

Configuring the Carlson Mini2 or Surveyor2 Internal GNSS Receiver for use with SurvCE

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Overview

This document describes how to configure the internal GNSS receiver on the Carlson Mini2 or Surveyor2 data collectors (Geo or Geo models contain an internal GNSS receiver) to work with SurvCE.

The Carlson Mini2 and Surveyor2 Geo and Geo Cell models contain an internal dual constellation (GPS and Glonass) single frequency (L1) GNSS receiver that has a specified accuracy of 2 to 5 meters.

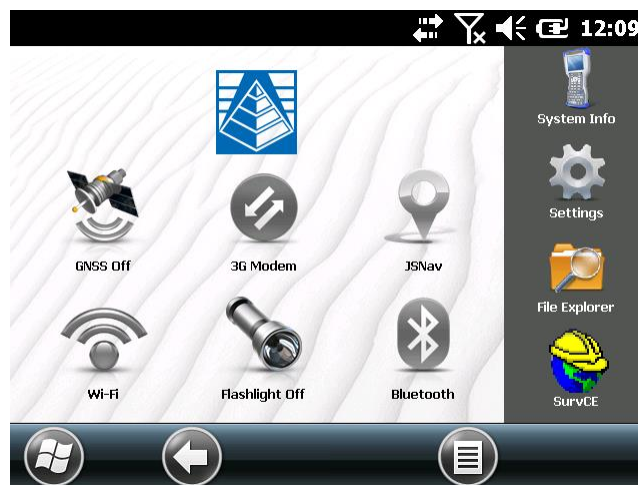
SurvCE version 4.3 and above supports the Mini2 and Surveyor internal GNSS receivers. If you do not have SurvCE version 4.3 or above installed on your Mini2/Surveyor2 you will need to upgrade SurvCE to version 4.3 (or above).

Configuring the Mini2/Surveyor2 GNSS Receiver using SurvCE

The Mini2/Surveyor internal GNSS receiver is typically configured from SurvCE. SurvCE version 4.3 and above contains a Mini L1 and a Surveyor2 L1 driver. These Mini2/Surveyor L1 drivers are binary drivers; do not use the GPS intermediate driver that other applications on the Mini2 or Surveyor2 may use.

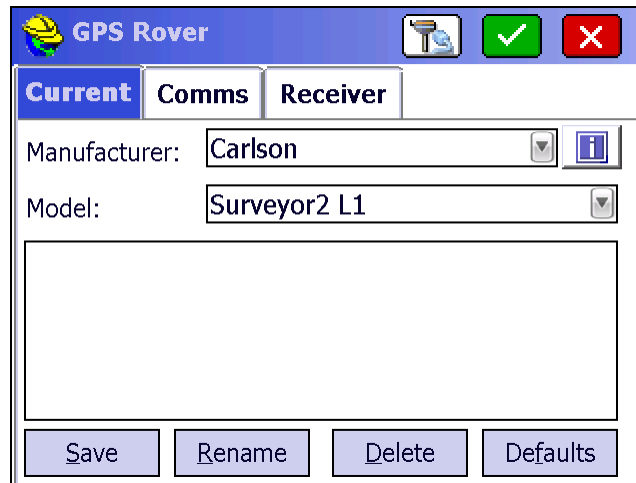
The following steps are used to configure the internal GNSS receiver:

1. Before running SurvCE, check the home screen and make sure the GNSS receiver is turned off. The GNSS icon on the home screen should say %GNSS Off+as shown below.

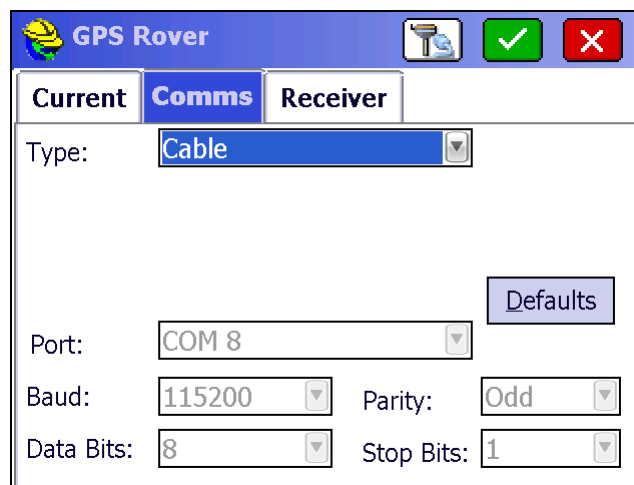


If the GNSS icon shows that the GNSS receiver is on (i.e. it shows the number of SV, the status and PDOP) simply tap the icon to turn the internal GNSS receiver off.

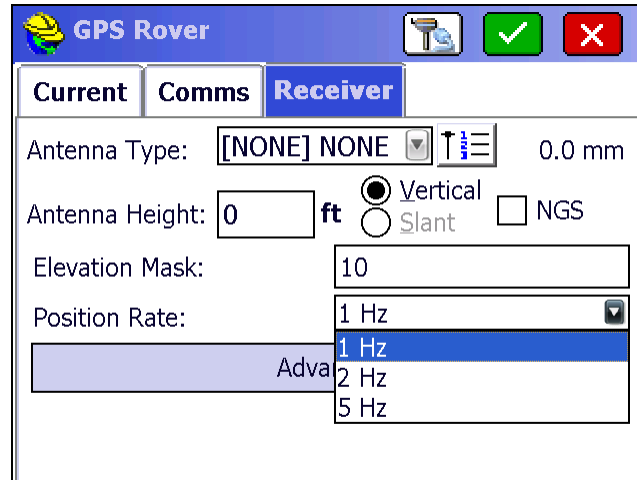
2. Run SurvCE by tapping on the SurvCE icon.
3. Configure GPS Rover in SurvCE by selecting the Equip tab then selecting GPS rover. With the current tab selected, set the Manufacturer to %Carlson+and the Model to %Surveyor2 L1+if you are using a Surveyor2 or %Mini2 L1+if you are using a Mini2 data collector. The correct Current tab setting for the Surveyor2 is shown below:



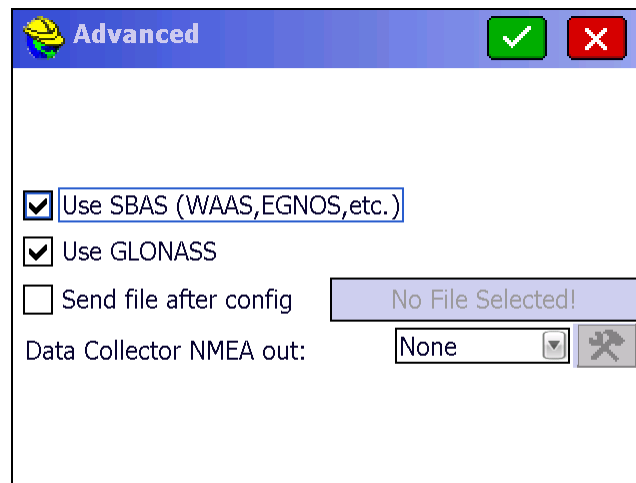
4. Select the Comms tab. SurvCE should set these values correctly, but in case someone has change the default values, they are:
 - o Type: Cable
 - o Port: COM 8
 - o Baud: 115200
 - o Parity: Odd
 - o Data Bits: 8
 - o Stop Bits: 1The default Comms settings are shown here:



5. Tap the Receiver tab. Most of the fields should be self-explanatory. The characteristics of the Mini2/Surveyor2 antenna have not been defined for the antenna type, so most users leave the antenna type set to **[None]**. The position update rate can be set to 1, 2 or 5 hz.



6. Use the Advanced button to enable SBAS or Glonass as shown below.



7. SurvCE is now ready to configure the receiver. Tap the green check to return to the Equip menu.
8. Tapping Menu Skyplot will display the position, unless this is the very first time you have used the internal GNSS receiver with SurvCE. If you don't see the position Status being updated in Monitor/Skyplot (make sure the receiver has a view of the sky), then exit SurvCE. Hold down the power button until the Power Button menu is displayed as shown below:



9. Tap the Power Off button (make sure the wall charger is not plugged into the Surveyor2/Mini2). After the Mini2/Surveyor2 powers off, press the power button to turn it back on. This will update the registry with the correct port settings. Go back into SurvCE, goto the Equip tab, then select Monitor/Skyplot. The position status should be shown and the positions should be updating. These last two steps only have to be performed once. If you change to a different Rover receiver then change back to the Mini2/Surveyor2 L1 driver, you will not have to run steps 8 and 9 again, the changes have been made to the registry. The only time you will need to redo steps 8 and 9, is if you restore the Mini2/Surveyor2 to factory defaults setting or if you update the Mini2/Surveyor2 OS.

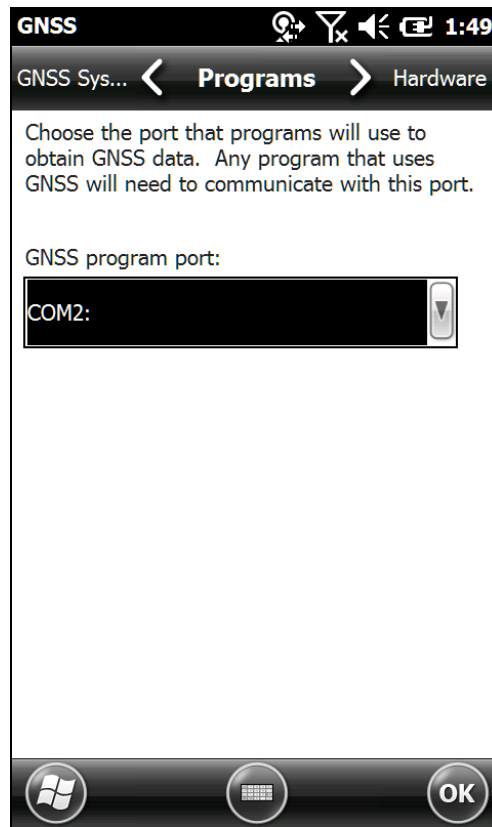
Using the GNSS home screen icon to configure the GNSS Receiver

The Mini2/Surveyor2 internal GNSS receiver can also be configured using the GNSS settings menu. This screen shots show the Mini2 display, the Surveyor2 works the same way.

The Mini2/Surveyor2 GNSS receiver can be configured from the GNSS status gadget on the Mini2/Surveyor2 home screen. Tapping the GNSS icon on the home screen toggles the GNSS receiver on and off.

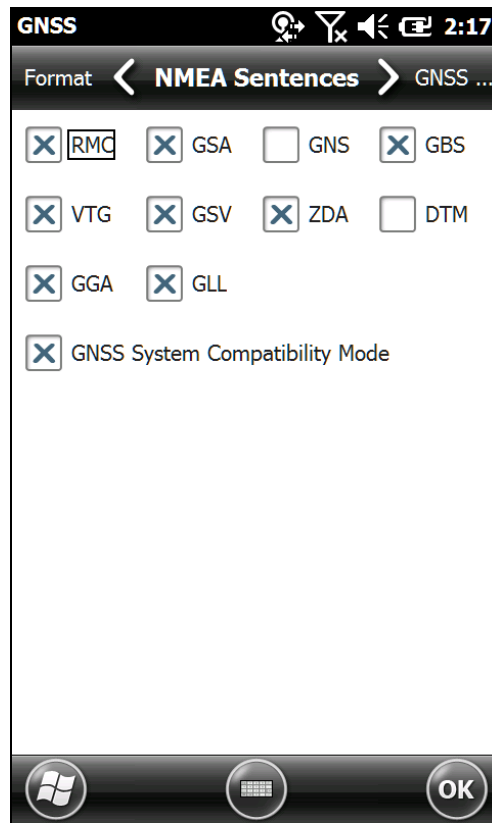


Tapping and holding on the GNSS icon displays the GNSS settings.

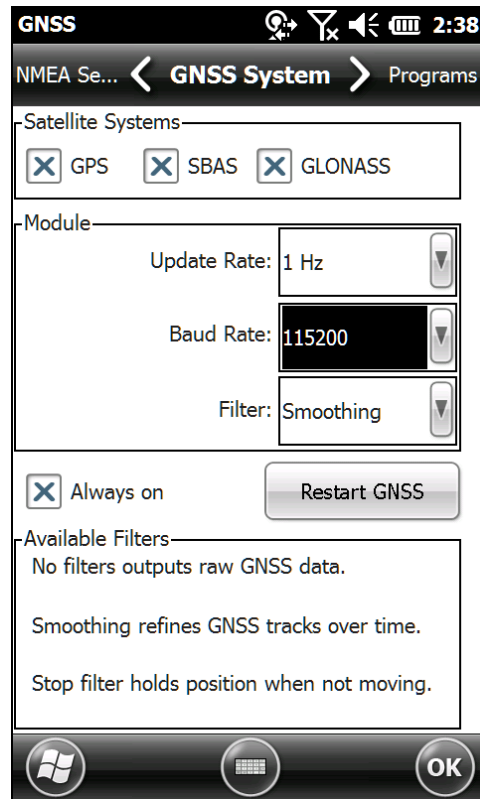


By selecting the tabs along the top of the GNSS settings, the desired setting can be found. The GNSS setting tabs are:

- **Programs** . This tab allows you to set the virtual GPS COM port for sharing with multiple applications. This is typically left to the default: COM2
- **Hardware** . Specify the GNSS receiver hardware port and baud rate. This should be left set to the default, COM8 and 115200 baud.
- **Access** . the checkbox automatically manages the GPS port. This box should be left checked.
- **Format** . Sets the format for GNSS position data. The default should be used: DD MM SS.SSSS.
- **NMEA Sentences** . This tab allows you to select the NMEA messages to broadcast by the receiver. The Mini2/Surveyor2 L1 drivers are binary and do not use these NMEA message settings. The default settings are:



- GNSS System . This tab is used most often to configure the Mini2/Surveyor2 GNSS receivers. It sets the Satellite systems to use (GPS, SBAS, GLONASS), the position update rate (1, 2, 5 or 10 hz), the baud rate, the filter used (No, Smoothing or Stop filter). Checking the **%Always on+**checkbox, keeps the GNSS receiver running in the background even when it is not being accessed by an application like GIS360. After changing the GNSS receiver settings, it is good practice to tap the **%Restart GNSS+**button.



The only setting not controlled by SurvCE is the Filter settings. As shown above, there are three settings: **No Filters**, **Smoothing**, or **Stop**. If you are post-processing the data using SurveyGNSS, you should use **No Filters**. For most other data collection using the internal GNSS receiver, the **Smoothing Filter** is the best option.

SurvCE will set the Satellite systems and the Update Rate, no matter what the settings are in this menu.

Additional Notes:

If you have any questions, or problems, please contact the Carlson Technical Support Team:

support@carlsonsw.com
Phone: (606) 564-5028
Fax: (606) 564-6422

FURTHER INFORMATION:

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