

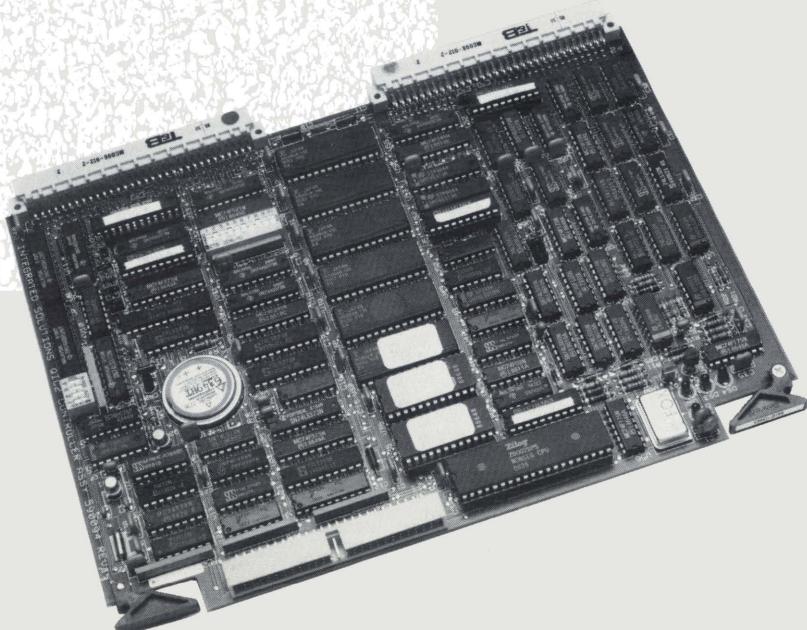
VME-QIC2/X Tape Controller

Product Specifications

Features

- 48 KBytes of on-board data buffer
- Optional variable length record support emulates industry standard half-inch tape drives which support variable block sizes
- Tape controller software interface (corresponds closely to the DEC TS-11 interface)
- High-speed Z8002B on-board processor
- CMOS real-time clock/calendar with battery backup
- A32/D16 extended addressing and data transfer capability

The Integrated Solutions VME-QIC2/X Quarter-Inch Tape Controller supports a QIC-02 compatible quarter-inch cartridge tape drive. The controller attaches to the drive via a 50-pin connector. The VME-QIC2/X is an intelligent device that maximizes throughput of the streaming tape subsystem by minimizing overruns. With the VME-QIC2/X, a tape subsystem can operate at up to 90 KBytes per second throughput. UNIX 4.2/4.3BSD drivers are available for the VME-QIC2/X which facilitate system integration of the controller.



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Architecture

The VME-QIC2/X is a VME double-wide printed circuit board with the following features:

VMEbus Compatibility. The VME-QIC2/X controller plugs into a VMEbus-based system and supports a QIC-02 compatible quarter-inch cartridge tape drive, attached via a 50-pin connector.

VMEbus Interface Logic. The VME-QIC2/X interfaces with the VMEbus as either a 24 or 32 address bit, 16 data bit master (A24/D16 or A32/D16 master), and as a 16, 24, or 32 address bit, 16 data bit slave (A16/D16, A24/D16, A32/D16 slave). These modes are jumper selectable. The ability of the controller to perform as a VMEbus master or slave provides useful configuration flexibility. The VME-QIC2/X interfaces with the VMEbus as either an A24/D16 or A32/D16 master, or A16/D16, A24/D16, A32/D16 slave. The 32-bit addressing capability extends addressing to up to four gigabytes. Four levels of interrupts are supported (jumper selectable). The VME-QIC2/X bus interface logic is consistent with the VME specifications for the following modules:

| | |
|--------------------------------|----------------------------------|
| Data Transfer Bus Requester | Data Transfer Bus (DTB) Slave |
| RWD | A32/D16, A24/D16, A16/D16 (STAT) |
| Data Transfer Bus (DTB) Master | Interrupter |
| A32/D16, A24/D16 (STAT) | One of IR(4-7) (STAT) |

Data Buffer. All data is transferred between the tape unit and main memory through an on-board 48 KByte buffer memory. Using the RAM, a caching algorithm minimizes overruns which typically occur with non-buffered controllers. Data rates up to 90 KBytes per second are supported.

Real-Time Clock. This element consists of a CMOS clock/calendar, lithium battery, micropower crystal oscillator, and power failure detection and cutover circuits. The lithium battery will power the clock for approximately five years before a replacement is required.

Control Processor. The high-speed Z8002B 16-bit processor controls all communication across the VMEbus-host interface and all operations of the tape unit. The processor gives the VME-QIC2/X a high level of functionality and offloads the host processor.

Tape Controller Software Interface. The controller's software interface corresponds closely to the DEC TS11 interface. Consequently, TS11 drivers for UNIX or other operating systems, if required, can easily be modified for use with the VME-QIC2/X controller.

Programming Interface. The VME-QIC2/X offers the user a high level of functionality, supported by the following commands on the controller:

| Write Characteristics | Position |
|---------------------------|-------------------------|
| Read | Space Records Forward |
| Write | Space Records Reverse |
| Write Tape Mark | Skip Tape Marks Forward |
| Get Status | Skip Tape Marks Reverse |
| Tape Subsystem Initialize | Rewind |

Form Factor

The form factor for the VME-QIC2/X controller is a standard double-wide VME board, 160mm by 233.33mm.

Diagnostic Indicators

The VME-QIC2/X controller has four status LEDs which indicate the state of the controller and the tape drive.

Electrical Requirements

The power requirements for the VME-QIC2/X are 3.5 amps, +5 volts $\pm 5\%$.

Environmental Requirements

Temperature:

- 0 to 50 degrees centigrade (operating)
- 40 to 65 degrees centigrade (non-operating)

Humidity:

- 10 to 90 percent (non-condensing)



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