

Two local firms win design awards

Two local electronic companies — BWD Electronics of Victoria and Fairlight Instruments of NSW — have been presented with design awards by the Australian Industrial Design Council.

Fairlight Instruments were presented with the Industrial Design Award for development of the Qasar general purpose computer.

This computer features dual 6800 microprocessors in the central processor which enables the machine to think at the same time as it reads or talks to the outside world or the memory. The 6800s are clocked alternately at the maximum rate of 1 MHz and share bus and memory. The resulting speed is effectively more than twice as fast as a conventional micro since delays due to interrupts

are avoided. The Qasar applications to date include small business computers, communication data processing, industrial control and music synthesis (the Fairlight Computer Musical Instrument — CMI).

The most striking application of the Qasar is in the CMI, produced by Fairlight, where the speed is fully utilised to control the pitch, harmonic content, and envelope shape of up to eight independent sounds played simultaneously. The sounds may be prerecorded natural sounds stored in the memory, or electronically gener-



Above: Kim Ryrie, a partner in Fairlight Instruments, accepts the Design Award. Below left: the Qasar twin-processor computer.



Above: John Beasley, designer of the BWD-880 Powerscope, with the award-winning instrument.

ated sounds. The CMI is designed to be programmed by a musician with no knowledge of electronics and this is achieved through the use of a light pen and video display. The musician chooses the pitch of a sound using a separate keyboard with its own microprocessor, he then draws the envelope shape of the fundamental and up to the seventh harmonic on the video screen with the light pen. This modified sound is stored in the memory and can be played on the keyboard at any pitch. The amplitude of the sound is determined by the speed of depression of the key and it repeats until the key is released (sustain").

The CMI includes 210 K of RAM, two double-sided 8" (200 mm) floppy discs, keyboard, VDU and light pen. It sells for about \$23 000.

BWD Electronics received the award for the BWD 880 Powerscope on the basis of originality of design and safety of operation.

The Powerscope is an oscilloscope designed for examining waveforms in ac and dc power supply and control circuitry. It features an insulated cabinet which has been tested to withstand over 5 kV and shrouded probes which will accept trans-

ients up to 3 kV. The BWD 880 will measure signal levels as low as 100 mV and up to 600 V RMS or in dc supplies to plus/minus 500 V across circuit components directly connected in three-phase powerlines. Maximum measurement range is from 100 mV to 1 kV, with accessories provided to extend this range to plus/minus 2 kV dc or 1.5 kV RMS continuous operation.

A unique feature of the Powerscope, according to BWD, is its ability to provide the user with digital readout of phase angle between a zero crossover reference marker and a variable marker. This can be adjusted from zero degrees to 359 degrees in one degree steps. In addition, the reference marker can be repositioned in multiples of 60 degrees to provide immediate phase angle relationships in two-three-six-phase systems. Time measurement can be made from 100 nanoseconds to 100 seconds with triggering extending from dc to 10 MHz, say BWD. Vertical input bandwidth is specified as dc to 7.5 MHz.

Since its release, the Powerscope has become widely accepted in industry and education, both in Australia and overseas.