



## Procedure for Connecting the Trimble R8 GPS Receiver to an Accessory Guidance Device

### REQUIRED ACCESSORIES/SOFTWARE/SETTINGS

- Trimble R8 Receiver
- Trimble TSC2 Field Computer
- Laptop PC with available RS232 (DB9) serial port AND most recent version of Trimble GPS Configurator program (free at [www.trimble.com/support.shtml](http://www.trimble.com/support.shtml))
- Trimble-rated RS232 (DB9) serial cable WITH 2 FEMALE ENDS (alternative is a generic serial cable with a "gender-change" adapter for the male connection as well as a null-modem adapter)
- Baud and parity settings for the guidance device

### OPTIONAL ACCESSORIES/SOFTWARE

- Trimble communications cable with 7-pin LEMO and DB9 serial connections
- Null-modem adapter (may be necessary depending on requirements for accessory guidance device)

Before this procedure is followed, you must start and initialize an RTK survey as normal if RTK-quality positioning is required---otherwise, the receiver will provide autonomous positioning. Three wiring/communication options are listed below. Your wiring method for initiating an RTK survey may dictate which wiring option (and accessories) you'll have to use for this procedure.

### WIRING OPTION #1: PORTS 1 (LEMO) AND 2 (DB9) AVAILABLE ON R8

*---this scenario is only possible if a Bluetooth connection is established between the TSC2 and the R8*

1. Connect the LEMO/DB9 cable to **Port 1** of the R8 and to your laptop PC.
2. Connect RS232 serial cable (and necessary adapters) to **Port 2** of the R8 and to the guidance device.

### WIRING OPTION #2: PORT 2 (DB9) AVAILABLE ON R8

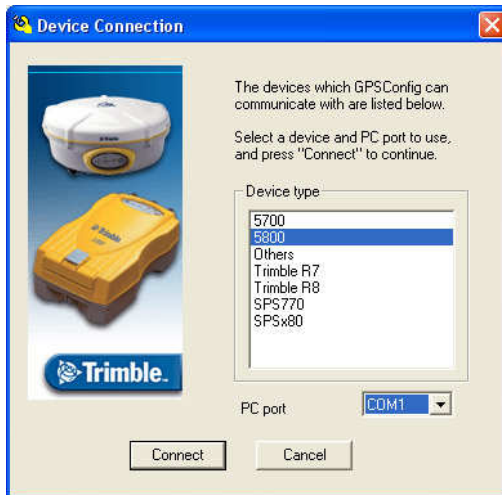
1. Connect RS232 serial cable with 2 female ends to **Port 2** of the R8 and to your laptop PC.
2. When you are finished with **GPS Configurator** program, remove the connection from your laptop PC and attach the cable to the guidance device.

### WIRING OPTION #3: PORT 1 (LEMO) AVAILABLE ON R8

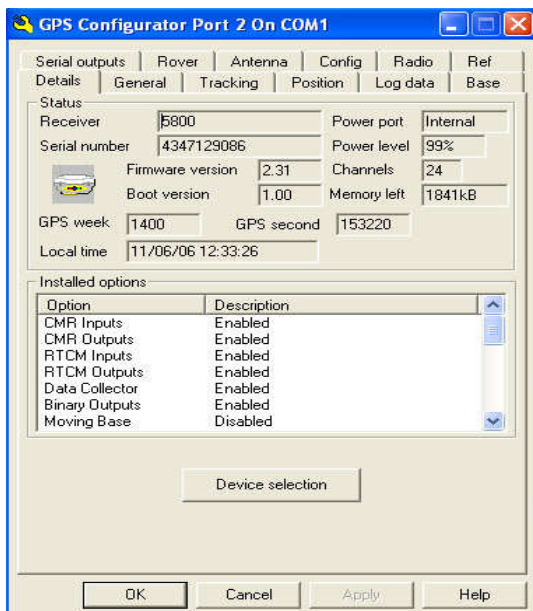
1. Connect the LEMO/DB9 cable to **Port 1** of the R8 and to your laptop PC.
2. When you are finished with **GPS Configurator** program, remove the connection from your laptop PC and attach the cable to the guidance device.

### PROCEDURE INSTRUCTIONS

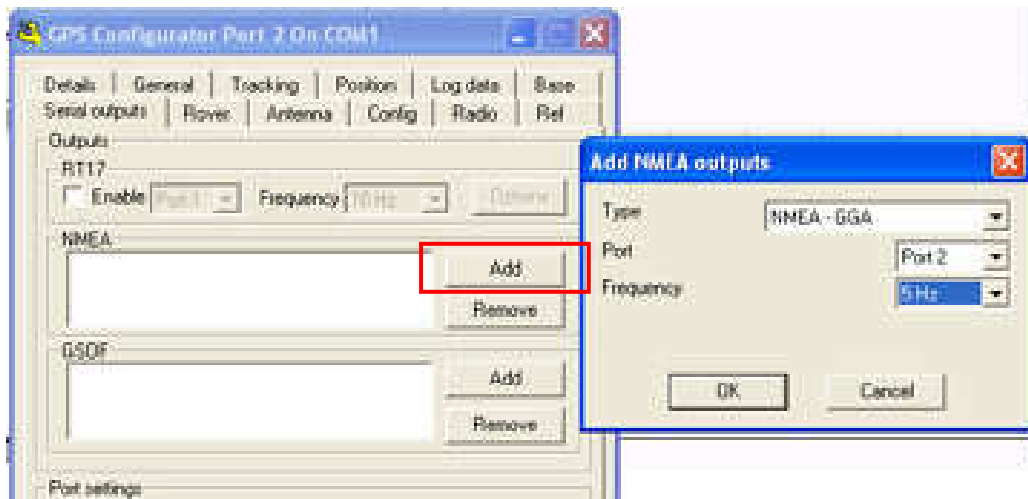
1. Begin and initialize an RTK survey using the TSC2 and the R8. (As a formality, a job has to be created as well---selection of **Datum**, **Projection**, or **Geoid Model** will have no relevance to data transferred to the guidance device.) Remember to key in a **Receiver Height** in the TSC2.
2. Connect a data cable to the R8 and to the laptop PC.
3. Start **Trimble GPS Configurator** program. Select the R8 receiver and the proper **COM Port** on your PC, then **Connect**.



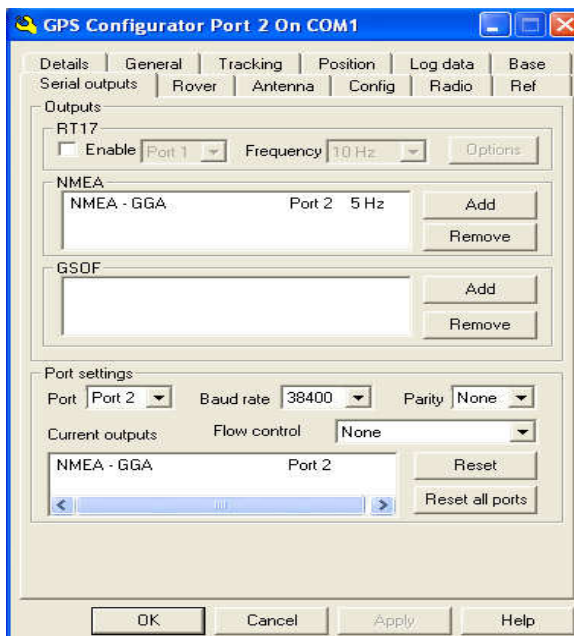
- When a successful connection is made, you'll begin with a **Details** dialog similar to this.



- Select the tab marked **Serial outputs**. From this tab you can select certain **RT17**, **NMEA**, and **GSOF** codes for release. As an example, suppose you want to receive the NMEA string of GGA at a 5 Hz interval. Select the **Add** button to the right of the **NMEA** window to open a dropdown NMEA list. Select **NMEA-GGA**, select the port number of the R8 that will be connected to the guidance device (**Port 2** in this example), then select 5 Hz from the **Frequency** dropdown list. Select **OK**.



6. The **GGA** command is added to the **NMEA** window. Select **Apply** to add the code to the **Current Outputs** window. You will have to repeat the procedure to include other required codes. In the **Port settings**, choose the Port that will communicate with the guidance device, and set the **Baud rate** and **Parity** as needed. (The **Flow Control** feature is only available if you are using Port 2 on the R8.) Again, select **Apply** after any changes.



Do not be concerned with forcing a data stream from the R8 through the same port on which you are connected to the PC. The stream is not interrupted by the PC, and it should be available for as long as the receiver is on (or as long as the RTK survey is active).

7. When you are finished selecting codes, select **Apply** (if it is not grayed out), then select **OK** to close the application. Remove the cable from the PC. Depending on your wiring option, you may have to now connect that cable to the guidance device.
8. Attach a cable from the R8 to the guidance device (if you haven't already). Activate the guidance device to confirm signal reception.

## TROUBLESHOOTING

If you are not receiving data at your guidance device, check the following ...

- Cable connections
- Installation or removal of a null-modem adapter (if the Trimble-rated serial wire with the 2 female ends is in the circuit between the R8 and the guidance device, a null-modem adapter should not be necessary for that circuit)
- Did you have to re-initiate an RTK survey? (Unfortunately, the ports on the R8 can only be configured AFTER the survey is initiated; settings from past port configurations are cleared every time a survey is initiated.)
- **Baud rate / Parity settings**
- Is data being streamed from the proper port on the R8?
- Did you select **Apply** after each setting change from **GPS Configurator**?