# BVME206/210

Parallel I/O Module

- Four independent 8 bit bi-directional parallel ports

- Two additional flexible handshaking lines per port

- All lines fully buffered

- Two independent 24 bit counter/timers with programmable clocks

- Full interrupt capability

- Uses dual MC68230 devices

- Range of Interface Modules for real world cable termination and isolation

- OS-9 drivers and utility library

- Single Eurocard 3U format

- Fully compatible with VMEbus specification C.1

The BVME206/210 are a pair of parallel interface cards offering similar facilities but with different I/O pinouts. The BVME206 is configured as a quad parallel printer interface whereas the BVME210 is better suited to monitoring and control applications which require bit manipulation.
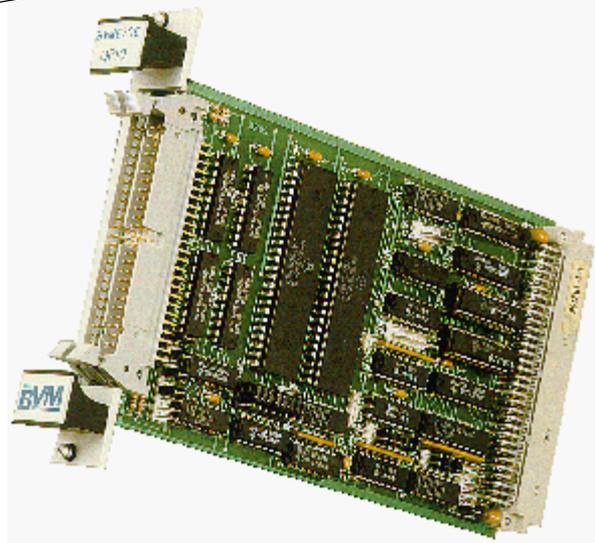
The modules use two MC68230 Programmable Interface/Timers (PI/T) chips which each include an independent 24 bit counter/timer. Each timer can be clocked from an internal clock or via the I/O interface and each is able to generate a vectored VMEbus interrupt.

Extensive OS-9 software support is available for these modules and real world connection is simplified by the use of the DIN rail mounting Plant Interface Modules (PIM). The PIMs provide various opto-isolation and relay options.

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General Operation

The module uses two MC68230 PI/T devices to provide the functions of parallel ports and counter/timer. The parallel ports are configured as four 8 bit ports with two programmable handshaking lines providing a total of 40 bits in all. All lines are fully buffered and can be configured as input or output in blocks of eight.

Counter/Timer

There are two identical timers within the BVME206/210, one in each 68230 device. These timers can each generate a square wave or a single interrupt after a programmed time period. The clock for the timer can be selected from the 8MHz system clock, the on board clock of 500KHz, 250KHz, 125KHz, 67.5KHz or from an external clock connected to the front panel connector. The latter enables the BVME206/210 to be used as an event or pulse counter.

VMEbus Interface

A fully compliant 16 bit slave interrupter interface is provided which can be addressed within the short I/O address space. All 32 registers on each of the PI/Ts are accessible from the VMEbus at an address which can be jumper selected on the BVME206/210.

The VMEbus interface supports address pipelining which allows other masters on the bus to start driving the address bus without waiting for completion of the current data transfer. Thus the address and data cycles can overlap, speeding up read cycles in multiple master systems.
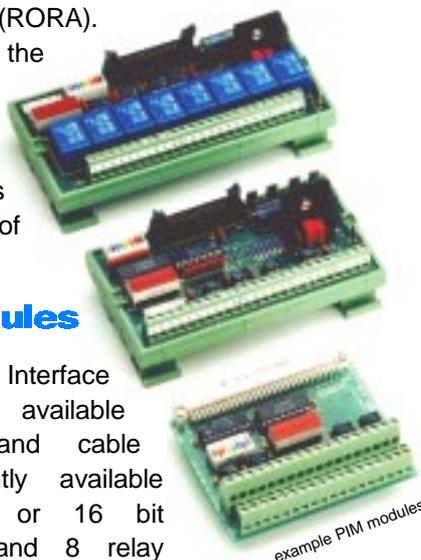
Interrupts

The BVME206/210 can generate interrupts selectable on any VMEbus interrupt level. There is one interrupt for each Timer and one for each port. The interrupts can be programmed to occur on change of state of the handshaking lines or on a zero count from the counter/timers. The interrupter operates on Release on Register Access mode (RORA). This means that the interrupt is only removed when the register in the PI/T has been serviced thus removing the danger of having interrupts lost.

Interface Modules

A range of Plant Interface Modules (PIMs) are available providing isolation and cable termination. Currently available versions provide 8 or 16 bit opto-isolated inputs and 8 relay outputs.

example PIM modules

Specification

VMEbus Slave
 A16: D16, D8 (OE)
 AM16 RMW

Interrupter
 ROAR
 I(1-7) Four Level
 Link Selectable
 SYSRESET monitor

Counter/Timer Device
 MC68230 PI/T

Input/Outputs
 Inputs - TTL Compatible
 Outputs - Open collector up to
 48mA

Links
 Register base address Interrupt
 levels
 Timer clock source

Dimensions
 160mm x 100mm
 3U single slot

Power
 5V 1.3amps
 +12V 0.0 amps
 -12V 0.0 amps

Environmental
 0 to 70°C
 95% humidity non-condensing
 (Extended specification available
 to order)

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