TELXON

PTC-921 DOS
User's Guide

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User's Guide

Part Number: 23451-000-02
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Contents

Regulations 1

General regulations

FCC statement

! Changes or modifications not expressly approved by Telxon for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

DOC statement

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as outlined in the Radio Interference Regulations of the Canadian Department of Communications (DOC).

This Class A digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numerique de la Classe A respecte toutes les exigences du Reglement sur le material broilleur du Canada.

CE statement

This device has the European community's CE mark of approval.

If your PTC contains an Air-I/O 500 radio module

FCC statement

The Air-I/O 500 radio module within the PTC-921 DOS fully complies with FCC Part 15.247 limits for intentional radiation as well as FCC Part 15.109 for unintentional emissions.

FCC regulations

The PTC-921 DOS uses radios (transceivers) and radio communication in its operation. The PTC-921 DOS is a low-power transceiver operating under FCC Part 15.247. No license is required for operation.

DOC statement

The PTC-921 DOS's Air-I/O 500 radio module is also approved for use in Canada. No license is required for operation.

This device complies with RSS-210 of Industry and Science Canada. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Safety information 2

Using and disposing of lithium-ion batteries

Follow these guidelines when handling the PTC's lithium-ion battery pack:

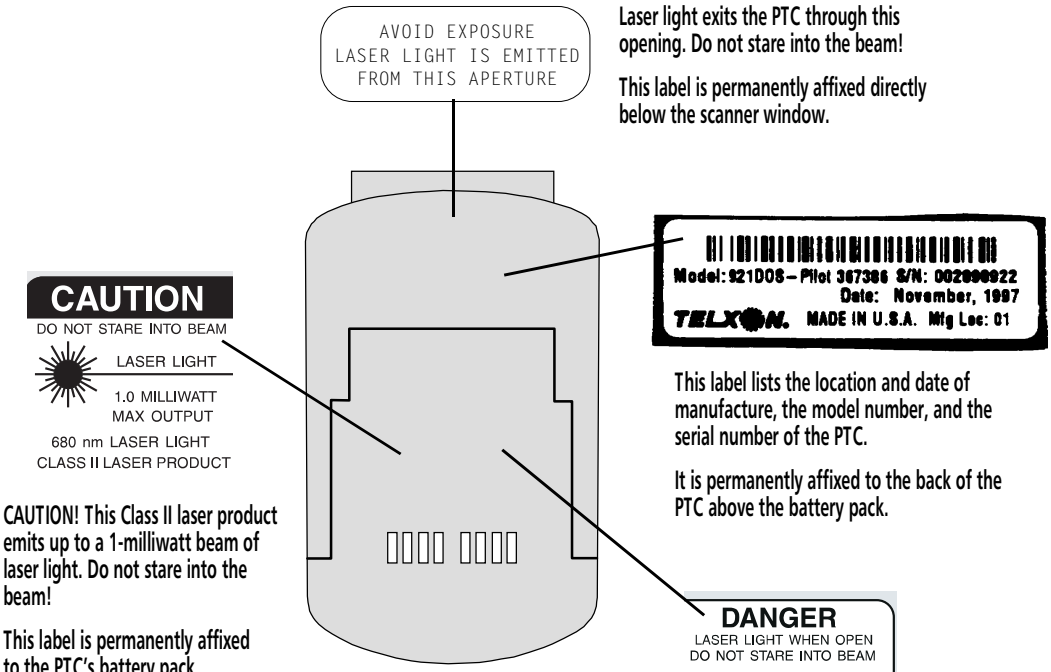
- Do not expose the battery pack to water, metal objects, direct sunlight, extreme heat, or fire.
- Do not attempt to disassemble the battery pack.
- Do not handle a damaged or leaking battery pack.

Lithium-ion batteries contain chemically active materials that are hazardous to the environment; therefore, they must be disposed of properly. Never attempt to incinerate a lithium-ion battery; doing so could cause it to explode. Telxon urges you to contact the Environmental Protection Agency, the Department of Natural Resources, a local hazardous waste disposal agency, or the Telxon Customer Support Center at 1-800-800-8010 for assistance prior to disposing of your lithium-ion batteries.

If your PTC contains a radio

This device is compliant to the ANSI C95.1 (1992) Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields per FCC Docket 93-62.

Using the internal laser scanner



Laser light exits the PTC through this opening. Do not stare into the beam!

This label is permanently affixed directly below the scanner window.

CAUTION! This Class II laser product emits up to a 1-milliwatt beam of laser light. Do not stare into the beam!

This label is permanently affixed to the PTC's battery pack.

This label lists the location and date of manufacture, the model number, and the serial number of the PTC.

It is permanently affixed to the back of the PTC above the battery pack.

DANGER! Laser light is emitted when the PTC's protective housing is open. Do not stare into the beam! (top of label)

The PTC-921 DOS is a Class II laser product. It conforms to the Department of Health and Human Services (DHHS) Regulation 21 CFR Subchapter J. (bottom of label)

This label is permanently affixed to the PTC's battery pack.

Scope of the manual 3

This manual provides general information on the PTC-921 DOS's parts, features, and accessories. It also explains how to operate and maintain the PTC.

This manual does not include the specific operating instructions for your organization's unique data collection program. Operating instructions and training should be available from your organization.

Document conventions

The following conventions are used throughout this manual.

Warnings

Warnings indicate potential bodily injury or death. They are set off in the left-hand columns of this manual by the following symbol: ⚠.

Cautions

Cautions indicate potential damage to equipment. They are set off in the left-hand columns of this manual by the following symbol: **!**.

Notes

Notes provide supplementary information. They are set off in the left-hand columns of this manual and are not preceded by a symbol.

Overview of the PTC-921 DOS 4

The Telxon PTC-921 DOS is a battery-powered, hand-held computer used to collect, store, and transmit data. It has a built-in laser scanner and may contain an Air-I/O 500 frequency-hopping radio module.

The PTC-921 DOS automates your data collection procedures and is custom programmed to efficiently handle your organization's unique data collection jobs.

The PTC runs a program specially designed to collect data for your organization. This program leads you through the data collection procedure with a series of display messages, prompts, and beeps. Messages tell you when you make an error and provide information on the program or the PTC's status. Prompts and beeps tell you when to enter data, what type of data to enter, and when you complete certain operations.

Entering data

Entering data into the PTC-921 DOS is easy. You can key in data through the keyboard or scan bar codes with the internal laser scanner. Additionally, data can be received through an optional internal frequency-hopping radio.

Through the keyboard

Entering data through the keyboard is similar to operating a calculator. As you press the numeric keys, the corresponding number appears on the screen. Pressing the ENT key stores data in the PTC's memory.

With the internal laser scanner

A *bar code* is a series of vertical bars and spaces used to encode information in a machine-readable form. They are used on nearly every item in business today.

A second method of entering data is with the PTC's internal laser scanner. When you scan a bar code the PTC is programmed to read, the PTC and scanner interpret the data and store it in the PTC's memory.

Via the radio

Refer to pages 10 and 17 for information on radio communication.

Storing data

Data entered into the PTC can be stored in files in the PTC's memory.

Each file holds a separate group of application-related data. For example, a PTC used to collect many types of data (sales orders, inventory changes, and employee hours) would store all data relating to sales orders in one file, all data relating to inventory changes in another, and all data relating to employee hours in still another.

Communicating data

After collecting the data, the PTC must transmit it to a host computer for processing to make it useful to you and your organization. The PTC-921 DOS can transmit data via an optional communication cradle or through its optional internal radio.

Once the host computer receives the data from the PTC, it uses that data to update its master files and records. In some cases, the host computer may even transmit data back to the PTC, asking you, as the PTC's operator, to perform a new task.

Getting started 5

Unpacking the PTC-921 DOS

Any additional accessories are shipped separately.

The PTC-921 DOS is shipped in a single box containing

- a PTC-921 DOS,
- a 950-mAhr lithium-ion battery pack,
- a *Guide to Maintaining Nickel-cadmium and Lithium-ion Batteries*,
- a *PTC-921 DOS Read-Me-First Sheet*, and
- a *PTC-921 DOS User's Guide*.

1. Remove the PTC from the box.
2. Remove all packing material from the PTC. Save the packaging in case the PTC is ever stored or shipped to Telxon for service.
3. Check the contents of the package to make sure you have received everything ordered.

If anything is missing or damaged, notify your Telxon sales representative.

4. Check the PTC for shipping damage. Pay particular attention to the PTC's case, display screen, and scanner lens.

Installing the battery pack

If your PTC was not shipped with the battery pack installed, follow the instructions in Chapter 10 to insert the battery pack.

Charging the battery pack

Charge the PTC-921 DOS's lithium-ion battery pack for 3 to 4 hours when you first receive the PTC and whenever the battery pack becomes weak. A low-battery message displays on the PTC's screen when the battery pack is running low. Refer to the *SC-921 DOS User's Guide* for charging instructions.

Turning on the PTC

Press one of the top three keys (ESC, SCAN, or ENT) to turn on the PTC-921 DOS.

Checking the PTC

1. Make sure the PTC is turned on.
2. Look at the PTC's display screen. What appears on the screen depends on the program your organization uses.

   If the PTC is operating correctly, you should not see or hear any of the following:

   - A low-battery warning
   - A blank display screen
   - Any warning beeps

   Repeat the steps in this section if the PTC-921 DOS is not operating properly. If the problem persists, refer to the "Troubleshooting" section on page 22.

Parts 6

Figures 1 and 2 on the following pages show and describe the external parts of the PTC-921 DOS. The part listed below is not shown in either figure.

Radio (optional)

Your PTC's application program controls the radio. Refer to your application's manual for details.

Your PTC-921 DOS may contain a 2.4-GHz Air-I/O 500 frequency-hopping radio module. This radio allows the PTC to interactively communicate in real-time with a host computer on a radio-based local area network. It provides secure, interference-free communication and does not require a license for operation.

Figure 1. The PTC-921 DOS (front view)

1. The PTC-921 DOS's keyboard has 15 keys: 10 numeric keys (0 through 9), 4 function keys (ESC, ENT, ., and -), and a SCAN key. The numeric keys are used to type data into the PTC. The function keys can be programmed via the PTC's application to perform a specific function. Pressing one of the top three keys (ESC, SCAN, or ENT) turns on the PTC.

   ESC key
   Pressing this key twice turns off the PTC.

   SCAN key
   Pressing this key activates the PTC's internal laser scanner, allowing you to scan bar codes. Note: Your application program may not support scanned data for all fields. Consult the documentation for your application to determine when the scanner and SCAN key are enabled.

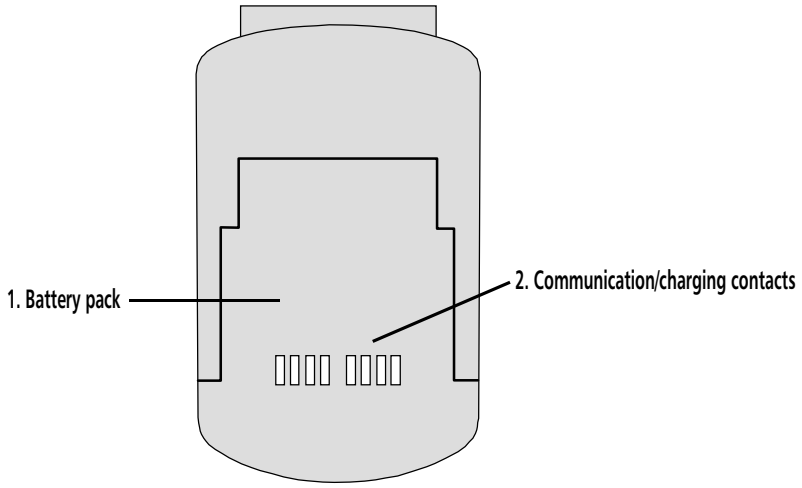
   ENT key
   This key can be used to enter data into the PTC's memory.

   - key
   This key can be used as a backspace key to erase the last character entered.

2. Pressing these buttons (one on each side of the PTC) releases the battery pack, allowing it to be removed from the PTC.
3. The PTC's monochrome black-on-white liquid crystal display (LCD) screen shows the information you type or scan into the PTC as well as messages from the PTC or host computer. The screen can show 2 lines of information with 12 characters each.
4. The laser light emitted from the PTC's internal laser scanner exits the unit through this lens.

   ⚠ Do not stare into the laser beam or point the scanner at anyone's eyes while the scanner is active; permanent eye damage could result.

Figure 2. The PTC-921 DOS (rear view)



1. A 950-mAhr lithium-ion battery pack provides power for the PTC-921 DOS.
2. These contacts on the PTC's battery pack connect with similar contacts on the SC-921 DOS. The electronic impulses for all communication between the PTC and the cradle and the power for recharging the PTC's battery pack pass through these contacts. See Appendix D for the pinouts of these contacts.

Features 7

Autodiscrimination between bar codes

See Appendix C for a list of the bar-code types your PTC is programmed to read.

Your PTC-921 DOS's application program can read and automatically discriminate between up to six different bar-code types.

Automatic off

Refer to the *RAMSaver Application Development Manual* for programming instructions.

To conserve battery power, the PTC-921 DOS automatically turns itself off after approximately 1 minute of inactivity. The exact length of time depends on how your application program has been configured.

Automatic return at on

When you turn off the PTC-921 DOS (or when the PTC turns itself off), it remembers where it was in the application. Then when you turn the PTC back on, it returns to that same point in the application. You do not need to review what you have done or perform any other start-up function to find your place.

Backup system

! Do not store the PTC for over two months without charging or replacing the battery pack. Both the main battery and the super capacitor will drain, and any data or programs in the PTC's memory will be lost.

The PTC's super capacitor provides enough power to protect data stored in the PTC's memory when the battery pack is being replaced or if it runs out of power. This backup system provides approximately 20 minutes of protection when the battery pack is removed.

Beeper

The PTC's beeper is used by the PTC and your application to warn you of problems or to prompt you to take an action. For example, if your application program has temporarily turned off a key, the PTC will beep if you press that key.

Clock

The PTC's clock can be set using the MS-DOS TIME and DATE commands.

The PTC-921 DOS has a built-in clock that keeps track of the date (month, day, year, and day of the week) and the time (hours, minutes, seconds, and tenths of seconds). The clock operates continuously. How the clock is used depends on your application program. For example, the PTC can use the clock to show the date and time on its screen or to time-stamp a file.

Communication

The PTC-921 DOS is capable of communicating with a host computer via its internal radio or through an optional communication cradle. See the manual or instructions provided by your organization for the proper communication procedure for your application.

Memory

The PTC-921 DOS has two types of memory: read-only memory (ROM) and random access memory (RAM).

Refer to the manual shipped with the cradle for flashing instructions.

The PTC's ROM is contained on an electronic chip called a *flash EPROM*, which can be reprogrammed while inside the PTC (via an optional communication cradle). It is used to store the PTC's operating system and application program.

RAM is used to store data entered into the PTC and application configuration settings. Data stored in RAM can be easily read, written, and changed. It is also volatile. All data in RAM will be lost if the PTC's battery pack and backup system run out of power.

The amount of memory in your PTC determines how much data you can enter before you have to send it to a host computer or print it. Various amounts of memory are available from Telxon, and the amount actually installed in your PTC has been determined by your organization's needs.

Scanning bar-code labels 8

The PTC-921 DOS is programmed to automatically recognize, read, and discriminate between up to six bar-code types. See the information provided by your organization and Appendix C for a list of the bar-code types your PTC is programmed to read.

Follow this procedure to scan bar-code labels with the PTC-921 DOS's built-in laser scanner.

⚠ Do not stare into the PTC's laser beam or point the scanner at anyone's eyes. Eye damage could result.

1. Place the PTC-921 DOS in the palm of your hand. Hold it in a comfortable position with the scanner lens facing the label to be scanned. The scanner can be at an angle to the label.

   The maximum distance from the scanner lens to the label depends on the size of the label being scanned. See Appendix C for the recommended scanning distance.

Your application program may not support scanned data for all fields. Consult the documentation for your application to determine when the scanner and SCAN key are enabled.

2. Press and hold down the SCAN key to start scanning.
3. Watch the line of light made by the scanner as it scans the bar code.
4. Hold the PTC so that the scanning line is perpendicular to the bars in the bar-code label. Also, make sure that the line passes over all of the bars.

   The PTC beeps each time it decodes a bar-code label.

If the PTC-921 DOS fails to read a label, refer to the "Troubleshooting" section on page 22.

Communicating data 9

The PTC-921 DOS is able to communicate with other PTCs and host computers. It can both send and receive data and instructions. Communication is controlled by your organization's application program. See the manual or instructions provided by your organization for details on conducting communication sessions.

The PTC-921 DOS is designed to use a communication cradle as its primary means of communicating with a host computer, but it can also communicate via its internal radio.

Using a communication cradle

See the manual provided with the cradle for instructions on how to install the PTC and operate the cradle.

The PTC-921 DOS can be installed in an optional SC-921 DOS Single-bay Communication Cradle, which provides battery pack charging and a communication interface to a host computer. The communication/charging contacts on the PTC's battery pack connect with similar contacts in the SC-921 DOS to enable the transfer of electronic impulses between the two units.

Using the radio

All radio communication is controlled by your organization's application program. See the instructions provided with the program for information.

Replacing the battery pack 10

Use the procedures in this section to remove a weak lithium-ion battery pack from the PTC-921 DOS and replace it with a new one. A low-battery message displays on the PTC's screen when the battery pack is running low on power.

Removing the battery pack

1. Turn off the PTC.

! Do not leave the PTC without a battery pack for longer than 20 minutes; all data and programs in the PTC's memory will be lost.

2. Press the Battery Release buttons on the sides of the PTC while sliding the battery pack off of the unit.
3. Refer to the "Safety information" section on page 3 for instructions on properly disposing of your lithium-ion battery pack.

Installing a new battery pack

1. Make sure the PTC is off.
2. Line up the battery pack with the opening in the back of the PTC. Make sure the flat side of the battery pack is facing the PTC and the rounded edge is on the bottom.
3. Slide the battery pack onto the back of the PTC until it clicks into place.

Maintaining the PTC-921 DOS 11

Operating conditions

The PTC-921 DOS is designed to minimize the intrusion of dust, dirt, and moisture. An optional holster, listed in Appendix B, is recommended when using the PTC in exceptionally harsh environments. The PTC-921 DOS can be operated at temperatures between 32 degrees F (0 degrees C) and 122 degrees F (50 degrees C).

Handling the PTC

The following information will help to ensure you receive safe, reliable, and trouble-free service from your PTC-921 DOS.

- Do not point the PTC's scanner at anyone's eyes, and do not stare into the laser beam. Permanent eye damage could result.
- Do not open the PTC's case. Only a trained technician can service the parts inside the PTC.
- Make sure the PTC is off before you replace the battery pack.
- Use only a Telxon-approved battery pack. Do not attempt to connect any electrical device that is not part of your PTC-921 DOS system to the PTC.
- If you store a PTC containing a lithium-ion battery pack in below-freezing temperatures for more than 1 hour, do not charge the battery pack until it warms up to room temperature.
- Protect the PTC from excessive heat, cold, and moisture and from harsh, dirty environments.

Storing the PTC

! Do not store the PTC for over two months without charging the battery pack. Any data in the PTC's memory will be lost.

- Do not store the PTC-921 DOS in temperatures below –22 degrees F (–30 degrees C) or above 158 degrees F (70 degrees C).
- Do not store the PTC in a damp or humid environment.

1. Transfer any data stored in the PTC to a host computer. See the manual or instructions for your organization's application program for directions.
2. Make sure you have a copy of any programs stored in the PTC.
3. Recharge the PTC's battery pack or replace it with a charged pack.
4. Pack the PTC in the original packing material or in a padded box and put it in a safe place, away from dust, dirt, humidity, and excessive cold.
5. Charge the PTC's battery pack every two months.

Cleaning the PTC

Equipment required:

- A soft, lint-free cloth
- A nonabrasive liquid cleaner such as Windex
- Isopropyl alcohol or a battery contact cleaner

! Do not soak the cloth and do not spray or pour cleaning liquids directly onto the PTC.

To clean the PTC, slightly moisten a soft, clean, lint-free cloth with a mild, nonabrasive cleaner and wipe the outside surfaces.

! Be careful not to scratch the scanner lens when you clean it. Scratches can reduce the scanner's effectiveness.

To clean the PTC's display and scanner lens, slightly moisten a soft, clean, lint-free cloth with a mild glass cleaner and wipe. Do not use a paper towel on any part of the PTC, including the display and scanner lens.

Telxon recommends cleaning the contacts at least once a week and more often if necessary.

To clean the battery pack's communication/charging contacts, use a cloth moistened with isopropyl alcohol or a battery contact cleaner.

If the PTC becomes extremely dirty or if liquids, dirt, or other foreign materials get inside the case, contact your Telxon service representative.

Servicing the PTC

Do not attempt to service the PTC. Only a trained Telxon technician may service the PTC. Follow the procedure set up by your organization to have the PTC serviced properly.

Troubleshooting 12

If you experience any of the problems in this section, follow the instructions provided.

The PTC does not turn on

- Charge or replace the PTC's lithium-ion battery pack.
- Contact your Telxon service representative.

The laser scanner fails to read a label

See Appendix C for a list of supported bar-code types.

- Make sure the bar-code label you are trying to scan is one of the bar-code types your PTC is programmed to recognize.

See Appendix C for recommended scanning distances.

- Move the laser scanner closer to or farther away from the bar-code label. You may not be scanning at the correct distance.
- Change the angle of the laser scanner to the bar-code label. You may be too far above or below the bar-code label or too far to the side to scan properly.

See page 20 for instructions.

- Clean the scanner lens.
- The PTC's application program may not support scanned data at this particular field. Consult the documentation for the PTC's application program to determine when the scanner and SCAN key are enabled.
- Point the scanner at a blank surface and press the SCAN key. Look for the scanning line that appears on the blank surface when the scanner is operating. If no scanning line appears, follow your organization's procedure to have the scanner serviced.

Your radio fails to establish contact

- Change your location by a few feet and transmit again.
- Recharge or replace the PTC's lithium-ion battery pack.
- Make sure the receiving equipment is turned on and is properly connected to the host computer.
- If the PTC still does not establish contact, follow your organization's procedure to have the PTC serviced.

Other problems

If you experience any other problems with your PTC-921 DOS that you cannot solve, notify your Telxon service representative or contact the Telxon Customer Support Center at 1-800-800-8010.

Appendix A

Specifications

Communication

Internal radio:	Optional 2.4-GHz Air-I/O 500 frequency-hopping radio module; 8- to 9-mW output
Serial:	RS-232 communication via PTC's communication contacts and the SC-921 DOS; 300 to 38,400 bps

Display

Type:	Twisted neumatic (TN) black-on-white monochrome LCD
Text mode:	2 lines x 12 characters

Electrical

Power:	950-mAhr lithium-ion battery pack
Charge time:	3 to 4 hours via the SC-921 DOS
Backup power:	Super capacitor; 20 minutes of RAM support

Environmental

The PTC's screen will be lighter if the PTC is operated in lower temperatures.

Operating temperature:	32 to 122 degrees F (0 to 50 degrees C)
Relative humidity:	5 to 95% noncondensing
Storage temperature:	–22 to 158 degrees F (–30 to 70 degrees C)
Shock:	3 ft/.91 m drop to concrete
Vibration:	Loose cargo 1" peak-to-peak orbital movement @ 400 RPM
Operating altitude:	Up to 15,000 ft/4,572 m
ESD protection:	15 kV

Laser scanner

See Appendix B for a list of supported bar-code types and scanning range specifications.

Type:	Symbol SE-1200 standard range
Safety classification:	Class II

Memory

OS flash ROM:	256 KB
Application flash ROM:	512 KB
SRAM:	1 MB (with a radio module); 1, 2, or 4 MB (without a radio module)

Physical

Length:	4.8 in/12.2 cm
Width:	2.6 in/6.6 cm
Thickness:	1.5 in/3.8 cm
Weight:	10 oz/.28 kg (with battery pack and internal scanner) 11.5 oz/.33 kg (with battery pack, internal scanner, and radio module)

Processor

Type:	V20H @ 9.8304 MHz

Software

Operating system:	Telxon ROM DOS (MS-DOS 5.0)

Appendix B

Accessory part numbers

Contact your Telxon representative to order any of the following parts.

The following table contains part numbers for ordering PTC-921 DOS accessories.

Table 1. Accessory part numbers

Item	Part number
Accessories	
950-mAhr lithium-ion battery pack	23085-001
Holster	P-82306-000
Manuals	
SC-921 DOS User's Guide	23452-000
Guide to Maintaining Nickel-cadmium and Lithium-ion Batteries	16488-000
RAMSaver Application Development Manual	14303-103

Appendix C

Bar-code types and scanning distances

This appendix provides a list of the bar-code types supported by the PTC-921 DOS and the ranges at which they can be read.

Bar-code types supported

Other bar-code types (such as Code 11, Code 16K, and Code 93) are available by special order. However, the PTC can support only six bar-code types, so any additional bar code will have to replace one of the default bar codes.

The PTC-921 DOS is programmed to read and automatically discriminate between the following bar-code types:

- Codabar
- Code 2 of 5
- Code 39
- Code 128
- Plessey
- UPC/EAN

Scanning distances

The following table lists the supported ranges for scanning bar-code labels based on the size of the label.

Table 2. Scanning ranges

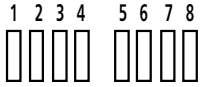
Bar-code size	Scanning distance (inches/centimeters)
6 mil	1.75 to 8.75 in/4.4 to 22.2 cm
7.5 mil	1.5 to 11.25 in/3.8 to 28.6 cm
20 mil	2.75 to 20.75 in/7 to 52.7 cm
40 mil	2 to 19.75 in/5.1 to 50.2 cm

Appendix D

Pinouts

Table 3 lists the pinouts of the PTC-921 DOS's communication/charging contacts. The diagram to the left of the table identifies the pin sequence when you are looking at the back of the PTC and the scanner lens is facing away from you as depicted in the figure on page 4.

Table 3. Communication/charging contact pinouts



Pin	Signal	Description
1	VBATT	Battery charge voltage
2	KILL	Kill
3	RXD	Receive data line
4	TXD	Transmit data line
5	RING	Ring indicate
6	GND	Ground
7	RTS	Request to send (handshake line)
8	CTS	Clear to send (handshake line)

Glossary

application	A PTC program that is designed to perform a specific task for the user. Examples include route accounting, payroll, price lookup, shipping, and inventory control.
application flash EPROM	A flash EPROM that contains the PTC's application program.
bar code	A series of vertical bars and spaces used to encode numeric or alphanumeric information. Bar codes are designed to be read by electronic means such as bar-code readers or laser scanners.
bar-code scanner	An electrical device that recognizes and deciphers bar-code labels. When the scanner passes over the bar code, it converts the bar code into electronic signals representing data. The PTC can then enter this data into files in its memory.
bps	Bits per second.
byte	A group of eight bits that acts as a basic unit for information transfer and storage.
character	A letter, number, or symbol.
CTS	Clear-to-send signal. CTS indicates that the line between a modem and a terminal device is clear for transmission. CTS typically follows a raised request-to-send (RTS) signal.
data communication	The transport of encoded information from one point to another.
display	The screen on the front of the PTC. It is used to show data, prompts, and error messages.

ESD	Electrostatic discharge.
file	Any group or collection of related information stored in memory. To add data to a file or to read data from a file, the program must access the file by its file name.
flash EPROM	A type of erasable programmable read-only memory that can be erased and reprogrammed electronically while installed in a PTC.
frequency-hopping (FH) radio	A type of radio that continually jumps from one frequency to another to avoid interference.
function key	A key on the PTC's keyboard that is defined by an application to perform a specific task. When pressed, a function key executes a certain function (for example, ESC).
GND	Ground.
hardware	Equipment used in conjunction with programs or data communication. Contrast with *software*.
host computer	A personal computer or mainframe that receives and processes data from PTCs.
Hz	Hertz. A unit expressing frequency in vibrations per second.
interface	The connection between two devices, defined by common physical characteristics, signal characteristics, and signal meanings.
laser scanner	A type of bar-code reader that uses a beam of laser light.
LCD	Liquid crystal display.
LED	Light-emitting diode.
lithium-ion battery	A type of rechargeable battery used to power the PTC-921 DOS.

mA	Milliampere hour(s). A measurement of the ability to provide electrical power.
MS-DOS	Microsoft Disk Operating System.
one-way communication	Transport of information from one device to another without interruption. In one-way communication, the receiving device cannot respond directly to the sending device.
PTC	Portable Tele-Transaction Computer. A battery-powered, programmable device used to collect, store, and transmit data.
RAM	Random access memory. In a PTC, RAM chips store program files and data entered by the operator.
RF	Radio frequency.
ROM	Read-only memory. In a PTC, ROM chips contain the operating system and the application program.
RS-232	An Electronic Industries Association (EIA) standard that defines the connector, connector pins, and signals used to transfer data serially from one device to another.
RTS	Request-to-send signal. RTS initiates the data transmission sequence on a communication line between a modem and a terminal device.
RXD	Receive data signal. RXD indicates that a device is currently receiving data.
signals	Electronic impulses that transmit data from one device to another.
software	A stored program or set of programs that is loaded into RAM for execution. Contrast with *hardware*.
two-way communication	Exchange of information between two devices. After each block of data, the receiving device sends a positive or negative acknowledgment to the sending device.

TXD	Transmit data signal. TXD indicates that a device is currently transmitting data.

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