

Tesla Roadster GPS Firmware Update Instructions

Prepare Software on Laptop

A Windows PC laptop with an available USB-A port is required. Garmin's instructions say that Windows 7 SP1 or later is required, but a test with Windows XP was successful. With an Internet connection active, prepare the software as follows:

1. Plug the USB connector of the Roadster GPS Firmware Update Cable into the laptop. The cable incorporates the PL2303 chip for which a driver should be readily available. Windows 10 automatically downloaded and installed it; older systems may need assistance.
2. Use the Windows Device Manager or some other method to find out which COM port number was assigned to the PL2303 adapter. COM7 was the result in the first tests of this procedure.
3. Download and unzip Garmin's sensor configuration utility SNSRXCFG onto the laptop from https://www8.garmin.com/support/download_details.jsp?id=4053
4. Download the self-extracting archive executable file containing the new GPS firmware and the firmware updater utility onto the laptop from https://www8.garmin.com/support/download_details.jsp?id=4055
5. Install the files from the archive by running the executable file (GPS18xPC_LVC_440.exe) that was downloaded. **These instructions assume that you let the installer put the files into the default location of C:\Garmin\GPS18x_PC_LVC.**

Connect to the GPS

1. When you're ready to do the firmware update, it's a good idea to first roll down the windows so you can reach in to open the door in case it gets closed while the APS is inhibited (the 12V battery is supposed to still allow the exterior handles to work, but this is an extra degree of caution).
2. Inhibit the APS (auxilliary power system), which turns off 12V power to many of the car's systems. To do this, tap the VDS display to wake it up, then tap 6 times quickly to bring up the diagnostic mode screen. Enter the password 1050 and tap OK. Then tap the Controls button, and on the next screen tap Inhibit APS.
3. Find the VMS which is an aluminum box with a label indicating "VMS" mounted on the ceiling of the passenger footwell. Unplug the large black plug from the VMS (the blue one can remain connected). You need to lift the latch and be careful not to break it, but there's not much risk of bending the pins. It does require quite a bit of force to separate these watertight connectors.
4. Connect the black plug just removed from the VMS to the box on the end of the GPS update cable. (The plugs are indexed so only the black one will mate with the update cable.)
5. If the mouse cursor on your laptop starts behaving erratically, see Appendix D in https://static.garmincdn.com/pumac/GPS_18x_Tech_Specs.pdf

Update the GPS Firmware

1. Run the SNSRXCFG program by clicking on the downloaded file (SNSRXCFG_300.exe). It will ask which Garmin sensor you will connect to; select “GPS 18x PC/LVC” and click OK.
2. From the menu bar, select Comm – Setup and then in the popup set the COM port number for the FTDI device and for Baud Rate choose manual and select 4800.
3. Select Comm – Connect which should connect to the GPS sensor. If it fails make sure you have selected the correct COM port and baud rate. You can try power cycling the GPS sensor by unplugging the black plug from the update cable box and then plugging in again.
4. Select View – NMEA Transmitted Sentences. This pops up a window that fills in with the various types of NMEA sentences as they are periodically received from the GPS sensor. Wait for the PGRMT sentence that shows the sensor type and firmware version. If the type is “GPS 18LVC” this is the older model seen on 1.5 Roadsters that does not need updating. If the type is “GPS 18xLVC” and the firmware version is less than 4.20, then it needs updating.
5. Select Config – Update Software or press F12 to update the firmware. A sequence of dialogs will be presented to select the 079601000440.rgn firmware update file and the Updater.exe utility that performs the update. Presuming that you have installed those files to the default location, the program will find the right files so you can just click on them and click Open.
6. If Updater.exe does not start automatically, change directory to C:\Garmin\GPS18x_PC_LVC and run Updater.exe manually. For the upload, the baud rate can be auto. The display will indicate “Software Loading...” during the 1-3 minute upload process. When the upload is completed, the unit will reset itself and turn on normally. If not, select Config – Switch to NMEA Mode. If necessary, unplug the USB cable, plug back in and restart SNSRXCFG.
7. Select Comm – Connect again to connect back to the sensor. Select View – NMEA Transmitted Sentences again and wait for the PGRMT sentence to be received. Now you should see the updated version number (e.g. 4.40).
8. You can now exit the SNSRXCFG utility. It may ask questions about saving the configuration; you can continue exiting without updating and decline to save the configuration file.

Restore Normal Operation

1. Disconnect the black plug from the update cable box and plug it back onto the VMS.
2. Uninhibit the APS. To do this, tap the VDS display to wake it up and repeat as needed to clear warnings, then enter diagnostic mode as before. Then tap the Controls button, and on the next screen tap Uninhibit APS, then tap Back twice to be back to normal operation.
3. If you get a “VMS-VDS comms fault”, unplug both the black and blue connectors from the VMS, wait a minute, and reconnect. It may take another few minutes for the fault to clear.

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