

# NORTH STAR ADVANTAGE

Featuring 8/16 option and NorthNet



## The Dual Purpose Computer for the Business That's Planning to Grow.

The North Star ADVANTAGE the easy-to-use desk top computer, doubles as a Word Processor and/or Data Processor in your office:

### Word Processor Advantages

- Selectric® style keyboard with quality feel has 87 sculpted keys including 15 Function Keys for fast entry.
- Choose from three North Star software options:
  - Enhanced Wordstar™ for CP/M® users
  - NorthWord™ for simplified editing that's easy to learn
  - NorthWord™ II, the most efficient word processor for microcomputers
- Large disk capacity stores hundreds of documents.
- Can be connected to other computers by NorthNet™, North Star's local area network.

### Data Processor Advantages

- Standard 8-bit plus fast 16-bit processors allow migration path as data bases or applications grow.
- 12-inch bit-mapped display offers high resolution graphics (640 x 240 pixels).
- Fully integrated, interactive financial software packages fulfill complete small business data requirements.
- State-of-the-art hardware offers optional 8MHz 16-bit 8088-2 processor with Z80A® co-processor, up to 256Kb

of memory, and up to 15Mb of hard disk storage.

- Choice of Operating Systems includes Graphics CP/M, and Graphics MS™-DOS.
- Several North Star ADVANTAGEs on NorthNet can share large data bases with protected file access.

### Growth Advantages

Your first North Star ADVANTAGE with two floppy disks—plus a dot matrix or letter quality printer and software—gives you all you need for high quality word processing and financial planning.

As your requirements grow, add hardware, software and more North Star ADVANTAGEs, and connect them with NorthNet into a fully integrated office of the future. You can increase computing power four ways:

- Plug in additional boards:
  - 16-bit 8088-2 processor
  - up to 256Kb of additional memory
  - NorthNet Workstation and Server Boards
  - serial or parallel I/O boards
- Upgrade mass storage to 5Mb or 15Mb Hard Disk.
- Add applications programs, languages, even more operating systems.
- Interconnect up to 64 North Star ADVANTAGEs on NorthNet.

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**NorthStar**™

# SOFTWARE

## North Star Graphics CP/M

Graphics CP/M is a powerful superset of CP/M that supports the extensive graphics capabilities of the North Star ADVANTAGE. It lets you make full use of the large body of CP/M-compatible software.

Languages on CP/M include North Star BASIC, COBOL, FORTRAN and Pascal.

North Star has enhanced several CP/M programs for use on the North Star ADVANTAGE, including:

Enhanced WordStar™ 3.0—the most popular word processing program in use today.

SpellStar™—the one-step "proofreader" for WordStar that catches misspellings and typos—and MailMerge™—the form-letter generator that lets you produce personalized letters.

Enhanced MicroPlan™—the sophisticated spread sheet with advanced math and statistical functions for the serious financial planner.

dBASE™ II—the powerful and flexible relational data base manager that contains its own interactive command languages.

## North Star Total Business Solutions Family

The Total Business Solutions Family is a high performance operating system for North Star proprietary word processing, financial and general business applications. The software is totally integrated so that every application can interact with every other one.

ACCPAC™ is a completely automated accounting system for small business with a comprehensive audit trail and detailed user menus. It includes:

- Accounts Payable
- Accounts Receivable
- General Ledger
- Order Entry
- Inventory Control
- Payroll

PROPAC™ is a time management and billing system for professional offices (medical, legal, financial) that includes:

- a client profile module (data base)
- a client time and billing module
- a client receivables module for balance forward billing and general ledger posting.

InfoManager™ II is a menu-driven data base management system that can store and manipulate lists of information. It includes both numeric and mailing list capability.

NorthWord is easy to learn and easy to use for report writing and editing. NorthWord II is a page-oriented, efficient word processor for professional users. NorthSpell™ II is a spelling verifier for NorthWord II-generated documents.

NorthPlan™ is a financial spread sheet that is fully integrated with InfoManager II and NorthWord II. It can be used in either an interactive or a preprogrammed mode.

## Graphics MS-DOS

MS-DOS is the most popular 16-bit operating system in the microcomputer field, and Graphics MS-DOS is the superset that supports all North Star ADVANTAGE 8/16 graphics features. Graphics MS-DOS also allows the North Star ADVANTAGE to read IBM PC diskettes.

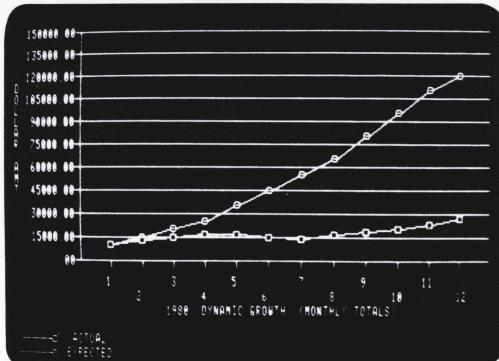
Together with the 8088-2 16-bit processor, Graphics MS-DOS represents a significant increase in computing speed and power. Available on it are:

- dBASE II—the 16-bit version of the relational data base manager is faster and can handle much larger data bases than the CP/M version.
- WordStar—plus SpellStar and MailMerge.
- BASIC 16
- BASIC 16 COMPILER
- FORTRAN-16
- COBOL-16
- Pascal-16

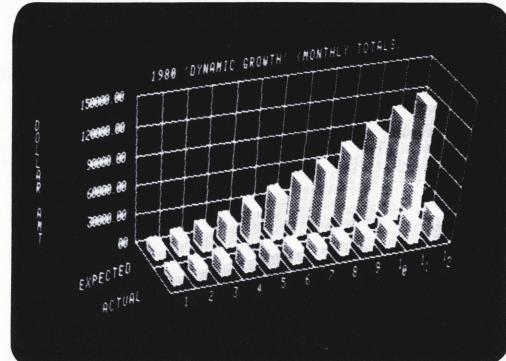
## North Star Graphics DOS

Graphics DOS is North Star's proprietary operating system that supports the bit-mapped graphics features of the North Star ADVANTAGE.

### TYPICAL SYSTEMS GRAPHICS:



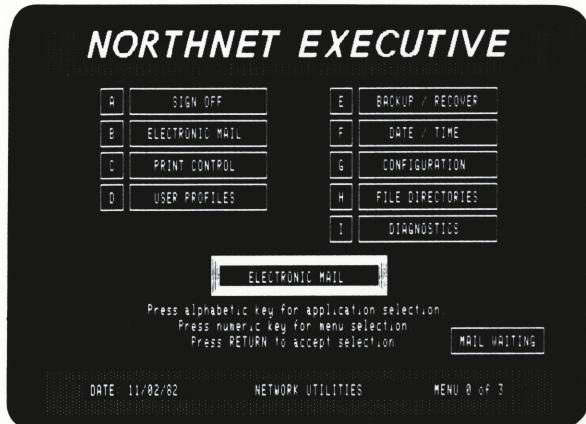
LINE CHART



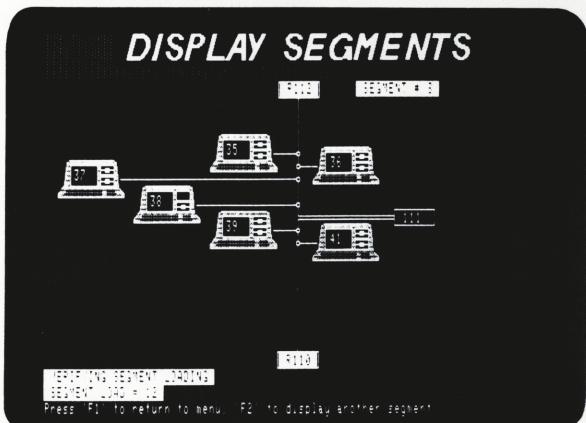
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# NORTHNET

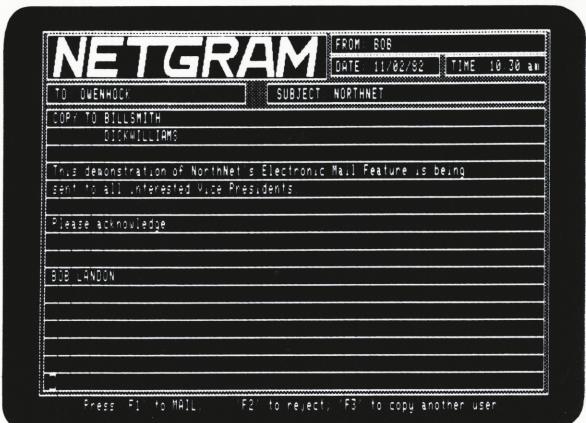
## TYPICAL NORTHNET SCREENS:



## UTILITIES MENU



## NETWORK CONFIGURATION



## ELECTRONIC MAIL

### NorthNet - The Proprietary Local Area Network

for the North Star ADVANTAGE and ADVANTAGE 8/16

NorthNet is a high speed, low cost local area network that is easy to install and simple to use. It interconnects a group of computers so they can share printers and large files, and can communicate with each other.

Unlike time shared multi-user computers, each user on NorthNet has a fully operational computer which can be used either on NorthNet or as a stand-alone, independent word processor or data processor.

NorthNet's versatile structure fits into any type and size of office. It can be configured to serve a number of separate departments—each with its own software, security and peripherals—and link all of them together with Electronic Mail. Or it can be used company-wide to provide a single integrated data base.

Whether you have two computers or 64, NorthNet lets you use them more effectively:

- Share expensive resources such as printers, hard disks and communications.
- Share and update a common data base with controlled access and record lockout.
- Communicate between North Star ADVANTAGEs with Electronic Mail.
- Access public data bases and other computer systems.
- Keep full processing speed and power plus local storage at each computer.

The NorthNet bus interconnects North Star ADVANTAGE computers with low cost, easy-to-install shielded twisted pair cabling. Each North Star ADVANTAGE is connected to NorthNet simply by plugging an inexpensive Workstation Board into the computer and running a 15-foot cable to the NorthNet bus. This allows the North Star ADVANTAGE to access shared files and resources, and to send and receive Electronic Mail.

The shared resources are provided by one or more North Star ADVANTAGE Workstations designated as Servers. These contain a Workstation Board, a Server Board and a Hard Disk. They may have other resources such as printers or communications facilities connected to them.

Software for NorthNet consists of a Network Executive Operating System to control access, configuration and communications; the Electronic Mail facility; and the CP/M operating system. To this basic software, add your selection of word processing and data processing applications.

## North Star ADVANTAGE Specifications

### Cabinet

Dimensions: 48 cm x 51 cm x 31.5 cm  
(18½ inch x 20 inch x 12½ inch)  
Shipping Weight: Approximately 22.5 kg  
(50 lb.)

Net Weight: 19.5 kg (43 lb.)

Composition: High impact structural foam

### Power Requirements

Domestic: 115v (95 to 135v), 50/60 Hz  
International: 230v (190 to 265v), 50/60 Hz  
Power Consumption: 2 amps @ 115v,  
1 amp @ 230v

### Temperatures

Operating: 10°C to 40°C  
(50°F to 104°F)  
Non-operating: -40°C to 60°C  
(-40°F to 140°F)  
Shipping: -40°C to 52°C  
(-40°F to 125°F)

### Humidity:

Operating: 20% to 80% non-condensing  
Non-operating and shipping: 5% to 95%  
non-condensing

### Processor/Memory

|                      | North Star<br>ADVANTAGE                            | North Star<br>ADVANTAGE<br>8/16   |
|----------------------|--|---|
| CPU                  | Z80A Micro-processor                               | Z80A & 8088-2 Co-processors   |
| Operating Speed:     | 4MHZ   | 8MHZ  |
| Auxiliary processor: | Intel 8035   | Intel 8035  |
| Memory:              | 64Kb Main RAM<br>20Kb Display RAM<br>2Kb Boot PROM | 64Kb-256Kb Main RAM for 8088-2 + 64Kb for Z80A<br>20Kb Display RAM<br>2Kb Boot PROM |

### Video

Screen: 28 cm (12 inch) diagonal P31 phosphor (green)

Non-glare face plate

Standard Character Format: 1920-character display, 24 lines by 80 characters. 5 x 7 character in 8 x 10 dot matrix with descenders

Graphics Resolution: 640 pixels wide x 240 pixels high

Refresh Rate: 60Hz

### Keyboard

11° Keyboard angle (Selectric compatible)

Keys: 87, with sculptured keytops

Key Groups: 49 Standard Typewriter Keys

14-key Numeric pad with

ENTER Key

15 Function Keys with up to 45 user-programmable functions

9 Additional Symbol/Control Keys

Other Features: N-Key Roll-Over

Full Cursor Control

Special Shift-Lock Keys

Five Shift Modes

Auto Repeat

### Disk

Number of drives housed in cabinet:  
Two floppy disk drives, or one hard disk and one floppy disk drive

#### Floppy disk characteristics:

Standard 5½ inch floppy diskettes  
512 bytes/sector, 10 (hard) sectors/track  
35 tracks/side, 2 sides/diskette  
360Kb storage/diskette (formatted)

#### Hard Disk characteristics:

Non-removable 5½ inch hard disk media,  
512 bytes/sector, 16 (soft) sectors/track  
5.0Mb or 15.0Mb formatted capacity/drive

|                               | Quad Floppy Disk | 5Mb Hard Disk | 15Mb Hard Disk |
|-------------------------------|------------------|---------------|----------------|
| Transfer rate:                | 250Kb/s          | 625Kb/s       | 625Kb/s        |
| Latency (average):            | 100ms            | 8.33ms        | 8.33ms         |
| Access Time (track-to-track): | 5ms              | 3ms           | 3ms            |
| Settling Time:                | 20ms             | 20ms          | 20ms           |
| Number of Tracks:             | 70               | 612           | 1836           |
| Disk Speed:                   | 300rpm           | 3600rpm       | 3600rpm        |

### Input/Output

Slots for up to six plug-in boards:

Serial I/O: RS-232C serial port

Current loop option

Asynchronous: 45 baud to 19.2 kilobaud

Synchronous: 2400 baud to 51 kilobaud

(One provided with each system)

Parallel I/O: 8-bit data in and out with three handshake lines for each port.

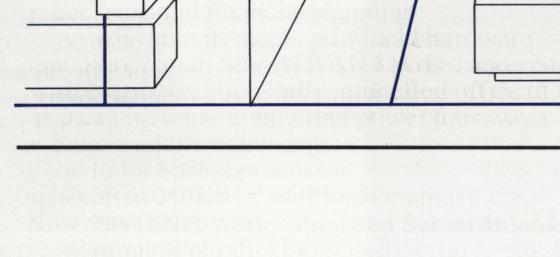
Maximum speed limited by the processor.

Workstation Board: Turns North Star ADVANTAGE into NorthNet Workstation. Includes separate Z80A processor.

Server Board: Together with Workstation Board turns North Star ADVANTAGE into NorthNet Server. Includes 64K of RAM and real time clock.

ADV-16 Board: Includes 8088-2 16-bit microprocessor and 64K of RAM. Up to three additional 64K RAM Expansion Boards can be plugged into the ADV-16 Board to bring 8088-2 memory to 256K.

Hard Disk Controller Board: for either 5 Mb or 15Mb Hard Disk



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