

SlotTrak Documentation

TABLE OF CONTENTS

Last Update: 07/14/06 9:25 PM

[System Requirements](#)

[Software Install](#)

[General Information](#)

[Computer Input / Output](#)

[Sensors & Wiring](#)

[Relay Output](#)

[Track Call](#)

[SlotTrak Menu Options](#)

[File](#)

[Settings](#)

[General Options](#) Tab

[Driver Database](#) Tab

[Car Classes](#) Tab

[Track Options](#) Tab

[Input Options](#) Tab

[Output Options](#) Tab

[Display Options](#) Tab

[Scoring and Reporting](#) Tab

[Sounds](#) Tab

[View/Print Qualify, Race, Dash, SSD Race Results](#)

[Scoring and Placing for Multiple Races](#)

[Exit](#)

[Session](#)

[Practice](#)

[Qualify](#)

[Race \(Run in each Lane with Rotations\)](#)

[Dash \(Counted one segment Race - no Rotation\)](#)

[Scalextric Sport Digital Race](#)

[Race-off \(Match race between 2 drivers\)](#)

[Help](#)

[About](#)

[Register](#)

The SlotTrak program functions as a lap counter and lap timer for any scale slotcar track, and is also used for RC racing. It will operate on any 1 to 8 lane track. Input interfaces include sensor connected to the parallel port, serial ports, and joystick ports, as well as complete input solutions TrakMate for Windows cards, Scalextric RMS, and Scalextric Sport Digital racing system. In addition to simple counting and timing, it will run various types of races complete with lane rotations and control of track power and optionally individual lane power control. The timing resolution is 1 millisecond. Times are displayed in milliseconds or seconds. The time display option is set in SlotTrak configuration. **All printing is directed to the default printer.** You must have a default printer defined to print out of SlotTrak.

All race, dash, and qualifying results are saved in files for future reference. SlotTrak creates sub-folders under the application path (program install folder). Folders are created for track configuration files, race results files, reports generated from race results, any pictures which may be displayed, and sound files. The sound files available for power on and off, time remaining, car sounds, etc are saved in a folder named 'Sounds', and chosen in the SlotTrak configuration.

Lap counting and timing is based on the minimum lap time defined in the program. It is important to specify a minimum lap time that applies to the class of car that is in use. When a car crosses over the sensor in the track, SlotTrak computes a lap time for that lane. **If the computed lap time is less than the minimum lap time, the lap is NOT counted.** This technique is used so riders (cars that come out and go into a different lane) crossing the lap count sensor will not cause an incorrect lap count. It is true that if a rider triggers a lap count and the computed lap time is greater than the minimum lap time, the lap will count. But chances are that subsequently, when the car in the proper lane crosses the lap count sensor, the lap time will be less than the minimum lap time because of the previous trigger caused by the rider. The lap count will not be incremented and the lap count ends up being correct. Of course, there are some scenarios that could happen that would cause lap count increments for both the rider and the car in the proper lane, but the probability of that happening is very small. There is no foolproof method. You can get away with just leaving the minimum lap time at the lowest setting and SlotTrak will count and time correctly, but it will not resolve other sensor triggers caused by riders (incorrect triggers).

System Requirements

[Back to Table of Contents](#)

The recommended minimum computer requirements are:

- Windows 95, 98, ME, 2000, NT, or XP. See note on next bullet...
- USB port may be used for output control using Phidget relay cards, or USB to Serial adapters to communicate with TrakMate card or Scalextric RMS or Digital systems. Windows 98SE, ME, 2000, NT or XP required for USB support.
- 200 MHz processor minimum. Windows 2000, NT, or XP require 500 MHz processor minimum (1 GHz processor speed recommended)
- DirectX (minimum version 8) is **required** to run the program. Windows 2000, NT and XP do a better job of supporting DirectX.
- Minimum of 64 Mb RAM for Windows 95, 98, and ME – 256 Mb RAM if running 2000 or NT, 512 Mb for XP.
- Parallel Port, Joystick Port, Serial Port(s), Scalextric RMS or Digital System (SSD), or TrakMate card may be used for lane trigger inputs.
- Minimum screen resolution 800 x 600 with small fonts.

Software Install

[Back to Table of Contents](#)

Download the zip files from the website (<http://www.slottrak.com>). Create folder 'temp' on the install drive (ex. c:\temp) and unzip the contents of the ZIP file(s) to this folder. Run setup.exe from the temp folder. Follow the instructions on the screen. Accept all of the default settings. SlotTrak software will be installed under the Program Files Folder, and added to the Start – Programs list. If you would like a shortcut icon on the desktop, go to Program Files – SlotTrak, right click on SlotTrak.exe and choose 'create shortcut', and move the created shortcut to your desktop. You may then delete the contents of the temp folder if you wish. Those files will no longer be required.

From SlotTrak CD – if autorun does not start automatically, run cdstarter.exe on CD. Choose from the available options to install the software, install sounds, or use some of the utilities or other options on the CD.

There are two SlotTrak executables that may be installed. The executable ending with 'C' (for example, SlotTrak700C.exe) is the commercial version. The commercial version includes the lane time sell feature and requires a different registration code than the normal version and costs more. Each version is identical in all other functions.

Computer Input / Output

Sensing: SlotTrak is designed to interface to any device that provides TTL level signals (0 or 5 volts) or switch closures, such as photocell receivers, reed switches, deadstrip, etc. or RS232 level signals (-5 to -15 volts / 5 to 15 volts). It interfaces by Parallel port (recommended), Joystick port, or serial port(s). It also interfaces via serial or USB port to the **TrakMate** hardware, **Scalextric Race Management** System hardware, or **Scalextric Sport Digital** system hardware. The required cable to connect the Scalextric Sport Digital (SSD) can be purchased at: richg@girling.net

Note: If deadstrip is used, make sure you isolate track power from the deadstrip so track power is not fed back into the computer! Bad things happen when this occurs.

If using photocells, place them at a track position that ensures that the car will pass over and block the sensor. There are two ways to mount the photocell receivers:

1. Vertically – receiver under the track surface. Holes drilled in the track allow light to reach the receiver. Light sources are mounted above the track and supply the photo receiver with enough infrared to keep them in a common state. When the car passes over the receiver, the light to the photocell is blocked. This causes a change of state in the receiver. This method is more robust, it is not affected by guide flag depth, length, composition, or color. NOTE: Florescent lights will NOT work as a light source!
2. Horizontally – across the slot. This option may be used for 1/24 and 1/32 cars only (cars with guide flags). A photo emitter and receiver are mounted on each side of the slot (buried under track surface). The guide flag passing through the slot blocks the emitter and causes a change of state in the receiver. No amplification of the photo emitter is required because of the small distance between emitter and receiver. This is a very clean install. There are no obstructions caused by overhead light sources.

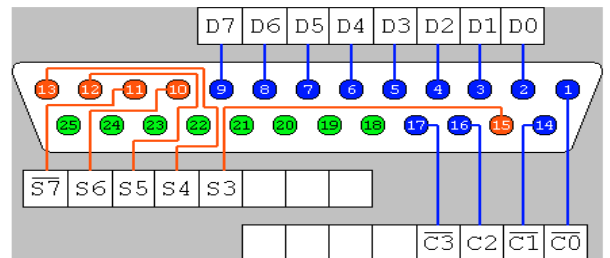
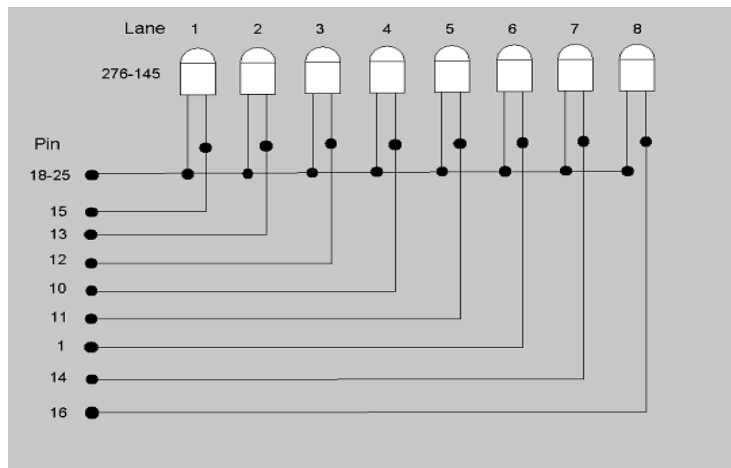
Relay control: The Parallel port or serial port may be used to control relays. Also, **Phidget** USB cards models 0/0/4, 8/8/8, and 0/16/16 may be used to control multiple output relays, or the **TrakMate** card (serial or USB with an adapter) can be used to control the track power relay ONLY.

Sensors & Wiring for Photocells

For the do-it-yourselfers, Radio Shack part # 276-145 (\$1.50 ea.) is recommended for the photocell receiver. You may use emitter/receiver photocells for triggering also, if the distance between the emitter and receiver is less than 4 inches. The emitter Radio Shack part # is 276-143 (\$2.00 ea.). Incandescent light bulb(s) work well for the emitter source. NOTE: Florescent lights will NOT work as an emitter source!

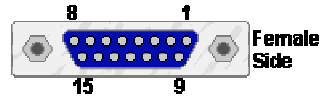
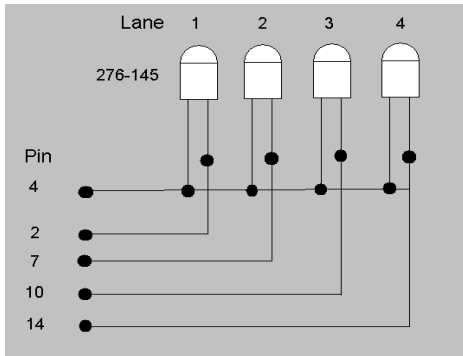
The longer lead on the photocell emitter/receiver goes to ground. The suggested wiring for the **receiver** photocells follows. Pin definitions are user-definable in SlotTrak. Parallel port: input pins 18-25 are ground, input pins are 1,10,11,12,13,14,15,16,17. Pins 2-9 are reserved for outputs for relay control. Joystick port: pins 2,7,10,14 may be used, pin 4 is ground. Substitute reed relays for the receivers in the diagram for wiring reed relays. For reed relays, it does not matter which side of the relay is connected to each pin (there is no 'longer' lead).

Parallel port wiring (8 lanes max)



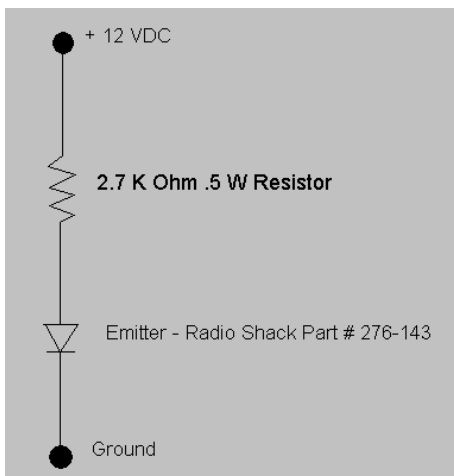
25-pin Female D-Type Connector

Joystick Port wiring (4 lanes max)



100K Ohm resistors are required between pins 1 and 3, and pins 1 and 6, so the computer is fooled into thinking it has functional joystick(s) on the joystick port.

Emitter Wiring



The schematic shown above is a starting point for the 'across the slot' emitter/receiver setup. By limiting the current to a very low value (approx. 4.4 milliamps above), the emitter signal will not penetrate the guide flag as it passes by and a valid trigger will be generated. This circuit works well on our tracks. Some guide flags do not block the emitter as well as others due to material, color, etc. so some experimentation may be required. If the emitter is at a greater distance from the receiver (above the track method), then additional current in the emitter (a lower resistance value) may be required. Measure the voltage between the appropriate port pin and port ground. Different computers will have different port characteristics so some fine-tuning of the resistance value may be required. A voltage of at least 2.4 Volts is required for TTL high, and a voltage of .8 volts or less is required for TTL low. Measure both blocked receiver and unblocked receiver states to verify the voltage values. Try different guide flags when measuring each state also. Limit the current through the emitter to 30 milliamps or less. Calculate the resistor wattage rating by:

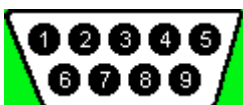
$(\text{No load voltage}^2) / \text{Resistance in Ohms}$

The computed wattage should be significantly less than the resistor power rating, ideally 50% of rated wattage.

Serial Port Pin Assignments

[Back to Table of Contents](#)

The serial port(s) may be used for output control, lane trigger input and track call input. Two outputs may be defined per serial port. The female 9-pin definition is shown.



The pin numbers are stamped on the connector. Pin 4 (DTR) and Pin 7 (RTS) are the two output pins that may be used to control a relay. Pin 5 is ground. The output of the serial port is RS232. The voltage specification on RS232 is -5 to -15 volts for a false condition, 5 to 15 volts for a true condition. The output of these pins do not go to zero volts, so make sure the polarity is correct when connecting to a solid state relay.

Track call input or lane trigger input can be defined on pins 1 (Carrier Detect), 6 (Data Set Ready), 8 (Clear To Send), or 9 (Ring). Other pins may be used, but produce triggers that are not distinguishable in the computer. Therefore, certain combinations of pins cannot be used together. SlotTrak will inform you if you use an improper combination.

Port Pin Assignments Table (Suggested only)

Description	Parallel Port Pin Assignment	Serial Port Pin Assignment	Joystick Port Pins
Lane 1 Trigger	15	1 (port 1)	2
Lane 2	13	6 (port 1)	7
Lane 3	12	8 (port 1)	10
Lane 4	10	9 (port 1)	14
Lane 5	11	1 (port 2)	NA
Lane 6	1	6 (port 2)	NA
Lane 7	14	8 (port 2)	NA
Lane 8	16	9 (port 2)	NA
Power Indicator	3 (use the power relay to eliminate the need for an additional relay here)	7 (Port 1)	NA
Power Relay	4	4 (port 1)	NA
20 Second light	5	NA	NA
10 Second light	6	NA	NA
5 Second light	7	NA	NA
Power on warning	8	NA	NA
Track Call	11 – tracks that are 4 lanes or less 17 – tracks that are 5 or more lanes	For less than 8 lanes, use available pins 1,6,8, or 9	NA

Zero-Port function

Some users may want to use additional resistors to protect the port circuitry on the computer. When resistors are incorporated, polarity may be reversed at the port pins depending on where in the circuit the leads to the port pins are located. For this reason, a 'Zero Port' function is required when configuring SlotTrak for use of the Parallel port or Joystick port only. Zeroing the port defines the no-trigger state of each lane pin input and track call input. As a result, it makes no difference if the polarity is reversed when wiring. SlotTrak will handle the lane triggers and track call properly. The zero port function is only required once, the results are permanently saved in a configuration file. You do not have to perform the Zero Port function every time SlotTrak is executed.

Relay Output Control

[Back to Table of Contents](#)

Track power control is required. Optionally, individual lane power, start sequence lights or time remaining lights, power on indicator, and power on warning outputs are also available. If individual lane power is implemented, a master track power relay is not required.

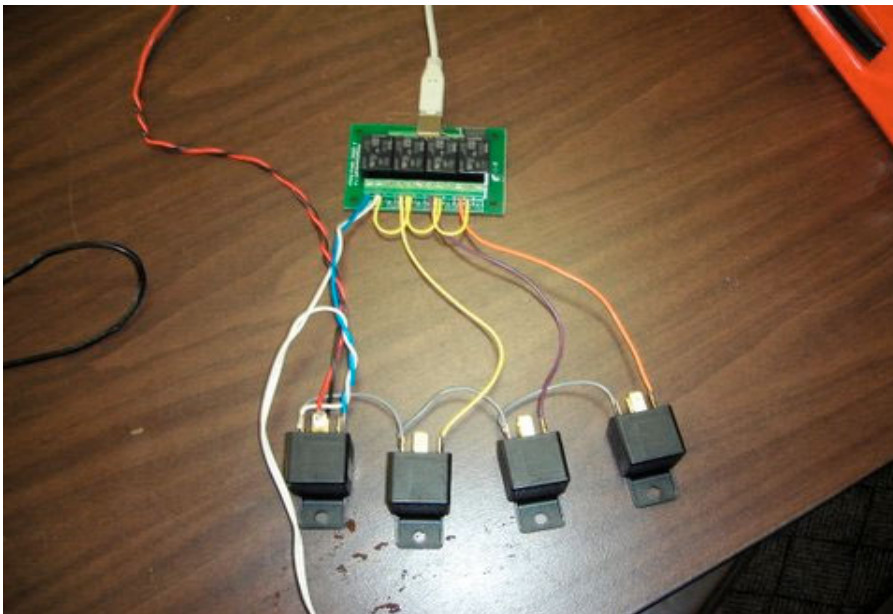
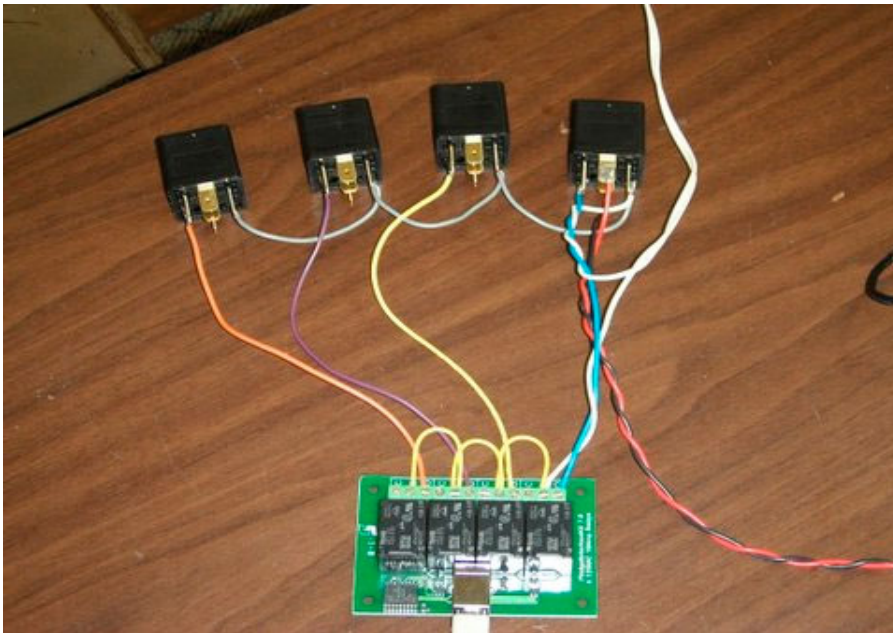
Parallel port or serial port control: A solid state relay (SSR) may be used as a pilot relay to control an electro-mechanical power relay to the track power supply. I recommend the Crydom series DC60, model DC60S7. Make sure the relay has a ~3 Volt minimum actuation level if using with the parallel port, serial ports run from -5 to -15 VDC to 5 to 15 VDC. Some parallel ports only provide slightly over 3 volts at the pin, even though in theory it should be 5 volts. SSR's require minimum amperage across the load side of the relay to close completely. Make sure the load meets those requirements. A relay coil on an electro-mechanical relay will certainly meet those

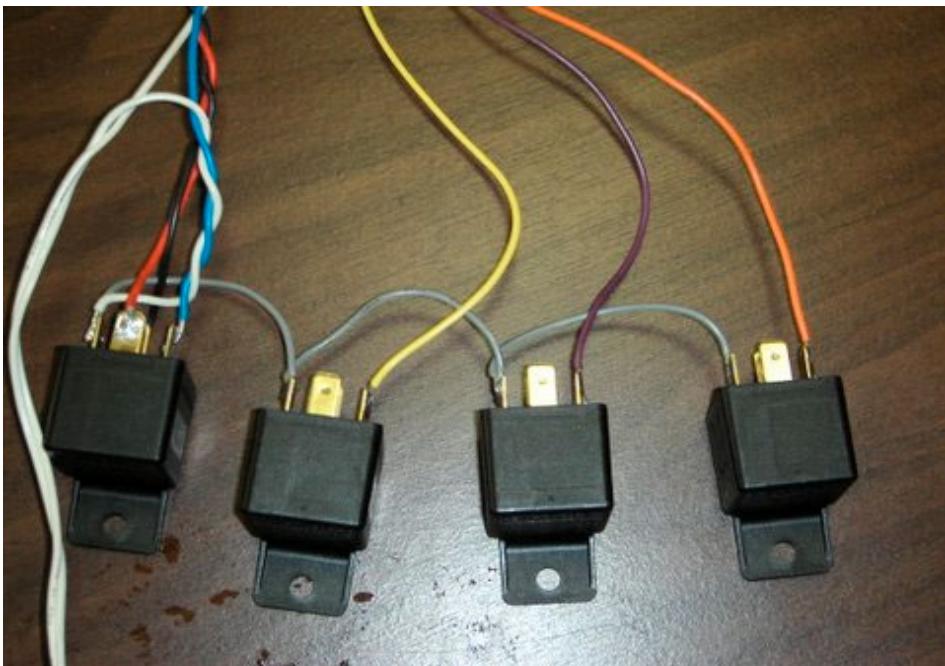
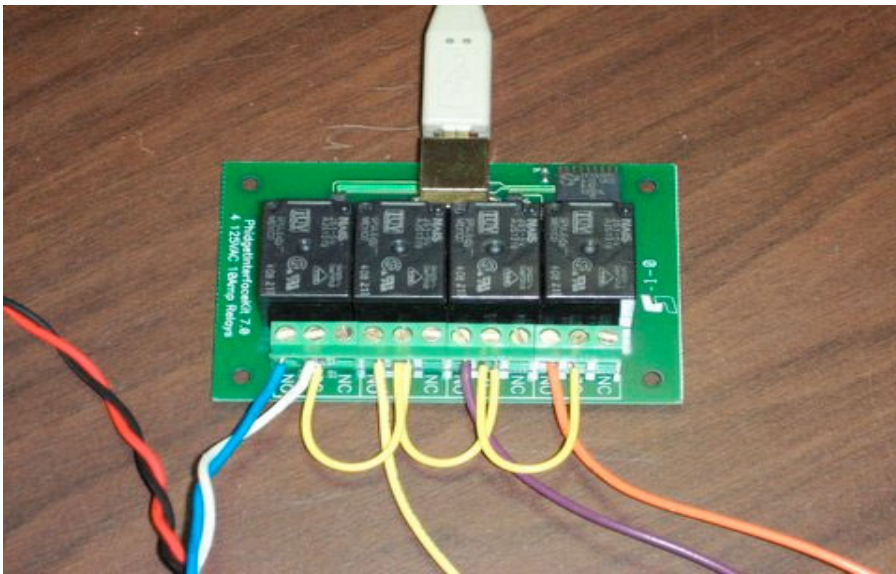
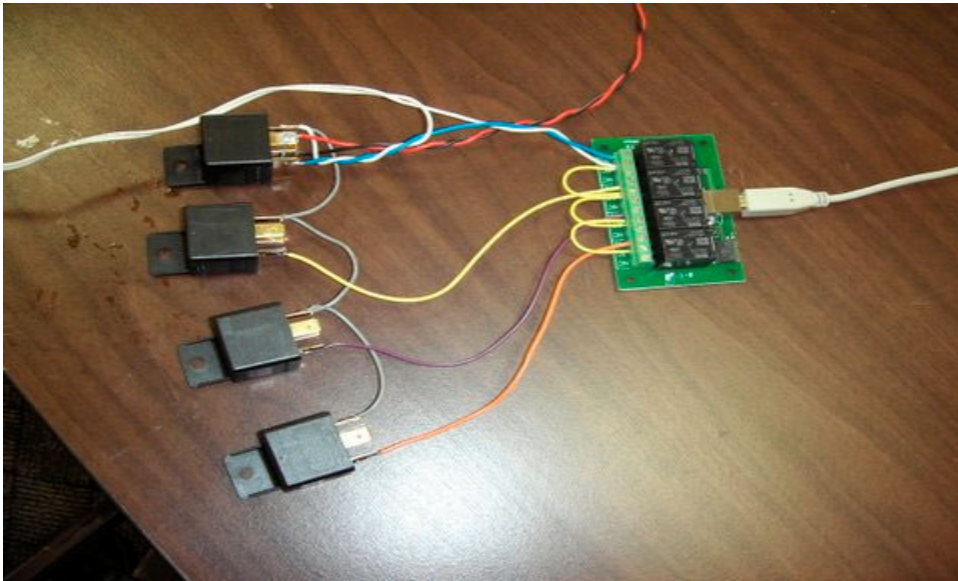
requirements. Again, make certain the current draw on the load side of the power relay meets the minimum requirement specified by the relay manufacturer. Independent lane power will use the same output pins that are available from the Parallel and serial port(s). You can drive either DC or AC load-side Voltage with a relay. If controlling DC voltage loadside, the FSMRA website has information on the relay selection and part number.

Relay wiring pin requirements are specified in Settings – Computer I/O Settings Tab. Ground is any of pins 18-25 on the parallel port, and pin 5 on the 9-pin serial port. Pin outs are user definable.

Phidget USB card controller: Use the 0/0/4 card (5 amps max) to directly switch loads under 5 amps or as pilot relays to control higher load amperage relays. Both the 8/8/8 and 0/16/16 have TTL level outputs to be used to control solid state relays which in turn can be used as pilot relays to control power relays (see above for some specs on the SSR's). All three of these cards can be plugged into the USB port, and require Windows 98SE and up (2000, NT or XP recommended). The SlotTrak install includes the drivers for all three of these cards. Plug the card(s) (any combination, up to a max of 4) into the USB port before running SlotTrak and it will auto-recognize the cards. This is only done once at startup. If you make a change to the Phidget card configuration, restart SlotTrak.

Phidget Card Wiring Example Photos





TrakMate Card: Specify the com port number used to connect the TrakMate card to the computer. The card can be connected by using a standard 9 pin serial cable, or a USB to serial adapter can be used. If the standard 9 pin cable is used, normally com port 1 or 2 is required. If USB, a virtual driver is installed with the USB adapter and the com port number will normally be 3 or 4. You can use the TrakMate card for master track power control only. The card outputs 0 or 12 VDC for relay actuation control. If individual lane control or any of the other SlotTrak outputs are selected, either the parallel port, serial port, or Phidget cards may be used in conjunction with the TrakMate card to provide the additional control outputs. Initialization of the TrakMate card is done when SlotTrak is started, and is also done each time the settings screen is visited in case a TrakMate setting option has been changed.

Track Call

[Back to Table of Contents](#)

Track call provides remote program control capability. Momentary push buttons may be used to provide a trigger to SlotTrak. The minimum closure time of the track call switch is 100 mSec. Function keys F8, F9, F10, F11, and F12 and the spacebar are also mapped to the Track call interrupt. The resulting action will depend on the current function of the program. After a track call trigger is received, there is a 4-second lockout before another track call trigger is acknowledged. Track call stations for corner workers are handy – they can pause the race if required. For example, if racing and power is currently on, a track call trigger will cause the power to be turned off. A subsequent track call trigger would turn the power back on. The required pin settings are defined in the Settings – Computer I/O Settings Tab. Run one side of the switch to the specified pin, the other side of the switch to ground. Parallel port grounds are pins 18-25, Serial port ground is pin 5. The track call pin is also user-definable. Track call inputs are also available on the TrakMate card and the Scalextric RMS system. If using the TrakMate track call switch input, an additional option is selectable in SlotTrak to define the switch sense (Normally open vs. normally closed). Track call is not available on the Scalextric Sport Digital system because SlotTrak cannot turn the power off on the SSD for possibility of missing a lap count when a car coasts over the sensor after power is turned off. The serial connection to the SSD is listen only, commands cannot be issued to the SSD.

Note on Parallel port pin selections (if applicable): The parallel port is actually divided into 3 ports, the Data (output control) (pins 2-9), Status (input) (pins 15, 13, 12, 11, 10), and Control Port (input or output) (pins 1, 14, 16, 17). The previous section on parallel port wiring shows the parallel port pin locations. If you're track is 4 lanes or less, it is more efficient to keep all of the lane and track call inputs on the status port, which is the default for 4 lanes. Therefore, if you are using the parallel port input for track call on a track of 4 lanes or less, it is best to use pins 10, 11, 12, 13, or 15. The default settings define pin 11 as the track call input for a track with 4 or less lanes.

Notes on Windows navigation

Some comments on navigating through the various SlotTrak screens:

1. If you hold the cursor/pointer over a command button or data entry/selection field, there may be a tool tip displayed which may help explain more about the option. You do NOT have to click on the option for the tool tip to display.
2. When command buttons have a letter underlined in their caption, pushing the 'Alt' key and the underlined key character will execute the command option just like clicking on it with the mouse.
3. You may resize windows by clicking and dragging the corner of the window. Some restrictions apply. For example, SlotTrak will not resize the contents of the display form for any session window where the power is ON. You must have the power OFF to resize a session window (Practice, Race, Qualify, etc.) properly.
4. For the configuration and setup screens, SlotTrak will save the size and location of the screen when the screen is unloaded. The next time you come back to that screen, it is resized to the saved settings.

File Menu

Under the File main menu, are the Settings, Results, Picture Show, and Exit functions.

Settings Menu

[Back to Table of Contents](#)

Set track configuration and options, specify a driver master list, determine port addressing and pin requirements, and specify appearance. The settings are saved in file TrakConfig.cfg in the Configuration sub-folder.

General Options Tab

[Back to Table of Contents](#)

The screenshot shows the 'SlotTrak Active Configuration Settings' window with the 'General Options' tab selected. The window has a menu bar with 'File' and a toolbar with standard window controls. Below the menu bar are several tabs: 'General Options', 'Driver Database', 'Car Classes', 'Track Options', 'Input Options', 'Output Options', 'Display Options', 'Scoring + Reporting', and 'Sounds'. The 'General Options' tab is active and contains the following settings:

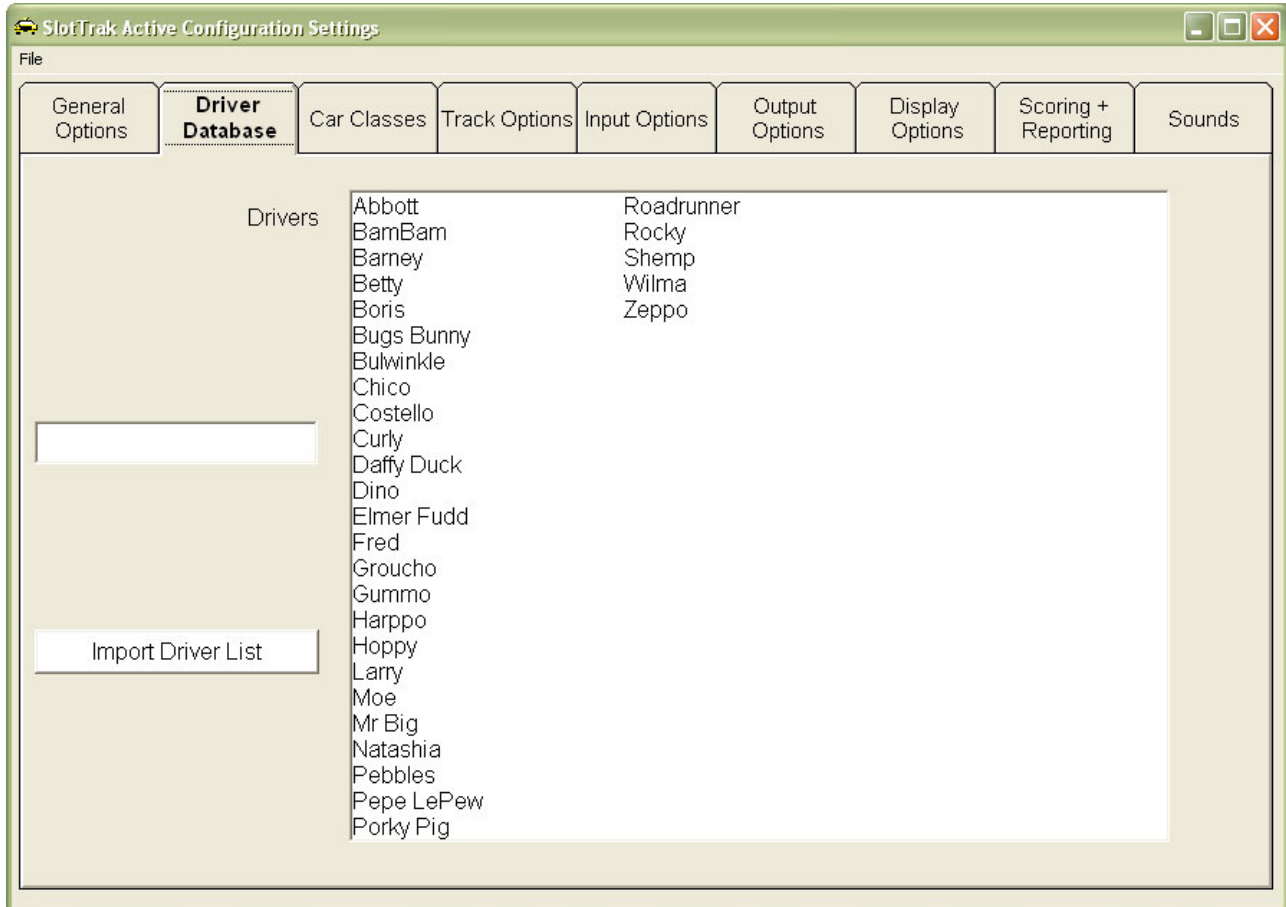
- Default Minimum Lap Time (Seconds): 0.500
- Default Coast Time (Seconds): 2.500
- Default Qualify Segment Length (Seconds): 30
- Default Qualify Segment Length (Laps): 5
- Default Timed Race Segment Length (Seconds): 90
- Default Timed Race Between Segments Time (Seconds): 90
- Default Counted Race/Dash/SSD Race Number of Laps: 10
- Race Display Toggle Delay (Seconds): 3.000
- Display Laptimes in milliSeconds:
- Display Laptimes in Seconds:
- Default to STRAIGHT Rotation:
- Default to EUROPEAN Rotation:
- Run in Demo Mode - Lane triggers input from number keys 1 to 8:

1. Set the default minimum lap time. If a car class is not specified, this is the minimum lap time that will be initially defined in the session setups. The min. lap time can still be redefined on the fly in each session setup.
2. Set the default Coast time. This is the time period after power is turned OFF to continue to monitor for lane triggers (cars coasting across the lane sensors after power is turned off).
3. Set the default qualify segment length in both seconds and laps. Each time a qualify session is setup the segment length in seconds and laps will be initially set to this default value.
4. Choose to default to qualifying by time or laps. This can be defined in the qualifying setup screen also.
5. Set default race segment length. Each time a race session is setup the segment lengths will be initially set to this default value.
6. Set default time between race segments. Each time a race session is setup the off time between segments will be initially set to this default value. Minimum value is 20 seconds.
7. Set default number of laps for Dash, Counted Race, or SSD Race.
8. Set the Race Display Toggle Delay. This is the time that SlotTrak will wait before switching to the field summary display screen when a race segment ends.
9. Choose the format for displaying time values, either in milliseconds or seconds.
10. Choose the default lane rotation. More on rotation in the race setup section of this manual.

11. Optionally run in Demo mode. You can simulate lane triggers by using number keys 1 to # Lanes. If you choose to run in demo mode and you are using the parallel port for input sensors, SlotTrak will not force you to zero the ports. You should do this anyway because you may get random triggers from the parallel port when in demo mode that may affect track call.
12. Save lap times, when checked, will instruct SlotTrak to save all lap times from Race, Dash, SSD Race, Qualify, and Race-off sessions in a file for future review.

Driver Database Tab

[Back to Table of Contents](#)



This is the master list of available drivers on this track. The drivers may then be selected from this list for any of the sessions where driver names are specified. Click Import Driver List to add drivers from a text file which may contain a list of drivers (one driver per line in the file). **The maximum number of drivers is 200.**

SlotTrak Active Configuration Settings

File

General Options | Driver Database | Car Classes | **Track Options** | Input Options | Output Options | Display Options | Scoring + Reporting | Sounds

English Units
 Metric (SI) Units

Display Scale Speed
 Scale:

Number of Lanes:
 Number of Track Sections:

Track Name/Description:

Disable ALL Output options

Disable	Lane	Color	Length (ft.)	Seed
<input type="checkbox"/>	1	Blue	61	1
<input type="checkbox"/>	2	Red	62	2
<input type="checkbox"/>	3	White	62.5	3
<input type="checkbox"/>	4	Yellow	63	4

Use Lane Number for Lane ID instead of Color Name

1. Choose the scale, T-Jet (1/72), HO (1/64), 1/32, or 1/24.
2. Choose to optionally display scale speed (mph or kph) in Practice and Qualify sessions. Race sessions do not display scale speed.
3. Define the number of lanes on the track.
4. Define the number of track sections. This is used to compute a virtual track position at the end of each race segment (in case a driver forgets where they ended the previous segment that they participated in). The calculation is based on the ratio of the elapsed time between the power off and the last lane trigger for each driver and the average lap time computed at the end of the segment for that driver.
5. Choose the color for each lane.
6. Define the lane length in feet or meters for each lane. This is used to compute scale speed, and is also used to determine segment winners when there is more than one car with the same number of laps. The segment win tiebreaker goes to the car on the longest lane.
7. The seed defines what lane is the #1 seed and so on. When setting up a race, you will have the option of importing saved qualifying sessions, and the driver-lane pairing is done based on the seed values defined here. The top qualifier would be automatically placed in the lane with the #1 seed and so on.
8. Define lane labeling. If 'Use Lane Number' is checked, the lanes will be referred to by their lane number. If unchecked, lanes will be referred to by color name.
9. Choose English or metric units. If metric, speeds will be displayed in kph instead of mph.
10. Enter a location to make it easier to identify the facility used when reporting race information.
11. Individual lanes may be disabled by checking the boxes to the left of each lane number. If the lane is disabled, it will not be available for any SlotTrak sessions.

Input Options Tab

[Back to Table of Contents](#)

The screenshot shows the 'Input Options' tab in the 'SlotTrak Active Configuration Settings' application. The window has a menu bar with 'File' and a toolbar with standard window controls. Below the menu bar are several tabs: 'General Options', 'Driver Database', 'Car Classes', 'Track Options', 'Input Options' (selected), 'Output Options', 'Display Options', 'Scoring + Reporting', and 'Sounds'. The main content area is divided into sections. At the top, there is a checkbox for 'Enable Track Call Input' which is checked, and a dropdown menu set to 'Parallel Port pin 11' with a 'Track Call' label. Below this is a sub-tabbed interface for sensor input ports: 'Parallel Port', 'Joystick Port(s)', 'Serial Port(s)', 'Scalextric', 'TrakMate', and 'DS Electronics'. The 'Parallel Port' sub-tab is active. It contains a warning message: 'WARNING - if you use pins 1, 14, 16, or 17, the BIOS setting for the parallel port MUST be 'Normal' or 'AT / PS2 Compatible'. If not, these pins will NOT work! If you require these pins (6-8 lanes) and do not have the correct BIOS option available, purchase a parallel port card add-on and use that port instead of the port on your motherboard.' Below the warning is a table for pin assignments:

Lane	Color	Pin #
Lane 1	Blue	15
Lane 2	Red	13
Lane 3	White	12
Lane 4	Yellow	10

Below the table is a button labeled 'Set Default Input Pin Assignments'. At the bottom of the sub-tab, there are two more controls: 'Parallel Port Address (Hexidecimal)' with a text box containing '0378', and 'Establish 'Neutral' Parallel Port Reading' with a button labeled 'Zero Port'.

1. Enable/Disable Track call and define track call input. This can be defined as Keyboard only.
2. Select the sensor input port. 4 lanes Maximum when using the joystick port. 4 lanes maximum per serial port. USB adapters will NOT work for input sensing. They do not offer individual pin control/sensing.

Parallel Port Configuration Tab

1. Parallel Port pin assignments: Specifies which pin is used for which lane and control output. Reference your settings when wiring your sensors and relays!
2. Parallel Port Address: **Entered in Hex**, the default value originally appears in this entry and applies to most systems. If your system uses a different address for the parallel port, change this value. You can view the current defined address either by going into your computer BIOS at startup, or using the Windows device manager.
3. Zero Port: clicking this button will 'calibrate' your system to the no trigger state on the track for each lane. Make sure to follow the instructions that appear when this function is executed – sensors must be active! If you run SlotTrak and continuous triggers occur, it's a good bet that you did not perform the zero port properly. The zero port values are stored in file 'IOPortconfig.cfg' in the Configuration sub-folder.

Joystick Port Configuration Tab

Parallel Port	Joystick Port(s)	Serial Port(s)	Scalextric	TrakMate	DS Electronics
Joystick Port Pin Assignments					
<input type="text" value="0201"/>	JoyStick Port Address (Hexidecimal)	Lane 1	Red	<input type="text" value="2"/>	Pin #
		Lane 2	Green	<input type="text" value="7"/>	
<input type="text" value="Zero Port"/>	Establish 'Neutral' Joystick Port Reading	Lane 3	White	<input type="text" value="10"/>	
		Lane 4	Blue	<input type="text" value="14"/>	Pin 4 = Ground
<input type="button" value="Set Default Input Pin Assignments"/>					

1. Joystick Port pin assignments: Specifies which pin is used for which lane. Reference this list when wiring your sensors!
2. Joystick Port Address: **Entered in Hex**, the default value originally appears in this entry and applies to most systems. If your system uses a different address for the joystick port, change this value.
3. Zero Port: Refer to the Parallel port Zero port definition.

Serial Port Configuration Tab

Parallel Port	Joystick Port(s)	Serial Port(s)	Scalextric	TrakMate	DS Electronics
Lane 1	Red	<input type="text" value="Serial Port 1 pin 1 (DCD) [25 pin 8]"/>			Pin 5 (25Pin 7) = Serial Port Ground
Lane 2	Green	<input type="text" value="Serial Port 1 pin 6 (DSR) [25 pin 6]"/>			
Lane 3	White	<input type="text" value="Serial Port 1 pin 8 (CTS) [25 pin 5]"/>			
Lane 4	Blue	<input type="text" value="Serial Port 1 pin 9 (Ring) [25 pin 22]"/>			
<input type="button" value="Set Default Input Pin Assignments"/>					

Define the Serial Port Pins to use for each lane. Four unique pins are available on each serial port.

Scalextric RMS Configuration

Parallel Port	Joystick Port(s)	Serial Port(s)	Scalextric	TrakMate	DS Electronics
---------------	------------------	----------------	-------------------	----------	----------------

RMS	Sport Digital (SSD)
------------	----------------------------

RMS Serial Port Number Port 1

If Track Call is enabled and parallel port is selected for track call input, the port must be zeroed to enable sessions. Track call input is also implemented from the RMS button when track call input is enabled.

Define the Serial port to be used for the Scalextric RMS connection.

Scalextric Sport Digital Configuration

Parallel Port	Joystick Port(s)	Serial Port(s)	Scalextric	TrakMate	DS Electronics
---------------	------------------	----------------	-------------------	----------	----------------

RMS	Sport Digital (SSD)
------------	----------------------------

1-2 Lanes

Text ID / Label Color	Car ID	Foreground (Text) Color
Car 1	Car 1	
Car 2	Car 2	
Car 3	Car 3	
Car 4	Car 4	
Car 5	Car 5	
Car 6	Car 6	

Average Lane Length (Feet) 10

Serial Port Number Port 1

Number of Lanes 2

Prompt user with Power Base setup reminders

Use Power Base Race mode to control Power and Race

No SSD Power control. Power Base is left in Practice mode. SlotTrak controls Race.

Enable External Output relay control

1. Choose the Lane grouping (power base unit) to be edited by sliding the Lanes scroll bar. 6 car ID settings are available for each power base. **A maximum of 4 power base units can be used for a total of 24 cars per race.**
2. Double-click each Text ID box to define a color for the car ID. Enter text into the box to change the car identifier text. The text color is set to the Foreground color. Double-click the Foreground color box to change the text color of the car identifier.
3. Enter an Average Lane length – required for computing scale speed.
4. Choose the Serial Port Number for this lane grouping. In this example, com port 1 is used to interface to the SSD power base that has been designated as lanes 1-2.
5. The option buttons define how power will be controlled in a race and how the race will be started.
6. Optionally prompt user with instructions on power base setup when any session is initiated.
7. If No SSD Power control is selected, you may optionally enable the SlotTrak output control functions. These would include the Parallel or serial port, Phidget cards, or the TrakMate card to control relays.

8. If the Power Base is used to control power, there are **two** ways to start a race:
 1. If 'Use SlotTrak Start Button to start race' (not shown above because the 'Use Power Base Race Mode' option is not selected) is **NOT** checked, the start button on the power base is used to start a race. Start buttons on ALL power bases should be pressed simultaneously, but it is not critical. As soon as SlotTrak receives a start command from a power base, it starts counting and timing laps for that power base. If the start tree option is enabled in Output settings, an on-screen indicator displays the start red/yellow/green lights. The lights turn yellow when the power base has sent a start command packet. All lights turn green when the power base turns power on which is 4 seconds after the power base start button is pressed.
 2. If 'Use SlotTrak Start Button to start race' **IS** checked, the SlotTrak on-screen start button and optional start tree can be used to start a race. In this scenario, the race must first be started by pressing the start button on the SSD power base(s). SlotTrak waits for the start command from all power bases and when all are received, makes the 'Start Race' button visible on the screen. The drivers must not start when the power comes on after the power base goes through its start sequence! Laps will not be acknowledged until after the 'Start Race' button on the SlotTrak display screen is pressed and the program completes its countdown to start. If there is a false start, the number of laps that SlotTrak counts and the number of laps that the power base counts will not be equal. The power base is unaware of a false start and therefore counts all of the laps, whereas SlotTrak is aware of the false start and does not count the first lap. The race will have to be manually terminated by pressing the 'Terminate Race' button on the SlotTrak race screen.

TrakMate Configuration

Parallel Port	Joystick Port(s)	Serial Port(s)	Scalextric	TrakMate	DS Electronics
Pins 18-25 = Parallel Port Ground					
Lane 1	Red	10	Pin #	TrakMate Serial Port Number	Port 1
Lane 2	Green	11		Sensor Type Setting	Infrared
Lane 3	White	12		Debounce Setting	0
Lane 4	Blue	13			

1. Define the com port ID. This will normally be port 1 or 2 if using a standard 9 pin serial cable, and will be port 3 or 4 (normally, but not always if other virtual com port devices have been installed) if using a USB to serial adapter. You will have to check the device manager to see what port was assigned to the USB device if an adapter is used.
2. The pin numbers initially default to the standard TrakMate wiring requirements. TrakMate uses a standard parallel port 25 pin connector for the sensor inputs to the card. If you choose to wire differently than the standard or purchased sensor cable, a different pin sequence can be assigned. Keep in mind that the pins available to be used are fixed, and cannot be changed. For example, if using a 4 lane track, pins 10, 11, 12, and 13 are the only pins that can be used for lane sensor hookup. Standard wiring requires lane 1 on pin 10, and so on.

3. The Sensor type setting sets the bias on the TrakMate Card. The card needs to know this to properly sense a lane trigger. Infrared are normally high and Reed relays are normally low. Refer to your TrakMate manual for the proper setting.
4. Debounce is defined from values of 0 to 10. It does not apply to reed relays, only infrared sensors. Refer to your TrakMate manual for the proper setting.

SlotTrak Active Configuration Settings

File

General Options | Driver Database | Car Classes | Track Options | Input Options | **Output Options** | Display Options | Scoring + Reporting | Sounds

Parallel and/or Serial Port | Phidget I/O Cards | TrakMate Board Relay ONLY

Set Default Output Pin Assignments

Pin ID or TrakMate (TMW) board Ref.

Power Relay Parallel Port Pin 4 R1

Individual Lane Control Pin ID

Lane 1 Parallel Port Pin 2

Lane 2 Parallel Port Pin 3

Lane 3 Parallel Port Pin 8

Lane 4 Parallel Port Pin 9

Seq. 1 (20 sec) Parallel Port Pin 5 R3

Seq. 2 (10 sec) Parallel Port Pin 6 R4

Seq. 3 (5 sec) Parallel Port Pin 7 R5

0378 Parallel Port Address (Hexadecimal)

Enable Power ON Indicator Output [R2] Enable Power ON Sequencing Outputs [R3-R5]

Enable Power ON Warning Output [R7] Enable Time Remaining Seq. Outputs [R3-R5]

DISABLE Master Track Power Output [R1] Hot Start Blink R3 0

Enable Individual Lane Power Control Display On-Screen Start Tree times on Power On

Parallel and/or Serial Ports

1. The Power Relay may be controlled from the parallel or serial port, or the TrakMate card if in use. All other control outputs may only use the parallel or serial port for this Output option. If TrakMate card id chosen, you must select the relay wiring Normally Open or Normally Closed, and define the com port to be used to communicate with the TrakMate card.
2. Enable/Disable Power On Indicator (R2). If a separate output is required when power is on, enable this. May be required if a bypass switch is used on the power control to the track, making it unable to use the power relay output for a power status indicator.
3. Enable/Disable Power ON Sequencing Outputs. These are a series of 3 outputs that can be used to indicate the track power is going to be turned on by counting down like the christmas tree on a drag race start. R3 blinks the count set in the dropdown list; followed by a 1-second wait followed by R4 turning on, followed by another 1-second wait, then R5 is finally turned on. There are also 'Sound Only' options for sequencing. In this case, there will be an on-screen indicator and a sound played. Sounds are also played if the relay outputs are enabled. If sequencing is enabled, the following options are made available:
 - a) Choose the number of times to blink output R3 when start sequencing is enabled.
 - b) Choose the 'Hot Start' option to have the power turned on to the track before the start sequencing is complete. Power is turned on at the beginning of the start sequence. This makes it possible for driver(s) to jump the start. This could take place at the start of a Dash session, Race segments where all drivers start from the start line and Race-off session start. When this option is enabled, the start line should be located immediately before the track sensors.
 - c) If 'Display On-screen start lights' is checked, the start 'Traffic light' sequence is displayed on the computer screen when power is turned on.
4. Enable/Disable Time Remaining sequence lights. The 3 outputs used for the Power ON Sequence may also be used to indicate remaining time in a qualify, race, or race-off segment. Sequence Out 1 (R3) comes on when there is 20 seconds left, Sequence Out 2 (R4) comes on with 10 seconds left, and Sequence Out 3 (R5) comes

on with 5 seconds left in the segment. If 'Sound Only' is defined, no relay outputs will be done. A sound will be played, such as '20 seconds left', '5 seconds left', etc.

5. Enable/Disable Power On warning. Activates this output pin (R7) for the length of time to perform the power on sequence (depends on options selected) before power is turned on to the track. You can use a buzzer, flashing light, etc. to make sure everyone is aware that power is coming on.
6. Each lane's power can be controlled individually if the 'Enable Individual Lane Power Control' option is enabled. The output to be used for each lane must then be defined in the same manner as above. This may be used for dash or race segment finish options where the power is required to be turned off in an individual lane when the car crosses the sensor area.

Phidget I/O cards

Individual Lane Control Relay ID		Card ID	Relay #	Ref.		
	Card ID	Relay #	Power Relay	TrakMate Board F	R1	
Lane 1	SN 5789 0/0/4	1	TrakMate Relay Wiring	Normally OPEN		
Lane 2	SN 5789 0/0/4	2	TrakMate Serial Port Number	Port 3		
Lane 3	SN 7855 8/8/8	0	Seq. 1 (20 sec)	SN 7855 8/8/8	3	R3
Lane 4	SN 7855 8/8/8	1	Seq. 2 (10 sec)	SN 7855 8/8/8	4	R4
			Seq. 3 (5 sec)	SN 7855 8/8/8	5	R5
			Power On Warning	SN 5789 0/0/4	0	R7

Parallel and/or Serial Port

Phidget I/O Cards

TrakMate Board Relay ONLY

If Phidget cards are plugged into the USB ports (each card requires a USB port), SlotTrak will auto-detect the cards and gather necessary information from each card such as serial number and number of outputs available on the card. The card ID dropdown lists will list each card by serial number and card type (0/0/4, 8/8/8, 0/16/16). When the card ID is defined, the Relay # dropdown list is filled with the appropriate number of outputs for the user to choose from. Unfortunately, Phidget does not outwardly ID their cards. The serial number is read through software only. If there is confusion on what card is what serial number, plug only one card in at a time before running SlotTrak and note the serial number from the Card ID dropdown lists and mark the card with a label. You must restart SlotTrak before switching plugged in cards. **The auto-detect of Phidget cards is only done once each time SlotTrak is started.**

The 8/8/8 and 0/16/16 outputs are TTL level outputs, designed to drive SSR's. The 0/0/4 card contains 5 amp relays. Again, you can mix and match any of these cards, but may only have a maximum of four total cards.

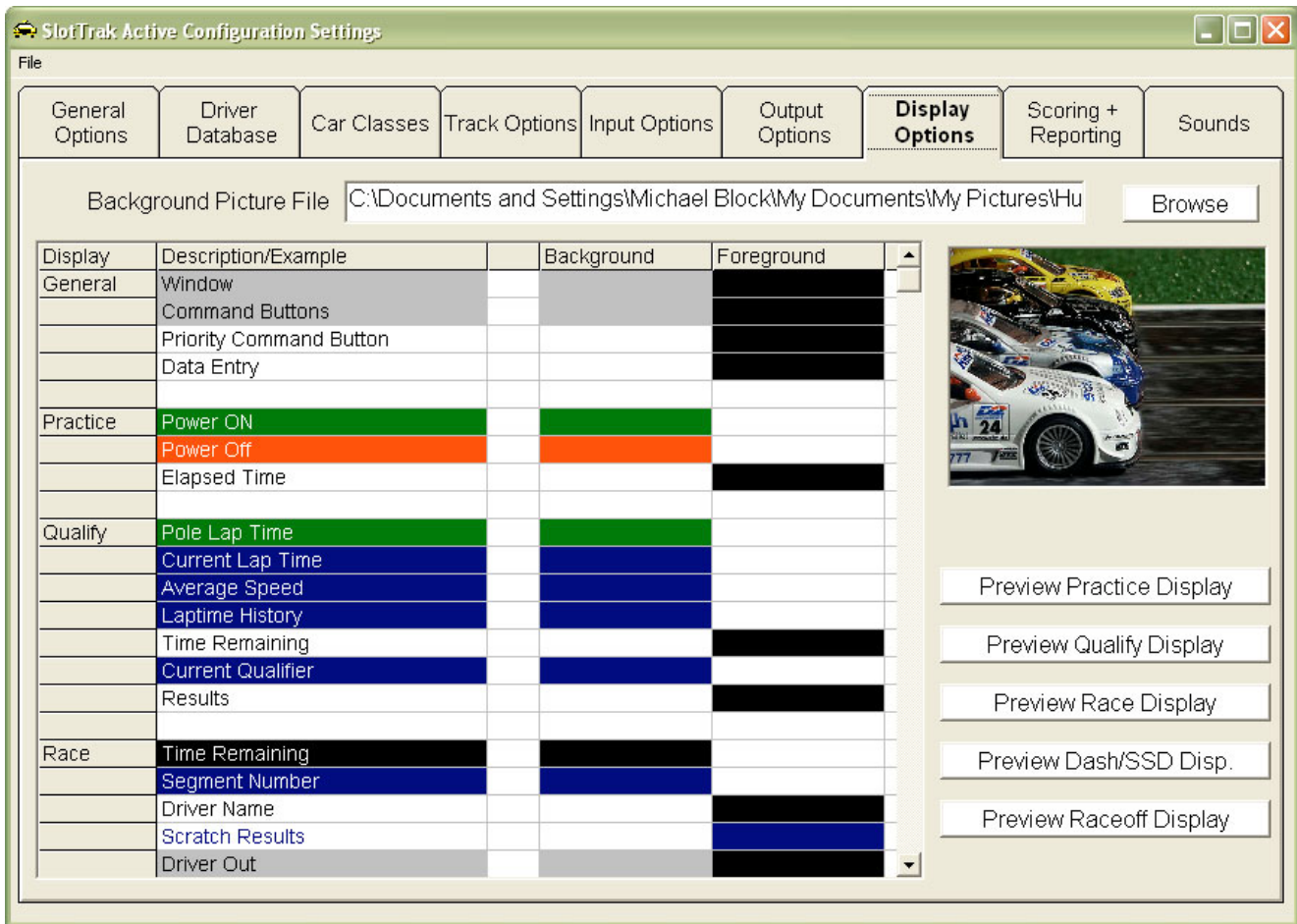
If a TrakMate card is in use, the power relay may optionally be controlled by using the TrakMate card output. All other outputs must be assigned to a Phidget card and relay number. If TrakMate card id chosen, you must select the relay wiring Normally Open or Normally Closed, and define the com port to be used to communicate with the TrakMate card.

TrakMate Board Relay Only

The screenshot shows the 'SlotTrak Active Configuration Settings' window with the 'Output Options' tab selected. The 'TrakMate Board Relay ONLY' section is active, showing the following settings:

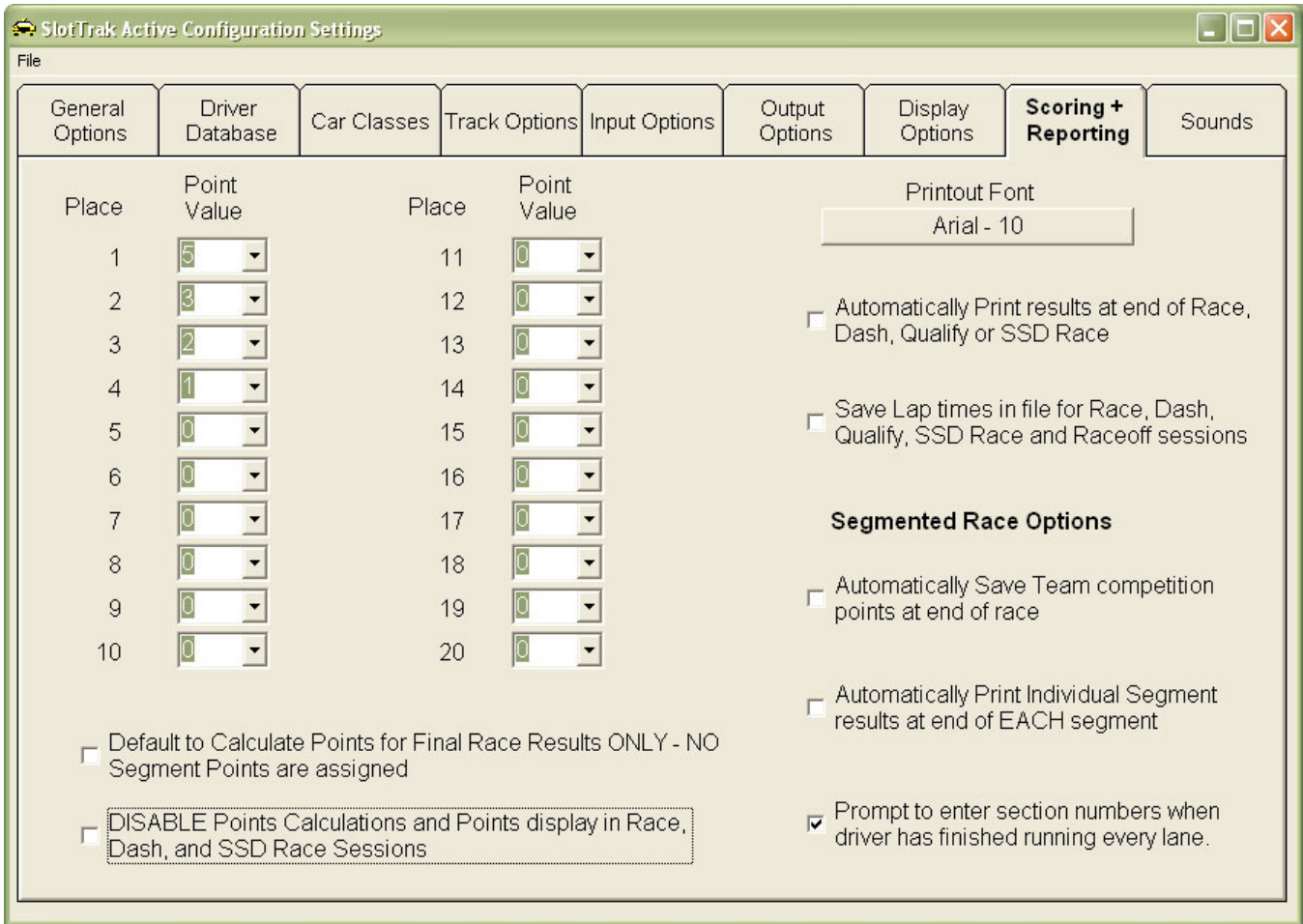
- TrakMate (TMW) Relay Wiring: Normally OPEN
- TrakMate Serial Port Number: Port 1
- Enable Power ON Indicator Output [R2]:
- Enable Power ON Sequencing Outputs [R3-R5]:
- Enable Power ON Warning Output [R7]:
- Enable Time Remaining Seq. Outputs [R3-R5]:
- Enable Individual Lane Power Control:
- Hot Start:
- Display On-Screen Start Tree:
- Blink R3: 2 times on Power On

With the TrakMate Board Relay ONLY option, only main track power can be controlled by SlotTrak. All output options that are NOT available with the TrakMate Only option are disabled. If additional outputs are required, use the Parallel/Serial port option or the Phidget I/O card option in conjunction with the TrakMate board if you still would like to use the TrakMate board to control the master track power relay.



1. Change the appearance, sizing, and screen position of the session displays. The Description / Example column in the grid displays a sample of what it will look like. Clicking on a box in the Background or Foreground columns brings up a color picker (if color is user settable). The sample will be updated when a color is chosen. Click on one of the five Preview buttons to view a sample of the display. While the preview display is active, size and position the display to your preferences.
2. Background Picture File: Specify a graphic that may be optionally displayed on the SlotTrak main screen. If 'Picture Show' is enabled, this setting is ignored. Suggested use would be a picture of your track. The image is shown in the sample display box under the Browse button.

SSD Race Session uses the same sizing parameters and color selections as set for the Dash Display.

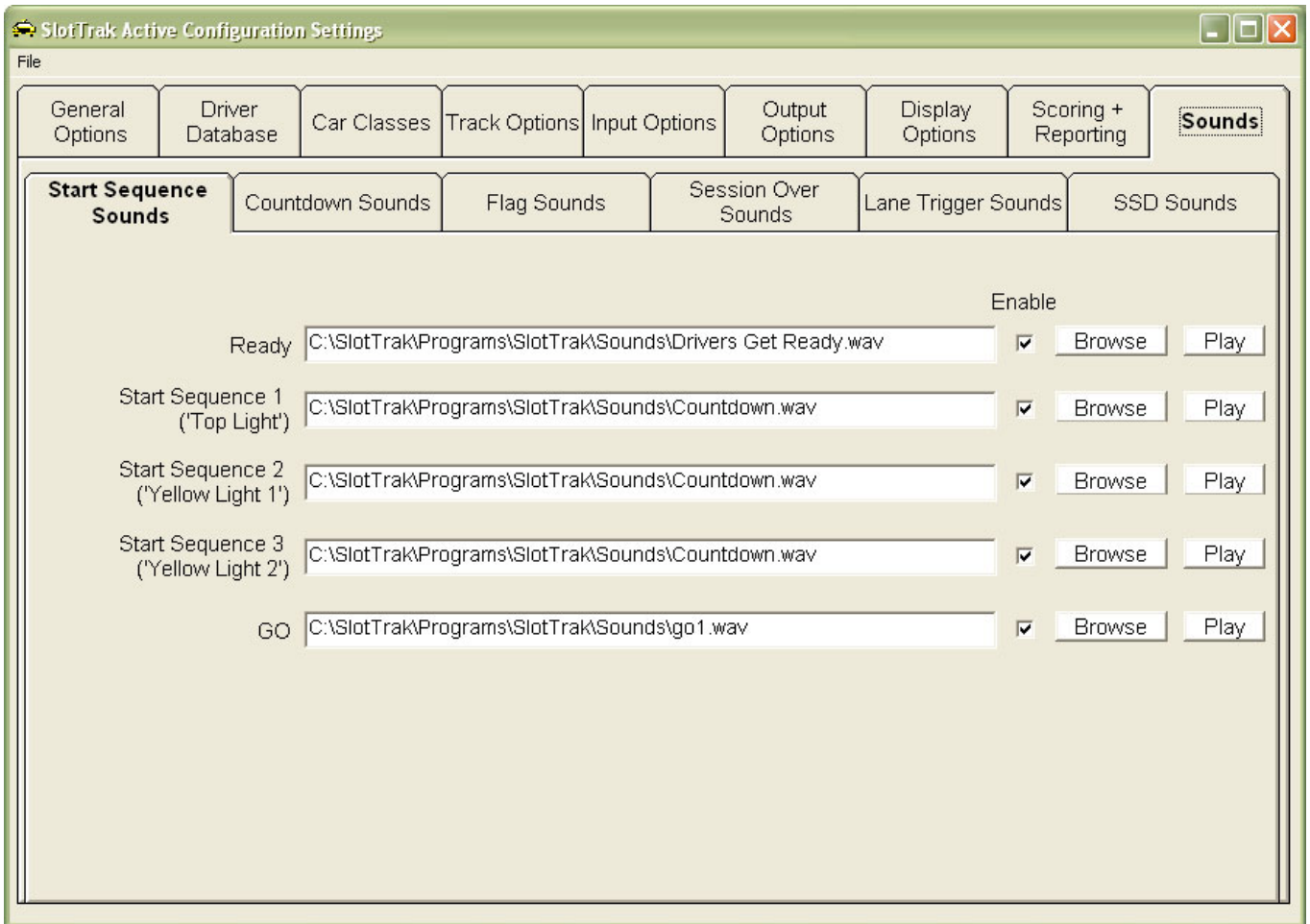


1. Define the points structure for race, dash, and SSD race results.
2. If the Auto Print at end of race option is checked, the results are printed at the end of the race automatically. All printing in SlotTrak is done to the default printer. You must have a default printer defined!
3. Check the Print at end of EACH segment to automatically print the race segment results.
4. If Auto Save is checked, the team competition points are saved in a file without prompting.
5. If section number input is checked, SlotTrak will prompt for race section number as each driver completes the segment rotation (only if the segments are not terminated at the finish line – more on this later in race setup). Depending on the number of drivers and lanes, this may be before the race is actually complete, as some drivers may finish earlier than others. The section number is then used to break any ties in final placings. If not enabled, the virtual section number is used to break ties, but the operator will have the option to resolve any ties manually.
6. Set the default printer font name and font size. If the printed fields exceed the paper width, the printer font size and font name will be adjusted to fit automatically by SlotTrak.

Sounds

[Back to Table of Contents](#)

SlotTrak sound files are saved in the Sounds sub-folder under the application path. PCM wave files are used for sounds. Many sound files are provided by the SlotTrak install. Users can also provide their own sound files.



Various sounds may be customized for different events in SlotTrak, which include lane triggers and fast lap indicators, and the start sequence. Enable/Disable the sound options by checking/unchecking the check boxes under Enable. Browse/locate any PCM .wav file by clicking the Browse buttons. The sound level may be adjusted (decreased) for all of the Lane Trigger Sounds by moving the vertical scroll bar. This allows the 'priority sounds' to be heard above the 'lane trigger sounds' when both sounds are playing simultaneously. On all sound selection tabs, double-clicking the 'Enable' label will toggle the selection status for all sounds on that tab.

View/Print Qualify, Race, Dash, and SSD Race Results

[Back to Table of Contents](#)

This menu function allows the operator to recall saved Qualify, Race, Dash, and SSD Race results, and also display a recap of all races that have been run. Qualify, Race, Dash, and SSD race results and Lapttime reports can be printed to report files by clicking the 'Make Report File' function. There are two files that are created for each report. File one is a simple text file that is created in the 'Reports' sub-folder with the same filename as the source session filename, and has a file extension of '.doc', so it can be opened in Word or WordPad. Use a true-type font such as Courier so the text file displays properly. The second file is an HTML file that is created in the 'Reports/HTML files' sub-folder. It is named the same, but uses an HTML extension. This file can be viewed in any web browser and is much more robust in the formatting since it does not rely on particular fonts for correct spacing. It is recommended to use the HTML file to share results via e-mail or websites.

Scoring and Placing for Multiple Races

[Back to Table of Contents](#)

This menu function provides the ability to compute total laps, place, and points values for a series of races. The races to be scored are selected in a listbox. A resulting table is generated with the drivers that participated in at least one of the races selected with the total laps, place, and the total points earned in the series of races selected. The table can then be saved to both a comma delimited file (.csv) and a HTML file if desired. Both file formats are always created. Double-click the multiplier in column 4 in the summary table on the top half of the screen to change the multiplier value for that race.

Exit

Exit the program.


Session Menu

This is where the operator chooses the **Session** type to initiate. It should be noted that for ALL sessions (Practice, Race, Qualify, Race-off, Dash, SSD Race, Team Comp), **when the power is ON, the auto-resize feature of the display form is turned off. Do not resize a form when the power is ON.** Only the borders of the form will change. None of the display controls will be resized to fit the form when power is ON!

Practice Session

[Back to Table of Contents](#)

A Practice session is just that – designed for turning practice laps. Here’s a screen shot for a 4 lane track:

Practice Session				
SWAP	White	Red	Yellow	Blue
Lap Time (Sec)	3.607	6.618	6.660	6.669
Scale mph	505.1	280.2	283.4	287.9
Fast Lap	2.888	2.804	2.820	2.763
Fast mph	630.8	661.4	669.2	694.9
22 Elapsed Time (Sec)	3.607	6.618	6.660	6.669
	2.936	2.986	5.841	5.835
	3.002	2.804	2.820	2.763
	2.888	2.835		
	2.987			
0.500 Minimum Laptime (Seconds)				
Power ON				
Toggle Power				
	6	5	4	4
Clear All	Print list	Print list	Print list	Print list
Quit	Clear F1	Clear F2	Clear F3	Clear F4

1. Current Lap times as well as fast laps are always displayed. If the display scale speed option is enabled in setup, current scale speeds and fast scale speeds are also displayed. If scale speed is not enabled, the actual speed is displayed. The scrolling list boxes display all of the lap times accumulated for each lane. The most **current** lap time is always placed on the **TOP** of the list. The list will hold up to 200 lap times. After 200 lap times, the least current (bottom of the list) time is removed from the list and the new lap time is added to the top of the list.
2. Lap counts for each lane are displayed directly above the Clear buttons.
3. The 'Clear' buttons under each lane's lap count reset the fast time, clear the lap times listbox for that lane, and reset the lap count to zero. F1-F8 designates the function key on the keyboard that will also perform this task if you prefer not to use the mouse. 'Clear ALL' resets all lanes at once.
4. Minimum lap time is set at the specified default lap time defined in settings when Practice is entered, but may be changed during the Practice session.
5. The power for all lanes may be toggled on/off by clicking the 'Toggle Power' button.
6. Track call, if enabled, will also toggle track power on/off.
7. Practice data is not saved in a file, but you can print the list of times by clicking the Print list button(s).

- 8. The boxes at the top default to the lane color text, but can be used to enter driver names for display and inclusion into the printed stats report.
- 9. The SWAP button switches to an alternate practice screen:

SWAP	ID	Lap Time (Sec)	Fast Lap
	White	3.517	1.737
	Red	5.939	2.001
	Yellow	5.908	3.660
	Blue	5.894	3.625

Both practice displays are always active whether they currently show or not, and may be displayed at the same time by resizing and repositioning each display on one CRT or displaying each individual display on individual CRT's if the computer is configured for multiple monitors.

Qualify Session

[Back to Table of Contents](#)

A Qualifying session provides a method to time trial the cars one at a time to see who can turn the fastest lap. Drivers may run in the lane of their choice, or a particular lane can be decided on before the qualifying session is started. SlotTrak will automatically detect what lane is being used. Each driver turns laps for the defined qualifying time, and the fastest lap time achieved is recorded for each driver.

Qualify Setup

Qualify Configuration

Select the Drivers for this Qualifier session

Qualify Order

Bill
Dave
Eric
Greg
Jay
Mike
Ron
Tom

Eric
Dave
Greg
Bill

Add Name

Randomize Order

Print Qualify Order

Qualify Laps Qualify by TIME Qualify by LAPS

Qualifier Session Descrip.

Car Class

Min Lap Time (Sec)

Cancel Load Last Configuration Load Defaults **Begin Qualify Session**

1. When selecting drivers from the list, hold the Ctrl key or mouse button down while clicking to select multiple drivers, or click while holding down the shift key to select a range of drivers from the list.
2. The listbox on the right is the order of qualifying for the drivers selected. Select a driver in this list and use the up and down arrow buttons on the right hand side to define the qualifying order. Click Randomize Order to randomize the qualifying order.
3. Qualify by elapsed time or define number of laps to be run.
4. Qualify Session Description is optional. When entered, the qualify results file will contain this description.
5. The car class is also optional. Again, this information is saved in the results file for future reference.
6. Optionally change the minimum lap time.
7. The 'Load Last Configuration' button will appear if there is a configuration file available. Every time a session is started, the configuration is saved in a file. By clicking this button, the last settings, including driver selections, are retrieved and set.
8. 'Load Defaults' will set the default settings for all items that apply.
9. Print Qualify Order prints the current defined qualify order to the default printer.

Qualify Display and Operation

Ties in qualifying are broken by the second fastest lap time for the tied drivers.


Qualify Session - Minimum Laptime = 2 seconds

3.652

Fast Lap for Brent

516.8

Fast Lap (Mph)



2.722

Pole: Andrew

Qual Lane Lane 3

Current Qualifier Brent

Qual # 3

Terminate

Pause [F8]

Seconds Remaining

17

Name	Time	Speed (Mph)	Place
Andrew	2.722	669.3	1
Brad	3.798	488.3	2
Brent			

Time (Sec)	Scale mph
4.554	414.4
3.809	495.5
3.652	516.8

1. All Lap times are recorded in the list box on the right of the display, with most current lap time at the bottom of the list.
2. The Pole lap time (upper right hand corner) is the current fast lap time for all drivers that have qualified. This is the lap time that everyone is trying to beat.
3. Clicking Start or pressing the F8 function key will turn power ON (if power control is enabled). The session can then be paused by clicking the Pause button, or pressing F8. Clicking the Continue button or pressing F8 will continue the segment.
4. Track Call, if enabled, will initiate the Start function when starting a segment and will Pause/Continue during a segment.
5. Qualify results are saved in the Results sub-folder in a file. Each filename may be user defined and has a '.qua' file extension. If the save lap times option is set, all lap times are written to a file of the same name, but with a LapData_.csv filename extension.
6. Colors on this display are defined in the Settings function of SlotTrak. The display above uses the default settings.
7. Click ADD Driver button (enabled between qualifying attempts) to add a driver on the fly to the qualify session.
8. Click Delete Driver (enabled between qualifying attempts) to remove a driver from the qualify session
9. Click Skip Driver (enabled between qualifying attempts) to skip the current scheduled driver in the qualify session. The skipped driver is re-scheduled to qualify at the end of the list.
10. Click Repeat Driver (enabled between qualifying attempts) to allow a 'do over' for the current driver.
11. Click Terminate to set the time to zero or laps remaining to zero if the driver wishes to end their qualify attempt prematurely.

The Race session runs a segmented race. All drivers race in every lane for a designated amount of time or designated lap count. SlotTrak keeps track of lane positions, lap counts, etc. as the drivers rotate through the lanes. There are two segment options - timed or counted. Power is turned on and off by SlotTrak. When a segment is completed, drivers move their car to the next lane in the rotation (which is displayed on the race information screen) at the track position where the car stopped, or brought back to the starting line if the terminate segment option is enabled.

If individual lane power is enabled, and the terminate segment option is enabled in either the Counted or Timed segment type, the power for each lane is turned OFF when the car in that lane completes their current lap after the winner has been decided. If individual lane power is not enabled, the lap count will stop counting when the car completes their current lap. Power remains on until each car completes their current lap. A 'Terminate Segment' button will appear on-screen to allow the operator to end the segment in case a car has malfunctioned and will not complete its current lap.

Race Setup

Settings Tab

1. The race description and car class are optional. If defined, these values will be included in the results file. Car class, if specified, will redefine the Minimum lap time and Coast time as defined for that class.
2. Select Lane Rotation Style (only available if 4 or more lanes). This defines how the cars are moved through the lanes during a race. European rotation (recommended) mixes the lanes so drivers have different drivers next to them in each segment. Custom allows you to enter your own rotation order. In the example shown, the driver will sit out after running in lane 1 and lane 3. This allows you to eliminate lanes also if you choose to do so. If '142' is specified for example, lane 3 will not be used. One use for custom rotation is it allows a rotation to be defined that will not fill all lanes, making extra corner workers available. Click the Rotation Tab to display the entire race rotation if you are not sure what the order will be.

3. Choose Timed Segments or Counted Segments. Each type will define additional options pertinent only to that race type.

For Timed Segments:

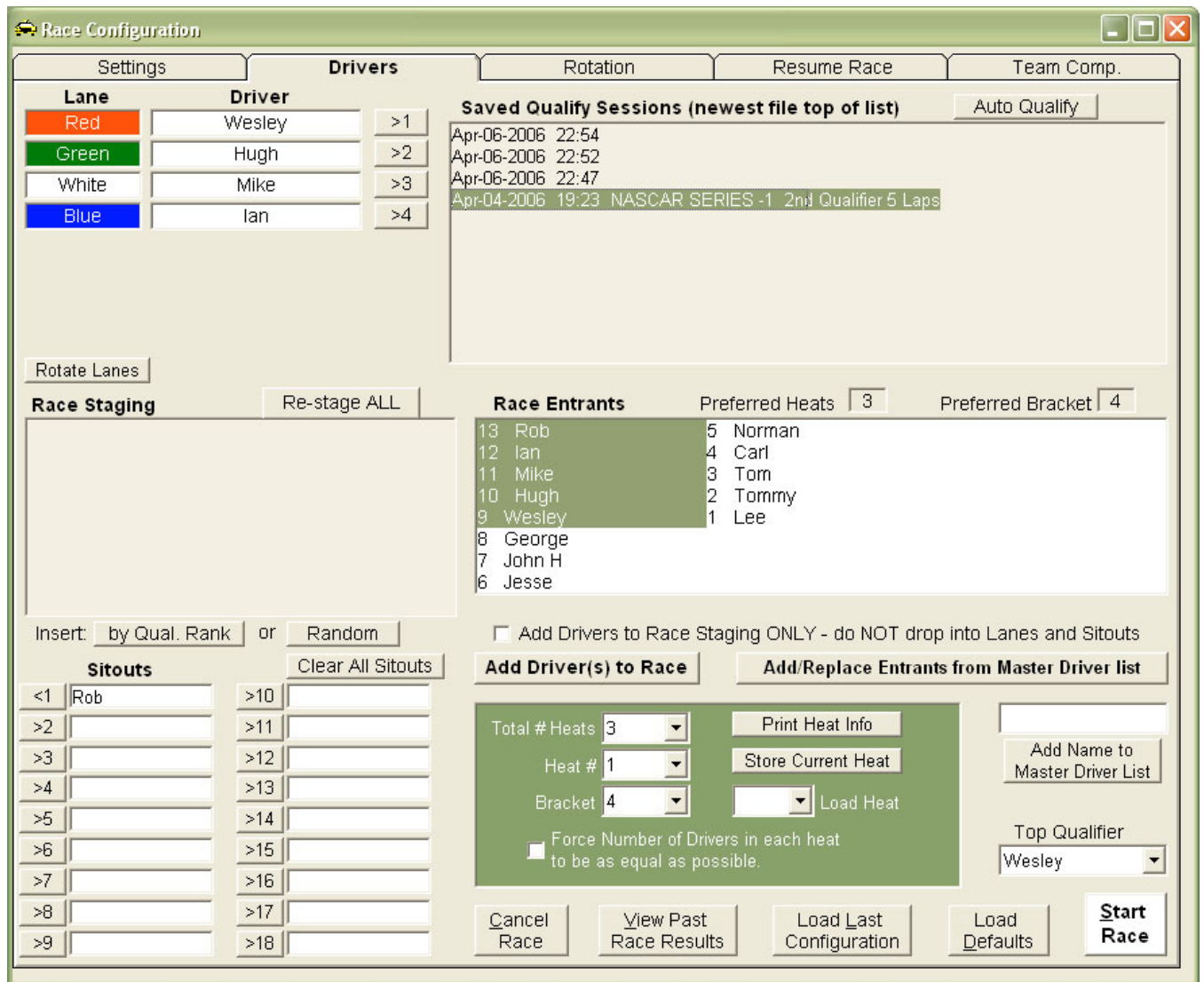
- a) Segment length defines the length of each segment, in seconds. Maximum of 32000 seconds.
- b) Off time between segments defines the amount of time between each segment. SlotTrak counts down between segments based on this setting. When zero is reached, the power is turned back on and the next segment is started. It is the responsibility of drivers to get their cars in position and be ready to race before the segment is started.
- c) If Disable Off Time Timer is checked, the timer countdown between segments in a timed race will be disabled. The next segment will be started by the race director or track call.
- d) The Termination method defines how each segment is ended:
 - If Normal, the cars stop at the location on the track where they were when the segment time decremented to zero and rotate from that location.
 - If 'Race to Line – at end of EVERY segment' is selected, the cars continue to the start/finish (sensor location). When the car crosses the lane sensor, if individual lane power is enabled (Recommended!), the power is shut off for that lane. If individual lane power is not enabled, no further laps are counted while the car continues to run. SlotTrak saves the time that it took the car to reach the sensor from the time the segment counted down to zero time remaining. It then uses these 'time extensions' to break any ties in finish order. All cars start at the start line at the beginning of every segment using this method.
 - If 'End of Race - Race to line on Last Segment only' is selected (**option only available if individual lane power control is enabled**) the cars remain at their track location when the timer counts down to zero for all segments except the last segment that they are on the track. The cars start at their finish position on the track for the next segment. For each driver's last on the track segment, the power remains on until the car crosses the lane sensor. The time extension is again saved and used to break any ties.
 - If either 'Race to line' options are used, section number entry is disabled.

For Counted Segments:

- a) Define the number of laps to be run before the segment is completed.
 - b) The Termination method defines how each segment is ended:
 - If Normal, power is shut off when a car reaches the designated lap count and all other cars stop at the location on the track and rotate from there.
 - If 'Race to Line – at end of EVERY segment' is selected, all cars continue to the start/finish (sensor location). When the car crosses the lane sensor, if individual lane power is enabled (**Recommended!**), the power is shut off for that lane. If not enabled, no further laps are counted while the car continues to run. SlotTrak saves the time that it took the car to reach the sensor from the time the segment winner completed the designated number of laps. It then uses these 'time extensions' to break any ties in finish order. All cars start at the start line at the beginning of every segment using this method.
4. Define how many times in a row each rotation position is run. If 3 is chosen for example, each lane position would be repeated 3 times in a row.
 5. The Number of complete lane rotations defines how many times the complete lane rotation is run.
 6. Minimum lap time and Coast time can be adjusted here, always in seconds.
 7. The 'Load Last Configuration' button will appear if there is a configuration file available. Every time a race session is started, the configuration is saved in a file. By clicking this button, all previous settings, including driver selections, are retrieved and set.
 8. The 'Load Defaults' button will load and define all of the default values that were specified in the configuration settings.
 9. The Points multiplier is used to 'weight' the race. The final point values for each driver are multiplied by this value to determine a final point value.

There is a maximum of 32000 laps per segment in SlotTrak. Total Laps maximum is 2,147,483,647, but the display is setup for a maximum of 5 digits or 99999. You can exceed 5 digits, but they might not all show. One way to modify the number of digits shown is to resize the screen. By resizing, font size changes are made and this may allow more characters to be displayed in the session display screens.

Drivers Tab



1. Define the drivers that will be participating in the race, and what lane they will be starting in. The quickest way to accomplish driver selection is to use a qualify session results file. If none is available, a qualify file can be created by clicking the Auto Qualify button or drivers can be selected from the master driver list by clicking either Add Driver(s) to Race or Add/Replace Entrants from master Driver list buttons. When more drivers than track lanes are selected, the driver(s) sit out before running lane #1 if using standard rotations, or user specified if using Custom rotation. To manually place a driver into a lane or Sitout, the lane or Sitout must be blank. Highlight the driver in the staging listbox and click the button next to the lane or sitout label to move the driver into that position. Click the button next to the lane or sitout when a driver is defined to remove the driver and place them back into the staging listbox.
2. Click the Rotate Lane Assignments to rotate the lane positions according to the rotation option selected previously in the Settings tab.
3. Re-Stage ALL removes all drivers from the assigned lanes and sitouts and lists them in the staging listbox so the operator can redefine each drivers start position to something other than the default.
4. The Sitout order determines when the driver comes on to the track with respect to other drivers that are also out. Sitout 1 will come on the track first.
5. 'By Qual Rank' puts ALL drivers in the staging listbox into Sitouts by order of qualifying position.
6. 'Random' puts ALL drivers in the staging listbox into Sitouts in a random order.
7. 'Clear All Sitouts' removes all drivers from the sitout order and places them back into the staging listbox.
8. 'Add River(s) to Race' brings up the master driver list and allows the operator to add additional driver(s) to the heat without changing the current order and placings of the already selected drivers. Driver removal is not possible with this option.

9. 'Add/Replace Entrants from master Driver list' allows the operator to choose drivers from the master driver list to define which drivers are going to be in the race, and not have to use Qualify or Auto-qualify results. The driver order is randomized when this option is used.
10. If 'Add Drivers to Race Staging ONLY' is checked, all drivers added to the Race Entrants listbox will be placed into the Race Staging listbox only, and will not be placed into Lanes or Sitouts. The operator would then be required to place the drivers manually into the proper lane or sitout.
11. Optionally, select the driver that is the top qualifier for this race.
12. Saved Qualify sessions listbox contains the qualifier sessions that are currently saved on the computer in the results folder. They are sorted when listed with the most current file at the top. Double-click to select a saved qualify session and load the results. The drivers that participated in the qualify session will be placed in inverted order in the race entrants list. You can then select drivers from the race entrants listbox and they will be selected and seeded according to qualifying order.
13. The Auto Qualify option creates a 'fake' Qualify results file with the drivers chosen from the master driver list. This allows the race setup features that use the Qualify results to be used even if there was no Qualify. If there is not enough time to run a Qualify session, use this option to speed race setup. The driver order is randomized when using this option.
14. By default, when multiple heats are required based on the lane count and number of drivers, SlotTrak will attempt to setup heats from slowest to quickest. SlotTrak will force the fast heats to contain the same number of drivers as lanes, and the slowest heat will contain all of the 'extra' or 'odd' drivers. For example, if there are 19 drivers and 4 heats with 4 lanes, heat 1 will contain 7 drivers and the rest of the heats will contain 4 drivers. If the 'Force Number of Drivers' option is checked, SlotTrak will instead try to create heat definitions that have an equal number of drivers, or as close as possible to equal.
15. If a qualify session is selected, you can set up number of heats, heat number, and bracket. Bracket allows some flexibility when setting up heats. Experiment with it to see what effect it has. **Using the Qualify results makes setting up a race much easier and quicker – use this feature!!**
16. The Add Name button allows driver(s) to be added to the master driver list without having to go back to the Settings/Configuration screen.

Setup note: If you define a heat or heats that are different than the SlotTrak determined heat configurations, make sure you store the heat configurations. If you don't, the next heat when chosen from the heat number drop down list will be configured as SlotTrak would want to configure that heat without knowledge of the previous heat's configuration. For example, if you would define a 2 heat race with 12 drivers in heat 1 and 6 drivers in heat 2 for a 4 lane track, that's fine but when heat 2 is selected, SlotTrak has no knowledge of the fact that you defined 12 drivers in the first heat and will create heat 2 with either 4 drivers [number of lanes] if Force is not selected, or 9 [total drivers (18) / number of heats (2)] drivers if 'Force...' is selected. **Bottom line – save your custom heat configurations in files by clicking on the Store Current Heat button!!**

Rotation Tab

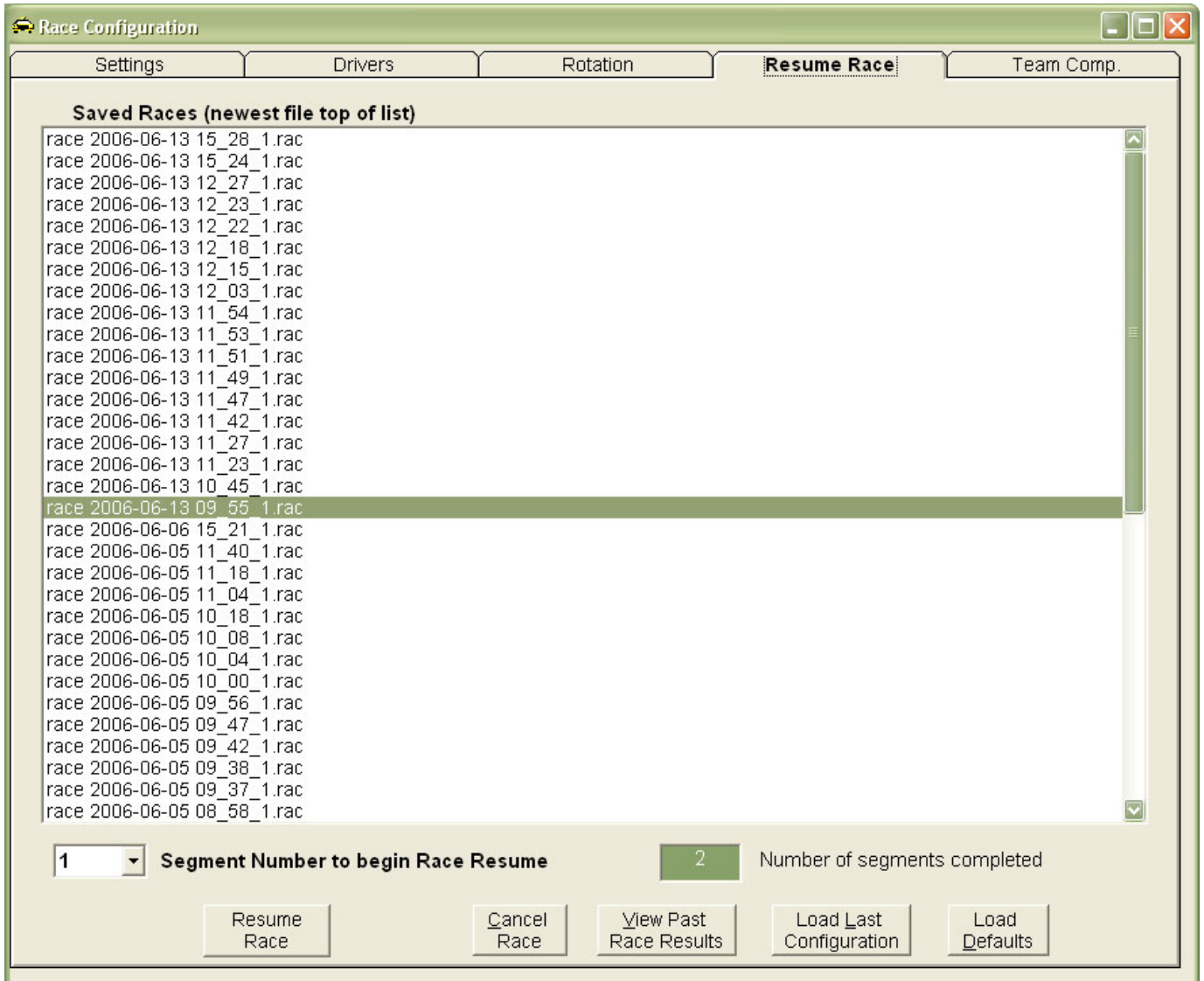
The screenshot shows the 'Race Configuration' window with the 'Rotation' tab selected. The window has a title bar with standard window controls. Below the title bar are five tabs: 'Settings', 'Drivers', 'Rotation', 'Resume Race', and 'Team Comp.'. The 'Rotation' tab contains a table with the following data:

	Lane 1	Lane 2	Lane 3	Lane 4
Seg.	Red	Green	White	Blue
1	Wesley	Hugh	Mike	Ian
2	Rob	Wesley	Hugh	Mike
3	Ian	Rob	Wesley	Hugh
4	Mike	Ian	Rob	Wesley
5	Hugh	Mike	Ian	Rob

Below the table is a large grey rectangular area. At the bottom of the window, there are six buttons: 'Print Table', 'Cancel Race', 'View Past Race Results', 'Load Last Configuration', 'Load Defaults', and 'Start Race'.

This table shows the complete lane rotation sequence and may be printed.

Resume Race Tab



If required, this option allows a race to be restarted at a specific segment number. A list of available race files is displayed. The list is sorted with the most current race file on top. Double-click the desired race file. The number of segments completed will be displayed. Choose the Segment number to begin Race Resume. This is the segment number that the race will be started at. Any previous segment's results will be retained in the race results.

Team Competition Tab

Race Configuration

Settings Drivers Rotation Resume Race **Team Comp.**

AC/DC Team Name A - Start in ODD lanes 1, 3

Include	Order	Start In
<input checked="" type="checkbox"/> 1 Angus	1	Red
<input checked="" type="checkbox"/> 2 Brian	2	White
<input checked="" type="checkbox"/> 3 Malcom	3	Sitout
<input checked="" type="checkbox"/> 4 Bon Scott	4	Sitout

Team A Members

Team Name B - Start in EVEN lanes 2, 4

Include	Order	Start In
<input checked="" type="checkbox"/> 1 Tom	1	Green
<input checked="" type="checkbox"/> 2 Jana	2	Blue
<input checked="" type="checkbox"/> 3 Melissa	3	Sitout
<input checked="" type="checkbox"/> 4 Eric	4	Sitout
<input type="checkbox"/> 5 Kristen		
<input type="checkbox"/> 6 Sam		
<input type="checkbox"/> 7 Nike		

Team B Members

Define Teams and Members

Enter Teams in Race


Load Team Race Config

Print Heat Info Cancel Race View Past Race Results Load Last Configuration Load Defaults **Start Race**

This option allows the setup of a race between two teams. The teams may consist of 2 to 10 drivers. An equal number of drivers from each team must compete. Drivers from the same team are never next to each other on the track. A straight rotation is always used for team competition. Click 'Define Teams and Members' to define Team names and the drivers on each team, along with the default starting position for each driver. The defined teams are listed in the dropdown lists and are chosen from the lists. When all selections and definitions are complete, **click the 'Enter Teams In Race' button to enter the team drivers into a race.** When entered, items such as rotation style (straight) and Counted race (with terminated segments) are set. **The team race is a points race** and points must be enabled and defined to run a team race. Use the Load and Save Team Race Config buttons to Load or Save this race configuration. This saves every defined parameter required to setup and run a race, just as the Race configuration or Store Heat functions will do, but allows the operator to name the saved configuration file.

Race Display and Operation

There are two displays associated with the Race Display. The **Segment display**:

Timed Race Session - Minimum Laptime = 0.5 seconds				
Driver	LAPS	Total laps	Average	Lap Time
Angus	3	3	2530	1714
Tom	3	3	2472	1656
Brian	2	2	2860	3168
Jana	2	2	2860	3153
		Up Next	Melissa	SEG of 8 1
TIME Remaining (Seconds)	7		Pause [F8]	

1. The race segment display is in order of current segment standing. The leader (red lane) is on top so a quick glance at the display indicates red in the lead for the segment.
2. Click on the column header to change the display option for that column. Total pts or Total laps may be displayed in column 3. Fast Lap, Median lap time, or Lag behind Leader or Trail behind position may be displayed in column 4. Lag is the time or # laps behind the current segment leader. Trail behind position is the time or # laps behind the car in the next highest position. Median is NOT an average, it is the lap time that half of the laps run for that driver are above that time and half are below that time.
3. These settings are saved so the next time a race is run, the display options start out as how they were last defined.
4. Right-click the lap time display label to display a list all lap times for that lane.
5. Double-click the name or lap count to adjust the number of laps. This can only be done when the power is OFF (paused).

The **field summary** display that is available during pauses or between segments:

Timed Race Session

Segment **1** Stats  **Abort Race** Next Segment # **2** of 6

Lane	Name	Rotate To	Average Lap	Fast Lap	Median Lap	Seg Laps	Seg Place	Total Laps	Seg Points	Race Place
Red	Bill	White	4.351	3.410	4.588	4	1	4	40	1
Green	Eric	Out	4.362	3.477	4.578	4	2	4	33	1
White	Chris	Blue	4.319	3.502	4.638	3	3	3	27	3
Blue	Andy	Green	4.318	3.541	4.587	3	4	3	22	3
Out	Dave	Red						0		5
Out	Callie	Out						0		5

TIME TO START (Seconds) **10**

Pause [F8] Countdown Skip [F4] Countdown Lap Times Toggle Display

The counted session displays are very similar, without the time remaining indicators in the display.

- Colors on this display are defined in the Settings function of SlotTrak. The display above uses default settings.
- The scroll bar under Display allows the user to scroll back to different segment numbers as the race progresses. This is enabled during the countdown/pause between segments. Don't worry about setting it back to the proper segment. That will be done automatically when the segment starts. When the race is complete, the scroll bar is enabled again to allow review of all of the race segments.
- Command button text shows the function key that will perform the same task as clicking that button if you prefer not to use the mouse.
- The Start Race button will begin the race. Power will be turned on.
- The Pause button will turn the power off and stop the timer from counting down. **SlotTrak continues to count laps for the specified Coast Time (in seconds) after EVERY Race, Dash, Race-off, Practice or Qualify power shutdown**, so cars coasting across the detection sensors will still get credited for their lap and lap time. A paused state is indicated by the blinking 'TIME REMAINING' caption during a timed race.
- Continue button will continue the race after a Pause and power will be turned back on.
- Pause Countdown button will pause the countdown that is counting to the beginning of the next segment. Again, the 'TIME REMAINING' caption will blink during a paused countdown (timed race only).
- Continue Countdown button will re-enable the countdown to the next segment (timed race only)
- Skip Countdown will cause the next segment to be started immediately.
- Abort race will stop everything – the race up to the time it is aborted is saved in the race results file for possible resumption. SlotTrak returns to the race setup screen when this option is executed.
- The race results file is saved in the Results sub-folder. The filename will have a '.rac' file extension, and are named by the user.
- Double-click the Driver Name label or the lap count display to adjust the number of laps for any active driver. This may be done during a paused segment or between segments.

13. The Lap Times button brings up a display of every lap time for every driver in the race. From this screen, you have the option to print or save the information in a file.
14. Double-click the lane label between segments to display the last computed virtual track position for the driver selected.
15. Track Call, when enabled, will perform the following functions:
 - With Start Race button displayed, track call will start the race.
 - With Pause button displayed, track call will perform the Pause function.
 - With Continue button displayed, track call will perform the Continue function.
 - During countdown between segments, track call will perform the Skip function.

When the race is complete, additional option buttons will appear to allow printing of the race results and if team competition is enabled, print and save of the team points information.

The Toggle Display buttons switch between the field summary display and the race segment display. Switching between the two displays never alters any of the countdown timing.

The Print Lap Times button allows the operator to display all lap times for every lane run for every segment. From that display, the options to print and save are available.

If the 'Prompt to enter section numbers' option is checked in settings, as each driver finishes the segment rotation, the section number on the track is prompted for and entered into SlotTrak. Depending on the rotation/number of drivers, this may occur before the end of the race. This section number is then used as a tie-breaker. Of course, if the segments are terminated, the section number is meaningless because all cars cross the finish line.

Dash Session

[Back to Table of Contents](#)

The Dash session performs a lap counted race (as opposed to a timed race) where each driver runs in a defined lane for the entire race. The amount of Dash laps is specified in setup. The first driver to reach the defined number of laps is the winner.

If Individual Lane Power is enabled, the power for each lane is turned OFF when the car in that lane completes the current lap it is on when the winner is decided. If Individual lane power is not enabled, the lap count will stop counting when the car completes the lap it is on when the winner is decided and track power is left ON until all cars finish. A 'Terminate Segment' button will appear to allow the operator to manually end the dash in case a car has malfunctioned and will not finish.

Dash Setup

Dash Configuration

Dash Descrip.

Car Class

Dash Laps

Min. Lap Time Sec.

Coast Time Sec.

Start Race with Lap

Points Multiplier

Top Qualifier

Lane	Driver	
Red	Kristen	> 1
Green	Tom	> 2
White	Melissa	> 3
Blue	Jana	> 4

Saved Quality Sessions

- Feb-10-2006 10:37
- Oct-31-2005 11:52
- Aug-18-2005 11:05
- Aug-09-2005 16:27
- Jun-16-2005 13:01
- May-08-2005 20:56
- May-08-2005 20:48
- Mar-16-2005 23:18 Race Auto Qual 15 Drivers
- Mar-16-2005 19:52 Race Auto Qual 4 drivers

Drivers Preferred Heats

- 4 Jana
- 3 Melissa
- 2 Tom
- 1 Kristen

of Heats

Heat #

1. Dash description and car classes are again optional.
2. Define the total number of dash laps.
3. Minimum lap time is initially set at the default value in settings. Choosing a car class may change this value. Otherwise, a new value can be typed in the input box.
4. Coast time is initially set at the default value in settings. Choosing a car class may change this value. Otherwise, a new value can be typed in the input box.
5. Driver selection is completed in the same manner as race setup. Refer to race setup for a description of driver selection. The maximum number of drivers in a dash is equal to the number of lanes on the track.

6. The 'Load Last Configuration' button will appear if there is a configuration file available. Every time a session is started, the configuration is saved in a file. By clicking this button, all previous settings, including driver selections, are retrieved and set.
7. Saved Qualify sessions listbox contains the qualifier sessions that are currently saved on the computer in the results folder. They are sorted when listed with the most current file at the top. Double-click to select a saved qualify session and display the results. The results are displayed in the Qualify Results listbox. You can also select drivers from the results listbox and they will be selected and seeded according to qualifying order.
8. Refer to the Auto Qualify reference in race setup for an explanation of this function.
9. The Points multiplier is used to 'weight' the race. The final point values for each driver are multiplied by this value to determine a final point value.

Dash Display and Operation

Driver	LAPS	Best Lap	Lap Time
Jay	4	3.730	4.514
Bob	4	3.773	4.412
Greg	3	4.516	8.200
Angus	3	4.561	8.211

Pause
[F8]

1. Start Dash button starts the dash and power is turned on to the track.
2. Abort Dash button stops the dash and returns to the main SlotTrak screen.
3. Pause button turns the power off. Again, SlotTrak counts for Coast time seconds (user defined) after the power is turned off to make sure cars coasting across the counters will be credited with their lap.
4. Continue button turns the power back on.
5. The Dash results are saved in a file in the Results sub-folder. The filename will have a 'dsh' extension, and is named by the user.
6. Double-click the Laps or driver display labels during a paused dash to adjust the number of laps for any driver. Lap adjustments must be done before the Dash is complete.
7. Colors on this display are defined in the Settings function of SlotTrak. The display above uses the default settings.
8. The lap count display on the right indicates the current placing in the race by order of lane color. The leader (red lane) is on top so a quick glance at the display indicates red in the lead.
9. Right-click the lap time display label to display a list all lap times for that lane. Power must be off for this function to be enabled.

The Dash finish does not turn the power off to the entire track when the winning driver accumulates the defined number of laps. SlotTrak leaves the power on for all lanes that have not crossed the finish line in an attempt to determine all other driver/car placings. If individual power control is enabled, power will be turned off for each lane when the car crosses the line on their current lap. When all drivers have crossed the finish line, the track power is turned off. A 'Terminate Segment' command button will appear while SlotTrak is waiting for all cars to finish. If a car has malfunctioned and will not cross the line, click the 'Terminate Segment' button to end the Dash. There are never ties using this method.

When the dash is complete, the field summary display will appear:

Dash Laps		Average Lap	Fast Lap	Median Lap			
Name	Lane	Sec	mSec	Sec	Laps	Place	Points
Angus	Blue	4.870	3.748	4.370	20	1	40
Jay	Red	5.240	3.686	4.386	19	2	38
Bob	Green	5.514	3.754	4.359	18	3	36
Greg	White	5.825	3.745	4.454	17	4	34

Scalextric Sport Digital (SSD) Race Session

[Back to Table of Contents](#)

The SSD session is similar in many ways to the **Dash** session. It is possible to run up to 8 lanes (4 power bases) using this option for a total of 24 cars maximum. There are two different finish options with SSD. The tool tip that is displayed when the cursor is placed over the End Lap options explains the two different finish options and how they operate.

The major difference between a SSD session and all others is the lack of ability to remotely program or command the power base unit. The power base transmits only, and will not act on any received characters (commands sent from the computer). Therefore, it is the responsibility of the operator to correctly setup the parameters in both SlotTrak and the SSD power base unit(s) to run a race properly. **The number of race laps designated on the SSD setup screen in SlotTrak must be equal to the programmed number of laps on the power base if the SSD power control option is enabled** in settings (only applicable for two lane – single power base setups).

Scalextric Sport Digital Race Configuration

Race Descrip.	Demo software																						
Car Class	Fly Racing Saleen																						
Race Laps	10	Auto Qualify																					
Start Race with Lap	1	<div style="border: 1px solid gray; padding: 2px;"> Saved Qualify Sessions Feb-10-2006 10:37 Oct-31-2005 11:52 Aug-18-2005 11:05 Aug-09-2005 16:27 Jun-16-2005 13:01 May-08-2005 20:56 May-08-2005 20:48 Mar-16-2005 23:18 Race Auto Qual 15 Drivers </div>																					
Points Multiplier	1	# of Heats	3																				
Min. Lap Time (Sec.)	2.500	Heat #	2																				
Coast Time (Sec.)	1.500	Bracket	6																				
<input checked="" type="radio"/> End at SAME Lap <input type="radio"/> End at LAST Lap		Load Heat	Top Qualifier																				
		Store Heat	Greg																				
		Print Heat	Add Name																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">TAG / ID</th> <th style="width: 60%;">Driver</th> <th style="width: 25%;">></th> </tr> </thead> <tbody> <tr><td style="background-color: yellow;">Car 1</td><td>Greg</td><td>> 1</td></tr> <tr><td style="background-color: orange;">Car 2</td><td>Bob</td><td>> 2</td></tr> <tr><td style="background-color: white;">Car 3</td><td>Jay</td><td>> 3</td></tr> <tr><td style="background-color: blue;">Car 4</td><td>Kristen</td><td>> 4</td></tr> <tr><td style="background-color: orange;">Car 5</td><td>Jana</td><td>> 5</td></tr> <tr><td style="background-color: green;">Car 6</td><td>Sam</td><td>> 6</td></tr> </tbody> </table>		TAG / ID	Driver	>	Car 1	Greg	> 1	Car 2	Bob	> 2	Car 3	Jay	> 3	Car 4	Kristen	> 4	Car 5	Jana	> 5	Car 6	Sam	> 6	Preferred Heats 3 15 Dave 3 Kirk 14 Mike 2 Chris 13 Melissa 1 Nike 12 Sam 11 Jana 10 Kristen 9 Jay 8 Bob 7 Greg 6 Tom 5 Eric 4 Ron
TAG / ID	Driver	>																					
Car 1	Greg	> 1																					
Car 2	Bob	> 2																					
Car 3	Jay	> 3																					
Car 4	Kristen	> 4																					
Car 5	Jana	> 5																					
Car 6	Sam	> 6																					
<input type="button" value="Cancel Race"/>		<input type="button" value="Load Last Configuration"/>																					
<input type="button" value="Add Entrants from Master Driver list"/>																							
<input type="button" value="All Information Correct - Start Race"/>																							

Scalextric SSD end race options:

End at **SAME** Lap - when the leading car passes the Sport Digital power base Finish Line at the end of the final lap, the race finishes for this car and all other cars as they complete their CURRENT lap.

End at **LAST** Lap - the race finishes for each car as it completes its final lap. The race finishes when all cars have completed their FULL number of laps.

Auto Qualify – when using Auto Qualify in SSD mode, SlotTrak will only allow the maximum number of digital entries (for example 12 drivers for a 4 lane/2 Power base setup) to be selected. In other words, only one heat may be defined. If you select more than the maximum, the driver selection is truncated. You will be prompted to enter the digital ID for each of the drivers selected. Whenever this qualify file is loaded in the SSD race setup, the digital ID that was defined in the auto qualify settings screen will be assigned to the associated driver.

Note: the above applies to auto qualify only. If you run a normal qualify session and import that file in SSD setup, all drivers are imported into a possible multiple heat race and you will be required to assign the proper digital ID 1 to ?. The above screenshot illustrates this. The saved qualify file for 15 drivers was imported (actually this file is an auto qualify file from a non-SSD race) and multiple heats are configured.

Refer to the Dash setup instructions for clarification on all of the other settings.

There are two different ways that a SSD race can be implemented.

1. Leave all power base units in power-up state and let SlotTrak do most of the work. This is definitely the easiest way to run a race. There is no programming or setup required on the power base. All power bases are left in practice (power-up state) mode. SlotTrak will determine who won the race and finish order. The only drawback to this method is the power may be left on at the end of the race (unless you enable the external power control in SlotTrak). Counting and timing for each individual car will stop when that car has been determined to have finished the race, but the cars may continue to operate, depending on the power control options specified.
2. The power base can be used to turn the power on at the start of a race, and optionally turn the power off for each car as it finishes or turn power off at end of race. There are two ways to start a race in this mode (see input settings for Scalextric Sport Digital for further explanation):
 - Use the start button on the power base to start a race. SlotTrak waits for the start command to be issued by the power base(s) and begins to count and time after the start command is received. If the start tree is enabled, it is displayed with red lights initially. The lights turn yellow when the start command(s) are received from the power base(s). When the power is actually turned on (after the power base countdown), the lights turn green.
 - Use the 'SlotTrak Start Button to start race' option to start a race. The start button is pressed on the power base to initiate the start sequence, but the race does not actually start until the start button on the SlotTrak display screen is clicked (or F8 is pressed) and, if the start tree is enabled, the countdown from the on-screen start tree completes. The power base turns the power on, the start command is received by SlotTrak through the interface, and the 'Start Race' button on the SlotTrak screen display becomes visible. Power is now turned on to the track, but if a driver leaves before the 'Start Race' button is pressed and the on-screen countdown finishes, lap triggers are ignored and the driver(s) are basically penalized a lap for jumping the start because the lap did not count. Make sure to line the cars up right before the sensors when this option is enabled. You must check 'Use SlotTrak Start button to start race' option in Scalextric SSD input settings to enable this start option.

SlotTrak still counts and times laps and displays the running order in the race as always, but also synchs itself to the race by interpreting the power base 'race over' command. SlotTrak also displays any false start indicators if they are enabled on the power base for this option.

In either case, SlotTrak NEVER counts laps for cars that it has determined to have completed the designated number of laps, or depending on the end option selected, have completed their current lap after a race winner has been established. The cars may remain running depending on the power control option used, but no additional laps or lap times will be recorded for those car(s).

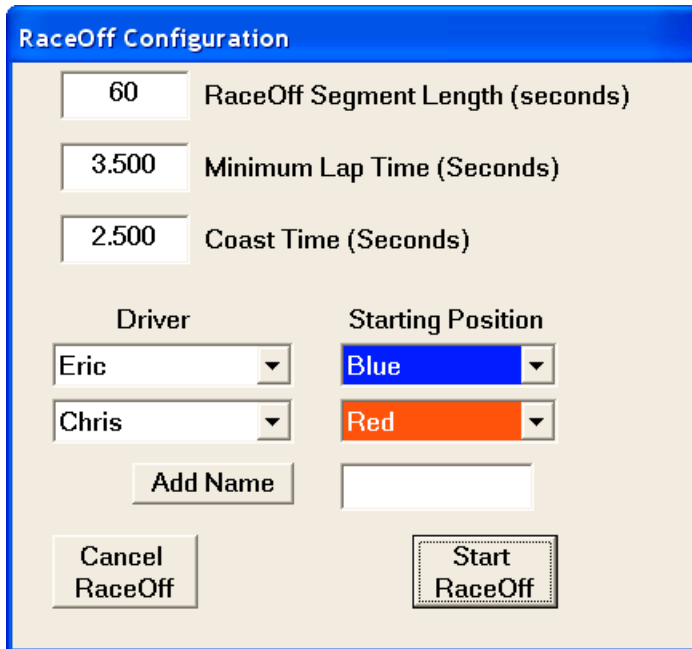
The SSD race display is the same as the Dash session, with the addition of the optional false start indicator.

Race-Off Session

[Back to Table of Contents](#)

Race-Off is a two-segment match race between two drivers. Each driver selects a lane to start in. The first segment is started and runs for the specified segment length. At the end of the first segment, the drivers swap lanes, putting their cars in the other's lane at the track position that their own car stopped at. The second segment is then completed. One use for Race-off is to resolve ties in races. Any match race can be setup using Race-off.

Race-Off Setup



The image shows a 'RaceOff Configuration' dialog box with a blue title bar. It contains several input fields and buttons. At the top, there are three text boxes with labels: '60' for 'RaceOff Segment Length (seconds)', '3.500' for 'Minimum Lap Time (Seconds)', and '2.500' for 'Coast Time (Seconds)'. Below these are two columns of dropdown menus. The first column is labeled 'Driver' and has 'Eric' and 'Chris' selected. The second column is labeled 'Starting Position' and has 'Blue' and 'Red' selected. Below the dropdowns is an 'Add Name' button followed by an empty text box. At the bottom left is a 'Cancel RaceOff' button, and at the bottom right is a 'Start RaceOff' button.

Setup is self-explanatory. Two drivers and what lanes they will start in are specified in the dropdown lists, along with a segment length and minimum lap time. There is no timer countdown between segments in a race-off. Results are not saved for a Race-off.

Race-Off Display and Operation

Raceoff Session

Driver	LAPS	Total laps	Best Lap	Lap Time
Eric	5	5	4.143	5.028
Chris	5	5	4.162	5.049

Segment # 1

35
TIME REMAINING
(Seconds)

Pause [F8]

1. The same functionality described in the Timed Race session applies to the Race-off session. Race-off results are not saved in a file.
2. Double-click the Segment Laps display label or driver name label during a segment pause to adjust the number of laps for one of the two drivers.
3. Right-click the lap time display label to display a list all lap times for that lane.

About Menu

The About Menu selection will display the splash screen that popped up when SlotTrak was started. The revision number of the program and assorted computer hardware parameters are displayed.

Register Menu

SlotTrak is Trialware. Registration cost is \$99 for the regular version, and \$149 for the commercial version which includes the time sell feature. When not registered, the program is fully functional, but the following restrictions are implemented:

- Race segment length is limited to 20 seconds
- Counted segments are limited to 3 laps
- Practice sessions display a message after 3 minutes
- Qualify is limited to 15 seconds

36 days from the software install date, SlotTrak becomes unusable if not properly registered. After 36 days of unregistered use, the only enabled function is software registration. The 'Evaluate SlotTrak' button disappears and all session types are disabled.

SlotTrak is keyed to the particular computer it is installed on, and requires a unique registration key for each individual computer. The software code is required to generate a valid key, which will register the program. Follow the instructions on the registration screen. To pay, use PayPal with the e-mail address SlotTrak@fsmra.com. Send the software code to the same e-mail address (displayed on the registration screen). When you receive the key, you have two options to register the program:

1. Enter the registration key in the Registration key text input box and then click the 'Register SlotTrak' button. It is best to cut-and-paste the key to ensure the key is not mistyped.
2. Place the entire key file that you receive into the SlotTrak application folder (the folder/directory where SlotTrakXXX.exe resides – normally c:/Program Files/SlotTrakXXX) and run SlotTrak. The program will register automatically. This is definitely the easiest and best way to register the program.

Don't lose the key – something may happen on your computer (hardware failure, virus, etc.) that will require a software re-install and re-registration. The key is entirely numeric, so case sensitivity is not an issue.

If you have SlotTrak questions, confused about content of this manual, or have suggestions, e-mail me at:

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