

TI-99ers In The '90s

*Classic Computer Column
by Barry Traver*

Lima MUG Conference Excellent!

Once again, the Ohio State University Lima Campus graciously hosted the annual Lima TI Multi User Group (MUG) Conference. The Lima Fair (which was not merely fair, but excellent!) took place on Saturday, May 17, 1991, and I was privileged not only to attend, but also

to stay again in nearby Venedocia at the home of Dr. Charles Good, faculty advisor of the student group that officially sponsors this annual event.

The Lima Fair, in many ways, is as good as (or at times better than?) similar events in larger cities, such as Boston or Ottawa. The Ohio State University Lima Campus is to be commended for the excellent facilities provided for what has become one of the most important TI events of the year. Gratitude should also be expressed in particular to Dr. Good and his able associates (Dave Szippel

and others) in this well-executed endeavor!

Who were the multi user groups represented at MUG? I don't have a complete list, but a partial list may give you some idea (I hope I've gotten most of the names correct!). There were user groups from Canada (9T9 User Group, Toronto, Ontario; Kawartha User Group, Peterborough, Ontario) and the US. The latter were from various states, including Illinois (Chicago User Group), Indiana (Hoosier User Group, Indianapolis; The Fort's User

Group, Fort Wayne), Michigan (Great Lakes User Group, Detroit), Missouri (St. Louis User Group), Pennsylvania (Pittsburgh User Group; West Penn User Group), and--of course--Ohio (Cin-Day User Group, Cincinnati and Dayton; Cleveland Area User Group; C.O.N.N.I., Columbus; New Horizons User Group, Toledo; OH MI TI User Group, Toledo?; and the Lima Ohio User Group from guess where?).

Although some vendors were not

SEE PAGE 59

HARDWARE / Adam News

← FROM PAGE 52

I take it that the inclusion of "Dean Roades, 463 ADAM, Jan. '91" means that the paragraph was originally written by Dean Roades and appeared in the January 1991 issue of the 463 ADAM newsletter.

In any case, I thought you might be interested in this little bit of information. I did not know that the game controller could be used with PowerPAINT, and I don't believe it was included in any of the documentation that I have.

I tried using the game controller myself, but I have gotten so used to using the function keys in the upper right hand corner of the keyboard that it does not increase my speed at all. In fact, it rather slows me down. For someone new to the joys of using the PowerPAINT program, however, this may be a feasible alternative to the function keys. Try it. You might like it.

Wacky Word Games

If you have just recently acquired your ADAM computer, and were not given the manuals that originally came with the ADAM, this might be of some help. It seems that one of the early Coleco Games, called "Wacky Word Games," is designed to teach children or uninformed users of the SmartWRITER word processing mode, some of the "ins and outs" of using the SmartWRITER functions.

If you would like a copy of this program, get in touch with your favorite ADAM vendor. I'm going to try to see if I can get a copy in order to try it out. It sounds like it might be fun.

SmartWRITER

While we're on the subject of SmartWRITER, here's a couple bits

of information you might be able to use. If you write large articles with SmartWRITER, it is a good idea to get a memory expander board for your ADAM. This enables you to keep more pages in ADAM's memory while you are writing and/or printing. As is, your ADAM is only capable of keeping about seven pages in memory.

Also, remember that INITIALizing your media only clears your directory. It does NOT clear all the stored data from that media. If you are using disks, it is a simple matter to reformat those disks. However, if you are using data packs, this is not possible. To completely clear your tape, the only thing I know to do is to block copy all the blocks from a completely empty tape onto the used tape. Sometimes this will clear up "bad blocks" on your tape, but not always. Of course, you need a "copy" program to do this.

If you are using disks, bad blocks can sometimes be cleared by running a large magnet (like the ones they use to clear video tapes) over the disk. However, remember two things. One, you will then have to reformat that disk so your ADAM will recognize it when you insert it in the disk drive. Two, do NOT run a magnet over a tape! The ADAM will not reformat a tape unless you have special equipment to accomplish that (a MegaCopy formatter, for instance). This equipment does not come with your ADAM. The circuitry to format data packs (tapes) was not built into your computer console.

Hexace

It's been a long time since we heard from Bruce Walters of Hexace Software (R.D. #4, Box 81, Franklin, PA 16323), but you may agree that it was worth the wait. Bruce recently

introduced three new software programs: SmartWRITER's Helper, FORMAX and COPX. I just received these three programs, but I understand that SmartWRITER's Helper has embedded commands for your Panasonic-Epson printer that enable you to use your ADAM with these printers without a printer patch. Bruce tells me it also clears up some of the "bugs" in the SmartWRITER mode.

FORMAX is a formatting program that allows you to format more than one disk at a time. I think this program will come in MIGHTY handy, since I often must format a large number of disks in connection with my work on the ECAUG Public Domain Library.

Since I only have two disk drives hooked up, I will only be able to format two disks at a time, but this is twice as many as one. Maybe I can talk my husband into hooking my spare double-sided disk drive up to the other two. Then I can format three at a time!

COPX is a copy program that allows you to use your RAM drive (you should have at least a 64K memory board) to make multiple copies of disks or tapes. I use a 256K MegaRAM, which allows you to copy the complete disk at one time, and two disk drives. It's preferable to use two of the same type of drives (tape or disk) to make these copies. The reason you work with two drives is...this program copies to two drives at the SAME TIME. Talk about a time saver! Bruce has outdone himself on this. As soon as I get time to work with them a little, I will let you know how I fare.

That's not all to this story, however. Bruce is selling each of these programs for only \$10 apiece, and that includes shipping and handling! This means that people on tight

budgets can buy the programs they need without feeling the pinch so much; instead of putting them on what P.J. Herrington calls their "wish list."

There's more! As an added incentive, Bruce says you can get your copy of a program for free, just by getting 10 other people to buy it. If 10 people send your serial number in with their order of the program you recommended, Bruce will refund your full purchase price. Send for your copy of these programs today. You can't ask for a better deal.

1991/92 Taxhelper

P.J. Herrington of MOAUG tells us that Gary Hoosier is already organizing his notes in regard to his TAXHELPER program. This means he'll soon be ready to start work on the 1991/92 version of this income tax program. Don't laugh. I've already started buying Christmas presents for December 1991. It's never too early to start on these things. That's how you avoid last minute rushes. Keeps you from getting ulcers. Also, bear in mind that I am writing this in May. There is a three month publishing time lapse between when I write the article and when you get to read it.

If you are among those who bought this year's volume, Gary would like you to send him any suggestions you might have to make the next version even better. Write to Gary at 922 Devon Drive, Newark, DE 19711.

If you have any suggestions, comments or whatever, for me, write to me at 411-B North Sea Lane, Fort Walton Beach, FL 32548. If you would like a reply, please enclose a legal-sized SASE. Also, if you would like to contact our ADAM Users Group, write to ECAUG, P.O. Box 4934, Fort Walton Beach, FL 32549-4934.

← FROM PAGE 54

represented (I did not see representation for MYARC or JP Software at Lima), many nationally-known (and lesser-known) TI vendors did find their way there, including 9640 News (Beery Miller), Asgard (Chris Bobbitt), Bud Mills Services, Competition Computer, Genial Computerware (mc), Harrison Software, L.L. Conner Enterprises, MS Express, O.P.A. (Oasis Pensive Abacutors, Gary Bowser), Ram-charged Computer, Tigercub Software (Jim Peterson), and W.A.S. Controls (William A. Shores).

Presenting The Presentations

As usual, Lima had a full schedule of presentations. Since these are being made available on videotape to user groups around the country and to individual members of the Lima User Group, let me mention the specific speakers and topics here:

(1) Charles Good, "Preview of FUNNELWEB 4.32, showing DISK REVIEW management of file comments" (yes, Tony and Will McGovern have made FUNNELWEB even better!), (2) Mike Sealy, "The latest software from MS EXPRESS" (sliding block puzzles, games and adventure aids), (3) Bruce Harrison, "GOLF SCORE ANALYZER and other software from Harrison Software" (more about the "other software" in a moment), (4) Eunice Spooner and Christopher Bedard, "THE OAKLAND COMPUTER CLUB, an elementary school user group" (an inspiring presentation), (5) Barry Traver, "Programs that write assembly language and XB programs,"... (6) Irwin Hott, "Current status of the newsletter article clearing house" (plans to assist struggling user group newsletters), (7) Chris Bobbitt, "Software and hardware from ASGARD" (some of which we previewed in last month's column), (8) Bud Mills, "The latest hardware from BUD MILLS SERVICES," (9) Mike Wright, "Bits and Pieces from the history of the T.I. 99/4A" (more about Mike in a moment), (10) Barry Traver, "GENIE and Genial,"... (11) Gary Bowser, "Hardware and software from O.P.A.," (12) Joe Ross, "C-SHELL 99," (13) Beery Miller, "9640 NEWS and maybe also 99/4A news," (14) Chris Bobbitt, "More ASGARD products," and (15) E.M. Smith, "NEWSLETTER PRINTER, with a revised TIW FORMATTER, software by Art Gibson."

In addition, there was an informal discussion among user group officers of "The multi user group CONFERENCE." Jim Horn of Disk Only Software had also been originally scheduled to speak (he gave his selected topic as "The Sex Life of the 99/4A!"), but unfortunately he was unable to attend, attending instead, I believe, to equally important business

for Uncle Sam (Jim is in the military).

Mike Wright brought along his (never officially released) TI-99/2, and gave a fascinating talk on little-known facts from the history of Texas Instruments. Although Mike's name may not yet be as well known as that of Bill Gaskill (author of TIMELINE 99), both are well qualified to be our "official" historians/archivists. I was encouraged to hear that they may be

working together on some future projects in that area. Although a somewhat quiet person, Mike has a tremendous amount to offer to the TI community, so I'll try to keep you informed as to future projects, whether he does them jointly with Bill or primarily on his own (as he has done thus far). (Whatever way it may be done, my own hope is that Mike's dream of a "TI Encyclopedia" will ultimately become a reality.)

Again, if you are an out-of-town member of the Lima User Group, you can order these presentations on videotape. Likewise, TI user groups may order a single copy of the presentations from the Lima UG. The cost is only \$15 (or send three blank VHS tapes plus \$3.75 for postage), and you can order the set (approximately 14 hours of viewing!) from the Lima User Group, P.O. Box

SYSTEMS

SPECIALS

Complete System:

386/25MHz. System **\$1699**
 4MB Memory, 80MB. Hard Drive, 18ms, 1.44MB Floppy Drive, 1.2MB Floppy Drive, 2 Serial/Parallel/Game Ports, IDE HD/FD Controller, Super-VGA Monitor, 1024x768, 28mm dp., VGA 16-Bit Card with 1MB, 101 Key Enhanced Keyboard, Windows 3.0 with Mouse, Mini-Tower Case with 200W P/S.

386/33MHz. 64K Cache System .. **\$2089**
 4MB Memory, 120MB. Hard Drive, 18ms, 1.44MB Floppy Drive, 1.2MB Floppy Drive, 2 Serial/Parallel/Game Ports, IDE HD/FD Controller, Super-VGA Monitor, 1024x768, 28mm dp., VGA 16-Bit Card with 1MB, 101 Key Enhanced Keyboard, Windows 3.0 with Mouse, Mini-AT Deluxe Case with 200W P/S.

486/33MHz. (128K Cache) 4MB Memory Installed	\$2185
486/25MHz. (8K Cache) 4MB Memory Installed	\$1699
386/33MHz. (64K Cache) 1MB Memory Installed	\$899
386/25MHz 1MB Memory Installed	\$719
386sx/16MHz. 1MB Memory Installed	\$519
286/20MHz 1MB Memory Installed	\$399
286/16MHz. 1MB Memory Installed	\$369
286/12MHz. 1MB Memory Installed	\$349
XT/12MHz. 640K Memory Installed	\$259

486/386/286 Systems Include:

- Motherboard and CPU • 1.2 or 1.44MB Floppy Drive (TEAC)
- 101 Key Enhanced Keyboard • 2 Serial/Parallel/Game Port
- Math Co-Processor Socket
- Basic Memory Installed-Power Supply
- Internal Clock/Calendar
- Enhanced Case - 1:1 IDE HD/FD Controller
- Please call for XT 12MHz. specifications

MOTHERBOARDS

XT 4.77/12MHz., AMI BIOS **\$38**
 286/12MHz. AMI BIOS, Exp. to 16MB **\$89**
 286/16MHz. AMI BIOS, Exp. to 4MB **\$115**
 286/20MHz. AMI BIOS, Exp. to 4MB **\$165**
 386SX/16MHz AMI BIOS, Exp. to 4MB **\$279**
 386/25MHz. AMI BIOS, Exp. to 8MB **\$399**
 386/33MHz. 64K Cache, AMI BIOS, Exp. to 8MB **\$569**
 486/25MHz. 8K Cache, AMI BIOS, Exp. to 16MB .. **\$1189**
 128K Cache (OPTION) .. **\$189**
 486/33MHz. 256K Cache, AMI BIOS, Exp. to 32MB .. **\$1749**

HARD DRIVES

40MB, XT Kit, MFM **\$205**
 40MB, 28ms., IDE **\$194**
 80MB, 18ms., IDE **\$329**
 120MB, 18ms., IDE **\$439**
 210MB, 15ms., IDE **\$699**
 320MB, 9ms., ESDI **\$1375**

KEYBOARDS

101 Key, Chicony, #5191 **\$32**
 101 Key, Maxi-Switch **\$38**
 101 Key, Keytronics **\$49**
 101 Key, Chicony w/Trackball **\$74**

NETWORK PRODUCTS

Ethernet Card, 16-Bit (NE2000 Compatible) **\$99**
 LANtastic AE-2 Ethernet Starter Kit **\$529**
 LANtastic 2Mbps Starter Kit **\$379**
 LANtastic AE-2 Ethernet Adapter **\$229**
 LANtastic 2Mbps Adapter **\$149**

VIDEO DISPLAYS

Mono Monitor, 12" Amber **\$79**
 Mono Monitor, 14" Flat Screen/Paper White **\$99**
 CGA Monitor, 14" (640x200) **\$159**
 HYUNDAI, VGA, 14" (640x480), 52mm dp. **\$219**
 HYUNDAI, VGA, 14" (640x480), 31mm dp. **\$295**
 HYUNDAI, Super-VGA, 14" (1024x768), 28mm dp. **\$319**

FLOPPY DRIVES

360K, Chinon **\$55**
 1.2MB, Mitsumi **\$59**
 1.44MB, Mitsumi (W/Frame) **\$59**

POWER SUPPLIES

200 Watts (For Full-Size AT Case) **\$45**
 200 Watts (For Mini-Tower Mini-AT Case) **\$41**
 150 Watts (For AT Jr. for XT Case) **\$32**

2100 Hwy. 360, Suite 1904, Grand Prairie, Texas 75050
(214)606-0280 / FAX: (214)606-1278

DEALERS CALL FOR QUANTITY PRICES**

TERMS & CONDITIONS: -VISA/MC/AMEX or COD CASHIER'S CHECK - PRICES REFLECT 4% COD CASH DISCOUNT - NO RETURNS ACCEPTED WITHOUT RMA* - ONE YEAR WARRANTY ON PARTS AND LABOR ON COMPUTER SYSTEMS - ALL RETURNS MUST BE IN NEW CONDITION ORIGINAL PACKAGING/MANUALS - ALL RETURNS ARE SUBJECT TO 15% RESTOCKING FEE - SPECIFICATIONS ARE SUBJECT TO CHANGE.

MISCELLANEOUS

MS-DOS 3.3/4.0 **\$47/\$54**
 Serial Mouse (3 Button) **\$18**
 Windows 3.0 with Mouse (2 Button) **\$79**
 2400BD. Modem, Internal with Software **\$55**
 Send/Rec. Fax 9600Bd., Modem 2400Bd **\$139**
 Colorado Tape Backup Unit, 120MB (DJ-10) **\$249**

VIDEO ADAPTERS

Monographic w/Printer Port .. **\$16**
 Color/Mono Graphics w/Printer ... **\$22**
 VGA 16-Bit, 800x600, 256K (Oak) **\$51**
 VGA 16-Bit, 1024x768, 256K/512K(Paradise-OEM) **\$78/86**
 VGA 16-Bit, 1024x768, 1MB (Trident-OEM) **\$109**
 VGA 16-Bit, 1024x768, 1MB (STB, Powergraph) **\$179**

CASES

AT Junior for XT (4x5.25" Bays) . **\$31**
 AT Full-Size (5x5.25" Bays) **\$47**
 Mini-AT Deluxe, 200W P/S (3x5.25", 2x3.5") **\$85**
 Mini-Tower, 200W P/S 2x5.25", 3x3.5" . **\$75**
 Full-Tower, 230W P/S (7x5.25") **\$145**

CM AUGUST '91 59

FROM PAGE 59

647, Venedocia, OH 45894.

Remember, this offer is intended not for individuals in general, but for user groups, conference speakers and attending dealers. Individuals who want a set of these videos can, however, become eligible to order the tapes by becoming paid members of the Lima UG.

Mike Maksimik's MIDI Master

One of the featured attractions at Lima was the appearance of Mike Maksimik's MIDI MASTER 99. At the time of writing this column, his project is not complete (I've only heard version 2.21 in operation, although version 3.0 may be available by the time you read this), but I have seen/heard enough to make me very encouraged indeed.

MIDI stands for "Musical Instrument Digital Interface," and Mike's program uses the RS232 card and custom sequencing software to achieve input and output with MIDI interface-equipped devices (e.g., certain electronic keyboards, such as many manufactured by Casio or Yamaha). Actually, in version 2.21, the music only goes one way (from your TI-99/4A or MYARC 9640 to the musical instrument), but two-way communication should be available shortly; e.g., so that you can play something manually on the keyboard, and send it to the computer to be saved as a digital data file.

We're talking about something much more sophisticated than the TI sound generator chip (which only allows three voices plus one noise). MIDI devices offer much more. For example, as Mike observes, "The CASIO CT 680 allows two modes of operation, a 16-note polyphonic

mode (on one channel only), or a multi-timbral (multi-instrumental) mode in which four channels are available to control four instruments within the synthesizer, with 6, 4, 2, and four notes polyphonically available to the four selected channels." I don't understand all of that yet, but I know that the music sounds great!

You should know that "MIDI synthesizers can produce the real sounds of many different instruments and built-in rhythms. The TI sound chip produces square waves similar to the wood organ instrument available on the CASIO MT240 synthesizer, [but] the CASIO MT240 has 29 other instrument sounds accessible through the MIDI interface. MIDI allows control over the instrumentation as well as the orchestration, and all of the subtleties that occur in music."

Although I've heard that MIDI MASTER 99 may perhaps also be available through Asgard (with Asgard essentially acting as a dealer), I understand that the product (according to the author) is primarily available directly from him at the following address: Mike Maksimik, Crystal Software Project, 635 Mackinaw Avenue, Calumet City, IL 60409. Version 2.21 may be ordered by sending a check or money order for \$45.00 (plus \$2.50 for shipping), and registered owners are eligible to receive version 3.0 upon its completion (presumably without extra charge).

Version 3.0, according to Mike, will have a number of advantages over version 2.21: It "will support all of the features of MM99 version 2.21 as well as CakeWalk file format compatibility [standard in the IBM and Mac world] and added memory such as the memory available in a Myarc 9640, P-GRAM card, or Horizon Ramdisk with RAMBO and ROS

version 8.14. Version 3.0 will also support scanning of the MIDI port in the sequencer, for recording of your piano playing, for example, at the same time [as] the sequencer plays music.... All developments of version 2.21 will be fully compatible with version 3.0."

Version 2.21 of MIDI MASTER 99 "includes the full assembly language sequencer, the MIDI interface and two patch cables; the Extended BASIC MIDI routines; and full documentation. Also included are songs suitable for compiling and Extended BASIC demonstrations." (As noted, version 3.0 with documentation will be sent when available.) If you're interested in seriously exploring the area of music with your TI-99/4A or MYARC 9640, Mike's MIDI MASTER 99 is an excellent way to go (and you can't complain about the price!).

Classical Music On A Classic Computer

If you don't have a "MIDI device," don't feel left out, for there is still excellent music being produced for the "plain" TI-99/4A. It is written entirely in assembly, so you will need 32K memory expansion to take advantage of the programs, but you don't have to run out and buy an electronic keyboard or digital piano to enjoy it. (It does sound better if you send the audio to an audio high-fi system, but that isn't required to enjoy the music.)

I'm talking about a company mentioned before in this column: Harrison Software (5705 40th Place, Hyattsville, MD 20781). They appeared at the Lima fair with two new products: "Lute Music of the 17th and 18th Centuries" (SS/SD, \$5.00 including S&H) and "Il Pastor Fido" by

Antonio Vivaldi (your choice, DS/SD or a SS/SD "flippy," \$6.00 including S&H).

Caution: if you own a MYARC 9640, you should be aware that these items are not compatible with the Geneve. Sorry!

By the way, Harrison Software is also writing music for the Tandy 1000, which uses the same sound chip that we have in the TI-99/4A. Since they have been getting rave reviews in the Tandy press, I was afraid that we might lose them from the TI world, so I was very happy to see that they are continuing to release music for the TI-99/4A as well.

One of the things I especially like about music from Harrison Software is that they not only offer "popular" classical music (e.g., Bach's "Two- and Three-Part Inventions," Mozart's "Eine Kleine Nachtmusik," Tchaikovsky's "Nutcracker Suite"), but also offer lesser-known works worth getting to know and difficult or impossible to obtain in any form elsewhere (e.g., "Wolffy at 8").

Thus--although Bach is probably the most famous of all who composed for the lute--Harrison Software's "Lute Music of the 17th and 18th Century" features lesser-known composers: Ennemond Gaultier, Du Faut (also spelled du Fault, no known first name), Charles Mouton, Jacques de Saint-Luc and Robert de Visee, plus some anonymous works. Likewise, Antonio Vivaldi's "Il Pastor Fido" ("The Faithful Shepherd") is not as well-known as his "Four Seasons," but it is also definitely worth getting to know.

Over the years Harrison Software has come out with some other worthwhile programs (a golf analyzer, a word processor, a Wheel of Fortune-type game), but their musi-

SEE PAGE 73

MIKE MAKSIMIK'S MIDI MASTER 99

286-12, AMI, 0k Exp to 16mb	\$79.00	Baby AT Desktop w/Dig Display	\$79.00	Supreme I/O-IDE 2h/2f/2a(1opt)lp/1g	\$25.00
286-16, AMI, 0k Exp to 16mb	\$115.00	Baby AT Verticle w/Dig Display	\$86.00	VGA-1024x768, non-int, 256k exp-1mb	\$89.00
286-20, AMI, 0k Exp to 16mb	\$159.00	Verticle Tower 5 bays w/Dig Dis	\$139.00	VGA-1024x768, non-int, 1mb installed	\$119.00
286-25, AMI, 0k Exp to 16mb	call	AT Slimline 4 bays	\$99.00	SBAGATE 157a IDE 44mb, 28mb	\$195.00
386sx-16, AMI, 0k Exp to 16mb	\$239.00			SBAGATE 144a IDE 125mb, 18mb	call
386sx-20, AMI, 0k Exp to 16mb	\$259.00			3.5 High Density Floppies	\$55.00
386-25, AMI, 0k Exp to 16mb	\$409.00			3.5 High Density Floppies	\$36.00
386-33, AMI, 0k Exp to 16mb	\$459.00				

COMPUTER PARTS

800-633-1171

Include Motherboard w/16mb DRAM Exp to 16mb, 2a(1opt), 1p, 1g, IDE 2h/2f, Choice of Floppy Drives, Choice of Baby AT Desktop or Verticle W/ Digital Display.

286-12, AMI	\$329.00	BMC DISTRIBUTING FEATURES HIGH QUALITY
286-16, AMI	\$369.00	COMPUTER COMPONENTS AT DEALER PRICES
286-20, AMI	\$439.00	DESIGNED TO MAKE YOU MORE MONEY. ORDERS
286-25, AMI	call	ARE SHIPPED AT 530pm EASTERN TIME MON
386sx-16, AMI	\$459.00	THRU FRI ALL ORDERS ARE INSURED FOR FACE
386sx-20, AMI	call	VALUE FOR PROPER DELIVERY AND HANDLING.
386-25, AMI	\$659.00	
386-33, AMI	\$719.00	

Include Motherboard w/0k Exp to 16mb, Choice of Desktop or Verticle W/ Digital Display.

286-12, AMI	\$189.00
286-16, AMI	\$229.00
286-20, AMI	\$269.00
286-25, AMI	call
386sx-16, AMI	\$299.00
386sx-20, AMI	call
386-25, AMI	\$489.00
386-33, AMI	\$575.00

386 Systems Include 44mb IDE 28mb Hard Drive, 2mb Ram, 1024x768 Non-Int VGA w/1mb Ram, 2 Floppies, 1a, 1p, 1g, 101 Keyboard, Choice of Vert or Desk

286-12	\$819.00
286-16	\$859.00
286-20	\$899.00
286-25	call

386 Systems Include 125mb IDE 18mb Hard Drive, 2mb Ram, 1024x768 Non-Int VGA w/1mb Ram, 2 Floppies, 1a, 1p, 1g, 101 Keyboard, Choice of Vert or Desk

386sx-16	\$1,219.00
386sx-20	\$1,279.00
386dx-25	\$1,479.00
386dx-33	call

