

TEXAS INSTRUMENTS

TI Forum

by Ron Albright and Jonathan Zittrain

JZ leads off...

Mike Lamontagne of MLsystems (P.O. Box 268, Valley Falls, RI 02864) has introduced an \$80 IBM keyboard interface for the TI-99/4A. Everything is included to properly connect a PC/XT keyboard—except the keyboard itself.

The interface consists of an EPROM and connector that bypasses the standard /4A keyboard and can be installed with a soldering iron, screwdriver, and exacto knife (to cut a hole in the side of the console for the keyboard port). Three wire connections need to be made. As the package currently stands, the standard 99/4A keyboard is disabled, but can remain in place.

John Willforth of the West Penn. 99'ers was able to make a slight hardware modification so that both the original keyboard and the additional one could be used.

According to Willforth, the EPROM actually has two self-contained versions of the software to accommodate either 9 or 10-bit serial keyboards. Aside from merely serving as an interface, the device (called the KBM/99) has quite a few functions built-in. For example, the function keys on the attached keyboard reduce "OLD DSK1." and "SAVE DSK1." to one keystroke. Through <CTRL> and a function key or <SHIFT> and a function key many other Extended BASIC functions have been abbreviated. The numeric keypad functions (Home, PageUp, etc.) have been defined for corresponding use with TI Writer.

Lamontagne will make customized function key assignments upon request. "It's also possible for the two software versions within the EPROM to be used for different key assignments (instead of 9/10-bit selection)," said Willforth. In other words, the original keyboard function assignments could be juxtaposed with a custom assignment (for telecommunications, for example) and then a switch installed to choose between them.

A load interrupt function has also been designed; <SHIFT><CTRL><PrtSC> will cause execution of screen dump or other programs in-

stalled for use with a load interrupt switch.

The interface functioned flawlessly for me with a Jameco Electronics KB83 83-key keyboard priced at \$29.95. Many other Computer Shopper advertisers offer PC-compatible keyboards ranging from \$25 to over \$100, including B.G. Micro and JDR Microdevices. The interface will drive any LED's on the keyboards as well.

Willforth, Coleman Working On Prototype Board

John F. Willforth of the West Penn. 99'ers (R.D. #1, Box 73A, Jeanette, PA 15644; (412)527-6656) also mentioned his work on a TI prototype board for the peripheral expansion box. Together with Scott Coleman, president of the West Penn. 99'ers, he is redesigning TI's original prototype board and hopes to have at least a hundred made.

The board is intended for use by hardware developers and for inclusion with various hardware kits. "It will contain dedicated circuitry to interface the p-box bus to different circuits," said Willforth. 6264LP or 62256 chips could be added directly to the card to boost the /4A with up to a quarter meg

of additional battery-backed static RAM, bank switched for different applications. "One could use the board to install a speech synthesizer in the p-box, a clock, or a super cart," added Willforth.

Willforth expects the board's price to be around \$35.

D.C. Fair Rescheduled

Bill Whitmore of the Washington D.C. area users group has announced new dates for the two day TI/Heath-Zenith/PC D.C. show. The event will be held at the Tyson's Corner, VA Sheraton Hotel on Oct. 24-25. Inquiries may be sent to Whitmore at P.O. Box 267, Leesburg, VA 22075.

Insight: The Users Group

Ever since the very beginning of the 99/4, users groups have played a major role in the development and survival of the machine. Perhaps it is because of the hobbyist nature of the owners that users groups have been so much more numerous and active than those for other computer brands. When TI pulled out, the users groups filled the void.

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MODIFIED COMMANDS	
CALL VERSION	returns 129 instead of 110 fixed bug in this call
CALL INIT	user can specify column length 1-255
LIST	can now be used without memory expansion removed - never used
CALL LOAD	removed - use RES instead
PERMANENT RESEQUENCE	allows RES for a block of program lines
RES	allows TRACE output to printer or disk
TRACE	
NEW FEATURES	
ERROR MESSAGES	in upper and lower case
QUIT KEY CHANGE	quit key turned off
AUTO LOAD BYPASS	can bypass DSK1.LOAD with any key press
CURSOR MOVEMENT	program editing greatly enhanced with FCTW SHIFT and CTRL arrow keys
NEW COMMANDS	
COPY	copy blocks of lines
DEL	delete blocks of lines
MOVE	move blocks of lines
NEW CALLS	
CALL ALL(num var)	rapidly fills screen with char catalog a disk
CALL CAT("DSK1.")	puts time on screen
CALL CLOCK	turns off clock
CALL CLEOFF	closes ALL open files
CALL CLALL	beep sound
CALL BEEP	beep sound
CALL BONG	chimes sound
CALL CHIMES	change all colors at once
CALL COLORS(i,b)	same as bye
CALL BYE	same as new
CALL NEW	allows numeric variable
CALL COSUB(num var)	allows numeric variable
CALL COTO(num var)	allows valid key list
CALL KEYS("keylist", num var)	peeks gram
CALL PEKGS(addr, num vars)	peeks gram
CALL POKGS(addr, num vars)	peeks VDP memory
CALL PEKBY(addr, num vars)	peeks VDP memory
CALL POKBY(addr, num vars)	quit key on
CALL QUITON	quit key off - default
CALL QUITOFF	stop sprite motion
CALL STSPRT	start sprite motion
CALL COSPRT	turns screen on
CALL SCRON	turns screen off
CALL SCROFF	checks alpha lock key
CALL ALLOCK(x)	checks shift key
CALL SHIFTX(x)	checks ctrl key
CALL CTRL(x)	checks fctn key
CALL FCTWX(x)	enables Draw and Plot
CALL DRAW	(see Draw and Plot manual for information on it's CALL LINKS, i.e. Edit, Show, Circle, Draw, Move, Fill, Plot, Save, Load etc.)
	1 - Memory Expansion Required.

TABLE 1 - New Functions and Calls With Triton X8

TI Forum

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Today, many remain strong—but declining.

"Users groups are needed more than ever," said Barry Traver, founder and past president of the Philadelphia TI Users Group. "Without them, the TI community would have disappeared long ago."

According to Traver, the Philadelphia group has experienced a slight decline in membership of late, drawing between seventy five and a hundred people to its monthly meetings. "But of those people," he notes, "many more have disk systems or even two consoles."

Madonna Nordaker of the Central Iowa 99/4A Users Group sees a similar trend in her area. "We have about fif-

ty or sixty active members," she said. "Two or three are interested in the Myarc computer... and everyone will wait until fall to see what develops."

J. Peter Hoddie co-directs the Boston Computer Society TI-99/4A Users Group with Justin Dowling, and has been at his post for several years. "Our membership has declined to about 310 on the list, fifty to seventy five at the meetings," he said.

Every users group has to deal with apathy—but some find it easier than others. "I've been lucky," said Hoddie. "We can call on someone the night before a meeting to bring a console or a TV set, and he'll come through." Hoddie attributes the high level of member activity to several causes. "I get up there and

cry... I guess they've taken pity after seeing me do it for the past forty months." On a more concrete level, Hoddie has two tips for users groups who wish to have more active members. "If someone does something for us, we do something back," he said. "Be it a free disk of software or the mention of the names of those who helped out, people enjoy receiving something tangible in return for their work." Another incentive is about ten dollars worth of snacks made available at the end of each meeting. "The members will stick around for the end of the meeting and get to know each other better when there's something to eat," Hoddie said. "And it keeps 'em buying disks," he added, noting that the sale of disks of public domain and fairware programs

has kept the BCS group solvent. "We pulled in \$500 at the Los Angeles fair and \$1200 in Boston."

Not only can users groups keep the flow of information going by offering disks of software, but they can use the collective bargaining power of their members for group purchases. Traver explained that the Philadelphia Users Group has made several bulk disk drive purchases on behalf of members. In both cases, everyone benefits—the group and its users.

As far as group participation goes, Bill Whitmore, founder and past president of the Washington, D.C. Area TI Home Computer Users Group said that his group has had some trouble. "Nobody wants to do anything," he said. "Our current president, who was to

only serve for a year, is on his third year... and is getting burnt out." Almost every users group has a small core of extremely interested and active members, who also tend to be very knowledgeable about the machine. "Many of our best people have moved on to Big Blue or clones," Whitmore said. Without an influx of new, dedicated members, users groups could be in trouble. "We peaked at about a thousand members, and now have a little over two hundred," added Whitmore.

As users group memberships slowly decline, unity among groups becomes even more important. A few years ago the D.C./Baltimore/Virginia area groups came together enough to publish a common newsletter under the banner of the "Mid Atlantic Ninety-Niners," or MANNERS. But coalitions like MANNERS are uncommon in the TI community. Users groups usually stay in touch only by sending one another copies of newsletters. Often a particular users group will find itself mailing more newsletters to other groups than to local members.

Newsletter editors welcome the exchange, since original material can be easily passed along from group to group. "Our newsletter was 99% our material until recently," said Whitmore, who is currently newsletter editor for his group. "Last month it was 99% copied from other newsletters. This month will probably be 50-50."

While information makes its way around the country through newsletter exchanges, it can quickly become distorted. "Some users groups change the facts altogether," said Hoddie. "One person might not understand a program and give it a bad review." Such a review—or random parts of it—could spread throughout the country, with no one newsletter being exactly sure where it came from. Hoddie recalled one incident where a supposed "tip" involving the PI operative had been passed around that claimed to allow users to distinguish versions of BASIC and Extended BASIC from one another. "It simply didn't work," said Hoddie, "and if someone had taken the time to sit down and try it out, that would have become apparent."

What advice do these leaders offer to other users groups? "Don't forget the basics," said Traver. "Sometimes the plain user is forgotten." Traver has helped the Philadelphia group institute classes where members can learn how to load, run, and use canned software. "Programming has its place,

COMCEL

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are not copy protected will run either in monochrome or color mode. In most cases I tried to have them run using color if they didn't involve graphics. The only conflicts that occurred here did so with memory resident programs and were solved by switching to monochrome mode. Packages that require graphics, must be able to operate using Hercules compatible graphics.

In addition to specific software programs, I was also able to test the system by using some of the routines found in C function libraries. Both the Vitamin C and C Tools Plus work properly in both Monochrome and Color text modes. The Halo Graphics Library operates well with the Hercules driver. These tests provide a good indication that a wide variety of software using any of the screen modes is likely to work properly with the Comcel board.

During the process of debugging a piece of software, it ends up being changed and recompiled many times. Since compilation is quite disk intensive, I did not expect a dramatic change in compilation speed. I was mistaken. I used the MS Make utility to compile two source files, one with 307 lines and the other with 359 lines and did both these with a graphics library. The times are listed in Figure 1.

Program	TI	COMCEL	Time Ratio
Battics C 3.0	292 sec	101 sec	2.77
Microsoft C 6.0	405 sec	141 sec	2.88

Figure 1

Program	TI	COMCEL	Time Ratio
SIEM	6.20 sec	1.71 sec	3.6
Floating Point Division	24.5 sec	3.5 sec	4.3
Int 2047	3.2 sec	1.02 sec	3.1
cos and addition	19.7 sec	2.02 sec	4.4

Figure 2

I then tested the speed of execution of a program using Microsoft's Sieve benchmark program and two programs I wrote to test floating point division (very time consuming) and the execution of 3,000,000 loops. All programs were written in C. See Figure 2.

The Comcel board comes with 1 Meg of memory, 704K of which is available to the user. This full load of memory is a major advantage to all who have any TI Pros with anything other than the 768K. With the Comcel board I can load both Sidekick and Superkey and still have more than 512K.

The Hercules graphics standard has been implemented very well. The difference between the TI 720 x 360 resolution and the Hercules 720 x 480 is accommodated by using the F11 and F12 function keys to shift the graphics display up and down so that the TI screen acts like a 720 x 300 window on a 720 x 480 virtual screen. It is necessary to separate the differences of the JEM system from those that might be present with the Comcel board. This is just such a case. After the quality of the color graphics available in the TI Pro, monochrome graphics aren't all that exciting. The folks at IBM Computer Services are in the process of working on the color driver that should be out in the near future.

The TI keyboard has significantly more keys than the IBM counterpart and all of the IBM keys seem to be in place, but those extra TI keys are naturally missing in the IBM mode. Unfortunately, I've got tap used to many of them for some things. This, of course, is not a criticism of the Comcel board, but rather the standard comment from TI users that "TI did it better." What is retained is the excellent feel of the TI keyboard while running IBM software.

BUGS and Annoyances

There is a memory conflict between the Comcel system and the TI memory resident program Keymate II. Until I removed Keymate from my TI system, the system would only operate in Comcel mode for under five minutes before crashing the system and requiring a cold boot. This problem has been completely solved by removing Keymate.

With Superkey loaded, set up for color and the screen mode set to color, the Superkey prompt does not disappear and writing to the screen seems to be disabled. After a few seconds, the screen goes blank. It can be reset by hitting the Superkey prompt. This is a minor annoyance which the user can work around by using the monochrome mode.

The documentation that includes source code and the information on how to use the Comcel system is excellent. Here is one suggestion concerning the documentation. The Comcel board is a TI board. Unfortunately, the TI documentation of how to use the board is not very helpful.

Getting the full 704K of RAM requires the command that the Comcel board is in. The documentation of this in the documentation

if you choose the color text

mode through use of the Mode COM command. Quit the Comcel system and then go back to it, the mode appears to be somewhere between monochrome and color. There is no visible text, even when text is obviously being written to the screen such as after the DIR command. This is corrected by another call to Mode COM or Mode Mono.

It seems that the Mode Mono command does not completely restore the system to a Hercules monochrome setup. In order to accomplish this, the Comcel system must be reloaded. If the mode is not set and Lotus is in there are no problems. If the mode is changed first to color (cd30) and then back to mono as described in the manual, Lotus displays the Version 2.01 logo and then promptly locks up the whole system requiring a cold boot. This kind of mode switching will be corrected. It should not pose a serious problem.

The Superkey driver is a good example of a well written program. It is a good idea to have a program that can be used to test the system. The Superkey driver is a good example of a well written program. It is a good idea to have a program that can be used to test the system.

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The Silver Box
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do not betray my expectation. There are lots of Wordstar mods floating around. Can you give us some clues?

Letter No. 3

Mr. Blitcher of Idaho reported a cure for the Michtron's Card basic game. As many readers will recall, the

program's graphics is upstaged if you apply extended memory patch and all the cards faces will show up as purple. This is due to the fixed video segment used by the game program. TO fix it, load the CARDS.DAT file in the memory using DEBUG. Look at location 032A. If it is "3C," change it to "0C" using E function. If it is not "3C" locate it by using S function of the DEBUG.

Search for "00" "3C" in the same area.

These two bytes set the video RAM location for the green color. White minus Green is Purple. Simple isn't it?

Letter No. 4

Mr. Bowman of Newton Falls, Ohio, wants to run IBM programs on the Sanyo (or Clumsy?). You said most of the good stuff stop dead. Which programs did you refer to when you say "good stuff?" I assume your experience is with the Sanyo and not with the (Clumsy) IBM clone. (If you do have compatibility problems in your clone, buy a Phoenix BIOS. My experience with it is trouble free.)

The main reason why some IBM programs don't run on the

Sanyo is because the Sanyo has different LSIs at different address locations. The Sanyo BIOS covers the difference fairly well but not completely. It cannot help you if the application program interfaces with the IBM hardware directly. This is the cause of 80% of all the difficulties.

The next problem is the keyboard setup. As you can see the Sanyo keyboard is a very nice keyboard but it lacks some keys used in the IBM PC. This sometimes makes a program like Sidekick unusable even if the program by itself is running perfectly in Sanyo. The problem in this case is that you cannot control them. The Sidekick patch corrects this situation, although the Version 156A directly interfaces with

the DMA Controller which does not exist in the Sanyo. Writing and reading on the ports normally occupied by the DMA chip may cause computer hangup because the keyboard control port may be affected.

If any of you have specific problems, please write. We may have the answers to your problems.

I received a few complaints from a few readers who have clones. The SMOOT156 recycler published a few months ago in this column did not work in some clones, especially if it was V20 equipped. This was caused by including some patches meant for the Sanyo machine. The

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too—but not in a class like that," Traver said.

"Sit tight," advised Nordaker. "Computers are changing so quickly... why not keep what we have until the next big leap (in computers)?... the TI is a little slower than some of the new models, but it does just fine."

Hoddie believes that publicity outlets are often under-utilized by TI groups. "We've gone to some local general computer shows," he said, "and although we'll clear only \$100 profit or break even, we sign up a few new members."

Computer Shopper and other publications also stand ready to help keep 99'ers together. "You've got to keep reaching out, or it'll dry up," warns Hoddie.

The next few months will prove to be crucial ones for the TI community. Some believe that the Myarc computer is too

late to gather a significant following; others feel that it might even end up competing with the current 99/4A owners. Users groups helped the 99/4A get on its feet. Now they are vital in keeping it standing.

Ron's Part

I couldn't agree with JZ more in his comments about the importance of users groups. They are the lifeblood of the TI user base and, if you don't belong to one, write to JZ and I. Include a self-addressed, stamped envelope and we'll get you in touch with one. You need to belong! Nuff said.

When Miller's Graphics became simply "MG" and invented the MG/Triton XT (a box that allows the TI console to control the hardware of an IBM-clone), many in the TI community lamented that one of our real ingenious people had gone the way of the "Big Blue" mentality. With the appearance of the latest offering from MG called "Super Ex-

tended Basic," those worries have been, at least partially, denied. The name of the product is no misnomer. This is, truly, what Extended Basic from TI should have been, but I am sure they didn't have the creativity to put it together.

Based on the work done by Mike Dodd of Knoxville, TN and Danny Michael of Muscle Shoals, AL with the incredible (and now extinct, thanks to the trade fights and rising chip prices) "Gram Kracker," the new software is a hybrid—all the compatibility of all the XB programs Plus an incredible new array of enhancements (see Table 1). From "cutsey" stuff (Like Call Chimes, and Call Honk) to the indispensable (Call Clock, Move and Copy), this new plug-in-and-run cartridge is an important upgrade to the XB programmer. Even with these enhancements, it would be a major upgrade in what is still the most popular programming language for the TI, but there is more. How about the "Draw'n Plot" routines from Quality 99 Software? When you have the cartridge plugged and do a Call Files(2), New, Call Init, and Call Init, and Call Drawnplot, 6K of tight code is sucked out of the module and into Low Memory Expansion. The 15 subroutines thus added to the XB environment can be used for some remarkable hi-resolution plotting, and graphing, and saving to disk as well as dumping to your printer. You can even control the graphics with joystick or trackball. Circles, squares and lines are drawn easily straight from the XB environment—that is, from your program. Further, with the Call Link ("Edit") command, you can directly edit, pixel by pixel, the drawing area using your joystick. Amazing stuff for sure. The art work you pro-

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duce can, in turn, can be called up and displayed from your XB programs (with a few restrictions) as well.

This is a tremendous addition to the XB programmer's toolbox. Combine this with Tigercub Software's Nuts and Bolts I, II, and III (156 Collingwood Avenue, Columbus, OH 43213), and anybody, and I mean anybody, can churn out some terrific code. A word of warning! This product is only sold mail order through Triton (P.O. Box 8123, San Francisco, Ca 94128; 1-800-227-6900; \$59.95). The reason I say this is there is another west coast mail order firm selling a similarly named product, but this ain't that! Stick with Triton on this one; besides they have the 1-800 phone lines. I love the cartridge—4 stars for sure.

Legends

Just saw the movie (1985, starring Tom Cruise) and now I have seen the software. Asgard (P.O. Box 10306, Rockville, MD 20850) slipped me a beta version of this marvelous new adventure game from the incomparable Donn Granros and new partner, Ed Johnson. What a beauty! Even a non-gamer can be addicted to this graphics "move-and-fight-and-cast-spells" frolic. The way it appears to be set up, Legends will be a traveling party of 4 (fighter, ranger, wizard, and cleric—but you can also design your own characters), which begins at Wizard's Rock.

That is the starting point of what is an exceptionally artistic graphic quest. Granros is an artist—not just in programming, but, really, an artist! His screens and monsters and graphics depict just that. As you make your way through the myriad screens (including such scenic spots as an old sewer system, a graveyard, and an abandoned castle, evil of course), you must fight, cajole, or run from some pretty "bad dudes" (as my teenage daughter refers to them). You thrust, parry, lunge or buy off the beasties as you move about using the console arrow keys. As you advance, I understand there are "traps galore, logical puzzles, and some non-combative encounters with some interesting residents." I freely admit I will never have encounters of this kind, as I am too inept to get that far, but Granros and Asgard promises me they are there. I believe them. Great company, great programmer, and great software.

Hats Off to HUG!

I wish my legs were long

enough to kick myself hard enough for this one. I guess I'll have to ask Mrs. Albright to do it for me. Back when the Editor gave his "TI Ultimatum" to get software to us or lose the column (that is not going to happen, folks), we got a great response. One user group took it upon themselves to go the extra mile as well. Dan Eichner of the Huggers User Group (P.O. Box 2222, Indianapolis, In 46206-2222) sent us their "product." A product of love and devotion that I am totally not qualified to critique—every newsletter they have put out since 1983. What a history lesson for the TI. What a collection of tips, inside information, reviews, and hacks. Amazing. And much more. It is a reflection of the groups continued devotion to the TI. Nice going guys! My hat's off and if my knee didn't hurt so bad, I'd stand and salute. You are a reflection of why the TI users are flourishing nearly 4 years after abandonment. You can get this group's newsletter for \$10 per year—what a buy!

Software Contest Continues

Thanks for the great response to the software giveaway. It continues this month and the winner is Hank Redmond of Riverside, California. Hank wins a copy of Asgard Software's "High Gravity"—version 2.0, a terrific education game in c99 from Tom Wible, their Graphx Companion IV disk—a collection of art for Graphx, and a copy of the popular *Orphan's Survival Handbook*, by yours truly (and sold through Disk-Only Software, P.O. Box 244, Lorton, VA 22079; \$19.95 incl. S&H). To be eligible for the drawing each month (and we do hope to continue it), send us a postcard with your name and address and you go in the pot.

Good Luck! Lots of software to give away and maybe even some hardware so stay tuned. Newsletter of the month goes to the Toronto Users Group (#109-2356 Gerrard Street E., Toronto, Ontario M4E 2E2) and forwarded by Steve Michelson. I have always known the creativity of the Canadian users (as manifested by some super Fairware software offerings) and now I have to marvel at the quality of their newsletters. Marvelous and thanks, Steve.

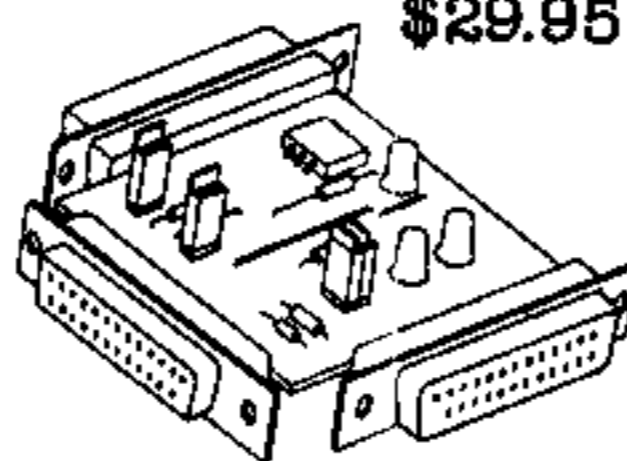
Winding Down

I was hoping to have my review of the Myarc 9640 in this issue. Alas, it will not appear as the machine (while being shipped in limited quantities and scheduled to appear at the summer CES) does not have a DOS ready to go yet. When that is ready and available, there will, I promise, be a review. I do not do "previews," or reviews of manuals without the software. That would be a disservice to the readers. Having worked with the machine, I think the machine has immense potential for someone who can deal with its offerings and idiosyncrasies, at least at this juncture. Suffice it to say, at least in this space, that I like the possibilities the hardware offers. It is the software that will need months and months to refine and polish. If you are up to a bit of adventure and are willing to trade power for a certain degree of "growing pains" consider the Geneve. More as time goes on. Perhaps, a review in the September issue.

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