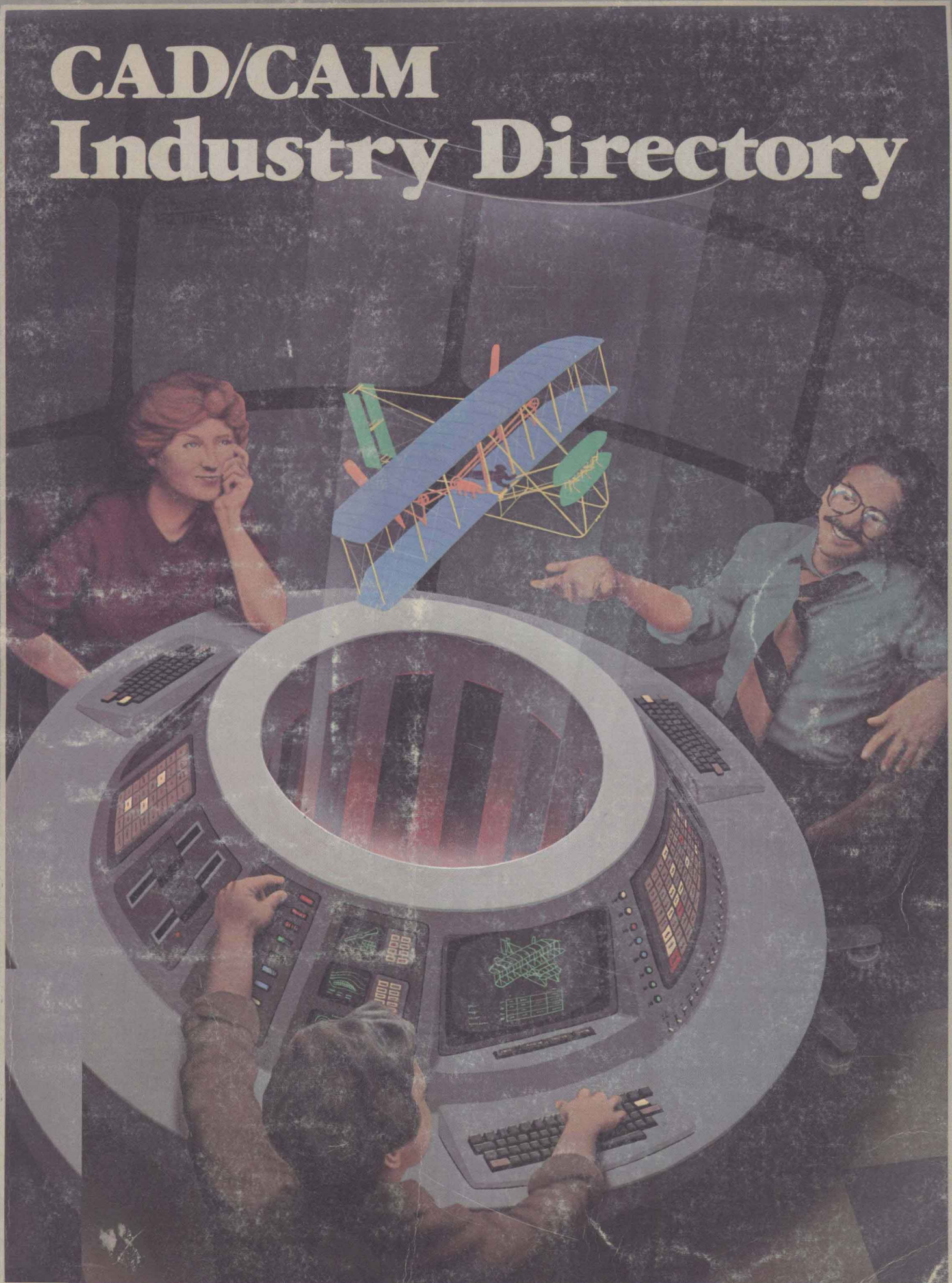
CAD/CAM Industry Directory



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LETTER FROM THE PUBLISHER

We at Technical Database™ Corporation would like to welcome you to another of our rapidly growing family of specification-oriented industrial automation equipment directories and updates. We know you will find our information accurate and easy-to-use, offering thorough coverage of the equipment and services necessary to plan the factory of tomorrow today.

The CAD/CAM Industry Directory™ is Volume II of our Intelligent Factory Library™ series. Volume I is the Robotics Industry Directory™. Now in its third year, the Robotics Industry Directory™ is recognized as providing the most complete collection of information on industrial robots and related products available.

Volume III is the Industrial Sensor Directory™. This volume contains specifications on vision systems, automated inspection systems, and numerous other types of sensors designed for industrial use.

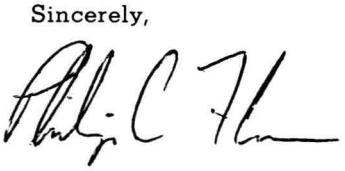
If you have not yet ordered the Industrial Sensor Directory™ and/or the Robotics Industry Directory™, we encourage you to obtain these valuable information tools by using the appropriate order forms contained within this publication. As with the CAD/CAM Industry Directory™, Industrial Sensor and Robotics Industry Directory listings are computer-generated to maintain accuracy and uniformity. Listing participants are sent copies of their listing to correct errors and for last-minute revisions.

In addition, you can keep your Directories current throughout the year by subscribing to Computerized Manufacturing™, the only magazine that incorporates the Robotics, Industrial Sensor and CAD/CAM Directory Updates. These exclusive computer-generated Updates of specification changes and new products are produced in the same format as our Directory listings, permitting instant product evaluation and comparison.

We value your feedback and have used many of our reader's suggestions in improving our directories from year to year. Please send us any questions, comments and/or suggestions and we will respond to them to the best of our ability.

Thank you for your investment in the CAD/CAM Industry Directory™.

Sincerely,



Philip C. Flora
Publisher

HOW TO USE YOUR DIRECTORY

THE CAD/CAM INDUSTRY DIRECTORY™ is divided into three basic sections. The first section, which begins on page 4, covers systems. It is divided into sections for: CAD Systems, CAM Systems, Computer-Aided Testing Systems, Flexible Manufacturing Systems, Automated Drafting Systems, Material Management Systems, Software Development Systems and Structural Analysis Systems. Section two, beginning on page 30, lists system hardware components. Included are sections covering: Computer, Mini; Computer, Micro; Memory Devices; Array Processors; Digitizer/Image Processors; Interfacing Devices/Data Converters; Workstations/Terminals—Alphanumeric; Workstations/Terminals—Graphic; Modems & Networks; NC, CNC, DNC; Programmable Controllers; Plotters; Printers. The page number on which each of these sections begins can be found in the Table of Contents on page 1. Finally, there is a section on Software; Consultants/Systems Houses begins on page 121. In addition, a Glossary of important terms can be found on page 153, and a complete index begins on page 155.

NOTE: The material in each listing in this directory is derived from submissions by the firms listed. We have NOT investigated any of the representations made and we assume NO liability for any incorrect information which may be contained herein.

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Palm Bay, Florida 32905
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none

Marketing Contact--Japan:
none

T157DR Color Work Station

1) 1,350,000 Bit/second asynchronous information processing rate.
2) Switch selectable positional resolution to 1 Mil.
3) Storage or raster graphic display.
4) Self diagnostic, operator control panel.
5) Modular construction for ease of service.
6) 16 button programmable cursor assembly.

Approximate Cost
Minimum: $30,000
Typical: $42,000
Delivery Time 90 days ARO
Length of Warranty 90 days

Arrigoni Computer Graphics, Inc.

Principal/HQ Location:
170 Knowles Drive
Los Gatos, California 95030

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Arrigoni Computer Graphics, Inc.
170 Knowles Drive
Los Gatos, California 95030
(408) 370-1400

Marketing Contact--Europe:
n/s

Marketing Contact--Japan:
n/s

Touch 'N Draw

Touch 'N Draw II is an interactive computer-aided design and drafting system created specially to meet the needs of architects, interior designers and facilities managers. Software packages are available to meet each application need.
1. Basic CADD is a touch controlled, architectural design and drafting package for creating plans, details, sections, elevations, and more.
2. Interior design applications software package aids the designer in symbol placement, and area measurement and produces bills of material and inventories.3. Touch 'N Plan contains a data base and analytical routines for space planning and facilities management.

Approximate Cost:
Minimum under $85,000
Typical $95,000.00
Delivery Time: 45 days
Length of Warranty: 90 days

Auto-Trol Technology Corporation

Principal/HQ Location:
12500 North Washington St.
P O Box 33815
Denver, Colorado 80233

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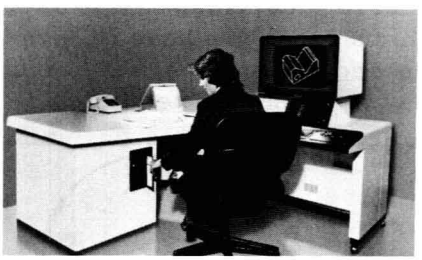
James Hammock
Vice President, Marketing
Auto-trol Technology Corp.
12500 North Washington St.
Denver, Colorado 80233
(303) 452-4919

Marketing Contact--Europe:
Jerry T. Sisson
Vice President, International Operations

Marketing Contact--Japan:
Jerry T. Sisson
Vice President, International Operations



Advanced Graphics Workstation

The AGW is a low-cost 32-bit CAD/CAM workstation that can be used as a stand-alone system. AGWs can be linked together to form a high-speed, local area network with distributed processing. In addition, the network can be connected to a host processor such as Digital Equipment Corporation's VAX series of computers. All of the configurations utilize Auto-trol's 32-bit software for architecture, engineering and construction; and mechanical design and manufacturing applications.
More than just an intelligent workstation, the Advanced Graphics Workstation provides a dedicated computer for every user. Each AGW utilizes its own 32-bit processor manufactured by Apollo Computer, Inc. of Chelmsford, Massachusetts. At under $100,000 per workstation, it is now cost-effective for a company to give every engineer, designer or drafter his own 32-bit CAD/CAM system while still allowing him to be a part of a corporate network. The Advanced Graphic Workstation's hierarchical communications capabilities allow interfaces to large mainframes such as Digital Equipment, IBM, and Sperry Univac computers.

Approximate Cost
Minimum: under $100,000
Typical: n/s
Delivery Time n/s
Length of Warranty n/s

Aydin Controls

Principal/HQ Location:
401 Commerce Drive
Ft. Washington, Pennsylvania 19034

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AYCAD Marketing and Sales
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401 Commerce Drive
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(215) 643-0600

Marketing Contact--Europe:
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1 Hunting Gate Wilbury Way
Hitchen, Hertfordshire SGR OTJ
England
462-58804 Telex: 826626 Aydin-G

Marketing Contact--Japan:
n/a

AYCAD

AYCAD is a low-cost computer-aided design and drafting system with color graphics. Using multiple microprocessors, each AYCAD workstation is a standalone system with a 3-dimensional graphics data base and is capable of being networked together in a multiple station environment.
The AYCAD system features a:
--36" x 48" digitizing table
--35 MByte Winchester Disk Drive
--1.2 MByte Floppy Disk Drive
--Separate Alphanumeric Display with Keyboard
--19" Color Raster Monitor with 1024 x 1024 Resolution.
The graphics software is designed by Aydin and executes under the C/PM-86 operating system with Pascal and Fortran compilers available for user-written application software.
AYCAD is designed for ease of use and uses simple English-like commands with system prompts that allow the inexperienced user to quickly and easily become productive on the system.

Approximate Cost:
Minimum $75,000.00
Typical $90,000.00 w/plotter
Delivery Time: 90 days
Length of Warranty: 90 days

Bruning

Principal/HQ Location:
1800 Bruning Drive West
Itasca, Illinois 60143

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Vice President Marketing
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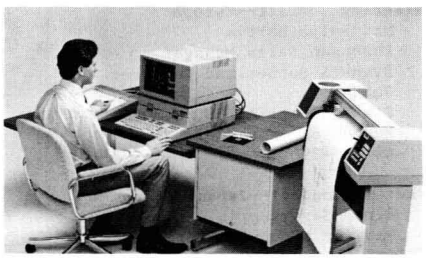

EasyDraf Computer Aided Drafting Systems

The Bruning EasyDraf Computer Aided Drafting System includes the latest state of the art equipment: HP 9836 computer, two 5-1/4" flexible disc drives, HP 7580 "D" size plotter, custom designed desk, chair, installation and training. The HP 9836 desktop computer, utilizing Motorola's 68000 microprocessor, is the heart of the system.

The design of the software program is based on the successes of the first EasyDraf system plus the input from many installations worldwide. The program emphasizes speed, flexibility of drafting standards and the most powerful set of editing commands in any low-cost CAD system.

A broad range of user requirements can also be accommodated with Bruning's array of 18 hardware options. The shared resource manager option permits up to 12 individual work stations to share a common data base on Winchester hard disc drives from 4.6 to 65.6 MB of storage.

CAM applications can now be accommodated with use of a new, exclusive software interface that passes the part geometry directly from EasyDraf to the Weber NC tape preparation program. Using Weber's Prompt system, tool path can be specified and an NC tape generated. Such methods assure accuracy and consistency between engineering drawings and the NC tape.

Approximate Cost:

Minimum:	n/a
Typical:	$57,700.00

Delivery Time: 30-60 days
Length of Warranty: 90 days

California Computer Products, Inc. (CalComp)

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Director of Marketing
CalComp Systems Division
3320 E. LaPalma Avenue
Anaheim California 92806
(714) 632-7200

Marketing Contact--Europe:
Paul Seckendorf
Vice President/General Manager
CalComp International Division

Marketing Contact--Japan:
Paul Seckendorf
Vice President/General Manager
CalComp International Division

IGS 400 and 500

The IGS 400 and 500 are turnkey interactive graphics systems that increase productivity and reduce costs in design, engineering and drafting applications. Three different workstations are available-a standard black and white graphics display with resolution of 300x416; a black and white high resolution (1024x768) graphics display; and a color graphics display with 832x624 resolution. The IGS 400 comes with 16/40 central processing unit capable of supporting four workstations while the IGS 500's CPU, the 16/65 can run up to six workstations. If less than six workstations are operating on the 16/65, however, system response time is improved anywhere from 50 to 100 per cent depending on the work mix.

Approximate Cost:

Minimum	$78,500--$112,000
Typical	n/s

Delivery Time: 90 Days ARO
Length of Warranty: n/s

Data General Corporation

Principal/HQ Location:
4400 Computer Drive
Westboro, Massachusetts 01580

Marketing Contact--North America:
Data General Corporation
4400 Computer Drive
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(617) 366-8911

Marketing Contact--Europe:
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92095 Paris, La Defense II CEDEX 21
(33-1) 776-4415

Marketing Contact--Japan:
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6-12-20 Jingumae
Shibuya-Ku
Tokyo 150 Japan
(81-3) 406-6451

ANVIL-4000 Mechanical CAD/CAM System

ANVIL-4000, from Manufacturing and Consulting Services, Inc., allows Data General MV/Family users to quickly conceptualize, analyze, and perform analysis on designs. Features include Geometry Generation, Geometry Manipulation and Analysis, View and Scale Manipulation, Families of Parts, Drafting, Numerical Control, File Management, and Management of Information.

ANVIL-4000 users can add modules without modifying the information stored in the computer system. For example, a numerical control module allows users to generate NC tapes for parts machining. Anvil-4000 can provide NC tapes that are production ready on the first try in over 95% of the time.

Once the data is entered into the system, it can be used to generate all the management information typically required, including bill of materials and parts release control information.

The ANVIL-4000 software is applicable in a variety of industries including aerospace, automotive, heavy equipment, computers and electronics.

Approximate Cost:

Minimum	$46,000
Typical	n/s

Delivery Time: Immediately
Length of Warranty: 90 days

Data Technology, Inc.

Principal/HQ Location:
4 Gill Street
Woburn, Massachusetts 01801

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Graphics Systems Specialist
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Marketing Contact--Japan:
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EURUS Corporation Japan
Landic Iikura Bldg, 1-5-7 Azabudai
Tokyo 106, Japan
03-586-5561

Computer Drafting Aid

The CDA System has been designed expressly for CAD applications in the photogrammetric field. Features such as absolute orientation, manuscript preparation with programmable symbology and line types are standard. Other programs for cross sectioning work and COGO are also available.

The System can be directly interfaced to a stereoplotter as well as table digitizers. Standard hardware includes a CPU, 10 MByte disk, A/N CRT, interface to stereoplotter, X-Y plotter. Optional hardware includes

graphics CRT, tablet digitizer, mag tape, etc.
Approximate Cost:
Minimum $28,000
Typical $55,000
Delivery Time: 90 days
Length of Warranty: 90 days

Decision Graphics, Inc.

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Decision Graphics UK
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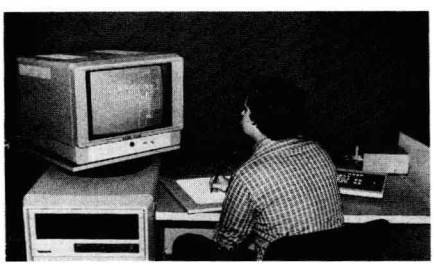
Marketing Contact--Japan:
n/s



PEAC™

PEAC is an interactive, computer-aided design system assisting planners, architects, and engineers in all design phases from initial concept through finished working drawings. PEAC can be applied to a wide variety of uses ranging from facility planning, office design, and factory layout to detailed design tasks of engineering concern.
PEAC's capabilities of storage, display, and manipulation of two-and three-dimensional data are enhanced by its ease of use. Users do not need special technical knowledge of computers and may converse with PEAC in English.
PEAC is comprised of five main packages:
--A program for schematic plan optimization.
--Drafting: a program for creating, storing, Fetching and overlaying drawings.
--Three-Dimension: A special program for the display of three-dimensional objects.
--Digitizing: a package specifically designed to capture accurately and efficiently existing drawings and process them into the system.
--Inventory: Bill of Materials generation directly from drawings or driving user written system.

All are supported by a sophisticated plotting system to allow the user to create complex composite plots for output to graphic screen or any pen or electrostatic plotter.
Approximate Cost:
Minimum $20,000
Typical $200,000
Delivery Time: 60 days
Length of Warranty: 90 days

Evans & Sutherland Computer Corp.

Principal/HQ Location:
580 Arapeen Drive
Salt Lake City, Utah 84108

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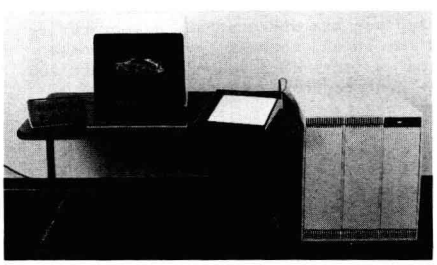
Manager, Computer Department, SE Group
Rikei Corporation
Shinjuku Nomura Building
1-26-2 Nishi-Shinjuku Shinjuku-Ku
Tokyo, 160 Japan
(03) 345-1411



PS300

The PS 300 is a self-contained, high-performance, interactive computer graphics system for the creation, manipulation and modification of complex 2-D and 3-D data structures. The system is designed to handle many of the functions which normally reside in a host computer, such as memory management, building and modifying data structures, and interpretation of interactive commands. The unique architecture of the PS 300 allows for the addition of many optional accessories.
OPTIONAL INTERACTIVE DEVICES :
Data Tablet
Alphanumeric Keyboard
Control Dials
32 Lighted Function Buttons
OTHER OPTIONAL ENHANCEMENTS:
Hard Copy Interface
CSM Color Display
PS 300/DEC DMR11-AE Interface (56Kb)
Memory Expansion up to 4 Megabytes
PS 300/IBM 3278 Interface (56Kb)
Approximate Cost:
Minimum $69,500
Typical $80,000
Delivery Time: 30 Day ARO
Length of Warranty: 60 Days

Evans & Sutherland Computer Corp.

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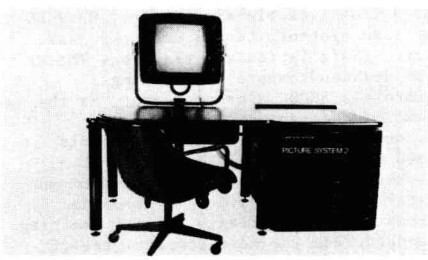
Stahlgruberring 32, D-8000
Munich 82, West Germany
49 89 429041

Marketing Contact--Japan:
Hiroo Sasaki
Manager, Computer Department, SE Group
Rikei Corporation
Shinjuku Nomura Building
1-26-2 Nishi-Shinjuku Shinjuku-Ku
Tokyo, 160 Japan
(03) 345-1411



Multi Picture System

The Multi Picture System is a general purpose, 3-D High-performance, vector refresh computer graphics system. It is designed to support several independent users simultaneously, each interacting efficiently and in real time with displayed objects.
Featuring a high level of cost-effectiveness due to its expandability to multiple, independent work stations, this systems capability, coupled with high-performance processing and display capabilities, make it an excellent tool for a very diverse field of display project.
A variety of Interactive Input Devices are supported for performing picture modifications, including: Light Pens, Data

Tablets, Alphanumeric Keyboards, Function Switches and Lights, Lighted Function Buttons, Control Dials, and Joysticks.
OTHER OPTIONAL ENHANCEMENTS:
Hard Copy Capability
CSM Color Display
Memory Expansion up to 256Kb
Approximate Cost:
Minimum $78,500
Typical $80,000--$90,000
Delivery Time: 30 to 60 days ARO
Length of Warranty: 90 Days

Forward Technology

Principal/HQ Location:
2175 Martin Avenue
Santa Clara, California 95050

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VP Marketing
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(408) 988-2378

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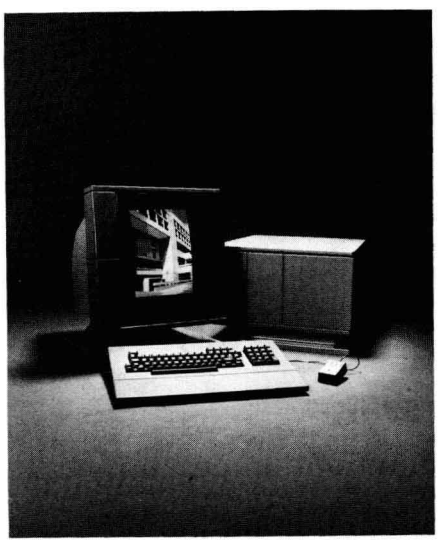
n/s

Marketing Contact--Japan:
n/s



Gateway Series

Forward Technology's Gateway Engineering Work Station brings together a host of technologies representing today's standards and emerging standards at a price level that augurs the spread of computer aided design. The main elements are an MC6800 microprocessor, an eight-slot IEEE-796 bus, up to lmb. of inexpensive random access memory, a Winchester disk drive, the Xenix™-68 Unix™ compatible operating system, the Siggraph CORE graphics protocals, hardware raster operations, an Ethernet local network interface, an RS-232-C port and a 16 bit parallel port. For graphics functions, the 68000 based central processing unit addresses a separate graphics board that contains its own special purpose discrete logic processor and its own 128K RAM.
Xenix™is a trademark of Microsoft Corp.
Unix™ is a trademark of Bell Labs.
Approximate Cost
Minimum: $14,000--$30,000
Typical: n/s
Delivery Time 60-90 days
Length of Warranty 90 days

Gerber Scientific Instrument Company

Principal/HQ Location:
83 Gerber Road West
South Windsor, Connecticut 06074

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North American Sales Manager
Gerber Scientific Instrument Co.
83 Gerber Road West
South Windsor, Connecticut 06074
(203) 644-1551

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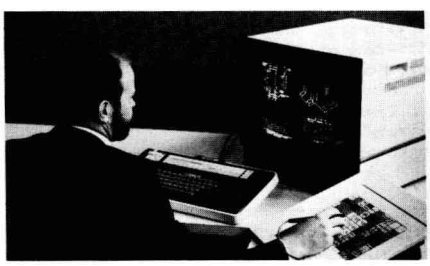
Vice President, Marketing

Marketing Contact--Japan:
Frank Estill
International Sales Manager



PC 800 Model 3

GSI's PC 800 Model 3, a concentrated CAD system for PCB design, features Color Graphics; Winchester Drive; Design Rules Checking; On-Screen Design; and Component Insertion Tapes. It can be configured with one of four high-precision Gerber photoplotters, digitizer, and variety of output devices.

Approximate Cost:
Minimum $47,000
Typical $90,000
Delivery Time: 1 -2 months ARO
Length of Warranty: 90 days, parts and labor

GRAFTEK
Graphics Technology Corporation

Principal/HQ Location:
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Marketing Contact--North America:
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Vice President Sales & Marketing
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6th Floor, Sumitomo Shoji, Mitoshire Bldg.
1 Kanda Mitoshsiro-cho
Chiyoda-Ku, Tokyo, 101 Japan

Series 32

The GRAFTEK Series 32 has been designed to be a flexible and modular turnkey CAD/CAM system. Based on a 32-bit CPU, the Series 32 is powerful enough to support up to twelve workstations operating concurrently, yet is competitively priced to be economical with only a few workstations. An average 4 workstation system includes 60 HZ non-interlaced high resolution monitors (color or black & white), 300 MB disk drive, tape drive, console, hard copy unit (color or black & white) and a choice of plotters and printers. The basic software package, Geometric Modeling Software, features 2 and 3 dimensional mechanical design, drafting, integrated solids modeling, and symbol management. Optional software include interactive Numerical Control part programming, OptiMold analysis package for the plastic injection molding industry, Finite Element Modeling, data base management, and schematics. Unique to the Series 32 is the optional voice input to operate this menu-driven system.
Approximate Cost:
Minimum $100,000
Typical $400,000
Delivery Time: 90 days ARO
Length of Warranty: 90 days

Information Displays, Inc.

Principal/HQ Location:
28 Kaysal Court
Armonk, New York 10504

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(38) 86-23-93

Marketing Contact--Japan:
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Dai-Ichi Trading Corporation
1-54-1 Shimo Ishihara
Chofu City, Tokyo
Japan 0424-86-1616

CADalyst

CADalyst's design employs several independent microprocessing subsystems enabling all the components of a traditional CAD system to be packaged within a compact modular workstation. Each CADalyst unit, suppporting up to 16 megabytes of addressable memory, features both 25-inch vector refresh and 19-inch color raster displays, a light pen and/or data tablet, a streaming mag tape drive, and a Winchester technology disk with fixed/removable media.
Any number of CADalyst systems can be configured in IDI's I-NET network that allows them to communicate with each other, other computers, and commonly pooled peripherals, either locally or over long distances. Because each CADalyst is a self-contained system, performance never suffers regardless of configuration choice.
Approximate Cost:
Minimum n/s
Typical Under $100,000
Delivery Time: n/s
Length of Warranty: n/s

Intergraph Corporation

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Huntsville, Alablama 35807

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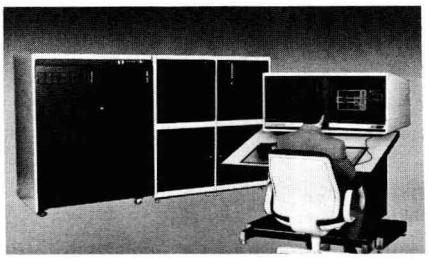
1-3, Ikejiri 3-Chome, Setagaya-Ku
Tokyo 154, Japan
(81) 3-413-8111/TLX 7812422575

Turnkey Interactive Computer Graphics Systems



Intergraph designs, manufactures, markets and supports a complete line of interactive computer graphic systems (turnkey) based on Digital Equipment Corporation's PDP-11/23, VAX-11/730, VAX 11-751 and VAX-11/780 CPUs. The graphics workstations, both color and monochromatic, feature dual 19" raster screens with ultra-high resolution (1280 x 1024 pixels). Although every Intergraph system is configured according to user requirements, a typical hardware configuration includes a central processor, one or more graphics workstations, a control console, on-line and archival storage subsystems and output devices such as printers, plotters and cameras. To complete the system, Intergraph adds its software for graphics and nongraphics (textual) data creation and management, the requisite applications software and, when desired, third-party software.
Approximate Cost:
Minimum: $ 88,000.00
Typical: $400,000.00(VAX)
Delivery Time: Varies
Length of Warranty: Varies

Lexidata Corporation

Principal/HQ Location:
755 Middlesex Turnpike
Billerica, Massachusetts 01865

Marketing Contact--North America:
James L. Repsher
VP-North American Sales
Lexidata Corporation
755 Middlesex Turnpike
Billerica, Massachusetts 01865
617/663-8550

Marketing Contact--Europe:
Bruce Blain
European Sales Manager

Marketing Contact--Japan:
Richard Paradies
General International Sales Manager

Model 8100/GS

Lexidata's Model 8100/GS features a dual processor architecture and extended CORE graphics software. It combines the performance of Lexidata's raster display processor with the powerful Motorola 16/32-bit MC68000 microprocessor. The Model 8100/GS has been developed primarily for CAD/CAM applications where interactive manipulation of a large, high resolution data structure is important.
Approximate Cost:
Minimum $18,250
Typical n/s
Delivery Time: Contact Vendor
Length of Warranty: 90 Days

McDonnel Douglas Automation Company (McAuto)

Principal/HQ Location:
Box 516
St. Louis, Missouri 63166

Marketing Contact--North America:
Jake Moelk
Manager Marketing
MCAUTO
Box 516
St. Louis, Missouri 63166
(314) 232-6443

Marketing Contact--Europe:
Charles Dignan
Director International Sales
MCAUTO
Paleisstraat 2
2514 The Hague, Netherlands
(070) 64 89 50

Marketing Contact--Japan:
T. Sakai
Marketing
Daini Seikosha Co. Ltd.
6-31-1 Kameido, Koto-ku
Tokyo 136 Japan
(03) 684-5711

Unigraphics™

Unigraphics is a wire frame and surface modeling CAD/CAM system that provides the functions of 3-D design, drafting, finite element modeling, and graphics NC programming from a centralized data base of part geometry. CAM software modules extend the basic capabilities to include parametric programming through GRIP, lathing and 2 through 5-axis machining. Unigraphics operates on both Data General and DEC 16-bit and 32-bit computers, which MCAUTO supplies. Specially designed work stations are supplied by MCAUTO in either direct view storage tube configurations or color or monochrome raster display configurations.
Approximate Cost:
Minimum: $100,000
Typical: $325,000
Delivery Time: n/s
Length of Warranty: n/s

MASSCOMP

Principal/HQ Location:
543 Great Road
Littleton, Massachusetts 01460

Marketing Contact--North America:
Dan Murray
Vice President, Sales
MASSCOMP
543 Great Road
Littleton, Massachusetts 01460
(617) 486-9425

Marketing Contact--Europe:
n/a

Marketing Contact--Japan:
n/a

MC 550 Series

A multi-terminal graphics workstation must provide an individual engineer with a system where performance, both computation and graphics, is not compromised and where the cost per graphics terminal is low. The MASSCOMP system architecture enables multiple high resolution graphics terminals to be integrated into a high performance virtual address workstation under an easy-to-use UNIX operating system. Each Graphics terminal consists of a 32-bit graphics processor, Graphics Program and Raster memory, a monochrome or color video monitor, plus a keyboard. MASSCOMP uses a virtual address 32-Bit CPU as the heart of its workstation. Programs can be developed using up to 16 Megabytes of virtual address space. The system has a 4K cache and a processor speed of 10 MHz, thereby providing very high speed computation.
Features:
Multiple Terminal Cluster
Easy-to-Use Menu System
Multiple Window Display
Dual Frame Buffers
Expandable to 10 Planes
Approximate Cost
Minimum: $25,000
Typical: $40,000
Delivery Time 60-90 days
Length of Warranty 90 days

Megatek Corporation

Principal/HQ Location:
3985 Sorrento Valley Blvd.
San Diego, California 92121

Marketing Contact--North America:
Hiram French
Vice President, Marketing
Megatek Corporation
3985 Sorrento Valley Blvd.
San Diego, California 92121
(619) 455-5590

Marketing Contact--Europe:
Michel Schwab
Director, Megatek S.A.
Megatek, S.A.
Av du Tribunal Federal, 34
Ch-1005 Lausanne
(21) 20 70 55

Marketing Contact--Japan:
Kazuo Nagashima
Sun Engineering
20-17, 2-Chrome
Akasaka, Minato-ku, Tokyo
(03) 585-8211

Whizzard 6200 Graphic Terminals

Four types of 2D alpha and graphics, high-resolution, interactive workstations with raster monitor, keyboard and joystick driven by Megatek's Graphics Engine™; 64K byte display list memory; intelligent RS-232 asynchronous serial interface; 4Kx4K virtual address space; real-time scaling and translation; data rates up to 9600 baud; supported by Wand™ 6200 software. Options include digitizer, 64K bytes additional display list memory, Rasterizor™ hardcopy interface.
Series comprised of:

6240: 512^2 monochromatic raster workstation

6245: 1024^2 monochromatic raster workstation

6250: 512^2 eight-color raster workstation

6255: 1024^2 eight-color raster workstation
Approximate Cost
Minimum: $14,900
Typical: $19,850
Delivery Time 90-120 days
Length of Warranty 90 days

Megatek Corporation

Principal/HQ Location:
3985 Sorrento Valley Blvd.
San Diego, California 92121

Marketing Contact--North America:
Hiram French
Vice President, Marketing
Megatek Corporation
3985 Sorrento Valley Blvd.
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Marketing Contact--Europe:
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Director, Megatek S.A.
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(21) 20 70 55

Marketing Contact--Japan:
Kazuo Nagashima
Sun Engineering
20-17, 2-Chrome
Akasaka, Minato-ku, Tokyo
(03) 585-8211

Whizzard 7200 Graphics Systems

Five types of 3D alpha and graphics, high-resolution, interactive workstations with stroke or raster displays driven by Megatek's Graphics Engine™. 64K byte display list memory; intelligent RS-232 serial or parallel interface; 4Kx4K virtual address space; data transmission at rates up to 9600 baud (serial) or 2Mbyte/sec parallel; supported by Wand™ software. Options include hardware clip, rotate, scale and translate device, digitizer, up to 128K bytes of additional display list memory, Rasterizor™ hardcopy interface.
Series comprised of:
7210: vector refresh line-drawing system, monochromatic.

7250:512^2 pixel resolution, up to 16 color raster display.

7255: 1024^2resolution, monochromatic or color, up to 16 colors.
7290: dual 7210 and 7250 workstations.
7295: dual 7210 and 7255 workstations.
Approximate Cost
Minimum: $23,500
Typical: $36,600
Delivery Time 90-120 days
Length of Warranty 90 days

Megatek Corporation

Principal/HQ Location:
3985 Sorrento Valley Blvd.
San Diego, California 92121

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Vice President, Marketing
Megatek Corporation
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Marketing Contact--Europe:
Michel Schwab
Director, Megatek S.A.
Megatek, S.A.
Av du Tribunal Federal, 34
Ch-1005 Lausanne
(21) 20 70 55

Marketing Contact--Japan:
Kazuo Nagashima
Sun Engineering
20-17, 2-Chrome
Akasaka, Minato-ku, Tokyo
(03) 585-8211

Whizzard 7600 Graphics Systems

Eight configurations of 3D alpha and graphics workstations with stroke or raster displays driven by Megatek's Graphics Engine™ and interfaced by LIFE™ to increase operator interaction and download tasks from the host computer. 4Kx4K address space; supported by Wand™ software. Includes standard hardware fill processor and Hardware clip, rotate, scale and translate device.
Series comprised of:
7610: vector refresh line-drawing system

7640:512^2 pixel resolution, monochromatic display

7645: 1024^2resolution, monochromatic display.

7650: 512^2 resolution, 16-color raster display.

7655: 1024^2 resolution, 16-color raster display.
7690: dual 7610 and 7650 displays.

7695: dual 7610 and 7655 displays.
Approximate Cost
Minimum: $54,000
Typical: $57,000
Delivery Time 90-120 days
Length of Warranty 90 days

Metheus Corporation

Principal/HQ Location:
5289 Elam Young Parkway
Hillsboro, Oregon 97123

Marketing Contact--North America:
Gary Romans
Marketing Manager, Graphics Systems
Metheus Corporation
5289 Elam Young Parkway
Hillsboro, Oregon 97123
(503) 640-8000

Marketing Contact--Europe:
Data-Type Terminals Limited
Unit 213 Springvale Industrial Estate
Green Forge Way, Cwmbran, Gwent
Wales, Great Britain NP44 5YR

Marketing Contact--Japan:
Dainichi Electronics Inc.
Kohraku Building
1-8, 1-chome, Kohraku
Bunkyo-ku, Tokyo, Japan

Omega 400 Graphics System; Lambda 750 VLSI Development System; Axia Graphics Software

Omega 400--High speed, high resolution (1024x1024), color raster display controller.
Axia--Graphics utility software based on Siggraph core standard written in Fortran.
Lambda 750--full set of logic design and physical design tools on Metheus designed stand-alone 32-bit computer system.
Approximate Cost
Omega 400
Minimum: $ 9,950
Typical: $ 15,000
Lambda 750
Minimum: $ 75,000
Typical: $100,000
Delivery Time 45 days
Length of Warranty 90 days

Ramtek Corporation

Principal/HQ Location:
2211 Lawson Lane
Santa Clara, California 95050

Marketing Contact--North America:
Peter W. Cassady
Vice President, Marketing
Ramtek Corporation
2211 Lawson Lane
Santa Clara, California 95050
(408) 988-2211

Marketing Contact--Europe:
Bill Ernul
Managing Director
Ramtek Europe BV
Meidoornweg 2
1171 Jw Badhoevedorp, Netherlands
(31) 2968-5056

Marketing Contact--Japan:
Ikegami Tsushinki Company Ltd.
6-16 Ikegami, 5-Chome
Ohta-Ku
Tokyo 146 Japan
(3) 37542121

6214 Colorgraphic Terminal

A complete colorgraphics computer system adaptable as a self-contained graphics program development system, stand-alone graphics workstation, satellite graphics processor, local network or broadcast studio picture generator, or complete business colorgraphic production facility.
Approximate Cost:
Minimum n/s
Typical $30,000
Delivery Time: n/s
Length of Warranty: n/s

Scientific Calculations, Inc.

Principal/HQ Location:
7635 Main Street
Fishers, New York 14453

Marketing Contact--North America:
Gerd Schlitt
Scientific Calculations
1230 Oakmead Parkway Suite 218
Sunnyvale, California 94086
(408) 746-j0400

Marketing Contact--Europe:
n/s

Marketing Contact--Japan:
n/a

MEDS™

MEDS™ (Micro Electronic Design System) is an automated Integrated Circuits Design System for both MOS and BIPOLAR markets. It enhances productivity for all design approaches including HAND-CRAFTED, CELL BASED and GATE ARRAY. MEDS™ is intended to be used for all phases of the implementation of an IC from the completion of logic definition through generation of data tapes for photomask production. As an integral part of the system, it supports automatic placement and routing, structural design, auto-interactive editing and central data management via a data base management system. The system also includes a versatile new graphics editing capability which includes dynamic pan and zoom features coupled with a multi-viewport color graphics presentation.
The MEDS™ system is targeted for users desiring a significant productivity improvement and who wish to have their entire design implementation process automated by one comprehensive system.
Approximate Cost
Minimum: n/s
Typical: n/s
Delivery Time n/s
Length of Warranty n/s

Scientific Calculations, Inc.

Principal/HQ Location:
7635 Main Street
Fishers, New York 14453

Marketing Contact--North America:
Marketing Communications
Scientific Calculations
7635 Main Street
Fishers, New York 14453
(716) 924-9303

Marketing Contact--Europe:
Scientific Calculations
(FRANCE) S A R I
18 rue de Sarrinen-Silic 247
Immeuble Dublin
94568 Rungis Cedex
FRANCE

Marketing Contact--Japan:
n/s

SCHEMACTIVE™ Program for Electronic Schematic Layout

AUTO-PLUS- Automated, interactive schematic design system. This system is a tool by which a user may define a schematic interactively on a CRT screen or may bulk capture a previously hand drawn schematic with a digitizer, or may create a schematic interactively at the CRT screen from an existing design data base. AUTO-PLUS is the concept of automation that is guided and controlled by human intelligence and accounts for the great flexibility the SCHEMACTIVE™ program affords the draftsman or designer. This is a versatile, highly flexible program that simplifies layout, eliminates tracing and inking, generates accurate, high quality schematics and logic drawings of up to 50 sheets. It also supplies net lists, parts lists, and other reports automatically compiled from drawings. SCHEMACTIVE™ automatically interfaces to the SCICARDS™ PC design system since both systems share a common data base. layouts, significantly ahead of normal schedule.

Approximate Cost
Minimum: $15K-Initial License Fee
Typical: $3.3K Monthly License Fee
Delivery Time Immediate
Length of Warranty n/s

Scientific Calculations, Inc.

Principal/HQ Location:
7635 Main Street
Fishers, New York 14453

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Scientific Calculations
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Fishers, New York 14453
(716) 924-9303

Marketing Contact--Europe:
Scientific Calculations
(FRANCE) S A R I
18 rue de Sarrinen-Silic 247
Immeuble Dublin
94568 Rungis Cedex
FRANCE

Marketing Contact--Japan:
n/s

SCICARDS™ System

The SCICARDS™ system is a tool for the printed circuit designer and provides comprehensive capabilities for design of single-sided, double-sided and multilayer printed circuit board design, including: automatic and computer aided component placement, automatic and computer aided routing; report generation; component placement drawings; fabrication (drilling) drawings; PCB artwork, including conductor layers, automatically generated power plane layers, solder masks and silk screen legends; and NC drilling machine tapes. Interfaces exist for all popular CAD systems. One of the most important program features is the reentrant capability which allows the designer to modify results, add features manually and still continue to use the automated routines as often as desired. This process is successful because of the in-line error checking of each user performed task and high quality refresh graphics displays.
The SCICARDS™ System supplies the user with a unique process to reduce PCB design time and eliminate design error resulting in accurately prepared manufacturable printed circuit board layouts, significantly ahead of normal schedule.

Approximate Cost

Minimum:	$150K-Initial License Fee
Typical:	$3.3K Monthly License Fee

Delivery Time Immediate
Length of Warranty n/s

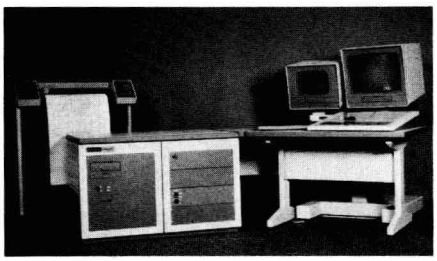
Summagraphics Corporation

Principal/HQ Location:
35 Brentwood Avenue
Fairfield, Connecticut

Marketing Contact--North America:
Frank Garvey
Director of Marketing
Summagraphics Corporation
35 Brentwood Avenue
Fairfield, Connecticut
(203) 384-1344

Marketing Contact--Europe:
Howard Feiner
Managing Director, Europe
Summagraphics, SA
14 rue de l'Ancien Port
1202 Geneva, Switzerland

Marketing Contact--Japan:
Jack Cassedy
International Sales Manager
Summagraphics Corporation



Summadraft System 8000

The Summadraft CADD (Computer Aided Design/Drafting) System is an advanced, low cost, turnkey, mini-computer based drafting system that can be applied equally well to many different disciplines that include: mechanical drafting, electrical/logic diagrams, floor (or space) planning, architectural design and layout, printed circuit board layout, etc. The general purpose drafting package can be enhanced by adding a standard architectural library , a COGO and surveying program, a word processor, an engineering calculation program, a Bill of Materials program, an N/C drill tape. The system is digitizer driven with all of the input data echoed on a raster graphic CRT display, while output can be provided on a variety of pen plotters or photo plotters. All customers receive the standard Summadraft application software which has a wide array of geometry functions, copy, mirroring, step and repeat, dimensioning, crosshatching, symbol library, extensive element editing, frame (window) editing, geometry calculations, element construction, groups and element parameters. The System 8000 includes a central processor with 64K bytes RAM memory, a 12.5 megabyte winchester disk with 1.2 megabyte floppy diskette, a 19" black and white raster (color optional) graphic display, an alphanumeric CRT display, standard DOS (disk operating system), a digitizer work station with 4 button cursor and hard menu, help tables that display on the A/N CRT, prompt messages on the A/C CRT and sub menu options (activated from the hard menu) on the A/C CRT. The user has a choice of pen plotters and photo plotters. Other optional peripherals include: line printer, magnetic tape, screen copier, tape punch and communications. Training is included. Maintenance contracts optional.

Approximate Cost:

Minimum	$48,000
Typical	$70,000

Delivery Time: 60 Days

Length of Warranty: 90 days

Summagraphics Corporation

Principal/HQ Location:
35 Brentwood Avenue
Fairfield, Connecticut

Marketing Contact--North America:
Frank Garvey
Director of Marketing
Summagraphics Corporation
35 Brentwood Avenue
Fairfield, Connecticut
(203) 384-1344

Marketing Contact--Europe:
Howard Feiner
Managing Director, Europe
Summagraphics, SA
14 rue de l'Ancien Port
1202 Geneva, Switzerland

Marketing Contact--Japan:
Jack Cassedy
International Sales Manager
Summagraphics Corporation

Summadraft System 8100

The Summadraft CADD (Computer Aided Design/Drafting) System is an advanced, low cost, turnkey, mini-computer based drafting system that can be applied equally well to many different disciplines that include: mechanical drafting, electrical/logic diagrams, utility maps, tool designs, etc. The system is digitizer driven with all of the input data echoed on a raster graphic CRT display, while output can be provided on a variety of pen plotters or photoplotters. The System 8100 includes a central processor with 128K bytes RAM memory, a 12.5 megabyte winchester disk with 1.2 megabyte floppy diskette, a 19" black and white raster (color optional) graphic displays, an alphanumeric CRT display, a digitizer workstation, with 4 button cursor and hard menu, standard RDOS (real time disk operating system.) The user has a choice of pen plotter and photoplotters The Summadraft drafting package optional peripherals include a line printer, magnetic tape, screen copier, tape punch and communications. Training is included with the system. Maintenance contracts are optional. This system can be field upgraded to a two station system.

Approximate Cost:

Minimum	$90,000
Typical	$110,000

Delivery Time: 60 Days
Length of Warranty: 90 days

Summagraphics Corporation

Principal/HQ Location:
35 Brentwood Avenue
Fairfield, Connecticut

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Frank Garvey
Director of Marketing
Summagraphics Corporation
35 Brentwood Avenue
Fairfield, Connecticut
(203) 384-1344

Marketing Contact--Europe:
Howard Feiner
Managing Director, Europe
Summagraphics, SA
14 rue de l'Ancien Port
1202 Geneva, Switzerland

Marketing Contact--Japan:
Jack Cassedy
International Sales Manager
Summagraphics Corporation

Summadraft System 8200

The Summadraft CADD (Computer Aided Design/Drafting) System is an advanced, low cost, turnkey, mini-computer based drafting system that can be applied equally well to many different disciplines that include: mechanical drafting, electrical/logic diagrams, utility maps, tool designs, etc. The system is digitizer driven with all of the input data echoed on a raster graphic CRT display, while output can be provided on a variety of pen plotters or photoplotters. The System 8200 includes a central processor with 128K bytes RAM memory, a 25 megabyte winchester disk with 1.2 megabyte floppy diskette, two 19" black and white raster (color optional) graphic displays, two alphanumeric CRT displays, two digitizer workstations, with 4 button cursors and hard menus, standard RDOS (real time disk operating system.) The user has a choice of pen plotter and photoplotters, which can be activated from either station. The Summadraft drafting package optional peripherals include a line printer, magnetic tape, screen copier, tape punch and communications. Training is included. Maintenance optional.

Approximate Cost:

Minimum	$138,000
Typical	$150,000

Delivery Time: 60 Days
Length of Warranty: 90 days

Summit CAD Corporation

Principal/HQ Location:
5222 FM 1960 W100
Houston, Texas 77069

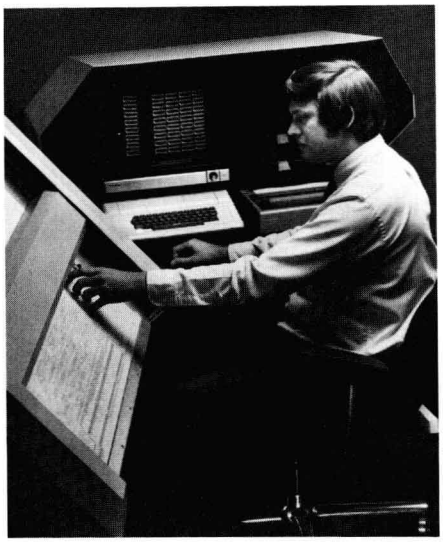
Marketing Contact--North America:
G W Young,
General Manager
Summit CAD Corporation
5222 FM 1960 W100
Houston, Texas 77069
(713) 440-1468

Marketing Contact--Europe:
Philip Brown
Manager
Amerikanisch
06121-442138

Marketing Contact--Japan:
n/s

Pathfinder PC CAD System, IBM PC68000

Our stand-alone interactive design station employs proven, powerful software. PATHFINDER is comprised of:



--"E" size interactive surface
--8-color pen plotter
--color raster CRT display
--keyboard
--voice input microphone
--microprocessor CPU's
--diskette drives
--132-character printer/plotter
Optional equipment includes a central station with 40 MB library disk, 9-track magnetic tape drive, N/C paper tape punch, and a laser photoplotter station.

Approximate Cost:

Minimum	$24,000--Graphics Workstation with software
Typical	$110,000--w/laser photoplotter

Delivery Time: 30-60 days ARO
Length of Warranty: 90 days

Tecquipment, Inc.

Principal/HQ Location:
P O Box 1074
Acton, Massachusetts 01742

Marketing Contact--North America:
J A Spencer
President
Tecquipment, Inc.
P O Box 1074
Acton, Massachusetts 01720
(617) 263-1767

Marketing Contact--Europe:
Peter Johnstone, Sales Director
Tecquipment, Ltd.
Bonsall Street
Long Eaton, Nottingham
England

Marketing Contact--Japan:
n/s

TQ-CAD System

The T.Q. CAD system plots a 3-D database viewed from any selected angle of azimuth and elevation. The system consists of the M T U 130-2D computer with the M68000 Datamover board (16 bit chip based), a 2 megabyte disc drive unit, a digitizer pad, plotter and printer. Up to 4 views of an object may be viewed simultaneously on the screen, including any 3D or perspective view. The system plots circles, dimensions, lines and allows a view to be "zoomed" several consecutive times. The image may be output to the printer or plotter at any time.
The system should be of great interest to educational institutions, architects and engineering drawing offices since it is probably one of the only true 3D systems available at the price.

Approximate Cost

Minimum:	n/s
Typical:	$17,000

Delivery Time 4/6 weeks
Length of Warranty 1 year

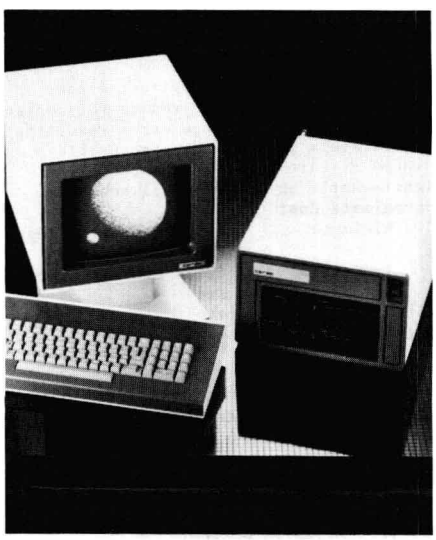
Terak Corporation

Principal/HQ Location:
14151 N. 76th Street
Scottsdale, Arizona 85260

Marketing Contact--North America:
G. Peter Gagnet, III
Vice President, Sales
Terak Corporation
14151 N. 76th Street
Scottsdale, Arizona 85260
(602) 998-4800

Marketing Contact--Europe:
n/s

Marketing Contact--Japan:
n/s



8510B Computer Graphics System

The Terak Minn-Draft software package represents a means of introducing the more sophisticated tasks of industrial CAD/CAM systems at a fraction of the cost for larger systems.
Combining two programs, DRAW and DRAFT, Minn-Draft allows a user to describe

simple, three-dimensional objects in algebraic terms by assigning X,Y, and Z coordinates to every vertex. Any errors in mathematical description become apparent when viewed in the three dimensions. Once the object is successfully defined, it can be rotated to any desired view including each of the standard projections typically seen on an engineering drawing, or into an auxiliary projection such as isometric.
The Terak Design Graphix CAD system is a complete, low cost 3D Computer Aided Drafting system ideally suited for mechanical, electrical or architectural design needs.
Minn-Draft and Design Graphix are both fully supported on the Terak 8510B Graphics Computer System and can support a variety of digitizers, menu tablets and plotters. The Terak 8510B is available with high resolution color, monochrome or dual CRT capability.

Approximate Cost:
Minimum $ 7,495
Typical $13,665
Delivery Time: 45 days ARO
Length of Warranty: 90 days

Three Rivers Computer Corporation

Principal/HQ Location:
720 Gross Street
Pittsburgh, Pennsylvania 15224

Marketing Contact--North America:
Kelly Hickel
Vice President, Marketing
Three Rivers Computer Corp.
Pittsburgh, Pennsylvania 15224
(412) 621-6250

Marketing Contact--Europe:
Roger Batson
PMD, Business Director
International Computers, Ltd.
ICL Computer House
292-298 High St.
Slough SL1 4NA
U K
(0753) 31111

Marketing Contact--Japan:
S. Ishibashi
Rikei Corporation
Shinjuku Nomura Building
11-26-2 Nishi-Shinjuku/Shinjuku-KU,
Tokyo, 160 Japan
TX J24208/J23772

System D/L

SYSTEM D/L combines a comprehensive logic design software package with Three Rivers' PERQ, the definitive graphics workstation. SYSTEM D/L facilitates the design, debugging, engineering release of integrated and discrete circuits, both digital and analog, and eliminates the need for electronic breadboard.

Approximate Cost
Minimum $23,000
Typical $25,000

Delivery Time 30 days

Length of Warranty n/s

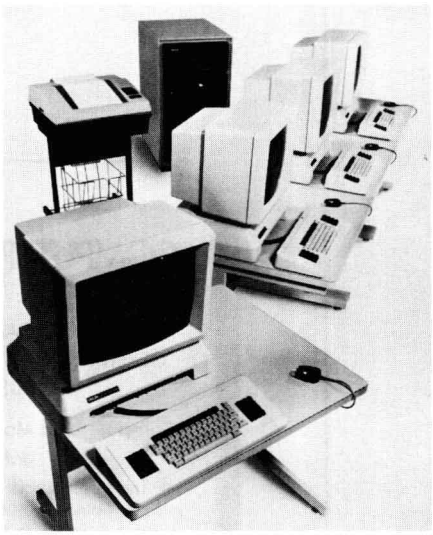
Valid Logic Systems, Inc.

Principal/HQ Location:
650 North Mary Ave.
Sunnyvale, California 94086

Marketing Contact--North America:
Robert Sumbs
650 North Mary Ave.
Sunnyvale, California 94086

Marketing Contact--Europe:
Thomas Lawrence
Valid International Ltd.
Berkshire House
56 Herschel Street
Slough, SL1 1TP
Berks, England
(0753)-820101

Marketing Contact--Japan:
Yasukazu Koinuma
Mitsubishi Corporation
0-3 Marunouchi 2-chome
Chiyoda-ku, Tokyo
Japan



SCALDsystem™

SCALDsystem™ - the tools
SCALDsystem consists of a set of sophisticated hardware and software tools for the user to do logic design. These tools include:
SCALD Design Validation System
SCALD S-32 Computer System
SCALD Graphic Design Stations
UNIX Operating System
High Level Languages
SCALDsystem provides the engineer with a high performance Graphics Design Station for interactive design and validation of schematics. Component libraries and the Design Database are stored in the SCALD S-32 Computer System.
The SCALDsystem software has been designed with the user in mind.
The Graphics Editor is the user interface to the system.
The Compiler expands the design to form a file called the Design Database.
The Timing Verifier analyses partial or complete designs for timing errors and is the engineer's constant companion throughout the design cycle. The SCALD Logic Simulator lets you simulate a design down to the component level. It uses the same design database for simulation as is used for implementation thus making separate descriptions for the systems unnecessary.
The SCALD Post Processor serves as the interface between the SCALDsystem™, other design systems and other analysis tools. The Post Processor converts your logical design into a physical design. Logical parts are automatically allocated to packages and pin numbers are assigned by the Post Processor. The SCALDsystem Device Libraries include support for CMOS, MOS, TTL, STTL, LSTTL, 10K ECL and 100K ECL.

Approximate Cost:
Minimum $ 60,000
Typical $ 100,000
Delivery Time: 30-45 days
Length of Warranty: 90 days

Vector General, Inc.

Principal/HQ Location:
21300 Oxnard Street
Woodland Hills, California 91367

Marketing Contact--North America:
Jim Church, Director of Sales
Vector General, Inc.
21300 Oxnard Street
Woodland Hills, California 91367
(213) 346-3410

Marketing Contact--Europe:
Hans Geluk
Sales Manager
Van Rietschoten & Houwens
P O Box 5054
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Marketing Contact--Japan:
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Hakuto Co. Ltd.
C.P.O. Box 25
Tokyo 100-91, Japan
03 502-2216

System 8000

The System 8000 combines Vector General's popular VG 8250 display system with a 32-bit IBM-compatible mainframe computer and a full range of storage and related peripheral devices. The system will run either CADAM Inc.'s CADAM software or Northrup Corporation's N-CAD software, or both concurrently.
The computer used in the System 8000 is the System 312, manufactured and supported for Vector General by Motorola's Four-Phase Systems Group. Comparable in power to the IBM 4341-1 or the System/370 Model 148, this computer can support up to 12 VG 8250 display stations and communications lines in a CADAM environment. A full range of support options are available including plotters, digitizers and large screen displays. The total hardware cost for 12-station system is $540,000, or $45,000 per workstation. This system set also includes 4 megabytes of active memory, 400 megabytes of disk storage, a 1600 BPI magnetic tape drive, a 600 LPM printer, three selector channels, and an integrated communications controller.

Approximate Cost:

Minimum	$380,000
Typical	$500,000

Delivery Time: 3 months
Length of Warranty: 90 days

Vectrix Corporation

Principal/HQ Location:
1416 Boston Road
Greensboro, North Carolina 27407

Marketing Contact--North America:
Michael Gold
Vice President
Vectrix Corporation
1416 Boston Road
Greensboro, North Carolina 27407
(919) 272-3479

Marketing Contact--Europe:
David Molesley
Sintrom Electronics, Ltd.
Arkwright Road, Reading
Berks RG2 OLS England
(0734) 875464

Marketing Contact--Japan:
n/s

VX128 and VX384

Both the VX128 and the VX384 are color graphics machines designed as stand-alone units, to be used with a host computer. The VX128 is the basic eight-color unit; the VX384 provides 512 colors with a color look-up table. Both machines feature both a serial and a parallel port for easy interface with the host computer. The internal processor for both units is the Intel 8088, 5 MHz, with an NEC 7220 chip. They feature bidirectional access to the graphics RAM. Resolution for both units is 672H x 480V. The VX128 has 3 bit planes and a 128K graphics RAM; the VX384 has 9 bit planes and a 384K graphics RAM. Peripheral devices for both units include the VXM high resolution color monitor, the VXP printer (which uses a dithered algorithm to yield 125 colors), and the VXK alphanumeric keyboard.

Approximate Cost:

Minimum	$1,995
Typical	n/s

Delivery Time: 30 days
Length of Warranty: 90 days

CAMAX Systems, Inc.

Principal/HQ Location:
7225 Ohms Lane
Edina, Minnesota 55437

Marketing Contact--North America:
Mr. Robin J. Smith
Marketing Manager
CAMAX Systems, Inc.
7225 Ohms Lane
Edina, Minnesota 55437
(612) 831-0604

Marketing Contact--Europe:
none

Marketing Contact--Japan:
n/s

COMPUSCOPE

CAD/CAM Systems

A turnkey Computer Aided Design and Manufacturing System for applications in tool and die, prototype part, or mold design and manufacturing. CAMAX hardware and software integrate design construction, input, modification, analysis, and precision CNC machining. Design input capabilities include a 3-axis coordinate measuring machine for digitizing models, patterns, and prints. Additional user friendly software provides construction of 3-dimensional designs on highly interactive Vector refresh graphics. User written Fortran programs can also be input with the optional PIC-4 software module.
Further design development is available with Sculptured Design Software that provides a selection of "surfaces" for building complex 3-D shapes from 2-D cross sections. Completed designs can be stored in a permanent memory, and later recalled for dimensioning, hard copy output, or further modification. Operator commands are assisted by a callable "Help" menu. Complete CNC machining programs are automatically generated by the software. Programs can be transferred to the machine tool with either punched tape, magnetic tape cassettes, or a direct link to the CNC control. CAMAX also offers the only multi-function CNC reader for magnetic tape cassettes. This DATAPATH® links directly to most CNC controls.
Approximate Cost
Minimum: n/s
Typical: $280,000
Delivery Time 90 days
Length of Warranty Contact Factory

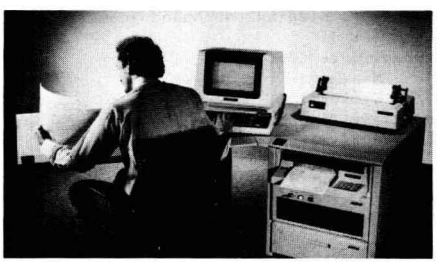
Computer Operations, Inc.

Principal/HQ Location:
5001-J Forbes Boulevard
Lanham, Maryland 20706

Marketing Contact--North America:
Stephen E. Silverman
President
Computer Operations, Inc.
5001-J Forbes Boulevard
Lanham, Maryland 20706
(301) 459-2100

Marketing Contact--Europe:
n/s

Marketing Contact--Japan:
n/s



ShopLink

ShopLink is the advanced, integrated DNC programming system from Computer Operations, Inc. The standard ShopLink system has one complete programming workstation and will connect to 7 CNC's. Up to 5 additional workstations and up to 287 additional CNC machines can be added at any time. This true multi-user system handles up to six workstations simultaneously with no reduction in system speed or performance. Faster than interactive graphics systems, ShopLink's method cuts programming time from hours to minutes. By dramatically reducing the number of keystrokes, the programmer enters a few quickly-learned commands to specify part geometry and tool path, and ShopLink does the rest. Workpiece programs are stored on ShopLink's hard disk, and with built-in Distributed Numerical Control capability, you get direct connection to all of your CNC mills, lathes and wire EDM's and completely eliminate punched paper tapes.

Approximate Cost:
Minimum $29,500
Typical $35,000

Delivery Time: 4-6 weeks

Length of Warranty: One Year

General Electric CAE International, Inc.

Principal/HQ Location:
300 TechneCenter Drive
Milford, Ohio 45150

Marketing Contact--North America:
Leonard Weibel
General Electric CAE
International, Inc.
300 TechneCenter Drive
Milford, Ohio 45150
(513) 576-3800

Marketing Contact--Europe:
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General Electric CAE
International Inc.
Centre Commercial de Rueil-Plaine
62, Rue D'Estienne-d'Orves
9255 Rueil
France
011-33-1-749-71-77#

Marketing Contact--Japan:
Tony Tolani
General Electric CAE
International Inc.
7-13, 1-Chome, Tsukiji
Chuku, Tokyo 104,
Japan
(03) 545-1990

SDRC HI-PRO System

SDRC HI-PRO is an NC Programming language exclusively developed for sheet-metal applications. The HI-PRO System combines computer-assisted parts programming, pattern layout and cycle minimization with visual verification into a single, easy-to-use system.
Features:
--Programming language which uses simple English words.
--Machine tool dependent language which makes part programs transparent to unique punch press considerations.
--Automatic pattern layout capability including multiple parts layouts.
--Automatic repositioning capability for oversize blanks.
--Automatic check and repositioning for hits in the deadzones.
--Automatic sorting of hits by tools.
--Automatic elimination of duplicate hits.
--Path minimization capability to significantly reduce cycle time.
--Common data base with the HI-PRO System allows for pre-punching and shearing operations.
Approximate Cost
Minimum: n/s
Typical: n/s
Delivery Time n/s
Length of Warranty n/s

General Electric CAE Intenational, Inc.

Principal/HQ Location:
300 TechneCenter Drive
Milford, Ohio 45150

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Chuku, Tokyo 104,
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(03) 545-1990

NCPPL

Master program of a part-programming system for multi-axis contouring and point-to-point work. Features user-created programming vocabulary which allows flexibility for creation of machine tool/controller parameter files. Provides user with ability to create unique routines for repeated machining operations, e.g. drilling, tapping, boring pattern work. Such routines may be embodied in subsequent part programs. Mathematical operations and decision making are also features of NCPPL.
A geometry package also allows simple part description in geometrical terms. Helpful in performing geometrical calculations for engineering, design, work methods purposes. Program output can be set in files for later processing in conjunction with NCPPL.

Approximate Cost
Minimum: n/s
Typical: n/s
Delivery Time n/s
Length of Warranty n/s

General Electric CAE International, Inc.

Principal/HQ Location:
300 TechneCenter Drive
Milford, Ohio 45150

Marketing Contact--North America:
Leonard Weibel
General Electric CAE
International, Inc.
300 TechneCenter Drive
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Tony Tolani
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International Inc.
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Chuku, Tokyo 104, Japan
(03) 545-1990

GE-ADAPT

The ADAPT Part-Programming System is designed for full 2-axis contouring on flat or tilted planes and for 3-axis position works. ADAPT, as a language, is a subset of the industry's standard Automatically Programmed Tools (APT) language. ADAPT's part-programming language uses APT vocabulary, grammar, and geometrical powers. Both APT and ADAPT are used in statements which make up the basic elements of their programs.
The ADAPT system required postprocessors to produce control tapes compatible with the NC controller. System capabilities include symbolic redefinition, multiple statements per line, subscriptec variables and system MACROS. With the exception of a few postprocessor vocabulary words, ADAPT's vocabulary is compatible with that of APT and is immediately usable by either APT or ADAPT part programmers. Post processors are optionally provided.
A menu driven interactive version is available to simplify data entry and immediate display unbounded geometry as it is created.

Approximate Cost
Minimum: n/s
Typical: n/s
Delivery Time n/s
Length of Warranty n/s

Gerber Systems Technology, Inc.

Principal/HQ Location:
40 Gerber Road East
South Windsor, Connecticut 06074

Marketing Contact--North America:
Mr. Terry Surprenant
Manager Marketing Operations
Gerber Systems Technology, Inc.
40 Gerber Road East
South Windsor, Connecticut 06074
(203) 644-2581 Ext. 4546

Marketing Contact--Europe:
Ms. Angela West, Office Manager
Gerber Systems Technology, Int.
GST House 4 Priory Road, High Wycombe
Buckinghamshire HP136SE England
011-44-494-442121

Marketing Contact--Japan:
Mr. Richard Kretzmer
Director, International Marketing

IDS-80 CAD/CAM System

A turnkey CAD/CAm system from Gerber Systems Technology, Inc. (GST), provides for multi-terminal hardware needs as well as a wide range of Software Application Modules for Mechanical Design, Detail Drafting, Electrical Design, and Numeric Control.

Approximate Cost:
Minimum $175,000
Typical $250,000
Delivery Time: 30-60 days
Length of Warranty: 90 days

Gerber Systems Technology, Inc.

Principal/HQ Location:
40 Gerber Road East
South Windsor, Connecticut 06074

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Mr. Terry Surprenant
Manager Marketing Operations
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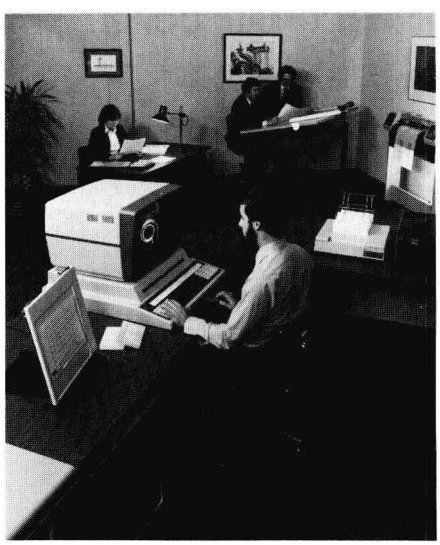
GST House 4 Priory Road, High Wycombe
Buckinghamshire HP136SE
England
011-44-494-442121

Marketing Contact--Japan:
Mr. Richard Kretzmer
Director, International Marketing



Autograph CAD/CAM Systems

Gerber Systems Technology, Inc. (GST) announces its formal entry into the low cost CAD/CAM marketplace with its new, high technology Autograph series system