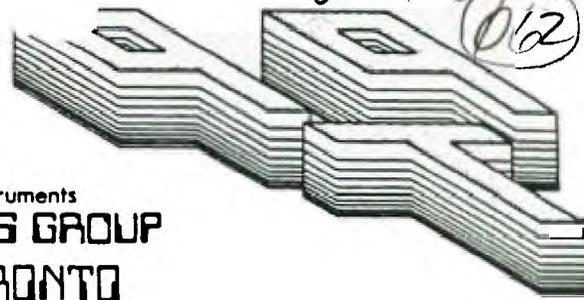


NEWSLETTER 9T9

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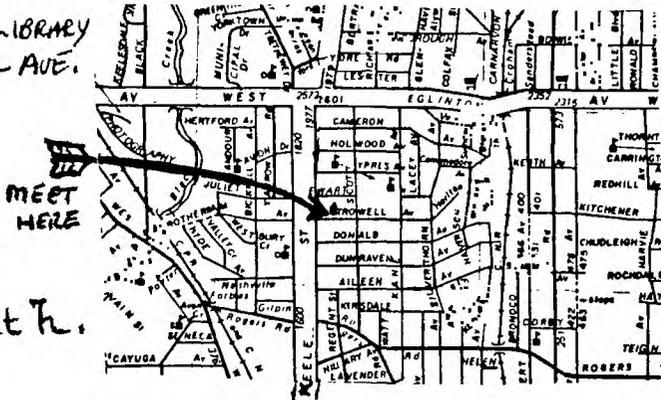
Texas Instruments
USERS GROUP
TORONTO

FOR THE TI-99/4A COMPUTER
and Compatibles

DOUBLE ISSUE

EVELYN GREGORY LIBRARY
120 TROWELL AVE.

* Last
Saturday
of the month.



NEW MEETING PLACE



Msg. #7921 in **Texas Instruments SIG** Posted on 10/16
To: ALL From: STEVE MICKELSON
Subject: 9T9 USERS GROUPS MEETINGS

The 9T9 Users Group will meet on a new day and place: Meetings will be Saturday mornings 9:30 - 1:00 PM, at the Evelyn Gregory Branch of the York Public library, at 120 Trowell Ave. That's ~~five~~ blocks south of Eglinton Ave., 1/2 block east of Keele St. The meeting schedule is as follows:

Saturday, Oct. 31 (get TI tricks with your treats), Nov. 28, Dec. 19. Visitors welcome. We meet in the library's auditorium. Bring consoles and soldering irons for a few "hands on" mods in the Oct. meeting. See the new TI-IBM utility which reads IBM ASCII text files and translates them to TI DV80 format and vice-versa. See the disk of the month, of the latest software from our library demonstrated and featured each month. Visitors, ask for your free complimentary copy of our Newsletter 9T9. For more information, contact: Randy at 469-3468 or Steve at 657-1494. We, also, support the new TI compatible, the Myarc Geneve. Hope to see you there.



SEP 7
M4L 3T0

From:
9T9 Users Group
#109-2356 GERRARD ST. EAST
TORONTO, ONT., M4E-2E2
CANADA

To:

9T9 EXECUTIVE COMMITTEE

PRESIDENT: Steve Mickelson (657-1494)
 VICE PRESIDENT: Bill Allen (541-8606)
 SECRETARY: MEMBERS: PS Randy Bassetto (469-3468)
 PRESIDENT Peter Sandford (2107)
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 Cecil Chin (414-2322)

PAST-PRESIDENTS Lloyd Lindsay (743-3868)
 Emile Verkerk (633-1451)

NEWSLETTER EDITOR

Steve Mickelson (657-1494)
 Associate Editor - Blair MacLeod

MEMBERSHIP FEES

FULL MEMBERSHIP \$3.00 / year
 NEWSLETTER SUBSCRIPTION \$1.00 / year

All memberships are household memberships. An newsletter subscription is only for those who do not wish to attend meetings, but wish to receive our newsletter and have access to our library. You are welcome to visit one of our general meetings before joining the group. If you wish more information contact the president in writing at the club address on the front cover or call and leave a message with his answering machine.

COMMERCIAL ADVERTISING

Any business wishing to reach our membership may advertise in our newsletter. The rates are as follows: (width by height):

1/2 PAGE (9" x 6") \$4.00
 1/4 PAGE (4 1/2" x 6") \$2.00
 1/8 PAGE (4 1/2" x 3") \$1.00

Please have your ad camera ready and paid for in advance. For more information contact the editor. Don't forget, that any member wishing to place ads, may do so free of charge, as long as they are not involved in a commercial enterprise.

NEWSLETTER ARTICLES

Members are encouraged to contribute to the newsletter in the form of articles, mini-programs, helpful tips, jokes, cartoons and questions. Any article may be submitted in any form by mail or modem. We will give credit to any article appearing in this newsletter. The printing of any given to the author and 9T9. More information is required, call the editor. The names of contributors in Newsletter 9T9, 9T9 Users Group, and Nine-Five Users Group are Copyright (c), 1991 by the 9T9 Users Group of Toronto, Canada, all rights reserved.

DISCLAIMER

Opinions expressed in this newsletter are those of the writers and are not necessarily those of the 9T9 Users Group. 9T9 cannot assume liability for errors or omissions in articles, programs or advertisements. Any hardware modification or project is presented for informational purposes, and the author, newsletter staff, and/or 9T9 Users Group cannot be held liable for damage to the reader's equipment. All such projects are done at your own risk!

Tid Bits, #12

-By Steve Mickelson, CIS 76545,1255; DELPHI/GENIE SMICKELSON

This article was written rather hurriedly, as the deadline is drawing nearer. You may note the new date and time for meetings. As a note of explanation, we appealed to our membership, to help find a new meeting place, centrally located and reasonably priced. As North York Board of Ed., backed out of a offer for a bargain-priced place, and asked for \$55.00 per session, \$15.00 MORE than what we paid at the old location. It seems that since we had neither student or teacher sponsorship, that we were not eligible for special "preferred" rate. As we were trying to cut costs, we became a club without a home. An orphan again. As it seemed no alternative was forthcoming, I approached the local branch, of the City of York Public library. A hall was available, at a REASONABLE \$20.00 per meeting, including use of the coffee urn and all the free water we need. Unfortunately, it was not available for the traditional last Tuesday, but could be rented the last Saturday. The choice, moving to the last Saturday, at this hall, or having NO scheduled place at all. So, I made an executive decision and booked the hall for October 31, with the November and December dates set, tentatively.

I know Saturday is a pain for many. It is my "being with the family" day and the only day I can sleep-in. I don't think one Saturday morning a month will kill any of us, and am willing to give it a try and hope you will do the same. We may lose some regulars, but may see some others, who couldn't make Tuesday's on a regular basis.

The decision is not carved in stone. So if you have a location in mind, between Highway 427 and the Don Valley Parkway, and somewhere between Finch and Lawrence, for about the same rate, on the last Tuesday of the month, let one of the executive know. One advantage, though, is visitors like Clint Pulley or Bob Boone, can more-easily make a Saturday meeting.

I think back in May, I reported that the Maximem has no GRAM! Need I say how wrong I was. Also, in that issue was an article about the CHARA1 file, by Lutz Winkler, which came from the San Diego TI-SIG newsletter. I have noted some of our articles reprinted, actually photocopied, from Newsletter 9T9, without credit. I am sure that is just an oversight. Editors please note the disclaimers inside our newsletter. Other newsletters faithfully, give credit to both the original source, (if different), as well as the newsletter, from which they obtained their article. I sure there nothing more frustrating, than spending 15 to 20 hours assembling, editing, printing, cutting, pasting and getting printed, a newsletter, each month, only to have your handiwork "pirated", by someone with not so much as word-one of a credit.

(Please note change of address on front cover as new date for 9T9 meetings. See Map.)

As you may have noted, I am now on GENie, the database is humungous, but us Geneve users are having problems downloading large files, such as the latest SYSTEM/SYS or files that have been archived. It seems, Fast Term writes to a disk, the X-OFF from the downloading user, is somehow not received or recognized, and GENie keeps-on sending data. Fast Term either gives a number of errors, retries and then aborts the download. In some instances, the download seems to be complete, but everything after the first 33 sectors consists of useless garbage, such as D7's. Curiously enough, even large text files are no problem, the "hold" code is recognized during disk access. Any file smaller than 33 SECTORS in size is no problem. I've contacted Scott Darling, one of the sysops there about the problem and 2 to 3 wasted hours online, (if you count the time value of the useless archived files I downloaded. If you have a problem of a similar nature, contact Scott, by sending a E-mail message to TIKSOFT, which will be read by him.

Our last issue was 24 pages in length. It appears, some members received their copy, missing a page or more from the end. If your copy is the same, contact RANDY for a replacement, and I'll pass the word on to Ruby, at Double Q, where we have the newsletter printed.

Our sympathies go to fellow member, Blair MacLeod, in the recent passing of his mother.

I had a note on what programs were featured on this month's release, but seem to have misplaced same. Anyhow, this meeting, we plan to have a demonstration of the library's "Disk Of The Month" as well as the new Freeware Picasso, by either Andy or Cecil. From what rave reports I've heard, this Art cum Text utility is a winner, having more features and much easier to use than some the regular commercial software. Poorly planned demos was a real problem our executive addressed, in its last meeting. When asked how to improve our meetings, it was suggested, that we shorten the business portion of the meetings, so as to have more time for demonstrations, tutorials, etc. I have been approached about having a special tutorial on assembly code, so if you feel confident to lead a group of eager users into the "FAST-LANE" side of computing, please step up and give us your help.

Last meeting, I handed out a flyer on improving the color and sharpness of the TI's colour display. I have done two of the modifications, to two of my consoles, much to my satisfaction. Cecil, did not note any appreciable improvement. The resistor used is a 330 OHM, 1/4 WATT, 5% tolerance value, (Radio Shack sells 5 of cat. # 271-1315 for \$0.59 plus tax. For our next meeting, I will bring my back-up console and will try a third such mod. for the next meeting. I intend to bring the MG Prom Set and my Corcomp Disk Controller Card, see review this issue. Also, I'll bring the Corcomp TI-IBM text conversion module, which we can test. Randy intends to show how to modify the 4A console, so that the joysticks function, EVEN with the "alpha lock" key depressed. You will need a 1N4148 diode, for the alpha lock mod. So bring your soldering irons and consoles along.

Because of short-time period a few things will have to wait for a later issue; namely the article re: 512 upgrade for the Foundation card, as well as the promised TI Fact Sheet, pull-out and post fact sheet. Next month, I hope to have some reviews on the majority of the terminal emulator programs, available for the TI. If you noted the different print style in TId Bits, from the rest of the newsletter, a new printer, (yes, another), has been acquired, from my sale of stock, (just two weeks before "Black Monday"). That and a few other peripherals I'll tell you about in reviews in up-coming issues of the Newsletter.

What A Guy!



GREAT FUN IS COMING
TO THE 1987 CHICAGO T. I. -FAIRE!!!

There's great fun coming to our annual Chicago T.I.-Faire, to be held November 7, 1987. This year, the theme of our Faire will be, "The Computer that Refuses to Die!" Along with our usual games, contests, raffles, and door prizes, we will have some great surprises for visitors to our Faire this year. This year's speakers will really pack the room with attentive audiences. We will have Lou Phillips, of Myarc, Inc. doing a demo of his new "GENEVE" machine. Come and see the new compatible machine up and running. Great Lakes Software will also demo some new products, which they have developed for the T.I.-99/4A. We will also have our own Dave Wakely doing a demo of the Triton Turbo XT, for those who are interested pursuing that path.

We are taking this opportunity to contact all known T.I. users and users' groups and to invite you to attend our fifth T.I.-99/4A Computer Faire. We will also be contacting all known vendors, producers, and distributors of products, hardware and software, which are compatible with T.I.-99/4A home computers.

This year there will be something entirely new: On Friday night, after our Faire set-up, we will be having our first "Friday Night Social Mixer." Here, Faire attendees will have the opportunity to meet with the exhibitors, the speakers, the programmers, and the designers, who will be present at this year's Faire. It will also be an opportunity for Faire attendees to meet with local and out-of-town users and members of the T.I. community. It is our desire that here we will be able to establish the lines of communications which will allow, through the networking process, for a renewal and a veritable renaissance of our T.I. community.

Also, this year, the annual Chicago Area T.I.-99/4A Users' Group's "T.I. Faire" will be the opening event in our first "T.I. Weekend." This year, the Chicago Users' Group will be putting on its Faire in conjunction with the Milwaukee T.I. Users' Group and the Wisconsin T.I. Council, who will be putting on their Faire on the following day, Sunday, November 8, 1987. (Milwaukee Wisconsin is approximately 1 1/2 hours away from the location of the Chicago T.I. Faire.) As you can see, this will be an excellent opportunity for all T.I. loyalists to, a.) find out what products and/or services are available to the T.I. community, b.) to find out what new products are being made available for the T.I. family of computers, and c.) to make contact with those vendors who provide the above mentioned products and/or services. In addition to providing product information, our Faire will also give lectures, seminars, and technical demonstrations/presentations. We will be dealing with diverse subjects such as Pascal (p-Code) programming, assembly language programming, T.I. Artist, T.I. Writer, etc.

The Faire Committee has also authorized the purchase of hundreds of blank diskettes, in order to make available at the Faire public domain programs that are precopied on disk. This process will save time and expense for our library and for the purchaser. Please don't miss this chance to increase the size of your personal library with quality public domain and "Freeware" programs at a reasonable cost.

This year, The O'Hare/Kennedy Holiday Inn was chosen for accommodations for our Faire attendees and vendors because of the high quality of its service, and its close proximity to our Faire, O'Hare Field Airport, and the tollway, that is used when travelling to Milwaukee. (Any exhibitors, attendees, speakers, and/or demonstrators who make their reservations through our group will receive a special group discount rate of \$65.00 per night per single [or] double occupancy.) It is also here that we will set up a hospitality suite for all of our exhibitors, demonstrators, and speakers. Also, our first "Friday Night Social Mixer" will be given at this same place.

For directions and/or additional information, about the CHICAGO-AREA T.I.-99/4A COMPUTER FAIRE, please feel free to write to us at, Post Office Box, 578341, Chicago, Illinois, 60657. You may also leave me a message on our users' group's b.b.s. (300 or 1200 baud). It is open 24 hours a day. The number is (312)966-2342. If you wish to make a direct "voice" contact, call our users' group hot-line, and leave me a message, or call our information chairman, Grant Schmalgemeier, at (312)477-0690 (from 09:30 p.m. to 11:30 p.m. (C.S.T.)).

Remember, Saturday, November 7, 1986 is the date, 9:00 p.m. to 6:00 p.m. is the time, and Triton College's Ironwood Room is the place. You have the opportunity to help us celebrate the machine which we know of as, "The Computer that Refused to Die!" I look forward to seeing you there!

Sincerely,
Don Jones
CHICAGO-AREA
T. I.-99/4A USERS' GROUP

MG Proms for CorComp Disk Controller Card

A Review by Scott Darling, Copyright 1986.
DOWNLOADED FROM GENIE

Permission to reprint given as long as due respect given to author.

The MG proms are available from MG, W. 1475 Cypress Ave, San Dimas, CA. 91773 for \$34.95. This includes postage and handling.

Good points!:

- 1: Removes the CC title screen! This eliminates problems with some modules.
- 2: Improved error handling on all utilities. E/A would sometimes lock up on me!
- 3: Decrease error time out- Disk Not Initialized now comes back faster!
- 4: For GK owners: Tool Shed and NEW calls can be used in an MSAVED program.
- 5: For A/L programmers: you can now perform Direct Sector I/O in VDP or CPU.

There are 2 short programs that show the format.

New Calls:

- 1: CALL ILR This clears out low memory and load the E/A Utilities. CALL LR does this automatically.
- 2: CALL LR This loads a D/F 80 Compressed/uncompressed file. Same as E/A # 3.
- 3: CALL LLR This starts a non-auto start program, same as E/A #4.
- 4: CALL RUN This loads the default "DSK1.UTIL1", same as E/A #5.
- 5: CALL RUN("DSK2.PROGFILE") Loads the PROGRAM IMAGE file, same as E/A #5.
- 6: DELETE "XILR" Allows all of the above calls froma running XB program. This must be done before using the links.
- 7: And lastly there is a patch for ADVANCED DIAGNOSTICS to load from CALL LR.

NOW the Bad points!:

1: The only BAD point I can find is that Ramdisks and Hard Drives are negated from the CALL RUN command. The reason I was given is that "only one DSR can be used at one time", thusly the one on the CC Card is the only one that can be active! Although, it is possible to use the CALL LR with the Ramdisk and Hard Drive. Because the DSR is turned off when the loader loads the file!

2: Bad point #2, this only aplys to A/L programmers. 'B >6A' or 'B >70' can not be used. You have to use the old save R11 to GPL space and then restore the GPL, retrieve the R11, and RT. Minor details I know....but it took me along time to find out the other way! So much for optimizing code!

Well, that is all I could find Wrong and Good! Should you buy the proms? That is up to you to determine thier value. I hope I have provided the info you will need for that conclusion.

ANNOUNCING THE NEW TI-99/SG UPGRADE!!!

FOR THOSE OF YOU TIRED OF HEARING OF CLONES AND COMPATABILITY, I DOWNLOADED THE FOLLOWING FROM GENIE -ED.:

The following announcement was received by Jonathon Livingston Kilroy who has been thoughtful enough to pass this exciting information on to us for inclusion in the SAC TIERS newsletter.

Thank you, J.L. Kilroy

- from 99 'PUTERS 'N STUFF, ltd.

Phineus Timely Chronotis, President

Dear TI-99 User,

Ever since Texas Instruments thought it best to discontinue their fine product and leave us out in the cold to fend for ourselves, people like you and me have been asking for an upgrade to our miserable little machines. Well sir, your waiting is over.

Announcing the new upgrade for your TI-99, it's the TI-99SG (SG for Super Good!) It is, in our opinion, the best little buy that can be legally had in this country.

You see, friend, my chief engineer and next door neighbor Farley had his kid's TI open trying to clean the cat fur from between the keys, and he looked up at me and said, "Phil, this ain't so hard to clone. Why, give us a little time and we can make one of them upgrades ourselves. If we could get it working before the next presidential election, we ought have it before them boys back east ever finish with theirs."

"You, know, Farley," I replied, "you got something there." So Farley and me, we cleaned out my garage and began working on what would become the TI-99SG! But enough preachin', let's get down to brass tacks.

The 'puter is about as big as my cat Fred, so if you ever met Fred you probably have a good idea. Either way it's about the size of a toaster oven, with a long air conditioner cord which hooks to 220 so you can plug it in next to your dryer. And unlike the 99/4, we put a fan in ours to keep her cool. We got the fans on sale too. Ever wonder what they do with those WWII office fans that's as big as a plate and painted that dirty grey? We'll, they're just the thing to keep all this high tech stuff cool.

Let me tell you, the cabinet is a beaut. We went out and bought a lot of that cork board they have on sale over at the lumberyard, and we fashioned us this box. We then stuck some contact paper over it, shined her up with some wax and a little spit, and I'll eat spoiled milk if it doesn't look as good as a mantle clock polished with bacon fat. We also went down to the auto body shop and got us one of them smoked glass things all the VW's seem to have, and with a lick of the torch we fashioned a custom dust cover. Course, you have to prop her up with a pencil and a piece of postal tape, but Farley says we can throw that in without upping the price any.

For those of you technical folks, well, we got a surprise. Farley got one of them old microwave ovens and he put together our microprocessor, the CF-204 -X0IR/PS199x. It's about the size of a pack of cigarettes and has more wires coming out of it than a beagle has hairs on his butt. We figure that you can just hook whatever you want to whatever wire and get better results than all that Japanese dip switching stuff.

Now, a lot of jaw flappin's been going on about keyboards, and we came up with a great idea. Farley said we have to keep costs down so we decided that we'd fix it so you can get one of those cheap typewriters at a rumage sale and hook it up straight away. You take the keys and you take that long little arm, and instead of hooking it to those levers, you hook it up to the little arms we have jutting out of the box, and you can use your typewriter as a keyboard. You can even use one of them electric jobs if that's your fancy. You just open up the bottom, pull off all that electrical junk and hook her up just like it was a manual job and you're all set.

We also have a RAT (Really Astonishing Thingamajig) which'll beat those "mice" paws down. Instead of having its tail going all over the floor and hooking up to the 'puter itself, we decided to go remote control. Now what you do is you lift these two little antennas which are where its ears ought to be, and then you kind of give it thump on the back of its neck with the back end of your middle finger. The RAT will send a signal to the 'puter, which will send a signal back. The RAT's eyes'll light up like a Christmas tree and you're ready for business. whole thing doesn't take more than thirty seconds or so to do.

Of course, there's always someone yammering for compatability. Our computer will become compatable with whatever is out there. Of course, it'll take time, and Farley figures that by the time we get it to run right our competition will be filing chapter 11. So we'll burn that bridge when we come to it.

Now we have to admit that the computer isn't quite up to snuff yet. We've found that if the computer is left on for more than five minutes it starts a minor electrical fire, and the CPU does have a tendency to explode, which sends the RAT running in circles underneath the house. However, we feel these are negligible bugs and will be worked out by the time you read this. In the mean time though, we've been traveling about showing off our dandy cabinet and telling good folks like yourself all about it and what it'll do when we get it to working proper. And I must admit, everyone seems pleased as pie with the cabinet and say if the 'puter is as good as the cabinet looks, we'll be living in Rio this time next year. And I thank you all for your whole hearted support. Maybe we can drop by your user group meeting and show you our cabinet too. We also have lots of literature, such as you're reading right now, and we have a few photos of Farley and me holding up the RAT. Those always seem to do well.

Hope to see your check for the new 99SG computer soon. And God bless.

Cordially,
/\$/ Phineus T(imely) Chronotis
President

/\$/ Phillip Farley
Chief Engineer

P.S.

One of our admirer's suggested we include a garbage disposal in the beautiful cabinate as an option. Farley was so disappointed by this oversight on his part that to make amends he will not only include a garbage disposal but also a PAPER SHREDDER! This should be especially attractive to newsletter editors. We listen. Give us your feedback.

LIST OF TI PHA, PHD, PHM and PHT SOFTWARE

DOWNLOADED FROM GENIE :
Version: 31-Dec-88, Compiled by:
Mike Wright,
45 Centerville Drive,
Salem, N.H. 03079.
603-893-1450

[Please note: Thanks go to Mike for supplying us with this very helpful list. N.B.: This is a semi-official list of items advertised by Texas Instruments. Presence of an item on this list does not necessarily mean that the book, disk, module, or tape was actually ever officially released. Two examples: TI has not yet officially released TI PILOT, although there are rumors that the project - like TI FORTH - was essentially completed, although TI has not yet seen fit to release TI PILOT to public domain or for sale. Likewise, to the best of my present knowledge, only three Addison-Wesley math games modules have ever been seen. I suspect that PHM 3087 was intended for Computer Math Games V.1]

- 0 PHA 2600 Beginning Basic Manual (99/4)
- 0 PHA 2601 User's Reference Guide (99/4)
- 0 PHA 2602 Beginning Basic Manual (99/4A)
- 0 PHA 2603 User's Reference Guide (99/4A)
- 0 PHA 2606 Creative Programming Computer Competency Series - Volume I
- 0 PHA 2607 Creative Programming Computer Competency Series - Volume II
- 0 PHA 2608 Creative Programming Computer Competency Series - Volume III
- 0 PHA 2609 Creative Programming Computer Competency Series - Allstar Projects
- 0 PHA 2610 Creative Programming Computer Competency Series (6 vols)
- 0 PHA 2611 Logo Curriculum Guide
- 0 PHA 2612 Editor/Assembler Manual
- 0 PHA 2613 Computer Awareness - Adults
- 0 PHA 2614 Computer Awareness - Children
- 0 PHA 2615 Programming Discovery in Logo
- 0 PHA 2616 TI-99/4A Technical Data Manual
- 0 PHA 2617 Basic Programming for Adults
- 0 PHA 2618 Programming Discovery in Basic for Students

- 0 PHD 5001 Mailing List
- 0 PHD 5002 TI-Trek (TI)
- 0 PHD 5003 Personal Financial Aids (O PHT)
- 0 PHD 5004 Programming Aids I (O PHT)
- 0 PHD 5005 Programming Aids II
- 0 PHD 5006 Math Routine Library (O PHT)
- 0 PHD 5007 Teach Yourself Basic (TI) (O PHT)
- 0 PHD 5008 Electrical Engineering Library (O PHT)
- 0 PHD 5009 Music Skills Trainer (TI) (O PHT)
- 0 PHD 5010 Mystery Melody (TI) (O PHT)
- 0 PHD 5011 Computer Music Box (TI) (O PHT)
- 0 PHD 5012 Programming Aids III
- 0 PHD 5013 Graphing Package (O PHT)
- 0 PHD 5015 Oldies but Goodies - Games I (TI)
- 0 PHD 5016 Structural Engineering Library (O PHT)
- 0 PHD 5017 Oldies but Goodies - Games II (TI) (O PHT)
- 0 PHD 5018 Market Simulation (TI) (O PHT)
- 0 PHD 5019 Teach Yourself Extended Basic (TI) (O PHT)
- 0 PHD 5020 Music Maker Demonstration (TI)
- 0 PHD 5021 Checkbook Manager
- 0 PHD 5022 Business Aids Library - Finance Management
- 0 PHD 5023 Basketball Statistician (TI)
- 0 PHD 5024 Business Aids Library - Inventory Management
- 0 PHD 5025 Saturday Night Bingo (TI) (O PHT)
- 0 PHD 5026 Bridge Bidding I (TI) (O PHT)
- 0 PHD 5027 Business Aids Library - Invoice Management
- 0 PHD 5029 Business Aids Library - Cash Management
- 0 PHD 5030 Speak Spell (TI)
- 0 PHD 5031 Speak Math (TI) (O PHT)
- 0 PHD 5037 Draw Poker (TI) (O PHT)
- 0 PHD 5038 Business Aids Library - Lease/Purchase Decisions (O PHT)
- 0 PHD 5039 Bridge Bidding II (TI) (O PHT)
- 0 PHD 5041 Bridge Bidding III (TI) (O PHT)
- 0 PHD 5042 Spell Writer (TI) (O PHT)
- 0 PHD 5043 Pirate Adventure (O PHT)
- 0 PHD 5044 AC Circuit Analysis (O PHT)
- 0 PHD 5046 Adventureland (SA) (O PHT)
- 0 PHD 5047 Mission Impossible (SA) (O PHT)
- 0 PHD 5048 Voodoo Castle (SA) (O PHT)
- 0 PHD 5049 The Count (SA) (O PHT)
- 0 PHD 5050 Strange Odyssey (SA) (O PHT)
- 0 PHD 5051 Mystery Fun House (SA) (O PHT)
- 0 PHD 5052 Pyramid of Doom (SA) (O PHT)
- 0 PHD 5053 Ghost Town (SA) (O PHT)

0 PHD 5054 Savage Island I and II (SA) (O PHT)
 0 PHD 5056 Golden Voyage (SA) (O PHT)
 0 PHD 5057 Tombstone City: 21st Century (TI) (O PHM 3052)
 0 PHD 5058 TI Invaders (TI) (O PHM 3053)
 0 PHD 5060 Munch Man (TI) (O PHM 3057)
 0 PHD 5062 Editor/Assembler Part A
 0 PHD 5062 Editor/Assembler Part B
 0 PHD 5063 UCSD-Pascal Compiler
 0 PHD 5064 UCSD-Pascal Assembler/Linker
 0 PHD 5065 UCSD-Pascal Editor/Filer/Utilities
 0 PHD 5066 TI Pilot
 0 PHD 5067 Beginner's Basic Tutor (TI) (O PHT)
 0 PHD 5068 Course Designer Authoring Package
 0 PHD 5070 Logo Sampler (O PHT 6070)
 0 PHD 5073 Tunnels of Doom
 0 PHD 5075 TI Writer/Multiplan Upgrade
 0 PHD 5076 Text To Speech (English)
 0 PHD 5077 Personal Tax Plan
 0 PHD 5078 TI Forth Demo Disk (E/A)
 0 PHD 5079 TI Forth Source Code (2 disks)
 0 PHD 5089 TI-Writer Word Processor
 0 PHD 5092 TI Count General Ledgers
 0 PHD 5093 TI Count Accounts Payable
 0 PHD 5094 TI Count Accounts Receivable
 0 PHD 5095 TI Count Payroll
 0 PHD 5096 TI Count Inventory
 0 PHD 5097 TI Count Mail List
 0 PHD 5098 TI Forth (E/A)
 0 PHD 5099 TI Advanced Assembly Debugger

0 PHD 5201 - PHD 5308 used by Plato. See separate catalog.

0 PHM 3000 Diagnostics
 0 PHM 3001 Demonstration
 0 PHM 3002 Early Learning Fun (TI)
 0 PHM 3003 Beginning Grammar (TI)
 0 PHM 3004 Number Magic (TI)
 0 PHM 3005 Video Graphs (TI)
 0 PHM 3006 Home Financial Decisions
 0 PHM 3007 Household Budget Management
 0 PHM 3008 Video Chess (TI)
 0 PHM 3009 Football (TI)
 0 PHM 3010 Physical Fitness (TI)
 0 PHM 3011 Speech Editor
 0 PHM 3012 Securities Analysis
 0 PHM 3013 Personal Record Keeping
 0 PHM 3014 Statistics
 0 PHM 3015 Early Reading (SF)
 0 PHM 3016 Tax/Investment Record Keeping
 0 PHM 3017 Terminal Emulator
 0 PHM 3018 Video Games I (TI)
 0 PHM 3019 Disk Manager
 0 PHM 3020 Music Maker (TI)
 0 PHM 3021 Weight Control and Nutrition (TI)
 0 PHM 3022 Personal Real Estate
 0 PHM 3023 Hunt the Wumpus (TI)
 0 PHM 3024 Indoor Soccer (TI)
 0 PHM 3025 Mind Challengers (TI)
 0 PHM 3026 Extended Basic
 0 PHM 3027 Addition and Subtraction 1 (SF)
 0 PHM 3028 Addition and Subtraction 2 (SF)
 0 PHM 3029 Multiplication I (SF)
 0 PHM 3030 A-Maze-ing (TI)
 0 PHM 3031 The Attack (MB)
 0 PHM 3032 Blasto (MB)
 0 PHM 3033 Blackjack and Poker (MB)
 0 PHM 3034 Hustle (MB)
 0 PHM 3035 Terminal Emulator II
 0 PHM 3036 Zero Zap (MB)
 0 PHM 3037 Hangman (MB)
 0 PHM 3038 Connect Four (MB)
 0 PHM 3039 Yahtzee (MB)
 0 PHM 3040 TI Logo
 0 PHM 3041D Adventure (disk) (SA)
 0 PHM 3041T Adventure (cassette) (SA)
 0 PHM 3042D Tunnels of Doom (disk)
 0 PHM 3042T Tunnels of Doom (cassette)
 0 PHM 3043 Reading Fun (SF)
 0 PHM 3044 Personal Report Generator
 0 PHM 3045D E.M. Electrical Engineering Library (disk)
 0 PHM 3045T E.M. Electrical Engineering Library (cassette)
 0 PHM 3046 Reading On (SF)
 0 PHM 3047 Reading Roundup (SF)
 0 PHM 3048 Reading Rally (SF)
 0 PHM 3049 Division I (SF)
 0 PHM 3050 Numeration I (SF) (30213)
 0 PHM 3051 Numeration II (SF)
 0 PHM 3052 Tombstone City: 21st Century (TI) (O PHD 5057)

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- 0 PHM 3058 Mini Memory
- 0 PHM 3059 Scholastic Spelling - Level 3 (Sch)
- 0 PHM 3060 Scholastic Spelling - Level 4 (Sch)
- 0 PHM 3061 Scholastic Spelling - Level 5 (Sch)
- 0 PHM 3062 Scholastic Spelling - Level 6 (Sch)
- 0 PHM 3064 Touch Typing Tutor (TI)
- 0 PHM 3067 Othello (Gab)
- 0 PHM 3082 Reading Flight (SF)
- 0 PHM 3083 Computer Math Games II (AW)
- 0 PHM 3084 Computer Math Games I (AW)
- 0 PHM 3085 Computer Math Games III (AW)
- 0 PHM 3086 Computer Math Games IV (AW)
- 0 PHM 3088 Computer Math Games VI (AW)
- 0 PHM 3089 Disk Manager 2
- 0 PHM 3090 Addition (Mil)
- 0 PHM 3091 Subtraction (Mil)
- 0 PHM 3092 Multiplication (Mil)
- 0 PHM 3093 Division (Mil)
- 0 PHM 3094 Integers (Mil)
- 0 PHM 3095 Fractions (Mil)
- 0 PHM 3096 Decimals (Mil)
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- 0 PHM 3114 Alligator Mix (DLM)
- 0 PHM 3115 Alien Addition (DLM)
- 0 PHM 3116 Demolition Division (DLM)
- 0 PHM 3117 Dragon Mix (DLM)
- 0 PHM 3118 Minus Mission (DLM)
- 0 PHM 3119 Meteor Multiplication (DLM)
- 0 PHM 3122 Plato Interpreter
- 0 PHM 3125 E.T. The Extra-Terrestrial
- 0 PHM 3131 Moonmine (TI)
- 0 PHM 3144 Early Logo Learning Fun (TI)
- 0 PHM 3145 Sneggit
- 0 PHM 3146 Munch Mobile
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- 0 PHM 3149 Space Bandits (MB)
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- 0 PHM 3154 Terry's Turtle Adventure (MB)
- 0 PHM 3155 I'm Hiding (MB)
- 0 PHM 3156 Honey Hunt (MB)
- 0 PHM 3157 Soundtrack Trolley (MB)

Review of Super XB from Triton

-by Scott Darling (C) 1987

Available from Triton 1-800-227-6900 \$59.95 (U.S.); Grades.....All A+

Do you remember when you FINALLY broke down and spent your hard earned money on the TI Extended Basic Cartridge? And how overwhelmed you were at its power? Well, sit down...you're gonna be overwhelmed again!

Triton is releasing a new and revamped Extended Basic. It is the old original we all know so well AND some VERY nice and needed enhancements that will bring us up to par with the other machines! Now, if I were to cover EACH modification thoroughly, it would take a book 24 pages long! So, I will give just the high points!

The following are modified commands, keywords, and subprograms.
 'PERMANENT' has been deleted as has 'SEQUENCE', 'RES' is still intact.
 'CALL VERSION' will return '120'.
 'CALL INIT' loaded too much data into expansion Ram than necessary.
 'CALL LOAD' allows you now to poke data into scratch pad ram WITHOUT expansion memory.
 'LIST' allows you to send a line length when outputting to printer.
 'TRACE' can be sent to ANY output device.
 Like I stated above, this is just a hint of the changes.



OK, now for NEW FEATURES:

The cursor is now an underline and ALL error messages are upper/lower case. There is an Auto Load bypass. Cursor movement includes beginning of a line number to end of the line number statement, movement up and down screen lines within a line number, tabs right and left 5 spaces, word tab to first character of a word, deletion of characters from any point in the line to beginning, or to the end. Besides line number statements, these functions also work in 'INPUT' and 'ACCEPT' statements.

Next are the NEW Commands:

'COPY' will copy and amount of lines to any point and you can provide a new increment. Limitations are memory space, bad line number references no change made to the copied lines as to line number references. The copies are mirror images of the original lines.
'MOVE' does the same as COPY, but does RES the new lines and line number references and deletes the old lines. Notice in both COPY and MOVE that a range of line numbers can be specified.
'DEL' will delete a range or one line number.
'CALL ALL' is the same as CALL HCHAR(1,1,32,768) only faster.
'CALL ALCK(A)' returns the status of the Alpha Lock key.
'CALL BEEP' is the standard beep tone.
'CALL BYE' is the same as BYE except this can be called from a running program.
'CALL CAT("DSKX.")' will bring up a catalog of a floppy and a RAM disk.
'CALL CHIMES' will play the chimes tune that is in the E/A manual.
'CALL CLOCK' will display a 24 interrupt driven clock in the upper right hand corner. Expansion memory is required.
'CALL CLKOFF' turns off the clock.
'CALL CLSALL' will CLOSE ANY and ALL open files.
'CALL COLORS(f,b)' will set all character sets to a foreground and background color specification. CALL SCREEN(x) is still required to set the border colors.
'CALL CTRL(a)' will return the status of the control key.
'CALL FCTN(x)' will return the status of the function key.
'CALL GOSUB(a)' allows a numeric variable to be used for a gosub.
'CALL GOTO(a)' does the same as above.
'CALL HONK' produces the standard honk.
'CALL KEYS(A\$,a)' allows a string of valid key presses with the position of the key pressed returned in a numeric variable.
'CALL NEW' is the same as NEW, except it is available in a running program.
'CALL NPROG(A\$)' where A\$="DSKX.filename".
'CALL SCREEN' turns the screen off.
'CALL SCRON' turns the screen on.
'CALL SHIFT(a)' returns the status of the SHIFT keys.
'CALL START' will start or restart ALL Sprites into motion.
'CALL STSPRT' will stop ALL sprites in motion.

This covers all of the Functions available. The manual covers these in far more detail than space permits. And probably better than I did!

The other feature of the this cartridge is CALL DRAW. This command brings up a fairly complete set of drawing commands. You have available commands to draw circles, squares, move the objects and pen around the screen, screen dumps to printers, save and load screens. You can add a label to the picture. ALL these functions are in CALL LINK statement structures. So they can be called from a running XB program. Two examples are included in the manual. Onscreen drawing is possible with a joystick and/or the keyboard.

And lastly to utilize this feature requires expansion memory, and a disk drive. CS1 or CS2 are not supported. Printer support includes Epson, Gemini, TI Impact, and Prowriter.

The manuals go into great detail in explaining every feature, command, modification of each item in the module. Yes I said manuals, you also get the original Extended Basic Manual besides a 25 page manual for the modifications!

Consider one last thing about this module. If this module is so good, then we should expect a lot of software to appear for it. I feel there probably won't be. It would be fairly simple to add, change, redo an existing program to utilize the added functions of this cartridge. Experienced XB people will notice the VERSION number is 120. Normal XB is 110, and the vintage XB was 100. Myarc is 200, I think. Using 'CALL VERSION(A):: IF A=120 THEN...' could be one way to write a program. Or just writing to use these new statements and providing this info in the program could be helpful. If nothing else, rewriting your own program to utilize this cartridge will make its price worthwhile. Consider this before passing around programs otherwise there will be some incompatibility problems! The convenience of this module will be more than worth compatibility problems.

All in all, I found this cartridge very well thought out and flawless. No matter what I tried I could not find a single item that did not function properly. And I want to pay tribute to each individual who supplied the software for this cartridge. In no particular order. Danny Michaels, D.C. Warren, and Mike Dodd. M. Shillingburg wrote the Draw portion of the cartridge.

9T9 LIBRARY LIST

-by Gary Bowser 09/29/87

Disks have a nominal fee of \$2.00 per disk (includes disk and handling). All disks are available by mail, send cheque or money order with a list of disk numbers, to the club's address.

SIZE is the number of disks needed.
 VER. is the version of the program.
 DATE when the program was added.

DISK code:

- | | |
|--------------------------------------|--|
| A - Art displays/makers/pictures | C - Catalogs of software/hardware |
| D - Disk managers/editors/catalogers | E - Educational |
| G - Games | H - Home and financial |
| I - Instructions | J - Junk miscellaneous |
| M - Music players.makers | P - Program languages/helpers/routines |
| S - Speech writers/players | T - Terminal emulators/dialers/BBS's |
| U - Utilities | W - Word processors/helpers/sorters |

TYPE code:

- | | |
|---------------------------------------|--|
| ART - TI-ARTIST and GRAPHX pictures | EA - Editor/Assembler loader and 32K |
| FAXB - E/A or Extended Basic with 32K | FRTH - Forth |
| MM - Mini Memory needed | M - Multiplan templates |
| RLE - Rul Length Encoded pictures | TE2 - Terminal Emulator II speech |
| TEXT - Dis/Var 80 files | XB - Extended Basic |
| XB32 - Extended Basic with 32K | XMEM - Extended memory i.e. 128K, etc. |

DISK PROGRAM SIZE TYPE VER. DATE

DISK	PROGRAM	SIZE	TYPE	VER.	DATE	
A001	ART2PICT-1	1	ART			Selection of TI-ARTIST pictures
A002	ART2PICT-2	1	ART			Selection of TI-ARTIST pictures
A003	ART2PICT3A	1	ART	09/29/87		Selection of TI-ARTIST pictures
A004	ART2PICT3B	1	ART	09/29/87		Selection of TI-ARTIST pictures
A005	ART2PICT4A	1	ART	09/29/87		Selection of TI-ARTIST pictures
A006	ART2PICT4B	1	ART	09/29/87		Selection of TI-ARTIST pictures
A007	ART2PICT5A	1	ART	09/29/87		Selection of TI-ARTIST pictures
A008	ART2PICT5B	1	ART	09/29/87		Selection of TI-ARTIST pictures
A009	AUTO CAD	1	EA			Computer assisted drawing
A010	GRPHJACKET	1	XB			Prints a disk jacket using a GRAPHX
A011	JET SPRITE	2	XB			Sprite builder program
A012	JP GRAPHIC	1	FRTH			FORTH drawing program and demo
A013	MAY RLE	2	EA			Displays special graphics
A014	PRINTER#01	1	XB			Selection of printer art
A015	TRIS 2001	1	XB32	2.10	09/29/87	Tri Artist Slide Show by Gary Bowser
C001	CATALOG#01	1	TEXT		09/29/87	Selection of TI software catalogs
C002	FREWARE	1	TEXT			A freeware catalog
D001	DIM	1				Disk information management
D002	DISKU	1	EAXB	3.2		Disk fixer type program with docs
D003	DM1000	1	EAXB	3.50		Disk Manager 1000 from Ottawa
D004	REDI...	1	EAXB			Disk copy program for TI Corcomp
D005	SUPERCAT	1	EA			Disk Catalog Program
G001	CHINACHESS	1	XB			A new game
G002	CRAPS	1	XB32			Crap Game Requires 32K
G003	FRNZY	1				Space game very well done
G004	MONOPOLY	1	XB			Plays like the board game
G005	MC ALLEN	1				Text adventure game
G006	OIL INVAS	1	FRTH			Oil Invasion (a game in forth)
G007	TI99 OPOLY	1	XB32			A well done version of Monopoly
G008	TRIVIA99er	1	XB32			Trivia Game
G009	WIT GAMES	3				Scrabble type games
G010	WORD WIZ	1				A word game with speech
H:01	CHECK BOOK	1				Cheque Book and Budget Management
H:02	FAST TRAC	2				Checkbook Recapper/planner
H:03	MP-BUDGET	1	MP		09/29/87	Budget template for Multiplan
H:04	PR FAC	1				A good personal data base program
H:05	VCR...	1				A Database for your VCR Tapes
I001	FORTH DOCS	5	TEXT			Forth Manual on disk
I002	TI PRWRITE	1	TEXT			Helper file for TI-WRITER commands.
M:01	4th MUSIC	1	FRTH			Music or Graphics Demo in Forth
M:02	AYLE F	1	XB			Music (Beverly Hills Cop)
M:03	MUSIC#01	1	EA			Selection of music
M:04	ORGAN	1	EA			Makes Keyboard an organ
M:05	XB MUSIC#01	1	XB		09/29/87	Selection of music
M:06	XB MUSIC#02	1	XB		09/29/87	Selection of music
M:07	XB MUSIC#03	1	XB		09/29-87	Selection of music
M:08	XB MUSIC#04	1	XB		09/29/87	Selection of music
M:09	XB MUSIC#05	1	XB		09/29/87	Selection of music
P001	EAXS	1	XB32			Editor Assembler Disk Version
P002	STAR	1	XB32			Super TI Assembly Routines for XB
P003	TI FORTH	1	EA			TI FORTH programming language
P004	TI PILOT	1	EA			TI PILOT programming language
P005	TOOL KIT	1	XB32			A set of programming utilities



P006	BASIC	2	EA		cBasic Language Compiler
S001	TECH/01	1	TE2	09/29/87	Selection of speech programs
T001	FAST TERM	1	EAXB 2.7	09/29/87	Terminal Emulator by Brad Cook
U001	CALENDARS	1	XB		A set of different calendars progs.
U002	FACTAL	1	EA		Fractal explorer
U003	LABELER	1	XB		Prints labels with over 100 logos
U004	FILELOADER	1	EA		Menu driven E/A program loader
U004	RAPIDSCROLL	1	EA		Rapid scroll for Dis/Var 80 files
U005	SCREENDUMP	1			Screen dump to printer
U004	SYSTEM	1	XB32		Encode assy to a X/B program
U004	TI SORT	1	EA		Dis/Var80 sort program
U006	TI-SYSTST1	1	YB32		TI 99/4A system test
U007	TI-SYSTST2	1	MM		TI 99/4A system test for mini memory
W001	BA WRITER	1	EAXB		TI Writer Disk Version
W002	CRUNCH	1			Crunches Dis/Var 80 files
W003	FUNNELWEB	2	EAXB 3.3		TI Writer, E/A, Disk manager in one.

YET, ANOTHER DOWNLOAD FROM GENIE:

XBASHER A review

-by Scott Darling (C) copyright 1987
 Written by Mike Dadd, Distributed by Genial Computerware.
 Box 183
 Grafton, Ma. 01519
 \$10.00 (U.S.)
 RATING: All A+'s

This program is needed by anyone and everyone!! No clarification you say?? EVERYONE has an Extended Basic program! AT LEAST one!! This program will make that one program run faster and reduce its size. GUARANTEED!! Most of us who have been around the Ti World for awhile remember what SMASH is. The BAD part about SMASH is you had to start it at night and HOPE it was done by morning!! You won't have to worry about XBASHER! Xbasher runs out of the Extended Basic environment. There are two versions available. One for TI XB and one for Myarc XB II. No mention was made of the 9640 compatibility. Probably because the 9640 will be so much faster. You can even run XBASHER on combined XB and A/L programs. Complete instructions are given on how to do this!

To run XBASHER requires that you save your Program in Merge format using the following: "OLD DSKn.filename" then "SAVE DSKn.mergename, MERGE". Then insert the XBASHER disk in drive and select XB. The disk files will determine which XB you are using and load the correct version of XBASHER. After the program has loaded, you are presented with a title screen.

Next, is the option screen. Which is: Shorten Variables, Crunch Lines, Remove REMS and !'s, Remove Let's, Change CALL CLEAR to DISPLAY ERASE ALL (this one alone saves you 5 Bytes!), Don't Change CALL SUB routine Digits, and Change Constants. Some of these are obvious as to what is going on. Shorten Variables will take all your String and Nonstring Variables and Shorten them to one then two character variables. There is an immense saving in memory by doing this. Tho', most people like to have a 'name' for variables. If the variable name is less than 3 characters it is no saving in memory. Its when you go over this limit that memory is being eaten away. There is also an option to print the Variable list to an output device.

Next, is crunch lines. This was VERY impressive. XBASHER will crunch or combine lines together. So what about the lines that are GOTO'ed you ask?? (Well somebody will ask!!) The A/L in XBASHER keeps track of the logic flow of the program! THIS part makes the program FAR superior to SMASH!! The only bad thing about this function is that the line length of a line number is so long you may not be able to edit the new line!! Considering this is the only drawback, it is a worthwhile option! I have been able to get 8 lines of code to a line number.....so did XBASHER.

Next, is REMOVE REM's and !'s. Remarks are good for developing a program but are a hindrance when actually running the program. This option will delete them and restructure the resulting deletion of them. Remove LET's. PLEASE I hope everyone by now realizes the LET statement is inconsequential to programming! Change CALL CLEAR to DISPLAY ERASE ALL. Nothing irks me more in XB programs than to see a "345 CALL CLEAR" then "350 DISPLAY AT(12,1):...". If you use "350 DISPLAY AT(12,1)ERASE ALL:" it does the same thing as CALL CLEAR and saves memory!!

Next is Don't change Sub Digits. What this option does is change the numeric constants to the characters \. [,] and . This saves 2 bytes per each occurrence of the variable. But, because of the nature of CALL SUB routines this may cost you MORE memory than any savings. Also, note. CALL SUB routines are like a separate XB program within a program. Consequently you can use identical variable names in CALL SUB's as in the program without any type of error received by the Basic Interpreter. Also, CALL SUBS are slower processing than GOSUB's. The only advantage is to CALL SUB's is variable variable passing!! (Are we confused yet??)



Lastly, is the Change Constants option. Basically what was said in the previous paragraph applies to this option. EXCEPT in this environment, this option will save you memory. Don't ask me why there is a difference. Just believe me!! So much for the option list. Each option has a letter reference. By pressing that letter toggles each option on and off. Hitting X says you like what you see on the Screen.

Next screen asks for the input file name. The one you saved in MERGE format and checks to see if you remembered the filename correctly. Then asks for an output name. And even provides a suggested name. Next is an output device and name for the variable listing if you selected that option. FINALLY the computer starts doing the work!! The screen will show you the status of the program. A line count, the last line number referenced by a goto, gosub statement will be shown on the screen. Xbasher makes two passes thru a program. First to make lists of variables, line numbers and other info. The second pass will write the new program to disk. How long will it take?? The size of the program involved is the ONLY factor. I ran an 11 sector file thru XBasher and it took 5 minutes to do the job. The savings were 500 bytes. Next I ran the ultimate EGO test on XBASHER. I wrote a program that is 90 plus sectors long. Almost 23K in bytes. So, I ran XBASHER against it. I felt I was a decent XB programmer and there was no way XBASHER was going to save any bytes in MY program!!

Well after about 30 minutes and my selecting ALL the options. The darn program found 200 bytes somewhere!! I'm still trying to see where it found them!!

To sum it up, Xbasher is the perfect compliment to any XB program. You only need to run it once, and save the resulting code. XBASHER will show you what XB programming is all about! There is a lot of power in that cartridge!!

HERE'S ANOTHER DOWNLOAD, I CAPTURED FROM GENIE.

64K-IN-CONSOLE-INSTRUCTIONS

-by Mike Ballman

Description:

A description of how to add 64k to your 99/4a console. Speeds it up by a factor of 2 as it's on the 16 bit bus, and some wait states have been removed. 12 sectors.

The FAST RAM upgrade I did to my 4A gives about a 50% increase in speed and puts a full 64K of ram in the console. Of course, only 32K is usable without some more modification. Some of the possible modifications are: ram at >6000->8000 when no ram is in the cartridge, bank switch out the ROMs in the console, have ram at >4000->6000 when not using a DSR, ram from >8000-8400 (so far that is ram from >0000 to >8400 and ram from >A000 to >FFFF 24K+33K=57K), and with a lot of decoding most of the other area could be filled in. I think it would be easier to put the >8000->A000 over the ROMs making two banks of ram there.

As of now I only have the normal 32K of ram active. But when I get back into it I will build up a board to hold all the decoding and bank switching hardware(SIC).

The parts I have used so far are:

2-64LS128 RAM chips at about \$16.00 each=	\$32.00
1-74LS21 four input AND gate 1.50	1.50
1-74LS153 dual 4-input multiplexer \$2.00	2.00
About 3 feet of wire	1.50
TOTAL PARTS	\$37.00

CONSTRUCTION DIRECTIONS: Do at your own risk
Remember TI numbers some of their chips funny.

Bend out all pins on the ram chips that cannot be made to line up with the Roms (U610 and U611) and the CE pin on the rams (all but about 10 or so pins can be made to line-up).

Solder the ram chips over the rom chips and wire the rest of the pins on the rams to the correct outputs of the micro (TMS9900-U600) except the CE and OE Ground the OE pin.

USED FOR DECODING
Solder the 74LS21 over U504 (74LS138) connecting inputs to pins Y1, Y5, Y6, and Y7. Connect the output from one half to an input for the other half. Tie all unused inputs HIGH.

USED TO ELIMINATE SOME WAIT STATES.
Solder the 74LS153 to any convenient place around the micro. Hook the output of the 74LS21 to "S0" of the 74LS153. Ground the "E" line. Cut the trace from U36-pin 11 to U610 pin 13. Connect pin 11 to "S1" and connect pin 13 to "S2" of the 74LS153. Tie "Input 3A" high. The rest of the "A" inputs LOW.



Solder the output of the 74LS21 also to the CE pins of the ram chips.

NOTES:

common pins are by function and location NOT location and NUMBER

!!!!ASK ALL QUESTIONS BEFORE YOU START!!!!

E-MAIL to MIKE-AB will be answered when I read it. Questions in the RT may not be answered the same day I read them. All answers will be in RT.

THE FOLLOWING WAS DOWNLOADED, BY YOUR EDITOR, FROM GENIE:

Using the "ImageWise" Video Digitizer
with the TI 99/4A

-by Steve Langguth

For the past year or so, thanks to the authors of a couple of "RLE" programs, users of the TI 99/4A have been able to view and use high resolution pictures created by the users of other brands of computers. It was great being able to take advantage of all of the picture files that could be found on the various online databases and BBS's. But it also made me realize that something was missing in the world of the 99/4A. Users of other brands of computers (even the 8 bit antiques like the Commodore 64 and Atari 800) had access to video digitizers, and TI users did not. Now, this might not seem like a very big problem to some users, but to those of us who enjoy working with computer graphics it was. Notice that I said "was". Finally, users of the TI 99/4A can digitize images from video cameras and VCR's and put those images into a format that can be used by the various bitmap mode drawing programs available for our computer. This article describes how it can be done.

The Hardware:

In the May and June 1987 issues of BYTE magazine, Steve Ciarcia (BYTE's resident hardware genius) described a video digitizing system that he had developed called the "ImageWise" system. This system is composed of two parts, a "digitizer/transmitter" and a "receiver/display". Each of these parts is contained on a separate printed circuit board. You can buy each board already assembled, or in a kit with all the needed components. Or, you can just buy the printed circuit boards (with an EPROM containing the control software) and then buy all the other necessary components yourself. I chose to buy the components myself, and the two parts of the system wound up costing me a total of about \$100 each.

When the boards arrived in the mail, they came with detailed instruction manuals and parts lists, including the various part numbers for several of the larger electronics supply companies. Even though I had never attempted a hardware project before, I had little trouble getting everything put together. (I DO have a friend next door, who is a 99/4A hardware "genius", so I could afford to be a little "braver" than I would have been if I had to attempt a project like this totally by myself!) And once I finally got all the components soldered into the correct holes (don't ask!!), both boards worked great.

The digitizer/transmitter (d/t) board is, as the name implies, the part of the "ImageWise" system that does the digitizing. Unlike some digitizers made specifically for other computer systems that take several seconds to digitize a complete image (and therefore require your "subject" to not move or your VCR to be set to "freeze frame"), the ImageWise d/t board captures a complete image in 1/60th of a second. It accepts video signals from a standard TV camera (either BW or color), VCR, laserdisc player, or camcorder, and stores the picture as 244 lines of 256 pixels with 64 levels of grey scale for each pixel. The d/t board then converts the stored video image to RS-232 serial data which can be transmitted to any computer with a RS-232 port or to the ImageWise receiver/display board.

The receiver/display board (r/d) accepts serial data from the d/t board or files downloaded from a computer. It converts this data back into a picture suitable for display on a composite video input monitor.

Together the two boards allow the user to create a file of digital data that represent an analog video image, use a computer to manipulate this file, and then display the newly "manipulated" image. The July and August 1987 issues of BYTE magazine both contain articles describing interesting image processing techniques that can be performed on files created this way.

The Software:

As I stated earlier, each board comes with an EPROM that controls what that board is doing. But you still need programs for your computer that allow you to accept the data being sent from the d/t board to the RS-232 and to send a data file from your computer to the r/d board. Also, if you want to display the digitized images on your computer monitor, you need a program that converts the data file into a form that your computer can use. If I was an IBM PC user, this would have been no problem, because the boards come with a disk containing programs for the PC that both "grab" and "show" images. But because my little 99/4A is an "orphan", I had to write these programs myself.

To "grab" a digitized image from the d/t board, you simply connect the DB-25 connector on the board to the RS-232 of the computer. The program needs to send a one byte code to the board to tell it what resolution to use (the choices are 256x244, 128x122, and 64x61), then when the program sends to the board a character >11 (XON), the board "instantly" digitizes the picture and begins sending it to the computer. (The baud rate being used is selected by a DIP switch on the board itself.) If the computer must take a "time out" to write to disk, the program simply sends a character >13 (XOFF) and the board stops sending until it receives another "XON". The file created by this program is LARGE. The board sends one byte for each screen pixel. The values of these bytes range from >00 for black to >3F for a pixel that is white. This adds up to a file of 246 sectors for each picture digitized. Of course, the file contains a lot more "data" than 99/4A users can use, because even though our high resolution screen is 256x192, we only have 15 colors to work with and each pixel cannot be colored "independently". Perhaps more of this data will be put to use on the Myarc 9640.

To "show" a digitized image on the r/d board, the process is just reversed. A file is simply read one record at a time and then sent to the r/d board via the RS-232. I found that I had to use assembly language to write the "grab" program, but a very simple Extended Basic program worked fine for the "show" program.

Finally, because I wanted to use my digitized images on my 99/4A, I wrote a program that will "convert" the information in the files created by the d/t board into a picture that can be saved in TI-Artist format. At first I decided to simply "turn on" a pixel if it was above a certain value and leave it "turned off" if the value was below the "dividing line". Unfortunately, this simple method really didn't give as much detail to the pictures as I knew was possible. After a lot of experimentation I was able to create an "algorithm" that turns on more pixels in the areas that are supposed to be darker, and less in the lighter areas. The converted picture has much less resolution than the original, but it CAN be saved as a TI-Artist picture file (25 sectors), which can then be modified or printed out.

Summary:

The ImageWise video digitizer system is a fairly simple to build, relatively inexpensive, very powerful video digitizer that CAN be used with the 99/4A. If all you are interested in is digitizing video from a camera or VCR, all you really need is the digitizer/transmitter board, which can be assembled for about \$150-\$175 dollars. To use the digitized images on the 99/4A itself, you will have to "sacrifice" a lot of the resolution. But because the system sends its data through a standard RS-232 interface, it will continue to be compatible as you "upgrade" your graphics capabilities.

If you have any questions that I haven't answered, just leave them on the message base here on GENie, or write to me at :

Steve Langguth
2956 South Barnes
Springfield, MO 65804.

Also, if you would be interested in buying the programs I wrote to use with the ImageWise system and the 99/4A, I will gladly sell them to you for \$10 --\$11, if I have to supply the disk (hey, I've got to pay for this baby somehow !!!).

MYWORD AND TI-WRITER HELPFILE

This file was translated, using Eric Olsen's DF128-DV80 utility, then edited and revised, 09/08/87, by Steve Mickelson of the Toronto 979 Users Group.

A. EDITOR MENU COMMANDS

- SaveFile - if you precede filename with beginning and ending line numbers, only that part of file is acted upon.
- PrintFile - use printer name or filename. Precede with line numbers for partial, C to eliminate ctl codes, L to print line numbers, F to print fixed 80 format. Unlike SF, tabs are not saved.
- LoadFile - enter filename. Precede with line numbers for partial load. To merge, precede with line number the merge is to follow. To merge partial file, precede with line to follow, first and last lines to include.
- ShowDirectory - enter disk number.

FOrmatter..... Takes you to the Formatter screen
 Help..... Takes you to the Help Menu
 Lines..... Copy Delete Move Show (prompts give formats)
 Other..... ProgramEdit RecoverEdit SaveOptions TextEdit Version
 Quit..... Exit Purge Save
 Search..... ChangeWildcard FindString ReplaceString (prompts show format)
 Tabs..... TabsOff ShowTabs EditTabs (L, R, T, I, C, B)
 Utility..... Takes you to the Utility loader
 Version..... Displays program author, Version number, and date released

B. TEXT EDITING OPERATIONS

NOTE: F represents the Function Key and CTL for Control.

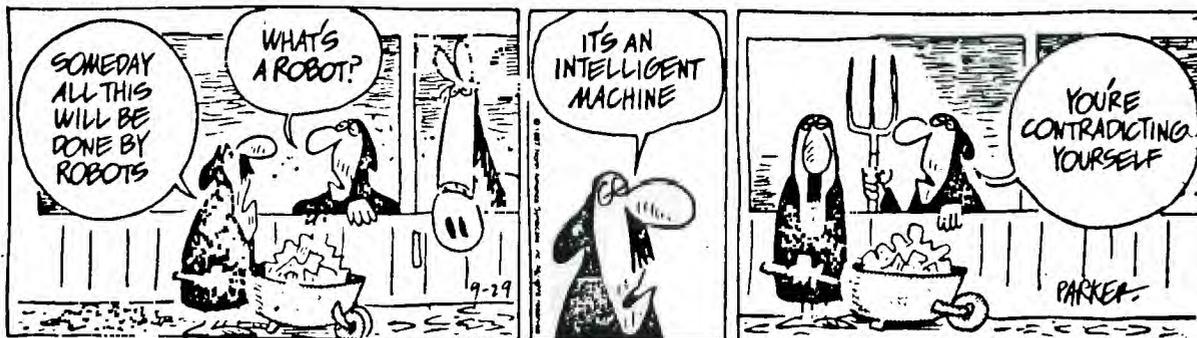
: INSERTIONS:		CURSOR MOVEMENT:	
Arrow keys		F2 or CTL G...	Word Wrap Mode: splits into two lines to insert
F7 / CTL I....	Tab		Terminate with reformat.
CTL T.....	Back tab		Fixed Mode: insertions push line to right.
CTL V.....	Beginning of line	F8 or CTL O...	Inserts blank line.
CTL 7 / CTL W.	Word tab	CTL 5.....	Duplicates line above, replacing cursor line.
CTL 4 / CTL J.	Next paragraph		OOPS restores.
CTL 6 / CTL H.	Last paragraph	SCREEN DISPLAY:	
CTL L.....	Home to upper left	CTL 3.....	Change screen colors.
CTL Y.....	Left margin release	F6 or CTL B...	Page up (24 lines)
CTL D.....	Toggles search direction	F4 or CTL A...	Page down (24 lines)
DELETIONS:		F0.....	Toggles line nrs on/off
F1 or CTL F...	Character delete	CTL 8 / CTL M.	Start new paragraph
CTL K.....	Delete to end of line	CTL Q.....	Home to first screen
F3 or CTL N...	Line delete	CTL 9 / CTL P.	Page break
CTL 1 / CTL Z.	OOPS! Cancels deletes.	EXITING:	
WORD WRAP MODE:		CTL =.....	Exit to Formatter
CTL 0.....	Toggles between word wrap (solid cursor) and fixed (hollow cursor) modes.	F9 or CTL C...	Escapes to command mode or from a command. (F5 is not used)
REFORMAT:			
CTL 2 / CTL R.	Word Wrap Mode: Closes up to next carriage return.		

C. FORMATTER COMMANDS

PAGE SETUP COMMANDS:	OTHER COMMANDS:
.FI... FILL closes up textnes. words that will fit on each line	.BP ... BEGIN PAGE forces new page.
.AD... ADJUST spreads out words on each line to right justify text. Must be used with .FI.	.SP n . Put n SPACES before next line.
.NA... NO ADJUST. Cancels adjust.	.PA n . Resets the PAGE number in headers or footers to n.
.NF... NO FILL. Cancels fill, adjust.	.IF f . INCLUDE FILE f within the text.
.LM... LEFT MARGIN. Sets left margin.	.CO t . Comment that is not printed.
.RM... RIGHT MARGIN. Sets right margin.	COMMANDS WITHIN TEXT: (All dot commands must be at left margin. Next 3 commands may be embedded.)
.IN n INDENT at start of paragraph. n by itself starts at that column nr. +n or -n sets relative to left margin.	& Underlines until space reached.
.PL n PAGE LENGTH - not needed if standard 66 lines is used.	@ Overstrike next characters until space is reached.
.LS n LINE SPACING sets number of spaces between lines.	Req'd Prints as space, but treated as Space character for filling, adjusting, overstriking, underlining.
.Ht t HEADER and FOOTER are used to put the same text (t) on every page. If a % symbol is used, it is replaced with the page nr.	COMMANDS THAT CHANGE TEXT:
.Ft t	.C* c The special characters , ,
	.C& c and * are replaced by any
	.C@ c character c for the same effect
	.TL n1:n2...nz - TRANSLITERATES char n1 into characters n2, ..., nz.

NOTE: All FORMATTER commands are prefixed with a period.

Wizard of Id



D. CONTROL-U CHARACTERS

By pressing both the Control and U keys, (CU), at the same time, toggles display of characters whose ASCII code is 64 less than the character typed to pass control codes to your printer. Codes shown work for TI Impact, Epson FX-80, STAR NX-10, NP-10, SG-10, Gemini 10X, and Panasonic 1091.

Function	Type:	ASCII Code	Exceptions: Printers
PICA	CU [CU P	27 80	27 66 1:10X, SG-10
ELITE	CU [CU M	27 77	27 66 2:10X, SG-10/NO: TI
CONDENSED	CU [CU	27 15	
ENLARGED	CU [CU W	27 87 1	27 87 1:10X, SG-10/27 14: TI
NLQ	CU [CU x	27 120 1	27 110:1091/27 65 4: SG-10/NO: 10X, TI
ITALICS	CU [CU 4	27 52	NO: TI
UNDERLINE	CU [CU -	27 45 1	NO: TI
EMPHASIZED	CU [CU E	27 69	
DOUBLE STRIKE	CU [CU G	27 71	
SUPERSCRIPIT	CU [CU S	CU @ 27 83 0	NO: TI
SUBSCRIPT	CU [CU S	CU A 27 83 0	NO: TI
1/8 LINE SPACE	CU [CU 0	27 48	
1/6 LINE SPACE	CU [CU 2	27 50	
PROPORTIONAL	CU [CU p	CU A 27 112 1	NO: 10X, TI
RESET PRINTER	CU [CU @	27 64	NO: TI, 1091

NOTE: Most of the commands that are set with an ASCII 1 (CU A) at the end of the command are cancelled by an ASCII 0 (CU @) at the end of the same command.

E. ASCII CODES

A S C I I		C O D E S	
!	33	1	49
"	34	2	50
#	35	3	51
\$	36	4	52
%	37	5	53
&	38	6	54
'	39	7	55
(40	8	56
)	41	9	57
*	42	:	58
+	43	<	59
,	44	=	60
-	45	>	61
.	46	?	62
/	47	0	63
		A	65
		B	66
		C	67
		D	68
		E	69
		F	70
		G	71
		H	72
		I	73
		J	74
		K	75
		L	76
		M	77
		N	78
		O	79
		P	80
		Q	81
		R	82
		S	83
		T	84
		U	85
		V	86
		W	87
		X	88
		Y	89
		Z	90
		[91
		\	92
]	93
		_	94
		^	95
		a	96
		b	97
		c	98
		d	99
		e	100
		f	101
		g	102
		h	103
		i	104
		j	105
		k	106
		l	107
		m	108
		n	109
		o	110
		p	111
		q	112
		r	113
		s	114
		t	115
		u	116
		v	117
		w	118
		x	119
		y	120
		z	121
		{	122
			123
		}	124
		~	125
		DEL	126
			127
ESCAPE	27		
l/f	10		
c/r	13		

8K DSR Card Article

-by John A. Johnson, Miami Users Group.

This text will explain the proposed usage of an 8k DSR card.

Up to now, a full blown TI was considered a machine with disk drive(s) and 32k memory expansion. For years the 32k memory has served us well, but with the advent of new, sophisticated software on the horizon, our computers could use a little more help. I'll tell you one way we can do that, but first, I'll describe the layout of the present 32k memory:

>2000 through >3FFF. This 8k block of memory (referred to as low memory) is used for assembly language program storage while running extended basic programs that CALL LINK to these routines. It can be used by TI Basic (with Editor Assembler installed) to also store machine language ("c", assembly, etc) routines. A pure machine language program can also be loaded into this area.

>A000 through >FFFF. This 24k block of memory is known as high memory. This is where our extended basic programs get placed. This area can also be used by TI Basic to store machine language programs, just like the low memory described above. A pure machine code program normally loads here also.

And that's it! 32k of program space period.

The 9900 CPU in our consoles can access 64k of memory, either RAM, ROM, or a mixture. The present layout of the computer is as follows:

>0000 through >1FFF. ROM in the console. Holds the operating system, part of TI Basic, Keyscan routine, etc.

>2000 through >3FFF. Low 8K memory RAM.

>4000 through >5FFF. This 8k block has no memory at all. Instead, each peripheral expansion card has a ROM (or RAM) program called a Device Service Routine (DSR) of up to 8k in size. This DSR is "paged" into this >4000 area when the card (RS232, Disk Controller, etc.) is called into service by the operating system. The CPU then runs the DSR which supervises the operation of the hardware on that particular card. Keep in mind that nothing but AIR is located here when no peripheral card is being accessed.

>6000 through >7FFF. This 8k block is where our ROM or RAM cartridges fit into the 9900's memory map. Most of our cartridges are GROM, but AtariSoft, Extended Basic, and a few others have ROM in their cartridges. Keep in mind that when no ROM cartridge is installed, nothing is here except AIR.

>8000 through >9FFF. This area of memory only contains 256 bytes of ram. It's used as a "scratchpad", a place for the operating system to perform all it's calculations, and store keystrokes from the user, etc. All of our memory mapped devices, such as GROM and VDP memory are also accessed through this area.

>A000 through >FFFF. High memory RAM.

So you can see from the above memory map that TI wasted at least 16k of memory - 8k at the >4000 area, and another 8k at the >6000 cartridge space area. What we propose to do is create a new definition of a "full blown" 99/4a, by installing RAM in this 16k space.

So you say "Wait a minute, if I had RAM here how would my peripheral cards get paged in", or, "I could never run another ROM cartridge". Almost true, but what if we could we could "page" in our new RAM at >4000, so that it would only be there anytime a DSR was NOT selected? It would be an 8k block of memory that was FULLY usable, just like the 8k block at >2000. Well, we did! And it works! Now what if we put in another 8k RAM and mapped it into the cartridge space ONLY when ROM (or RAM) doesn't exist already? Well, we can do that too!

So now you're thinking, "big deal, another 16k. no software will use it, because no one knows I have it". A true statement, and one that holds water.

But what if a peripheral card for the P-Box were available, either as a kit, or a completed, ready to run board for a very reasonable price? And what if a whole lot of people bought, or built this kit? Couldn't software such as TI Writer, PRBASE, and *M1000 be modified to utilize the extra ram? Y... IT COULD! And new software. If enough people had this super memory card, couldn't software designers target products for it, just as they do for a 32k market now? I think so.

I've built the 8K DSR RAM board, and on it is 8k used as standard, accessible ram, and another 8k ram used as a battery backed DSR. To understand the powers of having a battery backed DSR, just ask any Horizon Ramdisk owner about the versatility of his ramdisk. The card also has a real time clock, battery backed up, as with the DSR ram.

At present, I'm installing the 8k cartridge space ram, and total outlay should be approximately \$45 - \$50 complete.

Bud Mills will be carrying all the parts required to build this kit. Give him a call at 419-385-5946, or write him at:

Bud Mills Services
166 Dartmouth Drive
Toledo, OH 43614
U.S.A.

John Willforth is looking into making a PC board for the project. We'll know more about this in a few weeks.

John Clulow has the documents, instructions, source code, and some programs to accompany the project.

John Clulow
345 West South Boundary
Perrysburg, OH 43551
U.S.A.
Telephone 419-874-8838

In the future, I hope to add another 64k of ram to the card, using it as GROM. Yes, I think it's entirely possible to have a Gram Simulator on this board also, for little more than an additional \$40 or so. Ask any GramCracker owner what versatility he has!

To sum it up, with a 32k machine we can fit an elaborate program like TI Forth in memory, but we have no more memory left to use for data. With a 48k machine, we'll have lots. If we ever expect to have a program such as the flight simulators available for other computers, we need the extra memory.

Let's upgrade!

DIJIT SYSTEM 80-Column Card

This is a press release I received from DIJIT Systems concerning their 80 column CARD that goes in the Pbox. It seems to have some nice features. More info can be had from DIJIT.

DIJIT Systems, the San Diego based company that brought professional quality RGB display to the TI-99/4A, introduced its latest product at the 99/FEST-WEST/87 in Los Angeles: The Advanced Video Processor Card. The AVPC fits into the Periphæel Expansion Box and is compatible with existing TI-99/4A software. It features 80 column text and advanced graphics with up to 512 colors. The AVPC also supports Mouse and Light Pen inputs. The DIJIT Systems card contains 192K of video RAM and is designed to work with the "DIJIT-EYEzer", an external Gen-lock and video digitizing accessory. It will allow titling and graphic overlays on home videos as well as computer manipulation of external video images.

The DIJIT Systems AVDP gives the TI-99/4A video processing power comparable with the Atari ST and the Amiga.

The product is scheduled for release in August for \$195.00.

DIJIT Systems6
4345 Hortensia Street
San Diego, CA. 92103
(619) 295-3301

Yet, another press release about an apparent disk cache utility:

FIRM SIGNS NEW SOFTWARE AUTHOR, ANNOUNCES FIRST GENEVE PRODUCT

LORTON, VIRGINIA - "A significant 9900 family software arrangement" has been announced. Jeff Guide, CEO of Disk Only Software and Dr. Jerry Coffey, programmer believe it to be a first for the Myarc 9640 Geneve community.

Disk Only Software (DOS), a worldwide telecommunications based software firm and computer distributor announced that it had signed a service development contract with Dr. Jerry Coffey of Vienna, Virginia and thus JUMPBOOT is being offered as the first third party Geneve software service. DOS described its new offering as a substantive third party enhancement of the disk operating system for the Geneve computer -- the first third party product ready for shipment and offered for sale. JUMPBOOT allows the Geneve user to boot from a floppy drive as fast as a hard disk.

The Coffey "JUMPBOOT" will contain the latest version of SYSTEM/SYS on a disk specially formatted to take advantage of advanced fast multiple-sector read routines of the Geneve, Dr. Coffey said. The remainder of the boot disk uses a more conventional format for efficient file I/O operations.

During boot-up these disks can be read at 45 sectors per second using TI and Corcomp controllers, and an "eye-popping 80 sectors per second" using the Myarc controller, according to Coffey. The current (3.5 sector) version of SYSTEM/SYS, the GENEVE operating system, takes about half a minute to boot the system in the form it is distributed by Myarc. The nominal load times for the same file from the JUMPBOOT disk are seven and four seconds for TI/CC and Myarc controllers respectively he observed. The 160 Kbit/sec data transfer rate achieved by the new disk is near the physical limit for standard 5.25 inch drives.

Later versions of SYSTEM/SYS, the operating system of the Geneve, can be written over the old version without losing the fast loading capability, as long as the disk is not reformatted. This is important, as several upgrades of the original operating system, will probably be distributed via telecommunications resources such as TIFORUM and TI Information Network on CompuServe and Delphi. Larger versions of SYSTEM/SYS and MDOS can be installed by removing the filler file from the specially formatted section of the disk. Guide and Coffey both indicated that they were grateful for the openness of Myarc in distributing their copyrighted operating system software where the entire community could have a crack at enhancements. In the manufacturing process each high-quality disk is selected for dimensional accuracy and jacket stability, then tested for resistance to chatter during high speed reads. Dr. Coffey, who will be making these disks personally, noted that one disk in four is rejected for failure to meet standards of reliable performance. Any disk that fails to perform may be returned for a replacement as long as the original format has not been altered nor the disk damaged. Coffey noted that because of special formatting techniques the disk cannot be routinely backed up by normal methods. Therefore a backup disk with the boot disk is recommended.

Two duplicate disks are available for \$25.95. Single disks are available for \$15.95. Plus Shipping and handling of \$2.00. Virginia residents add 5 percent sales tax. Specify single or double density.

Order Toll Free by calling 800-456-9272. For help or information call 703-339-7097. Or write to P.O. Box 244, Lorton, VA 22079. Orders are accepted via Delphi (DOS) or CompuServe (74405,1207). Visa, MasterCard and American Express are accepted.

ATTENTION SOFTWARE WRITERS

ASGARD SOFTWARE
HAS A COMMITMENT TO PRODUCING
QUALITY SOFTWARE FOR THE 99/4A INTO
THE 1990's
BUT WE NEED YOUR HELP....

Asgard Software is one of the fastest growing, dynamic software companies in the 99/4A community. Our record speaks for itself. Founded in 1984 with 2 products, Asgard Software now fields over 30 items for the 99/4A in four diverse areas. We sell literally thousands of pieces of software a year, and advertise nationally. Our products are handled by numerous distributors and dozens of dealers. We have maintained a level of professionalism that has only increased. Our software regularly receives rave reviews from dozens of periodicals serving the 99/4A community.

However, we couldn't have done it without our authors. Asgard Software develops only a fraction of our software in-house. Most of our products are created by talented people throughout the United States, Canada and Australia. These items are submitted to us, and manufactured and sold on a contractual basis. We couldn't have attracted so many authors over the years without ATTRACTIVE ROYALTIES, some of the best in the industry, and a staff commitment to producing a quality product from start to finish. We test our software extensively, providing valuable feedback to the author(s) to produce the best program possible BEFORE IT IS RELEASED.

Also, we aren't afraid to give credit where credit is due, in our ads, our flyers, at conventions, and in the manuals. Some of our authors have become well-known TI personalities - Peter Hoddie, John Behnke, Warren Agee, Donn Granos, and the list goes on.

Finally, we aren't afraid of something a little different, or even a lot. We got where we are by exploring new areas in software - producing products with no analog elsewhere in the TI world or even the rest of the computer industry.

To maintain our commitment to the 99/4A world, we are actively soliciting authors. We are looking particularly for those who have written or are interested in writing programs in the following areas:

- o Strategy games
- o Specialized and general databases
- o Business and home productivity software
- o Utilities - particularly those of general interest
- o Graphics programs
- o Computer artwork



A finished product isn't necessary, or even the idea for one. We have hundreds of ideas for programs available for the cautious to the ambitious.

If you are seriously interested, contact:

Asgard Software
Attn: Chris Bobbitt
P.O. Box 10306
Rockville, MD 20850
(301)559-2429



The Better Half



"Your new credit card has a microchip to let you know if you're over your limit."

R/D COMPUTING-1987

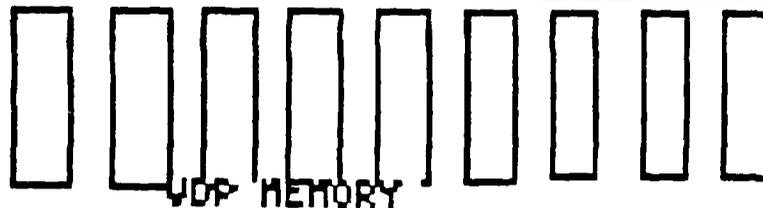
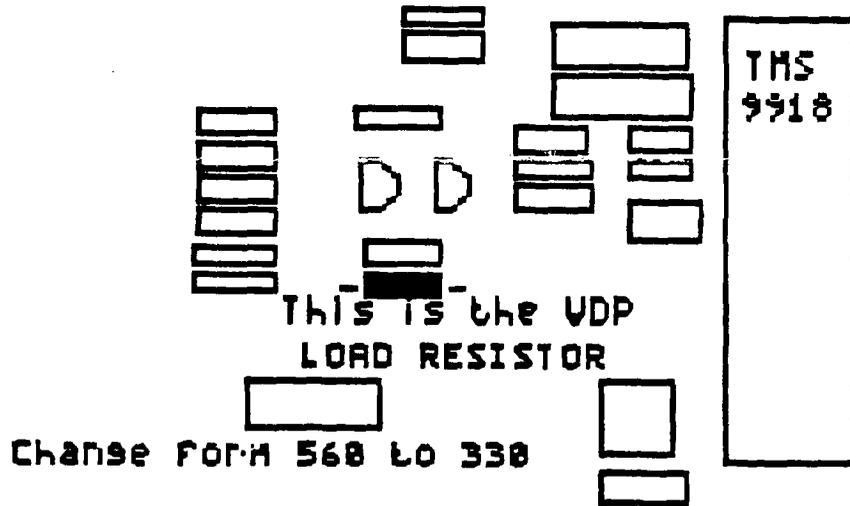
Improved Video

by, Bob Lawson

In my travels through the Texas Instruments Manuals, specifically the TMS-9918,28,29 Manual, I read, "The load resistor (RL, pin 36 to ground) defines the sharpness of the edges on the video signals. A lower resistor value gives faster fall times and a sharper picture." Hmm! I don't remember any 330 ohm resistors.

Well, I pulled out the "TI Console and Peripheral Manual, and sure enough, R212 pin 36 to ground was 560 ohms per the schematic. The next step was to check out a console, and well you guessed it, R212 was 560 ohms, not 330 ohms as recommended in the TI Manual!

Next step was to try some different value resistors, 330 ohms seems to be about the best common value resistor to use. I wonder why TI chose to use 560 ohms. I did find one old TI Manual which recommended 390 ohms (1979), but they're sometimes hard to find in 1/4 watt. This 30 cent change gives about a 40%, that's right, I said 40% improvement in the picture. The improvement is so good, you'll wonder where the WHITE SHADOWS WENT.



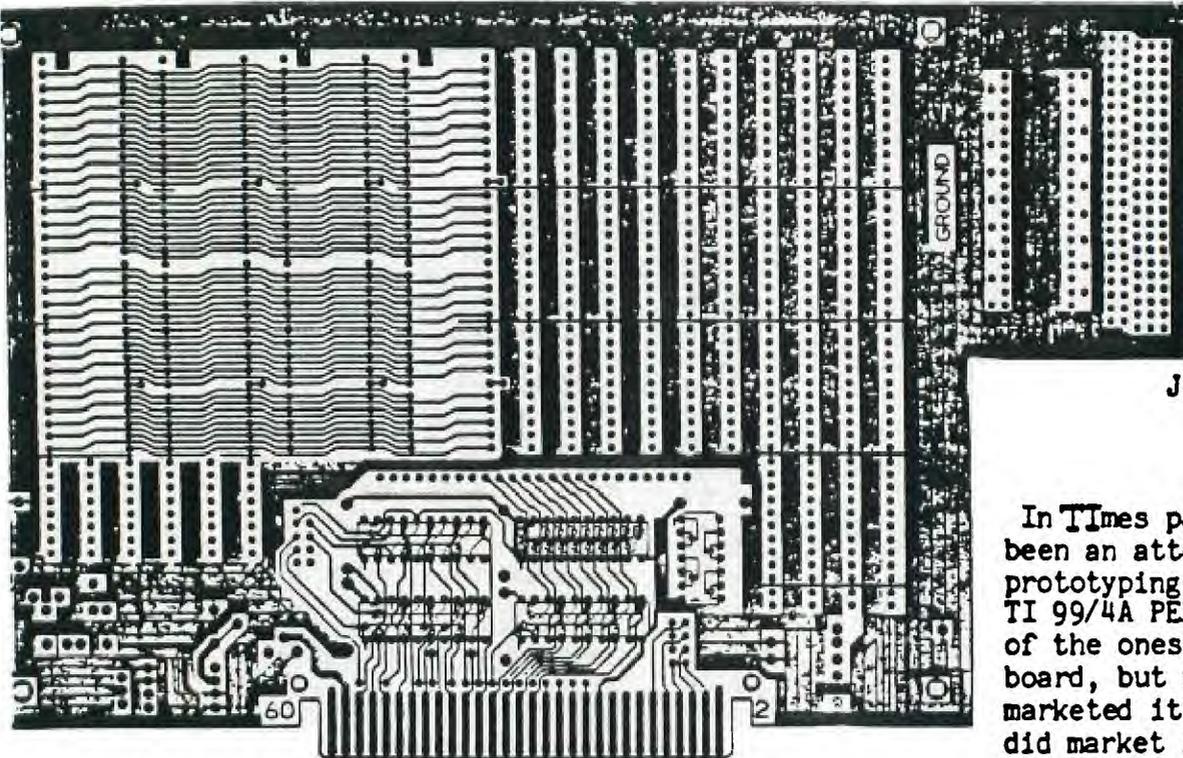
~~SNIAUG/89~~ TEXAS INSTRUMENTS GROM MODULE PARTS, PAGE 1 ~~MOBILE, AL~~

THIS IS A REARRANGED LIST OF THE GROM CHIPS AND MODULE PARTS LISTING SUPPLIED BY TEXAS INSTRUMENTS IN MAY 87. (THEIR LIST IS DATED SEP 85.)

1501701-0122	CAP, .10UF 50V	0.14	1015960-1073	GROM, E/REA	3.80
1015960-0326	IC, SN6/ELF	3.60	1015960-1001	GROM, EARLR	3.60
1500773-0033	RES, 100 OHM	0.02	1015960-1002	GROM, EARLR	3.60
1015921-0004	PCB	3.60	1015960-1204	GROM, ED/AS	3.60
1037200-0004	PCB	1.96	1015960-0115	GROM, EXT.B	4.00
1056412-0101	T/C BEIGE SNAP	0.38	1015960-1113	GROM, EXT.B	3.60
1056411-0101	B/C BEIGE SNAP	0.34	1015960-1114	GROM, EXT.B	3.60
1053555-0107	T/C BEIGE SCREW	0.36	1015960-1122	GROM, EXT.B	3.60
1053554-0107	B/C BEIGE SCREW	0.30	1015960-3115	GROM, EXT.B	3.60
1015923-0007	MODULE DOOR BEIGE	0.06	1015960-0445	GROM, FACEM	3.60
1015928-0001	SPRING	0.05	1015960-0446	GROM, FACEM	3.60
1010685-0034	SCREW	0.02	1015960-2009	GROM, FOOTB	3.80
1015960-0156	GROM, 4A 2	3.60	1015960-2010	GROM, FOOTB	3.80
1015960-0157	GROM, 4A, 2	3.60	1015960-0214	GROM, HANGM	3.80
1015960-0313	GROM, 4A AR	4.20	1015960-0015	GROM, H BUD	3.80
1015960-0134	GROM, A&S I	3.80	1015960-0211	GROM, INVAD	3.80
1015960-0135	GROM, A&S I	3.80	1015960-0255	GROM, LOG01	3.60
1015960-0136	GROM, A&S I	3.80	1015960-0256	GROM, LOG01	3.60
1015960-0137	GROM, A&S 2	3.80	1015960-0257	GROM, LOG01	3.60
1015960-0138	GROM, A&S 2	3.80	1015960-0280	GROM, M/ADD	3.80
1015960-0139	GROM, A&S 2	3.80	1015960-0278	GROM, M/COM	3.60
1015960-0333	GROM, ALEAD	3.80	1015960-0280	GROM, M/DEC	3.60
1015960-0298	GROM, ALLMI	3.80	1015960-0283	GROM, M/DIV	3.60
1015960-0299	GROM, ALLMI	3.80	1015960-0286	GROM, M/FRA	3.80
1015960-0341	GROM, ALPIN	4.00	1015960-0287	GROM, M/FRA	3.80
1015960-0342	GROM, ALPIN	4.00	1015960-0284	GROM, M/LAW	3.80
1015960-0343	GROM, ALPIN	4.00	1015960-0290	GROM, M/PER	3.80
1015960-0344	GROM, ALPIN	3.80	1015960-0349	GROM, M/PLA	3.60
1015960-0121	GROM, AMAZI	3.60	1015960-0350	GROM, M/PLA	3.60
1015960-0013	GROM, BEGRA	4.00	1015960-0351	GROM, M/PLA	3.60
1015960-0014	GROM, BEGRA	4.00	1015960-0352	GROM, M/PLA	3.60
1015960-1012	GROM, BEGRA	3.60	1015960-0353	GROM, M/PLA	3.60
1015960-1013	GROM, BEGRA	3.60	1015960-0496	GROM, MASH	3.60
1015960-1014	GROM, BEGRA	3.60	1015960-0497	GROM, MASH	3.60
1015960-0128	GROM, BLKJA	3.80	1015960-0498	GROM, MASH	3.60
1015960-0022	GROM, CHESS	3.80	1015960-0252	GROM, MATH	3.80
1015960-0023	GROM, CHESS	3.80	1015960-0253	GROM, MATH	3.80
1015960-1020	GROM, CHESS	3.80	1015960-0254	GROM, MATH	3.80
1015960-1021	GROM, CHESS	3.80	1015960-5253	GROM, MCH.M	3.60
1015960-0261	GROM, CHISH	3.80	1015960-5254	GROM, MCH.M	3.60
1015960-5296	GROM, CON60	3.80	1015960-0347	GROM, MET M	3.80
1015960-5297	GROM, CON60	3.80	1015960-0348	GROM, MET M	3.80
1015960-0368	GROM, DEC 1	3.80	1015960-0101	GROM, MIND	4.00
1015960-0024	GROM, DEMO	4.00	1015960-0215	GROM, MINME	3.80
1015960-1026	GROM, DEMO	3.60	1015960-0303	GROM, MINUS	3.80
1015960-2006	GROM, DIA6	5.40	1015960-0304	GROM, MINUS	3.80
1015960-0236	GROM, DIV 1	3.80	1015960-0466	GROM, MOONM	3.60
1015960-0237	GROM, DIV 1	3.80	1015960-0467	GROM, MOONM	3.60
1015960-0238	GROM, DIV 1	3.80	1015960-0468	GROM, MOONM	3.60
1015960-0239	GROM, DIV 1	3.80	1015960-0469	GROM, MOONM	3.60
1015960-0345	GROM, DRAGM	3.80	1015960-0470	GROM, MOONM	3.60
1015960-0346	GROM, DRAGM	3.80	1015960-5227	GROM, MOONS	3.60
1015960-0234	GROM, DSKM6	3.60	1015960-0262	GROM, MTH-6	3.80
1015960-0235	GROM, DSKM6	3.60	1015960-0263	GROM, MTH-6	3.80
1015960-0069	GROM, E/REA	3.80	1015960-0140	GROM, MULT	3.80
1015960-0070	GROM, E/REA	3.80	1015960-0141	GROM, MULT	3.80
1015960-0072	GROM, E/REA	3.80	1015960-0142	GROM, MULT	3.80
1015960-1071	GROM, E/REA	3.80	1015960-0221	GROM, MUNCH	4.00
			1015960-0106	GROM, MUSIC	3.80
			1015960-0107	GROM, MUSIC	3.80
			1015960-0108	GROM, MUSIC	3.80
			1015960-0011	GROM, NUM.M	3.80
			1015960-0319	GROM, NUM 1	3.80

SMAUG/99 TEXAS INSTRUMENTS GROM MODULE PARTS, PAGE 2 MOBILE, AL

1015960-0320	GROM, NUM 1	3.80	1015960-0217	GROM, RDRDU	3.80
1015960-0321	GROM, NUM 1	3.80	1015960-0218	GROM, RDRDU	3.80
1015960-0322	GROM, NUM 1	3.80	1015960-0219	GROM, RDRDU	3.80
1015960-0323	GROM, NUM 1	3.80	1015960-0220	GROM, RDRDU	3.80
1015960-0324	GROM, NUM 1	3.80	1015960-0314	GROM, READ	3.60
1015960-0325	GROM, NUM 1	3.80	1015960-0315	GROM, READ	3.60
1015960-0116	GROM, NUTRI	3.80	1015960-0316	GROM, READ	3.60
1015960-0117	GROM, NUTRI	3.80	1015960-0317	GROM, READ	3.60
1015960-0118	GROM, NUTRI	3.80	1015960-0318	GROM, READ	3.80
1015960-0119	GROM, NUTRI	3.80	1015960-0074	GROM, SECUR	3.80
1015960-1120	GROM, NUTRI	3.80	1015960-0075	GROM, SECUR	3.80
1015960-0180	GROM, P-COD	3.60	1015960-0076	GROM, SECUR	3.80
1015960-0181	GROM, P-COD	3.60	1015960-0077	GROM, SECUR	3.80
1015960-0182	GROM, P-COD	3.60	1015960-5237	GROM, SEWER	3.60
1015960-0183	GROM, P-COD	3.60	1015960-0447	GROM, SLYMO	3.60
1015960-0184	GROM, P-COD	3.60	1015960-0097	GROM, SOCCE	3.60
1015960-0185	GROM, P-COD	3.60	1015960-0098	GROM, SOCCE	3.60
1015960-0186	GROM, P-COD	3.60	1015960-0131	GROM, SP/TE	3.80
1015960-0187	GROM, P-COD	3.60	1015960-0132	GROM, SP/TE	3.80
1015960-0102	GROM, P. R. E	3.80	1015960-2032	GROM, SPEEC	3.80
1015960-0103	GROM, P. R. E	3.80	1015960-0222	GROM, SPELL	3.80
1015960-0104	GROM, P. R. E	3.80	1015960-0223	GROM, SPELL	3.80
1015960-0105	GROM, P. R. E	3.80	1015960-0224	GROM, SPELL	3.80
1015960-0295	GROM, PARSE	3.80	1015960-0226	GROM, SPELL	3.80
1015960-0296	GROM, PARSE	3.80	1015960-0065	GROM, ST/SM	3.60
1015960-0297	GROM, PARSE	3.80	1015960-0490	GROM, STAR	3.60
1015960-0060	GROM, PER. R	3.80	1015960-0491	GROM, STAR	3.60
1015960-0061	GROM, PER. R	4.00	1015960-0064	GROM, STAT	3.60
1015960-0062	GROM, PER. R	4.00	1015960-0066	GROM, STAT	3.60
1015960-0063	GROM, PER. R	4.00	1015960-0067	GROM, STAT	3.60
1015960-1060	GROM, PER. R	3.80	1015960-0068	GROM, STAT	3.80
1015960-1061	GROM, PER. R	3.80	1015960-5224	GROM, STY M	3.60
1015960-1062	GROM, PER. R	3.80	1015960-5225	GROM, STY M	3.60
1015960-1063	GROM, PER. R	3.80	1015960-0229	GROM, T. DOO	3.60
1015960-0111	GROM, PERRP	3.80	1015960-0230	GROM, T. DOO	3.60
1015960-0112	GROM, PERRP	3.80	1015960-0231	GROM, T. DOO	3.60
1015960-0000	GROM, PHY F	3.80	1015960-0232	GROM, T. DOO	3.60
1015960-1007	GROM, PHY F	3.80	1015960-0233	GROM, T. DOO	3.60
1015960-5286	GROM, PIRAT	3.60	1015960-0130	GROM, T. EMU	3.80
1015960-5287	GROM, PIRAT	3.60	1015960-1129	GROM, T. EMU	4.00
1015960-5288	GROM, PIRAT	3.60	1015960-2129	GROM, T. EMU	3.80
1015960-5289	GROM, PIRAT	3.60	1015960-1092	GROM, T. I. R	3.60
1015960-5290	GROM, PIRAT	3.60	1015960-1093	GROM, T. I. R	3.60
1015960-0405	GROM, PLATO	3.60	1015960-1094	GROM, T. I. R	3.60
1015960-0406	GROM, PLATO	3.60	1015960-1095	GROM, T. I. R	3.60
1015960-0407	GROM, PLATO	3.60	1015960-0258	GROM, TCHTY	3.80
1015960-0408	GROM, PLATO	3.60	1015960-0259	GROM, TCHTY	3.80
1015960-0193	GROM, RD6FU	3.80	1015960-0260	GROM, TCHTY	3.80
1015960-0247	GROM, RD6FL	3.80	1015960-0168	GROM, TILO6	4.20
1015960-0248	GROM, RD6FL	3.80	1015960-0169	GROM, TILO6	4.20
1015960-0249	GROM, RD6FL	3.80	1015960-0170	GROM, TILO6	4.20
1015960-0250	GROM, RD6FL	3.80	1015960-0171	GROM, TILO6	4.20
1015960-0251	GROM, RD6FL	3.80	1015960-1155	GROM, TMC	3.80
1015960-0189	GROM, RD6FU	3.80	1015960-0188	GROM, TOMB	3.80
1015960-0190	GROM, RD6FU	3.80	1015960-5281	GROM, TREAS	3.60
1015960-0191	GROM, RD6FU	3.80	1015960-5282	GROM, TREAS	3.60
1015960-0192	GROM, RD6FU	3.80	1015960-5283	GROM, TREAS	3.60
1015960-0305	GROM, RDRAL	3.80	1015960-1035	GROM, V. 6AM	3.80
1015960-0306	GROM, RDRAL	3.80	1015960-1036	GROM, V. 6AM	3.80
1015960-0307	GROM, RDRAL	3.80	1015960-1019	GROM, V6RAP	3.80
1015960-0308	GROM, RDRAL	3.80	1015960-0071	GROM, WUMPU	3.80
1015960-0309	GROM, RDRAL	3.80	1015960-0153	GROM, YAHTZ	3.80
1015960-0216	GROM, RDRDU	3.80	1015960-0212	GROM, ZEROZ	3.80



PROTO BOARD
FOR PEB

by
John Willforth

In Times past, there has been an attempt to produce prototyping boards for the TI 99/4A PEB. TI was one of the ones who made the board, but never really marketed it. Others who did market it, were not as successful as they would

like to have been. The primary cause of their failure was the methods TI used in marketing the 99/4A, software, and peripherals. No one knew enough about the TI 99 system and internals to write software, let alone design hardware (which would have needed software in order to function). We believe that "Times have changed!"

Above you see a very reduced picture of a new product that Scott Coleman and I are attempting to produce NOW for those who want to do their own prototyping of PEB peripherals, or would like to take advantage of the new projects that have come out recently for the PEB, such as speech on a card in the PEB, 32K memory and Super Cart Memory in the PEB, John Clulo's DSR card for the PEB and others that are just waiting for a place to reside.

This card will not just serve the TI99/4A community, but when the "fire-hose" is removed and a 9640 (GENEVE) is in that old PEB, we have taken the special requirements of the 9640 and it's additional use of some of the sixty pin buss in the bottom of the PEB into consideration, and made it easier for some one developing for that buss to use the same card in that environment.

Scott and I are nearing completion of the design of this card as of this date (6-25-87), and within 10 days we hope to have definite pricing on the manufacture of this board. We will have everything in place to have the units made, and then take orders. So if you are interested, let us know, but don't order until we are ready. I'm not going to say more about this board until it is ready. Wish us luck.

ELECTRONIC PARTS.....

Originally I gathered the parts for the HORIZON RAM disk together myself to build the unit, feeling that there was no way that BUD MILLS could provide these parts for less than I could acquire them, and still make any profit. "I WAS WRONG!" Bud can not only provide these parts down to the battery holder, but he can provide you with many parts for other projects TI related and otherwise. The next time I order parts, it will be from BUD. At least give him a call. 419 385-5946 or write:

BUD MILLS
166 DARTMOUTH DR.
TOLEDO, OH 43614

The kit cost for the RAM DISK (less the board/docs and schematics) is \$110.00. You will have to order the board FROM:
HORIZON COMPUTER LTD. BOX 554 WALBRIDGE, OH 43465
\$53. s/h qty 1