

Cordless Ring Scanner Series 9 with *Bluetooth*[®] Wireless Technology

Featuring a “Hands-Free” Bluetooth enabled bar code scanner to capture and send data wirelessly to Bluetooth enabled Pocket PCs and other Windows Mobile-based devices

User's Guide



socket[™]
Increasing Mobile
Productivity

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1 | Introduction

If you need to collect bar coded data but don't want to be tied to your mobile or desktop computer, the Socket Cordless Ring Scanner (CRS) Series 9 with *Bluetooth* wireless technology is just what you're looking for. This innovative device combines the power of laser bar code scanning with the convenience of *Bluetooth* wireless technology in a single compact, lightweight device that is ergonomically designed to fit comfortably on your hand.

Bar code scanning is the most efficient way to collect data for a mobile computer. If the data to be entered is bar coded, using a laser scanner is 50 times faster and 10,000 times more accurate than manual data entry.



Bluetooth wireless technology transforms how devices connect with each other, offering you new possibilities for using your mobile computer with other devices. With the Socket CRS, you can scan bar codes while connected to the PDA in your pocket or located up to 300 feet away — all without the hassle of cables or the awkwardness of a protruding antenna.

The Battery Friendly[®] CRS was designed to use minimal power, so you can use the CRS to scan 10,000 times in 8 hours in normal operating conditions without having to stop and recharge.

About the Software

SocketScan[™] enters scanned data directly into any open Windows program, as if the data were manually typed. You can configure Prefix/Suffixes and assign a beep tone to signify good data reads at the host.



The **Socket Cordless Scanner utility** makes it easy to configure SocketScan for use with the Cordless Ring Scanner. Simply identify which kind of *Bluetooth* hardware you will be using on your mobile computer, and SocketScan will automatically search for it when you try to connect.



Connect!Agent for Windows Mobile (patent pending) simplifies the *Bluetooth* setup and connection process. Once the CRS is turned on and SocketScan is running, Connect!Agent will automatically discover and set up the *Bluetooth* connection and continue to manage the connection. Connect!Agent runs in the background and requires no interaction from the user.

For software updates, please visit: www.socketcom.com/support/support_bar.asp

About Combining Scanning with *Bluetooth*

The Cordless Ring Scanner represents an optimal combination of proven laser bar code scanning technology and state-of-the-art *Bluetooth* connectivity. Because of the problems inherent in the intermittent storage of scanned data in on-board memory if the *Bluetooth* connection is lost, the CRS is designed to operate only when connected to the host, with the powerful Class 1 radio providing the maximum possible connection range.

The user is advised of the connection status with a single beep when the CRS connects to the host and a double beep when the connection is closed or lost. As with any wireless device, connectivity range can be affected by a variety of environmental variables.



The most likely source of errors in any cordless scanning system is not in the scanning and decoding process, but in the transmission of the data to the host. To prevent such errors, the Cordless Ring Scanner features Socket's exclusive Error Proof Protocol (patent pending), which ensures that scanned data is correctly received by the host computer and allows for real-time validation of data and notification to the user in case of errors.

The beeper and green LED signals provided by the CRS confirm not only a successful scan but also the successful transmission of the scanned data to the host. Users familiar with bar code scanning may notice a slight delay between the successful scan and shut off of the laser and the beep and green LED from the CRS confirming completed transmission of the data. In most instances, this delay is less than 300 ms (milliseconds), but may be slightly longer as the connectivity range limit is approached.

Because of the two-way transmission verification process, it is possible to cause communication problems by scanning bar codes as fast as possible. When this occurs, all transmissions will stop for several seconds before

scanning can be resumed. To prevent this from happening, the user should wait until the confirming beep is received before scanning the next bar code.

System Requirements

Your mobile computer should meet these minimum requirements:

- Windows Mobile 2003/2003SE/5.0
- Any of the following *Bluetooth* stacks:
 - Socket Drakar v1.4 (from Socket SD/CF Connection Kits)
 - Broadcom (Widcomm) v1.4
 - Microsoft *Bluetooth* stack for Pocket PCs
- Software installation requires ActiveSync 4.0 or greater

Package Contents

The Socket Cordless Ring Scanner package includes these items:

- Ring scanner (C)
- Wrist unit (A)
- Cable (B)
- Wrist unit case (D)
- Finger strap (F)
- 2 adhesive Velcro strips (G)
- Rechargeable 3.7V lithium-ion battery
- Battery charger
- CD with software and user documentation



Product Registration

Socket highly recommends that all customers register their Socket products. Registered users receive the following benefits:

- Priority for technical support
- Special offers for future products and upgrades
- The latest new product information.

Register online at: www.socketcom.com/prodreg

Hardware and Software Indicators

Battery Charger LEDs

LED	LED Activity	Meaning
Power	Red	Plugged into valid power source
Charging	Yellow	Charging
	Green	Battery is fully charged

Scanner LED

LED	LED Activity	Meaning
Good Read	Green	Data successfully scanned and sent to host device



Wrist Unit LEDs

LED	LED Activity	Meaning
Bluetooth Status	Blinking blue every second	Bluetooth radio is on, no connection
	Blinking blue, every 5 seconds	Bluetooth connection
Battery Status	Blinking Red	20% battery capacity remaining
	Solid Red	10% battery capacity remaining
	Off	Off or Good Battery status

Wrist Unit Beeps

Beep Pattern	Meaning
1 beep	Bluetooth connection to host device has begun or power on
2 beeps	Bluetooth connection to host device has ended or power off
1 beep (optional setting)	Data successfully scanned and sent to host device
3 beeps	Cable disconnected from wrist unit

SocketScan Icon Bottom of Today screen when SocketScan is open. Tap for menu.

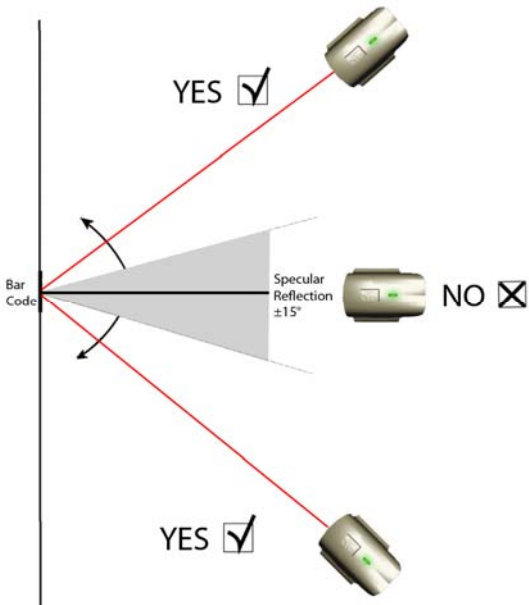
Icon	Meaning
	The CRS is not connected to the host device
	The CRS is connected to the host device

Scanning Tips

Practice to determine the best scanning angle and distance for your type of bar code.

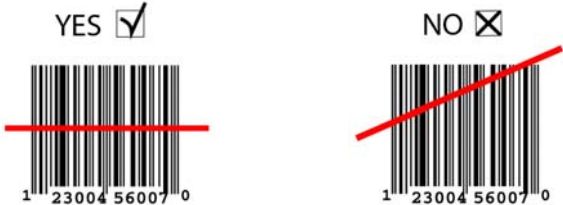
Scan Angle

For best results, position the scanner at an angle to the bar code, at least 15° from perpendicular. Otherwise, light can bounce back into the scanner and “blind” the sensing mechanism.



Aiming Beam

Aim the laser so that the red beam covers the entire width of the bar code.



Scanning Distance

- The optimal scanning distance varies depending on the bar code size, symbology, label media, W-N Ratio, and scan angle. In general, the CRS can successfully scan 2.2 to 30+ inches from the bar code.
- The larger the bar code, the further away you should position the scanner.
- The tighter the bars of the bar code, the closer you should position the scanner.

2 | Setup for Windows Mobile

This chapter explains how to install and use the Cordless Ring Scanner (CRS) with a *Bluetooth* enabled Pocket PC or other Windows Mobile-based device.

Setup Summary

- STEP 1: Charge and install the battery.
- STEP 2: Install the software.
- STEP 3: Configure scanner settings.
- STEP 4: Connect scanner to host device with *Bluetooth*.
- STEP 5: Put on the CRS.
- STEP 6: Scan data into your application.

OPTIONAL:

- Select symbologies.
- Configure prefix/suffixes.
- Run Scan Demo application.



STEP 1: Charge and Install the Battery

1. The battery must be charged before initial use, using the included Socket approved charger. The Charging LED will be yellow during charging. After the battery reaches full charge, which takes about 4 hours, the Charging LED will turn green.

Do not use the charger with other types of batteries. A fully charged battery should provide at least 10,000 scans and more than 8 hours of operation.

2. Slide the switch at the bottom of the wrist unit to the right to unlock the battery door. Insert the battery so that the battery contacts align with the contacts inside the wrist unit, then close and lock the battery door.



WARNING: Do not insert the battery backwards or upside-down. Damage may result.

STEP 2: Install the Software



Should I install Connect!Agent?

Connect!Agent simplifies the Bluetooth setup and connection process. Once the CRS is turned on and SocketScan is running, Connect!Agent will automatically discover and set up the Bluetooth connection and continue to manage the connection. Connect!Agent runs in the background and requires no interaction from the user.

Connect!Agent is optional to install.

Installation Instructions for Connect!Agent or SocketScan



TIP

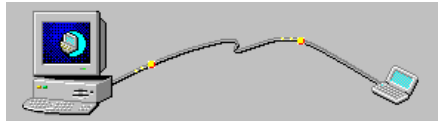
Connect the CRS to your mobile computing device and make a test scan to verify that your CRS works before you install Connect!Agent.



TIP

ADVANCED USERS: Refer to the README file for CAB file installation instructions.

1. Delete any bar code scanning software already installed in your device, including software from other companies. Make sure the software is closed. Tap Start | Settings | System tab | Remove Programs. Use the utility to delete the software.
2. Use ActiveSync and a serial/Ethernet/USB cable or cradle to make an active connection between the mobile computer and a host PC.



IMPORTANT: ActiveSync 4.0 or greater is required.

3. Insert the installation CD into your host PC.
4. Use My Computer or Windows Explorer to access your CD-ROM drive. In the CD contents, open the SocketScan folder and click on the **Setup.exe** file.

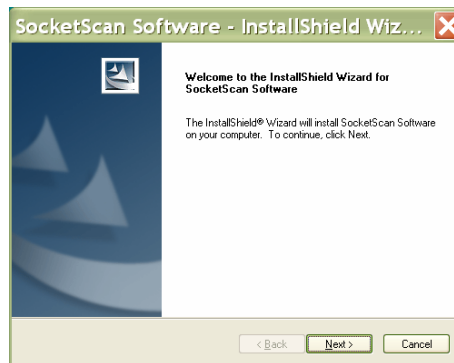


CD Drive



setup
Setup.exe
InstallShield Software Corpora...

5. The installation wizard will automatically begin. Follow the wizard to install the software.




6. After installing the software, a dialog on your Pocket PC will direct you to soft reset. Tap **Yes** or **OK** to proceed.
7. If desired, install Connect!Agent by repeating the same process, but launching the Setup.exe file inside the Connect!Agent folder in the CD.

STEP 3: Configure Scanner Settings

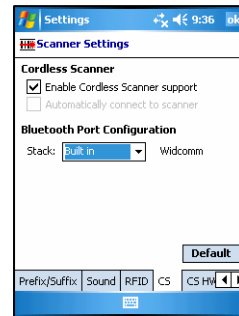
1. Tap Start | Settings | System tab | Socket Scanner Settings.

Alternatively, tap Start | Programs | SocketScan. Go to the Today screen.

Tap the SocketScan icon  at the bottom of the screen. In the pop-up menu, tap Settings.

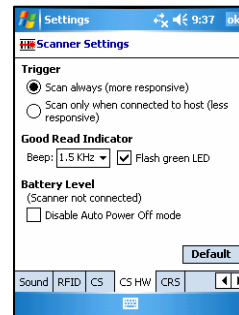
2. Tap on the CS tab at the bottom of the screen. Check Enable Cordless Scanner support.

Under *Bluetooth* Port Configuration, if your device has a built-in *Bluetooth* radio, your *Bluetooth* stack will be reported (e.g., Widcomm). If you installed Connect!Agent and would like to use it, select Connect!Agent from the list. If your device does not have a built-in *Bluetooth* radio, select Socket to use your device with the Socket SD/CF *Bluetooth* card.



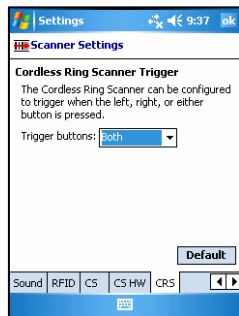
3. Tap on the CS HW tab. Enter the following settings:

- **Trigger:** Select whether you would like the CRS to scan only when a *Bluetooth* connection to the device is detected. If you require the CRS to detect a *Bluetooth* connection before each scan, scanning will be a few milliseconds slower.
- **Good Read Indicator:** Select how you would like the CRS to indicate that it has successfully read data.
- **Battery Level:** No progress bar should appear since you are not connected to the CRS.
- **Disable Auto Power Off mode:** The CRS automatically shuts off if there is no *Bluetooth* connection for 20 minutes. Check to disable.



4. Tap on the CRS tab. Select which button on the CRS you would like to use to trigger the scanner.

5. After entering settings, tap OK to save the changes.




STEP 4: Connect CRS to Host Device with *Bluetooth*

1. Turn on the Cordless Ring Scanner. Press the small power button on the side of the wrist unit for at least 2 seconds, until you hear a beep. The *Bluetooth* status LED on the wrist unit should be blinking blue.
2. Turn on the *Bluetooth* radio of your mobile device. Refer to your device manual for instructions.
3. If you did not install Connect!Agent, make sure a COM port is enabled for outbound *Bluetooth* serial communication. Refer to the device manual.

4. Tap Start | Programs | SocketScan.

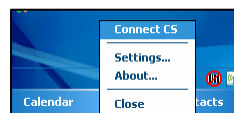
Disregard the icons for Socket Trigger RFID, Socket Trigger Scan, and Socket Trigger Select.



5. Tap on the SocketScan icon  at the bottom of the screen. In the pop-up menu, tap Connect CS.

Your mobile device cannot connect to the CRS if another device is set as the default Bluetooth serial device.

If Connect CS does not appear, tap Settings in the menu, tap on the CS tab, and enable cordless scanner support.



6. Your device will begin searching for the CRS.

- If you installed Connect!Agent, your mobile device will automatically search for and connect to the CRS. A beep will indicate the connection.
- If you did not install Connect!Agent, your device's *Bluetooth* software will search for devices. In the list of found *Bluetooth* devices, select Socket CRS. The device will connect to the CRS, indicated by a beep.

The six characters following the device name are the last six characters of the Bluetooth MAC address.

If using the Broadcom (Widcomm) stack, you will be prompted to configure automatic connections.

If a passkey is requested, enter 1234.



7. After your mobile device connects to the CRS, the SocketScan icon at the bottom of the Today screen will change into a ring icon to indicate the connection.



Connect!Agent will save information about the CRS to automate future connections to your specific unit.



TIP

If the Pocket PC suspends or the CRS is taken out of range, the Bluetooth connection will be lost. After the Pocket PC comes out of suspend mode or returns within range, SocketScan will try to re-establish the connection every 10 seconds for 30 seconds.

STEP 5: Put on the CRS

You can put on the CRS either with or without the case. If you choose not to use the case, the wrist unit will be more susceptible to abuse, specifically the plastic parts.

How to put on the CRS with the wrist unit case



1. Insert the wrist unit into the case. During insertion, you may hear a beep because the wrist unit's power button was pressed, however, the wrist unit will not turn on unless the button was pressed for more than 2 seconds.
2. Use the cable to connect the CRS to the wrist unit. The white arrows of the cable connectors should be on top.
3. Attach the finger strap to the bottom of the ring scanner.
4. Put on the wrist strap. Adjust it for a secure and comfortable fit.
5. Attach the wrist unit case to the wrist strap, by pressing the Velcro together.
6. Put the ring scanner on your index finger, adjusting the finger strap for a secure and comfortable fit.

How to put on the CRS without the wrist unit case

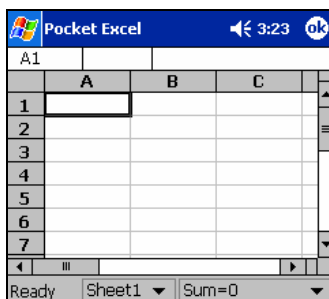
Note: After you stick the Velcro strips to the wrist unit, the wrist unit will no longer fit in the case, unless the Velcro strips are removed.



1. Stick the 2 adhesive Velcro strips horizontally to the back of the wrist unit. Do not space the strips too far apart. Note the size of the Velcro on the wrist strap.
2. Use the cable to connect the CRS to the wrist unit. The white arrows of the cable connectors should be on top.
3. Attach the finger strap to the bottom of the ring scanner.
4. Put on the wrist strap. Adjust it for a secure and comfortable fit.
5. Attach the wrist unit to the wrist strap, by pressing the Velcro together.
6. Put the ring scanner on your index finger, adjusting the finger strap for a secure and comfortable fit.

STEP 6: Scan Data into Your Application

1. Start the Windows application that you want to enter scanned data into (e.g., Excel, Notepad, etc.). Make sure a document or spreadsheet is open.



2. Place the cursor where you want data from the next scan to be entered.
3. Press the trigger button and aim your finger at the bar code. The red laser beam should cover the entire width of the bar code. See the next page for scanning tips.



When data is read and sent to the mobile computing device, the laser will turn off. Depending on your scanner settings, the scanner may beep and/or the ring scanner's LED may flash green to indicate a good read.

If no data is read in a few seconds, the laser will turn off, and you must try again.

4. After a successful scan, data should appear in your document. By default, the cursor automatically advances to the next cell or line, ready for the next scan.

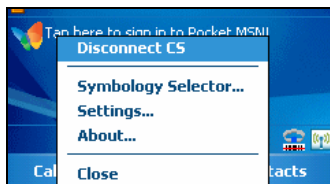
Wait for the "Good Scan" indication before you scan another bar code. If you try to scan too fast, the device can lock up until you stop scanning.

To turn off the CRS, press the power button on the wrist unit for at least 2 seconds, until you hear 2 beeps.

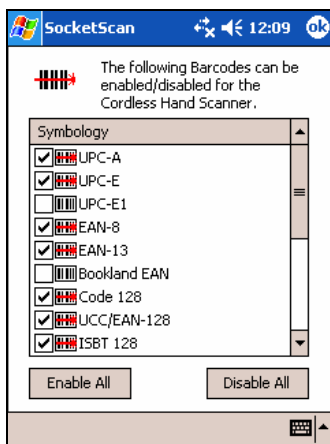
OPTIONAL: Select Symbologies

The applet makes it quick and convenient to modify which symbologies you want the scanner to recognize. By default, the scanner is set to recognize nine of the most common symbologies.

1. Tap on the SocketScan icon. In the pop-up menu, tap Symbology Selector...



2. In the screen that appears, check the symbologies you wish to enable. Uncheck those you wish to disable. Alternatively, tap Enable All or Disable All. Tap ok.



Symbologies not supported by the CRS will be grayed out. Enabling all possible symbologies will make the decode process slightly longer.

OPTIONAL: Configure Prefix/Suffixes

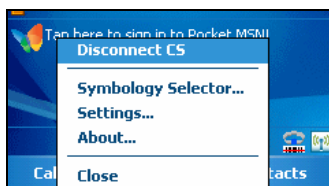
The SocketScan applet lets you specify prefix and/or suffix characters to be added automatically to the data you scan. This helps to further eliminate manual data entry.

1. Tap on the SocketScan icon. In the pop-up menu, tap Settings.

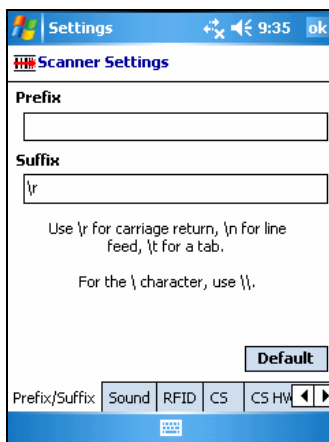


TIP

You can configure prefix/suffixes whether or not the CRS is connected to your Pocket PC.



2. The Scanner Settings utility will appear, with the Prefix/Suffix tab open. Enter the characters you want to be appended to each scan (128 character maximum). Tap ok.



TIP

Only printable ASCII characters can be used as prefixes or suffixes. The default suffix is a carriage return.

OPTIONAL: Run Scan Demo

Scan Demo makes it easy to determine the symbology, number of characters, and decoded data (in either ASCII or Hex) of any bar code supported by the scanner. This is especially useful if you encounter a bar code that the scanner will not decode by default.

1. Tap Start | Programs | Scan Demo.



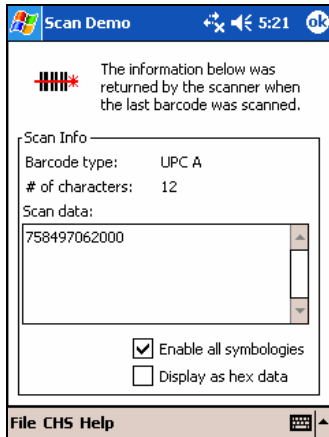
Accessing Scan Demo disconnects the Bluetooth link. If you have not configured the CRS to automatically connect, select the CRS tab at the bottom of the page to re-establish this link.

2. The Scan Demo screen will appear. If desired, use the check boxes at the bottom of the screen to modify the test.

Enable all symbologies: By default, this option is checked. Different symbologies can sometimes interpret the same bar code differently, so you may want to uncheck this option.

Display as hex data: Check this box to view scanned data in hexadecimal format. Otherwise, data will appear as ASCII.

3. Scan the bar code. Scan Demo will report the properties of the bar code.



Appendix A

Specifications

Physical Characteristics

Wrist Unit Size: 98l x 13.1h x 47w (mm) 3.86l x 0.52h x 1.85w (in.)

Ring Size: 55l x 37h x 38w (mm) 2.17l x 1.46h x 1.5w (in.)

Total Mass: approx. 90 g (0.2 lb)

Power Source: Rechargeable lithium-ion battery BL-6C

Expected Battery Life with Typical Operation (connected via Bluetooth and minimum 10,000 bar code scans): 8 hours

Operating Temp: -4 to 140°F (-20 to 60°C)

Operating System Support:

- Windows Mobile 5.0, 2003/2003SE

2005 Sunrise Date Compliant

Scanning Characteristics

Bar Code Symbolologies Decoded: Code 39, UPC/EAN/JAN, MSI, Code 128, Code 93, Codabar, I 2 of 5, D 2 of 5, RSS-14

Laser: Class 2 with Fuzzy Logic)

Scan Angle: 46.5°

Laser Scanner Performance:

Scan Repetition Rate: 50 (± 3) scans/sec (bi-directional)

Decode Distances: 2.2 to 40+ inches depends on symbol size, symbology, label media, W-N Ratio, scan angle

Bluetooth Characteristics

Protocol: Bluetooth 2.45 GHz ISM band frequency hopping

Antenna: Integrated

Radio Range: Up to 330 ft (100 m), depending on environment

Connection: Point-to-point *Security:* Encrypted link

RF Power: Class 1 radio; Typical Output: 14 dbm

Certification/Compliance (pending)

FCC: Part 15, Class B

CE: EN55024:1998

C-TICK: s.182

Industry Canada

VCCI

Bluetooth 1.1

IP54

TELEC

About Bluetooth Range

The Cordless Ring Scanner features a powerful Class 1 *Bluetooth* radio to provide the maximum possible range. As with all wireless technologies, the connection range can vary widely depending on many factors such as the brand and placement of the host device, the type and size of physical obstacles and the presence and activity level of competing radio transmissions.

In range testing of the CRS while connected to a variety of typical host devices with Class 2 radios, functional connection distances from 18 to over 100 feet have been experienced depending on the environment. The following conditions appear to reduce the *Bluetooth* connection range:

- The presence of soft, absorbent materials such as paper, fiberglass insulation, foam material in office cubical walls, carpeting and, to a lesser extent, even sheetrock and wood construction materials. Hard materials such as concrete increase the range.
- Human bodies or containers of liquid positioned between the host and the CRS.
- The presence and activity level of competing *Bluetooth* or 802.11 (Wi-Fi) systems using the same 2.4 GHz frequency.
- Metal in a grid pattern, such as chain link fencing or chicken wire. This type of material may block the *Bluetooth* (or Wi-Fi) signal completely.

Appendix B

Safety and Usage Tips

About *Bluetooth* and Health

Bluetooth wireless technology allows you to use short-range radio signals to connect a variety of devices, such as bar code scanners, mobile phones, Pocket PCs, notebook computers, printers, LAN access points, and many other devices at home or work. These radio signals replace the cables that have traditionally connected these devices.

Bluetooth products have small radio transmitters and receivers. Output power is normally very low, only 1 mW (1/1000 of a watt). This gives a working range of approximately 10 meters.

The maximum exposure levels from *Bluetooth* products are far below recommended safety guidelines. At most, typical *Bluetooth* devices (1mW) reach only one percent of the prescribed safety levels.

Product Care

- Do not expose your product to liquid, moisture or extreme humidity.
- Do not expose your product to extreme high or low temperatures.
- Do not expose your product to lit candles, cigarettes, or cigars, or to open flames, etc.
- Do not drop, throw or try to bend the product, as rough treatment could damage it.
- Do not paint your product, as the paint could obstruct parts and prevent normal use.
- Do not attempt to disassemble your product: a broken warranty seal will void the warranty. The product does not contain consumer serviceable components. Should your Cordless Ring Scanner need service, please contact Socket technical support at: support@socketcom.com.
- Treat your product with care. Keep in a clean and dust-free place.
- Changes or modifications of this product, not expressly approved by Socket, may void the user's authority to operate the equipment.

Antenna Care

Do not place a metallic shield around the Cordless Ring Scanner since it will reduce the radio transmission efficiency.

Efficient Use

For optimum performance, please make sure that there is no metal surrounding your Cordless Ring Scanner.

Driving

RF energy may affect some electronic systems in motor vehicles, such as car stereo, safety equipment, etc. Check with your vehicle manufacturer to be sure that the Cordless Ring Scanner will not affect the vehicle's electronics.

Aircraft

- Turn off your Cordless Ring Scanner before boarding any aircraft.
- To prevent interference with communications systems, you must not use your Cordless Ring Scanner while the plane is in the air.
- Do not use it on the ground without permission from the crew.

Radio Frequency Exposure

Your Cordless Ring Scanner contains a radio transmitter and receiver. When in operation, it communicates with a *Bluetooth* enabled mobile computer by receiving and transmitting radio frequency (RF) magnetic fields in the frequency range 2400 to 2500 MHz. The output power of the radio transmitter is 0.001 Watt. The Cordless Ring Scanner is designed to be in compliance with the RF exposure limits set by national authorities and international health agencies¹ when installed or used separately from other antennas or radio transmitters.

¹ Examples of RF exposure standards and guidelines:

ICNIRP, "Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz)", International Commission on Non-Ionizing Radiation Protection (ICNIRP), Health Physics, vol. 74, pp 494-533, April 1998.

99/519/EC, EU Council Recommendation on the limitation of exposure to the general public to electromagnetic fields 0 Hz – 300 GHz, Official Journal of the European Communities, July 12, 1999.

ANSI/IEEE C95.1-1992, "Safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz", The Institute of Electrical and Electronics Engineers, Inc., New York, 1991.

FCC Report and Order, ET Docket 93-62, FCC 96-326, Federal Communications Commission (FCC), August 1996.

Radiocommunications (Electromagnetic Radiation Human Exposure) Standard 1999, Australian Communications Authority (ACA), May 1999.

Appendix C

Bar Code Label Specifications

All bar code symbols/labels should satisfy the appropriate AIM Uniform Symbology Specification.

Background Substrate:

The bar code symbol should be printed on material (media) that is reflective and has a matte (not glossy) finish. A background diffuse reflectance of at least 70% to 80% is desirable for optimum contrast. Retro-reflective media should be used to obtain decode distances greater than 36 inches.

Ink Color and Type:

The inked bars should not exceed 25% reflectance at the wavelength that is being used for reading, whether printed with black ink or colored ink. The reflectance value should not vary more than 5% within the same character.

Voids and Specks:

The code should be printed clearly, free of voids, specks, blemishes and lines that could “fool” the scanner. Specks or blemishes in the white spaces, or false or missing bar sections could be interpreted by the reading equipment as part of the code. Generally, the width of such flaws is more serious than the height. Code symbols/ labels should be rejected if these defects are present.

Definition:

The bars in the bar code symbol should be well defined. Their edges should not be rough or fuzzy, so that the bars and spaces have the proper widths intended for the bar code symbology used.

Contrast:

Background reflectance (that of the substrate on which the codes are printed) should always provide a good contrast relative to the ink reflectance (that of the code bars). The difference between the two should be at least 37.5% at the wavelength used for reading.

Tolerance:

The ratio of the widths of bars and spaces in a bar code symbol must conform to the appropriate AIM bar code specifications and can cause problems if not correct throughout the bar code. Problems can occur when bar edges are smeared or rough, or when they exhibit voids.

Appendix D

Enabling or Disabling Symbologies

The Cordless Ring Scanner is pre-set to automatically detect and decode (auto-discriminate) the most common bar code symbologies. To enable or disable symbologies, simply use SocketScan's Symbology Selector.

Notes:

- *The length of some symbologies will change after Symbology Selector is used. See Table 1.*
- *With more symbologies enabled, the scanner must work harder to search through all the possible combinations. This may make the decoding process slightly longer.*
- *The advanced symbology parameters listed in Table 2 can only be modified by using the SocketScan Advanced Programming Guide or the SocketScan SDK. Check Socket's website for updates.*

Table 1. Default Symbologies

Symbology	Scanner Default	Default Length	Length after Symbology Selector
UPC/EAN/JAN			
UPC-A	Enabled	N/A	N/A
UPC-E	Enabled	N/A	N/A
UPC-E1	Disabled	N/A	N/A
EAN-8	Enabled	N/A	N/A
EAN-13	Enabled	N/A	N/A
Code 128 (USS-128 & UCC/EAN 128)	Enabled	Any	Any
Code 39*			
Code 39	Enabled	2 to 23	2 to 55
Trioptic Code 39	Enabled	2 to 23	2 to 55
Code 39 Full ASCII	Disabled	2 to 23	2 to 55
Code 93	Disabled	2 to 38	2 to 55
Interleaved 2 of 5*	Enabled	14 Only	2 to 55
Discrete 2 of 5*	Disabled	12 Only	2 to 55
Codabar	Disabled	5 to 55	2 to 55
MSI Plessey*	Disabled	1 to 30	2 to 55
RSS-14 (Standard, Limited, Expanded)**	Disabled	N/A	N/A

**Warning: Setting the length to "Any" may lead to inaccurate decodes of these symbologies.*

***This symbology will be added in the next release.*

Table 2. Other Symbology Parameters

Symbology Parameters	Scanner Default
UPC/EAN/JAN	
Supplementals	Disabled
Transmit Check Digit	Enabled
Bookland EAN	Disabled
Decode UPC/EAN Supplementals	Ignore
UPC/EAN Supplemental Redundancy	Seven
Transmit UPC-A Check Digit	Enabled
Transmit UPC-E Check Digit	Enabled
Transmit UPC-E1 Check Digit	Enabled
Convert UPC-E to A	Disabled
Convert UPC-E1 to A	Disabled
EAN-8 Zero Extend	Disabled
UPC/EAN Security Level	0
UPC/EAN Coupon Code	Disabled
Code 39	
Convert Code 39 to Code 32	Disabled
Code 32 Prefix	Disabled
Check Digit Verification	Disabled
Transmit Check Digit	Disabled
Code 39 Full ASCII	Disabled
Interleaved 2 of 5	
Check Digit Verification	Disabled
Transmit Check Digit	Disabled
Convert I 2 of 5 to EAN-13	Disabled
RSS-14	Disabled
RSS-14 Limited	Disabled
RSS-14 Expanded	Disabled

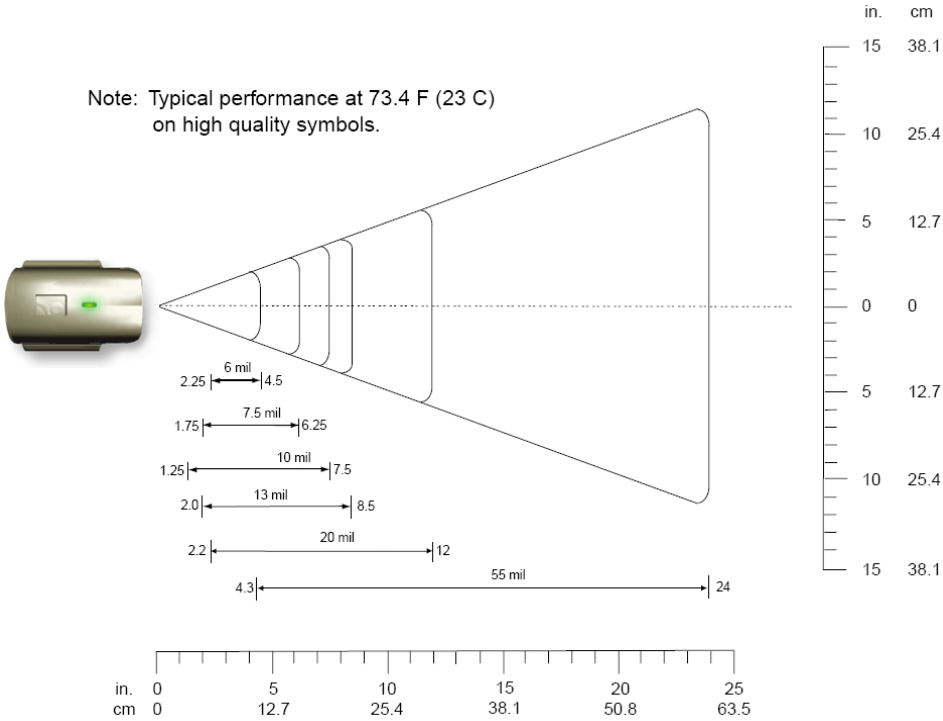
For more information on bar codes, symbologies, labels or other bar code related topics, visit any of the following web sites:

- a. www.aimglobal.org/technologies/barcode/
- b. www.aimglobal.org/aimstore/stackedsymbologies.htm
- c. www.adams1.com
- d. www.bizfonts.com
- e. www.barcode-us.com/info_center/upc.htm (UPC Codes)
- f. www.barcode-us.com/info_center/bookinfo.htm (Bookland EAN)
- g. www.dataid.com/bcsymbology.htm
- h. www.aaabarcodes.com
- i. www.snx.com/mechanics.html
- j. www.pscnet.com/html/aabcsymbologies.htm#Checksums
- k. www.idautomation.com/barcoding4beginners.html

Appendix E

Decode Zone


The decode zones for the Cordless Ring Scanner is shown below. The minimum element width (“X Dimension” or bar code “size”) is the width in thousandths of an inch (mils) of the narrowest element (bar or space) in the symbol. The figures shown are the typical scanning distances (depths of field) for selected bar code sizes. The maximum usable length of a bar code symbol (Width of Field) at any given range is also shown.



Appendix F

Troubleshooting

For help on SocketScan, tap Start | Help on a Pocket PC.

SYMPTOM: I get the “No Scanner Detected”  icon in the task tray of my Windows device and can't trigger the laser or scan any bar codes.

POSSIBLE REASON	SOLUTION
Your mobile computer is not connected to the Cordless Ring Scanner.	Make sure the Cordless Ring Scanner is on and in range and has enough battery power. Try to reconnect.

SYMPTOM: When I try to scan, the laser activates, but no data appears on my screen, and the laser eventually turns off.

POSSIBLE REASON	SOLUTION
The scanner is too close or too far from the bar code.	Practice so you get accustomed the most effective distance and scanning angle.
The bar code is incorrectly formatted or poorly printed.	Try scanning a bar code that is correctly formatted or printed well, such as on a retail package.
The bar code symbology may be disabled or not supported by the Cordless Ring Scanner.	Use Scan Demo for Windows Mobile to identify the symbology. If needed, enable the symbology by using Symbology Selector.

SYMPTOM: My mobile computer cannot find the CRS, and/or I get an error message saying that there are connection problems.

POSSIBLE REASONS	SOLUTION
You are too far from the Cordless Ring Scanner.	Move the devices closer together, within a range of 10-15 meters.
The Cordless Ring Scanner is not turned on.	Turn on the Cordless Ring Scanner.
You have assigned another device as your favorite or default Bluetooth serial device.	Remove any settings that assign another device as your favorite Bluetooth serial device.

SYMPTOM: While scanning with the CRS, I turned off the Pocket PC, or my Pocket PC entered suspend mode. Now my Pocket PC won't turn on again.

POSSIBLE REASONS	SOLUTION
This is a known problem with the Widcomm stack (built into HP h221X iPAQ Pocket PCs with ROM version 1.00).	Soft reset the Pocket PC by pressing the reset button.

SYMPTOM: While scanning with the CRS, I turned off the host device, or my host device entered suspend mode. Now the CRS won't reconnect to my host device.

POSSIBLE REASONS	SOLUTION
There is a problem with the Broadcom (Widcomm) stack on some devices where the CRS can be discovered but fails to communicate. Affected units include the HP iPAQ models h221X with ROM version 1.10 and h1945.	Soft reset the Pocket PC by pressing the reset button.

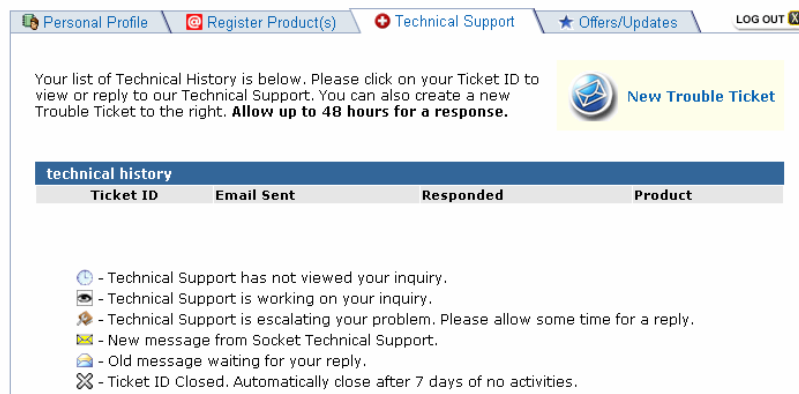
Appendix G

Technical Support

If you have trouble installing or using the Socket Cordless Ring Scanner, contact Socket's technical support department for assistance.

IMPORTANT! To obtain technical support, you must first register your product online at www.socketcom.com/prodreg.

After you register your product, log in and click on the Technical Support tab. Click **New Trouble Ticket** to submit an online request for technical support. Afterwards, you can log in anytime to monitor the status of your request. If we are unable to resolve your support inquiry online, we can arrange for a technical support representative to call you at a specific time.



Personal Profile Register Product(s) Technical Support Offers/Updates LOG OUT

Your list of Technical History is below. Please click on your Ticket ID to view or reply to our Technical Support. You can also create a new Trouble Ticket to the right. **Allow up to 48 hours for a response.**

New Trouble Ticket

technical history			
Ticket ID	Email Sent	Responded	Product

- Technical Support has not viewed your inquiry.
- Technical Support is working on your inquiry.
- Technical Support is escalating your problem. Please allow some time for a reply.
- New message from Socket Technical Support.
- Old message waiting for your reply.
- Ticket ID Closed. Automatically close after 7 days of no activities.

Please refrain from disassembling the Cordless Ring Scanner. Disassembly of this device will void the product warranty.

Limited Warranty

Socket Communications Incorporated (Socket) warrants this product against defects in material and workmanship, under normal use and service, for the following period from the date of purchase:

Cordless Ring Scanner: Two years

Incompatibility is not a defect covered by Socket's warranty. During the warranty period, Socket will, at its option, repair or replace the defective product at no charge when furnished with proof of retail purchase, provided that you deliver the product to Socket or to an authorized Socket Service Center.

The returned product must be accompanied by a return material authorization (RMA) number issued by Socket or by Socket's Authorized Service Center. If you ship the product, you must use the original container or equivalent and you must pay the shipping charges to Socket. Socket will pay shipping charges back to any location in the contiguous United States. This warranty applies only to the original retail purchaser and is not transferable.

Socket may, at its option, replace or repair the product with new or reconditioned parts and the returned product becomes Socket's property. Socket warrants the repaired or replaced products to be free from defects in material or workmanship for ninety (90) days after the return shipping date, or for the duration of the original warranty period, whichever is greater.

This warranty does not cover the replacement of products damaged by abuse, accident, misuse or misapplication, nor as a result of service or modification other than by Socket.

SOCKET IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING DAMAGE TO PROPERTY AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some states do not allow limitation of implied warranties, or the exclusion or limitation of incidental or consequential damages, so that the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

This product may contain fully tested, recycled parts, warranted as if new.

For warranty information, call (510) 744-2700.

Limited Software Warranty

LIMITED WARRANTY. SOCKET warrants that the original disk or CD ROM is free from defects for 90 days from the date of delivery of the SOFTWARE.

CUSTOMER REMEDIES. SOCKET'S entire liability and your exclusive remedy shall be, at SOCKET'S option, either (a) return of the price paid or (b) replacement of the SOFTWARE which does not meet SOCKET'S Limited Warranty and which is returned to SOCKET with a copy of your receipt. Any replacement SOFTWARE will be warranted for the remainder of the original warranty period or 30 days, whichever is longer. THESE REMEDIES ARE NOT AVAILABLE OUTSIDE OF THE UNITED STATES OF AMERICA.

NO OTHER WARRANTIES. SOCKET disclaims all other warranties, either express or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the SOFTWARE and the accompanying written materials. This limited warranty gives you specific legal rights. You may have others which vary from state to state.

NO LIABILITY FOR CONSEQUENTIAL DAMAGES. In no event shall SOCKET or its suppliers be liable for any damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out of the use of or inability to use the SOFTWARE, even if SOCKET has been advised of the possibility of such damages. Because some states do not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation may not apply to you.

EXPORT LAW ASSURANCES. You may not use or otherwise export or reexport the SOFTWARE except as authorized by United States law and laws of the jurisdiction in which the SOFTWARE was obtained. In particular, but without limitation, none of the SOFTWARE may be used or otherwise exported or reexported (a) into (or to a national or resident of) a United States embargoed country or (b) to anyone on the U.S. Treasury Department's list of Specially Designated Nationals or the U.S. Department of Commerce's Table of Denial Orders. By using the SOFTWARE, you represent and warrant that you are not located in, under control of, or a national or resident of any such country or on any such list.

GOVERNMENT END USERS. If the SOFTWARE is supplied to the U. S. Government, the SOFTWARE is classified as "restricted computer software" as defined in clause 52.227-19 of the FAR. The U. S. Government's rights to the SOFTWARE are as provided in clause 52.227-19 of the FAR.

CONTROLLING LAW AND SEVERABILITY. This License shall be governed by the laws of the United States and the State of California. If for any reason a court of competent jurisdiction finds any provision, or portion thereof, to be unenforceable, the remainder of this License shall continue in full force and effect.

Regulatory Compliance

The Socket Cordless Ring Scanner is designed to be compliant with the rules and regulations in locations where they are sold and will be labeled as required. This product is type approved — users are not required to obtain license or authorization before using.

This product has been certified as conforming to technological standards. Therefore, the following actions are punishable by law:

- Disassembly or modification of this product
- Removal of identification labels on the back of the product

The frequency used by this product is also used by industrial, scientific and medical devices, such as microwave ovens, as well as wireless detectors for motion detectors, such as those requiring licenses used on manufacturing lines or similar radio transmitters (all of these wireless devices will be called “other wireless transmitters” below). Most modern electronic equipment (e.g., in hospitals and cars), is shielded from RF energy. However, certain electronic equipment is not.

1. Please ensure that all medical devices used in proximity to this device meet appropriate susceptibility specifications for this type of RF energy.
2. In the unlikely event that there is electronic interference between this system and other wireless transmitters, quickly change the location of operation or stop operating the unit (cease signal transmission).
3. If other electrical interference or related problems occur, contact Socket technical support at support@socketcom.com

Radio Frequency Interference Requirements

This device complies with part 15 of the FCC rules and Industry Canada. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment is also ETS EN300 328-2, ETS EN301 489-1 and ETS EN301 489-17 compliant. 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 the 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 the user will be required to correct the interference at his or her own expense.

This equipment generates and radiates radio-frequency energy. To comply with FCC RF exposure compliance requirements, the following antenna installation and device operating configurations must be satisfied: (1) Users are not permitted to make changes or modify the system in any way, and (2) connecting external antennas to the Cordless Ring Scanner is prohibited. This device and its antenna must not be co-located or operated with any other antenna or transmitter.

To comply with Industry Canada RF exposure compliance requirements, the following antenna installation and device operating configurations must be satisfied: “The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, available at Health Canada’s website www.hc-sc.gc.ca/ehp/ehd/catalogue/rpb.htm”

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user may try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna of the radio or television.
- Increase the distance separating the equipment and the receiver.
- Connect the equipment to an outlet on a different branch circuit than that of the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402.

Canada Certification

The marking of “IC:xxxxxx-yyyyyy” on the device means: “xxxxxx-yyyyyy” is the certification number, and the term “IC” before the equipment certification number only signifies that Industry Canada technical specifications were met.

Radio Frequency Interference Requirements – Canada

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

CE Marking & European Union Compliance

Products intended for sale within the European Union are marked with a CE Mark which indicates compliance to applicable Directives and European Normes (EN), as follows. Amendments to these Directives or ENs are included: Normes (EN), as follows:

Applicable Directives:

- Radio and Telecommunications Terminal Equipment Directive 1999/5/EC
- Low Voltage Directive 73/23/EEC

Applicable Standards:

- EN 55 022 – Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment.
- EN 50 082-1 – Electromagnetic Compatibility – General Immunity Standard, Part 1: Residential, Commercial, Light Industry.
- IEC 801.2 – Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment, Part 2: Electrostatic Discharge Requirements.
- IEC 801.3 – Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment, Part 3: Radiated Electromagnetic Field Requirements.
- IEC 801.4 - Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment, Part 4: Electrical Fast Transients Requirements
- EN 60 950 + Amd 1 + Amd 2 – Safety of Information Technology Equipment Including Business Equipment.

LASER DEVICE:

Class 1 laser devices are not considered to be hazardous when used for their intended purpose. The following statement is required to comply with U.S. and international regulations:



CAUTION: Use of controls, adjustments or performance of procedure other than those specified herein may result in hazardous laser light exposures.

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.

Battery Warning:

- Your device contains a rechargeable Lithium-Ion battery. Never throw the battery into a fire, as that could cause the battery to explode.
- Never short-circuit the battery by bringing the terminals in contact with another metal object. This could cause personal injury or a fire, and could also damage the battery.
- Never dispose of used battery with other ordinary solid wastes. Batteries contain toxic substances.
- Dispose of used battery in accordance with the prevailing community regulations that apply to the disposal of batteries. Cover the metal terminals with insulating tape. (This is to prevent accidental short-circuiting).
- Never expose the battery to any liquid.
- Always keep the battery out of reach of infants or small children.
- Never shock the battery by dropping it or throwing it.
- Dispose of a spent or damaged battery promptly.

Product Disposal

Your device should not be placed in municipal waste. Please check local regulations for disposal of electronic products.



