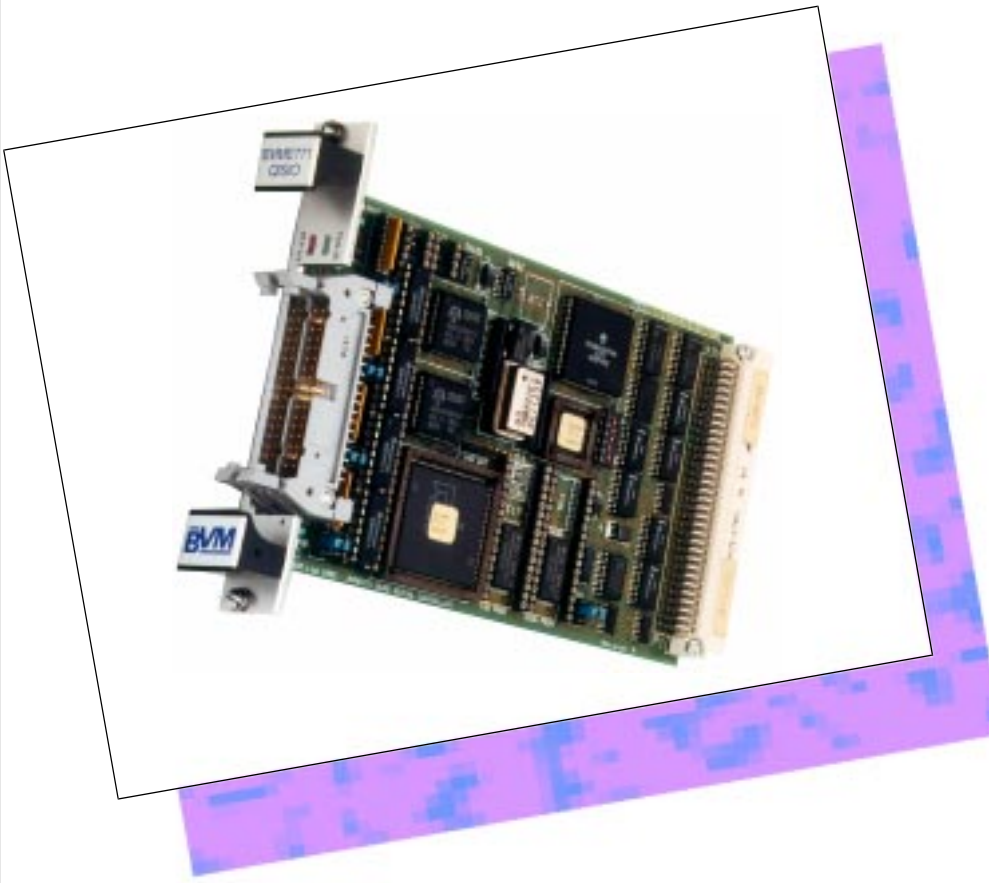
BVME771/772

Intelligent Serial Controller

- Four high speed serial channels
- Dual 85C30 or 85230 (772) SCC's devices
- RS232 and RS422/485 user selectable
- Synchronous or asynchronous
- 68HC001 CPU with 16 Mhz clock
- Dual port 64/256Kbyte SRAM
- Non-volatile static RAM (772)
- Up to 256Kbyte EPROM space in two 32 Pin JEDEC Sockets
- Real Time clock (772)
- VMEbus A24:D16 Slave
- VMEbus Interrupter
- Address pipelining support
- RED/GREEN status LEDs
- Optional remote RESET and ABORT switches (772)
- Low power CMOS design
- Fully compatible to VMEbus specification revision C.1
- Single Eurocard format with 3U or 6U front panel
- Architecture and object code compatibility with other BVME77X boards
- Firmware for asynch comms included with BVME771
- Extensive firmware and OS-9 software options available including SLIP

The BVME771 is an intelligent low cost serial controller for the VMEbus. It offers high performance with data rates up to 115.2Kbaud. For use in standalone applications the BVME772 has an expanded memory and a real-time clock allowing it to run an operating system on-board. The BVME772 also features 8 byte FIFO`s on each serial channel for sustained high data rates in more stringent applications.



Both the BVME771 and BVME772 are based on a 68HC001 16-bit processor, a low power CMOS member of the 68000 family. Communication with the VMEbus is via a high speed dual port SRAM buffer.

The serial ports are designed to operate with RS232, RS422 or RS485 multidrop standards. The four channels are accessible via a double stacked 34 way connector through the front panel. Pin configurations allow simple connection to 'D' connectors via ribbon cable.

Comprehensive software and firmware support is available in addition to Fbug+ debug monitor.

BVME771/772

Serial Ports

Four serial ports are available controlled by 8530 or 85230 (BVME772) devices. Both are similar except the 85230 has an 8 byte FIFO to enable more reliable sustained high speed data rates. Each port can be individually configured as RS232, 422 or 485 by jumper selection and installation of the appropriate buffer chips. The RS232 configuration is supplied as standard and a kit containing the RS422/485 buffers is available separately. All ports can operate synchronously or asynchronously but only one external clock input is available.

CPU

Both the BVME771 and BVME772 use a 68HC001 CPU in 16 bit mode with a clock speed of 16MHz.

Standard firmware is available allowing it to communicate with a host CPU on the VMEbus or the user can install his own firmware for stand-alone or specialist applications.

VMEbus Slave / Dual Ported Ram

The BVME771 is fitted with two 32K x 8 SRAM as standard, and the BVME772 is fitted with two 128K x 8 SRAM as standard. The static Ram is dual ported to the 68HC001 and the VMEbus. This dual ported SRAM allows zero wait state onboard CPU read accesses and one wait state onboard CPU write accesses, when not contending with the VMEbus.

The BVME771 is compatable with VMEbus address pipelining and RMW cycles.

Internal Interrupts

Internal CPU interrupts are generated by the Serial interface. These may be vectored or autovectored depending on the configuration of the relevent serial controller device.

The optional real time clock and ABORT switch can also generate internal CPU interrupts which cause autovectored interrupts.

Interrupter

The BVME771 may generate VMEbus interrupts on any single level I(1-7) and will responds with a software programmable ID to the subsequent interrupt acknowledge cycle. Writing the ID to the interrupt ID vector register causes a VMEbus interrupt to be generated on the link selected level. The BVME771 VMEbus interrupt ID vector may be programmed to suit the application.

Status Register

A status register provides indication of the board number so that firmware may identify the board type and its available resources. The standard module returns a value of 33hex.

Non-volatile operation

The BVME772 has the option of an onboard battery circuit that provides non-volatile operation for the optional real time clock and the SRAM to be battery backed-up.

The RAM contents are protected from power failure by disabling the RAM chip select during RESET caused by low voltage or power failure conditions.

Real Time Clock

The real time clock is implemented only on the BVME772 using an RTC72421 device. This provides a 12 or 24 hour calendar clock with battery backup.

LED indicators

The BVME771 has 2 LED indicators which enable the user to determine the module status:

SYS

The red SYS LED indicates if the the BVME771 has not been initialisd.

DPR

The green DPR LED indicates if any access is made to the dual ported RAM from either the VMEbus or the CPU. Individual accesses will not normally light the LED noticeably. Bursts of access will light the LED in proportion to activity.

Specification

VMEbus Slave
A24,A16
D16,D8(OE)
AM6
RMW

Interrupter
D08(0) ROAK I(1-7) Single level link selectable

Register
Status ID soft programmable
Module Identification Code
Serial Controller (Various)

CPU
68HC001 CPU 16MHz

Memory
2 x 32-pin CPU PROM sockets accepts 64K/128Kb EPROM
2 x 28-pin Dual Port RAM sites accepts 64Kb/128Kb SRAM devices

Serial Ports
2 x 8530 or 85C230 Dual Serial Interface Controller at 8MHz
RS232, RS422/485 operation (Selected by offset buffering and Links)

Status LED
Green - DPR access
Red - uninitialised

Switch
DPR Base Address decode
Abort Switch Header
Reset Switch Header

Links
RS485 Multidrop Control (4)
Serial connection JP*11 (4)
Serial connection JP*15 (4)
Serial connection JP*13 (4)
TXCLK Source (4)
Interrupt level select

Dimensions
160mm x 100mm Single Slot

Battery
Lithium 3.6V @ 100mAH

Estimated Power
+5V 1.05A typ.
±12V .02A (RS232 only)

Environmental
0 to +70°C
(extended range to special order)
5 - 95% humidity
non-condensing

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