HP-75D Sales Guide





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INTRODUCING THE HP-75D

Hewlett-Packard introduces the first portable bar code reader to read major industrial bar codes: the HP-75D portable computer. Your customers can benefit from the HP-75D if they have applications that involve remote data collection and the transmission of data from remote locations.

Combine the HP-75D with a digital bar code wand, and you have a powerful solution for remote data collection applications. The HP-75D is compact and rugged for use in the factory or in the field. With its built-in BASIC language operating system, the HP-75D can easily be programmed to provide user prompts and messages, process data, or communicate with other computers.

Communicating with host computers is easy. Add the HP-75D Expansion Pod*, and you gain the capabilities of electronic disc memory and a modem. Other communication options include a portable acoustic coupler (U.S. only), the HP-IL/RS-232C Interface, and the HP-IL/HP-IB Interface.

These options give Hewlett-Packard a unique position in the areas of remote data collection and remote information processing--two segments of the market HP has identified as "Remote Distributed Data Processing" (RDDP). The RDDP market covers many industries and applications. Some significant applications include field service, field sales support, inventory collection, and laboratory sample tracking. In many cases, the HP-75D replaces manual entry of data, and saves the customer time and money.

Six features of the HP-75D make it a powerful solution in the RDDP market:

- Easy to program.
- Rugged and reliable.
- Can be integrated into total HP solution (together with mainframes, personal computers, bar code wands, and printers).
- Customizable.
- Communicates with other computers and devices.
- Has two options for data entry--keyboard or bar code.

We will discuss these features and the RDDP market in more detail later in this guide.

* Available July, 1984

HP-75D AT A GLANCE

- Dimensions: 5 x 10 x 1-1/4 in Weight: 26 ounces
- 8-bit Series 80 CMOS CPU
- Single-line, 32-character LCD display; scrolls to 96 characters
- Typewriter-like, alphanumeric keyboard
- 48K byte ROM BASIC language operating system
- 16K byte RAM built in, expandable to 24K with optional plug-in memory module
- Built-in HP-IL interface
- Built-in, hand-pulled card reader
- Built-in bar code wand interface

Peripherals:

- HP 82162A 24-character Thermal Printer/Plotter
- HP 82161A 128K Digital Cassette Drive
- HP 82168A 300-baud Acoustic Coupler (U.S. Only)
- HP 82905B (opt. 248) 80-column (full-page) Impact Printer
- HP 7470A (opt. 003) Two-pen Plotter
- HP 82163A Video Interface
- HP 82912A 9-inch Monitor
- HP 82913A 12-inch Monitor
- HP 2671A (opt. 048) Alphanumeric Thermal Printer
- HP 2671G (opt. 048) Graphics Thermal Printer
- HP 82718A Expansion Pod*
- HP 92267A High-resolution Bar Code Wand
- HP 92267B Medium-resolution Bar Code Wand
- * Available July, 1984

SYSTEM SOFTWARE

Solutions Books	Part Numbers
Finance/Investment	00075-13009
Real Estate	00075-13010
Math I	00075-13003
Math II	00075-13004
Math III	00075-13005
Electronics	00075-13008
Statistics	00075-13011
Test Statistics	00075-13012
Games I	00075-13006
Games II	00075-13007
I/O Utilities	00075-13013
Graphics	00075-13016
Application Pacs	

VisiCalc(R)	00075-15014
Text Formatter	00075-15019
Math	00075-15015
Surveying	00075-15012
Data Communications	00075-15035
I/O ROM*	00075-15001

* The new HP-75D I/O ROM enhances the BASIC language capability of the HP-75D Portable Computer with HP-IL controller and advanced programming commands. I/O functions include formatted ENTER and OUTPUT, SEND, and other Series 80 I/O and base functions. The I/O ROM also provides advanced programming and file manipulation functions including string arrays, call with paramaters, and data file functions.

VisiCalc(R) is a registered trademark of VisiCorp.

A CLOSER LOOK AT THE HP-75D

The HP-75D is a fully-integrated, battery-powered computer weighing only 26 ounces and measuring $10 \times 5 \times 1-1/4$ in. Battery power and compact size allow the HP-75D to be used anywhere for fast, accurate data entry. Data can be entered from the keyboard or by scanning bar code with a digital bar code wand.

Data collected with the HP-75D can be processed at remote sites or transferred to another computer using the portable HP 82168A Acoustic Coupler or the HP 82718A Expansion Pod. The HP-75D can also communicate with other HP computers and peripherals using the HP-IL/RS-232C Interface (HP 82164A) or HP-IL/HP-IB Interface (HP 82169A).

HP-75D Product Features

Operating System

Featuring a CMOS version of the CPU used in the HP-86 Personal Computer, the HP-75D contains the same level of information-handling capability and accuracy of larger desktop computers.

An extensive 48K byte ROM-based operating system compliments the 8-bit parallel CPU. Major components of this operating system include:

BASIC--A comprehensive high-level language interpreter is built into the HP-75D. With over 100 system and BASIC commands and 41 numeric functions to choose from, this portable computer provides an extremely versatile and powerful instruction set for easy program development.

Text--A text file capability is built into the HP-75D. This feature allows easy entry, editing, and storing of data.

Time/Date Functions--A perpetual clock/calendar function in the HP-75D can record the time and date of a data entry automatically. A built-in appointment function can be used to execute programs or commands for unattended information processing or to provide audio alarm and prompting messages for data collection instructions. Calculations--You can perform direct mathematical calculations on the HP-75D. Numerical values, arithmetic or logical operators, and numeric functions may be keyed-in or programmed to process and analyze data.

Memory

Internal to the HP-75D is 16K bytes of CMOS RAM. Over 90% of this memory space is free for the user. For those requiring more memory, a single 8K byte expansion module, the HP 82700A Memory Module, may be plugged in behind the battery compartment. Adding this module does not change the outside dimensions of the HP-75D.

Since the HP-75D is a CMOS battery-powered computer, the user memory is continuous. Data stored in memory will not be lost when the computer is turned off. Additionally, any number of files may be in memory at any one time. This multiple-file capability is only limited by the memory space available.

The HP 82718A Expansion Pod provides additional memory to store data and programs. The pod comes with either 32K or 64K bytes of electronic disc RAM, which is indirectly addressable through built-in mass storage commands. Because CMOS RAM is provided in the pod, data and programs are retained even when the power is turned off.

Keyboard

The HP-75D incorporates a touch-type keyboard with a staggered typewriter-like configuration. The 65 keys are spaced for ease of entry, and the tactile feel allows for fast, error-free data entry.

In addition to touch-type capability, over 190 key or key combinations may be redefined. This feature permits immediate execution of commands or programs or immediate recall of typing aids by simply pressing a user-defined key combination.

Display

The single line LCD (liquid crystal display) of the HP-75D displays 32 characters of a full 96-character line. The 256-character set of the HP-75D includes both upper- and lowercase characters (full ASCII) as well as many additional special characters. The use of true descenders enhances the readability of the display.

Card Reader

A feature unique to the HP-75D in the portable computer market is the built in, hand-pulled card reader. Magnetic cards (1.3K bytes per card) are used to store programs, text files, data files, and key redefinitions. Information may be read from the magnetic cards to the HP-75D or information may be written to the magnetic cards as a convenient, inexpensive off-line mass storage medium.

Plug-in Ports

Three software plug-in ports are integral to the HP-75D. Each of these ports will allow up to 32K bytes (up to a maximum of 96K bytes for all three ports) of ROM-based software to be plugged in to the HP-75D. These software modules do not utilize any of the internal user memory space (RAM). The programs contained in the modules are readily available becuase they connect directly to the HP-75D internal bus.

Customers may also develop their own custom ROMs and plug them into the software ports.

HP 82718A Expansion Pod*

The HP 82718A Expansion Pod adds two enhancements to the HP-75D which are valuable for RDDP applications:

- 300 Baud direct connect modem
- 32K bytes or 64K bytes electronic disc memory

The HP-75D connects to the pod through the battery compartment and right-most front port. The HP-75D is held in the pod by two screw-on retainers, one on each side of the HP-75D. Once assembled, the dimensions of the HP-75D and pod together are $6-1/2 \times 11-1/2 \times 2-1/4$ in.

The pod's integral modem has the following features:

- Bell 103 compatible originate/answer
- 2 RJ11C direct connect jacks
- Automatic reporting of call failure, communications established, and loss of communications
- Automatic call answering
- Automatic disconnect on call failure or loss of communciations
- Automatic dialer (pulse, tone)
- Protocol
 - Asynchronous: 8-bit data with even start/stop bits
 - Full duplex
 - Parity: 7-bit ASCII with even, odd, mark, space or 8-bit data
 - XON/XOFF or ENQ/ACK protocol
 - 300 Baud

The HP 82718A includes 16K byte ROM software which provides modem and electronic disc commands. Low level modem commands allow user control of dialing, changing operating modes, and setting handshake protocol and parity. High level commands are used to turn the modem on and off, transmit strings to and from the modem, and check the status of the modem.

Electronic disc commands provide the ability to create, access, and modify files, establish a hierarchical directory structure, and copy files into and out of the electronic disc.

* Available July, 1984

BAR CODE SYSTEMS

Bar code data entry provides several advantages compared to keyboard entry:

- Faster data entry
- Improved accuracy
- Simplified end-user training

Data entered by bar code scanning is handled in the same way as keyboard-originated data. When reading bar code with the HP-75D, data can be displayed for verification and/or collected in RAM memory to be processed or transferred to another computer.

Two products are required for reading bar code with the HP-75D Portable Computer: 1) HP 82725A Bar Code Reader Module and 2) HP 92267A or HP 92267B Digital Bar Code Wand.

HP 82725A Bar Code Reader Module

The HP 82725A Bar Code Reader Module is an 8K byte ROM module which conveniently plugs into one of the front ports of the HP-75D. The Bar Code Reader Module provides the software that decodes the scanned bar code from the serial data provided by the wand into ASCII data. The HP 82725A supports the following bar codes:

- 3 of 9 Code
- Interleaved 2 of 5
- Industrial 2 of 5
- Code 11
- Universal Product Code (UPC A or E)
- European Article Number (EAN 8 or 13)
- Codabar

Each type of bar code is decoded by its own string function. The bar code reader module will reliably decode bar code that:

- Has a minimum element width of 0.0075 inch
- Has a ratio of wide to narrow elements between 2:1 and 3:1
- Is read with a minimum scan speed of 3 inches/second and a maximum scan speed of 30 inches/second

A maximum string length of 42 characters, including any check digit, can be decoded.

Digital Bar Code Wands HP 92267A and HP 92267B

Two types of wands are available for the HP-75D:

- HP 92267B: medium resolution "7.5 mils" wand (resolution 0.19mm, 0.0075 in) recommended for reading bar code labels produced on good quality dot matrix printers.
- HP 92267A: high resolution "5 mils" wand (resolution 0.13 mm, 0.005 in) recommended for reading high density labels which are generally produced on specialized printers.

The HP 92267A and HP 92267B have the following features:

- Replaceable, sealed sapphire tip
- Rugged, lightweight case
- Push-to-read switch
- 0-45 degree scan angle
- 3-30 in./sec scan speed
- Wand dimensions of 5.2 in. x 0.9 in. x 0.8 in.
- Strain-relieved coiled cord with maximum length of 28 in. (71 cm.) retracted and 72 in. (183 cm.) extended.

Bar Code Tips:

The "reading performance" of a bar code reader is usually measured by the "first time read rate", the percentage of bar code labels successfully read at the first attempt. The following tips will help the user achieve first time read rates greater than 90%.

- Observe the bar code specifications. Refer to the code description in "Elements of a Bar Code System" (5953-7732).
- The width ratio between large and narrow elements (bars or spaces) must never be less than 2, and should be increased to 3 when the geometric shape of the bars is not perfect (i.e. contain visible printing imperfections).

- Optical properties of the bar code labels must match optical specifications of the reader. For example, the print contrast must exceed a given value (70% for wands, 60% for slot readers) at the wand's light wavelength. In industrial applications, use only monochrome bar code: white for the substrate (spaces), and black for the bars (with the exception of black security labels).
- The density of the bar code label must match the reader's resolution, i.e. the narrowest element of the bar code pattern must be equal to or wider than the reader's resolution.
- Ink must be dry before reading; smeared ink cannot be decoded.
- In dirty environments, protect the label with a transparent plastic layer.
- Choose a substrate, or label material, that will withstand environmental conditions. Paper, plastic, and metal can all support the bar code labels, provided they have the correct optical properties.

Special note for dot matrix printers:

The print quality of bar code labels varies with general purpose dot matrix printers. Follow these steps to ensure a good reading performance:

- Use a good quality printer to ensure a perfect vertical alignment and horizontal linearity of the dots. This will also prevent voids in the bars or ink spots in the spaces. Dot overlap techniques (such as those available on the HP 2631G option 200) achieve good bar code opacity.
- Use Optical Character Recognition (OCR) paper for sufficient reflectance and good opacity at the reader's light wavelength.
- Use an OCR carbon-based ink ribbon for dark black bars.

FEATURES AND BENEFITS

<u>HP-75D</u>

FEATURES	BENEFITS
Compact size, battery powered	Use it anywhere
Single-line, 32-character display scrolls to 96 characters	Easy viewing of prompts and messages
8-bit CMOS CPU	Gives you the speed and power of a large computer
48K BASIC language operating system	For fast, easy program development
16K RAM plus optional 8K RAM plug-in	Lots of storage for data and programs
Touch-typeable alphanumeric keyboard	For easy, fast text entry
Built-in HP-IL Interface	Gives you the flexibility to communicate with computers and peripherals at remote sites
Rugged, durable	More versatility with the option to use in the factory or field
Built-in bar code wand interface	Fast, accurate data entry
Hand-pulled card reader	Convenient and inexpensive off-line storage of information and programs
3 plug-in ports	Ability to customize with software for specific application

HP 82725A Bar Code Reader Module

FEATURES

Supports major industrial bar codes

Programmable audible and visual operator feedback

Bidirectional scanning

Reads labels containing up to 42 characters

Optional check digit verification

BENEFITS

Versatility for wide range of applications

User friendly feedback speeds data entry and reduces errors

Easier to read bar code

Not restricted to specific label lengths

Verifies accuracy of bar code value

HP 92267A/B Digital Bar Code Wands

FEATURES

Rugged case

Replaceable, sealed sapphire tip

Push-to-read switch

HP 82718A Expansion Pod

FEATURES

32K or 64K CMOS RAM

300 Baud direct-connect modem

Electronic disc command

Modem control software

BENEFITS

Lightweight and durable

Prevents dust and dirt from collecting in tip

Conserves power

BENEFITS

More memory for programs and data

Link to host computer over telephone lines

Control over pod memory for easy transfer of data

Easy access to data

THE MARKET

Remote distributed data processing is a growing segment of the market for portable terminals and computers. The RDDP market began with the introduction of portable terminals and has expanded rapidly as portable devices added more processing power and memory capacity.

In RDDP applications, portable devices are used to collect, process, and store data at remote sites for later transmission to a host mainframe. Some examples of these applications are:

- Order entry to record sales and control inventory.
- Field service reporting for communications between dispatcher and service rep and for entry of customer repair information.
- Inventory collection in factory warehouse.
- Work-in-process tracking on the assembly line.

In each of these applications, data was previously collected using pencil and paper. Communication to a central location was by phone or mail, and data was entered into the system by keypunch operators. The results were available days or weeks later.

There are several advantages to using portable computers for RDDP applications:

- Elimination of data entry and computational errors. Built-in error-checking routines assure that errors are corrected as they are entered.
- <u>Measurable cost savings</u>. Costs for keypunch/verification personnel, dispatchers, and multi-part data entry forms are reduced or eliminated. The cost of mistakes is also reduced.
- <u>Availability of real-time data</u>. The time to mail, keypunch and verify data is eliminated, making information for management decision-making available more quickly. Information such as competitive product data can be collected and processed more easily.
- Enhanced productivity Unnecessary delays and aggravations of filling out forms and checking for errors are removed, leaving more time for other tasks and promoting greater worker satisfaction.

The RDDP market covers a range of applications in manufacturing, sales, service, and R&D. In general, the customer requirements for RDDP products and the HP-75D's ability to meet them are as follows:

MARKET NEED	HP-75D CAPABILITY
Reliability/Durability	HP quality well-known. HP here to stay.

Ease of Use BASIC operating system simplifies program development. Full alphanumeric keyboard is easily redefined.

Price/Performance HP-75D is competitively priced for its capabilities.

Dedicated Product ROMs and overlays, the HP-75D can be designed to fit specific applications.

Communications Capability

Storage Capability and Expansion Potential

Speed, Responsiveness

Single-vendor Solution

Modularity

HP-IB, RS-232 interfaces. Up to 24K bytes RAM.

Built-in HP-IL interface. HP 82168A Acoustic Coupler.

Additional 32K or 64K electronic disc with HP 82718A Expansion Pod.

8-bit, Series 80 processor.

Interfaces to HP mainframes, peripherals.

System grows with user's needs.

The primary customers for the HP-75D are managers, industrial engineers, and data processing professionals in major manufacturing companies. The two application areas where the HP-75D will be most successful are:

1) Field Sales and Service Reporting

Description: Customer calls and messages are transmitted to the HP-75D from a central computer. At the customer location, information on the customer's order is entered into the HP-75D, which edits the data to ensure accuracy. At the end of the customer visit or later in the day, the sales or service rep transmits the information to the central computer using the portable HP 82168A Acoustic Coupler or HP 82718 Expansion Pod with direct connect modem.

HP-75D Strengths:

- Compact size fits easily in briefcase
- Rugged, durable product for handling in the field
- Professional appearance
- Communications capability to host mainframes through portable acoustic coupler, HP 82718A Expansion Pod or RS-232C Interface
- Typewriter-like keyboard for easy data entry
- Customizable

HP-75D Weaknesses: - Single-line display

Major Competitors: - MSI - Motorola (Terminal with radio communications)

2) Remote Data Collection

Description: The portable bar coding reading system can be used in inventory collection, work-in-process tracking, distribution tracking, order processing, time management studies, and lab sample tracking.

HP-75D Strengths: - Ability to integrate into total HP solution - Easy to program - Communications - Customizability HP-75D Weaknesses: - Memory expansion - Small key size - Non-industrialized case (case not sealed against moisture) Major Competitors: - MSI - Intermec

CUSTOM PRODUCTS

Independent Custom Consultants (ICCs) provide support service to custom products customers, including:

- Custom ROMs
- Custom magnetic cards
- Custom keyboard overlays
- Software development
- System integration
- Packaging

For more information call the following HP sales centers:

Sales Force 02T/C (408) 725-8111 (SMS Sales Center)

Sales Force 12/22 (408) 257-7111 (PCG Sales Center)

PRODUCT LITERATURE AND SALES AIDS

HP-75D Technical Product Guide*	(5954-1078)
Series 10/40/70 Price List*	(5954-1081(D))
HP-75 Software Poster	(6118)
HP-75D Demo Cassette and	
Instruction Card	(5954-1057)
HP-75D Bar Code System Data Sheet	(5953-5657)

To order any of the above materials, call 800-FOR-HPPC toll free, or send completed order forms to:

Hewlett-Packard Inquiries/Distribution Dept. 1000 NE Circle Blvd. Corvallis, OR 97330

ADMINISTRATION

The HP-75D, Software, HP 82725A, and HP 92267A/B are on the following contracts:

- HP calculator dealers
- CMG purchase agreements
 - Exhibit A-1
 - Exhibit A-9

The HP-75D Opt. 001 and HP 82718A Expansion Pod are on the CMG purchase agreements only.

WARRANTY

The HP-75D is warranted for one year after purchase.

SERVICE AND REPAIR

The HP-75D will be repaired in the same manner as advanced calculators. For all U.S. owners, repairs will be made at the Corvallis Repair Center; otherwise, repairs will be made at authorized repair centers throughout the world. The Owner's Manual contains addresses of the worldwide repair centers.

The Standard Repair Cost (STREP) is \$190.

* Available May 1, 1984

SUPPORT: Who to Call?*

	Customer	Dealer	Sales Representative
Types of Questions			
Prices Availability Configuration General Pro- duct Info.	PCG Telemarket- ing Center (800) FOR-HPPC (800-367-4772)	PCG Sales Center (dealer hotline) (800) 648-8004	PCG Sales Center Telnet: 157-XXXX or (408) 257-7000
Dealer Loca- tions		Not applicable	Not applicable
Service/ Repair	(503) 757-2000		
Technical Software Detailed Pro- duct Info. Interfacing	PCD Technical Support (503) 754-6666	PCG Sales Center (dealer hotline) (800) 648-8004	PCG Sales Center Telnet: 157-XXXX or (408) 257-7000
After-sale		Not applicable	Not applicable
Custom Pro- ducts Customiza- tion	Local HP Sales Office	PCD Custom Products Major Accounts Dept. (503) 757-2000	
Users' Library (U.S.)	PCD Users' Library (503) 757-2000		
Quotes Large Volume Sales	Local HP Sales Office	Local HP Sales Office	HP Sales Rep- resentative, who contacts PCD Account Development (503) 757-2000

*These are U.S. telephone numbers.

QUESTIONS AND ANSWERS

- Q. WHAT IS THE DIFFERENCE BETWEEN THE HP-75C AND HP-75D?
- A. The HP-75D adds a bar code wand interface to the standard features of the HP-75C. Other than the capability to read bar code, the HP-75D has the same features and functions as the HP-75C.
- Q. WILL HP CONTINUE TO MARKET THE HP-75C?
- A. The HP-75D is intended to replace the HP-75C. The bar code interface for the HP-75D does not change the dimensions of the product or its capabilities. The bar code software and wand are sold separately from the HP-75D so that customers who are interested in keyboard data entry only can purchase the product. The HP-75C will be obsolete as of April 1.
- Q. WILL THE HP-75D REMAIN AN ACTIVE PRODUCT FOR SOME TIME TO COME?
- A. Yes. The HP-75D has many features which will make it successful in the RDDP market. HP has already had major success with the HP-75D in a field service reporting application. The introduction of the HP-75D reflects HP's commitment to the RDDP market.
- Q. WHICH BAR CODES CAN BE READ WITH THE HP-75D?
- A. With the HP 82725A Bar Code Reader Module, the HP-75D can read the most common bar codes for industrial and retail applications:
 - 3 of 9 Code (USD-3)
 - Interleaved 2 of 5 Code (USD-1)
 - Industrial 2 of 5 Code
 - Universal Product Code (UPC A or E)
 - European Article Number (EAN 8 or 13)
 - 2 of 7 Code (Codabar) (USD-4)
 - Code 11 (USD-8)
- Q. WILL SOFTWARE BE DISTRIBUTED IN BAR CODE AS WITH THE HP-41?
- A. No. The HP-75D bar code system was designed for data collection in industrial or retail applications.

- Q. WHY DOES THE RESPONSE TIME FOR BAR CODE SCANNING WITH THE HP-75D APPEAR TO BE SLOWER THAN OTHER BAR CODE PRODUCTS?
- Α. While other products are dedicated to bar code reading and have limited processing power, the HP-75D adds bar code to a powerful portable computer. The HP-75D's BASIC language operating system provides the flexibility to develop programs quickly and easily. When the bar code is scanned, data can be displayed, printed, processed, or stored in a data file. The HP-75D can be programmed to prompt the user for additional information such as quantity. Or, the time and date can be automatically recorded based on the HP-75D's internal clock and calendar. The added flexibility with the HP-75D means a short delay of up to a few seconds between bar code scans. This delay can be minimzed by setting the display delay to .5 seconds or less. For most applications, the HP-75D will meet the customer's performance requirements.
- Q. WHY WOULD A CUSTOMER PURCHASE AN HP-75D OVER AN HP-71B, OR VICE VERSA?
- A. Both the HP-71B and HP-75D are programmable in BASIC, have a QWERTY keyboard and single-line display, and are are customizable with plug-in modules and keyboard overlays. Key differences, however, position the products in two separate market areas.

The bar code interface and larger typewriter-like keyboard make the HP-75D particularly well-suited to remote data collection applications and text entry. Data can be entered by either the keyboard or by reading bar code with an optical wand.

A distinguishing feature of the HP-71B is the calculation mode, which augments the BASIC language capabilities and streamlines applications involving numeric data. The HP-71B also features a FORTH/Assembler option for greater programming flexibility. Customers who need the number-crunching power of a calculator as well as the programming power of a BASIC computer should consider the HP-71B. For a complete description of HP-71B applications and target markets, see the HP-71B Sales Guide (5953-5587).

In providing two options for portable computing products, HP is able to match the needs of more customers in more application areas.

- Q. HOW DOES THE HP-75D COMPARE TO OTHER HP BAR CODE PRODUCTS?
- A. Three HP products provide bar code data entry at comparable prices for individual workstations. The following chart compares the main features of these products. The key feature for the HP-75D is portability. With rechargeable batteries and CMOS memory, the HP-75D can be used anywhere. The HP 3081A and HP 39800A operate in realtime systems only. The HP 3081A was specially designed for use in harsh environments. It is the only product which is dustproof and splashproof.

	HP-75D Portable Computer	HP 3081A Industrial Workstation Terminal	HP 39800A Bar Code Reader
Keyboard	Alphanumeric QWERTY	Numeric or alphanumeric (ABCD sequen- tial)	No keyboard
Display/ Operator Feedback	32-character LCD	32-character Vacuum Fluorescent	No Display LED, buzzers
Power Supply	NiCad Batteries	Remote power supply; supply on data comm cable	AC current; Integral power supply U.S., Eur., Asia
Special Operating Environment	_	Sealed, dust- proof, splash- proof	Shielding (noisy, elec. environment)
Bar Codes Read	3 of 9 Interleaved 2 of 5 Industrial 2 of 5 UPC/EAN Codabar Codell	3 of 9 Interleaved 2 of 5	3 of 9 Interleaved 2 of 5 Industrial 2 of 5 Optional: UPC/EAN/JAN Codabar Other
Data Comm	HP-IL Built-in Optional: RS-232C Interface HP-IB Interface HP 82168A Acoustic Coup HP 82718A Expansion Pod	Current loop to RS-232C adapter or cluster controller e ler	Dual RS-232C Built-in; Programmable baud rate
* Suggested U.S. r	etail.		

- Q. CAN I RETROFIT AN HP-75C WITH A BAR CODE INTERFACE?
- A. No. The HP-75C would require major hardware changes to add the bar code capabilities.
- Q. HOW DO I DEMO THE HP-75D?
- A. The bar code demo tape (5954-1057) provides an easy way to demonstrate the bar code and data communications capabilities of the HP-75D. The demo is patterned after a field service application.

For simple bar code reading demonstrations, the following program is a quick solution:

Bar Code Program

Line #

DELAY .5
FOR $I = 1$ to 20
DISP 'BEGIN SCAN'
A\$=CODE39\$
DISP 'A\$'
NEXT I

This program prompts you to begin scanning then displays the decoded character string. The program is set up to read 3 of 9 code, but may be changed for any of the seven bar codes available.

- Q. WHAT IS THE MAXIMUM MEMORY EXPANSION FOR THE HP-75D?
- A. With the HP 82700A Memory Module, the HP-75D can be expanded to a maximum of 24K bytes of directly addressable CMOS RAM. The HP 82718A Expansion Pod provides either 32K bytes or 64K bytes of additional electronic disc memory. With the HP 82700A and the HP 82718A, the total memory available for the HP-75D is 88K bytes.

- Q. WHAT ADDITIONAL HARDWARE AND SOFTWARE PRODUCTS ARE AVAIL-ABLE TO LINK THE HP-75D TO THE REST OF THE ASYNCHRONOUS WORLD, SUCH AS THE HP 3000?
- A. Hardware: (at least one of the following)
 - HP 82168A Acoustic Coupler (U.S. Only)
 - HP 82718A Expansion Pod
 - HP 82164A HP-IL/RS-232 Interface
 - HP 82167A HP-IL/HP-IB Interface
 - Software: (at least one of the following)
 - 00075-13013 I/O Utilities Solution Book
 - 00075-15001 I/O ROM
 - 00075-15035 Data Communications Pac (Modem Communications Only)

