

IBM Personal System/2 Laptop 40 SX

Presentation
Guide

IBM

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Foil 1

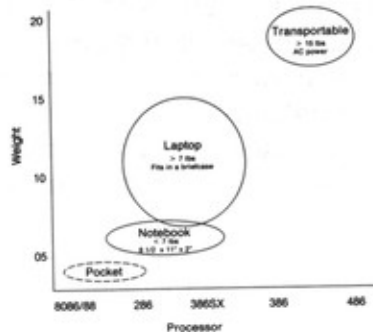
PS/2® Laptop 40 SX Agenda

- Portable positioning
- Laptop opportunity
- New Personal System/2 Laptop 40 SX
 - Highlights
 - Product information
- Market opportunity for the PS/2 Laptop

In addition to describing the features of the exciting new PS/2 Laptop, this presentation will briefly look at the portable market and the opportunity for the PS/2 L40 SX; also, it will discuss product strengths as compared with some of the leading competitors.

Foil 2

Portable Positioning



Today's portable marketplace can be roughly divided into three categories, based on size and weight:

At the high end, there are the Transportables such as the PS/2 P70 and P75 'power portables' where performance, capacity, and connectivity requirements of the workload generally demand AC power, and the technology required for the desired function dictates larger, heavier packaging.

The Laptop segment is where most of the action is today, with 'full function' capability in a battery powered unit weighing generally 7 to 12 pounds. Notebooks, weighing less than 7 pounds, are emerging as a fast growing segment as well, but with some functional limitations. And, there are exciting new developments in the even smaller Pocket and Tablet categories

Portables are driven by technology probably more than any other class of personal computers. Users are demanding more and more function in smaller and lighter units; longer operation on a single battery; color displays; connectivity. Today, these three segments can be reasonably well defined. As technology develops to enable more and more function in smaller and lighter components, the opportunity will be driven toward the notebook size system.

Foil 3

Today's Portables

Typical product characteristics

Transportable

- 386/486 Processor
- 2MB memory expandable to 16MB
- 60-120 + hard disk
- 2 + internal expansion slots
- AC only
- 20 lbs usable weight

Laptop

- 386SX Processor
- 1MB memory expandable to 6-16MB
- 40MB hard disk
- Internal modem slot
- Docking station for expansion slots
- Battery (2-3 hours)
- 7 to 12 lbs

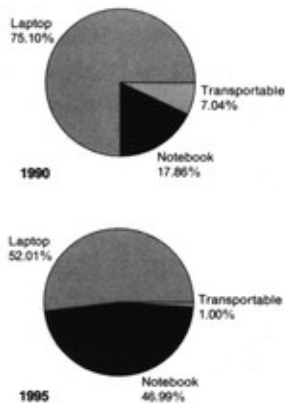
Notebook

- 286/386SX Processor
- 1MB memory expandable to 2-6MB
- 20MB hard disk
- Modem slot only
- Battery (3 hours)
- 4 to 7 lbs

The typical product specifications within these three segments are shown here. Transportables are 386/486 class systems with generally over 100MB of DASD and internal expansion capability. Laptops feature at least 386SX power with little internal expansion capability. Notebooks, as you can see, are moving to 386SX processor speed as well, but technology limitations require some tradeoffs of function and performance to get the small size.

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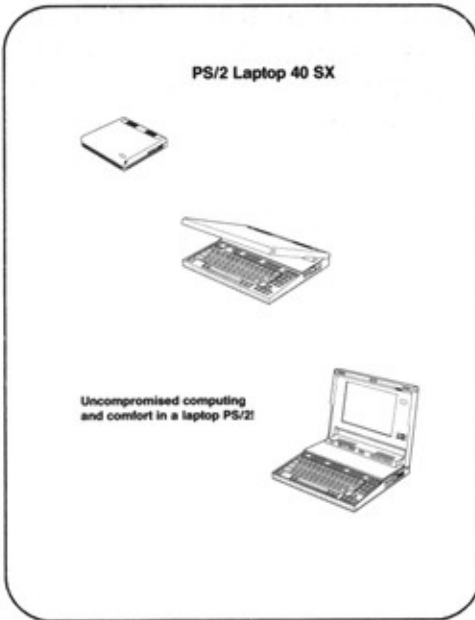
Laptop Opportunity



Source: Workgroup Technologies, Inc.

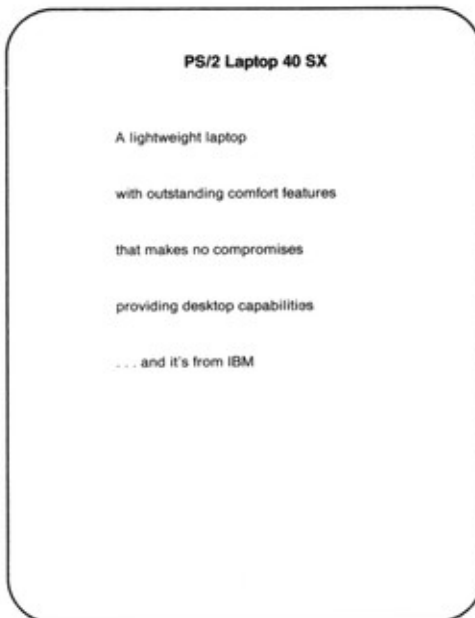
Here, you can see that today, the laptop segment is by far the largest and still growing much faster than the overall personal computer market. Today's technology optimizes at the function and size of a laptop system. However, as you can see, in the next few years the technology will allow more and more function to be driven into a smaller notebook size package; the Transportable segment will all but disappear in favor of smaller and more functional units.

Foil 5



It is into this primary laptop market that IBM is introducing the PS/2 Model L40 SX, offering UNCOM-PROMISED COMPUTING AND COMFORT IN A LAPTOP system.

Foil 6



The L40 SX is first of all, a lightweight laptop. It has outstanding comfort features and makes no compromises for portability; it provides capabilities normally associated with desktop systems, and it is a mainline product in the PS/2 family.

Foil 7

PS/2 Laptop 40 SX

A lightweight laptop

- 7.7 pounds with battery
- Fits in a briefcase

The L40 SX weighs in at less than 8 lbs — at the low end of the Laptop class machine. It has a footprint of a notebook, 10.7 by 12.8 inches, and easily fits in most attache cases. It comes standard with a black leather slip-case for carrying over the shoulder if you desire.

Foil 8

PS/2 Laptop 40 SX

Outstanding comfort features

- Familiar keyboard at 5 degree angle
 - Standard key size and spacing
 - Inverted 'T' cursor pad
 - 12 function keys
 - Full 101 keys with numeric keypad attached
- Up to 3 hours battery life
- Suspend/resume for easy stop/restart operation
- Non-disruptive battery exchange
- 10 system status lights with icons
 - Battery gauge
 - Heat and humidity check
 - Num lock, scroll lock, caps lock
 - Suspend/resume
 - Carrier Detect
 - And more
- High contrast, high resolution display
 - VGA
 - Supertwisted nematic (STN) sidelit LCD
 - Up to 32 gray shades
 - Black on white
- Combination mouse/trackball pointer

Usability features are very important to users of portable systems, and the L40 SX is a clear winner in this area. No tradeoffs have been made in the keyboard design. Unlike other laptop systems, the keyboard is sloped 5 degrees so that it is very comfortable to use — like a regular desktop keyboard. With 84 full size keys, the layout is the familiar PS/2 enhanced keyboard layout. The spacing of the keys is identical as well — a standard 3/4" from the center of one key to the center of the next key. And, with a 17 key numeric keypad offered as a standard feature, you can have the full 101 key layout whenever you need it.

A NICD battery is standard as well, providing up to 3 hours of battery operation. And with a very powerful suspend/resume capability, you can exchange the battery without disrupting what you are doing. Simply close the lid and the system retains all the information in memory. Open up the lid and within 15 to 20 seconds you're right back where you were. You can even change the main battery while the system is closed; this is because of a StandBy Battery that takes over while you are exchanging the main battery.

Ten status lights with icons show you various system status conditions. A unique battery gauge, for example, shows three states — battery full, battery medium, and battery low — so you can monitor battery usage as you work.

The LCD display provides a high 12 to 1 contrast ratio, and the 10-inch diagonal display is larger than many other laptops in the market today. It displays up to 25 lines and 80 characters across in text mode.

Another outstanding comfort feature is the optional Trackpoint device. You can use it as a mouse — or, flip it over and use it as a trackball, perfect for tight spaces. And, you can attach the numeric keypad and the Trackpoint device at the same time for full keyboard and pointer capability.

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PS/2 Laptop 40 SX

Makes no compromises

- Full angled keyboard with full size keys
- High quality VGA display with 1:1 aspect ratio
- Separate pointing device port
- Data/fax modem option
- Non-disruptive battery exchange
- Extensive power management
 - Sleep mode
 - Manual/automatic operating modes
 - Trickle charge during AC operation
- Balanced system performance
- Durable to meet rigors of travel

While the L40 SX uses some of the latest technology to minimize size and weight, it does not compromise on those features that customers view as important. Starting again with the sloped keyboard and the full size and full layout of the keys; and the feel is very much like the standard PS/2 keyboard; no compromise here.

A display that is easy to read and displays a circle as a circle; a separate pointing device port means you don't have to choose between the keypad and the pointer — you can use both. An internal dual function Data/Fax modem option means you can send and receive data and fax at speeds up to 2400 bps for data and 9600 bps for fax.

A powerful suspend/resume capability for non-disruptive battery interchange — or to allow you to stop and restart your job easily, whenever you want.

Power management features that you can control by specifying parameters for sleep modes, clock speed operation, and more. Features that conserve battery life, or let you operate at top speed when you need it.

The L40 SX does not compromise on performance. The 20MHz 386 processor is matched with a fast, 19 millisecond seek time, 60MB hard disk.

And the L40 SX is durable; designed to meet the test of portability.

PS/2 Laptop 40 SX

Provides desktop performance

- 20 MHz 386SX processor with coprocessor socket
- 60 million bytes (60MB) of hard disk storage
- 1.44MB 3.5" Diskette Drive
- 2MB memory, expandable to 18MB
- VGA compatibility; port for external PS/2 color monitor
- Serial and parallel ports
- External AT-bus connector
- Connectivity 'Statement of Direction'
 - Expansion unit for 3270, 5250, Token Ring connectivity
 - Using AT-half size cards
- Complete and familiar PS/2 keyboard

Foil 10

The L40 SX does not compromise on performance, either. With a 20MHz 386SX processor, this laptop has plenty of power and can run advanced applications written for the 386. It has 60MB of hard disk, a diskette drive, and 2MB of memory standard; memory is expandable to 18MB on the planar, using low-power memory options of 2, 4, and/or 8MB SIMMs. It provides VGA compatibility on the integrated LCD screen and has a display port for attaching an external PS/2 display. Serial and parallel ports are standard, and there is an external AT-bus connector. IBM has also announced that connectivity will be provided in the future for several networks using the AT-bus expansion port and AT half size cards.

Note: (See Statement of Direction in the announcement package)

Finally, the full size, full layout of the L40 SX keyboard means that you don't have to adjust to a different keyboard from your desktop PS/2.

Foil 11

The L40 SX, developed by IBM to meet the high standards of quality and reliability, is an important member of the PS/2 family worldwide. And, for the first time, IBM is offering international hardware warranty service; so you can get warranty service in countries where the PS/2 is sold.

IBM has a service network second to none, and support is only a phone call away. This is important when you are in a strange town and dependent on your system to do your job.

The quality and reliability of the PS/2 product line is well recognized, and that same commitment to excellence is built into the L40 SX.

PS/2 Laptop 40 SX

... And it's from IBM

- International Hardware Warranty Service
 - Countries where Laptop 40 SX is sold
 - Carry-in Service
 - IBM and IBM Authorized PC Dealers/Remarketers
 - 1 year limited warranty
- Widespread U.S. service and support
 - Over 2,500 IBM Authorized PC Dealers/Remarketers provide service and support in the United States
 - IBM On-site Alternative Service
- PS/2 quality and reliability

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The L40 SX — lightweight, comfortable, uncompromising, powerful, and backed by the high standards of quality, reliability and service of IBM.

PS/2 Laptop 40 SX


A lightweight laptop

with outstanding comfort features

that makes no compromises

providing desktop capabilities

... and it's from IBM



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Let's review the features of the L40 SX that come standard with the system.

PS/2 Laptop 40 SX Standard Features

Processor:	20 MHz 386SX Coproprocessor socket Automatic/manual modes (5, 10, 20 MHz)	
Memory	2MB low power (80ns) (18MB max) 2 available memory sockets	
Storage	1.44MB 3.5" diskette drive 90MB (10ms) hard disk	
Display	10" diagonal LCD display 640 x 480 resolution Black on white Up to 32 gray shades 1:1 aspect ratio	
Keyboard	84 key keyboard at 5 degree angle Inverted T cursor pad 12 function keys 17 key numeric keypad with mouse port Quiet on click mode	
I/O ports:	VGA monitor Parallel Serial (9-pin) Keyboard/pointing device AT bus connector	
Power:	Battery pack (up to 3 hours) AC adapter and power cord Internal backup battery Clock/calendar battery	
Power management:	Sleep mode Automatic/manual operating modes Non-disruptive battery exchange	
Status icons:	Battery gauge Humidity and overheat indicators Speaker sounder Suspend mode Num lock/scroll lock/caps lock indicators Diskette/hard disk in use indicators	
Carrying case:	Black leather strip-on case with strap	

The system features the 20MHz 386SX processor, and a math coprocessor socket is available on the system board. The user can set desired operating modes. In Automatic mode, the system can be set to run at "low power" in order to conserve battery, or to run at constant high performance levels. Manual mode provides an override capability from a switch on the front of the system. Normally, the automatic mode would be set to conserve battery and the manual mode set to maximum power. The user can then select maximum power only when it is needed.

With 2MB of fast 80 nanosecond memory, expandable to up to 18MB, this system can handle not only DOS, but Windows and OS/2 environments as well.

The display is 10-inches diagonally, VGA compatible, and displays black characters on a white background. Reverse white-on-black can be selected at set up time. The display is side-lit for even distribution of light source for easier viewing. Up to 32 gray shades are possible.

We've discussed the keyboard at length, and it is one of the most impressive features of the L40 SX. It's comfortable to use and has the full capabilities of a PS/2 desktop keyboard. The 17-key numeric keypad is provided standard, and is attached through the pointing device port at the back of the machine. It also has a 'mouse' port so you can use both devices at the same time.

Four standard ports are available, plus the expansion connector.

A battery is provided with the system, as is the AC Adapter and power cord. In addition to this exchangeable battery, the system unit has a backup Standby battery that facilitates the Suspend/Resume capability. It also has a separate clock/calendar battery.

Extensive power management features are built in to conserve battery life. The user can specify various parameters so that the system can be optimized for each user, based on their anticipated needs.

Ten status icons indicate various operating conditions and modes.

Also standard with the system is a handsome black leather slip-in carrying case.

The L40 SX is equipped with everything you need to do most jobs.

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PS/2 Laptop 40 SX Optional Features

- Internal data/fax modem*
 - Concurrent network and handset connections (two RJ11 phone jacks)
 - 2400 bps for data
 - 9600 bps for fax with send and receive
 - Fax utility
- Internal Serial Adapter (RS232)*
- 2/4/8MB memory SIMMs*
- Battery quick charger
- Mouse/trackball combination pointer
- Car battery adapter
- Deluxe carrying case
- Travel case

* Internal features must be installed by IBM trained personnel.

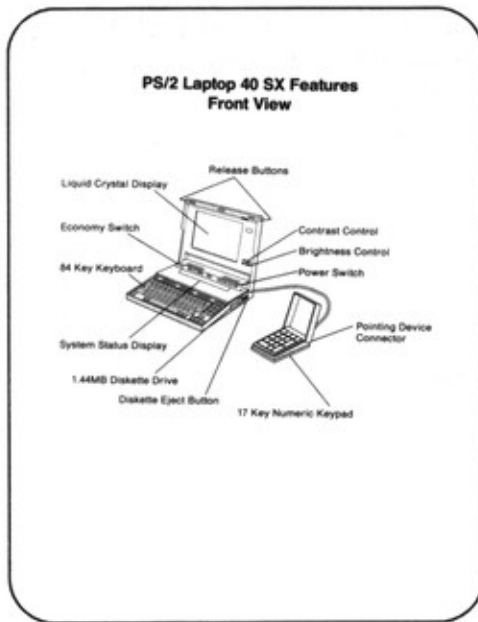
A powerful option is the internal Data/Fax Modem, providing dual operation capability for sending and receiving data and facsimile transmissions. The data modem is a Hayes™ compatible modem operating at 300, 1200, and 2400 bits per second. It uses the AT command set. The facsimile modem operates as a Group 3 (G3) operating at speeds of 300, 2400, 7200, and 9600 bps. It conforms to CCITT T.30 protocol. A Fax Utility is also provided to help you perform basic FAX operation.

The internal Serial Adapter provides a second RS232 interface. The Serial Adapter and the Data/Fax Modem occupy the same space in the system, so only one of these can be installed. These options are to be installed by IBM trained personnel.

Memory can be expanded using combinations of 2, 4, or 8MB memory SIMMs. Only one 4MB SIMM can be installed. All other combinations are possible.

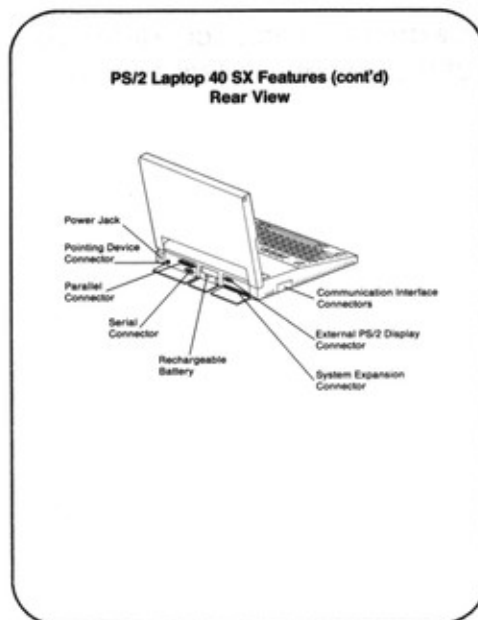
Other optional features include a Battery Quick Charger, which charges a battery in less than 3 hours; the Trackpoint combination mouse and trackball pointing device; and an adapter that plugs into a car cigarette socket for operating from the car battery. Two optional carrying cases are also offered: a cloth Deluxe Case which has multiple pockets for carrying accessories and papers, and a hard cover travel case on wheels.

Foil 15



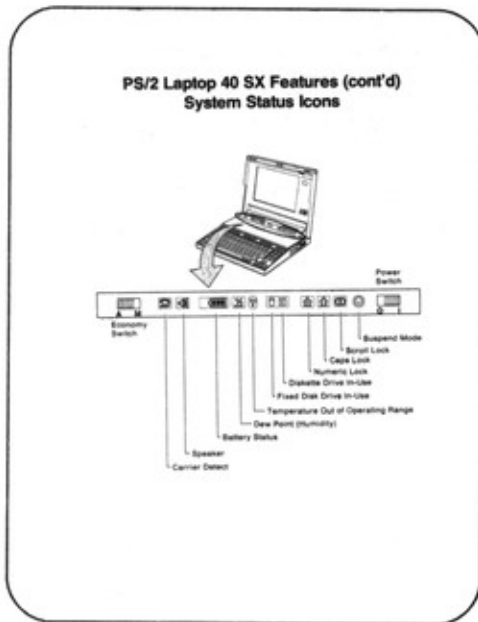
In this diagram, you can see the various features more closely. Most of these are self explanatory; however, notice the Economy Switch at the left. This allows the user to select Manual operating mode — for operating at the full 20MHz power, for example, to do a spreadsheet calculation. The user then can set the switch back to Automatic to conserve battery power.

Foil 16



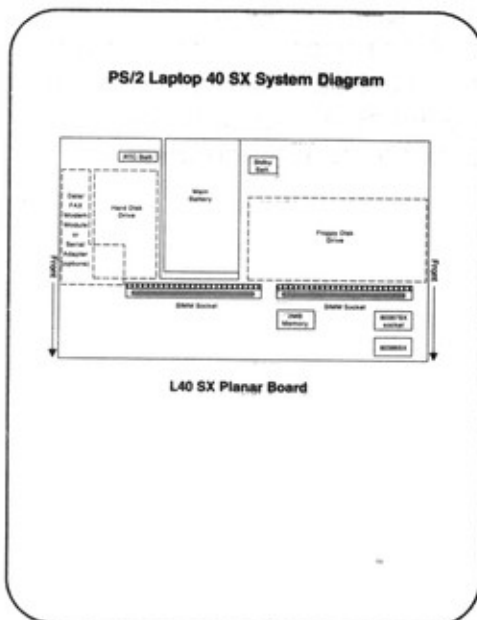
Here the back of the machine is shown, with the various connectors. Also notice the rechargeable battery, which slips into the back of the system. At the right side is the opening for the optional Data/Fax Modem or Serial Adapter connectors.

Foil 17



The 'dashboard' is an important feature of the L40 SX. Here, all the pertinent system status indicators are displayed — even a carrier detect light for the optional Data/Fax Modem. Notice the battery gauge, with its three levels of battery power indicators. It will also indicate when the battery is being recharged from the AC Adapter. The temperature and humidity indicators will light when these environments are outside of the operating range; for the protection of the system, it will not operate when these extreme conditions exist.

Foil 18



The system board is extremely compact. Here you can see the layout of the primary system components.

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PS/2 Laptop 40 SX Memory Matrix

Standard memory	Two SIMM sockets for optional memory*		Memory configurations possible**
2 MB	2MB P/N 79F0999		4MB
	2MB P/N 79F0999	2MB P/N 79F0999	6MB
	4MB P/N 79F1000		6MB
	2MB P/N 79F0999	4MB P/N 79F1000	8MB
	8MB P/N 79F1001		10MB
	8MB P/N 79F1001	2MB P/N 79F0999	12MB
	8MB P/N 79F1001	4MB P/N 79F1000	14MB
	8MB P/N 79F1001	8MB P/N 79F1001	16MB

* Optional memory must be installed by IBM trained personnel.

** Memory can be added in any combination except only one 4MB memory kit can be installed per system.

Memory can be added to provide up to 18MB. This chart shows the various memory configurations and how each is achieved. Notice again that only one 4MB SIMM may be installed. Memory options, like the internal modem and serial adapter, are to be installed by IBM or IBM Authorized Remarketers.

Foil 20

PS/2 Laptop 40 SX Positioning with PS/2 Model P70 386

Laptop 40 SX Laptop	Model P70 386 Transportable
<ul style="list-style-type: none"> • 20 MHz 386SX microprocessor • AT bus • 2MB 80ns low power standard memory expandable to 18MB on planar • VGA on planar • Slots not available • 3.5" 1.44MB Diskette Drive • 60MB (19ms) hard disk • Super-twisted Nematic (STN) side-lit LCD with 640 x 480 resolution; up to 32 gray shades • AC/DC • 10.7" d x 12.8" w x 2.1" h • Portable: 7.7 lbs 	<ul style="list-style-type: none"> • 16 MHz or 20 MHz 386 microprocessor • Micro Channel • 2MB or 4MB 85ns standard memory expandable to 8MB on planar • VGA on planar • Two available slots (one full-size 32-bit and one half-size 16-bit) • 3.5" 1.44MB Diskette Drive with external Diskette Drive port • 30MB (19ms), 60MB (27ms) or 120MB (23ms) hard disk • Gas plasma display with 640 x 480 resolution; up to 16 gray shades • AC only • 5.0" d x 18.3" w x 12.0" h • Transportable: Approx. 20 lbs

As we discussed earlier, the L40 SX is positioned in the laptop segment while the P70 386 is a transportable. Here are some of the major differences in the two systems. The L40 SX is ideal for users who want desktop function and performance in a battery powered system that is easily carried from place to place — and can be used in between! The P70 remains a very attractive offering for those users who demand full 386 power, large DASD, and connectivity in more than one location.

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The L40 SX really brings the capabilities associated with desktop systems down to size.

PS/2 Laptop 40 SX

Bringing desktop capability down to size

- 386SX processing power
- Memory expandable to 18MB
- 60MB hard disk storage
- Ergonomically designed keyboard
- Full function data/fax modem option
- 3 hour battery life
- Small, lightweight package

Foil 22

When compared to the PS/2 55 SX, for example, the L40 SX has all the function except the expansion capability.

PS/2 Laptop 40 SX Positioning with PS/2 Model 55 SX



Laptop 40 SX
Laptop

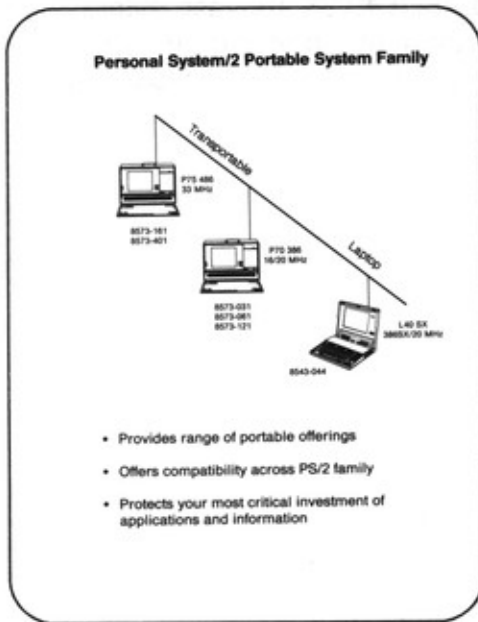


Model 55 SX
Desktop

- | | |
|---|---|
| <ul style="list-style-type: none">• 20 MHz 386SX microprocessor• 2MB 80ns low power standard memory expandable to 18MB on planar• VGA on planar• Slots not available• 60MB (18ms) hard disk• Superintegrated Nematic (STN) active LCD integrated display with 640 x 480 resolution• AC/DC | <ul style="list-style-type: none">• 16 MHz 386SX microprocessor• 2MB 100ns standard memory expandable to 8MB on planar• VGA on planar• Three available slots• 30MB (39ms) or 60MB (27ms) hard disk• Display separate• AC only |
|---|---|

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With the introduction of the L40 SX, IBM has a range of portables that are designed to compliment the PS/2 product line. Compatibility — not just to run the same software — but to provide the same keyboard design as well. Portables designed to protect your investment in applications, in training; the L40 SX . . .



Foil 24

. . . a laptop that you can use with confidence, anywhere you are.

PS/2 Laptop 40 SX

A lightweight laptop

with outstanding comfort features

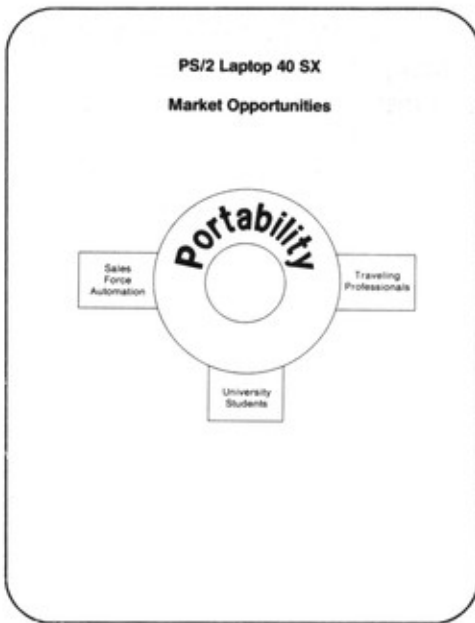
that makes no compromises

providing desktop capabilities

. . . and it's from IBM

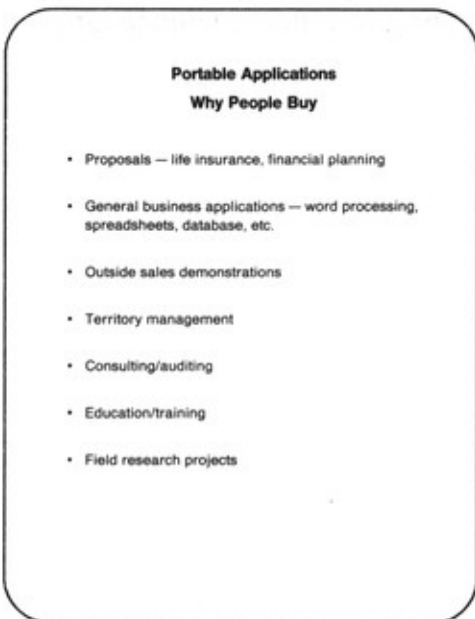
Foil 25

The opportunities for the L40 SX are vast. Literally anyone who needs computing power on the go — sales reps, students, professionals of all types. All need portability.



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These are just a few of the areas where portability is the primary requirement — yet full function is necessary as well. You can add many more to the list.



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Portable Applications What Buyers Want

- Portability (small size and light weight)
- Familiarity
- Usability
- Capacity
- Reliable offering
- Quality image

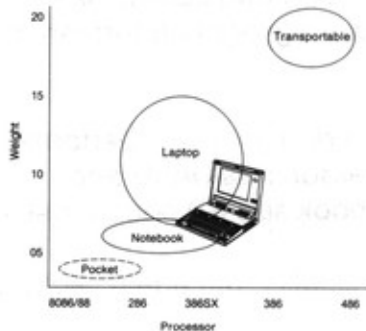
Studies by IBM and others tell us that there are key factors in users' buying decisions — small size and light weight being high on the list. However, other factors are important as well. Familiarity; portable users don't want to use a system that is different from their primary desktop system. They don't want to use different keystrokes. They want a system that does not restrict the use of applications — that has enough memory, file storage, graphics to perform the same jobs they can do on a desktop, non-portable system.

The system must be reliable — they are depending on it on the road.

The L40 SX meets these criteria; and, it's backed by IBM's commitment to quality.

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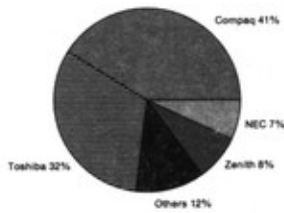
Portable Positioning



The PS/2 Laptop, while positioned as a Laptop in the previous definitions, will be an attractive portable system in both the Laptop and Notebook categories. That's because it has the performance capabilities associated with a laptop, and yet it's size and weight is very close to the 7 lb., 8 1/2-inch by 11-inch size associated with a notebook. And the usability, or comfort features of the L40 SX are unmatched in either class of computer.

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Portable Computers Market Share



Source: Audit and Surveys, Inc.

Let's look briefly at some of the competitors. Today, Compaq and Toshiba are the leading vendors in the portable arena, with Zenith, NEC, and many others sharing in this opportunity. Toshiba features a very broad range of portable products in all segments. Compaq is more focused on the laptop and notebook segments, but has been a leading portable vendor for some time.

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PS/2 Laptop 40 SX Who are the Competitors

- Compaq LTE 386s/20
 - 386SX microprocessor / 20 MHz
 - 4KB cache
 - 30/60MB hard disk
 - 81 key keyboard
 - 7.5 lbs
- Toshiba T2000SX
 - 386SX microprocessor / 16 MHz
 - 20/40MB hard disk
 - 86 key keyboard
 - 6.9 lbs
- Epson NB3s
 - 386SX microprocessor / 16 MHz
 - 20/40MB hard disk
 - 82 key compact keyboard
 - 5.8 lbs
- Others
 - Sharp PC-6441
 - Dell 320LT
 - Nec Pro Speedsx/20
 - TI TM 3000
 - AST Premium Exec 386SX/20

In the fall of 1990, Compaq, Toshiba, and others announced new portables in the 386SX laptop and notebook segments. The Compaq 386s/20 is a cached system, so they will highlight performance as a major advantage.

The Toshiba T2000SX offers slightly less performance with a 16MHz processor, less DASD and memory — but is a notebook size 6.9 pound system.

The Epson NB3s is even smaller, but again, lacks the capacities of the L40 SX.

In all cases, the ergonomically designed full keyboard of the L40 SX clearly differentiates it from these competitors.

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PS/2 Laptop 40 SX Product Comparisons

	IBM PS/2 Laptop 40 SX	Compaq LTE 386/25	Toshiba T2000SX	Epson NB2e
Processor	80386SX	80386SX	80386SX	80386SX
Speed	20 MHz	20 MHz	16 MHz	16 MHz
Cache	N/A	4KB	N/A	N/A
Standard Memory	2MB	2MB	1MB	1MB
Maximum Planar Memory	16MB	16MB	8MB	8MB
Integrated LCD	LCD	LCD	LCD	LCD
Display	800x600	800x600	800x600	800x600
Screen	Black on White	Blue on White	Black & White	Black on White
Size	10"	9"	8.5"	8.3"
Graphics resolution	VGA	VGA	VGA	VGA
Keyboard angled	Yes	No	No	No
Numeric Keypad	Yes	Optional	Optional	Optional
Hard Disk	17 Key 60MB	30-60MB	20-40MB	20-40MB
Average Seek Time	18ms	18ms	25/23ms	< 23ms
Standard Ports	5	5	5	5
External Expansion Port	Yes	Yes	Yes	Yes
Internal Expansion Options	Yes	Yes	Yes	Yes
Size	2x12.8x10.8	2.2x11x8.5	1.8x12.2x10	1.7x11.7x8.5
Weight	7.7 lbs	7.5 lbs	6.9 lbs	5.8 lbs
Worldwide Warranty Support	Yes	Yes	No	No

A more complete comparison of system specifications shows some of the key differences; The L40 SX, with the 20MHz processor, is faster than the Toshiba and Epson systems; but not as powerful as the Compaq with the built-in cache feature.

Key comparisons to notice are the memory expandability, screen size, keyboard, and file capacity. The L40 SX is equal or better in all of these categories. IBM also offers a worldwide warranty.

And, while the L40 SX is not as small or light as some, these characteristics need to be considered along with the uncompromising function that is built-in and the full keyboard design. To make the system smaller would have required a tradeoff on number of keys or key size — a tradeoff we believe would have compromised the system.

Foil 32

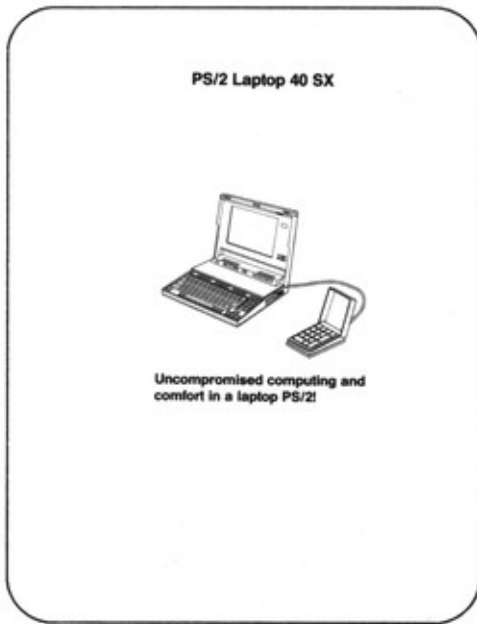
PS/2 Laptop 40 SX Marketing Strengths



While each of the three competitors have certain strengths, the L40 SX has strengths across the board. From the angled, full layout, standard size keyboard, outstanding suspend/resume capability, the status indicators and power management features; and the processing capabilities of the 20MHz processor, 60MB file, expandable memory....

Foil 33

The PS/2 L40 SX offers uncompromised computing and comfort in a laptop.....and the confidence that it is from IBM.



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IBM Personal System/2 Laptop 40 SX

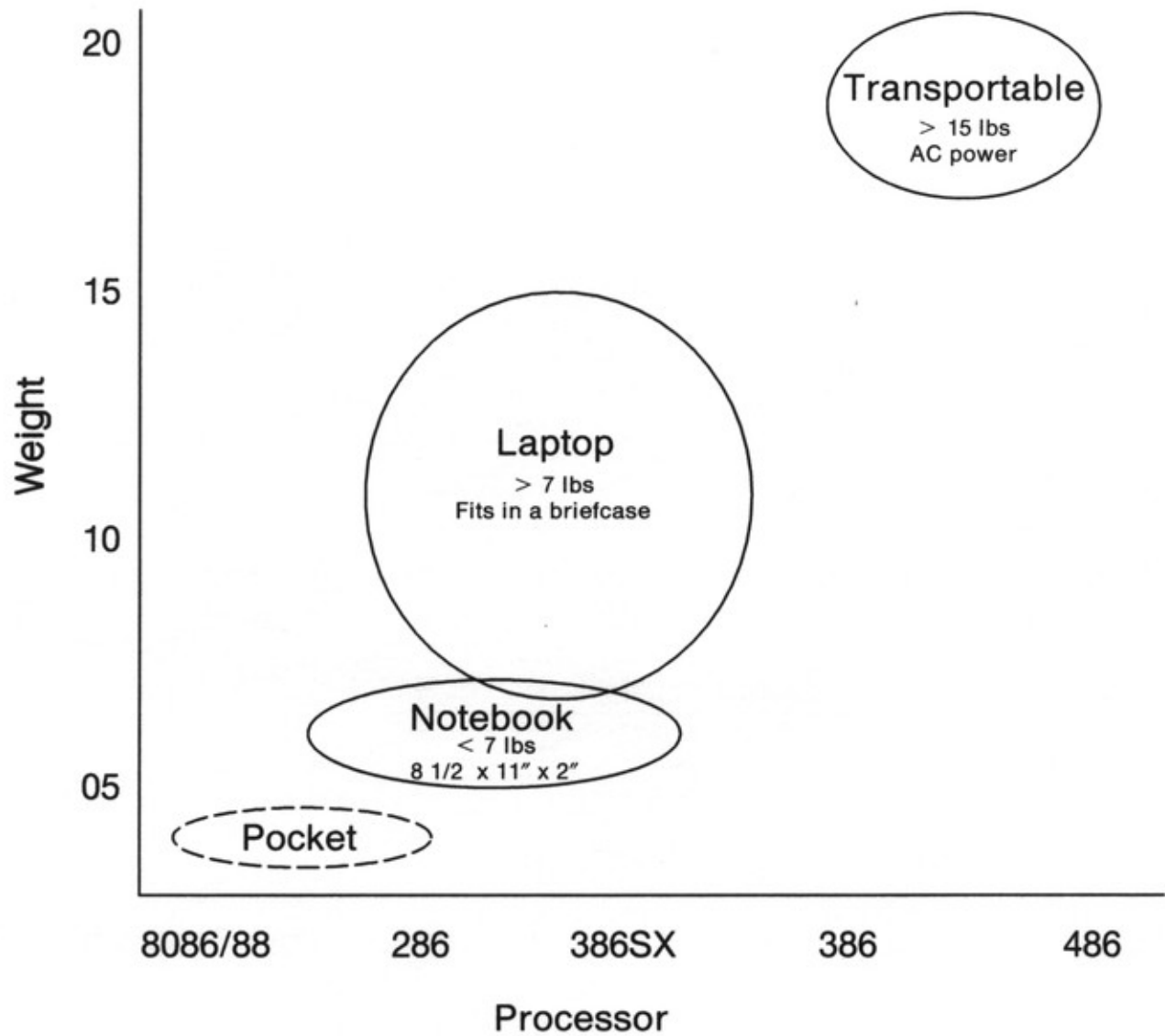
Presentation
Guide



PS/2[®] Laptop 40 SX Agenda

- Portable positioning
- Laptop opportunity
- New Personal System/2 Laptop 40 SX
 - Highlights
 - Product information
- Market opportunity for the PS/2 Laptop

Portable Positioning



Today's Portables

Typical product characteristics

Transportable

- 386/486 Processor
- 2MB memory expandable to 16MB
- 60-120+ hard disk
- 2+ internal expansion slots
- AC only
- 20 lbs usable weight

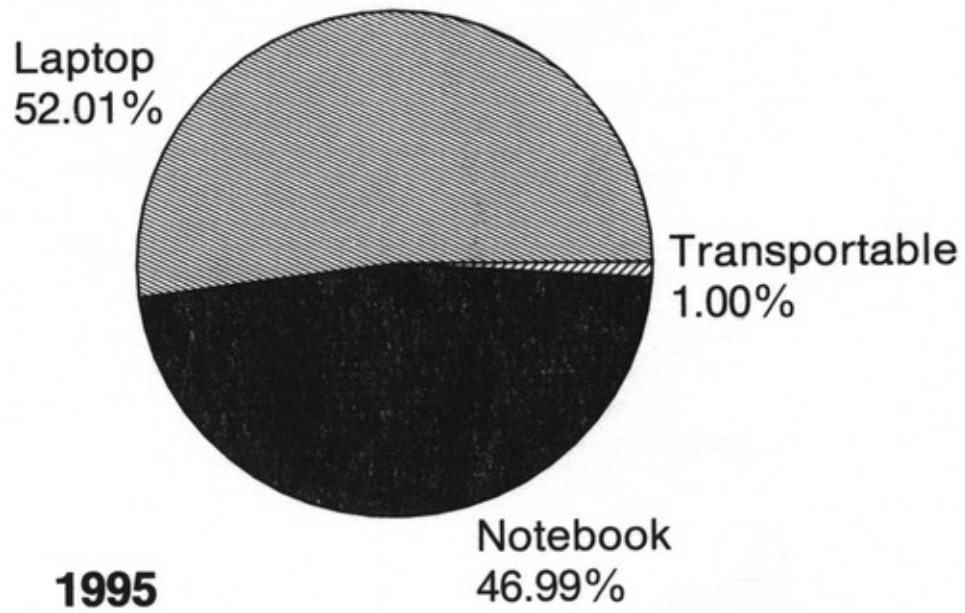
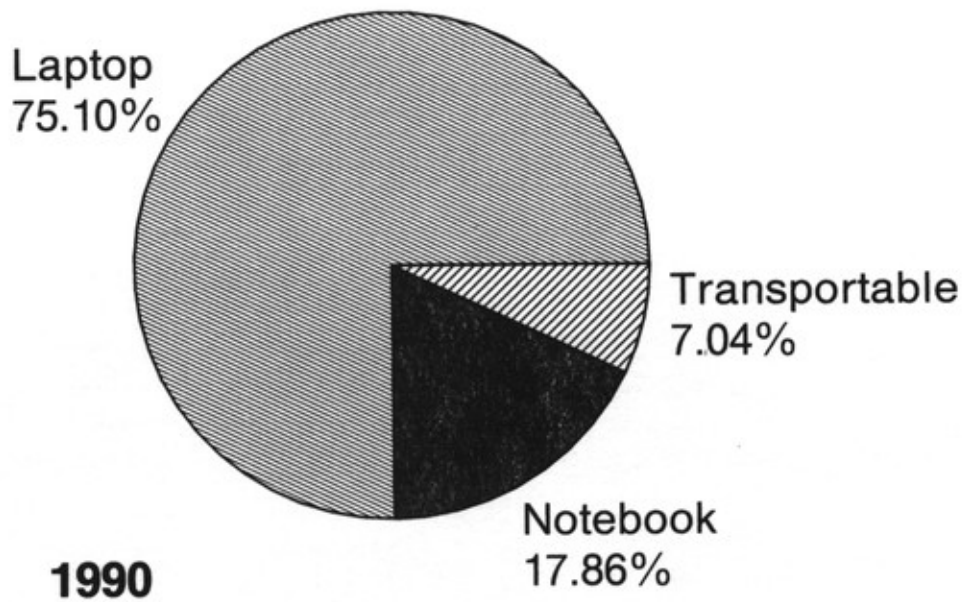
Laptop

- 386SX Processor
- 1MB memory expandable to 6-10MB
- 40MB hard disk
- Internal modem slot
- Docking station for expansion slots
- Battery (2-3 hours)
- 7 to 12 lbs

Notebook

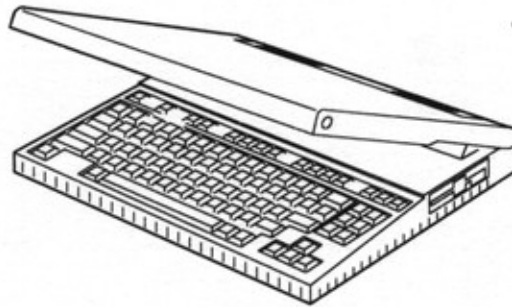
- 286/386SX Processor
- 1MB memory expandable to 2-6MB
- 20MB hard disk
- Modem slot only
- Battery (3 hours)
- 4 to 7 lbs

Laptop Opportunity



Source: Workgroup Technologies, Inc.

PS/2 Laptop 40 SX



**Uncompromised computing
and comfort in a laptop PS/2!**



PS/2 Laptop 40 SX

A lightweight laptop

with outstanding comfort features

that makes no compromises

providing desktop capabilities

. . . and it's from IBM

PS/2 Laptop 40 SX

A lightweight laptop

- 7.7 pounds with battery
- Fits in a briefcase

PS/2 Laptop 40 SX

Outstanding comfort features

- Familiar keyboard at 5 degree angle
 - Standard key size and spacing
 - Inverted 'T' cursor pad
 - 12 function keys
 - Full 101 keys with numeric keypad attached
- Up to 3 hours battery life
- Suspend/resume for easy stop/restart operation
- Non-disruptive battery exchange
- 10 system status lights with icons
 - Battery gauge
 - Heat and humidity check
 - Num lock, scroll lock, caps lock
 - Suspend/resume
 - Carrier Detect
 - And more
- High contrast, high resolution display
 - VGA
 - Supertwisted nematic (STN) sidelit LCD
 - Up to 32 gray shades
 - Black on white
- Combination mouse/trackball pointer

PS/2 Laptop 40 SX

Makes no compromises

- Full angled keyboard with full size keys
- High quality VGA display with 1:1 aspect ratio
- Separate pointing device port
- Data/fax modem option
- Non-disruptive battery exchange
- Extensive power management
 - Sleep mode
 - Manual/automatic operating modes
 - Trickle charge during AC operation
- Balanced system performance
- Durable to meet rigors of travel

PS/2 Laptop 40 SX

Provides desktop performance

- 20 MHz 386SX processor with coprocessor socket
- 60 million bytes (60MB) of hard disk storage
- 1.44MB 3.5" Diskette Drive
- 2MB memory, expandable to 18MB
- VGA compatibility; port for external PS/2 color monitor
- Serial and parallel ports
- External AT-bus connector
- Connectivity 'Statement of Direction'
 - Expansion unit for 3270, 5250, Token Ring connectivity
 - Using AT-half size cards
- Complete and familiar PS/2 keyboard

PS/2 Laptop 40 SX

. . . And it's from IBM

- International Hardware Warranty Service
 - Countries where Laptop 40 SX is sold
 - Carry-in Service
 - IBM and IBM Authorized PC Dealers/Remarketers
 - 1 year limited warranty
- Widespread U.S. service and support
 - Over 2,500 IBM Authorized PC Dealers/Remarketers provide service and support in the United States
 - IBM On-site Alternative Service
- PS/2 quality and reliability

PS/2 Laptop 40 SX

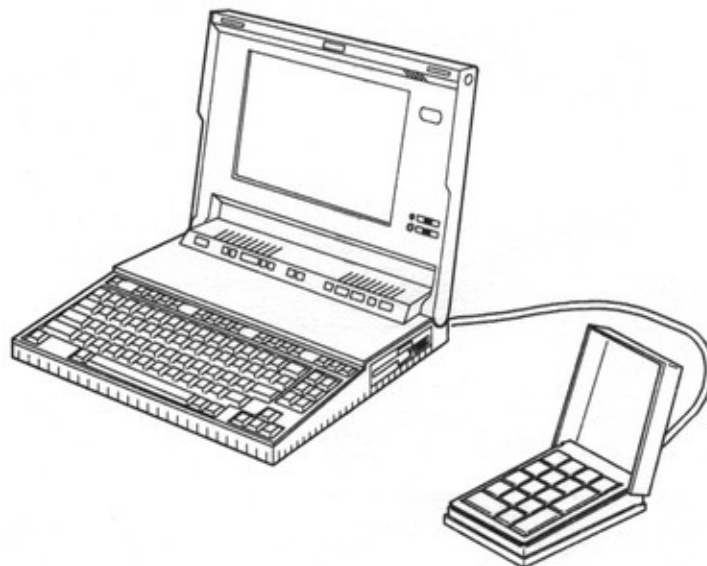
A lightweight laptop

with outstanding comfort features

that makes no compromises

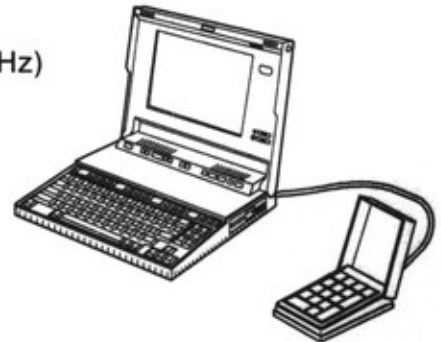
providing desktop capabilities

... and it's from IBM



PS/2 Laptop 40 SX Standard Features

Processor:	20 MHz 386SX Coprocesor socket Automatic/manual modes (5, 10, 20 MHz)
Memory	2MB low power (80ns) (18MB max) 2 available memory sockets
Storage	1.44MB 3.5" diskette drive 60MB (19ms) hard disk
Display	10" diagonal LCD display 640 x 480 resolution Black on white Up to 32 gray shades 1:1 aspect ratio
Keyboard	84 key keyboard at 5 degree angle Inverted 'T' cursor pad 12 function keys 17 key numeric keypad with 'mouse' port Quiet or 'click' mode
I/O ports:	VGA monitor Parallel Serial (9-pin) Keypad/pointing device AT bus connector
Power:	Battery pack (up to 3 hours) AC adapter and power cord Internal backup battery Clock/calendar battery
Power management:	Sleep mode Automatic/manual operating modes Non-disruptive battery exchange
Status icons:	Battery gauge Humidity and overheated indicators Speaker sounded Suspend mode Num lock/scroll lock/caps lock indicators Diskette/hard disk in use indicators
Carrying case:	Black leather slip-in case with strap



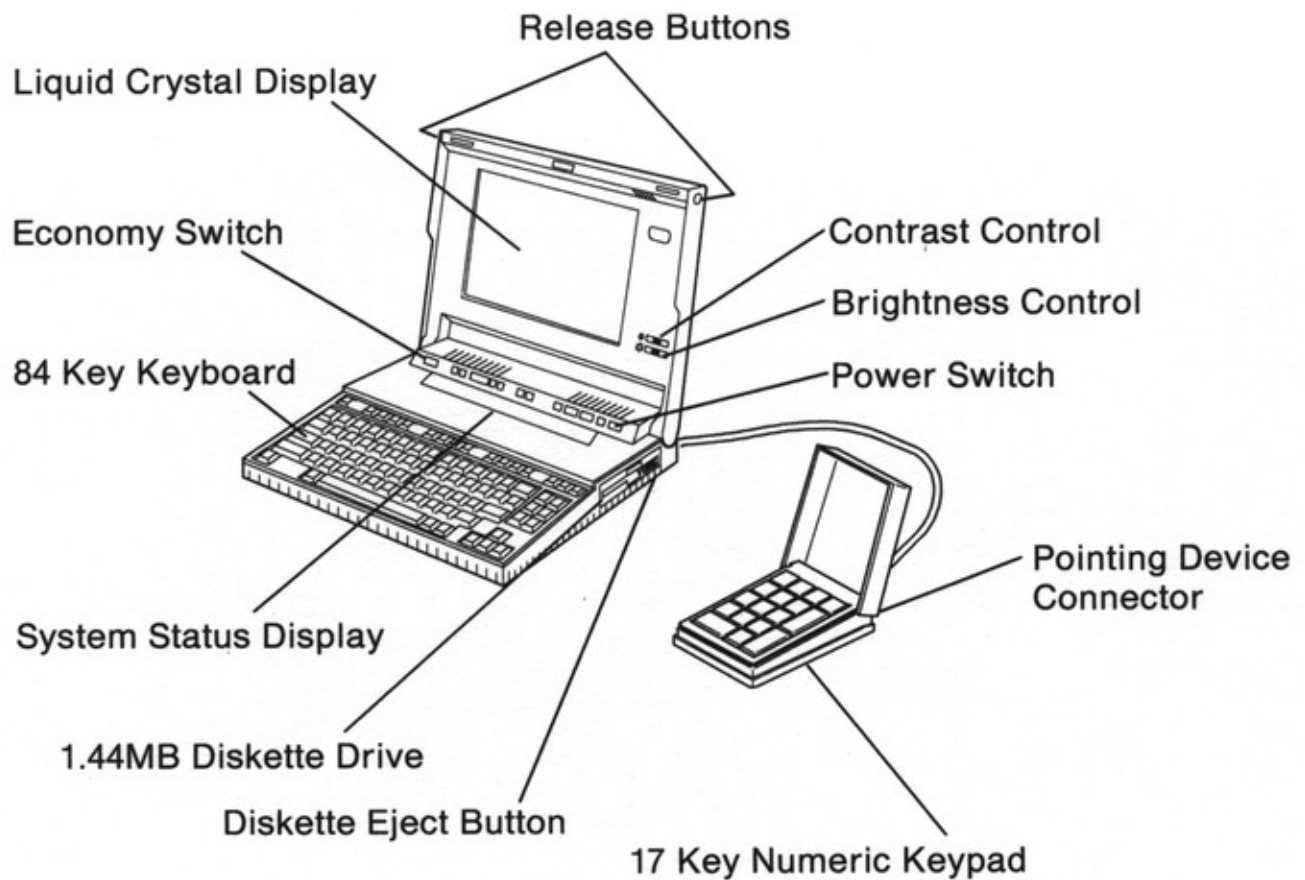
PS/2 Laptop 40 SX Optional Features

- Internal data/fax modem*
 - Concurrent network and handset connections (two RJ11 phone jacks)
 - 2400 bps for data
 - 9600 bps for fax with send and receive
 - Fax utility
- Internal Serial Adapter (RS232)*
- 2/4/8MB memory SIMMs*
- Battery quick charger
- Mouse/trackball combination pointer
- Car battery adapter
- Deluxe carrying case
- Travel case

* Internal features must be installed by IBM trained personnel.

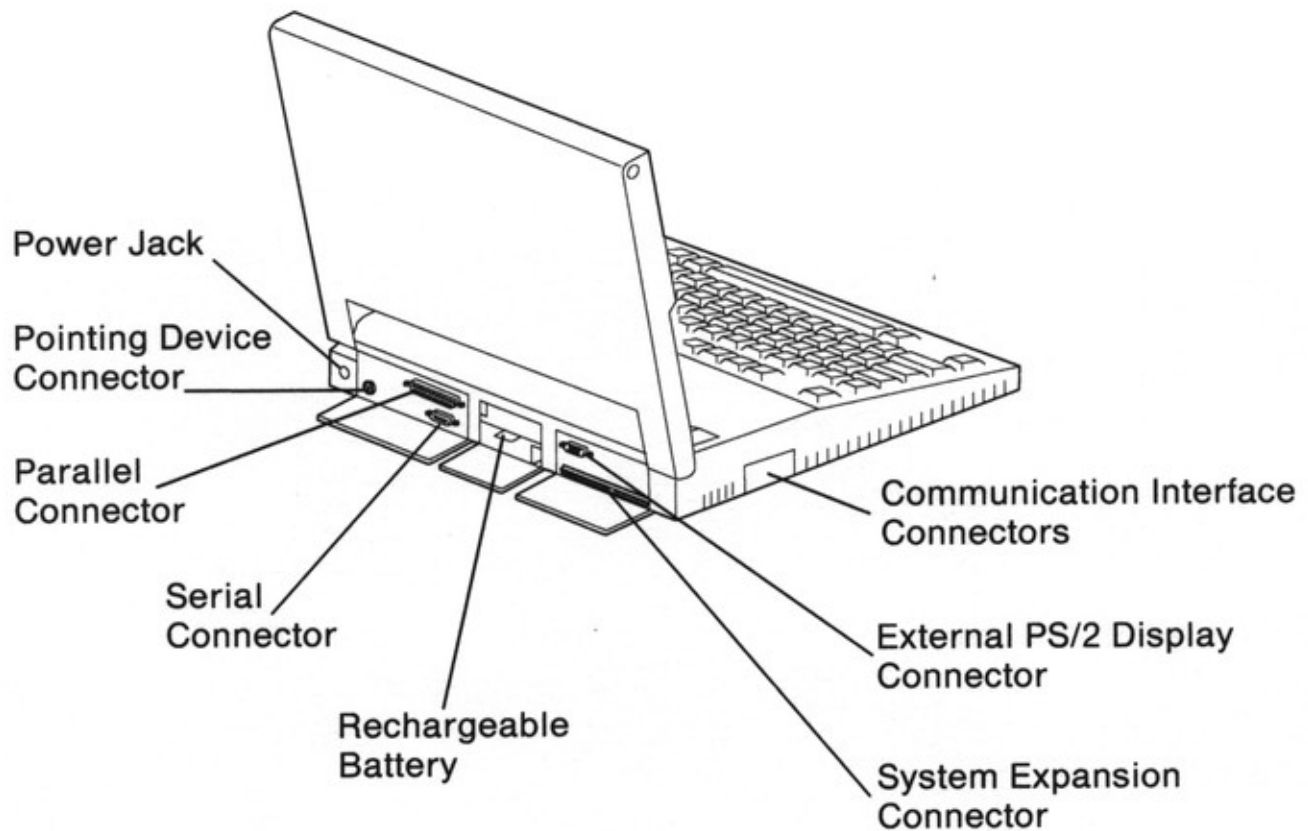
PS/2 Laptop 40 SX Features

Front View



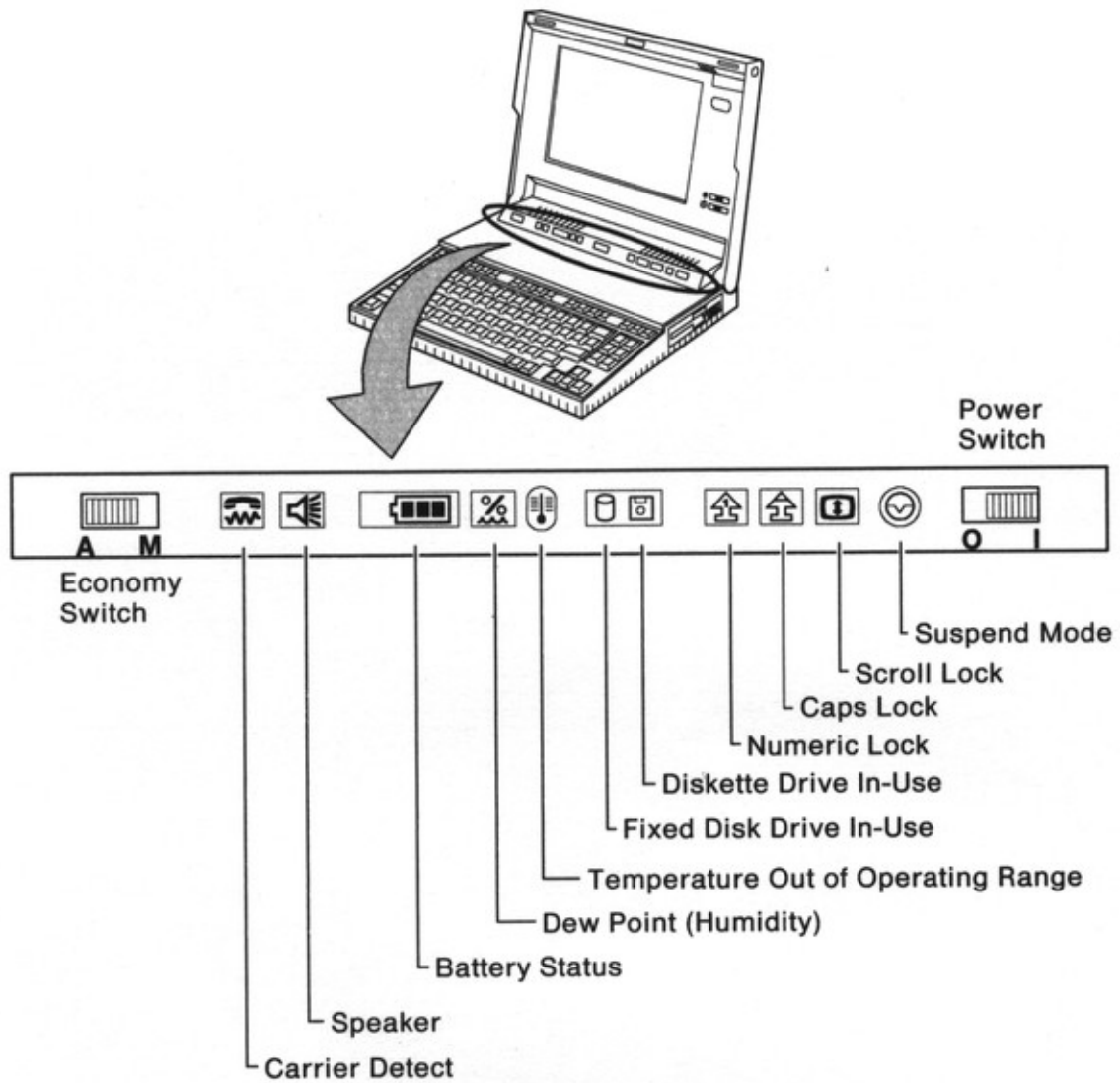
PS/2 Laptop 40 SX Features (cont'd)

Rear View

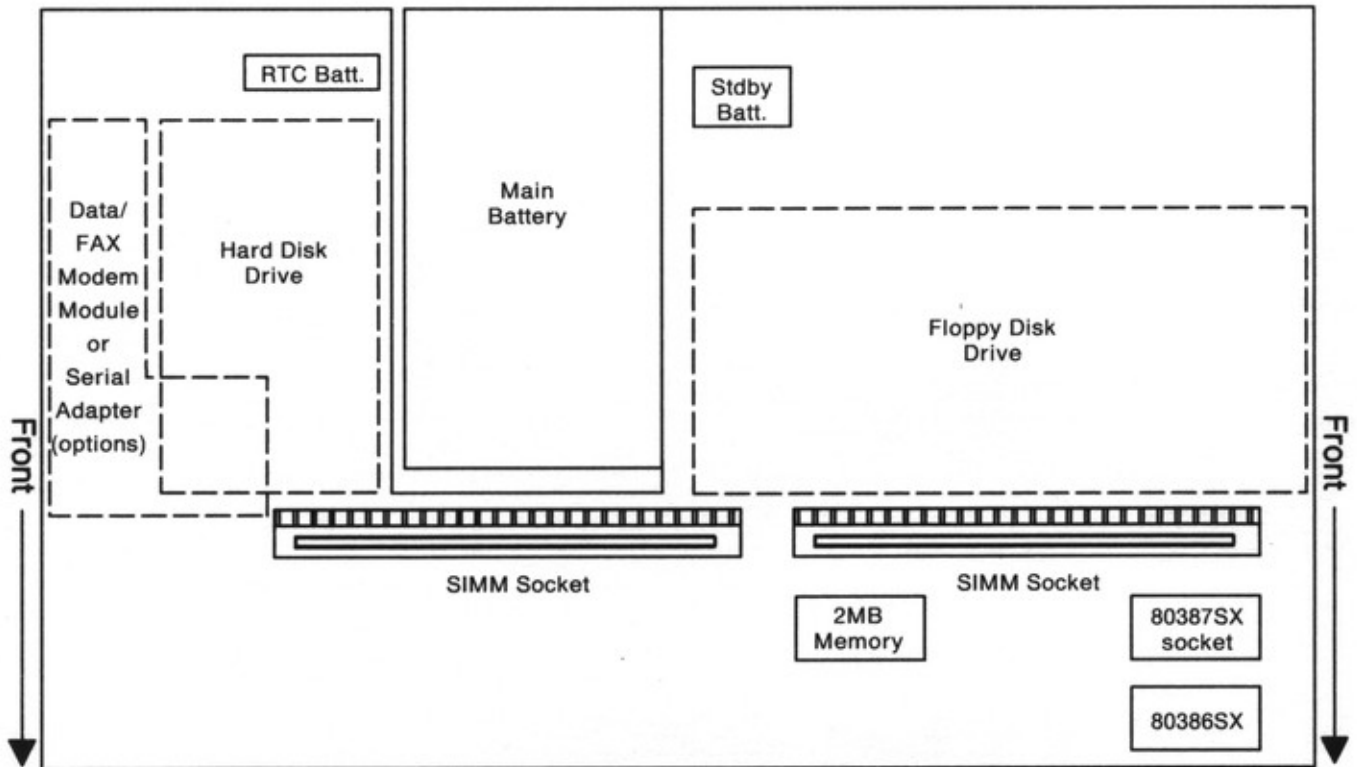


PS/2 Laptop 40 SX Features (cont'd)

System Status Icons



PS/2 Laptop 40 SX System Diagram



L40 SX Planar Board

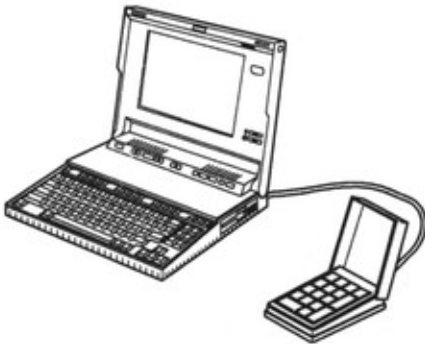
PS/2 Laptop 40 SX Memory Matrix

Standard memory	Two SIMM sockets for optional memory*		Memory configurations possible**
2 M B	2MB P/N 79F0999		4MB
	2MB P/N 79F0999	2MB P/N 79F0999	6MB
	4MB P/N 79F1000		6MB
	2MB P/N 79F0999	4MB P/N 79F1000	8MB
	8MB P/N 79F1001		10MB
	8MB P/N 79F1001	2MB P/N 79F0999	12MB
	8MB P/N 79F1001	4MB P/N 79F1000	14MB
	8MB P/N 79F1001	8MB P/N 79F1001	18MB

* Optional memory must be installed by IBM trained personnel.

** Memory can be added in any combination except only one 4MB memory kit can be installed per system.

PS/2 Laptop 40 SX Positioning with PS/2 Model P70 386



**Laptop 40 SX
Laptop**



**Model P70 386
Transportable**

- 20 MHz 386SX microprocessor
- AT bus
- 2MB 80ns low power standard memory expandable to 18MB on planar
- VGA on planar
- Slots not available
- 3.5" 1.44MB Diskette Drive
- 60MB (19ms) hard disk
- Supertwisted Nematic (STN) sidelit LCD with 640 x 480 resolution; up to 32 gray shades
- AC/DC
- 10.7" d x 12.8" w x 2.1" h
- Portable: 7.7 lbs

- 16 MHz or 20 MHz 386 microprocessor
- Micro Channel
- 2MB or 4MB 85ns standard memory expandable to 8MB on planar
- VGA on planar
- Two available slots (one full-size 32-bit and one half-size 16-bit)
- 3.5" 1.44MB Diskette Drive with external Diskette Drive port
- 30MB (19ms), 60MB (27ms) or 120MB (23ms) hard disk
- Gas plasma display with 640 x 480 resolution; up to 16 gray shades
- AC only
- 5.0" d x 18.3" w x 12.0" h
- Transportable: Approx. 20 lbs

PS/2 Laptop 40 SX

Bringing desktop capability down to size

- 386SX processing power
- Memory expandable to 18MB
- 60MB hard disk storage
- Ergonomically designed keyboard
- Full function data/fax modem option
- 3 hour battery life
- Small, lightweight package

PS/2 Laptop 40 SX Positioning with PS/2 Model 55 SX



Laptop 40 SX
Laptop

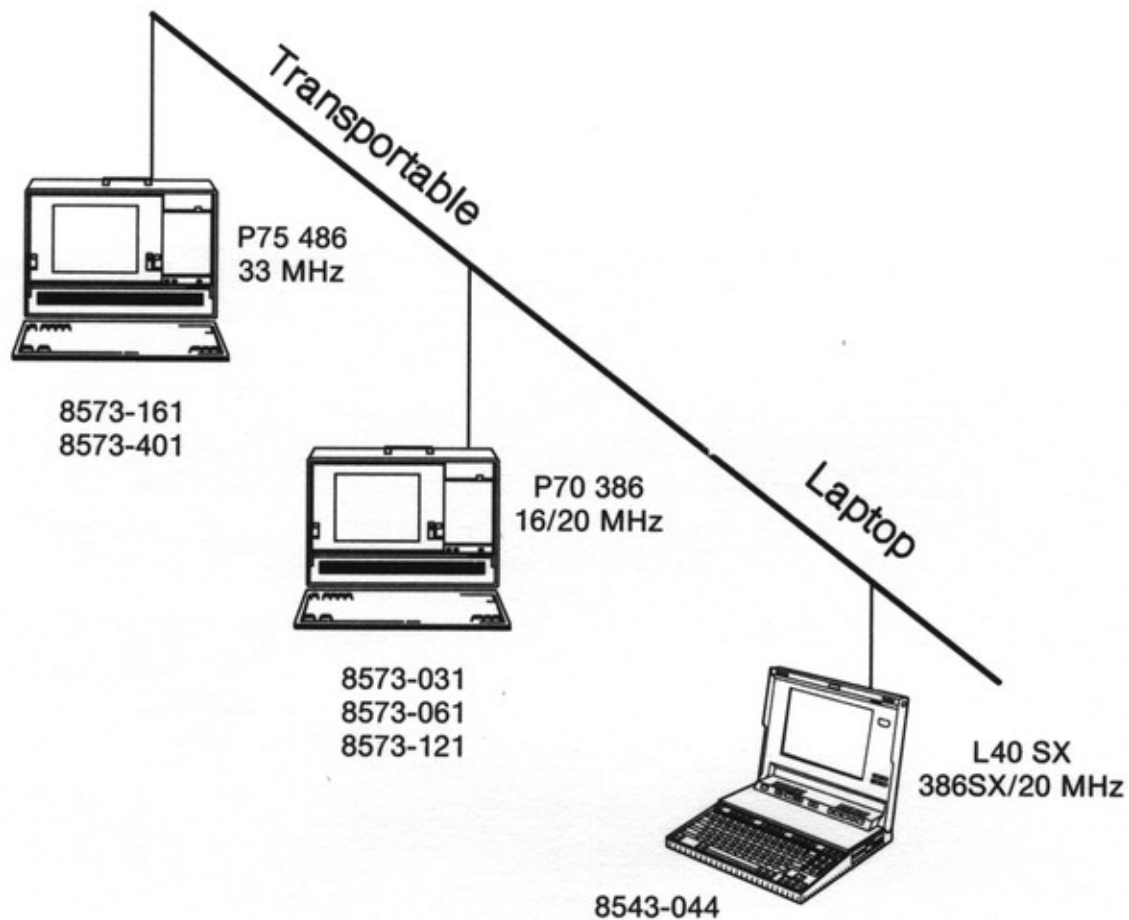


Model 55 SX
Desktop

- 20 MHz 386SX microprocessor
- 2MB 80ns low power standard memory expandable to 18MB on planar
- VGA on planar
- Slots not available
- 60MB (19ms) hard disk
- Supertwisted Nematic (STN) sidelit LCD integrated display with 640 x 480 resolution
- AC/DC

- 16 MHz 386SX microprocessor
- 2MB 100ns standard memory expandable to 8MB on planar
- VGA on planar
- Three available slots
- 30MB (39ms) or 60MB (27ms) hard disk
- Display separate
- AC only

Personal System/2 Portable System Family



- Provides range of portable offerings
- Offers compatibility across PS/2 family
- Protects your most critical investment of applications and information

PS/2 Laptop 40 SX

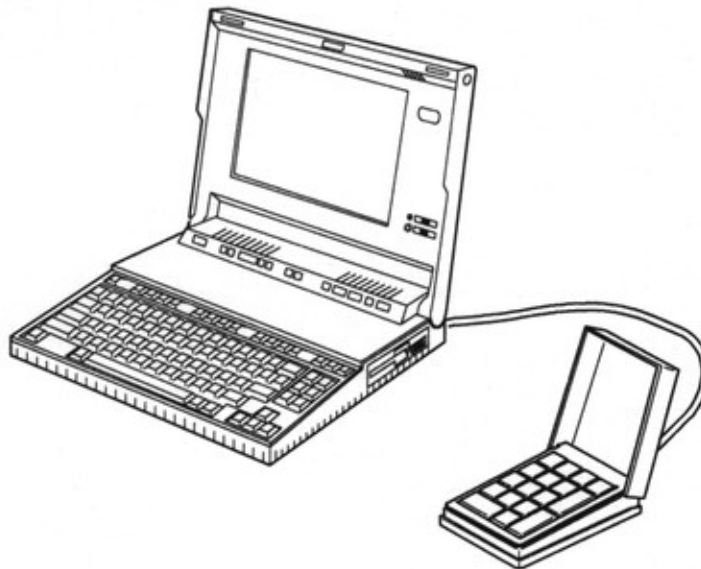
A lightweight laptop

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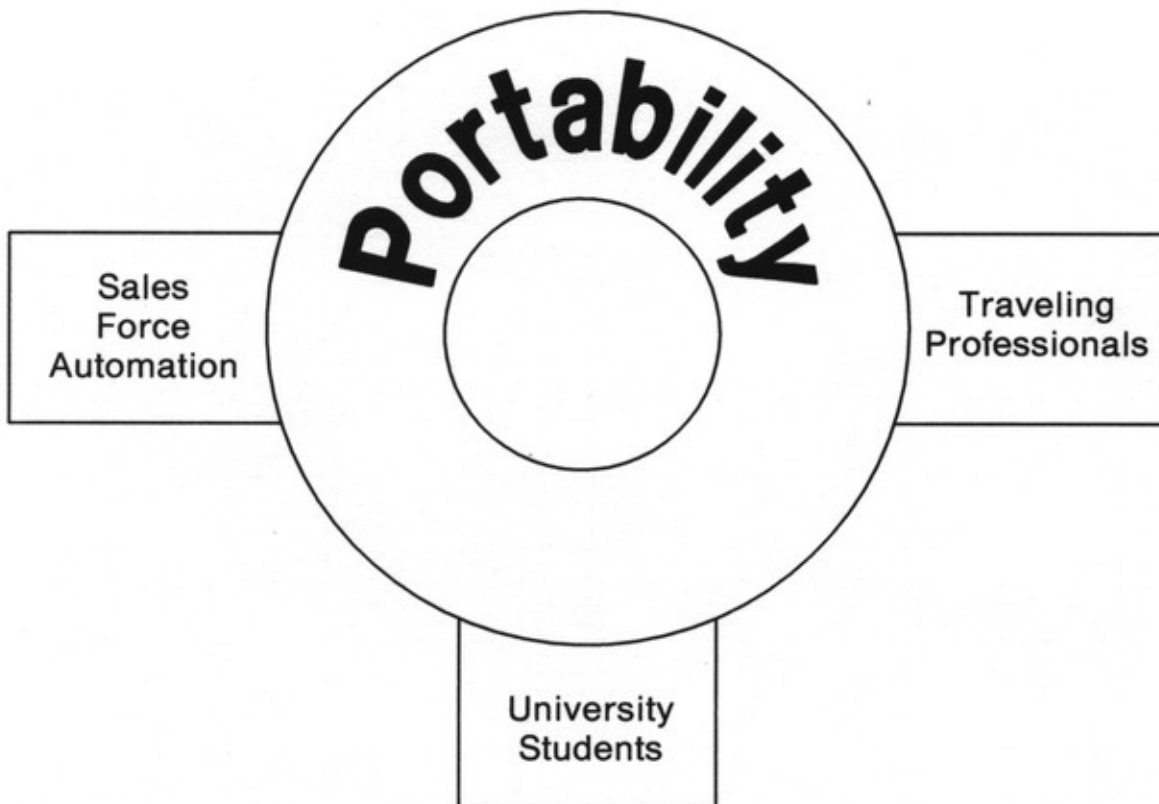
providing desktop capabilities

. . . and it's from IBM



PS/2 Laptop 40 SX

Market Opportunities



Portable Applications

Why People Buy

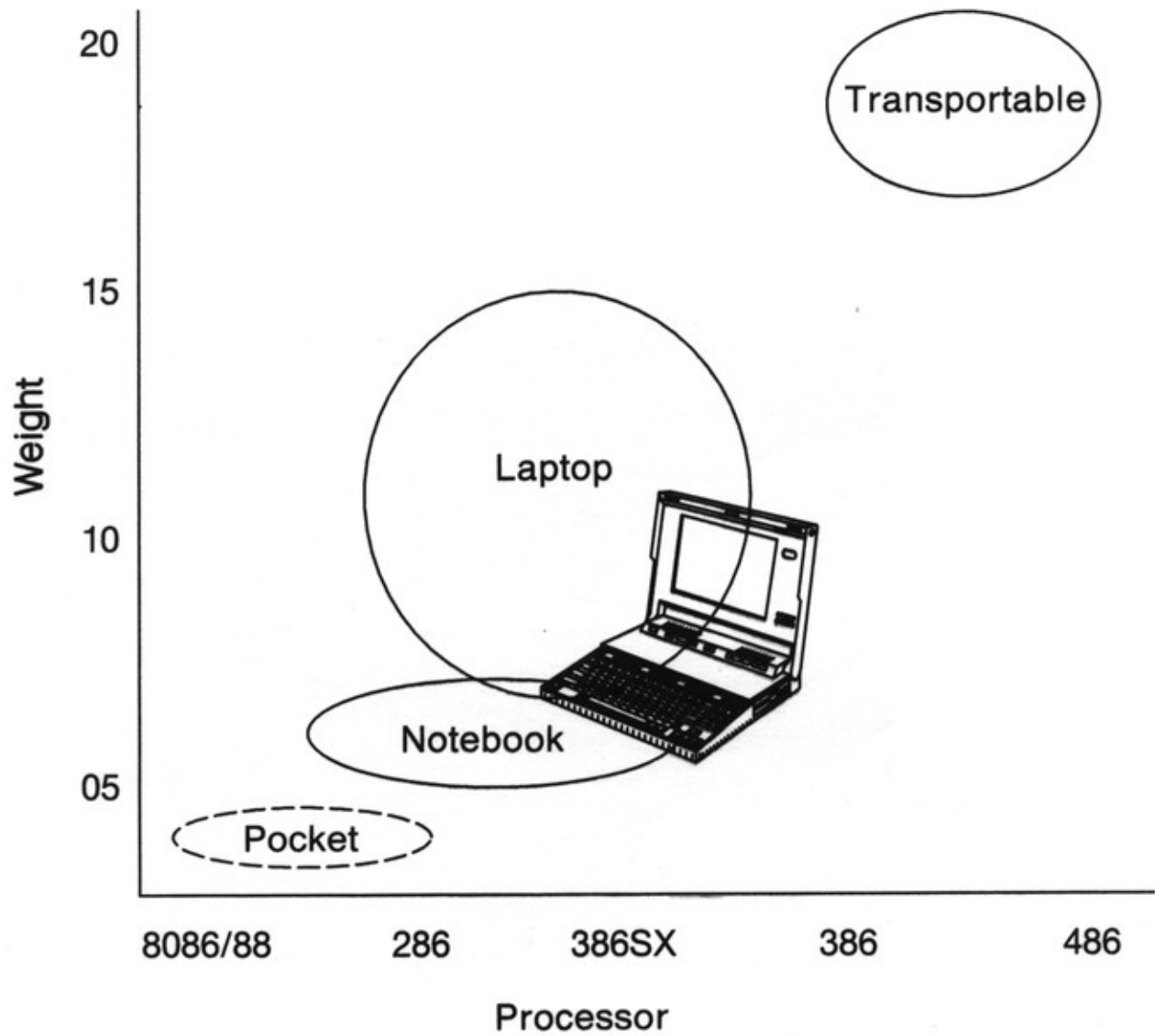
- Proposals — life insurance, financial planning
- General business applications — word processing, spreadsheets, database, etc.
- Outside sales demonstrations
- Territory management
- Consulting/auditing
- Education/training
- Field research projects

Portable Applications

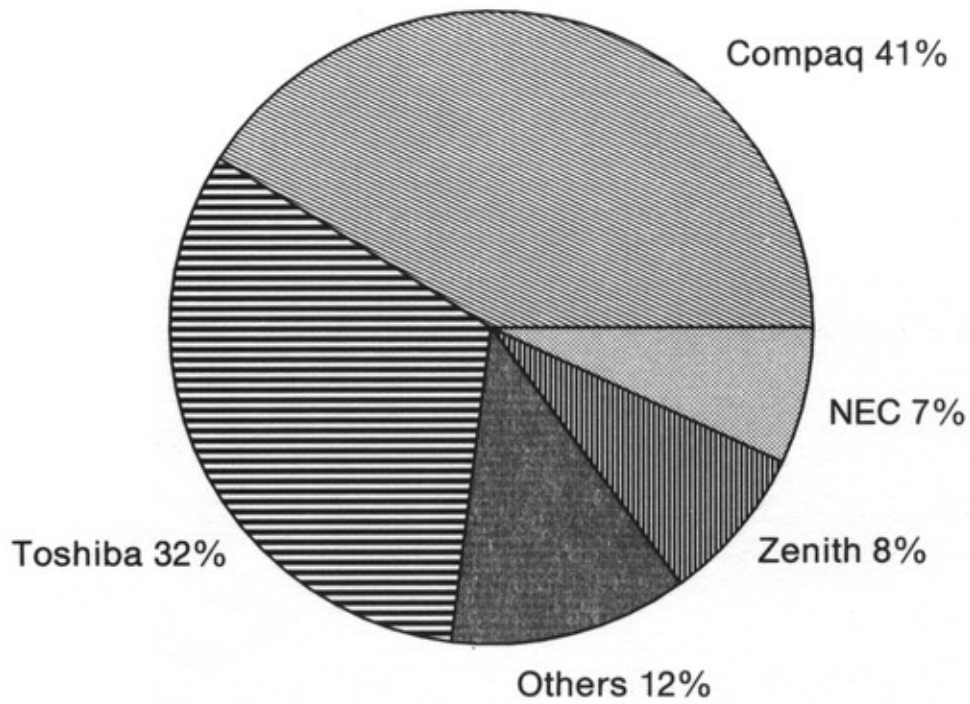
What Buyers Want

- Portability (small size and light weight)
- Familiarity
- Usability
- Capacity
- Reliable offering
- Quality image

Portable Positioning



Portable Computers Market Share



Source: Audits and Surveys, Inc.

PS/2 Laptop 40 SX

Who are the Competitors

- Compaq LTE 386s/20
 - 386SX microprocessor / 20 MHz
 - 4KB cache
 - 30/60MB hard disk
 - 81 key keyboard
 - 7.5 lbs
- Toshiba T2000SX
 - 386SX microprocessor / 16 MHz
 - 20/40MB hard disk
 - 86 key keyboard
 - 6.9 lbs
- Epson NB3s
 - 386SX microprocessor / 16 MHz
 - 20/40MB hard disk
 - 82 key compact keyboard
 - 5.8 lbs
- Others
 - Sharp PC-6441
 - Dell 320LT
 - Nec Pro Speedsx/20
 - TI TM 3000
 - AST Premium Exec 386SX/20

PS/2 Laptop 40 SX Product Comparisons

	IBM PS/2 Laptop 40 SX	Compaq LTE 386s/20	Toshiba T2000SX	Epson NB3s
Processor	80386SX	80386SX	80386SX	80386SX
Speed	20 MHz	20 MHz	16 MHz	16 MHz
Cache	N/A	4KB	N/A	N/A
Standard Memory	2MB	2MB	1MB	1MB
Maximum Planar Memory	18MB	10MB	9MB	5MB
Integrated Display Screen	LCD/ Sidelit Black on White	LCD/ Edgelit Blue on White	LCD/ SideLit Black & White	LCD/ Backlit Black on White
Size	10"	9"	8.5"	8.3"
Graphics resolution	VGA	VGA	VGA	VGA
Keyboard angled	84 Yes	80 No	86 No	82 No
Numeric Keypad	Yes 17 Key	Optional	Optional	Optional
Hard Disk	60MB	30/60MB	20/40MB	20/40MB
Average Seek Time	19ms	19ms	25/23ms	< 23ms
Standard Ports	5	5	5	5
External Expansion Port	Yes	Yes	Yes	Yes
Internal Expansion Options	Yes	Yes	Yes	Yes
Size	2x12.8x10.6	2.2x11x8.5	1.9x12.2x10	1.7x11.7x8.5
Weight	7.7 lbs	7.5 lbs	6.9 lbs	5.8 lbs
Worldwide Warranty Support	Yes	Yes	No	No

PS/2 Laptop 40 SX Marketing Strengths

IBM PS/2 Laptop 40 SX

- Usability features
 - Keyboard ergonomics
 - Status icons
 - Suspend/resume
 - 10" screen



+

- Performance
 - 20 MHz
 - 60MB file
- International Hardware Warranty Service



+

- Uncompromised computing

Compaq LTE 386s/20

- Performance
 - Cache
- Industry leadership

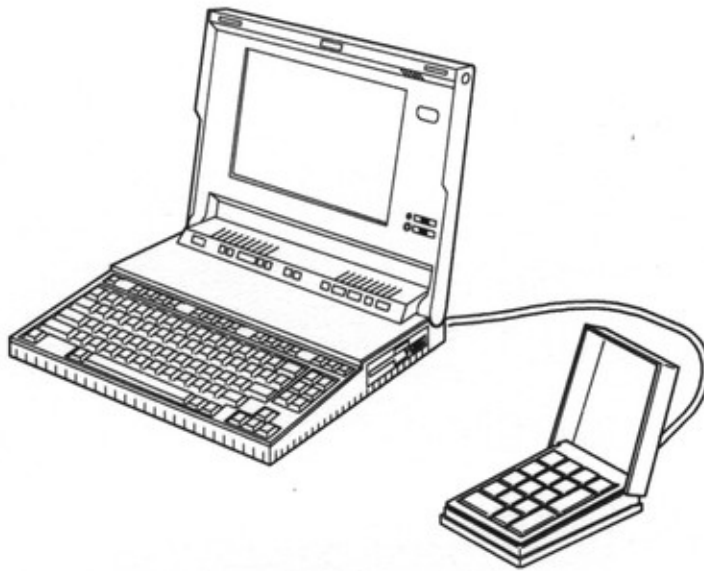
Toshiba T2000SX

- Portable Leadership
 - Weight 6.9 lbs
- Docking Station

Epson NB3s

- Price
- Packaging
 - 5.8 lbs
 - Notebook size

PS/2 Laptop 40 SX



**Uncompromised computing and
comfort in a laptop PS/2!**



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