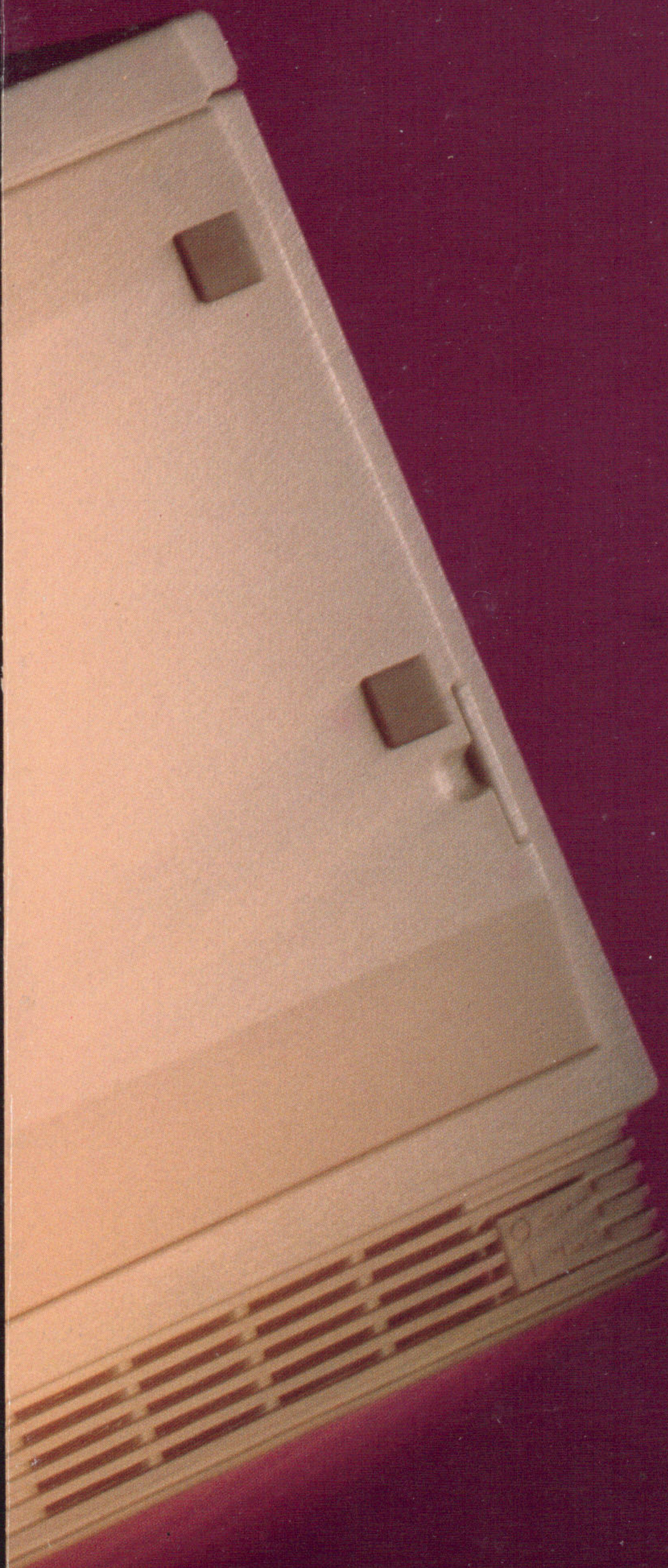


HEWLETT-PACKARD



The
Integral
Personal
Computer

HEWLETT
PACKARD
Integral PC



As Sophisticated
and Hardworking
as You Are

The Integral PC



■ The built-in ThinkJet Printer rushes through printouts at 150 characters per second. But it does it so quietly that you can barely hear it.

■ The nine-inch electroluminescent display gives you multiple 24 by 80 character windows with 255 by 512 pixel, bit-mapped graphics resolution.

■ The screen tilt allows you to adjust the viewing angle of the display. And the amber screen is easy on your eyes.

■ HP Windows let you organize the display to maximize your productivity.

■ Multi-tasking lets you get more done in less time because you don't have to wait for the computer to finish one project in order for you to start another.

■ GraphicArt and other graphics software let you generate topnotch graphics quickly and easily.



- The built-in disc drive uses 3 1/2-inch, double-sided, double-density discs with a formatted memory capacity of 710K bytes.
- The 512K bytes of Random Access Memory gives you ample user memory for most applications, and is expandable to over 5M bytes with bus expanders.

- The RAM Disc allows up to 1/2 of the user memory, or RAM to be allocated as RAM disc. RAM disc can be used as a built-in electronic disc for running applications at a faster rate than on conventional disc drives.
- The 256K bytes of Read Only Memory (ROM) stores the HP-UX operating system kernel, Personal Applications Manager (PAM), and HP Windows.

- The optional HP Mouse lets you run applications faster and easier. Use it to move the cursor around the screen quickly and accurately with less effort.
- PAM translates system commands into simple commands for easier use.
- HP Windows allows you to select window size and position.
- The complete system weighs only 25 pounds and occupies less than one square foot of desk space.

A Show of Force

There's a lot of power here. Mini-computer

power in fact. In a 25-pound package called the Integral Personal Computer.

There's a sophistication to the Integral PC that isn't present in other personal computers. It goes beyond just making the work easier. The Integral PC acts more as an assistant than as a tool.

The Integral PC can actually do some of the work on its own, while you take care of the other tasks at hand. With multi-tasking, you simply set some of your assignments in motion, and the Integral PC sees them through.

And the Integral PC with HP Windows can help you organize your projects while letting you keep an eye on each and every new development as it occurs.

That means you get more done in less time with less effort.

And that's just the start. There are possibilities for this computer that haven't yet been imagined.

But what else would you expect from the company that brought the business world the HP 3000, and with it, distributed computing.

The same company that put a full-function personal computer in a nine-pound package known as The PORTABLE Personal Computer.

Hewlett-Packard. ■



Juggle Your Projects

Multi-tasking on the Integral PC is like having several terminals or personal computers constantly at your disposal.

While one job is being processed, you can turn to another. Recalculate a spreadsheet, compile a program, search a database and print a report.

All at the same time.
On the same computer.

The Integral Personal Computer.

Multi-tasking is possible because the Integral PC, with the HP-UX operating system, allows different operations to "share" microprocessor time. It's like having a minicomputer sitting on your desk.

With multi-tasking, you don't have to wait for the computer to finish printing, compiling, or searching in order to

begin something else.

By minimizing time spent waiting for the computer, you increase your productivity. You haven't worked harder, just more efficiently.

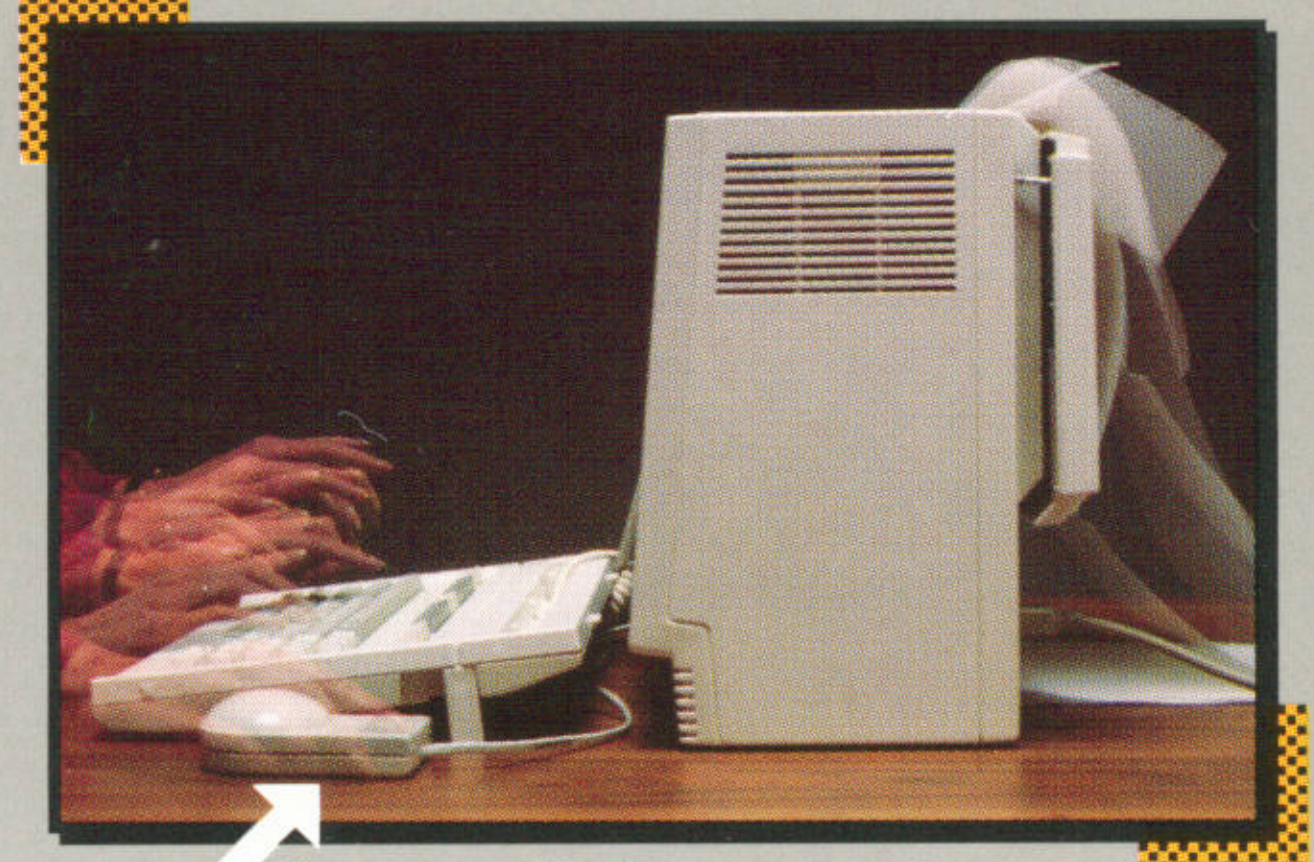
And when you add HP Windows to multi-tasking, you have a powerful productivity combination that lets you keep tabs on your work to maximize effectiveness.

You decide each window size and position to best fit your needs and PAM makes it exceptionally easy to do.

For instance, with HP Windows you can watch the stock market report run across the top of your screen while you figure your net worth on another window.

Even watch data accumulate on instruments you're controlling while you document the results.

Now you're better organized and, because of it, more productive.



Accomplish more than ever before. Let the Integral PC take care of the printing, while you get on with your work.

GraphicMtr
MemoMaker
MEMOMAKER
Line: 21 Column: 25 Length: 20 Main

To: Marcia H. Leesha-Oster, Pres.
From: Bruce F. Oster, U.P.
CC: Dick Nosmot
Buff R. Leesha
Mark J. Ordain

As you can see from the chart on the right, KERMIT has a good chance to capture at least 35% of the home robotics market.

KERMIT has all the features that consumers are looking for in a home robot: voice recognition and speech synthesis, programmability, battery power, remote control and the ability to navigate stairs. Presently, none of our competitors have anything even close to KERMIT. With KERMIT, we could leap-frog to the top of the home robotics market.

Personal Applications Manager (HP-UX)
Open Folder: /apps
Programs: GraphicMtr, adventure, ed, mille, rpn, vi

HOME ROBOTICS MARKET
All Others 18% KERMIT 35%

Automation Inc. 20%	Gepetto & Son 10%	Rastro Ltd. 17%
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MEMOMAKER
Line: 12 Column: 1 Length: 19

As far as production costs go, KERMIT is dirt cheap. But some of our vendors have been raising prices recently. Your brother has raised the price of hub caps (an integral part of KERMIT) to \$2.50 each now, citing soaring legal costs as the reason. Dick says that his brother, Timmy, can get us good hub caps for \$2 each. If we go with Timmy, we should clear 12% profit per KERMIT sold. That would put us over the \$3000 mark for fiscal '86. With that kind of money, we could pay off your dad and maybe even get a little pad of our own.

PRODUCTION COSTS			
	Jan	Feb	Mar
Hub Caps	\$ 40	50	40
Roller Skates	150	160	160
Trash Cans			
Dented	30	35	35
New	60	60	60
Garden Hose	30	20	20

MEMOMAKER Main
Line: 10 Column: 2 Length: 10

You can see from the attached chart that dish breakage dropped significantly from release 2.0 to release 3.0. The bug that led KERMIT to smash the plates on his head has been corrected. However, KERMIT's frisbee-like toss of the china does leave something to be desired. Buff is working on it and I expect to see dramatic improvements next week.

Rel.	Broken Dishes
1.0	80%
2.0	60%
3.0	20%



Collect your data, analyze it, and print your report. All at the same time, on the same computer. The Integral Personal Computer.

GraphicArt Applications Manager (HP-UX)

Marcia Leesha-Oster
President

Bruce F. Oster
V.P.

Mark J. Ordain
Manager

Dick Nosmot
Purchasing

Warren Tadpole
Q.A.

Buff R. Leesha
Engineering

Katie+ Susan
Sanitation

Situation Under Control

That's nice to hear whether you're writing applications programs or controlling instruments.

And the Integral PC offers both advanced programming features and powerful instrument control capabilities.

The Integral PC runs on the HP-UX operating system. HP-UX is based on the AT&T Bell Laboratories UNIX™ System III operating system with Berkeley enhancements like *cs*h and *vi*.

You've got access to an arsenal of programming languages. BASIC, and "C" for starters, with more to come. And the UNIX programmer's tools can save you time and effort when locating and correcting bugs.

Plus the Integral PC offers all the instrument control features of the HP Series 80 Personal Computers, and more.

Like multi-tasking, which allows you to use your Integral PC as an instrument controller and as a personal computer.

At the same time.

You don't have to dedicate one computer just to data collection, computer-aided test, or instrument control. Depending on the activity levels, one Integral PC could do all of the above at

once. And still serve as a personal computer.

Additionally, there's the Device Independent Library (DIL)* which is accessible through HP-UX "C". DIL provides high-level language control of instruments through compiled languages. DIL saves you time when you're programming high performance computer-aided test solutions.

Finally, real-time extensions available through HP-UX provide reliable interrupt handling and priority setting in a multi-tasking instrument control environment.

*Not available at introduction



Add a low-cost instrument controller to your laboratory test environment. And add a personal computer at the same time. The Integral PC.



You can use HP-UX Technical BASIC as an upgrade path for existing HP Series 80 Personal Computer programs, or to write your own. HP-UX Technical BASIC is a superset of ANSI BASIC with math, graphics, and instrumentation I/O command enhancements.

You've got two expansion ports in the back of the Integral PC plus an IEEE 488 HP-IB interface bus for hooking up instruments. And there's a bus expander to let you hook-up even more instruments and peripherals.

The Integral PC can also serve as an intelligent terminal to UNIX operating system-based computers. You can use the UNIX-to-UNIX copy program

(*uucp*), or *mail* to talk to the UNIX community.

Using the Integral PC as an intelligent terminal, you can write source code on any computer running UNIX software. Then download it back to your Integral PC to compile and run. Or vice versa. And that lends a degree of transportability to your minicomputer that it never had.

And with the Integral PC, you can be working on other projects while you're waiting for a response from your instrument or host computer.

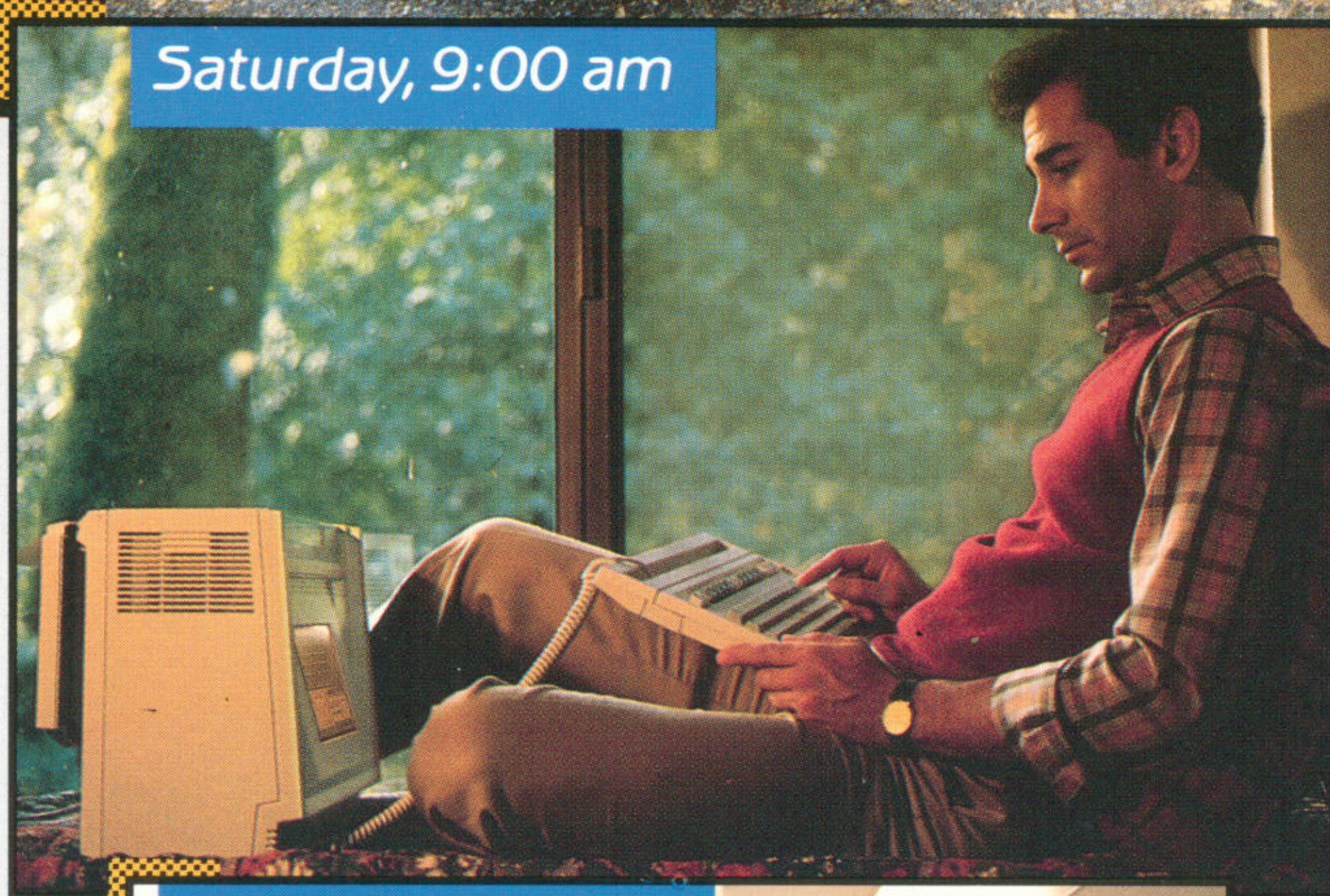
All of which makes the Integral PC the perfect upgrade for HP Series 80 users, and the entry-level member of the HP9000 family of computers. ■



Friday, 5:30 pm



Friday, 6:00 pm




Saturday, 9:00 am



Monday, 8:00 am

It's late Friday afternoon, and your program's got one last bug. Now, with the Integral PC, you can download the program from your mainframe, put it in your car, and take it home. There you can work on it at your leisure. Monday morning, the bug's fixed and you're a hero.



Computer
Museum

100% Solutions The Integral PC offers more than any other computer in its price range. In addition to being a low cost instrument controller, the Integral PC is an excellent office partner.

Thanks to general business packages like Microsoft® Multiplan®, Microtrak™, TK!Solver™ and HP's own MemoMaker to name but a few.

And there are also several vertical market software solutions available from independent vendors.

The Integral PC increases office productivity because it allows you to work on other projects while it spools a file to the printer. You can pull up a travel expense report in one window and copy it onto your monthly report.

Or have a bar chart in one window, a pie chart in another and write a report in a third window that talks about both charts.

You could even display your electronic mail in one window,

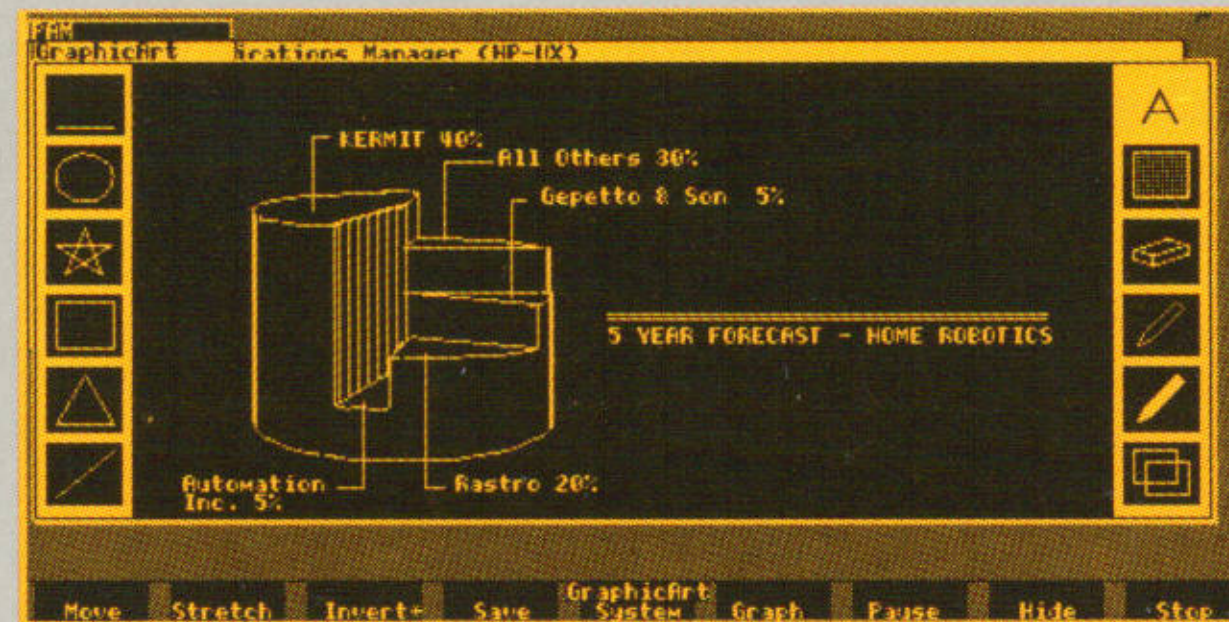
your daily calendar in another and write a memo in yet another. You get the idea.

The Integral PC will serve as a terminal to almost any multi-user computer. The Datacomm software package, plus a 300/1200 bps modem, lets you communicate with any main-frame or mini-

computer, plus services like Dow Jones News Retrieval® and The Source.^{SM*}

And with the Integral PC, you can be working on other projects while you're waiting for a response.

So use it to write software or control instruments, but don't forget the business side of this computer. ■

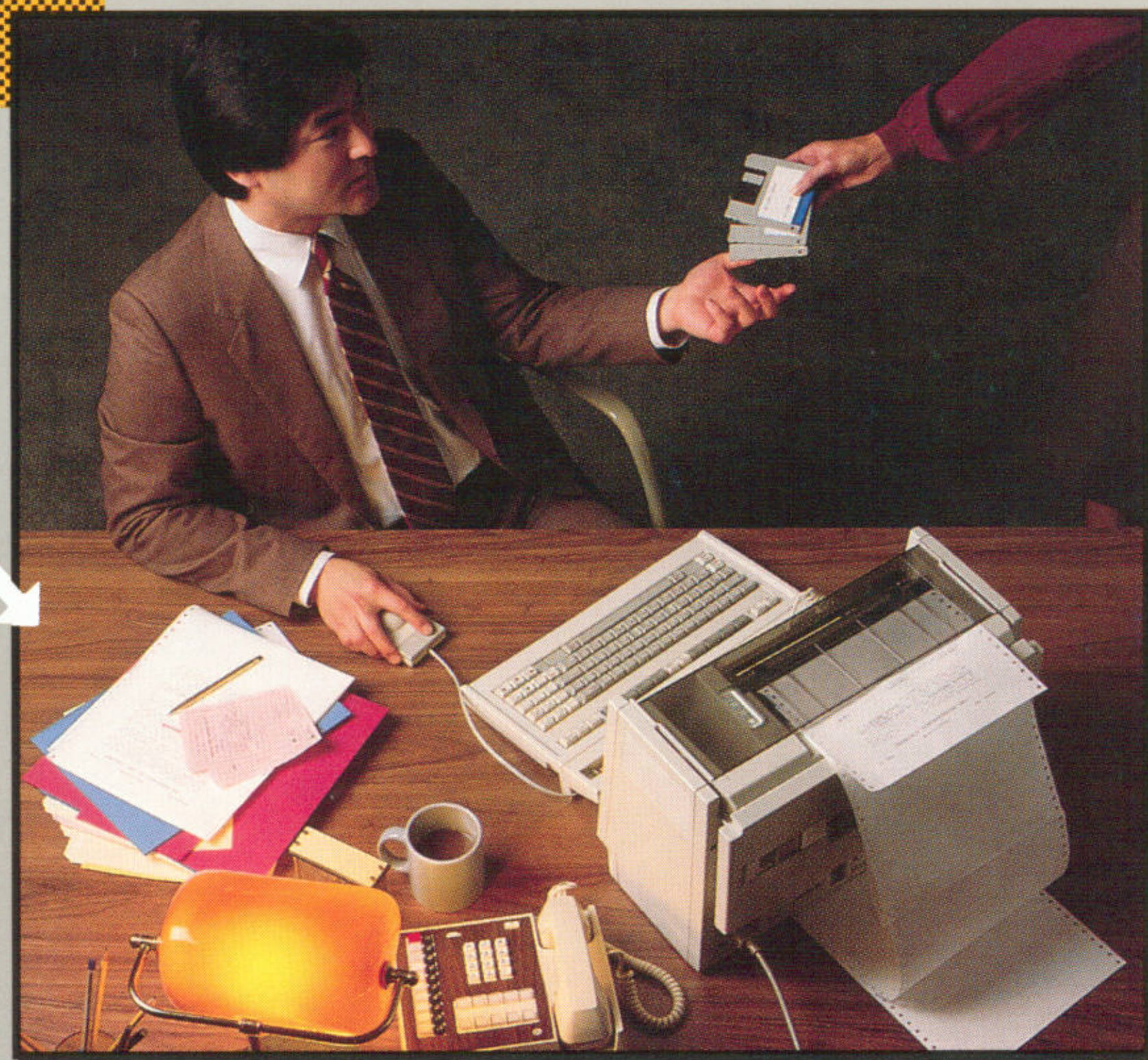


MEMO MAKER Format K
Line: 1 Column: 16 Length: 12

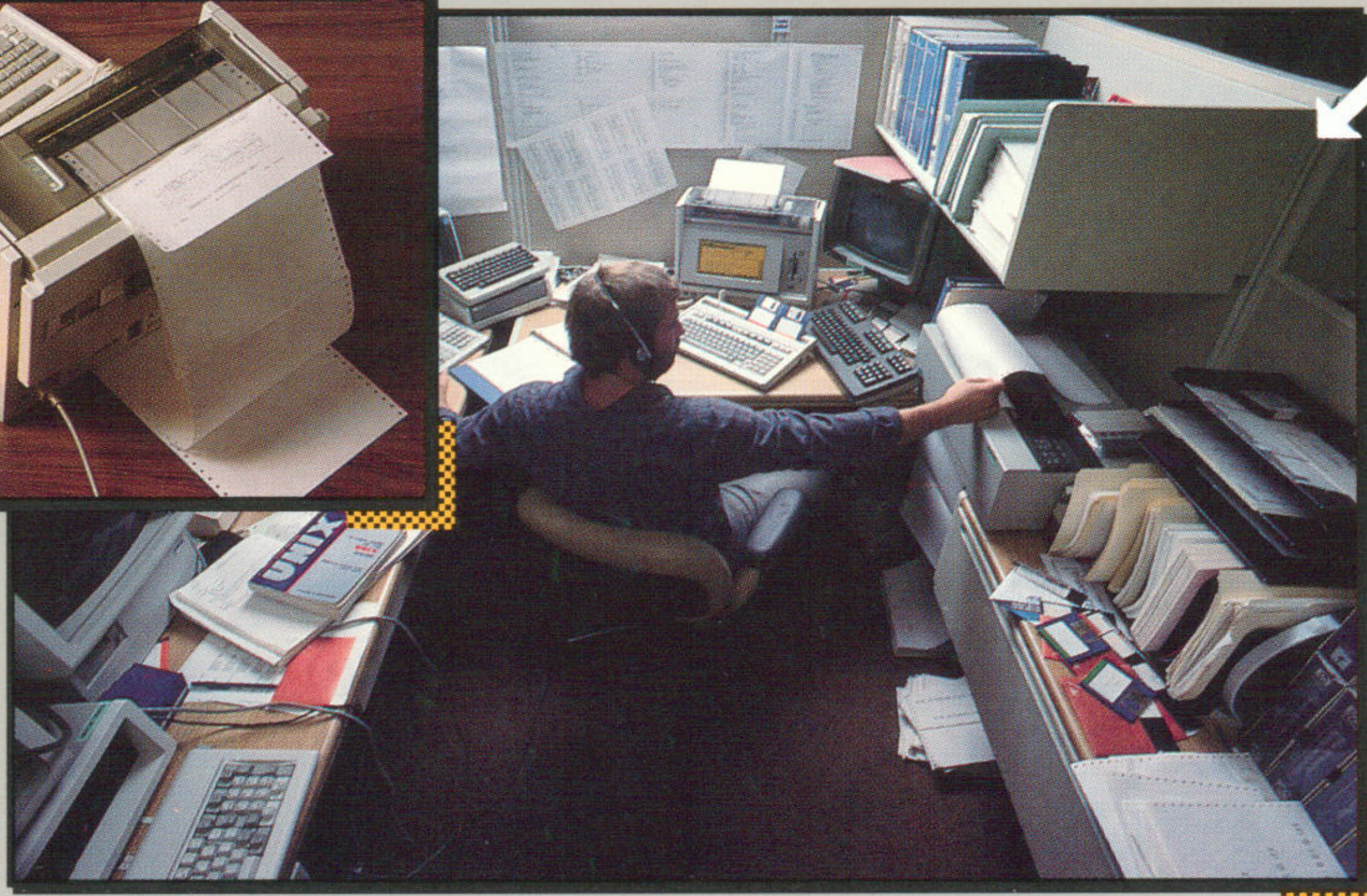
Testing is proceeding on connecting KERMIT up to a home's central air and heating system. Warren Tadpole is recuperating at County General from acute frostbite, and the doctors tell me that he will be able to keep his digits. It seems that KERMIT turned the test home into a meat-locker and then shut down due to the cold. Poor Warren was stuck in there for 6 hours before Katie and Susan (the cleaning ladies) saved him with CPR. Warren will be back next week. Katie and Susan next month.

Only one computer lets you do it all at once, the Integral Personal Computer from Hewlett-Packard.

Format graphs, recalculate spreadsheets, and dabble in some financial modeling, all while you print your speech for this afternoon's presentation.



Work more efficiently. You can compile one program, debug another, and print a program listing of a third. All at the same time on one Integral PC.



*U.S. only

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TK!Solver™ is a trademark of Software Arts, Inc.

Dow Jones News/Retrieval® is a U.S. registered trademark of Dow Jones & Company, Inc.

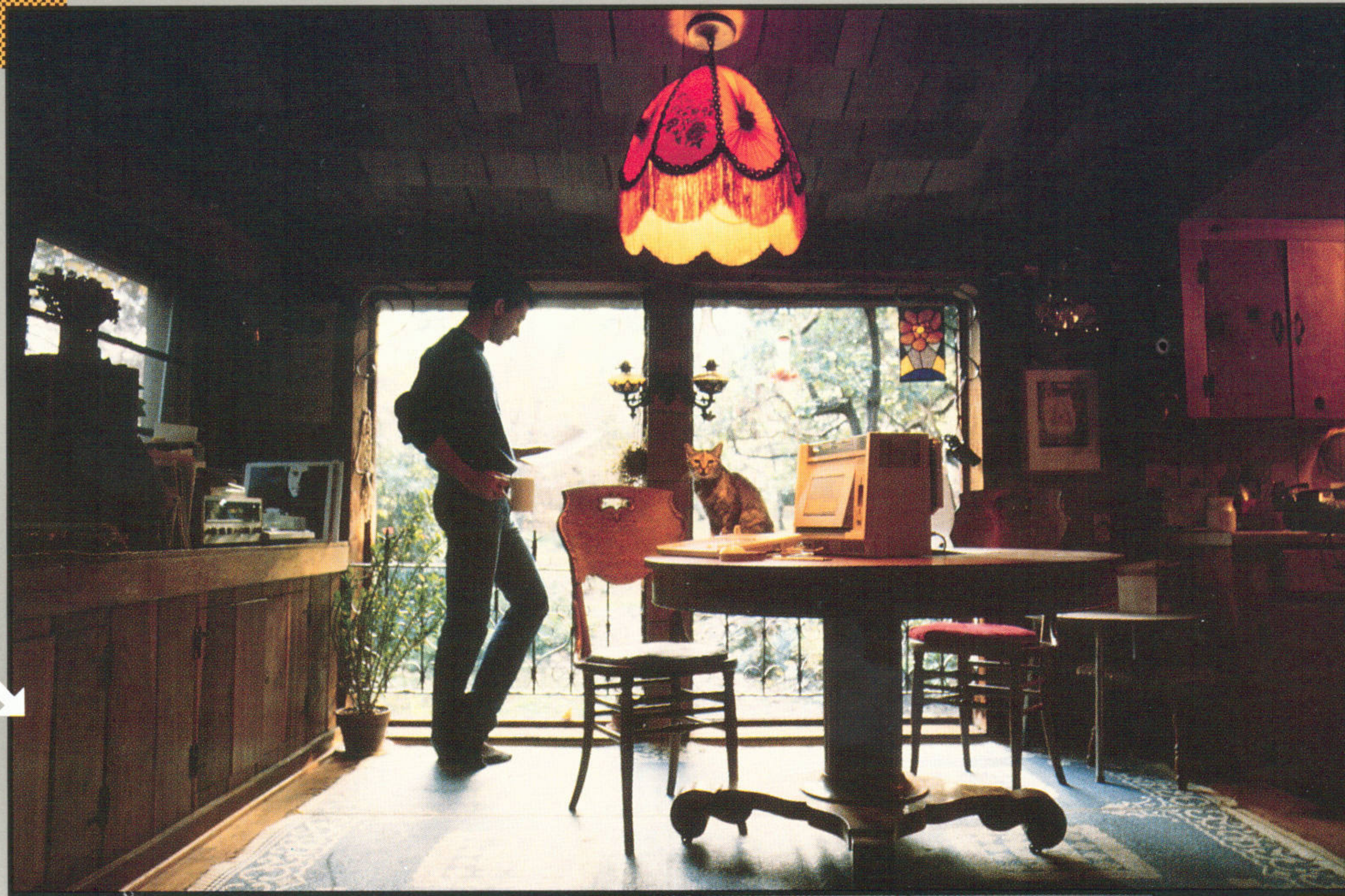
The SourceSM is a service mark of Source Telecomputing Corp., a subsidiary of Reader's Digest Association.

UNIX™ is a U.S. Trademark of AT&T Bell Laboratories

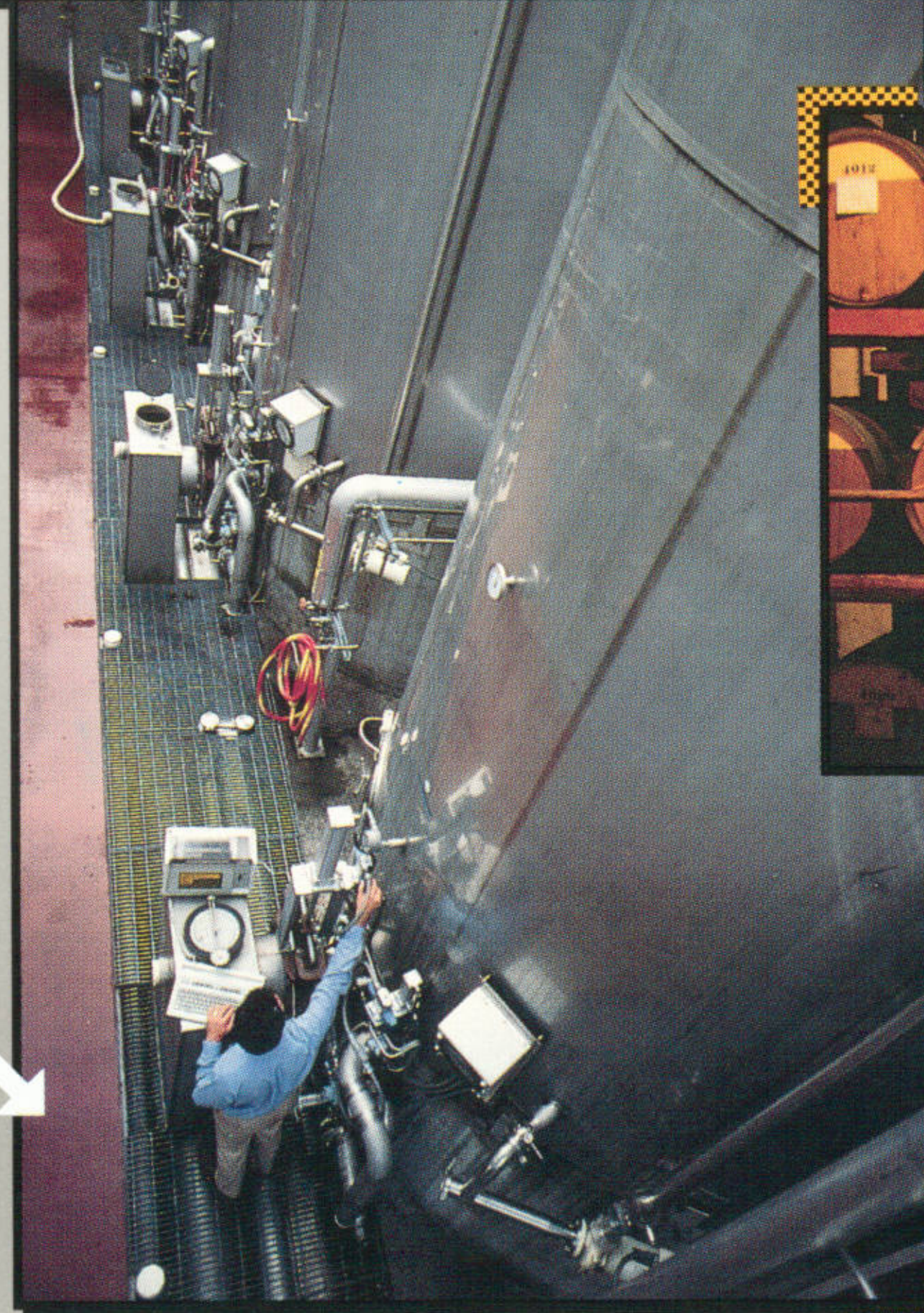


Something For Everyone

This computer has it.
The Integral PC
can offer every-
body something that they can't
get now out of their personal
computer. Or at least more of it. ■

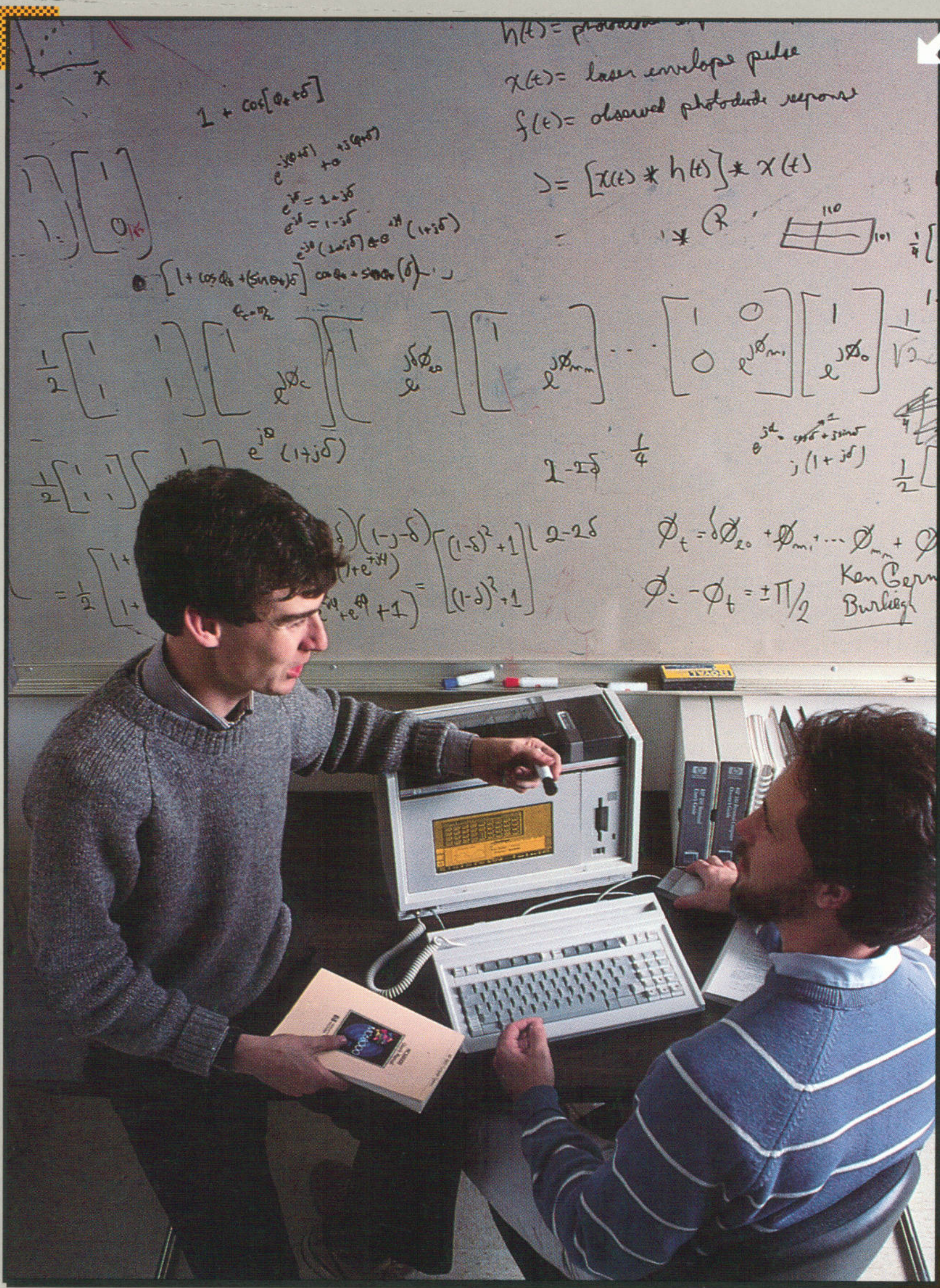


The Integral PC gives you the programming power of the UNIX operating system in a 25-pound package. Take it home at night or take it wherever you do your work best. And you'll do your best work. Because you can do things on the Integral PC that were never before thought possible on a personal computer. You're limited only by your own imagination.



You have all the instrument control features that you require, plus a full-time personal computer with the Integral PC. You can gather readings from a liquid chromatograph while you monitor temperature changes on a fermentation tank. And use the same Integral PC to control your inventories simultaneously. Plus there's so much more it can do—if you let it.





Take the power of your campus computer center wherever you have to go. The Integral PC is perfect for the lab and classroom, because it can put the power of the UNIX operating system on any desk in the world—and then go home with you at night.



Talk to your HP sales representative, or call (800) FOR HPPC* to find the dealer nearest you. They can put this computer to work for you.

*U.S. only

The Integral PC At a Glance

Central Processing Unit/ Microprocessor

Motorola 68000, 16/32-bit microprocessor running at 8 Megahertz clock rate

Graphics Processing Unit (GPU)

16-bit graphics processor with 32K bytes of dedicated Random Access Memory (RAM)

Internal Memory

256K bytes of Read Only Memory
512K bytes of RAM, expandable up to 1.5M bytes of RAM in the main system, or expandable up to 5.5M bytes of RAM with Bus Expanders. Up to 1/2 of the total RAM may be allocated as RAM disc.

Mass Storage

Double-sided, double-density 3 1/2-inch microfloppy disc drive built in 710 Kilobyte disc capacity (512 bytes per sector, 9 sectors per track, 80 tracks per surface, 2 recording surfaces per disc)
600 RPM rotational speed
350 milliseconds average access time

Display

9-inch electroluminescent (EL) display
255 by 512 pixel, bit-mapped display
24-line by 80-character standard window size (variable depending on font and window size)
Adjustable viewing angle (5 to 17 degrees in 2 degree steps)

Keyboard

Fully-spaced, 90-key, typewriter-style, full-travel keyboard
Low-profile, detachable
Numeric keypad
8 function keys
Flexible key mapping

Internal Printer

Built-in ThinkJet Personal Printer
Ink-jet dot-matrix printing method
150 characters per second (CPS) print speed
1K byte buffer size
Less than 50 decibels of sound pressure printing noise
11 by 12 dot character matrix text print resolution
96 by 96 dots per inch or 192 by 96 dots per inch graphics resolution
12 characters per inch, 80 characters per line normal print pitch
6 characters per inch, 40 characters per line expanded print pitch
21.3 characters per inch, 142 characters per line compressed print pitch
10.7 characters per inch, 71 characters per line expanded/compressed print pitch
Boldface and underline print modes
10 character sets in HP ROMAN8, including Danish, Dutch, English, French, German, Italian, Norwegian, Portuguese, Spanish and Swedish.
Pin-feed paper feed for fanfold paper
Friction-feed paper feed for single sheets
8 1/2 by 11-inch paper size



Physical Characteristics

7 inches deep by 13 inches high by 16 inches wide (17.5 cm by 32.5 cm by 40 cm)

0.78 square feet footprint (700 square cm)

25 pounds (11.4 kilograms)

Input/Output

Hewlett-Packard Interface Bus (HP-IB, IEEE-488)

2 Expansion Ports

2 Hewlett-Packard Human Interface Loops (HP-HIL)

System Clock

1 millisecond resolution

6-10 year lithium cell battery life

Accuracy within six minutes per year

System control capability (alarm functions)

Shock Resistance

30-g force on all six sides

Ergonomic Considerations

40 decibels of sound pressure in idle mode

Slim keyboard design (30 mm width)

Selectable character fonts

Environmental Constraints

-20° to 60° Celsius (-4° to 140° Fahrenheit) while in storage

10° to 40° Celsius (50° to 103° Fahrenheit) while in operation

8 to 80 percent relative humidity at 40° Celsius while in operation

55 to 500 Hz vibration

3-g maximum acceleration

Electrical Interference

FCC Class B, VDE (Radio Protection Mark-0871B)

Safety Approvals

UL Listed, CSA, TUV, SEV, KEMA, NEMKO, RKMC, and EI Finland certified and approved

Software Built into Read Only Memory

HP-UX/RO—Hewlett-Packard's version of the UNIX software kernel required for running applications software

Personal Applications Manager (PAM)—system interface for HP-UX

HP Windows—window manager for HP-UX



Software Included with Product on Disc

Tutor—Interactive "Getting Started" guide to using the Integral PC

Utilities—Easy-to-use tools for performing standard system functions

HP-UX Commands—32 standard UNIX commands including *cs*, a powerful UNIX C shell

Standard Applications—A collection of useful editors (*vi* and *ed*), fun games (Adventure, Mille), and GraphicArt, plus several fonts

Diagnostics—Easy-to-use program to verify system integrity

System Disc—For programming a collection of drivers including the HP Graphics Language (HPGL) window driver, Real Time OS Extensions, and a serial driver for connecting RS-232C printers.

Optional Peripherals (with order numbers)

Disc Drives

Single, 3 1/2-inch, double-sided, microfloppy disc drive 710K byte capacity (HP 9122S)

Dual 3 1/2-inch, double-sided, microfloppy disc drive 710K byte capacity per drive (HP 9122D)

15M byte Winchester with single 3 1/2-inch microfloppy drive, 710K byte capacity for microfloppy drive (HP 9133D)

15M byte Winchester (HP 9134D)

24M byte Winchester (HP 7941)

24M byte Winchester with tape back-up (HP 7942)

55M byte Winchester (HP 7945)

55M byte Winchester with tape back-up (HP 7946)

Printers

Daisy wheel printer with standard RS-232C interface or Option 046 with HP-IB interface (HP 2602A)

Dot-matrix printer with standard RS-232C interface or Option 046 with HP-IB interface (HP 2932A & HP 2934A)

The LaserJet Professional PC Printer with RS-232C interface (HP 2686)

Graphics Plotters

Two-pen plotter Option 001 with RS-232C interface or Option 002 with HP-IB interface (HP 7470A)

Six-pen plotter Option 001 with RS-232C interface or Option 002 with HP-IB interface (HP 7475A)

Eight-pen plotter Option 001 with RS-232C interface or Option 002 with HP-IB interface (HP 7550)

Interfaces

RS-232C Interface (HP 82919A)

Current Loop Interface (HP 82920A)

Binary Coded Decimal (BCD) Interface (HP 82922A)

General Purpose Input/Output (GPIO) Interface (HP 82923A)

GPIO/BCD Cable (HP 82976A)

Hewlett-Packard Interface Loop (HP-IL) (HP 82924A)

Hewlett-Packard Interface Bus (HP-IB) Cables recommended for use with the Integral PC

.3 meter right angle HP-IB cable (HP 92220R)

1 meter right angle HP-IB cable (HP 82977A)

2 meter right angle HP-IB cable (HP 82977B)

Memory Expansion Cards

256K byte RAM card (HP 82925A)

512K byte RAM card (HP 82927A)

Communications

300/1200 bps modem (HP 82921A)

Accessories

HP Mouse (HP 46060A)

Bus Expander (HP 82904A)

Briefcase cover (HP 92251F)

Carrying case with strap (HP 13269Y)

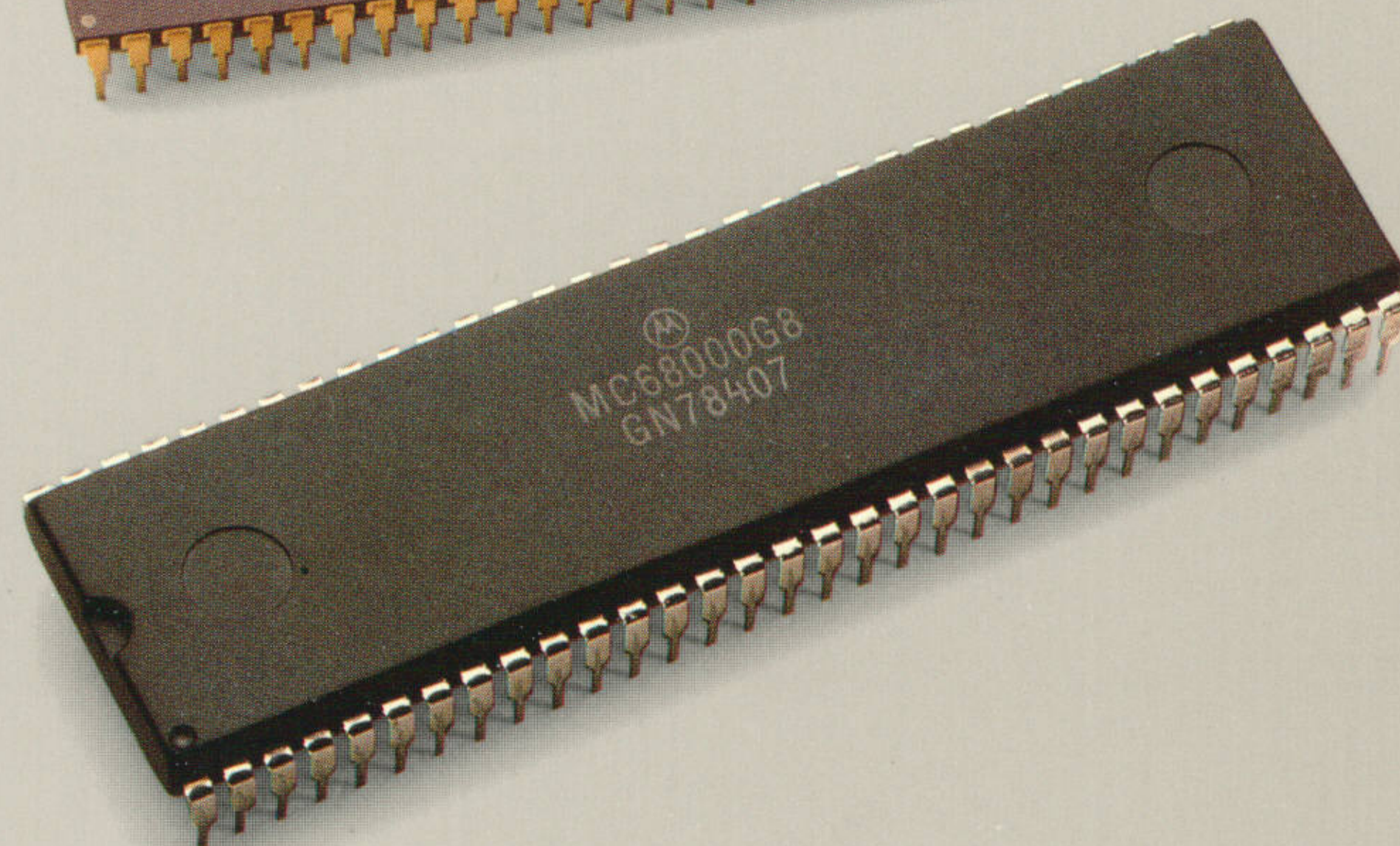
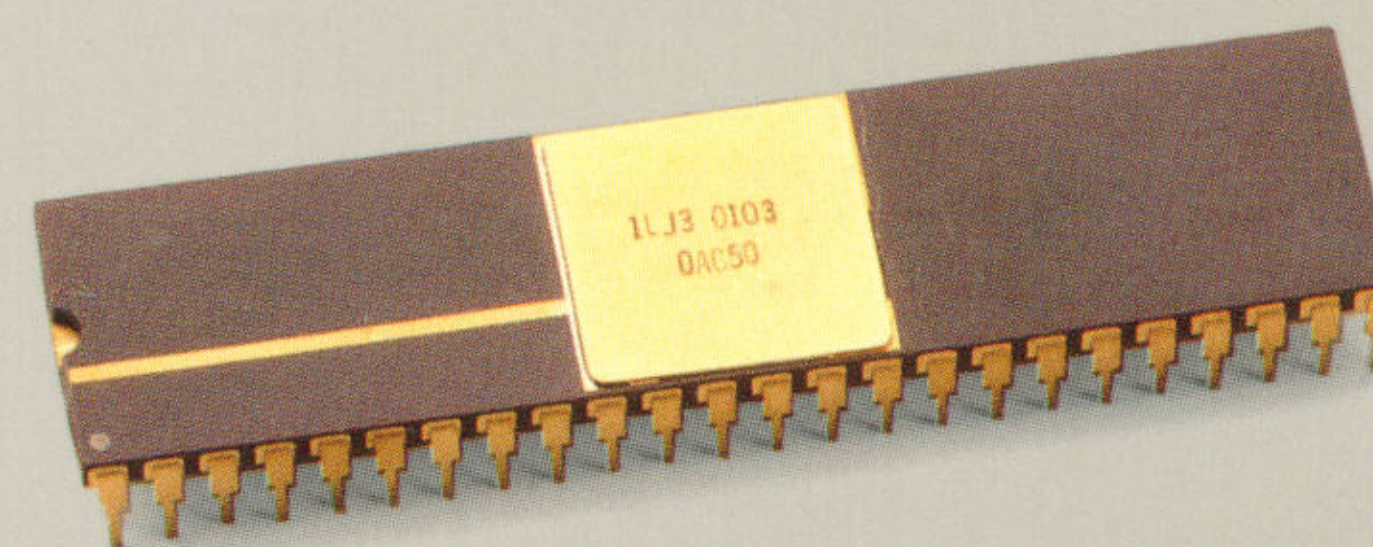
Modem cable, female/male connectors (HP 82974A)

Instrument cable, female/female connectors (HP 82974B)

Serial printer cable, female/female connectors (HP 82974C)

Serial printer cable, female/male connectors (HP 82974D)

Current loop cable, (HP 82975A) ■



Hewlett-Packard
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(800) FOR-HPPC

