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 800k bytes 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: 7 cm high x 39.5 cm 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.

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