
BLUETOOTH CORDLESS SERIAL ADAPTER USER MANUAL



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INTRODUCTION

The Socket Cordless Serial Adapter (CSA) will eliminate the need for a serial cable between your laptop, or PDA, and Sutron Data loggers. The maximum distance for a connection is 10 meters, depending on any obstacles between the two devices. This makes it easy to work on data loggers that are not easily accessible, such as data loggers installed on a tower. This would also make troubleshooting sensors connected to the data logger easier, as you could be at the sensor and still access the data logger menus.

This document will guide the user through the steps to install and use the Bluetooth device with Sutron data loggers, as well as provide some troubleshooting when problems occur.

Ordering information Models 6661-1258-2, 6661-1258-3, 6661-1258-4

A **6661-1258-2** is the basic Bluetooth CSA device. This is used when:

1. Connecting to a Satlink II
2. Connecting to an Xpert/Xlite, using the AC adaptor for power
3. Or, when making your own custom cables (see APPENDIX B)

You will receive the following items with the basic Bluetooth CSA:

- Sutron CDROM with
 - o Sutron Bluetooth CSA User Guide (This document)
 - o CSA configuration files for Sutron Data Loggers
- Socket CSA
- AC power adaptor
- Null modem adaptor
- Socket CDROM

A **6661-1258-3** is used when connecting to an Xpert/Xlite COM ports 2 or greater, such that the CSA draws power from pin 9. In addition to what is included with the basic Bluetooth CSA, you will receive the following item:

- 6411-1567-1 Xpert null-modem cable

A **6661-1258-4** is used when connecting to an 8210 data logger. This is the cable required to "wake-up" the CSA and 8210 and to provide power through pin 9. In addition to what is included with the basic Bluetooth CSA, you will receive the following item

- 6411-1568-1 8210 cable

OVERVIEW

Most new PDAs, and some newer laptops, do not come with a standard serial port, but do come with a built-in Bluetooth device. One of the features available through Bluetooth is a virtual serial connection. This makes it easy to make wireless connections to data loggers, as you only need to purchase an adapter for the data logger side. Even if your particular PDA or laptop does not have built-in Bluetooth, it can be easily added through USB "Dongles" like the Belkin® Bluetooth USB adapter, or one of the many other vendors that are available.

The advantages of using a Bluetooth serial connection include:

- o Wireless connection, no need to be directly at the data logger
- o Security, a pin code can be used to prevent unauthorized access
- o Ease of setup, Bluetooth serial ports are easy to setup and use.

The only disadvantage to using the Bluetooth serial device is the high current required to run it, around 41mA average, at +5 volts. At sites where AC power is available, this is not a big concern, but for sites where a battery and solar panel are used, this should be taken into account when performing the power budget.

One option for saving power would be to power down the Bluetooth CSA when not in use and to only power it when communications are needed. This is done by physically removing the device or removing the AC adapter.



INSTALLING AND CONFIGURING CSA

The steps required to use the CSA are as follows:

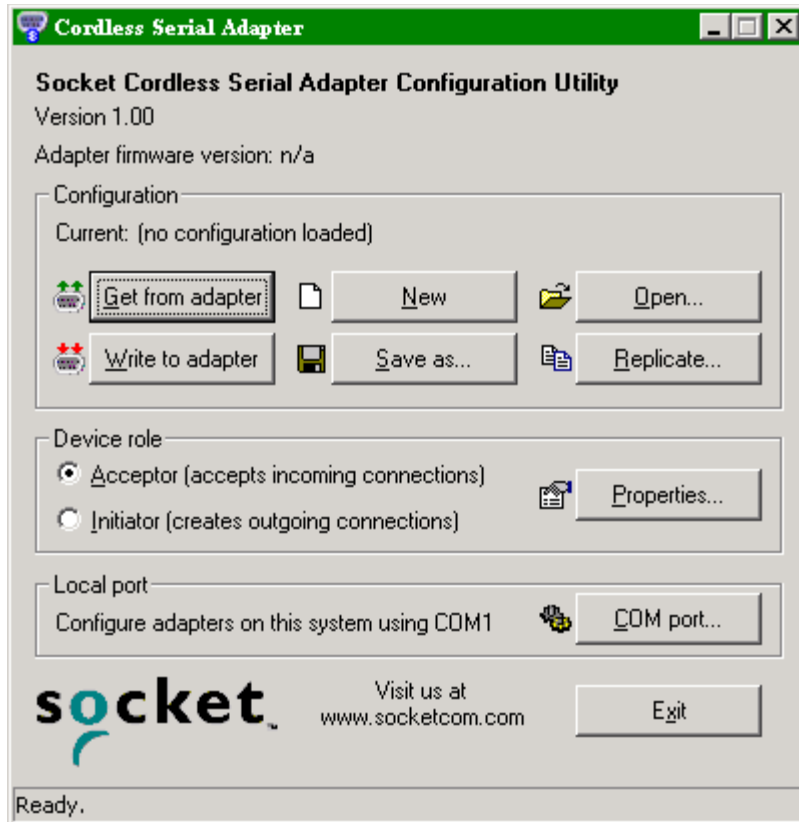
1. Configure software/hardware settings in the CSA
2. Power the CSA
3. Connect the CSA to the data logger
4. Install Bluetooth device on PDA/laptop (if not already included)
5. Running the appropriate software on the PDA/laptop (Xterm, SatComm, etc.)

Configure CSA for appropriate data logger

To configure the CSA, you will need to install the Socket Cordless Serial Adapter Configuration Utility onto a PC or laptop, this can be found on the Socket CDROM, or downloaded from the Socket website:

http://www.socketcom.com/support/support_cordless.asp?Type=Serial%20Adapter

Once the software is installed, apply power the CSA with the provided AC adapter, and connect it to a serial power through a null modem connector. Then run the utility, you will get a screen like this:

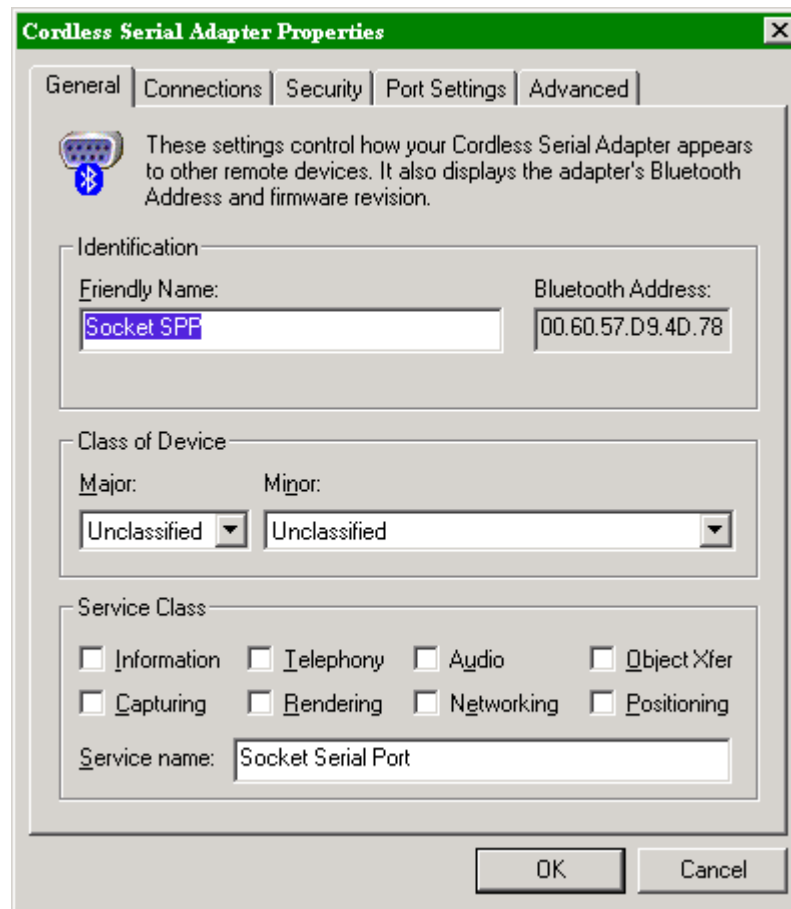


Click the COM port and select the COM port you have the CSA connected to, then click "Get from adapter" to get the current settings. Once this is done, and the device can successfully get the current configuration, click the "Open" button. Then select the appropriate CSA setup file from the Sutron Software cd:

- o socketSetupSatlink8210.csa for Satlink II or 8210
- o socketSetupXpert.csa for the Xpert/Xlite

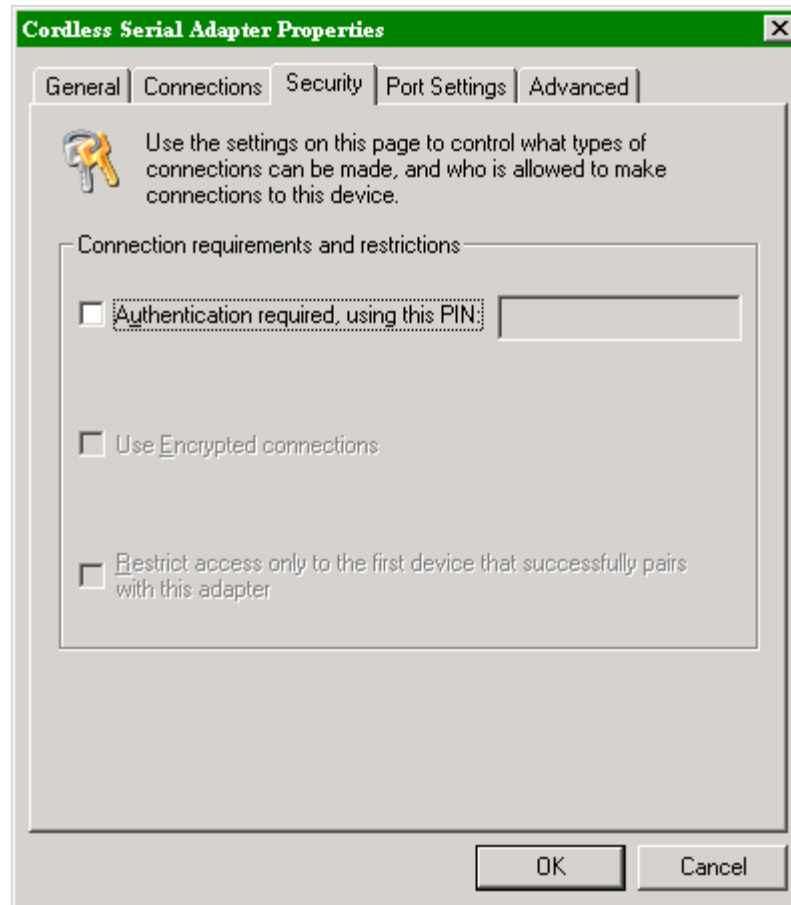
Then click the "Write to adapter" button to send over the setup.

That is all that is needed to configure the adapter, but you may want to go one step further to give the adapter a unique name or security code. At a minimum, a unique name should be given to each device. To do this, click the "Properties" button to get a screen like this:



The "Friendly name" is how the device is identified in a Bluetooth network. This could be the site name or serial number, or any unique name.

The Security tab provides a way to "secure" the site. This is a simple way to force anyone wishing to connect to the CSA to enter a pin number. Simply check the "Authentication required..." and enter a pin number.



If you decide to make these changes, click "OK, then click the "Write to adapter" to save the changes.

For more options, refer to the CSA User guide provided on the Socket CDROM or from their website.

Connecting and using with a SATLINK II

Once the CSA has been configured using the appropriate CSA configuration file, it is ready to be used with the Satlink II.

Powering the CSA

The Satlink II will provide +5 volts power to the CSA through pin 9, so no AC adapter is required. Connect the CSA directly to COM1, the blue LED should start flashing.

Using a PDA with SatComm

1. Run the Bluetooth manager on the PDA.
2. Browse Bluetooth devices and make sure you can see the CSA device.
3. Go to the Bluetooth settings screen and scroll to the "Serial port"
4. Note the "Outbound COM port".
5. Start SatComm.

If the SatComm COM port had previously been set to the Bluetooth COM port, you will see a list of available Bluetooth devices, click the device to start the connection.

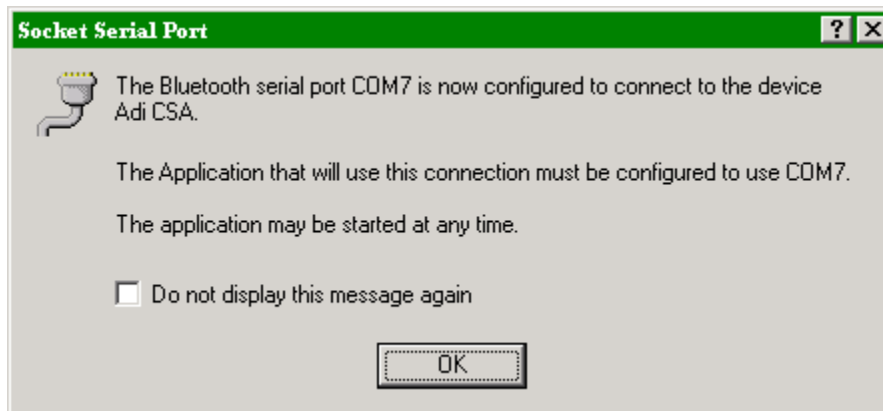
6. If the COM port has not yet been set to the Bluetooth port, click "options".
7. Select the port noted in step 4.
8. Make sure "Bluetooth mode" is checked.
9. Click "Tools/Get from Satlink" to get the current setup in the Satlink.

That's all there is to it! You can now work as if you work connected directly to the Satlink.

Using a laptop (or PC) with Satlink Communicator

1. Go to "My Bluetooth Places".
2. Go to "Entire Bluetooth network".
3. Find the CSA device, then right click on it.
4. Select "Connect Socket Serial Port" from the right-click menu.

Once the connection is established, you should get a message like this:



5. Note the COM port number and then click the OK button.
6. Run the Satlink Communicator program, and select the COM port noted above.

That's all there is to it! Now, the communicator will work just as if you were connected directly to the Satlink.

Connecting and using with a Xpert/Xlite

Once the CSA has been configured using the appropriate CSA configuration file, it is ready to be used with the Xpert/Xlite. Connect the CSA either directly to COM 1, or through a null-modem adapter/cable to any of the other COM ports

Powering the CSA

The AC power adapter must be used to supply power to the CSA when using COM 1. This is because COM 1 does not provide power out pin 9.

The AC power adapter may be used on COM ports 2 and above if using a standard null-modem adapter, this is because a standard null-modem adapter does not pass pin 9 (power pin). To use the pin 9 for power, set the COM PORT jumpers to provide +5 volts, then use the Sutron cable Part Number 6411-1567, or a custom made cable (See APPENDIX B).

Using a PDA with Xterm

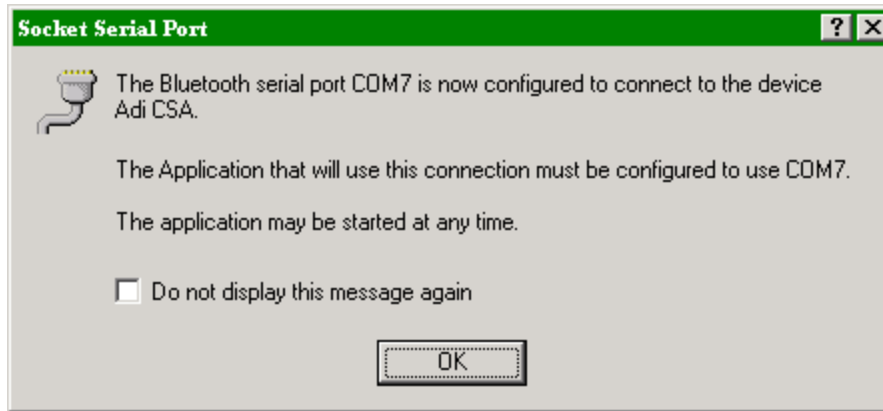
1. Run the Bluetooth manager on the PDA.
2. Browse Bluetooth devices and make sure you can see the CSA device.
3. Go to the Bluetooth settings screen and scroll to the "Serial port"
4. Note the "Outbound COM port".
5. Run Xterm.
6. Select the COM port as noted in step 4.
7. Leave all other settings at default, and then click OK.
8. Bluetooth Browser window will appear, select the CSA device.

That's all there is to it! Now, Xterm will work just as if you were connected directly to the Xpert/Xlite.

Using a laptop/PC with Xterm

1. Go to "My Bluetooth Places".
2. Go to "Entire Bluetooth network".
3. Find the CSA device, then right click on it.
4. Select "Connect Socket Serial Port" from the right-click menu.

Once the connection is established, you should get a message like this:



5. Note the COM port number and then click the OK button.
6. Run Xterm.
7. Select the COM port noted in step 5, enter a user name/password if needed.
8. Click OK.

That's all there is to it! Now, Xterm will work just as if you were connected directly to the Xpert/Xlite.

Connecting and using with an 8210

Once the CSA has been configured using the appropriate CSA configuration file, it is ready to be used with the 8210. The CSA must be connected with a Sutron cable part number 6411-1568, or with a custom made cable (See APPENDIX B).

Powering the CSA

The cable 6411-1568 will provide the pin 9 voltage from the 8210 to the CSA for power, simply set the jumper inside the 8210 to provide power to pin 9 of the RS-232 port. **NOTE: The voltage on the 8210 may exceed the recommended maximum +12 volts due to some battery chargers providing +13.8 volts. It is therefore recommended not to leave the CSA connected for extended periods (30 minutes typically is all that is needed to perform most tasks).**

Using a PDA with a third party terminal program

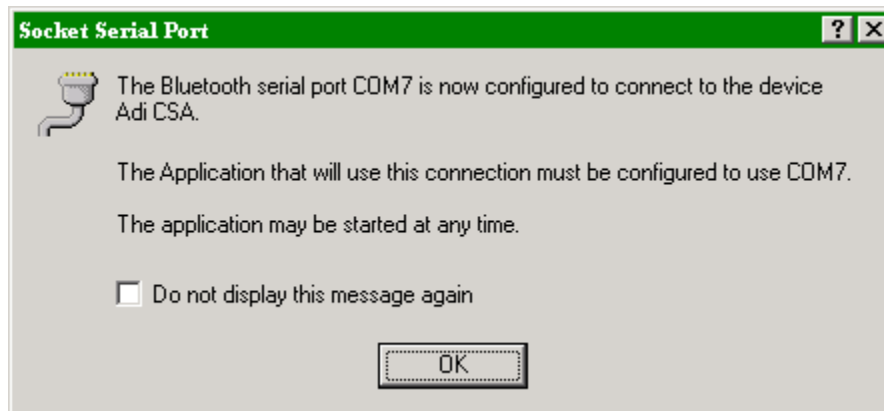
1. Run the Bluetooth manager on the PDA.
2. Browse Bluetooth devices and make sure you can see the CSA device.
3. Go to the Bluetooth settings screen and scroll to the "Serial port"
4. Note the "Outbound COM port".
5. Start the third party terminal program.
6. Set the terminal settings to 9600,8-N-1.
7. Select the COM port as noted in step 4.
8. Start the session.

That's all there is to it! You can now work as if you work connected directly to the 8210.

Using a laptop (or PC) with Satlink Communicator

1. Go to "My Bluetooth Places".
2. Go to "Entire Bluetooth network".
3. Find the CSA device, then right click on it.
4. Select "Connect Socket Serial Port" from the right-click menu.

Once the connection is established, you should get a message like this:



5. Note the COM port number and then click the OK button.
6. Run the WTs8210 program, and select the COM port noted above.

That's all there is to it! Now, the WTs8210 program will work just as if you were connected directly to the 8210.

APPENDIX A: TROUBLESHOOTING

The Socket CSA provides a status LED to show what is going on, this can be used when communications fail, to see what is going on with the device. When the adapter has power, the LED should begin flashing blue. At other times the LED will flash as described below:

- Once per 2 seconds Not discoverable.
- Twice per 2 seconds Waiting to connect.
- Three times per 2 seconds Connected.

APPENDIX B: CUSTOM CABLES

Sutron provides two cables for use with the CSA, these are include with the purchase of the -3 and -4 models. If you wish to make these cables yourself, below is the information for doing so.

The 6411-1567 is a DB-9 F-F null-modem cable that passes pin 9 through. This is for use with the Xpert/Xlite COM ports 2 and above, with the jumper set to provide +5 volts on pin 9.

Here is the wiring diagram:

DB-9 Pin (Side A)		DB-9 Pin (Side B)
-	X	-
3	-	2
2	-	3
7	-	8
8	-	7
5	-	5
1 and 6	-	4
4	-	1 and 6
9	-	9

The 6411-1568 is a DB-9 M-F cable that passes pin 9 from the 8210, over to pin 1 and pin 9 of the Bluetooth CSA. This "wakes up" the CSA, so that it knows there is a connection to the serial port and provides power to the CSA. Without this connection, both the 8210 and the CSA do not think there is a connection, and will not open their serial ports.

Here is the wiring diagram:

DB-9 Pin (Male connector Side 8210)		DB-9 Pin (Female Connector Side CSA)
-	X	-
9	-	1 & 9
2	-	2
3	-	3
4	-	4
5	-	5
6	-	6
7	-	7
8	-	8