

The Myarc Geneve 9640 Family Computer

HISTORY

A story in the first issue of "Home Computer Compendium" (soon after known as "microPendum", Texas Instruments having objected to the use of their trademark "Home computer") in February of 1984 announced the "99/64 (aka Phoenix)" from CorComp. CorComp had already established itself as a maker of memory, disk controller, and RS232 cards that worked with the 99/4A's Peripheral Expansion System.

Features of the announced machine included 64K of RAM exapandable to 1mb, built-in RS232 and disk controller peripherals, an improved Extended BASIC, and up to 132-column display. Compared to the 32K (max) RAM, expensive peripherals, a somewhat clunky but powerful Extended BASIC, and 32/40-column display, this machine was called a "Dream Machine" by the article.

How true.

It turns out that the details would be only partially realized. CorComp was to release an expansion module that included these features but nothing more.

No new computer. No built-in "super BASIC". No improved display. This device, the Micro Expansion System, was designed for those 99ers that had not yet purchased TI's bulky Peripheral Expansion System.

However, it was evident that 99ers were hungry for an upgrade path not even a year after TI abandoned the Home Computer market in Autumn 1983 that wouldn't waste their previous investment in hardware and software. After TI left the market, user groups in several cities, especially Boston and Chicago, held "TI Faires" and it was at such events that new products for the orphaned 99/4A were usually announced.

ENTER MYARC

Myarc (Microcomputer Architects), like CorComp, had its beginnings in the production of memory expansion, RS232, and disk controller cards. They expanded their line with an improved BASIC and RAMdisk cards.



At the March 1984 TICOFF exhibition in New Jersey, Lou Phillips (pictured), owner of Myarc, announced a new 4A compatible computer. This machine was announced in two versions – a self-contained model with keyboard (similar in design to the 99/8 or early Amiga and Atari machines of the time) and a computer-on-a-card that would fit in the TI Peripheral Expansion System. The PES (or "P-

Box” as it’s known) connected to the 4A via a “Flex Interface Card” and a huge cable that so resembled a fire hose that it was often called just that.

Further details of the as-yet unnamed machine were given the next month, at the New England 99 Faire in Boston on April 5, 1984. 256K or 512K RAM (expandable to nearly 2mb), a TMS 9938 video chip (later produced by Yamaha in many MSX and other computers) that could handle 80-column text and graphics at 512x424x256 colors, RGB and composite video output, a mouse port, PC keyboard interface, SN76496 sound chip (compatible with the sound chip in the 4A), and TI’s TMS 9995 CPU – a 12mhz successor to the 3mhz TMS9900 used in the 4A.

WHERE’S THE COMPUTER?

By 1985, the Chicago TI Faire had become the premier event in the TI world. The November 2nd show saw 1,700 visitors expecting to witness the debut of the Myarc computer.

What they saw instead was an Amiga-style computer case with built-in keyboard and a cartridge slot. Lou Phillips was announcing the machine would start shipping in the first quarter of 1986 at a price of around \$450.

That first quarter came and went.

The vaporware situation was becoming so frustrating for 99ers that in early 1986, microPendum changed its masthead from "Covering The TI99/4A Home Computer And Compatibles" to "Covering The TI99/4A EXCLUSIVELY".

THE GENEVE COMETH



for the machine, Lou Phillips and Jack Riley (pictured) of Myarc saw “Geneve” on a painting and went with that.

Fancy, glossy, color flyers were mailed out to thousands of 4A owners as Myarc apparently bought TI’s own mailing list (made of names of those 4A owners who returned registration cards to TI after their purchase).

Myarc finally announced that the computer would ship in card-only form and would be named the Myarc Geneve 9640 Family Computer (more commonly as either “the 9640” or “the Geneve” by users). Rumor has it that they wanted to use “99” in the name, but TI wouldn’t allow it. The “9640” came about as the “9” refers to “99/4A” and “640” refers to the RAM standard in the machine. “Family Computer” was a nice was around TI’s trademark of “Home Computer.” And, feeling that they needed a “friendly” name



In February 1987, microPendium again changed its masthead to "Covering the TI99/4A, the Myarc 9640 and compatibles". The 9640 was to be the only "compatible" ever produced.

The first formal review of the machine was in microPENDIUM's April 1987 edition. This was reviewing a beta-test machine. The article starts, "The Geneve 9640 is here! Finally. And it works."



A production model was received the next month, although the May 1987 issue states that the editors were "still awaiting release of M-DOS."

SOFTWARE

Several pieces of software were announced with the Geneve, including:

1. Cartridge Saver – Most of the software produced during by TI during the production run of the 4A was in cartridge format. Since the Geneve lacked a cartridge port, a program that ran on the 4A allowed a 4A user to dump cartridges to disk in a format that would work with the Geneve. This format turns out to be the same as that used with the GRAMkracker – a cartridge port device for the 4A that also allowed cartridge contents to be saved to disk and, optionally, manipulated (such as changed default filenames when saving data to disk with some programs, or changing default printers from the serial port TI preferred to the parallel port which everyone else preferred).
2. Advanced BASIC – this was a rewrite of Myarc's own Extended BASIC II and was for a time known as Extended BASIC III. It's largely compatible with 4A BASIC and Extended BASIC, although it allows access to the Geneve's features such as advanced video modes.
3. 4.21 Pascal runtime – The 4A has a USCD Pascal card that allowed it to run USCD Pascal programs. In essence, this card gave the 4A an additional Pascal-based operating system. While powerful, the user base of the 4A included mostly computer novices and families who had little use for such a device.
4. TI Writer upgraded to 80 columns – The de facto standard in 4A word processing was TI Writer largely because it was released by TI into the public domain when TI left the Home Computer market. TI Writer was largely based on the text editing system used on TI's 990 minicomputers. Instead of WYSIWYG display, "dot" commands were entered within the text to produce things like bold text or centered lines, similar to those used by the WordStar program found on other micros. The text editor was used to edit text, and a separate formatter program was used to interpret the dot commands and print formatted text. The principal limitation was the 4A's own 40-column display. For years, an 80-column display was the Holy Grail of 99ers, and this modification of TI Writer allowed it to work in 80-column text mode. Additionally, whereas the 4A's computer made entering commands tedious (as well as text...FCTN P was the keystroke used to type simple double quotes!), the Geneve's IBM-style keyboard was far easier to use for word processing. Dedicated function keys made this particular task even simpler.
5. Microsoft Multiplan Upgrade – Since Multiplan was still a copyrighted program by Microsoft, it could not be included in its entirety. However, owners of the 4A's version of Multiplan (which included a cartridge and a disk) could use Cartridge Saver on the

cartridge and this patch on the disk to get a Geneve-compatible version that ran faster and in 80-column mode. A 236 cell sheet took 2 minutes and 18 seconds to recalculate on a 4A, but only 23.73 seconds on a Geneve.

6. Myarc Disk Operating System – The 4A had no “real” DOS. Although BASIC programs and data could be loaded from and saved to disk, and programs could be written to obtain a disk catalog, all other DOS functions (formatting disks, copying files, etc.) had to be achieved with a Disk Manager program. MDOS changed that, with a command-line and syntax very much like Microsoft’s MS-DOS.

AND THEREIN WAS THE PROBLEM

Myarc was under pressure from two fronts concerning the Geneve. First, they had announced the machine 2 years previously and announced in December of 1986 that production had started. They really wanted to get the machine into production as did their retailers, who had been taking advanced payments – a practice that stopped when production delays plagued the machine.

Second, they had spent a lot of money in developing this machine and had very few resources (perhaps 5 employees and a couple of contractors) designing it and the company had to start recouping its investment.

When released, it was painfully obvious that the Geneve was rushed. Although the MDOS manual indicated users would see an “A:” prompt, the very first pre-release featured a “DSK1.” prompt. “DSK1” was how the 4A referred to disk drive 1. A user would launch a program by typing its name from this prompt. Most MDOS commands mentioned in the manual were not yet implemented.

In fact, what Myarc was calling MDOS was actually its GPL Interpreter. GPL – or Graphics Programming Language – was a TI-invented language somewhat akin to assembly. Most cartridges were programmed in GPL, and it was this interpreter that allowed a Geneve owner to run the cartridges they had saved with Cartridge Saver. So while the Geneve could run most 4A software it could run little else.

The first official Geneve column in *microPENDIUM* was a September 1987 article by Mike Dodd that largely talked about the various pieces of software meant to come with the machine, and what the status was of each.

Finally, MDOS v.97 was released in October of 1987 and incorporated most of the commands from the manual that shipped with the computer. v.99 added batch file processing. Updated software was distributed on numerous information services (such as CompuServe) and from time-to-time disks would be mailed from Myarc to registered Geneve owners.

It was expected that a boot ROM would be released containing the “final” version of MDOS so that users would no longer need to boot from disk. However, the fact that MDOS was incomplete shelved this idea.

Ultimately, version 1.0 of MDOS shipped around December of 1987. GPL Interpreter was at version .98 and ran from within MDOS. With the exception of 6 minor differences, MDOS was now the same program described in its manuals.

APPLICATION SOFTWARE AND “MY-ART”

Shortly after the Geneve’s release, Myarc let fly a series of announcements on software. They blamed the production delays mostly to the complexities of the Geneve hardware and the need to write MDOS from scratch. They claimed to have a system in place whereby certain pieces of PC software could easily be ported. Early announcements included My-Number (a Lotus 1-2-3 work-alike), My-BASIC (a BASIC compiler), and My-Data (a dBase III clone), none of which were ever released.

Further vaporware included a C Compiler (considered critical since so much software was written in C, and this would allow a great amount of software to be ported to the Geneve) and My-Word Pro, an advanced graphical version of My-Word that would support the Myarc Mouse.



However Myarc also announced, and actually released, its first and only standalone application package. This was My-Art, a drawing program retailing for around \$149 and including the Myarc Mouse.



HFDC

Hot on the heels of the Geneve was Myarc's announcement of the Hard and Floppy Disk Controller. This card allowed up to three 134mb MFM hard drives to be used with either a 4A or the Geneve. A streamer tape backup port was also on the card, but never really worked.

It became fairly common for users who could afford a Geneve to also have an HFDC card, and for these users to enjoy an added speed boost in booting MDOS and loading software from hard disk instead of floppy disk.

The speed was similar to that offered by RAMdisk cards, such as the Horizon RAMdisk sold by Bud Mills. These cards let a user save and load data at RAM speeds and usually fitted with battery backup, but the batteries would eventually die and of course capacities were limited by the high cost of memory chips relative to hard drive space.

The HFDC was released at around the time most IBM-compatibles using these drives were being replaced or upgraded to make use of the newer IDE drives, leading to relative ease in finding second-hand MFM drives.

Although older disk controller cards by TI, CorComp, and Myarc could make use of 720K 3.5" floppy drives as well as single or double density 5.25" drives, the HFDC allowed the use of 1.4mb (high-density) 3.5" floppies with the correct version of MDOS.

A special version of MDOS was created early on to work with the HFDC. For several years, you had to use an "H" version of MDOS if you wanted to use a hard drive or an "F" version if you wanted to use floppy drives. Neither version would utilize both types of drives, and a few bugs remained in MDOS.

SPEECH



The 4A supported its Speech Synthesizer via the expansion port found on the right side of the 4A console. This is the same port used to connect the Peripheral Expansion System (and its "fire hose" cable). The synthesizer had a pass-through connector, so most consoles had speech attached to the console, and the fire hose plugged into the pass-through port of the synthesizer.

Of course, the Geneve had no such expansion port. A company called Rave 99, best-known for a keyboard interface that allowed PC-type keyboards to be attached to the 4A, developed a "speech adapter card." This card allowed a user to remove the Speech Synthesizer from its housing, plug it in the card, then plug the card into the TI expansion system.



This remains the only way to get speech on the Geneve.

ADDITIONAL APPLICATIONS

Few pieces of software were released that ran natively from MDOS. The Printer's Apprentice by McGann Software, was an advanced desktop publishing package that ran on the 4A but was so complex that few 99ers could figure it out. An MDOS version was released that utilized the Geneve's graphics and memory making it far easier to use. McGann Software also released The Geometer's Apprentice and a hyper-card like system. Piracy was rampant in 4A circles, however, and McGann eventually bowed out of the market as a result.

TRIAD was a package that bundled a text editor, terminal emulator, and disk manager.

A collection of games that were originally released on the TOMY TUTOR computer were also released. These ports were made fairly easily due to the fact that the TUTOR shared much of the hardware found in the 4A and Geneve, including the Geneve's 9995 CPU.

Much of the better TI software was written in Assembly language. Although some of this software included Extended BASIC loaders, a few had to be loaded using TI's Editor/Assembler cartridge. While Extended BASIC would autoload a program on the first disk drive if named "LOAD", E/A had no such niceties, and programs could be notoriously difficult to launch. An E/A Program file loader called EXEC was released to allow a user to launch these programs from the MDOS command line. The only other way was to boot MDOS, load the GPL Interpreter, load in the Editor/Assembler cartridge then load the desired program – adding burden to an already cumbersome process.

ENTER BEERY MILLER AND THE MDOS BUYOUT



Beery Miller launched 9640 News, an on-disk magazine with the debut August 1988 issue. In 1990, he released three significant pieces of software – Baricade (a game running out of Advanced BASIC), Tetris (which ran directly from MDOS and is one of the few games to do so), and Windows 9640.

By the time MDOS was finalized enough to be really usable, the GUI market was heating up in the rest of the computing world. The Amiga, Mac, Atari ST, OS/2 and DOS programs like GEOS and of course Windows, were proving to the world that graphics and a mouse would make computing simpler for users.

Beery released Windows 9640 as a response. Although lacking in the graphical prowess of the aforementioned systems (developed by teams of programmers), it allowed task switching of up to 8 programs.

A similar program was under development by Myarc at one time. Named GEME, it was completed and released by Beery with Myarc's permission in November of 1991.

9640 News shut down in 1999

By the middle of 1992, development of MDOS had stalled. Paul Charlton was the developer of MDOS for Myarc and after a dispute with the company, refused to do any more updates to

MDOS or release the source code so they could update it themselves (this is a good reason to have clear ownership and release provisions in software contracts).

Beery founded and facilitated a program to buy out the source code to MDOS. The deal was that Beery would gather the funds (\$XXX) for Paul and that Paul would release the source code to Beery. When enough supporters chipped in, Beery flew to New York, met with Paul, gave him the money, and was personally handed the source code to MDOS. At long last, MDOS was in the hands of the community with source code freely available. Versions 5 and 6 of MDOS were direct results of Beery's efforts.

MDOS COMMAND LIST

The MDOS manual contains a full description of these commands. This list is meant only as a quick introduction to the features included in MDOS. Note that some of these commands may be depreciated. It's always best to read the Appendices in the MDOS manual for details on changes.

```
ASSIGN [x=y]:
ATTRIB [+/-P][d:][filename]
CASE [OFF/ON]
CD [[d:]path] or CD[[d:]path]
CHDIR[[d:]path] or CHDIR [[d:]path]
CHKDSK [d:][filename][F]
CLS
COPY [d:][filename] [d:][filename]
DATE
DIR [d:][filename][ /W ][ /P]
DISK1 [ON/OFF]
DISKCOMP [d:][d:]
DISKCOPY [d:][d:]
DEL [d:][filename]
ERASE [d:][filename]
FORMAT [d:][ /1 ][ /16 ][ /18 ][ /36 ][ /80 ][ /N ][ /V]
HARD [OFF/ON]
LABEL [d:][volume label]
MD [d:]path
MKDIR [d:]path
MODE [n]
MODE [B/F][N]
MODE PIO [ /# ]:[n][m]
MODE RS232[ /n ]:baud[,parity][,databits][stopbits]
PATH [[d:]path[;[d:]path ....]]
PROMPT [prompt-text]
REMAP [slot][drive-type]
RENAME [d:][filename] [filename]
REN [d:][filename] [filename]
RD [d:] path
RMDIR [d:] path
SETDSK [drive-no.][head-step][tracks]
TI
TIME
TREE [d:]
TYPE [d:][filename][ /M]
VER
VERIFY [OFF/ON]
VOL [d:]
```

Batch and AUTOEXEC Commands

```
ECHO [ON/OFF][message]
FOR %%variable IN (set) DO command
GOTO label
IF [NOT] condition command
PAUSE [message]
REM [message]
```

AUTOEXEC Only Commands

```
BUFFERS = [number] (Obsolete Command)
FILES = [number] (Obsolete Command)
LASTDRIVE = [letter]
MIRROR [1/2]
RAMDISK [size]
SPOOL [size]
TI [ON/OFF]
TIMODE (Obsolete Command)
```

HARDWARE SUMMARY



<http://www.mainbyte.com/ti99/>

- TMS9995 CPU at 12mhz
- TMS9938 (Yamaha V9938) 128K display chip (512x424x256 colors, 80-column text)
- TMS9901 Interrupt Controller
- SN76496 sound processor
- MM58274 real-time clock
- 512K 1-wait-state CPU RAM (expandable

to 2mb)

- 32K 0-wait-state CPU RAM (expandable to 64K)
- The on-board 512K RAM can be disabled so 0-wait-state RAM can replace it, but this renders the 99/4A emulation mode useless

PORTS

- Video – 8-pin DIN, 5 pins of which are the same as the 99/4A console to allow use of a 4A owners existing composite monitor (albeit at lower resolutions). The remaining 3 pins carry RGB blue, RGB green, and RGB sync signals. The RGB red signal is activated via a jumper on the Geneve board, thus turning the 5-pin composite port into an 8-pin RGB port. The video port carries a composite sound signal, and most Geneve monitor cables include a 1/8" plug for standard computer speakers or headphones.
- Mouse – Uses 9-pin mice.
- Joystick – This is a TI-compatible 9-pin joystick port. Adapters can be plugged in to allow use of more-common Atari-compatible joysticks
- Keyboard – Allows PC XT keyboards to be used.



<http://www.guidry.org/ti994a/>

NAME Geneve 9640 Family Computer

MANUFACTURER Myarc

TYPE Home Computer

ORIGIN U.S.A.

YEAR Spring 1987

END OF PRODUCTION Fall 1989

KEYBOARD IBM AT style (8x key or 101 key)

CPU Texas Instruments TMS9995

SPEED 12mhz

COPROCESSOR TMS9938 Video Display Processor, TMS9901 Interrupt Controller, SN76496 sound processor, MM58274 real-time clock

RAM 512K 1-wait-state CPU RAM (expandable to 2mb), 32K 0-wait-state CPU RAM (expandable to 64K)

VRAM 128K

TEXT MODES 32x24, 40x24, 40x26, 80x24, 80x26

GRAPHIC MODES 256x192, 256x212, 512x212

SOUND three channels, 1 noise

SIZE / WEIGHT Size of a standard TI Peripheral card

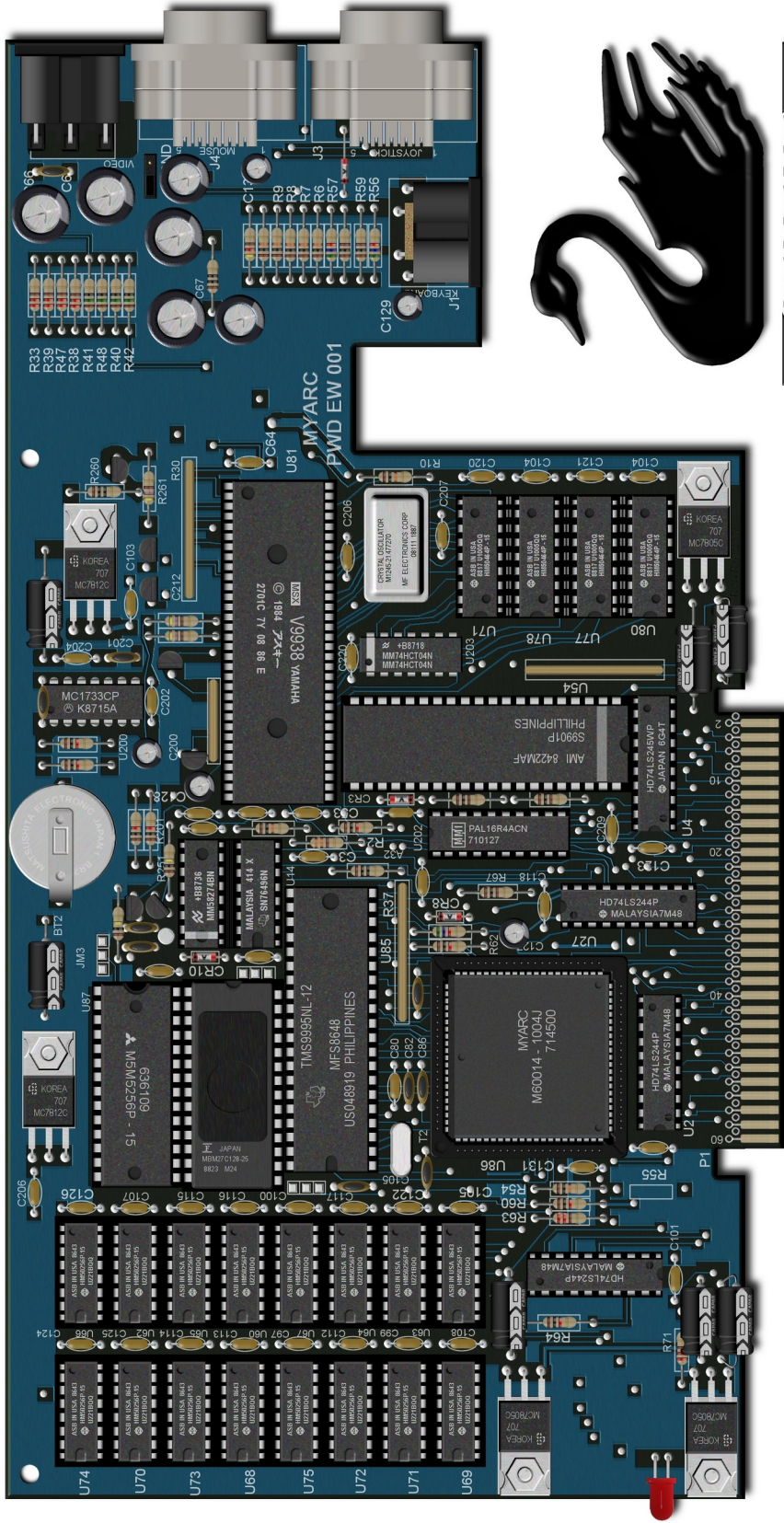
I/O PORTS Mouse, Keyboard, video, joystick (on-card), other ports require additional cards in the Expansion Box (RS232 serial/parallel)

BUILT IN MEDIA provided by Texas Instruments Peripheral Expansion Box

OS Myarc DOS, TI OS when in GPL Mode

POWER SUPPLY provided by Texas Instruments Peripheral Expansion Box

PRICE Standard keyboard \$449.95, Enhanced keyboard \$479.95



GENEVE
9640

<http://www.mainbyte.com/ti99/>

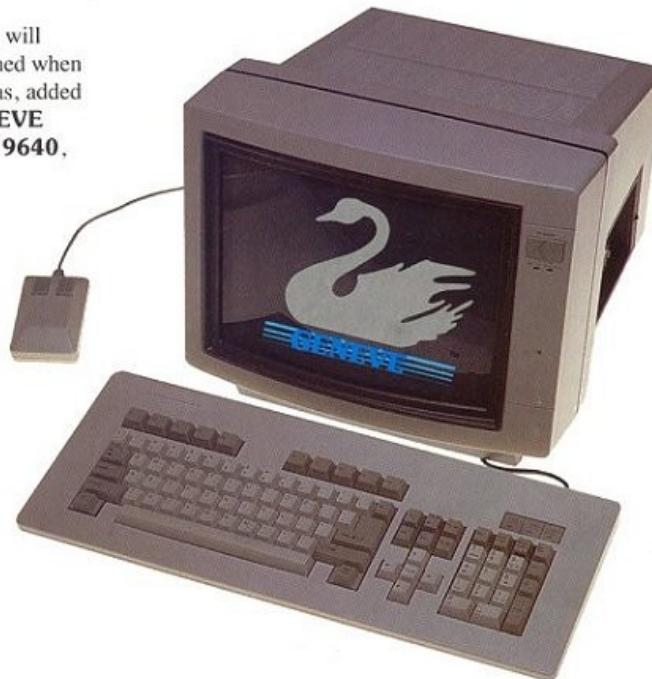
The GENEVE 9640

by MYARC, Inc.

It was a long time coming, but we think you will agree, the wait was worth it. MYARC listened when you told us what you wanted, took your ideas, added many of our own, and engineered the **GENEVE 9640**. Take a close look at **The GENEVE 9640**, and see, if you don't agree.

The **GENEVE 9640** has composite video output, to connect to a TV or computer monitor, like the T199/4A, as well as both high resolution (512 x 212 pixel's), and very high resolution (512 x 424 pixel's) RGB video output. In addition, up to 256 colors can be displayed on the screen at one time.

A PC style keyboard with input buffer is included with the **GENEVE 9640**. The RGB High Resolution Monitor with Sound, Monitor Cable, Mouse, and Enhanced Keyboard are optional.



T1 PEB required



The **GENEVE 9640** comes in a protective shell ready to plug into the T1 PEB. Connections are provided for Monitor with audio, Joy Stick, Mouse, and Keyboard.

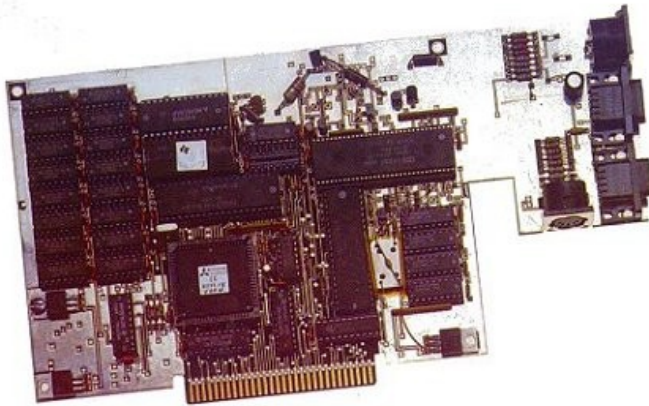


An outstanding 350 page manual with sections covering the introduction to and setup of the **GENEVE 9640**, using M-DOS, and Advanced Basic.

The **GENEVE 9640** comes with 6 pieces of software:

1. Cartridge Saver which allows the saving of most cartridge software to disk, then loading and running the saved software from disk.
2. Advanced Basic with new commands like draw and fill, the increased operating speed you always wanted, plus 32, 40, and 80 column display, and yes, it is compatible with T1 BASIC and EXTENDED BASIC.
3. The newest version 4.21 PASCAL run time to allow the loading and running of standard PASCAL software up to the full available memory.
4. T1 Word Processor upgraded to 80 columns, increased operating speed, plus Edit and Format reside in memory at the same time.
5. Microsoft MULTIPLAN upgraded to 80 columns, increased memory, and increased operating speed.
6. The MYARC DISK OPERATING SYSTEM.





There are so many features included in the **GENEVE 9640** we can not list them all in this brochure but three more you will want to know about are: built in real time clock with battery backup, 640K RAM, 12MHz clock speed and the **GENEVE 9640** is compatible with the vast majority of T199/4A software.

The companies listed below are the **MYARC** dealers who are stocking and have available for immediate shipment the **GENEVE 9640**. For more information or to place an order contact:

AMERICAN COMMUNICATIONS
428 Jean Wells Drive
Goose Creek SC 29445
(803) 797-5033

CITRONIC TECHNOLOGIES
981 Townley Avenue
Union, NJ 07083
(201) 686-5619

COMPU MASTER
112 Fairmead Road
Louisville, KY 40207
(502) 896-1935

COMPUTERS & CRAFTS
1418 Biscayne
Little Chocoma, WI 54140
(414) 788-6656 after 6 PM CST

DHEIN'S TRUE VALUE
7 West Airline Hwy.
Waterloo, IA 50703
(319) 236-3861

DISK ONLY SOFTWARE
P. O. Box 4170
Rockville, MD 20850
(301) 369-1339

EDU/COMP
6516 O'Henry
North Bridgeville, OH 44039
(216) 327-6579

GREAT LAKES SOFTWARE
804 East Grand River Avenue
Howell, MI 48843
(517) 546-0566

HUNTER ELECTRONICS
4N 370 Pine Grove
Bensenville, IL 60106
(312) 766-9503

L & M SYSTEMS
2330 East J-8 #173
Lancaster, CA 93535
(805) 948-1587

LAFLAMME & WRIGLEY WHOLESALE
5480 Canotek Rd., Unit 16
Ottawa, ON, Canada K1J 9B1
(613) 745-2225

LYBROOK INDUSTRIES
P. O. Box 1014
Wofforth, TX 79382
(806) 866-9892

NOVA COMPUTERWARE
52 Airport Road
Edmonton, AB, Canada T5G 0W7
(403) 452-0372

PALACE SIMULATIONS
13 Hill Street
Morristown, NJ 07960
(201) 292-1306

PLAZA COMPUTERS
424 Plaza Drive
Birmingham, AL 35235
(205) 836-7608

QUEEN ANNE SHOPPE
6-1/2 Boston Street, Room No. 4
Seattle, WA 98109
(206) 283-0953

ROBINETTE & ASSOCIATES
2850 Delk Road, Apt. 39A
Marietta, GA 30067
(404) 953-4584

SEEBER COMPUTERS
10668 Kaufman Road, NE
Silverton, OR 97381
(503) 873-3140

SPECIALIST IN
821 Main Street
Hopkins, MN 55343
(612) 938-3161

SUPERSOFT
34 California Drive
Rochester, NY 14616
(716) 663-0397

TENEX COMPUTER EXPRESS
P. O. Box 6578
South Bend, IN 46660
1-800-348-2778 (In Indiana 1-800-225-6838)

TEXAMENTS
53 Center Street
Patchogue, NY 11772
(516) 475-6463

VIDEO ELECTRONICS MARKETPLACE
458 Pleasant Street
Brockton, MA 02401
(617) 559-8935

VIDEOVISION
236 Upton St., P. O. Box 183
Grafton, MA 01519
(617) 839-4134

TI/Reg. TM Texas Instruments Inc.

MULTIPLAN/Reg. TM Microsoft Corp.

MYARC, Inc.
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