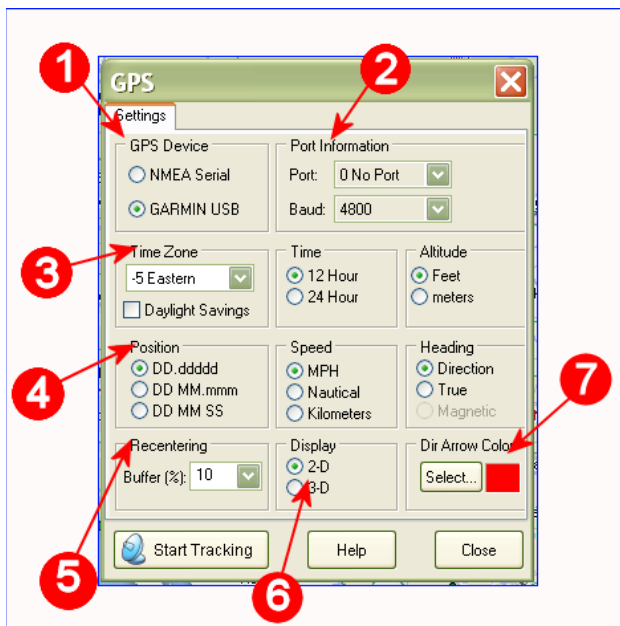


Using a GPS Device in Trailer Life Directory Campground Navigator 2008 A Step – by – Step Guide

Trailer Life Directory Campground Navigator (TLDCN2008) communicates with NMEA compliant GPS devices, through a COM port (either a physical COM port or a virtual COM port through a USB connection), to provide users with a live, moving map display. It also communicates with Garmin USB GPS devices, using the Garmin proprietary protocol. It should be noted that TLDCN2008 does not provide voice directions when working with a GPS device, it simply obtains the current location from the GPS device and displays it on the map. It is further recommended that to use the software with a GPS device, it should be installed and running on a mobile computer.

In the remaining of this section, we will presume that the user has connected their GPS device and has made certain that the device is communicating with the computer. That should all be done prior to starting TLDCN2008. See the section at the end of this tutorial for information on how to set up a number of different GPS devices to communicate with the computer.

In order to activate the GPS capabilities, you must click on the GPS button which opens the GPS settings dialog. In this dialog, the user must configure the GPS communication Parameters. **(1 & 2)**



(1) The program supports Serial NMEA compliant devices, and Garmin USB devices. Here, you can select the type of device that you are using with the program. Note that if you are using a NMEA compliant device, you need to know what COM Port it is using to communicate with your system. This can usually be determined through the GPS documentation or software drivers provided by the GPS manufacturer, prior to starting the program.

(2) (Port information is needed for NMEA Compliant Serial devices Only – Not needed if the GARMIN USB

option is checked). In order for the software to properly communicate with the GPS receiver, it needs to know which COM Port the GPS receiver is connected to along with the baud rate that the receiver is using to communicate. Many systems are configured to use COM1 or COM2 but this is not always the case. Be sure to check the manual or

settings within the GPS receiver and the GPS documentation. If the GPS device is using a virtual COM port, you may also be able to identify it by accessing:

Control Panel → System → Hardware → Device Manager → Ports....

(3) Setting the time zone property will properly display the proper time when the tracking is initiated. Most GPS receivers will output universal time which does not take into consideration time zones.

(4) Here users can choose which format they wish to see the Lon/Lat coordinates displayed in.

(5) If you are in GPS tracking mode and the "Center on Current Location" option is checked, then when your location has changed by the percent specified by this buffer setting, the map refreshes itself setting your current location at the center of the map. If the percentage is set to a low number the map will re-center often whereas if the percentage is high, it will re-center less often (less demanding on the computer CPU).

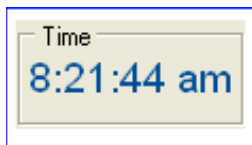
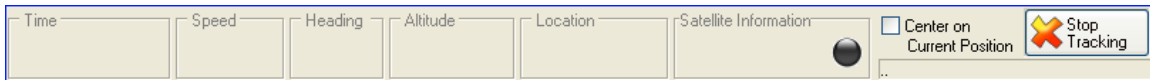
(6) In the Display Option panel there are two choices provided, 2-D and 3-D. If 2-D is selected, then the tracking is displayed on the main viewport (map) of the program. If 3-D is selected, then a second, smaller map window opens up in the middle of the screen, and tracking is done in that window. In 3-D mode, the map is automatically rotated so that the direction of travel is always forward (up).

(7) In the direction arrow color option box, the user can select the color for the arrow that is used to show the direction of travel.

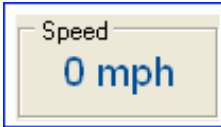
After the user has set their preferences in this dialog, they can click on the Start Tracking button to enable the GPS Tracking Mode.



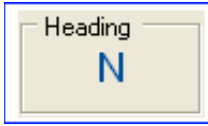
Once in tracking mode, the user will be able to see all of the GPS tracking information at the bottom of the screen, in a series of panels. The panels that are displayed echo the results calculated based on information obtained by the program while communicating with the GPS device connected to the computer.



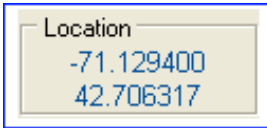
This panel displays the time as supplied to the program by the GPS device along with any time zone adjustments made by the user.



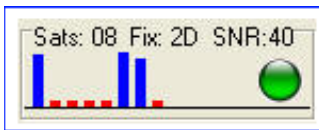
This panel displays the speed as supplied to the program by the GPS device as well as the format of the displayed speed (mph, kilometers or nautical miles).



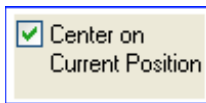
This panel displays the direction you are heading as provided to the program by the GPS device.



This panel displays the Longitude/Latitude coordinates of the current location (also marked on the map) as supplied to the program by the GPS device.



Displays the satellite fix information, as provided to the program by the GPS device. The satellite signal is reflected by the height of the bars. The 2D or 3D fix is indicated, and the Signal-to-Noise-Ratio value is displayed. *A red sphere indicates that no GPS fix has been obtained, while a green indicates that the device does in fact have enough of a satellite connection and has acquired a fix.*



Here, the user may select whether to re-center the map around the current fixed location, or not. The frequency of re-centering is based on the re-center buffer setting.



Pressing this button will stop the tracking mode and take the user back to the GPS settings dialog.

Working With Different Types of GPS Devices

Using the program with a GPS device, presumes that before you even run the program you already know, and you can tell the program how the device is communicating with the computer. So, although this is outside the scope of a Trailer Life Directory Campground Navigator tutorial, we felt that summarizing some of the steps the user can take in obtaining such information would be useful.

This section deals with the most common ways your GPS device may be connected to and is communicating with your computer. If you have a more customized setup, you can find additional information on how you may need to configure your device, in the utility and software programs that most likely came with your GPS receiver.

1. Using a GPS receiver with Serial output connected to a Serial (COM) Port.

This is the simplest (older) implementation of the GPS technology. The receiver has a cable that ends in a serial connector (most often DB9) and it connects directly to a serial port on the user's computer.



Since the user already knows which COM port the device is connected to (Serial ports on computers are most often clearly labeled), all they have to do is select the same port in TLDCN2008. Depending on your setup and the Operating System, the port being used by the GPS device may also be identified by selecting:

Control Panel → System Properties → Device Manager → Ports

Note that the user still needs to make sure that the baud rate on their device is the same as the value selected in the GPS setup dialog in TLDCN2008.

Typical devices with a serial (DB9) connector are the older Garmin GPS III, Garmin eTrex, Magellan 4000XL, etc.

2. Using a GPS receiver with Serial output connected to a USB Port.

In this setup, the same older GPS device type as in (1) is connected to a USB port, most often because newer laptop computers in particular, do not come with any serial (DB9) ports. In order to accommodate this type of connection, a Serial-to-USB adapter is required.

Such adapters use an internal (virtual) COM port to communicate with the computer. Once a GPS device of this type is connected, navigate to



Control Panel → System Properties → Device Manager → Ports

where you'll normally see the Serial-to USB adapter identified and the COM Port # it is using to communicate with the computer. Select the same port # in TLDCN2008 and start tracking.

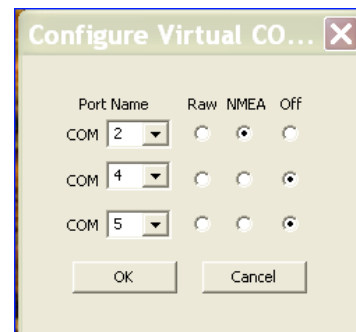
Note that the user still needs to make sure that the baud rate on their device is the same as the value selected in the GPS setup dialog in TLDCN2008.

3. Using a GPS receiver that has USB output and connected through a USB port

A popular example of a GPS device of this type, is Delorme's Earthmate GPS LT – 20. In order to make products of this type work with TLDCN2008, you must first download appropriate device drivers that allow such proprietary devices to communicate with third-party software, using NMEA sentences. Using the Delorme device as an example in this tutorial, you need to visit Delorme's web (www.delorme.com) site to obtain such a driver. Once on their website, navigate to the **Technical Support** page. On this page you will be asked to select your device from a list. When you have selected the device, choose the **Updates** option. From here, download **the Delorme Serial Emulation Driver for Earthmate Receivers**. Save the file, install it onto your system, and then restart your computer. (Note that you should follow the directions provided by the unit's manufacturer when installing and configuring these device drivers). Also note that installing, running and configuring the options in your GPS device is outside the scope of TLDCN2008. That's all done through the driver and software interface provided by the GPS receiver's manufacturer, even before TLDCN2008 is run.



Continuing with the Delorme example, once the Serial Emulator driver is installed, an icon will appear in the Windows taskbar (lower right of the screen) which looks like a satellite dish. Right click on the icon to open the dialog that allows you to select the ports you want to configure. Select the port number you wish to use and make sure that the NMEA option is selected. Run TLDCN2008 and click on the GPS button. Make sure the NMEA option is selected in the dialog that opens and make sure to set your COM port in the software to the same number as you set it in the Delorme dialog. You are now ready to use this GPS device with TLDCN08. Note that different versions of the device drivers may display different configuration dialogs and options. Some GPS receivers that use a USB connection, and virtual COM ports to communicate with the computer are: Delorme EarthMate LT-10, Delorme EarthMate LT-20, Pharos GPS360, GlobalSat BU-3003, Wintec BT100, etc.



4. Using a Bluetooth GPS receiver that communicates through a Virtual Com Port



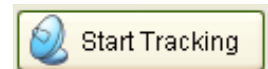
An example of such a device is Delorme's Earthmate GPS BT- 20. When using these types of GPS devices it is assumed that you already have a blue tooth adapter installed on your system and that it is properly configured. Turn the GPS device on and start the software that manages your blue tooth devices so that it can detect the GPS receiver. Select the GPS device you are using and it should display the COM port(s) the device is communicating through. Make sure you note the COM port setting and set the same port # in TLDCN2008, and you are ready to start tracking.

5. Using a Garmin GBS device and the Garmin Proprietary USB GPS Protocol

There is a family of Garmin GPS devices that use a proprietary protocol, developed by Garmin, to communicate with the computer (for example, Garmin 18 USB). In order to enable use of these devices with TLDCN2008, the proprietary protocol has been implemented in the program, and all the user has to do is make sure any drivers that came with the device are installed on their system, and then select the appropriate Garmin Interface in TLDCN2008.

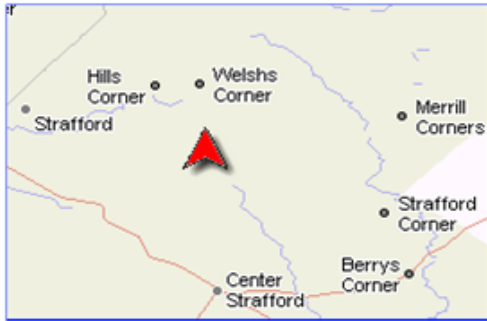
It should be noted that while "some" Garmin devices use this protocol, many use a virtual COM port and communicate through NMEA sentences, while other are capable of using either mode of communication. The user needs to review their GPS device's documentation and determine which mode it is currently using, before they setup the GPS options in TLDCN2008.

Regardless of which GPS device type you are using, once you have made sure that all the options are correct, in the GPS settings dialog, click on the Start Tracking button.



Notice the tracking information that appears at the bottom of the screen. As mentioned earlier, you should now be able to see the time, the speed at which you are traveling, the direction you are traveling in, the current altitude, along with the Lat/Lon coordinates of your current location.





Your current position on the map is indicated by the red arrow. As you are traveling, notice that this arrow moves along the map in the direction that you are moving in.

As you change directions, so does the arrow, following the direction of travel.

If you are using the 3-D display option, the behavior is a bit different. Here, the map itself is constantly rotating so that the arrow (direction that you are traveling in) is always going the same way (Up).

In this view you can see your direction arrow (1), the current Lat/Lon coordinates (2), and the direction that you are heading in (3).



As mentioned earlier, to exit GPS tracking mode and go back to the GPS settings dialog, simply click on the Stop Tracking button.