

NUSYS 1600 HARDWARE SPECIFICATIONS PROCESSING UNIT

General Features

The NUSYS 1600 Processing Unit utilizes the Intel 8086 16-bit microprocessor. It features 256K or 512K of RAM, 8K of ROM, 4 input/output ports, floppy disk drive controller and on-board self-test firmware.

Technical Specifications

Central Processing Unit (Standard)

- *Intel 8086 microprocessor.
- *16-bit word size.
- *Clock rate of 4,916 MHz.

Memory Management Unit (Optional)

- *4K bytes page size.
- *16 register set.
- *Memory size per process from 12K bytes to 256 bytes
- *Exception trapping for illegal operations.
- *Memory mapped DMA.
- *Separate Instruction/Data space.

Hardware Floating Point Unit

- *A socket is located on the Processing Units printed circuit board for an optional Intel 8087 floating point co-processor to provide for high speed floating point arithmetic.

Read/Write Memory

- *256K (standard) or 512K (optional) bytes of on-board RAM with parity check.
- *150nS access time.
- *Uses 64K dynamic memory chip.
- *Memory refresh is transparent to user and is performed by a direct memory access (DMA) cycle.

Read Only Memory

- *8K bytes of programmable Read Only Memory.
- *290nS access time.
- *Standard system supplied with two 32K bit chips, pre-programmed with bootstrap and self-test programs.

Input/Output

- *4 asynchronous serial Input/Output ports two ports configurable to synchronous operation.
- *Each serial port has an individual baud rate generator which is software programmable from 50 to 19,200 baud.
- *Standard RS232C signal levels.
- *Includes all control signals needed for proper terminal or modem communication.

Floppy Disk Drive Controller

- *Uses and LSI floppy controller chip.
- *Double density MFM recording technique.
- *Phase-locked-loop data separator.
- *Direct Memory Access data transfer.
- *Provides CRC error checking.
- *Capable of controlling up to 2 disk drives (5 1/4 in).
- *Provides a maximum storage capability of 800kbytes of formatted data per drive.

MECHANICAL

Printed Circuit Board

- *Size approximately 30 cm x 35.5 cm. (11 3/4 in. x 14 in.).

Cabinet

- *Size: 7cm high x 39.5cm wide x 47.5 cm long (2 3/4 in. x 15 1/2 in. x 18 3/4 in.).
- *Material: 18 gauge steel with plastic front bezel.
- *Weight: approximately 4.5 kg (10 lbs.).

Power Supply

- *110 AC, 60 Hz (optional 220V, 50 Hz).
- *High efficiency switching power supply design.
- *Includes internal power line filter.

Connectors

- *All connectors are mounted in the rear panel of the cabinet.
- *Four DB-25 female connectors (serial I/O ports).
- *Three DB-37 female connectors (floppy disk, hard disk).

MASS STORAGE UNIT

General Features

The Mass Storage Unit is a separate module designed to interface with the Processing Unit. It features a micro-Winchester hard disk drive unit, which is a compact drive with a storage capacity of 10 megabytes.

The Mass Storage Unit also houses a high density mini-floppy disk drive for program distribution and back-up. Additional features include an independent power supply and an advanced design hard disk drive controller capable of handling up to 4 hard disk drives.

Technical Specifications

Hard Disk Drives (Seagate ST412)

Capacity

*Unformatted per drive: 12.6 Megabytes-Formatted per drive: 10.0 Megabytes

Access Time

*Track to track: 3 msec.

*Average time: 85 msec (using burst mode).

*Average latency: 8.33 msec.

Controller (WD 1001)

*Uses a high speed bipolar microprocessor.

*Pre-programmed with optimized microcoded for efficient data storage and transfer.

*Automatic formatting.

*Automatic retries on all errors.

*Automatic restore and re-seek on seek error.

*Overlap seek capability.

*Implied seek on all commands.

*Uses MFM recording techniques.

*High speed direct memory access data transfer to Processing Unit.

*Data transfer rate of 5 Mbit/second.

*ECC error correction.

*Controls up to 4 drives.

Miscellaneous

- *Rotational speed: 3600 rpm.
- *Recording density: 7690 bpi.
- *Flux density: 9074 fci.
- *Track density: 345
- *Cylinders: 306
- *Tracks: 1224
- *R/W heads: 4
- *Platters: 2

FLOPPY DISK DRIVE (Tandon TM 100-4)

Capacity

*Unformatted: 1 Megabyte per drive.-Formatted: 800K bytes per drive.

Access Time

- *Track to track: 6 msec.
- *Average time: 158 msec.
- *Average latency: 100msec.

Miscellaneous

- *Rotation speed: 300 rpm.
- *Recording density: 5922 bpi.
- *Flux density: 5922 fci.
- *Track density: 96 tpi.
- *Track: 80
- *R/W heads: 2

MECHANICAL

Power Supply

*110V AC, 60 Hz (optional 220V, 50Hz), includes line filter

Cabinet

- *Size: 12.5 cm high x 39.5 cm wide x 47.5 cm long (5 in. x 15 1/2 in x 18 3/4 in.)
- *Material: 18 gauge steel with plastic front bezel.
- *Weight approximately 7 kg (15lbs)

Connectors *Five DB-37 female connectors **User Controls** *ON/Off switch.