# Flip Side Racing Software

**Jeremy Auten**

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Jeremy Auten

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# Chapter 1. Getting Started

## 1.1. General Information

Flip Side Racing Software is an open source, cross platform lap counting software project that currently supports the Core Speedway, Kyosho IC, I-Lap, GiroZ, Trackmate, AMBrc and Robitronic lap counters or the use of a keyboard. This software has been developed with a great amount of useful input from the Mini-Z community at the Mini-ZRacer.com Forums [http://mini-zracer.com/forums/] and was designed with the How Fast Are You OnLine Point Series in mind. If you have not looked into the How Fast Are You OnLine Point Series you should take a moment to visit their website at www.howfastareyou.com [http://www.howfastareyou.com]. Any group that has at least 3 people, RCP track [http://www.rcptracks.com] and a suitable lap counter can race against people around the world.

**Features**

- Supports Core Speedway, Kyosho IC, I-Lap, GiroZ, Trackmate, AMBrc and Robitronic lap counters
- Use cheap generic RFID tags
- Text to speech engine, the software will attempt to pronounce names and can dynamically announce things during the race such as ranks, individual best laps and time remaining
- Live graphing, during a race you can look at the graphs of racers progress
- Add racers anytime during a race, useful especially for practices
- Start races without adding anyone before the race, useful for practices
- Generates How Fast Are You OnLine Point Series information
- HTML and XML data race report export
- Available for Windows and Mac
- Open source

## 1.2. Setting up the Hardware

The first step is to set up the lap counting hardware. Use the following steps to quickly get the hardware set up.

1. Go to the General Config Screen using the General Config. button on the upper right hand of the window.
2. On the General Config Screen go down to the Hardware Settings section on the lower left of the window.
3. Choose the hardware type from the drop down menu. If you are using the Keyboard this go to the last step, otherwise proceed to the next step.
4. For the hardware lap counters you must select the correct COM Port from the COM Device Selection drop down menu and click Save Connection. The connection will save even if you select the wrong COM Port, if you are unsure of what COM Port is the correct one refer to the COM Port hardware documentation. If lap counting hardware does not appear to be detected by your Operating System

you may need to install a driver, further information can be found in the Device Driver section of the Hardware chapter.

5. While you are still on the General Config Screen enter your Club Name under the Club Info and select your club logo for the Report Logo Image.

# 1.3. Creating Racers

After correctly setting up your hardware you are ready to create racers. You must create racers before you start your first race. Use the following steps to create some new racers.

1. Go to the Edit Racers Screen using the Edit Racers button on the upper portion of the window.

2. Click the Create New Racer button to create a new racer with blank information.

3. Now that a new blank racer has been created the information about the racer needs to be populated, the only required fields are the Name and the UID though it is recommended that you also select an image for the racer. How the UID is populated depends on the hardware you are using.

   - **Core Speedway:** To get the UID of a racer with the Core Speedway lap counter put a car with an RFID Tag above the lap counter antenna and click the scan button.

   - **Other Hardware:** To get the UID of a racer with other hardware lap counters click the scan button and drive a car with a transponder past the lap counter.

   - **Keyboard:** If you are using the Keyboard to register laps put they key that you want to use for the racer in the UID field.

4. After you have entered all the information in about the racer click the Save button to save the racers information. All information is stored in the database.

5. For each additional racer that you need to create you must click the Create New Racer button first and follow the above steps.

# 1.4. Setting Up a Race

Now that you have set up your hardware and created some racers you are ready to set up a race. Use the following steps to set up your first race.

1. All the race settings are defined on the Race Config Screen, go to the Race Config Screen by clicking the Race Config. button on the top of the window.

2. While it is not required when the Auto Name feature is enabled you can enter a Race Name. The Race Name field is added to each race name along with the round type, date and time.

3. By default there are no Race Profiles created, Race Profiles can be useful but are not required. You can change all the race settings manually on this page to what you need for your race. If you have a multiple different types of races that you run it would be convenient to create a Race Profile for each race so that you can select a profile instead of having to change each setting manually.

4. If you have any questions about the available settings for a race you can find further information in the Race Config chapter.

5. After adjusting any race settings you are ready to run a race, proceed to the next section Running a Race.

# 1.5. Running a Race

You are now ready to run a race, all races run from the Race Screen. When a race is started the software will automatically add racers to the race as they are detected. Below are a few details about this feature.

- **Automatically Add Racers:** The software has the ability to add any detected car to a race automatically. They must have already been defined in the Edit Racers Screen which you did earlier when creating new racers. The first time the car is detected it will be added to the race automatically then the next time they cross the lap counter will be counted as their first lap.

To start a race you must click the Start Race button. Clicking this button will begin the Count Down to start the race. The race will then run according to the Race Type you selected on the Race Config Screen.

During a race many features are disabled, you can only go to the Race or Statistics Screens. The Race Screen will show you the current ranks and other information about the race while the Statistics Screen will show a Live Graph of the current racers during a race.

# 1.6. Viewing Results

After you have completed a race you can go back and view the results for any prior race. To see information about previous races you need to go to the Statistics Screen. On this screen you have the ability graph previous races, individual racers and generate reports about those races.

# Chapter 2. General Config Screen

The General Config. Screen contains various settings that control the overall operation of the program including setting up the hardware, defining audio settings, and your general club information. You access the General Config. Screen by clicking the General Config. button on the top row of buttons in the program. All settings that are changed on this screen are saved immediately to the preferences.xml file except for the COM Device Selection settings.

## 2.1. Club Info

The settings under the Club Info heading are used throughout the program.

### 2.1.1. Club Name

Make sure to set your club name correctly. The Club Name is used by the various reports generated by the program, such as the Race Report, Racer Inventory Report and the HFAY OLPS export. By setting this value correctly any time you generate a report your club name will be already in the report.

### 2.1.2. Report Logo Image

The Report Logo image is used by the two reports generated by the program, the Race Report and the Racer Inventory Report. The image that you set here will be included in any new reports that you generate.

## 2.2. GUI Settings

GUI Settings change how the Race Screen and Statistics Screen operate. By using these settings you can allow more racers per race or help a machine that may be too slow for live graphing.

### 2.2.1. Slot Colors

The Slot Colors list box controls what color the text will be on the Race Screen for each racer slot and on the Statistics Screen for each graph line. Click on the text in the list box to change the color. A window will pop up allowing you to select any color.

### 2.2.2. Maximum Number of Racers

This sets the maximum number of racers allowed in a race. The default setting is 8 but you can go as high as 24 racers in a race. Be careful, if you set this value too high you may not be able to see all the racers on the screen. Modify the row spacing to increase the number of racers that can be seen on the screen at once.

### 2.2.3. Row Spacing

Changing the Row Spacing changes the amount of space between each racer on the Race Screen. By making this value smaller you can fit more racers on the screen at once. The default value is 13. With this default value 8 racers will fit on a XGA (1024x720) screen.

### 2.2.4. Disable Live Race Graphing

Live Graphing can be a CPU intensive operation especially if you have a long race with a large number of racers. The Disable Live Race Graphing option allows you to permanently disable this feature for

computers that may not be fast enough. Though as long as you are not on the Statistics Screen the live graphing will not be running.

### 2.2.5. Theme

On the General Config Screen you can select which theme to apply to the program. Themes modify the appearance and sound effects of the program. To change settings of a theme click the Manage Theme button under the Theme heading. More information about themes can be found in the Theme chapter.

## 2.3. Hardware Settings

The Hardware Settings heading contains options for configuring any external devices you are using with the software.

### 2.3.1. Hardware Type

You must set the correct Hardware Type for the application to operate. If you set this to Keyboard then for each racer you must set the UID to the key you are going to press to register a lap for them. For the other hardware types you must define the correct COM port for the software to operate.

### 2.3.2. Accuracy

Accuracy is set to automatic by default. This setting defines what level of accuracy the lap counter provides for lap times. It is recommended to keep this on automatic as this will use the appropriate accuracy for your defined hardware type but you can manually define 0.01 second or 0.001 second accuracy if needed.

### 2.3.3. COM Device Selection

If you have a hardware lap counter you must select the correct COM port here for the software to operate. After selecting the correct COM port you must click the Save Connection button for the settings to be saved and for communication with the lap counter to be initialized. After saving this setting it will automatically be used.

### 2.3.4. Secondary COM Device Selection

In the event that you have a second lap counter connected to the computer you must define what COM port it uses using the Secondary COM Device Selection setting. After selecting the correct COM port click the Save Connection button to save the settings and initialize communication. The secondary lap counter will only be used for register laps, it does not work with the Edit Racers Screen. Only use this setting if you have a second lap counter attached.

### 2.3.5. Relay Board COM Device Selection

A DLPIOR4 Relay Board can be used to control Start/Stop lights. The application will control the relay board, during the starting race countdown the relay board can will have Relay 4 active until 2 seconds left in the countdown, at 2 seconds it will switch Relay 4 off and Relay 3 on, at 1 second it will switch Relay 3 off and Relay 2 on and finally at the start of the race it will switch Relay 2 off and Relay 1 on. When the race time limit or lap limit is reached race Relay 1 will turn off and Relay 2 will turn on. When everyone has finished their final laps or timed out Relay 2 will turn off and Relay 4 will turn on. You can connect lights to these relays to have a start/stop light for races.

If you have this relay board attached to the computer use this setting to define what COM port it is using. After selecting the correct COM port click the Save Connection button to save the settings and initialize communication.

# 2.4. General Settings

Under the General Settings heading is settings that do not fit in other headings.

## 2.4.1. Audio

If for some reason you need to disable the audio or are running this application on a system that does not have a sound card use this setting to turn off the audio. This will disable any sounds and speech of the application.

## 2.4.2. Check for Updates

The Check for Updates setting allows the program to see if there is a newer version of the program available for download. This check will happen each time the program launches. If there is a new version available you will be prompted with a pop up window asking if you want to go to the website and download it or not. When the software checks for an update it will send various information about your setup to the server. This information includes the version number, your club name, number of racers, number of races, hardware type and operating system. Use this setting to disable checking for updates.

## 2.4.3. Speech File

This drop down will automatically populate with the speech files available when the program is launched. Speech files are stored in the translations directory. By default the americanenglish speech file is used. It is possibly to use additional translations such as German and French or to create your own translation. To learn more about translations read the Translations section in Advanced Topics.

## 2.4.4. Close Program Prompt

This option allows you to control if and when you get prompted about whether or not you want to close the program. If this setting is set to "Always" then any time you try to close the program you will be prompted to confirm your action. If this setting is set to "During Races" then you will only be prompted if a race is active, while if you set it to "Never" you will not be prompted at any time to confirm you want to close the program.

## 2.4.5. Import All Data

If you have a new copy of the software and you want to import all settings, racers and races from an existing copy use this option. When you click this button you will be prompted to select the folder where the existing copy is located. The program will then overwrite the information in the new copy with the data from the existing copy.

# 2.5. Database Utilities

Many of the functions of the application are using a SQLite database to store relational information. Under this heading you will find utilities to modify some aspects of the database.

### 2.5.1. Edit Make/Models

When creating or editing racers you have the ability to select a Make and Model of the car they are driving. To add options to the Edit Racers screen for Makes and Models you need to use the Edit Make/Model utility. By clicking this button a small window will pop up allow you to create new Makes or add Models for a particular Make of a car. This information is then stored back in the database permanently.

### 2.5.2. Import/Export Racers

The Import/Export Racers buttons allow you to import or export the racer information from the Edit Racers screen. This does not include any race information, only information about that particular racer such as name, UID and other car details. Records with a duplicate UID will cause an error and not be imported.

This could be useful if you are traveling to another club, you can export the racer information from your computer and then send it to the other club director who then imports it. Then when your group arrives for racing all your cars are already entered into the program. Or if you want to start with a clean database but do not want to reenter all the racer information you can export the racer information download a new copy of the software and import your racer information.

### 2.5.3. Racer Inventory Report

The Racer Inventory Report button generates a report showing all the individual racer information. This report includes the club name and log at the top followed by a table of racer information. The report is automatically saved to a directory under the reports directory that is named Racer Inventory followed by the date and time. Within the Racer Inventory Report directory will be a HTML report along with the original XML data and a copy of the logo.

### 2.5.4. Vacuum

If you encounter slow database performance the Vacuum operation can help speed things up. Vacuum will remove unused space, defragment and compress your database allowing for faster operations. If you frequently delete races your database can become very fragmented and this operation would be beneficial.

## 2.6. Email Settings

Using the settings in this section will allow the software to automatically send out race reports to admins and/or racers after a race has been completed. For racers to receive email you must define an email address for that racer on the Edit Racers screen.

### 2.6.1. Server Name

This must be set to the SMTP server name for your email provider. For example if you are using Gmail this setting must be set to smtp.gmail.com

### 2.6.2. Server Port

This is the port number for your SMTP server, it is set to 25 by default. If your email provider does not indicate a port number and is not using encryption then this is a safe default. If you are using encryption then the port number is most likely 587 or 465. For example in the case of Gmail they are using encryption and have the port number set to 587. Your email provider should indicate what port number to use.

## 2.6.3. From Address

You must set this field to your email address. This is the address that the email's will appear to come from. If you do not set it to the address for your account your email provider may reject the email as spam.

## 2.6.4. Admin Addresses

Enter a comma separated list of email addresses into this field. If you define the recipients to include admins the listed admin email addresses will get a copy of each race report sent whether they are in the race or not.

## 2.6.5. Username

Set this setting to the username of your email account. Depending on your email provider this may be a normal username or it may be your from email address. For example in the case of Gmail this is your from email address.

## 2.6.6. Password

Set this to the password for your email account. To protect your password it is not displayed on the screen, only dots will appear.

## 2.6.7. Recipients

Recipients defines who will receive race reports. This can be set to Admins, Racers or Admins and Racers. If set to include Racers you must set the email addresses for each racer that wants to receive the reports. You do this by editing the racers information on the Edit Racers screen.

## 2.6.8. Race Reports

This setting defines which type or races will send a report. By default the software will only send out reports for Mains. You can change this to send out reports for all races, or to send out reports for all races but practices. Race reports are sent immediately after the race is completed.

## 2.6.9. SSL Encryption

Enable SSL Encryption if your email provider allows this option. If your email server supports this make sure to set the server port to the correct number. For example Gmail requires the use of port 587 with SSL Encryption.

## 2.6.10. Test Button

After you have defined the necessary email settings you can test the email functionality using the test button. This will send a basic email message to the defined from address. If you do not receive this test message then either check your junk mail folder or verify your email settings.

# Chapter 3. Edit Racers Screen

The Edit Racers Screen is used for creating, editing, deleting and viewing racer information. All racer information is stored in the database.

## 3.1. Creating Racers

To create a new racer you must first click the Create New Racer button. Clicking this button creates a new blank record for a racer that you can then edit and save. Each new racer must have a UID and a name defined. All the other fields are optional though selecting a Racer Image is recommended. After you have entered the info in for a racer you must click the Save button to save the record. The racer will then show up in the racer table on the right of the screen.

If you wish to copy a UID for an existing racer you can click the drop down arrow on the left of the UID field to select a particular UID from the list of available ones. While multiple racers can have the same UID only 1 racer with a particular UID may be enabled at a time.

### 3.1.1. Core Speedway Specific Info

When creating a new racer for the Core Speedway lap counter after you click the Create New Racer button you must click the Scan button next to the UID field. The car you are scanning must be on top of the antenna loop. The scan button will perform one quick scan, if a tag is detected the UID will display in the UID field.

### 3.1.2. Other Lap Counter Hardware Info

When creating a new racer for other hardware based lap counters after you click the Create New Racer button you must click the Scan button next to the UID field. The scan will run for 5 seconds, during this time the car you are scanning must then be driven over the antenna ribbon or below the detection bridge. If a new car is detected the UID will display in the UID field.

### 3.1.3. Keyboard Specific Info

The software has the ability to use the keyboard for registering the laps instead of using lap counter hardware. If you want to use this mode of operation each racer must have the UID field set to unique key. You are not limited to just numbers, it can be almost any key on the keyboard. Do not use the "r" key though, this key is used to announce the ranks during a race.

## 3.2. Editing Racers

To edit an existing racer you must click on the racer in the table on the race side of the screen. After click the racer all the information about the racer will be displayed in the fields on the left side of the screen. After you have made changes to the record you must click Save to save the changes.

If you need to change the UID of a racer then first select the racer that needs changed and then if you are using lap counting hardware you use the Scan button the same way as when you create racers. As long as the UID is not already used by another racer the scan will overwrite the existing UID and then you can save the racers information. If you are using the keyboard for lap counting then you can just manually update the UID field.

## 3.3. Racer Image

When creating a racer you can select a racer image. The software comes with an assortment of images but you can also use your own. At most the application will display 100x40 pixels of the image you select, the image is automatically resized down to 100x40 pixels.

## 3.4. Speak Field

The Speak field under the name allows you to have the program say a name other than what is in the Name field. This is useful in cases where someone may have their name match an online ID such as pinwc4 but the persons name is actually Jeremy. You can put pinwc4 as the Name and put Jeremy in the Speak field. The program will announce the name Jeremy but any reports will show the name pinwc4.

## 3.5. Email Field

This field defines the email address for this specific racer. You must set email addresses for each racer that wants to automatically receive a race report. Additionally you will need to have the correct email settings defined in the Email Settings section of the General Config screen.

## 3.6. Enabled

The enabled checkbox is used to allow you to share cars or transponders with other racers. While you can define multiple racers with the same UID only one racer with a shared UID may be enabled at a time. To enable a different racer that is sharing a transponder you may either click the enabled checkbox in the table showing all the racers which will then automatically save the change or you can select the individual racer in the table and then edit that racers information and click save manually. When you enable a racer the software will automatically disable any other racer that shares that UID.

## 3.7. Race Car Specific Information

Details about how to change the options available under the Race Car Specific Information heading can be found in the Advanced Topics chapter under the Adding Options to the Edit Racer Screen section.

## 3.8. Deleting Racers

Deleting a racer is simple. Just select the racer in the table on the right side of the screen and then click Delete.

**WARNING: This operation is permanent, there is no undo.**

# Chapter 4. Race Config Screen

On the Race Config. Screen you define all the settings for a race, including the race type, name, time limits, etc. Each time the application is launched it will default to the last settings or race profile selected.

## 4.1. Race Name

Each race that is ran must have a unique name. By default auto naming of races is enabled. This feature will add the date, time, and round type to whatever is filled in to the Race Name field. Even if you do not enter any information into the race name field the race name will still be unique. If you disable the Auto Name feature you must enter in a unique name for each race before the race is started.

## 4.2. Race Profiles

Race profiles are a collection of the race settings other than the Race Name settings that are permanently saved to the database. This allows you to easily retrieve common settings for different race types used by your club. Race profiles are not required to be created but they are usual for switching between race types such as practice races versus mains, or endurance races versus lap races.

### 4.2.1. Create Race Profile

To create a new race profile just click the Create button under the Race Profiles heading. This will pop up a small window where you must enter a unique race profile name. When you click OK on the pop up window the program will create a new race profile using the settings that were defined under the Race Profiles section of the screen.

### 4.2.2. Delete Race Profile

Deleting a race profile is simple, just select the Race Profile in the pop up menu and click the Delete button.

**WARNING: This operation is permanent, there is no undo.**

### 4.2.3. Save Race Profile

After changing settings for a Race Profile you just click the Save button for them to be saved for later use. If you do not click the save button the settings will be used for those races but after the application is closed and opened again the unsaved settings will be lost.

## 4.3. Race Settings

Below the Race Profiles section the individual race settings are listed. If race profiles are not being used these settings will default to the last settings used when the application was closed. If a race profile is not used the settings are stored in preferences.xml file otherwise they are stored in the database.

### 4.3.1. Race Type

The Race Type selected changes how the race is tracked, by time or by number of laps. There are 4 race types currently supported.

#### 4.3.1.1. Timed Race

For a timed race the race will end after the time limit has been reached. When the time limit is reached all racers must complete their final lap before the time out. When all racers have completed their final lap or timed out the race will end.

#### 4.3.1.2. Lap Race

In a lap race the race will end after the first person reaches the lap limit. After the lap limit has been reached all other racer must complete their final lap before the time out. When all racers have completed their final lap or timed out the race will end.

#### 4.3.1.3. Lap and Timed Race

With a lap and timed race the race will end after either the lap limit or the time limit is reached. When either the lap or time limit has been reached all remaining racers must complete their final lap before the time out. When all racers have completed their final lap or timed out the race will end.

#### 4.3.1.4. Staggered Time Race

A staggered race is similar to a timed race except each racer gets their own clock based on the time limit setting. Each individual racers clock will not start until after the first time they cross the lap counter. The race will end after the final racers time limit is reached and they have completed their final lap or timed out.

#### 4.3.1.5. Free Play Race

A Free Play race type is intended for open track time. It is not really a true race type, no results are stored. It has the following characteristics:

- The race does not end automatically, no lap limit or time limit. You must manually end it by pressing the End Race Button on the Race Screen.
- Results are not stored to the database after the session is ended.
- Racers are removed from the race screen if they have not gotten a lap within the Time Out value on the Race Config Screen.
- Racers can join the session at any time, the first time they cross the lap counter is considered their start time for calculating lap times.
- Racers can rejoin a session after they have been timed out, all information has been reset for them including lap counts, times and best lap.
- No rank or time announcements will be made.
- Overall and personal best lap times will be announced.
- On the Race Screen the pace column will show the average lap time.
- Ranking on Race Screen is configurable.
- Racers can be manually deleted during the race by double clicking on their name or picture.

### 4.3.2. Number of Laps

This setting defines the lap limit for a Lap or Lap and Time based races. You can type values into the field or use the +/- buttons to increment and decrement the value by 1 lap.

## 4.3.3. Time Limit

For Timed, Lap and Timed and Staggered Time based races the Time Limit value defines how long the race will run. The value in this field is based on minutes. You can type values into the field or use the +/- buttons to increment and decrement the value by 1 minute.

## 4.3.4. Minimum Lap Time

The Minimum Lap Time defines the quickest lap time that will be accepted by the software. If a lap is less than this value it will not be recorded. You can enter a value into the field or use the +/- buttons to increment and decrement the value by 1 second.

## 4.3.5. Round Type

The Round Type drop down defines whether this race is a Practice, Heat, Qualifier or Main. This information is used for the summary of the race, the race auto naming field and will show up in the race report.

## 4.3.6. Starting Count Down

When a race is started the count down timer will begin. The Count Down Time defines how long the count down before a race will be. If audio is enabled the software will start to announce count down seconds remaining at 5 seconds. If the Count Down Time is set to 8 seconds or longer the software will announce "Prepare to Race" and then count down.

## 4.3.7. Ending Count Down

At the specified number of seconds the program will count down the time remaining. For example if set to 5 seconds when only 5 seconds are left the program will count down 5, 4, 3, 2, 1 and the race will end. If this is set to 0 it will not count down.

## 4.3.8. Time Out

When the race time or lap limits have been reached the time out value will be used to end the race for racers that have not completed their final lap. If it takes the racer longer than the time out value to finish the final lap their race will be ended.

## 4.3.9. Count Down Type

Select the style of count down to use for the races. A traditional count down will display the count down time on the screen and when the count down reaches 5 seconds it will start saying the seconds remaining in the count down. When the countdown reaches 0 the starting horn sound will play and the race starts. In an F1 style count down instead of displaying the seconds in the count down the program will beep the specified number of times set as the starting count down number. When it reaches the final beep the program will set a random delay between 1 and 10 seconds before playing the starting horn and starting the race.

## 4.3.10. Ending Horn

This setting defines whether or not the ending horn sound effect plays when a race is complete. The sound effect will be triggered in a timed race when the time limit is reached. In a lap race it will be triggered when the first person reaches the lap limit.

# 4.3.11. Lap Indication

By default when a lap is detected the software will beep but there are other interesting options available.

## 4.3.11.1. Beep

The default lap indication setting is the beep, this will play a beep sounding wav file.

## 4.3.11.2. Lap Time

The Lap Indication can be changed to announce the Lap Time using this setting. Each time a new lap is detected the software will say the time. For example is a racer just got a lap time of 7.8 seconds then the software will announce 7.8 seconds.

## 4.3.11.3. Lap Difference

The Lap Different Lap Indication will announce the different between a racers best lap time and their current lap time. If it is a new best lap for that racer the software will announce the new best lap, otherwise it will just be the difference in time between their current time and their best lap time. For example if a racer has a best lap of 7.6 seconds and they just got a new lap of 7.8 seconds the software will announce .2 seconds.

## 4.3.11.4. Lap Time 1 Decimal, Lap Time 2 Decimals, Lap Difference 1 Decimal and Lap Difference 2 Decimals

These options are variations of the Lap Time and Lap Difference options that will round the announced time to the specified decimal place. For example if you select Lap Time 1 Decimal and get a lap time of 7.123 the software will announce the lap time as 7.1.

# 4.3.12. Enable Rank Announcements

If the Enable Rank Announcements setting is enabled then periodically during a race the current ranks of each racer will be announced. Set the Rank Announcement Interval to define when the announcements occur. You can also hit the "r" key at any time and the software will announce the current ranks.

# 4.3.13. Rank Announcement Interval

The Rank Announcement Interval defines how often the current ranks of each racer will be announced if the Enable Rank Announcements feature is enabled. This value sets the number of minutes between rank announcements. You can also hit the "r" key at any time and the software will announce the current ranks.

# 4.3.14. Rank Method

The Rank Method option allows you to change how racers are ranked during a race.

## 4.3.14.1. Total Laps

This ranking method ranks by the total laps followed by the time they were completed in.

## 4.3.14.2. Best Lap

This ranking method ranks by the best lap times. This is useful for qualifying rounds.

#### 4.3.14.3. Average Lap

This ranking method ranks by the average lap time. This method of ranking is useful for the free play race mode or staggered start races.

### 4.3.15. Rank Change Speech

This setting configures the speech settings for announcing rank changes during a race. If it is set to Lead Change then the program will only announce when someone takes the lead. If it is set to Any Change then the program will announce a rank change any time someone moves up in rank.

### 4.3.16. Best Lap Speech

This option allows you to change when best laps are announced. You can choose between none, personal or overall. When set to personal each races individual best lap time will be announced when it occurs during the race. If set to overall individual racers best lap times will not be announced, only the best lap overall will be announced during the race.

## 4.4. Start Race Button

The Start Race button will take you to the Race Screen and automatically start the race.

# Chapter 5. Race Screen

The Race Screen is the main screen used for starting and running a race. When a race is running this is the screen that shows you the current rank and information about each driver along with the timer for the race. There is also a count down light graphic towards the top right of the screen that changes during the count down before the race.

## 5.1. Start Race

To start a race you can click the Start Race button on this screen. When the Start Race button is clicked all racers in slots will be removed and a count down will occur as defined by the Count Down Time setting on the General Config Screen. Racers will be added automatically to the race if detected after the count down.

## 5.2. Race Information

While a race is running the information for each racer in a race will be updated on this screen each time a new lap is detected. The information on this screen currently includes the overall timer along with the rank, image, name, laps, time of the last lap, last lap time, pace and best lap of each racer.

## 5.3. Live Statistics

Clicking the Live Statistics button will take you to the Statistics Screen.

## 5.4. End Race

In the event that you need to end the race early you can click the End Race button to end the race immediately. When clicked the race ends right then, racers will not be allowed any more laps.

# Chapter 6. Statistics Screen

The Statistics Screen can either show you graphs and tables of information from previous races or show graphs of the currently running race if live graphing is enabled. If a race is currently running you will only be able to change graph types, other functions on this page will not be available.

## 6.1. Graph Types

Use the Graph Type pop up menu to select what type of graph you want to see.

### 6.1.1. Laps Versus Time

In the Laps Versus Time graph type the X axis of the graph will represent time and the Y axis will represent the total number of laps.

### 6.1.2. Laps Versus Lag

In the Laps Versus Lag graph the X axis will represent the lap number and the Y axis will represent how far behind the leader you are for that particular lap.

### 6.1.3. Time Per Lap

In the Time Per Lap graph the X axis represents the lap number while the Y axis represents lap time.

### 6.1.4. Rank Versus Time

In the Rank Versus Time graph the X axis represents time while the Y axis represents the rank of the racer.

## 6.2. Selecting Races

If a race is not currently running you can select previous races to see the results. To do this just click the race name of interest in the top left table on the Statistics Screen. After clicking a record in this table the summary table on the right will update with the information for each racer and the graph will plot the graph type selected.

## 6.3. Selecting Racers

To limit the graphed information to a specific racer and see the individual lap information for a racer you must select their name in the summary table on the upper right side of the Statistics Screen. This can only be done if a race is not currently running. When a racer is selected the graph will update with only that racers information and the table on the lower left side of the screen will show the individual lap information for that racer.

## 6.4. Exporting How Fast Are You OnLine Point Series Data

The Export HFAY OLPS format button will create a Comma Separated Value file containing information needed for each racer for the How Fast Are You OnLine Point Series. Select a race in from the upper left

table and then click the button. A window will pop up a window asking you to save the file to a location. The file will already be named based on the race name that you have selected. You can then send this file to the director of the How Fast Are You OnLine Point Series for your results to be included with the latest event.

**NOTE:** The How Fast Are You OnLine Point Series requires that the chassis and motor types be defined for each racer. Please make sure you have entered this information in for each racer participating in the HFAY OLPS before exporting the HFAY OLPS data.

# 6.5. Generate Report

The Generate Report button will generate a report of the race you have selected in the upper left table. This report will include some race configuration information, your club name, club logo, date and time of the race, summary of the race results and individual lap times. The results will be saved in a directory named after the race name under the reports directory. Within this directory will be a web report, raw XML data and a copy of the logo. After the report is generated by clicking the button the report will then be displayed using your web browser. To learn about customizing the appearance of the race report go to the Customize Race Report section.

# 6.6. Email Report

The Email Report option allows you to manually send an email that contains the results for the selected race. This manual generation of the email will follow the rules and use the Email Settings defined on the General Config screen. For example if you have your email settings defined to send an email automatically to Admins Only then even if you click this button to manually send race results it will still only go to Admins.

# 6.7. Delete Race

Deleting a race is quite simple. You need to first select the race you wish to delete in the table on the upper left side of the Statistics Screen and then click the Delete Race button. The application will prompt you asking whether or not you are sure you wish to delete the race, click yes to permanently delete the race or cancel not to.

# 6.8. Delete Racer Results

To delete an individual racers results from a race you must first select the race in the table on the upper left side of the Statistics Screen. After the race is selected you then can select the racer in the summary table on the upper right of the screen and click Delete Racer Results. Clicking this button will cause a pop up message asking if you are really sure you want to delete the racers results. Clicking yes will delete the results or cancel will do nothing.

# 6.9. Merge Laps

In the event that a racer accidentally got counted for 2 laps when they should have gotten one you can merge the laps together after the race has ended. To merge laps first select the race in the upper left table on the Statistics Screen, then select the racer in the summary table on the upper right of the screen. This will cause the laps table on the lower left of the screen to populate with individual lap information. By default the Merge Laps button will merge the time of the lap selected in this table with the time of the lap after it unless you select the last lap. If the last lap is selected it will merge the time with the lap before it.

Selecting a lap in the lower left hand table and clicking the Merge Laps button will cause a pop up asking you if you are sure you want to merge laps. Click yes to merge the laps. If yes is clicked the laps are merged and the summary information for the race is recalculated. This is needed just in case the ranking or other statistics of the race change as a result of the lap merger.

# 6.10. Split Lap

If the lap counter accidentally missed a lap for a race you will need to split a lap into 2 laps so that the racer gets proper credit. To split a lap for a racer after the race has been ran you must select the race in the table on the upper left side of the Statistics Screen and then select the racer in the summary table on the upper right side of the screen. This will populate individual lap information in the lower left table of the screen.

Select a lap in the lower left hand table and clicking the Slip Lap button will cause a pop up asking you if you are sure you want to split the lap. Click yes to split the lap. If yes is clicked the lap is split and the summary information for the race is recalculated. This is needed just in case the ranking or other statistics of the race change as a result of the lap split.

# 6.11. Live Graphing

The Statistics Screen is capable of graphing the information of the currently running race. As long as the Live Graphing feature is not disabled the statistics screen will show a live graph of the currently running race. During live graphing most of the features of the Statistics Screen are disabled except for the Graph Type selection. Once the race has completed then all the features of this screen are available again. Live Graphing can cause older machines to perform too slow to properly detect laps so be careful especially if you are running really long races.

# Chapter 7. How Fast Are You OnLine Point Series

The How Fast Are You OnLine Point Series is a worldwide point series that any group can participate in. To compete you need at least 3 people racing, 2 Wide L's of RCP track [http://www.rcptracks.com] and a suitable lap counter. The results of your race will be combined and ranked with all the other participating clubs around the world.

Each month you group must run a event which comprises of 2 races on a specific track design, one clockwise and one counter clockwise. Since everyone is running the same layout each month we can then combine the race results of each club together to rank everyone for each race and season. Each season consists of 5 events, each event consists of 2 races and there are 2 seasons a year. You must submit your groups previous race results by the first day of each month. At the end of a season your worst 2 races are dropped from your results and you will get your final worldwide ranking for that season.

Various prizes and awards are available for the top 3 racers, the top under 16 years old racers and clubs. The events are quick and easy to run but the competition for the top ranking is fierce.

We hope you will participate with our clubs in this unique and fun point series.

For more information and to register for the series visit the How Fast Are You OnLine Point Series site at www.howfastareyou.com [http://www.howfastareyou.com].

# Chapter 8. Hardware

The software has support for various types of hardware. This chapter details some of the unique things about the supported hardware.

## 8.1. COM Ports

To communicate with the various hardware that this software supports COM ports are used. Even though each of the devices plug in via USB the old style COM communication is what is being used. Each of the devices have a chip in them to convert from USB to COM. COM ports appear differently on each Operating System, here are some specific details for each OS.

- **Windows:** In Windows the lap counting hardware will probably be the last device in the COM port list. If that does not work or you want to know for sure what COM port is the correct one you can look in the device manager. To get to the Windows device manager go to your Control Panel then to Administrative Tools and then Computer Management. Within the window that pops up you can look at the device manager. Look under the Ports for a USB port created by the FTDI Driver. This will be the COM port you need to use.

- **Mac OS X:** In Mac the device will appear in the list as usb- followed by some numbers. If you have multiple of these devices you figure out which one is correct through the System Profiler. To get to the System Profiler click the Apple logo in the top left of your screen and then select About This Mac. In the window that pops up click the More Info... button, this will launch the System Profiler. In the System Profiler you can click USB under Contents to see the various USB devices connected. Look for a device using the FTDI Driver. If no device is found you may need to install the driver.

- **Linux:** In Linux the device will most likely be ttyUSB followed by a number. You may have to make a symbolic link to an existing device node such as /dev/ttyS3. How to determine the correct COM port can vary per distribution.

## 8.2. Device Drivers

All the currently supported lap counting hardware uses the same FTDI Driver for communication. If your computer is not recognizing the hardware you plugged in you may need to install a driver. You can download the latest version of the driver for Windows, Mac and Linux from FTDI's website here, www.ftdichip.com/Drivers/VCP.htm [http://www.ftdichip.com/Drivers/VCP.htm].

## 8.3. Core Speedway

The Core Speedway lap counter is an RFID reader based on the TI S6350 module or the Infinity 166 module. This reader uses 13.56MHz ISO15693 RFID tags for tracking RC cars. Details about the TI S6350 hardware can be found at TI's site here, www.ti.com/rfid/shtml/prod-readers-RI-STU-TRDC.shtml [http://www.ti.com/rfid/shtml/prod-readers-RI-STU-TRDC.shtml]. The software uses the UID of each RFID tag to uniquely identify each car.

The Infinity 166 variety of the Core hardware has been sold oversees most likely because the existing TI S6350 module was not RoHS compliant. The software automatically detects this hardware type and changes the timing for this module. While the TI S6350 based RFID reader can read 100 times a second the Infinity 166 module is slightly slower and can only be polled about 50 times a second.

## 8.4. Kyosho IC

The Kyosho IC lap counter is based on the Melexis 90121 RFID transceiver chip interfaced with an Atmel micro controller. The dNaNo and Kyosho tags utilize the 13.56MHz ISO15693 RFID standard for communication. The software uses a unique block of data stored on the RFID as the UID to identify each car.

## 8.5. I-Lap

The I-Lap Lap Counter is an IR based lap counting system. Each transponder has a 7 character UID that the software will use. When the I-Lap hardware is used the software will receive the lap times from the lap counter instead of using the internal software timer. When the accuracy setting on the General Config screen is set to automatic the software will use 0.001 second resolution lap times as provided by the lap counter.

As a result of using the hardware lap timer the race pause functionality is disabled. This functionality depends on the software timer but when using I-Lap hardware we utilize the hardware timer so we can have 0.001 second resolution lap times. As a result pausing is not supported with this hardware.

For more information on the I-Lap hardware visit the RC Lap Counter website at http://www.rclapcounter.com/ [???]

## 8.6. Robitronic

The Robitronic Lap Counter is an IR based lap counting system. Each transponder has a 2 byte UID that the software will use. When using the Robitronic Lap Counter the software will use the lap times sent by the lap counter instead of the internal software timer. The Robitronic hardware has a delay when sending detected racer information so you will notice a delay in the software for the detection beep and announcements compared to when you cross under the bridge.

Since the Robitronic Lap Counter sends lap timing information accurate to 0.001 seconds the automatic accuracy setting defined on the General Config screen will use 0.001 second resolution if the hardware type is set to Robitronic.

The ability to pause a race is disabled when using the Robitronic Lap Counter. The pause functionality is dependent on the software lap timer but when utilizing Robitronic hardware we use the hardware time provided by the lap counter to get the 0.001 second resolution. As a result pausing is not supported.

For more information on the Robitronic Lap Counter hardware visit the Robitronic web site at http://www.robitronic.com/

## 8.7. GiroZ USB

The GiroZ USB Lap Counter is an IR based lap counting system. The transponders are assigned an id from 1 - 24. Because of this limited range of transponder id's it is common that racers will share an id. To accomodate this the Flip Side Racing software allows you to assign the same id to multiple racers. Only 1 racer with a particular id may be enabled at a time.

## 8.8. GKA9805

The GKA9805 is a UHF RFID reader from Global KeyAccess. This reader uses EPC G2 tags and is therefore not compatible with the tags used for Core or Kyosho RFID lap counters. For more information on this reader visit the website at http://www.globalkeyaccess.com/ProductInfo10000713.aspx

# 8.9. Trackmate

The Trackmate Lap Counter is an IR base lap counting system. Each transponder has a 7 character UID that the software will use. When the Trackmate hardware is used the software will receive the lap times from the lap counter instead of the internal software timer. When the accuracy setting on the General Config screen is set to automatic the software will use 0.001 second resolution lap times as provided by the lap counter.

As a result of using the hardware lap timer the race pause functionality is disabled. This functionality depends on the software timer but when using I-Lap hardware we utilize the hardware timer so we can have 0.001 second resolution lap times. As a result pausing is not supported with this hardware.

For more information on the Trackmate hardware visit the website at http://www.trackmateracing.com/ [http://www.trackmate.com/]

# 8.10. AMBrc

Some AMBrc based systems will be able to be used by this lap counting software. In order to use an AMBrc based system it must attach to the computer through either a serial port or a USB port. When AMBrc is selected as a hardware type the software will receive the lap times from the lap counter instead of the internal software timer. When the accuracy setting on the General Config screen is set to automatic the software will use 0.001 second resolution lap times as provided by the lap counter.

As a result of using the hardware lap timer the race pause functionality is disabled. This functionality depends on the software timer but when using I-Lap hardware we utilize the hardware timer so we can have 0.001 second resolution lap times. As a result pausing is not supported with this hardware.

# 8.11. WanhaRacing

The WanhaRacing lap counter is a custom lap counter based on the TRF7960 reader from TI. This hardware is currently under development by another group and support is experimental.

# 8.12. UID

UID stands for Unique IDentifier. Each racer must have a UID. This is achieved in various ways depending on the hardware.

- **Keyboard:** For the Keyboard when Creating a New Racer you must assign a unique key to each racer, for example 1 or j. Any key can be used except for r,s,e and p which are reserved for Keyboard Shortcuts.
- **Core Speedway:** For the Core Speedway hardware the UID is based on the UID of the RFID in the car. When Creating a New Racer the scan button will pick up the RFID's UID.
- **Kyosho IC:** With the Kyosho IC lap counter the UID of the RFID is not used. Instead each RFID must have a unique block of data on block 1 of the memory on the RFID. Kyosho tags and dNaNo's already have a unique block of data but generic tags will not. Generic RFID tags will have to be initialized to work with the Kyosho IC lap counter. Refer to the Using Generic Tags with the Kyosho IC Lap Counter section of the Advanced Topics chapter for further information.
- **I-Lap:** The I-Lap transponders provide a 7 character transponder id that the software detects and will use as the UID.
- **Robitronic:** The Robitronic transponders use a 2 byte transponder id that the software detects and uses as the UID. With only 2 bytes used it is possible there will be duplicate id's as there can only be a

maximum of 65536 id's created. So will possible it is fairly unlikely you will encounter a duplicate transponder id.

# 8.13. RFID Tags

RFID tags are a small integrated circuit with a larger antenna loop for picking up the signal from the RFID reader (lap counter). The 13.56MHz ISO15693 RFID tags used by this software are a passive tag, meaning they do not need a power supply to operate, they pick up their power from the RF field generated by the lap counter. Each tag has a UID along with a small amount of memory that can be used for storing data.

This software enables the use of generic TI RFID tags with the lap counting hardware. For the Core Speedway lap counter nothing more needs to be done to use generic tags. With the Kyosho IC lap counter refer to the Using Generic Tags with the Kyosho IC Lap Counter section of the Advanced Topics chapter for further information.

Information about recommended generic RFID tags to use with the software can be found on the Flip Side Racing website here, www.flipsideracing.org [http://www.flipsideracing.org].

# 8.14. Relay Board

The software has the ability to use DLP Designs DLP-IOR4 USB relay board for controlling a stop/start light tree. This board is capable of handling up to 60W light bulbs. The relay board itself does not have any lights, it is your responsibility to build and wire the light tree.

The application will control the relay board, during the starting race countdown the relay board can will have Relay 4 active until 2 seconds left in the countdown, at 2 seconds it will switch Relay 4 off and Relay 3 on, at 1 second it will switch Relay 3 off and Relay 2 on and finally at the start of the race it will switch Relay 2 off and Relay 1 on. When the race time limit or lap limit is reached race Relay 1 will turn off and Relay 2 will turn on. When everyone has finished their final laps or timed out Relay 2 will turn off and Relay 4 will turn on. You can connect lights to these relays to have a start/stop light for races.

Information about the DLP Designs DLP-IOR4 relay board and locations to purchase board from can be found here, www.dlpdesign.com/usb/ior4.shtml [http://www.dlpdesign.com/usb/ior4.shtml].

# 8.15. Keyboard

If you do not have lap counting hardware to use you can instead use the keyboard to register laps for racers. While it is not as accurate it can still provide fun racing with a group of friends. Each racer must have a unique key assigned when Creating the Racer, the key does not have to be a number, it can be any key on the keyboard except the letters r,s,e and p which are reserved for Keyboard Shortcuts.

# Chapter 9. Theme

Changing some aspects of the appearance and sounds that the software has is possible. To manage a theme you must click the Manage Themes button on the General Config Screen. This chapter details some of the options that can be changed.

## 9.1. Managing Themes

Upon clicking the Manage Themes Button on the General Config Screen a window will pop up with the controls for managing themes. The top of this window contains the basic controls to select, create, delete, import, export and save themes. Below these controls is a tab panel, each tab contains various theme items that can be modified. After any changes have been made to a theme you must click the Save button for them to be saved. If the save button is not clicked any changes will be lost.

### 9.1.1. Select Theme to Manage:

This popup menu provides 2 functions. The first is the ability to select an existing theme to manage. The second is the ability to type in a new name of a theme to create.

### 9.1.2. Create

To create a new theme first type in a unique theme name in the popup menu then click the Create button. This will create a new theme with default theme settings. You can then select the theme to manage it.

### 9.1.3. Delete

To delete a theme select the theme to manage from the popup menu and then click the Delete button. Deletes are permanent, after a theme has been deleted there is no way to recover it.

### 9.1.4. Import

The import and export functions provide a way to share themes or to create backups of your themes. To import a theme just click the Import button. A window will pop up asking you to select the theme file to import. Selecting a valid file will result in the new theme being inserted into the database. If the imported theme has the same name as an existing theme you will be prompted to decide what to do. You can overwrite the existing theme with the imported theme or if you choose not to overwrite the theme the program will add a number to the end of the theme name.

### 9.1.5. Export

The export function provides a way to save a theme to be shared with people or to provide a backup for yourself. To export a theme just select the theme from the popup menu and click the Export button. A window will pop up allowing you to select where to save the file to.

### 9.1.6. Save

Any changes to a theme that you wish to keep must be saved. To save a change make sure you have a theme selected, make your changes and then click the Save button.

# 9.2. Customizing the Theme

After creating or selecting a theme to manage you can customize the various items of a theme using the tab panel on the theme manager window. This tab panel has 4 tabs, Images, Buttons, Colors and Sounds. Select the appropriate tab for what you want to change on your theme.

## 9.2.1. Images

This tab panel is used to control the various standard images used within the program.

### 9.2.1.1. Background

Clicking the browse button or clicking the existing image under the Background heading will allow you to select a new background image for the program.

The default background included is 1920x1200 in size and set to not scale. For screens smaller than this resolution the application will only display the portion of the background equal to the window size. For screens larger than this the remaining window space will be filled with the default background color which can be selected on the Colors tab.

### 9.2.1.2. Scale Background

By enabling this feature the program will stretch or shrink your background image to fit the window. By default this setting is off. With the setting off only the portion of the background equal to your window size will be displayed.

### 9.2.1.3. Main Logo

To change the Main Logo you need 2 images. One image is the logo itself while the other image is a mask. The mask is a black and white image that tells the program what part of the logo image should be displayed and what part of the logo should be transparent. When you click the browse button you will be prompted to select both of theses images. First you will be prompted to select the logo image, after one has been selected you will be prompted a second time to select the mask. The images used for the logo must not larger than 522x190. Anything larger than that will be cut off from the display.

### 9.2.1.4. Countdown Images

The Countdown Images are displayed on the Race Screen during the initial countdown before a race starts. The number after the image name indicates at which second of the countdown the image displays. For example Countdown 0 is displayed when 0 seconds remain in the countdown which is when the race starts, Countdown 1 is displayed when 1 second remains in the countdown and Countdown 6+ is displayed when 6 or more seconds remain in the countdown. The image used for countdowns must not be greater than 250x108 in size. Anything larger than that will be cut off from the display.

### 9.2.1.5. Empty Racer

The Empty Racer image is used on the race screen for slots that do not currently have a racer. To change this graphic you need two images, the empty racer image and a mask image. The mask image tells the program what part of the empty racer image to display and what part to make transparent. When you click the browse button you will be prompted to select these two images, first the program will prompt for the empty racer image and then it will prompt you to select the mask image.

### 9.2.2. Buttons

On this tab panel you can change the appearance of some of the buttons within the program.

#### 9.2.2.1. Navigation Buttons

To change Navigation Buttons you must have 3 images. You will need the button image, the button image mask file and a mouse over image. The button image is the default image displayed and the mouse over image is what is displayed when the mouse is over the button. The mask file is a black and white file that tells the program what parts of the button image are to be displayed and what parts are transparent. When you click the Browse button you will be prompted to select these three images. The program will first prompt you for the button image, then for the mask image and finally for the mouse over image.

#### 9.2.2.2. Documentation Buttons

The Documentation Buttons are the 4 buttons on the Main Screen used to navigate to various parts of the documentation. Two images are required for these buttons, the button image and a mask file. The mask file tells the program what parts of the button to display and what parts are transparent. When you click the Browse button you will be prompted to select two images. The program will first prompt you for the button image and then for the mask image.

### 9.2.3. Colors

The list box on this screen is used to control the various colors within the program. To change a color just click the text of what you want to change. A color selection window will pop up allowing you to customize that particular color.

### 9.2.4. Sounds

While most of the application uses Text To Speech for sound there are 4 sound effects that can be customized. The Sounds tab allows you to select new sounds and to play the sounds within a theme.

## 9.3. Customizing the Race Report

The logo and club name on the Race Report is controlled by the Club Info settings on the General Config Screen.

The overall appearance of the Race Report is controlled by the race.xsl file located in the reports directory. If you are familiar with HTML and CSS and you change the colors, appearance and layout of new reports by modifying this file. It is a text file so any text editor can be used. The race.xsl file only applies to new reports, if it is changed existing reports will have to be regenerated.

## 9.4. Customizing the Racer Inventory Report

The logo and club name on the Racer Inventory Report is controlled by the Club Info settings on the General Config Screen.

The overall appearance of the Racer Inventor Report is controlled by the racerinventory.xsl file located in the reports directory. If you are familiar with HTML and CSS and you change the colors, appearance and layout of new reports by modifying this file. It is a text file so any text editor can be used. The racerinventory.xsl file only applies to new reports, if it is changed existing reports will have to be regenerated.

# 9.5. Changing the Logo on the Splash Screen

When the application first launches there is a splash screen that appears with the Flip Side Racing logo before the main window pops up. This logo is loaded from the FlipSideRacingLogo.jpg file in the theme directory. Overwriting this file with your own logo will cause it to be displayed on the splash screen when the application launches. The image should be 520x190 or smaller in size. If it is larger than that the image will be cut off.

# Chapter 10. Advanced Topics

This chapter has sections detailing some of the more advanced things that can be done or changed with the program.

## 10.1. Adding Options to the Edit Racer Screen

When creating or editing racers on the Edit Racers Screen the pop up menus under Race Car Specific Information can be changed. These options are controlled by various parts of the program. The different spots used to change the options are listed below.

- **Scale, Chassis, Class and Motor:** These pop up menus are controlled by the raceparts.xml file. You can add or remove options from these menus by editing the raceparts.xml file with a text editor. Please make sure to keep the file properly formatted and do not remove the <>none<> entries for each option.

- **Make and Model:** The make and model options are controlled by the database. To add options either go to the Edit Racers Screen and type text into the Make and Model fields and hit enter or you use the Edit Make/Model utility located on the General Config Screen to add or delete makes and models.

- **Crystal:** The options available for the Crystal pop up menu is controlled by the crystals.xml file. You can add and remove options for the menu by modifying this file with a text editor. The Crystal pop up menu is also a combo menu, instead of choosing an option in the menu you can type text for whatever crystal you are using. Items entered through the menu are not saved to the menu though, you must edit the crystals.xml file for it to be a menu option.

## 10.2. Text to Speech

The software uses your Operating Systems built in Text To Speech capabilities to announce various things during a race such as time remaining, ranks, best laps and the count down.

- MAC OS X: On a Mac the Text To Speech settings are located in the System Preferences in the System heading under the Speech option. Within this preference pane you can change things such as the voice used and speed of the speaking rate.

- Windows: In Windows to configure Text To Speech settings you must go to your control panel and then go to the Speech applet. Within this applet you can choose different voices and change the speed of the speaking rate.

- Linux: For Linux the software is using kttsd for the Text To Speech. You must install and configure kttsmgr management utility and an appropriate Text To Speech engine for Text To Speech to operate in Linux. Festival is a common TTS engine used in Linux and will work with kttsmgr.

The default voices in some versions of the various operating systems do not sound very good. You can get third party voices that will work and sound much better. Here are a few options.

- Microsoft Mary and Mike English voices for free can be downloaded here, www.imptec.com/SpeechXP.exe [http://www.imptec.com/SpeechXP.exe].

- A list of various third party voices that you must purchase can be found here, www.microsoft.com/speech/evaluation/thirdparty/engines.mspx [http://www.microsoft.com/speech/evaluation/thirdparty/engines.mspx]. Some of these companies such as AT&T and Cepstral have voices that will also work in Mac and Linux.

- Free French and German voices for Windows can be downloaded from here, www.microsoft.com/reader/developers/downloads/tts.aspx [http://www.microsoft.com/reader/developers/downloads/tts.aspx]. You must install the Microsoft Reader from here, www.microsoft.com/reader/downloads/pc.aspx [http://www.microsoft.com/reader/downloads/pc.aspx] before installing the French and German voices.

Various clubs have been happy with the sound of the third party AT&T voices.

# 10.3. Translations

It is possible to translate the speech in the program to another language. By default the americanenglish.xml file located in the translations directory is used. The file is well documented and can be edited with a text editor to create a new translation. After editing the file save it with a new name reflecting the language that the text was translated to. After creating a new translation you will have to select the translation through the Speech File option on the General Config Screen. If you are translating the speech to a different language you will need to change your Text To Speech [TTS] settings to a language other than English.

Two translations are already included with the software, German and French. They are also located in the translations directory.

# 10.4. Change Racer Text Color

To change the racer text color used on the Race or Statistics Screens refer to the Change Text Color section of the General Config chapter.

# 10.5. Graph Line Colors

To change the racer graph line colors used on the Statistics Screen refer to the Change Text Color section of the General Config chapter.

# 10.6. Increase the Total Number of Racers Per Race

The total number of racers allowed per race is configurable. Refer to the GUI Settings section located on the General Config Screen to modify this limit.

# 10.7. Upgrading the Software

This software is under active development, it is recommended to download the latest copy of the software from www.flipsideracing.org [http://www.flipsideracing.org]. While there is no automated process for upgrading to the latest version of the software upgrading is fairly simple. After downloading the latest version of the software you can copy the FlipSideDB and preferences.xml file from your old copy of the software to the new. Unless you have manually edited other files such as the xml files used by the software those two files are all that are needed from the previous version.

# 10.8. Rename a Race

Currently the software does not provide a way to rename a race after it has been ran. But since the race data is stored in an SQLite database you can use a SQLite database management tool to modify any information

in the database directly. If you do modify the database directly it is recommended that you make a backup copy first.

# 10.9. Database Information

All of the racer and race information is stored in an SQLite database. This database is located in the program directory and named FlipSideDB. This file must exist for the software to operate.

# 10.10. Using a Secondary Lap Counter

Two lap counters can be used at once with this software. This allows you the flexibility to do rally or drag style timing or use 2 lap counters to cover a wider track. To configure a secondary lap counter refer to the Secondary COM Device Selection section of the General Config Screen.

# 10.11. Keyboard Shortcuts

There are a few keyboard shortcuts available to perform actions within the software.

If you want the software to announce the current ranks of all the racers hit the "r" key on the keyboard. You can also start a race by hitting "s", end a race by hitting "e", or pause a race by hitting "p".

# 10.12. Using Generic RFID Tags with the Kyosho IC Lap Counter

Generic RFID tags must be initialized before they can work with the Kyosho IC lap counter. A separate program called Kyosho RFID Tag Init has been created to initialize generic tags and can be downloaded from the www.flipsideracing.org [http://www.flipsideracing.org] website.

**WARNING: Do not initialize Kyosho tags such as those on the dNaNo, if you do they will probably no longer work with the Kyosho software. Only generic RFID tags need initialized.**

# 10.13. Troubleshooting Errors

In the event that you are encountering a bug please contact us for support. If the problem is resulting in an error message or crash the program will attempt to send the information about the error automatically. If it can not send the information it will create a file called dump.txt that contains details about the error. Please send us this information along with any details you can provide about what occurred to help us with troubleshooting the problem.

# Chapter 11. Support

If you need additional help with this software you can either contact us directly by using the Contact Link on the main website at www.flipsideracing.org [http://www.flipsideracing.org] or visit the forum hosted by www.mini-zracer.com [http://mini-zracer.com/forums/forumdisplay.php?f=150]. You will need to register in order to access the support forum.

We welcome any constructive feedback.