MEGARAM
Disc Emulator

Revolutionary, Non-rotating, Solid-state Replacement for Fixed and Moving Head Discs.

MEGARAM

Imperial Technology, Inc.
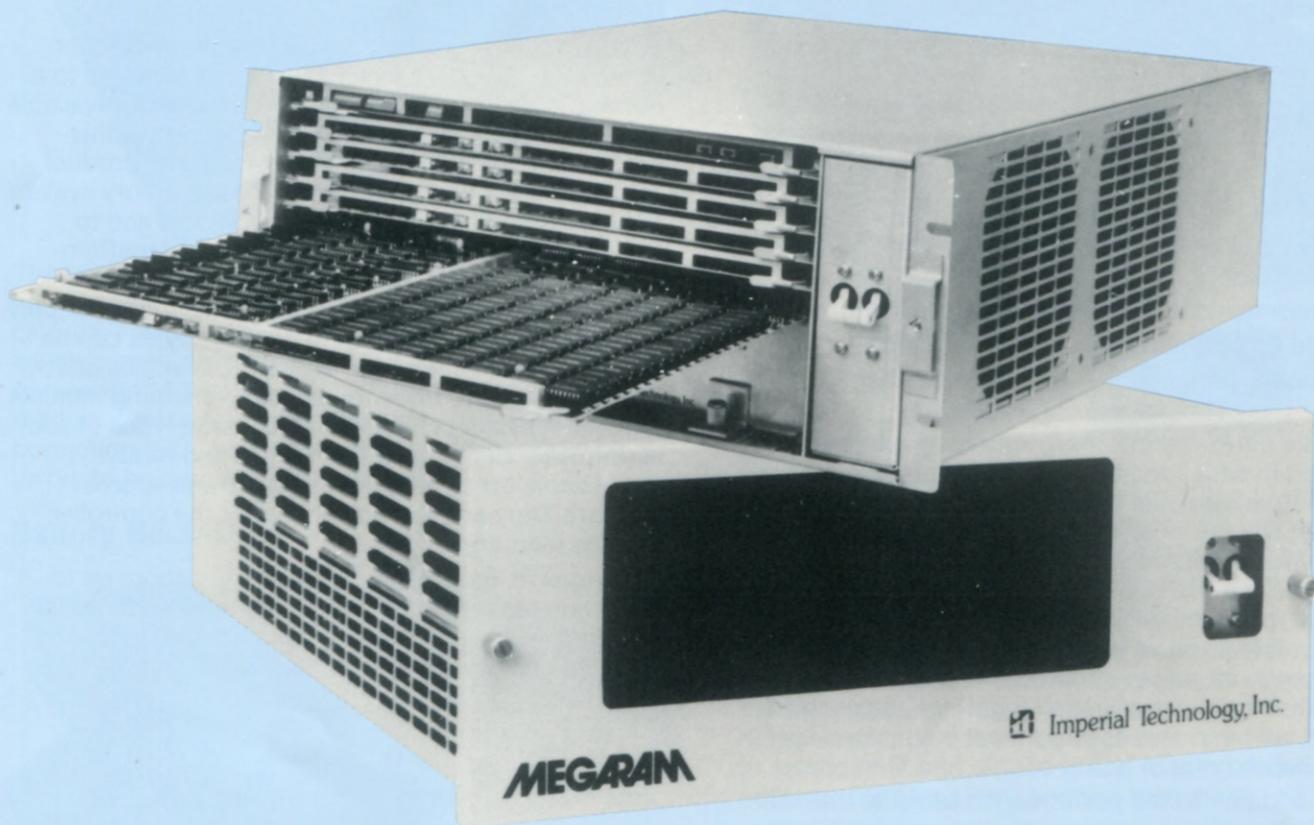
- Capacities from 2 megabytes to 40 megabytes in 2 megabyte increments.
- Full error detection and correction.
- Up to 40 megabytes in a 7″ chassis.
- Battery back-up.
- Megastream tape drive back-up in 7″ chassis.

it Imperial Technology, Inc.

High Reliability/Dramatic Performance

The MegaRam storage system from Imperial Technology, Inc., is a solid-state, non-rotating memory system which is interfaced to the computer as if it were a rotating disc. Because of the zero latency time and high data transfer rate, it combines the performance and reliability of main memory with the storage capacity and convenience of a peripheral.

In some applications, the most attractive feature of the MegaRam system is its considerably improved reliability compared to the rotating media that it replaces. In some applications, it is the dramatic improvement in throughput and performance that is the MegaRam's most important characteristic. And in other applications, it is the combination of speed and reliability that is most appealing.

Applications

The concept of the MegaRam system in providing a non-rotating, random-access memory to replace a rotating media has found wide acceptance in a large variety of applications.

- Disc Replacement
- Swapping Files
- Overlay Storage
- Process Control
- Telecommunications
- Mobile Equipment
- Shipboard Equipment
- Data Base Management
- Large Scratch Files
- Matrix Transformation
- Graphics
- Array Processing
- Data Acquisition
- Automated Test Equipment

Dramatic performance improvements have been obtained in situations that require a large amount of swapping, utilize extensive overlay storage programs, or run active Data Base Management systems. Orders of magnitude improvement in performance have been achieved. The use of a MegaRam system has reduced terminal response time from several minutes to one or two seconds, even when the number of terminals has significantly increased. In process control and data acquisition applications, the MegaRam has enabled the CPU to keep processing in real time instead of falling behind due to a lack of data handling speed.

In addition to the performance benefits that the MegaRam provides, enormously improved reliability and maintainability are realized since the system is all solid-state and contains no moving parts. The unit is easy to install. It is simply a matter of mounting the unit in the rack and plugging the cable into the I/O bus.

Since the system is completely software compatible with the rotating device, there are no software changes to incorporate and the standard disc diagnostics can be used for verification of system operation.

Interfaces

The MegaRam system is available with a variety of Interface Controllers that allow it to be attached to a number of different computers. The currently available configurations are listed on the back page of this brochure. They are all essentially the same product with a different controller to allow the memory system to be interfaced to the various processors and to provide the appropriate emulation. The MegaRam system is packaged in a self-contained 19-inch rack-mounted chassis with its own controller, power supply and blower assemblies. Up to 40 megabytes can be contained in a 7-inch high chassis. Capacities above 40 megabytes are obtained by daisy-chaining multiple chassis. A system consists of only three types of sub-assemblies, all of which are plug-in and easily-replaceable for ease of maintenance and spares support. They are: the power supply, the controller, and the memory module.

Imperial Technology is also very responsive to requirements for the design of custom interfaces to the MegaRam system. Please contact the factory for a quotation for your specific application.
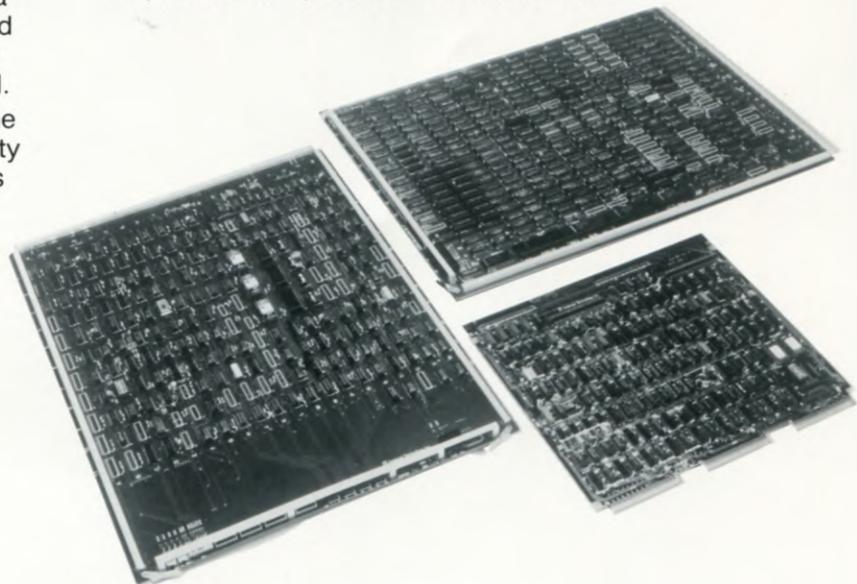
Options

A variety of options are available with the MegaRam system:

- Battery back-up
- Dual port capability
- Custom designed interfaces
- Field Expandability
- Megastream back-up
- Universal controller
- Standard DMA interface
- Sub-sector addressing

Memory Module

The MegaRam memory module is a semiconductor module employing 256Kxl dynamic MOS integrated circuits. The capacity of the module is 8,388,608 bytes which can be organized as 2,097,152 words of 32 bits per word or 4,194,304 words of 16 bits per word. The module contains a comprehensive error detection and correction (ECC) capability which allows single bit errors to be corrected automatically.

Battery Back-Up

The battery back-up option consists of an optional power supply assembly which replaces the standard assembly inside the MegaRam chassis. This optional supply contains a battery pack capable of supporting a full 40 megabyte capacity MegaRam system for approximately 10 minutes. Additional support time can be obtained by adding external batteries.

Megastream Back-Up

The Megastream provides for a manual and an automatic back-up storage for MegaRam systems. The recording medium is a 1/4 inch tape cartridge with a formatted capacity of 34 megabytes. MegaRam data is recorded on tape as a single, continuous file, with starting and ending MegaRam addresses on user-selectable 2 megabyte boundaries. The Megastream provides manual operations for:

- Save (Selectable Data Archive)
- Restore (I.P.L. Loading)
- Retention
- Erase
- Reset/Rewind

The Megastream can perform an automatic Save operation in the event of an AC power failure and a Restore operation upon an AC power-up transition. The AUTO-SAVE and AUTO-RESTORE operations can be independently enabled or disabled via control panel switches.

The Megastream Option is packaged in a 19-inch RTMA rack-mounted chassis only seven inches high. The chassis contains a streaming tape drive capable of accepting a tape cartridge with approximately 45 megabytes of unformatted capacity.

The chassis also contains a power supply and two sealed lead acid batteries capable of supporting the Megastream and the MegaRam for the entire dump sequence and an electronics controller module to control the data dumping and loading sequences between the MegaRam and the tape drive.

Reliability and Maintainability

The MegaRam system is an all solid state semi-conductor storage system with no moving parts and thus provides inherently superior reliability compared to rotating devices.

A comprehensive Error Detection and Correction (ECC) capability on a per word basis also contributes to a significant improvement in reliability.

A simple construction, a comprehensive mainte-nance display and built-in error correction, with a minimum of required spares provisioning, results in a highly reliable, easily maintainable system which can be field maintained and repaired.

Compatibility

CPU MANUFACTURER	CPU SERIES	MEGARAM PRODUCT	DISC EMULATED	INTERFACE	CAPACITY IN MEGABYTES
D.E.C.	PDP-11; VAX	MegaRam-11	RJS04, RF11, RK07, RL02, ML11, etc.	Unibus	1.0 to 28.0
D.E.C.	PDP-11/70	MegaRam-11/70HS	RWS04, ML11	Cache Bus	1.0 to 32.0
Data General	Nova & Eclipse	MegaRam-20	6001 & 6063	I/O	1.0 to 16.0
C.D.C.	System-17	MegaRam-17	9425/7	I/O	2.0 to 20.0
Westinghouse	W2500	MegaRam-25	73XX Series	I/O	1.0 to 8.0
Gould (S.E.L.)	S.E.L. 32	MegaRam-32	9010, 8055	I/O	2.0 to 32.0
Sperry Univac (Varian) Fischer & Porter Taylor Instruments	V70 Series	MegaRam-V72	70-77XX Series	I/O	1.0 to 16.0
Hewlett Packard	H.P. 1000 Series	MegaRam-1000	7906	I/O	1.0 to 20.0
Hewlett Packard	Any CPU with HPIB/RS-488 Interface	MegaRam-CS/80	7908, 7911, 7912/7914, etc.	HPIB	2.0 to 64.0
Perkin Elmer (Interdata)	Model 70	MegaRam-6000	D.D.C. 6000	Disc	1.0 to 8.0
Modcomp, Leeds & Northrup	Classic CP-400	MegaRam-7000	D.D.C., Alpha Data, Vermont Research	Disc	1.0 to 16.0
All	Any CPU	MegaRam-SMD	SMD Series	SMD	1.0 to 40.0

If you are interested in the MegaRam for your application, call our Marketing Manager at (213) 536-0018. He will be happy to provide you with specifics.

Imperial Technology, Inc.