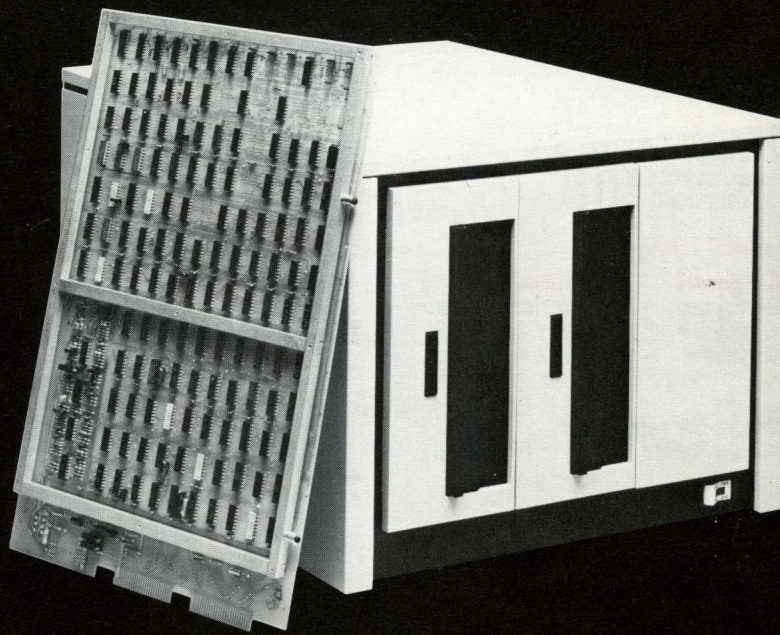# ◢✓®Shugart Associates

SA3800/8800

"Streaker" Controller and Subsystem

The Shugart SA8800 ''Streaker'' controller and SA3800 Subsystem offer the systems designer several very attractive system building blocks. The SA3800 provides a subsystem level component which shortens development time and minimizes initial program costs. Customers concerned with value added can start with the SA3800 and easily move to the Streaker as production experience with the SA3800 develops.

A general purpose Host interface is provided on the Controller PCB, allowing simple interfacing to host systems such as minicomputer/microcomputer I/O busses, CRT terminals, instruments, intelligent calculators and other byte oriented peripherals.

The controller interprets and executes macro level commands from the Host and provides status signals to the Host. It allows data to be addressed and transferred between the floppy disk drive and the Host, performing all of the required functions including formatting, serializing/deserializing, seeking and error detection. Use of these macro level commands by the SA8800/SA3800 Controller minimizes host system interface circuitry and overhead functions.

Typical applications for the SA8800 Streaker/SA3800 Subsystem include minicomputer systems, word processing, small business systems, distributed processing, intelligent terminals, program loading and other applications which require low cost random access data storage.

Key Features

- Proven double density as well as single density operation.

- IBM 3740 format compatibility option is standard feature.

- Single 12.5 in. x 17.5 in. (317.5mm x 444.5mm) PCB.

- PCB requires only two supply voltages: +5 and —5 volts.

- Simplified control interface.

- Controls from one to six SA800 family drives.

Additional SA3800 Features

- Integral power supply.

- Up to three SA800 drives in a single 19'' RETMA rack mountable enclosure. Also available in table top enclosure.

Specifications

SA8800/3800 Product Specifications (Common)

Capacity:	3740 Format	Double Density
Disk Drives	6	6
Per Disk	256.3 Kbytes	630.8 Kbytes
Per Track	3328 bytes	8192 bytes
Per Sector	128 bytes	256 bytes
Sectors/Track	26	32
Tracks	77	77
Encoding	FM	M²FM

SA8800 Product Specifications (Unique)

Power (exclusive of drive requirements)
+5V ± 5% 4.0A typical
−5V ± 5% 0.2A typical

Size
12.5 in. x 17.5 in. (317.5mm x 444.5mm)

Interface Connectors
I/O—50 pin ribbon or twisted pair (3M P/N 3415-0001 or Viking 3VH25/IJN-5)
DC—6 pin AMP P/N 1-480270-0

SA3800 Product Specifications (Unique)

System Capacity	3740 Format	Double Density
One Drive	256.3 Kbytes	630.8 Kbytes
Two Drive	512.6 Kbytes	1261.6 Kbytes
Three Drive	768.9 Kbytes	1892.4 Kbytes

Power
115 VAC, 60Hz ± 0.5Hz, 2.5A (standard)
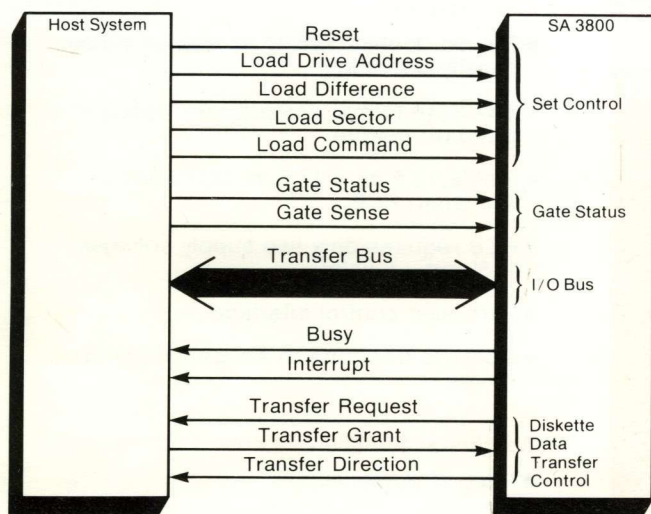100/115/200/230 VAC, 50/60Hz ± 0.5Hz (optional)

Size
13 in. H x 17 in. W x 22 in. D (330.2mm H x 431.8mm W x 558.8mm D)

Heat Dissipation
885 BTU/Hr typical

Environment
Temperature: 50°F to 90°F (10°C to 32.2°C)
Humidity: 20% to 80% RH
Max Wet Bulb Temperature: 78°F (25.6°C)

Interface Connectors
I/O—50 pin ribbon or twisted pair (3M P/N 3415-0001 or Viking 3VH25/IJN-5)

INTERFACE LINES

Signal	I/O	Description
Transfer Bus	I/O	Eight bit bidirectional lines used to transfer data, command and status between the host and the controller.
Load Drive Address	I	Clocks data on bus into drive address register.
Load Difference	I	Clocks data on bus into Track Difference Register.
Load Sector	I	Clocks data on bus into Sector Address Register.
Load Command	I	Clocks data on bus into Command Register.
Gate Status	I	Places Status Byte onto bus.
Gate Sense	I	Places Sense Byte onto bus.
Transfer Direction	O	Indicates direction of data.
Transfer Request	O	Initiates transfer of a data byte during Read or Write.
Transfer Grant	I	Acknowledge completion of transfer.
Busy	O	Command being executed.
Interrupt	O	Completion of command execution (except control reset) or detection of error.
Reset	I	General reset of control unit.

CONTROL COMMANDS

The SA8800/3800 executes eight command functions required to address, read and write data. Each function is initiated by transferring a one byte command sent by the host to the controller.

Command	Description
Control Reset	Halts a command in progress and clears all interrupts and status.
Recalibrate	Steps selected drive to track 00.
Seek	Steps head to desired track.
Read ID	Reads the next sector ID field.
Read Data	Reads a sector of data from the specified sector.
Write Data	Writes a sector of data with normal AM in the specified sector.
Write Deleted Data	Writes a sector of data with Deleted Data AM in the specified sector.
Format Track	Writes address marks, gaps and data on specified track.