

Imperial Technology, Inc.

MEGACARD

Add-In High Speed Solid-State Disk Emulation for DEC Computers.

Plug In a Solid-State RL01/RL02.

The Megacard is a complete RL01/RL02 solid-state disk emulating system packaged on Digital Equipment Corporation standard quad-sized boards. The boards plug directly into a Digital Equipment Corporation backplane or system unit and interface via the Unibus or the Q-bus.

The Megacard system consists of one controller board and from one to four memory boards. The memory boards each contain up to 10 megabytes of capacity and are the equivalent of one RL02 rotating drive. A depopulated board containing 5 megabytes is available which is the equivalent of one RL01 drive. The total system capacity is then 40 megabytes which is the equivalent of four RL02 drives.

Two different controller boards are available which allow the Megacard to be interfaced to either the Unibus or the Q-bus. Both provide complete emulation of the RL01/RL02 protocol and allow the Megacard to be a direct hardware and software replacement for the rotating units.

The all solid-state construction of the Megacard results in zero latency time, zero head positioning time and high data transfer rates. The performance improvements compared to the equivalent rotating units can be dramatic.

High-Speed Interface:

An optional High Speed Interface Board is also available which provides a second port into the Megacard system. This second port is a direct memory access port and allows high speed data transfers to and from memory. The addresses may be specified externally in a Random Access mode or in a Block Access mode. An internal addressing mode is available which operates in the Block Access mode only. The Block Access mode enables higher data transfer rates.

Data Retention:

The Megacard can use the +5 BAT power from the Digital Equipment Corporation backplane for the RAM array and logic necessary to ensure that data is retained when the system regular +5 Volt DC power is removed.

Features:

- Fully software and hardware compatible with RL01/RL02 drives.
- Plugs into existing system backplane.
- Unibus or Q-bus interface.
- Up to 40 megabyte capacity in increments of 5 or 10 megabytes.
- Error detection and correction.
- Random access to any address in storage.
- 2.5 μ sec maximum access time.
- 1.5 megabyte/second transfer rate.
- Optional High Speed Interface.
- One year warranty.

Reliability:

The Megacard is an all solid-state semiconductor storage system with no moving parts and thus provides inherently superior reliability.

It contains a comprehensive Error Checking and Correction (ECC) capability on a per word basis which results in a significant improvement in Mean Time Between Failures (MTBF). Field experience verifies the dramatic improvement over rotating disks.

Maintainability:

At the edge of the Megacard is an operational and maintenance LED display. The operational display shows whether the current instruction is a Read, a Write or a Write Check operation. The maintenance display shows the syndrome bits of any error which may have been detected and corrected and allows the failing bit to be identified.

A jumper option is provided which allows an Error Check operation to be performed from the processor. This operation scans the entire memory space and verifies the absence or presence of any errors and identifies their location.

Another jumper option is available which provides a Corrected Error Reporting mode. It sends a status bit back to the processor indicating that an error has been detected and corrected.

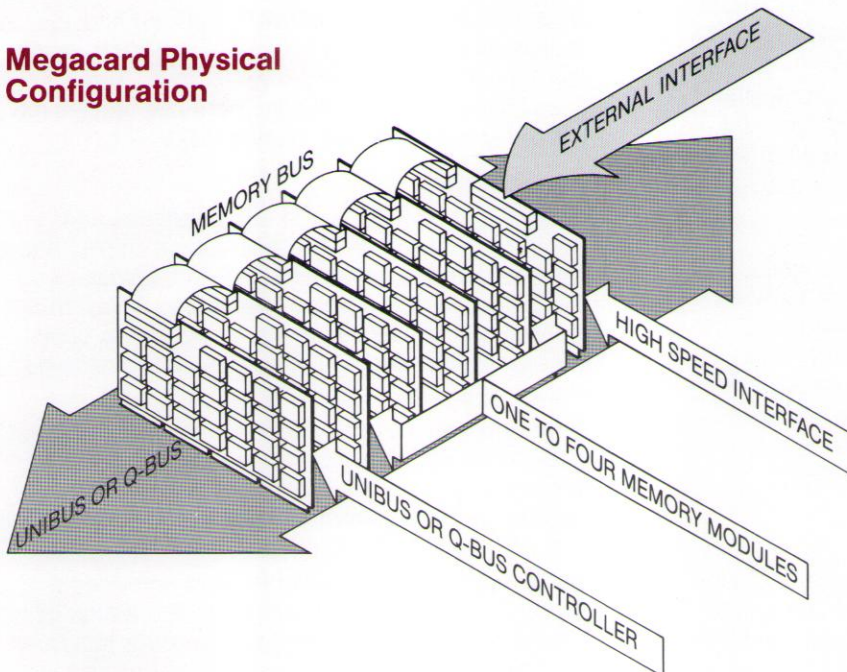
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Specifications:

	Unibus/Q-bus Interface	High Speed Interface
Word Length	16 bits	16 bits
Transfer Rate	1.5 Mbytes/sec	Block Access Mode — Internal/External Addressing: 12.0 Mbytes/sec Random Access Mode — External Addressing Only: 3.0 Mbytes/sec
Access Time	1.5 μ sec for Write 2.5 μ sec for Read	0.3 μ sec minimum 2.9 μ sec maximum
Bus Loading	One bus load	TTL Open Collector terminated 100 Ohms to +3V
Interrupt Vector	User selectable	N/A
Priority Level	User selectable	N/A
Device Address	User selectable	N/A
Size	Quad Board	Quad Board
Power	+5 Volts 2.8 Amps +5 Bat* 1.4 Amps <small>*Plus 4.0 amps for each 10 Mbyte memory module; 2.4 amps for each 5 Mbyte memory module.</small>	+5 Volts 2.8 Amps +5 Bat* 1.4 Amps
Capacity	5 Megabytes to 40 Megabytes in 5 Megabyte increments	
Operating Environment	0°C to 50°C ambient temperature. Up to 90% relative humidity with no condensation	

Megacard Physical Configuration



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