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# **RAD7 Bluetooth Connectivity**

## **Configuring and using the SD1000 Serial to Bluetooth Adaptor**

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### **Introduction**

The **Parani SD1000 Serial to Bluetooth Adaptor** can facilitate the transmission of radon data between a DURRIDGE RAD7 radon monitor and a Bluetooth-enabled Macintosh or Windows computer running CAPTURE software. This makes it faster and more convenient to perform graphing and real-time data analysis. The SD1000 adaptor has been tested across distances exceeding 40 meters, through walls and trees, and it is known to support 100 meter communication along uninterrupted lines of sight. It can be powered by either an AC adaptor or a 3.7V Li-ion battery, which is rated for 16 hours of continuous use.

### **Configuring the SD1000 Adaptor**

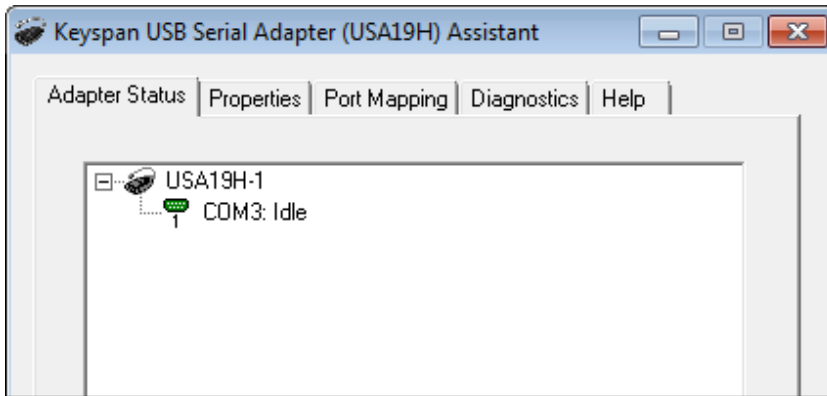
DURRIDGE Customers who purchase the Parani SD1000 adaptor with a RAD7 will receive the adaptor preconfigured for use with the RAD7. If these settings are modified, or if the SD1000 adaptor is purchased separately from the RAD7, it may be necessary to configure the adaptor as described below. If configuration is not necessary, skip directly to “Using the SD1000 Adaptor with the RAD7”, on page 4.

### **Required items**

- Windows computer with serial port or Keyspan Serial Adaptor (included with RAD7)
- ParaniWin software for Windows, available from the DURRIDGE Software CD, or from: [http://durridge.com/software\\_downloads/drivers\\_and\\_utilities/setup\\_ParaniWin-v1.0.6.exe](http://durridge.com/software_downloads/drivers_and_utilities/setup_ParaniWin-v1.0.6.exe)
- Parani SD1000 Serial to Bluetooth Adaptor and power source

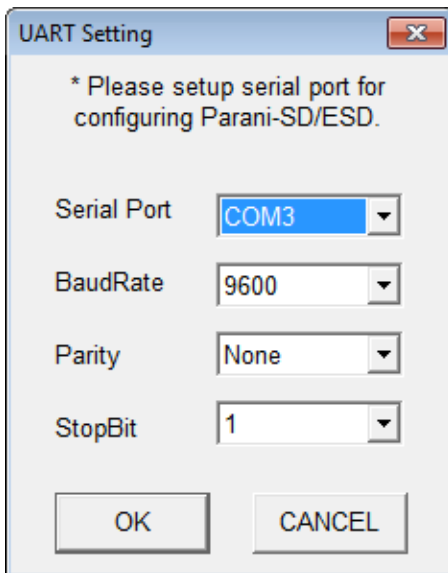
### **Procedure**

1. Make sure the Parani SD1000 Serial to Bluetooth Adaptor is powered OFF and make sure that all of its DIP Switches are set to the OFF position.
2. Connect the SD1000 adaptor to the PC. If your computer does not have a serial port, add one using the Keyspan Serial Adaptor (and make sure to install the appropriate drivers, available on the DURRIDGE USB stick or from [http://www.durridge.com/software\\_drivers.shtml](http://www.durridge.com/software_drivers.shtml)).
3. If you are using a Keyspan Serial Adaptor, launch the Keyspan Serial Assistant utility, shown in Figure 1, on page 2, and check to see which COM Port the Keyspan Serial adaptor is connected to. (For example, it may be COM3 or COM4).



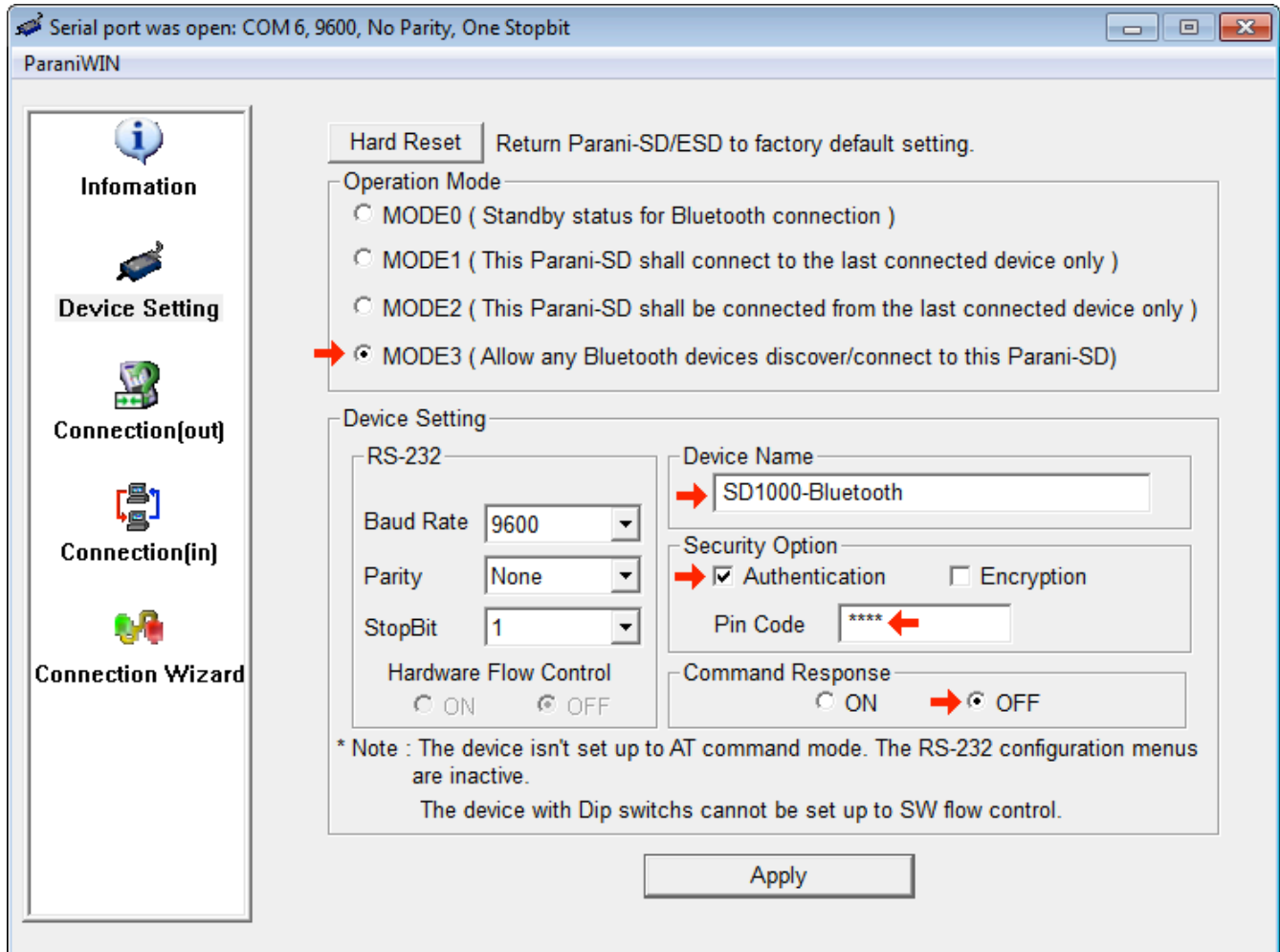
**Figure 1: The Keyspan Serial Assistant:** This utility reveals the name of the COM port that has been created by the USB to Serial Adaptor. In this case, it is “COM3”.

4. Connect the SD1000's power cord and slide its power switch to the ON position.
5. Install and launch the ParaniWin application. Upon launching the program, a dialog box titled UART Setting will appear, prompting you to specify a number of parameters, as shown in Figure 2, below. Please choose the following:
  - Set the Serial Port to the appropriate setting, as determined in Step 3, above.
  - Set the Baud Rate to 9600.
  - Set the Parity None.
  - Set the StopBit to 1.



**Figure 2: The ParaniWin UART Setting Dialog:** This dialog appears when launching ParaniWin. It is used to locate the SD1000 Adaptor so that it can be configured.

6. After clicking OK, select the Device Setting panel, as shown in Figure 3, on page 3. Set the controls as follows:
  - Set the Operation Mode to MODE3 (Allow any Bluetooth devices to discover/connect to this Parani-SD)
  - Set the Device Name to "SD1000-Bluetooth" or a similarly recognizable name.
  - Check the Authentication checkbox, and enter 0000 in the Pin Code field. Uncheck the Encryption checkbox.
  - Set Command Response to OFF. This makes it possible to for the SD1000 adaptor to operate without disrupting the RAD7. **Notice: If Command Response is left ON, the RAD7 may become corrupted and inoperable.**
  - Make sure the Baud Rate is 9600, Parity is None, and Stop Bit is 1.



**Figure 3: The ParaniWin Device Setting Panel:** This panel is used to configure the SD1000 adaptor. Controls marked with red arrows must be modified from their factory defaults in order for the SD1000 to function properly with the RAD7.

7. After specifying the correct settings, click the Apply button, and wait for the settings to be saved.
8. Exit ParaniWin. Switch OFF the SD1000 adaptor and unplug it from the computer. It is now ready to use with a RAD7.

## Using the SD1000 Adaptor with the RAD7

### Preparation:

If your computer does not have built-in Bluetooth connectivity, obtain a USB Bluetooth dongle and install any necessary drivers. Then restart the computer.

### Pairing the SD1000 to the Computer:

1. Plug the Parani SD1000 Serial to Bluetooth Adaptor into the RAD7's RS232 DB9 socket. Make sure the SD1000 adaptor's power cord is attached or its battery is installed and charged, and slide the SD1000 adaptor's power switch ON.
2. Make the computer "discover" the SD1000 adaptor:
  - On Windows, enter the Control Panel and select Devices and Printers. Click Add a Device and select the SD1000-Bluetooth adaptor. When prompted to enter a pairing code, enter 0000. When the connection process is complete, a notification will appear saying "Your device is ready to use."
  - On the Macintosh, open System Preferences and select Bluetooth, then click the Plus (+) icon and select the SD1000 adaptor. The system will automatically connect with the password 0000.
3. A virtual serial port (aka COM port) will be created on your computer, making it possible for CAPTURE to connect the the RAD7 via Bluetooth.

### Operation:

1. Power the RAD7 ON. Using the RAD7 keypad, select >Special SetBaud and set the RAD7's baud rate to 9600.
2. Plug the Parani SD1000 Serial to Bluetooth Adaptor into the RAD7's RS232 DB9 socket. Make sure the SD1000 adaptor's power cord is connected or its battery is in place, and slide the SD1000 adaptor's power switch to ON.
3. Launch the DURRIDGE CAPTURE software (available on the DURRIDGE Software CD or from <http://www.durridge.com/capture/>) on your Windows or Macintosh computer. CAPTURE may begin scanning for RAD7s automatically. If this option is disabled, click the Scan For RAD7s button near the lower right corner of CAPTURE's main window.
4. CAPTURE should detect the Bluetooth-enabled RAD7. If it does not, verify that the computer has discovered the SD1000 adaptor, as described in the Discovery section above.
5. Once the Bluetooth-enabled RAD7 has been detected, it will be possible to proceed with the standard CAPTURE operations, including downloading and graphing RAD7 data. For more information on using CAPTURE, please refer to the CAPTURE User's Manual:  
HTML Version: [http://www.durridge.com/software\\_downloads/misc/capture\\_help/](http://www.durridge.com/software_downloads/misc/capture_help/)  
PDF Version: <http://www.durridge.com/documentation/Capture%20Manual.pdf>

*Note: If the SD1000 adapter is turned off at any point after it has been discovered, restart the computer and turn the SD1000 adaptor back on before performing any further CAPTURE operations. Otherwise, CAPTURE may freeze while attempting to communicate with an unavailable port.*