

CANADA'S COMPUTER INFORMATION SOURCE

The

COMPUTER PAPER

NEWS

REVIEWS

FEATURES

FREE

REINVENTING
HOLLYWOOD

WE TEST WINDOWS 4.0
Hands-on
CHICAGO

The Special Effects of
BABYLON 5

Graphics Hotshot!

CorelDraw 5.0

REMOVABLE DRIVES

Internal 105MB IDE w/Cart	\$329
Internal 105MB SCSI No Cart	\$329
Internal 200MB SCSI No Cart	\$549
Internal 270MB IDE/SCSI No Cart	\$599
External 44Mb w/Cart	\$529
External 88Mb w/Cart	\$649
44MB Cartridge	\$89 ⁹⁵
88MB Cartridge	\$129 ⁹⁵
105MB Cartridge	\$79 ⁹⁵
200 MB Cartridge	\$159 ⁹⁵
270 MB Cartridge	\$119 ⁹⁵



Novell Personal Network	\$79
Novell Network 3.12 5 user	\$799
Novell Network 3.12 10 user	\$1899
Novell Network 3.12 25 user	\$2799
Novell Network 4.01 10 user	\$2499
MS Workgroups 3.11 Add-on	\$59 ⁹⁵
MS Workgroups + Windows 3.11	\$179
Lantastic Noderunner 2 user kit	\$439
Noderunner 1 add-on w/hard	\$139

BNC Connector or RG58	\$1 ⁹⁵
BNC Connector or RG62	\$1 ⁹⁵
Terminators 50 ohms	\$3 ⁹⁵
T-Connectors	\$4 ⁹⁵
Couplers	\$4 ⁹⁵
Network Cable RG45/RG58/RG62	\$40/ft
8 bit Ethernet card	\$89
16 bit Ethernet card	\$119
32 bit Ethernet card	\$479
8 bit Arcnet card	\$85
16 bit Arcnet card	\$139
Arcnet 4p passive hub	\$29
Arcnet 8p active hub	\$249

On-site installations available

NEW

We can back up your hard disk onto a CD-ROM for you!!!



Call for info. And pricing

SOUND CARDS

Gravis Ultrasound	\$149
Logitech Soundman Wave	\$249
Sound Blaster AWE32	\$379
Sound Blaster Pro Deluxe	\$109
Sound Blaster 16 Basic	\$139
Sound Blaster 16 MCD/ASP	\$189/\$239
Sound Blaster 16 SCSI-2/ASP	\$239/\$289
Turtle Beach Maui	\$199
Turtle Beach Rio	\$189
Turtle Beach Monterey	\$479

COMPAQ

Compaq Presario 425 4/200	\$1,469
Compaq Presario 633 4/200	\$1,499
Compaq Presario 850 4/270	\$2,099
Compaq Presario 866 4/340	\$2,699
Compaq Presario 633 CDS 4/200	\$1,999
Compaq Presario 833 CDS 4/270	\$2,349
Compaq Presario 850 CDS 4/340	\$2,599

Please call for leasing information.

An Entirely Windows Driven BBS
Call For Free Demo
BBS (416) 969-8269
or BBS (905) 508-8872



CD-ROMs - WE ARE YOUR GLOBAL CD SOLUTION!!



NEC 3XP Portable 250MS	\$579
NEC 3XI Internal 195MS	\$579
NEC 3XE External 195MS	\$649

Toshiba 3401 SCSI Internal	\$449
Toshiba 4101B SCSI	\$349
Panasonic 562 ROM Drive	\$179
Omni CD by Soundblaster	\$299
Sony 33A Internal	\$199
Philips CM206	\$179
Grolier's Encyclopedia Win.	\$29 ⁹⁵
King James Bible	\$29 ⁹⁵
Rebel Assault	\$59 ⁹⁵
Multimedia Mozart	\$39 ⁹⁵
Microsoft Beethoven	\$79 ⁹⁵
Microsoft Bookshelf 1993	\$59 ⁹⁵
Microsoft Encarta	\$79 ⁹⁵
Microsoft Musical Instruments	\$69 ⁹⁵
Microsoft Cinemania	\$59 ⁹⁵
Starwars Chess	\$24 ⁹⁵
Chessmaster 4000 Turbo	\$24 ⁹⁵

F-15 Strike Eagle III	\$29 ⁹⁵
Mayo Clinic	\$24 ⁹⁵
Family Doctor 3rd Edition	\$24 ⁹⁵
Carmen San Diego Deluxe	\$29 ⁹⁵
Comptons Interactive 1994	\$49 ⁹⁵
King's Quest 6	\$24 ⁹⁵
Arthur's Teacher Trouble	\$29 ⁹⁵
Just Grandma and Me	\$29 ⁹⁵
Critical Path	\$49 ⁹⁵
20th Century Video Almanac	\$24 ⁹⁵
11th Hour	\$89 ⁹⁵
Lawnmower Man	\$59 ⁹⁵
Kodak Photo CD Access	\$17 ⁹⁵
Corel Artshow 4	\$29 ⁹⁵
Megarace	\$49 ⁹⁵
Dragon's Lair	\$49 ⁹⁵
The Horde	\$69 ⁹⁵

Ultima 8CD	\$69 ⁹⁵
Sports Illustrated '94	\$39 ⁹⁵
Myst	\$64 ⁹⁵
Day of the Tentacle	\$39 ⁹⁵
Canada Phone	\$119 ⁹⁵
Indiana Jones	\$39 ⁹⁵
Microcosm	\$59 ⁹⁵
7th Guest	\$29 ⁹⁵
Sam & Max CD	\$59 ⁹⁵
Kid's Zoo/Undersea Adv.	\$29 ⁹⁵
Iron Helix	\$29 ⁹⁵
Mad Dog McCree	\$34 ⁹⁵
Journeyman Project	\$39 ⁹⁵
INCA	\$29 ⁹⁵
Putt Putt Goes to the Moon	\$29 ⁹⁵
Dinosaur/Space Adventure	\$29 ⁹⁵
Grolier's Prehistoria	\$34 ⁹⁵

CONTROLLERS

Super I/O Card	\$24
VESA IDE w/2s,1p	\$39
Adaptec 1522 kit	\$189
Adaptec 1542CF kit	\$349
Adaptec 2742AT	\$399

FAX/MODEMS

96/24 fax/modem	\$64
14.4 internal s/r	\$179
14.4 external s/r	\$209
Supra 28.8 internal	\$329
Supra 28.8 external	\$379

HARD DRIVES

340 Seagate	349
428 SeaGate	379
540 Quantum	479
1.08 Quantum SCSI	1,099
2.1 Quantum SCSI	1,749

SCANNERS

Logitech 32 w/OCR	\$159
Logitech 256	\$219

Logitech 256 w/ocr

Logitech color	\$479
Logitech color/ocr	\$519

VIDEO CARDS

Mono	\$19
512K VGA	\$59
Wonder LB 1MB	\$189
ATI 2MB Ultra Plus	\$289
ATI 2MB VLB Ultra Pro	\$329
ATI Pro Turbo VLB 4MB	\$679

TAPE

120MB internal	\$149
250MB internal	\$219
120MB external	\$299
250MB external	\$379
Trakker 250 external	\$439

MONITORS

14" VGA	\$259
14" SVGA inter.	\$299
14" SVGA non-int.	\$369
17" SVGA non-int.	\$1,129

MOTHERBOARDS

386SX-40	\$99
386DX-40	\$129
486 SX-25/33	\$229/269
486DX-40	\$469
486DX2-50 AMD/INTEL	\$489/539
486DX2-66 AMD/INTEL	\$649/699
486DX4	\$1,199
PENTIUM 60	\$1,599
PENTIUM 90	\$2,399

NEC MONITORS

NEC 3V	\$649
NEC 4FGE	\$859
NEC 5FGP	\$1,579
NEC 5FGE	\$1,379

HEWLETT PACKARD

HP 520	\$379
HP 560C	\$799
HP 4P	\$1,299
HP 4	\$1,699
HP Scanner IICX	\$1,299
HP IIP	\$649

INKJETS & LASER PRINTERS

Lexmark IBM 4029-20	\$1,299
Lexmark IBM 4029-30	\$1,499
Lexmark IBM 4039-10R	\$1,799
Lexmark IBM 4039-12R	\$2,299
Lexmark IBM 4039-16L	\$3,799
Lexmark 4072 Execjet	\$849
Lexmark Color Jet PS	\$2,799
Epson Stylus 800	\$359
Epson Action 1500	\$839
Epson Stylus 1000	\$649

PANASONIC

1150	\$189
2023	\$229
2123	\$269
2124	\$379
2180	\$199
2624	\$489
4410 Laser	\$739
4430 Laser	\$898
4440 Laser	\$1,479



CMSI

404 Steeles Avenue West, Unit 5
Thornhill, Ontario L4J 6X3
Phone: (905) 889-1616
Fax: (905) 889-1199

Monday: 9 am - 9 pm
Tuesday: 9 am - 9 pm
Wednesday: 9 am - 9 pm
Thursday: 9 am - 9 pm
Friday: 9 am - 9 pm
Saturday: 9 am - 6 pm
Sunday: 12 pm - 5 pm

All Pricing is already cash discounted • Some quantities may be limited.

June 1st.

**LARGER
LOCATION**

Expanded Service Facilities

HAPPY NEW DECADE

Canada's 1st DX notebook distributor
celebrates 10 years of growth by
continuing to provide
hi-performance notebook
& minitower systems.

June 1st.

**LARGER
LOCATION**

Toronto's Best Prices for Software & Accessories

Notebook Deal of the Month



486SX-25 PVT: \$1945(INTEL) \$71/MTH

486DX-33 PVT: \$2176(AMD) \$79/MTH

\$2211(INTEL) \$81/MTH

486DX/2-66 PVT: \$2385(AMD) \$87/MTH

\$2487(INTEL) \$91/MTH

- Choice of Intel or AMD CPU
- Landmark speeds from 83 - 220 MHz
- CPU upgradability to DX/2-50 & DX/2-66
- Provides non-obsolescence
- Very good 10" monochrome display
- Built-in, large, 17mm trackball
- 4 mb RAM (exp. to 20 mb) c/w detachable 120 H.D.
- 1.44 mb 3.5" FDD
- Two Type II and one Type III PCMCIA slot
- Fast Local Bus Video Graphics & Hard Drive Access
- Canada's best notebook value & service turnaround for PVTs

ULTINET

1984-1994

**10 YEARS OF SALES
SERVICE & SUPPORT**

**24 HOUR FAX ON DEMAND
PRICE & PRODUCT INFO**

416-256-5779

FREE SOFTWARE WITH EVERY SYSTEM:
wordprocessor, database, spreadsheet, games
PARTS & LABOUR WARRANTIES

Two years on minitowers
Five year on VESA motherboard with minitowers
One year on notebooks

EASY LEASE OWN ALWAYS AVAILABLE

Now in new 20,000 sq. ft. facility with service
area larger than many competitors' total facilities
(New Address Below)

**CANADA'S MOST EXPERIENCED
NOTEBOOK SUPPLIER**

In-house assembly and service of all Ultinet
notebook and minitower systems.
Ultinet provided Canada's first fully configured
hi-performance notebooks & VESA LB computers.

**We invite you to join us
for our next 10 years of success**

Minitower Deal of the Month

EASY

LEASE

TO OWN

\$36.50/\$1000

FOR 36 MONTHS

For PCI

upgrades

add \$300



486DX-33: \$1440(AMD) \$53/MTH

\$1466(INTEL) \$54/MTH

486DX/2-66: \$1579(AMD) \$58/MTH

\$1679(INTEL) \$61/MTH

- Genuine Intel or AMD CPU with 128k cache
- 4 mb FAST 60 NS RAM, 1.44 mb hi-density FDD
- Bullet VESA LB chipset, 1 mb video (32 bit VESA IDE controller raises transfer speed between 32 bit I/O bus & HD to maximum 1150 kb/sec)
- 14" .28 dpi non-interlaced monitor 1024x768
- 250 mb 12 ms fast hdd with 128k hd cache
- Ultinet motherboard with certified Intel #3, CPU ZIF socket for Pentium P24T processor, 3 VESA LB slots & 7 ISA slots, built-in CPU clock generator for 25 - 66 MHz CPUs
- Enhanced digital minitower case and 101-key enhanced keyboard
- Ultinet's unique upg. to dual 486/Pentium mbd 512k cache only \$249
- Ultinet's PVT Notebooks: Proven reliability with CPU upgradability. One of Canada's largest notebook tech dep'ts. Fast service or loaner is provided. No company matches Ultinet service or experience with notebooks & minitowers.

WHY SHOP ULTINET?

EXPERIENCE

Canada's first DX Notebook supplier also has ten years' experience
in desktop/minitower computers. Our installed base currently
exceeds 27,000 systems.

LOCAL ASSEMBLY & SERVICE

All assembly and service is done by Ultinet's own technicians at our
Toronto facilities, minimizing turnaround time. Our move to our new
20,000 sq. foot facilities further enhances our leadership role in
the Canadian computing industry.

UPGRADABILITY

Ultinet systems are designed for today's budget and tomorrow's
software demands. Our minitower/desktop systems are upgradable
to a dual 486/586/Pentium motherboard. All our PVT Notebooks
are upgradable to 486DX/2-66.

EASY LEASE TO OWN

Leasing rates are based upon a rate of \$36.50/\$1000 for a 3 year
period. Application of a down payment enhances credit approval
process and decreases monthly payment amounts.

LEASING EXAMPLE

System Price =	\$1518
Mthly Payment (\$1518 x .0365) =	\$55/mth
\$55 + 15% (GST & PST) =	\$63/mth

ULTINET PVT NOTEBOOKS

Model (mono, 4 mb RAM)	80 mb HD		120 mb HD		210 mb HD		340 mb HD		Lndmrk Speed
	AMD	Intel	AMD	Intel	AMD	Intel	AMD	Intel	
486SLC-33 (2 mb RAM)	\$1420 Cyrix		\$1518 Cyrix		\$1666 Cyrix		\$2048 Cyrix		90 MHz
486SX-25	N/A	\$1868	N/A	\$1985	N/A	\$2116	N/A	\$2507	83 MHz
486SX-33	N/A	\$1928	N/A	\$2024	N/A	\$2176	N/A	\$2567	110 MHz
486DX-33	\$2099	\$2135	\$2196	\$2231	\$2347	\$2382	\$2738	\$2774	110 MHz
486DX/2-50	\$2121	\$2171	\$2218	\$2268	\$2369	\$2419	\$2780	\$2811	162 MHz
486DX/2-66	\$2308	\$2411	\$2405	\$2507	\$2556	\$2659	\$2947	\$3050	220 MHz
Pentium DX-60 dual scan, 8 mb	N/A		N/A \$5537		N/A \$5688		N/A \$6080		347 MHz
Pentium DX-66 dual scan, 8 mb	N/A		N/A \$5694		N/A \$5845		N/A \$6237		382 MHz
Upgrade mono to dual scan passive matrix colour									\$842
Upgrade mono to active matrix colour									\$1859
Upgrade Pentium dual scan to active matrix colour									\$1216
Upgrade 340 to 520 mb hard drive									\$330
Upgrade each mb of RAM									\$88

ULTINET MINITOWER COMPUTERS

Model	RAM	H.D.	AMD	Intel	Lease to Own
486SX-25	4 MB	250 hd	N/A	\$1229	N/A
486DX-33	4 mb	250 hd	\$1460	\$1486	\$54/mth
486-50	4 mb	250 hd	\$1219 (Cyrix)		N/A
486DX/2-50	4 mb	250 hd	\$1481	\$1532	\$55/mth
486-66	4 mb	250 hd	\$1395 (Cyrix)		N/A
486DX/2-66	4 mb	250 hd	\$1599	\$1699	\$60/mth
Pentium DX-60	4 mb	250 hd	N/A	\$2289	\$84/mth
Pentium DX-66	4 mb	250 hd	N/A	\$2419	\$88/mth

ULTINET MINITOWER COMPUTER UPGRADES

Upgrade 250 to 340 mb Seagate h.d. 12 ms, 128k cache	\$79
Upgrade 250 to 440 mb Seagate h.d. 12 ms, 128k cache	\$160
Upgrade 250 to 770 mb Quantum SCSI h.d., 10 ms	\$670
Upgrade to mid/full tower case	\$29/63
MS Windows 3.1/3.11 OEM	\$60/115
Microsoft DOS 6.2 package with disks & manual	\$60
Panasonic double speed CD-ROM w/controller	\$219
Toshiba SCSI 4101 double speed CD-ROM	\$365
Soundblaster 16/16 MCD/16 SCSI	\$155/199/259
Upg. 15" non-interlaced 72 Hz monitor	\$160
Upg. 17" .28 dpi flat screen monitor 1024 x 768	\$695
Upg. to Mitsubishi Diamond Scan 17" .28 dpi	\$1095
Internal fax/modem 9600/2400 with software	\$49
Internal fax/modem 14,400/14,400 with software	\$139
Upg. to 8/16 mb RAM	\$220/710
Canon BJ105X c/w ASF/BJ200e/BJC600	\$339/379/798
Hewlett Packard Desk Jet HP 520/HP 560C	\$399/839
Panasonic 24 pin Pmt 2023/HP4L/HP4	\$260/989/1999
Multimedia kit Panasonic 562/Thunder Card 16/2 CDs	\$340
Multimedia kit Panasonic 562/Soundblaster 16/2 CDs	\$398

VESA LOCAL BUS UPGRADES

Dual-CPU 64-bit motherboard w/256k cache (motherboard only)	\$349
Dual CPU 64-bit motherboard w/512k cache (motherboard only)	\$399
Cirrus Logic 1 mb VLB video card (15M Winmark speed)	\$35
WD Western Digital 90C33 1 mb video card (18M Winmark speed)	\$55
ATI Graphics Wonder Accelerator 1 mb VLB	\$159
ATI Ultra Pro 2 mb VRAM VLB	\$349
Diamond Viper 2 mb VRAM (49M Winmark speed)	\$450
VESA LB IDE I/O controller	\$20
VESA LB hdd cache controller	\$220
VESA LB hi-speed SCSI controller	\$349

READY TO GO MULTIMEDIA PC

3 VESA local bus and 7 ISA slots	32 bit VESA LB 255 mb hard disk
P24T ZIF Socket	1.44 mb floppy disk drive
4 mb 60 ns RAM	14" non-interlaced .28 dpi monitor
VESA LB 1 mb "Bullet" Windows accelerator	Panasonic double-speed CD-ROM
	16 bit sound card
	2 speakers & 2 CDs

486DX-33	\$1785 (\$65/mth)
486DX/2-50	\$1845 (\$67/mth)
486DX/2-66	\$1986 (\$72/mth)

VAR INQUIRIES WELCOME



THE STANDARD OF STABILITY SINCE 1984



100 Bridgeland Avenue, Toronto, ON M6A 1Z4

Tel: (416) 256-2000 Fax: (416) 256-1449

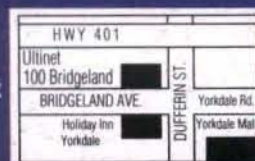
OPEN: MON, TUES, FRI 9-6; WED, THU 9-7; SAT. 10-5

CALL OUR 24 HOUR FAXBACK LINE AT (416) 256-5779 FOR PRODUCT INFORMATION BY FAX

All prices based on cash or lease-to-own. For credit cards, Corporate and Government P.O.s, add 3%.

We ship mail orders across Canada!

Prices subject to change without notice



Out of town.

Now there's a great new way to live off the LAN. Whether you're heading out of town or just heading home, LAN Distance lets you easily connect to your office network from your Windows or OS/2 remote PC.

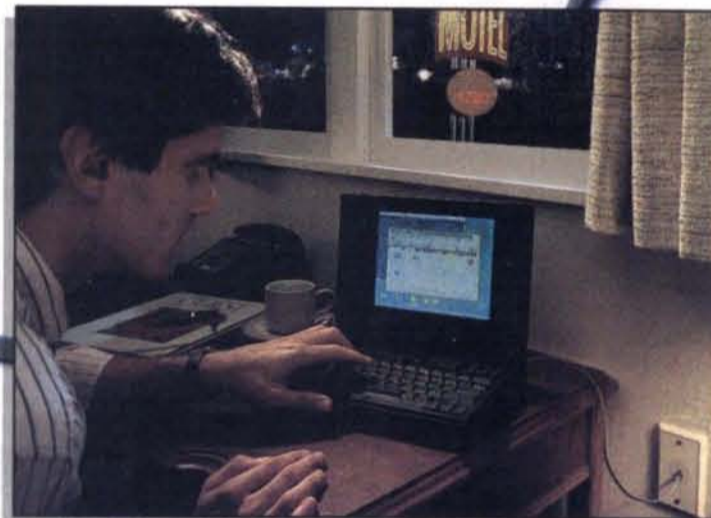
Use LAN Distance to dial into the LAN and do everything you could do if you were at the office. It's your network node on the road. An in-house network in *your* house. With host-like



security features, the integrity of your LAN resources is rock-solid. LAN Distance even filters and directs WAN traffic to minimize gridlock, so your road node can really move.

Not out

All you need is the modem – LAN Distance is a software-only solution. And since it's network operating-system independent, it works with IBM LAN Server, Novell, NetWare, ARTisoft, LANtastic, and Banyan VINES.



Shorten the distance between you and your LAN – make the LAN Distance call.

To purchase, call IBM Direct 1-800-465-1234 Ext. 286. And the next time you hit the road, it'll be like you never left.

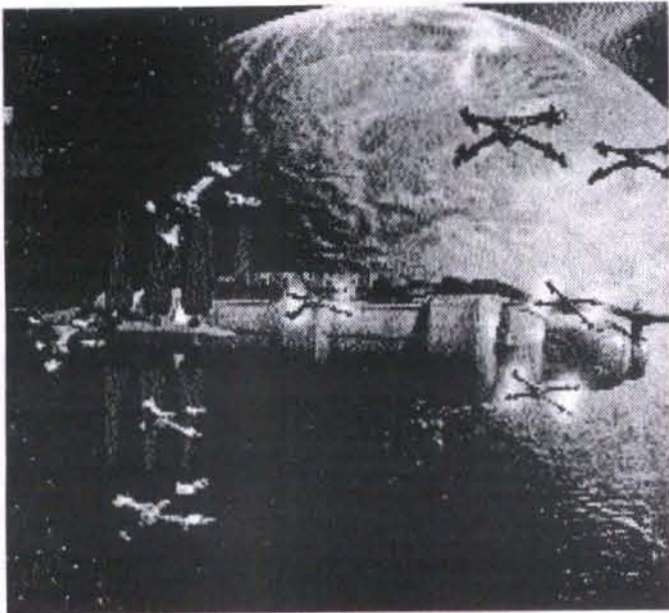
How they compare:	IBM LAN Distance	DCA Remote LAN Node	Shiva LANRover	Novell NetWare Connect
Connectivity Options				
Remote to LAN	YES	YES	YES	YES
Remote to Remote	YES	NO	NO	NO
LAN to Remote	YES	NO	NO	YES
LAN to LAN	YES	NO	NO	YES
Remote Connectivity Sync, ISDN, X.25 (in addition to ASYNC)	YES	NO	NO	YES
LAN Application Interfaces: NetBIOS, NetBEUI, 802.2 (in addition to IP and IPX)	YES	YES	YES	NO
Security: WS Addr., Sec. Admin., Logon Policies, Logon Day/Time (in addition to User ID, Password and Callback)	YES	NO	NO	NO

We're in the business
of connecting yours.

of touch.

LAN Distance and OS/2 are registered trade-marks of International Business Machines Corporation. IBM is a registered trade-mark owned by International Business Machines Corp. and is used under license by IBM Canada Ltd. Product names referred to in this ad may be trade-marks or registered trade-marks of their respective manufacturing or marketing companies.

C O N T E N T S



COVER STORY

11 The Stellar SFX of Babylon 5

BY FRANK GARCIA

FEATURES

COVER STORIES

- 9 Babylon 5 Airs On Computer Networks**
by Frank Garcia
- 22 Microsoft Windows 4.0**
A Hands-on Report
by Graeme Bennett
- 51 Hands-on: CorelDraw 5.0**
by Graeme Bennett

MULTIMEDIA

- 16 Reinventing Hollywood**
Tinseltown meets Siliconia
Exerpts from a new book
- 30 Conversation With Forest Baskett**
VP of Silicon Graphics
By Keith Schengili-Roberts

SHOW REPORTS

- 36 Comdex — The Wild and Woolly Insider's Report**
By James MacFarlane
- 40 But Is It Art?**
4Cyberconf Meets in Banff
By Kent Barrett
- 47 Multimedia 94**
Trade Show And Conference
By Keith Schengili-Roberts

DOCUMENT MANAGEMENT

- 72 A Guide to Optical Character Recognition**
- 75 Caere's PageKeeper**
By Geof Wheelwright
- 76 A Job For DocMan**
By Geof Wheelwright

NEWS, REVIEWS

SPECIAL: THE WRITING LIFE

- 20 Authors On Computers**
Who Uses What And Why
By Frank Garcia
- 68 Colombo's Canadians on Computers**
A collection from Canada's Master Gatherer
By John Robert Colombo

PUBLISHING

- 55 Two For the Page**
Low-end DTP
By Gord Goble

BOOK REVIEWS

- 63 Whole Internet Guide**
One of the Best Gets Better
By Keith Schengili-Roberts

63 Encyclopedia Compiles Useful Tidbits

By Keith Schengili-Roberts

64 Metaman Looks At Society As Organism

By Keith Schengili-Roberts

65 Books Unbound

CD-ROM Literary Endeavors
By Ross MacDonald

ONLINE

- 70 Commtalk**
Modem Standards a Modern Babel
By James MacFarlane

HARDWARE

- 42 AlphaSmart Smart Keyboard For Macintosh**
By Graeme Bennett and Douglas Alder

44 NEC's Luxury Notebook

A Look At The Versa 50 EC
By Ross MacDonald

61 Opening The Video Pipe With 64-bit Cards

By James MacFarlane

62 Short Take: Six 64-bit Cards

SOFTWARE

- 25 What Color Is Your Underwear?**
Exploring The Architecture Of Windows 4.0
By Graeme Bennett
- 58 Iconic Distractions And Other Windows Silliness**
By Gord Goble

OPINION

- 45 Incompatible . . . And Proud Of It**
By Bob Loblaw

DEPARTMENTS

- 6** Letter from the Editor
- 7** Mailbox
- 85** Addendum: Last Month's Cover
- 79** What's New
- 83** Newsbytes
- 84** Training
- 87** User Groups
- 87** Calendar of Events
- 86** Classifieds
- 88** Computer Directory
- 89** Index of Advertisers

COMING UP IN ONTARIO EDITION

AUGUST

CD-ROMs, GIS, Optical Drives
Classifieds Fri., June 24
Ad deadline Tue., June 28
Camera Ready Wed., June 29
Distribution Fri., July 15

SEPTEMBER

Education, 3D Graphics
Classifieds Tue., Aug 2
Ad deadline Wed., Aug 3
Camera Ready Thu., Aug 4
Distribution Fri., Aug 19

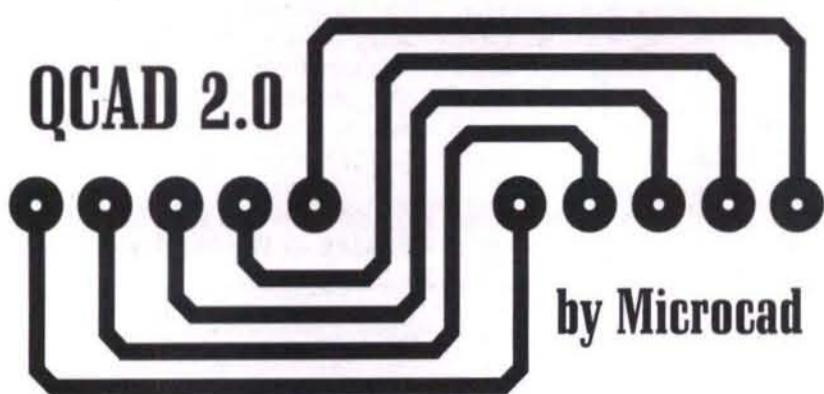
OCTOBER

Fax & Modems, BBS List
Classifieds Mon., Aug 29
Ad deadline Tue., Aug 30
Camera Ready Wed., Aug 31
Distribution Fri., Sep 16

Call Now
(416) 588-1580
for advertising information

Advertise in the new Eastern Edition of The Computer Paper
Toronto (416) 588-1580
Halifax (902) 457-2990
Montreal (514) 671-6380
Ottawa (613) 729-0234
Quebec/Atlantic 1-800-465-3517

Microcad, 620 Jarvis St. TEL: (416) 324-1347
#922, Toronto, M4Y2R8 FAX: (416) 324-2710



PCB DESIGN SOFTWARE WITH PROFESSIONAL AUTOROUTER

The most complete Printed Circuit Board design Windows like color / mouse graphic environment Native / Foreign net list preparation / importation Interactive and automatic placement of elements Interactive, and 100 % full automatic wire routing Regular and SMD support, single/multi layer, etc.

**COPY PROTECTION INCLUDED
RENT QCAD BEFORE YOU BUY**

3D Studio 2.0 Student Offer

\$285.00*

Explore the World of
Multimedia with Autodesk
3D Studio - The 3D Graphics
and Animation Standard for
the PC!



"Chevy"; created, designed and rendered in 3D Studio.

3D Studio 2.0 Student Edition:

- Full version
- Hardware Lock
- CD-ROM included

Autodesk 3D Studio 3.0 (Commercial)	\$2995.00
Autodesk 3D Studio 3.0 (Educational)	\$850.00
Autodesk Animator Pro (Educational)	\$367.00
Autodesk Autocad LT (Educational)	\$495.00

To order or obtain more information on other Autodesk Multimedia Products call TOR at (905) 660-3262 or Toll Free at (800) 561-7520.

TOR

TOR Computerized Systems Inc.
160 Applewood Crescent, #14
Concord, Ontario, L4K 4H2

Autodesk
Authorized Dealer

* VISA, Mastercard, AMEX or Certified Cheque with valid student ID only. Offer not good for Faculty or School use. Package is full blown, locked and not upgradable. There will be a charge for technical support.

Virtual Mean Streets

While scanning the news wires
I came across this item:



From the Editor

eWorld Bucks Online Anonymity Trend

CUPERTINO, CA (NB) — Newspapers over the past year have covered a number of abuses that occur on online services because of the anonymity of users' identifications. However, Apple's new eWorld is planning to virtually remove such user anonymity.

While online service providers always have the power to admonish or disconnect a user who is reported to violate the terms of agreement or "netiquette," the administrators of Apple's new eWorld have decided that members will choose between the use of their first name and last name, or first name initial and last name.

The use of anonymous names will still be possible online, but any member may click on a profile and read a person's registered name. According to the company, real online identities will encourage responsible behaviour and be "more conducive to the business environment that eWorld is

designed for."

Online abuses identified by Apple include such behaviour as: "flaming," which involves aggressive, hateful, abusive and/or libelous electronic-mail and online postings to groups; "mail bombs," which include mass mailings and flooding of mail centers and individual mailboxes; "stalking" which includes following and tracking the comings and goings of a specific individual; and "any unwanted and suggestive advances of a sexual nature or harassment of any sort".

These complaints have long been a problem for all online providers, most of whom have specific procedures to deal with it. Internet is the most difficult to control, because one can easily change identities and sign-on with other providers. As these electronic communities grow, the identifying and shunning of abusive individuals is claimed to be a strong self-policing technique.

Small Town, Safe City or Urban Metropolis — Where do you want to live?

I am beginning to see how the Internet, commercial online services, (such as Compuserve, America Online and GEnie) and the more homegrown Bulletin Board Systems, (such as CRS in Toronto and Mindlink in BC) will continue to co-exist in the electronic world of a couple of years from now. In the past few months, so much has been said about the Internet, that I found myself believing that the Internet would be the only thing left within a matter of months. After watching my kids interact with it, as well as their favourite local BBS's, I realised that they each have a place in an electronic future.

The Internet lacks a central authority or even marketing department and often seems too big a place to get comfortable. It is vast, relatively unorganized, unfriendly and often unappealing to the casual telecommunicator. I gave my kids the keys to the Internet, and at this point anyway, they have turned up their noses at it, they would rather talk to their friends on their local BBS. I find myself enjoying the convenience of world wide e-mail on the Internet, but reluctant to spend the hours sorting where the good stuff is.

Local BBS's often provide more of a close knit community of shared values than do the much broader commercial services or the Internet. The analogy of a small town, where everyone knows everyone else could be applied to a smaller BBS. The size of the town might vary from 20 to 30 individuals all the way up to tens of thousands. The next big jump is to the commercial services where the membership numbers are in the hundreds of thousands. Finally, the Internet is a metropolis that has millions of subscribers. Continuing the town, city and metropolis analogy, we see that it is possible to seek out smaller communities of individuals even within a city or metropolis, by staying within certain interest areas.

A license to be rude

One of the problems of life on the Internet as noted by the Newsbytes piece above about eWorld (no it won't be available in Canada for a while) is a lack of politeness by a few individuals. The Internet consists of a con-

glomeration of computers spun together into a diverse net of people. Such a group sometimes lacks shared values and since there is no real central control to police how people treat each other, the result is that sometimes "flamings", or verbal attacks happen between people. Like an unrefereed hockey game, the results are not pretty.

Remailers hide flamers

It is relatively easy to sign up with a variety of commercial connection providers, some of whom are not so diligent about identifying their users. Truly nasty people can change their identity at will. If you want to get really secretive, you can use a "remailer", an Internet logon site that will pass on your messages, but not your identity. (One such site is "anon@penet.fi" an infamous site in Finland) Truly secretive individuals might use a series of remailers to prevent anyone tracking them down. From this position of electronic disguise, they feel secure in flaming or attacking other people on the net.

Stick to the knitting

In contrast, most BBSes are close knit places, where often everyone knows everyone else, or at least has seen their name once in a while. Most of the dialogue seems to be conducted in enlightened tones because they know they are likely to run into each other again. The sysops keep an eye on the dialogue and deal with complaints when they come up. They maintain standards about the types of files that can be uploaded and downloaded. Most are concerned these days about being charged with pornography infringements or copyright software violations. The tide seems to be turning against the free-wheeling approach of the early days of BBSing. Some still maintain adult areas, but to get onto it you have to prove that you are an adult. While their systems don't provide government-grade security, they actually telephone you to confirm you are who you say you are.

The middle ground

Commercial services like Compuserve, GEnie and America Online, take the middle ground.

Mailbox

HP Ink Jet Printers Clarification

Clarification is needed on several issues raised about Hewlett-Packard printers in Frank Garcia's recent article, "The Ink Jet Prescription," appearing in the May 1994 issue. In describing the output from a HP DeskJet 560C printer, Mr. Garcia states that one color cartridge is used to produce all colors, including black. He states that because of this feature "sometimes the black comes out brown. This occurrence is, in fact, impossible due to the fact that the printer uses two cartridges, not one. A color cartridge, containing three primary colors, is used to produce a range of colors while a second cartridge is dedicated to printing black output.

Mr. Garcia also recommends the HP Portable. Readers should be aware that HP's most recently announced portable printers are the DeskJet 310 for PC users and the DeskWriter 310 for Macintosh users. In addition to standard black output, both printers offer color capability.

— GB

Ink Jet Redux

Frank Garcia's article, "The Ink Jet Prescription" in your May issue was most timely and well-documented. Research by BIS Strategic Decisions, of Norwell MA shows a 400 percent increase in sales of the color ink jet printers between 1991 and 1992. Their projections indicate that by 1995, color ink jet printer sales alone will exceed both dot matrix and monochrome jet printer sales. Why shouldn't they? The capital costs are similar.

The real cost of these printers, however, is the cost of ownership. Where ribbon printers added at most, a fifth of a cent to the cost of a print, the jet printers can go over 20 cents for graphics. As one might expect, the OEMs presented this in an optimistic light — Typically, "500 prints at 5 percent coverage."

But, these 500 prints would have to be short business letters, with few bold characters and a minimum of graphics. The average 7-by-10" ad in your journal, for instance, might cover 25 percent or more of its area with ink. So, 100 such prints would use the complete BubbleJet BC-01 cartridge and be rated at about 24 cents each.

Twelve cartridges doing such graphics —

which is why most people bought the printers — will exceed the cost of the entry-level jet printer. Many users therefore consider refilled cartridges.

Of course, printer manufacturers always have the old standby — "We'll void the warranty if you recycle cartridges."

Most established suppliers of refill kits for jet printers resolved this hassle several years

ago, in the case of remanufactured powder toner cartridges, by offering to assume any warranty liability connected to their work. Our company, for instance has never had such an invoice presented, and extends the same protection to Jet Printer refills.

John Connolly, general manager,
Image Control, Toronto

August 1994						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Calendar for Claris Contest.		Create Gantt Chart for Fall Events. Do Org Charts for Wendy.			
	1	2	3	4	5	6
7	Write Text for Call Centre Report.	9	10	Pie Charts for Call Centre Report.	12	13
	8					
14	Flow Chart for Report.	16	17	Create Graphics for Call Centre Report.	19	20
	15					
21	2-Day Presentation!!!	23	24	SUMMER PARTY	26	27
	22					
28	29	9 am Meeting	31			
		30				

From The Editor

Continued from page 6

The system administrators try to walk the delicate line between maintaining decorum, while avoiding to many infringements on people's privacy. They usually have more telephone text and a better user interface than most BBS's, so they are a good choice if you prefer a slicker look.

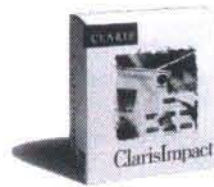
Your choice

Different levels of familiarity and security in the electronic world provide a diverse environment to choose the kind of virtual world you want to create for yourself. If you want to span the globe in search of new and exciting friendships, you can. If you want to get to know the people in your own small town, there is probably a BBS out there waiting to help you do it. City patrol should check out the well patrolled streets of Compuserve, GEnie or America Online. Ultimately, they will all be connected to each other via e-mail anyway.

Enjoy the issue

Douglas Alder
Editor/Publisher
Publisher@TCP.MINDLINK.BC.CA

Make an extra \$1000 this month.



Get ClarisImpact™ at the new promotional price of \$199 (Suggested Retail Price, \$499) and you could win \$1000. Just simply create a calendar month with ClarisImpact™ and send it in between June 1, 1994 and September 30, 1994.

At this special price ClarisImpact™ offers unrivaled value. When you consider its 8 in 1 features such as five business graphic applications (organization chart, flow chart, gantt chart, calendar and data charts), a free form graphics program, a word processor and a

presentation package, there's no better way to create, edit and communicate business graphics for marketing, sales, management, education, and small business.

You don't have to be a graphic designer to create and edit fast and efficiently, thanks to the intelligence built into every graphic. ClarisImpact™ is the only program you'll ever need to easily create and communicate high-impact business graphics from start to finish.

Send Calendar entries to: Karen Hunter, Claris Canada, 3 Church Street, Suite 402, Toronto, Ontario M5E 1M2

Draw: October 15, 1994.

For the name of your nearest Claris reseller, please call 1-800-361-6075

CLARIS

©1994 Claris Corporation. All Rights Reserved. Full contest rules can be had by writing Claris Canada, 3 Church Street, Ste. 402, Toronto, ON M5E 1M2. Claris, ClarisImpact, the ClarisImpact design are trademarks of Claris Corporation. Portions licensed by Ashlar, Inc. under U.S. Patent No. 5,123,087. Claris Corporation is a wholly-owned subsidiary of Apple Computer, Inc. Used under licence by Claris Canada.

REBUILT Fuser Assemblies



Dealer
parts for:

ALPS, EVEREX,
IBM, QMS, CANON,
NEC, APPLE, OLIVETTI,
HP, BROTHER, FUJITSU, QUME,
PANASONIC, MANNESMAN TALLY,
KYOCERA, OKIDATA AND MANY MORE

Call for incredible prices on
most laser printer parts!

\$79.00
from

with 4 month warranty

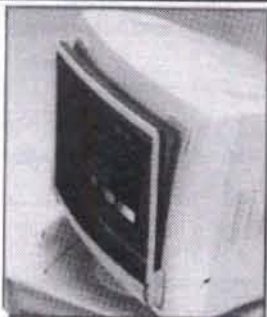
Setting new standards for price and quality

Commercial Laser Technologies (416) 633-6566

THE SOLUTION TO GLARE & RADIATION

EYE STRAIN, HEADACHES, RED EYES, FATIGUE,
DISCOMFORTS ... DO THESE SOUND FAMILIAR TO
YOU? ... MAYBE YOU NEED A FILTER WITH ANTI-
GLARE, ANTI-STATIC AND ANTI-RADIATION RELIEF.

BUY FROM THE MANUFACTURER,
SAVE \$\$\$ AND PROTECT YOUR HEALTH.



Mesh Filters*

12/13", 14", 15" **\$34.50**
• 17" **\$54.50** • 19" **\$69.50**

Glass Filters

12/14", 15" **\$74.50** • 17" **\$124.50** • 19" **\$139.50** (S & H + Taxes extra)

*Manufactured in Ontario by:

Across the Ocean: 8461 Keele St., #28, Concord, ON L4K 1Z3
Tel: (905) 669-9667 Fax: (905) 660-7884

EDITORIAL
 PUBLISHER / EDITOR Douglas Alder
 Associate Publisher Hari Singh Khalsa
 Managing Editor Graeme Bennett
 News Editor David Tanaka
 Contributing Editor Geof Wheelwright
 Contributing Writers Douglas Alder, Graeme Bennett, Kent Barrett, John Robert Colombo, Rob Crawford, Frank Garcia, Gord Goble, Bob Loblaw, Ross MacDonald, James MacFarlane, Linda Rohrbough, Keith Schengili-Roberts, Geof Wheelwright

ADMINISTRATION
 SECRETARY-TREASURER Armit Kaur Khalsa, Kathryn Alexander
 ADVERTISING John Oliver (416) 588-1580 Toronto
 NATIONAL AD SALES
 VANCOUVER OFFICE
 B.C. AD SALES Dyal Singh Khalsa, Kit Griffin (604) 733-5596
 DISTRIBUTION BC Sales@TCP.MINDLINK.BC.CA
 PRINTER Transcontinental West
 TORONTO OFFICE (416) 588-1580
 Yvette Doucette
 Tino Wong, John Oliver
 John Dodson
 (613) 729-7306
 MONTREAL AD SALES Jacqueline Sanderson (514) 671-6380
 HALIFAX AD SALES Judy Publicover (902) 457-4390
 QUEBEC & ATLANTIC 1-800-465-3517
 ADMINISTRATOR Maureen Khalsa
 AD COORDINATOR Sangeeta Seth
 CIRCULATION MANAGER Charles Oliver
 ADMIN. ASSISTANT Rob Crawford
 PRINTER Metroland

PRODUCTION
 PRODUCTION MANAGER Kim Knapik
 PRODUCTION STAFF Kim Fedor, Jana Kolar, Ernest Stelzer, Kent Barrett, Graeme Bennett, Vivien Clarke

ACCOUNTING & ADMINISTRATION
 CONTROLLER Christine McPhie
 ASSISTANT CONTROLLER Laura Waddington
 ACCOUNTING ASSISTANT Kari Eichler

SUBSCRIPTIONS
 To have 12 issues of The Computer Paper mailed directly to your home (in Canada), send a cheque for \$24.95 to Suite #8, 3661 West 4th Ave., Vancouver, B.C. V6R 1P2. American subscriptions please send \$45 in US Funds. Overseas please send \$99 Canadian (first class).

Canada Computer Paper Inc.
 BRITISH COLUMBIA: 60,000 Circulation
 #8, 3661 W. 4th Ave., Vancouver, BC V6R 1P2
 Phone: (604) 733-5596, Fax (604) 732-4280
 BBS Number: Mind Link! (604) 576-1214
 (Log on with the name "Computer Paper")
 Internet electronic mail addresses:
 See listings under Editorial, above
 Compuserve: 72627,1732 GENIE: TCP

ALBERTA: 50,000 Circulation
MANITOBA: 25,000 Circulation
 Prairie Office:
 The Devenish Building, Suite 306,
 908 17 Avenue S.W. Calgary, AB T2T 0A3
 Calgary (403) 228-3355
 Fax (403) 228-3456
 Edmonton (403) 459-3554
 Fax (403) 491-0160
 Winnipeg (204) 949-7720
 Fax (204) 949-7721

THIS IS VOLUME 7, NO. 7, JULY 1994

The Computer Paper is published monthly by Canada Computer Paper Inc. All rights reserved. Reproduction in whole or in part without the permission of the publisher is strictly prohibited. The opinions expressed in articles are not necessarily those of the publisher

CCAB INC.
 BDA DIVISION

ONTARIO: 100,000 Circulation
 408-99 Atlantic Ave.,
 Toronto, Ontario M6K 3J8
 Tel: (416) 588-1580, Fax (416) 588-8574
 BBS Number: CRS Online (416) 213-6002

EASTERN: 75,000 Circulation
 Ottawa: (613) 729-7306, Fax (613) 729-6615
 Montreal: (514) 671-6380
 1-800-671-6380, Fax (514) 671-6385
 Quebec, Ontario & East 1-800-465-3517

Canadian Publication Mail, Sales Product Agreement
 #244236 Printed in Canada ISSN 0840-3929
 Member of the BDA Division of CCAB Inc.

The publisher reserves the right to refuse ads of a sexual or violent nature, or ads which may be deemed to perpetrate sexual or racial stereotypes. Specifically, ads referring to Adult Software or X-rated software will be refused. The publisher reserves the right to be the final judge of what is considered appropriate. For a copy of our full policy please contact your sales representative.

INTERNET
 NEXT EXIT

Get on the Information Super-Highway with HookUp Communications. A wonderful world of information, communication & enjoyment awaits.

New to Internet? With Mac or Windows just "point and click" to access user forums, bulletin boards, or get the latest in news, weather and sports. Business users can save thousands of dollars using "E-Mail" for domestic and international communications! It's simple and so cost effective, you'll wonder how you did business without it.

Experienced Users. You already know the vast array of tools available through Internet and you can access them through PPP and SLIP; tools such as FTP, IRC, GOPHER, ARCHIE, TELNET, WAIS, MUD, NEWS and WWW.

We offer a variety of packages to fit your needs, with costs as low as 50¢ per hour. No Toll Charges from the Greater Toronto area, Waterloo, Markham, Hamilton, Stoney Creek and Ottawa.

SPECIAL OFFER! Connect before July 31st, 1994, and receive a \$25 rebate toward Service Fees.



CALL NOW!! 1-800-363-0400

HookUp
 COMMUNICATIONS

1075 North Service Road, Suite # 207 Oakville, Ontario L6M 2G2
 Fax: (905) 847-8420 E-Mail address: info@hookup.net

More than 500 CD titles available at low low low prices

"CDs Summer Sale"

Dinosaur/Space Adventure	\$29.99
3D Dinosaur Adv. w. Glass	\$24.99
Indiana Jones-Fate of Atlantis	\$34.99
Compton's Int. Encyclopedia 94'	\$54.99
Return to Zork	\$24.99
Animals MPC	\$19.99
the 7th Guest V.1.2	\$34.99
Microsoft Bookshelf 93'	\$39.99
Wizard MPC 2.0	\$15.99
Mad Dog McCree	\$32.99
Corel Photo Sampler	\$14.99
Just Grandma & Me	\$27.99
Arthur's Teacher Trouble	\$24.99
Mayo Clinic	\$24.99
Carmen San Diego	\$24.99
Iron Helix	\$32.99
MS Dinosaur	\$44.99
Gunship 2000	\$29.99
CICA MS WIN April 94'	\$19.99
Hobbs OS/2 94'	\$19.99
Kid Zoo/Undersea Adv.	\$34.99

MS Encarta 94'
 Call!!
 MON - FRI: 10:00 - 6:00
 SAT: 11:00 - 5:00

what's new and hot....

Compton's New Century Ency. 94'	\$44.99
Day of Tentacle	\$34.99
Microsoft Bookshelf 94'	\$69.99
Auto Almanac 94'	\$19.99
Critical Path	\$39.95
Journeyman Project	\$49.95
Lawnmower Man	\$64.95
Myst	\$69.95
Quantum Gate	\$39.95
Gabriel Knight	\$34.99
Simcity 2000	\$39.99
Inca	\$34.99
Forever Growing Garden	\$39.99

Sales & Showroom:
 20 Crown Steel Dr., Unit 12,
 Markham, Ontario L3R 9X9

Tel: (905) 940-1502

Multimedia Blowout Week

Sony 33A Double Speed Drive
Sound Blaster 16 MULTI-CD
CP55 Speakers

bundle with Microsoft Bookshelf **\$399.99**

bundle with Compton's New Century 94' Encyclopedia **\$389.99**

bundle with Dictionary for Children Just Grandma & Me or Arthur's Teacher Trouble **\$399.99**

bundle with Microsoft Encarta 94' **\$425.00**

5 ft. 10 Pak (PC Karaoke, Time: Man of the year, King Quest V, World Atlas, World fact book, Doom, Best of Media Clips, PC Animation, Stellar 7, CD-ROM of CD-ROMs) **\$49.99**

add \$14.99

Media Vision Fusion Double CD 16
 NEC Double Speed SCSI CD Rom
 Pro Audio Spectrum 16 SCSI SC
 Labtec Speakers
 7 CD Titles: Compton's Int. Ency., The 7th Guest, Arthur's Teachers Trouble, Battle Chess, Greens, B17 Flying Fortress, Railroad Tycoon.
 free \$25.00 worth MCD Club membership
\$519.95

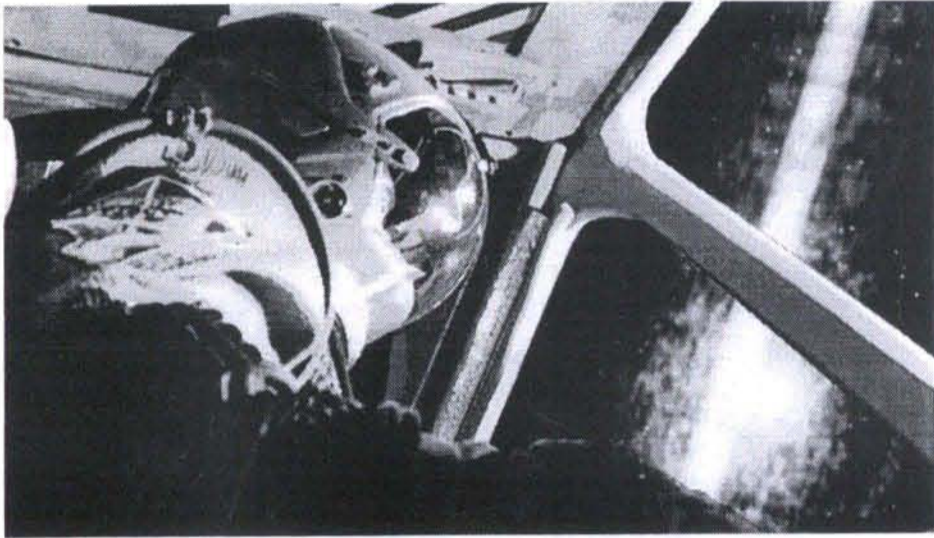
Call for free summer catalog
 Ask about MCD Club for 15% discount!!!

Bundles available in other brands: Panasonic/Mitsumi/Toshiba/NEC
 Other Software bundles, Call!!
 All prices are 3% cash discounted.
 We accept cash or cheque only.

MEDIA CONVERGENCE

Babylon 5 Airs On Computer Networks

BY FRANK GARCIA



Babylon 5 Cockpit

Courtesy of PTEN/Warner Brothers

Created by Executive Producer J. Michael Straczynski, and backed by Warner Brothers Television, Babylon 5 first appeared in February, 1993 with a 2-

hour pilot titled "The Gathering," which garnered an Emmy for special effects. Reaction was so good that Warner Brothers OK'd 22 episodes for a full first season and the first episode aired last January. In fact, the pilot is also up for a Hugo, the literary science fiction award, to be announced at the Worldcon in Winnipeg, this September.

Babylon 5 is one of the hottest science fiction television shows on television today employing state-of-the-art computer generated special effects.

Fans of this show will be pleased to hear that the show has been renewed for a second season and shooting begins anew in mid-July. The balance of the first season episodes will air between now and the end of October, with the second season beginning in November.

B5 chronicles the life and times of Jeffrey Sinclair as he commands a space station serving as sort of a 'United Nations' clearing-house, in a violent galactic universe where humans and alien ambassadors mingle and where machiavellianism reigns. B5, in addition to extensively presenting computer generated images (CGI), also gives us elaborate and wildly creative makeup, sets, costumes and characters to tell the story of the five-year saga that's been percolating in the mind of Joe Straczynski for the last seven years.

When *Babylon 5* came to the attention of Jim Moloshok, who's Senior Vice-President of Marketing and Advertising Services at Warner Brothers, he had the idea that publicizing the show via the computer Internet would be a valuable way to create word of

mouth and visibility for potential viewers of the television show.

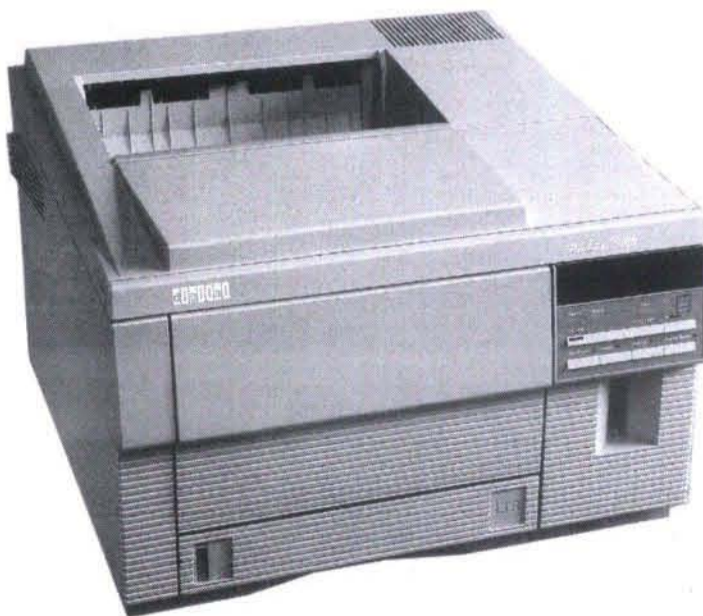
"The biggest problem in launching a new television show is many times a show goes on the air (and) people doesn't know it exists! The computer networks have been very important to the success of *Babylon 5*," says Moloshok. "First, it was a 2-hour made for TV movie. There were a lot of conversations on various networks; Internet, CompuServe, America Online and lots of other smaller nets."

The chatter on the nets was very much noticed by the creators of the show and by executives at Warner Brothers. In fact, to craft ideas and to attempt to improve on *Star Trek* and other similar space shows, creator Straczynski toured SF conventions and set up accounts on CompuServe, GENie and other computer networks and communicated directly to the fans. He polled what people hated in science fiction shows and what they wanted to see.

ORDER BEFORE
JULY 31, 1994
TO RECEIVE A FREE
1200DPI X 1200DPI UPGRADE.

Introducing the DEClaser 5100™

The new 600dpi network printer from Digital.



FEATURES OF THE DECLASER 5100:

- 8ppm, 600dpi (1200 dpi optional)
- Adobe PostScript™ L2 (73 fonts)
- PCL® 5E support (47 fonts)
- RISC and graphical processors
- Serial, parallel and AppleTalk hot ports
- EPA "Energy Star" compliant
- 2 PCMCIA Type II slots
- Optional Ethernet card
- Optional internal hard disk

To order call 1-800-DIGITAL

digital™

"I don't know when he sleeps but all night long, he's on the net with people," says Moloshok. "After the movie, there was a lot of feedback of what people liked and what they didn't like and what elements they thought he should change to make the show more realistic. People on computer networks played a very important role in helping to shape the show as it presently exists. They are more inclined to like science fiction than the general public. We find the index to be a little higher with those people."

Straczynski has also generously contributed writings to the networks describing his vision of the show's five-year history and sketching events and characters he

wants to present. Once, Straczynski needed names for a mega corporation and a mineral and went to the nets for suggestions and received titles which he used on the show.

To give something in return for enthusiastic feedback, Moloshok says they created a Babylon 5 Interactive program on Macromind Director for the Mac and for Windows.

"This interactive kit we created is not

only informative, but sort of fun to play with. I've gotten a lot of E-mail from around the world from people reacting to it. It's not just an advertising piece or a promotion piece, it's a fun to play with. We also gave it to local TV stations and to newspapers. It's really a different way of marketing a television show. I think it's the first time this kind of advertising has ever been used to market a television show."

Internet users know that messages and files travel the width and breadth of the world. Moloshok says that he's gotten E-mail from parties interested in the show — who have not yet even seen it — from as far away as Austria, Turkey, Scotland and Japan. "It's airing interna-

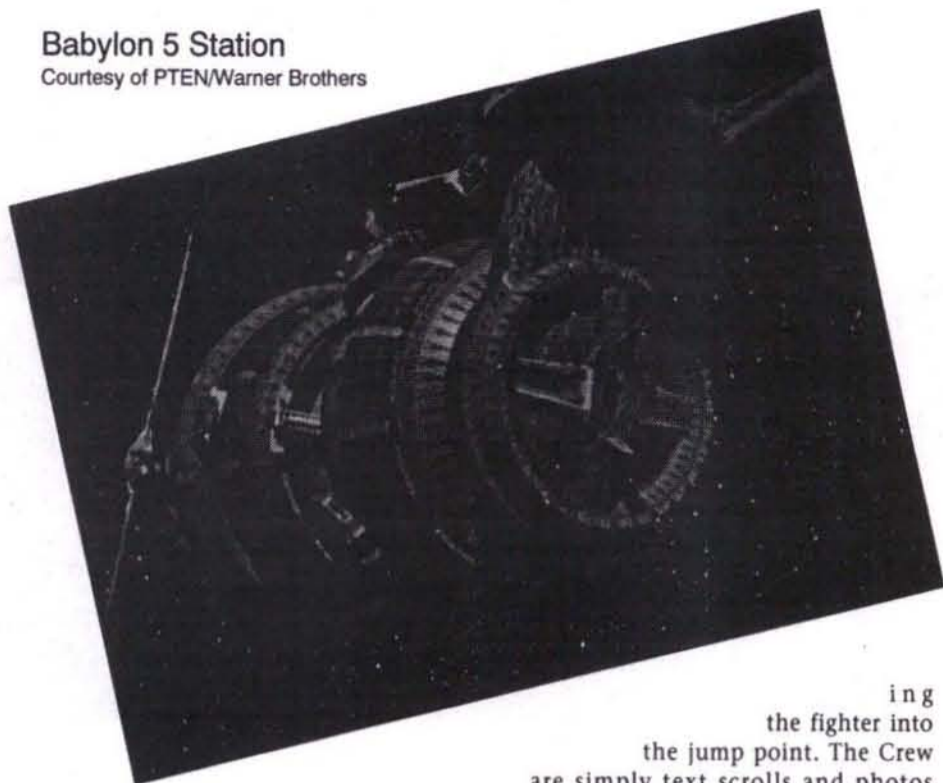
tionally and is available on home video internationally," he says.

The Babylon 5 Interactive is a self-running application. The user clicks on the program icon and the app dives into a screen of B5 graphics and sounds "uplinking" to the Main Menu.

The Main Menu offers four areas to explore: Babylon 5 Station, Ambassadors,

Babylon 5 Station

Courtesy of PTEN/Warner Brothers



The Makers and Alliances.

Clicking on the B5 Station option brings the screen to three items: Launch Fighter, The Crew or Technical. Launch Fighter literally does that. A short film clip runs launch-

ing the fighter into the jump point. The Crew are simply text scrolls and photos describing the history of the leading characters in the drama and a further click reveals the actors' biographies. Technical brings up a graphic of the station and a 'slider' which is manipulated by the mouse which 'scans' for special areas of the station, such as the alien



4800 Sheppard Ave East, Unit 105
Scarborough, Ontario, M1S 4N5
Sales (416) 299-8191
Fax (416) 299-1105
Service (416) 299-8782
Mon-Fri 11am-7pm, Sat 11am-6pm

CASES

Mini-Tower (YS931)	\$59
Mini-Tower/LED (YS931)	\$62
Mini-Tower/LED (C002)	\$63
Mini-Tower/LED (YS101)	\$64
Mini-Tower/LED/DELUXE (C609)	\$76
Mini-Tower/LED (YS201)	\$96
Large Tower DELUXE (TC6367)	\$148
Desktop/LED	\$75

HARD DRIVES

170 MB Maxtor IDE	\$259
210 MB Western Digital IDE	\$285
250 MB Samsung IDE	\$305
345 MB Maxtor IDE	\$345
420 MB Conner IDE	\$385
540 MB Quantum IDE	SCALL
Tape Backup Connor 250M Int	\$219
Tape Backup Jumbo 250M Int	\$225
Tape Backup Jumbo Trakker 250M	\$459
Tape DC2120 250M	\$27

Options

DX4-100Mhz CPU..	+\$800
DX2-66Mhz CPU..	+\$210
8MB Fast R.A.M....	+\$193
340MB Hard Drive..	+\$95
420MB Hard Drive..	+\$120
540MB Hard Drive..	+\$252
14" Non-Interlaced..	+\$52
14" Magnavox Monitor..	+\$62
14" Acer Monitor....	+\$69
DOS 6.2/Windows 3.1	+\$75
Double Speed CD-ROM..	+\$195
16-Bit Sound Card GS....	+\$150
14.4 Internal Fax Modem..	+\$165

FLOPPY DRIVES

Toshiba 3 1/2" 1.44M	\$51
Fujitsu 3 1/2" 1.44M	\$53
Epson 5 1/4" 1.2M	\$59
Fujitsu 5 1/4" 1.2M	\$65

CONTROLLERS

IDE FD & HD Controller	\$19
VESA IDE FD & HD Controller	\$39
IDE FD & HD 2S/1P/1G Controller	\$29
SCSI Adaptec 1522 for DOS	\$124
AT I/O Card 2S/1P/1G Controller	\$25
VESA IDE no cache	\$35
SUPER IDE FD/IDE/2S/1P/1G	\$15
4 High Speed Serial/2 Par	\$130
VESA Trident 9400 IDE/FD/2S/1P/1G	\$135

DOT MATRIX PRINTERS

** 2 Year CANADIAN Warranty **	
Panasonic 2123, color 24pins	\$282
Panasonic Color Kit \$60	

MOTHERBOARDS

386SX-40	\$98
386DX-40 128K	\$149
486DX-40 128K, up to DX, DX2	\$225
486SX-33 128K, Intel CPU	\$250
486DX-33 128K, Intel CPU	\$442
486DX2-66 128K, Intel CPU	\$620
486DX-40 128K, AMD CPU	\$410
486DX2-66 128K, AMD CPU	\$565
486DX4-100, Intel CPU	\$1299
Pentium DX-60 512K VESA	\$1440
Cooling Fan for 486 CPU	\$12

LASER PRINTERS & SCANNERS

** Canadian warranty **	
HP 4L 4ppm 1M, 300dpi	\$929
HP 4ML 4ppm 4M, Postscript	\$1399
HP 4P 4ppm 2M, 600dpi	\$1359
HP 4MP 4 ppm 6M, Postscript	\$1899
HP 4 8ppm 2M, 600dpi	\$1979
HP 4M 8ppm 6M, Postscript	\$2698
HP ScanJet IICx, color	\$1319

WE ALSO CARRY LEXMARK
AND CAN GET EVERYTHING!
DON'T SEE IT? CALL OR VISIT
OUR SHOWROOM!!

VIDEO CARDS

Trident 512K	\$49
Trident 1M 32 bits color	\$83
ATI Gr Wonder 1M Original	SCALL
ATI Gr Wonder 1M VESA Orig	SCALL

ATI Gr UI + 2M Orig

ATI Gr UI Pro 2M OEM OEM	SCALL
ATI Gr UI Pro 2M VESA Org	SCALL
VESA Cirr Logic 5428 1M	\$119
VESA Cirr Logic 5428 2M	\$189
PT521-8 Cirr Logic 5420 1M	\$85
PT524-8 Cirr Logic 1M	\$99
VESA VBCL8261 1M	\$99
VESA Cirr Logic 1M	\$99
VESA 5428 Cirr Logic 1M	\$115
VESA ACER 5428	\$121
VESA ACER 9400 IDE/FD/2S/1P/1G	\$135
VESA Trident 9400CX 1M	\$109
VESA Trident 9400CX 2M	\$179

INKJET PRINTERS

Canon BJ-200e	\$364
Canon BJC-600 Color	\$739
HP DeskJet 520	\$429
HP DeskJet 560C Color	\$849

MONITORS

Acer 14" .28 N.I.	\$338
Philips 14" .28 N.I.	\$345
Datas 14" TTL Paper White	\$129
Datas 14" Mono SVGA 1024	\$169
Datas 14" 1024 .39dp	\$269
MegamImage 14" 1024 .28	\$305
MegamImage 14" 1024 .28 N.I.	\$325
TVM 14" 1024 .28 low rad	\$339
TVM 14" 1024 .28 N.I. low rad	\$385
MegamImage 15" 1024 .28 low rad	\$469
Daewoo 15" 1024 .28 low rad	\$469
Goldstar 15" 1024 .28 low rad	\$515
MegamImage 17" 1024 .28	\$759
Datatrain 17" 1280 .28	\$930
Mitsubishi Diam. Scan 15FS	\$635
Mitsubishi Diam. Pro 17	\$1239
Mitsubishi Diam. Scan 17FS	\$1350
Mitsubishi Diam. Scan 20FS	\$2130
Sony 17" Multiscan	\$1650

CD-ROM

Mitsumi int 250ms 350k/s Kit	\$219
Panasonic int 320ms 300k/s Kit	\$219
Toashiba in 200ms 330k/s SCSI	\$469

KEYBOARDS

ESP 101 Enhanced	\$15
Mitsumi 101 Enhanced	\$23
BTC 101 Keyboard	\$23
Keytronic AT/XT	\$35
Keytronic Keyboard	\$62

FAX MODEMS

Zoltrix 14.4 Internal Fax Modem	\$145
Zoltrix 14.4 External Fax Modem	\$175
U.S.R. 14.4 Int Fax Modem v42 v32	\$180
U.S.R. 14.4 Ext Fax Modem v42 v32	\$199
I/O Card with one 16550 port	\$39

MEMORY

SIMM 256-70/80	\$17
SIMM 1M-60, 30 pins (call)	\$60
SIMM 1M-70, 30 pins (call)	\$56
SIMM 4M-70, 30 pins (call)	\$238
SIMM 4M-70, 72 pins (call)	\$233
SIMM 8M-70, 72 pins (call)	\$488
SIPP 1M-70, 30 pins (call)	\$62

OTHERS (Original Packaging)

MS Compatible Mouse	\$25
Microsoft Mouse v2.0 OEM	\$48
Golden Sound 16	\$149
Soundblaster 16 Basic	\$159
Soundblaster 16 ASP MCD	\$269
Speaker (Basic)	\$10
Speaker SB-668	\$30
Speaker LX-18	\$35
Joystick Bondwell QS123	\$30

DON'T SEE IT?! CALL!

SOFTWARE

MS DOS 6.2	\$50
MS Windows 3.1	\$59
MS Windows 3.11	\$79

hp HEWLETT*
PACKARD IBM

EPSON

USRobotics

Acer

JAGUAR

MICROSOFT
WINDOWS-
COMPATIBLE PC2
Multimedia PC

9 Years . Since 1985

COMPUTER SYSTEMS

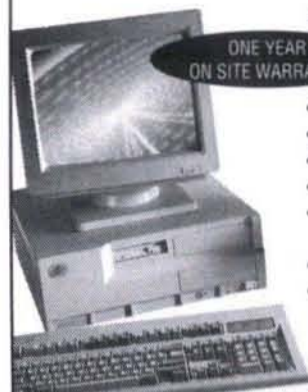
Intel 486DX-33Mhz, 128K, VESA
4MB FAST R.A.M.
170 Megabyte Hard Drive
3.5" Floppy Drive
VESA Local Bus 2S/1P/1G/2IDE
Mini Tower Case
14" .28dp Super VGA Monitor
1MB VESA Local Bus Video
101 Enhanced Keyboard
3 Button MicroSoft Comp Mouse

\$1395.⁸⁸

"POWER WITHOUT THE PRICE"

Prices/Specification & Availability are subject to change without notice. All advertised products are 4% Discounted for CASH, Money Orders OR CERTIFIED Cheque! Please call for up to date pricing! Logos are Trademarks of their respective owners.

IBM



ONE YEAR
ON SITE WARRANTY

- 486 DX-33 MHz Intel CPU
- 4MB RAM
- 250MB Hard Drive
- 1.44MB Floppy Drive
- 1MB VESA Local Bus Video Adaptor
- IBM Mouse & Keyboard
- Preloaded with PC DOS & Windows

\$1789⁰⁰

*Monitor Extra

▲ ValuePoint Systems



\$1899⁰⁰

▲ PCS 486DX Multimedia CD

- 486 DX-33 MHz VL
- 4MB RAM
- 1.44MB Floppy Drive
- 170MB Hard Drive
- Dual Speed CD-Rom
- Sound Card
- Built-in Speaker & Amplifier
- Mouse & 101 Keyboard
- SVGA .28 Monitor
- 1MB SVGA Video Adaptor
- Preloaded w/ MS DOS 6.2 & Windows 3.1.1
- 94' Compton's Encyclopedia **FREE**



▲ PCS Budget Package

\$1469⁰⁰

- 486DX-33 VESA Local Bus
- 4MB RAM
- 1.44MB Floppy Drive
- 170MB Hard Drive
- VESA Local Bus IDE I/O (2S/1P/1G)
- SVGA 512K Video Card
- SVGA 1024 x 768 Color Monitor
- Mouse & 101-key Keyboard
- Preloaded w/ MS-DOS 6.2 & Windows 3.1.1



SPECIAL

▲ Ultra Monitor by TTX

14" SVGA .28dp, NI
Two Year Warranty

\$289⁹⁹



Grand Opening



▲ PCS 486DX2-66VL

- 486 DX2-66 MHz
- 4MB RAM
- 1.44MB Floppy Drive
- 340MB Hard Drive
- VESA Local Bus IDE I/O
- VESA Local Bus 1Meg Video Adaptor
- SVGA Monitor .28 NI
- 101 Keyboard
- Preloaded w/ MS DOS 6.2 & Windows 3.1.1

\$1838⁰⁰



▲ PCS 486DX Black Diamond

- 486 DX-33 MHz VL
- 4MB RAM
- 1.44MB Floppy Drive
- 120MB Hard Drive
- VESA Local Bus IDE I/O
- 1MB Video Adaptor
- Black SVGA .28 Monitor
- Black Mouse
- Black Keyboard
- Preloaded w/ DOS 6.2 & Windows 3.1.1

\$1699⁰⁰



▲ PCS MultiMedia Systems

- IBM 486SLC2-66 VESA Local Bus
- 4MB RAM
- 1.44MB Mitsubishi Floppy Drive
- 125MB Hard Drive
- VESA Local Bus IDE I/O (2S/1P/1G)
- SVGA 512K Video Card
- SVGA 14" .28 dp Color Monitor
- Mouse & 101-key Enhanced Keyboard
- Preloaded w/ MS-DOS 6.2 & Windows 3.1.1
- Dual Speed CD-Rom, Sound Card and Speakers

\$1669⁹⁹

plus your choice of any 3 CD titles:
Mother Goose, Compton's Encyclopedia,
King's Quest V, Wing Commander,
Chessmaster 3000



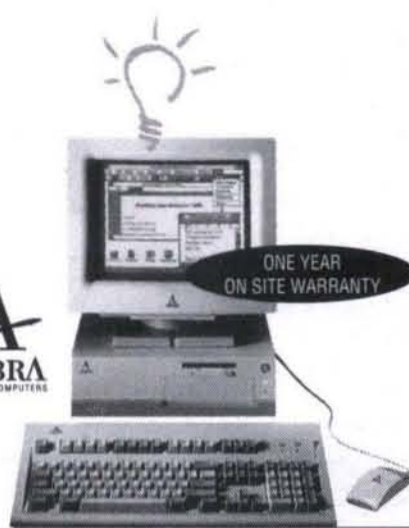
3A

COMPUTER
WAREHOUSE

1271 Denison St., Unit 52
Markham, Ontario
Tel: (905) 513-1811

Come visit our 5000 sq. ft. Showroom

AMBRA
PERSONAL COMPUTERS



ONE YEAR
ON SITE WARRANTY

▲ Ambra Achieva Systems

*Monitor Extra

Standard Features

- 4MB Ram • Mouse & Pad • Keyboard
- DOS & Windows • MS Works • Lotus Organizer

486SLC2-50

- 170MB Hard Disk • 1MB SVGA Card

\$1299^{00*}

486SX-25

- 170MB Hard Disk • 1MB SVGA Card

\$1249^{00*}

486DX-33

- 240MB Hard Disk • 1MB VL Bus Video Card

\$1669^{00*}

SPECIAL



\$99⁹⁹

ACTIVE 144/96 Fax Modem

Send & Receive, comes w/ Bit Fax & Bit Com Software

**Sound
BLASTER**

CREATIVE
CREATIVE LABS

16 BASIC

with PANASONIC interface

\$139⁹⁹

16 MULTI-CD

with MITSUMI, PANASONIC and
SONY interface

\$199⁹⁹

SoundTrek

with Built-in FM Transmitter & Speakers

\$69⁹⁹

**PANASONIC 562 CD-ROM and
94' Compton's Encyclopedia**

\$229⁹⁹

SPECIALS

Microsoft Mouse Ver.2 w/ Driver	\$33.99
Logitech Serial Mouse	\$54.99
EZ Serial Mouse	\$ 8.99
DEXXA Serial Mouse	\$19.99
CompuPartner Serial Mouse	\$12.99

HP Inkjet/Laser Printers

HP 520 Inkjet Printer 3 pmm	\$375.00
HP 500C Inkjet Color Printer	\$499.00
HP 560C Inkjet Color Printer	\$795.00
HP 4L Laser Printer, 1M, 4pmm	\$919.00

Cables, Switch Boxes, CD Titles,
Peripheral Boards, and many more...

Super Special

101 Enhanced Keyboard

\$99⁹⁹

(Limited quantity)
First come first served

• Cash & Carry • While Stock Lasts •

• Leasing Available • Details in Store •

ZODIAC SYSTEMS

2301 Brimley Rd., Unit 148B, Scar. M1S 5B6 (Brimley Rd. & Huntingwood Dr.)

Running out of **SERIAL PORT?** Having **IRQs CONFLICT?**Introducing **SUPER SERIAL CARD**

- ✓ Each port can be configured as COM1, 2, 3, or COM4
- ✓ Each port can set to either IRQ3, IRQ4, IRQ5, IRQ7, or IRQ9 (single port with one 16450 UART)
- ✓ Upgradable to maximum 2 serial ports with two 16550 Fast UART chips

Starting at \$18**16 bit Ethernet Combo****\$ 79**

- ✓ Software Configurable
- ✓ 10 BaseT & BNC
- ✓ NE2000 compatible
- ✓ Network Tested & Approved
- ✓ Supports Netware 2.x, 3.x, 4.0, Windows Workgroup 3.1 & 3.11 and most networks

VGA to TV Card**\$ 59**

- ✓ convert VGA signal to TV signal
- ✓ play all your favourite games on TV

Parallel Printer Card**\$ 19**

- ✓ LPT1 / LPT2 selectable

Networking Accessories: Wall Plates, BNC Connectors, Terminators, 10 BaseT cables, PC Systems, Upgrades, Accessories, Custom Made Cables, Concentrators, Repeaters, Transceivers

DEALERS WELCOME. PRICES ARE ALREADY CASH DISCOUNTED.**TEL: (416) 299-8082 FAX: (416) 292-6916****We Don't know about Computers, But we sure know about COMPUTER CARRYING SYSTEMS**

Come and see the world's best foldable Kart-a-Bag from U.S.A. We will be happy to demonstrate why it is the best. Also look at our Cameron Computer Cases which are top notch among others in quality.

SEE US AT BOOTH L2951**COMDEX/Canada '94**

Cameron of Canada Co. Inc.
29 Pemican Ct. Unit 2
North York, Ontario
M9M 2Z3

Tel: (416) 748-2922
Fax: (416) 748-2929



sector, living quarters, docking & customs and the observation dome.

Pulling back to the Main Menu, on the Ambassadors option, there are photos of each of the four ambassadors and again, text scrolls of the characters and the actors behind the elaborate makeup visages on the show.

The Makers are detailed text scrolls on the creative artists responsible for the

with a film snippet of a dream sequence from the series' first episode where Londo wanted to kill G'Kar. And in this film clip, G'Kar screams in agony.

When you exit, the program will 'disconnect' and bring you back to your HD. B5 Interactive requires 2MB of memory to run.

Another product deposited at various Internet and commercial network sites is Digital Trading Cards.

Moloshok acknowledges the popularity of trading cards with this special set of GIFs, pictures of the cast and shots of specific episodes of the show decorated with fancy B5-tinged



show.

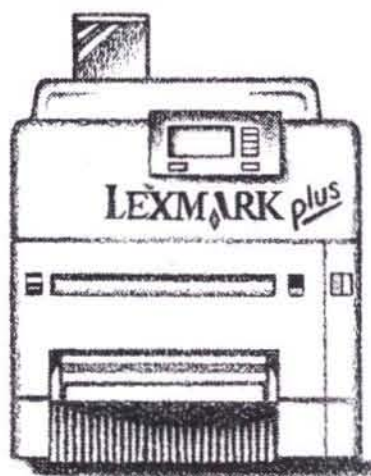
Clicking on Alliances, headshots appear for each important member of the station and if the user clicks on two boxes between characters, the program will reveal a relationship or in some cases, an 'unknown' relationship. Alliances is also where the program's second short film clip is located. If you choose Ambassadors Londo and G'Kar, you'll be treated

graphics and fonts.

"Each one has a number and a little fact on what the photo is about. There are 20 cards all together. The idea is for people to E-mail back and forth saying, 'I have cards number 1, 3, and 8, does anyone have 5 and 7?'"

"This is a 1990's way of exposing the show and creating word of mouth so people can look at this stuff."

B5 is probably the only current-running television show to make use of the Internet as a promotions tool. Sure, there's lots of Star Trek and even Star Wars material floating around, with B5 the Warner Brothers corporation has made available these items for the die-hard fans and computer freaks to lap up. And now, the fans themselves are creating documents.

Continued on page 14**We've made being obsolete obsolete.**

Easily upgradeable code protects your hardware investment for years to come.

Toronto
Compucentre Toronto
(416) 778-1300

Toronto
Entre Computer
(416) 863-6873

Toronto
Sidea
(416) 362-8088

Oshawa
Compute
(905) 433-7033

LEXMARK
1-800-358-5835

Mississauga
Abacus
(905) 821-8720

Mississauga
Canadian Laser Products
(905) 890-3600

Markham
Home Computing
(905) 415-0505

Markham
Parameter Driven Software
(905) 471-5242

**3.5" Floppy Disk
Reliable & Durable**

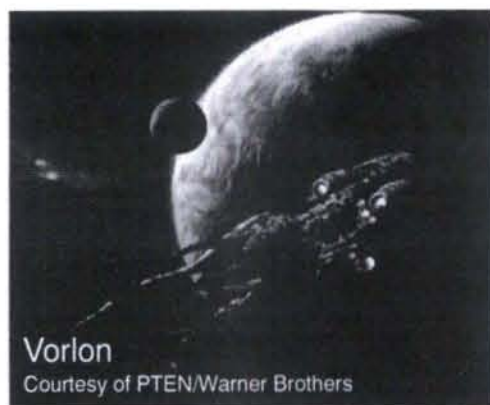
- We are a manufacturer under license of Sony Corporation.
- Our disks are all 100% Tested & Certified Error Free with Guaranteed Clipping Level.
- Available products: 2HD, 2DD, Video tape.
- Our own brand MEGA, OEM or bulk pack are also available.
- Duplicators & Wholesalers are Welcome.

YHC Cassette Int. Ltd.
75 Saintsbury Square,
Scarborough, Ontario
M1V 3K1 Canada
Tel: (416) 321-1179
Fax: (416) 321-8451

SoftCycle System
75 Saintsbury Square,
Scarborough, Ontario
M1V 3K1
Tel: (416) 297-1993
Fax: (416) 321-8451

Inmark Industrial Ltd.
1A Man Foong Ind. Bldg.,
7 Cheung Lee Street, Chai Wan, Hong Kong
Tel: (852) 558-2203 Fax: (852) 897-3700

T H A T ' S L E X M A R K F O R Y O U .



Vorlon
Courtesy of PTEN/Warner Brothers

When the pilot aired in February last year, it won an Emmy award for Best Visual Effects on television.

To complete the effects for a series of 22 episodes (not to mention pushing the special effects envelope even wider), it was necessary for folks at the Valencia, California-based company, Foundation Imaging to boost the processing power they had on the pilot for the series.

Babylon 5 SFX is created with a collection of Amigas using NewTek's Video Toaster technology.

Eight networked Amigas were used to generate spaceships and the 'authentic' zero-gravity space battles for the pilot. For the series, that was upgraded to 22 networked Amigas, giving them superior processing power to better meet the demands of any scenario or request that the writers and producers of the show could imagine. Specifically, in the pilot the server was a 3-gigabyte server while the series sports a 15GB server.

The reason the SFX is so fresh and innovative is it's done completely inside the computer

The reason the SFX is so fresh and innovative is it's done completely inside the computer, with none of the miniature models or time-consuming matte and compositing work used on previous shows such as *Buck Rogers*, *Battlestar Galactica* or on the *Star Wars* films. This is called computer generated imagery or CGI for short. Special effects today have advanced to a point where three-dimensional modeling can be rendered inside the computer and then output to film.

Foundation Imaging uses the Toaster's Light Wave 3D for an object's perspective and, via texture mapping, to give spaceship surfaces their distinctive looks (the details on the B5 station, for example).

"What you have is a fully equipped production studio inside your monitor," Paul Biegle-Bryant, FI's Network Specialist told Cinefantastique magazine. "All the facilities are inside. Our set for B5, electronically speaking, is five kilometers across. The space station has been scaled a half kilometer. You

The Stellar SFX of Babylon 5

Babylon 5 boasts razzle-dazzle, way cool feature film quality special effects (SFX).

BY FRANK GARCIA

The Compu Library

...The Price and Service Leader

SOFTWARE



Myst

Journey now to an island world surrealistically tinged with mystery and unlock the ancient betrayal of ages past.



Ultima VIII

Discover how to defeat the ruling Elemental Titans on their terms, while solving the mystery of their enigmatic pentagram



Lawnmower Man

Cyberjoke has entered Virtual Reality within the world's computer networks and now seeks revenge against Dr. Angelo.



Rebel Assault

Take control on any of four Star Wars vehicles in a variety of challenging piloting, targeting and combat scenarios.



Fleet Defender

The catapult officer calls for full afterburner. 50,000 pounds of thrust spools behind you as your F-14 strains for release.

OTHER SOFTWARE TITLES

Alone in the Dark 2.....\$49.95
SimCity 2000.....\$49.95
Seawolf SSN-21.....\$63.95
Jeopardy! Sports.....\$34.95
Subwar 2050.....\$53.95
Cobra Mission.....\$49.95
Metal & Lace.....\$43.95
Who Shot Johnny Rock? CD...\$54.95

Mega Race CD.....\$50.95
The Horde CD.....\$58.95
Quantum Gate CD.....\$57.95
Wolfpack CD.....\$89.95
Comanche CD.....\$89.95
Betrayal at Krondor CD.....\$36.95
Dunegeon Hack.....\$54.95
Civilizations for Windows.....\$69.95

MS Fine Artist.....\$55.95
MS Creative Writer.....\$49.95
Word Attack 3.....\$42.95
Lotus 1.2.3 v4 Trade Up.....\$124.95
WordPerfect v6.0 Win T-UP...\$149.95
The Cruncher.....\$52.95
MS Money v3.0.....\$29.95
MS Office v4.2 Trade-Up.....\$329.95

Compu Library PowerHouse

**Pentium 60MHz
8 MB RAM \$3395.00
512 K Cache
540 MB Hard Drive
Diamond Viper 2 MB**

HARDWARE

i486dx-33 Motherboard.....\$459.95
i486dx2-66 Motherboard.....\$699.95
Acerview 15" FS .28 Monitor..\$469.95
Acerview 17" FS .28 Monitor..\$879.95
Sony 33A DS CD-ROM.....\$219.95
Supra 14.4 Fax/Modem.....\$145.00
Logitech Easytouch w/OCR...\$259.95
Logitech 256 GS Scanman.....\$194.95

Pro Audio 16 Basic.....\$124.95
Pro Audio Spectrum 16.....\$235.00
Omni CD-ROM Drive.....\$279.95
WD 420MB Hard Drive.....\$419.95
Logitech Cyberman.....\$97.95
SoundBlaster 16 Basic.....\$139.95
SoundBlaster 16 MCD.....\$184.95
Compu Library 1.44MB Disks...\$5.50

NETWORKS MAINTENANCE ON-SITE SERVICE HARDWARE SOFTWARE ACCESSORIES

All hardware prices are C.I.B. cash, certified cheque or money order.

"Your Entertainment and Education Centre"

Store Hours:

Mon-Fri: 10:00 A.M TO 8:00 P.M.
Sat: 10:00 A.M TO 6:00 P.M.



Compu Library
4800 Sheppard Ave. East
#122, Scarborough, Ont.
(416) 298-0719



Continued on page 15

At \$1,599 it's a deal. With \$400 worth of free software, it's a steal!

The 7610 Desktop Laser Printer From Genicom.

- True 600 dpi output with both PCL 5e and Postscript emulation standard.
- High Resolution Control and Advanced Photoscale Technology for crisp text, graphics and images.
- 10 ppm printing for small workgroups, desktop publishing, electronic forms, pre-press and more.
- Standard automatic port and emulation switching.
- Accommodates compatible MIO interfaces for direct, internal network connectivity.

THE VALUE COULDN'T BE MORE GRAPHIC.

While supplies last, we're giving away two popular CD-ROM packages that really show off the capabilities of your new 7610 laser.



Masterclips™ The Art of Business includes 6,000 high-quality, full-colour clip art images and a comprehensive user's guide. Bitstream 500 font CD for Windows contains virtually every font you'll ever need.

Compare our performance, value pricing and free software offer. You won't find a sharper deal.

Call 1-800-268-0464 Ext. 329 for more information.

* Offer expires August 31, 1994 or while quantities last.



© 1994 Genicom Canada. All company and product names referenced are trademarks of their respective holders. Energy Star is a trademark of the Environmental Protection Agency. Offer not valid with other promotions. Free software also available with purchase of other Genicom non-impact printers. *Printer is NMSO approved.

Babylon 5 on Networks

Continued from page 12

Deposited at various FTP sites (which we published last issue) are GIFs, Episode Guides, Frequently Asked Questions (FAQ) lists and Electronic Press Kits. And these materials — as all things in the Internet tend to be — are often spread from the initial sites to many other sites, traveling from user to user.

According to a B5 Frequently Asked Questions list, there are allegedly as many as 100 GIFs available at the ftp.hyperion.com site. But Moloshok says that, at most, WB deposited somewhere between 30 to 50 GIFs. Any others would have been created by fans.

The B5 FAQ list answers many detailed questions a fan may have about the show. A copy of a B5 FAQ that was pulled from the World Wide Web runs 18 pages. FAQ lists are generally available for many cult TV shows, such as *seaQuest*, or *Quantum Leap*, at various FTP Internet sites, and they are often compiled by fans of that show.

The B5 episode guide became available on GENIE in December, 1993 and was revised for January, 1994 — before the show had even aired! It accurately lists in fairly good detail the titles, synopses, guest stars and directors for all 22 episodes in this season. Never before has a series guide been as widely available in such detail before the show has aired.

"That was not posted by us," says Moloshok. "There are a lot of fans of the show and of bulletin boards who work at TV stations that carry the show. A lot of people have access to material that they're able to upload ... We're delighted when someone does, because all it does is help the show."

News travels fast. The Warner Brothers V-P recalled an instance when "I saw a [TV] station list on one of the [computer] networks for our show. It reflected a sale that was only made not even a day before I saw the list. So, whoever was doing it, the information was quite accurate!"

There are also other assorted documents such as the B5 Actors Other Roles list; the B5 List of Lists by Mark Holtz (who's famous for other Lists of Lists), the B5 Grid Epsilon Log (detailed info and backstories and character profiles posted by J.M. Straczynski), GENIE and Usenet postings by Straczynski, a Technical FAQ and of course, a history of Ancient Babylonia.

Merchandising for the show is being handled in-house by Warner Brothers Con-

Babylon 5 Trading Cards

Courtesy of PTEN/Warner Brothers

sumer Products. One of the licences in development of interest to computing enthusiasts and B5 viewers in particular is that Compton NewMedia is assembling a B5 CD-ROM.

"Initially, it's going to be a disk that summarizes the show with background information," reveals Moloshok. "They'll have storylines and elements created specifically for the CD-ROM."

"You haven't seen a lot of products initially because with so many television shows coming and going, a lot of companies don't licence materials unless it gets picked up for at least a second season."

"If they [merchandise products] when the show first goes on the air, the show can be canceled and gone and then all this is on the market so they'd like to see it picked up for a second year."

Forthcoming merchandising includes a B5 video game from Genesis, and a comic book from DC Comics.



OWN A MODEM?

TRY COMPUTERLINK ONLINE FOR FREE



Actual Screen

COMPUTERLINK

"The Easy Way to BBS"

100 000 FILES-INTERNET ACCESS-66 CHAT LINES

BBS: (416) 233-5410 VOICE: (416) 233-7150
Supports ASCII, ANSI, & RIP (1200-14400 BPS)

ZyXEL Modem/Fax with Voice

Ultra High Speed up to 19.2Kbps Data & 14.4Kbps Fax

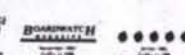
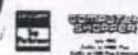
Booth L2151

COMDEX/Canada '94



- Maximum Throughput Speed up to 76.8Kbps
- Includes Zfax 3.0 VoiceFaxData Software with up to 1,000 Mailboxes, Fax on Demand, Caller ID log, etc.
- Caller ID and Extended Distinctive Ring
- Full Featured Windows Software Available
- Current Owners Call for Your Free Zfax 3.1 Software
- Additional Cellular Protocols Now Included

To make Your Wise Investment, call 416-534-1508 for a dealer near you.



ZyXEL
The Intelligent Modem

Lastly, a piece of B5 trivia seeps through during this interview which shows how much foresight is being put into the show: the reason that the main titles are in the letterbox format is because it's a preparation for the High Definition TV format.

"We are producing it so eventually we can transfer and reformat the film to High Definition TV," reveals Moloshok.□

SFX of Babylon 5

Continued from page 13

can move lights or objects anywhere within that space."

In the 1987 production *Captain Power and the Soldiers of the Future*, Visual Effects designer Ron Thornton, producers John Copeland and Doug Netter and executive producer J. M. Straczynski explored the possibilities of digital 3-D CGI with the villainous Soaron, a minion of the Lord Dread. Soaron was Dread's hunting dog who flew throughout the land ready to destroy Captain Power and his band of freedom fighters. As far back as 1987, while working on this show, Joe Straczynski had *Babylon 5* bouncing in his head.

Thornton's work is even more ground-

and create whatever he wants inside the computer and layer elements on top of each other. As an added bonus, he can manipulate and experiment with each element to his heart's content — at no added cost — until he's happy.

Using a five-step process, Thornton first drafts the objects for a scene and then lights the scene. After this, there's a technical direction stage, a rendering stage, and a final compositing to tape or film stage.

The *Babylon 5* station, if it were done on traditional SFX filming, would have taken six technicians working with materials six

weeks to complete, but Thornton did it all himself on CGI in two weeks. Here's another perspective: for the pilot, 80 shots were created at one-fourth the cost of using conventional means such as used in *Star Trek: The Next Generation*.

It's fair to say that computer graphics have reached a plateau where almost anything a writer imagines can now be done as a three-dimensional image on screen. It's like animation: if there's anything you can think about, it can be drawn. So powerful are today's capabilities that in an upcoming *Grail* with guest star David Warner, look out

for Ambassador Kosh (the big guy wearing a curtain) to reveal himself and be prepared to gasp, because he will be a CGI character.

The future of CGI has been scratched. It's rumored that in the upcoming *Star Wars* film that George Lucas plans for 1997, special effects will be rendered via CGI. Because it's all on a big 70mm film, the effects for that will have to be a higher quality than what we're seeing today on television. The mind boggles.□

It's fair to say that computer graphics have reached a plateau where almost anything a writer imagines can now be done as a three-dimensional image on screen

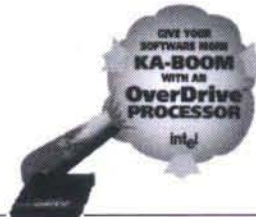
breaking when you realize the working budget for each episode including the SFX is less than the 1.2 million to 1.5 million that Paramount's *Star Trek: The Next Generation* had for each of their episodes. In fact, Thornton told us, "You have to bear in mind that *Babylon 5* is a low-budget show. We're averaging \$700,000 to \$750,000 per episode. We are continually looking for ways to squeeze more out of it."

The reason why CGI is fast becoming popular and may soon make modelmakers obsolete is that it eliminates time-consuming model construction of not just spaceships but anything else that needs to appear in the same frame with the spaceship. For example, if the script asks for 200 ships to exit from the jump point and head towards the station, traditional techniques would require designers to build every different ship and then composite them together into the scene. Each element they want in a scene would have to be created, shot and added separately. George Lucas had the luxury of enough money, time and manpower to build his galaxy, but in television there's none of that. Both *Battlestar Galactica* and *Buck Rogers* had generous networks footing the bills but *Babylon 5* doesn't need to rely on a large budget to create a universe.

For *Babylon 5*, in-computer modeling allows Thornton to assemble a smaller crew

SIRUS

The Pursuit of Excellence



Model 2220 Business PRO

- Genuine INTEL 32-bit Microprocessor
- VESA 32-bit Local Bus Main Board
- 128K External Cache
- AMI BIOS
- 4 Meg RAM - 70 ns
- SEAGATE / WESTERN DIGITAL 210 Meg IDE Hard Drive
- PANASONIC 1.44 Meg Floppy Drive
- CIRRUS LOGIC VESA Graphics Accelerator w/ 1 Meg
- SAMSUNG SynMaster 3Ne 14" Non-interlaced SVGA Monitor 0.28 dp
- Supports High Resolution of 1024 x 768
- VESA 32-bit IDE HDD / FDD Controller
- 2 x Serial / 1 x Parallel / 1 x Game Port
- Professional Mini Tower / Desktop Chassis
- 200W CSA Level-3 Power Supply
- BTC Enhanced 101 Keyboard
- MICROSOFT DOS ver 6.2 installed w/ Manuals
- KEYTRONIC / MITSUMI Serial Mouse
- 1 Year Parts & 2 Year Labour Depot Warranty

i486SX-33 \$1,395
SKU # 222-4S33T

i486DX-33 \$1,595
SKU # 222-4D33T

i486DX2-66 \$1,795
SKU # 222-4T66T

Multimedia Upgrade Solution

Multimedia Kit **\$179***

- SOUND BLASTER 16 16-bit Sound Card
- KOSS Magnetic Shielded Satellite Speakers

Multimedia Kit w/ PANASONIC 562B 2x CD-ROM **\$379***

*With system purchase. Prices good only for upgrades at the time of system purchase.

Performance Enhancement

- MICROSOFT WINDOWS for Workgroup 3.11 Upgrade **\$59***
- KATRON High Performance 16-bit Ethernet Adapter **\$99***
- US ROBOTICS 14.4 Fax / Modem - internal **\$179***
- MATROX MGA ULTIMA 64-bit Graphics Accelerator (Visit our Markham Store for Demo) **Call**

*With system purchase. Prices good only for upgrades at the time of system purchase.

Prices and specifications are subject to change without notice. • Intel and the Intel Inside Logo are registered trademarks of Intel Corporation. • All other brand and product names are trademarks or registered trademarks of their respective companies. • Prices shown are cash discounted and do not include shipping/handling charges and sales taxes. • Sirus reserves the right to substitute components of equal or greater quality or performance. • E. & O.E.

MARKHAM

Unit 9, 250 Cochrane Dr.
(Woodbine & Hwy 7)
Tel: (905) 470-2412
Fax: (905) 470-1873

NEWMARKET

Unit 30, 1111 Davis Dr.
(404 Town Centre)
Tel: (905) 853-2379
Fax: (905) 853-6278

BRAMPTON

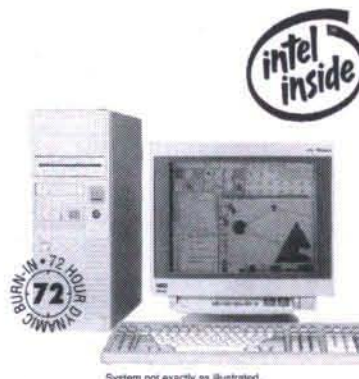
Shop 95, Shoppers World
(Hwy 10 & Steeles)
Tel: (905) 459-2899
Fax: (905) 459-8733

OAKVILLE

207 Church Street
(West of Dunn)
Tel: (905) 849-3868
Fax: (905) 845-0411

NORTH YORK

NEW Corporate
Computer Centre
Coming Soon



Model 3600 Reference STANDARD

- Genuine INTEL 32-bit Microprocessor
- VESA 32-bit Local Bus Main Board
- 128K External Cache
- AMI BIOS
- 4 Meg Ram - 70 ns
- SEAGATE / WESTERN DIGITAL 345 Meg IDE Hard Drive
- PANASONIC 1.44 Meg Floppy Drive
- PANASONIC 562B Double Speed Internal CD-ROM
- 15" Non-interlaced Monitor - 0.28 dp
- VESA 32-bit IDE HDD / FDD Controller
- 2 x Serial / 1 x Parallel / 1 x Game Port
- MICROSOFT WORKS for WINDOWS CD-ROM version
- MICROSOFT DOS ver 6.2 installed w/ Manuals
- MICROSOFT WINDOWS ver 3.11 installed w/ Manuals
- MICROSOFT Serial Mouse
- 1 Year Parts & 2 Year Labour Depot Warranty

GRAPHICS ACCELERATOR SERIES

Features for SX-33 and DX-33:

- TRIDENT 9400CXI VESA Graphics Accelerator w/ 1 Meg
- ORCHESTRA 15" Non-interlaced Monitor - 0.28 dp
- Supports Ultra High Resolution of 1280 x 1024
- Professional Mini Tower / Desktop Chassis
- 200W CSA Level 3 Power Supply
- BTC Enhanced 101 Keyboard

i486SX-33 \$2,095
SKU # 360-4S33T

i486DX-33 \$2,295
SKU # 360-4D33T

WINDOWS ACCELERATOR SERIES

Features for DX2-50 and DX2-66:

- DIAMOND STEALTH 32 VESA w/ 2 Meg DRAM using Tseng Lab W32p, 32-bit interleaved Windows Accelerator
- VDD 15" Non-interlaced Monitor - 0.28 dp
- Supports Ultra High Resolution of 1280 x 1024
- Complies with Swedish MPR-II Low Radiation Standard
- Professional Mid Tower Chassis
- 200W CSA Level 3 Power Supply
- KEYTRONIC Enhanced 101 Keyboard

i486DX2-50 \$2,795
SKU # 360-4T50T

i486DX2-66 \$2,895
SKU # 360-4T66T

Model 5360 Tower of POWER

- Genuine INTEL High Performance Microprocessor
- 8 Meg RAM - 70 ns
- PANASONIC 1.2 & 1.44 Meg Floppy Drives
- VDD 17" Non-interlaced Monitor 0.28 dp
- Supports Ultra High Resolution of 1280 x 1024
- Complies with Swedish MPR-II Low Radiation Standard
- KEYTRONIC Enhanced 101 Keyboard
- MICROSOFT DOS ver 6.2 installed w/ Manuals
- MICROSOFT WINDOWS ver 3.11 installed w/ Manuals
- MICROSOFT Serial Mouse
- 2 Year Parts & Labour Depot Warranty

SUPER FAST GRAPHICS ACCELERATOR SERIES

Features for DX2 and DX4:

- Genuine INTEL 32-bit Microprocessor
- VESA 32-bit Local Bus Main Board
- 256K External L2 Cache
- INTEL OverDrive ZIF Socket 3
- Upgradable to DX4 & PENTIUM OverDrive Technology
- SEAGATE / WESTERN DIGITAL 420 Meg IDE Hard Drive
- DIAMOND STEALTH 64 VLB w/ 2 Meg VRAM using S3's Vision 864 Graphics Accelerator or DIAMOND VIPER VLB w/ 2 Meg VRAM using Weitek P9000 Graphics Accelerator
- VESA 32-bit IDE HDD / FDD Controller
- 2 x Serial / 1 x Parallel / 1 x Game Port
- Professional Mid Tower Chassis
- 200W CSA Level 3 Power Supply

i486DX2-66 \$3,495
SKU # 5360-4T66F

DX4-100 \$3,995
SKU # 5360-DX100F

64-BIT GRAPHICS ACCELERATOR SERIES

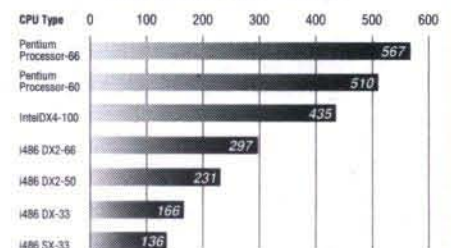
Features for Pentium-60 and Pentium-66:

- Genuine INTEL PENTIUM 64-bit Microprocessor
- Premium PCI Local Bus Main Board
- 256K External L2 Cache
- INTEL OverDrive ZIF Socket 4
- SEAGATE 540 Meg SCSI Hard Drive
- ATI Mach 64 PCI Graphics Accelerator w/ 2 Meg or #9GX64 S3's Vision 864 PCI Graphics Accelerator w/ 2 Meg
- Fast 32-bit PCI SCSI-2 Controller
- Professional Full Tower Chassis
- 300W CSA Level 3 Power Supply

Pentium - 60 PCI / SCSI Series \$4,795
SKU # 5360-PT60F

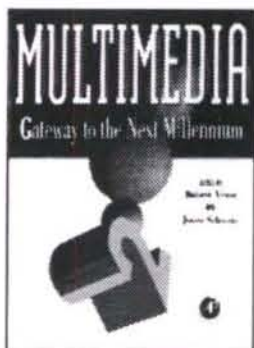
Pentium - 66 PCI / SCSI Series \$4,995
SKU # 5360-PT66F

The Intel iCOMP™ Index



Source: iCOMP™ - A Simplified Measure of Relative Intel Microprocessor Performance

MULTIMEDIA MAGIC



Re-inventing Hollywood

Tinseltown Embraces Siliconia

Excerpts from *Multimedia: Gateway to the Next Millennium*
a book from AP Professional scheduled for release in July

BY JOYCE SCHWARZ

By the year 2015, Hollywood as we know it in the '90s may undergo a change so profound that its impact will be equivalent to the advent of "talkies," television and home video combined.

A major paradigm shift in Hollywood film, television and video production is evolving, powered by new technologies in computers, digital film, compact discs, interactive multiplayers and new delivery systems, including fiber optic cable.

To most of Hollywood, multimedia is still a computer "nerd" term. However, mention the phrase "interactive" and talk bottom line numbers and you've captured a share of the more adventurous Hollywood dealmakers and their Silicon Valley counterparts.

According to Joe Miller, Sega of America's senior vice president, the interactive business totaled revenues of US\$4.5 billion last year, rivaling the theatrical box office numbers of \$5.2 billion.

The interactive business has garnered not only a financial niche but also new respect, as Hollywood studios form their own divisions and begin to produce multimedia product to complement box office hits.

Speaking at Hollywood's ShoWest industry trade confab, Columbia pictures Chairman Marc Canton said, "in the future we won't just see the movie, we will interact with it, feel it, play it and ride it. He also added that without significant improvement in the way theaters present movies and a much greater commitment to making quality entertainment and more diversified films, the theatrical business as Hollywood knows it could be replaced by the end of this decade.

So, is it any wonder that in May, 1994, 20th Century Fox became the last major studio to form an interactive division?

Paramount and Universal announced similar divisions in 1993. Universal came out with its first release, "Jurassic Park" in spring, 1994 on the 3DO platform.

Warner, Sony and Disney have had new media, computer software and interactive divisions for several years, producing and licensing products for various platforms. In April, 1994 MCM surprised the entertainment and computer industries by signing a co-production deal with Sega of America Inc. to produce television shows, games and movies.

To date, however, major studios and traditional Hollywood have not been able to rival the success of independent game developers such as Acclaim and Electronic Arts, which generate about \$500 million a year. As Jeff Berg, head of ICM's talent and literary agency said publicly recently, "Sega and Nintendo last year outgrossed the motion

picture industry. And that's just two companies."

Studios want their "fair share" and more of the burgeoning multimedia marketplace and see other potential money making arenas in "edutainment" (education and entertainment intertwined) and "infotainment" (entertainment oriented information presentations) for homes, schools, work places and public spaces.

Multimedia and its byproducts may literally create an electronic landscape that brings the glittering touch of Hollywood to all aspects of our lives.

For almost 100 years, film has reigned supreme in the kingdom of tinseltown. For the past 50 years consumers have lived in the "age of television". Videocassette tapes and cable enhanced these powerful formats rather than replacing them in the marketplace.

Between 1992 and 1994, a virtual cinematic multimedia panorama of technological and creative developments began to bridge the gap between Hollywood and Silicon Valley. Every

day, stories about new technological advancements and

multimedia deals abound in Hollywood film and trade papers. But it is stars and films that will continue to advance the medium to the big moneymaking level Hollywood is best

known for producing.

The "star power" of multimedia continues to heighten weekly as slates of new products featuring stars are announced.

High rated "TV Q" (a measure of television audience recognizability) names on or coming to your computer screen or set top box include Jason Hervey ("The Wonder Years" currently starring as the evil Troll Leader in Activision's "Return to Zork.")

Such action heroes as Wesley Snipes and Sylvester Stallone filmed extra footage of "Demolition Man" for Virgin Interactive's 3DO version of the movie. Of course, many Virgin aficionados have "met" Donald Sutherland, as a former KGB agent who fights evil, corruption and lies in "Conspiracy."

Sega has attracted its share of stars too — Deborah Harry, the former Blondie rocker, stars in Double Switch for Sega CD. Lots of stars' voices can be heard via sound blasters in the game world on such projects as the CD-ROM version of "Gabriel Knight: Sins of the Fathers" where you can hear Tim Curry, Mark Hamill, Michael Dorn (from Star Trek New Generation fame) and Efrem Zimbalist, Jr.

Other stars you'll find on upcoming CD-ROMS include Brian Keith, Margot Kidder, Grace Zabriskie, Kirk Cameron, Hulk Hogan, Chris Lemmon, and even super model Carol Alt.

For the most part, multimedia's featured actors have been unknown or little known performers. And many develop their own following in the "game" or "cinematic experience" arena. Robert Hirschboeck, a well known Shakespearean actor has captured many new media fans as the evil mansion owner in Trilobyte/Virgins "The 7th Guest" and "The 11th Hour". Video games have served as a connecting point between the

Compass System
486DX-33 486DX2-66
\$1,499 \$1,699

Intel CPU
Cache RAM 128k exp. 256k
Memory 4MB exp. 32MB
FD1.44MB, HD 245MB
I/O 2S / P / G Ports
VLB SVGA Card 1MB exp. 2MB
Mini Tower Case
101 Enhanced Keyboard
MS Compatible Mouse
14" NI SVGA .28dp1024X768

2 Yr Parts & Labor Warranty

Compass Pentium
P5-60MHz P5-90MHz
\$4,500 \$5,300

Intel CPU & Mainboard
Cache RAM 256k
Memory 16MB exp. 128MB
FD1.44MB, HD 525MB
PCI SCSI Controller
ATI PCI SVGA Card 2MB
Full Tower with Digital Display
Keytronic / Honeywell Keyboard
Microsoft Mouse II
15" NI SVGA .28dp LR 1280X1024

2 Yr Parts & Labor Warranty



Packard Bell

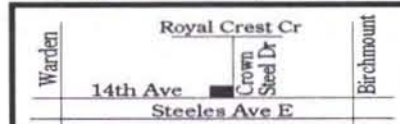


Bondwell Notebook

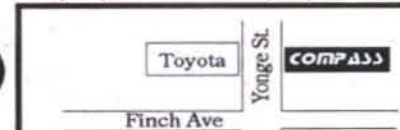
P5-90 MHz Multi-processor
Technology Coming Soon

COMPASS

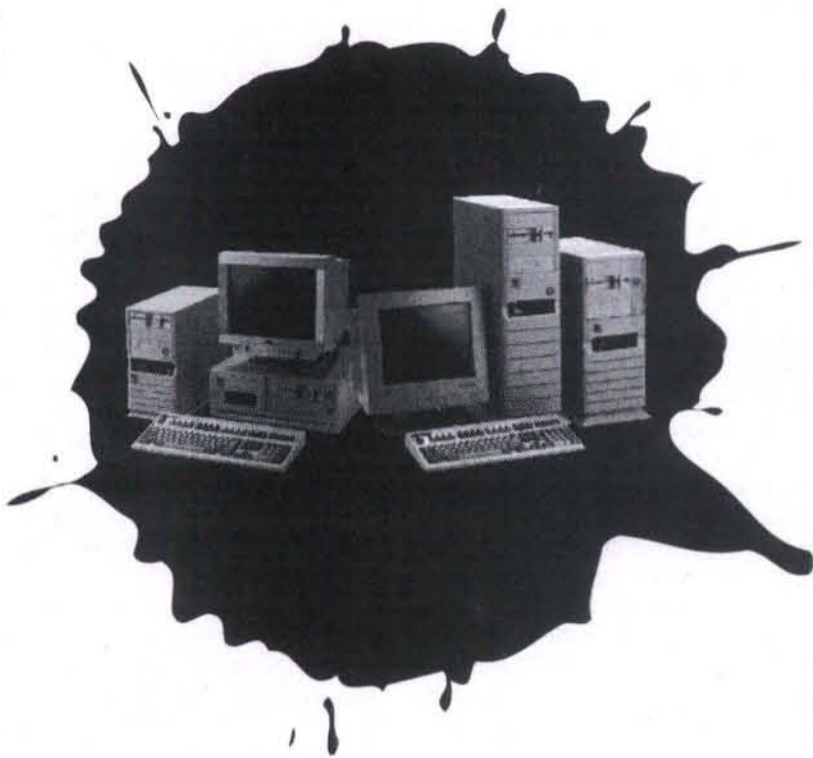
18 Crown Steel Dr, Ste 106, Markham
Tel: (905) 415-8855 Fax: (905) 415-8854



6101 Yonge St., North York
Tel: (416) 512-8650 Fax: (416) 512-7815



All Prices are CASH DISCOUNTED and subject to change without notice.



NOVELL

Microsoft

PENTIUM PROTURBO Graphics Workstation

ATI WIN TURBO Video Processor w/ 2MB VRAM

- 125 million WinMark
- The FASTEST VIDEO PROCESSOR

- 64 Bit Processor
- Flicker Free 100 Hz Refresh

INTEL PENTIUM*-60MHz CPU (256KB Cache)

- 3 x PCI Local Bus Slots • Built-in Disk & I/O Controller

AmPAQ Graphite 15 UVGA NI Monitor

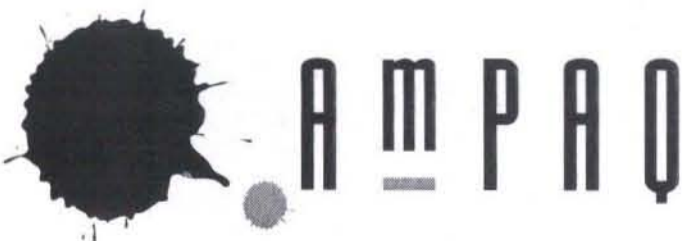
- 1280 x 1024 Non-interlaced • .28 dp, Power Management/
- Energy-Star Compliance • Swedish low Radiation MPR-II standard
- Digital Control • Colour temperature

540MB IDE Fixed Disc Drive

8MB 72-pin SIMM Memory (128MB max.)

(PLUS: all standard features listed)

\$ **3799**
while quantities last



* Intel 386, Intel 486, Intel Inside & the Intel Inside logo are trademarks of Intel Corporation. All other trademarks are trademarks of their respective companies.
** Computability Guarantee covers all major operating systems. Please contact your AmPAQ Sales representatives in your area for a complete list of operating systems covered by our guarantee.
† These components under this special promotion are different from the ones shown above. Prices subject to change without notice.
†† Performance is rated based on Bench Mark test from MatLab.

PCI ULTIMATE 486* DX-II 66MHz System

INTEL 486*DX-II 66MHz CPU (256KB cache)

- 3 x PCI Local Bus slots.

AmPAQ Graphite 15 UVGA NI Monitor

- 1280 x 1024 Non-interlaced • .28 dp, Power Management/
- Energy-Star Compliance • Swedish low Radiation MPR-II standard
- Digital Control • Colour temperature

ATI ULTRA PRO Video Processor w/ 2MB VRAM (PCI Local Bus)

- Upto 35 Millions Winmarks

540MB IDE Fixed Disk Drive

8MB 72-pin SIMM Memory (128MB max.)

SCSI-II / IDE Local Bus Controller

- Ideal for Disk Intensive Applications

(PLUS: all standard features listed)

\$ **3099**
while quantities last



ULTIMATE/ENERGY STAR 486* DX-II 66MHz System

INTEL 486*DX-II 66MHz CPU (256KB cache)

- 3 x VESA Local Bus Slots • Energy Star Compliance

AmPAQ Graphite 15 UVGA NI Monitor

- 1280 x 1024 Non-interlaced • .28 dp, Power Management/
- Energy-Star Compliance • Swedish low Radiation MPR-II standard
- Digital Control • Colour temperature

ATI ULTRA PRO Video Processor w/ 2MB VRAM (VESA Local Bus)

- Upto 32 Millions Winmarks

340MB IDE Fixed Disk Drive

4MB SIMM Memory

VESA Local Bus IDE Non-caching Controller

- Ideal for High Performance Disk Intensive Applications

(PLUS: all standard features listed)

SPECIAL
\$ **2499**
while quantities last

Performance Equals
IBM RS-6000^{††}
a RISC Based System



VLB 486/33MHz System

INTEL 486*SX 33MHz CPU

- VESA Local Bus Technology w/ 2 VLB Slots

14" Super VGA Non-interlaced Monitor

- 1024 x 768 resolution, .28dp.

32-Bit Super VGA Graphics Controller w/ 1MB RAM

170MB IDE Fixed Disk Drive

4MB SIMM Memory

32-Bit IDE I/O Controller

(PLUS: all standard features listed)

\$ **1299**
while quantities last



Standard Features:

- AmPAQ PRO-Series Enhanced 101-key Keyboard[†]
- 1.44MB Floppy Disk Drive
- AmPAQ PRO-Series Mini-tower / Classic Desktop Chassis[†]
- 200Watt CSA Approved Power System
- 2 Serial, 1 Parallel & 1 Game Port
- MICROSOFT DOS 6.21 (installed with software & manual)
- Complimentary 3-Button Mouse & Mouse Pad

RETAIL / END-USER : (416) 924-9916

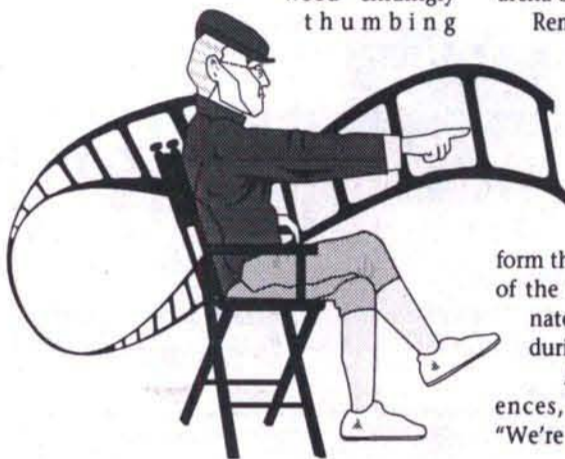
CORPORATE & GOVERNMENT CLIENTS : (416) 960-2010

"Old Hollywood" and the "New Hollywood."

The boundaries of Hollywood's landscape have fast forwarded beyond what even digital animators could fathom. The "New Hollywood" is developing not just hundreds of miles north of Los Angeles in Silicon Valley or San Francisco's multimedia gulch, but across the United States and around the world. The impact of this, nationally and internationally, is almost impossible to measure, but the media is certainly forecasting a fascinating future.

In what *Business Week* magazine is terming the "entertainment economy", Hollywood will become more a state of mind than a place in any particular country or state.

The *Wall Street Journal* called this new vision "Hollywired" in its special National Association of Broadcasters (NAB) spring, 1994 supplement. And Northern California pundits referred to their arena as "Sillywood" chidingly



their digits at the potential merging of Hollywood and Silicon Valley on one hand and on the other signing alliances and deals that may or may not materialize.

The entertainment economy and the best of the "New Hollywood" are contributing to new prosperity in pockets across the country. From Branson Mo. to Las Vegas to Orlando to Shea Stadium, Disney, Blockbuster, Matsushita's MCA, Paramount and Viacom have broken ground for a staggering array of theme parks, theaters, casinos and ballparks. It's estimated that more than \$13 billion in big entertainment projects will be in the pipeline by the mid 1990s, with more planned.

Will couch potatoes accept the new media in every walk of life on the road to the electronic highway? Yes, if Hollywood has anything to say about it. Hollywood will use its star power to dominate the 500 channels, move into prominence in the games world and claim a strong stake in the new arena of location-based entertainment.

Remember, Hollywood has a century of experience on its side. Early film pioneers like Edison tinkered in laboratories and their early "flickers" were destined to fascinate only a privileged few. It took marketing prowess and creative genius combined with technical innovation to form the building blocks for the ivory towers of the Hollywood studios that have dominated the world's entertainment market during the past century.

At most multimedia industry conferences, moderators seriously announce "We're all here looking for the next Chap-

lin." For like early Hollywood, today's multimedia world is led by great innovators who are designing today's on-ramps to the new electronic highways of tomorrow.

The Lure Of Multimedia

In the early '90s the venerable trade paper *Variety* started to cover the technology beat with a regular column. The *Hollywood Reporter* published its first special interactive media supplement.

Financial analysts swarmed like bees learning new buzzwords at the new media trade shows. And a new "gold rush" fanned excitement in San Francisco's multimedia gulch, where a flurry of fledgling multimedia companies began to paint a new landscape dotted with developers and high definition pixels.

Still, many Hollywood executives, producers and directors were skeptical at best and oblivious at worst. When this researcher called the top studios and networks in preparation for a special book, *Multimedia 2000* for the National Association of Broadcasters prepared in Spring, 1993, the most frequent answer to the question "who handles your multimedia?" was "what is multimedia?" and the second was "you need to talk to our MIS" department or our "computer people."

Those were the days when if you said "CD", the first thing a Hollywood mogul thought was that it was time to roll over his \$50,000 certificates of deposit, and television anchors were voicing amazement about the rise of the CD-ROM (sic) market. And many Hollywood VIP's thought that a CD-I was a music compact disc personalized (like a

license plate), not the compact disc interactive multiplayer then being launched by Philips in Blockbuster's 2,000 stores nationally.

Even today, confusion abounds about the difference between multimedia, new media, virtual reality and 500 channels. And if you're not a member of IICS (International Interactive Communications Society) or signed up for the new media expos, don't read *Multimedia Week* or *WIRED* or a post production journal like *Film & Video* or *In Motion* or the Hollywood trades and *Byte* magazine and *Personal Computing* and aren't in a SIG group (special interest group) on

We're all here looking for the next Chaplin

line on Prodigy or America Online or a subscriber to the newly popular "Hollywood On-Line", you may still be waiting for more visible signs of a multimedia revolution. Dollar deals in multimedia are figured in hundreds and thousands, not millions like Hollywood studios thrive on.

For many on the "cutting edge of multimedia", the new world is as open as the Wild West. If you work for Introvision or ILM or Iwerks or Rhythm & Hues or Pacific Data Images or at Kodak's all digital Cinesite

Continued on page 24

Yeuko Computer parts & service (1988)

29 Passmore Ave., unit 29, Scarborough Ont., M1V 4V2 (one block south of Steeles)

Tel: 416-321-8558, 416-321-3018 Fax: 416-321-3019 (half block east of Kennedy)

Hard Drives

170 MB IDE 64k cache 14ms MAX	2YR	\$259
250 MB IDE 64k cache 16ms IBM	2YR	\$299
250 MB IDE 64k cache 13ms WD	3YR	\$309
350 MB IDE 64k cache 12ms SEA	2YR	\$369
350 MB IDE 128k cache 12ms WD	3YR	\$379
420 MB IDE 128k cache 14ms CON	2YR	\$429
420 MB IDE 128k cache 12ms WD	3YR	\$439
420 MB IDE 256k cache 12ms SEA	2YR	\$449
540 MB IDE 256k cache 13ms MAX	2YR	\$539
540 MB IDE 256k cache 12ms WD	3YR	\$549
1.0 GB SCSI 256k cache 10ms TOS	3YR	\$999

Main Boards

386SX-40 AMD CPU, AMI BIOS	\$97
386DX-40 128k cache, AMD CPU, AMI BIOS	\$149
486DLC-33 128k cache, Cyrix CPU, AMI BIOS	\$169
486DLC-33 TI CPU, AMI BIOS	\$139
486SLC-33 64k cache, IBM CPU, AMI BIOS	\$159
Opti 386DX/486DLC/SX/DX/DX2/universal w/128k, vlb, no cpu, clock gen, ami	\$133
486DX VLB, ZIF, green, 128k, AMI, no cpu	\$159
How to build your first computer video tape	\$39

CPUs & Math-Co

Math-coprocessors	\$Call
486DX2-66 AMD	\$425
486DX2-66 Intel	\$Call
486DX-33 AMD	\$275
486DX-33 Intel	\$Call
486DX4-90 Intel	\$999
Pentium 90	\$1450

Floppy Drives

Panasonic/Toshiba 1.2m 5.25in.	\$55
Sony/Toshiba/Panasonic 1.44m 3.5in.	\$48
Canon dual floppy drive (1.2 & 1.44)	\$139

Ram Memory

1M 30 pin 70ns	\$55
4M 30 pin 70ns	\$199
4M 72 pin 70ns	\$188
8M 72 pin 70ns	\$355
16M 72 pin 70 ns	\$828
32M 72pin 70ns	\$1635
44256 DRAM	\$8
1M (1100) DRAM	\$8
PCMCIA 4M module	\$266

Video Cards

Cirrus Logic 1M VLB win. acc. 16M color	\$99
WD(Paradise)90C33 1M true 32bit acc.	\$129

Cases

Mini-toweror Desktop 5 bays 200w CSA	\$60
Mid-tower 6 bays 220w CSA	\$75
FullTower 8bays 250wdigital CSA	\$135
Server Tower 10bays door, wheels, 2 fans	\$199

Monitors (2 yr Warranty)

Daewoo 14" SVGA 0.28dp color int.	\$328
Daewoo 14" SVGA 0.28dp color non-int.	\$355
Daewoo 15" UVGA 0.28dp flatscreen NI	\$555
Daewoo 17" UVGA 0.26dp flatscreen NI	\$999

Printers

HP-520 600x300 dpi 3ppm Inkjet	\$379
HP-560C 600x300 dpi 3ppm color Inkjet	\$799
Canon BJ200e 360x360 dpi Inkjet	\$349
Canon BJ600C 360x360 dpi Color Inkjet	\$699
Okidata OL400e 600 dpi 4ppm 2m LED	\$839

Keyboard

Daewoo 101key AT w/cover	\$24
Honeywell professional 101key AT	\$39

I/O Cards & Controllers

AT I/O 2 ser, 1 par, 1 game w/cable	\$15
IDE 2HD & 2FD ISA 16 bit	\$15
Super I/O 2 IDEHD, 2FD, 2ser, par, game 16bit	\$18
VLB Super I/O 2IDEHD, 2FD, 2S, 1P, 1G 32bit	\$39
4 IDE HD & 4FD, 2Ser, 1Par, 1Game	\$95
Adaptec 1522 SCSI HD, FD 16bit	\$129
Adaptec 1542CF SCSI HD, FD Bus Master!	\$288
Always AL2000S SCSI HD, FD 16bit	\$249
Ultrastor 34F SCSI HD FD 32bit VLB FAST!	\$299
Storage Plus SCSI HD & FD 16bit	\$65

Multimedias

Soundblaster 16 multi-CD	\$159
Soundblaster pro	\$99
Sony 33A dbl speed	\$229
Panasonic 562 dbl speed	\$229
Mitsumi FX001D dbl speed	\$229
Mini speakers	\$10
Mini amplified speakers	\$29
AC/DC adaptor	\$10

Modems & Faxmodems

96/24 S/R faxmodem int. s/w	\$59
Zoltrix 14400 S/R faxmodem int. s/w v.32bis	\$139
US Robotic 14400 S/R faxmodem int. v.32bis	\$169
US Robotic 14400 S/R faxmodem ext. v.32bis	\$199
PCMCIA 2400 int. modem	\$69

Mice & joysticks

Super 3 button mouse MS comp.	\$14
Microsoft mouse II (J mouse)	\$35
Mouse pad	\$2
Quickshot analog joystick	\$19

Repairs

Monitors (except tube/flyback damage) flatrate	\$75
Computer service	\$35/hr



Super Anniversary Sale!

486DX-33 Only \$1349

486DX2-66 only \$1499

Standard config.

Build-in Math-co & 8K Int. Cache
VESA Local Bus MB 3 VLB slots
4M RAM, 128K External Cache
250M HD, 1.44M Floppy Drive
Minitower Case 200W CSA P/S
1M VLB Video Card 16M color
101 Key Enhanced AT Keyboard
14" Non-int. Monitor 0.28 DP
2 serial, 1 parallel, 1 game ports
1 yr parts & 3 yr labour warranty

Network Cards & Accessories

16 bit Ethernet NE2000 comp. BNC/RJ45	\$69
Terminators (RG 58/59/RJ 62)	\$4
BNC end connectors/T connectors	\$4
10ft network cable w/connectors	\$10
Network cables (RG 58/59/RJ 62)	\$0.35/ft

Cables & Accessories

6 ft printer cable	\$4
15 ft bi-directional Laser printer cable	\$12
25 ft bi-directional Laser printer cable	\$20
Gender changers	from \$4
Auto printer switch 2 to 1	\$35
VGA monitor switch 4 to 1	\$35
486DX CPU heatsink w/fan	\$15
Pentium CPU heatsink w/fan	\$35

**20 Formatted
LOGIC Brand
HD Diskette
MS Compatible
MOUSE & Pad**
*With any Computer System
purchase (while quantities last)*

MID Tower Case & 200W P.S.
4M Ram Fast Ram 70ns
Enhanced 101 KB
Japanese 1.44 MD
210M HD 16ms 64K Cache
LOCAL BUS Windows Acc. Card
LOCAL BUS IDE CONT.
14" 1024x768 SVGA Nt. 28mm
Panasonic 562 (Double Speed)
Sound Blaster 16 Sound Card
MAY'S BEACON Typing
CHESSMASTER 3000
US ATOs & World Atlas
DOS 6.2 & Windows 3.11

#1
3.5" Diskette
LIFETIME WARRANTY
DISKETTES
WHITE
BOX
\$4.79
Minimum
Purchase
2 Boxes

LOGIC
Brand
11th Disk
FREE

\$6⁴⁹
11/Box

7th GUEST
& 10 DSHD 3.5"
Formatted Diskette
\$34⁹⁹

Microsoft
Compatible
MOUSE
\$9⁹⁹

COREL DRAW!
3.0 MPC
*With any CD Drive
Purchase (while quantities last)
\$59⁹⁹

Microsoft **ENCARTA** 1994
*'With any CD Drive Purchase
 (while quantities last)*
\$59⁹⁹

Every Day Of The Week

ALL BOOKS 20% OFF

- **Panasonic Dbl Spd CDR**
- **Sound Blaster 16 Basic**
- **MS ENCARTA '94**
 - King Quest V - Stella 7
 - Doom - World Atlas
 - Time: Man of the Year
 - World Fact Book
 - Best of Media Clips
 - PC Karaoke Classic
 - CD Rom of CD Romms
 - PC Animation Festival
 - CP-55 Speakers
 - Headphones, Microphone

\$449⁹⁹

Indian Jones Fate Atlantis	\$35.99	Forever Growing Garden	\$39.99
7th Guest	\$34.99	Family Education Collection	\$24.99
PC-SIG 13th Edition	\$39.99	20th Century Almanac	\$19.99
King Quest VI	\$24.99	Total Baseball	\$19.99
MS Bookshelf '93	\$49.99	Time Table of History	\$19.99
Days of the Tentacle	\$34.99	Bible & Religion	\$14.99
Travel Companion	\$24.99	Animals MPC	\$24.99
Micropose Best 4 Games	\$24.99	CIA World Fact Book	\$24.99
Atlas 4.0 MPC	\$19.99	Mayo Clinic Health Book MPC	\$19.99
Audubon Mammals	\$19.99	Death Star Arcade	\$17.99
Compton Inter. Ency. 94	\$54.99	Critical Path	\$39.99
Playing With Languages	\$19.99	Iron Helix	\$29.99
Time Almanac '92	\$19.99	Mad Dog McCree	\$34.99
N. American Bus. Phone Bk	\$24.99	Draculor Unleashed	\$44.99
So Much Shoreware 4	\$29.99	Return to Zork	\$25.99
Desktop Imaging	\$19.99	2nd Granddaddy & Me	\$29.99
Supertoon	\$24.99	Journeyman Project	\$39.99
Quicktoon	\$24.99	Corel Photo Sampler	\$14.99
Mario Missing Dix.	\$24.99	Family Doctor 3rd Ed.	\$34.99
Electronic Home Lib.	\$14.99	Anthony Robbins Power Talk	\$24.99
EZ Languages (6 Lang.)	\$21.99	Fatty Bear's Birthday Surprise	\$17.99
King Quest V	\$24.99	Fatty Bear Fun Pack	\$17.99
Kids Zoo/Undersea Adv.	\$24.99	Putt Putt Jun Parade	\$17.99
Dino/Space Adventure	\$34.99		
Arthur's Innocence Trivia Bk	\$24.99		

Call for Unlisted Titles
New Titles Arrive Daily
ADULT XXX Titles Also Available

*Prices Apply To Jewel Case Packaging Only



Pro Deluxe	16 Basic
\$109⁹⁹	\$145⁹⁹
16 MCD	16 SCSI
\$185⁹⁹	\$229⁹⁹

**STYLUS
800**

**BYTE
BEST**

**PLUS
\$25
REBATE**

300 dpi
30 cps
Scalable Fonts
Built-In Typefaces

\$359

Office 4.2	Excel 5.0	Word 6.0/w
\$599 ⁹⁹	\$399 ⁹⁹	\$399 ⁹⁹
Upgrade	Trade Up	Trade Up
\$359 ⁹⁹	\$169 ⁹⁹	\$169 ⁹⁹
Bookshelf 94	Upgrade	Upgrade
\$89 ⁹⁹	\$135 ⁹⁹	\$139 ⁹⁹
Access 2.0	Windows	Money
Upgrade	for Wkgrip add-on Upg.	
\$149 ⁹⁹	\$59 ⁹⁹	\$29 ⁹⁹

<p>PANASONIC 562 DOUBLE SPEED 64K Buffer 320ms Access 300Kb/S Transfer Interface Card 2 Data Cables</p>		<p>SONY 33A DOUBLE SPEED 64K Buffer 320ms Access 300Kb/S Transfer Interface Card 2 Data Cables</p>
<p>\$199⁹⁹</p>	<p>FREE CD with any CDR drive purchase Corel Photo Sampler</p>	<p>\$219⁹⁹</p>

- Panasonic Dbl Spd CDR
- Sound Blaster 16 Basic

- REBEL ASSAULT
- SIM CITY 2000
- IRON HELIX
- RETURN TO ZORK
- GROIER MULTIMEDIA ENCY.
- MICROPOSE BONUS PACK
- CIVILIZATION, SILENCE SERVICE
- F117A, RAILROAD TYCOON
- INDY 500, LEMMINGS
- STEREO SPEAKERS
- JOYSTICK

- NEC Dbl Spd CDR
- Pro Audio Spectrum 16

- 7 Guest
- B-17 FLYING FORTRESS
- ENHANCED BATTLE CHESS
- COMPTON'S INTERACTIVE ENCY.
- ARTHUR'S TEACHES TROUBLE
- RAILROAD TYCOON
- GREEN GOLF
- LABTEC SPEAKERS CS550

\$539⁹⁹ **\$499⁹⁹**

LOGIC 'Where PRICING & SERVICE Make Sense' **COMPUTER HOUSE** Sales End JUN 30 '94

Sales End JUN 30 '94

Store Hours:
Mon-Fri. 9:00a.m - 9:00p.m
Sat. 9:00a.m - 6:00p.m
Sun. 12:00a.m - 5:00p.m

- Government & Corporate PO's Accepted
 - Dealers are Welcome

WAREHOUSE OUTLET
7310 Woodbine Avenue
(Denison & Woodbine)
TEL: (905) 415-0909
FAX: (905) 415-0911

MISSISSAUGA LOCATION
1590 Dundas St. E.
(Hwy 427 & Dundas)
TEL: (905) 276-9995
FAX: (905) 276-5108



*Some products not exactly as illustrated & While Quantities Last - We reserve the right to limit quantities - Logic Computer House disclaims any proprietary interest in trademarks or trade name except it's own - Price and availability are subject to change without notice **OAC Based on a 36 month term - All Sales already 4% cash discounted - Any other form of payment will be cash discounted price plus 4% - 15% re-stocking charge - All sales are final

2x Double-Speed CD-ROM DRIVES

**Multimedia for Today & Tomorrow
No One Makes It This Easy!**

Sun Moon Star™

Phillips CM 206 2X Drive
350KB/325ms Access/64K Cache
Int. Philips 2X Drive
+ Jazz 16 Sound Card with Interface
18 Month Warranty!

Multimedia Kits
Drive & Sound Card Only \$369
with these Titles:
Compton's Interactive
Kodak Photo-CD \$399

NEW

Sony 33A 2X Drive
300KB/320ms Access/64K Cache
(Includes Interface) Internal \$229
Drive Kit Only \$229
Drive Kit + Jazz 16 Sound Card
External Add 100 \$369

33A Drive + Jazz 16 Sound Card
+ Speakers + Windows/CD-Pak \$439
33A Drive + Jazz 16 Sound Card
+ Speakers/Headphones/Microphone
+ Titles: Chessmaster 4000/Life & Death
+ 7th Guest + Iron Hills
+ Arthur's Teacher Trouble \$489

More CD-ROMs

	Internal	External
Toshiba 3401 330KB/200ms/256K Cache/SCSI	\$479	549
Toshiba 4101 330KB/320ms/64K Cache/SCSI	349	N/A
Panasonic 562 300KB/200ms/64K Cache/Interface	229	329
Sony 561 330KB/295ms/256K Cache/SCSI	439	499
Sony 300KB/320ms/64K Cache/SCSI	299	
Plextor 335KB/240ms/64K Cache/SCSI-2	429	549
Plextor Quad-Speed 600KB/235ms/1MB Cache/SCSI-2	Call	

Plug-And-Play MULTIMEDIA KITS CREATIVE

DISCOVERY CD 16
"Aldus PhotoStyle SE" "Animals (of San Diego Zoo)"
"Software Technology Multimedia Encyclopedia"
"Where is Carmen San Diego Deluxe" "Just Grandma and Me" \$ Call

EDUTAINMENT CD 16
"Aldus PhotoStyle SE" "Indiana Jones 500: The Simulation" "Lemmings"
"Star Trek: The Next Generation" "The Simpsons" "Secret of Monkey Island: Loom" & "Secret Weapons of Luftwaffe" \$ Call

GAME BLASTER CD 16
on CD-ROM: "Star Wars Robot Assault" "Iron Hell" "Strategy 2000" "Return to Zork"
on Floppy: "Indiana Jones 500: The Simulation" "Lemmings"
+ Bonus CD-Pak: "Grolier's Encyclopedia" "Best of Microprose (4 Games)" \$579

Audio/Visual ACCESSORIES

Sound Blaster 16 Basic	\$159	Active 75 80W Speakers	\$99
Sound Blaster 16 MCD	219	Headphones	10
Sound Blaster 16 SCSI	259	Microphone	10
Sound Blaster AWE32	439	CD Caddies	8
MediaVision Jazz 16	139	CD Cleaning Kit	8

Buy ANY CD-ROM Drive and Get 1 of These Titles:
Microsoft Encarta, Compton's Interactive Encyclopedia or CorelDRAW! 3.0 \$79

3x Triple-Speed CD-ROM DRIVES

NEC Multispin SCSI Drives

	Drive Only	Multimedia Kit for PCs	CD-R510 (OEM Version)
450KB/195ms/256K Cache	Call	Call	Call
3Xi Internal Multispin	Call	Call	Call
3Xe External Multispin	Call	Call	Call
3Xp Portable Multispin (250ms)	Call	Call	Call

4Xe CDR-900 External 600KB/180ms Multispin \$ Call

***Multimedia Kit for PCs Includes:**
One of the above CD-ROM Drives + Jazz 16 Stereo Sound Card & Speakers
+ Kodak Photo-CD Access Software + 6-Time Windows Library

Optional SCSI Interface (PC Only) \$79

Double/Quad-Speed CD CHANGERS

Pioneer 602X 6-Disc Double-Speed Changer
(307KB/300ms Access/256K Cache)
External 6-Disc SCSI Changer \$1449

Pioneer 604X 6-Disc Quad-Speed Changer
(614KB/300ms Access/256K Cache)
External 6-Disc SCSI Changer \$1649

Pioneer 1804X 18-Disc Quad-Speed Changer
(614KB/300ms Access/256K Cache/Changes under 5 Sec.)
External 18-Disc SCSI Changer \$ Call

**Canada's Storage Experts
Offer You More:**

All-Canadian Worry-Free Warranty

30 Day Money-Back Guarantee

Fast Delivery Anywhere in Canada

Government-Approved Supplier

No Sales Tax Outside Ontario

Call Us For ALL Your Storage Needs!
High Capacity Solutions * Custom Integration * Memory Upgrades

Toronto Area Phone:
(905)840-6476
Fax:
(905)840-6560

18 Regan Road, Unit 31,
BRAMPTON, Ontario L7A 1C2

For Your Convenience We Accept:
VISA MasterCard

...plus Corporate and Government POs

Reel Magic

Desktop Video Breakthrough from Sun Moon Star!
Experience the Magic of...

MPEG Video Card for:
Full Frame! Full Motion! Full Resolution! Full IMPACT!

Level 1 Card + Titles: \$Call
Movies: Topgun, Star Trek: The Undiscovered Country
Games: Dragon's Lair, Return to Zork
Encyclopedia: Compton's Interactive

Level 2 Add Jazz 16 \$Call
Level 3 Add Sony 33A \$Call

3rd Annual MULTIMEDIA Festival
Coming August!

IDE & SCSI HARD DRIVES

Quantum

	IDE	SCSI
170MB 17ms 32K	\$269	\$289
270MB 12ms 128K	329	369
340MB 12ms 128K	399	489
540MB 10ms 512K	599	649

2 Year Warranty

Maxtor

	IDE	SCSI
245MB 15ms 64K	\$339	N/A
345MB 14ms 64K	389	499
545MB 12ms 128K	549	N/A

2 Year Warranty

Western Digital

	IDE	SCSI
213MB 13ms 64K	\$299	N/A
270MB 11ms 64K	329	379
340MB 12ms 128K	379	439
420MB 13ms 128K	439	549
540MB 11ms 128K	549	N/A

3 Year Warranty

Seagate

	IDE	SCSI
263MB 16ms 64K	\$319	N/A
342MB 13ms 128K	399	N/A
452MB 12ms 256K	499	N/A
529MB 12ms 256K	599	N/A

2 Year Warranty

SCSI Performance+ HARD DRIVES

Seagate

	IDE	SCSI
1.6GIG 10ms 256K	\$1199	
1.7GIG 9ms 256K	1799	
2.1GIG/3.5" 9ms 256K	2299	
2.9GIG/5.25" 11ms 256K	3299	

9.08GIG/5.25" 11ms 1MB \$6499

BARRACUDA Drives
(F A S T - 7200RPM / Mega Cache!)

	IDE	SCSI
1.6GIG/3.5" 8ms 1MB	\$2299	
2.1GIG/3.5" 8ms 1MB	2599	
4.1GIG/3.5" 8ms 1MB	\$Call	

5 Year Warranty

Quantum

	IDE	SCSI
1.08GIG 9.5ms 512K	\$1199	
1.44GIG 9.5ms 512K	Call	
2.16GIG 9.5ms 512K	Call	

5 Year Warranty

Fujitsu

	IDE	SCSI
1.06GIG 12ms 512K	\$1149	
2GIG 11ms 512K	2499	

5 Year Warranty

MIGHTYdrive
High Performance, Value-Priced
External Hard Drives for the Mac.
240MB to 2GIG! \$Call

SCSI REMOVABLES

SyQuest

	PC (SCSI)	Mac
5.25" (Inc. Cartridge)		
88MB/44MB/20ms	\$529	\$699
200MB/88MB/44MB/20ms	\$799	\$1029

* Bare Internal Drive. External Version Add \$199

Cartridges: 44MB \$95 88MB \$145 200MB \$199

3.5" (Inc. Cartridge) **PC (IDE) Mac Cartridge

	PC (IDE)	Mac
105MB/15ms	\$389	\$669
270MB/105MB/15ms	\$799	\$999
	\$199	

** Works with other IDE Drives! Also available as SCSI. \$ Call

Accidents Happen! TAPE BACKUP

QIC 40/80 (PC)

	Int.	Ext.
Colorado 120MB	\$159	\$279
Colorado 250MB	259	399
Trakker Parallel 120MB	449	499
Trakker Parallel 250MB	499	
Conner 250MB	259	

SCSI (PC/Mac)

	Int.	Ext.	Mac	Int.	Ext.	Mac
Conner 2.2GIG DAT	\$1599	\$1749	\$1799	250MB	\$679	\$799
Conner 4.4GIG DAT	1999	2149	2299	520MB	899	999

EXABYTE 8MM (PC) Mac 2.5-10GB! \$Call

	Int.	Ext.	Mac
1.5GB Int. \$1299 Ext. \$1599	5.0GB Int. \$3599 Ext. \$3799		
2.5GB Int. 2499 Ext. 2699	5-10GB Int. Call Ext. Call		

Authors on Computers

Who Uses What and Why

BY FRANK GARCIA

When crackerjack lawyer/novelist John Grisham (The Firm, The Pelican Brief) started out writing, the brick house he was living in was so cramped that the computer was between the washer and dryer.

As novelist Arthur C. Clarke completed 2010: Odyssey Two, his long-anticipated sequel to 2001: A Space Odyssey, he sent the manuscript from his home in the remote country of Sri Lanka as a 5.25-inch disk to his publishers in New York.

Later, during the filming of the feature film adaptation of the novel, written and directed by Peter Hyams, Clarke in Sri Lanka assisted the director in Los Angeles via computer modem. The correspondence became the book *The Odyssey File* (Del Rey/Ballantine, 1985). It is ironic that Clarke and Hyams would exchange ideas and collaborate in this new-fangled way, because Arthur Clarke is credited for inventing the geosynchronous orbit where satellites beam their data communications to the ground. This orbit is now officially recognized as The Clarke Orbit as a result of a journal paper Arthur wrote in the 1940s.

And did you know that authors Michael Crichton (*Jurassic Park*, *Congo*), Tom Clancy (*Hunt for Red October*, *Clear and Present Danger*) and film critic Roger Ebert all profess to be Apple Macintosh fanatics? Plus, director/actor Ron Howard writes on a Powerbook.

For many who use computers, the first software item on the shopping list is invariably a word processor. And from there, we handpick our favorites so we can pound out those correspondences or write that groundbreaking Canadian novel we've always wanted to write. But what are the professionals, the ones who have chosen writing as their career, using and if they are using a computer, are they happy with the state of technology?

Many journalists, novelists, or poets are today writing with equipment that have been the stuff of science fiction for centuries: without pen and paper, and now with sophisticated computer systems and high-end word processors. Because computers today are so inexpensive, and affordable for the average homeowner, anyone can use a computer to write.

But there are also many who refuse to use them.

Novelist, film critic and screenwriter Harlan Ellison works with an Olympia Typewriter, for him the ultimate tool.

"I use a manual typewriter, not one of these cockamamie word processors, these blendmasters," Ellison said on Knowledge Network's *Prisoners of Gravity*. "You pour words into it, blend it to make it better. I sit at a typewriter and I do the work there. I feel the pounds of energy going into it. I belong

to my work. It's the intimate of my hands on those keys. And I like being connected to my readers in that way. I don't like any mechanical crap in between us."

Harlan Ellison is one of the few authors who claims that he works out his writing as fully as possible in his head and then he pounds on the keys. As a result, seldom does he revise his work.

Ellison also told Vancouver journalist Michael Dean that, "I wouldn't have an electric (typewriter) in the house, much less a PC. I think they're the devil's playthings that are mostly used by idiots for doing idiotic jobs, but that's another of my cheery little thoughts."

Ian Slater, local author and UBC English professor, has stayed with wood as his equipment of choice and so far has resisted in using a computer.

"I use a pad, pencil and an eraser," says Slater. "It's transferred to a word processor later. My wife does that. But for writing, I write directly on the paper and then I transcribe it to a tape recorder and the tape recorder is transcribed to a word processor."

Slater, author of *World War III*, says he wants hard copy immediately and this is the system that has worked best for him. For revisions, his wife generates the hardcopy and he edits that and then it's back to the computer for fine tuning.

Unfortunately several years ago, while paying a visit to the beach, the manuscript for Slater's 1990 novel *Forbidden Zone* was snatched from his vehicle and was never recovered. This forced Slater to take six months to rewrite the story "pretty much from scratch", as no electronic version was ever made. "You can still have your laptop stolen, too!" he quips.

If there's any complaint about writing equipment, Slater says, "The mystery is why people are so bent on a computer in the first place. When you're writing a novel, a fairly quick novel, two-thousand words a day would be a good day to work. Two thousand words a day you don't need to type fast. You don't need to have it done quickly. Two thousand words is about 10 pages of handwritten material. The wonderful thing about writing with pencil and paper is it's very portable in ways even a laptop isn't."

But what some resist, others embrace. Columnist for Vancouver's daily tabloid *The Province*, teacher and novelist Crawford Kilian says computers help him create his work.

"I don't know how I produced anything before them," says Kilian. "Nonfiction (both

columns and books) is far easier to produce and revise; fiction is a little trickier, but even there it makes life much easier. For example, I'm republishing two of my old (pre-computer) novels with Beach Holme in Victoria; once I'd keyboarded them onto my hard-drive, revising the manuscript was a snap."

Shoeless Joe's maker and White Rock's resident author, William Kinsella, has been using computers since 1984, but he very candidly admits that he just looks at them as 'a fancy typewriter.'

"Unlike Spider Robinson who does everything on his word processor, all I use it for is to type letters and scripts," says Kinsella. "I still write first drafts in longhand and revise as I go to the word processor and that's pretty much the final draft."

Kinsella recalls being at the mercy of carbon copies for many of his novels and credits computers for giving him the freedom to print as many crisp copies as he wishes. His last two or three novels were tendered solely by computer disk, he says. "I can essentially get rid of my copier machine now."

Resisting the move up from just penning his work or banging on typewriters was a long struggle for him. "I felt that way for the longest time."

However, to this day, Kinsella says, "I don't want to know anything. I want a fancy typewriter. I'm not interested in learning anything about it."

Award-winning Fantasy novelist and head of the Writers Society in Burnaby, B.C., Eileen Kernaghan says that she began writing at six years old with a pencil.

"When I was 12, I got a typewriter and used it all the way up until seven years ago when I got a computer," says Kernaghan. "With a typewriter, I wrote four novels."

"I was intimidated about the idea of using a computer, because I was so used to typewriters. I thought it was a gimmick or something. But when I did get it, I worked on a book project with filmmaker Jonathan Kay, called *Walking After Midnight*.

"I could not possibly have done this book without a computer, not in the three months that I had to do it in. There was an enormous amount of editing and revising."

Making that big transition from pen and paper to typewriter and then to those big plastic computer boxes sometimes is not as easy as one may think. "I'm not intimidated by it anymore, I don't think. I'm now being intimidated by a modem! That's the next step for me. The whole information highway — I haven't got my drivers' licence for that yet," says Kernaghan.

Kilian cheekily notes that, "the computer has many of the qualities of a toy (as computer-users' wives have been quick to note)." But he also admits that he was a little intimidated at the start of making that move up.

"It's a big leap after using a typewriter all those years," says Kernaghan. "On a typewriter, you think directly to the keys, but on a computer it's a completely different situation. Your brain doesn't work. It's hard to get your subconscious working. That took a while. As with a lot of people, I was [writing] on the typewriter, and then putting it on the computer. Of course, after a while, you say, 'This is ridiculous! I can't go on doing this.'"

It was only after practiced experience on the computer that she was able to become comfortable with it.

"A lot of people still write in longhand first because they have a better relationship with a pen and paper. And when you sit down with new technology, which is typing

onto a screen, instead of a piece of paper, you don't immediately sign in on the screen. It's like an impediment.

"Bill Gibson [The science fiction 'cyberpunk' Vancouver author] talks about this too, about how it takes a while. If you do work on a computer, I have found, it doesn't take very long to get that relationship with a computer screen so I can think straight on the screen."

"I know that Mary Choo [a Richmond, B.C. poet] still writes on a typewriter and then puts it into a computer. Finally, in the

last month or so, she declared her first story directly to a computer screen.

"I could not write on a typewriter now," laughs Kernaghan. "I find that impossible. I can't go back to it!"

Kilian, an instructor at Capilano College's InfoTech program in Vancouver, praises computers for helping him in other ways.

"Teaching writing with the use of a computer and a projection pad is also far easier and more effective — the class can see the changes I make and compare different versions."

Kilian's interview was obtained, appropriately, via a computer bulletin board that he frequently visits. Although he's no longer writing for *The Province*, he has deposited text files of his weekly Education column inside a Writers Forum conference, in the First Class BBS Revelation for feedback from readers.

In fact, Kilian has also deposited 10 "How-To" Writing documents for perusal by

Continued on page 35

LEAVE OTHER COMPRESSION PRODUCTS BEHIND. UPGRADE TO STACKER 4.0 NOW!



WORLD BEATING COMPRESSION FOR DOS 6 USERS — AT A LOW, LOW UPGRADE PRICE!

Everyone knows Stacker sets the standard for data compression. It's smarter, safer and easier to use than any other product.

But did you know NEW Stacker 4.0 more than doubles your disk capacity to give you an additional 50% of disk space?

That's a serious amount of free space for your PC. Yet the price of an upgrade to Stacker is a terrific bargain!

CONVERT YOUR DOUBLESIZE DRIVE TO A STACKER SIZE DRIVE

NORMAL DRIVE	WITH DOUBLESIZE	WITH STACKER 4.0
100 Mb	190 Mb	250 Mb
170 Mb	323 Mb	425 Mb
250 Mb	475 Mb	625 Mb
340 Mb	646 Mb	850 Mb
500 Mb	950 Mb	1250 Mb

EVERYONE WINS WITH STACKER

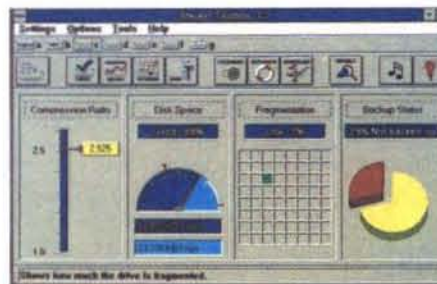
DoubleSpace barely doubles your disk capacity. Now compare that to the winning performance of Stacker in the table above. It stores your data tighter than any other product, thanks to our unique SmartPack™ technology.

You'll wait many years (probably forever!) for any other product to match this performance. And that's why an upgrade to Stacker makes sense today — you can be sure our standard is here to stay.

Just ask Compaq, IBM and Novell, who recently made Stacker 4.0 their first choice!

MORE WAYS YOU GAIN...

Stacker AutoSave™ maintains duplicate sets of



important DOS and file system information; DoubleSpace isn't so safe. Stacker 4.0 needs only 17 kilobytes of memory below 1 Mb to run, but DoubleSpace demands 37 kilobytes. Stacker 4.0 lets you tune your speed and compression ratio — you get no control with DoubleSpace.

With all these benefits, it's no wonder we designed Stacker 4.0 to automatically convert DoubleSpace drives — because Stacker is the disk compression DOS 6.x users really need!

SAVE UP TO 60%

Upgrading will save users of MSDOS 6.x, PC DOS 6.x, Novell

THE STACKER MONEY BACK GUARANTEE

Stacker 4.0's advanced compression guarantees the most disk space possible. If you are not completely satisfied with Stacker's performance, just return your upgrade to Stac within 60 days of purchase for a prompt refund.

6 GREAT FEATURES YOU ONLY GET WITH STACKER

1. More than double the disk capacity
2. A neat Windows toolbox to manage your drives
3. 10 tuning levels to balance speed/compression
4. Unique safety features including Stacker AutoSave™
5. Low memory requirement — just 17 kilobytes below 1Mb
6. Stac's unique money back guarantee!



Available at: A PLUS SOFTWARE • CLUB BIZ • COMPUCENTRE • DOPPLER • FUTURE SHOP • INLY SYSTEMS • LONDON DRUGS Also: CALL STAC'S UPGRADES—CANADA 1-800-668-9434

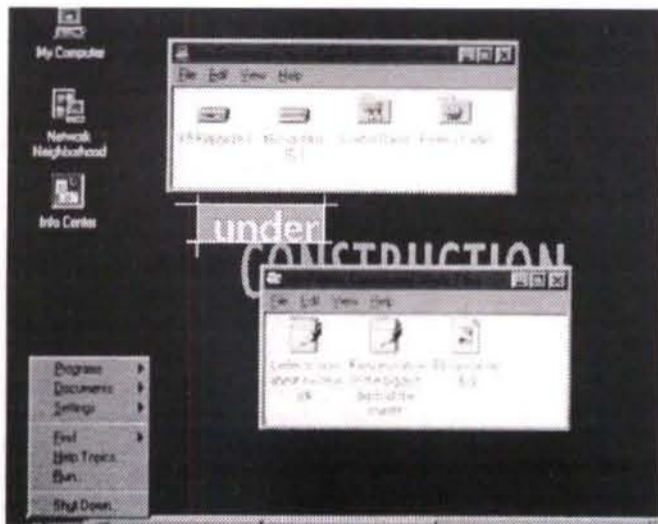
© 1994, Stac Electronics. Stac and Stacker are registered trademarks of Stac Electronics. Stac Electronics, 5993 Avenida Encinas, Carlsbad, CA 92008, USA. Tel #1-619-431-7474 Fax #1-619-431-9616

PREVIEW

Microsoft Windows 4.0

A Hands-on Report

BY GRAEME BENNETT



Chicago brings a radical new look to Windows.

Microsoft says that it would like to see fewer messages on your next computer's startup screen, too. To that end, it has been working on reinventing the PC experience. Later this year, Microsoft plans to release its next version of Windows — code-named "Chicago" — which it hopes will be user-friendly enough to open up the world of DOS-based PCs to a whole new audience.

This ease of use, the company hopes, will reduce the cost of PC deployment in businesses, and provide the operating system facilities for the next generation of software applications.

You might wonder whether it's an anachronism to use the words "friendly" and "DOS" in the same sentence. Well, you're right. Chicago won't require DOS. And if things go the way Microsoft envisions them, PCs of the future will automatically configure hardware add-ons, finally creating a "no excuses" standard for PC hardware.

The Way We Were

Let's face it: today's PCs are critically weak in a number of areas. It is a hassle to add new devices, uninstall software, configure networks — you name it. And are there any "multimedia PC" owners who haven't tried to run the latest, greatest game, only to be frustrated by an out-of-memory error imposed by DOS' 640K limit? Even launching a word processor is unduly difficult for beginners. In fact, Microsoft did a number of studies, and found that, even with the "easy to use" Windows 3.x, complete novices took nine minutes just to figure out how to launch a word processor.

Best Face Forward

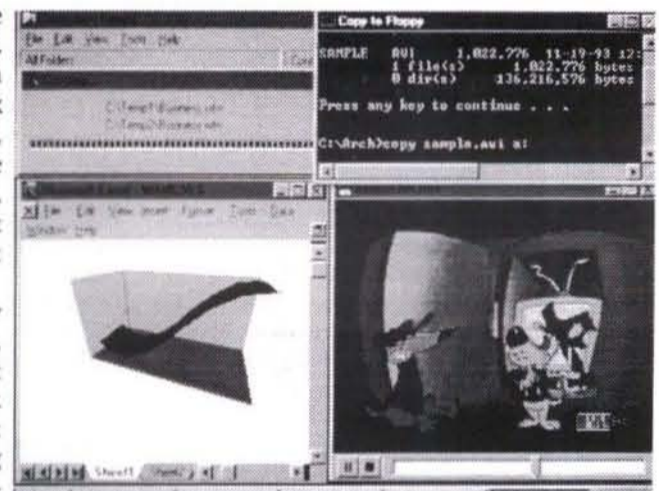
For Chicago, Microsoft completely redesigned the look and feel of Windows. The most prominent new feature is the strip along the bottom of the screen. When you first start up the program, an animated "Click here to begin" icon slides across the bar and points you to a pop-up box where your programs and the 15 most recently used documents are stored. Frankly, we'd be surprised if there were any novices who couldn't figure out how to launch Windows Write in a couple of minutes at the most, with this kind of dummy help.

This strip, called the Task Bar, is used for more than getting new users up and running, however. Microsoft says that, during its usability testing of Windows 3.1, it discovered that only 24 percent of experienced users switched between maximized applications with the Alt-Tab key combination. In Chicago, the names of running apps show up in the Task Bar, which is visible (and movable) at all times. A single click on an application's name in the Task Bar switches to it.

In use, it's not unlike changing channels on a TV. The Task Bar is similar in some ways to the Icon Dock of the NeXTstep OS, although Chicago allows the bar to be slid off the screen, resized, or moved around at will — things that are not possible with NeXT's OS.

The NeXT similarity shows up in other areas, too. As a matter of fact, it appears that Microsoft took a long look at all of the best features of other operating systems when it was designing Chicago. Overall, the GUI is something of a cross between Mac and OS/2, with a dash of NeXTstep thrown in.

In our opinion, Chicago has a better user interface than Macintosh or OS/2. As a matter of fact, the Mac's much-vaunted "Finder" is starting to look decidedly long in the tooth compared to either of its PC competitors. Like OS/2, Chicago is a true pre-emptive multitasking operating system. (Yes, we know that OS/2 already does almost everything Chicago promises.) We'll discuss the system architecture in "What Color is Your Underwear?", following this article. As well, both OS/2 and Chicago offer a significantly improved graphical user interface over that of Windows 3.x. While there are certain areas where each OS outshines the other, the most important distinctions between the two products are in the area of user interface and device support. However, we're not convinced that Chicago will offer a significant benefit to OS/2 aficionados. They already have an operating system that addresses many of the shortcomings of DOS. Windows 3.x/DOS users, on the other hand, may find much to like. In fact, we expect more than a little interest from Mac users, too.



Chicago provides better multi-tasking. An important consideration for multi-media users.

Continued on page 34

MEMORY

Canada, United Kingdom, Singapore,
Malaysia, Hong Kong, Japan

3.5 INCH 2HD, MICRO FLOPPY DISKETTES (Branded/Bulk)
DUPLICATOR GRADE (HIGH CLIP) DISKETTE
SOFTWARE REPLICATIONS (CD-ROM/DISK/TAPE)
MAGNETIC RECORDING MEDIA SPECIALIST
OEM MANUFACTURER
TURNKEY PROJECTS SPECIALIST
(MAGNETIC MEDIA/CD ROM/PLASTIC INJECTIONS)
AUDIO & VIDEO TAPES

Diskettes (Canada) Inc.

Manufacturer, Sole Importer & Distributor
for "Memory" & SUMO" Brands
3.5 inch MFD 2HD

See us at booth W7467

COMDEX/Canada'94



130 Frobisher Dr. Suite #8 Waterloo ON N2V 1Z9 Tel: (519) 888-9488 Fax: (519) 888-7271

The World's Most Popular Service & Support Group

WORLD

Business Systems Inc.

IBM Business Partner
Dealer
Associated Agent

FREE
MS-Dos 6.2
MS-Win 3.11
CPU-Fan

FREE
Forminco
Mouse
Arena

FREE
WORLD
Power
Bar

2 Year parts
5 Year labour
Depot!

30 Days
Money Back
Guaranty

WORLD Pentium-PCI Platinum	WORLD Pentium-Vesa Wizard	WORLD Vesa-6600 Advance	WORLD Vesa-4300 Office
Intel 586dx/60/512k PCI 4-slots 16Mb Ram 70ns 72 pin Super Multi I/O VLB 1.44Mb 3.5" FD Quantum 540Mb IDE ATI (PRO) 2Mb PCI MS J-Mouse w/Pad Orchestra Tuba 17 N.I. Logitech SoundMan Wave WORLD 2000 101 Keyboard NEC CDR-500 3x1 Int	Intel 586dx/60/512k 3 Vesa slots (P24T) 16Mb Ram 70ns 72 pin Super Multi I/O VLB 1.44Mb 3.5" FD Quantum 540Mb IDE ATI Wonder 2Mb VLB MS Mouse II w/Pad Orchestra Tuba 17 N.I. Panasonic CD-562 kit WORLD 2000 101 Keyboard Full Tower (Server) 300W	Intel 486dx/66/256k 3 Vesa slots (P24T) 8Mb Ram 70ns 30 pin Super Multi I/O VLB 1.44Mb 3.5" FD Quantum 340Mb IDE ATI Wonder 2Mb VLB MS Mouse II w/Pad MAG MX-15F N.I. MPR-II Panasonic CD-562 kit WORLD 2000 101 Keyboard Mid Tower w/LEDs	Intel 486dx/33/256k 3 Vesa slots (P24T) 8Mb Ram 70ns Super Multi I/O VLB 1.44Mb 3.5" FD Quantum 270Mb IDE ATI Wonder 2Mb VLB MS Mouse II w/Pad KDS 14" N.I. 28 MPR II Panasonic CD-562 kit WORLD 2000 101 Keyboard Mid Tower w/LEDs

\$5389 \$4669 \$2995 \$2439

Quality Service Support **BUY WISE - LEASE IT!** Quality Service Support
Available O.A.C.

OVER 25,000 PRODUCTS

Net/Cards	Scanners	Fax/Modems
Intel EtherExpress 16-bit Coax 149 Intel EtherExpress 16-bit 10BT 149 Compaq Ethernet Coax 109 Compaq Ethernet 10BT 109 D-Link DE220 Coax/10BT 129 D-Link DE500 32-bit VLB 389 3-Com Etherlink III 10BT/Coax Call 3-Com Etherlink III PCMCIA Call 3-Com Etherlink III 32-bit VLB Call BOCA 16-bit Coax/10BT 109 Xircom PCMCIA LAN adapter 109 NodeRunner 2000 16-bit Coax (10pack) 1999	Epson 5-600 Color 1139 Epson 5-800 Pro-Color 1699 Microtek 4-SP Color 1089 Microtek ScanMaker C Call HP ScanJet II-CX Color 1369 Logitech Easy Touch 256k 289 Logitech Scanman Color 499 Logitech PhotoMan Plus 256k 699 Mustek Pro 6000C Color 1149 Mustek Paragon 1200 Color 1639 Genius Smart Reader 600dpi w/OCR 699 Genius Page 1 Flatbed Color w/OCR 1389	Boca 14.4 F/M Int 169 Boca 14.4 F/M ext 219 Boca 14.4 F/M ext. Mac 239 Hayes Optima 144 + Pack 449 Hayes Optima 144 + VE Call USR-Robotic Courier Call USR-Sportster 14.4 E 189 USR-Sportster 14.4 I 159 Zykel U1496E 409 Zykel U1496E+ 609 Zykel U1496S+ LED E 839 Practical/Periph 14.4 F/M Int 195 Practical/Periph 14.4 F/M ext 219 Xircom PCMCIA Fax/Modem Call

Controllers **Upgrades** **Epson**

Adaptec 1510 CD-kit 135
Adaptec 1542C VLB 349
Adaptec 2842 VLB 379
Adaptec 2742T EISA 499
Adaptec 1338 Paro-SCSI 145
Promise 4030 IDE 64MB 195
Future TMC 1670 kit 179
Future TMC 1680CRL kit 269
Future TMC 7000 EISA kit 545
DPI Smart Cache II ISA SCSI-2 269
Multi I/O VLB 34

ES-800 C Pro
800dpi Scan/Resoluit.
24-bit True Colour
Exclusive True Pass
Built-in image processing
OCR/Photostyler LE
1 Year Warranty
\$1699

UPGRADES FREE While You Wait

Hewlett-Packard

- HP LaserJet 4 Plus
- 2MB Ram Standard
- 45 Scalable Fonts
- PCL5-E 600dpi
- 12ppm, 16mhz Intel
- 250 Sheet Paper Tray
- "NEW"

\$1949

Lexmark

- ColorJet 4079PS
- Postscript included
- 11x17" max.
- 360 x 360dpi 4mb-Ram
- Color JetPrinter
- WORLD Best Color output!

\$2865

ALPS

- Laser LSX-1000
- 10ppm 600dpi
- HP-Laser 4 comp.
- PCMCIA, Postscript
- 2mb-Ram (upgrd. 32mb)
- 85 scalable fonts
- uses / HP-Toner cartridge

\$1619

Orchestra Tuba

- .26mm Dot Pitch
- 17" 1600 x 1280 N.I.
- 76Hz Refresh Rate
- Multi-Scanning Tuba
- MPRII Low-Radiation
- WORLD June "Best-Buy"

\$975

Printers	Monitors	Video/Cards	Mother/Boards
Citizen Pro/Laser 6000 889 Citizen GSX-230 295 GMS ColorSpt. 1000 PS Call Kodak ColorEase PS Call Canon BJ200e SF 389 Canon BJ230 SF 499 Canon BJ260 SF 769 HP-520 399 HP-560C 799 HP-1200C 2095 HP-Laser 4L 899 HP-Laser 4P 1349 HP-Laser 4MP 1875 HP-Laser 4 Plus 1959 HP-Laser 4M 2695 HP-Laser 4j/mx 5759 HP-Laser 4j 3979 Fujitsu DL-3600 Call Fujitsu DL-1150 339 Fujitsu DL-5800 1529 Lexmark 4039-12R Plus New Call Lexmark 4039-16L Plus New Call Lexmark 600-Writer Call Lexmark ColorJet PS 11x17" 2865 Genicom 7610 10ppm Laser 939 Genicom 3840E 600cps 18-pin 1669 Genicom 4410X/4440X Call Genicom 7170 (11x17") Laser Call Epson LQ-570 Plus 24-pin 349 Epson Action 1500 Laser 889 Epson Stylus 800 Deskjet 379 ALPS LSX1000 10ppm Laser 1619 ALPS DMX800 800cps 18-pin 1695	Nec 5-FGE 1499 Nec 5-FGP 1679 Nec 6-FGP Call Mag MX15-F 709 Mag DX17-F 1195 Mag MX17-F 1309 Sony GDM-17" 1309 Sony GDM-20"se1 1519 Sony GDM-20"se1 Call KDS 1450 14" N.I. 329 KDS 1700 17" N.I. 965 Mitsubishi 17FS 1389 Mitsubishi 21FS 2729 Viewsonic 15 699 Viewsonic 17 1429 Viewsonic 21 2569 Viewsonic 17 G Call Viewsonic 21 G Call Orchestra 14" N.I. 369 Orchestra 15" N.I. 499 Orchestra 17" N.I. 975 TVM LR-5A Plus 15" 525 MagnaVox 20" N.I. 1349 MagnaVox 17" w/Speakers 775 ADI Microscan 3-G 14" 419 ADI Microscan 4-G 15" 525 ADI Microscan 4-GP 15" 625 ADI Microscan 5-A 17" 1239	ATI Graph Wonder 1M ISAVLB 179 ATI Graph Wonder 2M ISAVLB 279 ATI Graph Pro 2M VLB 385 ATI Graph Pro 2M PCI 419 ATI Graph Pro Plus 4M VLB Call ATI Graph Pro Plus 4M PCI Call Diamond Viper 2M VLB 459 Diamond Viper 2M PCI 489 Diamond Viper Pro 4M VLB Call Diamond Viper Pro 4M PCI Call Hercules Graphics 2M VLB 449 Hercules Dynamite 2M VLB 319 Matrox MGA 64-bit VLB 4M Call Matrox MGA 64-bit PCI 4M Call	VLB-486sx/25/128k 235 VLB-486sx/33/128k 279 VLB-486dx/33/256k 485 VLB-486dx/40/256k 475 VLB-486dx/50/256k 695 VLB-486dx/66/256k 685 VLB-586dx/60/512k 1395 VLB-586dx/66/512k 1459 PCI-586dx/60/512k Call PCI-586dx/66/512k Call PCI-586dx/60/512k SCSI 1629 PCI-586dx/66/512k SCSI Call With/ CPU Fan

Notebooks

Toshiba T1950 CT 4/325 Sale
Toshiba T4700/4800 C Sale
NEC Versa-E486dx/40 AC Sale
NEC Versa-E486dx/250 AC Sale
Panasonic CFV21P 486dx/66 Sale
IBM ThinkPad 350 Color 4/125 Sale
IBM ThinkPad 500 Mono 4/170 Sale
IBM ThinkPad 750/760 Color Sale
Epson 486SLC2/50 Mono 4/120 Sale
Epson Action 4000 C 4/250mb Sale
Epson Action 500 C 4/180mb Sale
Epson Action 700 CX 4/260mb Sale
Texas 4000E/C 486sx/25 4/120 Sale
Texas 4000E/C 486sx/25 4/120 Sale
AST Bravo D/Scn486sx/33 4/200 Sale
Canon NoteJet 486SLC/25 4/200 Sale

Software Alert!

Aldus Page 5.0 upgrd. 169
Corel Draw 5.0 upgrd. 309
MS Access 1.1V TradeUp 169
MS Office 4.0 Prof/upgrd. Call
MS WorkGrps 3.11 ADD 69
MS Visual C++ Pro 389
MS Word 6.0 upgr. 135
MS Windows 3.11 "New" 69
MS DOS 6.2 Full Ver. 58
MS Visual Basic Pro 389
Berland Paradox 159
Berland Office Call
Berland Quattro Pro 79
ATI Media-Merge Edit Call
Lotus 123 for/Win. upgr. 149
Lotus Freelance 439
Lotus Smart Suite 569
Norton Anti Virus 109
Norton Desktop 79
Norton PCAnywhere 149
Norton Speed Cache + 89
Delrina WinFax Pro 4.0 119
Delrina Smart Suite 159
Delrina Form Flow Call
Adobe Photoshop 775
Dynamac GOLD 95
Quark Express for/Win. 849
ProComm Plus for/Win. 159

WORLD AT A HIGHER LEVEL

WORLD PCI-Pentium Platinum Pro II

PCI-Pentium 586dx/60MHz/512k-cache
32MB-Ram 72-pin PS/2 "Fast Ram"
3.5" 1.44mb FD, Quantum 540mb SCSI
ATI Graphics Pro/64 4mb PCI, MS-J mouse,
NEC CDR-500 3Xi w/Logitech Sound Wave
WORLD 2000 101 Keyboard
Colorado 250mb Tape Back-Up Int.
MAG MX-17F 17" N.I. MPR-II (Green)
MS-Dos 6.2 / Windows 3.11
MS-Video / Genius Hi-Sketch Pen Tablet
MS-Office Professional, MS-Access NEW
Cardinal SnapPlus Video Capture
ATI Media-Merge for/Windows
Forminco Power Centre PC-1L "Desk"

With System "BONUS":
HP-ScanJet IIcx Colour \$1265

CD-Rom's

NEC CDR-500 3Xi int. ORGL. 609
NEC CDR-600 3XE ext. ORGL. 765
NEC CDR-400 3XP Port. ORGL. 595
NEC CDR-4X Pro-Multispin Call
Toshiba XM3401 int. 449
Toshiba XM3401 ext. 599
Toshiba XM4101 int. 315
Toshiba XM4101 ext. 429
Sony CDU-561 SCSI int. 229
Sony CDU-33A int. kit 229
Panasonic CD-562 kit 229

FREE! Audio/cable

Optical CD's

Sony Rewite 128mb int. 1425
Sony Rewite 650mb int. 2375
HP T1300 1.3GB 22ms int. 3885
HP 1.3GB Optical ext. 4409
Fujitsu Rewite 128mb int. kit 1379
Teac OD300 Rewite 128mb int. 1379
Pinnacle Sierra 1.3GB ext. 4485
Pinnacle Sierra 2.6GB ext. 8689
Pioneer Rewite 128mb int. kit Call

PC Back-Up	Forminco/Desks	TV/PC/Video
Colorado 250mb int. 249 Colorado Tracker 250 479 Colorado 2.4GB int. kit 1319 Peak/Perf.525 int.SCSI 699 Peak/Perf.525 ext.SCSI 799 Archive Viper 250mb 499 IOMEGA 250mb ext. 359 Syquest 88 ext. kit IBM/Mac Call Syquest 105mb ext. kit IBM/Mac Call Syquest 250mb ext. kit IBM/Mac Call Conner 250mb int. w/hope 249 Conner 250mb Ext. Part/Kit 459 Teac 525mb int. SCSI w/Sylos Call Teac 1.2GB ext. SCSI w/Sylos Call	Work-Station PW-1L 279 Power-Center PC-1L 379 Printer Stand PS-1 option 109 Command-Desk CD-1 719 Command-Corner CU-1 Call Ergo-Adminis. Chair (Leather) 379 Mouse-Arena MA-1 18 DocuMand Holder 25 Comer Unit Complete Call Monitor Riser Stand 89 Keyboard System Bar 189 Surge Protector 6-outlet 25 Command Centre 6-outlet 85 Back-Up UPS 450VA 450Watt 295	Creative Video Blaster 329 Creative Video Spigot 339 Intel Smart Video Recorder 709 Cardinal SnapPlus Capture Bndl. 919 MediaVision Pro Movie Studio 379 Genius Hi-Encoder 275 Genius Hi-Tuner TV/PC Pat-1 159 Genius Hi-Tuner TV/PC NTSC 159 Genius Hi-Video Pro Capture 489 Genius Laser Pen 135 TVM AVA Video Pro 489 TVM AVA Video Tuner 165 TVM AVA Video Encoder 169 ATI Video Capture Board Call

YOUR GUIDE TO THE "Home, Office Business & Corporate Revolution"

BUYER BEWARE! "We Are Committed To Your Success & Long Term Satisfaction"

Corporate Gold & Government Agencies
Call or Fax Request

Proud Member of
Better Business Bureau

VISA
Company Cheques

WORLD Direct
To order: CALL

Sales Line: (905) 470-5760
Order Line: (905) 470-5766
FAX: (905) 470-5772
BBS: (800) \$SW-ORLD
(Need Password)
Membership FREE!

WORLD
1994
Catalogue
FAX Your Request for Our 250 Page Catalogue

Store Hours
M-F 9 am-6 pm
Sat 10 am-5 pm

Prices and Specifications Subject to Change Without Notice - All advertised products already 3% CASH Discounted! For up-to date prices and availability, please call.

Hollywood

Continued from page 18

then you see daily the impact multimedia has on both bottom lines and on meeting tight schedules.

Despite all the hubbub about multimedia, it was only when the terms interactive television and interactive movies started to be used by the media that traditional Hollywood started to begin to understand what these "platforms" were about.

But in the post-production departments of studios and at post-production houses around Hollywood and across the nation in the early 1990s, it became apparent that multimedia was big and getting bigger.

According to analysts, the interactive multimedia industry will swell to some \$10 billion by the end of this decade.

Ten years ago, in the days before notebook PCs, VGA graphics, fax modems, 2400 bps modems and desktop publishing — when the Mac was still vaporware and much

of Hollywood was still using Selectric typewriters, and some executives still hired secretaries based on their legs and dictation skills — 80 percent of all post production for television was done on film. Today, 90 percent of it is done on tape.

Most Hollywood studios didn't even get PCs until 1988. Yes, there were a few first generation 8086/88 systems around but those were in the MIS departments or left to the mavericks like Robert Abel, a renowned renegade in the world of special effects, not-

ed for designing some of the best scenes for "Star Wars" and more. Techies were for the most part left outside the studio gates. Many studios had long ago disbanded their cohesive in-house production departments and films were obtained on negative pick-ups produced outside by independent producers.

If you saw the film "Chaplin", you know that there were many naysayers when talkies first came to Hollywood, too. While some people rambled nonstop two years ago about the wonders of Quadras and the mystery of "multiple platforms", only about 40-60 percent of Hollywood was even computer literate, according to industry consultant Ray Solley of The Solley group. "But that's better than the average consumer base where 99 percent of the homes have television but about only one quarter have computers (now it's 34 percent)."

In some areas of Hollywood, like music and post production, computers invaded earlier. MIDI was developed in the early 1980s as an industry standard. Todd Rundgren was out with an early audio CD constructed in multilayer segments which home listeners with CD-I or with CD-ROM players could manipulate. Now NARAS (National Association of Recording Artists) produces its own Music and Multimedia sold out day long seminars.

Former ITS (International Teleproduction Society — the people who own most of the post-production facilities) President Linda Rheinstein said, "the largest part of multimedia until this year was basically post, perhaps that's why people are becoming increasingly high tech oriented."

A report called "Creating Multimedia: Hollywood Goes Digital" by Volpe, Welty & Co., a San Francisco based investment banking firm caused some waves and brought their analysts to the forefront as predictors of the future. The report forecast that the Hollywood post-production market would increase by 16 percent or more than \$3.5 billion in the next three years and that the market would zap up to 825,000 customers—more than 10 times the current post client numbers. Volpe analyst Charles Finnie was quoted as saying that he believed that trend alone would rewrite the rules for Hollywood's post community.

A good example of that change was the fact that Industrial Light and Magic (ILM) did its Oscar-quality special effects for "Death Becomes Her" on a Silicon Graphics Inc. workstation that sells for less than \$100,000. "People aren't going to be able to spend \$1 million on a single machine in the future", Rheinstein predicted.

But post houses were not the only ones embracing multimedia during the past three years. Commercial production companies were making "moving storyboards" with it, directors and camera operators were editing their reels, set designers and art directors were "walking through" their 3-D designs in advance and photographers were creating interactive photo CD's. Stock film archives, books, works of music, children's stories and more were being developed on CD. And of course, the world of special effects was being forever changed by its entwining with multimedia and computer generated effects. □

The preceding excerpt was from Chapter 3 of *Multimedia: Gateway to the Next Millennium* (Academic Press, ISBN: 0-12-065625-6) and was reprinted with permission.

GOVERNMENT AND CORPORATE P.O.'S WELCOME

PREMIUM 486 SYSTEM

AT SIGNA, WE CAREFULLY MATCH ONLY THE HIGHEST QUALITY SYSTEM COMPONENTS TO ENSURE MAXIMUM PERFORMANCE AND RELIABILITY

486 DX2-50 1595

4MB Ram, 128KC, 210MB HD, 1.44 Panasonic FD, Cirrus Logic 1MB Vesa, 2 Ser/1 Par/1 Game Port, Mini-tower case, 101 Enhanced K/B, 14" SVGA .28dp Non-Interlaced Monitor, Mouse, Dos 6.2



US Robotics

14.4 Internal 155 14.4 External 185

Easy to own, Easy to use!



1 YEAR ON-SITE WARRANTY!



MULTIMEDIA 486DX2-66

INTEL 486DX2-66 CPU
Vesa Local Bus w/128K Cache
4MB Ram
1.44MB Panasonic Floppy Drive
340MB Hard Drive
1MB Vesa Video Card
14" SVGA .28 Non-Interlaced
Mini Tower Case w/230W P/S
Mitsumi 250ms/350kps 2X CD-Rom
TRUE Sound Blaster 1.6
6 MPC CD-Titles, Speakers, Microphone
ProXcel 102 Enhanced Keyboard
3 Button Mouse
Dos 6.2
Windows 3.1

2295

SCSI SYSTEM

486 DX2-66 CPU
Vesa Local Bus (8/256K Cache)
8MB Ram
340MB SCSI Hard Drive
Adaptec SCSI Controller
32 Bit 1MB/2MB Graphics Accelerator
Panasonic Floppy Drive
Mini Tower Case w/230 Watt Supply
14" SVGA .28 Non-Interlaced Monitor
ProXcel 102 Enhanced Keyboard
Microsoft Ergonomic Mouse
Microsoft DOS 6.2

2195



UPGRADES
ARE OUR
SPECIALTY

Hard Drives
Memory
CPU's
We ♥ Trade-Ins
We also do repairs

adaptec

1522 ISA 125
1542C ISA 299
1742 EISA 395
2742A EISA KIT 495
2842 VESA 379

NOTEBOOKS

AST

BRAVO 486/33 4/120MB COLOUR
(INCLUDES TRACKBALL, PCMCIA, DOS, WINDOWS)

2999

BRAVO 486/33 4/120MB MONO
(INCLUDES TRACKBALL, PCMCIA, DOS, WINDOWS)

2099



CALL FOR
OTHER MODELS



Microsoft

FAX/MODEMS

US Robotics 14.4 Int./Ext. F/M 155/185
Supra 14.4 Internal Fax/Modem 139
GVC 14.4 External F/M 199
GVC 14.4 Internal F/M 189
GVC 9600/2400 Internal F/M 79
GVC 9600/2400 Pocket F/M 139
Intel SatisFAXtion Modem/400 399
Fax Line Manager 129



CAD WORKSTATION

INTEL DX2-66 CPU
Vesa Local Bus (8/256K Cache)
8MB Ram
Western Digital 420MB Hard Drive
32 Bit Controller
32 Bit 2MB Graphics Accelerator
Panasonic Floppy Drive
Mini Tower Case
230 Watt Power System
MAG 15" 1280X1024 Digital Control Monitor
Honeywell 101 Enhanced Keyboard
Microsoft Ergonomic Mouse
Microsoft DOS 6.2

2599

MULTIMEDIA

CREATIVE
CREATIVE LABS, INC.

High End Multimedia Kit
(Dbl-Speed CD, SB 16, CD-Titles, Speakers)
SB 16 Basic 159
SB 16 Multi-CD 229
SB 16 SCSI-2 279
SB AWE 32 399
Wave Blaster 239
Gravis Ultra Sound 169
Midi-Mate (works with PAS 16 & SB) 79
Win/Tv Video Capture Card 595
Creative Labs/Yamaha SBS300 Speakers 159
Video Blaster (Come See in-Store Demo!) 329



CALL FOR ITEMS NOT LISTED

SOME QUANTITIES MAY BE LIMITED

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL PRICES ARE CASH DISCOUNTED.

PRINTERS



HEWLETT-PACKARD

HP Deskjet 520
HP Deskjet 560C



CALL
CALL

Canon

BJ-10sxf w/sheet feeder 299
BJ-200e w/sheet feeder 369
BJC-600 colour 749



ALL TRADEMARKS ARE PROPERTY OF THEIR RESPECTIVE OWNERS.

SIGNA COMPUTER SYSTEMS

1358 Kennedy Road, Scarborough, Ontario, M1P 2L7

Tel. (416) 755-1590 Fax (416) 755-5950

PREVIEW

What Color is Your Underwear?

Exploring the Architecture of Windows 4.0

BY GRAEME BENNETT

A Kick in the OS

The Computer Paper recently had the opportunity to test Microsoft's next release of Windows — code-named Chicago — at the company's Redmond, WA headquarters. We came away impressed with the product's user-interface design, and its underlying system architecture.

What? Have we turned into mindless Microzombies, touting the vacuous virtues of vapourware? Based on the robustness of the prerelease version (known as a "late beta" in programmer's parlance), we'll go out on a limb and say that this product (which is expected to be in widespread "field testing" by the time you read this, and is slated for general public release later in the year) represents the most important product ever for the Redmond giant. Why? Well, for starters, it sure looks like DOS is doomed. Microsoft spokespersons wouldn't say if there will even ****be**** another release of DOS, although it was speculated that a stripped down version of Chicago, sans graphical interface, would be the most likely candidate for an MS-DOS 7.0 release, if their customers demand one.

Microsoft is backing away from DOS because Chicago provides true pre-emptive multitasking, much as OS/2, Windows NT, Unix, AmigaDOS, and NeXTstep do. This, by the way, promises to leave Apple's Macintosh in the unenviable position of being the only major computer platform not to support pre-emptive multitasking as a standard operating system feature.

What Color is your Underwear?

Yeah, yeah, we know — most people give as much thought about whether their system is cooperatively or preemptively multitasking as they do about what color their underwear is. Fair enough, but we think it safe to say that few users will ever want to go back to a non-multitasking OS after they've tried one that provides the benefits of printing, copying files, telecommunicating, formatting disks, networking, and so on, in the background. If you're like most users, you'll soon wonder how you ever got along without multitasking.

Okay, so you're still skeptical. So were we. After all, OS/2 2.1 multitasks at least as well as Chicago, and it is pretty darned compatible with existing Windows and DOS apps. How much better could Chicago's compatibility be?

Chicago appears to have a considerable edge over OS/2 (and NT, for that matter) in the area of compatibility with existing device drivers.

Basically, they all work. OS/2 and NT, on the other hand, require all new device drivers, and as such, can't use a great many cards and devices on the market today.

Although it smacks of marketing hyperbole, Microsoft says its design goal for Chicago was nothing less than total compatibility. Because of this, Chicago isn't completely free of some of the hassles

JETBOOK

Up-gradable



SL Enhanced (GREEN) CPU



... using the award winning Polo Alto Design the JETBOOK reduces wrist strain.



HONORABLE ** AWARD ** AUGUST '93



DX2/50 and 250mb HDD
from **\$2375.00**

4mb RAM, NiMH battery, carry bag & shipping included!



Dealers Welcome!

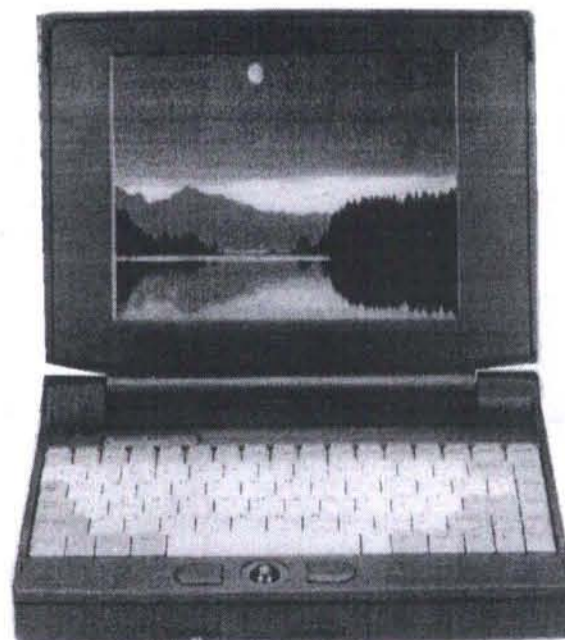
Sole Canadian Distributor and Service Centre:



PACIFIC ROYAL ENTERPRISES LTD.
The Portable Computing Specialists
1-(800) JET-8212

The only manufacture's authorized Canadian Distributor.
BEWARE of look-a-likes!

Port-able CD ROM

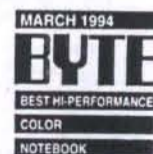


SMARTBOOK

Up-Gradeable
CPU, RAM, HDD and SCREEN

Top Performer
1 MB Accelerated VL-BUS video

Finally a notebook that can replace
a desktop system!



Home Office
COMPUTING

"Best Buy / Best Value"



All logos and trademarks are registered trademarks of their respected companies.

Many of the reviews are based on the same US OEM product marketed under a different name.

caused by the demonic duo: CONFIG.SYS and AUTOEXEC.BAT. Nevertheless, Chicago doesn't need either file to run, and if Windows apps don't need 'em, you won't either.

Microsoft is encouraging developers to make applications "Chicago-savvy," by putting the sort of info that used to clutter up WIN.INI, SYSTEM INI and our aforementioned boot-time pals into a new Chicago structure known as The Registry. Although the name implies that it is a single file, it actually consists of several files, maintained and automatically backed up by the system. Instead of requiring users to don their propeller beanies and edit these INI files with a word processor, though, Chicago provides a registry editor called RegEdit (perhaps

Microsoft programmers haven't noticed that they have more than eight characters to play with now).

Microsoft is also encouraging developers to include a standard Uninstall function, to make it easier to restore a previous system configuration. We'll attempt to scare developers into doing this now by advising you, dear readers, to only buy software that provides an "Uninstall" option. You can thank us later.

Chicago's Best Features (the ones we predict you'll come to adore)

- 255-character filenames
- Greatly improved user interface
- True preemptive multitasking



SyQuest
TECHNOLOGY

OPTIMAC
INTERNATIONAL, INC.

*Canadian assembly,
warranty and service*



Available exclusively through

ADAM PERIPHERALS

In Toronto call 905-886-2326 • Toll free 1-800-363-2326 • Fax 905-886-2344

Call for dealer nearest you.

Proud Canadian Distributor for: ASK, AXION, Axyss, Casa Blanca Works, Dayna, Focus Enhancements, GCC Technologies, Golden Triangle, Ikegami, Lapis, Magnavox, Mobius, OptiMac, Philips, PSI Integration, Quantum, Ricoh, Roland Music, Rutishauser, Samsung, Sicos, Sophisticated Circuits, Syquest, Targus, Toshiba, Umax, Xceed

- Doesn't require DOS

Chicago's "Beast" Features (the ones we predict you'll come to hate)

- The Registry, AKA the monster INI file from Hell
- The Explorer (it's better than FileMan, though)
- The way the Toolbar covers up stuff

Areas in which the Mac OS (System 7) Still Whips Chicago

- Installing and Uninstalling software
- Copying and configuring user preferences
- Adding multiple video displays or hard disks
- Running on RISC processor
- System-level speech support

Areas in which Chicago Now Whips the Mac OS

- Plug and Play device configuration and support
- DOS emulation
- Networking, e-mail, fax, telecommunications
- System-level MIDI and audio support
- GUI (ouch)
- Ease of use (double ouch!)
- System architecture
- Anti-aliased fonts

Microsoft says the OS is tied to Intel architecture, and can't be "ported" to PowerPC, Alpha or other RISC processors. That, it says, is what Daytona (Windows NT 3.5) is for. However, the consolation prize is that Chicago's system requirements are a lot low-

er than those of NT. Similar to the forthcoming "Personal OS/2" release from IBM, Chicago requires only 4MB of RAM to run. However, we'll say it here and now: get more RAM if you want to run Chicago or OS/2. 8 MB, in our view, is a more realistic system configuration for running Chicago, OS/2 or Windows 3.x.

As further evidence that Chicago is The Big One, we're convinced that Microsoft has fixed the truly serious problems that kept Windows 3.x from being reliable and robust enough to be used in a serious computing environment. In our view, the most serious flaw in Windows 3.x is its resource allocation limitations. In case you haven't noticed, a PC running Windows 3.x will run out of system resources when three or four applications are running, no matter how much memory and hard disk space it has. And, as all too many 3.x users are aware, Windows is not very graceful at recovering from resource allocation errors, and usually crashes with a GPF (General Protection Fault) error, causing you to lose all your data. From our discussions with Microsoft engineers of Chicago's inner workings, we are satisfied that Chicago solves this problem. Not only is there a lot more memory available for resource allocations, but the system can dynamically allocate more as it spawns new processes.

Won't you come out to Plug-and-Play?

Another vast improvement is Chicago's support for the emerging "Plug and Play" standard. Although the operating system will

Continued on page 28

MPT

We've moved! Check out our New Opening specials!

2370 Midland Ave. Unit A10, Toronto ON, M1S 5C6 tel (416) 292-0533 fax (416) 512-7905



510mb SCSI/2 HDD (600mb unformatted),	\$479	Microsoft WINDOWS 3.1, 3.5" or 5.25",	\$48
1.0g SCSI/2 HDD (1.2G unformatted),	\$866	Conner 210mb IDE HDD,	\$249
1MB 30pin 70ns SIMM, 5yr. warranty,	\$53	2s / 1p / 1g I/O card w. 16550 UART,	\$29
4MB 30pin 70ns SIMM, 5yr. warranty,	\$199	Toshiba/Pan. 1.44 MB 3.5" HD,	\$47
4MB 72pin 70ns SIMM, 5yr. warranty,	\$188	486slc-33Mhz mainboard w. CPU,	\$139
8MB 72pin 70ns SIMM, 5yr. warranty,	\$355	MID Tower CASE, 6 bays, 220 csa P/S,	\$77
Soundblaster 2.0c card, sprks, phones,	\$55	Logitech serial / ps2 MOUSEMAN,	\$59
MS DOS 6.2 full version, 3.5",	\$38	Super I/O 2IDE/2FD/2ser/1par/1game,	\$17
486dx board w. 8mb simm ram (NO CPU), <small>(zif socket, 256k cache, 3 vibus, green standard, usa, high quality 6 layers)</small>	\$477	Adaptec 1542CF SCSI/FD bundle,	\$279
Microsoft JMOUSE version 2,	\$34	AAMAZING .28dp 14" SVGA monitor,	\$288
16BIT NE2000c Novell certified CARDS,	\$69	SVGA 512k video card w. 256k ram,	\$39
NOTEBOOK 4mb memory card,	\$199	Many more items in stock! Drop by for a full price list Good service, Good prices, All the time	



When You Talk, We Listen.

At A Plus Software, we take special care in listening to your needs and concerns. We want you to be a happy customer. So we help you pick the software that's just right for you.

JANNA CONTACT

Developed by a management consulting firm, the people who created this program really knew exactly what is needed in order for the average business person to survive. By integrating document and contact management, Janna Contact truly allows you to operate your entire business from the uncomplicated Janna screen. It also integrates seamlessly with Microsoft Office. This program does what you expect contact and document managers to do and then goes over and above that expectation. And it's a Canadian product!



Janna Systems Inc.



\$149⁹⁵

LET US SHOW YOU HOW

Janna Contact DEMO DAY
The Following Saturday, 1PM-4PM
June 18: Yonge/Eglinton, Brampton, Vaughan,
Scarborough, Mississauga
June 25: London, Barrie

AL-QADIM THE GENIE'S CURSE

Your quest is to save your family honour and face the all-powerful Genie Lords. Explore the interactive world of the Arabian Nights while facing the incredible challenge of real-time combat and magical puzzle solving. You are a brave corsair who gets wrapped up in the action in this world of high magic and dark deeds. This exotic world of fast real-time action and arcade-style combat, will draw you into battles with sinister sorcerers, wise hermits and mysterious beings. Enhanced by grand cinematic musical themes, this story will delight you, terrorize you and challenge you with every step you take!



NEW

\$69⁹⁵

1942 THE PACIFIC AIR WAR

Who's side are you on? You're in command of either the U.S. or Japanese forces and it is up to you to prevail or be defeated. Experience the real life risks of fighting the legendary Pacific Air Wars by strapping yourself in the cockpit and picking apart the enemy with torpedos. Pilot any of 10 aircraft on your mission. Share the same field of vision as the actual aircraft with an innovative new virtual cockpit. Even go head to head with a friend via modem. It's 1942, and you don't have much time - so sharpen your skills and call up your courage. Your heart will stop, your hands will shake, but the target is engaged, so fire away!



NEW

\$79⁹⁵

THE DISCOVERERS IMAX CD-ROM

Knowledge Adventure has gone above and beyond what you would ever have expected from educational software with this latest product. The Discoverers takes you step by step through the most important and exciting discoveries that have taken place since the beginning of time. With an Imax film that will blow you away, and a variety of games that test your new knowledge, this educational package is truly an adventure that you and your children will love being a part of.



NEW

\$49⁹⁵

INCA II

NEW

Immerse yourself in the future - 500 years in the future, aboard a lost Incan city floating in space. A mysterious asteroid threatens the very existence of your empire. Prepare yourself for the battle of the ages where father is pitted against son, and good against evil. Inca II will return you to the award-winning universe of stunning graphics and animation.



3.5" Version **\$39⁹⁵**
Also available as CD-ROM

SIERRA

SIDEBAR

NEW

Here's a great new tool that makes it easy to work in your application or document. It has all the features of a Program Manager but right on screen - at your fingertips. This incredible icon bar sits on the right of the screen, and lets you open, search and store files. Searching through a myriad of files in the Program Manager can be time-consuming or even impossible. But with Sidebar, you can create folders with categories to browse through quickly. And if you don't want all those confusing settings from your Program Manager, you can even customize your own desktop.



\$59⁹⁵

Quarterdeck

SETUP ADVISOR

This nifty utility from the people who make CHECK/IT will scan your hardware for memory conflicts and more! Get to the bottom of current problems, and identify the optimum setting for new devices. A device configuration library lets you play "what-if" with hardware you may be thinking of purchasing, and you can add your own device definitions. Easy to use! Requires Windows 3.1 or later.



\$24⁹⁵

TouchStone

STACKER 4.0 UNIVERSAL UPGRADE

NEW

You've heard about how the new Stacker 4.0 will give you the most hard disk space you could ever imagine and by now you are familiar with the quality and ease of use of the Stacker products. Now it is easier than ever before for everyone to benefit from this fantastic utility. Stacker 4.0 is being offered as a Universal Upgrade. This means you don't need to own a previous version of Stacker in order to pay the low upgrade price; all you need is a copy of DOS 6.0 or 6.2. It's a great deal on a best-selling product.



\$69⁹⁵

STAC

WORDPERFECT 6.0A UPGRADE FOR WINDOWS

NEW

WordPerfect 6.0A for Windows will allow a serious user to easily make incredible graphics effects, find a section in a long document at the click of a mouse, or integrate a spreadsheet into the document without leaving the document. In addition, you get world class grammar checking and spell checking. You will want to custom load this program so that you don't have to use up the entire 32 Megabytes on your hard disk of the full program. You will also need a 386 or higher processor and at least 6 Megabytes of RAM.



\$129

WORDPERFECT CORPORATION

TEACH ME! TRAINING DISKS

From the beginner who would prefer to have their hand held step by step to the experienced user who wishes to take full advantage of all the features a program has to offer, this program is definitely worthwhile. Computer based training offers many advantages because you are learning within an interactive environment. The Teach Me... line offers training in the latest versions of your favourite software packages. These are programs designed to help you use all of the exciting new software packages to their full capacity, easily, comfortably and with confidence. Call our stores for a list of available



NEW

\$44⁹⁵ ea.

MICROSOFT OFFICE PROFESSIONAL 4.3 UPG. FOR WINDOWS

w/Word 6.0, Excel 5.0, PowerPoint 4.0, Access 2.0, & Mail 3.2 License

NEW



Microsoft Office is more than just a bunch of software thrown into one neat little package. What is exciting is that these full-featured products are integrated so that they work together as though they were a single program. Access is the new addition that turns the package "professional" and truly makes it complete. This is a version and competitive upgrade to the latest and greatest in Microsoft software.

COMPETITIVE UPGRADE **\$540**

WITH **\$50** MAIL-IN COUPON INCLUDED
for users of Office Pro 4.0 or earlier, or Office Std., Word, Excel, PowerPoint, or Access. Ask for details.

Microsoft

20 DISKETTES

20 Preformatted A Plus Software 3.5" High Density Disks with LIFETIME GUARANTEE

A Plus Software has done it again by providing you with the highest quality diskettes at the lowest price.



DYNAMITE DISK DEAL!

Available at an "I Can't Believe It" Price of only: **\$9⁹⁵**

LOCKING 3.5" DISK FILE

This is a well-designed and well-made locking disk file. Made from high-impact plastic, it will keep disks well protected and organized.



\$3⁴⁵

Item may not be exactly as illustrated.

Sale Ends Saturday, June 25, 1994.

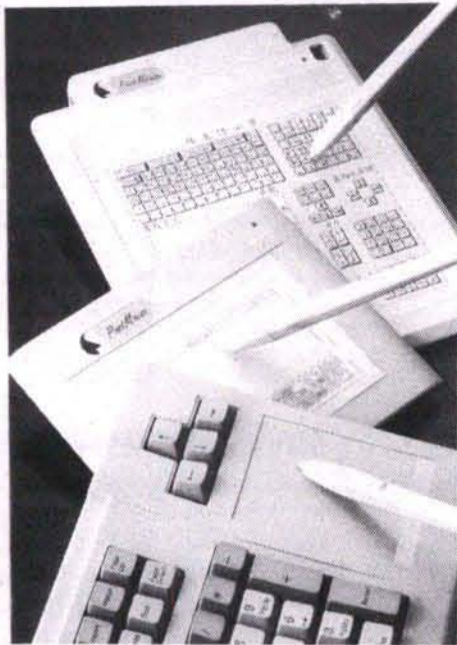
A PLUS SOFTWARE



TORONTO YONGE/ EGLINTON FREE CUSTOMER PARKING 2436 Yonge St. 322-7612	BRAMPTON HWY 7 332 Main St. North 450-1234	MISSISSAUGA Eglinton Ave. 4559 Hurontario 507-1866	VAUGHAN HWY 7 1600 Steeles Ave. W. 669-0557	ETOBICOKE Lundy St. W. 4195 Dundas St. W. 236-9337	MARKHAM HWY 7 8425B Woodbine Ave. 474-0076	SCARBOROUGH HWY 401 2208 Eglinton Ave. E. 755-4211	PICKERING Kingston Rd. 1550 Kingston Rd. 420-9830	LONDON Fanshawe Rd. W. 109 Fanshawe Rd. W. 661-0222	KITCHENER Fairway Rd. S. 589 Fairway Rd. S. 895-2586	KINGSTON Princess St. 2782 Princess St. 634-3234	BARRIE Hwy 400 411 Bayfield St. N. 728-8333
--	--	--	---	--	--	--	---	---	--	--	---

CompuCanada Inc.

200-2940 Main Street, Vancouver, BC, V5T 3G3 Tel: (604) 872-6066 Fax: (604) 872-0288



Digi-Pen

A Superb Input Combination

for **Typing,
Writing,
Drawing,
and Digitizer**

- Ideal for CAD, CorelDraw, drawing, sketching, writing or pointing.
- Emulates both a mouse, a digitizer and O.C.R.
- Include driver for Autodesk, DOS & Windows applications.

Dealer Wanted



Breaks The Language Barrier

- ★ Use Chinese/Japanese in English Windows applications, such as Word, Access, Ami Pro, PageMaker, PowerPoint, WordPerfect, Winfax, etc.
- ★ Compatible with Microsoft Windows - Including Chinese, Japanese, English or other versions.
- ★ Include the 10 most popular input methods for Chinese, and 5 for Japanese.
- ★ Bi-Lingual manual - English and Chinese/Japanese.
- ★ True Type Chinese / Japanese Fonts, Support Postscript

What Color...

Continued from page 26

work fine on today's generation of 386 and 486 (or better) PCs, to take full advantage of it, you will require a PC that has what is known as a Plug and Play BIOS. The BIOS is the basic input/output system that provides the information a PC needs to access hard disks, keyboards, and other I/O devices.

If you've ever struggled to set up a sound card or CD-ROM drive, you'll appreciate the difficulty of configuring today's PCs (and, if you haven't, reading "Card Bytes Man: a Plug-and-play Nightmare" in our June 1994 edition will give you the basic idea). The Plug and Play standard promises to allow PCs to be configured automatically, in much the same way as Apple's Macintosh currently does. Virtually all of the major PC vendors (Dell, Compaq, IBM, Toshiba, etc.) have committed to support P&P. We saw an incredible demo where a Toshiba laptop connected to a docking station, reconfigured its network connection, recognized and established a new printer connection, and mounted a new hard drive, all without turning off the power. In another demo, an IBM PS/1 even turned itself off when Chicago's "Shut down" command was used — a feature previously only available on some Macintosh models. Even better, when the PS/1 was restarted, the applications resumed at the exact point they had been at before the shutdown. We wish more PCs had the PS/1's Rapid Resume feature — it's a great time-saver.

Speaking of Macintosh, we'd be more than a little worried if we were Apple. (Mac fans: skip to the next paragraph now! You're not going to like the next couple of sentences.)

It's pretty safe to say that there's not a single feature of the Mac that Chicago doesn't, um, bring to the PC. Sure, there are a few differences in the way they are implemented, but on close examination, it's clear that Chicago is heavily Mac-influenced. Frankly, we think Chicago is superior in many important areas.

As mentioned earlier, Chicago is more robust and crash-resistant than the Mac OS.

Video for Windows supports better video playback and better multitasking than Apple's QuickTime.

Microsoft's "Registry" is roughly analogous to the Mac's invisible Desktop database and, although it can be argued that the Mac's desktop file is a more sophisticated solution, in actual use, we find Chicago's system to be more user friendly. To explain why, we need to examine how each system tracks information about its files.

Under DOS/Windows 3.x, file types are determined primarily by a three-character extension appended to the 8-character (max.) DOS filename. The system is set up so that files ending with the letters ".DOC" are recognized as, say, Microsoft Word files. For their part, applications typically put the 3-character extension on filenames automatically.

On the Macintosh, each file actually consists of two components: a data fork and a resource fork. The resource fork contains hidden codes which identify the filetype and creator type of each file. For example, Microsoft Word for the Mac saves its text files with the filetype "TEXT" and the Creator type "MSWD". These codes, by the way, are completely arbitrary and may or may not make any sense. The popular HyperCard program, for example, creates files with the creator type "WILD" — an obscure reference to the original working title of the program: WildCard. But I digress....

When MS Word is available on the Mac containing one of these documents, the invisible "desktop" file contains a list of these codes. That way, if the document is double-clicked or otherwise launched, the system knows that it belongs to MS Word, and automatically opens the right application. The trouble starts when a text file created with, say, MacWrite is double-clicked on a Mac without the application. Even though there might be a copy of MS Word on the computer that could easily open the file, the system will complain that "the application that created the file could not be found."

Recognizing this flaw, Apple is reported to be preparing a version of its System Software that includes "Macintosh Easy Open," a

What a DEAL!!

Panasonic 562 CD ROM
(double speed)
16 bit Sound Card 5 CD Titles

\$299

486-33 system w/ MULTI-MEDIA PACKAGE \$1399

- 486SLC 33Hz
- Super I/O Controller Card w/2S/1P/1G
- 210Mb Hard Drive
- SVGA Video Card
- 3 button mouse
- 1.44 Floppy Drive
- Mini Tower Case
- 4Mb RAM
- 101 Enhanced Keyboard
- SVGA Color Monitor

Panasonic 562 CD ROM (Double Speed) 16 bit Sound and 7 CD Titles

486DX-33 \$1,319

486DX-40 \$1,339

486DXII-50 \$1,399

486DXII-66 \$1,519

Complete With:

- 128K Cache
- 4Mb RAM
- 1.44Mb Floppy Drive
- 210 Mb Hard Drive
- SVGA Color Monitor
- SVGA Video Card
- Super I/O Card with 2 S/1 P/1 G
- Mini-tower Case
- 101 Enhanced Keyboard
- Free Mouse

Beginner's System

486DLC-33 \$889

- 2Mb RAM (up to 32Mb)
- 105Mb Hard Drive
- 1.44 Floppy Drive
- SVGA Color Monitor
- SVGA Video Card
- Super I/O Card w/2S/1P/1G
- Mini Tower Case
- 101 Enhanced Keyboard
- Free Mouse

105Mb → 210Mb ONLY \$70

WE DO TRADE-INS

We turn your old
Computer into CASH

PLEASE CALL FOR AN ESTIMATE

486DLC-33 Hz w/CPU.....	\$149	340 Hard Drive.....	\$359
486DX40 Hz w/CPU.....	\$459	Math Co.....	\$55
486DXII-66 Hz w/CPU.....	\$629	CD Titles.....	\$CALL

We SPECIALIZE on Upgrading your System

486DLC-33 w/2Mb RAM.....	\$259
486DXII-50 w/4Mb RAM.....	\$649
420Mb Hard Drive.....	\$399
Zoltrix 96/24 Fax Modem.....	\$49
Zoltrix 14.4 Fax Modem.....	\$139

All Prices are cash discounted, must be paid by Cash or Certified Cheque
Prices are subject to change without prior notice.



Computers

1182 Queen Street East, Toronto, Ontario
Tel: (416) 466-7153 Fax: (416) 466-6328

Mon.-Fri. 10:00am - 8:00pm
Sat. 11:00am - 7:00pm
Sun. By Appointment Only

utility designed to address this problem. (If you can't wait, Dataviz already bundles this utility with its MacLink Plus package.)

Chicago extends the DOS/Windows functionality in two important areas: first, it (finally!) does away with those much bemoaned eight-dot-three-character file names. Chicago filenames can be a whopping 255 characters long. (Macs support file and folder names up to 31 characters long).

The way Microsoft implemented long filenames is so brilliant, we're amazed no one came up with it before. The problem with long filenames, the way they are implemented in operating systems such as OS/2 and Windows NT, is that they are not supported on floppy disks, for compatibility purposes with older DOS and Windows systems. In other words, an OS/2 file will have a different name on floppy than it does on an HPFS hard disk.

Also, these systems require reformatting the hard drive, in order to allow the enhanced filesystems that provide these long filenames. Needless to say, reformatting one's hard drive is a fairly drastic step that a number of users aren't eager to take.

Chicago extends the existing file allocation table ("FAT") structures of both hard drives and floppy disks to provide long filenames on all media types. Even better, the disks can be read on systems running other versions of DOS or Windows, and the names show up in standard 8-dot-3 format.

Basically, it works like this: Chicago stores the long filenames as if they were directory names and sets the system attributes to hide the names so that non-Chicago systems won't see them as directories.

go systems won't see them as directories.

The system also distills the long filenames down into unique short names as necessary. "Long File Name" might become "LNGFLNM2", for example, to differentiate it from another long name that crunched down to the same letters.

Few machines are ready to fully exploit the plug-and-play capabilities of Chicago. If you are considering the purchase of a new PC, your best bet is one that offers a so-called "Flash BIOS." This means that the way the computer communicates with the various hardware components can be upgraded to support new features. On some PCs, this will be as simple as loading new code into the semi-permanent flash memory from a diskette.

A number of PC manufacturers have committed to supporting the plug-and-play standard. We've seen statements from big names like Acer, AST, Compaq, Daewoo, Dell, Hewlett-Packard, IBM, IPC, Packard Bell, Zenith, and dozens of other hardware manufacturers, pledging support.

Compaq is one of the only companies currently shipping computers that will take full advantage of Plug and Play technology as soon as the forthcoming version of Windows is available. We strongly recommend you verify that your vendor is committed to supporting Plug and Play and determine upgrade policies and costs, if any. Of all the things you should put on the list of features your next PC has, we think that full Plug and Play support is perhaps the most important. □

SALE!

WD 340 MB H.D.	\$359
Conner/Maxtor 540 MB H.D.	\$499
Conner 420 MB H.D.	\$399
SVGA 0.28 DP MONITOR	\$269
386DX-40 Motherboard w/CPU & 128K Cache	\$149

486 DX-33 \$1449 486 DX2-66 \$1649

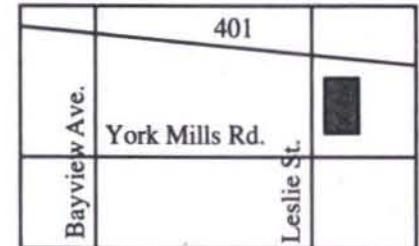
Vesa local bus w/Intel CPU motherboard, 128K cache, 4 MB RAM, 1.44 MB FDD, 170 MB IDE HDD, 1 MB 32-bit VL bus, SVGA Windows accelerator, SVGA 1024x768 (0.28 DP) color monitor, 2 serial/1 parallel/1 game port, 101-key enhanced keyboard, 3-button mouse, mini-tower case, 200 watt power supply, MS-DOS 6.2 w/disk & manual. 1 year parts & 2 year labor warranty.

MPM Industries Corp.

1875 Leslie Street, Unit 7
North York, Ontario
M3B 2M5

Tel: (416) 391-4600

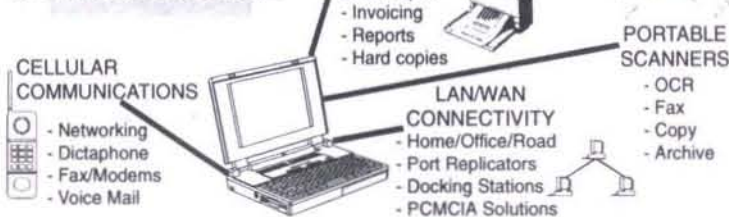
Fax: (416) 391-4373



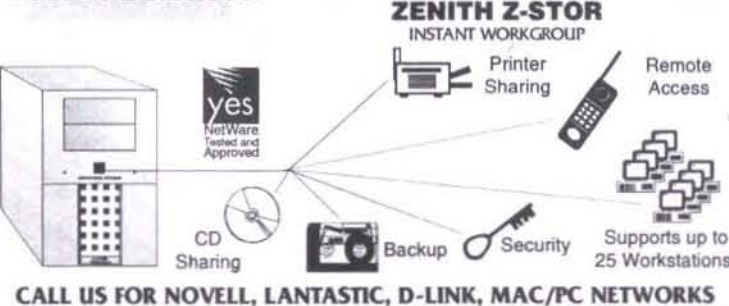
ACCESS Business Centre (416) 630-3497

...your access to office technology Mon.-Fri. 9-6

MOBILE OFFICE



NETWORKING

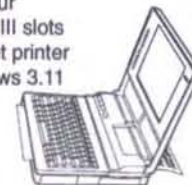


NEW!

Canon NOTEJET 486C COLOUR SCREEN

- Intel 486SX 33
- Dual scan passive colour
- PCMCIA Type II slots - III slots
- Built-in 360dpi bubblejet printer
- MS DOS 6.21 & Windows 3.11

486C 200HD - \$4295
486C 120HD - \$3995
Mono 85HD - \$2995



HIGH RESOLUTION

UNITY 1200 XLO

- 1200 x 1200 dpi
- over size printing
- to 12 x 19.5"
- Postscript & PCL-4
- Ethernet Intf.
- 40k Sram
- 32mb Ram
- 80mb Hard Disk
- 235 Fonts
- PC & Mac Intf.
- 33Mhz Rip
- Auto Switching

WINPRINTER 600XL

11x17 Printing
600 DPI
Postscript or Direct

FAST Windows Printing
Over 100 Fonts
High Speed Interface
\$3995

CALL FOR QMS, GCC, NEWGEN & LASERMASTER

COLOUR

LEXMARK 4079

- Full Colour
- Bubblejet
- Postscript
- 4mb Ram
- 11 x 17

FARGO PRIMERA

AFFORDABLE DYE-SUB

- Photo-realistic colour
- Spectacular Quality
- Spectacular Price

\$1395



CALL FOR QMS, TEXTRONIX, HP, CANON AND MORE

LARGE FORMAT COLOUR



Big Color

DisplayMaker
DIGITAL PRINTING SYSTEM

Output banners and posters from your graphics files (Macintosh and IBM)

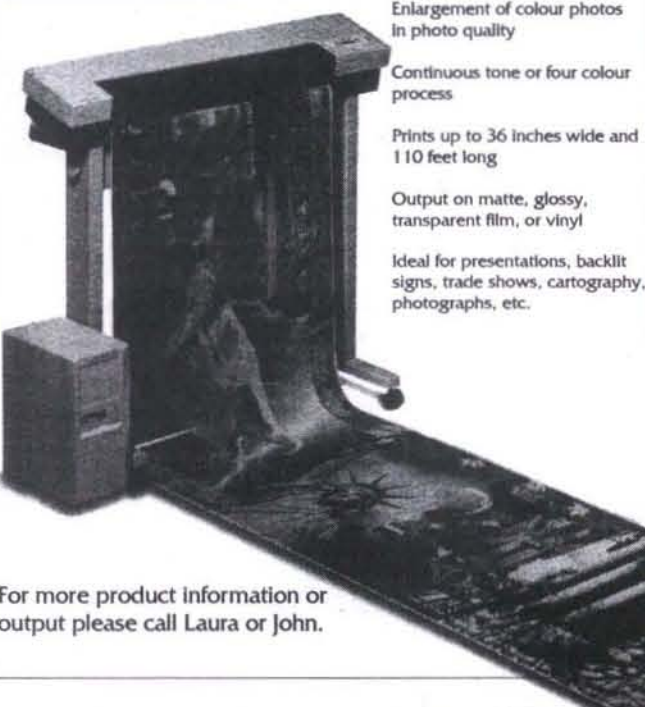
Enlargement of colour photos in photo quality

Continuous tone or four colour process

Prints up to 36 inches wide and 110 feet long

Output on matte, glossy, transparent film, or vinyl

Ideal for presentations, backlit signs, trade shows, cartography, photographs, etc.



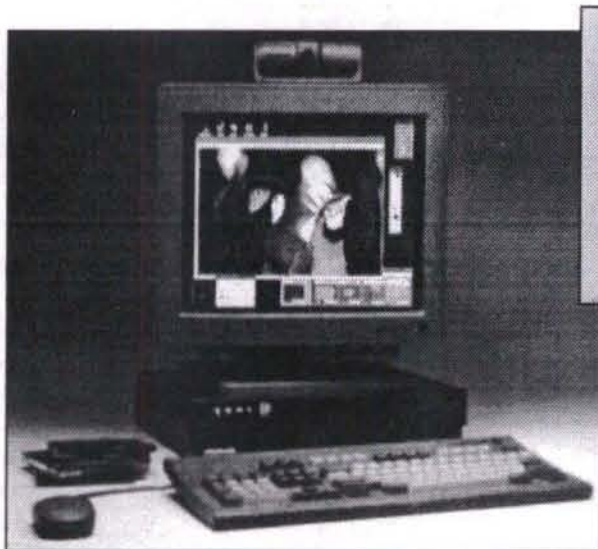
For more product information or output please call Laura or John.

INTERVIEW

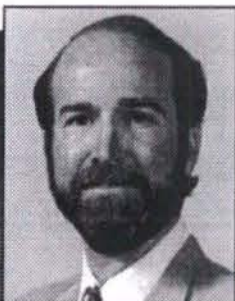
A Conversation With Forest Baskett

VP Of Silicon Graphics

BY KEITH SCHENGILI-ROBERTS



Silicon Graphics Indy Station



Forest Baskett

Silicon Graphics is a company on the forefront of computer technology. You may not be using one of their computers yet, but you've certainly seen what they can do if you've seen movies like "The Abyss", "Terminator 2" or "Jurassic Park".

Yet stunning graphics are only a part of what Silicon Graphics are all about. This conversation with Forest Baskett, Senior VP and Chief Technology Officer of Silicon Graphics demonstrates what else Silicon Graphics is doing these days.

The Computer Paper: What exactly is your role at Silicon Graphics?

Forest Baskett: I've been trying to do what I've always been trying to do: to help figure out what's next, to figure out where the industry is now, and think about our product strategy and where we best fit in.

TCP: How did the firm start and where do you see Silicon Graphics heading?

FB: Silicon Graphics is now over 12 years old. We started out primarily as a graphics company, but then we moved into multi-processing, parallel-processing and in the past eight years we have become quite expert in those fields. In that same time-frame we expanded out into additional media and offered more than just 3D graphics by going into audio, video and image processing as well. Our latest expansion has been into the user interface and the ability to make our systems really easy to use — to take advantage of multimedia and graphics to enhance the ways in which people can interact with our machines.

TCP: How is Silicon Graphics expanding the ways people work with computers?

FB: Well, you should try out one of our latest machines. The VideoMagic package that comes with our systems is really the nicest and easiest-to-use interface. Especially when you consider that our machines are

among the most rich and complex systems around.

TCP: What is it about these systems that make them better suited for people to work with than say, plain old DOS or Windows?

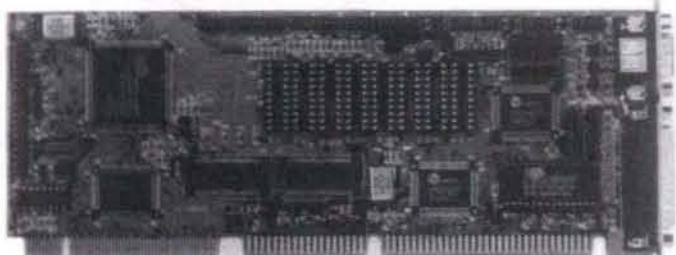
FB: We really emphasize the kind of graphics that we really know how to do well in order to provide a rich visual interface for a very fast, very intuitive kind of interaction. So the fact that we've got outstanding graphics with very fast response times and a really nice design is what makes it fly. DOS is an abomination, and Windows is graphically poor — it certainly is not intuitive. Running Windows is a real challenge to almost anyone, let alone people who are not computer literate. This business is not really about computers per se, but how people use computers. Our user interface is simply a lot easier and more effective to use.

This is only one of several areas that have been really noteworthy for us in the past several years. As we go forward, we are getting heavily involved with Time-Warner in the Interactive-TV arena and with Nintendo in the video games area. These are areas that fall out naturally from our previous expertise as we find new opportunities to use our technology and in-house talent to do some exciting new things.

TCP: How is the relationship with Time-Warner and Nintendo going to expand Silicon Graphics into the general marketplace?

FB: We are not a consumer electronics company and we are not proposing to become one. Our work with Nintendo is natural because of the graphics and the interactive

TRISON ELECTRONICS TECHNOLOGIES

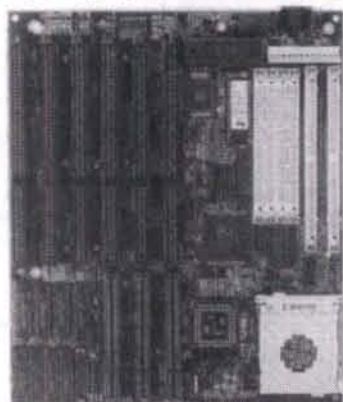


RESELLER'S CHOICE: V.L. BUS THREE IN ONE CARD

Vesa Local Bus True Color Graphics Engine 1280 x 1024 256 colors
Vesa Local Bus IDE Hard Disk Controller
Multi I/O supports two RS 232 port • one printer port • one Game port

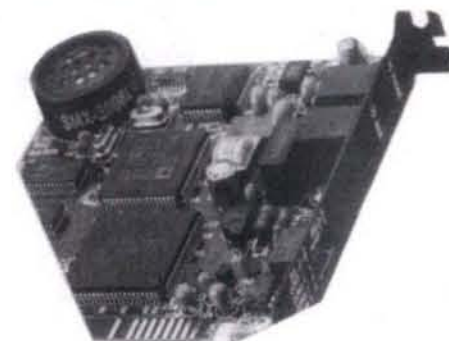
DX4 DEEP GREEN MAINBOARD

from manufacturer
SIM Modules installation from 1Mb to 128Mb
cache RAM 256K
CPU Selection 486DX-25/33/40/50 • 486DX2-50/66/80 • DX4-75/100



ENCLOSURE with LCD DISPLAY

Unique source whole the world



DEALER'S CHOICE: MODEMMAN'S MODEM

14.4/FaxModem • 14.4/FaxModem + Voice
19.2/FaxModem • 19.2/FaxModem + Voice
28.8/FaxModem

See Us At

COMDEX/Canada '94

Canada's #1 Information Technology Marketplace for Resellers and Corporate Decision Makers

including **INEXPO** and **WINDOWS.WORLD**

July 13-15, 1994 • Toronto, Ontario

BOOTH# W6045 SKYDOME

Designer, Manufacturer, Importer & Exporter

TRISON ELECTRONICS TECHNOLOGIES

tel (905) 238 9251 • fax (905) 238 6822

1350 Matheson Blvd. East, Unit 9

MISSISSAUGA Ontario

L4W 4M1

ONTARIO ★ TAIWAN

FREE SOFTWARE

We will give you 1 free software disk just to visit us at our location !!

CONVENIENTLY LOCATED BY:
FINCH & DUFFERIN

Only valid for walk in at our Dufferin/Finch location with this add, 1 per customer

NOW OPEN
7 DAYS A WEEK

HOURS:

Mon - Fri 9am - 6pm
Sat 10am - 5pm
Sunday 10am - 4pm

**TO ORDER,
PLEASE CIRCLE
TITLES BELOW**

BONUS:
For Every 10 Disks You Purchase
PICK 2 FREE

PRICES: 1-9: \$3.49 ea 10-49: \$2.59 ea 50-99: \$2.35 ea 100+: \$2.15 ea

EDUCATION

- Amy's first Primer** (ED 101) A collection of routines for pre-schoolers with alphabet, counting, shapes and colour.
PC-Touch (ED 107) Super typing Tutor. The best we've seen.
Dinosaur Database (ED 116) A fun educational program that teaches all about dinosaurs with world maps, pictures, common and scientific names. Also displays time periods.
Googol Math Games (ED 121) Makes learning an exciting adventure. Supports age levels 4 thru 12.
World Atlas (ED 151) (2 disks) Search by continent, country, or city in this fabulous atlas of the world.
Dos Learning System (ED 159) A great first tutor for DOS. Learn more about these fantastic machines. You'll love it.
French I & II (ED 302) Flash card drill familiarizes you with the French language. Review at your own pace.
Languages (ED 306) Teach or advance yourself with these basic tutors in: French, German, Italian, Spanish.
Balloon speller (ED 307) Great introduction to spelling for young children. Learn to spell in a fun environment.
School mom (ED 308) Teaches children ages 2-14 the basics of art, music, spelling, english, and math. GREAT !!
Funny Faces (ED 309) Make different looking funny faces on your screen. Loads of fun for the young generation.
Yogi Bear Math Adventure (ED 310) In a remote section of Jellystone Park, the child through an animated adventure VGA.
Teenage Mutant Ninja Turtle Colouring Book (ED 316) Fantastic colouring book for all ages. Children love this !!
Lotus Macro (SP 104) Short cuts for use with 123 !!
Lotus Templates (SP 106) Ready made applications. Ready made templates to get you running immediately. LOTS !!
Word Perfect 5.1 learning system (SP 115) (2 disks) Basic tutorial for learning LOTUS 123. Use this to master the program.
Word Perfect 5.1 Macro (WO 201) (3 disks) Learn all the powerful and new features of this new word-pro Simply the best tutorial on the market.
By Design (WO 202) (2 disks) Superb collection of over 100 helpful macros for WP 5.1.
Word Perfect add on (DP 110) Word Perfect add on brings desktop publishing to your documents. Creates beautiful graphic polished documents in moments. Sells for \$179.00 in stores

GENERAL

- PC Lotto** (GE 101) Canadian based lotto systems. Covers 40 different lotto systems including lottario and 649. File of all drawn numbers, best and worst numbers, GOOD LUCK !!
Medical Doctor (GE 114) Diagnose various symptoms you have and come out with a treatment !! Fantastic
Personal Budget Tools (GE 116) Plan your household budget. Keep track of finances and save for those luxuries.
Horse Racing (GE 123) Handicapping for thoroughbreds. Help increase your odds at the track by 1000 percent.
INCOME TAX RETURN (GE 138) Fast and efficient method for doing your income tax. Very helpful !!
PC-LOAN (GE 145) Best loan & mortgage, Canadian support.
Collect (GE 170) Lets you track and manage any type of collection by categories of your choice. Antiques, art, audio, cards, books, coins, stamps, movie, ETC.
Resume Master (GE 191) Resume quickly prepares a professional looking resume. Gives you the winning edge !!
Edna's Cookbook (ED 202) (2 disks) An electronic cookbook with fantastic new recipes. Add your own as well.
Brother's Keeper (GE 203) (2 disks) A great genealogy program that allows you to trace your family's history.
Telx (TE 116) State of the art communications package.
Solar System Simulation (AS 105) Gives a full simulation of our solar system in VGA graphics. Moon, planets, & more.
Skyglobe (AS 110) Shows 89 constellations as viewed from any location in the world and print them out. Easily the best and most acclaimed astronomy software package on the market. CGA/EGA/VGA
Mcfee Antivirus (SH 107) (2 disks) Latest collection of anti-virus programs Detect and eliminate all known viruses.

GRAPHICS & DEKTOP PUB

- Curve Digitizer** (DP 104) (2 disks) True full featured CAD system. Extensive options, very easy to use. THE BEST !!
PC Circuit (DP 108) Design printed circuit board layouts and electronic diagrams like magic. Fantastic !!
Print Partner (DP 109) (2 disks) Printmaster/Printshop clone. Prints banners, signs, calendars, and more. Includes set of 200+ built in graphics.
Dataworks Clipart I (DP 122) (12 disks) The best clipart collection we have seen in a long time, 500+ PCX graphics!!
Dataworks Clipart II (DP 123) (12 disks) More of the greatest assortment of graphics for every need !!
SimCGA (GR 102) Run CGA programs with Hercules type cards an essential program for anyone with a monochrome monitor.
Printshop Graphics (GR 108) 3 additional libraries, over 200 additional pics - needs printshop. Fantastic collection
Printmaster Graphics (GR 109) 3 more printmaster libraries
Printshop Graphics II (GR 111) 500+ images for Printshop
Printmaster Graphics II (GR 112) (2 disks) 500+ images
VGA Universe (GR 123) Beautiful slideshow of actual digitized pictures from space. The best graphics VGA
Printshop Graphics III (GR 125) (2 disks) More graphics for Printshop. This will complete your graphics library.
Printmaster Graphics III (GR 126) (2 disks) More graphics for Printmaster. This will complete your graphic collection
Kid Paint (GR 131) Kids go crazy on this program. A colouring book on computer. Songs & animation as well.
New Printshop Graphics (GR 141) About 700 images of people business, icons, zodiac signs, and more. 24 more fonts !!
VGA Space Flight Simulator (GR 306) Amazing demo for VGA. Blast off from planet earth and tour the universe. GREAT !!
GULF III (GR 307) A tribute to the troops in the Mideast conflict. Full colour photos and music VGA Req.

WINDOWS 3.1

- Utilities** (WI 110) (4 disks) 40+ utilities that will help you get the most out of windows & make it easy to use.
Windows Games I (WI 113) Includes tetris, centipede, asteroids, lunar lander, checkers, backgammon, and more !!
Icons & Icondraw (WI 114) (4 disks) Contains 1100+ icons for windows. Has icons for popular software packages and lets you view, edit, and create your own. FANTASTIC !!
Windows Games II (WI 119) Space walls, Hextris, Mines, Risk, Pente, Millie bories, and more. Collect them all !!
Windows Games III (WI 120) Includes tetris, Concentration, Taipei 3.5, Arachnid, Blackout, attack, Moku, and Solitaire.
Windows Games IV (WI 121) Tops off the game sets with Missile command, Cubic, Pacman, Pipe, Wordhai, Tetwin.
Chess for Windows (WI 122) Two great chess programs for windows 3.0, both play excellent games of chess.
Winjack (WI 127) Excellent game of BLACKJACK for Windows.
TRUE TYPE FONTS (WI 134) (12 disks) The ultimate set of fonts for Windows 3.1. Over 120 fantastic fonts worth \$100's
TRUE TYPE FONTS I (WI 135) (12 disks) The second set, with another 120 fonts. Fantastic variety !! GET THIS SET !!
Virus Scan (WI 140) Updated for use with both DOS and Windows
Benchmark (WI 149) Shows your windows speed and how to increase your performance. Essential for all !!
WIN TREK (WI 162) (2 disks) Windows STAR TREK at its best !! Fantastic graphics and game play. ENJOY !!
FRACAL (WI 166) A great fractal design program !!
Termite (WI 167) A hilarious program, termites chew up windows and spit them out on screen. Great prank !!

THOUSANDS OF TITLES

NOW FEATURING:

MACINTOSH

A full collection in our showroom !!

Come browse through the thousands of titles and many ALTERNATIVE SHAREWARE titles in our showroom. We only carry top quality SHAREWARE that will have you GAWKING with wonder!! The shareware we sell is a fantastic means of software distribution PLEASE SUPPORT THE SHAREWARE CONCEPT. For more information call 638-4411. If you can't make it to our showroom then call for our FULL FREE CATALOG to introduce you to THE WORLD'S GREATEST SOFTWARE COLLECTION.

FREE CATALOG WITH EVERY ORDER



FREE CATALOG WITH EVERY ORDER FOUR WAYS TO ORDER:

- 1 - MAIL YOUR ORDER
- 2 - FAX YOUR ORDER (638-4477)
- 3 - PHONE YOUR ORDER (638-4411)
- 4 - VISIT OUR OFFICE AT FINCH & DUFFERIN

MARCOM COMPUTERS CANADA

ORDER:

Name: _____
Street: _____
City, Prov: _____
Postal Code: _____
Phone# _____

PLEASE CHECK

ALL THAT APPLY

VISA: ☐

MC: ☐

CHK: ☐

5% ☐

3% ☐

Disks: _____

Free Disks: _____

Price per Disk: \$ _____

Post & Hand: \$4.00

**SUB-TOTAL: \$ _____

7% GST on **: \$ _____

8% PST on **: \$ _____

TOTAL: \$ _____

CREDIT CARD # _____

EXPIRY DATE: _____

NAME ON CARD: _____

4490 CHESSWOOD Dr. #3, Downsview, Ontario, M3J 2B9

capabilities and the processor design capabilities we have. They are the consumer electronics company and we are really the technology company that can give them a major step forward in terms of what they can offer consumers. That's a pretty straight-forward supplier relationship. With Time-Warner, again there's a natural partnership, because we are working on the server technology and they are supplying the content. Our servers have tremendous input/output capability and when you look

at servers for video-on-demand we are really a natural. The set-top units that will go into people's homes in our Interactive-TV experiment use an intuitive user-interface with high-quality graphics. We are again able to bring our technological expertise into play into a new kind of market. There's a good synergy between the value that we bring to these enterprises and the values and expertise that the other companies bring.

TCP: When can people expect to see the fruit of

these developments?

FB: Nintendo is planning on launching arcade games first, and then video games with the Reality Technology that we are developing. The Time-Warner experiment in Orlando, Florida with Interactive-TV is just that, an experiment. It's important to realize that we have a lot to learn about what works and what doesn't work as we try out Interactive-TV. There are a number of these experiments under way. The real value of these experiments is what we will learn from them, and how we can use that knowledge to progress to the next level, where we might start getting into deployment on a nation-wide scale. Computer manufacturing and home entertainment are multi-billion dollar industries and Interactive-TV would certainly seem to offer a better way of providing broader access to both for consumers.

TCP: A buzzword going about these days is the phrase: "Information Highway". How does Silicon Graphics see itself "on the road"?

FB: I think that things like the Time-Warner experiment are key to the unfolding of the Information Highway. Those are the experiments in which we'll learn what works and what people are really interested in. We'll find how people want access to the Information Highway and what kind of financial models will work. I think we're "on the road", and we are in fact building the road as we go along.

TCP: Most people know about Silicon Graphics through the work done in such films as "Jurassic Park" and "Terminator 2" using your machines. What can we expect to see next from Silicon Graphics in the film industry?

FB: We love the film industry because we get so much free publicity from them, but they are actually less than 10 percent of our business. As we go forward with our next generation of systems, the type of graphics you saw in "Terminator 2" and "Jurassic Park" are going to be vastly expanded. A lot of the scenes in those movies were done off-line. They were scripted, choreographed, story-boarded and then Industrial Light and Magic — who have a hundred of our machines — were computing night and day to generate those actual scenes. As we go forward you'll be able to see those same kinds of scenes generated in real-time by one of our systems instead of taking days and days with a hundred of our systems.

TCP: Where do you see Silicon Graphics 10 years from now?

FB: You know, that's the hardest question to answer because our industry is moving so rapidly. The processors double in speed and power every year, and the functionality we can provide goes up by a factor of 10 in three to five years. With that kind of technological change, our basic approach to the world is that we continue to be innovative, and to take advantage of the opportunities that show up. So we really don't think much about 10 years out, instead we look at just what kinds of fundamental expertise do we have to have now that we can use. Exactly how we put together our expertise in computer graphics, visual media, parallel processing and user interfaces ten years from now is almost anybody's guess. The thing that we count on is that we'll stay flexible enough to get there. □



Tel: (416) 287-1038

Tel/Fax: (416) 287-2891

Enterprises

Simm Mem 70ns 1MB \$51.00 (4 Min.) - Non-I .28 dp 14" Monitor SVGA \$289.99

486 DX 2-66 Power System

ATi Wonder Mach 32 1MB VL-Bus Video
4MB RAM, 128K Cache OPTi Motherboard
270MB IDE Hard Disk Drive
Local-Bus Controller Card 2s, 1p, 1g
Honeywell Soft-Tactile Keyboard
Microsoft Ergonomic Mouse & Pad
1.44MB 3.5" Floppy Drive

14" SVGA .28 Non-I Monitor \$ 1739

486 DX 2-66 Multi-Media

ATi Wonder Mach 32 1MB VL-Bus Video
4MB RAM, 256K Cache OPTi Motherboard
340MB IDE Hard Drive

14" SVGA .28 dp Non-I Monitor

Panasonic 562 Double Speed CD-ROM

16-Bit Sound Card Multi-CD 100% SB Compat.

(Other specs the same as other system)

\$ 2179 **PLEASE CALL FOR**

UPGRADES: 8MB Ram \$200 - 256K Cache \$40 - 340MB HD \$69

5.25" 1.2MB FDD \$60 - 24/96 Fax Modem \$50 - Mid-Tower case \$35

14.4/14.4 Fax Modem \$135 - 24-Pin Printer \$195 - 250MB Tape Back-up \$245

**MORE
LOW
PRICING!**

Free In-home setup & consultation with full system Prices and specs subject to change without notice

123 COMPUTER WAREHOUSE INC.

253 QUEEN ST. EAST, UNIT 2, BRAMPTON, ONT., L6W 2B8 TEL.: (905) 451-6769 FAX: (905) 451-9361

Slim Printer

- ◇ Only 5" wide
- ◇ Completely Silent printing
- ◇ latest LCD laser sharp output
- ◇ Perfect match with notebook
- ◇ LCD display panel
- ◇ 300 dpi resolution
- ◇ 4 pages per minute

LP410-1

1 MB RAM (Exp. to 4.5 MB) Standard

\$645.00

LP470-PS

2 MB RAM (Exp. to 4.5 MB)
with AppleTalk, Postscript Level II Included

\$1,099.00

RAVEN MAGIC FLITE AVAILABLE NOW!

This is what the future looks like.

HUGE COLOUR SCREEN! OPTIONAL CD-ROM! EXPANDABLE!

FEATURES	OPTIONS
• High 10.4" colour Active Matrix Screen	• Video Tuner
• Intel® 486 Power	• CD-ROM drive
• Removable floppy drive	• 7.5" monochrome trackball screen
• 200 MB 2.5" hard drive	• 9.4" monochrome pen display
• PCMCIA slots	• Expandable to 20 MB RAM
• Mini trackball	

AVAILABLE AT: **123 COMPUTER WAREHOUSE INC.** **Raven**

EXCEPTIONAL FEATURES LOADED:

Raven

**Better than inkjets.
Smaller than lasers.**



- ◇ Optional CD-ROM expandable
- ◇ Huge 10.4" colour screen
- ◇ Built-in trackball
- ◇ PCMCIA slots
- ◇ Removable Floppy Drive

MF 203SM

486 SX33, 4 MB RAM,
200 MB H/D,
Mono Screen **\$3,495.00**

MF 200SC

486 SX25, 4 MB RAM,
200 MB H/D
10.4" colour active
matrix screen **\$4,995.00**

16.7 Million Colors At Up To 1280x1024

Fusion Double CD 16

- 7 CD Titles
- Double Speed CD-ROM Drive
- Pro AudioSpectrum 16
- Amplified Stereo Speakers
- Includes the 7th Guest, Compton's Interactive+

Price....\$448

Multimedia combines sound and full motion video for more memorable learning experiences, more realistic games and dynamic presentations. **Media Vision's** complete multimedia Kits are loaded with CD software and easy to install on your existing computer.

While Quantities Last

PC
MAGAZINE
EDITORS'
CHOICE

The legend continues. MultiSound, the most award-winning sound card in the industry, has a new member in its family ... MultiSound Monterey™. MultiSound Monterey has everything you've come to expect from Turtle Beach... audiophile quality sound, software upgradability, multiport MIDI interface, 20 MIPS Motorola 56001 digital signal processor, and their hurricane architecture which breaks the limits of DMA cards. Additional features include user an effects processor, and an improved synthesizer.

\$499

configurable sample RAM, an effects processor, and an improved synthesizer.

VGA-To-TV

\$389

It just might be the easiest way ever to make great presentations on the road. That's because Krotman goPresent! has the power to instantly send sharp colorful images onto any television directly from your mono notebook. And it's much more portable than any LCD projection panels. Measuring just 5 x 3 x 1 inches and weighing 8 ounces, goPresent! 2.0 provides VGA-quality computer-to-video output in a portable package. Using a proprietary "zero flicker tolerance" (ZFT) chip algorithm, which stabilizes video output while in high-resolution, the converter allows even small point-size text and detailed graphics to be shown clearly and legibly. It includes composite and S-VHS video output options, simultaneous viewing of television and notebook computer display, VGA throughput, frequency adjuster, brightness control and an NTSC/PAL switch.

- 14,400bps send/receive...data/fax up to 57,600bps error-free data
- Rugged XJACK connector pops out for use and back in for travel
- XJACK connector eliminates bulky cables and modules
- Auto installation software for easy installation
- Hot insertion and removing modem without rebooting

P-55 Self Amplified	\$15
abtec AM-22 Microphone	25
abtec CS-150	49
abtec CS-550	56
abtec CS-900	129
abtec CS-1000	149
oustic Research PP 22	159
oustic Research PP 42	259
R Powered Partner 622	379
R Powered Partner 570	439

Super I/O 2S/1P/1G/FDD/HDD	\$19
Super I/O 2S/1P/IDE/16550 VESA	89
Super I/O 2S/1P/IDE/16550 ISA	89
Super I/O 2S/1P/2FDD/4HDD ISA	49
High-Speed 16550 UART 2S/1P	39
adaptec 1505 SCSI-2 16-bit	89
adaptec 1520 SCSI-2 16 bit	99
adaptec 2940 FASTSCSI-PCI	499
adaptec 2842 VESA LB Kit	399
adaptec PCMCIA-SCSI-2 Kit	399
DEC Enhanced Parallel-SCSI Kit	..	229

Logitech ScanMan 256	217
Logitech SM Color/256	543
Logitech FotoMan Plus 256	6991
CANON IX4015 1200dpi 24-bit	1349
HP ScanJet IIP 1200dpi	649
HP ScanJet ILCx 24-bit	1389
MicroTek ScanMaker IISP	1099
Miscellaneous	
IBM DOS 6.1	\$39
DrawingSlate 12x12/pen/cab	499
Microsoft Mouse Versin 2.0 R	87
Microsoft Mouse Versin 2.0	49
Apptool MousePenPro	69
Logitech Dexxa 3Btn Mouse	199

IBM DOS 6.1	\$39
DrawingSlate 12x12/pen/cab	499
Microsoft Mouse Versin 2.0 R	87
Microsoft Mouse Version 2.0	49
Appoint MousePenPro	69
Logitech Dextxa 3btn Mouse	19

Hayes ESP 16550 w/ 1 Port	\$129
Hayes ESP 16550 w/ 2 Ports	199
Practical PC-HSSP w/ 1 Port	129
LAVA 16550 I/O w/ 1 Port	39
MFX 16550 w/2 Serial/1P/1G	39

Conner 250MB w/tape+Software \$215	
Conner 525MB SCSI Int Kit	1135
Colorado 2.4GB Internal Kit	1309
Panasonic 1.44MB Floppy Drive ...	49
Dual 1.44/1.2MB Floppy Drive	169

Titles Available!
Call For Pricing and Info!

Compton's Interactive Encyclopedia	\$79	Rebel Assault	\$79
Grolier Multimedia Encyclopedia	\$79	Return To The Zork	\$79
Corel Draw 3.0	\$79	Iron Helix	\$79
Microsoft Encarta 1994	\$129	SIMM City 2000	\$79

*Reminiscent of an
great portable
CD-audio player*

Portable CD-ROM Drive

AT LAST, A CD-ROM DRIVE WITH
REAL GET-UP-AND-GO. **\$449**

- Ultra-quick 180ms access time
- Fastest double-speed CD-ROM drive
- Universal standard SCSI-2 Interface
- Sleek, compact, light & easy to install

This internal 14,400bps faxmodem has an onboard digital signal processor (DSP) which gives it the ability to upgrade to higher data/fax speeds as they become available. It includes V.32bis & V.42bis Fax & Data communications software for DOS and Windows.

100% Hayes compatible and comes with a lifetime warranty.
An investment you Won't Outgrow!

Lifetime Warranty \$169

Lifetime Warranty \$169



- 50 MHz 486SLC2 microprocessor
- 16KB internal cache
- **4MB** RAM (Exp-to-12MB)
- 3.5" 1.44MB floppy drive
- **170MB** hard drive
- 7.4" monochrome STN LCD display
- Screen has 64 shades of grey
- 1.63"H x 10.1"W x 7.23"D, **3.7lbs**
- TrackPoint II pointing device
- 85 key keyboard with 12 function keys
- Type II PCMCIA slot
- IBM DOS 6.1 preloaded, Progidy
- 1 Year IBM International Warranty

IN STOCK!

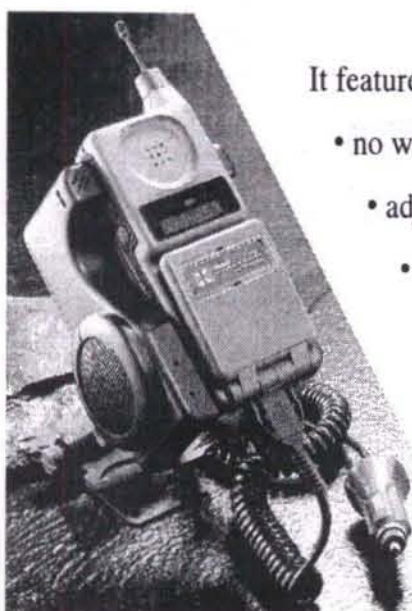
ThinkPad 750C
also available

\$2819

■ All MultiMedia Effects there are no minimum orders or unreasonable requests, we do not have any hidden charges or fees. ■ We do not bill you until we ship your product. ■ Government PO's accepted. ■ Corporate P.O.'s accepted from qualified institutions. ■ Leasing Available. ■ Shipping Cost to Quebec and Ontario ~ \$5.00. ■ All products advertised are already 3% cash discounted. ■ Add 3% for PO's or credit card orders. ■ We accept personal checks, but allow time to clear. ■ For faster service send certified cheque, money order or bank draft. ■ Mailing address: 49-6A The Donway West, Ste. 1011, North York, Ontario M3C 2E8. ■ Please include daytime phone number. ■ We will promptly replace any items but cannot guarantee compatibility. ■ There is a 15% restocking fee on returned non-defective, unopened goods returned within 30 days. ■ We carry hundreds of computer products at discounted prices, so please call for items not listed. ■ We offer all the latest products, in original packages with full manufacture documentation and warranties. Product prices and specifications are subject to change without notice. ■ All trademarks and registered trademarks are of there respective companies. ■ We are a Proud member of the Better Business Bureau and the Computing Technology Industry Association.

Call us for more specials and product information! (416) 502-3942 • FAX your order 24 hours a day to (416) 502-1593

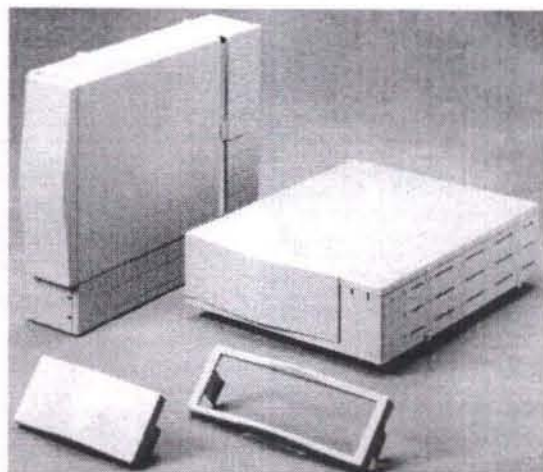
HANDS FREE CAR KIT



It features:

- no wiring layout in vehicle
- adjustable mounting bracket
- charges cellular battery at the same time
- for Motorola Flip phones

EXTERNAL SCSI DRIVE BOX



With CSA Power Supply

Easy to assemble

3 different types:

420 - Dual 5.25" Drive

151 - Single 5.25" Drive

131 - Single 3.5" Drive

Call Today for Fast Delivery

**DEALER
ENQUIRIES
WELCOME**

Focustronics & Co

145-4471 #6 Road Richmond, B.C. V6V 1P8 Tel: (604) 273-8086 Fax: (604) 273-3488

Windows 4.0

Continued from page 22

Although the current generation of the Mac operating system has limited multitasking capabilities, it is what's known as "co-operative" multitasking. This means that all the apps agree not to step outside their allotted memory space. However, if one application crashes or otherwise goes awry, it usually brings the whole system down.

IBM has made much of OS/2's "crash protection" — each app is protected from the others by the operating system. Although no system is impervious from crashing, there's a much better chance that, if one program goes down, the OS will protect the other tasks from damage. Chicago promises to provide similar capabilities,

leaving Apple's OS as the only one on the market that doesn't provide robust multitasking and memory protection — features Apple concedes it can't incorporate until sometime next year, at the earliest.

DOS: a "heritage status" OS?

Naturally, Microsoft hasn't turned its back on users that regularly use DOS applications. In fact, the company maintains that it is

committed to nothing short of total compatibility with existing DOS and Windows applications and drivers. Although we recommend that you take that statement with a grain of salt, it appears from our close examination of the architecture of the new release that the company is likely to succeed in convincing the

vast majority of PC users that they can safely leave DOS behind. □



The DOS command line window now features scaleable fonts and can be resized at will.

BUS COMPUTERS

80 Park Lawn Rd., Suite 302, Etobicoke, ON M8Y 3H8
Hours: Mon - Fri 10am - 6pm, Sat 11am - 5pm

Tel: (416) 253-0689 Fax: (416) 253-7790

ISA486SLC/33MHz
170MB HDD, 2MB RAM
512K SVGA
14" VGA COLOR
\$855
BUS Lease \$43.00/m

VESA486DX33MHz
260MB HDD, 4MB RAM
VL 1MB SVGA exp. to 2MB
14" SVGA N/I .28dpi
\$1555
BUS Lease \$75.00/m

VESA486DX2/66MHz
340MB HDD, 8MB RAM
VL 1MB SVGA exp. to 2MB
15" UVGA N/I L/R Green PC
\$2144
BUS Lease \$102.00/m

VESA486DX4 100MHz
420MB HDD, 8MB RAM
VL ATI 2MB SVGA ULTRA
15" UVGA N/I L/R Green PC
\$2799
BUS Lease \$133.00/m

Systems Include: 3.5" 1.44MB floppy drive, 101 Enhanced Keyboard, Mini Tower Case 230W CSA power supply, IDE I/O 25/1P/1G Port, AMI Bios, Clock, Calendar, 2-Year Parts & 3-Year Labour Warranty. Free one - hour tutorial if required

Monitors
14" SVGA Int. .28 dpi \$295
14" SVGA N/I Int. .28d \$325
15" UVGA N/I Int. L/R \$489
15" UVGA 4FG NEC \$919
17" UVGA N/I Int. .28d \$925
17" UVGA 5FG NEC \$1399

SVGA Cards
VL Cirrus L. 5428 1MB \$115
VL S3 1MB VERY FAST \$125
VL Dynamite PRO 2MB \$288
VL ATI 1MB Wonder \$159
VL/PCI ATI 2MB (OEM) \$365
VL/PCI ATI 4MB (OEM) \$745

Hard Drives
170MB 14MS 64K \$255
270MB 12MS 128K \$315
340MB 13MS 128K \$377
420MB 13MS 128K \$419
540MB 13MS 128K \$579
1.2GB 10MS 512K \$1299

Main Boards
VL486DLC33 128K \$199
IBM 486SLC/33 \$145
VL486DX/33 128K \$485
VL486DX2/66 128K \$595
VL486DX4 100/75 \$1145
PCI Pentium 60 \$1525

Controllers
ISA Super IDE I/O \$17
VESA IDE 25/1P/1G \$28
VESA IDE w/16550 \$75
SCSI Adaptec 1542 \$279
VESA IDE-Caching \$235

Fax Modems
96/48/24 Zoltrix Int. \$49
14,400 Zoltrix Int. \$125
14,400 Us Robotics Int \$155
PCMCIA ATI / Intel \$345
16550 Serial Card \$35

CD-ROMs
Mitsumi FX-001-D \$210
Panasonic 562 \$215
Toshiba SCSI \$325
NEC CDR500 3X1 \$750
Please Call for CD titles

Sound Blasters
SB Comp. 8-bit \$53
SB BASIC 16 \$149
Golden SB PRO \$145
SB SCSI 16 ASP \$275
Discovery CD 16 \$565

We Offer a High Quality Product & Better Service at Wholesale Prices. Give Us a Call.



**Consulting, Wholesale, System Design
PC Upgrades, Service & Installation
Dealers' & Consultants' Orders Welcome**

All prices cash discounted, specifications subject to change without notice

TELL ADVERTISERS YOU SAW THEIR AD IN



Rocket Computer Systems
23 Milliken Blvd. Unit B9 Scarborough, Ontario M1V 5H7
Tel: (416) 609-0946 Mon - Fri / Sat 10:30 - 7 / 6:00

Steeles Ave. E. Kennedy Milliken Finch E. Rocket

386DX-40, 128K w/387 Socket	\$140	HP 4L Laser Printer 300dpi, 1M	\$899
486DLC-40, 128K Math Co. VESA	\$250	HP 4P Laser Printer 600dpi, 2M	\$1299
486DX-40, 128K VESA P24T	\$399	HP 4 Laser Printer 600dpi, 2M	\$1719
486DX-33, 128K VESA P24T	\$440	HP DeskJet 520 Ink Printer	\$389
486DX2-66, 128K VESA P24T	\$599	HP DeskJet 560C Color Printer	\$780
Mini-Tower Case, 220W	\$60	HP DeskJet 500C Color Printer	\$530
Med-Tower Case, LED 220W	\$90	HP 310 Portable Ink Printer	\$405
Full-Tower Case, LED 230W	\$105	Panasonic 2123 24pin Color Printer	\$268
C.L. 5428 VESA 1M SVGA Card	\$115	USR 14.4 INT/EXT Fax Modem	\$160/\$195
Acer VESA 1M SVGA Card (to 2M)	\$125	Practical 14.4 Ext S/R Fax/Modem	\$245
ATI G. Wonder VESA 1M SVGA	\$189	Zoltrix 96/24 S/R Fax/Modem	\$50
ATI XL/24 1MB SVGA Card	\$130	Golden Pro 16bit MCD Sound Card	\$159
ATI Wonder 512K SVGA Card	\$60		
VESA IDE Controller (25/1P/1G)	\$32	Designer Fonts for Windows CD	\$29
IDE Controller (25/1P/1G/Cables)	\$20	The Solution CD	\$38
340MB IDE Hard Drive	\$369	The Ultimate Trivia CD	\$38
420MB IDE Hard Drive	\$399	Dictionary for Children CD	\$38
540MB IDE Hard Drive	\$499	7th Guest CD (Game)	\$45
Megamimage 14" NI Monitor 1024	\$310	5 FT 10 Pack CD	\$68
Megamimage 15" Green Monitor	\$460	Other CD Titles	Call
Daytek 15" NI Low Rad. Monitor	\$460		

MULTIMEDIA SYSTEMS:

486DX-33 VESA \$1,999

- * 128K Cache
- * 4MB Ram (70ns)
- * Panasonic 1.44MB Floppy Drive
- * Super IDE Controller (25/1P/1G)
- * Trident 1M SVGA Card
- * 14" SVGA N-I Monitor (1024, .28)
- * 340MB IDE Hard Drive
- * TRUE 16bit MCD Sound Card
- * Panasonic CD ROM (Dbl. Speed)
- * Medium Tower Case (220W)
- * 101-Enhanced Keyboard
- * MS Compatible Mouse & Mouse Pad
- * 10 CD Disks Bundle
- * DOS 6.2 (Disk & Manual)
- * FREE Speakers & CD Holder

486DLC-40 VL-Bus \$1,269
(Upgradable to 486DX-33/50/66)

486DX-33 VL-Bus \$1,439

486DX2-66 VL-Bus \$1,620

- * 128K Cache
 - * 4MB Ram (70ns)
 - * Panasonic 1.44MB Floppy Drive
 - * 170MB IDE Hard Drive
 - * Super IDE Controller (25/1P/1G)
 - * Trident SVGA Card 1MB
 - * 14" SVGA Monitor (1024, .28)
 - * Mini-Tower Case (220W)
 - * 101-Enhanced Keyboard
 - * MS Compatible Mouse & Pad
 - * ShareWare Programs
- (486DX & 486DLC Systems come with Math.. Co-processor)

486DX2-66 VL Bus \$1,889

486DX-33 VL-Bus \$1,709

486DLC-40 VL-Bus \$1,529

(DOS 6.2 & Window 3.11 Included)

- * 128K Cache
 - * 4MB Ram (70ns)
 - * Panasonic 1.44MB Floppy Drive
 - * 340MB IDE Hard Drive
 - * VL-Bus IDE Controller (25/1P/1G)
 - * Cardex VL-Bus SVGA Card 1MB
 - * 14" SVGA N-I Monitor (1024, .28)
 - * Mini-Tower Case (220W)
 - * 101-Enhanced Keyboard
 - * MS Compatible Mouse & Pad
 - * ShareWare Programs
- (486DX & 486DLC Systems come with Math.. Co-processor)

3 years labour & 1 year parts warranty for all systems; All prices are cash discounted & subject to change without notice

Authors on Computers

Continued from page 21

users. The documents cover such topics as Effective Work Habits, 10 Points on Plotting and Manuscript Formats.

In terms of equipment, Kilian says that he began on a British PC called Apricot.

"I took two weeks to learn it and in the next seven weeks wrote a non-fiction book. A dramatic increase in productivity. I used it for a while and wrote several more books and a couple of hundred columns on it.

"[Currently,] on my three-year-old Mac LC, I did another nonfiction book in six weeks over the winter. For journalism and college-materials production, the Macintosh is superior. For fiction, the important element seems to be the author, not the machine."

A person's writing style, strangely, does not seem to change as a result of using different equipment. Kilian believes that there has been "no major influence on my style (beyond rescue, alas). But ease of revision means that you can go back and polish where once the sheer drudgery of editing and retyping would have deterred me into letting the original version stand despite its weaknesses."

And Kernaghan agrees. "With a computer, I was able to write in a more compact style. With editing so easily done, I was able to trim down my writing. Editing is so easy — it's no problem to go through a page and take a bunch of stuff out because you're not retyping [all of] it. I had a story that was

7,500 words long and I wanted to send it to a contest that required 3,500 words. So, with a computer, I was able to edit it down from 7,500 to 3,500 and it was amazing how much better it was to go through!

"Every time you decide to take something out to tighten it up you have to type the entire page again [on a typewriter]. The amount of work involved discourages you from doing the editing. It's easier to just leave it as it is."

Kernaghan finds that the speed of production is one of the major advantages of a computer.

"Most book publishers now expect you to produce using a computer. It's faster," she says. "If you don't have a computer, there's no way for you to keep up with the pace. You're taking three years to write a novel and everyone else is taking three months or a year."

"Another advantage is now that you've made it a necessity to use a computer, almost any magazine that buys a story or even a poem will buy the hard copy and then immediately ask you to send it to them on disk. And they'll typeset from that. If you haven't got a computer, you're stuck! You're out of it."

"Harlan Ellison — he's in demand, he can set his own rules. For the rest of us, we have to do what we're told!"

But if there's any disadvantages to technology, Kernaghan complains that the user becomes technologically dependent.

"If the computer doesn't do what you're asking it to do, it's panic time!" she wails. "If something goes wrong, you're completely lost. Find someone to fix it. You don't

know where to begin to solve the problem. Meanwhile, it holds you up. You can't just go and use someone else's program."

So, what does the future hold for writers? Like Commander Adama in *Battlestar Galactica* who dictated the ship's log into the computer, perhaps we will reach an age in the near-future, because of voice-recognition technology, where authors lie on a beach with a margarita in their hands. They will vocally recite that next bestseller into

their flat-screen notebook which will absorb every word and print them on-screen. The software will recognize such typing mechanics as 'paragraph', 'comma' and 'period' and quickly execute such commands. (Better yet, let the software work out the English problems!)

Those are the days worth waiting for. No more problems with carpal tunnel syndrome except an epidemic of speechless (or hoarse) writers from all that talking. □

VOICE MAIL SCIECOM COMMUNICATIONS

PRESENTING: *Amanda*™ VOICE MAIL SYSTEM

Auto Attendant
Call Transfer
Call Screening
Unlimited Mail Boxes
1024 Msg. per mail Box
Pager Notification
Remote Access
Digital Recording
Variable Compression Rate
Guest Mail Boxes

Incl: Software
Rhetorex Voice
Processing Board
Remote Access
Serial Port Access
User Friendly
Fax on Demand
Expandable to 24 Ports
Custom Programming Available
Turnkey Systems Available

Providing a one stop service:

Telephone Communications
Voice Mail Installations
Telephone Systems
Repairs & Service Contracts
Leasing Available

SCIECOM
COMMUNICATIONS
Tel: [416] 750-8494 ext.: 210

Complete Communications and Voice Mail Services

You, *Plus* 2 Ability!

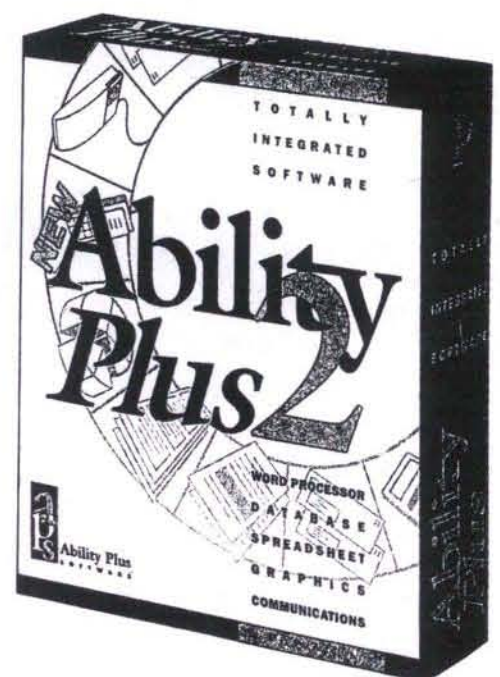
With dynamic linking of the Database, Spreadsheet, Word Processor, Graphics and Communications applications....

...you have all the ability to generate everything you need from Budgets, Letters, Customer Lists, Invoices, Sales and Inventory Records to Charts and Graphs!

**Ability
Plus 2**

Flex-ability, Manage-ability
and Profit-ability.....

and at only \$79.95*, Afford-ability!



See Ability *Plus 2* at your local computer store or phone (416) 464-9671 for a free Demo Disk or Time-limited \$29.95 Offer.

* Suggested List Price

SHOW REPORT

Comdex: The Wild and Woolly Insider's Report

BY JAMES MACFARLANE

AC Systems

High-Performance Computer Systems

Individual Solutions:

CAD Spreadsheet High-Speed Printing Database Management
Desktop-Publishing Animation Graphic-Development & Presentation
Photo-Development Software-Development ...

Repairs, Maintenance, Networking and Software Installation Services available.

Free software-installation & free delivery!

AC-i486DX-33:

- Genuine Intel 486DX-33 CPU
- 3x32bit VLB & 5x ISA Slots
- 4MB RAM, 128KB Cache
- 3.5" 1.44MB FDD, 178MB HDD
- 32-bit VLB IDE Controller
- 32-bit VLB Video Card, 1MB

\$1379.00

- 101 Enh. Keyboard & Mouse
- 14" 0.28 SVGA Monitor

386 Clearance Sale:

Systems starting from only
\$699.00 !!!

Upgrades from **\$120.00 !**

Guaranteed compatibility with Dos & Windows, Windows NT, OS/2, UNIX, Novell and all other major operating systems!

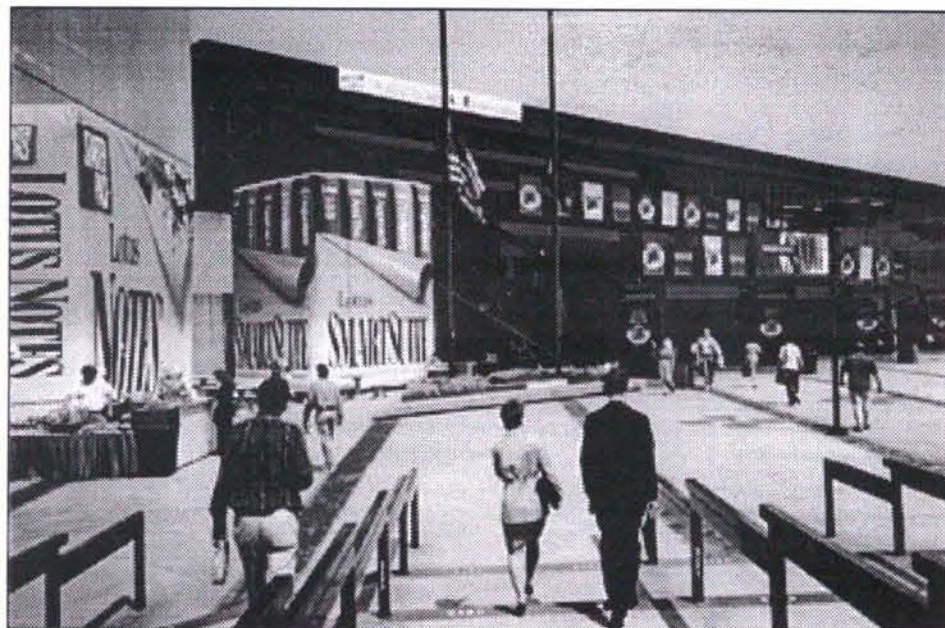
AC-A486DX-40 : \$1349.00 AC-i486DX-50 : \$1540.00

AC-A486DX2-66 : \$1484.00 AC-i486DX2-66 : \$1585.00

AC-i486DX2-50 : \$1439.99 AC-i486DX4-100: \$2199.00

Soon available : Intel Pentium 90MHz and 100MHz Systems!

FOR MORE INFORMATION AND PURCHASING CALL (416) 449-0311 OR FAX (416) 449-0596.



Comdex happens twice a year. It's a huge computer trade show that attracts the who's who of the industry. From game developers to the mainframe makers, it's all there and it's a nerd's dream come true.

I've been to too many trade shows for them to be fun anymore. While others attend the show wishing for lots of free t-shirts, buttons and software samples, I wish for a pair of insoles (maybe if I get a few mouse pads and cut them just right...). In any case, I decided to attend this particular show with a slightly different point of view. I was going to have fun, no matter the cost.

Day 1:

I don my red badge holder. It says press and it means I'm on my way to the endless freebies of Comdex. First stop: a room labeled 'press kits' — it's about the size of the Library of Parliament piled a few feet deep with glossy folders packed with the latest propaganda from the computer industry. I carefully browse over the stacks of folders, knowing that if I take too many I will require major shoulder surgery by the end of the day. When are these people going to learn: it's the information in the press kits that impresses the journalists, not the packaging. Oh well, at least I can exchange the ones I don't need for serious geek points with my friends.

IBM has a few thousand briefcase-sized blue boxes with handles piled against one wall. I see the other journalists in a frenzy, packing them with press kits and running to the Federal Express and UPS kiosks downstairs to ship them back to the office. I, too, fill a box, but foolishly tote it along with me. My deadline is over a week away.

Next door is the "working press" room, a space full of PCs, fax machines and phones for my fellow members of the press to get their work done. Armed with my trusty NEC Versa notebook I need none of these toys. I

trek onward, down to the conference level floor to take on the show.

The acoustic spectrum is a flurry of music and sound demos, live demonstrations and a few thousand conversations. A suave, good-looking man is standing in a booth singing to a Frank Sinatra tune. The company is Quebec-based Tune 100, makers of Soft Karaoke. It turns your PC and sound board into a karaoke machine, complete with microphone. They've got dozens of titles from oldies to modern.



Mr. Duval "croons" along with Soft Karaoke

The guy singing, Mr. Duval, is really good so I grab him after the "show". Gone is the smooth crooner's voice, replaced with a strong French accent. He tells me the package is selling well — you can even arrange your own band by adjusting and swapping different instruments. They have customers/groupies who drop by the booth for guest appearances. Only \$79.95 for the kit.

Continued on page 38

EUROCOM 9200

- SIMULTANEOUS LCD & CRT
- DIGITAL CONTROLS
- VESA DOCKING STATION PORT
- "HOT SWAPPING" NiMH BATTERIES
- PCMCIA SLOT TYPE IV
- REMOVABLE HARD DRIVE UP TO 540 MB
- 4 MB - 36 MB RAM MEMORY
- 1 MB VIDEO RAM
- VESA LOCAL BUS
- MICROPHONE, AUDIO IN & OUT JACKS
- BUILT-IN SPEAKER
- 1.44 MB OR 2.88 MB FLOPPY DRIVE
- FLASH ROM BIOS
- 128KB SECONDARY CACHE
- 25MM TRACKBALL

80486 SX-25, SX-33, DX-33, DX2-66, DX4-75 or DX4-100

The world's most powerful
super-notebook.

EUROCOM®
The best thing going

Call your authorized EUROCOM dealer today. Or contact
EuroPak International at (613) 224-6122 or fax (613) 722-2767.

Canada's
**NOTEBOOK
SPECIALISTS**

THE NOTEBOOK STORE

Canada's
**NOTEBOOK
SUPER CENTRE**

LOWEST PRICE

You always get the lowest available price on The Notebook Stores Systems. We guarantee it or we'll refund the difference.

* (Plus 5%)

SAMEDAY EXPRESS

Order any of our standard systems and we will have it ready for pick up within 4 hours, or order by 6:00 P.M., and we will have it to you by 10a.m. the following day.

CUSTOM CONFIGURATIONS

Eliminate Installation hassles by letting The Notebook Store install your extra memory, modems, and Software. Configuration is Free.

NOTEBOOKS

IMPULSE

486 Subnote 2 PCMCIA
\$1699



features

486 Processor 4 Megabytes Ram
120 MB Hdd/ Dos/Windows
Built in Trackball 2 PCMCIA

Product Code	List Price	Our Price
REPLY 410	\$2499	\$1699

AST

486-33 200 Hdd
\$2199



features

486-33 Processor 4 Megabytes Ram
Local Bus Video PCMCIA
200 Megabyte hard Drive

Product Code	List Price	Our Price
BRAVO	\$2349	\$2199

GRID

8 RAM 14.4 FAX/MODEM
\$1699



features

486 Processor 8 Megabytes Ram
80 Megabyte hard Drive, *F/R
(Limited Quantities Available)

Product Code	List Price	Our Price
GR 1650	\$2149	\$1699

COMPAQ

486 Intel 25 Mhz
\$1899



features

486SX-25 Processor 4 Megabytes Ram
80 Hard Drive Dos 6.0 Windows 3.1
3.9 Pounds, 3 Years Warranty

Product Code	List Price	Our Price
AERO	\$2659	\$1899

TOSHIBA

486-33 PCMCIA
\$2199



features

486-33 Processor 4 Megabytes Ram
Microsoft Trackball PCMCIA
120 Megabyte hard Drive

Product Code	List Price	Our Price
T1910-120	\$2699	\$2199

Panasonic

486DX2 / 50 CD NOTE
\$5699



features

486DX2/50 Processor 4 Megabytes Ram
200 Hard Drive 10.4" Active Matrix Colour
CD Rom & Video Internally (Optional)

Product Code	List Price	Our Price
M-CP21V	\$6899	\$5699

TOSHIBA			S.R.P	Only
Toshiba 1910	486 sx 33	120	\$2699	\$2199
Toshiba 1910	486 sx 33	212	\$2999	\$2499
Toshiba 1910CS	486 sx 33	212	\$3999	\$3099
Toshiba 1950	486 dx2/40	212	\$3699	\$2999
Toshiba 1950CS	486 dx2/40	212	\$4289	\$3699
Toshiba 1950CT	486 dx2/40	320	\$5299	\$4699
Toshiba 3400CT	486 sx 33	120	\$5299	\$4799
Toshiba 4700CT	486 dx2/50	320	\$8099	\$7099
Toshiba 4800CT	486 dx4/75	320	\$8799	\$7499

PANASONIC - CD NOTE			S.R.P	Only
Panasonic 486 DX2/50 Active	200		\$6899	\$5699
Panasonic 486 DX4/75 Active	260		\$7995	\$6599

AST POWER EXEC			S.R.P	Only
Active Matrix 486 DX25 w/pcmcia			\$5999	\$4199

TEXAS INSTRUMENTS			S.R.P	Only
TI Win 486 e/25	486 sx 25		\$2999	\$2499
TI Win 486 e/25c	486 sx 25 Color		\$3199	\$2899
TI Win 486 e/40	486 dx2/40		\$4899	\$3699
TI Win 486 e/40c	486 dx2/40 Color		\$5269	\$3999
TI Win 486 e/50	486 dx2/50		\$4562	\$3899
TI Win 486 e/50c	486 dx2/50 Color		\$5199	\$4499

COMPAQ CANADA			S.R.P	Only
Compaq Aero	80		\$2199	\$1899
Compaq Aero Colour	170		\$3699	\$2899
Compaq Contura	125		\$3799	\$2399
Compaq LTE Lite	125		\$3799	\$2999
Compaq LTE Color	170		\$6239	\$5699
Compaq Concerto	250		\$3489	\$3199
Compaq LTE Elite	209 Clr		\$6799	\$5999

NEC TECHNOLOGIES			S.R.P	Only
UltraLite Versae	486 dx2/40	120	\$4399	\$3799
UltraLite Versaec	486 dx2/40	120	\$7305	\$5499
UltraLite Versae	486 dx2/50	209	\$5085	\$4799
UltraLite Versaec	486 dx2/50	250	\$8375	\$6399

IMPULSE NOTEBOOKS			S.R.P	Only
800 SERIES NOTEBOOK - UPGRADABLE (HARD DRIVE/CPU-SL ENHANCED)				
Impulse PL815	486 sx/33	170	\$3799	\$2199
Impulse PL815	486 sx/33c	170	\$7305	\$3199
Impulse PL825	486 dx2/50	209	\$5085	\$2759
Impulse PL825	486 dx2/50c	340	\$8375	\$5199

**IF YOU FIND
A BETTER
PRICE
CALL THE
NOTEBOOK
STORE
BEFORE
YOU BUY**

NOTEBOOK UPGRADE CENTRE

MEMORY

Here are just a few modules available. All are professionally installed at no extra charge.

TOSHIBA	PCMCIA
NEC	Fax/Modems
IBM	Network
AST	Hard Drive
ZENITH	Flash Ram
TI	(all brands)
SAMSUNG	
IMPULSE	

We Make Buying Easy

ON THE SPOT FINANCING LEASING

VISA / MASTERCARD / AMEX
FREE ALARM WITH EVERY
NOTEBOOK PURCHASE

PORTABLE PRINTERS

All of these printers can be equipped with a battery and used from your remote location.

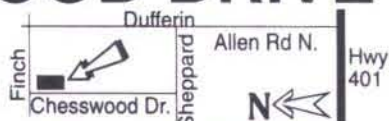
Canon BJ 10 SX
HP Portable Printer
Citizen PN48
Citizen Notebook Printer II
Panasonic NB Laser

from
\$279

* ALL CORPORATE AND GOVERNMENT PURCHASE ORDERS ARE ACCEPTED ** PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE
*** ALL PRICES ARE CASH AND CHEQUE DISCOUNTED ALREADY *parts must be in stock and the same item. 5% of the difference.

4495 CHESSWOOD DRIVE

2 lights W. of Dufferin, & 1 Street South of Finch
OR
Take the 401 to Allen N. at 2nd stop light
(Sheppard) Make left, & 2nd light
make a right (Chesswood) to 4495



(416)630-5681

No One Sells for less and gives better service

Comdex: Wild and Woolly

Continued from page 36

Additional song packages sold separately. Soft Karaoke is fun for parties, but don't let your friends see you.

A few rows away is a company called PC CompoNet. They've taken videos like the classic 30s flick "Reefer Madness" and about a hundred porn films such as "The Beaverville Hillbillies" and turned them into full-length MPEG editions on CD-ROM.

Politically Challenging CD-ROMS seem to be everywhere at the show. A company called Vice Entertainment out of Montreal is down there taking orders for their erotic literature and CDs full of GIFs.

A new twist on the multimedia theme (where else but in the steamy aisles of Comdex?) is a CD-ROM from a company called New Machine Publishing. It's showing off a product called Dream Machine, labeled as "interactive virtual sexuality". The software-generated escort takes you through a series of sexual fantasies, then asks you how

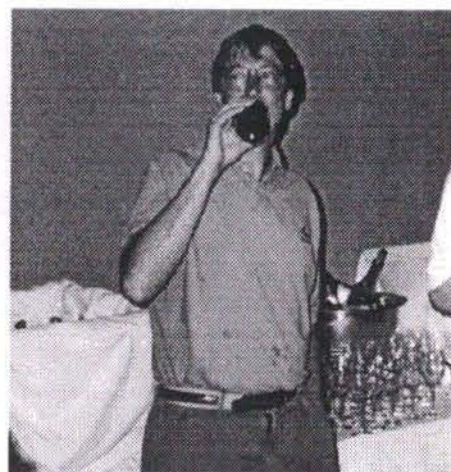
you feel about them. The software then tailors the fantasies to suit your personal tastes. Gives a whole new meaning to the word joystick.

Things are getting weirder by the minute down there so I stop by the press room again to see what's going on. A friendly guy in glasses with red frames is joking around with various people in the press kit room. I make a few jokes with him so he tells me to go to the work room and ask for a party list — Yes! there is a god for geeks.

I have a choice between Claris and

Microsoft. The Claris event ends at 9pm so I choose the "Microsoft Geekfest" party, which starts at 9pm (it must be better, there is no ending time). After navigating through the endless corridors of the Omni Hotel, which is directly under CNN headquarters, I come across a room full of boisterous Microsoft employees and press people. Endless free pizza, wine and beer.

At one end of the room there's a giant screen playing the basketball games, at the other dozens of people are playing with Nerf toys: putting a sponge golfball into a Microsoft mug, shooting a target with a Nerf bow and arrow, pistol and rifle. Once you score 10 points you can claim the prize of your choice at the table: Word, Excel, Access, Encarta, Dinosaurs, t-shirts and other Microsoft paraphernalia are exchanged for the game coupons.



BREWSKI BILL: Microsoft Chief Bill Gates at one of Spring Comdex's watering holes. Photo courtesy Dwane Lamb.

And look! There's Bill Gates wearing a green golf shirt and a pair of jeans. This guy needs a serious fashion consultant. Gates casually mingles with the crowd. Gone is the corporate mogul of the morning's keynote address. It's just Bill, with a beer in his hand, a smile on his face and cheerful conversation with anyone who will approach him. A far cry from a press conference.

Bill leaves later in the evening, everyone is drinking and the party gets sillier. People are out in the corridor having a war with about 15 Nerf footballs. The hotel staff begins to get worried. People with the Nerf Weapons of Mass Destruction turn the foam projectiles on their friends. Aside from getting a Nerf dart in my mouth, I escape unharmed.

The party's host announces that anyone with a tattoo is entitled to a free Geekfest t-shirt. I can't resist. A while later she announces that anyone with a piercing somewhere other than their ear would be given a Visual Basic t-shirt — and they had to show it. Unfortunately I don't qualify, but I do manage to scam a VB shirt by answering a skill testing question. The party doesn't get that out of hand, but at midnight the hotel staff politely ask us to leave. That's ok, because tomorrow night is Delrina's party.

Day two

I meet "PowerPC" Man at the Motorola booth. A big light and video show, where he pretends to talk to people "live" over the information superhighway. Ignore the

Canon
IBM
Hewlett
Panasonic
Toshiba
DacEasy
Quantum
Maxtor
COMPUTER
RECENT
SAMSUNG
SPEC
RECENT

Summer Sizzler Sale

Fax Modems

- 96/24 Internal **\$48⁸⁸**
- 14.4K Internal **\$138⁸⁸**
- 28.8K Internal **\$288⁸⁸**

NEC Internal Triple Speed

- 190MS Access Time
- 450KB/S Transfer Rate
- Includes: Corel SCSI 2 w/Interface or MS Encarta
- \$688⁸⁸**

Hewlett Packard

- HP 520 Deskjet **\$398⁸⁸**
- HP 560C Colour Deskjet **\$794⁸⁸**

Mitsumi CD ROM

- Double Speed 300KB/S Transfer
- 290MS Access Time
- 64K Cache Buffer
- \$198⁸⁸**

Pro Audio Sound Cards

- Pro Audio 16 Basic **\$118⁸⁸**
- Pro Audio 15 Spectrum/SCSI **\$169⁸⁸**
- Pro Audio 16 Studio w/SCSI **\$199⁸⁸**

Gravis Ultrasound Max (New)

- 3D Holographic Sound
- 32 Voices, 16 Bit Record & Playback
- Multiple CD Interface
- \$288⁸⁸**

Sound Blaster Cards

- Sound Blaster Pro Deluxe **\$108⁸⁸**
- Sound Blaster 16 Basic **\$149⁸⁸**
- Sound Blaster 16 MCD **\$189⁸⁸**
- Sound Blaster Awe 32 **\$398⁸⁸**

Canon

- BJ 200E Bubble Jet **\$368⁸⁸**
- BJ 600 Colour Bubble Jet **\$728⁸⁸**
- LBP 430 Laser **\$799⁸⁸**

MV-1000 Multimedia kit

- Sony SCSI Double Speed CD ROM
- 320MS, 300KB/S, 256K Cache
- Pro Audio Spectrum 16 Sound Card
- Compton's Interactive Encyclopedia
- 8-17 Flying Fortress, Railroad Tycoon
- High Quality Speakers
- KOSS Headset
- \$398⁸⁸**

STEALS 486-75MHZ

- Enhanced Mini Tower Case
- 230W Power Supply
- 4MB, 70ns Memory
- Math Co-processor
- 1.44 High Density Floppy Drive
- 1 Parallel/1 Game/2 Serial Ports
- 32 Bit VESA Local Bus IDE Controller
- 256MB Hard Drive, 12ms Access
- 32 Bit VESA Local Bus SVGA w/1MB
- 14" SVGA 1024x768 72MHz N.I. Monitor
- 101 Enhanced Keyboard
- INCLUDES: MS DOS 6.2 w/Disk & Manuals
- 2 Years Parts & Labour Warranty
- \$59⁵⁵ Per Month**
- \$1698⁸⁸**

STEALS 486-66MHZ

- Enhanced Mini Tower Case
- 230W Power Supply
- 4MB, 70ns Memory
- Math Co-processor
- 1.44 High Density Floppy Drive
- 1 Parallel/1 Game/2 Serial Ports
- 32 Bit VESA Local Bus IDE Controller
- 256MB Hard Drive, 12ms Access
- 32 Bit VESA Local Bus SVGA w/1MB
- 14" SVGA 1024x768 72MHz N.I. Monitor
- 101 Enhanced Keyboard
- INCLUDES: MS DOS 6.2 w/Disk & Manuals
- 2 Years Parts & Labour Warranty
- \$55¹⁸ Per Month**
- \$1568⁸⁸**

STEALS DX2-66MHZ

- Enhanced Mini Tower Case
- 230W Power Supply
- 4MB, 70ns Memory
- 256K Cache
- Math Co-processor
- 1.44 High Density Floppy Drive
- 1 Parallel/1 Game/2 Serial Ports
- 32 Bit VESA Local Bus IDE Controller
- 256MB Hard Drive, 12ms Access
- 32 Bit VESA Local Bus SVGA Card w/1MB
- 14" SVGA 1024x768 Monitor, MPR2
- 72MHz N.I. Monitor, MPR2
- 101 Enhanced Keyboard
- INCLUDES: MS DOS 6.2 w/Disk & Manuals
- 2 Years Parts & Labour Warranty
- \$62⁹¹ Per Month**
- \$1698⁸⁸**

STEALS MULTIMEDIA 486-50MHZ

- Enhanced Mini Tower Case
- 230W Power Supply
- 4MB, 70ns Memory
- Math Co-processor
- 1.44 High Density Floppy Drive
- 1 Parallel/1 Game/2 Serial Ports
- Super IDE Controller
- 170MB Hard Drive, 12ms Access
- Sony 2X Speed 320MS/300KB/64K CD Rom Drive
- Media Vision Pro Audio 16 Sound Card
- Labtec Speakers
- Compton's Interactive Encyclopedia
- Dinosaur Space Adventure, Aurther Teaches Trouble, Return to Zork, Greens Golf, Railroad Tycoon, B-17 Flying Fortress
- KOSS Head Set
- Windows Accelerator SVGA Card
- 14" SVGA 1024x768 Monitor
- 101 Enhanced Keyboard
- INCLUDES: MS DOS 6.2 & Windows 3.1 w/Disk & Manuals
- Microsoft Compatible Mouse
- 2 Years Parts & Labour Warranty
- \$67⁹⁸ Per Month**
- \$1798⁸⁸**

KOSS Speakers

- KOSS HD/1 Speakers **\$24⁸⁸**
- KOSS HD/4 Speakers **\$48⁸⁸**
- KOSS HD/6 Speakers **\$68⁸⁸**

SVGA Colour Monitor

- 14" 1024x768 Resolution
- .31 Dot Pitch
- 2 Year Warranty
- \$249⁸⁸**

Reel Magic MPEG Card

- Real Time 30 Frames/Sec. MPEG Playback
- 16 Bit Stereo Sound
- Full Screen Video
- \$474⁸⁸**

Raven 2406 w/Colour Kit

- High Speed Dot Matrix
- Colour & Black Ribbon
- 2 Year Warranty
- \$318⁸⁸**

Component Specials

- 1MB x 3 30 Pin Simm Module **\$54⁸⁸**
- UMC Local Bus Controller **\$28⁸⁸**
- Cirrus Logic Local Bus Video w/1MB **\$114⁸⁸**
- Mitsumi 101 Enhanced Keyboard **\$24⁸⁸**
- 486DX33/66 Motherboard w/128K Cache **\$74⁸⁸**
- 386DX/40 Motherboard w/CPU **\$98⁸⁸**

In-Store Specials

- Kraft Joystick **\$19⁸⁸**
- Low Blow Boxing Game **\$9⁸⁸**
- Wired For Sound Pro **\$21⁸⁸**
- Return to Zork CD **\$29⁸⁸**
- Sony Caddy **\$5⁸⁸**
- CD Jewel Case **.98⁸⁸**

All pricing is cash discounted
Price in effect until July 31st, 1994
Thousands of Items in Stock
Corporate P.O.'s Welcome
PRICE QUALITY SERVICE SELECTION

MISSISSAUGA
602-8333
FACTORY OUTLET
475-3999

COMPUTER STEALS DIRECT
SUPERSTORES

FACTORY OUTLET
560 Denison St. Unit #7
TEL: (905) 475-7089
FAX: (905) 475-7089

MISSISSAUGA
1825 DUNDAS ST.
TEL: (905) 602-8333
FAX: (905) 602-8330

MISSISSAUGA Store Hours
Mon.-Fri. 9:30-9:00
Sat. 10:00-6:00
Sun. 12:00-5:00
FACTORY OUTLET
Store Hours
Mon.-Fri. 9:30-8:00
Sat. 10:00-6:00

Some quantities limited. Some products not exactly as illustrated. We reserve the right to limit quantities. *G.S.T. and Prov. Tax extra. *Prices subject to change without notice. All trademarks and trade names are used to identify entries claiming the marks and names of their products. Steals Direct disclaims any proprietary interest in trademarks or trade names except its own. All prices are cash discounts. *D.A.C. on approved credit for 36 months. *No rainchecks. *15 day money back guarantee does not apply to components pricing.

man behind the curtain — this show is devoid of content. Well, at least it was better than the Intel booth — they weren't even there. Day two on the floor is relatively uneventful. I realize how boring trade shows really are — or maybe it's not boredom, maybe it's just sensory overload. Too many people trying to get your attention. On day two the exhibitors' tactics border on the annoying.

At the Delrina booth I swap a copy of *The Computer Paper* (May's edition with the review of Winfax 4.0, of course) for an invitation to the Delrina party. The party is at the Peachtree Plaza, a huge mirror-plated cylindrical building in downtown Atlanta. Delrina has booked the Presidential suite — on the 70th floor.

At the door I'm handed a chemical luminescent "button" with "Fun Fun Delrina" printed on it. It's one of those things where you crack a tube, mix the chemicals and it glows for hours. The room is aglow with huge blue, green or pink bulbs stuck on various pieces of the attendees' clothing. There are a few signs up on the wall: "fun fun fun on the infobahn". Another sign says "speed limit 28.8". This is obviously going to be a fun evening.

The view from the 70th floor is amazing — windows from floor to ceiling. It's pretty crowded so I manage to force my way through the bodies to find a cold one at the bar. Behind me is a fine selection of finger food: breaded shrimp, meatballs, wings, sausage rolls and other assorted items.

Wilma and Fred Flintstone are there — local actors dressed up as the characters in order to promote Delrina's new Flintstones screen saver. They look pretty good so I decided to grab Delrina's VP Bert Amato for a picture with them. Bert is a

limit 28.8" sign — a souvenir friends will ask about, at which time I'll be able to tell a few crazy stories that aren't suitable for print.

Day three

I wake up in pretty good shape, attend a press conference for a cool new machine from AST and make my way over to a show. A company called Romulus is demonstrating a product called CD Romance.

These guys are making multimedia personal ads of CD-ROM. Here's how it works: you call their office and they send you a kit. In the kit is a questionnaire, you fill it in and include a few pictures of yourself and a home video. They take the information, digitize it, and put it on the next CD. The CD Romance is sold in stores and people can search for partners who suit their tastes.

They were taking new applicants in their booth at the show and have had a

good response. One problem that's typical in computer circles: the male to female ratio. It's a great concept, but a few hundred male computer geeks on CD — I dunno, somehow I don't think these guys are going to get too many dates this way.

Romulus plans to bring out both PC and Mac versions of the disk. The question is, is it a good idea to match up PC and Macintosh people? The company had no comment. □



Delrina's VP Bert Amato meets the Flintstones.

good sport and poses for a quick Polaroid.

I chat up a few of Delrina's Wincomm developers, trying to pry out a few secrets about the next version and also to give them my personal wish list. They're pretty tight-lipped about the next release but are sympathetic to my concerns.

On the tables around me are generous stacks of Delrina product, which invitees are encouraged to scoff for their own personal use. I've got about a megaton of press kits and other stuff to haul back to Toronto with me, so I pass.

I quit the party at midnight, grabbing a few fortune cookies along the way. The fortune is "\$25 towards a subscription to Delrina's new fax mailbox service". On the wall near the door I steal the "Speed

MICROJACK MULTIMEDIA SERIES

Bridging the Worlds of Video and PC

VGA TO VIDEO CONVERTER

JACK Selection

Run your VGA or MAC display on your TV!



- Supports Windows 3.0 and 3.1
- Built-in Flicker-Free filter
- Supports all IBM standard video modes and Hi-color modes (256/32K/64K colours)
- Resolution up to 640 x 480 in NTSC TV system or 800 x 600 for PAL TV system
- Underscan/Overscan and TV brightness control
- Input: Standard VGA
- Output: Composite Video, S-VHS Video, RGB (15KHz) and VGA (31 KHz)

\$275

Jack Selection is an external VGA to Video converter which can be used on any PC, laptop or notebook. Displaying up to 800 x 600 SVGA resolution on both the VGA monitor and the television set, Jack Selection comes standard with a flicker filter, positioning software, video cables and power supply. It also supports 3 video formats — S-Video, composite and RGB — in one of two video standards, PAL or NTSC.

VGA TO VIDEO CONVERTER

MICROJACK III

The latest video converter — with more features and flexibility!



- Second generation Flicker-Free filter
- Supports all IBM standard video modes & high colour modes (256/32K/64K colours) resolution up to 640 x 480 in NTSC and 800x600 in PAL
- Supports Macintosh standard modes (640x480, 31 or 35 KHz)
- Full Underscan and Overscan
- Input: VGA D-Sub Connector
- Output: Composite RCA Connector, S-Video Connector
- Directional Panning with zoom
- Screen Freeze/Unfreeze

\$675

Jack³ Selection, the latest addition to MicroJack Multimedia's bestselling video converter series, bridges VGA to video and offers the maximum flexibility for all your needs. Features include: second generation flicker-free filter, full over/underscan, panning with zoom, plus remote control function. Jack³ Selection is easy to use — it requires no software drivers and it has its own power supply! The Auto Mode Detection feature ensures optimum performance on any platform.

FULL-MOTION VIDEO CAPTURE AND DISPLAY

MICROJACK Video Commander



\$499

Record and display full-motion video on your computer!

MicroJack Video Commander is the perfect video add-on for your multimedia system. It offers full-motion true colour video capture and windowing at up to 1024 x 768 resolution. The included Windows software will export your images to many formats for use in editing, presentation and publishing software.

- Inputs: Three selectable composite NTSC/PAL video inputs
- Supports IBM standard video modes and Hi-color modes (256/32K/64K colours)
- Output: Standard VGA signal
- Real time two-dimensional panning
- Fractional zoom up to 1024 x 1024 pixels
- Flexible memory configuration allows easy setup and prevents conflicts with system RAM or other peripherals

VGA TO VIDEO OVERLAY

MICROJACK TitleMate



\$399

Add captions and graphics to your video presentations

The **MicroJack TitleMate** is a video overlay board, ideal for use in educational training and instructional video presentation. Add captions and graphics onto video sources from VCR, Camcorder or LaserDisk. Included is MicroJack Titrer, titling software which uses Windows True Type fonts. Font size, styles (3D effects, shadows and borders) and colour are all selectable.

- Supports two video modes: Computer—displays video data in memory; Overlay—displays external video overlaid with on board memory video data
- Displays 256 of 256K colours
- Overlay colour: 1 of 256 colours
- Display resolution: 640 x 480 (NTSC), 640 x 512 (PAL)
- 512 KB on board memory
- Video Input: Composite Video with RCA connector
- Video Output: Composite Video with RCA connector



40 SHIELDS COURT, UNIT 1-2 MARKHAM, ONTARIO L3R 0M5

Monday to Friday 9:00 AM - 6:00 PM • Saturday 10:00 AM - 1:00 PM

MicroJack is a registered trademark of MIT Computer Supplies Co. Ltd.

TEL: (905) 946-0908 or (416) 321-2259
FAX: (905) 946-8749 or 1-800-463-3186

UNICOM

Computer Corp.

1179 Finch Ave. West
Unit 24, North York M3J 1J6

open
SAT - SUN

667-8200

COMPLETE 486DX2-66 SYST. \$1529-486DX/40-\$1375-386DX40-\$899

4Meg Ram, 170MB-HD, 1.44FDD, SVGA Monitor, 512K Video Card, Tower Case, 101KB, Controller(386W/2Meg)

QUALITY MOTHER BOARD

386 SX-40 MH	\$98
386 DX-40 MH, 128K	\$149
486 DLC-40, 128K, VL	\$225
486 SLC-66, 128K, VL	\$420
486 DX-40, 128K, VL	\$415
486 DX-33, 128K, VL	\$440
486-DX2-66, 128K, VL	\$510
PENTIUM	PLEASE CALL

GREEN MOTHER BOARD +18

QUALITY HARD DRIVES

170MB IDE 64K	\$259
212MB 14ms 64K	\$275
245MB 12 ms 128K	\$299
270MB 12ms 128K	\$329
345MB 12ms 128K	\$364
420MB 12ms 128K	\$395
520MB 12ms 128K	\$485
1.04 GIG 10ms 512K	\$950
1.70 GIG 10ms 512K	\$1359
2.1 GIG 10ms 512K	\$1595

BRAND NAME MEMORY

1 Meg SIM FAST RAM	\$53
4 Meg X9 SIM FAST RAM	\$209
2 Meg X36, 72PIN (8Meg)	\$460
HP4 4MEG	\$240

FLOPPY DRIVE

1.44 MB Floppy Drive	\$49
1.2 MB Floppy Drive	\$59

FAX MODEM

9600/2400 Baud P/S	\$59
14,400 Fax Modem Boca	\$169
14,400 U.S. Robotic Xt	\$198
14,400 U.S. Robotic Ent	\$179

BRAND NAME MONITOR

VGA 14" Color Monitor	\$235
SVGA 14" Color 39	\$265
SVGA 14" Color	\$285
SVGA 14" Noninterlaced	\$315
SVGA 15" Flat Screen	\$479
SVGA 17" .39 DPI	\$785
NEC 3V 14", 28	\$729
NEC 4FGE	\$939
NANYO 15" Flatscreen	\$959
Mitsubishi 17" FS	\$1329

VIDEO CARD

Trident SVGA 512K	\$58
Trident SVGA 1 Meg	\$78
VESA Local Bus 1 Meg	\$98
ATI DXL 24 bit	\$122
ATI-Ultra Graphic & 2 Meg	\$235
ATI-Ultra Pro 2 Meg V-RAM	\$415
ATI-Ultra Pro VESA V-RAM	\$415

CONTROLLER CARD

IDE Super I/O	\$18
IDE Super I/O VESA	\$35
VESA IDE (64K S-RAM Cache)	
w/25.1PIG	\$230
VESA SCSI (64K S-RAM Cache)	\$260

CASE AND KEYBOARD

Mini Tower w/200 PS	\$65
Mid Tower Case w/Digit	\$88
Full Tower w/250 PS	\$145
101 Enhanced BTC KB	\$19
101 Keytronic KB	\$45

TAPE BACKUP & SCANNER

Logitech ScanMan	\$195
250MB Tape Backup	\$199

PRINTER DM-BJ & LASER

9 Pin 1150	\$169
24 Pin Samsung	\$185
24 Pin Color w/o Kit	\$295
Epson 24 Pin w/cable	\$265
Epson BJ w/cable	\$395
HP 520 w/cable	\$385
HP 500C w/cable	\$515
HP 4 Laser w/cable	\$905
HP 4+ (12 ppm)	\$1899
HP 4P	\$1349
IBM Lexmark 10 ppm	\$1869
Canon BJ-200	\$375
Canon BJ-600	\$749
Canon Laser	\$784
Samsung Laser 5 ppm	\$649

MULTIMEDIA CD ROM

Panasonic Dbl Speed	\$205
Mitsumi Bdl Speed	\$205
Toshiba SCIC w/SCon	\$495
Sound Blaster Pro	\$115
Sound Blaster Pro 16 Bit	\$149
Sound Blaster 16 Multi-CD	\$165
Golden Sound Pro 16	\$160
CD Pak for Win 6Titles	\$104
7th Guest	\$55
Encyclopedia for Win	\$48
Animals for Windows	\$48

SOFTWARE

DOS 6.2 Full package	\$64
Windows 3.1	\$53
Windows 3.11	\$79
WP 6.0 for Windows	\$389
Lotus 4. Upgrade	\$140
CorelDraw 4.0 Upgrade	\$275
Quattro Pro Upgrade	\$69
Win Fax Pro	\$99

SHOW REPORT

But Is It Art?

4Cyberconf Meets in Banff

BY KENT BARRETT

TCP's The Night Weasel Jostles with Elk for the Best Seat at the Fourth International Conference on Cyberspace and the Art and Virtual Environments Symposium

Elk Warning!!!

4Cyberconf, the fourth international conference on cyberspace, was held in Canada for the first time in late May of this year, in conjunction with the Art and Virtual Environments Symposium.

Banff, Alberta is at once an exhilarating and a frustrating setting for an examination of the state of the virtual arts. Nestled among the mountains of Banff National Park, Banff Centre researchers and conference attendees shared this placid postcard village with all manner of wildlife, including calving elk who are known to aggressively protect their young. Signs in all buildings reminded everyone to be aware of the warning signs of elk aggression (staring, stamping, whites of eyes showing...) and to stay at least 100 meters away from them, which is difficult if they happen to be feeding on the shrubbery outside the front door of your lab.

It is sobering, after several hours in a darkened room with your head clamped into a virtual reality helmet, to step outside into the blazing panorama of a Rocky Mountain landscape and be confronted by a herd of wild animals that might suddenly decide that you are a threat to their young. It is a shocking reminder that even Silicon Graphics cannot produce computers that can give even the palest of reflections of the reality we take for granted every day.

Of course, that's no excuse not to try.

The symposium showcased work from the art and virtual environments project in the Banff Centre's Media Arts program. This three year research program, which began in 1991, has provided artists in a variety of disciplines with the access to the computer technologies required for them to explore the implications of VR.

Dancers, native artists, architects, painters, and musicians, all with little or no computer experience, were brought together with teams of technicians, programmers and high-speed machinery (including an SGI Onyx Reality Rack) in an attempt to stretch the limits of their own creativity, and push the envelope of what VR is considered to be. The results were fascinating. Here are a few of the many highlights.

Bar Code Hotel

by Perry Hoberman

Most VR installations adhere to the popular model of dataglove and head-mounted-display. One cyberspace-suited traveler explores a (usually) lonely world and navigates, bodiless, through a constructed landscape of flickering polygons and unearthly music. Not here.

At the Bar Code Hotel you can check in with your friends. In this space visitors wear simple polarizing eyeglasses, and a pair of video projectors beam the virtual environment into the gallery, superimposing it on the 'real' environment of the otherwise empty room. Entering the gallery, guests find themselves on the observation deck.

Beyond this platform the gallery space is covered with bar codes (the familiar striped Universal

Product Codes

printed on

most prod-

ucts' packag-

ing these

days). Five

light weight

laser pens are

provided to

scan these

codes and

experiment

with the

effects they

have on the

environment.

The effects are

startling.

Scanning a code

will suddenly cause

a common (though

uncommonly large)

object such as a

giant paper clip,

camera, or hat to

appear in three

dimensional space,

where it immediately

begins to move

around and exhibit

its own "personality".

Scanning other

codes will evoke

changes in the

"behavior" of the

floating objects,

causing them to

become "shy" (avoid

other objects) or

"aggressive" (chase

other objects), or

show a variety of

other personality

traits and, of

course, emit different

sounds.

The objects also

have a life span.

After a period of

a few minutes they

become sluggish

and respond less

vigorously to new

codes, and eventually

they flicker out

and die (though they

are still partially

visible for a

while as thin "ghosts".)

Guests can be as

interactive with the

objects as they

please, scanning

in a constant

stream of new

codes, or simply

letting an object

go where it

likes and only

occasionally

"correcting" its

behavior. It's a

lot of fun, but

the best part is

that since the

room itself is the

interface, guests

can interact with

each other. Bar

Code Hotel can

be played

freeform, like a

game without

rules, or directed

precisely like a

stage performance.

This piece drew

a lot of oohs and

ahhs. It's not

quite the holodeck,

but it's a step

in that direction.

See Banff! Kinetoscope

by Michael Naimark

This piece is a leap both forward and backward at the same time. Looking decidedly out of place beside the Macintosh computers and 3D sound generators in the Bit Rot Café is a tall wooden box with a crank on one side, and a single-viewer eyepiece on top.

The device resembles that famous 19th century VR machine, the kinetoscope. And

Continued on page 48

DEALER INQUIRIES
WELCOME!



ANUBIS

DEALER INQUIRIES
WELCOME!



486 DXII 66MHz

VESA MB 128 CACHE
4 MB RAM
340 MB HD
1.44 MB FD
14" SVGA NI MONITOR
MINI TOWER
MOUSE & KEYBOARD

\$1799

NETWORKING

SOFTWARE SALE!

HUNDREDS OF NEW AND
USED TITLES

- GAMES
- BUSINESS
- DESKTOP PUBLISHING
- GRAPHICS
- EDUCATIONAL
- CHINESE TITLES
- CD-ROM
- ACCOUNTING
- PROGRAMMING
- DATABASES
- SPREADSHEETS
- UTILITIES

TRAINING

7725 BIRCHMOUNT RD. UNIT 12
MARKHAM, ONT, L3R 9X3

TEL (905) 470-0365
FAX (905) 470-9201

天龍電腦公司
會宏中激電翻倚慧神
員基文軟腦譯天星雕
額制之公硬體國號中
入中星司體及香中文
法英視中中升及香中文
教軟窗文文級日中文手
學體工視視及俄文文寫
諮作窗窗音希系書辦
詢室效臘統系識統
裝統

各種五羅廣倉各種
類圖中筆馬東類中
字龍文輪拼東類中
體龍體字入音音入
字集及法及法入
形全真字庫
藏珠字庫
行大國注籍
列易標音軟
輪輪輪輪體
入入入入總
法法法法匯

每周七日 國台粵英語粵人服務

MISSISSAUGA LOCATION OPENING SOON

ABC COMPUTER

SOUND BLASTER MCD W/Advanced Signal Processor **\$199**

10 FOR EACH STORE ONLY

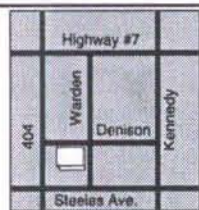
DOWNTOWN

161 JOHN STREET
TORONTO, M5T 1X3
TEL: (416) 979-3964
FAX: (416) 979-5458



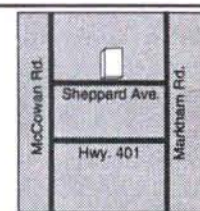
MARKHAM

7170 WARDEN AVE.
UNIT 17, L3R 5M8
TEL: (905) 946-1613
FAX: (905) 946-1957



SCARBOROUGH

4800 SHEPPARD AVE. E.
UNIT 120, M1S 4N5
TEL: (416) 321-0413
FAX: (416) 321-0429



LOCAL BUS SYSTEM PCI **\$2299**

SYSTEM INCLUDES:
• Intel 486DXII-66
• Acer PCI M/B w/256K cache
• 4MB RAM

• 1.44 Floppy Drive
• 420MB Hard Disk
• ATI PCI SVGA Card w/2MB Graphic Ultra
• 14" .28 Non-Int. SVGA Monitor 72Hz refresh rate, Toshiba CRT

• Microsoft Mouse
• Acer 101 Enhanced Keyboard
• A-Open Mini Tower Case

VESA LOCAL BUS PREMIUM SERIES

Pentium 66 Mhz \$2,999

• 8 MB RAM • 512K cache
• ATI Graphic Wonder 1M SVGA Card

486 DXII-66 Intel \$1,979

• 4 MB RAM • 128K cache
• Cirrus logic VL bus 1 M SVGA Card

SYSTEM INCLUDES:

• 15" SVGA .28 N/I F/S L/R Monitor (Digital Control)
• 420 MB Hard Drive
• 32 Bit VESA Local Bus Motherboard (built-in Math-Co)
• 1.44MB Floppy Drive (Japanese)
• Vesa Local Bus IDE Controller
• 2 Serial/1 Parallel/1 Game
• Midtower Case 220W w/LED Display
• FREE MS Compatible Mouse & Pad
• Acer 101 Enhanced Keyboard
(ISO - 9002 Certified)



2 YEARS PARTS & LABOUR WARRANTY

ALL SYSTEMS
include Microsoft
Dos 6.2
Legally Licensed
& Manual

\$1,249 486SX-25 Intel

170MB Hard Drive •

\$1,549 486DX-33

340 MB Hard Drive •

SYSTEM INCLUDES

VESA Local Bus 32Bit Motherboard •
Built-in Math-Co. (DX only) •
4 MB Fast RAM (Max. 32MB) •
1.44MB Floppy Drive •
14" SVGA .28" Color Monitor (1024x768) •
32Bit VESA Local Bus 1MB SVGA Card •
32Bit VESA Local Bus IDE Controller •
2 Serial/1 Parallel/1 Game •
101 Enhanced Keyboard •
Minitower Case •
FREE MS Compatible Mouse & Pad •

COMPETITIVE VESA LOCAL BUS SERIES

• ALL PRICES ARE 4% DISCOUNTED FOR CASH, MONEY ORDER & CERTIFIED CHEQUE ONLY • PRICES SUBJECT TO CHANGE WITHOUT NOTICE •

HARD DRIVES

MAXTOR, QUANTUM, SEAGATE
WESTERN DIGITAL, CONNOR

170MB	\$260
245MB	\$315
270MB	\$325
340MB	\$360
420MB	\$385
540MB	\$469

MOTHERBOARD

386SX-33/40	\$105
386DX-40	\$155
486SX-25 VESA LB	\$220
486DX-33/40 VESA LB	\$425
486DX2-66 VESA LB	\$630

CONTROLLERS

ADAPTEC

1522 SCSI HD/FD CARD ONLY	\$117
1522KIT SCSI CARD, S/W, CBL	\$206
1542KIT SCSI CARD, S/W, CBL	\$364
BOCA RESEARCH	
IDE PLUS 2S/1P/1G	\$65
I/O WITH 2 16C550 UART	\$75
I/O WITH 6 H SPEED RS232	\$143

VIDEO CARDS

ATI GRAPHIC WONDER 1M VL	\$189
ATI GRAPHIC ULTRA PRO 2M	\$399
ATI GR. ULTRA PRO 2M VL	\$399

ATI GR. ULTRA PRO 2M EISA \$469

DIAMOND

STEALTH PRO 1M VRAM ISA	\$339
STEALTH PRO 2M VRAM ISA	\$457
24 BIT 1M DRAM ISA	\$222
STEALTH PRO 1M VRAM VL	\$348
STEALTH PRO 2M VRAM VL	\$429
24 BIT 1M DRAM VL	\$232
VIPER 2M VRAM VL	\$550

KEYBOARDS

ENHANCED 101	\$24
KEYTRONIC 101	\$58
HONEYWELL 101 ENHANCED	\$55
FUJITSU 101 ENHANCED	\$57

MATH-CO PRO

80387SX-16,20,25,33	\$80
80387DX-25,33,40	\$70
MEMORY	
SIMM 256K 70NS	CALL
SIMM 1MB 70NS	CALL
SIMM 4MB 70NS	CALL
SIPP 1MB 70NS	CALL
DRAM 41256-80	CALL
DRAM 44256-70	CALL
DRAM 411000-70	CALL

MONITORS

DAEWOO

15" FS 1024X768 0.28 N-I	\$459
--------------------------	-------

17" FS 1280X1024 0.28 N-I CALL

21" FS 1600X1280 0.28 N-I CALL

PHILIPS

15" FS 1024X768 0.28 N-I	\$585
17" FS 1280X1024 0.25 N-I	\$1,240

MITSUBISHI

DIAMOND SCAN 17	\$1,335
DIAMOND PRO 20	\$2,473
DIAMOND PRO 21FS	\$2,810

NEC

3V	\$699
4FGE	\$899
5FGE	\$1,499
6FG	\$3,450

CASES

DESKTOP / 220W P.S.	\$65
MINI-TOWER / 220W P.S.	\$65
MINI-TOWER DISPLAY / 220W	\$70
MED-TOWER DISPLAY / 220W	\$105
FULL TOWER DISPLAY / 250W	\$140
220W POWER SUPPLY	\$45
250W FULL SIZE P.S.	\$70

PRINTERS

RAVEN

RP9100 9 PIN	\$180
RP2405 24 PIN	\$225
RP2406 24 PIN OPT. COLOR	\$279
RP2420 24 PIN 256CPS	\$370

PR9606 9 PIN WIDE \$496

PR2465 24 PIN WIDE \$475

LP470PS 4PPM LED SLIM \$1,125

LP510 5PPM LASER 512K \$721

LP530 5PPM LASER 1M \$929

LP570PS POSTSCRIPT 2M \$1,475

LP1030 10PPM LASER 1M \$1,375

COLOR KIT FOR 2406,9105 \$55

CANON

BJ10SX W FEEDER	\$325
BJ200e W FEEDER	\$364
BJ230 W FEEDER WIDE	\$529
BJC600 W FEEDER COLOR	\$780
LBP430 Laser	\$785

HEWLETT PACKARD

HP DESKJET 520	CALL
HP DESKJET 560C	CALL
HP4L 300DPI 1M LASER	CALL
HP4 600DPI 2M LASER	CALL

EPSON

LQ570 24 PIN 252 CPS	\$332
LQ870 24 PIN 330 CPS	\$616
LQ1070 24PIN WIDE 225CPS	\$510

MULTI MEDIA

CREATIVE LAB

SOUND BLASTER PRO DELUXE	\$139
SOUND BLASTER 16	\$165
SOUND BLASTER 16 ASP	\$265
EDUTAINMENT CD 16 KIT D/S	\$640

DIGITAL EDGE CD M/M KIT D/S \$820

CD-ROM

PHILIPS CM405 CD ROM	
EXT. 265MS, MPC, PHOTO, SCSI	\$690
SONY CDU561 CD ROM	
INT. 280MS, MPC, PHOTO, SCSI	\$460
TOSHIBA XM3401B CD ROM	
INT. 200MS, MPC, PHOTO, SCSI	\$490
CHONON CDS535 CD ROM	
INT. 280MS SCSI W CONTROLLER	\$520

FAX/MODEM

9600/2400 INT. S/R \$48

BOCA RESEARCH

INT. 14.4	\$185
EXT 14.4	\$225

ATI

INT. 14.4 BPS FAX/MODEM	\$200
EXT. 14.4 BPS FAX/MODEM	\$240

US ROBOTICS

14.4 BPS INT SPORTSTER	\$169
14.4 BPS EXT SPORTSTER	\$199
COURIER 16.8 BPS INT	\$685
COURIER 16.8 BPS EXT	\$745
COURIER HST/DS INT	\$969
COURIER HST/DS EXT	\$1,039

AlphaSmart Smart Keyboard for Mac

REVIEWED BY GRAEME BENNETT AND DOUGLAS ALDER

SmartPad Inc. offers an unusual keyboard for the Mac: it's got a simple text editor built into it. You can disconnect the two-pound, battery-assisted keyboard from your desktop Mac and carry it around with you as if it was

a portable computer, for taking notes. Shades of the TRS Model 100!

The AlphaSmart, as it is known, holds up to eight separate files (selected by pressing F1 through F8). When you plug it back into

your desktop Mac using a supplied cable (which the company insists can be done safely without turning off either unit), you can transfer the files by simply pressing the "Send" key. Transferring data has never been easier.

The unit fools the Mac into thinking the text is being typed directly into your existing applications (say, Microsoft Word or some other word processor) from a standard keyboard. Neat!

The battery life is impressively long. The company says the AlphaSmart will last 100 hours on two AA alkaline batteries.

While the keyboard works reasonably well, it is not the greatest editing device as it is laborious to maneuver around once you become used to the idea of being able to click anywhere with a mouse in the usual Mac and Windows programs. The biggest problem came when we went to download the text to a desktop computer. In its current incarnation, the unit is very slow in sending data. We practically could have rewritten the story in the time the AlphaSmart took to send it to the Mac.

It may also be problematic to use it as a substitute keyboard because of this slowness. Anyone who can type faster than about 20 words per minute would quickly surpass the keyboard buffer on the unit. We noticed what appears to be a bug in the SmartPad related to the slowness of the keyboard buffer. If you type very quickly, it seems to get "stuck" on a letter, and types it continuously.

SmartPad says that it is preparing a software patch that will address this limitation.

The company is currently focusing its marketing efforts on selling the AlphaSmart into the school system, where Macs are

prevalent — but typically in short supply proportionate to the number of students. It's not hard to see the value of having several AlphaSmarts per computer. At the end of each class, the students can just plug into the Apple Desktop Bus of an available Mac and enter their already typed-in data.

We feel that SmartPad Inc. should do everything it can to speed up the data transfer rates. More than a few people, we suspect, would consider an AlphaSmart a flexible alternative to a standard keyboard. We'd like to see an adapter that allows the unit to be attached to a PC. The company says a PC version is coming soon, but we'd rather have one unit attach to both platforms. We'd also like to see them lower the price somewhat. At US\$269, the unit is a little pricey.

The company offers a free 16-minute video demonstrating the AlphaSmart's capabilities. □

Contact: SmartPad, Inc., 415-974-5518; fax 415-474-1086.



486/SX-25 \$1289
486/DX-33 \$1389
486/DX40 \$1399
486/DX2-66 \$1549

CONFIGURATION

MINI TOWER CASING 128K CACHE
1.44 MB HI/D FLOPPY DRIVE
SVGA VESA BUS 1MB VIDEO CARD
SVGA .28 NON INTERLACED MONITOR
2S 1P AND 1 GAME PORT
4 MB FAST RAM 70 N/S
170MB HARD DRIVE
MS DOS 6.2

BEST IN GREEN

FREE
MOUSE
&
PAD

MONITORS

SVGA .39 \$249
SVGA .28 \$279
SVGA .28 N/I .. \$315
SVGA 15" N/I .. \$439
OTHERS PLEASE CALL

MOTHERBOARDS

486/SLC 33... \$125
486/DLC 40... \$179
486/SX 33... \$229
486/DX 33... \$379
486/DX 40... \$399
486/DX2-66... \$549

GREEN MACHINES

MULTIMEDIA BUNDLE

DOUBLE SPEED CDROM
16 BIT CARD AND 5 TITLES
STEREO SPEAKERS
ONLY \$329

STUDENT SPECIAL

486/SLC 33
2 MB FAST RAM
130 MB HARD DRIVE
MINI TOWER CASE
SVGA VIDEO CARD
2S 1P 1 GAME PORT
101 KEYBOARD
ONLY \$899

96/24 FAX/MODEM
ONLY \$45
14.4 FAX MODEM
ONLY \$109

HARD DRIVES

130 MB...\$229
170 MB...\$249
245 MB...\$289
345 MB...\$369
OTHERS CALL

** ON SITE SERVICE
IS AVAILABLE
** SERVICE CONTRACTS
** HAVE YOUR PC REPAIRED
IN YOUR HOME OR OFFICE
** VERY REASONABLE RATES

CALL 4 INFO!!

DIAL THIS
* 4 INFO!!

ASHTAQ

BUSINESS SYSTEMS

TEL: (905) 795-8333

FAX: (905) 795-8147

335 ADMIRAL BLVD #22 MISSISSAUGA
2 Streets South Of Derry Rd.
Off Kennedy

Monday to Friday 9 Am to 7 Pm
Saturday 9 Am to 6 Pm

ASHTAQ RESERVES THE RIGHT TO CORRECT TYPOGRAPHIC ERRORS. PRICES ARE SUBJECT TO CHANGE WITHOUT ANY NOTICE

KV COMPUTERS PRESENTS...

Unsurpassed quality & performance! No specials. No gimmicks. Just the finest quality & low prices. All the time.

2 YEARS

PART & LABOUR WARRANTY — ON ALL SYSTEMS —

Options: • On-site labour warranty \$50 per year
• delivery & set-up \$20 per system
• leasing CALL!

— Our systems outperform all others.
— Our motherboards run faster than all others by up to 50%, including Asus.

Why spend your hard earned dollars on a mediocre system?

Why compromise?

Drop by for the truth on 486 systems!

You'll be glad you did!

Get the best for less!

CONFIGURATION

◆ VLB 128k cache DX4 ZIF high performance green motherboard (available in 30-pin or 72-pin SIMM models)
◆ 4 meg RAM 70NS
◆ 210 meg 11ms WD hard disk
◆ 1.44 Fujitsu floppy
◆ VLB super i/o Vision controller
◆ VLB 1 meg Cirrus Logic 5428 upgradable video card
◆ Mini-tower 230 watt LED
◆ 14" SVGA .28 NI Monitor
◆ Keytronic 2000 keyboard
◆ Microsoft mouse & pad

PROCESSOR

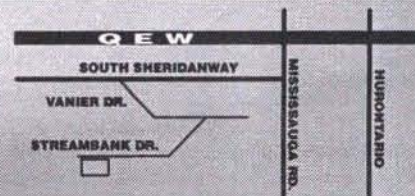
486 DX33 \$1,490.00
486 DX40 \$1,530.00
486 DX 2-50 \$1,530.00
486 DX 2-66 \$1,670.00
486 DX 4-100 Call!

CONFIGURATION

◆ 386/486 fast motherboard
◆ 4 meg RAM 70NS
◆ 210 meg 11ms WD hard disk
◆ 1.44 Fujitsu floppy
◆ super i/o controller
◆ 512k Trident video card
◆ Mini-tower 230 watt LED
◆ 14" SVGA .28 NI monitor
◆ Mitsumi keyboard
◆ Keytronic mouse & pad

PROCESSOR

386 DX33 \$1,120.00
486 SLC33 \$1,140.00
486 SLC 2-50 \$1,190.00
486 DLC 40 \$1,210.00



Prices are cash discounted.
Prices may be lower by the time you see this ad.
Please call for current pricing

Call for LOW Pentium pricing!
Call for LOW Multimedia & Component pricing!
Call for LOW Upgrade pricing (we take trade-ins)

KV COMPUTERS

1182 STREAMBANK DR.
MISSISSAUGA, ONTARIO L5H 1W8
TEL.: (905) 278-4373 FAX: (905) 278-3656

LANCE ELECTRONICS Inc

WILL SHIP ANYWHERE IN CANADA

FOR OUT OF TOWN ORDERS CALL 1-800-661-2319

BUILDING YOU THE FASTEST VESA SYSTEMS

SPECIAL BASE SYSTEMS®					PENTIUM SYSTEM SPECIAL
128K CACHE	486DLC-40MHz	486DX-40MHz	486DX-33MHz	486DXII-66MHz	
BUS	ISA	VLB	VLB	VLB	
CASE	MINITOWER/DESKTOP	MINITOWER/DESKTOP	MINITOWER/DESKTOP	MINITOWER/DESKTOP	INTEL PENTIUM 60MHz/256K CACHE/4 PCI
I/O	AT IDE SUPER I/O	VLB AT IDE SUPER I/O	VLB AT IDE SUPER I/O	VLB AT IDE SUPER I/O	MID SIZE TOWER/8MB RAM/3.5" FLOPPY
FLOPPY DRIVE	3.5" HD	3.5" HD	3.5" HD	3.5" HD	PCI SCSI/PCI VIDEO/MID SIZE TOWER CASE
KEYBOARD	101 KEY ENHANCED	101 KEY ENHANCED	101 KEY ENHANCED	101 KEY ENHANCED	15" .28 1280x1024 N.I. GREEN MONITOR
VIDEO	1MB SVGA	VLB 1MB SVGA	VLB 1MB SVGA	VLB 1MB SVGA	2S/1P/1G PORTS / 101 KB / 3 BTN MOUSE
MONITOR	.28 14" SVGA N.I.	.28 14" SVGA N.I.	.28 14" SVGA N.I.	.28 14" SVGA N.I.	\$3099.00 HARD DISK NOT INCLUDED
\$\$ PRICE \$\$	\$ 742	\$ 1073	\$ 1028	\$ 1177	4MB MODULE - \$ 200
HARD DISK	ADD	ADD	ADD	ADD	8MB MODULE - \$ 400
MEMORY	ADD	ADD	ADD	ADD	WITH PURCHASE OF
SERIAL MOUSE	FREE	FREE	FREE	FREE	SYSTEM OR MOTHERBOARD

GOVERNMENT & CORPORATE
P.O.'s ACCEPTED

**PROUD
MEMBER
OF THE
B.B.B.**

BETTER BUSINESS BUREAU

LEASE IT.. FOR AS LITTLE AS \$50.48 PER MONTH BASED ON 36 MONTHS (OAC) CALL FOR YOUR QUOTE

LANCE BASE SYSTEM SPECIAL

486DX COMPUTING POWER AT 50MHz
212 MB OF FAST HARD DISK STORAGE
4MB OF FAST 70 NS EXTENDED MEMORY
128K OF FAST 20 NS STATIC CACHE
JAPANESE 3.5" HD FLOPPY DRIVE
32 BIT VLB I/O & VIDEO 1MB CONTROLLER
FREE MOUSE 14" SVGA COLOUR FREE MOUSE
CASH & CARRY PRICE PLUS TAXES **\$ 1489** WHILE QTY'S LAST

NEED TO NETWORK YOUR OFFICE ?

WINDOWS FOR WORKGROUPS WINDOWS FOR WORKGROUPS WINDOWS FOR WORKGROUPS WINDOWS FOR WORKGROUPS WINDOWS FOR WORKGROUPS WINDOWS FOR WORKGROUPS

A TOTAL AFFORDABLE NETWORKING SOLUTION ...
INSTALLATION CUSTOMER SUPPORT FINANCING

FEATURING UPGRADES WHILE YOU WAIT

HARD DRIVES

SEAGATE	
3144A IDE 130MB.....	\$ 239
3290A IDE 260MB.....	\$ 323
3390A IDE 340MB.....	\$ 399
3550A IDE 452MB.....	\$ 549
3655A IDE 540MB.....	\$ 589
WESTERN DIGITAL	
212MB IDE 13MS.....	\$ 289
270MB IDE 13MS.....	\$ 319
340MB IDE 13MS.....	\$ 389
425MB IDE 13MS.....	\$ 439
540MB IDE 13MS.....	\$ 649
MAXTOR	
245MB IDE 14MS.....	\$ 319
345MB IDE 14MS.....	\$ 389
520MB IDE 12MS.....	\$ 679
TOSHIBA 3.5" FLOPPY DRIVE	\$ 49
TOSHIBA 5.25" FLOPPY DRIVE	\$ 62

MOTHERBOARDS

PENTIUM PCI/ISA 256K 60MHz WITH CPU	\$ 1664
ASUS PENTIUM PCI/EISA 60MHz WITH CPU 256K	\$ 1799
ASUS PENTIUM PCI/EISA 66MHz WITH CPU 256K	\$ 1919
ASUS DX4 VLB GREEN 128K 72PIN	\$ 199
ASUS 486DX-xx AMI 128K 30 PIN	\$ 149
ASUS 486DX-xx AWARD 256K EISA/VLB 30PIN	\$ 399
ACER 3/486 VLB AMI 128K WITH 486DLC 40MHz	\$ 259
ACER 3/486 VLB AMI 128K NO CPU	\$ 129
486-40MHz,w/CPU!	\$ 189
4C87 MATH CO-PRO ADD	\$ 60
DATAEXPERT 3/486DX-xx VLB, 128k Ami	\$ 149
386SX 40MHz	\$ 99

SPECIAL

72PIN 4MB MODULE \$ 200 WITH MB PURCHASE
72PIN 8MB MODULE \$ 400 WITH MB PURCHASE
72 PIN 16MB MODULE \$ 790 WITH MB PURCHASE
CALL FOR LATEST PRICING ON CPU's

VESA-LB VIDEO CARDS

TRIDENT ISA 1MB SVGA	\$ 89
TRIDENT VLB 1MB-2MB	\$ 109
Cirrus Logic 1M-2M	\$ 144
S3, VLB, FAST!	\$ 169
ATI Ultra Pro 2M, VLB	\$ 399
ATI VLB XL24	\$ 199
#9 GXE 2MB VLB VRAM	\$ 499
HERCULES DYNAMITE	\$ 324
MATROX MGA/2	\$ 595

CONTROLLERS

AT IDE VLB SUPER I/O	\$ 39
AT IDE MULTI I/O	\$ 24
HIGH SPEED AT IDE I/O 2s/2p	\$ 79
HIGH SPEED SERIAL Single	\$ 29
ADAPTEC	
1542C KIT SCSI.....	\$ 369
1542C BOARD SCSI.....	\$ 279
1522 SCSI BOARD.....	\$ 119
1522 KIT SCSI.....	\$ 199
2842 VLB SCSI KIT FAAST	\$ 438
2742 EISA SCSI	\$ 549
PROMISE	
IDE CACHING 512KB	\$ 169
IDE CACHING UP TO 16MB OK	\$ 189

KEYBOARDS &

BTC ENHANCED 101 KB	\$ 26
FUJITSU JUNIOR PRO	\$ 39
FUJITSU PROFESSIONAL	\$ 77
Z-NIX SERIAL MOUSE 3 BTN	\$ 19
486 CPU COOLING KIT	\$ 19
3.5" FLOPPY DRIVE BRACKET	\$ 5.99
3.5" HARD DISK STEEL BRACKET	\$ 5.99

CD-ROMS & TAPE DRIVES

MITSUMI DOUBLE SPIN	\$CALL
PANASONIC DOUBLE SPIN	\$CALL
SONY DOUBLE SPIN	\$CALL
NEC SCSI 3X SPIN	\$ 699
OMNI 2X C/W PHOTO STYLER	\$ 299
SUMMIT SE305 IDE -Tape	\$ 398
4mm DAT 2 GIG SCSI INT.	\$ 898
IOMEGA TAPE250	\$ 259
IOMEGA PARALELL 250	\$ 499
COLORADO JUMBO 250	\$ 249
COLORADO TRAKKER 250	\$ 499

SOUND BOARDS

GRAVIS ULTRASOUND	\$ 169
GALAXY NX-PRO 16 BASIC	\$ 189
PRO AUDIO SPECTRUM	\$ 219
ATI STEREO F/X	\$ 99
ATI STEREO F/X CD	\$ 139
SOUND BLASTER 16 CD ASP	\$ 239
SOUND BLASTER BASIC	\$ 187

CALL FOR OTHER SOUND SPECIALS

PRINTERS & MODEMS

HP-DESKJET 520	\$ 389
HP DESKJET 560C	\$ 795
HP LASER 4L	\$ 899
HP LASER 4P	\$1349
CANON BJ600	\$ 785
INTEL 14.4 FaxModem Int.	\$ 199
USRobotics 14.4 FaxModem	\$ 169
ZOLTRIX 24/96 S/R INT.	\$ 49
GVC 14.4 INT S/R FAX DATA	\$ 159
GVC 14.4 EXT S/R FAX DATA	\$ 189

NETWORK CARDS & ACC...

NOVELL CERTIFIED NE2000 COMBO	
CARD WITH AUI/BNC/RJ45	\$ 88
JUMPERLESS CARD	\$ 99
TERMINATORS 50 OHm	\$ 2.99
BNC CONNECTORS	\$ 4.99
25' COAX CABLE C/W BNC.	\$ 17
COAX CABLE CUSTOM CUT LENGHT	\$.30/FT
WIN WORKGROUPS 3.11 OEM	\$ 99
INTEL ETHEREXPRESS 16BIT	\$ 159
D-LINK 16 BIT COAX	\$ 149
SMC ELITE PLUS 1	\$ 179

SPECIALS WHILE QUANTITIES LAST

LOGITECH PS2 MOUSE	\$ 25
Z-NIX SERIAL MOUSE	\$ 14
MICROSOFT SERIES2	\$ 35
VEBATIM DC2120 TAPE	\$ 18
MAXELL DC2120 TAPE	\$ 18
VERBATIM 3.5" HD FD	\$ 15
MEGA 3.5" HD FD	\$ 7

MONITORS

SVGA 17" 1280X1024 N.I. LR	\$ 994
SVGA 15" 1280x1024 N.I. LR	\$ 529
SVGA 14" 1280x1024 N.I.	\$ 364
SVGA 14" 1024x768 N.I.	\$ 339
SVGA 14" 1024x768 INT	\$ 309
VGA 14" PAPER WHITE	\$ 149

387-40MHz CO-PROCESSOR \$ LOW
1x 9 70ns SIMM MEMORY \$ CALL

SOFTWARE

CORELDRAW 3 CD-ROM	\$ 89
WP 6 FOR WIN. UPG.	\$139
WP 6 FOR WIN TRADE	\$169
MS WORD 6 UPGRADE	\$126
MS WORD 6 TRADEUP	\$159
MS EXCEL 5 TRADEUP	\$159
MS EXCEL 5 UPGRADE	\$126

2395 STILLMEADOW RD., 4 LIGHTS WEST OF HWY 10, NORTH OF QUEENSWAY

CALL (905) 566-8325 FAX (905) 566-0812
OUT OF TOWN ORDERS 1-800-661-2319

PRICES ARE CASH DISCOUNTED -/- SUBJECT TO CHANGE WITHOUT NOTICE -/- MASTERCARD ACCEPTED

MIRAGE HEAD SET SUPRA HEAD SET STARSET HEAD SET MODULAR ADAPTOR MODEM COMPUSSET

PLANTRONICS
World Leader in Telephone Headsets

-The First Choice of Professionals

All Day Comfort



ASK ABOUT OUR NEW
COMPUTER MODEM HEADSETS



Mirage® - All Day Comfort

SHARE 3 DEVICES ON ONE LINE
WITH SEPARATE NUMBERS!

\$99.95 **Ring-ID** \$99.95
STATIC RING IDENTIFIER
FEATURES

Works with IDENT-A-CALL service. Handles THREE separate numbers
New, super accurate, static design No need for separate line for FAX
LED line activity indicators Line lock out feature

Built-in phone SURGE SUPPRESSOR No setup required, Just plug it in
THREE YEAR LIMITED WARRANTY
Made in Canada

REVIEW

NEC's Luxury Notebook

A look at the Versa 50 EC

BY ROSS MACDONALD

My love affair with portables began more than 10 years ago when I bought an Apple IIc after having been anchored to my desk by a II+, then IIe.

Of course, things have come a long way since then as I write now on my paleolithic "laptop". But my laptop's petrification didn't start in earnest until I met the new

NEC Versa 50 EC — a luxury notebook that's definitely not for the faint of wallet.

The two new Versa Es (E stands for "enhanced") are among the most capable,

flexible... and expensive notebooks around. My 50 EC is the top model sporting Intel's 3.3 volt 50 MHz SL 486-DX2 processor... and a street price of about \$6,800. The slightly more economical 40 EC is identical but with a 40 MHz DX2.

Capability-wise, these 6.9 lb. marvels do almost everything that might be expected of a desktop. The 50 MHz DX2 is comfortably fast, though not quite as speedy as the designation suggests (a recent test showed benchmark performance near that of a straight DX33). So the response time for some commands did betray heavy breathing under the hood.

And power management is a must if you expect to get the touted 3-5 hours from the removeable NiMH battery. NEC has thoughtfully provided a variety of power management levels ranging from none to annoying — the latter yielding 6-10 hours from a single charge if you can stand all that sleeping and waking stuff. Flat batteries charge in about 1.5 hrs with the machine off and in about 3 hrs when it's in use.

The status of all activities is indicated by a strange icon-based LCD panel just above the keyboard. Low level power management, for example, shows a running faucet, high level shows a dripping faucet. Both are displayed with blank and filled circles and a letter "C" in combinations that require the owner's manual even to write about.

Pointer control is achieved by means of a trackball, placed — thanks to user feedback according to NEC — somewhat awkwardly below the spacebar on the front of the machine. But the buttons are set logically to the left and right of the ball and I got used to the arrangement quite quickly, despite its demand for two-thumb dexterity (one for the ball, one for the buttons). I can only complain that the smallish 16mm ball requires pesky and frequent removal for cleaning because it loses responsiveness after only moderate use.

On the other hand, there are absolutely no complaints about the keyboard. Wrist resters will be unhappy that it's at the front of the machine but keyboard size, response and feedback are all excellent and it has a logical layout. There are separate Home, End, PgUp and PgDown keys with an inverted T layout for cursor control. A single Fn key activates the embedded functions which are all marked in blue.

NEC must love me because the Versa they shipped to me has its renowned TFT colour screen driven by a 1MB SVGA controller with BitBLT video accelerator. The 9.5" diagonal puts this among the largest color screens available and it can only be described as stunning in terms of brightness and clarity. I've run a multitude of CD-ROMs through this machine and all have shown up beautifully and with excellent animation. One disk even complimented the quality of my video capabilities after running its own test during installation.

BYTE INFO SYSTEMS

111 Regina Rd. Unit 7 Woodbridge, ON, L4L 8N5

Our Solutions Set New Standards For The Competition!


AST COMPUTER
The Product Of Our Obsession.

"Power" Users Dream Machine

Pentium 90MHz Dual Processor System

- Pentium 90MHz Dual CPU & Fans
- 16MB Ram Exp. 768MB
- 1Gig SCSI 2 Fast Harddrive
- Both High Density Floppies
- Chinon CD535 Internal SCSI2 CDROM
- #9GXE 64PRO 2MB VRAM
- NEC 5FGP 17" MultiSync Monitor
- Adaptec 2940 PCI SCSI 2 FastWide Controller
- FullTower Server Case
- ACER 101 SlimLine Enhanced Keyboard
- Logitech Ergonomic Mouseman

Call For Pricing



New Lower Prices

BYTE Difference

Total Customer Satisfaction
BYTE one of Canada's largest computer products dealers has over 12,000 products ready for immediate delivery across Canada. We have the top brands at the best prices available.

Availability & Timely Delivery
In our continuing efforts to better serve our customers, we have extended shipping hours. When an in-stock order is placed by 3:00pm local time, order is shipped same day.

Dedicated Sales Division
Recognizing that each business is unique and often needs individual attention, we take a consultative approach to Support and Service. We are solely responsible for the needs of some specific markets.

PUSH

BYTE

CONT BRIGHT

POWER

ON

OFF

0

Notebooks		Networking		Printers		Software	
AST Power Exec	C	3COM	C	Lexmark 12R+	1999	Novell V3.12	899
NEC UltraLite Versa	A	Piicon	A	HP Lasers	909	Novell V4.01	899
ACER Notebooks	L	Novell	L	QMS Lasers	2509	Cheyne Security Products	399
Raven Power Flite	L	SMC	L	Canon LBP430	809	Borland Products	Call
		D-Link	L	NewGen Pagesetters	7899	Microsoft Products	79
Canon		D-Link		QMS		NOVELL	
TEXAS INSTRUMENTS		3Com		LEXMARK		Lotus	
		Novell				WordPerfect	
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					
		D-Link					
		Novell					
		SMC					

OPINION

Incompatible... and Proud of It

BY BOB LOBLAW



Period", it appears that the dawn is not yet at hand.

For those who have not been following the sordid saga of Apple's boneheaded system software strategy, let me recap: Apple was once renowned for its Macintosh system software. The Macintosh, Apple proudly proclaimed, was easier to set up and maintain than any PC. And they were right. And then, during the Dark Period starting with the release of System 7, Apple basically lost it. For starters, System 7 was about 20 percent slower than the System 6 that preceded it. Then, almost nobody used — or supported — the Publish and Subscribe feature that was touted as one of the big benefits of the new version. Balloon Help — another system 7-only feature — also came to be regarded as nearly useless and hopelessly clumsy.

Soon afterwards, Apple started making computers that weren't compatible with the earlier system software releases. You had to use System 7. It then started to charge money for its system software, effectively frag-

menting the user base. Next, the company split up its system software into a standard issue, a home version (not officially available in countries other than the U.S.) and a "Pro" version. The main claim to fame of System 7 Pro is AOCE (which quickly got the appropriate nickname "Ouchie.") It includes an E-mail system that, to be blunt, is pathetically slow.

Then, Apple came up with the brilliant idea of "System Enablers," which made it impossible to create a single boot disk that would start up any model of Macintosh. Worse, it gave these enablers seemingly random numerical codes that had nothing to indicate which model they were for. About the same time, it started on a haphazard program of System upgrades. One particularly absurd example was when it released an "upgrade" (bug fix) for its hard disk formatter only two weeks after it released another version in System Hardware Update 2.0, which had a different name than System Updates 1.0 and 3.0. Apple's CD-ROM software 4.5 came out after version 5.0.

All the while, the company was releasing and rapidly discontinuing dozens of different Mac models, with overlapping feature-sets and price-points.

Now, in what may be its greatest stroke of subgenius, Apple is preparing to release QuickDraw/GX: a system software upgrade

that is reported to be incompatible with all existing printer drivers — including Apple's own. In other words, you will need to get new drivers for all printers — if you can! — before you can print with the new software. Apparently, the Adobe Type Manager font utility — a standby for most desktop publishers — will also require updating to be compatible with the new system software. Current releases of major programs, such as Aldus PageMaker 5.0, are rumored to be incompatible, period. Perhaps all those years of building computers so easy a dummy could use them has had an unexpected side-effect.

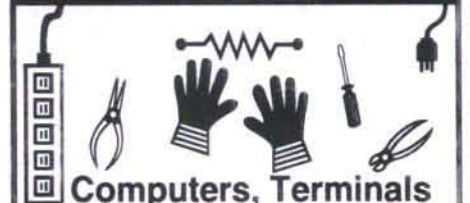
The Low Self-Esteem of PC Users

And speaking of dummies, what is it with computer users? Have all those years of being thought of as geeks and nerds taken their toll? How else can you explain the phenomenal success of the "...for Dummies" series of computer books from IDG Books? Eighteen of the 40 bestsellers on the April Publishers Weekly Computer Bestsellers list were from IDG Books and 15 of those titles were books in the "...For Dummies" series.

The issue is not whether they are well-written books (they are), but why they can't reflect a more positive attitude: "Computer Books for People Who Have Better Things to Do....", for example. □

EXPERT REPAIRS

for



**Computers, Terminals
Printers (Laser, Impact)
Monitors (TTL to SVGA)
Notebooks, Macintosh**

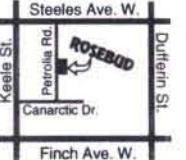
- ☑ Surface mount component level repair
- ☑ 4 Hours response service contracts
- ☑ Student discount on repairs



ROSEBUD

Service of Microcomputers

693 Petrolia Rd.
Downsview, Ont.
M3J 2N6
Tel: 663-7164
Fax: 663-0468



intel

CONNER

GENICOM

TTi

IBM

NEC

Microsoft

Best Price, Quality & Value In Canada

Our 486 Systems Start From

\$999

Complete System with 4 Meg Memory, Hard drive, Floppy Drive, SVGA Color Monitor, 2S, 1P, 1 Game port, 101 Kbd, and 230W Power Supply

TTi Pentium System \$2849

Intel CPU, 540 Meg HD, 8MB
Local Bus 1MB SVGA & I/O, 14" SVGA NI.28

SPECIALS SPECIALS SPECIALS SPECIALS SPECIALS SPECIALS SPECIALS SPECIALS

CD & SOUND

Sony CD
Headphones
Sound Board
2 Speakers

\$369

6 Free CD's

Service

Upgrades & Repair

Of most Name brands & Compatibles

Networks

Design & Installation

Call us for dependable services

\$599

Laser printer

With 1.5 Meg Mem.
Life Time Warranty on Print Head

20 Printer Only

Government and Corporate P.O.s, and Dealer inquiries welcome

TTi

TTi Computers & Business Equipment
Southcreek Business Park, 3045 Southcreek Rd.
Units #23 & 25, Mississauga

238-1238

Fax: 905-238-0235

MAE

LOTTION

Fujitsu

Panasonic

TTi

BLAZING 90 MHz PENTIUM



90 MHz SUPER SYSTEM

64-bit data path
8 MB RAM expandable to 192 MB
540 MB super fast Hard Disk 11 msec
3.5" 1.44 MB drive
3 PCI slots • 5 ISA slots
PCI Plug-and-Play ready • Mode 3 IDE
2 16550 serial • 1 ECP/EPP parallel
64 bit PCI graphics accelerator by Diamond



60 MHz SYSTEM

8 MB RAM • 420 MB super fast Hard Disk 11 msec
3.5" 1.44 MB drive
3 PCI slots • 5 ISA slots
2 16550 serial • 1 parallel
S3 Windows accelerator

FROM **\$3999⁹⁹**

FROM **\$2999⁹⁹**



Nobody Beats Our Adaptec Prices
1542 CF Bus Mastering
AT Bus SCSI Adapter
The industry standard
1510 AT Bus SCSI Adapter
A must for SCSI CD-ROMs

249⁹⁹

99⁹⁹

445S Bus Mastering
VESA Local Bus
SCSI Adapter

339⁹⁹

946C Bus Mastering
PCI Fast
SCSI Adapter

399⁹⁹

Maxoptix
REWRITABLE
OPTICAL
Tape

\$1999⁹⁹

ARCHIVE PYTHON
2 GB DAT
SCSI Interface
11MB/MINUTE
BACKUP &
RESTORE

\$1099⁹⁹

WHILE QUANTITIES LAST
EXTERNAL \$1249.99
INTERNAL

IBM ThinkPad

486/25 4 MB/120MB HD
PCMCIA Metal Hydrate battery. Up to 9 hours

MODEL 350 MONO **\$2299⁹⁹**
MODEL 350C COLOUR **\$2999⁹⁹**

IBM Value Point

486SX 25MHz
4 MB RAM • 127 MB HD
LOCAL BUS GRAPHICS

\$1199⁹⁹

486DX 33MHz
4 MB RAM • 212 MB HD
LOCAL BUS GRAPHICS

\$1799⁹⁹

486DX/2
4 MB RAM • 345 MB HD
LOCAL BUS GRAPHICS

\$1999⁹⁹

Philos 22

25 MHz 486SLDX • Low power consump.
Built-in Math Co-processor
4 MB RAM • 120 MB Hard Drive
(250 MB available)
Mono VGA LCD display
Pop-Up Trackball
DOS, Windows,
Lotus Organizer
International Warranty

\$1899⁹⁹

TRINITRON MONITORS

MADE BY SONY
DAZZLING!!
0.25 DOT PITCH
1024 X 768
NON-INTERLACED
The Best Picture
money can buy!

Great for PC & MAC
14" **\$599⁹⁹** 17" **\$1199⁹⁹**

TOSHIBA 17"

MULTISCAN
MONITOR
DIGITAL CONTROL
1024 X 768

\$799⁹⁹

1280 X 1024 \$899.99

MAG DX 17F - 17"

INNOVISION
1024 X 768 @ 75 Hz
1280 X 1024 @ 60 Hz

\$999⁹⁹

GRAPHICS WONDER

Graphics & Multimedia Accelerator
ISA & VESA
LOCAL BUS
VERSIONS

W/1 MB
"A perfect match for SONY"

\$199⁹⁹

SAVE \$50 when you buy a 14" SONY monitor.

GRAPHICS PRO TURBO \$499⁹⁹

MACH 64, 64 BIT ACCELERATOR W/2 MB

VIPER VLB/PCI WEITEK 9000

ALL DIAMOND CARDS AT RIDICULOUSLY LOW PRICES

DIAMOND The World's Fastest Accelerator

\$499⁹⁹

\$649⁹⁹

WILD AND CRAZY SATURDAYS

SAT JUNE 11

CREATIVE

GIVE AWAY

Sound BLASTER

16 BASIC

16 BASIC

16 BASIC

16 BASIC

16 BASIC

The World's 2nd Most Desired Multimedia Package

The ORIGINAL Sound BLASTER Philips CM-205 ONLY \$199⁹⁹

"A true classic" 150 kb/sec • <350 msec

World's Most Desired

PC SONY CDU-33A 2X DOUBLE SPIN Sound BLASTER

300 kb/sec transfer • <320 msec avg. access

CREATIVE MULTI-CD 16 BIT SOUND

GROLER'S ENCYCLOPEDIA \$399⁹⁹

ChessMaster 4000, Animals, World Atlas, US Atlas, Typing Tutor

SAT JUNE 18 MASS STORAGE MASSACRE

PHILIPS CM205 150 kb/sec • <350 msec 1X \$89⁹⁹

Mitsumi FX 001D 300 kb/sec • 250 msec (10 stroke) 2X \$149⁹⁹

Absolutely the CHEAPEST Double Spin Drive available.

Panasonic CR-562 300 kb/sec • <320 msec 2X \$159⁹⁹

SONY CDU-33A 300 kb/sec • <320 msec 2X \$179⁹⁹

Toshiba 3401 SCSI 330 kb/sec • 200 msec • 256K cache 2.2X \$399⁹⁹

SCSI HARD DISKS

1 GB various makes FROM \$899.99

540 MB <12 msec FROM \$549.99

213 MB <14 msec FROM \$289.99

IDE HARD DISKS

540 MB <13 msec FROM \$499.99

420 MB <13 msec FROM \$399.99

Archive/Colorado

250 MB INTERNAL TAPE BACKUP FROM \$199⁹⁹

SATURDAY JUNE 25

GIGANTIC ANNUAL CLEARANCE

UP TO 50% OFF

EVERYTHING IS BEING BLOWN OUT TO MAKE ROOM FOR '95 MODELS

NEW • DEMOS END-OF-LINE

NO PHONE CALLS PLEASE

SEE OUR AD IN THE TORONTO STAR Hi-Tech Section, Thurs. June 23

cash & carry • ALL SALES FINAL

LOOKING FOR A CHALLENGING CAREER IN COMPUTERS?

Qualified people are required in Retail Sales and Service at both locations.

Sales positions require at least 2 years experience in a related retail or corporate environment. Board level repair experience would be a definite asset for technical service personnel. Preference will be given to persons with related university or college training.

Send or fax resume to:

Personnel

Watronics, 175 Columbia St. W.

Waterloo, Ontario N2L 5Z5

Fax 519-747-0932

NO PHONE CALLS PLEASE

NO PHONE CALLS PLEASE

NO PHONE CALLS PLEASE

NO PHONE CALLS PLEASE

NEC's Luxury Notebook

Continued from page 44

But it's flexibility that really makes the Versa worthwhile. The screen is removable so it can be turned for presentations or even exchanged for color and monochrome. NEC also offers a pen/finger based touchy-feely interface called TouchPen, though I think they won't find many takers for that overblown technology.

The hard and floppy drives slide out to allow interchanges while the floppy's slot also accommodates a second battery for those who spend extra long periods away from a wall socket.

My system is the no options package but even at that it's impressive: 4MB of RAM, the 209MB removable hard drive, the 3.5" 1.44MB removable floppy, two PCMCIA Type II slots, a docking station port, all the usual ports, and that fabulous color screen.

Options include the color and monochrome screens, proprietary 4,8,12 or 16 MB RAM cards, hard drives of 120, 209 or 340 Mb, upgrade to TouchPen operation, a docking station, port replicator, extra battery pack and charger, car adapter, carrying case and the usual array of PCMCIA cards. Watch for a 75 MHz DX4 based version (and upgrade kits for the Versa Es in the near future).

With its numerous options and high quality components, the Versa 50 EC is a serious contender for those who want the best in portable computers. Or, if you only want one machine and portability is important, the 50 EC makes for a happy desktop substitute, especially if you can afford the extras. □



CAD CONNECTION

1568 Bloor St. West

Toronto (between Keele & Dundas)

Tel: 537-0509 Fax: 537-1354

386SX-33 MONO

1 MB RAM, Mini Tower
20 MB HD 1.44 FD
Mono Monitor
101 Keyboard 2S/1P/1G

\$565

486DLC-33/40 SVGA

4 MB Fast RAM
170 MB HD 1.44 FD
SVGA Monitor & Card
2S/1P/1G Ports
101 Enh. Keyboard
Mini Tower Case

\$1075

486DX-33 V-LBus SVGA

4 MB Fast RAM
Build In Math Processor
170 MB HD 1.44 FD
SVGA Monitor & Card
2S/1P/1G Ports
101 Enh. Keyboard
Mini Tower Case

\$1365

3 YEARS LABOUR 1 YEAR PARTS WARRANTY

NEW Multimedia System

486/50 Mhz

\$1485

CD ROM Dbl. Sp.

Sound Blaster Card

DOS & Windows

Speakers

Mouse & Pad

4 MB RAM

170 MB Hard Drive

1.44 Floppy Drive

SVGA Monitor

SVGA 512Kb Card

2S/1P/1G Ports

101 Enh. Keyboard

COMPUTERS FOR RENT

486

386

286 From \$50

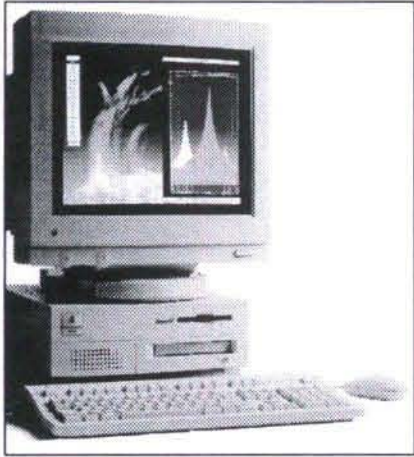
WE UPGRADE YOUR OLD SYSTEM

XT/286 to 386 from \$135

4 MB Fast RAM \$205

Prices are cash discounted and subject to change without notice.

Last year's Multimedia 93 Trade Show and Conference was really the first time the idea of "multimedia" became a factor in home computing and in business. This year, Jaron Lanier and friends came up from the States once more and put on a Virtual Reality concert for those interested in exploring the artistic possibilities of virtual reality. The actual Trade Show displayed many of the implements needed to create the virtual worlds and combinations of sound, sight and computing that is multimedia. Though there were still many exhibits devoted solely to photography, this year there was greater integration of picture and sound production with computers.



Apple's PowerPCs

One of the Apple displays featured a multimedia showdown between a Pentium PC and an Apple PowerPC. Guess who won? Though there was a Newton on display for people to try out, it was the PowerPC that stole the show. These speedy RISC-processor computers make a fast Quadra look like a slowpoke. For the typical user, a PowerPC equipped with full multimedia capabilities makes a very impressive machine. While these computers are able to run DOS and Windows-based applications as well, they are not able to run these with any sort of speed. But with more native PowerPC applications already out or coming out soon, the PowerPC is a real contender for multimedia supremacy in the home- and small- business market.

Contact: Apple Canada Inc. 1-800-665-2775

The Vivid Group's "Shark Bait"

Toronto-based The Vivid Group, which brought the Virtual Reality Goalie to Toronto's Hockey Hall of Fame, was showing off some of its wares at Multimedia 94. In particular, it was displaying an interactive adventure game called "Shark Bait", credited as the "World's First Dive-In Movie." In this game you become part of an adventure in a virtual version of Australia's Great Barrier Reef. Using your arms and legs you "swim" in this environment, looking for treasure and avoiding sharks. The way the Mandala equipment is designed, you do not have to wear any special equipment or other contraptions to immerse yourself in their virtual world. You are in front of a screen and you just have to look at a nearby television monitor to see how you are doing.

The best thing about this game is that you get to swim in a virtual world without having to wear scuba gear, or even get wet! The game unit will be touring Australia later this year, and will soon be available in an arcade hall version.

Contact: The Vivid Group (416) 340-9290

SHOW REPORT

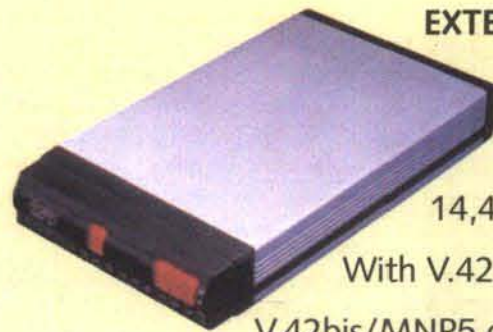
Multimedia 94 Trade Show and Conference

BY KEITH SCHENGILI-ROBERTS

Multimedia 94 was held May 26-28 at the Toronto Convention Centre.

ACEEX FAXMODEMS

Four ways to meet your needs for speed



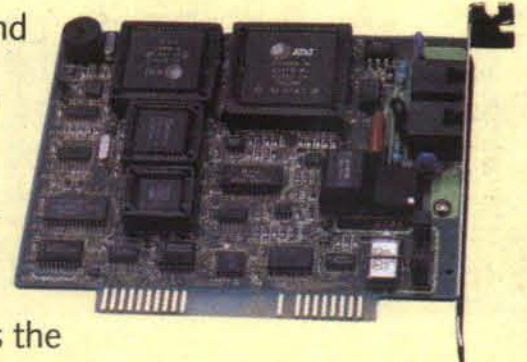
EXTERNAL FAXMODEM. This sleek V.32 turbo/V.17 model with enlarged LED indicators allows you to send and receive faxes in the background at 14,400 bps, and data at an incredible 19,200 bps.

With V.42 error corrector and

V.42bis/MNP5 data compression,

the effective data throughput is pushed up to 76,800 bps. Synchronous and asynchronous operations. **INTERNAL FAXMODEM.** Send and receive

faxes and data at the same speeds as the



external model. **PCMCIA FAXMODEM CARD.** No bigger

than a credit card, this model sends and receives faxes and data at 14,400 bps. Effective throughput up

to 57,600 bps with data compression Asynchronous operation.



Stores three telephone numbers and two con-

figuration profiles. Compliant with PCMCIA 2.0.

POCKET FAXMODEM. Ideal for use with laptops, this model has all the features of the faxmodem card, plus audio monitor.



5 YEAR WARRANTY



TORONTO

ARAX COMMUNICATIONS GROUP TEL: (416) 658-3989
CONNELL COMPUTER TEL: (416) 360-6368
FOCUS COMPUTER SYSTEMS TEL: (416) 739-6603
KOLMEX COMPUTER INC. TEL: (416) 669-6692
LOGICAL COMPUTING SYSTEMS INC. TEL: (416) 739-7260
MB ELECTRONICS TEL: (416) 663-3540

SCARBOROUGH

COMPUTER RENTALS AND SALES TEL: (416) 751-7764
DATA FIRST COMPUTER TEL: (416) 412-0574
MPM INDUSTRIES CORP. TEL: (416) 254-8899
RAINBOW COMPUTER SYSTEM TEL: (416) 266-6133

MARKHAM

LOGIC COMPUTER HOUSE TEL: (905) 415-0909
MIT COMPUTER TEL: (905) 946-0908
PROLOGIC SYSTEM TEL: (905) 513-8518
WISE GUY COMPUTERS INC. TEL: (905) 513-7002

MISSISSAUGA

BICMOS COMPUTER TEL: (905) 279-5038
HYPERTECH TEL: (905) 564-8680
LOGIC COMPUTER TEL: (905) 276-9995
SUMMIT SOFT TEL: (905) 819-9555

OSHAWA

THORNBERRY COMPUTER SERVICES TEL: (905) 404-8024

All names trademarked are property of their respective manufacturers

Continued on page 49

486 VLB SYSTEMS

INTEL 486SX-25	\$1,299
INTEL 486SX-33	\$1,339
INTEL 486DX-33	\$1,539
INTEL 486DX2-66	\$1,699
AMD 486DX-40	\$1,499
AMD 486DX2-66	\$1,649

3VLB 128K Cache
4MB Fast Memory (70ns)
200MB Hard Drive
1.44MB Floppy Drive
IDE Controller w/ 2S, 1P, 1G
1MB SVGA Video Adaptor
Mini Tower (or Desktop) Case
w/ 220W CSA Power Supply
101 Keyboard / Serial Mouse & Pad
14" SVGA Color Monitor, 28, N.I.
CPU Cooling Fan (for DX2-66 only)
MS DOS 6.2 (OEM)
w/ Manuals & Disks

PLEASE CALL FOR UPGRADES.

SamWare Systems

885 Progress Avenue, Unit 103A
Scarborough, Ontario M1H 3G3
Tel.: (416) 289-0533 Fax: (416) 289-1707
Mon-Fri 10:00 a.m. - 7:00 p.m. Sat 10:00 a.m. - 3:00 p.m.

Sales (systems & parts) • Diagnostic • Repair • Networking • Upgrades

COMPUTER CASES	FAX/MODEM	MOTHER BOARDS
MINI TOWER W/220W P.S. \$65	9600/2400 SR INT. \$69	386DX-40/128K \$159
DESKTOP W/220W P.S. \$70	14.4 FAX/MODEM INT. \$169	486SX-25/128K 3VLB \$239
MED. TOWER W/220W P.S. \$105	USR/GVC 14.4 INT. \$189	486-DX33/128 3VLB \$479
FULL TOWER W/250W P.S. \$155	USR/GVC 14.4 EXT. \$219	486DX2-66/128K 3VLB \$679
POWER SUPPLY 220W \$45		*w/ INTEL CPU TO 256K ADD \$20
CONTROLLER, I/O CARDS	KEYBOARD & MOUSE	PRINTERS
IDE CONTROLLER W/IO. \$29	101 ENHANCED KEYBOARD \$29	SAMSUNG 9PIN \$149
VESA IDE CONTROLLER W/IO. \$49	KEYTRONIC KEYBOARD \$49	SAMSUNG 24PIN \$199
I/O W/2S, 1P, 1G \$19	MOUSE FROM \$12	PANASONIC 2023 24PIN \$249
I/O W/16550 SERIAL \$39	TRACKBALL \$59	PANASONIC 2123 24PIN \$289
IDE CONTROLLER \$19	LAN	CANON BJ-105IF \$309
PRINTER CARD \$15	16 BIT ETHERNET (COMBO) \$79	CANON BJ-200E \$379
DRIVES	TERMINATOR OR T CONNECTOR \$4	CANON BJC600 \$769
1.44M/1.2M FDD \$55/\$65	BNC CONNECTOR \$2	CANON LBP430 LASER \$799
IDE HARD DRIVE	RFSB/62 COAX \$35/40 PER FT.	HP DESKJET 520 \$399
-130MB \$249 -170MB \$269	MONITORS	HP DESKJET 560C \$819
-200MB \$289 -245MB \$309	14" SVGA .39 \$269	HP LASERJET 4L \$929
-270MB \$329 -340MB \$389	14" SVGA .28 \$309	HP LASERJET 4P \$1,369
TAPE BACKUP	14" SVGA .28 N.I. \$339	HP LASERJET 4P \$1,939
250MB INT./EXT. \$229/\$459	15" SVGA .28 N.I. TTY \$499	VIDEO CARDS
	17" SVGA .26 N.I. TTY \$979	SVGA CARD 512K \$59
		SVGA CARD 1MB \$89
		VESA 1MB C.LOGIC \$129

Call for LAN/multi-media products, memory upgrades & other accessories.
One year parts and three years labour (carry-in) warranty on system.
Prices are cash discounted. Availability and prices are subject to change without notice.

LASER QUALITY

PORTABLE PRINTERS NEW
Battery Included \$224.44

USED IBM MONITORS 15" \$15
COMPOSITE MONO 9" \$9
DISK DRIVES 360K+ \$9
NEW ETHER 16 NET CARDS 79

ULTIMATE PERFORMANCE

CAD-GRAPHICS WORKSTATIONS

digital

POWER ACCELERATION

433 WORK STATION

Includes SCSI-2, NET/IDE

REPLACEMENT: 100MB NUCLEON
EXPANDED VIDEO GRAPHICS ADAPTER
2 MB DUAL PORTED VRAM
EXPANDABLE TO 16 MB
1280 X 1024 16.7 MIL. CP
PCW1142 486 586/60 100V/50/60HZ

COMPUTER PARTS SURPLUS
60 AMBER ST. UNIT 8 MARKHAM ONT. L3R-2Z9
905-415-1323 FAX 415-1324
Western Ont. 519-668-6011

Get the SURPLUS CHANNEL! weekly fax update.

TRUCKLOAD

386 SYSTEMS

COMPUTERS

From **\$400**

Better Business Bureau Member

REFURBISHED SYSTEMS WITH WARRANTY

But Is It Art?

Continued from page 40

indeed it is a kinetoscope, of sorts. Turning the handle on the side allows viewers to navigate and browse back and forth through a variety of silent stereoscopic "views" of the Banff area and rural Alberta.

I found the concept interesting, but couldn't see the work properly, as the view piece was not designed to accommodate people who wear glasses. Naimark sheepishly admits this and will change the design for his next piece.

Inherent Rights, Vision Rights

by Lawrence Paul Yuxweluptun

I first noticed this work when a young girl sitting at the eyepiece cried out "A bee just went by!"

Inherent Rights, Vision Rights is noted for being the first piece created at Banff to integrate 3D sound and visuals. The work is housed in a dishwasher-sized plexiglas enclosure that reveals its inner machinery and cabling. An eyepiece (yes, it works with eyeglasses) is presented at eye level when a viewer is seated before it. Navigation buttons mounted on columns replace the dataglove for maneuvering through the environment. Stereo headphones complete the ensemble.

Starting the device, you find yourself on an eerie, featureless plane. It is night. Strange animal sounds fill the air and music can be heard in the distance. Far away a low building is visible, and this seems to be the source of the music.

As you navigate toward the building the music increases in volume and tempo. Flies buzz around your head. ("A bee just went by!") The music reaches a crescendo as you enter the long house. Ceremonial fires burn within, their smoke rising up through holes in the ceiling. Arranged around the room are large reproductions of Lawrence's paintings as on dividers in an art gallery. Leaving the gallery you are free to roam around outside, where animal and spirit images float in the sky.

Topological Slide

by Stewart Dickson and Michael Scroggins.



The surf weasel checking out the topological slide.

In this work, viewers wear the HMD and stand on a low platform about three feet in diameter. Sensors under the platform sense the weight of the viewer and navigation is controlled by shifting your weight forward and backward and from side to side to direct your virtual self around 3D representations of mathematical equations. Very cool.

The inventors called it a topological

slide, but every one else called it what it is: a surfboard. The first time I tried it out I was very impressed, but slightly disoriented: the controls were working backwards. To move forward I had to lean backwards, to go right I had to lean left. I mentioned this to one of the technicians. "That's weird," he said, "it was working perfectly last night..."

You hear a lot of that around VR installations.

Placeholder

by Brenda Laurel and Rachael Strickland

This work attempts to use actual physical locations in Banff National Park as virtual locations to be navigated by players in this two-person interactive piece. It is only partly successful in that regard. Digitized video frames of footage shot at the three different locations were mapped onto computer-modeled geometry to produce natural virtual spaces that participants can explore and interact in, or at least that was what was hoped for.

Optical limitations prevented the scenes from matching as well as had been hoped, and the final work had to make some concessions to topology, but it is still a valuable experiment.

In this piece, two cybernauts wearing HMD's can enter the environment at once. Upon entering the space you can look around all you want, but in order to interact, it is necessary to "put on" a body. This is accomplished by sticking your head into the icon of a fish, crow, snake or a spider.

These icons are referred to by Laurel and Strickland as "smart costumes", the idea being that by becoming one of these creatures, you assume different powers. Fish can swim, of course, Snake can see in the infrared, and naturally, Crow can fly.

The players can see and hear each other in the environment, and how you are seen and how your voice is heard depend upon which smart costume you are wearing. Fish sounds like many bubbling voices at once, for example and Crow sounds like, well, a crow.

This piece stands out in my mind for one other innovation it introduced: as you wander about the world you can leave graffiti. Not the spray-paint kind (a limitation of RAM, processing, and programming constraints) but an audio equivalent. "Voice Holders", beautiful stone glyph-like markers located at various points may be filled with messages, observations, or songs to be played back by the next person who wanders by.

Conclusion

There was more, lots more, but there isn't the space here to describe it all. Some of the exhibits were entirely visual, some entirely aural, some both, some had physical feedback. Some were serious and thought provoking, others "merely" entertaining or fun.

The Banff Centre will be a place to watch over the next few years as technician/artists and artist/technicians continue to put their heads together to build that holodeck we've all been waiting for. One day, not too soon, but not too far away, I completely expect to be able to walk into an empty room, feel the sun on my face and the wind in my hair and find calving elk... staring, stamping, whites of eyes showing... □

Multimedia Conference

Continued from page 47

IBM's Personal Dictation System

The idea of speech recognition by computer has been around almost as long as computers themselves. However, it is only recently that computers have been powerful enough to be capable of taking on this task. For the most part, computers able to process speech into on-screen text have been largely experimental in nature, and only affordable to senior executives in large businesses. Now, out of IBM's Boca Raton labs, comes the IBM Personal Dictation System, which runs on a 486-based system.

This program, which won the Best of Show award, was impressive to watch in action, as it correctly deciphered the words spoken by a demonstrator. It is even able to place commonly used homonyms and proper nouns in the right context. In the demonstration I saw, the program was able to correctly spell out "Mrs. Wright" in a sample letter instead of typing out "Mrs. Write" or "Mrs. Right". It is also able to distinguish in most cases when it should use words like "two", "to" or "too" in a sentence. There are several different vocabularies available, including business dictation, journalism and medical vocabularies.

It requires a base machine of 486SX-25MHz running OS/2 with 60+ MB free disk space. It also needs an additional 8RAM above that needed to run the operating system, plus sound equipment designed to work with the program. It has to be trained for use with an individual speaker, but once trained, the program can correctly decipher speech at up to 70 words per minute.

Contact: IBM Canada 1-800-465-7999

CBC's The Language of Light

The Canadian Broadcasting Corporation is slowly making itself felt in the Canadian multimedia market. At the show, the CBC was demonstrating a prototype of a CD-ROM called "The Language of Light", an interactive training course focusing on technical lighting for broadcasting, film and the visual arts. The Windows-based CD-ROM is the result of a collaborative effort from many of the country's top lighting experts, and is a series of presentations and exercises using the full advantages of multimedia.

To test the marketplace, the CBC is selling a prototype of the CD-ROM to interested customers for \$50. While this subject is aimed at a particular professional group, you have to wonder what else the CBC is planning to do with multimedia.

Contact: CBC International Sales, Educational Sales Division (416) 205-6384

The McLuhan Program's VRAAP

The University of Toronto's McLuhan Program, long a pioneer in virtual reality and media research, had a respectable display at the show this year, showing off virtual worlds and immersing willing subjects into them via head-mounted display units. They were also using the space to show off the artistic possibilities of the virtual reality medium. In an effort to give artists greater access to the tools behind virtual reality, they have started the

Virtual Reality Artist Access Program (VRAAP). The purpose of the program is to allow artists free access to virtual reality instruments, to integrate the technologies into easy-to-use packages, and to fund specific artists to create virtual reality art.

People interested in this program can contact Graham Smith at the University of Toronto at the number listed below.

Contact: VRAAP (416) 978-7026

Internet e-mail: graham@gpu.utoronto.ca

On the whole, Multimedia 94 was a good show, with numbers not noticeably diminished (like many other computer trade shows in Toronto this past year) by the marketing pull of Comdex Canada. If you missed out this year, the show will return to the Toronto Convention Centre between May 31st - June 1st, 1995. □

TOPDRAWER ROM

by BigSky ROM

SYSOPS

624 MB OF QUALITY SHAREWARE, PRICED RIGHT...
ONLY \$30.00 + S&H \$4
• ADD GST ON TOTAL
• CHEQUE, MONEY ORDER OR C.O.D.

VITEK INDUSTRIES LTD.

164 Manitoba Street W., Moose Jaw, Sk. S6H 1P9
Tel 306-692-2030 Fax 306-691-0771

• Dealer Inquiries Welcome •
Send copy of bus. lic. as proof of business.

ROLL YOUR OWN CD-ROM's

Distribute your information on CD-ROM today
CD-ROM / MULTIMEDIA Development Software
CD-ROM Recorders SONY / Philips / Ricoh
Complete CD-ROM Publishing Services

TEXT/DATA/IMAGES/VIDEO/AUDIO

MISSISSAUGA	OTTAWA	CALGARY
905-564-2424	613-782-2473	403-269-6133
905-564-6655 Fax	613-782-2918 Fax	403-269-8329 Fax

CD-ROM - CD-ROM XA - CD-I - CD-DA - Mixed Mode - VideoCD - MMCD

BETACORP
TECHNOLOGIES INC.

ACM COMPUTER SYSTEM

4800 Sheppard Ave. East, Unit 109
Scar., ON M1S 4N5 (East of McCowan, North of 401)

Tel: (416) 298-6646
Fax: (416) 298-6302

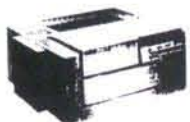
High Performance Pentium 60 MHz-PCI System \$2,777

- INTEL 60MHz Pentium CPU w/ Fan
- 64-bit PCI MB w/ Intel Chipset
- AMI Flash Bios - 256K Cache
- Enhanced IDE I/O On-Board
- 4 ISA, 2 PCI, 1 PCI/ISA Slots
- 2 High Speed 16550C, 1 Parallel
- 8 MB RAM, Max 128MB
- 420 MB IDE Hard Drive
- 1.44M Floppy Drive
- S3 PCI 1M Video Card
- 101 Enhanced Keyboard
- Mid Tower Case w/ 230W PS

Pentium 90MHz PCI System \$3,165



Authorized
Retailer



HP Printers

HP DeskJet 520 \$Call
HP DeskJet 560C \$Call
HP LaserJet 4L \$909
HP LaserJet 4P \$1,319
HP Printers for Macs \$Call

HP Flat Bed Scanners

HP ScanJet IIP - Mono \$699
HP ScanJet IICx - Color \$1,315

HP Plain Paper Fax \$995

Creative Labs Multimedia Bundles at Super Low Prices

Discovery 16 \$449 Game Blaster 16 \$539 Digital Edge 3x \$995

• System Upgrades, POS Accounting Systems Setups, Network Installations, Software, Books Available

SUMMER Specials: Business INTEL Computer

- Vesa LB MB w/ 128K Cache
- 4 Meg Ram (70ns)
- 250 Meg IDE Hard Drive
- 1.44 M Floppy Drive
- 14" SVGA 0.28dp NI Monitor
- Vesa Local Bus Window Accelerator 1M
- Super IDE I/O (2S, 1P, 1G)
- Mini Tower Case w/ 220W PS
- 101 Enhanced Keyboard
- MS DOS 6.2 /w Disks & Manuals



Peace of mind

Solutions to
Your needs and more... in
1 box.
Take a PS/1 home today
at these
LOW Prices!

E49 Bargain for Students	\$1,599
D48 Disney Magic Loaded	\$1,748
E28 Entry Level 486SX-33	\$1,748
80P Multimedia System - New -	\$2,495
40P Small Business System - New -	\$2,695
E67 Advanced 486DX2-66	\$2,888

- Please call for system configurations -

Complete Multimedia Computer System

- Genuine Intel CPU
- 4 Meg Ram, 128K Cache
- 245 Meg IDE Hard Drive
- 1.44 M Floppy Drive
- 14" SVGA 0.28dp Monitor
- VLB 1 Meg SVGA Card
- 2 Serial, 1 Parallel, 1 Game
- Panasonic Dble Spd CD-ROM
- Zoltrix 16 Bit Sound Card
- 10 CD or 6 CD Titles Bundle
- 4W Amplified Speakers
- Mini Tower Case w/ 220W PS
- 101 Enhanced KB & Mouse
- Dos 6.2 & Windows 3.1

486SX-25	\$1,695	486SX-33	\$1,739
486DX-33	\$1,929	486DX2-66	\$2,099
486DX4-100	\$2,645		

Uninterruptable Power Supply

SmartUPS 400/600/900	\$325/\$375/\$575
Backup 450/1250	\$225/\$575

Computer Components SPECIALS

Panasonic ds Cd-Rom + Zoltrix 1600 Sound	\$265
Panasonic/Mitsumi ds Cd-Rom + SB16MCD	\$325
4W Amplified Speakers	\$29
SoundVision Sound & 1 Meg Video Card	\$85
WD or Conner 420/ Conner or Maxtor 540	\$395/\$495
Zoltrix 14.4 Internal/External	\$118/\$155
16550 Uart Serial-1 S / 2 S & 1 P	\$29/\$45
4 Computers-2 Printers Auto Switching	\$95
JVC Performatted Disks	\$9.50

Note: Prices & Availability Subject to Change without Notice

• Hours: M-F: 9:30-8:00 Sat: 9:30-6:00 Sun: 11:00-5:00

Roland Hears Quicktime

BY LINDA ROHRBOUGH

CUPERTINO, CA (NB) — Apple Computer has teamed up with professional musical instrument company Roland Corporation to offer Roland's Sound Canvas musical instrument sound collection for use in the next release of Quicktime.

Apple says that users will be able to use

the Roland musical instrument sounds to make music using its multimedia extensions for the Macintosh without needing to know the technical nuances of musical instrument digital interface (MIDI) technology.

Quicktime movies are made up of different tracks, such as a video track and text

track, and now Apple is adding the ability for developers to include a music track. Each track is considered a "movie" itself, so the music track is often referred to as a "music movie."

Roland's Sound Canvas product includes families of musical instruments, such as

piano, organ, guitar, bass, strings and orchestra, ensemble, brass, reed, percussion, and sound effects. Apple has licensed one instrument from each family for inclusion in Quicktime 2.0.

Altogether, there will be 16 instruments, including some more unusual ones such as "special effects", according to Applesoft's product line manager for multimedia software, Duncan Kennedy. MIDI files usually take a significant amount of space, but Quicktime music movies can be stored in significantly less space, Kennedy added. For example, Beethoven's Moonlight Sonata would require nearly 180 megabytes (MB) if recorded as compact disc (CD) quality audio, but when stored as a Quicktime movie it needs only 75 kilobytes (K).

Kennedy told Newsbytes that, although there is a certain reduction in sound quality in the Quicktime music movie, it is nowhere near as noticeable as one might first expect. Quicktime stores eight-bit audio, but in using the premium-quality sound samples encoded by Roland to reproduce the sounds, Quicktime is able to play back music at much better quality than standard eight-bit audio is able to produce.

Quicktime 2.0 was announced earlier this year and is expected to be available this summer. □

Contact: Apple Canada, 1-905-513-5511, 1-800-263-3394

SELECTED SYSTEMS	486DLC-33 w.128KB cache	486DX-33 w.256KB cache	486DX2-50 w.256KB cache	486DX2-66 w.256KB cache	PENTIUM 66 w.256KB cache
BUS	ISA	3 VESA LBus slots + Pentium socket	3 VESA LBus slots + Pentium socket	3 VESA LBus slots + Pentium socket	3 PCI LBus slots +5 ISA slots
MEMORY	4MB, max 32MB	4MB, max 32MB	4MB, max 32MB	4MB, max 32MB	8MB, max 192MB
IDE HARD DRIVE	170MB w cache	340MB with cache	340MB with cache	340MB with cache	340MB with cache
N.I. 14" SVGA MONITOR 0.28	\$1279	\$1689	\$1759	\$1959	\$2999
All systems come with: 1MB SVGA video card, 101 enhanced keyboard, mouse, 1.2MB 5.25" & 1.44MB 3.5" floppy disk drives, mini tower case, 200W power supply, 2 serial, 1 parallel, 1 game port, clock, calendar, CMOS backup battery, AMI Bios.					

Computers

Notebooks and 486, 386, 286 systems
with the monitor and hard drive
capacity of your choice.

Printers

Dot-matrix printers and excellent
Laser printers for
top quality documents.

Rent

Systems upgrade: XT, 286, 386-->386, 486. Memory and Hard drives upgrade.
Local Area Network Installations, Programming, Repairs

CompuMemories

TEL: 416 232 2777
FAX: 416 232 2401
Prices on BBS: 416 237 9187

3088 Bloor Street West
Toronto, Ontario, M8X 1C8
Two blocks west of Royal York Rd.
Opened: 10-19, Saturday: 10-18

IBM ValuePoint SYSTEMS

486DX33 4MB/340MB HDD.....1893
486DX2-66 4MB/340MB HDD.....2192

MOTHERBOARDS (AMI BIOS)

Pentium 90 PCI,256KB.....1995
Pentium 66 PCI,256KB.....1545
486DX2-66,256KB, PCI & VL Bus.....795
486DX2-66, 256KB cache, VL Bus.....665
486DX2-50, 256KB cache, VL Bus.....545
486DX-40, 256KB cache, VL Bus.....515
486DX-33, 256KB cache, VL Bus.....505
486SX-33,128KB cache, VL Bus.....295
486DLC-33 Texas In 128KB cache.....199
386DX40, 128KB cache.....189
386SX40.....99

VIDEO CARDS

ATI XL 24bit Color 1MB.....135
ATI ULTRA PLUS 2MB.....245
ATI ULTRA PRO 2MB.....375
ATI ULTRA VESA LBus 2MB.....275
ATI Wonder VESA LBus 1MB.....175
ATI Turbo 64bit 2MB,PCI or VLB.....425
ATI Turbo 64bit 4MB,PCI or VLB.....715
Hercules Dynamite Pro 2MB VLB.....299
CIRRUS LOGIC 1MB VESA LBus.....145
TRIDENT 1MB VESA LBus.....125

HD CONTROLLERS

IDE VESA Local Bus HDD/FDD.....49
IDE ISA Super IDE & I/O w.16550.....70
IDE VESA LBus HDD/FDD 16550.....70
Adaptec 1522A SCSI HDD/FDD.....119
Future Domain 1680 SCSI.....165

HARD DRIVES

WESTERN DIGITAL
212MB (13ms/64KB cache).....285
270MB (13ms/64KB cache).....315
340MB (13ms/128KB cache).....385
425MB (13ms/128KB cache).....425
540MB (13ms/128KB cache).....525
QUANTUM
170MB (9ms/32KB cache).....275
270MB (12ms/128KB cache).....339
340MB (12ms/128KB cache).....385
540MB (12ms/128KB cache).....495
MAXTOR
245MB (14ms/64KB cache).....315
345MB (14ms/64KB cache).....365
540MB (11ms/256KB cache).....495
SEAGATE

260MB 3290A (16ms/64KB cache).....305
340MB 3391A (12ms/128KB c.).....385
428MB 3491A (12ms/128KB c.).....455

CONNER

245MB (13ms/64KB cache).....315
340MB (13ms/64KB cache).....365
420MB (13ms/64KB cache).....405
540MB (12ms/128KB cache).....495

TAPE BACKUPS

Conner 250MB internal.....245
Conner 250MB external (parallel).....475
Colorado 250MB internal.....245
Colorado 250MB Trakker ext.....465

CD ROMS

Toshiba 4101 SCSI double speed.....295
Panasonic CR562 double speed.....245
SONY CDU33A double speed.....255
MITSUMI FX01 double speed.....250

MONITORS

TTX 14" SVGA n.i. 0.28.....355
TTX 15" SVGA n.i. 0.28.....515
ORCHESTRA 14" SVGA n.i. 0.28.....355
MAG 17" SVGA n.i. 0.28.....899

LASER PRINTERS

HEWLETT PACKARD
HP 4L.....900
HP 4P.....1295
HP 4.....1829

RAVEN

RAVEN LP410.....599

DOT MATRIX PRINTERS

PANASONIC
KX-P2023 24pin.....245
KX-P2123 24pin/color option.....295
RAVEN
RP-2405 24pin.....225
RP-2406 24pin/color option.....295
CITIZEN
GSX-230 24pin/color option.....309
EPSON
LQ-570 Plus 24pin.....335

INK JET PRINTERS

HEWLETT PACKARD
HP DESK JET 520.....385
HP DESK JET 560C.....775
CANON
CANON BJ10SX.....299
CANON BJ200.....365

CANON BJ200E.....385
CANON BJ600.....720

NOTEBOOKS

AST, Toshiba.....Call
IBM ThinkPad500 mono 4/170MB.2645
BONDWELL 486DLC33 4/80MB.....1680
SunRacer 486SX33 4/80MB.....1938
SunRacer 486DX2-50 4/170MB.....2258
SunRacer 486DX2-66 4/170MB.....2378
SunRacer 486DX2-66 4/340MB.....2728
SunRacer 486SX33C 4/80MB.....2838
SunRacer 486DX2-50C 4/170MB.....3188
SunRacer 486DX2-66C 4/170MB.....3308
SunRacer 486DX2-66C 4/340MB.....3758
All SunRacer notebooks come with
4MB RAM (20MB max), VLB bus video,
PCMCIA slots, carrying case, AC
adapter, built-in track ball. C - denotes
Color Dual Scan

SOFTWARE

7th Gest.(CD).....50
ACCESS 2.0 upgrade.....159
Act 2.0 for Windows.....209
Borland C++ 4.0 (new).....239
Delrina Perform Pro.....99
DOS 6.2 full version.....69
DOS 6.2 step up upgrade.....15
DOOM (CD).....14
EXCEL Win upgrade..5.0 (new).....115
FoxPro 2.6 upgrade.....call
Harvard Graphics upgrade.....109
Indiana Jones (CD).....45
Just Gramma & Me (CD).....39
Lantastic V 6.0.....119
Lotus 1-2-3 Win upgrade.....119
Lotus AMI PRO upgr.....119
Microsoft ENCARTA CD 1994.....115
Norton Desktop/Norton Utilities.CALL
OFFICE 4.2 upgrade.....345
OS/2 for Windows.....85
OS/2 V 2.1 full ver.....112
PARADOX 2.0 Win.....159
PC TOOLS.....110
Peter & the Wolf (CD).....26
Procomm Plus Windows or DOS.....129
Return to Zork (CD).....36
Quattro Pro Ver 5.0 Win upgrade.....69
Quicken Canadian Win or DOS.....59
SimCity 2000.....59
Simply Accounting CA.....130

STACKER 4.0 upgr./full ver.....68/128
Teddy's Big Day (CD).....31
WINDOWS 3.1 full version OEM.....65
WINDOWS 3.1 full ver. Original.....89
Windows for Workgroups3.11upgr..59
Windows for Workgroups3.11full..155
WinFax Pro Win..Ver 4.0.....99
Wizard 2.0.....26
WORD 6.0 Win upgrade.....115
Word Perfect 6.0 Dos/Win upgr.....149
WORKS DOS or Windows.....75

FAX & MODEM

16550 Serial card.....29
Fax/Phone Ident-A-Call switch.....95
ATI 14.4 ETC-E F/M external.....225
ATI 14.4 ETC-I F/M internal.....195
BOCA 14.4 F/M internal.....155
Cardinal 14.400 internal.....169
GVC 14.4 Fax/Modem internal.....185
Intel 14.4 fax/modem external.....225
Intel 14.4 fax/modem internal.....205
INTEL SatisFAXtion 400 internal.....379
Supra 14.4 fax/modem internal.....145
Supra 28.8 modem/fax internal.....359
US ROBOTICS 14.4 F/M external.....205
US ROBOTICS 14.4 F/M internal.....185
ZOLTRIX 14.4 F/M internal.....155
ZOLTRIX 9600/2400 F/M internal.....89
Zoom Pocket 96/24 Fax/Modem.....125

AUDIO CARDS

Sound Blaster ASP 16 CD.....285
Sound Blaster 16.....155
Zoltrix (Sound Blaster comp.).....89
Spectrum Pro Audio 16.....189

MEMORY UPGRADE &...

4MB SIMM module 70ns.....220
4MB Memory upgrade for HP4/4P.....245
HP IIP/IIP/III 1/2/4MB.....109/165/295
Please fax Inquires (232 2401) about
memory for printers, notebooks &
systems: Apple, AST, AT&T,
Bondwell, Brother, Canon, Compaq,
DEC, Dell, Epson, Fujitsu, Hewlett
Packard, IBM, NEC, NCR, Okidata,
Olivetti, Packard Bell, Panasonic,
Sharp, Star, TEC, TI, Toshiba & others
387DX MathCo-all speeds.....75
Microtek ScanMaker II (scanner).....895
Intel Ethernet network card.....125
Selection of cables & switch boxes

TRUE VL-Bus System

486 DX/331399.00

Including:

- VESA L.B., 128 K Cache
- 1 Mb VL-Bus 32 Bits SVGA Card
- 4 Mb fast Ram
- 170 Mb IDE hard disk
- 1.44 Mb high density Floppy Drive
- 14" 1024x768 SVGA Monitor
- Mini Tower Case w/LED
- 101 Enhanced keyboard
- 2 serial 1 parallel and game port
- Intel w/Built-in Math Coprocessor

Pentium Systems from..\$2699.00

PCI Energy Saving System from..\$1680.00

Upgrade 486/33 to DX2/66 from..\$250.00

270 Mb IDE hard disk.....325.00

MEMORY Upgrade & Repair

Free Diagnostic and Estimation

CALL us before you dispose of your dead module.

On - Site Services & Upgrade..Pls Call

Price quoted are COD and subject to change without notice.

VISA cards subject to surcharge.

1300 Don Mills Rd. Suite 256 Toronto Tel:510-8918

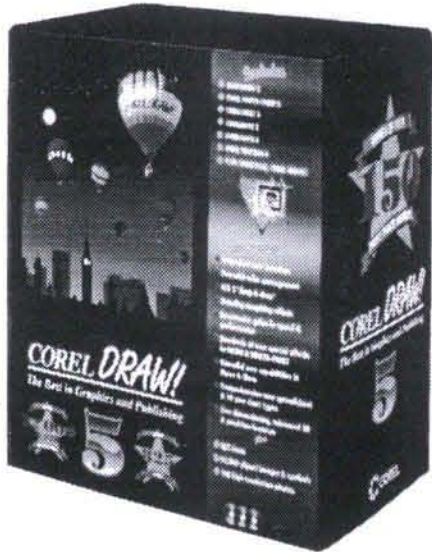
142 Willowdale Avenue, North York, Toronto M2N 4Y4

CPU SYSTEMS NEW LOCATION FROM JUN 21/94
Tel: 733-2100 Fax:733-2275
Shappard Ave E

SOFTWARE

Hands-on CorelDraw 5.0

BY GRAEME BENNETT



CorelDraw 5.0 is bigger than ever. A full installation takes a whopping 50 megabytes of hard disk space — and that's not including all the fonts or clip-art that come with the package.

The Promise and the Pain

First the good news: CorelDraw 5 addresses virtually all of the complaints we noted with previous releases, including CorelDraw 2.01 (reviewed way back in Feb. '92), version 3.0 (reviewed in *The Computer Paper*, July 1992) and version 4.0 (reviewed in Sept. 1993). Most notably, the fonts are of higher quality than those supplied with version 3 (there are now 825 of them), and text handling is much, much faster than in version 4.0. And did somebody ask for new features?

CorelDraw old-timers may recall that Corel was one of the first companies to bundle a CD-ROM disc with its product, which the company did with CorelDraw 3.0's release, back in the spring of 1992. In Sept. '93, we marveled that CorelDraw 4 came with not one but two CD-ROMs. Well, version 5's got three of 'em. And believe it, installing the package from CD-ROM beats the heck out of juggling floppies.

It's worth noting that although CorelDraw continues to allow you to access the program from CD-ROM, rather than installing it all on your hard disk, there are a couple of good reasons you might not want to do this. First, it's a lot slower. But, more critically, you can't access disc 2 at all if you choose to run the program from CD-ROM, because, of course, it needs to have disc 1 in the drive to run.

So, say goodbye to 50 megabytes of hard disk space. Yep, you read right. The big five-oh. Even if you do choose the CD-ROM option, it will still require 15 MB of hard disk space.

Back in Sept. 1993, we speculated about what features Corel could possibly put in Corel 5.0 to outdo the feature set of CorelDraw 4.0. Only half-jokingly, we pondered whether Corel should build in a PostScript interpreter, add the ability to use Photoshop plug-ins, allow it to load files from DTP packages, include lighting and 3-D effects, and so on. Well, guess what? They did.

Sure, CorelDraw has about a million fea-

tures. But, the big question is: how do they work?

We ran CorelDraw 5.0 through an extensive battery of tests to compare the promises with the reality. Here's what we found.

Importing and exporting functions are, as usual, a weak area for Corel. For example, Corel's filter for importing Macintosh PICT files imports them backwards and upside-down. So, who did the beta testing on that one, guys?

We had much better luck when we attempted to process EPS files with the new Interpreted PostScript option. Everything we threw at it worked like a champ, including files created with the new version 5 of Illustrator and version 4 of FreeHand. We also tested bitmapped EPS files saved in both PC and Macintosh formats. CorelDraw's PostScript interpreter even successfully rasterized EPS files that were saved in a format that will only print on a PostScript Level 2 printer — evidence that the interpreter is at least partly Level 2-compliant. We'd rate the PostScript interpreter as top-notch.

DeskJet/BubbleJet Ink Refills 5/\$49 !!

Faster drying, less smudgy - quality & printer safety guaranteed. Takes a minute, full instructions. Canon BJ: 5,10e(x) 20, 200, Fax, Apple S/W, Brother, IBM 4070 OR H/P 51608A: Olivetti JP150/350. all Panafax, Pitney-Bowes, Fujitsu. Red, Green, Blue, for above 4/\$59. H/P 51626A Hi-Capacity* 4/\$64. 500/50C cart. & 12 refills \$99. PaintJet/BJ800 2-/329 col. 2/\$39. Oki 4/800 opc \$139 rmls.

IMAGE CONTROL

416-251-4950

62 Mimico Ave. Etob.

1 E Royal York N Lakeshore



OptiMicro Technologies Inc.

486SX-33	\$1225. or \$35/mo.*
486DX-33	\$1439. or \$38/mo.*
486DX2-50	\$1499. or \$41/mo.*
486DX2-66	\$1675. or \$45/mo.*



All systems come with:
• 4Mb RAM
• VESA 1Mb Windows accelerator
• high speed I/O controller
• 212Mb hard drive
• SVGA monitor

*O.A.C.

The Easiest Way to Add a Hard Drive



PS-ValuePoint, please CALL

Monitors

14" SVGA \$275.
15" SVGA \$599.
17" SVGA \$799.

Modems

14.4k int. \$129.
14.4k ext. \$159.
28.8k int. \$289.
28.8k ext. \$325.

Networking

8 port hub \$269.
16 bit ethernet card \$ 79.
Personal Netware \$ 84.
Novell DOS 7 \$ 84.

Presenting ...
pPhD
(Parallel Port Hard Drive)



- ★ Perfect for laptops and portables
- ★ Easy setup, gives extra storage in three minutes
- ★ Attaches INSTANTLY to ANY PC and laptop parallel port
- ★ Use the same programs and data at home, office, and clients
- ★ Protects sensitive programs and data by carrying them along with you
- ★ Comes with carrying case, software, all cables and 1 year warranty
- ★ Easy backup ★ Light weight ★ Assembled in Canada

Hard Drives

212Mb \$279.
340Mb \$359.
426Mb \$399.
546Mb \$499.

For other size, please call.

Multimedia

Pan. 2x Speed CDROM \$199.
Pan. 2x Speed CDROM with
Sound Blaster 16 and 6 CDs \$399.
Toshiba CDROM 3401 \$465.
Toshiba CDROM 4401 \$310.
Sound Blaster comp. \$ 49.

Networking Solutions

- Novell CNE on staff
- On-site service
- Service contract available



LAN Starter Kit

includes 2x16-bit ethernet cards/Novell Networking Software/
All cable and connectors*/Installation

Only \$285.



Complete Novell Network System

(for 5 users) including:

4 x 486-40 Workstations/4Mb RAM/1.44Mb floppy drive/SVGA 1Mb card/
SVGA COLOUR monitor/16 bit ethernet card
1 x 486DX-33 Server/4Mb RAM/1.44Mb floppy drive/245Mb hard drive/SVGA 1Mb card/
VGA mono monitor/VLB I/O /16 bit ethernet card/Novell Netware ver. 3.12/Installation

Only \$6990**

**Leasing Available



Other network configurations available.

* larger office may require additional charge for cabling.

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL PRICES ARE CASH DISCOUNTED.



7170 Warden Ave., Unit 15, Markham, Ontario L3R 8B3

Tel. (905) 470-7016 Fax. (905) 470-8975 (Just N. of Steeles)

BIG BOSS 883-0115 10111 YONGE STREET • RICHMOND HILL



Lose weight

... not muscle!
At only 4 pounds,
the new Ambra
Lightweight
Notebooks are the
leanest, meanest
computers on the
road today.

Sub Notebook BAM2201

* 486SL-25MHz
* 4 MB memory
expandable to
20 MB
* 80 MB hard drive
* 8.2" VGA screen
* 64 grayscales
output
* Built-in trackball
* External 3.5" 1.44Mb disk drive



Preloaded software includes:

MS DOS 6.0, Windows 3.1
and PCMCIA Plus.

One year Executive Exchange warranty
and a lifetime 24 hour IBM HelpPC
technical phone support.

Sub Notebook BCM2B11

* 486SL-33MHz
* 4 MB memory expandable to 12 MB
* 120 MB hard drive
* 8.5" VGA screen / 256 Colours
* Built-in trackball
* Internal 3.5" 1.44Mb disk drive



Ideal for kids and grown-ups
alike. Ready to entertain
and educate right out of
the box. Easy to use,
easy to own and easy to buy.

IBM PS/1 80P

* 486SX-33MHz
* 253 MB hard drive
* 4 MB memory
expandable to
64 MB
* 3.5" disk drive
* 14" SVGA monitor
* Double-speed CD-ROM
* Audio card and stereo speakers
* 1 MB VRAM
* 3 year warranty



FREE Bonus Software Bundle with every IBM PS/1

IBM PS/1 40P

* 486DX2-50MHz
* 340 MB hard drive
* 4 MB memory
expandable to
64 MB
* 14" SVGA monitor
* Data/Fax modem
* 1 MB VRAM
* 3 year warranty



NOTEBOOKS

IBM Think Pad	
• 360/170 Mb/Mono	\$2850
• 360/170 Mb/Active	\$4990
• 360/340 Mb/Color	\$5520
• 500/85 Mb/Mono	\$2465
• 500/170 Mb/Mono	\$2730

Toshiba

• T1910/120	\$2200
• T1910/200	\$2490
• T1910CS/200	\$3150
• T1950/200	\$2990
• T1950CS/200	\$3720
• T1950CT/320	\$4550
• T3400/4800/6600	SCALL

AST

• BravoSX33/200 Mono	\$2160
• BravoSX33/200 DScan	\$3060
• Power Exec SL25/80	\$2750
• Power Exec SL25/120	\$2820
• Power Exec SL33/200	\$3490
• Power Exec SL33/340	\$3970

MULTIMEDIA

• Discovery 16	\$475
• Edutainment 16	\$605
• SB 16 Basic No/5	\$155
• SB 16 Multi CD	\$199
• SB 16 SCSI-2	\$249
• SB Midi Kit	\$89
• SB Multi CD/ASP	\$249
• SB Pro Deluxe	\$113
• Audio Cable	\$8
• Panasonic 562	\$230
• Sony 33A	\$230
• NEC CD 900	\$1350
• NEC CD 600	\$810
• NEC CD 500	\$690
• NEC CD 400	\$600
• Toshiba XM 3401B-5	\$579

SOFTWARE

Microsoft	
• Access/Upgrade	\$395/159
• Excel/Upgrade	\$389/127
• Office/Upgrade	\$585/335
• WFW/Upgrade	\$170/69
• Word/Upgrade	\$389/127

Lotus

• 123 Win/Upgrade	\$380/128
• AmiPro/Upgrade	\$335/128
• Approach	\$129
• Smart Suite/Upgrade	\$575/365

WordPerfect

• WP DOS/Upgrade	\$385/143
• WP Win/Upgrade	\$385/143

Delrina

• WinFax Pro 4.0	\$105
------------------	-------

PRINTERS

• HP InkJet 520	\$389
• HP InkJet 560C	\$800
• HP LaserJet	SCALL
• Okidata ML 184	\$340
• Okidata ML 320	\$470
• Okidata ML 380	\$315
• Okidata LED	SCALL
• Epson LQ570	\$360
• Epson LQ1070	\$520

COMPUTER ASSOCIATES

• Accpac AP/Upgrade	\$519/189
• Accpac AR/Upgrade	\$519/189
• Accpac PR/Upgrade	\$695
• Accpac GL/Upgrade	\$519/219
• Accpac IC/Upgrade	\$519/189
• Accpac JC/Upgrade	\$589/189
• Accpac OE/Upgrade	\$519/189
• Accpac Win	\$125
• Accpac LanPak	\$240

HARDWARE

• 486 Systems	SCALL
• 130 Mb HD	\$255
• 170 Mb HD	\$265
• 260 Mb HD	\$325
• 350 Mb HD	\$420
• I/O Mother Boards	SCALL
• VGA Monitors	SCALL

SERVICE

- Repair most makes of PC, monitor and printer.

UPGRADE

- PC Systems and Memory.

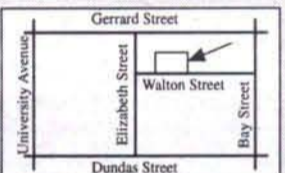
NETWORKING

• Novell Network	SCALL
• Novell Upgrade	SCALL
• SCO Unix	SCALL
• Lantastic	SCALL
• Cable & Access	SCALL
• SMC EL 16 Ultra	\$145
• SMC EL 16 C	\$165
• SMC EL 16 T	\$145
• SMC EL 16 ComBo	\$188
• SMC EL 12 Port Conc.	\$830
• Intel Ether Exp 16	\$149
• Intel Ether Exp 16TP	\$149
• Landesk Virus Protect	\$960
• UPS & PowerChute	SCALL
• SMC 8 Port Conc.	\$450

FAX MODEMS

• US Robotics 14.4 (E)	\$199
• US Robotics 14.4 (I)	\$175
• PCMCIA 14.4	\$289

Prices Subject to Change Without Notice

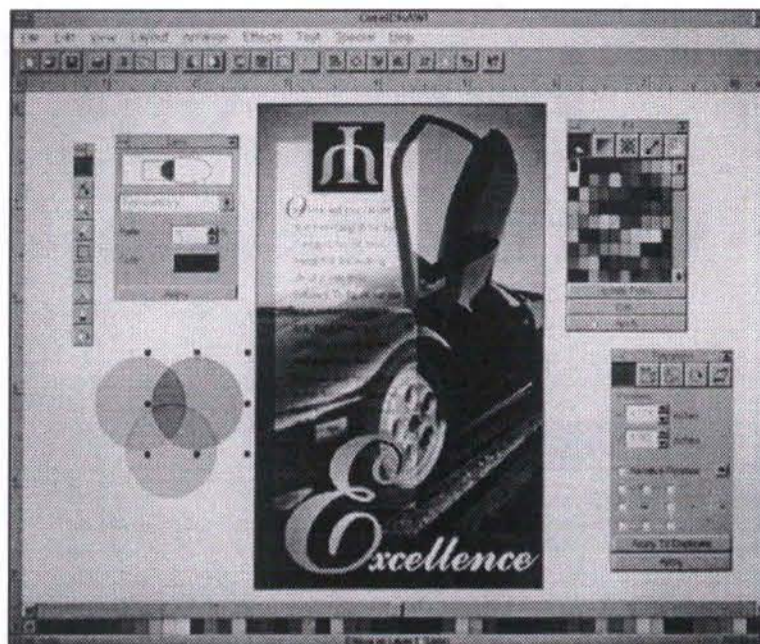


Cotech Computers Inc. (since 1984)

106 Walton Street (Bay & Gerrard)

Toronto, Ontario M5G 1Z2

Tel: 416-977-8778 Fax: 416-977-8032



CorelDraw 5.0's best feature may be its stellar implementation of Lenses—transparency functions that affect both vector objects and bitmaps

In other tests of the import filters, the only problems we noted occurred with grayscale and CMYK JPEG files. Although RGB files imported properly, even the smallest grayscale JPEGs gave a "Temp drive may be full" error, though our test PC had 76 MB of disk space free and a 20MB permanent swap file. That's a bug, or at least a noteworthy limitation in Corel's JPEG implementation.

The verdict: thumbs down for JPEG and PICT import filters, thumbs up for the rest.

We noticed that the program sometimes produces objects containing more than 1000 points. This can create problems when printing or exporting to other programs such as Aldus FreeHand.

Text Handling

The speed of text redrawing is dramatically faster than previous versions of CorelDraw. The addition of the high-quality fonts and additional page-layout functionality in version 4.0 left a lot of people attempting to use CorelDraw as a page-layout program. Unfortunately, CorelDraw 4.0's insistence on converting all text into graphic objects (outlines) meant that documents with more than a few words on the page were brutally slow to redraw.

CorelDraw 5.0 dramatically improves things in this area, as it now treats text as — well, text. The redraw speed of graphics objects is perkier than that of version 4, too.

Our favorite new feature of CorelDraw 5.0 is the lens feature. This is an amazing innovation that, quite frankly, blows anything else on the market away. You can lay CDR vector objects on top of other objects with effects, such as transparency, grayscale, magnification, etc. Great — Aldus IntelliDraw can do most of these things too. But you can layer vector objects and full-color bitmaps, and the transparency effects affect the bitmap as well. Ooh, ahh.

The fractal fills introduced with CorelDraw 4 have been enhanced with version 5. Now, fills can be used in virtually all of the Corel modules, and the fills are more beautiful than ever. If the "organic" look is the next wave in computer graphics, CorelDraw's ready for it.

Just for the record, certain functions in the program require that it be run in 386 Enhanced mode. So, PowerMac owners can dabble with running CorelDraw under Windows emulation, but attempting to use CorelDraw's Interpret PostScript or JPEG import filters when Windows is running in Standard Mode produces an error message: "not running on a 386 DPMS implementation."

Test Methodology

Corel says that the program's minimum requirements are a 386 with 8MB of RAM. We tested CorelDraw on several systems, ranging from an 8MB 486SX/33 to a

SCAN-DALOUS PRICES

for hi-res drum scans

HI-RES FULL COLOUR STARTING AT \$20

& FAAAAAST

SERVICE BUREAU

OUTPUT

PC AND MAC
ALL THE LEADING SOFTWARE

Graphic Solutions

WHATEVER IT
TAKES TO GET THE
JOB DONE!!

KITCHENER

1770 KING EAST, KITCHENER
519 741-8444

MISSISSAUGA

6625 TOMKEN ROAD, SUITE 202
905 795-9385

COVER YOUR FAXES WITH ATTENTION

Business Communications Utilities Group

Business Communications Kit
ProFAX™ Volume 1

COVER PAGES THAT GET YOU NOTICED!

Professionally-designed Fax cover sheets available in formats for DOS, Windows and Macintosh. Just drag, drop and use. No complicated set-up. Instant install.

Call (905) 936-9432 to order.

\$39.95



PhotoPaint 5 gained a number of useful features, including a mesh warp function and new artistic effects, such as the glass block effect shown here. Note the Preview buttons in many of the dialog boxes.

486DX/66 with 32 MB of memory. Performance on the latter was great. What? You're not surprised?

Just for interest's sake we tested it on a 486SX/25 system with 4MB of RAM. Well, they were right. Although it did work, it crashed a little too often to be useful.

On to PhotoPaint!

Corel has apparently noticed that the new PhotoPaint is hot, because it has announced that the program will soon be available separately for about \$300. While there are several important functions that it lacks compared to, say, Adobe Photoshop, it also exceeds Photoshop in a few ways. Most notably, it allows multiple floating selections (similar to Picture Publisher 4.0, reviewed in the June '94 issue), and can load just part of a large file. And it now supports Photoshop plug-ins! Kai's Power Tools, here we come....

Ventura — Down the Highway

The company had planned to include Corel Ventura 5.0 in the package but, according to Corel CEO Dr. Michael Cowpland, it wasn't stable enough to ship. The package includes a free upgrade coupon; the company says it will ship when it's ready.

Other Modules

A number of the other modules in the CorelDraw package have been enhanced, too — most notably, CorelMove has added morphing features similar to those in Gryphon's Morph (see the review of that program in the June, '94 issue) and CorelChart has added over 250 spreadsheet functions. A Corel spokesman pointed out the almost-absurdity of this number by explaining that CorelDraw now has more spreadsheet functions than Microsoft Excel.

CorelDraw 3.0: all the program you really need?

It can be convincingly argued that CorelDraw 5.0 is a bloated monster, and that CorelDraw 3.0b was all the drawing program any of us ever really needed. However, we like CorelDraw 5 better than any previous incarnation. Although far from perfect (heck, it's not even consistent!), the user interface is better than ever and Corel has managed to add a bevy of features without sacrificing ease-of-use.

It also works better than previous releases, flaky import filters and features you'll never use notwithstanding. Its built-in PostScript interpreter will help users produce stunning printed output from inexpensive

printers; its paragraph text performance will be a godsend to those who were struggling to use CorelDraw 4.0 as a DTP package. (This situation will only improve with the eventual inclusion of Ventura 5.). The developers also paid attention to the concerns of high-end users, with Panose font matching, CMYK image conversion and editing, color correction and PhotoCD support, and so on. Downloading fonts from previous releases was a nightmare; version 5 handles this task with aplomb.

The Good

- Much faster paragraph text handling
- 60 new textures, 825 fonts and 22,000 (!) pieces of clip-art
- PhotoPaint has been dramatically improved

- Mosaic now allows drag-and-drop importing
- Nifty lens effects break new ground
- PostScript interpreter built in — Level 2 compatible!
- Includes Ventura 5
- Morphing effects in CorelMove
- Color management system built in
- The manual is Corel's best ever, with plenty of color illustrations and clearly laid out info. Of course, we still expect to see about a hundred "Corel5" books.
- We did not have to wait long for technical support calls to be answered. Corel's tech support department was helpful and called us several times while attempting to solve our problems.

VESA Local Bus Systems

486 DX-40	\$1400
486 DX-33	\$1420
486 DX2-66	\$1679

All systems include: 128k cache, 4Mb RAM, 212 Mb HD 1.44 Mb FD, SVGA card, I/O card 14" SVGA monitor, Mini Tower case 3 Button Mouse, 101 KB

Upgrade to **only \$389**
MULTIMEDIA SYSTEM

with Dual speed CD-ROM, speakers 16 bit sound card and CD titles...

System upgrade? Network? Call us!

The Best Choice!

Hard Drive:	
540 Mb	\$490
420Mb	\$395
345 Mb	\$345
Fax/Modem:	
14.4/14.4 Int (S/R)	\$140
Monitor:	
15" SVGA NI .28	\$470
14" SVGA NI .28	\$297
Printer/Scanner:	
Canon BJC-600	\$720
Canon Scanner	\$1310
Multimedia kit:	
Mitsumi	\$409
Sony	\$360
Open Fri-Sat: 10-7	

ICCT Technologies (Canada) Inc.

500 Alden Rd., Suite 205, Markham, Ont. L3R 5H5 Tel.: (905) 475-9921 Fax: (905) 475-5350

CNE/ECNE Training Products

Powerful Windows based, training products at affordable prices!

Practice commands & utilities on simulations built in our Computer Based Training programs.

CBT's

DOS & Microcomputer Concepts	\$ 99.00
Administration v3.1x	\$175.00
Ad. Administration v3.1x	\$199.00
System Manager v2.2	\$175.00
TCP/IP Transport for NetWare	\$199.00
Service & Support for NetWare	\$199.00

Books

DOS & Microcomputer Concepts	\$29.00
Administration v3.1x	\$59.00
Ad. Administration v3.1x	\$59.00
System Manager v2.2	\$59.00
TCP/IP Transport for NetWare	\$59.00
Service & Support for NetWare	\$49.00
Networking Technologies	\$89.00

Proficiency Tests

DOS & Microcomputer Concepts	\$19.95
Administration v3.1x	\$19.95
Ad. Administration v3.1x	\$19.95
System Manager v2.2	\$19.95
TCP/IP Transport for NetWare	\$19.95
Service & Support for NetWare	\$19.95
Net. v3.1x to v4.0 Update	\$19.95
System Administration v4.0	\$19.95
Ad. System Administration v4.0	\$19.95
Networking Technologies	\$19.95
Unix OS Fundamentals	\$19.95
4.0 Installation Workshop	\$19.95
Printing with NetWare	\$19.95
NetWare Global MHS	\$19.95
Fundamentals of Inter-networking & Mgmt. Design	\$19.95

Call or write for a free demonstration disk!

2285 St. Laurent Blvd Unit D-12, Ottawa, Ontario K1G 4Z7
Tel: (613) 736-5326 Fax: (613) 736-9614



3 Year Parts and Labour Warranty

Limited Time Offer on Pentium Systems

IPC Dx-4-100, Intel 100MHz
4MB RAM, 1.44MB & 1.2MB Floppy Drive, 520MB Hard Drive, PCI Video 1MB & VLB Controller, 101 Extended Keyboard, Mouse.
\$2489.00
or \$21.50 per week

IPC 560 MTP, Intel 60MHz
8 MB RAM, 1.44MB Floppy Drive, 340MB Hard Drive, PCI Video 1MB & PCI IODE Controller, 101 Extended Keyboard, MS Mouse, 25, 1P, 1G.
\$2899.00
or \$24.90 per week

IPC 560 MPC, Intel 60MHz
8 MB RAM, 1.44MB Floppy Drive, 340MB Hard Drive, PCI Video 1MB, PCI IODE, MS Mouse, Double Speed CD Rom, 16 bit Sound Card & Spk, 101 Keyboard
\$3099.00
or \$26.60 per week

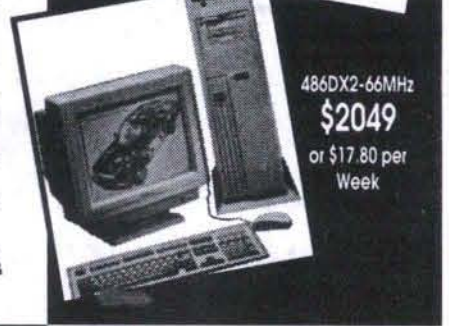
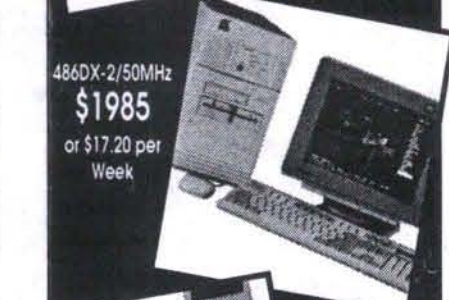
IPC 560 MTPs, Intel 60MHz
8 MB RAM, 1.44MB Floppy Drive, 877MB SCSI Hard Drive, 1 MB PCI Video, SCSI Controller, 101 Keyboard, Mouse.
\$3650.00
or \$30.64 per week

IPC 560 MPCs, Intel 60MHz
8 MB RAM, 1.44MB Floppy Drive, 877MB SCSI Hard Drive, PCI 1MB Video & SCSI Controller, Dual Speed CD-ROM, 16 bit Sound Card & Spk, 101 KB, Mouse.
\$4199.00
or \$35.25 per week

ALL PENTIUM SYSTEMS CARRY DOS 6.2 & WINDOWS 3.1

IPC Vesa System Configuration: (Only in Desktop)
4 MB RAM, 1.2 & 1.44MB Floppy Drives, 340 MB Hard Drive, VESA Local Bus Video & Controller, 101E Keyboard, SVGA Monitor .28 Dpi, MS Mouse, DOS & Windows, 3 Years Parts & Labour One Year On Site Warranty.

The Intel Inside Logo is a trademark of Intel Corporation. IPC is the trademark of 3D Micro.



Hi-TECH SERVICES
835 ALBION RD., ETOBICOKE

MONDAY - FRIDAY • 10AM - 8PM
SATURDAY • 11AM - 6PM

TEL: (416) 746-8815
FAX: (416) 746-0415

**N.E.D.L. Computer Co.
Richmond Hill**

486 DLC-40 MHz	\$1125
128K VLB System	free mouse
486 DX-40 MHz	\$1330
128K VLB System	free mouse
486 DX2-66 MHz	\$1520
128K VLB System	free mouse

All Systems Include:

4 mb RAM SVGA Monitor
Super I/O Card SVGA 512k card
1.44 Floppy Drv. 170 mb Hard Drive
Mini Tower Case 101 Enhanced Keyboard

HP Deskjet 550C \$750

We sell new + used systems
We do repairs and upgrades

26 Leventdale Rd.**Fax 905-737-7934 Tel 905-737-7934****9 am-11 pm • 7 Days a week****The Bad**

- Still only one document open in Corel Draw
- Corel Ventura wasn't ready in time; box includes upgrade coupon.
- Although the user interfaces of the various modules have been standardized somewhat, they still use different function keys to perform the same functions. Duh!
- In a telling sign of how little it costs to produce a CD-ROM disc, Corel doesn't even include jewel cases for the three discs in the package.

The Ugly

- Installation failed on one of our test machines; Corel was unable to deter-

mine why.

- As is typical for initial release of Corel products, there are a number of bugs in the import filters.
- You get only one free technical support call. With its new pay-per call technical support program, we can't help wondering if perhaps Corel is counting on a little extra income.

Summary

Is it viable to upgrade now?

Welllll...

Based on past releases, it's probably safe to say that Corel will crank out at least two bug-fix updates. By the end of the year, the program will probably be "all here," the Ventura Publisher upgrade will be sent out, and CorelDraw will rule.

Until then, though, we recommend that if you do upgrade, you keep an older version around just in case. We think that most users will find it stable enough to actually use, at least for its new features like the lens effects and PostScript interpreter.

If you do find a problem we haven't mentioned here (the package is so huge, that's virtually a certainty), there's always the safety exit. You can save files in Corel-Draw 3 or 4 formats (mercifully, the program is backwards compatible with both releases), and continue work on the files there. Of course, if you enjoy being on that bleeding edge....

In summary, we like this release a lot. If you are willing to put up with a few frustrations, CorelDraw is the best buy in PC graphics packages on the market today. □

VESA Local Bus Systems**SPECIAL!**

486DLC-40 (2Mb Ram)	\$ 987
486DX-33	\$1338
486DX-40	\$1369
486DX-50	\$1537
486DXII-66	\$1599

All Systems Include:

128k cache SVGA Card
4 Mb RAM IDE Controller Card
1.44 Mb Floppy Drive 101 Keyboard
212 Mb Hard Drive 3 Button Mouse
14" SVGA Monitor Mini Tower Case

Monitors:

14" SVGA .39 dp	\$251
14" SVGA .28 dp	\$283
14" SVGA Non-Int. .28 dp	\$306

Hard Drives:

170 Mb	\$239
256 Mb	\$281
270 Mb	\$305
340 Mb	\$347
426 Mb	\$398
540 Mb	\$555

MISCELLANEOUS:

Goldstar R400B CD ROM	\$178
Panasonic 562 Dual Speed	\$189
14,4/14,4 Int.(S/R) fax/modem	\$151
14,4/14,4 Ext.(S/R)fax/modem	\$171

Open 7 days a week 9:00am - 10:00pm

1335 St. Clair Ave. West, Toronto, Ont. M6E 1C3

(St. Clair W. • Lansdowne) Tel: (416) 653-8921 Fax: (416) 784-0695

NETA
Computer Consulting

Prices subject to change without notice.

MG SYSTEM**386DX40**

128K Cache

\$1129**486SX33****\$1189****486DX2-50**

128K Cache

\$1369**486DX33**

128K Cache

\$1429

- 4M Ram
- 250M Hard Drive
- 1.44M Floppy Drive
- Super VGA Card 512K
- 14" Super VGA Monitor
- 2serial, 1parallel, 1game
- 101 Keyboard
- Mini Tower Case
- MS compatible Mouse

VESA LOCAL BUS SYSTEM

- VESA Local Bus SVGA 1MB RAM
- 420MB Hard Drive

- 4M Ram
- 128K Cache
- 1.2MB Floppy Drive
- 1.44MB Floppy Drive
- 2serial, 1parallel, 1game ports
- 14" SVGA Non Interlaced Monitor

486SX33 \$1479**486DX33 \$1689****486DX2-50 \$1729****486DX2-66 \$1899**

Prices are subject to change without notice. Warranty: 2 years labour and 1 year parts

MicroGram Computer**Ocean Electronics** (A subsidiary of MicroGram)

825 Denison St., Unit 3, Markham, Ontario L3R 5E4

Tel: (905) 946-8986

Fax: (905) 946-8990

Mon. To Fri. 10:00 - 6:00 Sat. 10:00 - 4:00

**CorelDraw
and Chicago**

The CorelDraw development team have obviously been working with Microsoft's Chicago (Windows 4.0) for a while.

The Chicago influence shows up throughout the program, in some very nice ways. Corel uses "Tool tips" to provide helpful hints on what icons in the toolbars and toolboxes of the various modules do, and virtually every dialog box exploits the "tab pages" metaphor that Microsoft pioneered in Microsoft Word 6.0, and goes to town with, so to speak, in Chicago.

Another Chicago feature (OS/2 fans might argue that it's their feature) that is nicely implemented in CorelDraw is the use of the right mouse button to bring up a list of shortcuts related to the selected object. It's unfortunate that these shortcuts don't always include every attribute you might want to change, but in a program with the scope of CorelDraw, that's hardly realistic. □



Trivia: Is it just us, or does the bar-chart graphic that graces the startup screen to CorelChart bear a striking resemblance to downtown Vancouver?

USED PC's

IBM PS/2 286 complete system
1 MB, hard drive, VGA colour monitor
SPECIAL SALE \$549



Tel: (905) 471-2902 Fax: (905) 471-6252

Complete 386 systems from \$649

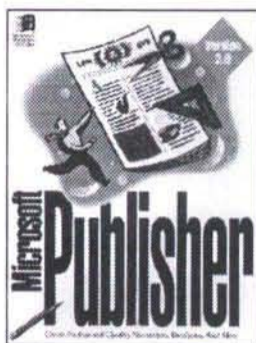
A&G Computer Depot of Markham
We upgrade, buy and sell used computers!

SOFTWARE

Two For The Page

Low-End Desktop Publishing

BY GORDON GOBLE



Microsoft Publisher 2.0

From: Microsoft Corp.
System requirements:
286 or faster processor
4MB RAM
VGA display
DOS 3.1 or higher
Windows 3.1 or higher
13MB free disk space (for full version)



PFS:Publisher 1.1

From: Spinnaker Software Corp.
System requirements:
286 or faster processor
2MB RAM (4MB recommended)
VGA display
DOS 3.1 or higher
Windows 3.1 or higher
8.5MB free disk space for installation
(6.5MB installed size)

PC Desktop Publishing certainly ain't what it used to be. Indeed, it has been a five year influx of competent What-You-See-Is-What-You-Get technology, and an increasingly capable stable of text and graphic based programs that have been almost solely responsible for that already tired phrase. Two such packages will be critiqued here - Microsoft Publisher Version 2.0, and PFS:Publisher Version 1.1.

While appealing to the relative newcomer, both programs present features and capabilities that may well interest even those who are gainfully employed putting their ideas and images down on paper. And at an average street cost of \$140 or less per program (compared to \$700 and up for the aforementioned PageMaker), the price is most definitely right.

Microsoft Publisher 2.0

If there is currently a better buy in the software marketplace than this, the latest version in the Microsoft Publisher line, I have yet to see it.

Microsoft Publisher 2.0 contains something for everyone - from a superb primer on the subject, to a thorough DTP tool for the indoctrinated, and all things in between.

Beginners will be taken by the hand and led through the basics, from placing text on

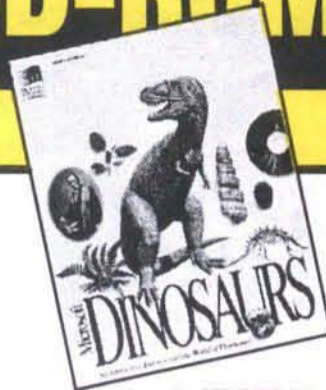
a page, to the construction of an appealing layout, proper graphic usage, and ultimately, the final production of a completed masterpiece. Alternately, budget-conscious professionals may just find that MP offers enough versatility, enough oomph to be the perfect addition to their toolkit.

For those new to the DTP game, MP incorporates a bevy of aids that will virtually guarantee a quality product right from the outset. For starters, the MP manual includes a 27-page hands-on tutorial on DTP in general and MP in particular. Written with its novice audience in mind, the MP tutorial is a great introduction, and combined with a visual Introduction to Publisher and a series of Online Demonstrations, is a feature that the rookie DTP'er should not ignore. But this is just the start in an incredibly comprehensive series of MP learning aids.

Continuing a trend begun with Version 1.0 of the Publisher line, MP 2.0 has retained its Page Wizard feature. If selected, Page Wizard will ask the user questions regarding the desired final product (be it a brochure, envelope, simple logo, even an origami drinking cup). The program then creates the basic layout/design skeleton, leaving the user to merely fill in the blanks. If further step-by-step assistance is required, MP 2.0 has supplied something it calls Cue Cards. These

INTRODUCING

CD-ROM TITLES



Many More Titles Available

20TH CENTURY VIDEO SPORTS	\$23	F15 STRIKE EAGLE III	\$28	MAYO HEALTH CLINIC	\$28
3D DINOSAUR ADVENTURE	\$29	FATTY BEAR FUN PACK	\$16	MIXED UP MOTHER GOOSE	\$24
7TH GUEST	\$39	GROLIERS ENCYCLOPEDIA V6	\$58	MS BOOKSHELF 1993	\$47
AMERICAN BUSINESS PHONEBOOK	\$19	GUINNESS DISC OF RECORDS	\$24	MS DINOSAURS	\$54
ANIMALS	\$23	GUNSHIP 2000	\$28	MULTIMEDIA PLATINUM	\$19
ARTHUR'S TREACHER TROUBLE	\$24	GUS GOES TO CYBERTOWN	\$20	MURDER MAKES STRANGE DEADFELLOW	\$18
BEETHOVEN 5TH (MICROSOFT)	\$29	HOLLY BIBLE	\$22	MUSICAL INSTRUMENTS OF THE ORCH.	\$17
BEST OF MICROPROSE	\$23	IMAGES OF NASA COLLECTION	\$35	NEW VIEW OF SPACE	\$29
BIBLES AND RELIGION	\$14	INDIANA JONES FATE OF ATLANTIS	\$29	N.G. MAMMALS	\$25
BIBLE LIBRARY	\$27	IRON HELIX	\$39	PC SIG 12TH EDITION	\$31
CARMEN SAN DIEGO DELUX	\$28	JUST GRANDMA AND ME	\$39	PUBLISH IT	\$23
CHESSMASTER 4000	\$23	KIDS ZOO/UNDERSEA ADVENTURE	\$28	PUBLISHERS PLATINUM VOL. 1-WIN	\$19
COMPTON'S INTERACTIVE ENCYC.	\$58	KING JAMES BIBLE	\$28	REFERENCE LIBRARY	\$19
COREL ARTSHOW 4	\$27	KINGS QUEST VI	\$40	RETURN TO ZORK	\$23
CRITICAL PATH	\$45	LINUX TOOLKIT	\$40	SHAREWARE OVERLOAD TRIO	\$29
DAY OF THE TENTACLE	\$39	MARIO'S EARLY YEARS	\$39	SHAREWARE STUDIO IV	\$19
DINOSAUR ENCYCLOPEDIA	\$22	MICROSOFT ENCARTA	\$28	SOFTWARE VAULT PLATINUM	\$19
DINOSAUR/SPACE ADVENTURE	\$34	MACMILLAN DICTIONARY CHILDREN	\$28	SPACE MISSIONS	\$19
DOCTORS BOOK OF HOME REMEDIES	\$21	MAGIC DEATH	\$22	SPORTS BEST	\$18
DR OS/2 GOLD I	\$19	MARS: THE SEARCH BEGINS	\$29	STAR WARS CHESS	\$23
		MAVIS BEACON TEACHES TYPE	\$21	SURVEY OF WESTERN ART	\$23
				TEDDY'S BIG DAY	\$25
				VISIONS OF SATURN II	\$29
				WINDOWS PLATINUM	\$19
				WORLD BANK PHOTO SAMPLER	\$10

HARD DRIVES

340MB MAXTOR/SEAGATE	\$329
428MB SEAGATE - IDE	\$410
428MB CONNER - IDE	\$385
540MB MAXTOR - IDE	\$469
540MB QUANTUM - IDE	\$475
1.08GB QUANTUM - SCSI	\$1055
1.06GB SEAGATE - SCSI	\$1055
88MB SYQUEST - SCSI	\$285

MANY OTHER DRIVES ALSO ON SALE!

SCSI SOUND CARDS & CONTROLLERS ALSO AVAILABLE

SYQUEST REMOVABLE DRIVES

105 MB 14MS, 64K Includes 1 Cart. SCSI - \$465 IDE \$365 Extra Cart. \$89	88 MB C R/W 88/44 Includes 1 Cart. SCSI - \$645 Extra Cart. \$125
200 MB INT/EXT R/W 88/44 ONLY Includes 1 Cart. \$call Extra Cart. \$160	270 MB IDE 13MS 64K CACHE Includes 1 Cart. \$769 LIMITED QUANTITY

CD-ROM DRIVES

PANASONIC 562 Internal Cont. included - \$195
MITSUMI Internal Cont. included - \$199
NEC 510 Internal (SCSI) - \$call
TEXEL 3028 Internal (SCSI) - \$379 5028 External (SCSI) - \$525
TOSHIBA 3401 Internal (SCSI) - \$449 4101 Internal (SCSI) - \$299 3401 External (SCSI) - \$call

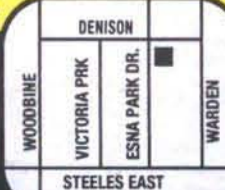
COLORADO, CONNER, WANGTEK
TAPE BACK-UP'S
BLOW OUT
MAC/PC COMPATIBLE

700 MB - INT/EXT	\$475/575
2 GB/4 GB - INT. DAT	\$999/1295

GLOBAL DRIVE

THE COMPUTER STORAGE EXPERTS
Call us, we're here to help
and outperforming the competition

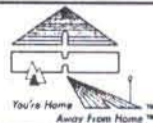
CHEQUES ACCEPTED
Prices, availability subject to change without notice.
Due to changing market conditions, please call for weekly
specials and up to date pricing. All prices cash discounted.



226 Esna Park Dr., Unit 1,
Markham, Ontario L3R 1H3
MON - WED: 9:00am-5:00pm
THURS. - FRI: 9:00am-7:00pm
SAT: 10:00am-5:00pm
TEL: (905) 475-1964
FAX: (905) 475-8102

NEW!
WE CAN BACK-UP
YOUR HARDWARE OR
SYQUEST CARTRIDGES
ON TO A CD-ROM.

- Worry Free Warranty
- Technical Support
- Govt & Corp. P.O.'s Accepted
- Fast Delivery
- Installation Available
- Over 10 Years of Storage Experience



Advanced Home Automation Inc.

Control your lights, stereo, anything from your PC!

Authorised IBM PS/1, PS/ValuePoint and PS/2 Dealer
Full line of computer interfaces for X-10 and Infrared control (starting at \$79.99)
Uses your existing house wiring

Voice: 1-800-265-6938 or (905) 655-5355

BBS: (905) 655-5844 Free registration on-line!



BOSCAN

Best Office Solutions Canada Inc.

"Office-in-a-Box"™

E-Z Office

"It's The Most Useful Set Of Tools In One Package Since The Swiss Army Knife" - Imaging Magazine

"Office-in-a-Box" and E-Z Office feature a complete office solution for paper and paperless environments. They transform your Windows™ based PC & printer into:

- ☎ Plain Paper Fax Machine
- 📄 Copier - Autofeeds, Reduces, Enlarges, Collates
- 📁 Document Image File Cabinet

IMAGING
MAGAZINE
PRODUCT OF
THE YEAR

Don't let your
"fax & copier
machines become
black-holes that
swallow money
one page at a
time"...Financial
Post

Equip your office without spending a fortune!

- Save money & desk space
- Store anything on paper in your PC
- Take control of your paper flow
- Find the document you need - quickly
- Win clients with instant responsiveness
- OCR to eliminate retyping

A 100% User Friendly Solution providing peak levels of efficiency and organization!!!

FOR YOUR OFFICE DOCUMENT SOLUTIONS
PLEASE CALL FOR A NO CHARGE ON-SITE CONSULTATION!
FOR ON-LINE LITERATURE USE OUR FAXBACK SERVICE

Call (905) 709-3472 FaxBack (905) 709-0296

nifty little on-screen prompts will pop onto the screen when needed, asking questions and supplying answers to a wide range of



SPRING.cgm

STAR.cgm

From Microsoft Publisher clipart collection

common problems. Microsoft has even added a "save your work message", in which a quick reminder pops onto the screen at customized intervals, from one to 999 minutes.

In addition, MP dialogue boxes come equipped with single paragraph Helpful Hints and Design Tips, and the MP Help files are both informative and extensive. Even the horrors of incorrect printing have been alleviated. After each job has been sent to the printer, a dialogue box will appear asking if the results were as expected. When they are not, MP sends the user to Printer Troubleshooting land, wherein many of the most common printing problems are discussed in simple terms — the end payoff being that a bad result is almost guaranteed not to be the fault of the software (is that subtle enough for you?).

Fortunately for those with a little more experience, MP permits most of these learning tools to be switched off. And that's good, because the seasoned professionals who may well end up using this versatile program won't want to be bothered with the momentary distractions they cause. And with the combination of quick learning curve and rock bottom price, those in the business may well want to take a close look.

At 12 MB of installed size, MP is well-endowed — 150 clip art images, 20 distinctive True Type fonts (which automatically install in the Windows System directory for use in other Windows programs such as word processors and drawing packages), assorted shapes, borders, and templates all contribute to the hard drive hunger of the program. Most assuredly, MP 2.0 is made up of a whole lot of stuff, but it's what can be done with all that stuff that impresses.

MP is a world of shortcuts. Clicking the right mouse button on any object (whether text or graphic) conjures up a quickie menu on that particular object, relating various properties, and allowing for modifications such as cutting, copying, highlighting, resizing and the like. The time-saving aspect of this function makes it a most welcome innovation, as is the MP mutating cursor. Just to let you know that you've chosen the proper handle on an object, the cursor may change to 1) a little moving truck, 2) double sided arrows displayed alongside the instruction "resizing", 3) scissors (for cropping), or 4) a little tea cup (short and stout - tip it over and the words pour out) when flowing text from frame to frame. Further time-saving visual references include the "two unconnected jigsaw puzzle pieces" button, that makes its appearance when several objects are selected at the same time. Click the button and voila, the jigsaw pieces are interlocked and the objects are grouped!

But it is the ease with which text may be formatted and transformed that sets a good DTP package apart, and MP allows for virtually any possibility. Although frames must still be placed on the page prior to the actual addition of text, auto-flowing words from frame to frame has rarely been easier, or smarter. MP can automatically insert "Continued on" and "Continued from Page Blank" notices, text frames may be auto-disconnected if a new story is begun, and an appropriate number of new frames will be automatically created, if so desired, for large blobs of imported text. A thorough spell checker is included, but the omission of a thesaurus was a most curious decision.

Text kerning is available in pre-defined amounts (i.e.: "very tight" to "very loose") or manually in exacting increments all the way up to 6.94 inches spacing between the selected characters. Shaping, molding, rotating, and fitting text to a path are accomplished by selecting the MP WordArt tool, entering the text (in limited doses only), and performing the operation. Shadowing in a variety of shades, and placing white text on a black background are other impressive special effects.

MP will automatically insert "smart" quotation marks for the default uni-directional keyboard ones, and allows for both soft and auto-hyphenating. Text Wrapping has more variety than ever before - wrapping can be made to conform around either an object's frame or its actual boundaries, and variable gutters can be manipulated for that customized appearance. A comprehensive table tool is available for those requiring a more systematic ordering of information and/or pictures, and the MP Style function will duplicate specific page or job layouts anywhere desired.

A wonderful addition to Version 2.0 is the Zoom button (located on the bottom scroll bar). Zooming is now just a single click away, and ranges from 10-400 percent, with eight stops along the way.

On the downside, purchasers of MP 2.0 will need a fast graphic setup and a lot of RAM, as pictures introduce a certain sluggishness that can be downright frustrating. But, that aside, Microsoft Publisher 2.0 is an extremely intuitive DTP package, layered deep with most of what is required to make a lasting impression. That sort of "bang for the buck" is worthy of high praise indeed.

PFS:Publisher 1.1

Speaking of "bang for the buck", PFS:Publisher offers a little less bang than Microsoft Publisher 2.0, but then again, requires a little less buck (averaging 20 percent less than the already inexpensive MP). Jaded pros should look elsewhere, but PFS:Publisher will perform most basic needs with amazing expediency (this program loads and saves in a nano-second!), and does have a few neat tricks up its digital sleeve.

At 6.5 MB of installed size, PFS takes up a shade more than half the hard drive space of Microsoft Publisher, yet includes 100 clip art images, 12 True Type fonts, and a couple dozen templates. The sizable PFS manual is smartly presented, and contains nearly 100 pages of what can be considered introduction/tutorial. Starting from "What is Desktop Publishing?" through "What is a Window?" and a detailed 70 page look at the intricacies involved in assembling a newsletter, PFS walks the fledgling DTP'er through the basics

ALPHA COMPUTER CONNECTION

2010 Steeles Ave. W. Unit 3
Tel: (905) 738-1570

2010 Midland Ave. Unit 5
Tel: (416) 297-7776

TEL: (905) 738-0744 TEL: (416) 297-7656

**TWO YEARS
LABOUR & PARTS
DEPOT WARRANTY
ON SYSTEMS**

ALPHA POWER SERIES

- * 4Meg Ram, 70ns * VLB Main Board w/128K Cache
- * 14" 1024 x 768 0.28dp SVGA NI Monitor
- * Cirrus Logic 5428 VLB Graphics Adaptor w/1Meg
- * Vesa Local Bus IDE HDD/FDD Controller
- * Panasonic 1.44MB Floppy Drive
- * Quantum/Seagate 260MB IDE Hard Drive
- * Mini Tower / Desktop Case with 220watt Power Supply
- * 101 Enhanced Keyboard & M.S. Compatible Serial Mouse

AMD 486DX-40 \$1490 OR \$58 PER MTH.	i 486DX-33 \$1530 OR \$61 PER MTH.	i 486DX2-50 \$1570 OR \$64 PER MTH.	i 486DX2-66 \$1710 OR \$67 PER MTH.
---	---	--	--

Multimedia I

- * Panasonic CR-562 Dual Speed CD Rom
- * Creative Lab SB Pro
- * Stereo Speaker CP-55

\$308

Multimedia II

- * Plector 3028 D.S. SCSI
- * SB 16 SCSI-2
- * Stereo Speakers w/Amp

\$648

Upgrade & Services

Monitors, Printers & Systems Repairation
Networking & Services
Free Estimation

Leasing Available

Easy Lease
To-own Plans
Approval within
48 Hours

Fax Modem

14.4
US Robotic or
Practical Peripherals
INT. \$160
EXT. \$198

ALPHA EXECUTIVE SERIES

- * 8Meg 72pins Simm, 70ns * VLB Main Board w/256K Cache, Zif, Green
- * ETC / ADI 15" 1280 x 1024 0.28dp XGA NI Monitor,
- * ATI MACH 32 VLB Graphics Adaptor w/1Meg
- * VLB IDE HDD/FDD Controller
- * Panasonic 1.44MB Floppy Drive
- * Quantum/Maxtor 340MB IDE Hard Drive
- * Mini Tower / Desktop Case with 220watt Power Supply
- * Keytronic KT-2000 101 Keyboard & M.S. II Serial Mouse

i 486DX2-66 \$2318 OR \$87 PER MTH.	Pentium 60 \$2998 OR \$113 PER MTH.	Pentium 66 \$3098 OR \$118 PER MTH.
--	--	--

**PCI SYSTEMS
ADD \$168**

* All Price are Cash Discounted and subjected to change without Notice.

ALPHA PREMIUM SERIES

- * 16Meg 72pins Simm, 70ns * PCI Main Board w/256K Cache for Pentium System,
- * Viewsonic 15" 15" 1280 x 1024 0.27dp XGA NTLR Monitor, Green, MPRII
- * ATI Mach 64 PCI Graphics Adaptor w/1Meg
- * VLB Cache Controller w/1Meg
- * Panasonic 1.2MB & 1.44MB Floppy Drive
- * Quantum/Maxtor 540MB IDE Hard Drive
- * Full Tower Pro Case with 300watt Power Supply & Double Fan
- * Maxiswitch 124keys Programmable Keyboard
- * Micro Soft II / Logitech Serial Mouse

FAST 32BITS PCI SCSI CONTROLLER AND SCSI HARD DRIVE W/SOFTWARE ..ADD.. \$160	MAG DX17F 17" 1280 X 1024 XGA N1LR, MPRII, GREEN ..ADD.. \$380	VIEWSONIC 17G 17" 1280 X 1024 XGA N1LR, MPRII, GREEN COLOR TEMPERATURE/TUNING ..ADD.. \$635
---	--	--

i486DX2-66 \$4168 OR \$155 PER MTH.	Pentium 60 \$4878 OR \$181 PER MTH.	Pentium 90 \$5530 OR \$205 PER MTH.
--	--	--

with aplomb. Absent are the on-screen aids of MP (PFS does not have its own version of Page Wizard, Cue Cards, etc.), yet the first few chapters of the PFS manual should cover most of the territory that is required knowledge for the newcomer, and are useful as a reference guide.

From initial view, there is little to differentiate between the two products reviewed here - both interfaces are set up in traditional style, with horizontal scrolling at the bottom, vertical up the right side, and a button bar across the top. But in application, there are some distinct differences.

PFS operates in one of two modes, Object or Text. One or the other is always active, and although this structure takes a little acclimatization, it 1) permits the display of more tools, and 2)



From PFS: Publisher clipart collection

displays tools only for the task currently at hand, eliminating confusion.

When in text mode, PFS users will find many of the same functions available to them as in a basic word processor, including variable text wrapping, a spell checker and a thesaurus. While the inclusion of said thesaurus is obviously an advantage over Microsoft Publisher and other medium to low end DTP packages, advanced text effects (such as stretching, white on black, fitting text to a path) are not possible, and are sorely missed. But flowing text from frame to frame is a snap, as is individual character kerning, structured on a point size percentage basis.

Like Microsoft Publisher, graphics are dealt with in an authoritative manner, most common file formats may be imported and exported, and Object Linking and Embedding is fully supported. PFS also offers something called a Catalogue, which works in much the same fashion as Corel Mosaic, allowing one to review thumbnail sketches of both graphic and text files. To say that the handling of graphics in this level of DTP package has seen improvement in the last couple of years would be a gross understatement.

Hearty congratulations to Spinnaker for the inclusion of something they call a QuickButton Palette, a block of single-click button commands that can be customized by the individual user. Pasting, zooming, page setup, and object information are just some of the 24 commands that can be just a mouse click away. The QuickButton Palette can be moved about like any other window, or hidden from view. This is a superb innovation that should be mandatory in any software package.

However, there are some nasty quibbles

with the PFS package that just won't go away. Scrolling, for instance, becomes painfully slow at increased levels of zoom. Page handling capabilities were questionable as well. Although I found it difficult to ascertain just how many pages could be handled in a single file, PFS only permits the user to Go To pages with two or less digits, so one would assume that 99 pages is the workable cut-off point. On a more positive note, PFS allows vertical scrolling of all the pages in a given publication, not just the current and facing page.

But the biggest knock against this program stems from the glaring omission of an Undo tool (although an Undelete function is present). This is something that experienced Windows users will find almost impossible to come to grips with, and is a serious problem. As is the exclusion of a "quick access file menu", meaning a little more time and mousing is required when picking between files (and after a substantial library of files have been built, the inherent delay can be annoying).

In summary, it is what has been forgotten, as opposed to shoddy workmanship, that keeps the PFS package little more than ordinary. A couple of years back, PFS:Publisher 1.1 would have rated a higher total score, but Microsoft Publisher 2.0 has set new standards for mid-range DTP packages, and cannot be ignored. However, PFS:Publisher doesn't cost much more than a dinner and a movie and can be considered a worthy option for the earnestly budget-conscious. □



Mississauga Tel: (905)848-9822
Fax: (905)848-9824
1310 Dundas St.E., #17 Mississauga, Ont.

Toronto Tel: (905)479-8892
Fax: (905)479-1045
160 Konrad Cres., Markham, Ont.



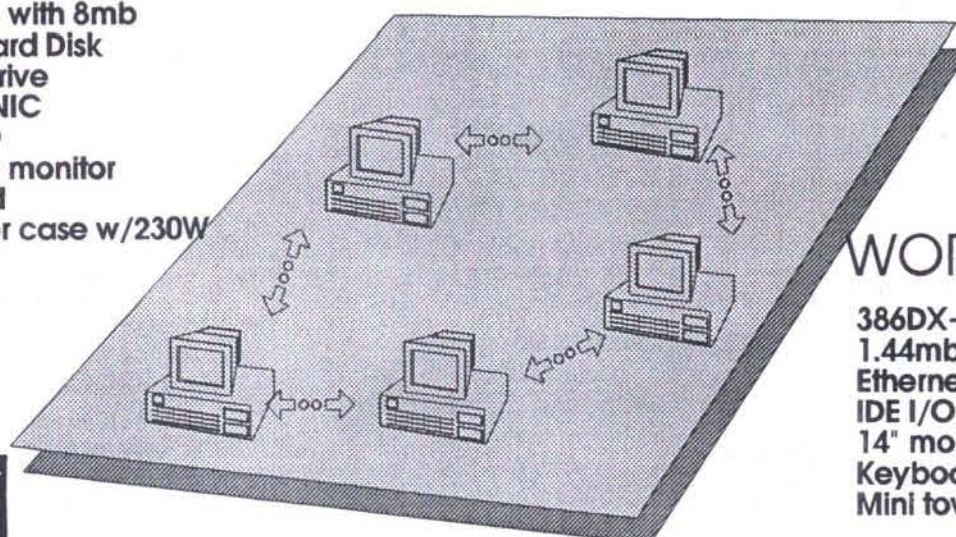
THIS OUT!!!

\$5999.00

Novell 3.12 5 user FILE SERVER with 4 WORKSTATIONS TURNKEY SYSTEM

FILE SERVER

486DX-33 with 8mb
345mb Hard Disk
1.44mb drive
Ethernet NIC
LB IDE I/O
14" mono monitor
Keyboard
Mini tower case w/230W



WORKSTATIONS

386DX-40 with 1mb
1.44mb drive
Ethernet NIC
IDE I/O
14" mono monitor
Keyboard
Mini tower case w/230W

486DX2-66
\$1685.00

486DX33
\$1500.00

486SX33
\$1300.00



128K cache/4mb ram/1.44mb disk drive/260mb Hard Disk/512K SVGA card
IDE controller/14" SVGA Monitor/101 keyboard/Mini tower case/mouse



FREE DELIVERY!
WITHIN TRADING ZONE

FROM
COMPUTER
TO
PRINTED PAGE

1 STEP
UPLOAD PRINTING SERVICE

ROSEHILL PRESS

Voice (905) 889-8892 Fax (905) 889-6761

SOFTWARE

Title: Do It On Your Desktop
Icon Make-It
Icon Do It

From: Moon Valley Software Inc., 21608 N
20th Ave. Phoenix, AZ 85027;
ph. 602-375-9502.

Surely we've all had experience with super-programs so deep and multi-layered that all

Iconic Distractions and Other Windows Silliness

BY GORDON GOBLE

we fallible bipeds have to do is initiate action, add data, and gaze in wonder as millions of calculations transform raw material into a practical, finished product, the value of which is immeasurable.

The merit of such software will not be analyzed here. For it is Phoenix-based Moon Valley Software that lies squarely in the spotlight, and Moon Valley Software is in the business of manufacturing the antithesis of the above.

As a matter of fact, the triumvirate of programs we'll be holding under the microscope have no measurable practical application whatsoever (with the part-time exception of one). They are neither of the gaming genre, nor can they be considered computer utilities, as utilities generally make computing a little easier for us all.

Yet Do It On Your Desktop, Icon Make It, and Icon Do It — three packages whose value lies in on-screen esthetics only — may well add a little fun and good humor to your world of Windows (specifically version 3.1 or better). Indeed, even this jaded reviewer was tempted to retain one or more of the Moon Valley Software offerings aboard his computer on a possibly-permanent basis. With the preceding caveats in mind, let's begin.

Do It On Your Desktop

System requirements: 386 or faster processor, 2MB RAM, VGA display, Windows 3.1 or higher, 2.5MB free disk space, mouse.

Aimed at Windows users who are fussy about the layout and appearance of their interface, Do It On Your Desktop also offers some marginal practical enhancements to the Windows environment. But the system information this program relays takes a back seat to its visual alterations.

DIOYD is packaged onto a single 1.44 MB diskette and its hassle-free installation takes about two minutes on a 486-33. Once the program has been loaded, Program Manager will immediately mutate. Fancy frames will surround Program Group windows, fancy fonts will spice up titles, and new colors and background bitmaps will replace the yawners included with Windows. Additionally, a "Systometer" button bar will appear, acting something like a combined fuel gauge/speedometer/odometer/clock in a car, but more on that later.

Special effects at the launch, minimization, maximization, or close of a given application may take the form of exploding, spinning, and swirling windows. This option can be switched on or off or customized at one's discretion, as can be virtually everything else in DIOYD.

If default window frames, fonts, etc. are not immediately to one's liking, there are plenty of choices. Frames can become art gallery thick or pencil thin, and made of bricks, wood, art deco motifs, and more.

Titling type styles can be changed to any font on one's system, and a number of varying styles of wallpaper are included.

Of a more useful nature, Program Groups can be sized automatically to fit the number of icons inside, and icons can be rearranged alphabetically or in any other manner.

But the most intriguing aspect of DIOYD is the Systometer metering readouts. The Systometer is a multi-level gauging system that details current available resources and the like. Available hard disk space, free RAM, CPU strain, date, time, mouse travel, and keystroke count are some of the bits of information made readily accessible through the Systometer. Even the units of measurement can be changed (for instance, mouse travel can be displayed in inches, feet, miles, or their metric equivalents).

Sadly, the price for DIOYD won't be paid only at the local computer shop, but during each and every computer session as well. You see, when in operation, DIOYD eats a goodly amount of the very resources it measures, and therefore, retards most operations — fast machines a little and slower machines much more. Fortunately, Moon Valley has seemingly recognized this, as DIOYD can be unloaded from memory with no more than two keystrokes.

Do It On Your Desktop is an attractive enhancement package that will dress up one's Windows' appearance, and although some may say "why bother", others may find the Systometer function provides invaluable and accessible information. This combination of esthetic and practical value makes Do It On Your Desktop a moderately interesting proposition — smarter than your average fluffy bear, Boo-Boo.

Icon Make-It

System requirements: 286 or faster processor, 1MB RAM (2 MB recommended), VGA Display, Windows 3.0 or higher, 2MB free disk space, mouse, sound board (and microphone to record sound).

Icon Make-It is a special effects program for icons within the Windows world. Users are encouraged to create animated, audible icons for their Windows applications, therefore riding the world of the evil inanimate variety that far too regularly rear their ugly little heads.

Seriously, bitmapped animation can be an enjoyable distraction, and despite the inherent silliness of this program, Moon Valley Software has treated the entire procedure much like a movie making experience, and has created a whole new world where none had previously existed. Whether this is a good thing or not is purely a matter of individual taste.

The Icon Make-It process is initiated with one of the 200 clip-art icons provided, or the



Tired of High Phone Bills?

Save up to \$1300 on phone bills each year!

Share 3 devices on one line
with separate phone numbers.

Show
Special
\$20 Savings

Hundreds of uses
Home Office
Fax Machine
Computer Modem
Children's Phone
Easy to Install



Only \$149.95!

Show
Price \$129.95!

With this Ad.

14 Day Trial Period
5 Year Warranty

CRESTLINE
TECHNOLOGIES INC.
Contact (905) 727-7978

Telephone Line
from Wall Jack

Telephone Set

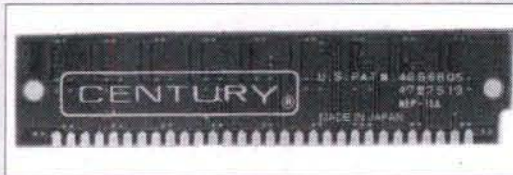
Fax Machine

Computer
with Modem

Do You Know Why?

Your system locked up or having parity error while running MS Windows, DOS 6.2 or other memory management software.

The fact is, there are a number of "basement manufacturers", who do not have the expertise in design and manufacturing. Some of them even use down grade components to cut down their cost. That is why a lot of memory reliability problems occurred when the system is used intensively. These problems become critical with high speed CPU and advanced operating systems like DOS 6.2, Windows 3.1, Windows NT, OS/2 and UNIX etc..



- * Made in Japan
- * Lifetime Warranty
- * UL Approved
- * Manufactured by

CENTURY

Put Only the Best Memory in your System

Century Memory module is designed and manufactured in Japan and is backed by Century's Lifetime Warranty. Compatibility and reliability are proven, that is why Century Module are widely used by "Fortune 500" Companies. Use Century memory in your system, you will not face the compatibility or reliability problems when you upgrade your system to Pentium or Windows NT.

Come to see us at COMDEX / Canada' 94 Computer Show.
From July 13 - 15. Our Booth No. 49745

Intel Pentium 90 MHz PCI & VL and Intel DX4 100 MHz VL
Available for you to test run.

Ado

Dealer Enquiry. Call (905) 477-8125



NOTEBOOKS



TOSHIBA-AST-BONDWELL-NOTESTAR-SAMSUNG-PACKARD BELL

TOSHIBA

T4800CT	486dx4/75	320Mb	\$7444.00
T4700CT	486dx2/50	320Mb	\$7050.00
T3400CT	486sx/33	120Mb	\$4750.00
T1950CT	486dx2/40	320Mb	\$4649.00
T1950CS	486dx2/40	212Mb	\$3649.00
T1910CS	486 sx/33	212M	\$3249.00
T1910	486sx/33	120Mb	\$2149.00

OLIVETTI STANDARD 3 YEARS WARRANTY

486 SL/25 COLOR \$2242

SAMSUNG

486SLC/25 MONO	120Mb	\$1749.00
486SX/25 COLOR	170Mb	\$3140.00
486SX/25 ACTIVE	170Mb	\$4649.00
468SX/25 MONO	170Mb	\$2050.00

BONDWELL

486NBII/50 4MB/120MB MONO	\$ 1995.00
486DX/33 4MB/120 MB MONO	\$ 2395.00
486DX/33 DUAL SCAN 4/120	\$ 2945.00

COMPUTERS
★ **MDG** ★

4162559343

DEAL OF THE CENTURY

TEXAS INSTRUMENTS

TI WIN 486 E/25	\$2444.00
TI WIN 486E/25c	\$2848.00
TI WIN 486 E/40	\$3646.00
TI WIN 486E/40c	\$3949.00
TI WIN 486 E/50	\$3849.00
TI WIN 486E/50c	\$4444.00



AST

BRAVO

486SX/25 MONO 4/80	\$ 2045
486SX/25 COL. 4/170	\$ 2995
486SX/25 ACT. 4/120	\$ 4395

POWEREXEC

486DX/33 MONO 4/80	\$ 3095
486DX/33 ACT. 4/80	\$ 5275
486DX/33 ACT 4/200	\$ 5795

**NOTESTAR 486DX/33 4Mb RAM,
120Mb HARD DRIVE PCMCIA TYPE III
TRACKBALL EXCELLENT 10" VGA MONITOR
ONLY \$2245.00 OR \$86/MONTH**

**MEMORY MODULES AVAILABLE FOR
ALL BRANDS
INSTALLED PROFESSIONALLY AT NO
EXTRA CHARGE**

WE HAVE ALL BRANDS OF NOTEBOOKS AT THE LOWEST PRICES IN CANADA

WHY SPEND MORE ?!

**BUY YOUR COMPUTER FROM MANUFACTURER
AT A WHOLESALE PRICE WITH FULL WARRANTY!!!**

486DX/33
\$1395.00

486DLC/33
\$1169.00

486DX/40
\$1475.00

4862/50
\$1199.00

MDG PR^o

Vesa local bus, 128 cache
4 MB RAM, 245 MB hard drive
1.44 MB floppy drive 3 1/2
1 MB local bus SVGA card
SVGA color monitor Daewoo
Tower case 230 W power sup.
101 Enhanced keyboard
Mouse, 2s/1p/1g ports
All computers are fully
tested and burned in.

NO WAITING, IMMEDIATE DELIVERY

UPGRADES

1.2 floppy drive + \$65

245mb to 420mb h.d. +	\$95
345mb to 420mb h.d. +	\$50
245mb to 546mb h.d. +	\$250
345mb to 546mb h.d. +	\$195

128 to 256 cache + \$35
.39 mon. to .28 NI + \$85
.28NI mon. to 15"NI + \$175

Memory or CPU CALL

VESA system to PCI + \$325

486DX/33
\$1670.00

486DX/40 AMD
\$1640.00

486DX/66
\$1870.00

486DX/4
PENTIUM CALL

MDG DELUXE

Vesa Local Bus, 8 MB RAM
345 MB hard drive, 256 cache
1.44 and 1.2 MB floppy drives
Tower case with 230 w p/s
vesa 32 bit ide controller
1 MB svga local bus card
SVGA .28 dp NON-IN monitor
1024x768 low rad. 72 Hz
Original logitech mouse
101 Enhanced keyboard

IMMEDIATE PICKUPS, NO WAITING

UPGRADE SPECIALS DONE WHILE YOU WAIT

**PENTIUM UPGRADE ZIFF SOCKETS
BEST QUALITY MOTHERBOARDS
IN NORTH AMERICA**

486DX/256Kb/ZIF.....	\$245.00
486DLC/33.....	\$165.00
486DX/33.....	\$439.00
486DX/50.....	\$645.00
486DX/66.....	\$695.00

ORIGINAL MICROSOFT MOUSE.....	\$29.00
LOGITEC MOUSEMAN COMBO.....	\$29.00
1Mb 30 Pin SIMMS.....	\$52.00
486SCL2/50 MOTHER BOARD.....	\$165.00
486DX/40 128 CACHE MEM.....	\$429.00


14.4 FAX MODEM INTER.....	\$119.00
9600/2400 FAX MODEM.....	\$39.00
DOS 6.21 OR WINDOWS 3.1	\$49.00
2X SPEED CD ROM SONY	\$279.00
WITH 16 BIT SOUND CARD	

**415 HORNER AVE. #2
(QEW & HWY 427)
ETOBICOKE, M8W4W3
FAX # 255-8672**

GET THE BEST PRICE FOR YOUR COMPUTER THEN GIVE US A CALL 416-255-9343

WE WILL MATCH ANY ADVERTISED PRICE IN CANADA OR WE WILL BETTER YOUR BEST QUOTE ON A SYSTEM BY \$30.00

CALL FOR MONTHLY SPECIAL AND MEMORY PRICING ALSO ON SCSI DRIVES AND OTHER

MDG 416-255-9343  **MDG 416-255-9343**

ALL prices are cash discounted and subject to change without notice. VISA+3% a member of Better Business Bureau.

*Upon verification of product availability and quote.

1 STOP COMPUTER SHOP

"The Software Stores With A Difference!"

New & Used Software

Fax Modems, Sound Cards, Speakers, Video Cards

10% - 60% OFF Books Accessories & More

3.5 HD Preformatted Disks \$ 5.50

* Turn your software into \$\$\$ *

239 QUEEN ST. E.
UNIT 16
(Under the Mandarin
Restaurant)
BRAMPTON
905 455-8306

COMPUTER MECHANICS

Why trust your computer upgrades and repairs to just anybody. We provide free estimates! Call for current pricing.

3749 BLOOR ST. W.
(Next to Westwood
Theatre, 5 min. from
Kipling Subway)
ETOBICOKE
416 233-8435

conception of a custom icon through the included pixel editor. If design is not the forte of the budding "producer", a unique "snapshot" utility is ready to convert any graphic on the screen into an icon. A "screening room" permits the manipulation of the icon in a wide variety of ways (shift, melt, shatter, dissolve, etc.) until the desired effect is achieved.

Final touches are applied in the "sound track" room where a software "tape deck" will record custom .WAV files to apply to the finished icon "short". (Numerous sound files have been included for those without imagination or a microphone.) Although the animator and snapshot tools are novel ideas, many of the editing tools (pixel editor, tape deck, etc.) are mere variations on utilities that already come with Windows.

Icon Make-It comes bundled with another Moon Valley icon lovers product, Icon Hear It Lite, thus allowing for the above audio modifications. The entire package is a step above Moon Valley's Icon Do It (review to follow), and will certainly hold interest for a greater period of time. Icon Make-It makes the grade for parent/child combos, computer newcomers, and those certain creative individuals with a lot of time on their hands. But be forewarned: the more animated icons that are concurrently active, the slower the whole computing process becomes.

Icon Do It

System requirements: 286 or faster processor, 1 MB RAM (2 MB recommended), VGA display, Windows 3.0 or higher, 2 MB free disk space, mouse.

As the name suggests, Icon Do It is an oddly

similar package to Icon Make-It (see above review), and confused consumers may be left asking, "Why couldn't all this have been bundled together?". While custom animation and the addition of sound to one's icons is not part of the Icon Do It package, it does include a bunch of other nonsensical stuff.

Compatible with both Windows and Norton Desktop, Icon Do It not only allows us to play with our icons, but tackles the even more basic domain of cursors to boot. Icon Do It consists of 200 static and 25 animated icons, 50 static and 10 animated cursors, then throws in 10 wallpaper patterns and four not-so-wonderful screen savers for good measure.

If one fully implements Icon Do It, CorelDraw! balloons will quietly drift across their tiny space, digital fingers will push Calculator buttons, F16 fighter planes will blow apart tiny little rivals, and more. Cursors will turn to rockets and flash across the screen, or pirouette as miniature ballet dancers. Why, it's all so cute and absorbing that I almost forgot to write this review.

On the downside, my cursor continued to transform into "Gumby" even after Icon Do It had been removed from memory, and my CorelDraw! icon wouldn't animate if said program was open. While the latter quibble is of little importance, observing Gumby clay-o-mating his way across the screen over and over again (until the computer was rebooted) remains one of the most annoying incidents in my recent memory. Yuch!

If increasing the cute quotient of your personal computer is on the agenda, head for the more advanced Icon Make-It, and leave Icon Do It on the shelf. □



16TH ANNIVERSARY SALE

(at this location only)

PRICES CASH DISCOUNTED. SUBJECT TO CHANGE.

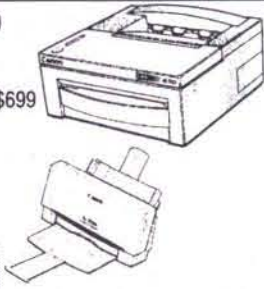
3850 Steeles W., #5
at Weston Rd.
905-856-2222
Toronto 416-741-5258
Fax 905-856-3136
Mon-Fri 10am-6pm
Sat 10am-4:30pm

SUNIX INC.

Computers & Electronics
Serving you since 1978

Service & Pickup Centre
2691 Markham Rd., #4
(2 blks. N. of Finch)
Scarborough, Ontario
Tel.: (416) 292-0588

LASER PRINTER, LBP430 \$739
* 1MB memory (exp. to 5 MB)
* 300 dpi, 4 page/minute
BUBBLE JET COLOUR, BJC-600C \$699
* 360 dpi, 16.7M colours
* 240 cps, built-in feeder
BUBBLE JET, BJ-200e \$349
* 360 dpi, 240 cps
* With Auto Sheet-Feeder
Two Year, To-Your-Door Replacement Guarantee by Canon



THE AFFORDABLE PENTIUM 60/66
* Intel CPU w/Cooling fan
* 256K Cache • 8 MB Memory
* 1.44 MB Floppy Drive • 425 MB Hard Drive
* L.B. Controller
* 2 Serial/1 Parallel/1 Game Ports
* 14" SVGA .28, N.I. Monitor
* Medi Tower Case
* Keytronic Keyboard • Serial Mouse
* 3 Years Labour 1 Year Parts Warranty
★60 MHz \$2,898 ★66Mhz \$3,048

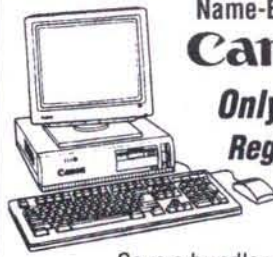


MULTIMEDIA CD
* PANASONIC Dual Speed CD-ROM with adapter \$188
* SOUND CARD 16, Bundled w/1 CD, 2 Speakers, 1 Microphone \$89
* GRAVIS 16-bit Soundwave Card \$169
* SOUND BLASTER 16 MCD Card (OEM) \$149

PANASONIC 24-PIN PRINTERS
KX-P2123 \$269
• 240 cps
• Quiet
• Colour Upgradable
Reg. \$329

PC-Television Card \$179
Watch TV with your monitor w/spkr/software for Windows
Reg. \$329

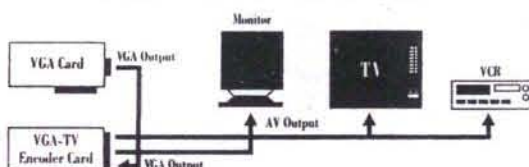
Name-Brand at Affordable Price... Canon
Only \$1,750 Reg. \$2,100
* Intel CPU • 4MB Memory
* 1.44 MB Floppy Drive
* 210 MB Hard Drive
* 2 Serial & 1 Parallel Ports
* 14" SVGA Monitor .39
* VESA Graphic Accelerator Card, 1 MB
* 101-Keyboard • Desktop Case
* MS DOS 6.2, MS Windows 3.1, and MS Works 3.0 Software
* One Year On-Site Warranty
Save a bundle with CANON printers! Ask for details



US Robotics 14.4k Fax Modem
• Internal **\$179** Reg. \$239
• External **\$189** Reg. \$239

ATI Graphics Wonder Mach32
• ISA/VLB **\$179**
• 16.7m colours
• Graphics & multimedia acceleration
• 5 years manufacturer's warranty
Reg. \$239

VGA → TV CARD \$58



- * Display computer text & graphics on your T.V. screen for business presentation, games, education and animation.
- * Supports most VGA cards, graphic and text modes.

486DX33 L.B.

- Intel CPU 128K Cache
- 4 Megs Ram Memory
- 3.5" 1.44 MB Drive
- 170 MB Hard Drive
- Super I/O HD/FD Controller
- 2 Serial/1 Parallel/1 Game
- 14" SVGA Monitor 0.39
- SVGA Video Card 512
- Mini Tower Case 220W P.S.
- 101 Enhanced Keyboard
- Mouse Serial
- 3 Year Labour 1 Year Parts Warranty

Sale \$1,339

486DX2-66 L.B.

- Intel CPU 128K Cache
- 4 Megs Ram Memory
- 3.5" 1.44 MB Drive
- 245 MB Hard Drive
- Super I/O HD/FD Controller
- 2 Serial/1 Parallel/1 Game
- 14" SVGA Monitor 0.38, NI
- SVGA Video Card 1 MB
- Mini Tower Case 220W P.S.
- 101 Enhanced Keyboard
- Mouse Serial
- 3 Year Labour 1 Year Parts Warranty

Sale \$1,699

WARRANTY REPAIRS ON:

- PANASONIC Impact/Laser Printers, Monitors.
 - STAR Impact/Laser printers.
 - SHARP Note-Books & Laser Printers.
- UPGRADES/REPAIR SERVICE:**
- Computer Systems, Laser Printers, & Note-Books



MONITORS

Opening the Video Pipe With 64-bit Cards

BY JAMES MACFARLANE

Multimedia is a very processor-intensive application, especially when it comes to animation, 3D graphics and digital video. Even small video screens of only 320 by 200 pixels with 256 colors mean moving up to half a megabyte of data per frame. Doing this at a rate of 12 to 30 frames per second quickly becomes a staggering amount of processing, especially if the image data needs to be decompressed.

A machine without enough horsepower to deliver this type of data stream gives the user either smaller viewing areas or jumpy motion. Now, video board manufacturers are overcoming the bottleneck of graphically oriented applications with the introduction of 64-bit local bus video cards.

Why local bus?

Back when IBM came out with the first PC, it had a 6 MHz bus. The "bus" is the data path between the CPU and the "slots", where you plug in peripherals such as your video card, hard drive controller and CD-ROM. Back then the CPU itself ran at only six MHz, so a six MHz bus was sufficient. An eight MHz version was introduced with the IBM XT. The bus was called ISA — Industry Standard Architecture.

Later, when 286/AT class machines came out, the CPUs began to get faster: 10, 12, 16 MHz. The bus had to remain at 8 MHz in order to maintain compatibility with all the plug-in cards that were already on the market. As 386 and 486 machines came out, the gap between the 8 MHz bus and the 25-50 MHz CPU became crippling. The CPU had the power of Niagara Falls, but could only deliver it through a drinking straw.

Local bus technology uses a 33 MHz bus and has a wider data path: 32 or 64 bits of data can be moved simultaneously. The ISA bus can only move eight bits (XT class) or 16 bits (AT class) at a time. There are other technical advantages to local bus technology as well.

More bits means faster video

Two things makes these new video cards faster: the speed of the bus, which allows the data to move from the CPU to the card faster, and the 64-bit internal structure of

the card itself. A 64-bit internal structure means the video chip, or video coprocessor can move data to its on-board RAM in chunks of 64 bits at a time.

A simple way to compare these local bus cards with standard ISA video cards is with this relationship: POWER = PATH x CLOCK. An ISA card has a 16-bit path, and an 8 MHz clock, for a power rating of 128, compared to the local bus card, with a 64-bit path and a 33 MHz clock, for a power rating of 2,112. A big difference, obviously.

The true performance of these cards varies from model to model. Manufacturers



Viper Pro by Diamond

are using the Ziff Davis WinMark 4.0 test to compare the speed of their own models and their competitors'. Three manufacturers are now shipping 64-bit cards: ATI Technologies of Toronto, Ontario, Matrox of Dorval Quebec and Diamond Computer Systems of Sunnyvale, California. □

Personalize Windows Wallpaper

Family Photos, Pets, Company Logos



- All Photos up to 8.5x11, color or B&W
- Converted to Wallpaper .BMP file in 640x480, 600x800 & 1024x768 res.
- Easy installation and phone support.
- One Picture \$12.95, 10 or more \$9.95.

Call 416 614-5247

PC Solutions Group, North York
Free pickup / delivery in Toronto

Manufacturer	Model	Winmarks (million)	Price (2MB)*
ATI Technologies	Graphics Pro	25.7	\$799
ATI Technologies	Graphics Xpression	36.9	\$399
Diamond	Viper Pro	26	\$369(US)
Matrox	MGA Ultima	40	\$449

* Prices vary depending on the amount of on-board RAM, screen resolution/color capabilities and other options.

SUMMER SPECIAL

Multimedia VLB System

486DX33

\$1989

486DX366

\$2169

486DX4100

CALL

486 VLB Motherboard 128K
Intel CPU
4MB RAM
1.44 Floppy Drive
270 MB HardDrive
VLB Video Card 1MB
VLB Controller with 2S, 1P, 1G
Mid-tower Case
14" 0.28 N.I SVGA
Panasonic 562 CD-ROM
Sound Blaster 1.6 Sound Card
101 Keyboard
MS Compatible Mouse & pad

FREE
MS DOS 6.2
Encyclopedia CD
Speakers

3.5 Pre-formatted
DSHD Diskette

\$4.89
Box of 10

CD Titles
Call for titles list
From **14.99**

MS Compatible
Mouse

\$11.99

Microsoft Mouse
Ver. 2.0

\$33.99

WANTED!
COMPUTERS SALES
At least 2 years related experience
Send or fax resume to:
1570 Kingston Rd., Unit 3A
Kingston, Ont. L7Y 1C4
Fax: (905) 686-7413, (905) 513-9875
(No Phone call please)

GigaTrend Computers & Electronics Inc.
220 Royal Crest Court, Unit 13A, Markham, Ontario
1670 Kingston Rd., Unit 3A, Pickering, Ont. (Brock & Kingston Rd.)
Toll-free: 1-800-387-GIGA Fax: (905) 686-7413 Fax-on-demand (905) 686-9872

AFFORDABLE NETWORKING!

Little Big
LAN software.

\$99.95* for the
entire network software!

No gimmicks! Network
your computers using any
combination of Serial ports, Parallel ports,
Non-proprietary Arcnet cards, Ethernet cards or Modems!

MENTOR ACCOUNTANT™
Bookkeeping software for
the Non-Accountant.
No accounting jargon.
Simple transaction entry.
Integrated GST Tracking,
Inventory Management
and Invoicing. Ver. 4

\$199.95*

We also stock and distribute a full line of Arcnet and Ethernet cards, Hubs, Cables and Connectors, "LOTTO ASSIST" for 649" software at \$29.95 SRP & "The INVOICE STORE" Point-Of-Sale software at \$149.95 SRP. **DEALER INQUIRIES WELCOME!**
CALL FOR FREE INFORMATION PACKS. *PLUS SHIPPING & TAXES. FOR IBM™ AND COMPATIBLE COMPUTERS.

CARANET CORPORATION
NEW! CARANET TECH SUPPORT BBS! (905) 683-9592

Box 218, Pickering, Ontario. L1V 2R4
Telephone: (905) 427-2886
Fax: (905) 683-9599

ACC Technology Inc.
825 Denison St. Unit 4
Markham, Ont. L3R 5E4
Tel: (905) 946-9440/9441
Fax: (905) 946-1098

Corporate Orders welcome: Computer Upgrade; Hardware; Networking; CAD Station
Markham North York Hong Kong

ACC - Pro VESA Local Bus

486 SX-25 \$1290	486 SX-33 \$1320
486DX-33/40 \$1450/1490	486DX2-66 \$1590

Standard Features:
- 128K Cache
- 4 MB RAM (70 nsec)
- 1.44 MB Floppy Drive
- 245 MB IDE Hard Drive
- IDE Controller, 2s/1p/1g
- 14" SVGA N.I. Monitor 0.28

Local Bus SVGA display w/1MB
Mini Tower Case w/220W CSA
101 Enhanced Keyboard
3 Button Mouse and Pad

Monthly Specials
While supplies Last!!!

CITIZEN GSX-220 24-Pin Color Printer (Color Kit Included)	\$270
Zoltrix 9600/2400 Fax/Data Modems	\$49
U.S. Robotic 14.4 Fax/Modems	\$170
Internal External	\$190
Golden SoundCard Pro 16	\$160
16C550 UART Serial Port + Cable	\$35
420 MB HardDrive (Conner)	\$380
Used Software (Games)	\$20 and up

ACC Pentium-60 PCI system
\$3100
(Call for details)

Upgrades

NEW!!! VESA GREEN BOARD
- Power Saving Features
- 72 pin SIMM socket
- 64 MB memory Upgrade
- 512 KB Cache Memory Upgradeable

only \$20

To 8 MB of RAM	\$210
Local Bus IDE	\$20
256K Cache	\$30
1.2 MB Floppy	\$60
Med Tower Case	\$40
15" FST N.I. Monitor	\$180
To 345 MB HardDrive (Maxtor)	\$80
To 420 MB HardDrive (Conner)	\$120
KeyTronic Keyboard	\$10
Microsoft "J" Mouse	\$30

NEW!!!
ETC 15" CA-1565CP SVGA N.I. Monitor
1280 x 1024
\$499

ETC1565SP Rated 8th out of 54 mainstream monitor in overall composite scoring tests
March 15, 1994 PC MAGAZINE

Multimedia Package

Golden SoundCard Pro 16
Panasonic CR-562-B (2x)
CP-55 Computer Speakers

\$380
Free Installation

All systems have 48 hours burn-in test, 2 years Labour and 1 year Parts Warranty
Prices are cash discounted and subject to change without notice

North York*Your One-Stop Source***16 bit Multi Media Package**

*Mitsumi D-Speed Int. CD-ROM Dr.
 *SB-16 MCD/Speakers/Microphone
 *6 CD-ROM Titles Pak

Limited Supply \$ 399

MaxiTouch
Touch-Screen
Monitor
Direct Import
14", 15" & 17"
\$ 950 up

Intel
 486dx-33 \$ 355
 486dx2/66 \$ 525
 486dx4/75 \$ 779
 486dx4/100 \$ 955
 Pentium 66 \$ 1089

AMD
 486dx-40 \$ 299
 486dx2/66 \$ 428
Memory
 1MB SIMM \$ 55
 4MB SIMM \$ 218

Mitsumi
 D Speed CD Rom Dr \$200
 Keyboard \$23
 1.4M FDD \$49
 1.2M FDD \$60

486 VESA Local Bus Computer System**From \$ 1,399**

On-site warranty (North York only)

Authorized Dealer

AST (computer)
 Computer Associates (S'ware)
 Panasonic (printer)
 Viewsonic (monitor)

MaxiPage Monitor

15" OnePage Display
 with Display card
 (demo in shop) **\$189**

Maxibyte Inc.

Tel:(416)250-8254 Fax:(416)250-6873
 #C12A, 5150 Yonge St. North York, On M2N 6L8
 (North York Centre Subway)
 (Below North York Central Library)

Short Take: Six 64-bit Cards

ATI Graphics Pro, Xpression

Toronto-based ATI offers two 64-bit graphics accelerators, the Graphics Pro Turbo and the lower-priced Graphics Xpression, both use ATI's own Mach64-series chip.

The Graphics Xpression uses DRAM, as opposed to the more expensive VRAM, targeting the product at the home user who requires 64-bit performance but doesn't require higher-priced VRAM-based boards. The Graphics Turbo Pro, on the other hand, does use VRAM and also provides higher resolutions in 24-bit color because it can use 4MB of RAM, while the Xpression uses only two.

The performance of the two boards is similar in 8-bit (256 color) mode while the Graphics Pro Turbo is designed for high-performance

in 24-bit color as well. Graphics Xpression is priced at \$399. The Graphics Turbo Pro starts at \$599. (ATI is sending us one of its 64-bit graphics cards, so we hope to have a full review of it in a future issue. — Ed)

ATI Technologies (905)882-2600

Matrox Impression Plus, Ultima

Montreal's Matrox Electronics has introduced the high performance Impression Plus card and also dropped prices on its Ultima series of 64-bit video cards and .

The Ultima series provides up to 40 million Winmarks and provides advanced features such as on-the-fly color and resolution switching, virtual display space for resolutions of up to 1600 by 1200. The units come in configurations for either PCI or VESA local bus. The Ultima comes with 2MB on board but is not upgradable, the Ultima Plus provides upgradability to 4MB. Starting prices have been cut to \$449 from \$599.

The Impression Plus provides a high-end video accelerator with add-on options for 3D graphics and video applications. Impression Plus is capable of 24-bit color at resolutions of 1280 by 1024 at a 90Hz refresh rate.

The card offers accelerated 3D capabilities with the application through the use of double-buffering and a optional PowerPlay64 chip promises 30 frame per second video playback at resolutions of up to 1280 by 1024. The card also has a VESA Media Channel connector, which can provide direct 32-bit video I/O ports for future expansion.

The Impression Plus starts at \$599 with 2MB, upgrade for the PowerPlay64 is \$149 and

will be available later this year.

Matrox Electronic Systems (514)685-2630

Diamond Viper Pro, Stealth

Sunnyvale, CA-based Diamond Computer Systems' Viper-Pro video accelerator card uses the Weitek P9100 graphics accelerator to provide high performance video for graphic-intensive applications. The P9100 has 64-bit architecture and provides 24-bit color at resolutions of up to 1280 by 1024 and 65,535 colors at 1600 by 1200 resolution. The unit also supports screen refresh rates of up to 120Hz.

This workstation-grade card promises a performance of 26 million true-color Winmarks (tested with WinBench 4.0 on a 66Mhz Pentium system) as well as handy software-based settings controls. The InControl Toolbox is a Windows utility that allows the user to change screen resolution and color configurations on the fly without the need to change Windows drivers. The Viper-Pro is capable of transferring data at speeds up to 132MB/sec. The unit lists at \$833 with 2MB RAM and \$972 with 4MB RAM.

Lower on the price scale is Diamond's Stealth-32 PCI card, offering 16-bit color at up to 1280 by 1024 resolution. The card is designed to match the price/performance requirements of the person who wants higher speed but doesn't have the demands of professional-grade imaging. It comes in one and two megabyte configurations. The 1MB units lists at \$277 and 373 for the 2MB version.

Contact: Diamond Computer Systems Inc. 408-736-2000



- Is your multi-user database system too slow?
 - Are you not getting the kind of reports that you need?
 - Is your current system hard to use?
 - Do you need to share data between PC's and Mac's?
- If you answered 'Yes' to any of the above, we should talk.

905-474-0890

olivetti brother. Canon

COMPUTERS

Do you want to be?

**FUJITSU****COMPUTERPARTNER****COMPAQ****SAMSUNG****Express****AST**
COMPUTER**LEXMARK****ViewSonic**In Touch with Tomorrow
TOSHIBA**AMBRA**
PERSONAL COMPUTERS**star**
THE COMPUTER PRINTER**MICROSOFT**
WINDOWS
READY-TO-RUN**Puzzled? Confused?**

HAVE YOU READ ALL THE ADS? STILL DON'T KNOW WHICH COMPUTER TO BUY OR WHO WILL TEACH YOU HOW TO USE IT? COME ON IN TO COMPU CITY AND SEE OUR IMPRESSIVE LINE OF BRAND NAME COMPUTER SYSTEMS, AT HARD TO BEAT PRICES. BRING IN YOUR QUESTIONS AND WE'LL HAVE A COFFEE AND DISCUSS YOUR NEEDS, ANSWER YOUR QUESTIONS, AND COME UP WITH THE BEST DEAL FOR YOU.

2632 Eglinton Ave. East
 Scarborough, Ont. M1K 2S3

269-7777**CompuCity***from the store that gives you more*

Hours: Mon - Fri 9am - 9 pm
 Sat. 9am - 6pm
 Sun Closed (Playing
 with our own computers)

EPSON**IBM****LOGITECH****PS/1**

bookreview

One of the Best Internet Guides Gets Better

BY KEITH SCHENGILI-ROBERTS

Title: *The Whole Internet User's Guide and Catalog 2nd Edition*
 Author: Ed Krol
 Publisher: O'Reilly & Associates
 Price: \$24.95 (U.S.)
 Softcover 543 pages 1994

The first edition of *The Whole Internet User's Guide & Catalog* sold over a quarter of a million copies. This launched scores of imitators, few of which came close to the quality of the original. This edition adds a lot of new material over the previous edition — more than 200 extra pages and many more useful diagrams and screenshots. It is still one of the best books about the Internet around.

Not surprisingly, much of the text in this book has been carried over from the first edition, which was originally published in September 1992. Since that time the Internet

has expanded, not only in terms of the number of people using it, but also the tools that are on it. Many of these new tools are covered in this edition, including such things as Veronica (which allows you to query Gopher sites for information), Mosaic (a hypermedia link to the World Wide Web) and MUDs (Multi-User Dungeons designed for people with a taste for role-playing). The one thing that has always separated this book from its imitators is author Ed Krol's writing style, which manages to inform the reader on how to use the various tools available on the Internet in such a way so that you are left with a "feel" for how the Internet works.

In addition, Krol has added more extensive listings of local Internet access services in North America, including many Canadian providers. There are also sections devoted to the basics of the Unix operating system, a summary of international Internet connectivity, and how to determine the type of Internet services to suit your needs.

The new edition of *The Whole Internet User's Guide & Catalog* is still one of the best books on the subject around. If you are going to get any book about the Internet, put this one at the top of your list. Accept no imitations. □

Contact: O'Reilly & Associates, Inc.
 1-800-998-9938

Encyclopedia Compiles Useful Tidbits

BY KEITH SCHENGILI-ROBERTS

Title: *The Online User's Encyclopedia: Bulletin Boards and Beyond*
 Author: Bernard Aboba
 Publisher: Addison-Wesley
 Price: \$42.95
 Softcover 806 pages 1993

This huge, thick book is a compendium of knowledge about going on-line and what you can expect to find once you're there. *The Online User's Encyclopedia* is a capable mentor intended to help guide people on how to connect to and use BBSes, and learn the intimate workings of the Internet and its various tools. Despite the title, this is not an encyclopedia, but rather a collection of some of the more interesting tidbits about online communications.

At the beginning of the book the reader is warned not to think of this as a book to be read through like a novel, but rather to think of it as a handy guide, designed to help the user as they gain in expertise and knowledge over time. Pick up a section and browse through it and you are bound to learn a lot more about online communications. Much of the book is devoted to getting onto the Internet and what to do when you are there. It is also copiously illustrated, with many of the pictures and diagrams serving as good aids to the accompanying explanatory text.

This book is not designed to cover everything in the communications world from

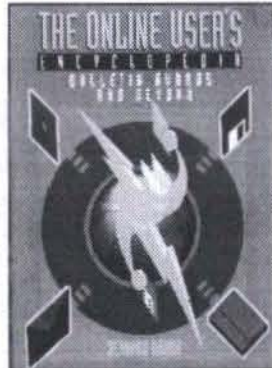
"A" to "Z", and anybody trying to find a quick, concise answer to any questions they have will come away disappointed. If you are looking into the specifics of how various terminal emulations

work, or how modems use hardware flow-control, you're not going to find them here. This book also has a real bias towards Macintosh communications. This is great for those users with a Macintosh, as there are few titles available on the subject, but many PC users will probably feel short-changed.

An encyclopedia it's not, but the book does succeed in covering the subjects it does look at in some breadth, if not with the conciseness you might want out of a book that calls itself an encyclopedia. It will tell you a lot about how and why bulletin boards work the way they do, along with the basics of how to actually use them in practice. Any reader willing to sit down with this book and read through it will get a lot out of it.

The Online User's Encyclopedia is a useful guide to online communication in general. If you are looking for a guide-book to online communications that will continue to be useful as you gain experience and expertise, this is a good book to invest in. □

Contact: Addison-Wesley Publishers Limited
 (416) 447-5101



? **LOOKING FOR CONTACTS?** ?
 ? ? ? ? ?
TerGar's MicroComputer HARDWARE Directory
 contains thousands of up-to-date listings of:

Manufacturers, Distributors, Wholesalers, Dealers,
 Rental, Refurb & Service Companies who deal in:

• Micro-systems • Peripherals • Accessories
 • Supplies • Parts • Repairs

#1 SOURCE for Canadian Buyers and Sellers
 Call Michele at 905.819.1274

MULTIMEDIA MAYHEM



FRACTAL CREATIONS
 2ND ED.

Wegner & Tyler
 Waite Group Press™

Fractals are intricate patterns of colour and texture generated by deceptively simple mathematical formulas. With *Fractal Creations* Second Edition and a PC you can easily create these phenomenal images. But this isn't just a book—it's a super-creative book/disk/CD-ROM bundle: you'll get the latest version of the world's most eminent fractal generator, Fractint version 18; plus the powerful Fdesign, a program which draws fractals that mimics nature such as rain, clouds or waves.

1-878739-34-4
 Paper & CD-ROM \$48.95

ANIMATION HOW-TO CD

Jeff Bowermaster
 Waite Group Press™

Flocks of skydiving frogs, columns of marching pencils, elastic diamonds dancing the lambada...create just about anything you can dream up with *Animation How-To CD*—your travel guide to the fantastic world of computer animation.

Discover the concepts of scene creation and object coordination: vantage point control, lighting, textures, object interactions, surface deformations, and motions based on real physical laws...or make up your own rules. *Animation How-To CD* lets you plunge into your imagination.

1-878739-54-9
 Paper & CD-ROM \$48.95



3D MODELING LAB

Philip Shaddock
 Waite Group Press™

A wine glass so real you'll want to sip its rich Bordeaux; a honey bee that shows the filigree of its translucent wings, a model train so detailed you'll expect steam to flow out its stack...and with this book it can! *3D Modeling Lab* is the first book to contain everything you need to build beautiful 3D wireframe models with surface textures on your PC—only your imagination sets the limits.

1-878739-52-2
 Paper & 2 x 3 1/2 \$55.95

VR BASIC

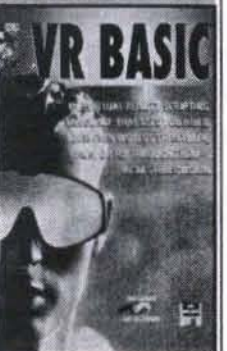
The Waite Group
 Waite Group Press™

Construct worlds with VR BASIC's™ powerful scripting language. Once your world is built walk or fly through it with joystick, mouse, or keyboard. VR BASIC's™ super speed makes it perfect for visualizations and 3D simulations. Build a Ferris wheel, orbit a planet, fly through a segment of DNA.

Comes with dozens of pre-built clip world objects, working robot, Ferris wheel, maze worlds, and a fractal landscape.

Package includes: 3.5 inch disk, 3D glasses, manual and reference card.

1-878739-45-X
 Boxed Set \$97.95



TORONTO COMPUTER BOOKS

521 Yonge Street
 Toronto, Ontario
 M4Y 1Y4

Tel: (416) 925-2088
 Fax: (416) 925-3471
 E-Mail Address: tcb@lo.org

NORTH YORK COMPUTER BOOKS

35-4841 Yonge Street
 North York, Ontario
 M2N 5X2

Tel: (416) 226-9989
 Fax: (416) 226-6212
 E-Mail Address: nycb@lo.org

WATERLOO COMPUTER BOOKS

1 King Street North
 Waterloo, Ontario
 N2J 2W6

Tel: (519) 746-6042
 Fax: (519) 746-6863

MISSISSAUGA COMPUTER BOOKS

1706 Dundas Street East
 Mississauga, Ontario
 L4X 1L7

Tel: (905) 279-6055
 Fax: (905) 279-6239
 E-Mail Address: mcb@lo.org

bookreview

Metaman Explores Society as Organism

BY KEITH SCHENGILI-ROBERTS

Title: *Metaman: The Merging of Humans and Machines into a Global Superorganism*
 Author: Gregory Stock
 Publisher: Doubleday Canada Limited
 Price: \$29.95;
 Hardcover 365 pages 1993

Picture a world where humans and machines unite, and where the individual is increasingly tied to others through technology. In this world an individual becomes the functional equivalent of an individual cell in a body, creating a global "superorganism". This is the central metaphor taken to the limit in Gregory Stock's book *Metaman*.

Stock's background is in biology, and from this he draws most of his ideas for the book. Stock sees *Metaman* as a living entity,

drawn together through the actions of people and technology to further the aims of human society as a whole. This superorganism calls upon the planet's natural resources, circulates and processes this material through itself, and then co-ordinates its activities through a complex nervous system comprising telecommunications, computer technology and people.

While this approach to human society and its technology is not a new one, Stock has put things together with an interesting twist. While the author stretches his "global super-organism" metaphor to the limit in places, on the whole it holds up relatively well. Essentially, it gives mankind the responsibility of taking care of the planet, and shaping its future.

The *Metaman* theory works as an effective argument against the so-called "Gaia theory", in which a living Earth actively manages the living environment. In this scenario mankind is disturbing the fundamen-

tal checks and balances that already exist on the planet. Instead of this, Stock sees *Metaman* as an evolving organism that is, increasingly, actively managing the resources of the world. The choice for humanity is that of global manager: either we accept the responsibility to manage the world or leave things to chance. There are signs that this is already happening — what used to be called "nature" is now thought of as "the environment", by definition a place that is actively managed, and not left to chance. The author argues that we must take action on issues like pollution and the population explosion if *Metaman* is to grow and thrive on Earth.

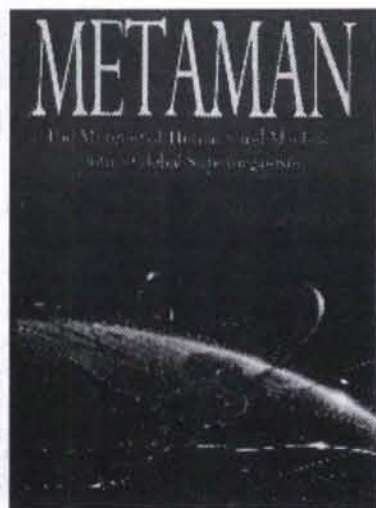
Key roles are played by computers and communications technologies in *Metaman*. Stock argues that the deepening union between humans and technology is symbiotic in nature, so the old question of which will become the master and which the slave is inapplicable. If the purposes and goals of a

global superorganism are to be served, both humans and computers will choose to live together in a co-operative relationship, each helping the other to survive and thrive.

So what are the roles to be played by the rest of the planet's ecology? Basically, the rest of the ecosystem will play whatever kind of role or roles mankind and *Metaman* as a whole choose. This leads to some disturbing conclusions. This reviewer is unsettled by such comments as "even if half the world's species were lost, enormous diversity would still remain". While Stock is probably right, many ecologists would — rightly — say that this is not the point. The purpose of preserving an environment goes beyond the concerns of mankind. Whether *Metaman* will take these into account over human priorities remains to be seen. Whether or not you agree with all the author says in this book, he does have a way of putting things into a new perspective.

Gregory Stock has put together a well thought-out book on how mankind, technology and the natural resources of the world can work together, and to what end. How the final chapter of *Metaman* is written is up to us. □

Contact: Doubleday Canada Limited (416) 977-7891



COMPUTER BOOK STORE

Tel/Mail/Fax Orders Welcomed

Same Day Shipping
Internet AccessMC³2019 Bishop Street
Montréal, Que. H3G 2E8

Tel: 514-287-1863

Fax: 514-287-7556

Internet Book Store: gopher.interlink.net

The Mother
Of All Sales!

"Discount Book Area" Featuring...

\$1 - \$5 for Computer Books!
While Supplies last...

• New titles every week

• Mail and special order by phone

"Specialists in computer books for beginning
users, consultants and programmers."MISSISSAUGA
COMPUTER
BOOKS

1706 Dundas Street East

Mississauga, ON L4X 1L7

Tel: (905) 279-6055 Fax: (905) 279-6239

email address: mcb@io.org

Mon-Fri: 10:00 am to 8:00 pm

Sat: 10:00 am to 6:00 pm

Sun: 12:00 am to 5:00 pm

C.M.S. COMPUTERS
SALES, UPGRADES, LEASING, RENTAL, TRAINING

2884 LAKESHORE BLVD W. ETOBICOKE ONT. M8V 2P6

Phone: (416)255-2422 FAX: (416)255-5799

486 DX 40 MHZ
2 MB OF RAM
170 MB HARD DRIVE
3.5" 1.44 MB FLOPPY DRIVE
IDE CONTROLLER CARD
512K SVGA VIDEO CARD
MINI TOWER CASE
14" .39 SVGA COLOR MONITOR
KEYBOARD
MOUSE & PAD

\$975.00

486 SX 33 MHZ
4 MB OF RAM
170 MB HARD DRIVE
3.5" 1.44 MB FLOPPY DRIVE
IDE CONTROLLER CARD
512K SVGA VIDEO CARD
MINI TOWER CASE
14" .39 SVGA COLOR MONITOR
KEYBOARD
MOUSE & PAD

\$1,125.00

OPEN 7 DAYS A WEEK Phone (416)255-2422

DEALER PRICE LIST AVAILABLE

486 DX 33 MHZ
4 MB OF RAM
260 MB HARD DRIVE
3.5" 1.44 MB FLOPPY DRIVE
IDE CONTROLLER CARD
1MB SVGA VIDEO CARD
MINI TOWER CASE
14" .28 SVGA N.I. COLOR MONITOR
KEYBOARD
MOUSE & PAD

\$1,445.00

486 DX/2 66 MHZ
4 MB OF RAM
260 MB HARD DRIVE
3.5" 1.44 MB FLOPPY DRIVE
IDE CONTROLLER CARD
1MB SVGA VIDEO CARD
MINI TOWER CASE
14" .28 SVGA N.I. COLOR MONITOR
KEYBOARD
MOUSE & PAD

\$1,625.00

MON-FRI 10-9, SAT 10-8, SUN 11-5



FAX/MODEMS

ZOLTRIX 96/2400 \$39.00

ZOLTRIX 14.4 \$125.00

* TWO YEAR 100% PARTS &
LABOUR WARRANTY, WITH
EXTENDED WARRANTY OPTION
FOR FULL 5 YEARS 100%

ALL SYSTEMS HAVE BEEN 3% CASH DISCOUNTED. MUST BE PAID BY
CASH OR CERTIFIED CHEQUE. PRICES AND AVAILABILITY SUBJECT TO CHANGE

Books Unbound

A Look at Some CD-ROM Literary Endeavors

BY ROSS MACDONALD

A book can be a real page turner. But that may well be a thing of the past. Now a book can be a real PgDn'er. Despite the myriad of abilities that CD-ROM affords us, one of the most popular products from multimedia makers is, quite simply books. Anyone who shares my sensibilities might balk at this development. I have always enjoyed the "thingness" of things — a book's binding, size, presentation and even weight influence and enhance the enjoyment of reading it. A CD-ROM, on the other hand, is distinguishable only by whether or not the jewel case is cracked.

Conversely, anyone who's ever spent a few desperate hours trying to find a specific passage, or quotation, or character in a book will quickly embrace the miracle of multimedia. Almost invariably, these digital diatribes have built-in abilities that no simple cellulose sheet can ever approach in terms of utility.

Books on CD-ROM range from encyclopedia through dictionaries, thesauri, almanacs and even novels and poetry, all with built in concordances as well as other extra CD-ROMish features like sound bites, animations, illustrations, historical maps and even music.

Of course, as with any media, some CD-ROM books are more versatile, some more useful and some better quality than others. We're going to look at just a smidgen of what's available and according to those criteria. All prices are MSRP in U.S. dollars unless noted otherwise.

World Library Inc.:

This company seems the most dedicated to directly transcribing books onto CD-ROM. Their titles so far:

Great Poetry Classics

1150 poems, sonnets and psalms. At \$50 this is really only of interest to those who would buy the books anyway.

Great Mystery Classics

171 complete mystery classics for \$50. But how Moby Dick, Dante's Inferno and Rip van Winkle came to be "mystery clas-

sics" is a mystery in itself. What you actually get is a haphazard literary hodgepodge, the bulk of which is taken up by the complete Sherlock Holmes and tons of Edgar Allen Poe.

Shakespeare Study Guide

If you can't figure this one out from the title you probably can't use it. The complete works of Shakespeare plus selected Barron's Book Notes. The \$25 price tag makes this a better buy than many of the even reasonably priced book editions. The built-in concordance is a student's dream.

Greatest Books Collection

150 complete texts of books, plays, poems and religious & historical documents. \$50 again.

Barron's Book Notes

101 study guides. America's Cole's Notes. \$50.

Electronic Home Library

925 individual literary works ranging, as usual, from essays and poetry through documentaries and novels for \$80. Seems we've seen this somewhere before.

Library of the Future (3rd ed.)

The complete texts of 1750 works on one CD-ROM. Unfortunately, one "work" can be a short anonymous poem or a Grimm fairy tale so don't figure on getting 1750 actual books here. But, at \$300, it's a fraction of the cost of the paper versions plus it contains virtually everything in the above titles except the Barron's Book Notes.

All World Library disks incorporate those special CD-ROM features we relish so much, including illustrations, variable display options and on-screen help. They also allow you to set book marks, make on-screen notes and print the texts or save them to disk. The best thing, though, is that you can search all or any of the texts for specific phrases, quotes or words. (That's what a concordance does and they used to be damned expensive!) You can also organize the works by era, age, century, country, subject, title or

author. And, if your poor little arms are just too strained by holding those big, bad, bulging books up to your face, a last feature is the adjustable scrolling option so you don't have to move a muscle.

The Story of Civilization

This promises to be an exceptional World Library publication but it won't be shipping for another few months. However, it's definitely something to watch out for. Containing the complete 11 volume life work of Will and Ariel Durant, the transfer to CD-ROM allows the extra advantages of 800 illustrations, audio clips and even video. This is a phenomenal reference work that everyone should have as it covers the

world's history and civilizations from prehistory to 1840. I always wanted the book version but couldn't afford it. World Library benevolently solves that minor problem for a mere \$100.

Microsoft:

Everybody knows this software giant but, surprisingly, they haven't yet commandeered the literary scene with their characteristic monopolizing vigor. They do, however, publish a couple of good bookish titles:

Continued on page 66

COMPUTER BOOK CLEARANCE

45 TO 90% OFF Computer Books

Shop At Any of These Locations!

FREE!

FOXPRO
VER 2 BOOK
\$25 Value free
with any
purchase

1 Stop Computer Shop

239 Queen Street East #16
Brampton, Ont.

(Under Mandarin Rest.)

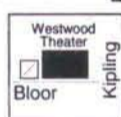
(905) 455-8306



1 Stop Computer Shop

3749 Bloor Street West
Etobicoke, Ont.

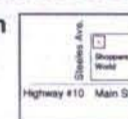
(905) 233-8435



Adesso Computer Access

Shoppers World Brampton
Brampton, Ont.

(905) 451-6946



The Paper Factory

6465 Millcreek Drive
Mississauga, Ont.

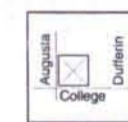
(905) 821-0938



OTA Notebook Centre

343 College St.
Toronto, Ont.

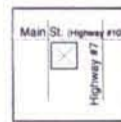
(416) 921-1177



A Plus Software

332 Main St. N.
Brampton, Ont.

(905) 450-1234



T & P Video Games & Computers

Square One Mall
Mississauga, Ont.

(905) 897-1271



A Plus Software

589 Fairway Rd. S. #7
Kitchener, Ont.

(519) 895-2586



T & P Video Games & Computers

Maple View Centre
Burlington, Ont.

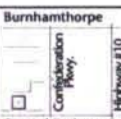
(905) 681-7320



The Computer & Book Ctr.

325 Central Parkway
Mississauga, Ont.

(905) 279-9968



Clearance Warehouse

4476 Chesswood Dr. #13
Downsview, Ont.

398-3337



* (Limited quantities / titles and book condition may vary)

COMPUTER BOOK CLEARANCE!

45 TO 90% OFF COMPUTER BOOKS

Diskettes!
20 3.5" HD
Only \$8.95



Excel 5 For
Windows VisiRef
1-56529-739-3
\$16.95

Word 6
Windows VisiRef
1-56529-740-7
\$16.95

1-2-3
Windows VisiRef
1-56529-741-5
\$16.95

WordPerfect
Windows VisiRef
1-56529-742-3
\$16.95



COMPUTER & BOOK CENTRE

325 Central Parkway W., Mississauga, Ont. L5B 3X9
Tel (905) 279-9968 Fax (905) 279-8101
at Confederation & Central Parkway, near Square One

HUGE SELECTION OF COMPUTER MAGAZINES!
Visual Basic/Online Access/BBS Magazine/Internet World/
Board Watch/Corel/FoxPro/Access/Clipper/Netware

Books Unbound

Continued from page 65

Encarta

The best seller CD-ROM of Funk & Wagnall's 29 volume encyclopedia — the reference of choice for supermarket shoppers everywhere. A nifty disk containing (according to the box) 1,000 articles, eight hours of sound, samples of 60 languages, 7800 photos and illustrations, 100 animations and video clips, 800 maps, 100 interactive charts, an illustrated timeline and an atlas. It's all good stuff too, except the approach can only generously be described as adolescent. Any serious encyclopedia user will want information more sophisticated than either Funk or Wagnall seems capable of here. However, all that extra video, sound and animation stuff — plus extensive cross-referencing abilities — makes this CD-ROM well worth its Canadian street price of \$125.

Bookshelf

The most attractive thing about this CD compendium of standard reference books is that it sells in Canada for a modest \$135. For that you get the American Heritage Dictionary, Bartlett's Familiar Quotations, The Concise Columbia Encyclopedia, Roget's Thesaurus II, The Hammond World Atlas, The Concise Dictionary of Quotations and The World Almanac. Not a bad deal, except that anyone who's ever looked up a word and had to: 1) load the CD-ROM, 2) launch Bookshelf, 3) type in the word then 4) launch a search before 5) closing Bookshelf, 6) removing the disc then 7) getting back work (if you're not already on your computer, forget it) has determined that normal books still beat these newfangled CD-ROMs in some departments. One thing that real books can't do, though, is search through every volume for a specific name, word or phrase. Bookshelf: 1, Books: 1. Stay tuned.

Compton's New Media:

This established publisher is taking CD-ROM very seriously and producing a growing catalogue of titles. The two I've used are:

Compton's Interactive Encyclopedia

The same idea as Encarta but with the slightly more mature approach of Compton's own real encyclopedia. Sells in Canada for about \$150.

The KGB/CIA World Factbook

This is an absolutely great CD-ROM. Kind of like an almanac but with real genuine spy info thrown in — government statistics, world economics, political and diplomatic protocol, treaties, trade and even drug traffic. There's lots of graphics and sound and an easy search tool so you can cross-reference information on any or all of the 250 countries and territories in the inventory. This one's just plain fun, just plain useful and just plain \$50.


Infobusiness Software:

Not a well known publisher but they should be. Unfortunately, nearly all their titles are Americentric. Among their available reference book disks are Government Giveaways

for Entrepreneurs, The Computerized Data Base Finder, The Great American Gripe Disk, Job Power Source, Info-Power and The Ultimate Job Finder. I have only one from this series:

Information U.S.A.

The pitch for this one reads, "The Richest and Largest Source of Information in the World is the U.S. Government. Your tax money creates this trillion dollar information empire, why not use it?" And why not, indeed, since us Canucks haven't even contributed. Kind of dry when compared to the KGB/CIA World Factbook, you might still want Information U.S.A. if you have — or plan to have — any dealings with the government down there. You get details on every federal domestic assistance program and lists that include 30,000 free or low-cost sources of information, plus thousands of data bases maintained by different departments and agencies. There's even a couple of hours of video to explain the best way to use this stuff. Incorporating the contents of Info-Power, The Great American Gripe Disk and The Computerized Data Base Finder, this disk really gives you four Infobusiness book titles for the price of one: \$70. A good buy for Ameri-o-philis. □



new MIDI products!

MUSICTIME 8

The latest version of Passport's Musictime for Windows and Macintosh. Features include direct playback from QWERTY keyboard, 8 staves for score printout and full color support. And a new low price!

\$199

LOGIC & LOGIC AUDIO 2.0 by EMAGIC

Now available for the Macintosh and Atari Falcon. The best sequencing environment just got better! More realtime control, notation features and digital audio editing like you've never seen before.


NOTE 1 & NOTE 1+

New high quality, cost effective laptop interfaces from MUSIC QUEST for the PC. The Note 1+ features a printer "thru" for convenience.

MICROLOGIC 1.5

Jump into this special introductory version of MicroLogic for Windows. Many new features including non-destructive editing, MME support and unlimited score printout. Free demo disk available.

\$189



FREE! Have you received the current issue of Musicware: The Computer and Music Newsletter? Call Musicware (416-785-3311) to order your FREE copy today.

PRODUCTS ARE AVAILABLE AT

Long & McQuade Musical Instruments

925 Bloor St. W., Toronto (416) 588-7886

DISTRIBUTED BY

MUSICWARE DISTRIBUTORS INC.

(416) 785-3311

Logo: **EMAGIC**

X-10 AUTOMATION

Complete line of LEVITON and X-10 PowerLine modules, in stock

Reboot Computers by Phone only \$120

BARAN-HARPER GROUP INC.

Voice (905) 294-6473 FAX (905) 471-3730 BBS (905) 471-6776

Network Design and Implementation

Consulting

Reasons to choose PSP Canada as your computer consultant:

- You know your business requirements but not how computers can help you.
- You know computers can help your business but not how best to introduce/use them.
- You know the solution but you just want to confirm it is the right one.
- You know all of the above but need help in its implementation.

NOVELL • WINDOWS NT • LANTASTIC • WINDOWS FOR WORK GROUP

Certified Novell Engineer On-Site.

Implementation Management

Project Management and Installation Services

- Cabling
- Workstation
- Servers
- Communication Equipment

- Operating System and Software Setup and Installation
- Network Documentation


- End-User Application Training
- Administrator Training
- User and Administrator Support

- Site Mangement
- 7-by-24 Support (7 days a week 24 hours a day)

7 DAYS A WEEK

7-by-24

24 HRS A DAY



PSPCanada

Peripheral Service Products (Canada) Inc.

Toll Free: 1-800-868-PSPC 1-800-868-7772 Local: (416) 391-3340 FAX: (416) 425-6197

1370 Don Mills Rd., Suite 300, Don Mills, Ontario, M3B 3N7

Office Hours: Mon. - Fri. 8:30 AM to 5:30 PM

What if you could FAX without a SCAN without a COPY without a

It's the perfect personal
solution for
all your
document
needs.



You must have **SCANEX**



Finally. Your own personal
faxing, scanning, copying
and OCR desktop device.

Scanfx is the first personal office tool that actually merges with your PC to give you plain paper faxing, black & white and color copies, true-color scanning and OCR — in a remarkably simple and affordable desktop device.

The secret? Scanfx integrates with your equipment — all you need is a fax/modem and a printer to get seamless color copying, TWAIN-compliant scanning, and even color faxing!

It even gives you OCR and photo editing capabilities through the included software*.

And simplicity is built right in. To fax, just press the button marked "Fax." To copy, just touch "Copy." And for plain-paper fax receiving, Scanfx can be easily configured for background operation, sending incoming faxes directly to your printer.



* Scanfx ships with WordScan OCR for text scanning and Picture Publisher LE for photo editing.

World's #1 Plustek SheetFed Scanners

SP-6000, 1200dpi Color for PC \$649
SP-6000M, 1200dpi Color for MAC \$699
ADF 600G, 1200dpi, Gray + PaperClip \$899
ScanFX 1 button Scan/Copy/Fax/OCR \$1,049

S/W for Plustek Scanners with purchase only

WordScan OCR for Windows \$139 Listed \$399
Recognita OCR for Windows \$199 Listed \$599
Photomagic Image software \$89 Listed \$199
Xformer Raster to Vector for DOS \$199 Listed \$499
Remark Office OMR Optical Mark Reading S/W for Survey, Research analysis \$199 Listed \$599

Characteristics of Plustek Scanners:

1. HP ScanJet Series & TWAIN compatible
3. 1/2 size, weight and price of Flatbed
5. Input device for Fax/Modem (**Better than fax machine**)
7. Scan Phonebook, Photograph & Photocopied materials
9. Support WP, Image editing, OMR, DIM & DTP softwares
11. Included HISCAN, save image as TIFF, PCX, BMP & TGA

Scanner Comparison:

HandHeld

limited scanning width
Susceptibility to human error
High defective rate due to mishandling
Cannot replace fax machine, copier

Sheetfed

Affordable, easy to operate
cannot scan book directly, copy needed. Can scan continuous page
Can replace fax machine & copier

Flatbed

Not Cost effective, difficult to align
Can scan book but will distort binding area
Scanning length is fixed, large footprint
For professional graphic artist.

For your nearest dealer, please call:

PLUSTEK Canada Inc. Unit #5, 151 Brunel Rd, Mississauga Tel:(905)890-9300 Fax:(905)890-9802

All name mentioned are trademark of their respective holders.

Get a PORSCHE Engine at Low Price

For people who scan 50 or more documents at one time there are few options. Today the only scanners with that capacity are professional or flatbed scanners with hefty price-tags. But even these usually only hold 5 to 10 pages. The solution? It's simple.

50 pages

We introduce the ScanPlus ADF 600G, offering great performance — at a low price



Recognita Plus OCR

- Scan English, French, Spanish and Portuguese
- Fastest DOS based OCR in the world
- Number 1 best seller in Europe
- Trainable

Xformer Raster to Vector Software

- powerful Raster to Vector conversion
- convert TIFF/PCX to DXF AutoCad
- eliminate manual input, redraw
- more accurate than other Trace program
- work under DOS for fast operation
- Evaluation diskette available.

Plustek Distribute the following Chinese Computing products:

Endusers and Dealers enquiry welcome.

DOS Based	Price
FL Chinese System LE ver	\$20
FL Chinese System Full ver	\$139
Scorpio WordProcessor	\$89
Scorpio Desktop Publishing	\$299
Chinese Hand Input System	\$449
Chinese DTP System	\$199-\$2999
Chinese Fonts for DOS	\$99-299
Chinese Sign Cutting	\$2999
ABIN Chinese Draw Pkg	\$89 up

Windows based:

Chinese Fonts for WIN \$99-299
Chinese Hand Input System \$449
MS Chinese Windows \$299
MS Chinese Software \$CALL
China Dragon Chinese fonts \$CALL
Dan Qing Chinese OCR \$2000

Colombo's Canadians on Computers

BY JOHN ROBERT COLOMBO

I've been collecting "quotable quotes" connected with Canada since the year 1967. Looking back, I see that my first two books, *Colombo's Canadian Quotations* (1974) and

Colombo's New Canadian Quotations (1987), had no quotes at all on "computers." It took me some time to catch on to the fact that the world, including Canada, was and is

being computerized right under my nose.

I included eight lively quotes on computers in *The Dictionary of Canadian Quotations* published in 1991. Since then I have been on the lookout for bright remarks made by Canadians about such subjects as computer technology and the information highway.

I now operate an IBM PS/1 and use Nota Benè software for my data extensive banks. This column of quotations devoted to computers and computer-related subjects comes from those data banks. The idea of scanning or even browsing tens of thousands of quotes that I have on file would be a giant's task, but with the aid of a computer with a reliable search feature it is child's play. As it is, it took me 15 minutes to gather together these quotations. Using the super-fast computers promised in the future, it might take all of 15 seconds!

Heather Menzies, academic, *Fast Forward and Out of Control: How Technology Is Changing Your Life* (1989).

Confederation

More than a century ago, in 1967, Canadians celebrated the 100th anniversary of Confederation. Little did they think that 117 years later, here in 2084, we would be celebrating an even greater historic event, the Centenary of the Deconfederation of Canada, which occurred, as any school child with a computer information terminal is well aware, back in the magic year of 1984.

J.M.S. Careless, historian, futuristic Convocation address, Laurentian University, Sudbury, Ont., Nov. 1979, *The Toronto Star*, 6 April 1980. Brian Mulroney was elected Prime Minister in the year 1984.

Cyberpunk

The word "cyberpunk" and the concept of "virtual reality" (computer stimulation of sensory experience) were introduced and popularized by the Vancouver science-fiction writer William Gibson in the title story of his story collection *Burning Chrome* (1980); he made them an integral part of his novel *Neuromancer* (1984).

So wrote Tom Shippey, "Inside the Screen," *Times Literary Supplement*, 30 April 1993.

Friendship

We are going to be able to develop genuine friendship with the advanced computers of the future. That sounds crazy, I know, but just consider that in our ultimate constituents we humans are the same as the computer. Both are simply configurations of electrons.

Arthur Gibson, theologian, quoted by Allen Spraggett in *The World of the Unexplained* (1974).

386 DX-40 \$1,079

- 128K Cache
- 4MB RAM
- 120 MB Hard Disk Drive
- VGA Card w/ 256K
- VGA Colour Monitor (.39DP)

PCI Local Bus

- 486SX-33 \$1,799
- 486DX-33 \$1,929
- 486DX2-66 \$2,089

- 256K Cache
- 4Mb RAM
- 420Mb Hard Disk Drive
- PCI bus SVGA Card w/ 1Mb
- Non-interlaced SVGA Monitor

486 VESA Local Bus

- 486SX-25 \$1,369
- 486SX-33 \$1,399
- 486DX-33 \$1,529
- 486DX-40 \$1,559
- 486DX2-50 \$1,589
- 486DX2-66 \$1,689

- 256K Cache
- 4Mb RAM
- 250Mb Hard Disk Drive
- VL Bus SVGA Card w/ 1Mb
- VL Bus IDE I/O Card
- Non-interlaced SVGA Monitor

Pentium 66MHz

\$3,399

- 512K Cache
- 8Mb RAM (Up to 128Mb)
- 420Mb Hard Disk Drive
- VL Bus SVGA Card w/ 2Mb
- VL Bus IDE Controller w/ 1Mb (Up to 4Mb)
- Non-interlaced SVGA Monitor

486 EISA/VESA Bus

- 486 DX-33 \$2,489
- 486 DX2-66 \$2,649

- 256K Cache
- 4Mb RAM
- 340 Mb SCSI Hard Disk Drive
- VL Bus SVGA Card w/ 1Mb
- EISA Bus SCSI-2 Controller
- Non-interlaced SVGA Monitor

All Systems Include: 1.2MB and 1.44MB Floppy Drives; 2 Serial, 1 Parallel, 1 Game Ports; 101 Enhanced Keyboard; Mouse; MS-DOS 6.2; Choice of Mini-tower or Desktop Case

Sound Cards

- Sound Blaster 16 Basic 149
- S.B. 16 Multi-CD w/CD & mic. 199
- S.B. 16 SCSI-2 w/CD & mic. 239
- Pro Audio Spectrum 16 145
- Pro Audio Studio 16 195

Fax/Modem

- 14.4K/14.4K Internal 155
- 14.4K/19.2K Internal 195
- 14.4K/28.8K Internal 315

CD-ROM Drives

- Toshiba 3401(200ms) 439
- Panasonic 562 Dual Speed 195
- Mitsumi FX001D Dual Speed 195

IDE Hard Drives

- 210MB 285
- 250MB 295
- 340MB 375
- 420MB 395

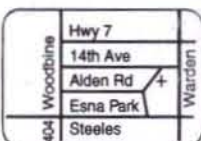
Multimedia Kits

- SB Discovery CD 16 439
- SB Game Blaster CD16 529

Tape Back-up

- Colorado Jumbo 120 149
- Colorado Jumbo 250 229
- Colorado Trakker 250 449

Note: Prices subject to varying Market Conditions. All prices are cash discounted.



KEHTRON COMPUTER INC.

461 Alden Road, Unit 22
Markham, Ontario L3R 3L4
Tel: (905) 513-8359 Fax: (905) 513-0973

Cherry Hill, NJ
King of Prussia, PA
Wilmington, DE
Norwalk, CT

How Can One Master UNIX?

Spend big bucks and attend UNIX training courses? Sure, but when the course ends, you are left with no access to UNIX systems again. You can buy and read UNIX books, but who learns driving by reading the instructions only?

Presenting the ultimate answer to the question:
The MasterUnix Package.

For anyone who wants to 'jump' into UNIX world, this package is put together to give you permanent access to UNIX and sufficient instructions to master it. First, there are only two dominant UNIX styles: System V and 4.3BSD. If you can get to know both styles, you'd sure build up an "I've-seen-them-all" confidence toward any other UNIX system. That's why we select Trans-Ameritech Linux/FreeBSD CD-ROM. It contains both a System V styled UNIX (Linux) and a 4.3BSD styled UNIX (FreeBSD) for Intel 386/486. Now, just turn your PC into a UNIX workstation and start practicing! Both systems are extremely popular in Internet and offer a complete development environment, including ANSI C and C++ compilers plus hundreds of standard UNIX utilities widely found in

ADVERTISEMENT

SUN, HP and DEC workstations. They all have full UNIX networking capacity and come with standard X Window System. Skills developed under them are directly transferable to any other UNIX systems. Experiment! You'll soon master UNIX inside out.

Without good documentation, dealing with a system as complex as UNIX is like walking in the dark. Along with the package, we supply you with complete How-to documents. From installation to system configurations, everything you may wonder how to do is covered. Questions like how to configure the boot loader, how to set up printers, how to bring up X windows, how to do networking and how to use C compiler, etc. are all answered. To get you started, we also include a 200 page Getting Started Guide and a 100 page User's Guide. Both guides give detailed tutorials on UNIX commands, UNIX system administration, X windows, trouble shooting and many more. Standard UNIX editors Vi and Emacs are also taught. To help you go further, a list of the best UNIX books is included. Totally, over 700 page documents are collected, classified and indexed. All the info we anticipate you may need is now at your finger tips. To ease your preparation for installation, we have even supplied a non-destructive partition program for you to cut a DOS partition into two without erasing any data.

For only \$149 (taxes included, add \$8 for shipping if required), we

put you onto the shortest path to master UNIX, in fact we put you into a Porsche on the path. Rejoice! at the ultimate autobahn speed, you're advancing toward the UNIX heart land.

Motif 1.2.3 For Linux Available. Motif is an object-oriented toolkit for writing graphical user interfaces under X Window System. It is the defacto GUI standard in the UNIX industry. Developing Motif applications is the hottest pursuit of many software companies. Check out the career ads in Toronto Star and see how many software companies are seeking Motif talents. Now for \$240 (taxes included, add \$6 for shipping if required), you can get both run-time and development versions of Motif, plus a 130 page user's guide. Tutorial source codes and Motif Window Manager are also included.

Order in person, by phone, fax or mail. VISA, MasterCard, M.O. and cheque are all accepted, no COD and P.O. please. We also carry complete Linux references and other UNIX and C documents, plus many items UNIX hackers are fond of. Catalog available at request. Come and see our demos today.

SUNNI MICROLAB

A Wonderland for UNIX hackers

421 King Street North, Waterloo, Ontario N2J 4E4

(519) 746-2582 / 746-3580 fax

Hours: Mon-Fri 10-6 Sat 12-5

Location: Next to Waterloo Campus of Conestoga College, inside M. Werner Realty Ltd. Building, lower floor.

Image

It may well be said that where the steel press may be taken as the image of Newtonian physics and mathematics, the computer can be taken as the image of contemporary physics and mathematics.

George Grant, philosopher, "Thinking about Technology," *Technology and Justice* (1986).

Industry

Every country that has waited for the industry to develop "naturally," through the flux and play of market forces, is waiting still. Canada is as populous and as committed to education as some countries that now make semiconductors. It had as much natural advantage for the semiconductor industry in 1980 as Korea did — indeed, much more, since it was richer, better educated, and closer to major markets and research centres in the United States. Hong Kong 10 years ago had as much natural inclination for making semiconductors as Singapore — it was just as crowded, just as much influenced by Confucian culture. The governments of Korea and Singapore deliberately cultivated the industry; the governments of Canada and Hong Kong did not. Korea and Singapore now have a semiconductor industry; Canada and Hong Kong do not.

Governments may not be able to pick winners, but they seem to be able to make winners.

James Fallows, U.S. economic writer, "Looking at the Sun," *The Atlantic Monthly*, Nov. 1993.

Intelligence

We've got to get used to the fact that man is not alone in the universe. Man isn't the cat's whiskers. An intelligent computer is as much made in the image of God as we are.

Arthur Gibson, theologian, quoted by Allen Spraggett in *The World of the Unexplained* (1974).

Interactivity

Technology is changing us and it is not always for the best. Inhale deep and smell whatever it is you like to smell. There is a whole world out there and it isn't virtual. It is real. Turn off your computer for a while and interact. Computer interactivity isn't nearly as interactive as the real world.

Douglas Alder, publisher and editor, "From the Editor," *The Computer Paper*, March 1994.

Manufacturing

If we are not our own competition, then someone else will be.

Jack Tramiel, Polish-born entrepreneur who, from a typewriter repair shop in Toronto in 1955, developed the first hand-held calculator, established Commodore International Ltd., and took over the Atari Corp. in 1985. Quoted in *The Toronto Star*, 6 Dec. 1983.

Nerds

People with heads like computers are no wiser than people with heads like turnips.

Louis Dudek, poet, "Epigrams" (1975).

Society

Think of a stretch limo in the potholed streets of New York City, where homeless beggars live. Inside the limo are the air conditioned post-industrial regions of North America, Europe, the emerging Pacific Rim, and a few other isolated places, with their trade summitry and computer-information highways. Outside is the rest of

mankind, going in a completely different direction.

Thomas Fraser Homer-Dixon, head of the Peace and Conflict Studies Program at the University of Toronto, quoted by Robert D. Kaplan in "The Coming Anarchy," *The Atlantic Monthly*, Feb. 1994.

Software Bank

One of the things I really do want to spend some money on is setting up the Great Canadian Software Bank. This is a pet scheme I've had for years, under which we would buy universal Canadian rights to all kinds of computer software. We would then make it available to all Canadians free of charge... The Software Bank would give them a resource base that would allow them to generate their own jobs.

Dian Cohen, economist, contributor to *If I Were Prime Minister* (1987).

Spell-Check

And a further note, a found poem from my spell-check: "Stopped at: Ottawa. Replacement: Oneiric."

Eric Korn, columnist and antiquarian book dealer, *The Times Literary Supplement*, 15 June 1990.

Technology

A millennium will date itself to the advent of computer technology. The impact of computers on human development will be as important as that of the Renaissance.

Michael Greenberg, CEO of ISG Technologies, Inc., quoted by Daniel Stoffman in "Northern Bytes," *The Globe and Mail's Report On Business Magazine*, March 1993.

Three R's

In the last age you learned the old three "R's". Now learn the new three R's: Ram, Rom and Run. The next lesson will be the three C's: Conflict, Crisis, Change. Kindergarten has just opened.

Frank Ogden, futurologist, "Ogden's Twelfth Law," *Dr. Tomorrow's Lessons from the Future* (June 1989).

Typewriting vs. Word Processing

Typewriters reward caution with fidelity; word processors encourage a carefree facility, only to betray it with grotesque calamities.

Francis Sparshott, philosopher, entry, *Contemporary Authors Autobiography Series* (1992), Volume 15.

Word Processors

The word processor I am working on goes along fine for a while, but then, when I'm not paying attention, it starts turning out utter nonsense which gets published and makes me look like a moron.

Joey Slinger, humourist, "Getting Even," *If It's a Jungle Out There, Why Do I Have to Mow the Lawn* (1992).

Coming in future issues: More Colombo's Canadians on Computers.

John Robert Colombo, known as the Master Gatherer, is the author compiler or translator of over 80 books. Recent publications include Colombo's All-Time Great Canadian Quotations (Stoddart) and *The Mystery of the Shaking Tent* (Hounslow / Dundurn). □

HITS COME! & Celebrate our Store Expansion!

Hard Drive 260 Mb
Seagate 12 ms

\$275

Sound Blaster Pro
with CD
Free Encyclopedia CD

\$99

Samsung PCL4
Laser Printer

5ppm

\$579

3.5" Floppy Disk
1.44 MB 2HD

\$3.99

Tons of
Special Prices, Plus...

80W Power II
Speakers

Limited Quantity

\$59.99

Panasonic CD ROM

Double Speed

\$188

ELECTRONIC
PARTS
AVAILABLE
COVER
9,000
ITEMS

System
Upgrade
Estimate
FREE!

NEW ADDRESS: 419 COLLEGE ST. (AT BATHURST) TORONTO, ONT.
FAX: (416) 603-0752 * Prices Already Cash Discounted. ** Limited Time Offer. TEL: (416) 603-2283

pc

High Point Mall
3415 Dixie Rd. (at Bloor)

SERVICE BUREAU

MISSISSAUGA'S FIRST
computer service bureau

*Personalized Training
Instructors
*Graphics
*Printing
*Resume

*Advice
*Repairs
*Software
*Computers
*Rubber Stamps

238-2636

VALUE COUPON

No Purchase Necessary On Selected Services.

- 2 local faxes
- 2 laser print job
- 2 hour computer rental

10% - 20% off Hardware
DISCOUNT & Software

FREE

REPAIR ESTIMATES or
COMPUTER CLEANING
A \$40 VALUE

VALUE COUPON

New Arrivals

- 1942 Pacific AirWar	\$69.95
- Grandest Fleet	\$54.95
- Harpoon 2	\$65.95
- Battle Isle 2	\$59.95
- Indy Speedway (Add-On For INDY CAR)	\$39.95
- Indy 7 Track (Add-On For INDY CAR)	\$39.95
- Corridor 7	\$39.95

Panasonic Double Speed CDROM
With adapter and cables
\$199.95

Preformatted
3.5" high density disks
\$4.49

24/96 Internal
Fax/Modem
\$49.95

Come and checkout our collection of CD titles.
If we don't have it, we can get it!!!

Microland Computer Systems Inc.
55 West Beaver Creek Unit 4
Richmond Hill, Ontario

Tel: (905) 886-8349

**Limited time offer
**While quantities last

Prices and specs are subject to change without notice

ONLINE



Modem Standards a Modern Babel

BY JAMES MACFARLANE

With 30 Million people on-line ... isn't it time you joined them?

BBS

GET ON-LINE TODAY

Even if you haven't bought your modem yet, call CRS Online **BULLETIN BOARD** System and get our free information package. Discover

DISCOVER THOUSANDS OF FILES

The latest shareware releases and the largest on-line software collection anywhere. Don't pay for software on disks when you can get it for free as part of your subscription.

8,000 PUBLIC CONFERENCES & INTERNATIONAL ELECTRONIC MAIL

Get information on thousands of topics from experts and hobbyists from around the world. Send messages person to person, around the world, for free as part of your subscription.

LARGE LOCAL CALLING AREA

Free local calling from most of South-Central Ontario.

FLAT ANNUAL FEE

Never pay by the minute or hour to use an on-line service again. Subscribers get 2 hours and 2MB every day. Pay annually or in monthly installments.

FREE TECHNICAL HELP

Phone support, seminars for new and advanced users and on-line help from CRS and thousands of computer users and software manufacturers.

NEWS & INFORMATION SERVICES

Direct news feeds from Reuters & UPI and stock results from over 12 exchanges are low-cost extras.

ONLY: \$59⁹⁵ for a 3-month trial subscription, \$129⁹⁵ for your first year, or just \$12⁹⁵ per month

(monthly subscriptions are for a minimum of 12 months.)

CRS ONLINE

12 Steinway Blvd., Unit 24, Etobicoke, ON M9W 6M5 • Phone: (416) 213-6000 • Toll Free: 1-800-563-2529

INTERNET ACCESS WITH EVERY SUBSCRIPTION

- your own Internet E-mail address (which is typically firstname.lastname@canrem.com)
- USENET newsgroups
- Internet mailing lists (listservs - available on request).

FTP/Telnet Prices Dropped

(extra to the personal subscription)

\$40 = 25 hours/MB

Effective March 1, 1994 CRS subscribers can take advantage of lower Internet FTP/Telnet pricing and there is no set-up fee for first-time subscribers.

Ping and Finger are included at no extra charge.

Call (416) 213-6000
for more information or to sign up.

START GETTING THE MOST OUT OF YOUR MODEM. CALL AND SIGN UP TODAY:

(416) 213-6000

CALL FOR OUR FREE INFORMATION
PACKAGE...OR USE
YOUR MODEM TO CALL
(416) 213-6002 OR 213-6003
FOR 60 MINUTES
OF FREE ACCESS.

Double standards? I went to Comdex last month and talked to as many modem manufacturers as I could. They seem to fall into one of two camps: either they're already selling V.FC 28.8 modems, or they're "waiting for the V.34 standard to be finalized." Yeah, sure.

Here we are, in the middle of another standards war. The problem is that the guys who are "waiting" have already lost the battle. The majority of manufacturers are sticking with the V.FC standard. While many V.FC manufacturers say they'll be upgradable to V.34, it doesn't matter: market forces will prevail and V.FC will become the non-official but de-facto high speed modem standard.

While talking to the "waiting" manufacturers I did get the distinct feeling that they simply haven't figured out how to make a V.FC modem yet. This includes well-known manufacturers like ATI, ZyXel and Digicom. These people all have one thing in common: they all jumped on the V.terbo 19.2 standard early in the game.

It doesn't make sense to me — on one hand they're waiting for the "official" V.34 standard implementation of 28.8 and on the other hand they've already chosen to support the non-official V.terbo standard. They should make up their minds.

Some good news, though: competition is driving down the prices for 28.8 modems. I saw a Boca Research modem in a Toronto store and it came with a high-speed 16550 serial card for well under \$400. Supra, Practical Peripherals, GVC and USRobotics are now shipping 28.8 product. The summer is usually the slow season for computer retailers, so keep your eye open for 28.8 bargains. Now is the time to seriously consider upgrading.

Still confused? Well, USRobotics may have the solution. If you've got US\$595 to spare you can buy their Courier with V.EVERYTHING (great name!). It will accept calls from V.FC modems at 28.8 as well as connecting with V.terbo modems at 19.2, it's upgradable to the V.34 standard for free and it still talks to the old HST standard modems. It even has cellular data and fax capabilities, and rumors have it there's a two-slice toaster option.

Home office solution?

You've probably seen modems that support voice, fax and data. The problem is that they're not that smart — they can't tell the difference between different types of incoming calls. It can either be a fax, a modem or an answering machine but no combinations of the above. Great idea, poor implementation.

Now MediaMagic (formerly Austin Computers) and AT&T have a (get this) 16-bit Sound Blaster and Windows Sound System compatible board with CD-ROM controller, V.32bis modem, fax, Caller-ID and voice mail and it can operate both multimedia and telephone functions simultaneously

and it can distinguish between incoming call types. It's called Telemetry-32. The price, only \$US399.

The board does it all by using something called a DSP - digital signal processor, and a powerful one at that. DSPs are capable of simulating and analyzing complex analog functions. They bridge the gap between the digital world of computers and the analog world of audio signals. They're used extensively in PC sound boards and high-end modems like the ZyXel and USR Courier series.

The nice thing about DSPs is that they're programmable. By simply changing the software they can become a sound recorder/play-back device, voice recognition system, a modem, a fax or any other analog device. The key to putting DSPs to good use is in how effectively and creatively they're applied. In this case it's the first time the common applications of DSPs in a PC have come together into a single, integrated package.

The key in this case is using a DSP resource manager called VCOS. It sits as an interface and control layer between the application software and the board. It allows concurrent applications to time share the DSP. Standard Windows telecom and multimedia applications are compatible with the board.

Net Surfin'

Want to check out some classic artwork but don't have the time to visit the Louvre? You can now visit the Virtual Louvre on the World Wide Web. Online you'll find JPEG images of works by Dali, Escher, Van Gogh



Visit Van Gogh on the Virtual Louvre

and other famous artists. If you have access to the WWW, getting there is simple: "http://mistrat.enst.fr/~pioch/louvre/".

How about the weather? You can grab live satellite weather photos from the Weather Machine at the University of Illinois as well as other type of weather imaging and data. Check out "gopher://wx.atmos.uiuc.edu/1".

Want some fun stuff to read? Here's a collection of links to all kinds of interesting literature, science fiction and experimental topics, such as Lewis Carroll's Jaberwocky, as "recognized" by an Apple Newton — "http://www.seas.upenn.edu/~alwang/text.html". □

Canadian Business Automation Inc.

COMPLETE SYSTEMS

386SX 40MHZ 2RAM, 170HDD	865.00
486DLC 25MHZ 2RAM, 170HDD	945.00
486DLC 40MHZ 2RAM, 170HDD	995.00
486SX 33MHZ 4RAM, 170HDD	1145.00
486DX 33MHZ 4RAM, 170HDD	1355.00
486DX2 66MHZ 4RAM, 170HDD	1495.00
486DX4 100MZ 4RAM, 170HDD	1995.00

All Systems include:

IDE Controller, 2s,lp,lg, ports
SVGA video card 512k
3.5" 1.44mb FDD
SVGA colour Monitor 0.39dp
Mini Tower Case 220w p/s
Keyboard, Mouse

MOTHERBOARDS

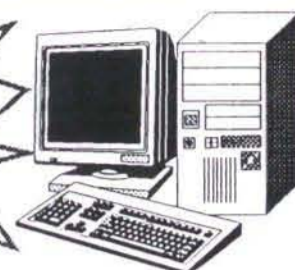
386SX 40MHZ(AMD)	\$ 95.00
486DLC 25MHZ(TI)	\$139.00
486DLC 33MHZ(TI)	\$155.00
486DLC 40MHZ(TI)	\$175.00
486SX 33MHZ(CYRIX)	\$209.00
486SX 33MHZ(INTEL)	\$229.00
486DX 33MHZ(AMD)	\$379.00
486DX 33MHZ(INTEL)	\$429.00
486DX 40MHZ(AMD)	\$385.00
486DX2 50MHZ(AMD)	\$465.00
486DX2 66MHZ(AMD)	\$545.00
486DX2 66MHZ(INTEL)	\$585.00
486DX4 100MZ(INTEL)	\$1115.00

WARRANTY:

TWO YEARS PARTS & LABOR
ON ALL SYSTEMS
ONE YEAR ON ALL COMPONENTS

**DEALERS
WELCOME**

ALL
COMPONENTS
AVAILABLE
AT
BARGAIN
PRICES!!



FAX/MODEMS

ZOLTRIX 14.4KBPS S/R	119.00
ZOLTRIX 96/24BPS S/R	39.00

MULTIMEDIA

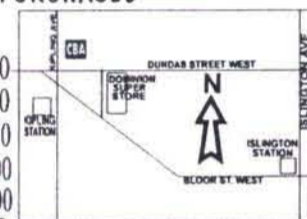
PANASONIC DOUBLE SPEED CD DRV	195.00
SB-2 COMPATIBLE SOUND CARD/SPKR	45.00
SB-16 COMPATIBLE STEREOSOUND CARD	75.00
SOUND BLASTER 16 STEREO SOUND CARD	145.00
BUNDLE PAN. DBL SPEED & 16BIT SOUND CRD	275.00
CD-BUNDLE SIX HOT TITLES	55.00
CD-TITLES MOST POPULAR CALL	

THIS MONTH SPECIAL
FREE 5 CD TITLES, MICROPHONE
SPEAKER SET & HEADPHONE
WITH EVERY MULTIMEDIA SYSTEM
PURCHASED

MONITORS

14" SVGA 0.39DP	249.00
14" SVGA 0.28DP	289.00
14" SVGA 0.28DP NI	309.00
15" FLAT SCREEN NI	445.00
17" FLAT SCREEN NI	785.00

Prices Subject to change without notice.



5172 Dundas Street West, at Kipling Tel. 237-0363

ANCHORS

AWAY CORPORATION

YOUR Computer Re-Marketing Specialists

* Trade In * Used and New * Buy and Sell *

Hours 10am to 6pm Mon->Fri 10am to 5pm Saturdays

7025 Tomken Rd Unit 1 Mississauga (at Derry)

PHONE (905) 795 8181 FAX 795 2749 BBS 795 2750

FOR INSTANT
FAX INFO DIAL
1-800-463-7363
EXT 5555

Tired of the
Upsell Spiel?

HOT DIGGITY DOG!

THE HOT DOGS ARE FREE! SO COME BY AND SHARE A TUBESTEAK
FROM NOON TILL 3PM EVERY SATURDAY THIS SUMMER!

SYSTEMS COMPLETE

XT'S FROM	\$175
AT'S FROM	\$299

386/486 SYSTEMS (NO MONITOR)

COMPAQ 386SX 1MB/40MB/1 FLP	\$ 399
COMPAQ 386SX 4MB/120MB/1.44	\$ 749
AAC 486SLC2/66 4MB/170MB/1.44	\$1099
WITH SVGA MONITOR	\$1299

PRINTERS

2 YEAR WARRANTY

9-PIN	\$149
24-PIN	\$189

SAMSUNG FINALE 8000
2MB RAM HP III COMPATIBLE
INCLUDES POSTSCRIPT

\$999

UPGRADES

*286 TO 386DX/40 W/4MB RAM	\$429
*286 TO 486DX/33 W/4MB RAM	\$799
LET US UPGRADE YOUR HARD DRIVE AS WELL!	

*WITH TRADE IN OF OLD MOTHERBOARD

MONITORS

2 YEAR WARRANTY

MONO VGA 14"	\$119
SVGA 14" .28I	\$279
SVGA 14" .28NI	\$299
SVGA 15" .28NI	\$449
SVGA 17" FROM	\$699
SVGA 17" .28NI	\$849

MISC.

FRAMEWORK	\$ 15
75 WATT SPEAKERS	\$ 77
EXT. CD ROM	\$219
PDI ARCNET CARDS	\$ 30

HARD DRIVES

QTM 170 MB IDE	\$ 250
QTM 525 MB IDE	\$ 529
QTM 525MB F-SCSI-2	\$ 559
QTM 700 MB F-SCSI-2	\$ 749
MAX 1.05 GB SCSI	\$ 899
QTM 1.2GB F-SCSI-2	\$1049
SEA 1.9GB F-SCSI-2	\$1449

**A GAMBIT OF OTHER
HARD DRIVES IN STOCK**

AST NOTEBOOKS

!NEW!

386/25SL-4MB/80MB HD
DOS 6, WIN 3.1
PCMCIA

\$1549

DEMO NOTEBOOKS AVAILABLE

TOSHIBA T5100 LAPTOP
386DX/16 2MB/40MB

\$799

LIMITED QUANTITIES

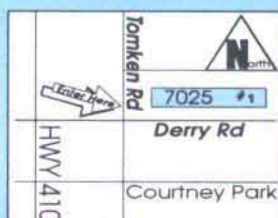
DEMO MONITORS

SVGA 14" .28I	\$249
SVGA 14" .28NI	\$269
SVGA ADI 3E 14" .28 NI	\$299
SVGA 17" .28NI	\$799

**A PLETHORA OF
OTHERS IN STOCK**



OUR WIDE RANGE
OF USED/NEW SYSTEMS
OR UPGRADES PROVIDE
AN EXCELLENT
ALTERNATIVE



**HEWLETT
PACKARD**
Authorized Retailer

**G.C. SYSTEMS**TEL. (905) 890-0253 TOR. (416) 219-3683
FAX. (905) 890-1076

151 BRUNEL RD., UNIT 13, MISSISSAUGA, ONTARIO CANADA L4Z 2H6

LIMITED TIME OFFER WHILE QUANTITIES LAST!**Main Board W/CPU**

386 SX-40	\$89
386 DX-40 W/128 Cache	\$135
486 DX-33 W/128 Cache VESA Local Bus	\$425
486 SX-25 W/128 Cache VESA Local Bus	\$205
486 DX-40 W/128 Cache VESA Local Bus	\$395
486 DX2-66 W/128 Cache VESA Local Bus	\$595

Hard Drive

Maxtor 170MB IDE	\$235
WD 212 MB IDE	\$240
WD/Maxtor 245 MB IDE	\$285
WD/Maxtor 340 MB IDE	\$345
WD/Maxtor 420 MB IDE	\$385
WD/Maxtor 540 MB IDE	\$440

Please ask for our complete systems 386 to 486

VOLUME DISCOUNTS & FREE DELIVERY ALSO AVAILABLE • PLEASE CONTACT OUR SALES OFFICE FOR DETAILS • PRICES SUBJECT TO CHANGE WITHOUT NOTICE
DEALERS ONLY**• SUMMER SPECIALS! •****Microview Systems****486DX33 \$ 1448****486DX2-66 \$ 1628**

Intel CPU

Built-in Math Co., Vesa L.B., P24T

128K Cache

4MB Ram 70ns

14" Non-Interlaced SVGA Monitor, 28dp

Vesa L.B. SVGA 1MB Video Card

210 MB IDE Hard Drive

1.44 MB Floppy Drive

Hard & Floppy Drive IDE Controller

Mini-Tower Case w/ 230w PS

101 Enhanced Keyboard

MS-Compatible 3-Button Mouse

Two Years Parts & Labour

Multimedia \$ 368

Panasonic CR562 2X CD-ROM

S.B. Comp. Golden Sound Card Pro 16

Dual Amplified Speakers

AMD 386DX40 \$ 998

4M Ram

14" SVGA Colour Monitor, SVGA Card 512K

130M HD, 1.44M FD

Mini-Tower, Keyboard, Mouse

System Upgrade and Repair

Kid Learning & Playing Program

14" Samsung NI \$319

Viewsonic V6E \$419

Mag DX15F \$589

Canon BJ200e \$ 369

Connor 420 MB \$ 389

Fax/Modem \$55 8 bit \$55

14,400 \$129 16 bit \$79

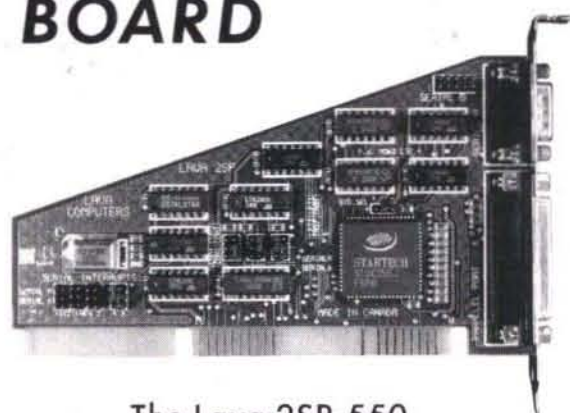
System Upgrade and Repair
Kid Learning & Playing Program

All prices are for cash and subject to change without notice.

7725 Birchmount Road, Unit 43, Markham Tel: (905) 513-9922 Fax: (905) 513-1165

HIGH SPEED 16550**I/O BOARD**

You have a fully packed system... Now you want to install a high speed modem, or a tape back-up. But your serial ports can't handle the speed, your parallel port is used by a printer, and you have no IRQ's available... Buy a new system?

**The Lava 2SP-550**

- Dual High Speed 16550 serial ports
- Bi-directional parallel port
- Configurable as Com 1-4 & LPT 1/2
- Selectable for IRQ 2/3/4/5/10/11/12/13
- Lava Lifetime Replacement Warranty

Made in Canada

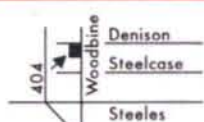
by:



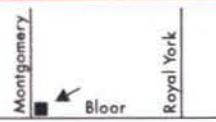
LAVA COMPUTERS



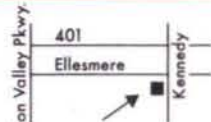
LIFETIME WARRANTY



Logic Computer House
7310 Woodbine Ave. Markham
tel: (905) 415-0909



Compumemories
3088 Bloor St. W. Toronto
tel: (416) 232-2777



Signa Computer Sys.
1358 Kennedy Rd. Scarborough
tel: (416) 755-1590

DOCUMENT MANAGEMENT

A Guide to Optical Character Recognition

Over the past several years there have been great advances in optical character recognition (OCR) technology. Most OCR software packages can now read clean documents with 99 percent plus accuracy. While certain "real world" documents (such as faxes and other degraded documents) still present challenges, most OCR packages also include features that dramatically improve the recognition on these everyday documents.

In general, there are three major areas to look at when evaluating OCR performance: accuracy (the number of correctly recognized characters), output format (the look of the output document), and identified errors (which assist in the cleanup process).

Common Features to Evaluate

Optical Character Recognition (OCR) software packages offer a wide variety of features. Developers have been working to make the products more accurate across a broader range of documents, and more automatic. The ideal OCR package would recognize every word on every page in any type style, regardless of the quality of font or layout.

Besides the overall accuracy of the program, other features or modes of OCR programs to watch for include the following:

Unattended Operation and Two-Column Documents: How well does the software handle a basic business letter without any user intervention? How well does it handle a two column document?

Image Detection: OCR slows down considerably when it encounters photos (halftone images) because it spends time checking every dot looking for characters. OCR software should easily and reliably remove or ignore halftones. Dramatically longer recognition times could be caused by the software not having a halftone removal capability.

Automatic Operation: Can the OCR automatically segment a complex layout? Can it automatically orient the page (detect and compensate for upside-down pages)?

Previewing Document Zoning: Can you preview the page image prior to recognition? Can you manually zone in on only the text that you want to recognize?

Quality of Recognition: Every document has a different typeface, layout, and style and presents a different challenge for OCR. For example, business letters, poor photocopies, faxes (both paper to be scanned and on-line from a fax modem), glossy magazine pages and newspapers each have different characteristics.

Ease-of-Use: How hard is it to configure the OCR to process a simple document, or to change settings to handle more complex or

poor quality documents? Is the user interface intuitive?

Output Options: After recognition, does the program offer a variety of output formats for all popular word processing packages? Does it retain format characteristics such as bold, centering, italics, etc.? Is the final result editable? (For example, hard-carriage returns for the sake of document appearance may make editing the output text more difficult.)

Input Options: Can it accept TIFF format files from a scanner or fax modem software, as well as drive a variety of scanners? Does it support TWAIN?

Integration: Does the application run as a stand-alone application as well as allowing the user to integrate the character recognition into other applications?

User Interaction: Can the user interact with the character recognition to train the system to recognize distorted or degraded characters, thereby minimizing recurring errors?

Price/Performance: How well does the price of the product reflect the software feature set and capabilities?

Testing OCR Software

Selecting Test Documents

The documents selected for testing can have a major impact on the test results. Even the best OCR engine may perform poorly on any given document - or the reverse can occur. The reasons for these seemingly arbitrary failings may not be readily apparent. For instance, if a package has trouble with a fax document, it is hard to tell if the problems are with reading faxes in general or the particular document you have selected. For example, pages with tight kerning or that are printed on a dot matrix printer may appear clear to the human eye, but present distinct challenges to the OCR software.

The best way to ensure accurate results is to have as many test documents as possible. In particular, it is helpful to have two or more of each class of document (such as faxes, business documents, etc.) so that you can spot anomalous results.

Following are suggestions for a variety of document features that you may wish to consider. You can easily combine several "features" in a single document (e.g. a tilted photocopied document) to keep the total number of documents in the test set manageable.

However, you do lose some information as to what specifically caused an OCR package to have trouble if you compound the number of elements in a single test document.

Document Characteristics

Clean documents: These are laser printed or typeset original documents with a clear font such as Times Roman. Normally, this type of document serves as your benchmark because it shows each package at its best. Also, full pages of text give you more data than a sparse business letter.

Photocopied documents: Folding a page and copying it a few times blurs the letters. Make sure the document is legible to the human eye - if you cannot read it, the OCR certainly will not!

Tilted (skewed document): Pages are often tilted after going through a photocopier, fax or scanner. An OCR application, however, should handle a reasonable amount of skew.

Landscape orientation: Software should be able to account for orientation differences, ideally detecting this automatically.

Fax quality: Fax documents require special consideration. Fax resolution is fairly low (100 x 200 dpi standard or 200 x 200 dpi fine mode, compared to 300 x 300 dpi or more for desktop scanners), which results in greatly distorted characters. Thus, "reading" fax documents may require the OCR software to use a different set of recognition experts for adequate accuracy.

Conducting the Test

To ensure reliable and repeatable results you should create TIFF files of all your documents prior to starting the test. Slight differences in scanner brightness, page skew and the contour of the paper will produce variations in the recognition results if each page is scanned several times. A scanning application (or even one of the OCR applications) will allow you to scan the test pages to TIFF files, which you can then run through each of the OCR applications. This is especially important when testing fax recognition. Resending a fax will produce even more dramatic differences than re-scanning a document. Many fax software applications also allow you to save pages images as TIFF files.

The most effective way to determine the number of OCR recognition errors is to have a "Ground Truth" file for comparison. This

is a perfectly correct version of the document you are testing. Alternatively, many word processors can be used to compare versions using their version comparison tools.

OCR accuracy is usually measured as the percentage of characters correctly recognized. This is the ratio of the number of correctly recognized characters divided by the total number of characters. When counting errors, you should decide in advance what exactly constitutes an error. For example, do you count the number of words with errors, or the number of misrecognized characters? Since a user must usually correct all errors, having more than one error per word really represents more work. If two characters are merged together (i.e. "rn" recognized by the software as an "m"), is that one or two errors? If you see poor results, consider asking the vendor's technical support for help - support is part of the package.

To measure the effectiveness of an OCR package you want to answer the questions: Are the results usable and did they save considerable effort compared to re-typing? The results of OCR are a combination of the raw accuracy (characters correctly recognized), the formatting (is the layout usable?) and the confidence of the output (did the system identify characters that it could not correctly recognize?) How much effort is required to take the output from the recognition engine and perform the necessary manual cleanup?

Summary

There are many dimensions to evaluating OCR software. First, you need a good range of document images that represent different real-world situations and have enough characters to allow you to spot consistently strong performing software. Next, you need to watch the total output (which is the recognition accuracy, the formatting and the identified errors). And finally, you should compare the combination of features and options provided by different applications - some are more intuitive, necessary or helpful than others.

One final consideration when evaluating OCR software packages is their relative value, or how they compare in terms of price vs. performance. Currently, there is a broad range of OCR software prices, from \$99 to \$1,000+. Each of the OCR packages should be evaluated on how well the price reflects the feature set and capabilities of the software. □

This document includes information provided courtesy of Xerox Imaging Systems, Inc. (800) 248-6550, or (508) 977-2000.

Energy Efficient Green PC

VESA Local Bus Systems

486 DX-33/40	\$1499	or 49/m
486 DX2-66	\$1699	or 56/m

All Systems include:

- Pentium P24T Upgradable, Intel CPU
- VESA Local Bus 32 Bit Mother Board
- Built-in Math Co-Processor
- 4 MB RAM, 128K Cache
- 250 MB IDE HD
- 1.44 MB OR 1.2 MB Floppy Drive
- VESA LB 32 Bit 1 MB SVGA Card
- 14" SVGA (1024 x 768) .28 dp NI Color Monitor
- VESA LB IDE Controller W/2S/1P/1G
- 101 Enhanced Keyboard
- Mini Tower OR Desktop Case
- 3 Button Mouse & Pad

TWO YEAR WARRANTY

*OAC based on 36 month lease

MULTI MEDIA

Panasonic CR562 (320ms/300kb) Double Speed Drive \$220

Sound Blaster Compatible w/Speakers \$50

Golden Sound Card Pro 16 (True 16 Bit) \$149

Multi Media VESA LB 486DX-33 System

Same as 486 DX-33 plus:
Panasonic Double Speed CD ROM,
16-bit Sound Card & Pair of Speakers

\$1799 or 59/m

5 CD Titles include \$90

Compton's Interactive Encyclopedia 1994 for Win, US & World Atlas, Travel to Space, World of Education, Interactive Story Time

MS DOS 6.2 & Windows 3.11 with Disks & Manual Legally Licensed **\$80**

HVM COMPUTERS

101 Duncan Mill Rd., Suite G1, Don Mills, Ont. M3B 1Z3
TEL: (416) 446-0535 • FAX: (416) 446-0591

Store Hours: Mon - Fri • 10:00 - 6:00 Saturday • 12:00 - 5:00

Power of Choice

PLUS EXPRESS	PENTIUM 60	DX2/66	DX/33
\$3288	\$1769	\$1569	

CPU-VL Bus-Pentium Ready-4MB RAM - 1.44MB-260MB HD-VL SVGA 1MB-SVGA 14" NI

IBM ValuePoint Ambra Achiever

LOWEST PRICE GUARANTEED

PENTIUMS 60/66 from ALR, AST, IBM-VP, NEC

FROM \$3095 256K or 512K cache Upto 1GB RAM ISA/VL/EISA/PCI Bus 64bit or 128bit architecture

NOTEBOOKS
AST • Epson • HP • IBM
Thinkpad • Impulse • NEC
• Panasonic • Raven • Samsung • Texas Instruments • Toshiba • Zenith

Compatibles Plus Inc.

Ph:(416)487-5050 Fax:(416)487-5579
138 Redpath Ave., Toronto ON M4P 2K4 2 blocks East of Yonge, North of Eglinton

3T TECHNOLOGY INC. (3T)

(416) 502-2055
1-800-520-0066

250 Consumers Rd. #100A Willowdale Ontario
Located Conveniently @ 401 & 404

Pentium Systems Now Available! Call for Pricing!!

3T CAD/SERVER/SYSTEMS	3T BUSINESS/EDUCATIONAL SYSTEMS
Intel 486DX-33/66 CPU 256K Cache Pentium ready 341MB Fast Hard Drive 8MB Fast RAM 1.44 & 1.2 MB Floppy Drive 101/102 Enhanced Keyboard 1MB VESA Local Bus Video Card	486DX/DLC-33 Intel/ATI CPU 128K External Cache 170MB Hard Drive 4MB RAM 1.44MB Floppy Drive 101 Enhanced Keyboard 512K SVGA card
486DX-33 \$1,699 486DX-66 \$1,899	486DX-33 \$1,169 486DLC-33 \$895
MONITORS 14" SVGA 0.39dp \$259 14" SVGA 0.28dp \$299 15" SVGA flat 0.28dp \$540 17" SVGA flat 0.26dp \$965	CD/SOUND/FAX/MODEM & ... CD-ROM DS 562 Pan \$195 Sound Cards from \$65 256 Grey Scanner \$185 14.4 Fax/Modem \$149

3T-P.O.S. (Computerized Cash Registers) & SOFTWARE for Retail, Business and Restaurant environments. Dealer inquiry welcome.

An Authorized Dealer of HP products Carrying the full line of HP printers & supplies, Scanners &...

HP 520	\$382
HP INK-JET 560C	\$789
HP 4L	\$919
HP 4P	\$1,299

digital PCs built in Canada to compete in the world! We are an Authorized Dealer. We carry all DEC products including Systems, Networking Solutions, Notebooks, Printers...

DECpc Lpv+ From	\$1,375
DECpc MTE From	\$2,765
DECpc XL From	\$3,825
DECpc APX Alpha AXP 64 bit RISC, 150 MHz	\$4,899

2000's Technology provides total solutions
including High Quality products from Digital, HP & 3T, Software Setup, Networking, Computer Upgrades and On-Site Services.
Government and Company Purchase Orders are welcome.

Ponlix Multimedia CD-ROM Titles

Better Windows Better Works
Windows utilities pack

Music Read Write Play
Music theory guide for beginners

CD-ROM Audio Tester
Audio performance checker

Brain Drain
Windows games pack

Green Environment
An introduction to environment protection

Sing-n-story Time
.. 5 new meaningful stories narrated by lovely children drama group
.. 11 songs with "Vocal Mode" and "Karaoke Mode"
.. 40 pages of coloring books for kids
.. Studio CD quality songs performed by children chorus
.. For age 4 to 8
.. Teachers and Parent's courseware included

For more information, please call: Tel: (416) 609-2083 or Fax: (416) 609-1571
Distributors enquiries are welcome

COMDEX[®] Canada

Canada's #1 Information Technology Marketplace for Resellers and Corporate Decision Makers.

including



**Get ready for
Canada's biggest
technology event
ever!**

- **See the next wave of technology solutions from over 450 companies!** Apple, IBM, Novell, Seagate Technology, Digital, Cabletron Systems, NEC, Lotus Development, Microsoft, Sony, 3M, Texas Instruments, Toshiba, Xerox, Fujitsu and hundreds more!

- **Hear keynotes by top industry leaders!**

Michael Spindler, CEO and President, Apple Computer, Inc.

Bill Gates, Chairman and CEO, Microsoft Corporation

John Edwards, Novell Executive Vice President and General Manager of AppWare Systems Group!

- **Experience Canada's #1 information technology conferences!** Over 70 topics—from corporate computing strategies, applications and platforms to Windows-based solutions and development tools to networks and connectivity!

Plan now to see a new world of technology solutions at COMDEX/Canada!

On-site registration only \$50 for the exhibits at all 3 shows!

Conference and Tutorial registration also available on site. *Registration opens at SkyDome at 7:30 a.m. on Wednesday, July 13 and at 8:00 a.m. on Thursday and Friday, July 14 and 15.*

WINDOWS WORLD is produced in cooperation with Microsoft Canada Inc. LAN EXPO is produced in cooperation with LANDA Toronto. COMDEX/Canada and WINDOWS WORLD and LAN EXPO at COMDEX/Canada Conferences and Expositions are properties of INTERFACE GROUP - NEVADA, Inc. Windows, WINDOWS WORLD and the Windows logo are trademarks of Microsoft Corporation. WINDOWS WORLD and the Windows logo are used by Interface under license from Microsoft.

CC4644 6/94

July 13-15, 1994 • Metro Toronto Convention Centre and SkyDome • Toronto, Ontario

DOCUMENT MANAGEMENT

Caere's PageKeeper Document Management Comes To The Desktop

BY GEOFF WHEELWRIGHT

Product: Caere PageKeeper For Windows 1.0
From: Caere Corp. 962 Briar Hill Ave.,
Toronto, ON M6B 1M3 Ph.416-784-0245
Needs: 486-33 PC recommended; 8MB RAM
recommended; Windows 3.1; scanner.
Price: C\$795

Caere PageKeeper is one of a number of reasonably-priced desktop document management systems that operate on personal computers. PageKeeper comes from a company with wide experience in the PC scanning and optical character recognition markets, but is the company's first entry into the document management market. PageKeeper provides scanning support and optical character recognition functions which allow you to "tie" the content of a document to the image of that document. This allows key-word searches of the document's content.

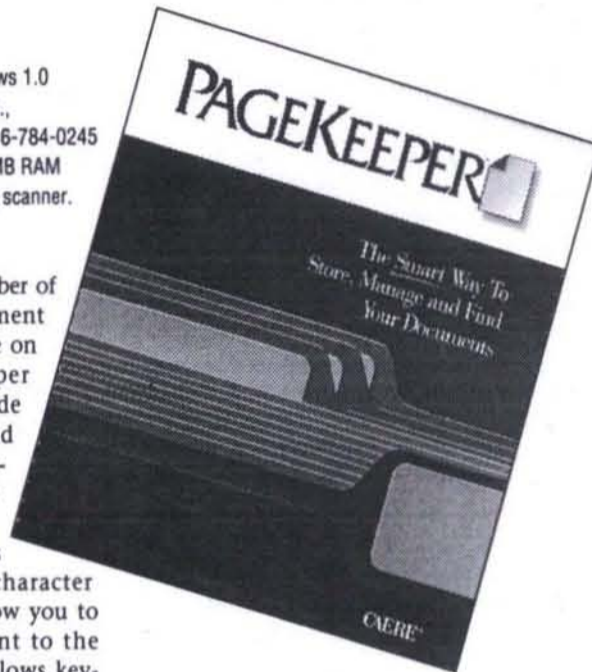
When you start setting up the scanner configuration within PageKeeper, the first thing that quickly becomes apparent is just how much Caere expects of its users' scanning equipment. To start with, there is no specific support for anything but flatbed and multi-page scanners. Handheld scanners such as the Logitech Scanman and even Caere's own Typist scanner don't get a look in.

It is fair to say that you can still use a hand scanner to scan documents using whatever bundled software comes with the scanner and then store and OCR the resultant file with PageKeeper. However, that is a somewhat long-winded way of doing things. Also, Caere promises that any scanner which comes with Windows 3.1-specific drivers can be used from within PageKeeper, so the scanner compatibility question is not likely to be a long-term issue.

Once you've got PageKeeper talking to your scanner, you will be pleasantly surprised at the level of control Caere offers you over the scanner from within PageKeeper. If you've got the time and scanning equipment to do it, you can scan in a whole stack of papers in one automated session using the "batch" document processing features of PageKeeper. It can handle up to 200 pages in a single scanned document file. PageKeeper is equipped to handle single-sheet, multiple-sheet and multiple double-sided sheet scanners.

You can also adjust the brightness of the scanner — thereby providing some way of compensating for a slightly poor original document and adjust the scanning mode for portrait or landscape orientation of the page, as well as its physical size.

PageKeeper supports OCR from PCX and



DCX (popularly used in faxes received with PC fax cards) file formats, not just the more common TIFF format.

There is also a spell-checker included within the recognition tools so that you can keep a close eye on the accuracy of the recognition as you carry it out. In addition, you can specify which "zones" within a document you want to OCR (e.g., you may want the contents of a magazine article, but not the advertisements surrounding it).

PageKeeper demands powerful hardware, but provides good network support. Caere recommends you use a 33 MHz 486 with 8MB of RAM (and at least a 10MB swap file on your hard disk if you have less than 16 MB of RAM). PageKeeper also takes up 8 MB of hard disk space (and that's without creating a single new index of your own).

PageKeeper indexes existing files on both your local hard disk and network drives, and the resulting index includes all the words in the files, not just any keywords you have pulled out of them for indexing. You can also share a PageKeeper database on a network, sending and receiving documents, mail messages and annotations to and from the other users of that database.

The other PageKeeper function that's particularly useful over a network is document "agenting," whereby you get PageKeeper to analyze the content of one document and then get it to go off and find other documents with a similar content.

PageKeeper will also install directly over a network. Version 1.1 is compatible with Windows for Workgroups, and supports MAPI-based E-mail systems. Faxing can be accomplished directly from within the program. PageKeeper naturally supports Caere's Faxmaster, as well as fax software from other companies. □

WIN LOTTO!

GAIL HOWARD'S SMART LUCK® LOTTERY SYSTEMS

Won 39 Lotto Jackpots Worth \$79.2 Million Dollars!

The ONLY Systems with documented JACKPOT WINNERS.



Gail Howard is the undisputed authority on lottery strategies used in the world today. Her remarkable success is helping people win big money in Lotto has led to appearances on hundreds of radio and TV shows, including *The Today Show* and *Good Morning America*.

"Last November 8th, I hit the jackpot to the tune of \$1,096 million dollars. I hit one 6-number prize, two 5-number prizes and three 4-number prizes from your system 503. What a joy and excitement! I'm working on my second jackpot because with your system it's very seldom that I don't collect some prizes."

— Marie Cloarec, Canada Lotto 6/49

"After reading Gail Howard's book, I have won 18 prizes to date. In my first week of play, I won seven prizes. In the 2nd, 3rd and 4th weeks, I won one prize each draw. In my 6th week of play, I won the first prize jackpot of \$516,234.80 plus eight other prizes."

— Max Harrell, Canada 6/39 Lotto

LOTTO HOW TO WHEEL A FORTUNE

This 397-page book contains the world's most successful lottery systems including ALL the systems used by Gail Howard's biggest Lotto jackpot winners. Easy to use as A-B-C. US \$19.50 + US \$5.00 S/H

"Gail Howard's program is the market's most comprehensive and incisive ... easy to install ... technical support is excellent ... Advantage Plus meets its claims. For the serious lottery enthusiast, it's the one to buy!"

— Cost Compute magazine

"Advantage Plus™ is the most user friendly software on the market, also the most professional and complete program ever devised for Lotto ... the ultimate lottery software for the serious lottery player."

— Computer Monthly magazine

"Lottery guru Gail Howard ... can help people beat the odds."

— Family Circle

"Wheeling systems like (Gail) Howard's have the most respectability among critics, since they concede that the wheels off a systematic way of reducing the odds"

— New York Daily News

"Leavelle Carter ... and Sherry Jaynes ... both won big jackpots by using Miss Howard's system. Mr. Carter bet \$13 and won \$606,023 in the D.C. Lotto game; Mrs. Jaynes hit a \$13.8 million jackpot in the New York state lottery ... On August 2, an Indiana couple hit the Canadian lottery for \$516,000. Two days later, 16 co-workers at a Miller Brewing plant in Clay, NY split more than \$1.4 million. All used Miss Howard's system."

— Washington Times

Gail Howard's SMART LUCK® Software for your IBM/Comp. Computer

ADVANTAGE PLUS™

Use ADVANTAGE PLUS™ and you'll trash all your other lottery software. It's the most complete, fastest and easiest to use — in a class by itself. Nothing else can begin to compare!

• COMPLETE drawing results for all Canadian Lotto Games from 1982 to present • Over 50 scientific charts and reports to zero in on winners • 86-page manual on disk tells how to identify winning patterns • Automatic SMART PICKS™ selects best Lotto #s instantly • Test past accuracy of SMART PICKS™ with one key stroke • A \$295.00 value. Your introductory price for a limited time only US \$79.95 + US \$5.00 S/H

COMPUTER WHEEL™

Easy to use scientific systems that reduce the odds. Has 252 Lotto Wheeling Systems, each with a specific win guarantee. Guaranteed flawless. Find one system that fails its win guarantee and you get DOUBLE your money back! (COMPUTER WHEEL™ and ADVANTAGE PLUS™ — a winning combination!)

• These systems cost as little as two dollars to play, or you can wheel up to 40 of the 49 numbers in your game • Shows the minimum and maximum number of multiple prizes that can be won with each system • TIMES IN THE WHEEL handicapping feature tells how many times each number position is in the wheel so you can place your strongest numbers where they appear most often • Optimizing feature makes best possible sums of your chosen numbers • Saves up to 500 wheels for win checking • US \$39.50 + US \$5.00 S/H

ADVANTAGE PLUS™ AND COMPUTER WHEEL™

Save \$20! Buy BOTH for only US \$99.95 + US \$5 S/H

We ship IBM/Comp. 5.25". Add US \$1.00 for EACH 3.5" disk (one per program).

A PROVEN WINNER!

1-800-945-4245

SMART LUCK® Software

DON'T SETTLE FOR LESS.



Dept. P-7, P.O. Box 1519 • White Plains, NY 10602

For information call 914-761-2333



Name _____

Address _____

City _____ Province _____

Phone () _____ Zip _____

☐ Visa ☐ MC Exp. Date _____

Card # _____

No Canadian dollar checks, please. Our U.S. banks slaughter us with the exchange and fees. U.S. dollar MO's welcome.

COMPUTER REPAIRS

XT'S, 286, 386, 486, PENTIUMS.
PRINTERS, MONITORS, KEYBOARDS,
DISKS, CD ROMS, AND TAPE DRIVES.
SYSTEM UPGRADES AND TUNE UPS.
FAST RELIABLE REPAIRS.
COMPETITIVE RATES.
FULLY GUARANTEED.
PICK UP AND DELIVERY
AVAILABLE
15 YEARS REPAIR EXPERIENCE.
CAN-AM P.O.S.
CONSULTING.
416 614 6163
9 AM - 9 PM MON - FRI.

DOCUMENT MANAGEMENT

A Job For DocMan

BY GEOFF WHEELWRIGHT

Have you ever found yourself scrambling for a file when customers call up and want to know how their orders are progressing?

Whether you work in an insurance company, a bank, a hospital, or even a retail operation, chances are that you spend a significant proportion of your working life handling pieces of paper.

Each contains information vital to the smooth running of your business. Finding that information quickly, however, is not easy. The basic problem today is that the information you need is generally held on paper or — if you've been progressive — on a microfiche or microfilm system. It means that there is only likely to be one up-to-date copy of the information in one place at any one time, and that means that only one person can be working with it at any given moment.

And if it's sitting in an out-tray waiting to move from one desk to another — or in that invisible corporate loop known as 'internal mail' — who knows when it will get to someone who can take action on it.

Keep The Customer Happy

But most businesses and organizations can ill-afford the unproductive time created by inefficient management of information. Insurance adjusters cannot force people who have lost their personal effects to wait for weeks while they pull together the necessary information to process a claim.

Banks and trust companies, meanwhile, need to be able to process mortgage forms quickly and efficiently or customers will go elsewhere to borrow money.

One solution to the urgent problem of how best to manage your records lies in the use of digital imaging, optical character recognition (OCR) and document management technologies. Digital imaging involves the use of computer technology to take electronic 'photos' of all your paper documents and store them as digital images on optical disc for later retrieval to your screen. OCR allows your computer to "read" the information in the documents and turn it into a word-processed file for editing, while document management technologies tie the original image and the OCR file together so that the documents can be retrieved and managed more effectively.

By storing your paper information digi-

tally, within seconds your computer can find a single document within a corporate filing system that could hold several hundred thousand documents. Digital imaging systems allow simultaneous multiple access to an image database — and as a result, the information retrieved is always timely and accurate.

Traditional paper record systems have long been great wasters of both space and time. At the offices of one corporate user we heard about, five large storage rooms were set aside to store financial records. Using digital imaging, document management and OCR, the company was able to transfer the records to a mere 64 laser discs — which are then stored in a juke-box for immediate retrieval. The records are no longer strewn over a huge site, and can be accessed quickly and shared by multiple users. Many corporations face the same problem. At a time when all businesses are looking for ways to cut costs it seems absurd to waste lots of expensive office space just to store paper.

You may think that computers are ubiquitous throughout your company and you already have control of your information-related work. But the fact is that only about five per cent of the business information in a given organization is actually held on computer systems. The remaining 95 per cent is still processed on paper.

Digital imaging represents a key tool in any drive to take control of this work. Once your information is held as a digital image — rather than a piece of paper — copies of it can be passed around site-wide and even wide area networks (WANs) in seconds, without losing the 'original'. You can even use this technology to re-allocate information processing from one overworked department to another. Using digital imaging, workflow management finally enters the 1990s.

The decision to use digital imaging technology on your office computer system doesn't mean that you have to give up on your existing computer installation. The range of configurations available from a wide variety of suppliers allow you to take an 'open systems' approach. Not only will such systems operate with industry-standard

BICMOS TRADING INT'L

Guarante best price in Canada !!

BICMOS 486DX-33MHz	BICMOS 486DX-50MHz	BICMOS 486DX2-66MHz
\$ 1589	\$ 1799	\$ 1759

All above systems including:
4MB Ram(70ns), 1.2M & 1.44M Floppy Drive, 256 MB IDE Hard Drive,
1MB Cirrus Logic VESA Video Card, VESA IDE Controller, 14" SVGA N.I. Monitor,
101 Enhanced Keyboard, Mini Tower Case, MS DOS 6.2, Mouse & PAD

**** 2 years parts & labour limited warranty ****

Special of the month

IBM 486SLC2-66MHz

(Faster than 486DX-33, LandMark 2.0 - 153MHz)

- 16K Internal cache, Made in USA, 4 MB RAM
- 1.2 & 1.44M FD, IDE Controller w/2S/P/G
- 1MB SVGA card, SVGA Color Monitor 28dpi
- 170M Hard Drive, 101 Enhanced Keyboard
- Mini Tower case, IBM DOS 6.1, Mouse & Pad
- Heat Sink & CPU Fan, Math-Co

ONLY \$1349
3 years parts & labour limited warranty

LIMITED
QUANTITY!

- 1.44M Pre-formatted Disk \$4.75
- Zoltrix Sound Card w/speaker \$50
- Zoltrix 96/24 Fax Modem (Internal) \$50
- GVC 14.4K Int. Fax Modem (OGM) \$149
- Mitsumi CD ROM (double speed) \$215
- ATI XL 24 SVGA Card w/1M \$140
- IBM 486SLC2-66 ISA Mainboard \$345
- IBM 486SLC2-66 VESA Mainboard \$455

Multimedia cd-rom package:

- Logitech SoundMan 16
- Magnetically Shielded Amplified Stereo Speakers
- Deluxe Microphone
- Mitsumi Double Speed CD-ROM
- 12 CD Titles

\$389

Mississauga Branch:
1125 Dundas St. East,
Suite 28, (2nd Floor)
Mississauga, Ont.,
L4Y 2C4
Tel: (905)-279-5038
Fax: (905)-279-9241

Markham Branch:
151 Amber St. Suite 5,
Markham, Ont.,
L3R 3B3
Tel: (905)-470-2625
Fax: (905)-470-2201

* Prices are subject to change without notice. FINANCING AVAILABLE NOW !!

VINA COMPUTER

1162 COLLEGE ST.
Tel: (416) 531-3698
Fax: (416) 531-3260
Toronto, Ontario

NEW
ADDRESS

MOTHER BOARD

- 386SX-40, AMD CPU, ISA \$99
- 386DX-40, AMD CPU, 128K \$149
- 486DX-33, 128K, CYRIX, ISA \$150
- 486DX-33, 128K, CYRIX, ISA \$185
- 486DX-33, 128K, INTEL, VL-BUS \$445
- 486DX-40, 128K, AMD, VL-BUS \$410
- 486DX-40, 128K, AMD, VL-BUS \$425
- 486DX-40, 128K, IBM, VL-BUS \$439
- 486DX-40, 128K, INTEL, VL-BUS \$610

HARD DRIVE

- SEAGATE 130Mb, 16ms, 32K \$225
- QUANTUM 170Mb, 12ms, 96K \$265
- DARIUS 14" SVGA, LOW-RAD, 28 \$345
- DARIUS 15" SVGA, LOW-RAD, 28 \$475
- AMAZING 15" SVGA, LOW-RAD, 28 \$475
- QUANTUM 540Mb, 9ms, 96K \$520

MONITOR

- MEGAIMAGE 14" SVGA NON-INT \$310
- DARIUS 14" SVGA NON-INT \$325
- DARIUS 14" SVGA, LOW-RAD, 28 \$345
- DARIUS 15" SVGA, LOW-RAD, 28 \$475
- AMAZING 15" SVGA, LOW-RAD, 28 \$475
- ACER 17" SVGA, EPA, LOW-RAD, 27 \$925

VIDEO CARD

- TRIDENT 512K, ISA \$50
- TRIDENT 1MB, ISA \$85
- CIRRUS LOGIC 1MB, 5422, ISA \$95
- CIRRUS LOGIC 1Mb, 5428, VL-BUS \$120

KEYBOARD

- MITSUMI/BTC 101-KEY \$22
- HONEYWELL \$40

486DX-33Mhz/128K \$150
MICROSOFT MOUSE \$35
14.4 FAX/MODEM INT. \$125
CONNER 420Mb/14ms \$399

Prices & availability subject to change without notice - Limited quantity on some items

UPGRADE

Pick any parts, we'll Install, Setup
and Test in Your system for only

\$25

FREE with any system purchase

486DX-40

- Cyrix 486DX-40Mhz, 128K Cache
- 1Mb SIMM Memory/70ns
- 120Mb IDE Hard drive
- 1.44Mb Panasonic Floppy Drive
- 14" SUPER VGA 6.39 Color Monitor
- TRIDENT SUPERVGA 512K
- 2 Serial, 1 Parallel, 1 Game Ports
- Mitsumi or BTC 101 Keyboard

\$925

FLOPPY DRIVE

- PANASONIC 1.44Mb \$49
- PANASONIC 1.2Mb \$59

MOUSE

- LEADGEN MOUSE, 3-BUTTON \$10
- MICROSOFT MOUSE (NEW) \$35

MISCELLANEOUS

- HD/FD/CABLES & BRACKETS... \$5/ea
- 486 CPU FAN & HEATSINK \$12
- SUPER IDE & I/O PORTS, ISA BUS \$17
- SUPER IDE & I/O PORTS, VL-BUS \$30
- ZOLTRIX 9600/2400 INT. \$45
- ZOLTRIX 14.4 FAX/MODEM, INT. \$125
- BOCA FAX-MODEM 14.4K INT. \$165
- WANG FAX-MODEM 14.4K EXT. \$199
- COLORADO 250Mb INT. \$220
- CONNER 250Mb INT./FREE TAPE CASE \$220

CASE

- DESKTOP CASE, 200w \$60
- MINI TOWER CASE, 200w \$60
- MID-SIZE TOWER CASE, 230w \$99
- FULL-SIZE TOWER CASE, 230w \$125
- SUPER TOWER CASE, 250w \$175

MULTIMEDIA

- SOUND BLASTER 16-BIT \$150
- LOGITECH SOUNDMAN 16 \$150
- CARDINAL SOUND PRO-16 \$150
- MITSUMI CD-ROM, 1X, INT. \$150
- PANASONIC CD-ROM 2X, INT. \$199
- SPEAKER w/AMP/EO. & VOL. \$25
- SPEAKER 80W w/AMP & VOL. \$99
- SOUND BLASTER 2.0 COMP. w/speaker, microphone & cables \$70

* Mon-Sat 9AM-7PM * All prices are Cash & Carry * Volume discount available *

100 MHz at 66 MHz Prices

The Product of Innovative Thinking

At Ambra™, innovation begins with optimized designs that harness state-of-the-art technology, such as the IBM Blue Lightning chip featured in the computer above. The result is computing that pushes speeds to the limit, while keeping prices firmly under control.

What's more, we stand behind every Ambra purchase. Because we back every system we sell with renowned IBM® service. Including toll-free, 24-hour, seven day a week IBM technical support.

Finally, if you're not completely satisfied with your purchase, return it within 30 days and we'll give you your money back. Period.

Compare our technology. It's leading. It's proven. And it's relevant to your needs.

Compare our prices, as they continue to offer more power for your dollar.

Then compare our service and support.

There is no comparison.

D4100BL 100MHz

You say your Windows™ applications need speed, but the cost of those DX2-66s keep you standing in your tracks. Well, lightning is about to strike. In the D4100BL from Ambra. It uses IBM's Blue Lightning 100MHz processor with clock-tripling technology to boost speed, without heating up the price. In fact, in triple-clock mode you'll outrun the more expensive Intel 486DX2-66.

The D4100BL is 100% 486-compatible, yet uses less power and offers twice the internal cache. With upgrades to sweeten the deal.

Winbench 4.0				
	DOSmark	Graphics Winmark	Disk Winmark	Winstone
486DX2/66 Average†	592.7	9.50	861	49.5
Blue Lightning 100‡	719.9	9.76	1243	58.7

PC World named Ambra's 66MHz Blue Lightning a "Best Buy." Wonder what they'll say about the 100 MHz?

As excited as we are about the D4100 BL 100MHz, there are other parts to the Ambra story. From our 50MHz 86-key keyboard Notebook, to our Pentium™ High Performance PC. There is an Ambra configured for your needs. So you pay for the technology you use. Nothing more. Nothing less.

3-YEAR WARRANTY*

You'll also enjoy greater peace of mind with our full 3-year warranty on every Ambra EISA, Pentium and Blue Lightning model you buy.

SERVICE & SUPPORT

Your new Ambra also comes with IBM's HelpPC™ for lifetime toll-free technical phone support — 24 hours a day, seven days a week.

30-DAY GUARANTEE

If for any reason you are not completely satisfied with your new Ambra PC, simply return it within 30 days for a full refund.†



Desktop model shown above. Mini-tower also available at same price.

D4100BL 100MHz BLUE LIGHTNING PROCESSOR (MONITOR INCLUDED)

\$3,249

Call now and upgrade from a 14" to a 15" FST monitor at no extra cost.

Available only until June 30th.

- Upgradable to Pentium Technology
- 16KB L1, 128KB L2 Cache, Max: 256KB
- 8MB RAM, Max: 64MB
- 440MB IDE Hard Disk Drive
- 14" SVGA Colour Monitor—Low Radiation (see offer above)
- VESA Local Bus Graphics Accelerator 1MB
- VESA Local Bus IDE Hard Drive Controller

- 4 16-bit ISA and 1 32-bit VL Bus Slots
- 3.5" 1.44MB Diskette Drive
- 5 Drive Bays
- Lexmark™ 101-Key Keyboard
- MS-DOS® 6.2, Windows 3.1, Mouse
- 3-Year Warranty

Call 1-800-363-0066 EXT. 826

Available only by phone.

AMBRA
HIGH PERFORMANCE

A product of ExperComp Services Ltd.,
a subsidiary of IBM Canada Ltd.

*Our 3-year warranty includes 1-year on-site and two more years of depot service. One-year warranty on monitors. On-site warranty may not be available in certain remote locations. †Warranty and 30-day money-back guarantee information available through Ambra. Please call 1-800-363-0066 for details regarding Ambra's money-back guarantee and 3-year warranty. Copies of the terms of Ambra's guarantee are available on request. One-year on-site service at no additional charge during warranty. Shipping, handling and applicable taxes not included in the price. Prices subject to change without notice. Ambra is a trade-mark of ICPI Ltd., and used under license therefrom. IBM, HelpWare and HelpPC are registered trade-marks or trade-marks of International Business Machines Corporation. MS-DOS and Windows are registered trade-marks or trade-marks of Microsoft Corporation. Intel, the Intel Inside logo, i486DX2 and Pentium are registered trade-marks or trade-marks of Intel Corporation. ‡Refers to Ziff Davis PC Graphics performance benchmarks under Windows. From PC magazine, 12/7/93. †Ambra results independently tested 3/31/94.

EASY PAYMENTS WITH YOUR VISA,
MASTERCARD OR AMERICAN EXPRESS



FAX ON DEMAND

Your business, small or large, has an important message to deliver. FAX ON DEMAND provides your existing and prospective customers with immediate access to information, 24 hours a day, 7 days a week.

- Brochures
- Price Lists
- Application Forms
- Hot Line Support
- Information Library
- Specials

High performance, low cost, DOS based, FAX ON DEMAND and Voice Mail system, featuring fully interactive voice prompts, Fax Broadcasting and many more features.

For more information call 1-800-263-0215

FAXCESSORIES
.....
INC
THE "FAX SOLUTIONS COMPANY"

Suite C-109, 151 Frobisher Dr.
Waterloo, ON N2V 2C9

CLC - \$1,000,000 BLOW OUT SALE!!!

NOTEBOOKS & LAPTOPS

MAJOR BRANDNAME PORTABLES STARTING FROM \$499.00
DELL 386SX/25, 3/60MB, VGA FROM \$799.00
DELL 386SX/25, 4/120MB, VGA FROM \$899.00
COMPAQ CONTURA 386SX/25, 4/60MB, VGA, WIN 3.1 FROM \$999.00
DELL 386SX/25, 4/60MB, COLOUR VGA FROM \$999.00
ZENITH Z-LITE, 4/60MB, SUB-NOTEBOOK, VGA DUAL PCMCIA NEW \$1,119.00
INEX 486SLC/50MHZ, 4/120, VGA 50MHZ NEW \$1,499.00
AST EXPLORER 486SX/25, 4/120MB, PCMCIA, VGA FROM \$1,599.00
AST POWER-EXEC, 486DX/25, 4/80MB, PCMCIA, VGA FROM \$1,599.00
DELL 386SX/25, 4/120MB COLOUR VGA, WIN3.1 + DOS FROM \$1,799.00
AST 486DX/25, 4/200MB, VGA PCMCIA FROM \$1,999.00
NEC ULTRALITE VERSA 486DX/25, 4/120MB, MONO FROM \$1,799.00
TOSHIBA T1900C, 486SX, 4/120MB, PCMCIA, COLOUR VGA FROM \$2,499.00
AMBRA NC425SL COLOUR, 4/120MB, DOS, WIN3.1 + MSWORKS FROM \$1,999.00
TEXAS INSTRUMENTS 486DX/240, 8/200MB, COLOUR VGA FROM \$2,999.00
TOSHIBA T1950CS, 486SDX/240, 4/120MB, PCMCIA, COLOUR VGA FROM \$2,999.00

TOSHIBA T1950CT, 486DX/240, 4/120MB, PCMCIA, ACTIVE FROM \$3,399.00
NEC ULTRALITE VERSA 486SL/25, 4/120MB, ACTIVE COLOUR NEW \$3,599.00
ZENITH 486DX/25 MHZ 120MB HDD COLOUR WIN3.1 & DOS FROM \$2,099.00
ZENITH Z-NOTE 486DX/33 200MB HDD COLOUR WIN3.1 & DOS FROM \$2,199.00
ZENITH Z-NOTE 486DX/25 ACTIVE COLOUR WIN3.1 & DOS FROM \$2,799.00

NAME BRAND DESKTOPS & PRINTERS

DELL 486DX/50, 4MB RAM, 110MB HDD, SVGA CARD FROM \$1,499.00
DELL 486DX/66, 4MB RAM, 110MB HDD, SVGA CARD FROM \$1,699.00
DELL 486DX/66, 4MB RAM, 320 MB HDD, SVGA CARD FROM \$1,899.00
DELL 486DX/66, 4MB RAM, 500 MB HDD, SVGA CARD FROM \$1,899.00
DELL 486DX/66, 4MB RAM, 680MB HDD, SVGA MONITOR FROM \$2,099.00
DELL 486DX/66, 4MB RAM, 1GIG HDD, SVGA CARD FROM \$2,399.00
486SLC WORKS, WINDOWS + DOS + MOUSE, 5MB RAM FROM \$599.00
HP II LASERJET COMPATIBLE PRINTERS, 9PPM, POSTSCRIPT FROM \$599.00
NEC LASER PRINTER, POSTSCRIPT FROM \$499.00
9600 FAX MODEM SEND & RECEIVE NEW \$39.99
LIMITED QUANTITIES. PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

2601 MATHESON BLVD., E. UNIT 6, MISSISSAUGA, ONT. (905)602-6077 5320 FINCH AVE. E., UNIT 6 SCARBOROUGH, ONT. (416)609-2655

A Job for DocMan

Continued from page 76

IBM-compatible personal computers (PCs with Intel 386 processors or better are recommended), but they also offer the option of communicating with Unix-based mini-computers, RISC architecture machines and mixed environment networks.

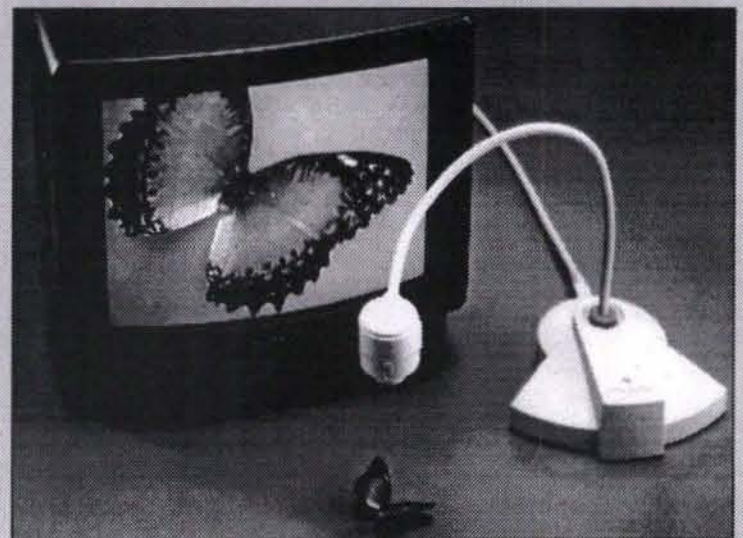
For years, a paper-free office has been the goal for the world's technology companies. Most efforts were dismal failures. Lack of flexibility, slow and inefficient computer systems and understandable user resistance combined to make this an idea whose time had not yet come.

Since then, times have changed and the advent of optical storage and powerful desktop computers now make this a realistic objective. Apart from the gains in productivity and reduction in costs that you might experience with digital imaging, you will also find that is an environmentally responsible approach to business.

Rather than using huge amounts of unnecessary paper to duplicate documents to pass around your company, digital imaging allows you to hold a single copy of a document or file as a digital image and then make that available on a computer screen to anyone who needs it. Only one copy of the document ever needs to exist - and even that won't use up any paper.

So from any perspective you might wish to consider your record management issues, OCR, digital imaging and document management technologies offer a strategic approach that will improve productivity, decrease costs, increase efficiency, make for happier conditions in the workplace - and help the environment. It isn't often you get the opportunity to make a business decision that offers even one of these benefits, never mind several at once. □

Flexcam

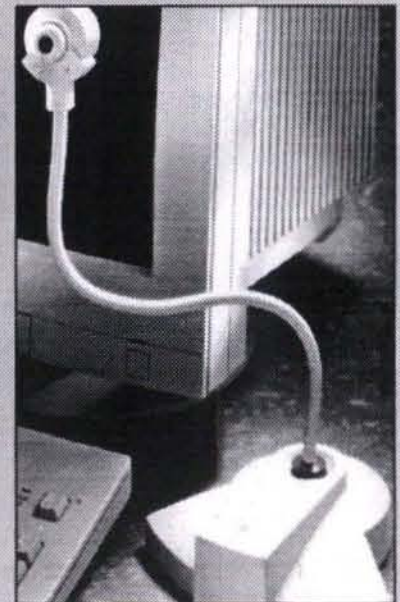


Digital cameras for computers have been out for a while, but Videolabs has added a whole new twist. The camera is mounted on a flexible gooseneck, making it easy to mount and aim. The unit's unique design allows it to be used for video conferencing, or bend over to scan documents, objects or images.

The included board combines full-motion video capture capabilities as well as VCR inputs. It can also handle two digital cameras simultaneously. The camera itself uses a colour CCD at a resolution of 510 X 492 pixels. Software controls for Windows allow the adjusting of the 50:1 magnification, image size, brightness controls and audio or video mute. The camera head has two microphones which can be fed through to a third-party sound board. US\$695 each.

Also available is Videoplex, a two-user "broadcast quality" video conferencing system. It can transmit bi-directional live video and audio over normal twisted pair cable at distances of up to 3,000 feet. The system also accepts standard NTSC and PAL inputs. US\$695 a pair.

Video Labs 612-897-1995.



PC DOCS OPEN
for Windows

Come See Us At
COMDEX / Canada '94
Booth L1050

PC DOCS OPEN Version 2.0

*"The best has simply
gotten better"*

PC Magazine
June 14, 1994

"The ultimate file manager"

Corporate Computing
June, 1993

"PC DOCS OPEN is the cream of the crop"

Windows Sources
March, 1993



Highly acclaimed PC DOCS OPEN™ helps you locate and retrieve documents on your network quickly and easily. Powerful document management capabilities perform functions such as instantaneous full text searching, watertight security, comprehensive version control, archival management and full mobile functionality. State of the art technology includes:

- Windows User Interface
- SQL (Sybase, Oracle and others)
- Open System Architecture
- Client/Server Computing
- Integration with Windows Applications
- Object Oriented Technology
- Completely Customizable Screens
- Multiple Network Support

PC DOCS -
THE QUARTEX
CORPORATION
416-445-4823
416-445-6228 FAX

PC DOCS
Setting the Standard for Document Management



what's new

Microsoft Promotes Computer Learning for Children

Microsoft Canada has instituted KidReach, a program designed to provide software and grants towards the purchase of computer equipment to charitable organizations working with young people. It will have an annual budget of \$250,000.

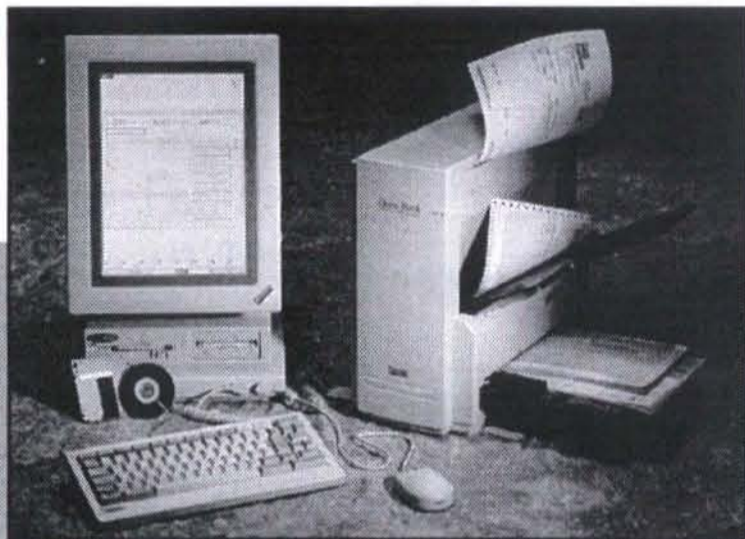
Microsoft will donate copies of their software for uses ranging from publishing newsletters, creating graphics and presentations, and facilitating study and research. Recipients of this program will also be able to apply for a \$1,000 cash donation towards computer hardware.

The program was announced at the Kensington Youth Theatre and Employment Skills centre in Toronto, an organization that works with street youths. This organization and many others across Canada are expected to receive the benefits of this project shortly. In addition, volunteer Microsoft Canada

employees will also be participating in the program to assist the recipient groups in getting the most out of their equipment.

In order to be eligible for the program, organizations will be required to have a charitable status and demonstrate that the equipment donated will be used in the learning and development of people 18 years old or younger. Priority will be given to children who may not otherwise have access to computers.

Contact: Microsoft Corporation 1-800-563-9048



For Mid-Level Electronic Document Storage

The Raven Docubank is a dedicated electronic filing system aimed at small and mid-size businesses, and departments within larger organizations. The system is made up of processing unit and scanner/printer unit that fits on a standard secretarial return. The system is powered by a Motorola 25 MHz 68030 processor. The display is a rotatable full-page size Liquid Crystal display. Document storage is handled by a 3.5-inch floppy/optical (floptical) drive with removable media. The media has a rated life of 10 years, and each disk will store

approximately 3,000 pages. The scanner/printer unit operates at about 40 pages per minute, while the thermal printer is rated at four ppm. Options include additional optical drives for mass storage, workstation-connection capability and a send/receive fax option. The suggested price of the Docubank is approximately \$20,000.

Contact: Serviceworks Distribution, 604-273-4453 (Vancouver), 416-712-2000 (Toronto), 514-344-4044 (Montreal)

LINO Output
P.C. or MAC
COREL APPROVED!
SERVICE BUREAU
A.C.A.D. Discount

- * CorelDRAW! Specialist
- * Quality Film & Repro
- * Colour proofing - From Film & Disk
- * Scanning - Colour/B&W
- * Film stripping on Premises

Tri-Tech (Canada) Inc.
Scarborough, Ont.
(416) 293-7844

Output direct from P.C.
Get the real power out of CorelDRAW!
Don't let your files get converted for output...
use any of your 750 True Type fonts
from CorelDRAW! 3 or 4...

SM JUNIOR PC	SM PRO GREEN PC	SM PENTIUM 90MHZ
486DX-33/40MHZ VL-BUS Intel i486DX-33/AMD 486DX-40 (your choice) 128K L2 Cache + 8K Internal 2 VL-BUS Slots 1Mb VL-Bus 32bit CL5428 Accel. SVGA Card VL-BUS 32bit IDE & I/O Controller 2s/1p/1g 270Mb 12ms 128KC Hard Drive 4Mb 70ns RAM 1.44 Panasonic High Density FDD Minitower case 5 bays 230W PS Microsoft comp. mouse & Pad 101K Enhanced KB	486DX-100MHZ VL-BUS NEW 486DX4-100MHz INTEL CPU Heatink and Fan for CPU 256K L2 Cache + 16K Internal 3 VL-BUS Slots 1Mb VL-B 32bit Diamond Stealth 24 VGA Card VL-BUS 32bit IDE & I/O Controller 2s/1p/1g 8Mb 70ns RAM 340Mb Quantum/Seagate HD 1.44 Panasonic High Density FDD Mid-Tower case 7 bays 230W PS Genuine Microsoft II mouse & Pad 101K Keytronics 2000 Enhanced KB	PCI, VL-BUS NEW Pentium 90MHz CPU Heatink and Fan for CPU 512K L2 Cache + 16K Internal 64bit 4PCI, 2 VL-Bus, 2 ISA Slots 1Mb PCI S3 Accelerator SVGA Card PCI NCR SCSI-2 controller, 2S/1P/1G 16Mb 70ns RAM 540Mb Seagate SCSI-2 HD 10ms 256KC 1.44 Panasonic High Density FDD Mid-Tower case 7 bays 230W PS Genuine Microsoft II mouse & Pad 101K Keytronics 2000 Enhanced KB
1,249	2,399	4,899

GET SMART
All SM system fully upgradable.
At any time we can convert your computer into Multimedia PC, add a Fax/Modem and/or Scanner or anything else - at NO EXTRA CHARGE.
You are eligible for a LIFETIME technical support with our 2 Years Parts & 3 Years Labour Warranty

Smart Machine
Tel: (416) 920-3252 Fax: (416) 921-8940 Open Mon-Sat 10-7
1255 Yonge St. suite 4102 Toronto Ontario M4T 1W6

PC VIDEO

FLICKER-FREE & 16.7 Million Colours
\$275
With AD

THE BETTER PC to NTSC ENCODER

High quality, external, portable SVGA to TV converter compatible with any notebook, laptop, desktop with VGA output NTSC or PAL versions, Colour smear filter Supports composite and S-Video output All required cables included 640 x 480 (NTSC) or 600 x 800 (PAL) Flicker-Free image with 16.7 million colours Supports Windows 3.0, 3.1 and DOS Hot-Key functions to move image Overscan / Underscan

Digital Video Full Screen, Full Motion

The Latest Digital Video Solutions from Canada, USA & Germany! Capture Video to your hard drive, edit, blend, dissolve, create special effects, then output back to Video Tape. Non-Linear Editing. Come in for a demo!

MIRO DC1 Video in and out 30F/S	\$1265
Truevision Targa2000 - 60 fields	\$7900
3DS Personal Animation Recorder	\$2350
ANIMATION	
Autodesk Animator Pro 1.3 Special	\$295
Playmotion - 3D Spline	\$459
Inside 3D Studio Book w/ CD	\$ 65
Crystal Flying Fonts	\$265

IC Technology
3D Studio Animation
Targa+ Cards
PC Video
Multimedia
Video Grab
DPS-PAR

Autodesk 3D Studio \$295
Special Offer to Students Only
Professional 3D Animation and Modeling
Commercial Price is \$3900
Full Package version 2.01a with all Manuals, Disks, CD & Hardware Lock
Available only to registered students in Canada
3D Studio Version 3.0 (current), students only \$850

MIRO D1 Still & Motion Grabber
16.7 million colours, 640x480 still and 320x240 motion AVI and MPEG. No VGA feature connector, no upper memory limits. MS Windows - to 1600 x 1280. Composite & S-VIDEO input. German made. **\$415**

AUTODESK 3D Studio Ver 3...BEST PRICE
AUTODESK Animator Pro 1.3 Special \$495
External Video Grabber \$295

Technology 1-800-267-0743
(416)633-5884 Fax:(416)398-5484
3865 Chesswood Drive, Toronto, Ontario, M3J 2R8

CISC SYSTEMS		MULTIMEDIA	
486DXL 40 WITH MATH-CO	\$1399	CREATIVE LABS SOUND BLASTER	\$89
486 DX 33 INTEL	\$1639	CREATIVE LABS SOUND BLASTER PRO	\$139
486 DX 40 (AMD)	\$1599	CREATIVE LABS SOUND BLASTER 16	\$169
486 DX2 66 INTEL	\$1799	MAGITRONIC MULTIMEDIA KIT	\$419
486 DX2 66 AMD	\$1699	Includes 4 top CD's, Interactive software, 16 bit sound card, speakers, CD-ROM	
486 SLC 2 66 WITH MATH-CO	\$1599	CREATIVE LABS SOUND BLASTER 16	\$369
PANASONIC DBL-SPD CD-ROM W/SPKRS			

OUR SYSTEMS INCLUDE
Local bus 128K cache, 4Mb RAM, 1.44 floppy drive
420 Mb HD 10" keyboard/VESA SVGA 1Mb RAM exp 2 Mb
VESA IDE controller, 25/10/1G SVGA, 28" Monitor
Mini tower, FREE 3 button mouse, mouse pad, dust cover

MITSUMI DBL-SPEED CD-ROM \$199
WITH INTERFACE
PANASONIC DBL-SPEED CD-ROM \$199

VIDEO CARDS
ATI GRAPHIC WONDER VLB/MB \$189
ATI GRAPHIC ULTRA PRO 16/256 VRAM \$249
DIAMOND STREATH 32 VLB/PC \$299
DIAMOND SPEED VLB/PC \$349
DIAMOND VIPER VLB/PC \$499

FAX - MODEM
MAGITRONIC INT. FAX MODEM 14.4/9600 S/R \$199/229
AS FAX MODEM 14.4/9600 EXTERNAL \$229/279
AS FAX MODEM 28.8 BPS INT/EXT \$249/299
ROCA FAX MODEM 14.4 BPS INT/EXT \$109/159

COM BUSINESS SERVICE CENTRE
1785 Queen St. East, Brampton, Ont. L6T 4S3
TEL: (905) 799-2600

SOFTWARE TRAINERS

WE only want the BEST!

BECAUSE OUR CLIENTS
DEMAND THE BEST

We are seeking out individuals that have strong presentation skills and are comfortable in a Windows environment. Computer "theorists" need not apply. We want application-strong demonstrators who can go into a retail location or a trade show setting and train a variety of people on the key selling features of our client's software — we need to get the message across.

We are seeking out individuals that are professional, entertaining and willing to travel. This is a part-time position that could range from 10 hours per week to 30 hours per week, depending on the new product launch schedule.

Training will be conducted in Toronto over a one week period. If you think you have what it takes, fax me your resume or send it directly. We are targeting a July start.

Hourly wages + expenses
Full training provided

Please fax your resume to (416) 730-1813

Attn: G. Hollis

or mail to TMG, Inc., 4211 Yonge Street,
Suite 202, North York Ontario, M2P 2A9.
Please no phone calls.

Sightings by Steven M. Johnson



A best-selling toy for toddlers this year has been the Executive Walker, which is favored by ambitious parents who wish to start early in steering a child away from the arts, and toward business.

what's new

Right-to-Die BBS Online

Yet another sign that on-line culture has come of age is the establishment of Choice In Dying BBS, the first BBS dedicated to such a topic in the United States. Founded by Choice In Dying, a 150,000-member not-for-profit organization, their BBS reflects the organization's interest in right-to-die issues.

The BBS has current information on such topics as living-wills, the legal distinctions relating to active and passive euthanasia, as well as both pending and current American legislation pertinent to right-to-die matters.

Contact: Choice in Dying BBS (212) 727-8219

Spray-On Computer Protector

Over time, many electronic circuit boards and computer motherboards will feel the damaging effects of moisture, static, and corrosion on their components. Circuit Guard, a spray-on application originally designed for the aerospace industry to protect sensitive electronics from exposure to harsh environments, will soon be available in computer stores.

Circuit Guard works by forming a protective barrier around electronic components, neutralizing particles in the air that can lead to corrosion. It also safely discharges harmful static electricity, and can reduce the noise from the fan in a computer's power supply. The spray is safe to use on circuit boards, is non-toxic, and will not irritate skin or eyes.

Circuit Guard will be available in 80g aerosol spray cans for \$19.95 in selected computer stores later this summer, or can be ordered directly from the manufacturer.

Contact: Circuit Guard International 1-800-365-5030

Internet: CIRCUITGUARD@DELPHI.COM

Unisys Invests in New Brunswick's Info Highway Plan

Unisys Canada, a major provider of information technology services and technology, has announced that it will invest \$2.5 million into the New Brunswick government's Information Highway plan. The bulk of this

money will go towards the installation of a computer server in Marysville Place, the province's computer centre. This computer server's main role will be to help develop software for use in New Brunswick's Information Highway Project.

Unisys has also announced the creation of a dozen jobs for information professionals at a new application development centre in Fredericton. They will work alongside the existing Unisys CASE Centre for Excellence to develop and promote new software designed for Unisys clients.

Contact: Unisys Canada, Fredericton (506) 451-8260

Toshiba Launches Fast New Notebooks

Toshiba of Canada has added the T4800CT to its line of notebook computers, utilizing Intel's new SL486DX4 microprocessors running at a speedy 75MHz. It is designed for those who need the fast processing power and a colour graphic display for multimedia in a notebook computer.




Toshiba T4800CT

Along with its battery, the T4800CT weighs in at 7lbs, comes with a standard 8MB RAM (which can be expanded to 24MB), and a cableless mouse. This multimedia notebook comes with a built-in Microsoft Sound System version 2.0. Using Thin-Film Transistor technology, the T4800CT has an impressive Super VGA active matrix colour display. It also has two PCMCIA 2.01 expansion slots, suitable for PCMCIA fax/modems, network connections, and other interface connections. It manages to pack these features together in a relatively small package that measures 12" x 8" x 2".

The T4800CT comes in two models: one with a 320MB hard drive priced at \$9,399, while the same model with a 500MB hard drive is priced at \$9,999.

Contact: Toshiba of Canada Limited (905) 470-3478

486 SX33	\$1379	VESA Local Bus System ◆ INTEL 486 CPU, 128K Cache ◆ 4MB Ram Expandable to 32MB ◆ Quantum 170MB IDE Hard Drive ◆ Panasonic 1.44M Floppy Drive ◆ Goldstar 14" SVGA .28dp Monitor 1024 X 768 NON-INTERLACED ◆ VESA Local Bus Video Card 1M ◆ IDE Hard / Floppy Drive Controller ◆ 2 Serial, 1 Parallel, 1 Game Port ◆ Mini Tower Case 200 Watt Power Supply ◆ 101 Key Enhanced Keyboard ◆ MS Compatible Mouse ◆ Microsoft DOS 6.2* w/ Manual & Disks ◆ One Year Parts & Two Year Labor Warranty
486 DX33	\$1579	
486 DX2/66	\$1779	

Connell  Intel Inside logo is a registered trademark of Intel Corporation. All Prices are cash or certified cheque only. Prices are subject to change without notice. *OEM

CONNELL COMPUTER SYSTEM INC.
111A Queen St. E. Toronto, Ont. Tel: (416) 360-6368 Fax: (416) 360-0487



Tel: (416) 297-6773 Fax/Voice Mail: 298-6152
2950 Kennedy Rd. Ste. #202, Mon-Fri/Sat 10:30-7:50

Green !! 72 Pin Memory Slot ! VLB, P24, Intel CPU !!

14" .28 1024x768 260MB HDD	MultiMedia System 2X Speed CD-ROM	15" FS N.I. 76Hz 420MB HDD
486DX-33.....\$1,499	486DX-33.....\$1,749	486DX-33.....\$1,749
486DX2-66.....\$1,666	486DX2-66.....\$1,899	486DX2-66.....\$1,899
4MB RAM	VLB IDE + I/O	3.5" FDD
128k Cache	VLB IM video	MiniTower
	Mouse	DOS 6.2 + Win 3.1.....\$90
\$1,099	486SLC2-50	2MB RAM, 3.5" FDD, 212MB HDD, K/B, Mouse
		14" SVGA .28 1024x768, 512k Video, MiniTower

What you need, is what we sell

256k cache memory.....	\$8
486dx-33 VLB board + CPU.....	\$435
486dx2-66 board + Intel CPU.....	\$599
SIMM 1M/4M.....	\$49/196
ATI Mach32 1M VLB 75Hz.....	\$199
VLB IM video.....	\$99
387DX 25 - 40 Math Co.....	\$42
CD-ROM 2X, SB16, spk.....	\$329
Fax/Modem 14.4, 96/24.....	\$115/45
3.5" / 5.25" Floppy.....	\$49/59
260/340/540M HD.....	\$299/359/499
IDE VLB.....	\$29
14" / 15" / 17".....	\$269/289/459/779
Mini/ Mid + P/S.....	\$59/89
16 bit Ethernet card, NE2000.....	\$79
NetWare Lite 1.1.....	\$79
24 Pin Printer EPSON AP3250.....	\$189

Upgrade your systems

286 to 486slc-33, 2M RAM.....	\$239
VGA mono to SVGA Color.....	\$249

\$149 per W.S. Network Solutions
1 set Ethernet card, T, Netware Lite 1.1.

Like **Big Mouth**, but w/ FAX & more

\$199 Voice / FAX board
built in * Auto-Switch for FAX / Voice
* Call forward+ Answer Machine
You'll be always in touched, just like
you own a "switch board operator"

\$299 Voice / FAX / MODEM 14.4
Built-in **FAX on DEMAND**
Your FAX / Voice can be delivered or
picked up on demand by your customer.

Monthly pay, Cash carry, Hurry Limit Qty !!

(416) 537-2611

SBL

COMPUTER PRODUCTS

SALES, SERVICE, RENTALS, LEASING

(416) 537-2611

S BLASTER 16 MULTI CD...\$199.
ProAudio SPECTRUM 16...\$229.
S BLASTER 16 SCSI-2 ASP...\$299.
BIGMOUTH...\$209.



THE PRO'S CHOICE

since 1979

LANtastic 6.0
EtherNet Kit
Per User...\$179.

COMPUTER PACKAGE DEALS!

486/DLC/33.....\$639*

486/DX/33.....\$869*

486/DX/50.....\$999*

486/DX2/66...\$1099*

486/DX4/100.\$1699*

Pentium/60.....\$1899*

Pentium/90.....\$2599*

P5 Socket + 3 VESA LOCAL BUS Slots Option...\$39.

PCI OPTION...\$199. (*128K-512K Cache Models)

CORELDRAW 5.0 \$249.

DISKETTE DRIVES Canon~Mitsubishi~Panasonic

3.5" 1.44 MB DS HD.....\$59. | 3.5" 2.88 MB Disk Drive/Kit...\$179.
3.5/5.25" (360/720/1.2/1.44).....\$169. | 5.25" 1.2 MB DS HD.....\$69.

SAMSUNG 486 NOTEBOOK 4MB 127MB HD - \$1599.

HARD DISK DRIVES & SCSI CONTROLLERS

MAXTOR 171MB 15ms 64K IDE.....\$269. FUJITSU 105MB 14ms 24K SCSI.....\$249.
MAXTOR 245MB 15ms 64K IDE.....\$299. EMPIRE 1080MB 9ms 512K SCSI.....\$1099.
MAXTOR 345MB 15ms 64K IDE.....\$399. SEAGATE 343MB 12ms 256K SCSI.....\$489.
WD 426MB 12ms 128K IDE.....\$438. SEAGATE 456MB 12ms 256K SCSI.....\$635.
SEAGATE 457MB 12ms 256K IDE.....\$479. FUJITSU 520MB 10ms 256K SCSI.....\$689.
MAXTOR 546MB 12ms 256K IDE.....\$499. QUANTUM 1.8GB 10ms 512K SCSI.....\$1479.
SEAGATE 529MB 12ms 256K IDE.....\$586. EXTERNAL SCSI HD Parallel Kit w/ SW.....\$189.
SEAGATE 1.05GB 10ms 256K SCSI.....\$989. DPT SmartCache III SCSI-2 H/F Kit.....\$279.
MICROPOLIS 1.05GB 10ms 512K IDE.....\$1149. ADAPTEC 1542C SCSI-2 H/F Kit.....\$349.

CASES & POWER SUPPLIES & KEYBOARDS

Mini Tower/Desktop w/ 200W CSA.....\$89. Full Tower w/ 300W, 10 Bay, 2 Fan...\$189.
Honeywell/Keytronics 101 Enhanced...\$49. ED120 Ext HD Case HH 45W SCSI.....\$169.

MEMORY UPGRADES - COMPUTERS & HP LASERS

4 MB x 9 SIMM 60ns.....\$239. | 1 MB x 9 SIMM 60ns.....\$59.
1 MB MEMORY UPGRADE, HP/III.....\$99. | 4 MB MEMORY UPGRADE, HP 4.....\$299.
4 MB MEMORY UPGRADE, HP/III.....\$269. | POSTSCRIPT UPGRADE HP.....\$379.

CO/PROCESSORS/UPGRADES Intel~Cyrix~LAVA

Intel Pentium 60/66/90 MHz from \$969. | Cyrix 387/SX/DX/33/40.....\$79/\$89.
16550 UART Serial Board (1 port).....\$29. | Intel 486/DX/2/4, 33 to 100...\$CALL.

MULTIMEDIA/CD ROM & REMOVABLE MEDIA DRIVES

PC Powered 150MB 18ms Ext Drive.....\$599. | NEC MultiSpin 3X CD ROM SCSI.....\$699.
PHILIPS CD ROM Int Kit 350ms 300KB.....\$279. | NEC MultiSpin 3XI CD ROM SCSI.....\$649.
Game BLASTER CD 16 Int Drive.....\$579. | Toshiba 3401B Int 200ms SCSI-2.....\$499.
Syquest 105MB 20ms 3.5" IDE Int Drive.....\$329. | Goldstar CD ROM Int Kit 350ms 32K.....\$189.

MODEMS/FAX/VOICE CARDS & SWITCHES

Tylin2000 9600 FAX/2400 Modem V.42 bis MNP5/Voice/Business Audio, Int.....\$149.
GVC 14.4 Internal S/R FAX/Modem, DOS/Windows, V.42/32bis/MNP5, 57,600bps...\$149.
INTEL SATISFACTION MODEM/FAX 100/200/300/400/400e Int/External.....\$CALL.
Complete Communicator 9600/2400 VOICE/FAX/Modem V.42 bis MNP5/Int.....\$119.

TAPE DRIVES Archive~IOMEGA~Colorado~Connor

Colorado JUMBO 250MB Int Tape Drive.....\$239. | CONNOR 250MB Int Tape Drive.....\$219.

VIDEO / TV CARDS

ATI GRAPHICS PRO TURBO 1280x1024, 64 bit, 100Hz, 2MB, 16.7M Colors, VLB...\$399.00
VIDEO BLASTER FULL-Motion VIDEO & TV, 2M Colors, MS Video, Animation...\$359.00
ATI Graphics Ultra+ 1280x1024, 2MB, NI, 76Hz, Mouse, 16.7M Colors.....\$259.00
Hercules DYNAMITE PRO 2MB, ISA/VESA, 1280x1024, NI, 87Hz, 16M Colors.....\$349.00
ATI Graphics WonderMACH32 Windows Accelerator 1280x1024 1MB, 16M Colors ISA/VLB...\$189.00
CIRRUS LOGIC 1MB, VESA Local Bus, 1280x1024, NI, 72Hz, 16M Colors.....\$129.00
ATI Graphics **ULTRA Pro** 1280x1024, 2MB, NI, 76Hz, Mouse, 16.7M Colors...\$349.00

POS SOLUTIONS - BAR CODING, SCANNERS, SOFTWARE

KeyBoard Wedge WAND Scanner.....\$329.00 | POS CASH DRAWER w/ Dual LOCK.....\$209.00
STAR 4.5" SERIAL POS PRINTER.....\$475.00 | UTILITY 1 BAR CODE Software.....\$179.00
CREDIT/HEALTH CARD READER.....\$275.00 | POS KEYBOARD, 44 Key Prog.....\$195.00
CCD HAND LASER SCANNER.....\$699.00 | POS ACCOUNTING Software.....\$275.00

MULTI I/O, RAM, CONTROLLER CARDS, FANS, MOUSE

RAMpAT! AT PLUS RAM Board OK>16MB, SIMMS, EMS 4.0, 286/386/486.....\$139.00
KeyTronic PROFESSIONAL MOUSE, Serial w/ Adapter & SW, 3B.....\$19.00
LAVA COMPLETE-55 16 bit IDE, FDD, 2 Serial (16550 UART), 2 Parallel.....\$79.99
ECS CI 93 AT I/O, 2 Serial, Parallel, FDD, Game, HD IDE, w/ Cables...\$29.99
MIO2080 VESA Local Bus Multi I/O, 2 S/P, FDD, Game, IDE, Cables.....\$49.99
HFA-015 486 PROCESSOR HEAT SINK & FAN with Connector Cable...\$19.99

NETWORKS/LANS ~ CARDS & CABLE

Gateway 16 bit Ethernet Adapter.....\$59. | WorkGroups Add-On Kit.....\$169.
LANtastic AI DOS/Windows ver 6.0...\$129. | COAX Cable RGU58 25 Ft.....\$15.

MAINBOARDS~386/486/Pentium (ISA/VESA/EISA/PCI)

SA486VP 486SX/DX, ISA/VESA/PCI, ZIF, 256K Cache, Exp>128MB, SIMM.....\$329.00
SA486PAIO 486SX/DX, I/O, SCSI-2, ISA/PCI, ZIF, 256K Cache, Exp>128MB, SIMM...\$399.00
486DLC/33 486DLC, 33MHz, w/487DLC, OK, 128K Cache, Exp>32MB, AMI, SIMM, 6Slot...\$249.00
486DX/40 486DX, 40MHz, 256K Cache, OK, Exp>32MB, AMD, OPTI, AMI, SIMM, 6Slot...\$499.00
PS486DX/33 VESA LB, P5 Socket, 256K Cache, OK, Exp>32MB, Intel, UMC, AMI, SIMM, 8Slot...\$529.00
486DX2/66 486DX, 66MHz, OK, 256K Cache, Exp>32MB, UMC, SIMM, 8Slot.....\$729.00
486DX4/100 486DX4, 100MHz, OK, 256K Cache, Exp>128MB, SIMM, ISA/VESA...\$1299.00
PENTIUM/60 Pentium, 60MHz, OK, 512K Cache, Exp>128MB, VESA, SIMM...\$1397.00
PENTIUM/90 Pentium, 90MHz, OK, 512K Cache, Exp>128MB, PCI, SIMM...\$2197.00

MONITORS/PANELS MITSUBISHI~NEC~GOLDSTAR~SAMSUNG

NEC Monitors 3FGe, 4FGe, 5FG/P/e, 6FG.....\$CALL.
GS1455 14" SVGA .39 1024x768 I.....\$279.
GS1460 14" SVGA .28 1024x768 I.....\$299.
GS1465 14" SVGA .28 1024x768 70Hz NI.....\$349.
MAG DX17F 17" 1280x1024 .26 76Hz FS NI MPRII...\$899.
DIAMOND SCAN 15FS .28 1024x768 NI 76Hz.....\$599.
MAGNAVOX 20CM64 20" .31 1280x1024 NI MS.....\$1399.
DIAMOND SCAN 17FS .28 1280x1024 NI 76Hz.....\$1299.
DIAMOND PRO 21FS .28 1600x1280 NI 76Hz.....\$2599.

PRINTERS & SCANNERS

HP DeskJet 520 / 550C, 560 Color.....from \$399.
OKIDATA OL830 Plus Laser, 2MB, 8ppm, PostScript...\$1499.
CANON BJ-10 SX INK JET w/ Sheet Feeder.....\$299.
HP LASER PRINTERS - 4P, 4, 4M, 4L, 4ML.....\$CALL.
NEC 1097 10ppm, 7MB, 600dpi, Adobe PS 2, PC/Mac...\$1899.
DEC 1152 Laser Printer 4ppm, 2MB, PostScript...\$899.
PANASONIC 1150, 2023, 2123, 2124 ETC.....\$CALL.
Golden IMAGE 800 dpi, 256 Gray Scale, OCR.....\$199.
Mustek ColorArtistPro 800 dpi, 16.7M Colors, OCR...\$499.

SOFTWARE SALE

MS FOXPRO 2.6 Win...\$129.
MS DOS 6.2U.....\$59.
Norton Anti Virus 3.0...\$79.
IBM OS/2 2.1 Win...\$69.
MS EXCEL 5.0 Win...\$169.
QEMM-386 Ver 6.0...\$49.
MS OFFICE 4.2...\$349.
Q & A 4.0 Win...\$99.
MS WORD 6.0 Win...\$149.
WINDOWS 3.11...\$79.
QUICK RETURNS TAX...\$19.
PC Tools Pro 9.0...\$109.
Norton Utilities 7.0...\$89.
Harvard Graphics Win2U...\$110.
WorkGroup 3.11 Win...\$69.
WordPerfect Win 6.0...\$159.
MS ACCESS Win 2.0...\$169.

128 Atlantic Avenue
Toronto, Ontario M6K 1X9
Phone: (416) 537-2611
Fax: (416) 537-1484



SYSTEM BUILDERS LIMITED

(4 Streets E. of King / Dufferin - Open Saturdays)

Order Desk 1-800-567-2611



128 Atlantic Avenue
Toronto, Ontario M6K 1X9
Phone: (416) 537-2611
Fax: (416) 537-1484



Throne Computer Systems

Present:

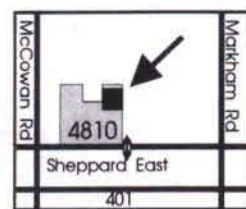
Hot Summer Special !!

** Leasing option available

4810 Sheppard Ave. E.,
Unit 224, Scarborough
Ont. M1S 4N6

Tel: (416) 609-1668

Mon - Sat 10 am - 6 pm
Sunday 12 pm - 4 pm

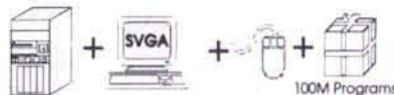


Super VGA Systems

Package include:

4 Meg memory, 70ns
128K cache on DX, DLX & 486SX models
210M IDE Hard Drive
Japanese 1.44M Floppy Drive
Parallel, 2 Serial, Game ports
101 enhanced keyboard
Mini-Tower with 230W CSA Power Supply
512K 16 bits Super VGA Card
14" Super VGA color monitor
MS compatible 3 button mouse
2 years labour & 1 year parts depot warranty

386-40SX,..... \$1049.-
386-40DX,..... \$1109.-
486-33SX,.... 3 VESA Local Bus \$1199.-
486-40DX,.... 3 VESA Local Bus \$1349.-



** Free 100 Meg of Programs **

Super VGA Multimedia Systems

Multimedia 486

4 Meg 70ns memory, 128K cache
340M IDE Hard Drive
Japanese 1.44M Floppy Drive
Parallel, 2 Serial, Game ports
Keytronic 101 enhanced keyboard
Med-Tower, 7 bays & 230W Power
1 Meg 256 color Super VGA Card
14" .28 Non-Int SVGA color monitor
Audio Plus 1600 stereo sound card
Built-in math co-processor in 486DX
Panasonic Double Speed CD ROM
MS compatible 3 button mouse, Speakers
Pentium P24T CPU socket motherboards 2 years labour & 1 year parts depot warranty

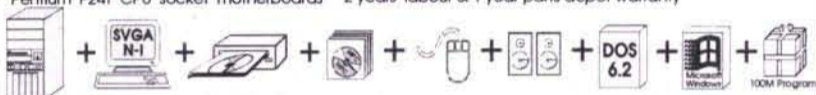
Software include:

100 Meg Programs (see below)
MS 6.2, Windows 3.1 with manuals & disks
5 CD Disc Titles: 1) Microsoft Bookshelf
include Encyclopedia, Dictionary, Atlas,
World Almanac, Roger's II, Quotations,
2) Window MPC Encyclopedia,
3) Game Disc
4, 5) 2 Utilities discs

486SX-33 VESA \$1819.-

486DX-33 VESA \$2009.-

486DX2-66 VESA \$2169.-



Upgrade Options:

Philips CD & Aztech 16 bits sound \$80
VESA IDE & Trident 1 Meg VGA \$40
Panasonic 1.2M Floppy Drive \$59
15" .28 flat screen, low rad. \$145

ATI 96/24 Send fax int modem..... \$39
Conner 420M Hard Drive \$45
SoundBlaster Pro 16 Basic \$100
Microphone for sound card \$25



PHILIPS Multimedia Kit with 3 CD Disc !!

Philips internal double speed CD-ROM, Aztech 16 bits sound card,
Stereo speaker & 3 CD Discs (MPC Encyclopedia, Games, Utility)

\$399.



CD Titles

CD Movie (Over 18) etc \$ 69
CorelDraw 3 w/manuals \$ 69
Encyclopedia MPC \$ 59
Kodak Photo CD \$ 29
Microsoft Works 3.0 \$ 75
Microforum CDs \$35 - 59
Microsoft Bookshelf \$ 60
Microsoft Encarta \$ 89
7 Guest \$ 5
** CD Caddy \$ 8

FREE

MS DOS 6.2 & Windows 3.1

Included Manuals, Disks & Installation

486-33SX,.... 3 VESA Local Bus \$1479.-
486-33DX,.... 3 VESA Local Bus \$1679.-
486-40DX,.... 3 VESA Local Bus \$1629.-
486-66DX2,.... 3 VESA Local Bus \$1829.-
486-100DX4,.... 3 VESA Local Bus \$2309.-
Pentium-60,.... 512K VESA Local Bus \$2529.-



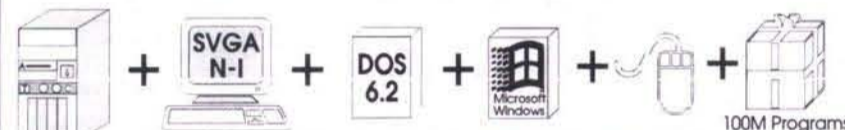
Special Package include:

4 Meg 70ns memory, 128K cache
Intel CPU on 33SX, 33DX, 66DX2, DX4 & Pentium
340M IDE Hard Drive
Japanese 1.44M Floppy Drive
VESA IDE with Parallel, 2 Serial, Game ports
Keytronic 101 enhanced keyboard
1994 style Mini-Tower, 230W CSA Power Supply
Trident VESA 1 Meg Super VGA Card
14" .28 Non-Interlaced Super VGA color monitor
MS compatible 3 button mouse
Pentium P24T CPU socket for 486SX, DX, DX2 models
Built-in math co-processor in all 486DX, DX2 & Pentium
2 years labour & 1 year parts depot warranty

Upgrade Options:

Conner 420M Hard Drive \$45
15" .28 flat screen, low rad \$145
ATI 96/24 Int Send Fax modem .. \$39
Panasonic 1.2M floppy drive \$59
Less: MS DOS 6.2 \$35
Less: MS Windows 3.1 \$30

** Free 100 Meg of Programs **



Free, 100 Meg Programs

All Throne Computer Packages come with free 100 Meg programs bundle includes:

Games, Spreadsheets, Word Processing, Home Organizer, Store phone#, Appointment programs, Educational & Tutorials, Music, Personal and business finance programs, Database, Image Processing, Virus checking & Cleaning, Windows software & Demos, etc.

** All special prices on the advertisement are cash discounted, must be pay by cash, money order or certified cheque only. VISA, Master Cards or Government P.O. are on regular prices (Regular price = Cash discounted price + 3%). Government, educational institutions & corporate p.o. are welcome. Prices are subject to change without notice.

MOTHERBOARDS

386SX-40 \$ 89
386DX-40, 128K \$ 149
486sx/dx/dx2 128k, no cpu \$ 125
486sx/dx/dx2/dx4 128k no cpu \$165
486SX-33 128K, intel cpu \$ 259
486DX-33 128K, intel cpu \$ 445
486DX2-66 128K, intel cpu \$ 599
486DX-40 128K, AMD cpu \$ 399
Pentium DX-60 512K VESA \$1265
Cooling Fan for 486 CPU \$ 12

CASES with Power Supply

Desktop 5 bays 230W \$ 78
Mini-Tower 5 bays 230W \$ 63
Med-Tower 7 bays 230W \$ 89
Tall Tower digital 8 bays 250W \$130
power supply 230W \$48

DRIVES & CONTROLLERS

IDE Conner 210M, 12ms \$ 282
IDE Conner 420M, 12ms \$ 385
IDE IBM 340M, 14ms \$ 355
IDE Quantum 170M, 17ms \$ 269
IDE Quantum 270M, 12ms \$ 333
IDE Quantum 340M, 12ms \$ 399
IDE Quantum 540M, 12ms \$ 515
SCSI Quantum 1.08GB, 9.5ms \$ 1070
IDE Samsung 356M, 13ms \$ 355
IDE WD 340M, 13ms \$ 355
IDE WD 420M, 12ms \$ 390
IDE WD 540M, 12ms \$ 530
PCMCIA(3) Maxtor 105M \$ 685
Conner Int 250M Tape Drive \$ 235
Jumbo Int 250M Tape Drive \$ 230
Jumbo Trakker 250M TD \$ 479
Tape DC2120 250M \$ 24
Panasonic 5 1/4" 1.2M \$ 59
Panasonic 3 1/2" 1.44M \$ 49
Panasonic 3 1/2" 2.88M \$152
IDE FD&HD controller \$ 19
VESA IDE FD&HD controller \$ 31
IDE FD&HD 2Ser/1P/1G cntr \$ 29
SCSI Adaptec 1522 for Dos \$ 124
SCSI Adaptec 2842 VESA kit \$ 417
AT I/O card 2Ser/1P/1G ports \$ 25

DOT PRINTERS

** 2 years Canadian Warranty **

Prices are not included color kit

Citizen 220, color, 24pins \$ 249
Citizen color kit \$ 65
Panasonic 2123, color 24 p \$ 269
Raven 2405(2023), 24 pins \$ 225
Raven 2406(2123), color 24 p \$ 269
Raven 2465(1624), 24p wide \$ 479
Color Kit(motor, cable, ribbon) \$ 60
Samsung 0912, 9 pins \$ 149
Samsung 2412 24 pins \$ 195
Samsung 2421 24 pins Wide \$ 370

LASER PRINTER, SCANNER

Canadian warranty, not grey market
All printers come with toner.
* Please call to confirm prices.

Canon 430 4ppm 1M, 300dpi \$ 785
Canon 430 4ppm 2M, 300dpi \$ 835
Canon 860 8ppm 2M, 600dpi \$1930
HP 4L 4ppm 1M, 300dpi \$ 908
HP 4ML 4ppm 4M Postscript \$1399
HP 4P 4ppm 2M, 600dpi \$ 1318
HP 4MP 4ppm 6M, 600dpi \$ 1869
HP 4 8ppm 2M, 600dpi \$ 1719
HP 4M 8ppm 6M, 600dpi \$ 2450
HP ScanJet IIP \$ 639
HP ScanJet IICx, color \$ 1319
Oki 400e 4ppm 300dpi \$ 678
Oki 410e 4ppm 600dpi \$ 889
Oki DOC'IT 3000 \$ 2460
Oki DOC'IT 4000 \$ 3100
Raven LP410-1M 4ppm \$ 649
Raven LP470PS 4ppm \$ 989

INKJET PRINTERS

Canon BJ-200e \$ 359
Canon BJC-600 Color \$ 709
HP DeskJet 310 portable \$ 415
Color Kit for DeskJet 310 \$ 68
HP DeskJet 520 \$ 379
HP DeskJet 500C color \$ 545
HP DeskJet 560C color \$ 798

Canon, Hewlett Packard,
Okidata, Citizen, Panasonic,
Raven, Samsung Authorized

LASER ACCESSORIES

Canon BJ-200/300 Ink Cart. \$ 32
Canon 430 memory 1M \$ 97
HP 4L memory 1M (HP) \$ 109
HP 2p.3p.3.3d 1M/2M \$129/199
HP 4.4p.4mp.4m memory 4M \$ 235
HP 4.4p.4mp.4m memory 8M \$ 490
HP Toner for IIP/IIP+/IIP \$ 99
HP Toner for IIP/IIP+/IIP \$ 99
HP Toner for 4/4m \$ 149
HP Toner for 4L/4ml/4p/4mp \$ 99
HP 4/4p Level 2 Postscript (P.P) \$375
HP 4/4p Level 2 Postscript (P.P) +
4 M memory bundle \$605
HP DeskJet 500 HC Ink Cart \$ 39
HP DeskJet 500C Color Cart \$ 39
Oki 400 1M memory \$ 135
Oki 400e 1M memory \$ 150
Oki 400e legal size tray \$ 115
Oki Image Drum OL400/800 \$ 295
Oki Image Drum 400e/410e \$ 200
Oki 400/800 Toner * Special \$ 30
Oki 400e/410e Toner \$ 34
Pana 4410/Raven 510 1M \$ 145
Pana 4410/Raven 510 Toner \$ 49
Pana 4400/Raven 410 1M \$ 129

MEMORY

* Please call to confirm prices.

DRAM 44256-70 \$ 9
SIMM 256-70/80 \$ 19
SIMM 1M-60, 30 pins (call) \$ 56
SIMM 1M-70, 30 pins (call) \$ 53
SIMM 4M-70, 30 pins (call) \$ 215
SIPP 1M-70, 30 pins (call) \$ 64

* Memory for Acer, Compaq, DELL,
IBM ps/1/2, P.Bell, Toshiba available

MATH CO-PROCESSOR

387SX, 16/20/25 Mhz \$ 78
IIT 387DX, 25/33/40 Mhz \$ 54

VIDEO CARDS

Monographics \$ 25
Trident 512K \$ 55
Trident 1M 32 bits color \$ 85
ATI Gr Wonder 1M original \$ 189
ATI Gr Wonder 1M vesa orig \$ 189
ATI Gr UI+ 2M, OEM \$ 245
ATI Gr UI+ 2M, mouse original \$ 265
ATI Gr UI Pro 2M VESA orig \$ 348
ATI Gr UI Turbo 2M VESA \$ 515
VESA Cirr Logic 5428 1M \$ 119
VESA Cirr Logic 5428 2M \$ 189
VESA Trident 9400CX 1M \$ 109
VESA Trident 9400CX 2M \$ 179

MONITORS

14" Datas TTL paper white \$ 125
14" Datas Mono SVGA 1024 \$ 169
14" Datas 1024 .39 \$ 269
14" Packard Bell 1024 .39 \$ 320
14" Megalimage 1024 .28 NI \$ 309
14" Packard Bell 1024 .28 NI \$ 420
14" TVM 1024 .28 NI low rad \$ 385
15" Daewoo 1024 .28 L-R \$ 459
15" Megalimage 1024 .28 L-R \$ 459
15" Packard Bell 1024 .28 NI \$ 555
15" Mitsubishi Diam. Scan 15FS \$635
17" Datatrain 1280 .28 \$ 990
17" Megalimage 1024 .28 \$ 895
17" Mitsubishi Diam. Scan 17FS \$1350
17" Packard Bell 1280 .28 NI \$ 1030
20" Mitsubishi Diam. Scan 20FS \$ 2130

CD ROM

Mitsumi int 250ms 350k/s Kit \$199
Panasonic int 320ms 300k/s \$189
Panasonic int 320ms 300k/s Kit \$199
Philip int 350ms 300k/s Kit \$ 219
Philip int CD&Aztech MPC Kit \$ 335
** Special 6 CD Titles \$ 109

KEYBOARDS

BTC 101 Keyboard \$ 21
Keytronic AT/XT ** USA ** \$ 32
Keytronic keyboard ** USA ** \$ 55
Honeywell 101 keyboard \$ 55
AT keyboard to PS/2 adaptor \$ 12

FAX MODEMS

** 5 years Warranty GVC/USR **

ATI 96/24 Send fax int Modem \$ 49
96/24 Send/Rec fax int Modem \$ 49
GVC 96/24 int S/R fax Modem \$ 75
GVC 96/24 Ext S/R fax Modem \$ 89
GVC 14.4 int s/r fax v42 v32 \$ 165
GVC 14.4 Ext s/r fax v42 v32 \$ 195
USR 14.4 int s/r fax v42 v32 \$ 155
USR 14.4 Ext s/r fax v42 v32 \$ 185
WinFax 2.0 for GVC only \$ 28
IO card with one 16550 port \$ 39

OTHERS

GVC 16 bits ethernet card \$ 105
Optical Glass Filter \$ 35
MS compatible mouse \$ 15
Microsoft mouse v2.0 OEM \$ 46
Logitech Mouseman *New \$ 69
Logitech Trackman *New \$ 103
Logitech Scanman 256 \$ 209
Logitech Scanman 256 w/OCR 263 \$ 340
VideoBlaster SE \$ 340
Aztech 16 bits sound card \$ 159
SoundBlaster Pro compatible \$ 75
SoundBlaster Pro Deluxe w/CD \$125
SoundBlaster Pro Deluxe noCD \$95
SoundBlaster Pro 16 Basic \$ 149
SoundBlaster Pro 16 Value \$ 160
SoundBlaster Pro 16 ASP MCDS 259
Speaker (Basic) \$ 10
Speaker LX-18 \$ 30
Active 80W speaker system \$ 100

SOFTWARE

BusinessVision II \$ 135
CorelDraw 3.0 w/ manuals \$ 69
CorelDraw 4.0 upgrade \$279
Games: CALL
Lotus 123 4.01 Win upgrade \$ 128
MS DOS 6.2 \$ 49
MS Windows 3.1 \$ 49
MS Windows 3.11 \$ 75
WP 6.0 Windows upgrade \$ 155
WP 6.0 Windows full version \$ 400
WP 6.0 DOS upgrade \$ 155

newsbytes

EXCLUSIVE NEWS

The Ultimate Copy Protection Scheme

When officials in the Peoples Republic of China (PRC) decide to do something, they don't fool around.

Apparently PRC authorities want the US government to grant it continued Most Favored Nation (MFN) special trade status, and have promised skeptical US companies that they will jail or even execute copyright and trademark pirates.

The PRC news agency Xinhua reports that Li Bida, deputy director of the trademark office of the State Administration for Industry and Commerce, said that violators of trademark laws face harsh penalties of up to life imprisonment and the death sentence.

Canadian Computer Show Cancelled

What was for many years Canada's principal computer show has been cancelled this year. The Canadian Computer Show would have celebrated its 25th anniversary this fall.

Ross Horton, manager of computer shows for Industrial Trade and Consumer Shows (ITCS) in Toronto, told Newsbytes the computer industry just was not showing enough interest in the Toronto-based show this year, and ITCS decided it would be "better to make the decision now."

Horton blamed a weak economy and increased competition for the show's demise. A major factor was undoubtedly the launch last year of COMDEX/Canada, a spinoff of the mammoth event held each fall in Las Vegas and each spring in Atlanta.

Contact: Industrial Trade and Consumer Shows, 416-252-7791, fax 416-252-9848

Dell Recalls Monitors

Dell Computer, is recalling approximately 63,000 color monitors due to the possibility of the units catching fire.

Dell told Newsbytes the recall applies only to the Model DL-1460NI 14-inch Super VGA color monitors. The display units were sold direct by Dell and through retailers in the US and Canada.

Readers who have this monitor should immediately unplug the monitor and contact Dell at 800-913-3355 between the hours of 9AM and 9PM Eastern Time Monday through Friday and 11AM to 3PM Eastern Time on Saturday.

Contact: 800-913-3355 to arrange repair via phone or 512-728-8528 for repair via Dell's bulletin board.

Free-Net Formed in Halifax

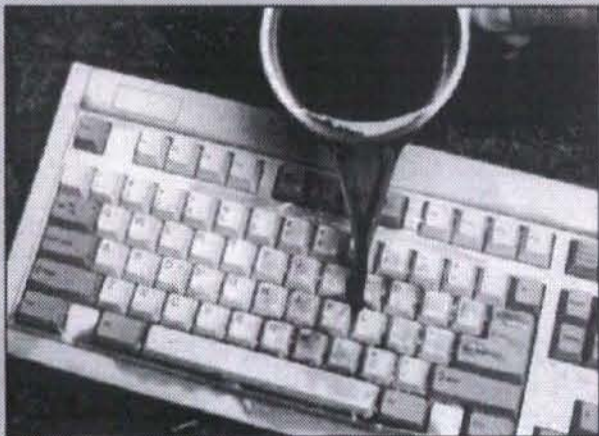
The Chebucto Free-Net should be up and running by the time you read this, says David Trueman, a member of its board of directors.

Free-nets are like bulletin boards, but do not charge for access and are non-profit operations supported largely by donations of money and equipment. They are meant to provide access to information. The first free-net opened in Cleveland in 1986. Canada has free-nets in Victoria and Trail, BC, and in Ottawa. Several others are in the organizing stages.

The steering committee for the Halifax operation was set up last September, Trueman told Newsbytes. Its board of directors includes representatives from Dalhousie University, the Halifax public library, the Nova Scotia government, and private business.

Contact: Chebucto Free-Net, 902-425-2061, Internet els@cs.dal.ca

Spill-Resistant Keyboard



Newsbyte Photo

CARROLLTON, TX (NB) — If your computer keyboard has ever suffered the ravages of spilled beverages or dropped crumbs, you'll probably be glad to know that a Texas company has introduced a keyboard designed to protect the board's working parts. Identity Systems Technology has introduced its IDKB101-SR keyboard, a unit that features a moisture-proof membrane beneath the keys to keep the underlying mechanism safe. According to the company, if you've never experienced the results of a spilled drink or breadcrumbs in the keyboard as you eat while you rush to complete that last minute project, you are very fortunate. PC system administrators and consultants report that it's a common problem.

The company claims that the company's new keyboard is an improvement over the soft molded plastic covers already available to protect keyboards. The US\$39.95 unit comes with a PS/2 adapter and attached to most notebook computers equipped with an external keyboard port.

Contact: Identity Systems Technology, 213-323-4600 or 800-723-8258, fax 214-323-0666

C Compac Computer Systems
2370 Midland Avenue, Unit A-15, Scarborough, Ontario M1S 5C6
Tel: (416) 609-3034 Fax: (416) 609-3843

July's Special

Western Digital Hard Drive (3 years)

212mb	\$249.95	256mb	\$299.95
340mb	\$349.95	426mb	\$399.95

Fax Modem (internal)

Zoltrix 96/24 w/bt/fax	\$36.95
Zoltrix 14.4/14.4 w/bt/fax	\$119.95
DSI 14.4/14.4 w/winfax lite	\$149.95

Multimedia & Sound Card

Sound Blaster Basic 16	\$145.95
Panasonic CR562 CD Rom	\$185.95
CD Rom Bundle	\$339.95
->Pan CR562(dual speed)	
->SB Basic 16.speaker	

Hewlett Packard Printer

HP 520	\$369.95	HP 560C	\$779.95
HP 500C	\$499.95	HP 4L	\$899.95

The above prices are for cash deals only & subject to change without notices

32 bit Vesa Local Bus

486DX2-66	486DX2-50
\$1529	\$1459
486DX-40	486SX-33
\$1429	\$1279

128K+Amb Rom, 1.44mb FDD, IDE I/O, VLB 32-bit VGA/1mb(exp 2mb)
14" SVGA Monitor/Keyboard & Mouse w/pad, 212mb HDD
MS Dos 6.2 & Windows 3.1(with disk & manuals)

Lease to own available

unbelievable

HARDWARE, SOFTWARE, ACCESSORIES AND SERVICE

It is your choice.... We have them all.....
Quality Clone or Affordable Brand Name

MISCELLANEOUS

US Robotics 14.4 Fax / Modem Int.	\$165.00
Logitech MOUSEMAN	\$69.00
Logitech SCANMAN 256	\$275.00
IBM JoyStick	\$23.00

SOFTWARE

MS WORD 1.0	\$126.00
Word Perfect WIN 6.0 U/G	\$134.00
CA Simply Accounting	\$119.95
MS Flight Simulator	\$53.95
Norton Anti Virus	\$104.00
MS Dinosaurs	\$63.00

PRINTERS

Canon BJ-200e	\$ CALL \$
Canon BJC-600	\$ CALL \$
HP4L	\$ CALL \$
Raven 2406	\$280.00

COMPAQ 486
~~\$1475.00*~~
*PRESARIO 425

SERVICE & SUPPORT

- ☒ WE REPAIR AND UPGRADE MOST MAKE OF PC
- ☒ AUTHORIZED COMPAQ & AST SERVICE CENTER
- ☒ NOVELL NETWORKING
- ☒ INSTALLATION & SUPPORT
- ☒ CITE ON STAFF

MULTIMEDIA

DISCOVERY CD 16 KIT	\$ 485.00
EDUTAINMENT CD 16 KIT	\$ 625.00
SOUND BLASTER 16 BASIC	\$ CALL
STEREO SPEAKER	\$ 18.80
MS ENCARTA	\$ 111.00

NOTEBOOKS

AST NB 4/33S-200W MONO	\$ 2,200.00	COMPAQ CONTURA 486/25 MD 120/W MONO	\$ 2,379.00
		COLOR	\$ 3,275.00

Limited Quantity. All prices are subject to change. All prices are Cash Discounted. Offer expires July 15th 1994

ONWARD COMPUTER

Amico	ONWARD
Amico	Eglinton
Amico	Dan

5070 Dixie Road (N of Eglinton), Mississauga
Tel.: (905) 602-5070 Fax: (905) 238-3312

Store Hours:
Mon - Fri 9:30 - 6:00
Sat 10:00 - 5:00

training

CNE COURSES

LAN Users 3.12	\$99
3.12 System Manager	\$149
3.12 Advanced System Manager	\$229
Service & Support	\$199
PC Hardware Basic	\$129
MS DOS for NW User	\$99
Networking Workshop	\$199
Also Computer Assembly & Troubleshooting	\$195
Setting up a Network with Netware 3.12	\$295

MICROBUS

3248 Sheppard Ave. E. Ste. 204 (416) 321-0895

Autodesk Generic CADD[®] Version 6.1 3 days HANDS-ON TRAINING SEMINAR

Xemex
(416) 739-8973

100% AutoCAD[®]
compatible!

- Drawing & editing tools
- Up to 256 layers
- Read/write in DWG files
- Import/export in DXF
- Import/export generate Bill of Materials
- Generate 3D drafting from 2D drawings

CALL FOR DETAILS

COMPUTLEARN

Windows, DOS, MS Word, WordPerfect, Lotus123, dBase, Paradox + DTP etc.

Tutoring at your Place or In our Office

Single, Group & Corporate rates Available

(416) 588-3086 or (905) 723-5651

Quality Software Training



STARLIGHT INC.

Software Training Since 1986

What's NEW & EXCITING

See us at COMDEX Canada '94
Booth # C608
Drop by StarLight for a FREE pass!

- Lotus Notes Specialty Labs & Workshops
 - LNS Lotus Notes: Security & Mechanisms
 - LNN Lotus Notes: NLM Notes Server Setup
 - LNR Lotus Notes: Using Notes Remotely
 - LND Lotus Notes: Data Lens Drivers
- Novell NetWare 4 Intensive Training (4.0-IT) for CNEs
 - 5 Day Compressed Course covering 526, 804, 530
 - Prepares CNE for all 3 Tests
 - Attractively Priced! Classes Start in July!
- Also available: Competitively priced Novell Student Kits

For more information, please call StarLight at (416) 971-9053
205 Richmond Street West, Suite 402, Toronto, Ontario M5V 1V3



Authorized
Education
Center

Microsoft
SOLUTION PROVIDER
Software Training Services



Novell
Authorized
Education
Center

COMPUTER COURSES PC & MAC

For everyone from the beginner to the experienced

- MS Word • WordPerfect • Lotus • Excel
- dBase • FoxPro • MS Works • Freehand
- PageMaker • QuarkXPress • Illustrator • CorelDraw
- System 7.XX • Windows • DOS • And More!

PC & MAC Installation & Maintenance
User Friendly Organization (905) 889-5311



Training Now - For Tomorrow

126 Hamilton Ave N, Ottawa, ON K1V 1C2

Phone: 613 729-0234 Fax: 613 729-6615

Outside "613" call: 1 800 667-8073

Internet: ac386@freenet.carleton.ca or
jwdodson@hookup.net

The following MacAcademy videos and Personal Training System interactive modules are available to rent.
Two week rental \$12.95 / tape plus S&H and taxes. Tapes will be sent by Canada Post registered mail. Two weeks begin when you receive the tapes.
If you don't find the tapes worth the money - don't pay. Call, fax, or e-mail your orders today.

MacAcademy Videos

Photoshop 1 thru 6
PageMaker 1 thru 6
Macromedia Director 1 thru 4
MacProject Pro 1 thru 4
Troubleshooting 1 thru 3
Claris Works 1 thru 6
Word 1 thru 4
FileMaker Pro 1 thru 4
Apple PowerBooks 1 & 2
Quicken: Business & Personal
Design & Layout
Plus...

Personal Training System Interactive Audio Modules

Word 1 thru 4
Photoshop 1 thru 3
FileMaker Pro 1 thru 3
Quark 1 thru 5
PageMaker 1 thru 3
Powerpoint
Quicken
Claris Works
Plus...
WP for Windows 1 thru 3
Windows
Windows for Workgroups

SoftTrain Institute

Central Campus

615 Yonge Street Suite 500 (at Yonge & Bloor)

975-0522

Long-Term Programs (2-12 months):

Computerized Office Specialist
Computerized Bookkeeping Specialist
Micro Computer Specialist
WordProcessing Operator
CAD Specialist
DeskTop Publishing Specialist
Computer Literacy Program
Customized Full-Time Programs



Short-Term Courses:

WordPerfect
WordPerfect for Win.
Word for Windows
Lotus 1-2-3
Lotus 1-2-3 for Win.
Excel for Windows
Typing/Keyboarding
Data Entry
dBASE III + / IV
DOS
Windows

C Language
QBasic
AutoCAD
Essentials of Accounting
ACCPAC Simply Acctg (Bedford)
ACCPAC Plus GL/AR/AP/PR
CorelDRAW
PageMaker
Harvard Graphics
PowerPoint
... and more!

About SoftTrain:

Affordable tuition / 100% hands-on
Low instructor/student ratio
Placement Assistance
Certificate upon completion
Days/Evenings/Weekends
Steps from Subway line
New courses introduced periodically

If you are over 45 years of age and have been recently laid off you may qualify for Government assistance.

Central Campus Only

For Computer Professionals

C++ OOPs and Windows
Programming

XWindows and Motif
Programming

Register now!

Central Campus only: PC Assembly, PC Architecture, Configuration and Installation, Trouble Shooting, Unix, Novell, OS/2, Job Search Skills... and more!

what's new

Pentium Portable Arrives



Ottawa-based EuroPak International has released what it claims is the world's first Pentium-based notebook PC. The Eurocom 3600 uses two fans to keep the Intel 66 MHz Pentium processor from overheating. The unit is slightly larger (11.3 x 10.5 x 2.4 inches) and slightly heavier (8 lb.) than the typical notebook computer — power has its price.

Standard on the 3600 are 8MB of RAM, 210MB hard drive, NiCd battery and two PCMCIA slots: a Type II and a Type III. On board is 1MB of video RAM to help the built-in Cirrus Logic GL6440 video accelerator chipset do its chores. Both VGA graphics and the hard drive work through a 32-bit local bus architecture, says the company.

The computer is available only with col-

or screens. A 10.5-inch passive matrix color screen is standard, while a 9.5-inch active matrix color screen is optional. Either screen will display 256 colors at 640 by 480 resolution. The graphics system will support 256 colors at resolutions of up to 1024 by 768 through an external monitor.

Options include an internal 16-bit stereo sound card, Nickel Metal hydride battery and docking station.

Suggested retail price for the basic configuration is \$7,100.

Contact: Impaq 1-800-663-9272

Information Highway Project Aimed at Doctors

Mentor Networks has announced a pilot project for "on demand" interactive multimedia education aimed at training physicians. Done in conjunction with Stentor, the alliance of Canada's major telephone companies, Mentor hopes to demonstrate the educational potential of an "information highway".

The pilot program is being conducted at the Royal College of Physicians and Surgeons of Canada at the Ottawa Civic Hospital with the cooperation of the University of Ottawa. A trial course on diagnosing and managing emergency situations involving chest pains has been written by specialists in this field. Using PCs, the doctors will be

able to access and interact with simulated case studies, made all the more real by a combination of full motion video, clinical images, text, and audio. Stentor's contribution to the project is their Asymmetric Digital Subscriber Line system, designed to deliver multimedia applications over regular phone lines.

Mentor hopes that the feedback it will get from the physicians participating in the project will help it develop better educational software for the information highway in the near future.

Contact: Mentor Networks Inc. (416) 861-1933

HITEK SYSTEMS

Invites POs from gov't, corporations and public. Financing and leasing available.

Toshiba, IBM, Compaq, Zenith, Panasonic, AST, Canon Notebooks, Printers, Fax/Modems, CD-ROMs, Software, Hardware, and Accessories.

386 Mono Notebooks and Laptops from	\$699.00
Compaq LTE Lite TFT Colour 386, 4/120	\$2399.00
Zenith Active Matrix Colour 386, 4/120	\$1999.00
486 Mono Demo Notebooks from	\$1799.00
Toshiba T1910 486 4/200	\$2188.00
Toshiba T3400 Subnote 386 4/200	\$2299.00
Toshiba T1950 TFT Colour 486 2/120	\$3999.00
Panasonic CFV21 TFT Colour 486 2/120	\$4600.00
Canon Notejet 486 4/85	\$2499.00
Compaq Lite TFT Colour 486 4/200	\$5699.00
IBM Thinkpad 350c 486 4/125 Colour	\$2799.00

"We Specialize in Networking & Custom Software Designs."

21 Franklin Ave. Toronto
Ph.: (416) 222-2185
Fax: (416) 222-2545

EXPERT SERVICE FOR HP, OKIDATA, PANASONIC & RAVEN



LASER PRINTER REPAIR

- quality, reliable service
- fast on-site service
- preventative maintenance
- laser supplies and cartridges

O.P.M. OFFICE PHOTOCOPY MACHINES & BUSINESS SYSTEMS

(905) 275-3022

CALL FOR A FREE ESTIMATE

Addendum: Last Month's Cover



The "info surfer" image on last issue's cover was created and rendered by Kent Barrett. Here, in Kent's words, is a description of how it was done.

The challenge was to create an image of an "info surfer". I had as models several stock shots of real surfers in a variety of poses and wave conditions. The images came from the Ocean Imagery CD-ROM by Gazelle Technologies (619-636-9999).

Four and a half programs were used to create the image of the information wave. First, I used Adobe Illustrator to draw some curved shapes, producing a series of "cross sections" of the wave I wanted to produce. Next the shapes were imported as .eps files into Strata Studio Pro, where they were assembled as "ribs", over which a covering was "skinned". The process resembles the building of a boat. Once that was completed, the wave object was saved as a DXF polyline mesh. A second wave object, slightly smaller

and altered to fit inside the first, was created in the same fashion.

Next, I used Adobe Photoshop and Kai's Power Tools (which I consider half a program, because it runs as a bolt-on to Photoshop) to produce the watery pattern that was to be applied to the "inside" wave in the final image. Photoshop was also used to produce a page of 1's and 0's to be applied to the "outer wave". The 1's and 0's were colored with the Power Tools, and the background was set to black so it would disappear in the final rendering.

To render the waves, the DXF shapes were imported into Specular's Infini-D where they were arranged and lit to resemble the view in the original photo. At this time the patterns from Photoshop were applied to the DXF files. The black in the 1's and 0's image was rendered completely transparent, and the result is what you see, a pattern of 1's and 0's in the shape of a wave, with the shadows falling on the wave beneath it. The completed setup was raytraced on a Quadra 700 and took 5 days to render!

When it was finally finished, the rendered wave image was imported back into Photoshop. The surfer was then stripped from the original photo and composited into place in front of the rendered waves. Finally, the sky and water areas of the image were painted in and a shadow was added to give a better feeling of depth to the surfer and voilà: "Surfer DooOood". □

C&T

COMPUTECH

7800 Woodbine Ave., Unit 114
Markham, Ont. L3R 2N7

Tel: (905) 470-0023

Fax: (905) 470-1312

486 VESA Local Bus System

Intel 486DX-33 \$1,489

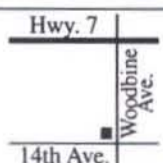
Intel 486DX2-66 \$1,638

All Systems include:

- 4MB RAM
- 128K Cache Memory
- 101 Keyboard
- 1.44 Floppy Drive
- IDE I/O Card
- SVGA Card 1 MB RAM
- Desktop or Mini Tower Case
- SVGA NI .28 Colour Monitor
- 260MB Hard Drive
- Mouse & Pad
- DOS 6.2 & Windows 3.1 with any System Purchase \$90

SPECIAL!!

Panasonic Double Speed CD-ROM	\$185
Sound Blaster 16/MCD Card	\$155
Zoltrix Fax/Modem 14.4K Int.	\$114
Zoltrix Fax/Modem 14.4K Ext.	\$145
Seagate 261MB Hard Drive	\$269
Seagate 341MB Hard Drive	\$335
Conner 420MB Hard Drive	\$369



Mon.-Fri.
10:00-6:00PM
Sat.
10:00-2:00PM

CLASSIFIEDS

CLASSIFIED ADVERTISING IS FREE FOR PRIVATE INDIVIDUALS. For businesses, Advertising Rates are \$7 per line (40 characters). Send in your ad along with payment for the August issue by June 24, 1994. (Personal Ads: an individual at a company can run an ad, but it must be for one-of-a-kind items for sale). FREE ads qualify for one month in the local edition only. Up to 2 ads per person maximum. All other ads classify as business ads and are subject to the \$7 per line charge.

BBS

1ST Class Amiga BBS Bloom Beacon. 283-5924.

AAP BBS. Something really exciting for your modem! Call 24 hrs. 19 yrs of age or older please. 416-237-1010/237-9337.

ARENA (Free BBS). 2400 to 14400. NO chat lines. JUST files. New. 416-652-9073.

COMPLETE 5-computer, 4-line BBS system. 905-549-2840.

DEVILS Delight 14400. 905-837-1713. Roboto.

EUPHORIA!! Download EUPHORIA2.ZIP.

GHOST Rider - Great beginners BBS PC Board 15.1 800+ meg online 2400-21.6USR. The staff here knows what it is like starting out and will be there to help. 416-696-2145.

INVESTMENT Club BBS for the do-it-yourself investor. Top stock picks, market talk, how to articles, buy sell timing, data exchange etc. 416-266-7005.

NEEDFUL Things is a fantastic graphical BBS. Open 24 hrs. 2400 to 14400. Online games, over 6000 files. RPG's, CD-ROM. NANet Friends Net. Robo/FX. 416-755-1971.

OPEN Windows - true windows BBS. 416-969-8219.

TECH Base BBS 1.5 gig of online files. Free access. Login at 57600 Zyxel high speed modem. 24 hrs. 519-763-6585.

THE Mix BBS 24 hr Int Net/Echomail & QwKSupport. GT Ntwk, latest shareware releases V32bis/HST 1200 to 16.8k baud. 416-841-8197.

THE Sports Board! DMP/Play/Gamebytes M distribution. One GB online Multimedia files/669/MTM/53M/STM/ULT files & lots more! 416-588-7815 at 28800 bps.

TRI FORCE BBS. New Mac BBS. Call 905-859-2585 to order login software. \$10 starter fee.

WE Got everything, doors, files. MSG'S+fun.

BUSINESS OPPORTUNITIES

CO-OP BUSINESS OPPORTUNITY

SUNIX is offering to business-minded computer-specialists to operate and manage one of the following businesses on a profit sharing basis (up to 50%). (no investment required):

1. Computer Repair Services
2. System and Memory Upgrades
3. Multimedia
4. Computer Security System
5. Networking System
6. SOHO Supplies
7. P.O.S.
8. D.T.P.
9. Electronics and Parts
10. Resellers and Buying Groups

REQUIREMENTS:

A. Minimum 2 years working experience on the related business.

B. Capable to develop a business plan, and to generate sales and profit.

TO APPLY: Mail or FAX your resume to: SUNIX Inc. 3850 Steeles Ave., W. #5 Woodbridge, ON L4L 4X6. Fax: 905-856-3136

OFFICE/Lab space available for emerging software developers/computer services group. Excellent Oakville woodland park prestige setting. Good access to QEW. Equity investment available for solid group with good prospects. Write in confidence: Michael Irwin Marketing, 487 Ann Avenue, Burlington, ON L7T 2S5.

EMPLOYMENT

HOW to earn \$75,000 with your PC. Send \$10 + LSASE TOVA Int. 9251-8 Yonge St. Suite 176, Richmond Hill, ON L4C 9T5.

WANTED: An individual with a good knowledge of scanning & enhancing photographs on CorelDraw or others, to consult/tutor. Call Tony 905-841-7197.

HARDWARE

1 COMPUTER Repair kit with: post board, QA + software & all original manuals/disk. \$98 (over \$270 new). 905-884-3166.

1.44 HIGH DENSITY DISKETTES \$ 6.00 per box (new) formatted. 466-7153.

2 GRAPHING/scientific calculators for sale - a Texas Instruments (TI-81) and Sharp EL9200, both 1 yr old with original manuals. \$70 each. Larry 416-248-5820.

10 NEW IBM Token ring adapters. Must sell - give away prices. Shabbir 905-508-0902.

14" Color EGA monitor. Comes with EGA card. Call Saied at 921-0902. \$150.

20MHz 386DX system \$550 & 286-20 system \$350 both with HDD, 3.5 floppy, 101 keybd I/O and mono video o/p. Evg. 905-884-3166.

42M IDE HD, new, \$100, 20m mfm hd \$50. Pocket modem, new \$50. Call 826-0569.

286-12 1m Ram 1.2 & 1.44 fdd. 43mb hdd. VGA card/b & w monitor. Modem 2400 internal. Epson LQ850 printer. \$500 obo. Adaptec AHA-1522B kit \$170. Brand new. Mail 416-503-4790.

286 Motherboard \$45; 1meg of DRAM for it \$20; 40meg hard disk. \$60. Call evg 905-884-6505.

286 Zenith 40mg hdd super VGA card mono monitor 5 1/4" disk drive nice machine for a beginner \$325. 905-456-3222 or 416-381-1620.

286AT, 1M, 43M HD, 1.2 fp, mono Monitor, k/b, Case, Mouse, \$295. 298-9940.

386 DX25, Intel 2mb Ram 60mb 1.2 & 1.44fd VGA monitor 3 button mouse \$750. 2 40mb HD \$80. Each 905-8896-9212.

386 Packard \$3200 includes software + 3 music + sound card printer Epson \$325. Other software neg. 416-242-7391.

386DX25, 2mb Ram, 45mb hd, vga, 1.2 & 1.44 floppies, color mon., mouse, keyboard. \$550. Call Pete after 5pm 905-457-5786.

386DX33 4mb Ram 80mb hdd 1.25 & 1.44 mb fdd VGA color monitor 101 enhanced keyboard 1 yr old. 905-890-0865.

386DX33 4m RAM 130HDM SVGA 14" (NI) 9600 Fax Modem. WIN3.1 WP 6.0 \$1000 obo. Tony 905-319-3233.

386DX40 Motherboard \$95, also 1.2m & 1.4M floppies \$30 each. Call 905-634-2541.

386DX40 w/4mb Ram 1.44/80mb 101kb SVGA w/512K mini tower, mouse, loaded. \$580. 905-472-2016.

386DX25 4mb Ram, both floppies, 40 & 130 mb hdds (int), ATI VGAWonder card, Goldstar 14" mon, software and DOS6 \$1200 obo. Call Drew 905-836-0254 after 6.

386SX system 1.2 mb floppies 2mb Ram 40mb hd. WP 6.0 DOS 6.2 etc. \$450 obo. 466-7153.

386SX, 2MB, 85HD, 1mb VGA, sound \$540. 696-6904.

386SX, 80mb HD, 2MB Ram, dual HD floppy, VGA on BRD \$465, 286-12, 20mb hd, 640K Ram, 14" mono \$235. Rob 416-398-8808.

386SX16, case \$120 obo. Call Mehdi 391-1668.

386SX33 Sys. 40mb hd 2fd 2m Ram RVGA cord 101kb. Lots of software. Ask \$530/obo. Hong 416-461-5115.

486/66 VEGA System loaded sell parts of whole. Details Mike 905-508-6848.

486 33Mhz 2mb Ram 40-80mb hd, 2 floppy, m monitor. \$650. 224-8223.

486DX Mainboard 128K Cache No CPU \$90, 1mb SVGA card \$70, IDE controller \$10, Modem 2400 obps \$30, MS. Serial mouse \$10, optical mouse \$40. Call Jim at 905-949-2768.

486DX66, 8meg.exp128m, 256k cache, exp 1m, 600 meg hddisk, 1 meg VLB disk controller exp 16m, 256k cache, 3meg VLB Videocard, 16 bit sound, Toshiba CDROM & Bernoulli 150 multidisk w/Adaptec SCSI, LaserJet printer 8ppm w/1.5 and more. \$3500. Rod 286-0112.

486DX266, Topas Pro 3D 16 mb Ram,

500 mb hd, Vesa local bus, ATI Ultra Pro 2mb, 5.25, 3.5 flops, CDROM, 17" monitor, sound blaster + speakers \$5000. 516-1117.

486SX33 4mb Ram 170mb hd SVGA color monitor everything is brand new. \$999. Call 416-264-5133.

AE HD + drive for Mac2 no motherboard change necessary (as new). \$200 705-722-3297.

AMIGA 500 1mb 1084S monitor, 2nd ext. drive. WP, Spreadsheet deluxe print & music, printer & many games. Best offer. 905-845-7265 eve.

AMIGA 500 1mb Ram 2 floppy drives, IBM compatible board, monitor stand, software, manuals. \$300 obo. 416-244-7246.

AMIGA 500 w/1 meg expansion, joystick, games, monitor (excellent condition). Call at night 7:30-9 pm. Ask for Chris 905-713-0843.

AMIGA 500: 1meg, 1084 color monitor, great for games, 50+ quality games. Call for offer or \$350. Extras included. 905-896-9814.

AMIGA 2000 1mb Ram, 2x3.5" drive, 1084 monitor. Best offer. 905-764-1178. Akl.

AMIGA 2000HD with 1meg Ram 53meg hdd color monitor Amiga DOS, Workbench, Advantage program. Desk included. \$1000 obo. 705-734-0252.

ARCHIVE Model 4520 SCSI 4mm dat 1.2GB Tape backup drive. \$500. Call Mark 860-9189.

ARCNET Cards \$40 ea, 8 bit TP/Coax, puredata PD1507, Katron ARC120. Call Frank 9-5pm 369-5003.

ATARI 512stfm. megafile 30, hd, SC1435 color monitor, software. 488-2637.

ATARI 1040ST, w/extras \$499. 905-841-5577.

ATARI Portfolio, 128K Ram, 64K Ram card, 1 Program card, AC adaptor, hardly used. \$175. 905-564-5965.

ATI Graphics Ultra-. ISA. w/2Meg. 495-9059.

CALCOMP 1043GT DM 36 Pen plotter - roll or cut sheet manuals ADI Drurs & supplies. \$2700. Call Alex 416-788-0575.

CANON Bubble Jet 200 printer for sale. (unopened). Warranty for 1 yr. \$299. 416-534-2564.

CASH Drawers - serial and parallel. New in box. Best offer. Paul 905-886-0796.

CD-ROM Philips CM206 (double speed) with interface \$200 + bonus - free cd. Call 769-0096.

COLOUR PRIMERA thermal transfer printer. NEW \$1045. Call Jason 905-294-6022.

COMMODORE 64/64C repairs/trades/buy/sell & all peripherals. Will buy dead items too. 905-989-1389.

COMPAQ 486DXII66 Portable. 12mb Ram, 530mb hdd, active mono display, internal 14, 400 fax/modem, carry case. \$4600 obo. Seagate hd 426mb, 120mb SCSI-2 \$530/\$180. Call Thanh 416-503-4790.

COMPLETE 5-computer, 4-line BBS system. \$7500. 905-549-2840.

COMPLETE BBS setup, PCboard, 5 computers, 4 lines, USR modems, \$6,500. 905-549-2840.

COMPLETE XT system; hard disk; floppy; monitor; I/O etc. \$150. Call 905-884-6505.

CREATIVE Labs card 2 \$99. 286 2 Ram 40hd 1.2 fi mono monitor kb mouse Dos 6 Win 3.1 \$350. Roy 264-5613.

DATA Copy full page scanner. Best offer. 416-323-1871.

DELL 486DX33 F Tower 24hr online support 340 HD, 12mb, ATI 1mb Ultra, NEC 2x CDROM, 1542 SCSI Kit, 1b bit sound-blaster, fax/modem 1.44 and 1.22m FD, software and manuals. Only \$2200 firm. Call Ray 905-796-9890.

ELECTRONIC ORGANIZER Sharp IQ8300 PDA 128kb (only 7 left) \$189 new 499-2888.

EPSON FX1050 24 pin letter quality printer. Good condition. 905-890-0865.

FAX/Modem 96/24, software, installation, manual \$40. John 905-569-8838.

FOR SALE - 80Meg IDE drive \$100, 286 motherboard with 2meg Ram on board \$90, 386SX-20 motherboard \$90. Call 416-748-5817.

HAVE a Commodore Pet 2001 series. Require tapes for setting up system. Please call 905-841-0558 after 6pm.

HEWLETT Packard Slimline Vectra 386, 4meg Ram SVGA with monitor and 9600 bps fax/modem asking \$550. Call Anthony 905-855-1028.

HP Laser Jet 3P for sale. \$900. 837-5108.

HP LaserJet 4P 4PPM. True 600 DPI. 2mb. 45 scalable typefaces. Toner included. Brand new, still in box. Warranty \$1300. Mr. So leave message 416-221-6892.

IBM 386DX33 M/b/d, ok \$120 obo, SB card w/cms chips \$100, ATI 1m VGA Wonder-16 w/mouse \$160 obo. 905-821-2760.

IBM PS1 286 System for sale, 1mb Ram 30 mb drive. 1.44 mb floppy drive, VGA monitor. 101 keyboard, 2 mouses, modem, software - Microsoft Works 2.0, DOS, 4 and more. \$800-900. 905-271-4433.

LASER printer HP II/III cartridge recharge at \$48 guarantee high quality. Tel 223-7671.

LINOTRONIC Printer100 + Postscript + Processor in good condition. Best offer. 416-323-9067.

MAC 88 Syquest ext drive with 1 cart. in excellent shape \$430. Additional 88 charts. \$115. Call 924-2697.

MAC CLASSIC II, 4/40 Stylewriter II & MS Word, 6mo warr. Jennifer @ 322-7734.

MAC Color classic, sparingly used, 16 mon warranty, 4mb Ram, 80mbHD, 256 color monitor, built in sound card & mike, preloaded software. Call 905-856-3304.

MAC External floppy disk drive \$65. WordStar 6.0 Software for IBM \$25. Call 661-9766.

MAC LCII, 4/80, system 7.1 with software, utilities and games. Like new! Purchased Oct 93. No keyboard or monitor \$550. Call 416-322-3052.

MAC POWERBOOK PB140 4/40 w/sw mint \$1500. Go outside with this. 920-3607.

MAC SE-20, deskwriter Kensington mouse, assorted Mac cables, Quicken (Mac) BO. 905-886-0796.

MICROSOFT Brand serial mouse. J-shaped ergo model \$50. A few misc PC hardware items for sale. 495-9059.

MICROSOFT mouse for sale. Brand new, never used. Ergonomic design, serial version, Asking \$75. Dave 416-269-5947.

MODEM GVC 2400 EXT \$25 & GVC9600 ext \$75 & 1 Epson LX800 Printer \$50.

MODEMS - 2400 Baud int for Compaq Lite & Toshiba laptops. BO Rob 416-398-8808.

NEW - Canon BJC600 color printer. Only \$750. Call 905-275-6143.

NEW - Compaq Contura notebook computer 486-25Mhz, 120mb hd, dual scan color trackball, Windows & DOS 6.0, nickel hydride battery pack. Only \$3500 275-6143.

NEW HAYES 28.8kb fax/modem 416-748-1603.

NEW LCII 4/40 with original software \$1100 obo. Tom 416-235-1313.

PANASONIC KX-P2180 printer for sale. Like new. Color compatible \$95. Dave 416-269-5947.

PRINTER Canon BJ200 \$300. Laptop AST Power Exec EI \$1000. Hard drive Seagate 130mb \$200. Fax/modem IBM options Mod533 24/96 \$90. Modem Supra 24 \$70. Seat support Obusform \$60. All new. 905-851-9404.

QUANTUM Harddisk 105 MB \$105, Everdata 14" SVGA color monitor \$250 obo. Call eves Raymond 905-771-0479.

SCANNER Artscan handscan with software and OCR. \$150. 966-2535.

SELL as whole or in parts 386DX40, 14" SVGA color monitor \$250, Fujitsu DL1100 24 pin color only 200 sheets put thru it \$250, 8 1/9 Sirmm 70ms ram chips \$55 ea., 125 meg Quantum disk drive \$200,

3.5" & 5.25 disk drives \$40 ea., 386DX40 motherboard expandable to 486 \$50, keyboard & mouse \$25. Entire package \$1100. Call 905-822-9966.

SIMMS 4-256K \$35 286-16MHz 640K \$15 Star NX2400 not fully functional \$45. Linux CD-ROM Jan 94 addition \$40. Better working 8-in-1 \$15 great for XT with CGA all items obo. Call Dino till 9 282-5984.

SOUND Blaster pro deluxe. 2 mos old w/software & manuals. Call Tony anytime leave msg \$95. 416-392-2060.

STAR-NX1000 9Pin dot matrix printer. Excellent condition. Asking \$100. Call 416-948-7200.

SUPER Famicom c/w 4 games inc. Super Mario F-1 ROC Golf AC Adaptor and AV jack for stereo sound, plays usual us. cartridges exc. condition. Ask \$250/offer. Call eve 416-924-2955.

SVGA Monitor, NEC 2V unused since bought \$250. Call and leave msg 905-571-4980.

TIMEPLEX Link2 for sale. 3 nodes: 2-18 slot nest, 1-13 slot nest. NCL+, ILC.2QSC.0, QVM.6, Time View 2000 2.1 on Sun Sparc. Call Ken Wilson 204-958-5372.

TOSHIBA P351 Printer for sale. Wide and narrow carriage with sheet feeder. \$250. Call Domenic 416-751-4833.

TOSHIBA T1200 1fd, 20m hd, 1200 modem 1mb, with 8087-2. \$375 obo. Call 416-695-3151.

TRIDENT SVGA 512K Card \$35. 905-579-8367. 16bit I/O Control card \$10. 905-579-8367.

UNICORN Setup disk and Unicorn expanded key board for Apple II, II+ and IIE \$200. 705-687-6168.

UNIMOUSE Tablet for Macintosh. \$100 Call 705-722-3297.

VGA Monitor for sale IBM PS2 monitor. Asking \$150 obo. Also brand new fax modem - 14.4 Boca Int for \$200 obo. Still in package. Call Shawn weekends/evenings after 10 pm 905-731-9898.

XT 8088 10Mhz 40m hd 2-5.25 floppy mono mon keybd. Great unit for the beginner or for keeping records and files. \$300 firm. Aft 5pm 755-0897.

XT Computer, floppies, software. Must sell - give away prices. Shabbir 905-508-0902.

SERVICES

On Site Services

- Hardware & software trouble-shooting, upgrading, including motherboard, memory, FAX/modem, sound card, HD and data recovery, etc.
- Network installation" (Novell & Lantastic).

\$30/Hr or \$60/Proj. CALL 416-720-7176

COMPUTER/DTP Lessons: Perfect for the university/private individual. An introductory lesson(s) to the Mac or DTP, etc. Reasonable. Call Barry 889-5311.

ELECTRONIC Organizer, Sharp IQ8300 PDA, 128kb (only 7 left). \$189. New. 499-2888.

FINANCING AVAIL on any computer over \$2000 OAC Pentiums avail. Call 969-0560.

HARD Disk repair \$40. PC troubleshooting, repair, upgrade, support. Call ITS 503-0072.

LEARN One-on-One WordPerfect 6.0 Win. Quattro Pro 5.0 Win. 10 hrs \$75 in advance. Call LP CompuService. 905-724-7353.

MAC 11 data transferred and translated to IBM or MAC format. 604-521-8618.

NOVELL Installation, performance and capacity planning. Unix system tuning project development. Call 756-2563.

SUNSGAGE Repetitive Strain Injury (RSI) Prevention Program. Designed for groups and/or individuals. Includes: education of RSI's and risk factors, TRAGER movement re-education, body dynamics, physical conditioning and applying design/redesign ergonomic principles with many practical tips. Paul Hyman 767-5655.

TROUBLE WITH YOUR PC? In-home help is just a phone call away. Software instal-

lation, hardware problems and upgrades, system setup, etc. No job is too small! Reasonable rates. Call David at 425-5965.

SOFTWARE

ACES OVER EUROPE \$30, Aces of Pacific w/1946 disk \$30, Red Baron w/Mission Builder \$25, 285-9743.

ACT - 5 user contact manager from Symantec. New Version 2.1 for DOS. Call Zev at 416-225-5595. Retail for \$1300 will sell for \$800.

ARTFULGold \$229. Clipper5 \$149. 905-332-78

COMPUTER DIRECTORY

Custom Software Specialists

Specializing in consulting services in:

- Business/Engineering Software
- Windows, DOS, OOPS Applications
- Networking, Multi Platform Connectivity Applications
- Visual Basic, Access, Visual C/C++, Crystal Reports, SDK, VBAssist, DataWidgets
- Clipper, R&R



Electronic Business Solutions
Call Gord Dubey (416) 801-9722

WE BUY & SELL USED COMPUTERS

Buy + Sell • Trade In • Trade Up
Used Computers from \$199 - IBM Compatible

Dominion Business Machines

100 Adelaide Street East
364-2978 Since 1902 364-0191

AVRO ARROW COMPUTER ANIMATION

AWESOME! REALISTIC!
FULL COLOR, HI RES, STEREO, ACTION PACKED
TO GET YOUR COPY, SEND \$14.95 + \$3.00 P&H TO
MACH 3 GRAPHICS, 7270 WEAVER CT., VANCOUVER, B.C. V5S3Y8
IF YOU'RE AN ARROW FAN, YOU'LL LOVE THIS VIDEO! VHS

CUSTOM CONTROL & INTERFACE

276 Carlaw Ave. Toronto, Ont. M4M 3L1



- Design & Manufacture (Analog & Digital)
- Prototypes (From Concept to Product)
- Embedded Systems-Single Chip Computer Programming
- Industrial Automation & Control
- Computer Setups-Custom Interfaces
- Electronic Advertising Props

Since 1986 TEL: (416) 236-8079
FAX: (416) 461-1673

Engineer, Sean O'Leary (Whiz Kid)

GREAT PLAINS **DYNAMICS** **DELTA** **digital**

Award Winning Graphical Business Software for Windows, Macintosh, and UNIX.

Canadian made, easy to use Business Software for Retail, Wholesale and Contractors.

Canadian made Intel, Pentium, and DEC Alpha AXP systems. 3 yr warranty

- Business Analysis- Installation - Training - Customization -

Business Solutions From
Gerald Clement MBA, certified implementation specialist
Computer Productivity Services 1-(905)-848-3053

ADS Advance Depot Service

IBM PS/2 8512, 8513 Monitor Repair At \$55.00
VGA Color Monitor & SVGA Color Monitor on SALE from \$15.00

IBM, Apple, NEC, Hewlett Packard, Okidata, Panasonic
Wyse, Compaq, Raven, Packard Bell, Epson

- ☒ Free estimates
- ☒ Network installation
- ☒ On-site service

450 Alden Road, Unit 5,
Markham, Ontario L3R 5H4 Phone: (905) 479-9542

SAVED BY TECHNOLOGY
CD SERVICE BUREAU
Roll your own CD-ROM or CD
Audio masters for just \$250!

We'll put up to 650MB of your data permanently onto a Mac or PC-format CD-ROM (additional charge for copying from removable media). Need more? Additional identical discs are \$125/each. Call Naginder Manhas @ 975-8768 for more info. We do CD Audio too - call Brian Bell @ 928-6434 for more info.

SAVED BY TECHNOLOGY
10 Broadbalk Street • Toronto • ON • M4Y 1C3

3T 2000's Technology (3T) Inc.
Computer Products Sales & Services

Computers & Parts
(Dealer Price)
Upgrades/Rentals
Networking/On Site Services

Tel: (416) 502-2055
250 Consumers Rd., #100 Willowdale

PUT OUT BY OUTPUT?
IS YOUR ADVERTISING...
Taking Too Much Time? Costing Too Much?
Not Pulling as Effectively as You Know It Should?

HAVE YOU GROWN ENOUGH...
To Need Professional Quality Production & Placement
Without the Overhead of a Full Service Ad Agency?

CAN YOU RISK...
Getting Less Than 100% Bang for Your Advertising Buck?

There IS an AFFORDABLE Alternative
(416) 236-8672 **eye-fi**
Production • Placement • Consultation • Training

BUSINESS VISION
Canada's #1 accounting software.
II+2 \$699. Turbo \$899. Delta \$1299.
Call for a FREE demo disk.

CORPORATE TAX RETURNS plus TAX PLANNING
from \$399. Call for a FREE quotation.

GRANATRON ACCOUNTING INC.
(416) 633-2179

DATA RECOVERY
Canada's leading experts on file retrieval
Complete Facility for Hard Drives
Diskettes and Removable Media

DOS • MAC • Novell • UNIX
Free evaluation 'No files - No charge'
Nationwide service - Highest success rate

Charges from \$150

CALL TODAY FOR A
FREE INFORMATION
FAX PACKAGE
(416) 510-6990
1-800-563-1167

30
Ready-to-Use Standard Form Templates for
Graphic Design Businesses, Advertising Agencies,
Corporate Creative Departments and DTP Users.
In Corel Draw Format. Fully Editable with Room for
Company Logos and Other Information.

Manual and Disk Introductory Price
\$19.99 - Taxes and Shipping

FANTOM ARTS COMMUNICATIONS INC.
To Order, Or To Find
Out More About Our Other
Graphic Design Services
Call
(416) 429-9898

ASCI INCORPORATED
Your Building Block
To System Excellence

SOFTWARE COMPANY (905) 936-9100 Fax 936-9099

- Database Design/Development & Technical Support
- 10 Years In The Industry
- Consultants to Government, Institutions, Corporations & Developers In Canada & Abroad
- On-Site Training
- Very Large Systems Specialists
- Specializing in - Database Products Including Paradox & Superbase
 - System/Crash Recovery
 - Data Porting - System Re-Development

LASER CHEQUES For Quicken & other Accounting software

- Standard business cheques also available.
- 40% less than the bank. • Shipped within 48 hours!
- Guaranteed lowest price! • Company logo included!

Security features on all our products!
Quick Cheques Inc.
63 Mallory Cres. Unit 3, Toronto, Ont. M4G 3L6
Tel: 416-425-6993 Fax: 416-425-6828
Toll Free: 1-800-361-5675

COMPUTER / FAX • SALES • RENTAL • LEASE

ABS Group
The Computer People
In business since 1971

Olivetti 386 w/VGA Colour Monitor & Olivetti 6 ppm Laser Printer
— \$1495⁰⁰ pkg price for Demo Models while supplies last!

ON THE ROAD SERVICE REACHES YOU IN 2 TO 4 HRS

(416) 636-2571

AutoCAD BY CORRESPONDENCE
Student Edition of AutoCAD available.

AutoCAD 2D, 3D, Customizing, and AutoLISP courses.
AutoCAD Operator Certificate
Authorized Autodesk Training Centre

For a free brochure write or call:
ACET Department, SAIT
1301 - 16 Avenue NW
Calgary, Alberta T2M 0L4

Phone: (403) 284-7202
Fax: (403) 284-8812
BBS: (403) 284-8112

Southern Alberta Institute of Technology

We want new original programs.
We publish & market low cost software for Windows with good graphics & GUI.
We will pay for any good & marketable programs.
Call Us Now.

Students' / Freelancers' Software Wanted

Ponlix Multimedia
Educational / Entertainment Training / Windows Games
A CD-ROM & Software Publisher
(416) 609-2083

SALE!!!

Cases	\$52	Memory	\$55/Mb
Mouse	\$9.99	3.5 HD Disk	\$5.50
Floppy Drive	1.22 \$53	Fax Modem ext.	\$95
	1.44 \$48	int.	\$69
16 bit Sound Card w/accessories			\$139
Keyboard			\$18.50

HARD DRIVES

127 Mb	\$165	200 Mb	\$235
170 Mb	\$220	245 Mb	\$279
340 Mb	\$340	1 Gig	\$899

MICROBUS
3248 Sheppard Ave. E. Ste. 204 (416) 321-0895

Index of Advertisers

Accessories	ACM Comp. System Ltd. 49	Cotech Computer Inc. 52	Microland Comp. Sys. 69	TOR 6	Service & Consulting
Cameron of Canada 12	Across The Ocean 8	CPU Data Systems 50	Microview 72	TTI 45	Abba 89
Accounting	Adam Peripherals 26	C&T Computech 85	MIT Computer Supplies 39	Ultinet 3	Advance Depot Service 88
Granatron Acctg. 88	ADI 58	CTC Computer Telenet 80	MPM Industries 29	Unicom Computer Corp. 40	ASCII S/W Comp. Int'l 88
Books	Advanced Home Auto. 55	CTS Computer Comp. 28	MPT Computers 26	Vina Computer 76	CAN AM POS 76
Bookware Comp. Bks. 65	Alpha Computer Conn. 56	Digital Equipment 9	Multimedia Effects 33	World Business Sys. 23	CLT/Commercial 8
Computer & Book Ctr. 65	AmPAQ 17	Dominion Bus.Mach. 88	Musicware Distributors 66	Yeuko 18	Computer Prod. Serv. 88
CPIC - Tech. Bookst. 63	Anchors Away Corp. 71	Eurocom 36	N.E.D.L Computer 54	Zegna 57	Custom Control & Interf. 88
MC3 64	Anubis Computing Cda. 40	Faxcessories 78	Neta Computer Cons. 54	Zodiac Systems 12	Data Recovery 88
Micro Comp. H/W Dir. 63	Apix 89	Focuonics 34	O.P.M. 85	Zykel 14	Dinamis Corporation 62
Mississauga Comp. Bks. 64	Ashteq 42	GC Systems 72	Onward Computer 83		On-Site Services 89
Toronto Computer Bks. 63	Baran-Harper Group Inc. 66	Genicom 14	Optimicro Tech. Inc. 51		Paul H. Animation 88
Desktop Publishing	Betacorp 49	GigaTrend 61	Pacific Royal 25	Lottery	PC Docs 78
eye-fi 88	BiCMOS Trading Int. 76	Global Drive Solutions 55	PC Factory 46	Smartluck 75	Quickcheque Inc. 88
Fantom Arts 88	Big Boss Computers 51	Hi-Tech Services 53	PC Solutions 61		
Graphic Solution 52	Bondwell 92	Hitek 85	Plustek Canada 67	Manufacturer	
Events	Boscan 56	HITS 69,90	Ponlix Multimedia 73	Memory Diskett 22	Service Bureau
Comdex Canada 74	BUS Bus. Ultimate Sys. 34	HVM Computer 73	Ponlix Multimedia 88	YHC Cassette Ind'l. Ltd. 12	Presentation Edge 89
Hardware & Software	Business Comm. Util. 52	IBM Canada Ltd. 4	Rocket Computer Sys. 34		Rose Hill Press 58
1 Stop Comp. Shop 60	Byte Info Systems 44	IC Technology 79	Rosebud 45	Networks	Tri-Tech 79
123 Comp. Warehouse 32	CAD Connection 46	ICCT Technologies 53	Samware 48	Crestline Technologies 58	PC Service Bureau 69
2000's Tech. 73,88	Canadian Bus. Auto. 71	Kehtron Computer Inc. 68	Saved by Technology 88	PSP Canada 65	Image Control 51
3A Computers 11	Caranet 61	KGB 31	SBL Sys. Builders Ltd. 81	Online	Shareware
A plus Software 27	Claris Canada 7	KV Computers 42	Sciecom Comm. 35	ComputerLink 14	Marcom Comp. Cda. 31
A&G Computer Depot 54	CMS Computers 64	Lance Electronics 43	Signa Computer 24	CRS Online 70	Shareware 89
ABC Computers 41	Com Bus. Service Ctr. 79	Lantec 53	Sirus Tech 15	Hookup 8	Vitek 49
Ability Plus 35	Compac RBM Systems 83	Lava Computer 72	Smart Machine 79	The Connection BBS 89	
AC Systems 36	Compass Technologies 16	Lexmark 12	Stac 21	Personnel	Training
ACC Technology 61	Compatible Plus 73	Logic Computer House 19	STD 91	TMG Inc. 80	Microbus 84
Access Business Centre 29	Complete Micro Sol. 2	Maxibyte 62	Steals Direct 38		SAIT 88
ACEEX 47	Compu City 62	MDG 59	Sunix Inc. 60	Rental	SoftTrain Institute 84
	CompuCanada 28	Media CD Shop 8	Sunni Microlab 68	ABS Group 88	SonoGrafix 84
	Comp. Liquidation Ctr. 78	Microbus 88	The Compu Library 13	Comumemories 50	Starlight Inc. 84
	Computer Parts Surplus 48	Microcad 6	The Notebook Store 37	Wonimation 89	Training Now - For Tom. 84
	Compuworld Plus 10	Micro Drives Canada 20	Throne Computer Sys. 82		User Friendly Org. 84
	Connell Computer 80	MicroGram 59	Trison Electronics 30		Xemix 84

TELL
ADVERTISERS
YOU SAW
THEIR AD IN



To Advertise, call (416) 588-1580.



RENT • RENT • RENT • RENT • RENT • RENT

IBM COMPATIBLES, LAPTOPS & PRINTERS

RENTALS • WEEKLY • MONTHLY • YEARLY
FREE DELIVERY AVAILABLE

MONDAY TO FRIDAY

11:00 AM - 6:00 PM

(905) 829-2155

Best Prices
in Town!

SPECIAL RENTAL PLAN FOR SMALL BUSINESS OR HOME OFFICE
STUDENT DISCOUNTS ON RENTALS
ALSO SALES • SERVICE • LEASING • TRAINING
• PRINTERS • MONITORS • MODEMS • RIBBONS • NETWORKING
• ALL COMPUTER ACCESSORIES

Wonimation
OAKVILLE, ONTARIO

WANTED!

Full-time freelancer to do
graphic design for
food packaging industry.

Experience preferred.

All-aspect knowledge of
QuarkXpress, Illustrator
and Photoshop for
Macintosh is essential.

Call Alex (416) 665-7376

For users of
CA Simply Accounting™

Journal Master

A full-screen editor that
edits - resequences - inserts - deletes
replicates - scan/replace - custom reports
on the General Journal
Software dimensions Inc. (416) 604-7600

The Connection BBS

Experience the Adventure!
News and Information
Downloading/Uploading
Shareware/GIFs Meeting People
Networking Around the World
Canada's Most Popular BBS
Making Friends Internet E-Mail

Call (905) 882-8161

Outside Toronto (416) 229-9732

ON-SITE SERVICES

ON-SITE PC, MAC, MONITORS & PRINTER
(LASER) REPAIRS. UPGRADES TO VIRTUALLY ALL
BRANDS. NEW & USED PARTS. NETWORK &
SOFTWARE SUPPORT. SERVICE AGREEMENTS.
FONTS: PUNJABI, BANGALI, HINDI & GUGARTI

PCs Xpert Corporation Rates From \$35
100 Westmore Dr. Unit 11C (416) 520-7102
Etobicoke, Ont., M9V 5C3

ABBA Computer

VIDEO PROFESSOR @ \$30

The Best in Video Training

INK JET REFILLS (4) \$47.95

RIBBONS & RE-INKING EQUIPMENT

LASER RECHARGE \$59 & up

EXECUFOLD REPAIR

21 Amber Street, No. 4, Markham, ON L3R 4Z3
Phone (905) 477-4033 Fax 477-1931

PRESENTATION
EDGE INC.

Suite 200, 138 Huron Street
Toronto Ontario M5T 2B2
599 3869 Fax: 340 9309

PC/WINDOWS LINO OUTPUT
PLUS FILE CONVERSION MADE EASY
MAC-TO-PC AND BACK AGAIN!

- 2400 dpi Paper and Film lino output direct from Windows
- Supporting CorelDraw, Quark XPress, PageMaker, and all major Windows applications
- 1200 dpi Plain Paper output
- 24-bit Colour Printing on a Canon Colour Laser with a Fiery Rip
- Crosfield 4000 dpi Drum Scanner
- Fuji Colour PrePress Proofs

Cross-Platform Experts! Send us your MAC and PC files for outstanding service!

IBM SHAREWARE

High Quality Programs, Latest versions, AS LOW AS 99¢ per disk
Home/Business, Games, Education, Databases, Utilities,
Graphics, Music, Engineering, & Windows Appl.
Please call, write or fax for a free Menu-driven Catalog
(specify 3 1/2" or 5 1/4" disk)

To: SHAREWARE CONNECTION, P.O. Box 68028
Calgary, AB T3G 3N8 Voice/Fax: (403) 241-2672

APix Tel: (416) 750-9909

AMIGA Products

- Amiga CD 32.....\$445
- Amiga 4000/040'sfrom \$220
- Warp Engine 040from \$1,110

We carry a full range of accessories for the
Amiga, MAC, & PCs.
Please Call for pricing on these items.

Office Hours: M-F 9am to 8pm

HITS THE POWER YOU

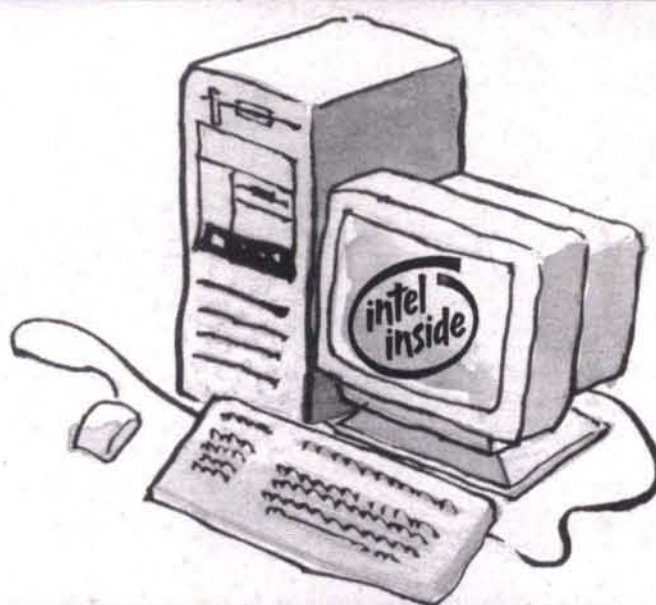
COMPUTER & ELECTRONICS

INTRODUCING THE INTEL® DX4™ SYSTEM

DX4™-100MHz Intel® CPU

\$2299

- Intel 486DX4-100MHz CPU
- VESA Local Bus Main Board 256K Cache
- 8MB RAM, Expandable to 112MB
- Panasonic 1.44MB Floppy Drive
- Maxtor 345MB Hard Drive
- 32-Bit VESA Local Bus Video Adapter with 1MB, Exp. to 2MB
- 32-Bit VESA Local Bus IDE Drive Controller
- Medium Tower Case with 6 Drive Bay
- 2 Serial, 1 Parallel & 1 Game Port
- 101 Enhanced Keyboard
- Microsoft Compatible 3-Button Mouse
- DOS-6 Installed with Manual & Disks
- Two (2) Years Parts & Labour Warranty (Monitor Not Included)



486DX-33 Intel CPU

\$1529

- 486 VESA Local Bus Main Board 128K Cache Expandable to 256K
- Intel 486DX-33MHz CPU
- 4MB SIMM RAM (70ns), Expandable to 32MB
- Panasonic 1.44MB Floppy Drive
- Maxtor 170MB Hard Drive
- 32-Bit VESA Local Bus Video with 1MB
- 32-Bit VESA Local Bus IDE Drive Controller
- 14" SVGA Non-Interlaced Monitor 1024x768 & 0.28dp
- Mini Tower Case 200W Power Supply
- 2 Serial, 1 Parallel & 1 Game Port
- 101 Enhanced Keyboard
- Microsoft Compatible 3-Button Mouse
- DOS-6 Installed with Manual & Disks
- Two (2) Years Parts & Labour Warranty

Upgradable to PCI Local Bus for only \$199

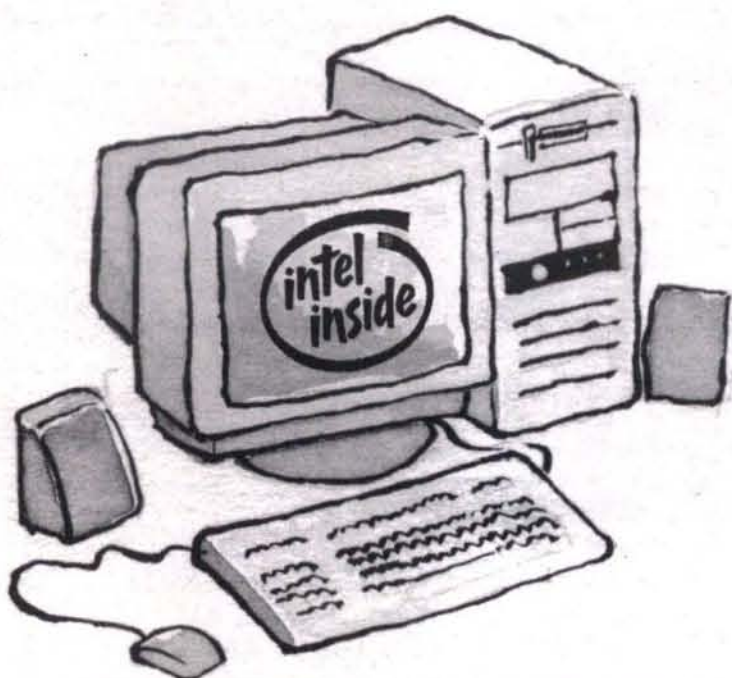
NEED

486DX2-66 Intel CPU

\$1759

- 486 VESA Local Bus Main Board 128K Cache Expandable to 256K
- Intel 486DX2-66MHz CPU with Cooling Fan
- 4MB SIMM RAM (70ns), Expandable to 32MB
- Panasonic 1.44MB Floppy Drive
- Seagate 260MB Hard Drive
- 32-Bit VESA Local Bus Video with 1MB
- 32-Bit VESA Local Bus IDE Drive Controller
- 14" SVGA Non-Interlaced Monitor 1024x768 & 0.28dp
- Mini Tower Case 200W Power Supply
- 2 Serial, 1 Parallel & 1 Game Port
- 101 Enhanced Keyboard
- Microsoft Compatible 3-Button Mouse
- DOS-6 Installed with Manual & Disks
- Two (2) Years Parts & Labour Warranty

Upgradable to PCI Local Bus for only \$199



MULTIMEDIA 486-33 System

\$1499

- 486 VESA Local Bus Main Board DX2 & Pentium(P-24T) Upgradable
- Intel 486SX 33MHz CPU 128K Cache Memory
- 4MB SIMM RAM (70ns), Expandable to 32MB
- Panasonic 1.44MB Floppy Drive
- 120MB Fast IDE Hard Drive
- Trident SVGA Video with 512K
- 14" SVGA Colour Monitor 1024x768
- Mini Tower Case 200W Power Supply
- 2 Serial, 1 Parallel & 1 Game Port
- 101 Enhanced Keyboard
- Microsoft Compatible 3-Button Mouse
- DOS-6 Installed with Manual & Disks
- Panasonic Double Speed CD ROM Drive
- Sound Blaster Pro Sound Card with CD Interface
- Stereo Speaker & Multimedia Encyclopedia CD
- Two (2) Years Parts & Labour Warranty

Richmond Hill
420 Highway #7E, Unit 14
Tel: (905) 889-6513
Fax: (905) 889-3125

Port Colborne
633 Main St. West
Tel: (905) 835-2244
Fax: (905) 835-0239

Scarborough
63 SilverStar Blvd., A-16
Tel: (416) 754-8887
Fax: (416) 754-8380

Mississauga
1350 Matheson Blvd.
Tel: (905) 238-8701
Fax: (905) 238-1586

NEW Toronto
419 College St.
Tel: (416) 603-2283
Fax: (416) 603-0752

NEW North York
3802 Victoria Park
Tel: (416) 499-2889
Fax: (416) 492-6501

Prices have been cash discounted and subject to change without notice • All trademarks are the property of their owners • All pricing is already cash discounted

CompuPARTNER[®]

YOUR PARTNER IN

- BUSINESS APPLICATIONS
- EDUCATION
- HOME ENTERTAINMENT
- FUTURE TECHNOLOGY & INVESTMENT



The Intel Inside Logo is a trademark of Intel Corporation.

CompuPartner systems use Intel processors.



GREEN IS NOT JUST A COLOUR. IT'S POWER AND EFFICIENCY.

The new family of CompuPartner 486 green PCs is designed to meet your power-hungry computing needs for a price that fits easily into your lifestyle.

Power savings and Power efficiency do not mean compromising your performance. The entire family of Intel processors in our green PCs delivers maximum power and speed, while the built-in Power management enables our green systems to meet the highest EPA Energy Star Standards.

We take pride in being your partner in computing and we are committed to maintaining our position at the forefront of information technology. CompuPartner is a Canadian product built with Canadian people in mind. CompuPartner is proudly distributed by authorized dealers across Canada.

CompuPARTNER

built by



Vancouver
Tel (604) 278-2893
Fax (604) 278-2861

Markham
Tel (905) 477-0388
Fax (905) 477-2861

Edmonton
Tel (403) 466-6800
Fax (403) 465-5355

Calgary
Tel (403) 250-9575
Fax (403) 252-0813

Ottawa
Tel (613) 736-7282
Fax (613) 736-7289

Regina
Tel (306) 761-2688
Fax (306) 761-1522

Montreal
Tel (514) 334-9340
Fax (514) 334-9350

Winnipeg
Tel (204) 488-7936
Fax (204) 488-7969

Quebec
Tel (418) 872-3492
Fax (418) 872-1968

Halifax
Tel (902) 468-3221
Fax (902) 468-1017

London
Tel (519) 680-3333
Fax (519) 680-2939

Hull
Tel (819) 778-7292
Fax (819) 778-7220

Stretch Your Computing Dollars!

Everywhere you look somebody has a deal to offer. You could go nuts trying to decipher their prices and compare features. We know how confusing it can be. That's why every Bondwell

system is priced as a complete package - with no hidden costs!

Whether you're running your own business or researching your next novel (or chasing mutants through a labyrinth) Bondwell has the system for you, at a price that's easy to handle.

We decided a long time ago that



Bondwell customers shouldn't have to choose between quality

and price. Every system is built to exacting standards and tested over and over again to

ensure your total satisfaction. Then we sharpen our pencils to make sure you

get the utmost in value, performance, and power for your dollar!

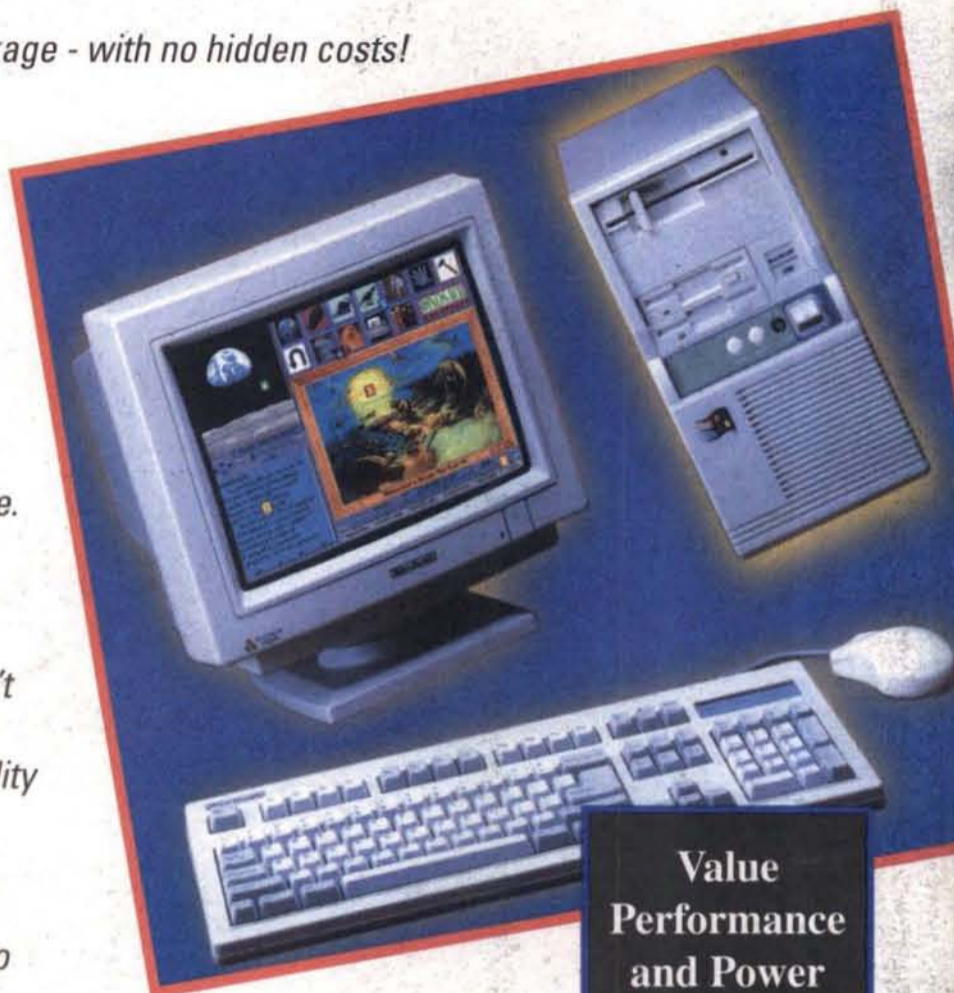


Bondwell MPC systems include Microsoft Works 3.0, an integrated word processing, spreadsheet, database, and graphics package!

Say hello to the future of computing. Check out the sensational

Bondwell systems at one of the dealers listed below or dial

1-800-846-7655 for more information.



Value
Performance
and Power
from
Bondwell!



Bondwell 4SX33

- Intel 486SX-33MHz processor
- 3 VESA local bus slots
- 4MB RAM
- 170MB hard drive
- 1.44MB floppy drive
- 1MB VESA SVGA video card
- 14" SVGA monitor, 1024 x 768
- MS DOS 6.2
- Windows 3.1
- Microsoft mouse

\$1,399.00

Bondwell 4DX33V

- Intel 486DX-33MHz processor
- 3 VESA local bus slots
- 4MB RAM, 128k cache
- 245MB hard drive
- 1.44MB floppy drive
- 1MB VESA SVGA video card
- 14" SVGA monitor, 1024 x 768
- MS DOS 6.2
- Windows 3.1
- Microsoft mouse

\$1,649.00

Bondwell 4DX66V

- Intel 486DX2/66MHz processor
- 3 VESA local bus slots
- 4MB RAM, 128k cache
- 340MB hard drive
- 1.44MB floppy drive
- 1MB VESA SVGA video card
- 14" SVGA monitor, 1024 x 768
- MS DOS 6.2
- Windows 3.1
- Microsoft mouse

\$1,849.00

Bondwell 450MPC

- Intel 486DX2/50MHz processor
- 3 VESA local bus slots
- 4MB RAM, 128k cache
- 245MB hard drive
- 1.44MB floppy drive
- Double speed CD ROM drive
- 16-bit sound card
- Dual external speakers
- 1MB VESA SVGA video card
- 14" SVGA monitor, 1024 x 768
- MS DOS 6.2, Windows 3.1
- Microsoft mouse
- Microsoft Works 3.0
- Dinosaur and Space Adventure

\$2,198.00



Built in Canada by
3DMICRO
COMPUTERS

NAK Technologies
Richmond Hill
905-764-7868

Savage Data Systems
North Bay
705-495-6359

Canada Business Services
Chatham
519-436-1148

Avenue Computers
Brantford
519-753-5750

Personal Computers
Hamilton
905-560-5711

Datatek Systems
Sarnia
519-332-8707

Orion Electronics
Kitchener
(519) 576-9902

Adaptable Software
Windsor
519-944-6742

The Intel Inside Logo is a registered trademark of Intel Corporation. The Bondwell logo is a trademark of Bondwell Canada. All prices and programs are subject to change without notice.