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Ryte Data. **NEWS REPORT MILLENNIUM COMPUTERS**

CALL FOR PRICE/AVAILABILITY OF NEW **TI COMPATIBLE » MYARC COMPUTER**

Your computer is obsolete? Don't believe it. Sell your machine? Never! Many people, magazines and companies have said that the TI 99/4A is dead; an orphan without support. Your 99/4A is faster, smarter and more useful than ever before.

The essential 'third party' (which made Apple and IBM successful) is coming out in force for the TI 99/4A. We'll say it once, if your computer continues to do the job -- it is not "obsolete." Over the past year many new products have been introduced; products which support, expand and improve the excellent TI 99/4A design. The following list is a partial report on new products:

Expansion systems to add full features and power to your computer.

New disk drive controllers that provide more storage, faster access and up to four double sided-double density slimline disk drives.

Powerful expanded memory cards - 128k, 256k, 512k and 1024k which provide RAMDISK files, application uses and printer "spooling" functions.

Astounding Graphics RAM (GRAM) peripherals which download modules to disk or cassette, provide customized programs and add more memory to the 99/4A.

Extended Basic programming language versions which give you HIGH resolution graphics. faster operations, more memory access and advanced programming features.

Multifunction cards which combine features in one expansion slot.

Real time clock peripherals which also include printer spooler features. A new precision input device, a "mouse," for desktop cursor control.

Home control system which operates your lights and appliances. This system can even function to monitor your heating system or act as a house security burglar alarm.

Your TI 99/4A is no longer "an orphan." The production of a powerful new compatible has started. This underlines the continued value and excellence of the 9900 family. Named the "Geneve 9640 Family Computer" from Myarc, this computer retains the best of your TI 99/4A with these exciting new features: 640k memory, fast operation, full sized keyboard, incredible high resolution and advanced expansion engineering. Myarc has spent over a year in developing this upgrade computer for the TI market. It will run much of the existing software and uses most of the Peripheral Expansion System cards. The first model is scheduled to be a "computer on a card" for the Peripheral Expansion System. Add all of this to the fabulous software from ASGARD SOFTWARE, MILLERS GRAPHICS. GREAT LAKES SOFTWARE, INCEBOT, DATABIOTICS, NOT POLYOPTICS, QUALITY 99

and many other companies. Then consider the popular "shareware" software concept within the TI 'community.' These are programs that cost only the disk, mailer and postage. You receive a copy of the program and pay the author a reasonable fee for the software. In other words, try it before you buy it! All of these products demonstrate what an 'out of production' computer can do.

Better yet, all the information essential to developing advanced hardware and software is now available to all TI 99/4A owners!

Now, believe it! Your TI 99/4A computer has more support than ever before. Subscribe to R/D Computing to see just exactly what we mean.

Dedicated to 99/4A and 9900 Computer Systems RACTINE NEUSLETTER

We have a vision. Our vision is one of continued TI 99/4A support. We're dedicated to the power of the machine. Fro the novice to the experienced computer user; for management, home, education, entertainment or advanced applications our publication "R/D COMPUTING" is for you.

Published monthly in Ontario, R/D COMPUTING gives you more innovative support than any other publication in Canada. Reviews, software programs, hardware, construction projects, technical information, new products and monthly news are all yours when you subscribe to R/D COMPUTING.

You need continued support for your machine; this is the place to find it. Many TI owners are not aware of the excellent support which exists. Several companies produce hardware and software for the 99/4A. Most of the new products are more sophisticated than anything ever developed for the 4A. We feel that the TI 99/4A deserves this support. Even though Texas Instruments stopped production, the power of their computer is just now being revealed. The millions of TI computers sold had only TI to rely on --- today that has changed!

From new software to advanced hardware; the support of the TI 99/4A computer has never been better! Take advantage of these new advances, get a return on your investment and use the power inside your computer.

A major feature of R/D COMPUTING is the regular "upgrade projects." These electronic construction projects are designed to give the 99/4A owners more features and improvements. For example, it is possible to increase the speed of your computer with a very simple part and switch. Each month we present new circuits, diagrams and projects for your computer.

We have just included a column on basic and extended basic programming, helpful tips and routines. Assembly language and "C" programs are also published to give TI owners a full range of useful information.

From the moment your 1986 subscription arrives at your home, you will have access to information that makes your computer more valuable, powerful and versatile. We believe that the TI 99/4A deserves new products, innovative hardware, software, information and a dedicated publication. THIS is what makes a computer "viable" in the fast paced microcomputer industry. Now that the 99/4A has been 'opened up,' all the secret information is available. You can have all these benefits and more each month. SUBSCRIBE NOW!

In our current subscription drive, you can really win. We are offering several high level prizes to subscribers. Please see page 10 for further details. No purchase is required to enter!

Read what they say:

"please enter my subscription for next year's subscription to your very informative newsletter."--- Manitoba

"Couldn't put it down! Here's my subscription. My wish list follows."- Florida "... words about you in Compuserve Conference. There were some "big" names in the TE community involved. Saw your ad in Computer Shopper."--- Illinois "Gentlemen: Thank you for the fast service on my subscription to the R/D Computing Newsletter, I would like to order back issues V 1.2 --- V 1.7."--- Italy

Software



Pre-programmed modules from Texas instruments and selected third party companies are available for TI 99/4A console owners in Canada. Prices require that a minimum order of \$30.00 be placed for these titles. 4 .

EDUCATIONAL \$10.00					
3002	Early Learning Fun				
3025	Mind Challengers				
3027	Addition & Subtraction				
3028	Addition & Subtraction II				
3029	Multiplication				
3091	Subtraction (Miliken)				
3092	Multiplication (Miliken)				
3094	Integers (Miliken)				
3100	Equations (Miliken)				
3118	Minus Mission (DLM)				
EDUCATIONAL \$16.00					
3043	Reading Fun				
3046	Reading On				
3047	Reading Roundup				
3049	Division 1				
INFOR	MATION MANAGEMENT \$15 ea.				
3006	Home Financial Decisions				
3007	Household Budget Management				

- **Physical Fitness** 3010
- Weight Control & Nutrition 3021
- Personal Real Estate 3022
- Measurement Formulas 3101

PROGRAMMING & UTILITY

3026 TI Extended Basic \$115.00

All modules are new, packaged in original cartons and will work with ALL consoles. Available to Canadian customers only. See order form for information on shipping, handling and insurance.

GPL Linker-RUNTIME

NEW FROM MONTY SCHMIDT:

GPL Linker is an ingenious program that places the power of Graphics Language Programming (GPL) at your command. No extra hardware is required beyond standard 32k and disk system. In short, Linker creates runnable program files from compressed (or uncompressed) GPL Assembler object files. You can then run these programs with "Option 5 Run Program Files" of the Editor Assembler Module.

Up to 24k GPL programs can be developed and run on standard 32k systems. Included in the run time version are two demonstration programs and "CONVERT," a public domain conversion program that converts MS BASIC statements to TI BASIC statements. Price: \$21.00 CDN funds \$15.00 US funds.

3058	MiniMemory \$60
01100	THE ADD IL \$60 (rea

- 3109 TI Logo II \$60 (req 32k memory)
- TI Writer \$60 (req expansion) 3111
- MicroSoft Multiplan \$60 (reg exp) 3113

ENTERTAINMENT MODULES

- 3194 Jawbreaker II
- Super Demon Attack 3219
- 3220 Microsurgeon
- 3222 Fathom
- 3227 Congo Bongo
- A-Maze-Ing 3030
- 3031 The Attack
- 3032 Blasto
- 3034 Hustle
- 3036 Zero Zap
- Hangman 3037
- 3038 **Connect Four**
- 3041T Adventure w/ tape
- Tombstone City 3052
- 3053 Invaders
- Car Wars 3054
- Munch Man 3057
- Chisholm Trail 3110
- 3112 Parsec
- Munch Mobile 3146
- Joysticks
- Speech Synthesizer TI

\$10
\$12
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\$12
\$15
\$10
\$10
\$10
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\$12
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\$10
\$21
\$85



This unit is a self-contained expansion system with standard 32k memory, RS 232 port for printers and modems, a powerful double sided, double density disk controller PLUS room for two slimline disk drives! No extra cabinets, power supplies or cables to buy. Atronic has designed the CPS 99 to offer advanced features at a price much lower than separate components. Now you can run TI Writer, Multiplan Editor Assembler package. Disk drives are not included. \$589.95 CDN funds.

NegaRam

The only full megabyte (1024k) RAM memory expansion for the 99/4A has now been introduced in North America. This new stand-alone unit attaches to the I/O connector to add the standard 32k PLUS 992k of extra memory. The innovative "SUPERVISOR" program monitors memory use, RAMDISK functions and bank-switching for application programs. Mega-Ram works with XB or E/A languages and other TI modules which require 32k. Compatible with virtually all TI programs. MegaRam does not come as an Expansion Box card due to the direct address line access needed. Price: \$575.95 (US) for twice the memory in this astounding product! Requires con- , sole, drive, XB or E/A.

MULTIFUNCTION EXPANSION CARDS

MULTIFUNCTION CARDS: Another first in the TI 99/4A community. DS/DD Disk Drive Controller with 32k memory on board. Controls up to four drives. Based on TI specifications. Frees up an extra slot at lower cost compared to separate Cards. Fully compatible with all tested software. Price: \$265.95 (US funds).

RS-232 with 32k memory on board. Two serial ports and one parallel port. Works like TI's RS-232 card except that the parallel port is not bi-directional. Gives you more room in your PE box. Price: \$175.95 (US).

A disk drive is the most important peripheral today. It gives you more control, advanced features, better software, easy operation and astonishing speed. Upgrade from cassette with a full height or a half-height disk drive. Prices from \$60 to \$189. Cables: \$25-\$50.





Compiler

New Basic Compiler that is finally easy to use! Supports virtually all Basic and Extended Basic commands in existing programs. Simply load and compile programs from a menu driven directory on your screen. No extensive re-writing, variable declarations or conversions are required. Compiler produces code-list in one pass containing all variable addresses and jump list. Package includes Extended Basic Loader, Floating Point Loader, Integer Loader, Disk Menu program and DSR program for the Compiler support. This Compiler cannot unravel DEF statements and stops on the END statement-no SUB's allowed. TRACE, BREAK, ON ERROR, CALL LOAD and CALL LINK may produce execution errors. Requires 32k, disk. Price: \$20.00 plus \$2 shipping (US funds).



Designed for the CorComp Clock Peripheral— Triple Tech Card or Stand-alone models. This utility package provides more functions for use in your Extended Basic programs. Direct access to the clock ROM at assembly speed gives you these features: three independent timers to set and read; alarm function; two interrupt routines to display time and date on screen with CTRL T-continuously or on your

command; all time and date displays are in 12 or 24 hour format using TEXT. This program also allows the week, date and time to be set independently rather than all together.

Program disk is not copy protected to allow you full use in your Extended. Basic programs. Package includes disk and instructions. Only \$17.95 plus \$2 shipping (US funds).

XBII <u>plus</u>

As reviewed in Micropendium October 1985. This command module gives you all the features of Extended Basic PLUS 40 new commands. Totally compatible with TI's XB, this enhanced version gives your programs. more power to access your 99/4A. Commands such as MLOAD, MSAVE, VPEEK, VPOKE, GPEEK are superior to most other Basic environments. Various demo programs and new applications using high resolution graphics make this module a "must" for Extended Basic users. Comes complete with a 95 page manual. Requires console and 32k. \$75.00 (US) plus \$2 shipping.

Printers provide the essential tools for word processing, computer graphics, program listings and other printing functions. From low-cost dot matrix to 'workhorse' typewriter style, a printer completes your system. Requires an RS 232 port. Special Citizen 120 dot matrix printer: \$400.00 CDN cable included free!





GPL Assembler v2.1 NØW with high memory loader package

UNLOCK ALL THE SECRETS! New GPL Assembler Version 2.1 available exclusively through Ryte Data.

This program provides the power to write, edit and assemble true GPL programs for the TI 99/4A. Create code that accesses console operating system routines directly. Develop programs that use the GPL Interpreter and all the features of the TI 99/4A.

One of TI's major secrets was the GPL interpreter contained on GROM chips in the 99/4A console. This internal code, "Monitor" and the operating system, was never documented. Many of TI's routines, programs, languages and command modules are written in this "Graphics Programming Language."

NOW THIS 'HIDDEN CODE' IS REVEALED IN FULL!

It is now possible to write your own 'modules' or update GPL modules (with the new hardware devices such as Maximem and GramKracker which are now available), modify disk based programs written in GPL and create working GPL programs such as Myarc's new Disk Manager III program. You can even modify the TI 99/4A operating system! New hardware devices will be available to take full advantage of this important software package.

This package includes the GPL Assembler disk, printed documentation, GPL tips and hints, update support service and commented GROM/ROM listings (with the book "INTERN"). An example for a command module type GPL program is included with source, object and list files on disk.

Requires: 32k memory, disk drive(s), TI Editor Assembler package. Printer/RS-232 recommended. Price: \$59.95 Package w/ INTERN \$75.00 (US)

Monitors

Your TI 99/4A can use a composite colour monitor for a sharp, crisp display. Better quality pictures than an ordinary TV set, a monitor will eliminate family viewing conflict. Low cost monochrome (black & white) monitors are perfect for word processing or programming. Call for models, features and prices.

NTERN^{T199/4A ROM and GROM Listings w/ Commentary by H. Martin plus GPL Directions}

THIS BOOK IS THE KEY! INTERN ("Inside") the TI 99/4A reveals the hidden secrets of the 4A. Essential for owners, enthusiasts, programmers, developers or anyone who wants in-depth understanding of how the TI 99/4A works. Over 200 pages of complete disassembled internal code found in the 4A console. ROM and GROM listings are fully commented with GPL directions explains how the entire operating system functions - including the GPL interpreter. Hidden tricks and tips are discussed along with the commands, format, opcodes and uses of Graphics Programming Language used in the mputer.

Starting with the cons² ROM: address >0000 to >1FFF, this book gives you a detailed look at every secret. Interrupt routines, power-ulg soctions, system Monitor, cassette routines, Basic and Extended Basic interaction and various utility routines. GROM V and 2 are also listed and commented in detailed descriptions. If you've ever wondered way your TI 99/4A acts as it does, what the tricks and hidden features are, where the "blank" spaces exist, why Texas Instruments kept all this information a secret: well, this is your chance! Order now! Only \$17.95 (US) Cheque, Money Order or COD. Add \$1.00 via Ground \$3.00 via Air \$5.00 shipping overseas.



G-Memory MODULE

Add another 8k of user memory to your TI 99/4A. The "GPL" Memory Module was designed to add new features to your computer. GMemory allows you to load and run Basic, Assembly Language and GPL (Graphics Programming Language) programs in the 8k 'module space' of the 99/4A. This module contains 16k of EPROM programming and 8k of user memory. The on-board software allows you to access this additional memory easily with cassette or disk systems.

This is a powerful low-cost 24k memory expansion in addition to the usual console memory or the 32k expansion available for the TI 99/4A. It is the only module on the market which allows standard languages and 'GPL' to be used by Ti owners! GPL programming requires the GPL Assembler package. Plugs directly into the module port for instant use. Manufactured in Canada. ONLY \$98.00 CDN funds or \$70.00 US funds.

48k Universal Module. Maximem is manufactured in Canada for the TI 99/4A. This amazing device allows you to upgrade your computers memory to 96k: 48k console and 48k Maximem. You can download (save) TI modules to cassette or disk load and run assembly language PLUS having the Editor Assembler and Disk Manager module programs instantly available.

This Universal Module opens up a whole new dimension for the TI 99/4A. An optional GPL loader program is available to load and run GPL code produced by the GPL Assembler. You can modify existing TI programs or write new "module" type code for use with the Maximem.





From Millers Graphics --- an 80k 'module' peripheral that provides a wealth of new features for the TI 99/4A. Download modules to cassette or disk, modify original TI programs, new operating system features, load and run Assembly Language Basic and GPL code ... all with battery backup. This device is menu driven with a wealth of features for both casual and expert users. Opens up an entire new area of memory for additional programming and custom modifications. Stores approximately 15 modules on 1 double sided

double density diskette. Contains its own module port for easier saving of modules.

80k version \$312.00 CDN funds or \$193.00 US funds.



128kCARD Features: from Mechatronic > 128k RAM/GRAM memory . 64k RAM and

- 64k GRAM
- > Expandable to 512k \bullet Two = 1 megabyte RAM
- > Load and run assembly programs
- > Load and run GPL programs
- > Save GROM modules and programs to disk
- > Save ROM programs to disk
- > Load and run ROM/GROM programs
- > Use "Load" files for custom system operation from main menu screen
- > Add an extra 13k to Basic programs
- > Menu access up to 8 choices (modules, etc.) from main screen
- > Load console GROMS 0-2 into the GRAM card, modify the 99/4A console operating system for new features!
- > All software is on card. No disk required.
- > Review module library from main menu
- > Hex monitor allows you to change CPU, VDP and GROM memory directly from keyboard input

> Change CRU address base via switches



GRAM

US FUNDS

with the GPL Package: \$310

32KINTERNAL MEMORY

The BEST way to expand your computers memory . . . INSIDE the console. Our 32k memory is located "under the hood." inside the empty area behind the module slot. No boxes on the side to bump or jar, no "freight train" effect which takes up desk space. Expand your TI to its full 48k potential. You can run TI LOGO II with 'just' a cassette deck! Other programs which require 32k are now accessible to all 99/4A owners. For those with an expansion system, our 32k board will free up an extra card slot. For those without an expansion system, our 32k board provides more memory at lower cost. You can save up to \$127 compared to other stand-alone prices. Due to the special design, we install this 32k board inside your console for you. (Technically experienced owners can install this board for even more savings --- write for details). Only \$98.00 CDN funds \$70.00 US funds.



Our 99AT expansion project is designed to provide:

-lower cost expansion system with more features than any other system; ---up to four disk drives in the system;

-five expansion slots for standard TI size cards; ---smaller connector cable;

-contemporary design and future upgrade;

-support for the Myarc 'Geneve' 9640 Family Computer system. As this project is just now being completed, we are taking advance orders. The 99AT project was designed by Pat Saturn and implimented through Millennium Computers. For full expansion capability; new peripheral cards, disk drives and the new Myarc computer system ... the 99AT expansion unit is the only expansion choice. To order yours, simply send us your advance order with your phone number. Your "99AT Expansion Unit" will be shipped on a first come — first serve basis.

ONLY \$210.00 CDN funds or \$155.00 US funds.

80 Column

WATCH your TI 99/4A grow up! Imagine adding HIGH RESOLUTION GRAPHICS - 80 COLUMN TEXT/DISPLAY, more sprites and 192k of Video RAM memory. Best of all, this new Enhanced Graphics Adaptor Display (EGAD!) is compatible with any TI 99/4A computer system; from console only to full expansion systems. No extra memory or other peripherals are required. You will want a hi-resolution composite or analog RGB (red/ green/blue) colour monitor to get the sharpest, clearest, most colourful and biggest display you've ever seen on the 99/4A.

EGAD has features you've only dreamed about; an additional 192k of memory, compatibility with all existing software - modules, cassette and disk programs, useful with Basic and Assembly Language, high speed graphics and memory moves, 'page' switching (for animation), 512 colours and MORE!

This is **THE** peripheral upgrade your TI 99/4A needs! Due to the high demand, you must place your order to secure delivery. Orders placed before December 21st receive a 10% discount price of \$200 US funds - first come first served. Orders postmarked or placed after December 21st are \$219.00 US funds. Include \$6.00 Shipping and Insurance.





Winners Draw

INCENTIVE PROMOTION

Until November 25th, you can win FREE PRODUCTS. We believe that the TI 99/4A is just now showing its true power and flexibility. To demonstrate this belief we are offering TI owners a chance to win one of a range of products.

Two categories of prizes have been set. They are suitable for both cassette and disk drive systems.

Simply enter your name in our draw to win your choice of these fine products for your TI 99/4A:

- Navarone 'Widget' Cartridge Expander
- StarShip Pegasis by Not-Polyoptics (cassette Basic)
- Night Mission by Millers Graphics (cassette Extended Basic)
- Microsurgeon (TI module) 4.

For subscribers to R/D COMPUTING the draw will include your choice of:

- Extended Basic II plus (high resolution module)
- 32k Memory Expansion unit
- GPL Assembler Package with INTERN and GPL Linker (32k/disk) 3.
- MiniMemory Programming Module
- Super Clock Support, INTERN book and Basic Compiler (disk) 5.

Lifetime subscription w/ disk to R/D COMPUTING. 6.

Send in your subscription on the ENTRY ORDER form. Use the postage paid Ryte Data envelope (for orders only) to mail your subscription today.

No purchase is required to enter the draw. Send in your name and address on a postcard, stating your choice of product. All entries will also receive a new catalogue listing of products. As your name and address was obtained from Texas Instruments, THIS OFFER WILL NOT BE DUPLICATED. To remain on our mailing list, enter your name TODAY. REMEMBER, our promotional draw closes November 25th, 1986. Winners names will be published in the December 1986 issue. Enter your subscription NOW!

DO IT TODAY!

As a final offer to TI 99/4A owners, if you would like to sell your computer system, we will list your ad in R/D COMPUTING free of charge. Call or write for details.

GOVERNING RULES

Contest is open to all TI 99/4A owners and users groups in Canada and the United States except the employees or family of Ryte Data/Medennium Computers (648845 Ontario Limited), Entries become the sole property of Ryte Data and may be used in any manner by the company.

Only one prize per entry, family or group.

All prizes as listed above will be given away. Any taxes are the responsibility of the winner. The winner must accept the prize as is, it cannot be exchanged for another item or a sum of money. Prizes will be sent out by Special Delivery mail.

Promotion opens August 1st, 1986 and closes November 25th, 1986 at midnight. Entries must be postmarked no later than November 24th, 1986. Random draw will take place on or before December 10th, 1986 at 6:00 p.m. in Haliburton, Ontario.

The winner agrees to have their name and address published in R/D Computing or used or listed for any promotional or advertising purposes.

To receive the names of all winners, send a stamped, self-addressed envelope marked "Winners" to Ryte Data, 210 Mountain St., Haliburton, Ontario KOM 1S0 after January 5th, 1987.

Contest is subject to all Federal, Provincial, State or local laws and regulations. Offer void where prohibited by law.

NO PURCHASE IS NECESSARY TO ENTER DRAW.



ORDER/ENTRY

Date

Send in your subscription on the ENTRY ORDER form. Use the postage paid Ryte envelope (for orders only) to mail your subscription today.

YES! ENTER MY NAME AS FOLLOWS:

Name Address City Phone

My choice is _____

MASTERCARD Expiry

Signature /MC orders. Add 3% Shipping, Handling per total order. Add 3% for Allow 2-7 weeks (maximum) for delivery.

R/D COMPUTING NEWSLETTER Monthly News, projects, reviews BACK ISSUES are \$2.00 each V1.3 V1.4 V1.5 V1.6 V1.7

TERMS: Personal cheque, company cheque or money order, MasterCard and COD orders add 3%. Enclose number, expiry date and signature. All prices are cash terms. Personal cheques are held for clearance. Add 3% shipping, handling and insurance. Delivery, allow 2-7 weeks. Add 10% for UPS shipping. C.O.D. service add \$10.00. Ontario residents add 7% sales tax. Dealer inquiries invited.





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