THE KIM FORUM

Rick Simpson

KIM is having an identity crisis. Is it just a very good system for the microcomputer novice? Or does it have the capability to compete with the "big boys" as a full-blown microcomputer *system?* Can a small board designed to familiarize the engineer with the MCS6502 microprocessor grow up to be a real computer? Is putting a floppy disk on a KIM like attaching water skis to a canoe? Where, in short, do we go from here?

My visit to the MACC convention in Cleveland in mid-June let me witness a variety of ways people are trying to answer these basic questions about KIM. I went to the show to see if users were seriously interested in large-scale software for KIM. I didn't expect a huge response since KIM systems with 8K or more of memory are still pretty rare. I shared a booth with Eric Rehnke, editor of the *KIM User Group Newsletter.* There were plenty of visitors to the show, and the exhibitors represented most of the larger computer stores in the Midwest. When I decided to attend, I never dreamed that the KIM would be one of the most widely represented systems at the show, but it was. Seven of the 40 booths in the show had one or more KIMs on display (there wasn't an Altair to be seen!).

One of the most ambitious offerings was at the Riverside Electronics booth, where they were showing a KIM-1 mated to a motherboard of their own design. Their board accepted Altair modules, their own video interface board, and had sockets for several 2708 EROMs, as well as several K of RAM. They should be delivering by the time you read this.

Newman Computer Exchange, of Ann Arbor MI, was showing the KIMSI motherboard for the KIM-1, which also accepts Altair modules; and Johnson Computing was exhibiting both KIM and the new OSI system, which is 6502-based. Johnson was also taking orders for Commodore Business Machines' new PET computer for delivery in late fall.

United Microsystems has come up with an ingenious answer to the perennial question, "How do I package a KIM when I build a system around it?" Their KIM-ALPHA is a molded plastic case, which looks like a computer terminal, complete with full keyboard and integral video monitor. Inside are a KIM-1, expanded memory and video interface.

Newman Computer was also showing a "barefoot" KIM running Peter Jennings' MICROCHESS — still the best program I know of to convince people who've spent four times the price of a KIM-1 on a larger system that they may have made a mistake in brushing off KIM as "too basic to do anything really complex."

From my point of view, the most fascinating use of KIM was in a noncommercial booth — that of SEMCO, the Southeast Michigan Computer Organization. SEMCO will host the next MACC convention June 23-25 at the Detroit Plaza Hotel. SEMCO is obviously a hotbed of KIM activity — they purchased a copy of FOCAL at the show, had it up and running in about fifteen minutes and loved it so much they took it up to their room to play with it all evening. Rene Vega showed me some of the software they've written for their KIMs. It included a cassette operating system and the start of a full operating system for KIM. They had also written an excellent keyboard-video RAM monitor, which had the game of LIFE implemented as well.

A Different Kind of "Software"

Eric Rehnke, Stan Ockers and Jim Butterfield have gathered their considerable KIM experience together and produced *The First Book of KIM* ($9 from ORB, P.O. Box 311, Argonne IL 60439). Eric needs no introduction; Stan is best known for his "Hunt the Wumpus" program for KIM, and Jim has produced an endless stream of games and utility programs for KIM, including the "Supertape" routines. (See Jim's article on "Hypertape" on page 66.) They describe the book as "a collection of dozens of programs — some useful, some recreational, all tested and documented . . . . Also included is a beginner's guide and other information useful to current and prospective KIM owners."

As a sneak preview, I'll also mention that Caxton Foster of the Computer and Information Science Dept. at the University of Massachusetts is the author of a college textbook for use in microprocessor-oriented classes. All programming examples use KIM. This should be a natural for the many colleges that now use KIM in their computer science curriculum. The book should be ready by next spring.

A Case for KIM!

Another KIM problem has been solved. The Enclosure Group, 55 Stevenson St., San Francisco CA 94105, has come out with a very neat enclosure for a "naked" KIM-1. Their solution makes KIM look like an oversize calculator, with cutouts in the side for the two connectors. There doesn't appear to be room inside for a power supply or any expansion boards. The case comes in a choice of four colors and costs $24.95. When you order, tell them whether your KIM has its single-step switch on the right or left side of the keypad since MOS has used two different keypads and each requires slightly different cutouts.

A User Comments on a KIMath Problem

"I am writing concerning an error in the KIMath routines. The routine USTRES (FEBA) is supposed to unpack the RZ register and store the results at address specified by (RES, RES+1). The routine actually leaves an empty cell between the last ASCII digit of the mantissa and the first digit of the exponent.

This is caused by using the INY instruction at FED1. The Y index is correctly positioned by the INY instructions at FEC1, but once all digits of the mantissa have been moved the Y index is incremented *twice.* This points the index to one cell past the end of the mantissa." (John Eaton, Vincennes IN)

PET vs KIM

Unless this is the first issue of a personal-computing magazine you've ever looked at, you must have heard about Commodore's (MOS Technology's parent company) PET personal computer (even though Commodore has never run an ad for it anywhere!). The PET has a built-in video monitor, keyboard, cassette drive and BASIC, and an operating system in 13K of

ROM (yes, 13K!). It also includes 4K of RAM and is expected to retail for $598. I'm often asked, "Should I buy a KIM now or wait for the PET?" The answer, as usual, depends. If you have $600 to spend all at once, only want to work in BASIC and want to do your interfacing, if any, through the IEEE-488 bus structure *and* are willing to wait till after Christmas (yes, they'll be introduced around November, but the supply will be mighty short), then perhaps the PET is for you. If you want to expand your system modularly, get your system in a month, use BASIC, FOCAL, or assembly language, depending on the job to be done, and start with an investment of $250, then KIM may be better for you.

My final observation on this subject is that most owners seem to enjoy seeing how far they can stretch the capabilities of their KIM. Every one I've seen seems to have some user-supplied (and often user-designed) circuitry trailing behind it. LEDs, speakers, A/D converters, relays, all seem to gravitate to KIM, and there is no doubt that the built-in

timers, keypad, and I/O lines encourage these efforts. What have you put on your KIM?

"The statement 'This adjustment has been factory preset and should only require adjustment due to component replacement,' in reference to the KIM-1 PLL free-running frequency is *not correct!* In less than a year's time, and on at least two occasions, I have had to readjust the VR1-5K trimmer pot in order for the cassette interface to work at all! Both failures were due to a change in humidity or temperature-pressure when the interface went from an air-conditioned environment to either a low-pressure, very dry condition, or to a moist muggy-hot atmosphere in field use of KIM.

"The low-quality 5K carbon-paper composition trimmer pot is the source of difficulty here. The resistance value may change as

much as ten percent for a humidity change of 60 to 95 percent, and similarly the temperature coefficient of this type of cheap carbon trimmer can be as high as 2000 ppm/°C. Use of a better-quality metal film or carbon film trimmer here would undoubtedly reduce the number of factory service requests for those who are timid and heed the warning on page E-2 of the *KIM-1 User Manual*.

"Adjustment of the VR1 pot is actually rather easy. A jumper is connected between pins A-P and A-L. A test monitor program located at address 1A6B is initiated and a dc voltmeter connected from pin E-X (PLL test) to ground. The VOM should read between 0.7 and +3.0 V when VR1 is properly adjusted. A reading of zero or +5 V is incorrect and usually indicates the center frequency is off for proper tracking of the PLL on playback. I try to trim this to about +1.4 V for best operation; however, the adjustment is very critical relative to the rotation of the trimmer pot. The very smallest turning of the trimmer produces a big change in the threshold adjustment

— again indicating that a better quality potentiometer would make life much easier for the KIM-1 user." (R. W. Burhans, E. E. Dept., Ohio University, Athens OH)

At Long Last —
8K BASIC

I mentioned that BASIC is now available for KIM. Following close on the heels of the BASIC for OSI systems, Johnson Computers, 123 W. Washington St., Medina OH 44256, has announced the availability of a version of the famous Micro-Soft BASIC specially configured for KIM. Once again, the 6502 is proved to be one of the fastest processors available; BASIC on KIM runs faster than any BASIC reported in the recent *Kilobaud* benchmark tests, beaten only by the integer BASIC running on the APPLE I — another 6502-based machine. Take that, Z-80 owners!

Preliminary information states that the BASIC is available on KIM cassettes

AROUND THE INDUSTRY

John Craig

Isaacson Nominated to Chair Store Owners' Association Committee

Dallas TX — Portia Isaacson, vice-president of Binary Systems Corporation, was nominated June 17 to be chairperson of a committee to form the first national association of independent computer store owners.

The initial exploratory meeting of some 40 store owners was held in Dallas at

the National Computer Conference convention.

In addition to Dr. Isaacson, who represented the Dallas area Micro Stores, which are retail affiliates of Binary Systems, Inc., others elected to the committee included: Ray Borrill, the Data Domain, Bloomington IN; Dick Heiser, the Computer Store, Santa Monica CA; Larry Stein, Computer Mart of New Jersey, Iselin NJ; Joseph Kappl, Byte Shop of Thousand Oaks, Thousand Oaks CA; Hollis

Rogers, Computers Etc., Houston, TX; Cary Fitch, The Computer Store of Jacksonville, Jacksonville, FL; and Sam Knecht, Computer Systems Design, Wichita, KS.

An organizational plan covering bylaws, goals, services and budgetary considerations for the association, which will be known as the "Computer Retailer's Association," was presented by Los Angeles attorney Kenneth Widelitz.

Widelitz also suggested a plan for getting the association " off the ground." An interest-bearing trust account will be established. Store owners interested in forming a national association should send a $100 check made out to the account, and include comments and ideas along with their remittance. Checks should be made payable to

Computer Retailer's Association and sent to Kenneth Widelitz, 10960 Wilshire Boulevard #1504, Los Angeles CA 90024.

If less than 20 computer-store owners respond — the minimum number required to form a trade association in California, according to Widelitz — each $100 contribution, plus interest, will be refunded.
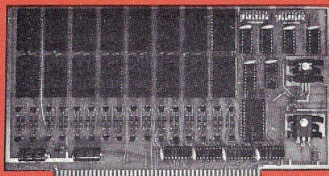
Contributors to the trust account will be charter members of the association.

No later than November 15, Widelitz will report on the status of the trust account listing the contributors and including a ballot for selecting a committee of owners to finalize the articles of incorporation and the bylaws.

These committee members will likely serve as the initial directors of the association.
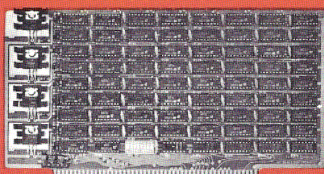
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efficient the coding is. Lines 20 to 40 form the repeating or iterative calculation. The GRADEs are read one by one from the supplied data, and a running total is kept in SUM. COUNT keeps track of the total number of grades read. The -1 is used to mark the end of data (grades) and trigger the final averaging. Though only three variables are used, the number of grades in a given averaging is not limited to a fixed value. In addition, the DATA statements can be easily viewed for accuracy and necessary corrections made before running the program. In short, the iterative scheme is highly advantageous. Our friend was convinced. His first thought now when faced with a programming problem is how to solve it by "going round in circles" that is, by iteration.

Address any comments or suggestions you might have to:

BASIC Forum
Dick Whipple
P.O. Box 7082
Tyler TX 75711

Next: More about iterative programming.

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for $99, with full documentation.

A Confession

I have never claimed to be objective about KIM; she was my first microprocessor love, and I can't seem to leave her. After a three-month absence from MOS Technology, I have rejoined them, and will continue to manage the KIM program for MOS. This is great for me, since I no longer have to feel guilty spending business time talking to people about KIM — it's my job! If you feel that this represents a conflict of interest, write to John and he can fire me!

If you have questions or comments on KIM, you can contact me at MOS Technology, 215-666-7950.

KIM Forum
c/o Rick Simpson
314 Second Ave.
Haddon Heights NJ 08035

LEGAL/BUSINESS FORUM

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sults.

"At different times, then, a given program is both 'source' and 'object,' both a writing and a mechanical tool or machine part. Printed instructions tell how to do; programs tell how *and* do."

Hersey goes on to offer a social comment based on his objections to the use of the Copyright Law to protect software. He writes, "Progress is progress, and we can guess that we must have all these products of human ingenuity in order to keep one jump ahead of entropy. But a definite danger to the quality of life comes with a blurring and merging of human and mechanical communication."

Hersey concludes that the solution is a proposed "Computer Software Protection Act." Although it differs from the copyright approach, Hersey's proposal seems to me to offer the same rights to the owner of software as the Copyright Law. Those rights raise some philosophical questions in and of themselves.

"Copying" is the exclusive right of the copyright owner. When is a com-