DIGITAL IMAGE ARCHIVING IN MEDICINE
The fastest...the largest memories...the easiest to program...

MARS-432 Array Processor

**Speed**
A high-speed programmable arithmetic processor used as a peripheral to a general purpose computer.

The state of the art in 32-bit floating point array processors. Direct addressability of up to 16 million words (64 megabytes) of data memory and direct access to the high-speed internal data bus assure the user of highest throughput rates.

**MARS-432 Array Processor Features Include:**
- Add and multiply times of 100ns
- Computational power of 30 megaflops
- Computes a 1024-point complex FFT in 1.7 ms
- DMA transfers at I/O bus rates of 20 megabytes/sec
- Data memory read or write in 100 ns
- Memory paging for uninterrupted processing during I/O transactions.

**MARS-432 Array Processor Memories**
Program and data memories compatible with programs written for today's array processor applications.

**Program Memory**
Virtual and physical address space of 4K words - standard. Expanded configuration uses a 4K cache memory to extend total memory to 64K words.

**Data Memory**
Data I/O is supported by DMA transfers into data memory with a physical address space of 16 million words. A data memory page-loading feature provides the option of zero overhead background loading of data during time critical program execution. No DMA cycle stealing overhead is incurred. Uninterrupted processing can occur simultaneously with high-speed I/O transfers.

**MARS-432 Array Processor Software**
An architecture specifically designed to support a FORTRAN compiler and other software development tools.

**FORTRAN Development System (FDS)**
FORTRAN compiler, linker, and trace/monitor provide high-level language access to the MARS-432.

**Microcode Development System**
Off-line development package includes macro-assembly, microcode diagnostics, and a unique utility for automatic microcode optimization.

**AP Run Time Executive Support Package (AREX)**
As the interface to the MARS-432 at run time, AREX provides processor initialization, I/O operations, and array function execution.

**Applications Libraries**
Extensive applications libraries include math, signal processing, and image processing.

For additional information on the MARS family of high-speed Array Processors, write or call:
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Reader Service Number 1