

POINT 4'S LOTUS CACHE MEMORY: MORE RESPONSIVE MULTI-USER SYSTEMS

The LOTUS Cache Memory (LCM) is a solid-state memory device which provides auxiliary mass storage for frequently used data which normally resides on disk. Access to data in the LCM is over ten times faster than access to data on the disk itself. It provides economical, high-performance mass storage at run time for the MARK 5 and 8 computer systems. Use of the LCM can result in dramatically higher system performance and throughput and significantly faster interactive workstation response.

The LOTUS Cache Memory is designed for users of POINT 4's MARK 5, MARK 8, and NOVA*-type computers to improve system performance where large numbers of workstations and/or disk operations are employed.

Frequently used disk-resident information is allocated storage space in the LCM. Once retrieved from the disk and stored in the LCM, all future references to that data by the central processing unit (CPU) are directed to the LCM. Data transfer occurs

between the LCM and CPU at electronic speeds, completely bypassing the electro-mechanical seek and latency delays normally associated with disk processing. A single block transfer from the cache can occur 160 times faster than from disk. The LCM offers the user access to vital business information...fast.

LOTUS CACHE MEMORY FEATURES

- High-speed, solid-state intermediate mass storage for frequently used data
- Compatible with POINT 4's MARK 5, MARK 8 and NOVA-type computers
- Static allocation of storage space for known high-usage information
- Dynamic allocation for ease of use and on-line adaptation to user need
- Block size of 512K bytes matches disk sector
- Choice of two different board capacities per board (512K bytes and 1M byte)

- 64 million byte maximum capacity per device code
- DMA transfer rates of 2.5M bytes per second
- Error detection and correction
- Battery back-up (optional)

OPTIMUM DATA MANAGEMENT

Space in the LCM may be statically allocated beforehand for storage of frequently used data such as disk directories, file indexes, high-usage programs, or entire data files. With items like indexes and directories in the LCM, access to the information they reference can occur in a single data transfer operation between disk and CPU. This can reduce the time required to complete a transaction to half or even a third of the time required without a cache.

DYNAMIC MANAGEMENT

Once a quantity of space in the LCM has been allocated to known high-usage items the remaining space is available for storage of individual data blocks. Studies have shown that, once accessed by the CPU, a given item of information has a high degree of probability of being accessed again almost immediately. The LCM dynamic management algorithm takes advantage of this phenomenon by storing data blocks in the LCM instead of returning them to disk in a time-consuming operation. Most frequently used data are therefore found in the LCM and available for high-speed transfer to the processing unit. As the dynamically managed portion of the LCM is filled, the least recently used data items are returned to the disk to free up



