Connecting a GPS Rover to a Modem or Base Network

There are several types of modems and methods for connecting to a network available. The RTK tab in the GPS Rover dialog configures the modems and network settings.
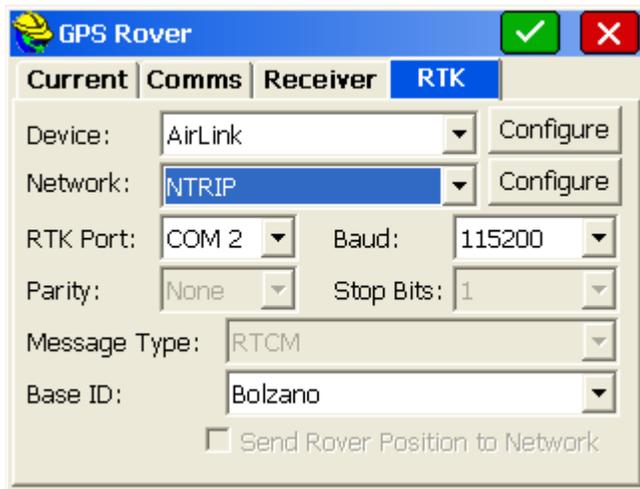
The dialog is designed to be filled out from the top to bottom, and from left to right. First select the device you will use to connect to the remote modem or network.
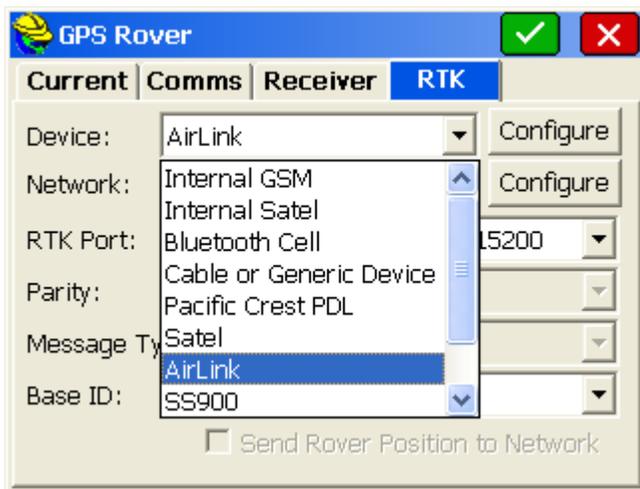
If a particular receiver model supports an internal modem or radio, meaning it is integrated into the receiver, those devices are shown first in the list. When an internal device is shown in the list, it means that model could have the device inside, but does not guarantee it. The user will have to know if the receiver was purchased with an integrated radio or modem.

External radios and modems are shown next and then one of the last options is "Data Collector Internet" which is a special case explained below where the data collector provides access to the internet instead of a modem inside or connected to the receiver..

Once a device that is capable of connecting to the internet is selected, the Network combo box is enabled. Select the type of network connection you will use.
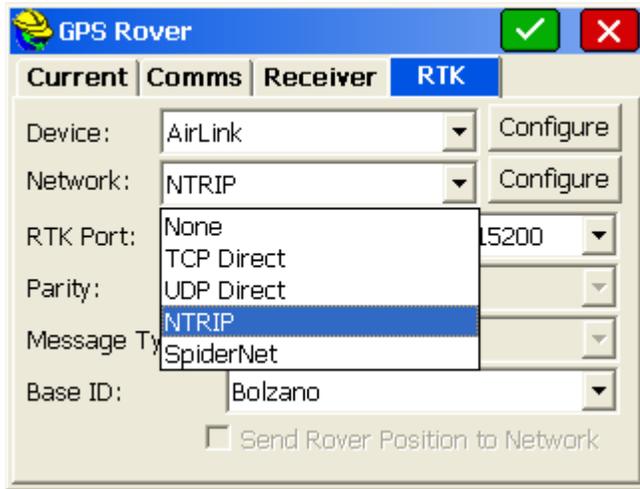
Here is a brief summary of the different network types available:

TCP Direct: For connecting to a single modem at a base or to a VRS network or another network that doesn't require a special login.

The configure button for TCP Direct brings up this window:
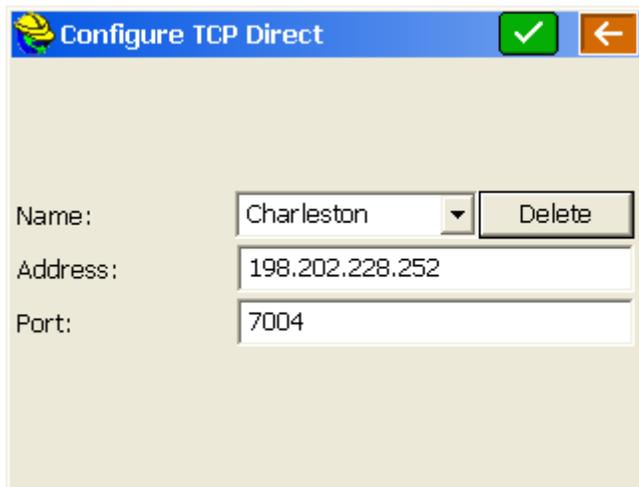
To add a new base or network address, select <New> in the Name field and replace the "<New>" text with what you want to call the connection and fill out the Address and Port fields. Most modems support either an IP address (Ex: 192.202.228.252) or a URL address (Ex: www.basenetwork.com).

UDP Direct: This works exactly like the TCP Direct option but uses UDP protocol instead of TCP. Most networks use TCP.

NTRIP: This option is for base networks that support NTRIP protocol. Pressing the Configure button shows the NTRIP Broadcasters (Also called Casters) that have been previously connected to.
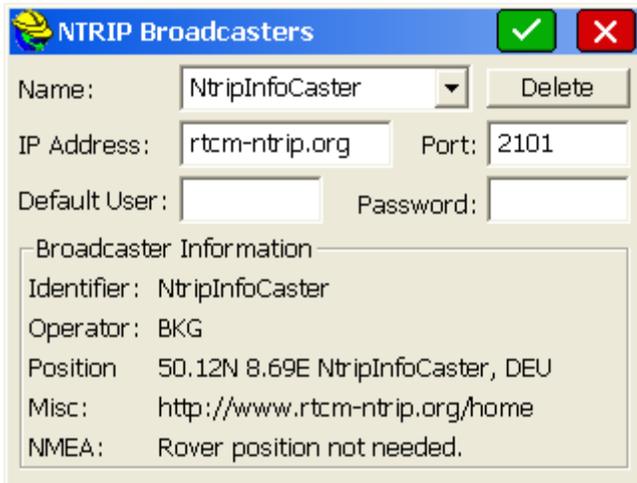
The default is for rtcm-ntrip.org which if connected to will download information about many Broadcasters (casters) all over the world. They will be shown the next time NTRIP Configure is selected. Select an existing caster or select <New> in the Name combo box and replace with a different name and fill out the other information. If the Default User and Password fields are filled out, they will be used as the default user name and password for all the bases at that caster.

When the green checkbox is selected, SurvCE will have the modem connect to the address of the Broadcaster and establish a connection. The Broadcaster then supplies a table of bases (also known as mountpoints) available at that Broadcaster. SurvCE puts the table of bases into the next window that comes up.
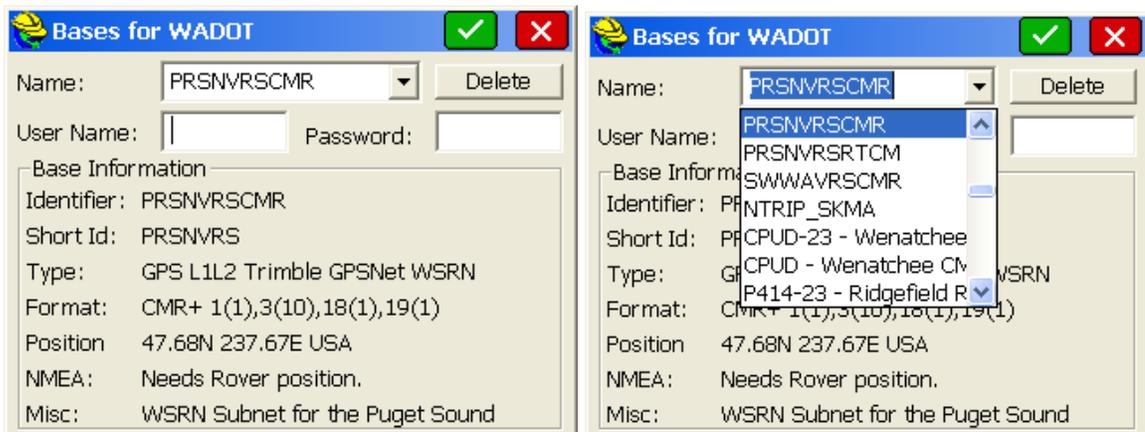
If you don't like the name of the base supplied by the Broadcaster, you can change it to something else you prefer and SurvCE will remember your preference but still ask the Broadcaster for the correct base.

Select the base you want to use and press the green check box. You are brought back to the RTK tab with the base you selected as the current Base ID. You can change the Base ID in the RTK tab without going back to the NTRIP Configure button.

Note that with NTRIP, SurvCE already knows if the base wants the rover position sent and what type of corrections are being sent. Those settings are shown in the RTK tab and are grayed out to guarantee that they stay on the correct setting.

SpiderNet: Networks that require that a GPUID message be sent to the network should use the SpiderNet option. The SpiderNet Configure window comes up when the Configure button to the right of the SpiderNet option is pressed.
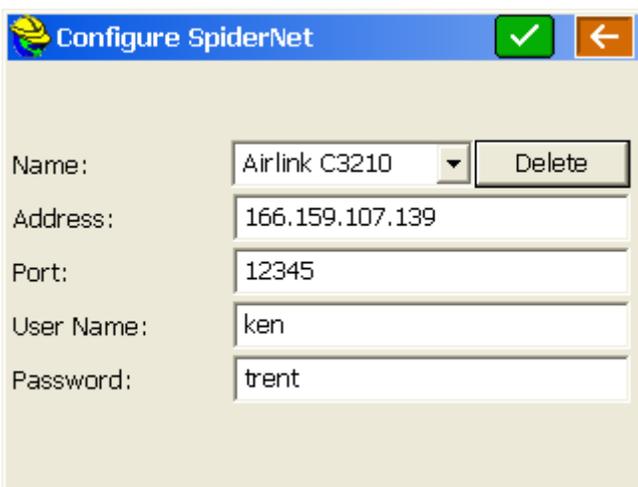
Add a new network by selecting <New> in the Name combo box and typing in the name of the network and filling out the other fields. If the User Name and Password fields are left empty, the GPUID message is not sent to the network.

Just like when using a radio, the RTK Port combo box is to identify which port on the receiver should be configured to accept RTK corrections. The Baud, Parity, and Stop Bits combo boxes specify the settings for the RTK port. Message Type identifies what type of RTK correction message the receiver should be expecting.

Base ID when using a network is a combo box to select the name of the network or base the modem should connect to. Use the Network Configure button to change the bases available in this list.

"Send Rover Position to Network" if turned on will cause the receiver to periodically send GGA messages out of the RTK port to the base or network.

Using an Internet Connection Established by the Data Collector (Data Collector Internet)

There are several ways of connecting a data collector to the internet – Cell phone cards inserted into the data collector, connections to a cell phone with a data plan, etc. These instructions assume that an internet connection has already been established to the data collector. One way to tell that the data collector is connected to the internet is to browse the internet using Internet Explorer. For information about how to connect a data collector to the internet using an Enfora cell card in an Explorer 600+, search Carlson Knowledge Base for "Enfora".

Once the connection to the internet has been established, start SurvCE and select Configure Rover in the Equip tab.
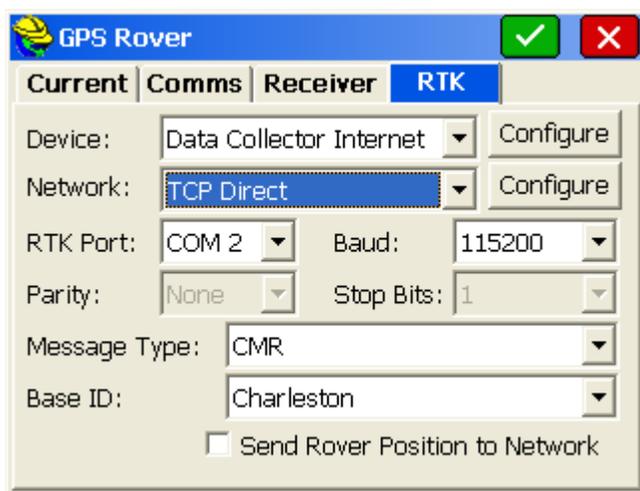
Press the Configure button to the right of the Data Collector Internet option.
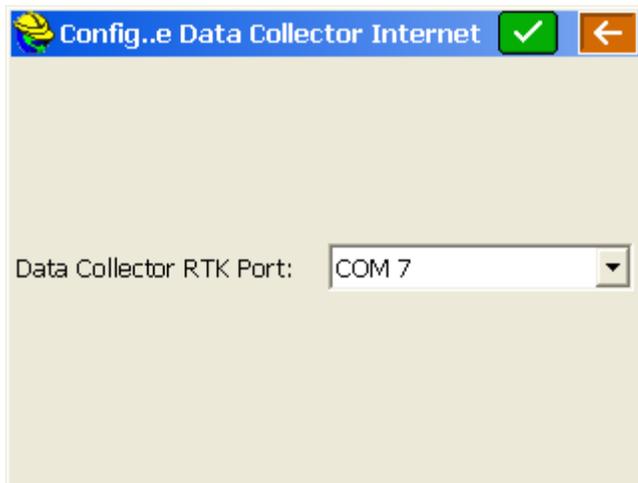
Select the COM port on the data collector that is connected to the RTK port of the GPS rover receiver. It cannot be the same port that is used to control the receiver and is selected in the GPS Rover Comms tab. It may be a serial port or a BT port with a connection that has already been established.

After selecting the port and pressing the green check to accept the input, select the network type in the RTK tab. Other settings are just like using the other modem selections as explained in the section "Connecting a GPS Rover to a Modem or Base Network".