

# Carlson Software Technical Bulletin

## SS900 Radio system with Leica 1200 Robot



This workflow shows how to use the Carlson SS900 Base Radio and Carlson Explorer 600+ with SS900 radio pack to control the Leica robotic instruments. This method reduces the amount of cables and radio accessories at the pole. It also provides a high performance, low power consumption base radio module at the tripod.

### SS900 Radio System

- 6100.426 Carlson Explorer 600+ Jett Pack Connect
- 6100.427 Carlson Explorer 600+ SS900 Rover Radio
- 6100.428 Carlson Explorer 600+ SS900 Base / Repeater Radio

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The photo below shows the SS900 Rover Radio Pack product #6100.427 (The black insert with the Carlson logo). The Radio Pack inserts into the Jett Pack Connect, product # 6100.426. (The blue tray that connects to the back of the Explorer 600+.)

This assembly interfaces with the Explorer 600+ on Com 2.



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1. Connect the SS900 base radio to the robotic instrument by connecting a cable from the 9-pin serial port of the base radio to the com port of the robotic instrument.



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2. Turn the Leica instrument on and verify that the Configuration is set for GeoCOM Mode 1, RS232 GeoCOM. From the main screen go to 5 Config..., then 4 for interfaces.



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3. Then press ESC key to return to the main menu. Leave the instrument in this main menu screen and proceed to the data collector.



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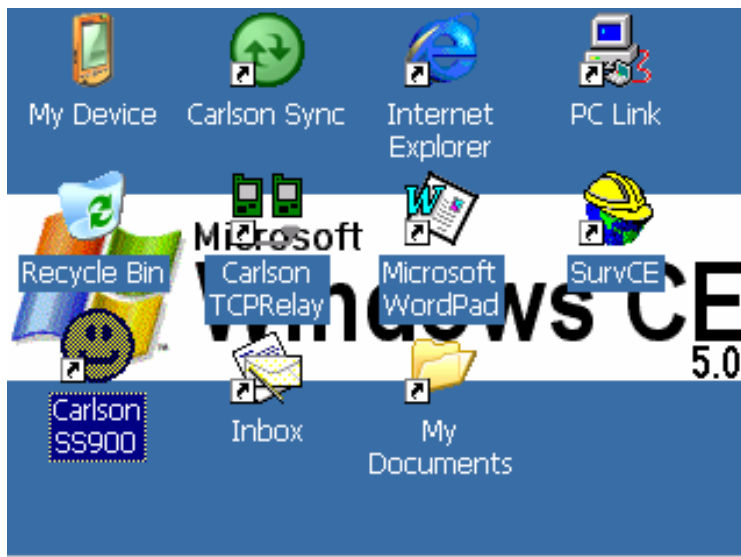
### Setting up the base and rover radios

1. Use the SS900 utility to configure the communication parameters of the rover and base radios.

Note: When the base and rover radios were packaged for shipping they were programmed with the serial number of the base radio. The serial number of the base radio can be found on the back of the base. (Example below is #1035) This 4-digit serial number is used to program the radios to be a mated pair. This prevents any radio step-on by other Carlson SS900 radios. Review the directions at the end of this document if you need to alter the serial number for some reason. A possible reason would be to use more than one rover off the same base radio.



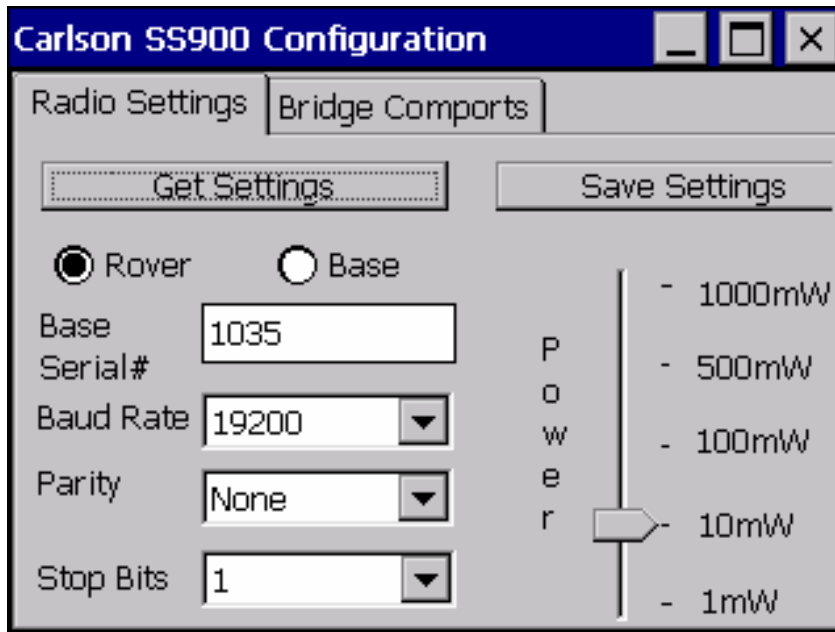
From the desktop screen select the Carlson SS900 icon, or from the Programs list select Carlson SS900.



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2. Program the base and rover radio Baud Rate, Parity and Stop Bits To do this, select Base or Rover Radio, and then “Get Settings” button. Then, fill in the Base Serial number field with the correct serial number displayed on the back of the base radio. This example is serial #1035. Select the proper Baud Rate, Parity, and Stop Bit to correspond with the robotic instrument. Press “Save Settings”, and the selected parameters will be written back to the radio.



In order to program the base radio, you must connect the 600+ to the base radio via a null modem cable. See the picture below.

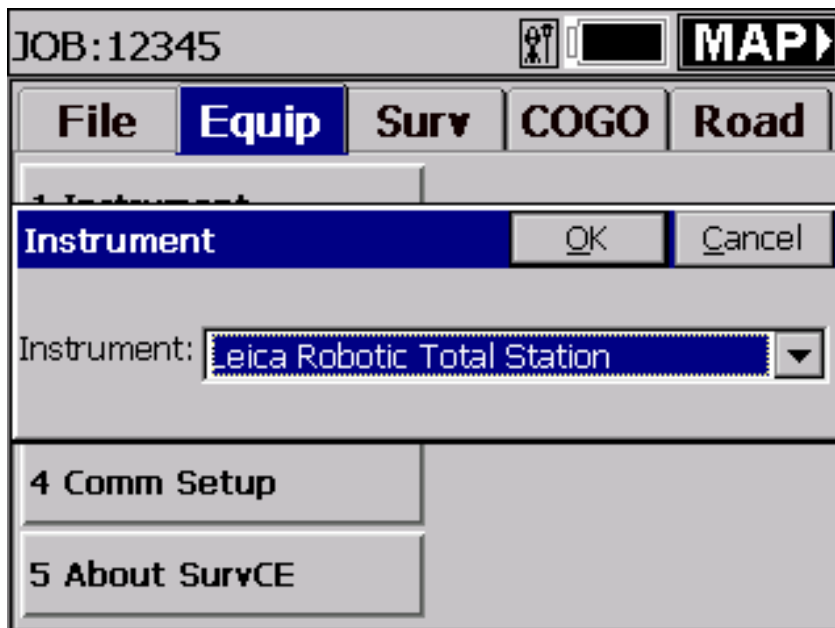


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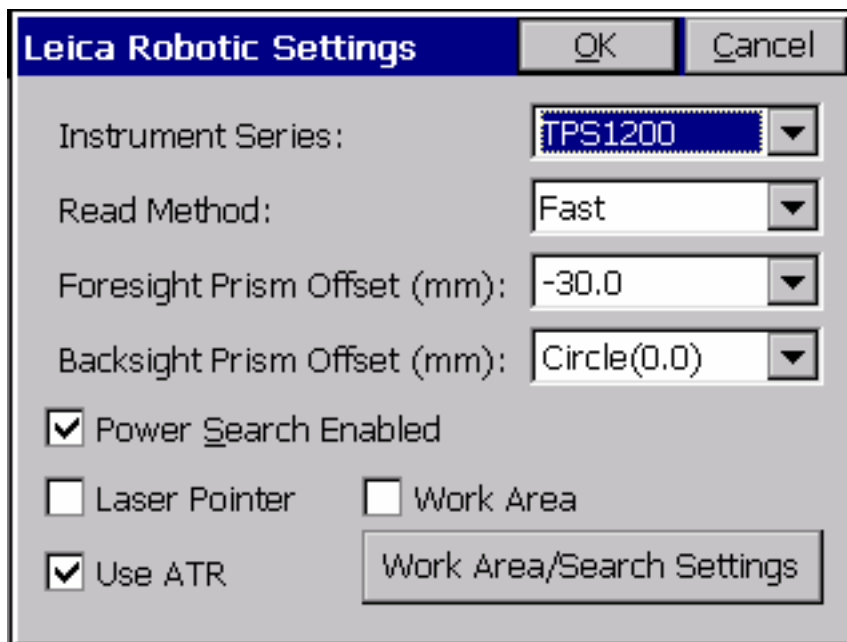
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### Setting up the data collector

1. Enter SurvCE and select Leica Robotic Total Station from the Instrument list.



2. Go to Equip – Settings and select the desired robotic settings.





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3. Go to Equip – Comm Setup. The radio pack on the back of the 600+ is com 2.

Comm Setup

OK Cancel

Port Number: COM2

This is a Bluetooth port Find Bluetooth Port

Bluetooth Driver: Atinav

Baud Rate: 19200 Parity: None

Char Length: 8 Stop Bits: 1

Defaults

You can now proceed to Sideshot/Traverse or any other SurvCE function.



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### Leica Accessories used with the radios.

Cable from base radio directly to the robotic instrument, Art. No. 563625



Or, Y-cable from the external robotic battery to the instrument and the base radio..  
Art No. 707135



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9-Pin adapter for the Y-cable. Art. No. 707525



## S900 Radio Configuration Utility.

### Radio Settings Tab

Select if the device running the application is the base station or the rover.

Select the Serial Number for the device. The valid range of Serial Numbers is 1000 to 10000.

Select Baud Rate, Parity, and Stop Bits based off of the specifications.

Choose the amount of Power to be used for the radio, with 1 mW being the smallest and 1000 mW being the highest.

Save these settings using the "Save Settings" button.

These settings can then be retrieved via the "Get Settings" button.

If no Serial Number is entered, the Get Settings button will attempt every possible connection setting until a connection is made and then retrieve the proper Serial Number.

### Bridge Comports Tab

Clicking the Bridge Ports button will activate the COM port bridging, making the input of one com port feed out of the other and vice versa.

After clicking the Bridge Ports button, clicking the UnBridge Ports button will deactivate the COM port bridging.