



BARE BOARDS

Not all microcomputers are housed in carefully designed eye-catching cabinets. A variety of machines, ranging from the simple to the quite sophisticated, are sold as bare boards. One of the most versatile of these is Rockwell's Advanced Interactive Micro-computer, better known as the AIM 65, which is intended as a teaching and development aid.

At its simplest, the AIM 65 is a bare board, devoid of casing. However, from the operational point of view, it is very comprehensive and is the only development machine that has a printer built in. Most development systems are much less generous in their design. They don't have a proper keyboard, nor do they have the 20-character, 16-segment LED display that gives the AIM user a useful window into the machine.

These three features are not essential, but the more usual sort of machine — with a hexadecimal keypad, eight-character, seven-segment display and no printer — is far more difficult to operate. The essential requirements are input/output channels and memory, and in these areas the AIM

is more typical with a standard four Kbytes of RAM and 12 Kbytes of ROM; however, in this respect it is better equipped than some other development machines, which often have only one Kbyte of RAM and two, four or occasionally eight Kbytes of ROM.

Compared with business and home computers, almost all of which have a minimum of 16 Kbytes of RAM and frequently much more, a mere four Kbytes may seem meagre. However, the AIM 65 also has two good solid expansion connectors that allow you to add more boards, such as the 32 Kbyte static RAM board. In general, development systems are used in applications that don't require a large memory capacity, and it's surprising how much you can do in the three Kbytes or so available after the operational requirements of the machine have been satisfied.

Since the AIM 65 is built around the 6502 microprocessor, all the parts of the memory map have fixed boundaries. This demands that the bottom 512 bytes are RAM to accommodate the machine stack, which occupies byte locations \$0100 to \$01FF. Zero page, from \$0000 to \$00FF, is a special area used by the 6502 as 'pseudo-registers'. Because the address decoders don't have

Take AIM...

A complete AIM system can be a little untidy, although for neatness the keyboard and motherboard can be supplied in a case. This is ideal if you are using the AIM in its basic 4K form. For expansion, one extra card can be plugged straight into the back of the AIM. If you need more, you have to use an expansion chassis and connect it to the computer using the two cards and ribbon cable shown in the foreground. The blue metal box is the power supply



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