

LAP COUNTER

Instruction Manual

Dear Customer,

Thank you very much for your purchasing the LapCounter for all your professional timing needs for the R/C sport.



WARNING!



- Keep the system from contact with water. Humidity can cause failure or destroy the system.
- Follow all guidelines set out in the manual. Other conditions (for example higher input voltages) can destroy the system.
- Never use the sytem unsupervised! If you do not need it, disconnect it from the power supply.
- Do not try to open the case. Warranty will be voided if you open the case.

CE

Installation

Basic function:

The LapCounter system operates with the transmission of infrared light, like a ordinary remote control of televisions or video recorders. This means the transponder sends the information signal via infrared light to the bridge receivers. This signal is processed by the interface and then delivered to the PC software. So it is absolutely necessary for the transponder to have a clear line of sight with the bridge receiver. To ensure this, place the transponder just below the window of the body. The receiver modules can be placed on a bridge above the track. So it is possible to drive with as much cars as you like at the same time.

Bridge receiver modules:

In the LapCounter kit there are 4 receiver modules included. But how much modules you need depends on your track width and the height of your bridge.

Following values for the beginner are recommended:

Height of the bridge: 50 – 100cm

Distance between the receiver modules: about 30cm.

For example if you have a track width of 150cm and you place the receiver modules with a distance of 30cm from each other on the bridge, you need 4 receiver modules.

Basically the higher the bridge, the larger the reception range of the receiver module and the less modules are needed. But the height of the bridge should also not be too high because the signal strength decreases with the height.

If you have mounted the receiver modules on the bridge you have to connect them together with the delivered flat cable. This flat cable has 12 connectors. If you need only 4 receiver modules you can cut the cable or simply leave the other connectors free. But don't forget you need one free connector to connect the receiver modules with the interface.



Caution: If you operate the system outdoors make sure that no direct sunlight can shine on the receiver modules. If the receiver modules are in direct sunlight the system may not operate correctly because the signal quality is reduced dramatically.

Interface:

If the bridge is ready now you can connect the interface with the flat cable to the receiver modules. To avoid interferences the distance between the interface and the bridge should be as short as possible.

On the interface you also find a connector for the power supply and a Mini-DIN connector for the communication with the PC.

For power supply you can use a wall power supply or any other stabilized power source with a voltage from 7 – 12 V. The current consumption of the system is very low so you can also use a battery pack with 6 – 8 cells. If the power supply has the correct polarity the green Power-LED should light up. The red Action-LED should light up for one second and then should go out. Now you can connect the interface to a free serial port (COM-Port) with the delivered cable to your computer. If your computer does not have a serial port, you need a USB to Serial converter. Such converters are available in computer stores.



Transponder:

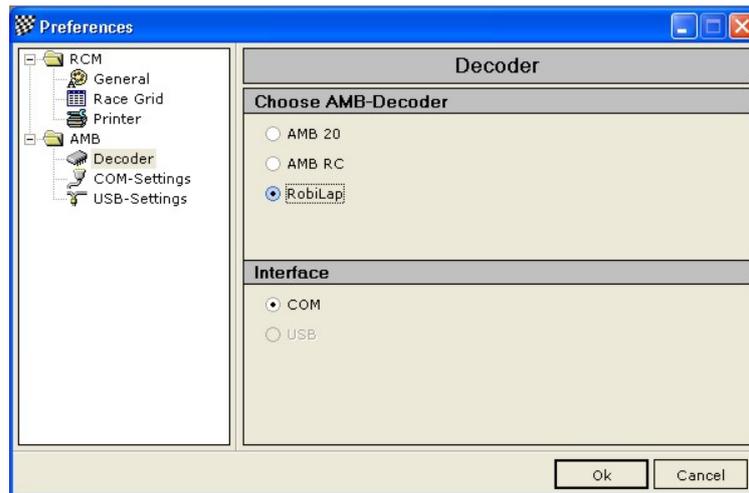
When you mount the transponder inside your model you have to search for a position where the transponder has direct visibility with the bridge. Otherwise the infrared signal is not delivered to the receiver modules. The transponder can be connected directly to the radio receiver in the model. If you use a receiver pack (for example in nitro cars) you should only use 4 or 5 cell receiver packs.



First operation

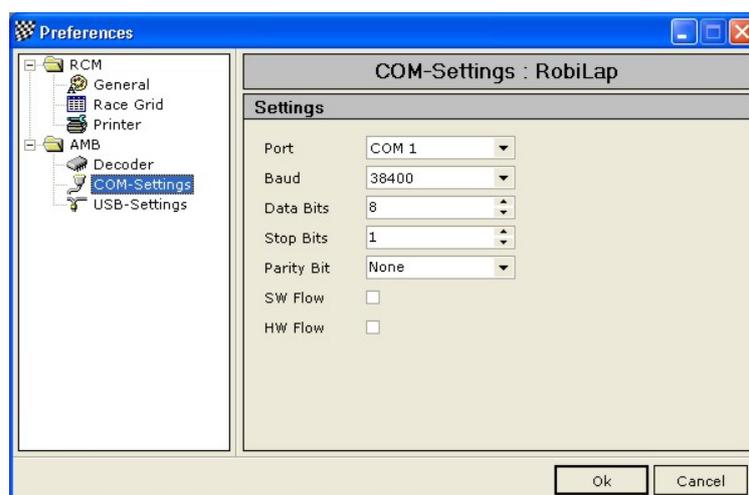
Now it is the time to install RCM Beginners on your computer. Place the delivered CD-ROM in your CD-Drive and start the *Setup_RCM_Beginners.exe*. Follow the instructions on your monitor. Once the setup is completed, please start the program.

Adjust Decoder setting:



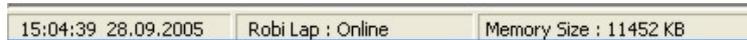
Now you should adjust the right decoder and the right COM port. These setting you find in the top menu under *Configuration / Options*. Under *AMB/Decoder* you have to choose *RobiLap*.

Adjust COM-Port:



Under *AMB / COM-Settings* you now have to adjust the COM port where the LapCounter system is connected to the PC.

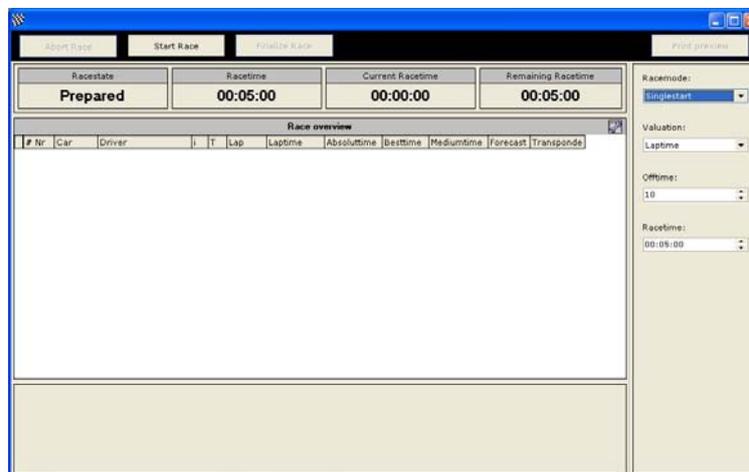
Once these settings are done click on the OK button. You should now see *RobiLap: Online* in the status bar on the bottom of the program.



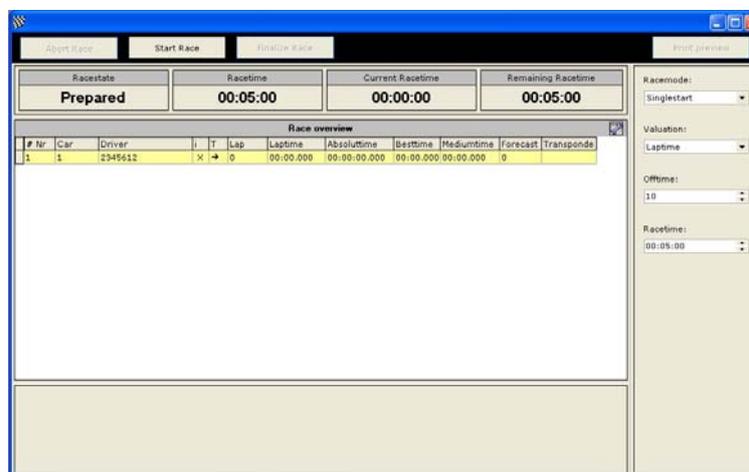
If the program still displays Offline, please check all connections, the power supply, the right COM-port setting and restart the program.

Start a Race in RCM Beginners

Now you can start your first race. On the menu bar you find *Timekeeping / Start Race*. If you choose it, a new window is opened.



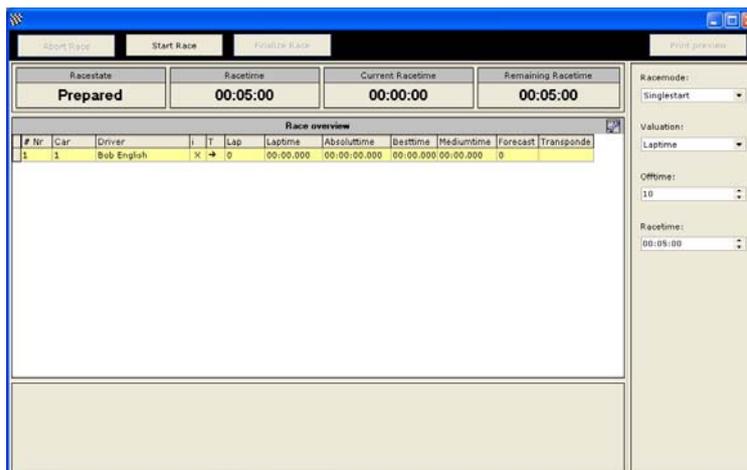
Now you can check if all transponders are working. Simply drive with the model trough the bridge, then the transponder number should be displayed in the window. Also the red Action-LED should light up shortly when a transponder is recognized correctly.



If you double click on the transponder number a little window is opened and you can assign this transponder number the name of the driver.



The system stores the name of the driver with his transponder number permanently.



Racing parameter:

On the right side of the window you will find the 4 following parameters:

- Racemode:
 - *Singlestart*: The time starts for each driver when crossing the bridge the first time (heats)
 - *Groupstart*: The time starts for all drivers when starting the race (finals)
- Valuation:
 - *Laptime*: Valuation with best lap time
 - *Besttime*: Valuation with best time over the whole run

- Offtime: Sets the time in which a transponder does not count after a valid count. This is used to avoid invalid counts from track sections near the bridge.
- Racetime: The duration of a race in Hours : Min : Sek

Race start:

When the race is started you can display the lap times of each driver by clicking the right mouse button on the driver and selecting *lap times*.

The screenshot shows a window titled 'Laptimes' with a sub-header 'Laptimes from: Bob English'. It contains a table with the following columns: Key, Absolut, laptime, Rrack conditic, Classification, Counted, Timekeepin, Hit, Strength, and Battery. The table lists several laps with their respective times and status.

Key	Absolut	laptime	Rrack conditic	Classification	Counted	Timekeepin	Hit	Strength	Battery
361	00:00:30.042	00:06.514	Normal	Start	OK	RobiLap	96	205	0
360	00:00:23.528	00:06.231	Normal	Start	OK	RobiLap	81	176	0
359	00:00:17.297	00:06.768	Normal	Start	OK	RobiLap	96	204	0
358	00:00:10.529	00:04.801	Normal	Start	OK	RobiLap	70	152	0
357	00:00:05.728	00:05.728	Normal	Start	OK	RobiLap	68	148	0
356	00:00:00.000	00:00.000	Normal	Start	OK	RobiLap	109	247	0

At the bottom of the window, there are 'Update' and 'Close' buttons.

When the race is over you can print out or store the result in HTML format. To print the result a printer must be specified in the options.

Inventory data:

If you know your transponder number and you want to assign a name to this number before the race, you can do it in *Inventory data / Persons*. You can also add, modify or delete names or transponder numbers.

The screenshot shows a window titled 'Personal administration' with buttons for 'New person', 'Cancel', 'Save', and 'Remove'. The 'Inventory data' section is expanded to show 'Bob English'. Below this, there are input fields for 'Lastname' (Bob), 'Firstname' (English), and 'Transponder' (2345612). A 'Close' button is at the bottom right.

Training with RCM Online Easy

On the delivered CD-ROM you also find a program called RCM Online Easy. You can install this program by starting *Setup_RCM_Online_Easy.exe*.

RCM Online Easy is designed for training. The handling and the settings are similar to RCM Beginners.

The advantage for training is that you only start the program once a day and let it run the whole day for training. You can display or print out the round times of each driver at any time.

Technical data

Interface:

Input voltage:	7 – 12 V
Current consumption:	ca. 50mA

Transponder:

Input voltage:	4 – 5 Zellen (4 – 6 V)
Current consumption:	ca. 11mA bei 6V



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