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Using the Parani SD1000U with the Geomax Long-Range Bluetooth Handle and Carlson SurvCE™


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In this document we are using the Carlson Surveyor+ data collector and the Carlson CR2/CR5 Robot with the Parani SD1000U and the ZRT81 Long-Range Bluetooth Handle. The following document will describe how to configure your radios, software and hardware. Some steps may vary if you have other hardware.

Configuring the Carlson CR2/CR5 to use Long-Range Bluetooth Handle

1. On the total station, go to the main menu. This is the screen with six large icons. You may need to press "Esc" a few times to get to it.

2. Choose 5-Configure, and then 4-Interfaces.

3. Press the down arrow to highlight "GeoCOM Mode", and then press F3-Edit.

4. Press the down arrow to highlight the port. Use the Left/Right arrows to select Port 2 (Handle).

5. Press F5-Device then tap F6-Page to get to the Radios tab.
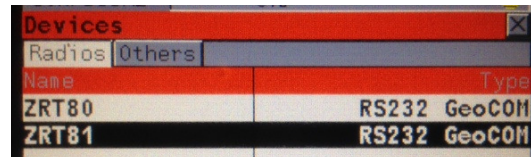
6. Press the down arrow to highlight ZRT81

7. Press F3 for Edit. Tap the left arrow to set the **Baud Rate to 115200** as shown in the screenshot to the right.

8. Press F1 for store, and then F1 for continue, then F1 for continue again. Wait for the hourglass to go away and wait for the red light on the radio handle to go off.
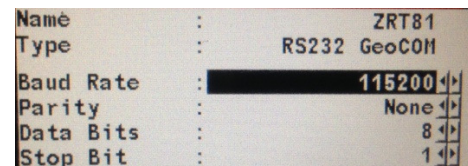
9. You should see a Green power indication light on the radio handle. Tap F1 for continue one final time to return to the Main Menu.
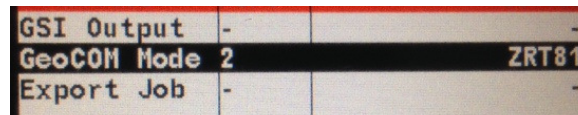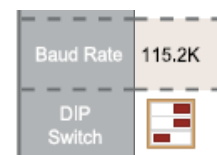
Set the Baud Rate on the Parani SD1000U Radio

Figure 1 - Parani-SD1000U LR-BT Radio

1. Set the baud rate of the SD1000U radio to **115.2K** using the upper three dip switches on the radio as shown in the diagram to the right.

Set the fourth dip switch to the Left in the OFF position as shown in the diagram to the right.
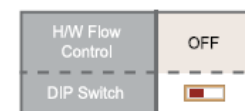
Figure 2 Parani Dip Switch Configuration

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Pair the Radios

Based on Parani-SD1000U User Guide:
http://www.sena.com/download/manual/manual_parani_sd1000U-v2.0.2.pdf

1. Power on the **USB radio** by plugging it into any USB port of a laptop or desktop computer and use a small pin to press RESET button. "Mode 0" (solid green light is lit next to "Mode" indicator) of the SD1000U should result.

> "*Windows XP and later versions already include the USB driver. When Windows asks for the location of the USB driver, you can select the option to* **Install the software automatically***. If the driver is not installed correctly for some reason, you can also install the driver after downloading the driver from* http://www.ftdichip.com/Drivers/VCP.htm.*"*

2. Download and install the "ParaniWin" configuration utility to a laptop or desktop computer using the link below:
http://web.carlsonsw.com/files/knowledgebase/kbase_attach/888/setup_ParaniWin-v1.0.7.exe

Launch the program via its short-cut icon

Figure 3 – ParaniWin Shortcut

3. As the ParaniWin application starts select the appropriate Serial Port and set it for a BaudRate of **115200** as shown below and click OK when complete:
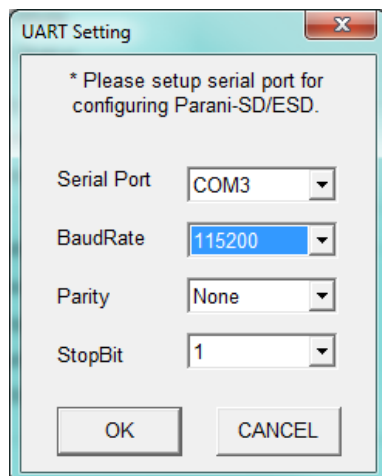

Figure 4 – ParaniWin Serial Port Settings

![Carlson logo] **Carlson.**®

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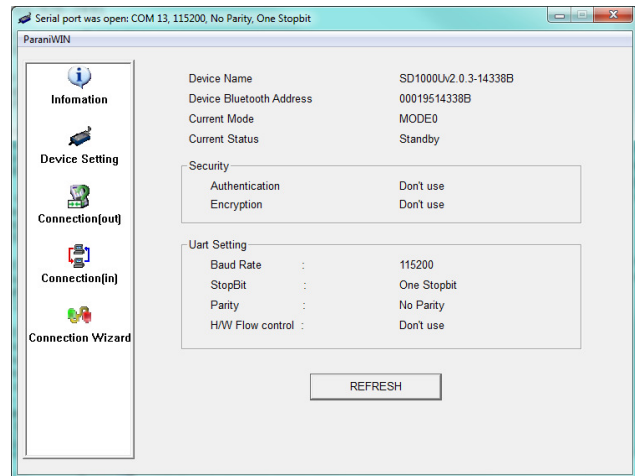4. Information regarding the current status of the SD1000U should display:

Figure 5 – ParaniWin Information Screen

5. Click on the **Device Setting** button to review or change desired aspects of the SD1000U radio.

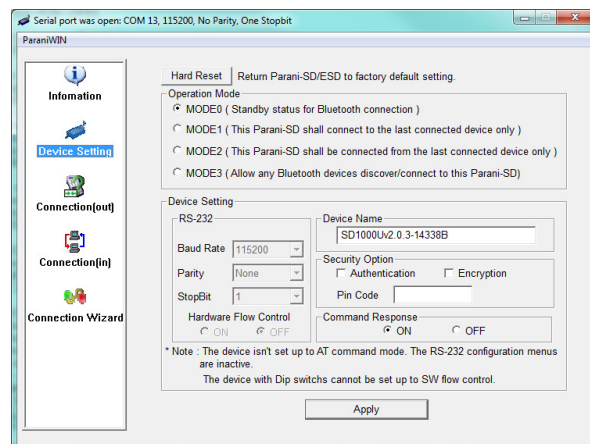The default values will likely be sufficient and they will be similar to that shown to the right:
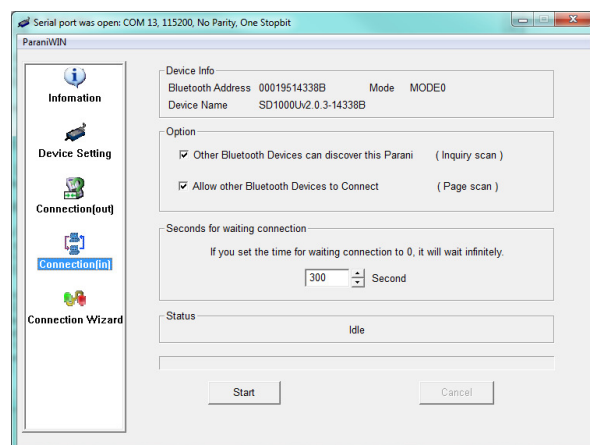

Figure 6 – ParaniWin Device Setting Screen

6. Click on the **Connection (in)** button to review or change desired aspects of the SD1000U radio.

The default values will likely be sufficient and they will be similar to that shown to the right:

Figure 7 – ParaniWin Connection (in) Screen

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7. *Make sure the Carlson CR2/CR5 robotic total station with its Long-Range Bluetooth Handle is powered on.* Click on the **Connection (out)** button and click on the *Search* button to search for nearby Bluetooth devices.
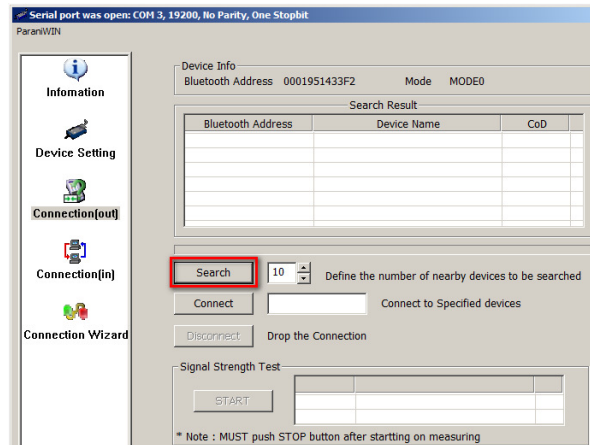

Figure 8 – ParaniWin Connection (out) Screen

8. The search process should only take a few seconds. If there are many Bluetooth devices nearby, it may take longer and you may need to expand the number of nearby search-able devices. The result should display the robotic total station handle as illustrated below.

Click-on the **RH_xxxxx** device name to select it and then click on the **Connect** button. (xxxxx is the serial number)

***Please Note: *the Device Name is sometimes displayed as "TPS radio LR BT"*
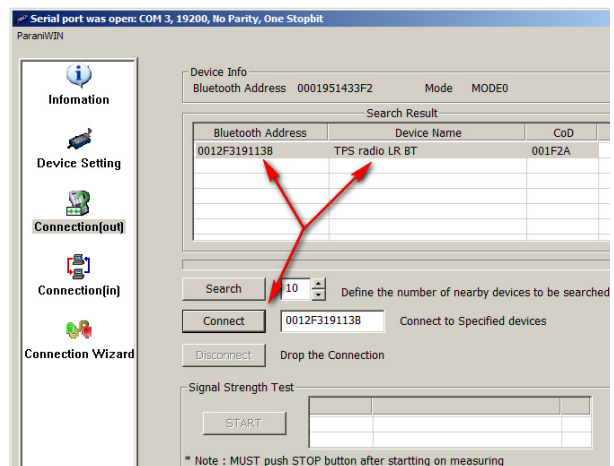
Figure 9 – ParaniWin Connection (out) Screen

The **RH_xxxxx** device should connect successfully as indicated below. Click **OK** when you see the "Connected successfully" box below:
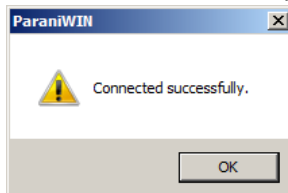

Figure 10 – ParaniWin Successful Connection

The **Connect** *indicator light on the SD1000U should blink 1 per second to indicate a connection has been established.*
The **Radio** *indicator light on the TPS radio LR BT handle should light to indicate a connection has been established.*

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9. Click on the **Disconnect** button to halt the Bluetooth session. This action stores the device ID of the previously connected device.
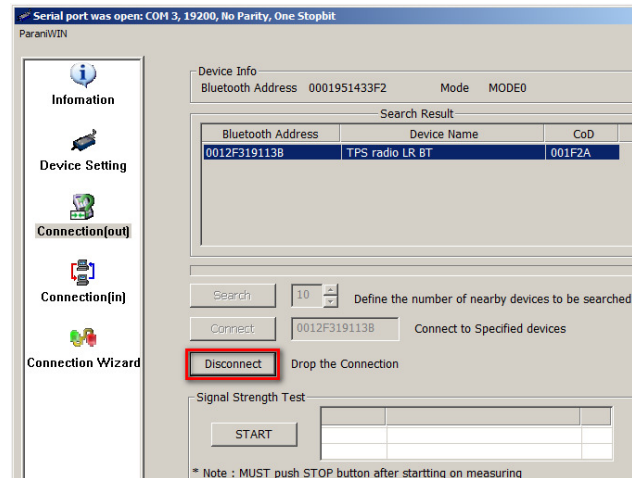

Figure 11 – ParaniWin Disconnect

10. Click on the **Device Setting** button and enable the "**Mode 1**" setting of the SD1000U as shown below. Click on the **Apply** button to commit this change:
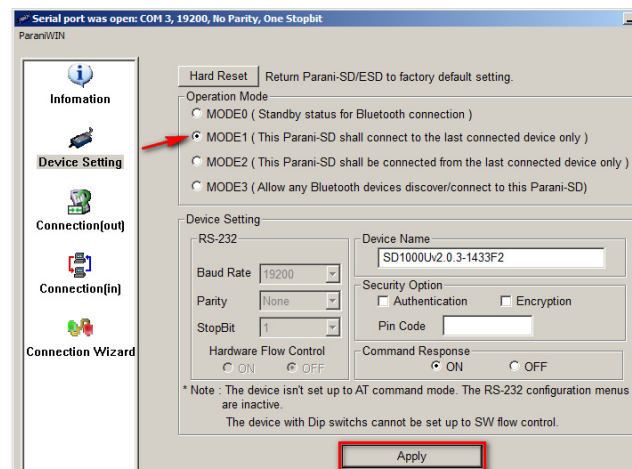

Figure 12 – ParaniWin "Mode 1"

11. Exit from the *ParaniWin* application and remove the SD1000U radio from the computer.

The SD1000U radio is now configured to make an automatic connection to the **TPS radio LR BT** handle, whenever they are powered on. Normally, this pairing routine will only need to be performed once for each set of radios.

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