UPDATE!
MAGAZINE

UPDATE COMPUTER SYSTEMS

ZX-80 ZX-81 TS-1000 TS-1500 TS-2068 QL Z-88

P. O. Box 1095
Peru IN 46970

$4.50/Issue $18/Year

July 1994

* UPDATE COMPUTER SYSTEMS MAGAZINE *

UPDATE COMPUTER SYSTEMS is Edited and Published by Frank and Carol Davis of P.O. Box 1095, Peru, IN 46970 USA. The phone number is 317-473-8031 for both voice and fax, with normal phone hours being between 5 P.M. and 9:30 P.M. Eastern Time during the week and noon to 6 P.M. on weekends. Please use the answering machine if we are not home. Most answers to questions left on the machine will be by mail, long distance charges are too costly for a small magazine.

Mailing date of the magazine: all issues will be mailed out near the 20th of the months of October, January, April and July. All mailings within the USA are by bulk mail and may take a few weeks to reach you at the most. Those wishing to have faster service may pay $4 extra for First Class Mail. The present rate for North America is $18 in US$, and $22 for the rest of the world. Back issues of the magazine are available for $16 per year in North America and $18 elsewhere (it is cheaper to mail a bunch as opposed to one issue at a time). There are four issues to a year, with each year of a subscription starting in October and ending with the July issue, at which time your subscription renewal is due. Timely renewals are what keep us in business!

Assistance in publishing this magazine is provided by you the readers, many of whom have contributed often in the way of reviews and articles. We offer you our heartfelt thanks. Our main assistant locally is longtime friend and colleague, Eliad P. Wannum, Poet and Psychologist, as well as Sinclair computer user. Many thanks to our regulars such as Mike Felerski, Bill Cable, Peter Hale, Paul Holmgren, Al Feng, Don Lambert, Bob Hartung and many others. You are all welcome to submit material for inclusion in the magazine. Please make all hard copy submissions letter or NLQ; no draft print copies, as we do not have much time for re-typing. Send at least two copies hard copy and the article or artwork on disk where possible. No audio tape submissions, as we do not use tape as a media, please. Try to avoid flowery or hard to read fonts...unless you are showing us a sample of the output of a program. If artwork is to be included in the article, please let us know in what order you think it should be displayed.

Those wishing to place ads in UPDATE MAGAZINE: We have two ways of handling ads. ONE, we will do reciprocal ads for other publications (generally on a year for year basis, with you sending us a copy of the issues the ad is placed in). The other way is to purchase ad space from us, with the following rates in effect for now: $15 per quarter page; $25 per half page; and $40 per full page ad. This is per issue. For inclusion in all four issues, you pay for three issues, in advance, and get the fourth ad free. Should you have questions on this please contact Frank Davis, by mail or phone as listed above.

We hope to be of service to you. Thank you!

** UPDATE PAGE DIRECTORY **

JULY 1994

Articles are marked by the following symbols to inform you of the specific, or non-specific type of computer that the article deals with: TS= TS2068 or Spectrum; QL= Quantum Leap; ZX= TS1000, ZX81 or TS1500; 88= Cambridge Z88; GI= General Interest.

Front cover art is by Abed Kahale of CATUG, the Chicago area user group, and TSNUG. Thank you, Abed.

GI- Page 1	Directory
GI- Page 2	Editorial by F. W. Davis
GI- Page 4	ComputerFest in Dayton
TS- Page 5	Letter & TS2068 ROM Bypass Board Schematics- Part 2 by the late Wm. J. Pedersen
TS- Page 9	TS2068 Talks to a PC by Modem by Abed Kahale
GI- Page 10	RMG ad by Rod Gowen
TS- Page 11	Open Letter from A. F. Rodriguez
ZX- Page 12	A. F. R. ad by A. F. Rodriguez
ZX- Page 13	ZX81 Tic - Tac - Toe (Doc- part 2 and Declarations)
GI- Page 16	Dot-Matrix Printer Review (Panasonic KX-P2023) by Abed Kahale
GI- Page 17	T/SNUG Information
GI- Page 18	The Best of the Plotter - ad
ZX- Page 19	World Map - Part 1 by Paul Holmgren
ZX- Page 25	Letter from David Lassov on the April Issue article on Tic - Tac - Toe
GI- Page 27	Mechanical Affinity - ad (TS2068 & TS1000 stuff)
TS- Page 28	Letter from Robert Hartung on Query from Basil Wentworth in April 1994 Issue
GI- Page 28	Computer Classics - ad by Dan Elliott
GI- Page 29	Wanted or For Sale, free ads to subscribers
QL- Page 30	The Release of XChange by Gunther Strube & Erling Jacobsen, with Intro by Hugh Howie of Sinc - Link of Canada
QL- Page 33	Report on Miracle in Newport 2 by F. Davis
QL- Page 34	Mechanical Affinity - ad (QL stuff)
QL- Page 34	QBOX - USA - BBS Ad
QL- Page 35	Archive Series Part 17: FormEd - A Form Editor & Printer for Archive Databases (to be continued) - Cable Column by Bill Cable
QL- Page 40	How to Modify a Radio Shack Color Monitor CM-8 from CGA to RGB for the QL by Chuck Spann
QL- Page 41	The Reliable QL by John Impellizzeri, taken off the Internet
QL- Page 44	The Versions of QPAC2, Thru December 1993, with Notes by Eliad P. Wannum
GI- Page 46	QL Survivors Source Book & Z88 Source Book
88- Page 47	Various Z88 Ads
88- Page 48	Z88 News and Information by F. W. Davis
88- Page 50	Z88 Users Club - ad

Back Covers - TS2068 & QL Issue Disks

THE UPDATE EDITORIAL, JULY 1994
by Frank W. Davis, ED

Well, here we are once again, taking thought to paper, via my old trusty QL and TS2068 (both are used in the creation of UPDATE! Magazine, as well as the infrequent use of the Z88). I seem to have gotten a pleasant response from the editorial statement last issue that we were not sure we would continue publishing for another year after this issue. Due to calls and letters that we got on this subject...we will continue for at least another year. That year will start with the October issue and run through the July 1995 issue. It was deemed that I needed to find out what you, the readers and contributors to UPDATE! felt. I received back many pleasant replies, i.e.: "you are the only magazine in the world that now covers all of the Sinclair machines, and you do a good job of fairly balancing them"..."of the three remaining U.S. made newsletters for Sinclair computing I feel that Update gives the best and broadest source of info for all users"..."I guess that I never seem to pay attention to contributing by writing till I find that we have the threat of losing Update. Here is my subscription fee early this year, no second reminder needed, and I have signed up a friend to subscribe. Keep on publishing!" Thanks for these and many other kind remarks. As I said last issue, we needed some new subscribers (we have lost some to passing on, nursing homes and a few defectors) and needed a certain number to remain financially stable. We have come close enough to that to give it a go for another year.

We are leaving the subscription at $18. I would have liked to have raised it to $20, to cover the increased costs we have, but held it down for one more year, and one only, due to the number of people we have who are on limited or fixed incomes. As we face another postage rate increase early next year this puts a small squeeze on us. We have held our price the same for going on 5 years of paper, toner, and postage increases. It is thanks to those who have seen fit to throw in a few extra dollars to help out that we have been able to do so. For those who want to , this is okay, but otherwise thru next year the price is still $18. The best any of you can do is get us is get a friend or relative to subscribe and renew real soon. Please do not wait for the October issue.

Perhaps you will have noticed that this time the renewal form (for those who had not renewed at the time of this mailing) is not a part of the magazine, but on a separate sheet. This is so we can give you one more page of information on Sinclair computers.

Now for other news. QL World magazine has sent out its last issue. It has been around since 1983 in one form or another, and under several owners. This does not mean the end of QL computing. That is at its highest rate of technological expansion in its history. The folks publishing it simply did not have the know how to run a computer magazine. The other publications they handled were of a sports nature, and they never did obtain a high enough number of subscribers to keep afloat a glossy monthly magazine. They have been trying to get someone to take over the publishing, but due to their wants in this matter, no luck yet. In the meanwhile we have other magazines that are more than capable of carrying on. One is IQLR, a QL specific magazine that has grown in the last few years to a level of competence that QL World never did achieve to me. They have over 2 thousand subscribers now and are continuing to grow. Most of those people are from overseas, which is odd for a USA based publication. I would love to see more North Americans support this fine publication. Most of you will find a flyer included with this issue in an attempt to get your support. We also have a much improved and informative quarterly put out by TSNUG. Bob Swoger, Don Lambert, Abed Kahale and others have seen to the increasing quality of this magazine. Right now they need new members and readers for TSNUG so that this can be a continuing operation. Please give them your support. We are in the process of obtaining more foreign readers for UPDATE!, as well as increasing our readership here in North America. We are the largest mag left in the world (to my knowledge) that covers all of the Sinclair and Cambridge computers. I hope to become even better known in the next few months. Other than supporting Sinclair dealers, user groups, clubs and computer shows... your magazines are your best way to see that new items and progress are made for a computer you use. We have way out-lasted the TI 99/4A, Atari 400/800, etc. I want to see us continue. This is not pessimism; this is what we should do.

Very little (maybe nothing) new has come out this last year that I am aware of for the TS1000. Am I wrong? If so let me know. I do hear rumours once in awhile that someone has done something new, engaged in a project, or doing a new hardware hack on these little machines, but no one sends in anything for them. Are these just rumour, or is someone keeping a lot of secrets?

For the TS2068, what do we have new? You have seen new software through us for use of 24 pin printers and graphics. We have also brought to you the chance to have updated versions of TASWORD 2. Next issue we hope to make you aware of upgraded forms of all of WIDJUP's software for the TS2068. These were written by the late Bill Pedersen. He gave the rights to all of his TS1000 and TS2068 software to us to handle, and there is a lot of it. As time permits we will be making it once again available. I need to have more of you let us in on what you are doing with the TS2068. It is not dead, just in need of vitamins.

For the Z88, this last year saw a new and improved ROM for it that fixed some serious bugs and lockups. It is available from the UK. We also saw internal RAM upgrades of 128K and 512K for it, replacing the standard 32K. There was also the release of the Z88 Source Book, now in its second edition. This was primarily the work of Tim Swenson, with the last typesetting by Crosby and publishing by UPDATE! Magazine. At the time of this writing Mechanical Affinity has the chance to buy into about 5,000 of these neat little computers. Are any of you interested? Let Frank or Paul of Mechanical Affinity know if you are, so they know if it will be worth pursuing.

We have some BBS support. Files can still be found on Compuserve, and the Club is still there as well as the weekly conference. QBOX has made a great showing and justly deserves your support (see their ad this issue). TSNUG has a BBS out of the Chicago area, check their newsletter or Bob Swoger for this. The Internet has a respectable number of Sinclair users worldwide. Buy a modem, get some software and check these out. For the QL we have public domain programs such as QTPI and QEM, which we will supply on disk for you for the tiny fee of $3 if you can not get it locally. Jim Hunkins has a new program, copyrighted but offered freely under easy conditions, that provides offline file reading for the QL and a BBS.

For one not to have known that the QL is booming would be hard for me to believe. It has a new IDE interface coming out of Croatia. This will allow you to access upto 128 Meg of data off of an IDE hard drive. It will be available from Ron Dunnet and Mechanical Affinity for less than $200, perhaps closer to $150. We have the new Super Gold Card with 4 meg of memory, three times the speed of the Gold Card, 4 disk drive adaptor and a true parallel port with cable. We have Page Designer 3, which makes for easy desktop publishing (not yet perfect, but working on it) on the QL. Text87Plus4 continues to improve, as well as its competition, the Perfection word processor. Editor Special Edition is getting better all the time. LineDesign and DataDesign are drastically improved and headed for more improvements. Miracle is now hard at work on the Graphics Card for the QL, and we hope to see them in time for Christmas. The QXL card for use on a IBM compatible is now in good form with bugs worked out and its Superbasic clone (much better) now released. It is now a fully useable board. Want to make easy banners on your QL? Then get Banter from Mechanical Affinity or DJC . I could very easily go on for pages. See the review on QLERK, from Wood and Wind Computing for the best finance program I have seen for the QL. This is a live machine; spend a few bucks and find out it is once again becoming state of the art.

A small note for those of you who see the PLOTTER ad for THE BEST OF THE PLOTTER...they forgot to say that there will be a companion disk that contains the TS2068 programs listed in the book, in either Larken or Oliger format. It is available for $9.95 PP. If you have little time to type in a program, this is for you. A lot of work by this club has gone into this book and it should be well worth the price. We have Rod Gowen and his group to thank for this. Give them your support, not just because it is a nice thing to do, but because it will be worth the money. Here is some more software for your TS2068. Give RMG a call for more stuff. I want to see them stay in business.

DAYTON MICROCOMPUTER ASSOCIATION INC. PRESENTS

COMPUTERFEST® 1994

SAT. AUG 27
9 AM-6 PM

SUN. AUG 28
10 AM-4 PM

HARA COMPLEX, 1001 SHILOH SPRINGS RD. DAYTON OH

513-223-FEST

DAYTON COMPUTERFEST

HARA ARENA, DAYTON, OHIO – AUG. 27 & 28
1001 SHILOH SPRINGS RD, DAYTON, OHIO

Both Mechanical Affinity and UPDATE! Magazine will be at the largest computer club show in the Midwest. We, along with other Sinclair dealers and user groups will be there for both days of the show. We will be showing and selling both new and used software and hardware for the TS1000, TS2068, QL and Z88. UPDATE! will also be taking subscriptions, selling back issues, as well as selling ISSUE DISKS for the first time at the shows. We are expecting to have TSNUG there as well. Paul will be handling the QUANTA library for members. This is a great chance to meet with us and see what is new for your computer, or buy that item you always meant to. There are usually a couple of folks also flea marketing new and used Sinclair items. This is also a great place to pick up all of your non-Sinclair computer needs at very good prices. Many dealers(but not all) are even willing to haggle a bit over a price.

We do think you will find it a pleasant and worthwhile experience. This is our personal invitation to join us and have some fun at the Dayton show.

There will be a Sinclair user picnic at the home of Tim Swenson, following the show on Saturday. It will be a pitch in, so bring food and drinks to contribute. We did this last year and a good time was had by all. There'll be maps available at our tables Saturday to show you how to get there. A lot of computer information was shared at last years picnic.

As most of us will be staying at the Red Roof Inn North or the nearby Knights Inn, it will be easy for us to get together for breakfast or supper. Join us. We will be arriving on the Friday afternoon before the start of the show to get set up. The Hara Arena is easy to find off of US70 or US75. Both have signs telling you when to exit to go to the Arena. Just follow the signs; this is a big deal for Dayton, so they want you to get there. This is the only major show in North America we can all get together for, so please try to be there for this. The whole show is huge, so make motel reservations now to be sure to get a room.

Mr. Frank Davis
Editor UPDATE!
513 E. Main St.
Peru, IN 46970

9/24/92

Dear Frank,

The latches must be already reset and ready before the CPU comes on line. CMOS chips usually automatically reset on power-up, so it wasn't certain that applying the RESET signal was even necessary.

The thing to try was to cut the RESET trace and jumper pins 3 and 4 on U4. If no problem, leave it that way.

Well, there was no problem, so that's it. See the marked PCB trace for all that's needed. For such a complex board, I think it came up smelling like a rose (barring Murphy).

The 138 (and relocated U4) can be added later on a piggy-back daughter board (using a wire wrap socket). For now, the ROMCS trace will not be cut, nor will ROSCS be brought from the edge using a wire. Boards can be updated later if desired.

Larry Crawford has verified total success using plugged in EPROMS. He has not yet verified using SRAM as ROM. Even the HOT-Z cartridge works with either DOS in place.

The acid test has been passed, yet much needs to be done. Most important is to get far enough along with new ROMs so results can be demonstrated before hackers get an opportunity to misuse their new toy.

Still, it is imperative to announce the sucess of this project, and to show the schematic for the version that requires getting inside the TS2068 to rewire it. That won't give away the details on how to get it to work without touching a screw and should discourage those who might be tempted by avarice. You could even publish the board patterns after using white-out on those alterations.

An editorial comment would carry a lot more weight than what I could say, and technical explanations are inapropos at this time.

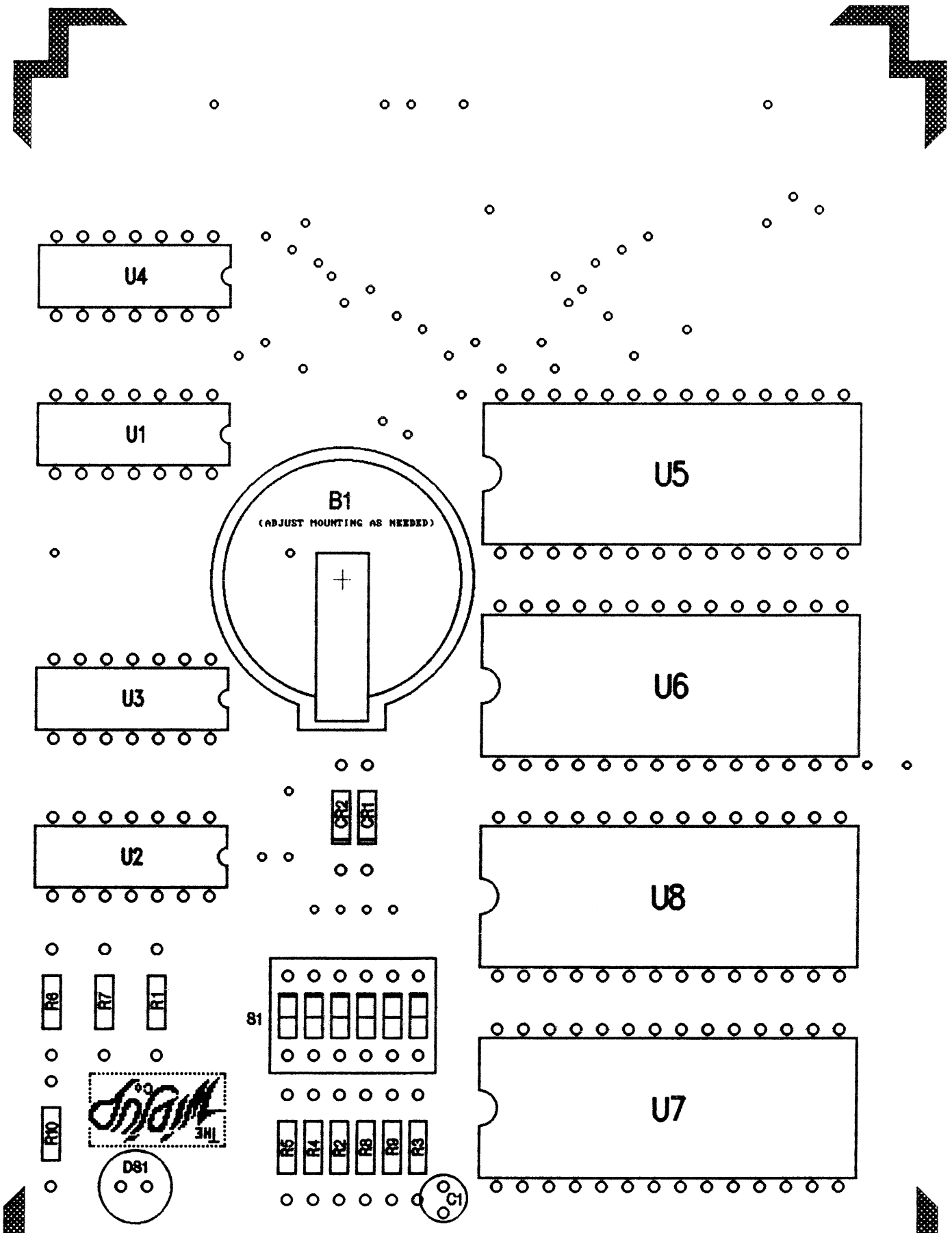
Rumors are spreading anyway, so it is better to confirm them in a manner that will inspire serious interest in the TS2068, not as just another gadget to play with.

A problem with my plugging it is: "I TOLD you so!". To say that in print would feel so good.

Larry has promised to alter the board you send me for the no-screw-touched version but for him to do that he needs both boards, as he only has Oliger style buss extenders. Only then will I be able to begin work on ROM repairs in earnest.

Bill Pedersen

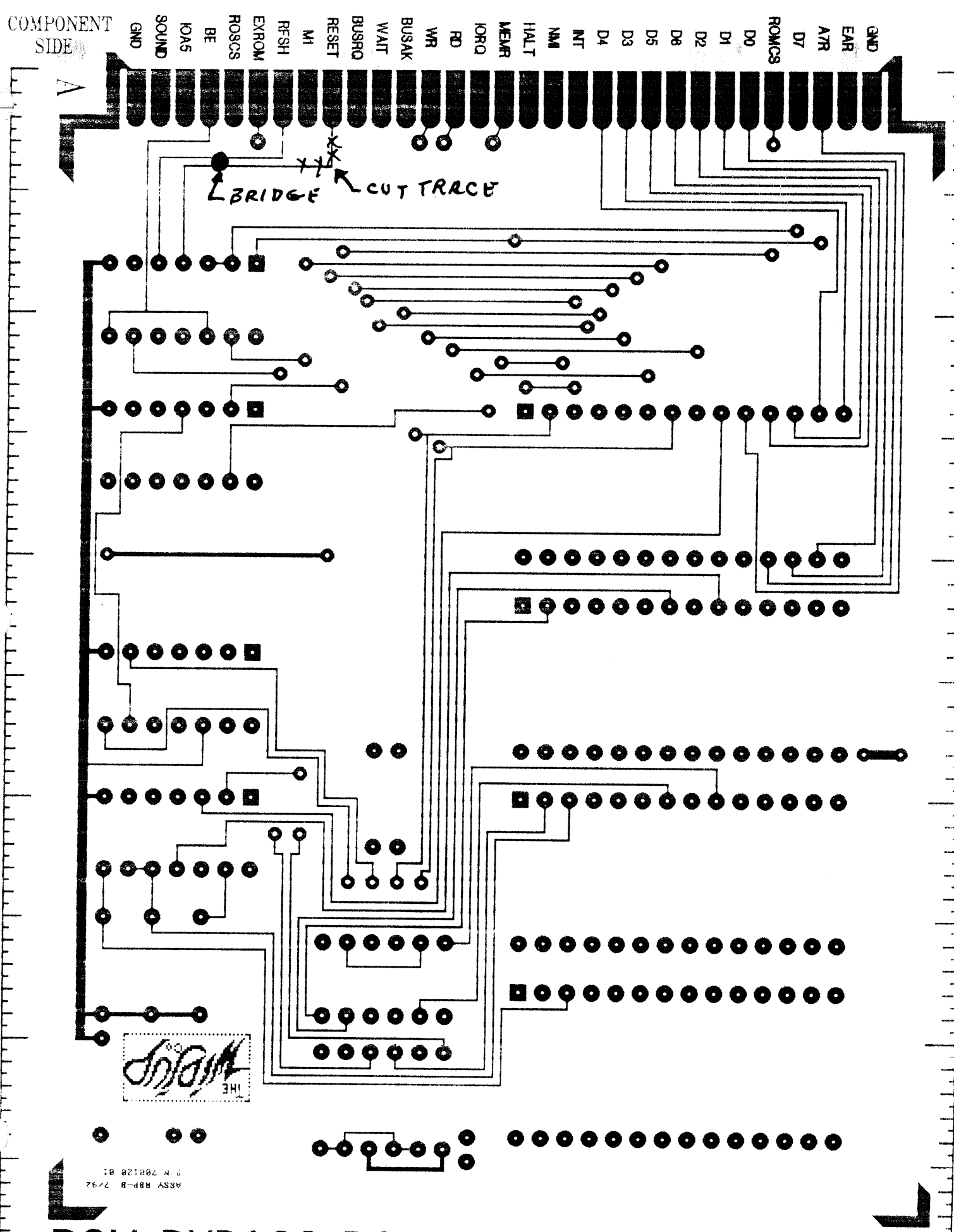
LAYOUT



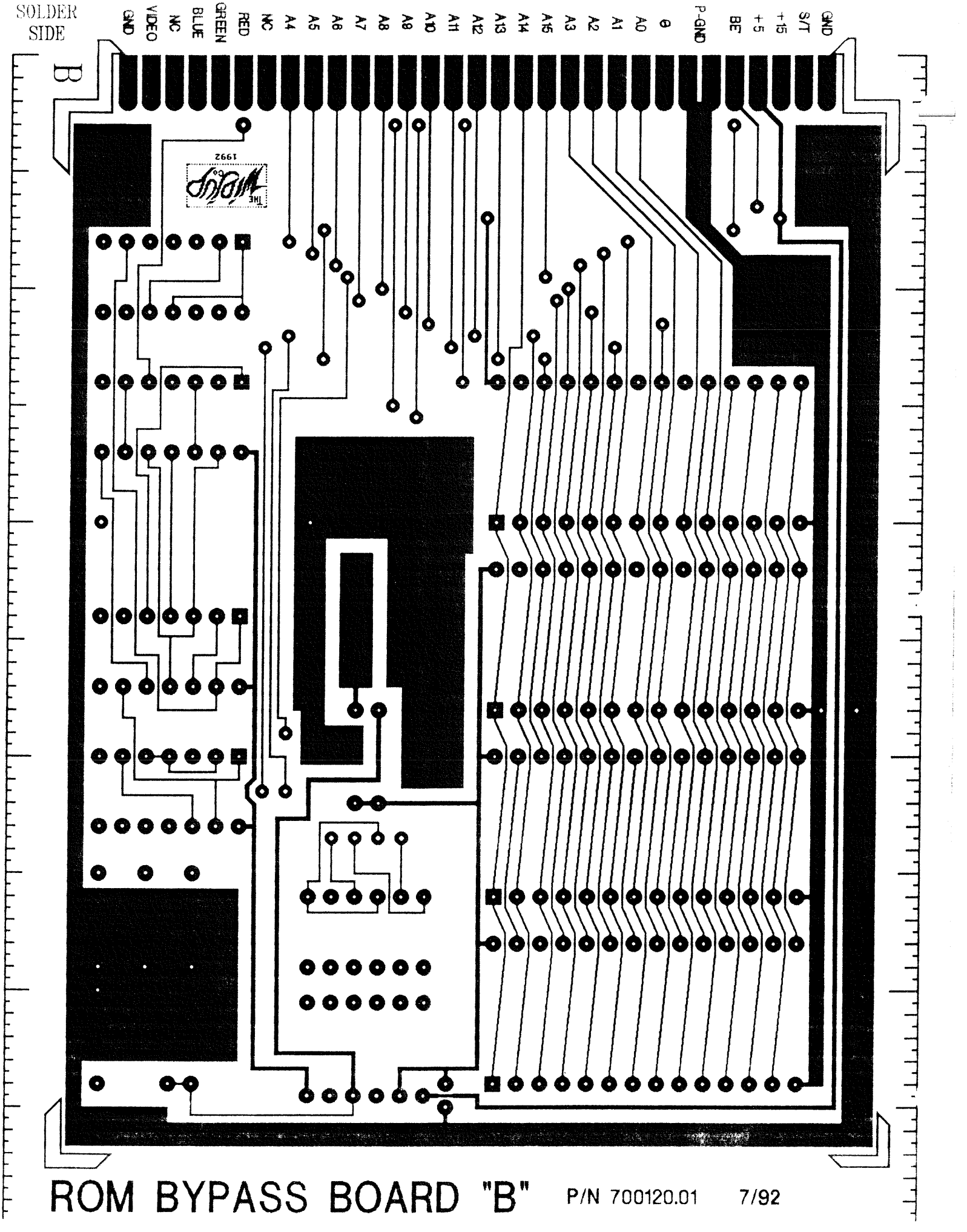
○ Plated through only.
○ Plated through with Component.

ASSY RBP-B 7/92

ROM BYPASS BOARD "B"



ROM BYPASS BOARD "B"



ROM BYPASS BOARD "B"

P/N 700120.01 7/92

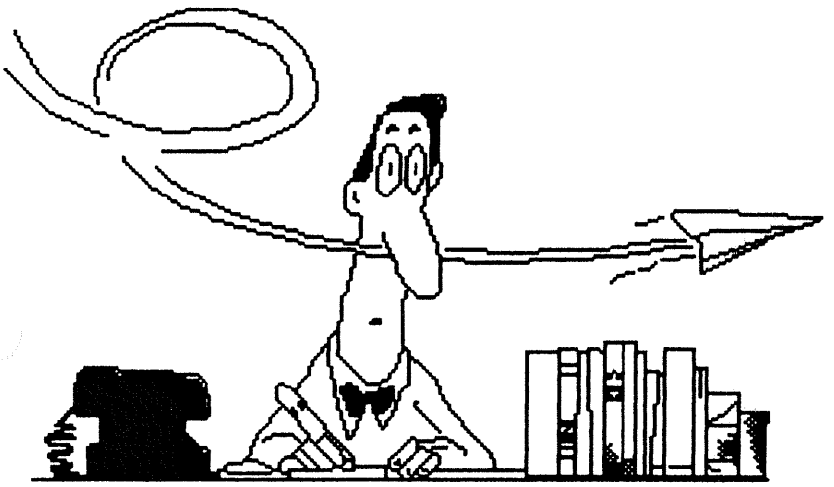
TS-2068 Talks To A PC By Modem

by Abed Kahale CATUG

Communicating with a PC using a Sinclair computer not having a serial port can be challenging. But the TS-2068 can communicate directly with a PC modem via the TS-2050 modem to transfer text files. In the past, the procedure was to upload files to a BBS by one computer and then download with the other which was a hassle. Of course, having a serial port, communication is made with a "Null modem" (techy for a cable).

To communicate, modems have to have a line that has a tone (carrier) and that provides a ring (signal). Connecting two modems together from two computers eliminates the carrier and the signal and the modems will not recognize each other. It has been done with the two modems connected to the same phone line that held up calling or receiving phone calls for the duration. That, can be a long time at 18 text characters per second which is what I get with the 2050.

With a Hayes compatible PC modem, here is how:-



1. Connect the two modem lines that normally go to the telephone line together using a two-line plug without any connections to the telephone line.

2. Turn on both modems and load the modems software. MTERM II, Loader V or MaxCom /Xmodem for the 2068. Load buffer etc.

3. Set both computers to **Terminal** mode and the TS-2068 to ASCII (toggle con: none) if using MTERM II, or Xmodem. Of course, parameters such as 8N1, Xmodem etc. have to match the PC modem's or vice versa.

4. On the PC modem, ENTER **ATA** (which is the Hayes command that forces the PC modem to answer the phone without the benefit of a carrier or a signal). The PC modem emanates a long squeal and recognizes the signal from the other modem and **connects**.

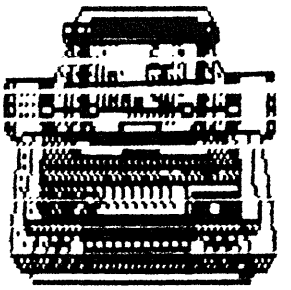
5. Set the PC to Download (Receive) mode, Xmodem or ASCII, 300 BAUD and enter the file name.

6. From the TS-2068 select SEND (Transmit) file "name.CT" and ENTER.

7. The PC acknowledges and receives the file.

8. If the PC does not recognize the end of the file, exit SEND to Terminal mode and ENTER Ctrl Z or X (SHIFT-7 Z or X) to tell the PC "End-Of-File".

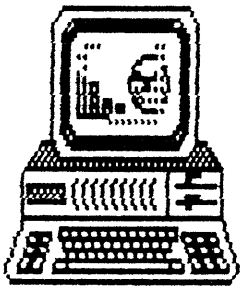
RMG ENTERPRISES



Supports Sinclair/Timex Users!

Send legal S.A.S.E. with request for price sheet. Specify model interest. Send $4 for GIANT GIFT catalog. (Includes ALL price lists) Phone or FAX for information on prices and availability.

Mail to:



14784 South Quail Grove Circle
Oregon City, OR 97045
503/655-7484 * FAX 503/655-4116

AFR SOFTWARE®
1605 PENNSYLVANIA AVE.
NO. 204
MIAMI BEACH, FL 33139

ALBERT F. RODRIGUEZ
PROPRIETOR

(305) 531-6464

Dear: Users & Vendors Of TIMEX-SINCLAIR
Computers And Accessories

July 1994

I thank you for the opportunity to address and inform you about who I am and what my company does and represents. My company's name is A.F.R. Software, my name is Albert F. Rodriguez, and I am the "Proprietor" of this company; which, is located in Miami Beach, Fl.

My field of business--as it relates to Timex-Sinclair products--is the manufacture, sale and delivery of four (4) horizontal business software programs and of one (1) computer programming tutorial program that is a game of strategy, knowledge and fun.

On the reverse side you will find descriptive literature about most of my software products. For a complete catalog of all of my hardware and software products (that I have for sale) please send me a large Manila S.A.S.E. (with $1.44 worth of postage) together with a personal check/money order in the amount of $5.00; or else, refer to the following past, present and future issues of Update Magazine which feature articles that I wrote and published in support of the products that I have for sale.

Regarding my program ZX/TS-Calendar please consult the July 1993 issue of Update, pages 33-38. For an article regarding a ZX/TS-Calc+R.F.R.G. (an Electronic Spreadsheet & an Accounting Model) see issue October 1993 of Update, pages 7-15. See also within the January 1994 issue of Update an article about my word-processors: ZX-TEXT and T/S-TEXT 2000. In the April 1994 issue of Update there appears an article about my game program: ZX81 TIC-TAC-TOE. Finally, in the upcoming October 1994 issue of Update I will publish a Quotation regarding both hardware and software that I currently have for sale on a first-come-first-serve basis.

Please make a mental note that I am currently offerring to sell my company's Mailing List at a rate of 5¢ per "proven" customer. The total value of this List is $13.00.

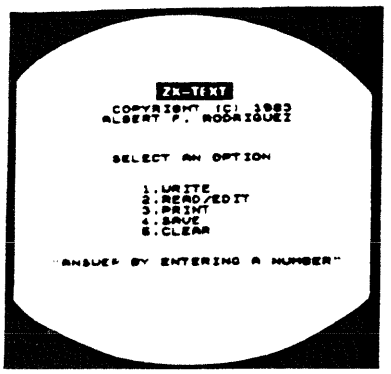
In case someone is interested in being a dealer of all of my software products, please write or call me from 9:00 a.m. through 5:00 p.m., Mon.-Sat., and I will answer any questions you may have regarding this subject. My telèphone is (305) 531-6464. Wishing you "Happy Computing" and hoping you enjoy reading this current issue of Update, I remain,

Sincerely,
Albert F. Rodriguez
"Proprietor"

ALSO AVAILABLE FOR THE T/S 2068 *

POWERFUL AND INEXPENSIVE BUSINESS SOFTWARE FOR ZX81, T/S1000 and T/S1500 COMPUTERS

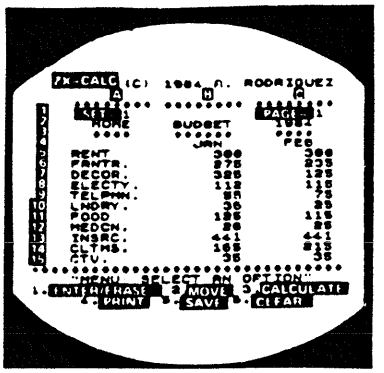
ZX-TEXT



A word processor is to a computer user what a typewriter is to a typist, except that the former has more advantages than the latter. ZX-Text can operate in 16-64K RAM providing from 1300 to 6500 words per document. It features 6 different options: write, read, edit, print, save and clear text. Text is written on a per-line basis with quick speed and with horizontal back-space and delete capabilities being available. You can also access the editor directly from write mode and vice-versa. Text can be proof-read on a per-line basis allowing for enough time to determine if any editing is needed. The text editor allows a line of text to be deleted, inserted, replaced and listed for editing. You may also change a word or expression within a line, stop or start text while it is scrolling up the screen, begin reading text from the first line of the file, re-enter write mode from the editor, return to the main-menu or create a window so that you can read-edit two files simultaneously. The print option takes text displayed in 30-column format on the screen and outputs to either the ZX/TS printer (With Memotech's Centronics Parallel Interface 80-column and lower/higher - case output is possible.) Files may be saved on tape cassette with the use of one single command, or by the same token they can be erased from memory / storage so that the full capacity of the program can be used for other purposes such as composing letters, reports, articles, memos, standard forms, instructions, ads, graphs, telephone directory, lists of customers, members, friends etc. Also copies of files are always less expensive and easier to run than using a photocopier. Other advantages are savings in time, paper, ink, correcting mistakes and adding afterthoughts more efficiently than doing them through either handwriting or using a typewriter.

$19.95

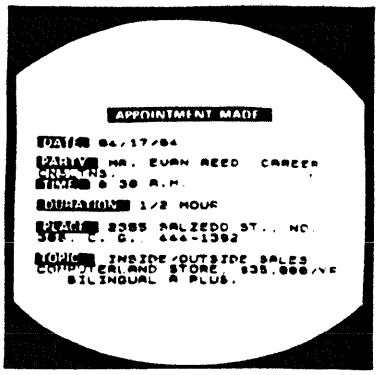
ZX-CALC



An electronic spreadsheet calculator is the fundamental basic tool for summarising, reporting and analyzing in matrix form any accounting, mathematical or scientific manipulation of numbers. ZX-Calc operates in 32-64K RAM and affords a maximum of 3360 characters / spreadsheet. The entire matrix consists of 15 columns (letters A-O) and 30 rows (numbers 1-30) with 8 characters / cell. Unlike other popular ESCs, ZX-Calc uses in calculations and within cells all 14 math functions on the ZX-81 / TS1000. It offers a unique "SUM function that totals one or more rows / columns simultaneously. Parenthesis can be used within equations. There is no fixed limit on how many equations may be entered. Formulas may be stored in all 420 cells of the spreadsheet. The display affords 15 rows / colums. Loading of data into more than one cell can occur across / down one or more row / column simultaneously. With vertical windowing you can arrange a set of columns in any order, or practice using fixed-variable-alignment display formats. The menu offers 6 options: enter / erase, move, calculate, print, save and clear the spreadsheet. Enter / erase allows the entering, deletion or data alignment within a cell through the use of a mobile cursor. With the move option you may move around the entire sreadsheet to access any row, column or cell. The calculate option allows you to enter labels, values or formulas into a cell or write and enter equations that will act upon the data already within the spreadsheet. You can also enter bar graphs into a cell in this option. Absolute / relative replication, down / across a column / row, is also allowed by this option. Also this option allows the automatic calculation of the entire spreadsheet with one single command. Print allows you to output to either the ZX / TS printer the entire spreadsheet by column-sets and row-pages through use of the COPY command. The entire spreadsheet may be saved on cassette tape or you may clear all data from it or erase the program from RAM entirely. The most salient advantage provided by an ESC over specifically vertical applications software is that an ESC provides a reusable framework with which you can compose any specific financial model rather than just be limited to only one statically fixed format for storing, displaying and manipulating numerical data.

$19.95

ZX-CALENDAR



Time management is an important aspect of any serious business and personal agenda. Planning how to spend our time leaves us better prepared before and while we are spending it and we remain better organized after we finish spending it. ZX-Calendar operates in 16-64K RAM affording 25 appointments in 16K, 100 in 32K or 180 in 48K and 64K. Each appointment record holds a maximum of 220 characters. The main menu includes enter/search/check/sort, change, save, clear and print any and all appointments made on a specific date or with any party. Output to either the ZX/TS printer is permissible. This program will permit you to remember to do something or to be somewhere important by cataloging your answers to six questions that you must account for in order not to waste time when it is scarce: when, with whom, at what time, for how long, where and what are you going to discuss and conclude when you get together with someone else? The program lets you permanently originate, record, classify, search, sort, calculate, modify, summarize, obtain a written report and store your answers to the preceding questions so that you will not forget what you decide to do with your time. This program identifies your time according to when you are going to spend it and with whom you are going to share it. Through these forms of labeling appointments you are able to verify or modify how your time is budgeted without wasting ink, paper or more time trying to remember what you said to yourself or what someone else said to you or where you placed certain written messages that you now can't find. With this program you will know where you can find exactly what you need to know about where you want to and have to be, or where you have been before you get and after you got there. Thus, ZX-Calendar will let you plan your time so that you will never have to worry about what is ahead or what came before, for you will always know by using it to never be caught astray by any time-frame.

$19.95

SHIPPING & HANDLING INCLUDED IN PRICE

A.F.R. SOFTWARE - 1605 Pennsylvania Avenue, No. 204 - Miami Beach, Florida 33139

DEALER INQUIRIES WELCOME **(305) 531-6464** FLORIDIANS ADD SALES TAX

L-1 © 1984

*Note: If you buy three (3) or more of the above programs you will receive ZX81 Tic-Tac-Toe (a $12.00 value) for free!

"ZX81 TIC-TAC-TOE"
Copyright (C) 1983
Albert F. Rodriguez

DOCUMENTATION

PART II

To clearly know what is being discussed next, the reader should have nearby a copy of the program list and its declarations (see below). The actual data stored within certain arrays in the variable store is not necessary to understand what follows. (A complete listing of the program, declarations and array content, are available for $6.20, P&H included, to whomever may decide to key in this program themselves rather than purchase it in cassette form for $12.00. Foreign buyers add $2.00 more for the cassette and $1.00 more for the listing and materials).

The program, on tape, is not listable on the screen. This precaution was taken so that a user would not accidentally disrupt the program if he/she happened to gain access to the code area of the program. To avoid reloading the program, a user, whenever he/she has access to this area, should key in GOTO 7 to restart the game (see Profile sheet for instructions about how to stop and re-start this program). No-money-back guarantee are the terms applicable to whomever buys this program in cassette form or not.

The program has the LOAD name: "TTT". When storing a program in cassette, it is better to give it a name, specially when the tape contains other different programs. The procedure is, of course, to use a REM statement with the name of the program within a pair of quotations (see the Chapter in the User Manual regarding LOAD/SAVE).

The program is self-running and this is possible because of line number 5. This line permits the program to begin execution immediately after it is loaded. It also eliminates the danger of a user accidentally erasing any data contained in the variable store by entering RUN. Any program written with a SAVE command, after it is loaded, will begin to execute from the first line after this command.

Lines 7 through 12 are in charge of initializing the character array C$(9). This array is initialized before the beginning of each game with the numbers 1 through 9. These values are what first appear in each square of the game board and permit a player to make a move during a game. The way the loop is structured is interesting from a programming viewpoint. This way of initializing a character array is faster and consumes less memory than, say, using LET and listing each individual array element in consecutive order.

In lines 16 through 18 the number array N(9) is initialized with zeroes before each new game. This array appears in the driver by the name of COUNTR. This array is used by this routine to store how many times during a game a particular move is made. This is important because it prohibits any one square in the game board from being used more than once during an actual game.

Line 34 initializes the number variable CTR, which is used to keep track of the total number of moves made during a game. When CTR equals nine, then it cues the driver called DRW. This routine does what its name says: given 9 consecutive moves and no winner, the game must end in a draw.

Line 35 is really interesting. This line lets the character variable F$ be used further down the program by pre-assigning it at the beginning of each game. F$, in this program, acts as a "flag;" it is what tells the computer that a game has finished in either a win or a draw.

Lines 112 through 120 compose what is actually the main program within my overall program. It has 5 subroutines and two drivers (see declarations below). After the last driver, at line 119, terminates execution (i.e., when a game being played ends either in a win or a draw), then line 120 permits the start of a new game by letting the program reexecute again from line 7. This way of structuring a program, which involves integrated multi-functional routines, is convenient in that it first allows a programmer to outline the principal areas of his/her program, then, the rest of the time can be devoted to writing each specific section of the overall work. (I credit this suggestion to Dr. William T. Kraynek, Associate Professor, Mathematical Sciences Department,

Florida International University, Tamiami Campus, Miami, Florida).

From lines 1001 to 1019 two things happen. Subroutine MSG prints a message on the screen for three seconds, urging the player to beat the computer. After clearing the screen, another set of instructions appear for 12 seconds, informing the user how to stop and restart the game. The length of time that each message appears can be reduced by pressing any key, except the space key, while each message is being displayed. These messages are displayed once per each new game.

Lines 2001 through 2012 is the subroutine BRD. This section prints on screen, once per game, the playing board. The vertical and horizontal lines of the board are made of the characters "I" and "-", respectively. The routine is made of two For/Next loops and a "counter" by the name of C. The variable C is what informs the computer that three sets of vertical lines and two sets of horizontal lines have been printed and that it may proceed with its next instructions.

Lines 3001 through 3015 is the subroutine PSTN. This name, actually, is an abbreviation for the word "position." This routine is continually called upon to display the actual moves that are either made or remain to be made before and during a game. The row coordinates, from top to bottom, are 2, 7, and 11; the column coordinates, from left to right, are 2, 7, and 13. This routine prints the content of each element in the array C$(9) at pre-determined locations on the game board, in row form, beginning with the highest and ending with the lowest row.

Lines 4003 through 4010 is the subroutine INSTRCS, which stands for "instructions."Once, per game, this section displays on the screen the name of the game, the year it was copyrighted, its author's name, who gets to play with either of the characters (in inverse video) "O" and "X", and who gets the first move. The player is assigned "O" and it is he/she who always gets to make the first move. Once a game begins, the instructions at the bottom of the screen, about who moves with what, and who moves first, are erased.

Lines 5000 through 5017 compose the subroutine RDAPRV. The basic functions of this routine are to read in the move made by a player during a game, then to determine if the move is included within the only acceptable type of moves that should be made during a game. Only the numbers 1 through 9 are acceptable moves. This routine is what is called a "search" routine. It seeks to match what is entered with what can only be an acceptable move. If the move is acceptable, the game proceeds with the rest of the instructions in the program. If the move entered is unacceptable, then, three things happen: an error message is displayed for two seconds, it self-erases, and the player is allowed another move. Whether or not a move that is made is acceptable, what is entered by a player is always displayed on the screen to let him know exactly what he did enter.

The first driver in the program appears in line 6000 through 6018. Its name is COUNTR. Its function is that it does not allow a player to make the same move, he/she or the computer makes, more than once. It too acts like a search routine by determining which acceptable move was entered; then, it stores in the number array N(9) the number of times that move was made. If a move in a game is made twice or more, an error message is displayed for two seconds, self-erases and allows another move by calling subroutine RDAPRV. If the move that was made has not been made before, the program then continues executing.

Lines 7001 through 7011 comprise the driver GAME. This routine has this name because it actually acts as the central processor of the program. An explanation of its intricate functions should make all other remaining sections of this program understandable to the reader. Its functions can be subdivided basically into six areas. First, after a player makes a move, GAME performs a search for the location on the game board that the player has chosen to move in (lines 7001-7003). Second, it assigns the character "O" to this location. Third, at line 7005 it calls the driver IN (lines 7012-7015). IN is responsible for three things: printing the "O" character in its chosen location by calling subroutine PSTN; finding what is where on the game board by calling subroutine RCD, lines 7026-7053 (RCD determines the entire code-sum of all characters at the nine locations on the game board. It does this in terms of adding the three rows, three columns, and both a top-right to bottom-left and a top-left to bottom-right diagonals. It performs this operation every time a move is made by the player); checking to see if the game has ended in a draw by calling driver CHK, lines 7054-7085 (a draw is only possible

in this program if all nine possible moves are made. Since the player is the only one to make the ninth move in any game, CHK searches for a draw, each time after the player makes its next move). If a draw does occur, then, GAME returns to the main program for the start of a new game. If a draw does not occur, then, fourth, the subroutine PKMV (lines 7100-7160) is called. PKMV is the arithmetic/logic module of the overall program. After subroutine RCD has determined the code-sum of the playing board, PKMV searches for the most optimal move that the computer can make under the circumstances. The total number of optimal moves that can be made by moving either second, fourth, sixth and eighth (which are the turns allowed the computer versus the five odd turns allowed the player) are, in this program, only 305 moves. After picking its best move from among these 305 moves, then, fifth, the computer (by calling the driver OUT) does three things: it searches for the location on the game board that the computer has chosen to move in; it assigns the character "X" to the location on the board that was pre-determined by subroutine PKMV; it prints the said character in its proper location, and it checks for a win in the game. (The computer checks for a win in a game only after each time that it makes its move, since it has always the last move prior to the ninth move, and such move, if ever made, will always result in any game ending in a draw, given that this program was designed to always let the computer move optimally against its opponent.) If a win is obtained, then driver CHK will execute the corresponding driver routine that draws a black graphic line wherever three characters of the same type appear along a row, column or diagonal (these routines can be found from lines 9003 through 9077). After displaying a prompt along with the preceding line, then driver GAME returns to the main program to set up a new game. If no win is obtained, then, sixth, the program calls driver SETUP. This routine clears, from the bottom of the screen, all information about the move that was last made by the player along with any instructions appearing at the beginning of a game and between moves made by the player. SETUP, next, calls the driver COUNTR to record the move made by the computer. Later it displays a prompt message that lets the player know that he/she can make his/her next move. Finally, it calls subroutine RDAPRV, then driver COUNTR, before returning to the driver GAME and re-executing this section all over again. The process of functions just described about the driver GAME continue until a game ends either in a win or a draw. At this time, the driver returns to the main program and the latter re-executes from line 7 onward, to start a run of a new game.

Ultimately, after finishing this program, I can confidently say that the ZX81 is an excellent medium with which to learn good programming habits given, of course, certain clearly definable parameters. It is definitely a resourceful workhorse with which someone can accomplish any fundamental task of producing entertaining and practical software. It is hoped that this paper may enhance the knowledge of its users as well as serve as a tribute to a very fine machine.



"ZX81 TIC-TAC-TOE"

PROGRAM DECLARATIONS

1. Number Arrays
N(9), L(8), T(215), U(22), S(13), B(16), F(15).

2. Character Arrays
C$(9), M$(215), R$(22), N$(22), A$(13), O$(13), D$(16), E$(16), G$(15), H$(15).

3. Variable Constants
E=2, F=7, G=13, SCR=567, OVER=7070.

4 Number Variables
A, B, C, D, H, I, J, K,LN, P, Q, R, S, W, X, Y.

5. Character Variables
P$, F$, I$, K$, B$, J$.

6. Drivers
COUNTR=6000, GAME=7001, IN=7012, OUT=7016, ASGN=7020, CHK=7054, DRW=9085, SETUP=8001, LINE I=9003, LINE II=9008, LINE III=9011, LINE IV=9022, LINE V=9027, LINE VI=9030, LINE VII=9044, LINE VIII=9061.

7. Subroutines
MSG=1001, BRD=2001, PSTN=3001, INSTRCS=4003, RDAPRV=5000, PKMV=7100, DSPLY=9078, PLOT I=9014, WIN=9081, PLOT II=9034, RCD=7026.

8. Keywords
REM, SAVE, PAUSE, LET, FOR/TO/NEXT, IF/AND/THEN/STEP, GOSUB/RETURN, INPUT, PLOT, GOTO, PRINT, CLS.

9. Functions
CHR$, AT, TAB, CODE.

10. Symbols
" ", $, ,, ;, "", +, =, ( ), -.

Dot-Matrix Printer Review

Panasonic KX-P2023

by Abed Kahale

If you are planning on buying a printer consider this one. I purchased it about 9 months ago and I am very satisfied with it. I have been using it for the ZXir QLive Alive! Newsletter. 24-pin, the quietest of its kind and an excellent value for less than $200 at discount stores.

Epson and IBM emulation, Centronics parallel port, tractor and single sheet feed, fan-fold paper Park, auto paper load, etc. The only drawback is its smallish ribbon cartridge.

3 Draft fonts at 240 cps.
4 Letter Quality fonts at 80 cps.
Pitch of 10 to 20 CPI., 10 CHARACTERS per inch, 20 characters per inch.
Draft — Pica, Elite and Micron
LQ — Courier, Prestige, *Script* and **Bold** Bold PS

Service is the best I have encountered, five 800 phone numbers. Check with RMG and Mechanical Affinity for availability.

It worked just fine with my MSCRIPT and TASWORD through LarKen/AERCO interface. No print code imbedding is required, fonts selection, emulation, etc. is all done from the top panel. (Picture 180X360)



Resolution up to 360 X 360 dots/inch.

T/SNUG Information

ZXir QLive Alive!

is the newsletter of T/SNUG, the Timex/Sinclair NorthAmerican User Groups, providing news and software support to the T/S community in at least four newsletters per year.

It is our goal to build and maintain a Public Domain software library and develop a list of available software for all T/S computers showing the source.

T/SNUG wishes to have one chairman from every T/S user group who will take charge of sending us their group's newsletter contents and other correspondence for inclusion in the ZQA! Newsletter.

We encourage your group to copy this newsletter and distribute it at regular meetings to all your members. If you cannot copy this newsletter, perhaps we can provide a disk with the articles on it.

You can keep T/SNUG alive for an annual contribution of $10 made payable to Abed Kahale. Send check to:-

ABED KAHALE (LarKen Library)
335 W NEWPORT RD
HOFFMAN ESTATES IL 60195-3106
Phone:- 708 885-4337
Back copies are available for 50¢ each postpaid

ZXir QLive Alive!

Articles Contributions

If you like to contribute an article to the Newsletter, upload a file to our BBS, call it TSNUG.ART. If you have an AD for the Newsletter, UPLOAD a file call it TSNUG.ADS. If you have news to post about your group, UPLOAD a file call it TSNUG.NWS

For help, contact the SYSOP by E-MAIL on the T/SNUG BBS, mail or phone:-

BOB SWOGER (CATUG/LarKen)
613 PARKSIDE CIR
STREAMWOOD IL 60107-1647
It is preferred that you call:-
H 708 837-7957 W 708 576-8068

To contribute a hardcopy, tape or disk send your inputs to:-

DONALD LAMBERT
ZXir QLive ALive! Newsletter
1301 KIBLINGER PL
AUBURN IN 46706-3010
Phone 219 925-1372

For software libraries, write or call the following Vice-Chairmen. When writing please enclose a LSASE .

DAVE BENNETT (Z88)
329 WALTON ST REAR
LEMOYNE PA 17045

ROD GOWEN (CCATS)
14784 QUAIL GROVE CIR
OREGON CITY OR 97045

ROD HUMPHREYS (VSUG/2068)
10984 COLLINS PL
DELTA B C V4C 7E6 CANADA

D G SMITH (2068 TAPE Library & JLO)
R 415 STONE ST
JOHNSTOWN PA 15906

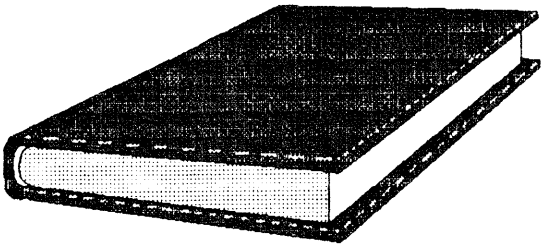
ED SNOW (ZX-81 TAPE & QL)
2136 CHURCHILL DOWNS CIR
ORLANDO FL 32825

IT'S READY!

CCATS & RMG Enterprises
Are Pleased To Announce

The Best Of The Plotter

Is Ready



To Ship!

ZX-81 QL **TS-2068**

Contents are exclusively those developed and published by THE PLOTTER's authors over the past 12 years.

To Order:

Send check or money order to:

RMG Enterprises
14784 S QUAIL GROVE CIR
OREGON CITY OR 97045

Or call and use your **VISA or MasterCard**
503 655-7484 (8 AM - 6 PM Tue-Sat) FAX 503 655-4116

Price per copy: **$14.95** pp. Comb bound 8.5 X 11 Over 100 pages.

Name .....

Address .....

City/State/ZIP .....

INTRODUCTION
from Paul Holmgren

World Map is a geography lesson for the ZX81, TS1000, or TS1500. It consists of an oversized map which scrolls around on the screen to center a particular location. There are two modes the program can run in: 1) The computer reviews the student by centering locations on the screen, flashing an asterisk, and printing the location's name. 2) The locations are centered on the screen and the student is asked to enter the name.

ENTERING THE PROGRAM

The first step in entering the program is creating a large REM statement at line 1 consisting of at least 2821 bytes. This area will be used to store the machine code and the data necessary to define the map. If you do not have a utility program or some other easy way of doing this then use this procedure:

- enter line 1 exactly as follows:

```
1 PRINT 0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0+0
```

- edit this line (using SHIFT 1) and change the line number to 2 and enter a second line exactly like the first.

- repeat changing line numbers until you have 18 duplicate lines numbered 1 through 18.

- at this point enter the following line (without a line number):

```
PRINT PEEK 19334,PEEK 19335
```

you should see this line on the screen:

```
118             118
```

- carefully enter these four lines:

```
POKE 16511,5
POKE 16512,11
POKE 16513,234
2 REM NEVER DELETE
```

At this point you have your "mega-REM" and might want to save it to tape. Remember NEVER to edit line 1 and NEVER delete line 2. You now need a way of POKEing almost 3K of data into this REM statement. LISTING 1 is provided for this task if you don't already have a hex loader or don't know how to calculate the checksums. Add the BASIC lines starting at line 100. Having done this, carefully proofread the program and save it. Run the program and enter the address of the START. To enter the hex data, you can enter any even number of digits, or enter any number of minus signs ("-") to back up that many bytes. When the screen is full, if the checksum does not match, you need to locate the error and correct it. As you finish each screen, if you want to save your work at that point, break out of the program, save it, and RUN it again until you have entered all 9 screens. Having done this, delete all the lines starting at 100, leaving lines 1 and 2, and add the BASIC of LISTING 2. In this listing there are several REM statements which occur immediately following every line which contains a USR GET call. These are necessary and

cannot be omitted since they define which keys are recognised as valid for input. At line 5262, be sure that there are 2 spaces following the REM keyword (the first automatically follows the REM keyword, then put a space, then put the comma, etc.)

THE BASIC

The BASIC (LISTING 2) is responsible for determining which options the student wishes, keeping track of all the countries and locations, and deciding how to scroll the map around to center the locations. Here are some of the more important variables used:

DF - address of the start of the display file
GET - address of the entry to the GET machine code routine
M - address of the map scrolling routine
M$ - 63 character string used to remember screen contents before the area corrupts it
G$ - used by the GET routine for input
O$ - remembers which option was chosen
T - keeps track of which countries have been randomly selected
X - horizontal position of where the top left corner of the screen should be placed on the map
Y - vertical position

Lines 7-240 initialize the program and asks for the 2 options. Depending on which option was chosen, either lines 1000-1193 or 2000-2173 initialize the variables containing information about the locations. This is where you can change the program if you want to put in your own set of locations.

NN - the number of locations for this option. Change this action to how many locations you wish to include for this option.

N$(NN,18) - array to store the location names. 1st dimension indicates which location 2nd dimension is the maximum length of a location name (This should always be 18)

L(NN) - array which stores the length of each name
X(NN) - horizontal position on map of location (0-84)
Y(NN) - vertical position (0-49)

Therefore to create your own set of locations, decide how many to include and LET NN = this number (line 1000 or 2000). Now for each location, LET N$() = the name, LET L() = the length of the name, and LET X() and Y() = the coordinate position on the map of the location.

THE MAP

The map is made from the 16 basic graphics characters. There are 85 characters across and 50 lines. It is stored using 2125 bytes of the mega-REM of line 1, occupying bytes 17200-19324. Bits 0-3 of each of these bytes are used to store a character from the top half of the map and bits 4-7 a character from the bottom half. Therefore the byte at 17200, for example, defines the 1st character of the 1st line and the 1st character of the 25th line. The 4 bits for the top or bottom are translated to graphics characters (codes 0-7, 128-135).

THE MACHINE CODE

There are 3 entry points to machine code in the mega-REM. The 1st, at 16540 (409C hex), is a routine to scroll the map in either direction according to the contents of byte at 16522 (408Ah). The

2nd, at 16861 (41DDh), is to copy the screen area which is used for text into M$ so it can later be restored (by printing M$). The 3rd is the GET routine (which was also in SWN:3:3) at 16900 (4204h).

```
START=16523
3E 6F 32 72 41 32 BE 41 3E 67 32 7F 41 32 CB 41
C9 3E 67 32 72 41 32 BE 41 3E 6F 32 7F 41 32 CB
41 ED 5B 0C 40 3A 8A 40 CB 4F 28 2C CB 47 3A 89
40 20 0F FE 1A C8 3C 21 21 00 19 01 F7 02 ED B0
18 5B FE 00 C8 3D 21 17 03 19 54 5D 01 21 00 ED
42 01 F7 02 ED B8 18 45 06 00 CB 47 3A 88 40 20
1C 3C FE 55 20 01 AF 32 88 40 13 62 6B 23 3E 18
0E 1F ED B0 23 23 13 13 3D 20 F5 18 23 3D FE FF
20 02 3E 54 32 88 40 21 17 03 19 54 5D 2B 3E 18
0E 1F ED B8 2B 2B 1B 1B 3D 20 F5 18 03 32 89 40
ED 4B 88 40 04 3A 8A 40 FE 22 20 04 3E 17 80 47
21 DB 42 11 55 00 78 D6 1A 38 05 3C 47 CD 8B 40
19 10 FD E5 09 3A 8A 40 CB 4F 28 2F E5 2A 0C 40
23 CB 47 20 04 11 F7 02 19 EB E1 06 20 3E 56 0C
B9 20 02 E1 E5 AF ED 67 EB 77 CB 5F 28 04 CB FE
CB 9E EB ED 6F 23 13 10 E4 C1 C9 C1 ED 4B 88 40
CB 47 20 0D 3E 1F 5F 19 81 1E 55 BB 38 03 ED 52
37 E5 2A 0C 40 23 30 03 1E 1F 19 EB E1 48 06 18
18 0F 3E 19 B9 20 0A CD 8B 40 D5 11 4D 08 ED 52
D1 AF ED 67 EB 77 CB 5F 28 04 CB FE CB 9E EB ED
CHECKSUM=30166

START=16843
6F D5 11 55 00 19 E3 1E 21 19 D1 EB 0C 10 D3 C9
32 0D 2A 16 40 E5 21 DB 41 22 16 40 CD 1C 11 23
23 23 E3 22 16 40 2A 0C 40 11 23 00 19 D1 01 1F
00 ED B0 23 0E 20 ED B0 C9 2A 10 40 3E 80 BE C8
3E 4C BE 28 24 CB 6E 28 18 CB 7E 28 0E CB 76 28
05 11 12 00 18 08 23 CB 7E 28 FB 11 06 00 19 18
DB 23 5E 23 56 23 19 18 D3 23 5E 23 56 E5 19 22
7B 40 E1 23 22 82 40 21 00 00 22 84 40 3E 00 32
86 40 21 87 40 36 00 21 21 40 CB C6 2A 84 40 11
01 00 19 22 84 40 30 07 3A 86 40 3C 32 86 40 2A
0E 40 3A 84 40 CB 77 20 04 36 00 18 02 36 80 CD
BB 02 44 4D 5D 21 21 40 CB 46 28 07 1C 20 CD CB
86 18 C9 1C 28 C6 CD BD 07 7E FE 77 20 23 21 87
40 3E 00 BE 28 B1 35 2A 0E 40 36 00 2B 3E 76 BE
20 01 2B 22 0E 40 2A 82 40 2B 36 00 22 82 40 18
96 FE 76 20 07 2A 0E 40 36 00 18 57 5F 2A 29 40
23 23 46 05 23 23 23 10 02 18 E4 56 7B BA 28 1D
23 10 02 18 DA 3E 16 BE 28 06 3E 1A BE C0 18 E6
23 10 02 18 CA 7E BB 38 E7 7A BB 30 E3 21 87 40
34 2A 0E 40 73 23 F5 3E 76 BE 20 01 23 22 0E 40
CHECKSUM=24749

START=17163
2A 82 40 F1 73 23 22 82 40 2B ED 4B 7B 40 AF ED
42 20 9C 06 00 21 87 40 4E C9 00 00 00 00 00 00
00 00 00 00 00 88 88 88 88 88 88 88 88 88 88 88
88 88 88 88 58 08 28 88 38 A8 A8 D8 C8 88 C8 83
8C 88 88 88 88 87 83 81 83 8C 48 08 08 08 08 08
08 08 08 08 08 08 08 28 A8 08 08 08 98 88 88 88
58 03 08 98 88 58 48 08 08 C8 88 88 58 88 88 88
88 88 88 88 88 88 88 88 88 88 88 88 B8 C8 88 88
88 88 88 88 88 88 88 88 88 88 48 08 08 08 88 87
```

```
C7 B1 90 A0 C0 86 83 82 82 80 80 80 80 83 85 0F
08 08 08 08 08 08 07 03 0C 08 08 08 08 C8 08 F8
98 88 88 88 88 A8 07 DC 8C 88 88 A8 08 08 08 88
88 A8 68 88 88 88 88 88 88 88 88 88 88 88 88 88
88 88 A8 88 88 88 88 88 88 88 88 88 88 88 88 88
B8 A8 08 08 80 8D 81 8F 7B 78 84 80 80 80 80 80
80 80 80 80 48 08 08 08 08 08 05 02 0C 08 08 08
08 08 08 88 38 88 88 88 88 88 88 0A 99 8B 8C 88
88 D8 48 98 88 88 C8 68 88 88 88 88 88 88 88 88
88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88
88 88 88 88 88 81 87 89 4C CB 8A E0 0F 33 C0 80
CHECKSUM=33709

START=17483
80 80 80 80 80 80 80 80 8F A8 08 08 08 08 08 08
05 08 08 08 08 08 08 08 08 F8 87 83 88 88 88 88
A8 53 8A 80 83 8C 68 88 88 88 78 C3 BC 87 88 88
88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88
88 88 88 88 88 88 88 87 81 88 86 87 8C 87 BE 4B
0B 08 0A 04 C4 80 80 80 80 80 80 80 80 8D 88 A8
08 08 F8 B8 08 08 08 08 08 08 08 08 08 08 91 8B
88 88 88 88 88 84 80 80 80 8F 46 E7 CC 88 73 08
88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88
88 88 88 88 88 88 88 88 88 88 88 88 8C 8A 8B 8B
88 8A 83 8B 1B 09 08 08 08 08 24 80 80 80 80 80
80 8F 89 88 88 88 88 88 88 A8 08 08 08 08 08 F8
48 08 F7 8D 88 88 85 85 87 80 80 80 80 80 80 80
40 C0 A0 00 0C 5C F1 A0 83 88 87 88 88 88 88 88
88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88
81 80 82 8C 8C 81 CD 8B 72 0D 06 0C 08 08 08 F5
24 80 80 80 80 8F 84 88 88 88 88 88 88 88 58 08
08 03 03 08 28 08 F8 88 8B 88 88 80 8F 80 80 80
80 80 80 80 80 A0 20 90 B0 90 50 D0 A0 50 10 20
C2 33 8C 80 82 8C 88 88 88 88 88 88 87 83 82 8C
CHECKSUM=36170

START=17803
88 88 88 87 8C 89 8A 84 80 82 88 85 88 5B 0F 00
00 0C 08 08 07 05 00 20 C0 80 82 8D 88 88 88 88
88 88 88 88 48 01 00 00 02 0C 08 8C 87 8C 83 80
81 8D 8E 80 80 80 80 80 80 80 80 80 30 30 80 80
80 80 80 80 00 40 C0 A0 80 80 80 82 83 8C 88 87
81 80 80 80 80 80 83 80 80 80 80 80 8E 83 88 83
81 80 A1 09 0A 00 00 0C 08 07 00 00 00 00 89 89
88 88 8C 88 88 88 88 88 88 51 00 00 00 00 0F 07
D2 80 80 80 80 82 83 80 80 80 80 80 80 80 80 80
80 80 80 80 90 A0 80 80 80 80 C0 B0 80 80 90 82
88 84 88 88 87 84 80 80 80 80 80 80 80 80 8F 87
80 80 80 80 80 80 8F 89 58 01 02 0F 09 08 08 00
00 00 FB 88 88 8A 80 80 88 88 88 88 88 87 80 0F
07 00 00 03 00 D0 80 70 80 80 80 80 80 80 80 80
80 80 80 80 80 80 80 80 80 80 80 C0 10 D0 70 20
80 8F 80 80 7F 88 88 88 8C 8B 84 80 80 80 80 80
80 80 80 80 80 80 80 80 80 80 8F 88 80 A9 08 0B
0F 08 08 08 04 00 09 D8 88 88 88 8B 88 88 88 88
88 87 80 50 08 00 00 00 00 00 F0 70 00 80 80 80
80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 30
CHECKSUM=33940

START=18123
00 00 00 10 04 8D 87 8F 8B 88 88 88 88 88 81 80
```

```
80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 88
88 88 87 A0 00 07 08 08 08 08 04 08 98 88 88 88
88 88 88 88 88 88 85 8F 50 09 07 03 00 00 F0 80
50 F0 80 80 80 80 80 80 80 80 80 80 80 80 80 80
80 80 70 10 00 00 0F 08 08 08 28 81 8C 88 C8 88
88 88 88 84 80 8F 8A 88 8B 84 80 80 80 80 80 80
80 80 80 82 88 88 88 85 80 50 00 08 08 08 08 08
F8 88 88 88 88 88 88 88 88 8D 88 88 8C 8F 08 01
00 00 00 D0 80 50 D0 80 80 80 80 80 80 80 80 80
80 80 80 80 80 80 80 00 00 00 00 08 08 08 08 08
80 89 89 88 88 88 88 88 87 8F 88 88 88 88 88 84
80 80 80 80 80 80 80 80 80 82 8C 88 81 80 10 00
02 08 08 08 F8 88 88 88 88 88 88 88 88 83 84 88
88 82 83 00 00 00 00 00 90 80 A0 90 80 80 80 80
80 80 80 80 80 80 80 80 80 80 80 50 00 00 00 00
00 00 0C 08 08 D5 88 88 8A 88 88 88 8C 89 88 88
88 88 88 88 88 80 80 80 80 80 80 80 8F 80 80 80
8D 84 80 00 00 00 0D 08 08 88 88 88 88 88 88 88
88 85 8D 80 8D 80 80 80 50 00 00 00 D0 80 80 80
CHECKSUM=33369

START=18443
80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80
80 00 00 00 00 00 0D 0D 08 08 D8 88 88 88 88 88
8A 88 88 88 88 88 88 88 88 88 8A 80 80 80 80 80
80 83 80 80 80 80 80 80 00 0B 0B 01 08 D8 88 88
88 88 88 88 88 88 88 88 86 81 80 80 80 80 00 00
00 90 80 80 80 80 80 80 84 80 80 80 80 80 80 80
80 80 80 80 80 80 00 00 F0 B0 B0 09 09 0C 08 98
88 88 88 88 88 C8 88 88 88 88 88 88 88 88 88 88
85 80 80 80 80 80 80 80 89 8A 80 80 80 02 0D 08
04 FD 88 88 88 88 88 88 88 88 88 88 88 84 80 80
80 80 80 40 00 9F 84 85 80 8F 87 80 8D 85 80 80
80 80 80 80 80 80 80 80 80 80 80 B0 80 80 80 89
88 0F 08 08 88 88 88 88 88 48 98 88 88 88 88 88
88 88 88 88 88 80 80 80 80 80 80 80 80 80 86 8A
8F 80 00 04 09 08 88 88 88 88 88 88 88 88 88 88
88 83 83 80 8B 84 82 84 80 80 88 88 88 84 82 8A
84 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80
80 84 80 88 88 88 AC B8 98 88 88 88 88 88 58 88
A8 88 88 88 88 88 88 88 88 88 80 80 80 80 80 80
80 80 80 85 8F 80 50 08 08 08 98 88 88 88 88 88
CHECKSUM=38060

START=18763
88 88 88 88 88 88 80 80 8F 88 88 8A 82 84 8B 80
80 80 80 80 88 84 80 80 80 80 80 80 80 80 80 80
80 80 80 80 80 83 8C 80 88 88 85 89 48 98 88 88
88 88 58 98 88 88 88 88 88 88 88 88 88 88 88 80
80 80 80 80 80 80 80 80 80 80 80 A0 08 08 C8 88
88 88 88 88 88 88 88 88 88 88 88 80 80 89 87 83
88 89 8A 88 84 80 80 80 80 82 81 80 80 80 80 80
80 80 80 80 80 80 80 80 80 80 80 88 8A 88 83 8B
88 88 88 88 88 88 78 D8 88 88 88 88 88 88 88 88
88 88 88 88 85 80 80 80 80 80 80 80 80 80 80 8D
78 08 F8 88 88 88 88 88 88 88 88 88 88 88 88 88
87 82 81 80 80 88 88 88 88 88 88 80 80 80 80 80
80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80
88 88 85 88 88 88 88 88 88 88 88 88 88 88 88 88
88 88 88 88 88 88 88 88 88 8A 84 80 80 80 80 80
80 80 80 80 89 A8 08 07 88 88 88 88 88 88 88 88
```

```
88 88 88 88 88 80 80 80 80 80 80 83 80 83 83 81
80 80 80 84 80 80 80 80 80 80 80 80 80 80 80 80
80 80 80 80 80 8D 88 88 88 88 88 88 88 88 88 88
88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 8A
CHECKSUM=42012

START=19083
80 80 80 80 80 80 8F 84 8D 88 88 08 D8 88 88 88
88 88 88 88 88 88 88 88 88 87 80 80 80 80 80 80
80 80 80 80 8C 80 80 80 8D 84 80 80 80 80 80 80
80 80 80 80 80 80 80 80 80 89 88 88 88 88 88 88
88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88
88 88 88 88 88 86 84 80 80 8F 88 88 88 8D 89 88
A8 38 88 A8 98 88 88 88 88 88 88 88 88 88 80 80
80 80 80 80 80 80 80 80 80 85 80 80 80 83 8D
8A 8B 80 80 80 80 80 80 80 80 80 80 80 80 8B 85
88 88 88 88 88 88 88 88 88 88 88 88 88 88 88 88
88 88 88 88 88 88 88 88 88 88 8A 8E 80 80 8D 88
88 88 83 88 89 88 A8 88 88 88 88 88 88 88 88 88
88 88 81 80 80 80 80 80 80 80 80 80 80 80 80 8D
80 80 80 80 8F 88 88 8A 80 80 80 80 88 84 80 80
80 8B 88 88 88 88 88 88 88 88 88 88 88 88 88 88
88 88

CHECKSUM=32221

-Variables used by GET routine
  FLAG 4021  bit 0: 1=key pressed, 0=no key pressed
  GLST 407B  (2 bytes) points to last byte of G$
  GCUR 4082  (2 bytes) points to current entry position in G$
  TIMR 4084  (3 bytes) least significant byte of timer
  TMR3 4086  3rd (most significant) byte of timer
  ELEN 4087  entry length (returned in USR function)

-Variables used by map scrolling routine
  XPOS 4088  horizontal position of window (screen) on map
                              00h <= x <= 54h
  YPOS 4089  vertical position of window on map
                              00h <= y <= 1Ah
  DIRN 408A  direction to move map
          (note: this is opposite the direction in which the
                 window (screen) is scrolled)
        values:
             21h = 33d = CODE "5" : move map left (scroll
right)
           22h = 34d = CODE "6" : move map down
           23h = 35d = CODE "7" : move map up
           24h = 36d = CODE "8" : move map righT

    ; routine to change code to be able to access bottom half of
map

    408B 3E6F     ACCB LD A,6F
    408D 327241         LD (4172),A    ;change instructions at 4171
and
    4090 32BE41         LD (41BE),A    ; at 41BD to be RLD
    4093 3E67           LD A,67
    4095 327F41         LD (417F),A    ;change instructions at 417E
and
    4098 32CB41         LD (41CB),A    ; at 41CA to be RRD
    409B C9             RET
```

Systems-Oriented Languages, CORP
2590 N. Jordan DR
Tucson AZ 85745-1132
602 884 7667 (voice)
602 882 0388 (data)

5 7 94

Frank Davis
Editor, UPDATE Magazine
513 E. Main
Peru IN 46970

Dear Frank :

In the April, 1994, issue of UPDATE Magazine, there is an interesting article by Albert F. Rodriguez, entitled "ZX-81 TIC-TAC-TOE," interesting , not so much for the game, but for what it says about optimizing BASIC code on the ZX-81. For, we have just about finished reworking BASIC code by Bill Jones on the TS2068, and some contributions are just begging to be mentioned, about optimizing 2068 BASIC code.

For example, there are a lot of FOR-NEXT loops, which are burdened with the extra time it takes to POKE 23692 with -1, or 255, or whatever. If these POKEs are changed to "POKE 23692,0", then they completely disable the interrupt facility, that prompts for "SCROLL?", AND they can therefore be pulled out of the loop, moved ahead of the loop, and executed ONCE PER LOOP, rather than ONCE PER loop CYCLE.

Similarly, Bill terminates many of his loops, by including an "ONERR GOTO" statement, and these can be pulled out of the loop, put ahead of the loop, and executed ONCE PER LOOP, rather than ONCE PER loop CYCLE. Of course, orders-of-magnitude improvement in processing speed result from this alteration of the loops involved.

We consider the Timex 2068 to be a MEMORY-BOUND data processor, and Bill gets around this by several useful techniques. First, he seems to be the first program developer to incorporate on a wholesale scale the BASIC operations, utilized to access the new disc operating systems. His flagship program, the word processor SMARTEXT was developed in the early 80's to occupy the programmable RAM of the 2068, and he greeted the appearance of JLOdos and LKdos, by fragmenting SMARTEXT into a suite of little subroutines, which accomplished the same operation, but DELETEd themselves upon completion, in order to MERGE the next operation from disc.

The suite is called DAISY and coordinates about 100k of CODE, all sharing 37k of RAM. But, as Larry Kenny indicates, "...there will be noticeable difference in the speed of a merge compared to a load." Thus, we have seen fit to break out the four MERGEable incarnations of DAISY into four LOADable versions of Daisy.

Another device, that Bill uses in his EXTRA-MEMORY PROGRAMMING, besides DELETE and LOAD, is the variable file of the 2068. First, he sets all the constants into the variable file, and he uses the constants, by refering to their variable name. He gains several benefits here with only two costs. The constants refer to unique locations throuhout the program, no matter how many times they be referenced. The entire variable file is SAVEd and LOADed, completely changing the configuration of the operating program by menu selection. The net gain in available memory is "memorable", to say the least. We typically save 10000 bytes of RAM, by refering to only 4000 bytes of predefined constants.

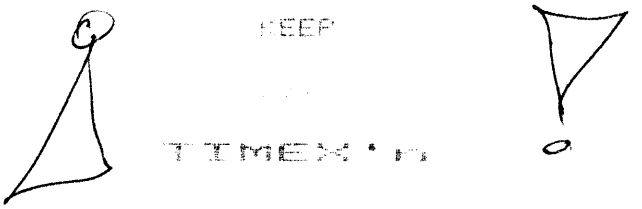
But, there are some extra memory cycles involved, so that a really tight loop often requires the actual numbers, in order to meet its timing criterion. Similarly, an excess of string operations can slow things down. Apparently, the 2068 BASIC regenerates storage for its strings upon every execution of the instruction involved. While this accounts for the 2068's advanced string manipulating capability, it is costly in machine cycles and must be used judiciously. However, functions can be very useful, when using strings. For example, we never use strings, when we can get away with evaluating their LEN, CODE, or VAL.

The second cost, associated with Bill's memory-saving technique of refering to constants by their predefined names is the usual tragedy, resulting from inadvertant use of RUN, in order to start a program. The whole variable file is CLEARed. It must then be RESET, which is no problem, should you have the foresight to store a VARSET program. VARSET can be LOADed, RUN, and DELETEd. Then, the program, which uses the variable file, set by VARSET, is simply MERGEd in from disc, right over the variable file.

And, lastly, there is the issue of SELF-DOCUMENTING code. After a year away from a program, it is easier to recall what (CODE"8"-CODE"0") stands for, rather than (CODE"8"-48). So, after all,this is just another application of Chapter 3, "SAVING TIME AND SPACE" by Randle Hurley, as mentioned in Mr. Rodriguez' nice article. It applies to the TIMEX-SINCLATR 2068. Just think : Only the QL by Sir Clive does not use the Z-80 microprocessor. the ZX-80, ZX-81, TS2068, and Z88 differ fundamentally only in the OPERATING SYSTEM. But, what differences!!!!

We are anxious to use Mr. Impellizzori's new BBS in Detroit Michigan. It is for Sinclair freaks like us; is run on a QL; is called QBOX-USA; and, is intercontinental/international in scope.

As a matter of fact, we feel that Frank Davis and Paul Holmgren have an opportunity to bring the 2068 into the 21st century, by developing, supporting, and making available telecommunications Hardware and Software for the 2068, as cheap and flexible access to the coming information super-highway.



Thanks again,

David E. Lassov

MECHANICAL AFFINITY

Serving ALL QL Users

Frank Davis
513 East Main St.
Peru, Indiana 46970
317-473-8031 evenings & weekends

Paul Holmgren
5231 Hilton Head Court
Indianapolis IN, 46254
317-291-6002 evenings & weekends

TS2068 COLOR COMPUTER, with TS2040 Thermal Printer, two rolls of 2040 paper for printer and two TS2068 programs (our choice)..... and all for the low price of $68, postage paid. This is a great gift for a family member or friend, or as a back-up unit!

KEYBOARD MEMBRANES for the ZX81 or the TS1000, factory new, ready to use to replace that ailing keyboard, or as a spare for $6. This does include all postage, and these are the last of them.

KEYBOARD MEMBRANES for the QL, factory new and fresh, with instruction sheet, for $20, postage paid.

PROFILE, the best database program for the TS2068, on a dock eprom plug in board. Leaves most of your RAM for data, easy to use. These, with manual for only $25.

HOT Z ROMS, allows you to greatly expand your TS2068 machine programming skills. Look at and change code. This program is on a dock board for plugging in the dock port of your TS2068. This leaves more memory free for the program to use. This is available with manual for only $25.

MTERM 2, a terminal program for the TS2068, on a plug in eprom board for the dock port. The program allows you to upload and download files from a BBS or another computer. It is available for $25.

TOM BENT'S ZX81, EPROM UPGRADE, on a direct replacement special socket. This comes with manual and instructions so that you or someone qualified can install it in your TS1000, TS1500 or ZX81. This is the best system upgrade for this machine. Code is corrected, the floating point math improved and some of the characters made more readable. This is only $12.

WE ACCEPT CHECKS, MONEY ORDERS, CASH (IN US$, BRITISH POUNDS, OR IN GERMAN MARKS WITH US$ EQUIVALENCY plus 10% CONVERSION CHARGE). WE ALSO SHIP C.O.D., WITH JUST THE ADDING OF C.O.D. FEES.

Eliad P. Wannum
UPDATE Magazine
P. O. Box 1095
Peru, IN 46970

Dear Eliad:

You may have already received the answer to Basil Wentworth's query about redirecting screen output of the TS2068 to a printer (April UPDATE, p. 14). The problem was that somehow the ending part of the stream redirect command never made it to the published copy. The complete command is this:

OPEN #2,"P"

Assuming that your printer is online and the driver for it has been activated (eg: LET /p=o for an Oliger board), this will send all screen output to the printer from the commands PRINT, LIST, and CAT. This is a neat way to print disk catalogs. Set the printer to CONDENSED or 15 C.P.I. first for a more compact label sheet. Use CLOSE #2 to revert to normal output.

With best regards,

Bob

Robert D. Harlung
2416 No. County Line Road E.
Huntertown, Indiana 46748
(219) 637-3081

COMPUTER CLASSICS
RT 1, BOX 117
CABOOL, MO 65689

Repair Service for America's Favorite Home Computers and their accessories

ADAM ATARI COMMODORE
IBM OSBORNE SINCLAIR
TIMEX TI TRS-80

BUY - SELL - TRADE - UPGRADE

Write for prices
SASE appreciated

Ph. (417) 469 - 4571

COMPUTER CLASSICS
*** FOR SALE ***

IBM XT COMPUTER $200 +shipping
Includes 10 MEG hard drive, 640K RAM, 360K floppy, serial port and parallel port, monochrome monitor, and keyboard.

IBM 286 COMPUTER $350 +shipping
Includes 20 MEG hard drive, 1MB RAM, 1.2MB & 1.44MB floppies, serial & parallel ports, keyboard, and monochrome monitor.

QUAD DENSITY 5 1/4 in. (720K)
half height floppy drives
$25 each or 10 for $150

IBM HARD DRIVES, CONTROLLERS,
and RGB COLOR MONITORS
Write for prices

WANTED or FOR SALE !

THESE ARE FREE ADS THAT ARE OFFERED FOR THE SALE OF SINCLAIR RELATED HARDWARE, SOFTWARE, AND PERIPHERALS THAT WILL WORK WITH THEM. YOU MAY ALSO LIST ITEMS YOU ARE LOOKING FOR AND WOULD LIKE TO OBTAIN FROM SOMEONE. THIS IS ALSO A GOOD PLACE TO ASK FOR HELP WITH A COMPUTER OR SOFTWARE PROBLEM. THESE ADS ARE FREE TO UPDATE SUBSCRIBERS, BUT NOT TO COMMERCIAL VENDORS. VENDORS, PLEASE CONTACT US SEPARATELY ABOUT THE PLACING OF ADS.

1) FOR SALE: Olivetti PR2300 INK-JET PRINTER, like new in original box for $75.00. RADIO SHACK CGP-115 COLOR PLOTTER/PRINTER for $75.00. TS2050 MODEM, new, complete in original box for $35.00. Contact: D. G. Smith, R.415 Stone St., Johnstown, PA 15906-1609.

2) WANTED: To purchase a used set of Simon Goodwins' DIY TOOLKIT that were previously made available by QL World. Also looking for issues of QL World magazine. Contact: Nazir Pashtoon, 940 Beau Drive #204, Des Plaines, IL 60016.

3) HELP NEEDED: We need someone skilled in both QL and Amiga programming, or a team effort. Here at UPDATE, we offer the QL Emulator Disk Set for the Amiga computer series. This is in PAL format, and we need someone to do the necessary changes to make it more compatible with the North American NTSC standard. We can work out an exchange on this. Also looking for a copy of the public domain program that emulates a TS2068 on an Amiga computer (even a commerical program will be considered.) Write to UPDATE ! MAGAZINE, P. O. BOX 1095, PERU, IN 46970.

4) FOR SALE: LARKEN RAMDISK BOARD, fully populated to 256K of battery backed-up RAM. This comes with full manual, and is rare to get hold of. Offered for $100, and this does include shipping and insurance. Also FOR SALE, full Aerco Disk Interface, with 256K of additional RAM, for bank switching or to use as RAM disk. Offered for $125, and includes manual and loads of programs on 5 1/4 disks. Offered by : Frank Davis, 513 East Main Street, Peru, IN 46970. You may call evenings from 5 to 9:30 P. M. or on weekends. No weekday daytime calls please. PH 317-473-8031.

5) FOR SALE: Offered by Eliad Wannum, one Hunter Board Non-Volatile Board Kit, with memory. This is a complete kit, with docs, memory and instructions in original package. For sale for $30 PPD. Send check to : Eliad Wannum, c/o UPDATE! Magazine, P . O. Box 1095, Peru, IN 46970.

6) NEEDED: Competent, dependable readers to review software and hardware for the TS2068 and the QL, and then write it up and mail it in. Review copies of items provided by UPDATE! Magazine. Give a call to the Editor, Frank Davis, evenings or weekends at 317-473-8031.

THE RELEASE OF XCHANGE

Recently I received a whole stack of disks from Ron Blizzard, and on one of the disks was a treatise on Xchange, the recently released Psion program. The article deals with how Xchange was released, and gives a lot of information on the use of this program.

This issue, I will give the history, as told by Gunther Strube & Erling Jacobsen, of the maneuvering to have it released. Next issue I will give the rest which is titled "XCHANGE Introduction and Reference Information"

Hugh Howie.

****

København, 7.7.93

Dear QL user,

At last we succeeded in getting the XCHANGE program released for you, the QL user. XCHANGE was programmed for the THOR based on the standard PSION QL software. Dansoft paid a considerable amount of money to have an improved version of the standard software but based around the concept of the IBM XCHANGE version. The software was then distributed on license from PSION as the standard software running on the CST THOR PC computer. Three versions were made: one english version, one danish version and a QUILL-only XCHANGE version in danish (sorry QL-users!). Around 1989 the production of the THOR computers were stopped due to cash flow problems. Dansoft and THOR International stopped the THOR business a year later. All excisting services were moved to other people. The Ritzau news system (NB: please refer to QL WORLD anno 1987-88) is still running in various information centres like the danish television and radio stations. Nobody had at the time any idea of releasing the XCHANGE software to the QL users. However, Dansoft knew that pirate copies were around running on QL's and other compatibles! We had copies of it!

In early 1993 we contacted Hellmuth Stuven (former owner of Dansoft) to get an idea of the status of the THOR XCHANGE program. He informed us that he paid for the development costs and an exclusive agreement of the sole distribution of the THOR XCHANGE software. He agreed to release the software to the QL community. We now realise that PSION themselves have no objection of letting the software flow freely among QL users (the letter printed in the June issue of QL-world).

The THOR XCHANGE contained a minor degree of software protection against letting the program run other platforms than the THOR computer. It was a simple check whether a 'THOR watermark' was present or not (the THOR serial number display on initialisation of the computer). If no watermark was present the program simply displayed 'This software is only running on a THOR', and executed an infinite loop (the program had to be killed from another source, e.g. SuperBASIC). The software protection has now been removed.

In addition, we have improved the XCHANGE program in other areas:

1. XCHANGE used to call the MODE system call to redraw its windows. You already know the effect - all windows below XCHANGE are displayed momentarily. If you have a look of the old PSION boots you will notice that they close SuperBASIC windows #1 and #2 before execution the PSION program to prevent the 'window demonstration'. This has now been fixed.

2. XCHANGE (and the previous PSION quartet) created a dummy job for its workspace. The drawback of this is that if you accidentally kill that job the mother job will crash (since its workspace has been corrupted due to QDOS using the memory for its own purposes). XCHANGE has now been modified to allocate its workspace in the Common Heap Area (dynamic allocation/ deallocation) as any job usually does.

3. The old PSION quartet had no active cursor which had the effect of not being able to activate the PSION console input by CTRL C, if the program had been executed by the SuperBASIC EXEC/EX commands. The problem of that were fixed if you installed the pointer environment with its protected windows. If you do not have any window system installed in your QL, you would have the same problem with XCHANGE. However we have modified XCHANGE with an active cursor (but not visible) to prevent that problem.

Unfortunately all THOR XCHANGE documentation (based around QUILL files) exists only in danish. There is still a chance to get information in english, since all english THOR users have the standard THOR manuals. You should be able to contact a THOR user through QUANTA. However, much incorrect information will be present, since it was written before the XCHANGE program was finished for the THOR (the XCHANGE information in the english THOR manuals were based around the IBM XCHANGE version which has more features than the present THOR version). Do not despair, dear QL user, since you still have the online help (with F1). Additional information of XCHANGE will be found in this document. We have only included the information that cannot be read from the XCHANGE help files. All other information should be comprehendable from the help files.

One last thing; both the old PSION programs and XCHANGE draw their lines around menus by POKE'ing directly to the screen memory! EASEL draws its graphs partially in the same way! If you use the ATARI QL-emulator with the EXTENDED MODE 4 emulator card (780x280 pixels in mode 4) a lot of mess is drawn onto the screen whenever an XCHANGE menu is drawn or XCHANGE EASEL is active. This is because the base address of the screen memory is lower than on the QL. If you have installed the QVME card in your ATARI, there is no problem since the video memory on the card is placed at a completely different address (in high memory). Since the menu lines is drawn in the old screen memory you will have XCHANGE running perfectly without the menu frames. However you will get only half of the graphics on the screen in XCHANGE EASEL - the rest is actually POKE'd in the old screen memory. With driver release E.30 you can use a command to activate the standard 512x256 resolution with all screen output directed to the old screen memory. This is then copied via the fast ATARI blitter chip to the QVME card. XCHANGE will display everything again as it used to.

Executing the XCHANGE on a QL (or compatible)

Since XCHANGE was designed to run on a THOR, certain things must be obeyed to be able to execute it on a QL:

1. You must have at least 256K expanded RAM in your QL. XCHANGE is a 183K program which needs minimum 64K workspace.

2. XCHANGE creates a workfile, 'Psion_xch' in ram1_ . It is therefore needed to have a ramdisc driver installed. If you have a Gold Card, an ATARI QL emulator, or a QL with expanded RAM and QRAM/QPAC2, there is no problem since they install a RAM disk on initialisation. If you do not own a RAM disc, but have a disk drive, you can execute the following:

```
FLP_USE RAM  <ENTER>
EXEC RAM1_XCHANGE  <ENTER>
```

The June issue of QL-world indicates that other modified versions of XCHANGE V3.90 exists. If you should get any information, please let us know.

If you should have any queries, please contact us at the following address:

Gunther Strube
Gl. Kongevej 37, 2.th
DK-1610 København V
Denmark

We hope that you will enjoy XCHANGE, and, it is your responsibility to distribute XCHANGE to every QL user you know!

Best wishes from

Gunther Strube & Erling Jacobsen

DID YOU KNOW?.....

The origin of the terms *bug* and *debugging* is thought to have occurred in 1945 during the development of a computer called the Mark II. A relay in the machine failed. The cause of the failure was found to be a moth. The development team carefully removed the moth and taped it into their log book. From that time on, when the computer was not working, the development team members said they were debugging the computer.

DID YOU KNOW?.....

The keyboard as we know it (QWERTY) was designed in the last century for use on the Remington Typewriter. The designers found that it was too easy to jam the hammers on the typewriter, so they moved the most commonly used keys around to decrease the typing speed. Several alternative keyboard layouts are available but few people take the time to learn them.

REPORT ON NEWPORT 2
by Frank W. Davis

Once again some of us loyal, die hard, QL users made the long trek from the Midwest to the East Coast and found the fair city of Newport, Rhode Island, in the month of May. I seldom seem to enjoy these long drives anymore, perhaps a sign that I am no longer as young as (?what comes next in this old saying?). It is always a joy to finally get where I am going. Perhaps I need to do more driving aad traveling just for the fun of it to see if that is the cure. On the way there we ran into a lot of construction, closed bridges, accidents and fire on a bridge. What a relief it was to get there and to find out it was all worth while! And I do mean it was worthwhile. We found the show, location, and people very enjoyable.

More than once Bob Dyl almost called off the entire show. At the last minute some of the overseas vendors were not able to make it to the show. Bob, being a perfectionist, had thought that it would not be okay to continue without more vendors there. It turned out to be a great show anyway. Thanks go to Bob Dyl for a fine show and for giving us all this chance to meet or get re-aquainted with each other.

The show was held at a Howard Johnsons Motor Lodge in Middletown, Rhode Island,, in a large meeting room. The CATS group from our nations capital was well represented by Herb Schaaf, Mannie Quintero and Tom Robbins. I saw many folks from the NESQLUG group, such as Al Boehm, the Gary Norton family, Bill Cable, Mike Jonas, Joyce Blaho (and Peter Hale dropped by for a visit the night before the show) to name a few. From the LIST group of New York we had Ken Lang, Bob Gilder and Joe LaPunzina. Many other folk were there, such as Jim Hunkins, a short visit by Richard Taylor, Mel LaVerne and son, Hugh Howie of Canada, Parker Lewis of Rhode Island, Don Walterman and John Impellizzeri of the Detroit area, and Tim Swenson of Dayton, Ohio. There were others and I mean no slight by not mentioning your name, to make it a friendly event.

Stuart Honeyball of Miracle Systems was there selling Gold Cards, QXL Cards, QL parts for Bill Richardson, and taking orders for the Super Gold Card. He had only his own Super Gold for the show, as there had been an order for the boards mix up. This is all straightened up now and all ordered should have been sent, with many more in stock at Miracle and Mechanical Affinity now.

Bill Cable of Wood and Wind Computing was there showing and selling his new (two years in the making?) QL finance management program QLERK. See a review of that elsewhere in this issue. It was warmly received by those who bought or saw it.

Al Boehm was demonstrating his Cloud Simulation Program. I think this was being done on his QXL (QL emulator hardware board on an IBM). He handed out information on this program. He is a member of NESQLUG. We are told that it will soon be made available for those that want it as public domain. Well done, Al!

John Impellizzeri and Don Walterman set up and demonstrated live, the use of their BBS called QBOX. See their ad elsewhere in this issue. This showed us one of the neater uses one can make of the QL. If you have not tried this board, then do so soon. Give these gentlemen support for a job well done.

Bob Gilder was showing off some of his craftmanship to some admiring people. He was also showing us his "Real Time Digitiser" to a crowd of people. This was a new item to most, if not all of us. It may be he has the only one in North America. They can be purchased, however. We should not let Bob be the only one to have this much fun. Thanks, Bob!

Carol Davis and I had a table set up for the sale of back issues of UPDATE!, taking subscriptions, selling copies of The Z88 Source Book, the QL Source Book and copies of the QL Emulator for the Amiga computers. I must report we did a fine business.

IQLR, was of course represented and taking subscriptions, selling binders and well done indexes for the past issue years. I have found the binders to be a great way to store my back issues neatly. I also like the laminated indexes to tell me which issue to find something in. Check with Bob if you need these.

Paul Holmgren, Carol Davis and I (Frank Davis) were manning the tables for Mechanical Affinity. Business was hot! We made some good deals for people, moved a lot of software and hardware and chatted a lot. We had for sale some of our new ten disk clip art collection for the QL. This is a set of compressed clip art just to fit it on ten disks! We also sold a lot of clip art from the UK, Text87Plus4 word processors and LineDesign vector graphics programs. Another good seller was the new Page Designer 3 from DJC.

The rest of the weekend consisted of going to good restaurants, visiting and touristing with good friends. Then came a perfectly uneventful drive back to Indiana. It appears that the show next year may well be held in the suburbs of Detroit, under the able hands of Don Walterman and John Impellizzeri. If so, give them your support. I know we will. Next year folks...more vendors, more demos, more of you!

MECHANICAL AFFINITY

Serving ALL QL Users

Frank Davis
513 East Main St
Peru, Indiana 46970
317-473-8031 evenings & weekends

Paul Holmgren
5231 Milton Wood Court
Indianapolis IN, 46254
317-291-6002 evenings & weekends

Trump Cards, disk interface for two 360K or 720K disk drives, 896K of memory and TK2, reconditioned for $100.

Gold Cards,3 drive disk interface, 2 meg memory,TK2 and 16 megaHerz speed. New for $300, and reconditioned ones for $230.

Super Gold Cards, built in 4 drive adaptor disk interface, 68020 processor, 4 meg of memory, runs at 24 megaHerz speed, built in true parallel printer port (with printer cable) and the latest TK2. The price is $480. Contact us about our Trump , or Gold Card trade in program.

Sinclair QL Printers, black with QL logo, 9 pin printers that are made to run with the QL (serial). Price is $60.

CUESHELL, the new graphics oriented desktop program for the QL. It gives you program options on the screen, which you can easily control, change or launch. It is pointer environment driven and makes full use of level 2 drivers. Our price is $62.

Page Designer 3, the QLs easiest to use full featured desk top publishing program. Comes with loads of fonts and clip art in a 4 disk set. You can even use HDF fonts from Digital Precisions Professional Publisher, as well as other clip art from other QL programs. This ad was done using PD3. Our price is $63.

Text87Plus4, an excellent word processor that allows you to use drivers for all the latest printers, gives you many fonts as well as columns and precise control of paper size and print size. Our price is $120.

LineDesign Version2, a top of the line superb vector drawing program package that allows you to mix many! fonts and graphics (10 disk set) with your artwork. The price is $153.

DataDesign 3, a fast pointer driven database that is easy to set up and use for the QL. The price is $95.

Qliberator 3.36, compiles virtually all of SuperBasic, and it is easy to use, with QL and QXL. The price is $75.

CONTACT US FOR ALL YOUR QL NEEDS, WE'LL DO OUR BEST!

QBox-USA



810-254-9878



24 hours a day, 300/1200/2400 baud
(a new high speed modem, up to 14400 baud will be online soon)

QBox-USA is a BBS set up by QL enthusiasts for QL enthusiasts. The sytem runs entirely on a Sinclair QL. We maintain a link (Fidonet) with European BBS's that carry QL related message areas. With QBox-USA North American QL users can keep in touch with our fellow QL users in Europe and keep up with the latest developments for the QL and QDOS. We are currently carrying the following message areas: INTERNATIONAL QL, MINERVA, QUANTA and QBOX. There are also file areas that contain many programs available for download. Just a few of the files available are: QIPI, QFAX, Zip/Unzip, QLTerm, QLGIF and many more! There is no charge to use QBox-USA other than normal phone call charges. Please give QBox-USA a try! We look forward to your call!

produced using Page Designer 3

CABLE COLUMN

By Bill Cable

ARCHIVE SERIES
PART 17 : FormEd - A FORM EDITOR AND PRINTER FOR ARCHIVE DATABASES (to be continued)

This time we will enter some procedures to be merged with the group3 procedures to make a new program called FormEd (form editor). Forms can be designed on screen for any ARCHIVE database for browsing and printing and saving for later use. Its primary purpose will be for printing out the forms to your printer such as address labels from your address database. Its slow but handy. The rest of the procedures needed will follow in the next column for now you can just create forms and browse through you database with them. Get into the ARCHIVE editor and start at it. When done merge the group3_prg procedures done in Part 14 and you have most of the program done.

```
proc closey;l$
close l$
endproc
proc formed
rem  Written by Bill Cable  6/94  and released to public domain
error form_check: if errnum(): let flg=1: endif : if flg:formed1: endif :formed3
endproc
proc formed1
mode 0:setup. error close_all
heady;"FormEd - A Form Editor, Creater, and Printer for ARCHIVE Databases"
print " 1. This program allows you to create forms that incorporate your own"
print "    databases. Good for printing them in a structured way or as labels."
print " 2. Two databases (form_fm1 & form_fm2) hold form information. If they"
print "    don't exist already the will be created. Please back them up."
print " 3. The database you use on a form will be accessed read only. Using"
print "    the form display you can browse or print it as selected/ordered."
print " 4. Each form has an identifying name (1-8 characters) and is saved for"
print "    later access. The form is designed on screen by typing text at the"
print "    cusor position or adding field values there. Fields values can be"
print "    joined when added. Field values can be underlined or removed."
print " 5. Special fonts are supported in the printing (Normal,Bold,Italic,"
print "    Underline,Wide,Condensed) but you may have to alter the characters"
print "    sent to the printer if your printer is not epson compatible."
print " 6. To do the ordering and selecting of your database the program is"
print "    halted so you can type in the Select, Order, or Reset command at"
print "    the ARCHIVE prompt '>' and then restarted by : formed<ENTER>."
device;21,"Location of form databases (form_fm1,form_fm2). eXit to stop"
if ans$="": mode 1: stop : endif : let fd$=ans$: let fn$="form_fm"
error looky;fd$+fn$+"1","f1"
if errnum(): if errnum()<>100:erry;23,"accessing "+fd$+fn$+"1": endif
yorn;23,"Create form databases on "+fd$+" now": if ans$="n":formed: return
else : error form_create: if errnum():erry;23,"making "+fd$+fn$+"1"
formed: return : endif : endif : looky;fd$+fn$+"1","f1": endif
error looky;fd$+fn$+"2","f2": if errnum():erry;23,"accessing "+fd$+fn$+"2"
acky;23,"You must fix":formed: return : endif :formed2
endproc
```

```
proc formed2
heady,"FormEd - Choosing a Form": use "f1"
if count()>0:yorn,4,"Send listing of currently defined forms to printer"
if ans$="y":form_print1: endif : endif : error closey,"s"
let ans$="": while len(ans$)<1 or len(ans$)>8
inpy,6,"Name of form [1-8 characters or <ENTER>=quit]"
if ans$="": close "f1": close "f2": mode 1: stop : endif : endwhile
let form$=ans$: use "f1": locate form$: if form_name$<>form$
yorn,8,"Form '"+form$+"' not defined. Add it now"
if ans$="n":formed2: return
else :form_new: close "f1":looky,fd$+fn$+"1","f1": locate form$: endif : endif
let sd$=dbf_loc$: let sn$=dbf_name$: let ans=1: while ans and sn$<>""
error looky,sd$+sn$,"s": let ans=errnum()
if errnum():erry,10,"Problem accessing "+sd$+sn$
yorn,11,"Change device or name": if ans$="n":formed2: return : endif
device,12,"Database": let sd$=ans$
defy,14,"Database name (with extension)",sn$: let sn$=ans$: endif : endwhile
yorn,20,"Send listing of fields of "+sd$+sn$+" database to printer"
if ans$="y":form_print2: endif: formed3
endproc
proc formed3
mode 0: let flg=1:form_display
while 1: print at 0,3,upper(form$)," form using ",sd$+sn$,
print " with ",count("s")," selected", tab 57,
key_choice,23," FORM","","Edit Print Browse Select/order eXit","epbsx"
if ans$="x":formed2: return
else : if ans$="e":form_edit,1,high,1,1,wide,1:form_display
else : if ans$="p":form_print
else : if ans$="b":form_browse
else : if ans$="s": use "s": mode 1: cls : print
print "FormEd halted. Type desired ARCHIVE select, order, or reset Command"
print "Then type : formed<ENTER> to restart": let flg=0: stop
endif : endif : endif : endif : endif : endwhile
endproc
proc form_browse
local a$,f$: while 1: use "s"
key_choice,23," BROWSE "+sn$,"","Next Back Rec# Find More eXit","nbrfmx"
if ans$="x": use "f1": return : endif : let a$=ans$
if a$="n": next : else : if a$="b": back
else : if a$="r":inpy,23,"Move to record [0-"+str(count("s")-1,2,0)+"]"
position val(ans$): else : if a$="f":inpy,23,"Enter text to find": let f$=ans$
msg,23,"finding '"+f$+"'": find f$
else : if a$="m":msg,23,"more finding '"+f$+"'": continue
if not found():acky,23,"More '"+f$+"' not found": endif
endif : endif : endif : endif : endif :form_fvshow1,"": endwhile
endproc
proc form_check
let i=flg
endproc
proc form_color,l,i$
key_choice,l,"," for "+i$+" color","[Black,Red,Green,White]","brgw"
if ans$="b": let ans$="Black - 1": else : if ans$="r": let ans$="Red - 3"
else : if ans$="g": let ans$="Green - 5"
else : let ans$="White - 7": endif : endif : endif
endproc
proc form_create
msg,23,"creating form file 1 : "+fd$+fn$+"1"
create fd$+fn$+"1" logical "f1"
form_name$
form_desc$
form_paper$
```

```
form_ink$
form_height
form_width
form_line
form_text$
form_font$
dbf_loc$
dbf_name$
dbf_desc$
endcreate
order form_name$;a,form_line;a: close "f1"
msg;23,"creating form file 2 : "+fd$+fn$+"2"
create fd$+fn$+"2" logical "f2"
field_form$
field_line
field_column
field_name$
field_number
field_start
field_width
field_format$
field_join
field_join$
endcreate
order field_form$;a,field_line;a,field_column;a: close "f2"
endproc
proc form_display
use "f1": locate form$: let wide=form_width: let high=form_height
let fp=val(form_paper$(9)): let fi=val(form_ink$(9))
if fp=1: let dp=3: let di=7: else : let dp=1: let di=7: endif
paper dp: ink di: cls : let k=form_width
let i=1: while i<high+1: locate form$,i
print at i,1; paper fp; ink fi;form_text$;
let i=i+1: endwhile :form_fvshow1;""
endproc
proc form_edit;sl,nl,al,sc,nc,ac
local ll,lc,i$,i,j,k,j$
close "f1": open fd$+fn$+"1" logical "f1"
close "f2": open fd$+fn$+"2" logical "f2": use "f1"
if sl>22: let sl=22: endif : if nl>22-sl: let nl=22-sl: endif
if sc>79: let sc=79: endif : if nc>79-sc: let nc=79-sc: endif
let nl=sl+nl-1: if al<sl or al>nl: let al=sl: endif
let nc=sc+nc-1: if ac<sc or ac>nc: let ac=sc: endif : let ll=al: let lc=ac
while 1: use "f1"
print at 23,1,"Editing Form - Move and type text or <F3> for other options";
print tab 80; at 0,70;"[";al;",";ac;"]"; tab 79;
print paper fp; ink fi; at al,ac;chr(14);
let i$=getkey(): let i=code(i$): if i<>20
if i=10 or i=11: let j=3: else : if i=12 or i=13: let j=10
else : let j=1: endif : endif
if i=2 or i=10: let al=al-j: if al<sl: let al=nl: endif
else : if i=3 or i=11: let al=al+j: if al>nl: let al=sl: endif
else : if i=4 or i=12: let ac=ac+j: if ac>nc: let ac=sc: endif
else : if i=5 or i=13: let ac=ac-j: if ac<sc: let ac=nc: endif
endif : endif : endif : endif
if i>31 and i<127: print paper fp; ink fi; at al,ac;i$;
locate form$,al: let j$=""+form_text$+""
let j$=j$(1 to ac)+i$+j$(ac+2 to len(j$))
let form_text$=j$(2 to len(j$)-1): update
let ac=ac+1: if ac>nc: let ac=sc: endif : endif
if ll<>al or lc<>ac: let ll=al: let lc=ac: endif : else
key_choice;23," FIELD EDIT","","Add Remove Underline List eXit","arulx"
if ans$="x": close "f1": close "f2":looky;fd$+fn$+"1","f1"
looky;fd$+fn$+"2","f2": use "f1": return : else : if sn$<>""
if ans$="a":form_fadd;al,ac,nc
```

```
else : if ans$="r": use "f2": locate form$,al,ac
if field_form$=form$ and field_line=al and field_column=ac
yorn;23,"Remove "+field_name$+" from specifed position": if ans$="y"
print at al,ac; paper fp; ink fi,rept(" ",field_width),: delete : endif
else :acky,23,"No field value starts at current cursor position": endif
else : if ans$="l":yorn;23,"Listout fields on form to printer now"
if ans$="y":form_print3: endif : else :form_fvshow1;chr(5)
endif : endif : endif : endif : endif : endif : endwhile
endproc
proc form_fadd;al,ac,nc
use "f2": let field_form$=form$:form_fpick
let field_name$=fieldn(field_number,"s")
let field_line=al: let field_column=ac
defy;23,"Start at field charcter","1": let ans=val(ans$)
if ans<1 or ans>255: let ans=1: endif : let field_start=ans
defy;23,"Field width",str(nc-ac,2,0): let ans=val(ans$)
if ans<1 or ans>nc-ac: let ans=nc-ac: endif : let field_width=ans
if fieldt(field_number,"s")
key_choice;23,"","Field format","Normal Upper Lower","nul"
else :key_choice;23,"","Field format","General Decimal(2) Integer","gdi"
endif : let field_format$=upper(ans$)
yorn;23,"Will this field be joined with a field following it"
if ans$="y": let field_join=1
inpy;23,"Joining symbol(s) (ie. ' ' or ',' or '/',<ENTER> = none)"
let field_join$=ans$: else : let field_join=0: let field_join$="": endif
yorn;23,"Add '"+field_name$+"' now": if ans$="y": append
if field_join: print at 22,1;"Joins ";field_name$;
form_fadd;al,ac,nc: return : endif
locate form$,al,ac:form_fvshow2;"","": endif :liny,22: use "f1"
endproc
proc form_fpick
while 1:inpy;23,"Field of interest [0-"+str(numfld("s")-1,2,0)+"]"
let ans=val(ans$): if ans<0 or ans>numfld("s")-1: let ans=0: endif
let field_number=ans:yorn;23,fieldn(ans,"s")
if ans$="y": return : endif : endwhile
endproc
proc form_fvshow1;u$
use "f2": print at 0,57;"at Rec# ";recnum("s"); tab 79;
use "f2": locate form$: while not eof() and field_form$=form$
form_fvshow2;"",u$: next : endwhile : use "f1"
endproc
proc form_fvshow2;l$,u$
local i,j,k,l,c: let l=field_line: let c=field_column
let ans=field_number: if fieldt(ans,"s")
let ans$=fieldv(ans,"s"): if field_format$="U": let ans$=upper(ans$)
else : if field_format$="L": let ans$=lower(ans$): endif : endif
else : if field_format$="G": let ans$=str(fieldv(ans,"s"),4,0)
else : if field_format$="D": let ans$=str(fieldv(ans,"s"),0,2)
else : let ans$=str(fieldv(ans,"s"),2,0): endif : endif : endif
let ans$=l$+ans$
let i=len(ans$): let j=field_start: let k=field_width: if j>1 or i>k
if j>1: if j>i: let ans$="": else : let ans$=ans$(j to i): let i=i-j+1: endif
let k=k-j+1: let i=i-j+1: endif
if i>k: let ans$=ans$(1 to k): endif : endif
if field_join: let ans$=ans$+field_join$: next
if l=field_line and c=field_column and not eof(): form_fvshow2,ans$,u$: return
else : back : endif : endif
print at l,c; paper fp; ink fi,u$,ans$; tab c+field_width+1,u$;
endproc
proc form_new
close "f1": error openy,fd$+fn$+"1","f1"
let form_line=0: let form_text$="": let form_font$=""
while 1:heady,"Adding New form : "+form$: let form_name$=form$
print at 3,1,"Form information"
```

```
inpy,5,"Form description": let form_desc$=ans$
form_color,6,"Form paper": let form_paper$=ans$
print at 6,0," Form paper color : ";ans$, tab 80,: let form_ink$=ans$
while form_paper$=form_ink$:form_color,7,"Form ink"
let form_ink$=ans$: endwhile
print at 7,0," Form ink color : ";ans$, tab 80,
defy,8,"Form width (10-78)","78": let ans=val(ans$)
if ans<10: let ans=10: endif : if ans>78: let ans=78: endif
let form_width=ans: print at 8,0," Form width : ";ans; tab 80
defy,9,"Form height (1-20)","20": let ans=val(ans$)
if ans<1: let ans=1: endif : if ans>20: let ans=20: endif
let form_height=ans: print at 9,0," Form Height : ";ans; tab 80,
yorn,12,"Use information from a database on this form"
if ans$="y": print at 12,1,"Database information", tab 80,
device,14,"Location of database to be used in form"
let dbf_loc$=ans$: print at 14,0," Database location : ";ans$; tab 80,
inpy,15,"Name of database to be used in form"
if not instr(ans$,"_"): let ans$=ans$+"_dbf": endif
let dbf_name$=ans$: print at 15,1,"Database name : ";ans$; tab 80,
inpy,16,"Description of database": let dbf_desc$=ans$: endif
yorn,23,"Add form now": if ans$="y": append : let i=1: let j=form_height
let form_desc$="": let form_paper$="": let form_ink$=""
let dbf_loc$="": let dbf_name$="": let dbf_desc$=""
while i<=j: let form_line=i: let form_text$=rept(" ",form_width)
let form_font$=rept("N",form_width)
append : let i=i+1: endwhile : return : endif
yorn,23,"Still want to add a "+form$+" form": if ans$="n": return : endif
cls : endwhile
endproc
proc form_print
acky,23,"Not implemented yet"
endproc
proc form_print1
msg,23,"Printing listing of defined forms"
lprint : lprint "FORMS DEFINED IN FILES form_fm1 AND form_fm2 ON ";fd$
lprint tab 60;date(2) : lprint : lprint : search form_line=0
while found(): lprint "Form name : ";upper(form_name$)
lprint " Description : ";form_desc$
lprint "  Form paper : ";form_paper$; tab 30;"Form ink : ";form_ink$
lprint "  Form length : ";form_height; tab 30;"Form Height : ";form_width
if dbf_name$<>"": lprint "  User database : ";dbf_loc$;dbf_name$
lprint "      Database desc : ";dbf_desc$: endif
lprint : lprint : continue : endwhile :liny,23
endproc
proc form_print2
msg,23,"Printing listing of "+sd$+sn$+" field names" : lprint
lprint "FIELDS OF DATABASE ";sd$;sn$;" USEABLE IN FORM ";upper(form$)
lprint tab 60;date(2) : lprint : let i=0
while i<numfld(): lprint i, tab 5;fieldn(i,"s"): let i=i+1: endwhile :liny,23
endproc
proc form_print3
msg,23,"Printing fields on form "+form$
lprint : lprint "FIELDS OF "+sn$+" DEFINED ON FORM - "+upper(form$)
lprint tab 60;date(2) : lprint : lprint : use "f2": locate form$
lprint "Line/Column  Name        Start   Width   Format  Join Symbol"
while field_form$=form$ and not eof(): lprint
lprint "[";field_line;",";field_column;"]";
lprint tab 15;field_name$; tab 30;field_start; tab 40;field_width;
lprint tab 50;field_format$; tab 58;field_join; tab 64,"'";field_join$,"'"
lprint : next : endwhile :liny,23
endproc
```

Next time the printing part of FormEd with some instructions
Until then Happy Archiving!

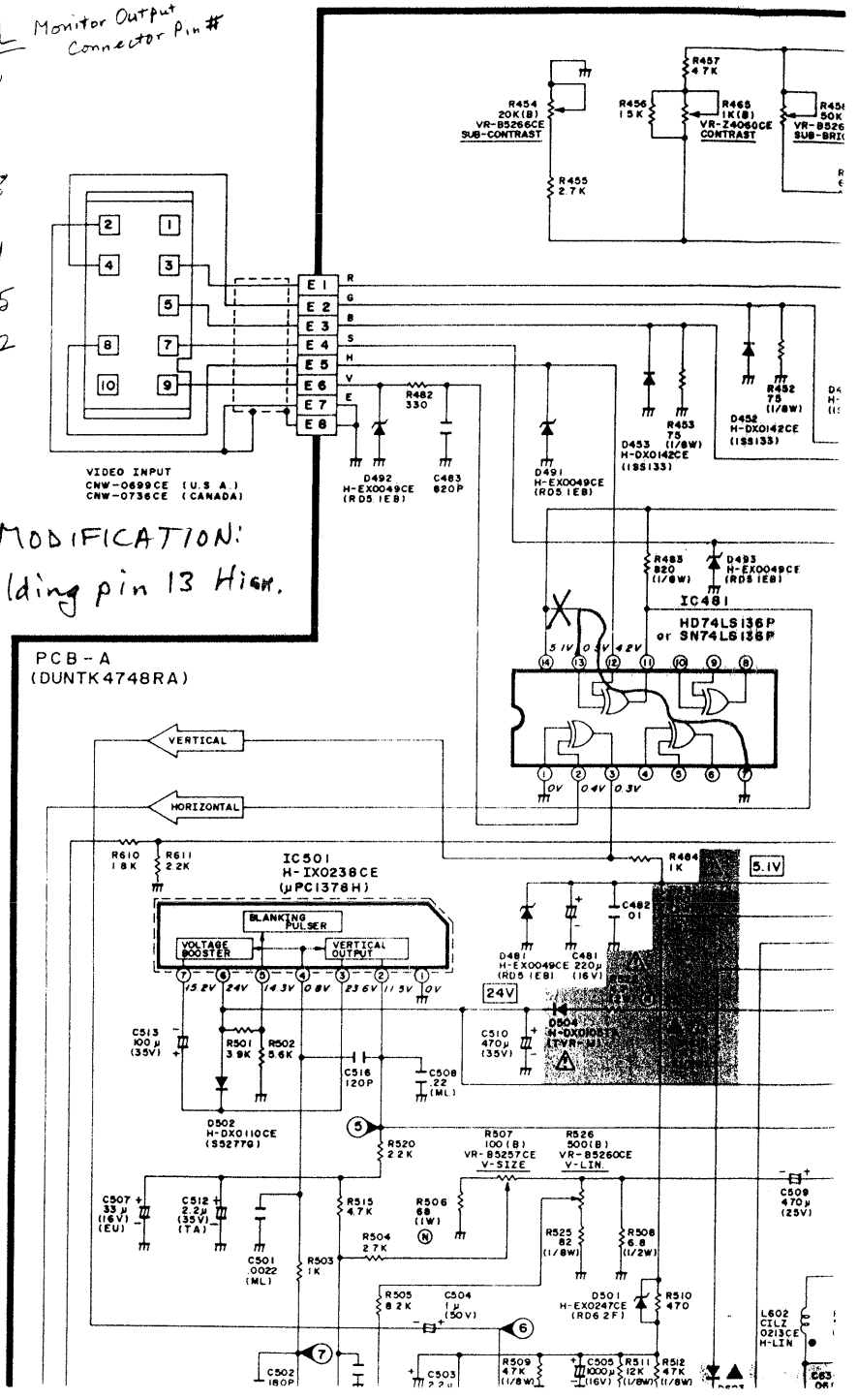
RADIO SHACK Color Monitor CM-8

Catalog Number: 26-3215 (U.S.A./CANADA)

QL Monitor Output Connector Pin #

E1 Yellow R → 7
E2 Yellow/Red G → 6
E3 Green B → 8
E4 Grey S
E5 Grey H → 4
E6 White/Blk V → 5
E7 Orange Gnd → 2
E8 Black → Shield

↓
DRA



CGA to RGB MODIFICATION:

- Cut the trace holding pin 13 High.
- Jumper pin 13 to ground (pin 7).

IC481 is an Exclusive OR logic chip.

WORKS GREAT!

THANKS FOR THE TIP ON INVERTING THE HORIZONTAL SYNC INPUT.

Chuck Spano

The Reliable QL

John Impellizzeri, taken off the Internet

(I had seen this file on the BBSs several times over the last year, and had thought it might be of assistance to those few of you who may still be having any problems with your QL mechanically. I have myself made all of these changes, and a few others on well over 45 QLs over the last few years. Most every QL has needed at least some of them, while others have needed them all. F.W. Davis, Ed. Anyone who knows the author of this article, tell John we appreciate it.)

I wrote the following article a couple of years ago, meaning to submit it to a user group newsletter. I never did send it in. The information in it is still valid and so with a few updates at the end, here it is...

Much has been written about the QL and its problems with the microdrives and locking up. Recently there have also been articles about various solutions to the problems. While I have not discovered any new cures, I am going to write about my experiences with my QL.

As far as the microdrives are concerned, my solution was disk drives. The mdv's were OK for me until my Archive and Quill files grew too large to fit on the cartridges. They seemed reliable enough if used with care, they just didn't hold enough.

I ordered my QL from A+ Computers at the 1987 Indianapolis show. When I received it I set it up using a TV for a monitor as all the other peripherals I had were specifically for my ZX81/TS1000 system. It seemed reliable enough as I began using and learning this new system.

At this point the QL had never locked up or crashed except for when I was poking around where I shouldn't have been.

Not too much later I realized I was going to need more RAM. I ordered an external 512K RAM board and RAM disk software. I also obtained an RGB monitor. This arrangement worked well for a while and the QL tolerated the RAM board just fine, although I did notice the power supply was a little warmer.

I first started noticing a problem after I added a Cumana disk interface. I suspected the interface at first but after trying just the interface and the QL it was fine. Only when I had the RAM and the disk did I have problems. The power supply and the QL both got very warm. I should mention that my entire system is plugged into a surge protected and filtered power strip. While we don't seem to have any problems in this area with 'dirty' power, I like to use the strip just to be on the safe side. It also seems to help when any major appliance in the house starts up. The lights sometimes dim or flicker, but my system isn't bothered. My

first solution was a small cooling fan purchased at Radio Shack and wired to be on whenever the QL was. The fan was aimed at the QL's heatsink in the microdrive area. This worked and though the fan is pretty quiet, I still wanted a better solution.

I had received back issues of Quantum Levels which had a series on solving the QL's ills. I also got a copy of the May 1989 CATS newsletter which had many solutions. All of the modifications I made were taken from these two publications. Some of the modifications that were suggested I found had been done already. Some uncovered definite trouble 'under the hood'. Others I made just to be safe.

So, starting from the top; After removing the top cover and disconnecting the keyboard tails, the first thing I checked was the DC voltage at the regulator. Using a digital meter I measured 4.91 volts. I then checked the voltage at the jumper wire to the 68008 and measured 4.87 volts. This was a slightly lower than what the CATS article recommended, although it may be due to the calibration of my meter. To be sure I replaced the regulator with a fresh new one and didn't notice any change. What I did find when I replaced it though was that what little silicone grease was between the regulator and the heatsink had dried up and flaked off. After removing the old stuff and applying liberal amounts of new grease I replaced the regulator and added the recommended bypass capacitor right at the pins to the chip. Next I added the 20 ohm shunt resistor near the expansion connector. The CATS article mentioned a straggly jumper supplying power to the CPU. On my QL I found a nice solid 20 gauge wire. I then added a 10 uFD tantalum cap at the CPU in parallel with the existing cap. The article also mentioned making sure that a ground trace on the board was cut. I found that mine was. Even though they looked okay, I resoldered all the connections to the 'spiderboard'. I also tied the unused pins (1,3 and 5) high and added a bypass cap here. Bypass caps were also added at the 8301, 8302 and 8049 chips. The articles in Quantum Levels suggested adding a cap between the 8301 and the first ROM chip along with bypass caps at IC26 (serial port receiver). These additions were also performed.

Next the QL circuit board was completely removed from the bottom half of the case for the following. The solder connections to the power connector were checked and found to be very poor. When I wiggled the connector I could see that the connector pins were barely making contact with the traces. All of the old solder was removed and I then removed the connector and filed the pins until they were shiny and then resoldered it. The power connector now was very solid. Quantum Levels also recommended adding bypass caps to each RAM chip. I found that these caps had already been added to my QL.

The only other change I have made is to replace the ROM chips with an EPROM version from Sharp's. (These are now available from Mechanical Affinity.) This helped to keep the heat sink cooler

and I also upgraded to the MG version. There were a few other suggestions that I haven't done. I didn't add the second regulator as the original one seems to be doing fine since I changed to the EPROM and added the shunt resistor. I also didn't add the RGB buffer circuit since I haven't had any trouble with this area and I noticed that my QL did have the 'protection' diodes added to the video chip.

The CATS article talks about looking at the data lines with an oscilloscope and experimenting with different size caps on the data lines to clean them up. While I do have a scope, it's only a 5 MHz job and no match for the signals bouncing around in the QL. I figured with all the changes that I did make I would just put the QL back together and see what happens. If needed, I would proceed further.

After all the modifications, my QL, to date, has not had any problems with locking up or crashing. I should mention that my QL's serial number is 5282. I have a back up QL that just sits around in case this one decides to die. It is an earlier production unit (# 3399) and I intend to disassemble this one soon and see what I can find.

I highly recommend that anyone with a QL that has problems obtain a copy of these excellent articles and 'tune up' their QL. It is definitely worth it!!

Since I wrote the above I've made a few changes. In place of the Expanderam and Cumana disk interface I now have a Gold Card (v 2.28). I have a 3.5" 3.2 MB floppy, a 3.5" DD/HD floppy and a 5.25" DD floppy. I have also replaced the 8049 co-processor chip with the Hermes 8749 chip. My QL still performs flawlessly even when left on for days. There have been no unexplained crashes or lockups. I still haven't looked at my spare QL to check it out as my main QL runs great! It is ultra-reliable.

REFERENCES

CATS Newsletter
(May 1989)
Quantum Levels
(1-1, 1-2, 2-2, 2-4, 2-5)

John J. Impellizzeri 75206,1565 Compuserve

THE VERSIONS OF QPAC2, THRU DECEMBER 1993

(A Pointer Environment Front End Program For The QL, from CARE Electronics, available from Mechanical Affinity and Dilwyn Jones Computing) If you find that you have an older version that displays one or more of the errors listed, then see one of these companies about upgrading

(notes by Eliad P. Wannum)

V1.01 columns re-organised

V1.02 sleep always available on keystroke

V1.03 first complete version

V1.04 release version

V1.05 files V1.03: COPY/VIEW/ALL files fixed

V1.06 German version. Files V1.04 (ALL, Stuff filename) Sysdef V1.02 (Make_dir)

V1.07 French version. Files V1.05 (Sort problems, file retry)

V1.08 First German release version.

V1.09 Revised German/French. Config no sort, trees and statistics. Channels V1.02 no longer fails on open directory.

V1.10 Files V1.06 version check removed from Update and Backup. Extension ignored in directory name. 2D directory selection.

V1.11 Lower case Things selectable by keystroke in Things, Exec etc. Occasional transient borders suppressed.
Button Sleep V1.03 is much safer on force removing Jobs.
Files V1.07 (files > 16K bytes to printer).
Does not try to copy files to themselves.
Can Execute files from MDV.
Rjob V1.02 can remove itself.
Sydef V1.03 Make Directory removes failed directory file.

V1.12 Parameter handling introduced.

V1.13 Sydef V1.04 fixes initialisation problem in QPAC V1.12

V1.14 Files V1.08, fixed job name allowed.

V1.15 Size allowed up to screen size.

V1.16 Files V1.09 Sort also sorts status of items.
Zero length files can be copied.

V1.17 Monochrome Mode.

V1.18 Bpick V1.02 picks jobs with priority 126 as well as 1.
Buttons and sleeping jobs are priority 126.

V1.19 Files V1.10 uses FileInfo Thing.

V1.20 Files V1.11 improved error recovery in FileInfo Thing.

V1.21 Files V1.12 FileInfo type 4 used.
Files V1.13 File error recovery error corrected.

V1.22 Files V1.14 directory control from main menu.

V1.23 Files V1.15 can Execute from Microdrive.

V1.24 Files V1.16 count of files selected corrected.
Allocation in button frame is optionally temporary.

V1.25 Files V1.17 does not reference $4 if DO on empty space.

V1.26 Button Sleep V1.04 correction for some versions of PTR: could smash heap on wake.

V1.27 Files V1.18 allows multiple as well as negative sorts on command line.

V1.28 Jobs 1.02 slightly improved.

V1.29 Files V1.19 tree off on directory up in main menu; tree off on Nn_ directory listing.
Button Frame 2.03 any size of origin (up to 32767).

V1.30 Channels 1.03 fixed for integrated ptr CON.

V1.31 Button Frame 2.03 any size of origin (up to 32767).

V1.32 Files V1.20 F3 C X no longer crashes. Any single character should be accepted as net.

V1.33 General: maximum initial size is scaled with screen size. Files V1.21 directories can be before files in list. Lower casing of directory names can be suppressed. Guardian menu can be suppressed on Execute file.

This program was created by Tony Tebby, one of the key people responsible for bringing the QL to us in the first place. It is a program that has continued to evolve over the years, for which we owe Tony a big thanks. He is also the one to credit with Tool Kit 2, which many of us have come to rely on for extending the use of our QL, and getting the most out of our disk and file handling. This program is also one that has seen constant evolvement, and is available on Trump Cards, Gold Cards, Super Gold Cards, QXLs, disk and on eprom. To get the latest versions contact Care Electronics, Dilwyn Jones Computing or Mechanical Affinity.

Other fine programs have also come from Care Electronics and Tony Tebby, including QTYP2, which all of us who use Perfection with spellchecker and Text87Plus4 are well acquainted with. It is also available on its own and available from the above listed sources.

QPAC2 is the sort of program that allows those who want to be able to multitask and easily switch back and forth between Jobs to do so. It is, however, a program that requires a bit of study to come to grips with. It is best tackled with the help of a friend, user group, or you should obtain the public domain program called QPACER to help you set it up for your uses. It is available from QUANTA or from user group libraries.

We also have two other fine QL front end programs that you may be interested in. One is QTOP and the other is CUESHELL. Both are also excellent, and achieve the same end by different means. These will be covered at a different time. Both are available from Mechanical Affinity and Dilwyn Jones. With programs like these one should never wish he had Windows (IBM front end) on their computer.

QL SURVIVORS SOURCE BOOK

2ND EDITION -- This book contains worldwide lists of all QL BOOKS; PERIODICALS; BULLETIN BOARDS; USER GROUPS; HARDWARE and SOFTWARE DEALERS; PUBLIC DOMAIN and SHAREWARE SUPPLIERS. Nowhere else can you find all of this data in one easy to use source. This is a work of art by the same great folks that brought you IQLR, and offered by UPDATE Magazine. When we sell out of current stock it will be gone. It is now available for only $10.00 US$, and this now includes all postage and handling in the North and South American areas. Order now and it will be shipped to you by either First Class Mail or Priority Mail; no more waiting around for slow UPS delivery! Whatever it is you are looking to buy for your QL, this will tell you where to look for it, along with phone and fax numbers, as well as addresses.

Z88 SOURCE BOOK

This book was compiled by Tim Swenson and published by UPDATE Magazine, and was designed to be a good and concise reference book on the Z88; how to interface it with the rest of the worlds computers; what products are available for it and where to find them. It will not replace your Z88 user guide, but will instead supplement it, and fill in areas that were missing by putting all this information in one easy to use book. When you order it we also include a disk of utilities and programs that are discussed in the book. This is available in the following formats: QL in 3 1/2 1440 or 2880 sector disks; QL in 5 1/4 720 or 1440 sector disks; IBM 360K 5 1/4 disks; IBM 720K 5 1/4 disks; IBM 720K 3 1/2 disks; IBM 1.4 meg 3 1/2 disks. Please let us know with your order which type and size of disk you need. The price for all of this is $7.00 US$, which includes P. & H. in North America, and elsewhere $7.00 US$ plus $2.00 US$ for the additional postage we have to pay. We will accept for foreign orders the cash equivalent, plus 10% for conversion, if you are unable to obtain a money order or travelers check in US$. We want to make this information widely available, so we are trying to be as flexible as possible.

NEW!

for the Cambridge Z88

VERSION 4.0 ROM

JUST **£24.95**

Including VAT and UK Delivery. Overseas price is the same - the VAT offsets the extra postage costs.

SEND CHEQUE, POSTAL ORDER OR CREDIT CARD NUMBER & EXPIRY DATE TO:
WOODWARD TECHNOLOGY, PO BOX 15, BELPER, DERBYSHIRE. DE56 0XE.

RANGER

Z88 Price List

COMPUTERS	
Z88 (UK)	£189.95
Z88 (Ranger version)	£201.50
Z88 (Int. versions)	£215.95
Rugged Ranger	£299.00
Amstrad NC100	£169.36
Psion Series 3 - 256k	£212.72
RAM MEMORY	
128k RAM Pack	£32.95
512k RAM Pack	£87.95
1M RAM Pack	£136.13
EPROM MEMORY	
32k EPROM Pack	£16.95
128k EPROM Pack	£23.95
256k EPROM Pack	£51.02
EPROM Eraser	£38.95
Z88 COMMUNICATIONS	
RangerLink (25 pin)	£54.00
RangerLink (9 pin)	£54.00
RangerLink Upgrade	£30.00
PC Link II	£27.95
BBC Link	£8.95
Z88-to-Mac	£32.95
Parallel Cable	£18.95
Serial Cable	£7.95
BABT approved Modem	£207.00
CARRYING CASES	
Plastic Case	£6.95
Leather Case	£30.00
Topper	£8.95
Field Case	£70.00
POWER SUPPLY	
Mains Adapter (UK)	£8.75
Nicad Battery Pack	£23.00
Nicad Pack + Charger	£37.50

APPLICATIONS SOFTWARE	
Spell-Master	£52.00
SqueeZ~88	£44.00
RangerUniverse 2	£99/125
PC PipeDream (3.5")	£99.00
PC PipeDream (5.25")	£99.00
Vision-100	£175.00
Z-Term	£43.50
BJ10e Printer Driver	£20.00
PERIPHERALS	
RangerDisk 1- last few	£150.00
RangerDisk Mains Ad.	£17.50
RangerDisk PC Driver	£30.00
RangerDisk3 for NC100	£229.00
ADAM A/D Converter	£250.00
Barcode Wand (HP)	£250.00
CCD Scanner	£277.50
PRINTERS	
Canon BJ10ex	£250.00
BJ10 Sheet Feeder	£55.00
BJ10 Battery Pack	£39.00
BJ10 Ink Cartridge	£19.95
Diconix 150+ (P)	£345.00
Diconix Ink Cartridge	£13.00
BOOKS	
Z88 Developers Notes	£40.00
Z88 BBC BASIC	£14.50
Z88 Magic	£14.95
Z88 PipeDream (Dabs)	£14.95
Z88 User Manual (CCL)	£17.00
DELIVERY	
Next Day	£12.00
Post UK (Small)	£3.50
Post UK (Medium)	£5.00
Post UK (Large)	£6.50

All prices subject to VAT. Deliveries to export destinations can be made VAT free. Delivery charges include insurance. Next day delivery available to England and Wales. Please enquire for prices to offshore islands and Scotland. Postal service is by First Class Recorded Delivery to UK and BFPO. Please enquire for postal rates to other destinations.

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE. E&OE.

Z88 NEWS AND INFORMATION
by Frank W. Davis

What is new for the Z88 over on this side of the big pond (Atlantic Ocean) in 1994? Not as much as I would like to report on, and yet a few very good things.

The first item of interest for those who are Z88 users is that now Mechanical Affinity can offer a service that was not available here before. Have you got a Z88 plug in eprom cartridge that you would like to have erased, so that you could re-use it? As we all know, they do not fit into the standard eprom erasers we are all so familiar with. Now, by sending the eprom cartridge to Paul Holmgren (for address and phone see the Mechanical Affinity ads) and he will be able to use our special eprom eraser that zaps them clean in just a few seconds. Send $5 for the first eprom and $4 for each additional eprom you need erased. This also covers the postage, and should be a fairly fast turnaround, unless we really get swamped with the demand. This will allow you to get rid of files or programs you saved to eprom, but no longer need.

Most of you know that UPDATE! publishes the Z88 Source Book. Did you know it is in its second edition and is even better now? We owe a BIG thanks to Tim Swenson the compiler of this and to Crosby (no first or last name, just Crosby) from Arizona who picked the print style and laid it out for us to print. We still offer the disk of the programs that are public domain or shareware mentioned in the book free with the purchase of the Z88 Source Book. They are in either IBM or QL disk format, your choice.

Now for the inquiry of the season. At Mechanical Affinity, we have a chance to buy into 5,000 NEW Z88 COMPUTERS! Would it be worth our while to acquire some of these for resale here in North and South America? This also includes extra memory, lots of eprom cards, cables, toppers, etc. We do not want to spend a lot of money on something that is going to sit in stock and take a long time to sell. You are going to have to be the judge of what you want and let us know about this.

Paul and I offered a small lot of 15 of these before two years ago and they were gone in three weeks. Does anyone else want to get a Z88? The ones we had before were all refurbished, but these are brand new. The price will probably be in the range of $200. The number we can sell will, of course, determine what we will have to pay for them. This, then sets what we must charge for them to you the customer. Myself I have found it an extremely handy little machine to take on the road, and it goes great with my portable Canon Bubble Jet printer. They are very quiet to operate, run for about 20 hours on a set of 4 double A batteries, and have a built in eprom programmer to save files to. There are programs available to save files off of the Z88 to your IBM, QL, MAC or to an Amiga. If you check our past ads, you will notice that some companies also make a portable disk drive for them to save and use

their own files. It has a built in database, word processor, communication program, appointment book, clock, alarm, and a host of other applications. The screen is built into this 2 pound marvel. No hard drives are available. It can be run from an adaptor, as well as from batteries. Call to Frank Davis, evenings at 317-473-8031, to let me know if you have an interest. Please do so soon, so Paul and I can decide what to do.

Have you seen the new RENEWAL Reusable Alkaline Battery from RAYOVAC? They can be recharged in their own special recharger upto 25 times, and they work dandy in the Z88. They do a better job than NICADS in the Z88. When you use NICAD batteries they do not have a full 1.5 volt charge as you get in alkalines. Because of this, when used in a Z88 the NICAD will not give you full power. This is too bad as most NICAD batteries can be recharged (if properly taken care of) hundreds of times. It seems to me that you should stick to either regular alkalines or get the new RENEWAL Reusable Alkalines. You need to make a one time purchase of their own recharger. It never overcharges and will intelligently check on batteries left in it to see if they need another bit of charge to keep them optimal. Pretty neat if you think about it.

Say, what ever happened to the 50,000 Z88s that have been said to have been sold to Apple Macintosh users? And how about the 15,000 that we are told were sold through the Home Shopping Network? Not to mention those sold by mail? With even that many I would expect to see more mention of them these days. That is more than all the TS2068s sold in North America, and they still keep popping up at computer shows and the occasional mention on the BBSs. I have been to many computer and hamfest shows over the last 8 years and have not seen the first one come up for sale used at these shows. Did they all get broken and thrown away? Perhaps they are mostly still quietly in use, or at least tucked away rather than thrown away. Things of this nature just get me curious.

If you have one and it is a version three ROM, or earlier, then I would strongly suggest you consider getting the new version four ROM. It cures some lockups that you may have thought were hardware related. See some of the recent past ads in UPDATE! to see where to get these.

HAPPY COMPUTING ON YOUR Z88 TILL THE NEXT ISSUE OF UPDATE!

THE HIGHEST KNOWN ACHIEVEMENT FOR THE Z80 CHIP SET IN A PERSONAL PALMTOP COMPUTER, THE CAMBRIDGE Z88!!!!!!!!!!!

SEND US YOUR Z88 NEWS, AND IF YOU SELL SOMETHING OR THEM, LET US KNOW. IT PAYS TO ADVERTISE IN UPDATE MAGAZINE.

Z88 USERS' CLUB

If you own a Cambridge Z88 portable computer, or are thinking of buying one, then the **Z88 Users' Club** is for you! The Club was established in 1987 to help users get more out of this powerful laptop computer, and from modest beginnings has grown to encompass the combined experience of around **2000** members.

BENEFITS OF MEMBERSHIP

● **CLUB MAGAZINE:** Called **Z88 EPROM**, this is the only U.K. magazine dedicated to Z88 Users. Printed in a handy A5 format, each issue normally has 36 pages packed with news and views about the machine, members' letters, hints and tips, articles and of course in-depth reviews of all the latest hardware and software for your Z88. The magazine is sent by post six times each year to all members.

● **SOFTWARE LIBRARY:** As well as short programs printed in **Z88 EPROM**, the Club has an expanding Library of about 200 programs and applications written by members. These range from the BASIC Patch, which implements a line editor and graphics commands within Z88 BBC BASIC, to QL, ST and PC file transfer programs. Available FREE to members through the Club Library Service, the programs are copied onto your own EPROMs or disks. Also, for a small charge which covers p&p, we are able to combine several 32k application ROMs onto a larger EPROM. Full details when you join the Club.

● **PROBLEM HELP:** We can help with your Z88 queries in two ways; the regular Queries Hints and Tips section in most issues of **Z88 EPROM** will answer many of your questions, or alternatively you can call on the expertise of our network of Helpliners - members with particular experience in certain subjects, who will assist other members with their problems.

● **SPARES SERVICE:** By arrangement with Cambridge Computer Ltd, the Club sells a wide range of Z88 spare parts to members, all of which are supplied with easy fitting instructions.

● **CLUB DISCOUNTS:** The Club occasionally negotiates Special Offers for members on certain Z88 products.

● **EPROM ERASURE SERVICE:** Why pay £40 for an EPROM eraser, only to use it every few months? Send your EPROM to the Club Software Library with the 50p service charge and return postage, and we will erase it and return it to you.

● **LIAISON WITH CAMBRIDGE COMPUTER:** Although the Club is a completely independent organisation, we have the full co-operation of Cambridge Computer Ltd, the Z88's manufacturers, and we liaise with their Technical Team as required.

Membership of the Club is by subscription to the Club Magazine, **Z88 EPROM**. A current subscription to **Z88 EPROM** also entitles you to the other membership benefits listed above.

HOW TO JOIN THE Z88 USERS' CLUB

Z88 EPROM is published 6 times each year and subscription is for 6 or 12 bi-monthly issues, sent post-paid to your address. All overseas subscription rates include Air Mail postage. We regret that a Surface Mail service is not available.

● **HOW TO JOIN:** Select the correct subscription rate for your address, fill in the application form below and send it with the correct payment to the Club Address. We will process your application and send you your Membership Pack, which includes your first issue of **Z88 EPROM** together with details of back numbers, Software Library, spares service etc.

SUBSCRIPTION RATES

	6 ISSUES	12 ISSUES
U.K./BFPO/C.I.	£8.95	£17.90
Rest of Europe	£13.00	£25.00
Middle East	£17.00	£33.00
America and Africa	£17.00	£33.00
Elsewhere	£18.00	£35.00

All Cheques/P.O.s **MUST** be in Pounds Sterling, and cheques **MUST** be drawn on a U.K. Bank. Overseas, a Post Office or Bureau de Change can arrange Sterling cheques. Eurocheques are acceptable, but **MUST** be endorsed with your guarantee number on the reverse.

We also accept Access/Mastercard and VISA for subscription payment.

PLEASE MAKE ALL CHEQUES PAYABLE TO "WOODWARD TECHNOLOGY"

MEMBERSHIP APPLICATION FORM
PLEASE USE BLOCK CAPITALS

I wish to subscribe for 6/12* issues of **Z88 EPROM**. *DELETE AS APPLICABLE.

*I enclose cheque/PO for £.....

*Please debit my VISA/Mastercard with £.....

Card Number: .....

Expiry Date: ...../..... Signature: .....

NAME: _____

ADDRESS: _____

_____

_____ POST CODE:_____

TELEPHONE NO: _____

Cut out the coupon and send to:
Dept. S, Z88 Users' Club, P.O.Box 15, Belper, Derbyshire. DE56 0XE.

OFFICE USE ONLY BELOW THIS LINE

QL UPDATE ISSUE DISKS

These disks contain at least one MAJOR piece of software written specifically for disk drives and are guaranteed to be worth the money. The rest of the disk space is filled with various utility programs, or support files either for the major piece of software or from various issues of UPDATE. Some files are taken from public domain or shareware if deemed of sufficient use. Half of the money goes to the contributor of the issue disk on a bi-annual basis. The rest goes to UPDATE to support the issue disk program. All are $20 US$, except where noted. Add $5 US$ extra for shipping outside of North America. All known QL disk formats are supported; please tell us which you need.

1) HARTUNG UTILITY ISSUE DISK- Here are some excellent programs, such as a stand alone database, Address and QSO files. All are written in SuperBasic. This gives lots of programming hints and tricks for QL programmers. This has been recently updated and improved by Bob Hartung. The Address File can be used as an Inventory program, or use it to print out labels. Both paper or screen printout can be Alpha sorted or by last name. $15.

2) CABLE ARCHIVE ISSUE DISK- Written by Bill Cable. Contains many useful ARCHIVE programs that work on any Archive database. Titles include: DIR (directory within Archive), SCAN (quick database display and print), FREQ (frequency distribution of a field), SPLIT (split 1 database display and print), JOIN (join 2 databases into 1), REFIELD (redefine field names), REPLACE (replace text within a database), MATCHER (find dupes within a database), WINDEX (word index any text file), GROUP 1 to 3 (useful procedures from UPDATE articles), QUERY (interrogate any database). Also includes extensive DOC files about the programs and ARCHIVE in general. The price is $20.

3) QLUSTER 5s109 ISSUE DISK- A great program from Al Feng to provide you with many utilities to handle & unclutter your disks & MDVs (and it now supports sub-directories). Some of the features concern COPY, DELETE, FORMAT, VIEW, as well as extended use of some of the TK2 commands (TK2 needed for this program).The program is TURBO compiled for a speedy program. It is MINERVA compatible, multi-tasks and allows you to use minimal keypresses to do the job. The price is $15.

4) QLuMSI DOS 4.30 ISSUE DISK- The latest version of Al Fengs extensively updated MSDOS simulator and front end program for the QL. Other programs on the disk enhance file management and cloning of other programs. Educational and useful. The price is $20.

5) QLAMBer- Al Fengs latest issue disk. He calls it A-Moving-Box/enhancedrelease. This greatly extends the selective file management capabilities of the QLUTter program by additionally accessing six TK2 keywords, while reducing CODE size, easily supports sub-directory access, and easily multi-tasks within QRAM or Taskmaster. TK2 must be on ROM or loaded prior to start up of program. The price is $15.

TS2068 UPDATE ISSUE DISKS

These disks contain at least one major piece of software written specifically for disk drive and are guaranteed to be worth the money. The rest of the disks are usually filled with various utility programs taken from the issues of UPDATE, shareware or public domain. On most of these, half the money goes to the author and is meant to encourage new programming for the TS2068 that makes use of the various disk drive systems. To have your particular disk system supported here requires that someone write or alter the software from one system to the other. We are always open to your help and suggestions, but have limited time and programming resources available here. The prices are as listed beside each piece of software. We can provide all but 3" disk formats as far as size and disk density. We accept cash, checks, money orders and C.O.D.

1) THE WIDJUP COLLECTION, contains most of the popular programs formerly offered by WIDJUP and written by the late Bill Pedersen. This is a two disk set, and does not include his CAD Program. It contains editors, printer drivers, games,TS2068 tutorials, etc. This is a new release and we will have more about it next issue. In Oliger or Larken disk formats. The price is $20.

2) WIDJUP'S CAD PROGRAM, a long time favorite that will give you professional results from your TS2068 in the area of computer aided design and the development of printed circuits. With the right graphics it has been also used to print a page for desk top publishing, or computer art. It requires no expanded memory and is available for the following setups: (a) Oliger, for either the Olivetti Ink Jet printer, or for IBM compatible printers. (b) Larken for IBM compatible printers or for the Olivetti Ink Jet printer. Please specify disk size, format and printer type. The price is $20.

3) OLIGER DISK DRIVE BBS PROGRAM, this creates a single user BBS program, with several message bases, E-mail, and SYSOP Chat area. We have also added many other Oliger disk programs to this collection, as well as some playtime. This was written by Paul Holmgren. The price is $20.

4) 24-PIN BIT IMAGE GRAPHICS FOR 24-PIN OR BUBBLE JET PRINTERS, for Epson emulation modes, by Larry Crawford. This program takes the mystery out of graphics and some of the newer printers out there on the market. We also include some extra software with this one, and for just $15. It is available in Larken and in Oliger disk formats.

Needless to say we are always interested in a new issue disk we can present here for our readers, so those who are out there writing programs, send them to us to look at. This helps to keep the TS2068 alive. It is also a way to pick up some pocket money. We usually make royalty payments twice a year based on previous sales.