

MXL - GPS Laptimer

This new GPS Laptiming feature for the MXL allows racers to get laptimes and splits without using beacon transmitters and receivers. All you need is a GPS module version 35.13 connected to your MXL with 14.86.22 firmware version (or more recent ones).

The first operation to perform when you go on track is to set lap and split positions by giving correct instructions to the GPS module. This allows the GPS to get beacons. This operation must be done before racing and it can be done only **once** for each track.

Setting the lap position

Switch to the “Set GPS Beacons” page (figure 1) by pressing the *Menu* Button. This can be done either with engine running or not. If the engine is running, the Menu Button will not only turn backlight on/off but it will give the possibility to set GPS beacons too.



Figure 1. “Set GPS Beacons” on MXL

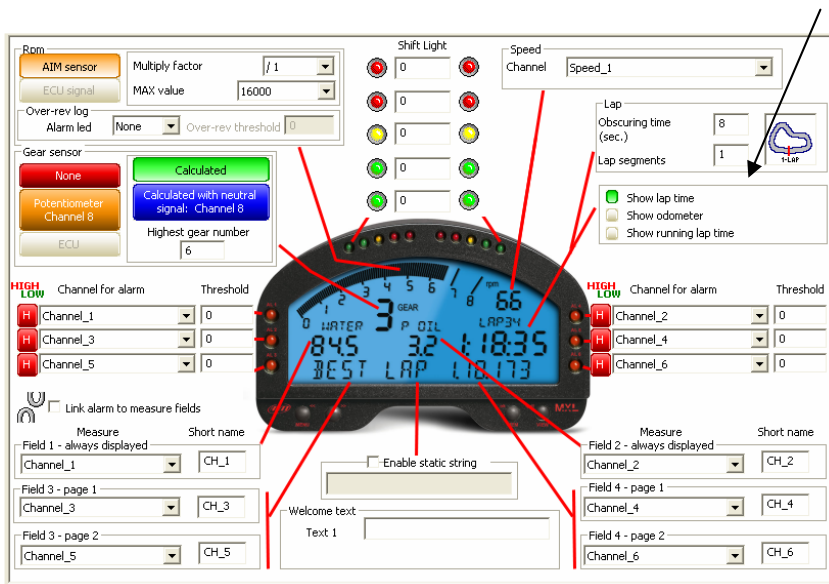
Press the OK button to begin settings. The MXL will now ask for beacons as shown below in figure 2.



Figure 2. Press the “OK” button to set the start/finish line.

With the screen above showing, go to the finish line and press the OK button. The finish line position will be saved.

Number of splits has to be configured as shown below in RaceStudio2 window:



In case of low or no available satellite signal, the MXL will ask again for beacons.

If you have some splits configured, your system will ask you to set their position. Figure 3 shows the screen that you will see to do this. Go to the split line and confirm it by pressing the OK button.



Figure 3. Press “OK” button to set the split locations individually.

You may follow this procedure either while the vehicle is moving on track, or while stopped. Once the configuration is over, the main page (figure 4) will appear automatically and you will be ready to acquire lap times. The “TRK” info in the lower right part of the display means that the current track has been recognized and the system is ready to get GPS Laptime and split points. If you wish to abort procedure, you have to restart the MXL.



Figure 4. System ready for GPS Lap timing.

Additional features

Your GPS Module can store up to 50 GPS track configurations. Once stored, the configuration will be automatically loaded every time you enter the track with the GPS module connected to your MXL.

ATTENTION:

MXL with GPS Laptimer function manages signals coming from the optical receiver too. We would suggest you to disconnect this traditional infrared receiver to avoid duplications on the final lap time.

GPS Manager

Using the GPS Sensor it is possible to go on track and to create lap beacons and split beacons anywhere on the track. This software is to be used for the synchronization of AIM GPS Sensor and users PC.

This software allows you to:

- Move lap/splits configurations from the GPS Sensor to the PC,
- Move lap/splits configurations from the PC to the GPS Sensor.

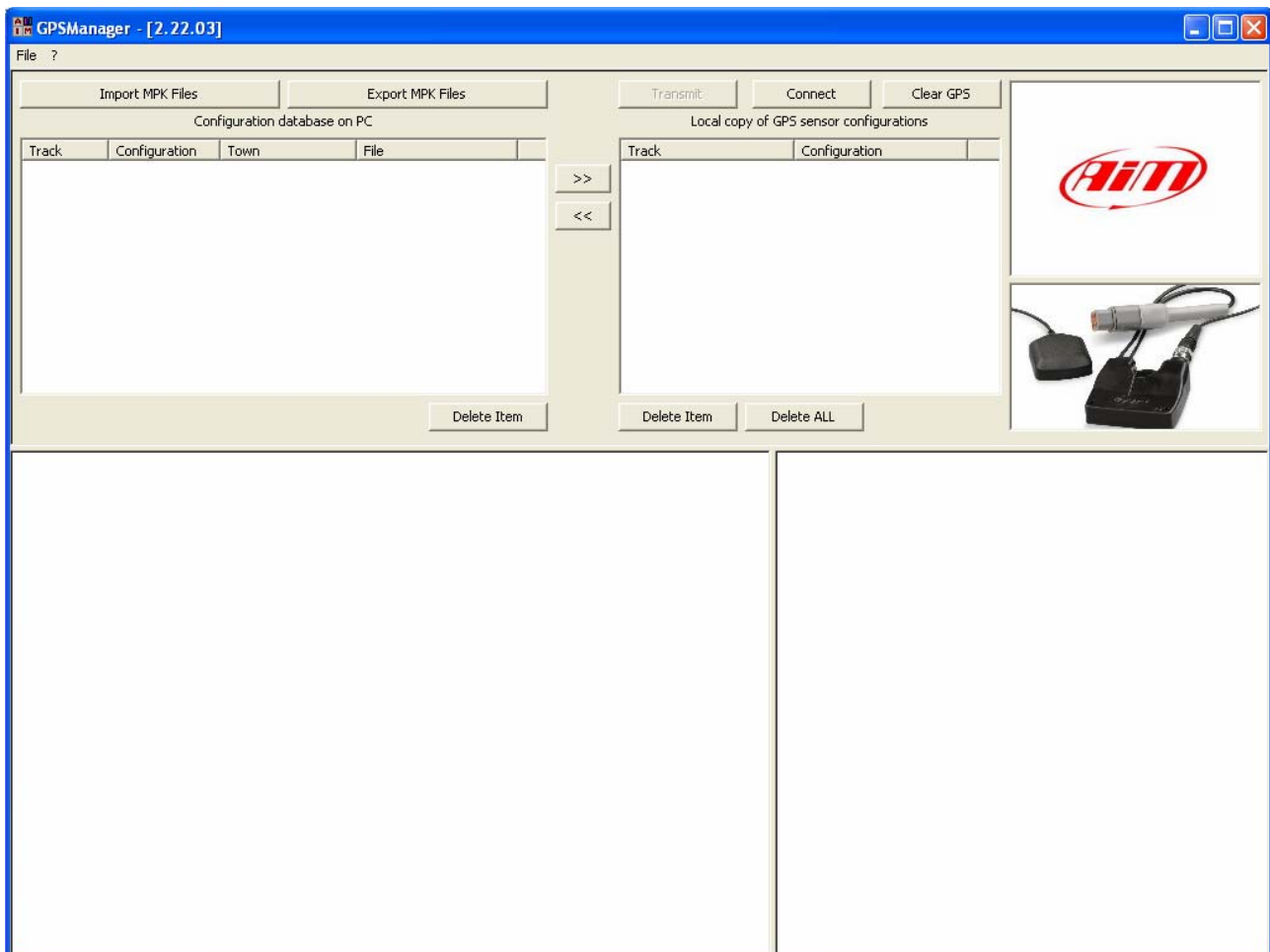


Figure 5. PC screen shot of GPS Manager

The software features a lap/splits configuration database. In the top left of the screen is a list of all the available (track) configurations as shown in figure 5 above. This list is automatically populated by the software.

In the upper right corner of the screen a picture of the GPS Sensor can be seen just below the AIM logo. When a communication with an AIM gauge is established the AIM logo transforms into a picture of the gauge through which the PC is communicating with the GPS Sensor.

In the upper middle part of the software there are three buttons (“Transmit,” “Connect,” and “Clear GPS”) with a configuration list directly below it.

The configuration list is the list of the lap/splits configurations available to the GPS Sensor. It is populated on user command. Those user commands will be explained in more detail below.

The *Receive* button is used to populate the GPS Sensor list. The GPS Manager software copies into the list all the configurations that are inside the GPS Sensor.

The *Transmit* button is used to copy all the configurations of the GPS Sensor list into the GPS Sensor memory. A confirmation message window is shown to the user because this operation modifies the GPS Sensor memory content.

The *Clear GPS* button is to be used to completely erase and empty the GPS Sensor memory. A confirmation message window is shown to the user because this operation completely erases the GPS Sensor memory.

Between the two lists, two buttons can be seen. The << button is to be used to move a configuration from the GPS Sensor list to the PC database list. The >> button is to be used to move a configuration from the PC database list to the GPS Sensor list. Please notice that the configuration is moved from one list to the other only in the software and the GPS Sensor is synchronized only when the *Transmit* button is clicked.

When moving a configuration from the GPS Sensor list to the PC database list three situations can occur:

1. The configuration on the GPS sensor has just been created. In this case the user is prompted with a window in which he has to insert the name of the track and its configuration name as shown in figure 6 below, and the configuration is copied into the database.
2. The configuration on the GPS sensor has already been copied into the database, in this case the user is prompted the name insert window, if OK is clicked with no name change nothing happens, if OK is clicked with a new name inserted a new configuration is created into the database.
3. The configuration on the GPS sensor already has a name, but there isn't a copy of it in the database. In this case, the configuration is inserted into the database.



Town & File Name	
Pista Name	Monza
Variant Name	Junior
Town <input checked="" type="checkbox"/>	Monza
File Name <input type="checkbox"/>	Monza-Junior.mpk
OK Cancel	

Figure 6. Creating file name for given GPS configuration

The picture above shows the window in which it is possible to insert the track name and the track configurations name. The file name is automatically defined by the track and configuration name, unless users enable the checkbox and edit the file name. Users may insert a town name that may differ from the track name (by default it is set the same as the track name).

The software features three different delete buttons as shown in figure 5. The “Delete Item” button below the PC database list allows users to delete some configurations from the database individually. The buttons below the GPS sensor list let users delete configurations from the GPS sensor list. The “Delete Item” button allows you to delete configurations individually, or you can choose to delete all of them at once by selecting the “Delete All” button. Remember that in this case the configurations are deleted from the local copy of the GPS sensor memory, the *Transmit* button must be used to synchronize the GPS sensor.

The bottom part of the software is divided in two parts as shown in figure 5. The left part is actually empty and is reserved for future use (when the software adds lap/splits editing functionalities). The right part shows some info on the list item selected. Some more features will be added to this part with further developments of this software as well.

Typical use of the GPS Manager software

You go on track with the GPS Sensor connected to an AIM gauge and complete the firmware procedure that lets you insert lap and splits positions. Once the procedure is completed the gauge will be able to get lap times for its whole life.

Should you want to copy the lap/splits configuration you have created to any other AIM GPS sensor, simply follow the steps below.

1. Connect your GPS sensor to the GPS Manager software
2. Click the *Receive* button
3. Click the << button to copy the lap/splits configuration into the PC database
4. Unplug the GPS sensor
5. Connect the desired GPS sensor to the PC
6. Click the *Receive* button
7. Populate the GPS sensor list with the correct lap/splits configuration
8. Click the *Transmit* button