



Orbits

VERSION 4

Race Administration & Timing Software



Training Guide

THE WORLD'S LEADER IN AUTOMATIC TIMING AND SCORING

Disclaimer

This publication is to be used for version 4.0 of Orbits. This publication has been written with great care. However, the manufacturer cannot be held responsible, either for any errors occurring in the publication or for their consequences. Information in this document is subject to change without notice.

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Welcome

Thank you for choosing Orbits 4 as your timing and scoring solution! This manual is intended to familiarize you with the Orbits software and to help you handle different race situations.

About this document

This document explains the basics in using Orbits 4 to perform timing and scoring using single or multiple detection points. This document can be used as a reference manual in your day-to-day operations at the racetrack.

Who are we?

AMB i.t. B.V specializes in the development of timing and scoring solutions for different kinds of racing sports. The software is developed for use in combination with AMB i.t. timing hardware.

AMB i.t. B.V. is staffed by the same group of engineers who have developed programs like Timegear, ChronX, PractiX and Orbits, the software supplied with AMB i.t. timing and scoring systems. AMB i.t. B.V. software is distributed by AMB i.t. offices in The Netherlands, the USA, Japan and Australia.

A large, stylized number '1' with a 3D effect, positioned on a light gray vertical bar.

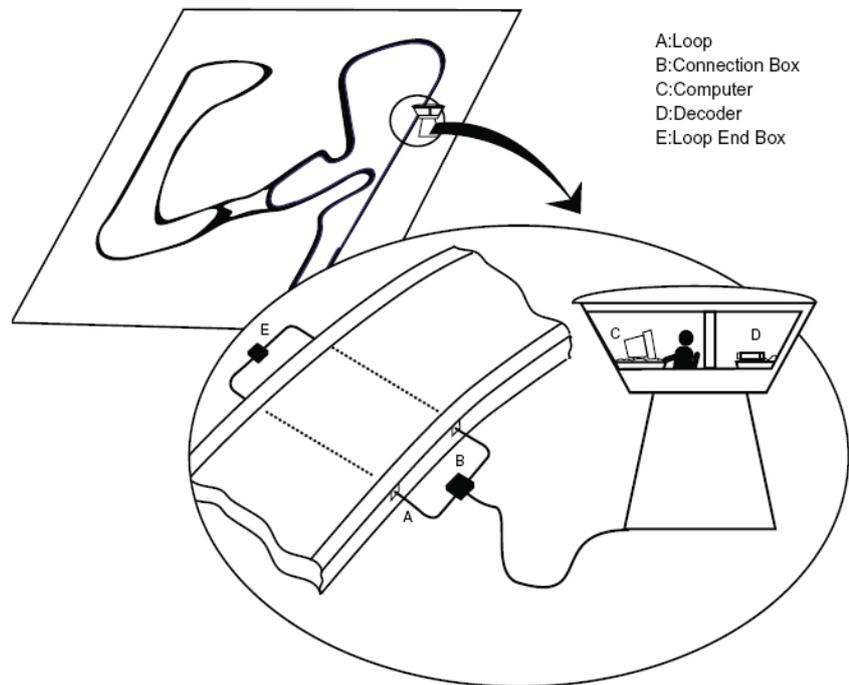
Basic Concepts

This chapter describes the basic concepts of timing and scoring. These concepts are essential for everyone involved in timing and scoring.

System overview

AMB i.t. timing systems are designed to time and score different kinds of racing events. A transponder is mounted on, by example, a car or motorcycle. The signal sent by a transponder is picked up by a detection loop installed in the track surface. The detection loop is connected to an AMB i.t. decoder. The decoder timestamps the received transponder signals and sends this data to a connected computer.

The figure below shows the basic overview of an AMB system, and the following is a brief description for each of the system's components.



Single loop system

All race organizations use a finish line to score a race. The type of timing and scoring where only one 'timing line' or 'detection point' is involved is commonly referred to as: single loop timing and scoring.

Note: when using an extended loop decoder the system may include a separate detection point in the pit lane.

Multiloop system

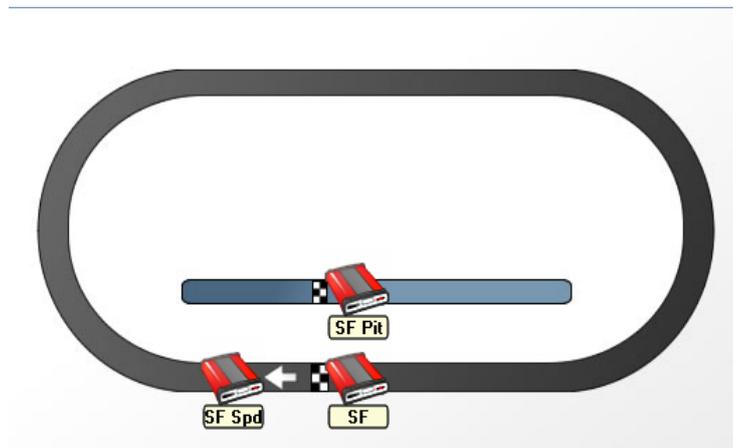
Timing and scoring with a multiloop system can add great value to a race, due to the multiple loops installed. Much more information will be available, like split times, speeds and differential times at various parts of the circuit.

Installing multiple loops and therefore multiple decoders makes both the hardware and the software part of the system more complex. The complexity of the system will be handled for the most part by the Orbits system. Therefore operating a multiloop system is, in general, as simple as operating a single loop system.

Timelines

The start/finish line plays a major role in timing a race. In a multiloop environment there are more lines on the track where competitors are timed.

Throughout this manual we will refer to these physical lines by the term: **Timelines**.



The picture above shows an example track with 3 timelines.

- Start/Finish
- Start/Finish Pits
- Start/Finish speed trap

Section

Let's define a section "Start/Finish Speed" which will be from timeline Start/Finish to timeline Start/Finish Speed in the track layout in above picture. The description of this section will be 'Start/Finish Speed' and the short description will be 'SF Spd'. The entry decoder of this section is decoder Start/Finish (Start/Finish speed trap).

Entry timeline – The timeline, a car will cross when entering this section.

Exit Timeline – The timeline, a car will cross when exiting this section.

Transponder

AMB transponders enable you to give each competitor a unique identification. The transponder is affixed to the vehicle with a transponder holder that is secured with bolts, screws, rivets or zip ties. When passing over the detection loop in the track, the transponder sends its signal to the loop.

Detection loop

The detection loop is embedded into the track surface and picks up each transponder passing. The unique signal of the transponder is picked up by the loop and transferred to the AMB decoder. Several transponders can be picked up at exactly the same time. This ensures no transponders will be missed, even if 7 or 8 vehicles pass the loop at exactly the same time.

Decoder

The AMB decoder is connected to the detection loop via a coax cable and receives the transponder passing data from the detection loop. It reads the unique transponder signal and gives the transponder an exact passing time. When received, it sends the passing information to the computer running the Orbits 4 program.

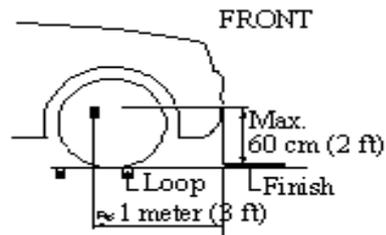
2

Hardware Installation

Orbits is a single loop timing and scoring system. The installation of a single loop system consists of three main components: loop installation, decoder installation and transponder installation. This chapter describes these components that are used in combination with the Orbits 4 software program.

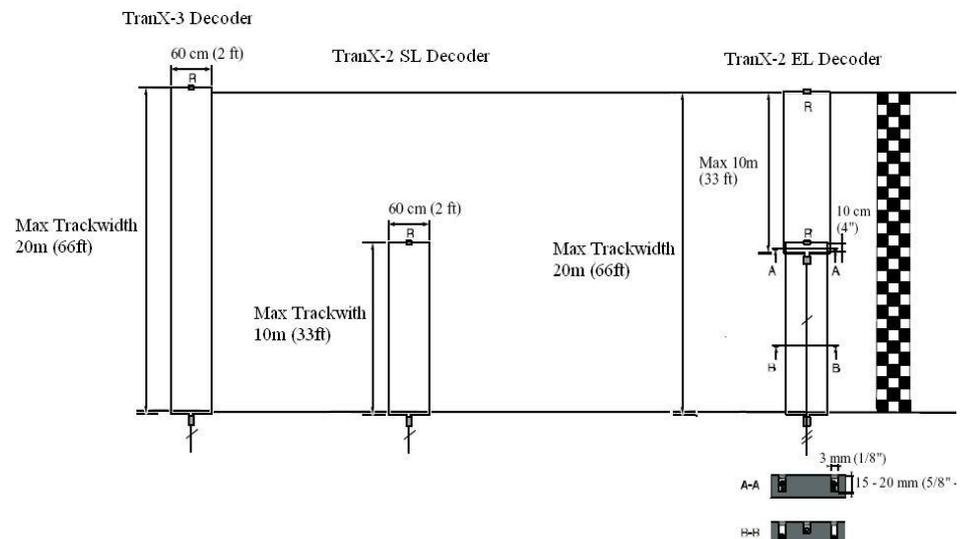
Positioning the detection loop

All wiring of the detection loop must be installed according to the drawing below in order to avoid a serious degradation in the performance of the system.



Step 1 > The detection loop must be positioned in such a way that the transponder is above the center of the detection loop when the front of the cars/motorcycle crosses the finish line. Make sure cars/motorcycle cannot pass outside the detection loop. Extend the detection loop outside the track if necessary.

Step 2 > Depending on the type of decoder, a loop can be used for a track width of max. 20m (66ft). For wider tracks use 2 or 3 (max.) loops. When 2 or 3 detection loops need to be installed, make them of even length with 10 cm (4") overlap.



Step 3 > With a separate loop installed in the pit lane, connect it to the BNC connector marked loop 3 (PIT) on the decoder. Passings registered in the pit lane will be identified as such by the decoder.

Step 4 > The detection loop is sensitive to interference, sometimes emitted by nearby power cables. When possible, keep other cables 5 m (15 ft) away. Also, make sure cars/motorcycles or other parts on the track will not get closer than 5 m (15 ft) to the detection loop, to avoid false inputs.

Step 5 > For dirt tracks, the detection loop is best installed in plastic conduits at a maximum depth of 30cm (1ft) below the surface. The maximum depth should be chosen in a way that the cars/motorcycles cannot dig out the detection loop. However please respect the maximum distance between loop and transponder, which is 60cm (2ft) for cars and 120cm (4ft) for motorcycles.

Note: When pulling the detection loop wire through the plastic conduit, it is a good idea to pull another non-metal wire through. This wire then can be used to install a new loop wire in the event it gets damaged.

Installing the detection loop

Step 1 > Cut the slots in the track a maximum of 2 cm (3/4 in) deep and 60 cm (2 ft) apart. Make sure the slots are clean and dry. This will ensure a perfect seal when the silicon is applied after the installation of the wiring. Put the wires of the detection loop in the slots and cut the excess length of the detection loop wires.

Step 2 > Widen the slot with a chisel where the small connection box of the loop is to be installed. Place the connection box vertically into the slot.

Step 3 > When all wires are installed, put the heat shrinkage sleeve over a detection loop wire end. Then solder the loop wire to the short wire end of the connection box. When soldering the wires together, the solder should flow through the entire connection and not only around it. Now put the shrinkage sleeve over the soldered connection and hold it over a heat source to shrink the sleeve (also see the drawing below). Repeat this procedure for the second wire of the detection loop.

Step 4 > Fill the slot with silicone. Before doing this, please test the loop as described in Chapter 3. Make sure not to overfill the slots and that the silicone is fully under the surface of the track, otherwise tires may pull out the silicone.

Step 5 > If any silicone spills out of the slot, remove the excess silicone by scraping the top with a small piece of cardboard. This also ensures that the silicone is pressed into the slot for a perfect seal.

Silicone

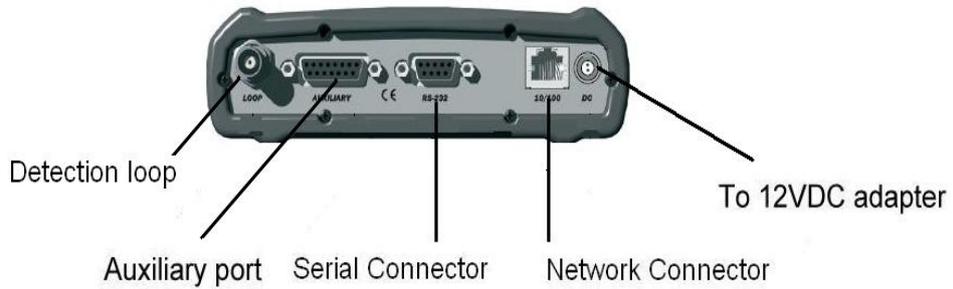
There is a wide variety of silicone types available in hardware stores; it is important that the right type is used. Silicone that can withstand different temperatures as well as both wet and dry conditions (since weather situations can vary), should be used. If you are unsure, check the specifications of the silicone.

The following types of silicone have been shown to yield lasting results and are recommended by AMB:

- Dow Corning 890SL is a self-leveling silicone kit. It is applied as a liquid and fills the slot completely.
- Purflex is a polyurethane-based silicone that retains its elasticity under a wide range of temperatures.

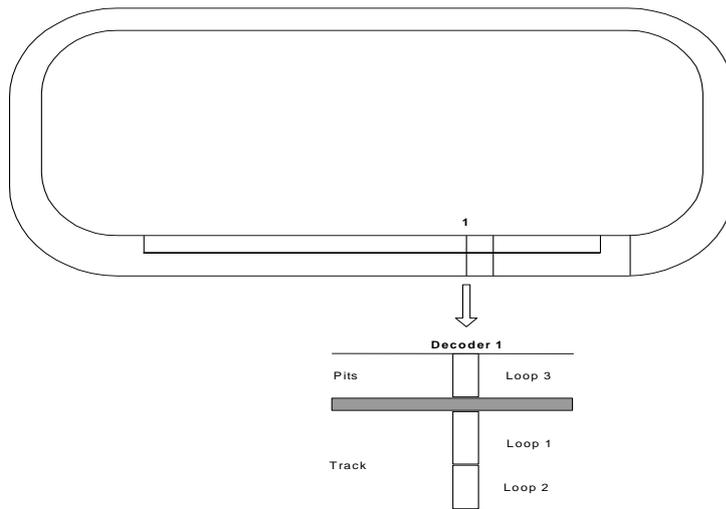
Connecting the detection loop to a TranX3 Decoder

The detection loop is connected to the connector at the back of the decoder.



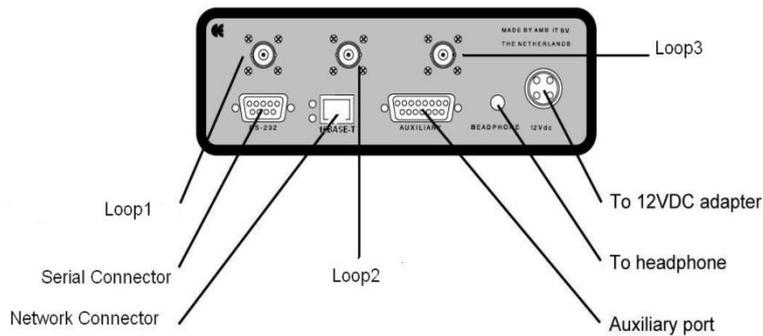
TranX2 Extended Loop Decoder Installation

With the TranX2 Extended Loop decoder it is possible to connect up to three loops to one decoder. Two detection loops can be used on the track, while the third is identified as a pit loop. In the Orbits program passings detected on this detection loop are marked with a 'P' from pit passing in the results pane and marked in blue in the passing list.



Connecting detection loops to TranX2 Extended Loop Decoder

The detection loops are connected to the connectors at the back of the decoder.

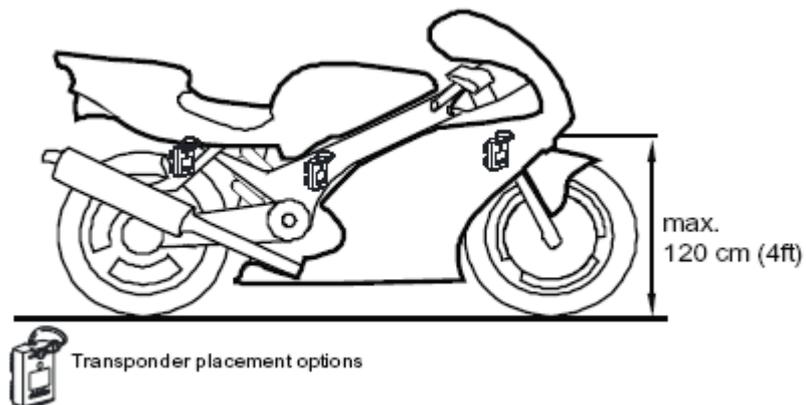
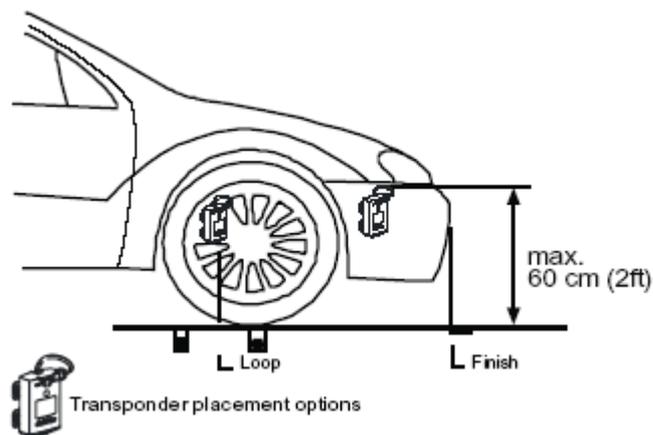


Transponder positions

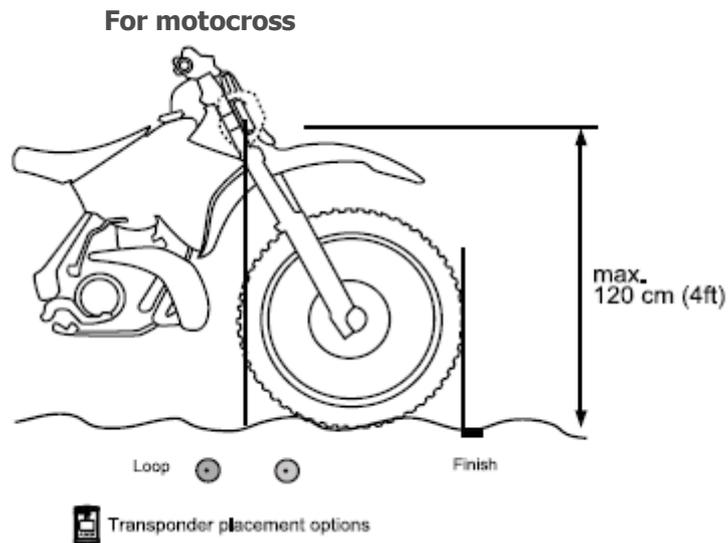
The transponder position on a car or bike influences whether the transponder will be received with sufficient signal strength and whether the system will be able to determine an accurate passing time. A transponder position therefore should be determined with great care and should obey the following restrictions:

- Metal or carbon fiber parts may absorb or block the magnetic transponder signal; therefore the transponder should be mounted with no metal or carbon fiber parts beneath it.
- For the decoder to be able to determine an accurate passing time from the received transponder signal, the transponder should be mounted vertically. Whether the printed transponder number actually is pointed forwards, backwards or to the side is not important.

For cars and motorcycles



The figure above shows the recommended transponder positions and their maximum heights. Since the transponder signal is limited in strength a maximum mounting height should be obeyed. Higher transponder positions (or positions blocking the signal) will dramatically reduce the received signal strength.



Main and backup

When you score a race the result must be available after the race at all costs. For important races, many organizations have two systems to do the timekeeping: one main Orbits system and one backup Orbits system in the rare event where the main system fails.

Orbits 4 does not support this main and backup configuration by itself; each separate system needs an operator for starting/stopping the race.

Main and backup configuration I

The latest type of decoders are equipped with both a serial (RS232) and a network (TCP/IP) connection for communication.

Therefore it is possible to connect two computers running the Orbits program to one decoder, giving a back-up for the timekeeping. If one computer fails, one can still continue timekeeping on the second computer.

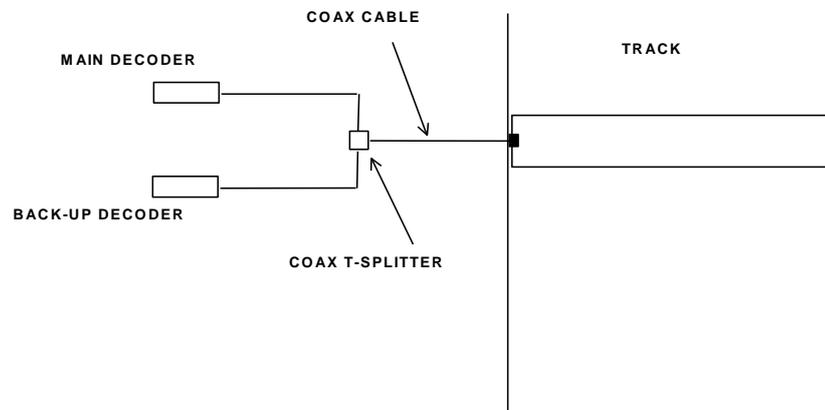
Note: This back-up configuration does not give any back-up solution for the decoder or detection loop. See the next paragraph for a this type of back-up configuration.

Main and backup configuration II

When connecting a Main and Back-up decoder, the signal from coming from the detection loops is split with help of a custom coax T-splitter available from AMB. The coax T-splitter is best placed close near the decoder. See the depiction below.

Splitting the signal coming from the detection loop will result in loosing approximately 10 points in signal strength from the transponder. Check the transponder passing whether the decoder receives a sufficient strong transponder signal. (strength min. 100, or 60 points above the background noise. Also see Signal Strength, Hits and Noise)

Note: When two or three detection loops are used, they are split and connected to the main and back-up decoder in the same way.



3

Hardware Performance testing

Once the system has been installed, it should be tested to make sure that it is functioning correctly. We also recommend repeating the same procedure at the start of each race event. This chapter describes the tests to perform to ensure your timing system is functioning properly.

Testing the loop

Step 1 > Connect the detection loop(s) to a decoder and computer running Orbits. Check the background noise, which is updated every 5 seconds in the Timing tab of Orbits 4. The background noise level should be between 0 and 40. A higher value may indicate interference by other electrical equipment in the area or a bad loop installation (broken wiring, bad soldering connection, oxidized connections, etc). Try switching off any suspected equipment or removing nearby objects and check for improvements. Especially at night, short-wave radios may cause a slightly increased background noise.

Step 2 > If no signal is received and the detection loop installation seems to be correct, the coax to the connection box or BNC connector may be faulty. Both can be easily checked. Take a multimeter and set it to measure resistance. Connect or hold one probe to the center pin of the coax cable and connect or hold the other probe to the shielding of the BNC connector. This measurement should read about 100 kOhm. When this value is measured it still does not give any assurance that the connection box itself is OK, however tells that the connection to the connection box is OK.

Step 3 > If a detection loop has been correctly installed, a transponder should be picked up at the same distance from the detection loop at all positions along the detection loop. To test this, stand at one end of the detection loop about 8m (25 ft) away and hold a transponder approximately 60cm (2 ft) off the ground. Walk slowly towards the detection loop. You will hear a beep in the headphones attached to the decoder when the transponder is detected. Mark the spot where the transponder was detected. Repeat the process for the middle and other end of the detection loop and do the same coming from the other direction. The detection distance from the loop should be approximately the same for all positions.

Step 4 > Check the signal strengths of the transponders as they are picked up by the system during a reality test. A good loop will yield consistent transponder signal strengths of at least 100 with a hit rate of at least 20. The hit rate may vary depending on the speed of the transponder passings (slower passings will yield higher hit counts) but the signal strength should be consistent (< 10 points variation) for the same car.

Signal, noise and hits

The parameters signal strength; background noise and number of hits describes the overall performance of decoders and transponders.

During the crossing of transponders the signal is repeatedly received by the decoder. The number of repeated contacts is the number of hits. On each hit the transponder number and status is received by the decoder. Since the number of hits may vary a lot depending on the speed when passing the detection loop, a typical value cannot be given. However normally values of 20 and higher are seen.

The average background noise is sent by the decoder every 5 seconds. The background noise indicates the amount of interference received in the TranX frequency range. Since mobile communications do not interfere with the TranX system, a person standing near the detection loop, using a mobile phone will not result in an increase of background noise. Typical values are in the range of 0 to 40.

If the noise level is higher, the received transponder signal strength should be 60 above the noise level to ensure a perfect functioning of the system.

The transponder signal strength normally is quite constant between passings of the same transponder. For all TranX systems the received transponder signal strength always should have a minimum of 100.

4

Getting started

This chapter guides you through the installation process of Orbits.

System requirements

The minimum hardware specifications to run the Orbits program are:

- IBM Compatible Pentium III processor or better (1 GHz)
- 512 MB Memory, 1024 MB Recommend
- Approximately 100 MB of hard disk space and a free COM Port
- CD-Rom player
- Network adapter
- **Operating systems:**
 - Windows 2000
 - Windows XP
 - Windows Vista

Administrator

You need to have administrator rights in order to install and run the program.

Installation

The Orbits program is supplied on a CD-ROM. To install the Orbits program:

- Put the CD-ROM in your CD-ROM player
- The setup program will start automatically (if your computer does not support this Auto run function, please run the Orbits_4_Setup.exe program in the Orbits directory on the CD-ROM)
- Follow the instructions of the installation program

Shortcuts to Orbits are added under the Start menu and on your desktop.

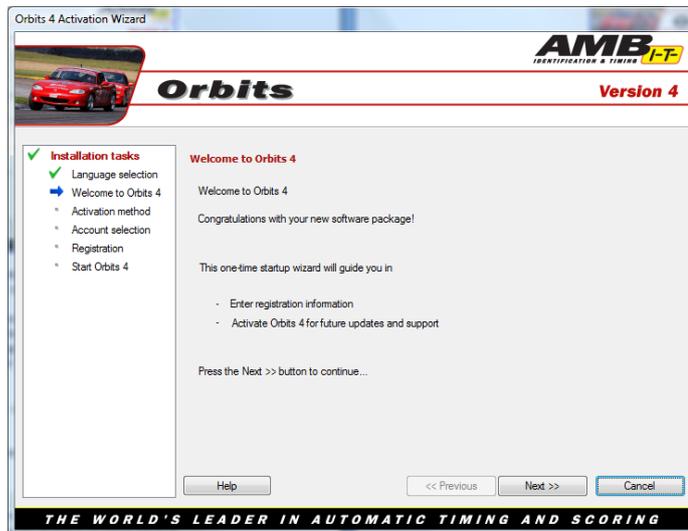
Activate the program

When you start Orbits for the first time, you will see the Activation wizard that will help you to activate and personalize your copy of Orbits. To perform the activation, an Internet-connection is required.

You can activate Orbits in two ways:

- **Activate online** > This will perform the activation on the computer Orbits is installed on. This way of activating is recommended.
- **Activate with help of another computer** > Use this option only, when it is not possible to connect the main computer – the one you installed Orbits on - to the Internet.

Activate Online



To activate online, enter your unique serial number and click 'Next >>'. The serial number can be found on the back of the Orbits manual.

In the page that follows, you have to enter login-information from an existing AMB account. This can be one of the following accounts:

- Account for the AMB support website
- Mylaps.com account that you have used for uploading results to the internet.

If you don't have either of these accounts, you can also create a new AMB account here.

On the next screen, you can enter your registration information for Orbits.

Organization name:

Important! - The organization name will appear on your print-outs and can not be changed after activation. Please check for proper spelling!

Important: The organization name you enter, cannot be changed afterwards, and will be visible on the bottom of your print-outs.

Once you've entered the registration information, the wizard is complete. You can start Orbits by clicking the 'Finish' button.

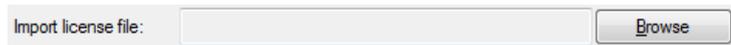
Activate with another computer



To activate with another computer, choose 'Activate with help of another computer' in the 2nd step of the wizard and click 'Next >>'.

The wizard will provide you with a computer code that you will need during the activation process. Write down that computer code, and visit <http://activate.amb-it.com/> on a computer with Internet-connectivity.

On the website, enter your serial number and the generated computer code. The file that contains your license information can be saved on a USB storage device or a floppy disk. The website will provide a small license file. With that file, return to the computer with Orbits 4, and import the generated file into the wizard by clicking the 'Browse' button.



If the file is OK, the 'Next >>' button will be enabled. Click it to complete the activation process. Orbits is now fully registered and will be started as soon as you press the finish button.

Firewalls

You may experience problems if you have a firewall in place that does not allow the Orbits 4 to pass through the firewall.

Open the following holes in your firewall for Orbits 4:

Port 51604 TCP – to communicate with an Orbits Remote
Port 5400 TCP/UDP – to communicate with the decoder
Port 5403 TCP/UDP – to communicate with the decoder
Port 80 TCP -- HTTP protocol (For uploading results to Mylaps.com)

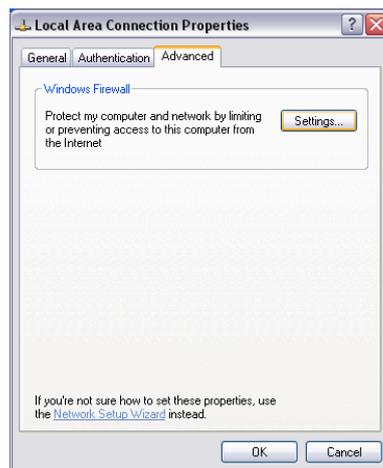
For **Windows XP** users:

There is an Internet connection firewall on the Windows XP system. By default it is disabled. But it may be enabled so requests may be blocked by the firewall. To configure the Internet connection firewall of Windows XP, please follow these steps:

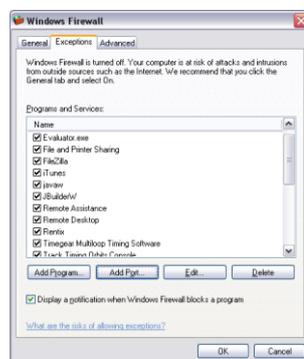
Open Network Connections (Click Start, click Control Panel, and then double-click Network Connections.)

Click the Dial-up, LAN or High-Speed Internet connection, and then, under Network Tasks, click Change settings of this connection.

On the '**Advanced**' tab, click the '**Settings...**' button.



Click on the '**Exceptions...**' button.



Click the '**Add Port...**' button to add a service.

Language setup

Orbits supports multiple languages. The choice of language can be changed before, or after the race. The language can be changed by selecting **Help – Change Language**, followed by selecting the required language from the drop-down list. If your language is not listed, please contact AMB i.t. for the availability.



Help

Orbits features an in-depth built-in Windows Help File accessible by selecting **Help – Contents** or pressing 'F1' in the program.

5

Overview

This chapter deals with the configuration and setup of Orbits.

Starting Orbits

The Orbits program can be started by double-clicking the Orbits shortcut icons on the Windows desktop or via the Windows Start button. Orbits can be found under Programs → Orbits 4.

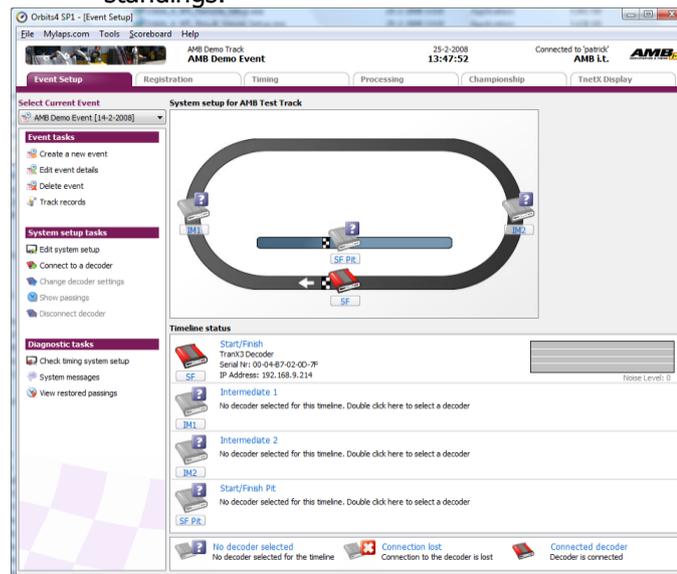


Orbits consists of two programs, the Orbits interface and the Orbits server. The Orbits server is running in the background and is started automatically when you start the Orbits program.

Orbits

The Interface consists of five sections:

- **Event Setup** > In this section you can schedule race events and perform the system setup, monitor the system status and connect to your decoder(s).
- **Registration** > In this section you can manage your time schedule and enter competitor data. Orbits uses a database to store all known competitors.
- **Timing** > The timing section gives access to functions that are relevant during different stages of a timed run, e.g. functions related to runs, competitors in a run and passing data.
- **Processing** > This section includes the functionality to organize run results and is used after a run has finished. The processing section hosts different functions like printing results, creating starting grids, assigning points to a run and merging results.
- **Championship** > This championship section includes the functionality to organize and manage the championship standings.



Orbits Server

The Orbits Server is a separate program running in the background. It handles the communication with the AMB decoder, stores the passings and calculates the results. When the Orbits server is running, the following icon will appear on the Windows taskbar at the bottom right part of your screen. This server should always be running when you use Orbits.



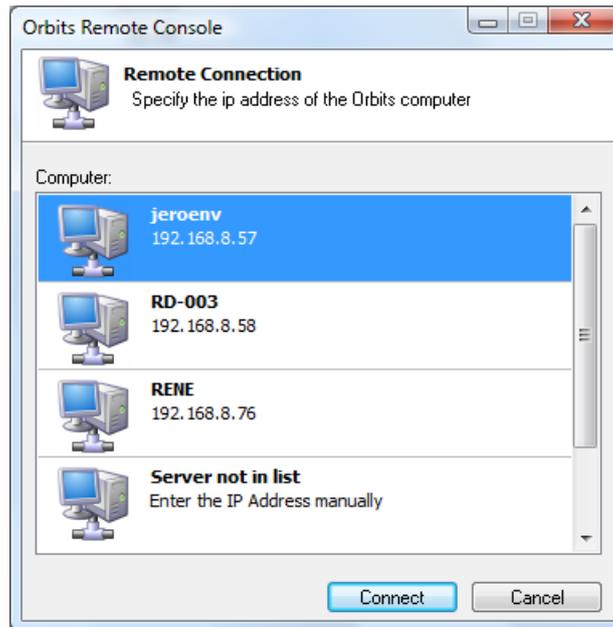
The Orbits server icon.

Note: The visible parts of the program, the Orbits user interface, are separate from the Orbits Server. This means that if the Orbits interface is accidentally shut down, the server is still running and decoder records will continue to be stored and processed. After restarting Orbits, the race can be continued without loss of data. The server is started automatically when the Orbits program is started. When the Orbits program is shut down, the Orbits server will keep running. Shutting down the server is only possible by clicking the right mouse button on the server icon and selecting **Exit Orbits Server**.

Remote console

In Orbits it's possible to make a remote connection with an Orbits Server that's running on a different computer. The remote connection is created to allow you to do remote race administration including registration/results processing. The Remote Console offers the following features:

- Registration screen
- Processing screen
- Championship screen

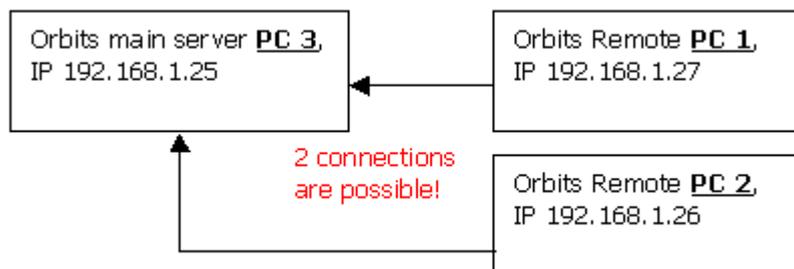


Installation

The installation for the remote Orbits computer can be found on the Orbits 4 cd in Orbits\Orbits_4_Remote_Setup.exe.

Remote console configuration

Setting up a connection between Orbits (Main, with timekeeping tab) and maximum 2x Orbits Remote can be done as follows:



Setup of 1 Orbits main program and 2x Orbits Remote programs

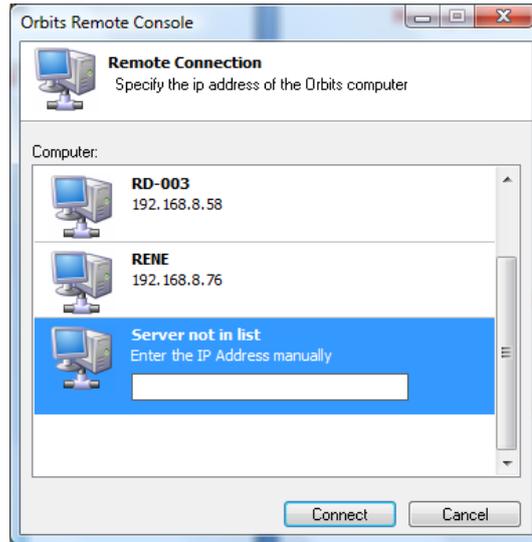
This means you can connect maximum 2x Orbits Remote computers to the Orbits main computer in parallel. To setup a connection between the Orbits main and Orbits Remote program, the Orbits main program needs to be started first.

Note: be aware that a connection between an Orbits main and Orbits Remote computer requires the same version of the Orbits program on

both computers!

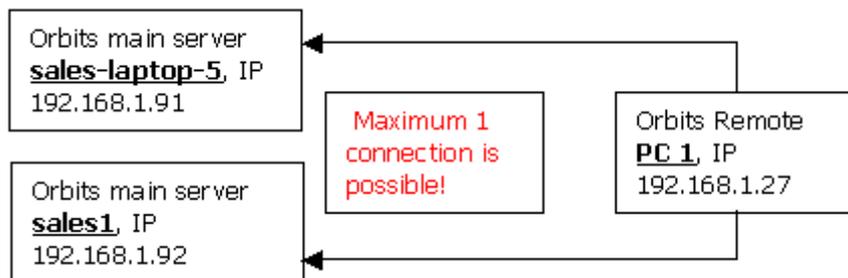
Network connections

If 2 or more computers are connected with each other via a switch, please make sure they are operating within the same network range. Start up Orbits Main first (**PC3**) and then start up Orbits Remote on the 2nd computer (e.g. **PC2**). Then double click on the name of the computer or select the computer by clicking and press connect in the 'Orbits Remote Connection'-dialog (see example).



Check if there is an Orbits pc in the network to connect to with your Orbits Remote computer. If the computer name or IP address doesn't appear automatically, click on "Server not in list" and enter the IP address of the Orbits main pc (e.g. IP address of **PC3**, 192.168.1.25) in the textbox that appears.

Although it is only possible to connect to 1 Orbits main computer with a Orbits Remote program, you might have 2 computers, which are running the Orbits main program (see below example).



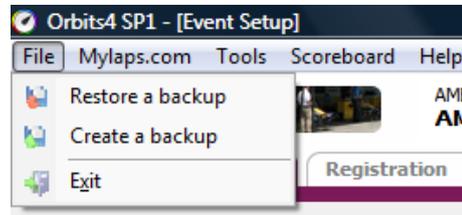
Setup of 2 Orbits main programs and 1 Orbits Remote program

If these 2 computers are connected within a network together with a Orbits Remote computer, the Remote computer will scan both Orbits main computers (see Orbits Remote program example). In this way you are able to choose which Orbits main program you want to connect to.

Managing data

Orbits automatically save all data. If you want to make a backup of your data use the Restore & Backup data wizard.

The Restore & Backup menu can be found under File – Backup or Restore Data.



Create a backup

To backup the data, click on the Create menu. Select the filename to make a backup of your data.

Note: A Orbits backup file can be recognized by the extension ".obf".

Restore a backup

Select the folder that contains the backup file. Click on the Next button to restore the data.

Note: If you want to restore Orbits 1 data files, select the folder that contains the Orbits 1 data.

Important: When you restore data, all of your existing data will be replaced with the restored data!

After the sessions

When making a back-up of your computer, it is also a good idea to make a back-up of the data after each event or day of the event. Orbits will give a warning when you close the program to backup your data.

General settings

The Orbits General Settings options apply to all new subsequent events and runs. The General Settings can be found under Tools - Options and are divided up into different tabs:

- General
- Run Defaults
- Starting Grid
- Oval Defaults
- Driver ID Defaults

For each competitor in the competitor database, there are eight additional data fields that can be used for data specified by the user. In this tab you can name the headers of these data fields. Additional data fields 1, 3, 5 and 7 are drop-down boxes that store previously entered values, it is recommended that you use these for information that can be the same for multiple competitors (*e.g. nationality*).

Run defaults

The run settings in this part will become the default values for all successive runs. The settings can of course be changed for each individual run.

Starting grid

In this part you can select the preferred layout of a starting grid.

Oval Defaults

When a yellow, yellow not counting or red flag situation occurs during a race, the program automatically generates the lineup if the oval features are enabled in the general settings. Depending on the lineup method and the lineup scheme, the program automatically generates the lineup.

Lineup Method

Back to Last Completed Lap > The program will go back to the last completed lap. Therefore all the passings in the current lead lap will be marked as deleted. The program will generate the lineup immediately.

Race up to the Yellow > The program allows the leader to complete his lap. The program will make the lineup after the leader completes the current lap.

Lineup Scheme

Current Track Order > The program will use the current track order at the yellow or red flag situation for the lineup scheme.

Race up to the Yellow > The program will use the current race results at the yellow or red flag situation for the lineup scheme.

Sandbagging

This feature will allow you to apply the 'sandbagging rule' on the qualify time. The time specified will be deducted from the qualify time when creating a starting grid.

Driver ID Defaults

Enabling this feature, allows you to assign up to 6 transponders per

'team'. See timing for more information.

6

Event Setup

This chapter describes how a race event can be prepared and how you need to configure your timing system setup.

Overview

Open the event setup page of the program by clicking on the **Event Setup** button at the top of the program or by pressing **CTRL + 1**.



Event management

Orbits stores the race result per event. This means that prior to each event you hold, a new event has to be created in Orbits. Since an event is run at a track, you also need to specify your timing system setup.



The current selected event is displayed at the top left of the screen.

Create an event

You can create a new event from the Event Setup page. Click on **Create a new event** to start the 'New Event wizard'. Now the wizard will guide you through this process.

Event settings

You can specify the following info on the first page of the wizard.

Event Name:

The name of the event.

Description:

The description of an event. This information will also be displayed on Mylaps.com when you upload the Event.

Sport:

The type of sport for this event. This information will also be displayed on Mylaps.com when you upload the Event.

Begin Date and End Date:

The begin and the end date of the event.

Event Footer 1, 2, 3, 4

The text that should be displayed on the footer of the printouts.

System Setup

The wizard will ask which timing system setup you are using. You have to option to create a new system setup or to select a setup that was used add a previous event. More information about track creation can be found in the system setup section.

Track Details

Name

The name of the new track.

Length

The length of the track is used to calculate the speed shown on the qualifying and race results. Depending on unit of the track length specified (kilometers or miles), the speed (during the race and in the results) will be shown in km/h or mph.

Driving direction

Select the driving direction of your track.

Use photocells

Select this option when you want to use photocells as backup time keeping system. Connect the photocells to the start/finish decoder. More information about photocells can be found in Appendix A of this manual.

Photocell timeout

When photocells are connected to the decoder, Orbits uses the photocell inputs as a back-up source for timing. If a competitor with a transponder is passing the finish line, Orbits will receive both photocell time and transponder time from the decoder, and assign them to the same passing. If a competitor without a transponder passes the finish line, Orbits only receives a photocell time and will ask you to identify the competitor number.

The photocell timeout is used to set the time Orbits will wait for a transponder input after receiving a photocell input. The value is default set to 2000msec. The lower this value, the sooner Orbits will generate an alarm if a competitor without a transponder is detected by the photocell.

Photocell separation

The separation is used by Orbits to determine whether a photocell time can be assigned to a transponder passing time. The smaller this value, the more accurate Orbits will be able to detect competitors without a transponder. If the separation is set too small, a competitor with a transponder, passing the finish line, will also generate a photocell time, for which Orbits will ask you to identify the competitor number.

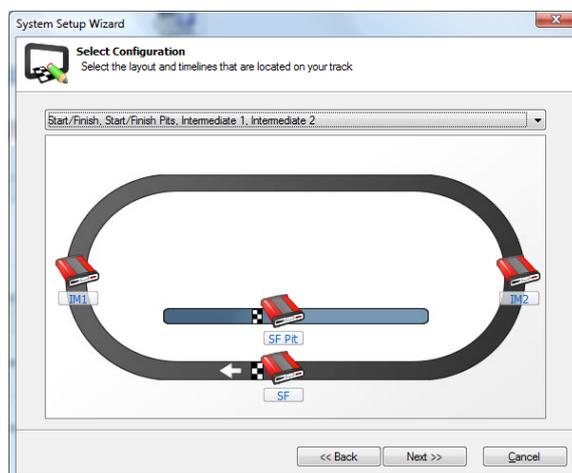
The screenshot shows a window titled "System Setup Wizard" with a sub-window titled "Track Details". The sub-window contains the following fields and options:

- General**
 - Name:
 - Length:
 - Required for displaying the Speed
 - Track driving direction is clockwise
- Photocell**
 - Use photocells
 - Photocell Timeout: ms
 - Photocell Separation: ms

At the bottom of the dialog are three buttons: "<< Back", "Next >>", and "Cancel".

Track configuration

Next step is to select your track configuration. Depending on the number of timelines on your track you can select your configuration from the list. The following configurations are installed by default. The track layout shows the *timelines* on the track. Each timeline has a unique name in this configuration. Orbits have several built-in configurations available.



If your configuration is not listed, please contact your local AMB office.

1 Timeline

Orbits offers the following configurations with 1 timeline.

Start/Finish

- Start/Finish (Lap counter)

2 Timelines

Orbits offers the following configurations with 2 timelines.

Start/Finish, Start/Finish Pits

- Start/Finish (Lap counter)
- Start/Finish Pits (Lap counter)

Start/Finish, Intermediate 1

- Start/Finish (Lap counter)
- Intermediate 1

This configuration will create section 1 and section 2 times.

Start/Finish, Pits (No Lap counter)

- Start/Finish (Lap counter)
- Pits (Pit counter, will not count for lap)

Start/Finish, Start/Finish Speed (Speed trap before start/finish)

- Start/Finish (Lap counter)
- Start/Finish Speed

This configuration will create a start/finish speed section.

Start/Finish, Start/Finish Speed (Speed trap after start/finish)

- Start/Finish (Lap counter)
- Start/Finish Speed

This configuration will create a start/finish speed section

3 Timelines

Start/Finish, Start/Finish Pits

- Start/Finish (Lap counter)
- Start/Finish Pits (Lap counter)

Start/Finish, Intermediate 1, Intermediate 2

- Start/Finish (Lap counter)
- Intermediate 1
- Intermediate 2

This configuration will create section 1 and section 2 and section 3 times.

Start/Finish, Pits (No Lap counter), Intermediate 1

- Start/Finish (Lap counter)
- Start/Finish Pits (Lap counter)
- Intermediate 1

This configuration will create section 1 and section 2 times.

Start/Finish, Start/Finish Pits, Start/Finish Speed (Speed trap before start/finish)

- Start/Finish (Lap counter)
- Start/Finish Pits (Lap counter)
- Start/Finish Speed

This configuration will create a start/finish speed section.

Start/Finish, Start/Finish Pits, Start/Finish Speed (Speed trap after start/finish)

- Start/Finish (Lap counter)
- Start/Finish Pits (Lap counter)
- Start/Finish Speed

This configuration will create a start/finish speed section.

Sections

Next step is to fill in the section names and length. Depending on your selected configuration the program will ask you to fill in the section names and section length.

Name

The description of a logical section.

Short Name

The short description of this logical section will be used in the result screens. It can be 6 characters long.

Length

Length of the section. This number has to be very accurate, as it will be used in speed calculations. This number will either be in kilometers or miles depending on the used length unit (kilometers or miles).

Note: For a speed trap it is required to fill in the track length.

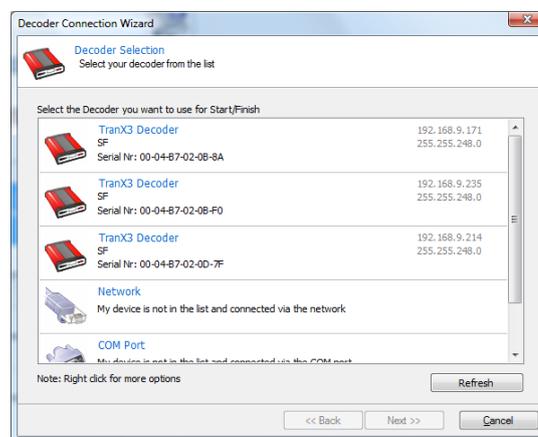
Decoders

After you have created your event and configured your timing system setup, you can select your decoders. Orbits can be used with all TranX, TranX2, Activ, AMB MX, ChipX and TranX Pro TranX3 compatible decoders.

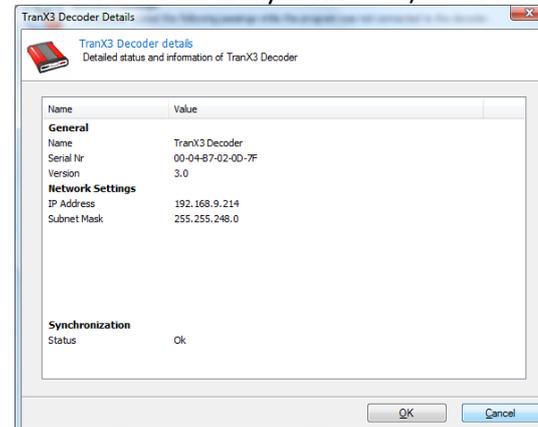
Note: Decoders other than the TranX3 decoder can only be used as a start/finish decoder.

Connect to a decoder

To connect to an AMB decoder, you can double click on a timeline, or choose register a new decoder from the system setup tasks. Now the 'Decoder Connection Wizard' will open. The wizard first scans the network for available decoders. On the first page all decoders that are found in the network are listed on the screen. Select the decoder you want to use and click on the **Next** button.



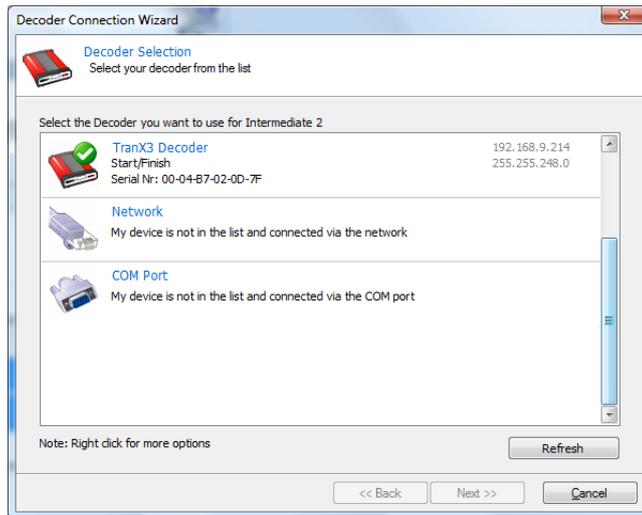
Now the program will try to make a connection to the decoder. If the decoder is successfully connected, the decoder details screen will open.



If the decoder is marked with warning icon or if your decoder is not displayed in the list, see Connection issues for more details.

COM Port

If the decoder is attached to the serial-port of the computer, you must add the decoder manually by selecting the COM Port option from the selection list.



Now you need to select the COM Port from the choice list.

Network

If your decoder is connected to your network, but not in your list, you must add the decoder manually by selecting Network option from the selection list.

Now you need to enter the IP address of the decoder. See connection issues for more info about the decoders IP address.

Connection issues

Serial number is red?

If the serial number is highlighted red, this means you need to upgrade your decoder firmware. To update a decoder go to the support section of the AMB i.t. website (<http://support.amb-it.com>) or click the button Check for available updates (Online).

IP address has a warning icon?

If the IP Address is not in the same network range as the computer a warning icon will appear. This means that you need to change the IP Address of the decoder. You can do this by right clicking on the decoder and select change decoder settings. You can now connect to your decoder by selecting it from the list and hit the Next button.

My decoder is not in the list?

If your decoder is not listed first check if it is powered on and that all connectors are firmly in place. If it still does not connect it is possible that the decoder has an old firmware version. Manually connect to the decoder by selecting the network option and hitting the **next** button. You can now enter your IP Address, hit the **Next** button to connect. If it connects it means that the decoder firmware needs to be updated. It is possible to do timing in compatibility mode, but some new features will not be supported.

Check timing system setup

If all decoders seem to work properly, it is time to check the system setup and generate passings on each decoder.

Therefore you can start the Timing System Setup Check. This can be started by selecting Check timing system setup.

This wizard will guide you through some simple steps to check your timing system setup. With this test you can verify that all decoder(s) are connected and configured properly.

You need a transponder to check your timing system setup. Please specify the number of the transponder that you will use for this test.

This transponder will be used to check of the decoders. With this you can check if all decoders are working and if the timelines are configured properly.

Synchronization

Each decoder has its own clock. These clocks are used for time stamping the passings. When you have multiple decoders all clocks need to be synchronized to one main clock. To synchronize the clocks of all decoders, Orbits uses one of the following principles:

Track Side Box

If you have multiple decoders in a Track Side Box, the decoder clocks are synchronized by the controller.

GPS

If you use multiple decoders for timing that are on several locations around the track, all decoders needs to be synchronized by GPS. The accuracy of the GPS system is well known. It is the highest quality time-transfer system readily available and affordable. The only requirement is a clear view of the sky. Once a decoder has an active GPS connection the internal clock of the decoder is set to UTC (Coordinated Universal Time). The advantage of a decoder with an active GPS connection is that the decoder handles its own time synchronization. When all decoders in the network have active GPS connections you can be sure that their clocks will be perfectly synchronized at all times.

Time-zone

If your decoders are synchronized by GPS, the current system time-zone settings control how Orbits converts between GPS time to local time. Orbits will use the system time-zone settings for selecting the time-zone. You can see the system time-zone by opening the decoder details screen.

Note: If you change your system time-zone, you need to restart Orbits before these settings take effect. Orbits will give a warning message when you change the system time-zone.

GPS Status

GPS

Red icon means that a GPS module is attached to the decoder, but that the module is not synchronized to GPS yet.

GPS

Yellow icon means that the decoder clock has been synchronized with GPS, but the GPS module doesn't receive records at this time (lost GPS-connection).

GPS

Green icon means that the decoder clock is synchronized with GPS.

The number of satellites found is a good indication of the GPS signal quality. You can see the number of satellites in the decoder details screen.

Warnings and errors

Decoder is synchronized by GPS, but the signal is lost.

Make sure that the GPS module which is attached to the decoder has a clear view of the sky. If the decoder is positioned between a lot of metal objects, try moving it around a little. Sometimes you have to find a 'sweet spot'. The number of satellites found is a good indication of the signal quality. You can see the number of satellites in the decoder details screen.

Decoder is not synchronized to a controller or by GPS

No GPS device is attached to the decoder or it is not recognized as such. The decoder is now relying on its internal clock to retain timing accuracy. Even though this clock is very accurate, a GPS connection is preferred. You can check the connector of the GPS device. It may be loose or dirty, try another GPS device on the same decoder, the device or the wire may be broken.

No GPS device attached to the decoder

No GPS device is attached to the decoder or it is not recognized as such. The decoder is now relying on its internal clock to retain timing accuracy. Even though this clock is very accurate, a GPS connection is preferred.

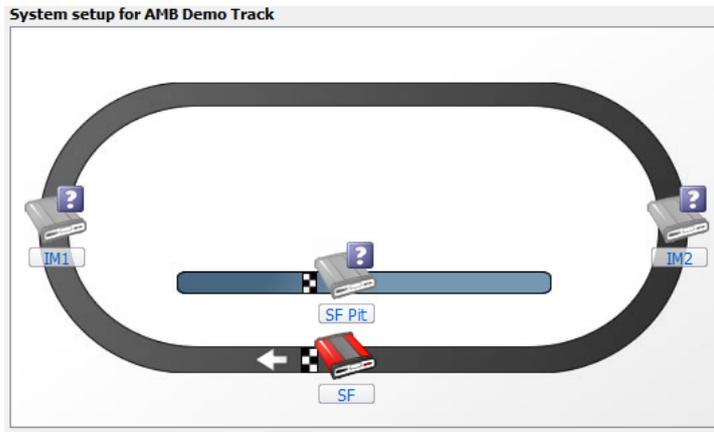
- Check the connector of the GPS device. It may be loose or dirty.
- Try another GPS device on the same decoder, the device or the wire may be broken.

Decoder is synchronized to a different controller

The decoder is synchronized by a different controller. When you don't use GPS, make sure that all decoders are synchronized by the same controller.

Timing system status

On the system setup page you can see the status of your system setup.



The image displays your current system status.



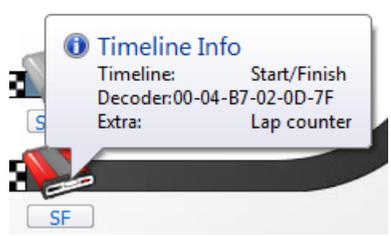
There is an active connection with the decoder.



A question marks means that no decoder is selected for that timeline. Double click on the timeline to select a decoder.



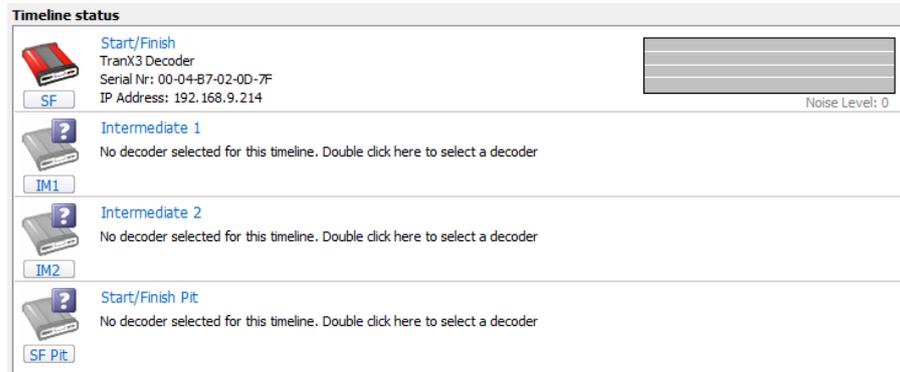
A red dot means that the connection to the decoder is lost. Right click on the decoder to reconnect.



If you move the mouse pointer above the timeline you get an info tip with detailed information.

Timeline status

In the timeline status screen you can see the status of each timeline and find detailed information about a decoder if connected.



The left part of the screen displays the status of the timeline.



There is an active connection with the decoder.



A question marks means that no decoder is selected for that timeline. Double click on the timeline to select a decoder.



A red dot means that the connection to the decoder is lost. Right click on the decoder to reconnect.

Show passings

To analyze the transponders on a timeline you can open the timeline passings screen. You can open this screen by selecting the timeline and then choose Show passings..

Hits

The number of hits of the last passing

Strength

The strength of the last passing for that transponder.

Noise

The noise during the last passing.

Noise

The background noise in combination with the signal strength is the most important indicator of the performance of the hardware system. If a decoder is connected to the computer, the background noise will be indicated in the timeline status screen, which can be found on the Event Setup page.



The image shows a software interface for a TranX3 Decoder. On the left, there is a small icon of a red and black device. To its right, the text reads: "Start/Finish", "TranX3 Decoder", "Serial Nr: 00-04-B7-02-0D-7F", and "IP Address: 192.168.9.214". Below this text is a small blue button with the letters "SF". On the right side of the interface is a graph showing a blue line representing noise level over time, with a label "Noise Level: 0" at the bottom right.

The average background noise is sent to the computer by the decoder every five seconds. The normal value for the background noise is between 0 and 30. An increased value of the background noise may indicate interference. If the background noise is higher, the received transponder signal strength should be 60 units above the background noise to ensure a reliable detection of the transponder.

A high background noise level may be indicated for a longer period of time than the actual duration of high noise levels. If no 5 second time interval passes without any transponder passings occurring, the background noise measurement is taken. Therefore the higher (and at that moment incorrect value) is shown again. Any electrical switch in the area, or (usually at night) short-wave radio stations can cause peaks in the background noise. Electronic equipment or a bad hardware system installation may also cause an increased background noise. Please refer to your AMB Hardware Manual for further information.

Track records

Orbits support an automatic registration of track records per class. All existing track records can be entered into Orbits by using the 'Track Records Editor'. The editor can be shown by selecting the Track records task found on the taskbar on the left side of the system setup page.

The Track Records Editor gives you an overview of all existing track records. Track records that are not present in the Orbits system can be added manually by selecting the New task on the left. If a new track record is set *during* a race, the dialog below will be shown:



This allows the timekeeper to accept or deny a new track record. If the new track record is accepted, it will replace the current track record. If there is no track record defined for a class, the new track record dialog will never appear for that class.

Note : If the laptime is below the minimum laptime, the lap will not count for a track record.



Registration

This chapter describes how you can enter your time schedule and competitors and which tasks need to be completed to begin timing your event.

Overview

Open the registration page of the program by pressing the **Registration** button at the top of the program.



Competitor Database

All competitors are stored in one competitor database. This database, which is organized by class, can be used for every race event. The competitor database can be shown by clicking on the **Show competitor database** option on the taskbar on the left from the registration screen or by hitting the 'F3' function key.

To create a new competitor, right click in the competitor screen and select **New Competitor**.

You can search the database for specific competitors using the **Search** bar. To show all competitors again, click the **Show All** button.

Competitor classes

In the competitor database, the competitors are stored in classes. A competitor can belong to only one class. If a competitor competes in more than one class, he has to be entered separately for each class.

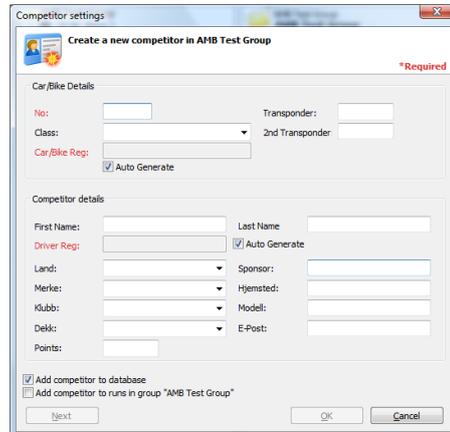
When a class is selected (on the left) in the class list, only the competitors in that class are shown. When multiple classes are selected, the competitors in the selected classes are shown. When you press **Show All**, all competitors in the database are shown. A class is created automatically when it is entered for a new or existing competitor. You can also create a class by right mouse clicking on the list of classes and selecting **Make a new class**.

To make identification easy, competitors that are in the same class are marked with the same helmet.



Competitor Details

The following information can be entered for a competitor:



No

Orbits accepts 4-digit alphanumeric car/bike numbers.

Class

In the Class drop down box, all classes from the Competitor Database are listed. If a class was selected on selecting **Add Competitor**, this class will be pre-selected. You can either select an existing class or fill out a new one.

Transponder/2nd Transponder

It is only necessary to fill out the transponder number(s) if the competitor has his/her own personal transponder(s). The 2nd transponder field can be used in case a car is equipped with a new transponder during a session.

Car/Bike Reg.

The car/bike registration number is a unique number for a car/bike (e.g. chassis number). If you do not know this number you can let Orbits generate a unique number for you by selecting **Auto generate**. Note: The combination of car/bike registration number and driver registration number is unique for each competitor. It is used by Orbits as a key, and **cannot** be modified. Therefore it is important to enter this information accurately.

First Name/Last Name

The first and last name fields must be filled out carefully to make the sorting on name work correctly. If you want 'Mc Donalds' to be sorted on 'Donalds', please place 'Mc' in the first name field. In the results on screen and on printouts, the full name will be printed as a combined string, with first name and last name after each other. If you want the program to first display the last name and then the first name, please enter the last name in the First Name field and vice versa.

Driver Reg.

The driver registration number is a unique number for a driver (e.g. license number). If you do not know this number you can let Orbits generate a unique number for you by selecting **Auto generate**. Note: The combination of car/bike registration number and driver

registration number is unique for each competitor. It is used by Orbits as a key, and cannot be modified. Therefore it is important to enter this information accurately.

Additional data fields

In the additional data fields you can enter any necessary additional data on the competitor. Headings for all additional data fields can be named in the General Settings (Tools-> General Settings from the main menu). For three of the additional data fields the value can either be entered by hand or selected from a drop down box, which contains all previous entries.

To enter another competitor select the **Next** button. Once all competitor information is entered select the **OK** button.

Managing competitors

By clicking the right mouse button on a competitor in the Competitor database a pop-up menu will appear for adding, editing or deleting competitors. Shortcut keys are indicated on the right side of the options pop-up menu.

Adding new competitors:

To add a new competitor, click right mouse button anywhere on the competitor database and choose **Add competitor**.

Editing existing competitors:

If you want to edit a competitor, highlight the corresponding row in the competitor database, click the right mouse button and choose **Edit**. To select more than one competitor, press and hold **Shift** or **Ctrl** while highlighting them.

If you have selected multiple competitors to edit, the bottom part of the **Modify Competitor** screen will show how many competitors you have to go (e.g. **To do: 5**).

Deleting competitors:

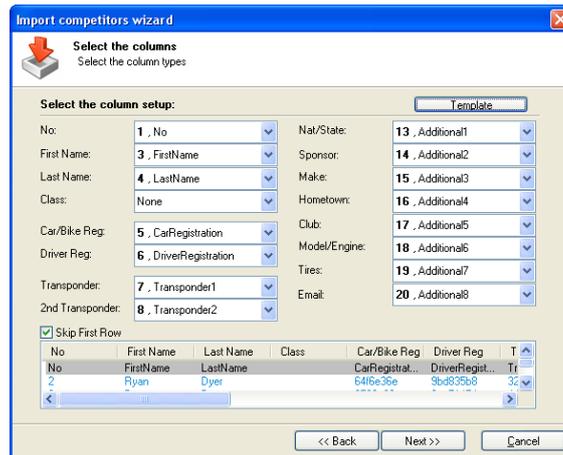
To delete one or more competitors, highlight them, click the right mouse button and select **Delete**. You will be asked to confirm that you want to delete the selected competitors.

***Note:** this question will only be asked once, even if you have selected multiple competitors for deletion.*

Import competitors

From the competitor database, you can start importing competitors from a file. Click on **Import competitors** to start the import wizard.

The '**Import competitors wizard**' guides you through this process. After selecting the file you would like to import, you can set the relations between the Orbits-fields and the fields in the file. Below the field selection, the wizard shows a preview of how the competitors will be imported.



It is possible to save the selected column setup as a template. This makes it easier to import the same file format next time. If you import an Orbits exported competitor file, the wizard automatically recognizes the fields in the file and will skip this page.

On the next page you can make a selection of the competitors you would like to import. Use the checkboxes to select or deselect the competitors.

The final page will give you an overview of all successfully imported competitors

Export competitors

From the Competitor database, you can export competitors to file. Click on **Export competitors** to start the '**Export competitors wizard**'.

The '**Export competitors wizard**' guides you through this process. After selecting the file you like to export to, you can specify which competitors you want to export. There are three options:

Export the selected competitors: Export the selected competitors only.

Export the competitors that are currently shown: Export the competitors that are currently displayed

Export the complete competitor database: Export the complete competitor database.

The final page will give you the option to open the exported file.

Club transponders

The Club Transponder Table is designed to facilitate race series that own their own pool of rental transponders and assign them to a new competitor before each event. Instead of typing the full transponder number in the competitor information, a 1-3 digit number can be used. The Club Transponder Table can be found under Tools – Club Transponder Table. On the right side of the Club Transponder Table window, the full transponder numbers are shown; on the left the corresponding short reference numbers.

To enter a new club transponder, select the **New** task on the taskbar on the left. A dialog will appear. Fill in the appropriate transponder and reference number. Editing or deleting a club transponder can also be done from the taskbar on the left.

Groups

For each event Orbits has the possibility to define groups of competitors. This makes it easier to organize the competitors in the event. When you have an event where competitors from different classes race together, you can define a group for these competitors.

So groups can be used to organize competitors in an event. The registration screen shows competitors that have entered the current event, divided into groups. If you select a group in the left part of the screen, the right part of the screen will show the competitors in these groups. An event must always contain at least one group.



The groups and runs tree expands and contracts like the directory structure of a Windows computer.

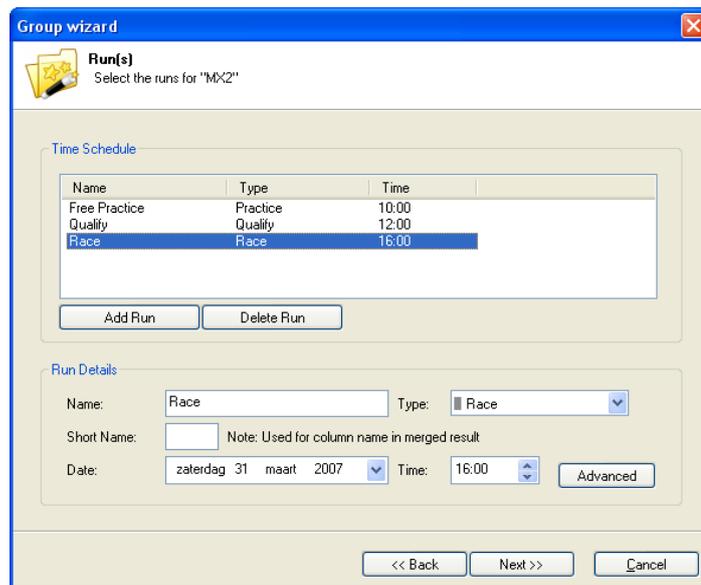
Only competitors listed in a group can be timed during the current event. If you do not know which competitors have entered the event, but you do have all of them listed in your competitor's database, you can copy the complete database to one group. Also if you do not want to divide competitors into different groups, you still have to copy either all competitors or just those competitors entered for the current event into one group. When all competitors have been entered into groups, the event schedule for each group can be created.

Create a group

You can create a new group by starting the group wizard. Start the wizard by clicking on Create a new group under the group tasks. Now the Group Wizard will start.

You first need to enter the group name and group description. After selecting this, you can enter the Time schedule for the group.

Each group prepared for an event can hold a series of runs. To add a new run to this group, you can click on the **Add Run** button. Then select the name, type and start time of the run. Click on the **Advanced** button to enter the detailed run settings.



The screenshot shows the 'Group wizard' dialog box with the 'Run(s)' tab selected. The title bar reads 'Group wizard' and the subtitle is 'Run(s) Select the runs for "MX2"'. The 'Time Schedule' section contains a table with three columns: Name, Type, and Time. The table lists three runs: 'Free Practice' (Practice, 10:00), 'Qualify' (Qualify, 12:00), and 'Race' (Race, 16:00). The 'Race' row is highlighted. Below the table are 'Add Run' and 'Delete Run' buttons. The 'Run Details' section has fields for Name (Race), Type (Race), Short Name (empty), Date (zaterdag 31 maart 2007), and Time (16:00). An 'Advanced' button is next to the Time field. At the bottom are '<< Back', 'Next >>', and 'Cancel' buttons.

Name	Type	Time
Free Practice	Practice	10:00
Qualify	Qualify	12:00
Race	Race	16:00

Run settings

A new run can be created by right clicking on a group and select **New Run** from the menu. To edit or delete a run, right click on a run and select **Modify** or **Delete <Run>**.

A dialog box will appear with the following settings:

Name

The name of the timed session.

Short Name

This name is used when a merge result is created.

Date

The scheduled date of the session.

Time

The scheduled time of the session.

Type

- Practice: The results are sorted on best laptime.
- Single car qualifying: The results are sorted on best laptime.
- Qualify: The results are sorted on best laptime.
- Race: The results are sorted on laps and total time.

Start Method

This property indicates how the start of the race is defined. The possibilities are:

- **Start on First Passing** > the elapsed time is measured from the first passing after dropping the green or yellow flag.
- **Start on Flag** > the elapsed time is measured from the dropping of the green or yellow flag. A session can also be started using an external start pulse connected to the photocell 2 input of the AMB decoder. The external start pulse will result in a green flag to be inserted. Run has to be in warm-up mode in order to activate this function
- **Staggered Start** > Each competitor has his own starting time, triggered by passing the start/finish line.

Count First Passing

If this option is set to Yes, the first passing of the start/finish line of each vehicle will count as the first completed lap. Normally the first two passings will count as one lap (one passing for starting and one passing for completing the first lap). Whether or not to count the first passing is dependent on several factors such as the distance between the starting grid and the start/finish line (the detection loop). For instance, if the starting grid is formed and is positioned close to the start/finish line, the front-runners may already be detected by the system (as indicated by a beep on the headphone) before Orbits is even started. In this case it may be useful to set the Count First Passing option to Yes.

Note: You should try to grid the competitors at least 5m / 15 feet from the detection loop to prevent premature detection.

Auto Finish at Lap

When the first competitor reaches the number of laps specified in this field, Orbits inserts a finish flag and marks all subsequent passings as finished. Stopping the timing and scoring manually when all competitors have finished is still required. When this setting is left at 0, Orbits will not finish a session automatically.

Auto Finish at Time

When the race clock reaches the specified time entered in this field, Orbits will automatically insert a finish flag and mark all subsequent passings as finished. Stopping the timing and scoring manually when all competitors have finished is still required. When this setting is left at 00:00, Orbits will not finish a session automatically. Note: When a timeframe - measured in both laps and time - is specified, whichever criteria are reached first is used to finish the race.

Auto Finish on time and laps

After the race clock reaches the specified time and after the first competitor reaches the specified number of laps entered in these fields, Orbits will automatically insert a finish flag and mark all subsequent passings as finished. The race clock first has to reach the specified time before the specified number of laps is starting to count down.

Auto Finish on time or laps

When the race clock reaches the specified time or the specified number of laps entered in these fields, Orbits will automatically insert a finish flag and mark all subsequent passings as finished.

Individual Finish on laps

Every competitor finishes individually after the given amount of laps.

Individual Finish on time

Every competitor finishes individually after the given amount of time.

Minimum laptime

Lap-times recorded below the specified minimum laptime will be automatically invalidated and are displayed in red in the passing screen. An invalidated passing will count as a lap, but will not be used for determining best laptime. The minimum laptime value can be changed at any time, also when timing a session.

***Note:** Passings with laptimes that are faster than 3 seconds will be automatically deleted.*

Qualification Requirements

This property indicates how competitors can qualify to appear on the race results. The possibilities are:

- **None** > All competitors appear on the race result.
- **Maximum Percentage of the best laptime** > When selected, you can specify a percentage of the best laptime of this run. To appear on the results, a competitor must achieve a laptime of no more than the specified percentage of the best

-
- laptime. This only applies to qualifying and practice results.
 - **Maximum % of the avg. best laptime of the top X** > When selected, you can specify a percentage and the number of competitors from the top. To appear on the results, a competitor must achieve a laptime of no more than the specified percentage of the average best laptime of the specified top X competitors. This only applies to qualifying and practice results.
 - **Minimum percentage of the leader total laps** > When selected you can specify a percentage. To appear on the results, a competitor must complete at least the specified percentage of laps of the leader. This only applies to printed results.
 - **Maximum number of competitors** > When selected, you can specify a position. All competitors from the specified position down do not qualify. This applies to race, qualifying as well as practice results.

Adding competitors to groups

There are several ways to add competitors from the database to a group. One way is to drag the competitors from the competitor database. To add competitors from the competitor database (Hit 'F3' to show the competitor database) to the current group, highlight them, hold the mouse button down and drag them onto the Competitors in <group name> box on the bottom right part of the screen.

To add a new competitor you can also click the right mouse button on the Competitors in <group name> box and select New competitor. This way a new competitor can be added who is not in the competitor database yet.

To remove competitors from the current group, highlight the corresponding competitor in the Competitors in <group name> box, click the right mouse button and select Delete. This will only remove the competitor from this group.

To edit competitor information for the duration of the event, highlight the corresponding competitor in the Competitors in <group name> box, click the right mouse button and select Edit.

Competitors may also be moved or copied from one group to another, by selecting them in the right part of the screen and dragging them to a group in the left part of the screen.

Tip: Start an event by creating a group called "Event entries" and drag all competitors that have entered the event to this group. Then you can drag the competitors from this group to the different race groups.

Modifying competitors When you drag a competitor from the competitor database into a group, this competitor is now a copy of the original one. When you change a competitor in the group, these changes are not automatically updated in the competitor database; they only affect the current group. This allows you to make temporary changes while a race is going on, e.g. when somebody is using a different transponder or a different car number during the event. The same applies to a competitor that you drag from a group into a run. You can also add competitors to a group without adding them to the database. When you want to update changes to a higher or lower level, you can specify this by checking the corresponding boxes in the competitor edit dialog while creating or modifying competitors.

8

Timing

This chapter describes the process of starting a race and the actual timekeeping activities.

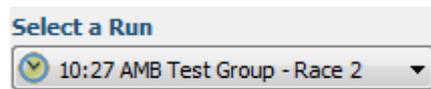
Overview

After preparing the race event, you can start racing. This part of the manual describes the process of starting a race and the actual timekeeping activities. All of this takes place in the **Timing** tab of the program. When the **Timing** tab is selected, it will look like the figure below. The screen is divided into three main sections: the Passings screen, the Results Screen and the Lap Chart. The screens can be adjusted by selecting the  tool and dragging it to the preferred position. You can hide and show the  tool by clicking it with the left mouse button.



Timing a run

To start a practice, qualifying or race session, check if the right track and event are selected in the title bar. To change the selected track and/or event go to the registration screen and select an event from the choice box on the top screen. Before you can start a session you first have to open the session. This can be done from the selection box on the top of the timing screen.



Select the run from the selection list.

Starting a run

A run can be created by selecting **Create new run** from the taskbar. After selecting the run, you can start it by clicking the green flag. You may also use the *F5* hotkey. Please note, however, that in order for the *F5* hotkey to work, the Orbits program must be active and no other window (another program) can be active.

Before starting to time the race, you may start that run in warm-up mode, by clicking the purple warm-up flag. By doing this during the warm-up laps, you may use these passing to check transponder relations (making sure car number/driver in Orbits matches the car/driver on the track).

External start

After starting a session with a Warm-up flag, the green flag will be initialized automatically when the decoder receives a Photocell 2 input from the Auxiliary port. Please check you AMB hardware manual for wiring details.

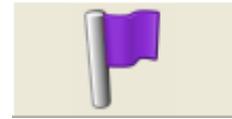
Flag situations

The green, yellow, red and finish flag can be selected by clicking the flag with the mouse or using the corresponding hotkeys. However, stopping the actual timing of the race can only be done by clicking the stop button, since no hotkey is made available.

A flag change is indicated in the passings screen by a separate line. For each transponder passing the current flag situation is shown in the first column of the passings screen. In the Passings Screen, flags may be dragged into the correct position when dropped late or early.

Warmup flag

Select the purple flag to start the warming up. When the purple flag is active the laps will appear in the Passing Screen, but will not count for the results.

**Green flag (F5)**

Select the green flag to start the race or to change from a yellow or red flag situation back to a green flag. A stopped race can also be restarted by selecting the green flag.

**Yellow flag (F6)**

Select the yellow flag when a full course yellow is given. This flag will not affect the result.

**Yellow flag Not Counting (Oval features only)**

If the oval features are enabled, there is an option to throw a yellow not counting flag. During this flag situation the lap count is never increased but the passings will still be registered.

**Red flag (F7)**

Select the red flag when a red flag situation occurs. During a red flag situation the lap count is never increased but the passings will still be registered.

**Finish flag (F8)**

After the finish flag is dropped, the next passing by each competitor will be marked as finished and all subsequent passings will be marked as extra and will not affect the race/qualifying result.

**Stop**

Select the Stop button to stop the timing and scoring for this session. Once a session is stopped, successive transponder passings will not be registered. The session can be restarted by selecting the green flag (or pressing the *F5* hotkey).

**Stop a run**

Select the Stop button to stop the timing and scoring for this run. Once a run is stopped, successive transponder passings will not be registered. The run can be restarted by selecting the green flag (or pressing the *F5* hotkey).

Track chart

The Track Chart is a graphical presentation of competitors that are on the track. Each box represent a competitor and displays the following information:



The car number



The expected time. This bar will update during the lap. If a competitor is expected to pass start finish the bar will be 100 % green.

When a competitor is running late, the green bar will become  red. This is an indication that the competitor is in a slow lap, or that he is out of the race.



The result marker.



The competitor is not active anymore.

The Track Chart can be sorted in 4 ways.

- **On track position:** This shows the order in which the competitors have passed the detection loop in the last completed lap. The leader is the first competitor.
- **On result:** This shows the order based on the current run results.
- **On car number:** Competitors are sorted on car number.
- **On expected time:** This shows the order in which competitors are expected to pass start finish. The competitor at the top is expected first.

To do this, right click in the Track Chart screen and choose the desired option.

To show the passings of a specific competitor you can click on the competitor box and select the **Show Passings** option. Now only the passings of this competitor are shown in the Passings Screen. After you selected this option, Clicking the **Show All Passings** button on the top of the Passing Screen will show all passings of all competitors.

Markers and colors

The following markers can be shown at the right of the box. (Behind the number)

- Competitor passed in the current lap 
- Competitor missed one lap 
- Competitor missed 2 or more laps 
- Competitor improved position 
- Competitor is finished 
- Competitor is in the pits 

The following icons can be shown at the left of the box. (In front of the number)

- Last passing of the competitor was a manual passing. 
- Last passing of the competitor was a photocell passing. 
- A battery indicates a transponder sending out a low battery warning. The transponder of this competitor needs to be recharged; the expected operating time left is between 0 and 12 hours and therefore the transponder needs to be charged before the next run. 
- A yellow signal strength or number of hits indicates a value low. 

Passings screen

The Passings Screen displays all information from the start/finish and start/finish pits timeline along with any manual additions to timing & scoring (e.g. adding of a manual passing, inserting flags, etc.). A colored horizontal line will appear each time a lap is activated. The color of the flag corresponds with the color of the line.

#	No.	Name	Laps	Lead	Lap Tm	Spd	
219	45	BAS BERGH...	8	8	2:33.637	43,700	
220	66	ROLF MIDDE...	8	8	2:33.407	43,766	
221	99	BAS STAPEL...	8	8	2:37.466	42,638	
222	52	WIGGER JEL...	8	8	2:37.806	42,546	
223	32	WIEGER TE...	8	8	2:38.380	42,392	
224	47	JARNO DE J...	7	8	3:37.869	30,817	
225	25	EDWIN SATI...	8	8	2:39.659	42,052	
226	69	RICHARD SL...	8	8	2:34.818	43,367	
227	83	REINK TUIN...	8	8	2:38.598	42,333	
228	48	MARCEL KA...	7	8	3:03.186	36,651	
229	51	DERK JAN K...	8	8	2:48.603	39,821	
230	11	MARTIJN VA...	8	8	2:42.869	41,223	
231	29	HENDRIK VA...	8	8	2:47.690	40,038	
232	19	FRANK DE R...	7	8	3:10.107	35,317	
233		Run Stopped					

Indications in the passing screen



Deleted passing: A deleted passing is marked gray with a red cross in front of the passing. This passing is marked deleted; the competitor will not be credited with a lap for this passing.

67

Low Battery Warning: A red competitor number indicates a transponder sending out a low battery warning.

28.601

Laptime Violation: The laptime of this competitor is below the indicated minimum laptime in the run properties. (If the laptime is faster than 3 seconds, the laptime will be ignored)



2

Manual Passing: This is a manual passing and doesn't have a photocell or transponder time associated with it.

29.636

Overall Best Laptime: A laptime in purple indicates an overall best laptime for this competitor.

Personal Best Laptime: A laptime in green indicates a personal best laptime for this competitor.

8

Pit passing: This passing was received on the pit detection loop

Delete passings

Passings, which for some reason are not correct, can be deleted in the Passings Screen; for instance when a technician walks past S/F with a transponder in his pocket causing an unexpected passing. A deleted passing will be interpreted as if it did not happen.

To delete one or more passings, select them in the Passings Screen, click the right mouse button and select Delete Passing(s). All selected passings are now marked deleted by a gray line with red characters and a red cross before the line number.

*Note: Deleted passings are not removed from the run - they are just marked as deleted. Therefore it is still possible to undelete a deleted passing (result): select the passing, click the right mouse button and select **Undelete (Passing)**.*

Invalidate passings

A passing that ends a lap, which for some reason (competitor took a shortcut) should not be considered for best laptime, can be invalidated in the Passings Screen. An invalidated passing will only be used to count a lap

To invalidate a passing, select it in the Passings Screen, click the right mouse button and select Invalidate Passing. The selected passing is now marked invalid by a gray laptime with red characters.

When a laptime is lower than the minimum laptime specified for the run, Orbits will popup a dialog to ask you if the passing should be deleted or not.

Moving flags and manual passings

One of the main features of Orbits is the ability to change flag situations at any time. Together with the ability to delete and undelete passings, add and move manual passings, this makes the system very flexible and powerful. To move a flag or a manual passing, click on it and drag the passing to the new position.

The new time of the passing will be set to 0.001 seconds before or after the passing it is dropped on. After a flag or manual has been moved, the result of the race will be recalculated automatically.

Lapchart

The Lapchart shows the passings in a way that is often used when manually timing a race. At the top of the chart the lap count is displayed and underneath in boxes the numbers of the passing competitors. The colors of the boxes represent the color of the flag that was active at the moment of the passing. In race mode each time the leader passes, a new column is created. Clicking on a passing in the Lapchart, will select the passing in the Passing Screen.

Lapchart colors

Warmup flag	
Green flag	
Yellow flag	
Red flag	
Finish flag	
Extra passings after finish	

The content of a passing box gives extra information on the status of a passing:

<p>Pit Indicates that this passing occurred on the pit start/finish loop.</p>	
<p>Low hits/strength Indicates that this passing had a low hits and/or strength warning.</p>	
<p>Laptime violation Indicates that the laptime of this passing is below the minimum laptime or the passing has been invalidated.</p>	
<p>Low battery Indicates that the transponder is sending out a low battery warning.</p>	
<p>Manual Passing Indicates that the passing is a manual passing.</p>	
<p>Unlinked photocell If a photocell 'hit' cannot be linked to a transponder passing it will appear as an unlinked photocell in the lapchart.</p>	
<p>Linked photocell When a photocell has been assigned, the car number of the competitor will appear in the box together with a small yellow dot.</p>	
<p>Deleted Passing A red cross through the car number indicates that the passing has been deleted.</p>	
<p>Bold Bold text indicates that this passing is in the same lap as the leader. Car number 64 is at least one lap behind car number 31, who is in the same lap as the leader.</p>	 

Result screen

The Results Screen is used to display results during a practice, qualification or race. This screen shows the current position of the drivers and information like: lap count, total time, time difference with the leader when they are in the same lap. When you right click in the results screen you can modify the column settings by selecting the **Choose Columns** option.

Official Results							Show hidden competitors (-)	
	No.	Name	Laps	Total Tm	Diff	Gap	S1 Tm	S2 Tm
🚩	1	222 Antonio Cairoli	11	25:56.326	-	-	....	1:07.156
🚩	2	12 Kenneth Gundersen	11	26:09.036	+12.710	+12.710	....	1:08.177
🚩	3	131 Nicolas Aubin	11	26:14.667	+18.341	+5.631	....	1:08.106
🚩	4	14 Garreth Swanepoel	11	26:16.995	+20.669	+2.328	....	1:05.879
🚩	5	99 Sean Hamblin	11	26:28.947	+32.621	+11.952	....	1:09.642
🚩	6	25 Wyatt Avis	11	26:33.399	+37.073	+4.452	....	1:09.026
🚩	7	41 Tom de Belder	11	26:34.927	+38.601	+1.528	....	1:06.574
🚩	8	22 Anthony Boissiere	11	26:35.544	+39.218	+0.617	....	1:06.283
🚩	9	89 Jeremy van Horebeek	11	26:36.782	+40.456	+1.238	....	1:06.694
🚩	10	24 Tom Church	11	26:38.515	+42.189	+1.733	....	-
🚩	11	121 Xavier Boog	11	26:43.556	+47.230	+5.041	....	1:09.673
🚩	12	48 Rinus van de Ven	11	26:46.630	+50.304	+3.074	....	1:06.493
🚩	13	37 Gert Krestinov	11	26:47.875	+51.549	+1.245	....	1:04.582
🚩	14	43 George Strik	11	27:06.422	+1:10.096	+18.547	....	1:10.479
🚩	15	66 Aigars Bobkovs	11	27:34.776	+1:38.450	+28.354	....	1:11.622
🚩	16	74 Elliot Banks-Browne	11	27:47.838	+1:51.512	+13.062	....	1:09.291
🚩	17	45 Jake Nicholls	11	27:49.213	+1:52.887	+1.375	....	1:08.758
🚩	18	95 Hugo Dagod	11	27:52.335	+1:56.009	+3.122	....	1:09.381
🚩	19	32 Robert Sturm	11	28:13.578	+2:17.252	+21.243	....	1:10.469
🚩	20	11 Dennis Verbruggen	10	26:41.705	1 Lap	1 Lap	....	1:29.214
🚩	21	77 Shannon Terreblanche	10	26:51.088	+9.383	+9.383	....	1:12.561
❌	22	36 Matteo Bonini	7	19:11.190	4 Laps	3 Laps	....	1:35.668
❌	23	18 Pier Filippo Bertuzzo	2	10:27.701	9 Laps	5 Laps	....	1:18.984

0:28:16Best: 2:07.871 by [222] Antonio Cairoli
0:28:16

Official/Hidden results

There are two ways to remove a competitor from the result. The first option is to hide the competitor from the result by right mouse clicking the competitor and selecting Hide competitor from result. When you hide a competitor from the result, the data won't be lost and can easily be recovered by selecting the Hidden Results button at the top of the results screen. Select the competitor and right mouse click it to show the unhide option Show Competitors on Result.

You can also permanently delete a competitor from the result when necessary by right mouse clicking the competitor and selecting **Remove Competitor**. If the removed competitor had passings, these will now show as unrelated passings in the passing screen. The result of the unrelated transponder is listed under hidden results.

Result status

When appropriate you can mark a competitor as Did not start (DNS), Did not finish (DNF) or Disqualified (DQ) by right mouse clicking the competitor and selecting the desired option. For the DNF and DQ status, there is an option to send the competitor to the bottom of the results. On the print-out the status of each competitor will be shown.

Active

The competitor is active.

DNS

The competitor will be marked as Did Not Start and moved to the bottom of the result.



DNF

The competitor will be marked as Did Not Finish. If you don't choose to move the competitor to the bottom of the result he will keep his position.



DQ

The competitor will be marked as Disqualified. If you don't choose to move the competitor to the bottom of the result he will keep his position.



Corrections and penalties

Penalties can be given during and after timing a run. You can give penalties to a competitor by selecting the competitor in the Results Screen, right mouse clicking and selecting Corrections and Penalties. A penalty on position can only be applied after the run is stopped.

A penalty can consist of a correction of Total time, Number of laps, Best laptime, position and/or points. The penalized or corrected results will be marked with an  icon in the corresponding column of the result screen. An overview of all penalties that have been given during a run can be seen on the Process Page by clicking Penalties/Corrections on the left taskbar.

Manual passings

When the transponder of a competitor is not detected, that competitor needs to be timed manually. Reasons for not detecting a transponder can be an incorrect transponder position, a transponder that was not charged or a completely missing transponder. If multiple transponders are not detected, a bad loop installation may be a more likely cause for the failures.

To insert a manual passing at the current race time you have to hit the 'F10' key. To insert a manual passing after a passing in the passing list, do a right mouse click on the passing and select Insert a Manual Passing from the pop-up menu. After inserting a manual passing you can drag it to another position with your mouse.

A manual passing will show with a 📌 icon in the Passings Screen. You can assign, or reassign it to a competitor by selecting it, clicking the right mouse button and selecting Assign Competitor to Passing.

The Assign a Manual Passing dialog will pop up. It consists of two lists sorted by Competitor number. The first list contains all competitors in the current Run. The second list contains all competitors for which a manual passing was previously added. A manual passing is assigned to a competitor by selecting a name from one of the lists and clicking the Assign button or hitting the Enter key. When you select Delete, the manual passing will be deleted.

Note: The 'F10' hotkey can be pressed at any time while a race/qualification is running.

Laptimes from manual passings will always be invalidated and therefore not count as best laptime. Multiple laps can also be added by right clicking the competitor and selecting **Corrections and Penalties**. Photocell and manual passings work similarly.

Unrelated transponders

If a transponder passes start/finish and the transponder number is unknown in both the run and the group, the transponder will appear as an unrelated transponder on screen.

A relation between transponder number and competitor can be created by double clicking on the hidden competitor under "Unrelated competitors".

Unrelated competitors			
Transp...	Time of Day	Passi...	Timeline
1012	14:53:40.932	1	Start/Fini
1011	14:53:40.791	1	Start/Fini
1010	14:53:40.275	1	Start/Fini
1009	14:53:39.994	1	Start/Fini
1008	14:53:39.760	1	Start/Fini
1007	14:53:39.338	1	Start/Fini
1006	14:53:39.041	1	Start/Fini
1005	14:53:38.682	1	Start/Fini
1004	14:53:38.354	1	Start/Fini

In order to relate a competitor to a transponder you can choose one of four options.



Quickly create a competitor

A new competitor with the given transponder number will be created.

Link transponder to an existing competitor

An existing competitor can be selected from the run, group or database. The transponder will be linked to the selected competitor.

Keep unrelated, but show on results

No relation is created between a new or existing competitor but the unrelated transponder number will be visible in the result.

Keep unrelated, don't show on results

No relation is created between a new or existing competitor. The unrelated transponder is not visible on the result. The unrelated transponder will be visible under "Unrelated transponders" after clicking on

the button "Show hidden competitors".

Transponder switch

When two competitors have accidentally switched their transponders, you can manually switch them back. In the Passings Screen, select and right mouse click a passing of one of the competitors. Select the **Switch Transponder(s) With...** option and a list of competitors will appear. Select the competitor the transponder needs to be switched with. When more than two competitors have the wrong transponder you can repeat the process.

Announcements

Announcements can be used to make notes of official decisions made during a run. E.g. Stop and Go Penalty for competitor, reason for red flag etc. The announcements are printed in the official race result printout. To add, modify or delete announcements by selecting **Announcements** from the taskbar on the left of the screen and right click on the Announcement Screen to select your task from the menu.

Note: Announcements will appear on Official Race Reports and on Mylaps.com

Driver ID

Enabling this feature, allows you to assign up to 6 transponders per 'team'. In the competitor details screen, you can specify the transponders for the team by clicking on the **Edit Transponders** button.

There are 2 ways to support multiple drivers per team.

Unique transponder per competitor

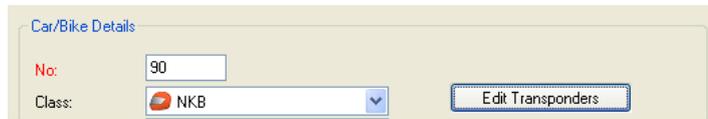
Each driver per team has its own unique transponder. You can specify the transponder number per driver.

Using the TranX pro driver id transponder

Using the TranX Pro system and its TranX Pro DriverID Transponders. The TranX Pro DriverID transponders identify which of the teams' drivers are in the car throughout the race. The driver data makes it easy for the operator to keep track of who is on the track and what laptimes they are turning.

Edit a competitor

Click on 'Edit Transponders' button to assign the Transponder(s) for the selected competitor.



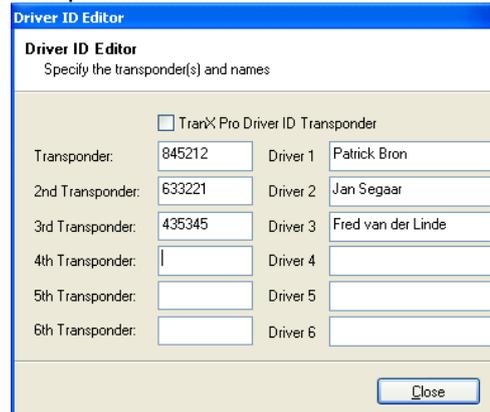
Car/Bike Details

No: 90

Class: NKB

Edit Transponders

If you use a transponder per competitor you need to fill in all the transponder numbers.



Driver ID Editor

Specify the transponder(s) and names

TranX Pro Driver ID Transponder

Transponder: 845212 Driver 1: Patrick Bron

2nd Transponder: 633221 Driver 2: Jan Segaar

3rd Transponder: 435345 Driver 3: Fred van der Linde

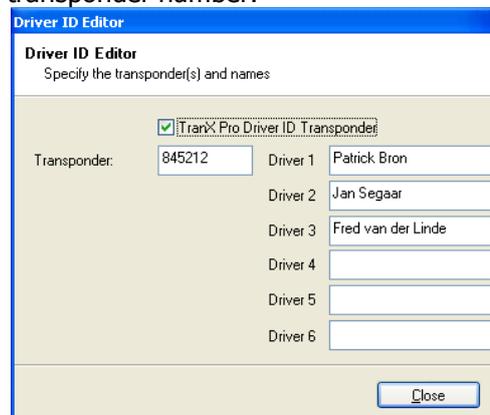
4th Transponder: Driver 4:

5th Transponder: Driver 5:

6th Transponder: Driver 6:

Close

If you use the TranX Pro DriverID transponder you only need to fill in one transponder number.



Driver ID Editor

Specify the transponder(s) and names

TranX Pro Driver ID Transponder

Transponder: 845212 Driver 1: Patrick Bron

Driver 2: Jan Segaar

Driver 3: Fred van der Linde

Driver 4:

Driver 5:

Driver 6:

Close

Result and passing screen

The program will display the name of the current driver in the result screen and in the passing screen. The name in the result screen will be updated as soon as the new driver is detected by the decoder. As soon as a new driver is detected the name.

Oval features

Single car qualifying

When the runtime is set to Single Car Qualifying, the program will switch to Single Car Qualifying mode. This means that the program will time the competitors individually. The number of competitors that are qualified on best lapttime, can be inputted in the run settings screen. This option is only enabled if the run is a Single Car Qualifying run. The program will show which competitor is qualifying at that moment.

Timing a Single Competitor

When a new competitor is on the track, insert the warm-up flag to start timing the competitor. After the competitor has finished his warm-up laps starts single car qualifying by inserting the green flag. Depending on the number of laps stop the qualifying session of the competitor that is on the track by inserting the finish flag. To start timing the next competitor insert the warm-up flag again.

Note: when the number of laps is filled in, in the run settings screen (auto finish laps), the program can automatically insert a finish flag. If the option Automatically inserts a Finish Flag is checked and the number of laps is reached, the program automatically inserts a finish flag.

Select other qualifier

The program will automatically select the first competitor after the warmup flag as the current competitor. If there are two or more competitors on the track at the same time you can pick the competitor that should be times, by selecting the competitor form the menu. (Only competitor after the warmup flag will be displayed in the menu.)

Tie on Best Lapttime

When there is a tie on best lapttime, this is indicated by a red background color in the results screen. To change the qualify order for competitors that have a tie on best lapttime, drag and drop the competitor in the proper position, within the competitors that have a tie. When the scoreboard feed is enabled, the scoreboard feed will be automatically go to hold, so there is the possibility to fix the tie on best lapttime.

Provisional and Past Champion

When a competitor is not qualified on time, the program allows the operator to mark a competitor as a provisional or past champion. The program allows the operator to mark 10 competitors as provisional and one competitor as a past champion. This can be done from the results screen, by right click on a competitor and selecting the desired option from the menu. The provisional and past champion will be placed on the qualify results behind the qualified competitors.

Note: Competitors that are qualified on time will be marked in the results screen with a white background color. Competitors that are not qualified on time will be marked with a darkgray background color.

Lineup creation

When a yellow, yellow not counting or red flag situations occurs during a race, the program automatically generates the lineup if the oval features are enabled in the general settings. Depending on the lineup method and the lineup scheme, the program automatically generates the lineup.

Lineup Method

- **Back to Last Completed Lap** > The program will go back to the last completed lap. Therefore all the passings in the current lead lap will be marked as deleted. The program will generate the lineup immediately.
- **Race up to the Yellow** > The program allows the leader to complete his lap. The program will wait with making the lineup until the leader has completed his current lap.

Lineup Scheme

- **Current Track Order** > The program will use the current track order at the yellow or red flag situation for the lineup scheme.
- **Race up to the Yellow** > The program will use the current race results at the yellow or red flag situation for the lineup scheme.

To change the position of a competitor in the lineup, drag and drop the competitor to the proper position. To set a competitor at the back of the lineup, right click on the highlighted competitor and select **Set to Back**. To mark a competitor that has caused an accident, right click on the competitor and from the menu select **Add Caused Accident**.

If a competitor is has the position on the track the lineup request, he will be marked green. If the competitor is not in the proper lineup position he is marked red.

A lineup can be saved to HTML, CSV and txt file. To print the lineup, click the print button. The program will print the columns in the selected order.

Sandbagging

Orbits will monitor the competitor laptimes during the race. If the laptime in the race is faster than the qualify time – sandbagging time, the laptime will be marked red.

#	No.	Name	Laps	Lead	Lap Tm	Spd	Elapsed...	Time of De
111	30	Frank Aghina	10	10	1:58.915	130,404	20:11.481	16:29:59.74
112	12	Maarten van ...	10	10	1:58.855	130,470	20:11.869	16:30:00.12
113	44	Bert van den ...	10	10	2:03.515	125,547	20:36.010	16:30:24.27
114	26	Robert Vroom	10	10	2:01.161	127,986	20:41.048	16:30:29.30

To view the 'Sandbagging time' per competitor you can add the column 'Minimum Laptime' in the result screen.

Pos	No.	Name	Min. Lap Tm	Last Tm
1	42	Henk Böenkamp	1:50.997	1:55.627
2	35	Harm Boerma	1:51.826	1:53.124
3	63	Mikael Sode	1:54.570	1:57.464
4	12	Maarten van Helden	1:56.807	1:57.309

After the qualify session is finished you need to create the starting grid for the race. This can be done in the Processing screen. When the starting grid for the race is created the program will automatically calculate the 'Minimum lap time' per competitor. It will take the qualify time and deduct the time filled in the General Settings screen.

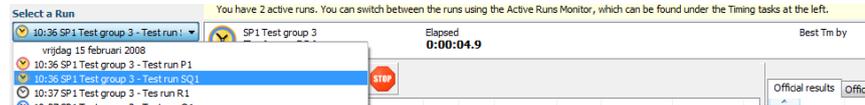
Section times

If your system setup is configured with sections, Orbits will automatically display the section results. For an intermediate the times will be displayed. For a speed trap, the .speed. If a competitor set his best section time in the current lap it will be marked with a purple background color. If a competitor enters a section the previous section time will be cleared, so you know that the competitor is in that section.

Pos	No.	Name	Laps	Total Tm	S1 Tm	S2 Tm
1	37	Kristof Salaets	3	1:00.599	---	13.266
2	18	Thomas Allier	3	1:00.661	---	13.141
3	121	Alessio Chiodi	3	1:01.098	---	13.484
4	11	Steve Ramon	3	1:01.535	---	13.562
5	111	Aigar Leok	3	1:02.127	---	13.374
6	70	Jonny Lindhe	3	1:02.190	---	13.671
7	108	Kornel Nemeth	3	1:02.284	---	14.046
8	31	Kasper Jensen	3	1:02.845	---	13.609
9	2	Kevin Stribos	3	1:03.251	---	14.015
10	71	Antti Pyrhonen	3	1:03.407	---	14.264
11	15	Cristian Beggi	3	1:04.000	---	13.890
12	16	James Noble	3	1:04.967	---	14.296
13	90	Sebastien Pourcel	3	1:05.279	---	14.420
14	4	Mike Brown	3	1:05.404	---	14.420
15	14	Marc de Reuver	3	1:05.965	---	14.513
16	7	Jonathan Barragan	2	44.899	6.963	---
17	101	Maximilian Nagl	2	44.930	6.932	---
18	51	Matteo Dottori	2	45.055	6.807	---
19	19	David Philippaerts	2	45.258	6.698	---
20	23	Alex Salvini	2	45.679	6.963	---
21	89	Radomir Harbich	2	45.804	6.807	---
22	24	Pierre A. Renet	2	46.880	6.885	---

Multiple active runs

With the multiple active runs option enabled up to six runs can be active at the same time. Runs can be selected in the same way as when timing a single run, using the "Select a Run" drop down menu. After selecting each run it can be started by inserting a flag (e.g. a green flag).

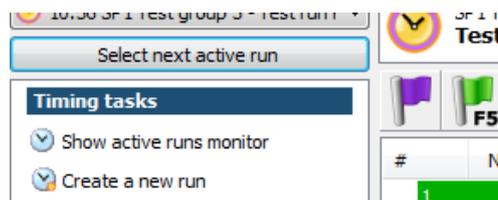


Starting multiple runs simultaneously (inserting a green flag for more than one run) can be done by inserting a warm up flag for each run to start, followed by pressing CTRL + F5 to insert a green flag.

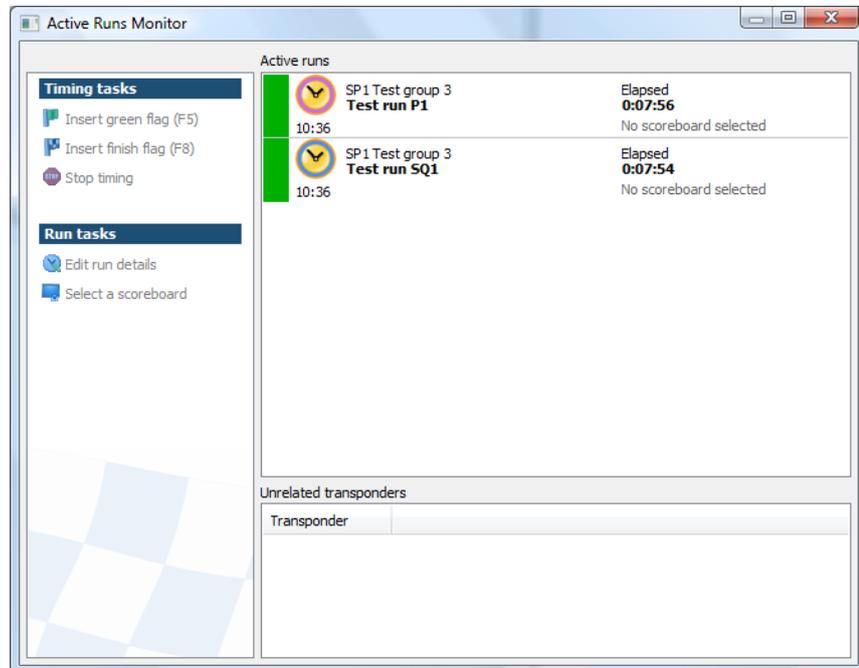
By pressing the control key plus the key for a flag (F5, F6, F7 or F8) that flag is inserted for each of the active runs.

Overview of active runs

An overview of all the active runs can be opened by clicking "Show active runs monitor" (this option is available from the "Timing tasks").



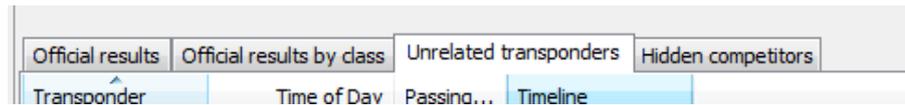
In the overview of all active runs a run can be selected by clicking. It is also possible to switch between runs using the up and down keys.



Unrelated transponders in case of multiple active runs

Unrelated transponders are handled differently when timing multiple active runs. Therefore it is best to copy the competitors in a run to each run before the run is started. In case of multiple active runs it is not possible to automatically link a transponder to a competitor in a group.

Unrelated transponders can be found by clicking on the tab "Unrelated transponders". In case of an unrelated transponder the unrelated dialog not will be displayed.



Photocells in case of multiple active runs

It is not possible to use photocells when timing multiple active runs.

9

Processing Results

Orbits contain extensive features for processing your results. This section describes the way you can assign points, merge results, create a starting grid and copy competitors.

Overview

The processing page can be accessed by clicking on the Processing tab, which can be found at the top of the screen.



Merge results

In Orbits, the results of a series of runs may be combined in order to calculate an overall result of a series of qualifying sessions or races. From the merged results of qualifying sessions, a selection of qualified competitors can be made and copied to the appropriate final group. A merge can be based on best lap-time, race result, or points.

Create a merged result

To create a merged result, click on **Create a new merge**, which can be found under the **Merged result tasks**. Now the wizard will guide you through this process.

Step 1> General merge settings

Name

Name of the merged result.

Sort method

Specify how the merged result should be sorted.

- Qualify sort: The merged result is sorted on best lap-time.
- Race sort: Results are sorted by highest number of laps and then lowest total time.
- Most points sort: Result is sorted on most total points. The competitor with the most points wins.
- Less points sort: Result is sorted on less total points.

Invert the result

Check this button when you want to.

Merge method

- Best: Take the best result. (This is default setting for a merge sorted on best laptime)
- Sum: Calculates the sum of the results. (This is default setting for a merge sorted on points or sorted laps)
- Average: Calculates the average result.

Step 2> Select the runs to merge

Select the runs that are going to be merged. By using the arrow buttons, runs can be added to the merge. To delete a run from this merge use the corresponding buttons.

Results filter

The result filter allows you to exclude competitors from the merge. The following filters are available:

- On Position: Only include competitors in the merge that are in the specified range. (Minimum position, Maximum position)
- On Class: Only include competitors in the merge that are in the selected class(es).
- On Points: Only include competitors in the merge that are in the specified range. (Minimum position,

-
- Maximum position)
 - Qualified: Only include qualified competitors in the merge.

To specify a filter on a result, select a run or merge from the list and choose the filter from the choice list. Check 'Use same filter for all' if you want to apply the filter for all runs in the merge.

Step 3 > Options

Qualification requirements

This property indicates how competitors can qualify for the merged result. The possibilities are:

- None: All competitors appear on the result.
- On best lapttime: When selected, you can specify a percentage. To appear on the results, a competitor must achieve a lapttime of no more than the specified percentage of the best lapttime. This only applies to merges sorted on best lap-time.
- On average best lapttime of top x: When selected, you can specify a percentage. To appear on the results, a competitor must achieve a lapttime of no more than the specified percentage of the best lapttime. This only applies to merges sorted on best lap-time.
- Minimum percentage of the leader total laps: When selected you can specify a percentage. To appear on the results, a competitor must complete at least the specified percentage of laps of the leader. This only applies to printed results. This only applies to merges sorted on laps.
- Maximum number of competitors: When selected, you can specify a position. All competitors from the specified position down do not qualify. This applies to race, qualifying as well as practice results.

Keep not qualified competitors in the merge

If you apply a Qualification Requirement on this merge, not qualified competitors will appear on the merged result. If this option is off, a not qualified competitor will not appear on the result.

Unique Identifier

This is used to identify competitors with the same information in the selected field.

Counting runs

Specify how many runs are counting for the merge. The program will drop the worst result if a competitor appeared in more runs than specified.

Step 4> Finish the wizard

Calculate the merged result: Check this button to calculate the merged result.

Solve ties

When two or more competitors have the same number of points, the total points column is marked with a red background.

10	3	Remco Vos	125	13
11	15	Brad O'Leary	125	13

You can change the position, by selecting a competitor and drag and drop him on the preferred position.

10	3	Remco Vos	Brad O'Leary	13
11	15	Brad O'Leary	125	13

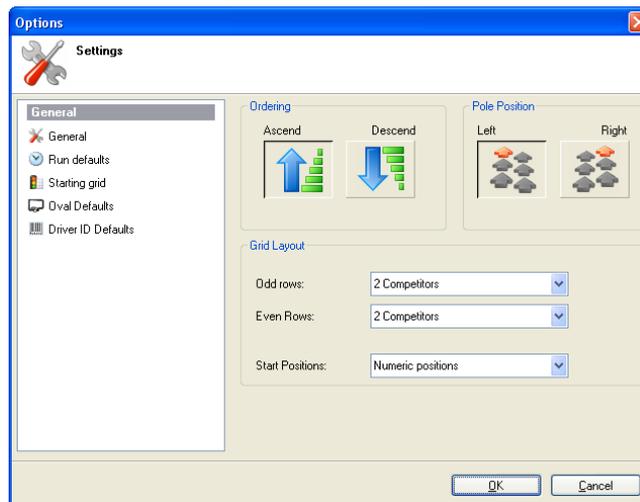
Calculate merged result

A merged result can be calculated after all runs are finished (and points are assigned). Click on 'Calculate merged result' which can be found under Merged result tasks' to calculate the result.

Note: The merged result is not automatically updated when the result of one of the run changes. Click on 'Calculate merged result' to apply the changes.

Starting grid

Select the preferred layout of the starting grid. The starting grid settings can be found under **Tools – Options** and then the Starting grid task, which can be found at the left part of the screen.



Ordering

The starting grid can be printed in ascending or descending order.

Pole Position

The layout can be one or more rows with a pole position either on the left or right side.

Grid Layout

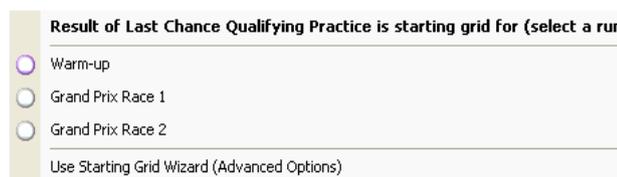
The starting grid can have a different number of competitors in the even and odd rows. The maximum number of competitors in a row is 6.

There are several ways to create a starting grid.

Create a starting grid (Quick)

Select the run where you want to create the starting grid for

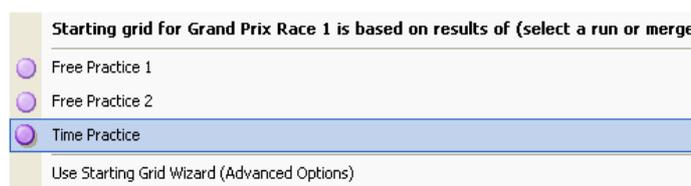
Select the run where you want to create the starting grid for. Now click on 'Starting grid' which can be found under Result tasks. The following menu will be displayed:



Now select the run where you want to create the starting grid for. In this example select Race.

Select the run that contains the results

Select the run that contains the results. Now click on 'Starting grid' which can be found under Result tasks. The following menu will be displayed:



Now select the run where this starting grid is based on. In this example select Qualify.

Create a starting grid (Wizard)

Select the run to create the starting grid for. Then open the 'Starting Grid wizard' by clicking on Starting grid button, which can be found under Result tasks and select Use Starting Grid Wizard from the menu. Now the wizard will guide you through this process.

Step 1> Select the run

Select the run where you want to create the starting grid for.

Create starting grid for competitors in <Run>

When you want to create a starting grid for a specific group of competitors, copy the competitors to the run where you want to make the starting grid for. Only competitors that were added to this run will appear on the grid.

Step 2> Specify the starting grid options

The second step is to select how the starting grid should be created. The starting grid can be created using the following methods:

- Result, the starting grid is based on the result of a run: The starting grid is based on the result of another run. Depending on the type of that run, the starting grid will be sorted on best laptime or laps. Select the run where the starting grid is based on.

-
- Even and odd row, the grid is based on the result of runs: The starting grid is based on the result of 2 runs. Select a run for the odd positions and select a run for the even positions.
 - Manual starting grid, manually assign the start positions: Manually assign the start positions. Select a group of run that contains the competitors. Select a run or group that contains the competitors that should be on the grid.
 - Random starting grid, create a random starting grid: Create a random starting grid. Select a run or group that contains the competitors that should be on the grid.
 - Inverted, grid is based on the inverted grid of another run: The starting grid is based on the grid of another run. Select the run where the grid is based on.

Sort the starting grid by class

The starting grid will be sorted on class.

Only add qualified competitors

Only add qualified competitors from the selected run.

Step 3> Finish the starting grid

The last page of the wizard displays the starting grid. Click on finish to print or modify the starting grid.

Modify the starting grid

Once a starting grid is created you can easily modify the start positions with the starting grid editor.

Modify the start positions

You can change the start position by selecting a competitor and drag and drop him to the preferred position.

Invert starting grid

This will put all competitors on the grid in reverse order.

Invert top x competitors

This will put the top x competitors on the grid in reverse order.

Edit comment

When a competitor is selected you can change the text in the comment column.

If you right click a competitor you get a menu with the following options:

Send to Back

Place the selected competitor at the back of the starting grid.

Insert/Delete Empty Place

Insert or delete an empty place at this position.

Delete Selected Competitor

Remove the selected competitor from the starting grid.

Edit comment

Edit the comment of the selected competitor.

Starting grid header comment

This text will be printed at the top of the starting grid.

Starting grid footer comment

This text will be printed at the bottom of the starting grid.

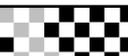
Select the additional data that should be displayed per competitor

Select the additional information column you want to print per competitor.

Print the starting grid

To print the starting grid, click on the Print button, which can be found under the Other Tasks. This will open the printer selection dialog.

If you want to print a starting grid sorted on car number, you can click on Print large numbers button, which can also be found under Other tasks.

NNKC 2004 Club Race #2		
Hard Tire 80	NNKC Config 3 (LT/ST3) 0,633 Miles	
Race	18-4-2004 14:12	
Race (12 Laps)		
1	1 [18] Nancy Latimer [48.801]	2 [3] Cody McKinney [48.947]
2	3 [24] Steve Dow [49.269]	4 [14] Karen McCaskill [49.575]
3	5 [31] Jeff Wamre [49.599]	6 [2] Meadows Tad [50.137]
4	7 [64] Larry Williams [50.509]	8 [52] Kevin Tanaka [51.023]
5	9 [99] Jason Crosby [51.314]	10 [23] Robert Gatt [53.583]
6	11 [28] Rob Stewart [53.844]	12 [38] Jeff Cloutier [56.348]
7	13 [44] Steve Manubi [1:58.265]	

Copy competitors

From a run or merged result, qualified competitors can be selected and copied to another group or run. Select the competitors you want to copy to another run, in the results screen. Open the dialog by clicking on **Copy the competitors** button, which can be found under results task.

In this dialog you can specify which competitors should be copied to another group or run.

Copy Tasks

Select all Select all the competitors

Deselect all Deselect all competitors.

Select qualified Only copy competitors that are qualified. Qualified competitors will be displayed with a block color.

10 15 Brad O'Leary 250 Not qualified competitors will be displayed with a dark gray color. 11 27 Micheael Assenmacher 250

Select even rows Only copy competitors that are on a even position.

Select odd rows Only copy competitors that are on a odd position.

Select a group or run to copy to

Specify the group or run to copy the selected competitors to.

Reset competitors transponder during copy

When checked, the competitors transponder number will be set to zero during copy.

Press the OK button to copy the competitors.

Points

Orbits allows you to assign points to the results of a run or merge according to customized points schemes.

Assign points

To start the Assign Points wizard, select the run or merged result and click on 'Assign points', which can be found under the Result Tasks. The Assign Points Wizard will guide you through the process.

Step 1> Select the points scheme

The first step is to select the points scheme. Click on the class name to select the point scheme.

There are different options when assigning points:

One class

Class	Points Scheme
 Cupracup	Select a point scheme

In this situation select the point scheme for the class.

More classes

Class	Points Scheme
Use one points scheme	Select a point scheme
Select a points scheme per class	
 Cupracup	Select a point scheme
 Ferrari	Select a point scheme

When you want to select a different point scheme per class, click on a class to select the point scheme. Click on 'Use on points scheme' when you don't want to distinguish on class.

Class	Points Scheme
Use one points scheme	Select a point scheme
Select a points scheme per class	
 FF	Select a point scheme
 Ffirst	Select a point scheme
 V 360	Select a point scheme

It is also possible to combine classes when assigning points. Select the classes to combine and click on 'Combine classes'

When you have selected a points scheme for this run or merge, you can assign the corresponding points by clicking on the Next button. The Next button will be disabled when no points scheme has been selected.

Step 2> Points assigned

The page will display the assigned points. Click on finish to close the wizard, or on back to select another point scheme.

Manage point schemes

To create a new points scheme click on the **New** button. Editing and deleting a points scheme is done similarly.

Point schemes settings

Points scheme name

Name of the points scheme.

Points

Here you enter the points to be assigned to the results of the run or merge in ascending order. Follow each number by <Enter>. It is also possible to enter decimal point values.

The new points scheme will automatically be saved to disk in the directory Points in the Orbits folder.

Enter the points scheme by clicking on the points column and fill in the points for that position.

Other

Here you can specify the points for a specific result state.

DNS competitors

- Normal Points: Points according to position.
- Fixed points: Specify the points.
- No points: No points are assigned

DNF competitors

- Normal Points: Points according to position.
- Fixed points: Specify the points.
- No points: No points are assigned

DQ competitors

- Normal Points: Points according to position.
- Fixed points: Specify the points.
- No points: No points are assigned

Not classified

- Normal Points: Points according to position.
- Fixed points: Specify the points.
- No points: No points are assigned

10

Publishing Results

Besides the timing and scoring functionality Orbits has several ways to distribute the results to the outside world. This chapter describes this.

Overview

Besides the timing and scoring functionality Orbits has several ways to distribute the results to the outside world. These options include a Mylaps.com upload, RMonitor feed, export to Excel, export to CSV file and exporting to HTML and printing of several results templates.

Mylaps.com

Get your results and laptimes online in a few clicks

Using the AMB i.t. software packages you can upload your race results in a few clicks. Putting your results online has never been easier. Uploading to Mylaps.com is free of charge and offered as an extra service with this timing-software. Give your racers the information they deserve and start uploading today.

All your results on one page

All the events you uploaded can all be seen on one easy page on Mylaps.com. You can even get your own Mylaps.com subdomain (This is an address like: myraceclub.mylaps.com) to link directly to your uploaded results. In this way, your racers can access their results, laptimes and section times within 1 click.

To expose your organization in a professional way, you can also put on a link to your own website, and put a logo on all the results that you upload!

Get the results on your own website

Mylaps.com offers organizations that upload, the possibility to put their uploaded results live into their own website.

By copying a small piece of code into your own website, your site will stay up-to-date while you upload results to Mylaps.com.

Upload: Computer is connected to the internet

To upload results to Mylaps.com, click the Upload to Mylaps.com button, which can be found under Publish tasks. Now the wizard will guide you through this process.

- **Step 1> Login on Mylaps.com:** In order to use the Mylaps.com service you must login with the username and organization of your Mylaps.com account. Enter the username and password which are associated with your organization.
- **Step 2> Specify the runs and merges:** The program will select all finished runs to upload to Mylaps.com. Once a run is uploaded to Mylaps.com it will not be selected for upload until the result of the run changed. Click the Next button to start uploading to Mylaps.com.
- **Step 3> Uploading results** The Upload wizard makes a connection with the Mylaps.com server. Once the connection is made the results are automatically uploaded.

Click on the link to view the results.

Upload: Computer is not connected to the internet

The first 2 steps are the same as when the computer is connected to the internet.

- **Step 3 > Save the upload file:** When there is no connection to the internet, specify the location to save the upload file, so the results can be uploaded to Mylaps.com from another computer.
- **Step 4 > The upload is finished:** The upload file is successfully saved to the selected location. To upload the results to Mylaps.com, bring the file to another computer that is connected to the internet and open it there.

Export results

Exporting results to TXT, CSV or HTML. To export results of a run or merge, click on Export results to file, which can be found under Publish tasks. Now the wizard will guide you through this process.

Export results

The results file can be exported in three different format:

- txt file; The results are exported to a tab delimited text file.
- csv file: The results are exported to a comma delimited text file.
- html file: The results are exported to a html file.

Select a file

Select the location where you want to save the export file.

Current selected columns

This will export the columns that are currently visible in the result screen.

Show class column

This will include the position in class and class column in the export file.

Show points column

This will include the points column in the export file

Export laptimes

Exporting laptimes to TXT, CSV or HTML. To export the laptimes of a run, click on Export laptimes to file, which can be found under Publish tasks. Now the wizard will guide you through this process.

Export results

The laptimes file can be exported in three different format:

- txt file; The laptimes are exported to a tab delimited text file.
- csv file: The laptimes are exported to a comma delimited text file.
- html file: The laptimes are exported to a html file.

Section Info

This will export the section times per lap.

Passing Info

This will export the passing info

Print results

Orbits has several pre-defined templates for printing results. To print the results of a run or merge, click on **Print**, which can be found under **Publish tasks**.

Print the results of a run

- You can choose the following templates:
- Race results
- Qualify results
- Laps of competitor
- Lapchart
- Points

If you choose the laptimes report, it will also print the section results per lap.

The results templates can also be sorted on class.

Edit the printout

The race and qualify result templates can be customized. Select the template you want to customize and choose *Preview/Edit Template*. Now the print preview window appear which allows you to edit.

Castrol 150 LMS Série National Sorted on Laps

LMS Ovale Chaudière 0.400 Km

Finale (150 tours) 08/27/05 03:30

Race

P...	No.	Name	Class	L...	Diff	Total Tm	Best Tm	Hometown
1	C21	Jean-Francois DERY	SPORTS...	193	-	1:36:13.7...	13.395	VAL-BELAIR
2	3jr	Sylvain LACOMBE	SPORTS...	193	+0.221	1:36:14.0...	13.297	TERREBON...
3	11	Claude LECLERC	SPORTS...	193	+0.682	1:36:14.4...	13.452	LANDRAIE
4	35	Karl ALLARD	SPORTS...	193	+1.024	1:36:14.8...	13.421	ST-FELICIE
5	8	Marc-Andre CLICHE	SPORTS...	193	+1.300	1:36:15.0...	13.420	VALLEE JO...
6	66	Simon ROUSSIN	SPORTS...	193	+2.214	1:36:16.0...	13.584	QUEBEC
7	67	Renaud BLAIS	SPORTS...	193	+4.540	1:36:18.3...	13.658	ST-ROMU...
8	28	Dany OUELLET	SPORTS...	193	+4.673	1:36:18.4...	13.452	RIVIERE-D...
9	80	Donald THEETGE	SPORTS...	193	+4.725	1:36:18.5...	13.336	QUEBEC
10	9	Yvon BEDARD	SPORTS...	193	+5.001	1:36:18.7...	13.453	ST-NICOLAS
11	97...	Jacques POULIN	SPORTS...	193	+5.531	1:36:19.3...	13.751	EAST BRO...
12	37	Marc BEGIN	SPORTS...	193	+11.362	1:36:25.1...	13.543	ST-PHILIB...
13	74	Richard BEAUCHA...	SPORTS...	192	1 Lap	1:36:31.1...	13.520	ORMSTOWN
14	18	Andre COURSOL	SPORTS...	190	3 Laps	1:36:19.7...	13.607	HEBERTVI...
15	14	Daniel GUAY	SPORTS...	190	+0.275	1:36:20.0...	13.542	HEBERTVI...

Customizing the table

In the preview window click on edit print out to set the template in edit mode.

Change the columns

Right click on the result and choose Change column settings.

Change font

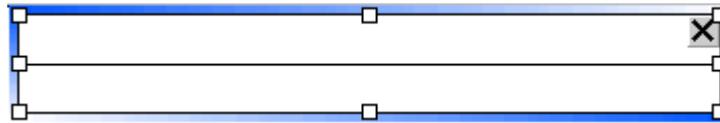
To change the font right click in the table and choose Change font.



Logo and text objects

The print template editor offers several objects to place in the header of the template (This are is marked by the rectangle, as displayed in the picture). The available objects can be selected by using the toolbar shown at the top of the screen.

Once you've selected an object you can create it on the printout pushing the left mouse button and hold it. Move your mouse to the right bottom of the printout to enlarge it. When the object has reached the proper size you can release the left mouse button.



Line object

The line object is a simple object that shows a horizontal or vertical line in a color or width that is defined by the user. Right click on the object and choose Properties to change the line thickness.



Text object

The text object can display a user-defined text or a predefined value (date, time, etc). With the buttons you can change the colors. By getting the properties of the object (double click left button or right click and select properties from menu) you can change the rest of the settings.



Picture object

The picture object can be used to display images in jpeg, gif, bitmap or icon-format. By default the image is displayed using its original proportions, by selecting the "original size"-button the images keeps its original size.

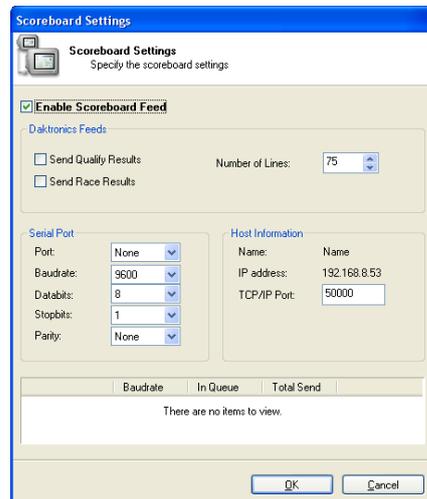
Each object can be resized by using the arrow tool. Before you can resize or move an object you must select it first. A selected object shows a border around the object with eight squares. Now you can resize the button by pressing the left mouse button on top of one of the squares and drag the mouse until it has reached the proper size.

If you move the mouse over the object a moving cursor appears. If you hold the left mouse button and move the mouse the object will follow the mouse.

The changes made to the selected template can be saved. The program will prompt to save the changes.

Scoreboard

The Orbits program can supply a single information feed via RS232 (null modem) and multiple information feeds via TCPIP (network) to other computers or scoreboards. Both the AMB Rmonitor protocol and the Daktronics protocol are supported. Please contact AMB if you want to receive the Rmonitor protocol. Via **Scoreboard – Scoreboard Settings**, the communication settings for the information feed(s) can be specified.



RS232

Set the correct COM port that the scoreboard is connected to. The following settings should be filled in for the Rmonitor protocol: Baud rate=9600, Data bits=8, Stop bits=1, Parity=None.

TCP/IP

The hostname and IP address will be automatically .given in the Host information section. Specify the port that you want to use. Port 50000 normally always be available.

Daktronics

The Daktronics protocol is built into the Orbits software. Choose to send information about qualifying results and/or select to send information about the race results. Select the appropriate feed and the number of lines that are used on the scoreboard.

RMonitor

Once all appropriate settings are made in Orbits, the same settings (if necessary) need to be made at the scoreboard side. Connect the scoreboard or scoreboard computer running the Rmonitor software with either a network or RS232 null modem cable.

If new information should not be sent to the scoreboard (e.g. when editing results is in progress) the scoreboard feed can be stopped temporarily by selecting **Scoreboard – Hold**. A refresh of the information can be forced by selecting **Scoreboard – Refresh**, or by using the 'F2' hotkey. This reset will force all information to be resend to the scoreboard.

The RMonitor software can be used to display scoring information on another computer and VGA screen. The RMonitor software can also run on the timing and scoring computer itself to supply additional information, such as track positions (use TCP/IP making connection between the Orbits and RMonitor software)

To display the scoreboard information, the Orbits program must be started first. Then start the RMonitor program and select the correct communication settings. The RMonitor program should connect to the Orbits program. If the RMonitor program is started before the Orbits program, the connection cannot be established.

MyLaps Monitor

MyLaps Monitor is a result viewer for the following AMB software programs: Orbits and Sparc2. It allows you to display results on a (secondary) monitor such as a computer screen or a TV. The results are displayed with easy-to-use layouts. A layout is a definition of how and what kind of results are displayed. Please contact AMB i.t. for more information.

A large, stylized number '11' is positioned on the left side of the page. The numbers are white with a grey outline and are set against a vertical grey gradient bar that runs down the left edge of the page.

Championship Administration

This chapter describes how to do the championship administration with Orbits.

Overview

Open the championship page of the program by pressing the **Championship** button at the top of the program.



Championship management

Orbits organizes the championship per season. The selected championship is displayed on the top of the screen.



A championship consists of a number of events. Combined these events will form a championship. There is no limit on the number of events per championship.

Event Results		
#	Event	Date
1	Valkenswaard	31-3-2007

Create a championship

You can create a new championship from the championship page. Click on **Create a new championship** to open the 'Championship Settings' screen.

Edit or delete a championship

To edit a championship click on 'Edit championship' which can be found under 'Championship Tasks'. Now you can modify the championship in the Championship Details screen.

To delete a championship from the program click on 'Delete championship' under the Event Result Tasks.

Championship settings

A championship offers the following settings:

Name

The name of the championship.

Season

The championship season.

Sort method

Here you can choose how the championship should be sorted. There are two options:

- **Most points:** The championship will be sorted on most points.
- **Less points:** The championship will be sorted on less points.

Tie solver

In case of a tie on points Orbits offers the following Tie solvers:

- **Most 1,2,3 places per run:** The competitor with the most 1st places will win. In case this is the same, it will look to the most 2nd places. Etc. It will look at the run results.
- **Most 1,2,3 places per event:** The competitor with the most 1st places will win. In case this is the same, it will look to the most 2nd places. Etc. It will look at the event results.
- **Result of last run:** The competitor with the best result in the last run will win.
- **Result of last event:** The competitor with the best result in the last event will win.

Valid results

In case of a tie on points Orbits offers the following Tie solvers:

- **All points are counting:** The competitor with the most 1st places will win. In case this is the same, it will look to the most 2nd places. Etc. It will look at the run results.
- **Maximum number of valid runs:** Specify how many runs are counting for the championship. The program will drop the worst result if a competitor appeared in more runs than specified.
- **Maximum number of valid events:** Specify how many runs are counting for the championship. The program will drop the worst result if a competitor appeared in more events than specified.

Championship display options

A championship offers the following settings display options:

Select the layout

Specify how a championship should be displayed. There are three different layouts available.

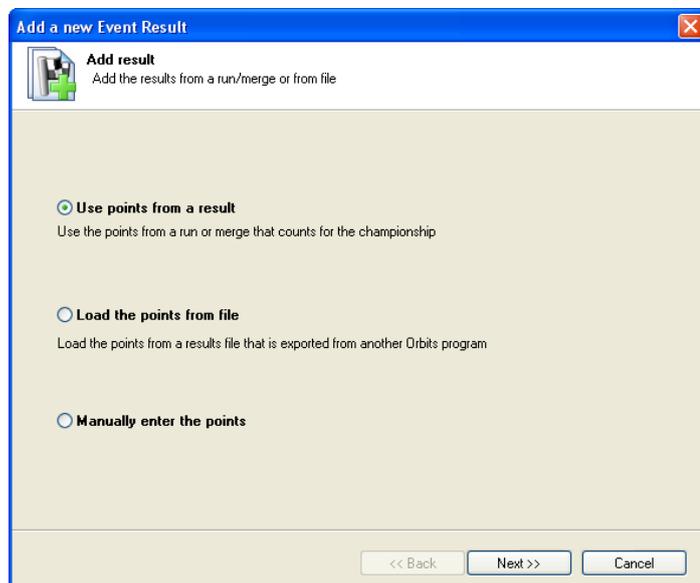
- **Points per run:** The program will add a column for each run in the championship.
- **Points per event:** The program will add a column for each event in the championship.
- **Points per run and event totals:** The program will add a column for each run in the championship. It will also displays the totals per event.

Footer Text

This text will be displayed on the print out and on the web MyLaps.com website. You can define 3 lines of footer text.

Adding a result to the championship

Click on 'Add event result' to add a new result to the championship. This will start the 'Add Event Result' wizard which will guide you through the process.



The first step is to select how to add the result. There are three options here:

- **Use points from a result:** Add a run or merged result that contains the points for the championship. Use this option when you the results are available in the local version of Orbits.
- **Load the points from file:** Add the result from a points file, that was exported from another Orbits program.
- **Manually enter the points:** Enter the points manually. Use this option when the results are not available in Orbits.

Use points from a result

When this option is selected you need to specify which run or result is counting for the championship. Select the run or merge and click next. The points will now be added to the championship.

Load the points from file

When this option is selected you need to select the file that contains the points for the championship. Click on next to import the file and add the points to the championship.

Manually enter the points

When this option is selected you need to specify the name of the event. Click on next to manually enter the results of the event.

Edit the event result

After a result is added to the championship. Select the event from the Event List and click on 'Edit event result' which can be found under Event Result Tasks.

P. No.	First Name	Last Name	Class	Q.	
1	377	Christophe	Pourcel	Mx2	10
2	101	Tommy	Searle	Mx2	9
3	27	Marcus	Schiller	Mx2	8
4	17	Mati	Sistola	Mx2	7
5	47	Pascal	Leuret	Mx2	6
6	34	Shaun	Simpson	Mx2	5
7	80	Erik	Eggens	Mx2	4
8	13	Manuel	Manni	Mx2	3
9	50	Martin	Barr	Mx2	2
10	20	Gregory	Aranda	Mx2	1
11	95	Rob	van Vlijeken	Mx2	0
12	81	Jeremy	Taroux	Mx2	0
13	21	Steven	Frossard	Mx2	0
14	28	Roberto	Lombici	Mx2	0
15	501	Alessandro	Lupino	Mx2	0
16	45	Jason	Dougan	Mx2	0
17	29	Matthias	Walker	Mx2	0
18	44	Angelo	Pellegini	Mx2	0

Change the competitor points

It is possible to edit the points or competitor info. Select the competitor you want to modify and click on 'Edit competitor' which can be found under Competitor tasks. The following screen will appear.

Competitor	Result	Points	Pos
No: 52	Reeks/Manche 1	3	18
Class: NATIONAL 250/500	Reeks/Manche 2	15	6
First Name: Tim			
Last Name: GODRIE			

Add a competitor

Add a competitor to the result by clicking on 'Add competitor' which can be found under Competitor tasks.

Championship layout

The championship standings will be displayed as following.

Nationalen 250/500															
Season: 2010															
Pos	No.	Name	Total	Drop	Diff	Gap	19-06-2005			03-07-2005			15-05-2005		
							R1	R2	Total	R1	R2	Total	R1	R2	Total
1	33	Kenny JANSSENS	106	13	0	0	20	14	34	13	25	38	25	22	47
2	22	Joel MOTMANS	104	0	2	2	25	25	50	20		20	18	16	34
3	45	Francois PAQUET	100	12	6	4	22	18	40	18	22	40	12	20	32
4	25	Tim GODRIE	98	3	8	2	3	15	18	16	20	36	22	25	47
5	13	Tijs VAN TICHELEN	75	0	31	23	12	20	32	25	18	43	0		0
6	50	Victor TIESTERS	69	4	37	6	15	9	24	22	16	38	7	4	11
7	16	Xavier ROELEN	67	0	39	2	10	22	32	14	14	28	0	7	7
8	17	Kenny DE BRUYN	66	6	40	1	14	6	20	11	11	22	16	14	30
9	8	Frédéric MERTENS	64	9	42	2	11	13	24	15	13	28	9	12	21
10	5	Jiri WEYTS	56	0	50	8	16	2	18	0		0	20	18	38
11	28	Adri VANDERSANDEN	56	0	50	0	13	0	13	10	9	19	13	11	24
12	31	Michael STIEMANS	52	0	54	4	6	16	22	0		0	15	15	30
13	35	Kim STRAETEMANS	48	0	58	4	0	0	0	9	12	21	14	13	27
14	49	Tommy GOOSSENS	47	0	59	1	18	1	19	12	15	27	1	0	1
15	32	Nicolas STAMPAERT	36	0	70	11	7	11	18	8	7	15	3	0	3
16	40	Kristof LOVERIX	34	0	72	2	9	12	21	5	8	13	0		0
17	15	Dirk PARIDAENS	34	4	72	0	5	8	13	7	6	13	4	8	12
18	47	Olivier FAUCON	32	0	74	2	2	10	12	0		0	11	9	20
19	42	Vincent PAQUET	29	0	77	3	0		0	1	10	11	8	10	18
20	20	Joris HANON	18	0	88	11	8	7	15	0		0	0	3	3
21	19	Vincent FAYT	15	0	91	3	0		0	0		0	10	5	15
22	6	Gert VAN HOEK	14	0	92	1	4	5	9	0	0	0	5	0	5
23	26	Olivier LAROCHE	13	0	93	1	0		0	6	5	11	2	0	2
24	177	Bart HOOLANDTS	12	0	94	1	0		0	0		0	6	6	12
25	46	Frank VERBRUGGHE	8	0	98	4	0	0	0	4	4	8	0		0
26	41	Philippe BLAIRON	8	0	98	0	0		0	3	3	6	0	2	2
27	2	Patrick SOORS	4	0	102	4	0	4	4	0		0	0		0
28	9	Rob LAUWERS	4	0	102	0	1	3	4	0		0	0		0
29	721	Franky VAN EECKE	3	0	103	1	0	0	0	2	0	2	0	1	1
30	11	Joel VAN BOXEL	2	0	104	1	0	0	0	0	0	2	2		0
31	18	Gert KAESEMANS	0	0	106	2	0		0	0	0	0	0		0
32	4	David VAN ACHTER	0	0	106	0	0	0	0	0		0	0		0
33	36	Ake DE MEERSMAN	0	0	106	0	0		0	0		0	0		0
34	37	Evert BRAAM	0	0	106	0	0		0	0		0	0		0
35	29	Dominique SCHROYEN	0	0	106	0	0	0	0	0		0	0		0

1 1st place
 2 2nd place
 3 3th place
 7 dropped

19-06-2005	Kampioenschap van Vlaanderen
03-07-2005	J.R.T. O.L.V.WAVER 03.07.2005
15-05-2005	J.R.T. Westdorpe 15.05.2005

Organization Name

A column will be created for each event in the championship.

19-06-2005

R1 R2 Total

The points received for the runs in an event will be displayed in a column. Besides the point per run there is also a column Total, which displays the total pints received for a specific event.

1st place will be marked with a gold background color.

2nd place will be marked with a silver background color.

3rd place will be marked with a bronze background color.

Dropped points will be marked with a red text-color

25

22

20

3

The legend will display the date and the event name.

19-06-2005	Kampioenschap van Vlaanderen
03-07-2005	J.R.T. O.L.V.WAVER 03.07.2005
15-05-2005	J.R.T. Westdorpe 15.05.2005

Solve ties manually

Click on Show ties to display competitors with the same number of total points.



When a tie is automatically solved (according to the tie solve method in the championship settings) the position column will be marked with a green background color:

10	5	Jiri WEYTS	56
11	28	Adri VANDERSANDEN	56

When the program was unable to solve the tie, the position column is marked with a red background color:

16	40	Kristof LOVERIX	34
17	15	Dirk PARIDAENS	34

[Place up](#)

You can now choose to change the position of a competitor by clicking on 'Place up'.

Print the championship standings

Orbits has three pre-defined templates for printing the championship standings. To print the championship, click on 'Print', which can be found under Publish tasks.

Available layouts

- **Points per run:** The program will print a column for each run in the championship.
- **Points per event:** The program will print a column for each event in the championship.
- **Points per run and event totals:** The program will print a column for each run in the championship. It will also print the totals per event.

Orientation

- **Portrait:** The championship standings will be printed portrait. Choose this option when you have more than 40 competitors in the championship.
- **Landscape:** The championship standings will be printed landscape. Choose this option when there are many events in the championship

Export championships to file

The championship standings can be exported to a HTML file. To export the championship standings, click on 'Export to file' to file, which can be found under Publish tasks.

Select the location where you want to save the championship.

Upload championship standings to MyLaps.com

To upload your championship standings results to MyLaps.com, click the Upload to Mylaps.com button, which can be found under Publish tasks. Now the 'Upload Championship' screen will guide you through this process. An internet connection is required to publish the championships.

Name	Season	Status
<input checked="" type="checkbox"/> MX1	2007	

Login on Mylaps.com

In order to use the Mylaps.com service you must login with the username and organization of your Mylaps.com account. The championship standings will be displayed under this account.

Username

Enter the username which are associated with your organization.

Password

Enter the password of your organization.

Select the championships to upload

Select the championships you want to publish on MyLaps.com.

Finally click on Ok to upload the championships. The program makes a connection with the Mylaps.com server. Once the connection is made the championships are automatically uploaded.

12

TnetX Display

This chapter describes how the TnetX system is integrated in Orbits.

Overview

Open the TnetX Display page by pressing the **TnetX Display** button at the top of the program.



The Timing System sends the official timing and position information, generated by a Personal AMB Transponder to the TnetX Host system. The Communicator installed on a vehicle receives this information and updates the TnetX Display.

The TnetX Host System is an add-on to the AMB Transponder Timing System operated by Timekeepers and/or Race Organizers.

System components

The TnetX OnBoard Display system contains of the TnetX Display kit, the TnetX Host and Orbits 4 software.

Racers need a Personal AMB Transponder and the display kit; this kit contains of:

- TnetX OnBoard Display
- TnetX Communicator
- TnetX Breakout Box

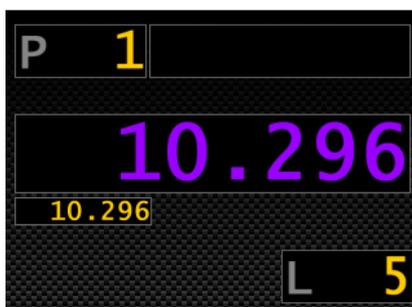
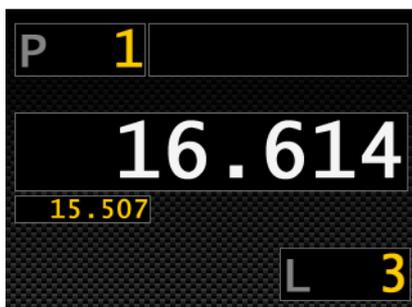
Organizations that currently use AMB timing equipment just need the TnetX Host and this software with the TnetX plugin. To check if the plug-in is enabled, go to the About screen and verify that the TnetX plug-in text is displayed. See the following picture.

Licensed to:

Name	AMB i.t.
Registration	
Timelines	
Extra	TnetX Plugin

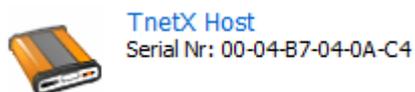
TnetX Display

Easily installed, the TnetX OnBoard Display shows official qualify and race results giving a competitor direct feedback on the performance within each session. With its high quality and state-of-the-art OLED display the most relevant information will be available clearly and instantly.



TnetX Host

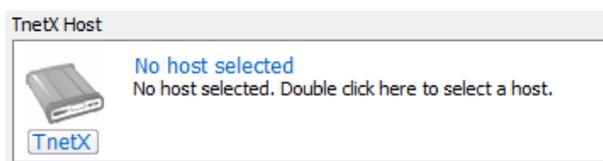
The TnetX Host is the gateway for the official results.



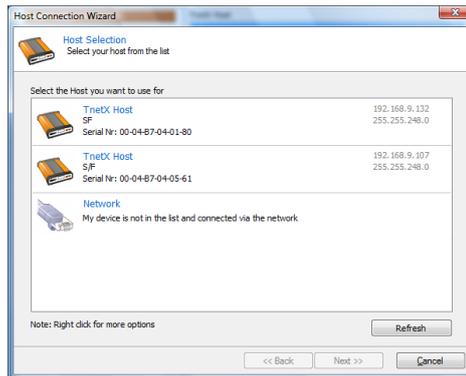
The official information for each Personal Transponder will automatically be sent while racers are crossing the 2nd loop antenna after the finish line.

Connect to a TnetX host

To connect to a TnetX Host, you can double click on the TnetX host box, or choose register a new Host from the Host Taks.



Now the 'Host Connection Wizard' will open. The wizard first scans the network for all available TnetX Hosts. On the first page all hosts that are found in the network are listed on the screen. Select the TnetX host you want to use and click on the **Next** button.



Now the program will try to make a connection to the host. If the host is successfully connected, the Host details screen will open.

If the host is marked with a warning icon or if your host is not displayed in the list, see Connection issues for more details.

Network

If your Host is connected to your network, but not in your list, you can add the Host manually by selecting Network option from the selection list. Now you need to enter the IP address of the host. See connection issues for more info about the Hosts IP address.

Once the TnetX host is connected, the system is ready to sent results

Connection issues

Serial number is red?

If the serial number is highlighted red, this means you need to upgrade your TnetX Host firmware. To update a Host go to the support section of the AMB i.t. website (<http://support.amb-it.com>) or click the button Check for available updates (Online).

IP address has a warning icon?

If the IP Address is not in the same network range as the computer a warning icon will appear. This means that you need to change the IP Address of the TnetX Host. You can do this by right clicking on the TnetX Host and select change TnetX Host settings. You can now connect to your TnetX Host by selecting it from the list and hit the Next button.

My TnetX Host is not in the list?

If your TnetX Host is not listed first check if it is powered on and that all connectors are firmly in place. If it still does not connect it is possible that the TnetX Host has an old firmware version. Manually connect to the TnetX Host by selecting the network option and hitting the next button. You can now enter your IP Address, hit the Next button to connect. If it connects it means that the TnetX Host firmware needs to be updated. It is possible to do timing in compatibility mode, but some new features will not be supported.

Displays

All displays are listed on the TnetX Display page. You can choose to display all the displays and the displays that are present in the active run.

You will find detailed information about the display status.

- Display temperature
- Communicator temperature
- Last contact time
- Competitor information (Number, name and class)



It will also give you the status of the display.



Possible error messages.

- Not linked to a result yet: There is no competitor in the active run with a transponder number that match the communicator number.
- No display found: The communicator reported that no display is attached to the break out box.
- Updating layout set: Orbits is updating the display layout set of the TnetX display

Virtual display

The virtual display shows you the information that is on the drivers display. Select a display from the selection list and choose Virtual display from the display tasks.



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How to

This 'How to..' guide has short descriptions of how to use certain functions. For more information about those functions please refer to the corresponding chapters in this manual.

Common questions

Decoders

The noise level is too high, what should I do ?

Check all the connections (BNC connectors make proper contact?) and all cables (Are coax cables and loopwires damaged or cut?). If the loopwire is cut and the track is wet, the noise level may go up to very high levels. Reinstalling the loop solves this problem in 99.9% of the cases.

Transponder

What does the light on the transponder indicate?

- **While being used** > The number of green blinks is the **minimum** days (24h) to go before the battery is empty. The last 24 hours before the battery is empty the transponder will blink red. A solid red LED indicates that it can switch off at any moment!
- **While connected to charger** > A red blink means the transponder is still charging. When the led remains green, the transponder has finished charging.

Strength or hits on some or all transponders are low

When the signal strength is pretty consistent (within 10 points or so) but is low, this indicates that the transponder is not properly mounted. The transponder needs to be mounted within 2 ft. of the track with no metal or carbon fiber between the track and the transponder. There needs to be sufficient space around the transponder. The transponder cannot be affixed with metal wire or hose clamps, since that will reduce the signal coming out of the transponder significantly.

When signal strength is heavily fluctuating for 1 transponder (more than 10 points), this indicates that there is a problem in the loop, coax cable or the connections.

Runs

How to restart a run.

After a run has been stopped, apply a green/yellow flag. The race will now restart.

Competitors

How to open the competitor database?

In the Registration Page click the Show competitor database button or press 'F3'

How to add competitors from the database to a run?

- Select a run in the Registration page.
 - Open the Competitor Database.
 - Select the driver(s) you wish to add.
 - Right-click and select <Add to selected run> from the menu.
- Select a run in the Operator Module.
 - Open the Competitor Database
 - Select the driver(s) you wish to add.
 - Drag the selected drivers into the <Competitors in run/group> screen.

Updating competitor data

If the change is permanent, competitor data should be changed in the Competitor Database. If the change applies only to this run/group, the data should be changed in the run/group only.

Applying a change in the Competitor Database to a run/group.

If a change is permanent, but the competitor has already been added to a run there are two different ways of synchronizing the data depending on the circumstances:

1. The competitor has not passed yet >

Remove the competitor from the run and add him/her again.

2. The competitor has already passed >

As a safety it is not possible to change a competitor in a run from the Competitor Database. The competitor has to be made unrelated first and added again.

- Make the competitor unrelated in the run.
- Add the competitor again.

Results

How to delete a result from a run?

- Open the <Competitors in run> screen.
- Select the competitor who's result you wish to remove.
- Right-click and select <Delete result> from the menu.

Don't show the pace car on the results?

If the pace car has a transponder, the car will show up on the results. To prevent the pace car from showing, you can mark the pace car result as hidden. The pace car will still appear in the hidden results, but won't show on the results (e.g. printout, RMonitor).

The wrong competitor shows up after a passing

- Select the competitor, right-mouse click and select 'Make Unrelated' from the menu.
- Now double-click on the competitor and select a new competitor from the Run, Group or Database or create a new competitor.

If the transponder numbers are switched between two competitors in a run, you may also do the following:

- right-mouse click on one of the competitors with the wrong transponder number.
- Select '**Switch Transponder(s)** with' from the menu and select the competitor whom the transponder should be switched with,

To make sure everything is alright from now on for following races, you have to do some research.

- Find out what caused the wrong competitor to show up. Were the transponders switched by accident? Was the wrong number entered in the database? etc..

Adjust the transponder numbers in the database/group if needed.

The best laptime is not a valid lap

To make a laptime not count for best lap, you can right mouse click on the incorrect passing and select 'Invalidate passing'. Now the passing will still be used to credit the competitor with a lap, however the passing will not be used for fastest laptimes.

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Appendices

The appendices contain information about photocells and file formats.

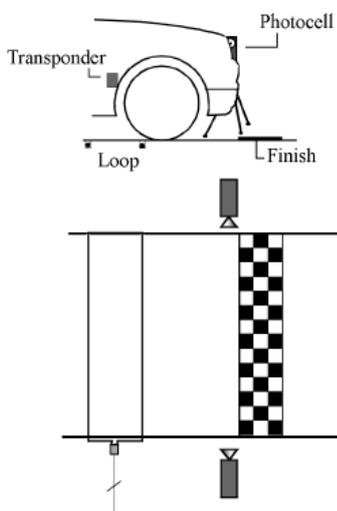
Appendix A – Photocells

Using photocells

For back-up purposes photocells and manual time keeping can be used. The photocells can be connected to the decoder. The decoder is triggered each time the light beam of the photocell is interrupted. The transponder and photocell inputs can be related to each other. Note that in Orbits the transponder system is used as primary system and therefore the transponder time is taken for timing and scoring.

Positioning photocells

When the hardware system is set up properly, the detection loop is located before the actual finish line, in that way that the transponder is in the middle of the detection loop when the front of the vehicle is crossing the finish line.



For a correct match of transponder- and photocell passing times (laptimes are not affected) the photocell should be positioned at the finish line. When positioning of the photocells is not possible as depicted in the picture on the right, the extra time difference should be calculated in the maximum transponder, photocell time separation. Make sure that when the photocells are installed, the batteries are full and that the photocells are aligned and switched on.

Setting Photocell delay

Each photocell transmitter is equipped with a selector switch for setting the photocell delay. This time defines the maximum interval between two interruptions of the light beam that will be considered as one interruption. This setting is, among others, to avoid multiple interruptions of the light beam generating multiple photocell hits.

Connecting Photocells to the decoder

Photocells are connected via an AMB photocell interface cable (AMB No. 5503) to the auxiliary port of the AMB decoder. Please refer to the hardware manual of your system for the exact pin specification of the auxiliary connector.

Appendix B – File Formats

Result file format

The exported results file contains the results of the competitors in the selected run.

Record layout

Depending on the selected file type the output file has the following record layout:

Txt file: - FIELD - <TAB> - FIELD - <cr/lf>
Csv file: - FIELD - <COMMA> - FIELD - <cr/lf>

Fields can be numeric or alphanumeric depending on the field. Fields separator is a comma “,” (ASCII code 44 decimal) or a tab (ASCII code 9 decimal). Record separator is a carriage return (cr) plus linefeed(lf).

If you choose to export the selected columns the program will display the columns that are currently selected in the result screen.

Record format for qualify columns (run only) *Export format for a qualify result*

Pos	Finish position of the competitor, Numeric.
PIC	Finish position of the competitor in his class, Numeric. <i>(Only when show class column is on)</i>
No	Car number of the competitor, Maximum 4, Alphanumeric.
Name	Name of the competitor, Alphanumeric.
Class	Class of the competitor, Alphanumeric. <i>(Only when Show class column is on)</i>
Best Tm	Best laptime of the competitor, Floating point with 3 decimal places.
Best Spd	Average speed of best lap
In Lap	Lap the best laptime was set, Numeric.
Diff	Differential time or laps of the competitor with the leader, Floating point with 3 decimal places or numeric.
Gap	Differential time or laps of the competitor, Floating point with 3 decimal places or numeric.
2 nd Best Tm	2 nd Best laptime of the competitor, Floating point with 3 decimal places.
2 nd Best Spd	Average speed of 2 nd best lap
2 nd In Lap	Lap the 2 nd best laptime was set, Numeric.
Car Reg	Car registration number of the competitor
Additional Data 1	Additional data 1 of the competitor, Alphanumeric.
Additional Data 2	Additional data 2 of the competitor, Alphanumeric.
Points	Points the competitor received, Numeric. <i>(Only when Show points column is on)</i>

Sample

Pos<TAB>PIC<TAB>No<TAB>Name<TAB>Class<TAB>Best Tm<TAB>Best Spd<TAB>In
Lap<TAB>Diff<TAB>Gap<TAB>2nd Best<TAB>2nd Spd<TAB>2nd Lap<TAB>Car/Bike Reg<TAB>
Additional 1<TAB> Additional 2<TAB>Points<cr/lf>

Record format for race columns (run only)*Export format for a race result*

Pos	Finish position of the competitor, Numeric.
PIC	Finish position of the competitor in his class, Numeric. <i>(Only when show class column is on)</i>
No	Car number of the competitor, Maximum 4, Alphanumeric.
Name	Name of the competitor, Alphanumeric.
Class	Class of the competitor, Alphanumeric. <i>(Only when Show class column is on)</i>
Laps	The number of laps of the competitor, Numeric.
Total Tm	Total race time of the competitor, Floating point with 3 decimal places.
Diff	Differential time or laps of the competitor with the leader, Floating point with 3 decimal places or numeric.
Gap	Differential time or laps of the competitor, Floating point with 3 decimal places or numeric.
Avg Spd	Average speed of race
Best Tm	Best laptime of the competitor, Floating point with 3 decimal places.
Best Spd	Average speed of best lap
In Lap	Lap the best laptime was set, Numeric.
Car Reg	Car registration number of the competitor
Additional Data 1	Additional data 1 of the competitor, Alphanumeric.
Additional Data 2	Additional data 2 of the competitor, Alphanumeric.
Points	Points the competitor received, Numeric. <i>(Only when Show points column is on)</i>

Sample

Pos<TAB>PIC<TAB>No.<TAB>Name<TAB>Class<TAB>Laps<TAB>Total
Tm<TAB>Diff<TAB>Gap<TAB>Avg. Speed<TAB>Best Tm<TAB>Best Spd<TAB>In
Lap<TAB>Car/Bike Reg<TAB>Additional 1<TAB>Additional 2<TAB>Points

Record format for qualify columns (merge only)*Export format for a merged qualify result*

Pos	Finish position of the competitor, Numeric.
No	Car number of the competitor, Maximum 4, Alphanumeric.
Name	Name of the competitor, Alphanumeric.
Class	Class of the competitor, Alphanumeric. <i>(Only when Show class column is on)</i>
Overall Best Tm	Overall best laptime of the competitor, Floating point with 3 decimal places.
In session	The name of the session the best laptime was set. For each session in the merge the following column(s) will be included
Best Tm	Best laptime of the competitor in this session, Floating point with 3 decimal places.
2 nd Best Tm	2 nd Best laptime of the competitor in this session, Floating point with 3 decimal places.
Car Reg	Car registration number of the competitor
Additional Data 1	Additional data 1 of the competitor, Alphanumeric.
Additional Data 2	Additional data 2 of the competitor, Alphanumeric.
Points	Points the competitor received, Numeric. <i>(Only when Show points column is on)</i>

Sample with 3 runs in the merge

Pos<TAB>No.<TAB>Name<TAB>Class<TAB>Overall BestTm<TAB>In Session<TAB>Best: Run
1<TAB>2nd: Run 1<TAB>Best: Run 2<TAB>2nd: Run 2<TAB>Best: Run 2<TAB>2nd: Run
2<TAB>Car/Bike Reg<TAB>Additional 1<TAB>Additional 2<TAB>Points

Record format for race columns (merge only) *Export format for a merged race result*

Pos	Finish position of the competitor, Numeric.
No	Car number of the competitor, Maximum 4, Alphanumeric.
Name	Name of the competitor, Alphanumeric.
Class	Class of the competitor, Alphanumeric. <i>(Only when Show class column is on)</i>
Laps	The number of laps of the competitor, Numeric.
Total Tm	Total race time of the competitor, Floating point with 3 decimal places.
In Session	Session where the result was set
	For each session in the merge the following column(s) will be included
	Laps The number of laps of the in the specific run/merge, Numeric.
Car Reg	Car registration number of the competitor
Additional Data 1	Additional data 1 of the competitor, Alphanumeric.
Additional Data 2	Additional data 2 of the competitor, Alphanumeric.
Points	Points the competitor received, Numeric. <i>(Only when Show points column is on)</i>

Sample with 3 runs in the merge

Pos<TAB>No.<TAB>Name<TAB>Class<TAB>Laps<TAB>Total Tm<TAB>In Session<TAB>Laps:
Run 1<TAB>Laps: Run 2<TAB>Laps: Run 3 <TAB>Car/Bike Reg<TAB>Additional 1<TAB>Additional
2<TAB>Points<cr/lf>

Point columns for points (merge only) *Export format for a merged points result*

Pos	Finish position of the competitor, Numeric.
No	Car number of the competitor, Maximum 4, Alphanumeric.
Name	Name of the competitor, Alphanumeric.
Class	Class of the competitor, Alphanumeric. <i>(Only when Show class column is on)</i>
Total Points	Total points, Numeric.
	For each session in the merge the following column(s) will be included
	Points Points for this session, Numeric.
Car Reg	Car registration number of the competitor
Additional Data 1	Additional data 1 of the competitor, Alphanumeric.
Additional Data 2	Additional data 2 of the competitor, Alphanumeric.
Points	Points the competitor received, Numeric. <i>(Only when Show points column is on)</i>

Sample with 3 runs in the merge

Pos<TAB>No.<TAB>Name<TAB>Class<TAB>Total Points <TAB>Points: Run 1<TAB>Points: Run
2<TAB>Points: Run 3 <TAB>Car/Bike Reg<TAB>Additional 1<TAB>Additional 2<TAB>Points<cr/lf>

Competitor file format

The competitor file contains competitors from a run, group or from the database.

Record layout

Depending on the selected file type the output file has the following record layout:

Txt file: - FIELD - <TAB> - FIELD - <cr/lf>
Csv file: - FIELD - <COMMA> - FIELD - <cr/lf>

Fields can be numeric or alphanumeric depending on the field. Fields separator is a comma "," (ASCII code 44 decimal) or a tab (ASCII code 9 decimal). Record separator is a carriage return (cr) plus linefeed(lf). Alphanumeric data is started and ended with quotes. The first line of the export file contains the header information.

Record format for competitor

No	Car number of the competitor, Maximum 4, Alphanumeric.
Class	Class of the competitor, Alphanumeric. (<i>Only when Show class column is on</i>)
First name	First name of the competitor, Alphanumeric.
Last name	Last name of the competitor, Alphanumeric.
Car Reg	Car registration number of the competitor, Alphanumeric.
Driver Reg	Driver registration number of the competitor, Alphanumeric.
Transponder 1	1 st transponder number, can be numeric or Alphanumeric.
Transponder 2	2 nd transponder number, can be numeric or Alphanumeric.
Additional Data 1	Additional data 1 of the competitor, Alphanumeric.
Additional Data 2	Additional data 2 of the competitor, Alphanumeric.
Additional Data 3	Additional data 3 of the competitor, Alphanumeric.
Additional Data 4	Additional data 4 of the competitor, Alphanumeric.
Additional Data 5	Additional data 5 of the competitor, Alphanumeric.
Additional Data 6	Additional data 6 of the competitor, Alphanumeric.
Additional Data 7	Additional data 7 of the competitor, Alphanumeric.
Additional Data 8	Additional data 8 of the competitor, Alphanumeric.

Sample

```
"No"<TAB>"Class"<TAB>"FirstName"<TAB>"LastName"<TAB>"CarRegistration"<TAB>"DriverRegistration"<TAB>"Transponder1"<TAB>"Transponder2"<TAB>"Additional1"<TAB>"Additional2"<TAB>"Additional3"<TAB>"Additional4"<TAB>"Additional5"<TAB>"Additional6"<TAB>"Additional7"<TAB>"Additional8<cr/lf>"
```

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