

Using the Parani SD1000U/SD1000 with Carlson SurvCE™



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Congratulations! You are the proud owner of a new set of Parani Long Range Bluetooth radios.

The following document will explain how to configure your radios, software and hardware and include a list of the parts you should have received.

In this document we are using the Carlson Surveyor+ data collector and the Carlson Robotic Total Station CR2/CR5. Some steps may vary if you have other hardware.

Installing the Radio Driver

This step will only need to be performed once.

1. Install SurvCE Version 2.62 or higher from <http://tiny.cc/survce>
2. Make sure to **Run SurvCE 2.62** {or higher} at least one time before connecting the USB radio
3. Plug the USB radio (referred to as *SD2 in the Sena documents*) in to the data collector.
4. A dialog will prompt for the name of the device driver. Type in **"ftdi_ser.dll"** and press OK.

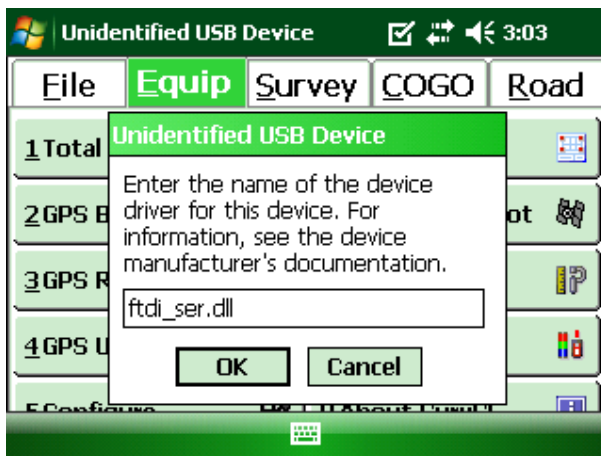


Figure 1 - Parani-SD1000U USB Driver Installation

Pair the Radios

Based on the Sena Quick Start Guide: http://sena.com/download/qsg/qsg_parani_sd1000.pdf

1. Power on the **USB radio** by plugging it into the USB port of the data collector and **use a small pin to press the Reset button**.

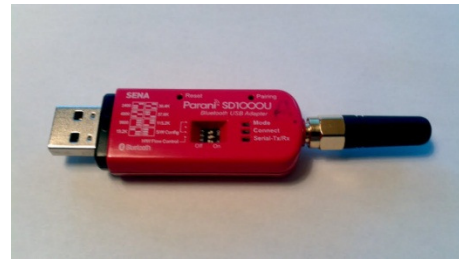


Figure 2 - SD1000U USB Radio

2. Attach an antenna to the RS232 radio before powering it on. Power on the **RS232 radio** using the switch on the side and **use a small pin to press the Reset button**.

It is not necessary for the RS232 radio to be connected to the total station during the pairing process.



Figure 3 - SD1000 RS232 Radio with Extended Battery

If the RS232 radio won't power on and the extended battery was shipped separately you will need to remove the back plate and attach the Extended Battery using the 2 screws that are included.

3. Press the Pairing Button of the **RS232 radio** for 2 seconds until Mode LED blinks 3 times every 2 seconds. Keep the power ON.
4. Press the Pairing Button of the **USB radio** for 2 seconds until Mode LED blinks 3 times every 2 seconds.
5. Press the Pairing Button on the **USB radio** again for 2 seconds until the Mode LED blinks every second.
6. Wait for the RS232 Radio and the USB radio to connect to each other. You will know they are connected when the Connect LEDs of both radios blink once a 1 second. It takes about 10 seconds to make a connection. If there are many Bluetooth devices nearby, it may take longer.
7. Turn the **USB radio** off by unplugging it from the USB port. The Mode LED on the RS232 radio blinks twice every 3 seconds. Plug the USB radio back in.
8. Turn the **RS232 radio** off. The Mode LED on the USB radio blinks once every second. Turn the RS232 radio back on. Both radios should be blinking the Connect LED once a second.
9. Now your RS232 radio and your USB radio are configured to make an automatic connection to each other, whenever they are powered on. Normally, this pairing routine will only need to be performed once for each set of radios.

Connecting the Radio to the Total Station

1. The total station considers the radios to be a straight cable connection. Plug the RS232 radio into the serial end of the total station connection cable. You may need to use a null modem adaptor.



Figure 4 - RS232 Null Modem Adapter

2. Configure the total station to use an RS232 cable connection, and set the baud rate in your instrument to 9600 See below for specific instructions for the Carlson CR2/CR5.



Configuring the Carlson CR2/CR5 to use Parani Bluetooth Radios

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 for Edit.
4. Press the down arrow to highlight the port. Use the Left/Right arrows to select Port 1.
5. Press F5 for device. Use the arrows to select “RS232 GeoCOM”.
6. Press F3 for edit. Use the arrow keys to set the baud rate to 9600
7. Press F1 for store, and then F1 for continue until you are back at the main menu.

Configuring SurvCE

1. From the Main menu, tap the Equip tab then tap “Total Station”.
2. On the Current tab, choose Carlson from the Manufacture dropdown list.
3. On the Comms tab, set the Type to **Radio** and set Radio to **Parani LR-BT**.
4. Set the port to **COM3** and set the baud rate to **9600**

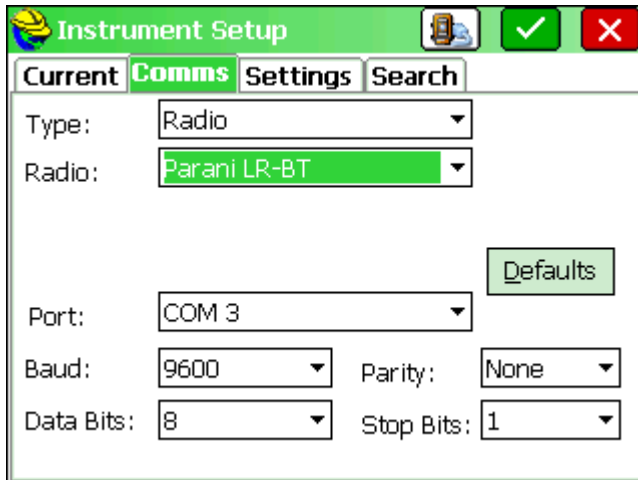


Figure 5 - SurvCE Communications Setup, Version 2.61.5 and higher

5. Tap the “Instrument” icon in the upper right to test the communication parameters without leaving the Instrument Setup dialog box. You should see “Successful Connection” displayed.



Figure 6 - SurvCE Quick Equipment Connection

6. After a successful connection, tap the Settings tab and fill out your FS Target and BS Target values
7. Fill out your EDM mode and Search tab with the settings you want to use
8. Tap Green Check to initialize the instrument and save your changes

To customize the Baud Rate and for detailed technical information of the radios you can refer to Page #10 through 16 in the Sena PDF Manual at the link below:

Sena Parani SD1000 Manual: http://www.sena.com/download/manual/manual_parani_sd1000-v1.0.1.pdf

Parts List



Figure 7 SD1000 - RS232 Radio



Figure 11 Null Modem



Figure 8 Dipole Antenna for SD1000



Figure 12 Instrument to SD1000 Cable (Null Modem)



Figure 9 Wall Charger for SD1000



Figure 13 USB Charger Cable for SD1000



Figure 10 Extended Battery for SD1000



Figure 14 SD1000U - USB Radio