

# Aquarius

It comes from a company famous for their toys, but the Aquarius is a serious computer at a bargain price

With its Z80 processor and button-type keyboard, the Mattel Aquarius is in the Spectrum class of microcomputer. However, in many ways it is a much more flexible machine, largely because its built-in expansion bus has been well-exploited by its designers.

A variety of expansion modules can be connected through this bus, ranging from small RAMpacks of 4 Kbytes to a large expansion chassis. Perhaps the most useful of these is the 'small expansion chassis', which has two slots for extra memory or program packs, as well as two extra sound channels and two hand controllers. Plugging a 16 Kbyte RAMpack in one slot and a proprietary ROMpack, such as Finplan, in the other would give a quite versatile system.

The 4 Kbytes of RAM built into the machine is hardly generous, but with expansion of up to 64 Kbytes of RAM with the large expansion chassis, it's possible to run as large a machine as any home computer.

The keyboard and display of the Aquarius, however, lack the quality of larger machines. There's no space bar, and the keys don't respond very sensitively or quickly, so it's not suitable for touch-typing. The 24 line by 40 character screen, though bigger than some, is not adequate for small business use.

The display has 16 colours that can be used for either the text or the background. Though lacking user-definable characters, it has 256 displayable symbols, including upper and lower case letters,



**Mini Expander**

This device features two cartridge ports, allowing a program cartridge and memory pack to be connected simultaneously. It also features the two 'hand controllers' and three additional sound channels

CHRIS STEVENS



**Aquarius Printer**

This low-cost printer uses a thermal printing mechanism and so requires special thermal paper. It can print at a rate of 80 characters per second, across a total width of 40 columns. A four-colour printer/plotter is also available

and a selection of graphics symbols. It can also be used as a 320 x 192 pixel high-resolution screen. The display is output to the television, with no provision for monitor output. The quality is average with a noticeable bias towards blue shades and slightly blurred characters, but the picture is steady and bright, with a good range of colour.

Sound is available on this machine, although it lacks the sophisticated envelope and waveform controls found on others. A fairly standard Microsoft BASIC is built in, but Extended BASIC and an Aquarius LOGO are promised.

One of the most interesting add-ons planned for the Aquarius is the BSR X-10 system, which can control a range of household appliances. This system allows up to 255 different electrical devices to be controlled in response to signals generated by a central unit. No additional wiring is needed, since these signals are in the form of pulses sent down the domestic ring main. The pulses aren't large enough to make any difference to the mains current, but an X-10 detector plugged into any mains wall socket can pick up the code and alter the current supplied to its local appliance according to the command sent.

The controller unit is programmed in weekly cycles by the Aquarius, and during this programming operation the computer is unavailable for other uses. Provided the preset program is satisfactory, the computer is free for ordinary use at any other time.

**The Aquarius Keyboard**

The keyboard is one of the weaker points of the Aquarius. Though claimed to be a 'standard' QWERTY layout, it is only just deserving of the name. There is no space bar, only one SHIFT key, RETURN is in an unconventional position and the spacing isn't quite the same as on a typewriter



**RF Connector**

TV-compatible output appears here — there is no provision for monitor output

**Power Connector**

Power is applied here from a small transformer

**RAM**

The built-in 4K of user memory is contained in these chips

CHRIS STEVENS

**ROM**

The standard Microsoft 8K BASIC is held in these chips. The extensions that have been added to handle the graphics and sound take up the rest of the ROM space

**Modulator**

The screen display signal is converted into a standard TV signal, and appears on Channel 36