UPGRADE THE FIRMWARE ON YOUR KIWI-GPS UNIT

The following instructions are intended for those who own a KIWI-GPS unit. The recommended configuration settings are selected to be optimal when used with the KIWI-OSD and any changes from the recommended settings may cause the KIWI-OSD not to operate as designed.

NOTE: Some assumptions are made as to the technical and PC savvy of the reader. Terms such as "browse", "download", and "install", "Double-click", "Click" will be used without explanation.

In order to proceed, you will need the following:

- KIWI-OSD
- KIWI-GPS unit (the one you wish to upgrade)
- The serial cable that came with your KIWI-OSD unit.
- Suitable power for the KIWI-OSD
- A PC with a serial port. Garmin does not specify what version of operating system but probably Windows 2000 or greater is required. It is recommended that you use a serial port rather than an USB port that is configured to be a serial port unless you are very familiar with characteristics of how the USB/serial port on your computer behaves.

Determine which Garmin GPS unit you own.

Turn over the GPS "puck" and look at the back. It should resemble one of the photos below. You should have either a Garmin 18 or Garmin 18x unit. NOTE: Some users may have a Garmin 16 GPS. We are not including instruction on how to upgrade those units, but if you follow the basic procedures and download the proper software from Garmin, the steps you must take are similar.

The model 18 is shown on the left and the model 18x is shown on the right. Note which one you have for later in the instructions.

Download the necessary software from Garmin.

Browse to www.garmin.com , click on "OEM" from the "Products" menu, then either on the GPS 18 OEM, or GPS 18x OEM based on your model number above. NOTE: DO NOT select the GPS 18 5hz or GPS 18x 5hz models.

From the "quick links" options on the right of the screen, select "Updates & Downloads".

For the GPS 18 OEM, download and save the Unit Software, GPS 18 Ver. 3.20 as of Oct 10, 2007 as well as the Additional Software, SNSRCFG Ver. 3.20 as of Apr 13, 2007.

For the GPS 18x OEM, download and save the Unit Software GPS 18x PC/LVC Ver. 2.80 as of Oct 13, 2008 as well as the Additional Software, SNSRXCFG Ver. 2.00 as of Apr 24, 2008.
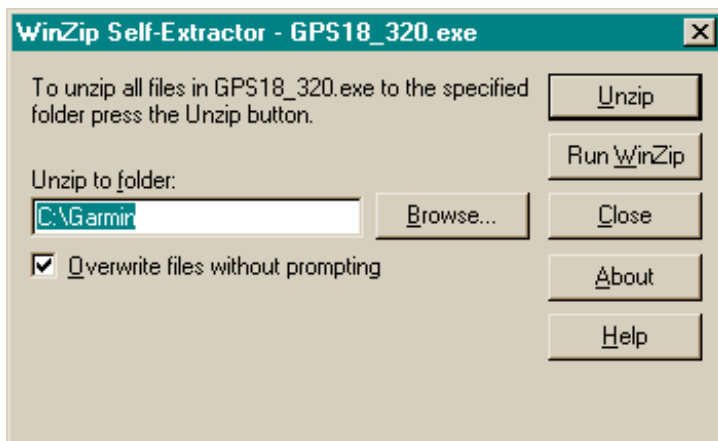
Installing the software on your computer.

Under the C: drive on your computer, created a folder and name it "garmin". This is the location of where the GPS configuration software will be installed.

Browse to the location of where you downloaded the Garmin files.

For the GPS 18 LVC model:

Double-click the GPS18_320.exe file.

It will prompt you for the location of the folder you just created. Click on "Unzip"

Click on the "OK" button. Then click on the "Close" button to exit the Self-Extractor utility.

Copy the SNSRCFG_320.exe program from the download location to C:\garmin .
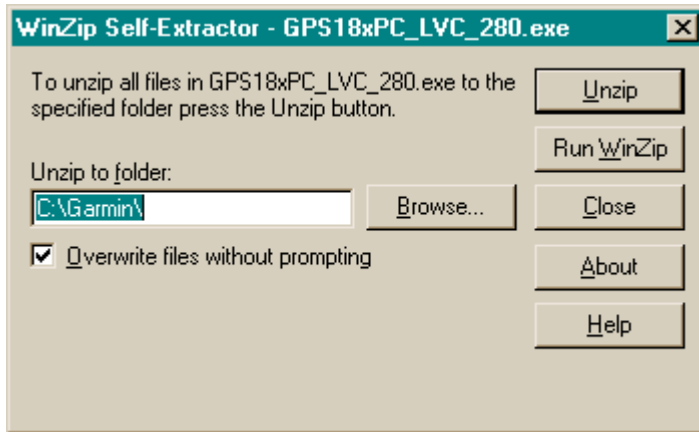
There should now be 4 files in the C:\garmin folder:

027300000320.RGN
GPS18_0320.TXT
Updater.exe
SNSRCFG_320.exe

All configurations are accomplished via the SNSRCFG_320.exe utility. Skip past the GPS 18x OEM section below.

For the GPS 18x OEM model:

Double-click the GPS18xPC_LVC_280.exe file.

It will prompt you for the location of the folder you just created. Click on "Unzip"

Only 2 files are unzipped. Click on the "OK" button. Then click on the "Close" button to exit the Self-Extractor utility.

Copy the SNSRXCFG_200.exe program from the download location to C:\garmin .

There should now be 3 files in the C:\garmin folder:

079601000280.rgn
Updater.exe

SNSRXCFG_200.exe

All configurations are accomplished via the SNSRCFG_320.exe utility.

Attach your KIWI-GPS to your PC

This step requires you to open your KIWI-OSD so that you can install the serial cable that was shipped to you when you purchased your OSD.
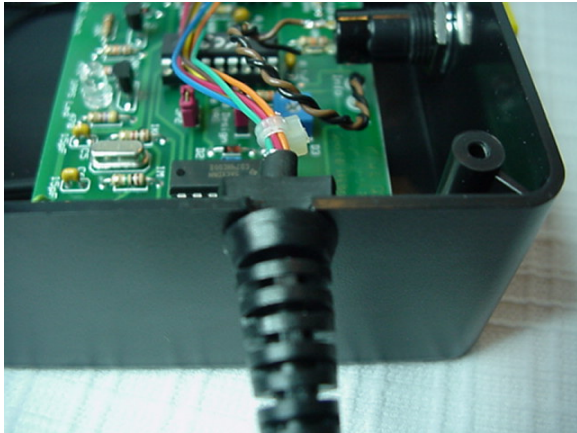

KIWI Serial Cable

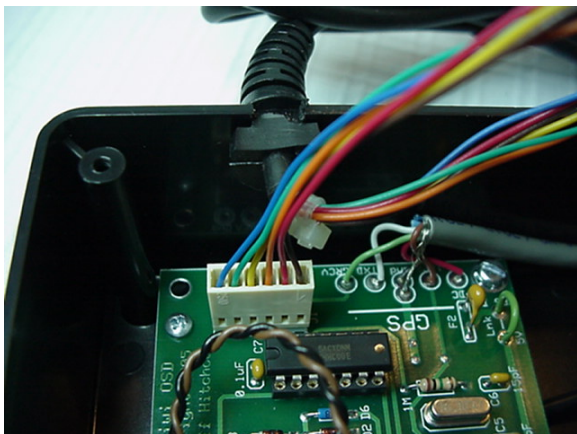The cable's Strain relief

Remove the 4 screws on the cover plate

Remove the white hole cover. NOTE: Some of the older KIWI models may not have the white hole cover.

Insert the cable into the U-shaped slot. This step is done to help keep the cable from being accidently yanked out of the OSD during the configuration.

Install the cable connector onto the Molex connector as shown.

If you only plan to use the serial cable to configure the GPS, do not bother to reinstall the cover. The other end of the serial cable is a DB-9 female connector. Attach it to a male DB-9 serial port on your PC.

Apply power to the KIWI-OSD and plug in the KIWI-GPS into the KIWI-OSD. NOTE: it is not necessary to attach a video source or video monitor at this time.
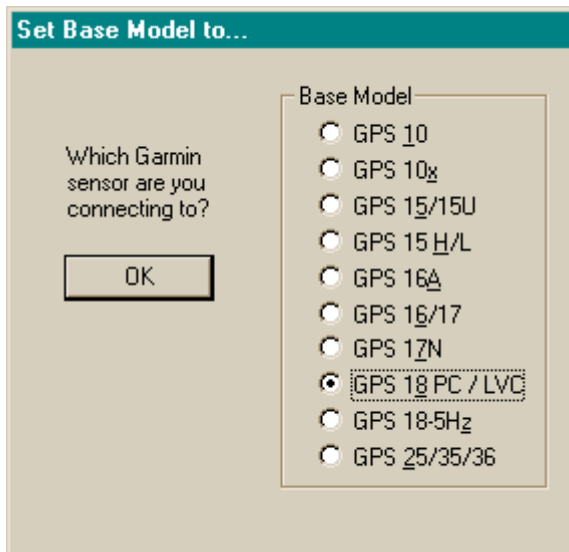
Configuring and Updating the GPS module

Once the KIWI-GPS is attached to the powered KIWI-OSD, we may now run the update and configuration utilities.

Follow the steps below for the GPS model you own.

For the GPS 18 LVC:

Run the SNSRCFG_320.exe utility. If you are prompted by your system, allow the program to run.

When this screen displays, select GPS 18 PC / LVC and click OK.

The Sensor Configuration Screen will display. Don't worry about the settings on the screen, they will be configured later.

For the GPS 18x:

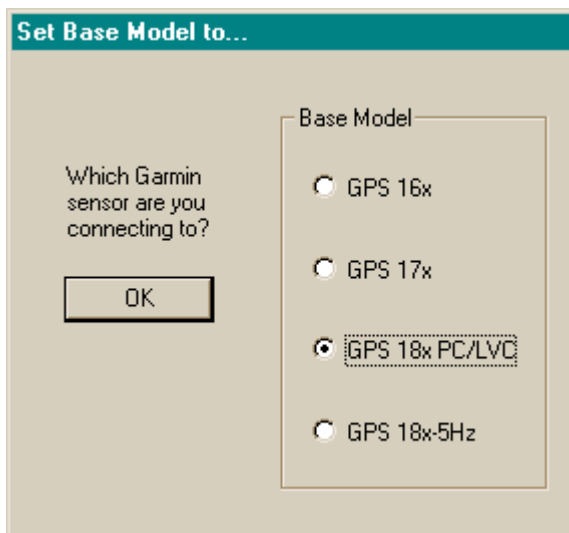Run the SNSRXCFG_200.exe utility. If you are prompted by your system, allow the program to run.

When this screen displays, select GPS 18x PC/LVC and click OK.

The Sensor Configuration Screen will display. Don't worry about the settings on the screen, they will be configured later.

For both GPS 18 and GPS 18x models

The values shown are the default "out of the box" configuration settings and are not what we need for proper operation of the KIWI-OSD. We will take care of that problem later.
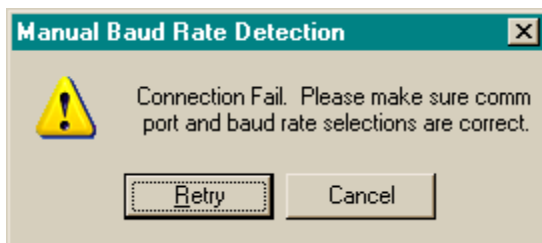
Our first step will be to attempt to communicate with the GPS unit. This step is common to both the GPS 18 and GPS 18x.

Click on the icon with the two red arrows pointing toward each other. It is the third from the left.
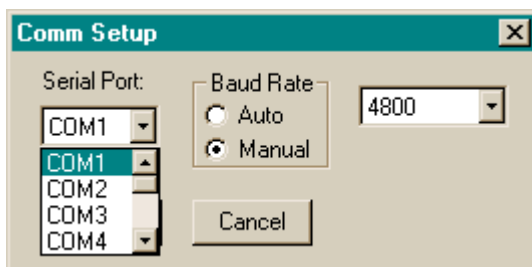
If the connection is successful…
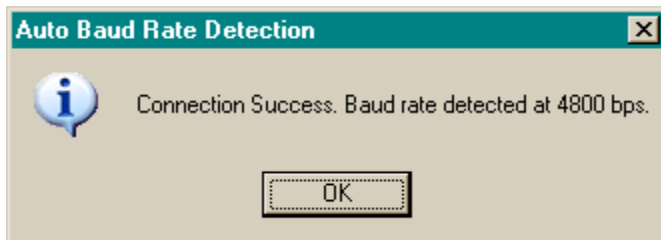
The screen to the left is displayed ….

Otherwise,the screen to the left is displayed. If this occurs, you must configure the software to "see" the GPS.

Click on "Comm", then "Setup" from the menu. The following screen is displayed.

Try different COM ports but leave the Baud rate set to manual and 4800. Keep trying the available COM ports till the Connection Success screen is displayed. NOTE: COM1 and COM2 are the most common serial ports, but some USB/serial ports use other ports as well.

Repeat clicking on the "connect" icon and changing values until you identify the correct COM port. And get good connection.

Once we have a good connection to the GPS, we will attempt to retrieve the current settings so that we do not have to reconfigure every setting.

Our next step will be to update the firmware.

V1.00

WARNING: Do not attempt to update the firmware until you have successfully established a connection with the GPS using the steps above. The following instructions ASSUME that you have established that connection.

From the "Config" menu, select "Update Software". You will be prompted with the following message:
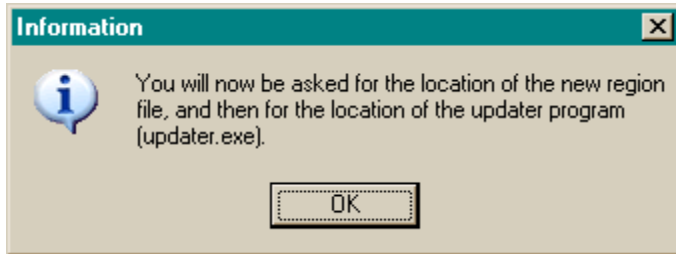
 Click "OK".

You will be prompted for the location of the region file and the update utility. NOTE: the program you are currently running is NOT the update application; it is the configuration application. The configuration application talks to the update application to install the firmware code.

If the "Look in" folder is not Garmin, use the navigation buttons to browse to C:\Garmin .
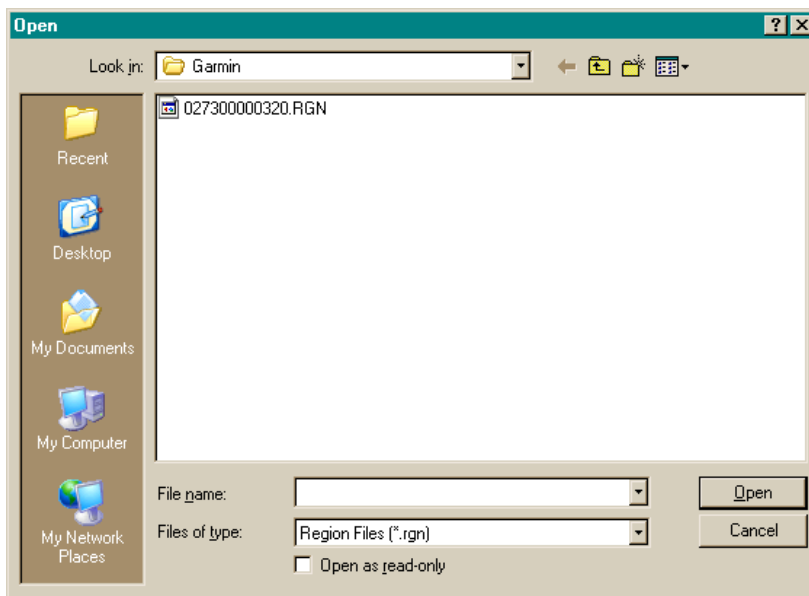
Click on the RGN file. The file name will appear in the File name box. Click "Open"

You will now be prompted to selection the Update utility. Click on the Updater.exe file.
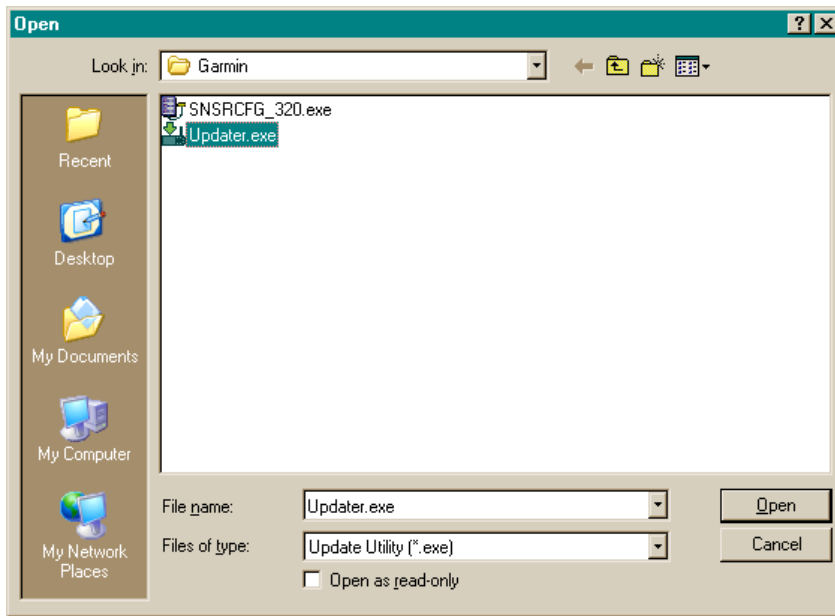
The selection will appear in the File name box. Then click "Open".

When the following window appears,
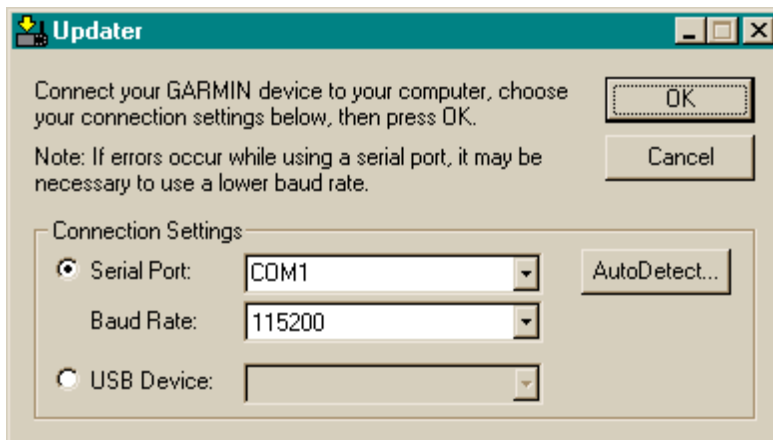
Insure that the COM port settings are the same as you selected during the initial connection process. You may need to adjust the Baud Rate setting if the transfer does not work properly since some serial ports are limited in their ability to sustain a high speed connection.

Click "OK" to begin the update process.

If the following message appears,
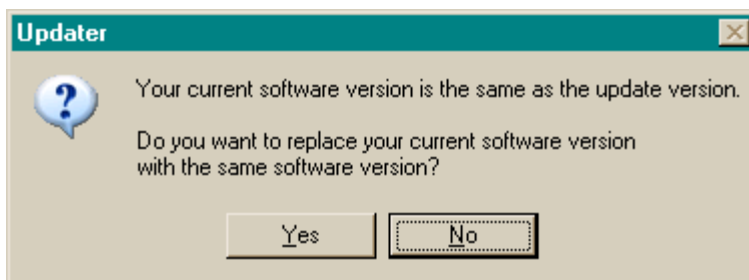
Then the firmware on your GPS is already loaded with the most recent. You can now click "No" to end the update.

If the version on your GPS is different, then the software will begin the update process. You will see a screen similar to the one below.

Updating Software In... `_ □ X`

GPS 18LVC - software ver. 3.20
Updating...
100% complete, 0:00 remaining

[_____]   Abort

DO NOT disrupt the GPS, OSD, or your power at this time.

When the update process is complete, the following message is displayed.

Update Complete `_ □ X`

The update was successful.

OK

If any problems occur, follow the instruction on the screen and take the necessary action.

Click "OK". The software will return you to the Configuration Application.
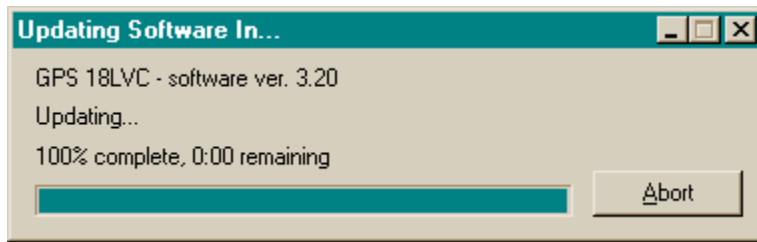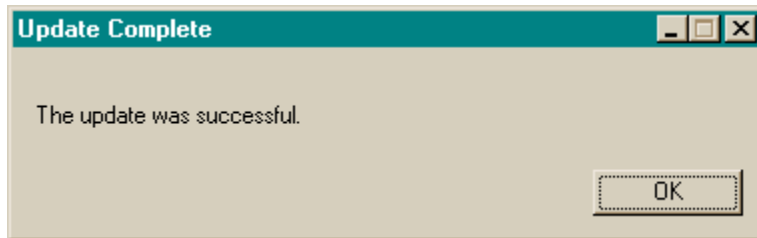
Retrieving the current configuration from the GPS

For both GPS models…

Reconnect to the GPS as before by clicking on the "Connect" icon.

When you connect, two additional icons will become enabled. "Send Config to GPS" and "Get Config from GPS". You can tell which is which by hovering the mouse over each icon without clicking on either of them.

Click on the "Get Config from GPS" icon.

The current configuration information will be retrieved from the GPS. The configuration screens for both models of GPS are shown below.

Compare what is on the your computer screen with the values on the examples below. With the exception of the Latitude/Longitude and Altitude values, the other values should be the same.

If any of the values are different, you must change them to match the values on these examples shown below. Details of how to change each value would require too much documentation, but the sub screens you must use are located under the "Config" menu. Use the "Sensor Configuration", and the "NMEA Sentence Selection" options. Take your time and change only one value at a time so that you can see how the values change and can undo any mistakes you might make.

```
SNSRXCFG.cfg - GARMIN Sensor Configuration Software

File  Comm  Config  View  Help

Configuration file:  SNSRXCFG.cfg
GPS Base Model:       GPS 18 PC / LVC
                                            Selected
Latitude:             38° 51.333' N         Sentences:
Longitude:            094° 47.941' W        GPGGA
Altitude:             300.0 meters          GPRMC

Fix mode:             Automatic
Filter mode:          Automatic
Baud rate:            4800 bps
Dead Reckon Time:     30.0 sec
NMEA Output Time:     1 sec
Position Averaging:   On
NMEA 2.30 Mode:       Off
Power Save Mode:      Off (Normal Mode)
PPS mode:             1 Hz
PPS Length:           20 msec
PPS Auto Off:         Off
Phase Output Data:    Off
Mask Low Speeds:      On
DGPS Mode:            None
Differential mode:    Automatic
Earth datum index:    WGS 84
```

For the GPS 18 model.

```
SNSRXCFG.cfg - GARMIN X-Series Sensor Configuration Software

File  Comm  Config  View  Help

Configuration file:  SNSRXCFG.cfg
GPS Base Model:       GPS 18x PC/LVC
                                            Selected
System Configuration                        Sentences:
  Baud rate:          4800 bps              GPGGA
  Power Save Mode:    Off (Normal Mode)     GPRMC
  Phase Output Data: Off

NMEA Configuration
  NMEA 2.30 Mode:     Off
  NMEA Output Time:   1 sec

PPS Configuration
  PPS mode:           1 Hz
  PPS Length:         20 msec
  PPS Auto Off:       Off

GPS Configuration
  Fix mode:           Automatic
  DGPS Mode:          None
  Differential mode: Automatic
  Dead Reckon Time:   30.0 sec

  Latitude:           00° 00.000' N
  Longitude:          000° 00.000' E
  Altitude:           300.0 meters

  Earth datum index: WGS 84
```

For the model GPS 18x

Once the settings are correct, save the configuration to your PC by selecting the "Save" option on the "File" menu. The "File name" box will pre-load with the name of the configuration file. Insure that the folder is pointing to C:\Garmin and then click the "Save" button.

If you made any changes to the configuration, you must upload any changes back to the GPS.

This is accomplished using the "Send Config to GPS". Click on the icon and you will see the configuration messages being sent to the GPS.
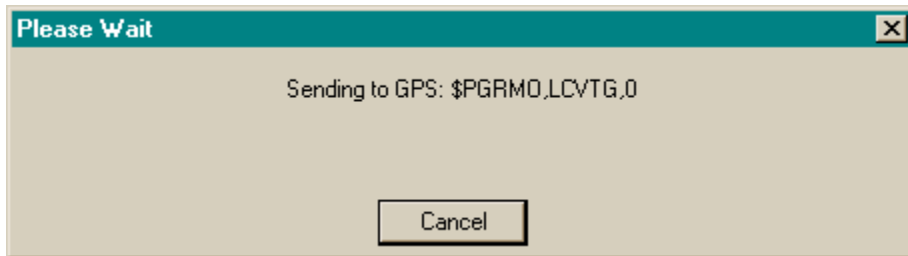
An example is shown above.

When the transfer is complete, exit the utility, and disconnect the GPS serial cable from the PC. Remove the cable from the OSD, replace the white grommet, and replace the lid on the OSD and secure with the four screws.

This completes the configuration and firmware update procedures.