

## SPA Laptimer manual

The new SPA Laptimer is an accurate and easy to use battery powered timing system, with a backlit graphic display with large easy to read digits.

The track side beacon beams infra-red across the track which is picked up by the small receiver connected to the laptimer.

The display shows current lap time, and also a second smaller display can be configured to show last lap, best lap, compare to last lap, or compare to best lap.

More than 2000 laps and 100 sessions can be stored for viewing on the Laptimer and at the click of a mouse the data can be downloaded to a PC with a USB lead, and optional bluetooth download to a PC or PDA.

The Laptimer and beacon are low powered and run from internal AA batteries for convenience and portability. The Laptimer display unit can also be hard-wired to the vehicle 12v supply if desired and is also powered up when connected to the USB socket on a PC or Laptop.

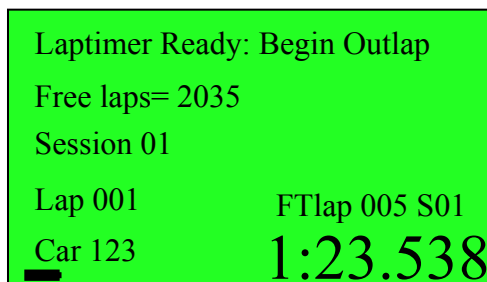
The SPA Laptimer is ready to use out of the box, but if desired can be configured by the menu system. Simply connect the receiver cable, press the on/menu button, flick the switch on the transmitter down (red led flashes when on) and it is ready.

### Operation

Hold down the On/menu button until the Laptimer switches on.

If you are powering using an external 12v supply, the Laptimer will come on and go off with the 12v supply. Plugging into the USB also will start and power the Laptimer.

The display will show the information/outlap screen:-



Laptimer Ready: Begin Outlap  
Free laps= 2035  
Session 01  
Lap 001            FTlap 005 S01  
Car 123            1:23.538

Here you can review the status. This screen stays until a lap signal is received from the beacon. Then is changed to a lap time screen:-



0:09.382  
Lap 2  
Sess 01            FTlap 005 S01  
                     1:23.538

Sess is the current session you are storing laps in (outing, race etc). The session is under your control. You can access the menu to start a new session (so the laps start

from one again), or you can continue counting up the laps from where you are now. If you decide to clear the memory, then the session and lap starts at one again. After lap one, the smaller display appears too.

The smaller display is configurable to show:-

Last lap: displays the previous lap.

Best lap: displays the fastest lap in the current session.

Cmp last: Compares the current lap with the previous lap and shows ++ (faster) or -- time (slower)

Cmp best: Compares the current lap with the fastest lap and shows ++ (faster) or -- time (slower)

The battery symbol show the approximate charge left in the battery.

If a bluetooth connection is made to the Laptimer, then the bluetooth symbol shows.

If lap memory is low: Less than 100 laps LM shows, less than 10 laps NM shows.

The Laptimer will switch itself off after a default 60 minutes, this can be configured in the menu or the Laptimer can be switched off manually from the menu. The next time the Laptimer is switched on, it will start an outlap from the same lap number again. If you start a new session, or clear the memory, then the lap starts at one again.

The new SPA Laptimer works best with its own transmitter beacon, but it will also work the older blue metal SPA beacon, and can work with any 38 KHz infra red signal.

Menu System:

To access the menu, hold down the On/menu button. After 5 seconds the first menu item appears. To select the next menu item, press the button again, to access a menu item, press the on/menu button for more than 2 seconds.

**Fastest Lap:** Shows the best lap for the current session. Also shows the best lap overall for all sessions on the smaller display (the S shows which session this lap was on). Hold the button for as long as you need to view this screen.

**Replay Laps:** Shows the laps sequentially from lap one, session one. Click the button for the next lap, or press and hold to scroll up quickly (it pauses when a new session is reached). Also shows the best lap overall for all sessions on the smaller display (the S shows which session this lap was on). After 10 seconds the display will return to the menu.

**Replay List:** Shows a list of six laps sequentially from lap one, session one. Click the button for the next six laps, or press and hold to scroll the top line up quickly (it pauses when a new session is reached). After 10 seconds the display will return to the menu.

**Next session:** Starts a new session (the current session number is displayed). If the current session has no laps (empty) it will show an error message instead.

**Set Car number:** This is mainly for bluetooth option use. It shows on the PC bluetooth device name as SPA Laptimer xxx, where xxx is the car number.

**Set password:** This sets the password for granting a bluetooth connection.

**Clear memory:** Clears all lap and session data from memory.

**Set Beacon type:** Set the type of beacon the Laptimer will trigger from:-

- All beacons: Any 38 KHz infra-red beacon
- New SPA beacon only: New black beacon only
- Old SPA beacon only: Blue metal SPA beacon set to channel 63

**Set Beacon retrigger time:** Sets the time for Laptimer to ignore a beacon signal after a lap signal is received.

**Beacon test:** Counts up when receiving lap signals. Click to end test.

**Line 2 Display:** Selects which lap information is displayed on the smaller display:-

- Last lap: displays the previous lap.
- Fastest lap: displays the best lap in the current session.
- Cmp last: Compares the current lap with the previous lap and shows ++ (faster) or -- time (slower)
- Cmp Best: Compares the current lap with the fastest lap and shows ++ (faster) or -- time (slower)

**Freeze lap display:** Set the seconds for freeze time. When the beacon triggers a new lap, this will freeze the main laptime to allow the driver to read it.

**Set the backlight brightness:** Adjust the backlight brightness (10 is default). Be aware that the higher the brightness the shorter the battery life.

**Set the display contrast:** This may need adjusting for wide temperature variations.

**Set the switch off time:** This adjusts the auto off time (default 60 minutes)

**Set the backlight on time:** This sets the time for the backlight to go off (default 10 seconds). It will light up whenever a button is pressed, or a beacon is passed and then go off after this time. This setting will have a dramatic effect on the battery life.

**Switch off laptimer now:** Use this to manually switch off the laptimer if you wish.

### Installation

Route the infra-red receiver cable away from any power cables and as far from any ignition cables as possible.

Attach the receiver so that its black window points directly across the track.

Mount the beacon transmitter so that it points directly across the track (the higher the better).

If you wish to use the vehicles 12v supply instead of internal batteries, wire this to the accessories or ignition on supply. The Laptimer will power on when the 12v is switched on automatically, not by using the on/menu switch. When in this mode the

laptimer will not switch itself off. It will remain on until the 12v supply is switched off.

### Changing Batteries

To replace the batteries in the display unit, remove the screws of the bottom plate where the USB socket is.

Carefully pull out the battery carriers just far enough to access the batteries, and replace the batteries. Make sure you put the batteries the correct way around (marked on the plastic).

When replacing the bottom plate, make sure you don't cross the threads. If the screws do not turn very easily, then back them off a half to one turn (or until you feel a click), and try again. Only lightly hand tighten the screws, do not over tighten them.

To change the batteries on the transmitter beacon, slid of the rear cover and replace them. Ensure they are the correct way around.

Notes:

If you have batteries installed too this is fine, they will not use power while the 12v supply is switched on.

If you switch on Laptimer using internal batteries using the on/menu button, and then switch on the 12v, it will use reduced battery power, and when the 12v is switched off, it will resume using normal battery power.

Downloading with USB:-

Configure for USB: Go to Start..All Programs..Laptimer3..Laptimer and then select Download..Settings. Click the USB button.

To download data with a USB lead, simply plug into the PC. Start the SPA Laptimer software on the PC and click the download icon. Make sure the Laptimer is not in the menu system or this will not work. It is recommended to do this when the laptimer is off, then plugging it into the USB will power it on and it will not use internal battery power.

To download with bluetooth:-

Bluetooth setup for XP

Default password= 0000

Right click on BT logo next to clock, select "Explore my Bluetooth places"  
On left of window under "Bluetooth tasks" Click "Search for devices in range"  
Wait for scanning to complete  
Right click on "SPA Laptimer xxx"  
Select "Pair Device"  
Enter password "0000"

SPA Laptimer Device should now have a red tick to show it has been paired.

Double click on "SPA Laptimer xxx" and a plug icon should appear. Double click on the plug and when it connects make a note of the COM port number it uses (EG COM5). The plug has two green arrows to indicate it is now connected. You can also check for the COM port number by right clicking on the plug icon and selecting "Properties".

Now go to Start..All Programs..Laptimer3..Laptimer and then select Download..Settings. Click the Bluetooth button and select the COM port number from above.

Data can now be downloaded by selecting Download..Get data, or by pressing the Download Data button.

### Bluetooth setup for Windows Mobile 5

Default password= 0000

Tap on BT logo, select "Turn on Bluetooth"

Tap on "New Partnership..."

Wait for scanning to complete

Tap on "SPA Laptimer xxx" then tap Next

Enter passkey "0000", tap Next

Select "Serial Port", Tap Finish

Make sure the soft keyboard is not obscuring the tabs at the bottom, and select "COM Ports"

Tap "New Outgoing Port"

Tap "SPA Laptimer xxx", Tap Next

Make a note of the COM port number it uses (EG COM7)

Tap Finish, Tap ok

Now go to Start..Laptimer Mobile and then select Download..Settings. Click the Bluetooth button and select the COM port number from above. Tap OK to select.

Data can now be downloaded by selecting Download..Get data.

### Specification:

Display:

3 x AA size batteries

Compatible with:-

Alkaline battery (2600mAH or better recommended)

Oxyride (Nickel oxyhydroxide/Manganese dioxide)

Alkaline rechargeable (EG Pure Energy)

Do not use Lithium

Do not use NiCad or NiMH as their voltage is too low.

External voltage 12v supply: 5-60v

Consumption: 11mA normal, 77mA backlit, (Bluetooth 61mA normal)

Accuracy: 1mS resolution (6.666uS clock @ 30ppm)

Data storage: Flash, none volatile

Weight: 386g including batteries

Size: 108 x 62 x 30 mm

Cable length: 2m

Transmitter:

2 x AA batteries

Compatible with:-

Alkaline battery (2600mAH or better recommended)

Oxyride (Nickel oxyhydroxide/Manganese dioxide)

Alkaline rechargeable (EG Pure Energy)

Do not use Lithium

Do not use NiCad or NiMH as their voltage is too low.

Consumption: 30mA

Weight:

Size: 116 x 28 x 15 mm

Carrier Frequency: 38 KHz