

MULTI-USER SUPER MICRO

FULL 16 BIT PERFORMANCE

SYSTEM SUMMARY The NUSYS 1600 is a powerful 16-bit multi-user, multi-tasking microcomputer system supporting up to three user terminals.

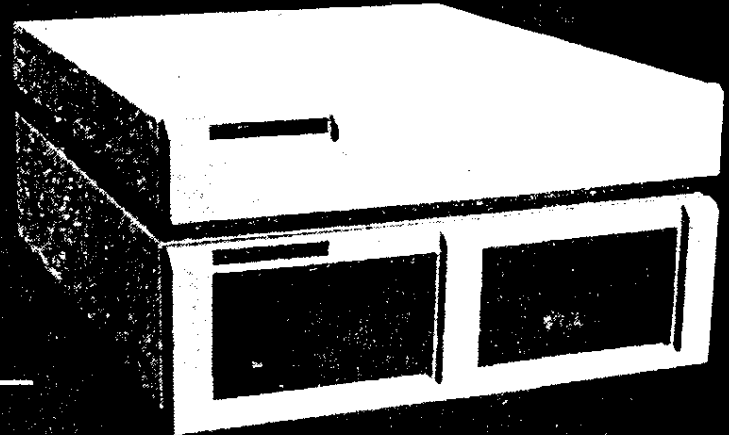
PROCESSING UNIT

Features:

- 256K standard RAM — upgradable to 512K
- 8K ROM
- 4 Input/Output ports
- Floppy disc drive controller
- On-board self-test firmware

Specifications:

- 8086 microprocessor @ 4.916 MHz
- 8087 hardware compatible
- 4 I/O Ports with RS232C interface



MASS STORAGE UNIT

Features:

- separate module, allows expansion
- 10 megabyte 5 1/4" micro-winchester hard disk drive
- 640 Kb DS DD floppy disk drive (96 tpi)
- independent power supply
- WD 1001 hard disk drive controller will support up to 4 drives

Specifications:

Hard Disk Drive:

- Seagate ST412
- Unformatted — 12.6 megabytes
- Formatted — 10 megabytes
- Disk Controller — Western Digital WD 1001

Floppy Disk Drive

- Tandon TM 100-4
- Unformatted — 1 megabyte
- Formatted — 640 Kb

SOFTWARE

- CP/M-86
- QNX Operating System

NUSYS 1600 BASIC SYSTEM

\$3,495.

INCLUDES: 256K RAM CPU
Mass Storage Unit

OPTIONS: 256K Add-on Memory 590.
Terminals (each) 590.

SOFTWARE: QNX 750.
DOC Text Formatter 275.
On-line documentation 120.
Q-DOS: DOS Emulator 75.
Q-Mail: Mail System 120.
Q-Spell: Spelling Checker 235.
Basic Compiler 350.
Fortran Compiler 350.
Dibol Compiler 350.

Systems Available from:

FULCRUM Technologies Inc.
331 Cooper Street
Ottawa, Ontario K2P 0G5
Telephone: (613) 238-1761

Software & Service:

Data Profiles Limited
158 Maclaren Street
Ottawa, Ontario K2P 0K6
Telephone: (613) 233-8763

Specifications subject to change without notice.

Terms: C.O.D. only.

QNX is a registered trademark of Quantum Software Systems, Ltd. CP/M-86 is a registered trademark of Digital Research Inc.

T H E N A B U 1 6 0 0

The NABU 1600 is a powerful 16-bit multi-user, multi-tasking system which can operate as a stand-alone business computer supporting up to three user terminals, utilizing a telephone interface for communication, and later form part of a cable-connected local or city-wide network.

PROCESSING UNIT

General Features

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

A specially designed Memory Management Unit manages memory and augments the software operating system in the XENIX environment.

Technical Specifications

Central Processing Unit

- Intel 8086 microprocessor.
- 16-bit word size.
- Clock rate of 4.916 MHz.

Memory Management Unit

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

Hardware Floating Point Unit

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

Read/Write Memory

- 256K or 512K 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 an 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 (5¼ 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. (11¼ in. x 14 in.).

Cabinet

- Size: 7 cm high x 39.5 cm wide x 47.5 cm long (2¾ in. x 15½ in. x 18¾ in.).
- Material: 18-gauge steel with plastic front bezel.
- Weight: approximately 4.5 kg (10 lbs.).

Power Supply

- 110V 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, cable adaptor).

User Controls

- RESET switch.
- ON/OFF switch.

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 (5 megabytes optional). 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 Drive

Capacity

- Unformatted per drive: 12.6 Megabytes
- 6.3 Megabytes (optional).
- Formatted per drive: 10.0 Megabytes
- 5.0 Megabytes (optional)

Access Time

- Track to track: 3 msec
- Average time: 85 msec (using burst mode)
- Average latency: 8.33 msec

Continued overleaf

Hard Disk Drive (Optional)

Controller

- Uses a high speed bipolar microprocessor
- Pre-programmed with optimized micro-code 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
- Disks 2

Floppy Disk Drive

Capacity

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

Access Time

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

Miscellaneous

- Rotational speed 300 rpm
- Recording density 5922 bpi
- Flux density 5922 fci
- Track density 96 tpi
- Tracks 80
- R/W heads 2

Mechanical

Power Supply

- 110V AC, 60 Hz (optional 220V, 50 Hz)
- Includes line filter

Cabinet

- Size 12.5 cm high x 39.5 cm wide x 47.5 cm long (5 in x 15½ in x 18¾ in.)
- Material 18-gauge steel with plastic front bezel
- Weight: approximately 7 kg (15 lbs.)

Connectors

- Five DB-37 female connectors

User Controls

- On/Off switch

SOFTWARE

Operating Systems

- XENIX—Multi-user, multi-tasking operating system.
- MS/DOS—Single user operating system.

Communications

- Asynchronous
- Synchronous

Program Development Tools

- Full-screen editor
- Utilities package
- File management
- Screen management

Languages

- C-Language
- BASIC
- FORTRAN
- Pascal
- COBOL

Applications

- Word Processing
- Electronic Spreadsheet
- Accounting
- Data Entry
- Database management



NABU Manufacturing Corporation

1051 Baxter Road, Ottawa
Ontario K2C 3P2
Telephone (613) 596-6700

NUSYS 1600 MICROCOMPUTER

SYSTEM SUMMARY

The NUSYS 1600 is a powerful 16-bit multi-user, multi-tasking microcomputer system supporting up to three user terminals.

PROCESSING UNIT

Features:

- * 256 K standard RAM - upgradable to 512K
- * 8K ROM
- * 4 Input/Output ports
- * Floppy disc drive controller
- * On-board self-test firmware

Specifications:

- * 8086 microprocessor @ 4.916 MHz
- * 8087 hardware compatible
- * 4 I/O Ports with RS232C interface

MASS STORAGE UNIT

Features:

- * separate module, allows expansion
- * 10 megabyte 5 1/4" micro-winchester hard disk drive
- * 800 Kb DS DD floppy disk drive (96 tpi)
- * independent power supply
- * WD 1001 hard disk drive controller will support up to 4 drives

Specifications:

Hard Disk Drive:

- * Seagate ST412
- * Unformatted - 12.6 megabytes
- * Formatted - 10 megabytes
- * Disk Controller - Western Digital WD 1001

Floppy Disk Drive

- * Tandon TM 100-4
- * Unformatted - 1 megabyte
- * Formatted - 800 Kb

SOFTWARE

- * QNX Operating System
- * BASIC, FORTRAN, DIBOL
- * Word Processing, text editor, Mail System
- * Data Base

Systems Available from:

FULCRUM Technologies Inc.
331 Cooper Street
Ottawa, Ontario K2A 0G5

Telephone: (613) 238-1761

Software & Service:

Data Profiles Limited
500-880 Wellington Street
Ottawa, Ontario K1R 6K7

Telephone: (613) 233-8763

All specifications subject to change without notice. The above information is thought to be correct and complete; however all systems are sold "as is" and "where is" without warranty of any kind.

Terms: C.O.D. only.

SUGGESTED PRICE LIST

NUSYS 1600	BASIC SYSTEM	\$ 3,495.
INCLUDES:	256K RAM	
	Mass Storage Unit	
OPTIONS:	256K Add-on Memory	590.
	Memory Management Unit	290.
	Terminals (each)	590.
SOFTWARE:	QNX	750.
	DOC Text Formatter	275.
	On-line documentation	120.
	Q-DCS: DOS Emulator	75.
	Q-Mail: Mail System	120.
	Q-Spell: Spelling Checker	235.
	Basic Compiler	350.
	Fortran Compiler	350.
	Dibol Compiler	350.

QNX is a registered trademark of Quantum Software Systems, Ltd. Dibol is a registered trademark of Digital Equipment Corp.

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 800 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: 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.

PC / MSU

The PC/MSU is a powerful mass storage unit which adds hard disk capability to the IBM Personal Computer with standard off-the-shelf components - priced to sell.

FEATURES - HARDWARE

- * TWO micro-winchester hard disk drives (5 1/4" 10 Mb each)
- * Seagate ST 412 drives
- * Intelligent HD controller WD 1001
- * Independent power supply
- * Independent cooling fan
- * Separate steel enclosure - compatible in appearance to the PC

FEATURES - SOFTWARE

- PC DOS * 2.0 Loadable device driver
 - * formatter/diagnostic program
- QNX * driver available from Quantam Software Systems Ltd.

SYSTEMS AVAILABLE FROM:

FULCRUM Technologies Inc.
331 Cooper Street
Ottawa, Ontario K2P 0G5

(613) 238-1761

SERVICE:

Data Profiles Ltd.
500 - 880 Wellington St.
Ottawa, Ontario K1R 6K7

(613) 233-8763

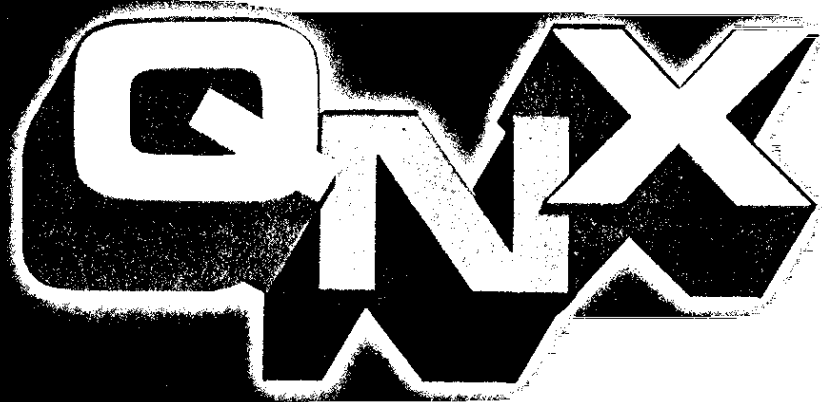
PRICE ----- \$2,995.

- Includes - PC Interface board
- Necessary cables
- software to operate
- installation and operation instructions
- everything you need to add dramatic power to your PC.

IBM PC and PC DOS are registered trademarks of International Business Machines Corporation. QNX is a registered trademark of Quantum Software Systems, Ltd.

The Next Generation Operating System

QNX. Literally the finest, fastest, most comprehensive PC operating system available. A true real time, multi-user, multi-tasking operating system that gives the user hierarchical files and 16 level task priorities. In addition to the standard set of over 60 utilities (including word processing, communications, "C" compiler and 8086 assembler ... **all for only \$650 U.S.**) the following products are also available.



QDOC. A sophisticated document processor. Capabilities: automatic table-of-contents, indexes, footnotes, mailing lists, forms, etc.

QSPELL. A very fast multi-user spelling checker that has the unique ability to check spelling in real time as you enter or print text anywhere in QNX.

QMENU. A menu interface to QNX and your applications allows you to create your own menus as a front end to any application.

QBASIC. A basic compiler which supports structured IF THEN ELSE's, multi-line functions and separately compiled modules.

QDOS. A PC-DOS emulator which allows you to run many of your DOS applications as a task under QNX.

QMAIL. A multi-user messaging system. Features include registered mail, mail forwarding, sending to groups of users, etc.



QUANTUM SOFTWARE SYSTEMS LTD.
P.O. Box 5318, Station "F"
Ottawa, Ontario, Canada K2C 3H5
Tel. (613) 820-8460

QUANTUM SOFTWARE SYSTEMS INC.
6940 Santa Teresa Blvd., Ste. 6
San Jose, California 95119
Tel. (408) 281-1586

QNX

QNX OPERATING SYSTEM

- Multi-tasking — Many programs executing concurrently.
- Multi-User — QNX is a complete timesharing environment.
- Real-Time — Ideal for process control.
- Message Passing — Very efficient, ideally suited for local area network configurations.

HIERARCHICAL FILE STRUCTURE

- Organize files in directories, just as you would organize paper files in your filing cabinet.
- 16 character file names or directories.
- No limit to the number of directories, or directory levels.
- Minimum file size is 512 bytes (very little disk wastage).
- Maximum file size is the size of the disk.
- Optimized for personal computer environment
 - works well on floppies
 - secure against power failure.
- Multiple access to files for read.
- File locking for write.
- Multi-user file security.

DOS FILE TRANSFER

A utility program is provided to allow you to transfer files between QNX and DOS 1.1 formatted diskettes.

TERMINAL SUPPORT

QNX will support asynchronous communication lines at speeds up to 9600 baud. Line editing is supported on all terminals (if desired) including rubout, line erase, character replace, insert, and delete. Previous lines can be recalled and edited. A database of terminal capabilities (termcap) allows "C" programs to be terminal independent.

MINIMUM HARDWARE CONFIGURATION (single user)

- IBM PC (or PC compatible) personal computer
- 128K RAM
- 1 320K floppy disk drive (2 recommended)
- 1 keyboard plus display (monochrome OR colour)

MAXIMUM HARDWARE CONFIGURATION (17 users)

- IBM PC (or PC compatible) personal computer
- 880K RAM
- 8 disk drives (floppy, hard, or ramdisk)
- 1 keyboard plus display
- 2 parallel printers
- 16 serial devices (terminals, modems, printers, ...)

QNX FEATURES

- Shared Code — Minimizes memory usage.
- Shared Library — Reduces size of programs on diskette.
- Disk Caching — Speeds up disk accesses.
- Multiple windows — Convenient interface to multiple tasks.
- Mountable disk drivers — Supporting many popular hard disks.

OTHER QNX PRODUCTS

- QDOC — Sophisticated Document Processor.
- QSPELL — Very fast, real time spelling checker.
- QMENU — A menu interface to QNX and your applications.
- QBASIC — Basic Compiler.
- QDOS — DOS emulator which allows many popular DOS products to run under QNX.
- QMAIL — Multi-user electronic messaging system.
- BTREE — A set of "C" library routines which provide low level data base support.

A COMPARISON WITH OTHER MULTI-TASKING SYSTEMS

Intel Corporation has published a series of benchmarks which test the "speed" of an operating system. The following times have been recorded for several popular UNIX (tm) or UNIX-like systems which are commercially available. The benchmark measures task switching.

OS	Computer	Processor	Measured time (msec)	Scale factor	Normalized time (msec)
QNX	IBM PC	5Mhz 8088	1.35	1.0	1.4
UNIX	ONYX	4Mhz 78000	6.56	1.88	12.3
XENIX	ALTOS	5Mhz 8086	10.4	1.36	14.1
UNIX	CODATA	8Mhz 68000	5.34	2.85	15.2
XENIX	Intel-286	5Mhz 80286	4.93	4.2	20.7
UNIX	FORTUNE	6Mhz 68000	10.5	2.14	22.4

FULL SCREEN EDITOR (ED)

- Very powerful, VERY fast word processing Editor
- Powerful pattern matching commands
- Multi column operations (block copy, move and delete)
- Up to 256 characters per line with horizontal and vertical scrolling.
- Convenient auto-filling and justification
- Extensive macro capabilities allowing customization (editor packages)
- Complete keyboard translation

"C" COMPILER

- Kernighan and Ritchie "C" including close to 150 "C" library routines.
- 8087 support and complete mathematical library.
- Shared memory support

ASSEMBLER (8086/186/286)

The QNX assembler supports the complete Intel family of 16 bit processors. Features include:

- 3 relocatable regions
- Full 8087 support
- Generates short branches where possible
- Very fast

QUANTUM SOFTWARE SYSTEMS LTD.

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Ottawa, Ontario, Canada K2C 3H5
Tel. (613) 820-8460

QUANTUM SOFTWARE SYSTEMS INC.

6940 Santa Teresa Blvd., Ste. 6
San Jose, California 95119
Tel. (408) 281-1586



CLEARANCE SALE - DISCONTINUED SUPERMICRO

CPU

- 8086 CPU Board FEATURES - 256K RAM + parity \$ 350.
4 Serial ports
NEC floppy controller
2 extra DMA ports
- Schematics for CPU (includes engineering documentation) 50.
- CPU cabinet INCLUDES - power supply 150.
line filters
internal cables
- Diagnostics 100.
- CPU COMPLETE INCLUDES ALL OF ABOVE, TESTED AND WORKING AS 1,395.
A COMPLETE, OPERATIONAL CPU
- CPU add-on memory board, an additional 256K RAM (includes 200.
36 4164-15 or equivalent)

DISC DRIVES

- Floppy drives 5 1/4" DS DD 96 tpi Tandon TM 100-4 \$ 275.
- Micro-winchester 5 1/4" Seagate ST 412 10Mb 750.
- Controller Western Digital WD 1001 connects CPU to hard disc drives 175.
- Disc drive cabinet, INCLUDES power supply, fits TWO 5 1/4" disc drives 200.
- COMPLETE disc storage sub-system, INCLUDES one of each of the above components, assembled and tested 1,695

SOFTWARE

- QNX - A real-time, multi-tasking, multi-user operating system faster, smaller and BETTER than UNIX, INCLUDES the QUANTUM C Compiler including FULL Kernighan & Ritchie V7 & 8086/8087 ASSEMBLER \$ 750.
- CP/M-86 - INCLUDES complete implementation for above CPU 400.
Digital Research documentation, AND
source for the BIOS

ATTENTION IBM PC OWNERS

- Disc storage sub-system for the PC - INCLUDES
interface board to the IBM PC
Loadable device driver to PC DOS 2.0
installation and operating instructions
INCLUDES disc cabinet described above

10 MB VERSION

\$ 1,995.

TWIN 10 MB VERSION

2,995.

CONDITIONS OF SALE:

Certified cheque or money order. Ontario residents must add 7% sales tax. All products will be sent courier collect. Complete systems have been tested and are operational.

For further information:

FULCRUM TECHNOLOGIES INC.
331 COOPER STREET
OTTAWA, ONTARIO K2P 0G5

TELEPHONE (613) 238-1761

UNIX is a trademark of Bell Laboratories. CP/M-86 is a trademark of Digital Research Inc. IBM and PC DOS are trademarks of International Business Machines Corp. QNX is a trademark of Quantum Software Systems, Ltd.

All products listed above are in limited supply and will be sold on a first come first served basis. Everything is sold without warranty on an "AS IS" "WHERE IS" basis.

83.11.24

DATA PROFILES LIMITED ***** SERVICE MAINTENANCE AGREEMENT *****

CONTRACT NO. _____

Purchase Date: _____

System: _____

Serial CPU: _____

Starting Date: _____

MSU: _____

Expiry Date: _____

Service Price: _____

RETAIN THIS AGREEMENT AND PRESENT SHOULD SERVICE BE REQUIRED

NAME _____

PHONE: _____

ADDRESS _____

CITY _____

PROV. _____

POSTAL CODE: _____

In consideration for the price indicated above, Data Profiles Limited will upon request, service and maintain the above described product to the extent necessary to keep it in good working condition until the expiry date shown.

Service will be performed when the customer brings the product to Data Profiles Limited.'s service center.

This agreement does not cover repairs necessitated by external causes such as: acts of abuse, fire, flood, wind or lightning.

Agreement is void if services are performed by unauthorized personnel.

Service Manager

DATA PROFILES LTD. 500-880 Wellington St. Ottawa K1R 6K7 613 233 8763

QIX ORDER FORM

SOLD TO: _____

DATE ORDERED: _____ DATE REQUIRED: _____

REFERENCE: _____

SOFTWARE REQUIRED:

QHX	\$750.	_____
Q.DOS	75.	_____
DOC TEXT FORMATTER	275.	_____
ON LINE DOCUMENTATION	120.	_____
Q.MAIL: MAIL SYSTEM	120.	_____
Q.SPELL: SPELLING CHECKER	235.	_____
BASIC COMPILER	350.	_____
FORTTRAN COMPILER	350.	_____
DIBOL COMPILER	350.	_____

Data Profiles Limited
880 Wellington Street
Suite 500
Ottawa Ontario K1R 6K7

(613) 233-8763

Established - 1978

SERVICES PRICE LIST

SERVICES:

Regular service rate (per hour - 1 hour min.).....\$ 65.00
On site service (min to cover travel - 25 km. peace tower).....\$130.00
System Installation Service\$100.00
Service Maintenance Agreement:
NUSYS 1600 with MSU (per month)\$ 55.00
with MMU and MEU\$ 65.00

Parts and Software by quotation.

All work carries a 30 day warranty.

CLIENT REFERENCE LIST

Our client list includes the following:

Bell Northern Research

The Computer Communications Group

Bell Canada

The Office of the Auditor General

Canda Mortgage and Housing Corporation

The Treasury Board

The Department of National Defence

NABU 1600 O/S's

- MS-DOS
- XENIX

MS-DOS

This operating system is not expected to be the main drawing card of the NABU 1600 and will not be discussed in detail.

MS-DOS is a slightly enhanced version of CP/M and was written by Microsoft for IBM, and was/is sold inexpensively to ensure wide usage.

The MS-DOS operating system is a single-user, single tasking system designed for the business user rather than scientific user.

The purpose of offering MS-DOS is to increase the range of Class III products that will run on the NABU 1600.

XENIX

As "Xenix" is the supported operating system derived and enhanced from the "Unix" O/S, let us look at Unix and its background first.

Unix is a trademark for a family of operating systems developed by Bell Laboratories. Unix development began with Ken Thompson's work on a PDP-7 minicomputer; he and others were motivated by one overriding objective: to create an environment which would be well suited to programming research. The acceptance by Bell Labs of this early development, led to later versions running on PDP-11/34, /40, /60 and /70 computers.

One of the most significant features of Unix was its development in the general purpose language "C" which provides facilities for structured programming as well as modular compilation. Due to this implementation in a high level language, Unix has been successfully ported to a wide range of hardware, including: VAX, IBM 370, Amdahl 470, Interdata 8/32, Data General (Nova and Eclipse), Zilog (Z80,Z8000), and Mortorola 68000.

Once Unix became operational in 1971, it came into use not only throughout Bell, but was also distributed to a number of Universities for use in computer science education programs. As a result of demand, Bell entered into an agreement with Western Electric to act as distributors of source Unix licences to commercial institutions wishing to use Unix. Under this arrangement Western Electric itself would not provide any operating support it would only act as a distributor. Unix version 6 became widely distributed in this fashion.

However, true commercial acceptance in the past has been hindered by the requirement to purchase a Unix source license, third parties are now providing support for Unix and selling object only versions of Unix at reasonable prices.

In particular, Human Computing Resources of Toronto is now distributing, in Canada, Unix version 7 (object only) on behalf of Microsoft who have a license arrangement with Western Electric. In fact HCR has been contracted to provide Unix version 7 on the 16 bit 8086 machine (Xenix).

Although Unix V7 has only been available recently in binary form, Western Electric has announced (December 1981) the release of a new version of Unix called System III. This version of Unix contains all of V7 plus some of the tools available in the PWB (Programmers Work Bench). It will be available under OEM agreements at a price of \$100 for a single user binary system. Western Electric also announced that A.T.&T. Corporate would take over Unix licensing. Western Electric also indicated that Bell was committed to providing a commercially viable Unix system.