Owner's Manual

SP5 High Performance Laser Scanner System
for Nextel Motorola i355 and i365 Phones

Scanner Lens   Charger Port

ScannerPal, Inc.
Albany, Oregon
"Bar code scanners for NEXTEL phones"
www.scannerpal.com
Phone: 888.784.9817

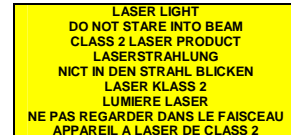| Package Contents: |
| :---: |
| SP5 Laser Scanner |
| Leather Case |
| Wall Charger |
| Car Charger |
| Owner's Manual |

SP5 Mobile Workforce

1. Summary: The SP5 system brings high performance laser bar code scanning technology to cell phone scanning solutions. It combines the ease of use of a cell phone handset with the accuracy, speed and flexibility of a rugged, versatile scanner. SP5 is a compact, powerful tool that easily integrates with your wireless Java J2ME program.

- The Nextel Motorola phone and SP5 scanner as assembled in the leather case becomes a single device that you can hold in one hand.
- The scanner is powered directly from the phone, and requires no additional batteries. The provided wall and car chargers can be used while scanning.
- **A Laser Scan beam is emitted through the Scanner Lens.**

2. Product Warnings and Cautions: Please notice the warning labels that come with, or are applied to your SP5 Scanner. Note the triangular warning beside the scan lens.

LASER LIGHT
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT
LASERSTRAHLUNG
NICT IN DEN STRAHL BLICKEN
LASER KLASS 2
LUMIERE LASER
NE PAS REGARDER DANS LE FAISCEAU
APPAREIL A LASER DE CLASS 2

3. Ergonomic Recommendations:

Repetitive motions and work in awkward positions can result in injury. To help reduce this possibility:
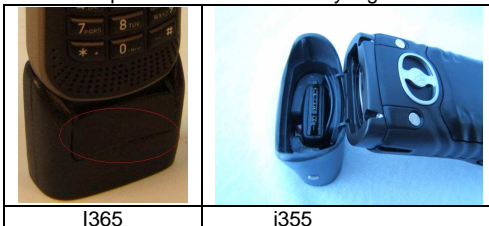- Notice the ergonomic position of your work
- Take frequent breaks, alternate hands, and vary fingers/thumbs used to press buttons
- Use a relaxed grip, and adjust grip to avoid over reaching with thumb
- Avoid prolonged or repetitive bending of the wrist
- Avoid prolonged overhead work
- Avoid slumped posture
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Seek medical advice if you notice pain or altered sensation in hands

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4. It's Easy to Use Your SP5

To attach: Stand the scanner upright on a firm, flat surface. There is an empty space in the scanner housing for the phone's rubber connector cover. (The *back* of the scanner is the side with a yellow laser warning *label*.) For an **i365 phone, you may need to tilt the scanner into the phone**, then tuck the rubber cover in place **after** attaching the scanner. For an ***i355 phone, push the cover in place*** before ***attaching the scanner***. If the phone is on, it will display "Device Attached". Insert the phone and scanner into the leather case. Push the phone and scanner assembly all the way in, until the scanner contacts the tab at the bottom of the case. Close the Velcro flap at the top snugly, this will hold the phone and scanner firmly together in the case.

I365	i355

To remove: Push the phone and scanner up out of the case, taking care to not touch or push on the lens. Then gently "wiggle" the scanner off the bottom of the phone.

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5. Phone Setup: The phone's baud must be set so that it can communicate with the scanner: Press the Menu button, scroll to Settings, OK, scroll to Advanced, OK, scroll to Baud Rate, OK, scroll to Auto, OK, Back, Back. Now turn the phone off, and then on again.

6. Care and Cleaning of Connectors: The connectors between the phone and the SP5 are small and carry low electrical current. It is important to keep them clean and free of grease or oil that can prevent a proper electrical connection. The rubber connector cover on your phone may also get in the way of a good connection if it is not properly folded back and completely pushed into the scanner compartment. A poor connection between the SP5 and the phone can result in a weak beam or no beam emitted from the SP5. To minimize wear and tear on the scanner and phone connections, the scanner should remain on the phone. The included wall and car chargers are designed to charge the phone battery while the scanner remains attached.

7. Using the SP5 with software on the Phone: The SP5 needs to be on the handset before the phone is running the program you will use it with. Sometimes the program is set in the phone's "start up" function, so that turning the phone off is not enough to allow the SP5 to "join in" so it can work. You can be sure you have truly exited a program if while running the program you press the red "hang up" key to suspend the program and then press the "exit" soft key to completely exit the program.

8. SP5 Scanner Initialization: Most software vendors use a recent version of ScannerPal's software driver in their program, or a generic Symbol Technologies driver that will have an initialization feature included. If this is not included in the software, the SP5 may need to be re-initialized from time to time. If this becomes a problem, please contact ScannerPal for a simple method of dealing with this. Losing scanner initialization can result in a weak beam or no beam emitted from the SP5.

9. Scanning Bar Codes: Scanning is triggered by your software. Different software applications choose different keys on your handset to trigger the scan. When scanning, hold the scanner a few inches above the bar code, adjusting that distance so that the laser beam crosses over the entire bar code. Hold the scanner directly above the bar code or at a slight angle. The scanner will tolerate deviation from this position to about 47°± 3°. The SP5 will not read damaged or partial bar codes; for error prevention it is not supposed to. Bar codes need to be printed with precision to ensure readability. Some word processing programs can cause distortion in printing. WordPad is recommended for printing bar codes using bar code fonts, or you can print them with a dedicated bar code printing program. We carry and have used FlicPrint software with success.

The SP5 supports scanning of all common 1-D bar code symbologies. It is factory pre-set with the most common symbologies enabled, including Code 39, Code 39 Full ASCII, Code 128, and UPC/EAN. Although other symbologies are supported, they may not be enabled, so the SP5 will not read them until they are specifically enabled. Some symbologies are mutually exclusive, so it is not possible to enable the SP5 to scan all symbologies at the same time. Enabling fewer symbologies reduces the load on the scan engine's microprocessor, allowing it to operate faster.

Enabling or disabling specific bar codes can be accomplished by scanning bar codes designed for that limited purpose. **This is a process that should only be undertaken with care. Please check with ScannerPal to be sure that your application software is using the latest software driver before attempting to enable or disable specific symbologies. If your software is not using a correct version driver, your SP5 may stop working.** With some bar codes, such as Interleaved 2 of 5, additional settings for the length of the bar code may be required, in addition to enabling. Bar codes to be used in the enable/disable process, and related "parameter" functions are available to SP5 owners who are using a recent version (later than August 28, 2006) driver. These bar codes are available for download at:
http://www.scannerpal.com/sp5enginebarcodes

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10. Outline of Scanner Operation. The SP5 scanner uses a Symbol Technologies, Inc., scan engine. Outline items 3-8 are functions as described by Symbol. The SP5 scanner works this way:

- The scanner is attached to the phone and is "initialized" to its software, which includes the scanner's software drivers.
- The user presses a button on the handset set by user's software to activate the scan. (For some applications, the scanner may be set to "always on.")
- A laser diode emits a coherent beam of light focused to a diameter appropriate for the bar code densities to be read.
- The laser beam strikes the mirror of the scan element. This mirror oscillates about its vertical axis and causes the beam to be deflected, forming the outgoing scan line.
- As the laser spot is swept across the bar code it is either reflected off the white spaces or absorbed by the black bars.
- A collection mirror tracks the location of the laser spot on the bar code, collects the reflected light and focuses it onto the receiver photodiode.
- The photodiode is a transducer that converts optical energy to electrical current. This current is fed into the analog signal processing circuitry.
- The analog signal processing circuitry amplifies, filters and edge enhances the signal returned from the bar code. These edges represent the place when the laser transitioned between a bar and a space, and represents the information contained in the bar code.
- The digitizer circuitry generates a digital waveform whose ones and zeros represent the widths of the bars and spaces in the bar code. This waveform is called the Digital Bar Pattern (DBP).
- The scan yields a scan result, which is a decoding of the numbers, letters and other information symbolized in the bar code.
- The SP5 software drivers take the scan result to your handset.
- Your software will transmit the scan result via Nextel data services or manipulate it in other ways, as programmed.

11. Charging the Phone: Near the base of the scanner on the right side is a charger port. Both wall and car chargers are supplied with your SP5. The SP5 does not use its own batteries, but operates off the handset battery. You may also, of course, disconnect the scanner to plug in a standard Nextel charger.

12. Regulatory Notices.

"Complies with 21CFR1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001. "
- "EN60825-1:1994+ A1:2002 +A2:2001"
- "IEC60825-1:1993+A1:1997+A2:2001"
- "Class 1 Laser devices are not considered to be hazardous when used for their intended purpose.

The following statement is required to comply with US and international regulations:

Caution: Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Class 2 laser scanners use a low power, visible light diode. As with any very bright light source, such as the sun, the user should avoid staring directly into the light beam. Momentary exposure to a Class 2 laser is not known to be harmful

The SP5 is a Class 2 laser scanner.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

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13. Technical Specifications: The SP5 is capable of reading all common 1D bar codes. It must be "enabled" to read each kind of these bar codes, some are mutually exclusive. Unless a different request is made, each new SP5 is enabled to read Code 39, Code 39 Full ASCII, Code 128, UPC/EAN. Other available symbologies are: Codabar, Code 93, Code 11, Interleaved 2 of 5, MSI, D2 of 5, IATA 2 of 5, Code 39 Trioptic, Bookland EAN, and RSS.
Contact us or carefully read this manual and referenced material to enable others.

Features	Benefits
Large working range	Meets the needs of a wide range of applications for increased productivity
100 scans per second	Optimized scanning speed delivers aggressive performance and accurate capture of all bar codes – even damaged and poor quality
Low power consumption	Increases battery life in portable terminals
Bright scan line and aim mode	Provides intuitive ease-of-use across the entire working range
Programmable scan angle	Provides flexibility to easily and cost-effectively customize scanner for specific applications
RoHS compliant	Manufactured without hazardous substances, for easier recycling at end of product life
Scan Rate:	104 scans/second ± 12 scans/second (bi-directional)
Scan Angle:	47°± 3°default / 35°± 3°reduced
Voltage:	3.3v ± 10%
Drop Specification:	2000G
Operating Current:	76 mA (typ) / 81 mA (max)
Operating Temp (Chassis):	-4°to 140°F/-20°to 60° C
Ambient Light:	10,000 ft. candles
Decode Zone Typical:	
4mil	1.0 in. - 5.5 in. / 2.54 cm - 13.97 cm
5mil	1.25 in. - 8 in. / 3.18 cm - 20.32 cm
7.5mil	1.5 in. - 13.25 in. / 3.81 cm - 33.66 cm
10mil	1.5 in. - 17.5 in. / 3.81 cm - 44.45 cm
UPC 100%	1.5 in. - 23.5 in. / 3.81 cm - 59.69 cm
15mil	1.5 in. - 29.5 in. / 3.81 cm - 74.93 cm
20mil	1.75 in. - 35.5 in. / 4.45 cm - 90.17 cm
40mil	* - 40 in. / * - 101.6 cm
55mil	* - 55 in. / * - 139.7 cm
	(* dependent on width of bar code)

14. Accessories. As noted, the SP5 comes with chargers. A customized leather carrying case can be designed to meet your specifications, and your company logo be embossed on the case, both are available for large orders at additional cost. Specialized premium versions of the SP5 are available with a multiplexed input port for external serial devices.

15. Terms of Use and Licensing for our SP5 Scanner (all versions) and related software under Sale or Loaner Agreement: (All users are required to agree to these terms before being allowed to download software, and all use of our software is subject to the following terms and conditions.)

Important: You must accept the terms use, licensing and limitations listed below before you can use these products. If you accept these terms you may proceed and downloading will be your acceptance. If you do not agree to all of the terms, do not download or install the software or use the scanner; you must return the product to ScannerPal, Inc. If you are being given the right to temporary use of the software, then at the conclusion of your trial of the SP5, you must destroy all copies of this downloaded software. In the event of eventual purchase of the SP5, you will be given an authorization code for download of appropriate software for your use of the purchased SP5(s), still subject to restrictions, below

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A. **SP5 Hardware**

The SP5 contains intellectual property and proprietary information of ScannerPal, Inc., and others, some of which is covered by issued or pending patents of ScannerPal Inc. and its business associates. No ownership interest in any intellectual property rights pass from ScannerPal, Inc. to subsequent recipients of the products and recipients shall not use the product for the purpose of copying, reproducing, infringing, or reverse engineering the technology or knowingly sell the product to any third party for those purposes.

All duties and taxes are the responsibility of the customer. These commodities, technology or software may be exported from the United States in accordance with the Export Administration regulations. Diversion contrary to U.S. law prohibited.

B. **Limitation of Warranties and Damages:**

No warranties are given with the loan of our products for trial use or field testing. In the event of eventual purchase of the software and hardware products referred to above, ScannerPal, Inc., shall not be responsible for economic damages of any kind as a result of a defect in product design or manufacture, but will repair or replace any product it has manufactured for one year after purchase, and will pass through any available warranties for products it does not manufacture to Purchasers.

C. **Limited Warranty.**

a. ScannerPal's hardware Products are warranted against defects in workmanship and materials for a period of twelve (12) months from the date of shipment, unless otherwise provided by Seller in writing, provided the Product remains unmodified and is operated under normal and proper conditions.
b. ScannerPal's obligations under this warranty are limited to repair or replacement of defective parts.
c. Customer is responsible for shipment to ScannerPal and assumes all costs and risks associated with this transportation; return shipment to the Customer will be at ScannerPal's expense. Customer shall be responsible for return shipment charges for Product returned where Seller determines there is no defect ("No Defect Found"), or for Product returned that ScannerPal determines is not eligible for Warranty repair. No charge will be made to Buyer for replacement parts for Warranty repairs. ScannerPal is not responsible for any damage to or loss of any software programs, data or removable data storage media, or the restoration or reinstallation of any software programs or data other than the software, if any, installed by ScannerPal during manufacture of the Product.
d. The above Warranty provisions shall not apply to any Product (i) which has been repaired, tampered with, altered or modified, except by ScannerPal; (ii) in which the defects or damage to the Product result from normal wear and tear, misuse, negligence, improper storage, water or other liquids, battery leakage, use of parts or accessories not approved or supplied by ScannerPal, or failure to perform operator handling and scheduled maintenance instructions supplied by Seller; or (iii) which has been subjected to unusual physical or electrical stress, abuse, or accident, or forces or exposure beyond normal use within the specified operational and environmental parameters set forth in the applicable Product specification; nor shall the above Warranty provisions apply to any expendable or consumable items, such as batteries, supplied with the Product.

EXCEPT FOR THE WARRANTY OF TITLE AND THE EXPRESS WARRANTIES STATED ABOVE, SCANNERPAL DISCLAIMS ALL WARRANTIES ON PRODUCTS FURNISHED HEREUNDER, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. THE REMEDY SET FORTH IN THIS SECTION 6 IS BUYER'S SOLE AND EXCLUSIVE REMEDY FOR WARRANTY CLAIMS, AND IS EXPRESSLY IN LIEU OF ALL OTHER REMEDIES THAT MAY BE AVAILABLE TO BUYER AT LAW OR IN EQUITY.

ScannerPal, Inc,
Corvallis, OR

For more information or to purchase accessories go to www.scannerpal.com

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