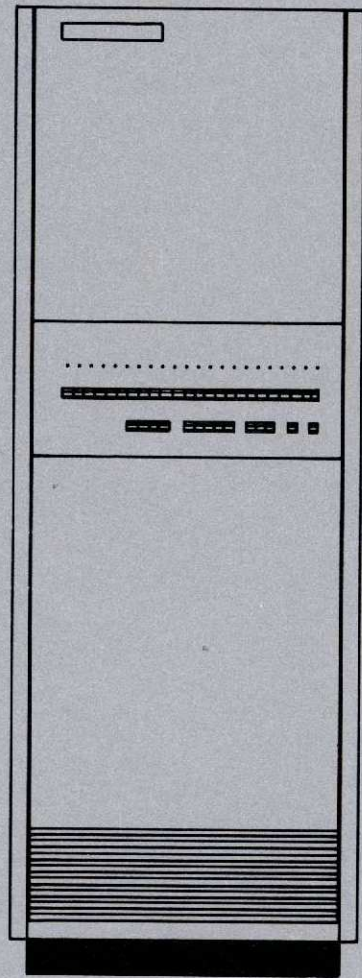


# SLASH 6

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**Supermini performance  
at super minicost**



**HARRIS**  
COMPUTER SYSTEMS

*(Datacraft)*

# SLASH 6 SYSTEM: The Optimum Price/Performance Value

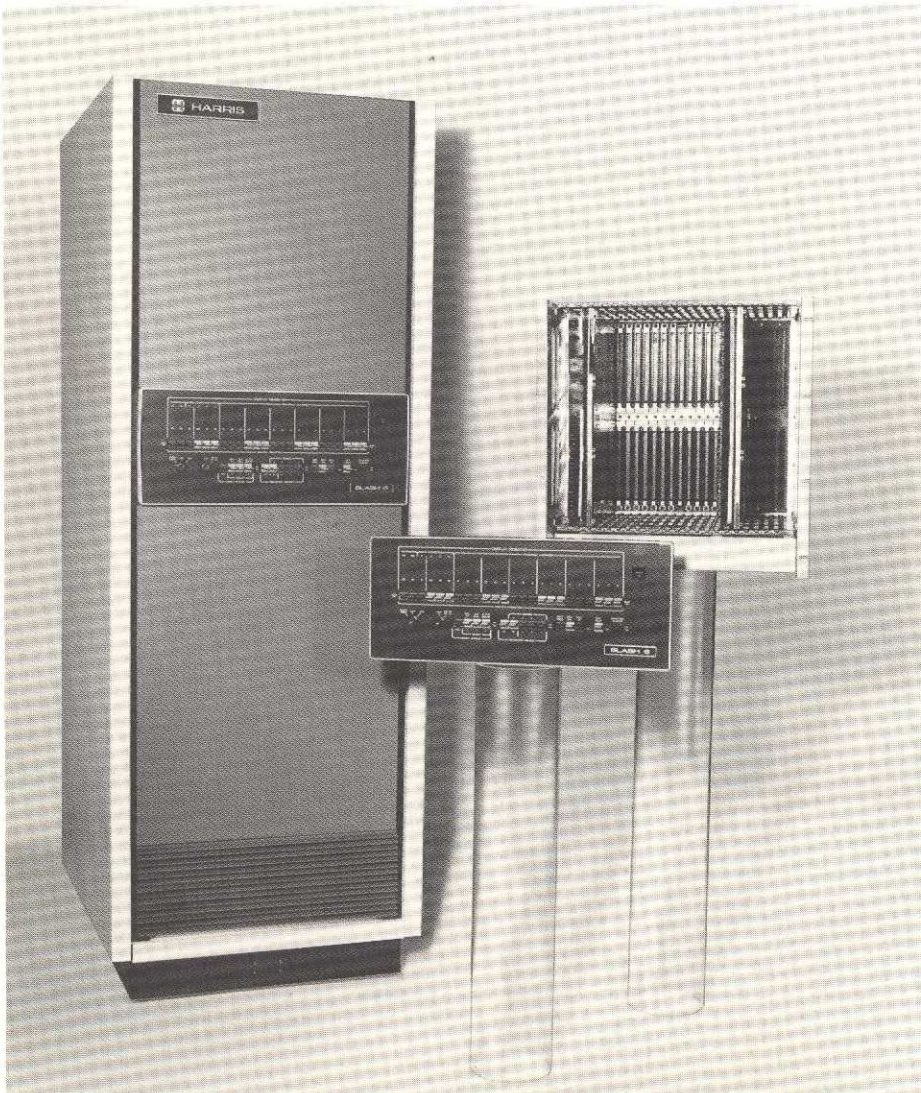
The HARRIS SLASH 6—the newest model in the SLASH Series of computers—offers the optimum price/performance value for a wide range of concurrent multi-use, real-time applications. The SLASH 6 utilizes the latest technology available for microprogrammed computer systems to outperform most 32-bit minis at a price that is lower than many 16-bit machines. The modularly-structured architecture of the SLASH 6, in conjunction with HARRIS' comprehensive line of quality peripheral devices and versatile software, provides a wide-range of configurations to meet your current and future requirements.

The HARRIS SLASH 6 instruction set consists of 658 instructions (over 120 generic) that offer the programmer exceptional flexibility and convenience. The instruction repertoire features an extensive list of operand, register-to-register, double-word, word, byte and bit manipulations; a versatile set of arithmetic, logical and compare operations; and a total control over the external interrupt levels, program restrict and I/O functions. The SLASH 6 provides direct addressing to 32K words (K=1024), indexed addressing to 64K words and indirect addressing to 256K words of memory. And the SLASH 6 software is totally compatible with all HARRIS SLASH Series computers.

## CONFIGURATION: Flexibility for the Systems OEM User

The standard SLASH 6 computer is comprised of the CPU with hardware multiply/divide/square root, 48K byte memory module with error correction, 120 hz clock, eight priority interrupt levels, power failure shutdown and restart, eight bootstraps, turnkey control panel and power supplies. Three chassis configurations are available: a 10-slot chassis, an 18-slot chassis and an expansion chassis. All chassis can be mounted in a 19-inch RETMA rack or in the HARRIS cabinet shown.

A minimum SLASH 6 system consists of the standard SLASH 6 computer with the Bit Processor, Executive Traps and Stall Alarm options and one PIOC. This system is expandable to a maximum of 768K bytes of memory, an SAU, a Programmer's Control Panel and up to 16 DMA channels plus additional PIOC capabilities.



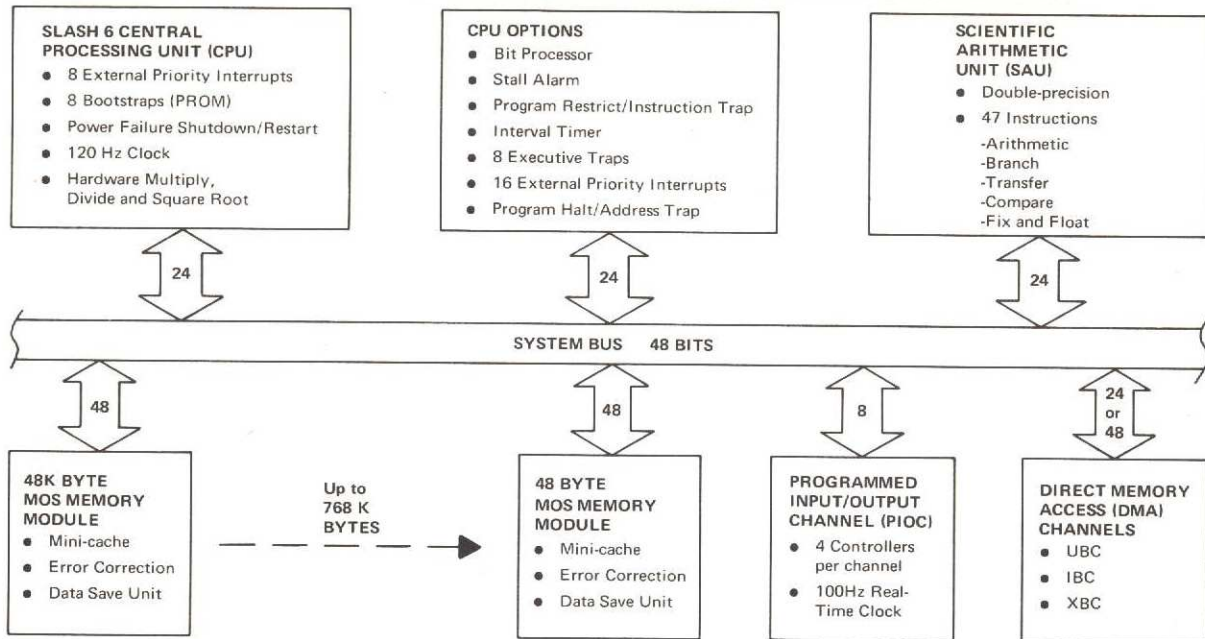
## PERIPHERALS: A Broad Selection of Quality Devices

HARRIS provides a single-source for all of your I/O requirements. A full range of quality peripheral devices is available, including:

- Moving Head Disc Systems to 600M bytes
- Cartridge Discs to 10.8M bytes
- Fixed Head Discs to 2.1M bytes
- Floppy Discs to 310K bytes
- Magnetic Tapes to 200 ips at 800/1600 bpi
- Card Readers to 1000 cpm
- Line Printers to 900 lpm
- Printer/Plotters to 1200 lpm/3 ips
- DMA Communications Multiplexers and Ports
- Paper Tape devices
- Console devices and remote terminals

Each is fully supported by standard interface hardware, software drivers and diagnostic programs.

# SLASH 6 SYSTEM ARCHITECTURE



## SYSTEM BUS

The SLASH 6 features a high-speed, asynchronous, bi-directional System Bus with a 48-bit data path and an 18-bit address path designed to maximize direct memory access (DMA) I/O operations. All functional elements in the computer system communicate through the System Bus. The asynchronous bus allows each system element to function at its own rate—independently of the other system elements. For example, *concurrent* DMA I/O transfer, CPU instruction execution and SAU double-precision floating point operation.

## CPU OPTIONS

The SLASH 6 is available with all of the Internal CPU options offered with the HARRIS SLASH Series computers: Bit Processor, Stall Alarm, Program Restrict/Instruction Trap, Interval Timer, up to 8 Executive Traps, Program Halt/Address Trap, and up to two, 8-level external Priority Interrupt groups. One option card holds all of these internal CPU options—many of which plug into the card.

## SCIENTIFIC ARITHMETIC UNIT

The Scientific Arithmetic Unit (SAU) is a hardware floating point processor used for the high-speed execution of double-precision arithmetic (39-bit mantissa and an 8-bit exponent). The 47 SAU instructions include Fix, Float, Change Sign, Square, Square Root and Inverse functions. All arithmetic operations are performed by the SAU in parallel with CPU execution.

## MOS MEMORY SYSTEM

The SLASH 6 price/performance value is enhanced with the MOS semiconductor memory system featuring single-bit error correction and a mini-cache. A 5-bit Hamming code technique is used to correct single-bit errors for each 24-bit word—thereby improving the reliability of the memory system. An optional Data Save unit is available to retain memory information in the event of a facility power loss. The SLASH 6 memory is expandable, in 48K byte increments, to a maximum of 768K bytes.

Each 48K byte memory module has a 48-bit mini-cache to improve system performance. Each memory access fetches two 24-bit words which are buffered in the mini-cache. When the CPU requests a word from memory, a memory access is performed and the word is transferred over the system bus to the CPU. However, if the CPU requires the next sequential word, it is

transferred to the CPU without requiring a second memory access. The mini-cache significantly reduces fetch-and-execute time for sequential instructions.

## PROGRAMMED I/O CHANNEL

The SLASH 6 Programmed I/O Channel (PIOC) provides a cost-effective method of interfacing character-oriented devices to the CPU. Each PIOC can accept up to four plug-in, integral device controllers or two controllers and a 100K Hz Real-Time Clock. The PIOC can also communicate with up to 12 external device controllers.

## DIRECT MEMORY ACCESS CHANNELS

Three types of Direct Memory Access (DMA) I/O Channels are offered with the SLASH 6 computer. Once initialized, DMA channels perform blocked data transfers between the peripheral device and memory—without further CPU intervention.

### Integral Block Channel

The Integral Block Channel (IBC) is a cost-effective, DMA channel dedicated to the block mode Card Reader controller and the Floppy Disc controller. These controllers plug into the IBC card. The IBC permits both controllers to be active concurrently—thereby maximizing the throughput of this channel.

### Universal Block Channel

The Universal Block Channel (UBC) provides two logical, concurrent, 24-bit channels. The UBC buffers 48 bits of data for each channel and transfers 48 bits in parallel to/from memory. This feature minimizes System Bus activity and significantly improves system throughput. The UBC also supports command chaining as well as data chaining. With transfer rates up to 4.98M bytes per second, the UBC is used primarily for high-speed devices such as discs or tapes. The UBC can communicate up to 16 device controllers.

### External Block Channel

The External Block Channel (XBC) is a special-purpose DMA channel for custom-designed external controllers that provide external control over the word count and memory address information. The XBC can communicate with up to eight external devices on a user-assigned priority basis.

# SOFTWARE: Versatile Operating Systems and Support Packages

HARRIS' sophisticated, field-proven software includes four operating systems, six languages, six support programs, a system utility package and, optionally, three remote job entry support packages to large, host computer systems. The SLASH 6 can also act as a host processor for any RJE terminal that supports IBM 2780 protocol.

## Operating Systems

- Disc Monitor System (DMS)
- Disc Operating System (DOS)
- Tape Operating System (TOS)
- Resident Operating System (ROS)

## Languages

- FORTRAN IV Compiler with extensions
- Interactive BASIC Compiler with extensions
- Harris MACRO Assembler
- RPG II Compiler
- SNOBOL 4 Interpreter
- FORGO (Diagnostic FORTRAN Compiler)

## Support Programs

- Sort/Merge
- Indexed Sequential File Handler
- ACRONIM (Interactive Text Editor)
- Cross Reference
- DEBUG
- Trace

## Remote Job Entry Packages

- CDC UT-200 for the 6000/7000 series
- IBM 2780 for the 360/370 series
- UNIVAC 1004 for the 1100 series
- Host capability for IBM 2780 protocol terminals

## DISC MONITOR SYSTEM

The Disc Monitor System can perform *concurrent* real-time, batch and interactive processing. DMS is expandable from a minimal batch configuration to a large-scale system that provides multi-programming foreground/background processing, spooled I/O, local and remote interactive terminal support, dynamic memory allocation, timer-scheduled programs, dynamic file creation, inter-program communications, program segmentation and overlaying, reentrant foreground capability, automatic background checkpointing, program protection and system accounting functions.

## The Optimum Price/Performance Value

*The HARRIS SLASH 6 Computers will meet your processing requirements. We invite industry comparison. And when all claims have been researched and the capabilities vs. costs are compared..... your choice will be HARRIS.*

For more information on the SLASH 6 contact your nearest HARRIS Sales office or fill out and mail this coupon.

NAME		
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ORGANIZATION		
STREET ADDRESS		
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**HARRIS**



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