

# Mobile Computing for Beginners

**symbol**<sup>®</sup>



**WHAT DO I  
NEED TO KNOW?**

**WHO CAN HELP ME  
GET STARTED?**

**WHAT'S THE  
FIRST THING I  
SHOULD DO?**

**(What you've always wanted to know  
about mobile computing, but were afraid to ask!)**

## Information on the Move

From the manufacturing plant to the distribution center to the retail sales floor, mobile computing is having an impact on every aspect of our business lives. In Healthcare, Manufacturing, Transportation and a host of other industries, mobile computing solutions are increasing efficiency, improving quality and boosting the bottom line.

*Mobile Computing for Beginners* was written to give forward-thinking professionals like you an introduction to mobile computing devices, and to outline some of the issues that need to be considered so you can make the right choices for your own application challenges.

Read on to see how Symbol Technologies, Inc. can help to improve your business operations with mobile computing.



## Flexible Computing Where You Need It

Mobile computers—those used in business applications—come in different shapes and sizes to solve application challenges in a variety of environments. But they can be broadly classified into three groups: **Key-based**, **Pen-based** and **Vehicle Mount**. All are reliable, decision-support tools ideal for all your data management functions.

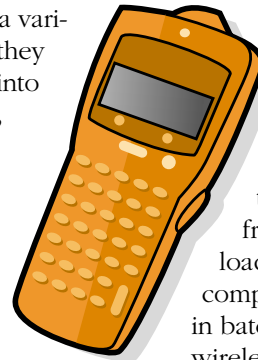
Choose from a variety of mobile computing models for applications that require you to:

- Capture information in real-time
- Download/upload data quickly via batch or wireless communications
- Hold or wear your mobile computer
- Integrate scanning capabilities
- Enable web browsing
- Connect to a portable printer
- Use a ruggedized model for tough environments or extreme weather conditions

Whether your workplace is harsh, normal, indoors, or outdoors, there is a mobile computer that is ideal for collecting, processing and communicating information where you need it and when you need it.

## Linking Workers to Data and to Each Other

In today's fast-paced business environment, the ability to manage information at the point of activity can provide companies with distinct competitive advantages. Like any other task, finding the right tools for the job is critical, which is why Symbol offers a wide selection of products with different form-factors, operating systems, communication options, and more.



### Key-Based

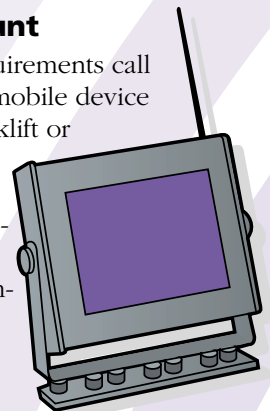
When you have a data-intensive application that requires manual entry of information, a key-based mobile computer is the answer. Built with full, easy-to-use alphanumeric keyboards and large back-lit displays, key-based mobile computers are productive tools for many applications from the retail floor to the loading dock. These mobile computing devices are available in batch, or with Spectrum24® wireless LAN connectivity for high-performance communications, and some offer wireless wide area connectivity. Many are based on Palm™ Operating Systems, DOS, or Wince CE® operating systems.

### Pen-Based

The hallmark of pen-based mobile computers is that they do not have a keyboard. Instead, you enter and retrieve information using a pen-like stylus. Designed specifically for mobile, information-intensive applications, pen-based terminals increase efficiency and effectiveness and are rugged enough to go virtually anywhere. They are indispensable for on-the-move workers in all industries who need to collect data where it originates. Like many key-based terminals, pen-based devices are available in batch, wireless LAN and wireless WAN versions.

### Vehicle Mount

When your requirements call for a mounted mobile device for use on a forklift or motorized pallet, Symbol has durable and full-featured, industrial mobile computers that will enable your mobile workers to capture, compute and communicate data wherever they are in the



warehouse. These heavy-duty workhorses perform in the harshest environments, can port to a bar code scanner and can enable operators to wirelessly transmit data to and from a remote host system. These menu-driven, touch-screen, truck-mounted computers simplify real-time management of material, work-in-process and finished goods. Productivity zooms because workers receive the latest work orders and updates without leaving the truck.

## Operating Systems

For Key-based, Pen-Based, or Vehicle Mount, the operating system is the backbone of the mobile computing device. Several operating systems are available for mobile computers, but the most prevalent ones are the DOS Operating System, and the Palm Operating System, Microsoft® WindowsCE® and the Pocket PC Operating System.



### DOS

Considered less glamorous than the others, DOS is, nonetheless, a convenient and powerful operating system. Because of its industry-standard architecture, it enables efficient programming and development of demanding and information-intensive applications. However, it is a single-user operating system, running only one program at a time.

### Palm OS

The Palm Operating System runs multiple programs at one time, and enjoys a reputation for simplicity, operating speed and easy customization through third-party software add-ons. The Palm OS is an open standard operating system and has been licensed for use to many mobile computing manufacturers.

### WindowsCE

WindowsCE is basically a mini-version of Windows® and is often referred to as “Wince.” It was designed specifically to work with mobile computing devices. The look and feel of Wince is very similar to Windows 95/98 and is intended to make Windows users feel at home. A multi-tasking OS, WindowsCE has more memory and more functions than devices based on the Palm OS.

### Pocket PC

Pocket PC is a version of the WindowsCE operating system. Devices running on the Windows-powered Pocket PC platform have a new, easier-to-navigate user interface. They also feature extensive Internet browsing capabilities, and powerful overall performance.

It is important to remember, that your mobile computer must be compatible with your desktop PC. The operating systems outlined above function with DOS, Windows, Macintosh™, Unix® or Linux® systems, but may require additional software to do so.

## Synchronization

### Or, how information moves

At the heart of the mobile computing revolution is the ability to move information quickly and easily from the mobile device to a desktop PC and vice versa. Within the mobile computing community, we call this function synchronization.

All mobile computers come with some form of synchronization software. Once installed on both systems, it allows a mobile computer and desktop PC to exchange information using a common application, such as a word processor or spreadsheet. When deciding which synchronization program to use, you must be careful to choose one that is compatible with all of the devices with which you plan to exchange information.

## Making the Connection

A mobile computer can communicate wirelessly and exchange information with the host in real time, or through a batch download/upload option.

### Batch Connectivity

Most batch mobile computers, come with a special stand—called a cradle—that facilitates synchronization. Cradles usually attach to a PC's serial port. However, some key-based and pen-based models bypass the cradle completely and connect directly to the RS-232 port on the PC.

Batch connectivity is ideal for those applications where information doesn't have to be received and transmitted in real time, but can be downloaded at the end of a shift or the end of a day.

### Wireless LAN Connectivity

Mobile computers equipped with a Spectrum24 wireless LAN radio card use radio waves to transmit information. This permits interactive, two-way data communication in real time. Information captured and processed at the point of activity—where the work is happening—can be communicated to the main host or to another computer for tracking, reporting, or computing. The results, instructions, or next work assignment can then be sent back to the point of activity for immediate action.

When you need to move accurate information instantly, when time is critical to data management operations, then wireless connectivity is the only answer.

## All About:

### Memory

Memory is the heart of a mobile computer. It stores the operating system, application software and all data files that allow you to create all kinds of documents. As a general rule, the more memory you have the better. More memory allows your mobile computer to store more programs and process information faster. However, if you try to run applications without sufficient memory, they may not operate correctly.

So, if you plan to load up on applications, look for a mobile computer that offers upgradeable memory or supports removable storage media. The downside of increased memory is that it drains your batteries faster.

### The Display

Mobile computers use LCD (Liquid Crystal Display) back-lit screens that are basically the same as those used in laptop computers. Since the screen is the key interface between you and your information, choose a mobile device with one that can display the data needed to complete a task.

### Batteries

Power for your mobile computer comes from either alkaline batteries or a removable battery pack. Many models also include a small back-up battery to protect you from memory loss should your main batteries fail while you are using your mobile device.

In general, you can expect a set of alkaline batteries to last a few weeks under normal use. A rechargeable battery pack typically runs for several hours between charges. The most common types of battery packs are nickel-cadmium (Ni-Cad), nickel-hydride (NiMH) and lithium ion.

## Putting Mobile Computing to Work Anywhere



Where can mobile computing be used?

Anywhere and everywhere. Take a look at how Symbol's mobile computing devices benefit businesses in just about any industry!

### Manufacturing

Getting things done in the plant is easier, faster and more accurate when you track, compute and communicate using mobile computers. If you are in production control, manufacturing, engineering, quality, operations or any other manufacturing function, mobile computing gives you the ability to do your job at the point of activity instead of at your remote workplace.

Our broad line of mobile computing devices suit a wide range of industrial applications, are easy to use, and stand up to tough industrial environments.

The innovative SPT 1700, for example, combines the functionality of the Palm OS with the latest in bar code scanning technology.



In a rugged environment where forklifts are a must, portable terminals like the vehicle mount mobile computer, VRC 6900, meet the challenge.

Small, light, wearable computers, like the WSS 1000 Wearable Scanning System, enable data capture while the operator's hands are free to handle materials, boxes and stock easily and conveniently.

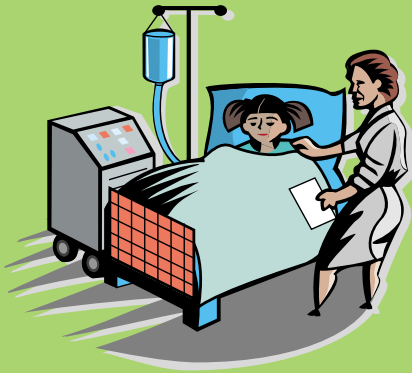
## Warehousing and Distribution

Symbol's wireless LANs and mobile computers, such as the rugged PDT 6800, allow managers, auditors and expeditors to take their computer to the far reaches of the distribution center. They handle management information, lost goods tracking, cycle counting and numerous other tasks effortlessly and immediately. In addition, mobile computers can reduce errors in applications such as picking, packing and put-away. Symbol's mobile computers empower personnel to achieve improved efficiency and customer responsiveness.



## Healthcare

Caregivers need real-time access to the latest patient data—clinical histories, treatments, medications, tests, lab results, insurance information, etc. By using Symbol's Spectrum24 wireless LANs and mobile computing solutions, caregivers can tap into vital information anywhere in the healthcare network.



Instead of scribbling notes, nurses can update patient information, check for drug interactions or verify treatment orders at bedside with mobile computers. Using Symbol's pocket-size SPT 1740, doctors can capture changes or write, sign and send medical orders on the spot. Or with the NetVision® phone, using Voice-Over-IP, medical staff can effortlessly communicate with each other.

## Retail

Line busting is easy to accomplish with Symbol's PDT 2700 CE-based platform device. Our mobile computers work hard to provide retailers with instant information making it easy to improve customer service.

Symbol's wireless LANs and mobile computing devices give store managers anytime, anywhere access to vital data on store sales, back office, customer profiles, pricing and product information.



Small, lightweight computers such as the PDT 6100 series are cost-effective options for order entry, price management and a host of other in-store tasks.

As merchandise arrives, shipments can be verified with innovative computers such as the PDT 6800. With its large, 16-line

back-lit display, and well-balanced ergonomic design, it is an ideal choice for scan-intensive activities.

## Education

Symbol's high-performance wireless LANs are revolutionizing educational computing. Free from wires, computing power goes where it is needed: to the classroom, gym, lab, library, or dorm.

Symbol's information technology also helps streamline school administration. Symbol's mobile computing products, such as the versatile SPT 1500, help track students, supplies and buses. It even links teachers on hall duty to the attendance and scheduling database.

And no matter where they are, maintenance staff can log work orders, check records or find equipment with key-based mobile computers which feature a full keyboard and large back-lit display.



## Transportation

Transform your vehicles into mobile profit centers with Symbol's mobile computing devices like the Wireless Wide Area Networks (WWAN) enabled PDT 7500. In-cab computers capture and transmit a constant stream of real-time data on shipments, routes, vehicle performance and more. Use the data to reduce mileage, improve fuel economy and

boost productivity across the board. When you know what your fleet is doing hour by hour, you can reduce delivery turn-arounds, match customer time windows, improve equipment usage, eliminate aborted deliveries, even remotely monitor time-sensitive loads. The versatile PDT 7500, built for productivity in demanding environments is a dependable link from workers to the yard.



**I didn't know that!**

# Mobile Computing

It Works Wherever  
Your Imagination  
Takes It.



PDT 2700



PDT 7500



VRC 7900



PDT 7200



SPT 1500



PDT 6800



PDT 6100



## Spark your imagination!

Look at where mobile computing  
makes a difference:

- Inventory Control
- Line Busting
- Picking/Packing
- Shelf-price Audits
- Patient Tracking
- Point-of-Sale

- Student Instruction
- Inspections
- Label Compliance
- Work in Process
- Shipping/Receiving
- Asset Tracking



**What Questions  
Should I Ask Before  
Buying?**

**Q** ■ **What is the first thing I should do if I want to add mobile computing to my business?**

**A** ■ First, be prepared to answer detailed questions about your business operations. Next, be ready to communicate about the realistic application solutions you expect a mobile computer to provide. Finally, discuss in detail the benefits you should be able to realize from integrating a mobile computing device into your system.

**Q** ■ **How do I select a mobile computing source?**

**A** ■ When choosing a mobile computing partner, look for a company with a demonstrated capability in the technology, and a record of product innovation. They should also have long-term financial stability, a dependable infrastructure, and strong warranty and product support. Search out a mobile computing provider who has solid partnerships with other industry leaders. This way, they will be able to provide a stronger support system for you after installation.

**Q** ■ **What kind of technical support is available after I make my purchase?**

**A** ■ At Symbol, technical support is available 24 hours a day, 365 days a year. Don't settle for anything less than that or you may be vulnerable to downtime in productivity.

**Q** ■ **Who will help me make the right decision?**

**A** ■ When you are ready to make a mobile computing purchase, be sure to find a company that makes an effort to understand *your* unique business challenges. Feel comfortable that they will be with you long after they make the sale. You can depend on Symbol and its business partners to be with you every step of the way—from installation to support.