

# Hill-climb / Sprint / Rally Stage Timing Using GPS

The DD2-PRO+ system requires a GPS location for the finish line of each stage or sprint in order to stop the timer. This location can either be entered manually using the Configure setup in the DigiTools, or by pressing button D (external button) when on the finish line.

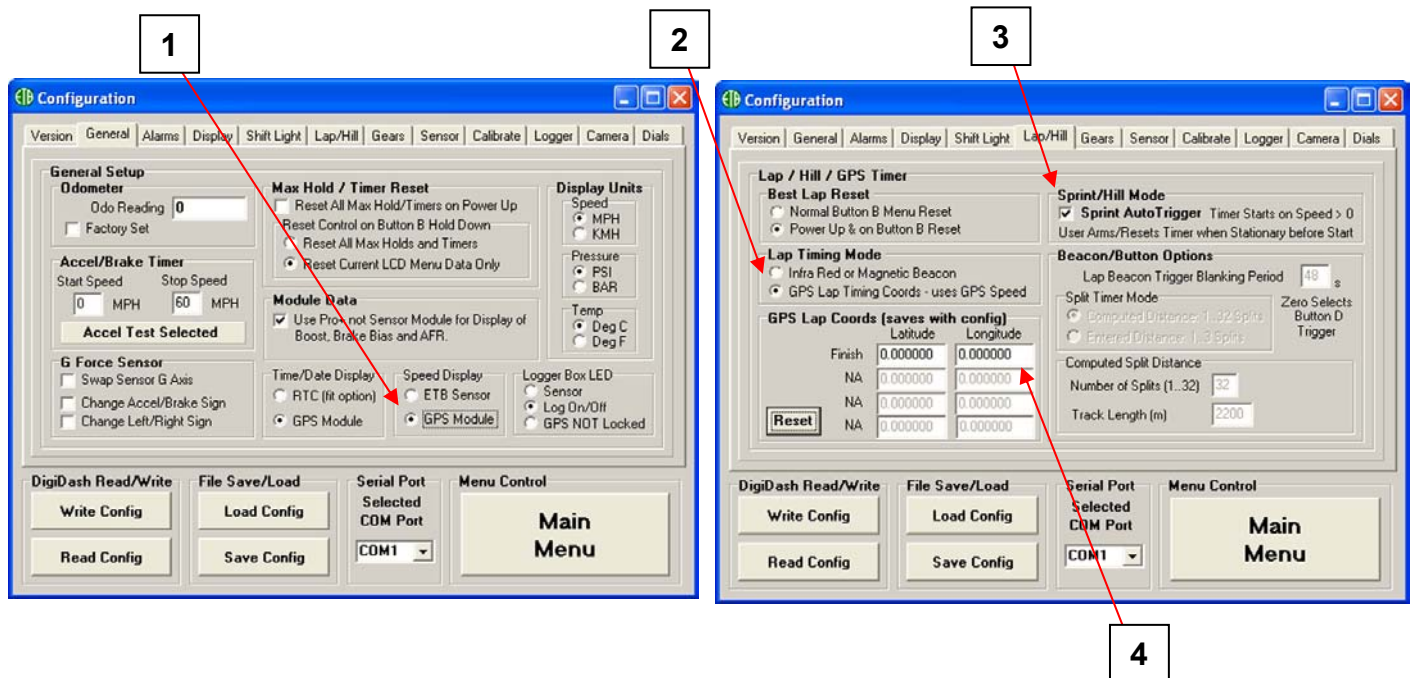
## Installation Requirements

- GPS sensor connected to Display (via Grey connector on flying lead)
- Manual push-button wired in for Button D (Grey wire on Yellow Display connector). This should be a single-pole, single throw push-to-make switch.

## Software Configuration of DD2-PRO+ for Stage Timing

The following functions must be selected in the DigiTools Configure Menu in order to use GPS stage timing:-

1. GPS Speed (Configure Menu / General Tab)
2. GPS Lap Timing (Configure Menu / Lap/Hill Tab / Lap timing Mode)
3. Sprint Auto Trigger (Configure Menu / Lap/Hill Tab / Sprint/Hill Mode)



## Setting the GPS Co-Ordinates of each Stage Finish Line

There are two ways to enter the GPS stage finish co-ordinates (Longitude and Latitude).

### **Manually entering GPS Co-ordinates**

If the GPS co-ordinates of the stage finish line are known (these can sometimes be obtained using Google Earth), the Latitude and Longitude values can be entered manually (see item 4 above). These co-ordinates can then be saved as a Configuration File (.dcf file). The filename should show the particular stage to which the finish line relates.

### **Using Button D to record the GPS co-ordinates**

During practice / reconnaissance, the finish line can be recorded by pressing Button D. This will log the GPS co-ordinates and can be viewed using the DigiTools configure menu (lap/hill tab). The co-ordinates recorded will be shown in the finish line box as above (item 4). Each time the finish line co-ordinates are set to memory, the GPS co-ordinates must be saved as configuration file (.dcf) to your lap top.

**NOTE** - *For each stage or sprint / hill climb, the corresponding configuration file with the correct finish line co-ordinates must be written to the PRO+ system using a laptop to ensure that the timer is stopped as you pass the finish line.*

### **User Procedure for Recording Stage / Sprint / Hill-climb times**

The recording of a stage (or "Lap") time is very important as this time is used for specifying the start and stop points when plotting the stage map in the DigiTools Analysis software. The following procedure assumes that you have correctly configured the DD2-PRO+ as instructed above.

The procedure for each stage, sprint or hill-climb is as follows:-

- a) Write the corresponding configuration file to the DD2-PRO+ unit with the appropriate GPS finish Line co-ordinates. (Ensure that GPS speed, GPS lap timing mode and Sprint Auto trigger functions are selected)
- b) Go to start line.
- c) Turn on Datalogger by holding down button A for 2 seconds.
- d) Press Button B to reset the timers. (The timer will automatically start when speed is greater than (>) 0.
- e) On completion of the stage, switch off the logger.
- f) Before beginning next rally stage, write the corresponding configuration file to the DD2-PRO+ with the new GPS finish line co-ordinates.