays. They provide extensive consulting services with TIGA-340 software and TMS34020 hardware.

IIS specializes in the design of high-resolution imaging systems in multiprocessing environments and offers a modular design approach to image acquisition, storage, processing and display. Each of the IIS modules is interfaced to a real-time 32-bit image bus board on TMS34020 bus protocols and arbitration, simplifying the development of complex high-performance custom designs.

InSight Graphics Software
126 Vest Way
North Andover, MA 01845
(508) 686-9308; FAX (508) 967-2210 (temporary)
Raymond S. Burns, President

GYPSI Family

The GYSPI family of debuggers is an ally against the constant battle with graphics software bugs.

Each member of the GYPSI family loads and interactively executes standard TMS34010 load modules, displaying complete internal memory and register status as the graphics unfold on the screen. GYPSI puts the user in total control with familiar commands to display and alter memory, set breakpoints, single-step, search, fill, disassemble and squash bugs.

GYPSI Host

GYPSI/H lives mostly on the host PC, displaying status on the PC monitor, and features uploading data files from the host to the board, palette swapping between the host, downloading data from the board to the host and automated program test-through command file.

Hardware Requirements: PC/AT or compatibles, separate graphics monitor

Software Requirements: DOS 2.0 or higher

Availability: Now

GYPSI Serial

GYPSI/S lives entirely on the board and communicates through a serial port to standard serial terminals. After uploading from the PC host, GYPSI/S responds to the serial terminal, interrupting the graphics processor program and accepting general GYPSI commands until released through the "Quit" command. GYPSI allows the user to set breakpoints, then "Quit" to return to the graphics processor program. As breakpoints are hit, GYPSI returns to reveal internal status and accept other GYPSI commands. GYPSI/S is useful in examining host/graphics communications without disturbing the host program.

Hardware Requirements: PC/AT or compatible, graphics co-processor with SMC-2651 compatible serial port, ANSI standard serial monitor

Software Requirements: DOS 2.0 or higher

Availability: Now

InSight Graphics Software (Continued)

GYPSI/TIGA/Serial

GYPSI/TS does everything GYPSI/S does and TIGA automatically locates GYPSI/TS in graphics processor memory space. Besides its power as a debugger for TIGA programs, GYPSI/TS also allows tracking of TIGA itself, setting breakpoints at TIGA functions as well as targetting TIGA modules. GYPSI/TS is especially useful when porting TIGA to boards.

Hardware Requirements: PC/AT or compatible, graphics co-processor with SMC-2651 compatible serial port, ANSI standard serial terminal

Software Included: TIGA driver

Software Requirements: DOS 2.0 or higher, TIGA system software for host and graphics co-processor

Availability: Now

GYPSI/TIGA/Host

GYPSI/TH does everything GYPSI/H does and works with any board supporting TIGA. Also, because GYPSI/TH's functions are TIGA functions, TIGA software can call GYPSI/TH's functions for non-interactive debugging of host/graphics data/control communications.

Hardware Requirements: PC/AT or compatible, graphics co-processor, separate graphics monitor recommended

Software Included: TIGA driver

Software Requirements: DOS 2.0 or higher, TIGA system software

Availability: 2nd Quarter 1990

InSight develops and markets graphics software development tools for the TMS34010/20 family. The tools complement the TI Assembler or "C" compiler to provide a complete and inexpensive software development environment for the graphics system processor board.

InSight offers cost-effective consulting services to customize the tools for non-standard and less common boards. InSight will port tools to any TMS34010-based board with a PC/AT or compatible host interface. They also implement additional or specialized tools as required.

Intergraph Corporation
MicroStation
HQ1007
Huntsville, AL 35894-0001
(205) 730-2194; FAX (205) 730-2461
Roger Woodsmall, MicroStation Product Manager

MicroStation PC Version 3.3

MicroStation PC is two- and three-dimensional CADD software with more than 500 commands. It runs under DOS on IBM-compatible computers and features a menu-driven user interface; reference files for efficient work sharing; simultaneous display of up to 8 views on two screens, all fully active for input and output; drawings of virtually unlimited size; shading; interface with dBASE III relational database for linking non-graphical data to graphical elements; multiple undo and redo functions; hidden line removal; translation-free compatibility with MicroStation on other platforms and Intergraph's VAX-based software; continuous file-saving to disk; and DXF input and output.

Hardware Requirements: IBM PC/XT/AT/PS2/386 or fully compatible computer
Software Included: TIGA driver, also available on update disk
Software Requirements: DOS
Availability: Now

Intergraph Corporation, founded in 1969, is a member of the Fortune 500. Intergraph's product line ranges from microprocessor modules to workstations and complete application-specific systems for computer-aided engineering, design, manufacturing and publishing.

Ithaca Software
902 W. Seneca Street
Ithaca, NY 14850
(607) 273-3690; FAX (607) 273-3697
Gary Wayne, Vice President

HOOPS Graphics System

HOOPS is a leading programming tool for producing high-performance 3D graphics applications for personal workstations. Many of the leading commercial CAD/CAM/CAE and scientific visualization applications are based on HOOPS. The system is built around an hierarchical graphics database with an innovative declarative programming interface. The system greatly simplifies the design and production of complex applications. HOOPS' Structured Device Interface efficiently uses advanced features found on TIGA graphics devices. HOOPS applications are 100% source code compatible across all of the major workstations, personal computers, window systems and hardcopy devices.

Hardware Requirements: 80386/80486-based computer with math co-processor, 2 MB of memory

Software Included: TIGA driver sources with tools

Software Requirements: Phar Lap DOS Extender

Ithaca Software, founded in 1981, specializes in the production of advanced computer graphics applications and development tools. The company's principal product, HOOPS, is the leading 3D graphics development tool for personal workstations. Ithaca Software is a privtely-held company with offices in Ithaca, New York and Emeryville, California.

Janus Systems Inc.
833 Flynn Road
Camarillo, CA 93012-8737
(805) 484-9770; FAX (805) 484-8459
Brian Herdeg, Director of Software Engineering

Oasis Document Storage, Retrieval and Editing Software

The Oasis Document Storage and Retrieval allows the user to scan, store, view, modify and print engineering documents (A through E size).
Hardware Requirements: 80386-based computer, 80 MB hard disk, 8 MB RAM
Software Included: TIGA drivers for OS/2 PM supplied in binaries
Software Requirements: OS/2 1.2 or higher
Availability: June 1990

Janus Graphics Adapter

The Janus Graphics Adapter is a key component to Oasis. It is TMS34020 based, has provisions for 2 MB VRAM and 16 MB DRAM, and can be configured for 1/2bpp Grayscale or 4/8bpp color. The optional I/O daughterboard contains scanner and laser printer interface, EGA chipset (for register compatibility), and hardware assisted scaling at 2:1, 4:1, 1:2 and 1:4. Resolutions supported include 640 x 480 x 2/4/8 bpp, 1024 x 768 x 2/4/8bpp, 1024 x 1024 x 2/4/8bpp, 1280 x 1024 x 2/4/8bpp, 1600 x 1200 x 2/4/8bpp; and Mono 1600 x 1200, 1728 x 2200 and 2508 x 1796.
Hardware Requirements: 16-bit ISA bus, one full expansion slot
Software Included: Full TIGA support: Windows, DOS and OS/2 drivers for scanner and Canon-based laser printer
Software Requirements: Windows, MS-DOS or OS/2 PM
Availability: June 1990

Janus Systems Inc. is comprised of image, computer and graphics experts experienced in engineering and technical documentation systems. Janus is part of SEQUA Corporation (formerly Sun Chemical), a multi-billion dollar corporation.

JMI Software Consultants, Inc.
P.O. Box 481
904 Sheble Lane
Spring House, PA 19477
(215) 628-0840

C EXECUTIVE 2.3

C EXECUTIVE is a real-time. multi-tasking operating system designed for embedded microprocessor systems. Currently available for 15 different CPU architectures, the TMS34010 version of C EXECUTIVE will allow complete embedded graphics applications to be contained on one microprocessor. Applications can be written in either "C" language or assembly code, linked with the C EXECUTIVE nucleus, and then loaded into RAM or ROM for execution. A comprehensive ROMable, sharable "C" library is included, providing a complete execution environment for "C" programs running in a board level product.

C EXECUTIVE and the TMS34010 provide a unique combination of a field-proven operating system with a powerful, general-purpose graphics engine. Special purpose display terminals and other graphics applications requiring multi-tasking can now be implemented in "C" language using a single microprocessor.

Current customer applications include laboratory and factory data acquisition, military avionics, PBX systems, cardiac monitors, FAA radar controls, process control, robotics, vision systems, medical imaging and high-performance graphics terminals.

Laboratory Microsystems Inc.
12555 W. Jefferson Blvd. #202
Los Angeles, CA 90066
(213) 306-7412; FAX (213) 301-0761
T. Triffet, Manager

LMI Forth Metacompiler Version 3.0

The LMI Forth Metacompiler for the TMS34010 allows utilization of an IBM PC as an inexpensive development station for high-speed, compact TMS applications. Compatible with the TI Development Board, the program allows interactive compilation and debugging using a Forth kernel running on the Development Board itself.

Hardware Requirements: IBM PC, 640K RAM
Software Requirements: MS-DOS 3.0 or higher
Availability: Now

LMI specializes in professional quality for the Forth interpreters, compilers, and cross-compilers for embedded systems development.

Level Zero, Inc.
69 Hickory Drive
Waltham, MA 02154
(617) 890-5937; FAX: (617) 890-5938
George Mulla

Level Zero
TURNKEY SOFTWARE SOLUTIONS

Turnkey Software Development

Level Zero is a recognized leader in providing turnkey software and system development services from device through application levels. Clients include Lotus Development Corporation, for whom we are the largest authorized driver developer, Microsoft (we wrote their QuickC Graphics Library), other industry leaders as well as smaller and less well known companies.

Drivers

Level Zero devotes a significant portion of its business to writing device drivers for applications and environments. They are Lotus Development's longest standing external driver development resource for 1-2-3 and Symphony. Under licenses from Microsoft, Level Zero writes device drivers for Windows 286, Windows 386, and OS/2 Presentation Manager. Level Zero also has resources to write drivers for Digital Research's GEM, Ventura Publisher, X-Windows and UNIX.

Graphics

Graphics capabilities extend from development tools to device drivers and applications. In addition to tools like the graphics library for QuickC, Level Zero has written application-embedded graphics display and print modules that are custom designed to match the application and the user's computer skills. Graphics capabilities for printer, plotter and display drivers cover a wide range of environments using the TMS340 processors.

About Level Zero

Typically working to a specification, a fixed price, and a firm schedule, and using its own development resources, Level Zero assumes complete responsibility for a project, including design, development, testing, project management, quality assurance, documentation, training, etc. Work is generally performed away from the client's site unless unique technical or security considerations dictate otherwise.

Level Zero employs over 30 software engineers, hardware engineers, project managers and support persons in its consulting business.

LifeCycle Software Systems
8060 Niwot Road Suite 223
Longmont, CO 80501
(303) 652-2074
Leonard J. Miller, Principal Engineer

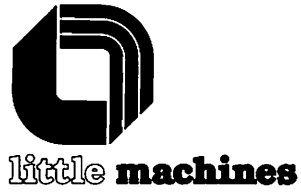
LIFECYCLE SOFTWARE SYSTEMS
STRUCTURED SOFTWARE ENGINEERING
DEVELOPMENT & SUPPORT

Life Cycle Software Systems provides full software engineering consulting services, from product specification to maintenance. The company specializes in operating systems for custom microprocessor development projects, and IBM PC/PS family application tools, but is not limited to these fields. The firm also possesses a background in digital hardware design enabling us to more easily comprehend low-level hardware/software interfaces. LifeCycle Software Systems has experience with many logic analyzers, emulators, etc.

Previous experience includes:

- Custom multitasking operating system for the TMS34010. This system provides high-speed page composition for the IBM PC, including image compression, decompression, and utilization of the complete Texas Instruments Math/Graphics Function Library.
- Custom Host Interface specification and development for an IBM PC to the TMS34010.
- Custom CCITT Groups 3 and 4 image compression and decompression implementations for the TMS34010.
- Custom operating system including servo and read control software for a 12" OROM drive.
- Custom operating system for 6809 based acoustic well probe.
- Custom SCSI interface development for Z80 based machine.
- Custom IBM PC to PERTEC 1/2" tape drive interface.
- Custom diagnostics for various microprocessor based machines, including 8080 family, Z80 family, 6800 family, TMS34010, T19900.

Little Machines
11010 Roselle St.
San Diego, CA 92121-1205
(619) 452-6400; FAX (619) 452-3897
Thomas R. Little, President



Versa Graphics Image Processor

The Versa Graphics Image Processor (VG/IP) is a general purpose graphics or image processor. As an eight- or sixteen-bit slave tasks, the VG/IP also stores images and refreshes the CRT. It is packaged on a single Multibus card. Transfers take place at Multibus speeds and are controlled by the TMS34010 which also acts as a DMA controller.

The VG/IP includes 384 KBytes of Video RAM (VRAM) for storing images and refreshing the CRT. The VG/IP will store and refresh one complete image at the maximum size of 1024 pixels by 768 lines by 4-bits.

In addition to the VRAM, the VG/IP has provision for an optional two or four megabytes of DRAM for storing 34010 programs or data.

Output video is generated by the TMS34070 color palette which produces a 16 out of 4096 color graphics display. Output is at a pixel rate up to 66 MHz.

VMEbus Versa Graphics Image Processor

The VMEbus Versa Graphics Image Processor (VVG/IP) is packaged on a single VMEbus card. Transfers take place at VMEbus speeds. Two 28-pin PROM sockets are provided to store set-up instructions and user defined programs. Other specifications are the same as for the Multibus version.

Hardware Required: Multibus or VMEbus system
Availability: Now

LocUS Inc.
(formerly Bahr Technologies)
1842 Hoffman Street
Madison, WI 53704
(608) 244-0500; FAX (608) 244-0528
Kendall E. Post, Vice President, Engineering

Consulting Services - Hardware and Software

LocUS Inc. is a contract engineering firm with an 11 year history in product specifications, hardware/software design, PCB layout, mechanical design, documentation, production/assembly/test, patent work and technology transfer. With extensive experience in medical, industrial and consumer products, LocUS has built a reputation for innovation, short time-to-market and low cost of goods. Team disciplines include computer science, analog/digital/RF electronics, math, physics, mechanical/packaging engineering and more.

Logitec Company
Village D'Entreprises
230 Route Des Dolines
Sophia Antipolis
06560 Valbonne (France)
(33) 93654520
Mr. Francois Helt, Research and Development Director

Sophia Frame Buffer Board

Sophia is a multi-purpose frame buffer designed for the IBM PC/AT (286/386) family of computers. The design of the frame buffer is very flexible in order to address a wide range of graphics applications. The board supports resolutions from 640 by 483 interlaced to 1288 by 1024 non-interlaced at 32 bits per pixel. Sophia also has broadcast quality genlock capabilities for both the PAL and NTSC standards.

The Sophia board occupies two full-length AT slots including up to 6 MBytes of dual ported video RAM and up to 8 MBytes of program memory. Also on board is special hardware to, accelerate zoom, pan and scroll. There are four overlay planes and Alpha Channel output is optional. Sophia comes with a variety of C callable graphics libraries running under DOS or Unix that include image processing and volume rendering functions.

Hardware Required: IBM PC/AT or compatible

Availability: Now

Logitec is a French distributor of peripheral products for the PC/PS computer market, established in 1983. The company added a line of graphics products in early 1987. These products range from graphics cards for PC/AT to graphics turnkey systems including a broadcast animation package. In April 1988 it opened a research and development laboratory in Sophia Antipolis, a research park located near Nice in the South of France. This laboratory is dedicated to the development of hardware and software graphics products.

Lotus
55 Cambridge Parkway
Cambridge, MA 02142
(617) 225-1276

Lotus®

Lotus 1-2-3 Release 2.2

Lotus 1-2-3 now gives users the flexibility and speed they're accustomed to with the easier to use, more powerful Lotus 1-2-3 Release 2.2. Release 2.2 combines three analytical functions—spreadsheet, database, and graphics into a single program.

Integrating the functions makes the system easier to use and gives every business a competitive edge.

1-2-3 gives you the whole picture. Users can retrieve information from the 1-2-3 database, work with it on the spreadsheet and instanteneously draw a chart or graph of the result. And, 1-2-3 does it clearer, crisper and faster than ever before.

Additional graphics and output features include the ability to produce typeset quality output with mixed text and graphics directly from 1-2-3; Graph Group highlights a range to graph versus specifying each data range separately; and one-step data labels and graph legends selection.

Hardware Required: 320K system RAM required, 512K recommended

Software Available: TIGA Driver

Lotus 1-2-3 Release 3

With its unique, three-dimensional worksheet environment, its powerful data management capabilities, complete business graphics, full networking support and better programming tools, Lotus 1-2-3 Release 3 is the perfect solution for any business or corporate user working with large and complex applications.

Release 3 utilizes a new technology which makes it easier to build and manage compound applications and complex data. Conventional spreadsheets provide two axes for you to work with: rows or height and columns or width. A true 3D spreadsheet is like your notebook, where each page represents the conventional 2 axes spreadsheet. All the pages together in the notebook add a dimension and give the true 3-D. You can work with up to 256 worksheets in a single file at once, each with 256 columns by 8,192 rows.

Hardware Required: IBM PC AT and Lotus certified compatibles, including most IBM PS/2 and Compaq models. 1 megabyte system RAM for DOS 3.0 and above, 3 megabyte of system RAM for OS/2 1.0 and 1.1

Software Available: TIGA Driver

Matrox Electronic Systems, Ltd.
1055 St. Regis
Dorval, Quebec, Canada H9P 2T4
(514) 685-2630; FAX (514) 685-2853
Susan Verrecchia, Marketing Promotions Coordinator

matrox
THE LEADER IN VIDEO MICROTECHNOLOGY

The IMAGE Series

The IMAGE Series is a revolutionary image processing board set designed to bring flexibility to image processing. The IMAGE Series offers OEMs and system integrators real-time image acquisition and processing, 640 x 480 or 1280 x 1024 non-interlaced display resolution, and powerful graphics in an integrated product line. The Series consists of a four-board set based on a flexible and modular architecture which enables system designers to select only the boards that fit their application requirements: IMAGE-1280 image display board, IMAGE-RTP real-time processor, IMAGE-ASD asynchronous digitizer, and IMAGE-CLD color digitizer.
Hardware Requirements: PC AT or compatible
Software Included: Image-shell
Availability: Now

VG-1281 Graphics Board

The VG-1281 offers VMEbus users a powerful workstation for a single slot. With 1280 x 1024 display resolution and a choice of 256 colors from a palette of 16.7 million, the VG-1281 satifies any high-performance graphics needs. Its 1280 x 1024 frame buffer can be expanded to 2048 x 2048 and 1 MB of on-board RAM is available. The VG-1281 incorporates dedicated hardware to provide smooth zoom, pan and scroll and a user-defined cross-hair cursor. The board also includes two RS-232C serial ports and can be supplied with 2 or 8 bits of overlay. Matrox has also developed an X Windows server that provides full X compatibility in SUN 3 and SUN 4 systems.
Hardware Requirements: VME bus
Software Included: Lib shell
Availability: Now

MMG-1281 Graphics Board

Designed for the Multibus II architecture, the MMG-1281 meets the standard of high-performance required in an industrial environment. The MMG-1281 provides 1280 x 1024 display resolution and 2048 x 1024 frame buffer. Users can choose 256 displayable colors from a palette of 16.7 million. 1 MB of on-board RAM is available and the MMG-1281 incorporates dedicated hardware to provide smooth zoom, pan and scroll, and a user-defined cross-hair cursor.
Hardware Requirements: PC AT Bus
Software Included: Lib shell
Availability: Now

Matrox Electronic Systems, Ltd. (Continued)

MG-1281 Graphics Board

For Multibus I systems, the MG-1281 delivers powerful and flexible graphics capabilities. The MG-1281 provides a 1280 x 1024 resolution using a 2048 x 1024 frame buffer and allows 256 simultaneous colors from a palette of 16.7 million. The MG-1281 offers the flexibility to increase the standard 1 MB of on-board local RAM to 2 MB, to alter configuration for 640 x 480 resolution with a 1024 x 512 frame buffer and to add I/O devices via the two serial ports. The MG-1281 can also be supplied with two video outputs, thus halving the controller cost associated with traditional solutions.

Hardware Requirements: IBM PC/AT or compatible bus
Software Included: Lib shell
Availability: Now

PG2-1281 Graphics Board

The PG2-1281 transforms the IBM PS/2 into a high-performance graphics workstation. Providing very high 1280 x 1024 display resolution and 256 colors from a 16.7 million palette, it also offers 1.5 MB of on-board display list RAM. The PG2-1281 utilizes the VGA from the PS/2 planar board to offer a single-monitor solution, displaying VGA graphics on the same screen used for the PG2-1281's high-resolution graphics.

Hardware Requirements: IBM PS/2
Software Included: PGM shell, Lib shell
Availability: Now

PG-1281 CV Graphics Board

The PG-1281CV offers 1280 x 1024 display resolution, a choice of 16 or 256 colors from a 16.7 million palette, and is available in 4- or 8-bit plane versions. A 2K x 1K frame buffer can accomodate large graphics images. The PG-1281CV can be run in dual screen mode or a more compact single-screen mode. In the single screen mode Matrox provides standard CGA emulation or an optional VGA card linkage.

Hardware Requirements: IBM PC/AT or compatible
Software Included: PGM Shell, Lib shell
Availability: Now

PG-1024V Graphics Board

The PG-1024V provides 1024 x 768 resolution, a choice of 16 or 256 displayable colors from a 16.7 million palette, and a 1024 x 1024 frame buffer. The PG-1024V offers CGA emulation and the same VGA pass-through as the PG-1281CV.

Hardware Requirements: IBM PC/AT or compatible
Software Included: PGM shell, Lib shell
Availability: Now

Matrox Electronic Systems, Ltd. (Continued)

PG-641 Graphics Board

The PG-641 provides 640 x 480 resolution, a 1024 x 1024 frame buffer, and 256 colors from a palette of 4096. Offering the same true graphics, high-performance features as the PG-1281CV, the PG-641 is an economical alternative for applications that demand high performance but do not require high-resolution display.

Hardware Requirements: PC AT/RT or compatible

Software Included: PGM shell, Lib shell

Availability: Now

Matrox is a world leader in the design and manufacture of high-performance graphics and image display processors. Products target four distinct markets: graphics, imaging, video and financial information; each encompassing a wide range of applications.

Media Cybernetics, Inc.
8484 Georgia Avenue
Silver Spring, MD 20910
(301) 495-3305
Pam Blaine, Marketing Research

media cybernetics, inc.

IMAGE-PRO™

Image-Pro is a device-independent image processing software package that consists of a comprehensive user-friendly, interactive image processing shell, a full featured raster editor, a library of image processing functions and a batch print and slide show module.

The interactive shell provides Image-Pro users with a highly interactive image processing environment. Functions supported include image analysis, histogram, distance, contour and area measurements, high pass, low pass, laplacian, edge, sobel, erotion, dilation, mean and unsharp mask filtering operations. User selectable kernel size and an interactive filter (kernel) editor provide for the custom design of spatial filtering (convolution) functions which may also be executed from the main menu.

Hardware Required: 640K RAM, TMS34010 board, analog RGB monitor, video camera, video digitization hardware, locator, hard disk, printer

Software Required: MS-DOS 2.0 or higher

Availability: Now

HALO™

The HALO Graphics Kernel System (HKS) is a comprehensive industry standard subroutine library of graphic primitive subroutines. The library consists of over 170 graphic routines callable from 16 programming languages including all of Microsoft, Gold Hill Common LISP and all major versions of "C."

Library functions include line, arc, circle, ellipse, spline, polygon, polyline, marker, bitclips, etc. Font subroutines manage stroke and bit map fonts.

Printer, plotter, locator, display controller and scanner device drivers are available for over 150 devices. HALO has been ported to Number Nine Computer's Pepper Pro1280 using the TMS34010.

Hardware Required: 256K RAM, hard disk, TMS34010 board

Software Required: MS-DOS 2.0 or higher

Availability: Now

MegaScan Technologies, Inc.
42 South Street
Hopkinton, MA 01748
(508) 435-2600; FAX (508) 435-9166
Bernadette M. Golas, Product Marketing Manager

MegaScan

FDP-2111 Frame Buffer and Display Controller

The FDP-2111 is a frame buffer and display controller for MegaScan's UHR-2007 monitor. Together, they make up MegaScan's Medical Display System. The FDP-2111 features 2560 x 2048 x 8bpp resolution; 200 dpi; TMS34010 processor; 8-bit, 5 Megapixel video buffer; hardware support for zoom, pan and scroll; PC/AT and VME interfaces and a 12-bit, 48 Megapixel frame buffer. The FDP-2111 is targeted at medical imaging (teleradiology, CAT, MR, PACS - for diagnostic purposes), government contracts (non-destructive test/non-destructive evaluation), photo interpretation and electronic pre-press.

Software Included: MS-DOS Graphics Library, MS-DOS Demo Program, SUN-UNIX Graphics Library

Availability: Now

FDP-3100 Frame Buffer and Display Controller

An integrated part of the Document Display System (DDS-310), the FDP-3100 controller provides: 4096 x 3300 resolution; 300 dpi; over 13 Megapixel frame buffer; Microsoft Windows support; TMS34010 processor and PC/AT and VME interfaces. The FDP-3100 is targeted at applications in Document Image Management (processing various types of office forms), engineering drawings, CAD/CAE and desktop publishing. The 300dpi resolution allows users to display at laser printer resolution.

Hardware Requirements: 640K memory

Software Included: MS-310 Windows Toolkit, MS-DOS demo program

Availability: Now

MegaScan Technologies manufactures ultra-high-resolution monitors and display controllers used in medical imaging and document management applications. The Medical Display System offers 2560 x 2048 pixel resolution with 256 gray levels, while the Document Display System provides 4096 x 3300 resolution at 300 dots per inch.

Megatek Corporation
9645 Scranton Road
San Diego, CA 92121
(619) 455-5590; FAX (619) 453-7603
Rusty Wise, General Manager, X-cellerator

MEGATEK CORPORATION
A UNITED TELECOM COMPANY

X-cellerator Board

The X-cellerator is a user-installable board that accelerates text and graphics in an X Window enviroment by 5 to 10 times, depending on the application. The board fits into a single 9U VME slot on SUN 3 and SUN 4 workstations and offers resolution choices of 1280 x 1024 or 1152 x 900.
Hardware Requirements: SUN CPU with VME interface
Software Included: TIGA Driver, Optimized X server
Software Requirements: SUN OS 4.0 or higher
Availability: Now

Founded in 1972, Megatek Corporation, a United Telecom Company, is a leading designer, manufacturer and integrator of high-performance graphics workstations in government applications including C3I, visual stimulation, training and real-time data analysis. Megatek also serves commercial markets requiring high-performance graphics for modeling and scientific visualization.

Metagraphics Software Corporation
269 Mount Hermon Rd.
Scotts Valley, CA 95066
(800) 732-1550 or (408) 438-1550;
FAX (408)438-5379

METAGRAPHICS
SOFTWARE CORPORATION

MetaWINDOW/PREMIUM

MetaWINDOW is an advanced, high-performance graphics development toolkit that bridges the gap between low-level graphic primitive libraries and pre-packaged window managers. The MetaWINDOW system provides an expanded set of graphic display functions, plus added functionality and performance required for implementing multi-window desktop display applications.

Based on state-of-the-art "object oriented" graphic display constructs—the foundation for the Xerox Star, SUN Microsystems, Apple Macintosh, and Apollo workstations—MetaWINDOW provides unparalled performance and functionality for IBM PC application developers. Through its rich function set of over 250 graphic procedures, MetaWINDOW streamlines application development.

Hardware Requirements: IBM PC/AT/PS2 or compatible, 256K RAM, graphics adaptor
Software Requirements: PC DOS 2.0 or higher; "C", Pascal or Fortran compiler
Availability: Now

Founded in 1983, Metagraphics has grown to become a leading supplier of graphic software development tools for the PC marketplace. The company's current products have been widely acclaimed in a broad range of professional and technical publications and its MetaWINDOW graphics system has been awarded PC Tech Journal's "Product of the Month."

Metamorphose Engineering Inc.
309 2nd Street
Los Altos, CA 94022
(415) 490-4618
Peter Alexander, Exec. Vice President/ Marketing

ME-512 Videographics Adapter and Frame Grabber

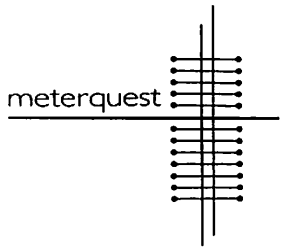
The ME-512 Videographics Adapter and Frame Grabber is first in a series of 34010-based products from Metamorphose Engineering. The ME-512 offers 512 by 512 display resolution with 32,768 colors. With memory expandable to 20 megabytes and a 40 MHz 34010 graphics processor, the ME-12 is ideally suited for hi-powered image processing and animation applications.

The ME-512 is fully compatible with the Truevision TARGA™-16. Its addressable resolution at 16 bits/pixel is 512 by 768 and can be expanded to 2048 by 2048. Image capture resolution is 504 by 486 for NTSC and 492 by 578 for PAL.

Software libraries of low-level graphics routines are available along with optional TI 320C25 DSP and 32-bit expansion.

Hardware Required: IBM PC/XT/AT or 100% compatible
Availability: Now

Meterquest Ltd.
The Courthouse
9 Justice Walk
Chelsea, London, UK SW3 5DE
(44) 1-376-5557; FAX (44) 1-376-5550
P.V. Wilkinson, Managing Director



MQ-MAGIC Graphics Board

The Meterquest Advanced Logic Interface Controller (MAGIC) allows a single driver to be ported to graphics cards to display a wide variety of standards including Meterquest's DGIS implementation. MAGIC is autoscaling for differing display resolutions and monitor types.

Hardware Requirements: TIGA compatible, PC/AT compatible
Software Included: TIGA driver, drivers for GEM, WINDOWS, AutoCAD and others
Software Requirements: Direct DOS "C" Library, UNIX
Availability: Now

Consulting Services

Meterquest Technology, a subsidiary company, provides assistance to companies wishing to use high-performance graphics but lacking either the detailed knowledge and expertise or simply wanting to get there faster. With such rapidly changing market needs, shortening the lead time for product implementation must be a high priority.

This service can provide for both hardware and software design for TMS34010 users.

Meterquest is a specialized software, hardware and design consulting company for graphics device driver development and bespoke interface products for use in color and monochrome screens and printers.

Microbus Electronics Inc.
6401 Dellwood Dr. NE
Fridley, MN 55432
(612) 571-7013; FAX (612) 572-3968
Gary Vander Halt, President

Consulting Services - Hardware and Software

Microbus Electronics Inc. is a hardware/software contracting company with extensive experience in 34010 development. Microbus has developed products for Arcon Graphics and other graphics companies, as well as companies not involved in computer graphics. Microbus is equally comfortable in the various sub-disciplines of graphics such as CAD/CAM, DTP, document retrieval and image processing. Microbus has developed products on the VME, Multibus, PC and MicroChannel buses.

Microbus will take charge of a project from the specification stage through design, PCAD schematic capture, generation of PCB artwork, software development and documentation, all the way to prototypes and small production runs. By keeping overhead low, Microbus can offer very reasonable rates and will quote fixed price bids on well-defined projects or work on an hourly fee basis.

Micro Display Systems, Inc.
1310 Vermillion Street
Hastings, MN 55033
(612) 437-2233; FAX (612) 437-7325

The Genius 1900

The Genius® Model 1900 series features color and grayscale monitors based on the Texas Instruments TMS34010 32-bit processor. The TIGA software interface provides compatibility with over 200 software applications.

The Genius® Model 1920C

The Model 1920C is a 19" Landscape display for IBM AT/compatibles which utilizes the TIGA software interface and the TMS34010. This monitor features: dual page color display system; 25, 66, 72, 78 or 85 lines selectable; non-interlaced screen for flicker-free display; tilt and swivel base; 1280x1024 pixel, 100 dpi; 16 or 256 of 16.8 million colors selectable.
Hardware Requirements: IBM AT or compatible

The Genius® Model 1922G

This model is a 19" Landscape display for IBM PS/2 Family Products. It features: a dual page grayscale display system; includes monitor, controller card, and software documentation; non-interlace screen; 1280x1024 pixels, 100 dpi.
Hardware Requirements: IBM PS/2

The Genius® Model 1920M

This model is a 19" Landscape display for IBM PC/XT/AT systems featuring a dual page monochrome display. This system includes the monitor, controller card and software documentation. The Model 1920M supports 1280x1024 pixels with 100 dpi and is non-interlaced.
Hardware Requirements: IBM PC/XT/AT or compatible

The Genius® Model 1922M

This dual page monochrome display system is designed for the IBM PS/2 Family Products. It features a 19" non-interlaced monitor with 1280x1024 pixels, 100 dpi, a controller card based on the TMS34010 and software documentation. Emulations include: MDA, CGA and Hercules.
Hardware Requirements: IBM PS/2 compatible

The Genius® Model 1720G

The Genius® Model 1720G is a true full-page grayscale display system. The system consists of a 17" non-interlaced monitor, a 34010-based controller card, and software documentation. This system supports 736x1008 pixel resolution and 90 dpi.
Hardware Requirements: IBM AT or compatible

Micro Display Systems, Inc. (Continued)

The Genius® Model 1920G

This dual page grayscale display system is designed for IBM AT compatibles. The monitor is a 19" 1280x1024, 100 dpi, non-interlaced display. The controller card is TMS34010-based.

Hardware Requirements: IBM AT or compatible

Micro Display Systems, Inc., was incorporated in Minnesota in August of 1981. The company's objective was to design, manufacture and market a video display system complete with a controller card that would display a full page of text. The product was to use a high resolution CRT and be compatible with microcomputers.

The company founders established the company with the idea of bringing full-screen technology, already being used on dedicated word processing systems, to the microcomputer marketplace. The company's first product was a full-page 57-line text-only monitor for the Apple Computer. IBM's PC introduction in 1982 changed the company's focus from the Apple marketplace to a newly designed product for the emerging office automation PC's which required both text and graphics.

Micro Display Systems' first MS-DOS product, THE GENIUS®, a 15-inch high-resolution portrait mount monitor and controller card was introduced in early 1984, with production beginning in May of 1985.

Micrografx, Inc.
1820 N. Greenville Ave.
Richardson, TX 75081
(800) 272-3729; (214) 234-1769 in Texas
Kenneth Mecca, Dir. of Marketing

Windows DRAW

Windows DRAW, selected as the best free form graphics program on the market by Software Digest (Dec. 1986), is a powerful, easy-to-use drawing and graphics arts publishing system for people requiring professional presentations, proposals, illustrations, or any other documents. Anything that can be done with pencil and paper can be accomplished with the click of a button. Now bundled with our Windows ClipArt collection, an assemblage of over 1000 artistic images, Windows DRAW is the most complete graphics arts publishing system available for under $300. Windows DRAW runs as an application to Microsoft Windows and is also compatible with other Windows applications including Aldus PageMaker, Microsoft Write, and Micrografx In*a* Vision, Windows GRAPH, and Windows CONVERT.

In*a* Vision

In*a* Vision is a highly powerful, but easy-to-use, drafting system that allows both the novice and the power user to create, enhance, and modify the most difficult designs at a fraction of the cost and at a fraction of the time it takes using any other CAD system. In*a* Vision is the fully integrated CAD package you need for creating complex technical drawings, blueprints, diagrams, and electrical, mechanical, or architectural designs. In*a* Vision includes 16 overlays, dimensions, crosshair cursor, visible coordinates, templates, and a user-definable drawing area up to 68"x 68". And many more features for the precision and accuracy you need. In*a* Vision runs as an application to Microsoft Windows and is also compatible with other Windows applications including Aldus PageMaker, Microsoft Write, Micrografx Windows DRAW Windows GRAPH, Windows ClipArt, and Windows CONVERT.

Windows GRAPH

Windows GRAPH, the most advanced charting package available today, is for people needing to create presentation quality business graphics in a wide variety of two or three dimensional formats. Input can be imported from the most popular spreadsheets on the market including Microsoft Multiplan. Windows GRAPH is so easy to use that graphs can be produced with the click of a button; so powerful that virtually any type of chart or charts can be drawn, combined, and enhanced with free form drawing and text capabilities. Graph has unique features not found in other micro- based business graphics products, such as 3-D support, Dynamic Data Exchange support, creation of combination charts, curve smoothing, and much, much more. Windows GRAPH runs as an application to Microsoft Windows and is also compatible with other Windows applications including Aldus PageMaker, Microsoft Write and Micrografx Windows DRAW, In*a* Vision, Windows ClipArt, and Windows CONVERT.

Hardware Required: IBM PC or compatible, 512 K, EGA (for color)
Software Required: DOS 2.0 or higher; Microsoft Windows
Availability: Now

Micro Industries
691 Greencrest Drive
Westerville, OH 43081
(614) 895-0404; FAX (614) 882-6357
Michael A. Curran, General Manager

MICRO INDUSTRIES

MIB II 386/171 Color Graphics Subsystem

The MIB II 386/171 is a double-board subsystem that combines the OME 171 with an 80386-based processor board to provide medium- to high-resolution graphics for Multibus II applications. The processor board features the 80386 CPU, 2 MB dual port DRAM, 64K cache memory, two EPROM sockets, ADMA, MPC, Interconnect controller, SCSI interface, 8530 SCC, 8259A PIC and 8254 PIT. The SCC provides two additional half/full-duplex serial I/O channels with programable bauds up to 19.2K. The cache improves performance by allowing zero wait states for cache hit read accesses and three wait states for other DRAM accesses.

Hardware Requirements: Multibus II compatible system
Software Requirements: 80386 Development Tools, TI 34010 Development Tools
Availability: Now

OME 171 Graphics Expansion Module

The OME 171 was designed around the powerful 32-bit TMS34010 processor for use with a Multibus II host board. The OME interface allows the host CPU to access the TMS34010 and 8530 SCC at rates up to 400 nanoseconds/16-bit transfer. The module also features a Bt458 RAM/DAC for composite RGB output and pixel color, a Bt431 for cursor control with a simple software interface, two RS-232C serial channels, 2 MB DRAM, 2 MB frame buffer, and a 256K overlay buffer.

Hardware Requirements: Multibus II compatible system
Software Requirements: TI Development Tools
Availability: Now

MIB II 186/157A Terminal Communications Controller

The MIB II 186/157A includes two 78808 UARTs which supply 16 asynchronous serial I/O channels with independently programmable baud rates. The TMS34010 processor sustains simultaneous operation at 19.2K baud. The board supports modem status change detection for Data Set Ready and Data Carrier Detect signals and reports interrupt requests due to transmitter/receiver interrupts. The Summary registers detect data set changes and determines interrupt causes for any channel with a single read. The board also features an 80186 CPU, 512K DRAM, four memory sockets, 8751 controller, ADMA, MPC, 8259A PIC and two SBX connectors.

Hardware Requirements: Multibus II compatible system
Software Requirements: 80186 Development Tools, TI 34010 Development Tools
Availability: Now

MIB II 186/152B 8 Channel Serial I/O Controller

The MIB II 186/152B provides serial communication for Multibus II applications. Two TMS 34010 processors control four 8530 SCCs to supply eight synchronous/asynchronous serial I/O channels. An 8-bit parallel ring indicator port serves all eight channels. The TMS34010 processors support simultaneous operation of the SCCs at 56K baud with channels individually programmable for rates up to 1.5 Mbits/second. The board also features an 80186 CPU, 512K DRAM, two EPROM sockets, 8751 controller, MPC, and 512K DRAM for each TMS34010 processor.

Hardware Requirements: Multibus II compatible system

Software Requirements: 80186 Development Tools, TI 34010 Development Tools

Availability: Now

Micro Industries offers an integrated package of engineering, manufacturing and product support. The company manufactures over 300 standard board products and is capable of providing semi-custom designs that combine existing circuitry with standard boards as well as fully customized designs.

Microkey Limited
98a St. James Street
Brighton, Sussex BN2 1TP
United Kingdom
(0273) 672911
Paul Wynter, Managing Director

— μKEY —

ATS 34010 Series of Graphics Controllers

Microkey, part of the Advanced Text Systems Group, has introduced a new range of Graphics Products based on the Texas Instruments 34010. The family of IBM bus compatible cards designated ATS-34010 will allow all OEMs and end users low-cost access to the high performance Graphics Controller of the future.

Unique features are incorporated in the cards including Hi-Resolution Monochrome, 1024 x 1024 8 bit Colour, Hi-Speed bus, 2 Meg RAM, Genlock for video applications and programmable top-clocks. All the cards are TI software product compatible including TI's assembler and debugger.

The cards are supplied with a useful set of Graphics Primitives and full documentation. The company can also offer full OEM hardware/software development and manufacturing for designers wishing to include the Texas Instruments 34010 GSP ICs into their products. Future cards will include the Texas Instruments TMS320 DSP and other TI high-end products.

Hardware Required: IBM compatible PCs
Availability: Now

Micro Machines
13750 SerraOaks
Saratoga, CA 95070
(408) 741-5012
Larry Krummel

Image Storage and Retrieval Software

The basic algorithms needed for storage and retrieval of scanned image data are implemented on the TI 34010. They include:

- Compression/Decompression
- CCITT Group 3/1d Compression
- CCITT Group 3/1d Decompression
- CCITT Group 3/2d Compression
- CCITT Group 3/2d Decompression
- CCITT Group 4/2d Compression
- CCITT Group 4/2d Decompression
- Binary Image Transforms
- Resolution Matching (Scale)
- Rotation
- Binary Image Generation
- Halftoning - continuous tone to raster
- Diablo 630-text to raster
- TEK 4014-vector to raster.

Hardware Required: TI 34010
Software Required: TI development tools
Availability: Now

Image Storage and Retrieval Peripheral Controller

An IBM XT/AT controller board for laser printers and CCD scanners. Direct video control of Fujitsu, Canon and Ricoh laser printers and scanners. Custom hardware arrays on the board boost the image processing performance of the 34010 to exceed dedicated hardware but keep the flexibility of a general purpose processor.

DGIS for printers is available for this board from Graphic Software Systems (GSS). Micro Machines HCS/RCS software provides scan, compress, and disc storage as well as retrieve, decompress and print. The HCS/RCS software also provides viewing on any display with pan, scale and rotation.

Hardware Required: IBM XT/AT/Compatible
Software Required: Micro Machines Host Control System (HCS); Micro Machines RIP Control System (RCS)
Availability: Now

Micro Machines develops, markets and supports software and controllers for large format image processing. Micro Machines products are sold to OEMs and VARs. Product variations may also be licensed for manufacture.

Micro Machines controllers are available for Fujitsu, Canon, and Ricoh laser printers and scanners.

Microsoft
16011 NE 36th Way
Box 97017
Redmond, WA 98073-9717
(206) 882-8080

Microsoft® Windows

Microsoft Windows is an extension of the DOS operating system. With Windows, the user operates more efficiently by integrating all tasks into one environment.

That is, Windows lets the user run several applications at once. No time is lost quitting one application and running another, because with Windows, it's as simple as clicking a mouse, or inputting a few keystrokes.

Windows also saves time and effort by making it easy for information to be shared between various applications. Simply cut and paste text and graphics from one Windows application to another, or from a DOS application to a Windows application.

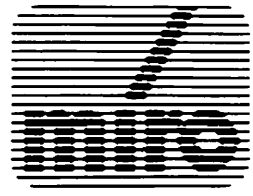
Another important benefit of Microsoft Windows is the friendly user interface. Windows is a very visual way of working with your computer system. Graphics are used to present many applications running in different "windows" on the same display screen. The Windows interface gives the user the same set of tools for running all applications. This keeps things consistent and shortens the learning curve.

Windows provides an easy method for running your applications, including drop-down menus, icons, and the choice of using your keyboard, a mouse, or both together.

Hardware Requirements: IBM PC/XT compatible; 1.5 MB hard disk storage space available

Software Available: TIGA drivers for Windows & Windows 386 V2.1 are available now and Texas Instruments will provide TIGA drivers for future Microsoft Windows releases.

miro datensysteme
Gifhorner Str. 28
D-3300 Braunschweig
West Germany
(49) 0531-30091-0; FAX (49) 0531-30091-99
Owe Bunger



miroGRAPH 700 Graphics Card

The new performance class represented by the miroGRAPH 700 color graphics card, with resolution of 1280 x 1024 and extremely high drawing speeds, is the ideal basis for professional graphic user surfaces. High image redraw speeds cut out the wait times previously suffered by users of standard graphics adapters when complex image contents have to be built up. The picture resolution and the ability to show 256 different colors at the same time allows a clear differentiation and display of multiple windows. Text and graphics are always sharp and clear. And the 75 Hz frame frequency ensures non-flicker ergonomic displays.

Hardware Requirements: IBM AT or compatible
Software Included: TIGA Driver, other drivers available
Software Requirements: DOS
Availability: February 1990

miro datensystem GmbH was founded in 1982. In the last three years, the number of employees has tripled to almost eighty people working for miro; developing, producing and marketing high-resolution graphics systems for IBM compatible ISA- and MCA-Bus PCs and Apple Macintosh computers. As working with user interfaces is becoming more and more wide spread, the high-resolution miroGRAPHs provide the needed flexibility.

Mitsubishi International, Inc.
701 Westchester Avenue
White Plains, NY 10604
(914) 997-4999
Rich Virga, National Sales Manager

Mitsubishi
International Corporation

CHC-336 Thermal Color Printer

Mitsubishi International, Inc., marketers of Shinko products in the U. S. A., has introduced a 34010-based Intelligent Graphics Controller built into the CHC-336 Thermal Color Printer.

The CHC-336 printer can interface with a virtually unlimited array of computer graphics systems without the need for a custom written software driver. The printer supports Hewlett Packard Graphics Language (HPGL) and Directed Graphics Interface Standard (DGIS) internally. The external drivers support Computer Graphics Interface (CGI), Virtual Display Interface (VDI) and Computer Graphics Metafile (CGM).

The 336 is an A size printer which outputs brilliant color graphics hardcopy as well as ultra-sharp color transparencies for overhead projection. A built-in page buffer allows for multiple copies. YMC and YMCB color modes are user-selectable via control panel dip switches. In the IGC mode the printer can output 256 brilliant colors from a palette of over 32,000 colors.

The CHC-336 is fast, very easy to use and virtually maintenance free. The printer focuses directly into the PC and desktop publishing marketplace with a complete color printing system. It is equipped with both RS-232 and Centronics Interface.

Hardware Required: Host computer with RS-232 serial or Centronics parallel port
Availability: Now

Motorola Microcomputer Division
Mail Drop DW212
2900 South Diablo Way
Tempe, AZ 85282
(602) 438-3652
Dave Peters, Product Marketing Manager

MOTOROLA
Microcomputer Division

MVME393 Multi-Channel Graphics Display Controller

The MVME393 Multi-Channel Graphics Display Controller utilizes a revolutionary dual processor architecture to provide a rich graphics environment with a low cost per channel. By using an MC68010 MPU, on-board intelligence is available for multi-tasking and windowing operations, while the Texas Instruments TMS34010 handles concurrent bit mapped display functions for up to eight color monitors.

The MVME393 has been optimized to satisfy requirements for both text and graphics information on multiple screens such as those used in flight simulation, factory automation, instrumentation, financial transaction processing, information services, navigation and military applications.

The standard double height VMEbus board features selectable transition module configurations to provide a varied number of graphics displays, resolutions, number of colors, and video breakout to monitors dependent on users applications. On-board memory consists of 64 KBytes for the VMEbus/ MC68010, 512 KBytes for MC68010/TMS34010 instructions, and 2 MBytes for the video frame buffer organized as 1024 x 2048 x 4.

Multi-tasking operations provide an efficient command interpreter for two horizontal windows (tickers) and Lone primary text window, simultaneously, for each of eight displays each running independent tasks with sub-second response. The firmware also provides the ability to control a general text window and three other general purpose graphics windows in conjunction with two tickers and primary text window.

Hardware Required: VME system

Software Required: System V/68™ operating system; Motorola's port of AT&T's UNIX; Nova Graphics International CGI is optional.

Available: Now

MPI Technologies, Inc.
15922 Pacific Coast Hwy. Suite 215
Huntington Beach, CA 92649
(213) 592-3388; FAX (213) 592-4926
Alain Courtois, Vice President of Engineering

MPI technologies, inc.

AT05 IPDS-Compatible Printer Adapter

The AT05 permits today's highest performance page printers to be used with IBM's powerful IPDS page description protocol. The speed and resolution of the AT05 and ASCII printer solution can be up to 10 times greater than the IBM 3812 or 3816 system printers. The AT05 provides complete IPDS protocol conversion for popular printers such as the Xerox 4045 and 4046, Canon LBP-8R, HP Laserjet Series II and Ricoh LP/4081. All IPDS "towers" are fully implemented to provide complete IBM 3812 and 3816 model 2 emulation to the host system.

Software Included: IPDS support
Availability: 1990

MPI Technologies, an affiliate of MPI France, offers IPDS hardware, software and services to the printer industry and produces coax and twinax products.

M. Slinn Engineering Services, Inc.
3158 W. 32nd Ave.
Vancouver, B.C., Canada V6L 2C1
(604) 266-5380; FAX (604) 266-5348
Michael Slinn, President

Consulting Services - Software

M. Slinn Engineering offers custom software and drivers for the 34010 family. Software is written in "C" and Assembler languages and is available for both IBM compatibles and MAC hosts. Complete product design is available upon request.

The software engineering firm was incorporated in 1984 and specializes in undertaking development projects with expertise in software development, documentation, packaging and training. References are available upon request.

Multisignal Technology Corporation
4662 Katella Ave., Suite J
Los Alamitos, CA 90720
(213) 431-3503; FAX (213) 598-1741
Chai S. Heng, Senior Design Engineer

MTIG-100

The MTIG-100 add-on board is an integrated TMS34010-based frame-grabber and graphics processor for the IBM PC/AT and compatibles. The MTIG-100 has four video input channels for the RS-170 or CCIR inputs and 2K x 8 input Look-up Table (LUT).

Image resolution is 512 x 512 x 8 with an additional overlay plane organized as 512 x 512 x 4. The video DAC provides 256 colors or gray levels from a palette of 16.7 million and 15 overlay colors. The video digitizer can digitize real-time video signals (30 frames/second for RS-170 and 25 frames/second for CCIR), with an aspect ratio of 4:3 or 1:1 (for square pixels).

Software support for the MTIG-100 includes Operational Software (MTIG_OP) and Image Library (MTIG-340 ILIB).

Hardware Required: IBM PC/AT or compatible
Software Required: TMS34010 software development tools
Software Included: Operational Software (MTIG_OP)
Availability: Now

Multisignal Technology Corporation was founded in 1986 with product development and research capabilities in image analysis, machine vision, signal processing, graphics, neural networks, and artificial intelligence. Multisignal's product line includes a frame-grabber and graphics processor, a PC-based image workstation, an array processor, and imaging/graphics software.

National Design, Inc.
9171 Capital of Texas Highway North
Houston Building #230
Austin, TX 78759
(512) 343-5055; FAX (512) 343-5053
Gabrielle Ryan, Vice President Sales & Marketing

NDI 1028 Graphics Controller

The NDI 1028 Graphics Controller is a high-performance, low-cost color graphics subsystem that incorporates the value-added capabilities of direct 60 MHz TMS34010 control and the versatility of NDI contollers into a compact, dedicated OEM offering.

Features of the NDI 1028 include software selectable resolution up to 1024 x 768, 256 colors from a palette of 16.7 million colors, and flicker-free interface with all popular non-interlaced monitors. The NDI 1028 supports up to 3 MB of on-board RAM, provides a video graphics overlay pass-thru, and offers an on-board hardware EGA/SUPER VGA emulation option.

Software support includes TIGA, TI Development Tools, NOVA*CGI™, X Windows, AutoCAD® Releases 10 and 11, and NDI Display List.

Hardware Required: 286 or 386 personal computer with AT BUS or VME BUS
Software Required: DOS or UNIX operating system
Availability: Now

NDI 1289 Graphics Controller Card

The NDI 1289 Graphics Controller Card unleashes the power of the TI 60 MHz TMS34010 with its pure speed, enhancing any engineering or desktop publishing application.

The NDI 1289 offers unique features like software selectability in normal resolutions up to 1280 x 1024, 256 displayable colors from a palette of 16.7 million colors, as well as monochrome or 16 colors from a palette of 4096 colors. The NDI 1289 converses flicker-free with all popular non-interlaced monitors, supports up to 4 MB on-board RAM, and includes either EGA/SUPER VGA hardware emulation or an EGA/SUPER VGA pass-thru mode. Keyboard controller and RS-232-C port are standard with the NDI 1289, as are overlay window capabilities, a hardware cursor controller, and pixel doubling and scrolling. Value-added OEM customization is also offered.

Software support includes TIGA, TI Development Tools, NOVA*CGI, X Windows, AutoCAD Releases 10 and 11, and NDI Display List.

Hardware Required: 286 or 386 personal computer with AT BUS or VME BUS
Software Required: DOS or UNIX operating system
Availability: Now

NDI VME 1280

The NDI VME 1280 graphics controller provides the high-performance of the NDI 1289 in a VME bus structure. Thus, the system integrator can easily add high resolution color graphics to a VME platform.

The NDI VME 1280 supports up to 4 MB VRAM and 3 MB DRAM on-board. Software support includes TI Development Tools, NOVA*CGI, X Windows, and NDI Display List.

Hardware Required: 286 or 386 personal computer with AT BUS or VME BUS
Software Required: DOS or UNIX operating system
Availability: 2nd quarter 1990

National Design, Inc. (Continued)

RASEDIT

RASEDIT, a raster bit map editor, is a powerful, icon-driven paint primer package which reduces the time needed to customize NDI's graphic engine for particular applications. Written in C and built to run on the graphics engine, RASEDIT needs the computer for only a few low-level routines, freeing up both CPU time and storage requirements.

RASEDIT features include easily-modified configuration for set-up of board type, resolution, pixel depth, and monitor timing patterns; Microsoft® mouse compatibility; complex image generation primitive that includes polyline, filled or framed rectangles or ovals, different brush sizes, and convex polygon fills; and dynamic PAN, ZOOM, and EDIT functions. RASEDIT also offers run-length encoded format (such as PCX), modifiable hue selection in 1-degree increments, and uploadable font capabilities. All 34010 pixel processing options, including BOOLEAN logic, may be performed on bit map, and the bit map may be rotated, mirrored, copied, or moved. Also, PCX bit maps may be imported to RASEDIT.

Hardware Required: 286 or 386 personal computer with AT BUS or VME BUS
Software Required: DOS or UNIX operating system
Availability: Now

DLP

DLP, Display List Processing, is an NDI graphics programming interface for a 286- or 386-based personal computer. DLP is fast, user-friendly, and requires no 34010 programming knowledge. The interface consists of a group of functions which are called from C. The user builds a display list which may consist of points, lines, or polygons. These entities may be scaled, moved, or rotated as one display list.

DLP supports two modes: 1) integer power-of-2 transformations (transforms at approximately 100,000 vectors per second), and 2) floating point transformations (transforms at approximately 30,000 vectors per second).

DLP uses an alternate approach to the single instruction execution employed in most intelligent graphics card interfaces. As the host application is run, the display list is built on the graphics engine. It is then run or transformed on the card. Thus, the computer does not wait for each graphics instruction to finish before sending the next entity. With DLP, all entities are sent and then drawn. This allows the host to build multiple display lists and run one or more of them with a single command, such as RUNDLP(1);.

Display lists may call other display lists and double-buffering techniques are supported for those needing animation.

Hardware Required: 286 or 386 personal computer with AT BUS or VME BUS
Software Required: DOS or UNIX operating system
Availability: Now

National Design, Inc. is a major manufacturer of quality graphics video controllers for the IBM PC®/AT and compatibles and VME bus environments. These boards are used primarily by systems integrators anxious to take advantage of NDI's unique capability to allow direct communication with the TMS340 series. The NDI product family allows users unparalleled resolution and speed in crucial applications such as avaiation training, medical imaging, strategic military and other real-time applications. System integration is greatly enhanced through the use of NDI's multi-functional software toolkits.

Nautil Company
BP608 75530 Paris Cedex II
France
(1) 43 57 83 20
Mr. Picard, General Manager

Nautil

CORAIL

The CORAIL board is a high resolution graphics board for IBM PC/XT/AT compatibles with 625 line television standard.

The board is designed around the Texas Instruments TMS34010 graphics processor. It contains 1 megabyte of video memory (VRAM) organized as one logical screen of 1024 by 1024 pixels of 256 out of 16 million colours.

The physical screen resolution is 576 lines of 768 pixels. This display window can be moved over the whole of the logical screen.

It is connectable to all televisions and monitors equipped with a PERITEL connector.

The CORAIL board also provides a "GENLOCK" input allowing synchronization with an external signal and a "chop" output allowing the incrustation of images into an external video source (VCR, video disk, camcorder, video camera, television, etc.).

A large graphics library, written in 34010 assembly language is supplied with the board and allows easy use of the latter with most high level languages (BASIC, Pascal, C, etc.).

An optional graphics composition program is also available.

NEC Home Electronics (U.S.A.) Inc.
1255 Michael Drive
Wood Dale, IL 60191
(312) 860-9500
Harold Melnik, Product Manager

NEC®

MultiSync Graphics Engine

The MultiSync Graphics Engine board is a new category of graphics adapter products developed to dramatically enhance the speed and performance of a vast array of graphics-oriented software applications.

The MultiSync Graphics Engine board was developed to provide accelerated performance and, ultimately, higher productivity at the high resolutions associated with such "power user" applications as electronic publishing, CAD/CAM, simulations, business graphics and graphic design in windowing environments.

The board utilizes the 34010-50 and is available for IBM AT and compatibles and Micro Channel Architecture.

System configuration includes: 512K VRAM, 768 DRAM for 16 color version; 1MB VRAM, 768 DRAM for 256 color version. The MultiSync Graphics Engine supports VGA, Super VGA (800x600), 1024x768 interlaced and 1024x768 non-interlaced. NEC MultiSync monitors and MultiSync compatible monitors are supported.

Hardware Requirements: IBM AT compatibles - 16-bit bus with 286/386 support, IBM MCA

Software Supported: TIGA, DGIS, Presentation Manager, Windows 286 & 386, AutoCAD Release 9.0 and 10.0 with Display List support, GEM 3.1, Ventura 2.0, GSS CGI 2.15, Flight Simulator Release 3.0, PC-Xview (UNIX remote terminal support)

Availability: Now

Nissho Electronics (U.S.A.) Corporation
Inwood Park, Suite 200
17310 Red Hill Avenue
Irvine, CA 92714
(714) 261-8815
Joseph Friedman, Director of Sales/Marketing

NISSHO ELECTRONICS

LN-1240

The Nissho LN-1240 is a 400 x 400 DPI resolution, 12 PPM laser printer that uses the Texas Instruments TMS34010 Graphics System Processor. The LN-1240 supports the electronic publishing market's most popular page description language (PDL), PostScript, implemented by Control-C Software. With this functional capability, desktop publishing applications are simplified because many page composition software packages have been designed to interface with this popular PDL. The LN-1240 has an open bus architecture which provides OEMs with a flexible platform that can be customized to address the technical publication, CAD/CAM, scientific and desktop publishing markets easily and effectively. Memory or program expansion can be increased to 1 MByte for proprietary firmware or special application functions. Page RAM can be expanded beyond the standard full page bit map configuration to 6 MBytes, for multiple page capability. The LN-1240 can be configured to print either face-up or face-down and will support dual 250-sheet input cassettes. Various paper sizes are also supported, up to A4 or 8.5"x14". To print on transparencies or to produce duplex printout, a manual feed table is available as a standard feature. A cartridge system simplifies user operation and consumable replacement. Preventive maintenance can be performed by the user.

Hardware/Software Required: None

Availability: Now

LN-2248 PrintStation

The Nissho LN-2248 PrintStation is a 480 x 480 DPI resolution, 22 PPM laser printer that uses the Motorola 68020 and Texas Instruments TMS34010 Graphics System Processor. The PrintStation provides OEMs with a complete solution for high-end technical publishing, CAD/CAM and scientific applications that demand large and complex volumes of printed material. The 34010 performs high-speed area/fill, outline drawing and serial rasterization for sophisticated graphics applications.

The PrintStation has an open bus architecture which provides OEMs with a flexible platform that can be customized or expanded. The PrintStation supports the electronic publishing market's most popular page description language (PDL), PostScript, implemented by Control-C Software. Through Post-Script compatibility, OEMS can concentrate on developing efficient system architecture knowing the PrintStation will universally interface with existing application packages and handle all aspects of Fonts, graphics and page composition.

Dual 250 sheet input cassettes come standard. Input trays are universal and support letter, legal, and ledger (11" x 17") paper sizes. The PrintStation can accept 20 pages of non-standard stock size with its multiple sheet bypass feature. Optional features include a large-capacity cassette which holds 2,000 sheets, a 10- or 20-bin sorter, and semiautomatic duplexing unit to simplify two-sided copying.

Hardware/Software Required: None

Availability: Now

Nissho Electronics (USA) Corporation is a subsidiary of Nissho Iwai of Japan, one of the world's leading trading corporations. Its worldwide network includes more than 8,000 specialists in more than 160 offices in 75 countries.

Nova Graphics International
1515 Capital of Texas Hwy., South
Austin, TX 78746
(512) 327-9300; FAX (512) 327-8629
Sonja Eagle, Sales Coordinator

NOVA GRAPHICS INTERNATIONAL
CORPORATION

NOVA*CGI™

NOVA*CGI is a faithful implementation of the Computer Graphics Interface defined by the computer graphics standards making groups within the American National Standards Committees and the International Standards Organization. The CGI defines a standardized virtual device interface to allow device independence and software transportability in the development of graphics applications. NOVA*CGI is a firmware or downloaded software interpreter of CGI functions which runs on the TMS34010 and is ideally suited to exploiting its full power. NOVA*CGI graphical functions are described in terms of a CGI data stream. Since the interface to NOVA*CGI is based on a standardized data stream encoding, hardware drivers for the interface are simple communications software (ignorant of graphical functions) and are not seriously impacted by differences in physical interfaces. Such data streams are generated by an application or higher level graphics package such as NOVA*GKS using a standardized procedural binding to a CGI generator available from Nova Graphics.

Manufacturers of graphics hardware devices now have the ability to implement the emerging CGI standard on the TMS34010 using NOVA*CGI at the device level. NOVA*CGI supports advanced graphics functions including bundled attributes, raster operations and segment capabilities. In addition to the base product, NOVA*CGI, Nova Graphics International has provided additional capabilities for users of CGI via the T-Windows capability of NOVA*CGI. T-Windows allows multiple independent CGI Virtual Device Implementations to share a single display in non-overlapping windows. Under a multitasking environment host operations system, these independent CGIs can be accessed by independent application processes.

Hardware Requirements: TI TMS34010, 512K RAM/ROM
Availability: Now

Nova Graphics International is an innovative leader in establishing and implementing graphics software standards. The company provides graphics software interfaces for a wide variety of computing environments and provides standards-based or custom solutions.

Number Nine Computer Corporation
725 Concord Avenue
Cambridge, MA 02138
(617) 492-0999
Will Frentz, Executive Vice President

PEPPER Pro 1280™

This new Pro-Line product couples the Number Nine Intelligent Operating System (NNIOS™) and Memory Window™ architecture with Texas Instruments TMS34010 graphics system processor for a significant advancement in desktop engineering and publishing workstations.

The Pepper Pro1280 is the first of several Number Nine products to use the TMS34010 graphics processor. The Pro1280 combines non-interlaced 1280 x 1024 pixel resolution and 256 on-screen colors with CGA, MDA, and PGC compatibility, all in a single-board, single-monitor system. The board has 1.25 megabytes of video RAM (expandable to 5 megabytes), 128K of instruction RAM, 128K of graphics firmware, and either a 4096-color palette or a 16 million-color palette. The Pro1280's 16 x 38 pixel system font, as well as its high display resolution, show popular software applications like never before. Ideal as the heart of professional workstations, the Pro 1280 brings its full workstation performance to Autocad, VersaCAD Advanced, Computervision's Personal Designer series, Lotus, MS-Windows, GEM, HALO, CGI, and many other popular software standards.

Hardware Required: AT/RT, Compaq 386
Software Required: NNIOS, DOS, UNIX
Availability: Now

PEPPER SGT

This is a multiprocessor PC graphics board that brings the performance of professional graphics work-stations to a standard PC business platform. The board is based around both the TI TMS34010 GSP and the Intel 82786 graphics processors. The board combines high-speed and multiple resolutions with abundant graphics memory and the means to manage it. The single-board, low-power design conserves expansion slots while providing 1 megabyte of video memory, expandable to 4 megabytes. Without the aid of special display drivers, Pepper SGT takes advantage of its higher resolution and on-board horsepower by replacing IBM text with a 16 x 19 color character cell array... 300% sharper than standard EGA text. This means that all CGA and MDA based software appears dramatically more legible and is displayed with amazing speed.

With variable-scan monitors, users may configure the board to display 640 x 480 pixel resolution with up to 256 on-screen colors, or 16 colors may be shown at either 800 x 600 or 1280 x 480. All display modes run flicker-free and are selectable from a palette of 16,777,216 colors.

Software Drivers: MS Windows, GEM, HALO, CGI, Lotus 1-2-3, Symphony, Ventura, PageMaker, VersaCAD, AutoCAD and Personal Designer.
Hardware Required: PC XT/AT/RT, Compaq 386
Software Required: NNIOS, DOS, UNIX
Availability: Now

Number Nine Computer Corporation (Continued)

PEPPER 1600™

The new Pepper 1600 combines a crisp 1600 x 1200 flicker-free monochrome display resolution with its powerful multiprocessor Pepper board architecture. The board couples both the TI TMS34010 GSP and the Intel 82786 graphics processors with a full megabyte of display memory. The single-board, single-monitor, low-power design may also be expanded to four megabytes of display memory, providing an unprecedented 8192 x 4096 pixel drawing area!

IBM MDA and CGA compatible software runs on the Pepper 1600, allowing it to act as the only display board in your system. Without the aid of special display drivers, Pepper 1600 takes advantage of its higher resolution and on-board horsepower by replacing IBM text with a 16 x 38 character cell array. . . over 400% sharper than standard VGA text. This means that all CGA and MDA compatible software appears typeset-sharp and displayed with amazing speed.

Software Support: PageMaker under MS-Windows, Ventura Publisher under GEM, HALO DPE under HALO, and CGI-based applications.

Hardware Required: IBM PC/XT/AT/RT, or Compaq 386

Software Required: NNIOS, DOS, UNIX

Availability: Now

NNIOS™

NNIOS is a true operating system for the TMS34010. More than a set of graphics primitives, NNIOS offers a full graphics operating system services environment.

NNIOS firmware is responsible for the ease of porting applications to the Pepper Graphics System.

NNIOS is a rich library of on-board device-independent graphics, video control, and advanced memory management functions. Optimized to draw the best performance from the TMS34010, NNIOS allows software developers to write through an efficient, comprehensive device driver rather than directly to the hardware.

Hardware Required: Pepper Pro 1280, Pepper SGT, or Pepper 1600; PC AT/RT, Compaq 386

Availability: Now

Number Nine Graphics Xcellerator (#9GX)

The #9GX is a low cost, graphics board capable of resolutions from 640x480, 16 colors to 1280x1024, 256 colors. The #9GX is based on the Texas Instruments TMS34010. The board also supports refresh rates up to 72 Hz, an expandable Video RAM and DRAM memory configuration, MDA emulation, and VGA digital loop through or on-board VGA.

Hardware Requirements: IBM PC compatible

Number Nine Computer Corp. designs and manufactures advanced PC graphics boards for business and professional desktop workstations. A pioneer in the industry, Number nine built the first PC graphics board that utilized multiported memory architecture coupled with an on-board graphics processor. Its Revolution 512 x 8 graphics board was the first 256 color card in the PC marketplace, bringing the first of a long line of graphics applications from minicomputers to PC platforms. Number Nine was also the first to offer true-color 32 bit/pixel graphics boards, as well as broadcast-quality video genlock.

Number Nine's new series, The Pepper Graphics System, is a natural evolution of the company's earlier Revolution card family. All Pepper cards include the TI 34010 and IBM display emulation, providing the total single-board, single-monitor solution. The company began rolling out The Pepper Graphics System during the 4th quarter of 1986.

Number Nine was founded in 1982.

ODDS INC.
1590 S. Milwaukee Ave., Suite 315
Libertyville, IL 60048
(708) 680-7794
Louis J. Skriba, President

Optical Disc Duplication Services

A-DIOS™

Optical Disc Duplication Services Inc. (ODDS Inc.) is developing A-DIOS, an innovative "desk top" optical media publishing software package distributed exclusively on the new Panasonic 8" analog recordable optical memory disc. "A-DIOS," which is an abbreviation for Analog-Disc Interactive Optical Software, is operating system software for the TMS34010 processor, that eliminates keyboard input, magnetic discs (both hard and floppy) and paper based printouts from the user environment. Loading code into program RAM to operate the TMS34010 is made possible by the AT&T VISTA™ videographics board which is capable of digitizing broadcast quality input video signals. A-DIOS program data is recorded by ODDS INC. as a video signal on a small portion of the optical memory disc media using the new Panasonic Optical Memory Disc Recorder (TQ-2026F). By exploiting the unique features of the analog optical recording media and the TMS34010 based VISTA board, ODDS INC. has broken with the tradition (and limitations) of Intel's XXX86 series processors, IBM ROM based BIOS, and floppy disk based "DOS" software. Communications intensive applications can now be developed using audio and "video" input and output exclusively.

The A-DIOS operating environment is based on a non-digital system command structure. User programs are based on a library of commands/functions/procedures, organized into logical and literal "frames." The human interface to the operating environment is based on sampled and compressed audio and video input signals. The operating system output (system prompts, error messages, online tutorials, documentation) is based on a combination of high-resolution graphics (to the limit of the VISTA board and display configuration); NTSC broadcast quality video, and telephone grade audio. A-DIOS replaces other operating systems in the creation of non-print, non-alphanumeric communications appropriate for factory automation training, professional communications, and automated retailing systems.

Hardware Required: IBM PC/AT or compatible, AT&T VISTA videographics board, Panasonic OMDR TQ-2026F, both configured by ODDS INC., video camera, microphone, multisync monitor, multiport RS232, Hayes compatible modem

OGIVAR TECHNOLOGIES, Inc.
7200 Route Transcanadienne
Ville Saint-Laurent, Quebec
Canada H4T 1A3
(800) 361-3694
(514) 737-3340; FAX (514) 737-4729

Ogivar System 386/33

The Ogivar System 386/33, which performs in both the MS-DOS and OS/2 environments, features a multiple processor configuration. In addition to its standard 33-MHz Intel 80386 microprocessor and 80385, 33-MHz cache controller, the System 386/33 also features an optional slot for a Weitek WTL3167 floating point coprocessor or an Intel 80387 33-MHz numeric coprocessor.

To power its high-resolution 1,024 x 768 display, the System 386/33 uses the Texas Instruments TMS34010 graphics processor with 8514 AI software emulation and VGA register compatibility, and the TIGA interfaces for OS/2 Presentation Manager, Microsoft Windows, and UNIX X-11 Windows.

To take advantage of the powerful onboard TMS34010 graphics processor, the System 386/33 comes standard with a 19-inch color monitor supporting VGA graphics in 80 characters by 25 lines and 1,024 x 768 screen resolution. Up to 2 MB Video RAM memory is available as an option.

Ogivar Technologies, Inc., Canada's national computer company, has its headquarters and manufacturing facilities in Montreal and offices in Ottawa, Toronto and Quebec City. A leading supplier of 80286- and 80386-based desktop PC-compatibles in Canada, Ogivar Technologies distributes its line of computer products in the United States through a nationwide distribution channel.

Publicly held, the company is traded on the Montreal Stock Exchange under the symbol "OGI".

Omnicomp Graphics Corporation
1734 Sam Houston Parkway N.
Houston, TX 77043
(713) 464-2990; FAX (713) 827-7540
Anthony G. Masrage, President

Omnicomp™
Graphics Corporation

OMNI 8600 GDC Graphics Display Controller

The OMNI 8600 GDC is a 6U x 160mm high-performance VME (with VSB option) Graphics Display Controller based on the TMS34020/34082 processors. The flexible architecture of the OMNI 8600 provides resolution up to 1600 x 1280 and memory ranging from 2K up to 4K x 4K. The frame buffer can include 4-, 8-, or 24-bit planes, in addition to 4 or 12 overlay planes. The OMNI 8600 can include a DEC DRV11-WA interface in addition to two serial ports with firmware support for local I/O devices. The optional OMNI 8815 GDM (Intel 80486-based) can be coupled with the OMNI 8600 to provide graphics database management via GKS firmware.

Software Included: Drivers for UNIX, DOS, OS/9, PSOS and others as requested, OMNI*NKS native kernel system firmware and libraries

Availability: Now

OMNI 8200 Frame Grabber

The OMNI 8200 FGB is an NTSC or PAL frame grabber for digital image processing on the VME bus. The board digitizes standard video signals such as RS-170 PAL (at 768 x 575 resolution) and NTSC (at 756 x 685 resolution) and stores resulting images in a real-time buffer. The OMNI 8200 can locally store as many as two PAL or four NTSC frames in 2K x 1K x 8 planes plus 2 overlay buffer which are mapped to the VME bus. Alternately, the OMNI 8200 can be windowed in real time on the high-performance OMNI 8600 GDC graphics display controller.

Software Included: Drivers for UNIX, DOS, OS/9, PSOS and others as requested, OMNI system firmware and libraries

Availability: Now

OMNI 6600 Graphics Display Controller

The OMNI 6600 GDC offers all the features and benefits of the OMNI 8600 GDC but is designed for the PC/AT platform based on the TMS34020/34082 processors.

Software Included: Drivers for UNIX, DOS, OS/9, PSOS and others as requested, OMNI*NKS native kernel system firmware and libraries

Availability: Now

OMNI 6200 Frame Grabber

The OMNI 6200 FGB is a frame grabber that can be coupled with the OMNI 6600 GDC for use in PC/AT bus environments. Specifications are the same as for the OMNI 8200 FGB except for bus requirements.

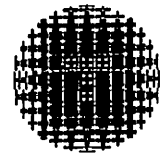
Software Included: Drivers for UNIX, DOS, OS/9, PSOS and others as requested, OMNI system firmware and libraries

Availability: Now

Omnicomp Graphics Corporation specializes in providing systems integrators with graphics solutions for the PC/AT, Multibus II, VME and other host-independent platforms.

Omnicomp's graphics display systems are based on flexible architecture which can be configured to include the following modules: Graphics Database Managers (MC88000 or Intel 80486), Graphics Display Controllers (TMS34020/34082), Frame Grabbers (TMS34010), and Z-buffers.

Oracle Telecomputing, Inc.
25 Industrial Ave.
Carleton Place
Ontario, Canada K7C3V7
(613) 257-4425; FAX (613) 257-7764
Brian McGregor, Manager Graphics Design Services



Hardware/Software Design and Consulting

Oracle Telecomputing specializes in consulting, design, and implementation of hardware and software for the TMS340 family and custom turnkey systems. Application areas include weather, air traffic control, air defense control, process control, network management, maintenance monitoring, and more.

OrCAD L.P.
3175 NW Aloclek Drive
Hillsboro, OR 97124
(503) 690-9881; FAX (503) 690-9891
Jim Edgerton, Marketing Communications Manager
Joe Rayhawk, Technical Support - Graphics

OrCAD

OrCAD/SDT III

OrCAD/SDT III (version 3.22+) is the most popular CAE tool in the world. SDT III is a set of software tools for schematic capture on the PC. System price includes free product updates, technical support, and access to OrCAD's 24-hour bulletin board.

The package also includes libraries of over 6200 parts, netlist output that can be converted to over 30 formats, drivers for over 150 printers/plotters/graphic cards, and automatic electrical rules checking/bill-of-materials and netlist generation. On-line part browsing, five zoom levels, interface to PSPICE, and user-definable A - E worksheets are other features of OrCAD/SDT III.

Hardware Required: PC/compatible with minimum 640K RAM
Software Required: DOS operating system
Software Included: TIGA drivers
Availability: Now

OrCAD/VST

OrCAD/VST (version 1.2+) is a 12-state, event-driven logic simulation tool for the PC/compatible. VST integrates a stimulus generator, design linker, and design compiler into a simulation environment. A netlist for OrCAD/SDT III is required.

OrCAD/VST offers an easy-to-use graphic interface, including pop-up menus and powerful keyboard macros. The logic analyzer style display simplifies data analysis.

Package includes technical support, product updates, and access to OrCAD's 24-hour bulletin board for one year.

Hardware Required: PC/compatible with minimum 640K RAM
Software Required: DOS operating system; OrCAD/SDT III netlist
Software Included: TIGA drivers
Availability: Now

OrCAD/PCB II

OrCAD/PCB II (version 2.02+) is the second generation of printed circuit board layout tools from OrCAD. The package includes a graphic environment with easy-to-use pop-up menus and on-line design rule checking.

Also included are extensive module libraries, an autorouter with user-controllable optimization, and drivers for over 150 printers/plotters/graphic cards.

OrCAD PCB II comes with one year of technical support, product updates, and access to OrCAD's 24-hour bulletin board.

Hardware Required: PC/compatible with minimum 640K RAM
Software Required: DOS operating system
Software Included: TIGA drivers
Availability: Now

OrCAD is the leading manufacturer of electronic design automation software for the PC. Products include schematic capture, printed circuit board layout, logic simulation, and programmable logic design software.

Panacea, Inc.
Londonderry Square, Suite 305
50 Nashua Road
Londonderry, NH 03053
(603) 437-5022; (800) 729-7420; FAX (603) 434-2461
Jake Richter, President

PANACEA Inc.
Computer Graphics Software

Display List Driver-TIGA

Display List Driver (DLD)-TIGA for AutoCAD® release 10 is an add-on software package that accelerates AutoCAD performance for pans, zooms, and redraws, at a rate of 2 - 10 times faster than that of a non-dislpay list driver.

DLD-TIGA supports expanded memory, extended memory, and disk storage of the display list information. DLD-TIGA also supports AutoShade and AutoSketch, and runs on all 100% TIGA-compatible graphics boards.

An AutoCAD 386-specific version of DLD-TIGA will be available in the second quarter of 1990.

Hardware Required: MS-DOS® PC that meets minimum configuration requirements for AutoCAD release 10

Software Required: MS-DOS 3.2 or higher

Software Included: TIGA drivers

Availability: Now

Panacea, Inc. is a computer graphics software company which specializes in custom and commercial software development and consulting for graphics processors and PC-based graphics boards. Consulting services include product evaluation, short-term and long-term product planning, and industry overviews. Custom software includes porting services for TIGA-340 and application drivers.

PC Tech, Inc.
907 North Sixth Street
Lake City, MN 55041
(612) 345-4555; FAX (612) 345-5514
Earl Hinrichs, Vice President

Mono II

Mono II is an 8-bit ISA PC graphics board. Resolution up to 2048 x 1536 x 1 is featured; other common resolutions supported are 1600 x 1200 x 1, 1280 x 1024 x 1, and 1024 x 768 x 2. Portrait-style resolutions are also available.

Mono II supports 348K VRAM, 512K or 2 MB DRAM and offers ECL video output. Imaging software and DGIS™ are also available. Mono II is certified to run under AGE Software's X Windows Server. An MCA version of Mono II is currently under development. License, custom silk screen, and customized software are available to OEMs.

Hardware Required: PC/compatible with ISA bus
Software Required: MS-DOS® operating system
Software Included: TIGA 1.1, MS®-Windows, and AutoCAD® drivers
Availability: Now

Top Color /8

Top Color /8 is an 8-bit PC or 16-bit ISA PC graphics board. Resolution up to 1280 x 1024 x 8 is featured, along with analog RGB or analog monochrome video output. The color version of this board offers a 16 MB (24-bit) color palette, while the monochrome version has a 256 (8-bit) gray shade palette.

Top Color /8 comes standard with 1 MB off-screen DRAM and is expandable to 4 MB. A VGA capture option is also available.

License, custom silk screen, and customized software are available to OEMs.

Hardware Required: PC/compatible with ISA bus
Software Required: MS-DOS 4.01 operating system
Software Included: TIGA 1.1, MS-Windows, and AutoCAD drivers
Availability: 4/1/90

Top Color

Top Color is an 8-bit PC or 16-bit ISA PC graphics board. Resolution up to 1280 x 1024 x 4 is featured, along with analog RGB video output. An analog monochrome version of the board is also available.

Top Color offers a 16 MB (24-bit) color palette. The board comes standard with 1 MB DRAM and is expandable to 4 MB.

License, custom silk screen, and customized software are available to OEMs.

Hardware Required: PC/compatible with ISA bus
Software Required: MS-DOS 4.01 operating system
Software Included: TIGA 1.1 drivers
Availability: Now

PC Tech, Inc. (Continued)

C34010

C34010 is an 8-bit ISA PC graphics board. Resolution up to 1024 x 768 x 8 is featured, along with analog RGB video output. C34010 offers a 256K (8-bit) color palette. The board comes standard with 768K VRAM and is expandable to 1 MB. DGIS is also available for the C34010.

License, custom silk screen, and customized software are available to OEMs.

Hardware Required: PC/compatible with ISA bus
Software Required: MS-DOS operating system
Software Included: TIGA 1.1, MS-Windows, and AutoCAD drivers
Availability: Now

PC Tech is a Minnesota-based firm that specializes in the design, development, prototyping, and production of very high-performance PC/compatible products. PC Tech also accepts contract product design and development work for both hardware and software. In addition to providing new designs, PC Tech can provide all of its standard products in private label versions, either as-is or with modifications. This allows the quicker release of designs tailored to a particular customer's requirements than if the project was begun from scratch.

PC Tech has completed and shipped over a dozen different 34010-based designs over the last several years, all of which support TIGA. PC Tech provides custom 34010 programming to its OEM clients.

PC Tech can also provide fast-turn hardware prototype production through hole and SMT components. PC Tech maintains a close working relationship with component manufacturers, PC board fabrication facilities, and conventional and SMT assembly operations for larger lots.

The Peerless Group
2629 Manhattan Beach Blvd.
Redondo Beach, CA 90278
(213) 536-0908; FAX (213) 536-0058
Gary Rosen, Ph.D., OEM Sales Manager

Microsoft PDL

Microsoft PDL is a Printer Description Language developed by Peerless for Microsoft.

Peerless enjoys a relationship with Microsoft such that it can offer PDL products as source or binary, provide porting services for Microsoft products, perform custom implementation of Microsoft PDLs, and support the printer manufacturing community with Windows drivers.

Hardware Required: TMS340 controller
Availability: Now

Peerless designs and develops vertically-integrated software and hardware products for manufacturers of personal and minicomputers, workstations, and peripheral devices. Peerless' services allow OEMs to offer innovative, trend-setting products and retain a long-term competitive edge.

Performix Technology Corporation
44777 Grimmer Blvd., Suite C
Fremont, CA 94538
(415) 659-0100; FAX (415) 659-0402
David Q. Le, Vice President, Marketing

Full-Power™ Model 100Z

The Performix Full-Power Model 100Z is an 8/16-bit graphics controller that provides 1024 x 768 non-interlaced resolution on an IBM PC®/AT/XT™ or AT-compatible.

The Model 100Z is the first low-cost board using both TI's 34010 and 34092 BGA chips. It is capable of displaying 16 colors (with 512K VRAM) or 256 colors (with 1 MB VRAM) out of a palette of 16.7 million colors. An auto-configure feature makes installation in an 8-bit or 16-bit slot a simple procedure.

The Model 100Z has full VGA pass-thru compatibility, making it possible to use lower resolution applications when necessary.

Fully TIGA-compatible, the Model 100Z works with monitors with frequencies up to 48 kHz. A full set of software drivers is included.

Hardware Required: IBM PC/AT/XT or AT-compatible computer; 8-or 16-bit slot; monitor up to 48 kHz

Software Required: DOS 2.0 or higher

Software Included: Drivers for AutoCAD® 9 and 10, Lotus® 1-2-3®, Windows 286 and 386, Ventura Publisher®, and more

Availability: Now

Full-Power Model 100V

The Performix Full-Power Model 100V is an 8/16-bit graphics controller for the TI 34010, offering 1024 x 768 resolution with VGA fully-integrated on the board.

The Model 100V is the lowest-priced product of this performance quality and is also the first of its kind to use TI's new 34092 BGA support chip. It displays either 16 or 256 colors out of a palette of 16.7 million colors, and ships with a full complement of drivers.

Fully TIGA-compatible, the Model 100V works with monitors with frequencies from 31.5 - 48 kHz.

Hardware Required: IBM PC/AT/XT or AT-compatible computer; 8-or 16-bit slot; monitor up to 48 kHz

Software Required: DOS 2.0 or higher

Software Included: Drivers for AutoCAD 9 and 10, Lotus 1-2-3, Windows 286 and 386, Ventura Publisher, and more

Availability: Now

Performix is a microcomputer systems company whose mission is to develop, market, and produce innovative enhancement products for the personal computer market. Performix is currently engaged in the development of graphic controller products for the IBM PC and PS/2® compatible computers. These products feature on-board intelligence for improved performance and productivity.

Peritek Corporation
5550 Redwood Road
Oakland, CA 94619
(415) 531-6500; FAX (415) 530-8563
Victor Gold, Sales Manager

Peritek corporation

VCT-Q

Based on the TMS34020 32-bit Graphics System Processor, Peritek VCT-Q is the first single-board 24 bits/pixel graphics controller for DEC Q-Bus MicroVAXs and LSI-11s. Maximum display size is 1280 x 1024 pixels. A 4-bit overlay plane is also included. Software is available for VMS, Ultrix, RT/TSX, and RSX.

The Brooktree BT473 color map controller supports the overlay and true/pseudo color, mapped/unmapped output. Hardware pan and zoom provide screen resolutions from 64-1280 pixels, at 30 or 60 Hz vertical and 15.7 to 60 kHz horizontal, interlaced or non-interlaced.

Options include graphics cursor, SCSI, and serial ports.

Hardware Required: DEC microVAX or LSI-11

Software Required: RT/TSX; RSX; VMS; or Ultrix

Software Included: VCT Standard software; VCT graphics sub-routine package; DEC/X Windows Server

Availability: Now

Peritek Corporation is the leading display controller manufacturer in the DEC marketplace. With over 12 years of experience in designing standard and custom products for MicroVAX and LSI-11 computers, Peritek is a reliable supplier to university, medical imaging, process control, and other users of DEC products.

Phar Lap Software, Inc.
60 Aberdeen Avenue
Cambridge, MA 02138
(617) 661-1510; (617) 876-2972

386|DOS-Extender

With the Phar Lap 386 | DOS-Extender, the DOS memory limit is no longer 640K. This development tool turns DOS into a true 32-bit operating system, making protected mode applications possible and bringing as much as 4 gigabytes of memory to the program developer. All the memory in the machine is available.

Thirty-two bit power makes workstation-class applications a reality in the DOS environment. The problems dealing with overlays, bank-switched EMS or segmentation are eliminated.

Transparent to the end-user, 386 | DOS-Extender is embedded in the application. Many industry leaders are already shipping their powerful applications with 386 | DOS-Extender

Phar Lap Software also offers 386 | VMM™ virtual memory manager. 386 | VMM allows the application to grow bigger than available RAM through true demand-paging, swapping out code and data to disk as needed.

Hardware Requirements: All 80386 PCs that run MS-DOS or PC-DOS

Phoenix Technologies Ltd.
846 University Avenue
Norwood, MA 02062-3950
(617) 551-4000; FAX (617) 551-3750
Tom Spillane, Marketing Programs Manager

Phoenix

PhoenixPage™

PhoenixPage is a modular printing architecture that enables OEMs to offer compatibility with Adobe® PostScript®, HP® LaserJet™, and a variety of other industry standard imaging models. PhoenixPage's comprehensive graphics and font management kernel provides a foundation that can be quickly adapted to emerging standards, such as PCL 5.

PhoneixPage architecture consists of two primary components: 1) Printer Language Interpreters (PLIs), and 2) Page Description Interface (PDI). PLIs efficiently handle page description commands from application programs. The PhoenixPage PDI contains a set of graphics functions common to various industry standard page description languages and printing protocols. The PDI also contains the PhoenixPage Font Manager and FontSocket™ which supports the 35 Bitstream® fonts and a range of other technologies.

PhoenixPage is optimized for the unique features of the TMS340 graphics family.

Hardware Required: 2 MB RAM; 1.5 MB ROM; print engine
Software Required: PhoenixPage print engine interface software
Software Included: TIGA drivers
Availability: Now

Phoenix Technologies Ltd. designs, develops, and markets a variety of system-level hardware and software products for manufacturers of personal computers, workstations, and peripherals. The products enable OEMs to quickly bring products to market that are compatible with industry standards.

Pittsburgh Powercomputing
1501 Reedsdale Street
Pittsburgh, PA 15233
(800) 326-4025; FAX (412) 231-0305
Dave Weinstein, Technical Support

PPc

X-Station/340

X-Station/340 is PPc's software port of X11 Release 3 for the TMS34010 graphics controller. The controller functions as an X server.

X-Station/340 features include full X11 Release 3 compliance, support for 1/2/4/8-bit displays from 640 x 480 through 2048 x 1536, custom optimization for TMS34010 graphics coprocessor, and support for DOS, SCO UNIX, SCO XENIX, Open Desktop, and ISC 386/ix. X-Station/340 runs with a 286/386/486 AT, VME, and EISA bus and features resource paging, automatic memory size sensing, and support for local or remote keyboard and mouse.

Availability: Now

Pittsburgh Powercomputing (PPc) provides expertise in X Windows and TIGA under UNIX for the TMS34010 or 34020. PPc provides both off-the-shelf software solutions and customized ports for clients wishing to implement X Windows or TIGA with UNIX on their TMS340 graphics controller.

Pixelab, Inc.
4513 Lincoln Ave., Suite 105
Lisle, IL 60532
(708) 960-9339; FAX (708) 960-9396
Ken Yabumoto, Director of Engineering

pixelab

GSP Operating Tool (GSPOT)

GSPOT is a high-level language symbolic debugger for the TMS340 family. It is configurable to virtually all graphics system processor-based graphics controllers under MS-DOS®. Its unique TSR capability allows for control of both the host program (under MS-DOS) and the target program (for the graphics system processor), whether a special host-target communication protocol or TIGA platform is used.

Key GSPOT features include window-oriented, user-friendly implementation; assembler level and C source level debugging; and a built-in C expression evaluator. GSPOT allows concurrent debugging of host and target programs and offers an interactive register display/edit. Memory display/edit is also provided, with variable pitch and pixel size.

GSPOT provides script/log files (input/output redirections), and watchpoints using C expressions. Local (auto) variables are accessible by name. GSPOT allows floating-point in expressions and watchpoints.

Finally, GSPOT provides full TIGA support and a re-configurable host interface.

Hardware Required: IBM PC®/AT; SDB board or other graphics system processor-based target; EMS (optional)
Software Required: MS-DOS 3.0 or higher
Availability: Now

GSPICE

GSPICE is a pseudo-in-circuit emulator for the TI 34010 processor. Pixelab offers this special adapter to interface a stand-alone GSP-based circuit board to a PC/AT machine for debugging. Its probe plugs into the 34010 socket of the graphics system without modification, like an in-circuit emulator.

GSPOT debugging software is shipped with GSPICE, providing a cost-effective alternative to a true in-circuit emulator.

Hardware Required: Stand-alone graphics system processor-based circuit; IBM PC/AT with 8-bit ISA
Software Required: MS-DOS 3.0 or higher
Software Included: Graphics System Processor Operating Tool (GSPOT)
Availability: Now

Pixelab, Inc. (Continued)

Laker Graphics Controllers

The Laker Series Graphics Controller is a high-performance graphics controller with up to 2.5 MB of video and program memory (specifically designed for OEM applications). Custom target software can be developed using Pixelab's exclusive Laker Kernel Executive (LKX) communications protocol.

Key features of the Laker Series include IBM PC/AT compatible 16-bit I/O mapped interface, up to 1.5 MB programming space, and non-interlaced 60 Hz refresh. On-board BIOS ROM for the system console is provided. The Laker Series functions with a 40, 50, or 60 MHz 34010 processor.

The Laker Series Graphics Controller comes in two models: the GM-1664 and the GC-1280. Model GM-1664 offers 1664 x 1200 resolution (monochrome), 75 kHz horizontal sweep, ECL video and TTL sync. Model GC-1280 offers 1280 x 1024 x 4 resolution, 16 colors from 4096, 64 kHz horizontal sweep, analog RGB videos, and TTL sync.

Hardware Required: IBM PC/AT with 16-bit ISA
Software Included: On-board BIOS ROM; LKX (optional); TIGA driver (optional)
Availability: Now

Laker Kernel Executive (LKX)

LKX is a communications protocol between a host program under MS-DOS and a target graphics system processor program. While TIGA provides a uniform software platform for independent software vendors, LKX delivers highly optimized data transfer and very efficient graphics primitives.

LKX supports high-speed CCITT format image decompression with on-the-fly zoom features in multi-tasking implementations.

Pixelab customizes LKX to meet the specific needs of each of its customers.

Hardware Required: Laker Graphics Controller; IBM PC/AT
Software Required: MS-DOS 3.0 or higher
Availability: Now

Consulting Services

Pixelab is available to meet any customer's specific graphics needs. Whether it means providing customized versions of its products or creating a new system from the ground up, Pixelab provides technical expertise in both hardware and software.

Pixelab was established in 1986, specializing in graphics-related hardware and software. The company focuses its activities on TI's TMS340 family processors. Pixelab offers engineering services to OEM customers and to other manufacturers with GSP-based products.

Point Line Graphics, Inc.
122 East Olin Ave., Suite 270
Madison, WI 53713
(608) 256-3025; FAX (608) 256-2801

Point Line CADD

Point Line CADD professional software for design, drafting and presentation. Includes: high speed production editor, instantaneous pan and zoom, fast screen redraws, text editor, macros, associative dimensioning, associative overlays, 2D and 3D symbols, DXF translator, easy to learn input methods similar to standard drafting techniques. 3D/Solids modeling, Walk & Fly through animation, Movie Scripting and playback, hidden line removal, 2D and 3D conversions and video merging. Includes a high resolution paint program for stunning presentations.

Point Line CADD supports open architecture customizing with standard languages like Pascal and C.

Software Driver: TIGA

Ponsor Corporation
7720 Arjons Drive
San Diego, CA 92126
(619) 271-6309; FAX (619) 271-6341
Jeffrey R. Ponsor, President

PTD™ (PTD10, PTD20, PTD20/82C)

PTD (Portable TMS340 Debuggers) provide engineers with a set of high-level debugging tools which can be easily ported to various TMS340 interface schemes and operating systems.

Currently available are 34010 and 34020 versions, with 34082 support coming in 1990. All are high-level debuggers which utilize a source window and a variable or processor-register window.

PTD supports full symbolic debugging, with a "script language" interface for debugging macros. The package is available in three forms: 1) executable for SDB34010 or SDB34020 boards; 2) porting package for MS-DOS®-based PC applications; and 3) full source written in ANSI-compatible C. Each includes a free one-year update policy.

Hardware Required: Host computer with TMS34010, TMS34020, or TMS34020/34082 coprocessor

Software Required: ANSI-compatible C compiler

Availability: PTD10, PTD20 - Now; PTD20/82C - April, 1990

Ponsor Corporation, founded in 1985, manufactures hardware and software development tools and provides consulting services for the graphics and communication marketplace.

Princeton Graphic Systems
1100 Northmeadow Pkwy., Suite 150
Box 100040
Roswell, GA 30076
(404) 664-1010; (800) 221-1490; FAX (404) 664-1510

Ultra X™

The Ultra X™ is a 34010-based high resolution color display terminal for the X Windows environments. Ultra X combines high-performance color graphics with universally accepted PC standards and a unique X Window server to provide the ideal solution for all multi-use, X Window-based applications.

The Ultra X offers a highly optimized, cost-effective, and configurable system for displaying X Window applications. Because of its hardware independence, X Windows is practical for small business with UNIX-based single and multi-use PCs and preferable for medium and large corporations wishing to integrate complex networks of diverse computers with a common user interface. Therefore, the Ultra X is suitable for almost any environment, from single users to complex networks, as well as minis, mainframes, and supercomputers.

With configurable memory from 512K to 8MB, the Ultra X supports a broad range of applications such as word processing, spreadsheets, desktop publishing, CAD/CASE and industry verticals. The Ultra X features Virtual Screen, which allows a user to access a screen much larger than the display resolution of the monitor, and a custom memory management system designed for X-server support. Other custom features include a high-performance cursor and user friendly set up. In addition, the Ultra X is designed to offer resolutions from standard VGA up to workstation quality 1280 by 1024 in monochrome or color.

Availability: 4Q90

Princeton Graphics Systems is a leading designer, manufacturer and marketer of high resolution color and monochrome video monitors and related products. These products are among the highest acclaimed monitors in the exploding personal computer-based imaging, CAD/CAM and desktop publishing markets. They are sold through major distributors, resellers, OEMs, VARs and other channels. PGS is located at 1100 Northmeadow Parkway, Building 150, Roswell, Georgia, 10076, (404) 664-1010. PGS is a division of World-Wide Technology Inc. (NASDAQ: WOTK.)

QMS
One Magnum Pass
Mobile, AL 36618
(205) 633-4300 x 1582; FAX (205) 633-0013
Rich Dunwoodie, Product Marketing Manager

QMSWriter PM10

Designed for the 34010-60 MHz, the QMSWriter PM10 printer works with all IBM PC®/AT, PS/2® and 100% compatible host systems. Host printer connectivity is via a high-speed AT or Micro Channel™ bus interface card.

With support for both DOS and OS/2™ operating systems, the QMSWriter PM10 printer is fully-compatible with most DOS-based applications and the growing list of OS/2 Presentation Manager™ software.

On OS/2 operating systems, Presentation Manager's Graphical Programming Interface (GPI) features a graphics imaging model that includes direct one-to-one mapping of screen images for WYSIWYG printing. Additional HP® LaserJet™ Series II printer and HP7475A printer/plotter emulations are supported.

For DOS systems, the QMSWriter PM10 printer ships with the Direct Graphics Interface Specification (DGIS™) as a native language, plus HP LaserJet Series II and HP7475A emulations. PostScript® printing is also supported in DOS environments via an optional UltraScript™ PC software package.

The QMSWriter PM10 printer's 300 dpi color output is ideal for producing high-quality documents and transparencies in graphic arts, animation, publishing, presentation graphics, and general business environments.

Hardware Required: IBM PS/2 or IBM PC AT/100% compatible

Software Required: OS/2, Presentation Manager 1.2

Software Included: System software; printer languages: GPI under OS/2, DGIS under DOS; DOS and OS/2 printer emulations: HPPCL Level IV, HPGL, PostScript via QMS UltraScript PC; supporting typefaces and fonts

Availability: 4/20/90

QMS Colorgrafix™ 100plus Model 60

The QMS Colorgrafix 100plus Model 60 is a versatile print system designed to meet the needs of demanding graphic applications for the 34010. It supports CALS compliant ANSI CGM, AutoCAD®, AutoShade and HPGL applications.

The 300 dpi Model 60 also provides letter/A4 Ethernet TCP/IP network printing applications. Includes print engine and one 8 MB RAM controller card (which resides in the QMS Colorgrafix 100plus print spooling station).

The print system's print spooling station includes a 20 MB print spooler and software, monochrome monitor, keyboard, and 12.5 MHz 286 processor.

The QMS Colorgrafix 100plus Model 60 comes with one A/A4-size starter kit, power cord, and manual. System diskettes containing typefaces and drivers are also provided.

Hardware Required: FTP/TCP-IP network compatible

Software Included: ANSI and CALS compliant CGM; AutoCAD, AutoShade, and HPGL drivers; DGIS printer language

Availability: Now

QMS Colorgrafix 100plus Model 65

The QMS Colorgrafix 100plus Model 65 is a versatile print system designed to meet the needs of demanding graphic applications for the 34010. It supports CALS compliant ANSI CGM, AutoCAD, AutoShade and HPGL applications.

The 300 dpi Model 65 also provides letter/A4 11" x 17" Ethernet TCP/IP network printing applications. Includes print engine, one 4 MB RAM controller card, and one 8 MB RAM controller card (both reside in the QMS Colorgrafix 100plus print spooling station).

The print system's print spooling station includes a 20 MB print spooler and software, monochrome monitor, keyboard, and 12.5 MHz 286 processor.

The QMS Colorgrafix 100plus Model 65 comes with one A/A-size and one B/A3-size starter kit, power cord, and manual. System diskettes containing typefaces and drivers are also provided.

Hardware Required: FTP/TCP-IP network compatible

Software Included: ANSI and CALS compliant CGM; AutoCAD, AutoShade, and HPGL drivers; DGIS printer language

Availability: Now

QMS Colorgrafix 100 Model 60

The QMS Colorgrafix 100 Model 60 uses a one-board controller which can be installed in a 16-bit slot of an IBM-PC/AT or 100% compatible under TMS34010. It has 8 MB of RAM and will allow the production of an 8.5" x 11"/A4 full-color image at 300 dpi.

Direct software support is provided for AutoCAD, AutoShade, ATVISTA®, TARGA®, TIPS®, GSS*CGI and Microsoft® Windows. Other filters included are HPGL (HP7475A), ANSI CGM, and filters which allow for direct printing from DOS versions of AutoCAD, PLT, AutoShade, and RND files. All drivers and filters support monochrome, three (CMY), or four (CMYK) color printing.

Hardware Required: IBM PC/AT or 100% compatible

Software Required: MS-DOS® 2.0 or higher

Software Included: ANSI and CALS compliant CGM, GSS*CGI, AutoCAD, AutoShade, ATVISTA, TARGA, TIPS, Microsoft Windows, and HPGL drivers; DGIS printer language

Availability: Now

QMS Colorgrafix 100 Model 65

The QMS Colorgrafix 100 Model 65 uses a two-board controller which can be installed in two adjacent 16-bit slots of an IBM PC or 100% compatible under TMS34010. Model 65 includes the two-board controller system and color thermal transfer engine, as well as software support for AutoCAD, AutoShade, GSS*CGI, TIPS, TARGA, ATVISTA, Windows, HPGL, and ANSI CGM. The software drivers and filters are loaded onto the controller system via simple DOS commands.

The controller boards contain 12 MB of RAM, 8 MB of which are allocated to the production of an 11" x 17"/A3 full-color image at 300 dpi. The general purpose programmability of the TMS34010 boosts system performance by off-loading the processing from the host CPU while the QMS Colorgrafix controller processes the image using an advanced, high-performance, 32-bit CMOS microprocessor.

The QMS controller does not interfere with any normal operations of the AT in which it resides.

Hardware Required: IBM PC/AT or 100% compatible

Software Required: MS-DOS 2.0 or higher

Software Included: ANSI and CALS compliant CGM, GSS*CGI, AutoCAD, AutoShade, AT-VISTA, TARGA, TIPS, Microsoft Windows, and HPGL drivers

Availability: Now

QMS is a leader in the rapidly expanding nonimpact print systems market and is a major producer of enhancement products for impact printers. QMS offers the broadest selection of intelligent laser and thermal transfer printers available for electronic publishing, office automation, advanced imaging, and automatic identification applications.

Quantum Data, Inc.
2111 Big Timber Road
Elgin, IL 60123
(708) 888-0450; FAX (708) 888-2802
Joanne Zalusky, Customer Service Manager

The FOX Modular Graphics Generator

Quantum Data's FOX generator is designed for display engineers who need a flexible signal source for evaulating both state-of-the-art raster-scanned CRT displays and accompanying video signal formats.

The FOX is capable of generating video signals for virtually any make raster-scanned CRT display. It is also capable of producing video signals for displays that have yet to be developed.

The 8701 is a stand-alone unit that has a built-in computer and control panel. Included is a turnkey software package that allows users to establish their own video signal format and draw test images. Video signals are generated by video plug-in modules. Each video plug-in is designed to drive a general class of display over a wide range of pixel rates. Three plug-ins are currently offered: 1) BCF-125, 2) ACV-250, and 3) ACV-400. These plug-ins support pixel rates of 1-125 MHz, 1-250 MHz, and 1-400 MHz, respectively.

Using the UI-PC (Universal Interface) option, users can operate the 8701 from any IBM PC®/ compatible computer. Other available options include an IEEE-488 interface, a production keypad with RS-232 interface, and a C custom drawing software package.

Hardware Required: IBM-PC/XT™/AT or compatible (host interface adapters and software for other computers will be available at a later date)

Availability: Now

Over the past nine years, Quantum Data, Inc. has supplied video signal generators to over 400 companies worldwide.

RAM Graphics Incorporated
2790 Wexford Ave.
San Jose, CA 95132
(408) 272-4430
Marvin Kausch, President

RAM Graphics
INCORPORATED

RG422 System

The RG422 System is based on the TI 34010 and designed specifically for CCIR 601 422 Component Digital Format. It is intended for sophisticated paint systems, bit-mapped character generators, and animation systems for broadcast and industry.

Image memory can be 24, 32 or 40 bit and configurable as YUV or RGB plus alpha and frisket planes. The image memory size is 768 x 512 for NTSC or 768 x 768 for PAL or NTSC. There is a simultaneous digital image read and write for flash input and display output.

Flexible board interconnections allow future expansion and easy system upgrade. The basic system consists of a single image memory board; a digital mixer board can be added along with a 5-component image memory board.

Hardware Required: IBM PC/AT or compatible
Software Required: TI software development tools
Availability: Now

Ramtek Corporation
1525 Atteberry Lane
San Jose, CA 95131
(408) 954-2700; FAX (408) 954-0118

Ramtek Image Processing Subsystem

Ramtek Corporation is currently developing an image processing subsystem based on its state-of-the-art display technology and the TI TMS34020 and TMS34082 processors.

The subsystem will offer 1280 X 1024 resolution, plug into a VME bus and run under UNIX. The software running on the subsystem will consist of an X window server and an image kernel system, IKS, developed by the University of Lowell.

Ramtek is designing this image processing subsystem with two TMS34082's running in parallel. Ramtek anticipates that the 80 MFLOPs of performance from its imaging subsystem will enable IKS to run up to 100 times faster in comparison to the same function on a Sun workstation.

Ramtek Corporation, headquartered in San Jose, California, designs and develops computer display and processing systems for the imaging and graphics markets.

Rasterex (International) A.S.
Gjerdrumsvei 10A
N-0486 Oslo 4
Norway
+472-239290; FAX +472-394111
Jan Erik Stoll
Managing Director

Liberty Graphics Board

Liberty is a series of 16/8-bit AT bus (single XT-form factor) color boards, ranging from 1024/16 to 1280/256. All boards can be single screen, as they are fitted with both Rasterex' VGA chip and also provide for loop-through from an external VGA board. The boards may have up to 16 MB of DRAM on board for local display list support. The boards can be configured for 75 HZ refresh.
Availability: Now

MB 2000 Graphics Board

MB 2000 is a 16/8-bit AT bus (single XT-form factor) monochrome (1-bit plane) board, with resolution (programmable) up to 2046 x 1536 x 7bpp and max dot rate in excess of 200 MHz.
Software Included: Drivers for DGIS 2.0, Rx Version 1.0, Windows, Ventura, GEM
Availability: Now

Spider Graphics Board

Spider is a series of MCA bus compatible color boards, ranging from 1024/16 to 1280/256. All boards can be single screened by VGA loop-through. The boards may have up to 8 MB DRAM on board for local display-list support. The boards can be configured for 75 Hz refresh.
Availability: Now

Rx VGA Version 1.1

Rx VGA is a 68-pin VGA chip specially designed for use with the TMS34010. The chip allows the sharing of memory between the VGA and graphics system processor, and uses the graphics system processor as a CRT controller in VGA mode.
Hardware Requirements: TMS34010
Software Requirements: BIOS
Availability: Now

Tracer Graphics Board

Tracer is a board incorporating both the TMS34020 and the TMS34082. It is specifically designed for handling 3-D on-board display lists, and is available with 1280 x 1024 resolution in 256 colors.
Availability: 3rd Quarter 1990

Rasterex (international) is a young company run by people with long and distinguished careers in the fields of personal computers and display technology. The company expects to have a high market profile due to advanced hardware designs coupled with innovative driver software.

Raster Graphics Inc.
P.O. Box 5157
Bend, OR 97708
(503) 388-2584; FAX (503) 389-8249
Phillip Smith, President

RASTER GRAPHICS INC.

RG-65x Graphics Board

The RG-65x is a smart state-of-the-art 1024 x 768 x 8bpp, 60 Hz non-interlaced Multibus one-color graphics board. It features the high performance TMS34010 graphics processor and brings a new level of speed and versatility to Multibus designs. Special hardware features include a 2-bit overlay plane, 512K to 4 MB RAM, an RS-232 serial port, and an AT keyboard port. A special software feature includes AFGIS™, an advanced firmware graphics instruction set that simplifies graphics programming.
Hardware Requirements: Multibus I system
Software Included: AFGIS firmware
Availability: Now

Model RG-51x Graphics Board

The RG-51x is built around the TMS34010 graphics system processor and offers resolutions of 640 x 480 x 4bpp to 1024 x 768 x 8bpp, AFGIS firmware, analog and TTL outputs with support for EGA/VGA, serial mouse and keyboard interfaces, MPC (82389) interface, support for transport message passing protocol and 2-bit overlay.
Hardware Requirements: Multibus II system
Software Included: AFGIS firmware
Availability: Now

Model RG-70x Graphics Board

The RG-70x is built around the TMS34010 and offers resolutions of 640 x 480 x 4bpp to 1024 x 768 x 8bpp, AFGIS firware, analog and TTL outputs with support for EGA/VGA, serial mouse and keyboard interfaces and 512K to 4 MB RAM.
Hardware Requirements: VME bus system
Software Included: AFGIS firmware
Availability: Now

Model RG-91x Graphics Board

The Model RG-91x is built around the TMS34020 graphics system processor, offers resolution of 1280 x 1024 x 8bpp for color and 1664 x 1200 x 1bpp (2k x 2k x 2 optional), TIGA interface and low cost array interface to AT bus.
Hardware Requirements: AT bus
Software Included: AFGIS firmware
Availability: Now

Raster Graphics Inc. provides graphics boards and related products to the industry. They specialize in custom designs for OEMs as well as providing a line of TMS340-based graphics boards.

RasterOps Corporation
2500 Walsh Avenue
Santa Clara, CA 95051
(408) 562-4200; FAX (408) 562-4065
David Cence, Workstations Product Manager

RasterOps

16 PC Graphics Board

The RasterOps 16 PC board is an intelligent color graphics system with real-time frame grabbing and display capabilities. Resolution supported is 512 x 512 x 16bpp.
Hardware Requirements: IBM AT or compatible, Model 30 or compatible
Software Included: Drivers for TIGA, TARGA and Windows
Software Requirements: DOS 2.0 or higher
Available: Now

Rational Systems, Inc.
220 No. Main Street, 2nd Floor
P.O. Box 480
Natick, MA 01760
(508) 653-6006; FAX (508) 655-2753
Byron Bollas, Director of Marketing

Rational Systems, Inc.

DOS/16M™

DOS/16M is a "DOS-Extender" which is designed to enable your current C, Fortran, Pascal, and Assembler programs to directly address the full 16 MB available on 80286 and 80386 PCs running DOS 3.x.

DOS/16M is so simple to integrate into your applications, developers very often need only relink the current files with the *DOS/16M* libraries and give the programs the ability to access 16MB.

DOS/16M is a "translator" for your programs operating in protected mode and DOS 3.x operating in real mode. Designed for developers whose applications are constrained by the 640 KB operating limitations of DOS, *DOS/16M* eliminates the need for complex and performance-killing overlays, EMS bank-switching, or data buffering schemes that are often necessary to work within the DOS 640 KB limit.

Other features of *DOS/16M* include: compatibility with your existing development tools, transparent operation for your application users, benefits of debugging in protected mode, support for direct access to all I/O, memory, and interrupts.

Rellim
2680 Bayshore Parkway
Mountain View, CA 94043
(415) 964-1186
Gary E. Miller

NewScript Page Description Language

NewScript is a Page Description Language (PDL) for laser printers. It is a full implementation of the PostScript language. PostScript allows the user to generate and manipulate arbitrary font and graphics images. These can be rotated, scaled, translated, outlined, clipped, etc. allowing the user complete control. More applications programs support this PDL than any other PDL. NewScript is written in "C" with some assembly language optimization for the TMS34010 graphics chip.

RELLIM will port NewScript to your laser printer controller for a small NRE and royalty.

Availability: Now

Rellim provides total (hardware/software) solutions to microprocessor design problems. All applications areas are covered: PCs, UNIX, custom BIOS, graphics, telecommunications, medical testing, and in-circuit emulation.

Renaissance GRX, Inc.
Cedar Park
2265 116th Avenue N.E.
Bellevue, WA 98004
(206) 454-8086
Rod Bauer, Rendition Product Manager
Pete Dyer, V.P. of OEM Sales

Graphics Controllers

Rendition graphics controllers are based on the TI 34010 graphics system processor, employ surface mount technology, and incorporate a Microsoft InPort interface as standard. Rendition graphics controllers conform to XT 286 form factor which enables them to be used in IBM PCs, XTs, ATs, and PS/2 Model 30s. Other features include custom screen fonts, and software utilities for selecting active monitor, screen resolution, and number of colors used.

Graphics performance is significantly enhanced, even in 8088-based PCs, as graphics processing is performed in parallel with the host CPU. Automatic sensing of 8 or 16 bit data bus provides increased performance for AT and 386 computer users. Exceptional Microsoft Windows performance is standard.

All Rendition graphics controllers offer RGDI (Renaissance Graphics Device Interface for the TI 34010 graphics system processor) firmware as standard, providing software compatibility through the entire product family. Renaissance's RGDI offers driver support for popular PC applications and graphics interfaces, with selectable resolution and color support. Software applications supported include Microsoft Windows, IBM Presentation Manager, Digital Research GEM, HALO, AutoCAD, VersaCAD, Lotus 1-2-3 and Symphony, GKS, and all software written using RGDI.

Rendition I™ Advanced Graphics Controller with Mouse Interface

Rendition I is a high-performance graphics controller based on the TMS34010 graphics system processor. Rendition I is hardware compatible with existing graphics standards (IBM monochrome, CGA, Hercules, and optionally, EGA). High-performance configurable Renaissance modes are 720 x 350, 640 x 200, 640 x 350, 640 x 480, 752 x 564, 800 x 440 in up to 64 colors, and 1024 x 768 with 4 shades of grey. Two monitors can be simultaneously attached to the Rendition I and selected through software. Customized PostScript fonts are included for increased performance of Microsoft Windows applications. Standard configuration is 128K dual ported DRAM, 512K dual ported VRAM, and 64K firmware PROM.

Hardware Required: IBM PC/XT/AT, PS/2 Model 30 or compatible, and monitor
Software Required: DOS
Availability: Now

Renaissance GRX, Inc. (Continued)

Graphics Vision™ 1280

Graphics Vision 1280 is a high resolution intelligent graphics controller designed for the CAD professional. State-of-the-art CAD graphics handling is provided with the incorporation of the TMS34020 microprocessor. A full range of software drivers are optimized to take advantage of the power of the chip.

Graphics Vision 1280 supports a wide range of popular monitors and displays a maximum resolution of 1280 x 1024 with 16 or 256 colors. Fully configured, the Graphics Vision 1280 has 2 MB video RAM, 1 MB dynamic RAM and a 16.7 million color palette. Users may choose a single screen monitor solution via standard VGA pass-through mode or a classical two-screen monitor solution.

Software Supported: AutoCAD 9 and 10, MicroStation, Personal Designer, VersaCAD, Windows 286/386, GEM/3, Ventura Publisher, Lotus 1-2-3/Symphony and TIGA

Hardware Required: IBM ATs, 386 computers, and other IBM compatibles with Industry Standard Architecture (ISA) bus

RIX SoftWorks, Inc.
18552 MacArthur Blvd., Suite 200
Irvine, CA 92715
(714) 476-8266; FAX (714) 476-8486
Carmen Serio, Account Executive

RIX SoftWorks Inc.

Colorix Professional Paint Program

Colorix-Professional supports the direct importation and exportation of TARGA, WPG (WordPerfect), TIFF, PCX, GEM-IMG, and GIF files. Other features include image rotation in one-degree increments to 360 degrees, on-line help, and numerous tools such as brushes, boxes etc. Colorix-Professional supports most color ink jet, dot matrix and thermal printers for hard copies. It also includes an animation/presentation program for custom stand-alone demonstrations.

Hardware Requirements: XT/286/386 compatibles with 640K system memory

Software Included: TIGA driver

Availability: 3rd Quarter 1990

RIX SoftWorks, Inc. is an industry leader in presentation/graphics software. The company's product line ranges from EGA paint software to Super-VGA and TIGA software packages for scanning, imaging and creating high-quality graphics.

Robo Systems International, Inc.
105 Terry Drive
Newtown, PA 18940
(215) 579-1344; FAX (215) 860-6993

Robo Products

RoboCAD, RoboSOLID, and RoboBUILD products cover drafting, design, surface and solids modeling, and interact fully with one another. Although rich in features, the products have outstanding ease of learning and ease of use.

Use Robo software by pointing and clicking on pull-down menus, palettes and icons. Interact using dialog boxes. "Hunt-and-peck" keyboard input is kept to a minimum. No nested menu trees to traverse, no "unknown command" messages—everything is right there, on your drawing screen, all the time. No need to divide your attention between screen, keyboard, and digitizer overlay—just concentrate on the screen.

Hardware Requirements: IBM PC compatible
Software Available: TIGA driver

SCIP
12821 Western Ave., Suite L
Garden Grove, CA 92641
(714) 894-3130; FAX (714) 894-5240
Ali Ghazvini, Senior Project Engineer

Millenium System - Hardware and Software

The Millenium board is an AT-based, high-resolution, full-color imaging and graphics board for high-quality color imaging applications. The board provides a resolution of up to 1280 x 1024 x 44bpp, 60 Hz, non-interlaced with TMS34010-60 running TIGA software. The Millenium can display high-quality RGB or YMCK images with 16.7 million simultaneous colors from a palette of 83.5 million colors selectable on a pixel basis. The board also provides additional overlay graphics and auxiliary image planes.

With an interface to a real-time 32-bit image bus, digital images may be transferred at 48 MB per second while providing a multiprocessing environment for multiple 34010 processors or other array processors and large image memories.

The TIGA software allows the Millenium board to run Microsoft Windows 286/386, creating a window-based image processing environment, while providing an extensive graphics and image processing library for application developers.

Other libraries include SCIP Graphics Library (SGL) which provides a large library of graphics and imaging functions for DOS and OS/2. SGL also provides a driver for Microsoft Presentation Manager under OS/2. SGL also supports other SCIP related products such as array processors and large image memories.

The Millenium board will be supported with a complete family of products which allow devices to share image data transfer and display through the high-speed bus.

The overall system provides a highly suitable solution for high-quality image processing tasks such as graphics workstations, high-resolution medical imaging and landsat imaging workstations.

Hardware Requirements: IBM PC 286/386 or compatible
Software Included: TIGA driver, SCIP Graphics Library (SGL) Imaging and Graphics
Software Requirements: DOS and OS/2
Availability: Now

SCIP designs and develops advanced imaging products. The company's products include hardware and software for general purpose applications and the high-quality publishing market.

Sertek Laboratory Inc.
1171.135 Chien Kuo N. Rd, Sec. 2
Taipei 10479 Taiwan
500-7192
David Wang, Vice President

Sertek

Chinese Font Generator

The Chinese Font Generator is a PC add-in board that uses the TMS34010 Graphics System Processor. The 34010 is used to process different types of Chinese characters in vector form. It generates different sizes of type fonts for electronic publishing systems.

Sertek Laboratory is an engineering oriented system house that specially focuses on Chinese Information System Solutions. The company's major products include Chinese terminal, workstation, CAD, network and mainframe connectivity. Sertek develops both software and hardware using MS-DOS Chinese Application Environment and UNIX Chinese Application Environment.

Availability: Now

Sigma Designs, Inc.
46501 Landing Parkway
Fremont, CA 94538
(415) 770-0100; FAX (415) 770-0110
Charles E. Waters, Senior Marketing Manager

SAGE 1280 Sigma Advanced Graphics Engine

The SAGE 1280 is a high-performance graphics controller for IBM PC/AT and compatible systems. SAGE 1280 is based on the 60 MHz TMS34010 graphics system processor with a 1280 x 1024 resolution and 256 colors. Compatible with CGA, TIGA-340, VGA pass-through, and 8514/A; SAGE 1280 is ideal for professionals who use CAE/CAD design, desktop publishing or presentation graphics software. SAGE 1280 works with multiscanning monitors such as the 19-inch NEC Multisync 5D, or high-end 64 kHz monitors. SAGE 1280 comes complete with adapter board, utility software, VGA pass-through cable and user's guide.

Hardware Requirements: IBM PC/AT or compatible

Software Included: Drivers for AutoCAD 9 and 10, GEM, Lotus 1-2-3, Symphony, Windows 286/386, PageMaker, Ventura Publisher, Microsoft Word, WordPerfect. Works with TIGA-340 compatible and 8514A (A/I) compatible applications. X Windows server optional.

Software Requirements: DOS 2.0 or higher, UNIX System V

Availability: Now

ColorMAX 1280 Display System

ColorMAX 1280 is a complete color display system for IBM PC/AT compatibles offering workstation-level performance and display quality. Featuring a 60 MHz TMS34010 graphics system processor and a 19" TRINITRON® monitor, ColorMAX 1280 provides fast, high-quality graphics at 1280 x 1024 resolution with 256 colors for the most demanding CAD and graphics design applications. Full compatibility with TIGA-340, 8514A (A/I) and CGA make it the ideal choice for any professional PC user. ColorMAX 1280 comes complete with IBM PC/AT bus controller board, monitor, video and power cables, utility software and user's guide.

Hardware Requirements: IBM PC/AT or compatible

Software Included: Drivers for AutoCAD 9 and 10, GEM, Lotus 1-2-3, Symphony, Windows 286/386, PageMaker, Ventura Publisher, Microsoft Word, WordPerfect. Works with TIGA-340 compatible and 8514A (A/I) compatible applications. X Windows server optional.

Software Requirements: DOS 2.0 or higher, UNIX System V

Availability: Now

Sigma Designs, Inc. (Continued)

L-*View (EISA) Display System

L-*View is a high-resolution monochrome display system offering workstation-level performance for EISA bus personal computers. The EISA option features the TMS34020 GSP with 1664 x 1200 resolution on a 19" monochrome monitor and 4 shades of gray. L-*View (EISA) is compatible with IBM, MDA, Hercules, TIGA-340 and 8514A (A/I) standards making it ideal for graphic design and professional publishing applications. L-*View (EISA) comes complete with controller board, monitor, cables, utility software and user's guide.

Hardware Requirements: EISA compatible personal computer or workstation

Software Included: Drivers for AutoCAD 9 and 10, GEM, Lotus 1-2-3, Symphony, Windows 286/386, PageMaker, Ventura Publisher, Microsoft Word, WordPerfect. Works with TIGA-340 compatible and 8514A (A/I) compatible applications. X Windows server optional.

Software Requirements: DOS 2.0 or higher, UNIX System V

Availability: Late 1990

L-*View GSP Display System

L-*View (GSP) offers the same features and benefits as the L-*View (EISA) for IBM PC/AT and compatible systems.

Hardware Requirements: IBM PC/AT and compatibles

Software Included: Drivers for AutoCAD 9 and 10, GEM, Lotus 1-2-3, Symphony, Windows 286/386, PageMaker, Ventura Publisher, Microsoft Word, WordPerfect. Works with TIGA-340 compatible and 8514A (A/I) compatible applications. X Windows server optional.

Software Requirements: DOS 2.0 or higher, UNIX System V

Availability: Spring 1990

Sigma Designs is a leading manufacturer and marketer of graphics products including industry standard graphics boards, high-resolution display systems, video capture boards and system enhancements products for IBM, IBM compatibles and Apple personal computers.

Signature Software
2151 Brown Ave.
Bensalem, PA 19020
(215) 639-8764
Dave McWherter, President

Mc34010

Mc34010 is a macro assembler, linker and job controller which assembles and links source files for the TMS34010 and runs on the Apple Macintosh computer. Mc34010 uses the same instruction opcodes and addressing mode syntaxes as does the Texas Instruments TMS34010 Assembler. Most, but not all, of the TI pseudo-ops are compatible as well. In addition, Mc34010 provides many additional pseudo-ops.

Some of the major features of Mc34010 are:

- The assembler, linker, and job controller are integrated in one program and they adhere to the standard Macintosh user interface
- Standard TI opcodes and syntax
- Built-in cross reference
- Local labels
- Based variables
- Stack frame template capabilities
- Dummy sections
- Packed symbol files
- C-like string escape codes
- English error messages
- User-definable link map files and pre-loaded symbols
- Supports both absolute and relocatable sections.

Hardware Required: Apple Macintosh with 512K or more of RAM
Software Required: A text-based editor
Availability: Now

Signature Software is a small software development firm specializing in system and tool software development for microcomputers. Signature also does specialized programming on a contract basis. Primary emphasis is placed on development tools for the Apple Macintosh computer, but tools and custom applications have been developed for a wide range of microprocessors.

Some of its successful products have been a complete operating system and system ROM for a major 6502-based personal computer, a highly respected Motorola 68000 assembly language development system for the Apple Macintosh, a specialized highly optimized floating point software package for a major developer of insurance software packages, a complete 6502 development system for the Apple II series, various terminal and data communication emulation projects (BI-SYNC and SDLC), etc.

The firm specializes in producing highly optimized assembly language based products, but also has experience with a wide variety of development languages.

Signature Software was founded in 1985.

Singer-Dalmo Victor
1515 Industrial Way
Belmont, CA 94002
(415) 594-2620
Richard Hartman - MD#4A, Manager, Advanced Business Development

SINGER

VIDCOMP-T

VIDCOMP-T is a video compression data link that provides the capability for capturing, digitizing, compressing, and transmitting video images via voicegrade or conditioned telephone lines, tactical radios, multiplexed microwave, or satellites in near realtime. Any bandwidth communications medium from 300 bits/second to 64 kilobits/second can be fully utilized for transmission, even over noisy channels with bit error rates of 1×10^{-2} to 1×10^{-3} or better. Bandwidths up to 384 kilobits/second can be fully utilized over channels with bit error rates of 1×10^{-6} or better.

Operator controlled compression ratios can be selected from 2.5:1 to 200:1, to trade-off frame rate vs. resolution. Near photographic quality (512 x 512 x 8) monochromatic images are maintained at compression ratios up to about 24:1 and good quality images are maintained at compression ratios up to about 45:1. Proprietary multiple adaptive algorithms allow transmission at high compression ratios while maintaining excellent picture quality.

Direct connections are made to VIDCOMP-T from the sensor (image source). Serial bit stream digital outputs from VIDCOMP-T feed directly into the transmission medium's modem, encryption unit, or digital input port (RS-232/MIL-STD-188C).

At the receive end, the process is reversed. The image is decompressed, converted to an analog image and drives (RS-170) monitors, tape recorders, or hard copy machines.

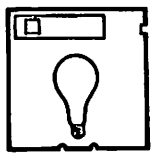
Transmitter and receiver are identical, using different, self-contained software to perform functions. Size is 5.2 x 7.6 x 14.8 and weight is 17 pounds.

Options available include zoom, rotation, 512 x 512 or 256 x 256 transmission, multipleframe storage and post reception processing for image improvement. Up to 16 level parallel processing is provided to remove processing time from becoming a critical factor in total preparation/transmission time. The TMS34010 plays an important role in VIDCOMP-T's superior operational capability.

Hardware/Software Required: None
Availability: Now

The Dalmo Victor Division of the Singer Company designs and manufactures radar warning receivers and processors, wide and narrow band surveillance receivers, active expendable countermeasures systems, software analysis systems, microwave antennas, video compression data links, rail and transit detection and status systems, fiber optic delay lines, and threat simulation systems. The company was founded in 1979.

Solution Logic, Inc.
1849 SE 43rd Street
Portland, OR 97215
(503) 234-7116; FAX (503) 656-3165
Patrick J. Franz, Vice President of Engineering



Solution Logic, Inc.
Custom Software Solutions

Consulting Services - Software

Solution Logic provides a full range of software developemnt services, from feasibility studies through specification, design, coding, testing, documentation and product support. Company specialties are graphics and real-time systems, using state-of-the-art hardware such as the TI 34010/20.

Solution Logic engineers have an extensive, up-to-date spectrum of experience from bit slice microcode through high-level applications. They are experienced with industry standard software, hardware, chips and systems as well as the latest in graphics standards and technologies.

Solution Logic, Inc. was formed in 1985 to provide software development services for the computer graphics field. Since that time, they have assisted many companies in getting their high-performance graphics systems to market.

SOTA Technology, Inc.
559 Weddell Drive
Sunnyvale, CA 94089
(408) 745-1111; FAX (408) 745-1640
Karin Bootsma, Product Marketing Manager

STATE OF THE ART TECHNOLOGY™

SOTA 340i Graphics Board

The SOTA 340i is an "Intelligent Graphics System" based on the TMS34010. Equipped with its own procesor (running at 50 MHz), SOTA 340i executes up to 6 MIPS and delivers a maximum draw rate of 48 million pixels per second. Additionally, it includes a hardware windowing accelerator which runs Microsoft Windows applications up to 8 times faster than most 34010-based cards.

The SOTA 340i supports 1280 x 1024, 1024 x 768, 800 x 600 and 640 x 480 with 256 colors out of 16.7 million, in interlaced and non-interlaced modes.

Hardware Requirements: PC AT or compatible

Software Included: Software support for TIGA, DGIS, 8514A (A/I) standards; CGA/MDA/Hercules/AT&T 6300 and WYSE-700 emulation software and VGA pass-through; drivers for over 600 PC applications including Microsoft Windows, AutoCAD, GEM, Ventura Publisher, CADKEY and many more

Availability: Now

SOTA View System

The SOTA View system is a high-resolution, high-speed system which displays two legal size pages, side-by-side on its 19" screen. The system combines the 1664 x 1200 paper-white, flicker-free SOTA dual-page monitor with a board based on the SOTA 340i, to create the ideal solution for high-end desktop publishing, CAD, text, and graphics needs.

The SOTA View System displays up to 180 columns by 86 lines and supports four shades of gray to provide additional contrast in pictures and scanned images. Since the system is based on the SOTA 340i (which incorporates the TMS34010), it offers the same broad compatibility and incredible performance as the SOTA 340i.

Hardware Requirements: PC AT or compatible

Software Included: Software support for TIGA, DGIS, 8514A (A/I) standards; CGA/MDA/Hercules/AT&T 6300 and WYSE-700 emulation software and VGA pass-through; drivers for over 600 PC applications including Microsoft Windows, AutoCAD, GEM, Ventura Publisher, CADKEY and many more

Availability: 2nd Quarter 1990

SOTA Technology, Inc. designs and manufactures a variety of graphics, desktop publishing, and PC/XT/AT upgrade products. SOTA products are distributed in the U.S. and in over 35 countries around the world. The company was founded in 1986 and currently employs 40 people.

Spectre Corporation
600 W. Cummings Park, Suite 6500
Woburn, MA 01801
(617) 932-8640; FAX (617) 932-8644
Robert Garczynski, President
Tad Lawcewicz, Vice President, Engineering

SP200 High-Resolution Display Controller

The SP200 high-resolution display controller is TMS34020-based and is a plug-in board for IBM PC/AT/RT and compatibles.

The SP200's flexible architecture allows for various memory and functional upgrades on-board without the addition of modules or daughter cards. Spectre has provided the market with a powerful single board solution for graphics, imaging and desktop publishing.

The SP200 features resolution of up to 1280 x 1024 x 8bpp with optional 1 bit overlay (.25 MB VRAM), 1 or 4 MB program memory, socket for TMS34082 co-processor, socket for hardware cursor and VGA pass through. Other features of the SP200 include EEPROM, LED diodes, hardware reset button and security key to simplify software development and allow this product to be extremely user-friendly.

This same architecture for MicroChannel, VME and NuBus is in development.

Hardware Requirements: IBM PC/AT/RT or compatibles

Software Included: Drivers for TIGA, CGA emulation, monochrome emulation, 8514A emulation. EGA/VGA emulation and DGIS are in development.

Software Requirements: DOS (UNIX in development)

Availability: Now

Spectre Corporation is a manufacturer of high- and ultra-high-resolution display controllers for graphics, imaging, desktop publishing and parallel processing. Spectre's products are plug-in boards for IBM PC/AT/XT/RT, VME, MicroChannel and NuBus computers. Other buses and other custom designs are available.

Spectrum Digital Incorporated
11000 Stancliff, Suite 180
Houston, TX 77099
(713) 561-6500; FAX (713) 561-6037
Ron Peterson, Vice President

Consulting Services - Hardware

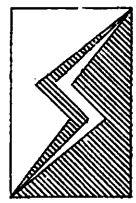
Hardware consulting specialties include design and prototyping TMS340 products. Design experience in high-resolution systems, video overlay, LCD controllers, embedded controllers and PC add-in cards.

Consulting Services - Software

Graphics software services include writing of TIGA/TMS 340 device drivers, custom application software, embedded control systems software, TIGA FONT editor and libraries, function libraries and custom menu-driven software tools.

Spectrum Digital is a custom engineering and software design firm specializing in the incorporation of high-performance graphics controllers in client applications. Over 30 years of microprocessor design experience enable Spectrum Digital to take a concept through the design and prototyping stages to an end product in a timely and efficient manner.

Sterling Development Group, Inc.
P.O. Box 4482
266 South Champlain Street
Burlington, Vermont 05401
(802) 862-1736
Claude Dominque, President



The Sterling Development Group is a full service engineering company providing both hardware and software services. Sterling Engineers have had extensive experience with the TMS34010 graphics chip in a variety of graphic system applications including page printers and the TMS34010 software development board. In addition, we have expertise in the following areas:

Digital Hardware Design

Computer graphics-TI 34010
Microprocessor systems
Digital signal processing
Programmable logic
Bit slice processor systems

Analog Hardware Design

Data acquisition systems
Signal processing systems
Power electronics
Motor controls
Test equipment
Power supplies-switch mode and linear
Process control
Sensors

Software Design

Assembly language
Real time
Microcode
Data base
High level

Printed Circuit Board Engineering Service including:

Design engineering
Fabrication and testing
Electronic prototyping

Sterling can augment a client's engineering resources from concept to production or provide a complete turnkey solution to a defined technical problem.

Structural Research and Analysis Corporation
1661 Lincoln Blvd., Suite 200
Santa Monica, CA 90404
(213) 452-2158; FAX (213) 399-6421
Andrea Mendelsohn, Marketing Manager

Structural Research and Analysis Corporation

COSMO/M™

COSMO/M is a full-function element package consisting of a pre-processor, a post-processor and impressive color graphics. The program performs linear and nonlinear, static and dynamic, structural, fluid and electrical network analysis. COSMO/M determines stresses, strains, displacements, forces and temperature distribution in structures subjected to external loads, forces and imposed boundary conditions. COSMO/M features an extensive library, load options and material libraries with composites.

COSMO/M also features a straightforward CAD interface so that any IGES or DXF file may be brought into COSMO/M for analysis, saving valuable engineering time.

Because COSMO/M is a modular system, engineers need only to purchase the modules required for specific applications. Eleven different modules cover separate areas of engineering analysis.

Hardware Requirements: DOS 3.0 or higher, math co-processor, 640K RAM, 10 MB hard disk, graphics board and mouse

Software Included: COSMO/M will include Through Halo Graphics in the future

Availability: Now

SRAC is one of the leading developers of FEA software for micro, supermini and workstation platforms. Originally founded in 1982, SRAC has continuously met market demands through innovative features and cost-effective solutions to engineering FEA challenges.

Sun Microsystems, Inc.
2550 Garcia Avenue
Mountain View, CA 94043
(415) 960-1300; FAX (415) 969-9131

GX*i* ™

The GX*i* provides low-cost, color accelerated graphics for the popular Sun386i™ workstation, boosting perfromance on graphics-related functions by three to ten times. The GX*i* graphics accelerator fully integrates high-speed graphics into the Sun386i environment. A graphics-enhanced Sun386i offers benefits over personal computers that use third-party add-in graphics boards while also giving users the advantages of a workstation that runs integrated DOS and UNIX applications.

Incorporating the GX*i* in a Sun386i workstation improves the performance of tasks such as windowing, scrolling, and text processing, as well as accelerating 2-D graphics functions such as vectors and area fills for applications like computer-aided design.

The GX*i* accelerator is based on the industry-standard Texas Instruments TMS34010 graphics processor widely used in the high-end personal computer industry. Since the TMS34010 is supported by hundreds of PC graphics software vendors, Sun customers will be able to integrate future PC graphics functions and enhancements as they are developed.

The GX*i* architecture augments the TMS34010 with a custom Sun ASIC that speeds critical graphics functions such as vectors, fills, scrolls, BitBlit operations and shading.

Sun Microsystems, Inc., headquartered in Mountain View, California, is a leading worldwide supplier of network-based distributed computing systems, including professional workstations, servers and UNIX operating system and productivity software.

SWIFTSCAN Associates, Inc.
14 Renzulli Road
Norwalk, CT 06851
(203) 846-3153; FAX (203) 849-9014
Joan C. Carter, President

MSDSCAN™ EPA Chemical Regulation Reporting Tool

Chemical Material Safety Data Sheet (MSDS) maintenance, average daily chemical balance calculations and data preparation for reporting chemicals exceeding specified limits require an automated tool. MSDSCAN, a TMS340-based image system, supports federally legislated regulation compliance by supplying the required chemical information management, categorization and MSDS access.

While managing the chemical inventory, MSDSCAN running under DOS, can: display original MSDS images (scanned and stored on non-destructable disk) on a high-resolution monitor; generate laser-printed MSDS hard copies; transmit any MSDS to remote locations via FAX or modem; and print EPA required reports.

Hardware Requirements: 80386 CPU or better, Optical WORM drive, 6 MB RAM, 80 MB hard disk, optical scanner, TIGA compatible 340 graphics board, Laserjet II printer, Intel connection co-processor

Software Requirements: MS-DOS 3.3 or better, TIGA 340, EMS 4.0

Availability: Now

SWIFTSCAN Associates, Inc. has been involved in systems integration and application development for optical storage systems, image management applications and document conversion since 1984. Its clients include several Fortune 500 corporations.

System Engineering
3-11 Kanda-Jinbocho Chiyoda-ku
Tokyo, Japan
(03)-237-8324
Ken'ichi Yuda, Sales Manager

TMS34010 Software Development Tool (SDT)

The TMS34010 Software Development Tool was produced by SE to provide a simple way to develop using the TMS34010 Graphics System Processor. The board plugs into the NEC PC98 Series. It directly drives most digital and analog RGB raster-scan monitors. On-board memory consists of a 256K byte frame buffer organized as 1024 x 512 x 4 using TMS4161 VRAM and 512K bytes of TMS34010 program memory using TMS4256 DRAM. Both program RAM and frame buffer are accessible to the host by the TMS34010's host port and DMA (from host). The board comes with an interactive PC98 Series user interface and offers a simple command set for easy software debugging.

Hardware Required: NEC PC9801 Series and PC9801 Monitor Display
Software Required: TMS34010 Assembler and "C" Compiler
Availability: Now

System Engineering, headquartered in Tokyo, Japan, is a high-technology corporation engaged in digital signal processing systems, voice CODEC, fading simulators and computer graphic systems. System Engineering has been producing DSP systems since 1983 and computer graphic systems since 1980. The company was founded in 1977.

Talaris Systems Inc.
P.O. Box 261580
San Diego, CA 92126
(619) 587-0787
Rick Brown, Vice President, Sales and Marketing

SYSTEMS INC.

Talaris 1590 Printstation

The Talaris 1590 Printstation is the first in a family of printstations based on a new laser printer architecture designed for the multi-user computing environment. The Talaris 1590 Printstation, a true 15-page-per-minute printer, is based on the Ricoh LP4150 engine and has two 250-sheet paper trays and a 500-sheet, face-down output tray.

The Talaris 1590 is based on the Talaris Printstation Control System (PCS), a single board controller with two processors, each of which performs the tasks best suited to it. A Texas Instruments Graphics System Processor (TMS34010) does highly efficient raster image processing. A National Semiconductor 32016 manages I/O and interprets commands. The PCS architecture provides for expanding memory from 3 MBytes to 5.5 MBytes. The printstation uses Talaris's Extended Command Language (EXCL™), based on the ANSI X3.64 standard, with extensions to support emulations, page description languages (PDLs), and graphics. This design helps the Talaris 1590 maintain its rated engine speed even when printing complex pages with many vector or raster graphic images.

The Talaris 1590 employs the ANSI-standard Small Computer Systems Interface (SCSI). The SCSI permits the printstation to accept data from the host network at speeds of up to 1.5 MBytes per second. Besides the SCSI, each printstation features an RS232 and an RS422 interface, as well as a Dataproducts® parallel. An optional Centronics® parallel interface is also available. The multiple interfaces provide plug and print compatibility with many different multiuser computer systems and local area networks.

For immediate compatibility with a wide range of word processing and graphics software, the printstation features built-in LN03 Plus®, Tektronix 4014® and Diablo 630 ECS® emulations. In addition, Talaris printstation architecture has the flexibility for implementing other emulations and PDLs in plug-in cartridge format.

Hardware Required: Host Computer

Availability: Now

Talaris Systems Inc. (Continued)

Printstation Control System

The Talaris Printstation Control System (PCS) is a single-board laser printer controller with an advanced architecture that is extraordinarily hospitable to new development. The architecture features two different microprocessors for efficient allocation of processing tasks. Video RAM is utilized so that the PCS can be coupled with a wide variety of print engines. A Small Computer Systems Interface (SCSI) is included among the four interfaces on the board providing a performance advantage, as well as creating multiple opportunities for add-ons. A custom gate array increases the reliability of the PCS by greatly reducing part count.

The development environment is further enhanced by the presence of an on-board debugger, a performance monitor, and a file system. The programming language is C, and host-based loading has been enabled to allow easy installation of new firmware.

The functionality of the PCS has been logically split between two processors. A 40 MHz Texas Instruments TMS34010 Graphics System Processor does highly efficient raster image processing, with output to the print engine via dual-ported high-speed video RAM. A 10 MHz National Semiconductor 32016 manages host I/O and interprets commands. The processing power of the 32016 can be increased by the addition of a floating-point arithmetic processor. A standard C environment has been provided for programming on both processors, which results in easy moving of code to the appropriate processor, should a new imaging engine or interpreter require it.

Hardware Required: Print Engine, Host Computer

Availability: Now

Tandberg Data
Oslo, Norway
+47 2 18 90 90; FAX +47 2 18 95 83
Bjarte Rosnes, Product Marketing

TDV 5260 Display System

TDV 5260 is a powerful and versatile PC-display system consisting of a high-resolution 17", fully-overscanned, monochrome monitor and a high-performance graphics adapter to be inserted in an IBM PC/AT or compatible. The graphics adapter can be configured with 1 to 4 MB RAM. In addition, the display memory can be configured to 1- or 4-bit planes, making it possible to display information on the screen either in black or white or with 16 gray shades. The TDV 5260 supports the standard X Window System and is ideal for upgrading PCs to include X Window functionality.
Availability: March 1990

TDV 6710 Software

TDV 6710 is a high-performance implementation of the server part of X Window System Release 11.3. TDV 6710, in combination with TDV 5260 upgrades a PC/AT or compatible to a high-performance, top ergonomic X-terminal.
Availability: 1990

TDV 5710

The TDV 5710 is an implementation of the TIGA graphics interface. In combination with the TDV 5260, TDV 5710 makes it possible to run all PC applications which have been adopted to the TIGA interface, such as Microsoft's MS-Windows.

TDV 5710 can also be combined with both the TDV 5260 and the TDV 6710 to create a product for users who want to access X Windows applications on a LAN and still run their PC applications locally.
Availability: A prototype of this product was shown at the Systems Fair in Munich in October, 1989.

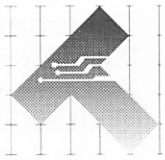
TDV 6711

TDV 6711 consists of a driver interface for Interactive System Corporation's ISC 386/ix 2.0 with TDV 5260. The combination TDV 6711 and TDV 5260 upgrades a 386 PC/AT, where ISC 386/ix 2.0 is installed, to a powerful UNIX workstation with top ergonomics and performance. If this workstation is connected to a LAN, both local and remote X-Clients can be run.

TDV 6713

TDV 6713 is the same as TDV 6711, except that it is a driver for The Santa Cruz Operation Inc.'s SCO Unix System V/386 3.2

Teknic Incorporated
214 Andrews Street
Rochester, NY 14604
(716) 546-3212
Thomas Bucella, President



Product Development

Teknic develops world class products that keep our clients ahead of the competition.

As a manufacturer's resource, we engineer software, hardware and electronic systems to customer specifications for a fixed fee. We develop reliable, manufacturable turnkey systems optimized for low production costs.

Teknic Engineers develop graphics and imaging hardware based upon the TMS340 Family of chips. Interfacing with scanning, video, and image processing devices is our specialty.

Design experience includes the following:

- NTSC, RS-170 and PAL video decoding, capture and encoding.
- Real time video scan rate conversion.
- Gen-locking of graphic displays with external sources for mixing.
- High bandwidth image bus design for rapid data access by image processing hardware.
- Image processing software and hardware.
- NuBus, VME and IBM PC bus interfacing.

Recent Graphics and Video application projects have included:

1. An image capture and display product for security applications. The system mixes live digitized continuous tone video with IBM PC graphics. Multiple live or stored video images can be simultaneously digitized and displayed on the same screen, panned, rolled, zoomed or scaled, with or without graphic overlay.
2. Frame-Grabber circuitry which decodes NTSC video into digital stream for high resolution capture.
3. A NuBus interface for a graphics system.

Tektronix, Inc. Visual Systems Group
P.O. Box 14689
Portland, OR 97214
(800) 225-5434; FAX (503) 239-0698
Donna Loveland, Public Relations

Tektronix®
COMMITTED TO EXCELLENCE

XN10 Graphics X Station

The full-color XN10 provides high-performance X Window system support and workstation-like resolution at a low cost. Two powerful processors—the 34010 and 386X—plus Tek custom gate arrays provide peak X performance and application processing efficiency in manufacturing automation, data analysis, CAD/CAE, mapping and GIS for graphics-intensive window applications such as high-end technical documentation, CASE and information retrieval. The XN10 features a standard 16" display (upgradable to 19"), 1024 x 768 addressability, and a palette of 16.7 million colors with 256 colors displayable. Compatible with UNIX, ULTRIX and VMS applications, it also features Ethernet TCP/IP, RS-232 port, Centronic and RGB ports. 2 MB memory is standard, expandable to 8 MB.

Hardware Requirements: Ethernet host computer
Availability: Now

4211 Graphics Netstation

The 4211 combines the powerful 34010 and 386SX microprocessors with Tek custom gate arrays for color graphics terminal performance unsurpassed in its price range. Its standard RS-232C host connection plus dual connect IBM coax and TCP/IP-based Ethernet LAN options provide a unique direct network connectability. Ideal for applications in CAD/CAM, cartography, manufacturing automation and many others, the 4211 incorporates the local intelligence of Tek graphics with wide-ranging software compatibility. The high-resolution 15" color display features 1024 x 768 addressability and a standard palette of 4096 with 16 simultaneous displayable colors, or the optional 16.7 million with 256 displayable. A Centronics, RGB, and two peripheral interfaces provide compatibility with a variety of output devices.

Hardware Requirements: Serial or Ethernet host computer
Software Requirements: VMS/UNIX O/S
Availability: Now

XN11 Graphics X Station

The XN11 combines a powerful X Window interface with networking and high-graphics performance in a high-resolution color display station. It features a standard 15" display, 1024 x 768 addressability, and a palette of 16.7 million colors with 256 displayable. The XN11 comes with a built-in X server (Version 11) for workstation-like interface and features full-screen Tek graphics processing support. TI's 34010 and Intel's 386SX, plus Tek custom gate arrays maximize application processing and X performance with memory expandable to 8 MB. Standard serial RS232C and TCP/IP-based Ethernet LAN connections plus an IBM coax option let it fit most work environments.

Hardware Requirements: Serial or Ethernet host computer
Software Requirements: VMS/UNIX, etc. O/S
Availability: Now

Tektronix, Inc. is a leading manufacturer of electronic products and systems in the areas of computer graphics, test and measurement, and communications. Headquartered in Wilsonville, Oregon, Tek's Visual Systems Group markets a complete line of graphics products, including graphics superworkstations, workstations, netstations, terminals, advanced image printers and software.

TelePhoto Communications, Inc.
11722 Sorrento Valley Road, Suite D
San Diego, CA 92121-1084
(619) 452-0903
Leonard G. Roberts, Marketing & Sales Director

TELEPHOTO COMMUNICATIONS, INC.

ALICE™ Type-80

ALICE Image Compression Systems are used to compress high resolution, full-color and gray-scale digitized images for increased storage capacity and accelerated transmission over standard telephone lines.

The Type-80 is designed to run on the TMS34010 Graphics System Processor. The product provides approximately 8-to-1 compression.

The ALICE Standard Utility Program consists of a menu driven utility (ALICEM) and a command line drive utility (ALICEC) which provides the following functions:

- Capture image (ALICEM only)
- Load and save image
- Compress and uncompress image
- Select compression parameter-allows user to choose the degree of compression (Good, Better, Rest), thereby controlling any image degradation
- Select window
- Erase screen

Hardware Required: 34010-based system

Availability: Now

Telex Computer Products International Inc.
Rm. 801 8th Floor Pong Lai Building
245 Minchuan E. Road
Taipei, Taiwan, R.O.C.
886-2-594-4294
Jack Lee, Hardware Group Leader

Telex Graphics System

The Telex Graphics System is a PC add-in board based on the Texas Instruments TMS34010 Graphics System Processor. The standard board will have a 2048 x 1024 resolution and drive a mono-chrome monitor. As an optional feature, the board can be expanded to four color planes at the same resolution.

Hardware Required: IBM PC/XT/AT

Telex Computer Products, with headquarters in Tulsa, is the larger subsidiary of The Telex Corporation. TCP is the leading alternative in 3270 protocol-compatible terminals, printers and controllers and airline information systems. TCP also manufactures and markets intelligent workstations, telephone equipment, System/3X equipment and high-performance tape drives. With over 6800 employees, Telex Computer Products provides sales and service support to its customers in the U. S. and in more than 70 countries worldwide.

Truevision, Inc.
7340 Shadeland Station
Indianapolis, IN 46256
(317) 841-0332; FAX (317) 576-7700
Dennis Collins, Marketing Manager
Karen Frye, Marketing Coordinator

NuVista Videographics Cards

Capture and display images with high spatial and high color resolution with a NuVista. These boards are the perfect solution for high-end graphics applications ranging from video production and graphic design to digital pre-press and medical imaging. NTSC and PAL compatibility, multiple bit/pixel settings, programmable capture and display resolutions, and a 32-bit TMS34010 graphics co-processor are just a few of the unique features. QuickDraw compatibility provides access to virtually all MacIntosh II software.

Hardware Requirements: Apple Macintosh II or IIx host

Availability: Now

HR Graphics Cards

The HR graphics card is the first product to bring true workstation-quality display capability to the Macintosh II. Its 1280 x 960 non-interlaced display is four times larger than a standard Mac screen and provides 56% more pixels than 1024 x 768 cards. The HR card features 8 bits/pixel coupled with a look-up table to produce 256 colors from a palette of 16.7 million. Hardware panning lets you roam throughout the HR card's large virtual desktop, which is available in two sizes: 2K x 1K on the 2 MB model, or 2K x 2K on the 4 MB model.

Hardware Requirements: Apple Macintosh II

Availability: Now

ATVista Graphics Board

The ATVista graphics cards allow all the flexibility and high-resolution of the NuVista cards for IBM PC/AT and compatibles.

Hardware Requirements: IBM PC/AT or compatible

Availability: Now

TARGA Videographics Adapters

TARGA videographics adapters give users the power to create dazzling graphics at an affordable price. They provide real-time, true-color capture and display, high-quality video output and a variety of models offering from 256 shades of gray to over 16.7 million colors.

Hardware Requirements: IBM PC/XT/AT or compatible

Availability: Now

Truevision, Inc. (Continued)

VIDI/O Box - NTSC and PAL Versions

Anyone who needs access to a variety of video input and output devices will find that a Truevision VIDI/O box is a simple, yet elegant, solution. These stand-alone products are both Encoders and Decoders, converting analog RGB to both composite video and S-Video (Super VHS and ED Beta) and simultaneously converting composite S-Video to analog RGB. They provide loop-through of all input and output signals as well and may be operated in either the master or genlock modes.
Availability: Now

Slide Presentation Software

Slide Presentation is a software package that allows the user to create an electronic slide show complete with wipes, fades and dissolves, all sequenced and editable even at the last second. Slide presentations can be created at the computer or the software can be used to demonstrate an unattended sequence of images and text. It can also overlay images on live video for developing multimedia presentations or tutorial videotapes.
Hardware Requirements: TARGA videographic adapter
Software Requirements: TIPS® Imaging Software
Availability: Now

TIPS TypeRight Software

This program lets the user add high-quality anti-aliased text to images. Total editing of text is possible since it is treated like an object which can be easily modified until the final rendering. Colorful gradient rectangular backgrounds are easily produced, and offer dithering for smooth appearances.
Hardware Requirements: TARGA videographic card
Software Included: TIPS interface
Software Requirements: TIPS Imaging Software

Truevision designs and manufactures microcomputer graphics products that enable users to process images with television-quality resolution.

Unidot, Inc.
528 Commons Drive
Golden, CO 80401
(303) 526-9263; FAX (303) 526-9502
Bob McClure, President

UNIDOT

TMS34010 C Compiler

The Unidot C compiler for the Texas Instruments TMS34010 processor has been designed to conform to the accepted standards for C under Unix. It is user tailorable to local requirements for sign extension of characters, integer sizes, padding requirements, and numerous other variations. Optionally, it supports the latest proposed ANSI standards. This includes function argument coercion, keywords **signed, volatile, const,** and signed bit fields. It is fast and produces high quality code. Floating point is software supported for 32 and 64 bits in a non-IEEE format for highest speed execution.

The code generator for the TMS34010 supports the full C language, and in addition has several added features:

- Pointers to bit fields
- Direct C access to graphics registers
- In-line code for most string functions
- Optional flow optimization
- In-line assembly code
- Low overhead function calls
- Optimized for controller applications

Output of the Unidot C compiler for the TMS34010 is assembly code that conforms to the standard Texas Instruments assembly language syntax or the Unidot assembly language for the TMS34010. A complete library of C functions is also available.

The compiler and library are available in source form for MS DOS systems, Digital Equipment VAX computers under VMS, or most systems using the Unix operating system. It is also available in binary form for MS DOS.

TMS34010 Assembler

The Unidot assembler for the TMS34010 is a member of the Unidot cross development family. Operand syntax is similar to the Texas Instruments Assembler except that standard operator precedence is used. Pseudo operations are Unidot standard. Among other features this assembler includes:

- Nested macro definitions
- Macro redefinition
- Nested macro expansion
- Nested source file inclusion
- Multiple code and data sections
- Large numbers of external variables
- Very large symbol table space
- Full listings and Cross references

Output of the assembler is Unidot standard link format so that the standard Unidot linker and archiver can be used.

The assembler, linker, and archiver are available in source form for MS DOS systems, Digital Equipment VAX computers under VMS, or most systems using the Unix operating system. It is also available in binary form for MS DOS.

Availability: Now

Unitron Incorporated
3F 542-3 Chung Cheng Road, Hsin Tien
Taipei 23138, Taiwan, R.O.C. 23138
(02) 917-1881; FAX 886-2-9157398
T.P. Huang, Vice General Manager

Pc-Palette

The Unitron Pc-Palette is an intelligent graphics adapter with 1024 x 768 x 256C and 8514/A AI and TIGA Standards compatibility. It supports all 8514/A and TIGA graphics primitives and attributes.

The Pc-Palette with TMS34010 makes all applications run faster. The TMS34010 provides the application writer with a dual processor environment enabling application tasks to run in parallel by partitioning them between the host and TMS34010. The Pc-Palette also completes IBM 8514/A AI routines with an ingenious color compare circuitry.

Hardware Requirments: IBM AT compatible computer, IBM 8514/A AI compatible monitor (1024 x 768), 640K RAM, feature connector, ID connector emulator

Software Requirements: MS or PC DOS 3.0 or higher

Software Included: Drive, fonts, diagnostics, utility program

Availability: Now

Unitron Inc. is a world-wide manufacturer of personal computers, mainboards and peripherals. Unitron is continually introducing new products to meet customer needs. The key, as always, is continued customer support.

Univision Technologies, Inc.
Three Burlington Woods
Burlington, MA 01803
(617) 221-6700; FAX (617) 221-6777
Bonnie Shields, Corporate Communications Manager

univision
technologies, inc.

Univision UDC-7000-TI

The UDC-7000-TI features both the TMS34010 graphics and optional 34082 floating point units. This board is capable of 33 MFLOPS performance and vector drawing speed of 200,000 vectors/second. The UDC-7000-TI can display images as large as 1280 x 1024 x 32bpp, from a display memory of 2048 x 2048. This feature is important in applications such as seismology, where full 24-bit color and 8-bit graphic overlay is required. The on-board 33 MFLOP co-processor, 20 MHz peripheral VSB bus and local pan and zoom hardware allow a single add-in board to handle demanding imaging and graphic applications at up to 32 bits/pixel. When used with the Univision UPX-1000 frame grabber, images as large as 1280 x 1024 x 8bpp can be digitized and viewed at 20 frames per second. Single screen IBM monochrome, CGA, EGA and 8514/A display standards are emulated in firmware and hardware using Univision's propietary ASIC gate array.

Hardware Requirements: PC AT or compatible

Software Included: Drivers for TIGA and X Windows, SDSL (Univision's propietary library)

Software Requirements: MS DOS, UNIX

Availability: April, 1990

Univision Technologies designs and develops high-resolution graphics controllers. Distinguishing itself from low-resolution graphics manufacturers, the company only supplies controllers which allow images of 1280 x 1024 and greater to be displayed on screen. Univision offers a range of products for IBM PC, DEC and SUN systems which support resolutions as high as 2K x 2K.

Vectrix Corp., A Division of Everex Systems, Inc.
204 South Olive Street
Rolla, MO 65401
(314) 364-7500; FAX (314) 364-9533
Tom Kendall, Marketing Manager
(714) 727-2452; FAX (714) 727-2498

VX1280 Graphics Board

The VX1280 is a very fast single-slot TMS34010-based controller utilizing ASIC technology operating at 60 MHz and provides a resolution of 1280 x 1024 non-interlaced. The basic model provides 16 colors from a palette of 256K, with an optional 256 colors from a palette of 16.8 million also available.

The VX1280 is designed for use in all compatible 286 and 386 ISA and EISA PC systems in a single- or dual-monitor mode. The 512K DRAM memory is expandable to 4.5 MB for display list processing and other user requirments. The controller includes an on-board VGA chip set that provides full VGA program compatibility with a single monitor.

Hardware Requirements: AT 286 or 386 compatible
Software Included: TIGA interface
Software Requirements: DOS 3.0 or higher
Availability: April, 1990

VX1024 Graphics Board

The 1024VX is identical to the VX1280 except that resolution provided is at 1024 x 768. Custom drivers are available to support the major CAD programs from AutoCAD through VersaCAD. In addition, the TIGA-340 software interface provides access through MS-Windows to an expanding array of programs, including desktop publishing.

Hardware Requirements: AT 286 or 386 or compatible
Software Included: Drivers for TIGA, ADI v.4.0, AutoCAD, AVR Shade, CADKEY, Mastercam 3D, MIPS, Microstation PC, ORCAD, P-CAD, VersaCAD
Software Requirements: DOS 3.0 or higher, 30K or 40K Memory
Availability: Now

PRESTO! Graphics Board

The PRESTO! card is a high-performance single-slot TMS34010-based controller that provides a resolution of 1280 x 1024 or 1024 x 768, non-interlaced. The basic model offers 16 colors from a palette of 4096. An optional memory module offers a display of 256 colors from a palette of 16.8 million. Designed for use in compatible 286 and 386 PC systems in a single- or dual-monitor mode, the PRESTO! board offers hardware zoom with pan capability and wraparound. A custom line drawing option increases the line drawing speed from 1.25 million pixels/second to over 10 million pixels/second. Available memory is 512K for processor RAM and general use.

Hardware Requirements: AT 286 or 386 or compatible
Software Included: Drivers for TIGA, ADI v.4.0, AutoCAD, AVR Shade, CADKEY, Mastercam 3D, MIPS, Microstation PC, ORCAD, P-CAD, VersaCAD
Software Requirements: DOS 3.0 or higher, 30K or 40K Memory
Availability: Now

Vectrix, a pioneer in the development of high-performance graphics controllers since 1982, was acquired by Everex Systems Inc. in late 1989 to add CAD compatible graphics to the Everex product line. Vectrix will continue to provide product design, software development and technical support for the products that are produced by Everex in their Fremont, CA facilities.

Vermont Microsystems
11 Tigan Street
Winooski, VT 05404
(802) 655-2860; FAX (802) 655-9058
Irene Steiner, Marketing Specialist

X Series Graphics Controllers

The X/Series family provides a stepping stone between PCs and dedicated workstations. The X/Series provides PC users with the features and performance levels of real-time 3-D graphics workstations with resolutions of 1280 x 1024 at 64 kHz, non-interlaced. The X/Series incorporates snap-on modular upgrades that allow the performance of the base card to grow with user needs. Additional features include a 16.7 million color palette, Vermont Microsystems new VCAD graphics accelerator ASIC, the TMS34010, and analog signal pass-through.

Hardware Requirements: Multi-sync monitor, VGA card

Software Included: Drivers for AutoCAD 9 & 10, Prime/OV, Personal Designer and Windows 286/386

Availability: Now

Cobra/2 and Cobra Plus Graphics Board

The Cobra/2 and Cobra Plus are high-performance graphics processors designed for MicroChannel Architecture (MCA) and Industry Standard Architecture (ISA), respectively. They offer non-interlaced resolution of 1024 x 768 and up to 256 colors from a palette of 16.7 million. Both boards are compatible with over 100 popular software packages and allow VGA pass-through. Auto-install utilities are included to allow fast set-up.

Hardware Requirements: Multisync monitor, expanded memory recommended

Software Included: Drivers for AutoCAD 9 & 10, Prime/OV, Personal Designer, Windows 286/386, VersaCAD, GEM and Microcadam

Availability: Now

Cobra/2 HS and Cobra Plus HS Graphics Boards

The Cobra/2 HS and Cobra Plus HS are high-speed versions of the original Cobra/2 and Cobra Plus graphics, based on the TMS34010 60 MHz graphics CPU, and offering a 35% increase in clock speed over the original products. Cobra/2 HS is designed for MicroChannel Architecture (MCA) and Cobra Plus HS is for Industry Standard Architecture (ISA). Both graphics engines provide flicker-free 1024 x 768 resolution, 16 to 256 colors from a 16.7 million color palette, and instant pan, zoom and bird's eye view.

Vermont Microsystems was founded in 1980 and designs, manufactures, markets and supports high-performance, high-resolution graphics processing subsystems for professionals in the CAD/CAM, desktop publishing and graphics imaging fields.

Versacad Corporation
2124 Main Street
Huntington Reach, CA 92648
(714) 847-9960
Brian J. Cody, Product Manager

VERSACAD CORPORATION

VersaCAD® DESIGN

VersaCAD® DESIGN is a fully programmable, interactive computer aided design and drafting software package for popular microcomputers. Using modular integration, the software allows interactive work in 2D drafting, true 3D modeling with user-definable light source color shading, bill of materials reports and universal two-way CAD communications. Logical menu command structure aids learning, with commands selectable off the screen from a graphics tablet overlay or by pressing a single keyboard letter. The software is totally customizable by the average user, including "record and playback" macro commands, personalized symbol libraries, and a built-in CAD Programming Language (CPL). Most popular local area networks are supported.

Software Required: MS/PC DOS ver. 2.1 or greater

Availability: Now

Versacad Corporation is one of the leading manufacturers of computer-aided design and drafting software for the microcomputer industry according to a number of leading market research groups specializing in this field. With over 30,000 software systems sold since 1981, along with 50,000 drafters and designers trained on Versacad Corporation products each year in over 3,000 schools, colleges, and universities worldwide, the company is recognized as the pioneer of personal computer CAD and respected as the technological leader.

Versacad Corporation is best known for two of the most popular CAD systems on the market-VersaCAD and CADAPPLE. These systems are used by professionals across a broad spectrum of disciplines in engineering, architecture, facilities design, circuit design, and educational training.

In addition to technological leadership, Versacad Corporation also sets standards for customer support, state-of-the-art features, user-customization, ease of use, and support for the widest range of hardware and peripherals in the industry.

Wang Laboratories Inc.
One Industrial Avenue
Lowell, MA 01851
(508) 459-5000; FAX (508) 452-0896

Wang 9229 PC AT High-resolution Display Card

The TMS34010 is used in the Wang 9229 PC AT high-resolution display card, which supports Wang's 16-inch high-resolution monochrome monitor. The card provides resolutions of 1024 x 1024 x 1 bit per pixel or 2K x 2K x 1 interlaced and 720 x 698 x 1. The TMS34010 is used to decompress, compress, display, and process images, plus display graphics and text. The Wang 9229 display card with appropriate high-resolution drivers is used to support Wang's 16-inch high-resolution monochrome monitor both in Wang Integrated Image Systems and Wang Freestyle™ personal computing systems. When the card is not used in high-resolution mode, it emulates a Hercules graphics card.

Wang Integrated Image Systems (WIIS) is a comprehensive set of tools for capturing, storing, retrieving, and sharing the 95 percent of information based on paper in the workplace and integrating it into the mainstream computer environment. Images, data processing, office automation, and communications, including direct links to IBM mainframe databases, all can be accessed from one WIIS workstation.

The Wang Freestyle™ personal computing system is a hardware and software product that runs on Wang PC 200/300 Series and other true IBM PC/AT compatible personal computers. It features an electronic pencil and tablet and a telephone-like handset that permits users to turn virtually any information on the PC screen into an electronic piece of paper and add a signature or notes. Spoken comments can be added through the Freestyle voice handset. The complete information packet can then be sent to other Freestyle users in a business network. Freestyle pages with written or typed notes can also be sent to a FAX machine or to another Freestyle system that has a Freestyle FAX option installed.

Western Digital Corporation
800 East Middlefield Road
Mountain View, CA 94043
(415) 960-3353; FAX (415) 968-1974
Anil Deora, Product Manager

Verticom MX-Series

Verticom's MX-Series of graphics cards integrates the TMS34010 with onboard Paradise VGA/16 compatibility at an affordable price.

The MX-Series supports high-performance resolutions of 1024 x 768 and 800 x 600, in addition to VGA resolution of 640 x 480. Available in two configurations, the MX16/AT provides 16 on-screen colors with 384K of display memory. The MX256/AT provides 256 colors with 768K of display memory.

Complete compatibility with Microsoft Windows 2.1, IBM 8514/A (AI), TIGA and, optionally, GSS DGIS, assures high-resolution display support for all CAD, desktop publishing and high-end business applications.

MX-Series cards come standard with 256K of 34010 program memory and can be upgraded to 512K with the memory expansion option.

Hardware Requirements: IBM PC/AT or compatible, multi-sync monitor scanning from 30 to 52 kHz

Software Included: Drivers for IBM 8514/A (AI), TIGA 1.1, GSS DGIS 2.01, AutoCAD 9/10 DL, Windows 286/386

Availability: Now

Western Digital Corporation is a multinational company that designs, develops, manufactures and markets semiconductors, subsystems and intelligent disk drives for OEMs and resellers who serve the microprocessor industry. Imaging products include LSI boards for 8514/A-, VGA-, EGA- and TMS34010-based solutions. Western Digital products are sold in retail under the "Paradise" and "Verticom" brand names.

Williams Electronics Games, Inc.
3401 North California Avenue
Chicago, IL 60618
(312) 267-2240
Roger C. Sharpe, Director of Marketing

NARC™

NARC brings to life sensational, digitized graphics that are a technological leap ahead, with an impact that will help to redefine the state-of-the-art for coin-operated amusement game entertainment.

Williams' system allows players to virtually 'live out' the action on incredible, highly articulated and detailed screens. The genius of Williams' engineers is the creation of an intense 2-person cooperative adventure where the elite team of Max Force and Hit Man are on a mission to destroy the K.R.A. K. criminal syndicate and protect the innocent.

There's wave after wave of exciting non-stop action as players must punish the guilty. . . making busts and seizing drugs and loot as evidence for bonus points. Junkies, punks, thieves, psychos and murderers must all face the elite team's special brand of justice. Armed with machine guns and rocket bombs, and aided by a high-powered sports car, helicopter and on-screen scanner, players must fight their way through ghetto streets, inside abandoned warehouses, downtown and up, across bridges until they reach the ultimate showdown at corporate crime headquarters against the master villain, Mr. Big.

The wonder and marvel of NARC is due to a technology made possible by Texas Instruments 34010 graphics system processor and a custom integrated circuit that ensures copy protection. With quality craftsmanship, advanced diagnostics and bookkeeping functions, as well as proven play appeal features built-in, NARC is the blockbuster hit video game players have been waiting for.

Availability: Now

WordPerfect Corporation
1555 North Technology Way
Orem, UT 84057
(801) 225-5000; FAX (801) 222-5077
Contact Information Services

WordPerfect CORPORATION

WordPerfect 5.1

WordPerfect 5.1, the newest WordPerfect word processing package, offers several new features to make it even more powerful yet easier to use. These new features make it easier to create tables, print mailing labels, import spreadsheets and print complex equations. Pull-down menus are available through mouse or cursor key for easy access. The Tables feature allows the user to create tabular data automatically enclosed in graphic lines. The Equation Editor includes a comprehensive collection of symbols, characters and mathematical operations and functions. And the WordPerfect heritage continues with features like Columns, Underlines, Bold, Macros, Merge, Footnotes/Endnotes, Thesaurus and a 115,000 word Speller. Integrate text and graphics with ease in WordPerfect 5.1 to create professional-looking correspondence, reports and newsletters.

Hardware Requirements: TIGA compatible video board
Software Included: TIGA driver available on update disk
Software Requirements: TIGA driver
Availability: Now

WordPerfect Corporation ranks third among the best-selling PC software companies. The company develops and markets WordPerfect, the world's best-selling word procesor; WordPerfect Office, an office automation package; PlanPerfect, an advanced spreadsheet; DataPerfect, a menu-defined database; and WordPerfect Executive for laptop computers.

Wyse Technology
3571 N. First Street, M/S 622
San Jose, CA 95134
(408) 433-1000 ext. 1487; FAX (408) 473-2400

WYSE

WY-7190

The WY-7190 is a high-resolution monochrome graphics display subsystem for desktop publishing that can emulate all the popular graphics modes: CGA, MDA, Hercules, VGA and the Wyse WY-700.

The WY-7190 19-inch monochrome display subsystem features a high-performance 16-bit board interface that operates with all IBM PC/ATs and compatibles, including Wyse's 286- and 386-based personal computers.

Designed specifically for the desktop publishing specialist, the WY-7190 combines the high-resolution of 1280 x 960 pixels with an intelligent controller based on the Texas Instruments 34010 graphics processor, resulting in a flicker-free monitor with a 1-to-1 aspect ratio. The system's ability to emulate multiple graphics modes means that for the first time users can buy a single monitor to address desktop publishing and applications that support desktop publishing.

The WY-7190 provides crisp, clear characters on a truly paper-white display. The user can display two fully composed pages in small type sizes with detail sufficient to differentiate between a serif and a sans serif font.

The WY-7190's high-resolution mode supports the most popular desktop publishing software packages, including Ventura Publisher and Aldus Pagemaker. Drivers for Microsoft Windows and Digital Research GEM let the unit run a wide range of other publishing and graphics programs. Beyond the desktop publishing arena, there are high-resolution drivers for such programs as AutoCAD, PCAD and CADVance.

Hardware Required: WYSEpc 286 and WYSEpc 386 families; IBM PC/AT and compatibles

Xerox Technigraphic Products
317 Main Street
East Rochester, NY 14445
(716) 586-8117
Scott Sipherd, Director of Marketing

XEROX®

XTI Plot Controller

The XTI is a high performance, modular plot controller specifically designed for high throughput, high resolution output on large forms (D, E, and larger sizes). Standard input is RS232 with optional input modules for RS423, VPI (Versatec Parallel Interface), Centronics, Ethernet. IBM channel attachment is also available through a channel-to-VPI protocol converter which emulates the IBM 3211 printer. Output (raster data) is provided through a hardware module which follows the Xerox 5-wire hardware specification for laser printer communication. This module can be replaced by an OEM designed module to satisfy other output standards.

The XTI base unit is an 8-slot Multibus I system with a 68010 CPU board and a graphics engine board which uses four (4) TMS34010 graphics processors and 8MB of dynamic RAM. Output modules, such as the 5-wire, connect via a double-wide SBX port on the CPU, and most parallel and serial input modules are connected via the single-wide SBX connection on the CPU. RS232 ports and floppy disk controllers are built right into the CPU and do not require additional hardware modules.

The base system will handle pen plotter emulation (Calcomp 907, HPGL) over RS232 at rates up to 38.4K baud, and VRF (Versatec Random Format) over VPI at rates as high as 1MByte/sec. An additional 6 slots in the Multibus I chassis allow for an Ethernet board and hard disk controller (for spooling), and up to 3 additional graphics engine boards for increased rasterizing power. The additional graphics engine boards ensure premium performance for more sophisticated plots such as those containing filled polygonal regions (e.g., VLSI).

Each interface option for the XTI is provided as a "kit" containing the necessary hardware module and software (on 3 1/2" diskette) to perform a specific graphics language emulation on a specific hardware interface. A diagnostic diskette is also provided for running on-site hardware checks.

Availability: Now

Xiphias
13464 Washington Blvd.
Marina Del Rey, CA 90292
(213) 821-0074
Peter Black, President

XÏPHIAS
TOOLS FOR AN INFORMATION SOCIETY

Digital Typefonts

The following digital typefonts are available.

1. Presentation Graphics Fonts: A library of over 35 faces in several sizes.
2. WYSIWYG font for desktop publishing, available in GEM, Windows, and other formats.
3. Anti-aliased (grey-scale) fonts in 2, 3, 4 and 8 bit depth.
4. A real-time 34010 based anti-aliased font generator capable of kerning, character rotation, and diagonal string mapping of text.

BLADE™

A fast, efficient 34010 based algorithm for the conversion of bit-mapped line art into a variety of polygonal forms, ranging from pure vector to Postscript (including fitted Bezier curves) based data formats.

Hardware Required: TMS34010
Availability: Now

Xiphias, located in Marina Del Rey, an ocean facing suburb of Los Angeles, is a leading supplier of digital type fonts and computer graphics technology. Its clients include Microsoft, Lotus, Ashton Tate, AT&T, Atari, Citizen America, Bell & Howell and others. The company was founded in 1979.

Zenographics, Inc.
19752 MacArthur Blvd., Suite 250
Irvine, CA 92715
(714) 851-6352
Bob Romney, President

Zenographics

MIRAGE

Mirage consists of three integrated applications: Chart, EGO, and DBM. Chart produces superb charts and graphs in thousands of variations. You can store charts as images, for editing by EGO, as well as specs, for automated charting and repetitive chores. Chart has almost no limits-to the amount of data in a chart, number of charts per page, or number of fonts per chart. The selection of colors is limited-only 360 million!

EGO, the graphics editing system, is a complete drawing package. You can use it to create freeform drawings such as logos, technical illustrations, or word charts, and you can use it to edit Chart images as well.

DBM is the Mirage file manager and data interchange utility. You can use DBM to import data for your charts automatically or to maintain databases for your automated charting. In addition to DBM, the WKSCMD utility program brings Lotus worksheets in directly. Mirage has a number of outstanding features, such as:

- Colors from a palette of 360 million
- Typeset-quality font capability
- Integrated business charting, graphics editing and database management
- Intelligent support of high-quality output devices
- The Max programming language
- Operation at high, low, and medium resolutions
- Color sweep
- Manipulation of symbol and image libraries

Mirage supports several graphics coprocessor-based video cards that use the Texas Instruments TMS34010, such as the Number Nine Pepper SGT and the Bell & Howell Nova.

Mirage also supports such Postscript-based printers as the Texas Instruments Omnilaser 2110 and 2115 PS models.

Hardware Required: PC compatible, 384K RAM, graphics card. Hard disk and math coprocessor highly recommended

Availability: Now

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SPVB066C