Z1 Software Manual

Z1 Dashboard v4.14

Z1 Analyzer v1.11

Z1 Server v1.12

Updated 5/3/2018

Table of Contents

Z1 Dashboard Software Overview

The Z1 Dashboard software is a comprehensive suite of displays designed to help the sim racer get the most from their sim racing experience. Compatible with many of the most popular modern sims, including iRacing, rFactor 1 & 2, Assetto Corsa, Automobilista, RaceRoom, Project CARS 1 & 2, Kart Racing Pro, ARCA Sim Racing, Game Stock Car, and Codemaster F1 sims, the Z1 Dashboard software will auto detect the sim you are running and then choose the correct dash to display from its list of pre-defined sim-racing dashboards.

With over 100 different dashboard variations there is one for every sim racer and every car. You can customize the Z1 with each car having up to 10 dashboards. You can scroll through these dashboards with a click of a button. If that is not enough for you or you want multiple dashboards displayed simultaneously, then multiple instances of the software can be run, each displaying different dashboards.

But the Z1 Dashboard software is not just about displaying dashboards. It is also a tool to help you get the most out of your sim racing experience allowing you to finish as high up the order as possible. There are real time track maps to show you where you are on track compared to your competitors, and where you

will exit after your pit stops. There are timing and scoring screens to provide detailed lap times, position, laps and fuel information.

Fuel management is a crucial part of racing. The Z1 Dashboard software provides you will all the information you need to ensure you take the correct amount of fuel during the race. There are screens to tell you how much fuel you'll need to finish, your average fuel consumption, the number of laps remaining in the race (especially useful in timed races), and the number of laps of fuel remaining in your car. The software can interface with the sim to properly fill the tank during a pit stop with the push of one button.

Telemetry is another huge aspect of modern racing. With two full telemetry dashboards giving you live information about tires, tire wear, tire temperature, g-forces, and driver inputs all in an easy to view graphical display, you can ensure you get the most out of your car.

Try out the Z1 Dashboard sim-racing software today! Sim-racing just isn't the same without a Z1 Dashboard.

Registering the Z1 Dashboard Software

Z1 Dashboard Registration The first time you run the Z1 Dashboard software you will be asked if you would like to register your copy of the software. There are three ways to register the software. The first is to enter your order number. This is the preferred method of registration and will allow you to use the software online and offline with all supported sims.

The second method is used in conjunction with the Z1 Server application. If you will be connecting to a registered Z1 Server, then you should use this method.

The third method allows you to use your driver name within the sim to register the software. You can use this method if the first two methods does not work for you or you do not have your order number. Note that this method works with only certain sims and requires that you play them online. To set the driver names you may use, click here and enter your order number.

In order to register the software you must be connected to the internet.

Running As A Demo

To run the demo version of the software click the Run As Demo button. This will run the software as a demo. The demo version of the software is a fully functional version which will allow you to use all aspects of the software. After 15 minutes of use the software will automatically quit. You can then restart the software for another 15 minutes.

Unregistering The Software

You may unregister the software by clicking the About button in the settings dialog. That will display a screen that allows you to unregister your software. If you are going to move the software to a different computer you will need to unregister it from the first computer before moving it.

Updating the Z1 Dashboard Software

All purchases of the standard private home use license of the Z1 Dashboard software come with one free month of updates from the date of purchase. If you also purchased the update subscription, then you will be able to download all the updates after that date as long as your subscription is active. If you do not have the update subscription, then you will be able to purchase any update for $14.

Connecting the Z1 LCD Screen

Z1 LCD Screen The Z1 LCD Screen connects to a USB port on your computer. It has its own onboard circuitry to power the 480 x 272 pixel display. When using the Z1 LCD Screen, the Z1 Dashboard software will automatically detect the screen and place the first instance of the running software on the screen. It will also use slightly less CPU time as it offloads some of the drawing to the screen's circuitry. It is the perfect way to get the best from your racing sim dashboard software!

LCD SCREEN DRIVER INSTALLATION PROCESS

The first time you connect your LCD Screen you will need to make sure the drivers are properly installed. Following these steps will ensure your screen is up and working as fast as possible.

1) Make sure you have downloaded the LCD Drivers and unzipped them. You can download the drivers here.

2) Plug in the LCD Screen to an available USB port. The Z1 Sim Wheel logo should appear on the LCD Screen. Note that depending on the number of current USB devices you already have attached to your computer a powered USB hub may be necessary.

3) Windows will search for a driver, but will most likely not find one.

4) Open the device manager on your computer (right click on My Computer, choose Properties, then choose Device Manager on the top left.)

5) Under Other Devices you will see USBD480. Right click on that and choose Update Driver Software

6) Choose the option to manually browse and navigate to the drivers folder. (This 'drivers' folder is from the LCD Screen Drivers zip file that is available on the www.z1SimWheel.com/downloads page.)

7) Make sure the option to check subfolders is checked.

8) Windows will find the driver and install it.

The LCD Screen benefits

• Small and compact display

• Can easily be permanently integrated into your sim racing cockpit

• Resistive touch panel works when wearing racing gloves (unlike phones or tablets)

• Single USB connection makes connecting to your PC easy.

• Wired connection prevents lag, dropped connections and interference from outside applications as occurs on phones and tablets.

LCD Box specs

• Screen Resolution: 480 x 272 pixels (16 bit color)

• Box Construction: powder coated aluminum.

• Carbon Fiber: Optional carbon fiber front panel.

• Height: 86mm (3-3/8 inches)

• Width: 130mm (5-1/8 inches)

• Depth:20mm (13/16 of an inch)

• Weight: 175 grams.

Connecting to the Supported Sims

The Z1 Dashboard software currently supports 15 racing simulations. This section describes how the Z1 Dashboard software connects to each of those racing simulators.

Anti Virus Software

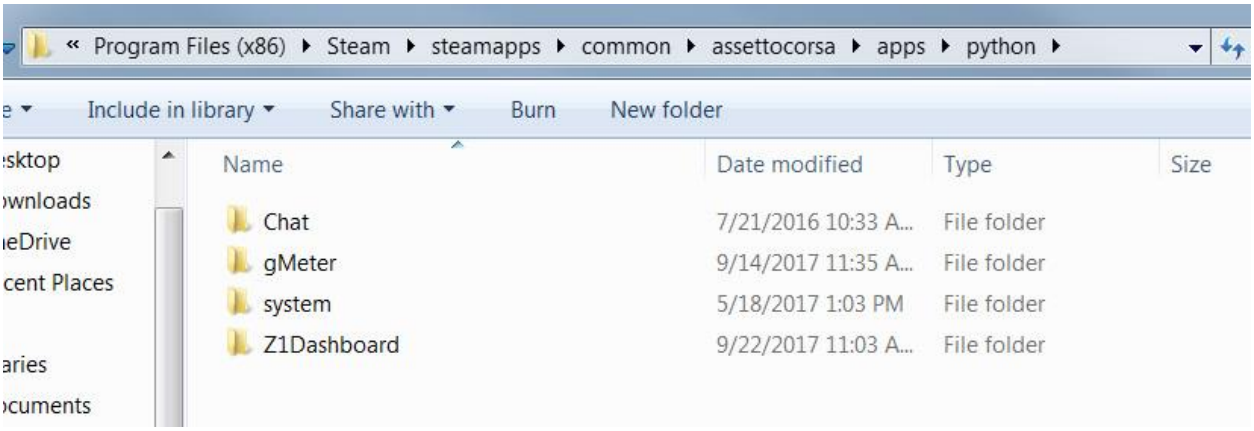
Note that sometimes certain anti virus software can interfere with the connection between the Z1 Dashboard and your sim by either placing the Z1 Dashboard software in a 'sandbox' where it can't communicate with any other processes, or by preventing certain ports from being opened. If you find that you are unable to connect to your racing simulator, then the first place to look is your anti-virus software.

iRacing

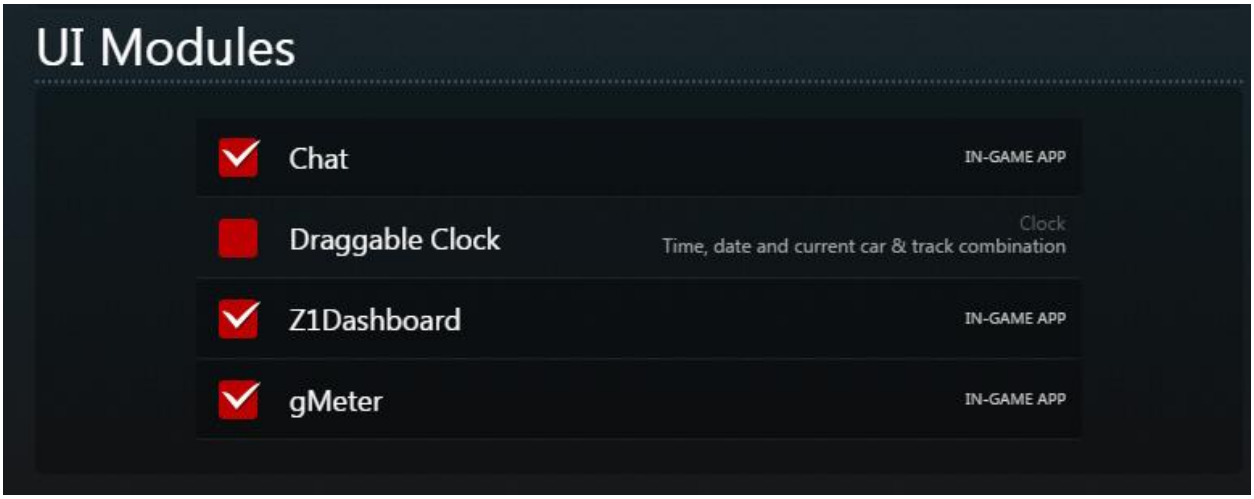
iRacing is extremely simple to setup. There is actually nothing you have to do. Just launch the Z1 Dashboard software and then launch iRacing. The software will detect that iRacing is running and then display the statistics screen or your favorite sim racing dashboard.

Assetto Corsa

To get all the information from Assetto Corsa you will need to install the python plugin. The plugin is located in documents/z1dashboard/plugins/assettocorsa. There you will find a folder called Z1Dashboard. It contains the plugin 'Z1Dashboard.py'. Copy the entire folder into Program Files (x86)\Steam\steamapps\common\assettocorsa\apps\python. (You should end up with the Z1Dashboard folder inside the python folder as shown below. And that Z1Dashboard folder should contains a file called 'Z1Dashboard.py' and two other folders called 'lib32' and 'lib64'.



Then when you start Assetto Corsa look in the General settings under the UI Modules and make sure the Z1Dashboard module is selected, as shown below. Note that the Z1 Dashboard software recognizes Assetto Corsa when you actually go to the track, and not when you are still selecting the car and track.



Automobilista

The connection to Automobilista requires that you place the Z1Automobilista.dll plugin into the Automobilista plugin folder. The Z1Automobilista.dll plugin file is located in documents/z1dashboard/plugins/automobilista. You will need to copy this into the plugins folder of your Automobilista installation. Once there simply start your Z1 Dashboard software and then start Automobilista.

rFactor 1

The connection to rFactor 1 requires that you place the Z1SWRF.dll plugin into the rFactor 1 plugin folder. The Z1SWRF.dll plugin file is located in documents/z1dashboard/plugins/rfactor1. You will need to copy this into the plugins folder of your rFactor 1 installation. Once there simply start your Z1 Dashboard software and then start rFactor 1.

rFactor 2

The connection to rFactor 2 requires that you place the Z1SWRF2.dll or the Z1SWRF264.dll plugin into the appropriate rFactor 2 plugin folder. Both files are located in the documents/z1dashboard/plugins/rfactor2 folder. The Z1SWRF2.dll is for 32 bit versions of rFactor 2. The Z1SWRF264.dll is for 64 bit versions of rFactor 2.

Steam Installation:

The rFactor 2 32 bit plugin folder is located at \Program Files (x86)\Steam\steamapps\common\rFactor 2\Bin32\Plugins

The rFactor 2 64 bit plugin folder is located at \Program Files (x86)\Steam\steamapps\common\rFactor 2\Bin64\Plugins

Previous Installations:

The rFactor 2 32 bit plugin folder is located at \Program Files (x86)\rFactor2\Bin32\Plugins.

The rFactor 2 64 bit plugin folder is located at \Program Files (x86)\rFactor2\Bin64\Plugins.

You will need to copy the appropriate plugin into the plugins folder of your rFactor 2 installation. Once there simply start your Z1 Dashboard software and then start rFactor 2.

Note that there will be about a 10-20 second delay when you get in the car before rFactor 2 will start broadcasting data. This results in the software not detecting that you are in the car for those 10-20 seconds. You will notice a small 'plug' icon at the top left of your rFactor window which will shrink away when rFactor 2 starts to broadcast the data.

RaceRoom

RaceRoom is extremely simple to setup. There is actually nothing you have to do. Just launch the Z1 Dashboard software and then launch RaceRoom. The software will detect that RaceRoom is running and then display the statistics screen or your favorite sim racing dashboard.

ARCA Sim Racing

The connection to ARCA Sim Racing requires that you place the Z1SWArca.dll plugin into the ARCA Sim Racing plugin folder. The Z1SWArca.dll plugin file is located in documents/z1dashboard/plugins/ARCA Sim Racing. You will need to copy this into the plugins folder of your ARCA Sim Racing installation. Once there simply start your Z1 Dashboard software and then start ARCA Sim Racing.

Game Stock Car

The connection to Game Stock Car requires that you place the Z1SWGSC.dll plugin into the Game Stock Car plugin folder. The Z1SWGSC.dll plugin file is located in documents/z1dashboard/plugins/Game Stock Car. You will need to copy this into the plugins folder of your Game Stock Car installation. Once there simply start your Z1 Dashboard software and then start Game Stock Car.

Kart Racing Pro

The connection to Kart Racing Pro requires that you place the Z1SWKRP40.dlo file into the Kart Racing Pro plugin folder. The Z1SWKRP40.dlo file is located in documents/z1dashboard/plugins/Kart Racing Pro. You will need to copy this file into your Kart Racing Pro plugins folder. Once done simply start your Z1 Dashboard software and then start Kart Racing Pro.

SimBin sims

There is nothing you need to do to connect to your favorite SimBin sim. Just start the sim and start the Z1 Dashboard software. When you get in the car the Z1 Dashboard will recognize the sim and display the dashboard. Note that as SimBin does not output the type of car being driven that the Z1 Dashboard has to do some guesswork to determine which car is being used. You can still customize the dashboard for the car, but note that not every car may be uniquely identified, resulting in the same dashboard being used for multiple cars. Also note that as SimBin does not output when the sim has exited, the Z1 Dashboard assumes that if the sim does not output any new data within 10 seconds that it has exited. This means that if you are in the process of selecting an event that the Z1 Dashboard might un-connect from the sim and then instantly reconnect. This is normal behavior.

Project CARS

Project CARS requires that you turn on the Use Shared Memory option in order for the Z1 Dashboard software to successfully communicate with Project CARS. This option is located within Project CARS under Help & Options. Choose Visuals and the Use Shared Memory option is located in the Hardware menu block. Make sure this is set to Yes. Once done simply start your Z1 Dashboard software and it will recognize Project CARS.

Codemasters F1 2017

Codemasters uses a UDP connection to communicate with the Z1 Dashboard software. First make sure that the Z1 software is set to scan for the F1 2017 sim. This is done ind the Network tab of the Z1's settings dialog. Second, you will need to tell the sim to send the UDP data. To do so go to the preferences menu tab and select UDP Telemetry Settings as shown below.

Then make sure the UDP Telemetry option is set to On. Set the Send Rate as high as possible. 60 Hz is currently the highest setting.

If you are having difficulties in connecting, then ensure that your anti virus software or firewall is not blocking the IP Address or Port. By default these are IP Address 127.0.0.1 and Port 20777. You can change these if necessary in the Network tab of the Z1 Dashboard's settings dialog.

Codemasters F1 2016

Codemasters uses a UDP connection to communicate with the Z1 Dashboard software. First make sure that the Z1 software is set to scan for the F1 2016 sim. This is done ind the Network tab of the Z1's settings dialog. Second, you will need to update your hardware_settings_config.xml file for the sim in order to turn on the data feed. This file is located in Documents\My Games\FormulaOne2016\hardwaresettings.

Find this line:

```
<motion>
...
<udp enabled="false" ip="127.0.0.1" port="20777" />
...
</motion>
```

and update it to be:

```
<motion>
...
<udp enabled="true" ip="127.0.0.1" port="20777" />
...
</motion>
```

If you are having difficulties in connecting, then ensure that your anti virus software or firewall is not blocking the IP Address or Port. By default these are IP Address 127.0.0.1 and Port 20777. You can change these if necessary in the Network tab of the Z1 Dashboard's settings dialog.

Note that sometimes with Codemasters sims, there can be a delay of data through the UDP connection making the Z1 Dashboard lag behind by about a second or two. If you find this happening please make sure you do not have any firewall, anti-virus software, or other devices that might be filtering or slowing the data.

Codemasters F1 2015

Codemasters uses a UDP connection to communicate with the Z1 Dashboard software. First make sure that the Z1 software is set to scan for the F1 2015 sim. This is done ind the Network tab of the Z1's settings dialog. Second, you will need to update your hardware_settings_config.xml file for the sim in order to turn on the data feed. This file is located in Documents\My Games\FormulaOne2015\hardwaresettings.

Find this line:

```
<motion>
...
<udp enabled="false" ip="127.0.0.1" port="20777" />
...
</motion>
```

and update it to be:

```
<motion>
...
```

```
<udp enabled="true" ip="127.0.0.1" port="20777" />
...
</motion>
```

If you are having difficulties in connecting, then ensure that your anti virus software or firewall is not blocking the IP Address or Port. By default these are IP Address 127.0.0.1 and Port 20777. You can change these if necessary in the Network tab of the Z1 Dashboard's settings dialog.

Note that sometimes with Codemasters sims, there can be a delay of data through the UDP connection making the Z1 Dashboard lag behind by about a second or two. If you find this happening please make sure you do not have any firewall, anti-virus software, or other devices that might be filtering or slowing the data.

Codemasters F1 2013

Codemasters uses a UDP connection to communicate with the Z1 Dashboard software. First make sure that the Z1 software is set to scan for the F1 2013 sim. This is done ind the Network tab of the Z1's settings dialog. Second, you will need to update your hardware_settings_config.xml file for the sim in order to turn on the data feed. This file is located in Documents\My Games\FormulaOne2013\hardwaresettings.

Find this line:

```
<motion enabled="true" ip="dbox" port="20777" delay="1" extradata="0"
/>
```

and update it to be:

```
<motion enabled="true" ip="127.0.0.1" port="20777" delay="1"
extradata="2" />
```

If you are having difficulties in connecting, then ensure that your anti virus software or firewall is not blocking the IP Address or Port. By default these are IP Address 127.0.0.1 and Port 20777. You can change these if necessary in the Network tab of the Z1 Dashboard's settings dialog.

Note that sometimes with Codemasters sims, there can be a delay of data through the UDP connection making the Z1 Dashboard lag behind by about a second or two. If you find this happening please make sure you do not have any firewall, anti-virus software, or other devices that might be filtering or slowing the data.

Dashboard Switching

The Z1 Dashboard software allows you to assign up to 10 dashboards to each car. You can then scroll through the dashboards with a button click. You can assign this button click to a rotary switch or a scrolling button on your wheel, allowing you to change dashboard easily. Each of the 6 instances can have up to 10 dashboards assigned to them for each car. With the ability to map specific joystick buttons to each instance, if you've got enough buttons you can control everything from your wheel or button box.

By default the first instance of each car will display the following dashboards in order:

1) The car's main dashboard
2) The track map dashboard
3) The timing & scoring dashboard
4) The telemetry dashboard
5) The adjustment dashboard
6) The pit stop dashboard

Limiter Dash:

In addition to being able to scroll through your selected dashboards, you can also assign one of them to be displayed when the pit limiter is engaged. By default this is the pit stop dashboard. When the pit limiter is turned off your display will revert to the previously displayed dashboard.

You could use this feature to switch to the track map to see the position of a competitor while you service your car. Alternatively the pit stop dashboard could be useful to ensure you properly fill the tank of your car. You can set this to whatever suits your needs, or simply turn the feature off it you prefer.

Multiple Instances

The Z1 Dashboard software can be run multiple times simultaneously. When you run the software you create what is known as an "instance." If the software is running and you attempt to run it again, you will create another instance of the software, and end up with two windows both running the software. You may create up to 6 separate instances.

The advantage of multiple instances of the software is that you can have different dashboards displayed on each instance and can position each one wherever you need it. For example you could have four instances all running simultaneously. One instance could display the main dashboard for the car; another the Track Map dashboard; another the Timing and Scoring dashboard; and another the Telemetry dashboard.

By default the second instance displays the Track Map dashboard with driver positions. The third instance displays the Timing & Scoring dashboard. The fourth instance displays the Telemetry dashboard with friction circle and tyre graphics. The fifth instance displays the Adjustment dashboard.

All settings are specific to each instance. You can access these settings in the Car 1 tab of the Settings Dialog. The Settings Dialog will display the settings for its specific instance. And as each instance can have different settings, you will need to open the Settings Dialog for each instance if you wish to customize that instance.

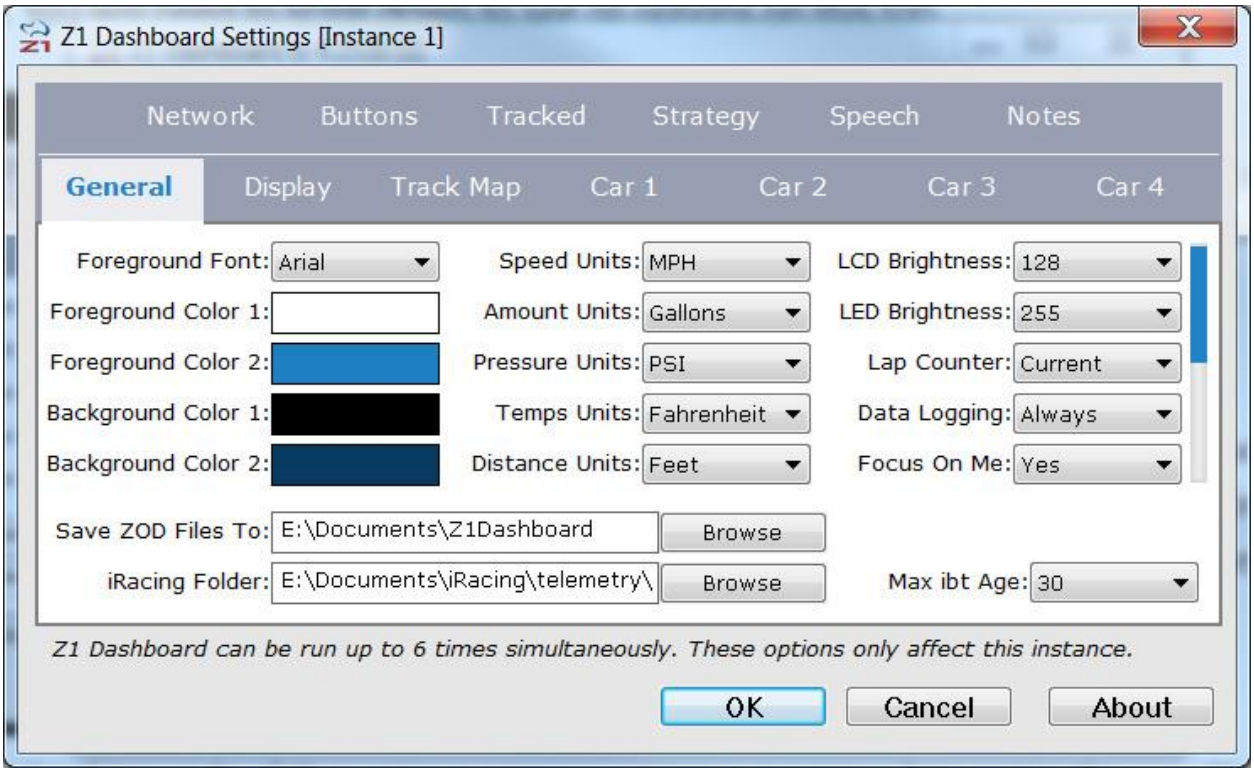
Note that if you have a Z1 LCD Screen, then instance 1 is always displayed on the LCD Screen. Instances 2 through 6 would be displayed on your regular Windows monitor. Also when using the Z1 LCD Screen, the Always On Top, Hide Title Bar, Scaling and Auto Resize options have no effect on instance #1.

Z1 Dashboard Settings

General Settings

The Z1 Dashboard software allows you to easily customize the display to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon Settings Icon while not connected to a sim, or by selecting 'Settings' from the menu when not in the car. Note that each instance of the Z1 Dashboard software can have different settings. Changing settings for a particular instance only effects that instance.

Note there is a scroll bar on the right side of the tab. You will need to scroll down to see all options on this tab.



Foreground Font:

This is the font used to display the text on the garage screens you see when not in the car. The drop down displays all fonts available on your system. Select the desired font from the list.

Foreground Color 1-2:

These colors are used to display the text on the various garage screens you see when not in the car. Change these colors to change the look of the garage screens. Clicking on any of the swatches will will display a color chooser which allows you to select the desired color.

Background Color 1-4:

These colors are used to create backgrounds of the various garage screens you see when not in the car. Change these colors to change the look of the garage screens. Clicking on any of the swatches will will display a color chooser which allows you to select the desired color.

Speed Units:

This determines how speeds will be displayed, either KPH or MPH.

Amounts Units:

This determines how amounts, such as fuel, will be displayed, either liters or gallons.

Pressure Units:

This determines how pressures will be displayed, either kPa/Bar or PSI.

Temps Units:

This determines how temperatures will be displayed, either Celsius or Fahrenheit.

Distance Units:

This determines how distances will be displayed, either meters or feet.

Kiosk Mode:

This turns Kiosk mode on or off. Kiosk mode will cycle through all selected dashboards for the car, overlaying the name of the dashboard. This is intended for trade show and similar events.

Time Font Size:

This is the font size that will be used when displaying the time on all dashboards and garage screens.

Touch:

If you have a touch screen LCD, then this must be set to Enabled in order for the touch data to be read.

Debug:

This drop down allows you to turn on various debug modes which can help diagnose problems. In most situations this can be left set to off. Note that selecting a debug option can slow down frame rates due to the amount of data output during the debug process.

LCD Brightness:

This is the brightness level of the LCD screen. It can be between 1 and 255. Higher numbers are brighter.

LED Brightness:

This is the brightness level of the LEDs in the SMZ1 wheel. It can be between 1 and 255. Higher numbers are brighter.

Lap Counter:

This lets you choose how the current race lap is displayed on your dashboard. Current means that if you are on lap 10 of a 10 lap race the display will say Lap 10 of 10 (because you are on the 10th lap. Completed

means that if you are on lap 10 of a 10 lap race the display will say Lap 9 of 10 (because you have completed 9 laps.)

Data Logging:

When set to Always the software will data log every lap you run in all sessions. When set to Never the software will not record any of your laps. When set to Button the data logging will be toggled on and off by the user specified button.

Focus On Me:

When set to Yes the standings dashboard will automatically keep the list of drivers scroll so that you are visible on the screen.

LCD Reconnect:

When set to Yes if you were running the software on a Z1 LCD Screen and that screen became disconnected for any reason and is then reconnected, the software will attempt to reconnect to that Z1 LCD Screen.

Save Splits:

When set to Yes the software will save your split times after each session. This allows you to compare laps to ones set in previous sessions. If you do not want to save your split times, set this to No. With the No option set every time you get into the car your split times will be based on whatever times you set during that session.

Show Updates:

When set to Always the software will continually alert you to new versions that are available. When set to Once the software will only alert you to new versions one time.

Sleep:

This can be set to Yes or No. When set to Yes the instance will pause for 16 milliseconds each loop. If you have a very high end system you can set this to No in order to gain some extra performance in the software at the expense of more CPU usage.

High Priority:

This can be either Yes or No. When set to Yes this instance will run at Windows high priority. When set to No it will run at the Windows default priority. Running at high priority can sometimes give slightly more responsiveness on high end systems.

Save ZOD Files To:

This is the location where the Dashboard will create the ZOD telemetry files. You can click the Browse button to open up a file chooser allowing you to select the desired location. Alternatively you can type the full path directly into the text field. The default location is documents/z1dashboard.

iRacing Folder:

This is for iRacing only. To use the IBT telemetry analysis tool you need to tell the app where your iRacing telemetry folder is located. You can click the Browse button to open up a file chooser allowing you to

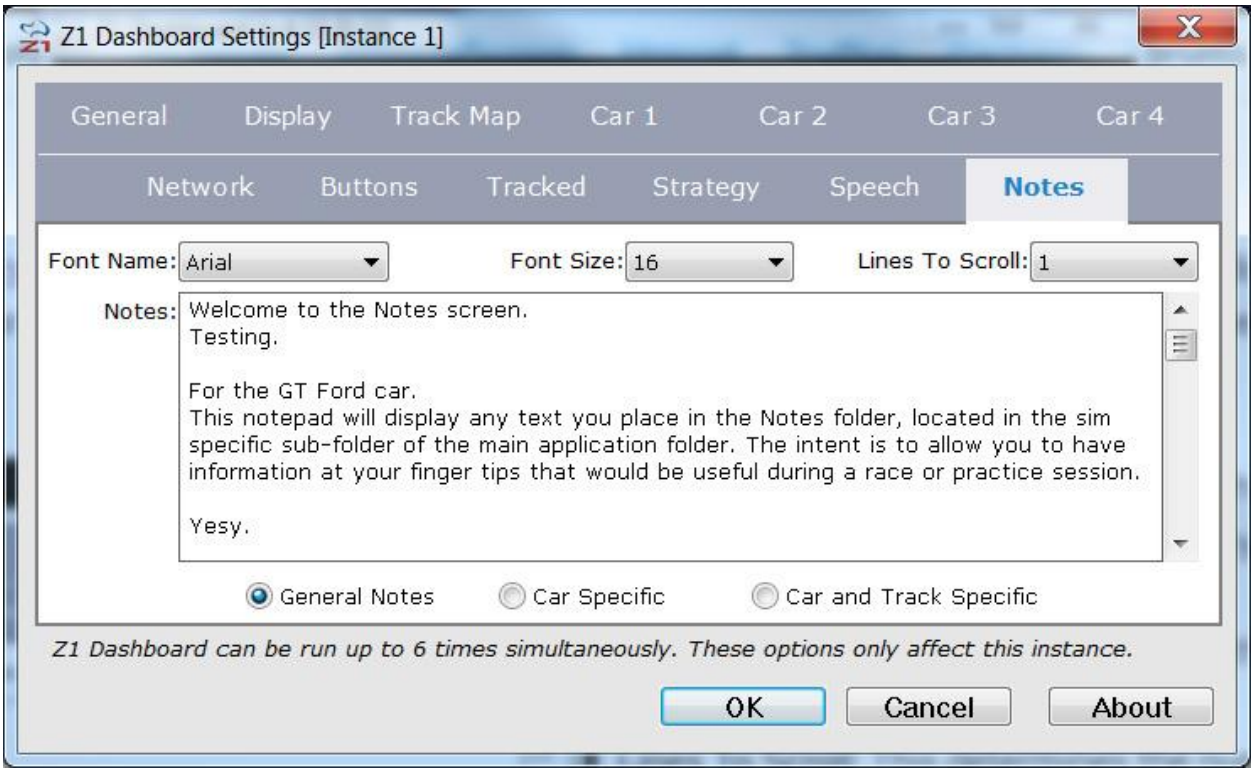
select the appropriate folder. Alternatively you can type the full path directly into the text field. See this page for details on how to fully setup telemetry analysis.

Max ibt Age:

This is for iRacing only. This specifies which IBT files you can select to review using the telemetry analysis tool. Any file older than the specified number of days here will not be displayed as a choice. This is to prevent the number of files from becoming unmanageable.

Notes Settings

The Z1 Dashboard software includes a notes screen in it garage display. This notes screen allows you to display any notes you deem important, broken down by sim, car or car and track. You can customize the appearance of the note as well as the specific text for that note in this tab of the Settings Dialog.



Font Name:

This determines the font that will be used when displaying the notes. The drop down displays all fonts available on your system. Select the desired font from the list.

Font Size:

This determines the size of the font when displaying the notes.

Lines To Scroll:

This determines the number of lines that will be scrolled up or down when you click the up or down arrows at the top right of the notes screen.

Notes:

This is the text that will be displayed in the notes area.

General Notes:

This is the default option. When this option is selected the note will be used as the general notes for the currently selected sim.

Car Specific:

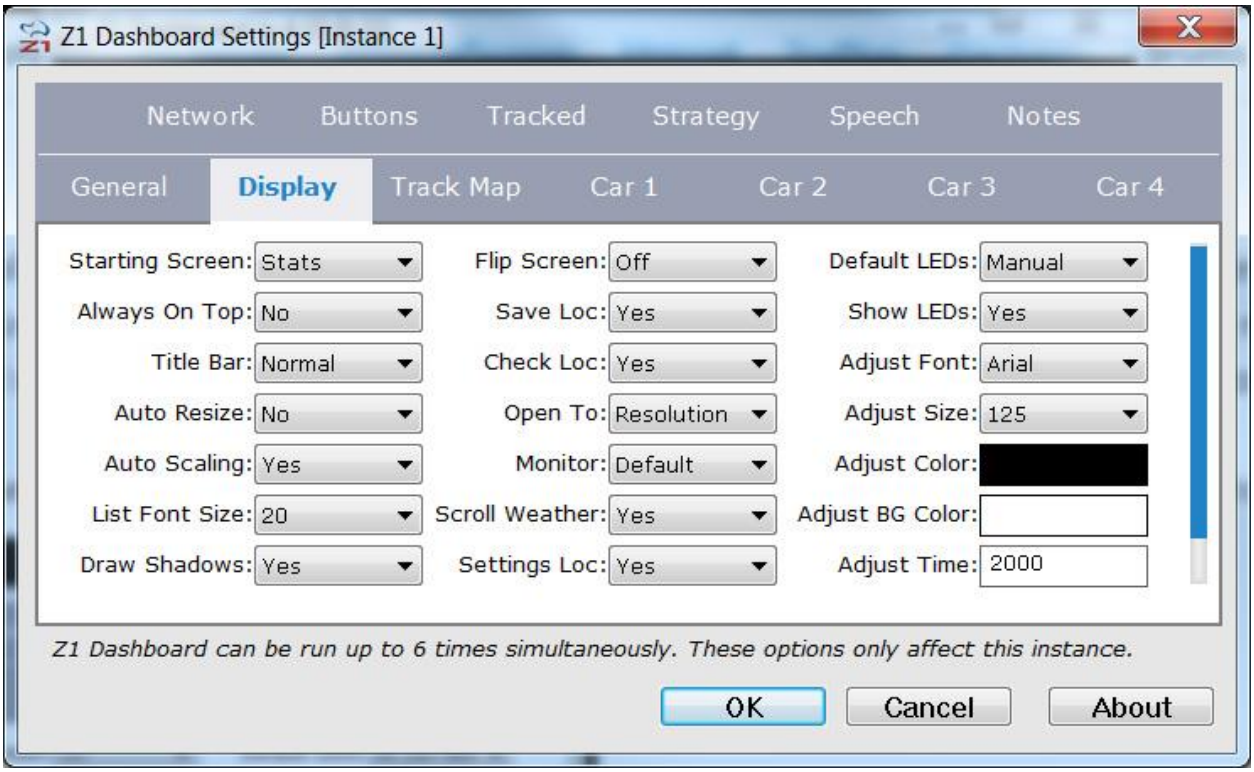
When this option is selected the note will be display whenever you have the current car loaded, overriding any general sim notes that you may have.

Car and Track Specific:

When this option is selected the note will be displayed whenever you have the current car and track loaded, overriding any other notes that may be defined.

Display Settings

The Z1 Dashboard software allows you to easily customize the display to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon Settings Icon while not connected to a sim, or by selecting 'Settings' from the menu when not in the car. Note that each instance of the Z1 Dashboard software can have different settings. Changing settings for a particular instance only effects that instance.



Starting Screen:

This allows you to choose which of five screen options is displayed first when you are not in the car. Note that for the first 4 options you may still switch to one of the other screens by selecting the appropriate icon as this only determines which screen is displayed first.

- **Stats** - This displays the statistics screen first.
- **Notes** - This displays the notes screen first.
- **Laps** - This displays the lap times screen first.
- **Standings** - This displays the standings screen first.
- **Dashboard** - This displays the dashboard even if you are not in the car. This option can be very useful if you wish to view a dashboard such as the Track Map when you are not in the car. Note that if you use this setting then you will not be able to access the other garage screens once the sim has started. To open the settings dialog once the sim has started, click the right side of the screen.

Always On Top:

This can be set to either Yes or No (the default). If you set it to Yes and run your sim in Windows mode, then the Z1 Dashboard software will remain on top of the sim at all times. This can be useful if you want the software to act as an overlay. Note that if you run your sim in full screen mode, this option will not work

Title Bar:

This setting allows you to choose what type of title bar is used for the Z1 Dashboard window. This setting has four options:

- **Normal** - The system default title bar is used at all times.
- **Thin** - A thin title base will be used at all times. Note if you choose this option then you may have difficulty moving or resizing the window.
- **None** - No title bar will be used. Note if you choose this option then you will not be able to resize or move the Z1 Dashboard window.
- **Racing** - The title bar is hidden when you are in the car.

Auto Resize:

This can be either Yes or No. When set to Yes if you change the size of the window with the mouse then the instance will resize its display to fully fit the window. When set to No resizing the window will change the scale (assuming you have Auto Scaling turned on), but the app may not fill the entire window. Note that setting it to Yes can cause a performance hit.

Auto Scaling:

This can be either Yes or No. When set to Yes, the default, the app will automatically determine the optimal scaling factor for the current window size. Note that this does not necessarily mean the full window will be used, as you need auto-resize turned on for that to happen.

List Font Size:

This is the font size that is used to render text in any list. This includes standings screens, driver lists, lists in various track maps screens, lap time lists, etc.

Draw Shadows:

When set to Yes shadows will be rendered on the dashboards that support them. This option requires a bit more CPU processing power and could slightly reduce frame rates in the sim.

LCD Serial #:

When running multiple LCD Screens, this is the serial number of the screen that this instance of the application should be displayed upon. If this is blank then the Z1 will select an LCD screen to use from those available.

Flip Screen:

This is used in conjunction with the LCD Screen. If you want to turn the LCD screen around so that the USB cord exits from the right instead of the left you should set this to On.

Save Loc:

This can be set to Yes or No. When set to Yes the instance will save its location upon exiting. When set to No the instance will not save its location. This can be useful if you don't always have a particular monitor connected to your PC and don't want the Z1 to overwrite a default location.

Check Loc:

This can be set to Yes or No. When set to Yes the instance will check, on start up, to see if it will be displayed off screen based on the position it was when it last ran. When set to No it will display itself at that last position regardless of whether or not that is a valid on-screen location. This is useful if you use USB displays that might not be connected at all times.

Open To:

This determines how the Z1 window is positioned when it is opened. The options are:

- **Scale** - The window will open to the default size base on the last used scale. This is an aspect ratio of 480x272 pixels.
- **Resolution** - The window will open to the exact resolution (size) it was when you last closed it.
- **Maximised** - The window will be maximized on startup.
- **Top Left** - The window will be positioned at the top left of the monitor it was on when it was last closed, and take up a quarter of the screen.
- **Top Right** - The window will be positioned at the top right of the monitor it was on when it was last closed, and take up a quarter of the screen.
- **Bottom Left** - The window will be positioned at the bottom left of the monitor it was on when it was last closed, and take up a quarter of the screen.
- **Bottom Right** - The window will be positioned at the bottom right of the monitor it was on when it was last closed, and take up a quarter of the screen.
- **Top Half** - The window will be positioned in the top half of the monitor it was on when it was last closed, and take up half of the screen.
- **Bottom Half** - The window will be positioned in the bottom half of the monitor it was on when it was last closed, and take up half of the screen.
- **Left Half** - The window will be positioned in the left half of the monitor it was on when it was last closed, and take up half of the screen.
- **Right Half** - The window will be positioned in the right half of the monitor it was on when it was last closed, and take up half of the screen.
- **Full Screen** - The window will take up the entire monitor, but will not be maximized. This can be useful for situations where the maximized option causes problems.

Monitor:

This determine which monitor the Z1 Dashboard will open to. The default option lets the Z1 choose the monitor based on where the application was when it closed, and Windows system settings. Choosing a specific monitor number forces the application to start on that monitor regardless of where it was previously.

Scroll Weather:

This determines if the weather scroll is displayed at the bottom of the garage statistics screen. The weather display will either be a static line or a scrolling line depending upon available space. Note that not all sims support weather, so even if this option is turned on you may not see any weather displayed for some sims.

Settings Loc:

When set to Yes the Z1 may adjust the location of the settings dialog if it appears it will be off screen. If this results in the settings dialog being displayed in odd locations, you should turn this option off.

Default LEDs:

This defines how dashboard shift lights will be setup when you select a new dashboard for a car. There are five options:

- **All 80-98**: illuminates each shift light (LED) individually going from left to right, with the first one illuminating when you reach 80% of redline, and the final one coming on at 98% of redline.
- **All 65-98**: illuminates each shift light (LED) individually going from left to right, with the first one illuminating when you reach 65% of redline, and the final one coming on at 98% of redline.
- **Grouped 80-98**: divides the shift lights (LEDs) into 3 groups moving from left to right. The first group is illuminated at 80% of redline, then second at 90% and the third at 98% of redline.
- **Grouped 65-98**: divides the shift lights (LEDs) into 3 groups moving from left to right. The first group is illuminated at 65% of redline, then second at 80% and the third at 98% of redline.
- **Manual**: You will specify how they illuminate in the Car 3.

Show LEDs:

This lets you choose whether or not the LED lights are displayed within the window. If you are using external LEDs, then you can set this to No to prevent duplication of the LEDs.

Adjustment Settings:

When you make a change to an in-car setting the Z1 software will display the result of that change on the display in large text for a few seconds instead of the currently selected dashboard. These settings effect how those changes are displayed.

Adjust Font:

This is the font used to display the change.

Adjust Size:

This is the font size to display the change.

Adjust Color:

This is the font color used to display the change. Click on the color swatch to display a color chooser allowing you to specify the color used.

Adjust BG Color:

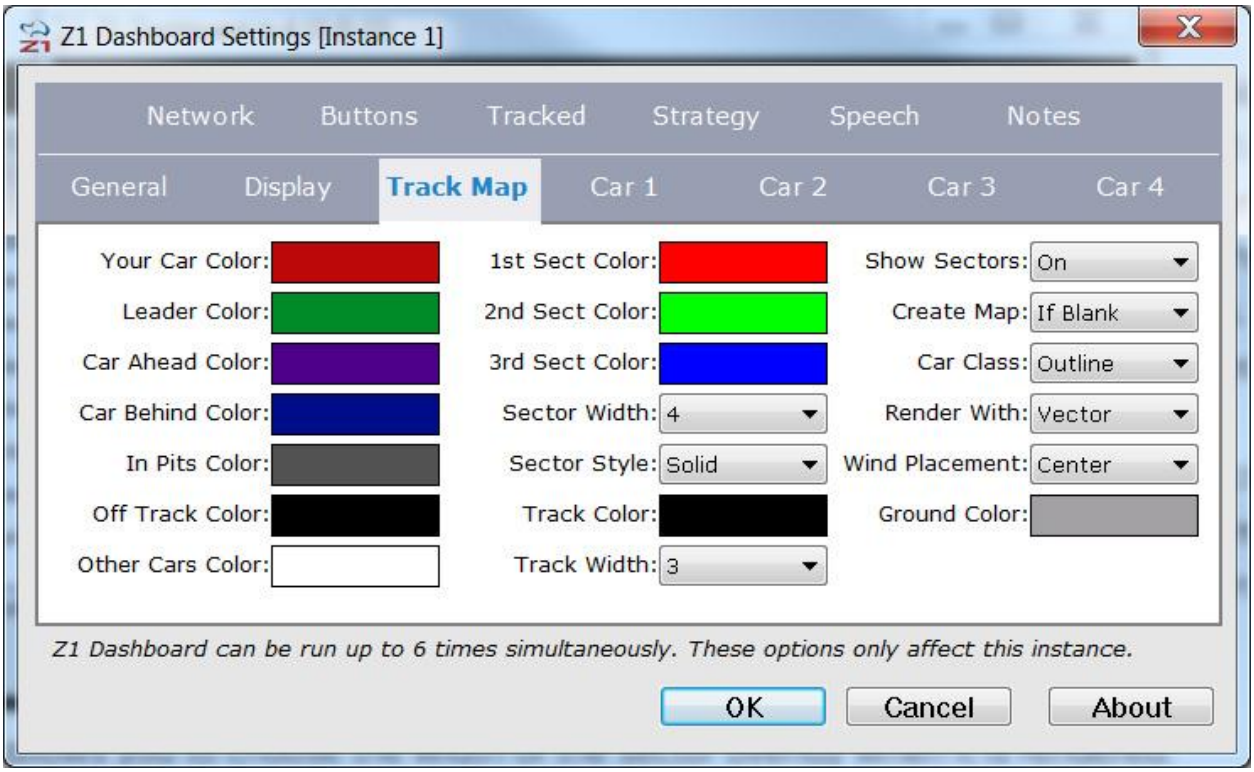
This is the background color of the window used to display the change. Click on the color swatch to display a color chooser allowing you to specify the color used.

Adjust Time:

This is the amount of time the change will be displayed. Setting this to zero turns off the feature.

Track Map Settings

The Track Map tab of the Settings Dialog is where you can customize the appearance of the track map. The first column of text fields allows you to specify the color coding for your car, the leader's car, the car ahead of you, the car behind you, cars in the pits, cars who have driven off track, and cars that don't fall into any of the previous categories. Clicking on the swatch will display a color chooser which allows you to select the desired color.



The second column allows you to specify the colors used to highlight the sectors of the race track. If the track contains more than 3 sectors, then the software will cycle through the different colors when displaying each sector.

Sector Width:

The Sector Width drop down allows you to choose the width of the sector overlay when it is rendered.

Sector Style:

The Sector Style drop down allows you to choose how the sector overlay is rendered. Solid is a single solid line. Dotted renders the overlay as a series of individual dots. In this case the sector width option is the radius of the dots. Dashed renders the overlay as a dashed line.

Track Color:

The track color field shows the color the automatic track map creation process will use when drawing the track. Clicking on the swatch will display a color chooser which allows you to select the desired color.

Track Width:

The track width drop down tells the automatic track map creation process how wide the track should be when drawn.

Show Sectors:

Show Sectors allows you to specify whether or not the sectors should be highlighted. The options are On, where the sectors will always be highlighted; Off, where they will never be highlighted; and Practice, where they will only be highlighted in practice sessions.

Create Map:

The Create Map drop down tells the software when to create the track map. If Blank will create the track map if one does not already exist when you get to the track. Always will create the track map regardless of whether or not one already exists. Never will not create the track map even if one does not exist.

Car Class:

The Car Class drop down lets you specify how a car's class should be drawn. The Fill option will fill the car's circle with a color representing that car's class. (The outline will then be one of the colors from the first column.) The Outline option will draw the car circle's outline with a color representing the car's class. (The circle will then be filled with one of the colors from the first column.)

Render With:

The Render With option allows you to specify how the track map is drawn. Setting it to Vector will draw the map from data points recorded when driving. Setting it to Graphic will use a pre-created graphic for the track map. The Vector option will give cleaner images at higher resolutions. The Graphic option is the original way the maps were drawn, with the advantage of letting you mark up the track map if desired.

Wind Placement:

When possible the Z1 Dashboard will display the wind direction as an arrow and the wind speed on the track map. You can set the location of that display by selecting one of the options here. The default option is to place the information in the center of the map.

Ground Color:

This is the color to be used when rendering the ground on a 3D track map.

Track Map Images

The actual displays of the track maps are PNG images. The Z1 Dashboard software will automatically create the track map for any track you drive on after a lap or two. You can specify when the track map is created. The options are "Always", "If Blank" and "Never". The "Always" option will create a new track map every time you run a new fast lap in a session. The "If Blank" option will create a new track map after every fast lap of a session only if there was not an existing track map at the start of the session. The "Never" option will never create a track map. Note that track maps are only created during practice sessions and not during a race.

Pit Lane

In addition to rendering the track, you may also render the pit lane when using iRacing. To do so turn on the telemetry recording in iRacing (usually Alt-T) and drive a normal racing lap. Then drive another lap where you cross the start/finish line to both start and finish the lap in the pits. Next open the normal driving lap in the Z1 Dashboard's telemetry analysis screen. Click on the compass icon to create the track map. Then return to the selection screen and select the lap where you drove through the pit lane. Click on the compass icon again to have the pit lane added to the track map.

iRacing

iRacing does not output the necessary data to create the track maps during a session. For this sim the Z1 Dashboard software comes with over 230 different track maps. However, you may still create your own track maps from the iRacing telemetry files. This is the suggested method as it produces very accurate track maps.

Drive a full lap with iRacing recording the telemetry. Then open that recorded lap in the Z1 Dashboard's telemetry analysis screen. There will be an option to create a new track map by clicking on the compass icon.

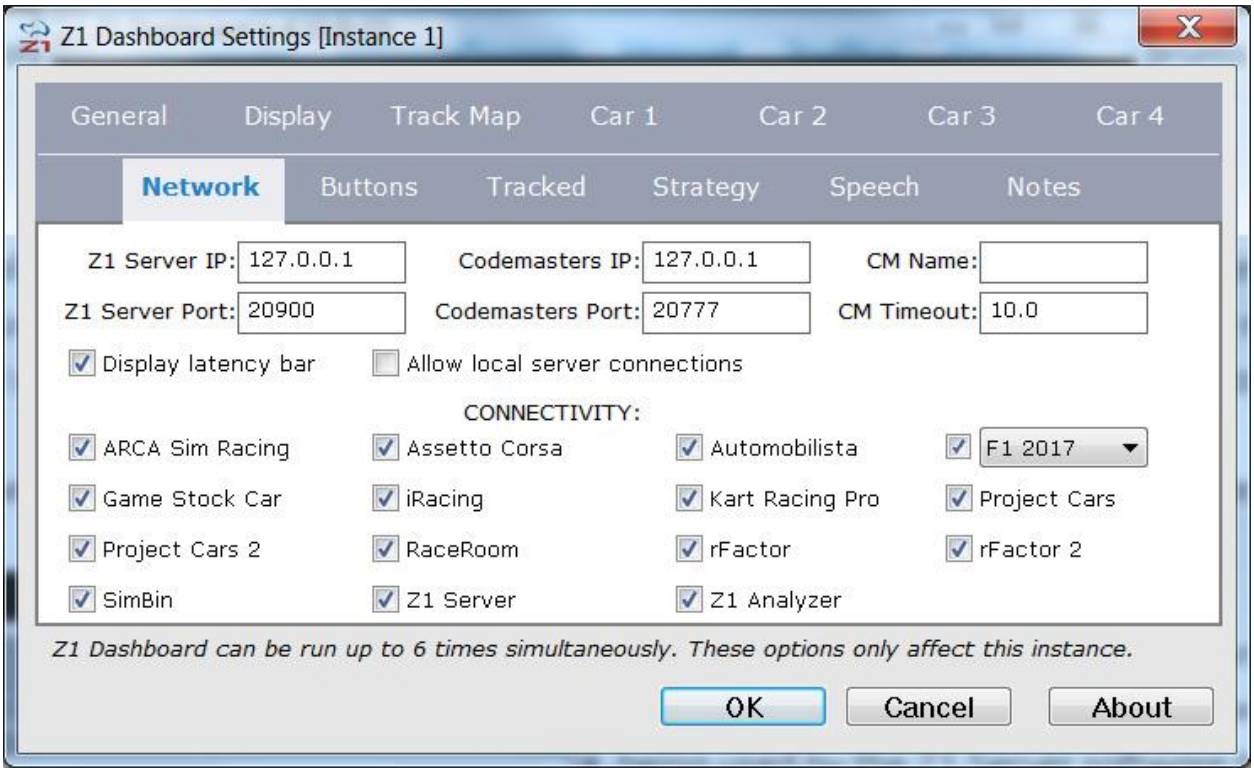
Modifying Track Map Images

In addition to creating track map images for new tracks, you may also want to modify existing PNG images used to display the track maps. You can do this using any image editing software, from Paint to Photoshop.

As an example, if you wanted to add notes to a track map, or corner names or numbers, you would edit the image appropriately and resave it. Now when you display the track map dashboard for that track, your edited track map image would be displayed.

Network Settings

The Z1 Dashboard software allows you to easily customize the display to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon Settings Icon while not connected to a sim, or by selecting 'Settings' from the menu when not in the car. Note that each instance of the Z1 Dashboard software can have different settings. Changing settings for a particular instance only effects that instance.



Z1 Server IP:

If you are running the Z1 Dashboard on a different computer from the sim and want to connect to the Z1 Server software, then you should enter the IP address being used by the Z1 Server software here.

Z1 Server Port:

If you are running the Z1 Dashboard on a different computer from the sim and want to connect to the Z1 Server software, then you should enter the port number being used by the Z1 Server software here.

Display latency bar:

Enabling this option will display a small green bar at the lower right of the Dashboard when it is connected to the Server. The bar shows the quality of your connection. If the bar grows in size, or turns yellow or red then your connection quality is low, and some data may not be received by the Dashboard.

Codemasters IP:

If you want to connect to the Codemasters F1 sims, then you should enter the IP address being used by the Codemasters sim here. This is usually 127.0.0.1.

Codemasters Port:

If you want to connect to the Codemasters F1 sims, then you should enter the port being used by the Codemasters sim here. This is usually 20777.

CM Name:

This is the driver name you want to have displayed when you are running a Codemasters sim. The Codemasters sims do not include the name of the driver in the API data feed. So if you leave this field blank then the driver name displayed with a Codemasters sim will either be 'Driver' or the name of the F1 driver whose car you are driving.

CM Timeout:

Codemasters turns off telemetry when you pause or exit the sim. Since there is no way for the Z1 Dashboard to know if the sim is just paused or has exited, it will wait for the number of seconds specified here for the sim to resume. If it does not resume within that time frame then the Z1 Dashboard will assume the sim has exited.

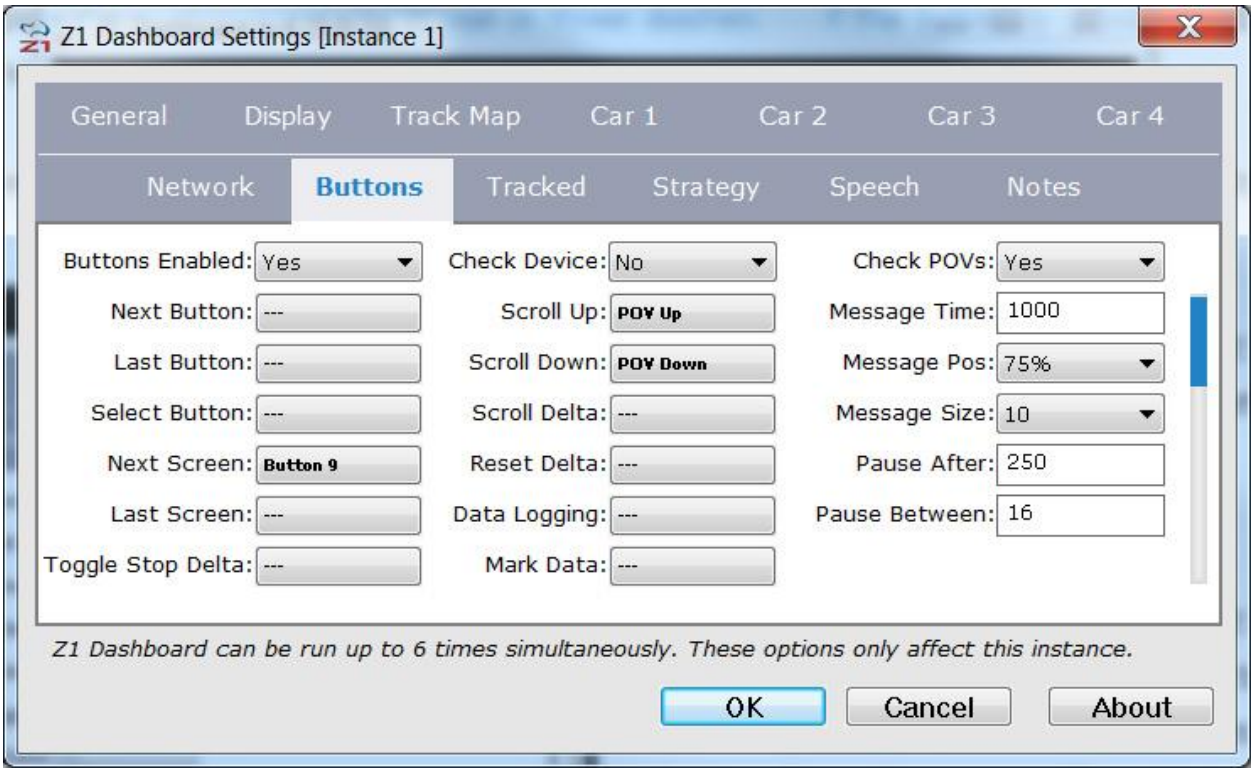
Connectivity:

The various connectivity options determine which sims the Z1 Dashboard will attempt to connect to. If you are only using a few sims then unchecking the ones which are not used will result in a faster connection time when starting your sim.

For Codemasters you need to check the checkbox and then select the version of the sim you want to connect to from the drop down. For F1 2017 there are two options: 'F1 2017' and 'F1 2017 BC'. The BC option indicates that you want to use Codemasters broadcast mode when connecting to the sim.

Buttons Settings

The Z1 Dashboard software allows you to easily customize the display to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon Settings Icon while not connected to a sim, or by selecting 'Settings' from the menu when not in the car. Note that each instance of the Z1 Dashboard software can have different settings. Changing settings for a particular instance only effects that instance.



The button to the right of the text description will either display the button currently in use or three dashes --- if the option is unassigned. To select a button input for a particular option click on the button to the right of the text description.

Note there is a scroll bar on the right side of the tab. You will need to scroll down to see all options on this tab.

Buttons Enabled:

This can be either Yes or No. When set to Yes the app will check for button presses. Note that if you change the setting you will need to restart the software for the change to take effect.

Check Device:

This can be either Yes or No. When set to Yes the app will check for device number as well as the button number to determine if a button was clicked. If you have multiple identical devices, such as button boxes, then turning this option on will allow the software to differentiate between those boxes.

Check POVs:
This can be either Yes or No. When set to Yes the app will check for POV hat switch inputs. There may be cases when you do not want the Z1 to check for those inputs. If that is true then you should turn this option off.

Next Button:
This is the button assignment to highlight the next button in the sequence of displayed buttons on a particular screen.

Last Button:
This is the button assignment to highlight the previous button in the sequence of displayed buttons on a particular screen.

Select Button:
This is the button assignment to select the currently highlighted button on a particular screen.

Next Screen:
This is the button assignment to display the next dashboard associated with the current car. This only works when you are in the car.

Last Screen:
This is the button assignment to display the previous dashboard associated with the current car. This only works when you are in the car.

Toggle Stop Delta:
This allows you to assign a button to turn on or off the 'after stop' display on the track maps. By default the 'after stop' display is shown when you get within a specified number of laps of your stop (3 by default). Note you may use a button to turn it on or off at any time.

Scroll Up:
This is the button assignment to scroll up any windows that have up/down arrows.

Scroll Down:
This is the button assignment to scroll down any windows that have up/down arrows.

Scroll Delta:
This is the button assignment to scroll through the various delta options. This lets you change the displayed delta on the fly. The Dashboard will display a message when you change the currently selected delta.

Reset Delta:
This is the button assignment to reset the current delta. This lets you delete any saved splits for the current car and track combination. This is useful if the weather or other changes in the track require the delta to be reset. The Dashboard will display a message when that the delta has been reset when this button is pressed.

Data Logging:
This is the button assignment to toggle data logging on and off. You must also set the Data Logging option to Button (in the General tab) for this to work.

Mark Data:
This is the button assignment to insert a marker into telemetry files. Once assigned it just requires a single push to place the marker. Holding the button down continually will place multiple markers all in a row.

LED Up:
This is the button assignment to increase the brightness of the LEDs in the SMZ1 wheel.

LED Down:
This is the button assignment to decrease the brightness of the LEDs in the SMZ1 wheel.

Message Time:
Certain buttons change settings within the Z1 Dashboard or your car. These include adding or removing fuel, or changing deltas, etc. When those actions occur a message is displayed on the Dashboard alerting you to the change. The value in this Message Time field is the amount of time, in milliseconds, that the messages are displayed.

Message Pos:
Certain buttons change settings within the Z1 Dashboard or your car. These include adding or removing fuel, or changing deltas, etc. When those actions occur a message is displayed on the Dashboard alerting you to the change. The value in this vertical position on the screen where that message will appear. 10% is at the top of the screen, and 100% is at the bottom, with other values being in between. This allows you to customize where the message is displayed to suit your purposes.

Message Size:
This is the font size used to display the messages on screen.

Pause After:
This is the number of milliseconds that the software will wait after receiving a button input before it will accept another input. You can increase of decrease this value to suit your types of buttons. For example if you are using a rotary dial, you might want to software to wait less than if you are using a push button. The default value of 250 gives a fairly good compromise across all button types.

Pause Between:
This is the number of milliseconds that the software will wait between checking for button inputs. If you find that button inputs are being missed you can try reducing this value. If button inputs are happening too quickly then try a higher value.

Dashboard Screen Buttons

Screen 1 - 10:

You can assign a specific button to jump directly to a specific screen number within your car's dashboards. Just assign the appropriate button to the desired screen number.

iRacing Only Buttons

The following options are available to iRacing only. This is because iRacing offers the ability to implements these features while other sims do not.

Add Fuel:

This is the button assignment to add fuel in iRacing. This will add one liter to the amount of fuel that will be added at your next pit stop.

Remove Fuel:

This is the button assignment to remove fuel in iRacing. This will remove one liter from the amount of fuel that will be added at your next pit stop.

Fuel To End:

This is the button assignment to add the necessary fuel to finish the race in iRacing. This will add the amount of fuel required to finish the race, plus the specified buffer amount (3 liters by default), at your next pit stop. If this is more than the capacity of the fuel tank then you will get a full tank of fuel at the next pit stop.

Clear Tires:

This is the button assignment to tell your pit crew that you do not want to change your tires at the next pit stop.

Fast Repair:

This is the button assignment to tell your pit crew that you wish to have a fast repair at the next pit stop instead of fixing all the damage (if any) that exists on your car.

Speech Buttons

Say All:

This button will speak all available data to you when you press the button.

Lap Time:

This button will speak your last lap time when you press the button.

Position:

This button will speak your current position when you press the button.

Laps of Fuel:
This button will speak the remaining laps of fuel in the car when you press the button.

Lap Number:
This button will speak the current lap number when you press the button.

Watch List Buttons
Add Ahead:
This is the button assignment to tell the Z1 software that you want to add the car ahead of you on track to your watch list.

Add Behind:
This is the button assignment to tell the Z1 software that you want to add the car behind you on track to your watch list.

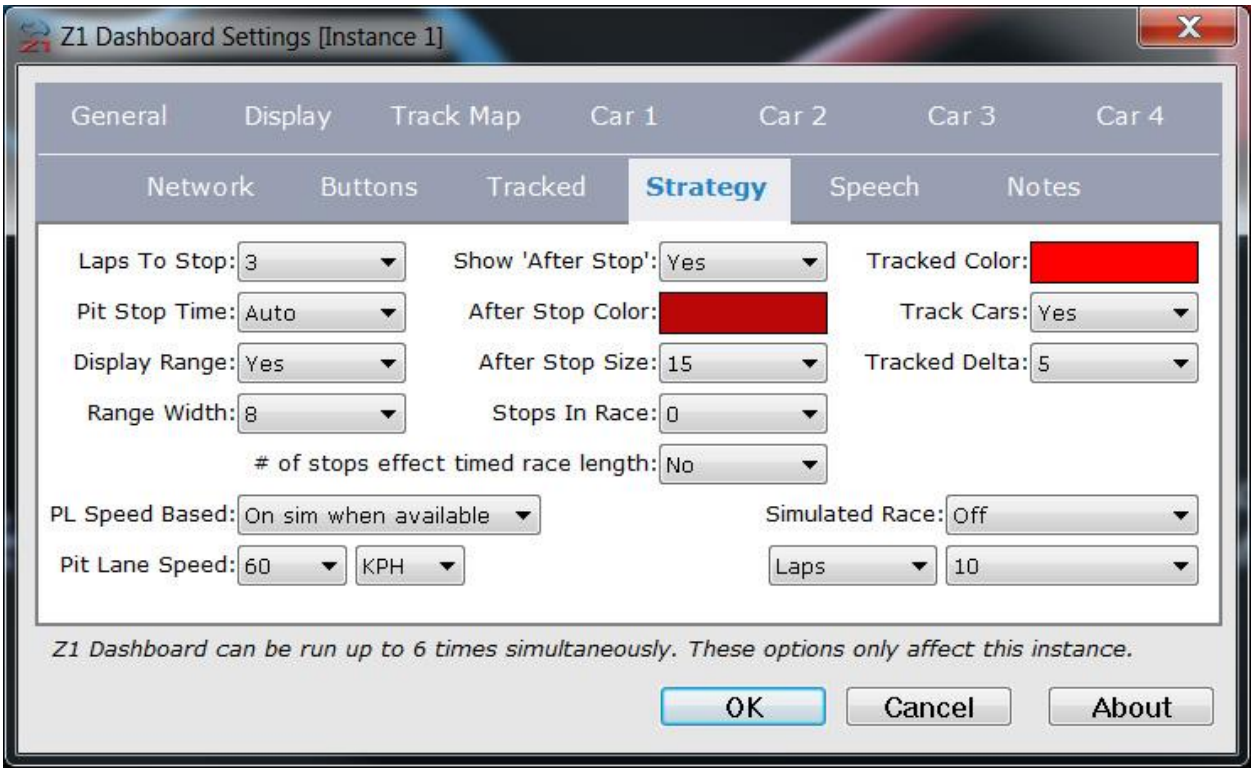
Cut Ahead:
This is the button assignment to tell the Z1 software that you want to remove the car ahead of you on track from your watch list.

Cut Behind:
This is the button assignment to tell the Z1 software that you want to remove the car behind you on track to your watch list.

Other Buttons
Toggle Sim Race:
This is the button assignment to tell the Z1 software that you want to start/stop a simulated race. Note that to start a simulated race using a button the Simulated Race option (see Strategy tab) must be set to Start With Button. Also note that if you are running a simulated race and press this button then the simulated race will end regardless of whether it was started with a button or by getting in the car. The reason for this is if you accidentally left the simulated race feature on and then started a real race you would need a way to turn the simulated race off for your real race.

Strategy Settings

The Z1 Dashboard software allows you to easily customize the display to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon Settings Icon while not connected to a sim, or by selecting 'Settings' from the menu when not in the car. Note that each instance of the Z1 Dashboard software can have different settings. Changing settings for a particular instance only effects that instance.



The Z1 Dashboard helps you with many strategy aspects of your race. For example, when you are approaching your pit stop the track map dashboards will start to display a highlighted snake on the map. This snake shows you approximately where you will rejoin the track after your stop. This can be used to help you determine when to make your stop. In addition the cars near you will be highlighted at this point and remain highlighted until after you and they have pitted. This is because during pit stops you are sometimes racing cars that are not near you on the track. Having the cars that you are racing highlighted allows you to see them easily regardless of where they are on the track.

Laps To Stop:

This allows you to specify when the snake are car highlighting should start. If you set this to 3, then when you get down to 3 laps of fuel remaining the track maps will start to display the snake and highlighted cars. Note that you can also assign a button to toggle this highlighting as well, so that you can have it on whenever you like.

Pit Stop Time:
This is the time it takes for you to pit. The Auto settings will let the Z1 calculate the time of the pit stop. This is done using several criteria including the average of previous stops, pit speed limits and pit lane length. If you set this to a specific time, then the Z1 will always use that time for all pit stops.

Display Range:
When set to Yes the highlighted snake will be displayed on the track map to represent your approximate location after your pit stop. When set to No the old style 'After Stop' square will be displayed instead. Note that if there is not enough pit stop data to generate a highlighted snake, then even if set to Yes the old style 'After Stop' square will be displayed.

Range Width:
This is the width of the pit stop snake highlight on the track maps. It is recommended to make the snake slightly wider than the track map width.

Show 'After Stop':
Setting this to Yes will display the text 'After Stop' near the highlighted pit stop snake. Setting this to No will turn off that text display, leaving just the highlighted snake.

After Stop Color:
This is the color used to render the After Stop Text, and the snake overlay. Click the swatch to display a color chooser so you can customize the color.

After Stop Size:
This is the font size used to render the After Stop text.

Stops In Race:
This is the number of stops you plan to make in the race. You need to manually set this for each race to make sure it is correct. This is very important in timed races. The Z1 does not know how many stops you plan to make if you do not tell it. Every pit stop you make reduces the amount of time you are on track. This reduction in time means that during a timed race you will do fewer laps, resulting in needing less fuel. If you plan to make one stop but this option is set to zero stops then the Z1 may over-estimate the amount of fuel you need to finish the race. It is therefore highly advised to make sure this is set correctly for timed races.

# of stop effect time race length:
If you set this to Yes then the Z1 will use the number of stops you plan to make when calculating the number of laps you have left to run in a timed race. This in turn will effect the amount of fuel you need to finish the race. It is recommended that you use this option in conjunction with the simulated race option to determine what works best for you.

Tracked Color:
This is the color used to highlight the cars that are near you when they are being tracked during the pit stop window.

Tracked Cars:

When set to Yes cars near you will be tracked during pit stop windows. When set to No they will not be tracked.

Tracked Delta:

This is the maximum number of seconds a competitor can be either ahead or behind you in order for them to be tracked.

PL Speed Based:

This determines how the Z1 will determine the current pit lane speed limit. By default it will always try to get that information from the sim. If you select 'Always on entered limit' then the Z1 will use the speed limit you enter regardless of what the sim reports.

Pit Lane Speed:

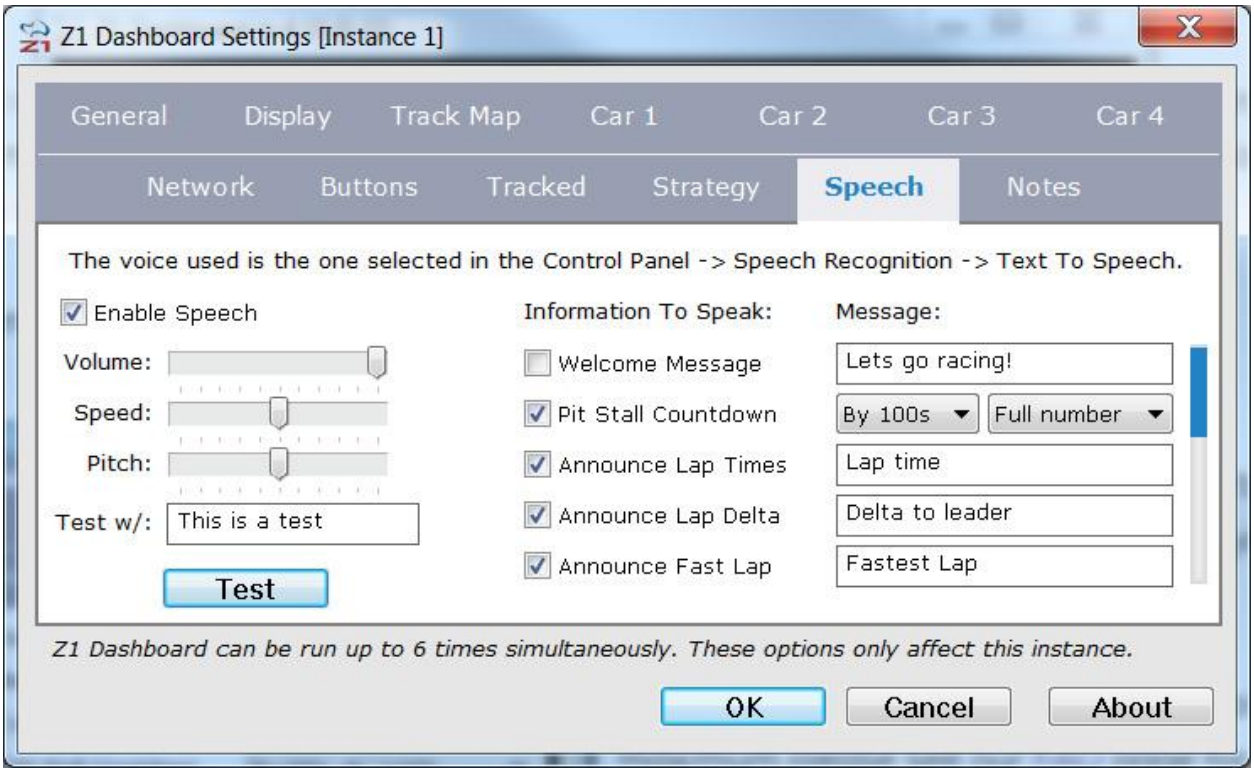
This is the pit lane speed limit in either KPH or MPH that the Z1 will use if the sim does not report a pit lane speed limit or if you specify the Z1 should ignore any reported limit from the sim in favor of this number.

Simulated Race:

This determine if the Z1 will run a simulated race once you get in the car. You can choose to have a simulated race start when you get in the car or when you press a button. Once started the simulated race will continue for the designated number of laps or minutes. All features of the Z1 will act as if you are in a race during this time. This is an excellent way to practice your race, check for the best strategy, and confirm the amount of fuel needed at a stop.

Speech Settings

The Z1 Dashboard software allows you to easily customize the display to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon Settings Icon while not connected to a sim, or by selecting 'Settings' from the menu when not in the car. Note that each instance of the Z1 Dashboard software can have different settings. Changing settings for a particular instance only effects that instance.



The Z1 Dashboard provides a wealth of information to you when in the car. This information is displayed in various formats on the different dashboards. However sometimes looking away from the track for the split-second it takes to view that information can be difficult. So the Z1 Dashboard can speak various items of information to you.

This information can be spoken at specific times, or upon a press of a button.

Enable Speech:

This checkbox must be ticked in order to have any of the speech options work. If you do not want any items spoken to you then you should untick this checkbox.

Volume:

This slider adjusts the volume of the voice. If the voice isn't loud enough even at maximum please see our FAQ page for tips on how to make it louder.<

Speed:

This is the speed at which the voice will speak. Moving to the right is faster.

Pitch:
This is the pitch of the voice. Moving to the right is higher.

Test w/:
This is the test phrased used.

Test Button:
Click this button to test your volume, speed and pitch settings. The test phrase will be spoken.

Information To Speak:
The checkboxes below this column indicate what can be spoken. If the checkbox for the item is ticked then that item will automatically be spoken at the appropriate time. Note the scroll bar on the right is used to display all options.

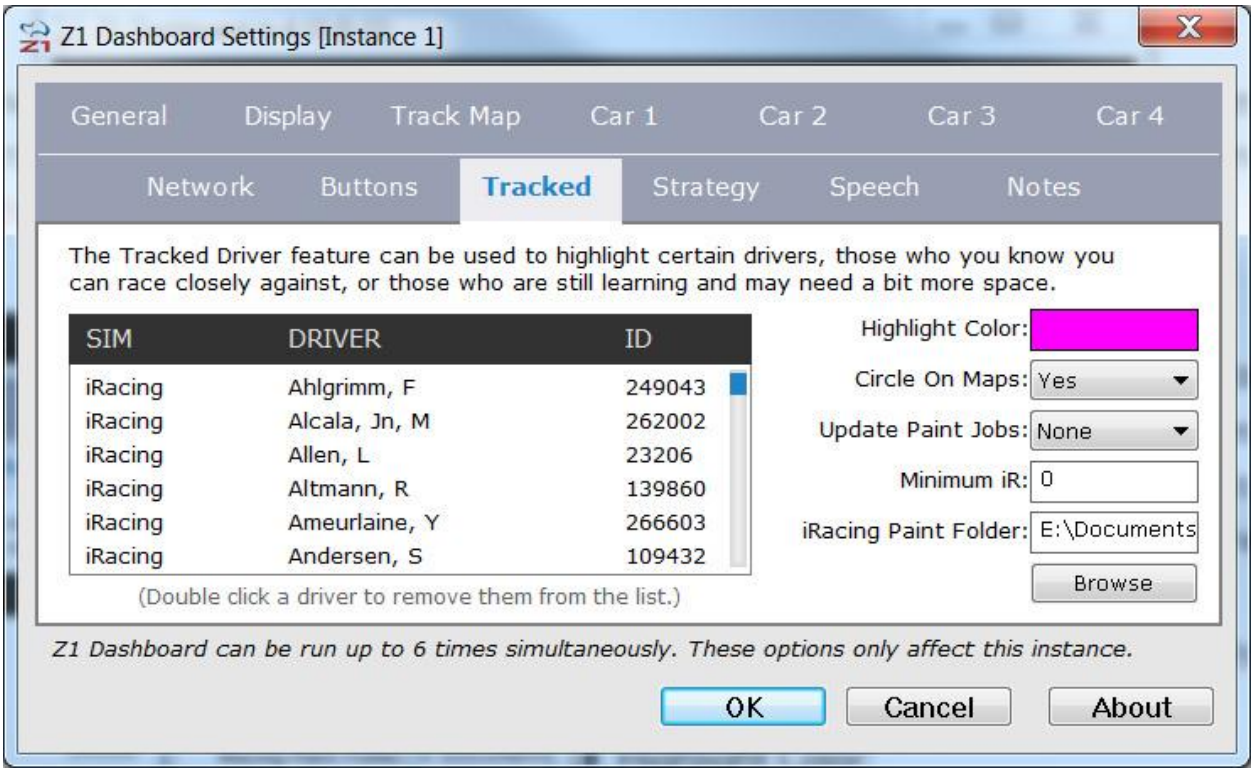
Message:
The text in each text box indicates what will be spoken for each item. You can enter whatever you like in the text boxes.

Note for the pit stall countdown there are various options in drop downs. The first drop down indicates how often the distance to your pit stall will be announced. You can choose between 50, 100 and 200. The measurement is associated with the distances selection in the General tab. So if you have selected feet, then the measurements are 50 feet, 100 feet or 200 feet. If you have selected meters then the measurements are 50 meters, 100 meters or 200 meters. If you choose too short a distance then the Z1 may skip some announcements to keep up with the car's current location.

The second drop down indicates how the distance is announced. Full Number will read out the entire distance as in '1000,900,800,700...' The 1/100 option will read out just the hundreds unit as in '10,9,8,7...'.

Tracked Driver Settings

The Z1 Dashboard software allows you to easily customize the display to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon Settings Icon while not connected to a sim, or by selecting 'Settings' from the menu when not in the car. Note that each instance of the Z1 Dashboard software can have different settings. Changing settings for a particular instance only effects that instance.



The tracked driver feature allows you to add drivers to what we call your 'tracked' list of drivers. This is intended to be a list of drivers you feel you can race closely with, or drivers who you need to give a bit more room to when racing. This tab lets you view those drivers on the list, to remove drivers from the list, and to adjust settings for the display of those drivers.

Driver List:

The driver list displays the names of each driver who is on your tracked driver list. You can have different drivers for each sim. The name of the driver, the name of the sim, and if appropriate their ID, is displayed in this list. Use the scroll bar to view the entire list if it is bigger than the display area.

You can remove a driver from the list by double clicking on their name.

Highlight Color:

This is the color used to indicate a driver is on your tracked driver list in dashboards such as the Standings dash or the Ahead/Behind dash. Click on the swatch to display a color chooser to change the color.

Circle On Maps:

If this is set to Yes then any driver who is on your tracked driver list will have an extra circle displayed around their car dot on the track maps. The color of this circle will be the Highlight color above.

Update Paint Jobs:

This is for iRacing only. You may choose to replace a driver's paint job on the car with a solid color if they are on your tracked driver list. This makes the car very easy to see on the track. The paint jobs are updated when you exit the Z1 Dashboard. Selecting All from the drop down will update all the drivers on the list. Selecting Changes will only update those drivers who were newly added to the list, and is much faster. However if you use software such as Trading Paints to keep your paint jobs up-to-date then you may want to use the All option to make sure the tracked driver's paint jobs are not overwritten by Trading Paints (or other software). Selecting None disabled this feature.

Minimum iR:

This is for iRacing only. You can specify a minimum iRating under which a driver is automatically added to your tracked driver list. If the driver's iRating climbs above your minimum then they will be removed from your tracked driver list.

iRacing Paint Folder:

This is for IRacing only. In order for the paint job updates to work the Z1 Dashboard needs to know where your iRacing paint folder is located. By default this is: Documents\iRacing\paint. If you need to change the location click the Browse button to select the new location.

Car Settings

The Z1 Dashboard software allows for a lot of customization of each car's dashboard. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon Settings Icon when not in the car. There will be four tabs associated with the car, Car 1, Car 2, Car 3 and Car 4. Each is described below.

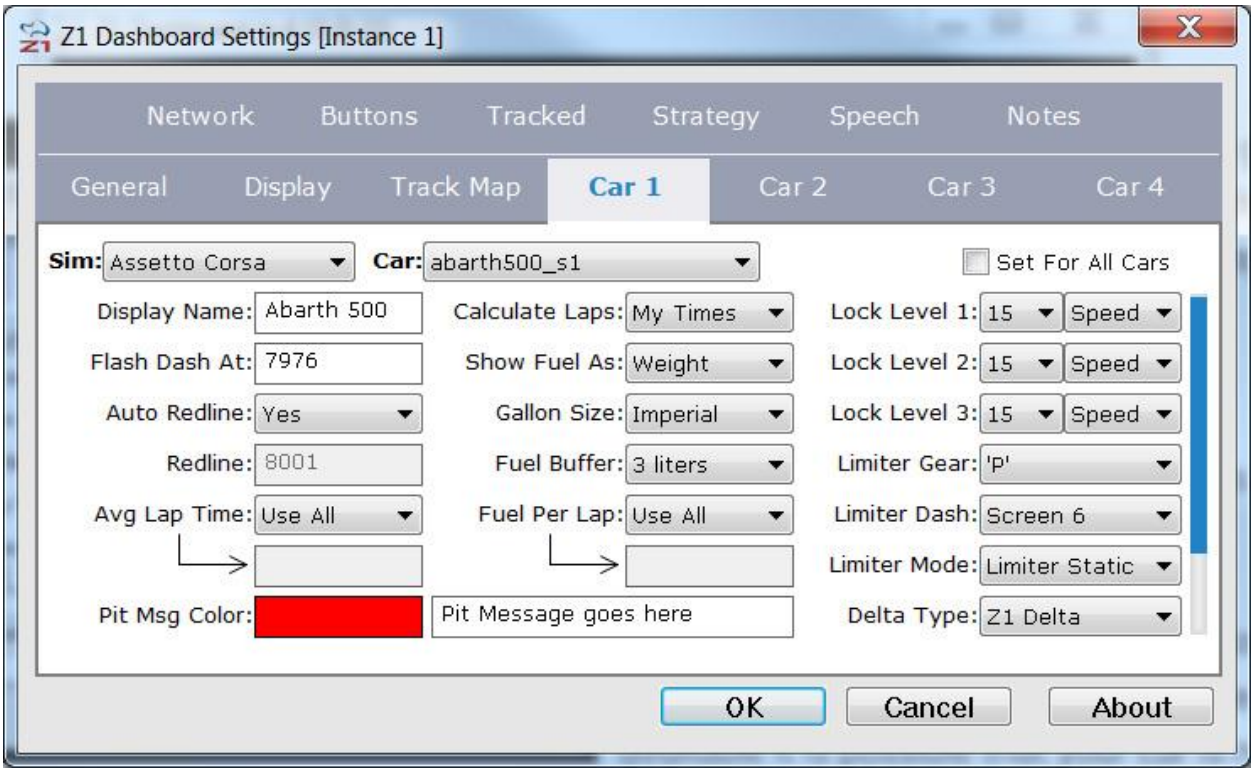
A Note For Stock Cars Using Impala Style Dashboards. The pit speed limit lights on Impala style dashboards can be customized using the shift light fields located in the Car 3 tab. See here for full details.

Remember that you can have up to 10 dashboards associated with each car. With this in mind, you can specify which dashboard appears in which order for the specific car. Each dashboard can then have its own customized information.

Remember that you can run multiple instances of the software. With this in mind, you can also specify different dashboard configurations for a specific car for each instance. Most of the time, however, it is easier to define the car just once for the first instance (see below) and then use the default dashboard option to display track maps or telemetry data, etc, for all other instances of the software.

Car 1 Tab

Car 1 Tab This first tab allows you to specify the general settings used for the car. It includes options that are global to all dashboards used for the car. The name of the sim and car being edited are displayed at the top of the dialog to ensure you are editing the correct car.



Sim:
This is the name of the sim whose cars you want to edit.

Car:
This is the car that you want to edit. Note that while the Z1 Dashboard comes with a list of many of the cars available in all the sims, due to the number of cars available it is possible that your car is not displayed here. If that is the case, then you will need to drive the car once in order for it to show up in this list. After that it will be available as an option.

Set For All Cars:
If you tick this checkbox then when you save the current car definition, by clicking the OK button, the definition will be saved for all cars in the currently selected sim, including the default dashboard. This allows you to very easily make a specific dashboard layout and assign it to all cars. Note that if you do this it will overwrite all other car definitions for the sim.

Display Name:
This is the name of the car as it should be displayed in the garage screen.

Flash Dash At:
This determines the RPMs at which the software will start to flash the background of the screen to indicate that the rev limiter is engaged

Auto Redline:
By default the software will try to determine the redline of the car based on information supplied by the sim. However, sometimes the supplied information can be incorrect. Settings this to No will allow you to manually enter the redline for the car.

Redline:
This is the redline for the car. If you have the Auto Redline option set to Yes then you cannot change this as it is set by the sim. However if the Auto Redline option is set to No then you can enter your desired redline value here.

Avg Lap Time:
This tells the software which laps to use when calculating average lap times. This is useful for timed races in order to determine the number of laps remaining in the race. However there are certain conditions that can cause inaccuracies during a race, such as running under yellow flags or pit stops, etc.

You therefore have three options:

1) **Use All** - this is the default. It uses all laps to determine your average lap time.
2) **Within X%** - This option only includes those laps that are within X% of the average lap time. This will allow you to not include yellow laps or pit laps (or other unusually slow laps). The first three laps of the race are used to determine a base average lap time. The specific percentage is placed in the text field as a whole number. As an example if your first three laps average 60 seconds, and

you have set this value to 10, then any lap over 66 seconds will not count towards your average lap time.

3) **Previous X** - This option tells the software to determine the average lap time based on the previous X laps. This is useful if you want to include yellow flag periods in your average lap times when they are running, but then want to discard them when you go back to green flag running.

Pit Msg Color:

This is the foreground color of the message that is displayed in the pit info dashboard. Clicking the swatch will display a color chooser which allows you to select the desired color.

Pit Message:

This is the message that will be displayed in the pit info dashboard if it is used.

Show Flags:

The Z1 Dashboard will display yellow flags and blue flags on the dashboards by flashing the background. You can turn this option off by settings this to No.

Show Wings As:

The adjustment value of rear and front wings can be numbers (1,2,3...) or a distance (1mm, 2mm, 3mm...). If the wing adjustment numbers are not displaying correctly in the Adjustment Dashboard then it is most likely because this option is set incorrectly for the car.

Calculate Laps:

This option allows you to specify how the number of laps remaining in a timed race are calculated. The two options are Leader Times and My Times. Most of the time you should use Leader Times. This uses the leader's lap times to determine the number of laps remaining in the race. Because they are faster than you (unless you are the leader) they may be able to do more one more lap than you will be able to do in the time remaining. This means you will also have to complete that additional lap, and this will impact fuel consumption.

Show Fuel As:

This determines how the fuel is displayed in the dashboard for this car. There are two options: Weight, which displays the fuel as either pounds or kilograms; or Amount, which displays the fuel as either gallons or liters.

Gallon Size:

This determines which gallon measurement to use. It can be either Imperial or US. This is only applicable when using imperial units and showing the fuel as an amount.

Fuel Buffer:

When calculating the amount of fuel required to finish a race the Z1 software will specify only just enough fuel to get you to the finish line. Sometimes this may not be quite enough if you use more fuel than expected after your pit stop. So by setting a fuel buffer, you can tell the software to add the specified amount of fuel to its calculations. The default amount is 3 liters.

Fuel Per Lap:

By default the Z1 Dashboard software will calculate the amount of fuel used per lap by averaging a certain number of laps. However that can sometimes cause inaccuracies, especially if you are under a long full course caution.

You therefore have three options:

1) **Use All** - This is the default option. It uses all laps to determine the amount of fuel used per lap.
2) **Previous X** - This uses the previous X laps to determine the average fuel consumption. You specify the number of laps in the text field as a while number (ie 5 to use the last five laps).
3) **Use Amount** - Enter any number in the text field and the software will use that exact amount of fuel for the average amount per lap. This number should be in the same units as those displayed by the car. For example setting it to 2.5, when you use liters as the fuel display, will mean the software will calculate fuel amounts based on you using 2.5 liters per lap.

Show Lap Time:

This determines how long the last lap time will be displayed after crossing the start/finish line (in milliseconds).

Lock Level 1-3:

Certain dashboard allow you to utilize the three left and three right LEDs to show if your front wheels are close to locking up. The sensitivity of this feature is controlled using these three Lock Level lines. Lock Level 1 controls the outermost LED, Lock Level 2 controls the middle LED, and Lock Level 3 controls the inner most LED of the three. Each of the three can be set to Speed or Prcnt (percent). The number value is the amount of either speed or percentage difference between the from wheel and the rear wheel. Once that difference has been exceeded the LED will illuminate. Note settings the value to zero will turn the feature off. Also note that you need to have at least 15% of brake travel engage for the feature to be engaged.

As an example if you have the Lock Level 1 set to 15 and speed and your units are set to KPH, then if the front wheel is turning at least 15 KPH slower than the rear wheels then the outermost LED will illuminate.

Another example would be using the Prcnt option. This allows you to have a variable difference in speed between the front and rear wheels. As your speed increased the difference between the front and rear wheels has to be higher than at a lower speed to illuminate the LED.

Limiter Gear:

This allows you to specify how the gear indicator should display information when the pit limiter is engaged. The options are 'P' of Gear. The 'P' setting will display a P when the pit limiter is engaged regardless of the gear you are in. The Gear option will display the actual gear you are in when the limiter is engaged.

Limiter Dash:

This indicates which of the dashboards associated with this car will be displayed when the pit limiter is engaged. Selecting None means that engaging the pit limiter will not select a specific dashboard.

Limiter Mode:

This determines when the selected pit limiter dash is displayed. There are four options:

1) **Limiter Static** - This is the default. The pit limiter dash will be displayed when the pit limiter is engaged. When the pit limiter is turned off the dash will return to the dash displayed before the limiter was engaged.
2) **Limiter Change** - The pit limiter dash will be displayed when you engage the pit limiter. You may then change the dash to a different one at any point. Turning off the pit limiter does not restore the original dash.
3) **Pit Lane Static** - This pit limiter dash will be displayed when you enter pit lane. When you exit pit lane the dash will return to the dash displayed before you entered pit lane.
4) **Pit Lane Change** - The pit limiter dash will be displayed when you enter pit lane. You may then change the dash to a different one at any point. Leaving the pit lane does not restore the original dash.

There are times, though, when using the leader's lap times would not make sense, such as a multi class race where the leader of the race is in a different category from you. In this case you should use My Times to get a more accurate number of laps remaining in the race.

Delta Type:

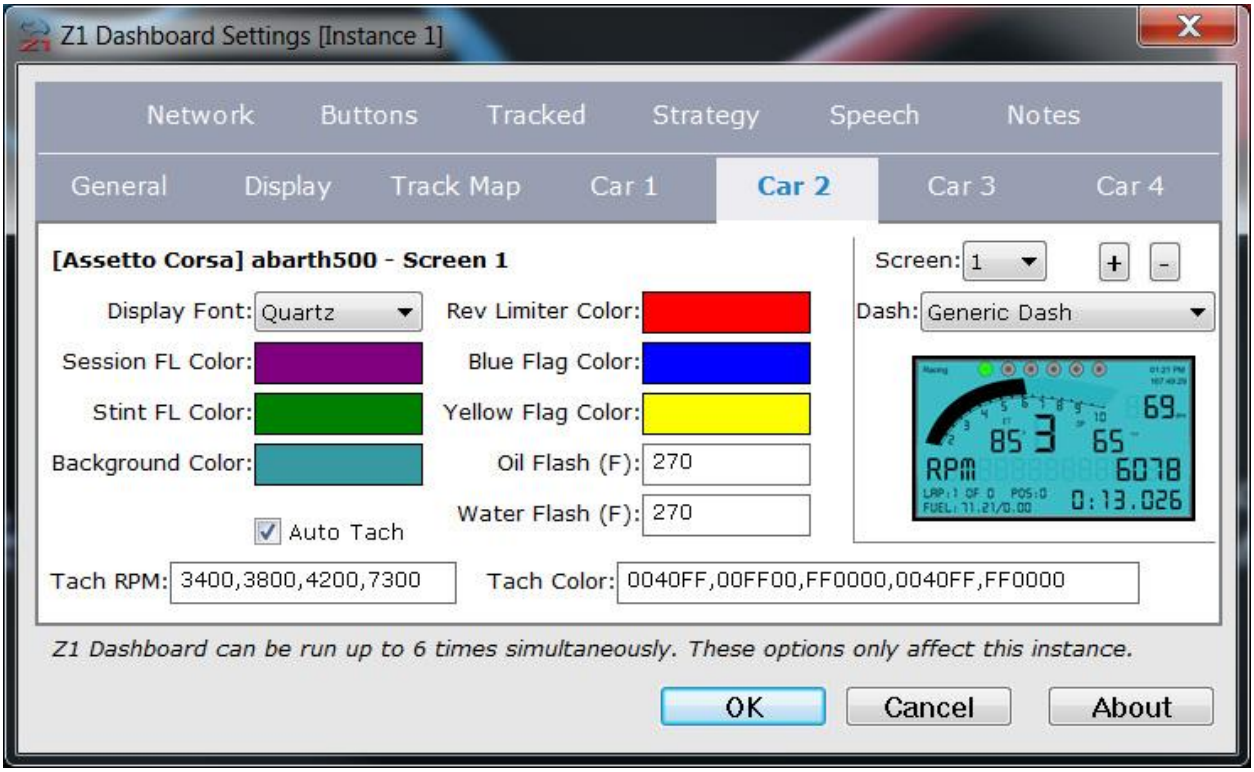
By default the Z1 Dashboard software will calculate the delta using its own data. This allows for accurate deltas in all of the sims. However some sims offer their own delta timing options. You can specify that one of these should be used by the Z1 Dashboard when running the sim. To do so, just select the desired option from the drop down.

Show Extras:

Some of the analogue dashboards have additional information, such as lap times, positions, etc that can be displayed. Settings this option to Yes ensures that information is displayed. Setting it to No will only display the analogue information on those dashboards.

Car 2 Tab

Car 2 Tab This second tab allows you to specify the various items that are specific to the current dashboard and screen. As with the first tab, the name of the sim and car being edited are displayed at the top of the dialog, along with the screen number, to ensure you are editing the correct car and screen.



Screen:

This drop down allows you to select which of the 10 dashboards associated with this car you would like to edit. Note that even though the car can have up to 10 dashboards associated with it, this drop down will only display numbers for the currently defined dashboards. To add an additional dashboard, press the plus (+) button. To remove the currently selected dashboard, click the minus (-) button.

Dash:

This is the dashboard that should be displayed for this car and the currently selected screen. The drop down includes all available dashboards. Selecting one of them will change the preview dashboard icon to help in the selection process. When you change a dashboard there are several other settings which will be automatically updated. They are: Display Font, Background Color, Tach RPM, Tach Color, Oil Flash, Water Flash, and all shift light colors and RPM ranges. This happens to help make sure that the dashboard displays as intended.

Display Font:

This is the font that is used when displaying information on the dashboard (RPMs, Speed, etc.) This mostly applies to the road car dashboards, as the oval car (and a few of the road cars) use dials to display information.

Session FL Color:
This is the color that is used to display the lap time on the dashboard when it is your fastest session time. Clicking the swatch will display a color chooser which allows you to select the desired color.

Stint FL Color:
This is the color that is used to display the lap time on the dashboard when it is your fastest stint time. Clicking the swatch will display a color chooser which allows you to select the desired color.

Background Color:
This is the background color of the dashboard for the car. Clicking the swatch will display a color chooser which allows you to select the desired color.

Rev Limiter Color:
This is the color that the background of the dashboard will become when the rev limier is engaged. Clicking the swatch will display a color chooser which allows you to select the desired color.

Blue Flag Color:
This is the color that the background of the dashboard will become when a blue flag is present. Clicking the swatch will display a color chooser which allows you to select the desired color.

Yellow Flag Color:
This is the color that the background of the dashboard will become when a yellow flag is present. Clicking the swatch will display a color chooser which allows you to select the desired color.

Impala Style Dashboard Settings
The following five settings only effect the stock cars that use the Impala style dashboards.

Auto Tach:
If this checkbox is ticked then the software will determine when to illuminate the pit lane speed limit LEDs within the tachometer based on the speed limit of the track. Note this is only possible if the sim returns the track's pit lane speed limit.

Tach RPM:
On the oval cars with tachs that can change colors, these values specify the RPMs at which the tach changes to the next color. It is a comma separated list of 4 RPM levels.

Tach Color:
On the oval cars with tachs that can change colors, these values specify the color for each RPM range. There are five RPM ranges, and as such this is a comma separated list of those five colors in hex format.

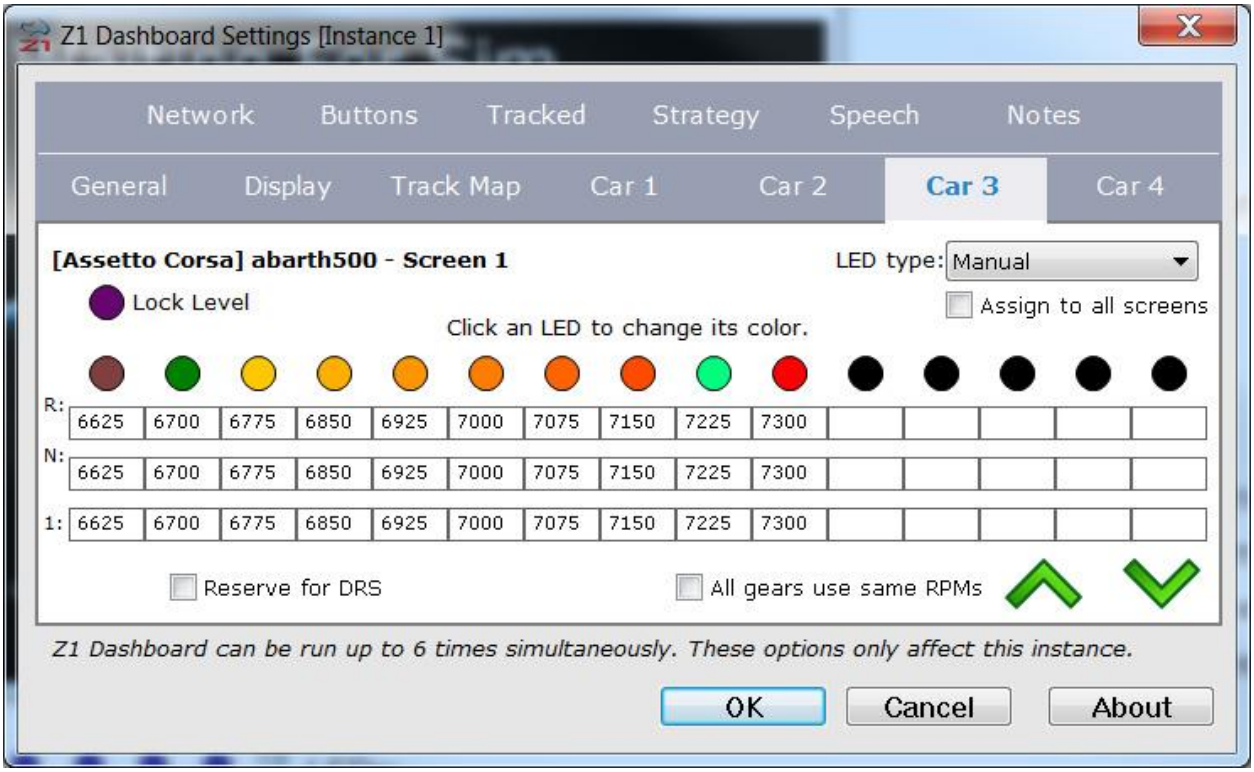
Oil Flash (F):
On some of the oval cars, the oil temperature gauge will flash once the oil temperature exceeds a certain value. This setting specifies that value in degrees fahrenheit.

Water Flash (F):

On some of the oval cars, the water temperature gauge will flash once the water temperature exceeds a certain value. This setting specifies that value in degrees fahrenheit.

Car 3 Tab

Car 3 Tab This third tab allows you to specify the color and rpm illumination of each of the shift lights on the dashboard. As with the first tab, the name of the sim and car being edited are displayed at the top of the dialog, along with the screen number, to ensure you are editing the correct car and screen.



Lock Level:

This is the color that will be used to illuminate the LED when the lock level feature is engaged.

LEDs:

This is a representation of the LEDs used in the display. If the LED shows as black then it is not used for the selected dashboard. To change the color, click on the LED and use the color chooser to select the desired color.

LED Type:

This defines how dashboard shift lights will illuminate. There are five options. Using any option besides manual will override any RPM limits you enter into the various gear text fields.

- **All 80-98**: illuminates each shift light (LED) individually going from left to right, with the first one illuminating when you reach 80% of redline, and the final one coming on at 98% of redline.
- **All 65-98**: illuminates each shift light (LED) individually going from left to right, with the first one illuminating when you reach 65% of redline, and the final one coming on at 98% of redline.
- **Grouped 80-98**: divides the shift lights (LEDs) into 3 groups moving from left to right. The first group is illuminated at 80% of redline, then second at 90% and the third at 98% of redline.

- **Grouped 65-98**: divides the shift lights (LEDs) into 3 groups moving from left to right. The first group is illuminated at 65% of redline, then second at 80% and the third at 98% of redline.
- **Manual**: You will specify how they illuminate in text fields.

RPM Boxes:

There is a box underneath each LED. This is used tp specify the RPM at which that LED should illuminate. You can only make changes to these values if you have selected 'Manual' from the LED type drop down. Any other choice will automatically determine the values based on the selected choice.

Assign to all screens:

If this box is ticked then the LED pattern will be assigned to all screens associated with this car. This is useful if you are using a complicated shift pattern for an F1 style dashboard and want to easily copy it across all the F1 screens used by this car. Note this only copies it to this car, and not any other car.

All gears use same RPMs:

If this box is checked then you will only see one row of boxes underneath the LEDs. The values entered into that one row of boxes will be used for all gears in the car. If this box is not checked, then you will see multipple rows of boxes allowing you to enter specific RPMs for each gear. You can use the green up and down arrows to navigate through the gears.

Reserve for DRS:

Checking this box reverses the left 5 LEDs for DRS usage. Note this is only applicable to the F1 dashboards and the SMZ1 wheel.

A Note For Stock Cars Using Impala Style Dashboards

All the Impala style dashboards include seven lights within the tachometer. These lights illuminate at specific RPM ranges to help you maintain the pit lane speed limit. As you approach the pit lane speed limit the lights illuminate sequentially through three color groups.

Speed limit light color groups:

The default color groups are yellow, followed by green, and finally red. You can customize those colors by selecting the desired colors for the first three LEDs.

Speed limit light RPM ranges:

There are three sets of RPM ranges for these lights: one for the yellow phase, one for the green phase, and one for the red phase. In sims that provide the pit lane speed limit these RPM ranges will be set automatically to provide accurate illumination based on the speed limit.

For tracks or sims that do not include the pit lane speed limit, you can manually set the RPM range for the LEDs. Each phase (yellow, green and red) contains 8 RPM numbers. The 8 RPM numbers should be entered in gears 1, 2 and 3 in the first 8 RPM boxes. The first light will be illuminated between the first and final indicated RPM in the list. The second light will be illuminated between the second and final indicated RPM in the light, and so on. Make sure you have the LED type set to manual.

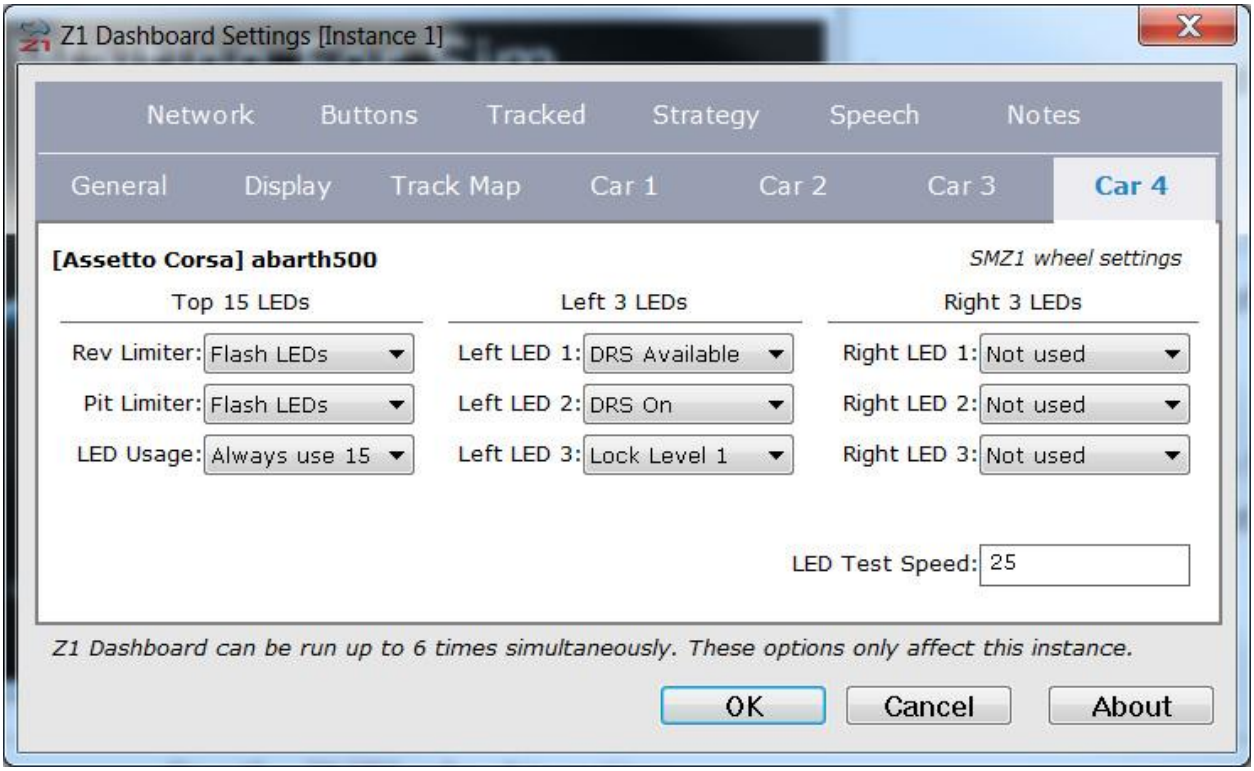
The RPM ranges for the first phase (yellow by default) should be placed in the 1st gear row. The RPM ranges for the second phase (green by default) should be placed in the 2nd gear row. The RPM ranges for the third phase (red by default) should be placed in the 3rd gear row.

For example if the 1st gear row contains the following list of RPM ranges: 2500,2600,2700,2800,2900,3000,3100,3125

then the first light will illuminate in yellow between 2500 and 3125 RPM. The second light will illuminate in yellow between 2600 and 3125 RPM.

Car 4 Tab

Car 4 Tab This fourth tab allows you to specify various settings used with the SMZ1 wheel.



Rev Limiter:

This allows you to specify what the top 15 LEDs do when the rev limiter in engaged. The options are to do nothing or to flash all 15 of the LEDs.

Pit Limiter:

This allows you to specify what the top 15 LEDs do when the pit limiter in engaged. The options are to do nothing or to flash alternating LEDs.

LED Usage:

Many of the dashboards do not have 15 LEDs included in their design. This option allows you to specify what should happen in those cases. The 'Always use 15' option will override the dashboard's design and allow you to use all 15 of the LEDs on the wheel. This is the default. The 'Base On Dash' option will only use the number of LEDs that are included in the dashboard design. This could give you a more realistic LED illumination, but might not use all 15 of the LEDs available on the wheel.

Left 3 LEDs:

This allows you to specify when each of the left 3 LEDs are illuminated. The options for each LED are: Note Used, DRS Available, DRS Active, DRS On, Yellow Flag, Blue Flag, Pit Limiter, Water Temp Warning, Oil Pressure Warning, Fuel Pressure Warning, Low Fuel Warning, Lock Level 1,2,3.

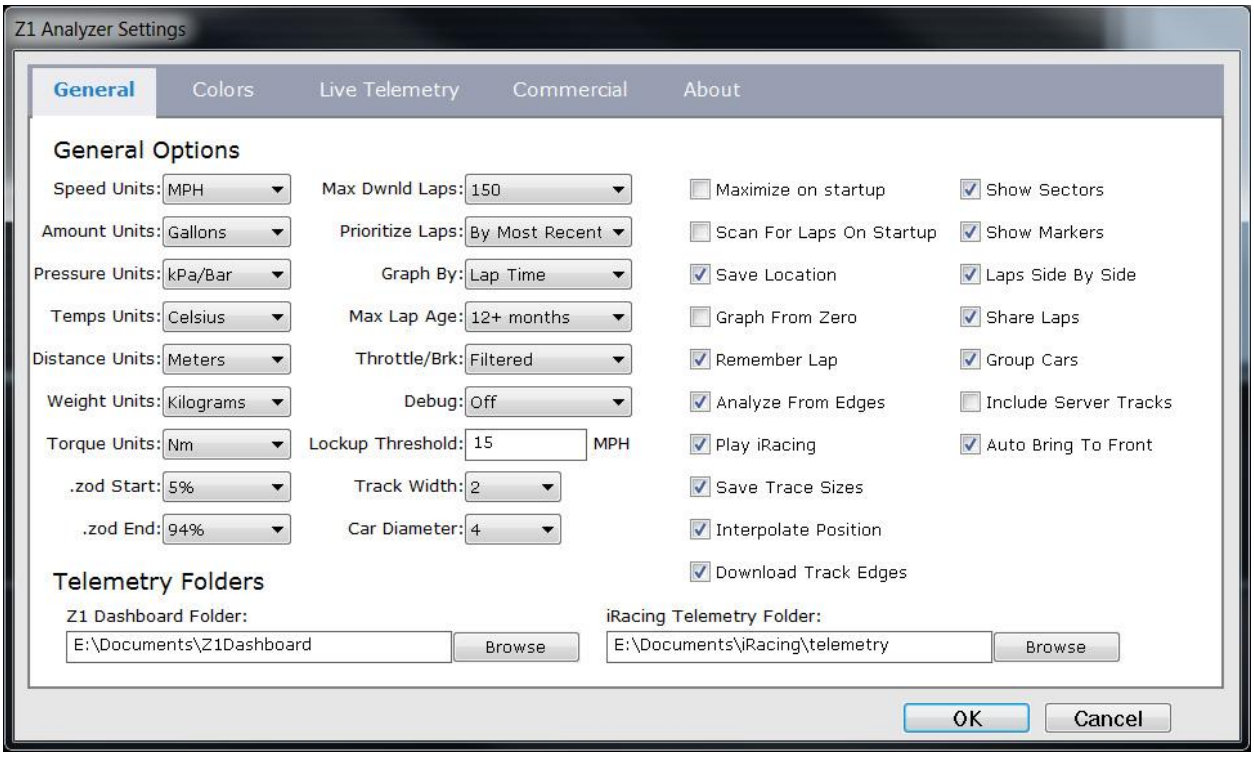
Right 3 LEDs:

This allows you to specify when each of the right 3 LEDs are illuminated. The options for each LED are: Note Used, DRS Available, DRS Active, DRS On, Yellow Flag, Blue Flag, Pit Limiter, Water Temp Warning, Oil Pressure Warning, Fuel Pressure Warning, Low Fuel Warning, Lock Level 1,2,3.

Z1 Analyzer Settings

General Settings

The Z1 Analyzer software allows you to easily customize the display to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon at the top left of the screen.



Speed Units:

This drop down allows you to choose the units used to display speed values throughout the application. The options are KPH or MPH.

Amount Units:

This drop down allows you to choose the units used to display fuel amount values throughout the application. The options are liters or gallons.

Pressure Units:

This drop down allows you to choose the units used to display pressure values throughout the application. The options are kPa/Bar or PSI.

Temps Units:

This drop down allows you to choose the units used to display temperature values throughout the application. The options are celsius or fahrenheit.

Distance Units:
This drop down allows you to choose the units used to display distance values throughout the application. The options are meters or feet.

Weight Units:
This drop down allows you to choose the units used to display weight values throughout the application. The options are kilograms or pounds.

Torque Units:
This drop down allows you to choose the units used to display torque values throughout the application. The options are newton-meters or foot-pounds.

zod Start:
When scanning for laps the Analyzer looks for full laps only. However sometimes due to the fidelity of the lap data that some sims report, the starting position reported by the sim might not be exactly at zero. So by allowing a slight variable in the start location the Analyzer can read all generated laps. The default variance is 5%. A setting of 5% means that the lap has to start somewhere between the start/finish line at 5% of the way round the lap. If you find some of your laps are not being read then try adjusting this variable to a higher number.

zod End:
When scanning for laps the Analyzer looks for full laps only. However sometimes due to the fidelity of the lap data that some sims report, the ending position reported by the sim might not be exactly at 100% of the lap. Alternatively some tracks, such as the Nurburgring Tourist configuration, have the end of a timed lap before the end of the physical lap on track. So by allowing a slight variable in the end location the Analyzer can read all generated laps. The default variance is 95%. A setting of 95% means that the lap has to finish somewhere between 95% and 100% of the lap. If you find some of your laps are not being read then try adjusting this variable to a lower number.

Max Dwnld Laps:
This is the maximum number of laps that will be returned from the server for display in the open lap dialog. A larger number may results in more available laps in the dialog, but can also slow the application down.

Prioritize Laps:
This determines which laps are returned if there are more laps available on the server than the MaxDwnld Lap setting above. Most Recent will choose the most recently uploaded laps. Fastest Lap will choose the fastest laps.

Graph By:
This determines the units to be used on the X axis of the traces. The options are Lap Time, Lap Percent, and Lap Distance.

Max Lap Age:

This is the maximum age of a lap file in months for it to be included in the scanned laps. This allows you to reduce the number of laps in your database to just the current ones.

Throttle/Brk:

This allows you to specify which throttle and brake traces are used in generating the throttle/brake overlays on track maps. You can choose Filtered or Raw. Filtered includes all electronic inputs, such as auto blips, etc. Raw is the exact position of the pedals, regardless of what the engine electronics may be doing to the inputs.

Debug:

This allows you to select form the various debug options. In general this should be set to Off unless you are trying to debug a problem with the application. The debug data is stored in the log files located in documents/z1analyzer/logs.

Lockup Threshold:

This is the speed in MPH that is used in the Brake Lockup analysis screen to determine if the front wheels are locked up or not. If the difference in wheel speed between the front and rear wheels is great than this amount then the front wheel are considered to be locked up in the analysis screen..

Track Width:

This is the width of the track when it is drawn in the various track maps.

Car Diameter:

This is the diameter of the dot representing your car when drawn on the various track maps.

Maximize on startup:

With this checkbox ticked the application will maximize the window upon starting.

Scan For Laps On Startup:

With this checkbox ticked the application will scan for new laps every time it starts. If you uncheck this box, then you can tell the Analyzer to scan for laps when you are in the Select lap Dialog.

Save Location:

With this checkbox ticked the application will remember the location of the window when you close it. The next time you open the window (assuming it isn't maximized) the window will position itself at that location.

Graph From Zero:

With this checkbox ticked any trace graph that could start at a level of zero will do so. For example if the car has a maximum RPM of 8000, with this box ticked the trace will display a graph from zero to 8000. If you untick the box then the lower value of the graph will correspond to the lowest value actually used in the trace. For example if your car has a maximum RPM of 8000, and during the lap the RPM ranges from 5000 to 8000 then the trace graph would go from 4000 to 8000. This allows you to have more detailed displayed in the trace.

Remember Lap:

With this checkbox ticked the Z1 Analyzer will remember the currently loaded lap and reload it the next time you open the application.

Analyze From Edges:

With this checkbox ticked the Z1 Analyzer will determine the turns on the track by using the track edges if they are available. This usually produces better results than the previous method used (by analyzing the car's telemetry) to determine if it was in a turn.) If the track edges are not available or this box is unticked then the old style of telemetry analysis to determine the turns will be used.

Play iRacing:

If you are using iRacing and have the Analyzer running on the same machine as the sim and the lap you are analyzing is one that has just been run in the current iRaving session, then checking this box will tell the Analyzer to attempt to play back the replay of the lap in sync with the movement on the traces.

Save Trace Sizes:

If this option is selected then the Analyzer will remember the location and sizes of the traces when you open it. If you uncheck it then the default locations will be used when the Analyzer is opened.

Interpolate Position:

The rFactor and rFactor 2 sims do not provide accurate enough positions through out the lap for all of the Analyzer's analysis functions to work smoothly. If this option is selected the Analyzer will fill in the gaps with data based on other inputs creating a smooth movement throughout the lap.

Download Track Edges:

When you open a lap the Analyzer will check to see if you have track edge files for the track available. If you do not and this option is selected then the Analyzer will attempt to connect to our servers and download the track edge files if they are available. Having track edge files available makes many of the analysis screen much more useful.

Show Sectors:

This checkbox determines if sector boundaries are drawn on the traces and track maps. This is on by default.

Show Markers:

This checkbox determines if markers placed in the telemetry file are drawn on the traces and track maps. This is on by default.

Laps Side By Side:

This checkbox determines if the Analyzer will render both loaded laps side-by-side on the speed comparison analysis screen. This is on by default and allows you to view the throttle and brake inputs overlayed on the track map for easy comparison.

Share Laps:

When this is selected any laps that you open will be uploaded toi our servers so other users cna download them and compare them against their own laps. It also allows you to download laps from our servers to compare your laps against. If this option is turned off then your laps won't be shared, and you won't be able to download laps from our server.

Group Cars:

When this option is selected the laps displayed in the open lap dialog will be grouped together by the car make.

Include Server Tracks:

The list of tracks available in the Track drop down in the Open Lap dialog is based on the laps you have driven. If this option is selected then that list will also include any tracks from laps that others have driven that are available on our servers. This allows you to view and download laps from tracks that you have not yet driven on. Note you must also have the Share Laps option selected for this to work.

Auto Bring To Front:

If this is selected then whenever you click on a trace oin the Analyzer that trace will be brought to the foreground.

TELEMETRY FOLDERS:

Z1 Dashboard Folder:

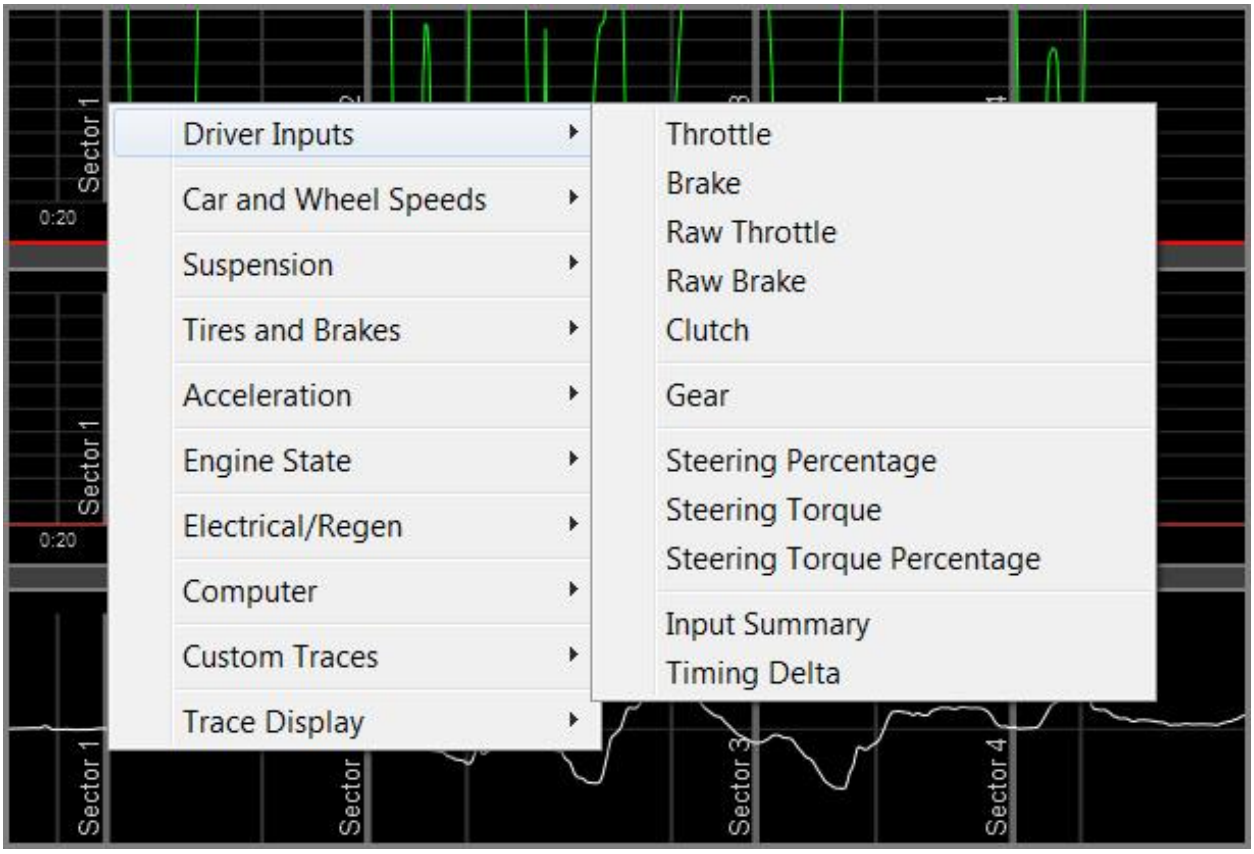
This is the path to your Z1 Dashboard folder in your documents folder. The application should automatically set this. However if you need to change it click the Browse button to do so.

iRacing Telemetry Folder:

In order for the application to load the iRacing ibt files it needs to know where they are located. The application will assign the default iRacing folder. However if you use a different folder to store your iRacing ibt files then you can change this location by clicking the Browse button.

Layout Settings

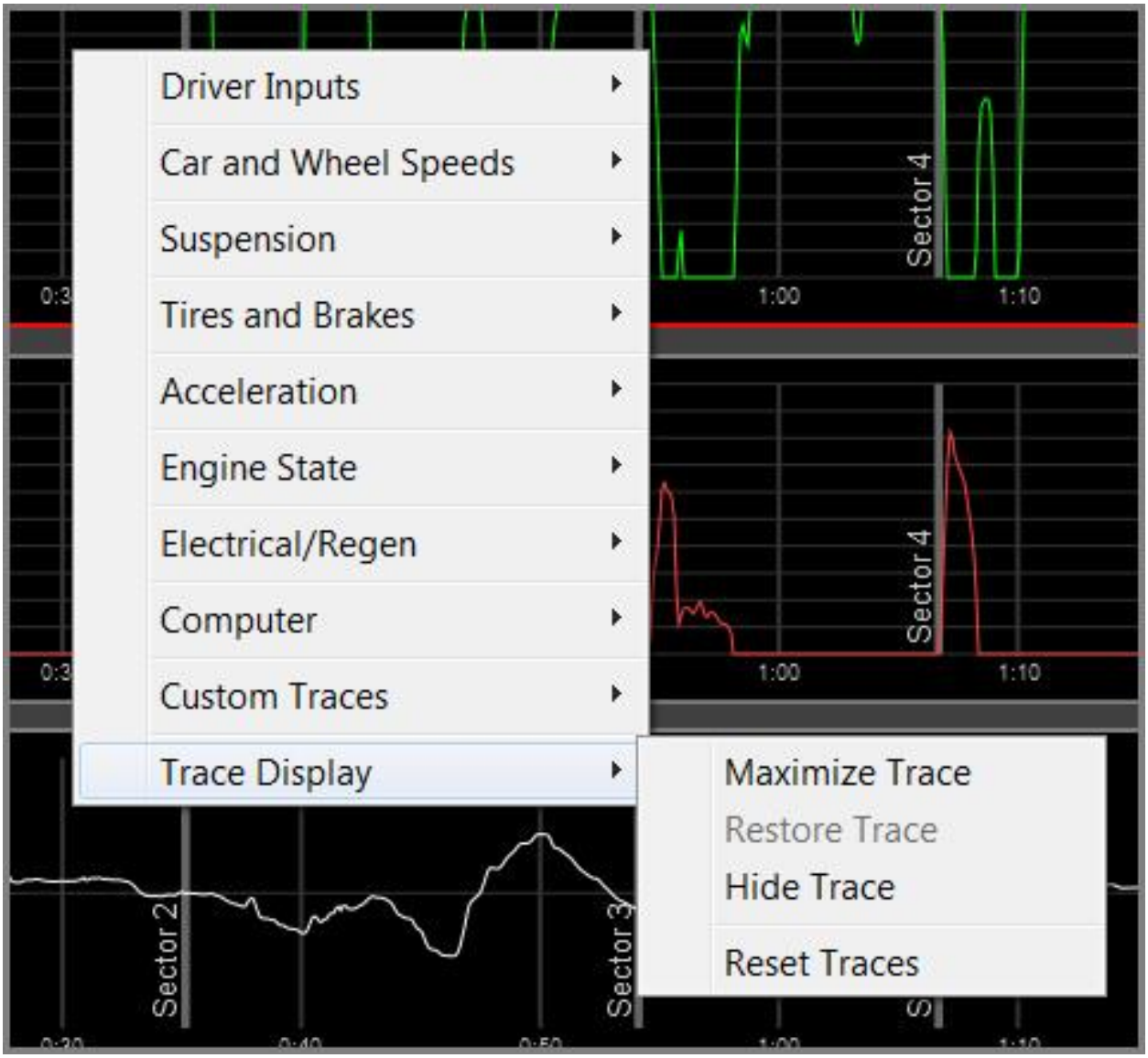
The Z1 Analyzer software allows you to easily customize the layout to suit your style. This customization is done using the drop down menu available by right clicking on any trace.



Default Trace Display

you can select what you want each of the nine traces to display by right clicking on the trace and selecting the desired option. The various data channels are arranged into various groups. Each group has a sub-menu with the various options listed.

Any defined custom traces are also included in this drop down menu, allowing you to select the desired custom trace in the same fashion.



Trace Size and Location

You can move a trace by left clicking it title bar (located on the left side of the trace) and dragging it to the desired location. You can resize a trace by left clicking on its lower right corner and dragging it to the desired size.

Note this also works on the Lap Data and Track Map windows.

A trace can also be maximized by selecting the Maximize Trace option from the drop down. Once a trace is maximized you can select the Restore Trace option to return it to its non-maximized state.

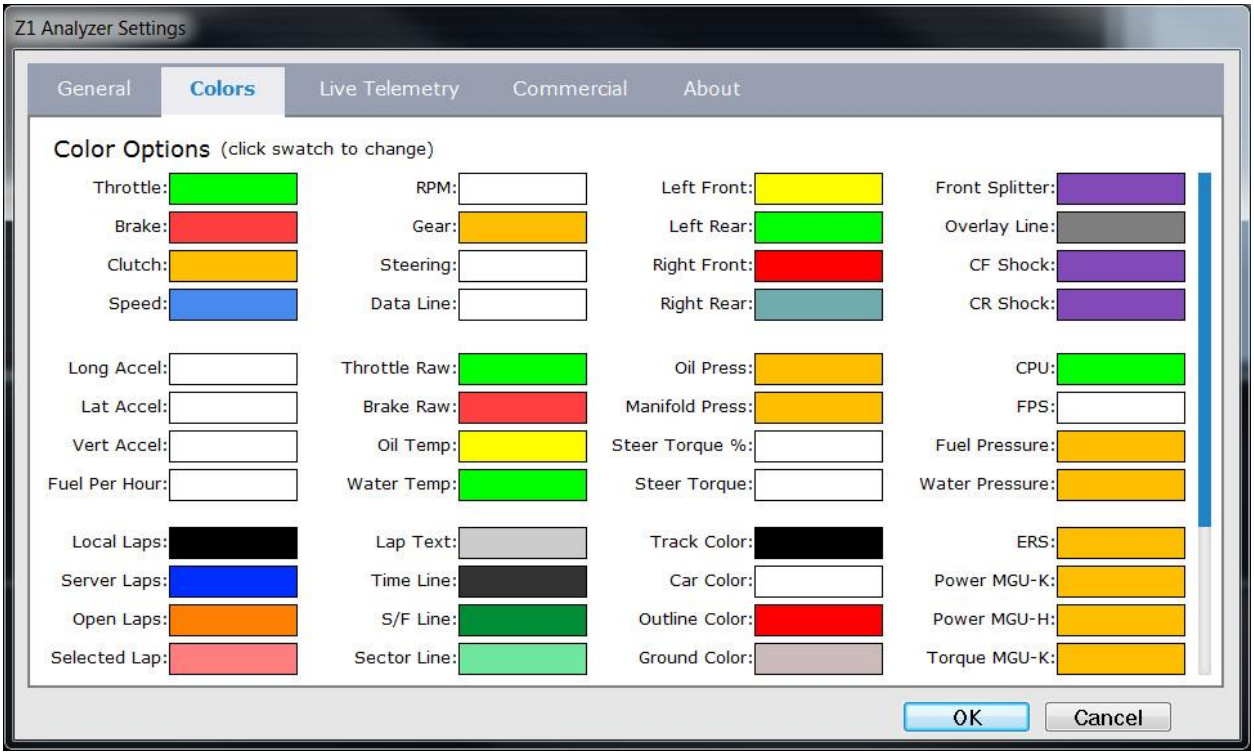
If you do not want to see or use a particular trace it can be hidden by selecting the Hide Trace option.

If you want to restore all traces to their original locations and sizes then select the Reset Traces option.

Note that many of these visibility options are also available under the Trace Display main menu.

Colors Settings

The Z1 Analyzer software allows you to easily customize the colors to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon at the top left of the screen.



Trace Colors:

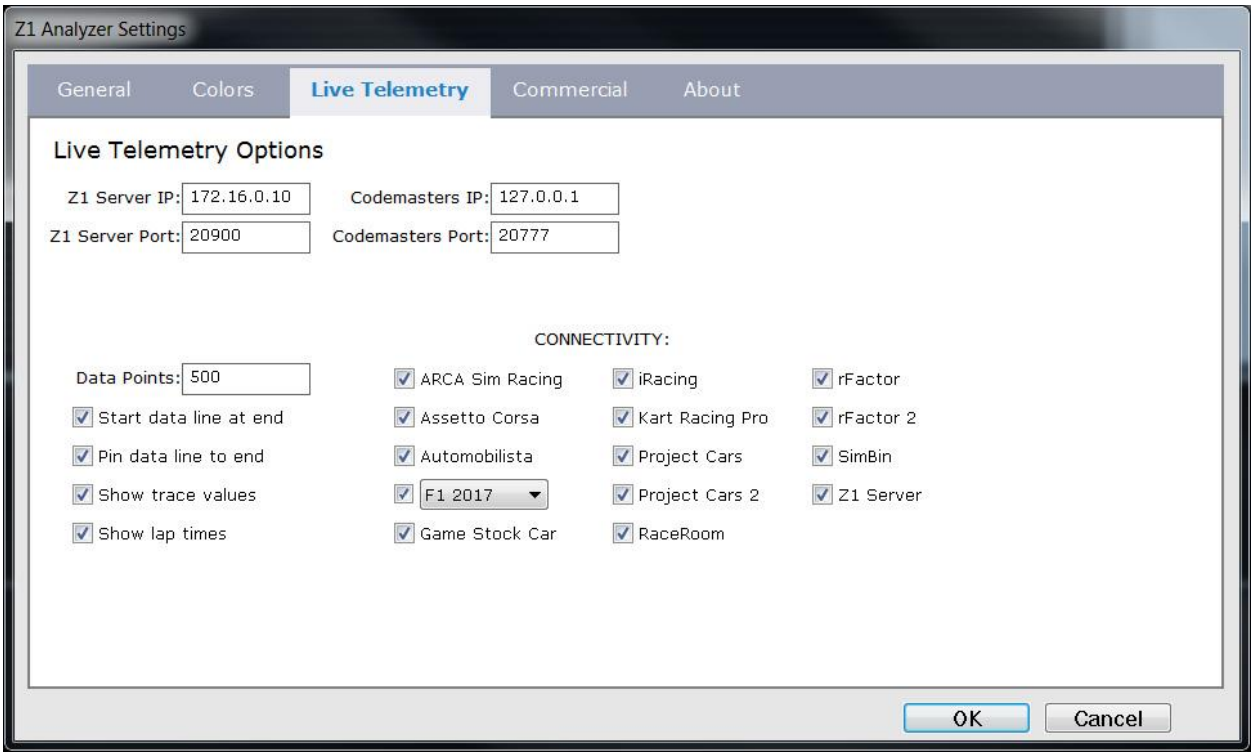
Each of the traces used in the Analyzer can have its own color. In addition the overlay line and data line also have colors assigned to them. This screen allows you to customize the colors used in each of those to your own preferences.

Just click on the swatch you want to change and then use the color picker to select the desired color.

When you are done click OK to save your changes, or cancel to discard them.

Live Telemetry Settings

One of the great features of the Z1 Analyzer is its ability to show you live telemetry. This allows you to see the data streaming off the car in real time. If you are a driving coach this lets you give real time feedback as opposed to having to wait for the lap to be finished before helping your driver. In addition if you are a team manager then you can use this feature to monitor your car to make sure everything is within appropriate values.



The Live Telemetry settings screen allows you to set up how the Analyzer will connect to some of the sims, as well as specifying some of the display features for live playback.

Z1 Server IP:

If you are running the Z1 Dashboard on a different computer from the sim and want to connect to the Z1 Server software, then you should enter the IP address being used by the Z1 Server software here.

Z1 Server Port:

If you are running the Z1 Dashboard on a different computer from the sim and want to connect to the Z1 Server software, then you should enter the port number being used by the Z1 Server software here.

Check for the Z1 Server:

If you want the Z1 Dashboard to try and connect to the Z1 Server you should tick this checkbox. Leaving it unchecked will prevent the Dashboard from searching for the Server, and slightly speed up the connection to other sims.

Codemasters IP:

If you want to connect to the Codemasters F1 sims 2012 - 2013, then you should enter the IP address being used by the Codemasters sim here. This is usually 127.0.0.1.

Codemasters Port:

If you want to connect to the Codemasters F1 sims 2012 - 2013, then you should enter the port being used by the Codemasters sim here. This is usually 20777.

Data Points:

This is the number of individual data points kept in memory. The higher this number the farther back each trace will display data. A smaller number will move the data across the screen faster.

Start data line at end:

With this checked the data line that shows the current location of the displayed data numbers in a trace will begin at the end (the right side) of the traces.

Pin data line to end:

With this checked the data line will stay at the right side of the trace regardless of where you click while live telemetry is playing.

Show trace values:

With this checked the telemetry values will be displayed at the data line during live telemetry playback. If these numbers are interfering with your view pof the trace lines, then uncheck this box.

Show lap times:

check this box if you want the current and last lap time to be displayed on the track map when live telemetry is running.

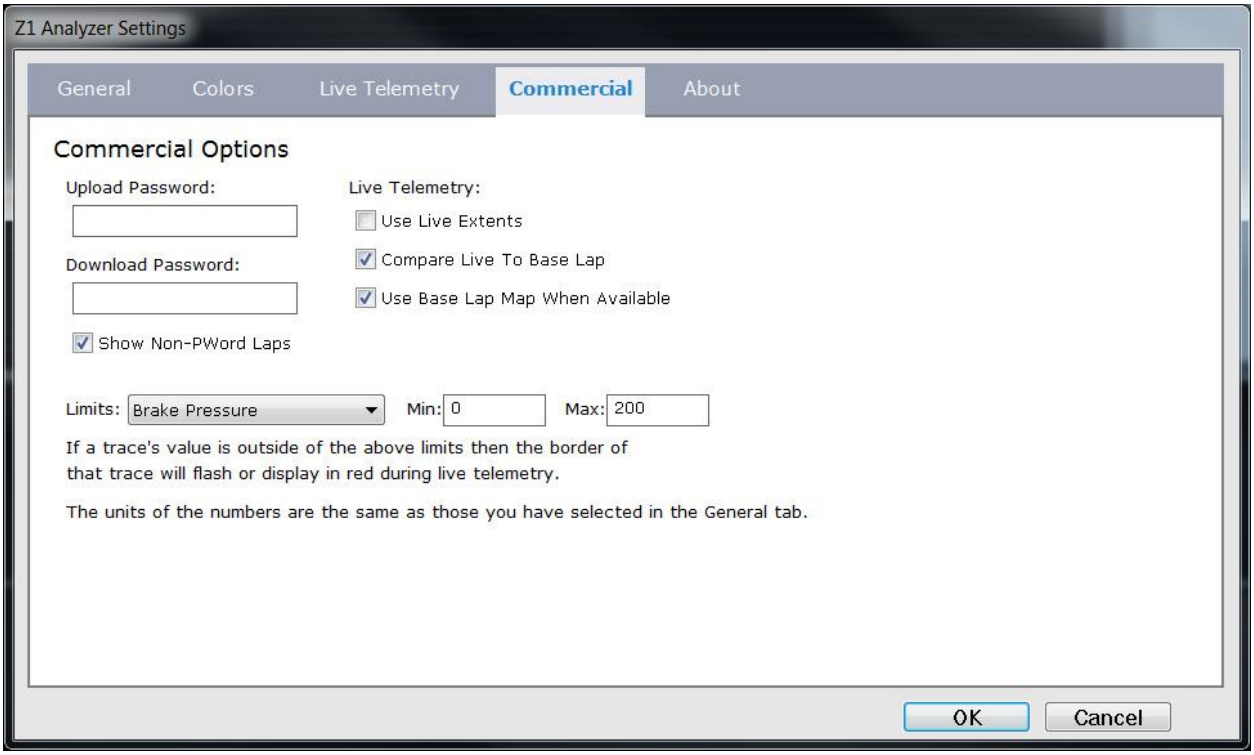
Connectivity:

The various connectivity options determine which sims the Z1 Dashboard will attempt to connect to. If you are only using a few sims then unchecking the ones which are not used will result in a faster connection time when starting your sim.

For Codemasters you need to check the checkbox and then select the version of the sim you want to connect to from the drop down. For F1 2017 there are two options: 'F1 2017' and 'F1 2017 BC'. The BC option indicates that you want to use Codemasters broadcast mode when connecting to the sim.

Commercial Settings

The Z1 Analyzer has various features available to commercial users. This tab of the settings dialog allows the commercial user to customize those settings.



Upload Password:

Commercial users may assign a password to any uploaded lap file. If this is done then only other commercial users who know that password can download the lap file. This enabled easy sharing of lap files between specific users.

Download Password:

If you want to download a password protected lap file then you will need to enter the password here.

Show Non-PWord Laps:

With this option selected you will see all non-password protected laps as well as those that are password protected. You can use this option to filter the list down to just those laps with a password by un-selecting it.

Use Live Extents:

When the traces are drawn they need to know the maximum and minimum values, or extents, of the graph. With this option selected those values will be calculated on the fly from the live telemetry data. If you have a base lap loaded then unchecking this option will tell the Analyzer to use the base lap's data to determine the maximum and minimum extents for each graph. This will produce faster redraws than using the live data's extents.

Compare Live To Base Lap:

If you have a base lap loaded then with this option checked that base lap will remain loaded when you start live telemetry. This allows you to compare the live telemetry to the pre-recorded base lap telemetry.

Use Base Lap Map When Available:

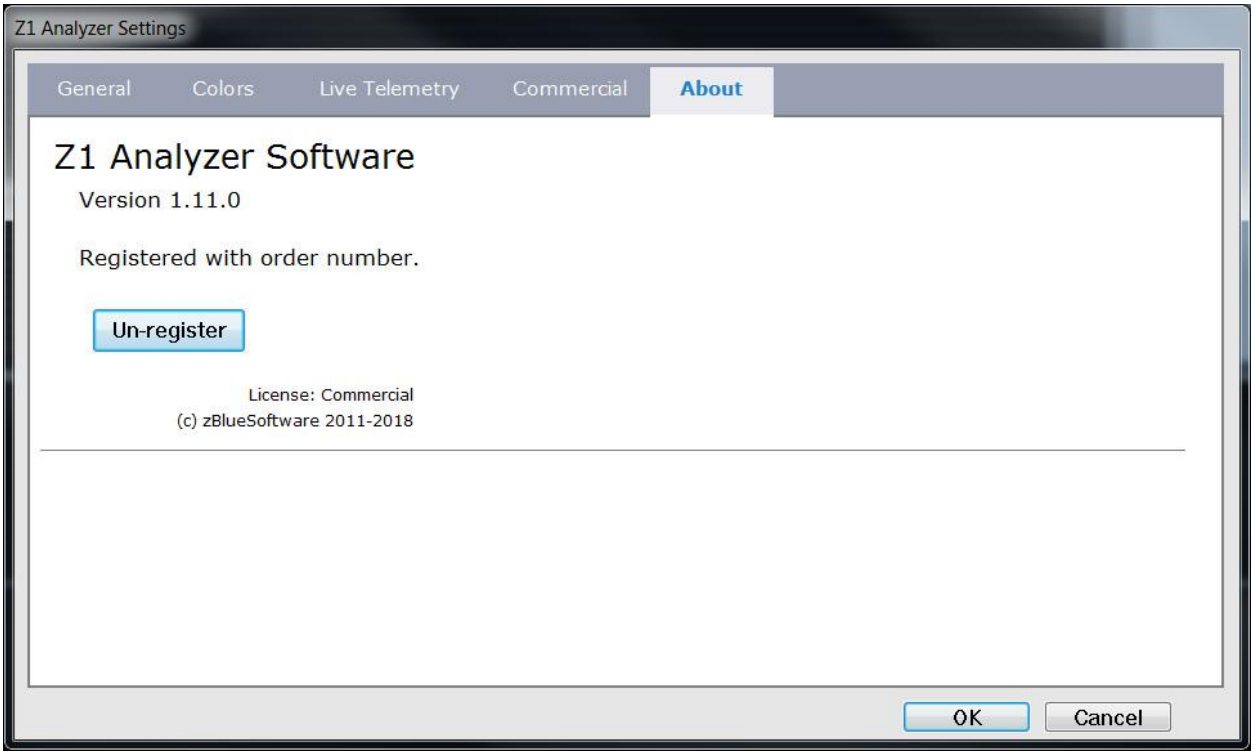
If you have a base lap loaded then selecting this option will use the data in that base lap to create the track map. If this option is not selected or a base lap is not loaded then you will have to have created and saved a track map for this track in order to see one during live telemetry play back.

Limits:

As a commercial user you can have the border of a trace flash during live telemetry if the value of the data displayed within the trace exceed predefined limits. You can define the maximum and minimum limits for all the standard data channels by selecting the desired channel and then entering the maximum and minimum value. The units for the entered values correspond to those used in the trace. For example if the trace is displaying KPH, then the values entered are taken to be KPH values.

About Tab

The Z1 Analyzer software allows you to easily customize the display to suit your style. This customization is done using the Settings Dialog, accessible by clicking the Settings Icon at the top left of the screen.



This tab will display the version of the Analyzer you are running along with its current registration status the order number used to register the software if appropriate.

Register/Unregister:

This button will either display 'Register' if you are running in demo mode, or 'Unregister' if you have a registered copy of the software. Click it when it says 'Register' will allow you to register the software. Clicking it when it says 'Unregister' will allow you to unregister the software. You would unregister the software if you wanted to move it to another computer.

Z1 Server Settings

Overview

The Z1 Server application allows you to broadcast your sim's data to any computer on your network. The Z1 Dashboard or the Z1 Analyzer can then read the broadcasted data, so you can now run the Z1 Dashboard or Z1 Analyzer on any computer on your network. The Z1 Server will also broadcast the joystick button inputs allowing you to control the dashboard switching from the main computer. You run the Z1 Server application on the same computer as the sim, and then run the Z1 Dashboard or Z1 Analyzer on another computer on the network.

Note that if you are going to run the Z1 Dashboard software on the same machine as the sim, then you do not need to run the Z1 Server.

The Z1 Server display shows you the five important pieces of information you need to get your sim's data broadcast over your network.

Connected to sim:

The Z1 Server must be run on the same machine as the sim you wish to connect to. If the Z1 Server has established a connection with the sim, then the name of that sim will be displayed here. If not, then a "Waiting for Sim" message will be displayed instead.

Connected to client:

A client is an instance of the Z1 Dashboard software, or Z1 Analyzer, or any other application that implements the Z1 Server UDP connections. Once such a client has established a connection to the Z1 Server the appropriate client identifier will illuminate. If the client disconnects then the identifier will once again become dark. Note that once the Z1 Dashboard is connected to the Z1 Server, if the Z1 Server is not connected to a sim, then the Z1 Dashboard will say that it is connected to the Z1 Server. If the Z1 Server is connected to a sim, then the Z1 Dashboard will say it is connected to the appropriate sim.

Transmitting data:

Once a client connection has been established and data is being transmitted from the Z1 Server to a client, this will say 'Yes'. If that is not the case then this will say 'No'.

IP Address:

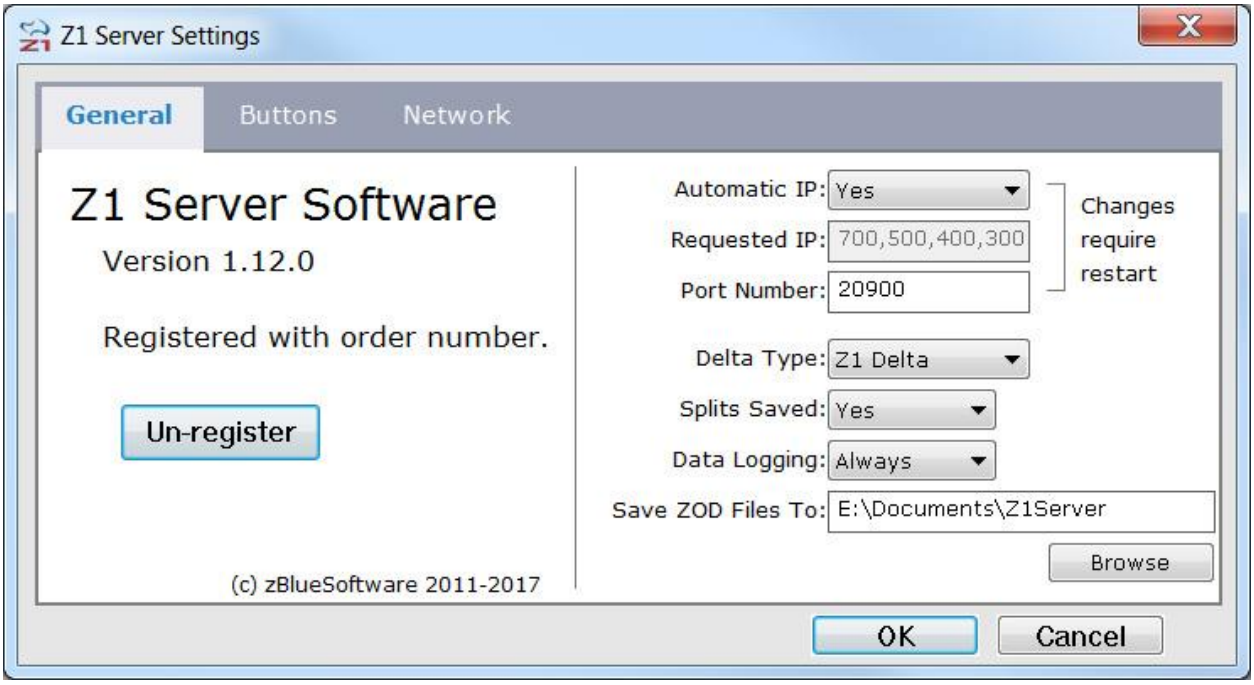
The Z1 Server uses UDP to transmit data. That UDP connection needs a specific IP Address to work. The IP Address being used by the Z1 Server to transmit the data will be displayed here. The IP Address set in the Z1 Dashboard or Z1 Analyzer software must match this IP Address.

Port Number:

The Port number being used by the Z1 Server is displayed here. The Port number set in the Z1 Dashboard or Z1 Analyzer software must match this Port number.

General Settings

By clicking on the settings icon at the top right of the Z1 Server screen you can access the settings dialog. The various options within that dialog are explained here.



IP Addresses/Ports

Note that your network needs to allow access across the IP address and port number that the Z1 Server software is using in order for a connection to be established between the Server and a client. If your anti-virus software or firewall, or any other system blocks traffic on the IP address or port number then a connection will not be able to be established.

Register/Unregister buttons

You can see the version number of the software on the left side of this screen. You can also see if you are running a demo version, or the type of registration you are currently using. The register/unregister buttons allow you to register or unregister the software.

Automatic IP:

This drop down allows you to specify how the IP address the Z1 Server will use is determined. When this is set to Yes, then software will determine the IP address to use based on the IP address of the computer. If it is set to No then you will be responsible for entering an IP address for the software to use. Note that unless you have experience with networks, you should leave this option set to Yes.

Requested IP:

This is the IP address that the software will use. Note that if the Automatic IP drop down is set to yes, then you can leave this field blank. However, if that drop down is set to No, then you will need to enter the IP address you wish to use here.

Port Number:

This is the port number that the software will use. By default port number 20900 is used. However you can change that if it is conflicting with another application.

Delta Type:

By default the Z1 Server software will calculate the the delta using its own data and broadcast that to the clients. This allows for accurate deltas in all of the sims. However some sims, such as iRacing and Assetto Corsa provide various deta options. You can specify that one of these should be used by the Z1 Server when running those sims. To do so, just select the desired option from the drop down.

Splits Saved:

This option allows you to specify whether or not split times should be saved. Saving split times affects how the Z1 Delta is determined. If you save the splits them the system will save your fastest ever lap, and the delta will be calculated against that lap. If you do not save the splits then the delta will be calculated against the fastest lap of your current session.

Data Logging:

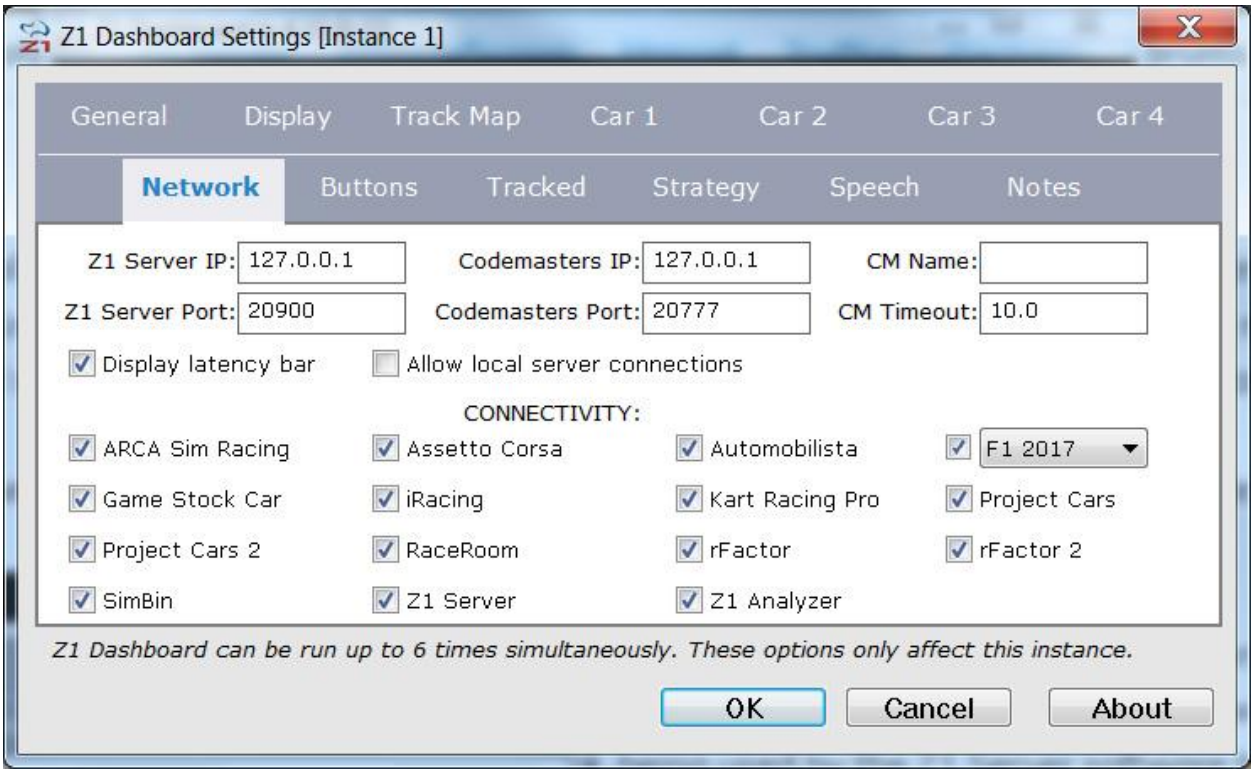
This determines when data logging is active. By default it is always active. However you can choose to have it activated using a button, or have it turned off.

Save ZOD Files To:

This determines where the ZOD telemetry files will be saved. The default location is in the documents/z1server folder. If you want to change that location click the Browse button and select the desired location.

Z1 Dashboard Settings

In order for the Z1 Dashboard to connect to the Z1 Server you will need to specify the correct IP address and port number.



Z1 Server IP:

If you are running the Z1 Dashboard on a different computer from the sim and want to connect to the Z1 Server software, then you should enter the IP address being used by the Z1 Server software here. If this field is left blank then the Z1 Dashboard will not try to connect to the Z1 Server software.

Z1 Server Port:

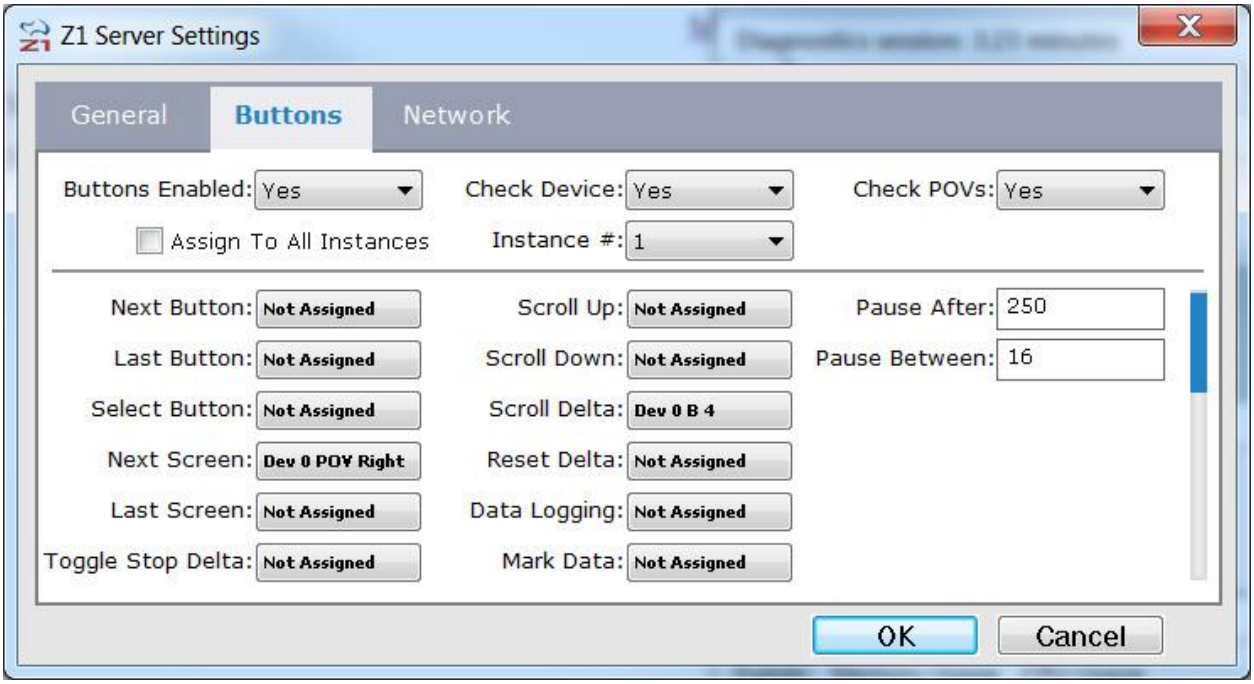
If you are running the Z1 Dashboard on a different computer from the sim and want to connect to the Z1 Server software, then you should enter the port number being used by the Z1 Server software here.

Connectivity: Z1 Server:

If you want the Z1 Dashboard to try and connect to the Z1 Server you should tick this checkbox. Leaving it unchecked will prevent the Dashboard from searching for the Server, and slightly speed up the connection to other sims.

Z1 Server Button Settings

By clicking on the settings icon at the top right of the Z1 Server screen you can access the settings dialog. The options within the Buttons tab are explained here. The Z1 Server can transmit button presses from your wheel or button box across your network to the Z1 Dashboard. To do so you need to assign the desired buttons to the Z1 Server as explained below.



Buttons Enabled:

This can be either Yes or No. When set to Yes the app will check for button presses. Note that if you change the setting you will need to restart the software for the change to take effect.

Check Device:

This can be either Yes or No. When set to Yes the app will check for device number as well as the button number to determine if a button was clicked. If you have multiple identical devices, such as button boxes, then turning this option on will allow the software to differentiate between those boxes.

Check POVs:

This can be either Yes or No. When set to Yes the app will check for POV inputs, such as hat switches.

Assign To All Instances:

When this is checked the button inputs will be broadcast to all connected instances of the Z1 Dashboard. If you want the inputs to be sent only to a specific instance then uncheck this box.

Instance #:

If you have unchecked the Assign To All Instances checkbox then you will need to specify which instance these buttons definitions should be sent to. You can choose the instance number (1-6) from this drop

down. Each instance can have a different set of buttons assigned to it. This allows you to control up to 6 connected instances of the Z1 Dashboard using different button inputs.

Next Button:

This is the button assignment to highlight the next button in the sequence of displayed buttons on a particular screen. Click the S icon to its right in order to select the desired button.

Last Button:

This is the button assignment to highlight the previous button in the sequence of displayed buttons on a particular screen. Click the S icon to its right in order to select the desired button.

Select Button:

This is the button assignment to select the currently highlighted button on a particular screen. Click the S icon to its right in order to select the desired button.

Next Screen:

This is the button assignment to display the next dashboard associated with the current car. This only works when you are in the car. Click the S icon to its right in order to select the desired button.

Last Screen:

This is the button assignment to display the previous dashboard associated with the current car. This only works when you are in the car. Click the S icon to its right in order to select the desired button.

Toggle Stop Delta:

This allows you to assign a button to turn on or off the 'after stop' display on the track maps. By default the 'after stop' display is show when you get within a specified number of laps of your stop (3 by default). But you may use a button to turn it on or off at any time.

Scroll Up:

This is the button assignment to scroll up any windows that have up/down arrows. Click the S icon to its right in order to select the desired button.

Scroll Down:

This is the button assignment to scroll down any windows that have up/down arrows. Click the S icon to its right in order to select the desired button.

Scroll Delta:

This is the button assignment to scroll through the various delta options. This lets you change the displayed delta on the fly. The Dashboard will display a message when you change the currently selected delta. Click the S icon to its right in order to select the desired button.

Reset Delta:

This is the button assignment to reset the current delta. This lets you delete any saved splits for the current car and track combination. This is useful if the weather or other changes in the track require the delta to be reset. The Dashboard will display a message when that the delta has been reset when this button is pressed. Click the S icon to its right in order to select the desired button.

Data Logging:

This is the button assignment to toggle data logging on and off. You must also set the Data Logging option to Button (in the General tab). Click the S icon to its right in order to select the desired button.

Mark Data:

This is the button assignment to insert a marker into telemetry files. Once assigned it just requires a single push to place the marker. Holding the button down continually will place multiple markers all in a row.

Pause After:

This is the number of milliseconds that the software will wait after receiving a button input before it will accept another input. You can increase of decrease this value to suit your types of buttons. For example if you are using a rotary dial, you might want to software to wait less than if you are using a push button. The default value of 250 gives a fairly good compromise across all button types.

Pause Between:

This is the number of milliseconds that the software will wait between checking for button inputs. If you find that button inputs are being missed you can try reducing this value. If button inputs are happening too quickly then try a higher value.

Dashboard Screen Buttons

Screen 1 - 10:

You can assign a specific button to jump directly to a specific screen number within your car's dashboards. Just assign the appropriate button to the desired screen number. Click the S icon to its right in order to select the desired button.

iRacing Only Buttons

Add Fuel: (iRacing only)

This is the button assignment to add fuel in iRacing. This will add one liter to the amount of fuel that will be added at your next pit stop. Click the S icon to its right in order to select the desired button.

Remove Fuel: (iRacing only)

This is the button assignment to remove fuel in iRacing. This will remove one liter from the amount of fuel that will be added at your next pit stop. Click the S icon to its right in order to select the desired button.

Fuel To End: (iRacing only)

This is the button assignment to add the necessary fuel to finish the race in iRacing. This will add the amount of fuel required to finish the race, plus three liters (as a buffer), at your next pit stop. If this is more than the capacity of the fuel tank then you will get a fuel tank of fuel at the next pit stop. Click the S icon to its right in order to select the desired button.

Clear Tires: (iRacing only)

This is the button assignment to tell your pit crew that you do not want to change your tires at the next pit stop. Click the S icon to its right in order to select the desired button.

Fast Repair: (iRacing only)

This is the button assignment to tell your pit crew that you wish to have a fast repair at the next pit stop instead of fixing all the damage (if any) that exists on your car. Click the S icon to its right in order to select the desired button.

Watch List Buttons

Add Ahead:

This is the button assignment to tell the Z1 software that you want to add the car ahead of you on track to your watch list.

Add Behind:

This is the button assignment to tell the Z1 software that you want to add the car behind you on track to your watch list.

Cut Ahead:

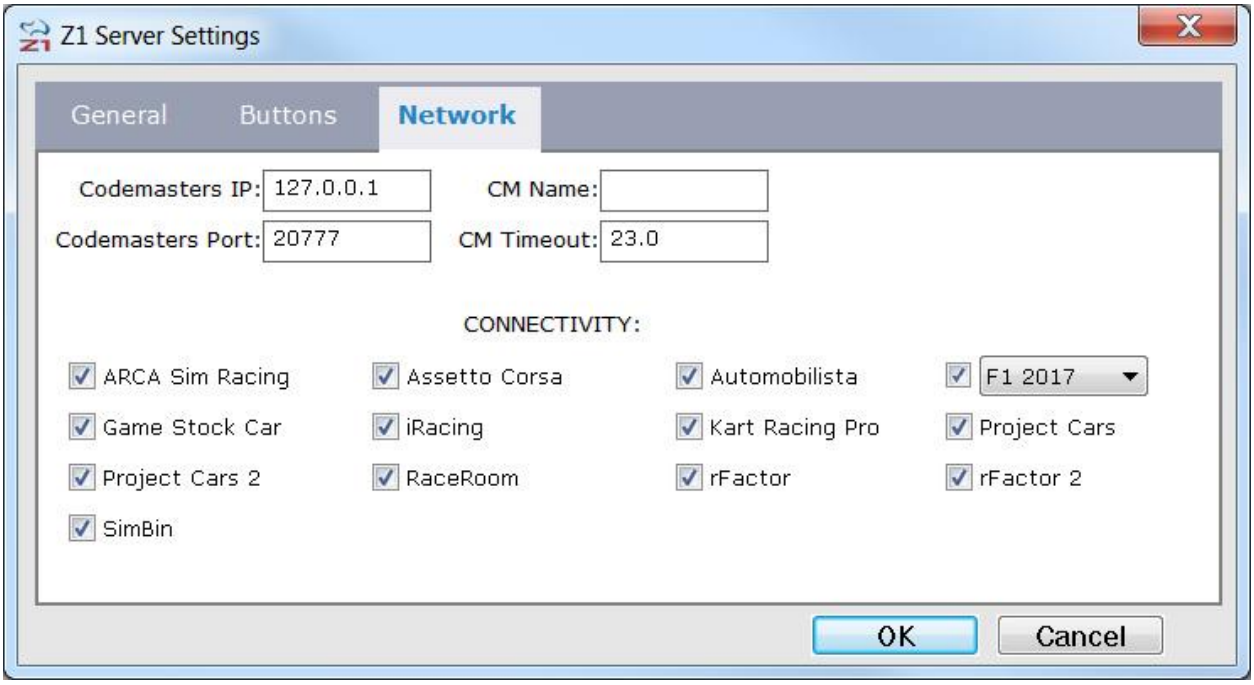
This is the button assignment to tell the Z1 software that you want to remove the car ahead of you on track from your watch list.

Cut Behind:

This is the button assignment to tell the Z1 software that you want to remove the car behind you on track to your watch list.

Network Settings

By clicking on the settings icon at the top right of the Z1 Server screen you can access the settings dialog. The options within the Network tab are explained here.



Codemasters IP:

This is the IP address that the Codemasters sim is broadcasting on. If this doesn't match the IP address from Codemasters then the Z1 Server will not be able to connect to that sim.

Codemasters Port:

This is the port number that the Codemasters sim is broadcasting on. If this doesn't match the port from Codemasters then the Z1 Server will not be able to connect to that sim.

CM Name:

This is the driver name you want to have displayed when you are running a Codemasters sim. The Codemasters sims do not include the name of the driver in the API data feed. So if you leave this field blank then the driver name displayed with a Codemasters sim will either be 'Driver' or the name of the F1 driver whose car you are driving.

CM Timeout:

Codemasters turns off telemetry when you pause or exit the sim. Since there is no way for the Z1 Server to know if the sim is just paused or has exited, it will wait for the number of seconds specified here for the sim to resume. If it does not resume within that time frame then the Z1 Server will assume the sim has exited.

Connectivity:

For the Z1 Server to attempt a connection with a sim its name must be checked in this section. If you only use one of two sims then unchecking the other sims will speed up the process of connecting to the sim when you run the Z1 Server.

For Codemasters you need to check the checkbox and then select the version of the sim you want to connect to from the drop down. For F1 2017 there are two options: 'F1 2017' and 'F1 2017 BC'. The BC option indicates that you want to use Codemasters broadcast mode when connecting to the sim.