

# MICROCOMPUTERS: THE FIRST DECADE

"World's First Minicomputer Kit to Rival Commercial Models . . ." That's what the cover of the January 1975 issue of *Popular Electronics* proclaimed. The featured article described the Altair 8800, a \$400 microcomputer kit. Although it was not the first microcomputer kit to appear, the Altair was certainly the most significant. While the Altair is now long gone, its descendants, the S-100 bus microcomputers, live on.

The basic Altair was very different from today's basic microcomputer. For his \$400, the kit builder received all the parts required to assemble an 8080-based microcomputer, but some of the things we consider vital today were missing. For example, the Altair came with only 256 bytes of memory, a miniscule amount by today's standards. The only way of communicating with the Altair was by entering commands and data via a set of toggle switches on the front panel and determining the results by examining two rows of light emitting diodes. As for software, there simply wasn't any. No Pascal, no BASIC, not even an assembler.

Despite these limitations, the Altair became very popular with electronics hobbyists. One of the most important features of the Altair was its electronic "bus". This allowed additional electronic circuit cards to be easily installed. Soon, it seemed that everybody with a little bit of money, a fair bit of technical knowledge, and a garage or basement was building add-on cards. With these add-ons, Altair owners could add more memory to their computers, communicate with them via conventional keyboards and video displays, save and load programs on cassette tapes, and much more. In order to take advantage of these add-ons, other microcomputer makers also adopted the Altair's bus, which is known today as the "S-100 bus".

As more hardware appeared, so did software. At first, there were just a few assemblers and machine language monitors. Then along came something called Tiny BASIC. Although it was not up to the standards of the languages available on larger com-

puters, Tiny BASIC allowed microcomputer owners, for the first time, to program their machines in a moderately high-level language. Soon Tiny BASIC was not enough. Enter Bill Gates and his enhanced BASIC interpreter. People started adding floppy disk drives to their computers and needed software to operate the disks. Enter Gary Kildall and his CP/M (Control Program for Microcomputers) operating system.

This was the Golden Age of the "garage manufacturers", tiny companies that were sometimes literally run out of garages. Most of these companies, and many of their larger brethren, eventually went broke; ironically, some went out of business because they simply couldn't handle the demand for their products. A few have gone on to become giants in the industry, including Apple Computer, Compupro, Morrow, Microsoft, and Digital Research.

A little over two years after the Altair appeared, the microcomputer industry was undergoing a massive change. Within a span of just a few months, three new machines had been announced: the Apple II, the Commodore PET 2001, and the Tandy/Radio Shack TRS-80. These were the first microcomputers designed for relatively non-technical home users. Built right into these machines were the BASIC programming language, a keyboard, video display circuitry, and a cassette interface for loading and saving programs. A new owner could take one of these computers home, plug it in, and immediately start using it. This opened up a huge new market segment to the microcomputer manufacturers.

The response of the buying public to these machines was phenomenal. For example, when Tandy released its first TRS-80 computer in the fall of 1977, the company expected to sell 3,000 of them over the next year. Instead, 10,000 orders came in in just six weeks.

Soon, Apple, Commodore, and Tandy were dominating the microcomputer market. All three companies expanded their computer lines as they vied for top spot in the market.

However, another shake-up was due for the microcomputer field.

In the fall of 1981 IBM announced its PC. Unlike the previous milestones, this one was more due to marketing than technology. While the IBM PC did include some technical advancements, it was more important, especially to business users, that IBM had finally applied its stamp of approval to a microcomputer. Many of the business users who had been buying Apple, Commodore, and Radio Shack machines turned to IBM, almost instantly giving that company a large share of the market.

In the wake of the IBM PC, dozens of companies have adopted the "PC standard", just as the Altair bus standard was adopted way back when. Even the "old-timers" have, to some degree, accepted the PC standard: Apple has endorsed Rana's PC-compatible add-on for the Apple II line, Tandy has released the partly PC-compatible Tandy 2000, and Commodore is considering marketing a PC-compatible computer.

Amidst the flood of PC-compatibles, this year Apple introduced the Macintosh. The Macintosh (or Mac, as it is often referred to) features an entirely new way of communicating with the user. Instead of entering commands via the keyboard, the Mac user uses a mouse to manipulate pictures (known as icons) on the video screen. Whether the Mac will become known as another milestone or will end up as a footnote in the history of microcomputers, remains to be seen.

It certainly has been an interesting decade, and the next one is shaping up to be equally interesting. The Pacific Coast Computer Fair has been around for half the lifetime of the microcomputer and we are extremely pleased with the support we have received from the microcomputing community and the public at large. We are also proud of the calibre of speakers that we have been able to attract to Vancouver for this and previous Fairs. We hope to continue the Pacific Coast Computer Fair into the second decade of the microcomputer and beyond.

Brian Smith

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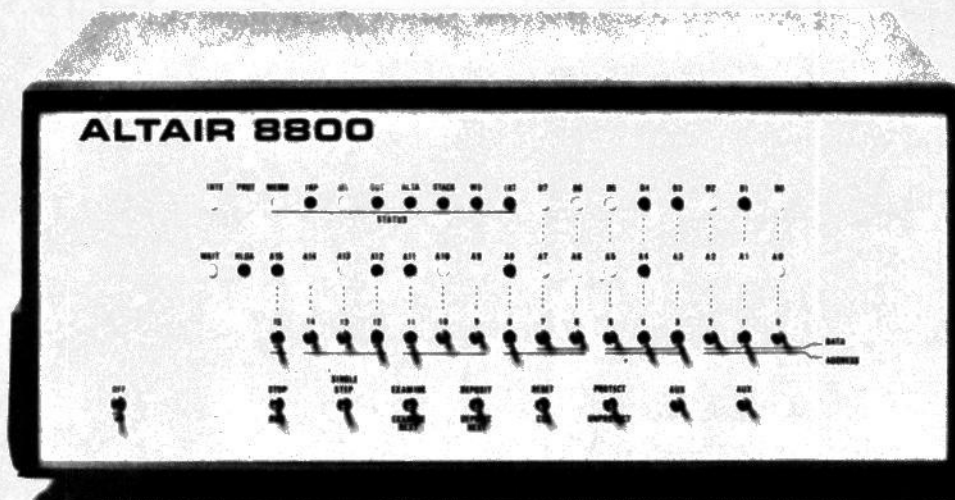
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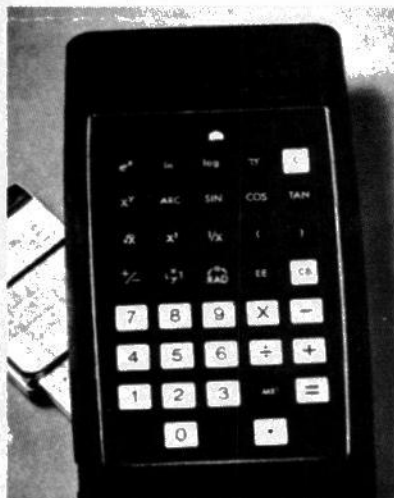
# World's First Minicomputer Kit to Rival Commercial Models...

## "ALTAIR 8800" SAVE OVER \$1000



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