

# **Cordless Serial Adapter with *Bluetooth®* Wireless Technology**

*Instant cable-free serial connection for devices with an  
RS-232 serial port*

## **User's Guide**



**socket**<sup>™</sup>  
The Mobile Connection

## Copyright Notice

Copyright © 2005 Socket Communications, Inc. All rights reserved.

Socket, the Socket logo and Battery Friendly are registered trademarks of Socket Communications, Inc. Cordless Serial Adapter with *Bluetooth* Wireless Technology is a trademark of Socket Communications, Inc. The *Bluetooth* word mark and logo are owned by the *Bluetooth* SIG, Inc., and any use of such marks by Socket Communications, Inc. is under license. All other brand and product names are trademarks of their respective holders.

The Cordless Serial Adapter with *Bluetooth* Wireless Technology includes technology licensed under United States Patent Nos. 4,543,450, 4,603,320, 4,686,506, and 4,972,470.

Reproduction of the contents of this manual without the permission of Socket Communications is expressly prohibited. Please be aware that the products described in this manual may change without notice.

Feel free to contact SOCKET COMMUNICATIONS at:

**Socket Communications, Inc.**  
37400 Central Court  
Newark, CA 94560

Other than the above, Socket Communications can assume no responsibility for anything resulting from the application of information contained in this manual.

Socket Communications requests that you refrain from any applications of the Socket Cordless Serial Adapter that are not described in this manual. Please refrain from disassembling the card. Disassembly of this device will void the product warranty.

You can track new product releases, software updates and technical bulletins by visiting Socket's web page at: [www.socketcom.com](http://www.socketcom.com).

# Table of Contents

<b>1   INTRODUCTION</b>	<b>4</b>
<b>2   SETUP</b>	<b>6</b>
STEP 1: Install the Software	6
STEP 2: Attach the CSA to the Computer	8
STEP 3: Prepare Communications Settings	8
STEP 4: Configure the CSA	9
Set up a CSA pair for cable replacement.	12
Set up a CSA as passive serial <i>Bluetooth</i> receiver.	18
STEP 5: Attach CSA to Device	21
<b>3   CONFIGURATION UTILITY</b>	<b>23</b>
Configuration Functions	24
General Properties	26
Connections Properties — ACCEPTOR MODE	27
Connections Properties — INITIATOR MODE	28
Remote Target (Initiator only)	30
Port Settings	32
Advanced (Acceptor only)	33
<b>APPENDICES</b>	
<b>A   SPECIFICATIONS</b>	<b>34</b>
<b>B   SAFETY AND USAGE TIPS</b>	<b>36</b>
<b>C   GLOSSARY</b>	<b>39</b>
<b>D   TROUBLESHOOTING</b>	<b>42</b>
<b>E   TECHNICAL SUPPORT</b>	<b>43</b>
Limited Warranty	44
Limited Software Warranty	45
Regulatory Compliance	46

# 1 | Introduction

## Overview

Socket's Cordless Serial Adapter (CSA) with *Bluetooth* Wireless Technology eliminates your conventional RS-232 serial cable, providing an easy-to-use, invisible connection with superior freedom of movement. This tiny adapter allows any device with a standard 9-pin serial port to communicate wirelessly. You can communicate with another CSA or other *Bluetooth* enabled devices such as a laptop computer, PDA or mobile phone. Take advantage of Personal Area Networking quickly and easily.

You don't need to install any drivers on the host device — just plug the CSA into the 9-pin serial port on your industrial equipment and wirelessly download the information you need to any *Bluetooth* enabled notebook, Pocket PC, Palm or Mac OS device. Reduce costs by decreasing cycle times for equipment maintenance and servicing through easier access to serial ports in difficult or dangerous-to-access areas. Do you have cabled connections you would like to replace with a cordless solution? Attach a CSA on each side, and make bulky cables a thing of the past.

The CSA communicates over the *Bluetooth* Serial Port Profile. The adapter can be powered from either the included AC power adapter or from the host device over Pin 9 on the CSA.

## Common Usage Scenarios

Scenario 1: Set up a CSA pair as serial cable replacement.



*Example: Replace your printer cable with a wireless Bluetooth connection between your laptop and printer.*

Scenario 2: Set up the CSA as a passive serial *Bluetooth* receiver.



*Example: Use the CSA to Bluetooth enable industrial equipment, which you can then control and monitor from a Bluetooth enabled Pocket PC.*

Custom versions of the CSA are available to OEMs. For more information, contact: [developers@socketcom.com](mailto:developers@socketcom.com).

*Notes:*

- *The Cordless Serial Adapter was not designed to Bluetooth enable your computer for ActiveSync.*
- *The Cordless Serial Adapter was designed for use with industrial serial equipment only. Because of power requirements, custom drivers, and custom serial communication protocols, the Cordless Serial Adapter is not intended for use with some consumer serial devices, including but not limited to: 56k modems, cellular phone data cables, digital camera data cables, joysticks, keyboards, mice, Pocket PC cradles, scanners, etc.*

## About the Software

Socket's Cordless Serial Adapter Configuration Utility is an easy-to-use Windows application that lets you to reprogram many of the default settings on your CSA. You have the freedom to custom configure settings to match your individual needs. The utility runs under Windows 95, 98, Me, 2000 or XP\*.



Cordless Serial Adapter

Software updates: [www.socketcom.com/support/support\\_cordless.asp](http://www.socketcom.com/support/support_cordless.asp)

Developers: To use a terminal device to manually reprogram the CSA via AT commands, please refer to the *Socket Cordless Serial Command Set* in the *Docs* folder on the installation CD.

## Product Registration

Socket highly recommends that all users register their Socket products. Registered users receive priority for technical support, product updates, and special offers. Register online at: [www.socketcom.com/prodreg](http://www.socketcom.com/prodreg)

## Package Contents

- Socket Cordless Serial Adapter with *Bluetooth* Wireless Technology
- 9-pin female/female null modem
- AC power adapter
- *Socket Cordless Serial Adapter Installation CD*
- *Quick Start* Guide with warranty and copyright information

---

\* Windows 95 v4.00.950B; Windows 98SE

## 2 | Setup

This chapter covers the setup procedure for the Cordless Serial Adapter with *Bluetooth* Wireless Technology. Please note that no drivers are necessary, so the only software you need to install is the CSA Configuration Utility.

### Setup Summary

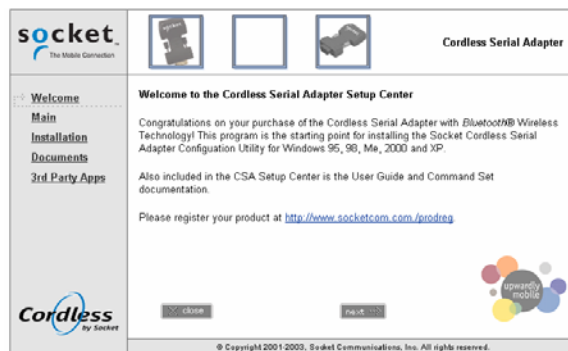
- STEP 1. Install the software.
- STEP 2: Attach the CSA to your computer.
- STEP 3. Prepare communications settings.
- STEP 4: Configure the CSA.
- STEP 5: Attach CSA to device.

### STEP 1: Install the Software

1. Insert the *Socket Cordless Serial Adapter CD*.
2. Use My Computer or Windows Explorer to access your CD-ROM drive. In the CD, click on SETUP.EXE.



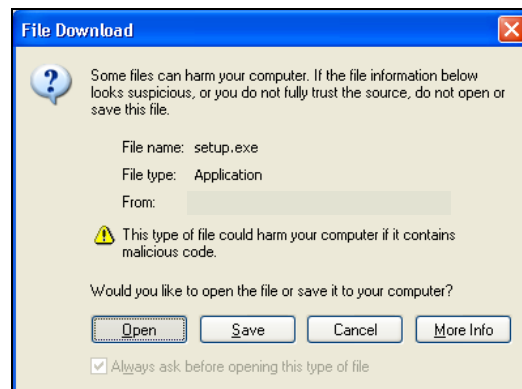
3. The Cordless Serial Adapter Setup Center will begin. Follow the screens to install the software. In the Main Page, click Install Utility Software.



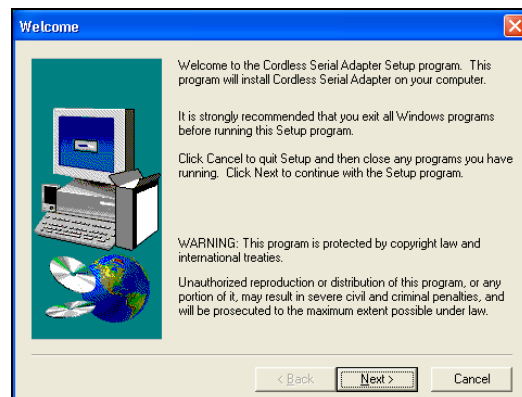
4. In the next screen, click **Configuration Utility**.



5. In the File Download screen, click **Open**.



6. Follow the instructions on your screen to install the software.



## STEP 2: Attach the CSA to the Computer

1. Attach the Cordless Serial Adapter (CSA) to the serial port of the computer you just installed the software on.
2. Determine the COM port number where you just attached the CSA.
  - Click **Start | Control Panel | System**.
  - Click on the **Hardware** tab. Click on the **Device Manager** button.
  - In the list, click on **Ports**. The Communications Port should be listed with its COM number.
3. Use the AC adapter to connect the CSA to a power outlet.

Alternatively, the CSA can draw power off of Pin 9 of your computer's serial port if supported.

4. When the adapter has power, the LED should begin flashing blue.

Flash Rate	Meaning
Once per 2 seconds	Not discoverable
Twice per 2 seconds	Waiting to connect
Three times per 2 seconds	Connected



## STEP 3: Prepare Communications Settings

Find out what communications settings you need to connect your devices. The necessary settings may include the following (only some may apply):

- *Bluetooth* address of the device you wish the CSA to connect to
- Baud rate, data bits, parity, stop bits, flow control
- Does the local host send DTR signals?
- Does the local host accept notifications of *Bluetooth* events?
- Security settings (e.g., PIN, encryption, etc.)
- *Bluetooth* device/service classes detectable by the remote device
- Advanced users only: page scan timing, inquiry scan timing, sniff mode parameters



## STEP 4: Configure the CSA

Socket's Cordless Serial Adapter Configuration Utility lets you reprogram the default settings on the CSA for *Bluetooth*. You can custom configure settings to match your individual needs.

### Preliminary Configuration

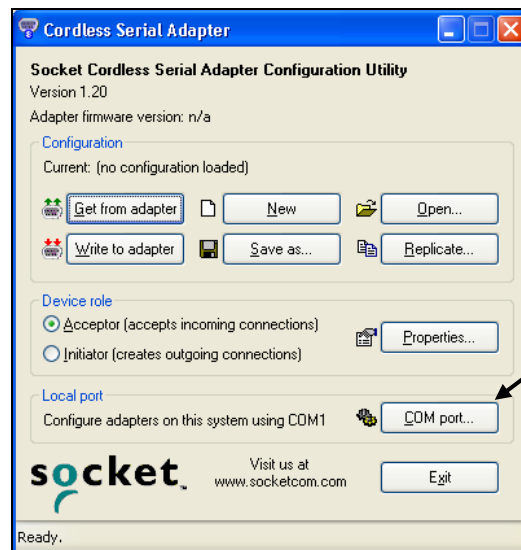
1. Open the utility, by doing either of the following:

- Click on the icon on your desktop.
- Go to Start | Programs | Cordless Serial Adapter.



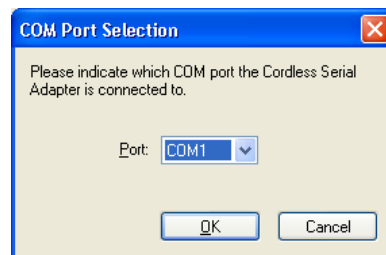
Cordless Serial Adapter

2. The Cordless Serial Adapter Configuration Utility will appear. Click on the COM port button.

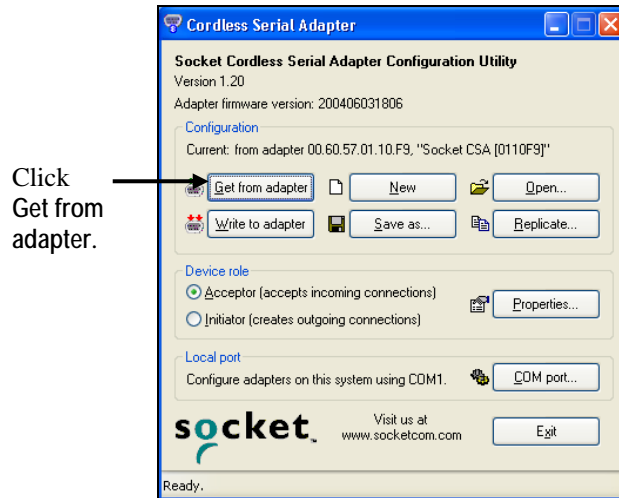


Click  
COM port.

3. In the screen that appears, select the COM port number where the CSA is attached to your computer. Click OK.



4. In the Configuration box, the current configuration should be reported as no configuration loaded. To verify that you have properly connected, click **Get from adapter**. The utility should now report the CSA's firmware version, *Bluetooth* address and friendly name.



*Note:*

- *If this is your first time using the CSA, the utility will report “new configuration.”*
- *If you get an error message reporting communications problems, make sure the CSA is pushed all the way into the serial port, and make sure you chose the correct COM port in the previous step.*

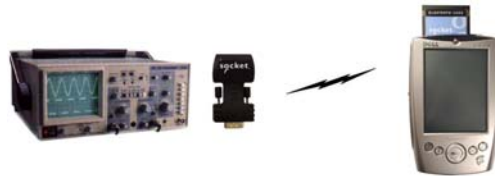
5. Now you are ready to enter the Device role and properties. The appropriate settings will vary depending on what device(s) you are using and how they can communicate. The following pages will include instructions for two of the most common scenarios:

- Scenario 1: Set up a CSA pair as serial cable replacement.



*Example: Replace a printer cable with a wireless Bluetooth connection between your laptop and printer.*

- Scenario 2: Set up one CSA as a passive serial Bluetooth receiver.



*Example: Use the CSA to Bluetooth enable industrial equipment, which you can then control and monitor from a Bluetooth enabled Pocket PC.*

*Notes:*

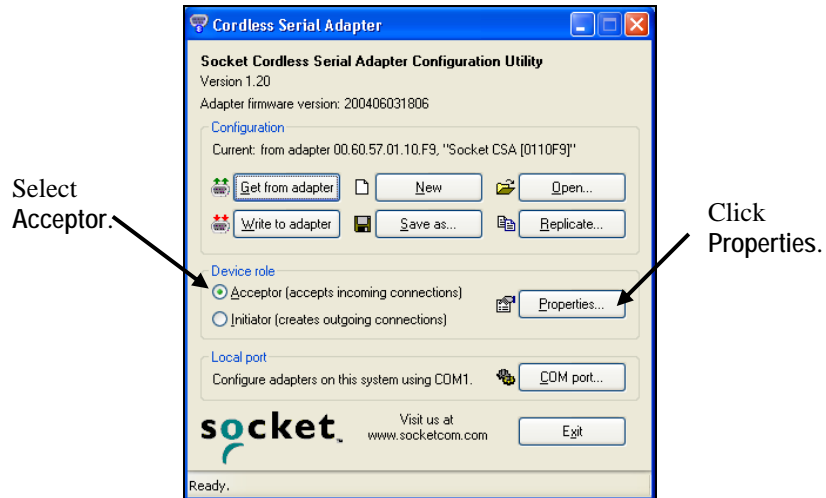
- If you have another scenario, refer to Chapter 3 for instructions on each properties page.
- Make sure you manually configure your baud rate and other settings in any third-party applications used with the CSA. Auto-detect and Plug and Play functions are not reliable with Bluetooth, and the CSA may not work properly unless you manually enter the correct settings.

### **SCENARIO 1: Set up a CSA pair for cable replacement.**

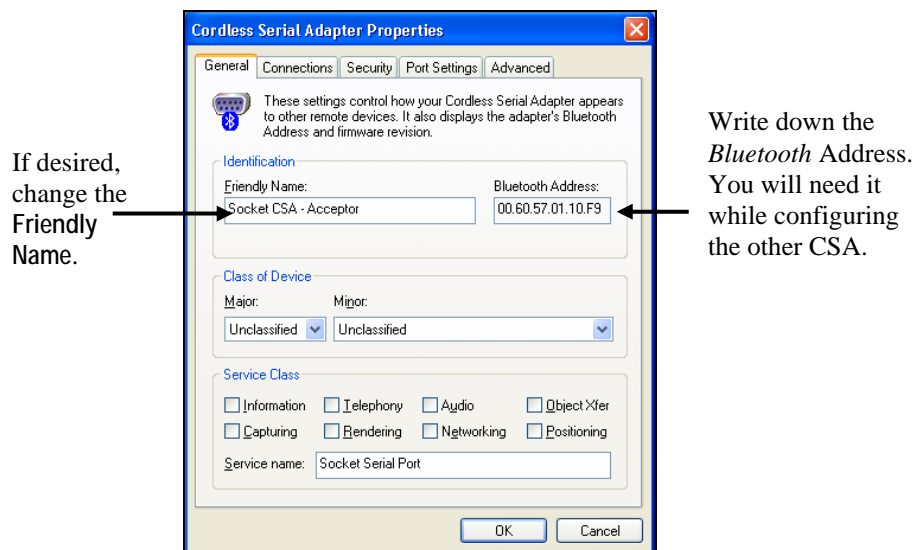
To set up a pair of Cordless Serial Adapters as serial cable replacement, one CSA must be an acceptor, and the other an initiator (e.g., in the previous example, the printer would be acceptor, and the laptop would be initiator).

#### **➤ Set up the Acceptor**

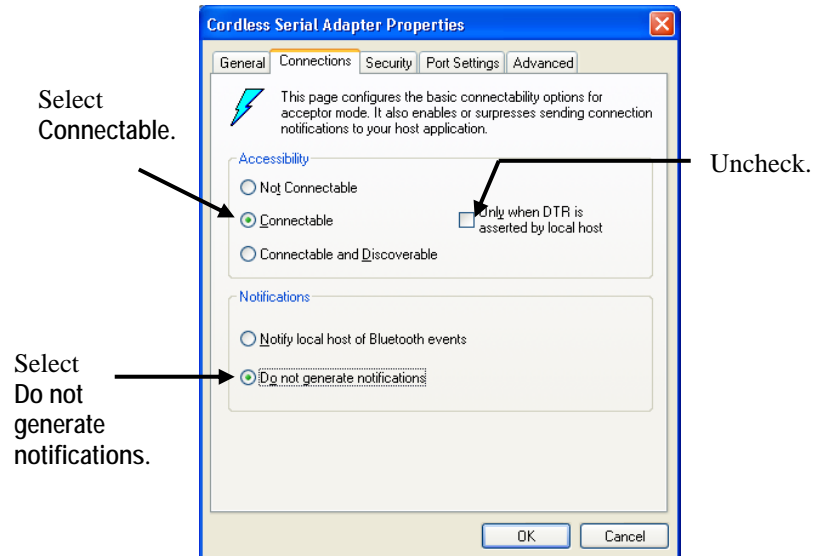
1. In the Device role box, select Acceptor. Click Properties.



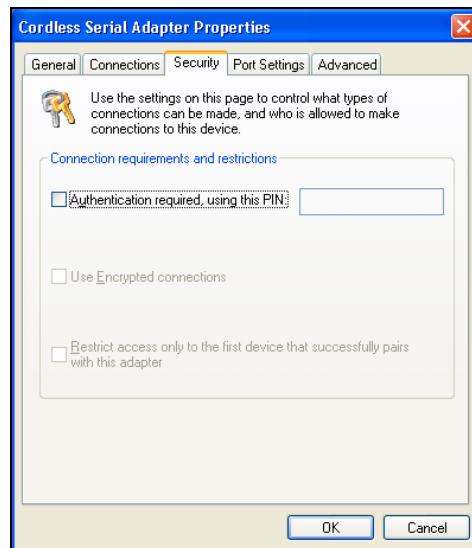
2. In the General screen, change the Friendly Name if desired. For example, you may want to enter a name like "Socket CSA-Acceptor." Note the Bluetooth Address of this CSA. You will need it to configure the initiator.



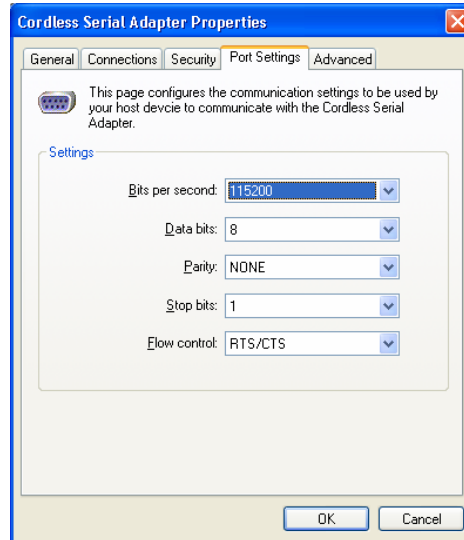
3. Click on the **Connections** tab. Enter the following settings:
- Accessibility: Select **Connectable**
  - Uncheck **Only when DTR is asserted by local host**
  - Notifications: Select **Do not generate notifications**



4. Click on the **Security** tab. Make sure all boxes are unchecked.



5. Click on the Port Settings tab. Enter the appropriate settings for your devices and applications. Do not change any default settings in the Advanced screen. Afterwards, click OK to exit the properties screens.



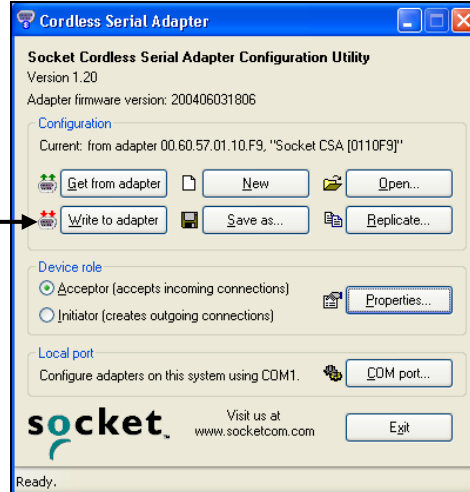
**Important!**

***Be sure to set the baud rate to match that of the local host serial port!***

***You must also enter the same baud rate in any third party applications used with the CSA!***

6. Click Write to adapter to configure your CSA with the new settings.

Click  
Write to  
adapter.



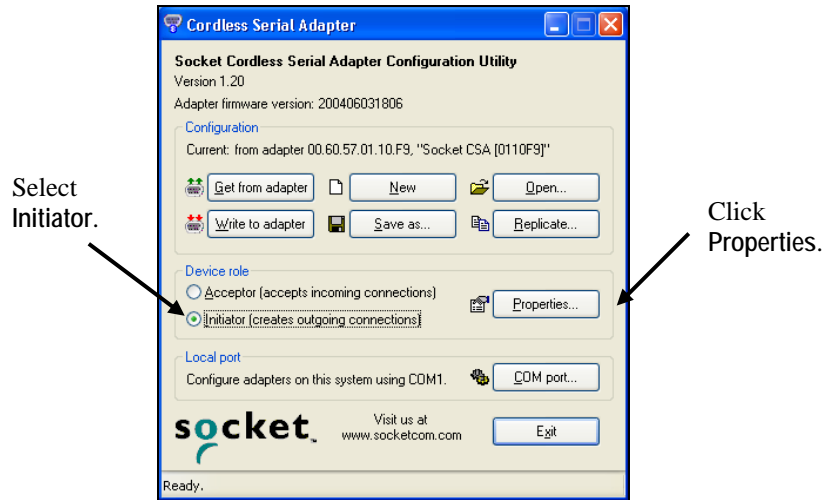
**Important!**

***If you do not click Write to adapter, the CSA will not be configured with the new settings!***

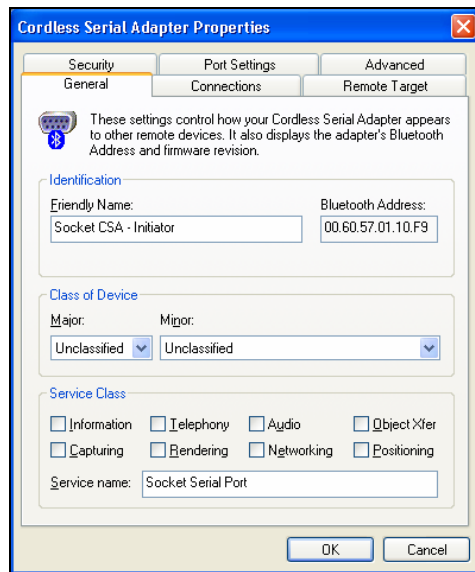
7. Unplug the CSA from the computer. Now you are ready to configure the second CSA.

➤ **Set up the Initiator**

1. In the Device role box, select Initiator. Click Properties.

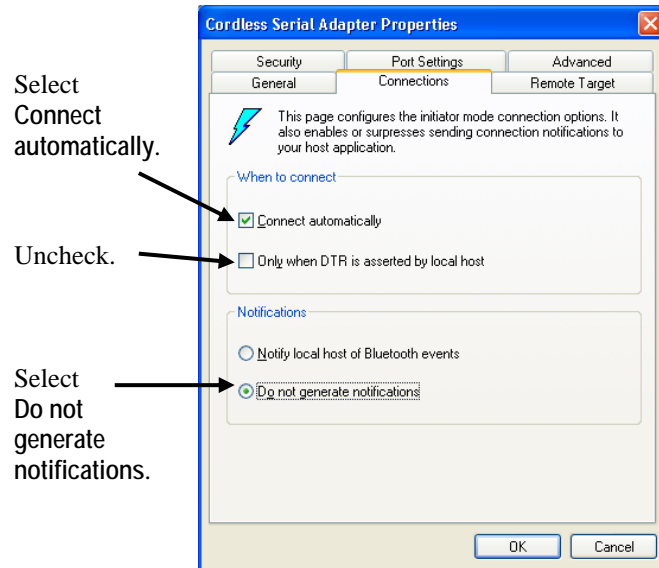


2. In the General screen, change the Friendly Name if desired. For example, you may want to enter a name like “Socket CSA-Initiator.”

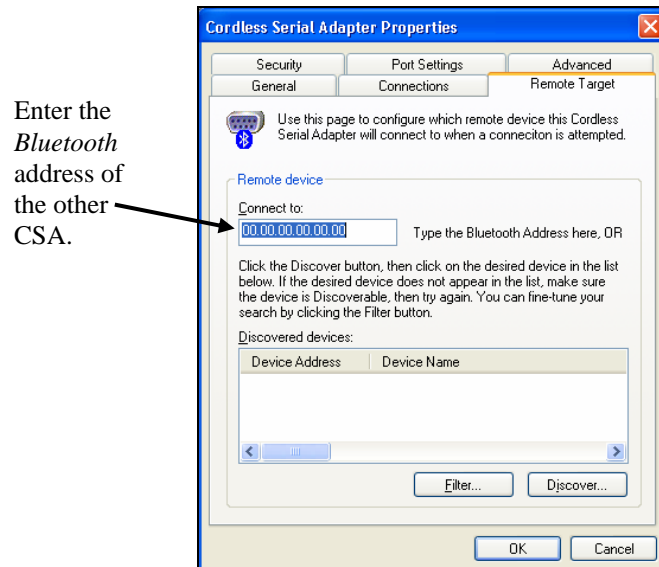


3. Click on the **Connections** tab. Enter the following settings:

- Accessibility: Select **Connect automatically**  
Uncheck **Only when DTR is asserted by local host**
- Notifications: Select **Do not generate notifications**

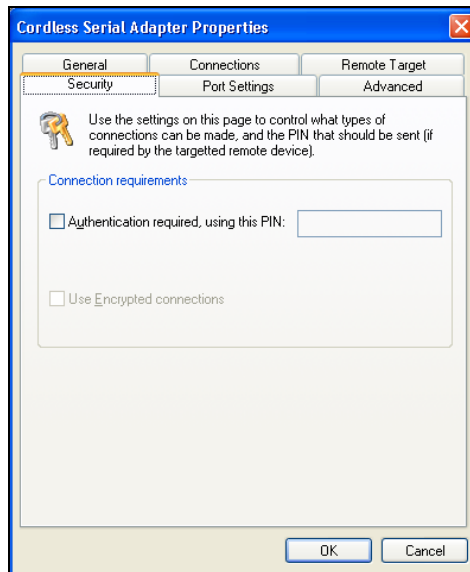


4. Click on the **Remote Target** tab. In the **Connect to** field, enter the *Bluetooth* address or friendly name of the other CSA.



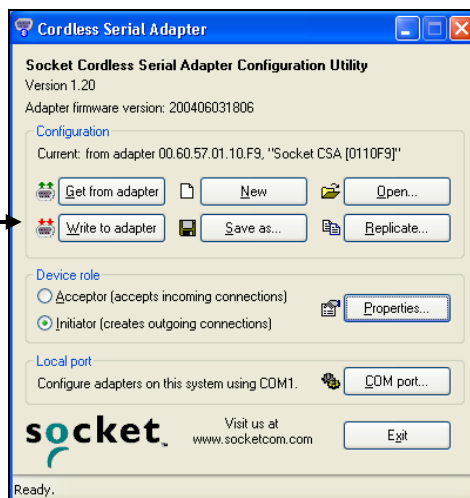
5. Click on the **Security** tab. Make sure all boxes are unchecked.





6. Click on the **Port Settings** tab. Enter the appropriate settings for your devices and applications. All the settings should be the same as the CSA set up as Acceptor.
7. After entering all of the properties, click **OK** to exit the properties screens.
8. Click **Write to adapter** to configure your CSA with the new settings. Unplug the CSA from your computer. Now you are ready to proceed to Step 5 to attach it to the device.

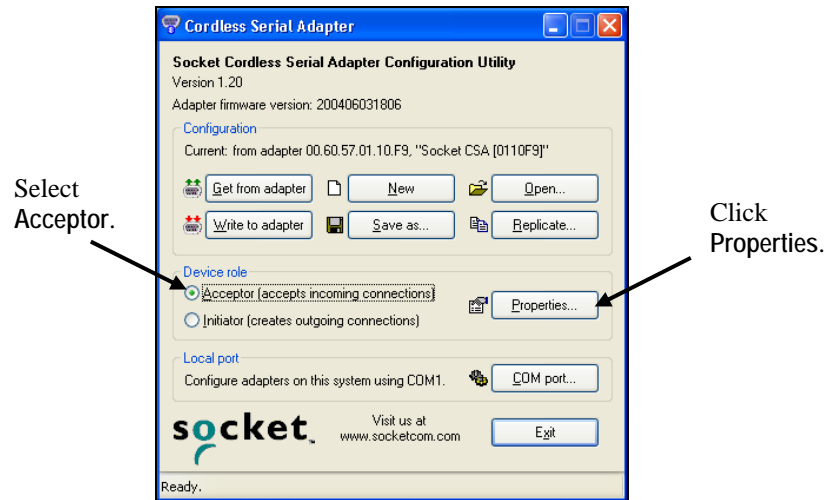
Click  
Write to  
adapter.



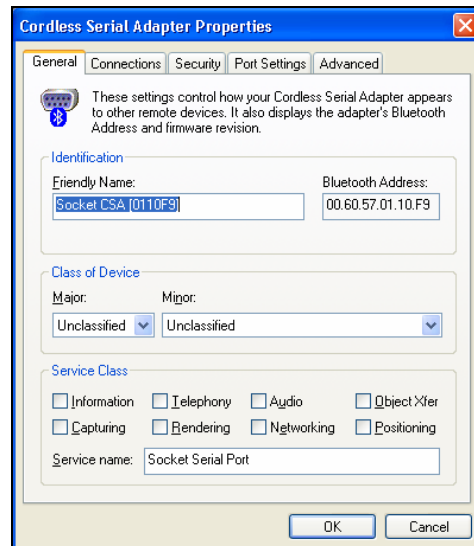
*Important!*  
*If you do not click*  
*Write to adapter,*  
*the CSA will not*  
*be configured with*  
*the new settings!*

## **SCENARIO 2: Set up a CSA as a passive serial *Bluetooth* receiver.**

1. In the Device role box, select **Acceptor**. Click **Properties**.

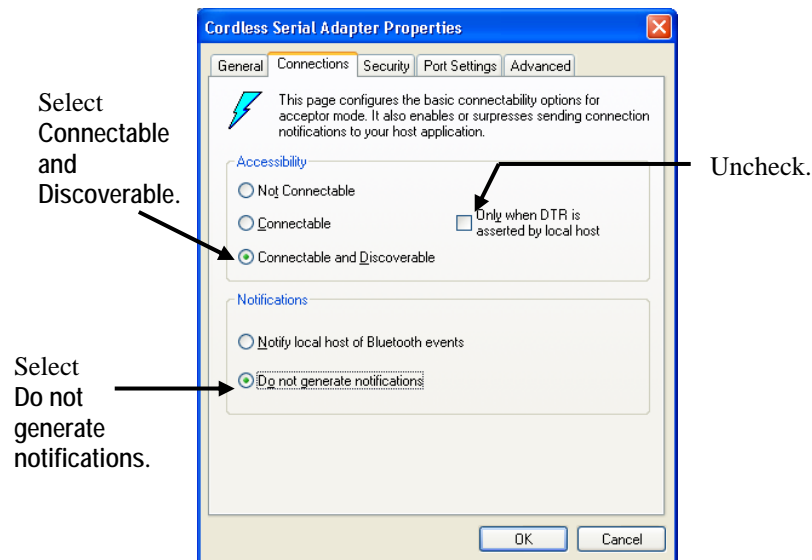


2. In the General screen, change the **Friendly Name** if desired.

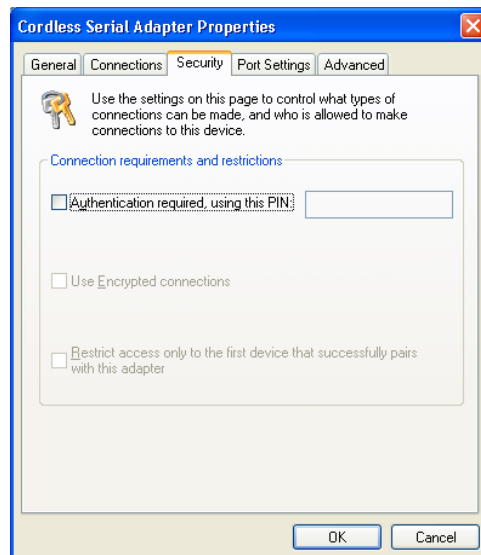


3. Click on the **Connections** tab. Enter the following settings:

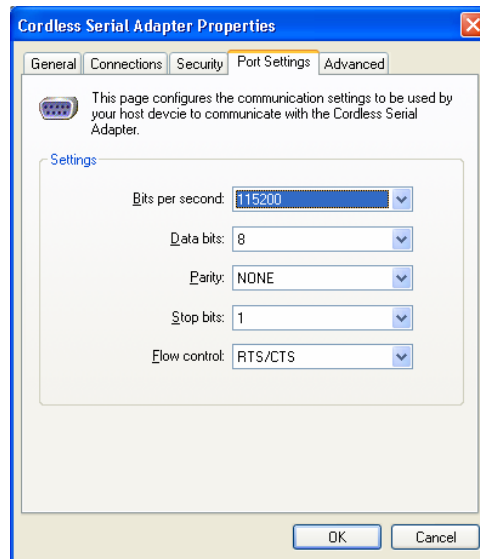
- Accessibility: Select **Connectable and Discoverable**
- Uncheck **Only when DTR is asserted by local host**
- Notifications: Select **Do not generate notifications**



4. Click on the **Security** tab. If the other device requires special security settings, make the appropriate selections.



5. Click on the **Port Settings** tab. Enter the appropriate settings for your devices and applications. Do not change any of the default settings in the Advanced screen. Afterwards, click **OK** to exit the properties screens.

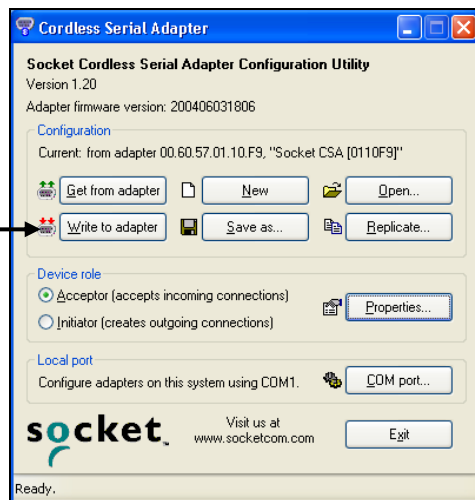


**Important!**  
*Be sure to set the baud rate to match that of the local host serial port!*

*You must also enter the same baud rate in any third party applications used with the CSA!*

6. Click **Write to adapter** to configure your CSA with the new settings.

Click  
Write to  
adapter.



**Important!**  
*If you do not click Write to adapter, the CSA will not be configured with the new settings!*

7. Unplug the CSA from the computer. Now you are ready to attach the CSA to the device.







## STEP 5: Attach CSA to Device

After configuring the CSA, now you are ready to attach it to the serial port of your target device.

### Assemble correct hardware to attach CSA.

Depending on the type of target device you are using and what type of serial port it has, you may or may not need to use additional hardware to correctly attach and communicate via the CSA.

*Note: For more information about Data Communications Equipment (DCE) and Data Terminal Equipment (DTE) devices, please refer to the glossary in Appendix C.*

Target Device Type	Device Type Examples	Additional Hardware Required
DCE with female serial port (with pinholes) 	Most modems and printers and some industrial equipment	None. Attach the CSA directly to the serial port of your device 
DTE with male serial port (with pins) 	Most desktop and notebook computers	Null modem with 2 female serial ports (included) 
DTE with female serial port (with pinholes) 	Miscellaneous industrial equipment	Male gender changer (not included)* Null modem with 2 female serial ports (included) 

*\*Male gender changers are available from most computer stores.*

**CSA connects either automatically or with manual initiation.**

Depending on how you configured the CSA, it may automatically connect with the remote device, or you may need to manually initiate a connection.

In the previous scenarios, the following should happen:

**SCENARIO 1: Set up a CSA pair for cable replacement.**

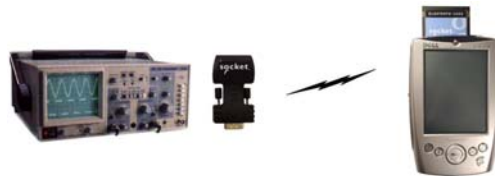
After you attach the CSA to each device (with each powered on), they should automatically try to connect.



*Example: After you attach the initiator CSA to the laptop and the acceptor CSA to the printer, the two CSA's will automatically try to connect.*

**SCENARIO 2: Set up one CSA as passive serial *Bluetooth* receiver.**

After you attach the CSA, your device will be discoverable and ready to accept a *Bluetooth* connection. Perform a device discovery from the initiator device, then commence the connection.



*Example: The industrial equipment with the CSA will be discoverable and ready to accept a *Bluetooth* connection. Perform a device discovery from the *Bluetooth* enabled Pocket PC, then start the connection.*

***Important!***

*Make sure you manually configure your baud rate and other settings in any third-party applications used with the CSA. Auto-detect and Plug and Play functions are not reliable with *Bluetooth*, and the CSA may not work properly unless you manually enter the correct settings.*

## 3 | Configuration Utility

This chapter explains how to use Socket's Cordless Serial Adapter Configuration Utility. Besides covering the basic configuration functions, this chapter will also explain how to use each property screen.

The utility includes the following properties screens:

- General
- Connections — Acceptor mode
- Connections — Initiator mode
- Remote Target (Initiator mode only)
- Security
- Port Settings
- Advanced (Acceptor mode only)

The utility can be accessed by either of two methods:

- Click on the icon on your desktop.

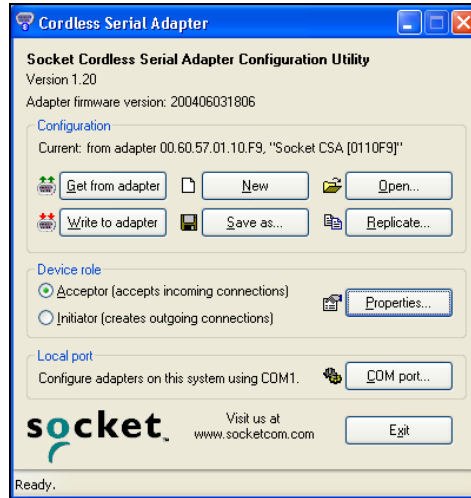


Cordless Serial Adapter

- Click Start | Programs | Cordless Serial Adapter.

*Developers: You can also reprogram the Cordless Serial Adapter manually through AT commands via a terminal device. Refer to the Socket Cordless Serial Command Set, available in the Docs folder on the installation CD.*

## Configuration Functions



**Get from adapter:** Click to read the configuration currently written to the CSA. You can read the current configuration and modify the settings if desired. Checking to see if a configuration can be read is also a good method for verifying that the CSA is properly attached and ready to have a configuration written to it.

**Write to adapter:** Click to physically configure the CSA with the settings entered into the utility.

***Warning! Do not remove the CSA during the writing process, or you can damage the CSA!***

**New:** Click to enter settings for a new configuration, with all the settings starting at default.

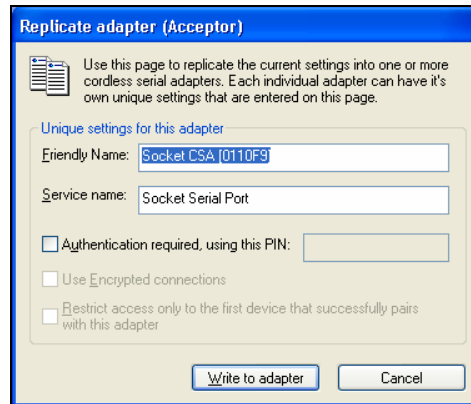
**Open:** Click to open a previously saved configuration.

**Save as:** Click to save a configuration for future use. If you need to use the CSA with multiple devices and/or applications, you may want to save a configuration for each, instead of manually entering settings every time you need to re-configure the CSA.



**Replicate:** Click to make a copy of the current configuration. A screen will appear for you to enter some unique settings (e.g., friendly name, security settings) for this configuration. Enter any necessary settings and click OK.

This function is useful if you have multiple CSA's and need to configure them all with the same settings. The screen varies depending on whether you are in Acceptor or Initiator mode.



**Replicate adapter (Acceptor)**

Use this page to replicate the current settings into one or more cordless serial adapters. Each individual adapter can have it's own unique settings that are entered on this page.

Unique settings for this adapter

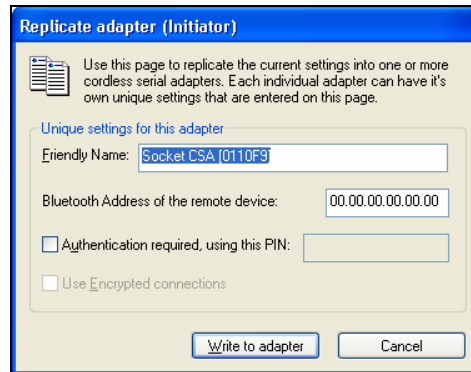
Friendly Name:

Service name:

☐ Authentication required, using this PIN:

☐ Use Encrypted connections

☐ Restrict access only to the first device that successfully pairs with this adapter



**Replicate adapter (Initiator)**

Use this page to replicate the current settings into one or more cordless serial adapters. Each individual adapter can have it's own unique settings that are entered on this page.

Unique settings for this adapter

Friendly Name:

Bluetooth Address of the remote device:

☐ Authentication required, using this PIN:

☐ Use Encrypted connections

## General Properties

The General properties page displays general device identification, device class, and service class information. This page appears for both acceptor and initiator modes.

The screenshot shows the 'Cordless Serial Adapter Properties' dialog box with the 'General' tab selected. The dialog has five tabs: General, Connections, Security, Port Settings, and Advanced. A Bluetooth icon and text explain that these settings control how the adapter appears to other devices and display its Bluetooth Address and firmware revision.

**Identification**

Friendly Name:  Bluetooth Address:

Firmware: xx.yy.zz

**Class of Device**

Major:  Minor:

**Service Class**

☐ Information ☐ Telephony ☐ Audio ☐ Object Xfer  
☐ Capturing ☐ Rendering ☐ Networking ☐ Positioning

Service name:

Buttons: OK, Cancel

**Friendly Name:** If desired, enter a new name. For example, you may want the friendly name to reflect which device you plan to attach it to.

**Class of Device/Service Class:** ADVANCED USERS ONLY!

If the CSA is in Acceptor mode, and the *Bluetooth* device initiating the connection can only detect and/or connect to certain device/service classes, make the appropriate selection(s). For more information, please refer to the *Bluetooth* Assigned Numbers document at:

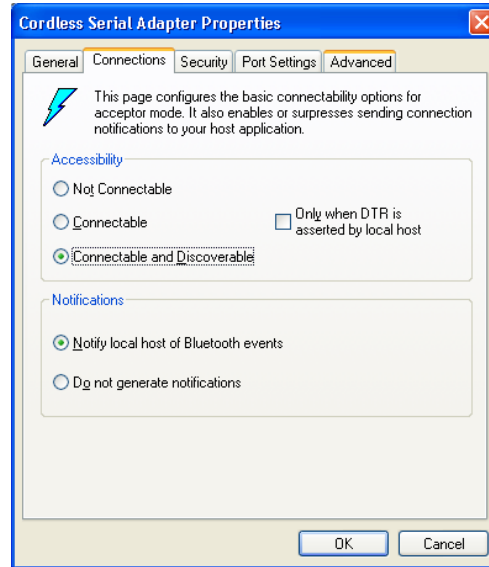
<http://www.bluetoothsig.org/assigned-numbers/baseband.htm>

*Note: If no configuration is loaded, no Bluetooth Address will appear.*

### **IMPORTANT!**

After entering all the adapter properties, click OK to exit the properties screen. Then click **Write to adapter**, or the CSA will not be configured with the new settings!

## Connections Properties — ACCEPTOR MODE



### Accessibility

- **Not Connectable:** Select to prevent the CSA from connecting to other devices.
- **Connectable:** Select to allow other devices to connect to the CSA.
- **Connectable and Discoverable:** Selected by default.
- **Only when DTR is asserted by the local host:** Check ONLY IF you know that the local host sends DTR (Data Terminal Ready) signals. If you are not sure, uncheck the box.

#### *Important!*

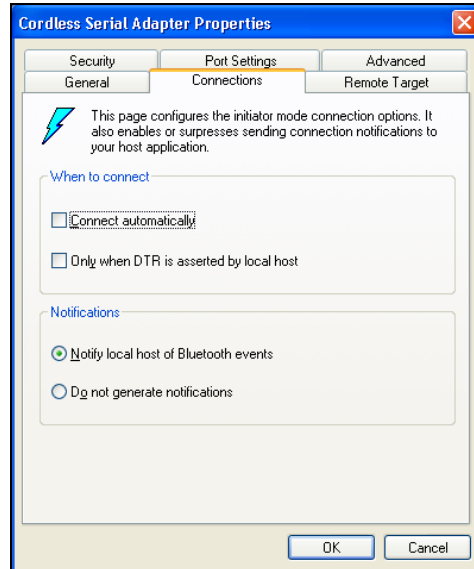
*If you check Only when DTR is asserted by local host, the CSA will only become discoverable and/or connectable after receiving DTR signals from the local host. If you are not sure whether your local host sends DTR signals, or if you have trouble connecting, UNCHECK this box.*

### Notifications

- **Notify local host of Bluetooth events:** Selected by default.
- **Do not generate notification:** Select if your local host cannot accept notifications of Bluetooth events, or if you are not sure whether or not your local host can accept them.

*Note: Notifications may be useful if you are writing custom software for the CSA. Your software would decide how to process notifications.*

## Connections Properties — INITIATOR MODE



### When to connect

- **Connect automatically:** Select for the CSA to connect automatically.

*Note: If you check **Connect automatically**, the CSA will need to receive a software command to initiate a connection.*

- **Only when DTR is asserted by the local host:** Check ONLY IF you know that the local host sends DTR (Data Terminal Ready) signals. If you are not sure, uncheck the box.

### *Important!*

*If you check **Only when DTR is asserted by local host**, the CSA will only initiate connections after receiving DTR signals from the local host. If you are not sure whether your local host sends DTR signals, or if you have trouble connecting, **UNCHECK** this box.*

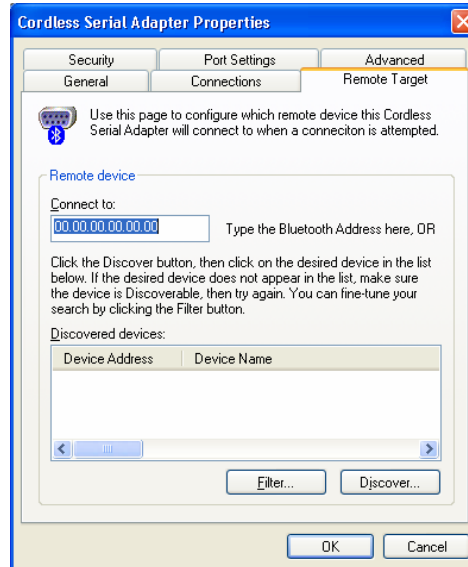
*If you enable **Connect automatically** but disable **Only when DTR is asserted by local host**, the CSA will always automatically try to connect to the target device. If the target device is within range, you may have trouble using the Socket CSA Configuration Utility, because the CSA has already connected to the target device. If you are experiencing these problems, move the target device about 10-30 meters away (outside the Bluetooth range), in order to break the connection.*

#### Notifications

- **Notify local host of *Bluetooth* events:** Select ONLY IF you know your local host can accept notifications of *Bluetooth* events. Some devices cannot accept such notifications and will malfunction.
- **Do not generate notification:** Select if your local host cannot accept notifications of *Bluetooth* events, or if you are not sure whether or not your local host can accept them.

*Note: Notifications may be useful if you are writing custom software for the CSA. Your software would decide how to process notifications.*

## Remote Target (Initiator only)



You have two options for identifying the remote device (the device you wish the CSA to connect to):

### OPTION 1:

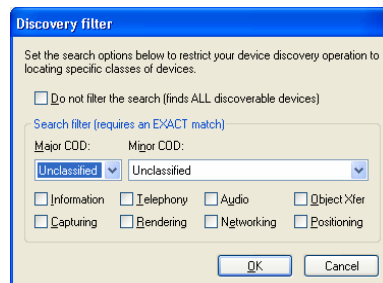
If you know the *Bluetooth* Address or friendly name of the remote device, simply type it in the **Connect to:** field.

### OPTION 2:

If you do not know the *Bluetooth* Address or friendly name of the remote device, perform a device discovery:

#### Device Discovery

1. Click on the **Filter...** button to select the *Bluetooth* device and/or service class to discover.



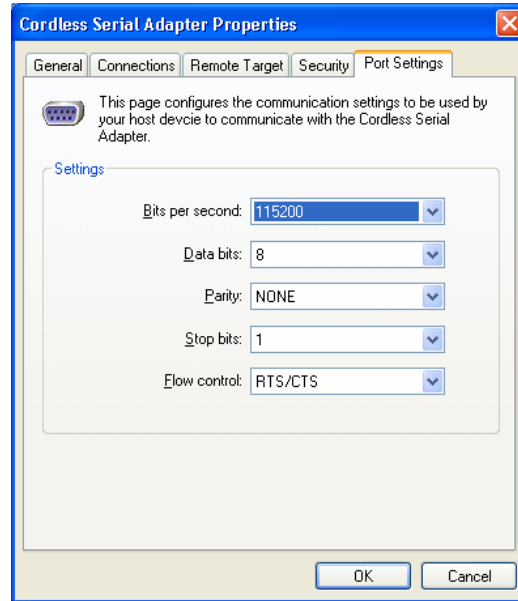
2. Click **Discover...** The utility will search for *Bluetooth* devices in range.



3. In the **Discovered devices** field, click on the *Bluetooth* address of the device you wish the CSA to connect to. It should appear in the **Connect to:** field.

*Note: If you do not know the Bluetooth address or friendly name of the remote device, perform the device discovery with the remote device on, then with the device off, to determine the correct Bluetooth address or friendly name.*

## Port Settings



Select the correct port settings for your remote device.

### **IMPORTANT!**

After entering all the adapter properties, click **OK** to exit the properties screen. Then click **Write to adapter**, or the CSA will not be configured with the new settings!

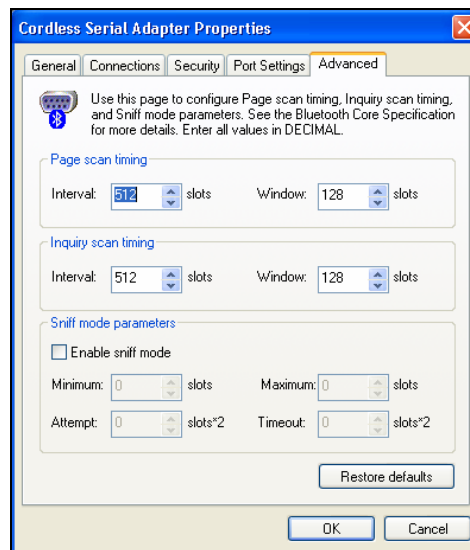


## Advanced (Acceptor only)

### *Important!*

*It is beyond the scope of this User's Guide to explain the effects of the Advanced settings.*

*DO NOT adjust any of the settings in the Advanced screen unless you are an advanced user and completely understand what you are doing!*



### **IMPORTANT!**

After entering all the adapter properties, click OK to exit the properties screen. Then click Write to adapter, or the CSA will not be configured with the new settings!

# Appendix A Specifications

## ***Physical Characteristics:***

**Dimensions:** 65 x 35 x 17 mm

**Total Mass:** 25 g

**Serial Connector:** 9 pin male DB-9, DTE

**Antenna:** Integrated

Class 2 *Bluetooth* module

## ***Baud Rate:***

**Default:** 19,200 bps

**Configurable range:** 1,200-230,000 bps

## ***Environmental Conditions:***

**Operating Temperature:** -20 to +85 °C

**Humidity:** 5% to 95% non-condensing

**Storage Temperature:** -40 to +95 °C

***Serial COM Interface Standard:*** Asynchronous RS-232

## ***Range:***

Approx. 10 m (open office environment)

***Hardware Compatibility:*** Any device with serial communications port.

***Software Included:*** Socket Cordless Serial Adapter Configuration Utility

***Software Compatibility:*** COM port

## ***Software Operating System Support:***

Windows 95 v4.00.950B, 98SE, Me, 2000, XP

***Warranty:*** Three years

## ***Certification/Compliance:***

*Bluetooth* 1.1

FCC: Part 15, Class B

Industry Canada

CE: ETS 300 328, ETS 300 826

C-Tick S.182

***Bluetooth Profiles:*** Serial Port

### *Pin Assignments*

Pin #	Direction	Function
1	IN	DCD — Carrier detect
2	IN	RXD serial data from local host
3	OUT	TXD serial data to local host
4	OUT	DTR Data terminal ready
5		Ground
6	IN	DSR Data set ready
7	OUT	RTS Request to send to local host
8	IN	CTS Clear to send from local host
9		Optional power input (3.3 to 5.0 Vdc)

### *Power Mechanisms:*

The CSA operates from DC power and can be powered via one of two mechanisms:

#### **1. From the Power Jack on the CSA.**

When supplying DC power to the power jack, please note the following:

- The acceptable supply voltage for normal operation ranges from 3.5 to 5.5 VDC, with an Absolute Maximum is 5.6V.
- The Power supply must rise to its final voltage in less than 1mS.
- For specifications of the power jack's physical connector, refer to SMK part number LGP3131-0111 at <http://www.smk.co.jp>.

#### **2. From Pin 9 of the DB-9 Connector.**

The acceptable supply voltage ranges from 3.5 to 12 VDC, with an Absolute Maximum of 12V.

The CSA was not intended to be connected directly to a vehicle's electrical system, although a cigarette lighter adapter/DC charger is permissible.

The typical current requirements are provided in the table below.

*Note: The power supply should be capable of supplying a minimum of 200 mA to ensure proper operation.*

Mode	Average	Max	Units
Connected	40.5	76.5	mA
Connected standby (RS-232 transceiver off)	3.5	53.0	mA
Waiting to connect	39.1	55.9	mA
Waiting to connect standby (RS-232 transceiver off)	2.3	19.1	mA

## 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 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. There is a risk of electrical shock.
- 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. There is danger of fires, electrical shock, damage to the unit, and injury. The product does not contain consumer serviceable components. Should your CSA need service, email: [support@socketcom.com](mailto: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.
- The Cordless Serial Adapter is susceptible to physical damage. Do not exert excessive force on it, or permanent damage can occur!
- If the CSA gives any electromagnetic interference to other devices, either remove it from the host device or unplug it from its power source.
- Do not insert any metal objects such as staples or paper clips into the unit.
- Do not place the unit in direct sunlight, in a closed car, near a heating device or any other location where the temperature may become high.
- Do not expose the unit to high levels of dust.
- Do not use the unit near a microwave oven or in areas where there is a risk of electrical shock, static electricity or electromagnetic interference.

- Do not use the Cordless Serial Adapter in a place with risk of strong vibration.
- Do not use benzene or paint thinner to clean the Cordless Serial Adapter.

### **Antenna Care and Efficient Use**

Do not surround your Cordless Serial Adapter with metal since it will reduce the radio transmission efficiency.

### **Driving**

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

### **Aircraft**

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

### **Radio Frequency Exposure**

Your Cordless Serial Adapter is a radio transmitter and receiver. When in operation, it communicates with a *Bluetooth* enabled computer, printer or other device 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 Serial Adapter is designed to be in compliance with the RF exposure limits set by national authorities and international health agencies<sup>1</sup> when installed or used separately from other antennas or radio transmitters.

---

<sup>1</sup> 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 Glossary

A, B, C	
<b>Acceptor</b>	A <i>Bluetooth</i> enabled device that accepts an action (e.g., a connection) from another <i>Bluetooth</i> enabled device, known as the initiator
<b>AT command</b>	The de facto standard language for controlling modems. The AT command set was developed by Hayes and is recognized by virtually all personal computer modems
<b>Authentication</b>	Verification of identity as a security measure. Passwords and digital signatures are forms of authentication
<b>Bluetooth</b>	Short-range, low power wireless technology used primarily for cable replacement between devices. To learn more about <i>Bluetooth</i> and how it works, read Socket's technology briefs online at: <a href="http://www.socketcom.com/support/learn.asp">http://www.socketcom.com/support/learn.asp</a> .
<b>COM port</b>	A serial communications port
<b>CSA</b>	Socket Cordless Serial Adapter with <i>Bluetooth</i> Wireless Technology
D, E	
<b>data bit</b>	Bits that contain information, as opposed to bits used for starting, stopping, or error checking
<b>Data Communications Equipment (DCE)</b>	In serial communications, a device between the communication endpoints that is responsible for facilitating the communications process. A modem is the most common kind of DCE
<b>Data Terminal Equipment (DTE)</b>	In serial communications, a device at the endpoint of the communications path. The CSA is a DTE. Other examples of DTE are terminals, computers, protocol converters, and multiplexors
<b>Data Terminal Ready (DTR)</b>	A signal from a communications program to a DCE, which indicates that the program is loaded and ready to run
<b>device class</b>	A parameter that indicates the type of device and which types of services are supported. The class is reported during a device discovery
<b>discoverable</b>	Capable of being found by other <i>Bluetooth</i> enabled devices during the device discovery phase
<b>encryption</b>	The encoding of data to make it unreadable by unauthorized users

<b>F, G, I</b>	
<b>female serial port</b>	A serial port with pinholes
<b>flow control</b>	The control of transmission between communications devices, to make sure the sender does not send data until the receiver is ready to receive it
<b>friendly name</b>	A name you can assign to a <i>Bluetooth</i> enabled device, e.g., “Lesley’s Computer.” If the <i>Bluetooth</i> enabled device is discoverable, the friendly name is provided to other <i>Bluetooth</i> enabled devices during device discovery
<b>gender changer</b>	An adapter that changes a serial connector from male to female, or vice versa
<b>initiator</b>	A <i>Bluetooth</i> enabled device that initiates an action (e.g., a connection) to another <i>Bluetooth</i> enabled device, known as the acceptor
<b>inquiry scan</b>	A mode that a remote device enters when advertising that a service is available
<b>L, M, N, P</b>	
<b>local host or local device</b>	The device that the CSA is attached to
<b>male serial port</b>	A serial port with pins
<b>null modem</b>	An adapter that enables two RS-232 DTE devices to communicate with each other without a regular modem or other DCE device between them
<b>page scan</b>	A mode in which a <i>Bluetooth</i> enabled device analyzes pages by other <i>Bluetooth</i> enabled devices to determine if any of the pages are addressed to it. Before connecting to a remote device, a local device must get the remote device's attention by paging the remote device.
<b>parity</b>	An integer's property of being odd or even. Parity checking is used to detect errors in binary-coded data
<b>R, S</b>	
<b>remote device</b>	The other <i>Bluetooth</i> enabled device that the CSA connects to
<b>RS-232</b>	(Recommended Standard-232.) An Electronics Industries Association standard for asynchronous serial lines, used commonly for modems, computer terminals, and serial printers. RS-232 uses a 25-pin or 9-pin connector
<b>Serial Port Profile</b>	A serial communications service offered by a <i>Bluetooth</i> enabled device, which must be implemented as defined by the <i>Bluetooth</i> SIG. For two <i>Bluetooth</i> enabled



	devices to interoperate in serial communications, both devices must have this profile
<b>service class</b>	The type of service that a <i>Bluetooth</i> enabled device can provide to other <i>Bluetooth</i> enabled devices
<b>stop bit</b>	In serial communications, where each bit of the message is transmitted in sequence, stop bits are extra "1" bits which follow the data and any parity bit. They mark the end of a unit of transmission (normally a byte or character)

## Appendix D Troubleshooting

**SYMPTOM:** The Configuration Utility is not working properly (e.g., I cannot read the settings from the CSA) and/or I get an error message that says “Unable to open the COM port.”

POSSIBLE REASONS	SOLUTION
The CSA is not attached properly to your computer.	Properly insert the CSA, pushing it into your computer’s serial port as far as it will go.
The CSA does not have power. The LED is not blinking.	Use the AC adapter to connect the CSA to an electrical outlet.
The CSA currently is configured with automatic connections and DTR disabled, and the remote device is within range. Thus, you are currently connected to the remote device.	Remove the remote target from range.
ActiveSync has control of the port where the CSA is attached.	In the ActiveSync connection settings, make sure a serial cable connection is not allowed at the COM port where you attached the CSA.
Your computer is already connected to another device using the same COM port that the CSA is trying to access.	Disable the conflicting connection.

**SYMPTOM:** The CSA is not communicating properly with my third party software.

POSSIBLE REASONS	SOLUTION
You configured the CSA and/or the third party software incorrectly.	Make sure the CSA and third party software are set for the same baud rate and other settings.
You are using auto-detect and Plug and Play functions.	Auto-detect and Plug and Play functions do not work reliably with <i>Bluetooth</i> . Make sure you manually enter the baud rate and other settings to match those of your local host device’s serial port.
Various possible reasons, such as incompatible hardware.	If your hardware responds to standard AT commands, set up a test connection with Windows Hyper Terminal using the CSA COM port as the connecting modem.

# Appendix E Technical Support

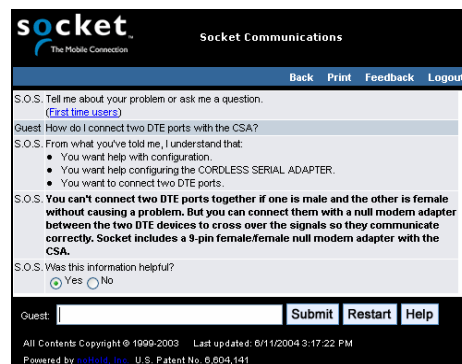
If you have trouble installing or using the Cordless Serial Adapter with *Bluetooth* Wireless Technology, Socket has two technical support resources to help you. Please note that technical support is available in English only.

## 1. Socket On-Line Support (SOS)

Socket On-Line Support is an automated technical support program that interacts with you to provide the answers you need. SOS provides immediate service and is the best place to start for technical support. To access SOS, visit:



<http://www.socketcom.com/support>. Click on the SOS icon.

A screenshot of the Socket On-Line Support (SOS) web interface. The header shows the 'socket' logo and 'Socket Communications'. Below the header is a navigation bar with 'Back', 'Print', 'Feedback', and 'Logout' links. The main content area displays a conversation between the user and the SOS system. The user asks: 'How do I connect two DTE ports with the CSA?'. The SOS system responds with a list of options: 'You want help with configuration.', 'You want help configuring the CORDLESS SERIAL ADAPTER.', and 'You want to connect two DTE ports.'. The SOS system then provides detailed instructions: 'You can't connect two DTE ports together if one is male and the other is female without causing a problem. But you can connect them with a null modem adapter between the two DTE devices to cross over the signals so they communicate correctly. Socket includes a 9-pin female/female null modem adapter with the CSA.'. At the bottom, there is a 'Guest' field, a 'Submit' button, and a 'Restart' button. The footer contains copyright information: 'All Contents Copyright © 1999-2003 Last updated: 6/11/2004 3:17:22 PM' and 'Powered by outsoft, Inc. U.S. Patent No. 6,604,141'.

If SOS cannot solve your problem, end the session by submitting an email inquiry to a Socket technical support engineer as prompted. Your interactive session will be saved for reference.

## 2. Human Technical Support

***IMPORTANT! To obtain personal technical support from a Socket technical support engineer, you must first register your product online at <http://www.socketcom.com/prodreg>.***

Immediately after product registration, you will be given the option to submit a problem. Click on this option to submit an email inquiry to a technical support engineer. If we cannot resolve your inquiry via email, we can arrange for a support engineer to call you at a specific time.

## 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 Serial Adapter: Three 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, email [info@socketcom.com](mailto:info@socketcom.com).

## **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 Serial Adapter with *Bluetooth* Wireless Technology 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 +1-510-744-2720.

### **Radio Frequency Interference Requirements**

This device complies with part 15 of the FCC rules and Industry Canada RSS 210. 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.

**CAUTION:** Change or modification not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment is ETS 300 328-2, ETS 301 489-1 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.

In order for this device to comply with FCC rules, under the provision of Part 15.247(b)(c), it must operate in a manner that ensures that the public is not exposed to radio frequency levels in excess of the Maximum Permissible Exposure (MPE) limits.

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, obtainable from Health Canada’s website: [www.hc-sc.gc.ca/ehp/ehd/catalogue/rpb.htm](http://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:

- 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.

#### **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.

NOTE: To comply with FCC and Industry Canada exposure requirements, this device is approved for operations in a user’s hand when there is a distance of 20 cm or more between the device antenna and the user’s body.

#### **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:***

- R&TTE 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

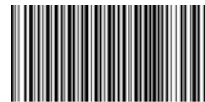
Note that the radio frequency band used by this equipment has not been harmonized in all the EU. Applicable area (nation): Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden, Switzerland, The Netherlands, United Kingdom

**Product Disposal**

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







6410-00207 C